

MARION COUNTY

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

LETTING DATE
11-19-2024



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.



REVISIONS

TOTAL

25

PROJECT IDENTIFICATION NUMBER

18-63-005-020

PROJECT NUMBER

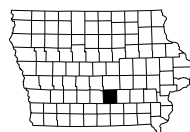
BRFN-005-3(69)--39-63

R.O.W. PROJECT NUMBER

NHSN-005-3(70)--2R-63

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
* J.2	Detour Plan
V Sheets	Bridge and Culvert Situation Plans
* V.1 - 3	Bridge Plans
W Sheets	Mainline Cross Sections
* W.1 - 10	Mainline Cross Sections
	* Color Plan Sheets

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

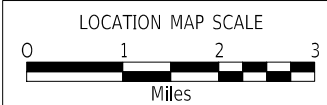
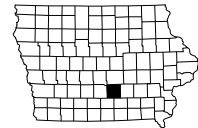
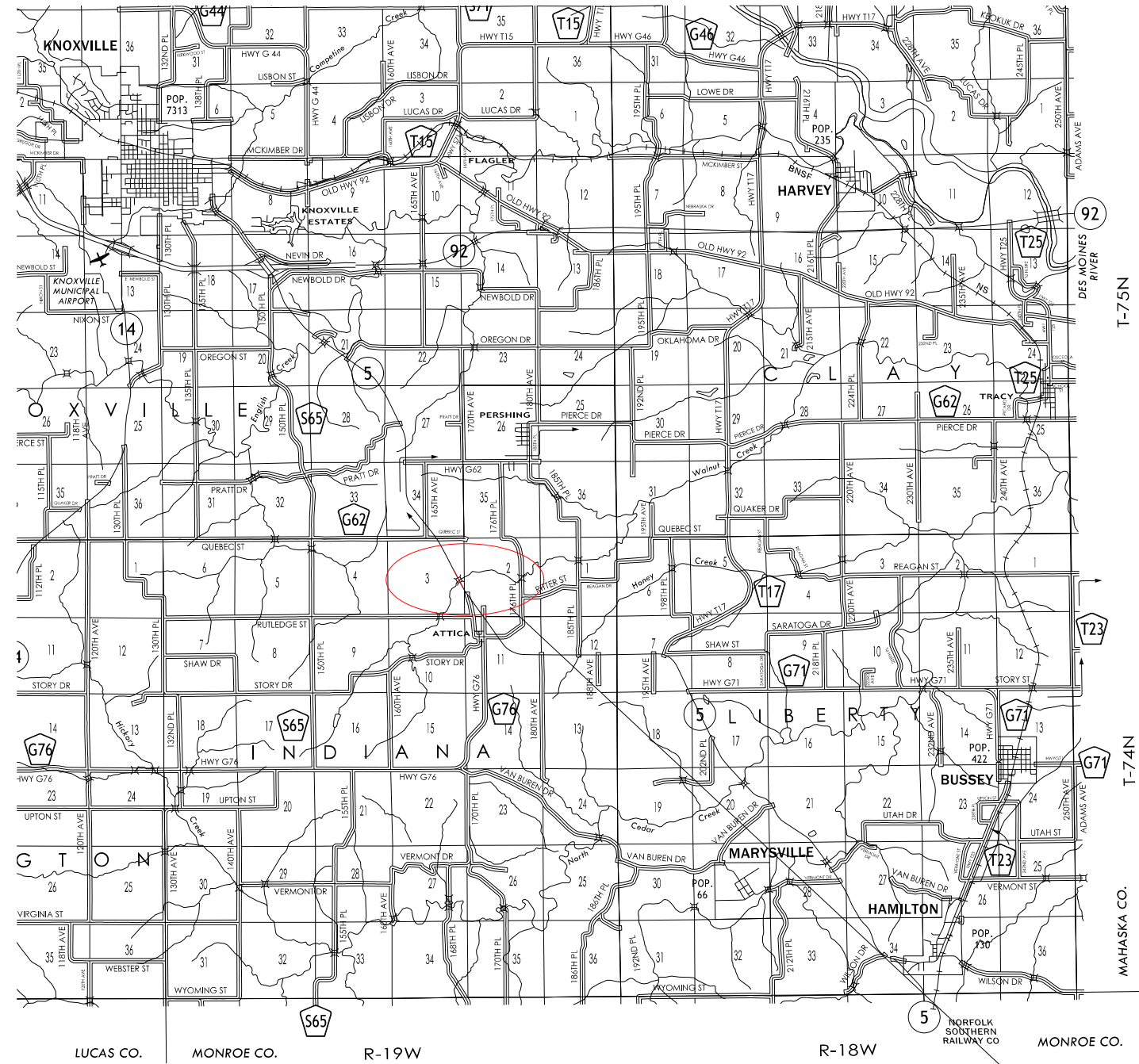
Schedule

D04 - 7/23/2024

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 01/22/2024



PROJECT LOCATION
 FHWA 35141
 MP 55

Combination Shoulder

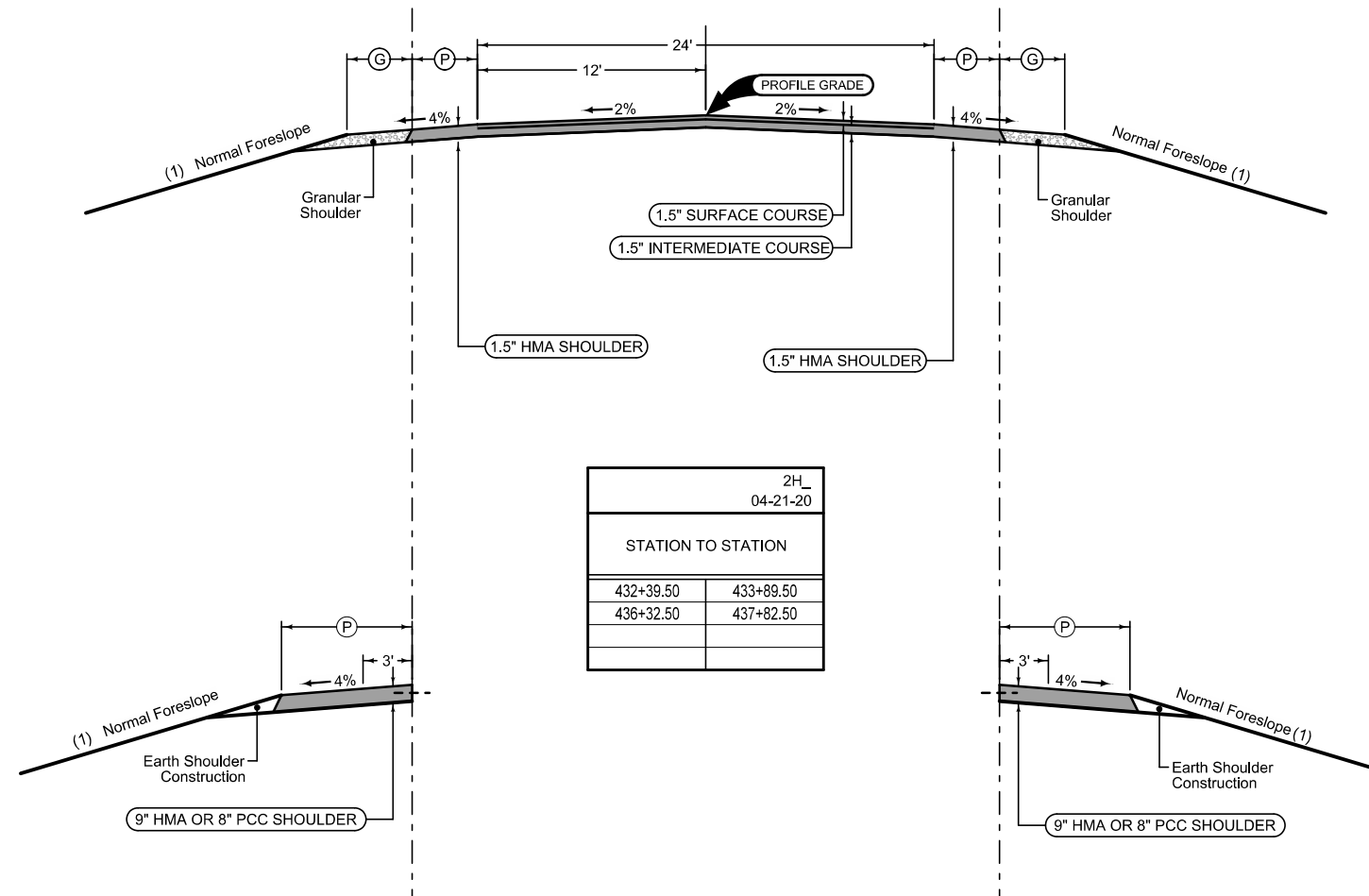
Shoulder Jointing:
Longitudinal joint: B

		2_C_04-21-20	
STATION TO STATION		(P) Feet	(G) Feet
432+39.50	433+02.32	2	3
437+19.68	437+82.50	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+02.32	433+89.50	VAR	
436+32.50	437+19.68	VAR	



Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

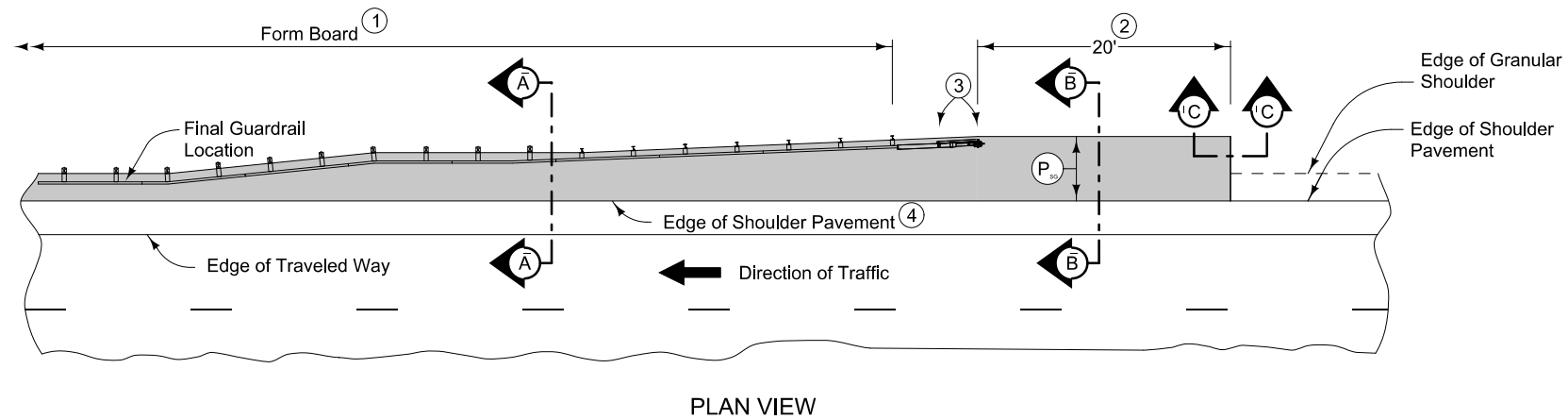
		2_C_04-21-20	
STATION TO STATION		(P) Feet	(G) Feet
430+80.43	431+32.09	2	3
437+19.68	437+82.50	2	3

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	
431+32.09	433+89.50	VAR	
436+32.50	437+19.68	VAR	

(1) Refer X-sections for additional details



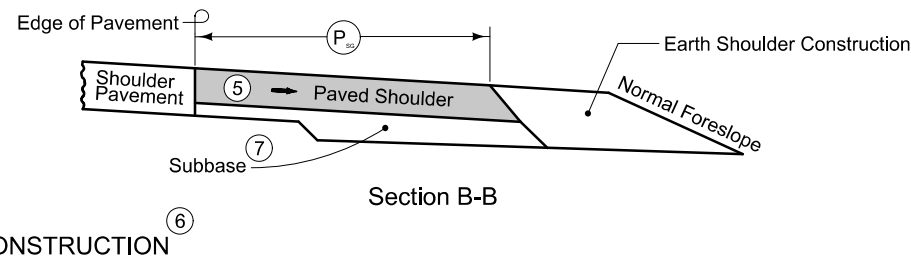
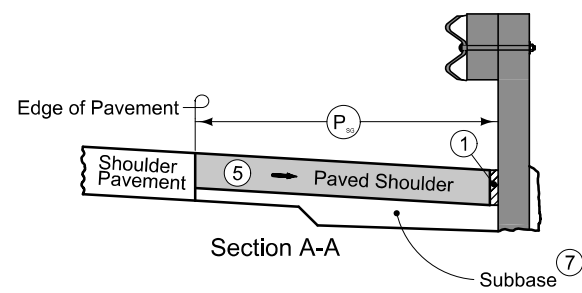
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

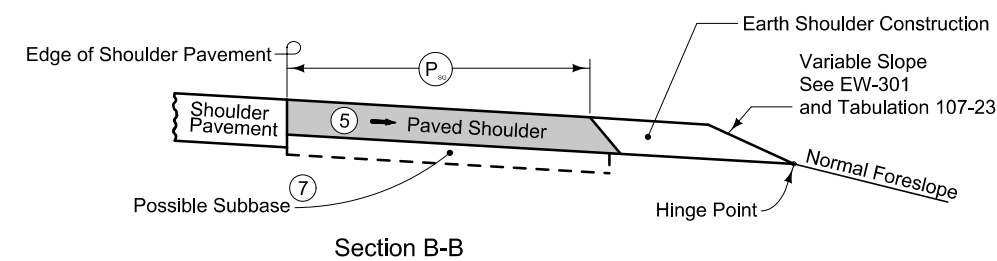
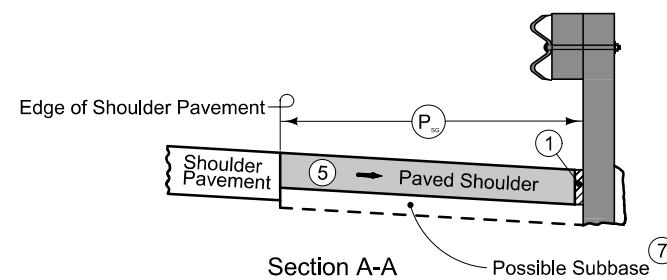
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

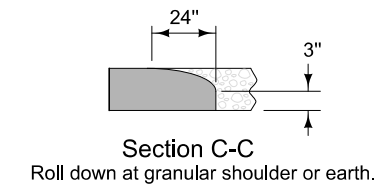
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves 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.



NEW CONSTRUCTION



EXISTING SHOULDER



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
- 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 Evergreen Tree
- SHR Shrub
- BLD Building or Foundation
- 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

- T1 --- TL1D Windstream Communications - Quality D
Dan Hogan
1614 230th St
Manchester, IA 52057
(563) 920-2428
Dan.Hogan@windstream.com
- G --- GL1D MidAmerican Gas - Quality D
Jason Lough
302 S Vine
Ottumwa, IA 52501
(641) 683-4171
jelough@midamerican.com
- G --- GL1D MidAmerican Gas - Quality D
William Barry
602 D ave NW
Cedar Rapids, IA 52405
(319) 298-5146
WEBarry@midamerican.com
- W --- WL1D Iowa Regional Utility Assoc. - Quality D
Matt Mahler
1351 Iowa Speedway Drive
Newton, IA 50208
(800) 400-6066
mmahler@irua.net
- PPA MidAmerican Electric
Matt Novy
3500 104th Street
Urbandale, IA 50322
(515) 252-6730
MDNovy@mldamerican.com

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	

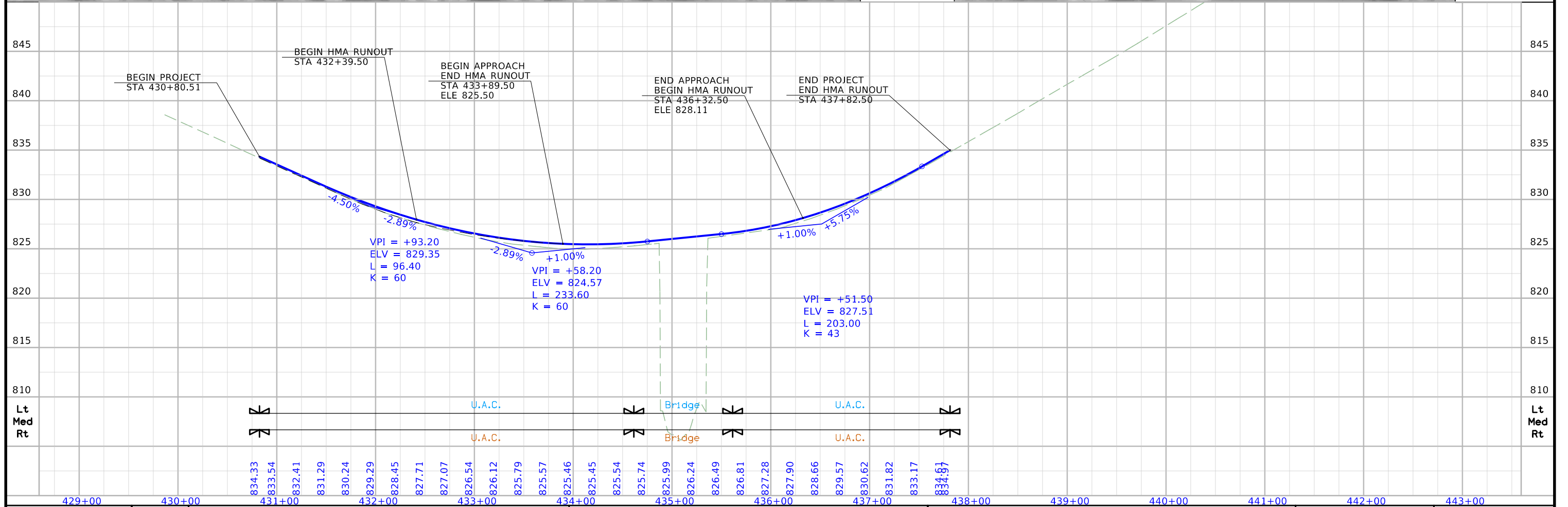
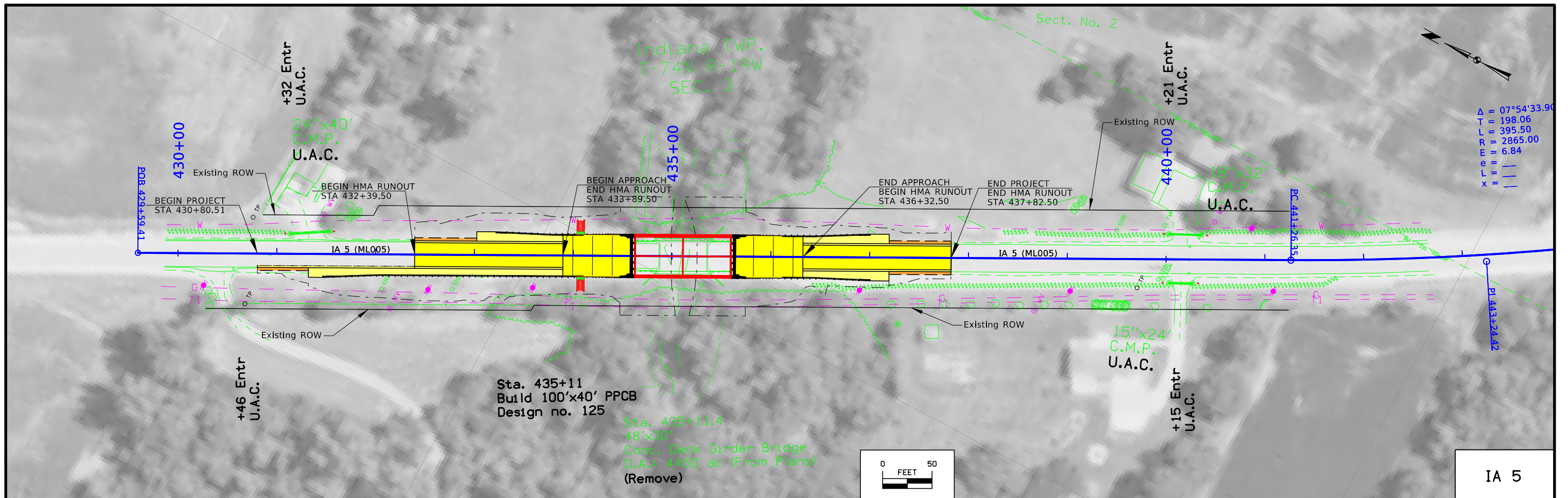
- Reference Point
- Station
- ▲ Section Corner
- Ground Line Intercept
- /// Saw Cut
- Guardrail
- ▬ Trench Drain
- High Tension Cable Guardrail
- ~ Sheet Pile
- ▨ Pavement Removal
- ▩ Clearing & Grubbing Area

