LETTING DATE 11-19-2024

BRIDGE AND APPROACHES-PPCB
BRFN-005-3(69)--39-63

MARION COUNTY

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map 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 5
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
W Sheets	**Mainline Cross Sections**
W.1 - 10	Mainline Cross Sections
	* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

MARION COUNTY

BRIDGE AND APPROACHES-PPCB

Walnut Creek 0.9 mi N of Co Rd G76

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

IOWA ONE CALL
1-800-292-8989
811
www.iowaonecall.com

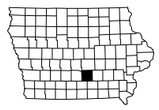
REVISIONS

TOTAL 21
PROJECT IDENTIFICATION NUMBER
18-63-005-020
PROJECT NUMBER
BRFN-005-3(69)--39-63
R.O.W. PROJECT NUMBER
NHSN-005-3(70)--2R-63

Schedule

D05 – 12/19/2022
D04 – 7/23/2024

For Project Location Map,
Refer to Sheet A.2



DESIGN DATA RURAL			
2018	AADT	3690	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		8.6	%
Total Design ESALs		--	

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

PRELIMINARY PLANS

Subject to change by final design.

D3 PLAN – Date: 11/09/2022

FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER A.1

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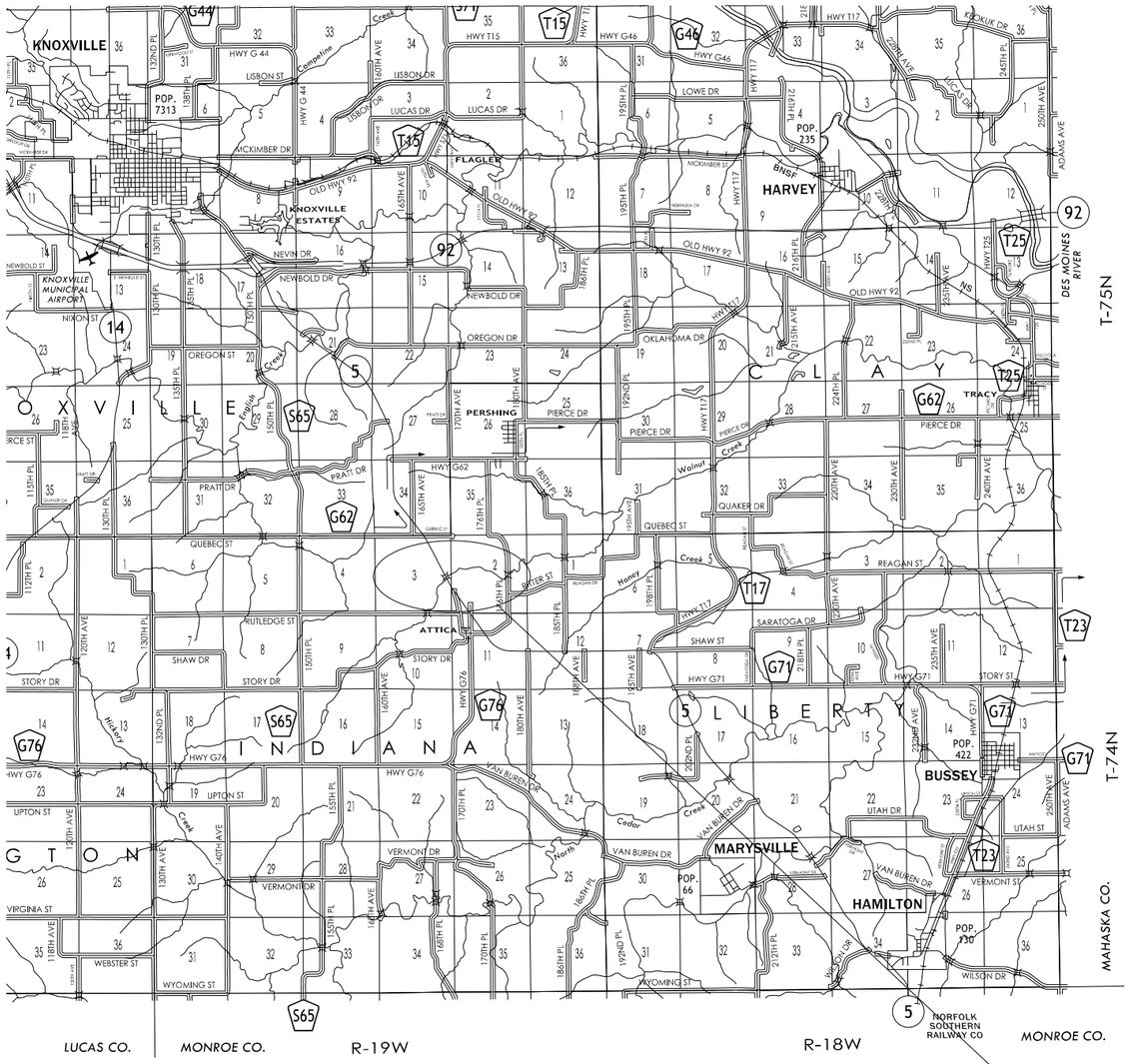


PROJECT LOCATION
FHWA 035140
MP 55

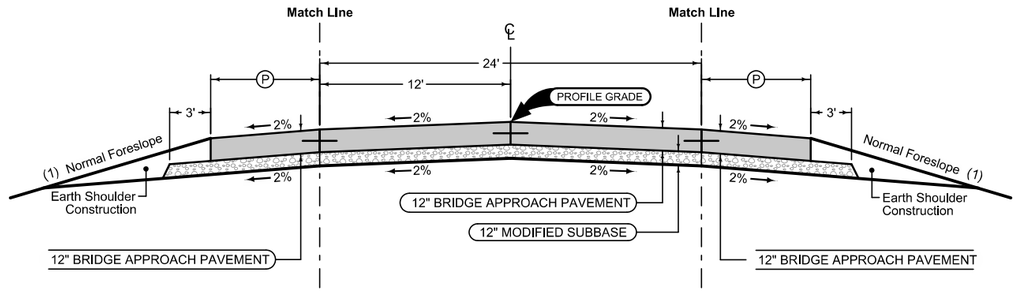
LOCATION MAP SCALE
0 1 2 3
Miles

FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER A.2

Shoulder at Bridge Approach

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

2_P_FullPCC_ 04-21-20		
STATION TO STATION		(P) Feet
433+91.40	434+61.40	8
435+61.40	436+31.60	8



Mainline Jointing:
See BR-203
Longitudinal joint: L-2

2P_ 04-21-20	
STATION TO STATION	
433+91.40	434+61.40
435+34.440	436+31.60

Shoulder at Bridge Approach

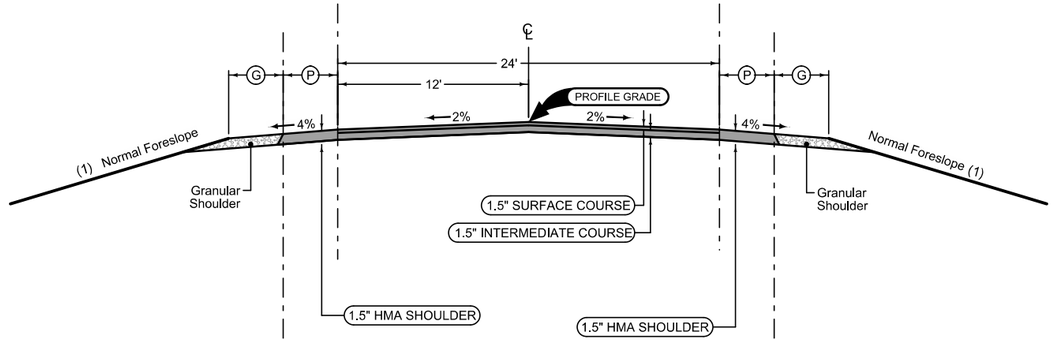
Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

