

BRIDGE REPLACEMENT - CSS
BRF-136-2(043)--38-53

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BRF-136-2(043)--38-53

JONES COUNTY

LETTING DATE
Jan 20 2027

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 136
G Sheets	Survey Sheets
G.1 - 2	Reference Ties and Bench Marks
G.3	Horizontal Control Tab.
J Sheets	Traffic Control and Staging Sheets
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W Sheets	Mainline Cross Sections
* W.1	Cross Sections Legend & Symbol Information Sheet
* W.2 - 10	Mainline Cross Sections
	* Color Plan Sheets

<-- H Sheet

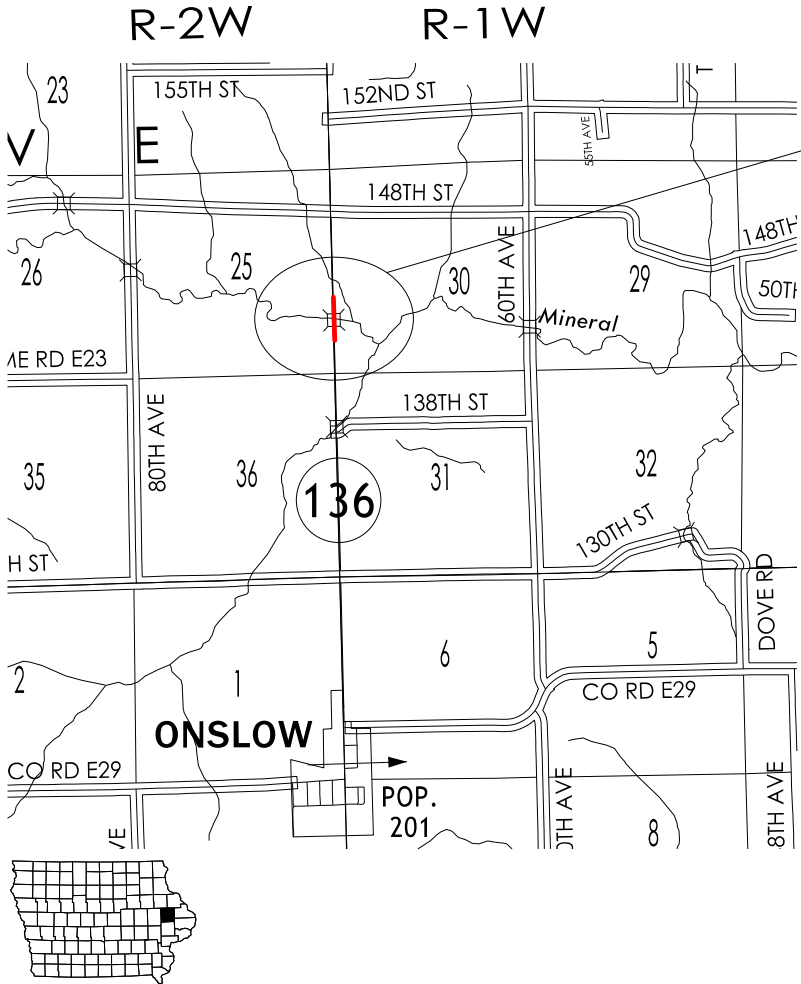


PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
JONES COUNTY
Bridge Replacement - CSS
Mineral Creek 2.1 mi N of N Jct Co Rd E29

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



PROJECT LOCATION
FHWA # 32540
REF LOC 60.1

T-85N

DESIGN DATA RURAL			
2027	AADT	700	V.P.D.
2047	AADT	900	V.P.D.
20	DHV	-	V.P.H.
	TRUCKS	23	%
	Total		
	Design ESALs	-	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	X	Primary Signature Block	X
X	X	X	X

P9 PLAN - Date: 11/05/25
D4 PLAN - Date: 9/08/26

PRELIMINARY PLANS

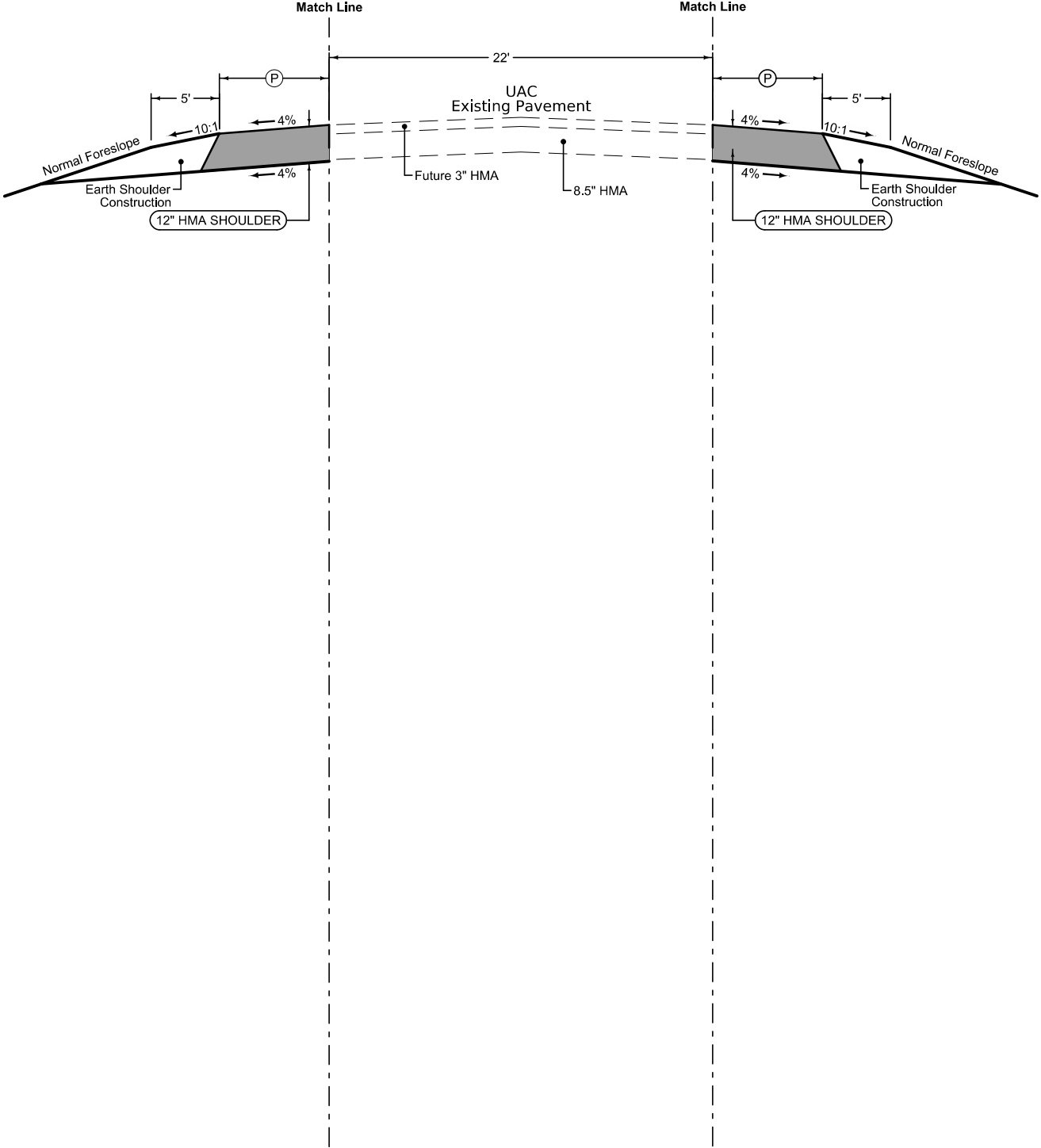
Subject to change by final design.