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.2
----------------	---------	-------------------------------------	---------------	--------------------------------------	------------------

Survey Information

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 laRTN 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 laRCS Zone 9 (U.S. Survey Feet). This survey control is relative to laRTN reference stations. laRTN 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.

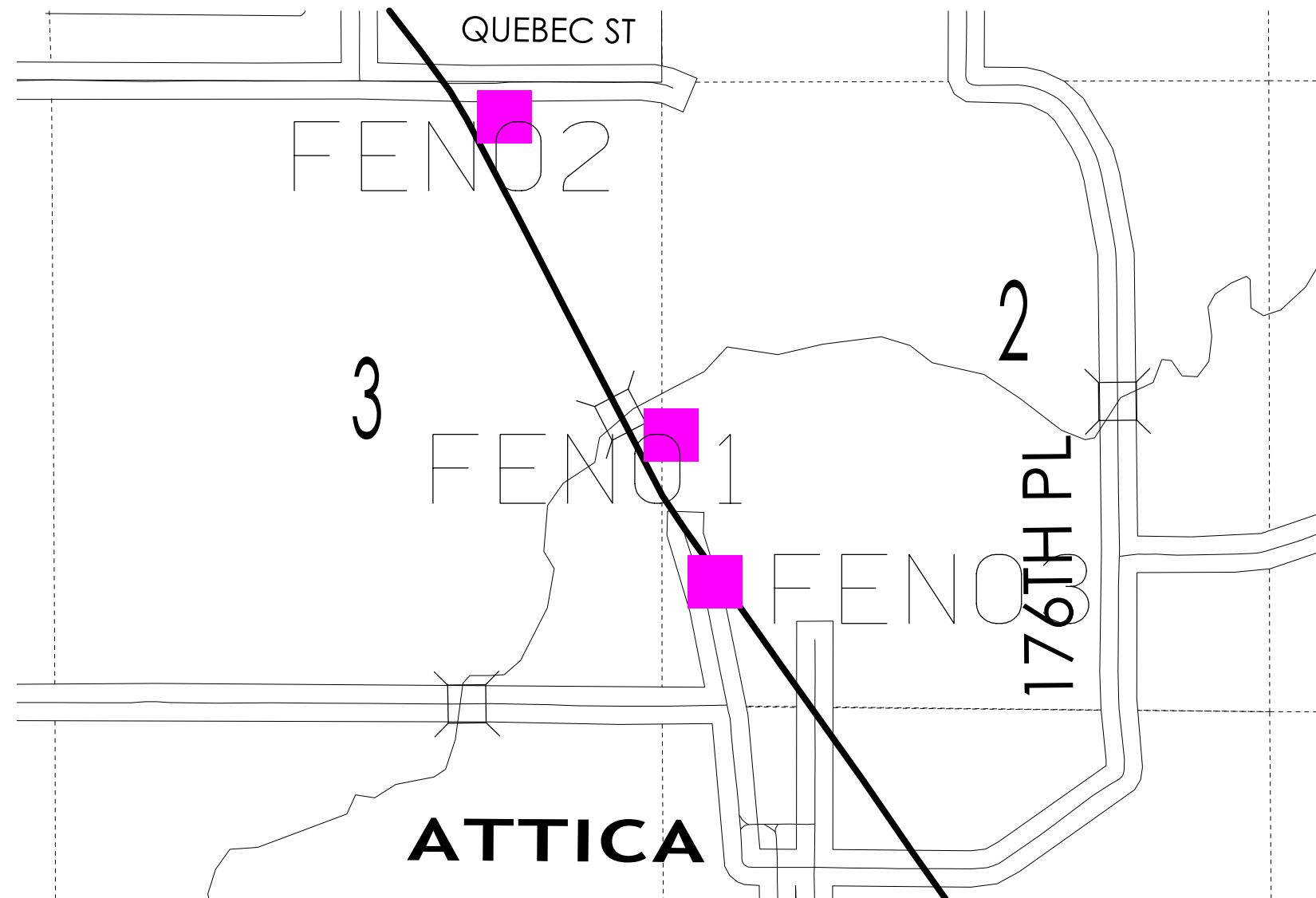
Survey stationing relates to as built plan stationing as follows:

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

1a. Regional Coordinate System Zone 9

Coordinate listing from next sheet will be used with 1aRTN 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

1a. 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

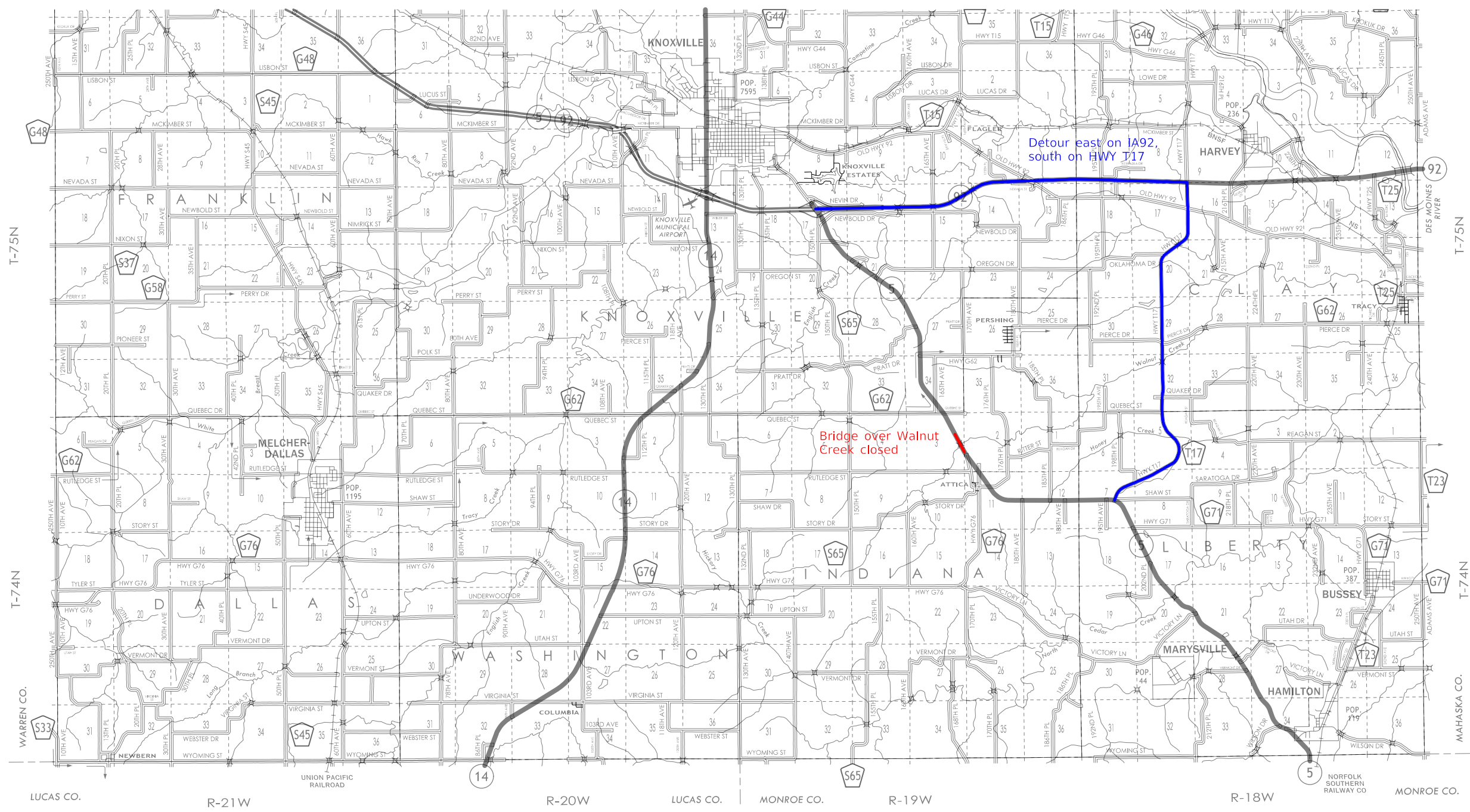
IA 5 will be closed during construction and traffic will be maintained via detour.

