



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
JONES COUNTY
BRIDGE REPLACEMENT-PPCB
Kitty Creek 1.1 mi S of Co Rd X44 (SB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



V - Sheets

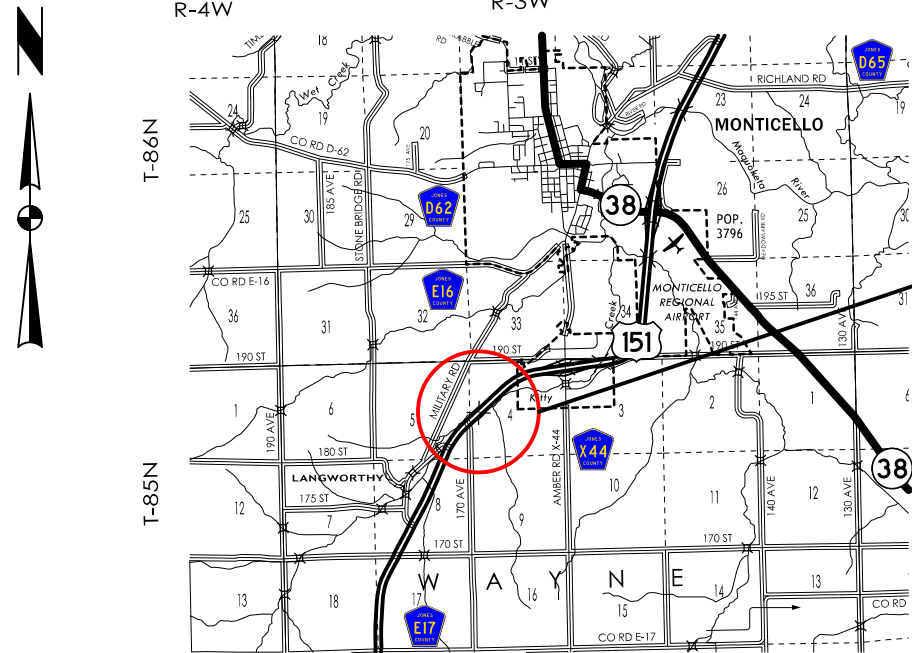
REVISIONS

TOTAL
28

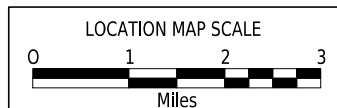
PROJECT IDENTIFICATION NUMBER	19-53-151-010
PROJECT NUMBER	BRFN-151-4(126)--39-53
R.O.W. PROJECT NUMBER	NHSN-151-4(127)--2R-53

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.1	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	US 151
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 & Staging Legend & Symbol Info. Sheet
* J.2 - 8	Staging and Traffic Control Sheets
W Sheets	Mainline Cross Sections
W.1 - 11	Mainline Cross Sections
	* Color Plan Sheets



PROJECT LOCATION
REF. LOC. 62.00
FHWA No. 32250



DESIGN DATA RURAL

2024 AADT	6750	V.P.D.
2044 AADT	9000	V.P.D.
20 -- DHV	--	V.P.H.
TRUCKS	12	%
Total Design ESALs	--	

INDEX OF SEALS

PRELIMINARY PLANS

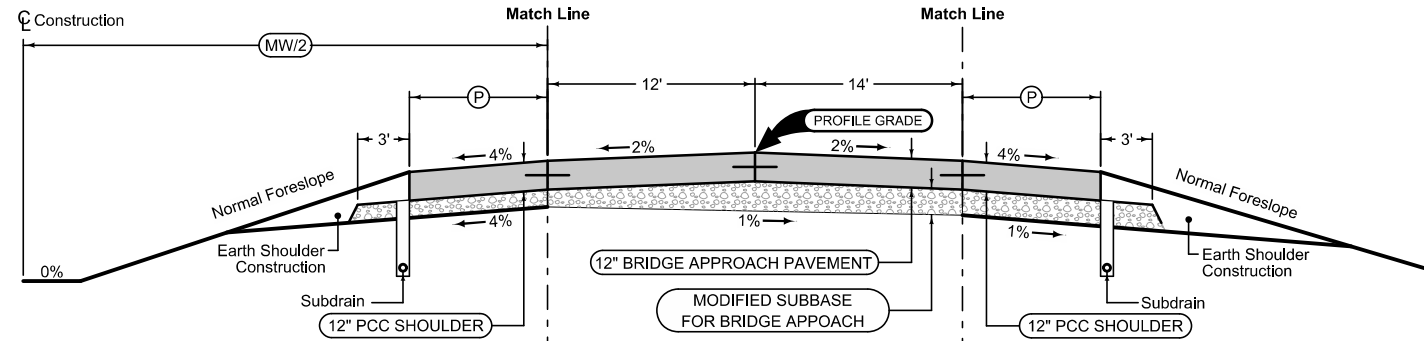
Subject to change by final design.

D5 PLAN - Date: 5/8/2024

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION	(P)	Feet
920+68.57	920+93.57	9.54
922+99.03	923+64.73	9.54



Section shown in the direction of traffic.

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

4DP_ 04-21-20			
Direction of Travel	BEGIN STATION	END STATION	(MW) Feet
SB	920+93.57	921+75.70	67.86
SB	922+99.03	923+64.73	67.86

Full Depth PCC Shoulder

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

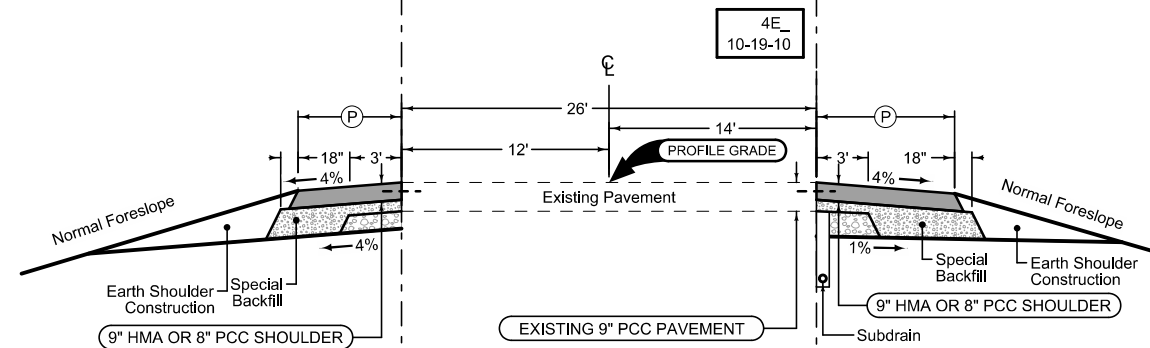
2_P_FullPCC_ MODIFIED		
STATION TO STATION	(P)	Feet
920+68.57	920+93.57	7.54
922+99.03	923+64.73	7.54

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_ MODIFIED			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
SB	923+64.73	925+39.56	*
NB	918+99.73	921+85.78	*

* See Typical 7156 and cross sections



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_ MODIFIED			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
SB	923+64.73	925+93.49	*
NB	919+53.76	921+85.78	*

* See Typical 7156 and cross sections

Full Depth PCC Shoulder

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

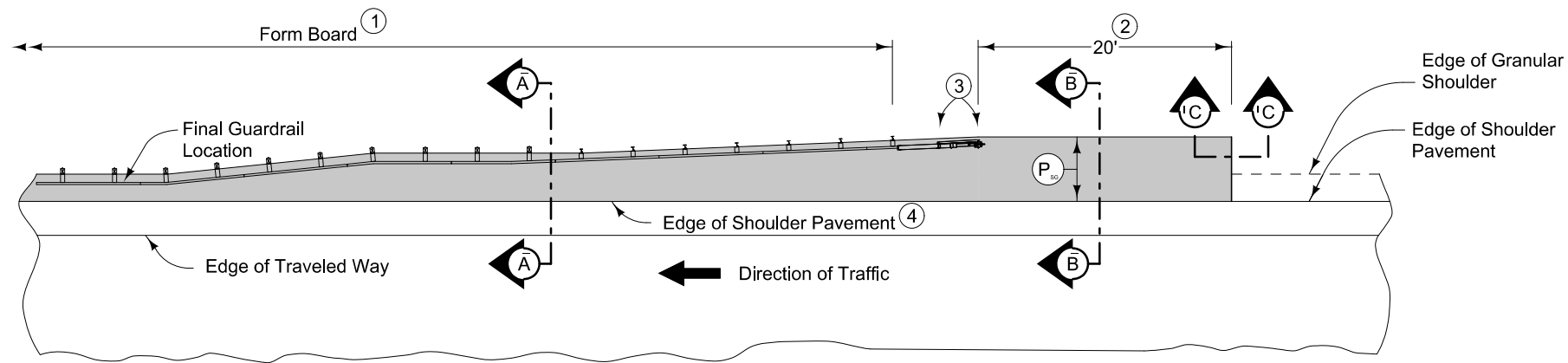
4_P_FullPCC_ MODIFIED			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
SB	920+68.57	920+93.57	6



Full Depth PCC Shoulder

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

4_P_FullPCC_ MODIFIED			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
SB	920+68.57	920+93.57	8



PLAN VIEW

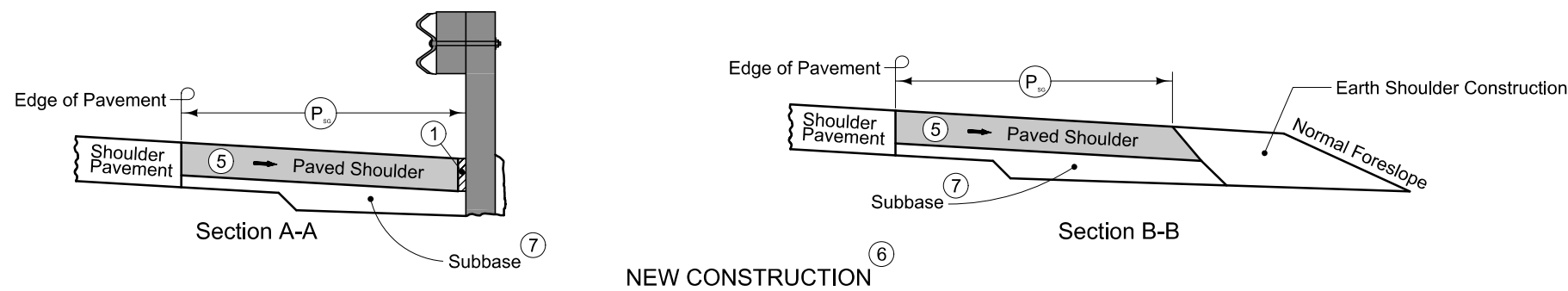
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

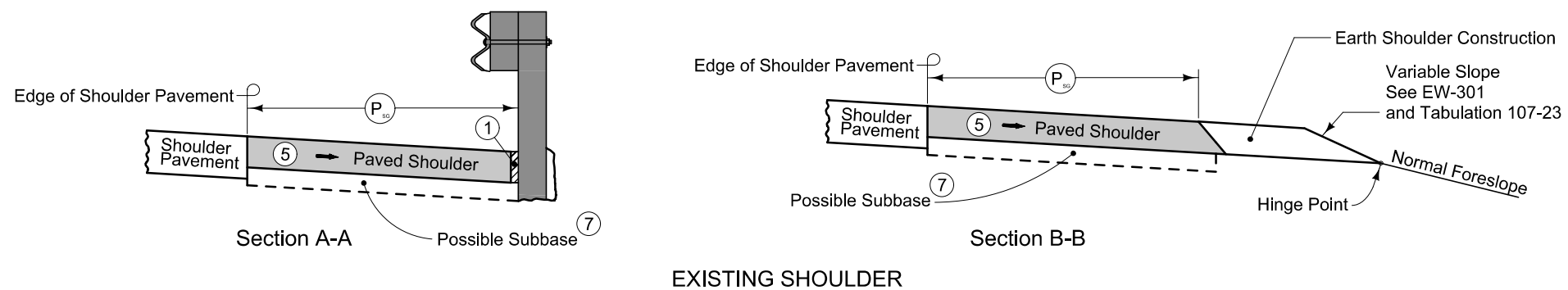
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

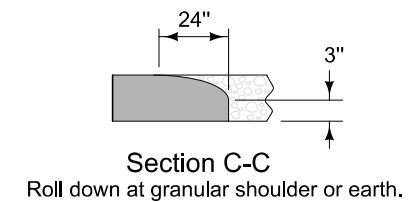
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-102) joint for PCC shoulder. 'B' (per PV-102) 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