D5 PLAN - Date: 7/25/25

Paved Shoulder at Guardrail

Shoulder Jointing:
Longitudinal joint: B

2_P_FullPCC_MODIFIED		
STATION TO STATION		(P) Feet
292+63.50	293+16.56	Varies
296+11.43	297+01.99	Varies

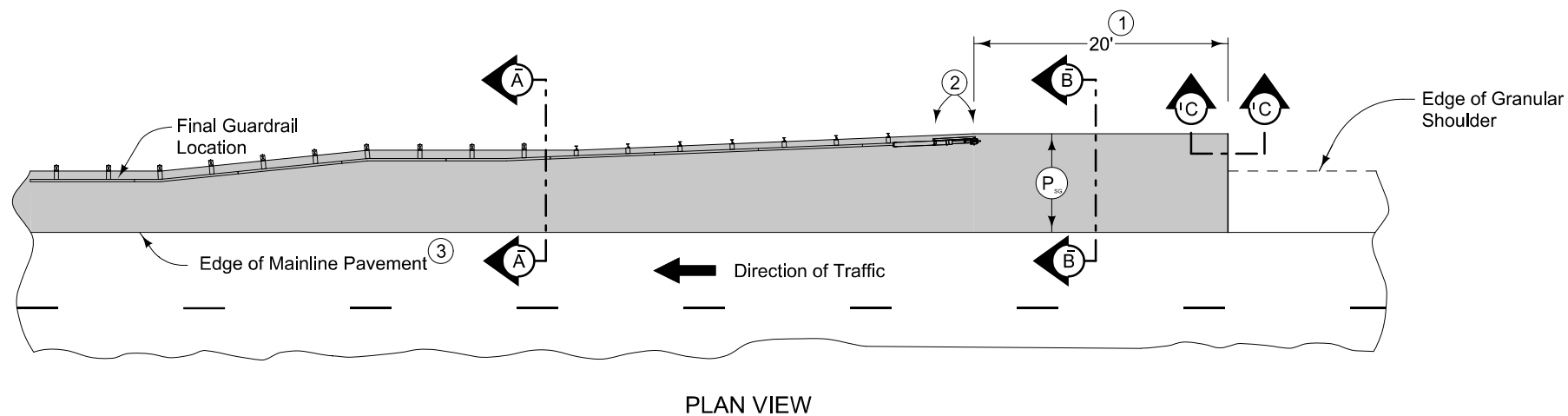


Paved Shoulder at Guardrail

Shoulder Jointing:
Longitudinal joint: B

2_P_FullPCC_MODIFIED		
STATION TO STATION		(P) Feet
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296+11.43	296+64.49	Varies

IA 136



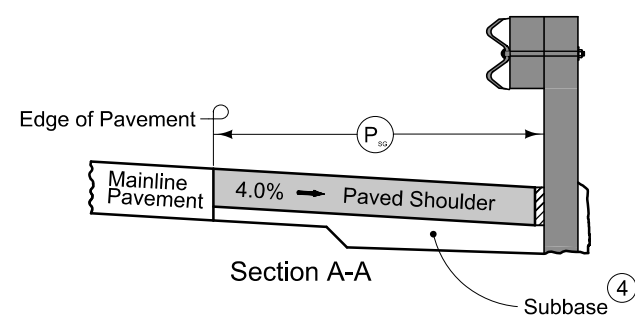
DESIGNER INFO	7156
	MODIFIED

12" HMA Paved Shoulder at guardrail.

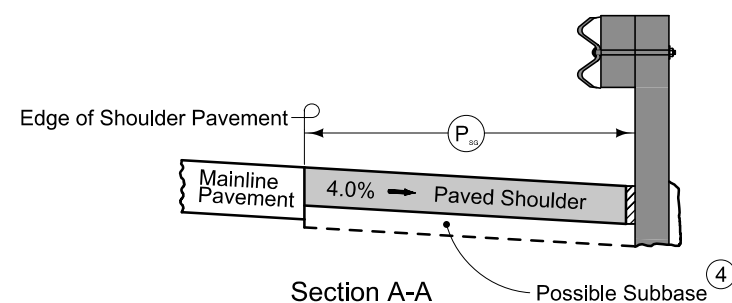
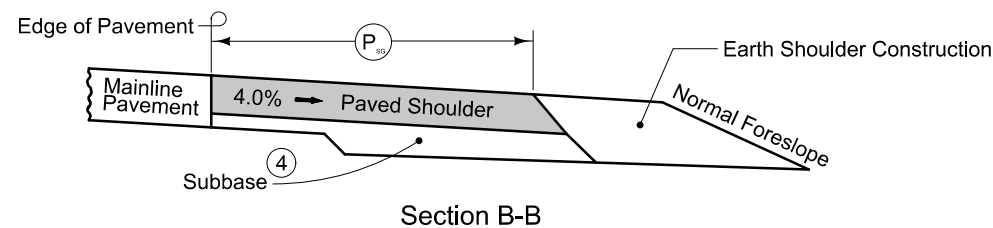
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

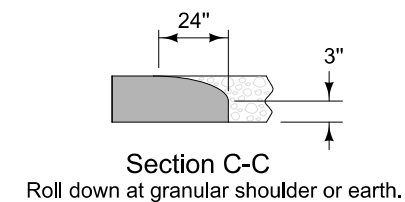
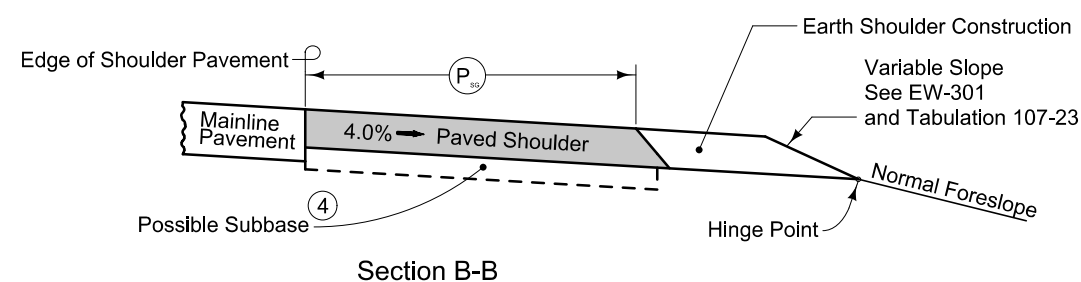
- ① Continue paved shoulder 20 feet beyond the center of the first post.
- ② Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ③ 'BT' joint (per PV-101) for PCC shoulder.
'B' joint (per PV-101) for HMA shoulder.
- ④ Refer to other details in the plan.



NEW CONSTRUCTION



EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL
(GRANULAR SHOULDER ADJACENT TO MAINLINE)

Survey Information

SURVEY INDEX

Jones County
BRF-136-2(43)--38-53
Mineral Creek 2.1 mi N of N Jct Co Rd E29
PIN: 22-53-136-010
Type of Work: Bridge Unspecified
Project Directory: 5313601022

Survey Personnel

Myron Fox – Survey Party Chief
Samuel Schilb – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 03/28/2024
End Date 05/20/2024

General Information

This survey is for the bridge over Mineral Creek on Hwy 136. This survey request was for the Hwy 136 corridor only. This project is a Full Field DTM survey.

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

Coordinates were determined for primary project control points by conducting concurrent six-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. 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 10
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The Alignments for this project were provided by the District Land Surveyors Office

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.



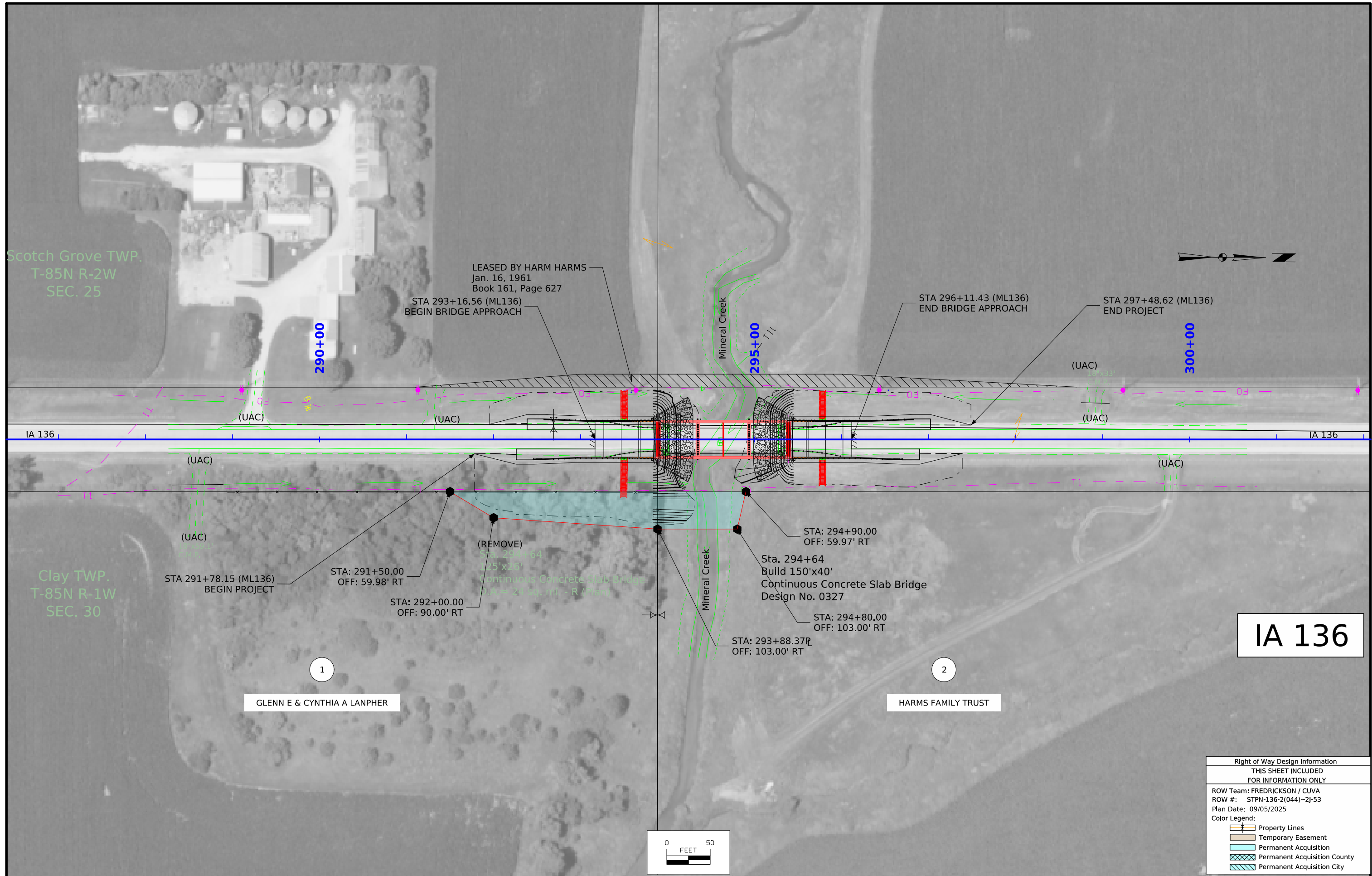
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 10 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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 (laRTN 2019 Adjustment)
la. Regional Coordinate System Zone 10 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code Description
300	8109427.37	20677020.12	831.68	CP Set FENO monument from the intersection of Hwy 136 and 138th St proceed NE 62' point is 24' NW of CL of 138th St 4" below surface
54	8104855.10	20677065.67	896.12	CP Jones County Contol Monument FND as Described
301	8115058.26	20677002.68	851.82	CP Set 5/8th" x 42" rebar from the intersection of Hwy 136 and 148th St proceed S 85' point is 63' W of CL of Hwy 136 4" below surface



Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY
ROW Team: FREDRICKSON / CUVA
ROW #: STPN-136-2(044)--2J-53
Plan Date: 09/05/2025
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition
Permanent Acquisition County
Permanent Acquisition City

TRAFFIC CONTROL PLAN		108_23A 8/15/22
Traffic on IA 136 will be maintained at all times via an offsite detour.		

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
BRF-136-2(38)--38-53	Bridge Deck Replacement

Control Point: CP300, N 8109427.37, E 20677020.12, CP Set FENO Monument From the Intersection of Hwy 136 and 138th St Proceed NE 62'. Point Is 24' NW of CL of 138th St 4" Below Surface. Elev. = 831.68

General Notes:
This Design Is for the Replacement of the Existing 125' x 26' Continuous Concrete Slab Bridge, Jones Design No. 1253, FHWA No. 032540, Maint. No. 5360.1S136.

Top of Bridge Slab at Centerline Roadway is 0.03' Below the Profile Grade to Account for Deck Cross Slope and Parabolic Crown.

Design Notes:
See Design Sheet No. 3 for Staging Sequence Details.

Standard Bridge Index No. J40. Verify Abutment, Wingwall, and End Barrier Geometries after Standard J40 Is Updated to the CONNECT Version.

TL-4 Single Slope Bridge Railing Proposed.

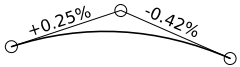
Pier Type - Fully Encased Pile Bent with an Assumed Cap Width of 3'-0" and Encasement Thickness of 22".

Final Design Shall Consider the Need for Temporary Shoring to Accommodate Staging of Bridge Construction and Include in the Final Plans as Necessary.

Class E Revetment Stone Is Embedded.

There Is a Potential for Conflicts With Existing Battered Timber Piles Near the Piers. The Proposed Piles May Be Spaced to Maintain a Clearance That is the Larger of 2.5 Feet or 2.5 Times the Proposed Pile Size Per BDM 6.1.7.1. Final Pier Pile Layout to Be Determined in the B03 Phase.

VPI Sta. = 295+01.98
VPI Elev. = 831.00
VC = 200.00'



VPC Sta. = 294+01.98 VPT Sta. = 296+01.98
VPC Elev. = 830.75 VPT Elev. = 830.58

Profile Grade on CL IA 136 & P.G.L.

IA 136 Traffic Estimate

2027 AADT	700 V.P.D.
2047 AADT	900 V.P.D.
2047 DHV	90 V.P.H.
Trucks	23%
Total Design ESALS	???

Hydraulic Data

RIDB: ""MineralC_Jack_19.02"
Drainage Area = 24.3 Sq. Mi.
Stream Slope (HGL) = 7.9 Ft./Mi.
Avg. Low Water Stage = ????

Q₅₀ = 5,730 cfs
Stage = 823.3
Channel Low Chord = 828.3
Avg. Bridge Velocity = 9.8 fps

Q₁₀₀ = 6,740 cfs
Stage = 824.1
Operational Low Chord = 828.3
Backwater = 3.1 Ft.
Avg. Bridge Velocity = 9.7 fps

Q₂₀₀ = 8,700 cfs
Stage = 824.3
Calculated Design Scour = Elev. 796.3

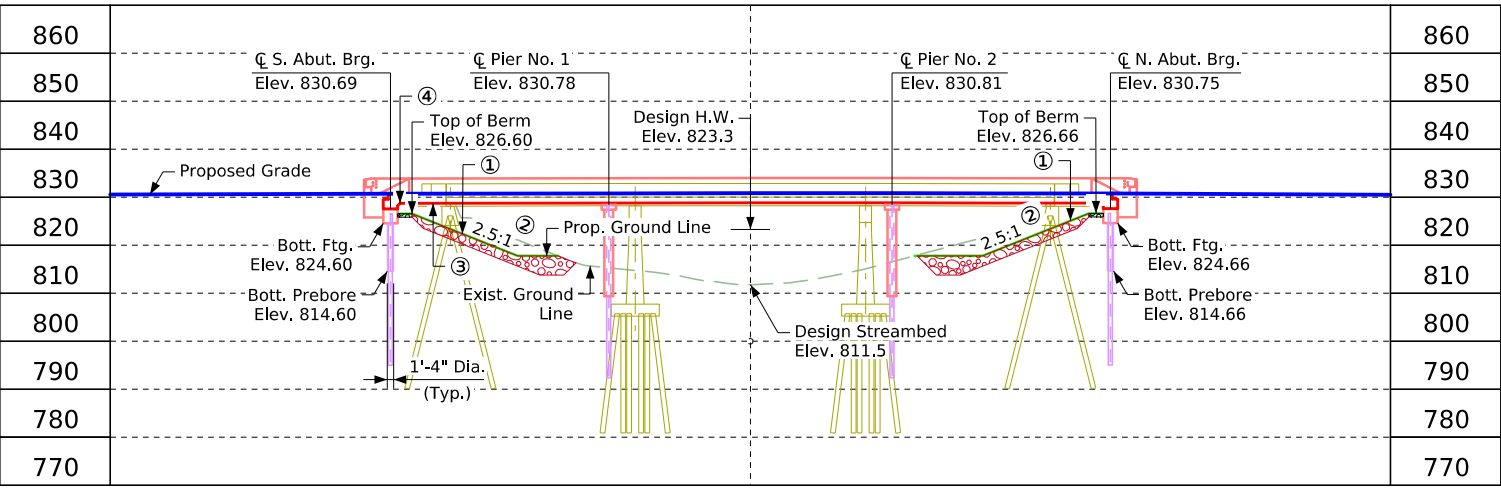
Q₅₀₀ = 9,470 cfs
Stage = 825.7
Avg. Bridge Velocity = 10.1 fps
Calculated Check Scour = ????

Utilities Note:

Utilities shown on this sheet are for information only. See Road Design sheets for utility information.