2_P_FullPCC_ 04-21-20		
STATION TO STATION		(P) Feet
433+91.36	434+61.40	8
435+61.40	436+31.40	8

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_C_ 04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
432+41.40	433+21.43	2	3
437+38.87	437+81.40	2	3



2H_ 04-21-20	
STATION TO STATION	
432+41.40	433+91.40
436+31.60	437+81.40

Combination Shoulder

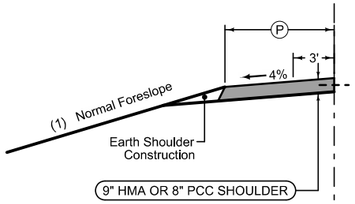
Shoulder Jointing:
Longitudinal joint: B

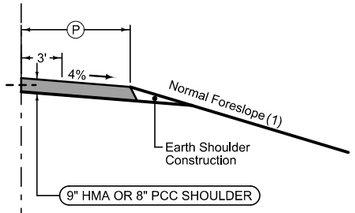
2_C_ 04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
430+82.40	432+83.93	2	3
437+01.37	437+82.40	2	3

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

2_P_Guard_ 04-21-20		
STATION TO STATION		(P) Feet
433+08.98	433+91.40	VAR
436+31.40	437+38.87	VAR





Paved Shoulder at Guardrail

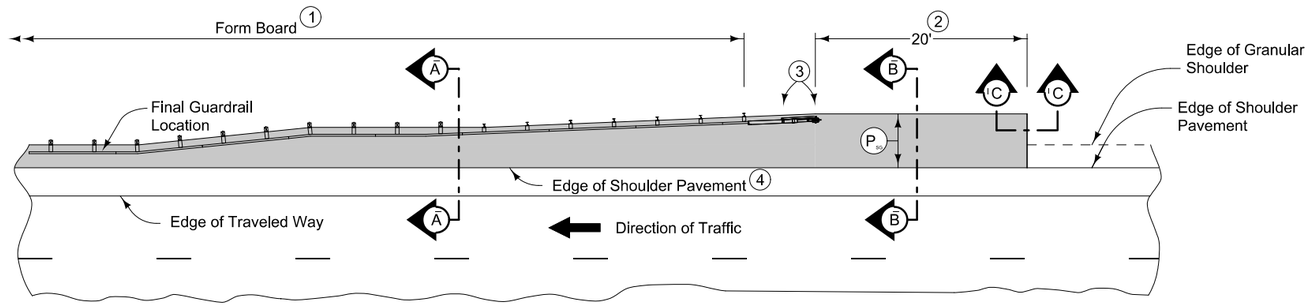
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION		(P) Feet
431+33.99	433+91.36	VAR
436+31.40	437+13.81	VAR

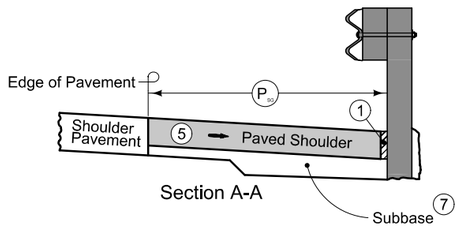
(1) Refer X-sections for additional details

IA 5

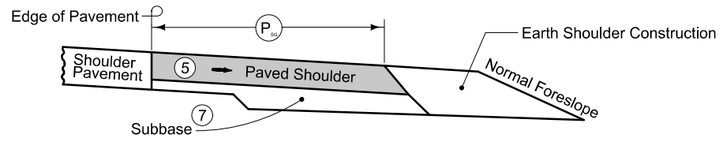
7157
04-19-22



PLAN VIEW

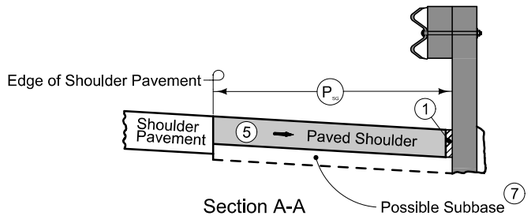


Section A-A

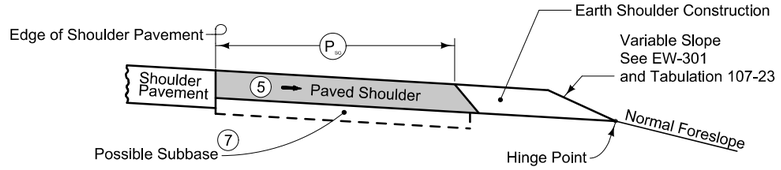


Section B-B

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.

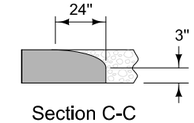
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(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)

SURVEY SYMBOLS

- ENU Edge Unpaved Entrance & Parking
- CP Control Point
- C Centerline BL of Road (ML or SR)
- PPA Power Pole Co. 1
- TVP TVP TV Pedestal
- SIGN SI Sign
- ENT Centerline BL of Entrance
- BL Topo Breakline
- BCL Bridge Centerline
- BD Bridge Deck
- BRG Bridge
- D Centerline Draw or Stream (Down)
- ENP Edge Paved Entrance & Park Lot
- GDL Guard Rail Steel
- RET Retaining Walls
- EP Edge of Paved Roads (ML or SR)
- SNP Unpaved Shoulder
- SH Paved Shoulder
- RIP Rip-Rap
- FENO FENO Monument
- CON Concrete or A/C Slab
- GR Ground Shot
- TDC Tree Deciduous
- TEV Evergeen Tree
- SHR Shrub
- BLD Building or Foundation
- WV WV Water Valve
- BM Bench Mark
- BNK Stream Bank
- TLNL Tree Line Left
- FW Wire Fence
- TLNR Tree Line Right
- PIP Pipe Culvert
- SOP Size of Pipe or Culvert
- PLG Location of General Photo
- PRO Profile Shot
- SWK Sidewalk
- TP TPD Telephone Pedestal
- DU Centerline Draw or Stream (Up)
- EG Edge of Gravel Road
- EW Edge of Water
- BLS Bridge Low Steel
- SBR Size of Bridge

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- TL1D Windstream Communications - Quality D
- GL1D MidAmerican Gas - Quality D
- WL1D Iowa Regional Utility Assoc. - Quality D
- PPA MidAmerican Electric

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	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)

FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER D.1

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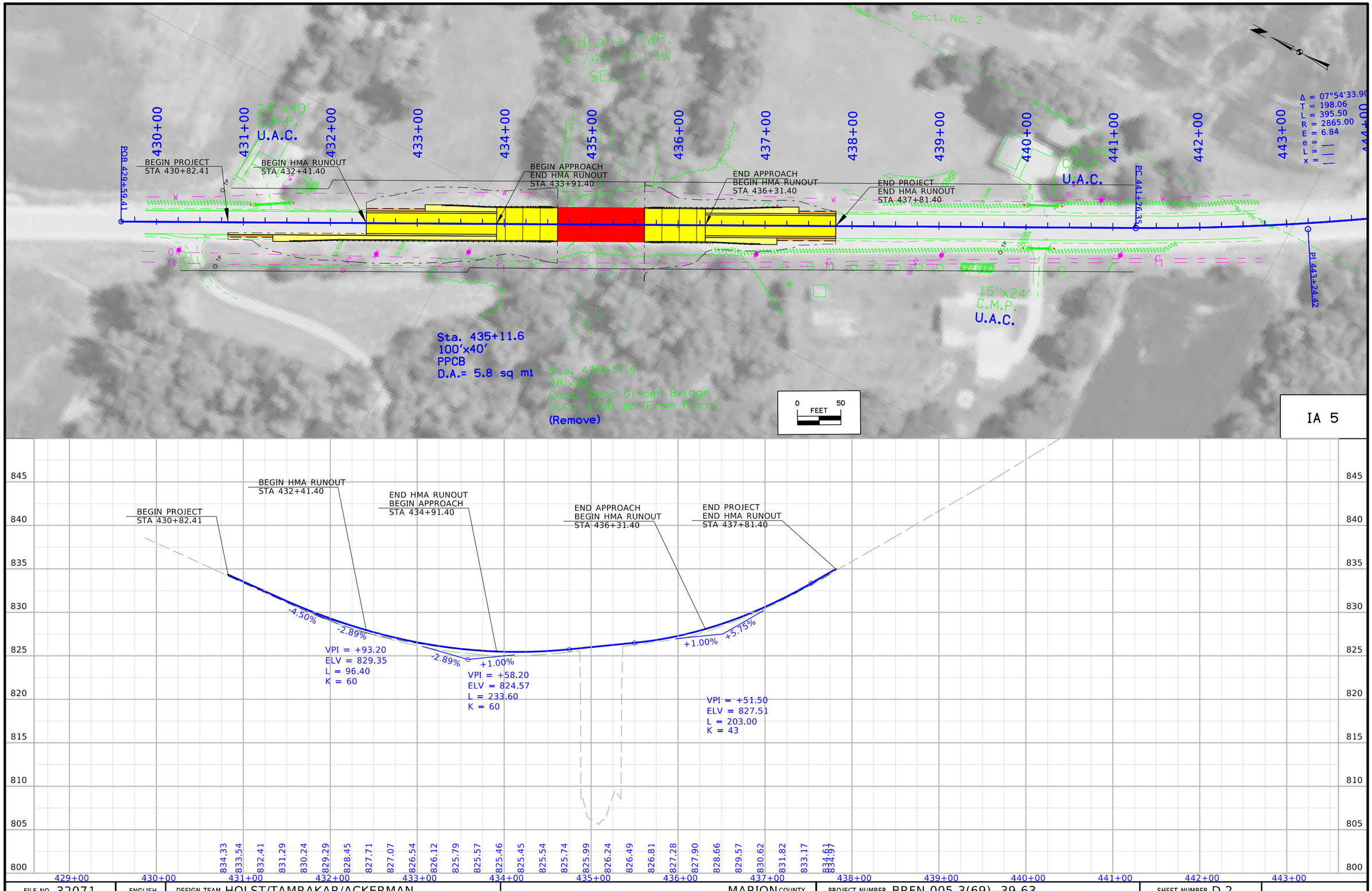


FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER D.2	

8:17:22 AM 11/9/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Sheet_Files\SHT_63005069Z09_D02.dgn

County: Marion
SAP 548.3
PIN: 18-63-005-020
Project Number: BRFN-005-3(69)--39-63
Location: Walnut Creek 0.9 mi N of Co Rd G76
Type of Work: Bridge-Unspecified
Project Directory: 6300502018

Party Personnel

Nels Sutherland- Party Chief
Myron Fox- Assistant Survey Party Chief

Date(s) of Survey

Begin Date	11/20/2018
End Date	10/30/2019

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction and reconstruction of Hwy 5. Project datum and control information is provided by Design Survey Office. This project is a Full Field Survey. This survey request was for the Hwy 5 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12B). Benchmarks were placed throughout the project using post processed static observations relative to IaRTN Base Network. A minimum of 6hrs of data was simultaneously collected on each of the primary control points.

Horizontal Control

The project coordinate system for this survey is IaRCS Zone 9 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00.

Alignment Information

The horizontal alignment for this survey is a retrace of Project No.253, Grading and Bridge as-built plans. Survey stationing was equated from the plan bridge station 435+11.4 and run back and ahead without equation throughout the survey.

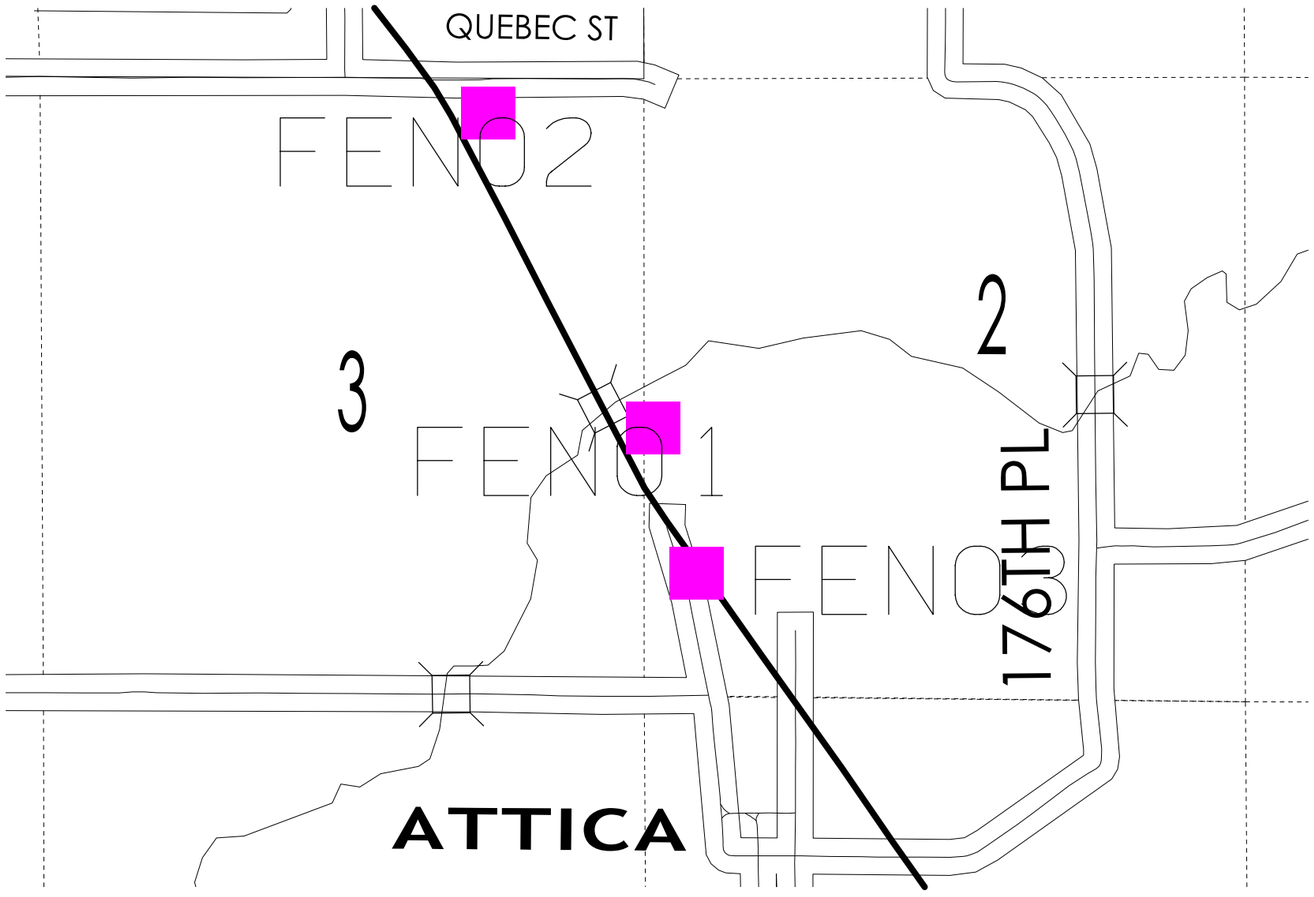
Survey stationing relates to as built plan stationing as follows:

Bridge Sta. 435+11.4 As-built Plans Project No. 253, Bridge plans
Survey Bridge Sta. 435+11.4

PC Sta 441+26.35 Project No. 253, Grading plans
Survey PC Sta. 441+26.35

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) EPOCH 2010.00
VERT. DATUM: NAVD88
Ia. Regional Coordinate System Zone 9
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) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 9

Point Name	North	East	Height	Code Description
FENO1	7560720.538	19442875.033	829.274	FENO MON WITH BRASS DISC 4IN BELOW SURFACE 955FT NW OF THE INTERSECTION OF POPLAR ST AND HWY5 THEN 24FT EAST OF CL HWY5
FENO2	7563720.002	19441324.588	911.306	FENO MON WITH BRASS DISC 4IN BELOW SURFACE 100FT SE OF THE INTERSECTION OF QUEBEC ST AND HWY5 THEN 44FT EAST OF CL HWY5
FENO3	7559757.470	19443379.615	891.568	FENO MON WITH BRASS DISC 4IN BELOW SURFACE 115FT SE OF THE INTERSECTION OF POPLAR ST AND HWY5 THEN 30FT WEST OF CL HWY5

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	ML005	428+59.41	7561457.34	19442467.76															
2	ML005	429+59.41	7561368.48	19442513.63															
3	ML005							441+26.35	7560331.57	19443048.95	443+24.42	7560155.58	19443139.81	445+21.85	7559993.76	19443254.02			

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	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	ML005										7.909°	198.065	395.500	2865.000	6.838	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

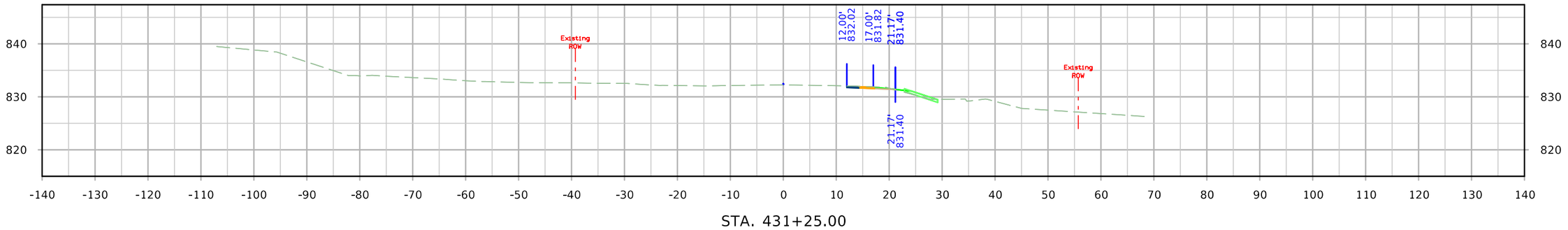
The Contractor shall provide, install, maintain, and remove all detour and closure signs. Refer to detour map on J sheets for detour and sign location. IA 5 will be closed during construction and traffic will be maintained via detour.

108-25
10-21-14

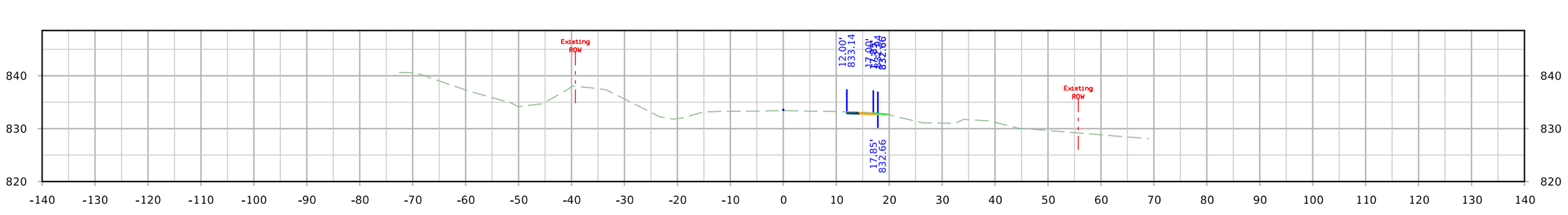
511 TRAVEL RESTRICTIONS

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
IA 5	BOTH	Marion	Bridge over Walnut Creek on IA 5				Closed					

IA 5



STA. 431+25.00



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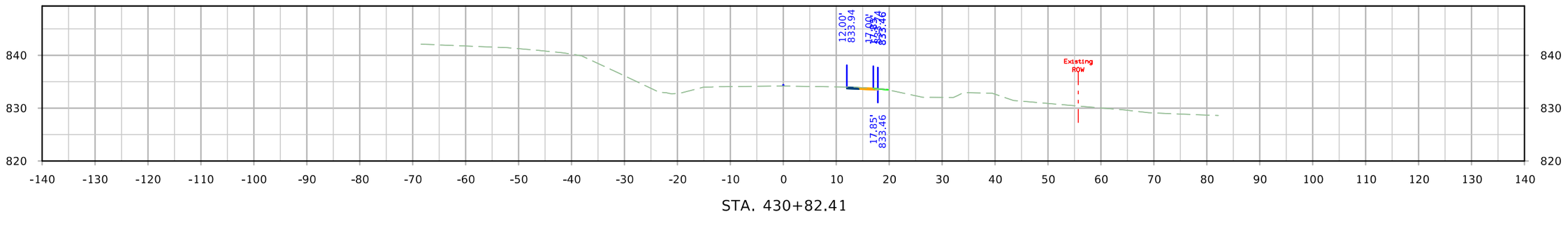
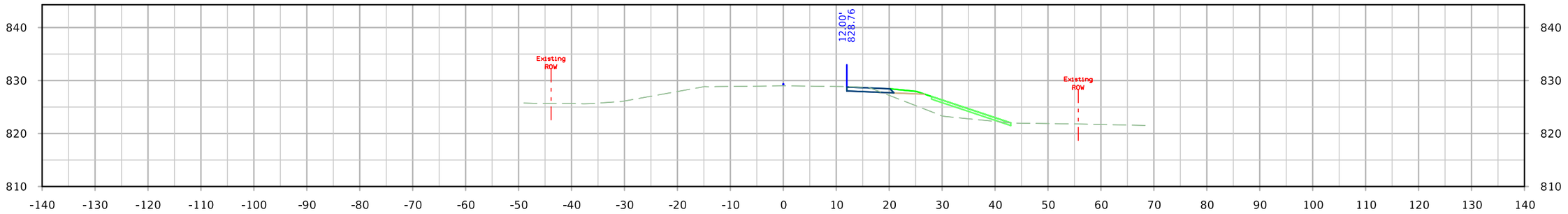