	BBB, Bottom of Bridge Beam
	BBB, Bottom of Bridge Beam
	BCL, Bridge Centerline
	BCL, Bridge Centerline
	BL, Topo Breakline
	BL, Topo Breakline
	BNK, Stream Bank
	BNK, Stream Bank
	BRG, Bridge
	BRG, Bridge
	C, Centerline BL of Road -ML or SR
	C, Centerline BL of Road -ML or SR
	CON, Concrete or A/C Slab
	CON, Concrete or A/C Slab
	D, Centerline Draw or Stream -Down
	D, Centerline Draw or Stream -Down
	DU, Centerline Draw or Stream -Up
	DU, Centerline Draw or Stream -Up
	ENP, Edge Paved Entrance and Park Lot
	ENP, Edge Paved Entrance and Park Lot
	ENT, Centerline BL of Entrance
	ENT, Centerline BL of Entrance
	EP, Edge of Paved Roads -ML or SR
	EP, Edge of Paved Roads -ML or SR
	Existing Contours
	FW, Wire Fence
	FW, Wire Fence
	GR, Ground Shot
	GR, Ground Shot
	GU, Gutter In Front of Curb
	GU, Gutter In Front of Curb
	LIN, Miscellaneous Line
	LIN, Miscellaneous Line
	MIS, Miscellaneous
	MM, Mile Marker Post
	RIP, Rip-Rap
	RIP, Rip-Rap
	ROC, Rock Outcropping
	ROC, Rock Outcropping
	ROW, Right of Way Mark
	SBR, Size of Bridge
	SH, Paved Shoulder
	SH, Paved Shoulder
	SI, Sign
	SNK, Sink Hole
	SNK, Sink Hole
	SNP, Unpaved Shoulder
	SNP, Unpaved Shoulder
	SOP, Size of Pipe or Culvert
	SP, Stream Profile
	WC, Wild Card -Misc. Field Shot

UTILITY LEGEND

	FO1D, Wisconsin Independent Network - Quality D Wisconsin Independent Network (WIN) Mike Ferm (Fiber Distribution & Fiber Transmission) OSP Engineer 3636 Westown Pkwy Suite 200 West Des Moines, IA 50266 (515)493-6014 dick.hammetter@wintechnology.com
	MIS, USGS Monitoring Well Gauge - Quality C

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

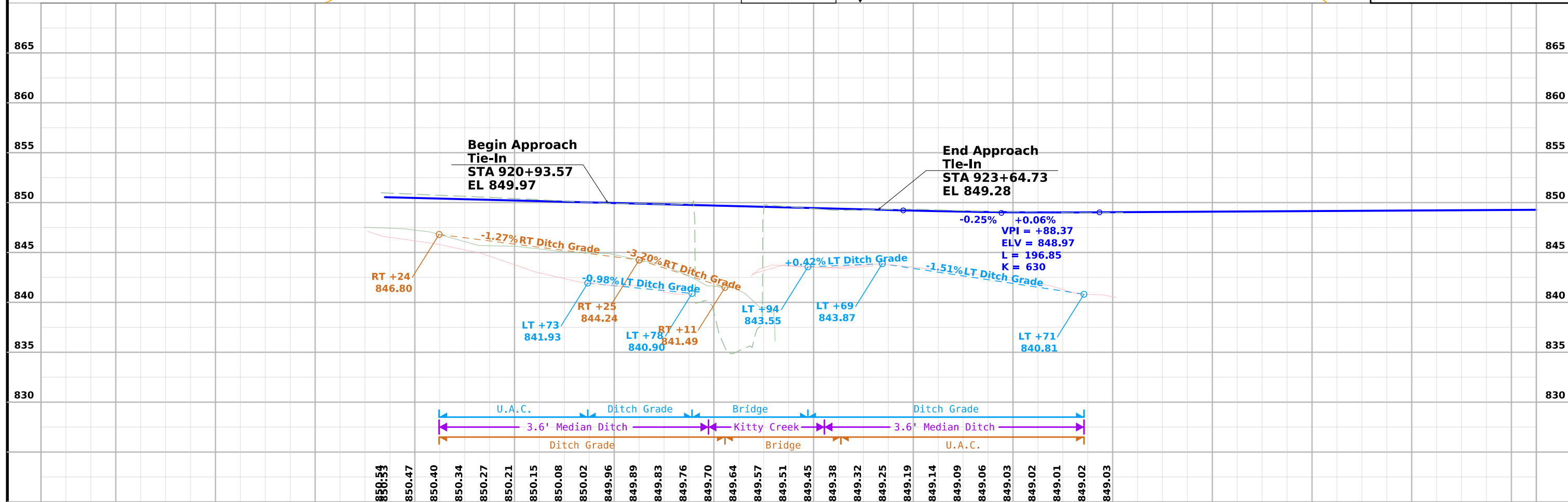
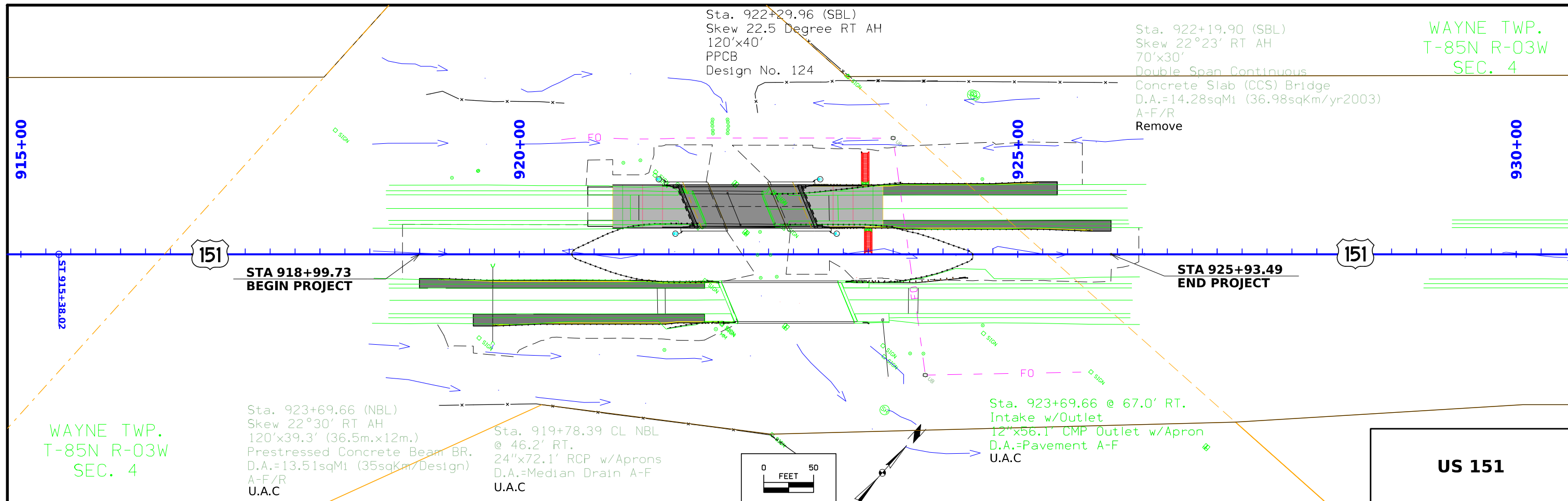
	Reference Point	Survey Line
	Station	Survey Line
	Section Corner	Survey Line
	Ground Line Intercept	Survey Line
	Saw Cut	Survey Line
	Guardrail	Survey Line
	Trench Drain	Survey Line
	High Tension Cable Guardrail	Survey Line
	Sheet Pile	Survey Line
	Pavement Removal	Survey Line
	Clearing & Grubbing Area	Survey Line

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
	Access Control
	Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Survey Information

SURVEY INDEX

Jones County
SAP-0970.0
PIN 19-53-151-010
Project Number: BRFN-151-4(126)--39-53
Location: on SBL US Hwy. 151 over Kitty Creek 1.1 mi S of Co Rd X44
Type of Work: SBL Bridge Replacement
Project Directory: 5315101019

Survey Personnel

Geoff Tinker, PLS – Land Surveyor, Sr. (Field Survey & Proj. DGN's)
 John Hahn – Assist. Party Chief (Field Assist. 06/30, 07/01, 07/13)

Date(s) of Survey

Begin Date	06/23/2021	Initial Pavement / Roadway
	06/30/2021 and 07/01/2021	Roadway, Crossovers, Structure
	07/13/2021	Crossovers completed
End Date(s)	08/30/2021 thru 09/09/2021	Embankment, Waterway, Utilities

General Information

Measurement units for this survey are US survey feet, upon IaRCS Zone 10.
 This survey is for SBL Bridge Survey (Topo) along US Hwy. 151 over Kitty Creek located 1.1mi. South of Co. Rd. X44.

Project Control

Coordinates were determined for primary project control points by conducting concurrent Static Survey observations, with Post Processing and Adjustment being constrained to surrounding Iowa Real Time Network (IaRTN) reference stations.

Refer to separate Control Index File Report I-53151126_CNTRL for complete details, at:
<pw:\projectwise.dot.int.lan:PWMMain\Documents\Projects\5315101019\PrelimSurvey\0970\Control>

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
COORDINATE SYSTEM: IOWA RCS ZONE 10 (CEDAR RAPIDS)
VERTICAL DATUM: NAVD88 (w/Geoid12B)

Alignment Information

The horizontal alignment for this survey is a retrace of "Metric" As-built Plans from Project No. **NHSX-151-4(56)—3H-53**, per Sheets G.02, G.03, G.07 and G.08

Existing Centerline Monuments were found at specific Horizontal Alignment points, as related to above Sheet G.08 "Metric" Stationing and found as detailed below. Metric Station **271+61.312m.** at T.S. for P.I. #209 (Spiral/Curve/Spiral) was "HELD" for this project as equated to Sta. **891+11.738** (UsFt) and run ahead without equation throughout the Survey Alignment.

Stationing from Sta. 891+11.738 was calculated back through "Best Fit" of Tangent from split of exiting inside edge of SBL and NBL PCC Pavement, and "Held" plan deflection for P.I. #208 and Radius (5,000m = 16,404.1667ft). An additional Tangent length in back Stationing from Plan P.C. 263+39.175m (Sur 263+39.267m) was added to define B.O.P. for Alignment at Sta. **860+00.000** (UsFt.) for alignment definition.

Horiz. Alignment reports were generated in both Metric (Meters) and UsFt for previous Metric project reference as part of this UsFt. defined project upon IaRCS Zone 10.

Survey (SUR) stationing in UsFt as related to as-built plan "Metric" stationing, as follows:

BOP Sta. 860+00.000 (UsFt) = BOP Sta. 262+12.852m.
 (Calculated, as detailed above)

PC Sta. 864+14.747 (UsFt) = SUR PC Sta. 263+39.267m. vs. Plan 263+39.175m.
 (Calculated, as detailed above)

PI #208 Sta. 871+51.647 (UsFt) = PI #208 Sta. 265+63.875m. vs. Plan 265+63.781m.
 (Calculated, as detailed above)

PT Sta. 878+87.556 (UsFt) = SUR PT Sta. 267+88.181m. vs. Plan 267+88.085m.
 (Calculated, as detailed above)

TS Sta. **891+11.738** (UsFt) = SUR TS Sta. **271+61.312m.** Plan "HELD"
Pnt.# GT650 Found 1/2" (#4) Rebar at -9in Deep, located STA. **891+12.040 @ 0.207' Rt.**
 (Align. not held through point due to Best Fit of Tang. Back and Fnd. C.L. Geom. Pnts. ahead)

SC Sta. 894+13.577 (UsFt) = SUR SC Sta. 272+53.313m. vs. Plan 272+53.312m.
 "Not Found"

POC Sta. 897+94.810 (UsFt)
Pnt.# GT651 Found Cut "X" H.C. 673 ref. to Intersection Pnt. @ 0.137 Rt. of SUR C.L. Align.

(cont.)