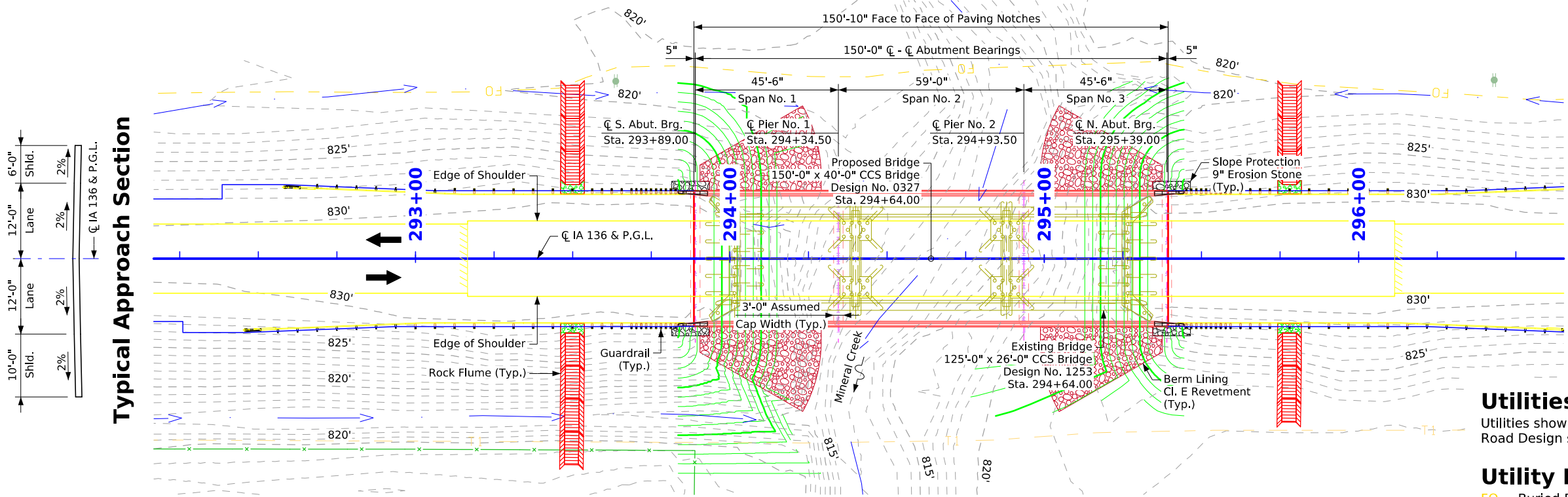
Utility Legend:

FO - Buried Fiber Optic, Maquoketa Valley Electric Coop
T1 - Buried Tele. Cable, Onslow Coop Telephone Assn.
- Power Pole, Maquoketa Valley Electric Coop



Longitudinal Section Along CL IA 136

- ① Class E Revetment (Embedded)
- ② Berm Slope Normal to CL Abutment
- ③ Channel Low Chord
- ④ Operational Low Chord



Situation Plan

Hydraulic Design

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 Spencer Kelly

Printed or Typed Name

My license renewal date is December 31,

Pages or sheets covered by this seal:

Sheets V.1 and V.2

Location

IA 136 Over Mineral Creek
T-85N R-1W & R-2W
Section 25 & Section 30
Scotch Grove & Clay Townships
Jones County
FHWA No. 032541
Bridge Maint. No. 5360.1S136
Latitude 42.139503°
Longitude -91.014207°

150'-0" x 40'-0" Continuous Concrete Slab Bridge

45'-6" End Spans 59'-0" Interior Span

Situation Plan

STA. 294+64.00 (IA 136)

May 2025

Jones County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0327

Design Sheet No. 1 of 3

FHWA No. 032541

FILE NO. 32676

ENGLISH

DESIGN TEAM Jacobs

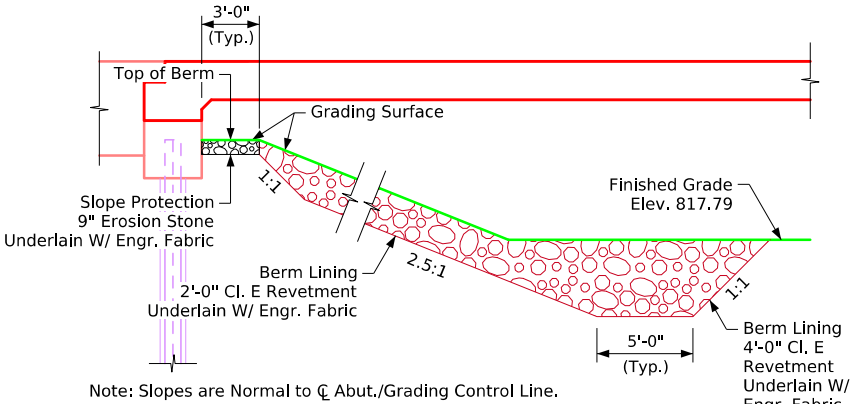
Jones COUNTY

PROJECT NUMBER BRF-136-2(043)--38-53

SHEET NUMBER V.1

Berm Slope Location Table						
Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	294+15.50	24.58' Lt.	817.79	295+12.38	24.58' Lt.	817.79
A2	294+15.50	24.58' Rt.	817.79	295+12.38	24.58' Rt.	817.79
B1	293+93.50	24.58' Lt.	826.60	295+34.50	24.58' Lt.	826.66
B2	293+93.50	24.58' Rt.	826.60	295+34.50	24.58' Rt.	826.66
W1	293+83.50	24.58' Lt.	830.15	295+44.50	24.58' Lt.	830.22
W2	293+83.50	24.58' Rt.	830.15	295+44.50	24.58' Rt.	830.22

Berm slope elevations reflect the grading surface.

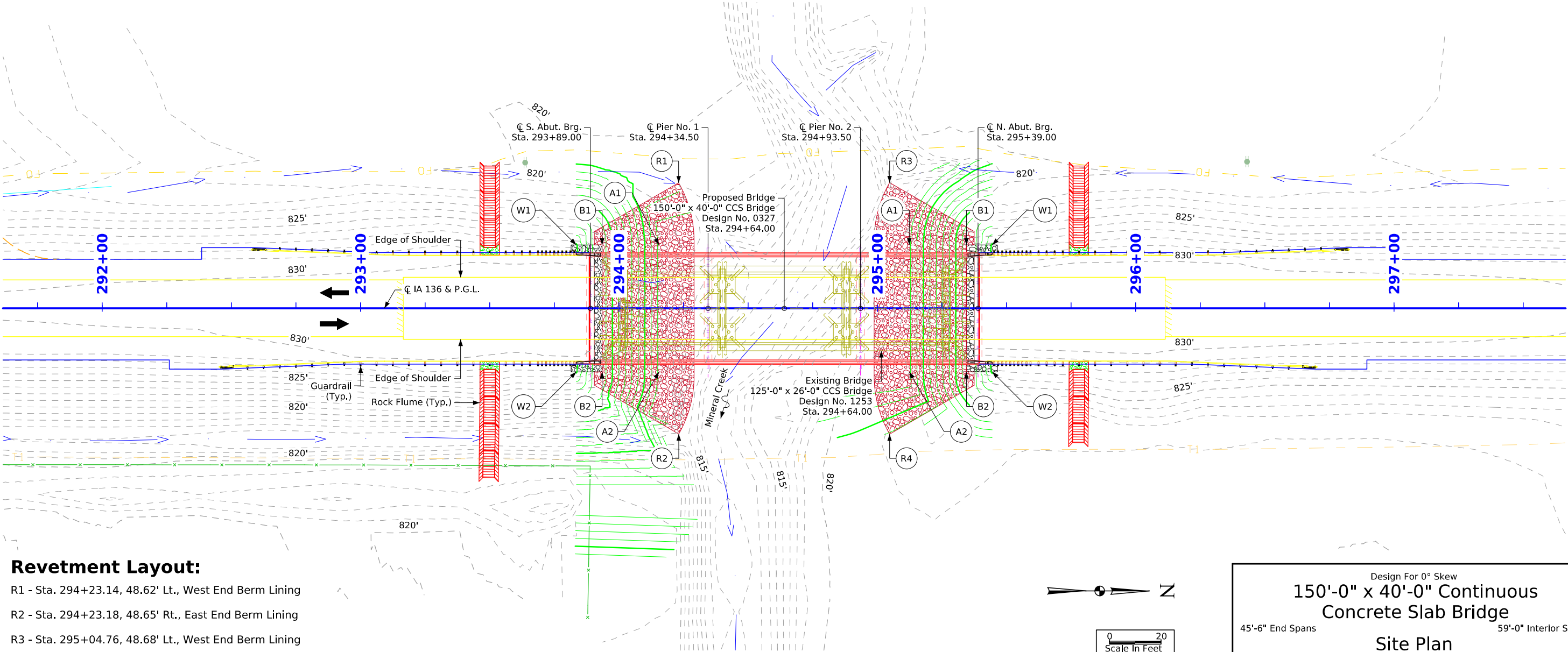


Revetment Quantities				
Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - South	507.7	-	336.8	317.3
Berm Lining - North	509.4	-	338.2	318.4
Stone Protection - South	-	9.4	23.4	5.9
Stone Protection - North	-	9.4	23.4	5.9
Totals	1017.1	18.8	721.8	647.4

Excavation quantity calculated from grading surface. Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans.

Revetment and erosion stone estimated at 1.6 Ton/CY.