STA. 430+82.41

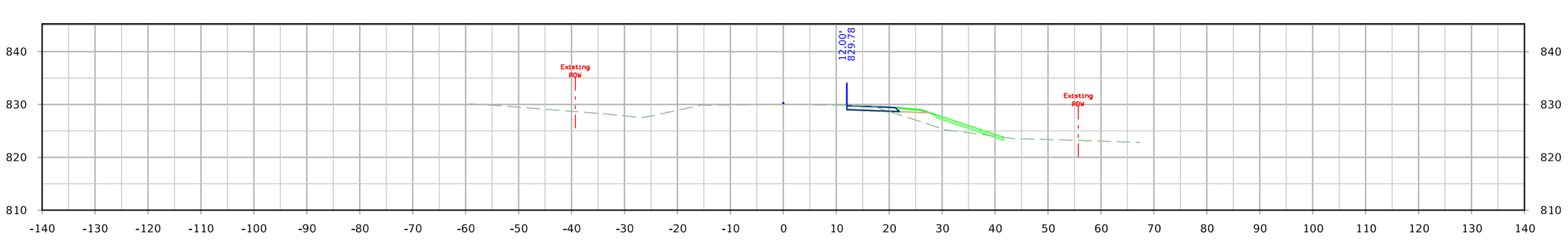
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.1

3:40:26 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

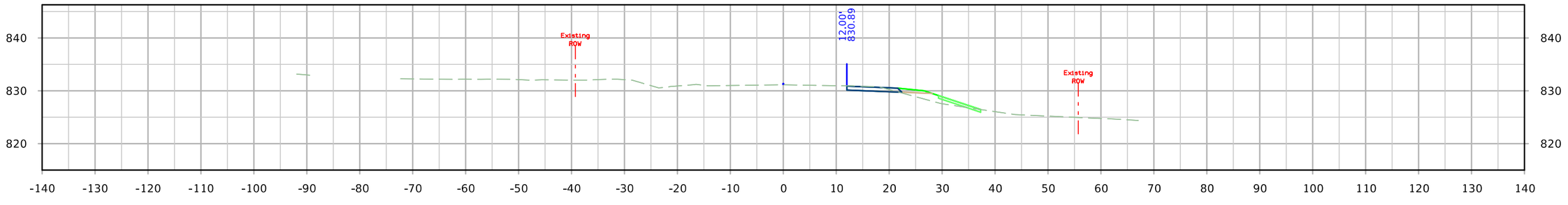
IA 5



STA. 432+00.00



STA. 431+75.00



STA. 431+50.00

FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.2

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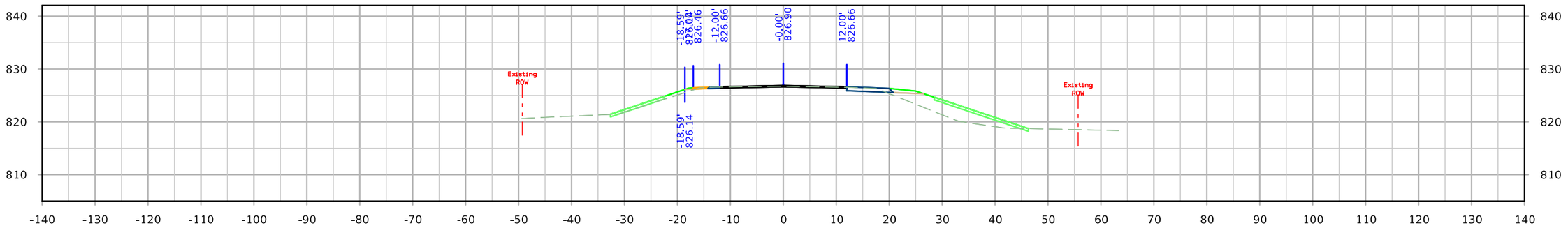
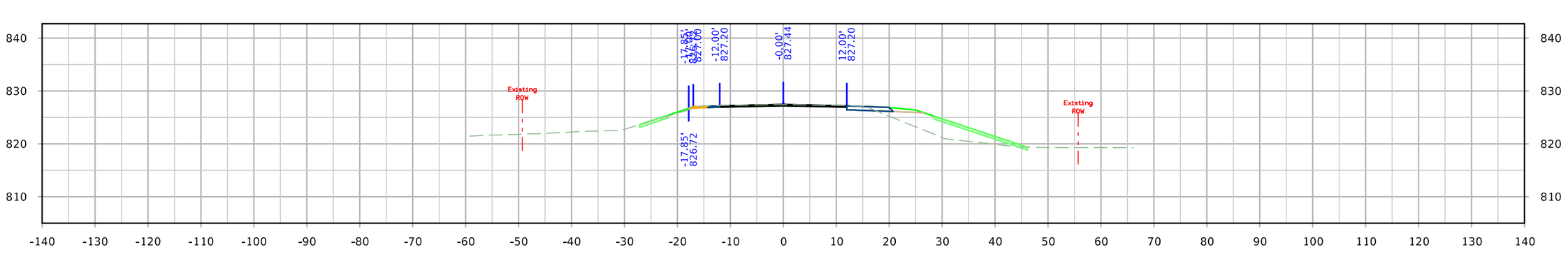
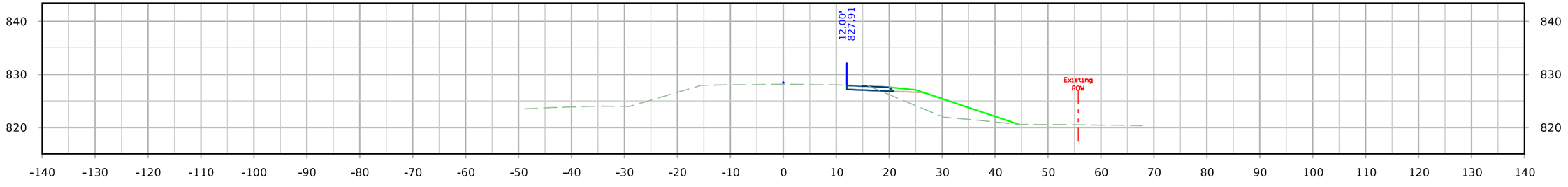
IA 5



STA. 432+75.00



STA. 432+50.00

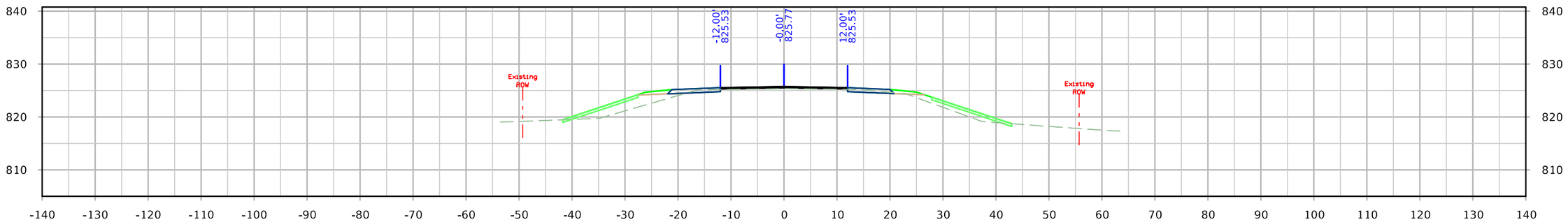


STA. 432+25.00

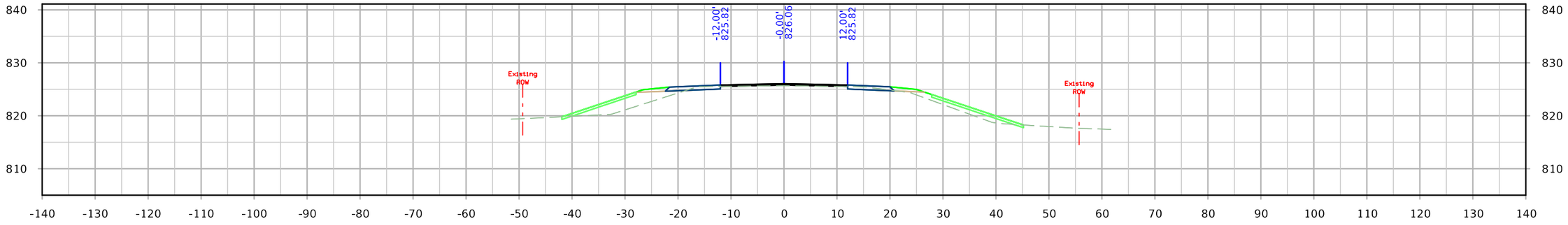
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.3