PI #209 Sta 903+38+070 (UsFt) = SUR PI #209 Sta. 275+35.099m. vs. Plan 275+36.879m.
 (Tangent Int. from "Best Fit" existing Pavement back, and Found C.L. Geom. Points ahead)

CS Sta. 912+41.262 (UsFt) = SUR CS Sta. 278+10.392m. vs. Plan 278+10.041m.
Pnt.# GT652 Found 1/2" (#4) Rebar at -14in Deep, located STA. **912+40.440 @ 0.303' Rt.**

ST Sta. 915+43.101 (UsFt) = SUR ST Sta. 279+02.393m. vs. Plan 279+02.041m.
Pnt.# GT653 Found 1/2" (#4) Rebar at -7in Deep, located STA. **915+42.58 @ 0.00' Lt/Rt.**

TS Sta. 942+12.168 (UsFt) = SUR TS Sta. 287+15.926m. vs. Plan 287+15.827m.
Pnt.# GT654 Found 1/2" (#4) Rebar at -13in Deep, at E.O.P for SUR. C.L. Sta. HELD

ST Sta. 945+14.004 (UsFt) = SUR ST Sta. 288+07.923m. vs. Plan 288+07.827m.
 (Calculated from Tang. back holding Ls=92.00m. and Yo(offset)=1.41m. per hist. plans)

Point List of C.L. SUR Geom. found to construct separate SURML151 defined Alignment:

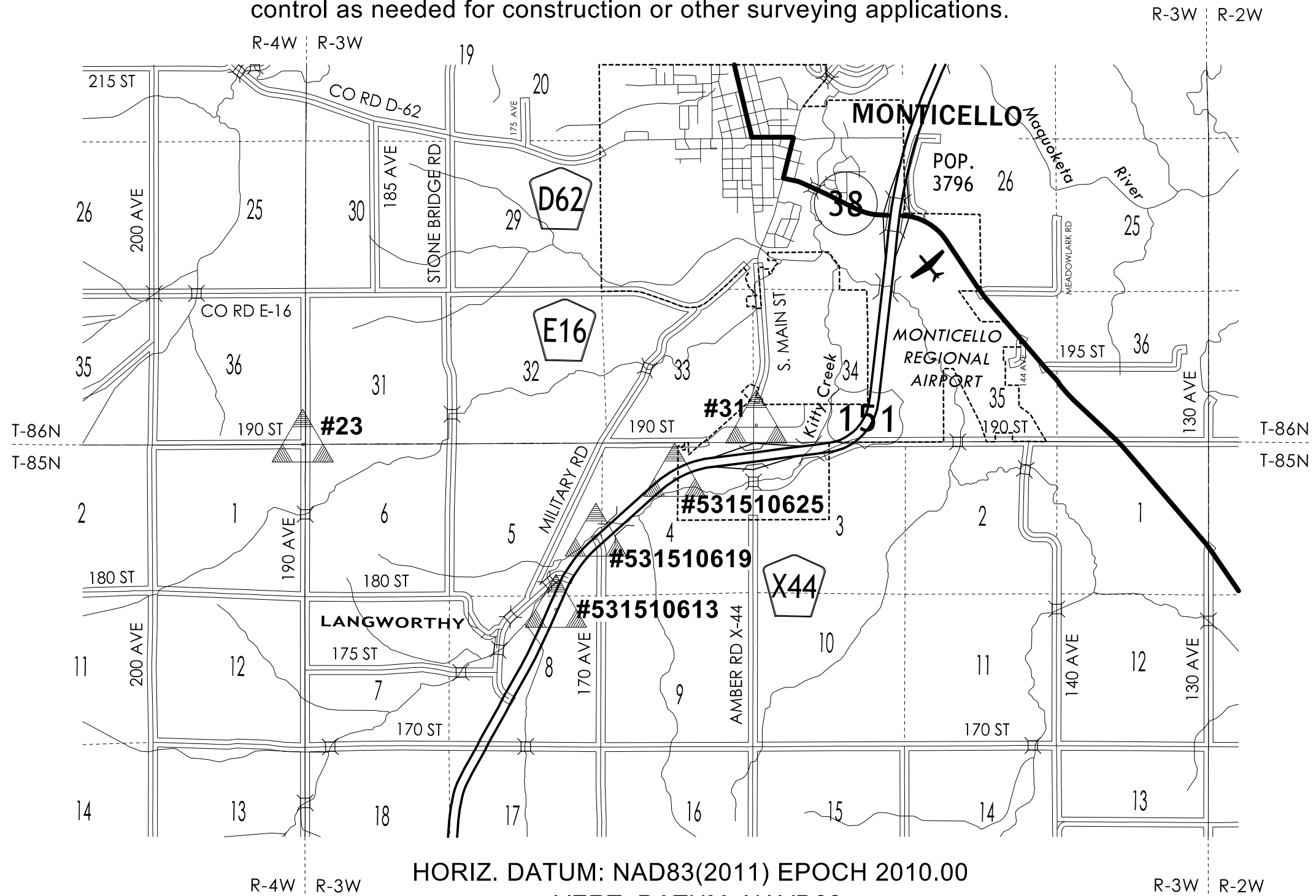
Point Name	Northing	Easting	Elevation	Feature Definition
GT650	8131846.634	20622461.471	858.771	TS
GT651	8132459.884	20622760.668	858.696	POC
GT652	8133592.569	20623650.455	849.093	CS
GT653	8133795.974	20623873.842	849.729	ST
GT654	8135570.914	20625867.890	843.937	TS

Utility Information

Refer to separate Index file Utility Report **Utility Report-06150024.docx** for complete project Utility locate details. For Iowa One Call logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the **PrelimSurvey** project directory, per:
<pw:\projectwise.dot.int.lan:PWMMain\Documents\Projects\5315101019\PrelimSurvey\0970\Utility\Info\Iowa One Call>

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 10

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 10
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Feature Code / Description
531510613	8131347.013	20622349.634	863.474	CP CP1_SW Merged 2 OBS at FND IaDOT Ref Pt Mon 3.5in Bronze Disk along NBL US Hwy. 151 at 103.2ft E/NE of Refl. Delin. mm 61.3 near Top of SE Foreslope flush with ground loc. 0.6ft South of Ref. Pt. Sign U-Post; at 26.2ft South of Granular Shldr.; at 60.8ft SE of PCC Joint w/South Edge EBL aligned w/Median U-Turn; and 125.6ft NE of Top RCP FES End
531510619	8133839.882	20623750.728	848.448	FENO CP2_FENO AVG of 2 OBS being SET 1m. L. FENO Mon. w/2in Bronze Cap stamped "151 0619" at -4in deep loc. along US Hwy. 151 at mm 61.9 on North side at Intersection with 170th Ave.; at 60.2ft NE of N. End. RCP FES; at 42.8ft N. of Rd. (One Way) Sign; and 60.7ft West of Rd. (Names) Sign
531510625	8135937.913	20626508.582	842.052	CP CP3_NE Merged 2 OBS at FND. IaDOT Ref Pt Mon 3.5in Bronze Disk along NBL US Hwy. 151 near mm 62.5 along S.E. Foreslope flush with ground at 39.8ft SE of South Edge PCC; at 72.7ft NW of ROW Fence.; at 105.9ft W/NW of ROW Cor. Post (Bend); and 38.8ft NE of South I-Beam
23	8137140.350	20613474.900	907.997	CP CCP 1 OBS on FND. Jones County GPS CP Mon. stamped "2004-023" being 5/8in. Alum. Rod Mon. (Assumed 6ft L.) w/2.5in Dia. Alum. Cap under NGS style Access Cover. Loc. NW Cor. Int. of 190th Ave. and 190h St. at 27.0ft N. of CL 190th St.; at 5.5ft West of CL P.P.; at 3.3ft W/SW of Metal Cor. Post; and 96.9ft W. of C.L. 190th Ave
31	8137808.743	20629370.483	829.855	CP CCP 1 OBS on FND. Jones County GPS CP Mon. stamped "2004-031" being 5/8in. Alum. Rod Mon. (Assumed 6ft L.) w/2.5in Dia. Alum. Cap under NGS style Access Cover. Loc. NE Cor. Int. of Amber Rd. and Welter Dr. at 87.8ft N. of CL Jnt. Welter Dr.; and 39.2ft South of C.L. P.P.; at 57.4ft NW of WV N. of HYD.; and 24.6 E/NE of N. end RCP FES

NOTE:

The first two digits in the control point name refer to the county number.
The next 3 digits refer to the highway number.
The next 3 digits refer to the highway milepost.
The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SC			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	ML151																		
3	ML151				80437.270 R1	8124043.06	20618784.69	78282.804 R1	8121893.08	20618658.84	78918.726 R1	8122529.00	20618659.06	79553.927 R1	8123162.74	20618711.64	80739.108 R1	8124343.42	20618814.25
4	ML151							80739.108 R1	8124343.42	20618814.25	81278.244 R1	8124878.09	20618883.49	81807.828 R1	8125362.48	20619120.19			
5	ML151				81807.828 R1	8125362.48	20619120.19				81908.461 R1	8125452.90	20619164.37				82109.665 R1	8125629.46	20619260.95
7	ML151	85994.919 R1	8129038.10	20621125.45															
8	ML151							86409.665 R1	8129401.97	20621324.48	87146.565 R1	8130048.47	20621678.11	87882.475 R1	8130724.08	20621972.35			
10	ML151				89106.657 R1	8131846.44	20622461.16				89307.893 R1	8132030.94	20622541.51				89408.496 R1	8132121.91	20622584.50
11	ML151							89408.496 R1	8132121.91	20622584.50	90332.989 R1	8132957.79	20622979.46	91236.181 R1	8133593.35	20623650.84			
12	ML151				91236.181 R1	8133593.35	20623650.84				91336.803 R1	8133662.53	20623723.91				91538.020 R1	8133796.32	20623874.23
14	ML151				94207.086 R1	8135570.92	20625867.90				94408.333 R1	8135704.73	20626018.22				94508.923 R1	8135768.11	20626096.38
15	ML151							94508.923 R1	8135768.11	20626096.38	95357.503 R1	8136302.57	20626755.50	96169.688 R1	8136450.42	20627591.11			
16	ML151				96169.688 R1	8136450.42	20627591.11				96270.320 R1	8136467.95	20627690.20				96471.525 R1	8136493.87	20627889.77
18	ML151				100363.894 R1	8136995.09	20631749.73				100565.190 R1	8137021.01	20631949.35				100665.731 R1	8137042.12	20632047.79
19	ML151							100665.731 R1	8137042.12	20632047.79	101875.069 R1	8137295.72	20633230.24	102804.812 R1	8138482.08	20633464.87			
20	ML151				102804.812 R1	8138482.08	20633464.87				102905.490 R1	8138580.84	20633484.40				103106.650 R1	8138780.85	20633507.12
21	ML151	106173.550 R1	8141828.15	20633853.29															

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	ML151																			
C2	ML151	23°56'06.3"	02°38'08.2"	301.837	846.575	74.075	301.773	4.627	201.247	100.633	04°43'23.2"	635.921	1271.123	15419.948	13.107					
C3	ML151										18°39'49.9"	539.136	1068.720	3280.840	44.003					
C4	ML151	24°47'34.9"	01°45'25.5"	301.839	1232.778	118.266	301.810	3.085	201.236	100.622	05°08'39.0"	736.900	1472.809	16404.167	16.543					
C5	ML151	34°16'27.8"	02°38'08.2"	301.837	1162.915	153.641	301.773	4.627	201.247	100.633	21°16'43.9"	924.493	1827.685	4921.250	86.084					
C6	ML151	76°07'14.6"	04°42'23.2"	301.837	1591.054	498.805	301.634	8.261	201.296	100.677	29°00'11.5"	848.580	1660.765	3280.840	107.965					
											66°42'28.2"	1209.338	2139.081	1837.270	362.289					

**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

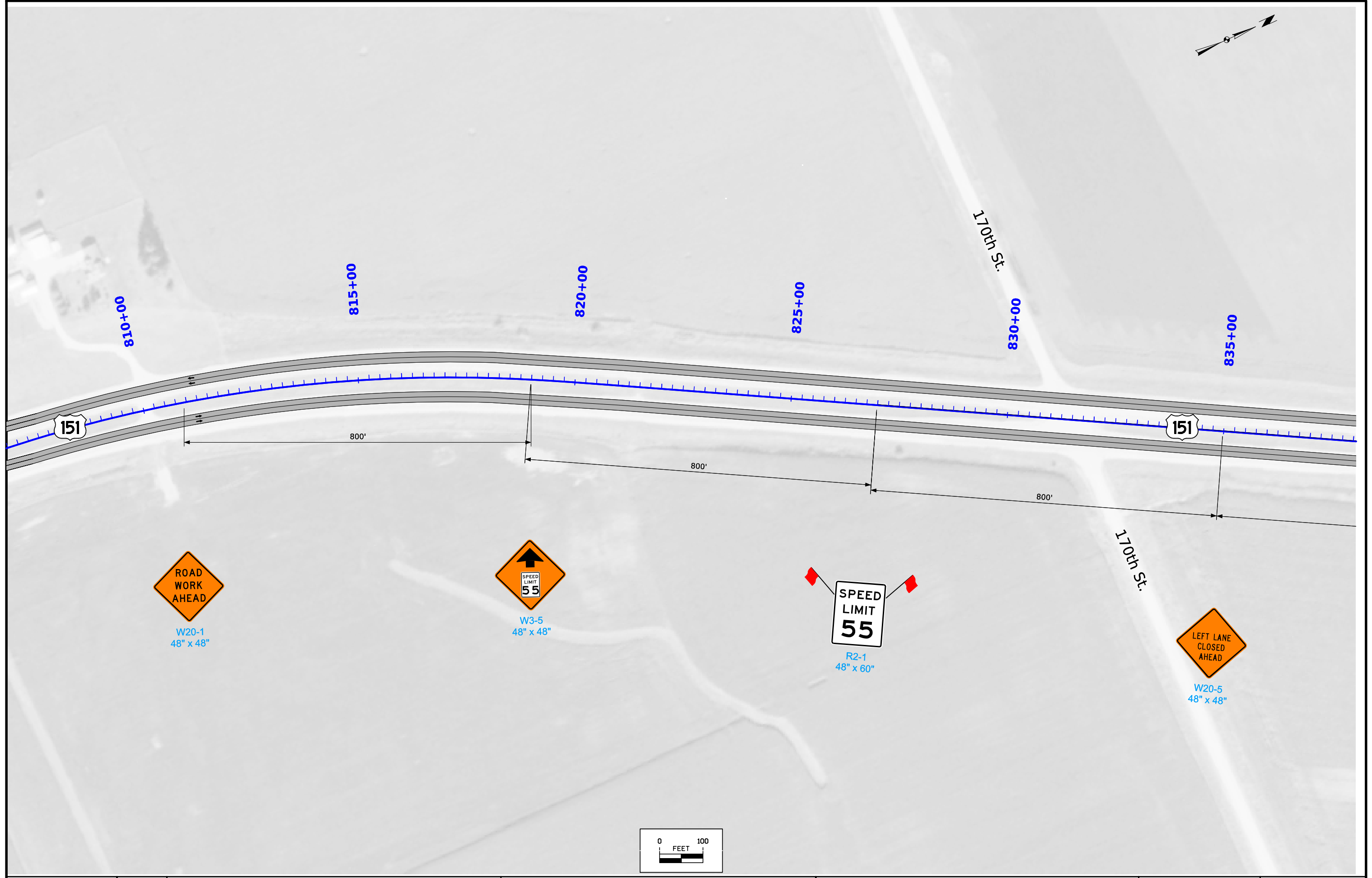
**PLAN VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