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.

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					



Detour east on I-92,
south on HWY T17

Bridge over Walnut
Creek closed

Control Point FENO1: 7560720.538N, 19442875.033E, FENO Mon with brass disc 4 in. below surface 955 Ft. NW of the intersection of Poplar St. and Hwy. 5, then 24 Ft. East of CL Hwy. 5, Elev. = 829.274.

Hydraulic Data

RIDB: Not Applicable
 Drainage Area = 5.79 Sq. Mi.
 Stream Slope (HGL) = 13.3 Ft./Mi.
 Avg. Low Water Stage = 806.4

Q₅₀ = 4570 cfs
 Stage = 817.95
 Channel Low Beam = 820.63
 Avg. Bridge Velocity = 12.33 fps

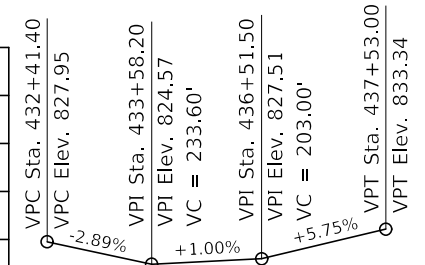
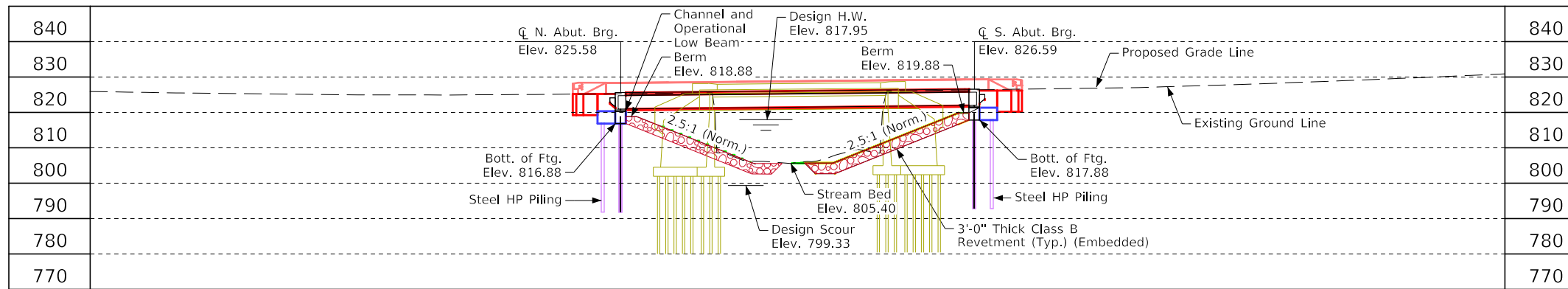
Q₁₀₀ = 5640 cfs
 Stage = 818.50
 Backwater = 1.28 Ft.
 Avg. Bridge Velocity = 14.13 fps

Q₂₀₀ = 6810 cfs
 Stage = 819.53
 Calculated Design Scour = 799.33

Q₅₀₀ = 8230 cfs
 Stage = 820.53
 Avg. Bridge Velocity = 15.58 fps
 Calculated Check Scour = 795.77

Roadway Overtop 825.44
 Sta. 434+15

Extreme HW Stage = NA
 Date = NA



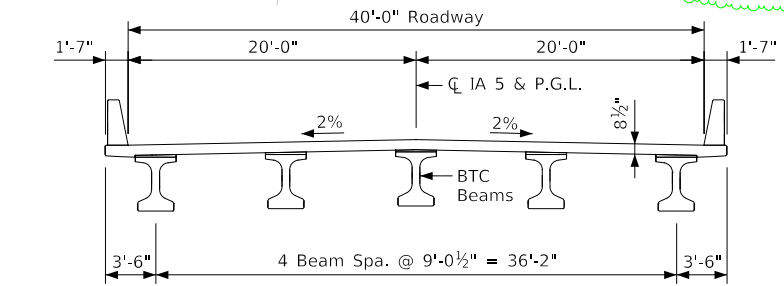
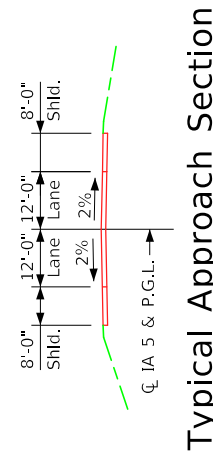
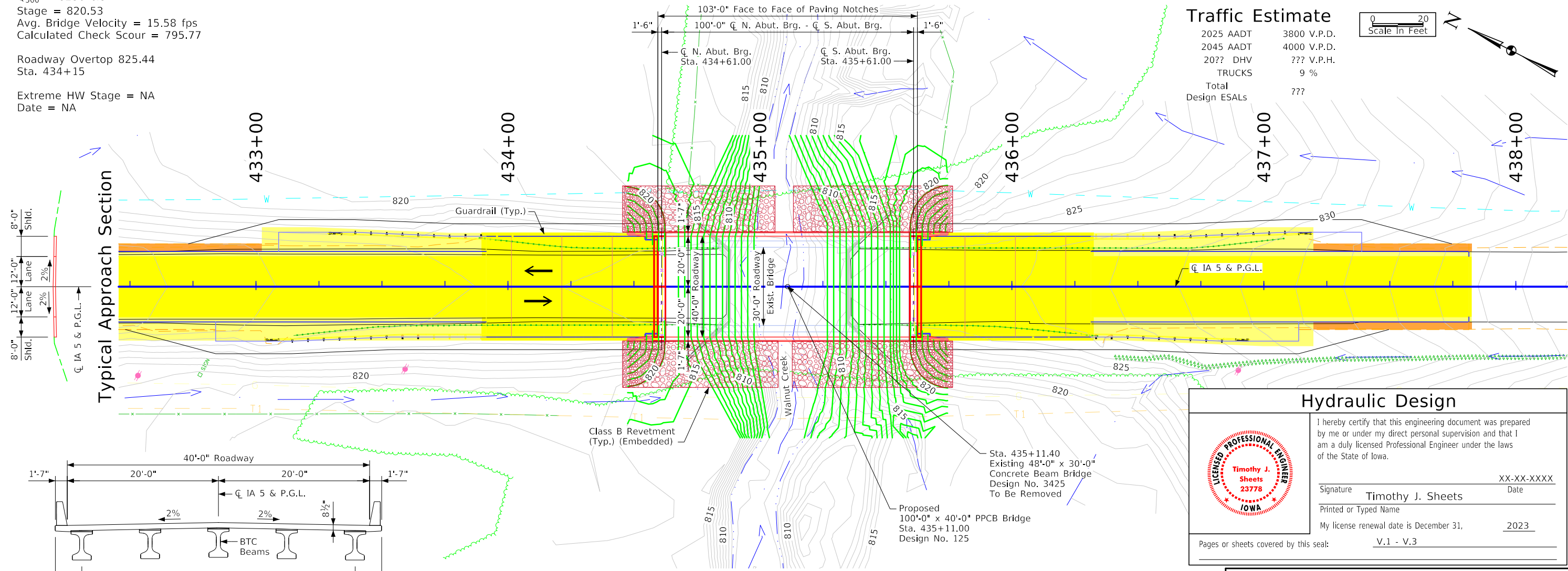
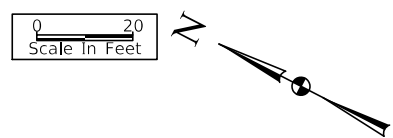
Design Notes:
 1. TSS TL-4 bridge railing proposed.

BRG TSL Longitudinal Section Along Centerline Approach Roadway

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

Traffic Estimate

2025 AADT	3800 V.P.D.
2045 AADT	4000 V.P.D.
20?? DHV	?? V.P.H.
TRUCKS	9 %
Total Design ESALs	???



Typical Deck Section

General Utility Symbols:
 T1 - Windstream Communications
 G - MidAmerican
 W - Iowa Regional Utility Assoc.
 ● - Power Poles - MidAmerican

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

Note:
 This design is for the replacement of the existing 48' x 30' concrete beam bridge, Marion Design No. 3425, FHWA No. 35140, Maint. No. 6355.4S005.