Section Through Berm Lining (Embedded)



Revetment Layout:

- R1 - Sta. 294+23.14, 48.62' Lt., West End Berm Lining
- R2 - Sta. 294+23.18, 48.65' Rt., East End Berm Lining
- R3 - Sta. 295+04.76, 48.68' Lt., West End Berm Lining
- R4 - Sta. 295+04.76, 48.68' Rt., East End Berm Lining

Site Plan

Design For 0° Skew

150'-0" x 40'-0" Continuous Concrete Slab Bridge

45'-6" End Spans59'-0" Interior Span

Site Plan

STA. 294+64.00 (IA 136)

May 2025

Jones County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0327Design Sheet No. 2 of 3FHWA No. 032541

CROSS SECTION VIEW COLOR LEGEND			
Design Color No.	Feature	Design Color No.	Feature
Aggregate		Grading	
(64)	Choke Stone	(8)	Behind Curb Cut
(42)	Engineering Fabric	(6)	Granular
(8)	Flooded Backfill	(13)	Granular Back Fill
(92)	Macadam Stone	(48)	Rock Undercut
(20)	Modified	(8)	Shoulder Earth Fill
(12)	Plowing Shaping	(2)	Side Slopes
(14)	Porous Backfill	(226)	Side Slopes Dressing
(8)	Revetment Class A	Substrata	
(6)	Revetment Class B	(128)	Boulder
(62)	Revetment Class C	(209)	Boulder Removed
(188)	Revetment Class D	(48)	Broken Weathered
(28)	Revetment Class E	(210)	Broken Weathered Removed
(12)	Shoulder Special Backfill	(3)	Core Out
(12)	Special Backfill	(115)	Core Out Remove Only
(20)	Subbase	(195)	Core Out Remove and Replace
(20)	Subbase Lower	(203)	Existing Pavement
(20)	Subbase Upper	(184)	Existing Pavement Remove Only
(118)	Subgrade Treatment	(200)	Existing Pavement Remove and Replace
Asphalt		(6)	Loam
(207)	HMA Base Course	(211)	Loam Removed
(207)	HMA Interim Course	(80)	Rock
(207)	HMA Surface Course	(212)	Rock Removed
Bridge		(4)	Select Sand
(0)	Bridge	(214)	Select Sand Removed
Concrete		(3)	Shale
(0)	Barrier Concrete	(215)	Shale Removed
(0)	Barrier Concrete Footing	(10)	Topsoil
(0)	Curb Gutter	(2)	Topsoil Remove Only
(48)	Flowable Mortar	(4)	Topsoil Remove and Replace
(0)	Median Concrete	Unsuitable / Waste	
(0)	PCC Pavement	(3)	Unsuitable Type A
(0)	Sidewalk	(216)	Unsuitable Type A Removed
Existing		(13)	Unsuitable Type B
(0)	Existing Pavement	(217)	Unsuitable Type B Removed
Shoulder		(11)	Unsuitable Type C
(209)	Shoulder HMA	(218)	Unsuitable Type C Removed
(0)	Shoulder PCC	(3)	Waste
(6)	Shoulder Granular	(219)	Waste Removed
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		

NOTES:

Text

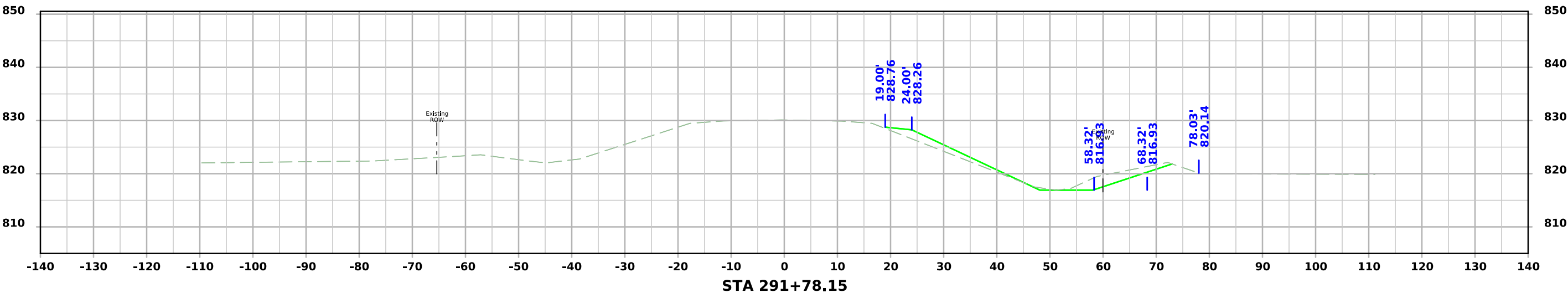
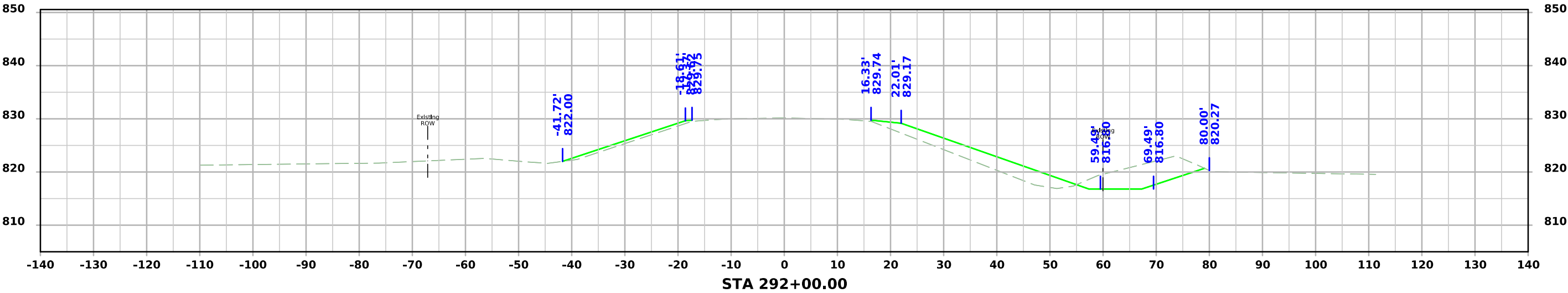
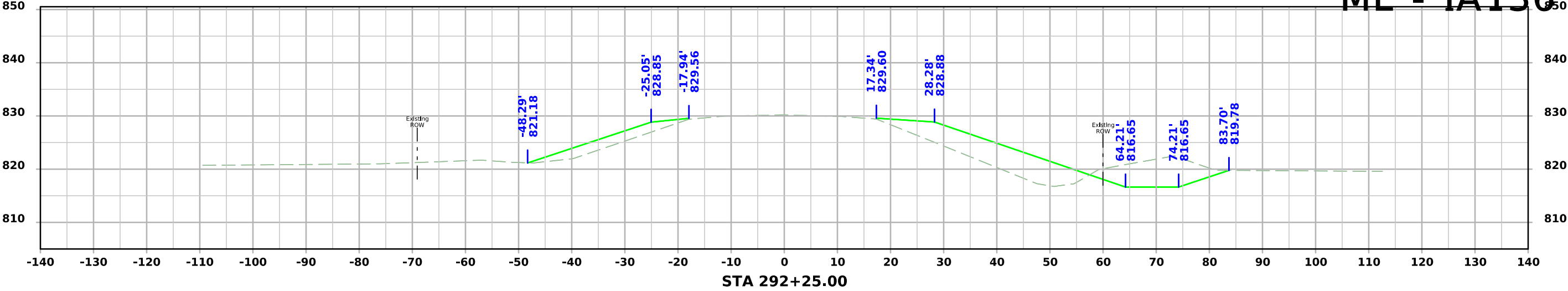
NOTES:

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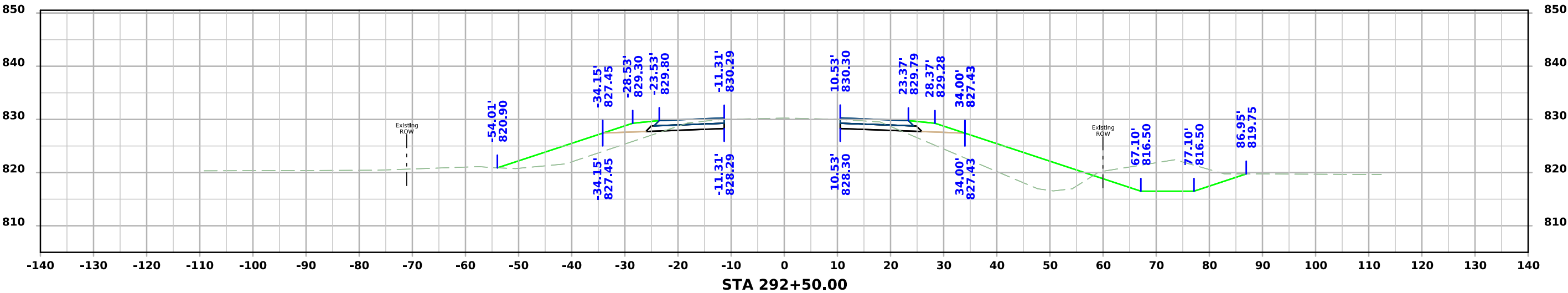
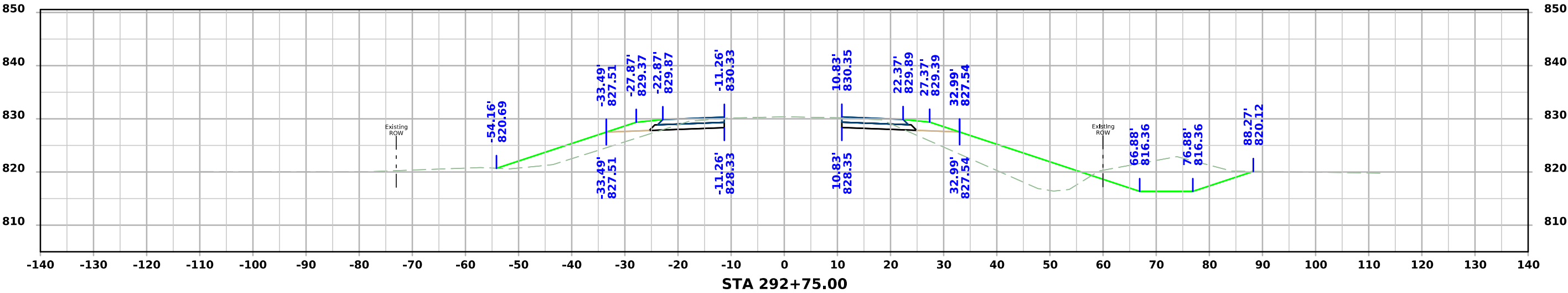
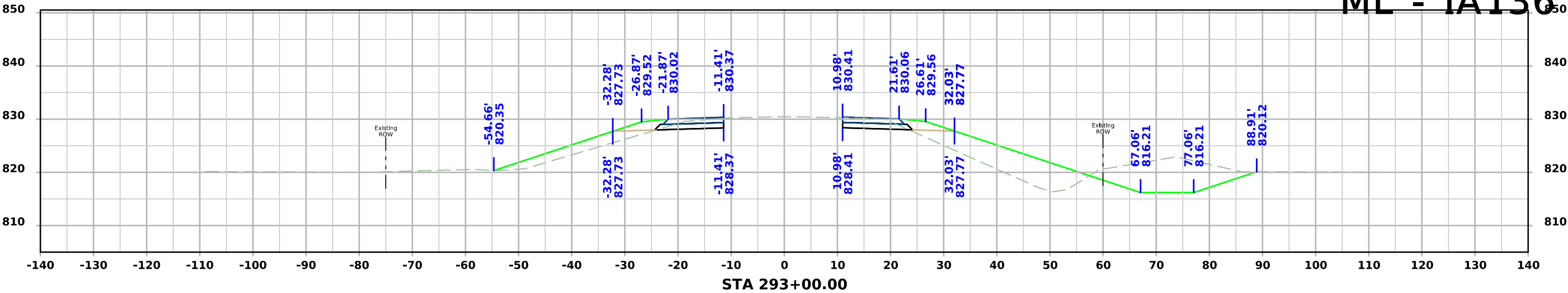
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

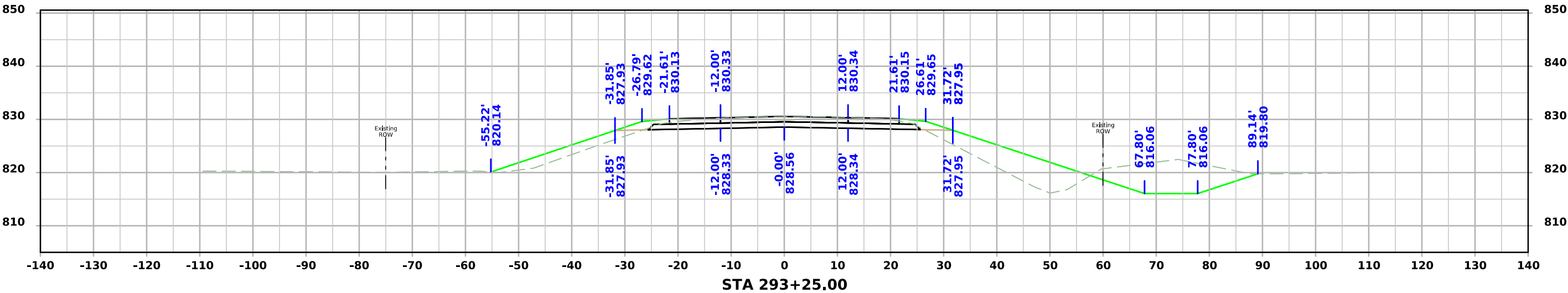
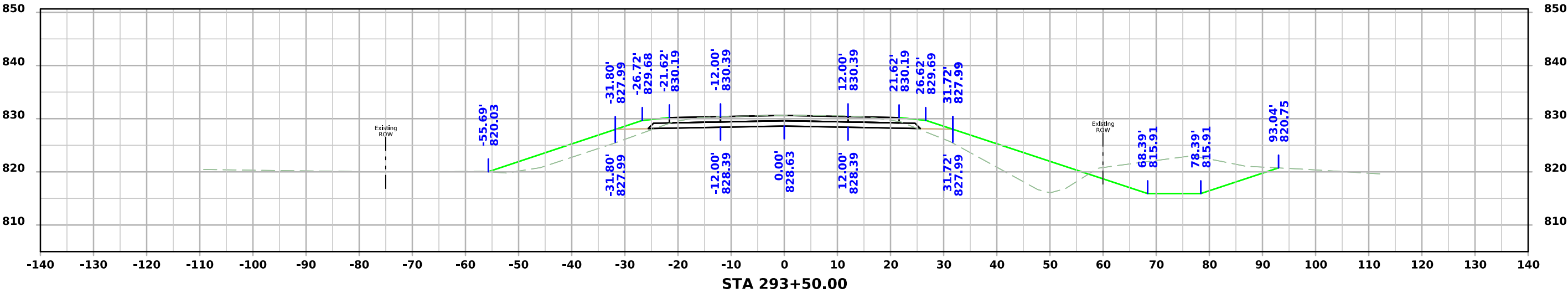
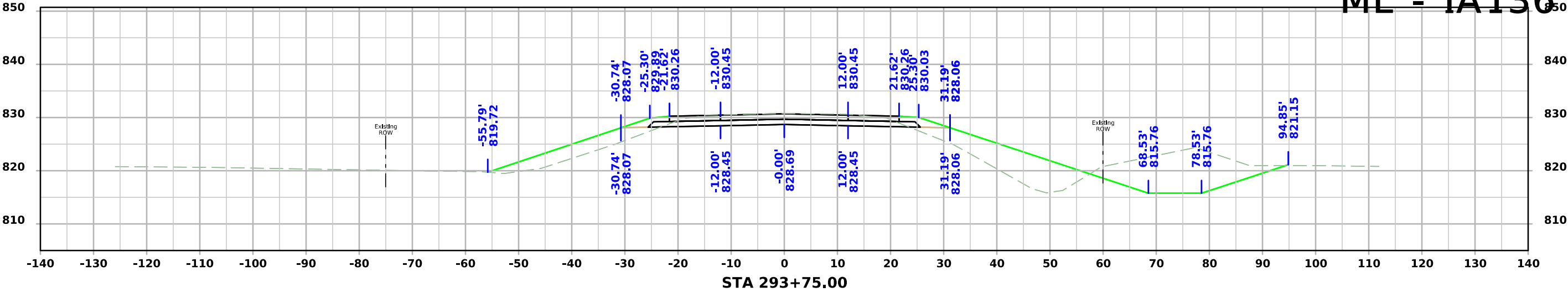
ML - IA136