	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		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)



W20-1
48" x 48"



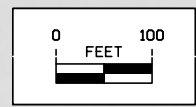
W3-5
48" x 48"

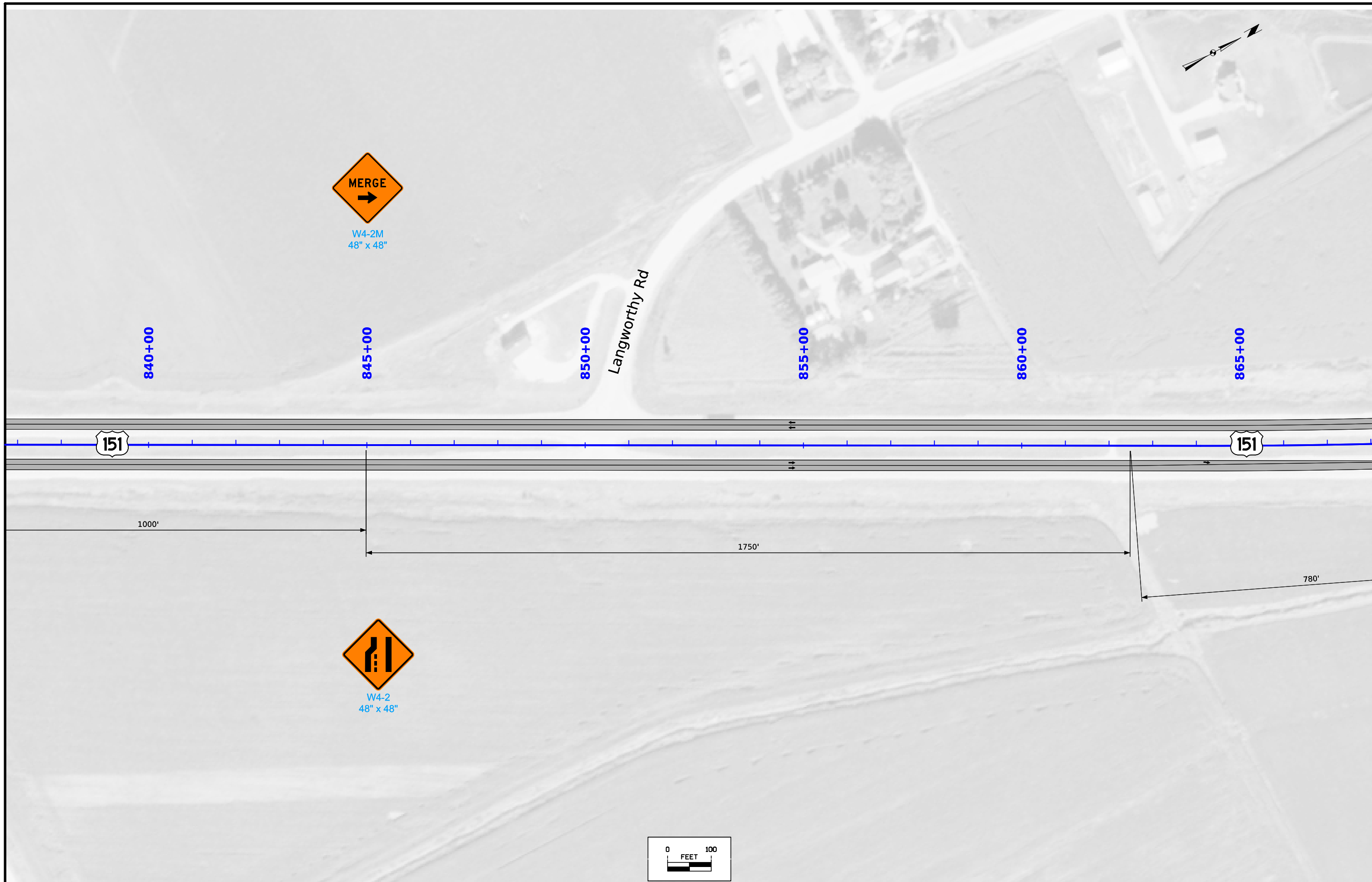


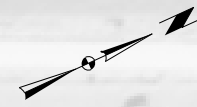
R2-1
48" x 60"



W20-5
48" x 48"







SPEED
LIMIT
65

R2-1
48" x 60"

END
ROAD WORK

G20-2A
48" x 24"

870+00

875+00

880+00

885+00

890+00

895+00

R3-7
30" x 30"

Langworthy Rd

151

151

STA 880+30.00

100'

R3-2
36" x 36"

500'

500'

115'

SPEED
LIMIT
55

R2-1
48" x 60"

TWO WAY TRAFFIC
NEXT **X** MILES

G20_21
144" x 42"

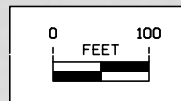
G20_21A
14" x 14"

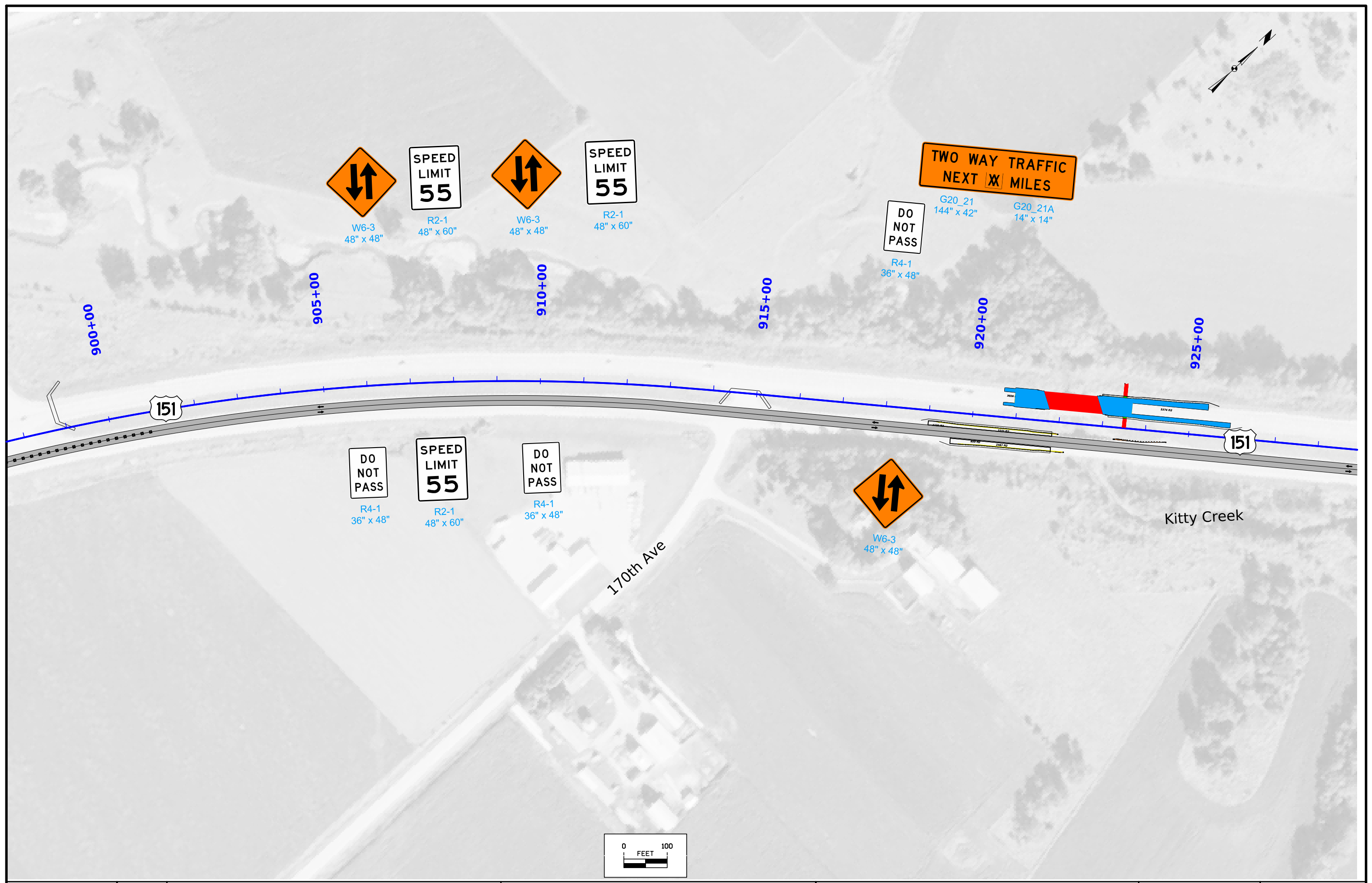
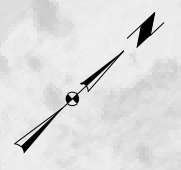


W6-3
48" x 48"



W1-4R
48" x 48"





W6-3
48" x 48"



R2-1
48" x 60"



W6-3
48" x 48"



R2-1
48" x 60"



G20_21
144" x 42"

G20_21A
14" x 14"



R4-1
36" x 48"



R4-1
36" x 48"



R2-1
48" x 60"



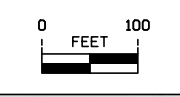
R4-1
36" x 48"



W6-3
48" x 48"

170th Ave

Kitty Creek





W6-3
48" x 48"



W1-4L
48" x 48"



R2-1
48" x 60"



151

151

DO
NOT
PASS

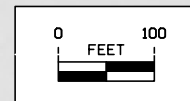
R4-1
36" x 48"

END
ROAD WORK

G20-2A
48" x 24"

SPEED
LIMIT
65

R2-1
48" x 60"



STA 935+27.00

930+00

935+00

940+00

500'

945+00

500'

950+00

955+00





Control Point 531510619: 8133839.882 N, 20623750.728 E, FENO mon. w/2in bronze cap stamped "151 0619" at 4 in deep loc. along US Hwy 151 at MM 61.9 on north side of intersection with 170th Ave., Elev. = 848.448

Hydraulic Data

RIDB: KittyC_Jones_4.93
 Drainage Area = 14.4 Sq. Mi.
 Stream Slope (HGL) = 11.62 Ft./Mi.
 Avg. Low Water Stage = 835.74

Q₅₀ = 3030 cfs
 Stage = 846.16
 Channel Low Beam = 844.47
 Avg. Bridge Velocity = 2.52 fps

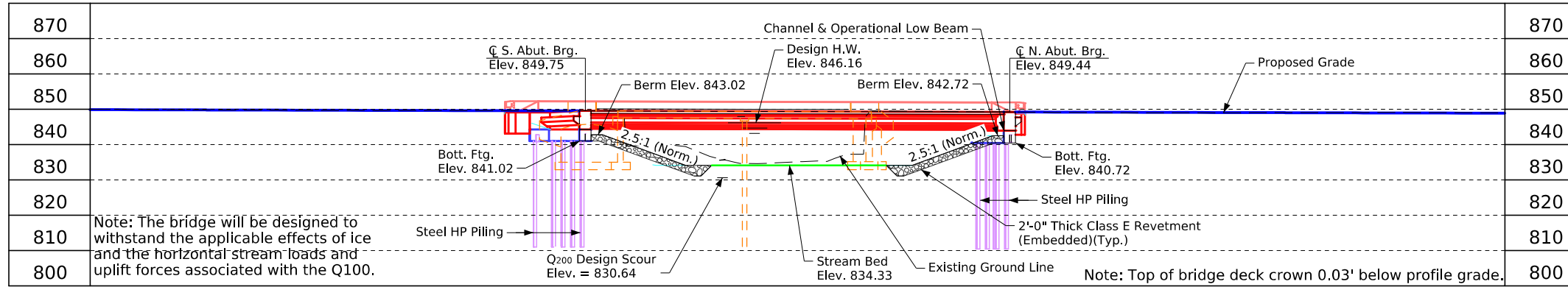
Q₁₀₀ = 3610 cfs
 Stage = 846.89
 Backwater = 0.03 Ft.
 Avg. Bridge Velocity = 2.82 fps

Q₂₀₀ = 4210 cfs
 Stage = 847.58
 Calculated Design Scour = 830.64

Q₅₀₀ = 5040 cfs
 Stage = 848.47
 Avg. Bridge Velocity = 3.46 fps
 Calculated Check Scour = 826.09

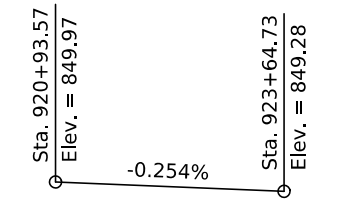
Roadway Overtop 849.28
 Sta. 923+64.73

Extreme HW Stage = Unknown
 Date = Unknown



This design is for the replacement of the existing 70' x 30' Continuous Concrete Slab Bridge, Jones Design No. 1559, FHWA No. 32250, Maint. No. 5362.0L151.