Location
 IA 5 over Walnut Creek
 T-74N R-19W
 Section 3
 Indiana Township
 Marion County
 FHWA No. 35141
 Bridge Maint. No. 6355.4S005
 Latitude 41.240266°
 Longitude -93.024742°

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.

XX-XX-XXXX
Date

Signature: Timothy J. Sheets

Printed or Typed Name: Timothy J. Sheets

My license renewal date is December 31, 2023

Pages or sheets covered by this seal: V.1 - V.3

Design For 0 Degree

100'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge

100'-0" Span

Situation Plan

STA. 435+11.00 (Centerline IA 5)

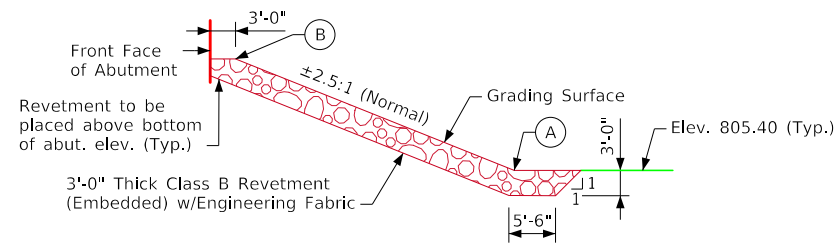
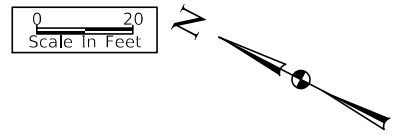
Turn-in Date: Dec 2023

Marion County

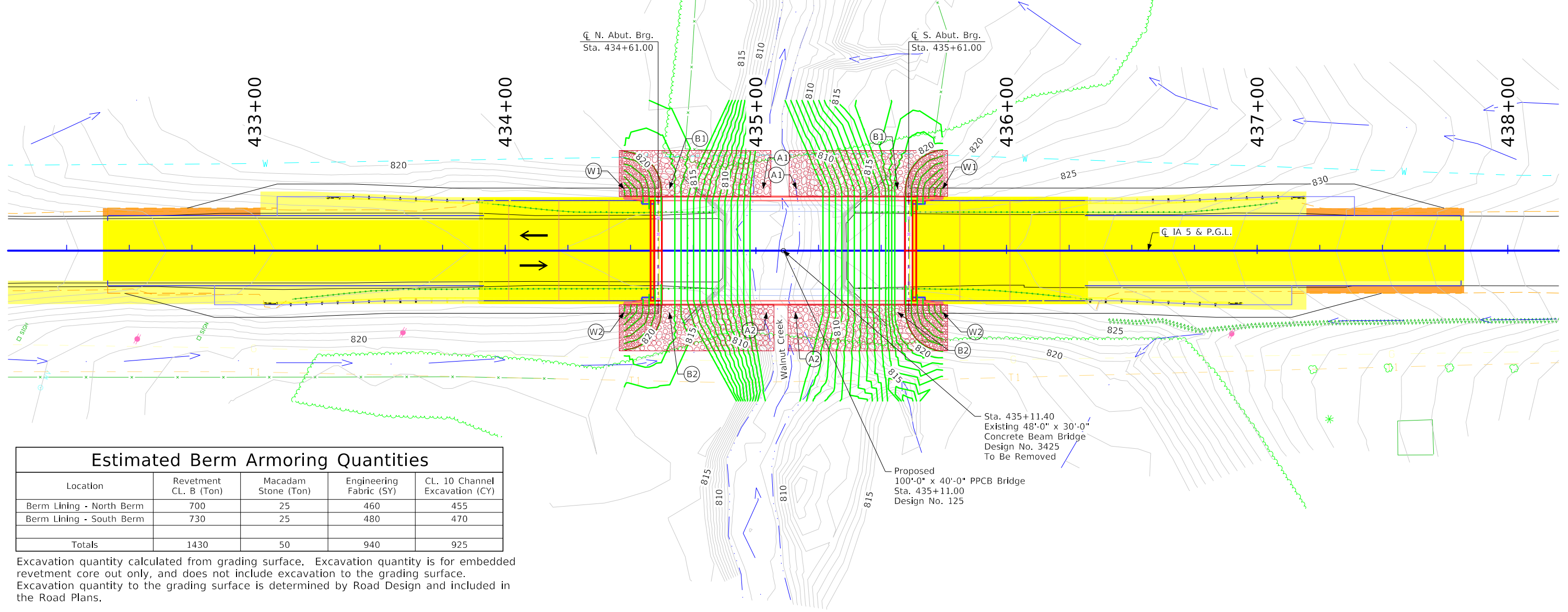
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 125 Design Sheet No. 1 of 3 FHWA No. 35141

Control Point FENO1: 7560720.538N, 19442875.033E, FENO Mon with brass disc 4 in. below surface 955 Ft. NW of the intersection of Poplar St. and Hwy. 5, then 24 Ft. East of CL Hwy. 5, Elev. = 829.274.



Section Thru Embedded Revetment Berm



Location	Revetment CL. B (Ton)	Macadam Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - North Berm	700	25	460	455
Berm Lining - South Berm	730	25	480	470
Totals	1430	50	940	925

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 based on a density of 1.6 Ton/CY.

Points	North Abutment			South Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	435+02.90	24.67' Lt.	805.40	435+16.33	24.67' Lt.	805.40
A2	435+04.30	24.67' Rt.	805.40	435+15.83	24.67' Rt.	805.40
B1	434+65.50	24.67' Lt.	818.88	435+56.50	24.67' Lt.	819.88
B2	434+65.50	24.67' Rt.	818.88	435+56.50	24.67' Rt.	819.88
W1	434+47.50	24.67' Lt.	824.98	435+74.50	24.67' Lt.	826.26
W2	434+47.50	24.67' Rt.	824.98	435+74.50	24.67' Rt.	826.26

Berm slope elevations reflect the grading surface. All points are 3'-0" from the end of the abutment footing. Offsets are from CL IA 5.

Site Plan

Design For 0 Degree
100'-0" x 40'-0" Prestressed Concrete Beam Bridge
 100'-0" Span
Site Plan
 STA. 435+11.00 (CL IA 5) Turn-in Date: Dec 2023
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 125 Design Sheet No. 2 of 3 FHWA No. 35141

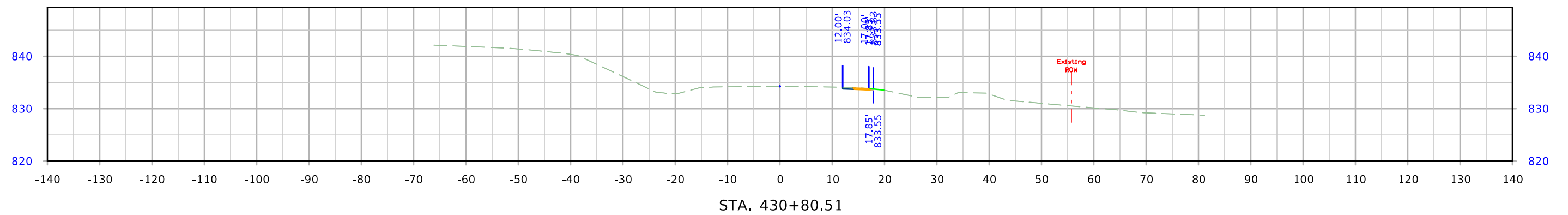
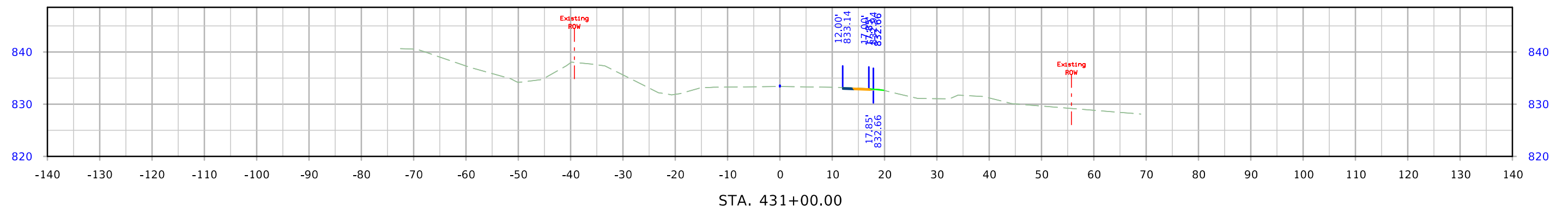
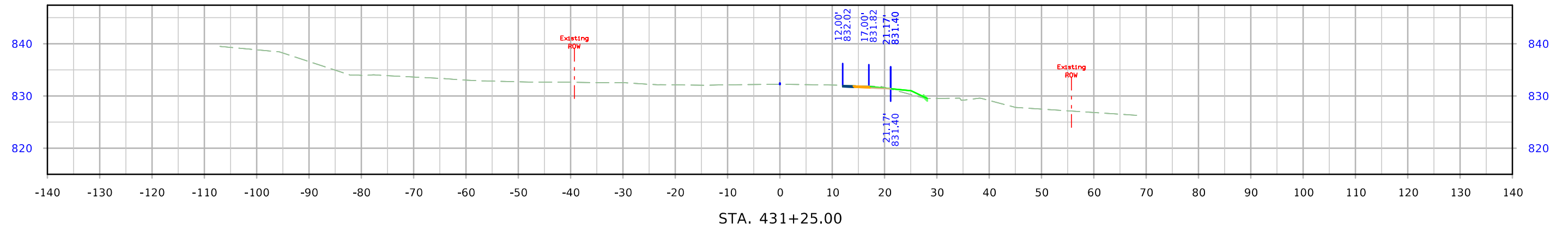
IA 5 over Walnut Creek
 Project No. BRFN-005-3(069)--39-63
 PIN: 18-63-005-020
 File No. 32071
 Marion County - Design No. 125
 100'-0 x 40'-0 Prestensioned Prestressed Concrete Beam (PPCB) Bridge
 Location: 0.9 mi. N of Co. Rd. G76
 Station 435+11.00 (CL IA 5)
 Maintenance No. 6355.4S005
 FHWA No. 35141
 Work Description: Bridge Replacement - PPCB
 Prepared for: Iowa DOT
 Prepared by: Foth IE