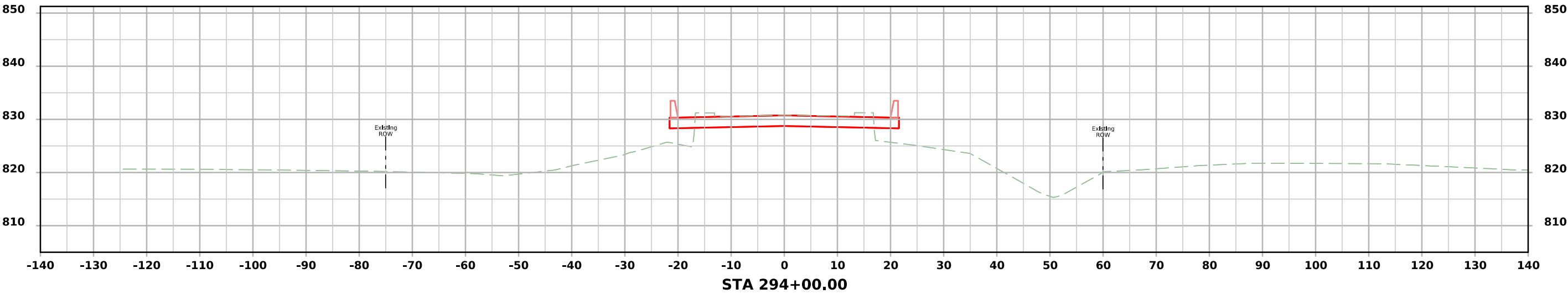
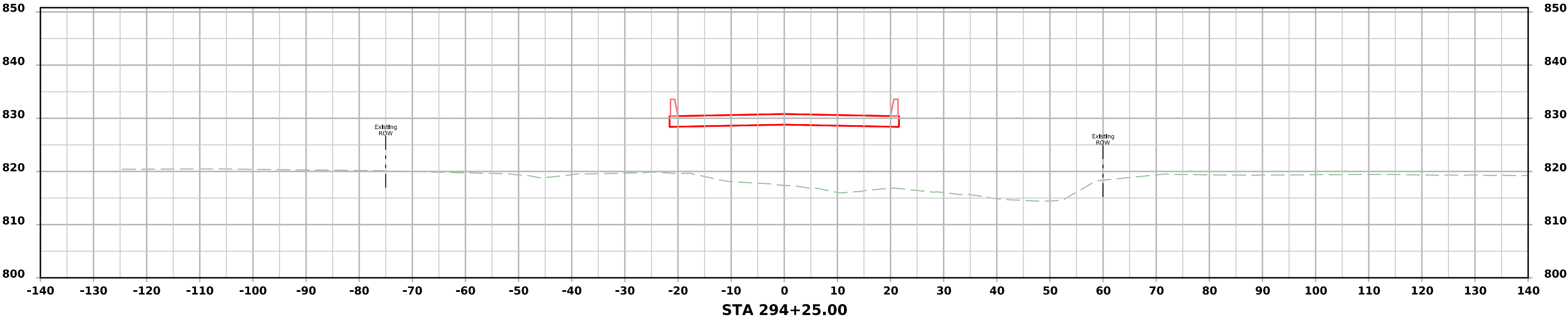
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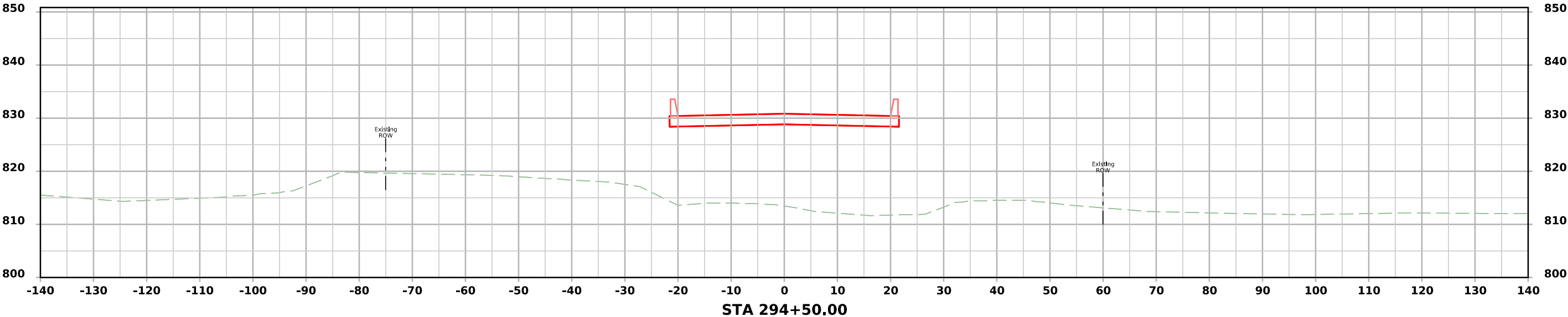
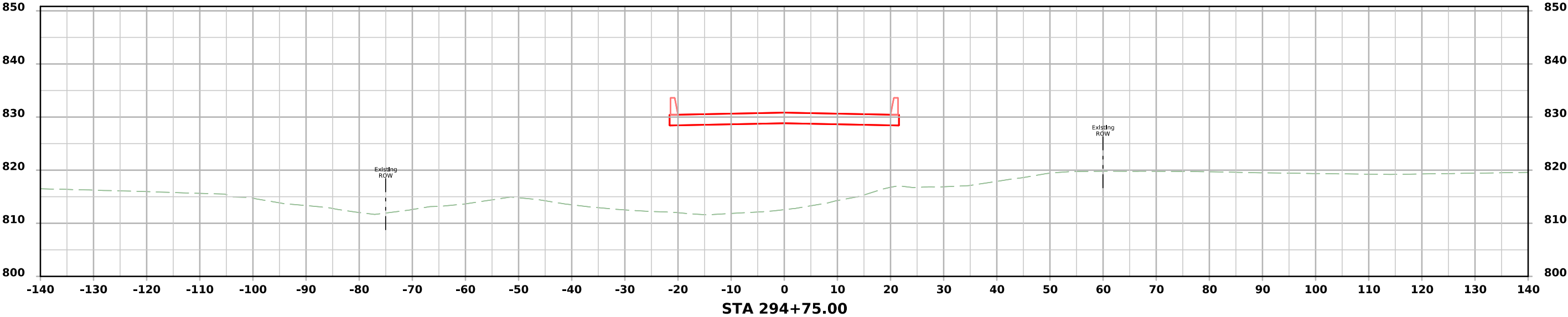
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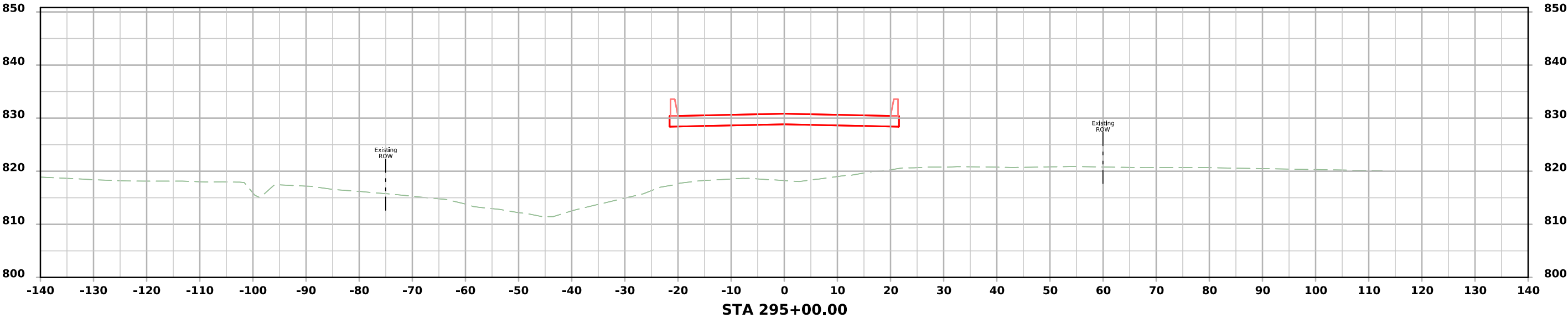
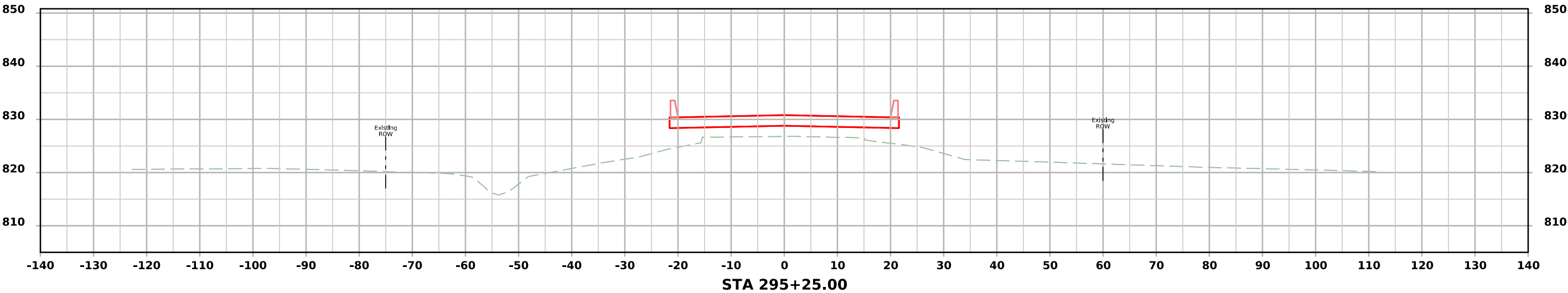