BRG TSL Longitudinal Section Along Approach Roadway

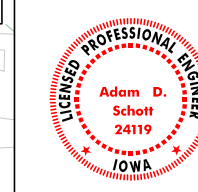


Proposed Profile Grade US 151

Traffic Estimate

2024 AADT	6750 V.P.D.
2044 AADT	9000 V.P.D.
20?? DHV	?? V.P.H.
TRUCKS	12 %
Total Design ESALS	???

Hydraulic Design

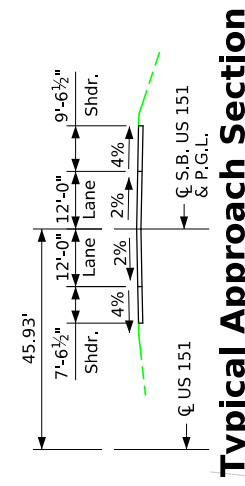
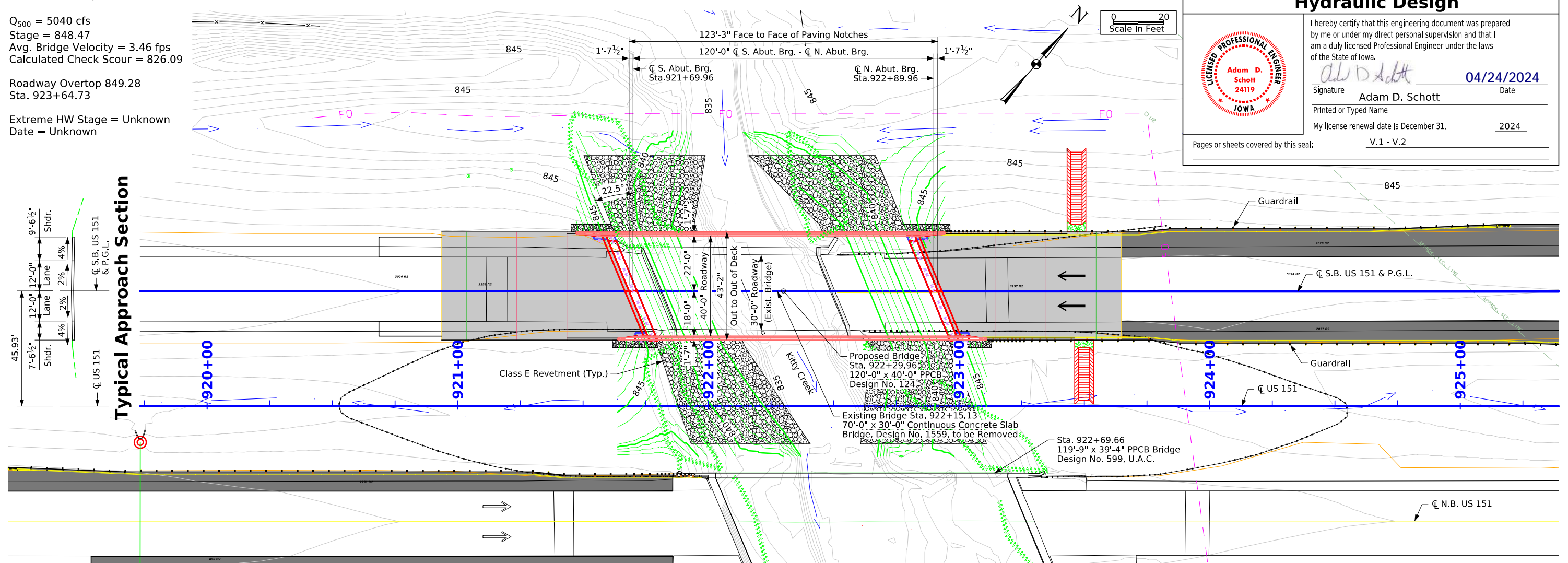


I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

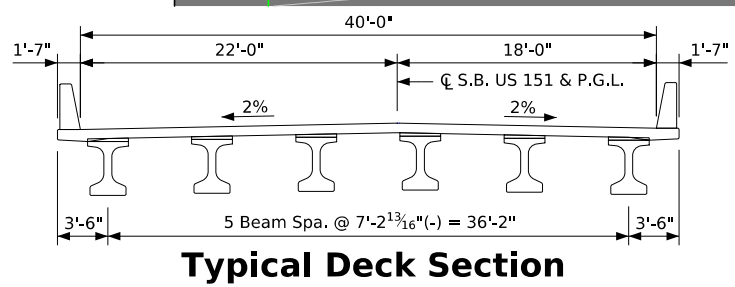
Signature: Adam D. Schott
 Date: 04/24/2024

Printed or Typed Name: Adam D. Schott
 My license renewal date is December 31, 2024

Pages or sheets covered by this seal: V.1 - V.2



Typical Approach Section



Typical Deck Section

- Design Notes:**
1. Work under this design shall include removal of Jones Design No. 1559. Includes removal of substructure units and the removal of the 70' x 30' continuous concrete slab superstructure. Full removal of the south abutment wing footings may be required to avoid conflict with the proposed piles.
 2. TSS TL-4 bridge railing proposed.
 3. Provide vent holes in beams.

Situation Plan

Utilities Note:

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

General Utility Symbols:

FO - Wisconsin Independent Network

Location

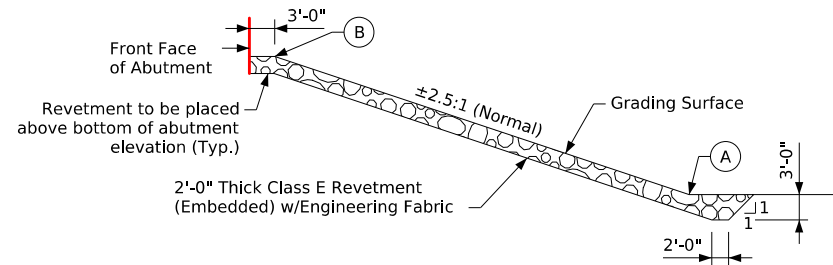
S.B. US 151 over Kitty Creek
 T-85N R-3W
 Section 4
 Wayne Township
 Jones County
 FHWA No. 32251
 Bridge Maint. No. 5362.0L151
 Latitude 42.200923°
 Longitude -91.207725°

Design For 22.5 Degree RA
120'-0" x 40'-0" Prestressed Concrete Beam Bridge
 120'-0" Single Span
Situation Plan
 STA. 922+29.96, 45.93' Lt. (US 151)
 Turn-in Date: April, 2024
Jones County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 124 Design Sheet No. 1 of 3 FHWA No. 32251

Control Point 531510619: 8133839.882 N, 20623750.728 E, FENO mon. w/2in bronze cap stamped "151 0619" at 4 in deep loc. along US Hwy 151 at MM 61.9 on north side of intersection with 170th Ave., Elev. = 848.448

Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Revetment, Remove & Replace (CY)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - South Berm	370	95	5	560	325
Berm Lining - North Berm	385	80	5	555	320
Totals	755	175	10	1115	645

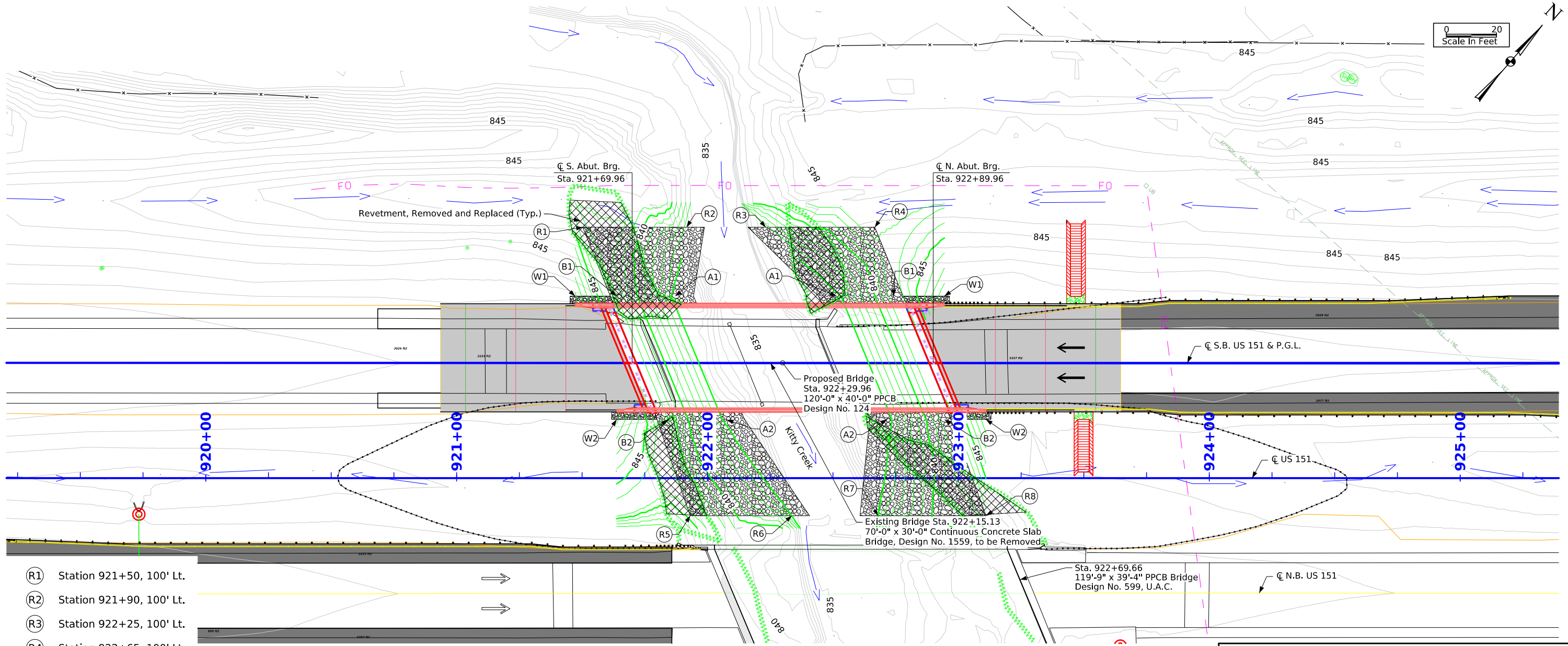


Section Thru Embedded Revetment Berm

Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	921+87.33	72.51' Lt.	834.33	922+51.37	72.51' Lt.	834.33
A2	922+07.70	23.34' Lt.	834.33	922+71.74	23.34' Lt.	834.33
B1	921+63.82	72.51' Lt.	843.02	922+74.08	72.51' Lt.	842.72
B2	921+84.18	23.34' Lt.	843.02	922+94.44	23.34' Lt.	842.72
W1	921+47.35	72.51' Lt.	849.24	922+94.35	72.51' Lt.	848.87
W2	921+63.92	23.34' Lt.	849.28	923+10.92	23.34' Lt.	848.91

Berm slope elevations reflect the grading surface. Offsets are from CL US 151.