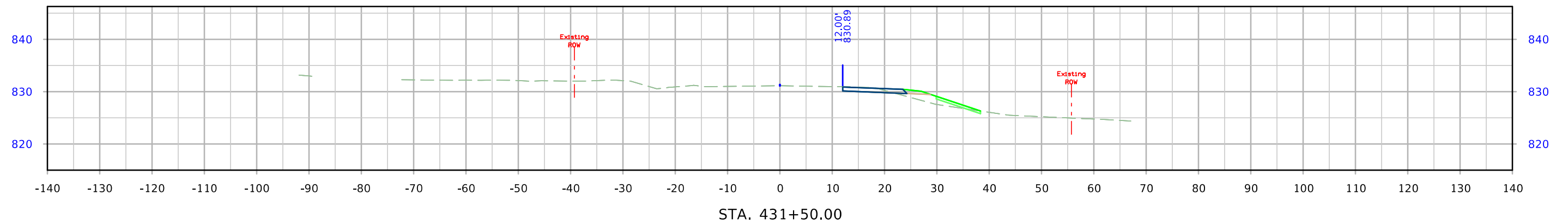
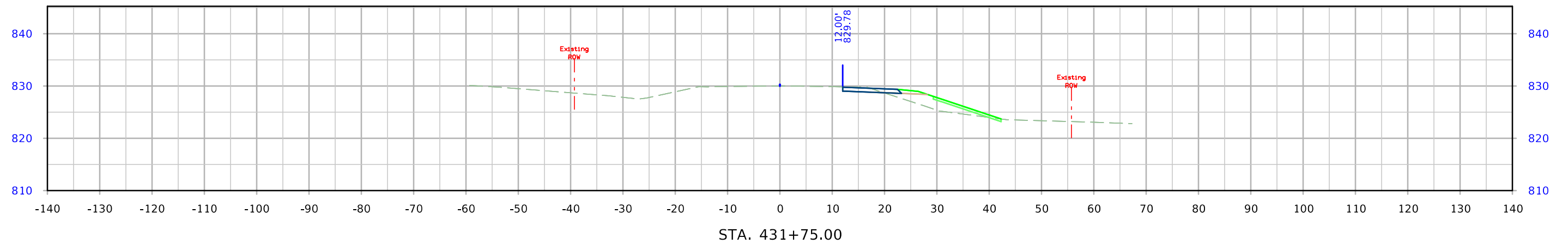
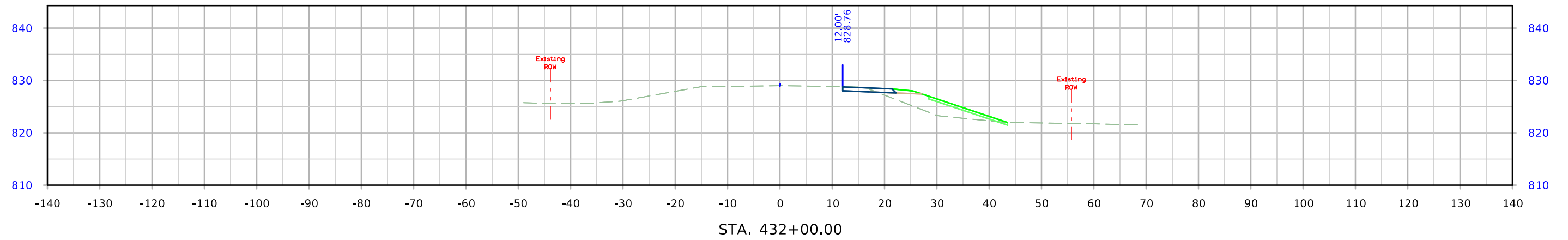
TSL DEVELOPMENT DETAILS

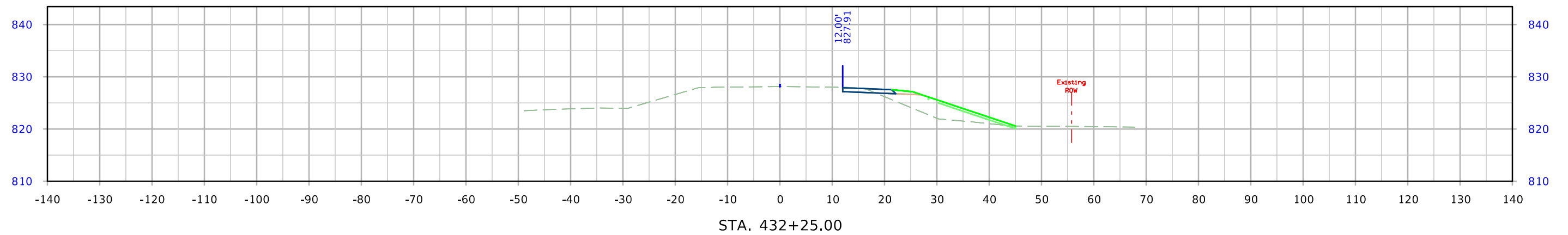
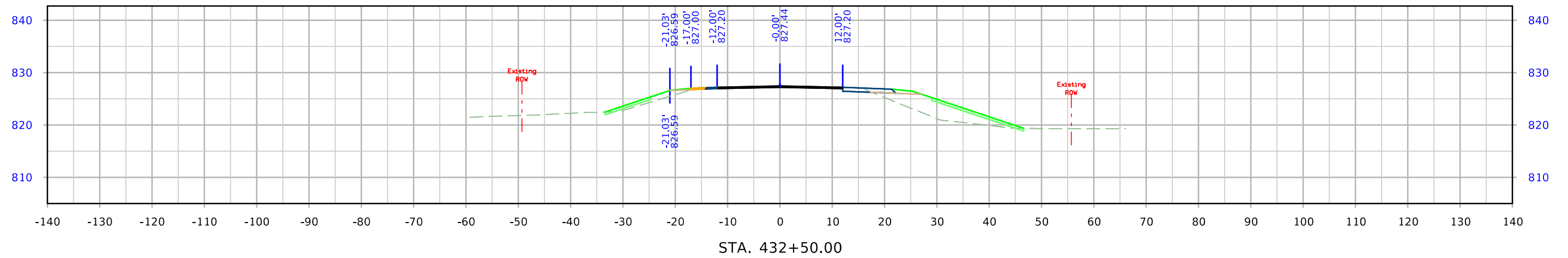
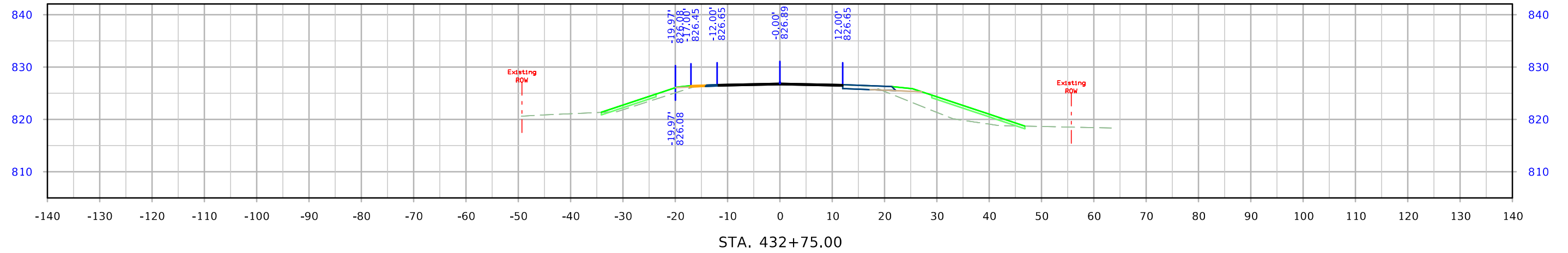
1. BDM 3.2.2.4 - Freeboard
 - a. Q_{50} design elevation is 817.95 on the downstream edge of the proposed bridge.
 - b. Channel low beam at Sta. 434+62.50 and is 820.63.
 Freeboard for the proposed bridge is 2.68', which is less than the DNR requirement of 3', however, a DNR Floodplain Development Permit is not required. Calculation is below:
 Low Step Elevation at N. Abut. = 820.38
 Bearing Device Height = 0.25'
 Low Beam Elevation = 820.63
 Freeboard = 820.63 - 817.95 = 2.68'
2. BDM 3.2.2.7 - Scour
 - a. Design scour calculated based on a pressure flow situation.
3. BDM 3.6.1.6 - Superstructures - PPCB
 - a. A 100' x 40' PPCB Bridge with an 8.5" deck thickness is proposed.
 - b. Estimated 2" haunches at both abutments.
 - c. BTC beams are proposed.
 1. The B0 Concept included BTB beams. The change was made to BTC beams for three primary reasons: A 40' width requires the use of six BTB beams but only five BTC beams; BTC beams are less expensive according to data from BidX; and using BTC beams reduces the backwater produced by the bridge to be less than 1.5'. Using BTB beams would produce a backwater of about 2.0'. Although the Q_{50} freeboard experienced by the BTC beams will be less than the desired 3', the Q_{100} freeboard is still greater than 2' and the Q_{500} freeboard is greater than 0'.
4. BDM 3.6.2.1 - Width - Highway
 - a. The width of the bridge was set by adding together the proposed lane widths and effective shoulder widths.
5. BDM 3.6.2.2 - Sidewalk, Shared Use Path, and Bicycle Lane
 - a. No pedestrian or bicycle facilities are included in the proposed bridge.
6. BDM 3.6.6 - Deck Drainage
 - a. The proposed bridge is located on a sag vertical curve. Deck drain locations to be determined during Final Design.
7. BDM 3.6.8 - Barrier Rails
 - a. TL-4 barrier rails conform with the BDM requirements for a mainline non-interstate bridge.
 - b. Barrier rails for this project will be the TSS TL-4 rails.
8. BDM 3.7.2 - Abutments
 - a. Integral abutments will be used with HP piling.
9. BDM 3.7.3.5 - Slope Protection
 - a. Embedded Class B revetment with a thickness of 3' is proposed to reduce the contraction scour through the bridge opening and protect the abutment berms.
 - b. Macadam stone is proposed along the wings and around the wing grading.
10. BDM 3.7.6 - Foundation Conflicts
 - a. The bridge abutments will be placed behind the existing abutments.
 - b. There are no known foundation conflicts.