3:40:28 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

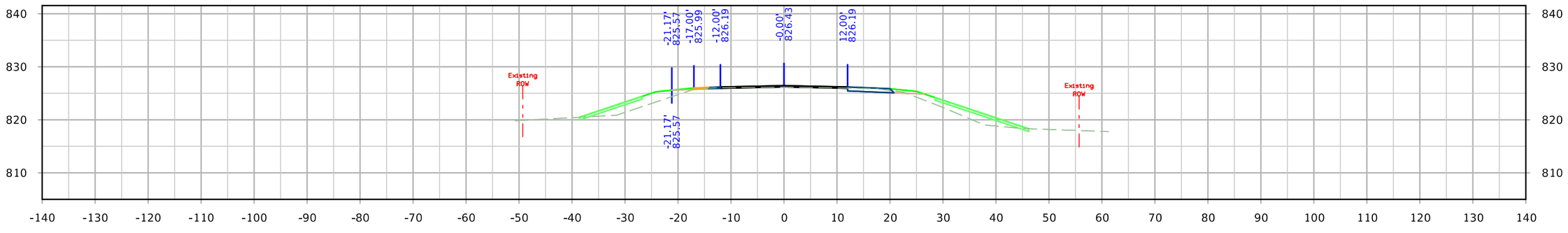
IA 5



STA. 433+50.00



STA. 433+25.00

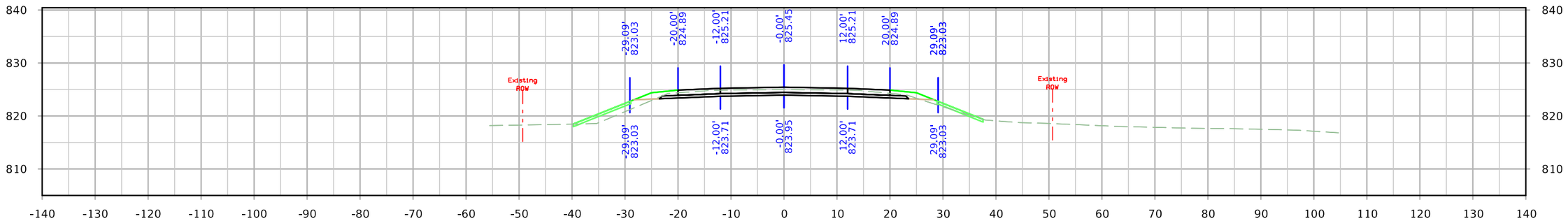


STA. 433+00.00

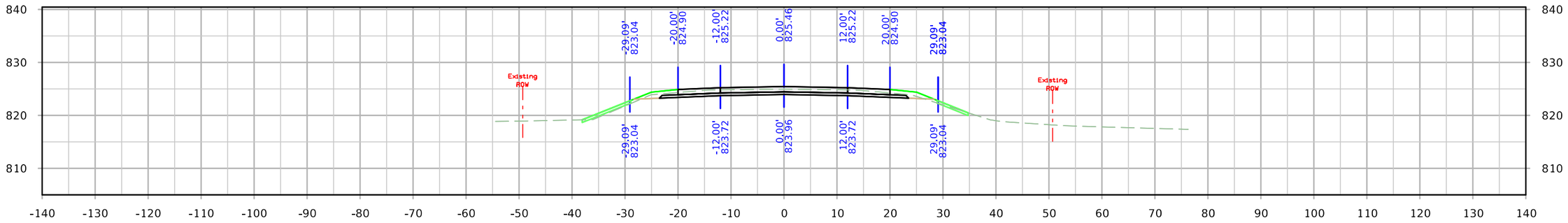
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.4

3:40:29 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

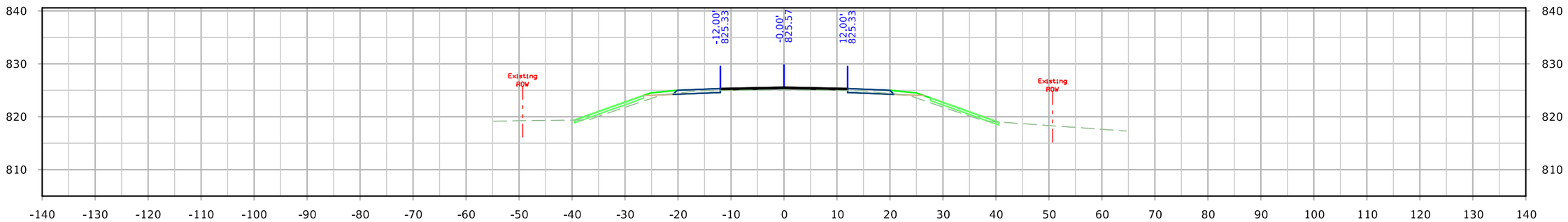
IA 5



STA. 434+25.00



STA. 434+00.00

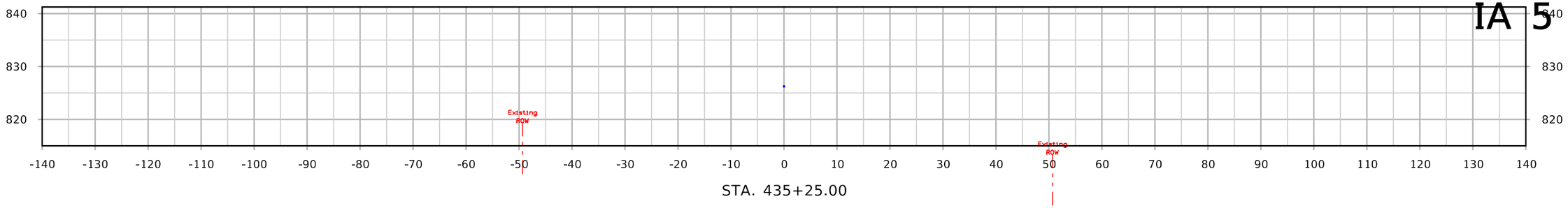


STA. 433+75.00

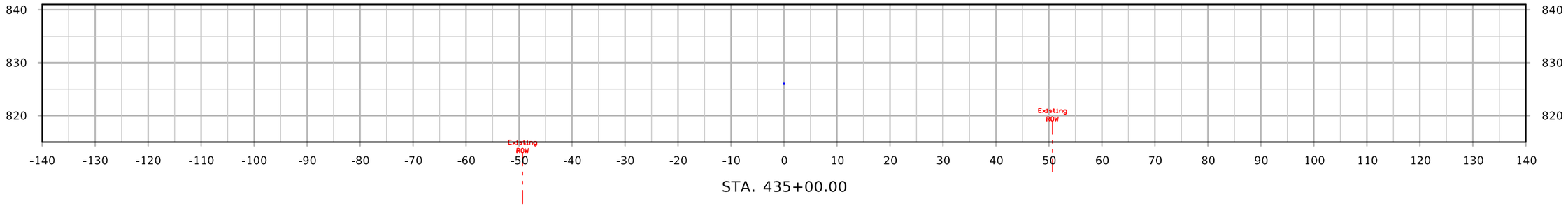
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.5