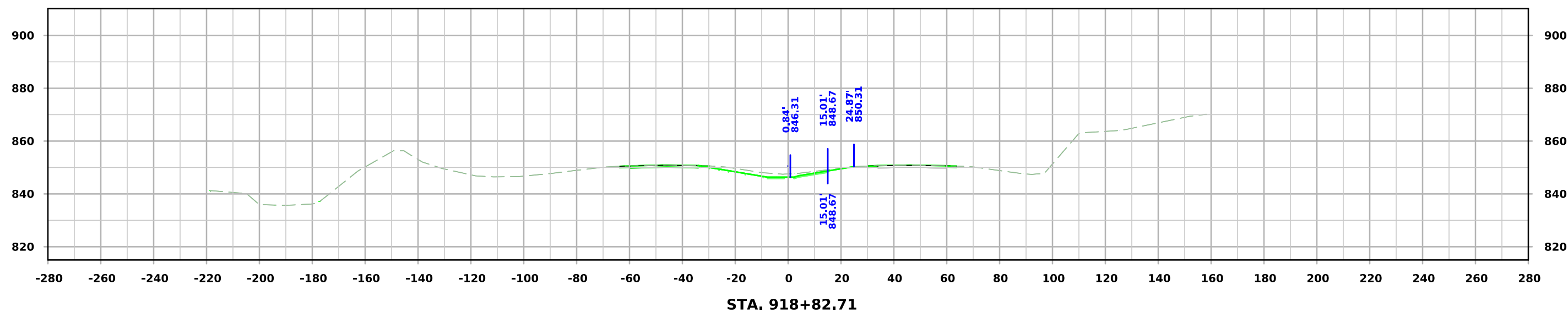
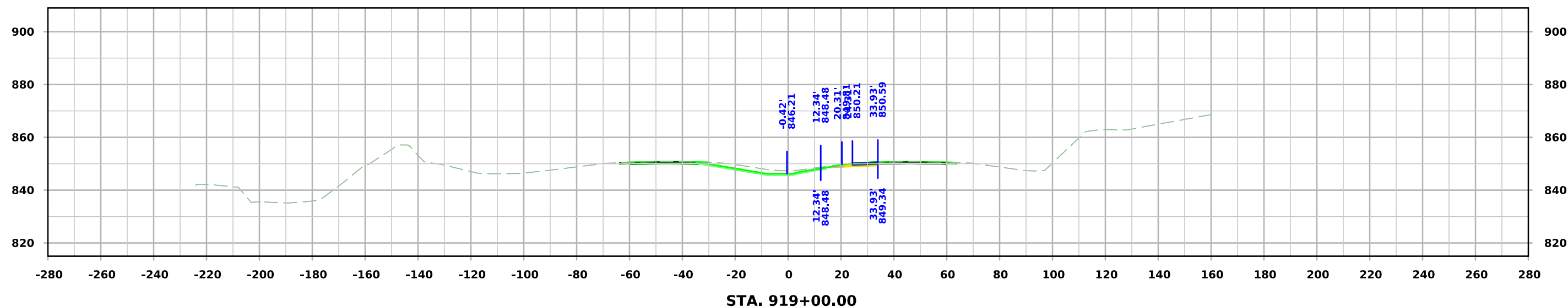
Site Plan

- (R1) Station 921+50, 100' Lt.
- (R2) Station 921+90, 100' Lt.
- (R3) Station 922+25, 100' Lt.
- (R4) Station 922+65, 100' Lt.
- (R5) Station 921+95, 15' Rt.
- (R6) Station 922+35, 15' Rt.
- (R7) Station 922+65, 15' Rt.
- (R8) Station 923+10, 15' Rt.

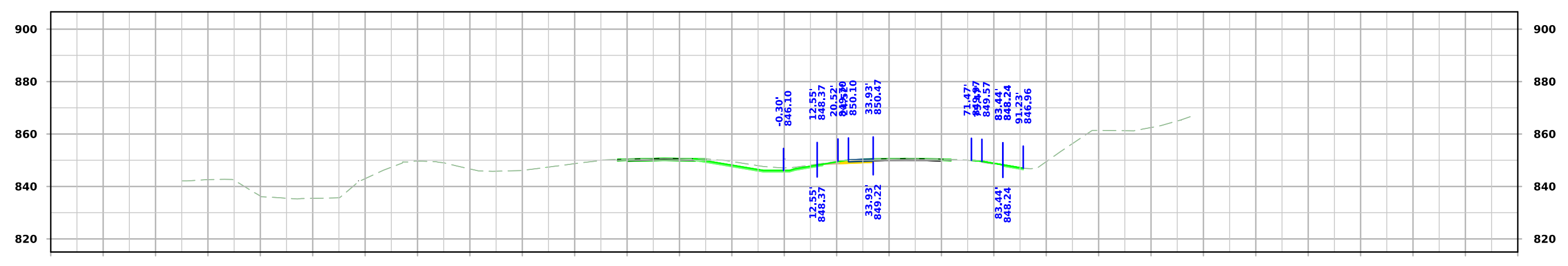
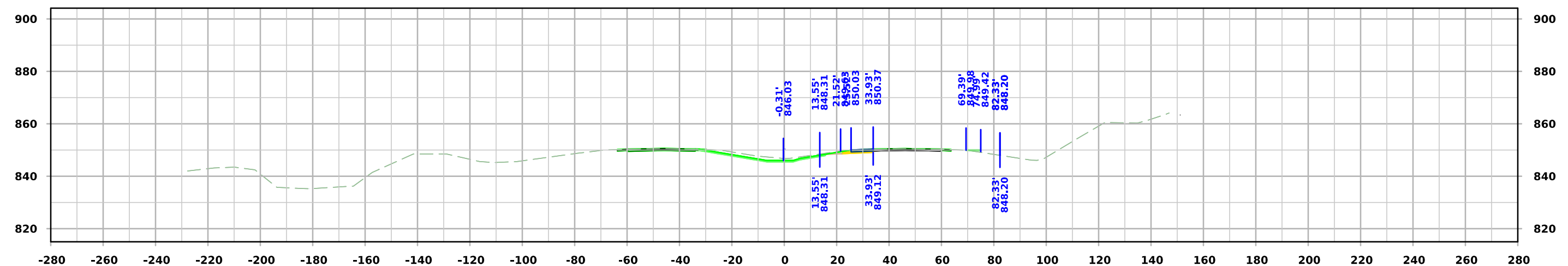
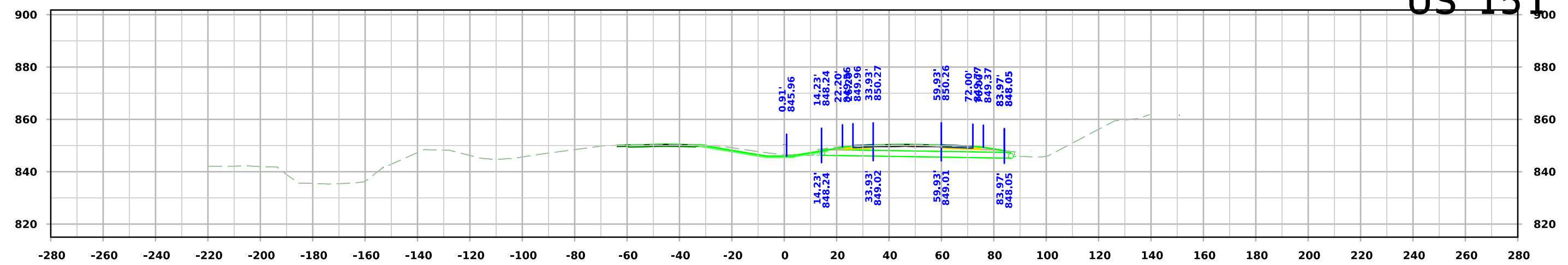
Note: Offsets are from CL US 151

Design For 22.5 Degree RA
120'-0" x 40'-0" Prestressed Concrete Beam Bridge
 120'-0" Single Span
Site Plan
 STA. 922+29.96, 45.93' Lt. (US 151) Turn-in Date: April, 2024
Jones County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 124 Design Sheet No. 2 of 3 FHWA No. 32251

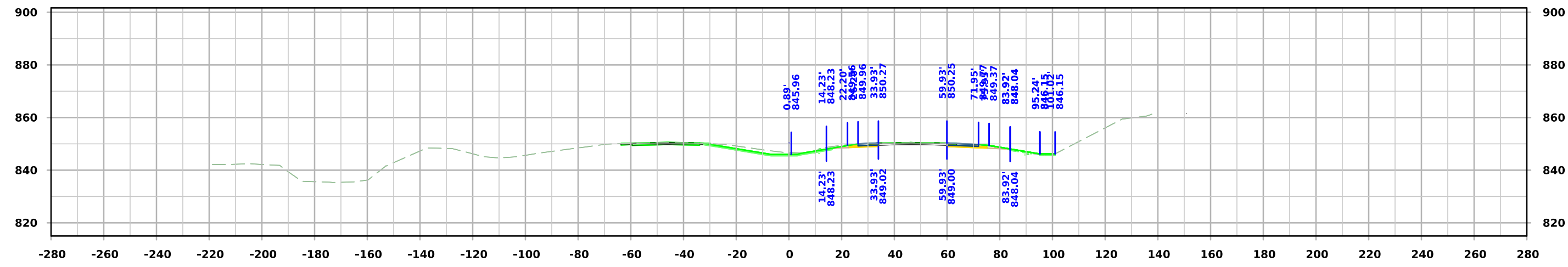
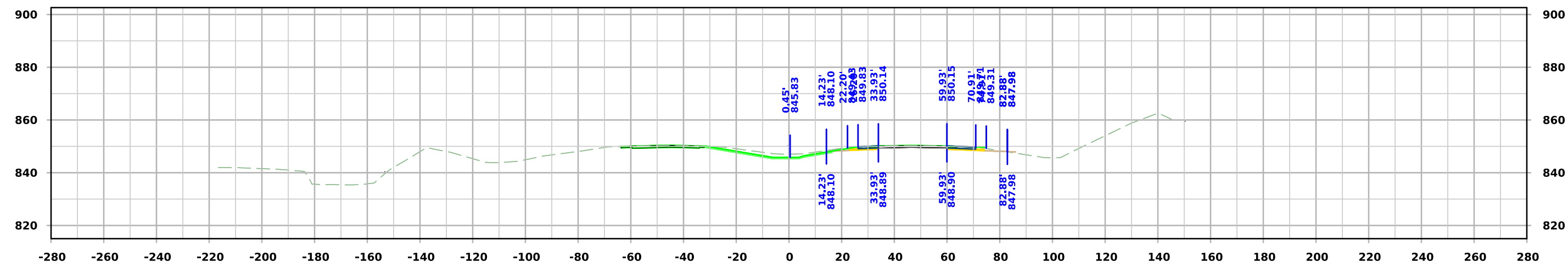
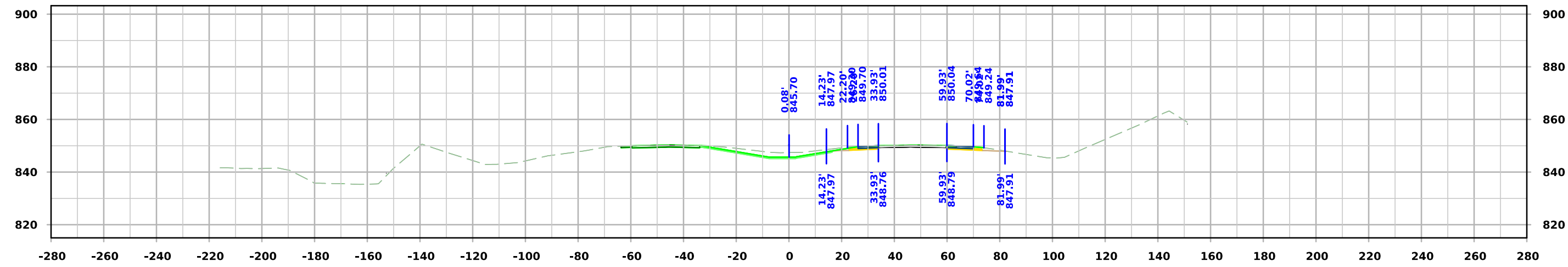
US 151



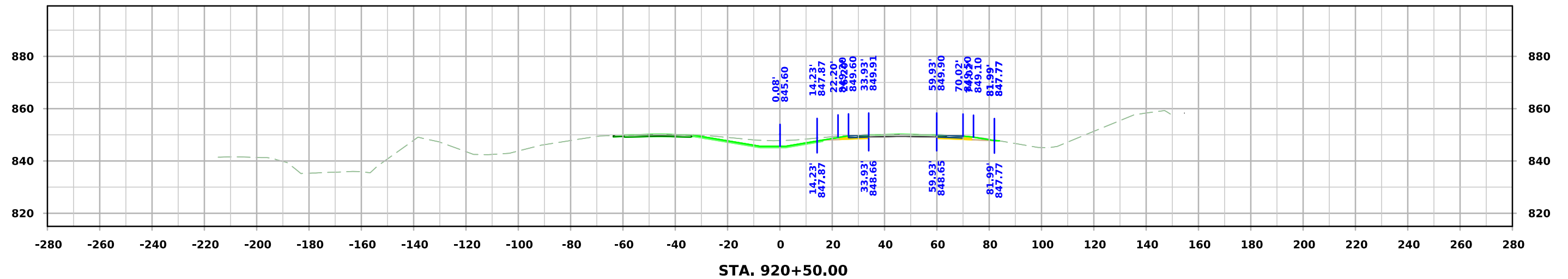
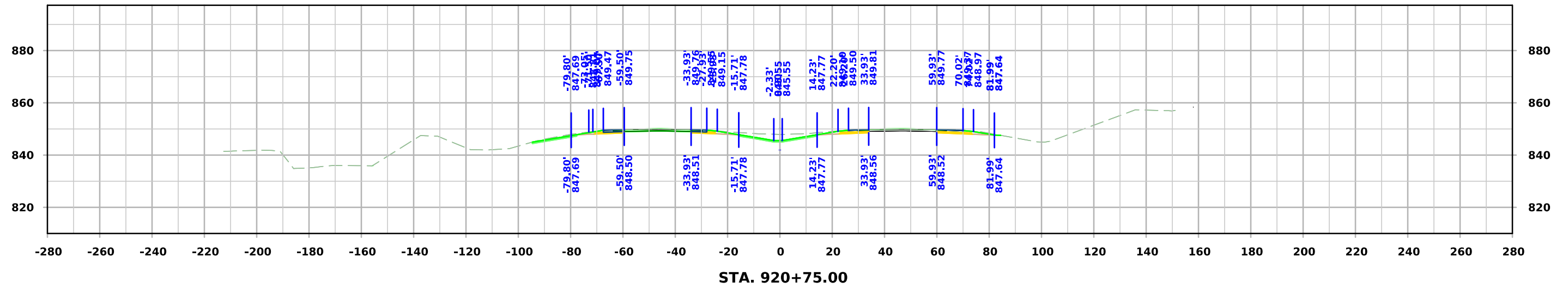
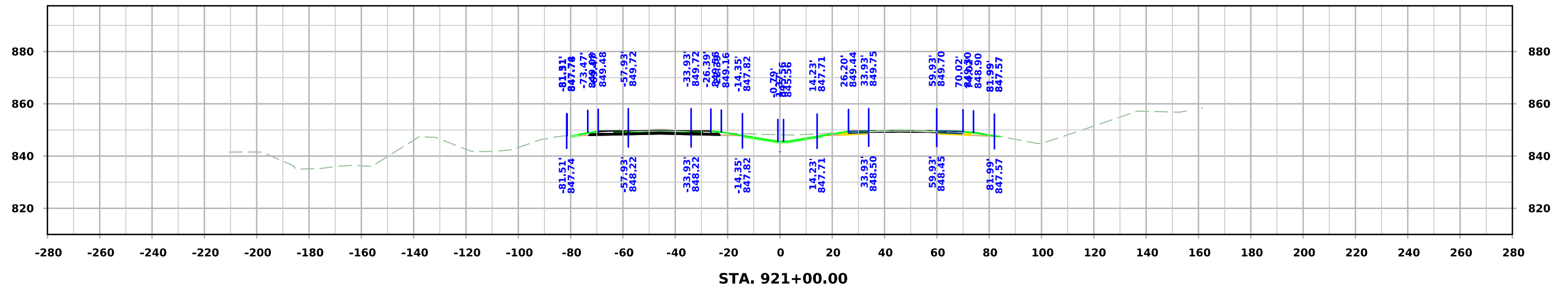
US 151