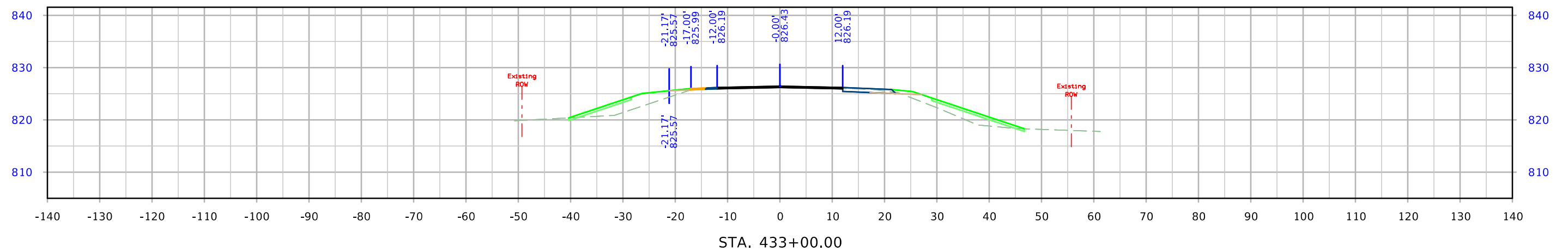
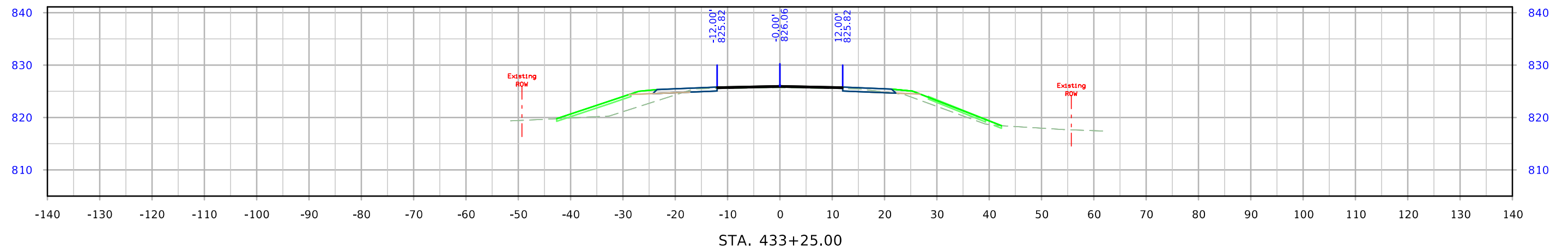
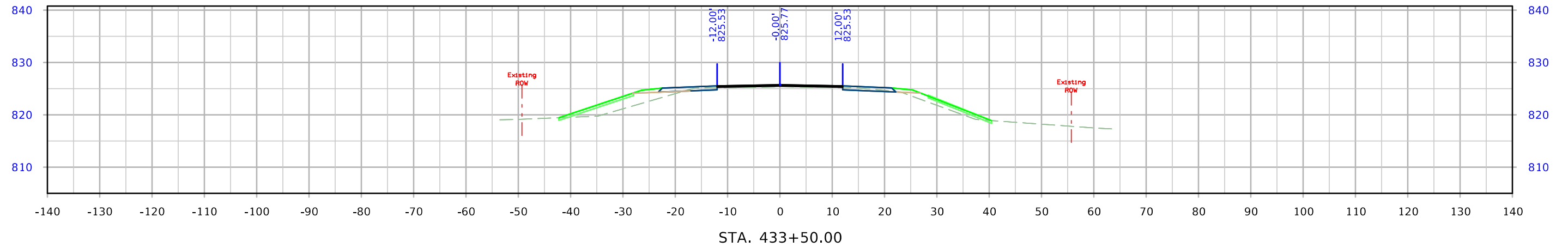
Design For 0 Degree
**100'-0" x 40'-0" Prestensioned
 Prestressed Concrete Beam Bridge**
 100'-0" Span
TSL Development Report
 STA. 435+11.00 (CL IA 5) Turn-In Date: Dec 2023
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 125 Design Sheet No. 3 of 3 FHWA No. 35141

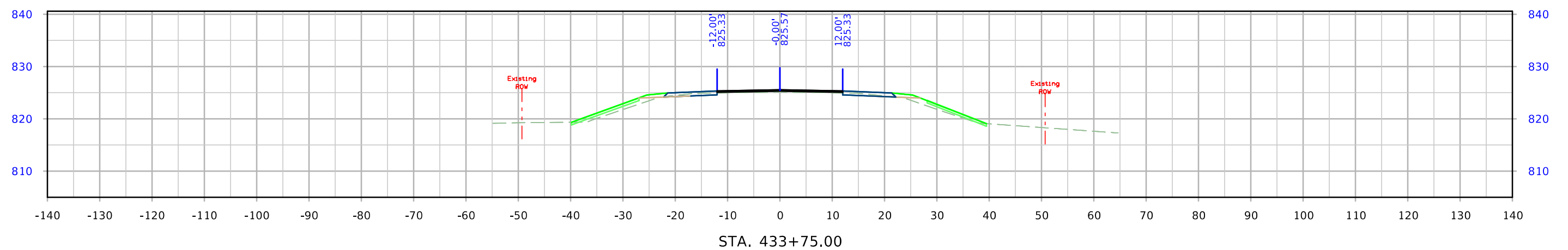
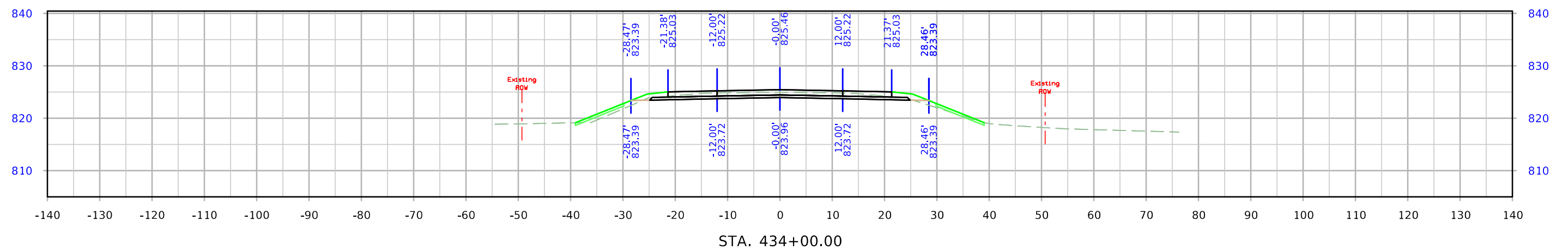
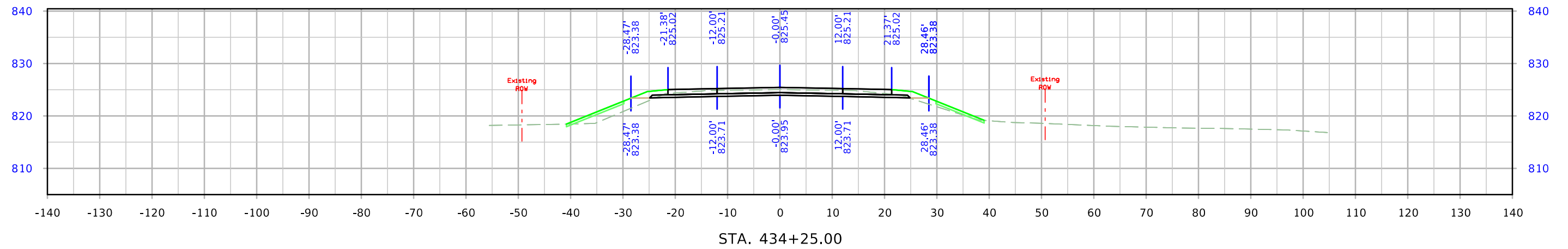
FILE NO. 32071	ENGLISH	DESIGN TEAM Foth	Marion COUNTY	PROJECT NUMBER BRFN-005-3(069)--39-63	SHEET NUMBER V.3
----------------	---------	------------------	---------------	---------------------------------------	------------------