3:40:30 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

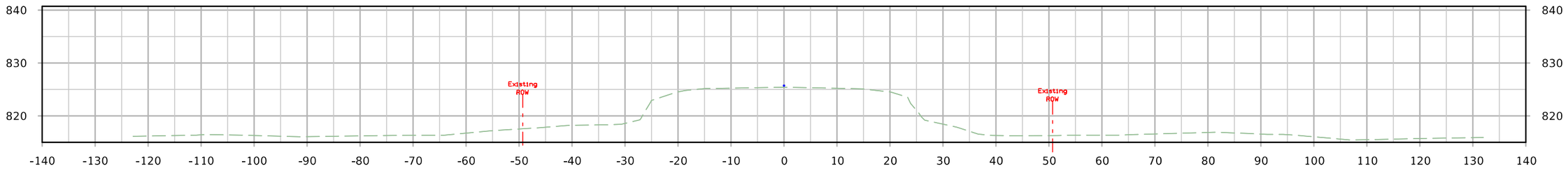
IA 5



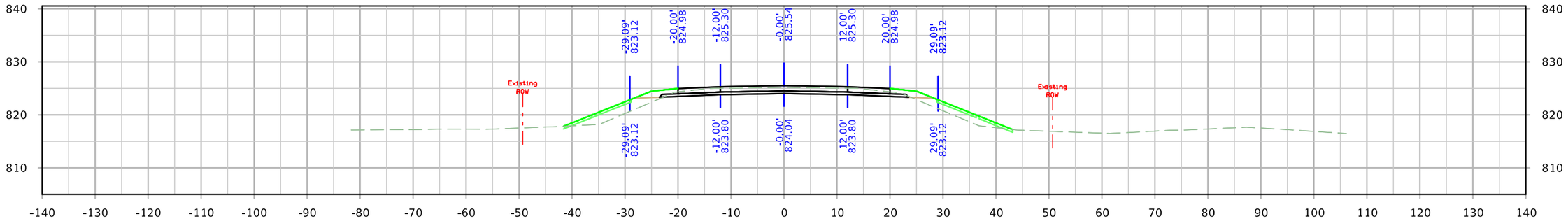
STA. 435+25.00



STA. 435+00.00



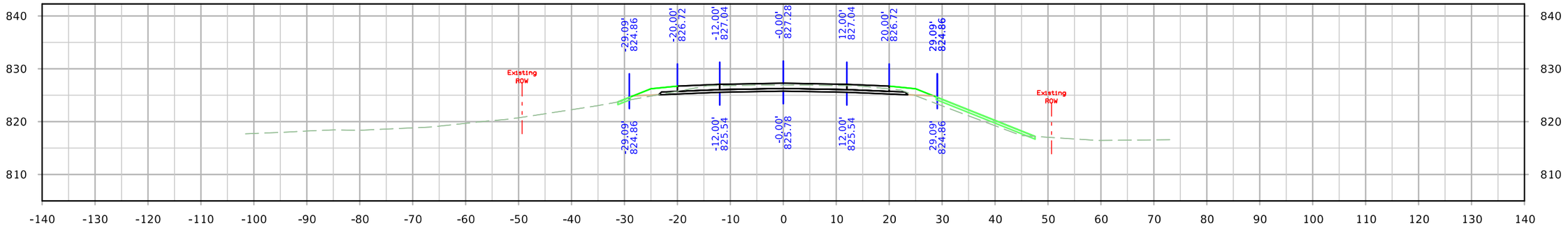
STA. 434+75.00



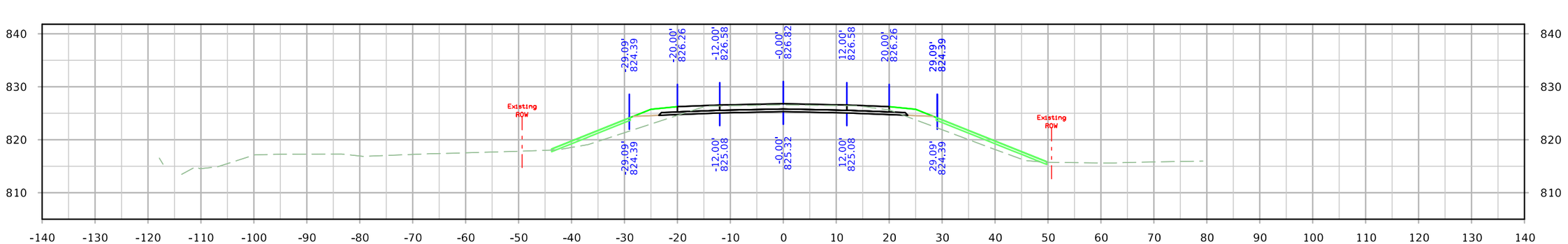
STA. 434+50.00

FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.6

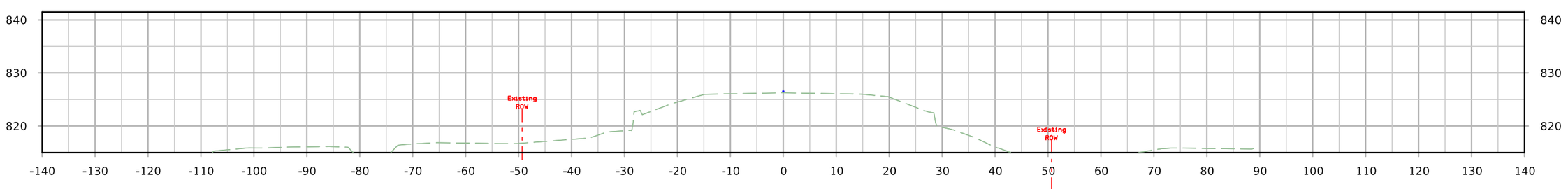
IA 5



STA. 436+00.00



STA. 435+75.00

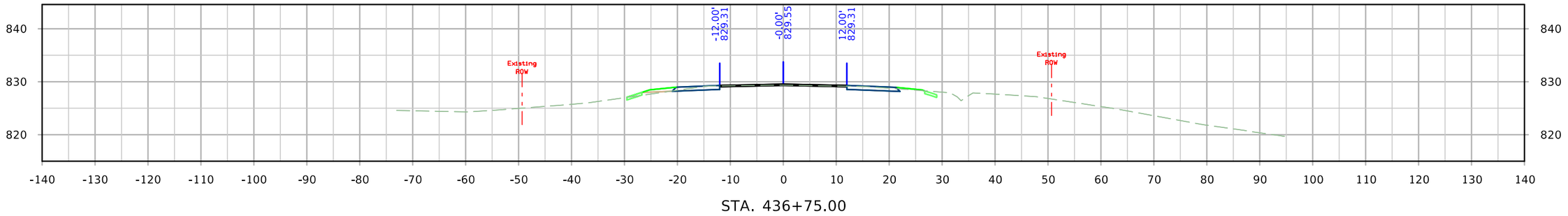


STA. 435+50.00

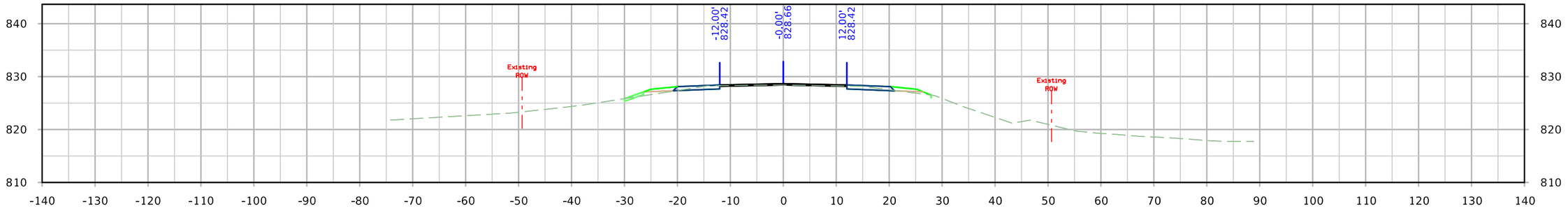
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.7