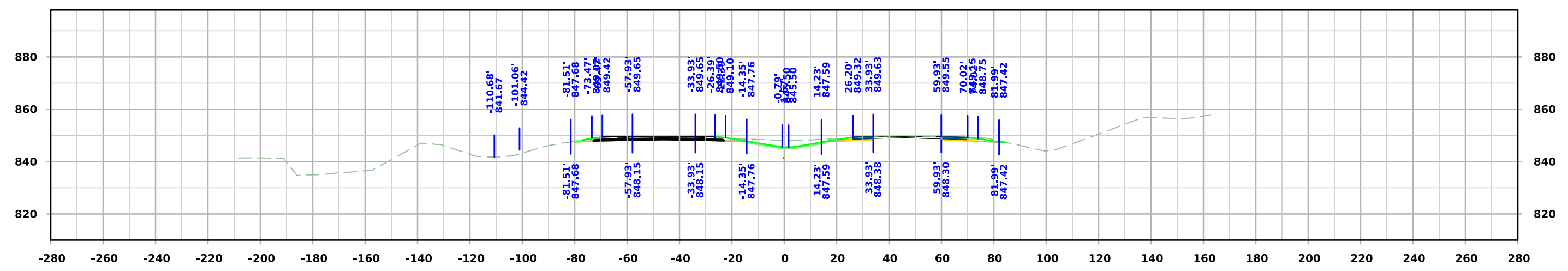
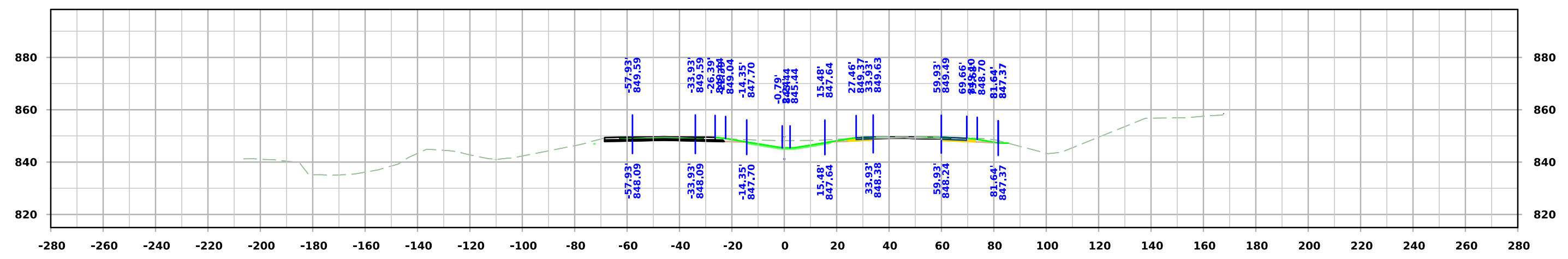
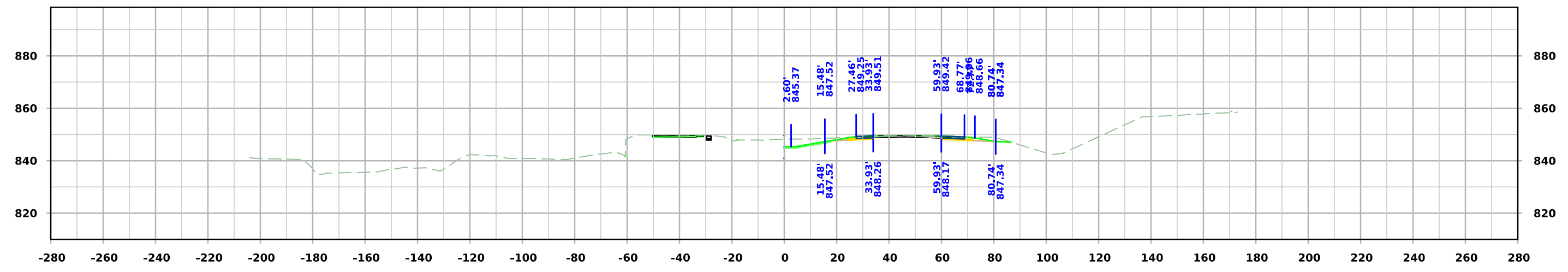
US 151



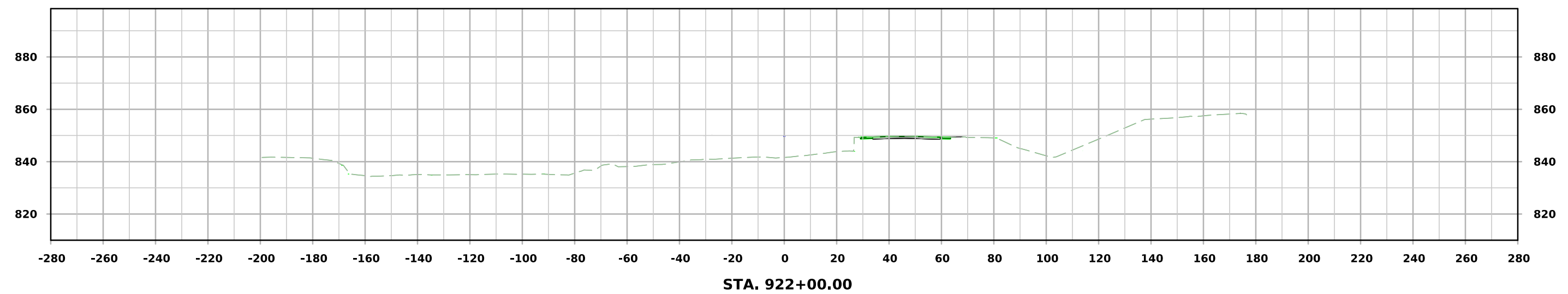
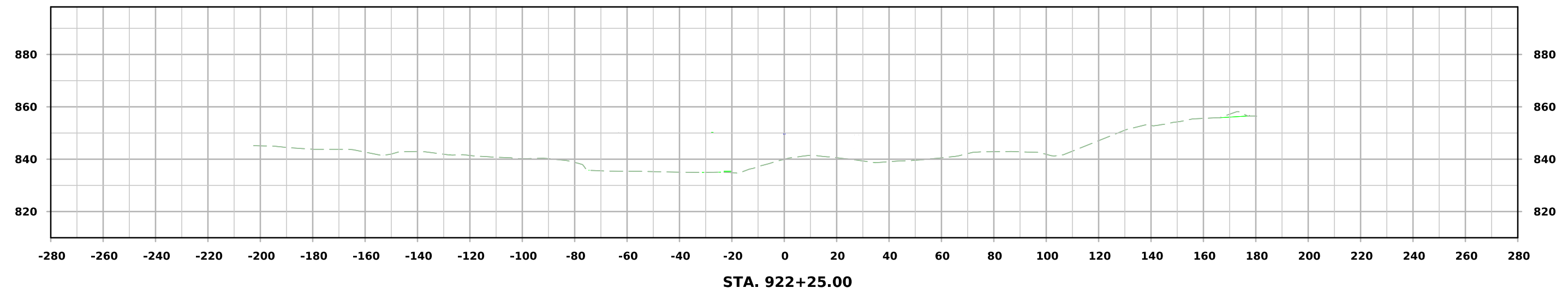
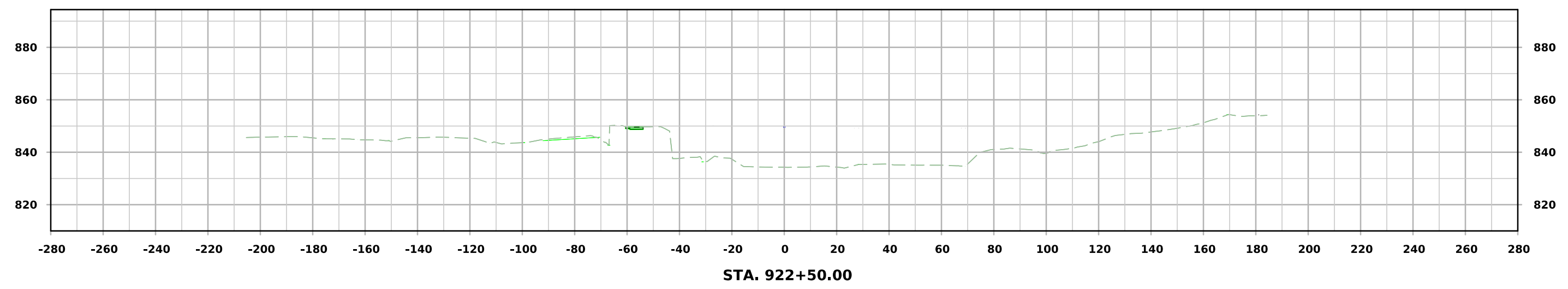
US 151



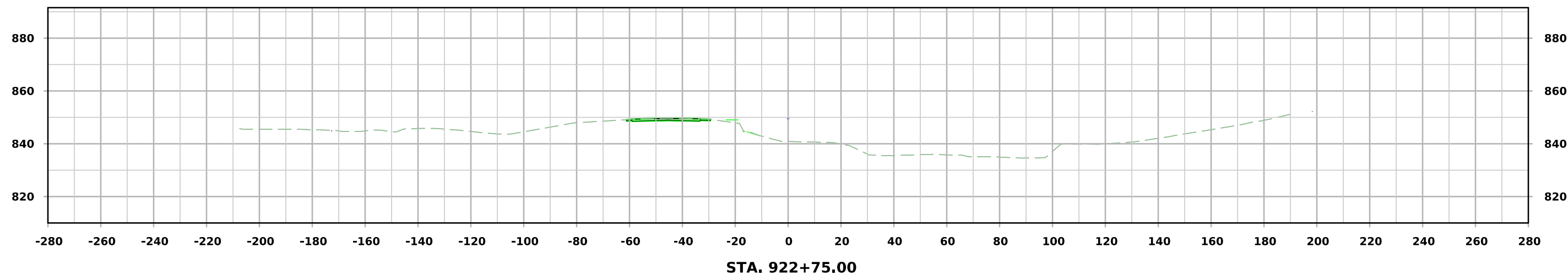
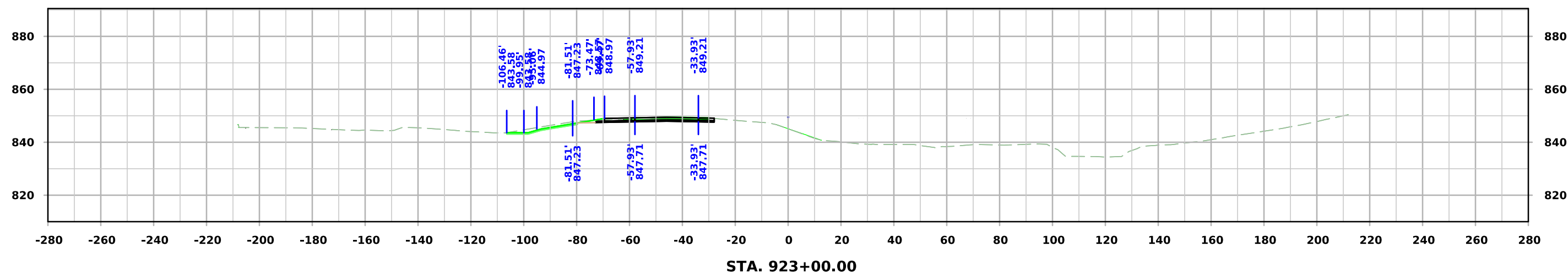
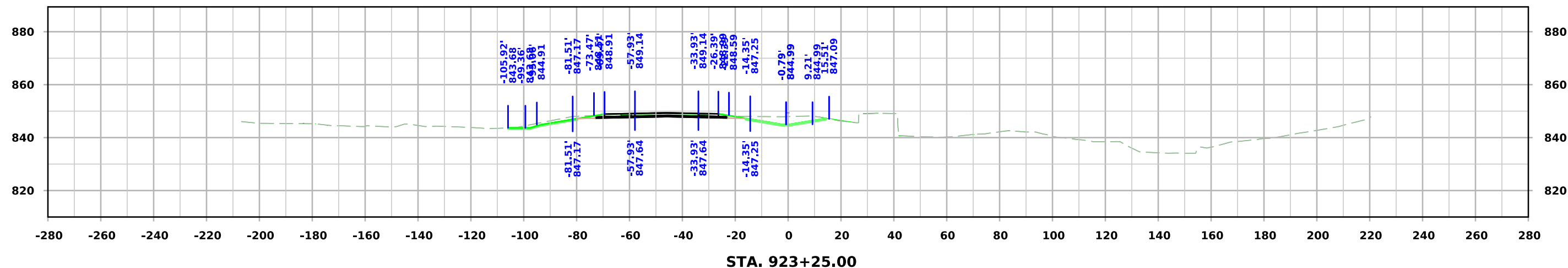
US 151