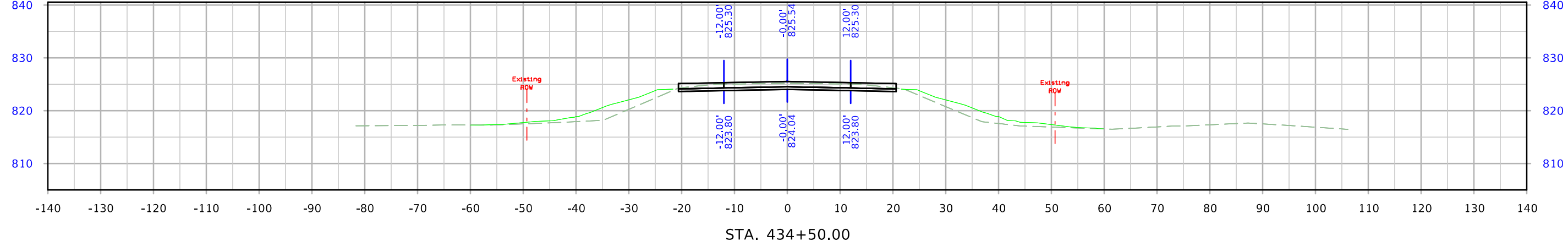
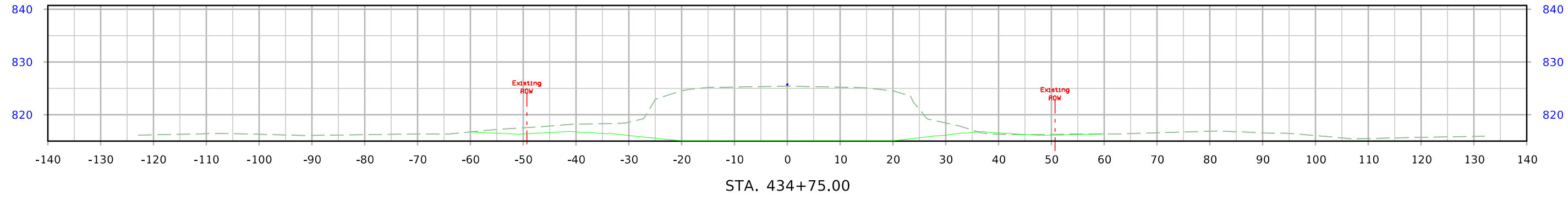
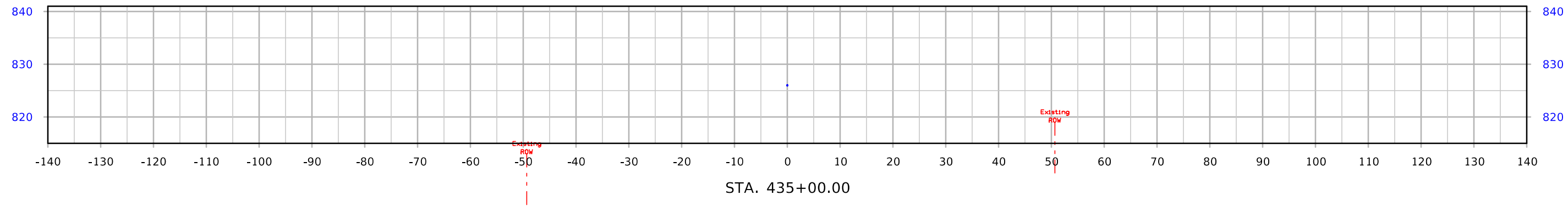
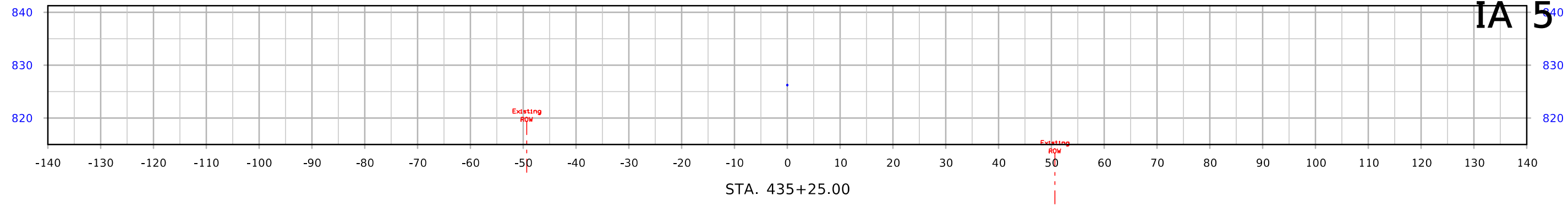


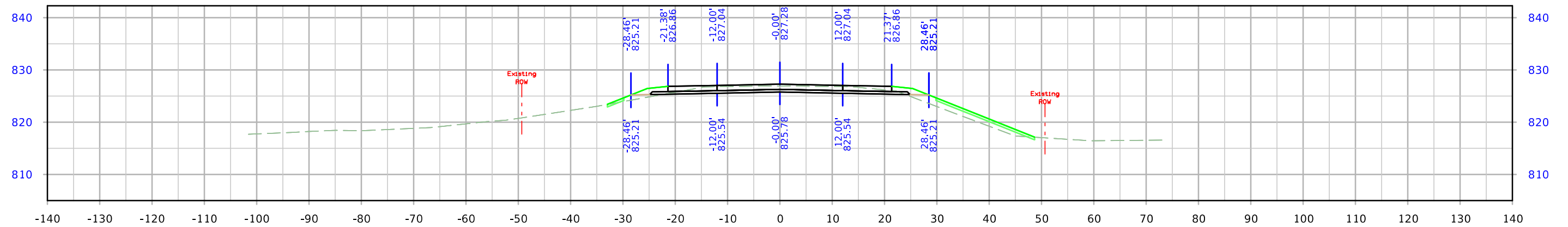




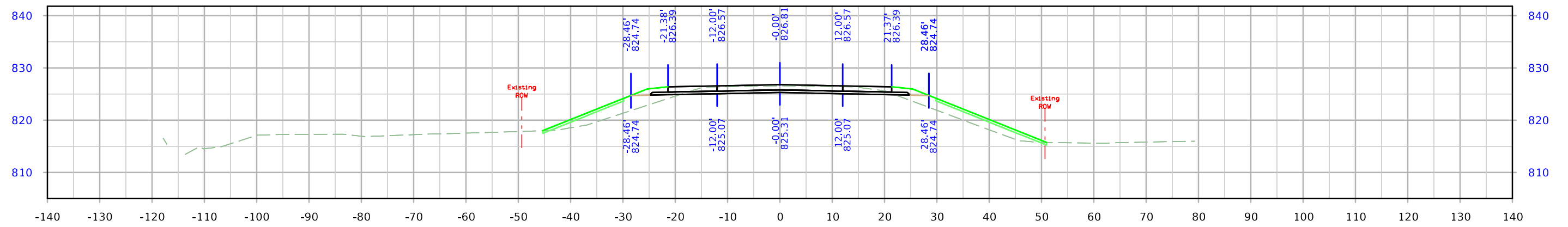


IA 5

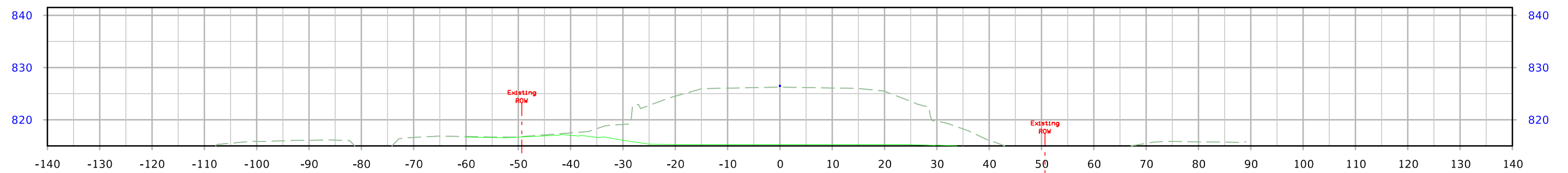




STA. 436+00.00



STA. 435+75.00



STA. 435+50.00