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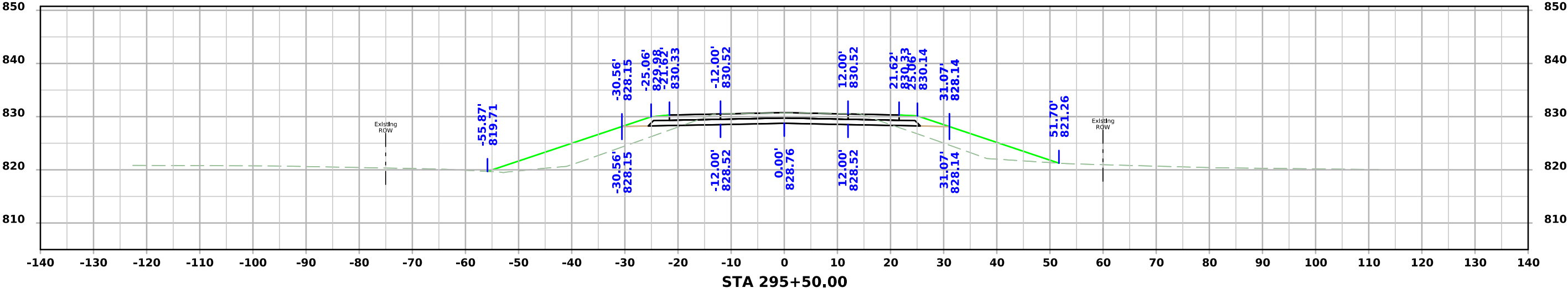
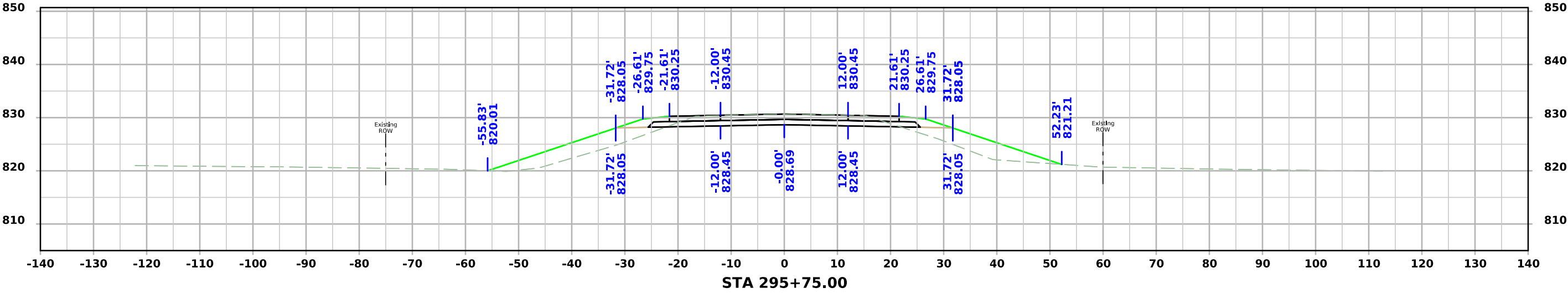
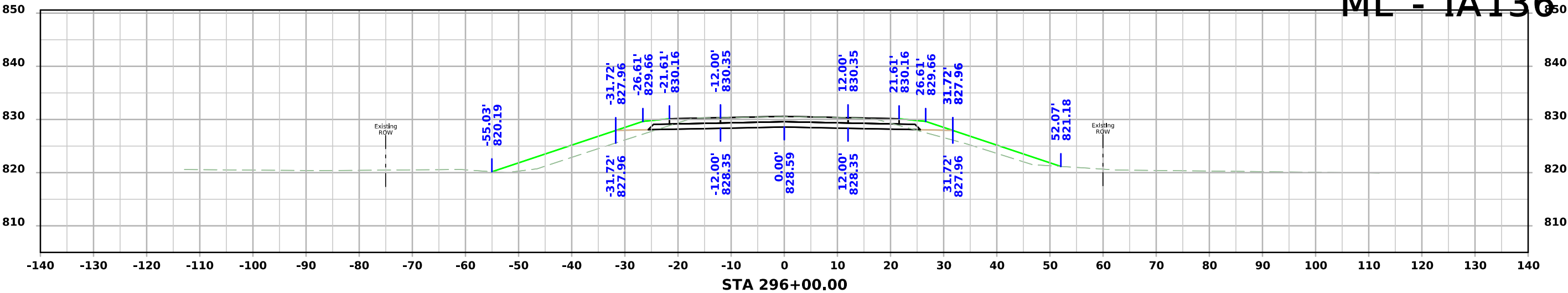
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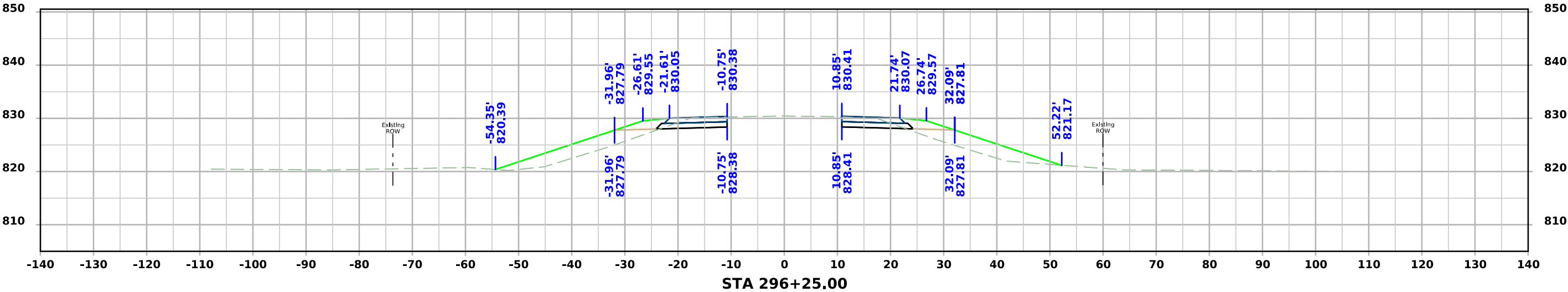
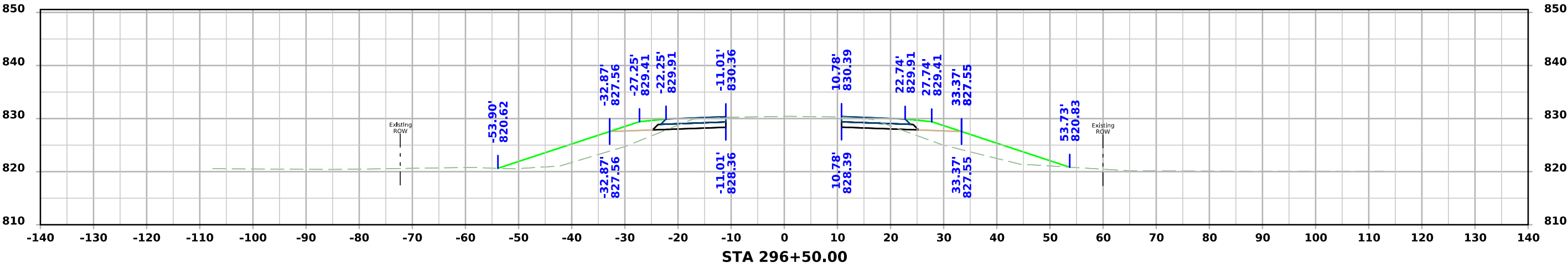
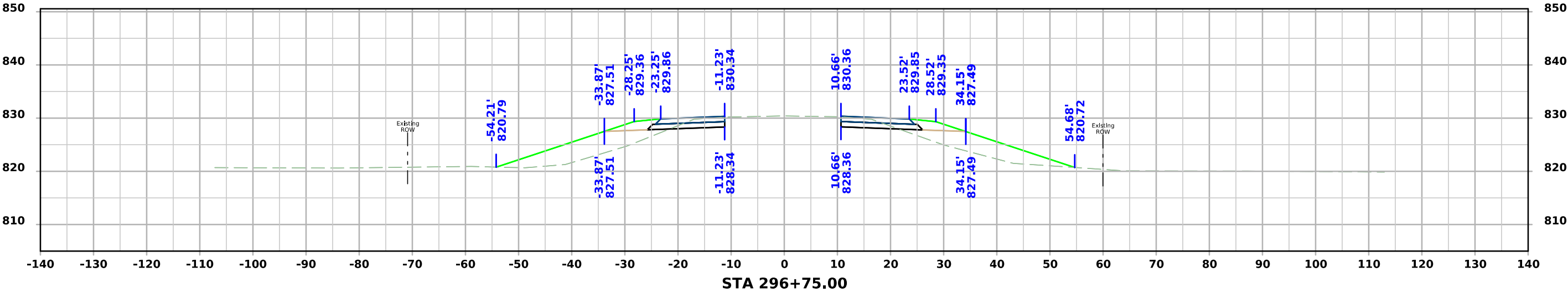
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