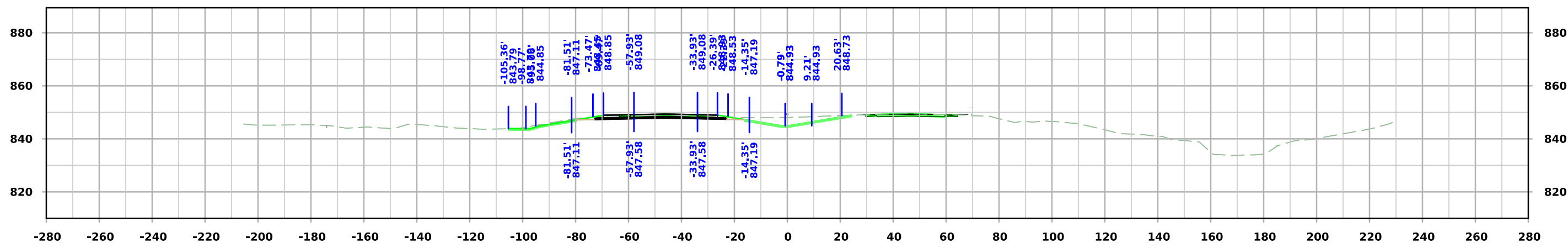
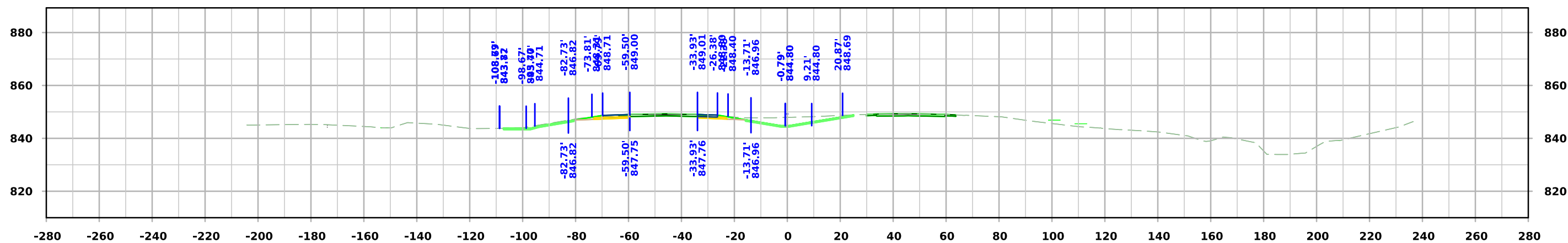
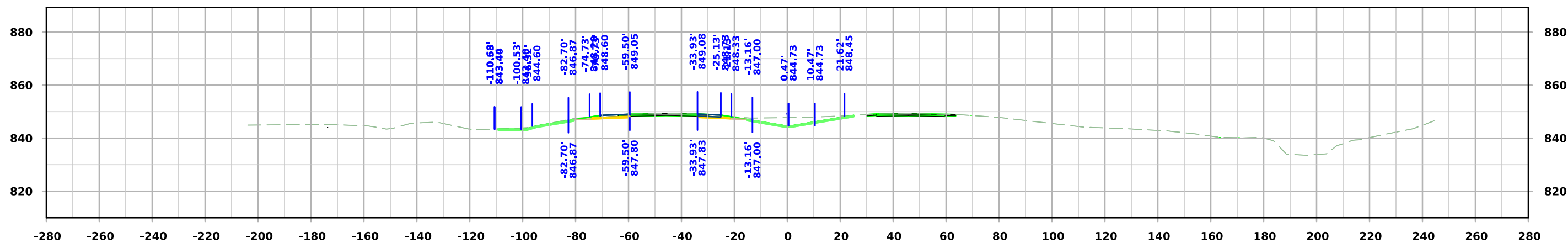
US 151



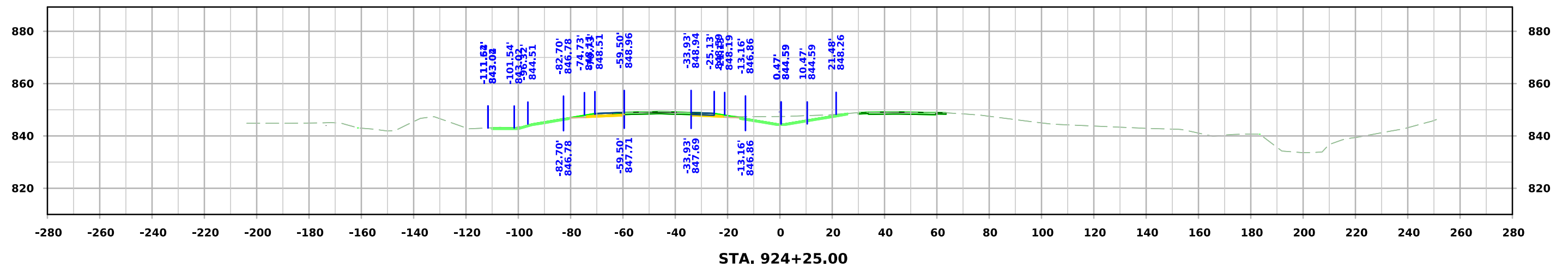
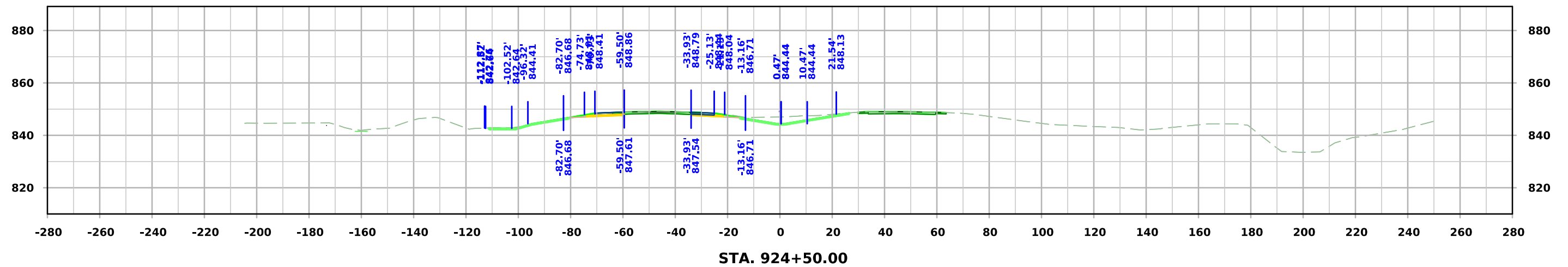
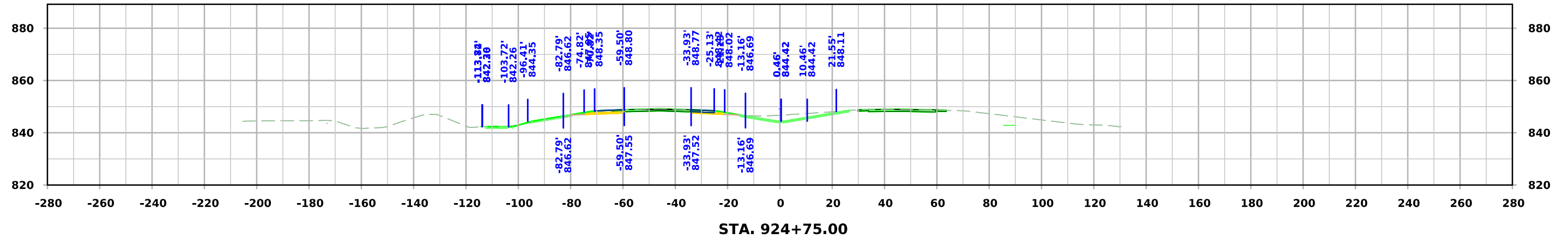
US 151



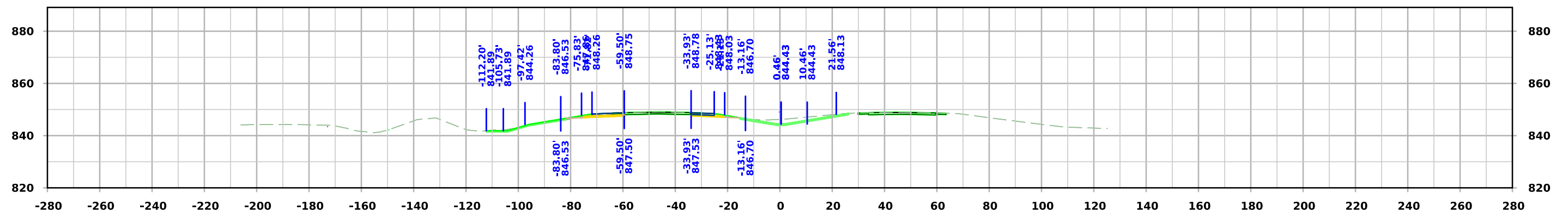
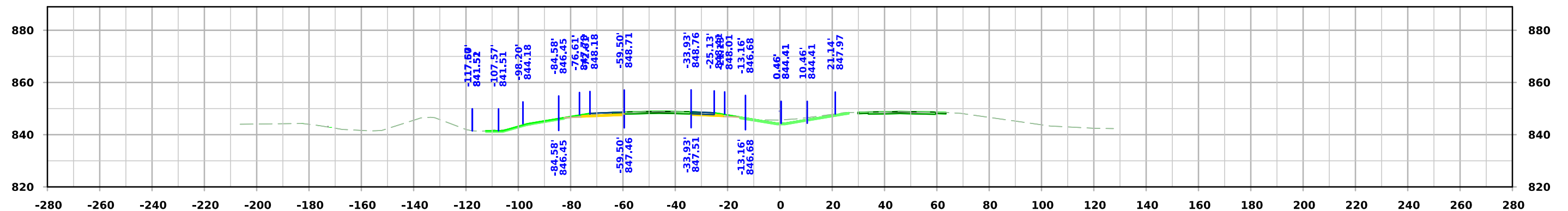
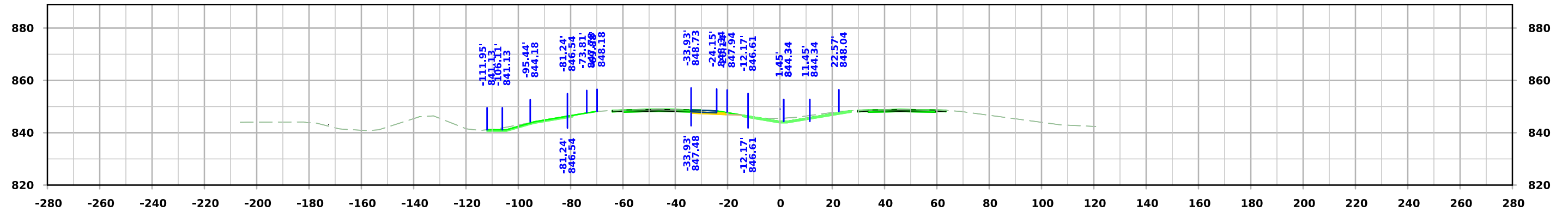
US 151



US 151



US 151



US 151