3:40:32 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

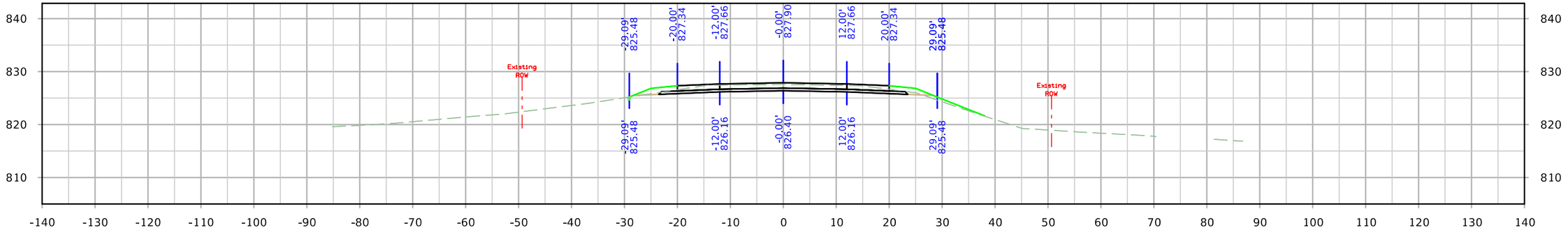
IA 5



STA. 436+75.00



STA. 436+50.00

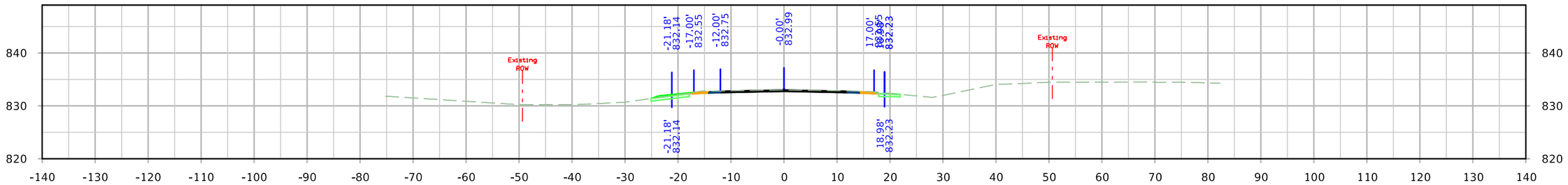


STA. 436+25.00

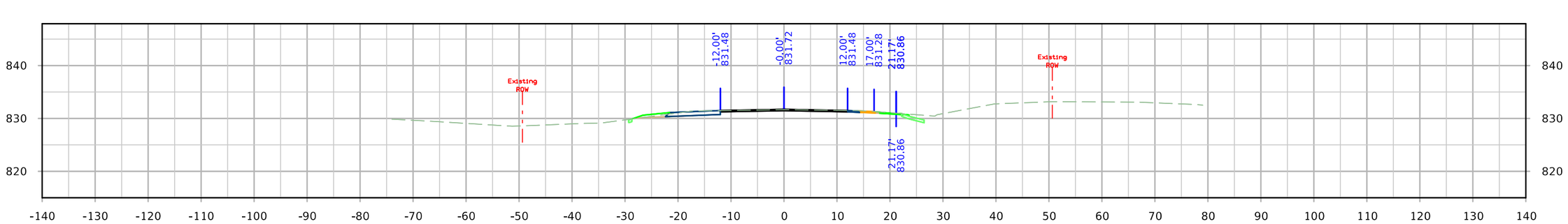
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.8

3:40:35 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

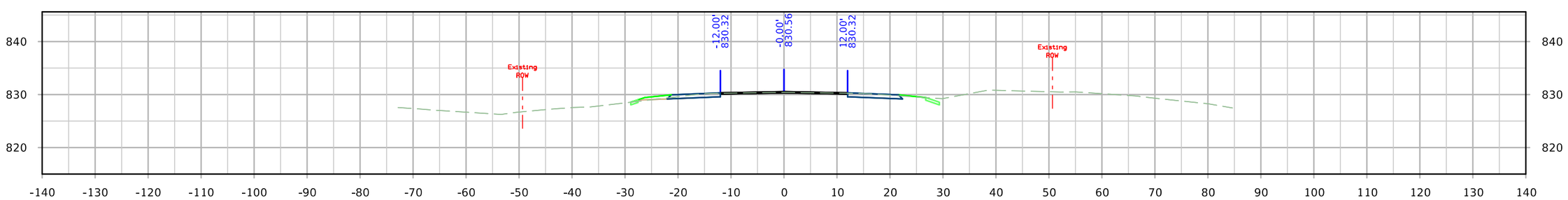
IA 5



STA. 437+50.00



STA. 437+25.00

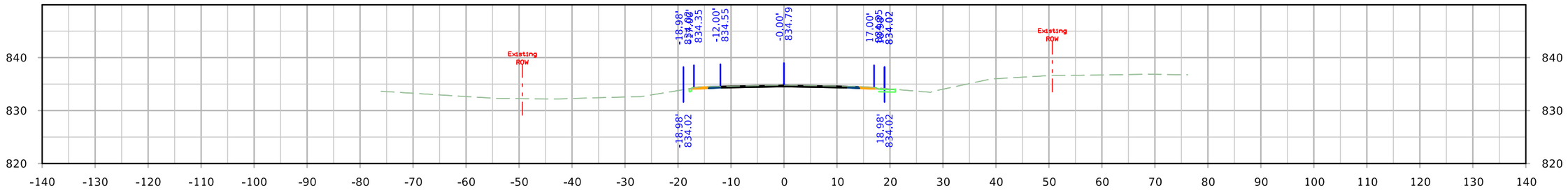


STA. 437+00.00

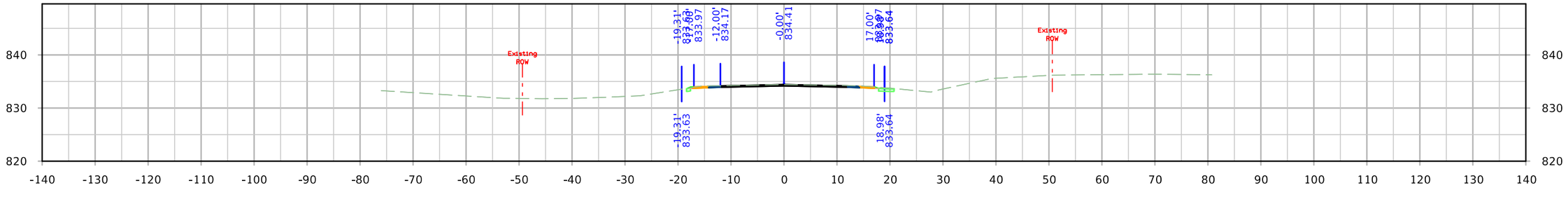
FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.9

3:40:36 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn

IA 5



STA. 437+81.40



STA. 437+75.00

FILE NO. 32071	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	MARION COUNTY	PROJECT NUMBER BRFN-005-3(69)--39-63	SHEET NUMBER W.10

3:40:37 PM 11/8/2022 jacker1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6300502018\Design\CADD_Files\Cross_Sections\XS_63005069Z09.dgn