

No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 2	Typical Cross Sections and Details
<b>C Sheets</b>	<b>Quantities and General Information</b>
C.1	Estimated Project Quantities and Reference Notes
C.1	Standard Road Plans
C.1	Tabulations (beg. with tab. of incidentals if needed)
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	US 218
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Reference Ties and Bench Marks
* G.2	Reference Ties and Bench Marks
G.3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
J.1	Traffic Control Plan
* J.2	Modified TC-217
<b>R Sheets</b>	<b>Erosion Control Sheets</b>
RC.1 - 3	Est. Quantities, PPP, General Notes and Tabulations
* RR.1	Erosion Control Legend and Symbol Information Sheet
* RR.2 - 3	Drainage Basin and Erosion Control Device Maps
<b>U Sheets</b>	<b>500 Series, Mod.Stds. and Detail Sheets</b>
* U.1	Modified BA-108
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>
* V.1 - 3	Bridge and Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
* W.1	Cross Sections Legend & Symbol Information Sheet
* W.2 - 8	Mainline Cross Sections
	* Color Plan Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**BLACK HAWK COUNTY**  
**Bridge Replacement**  
U.S. 218 bridge over Big Creek Overflow  
0.3 mile north of County Road D48  
in the city of La Porte  
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
32
PROJECT IDENTIFICATION NUMBER
21-07-218-050
PROJECT NUMBER
BRF-218-7(242)--38-07
R.O.W. PROJECT NUMBER

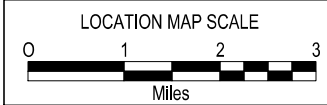
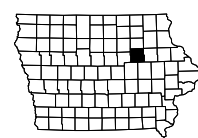
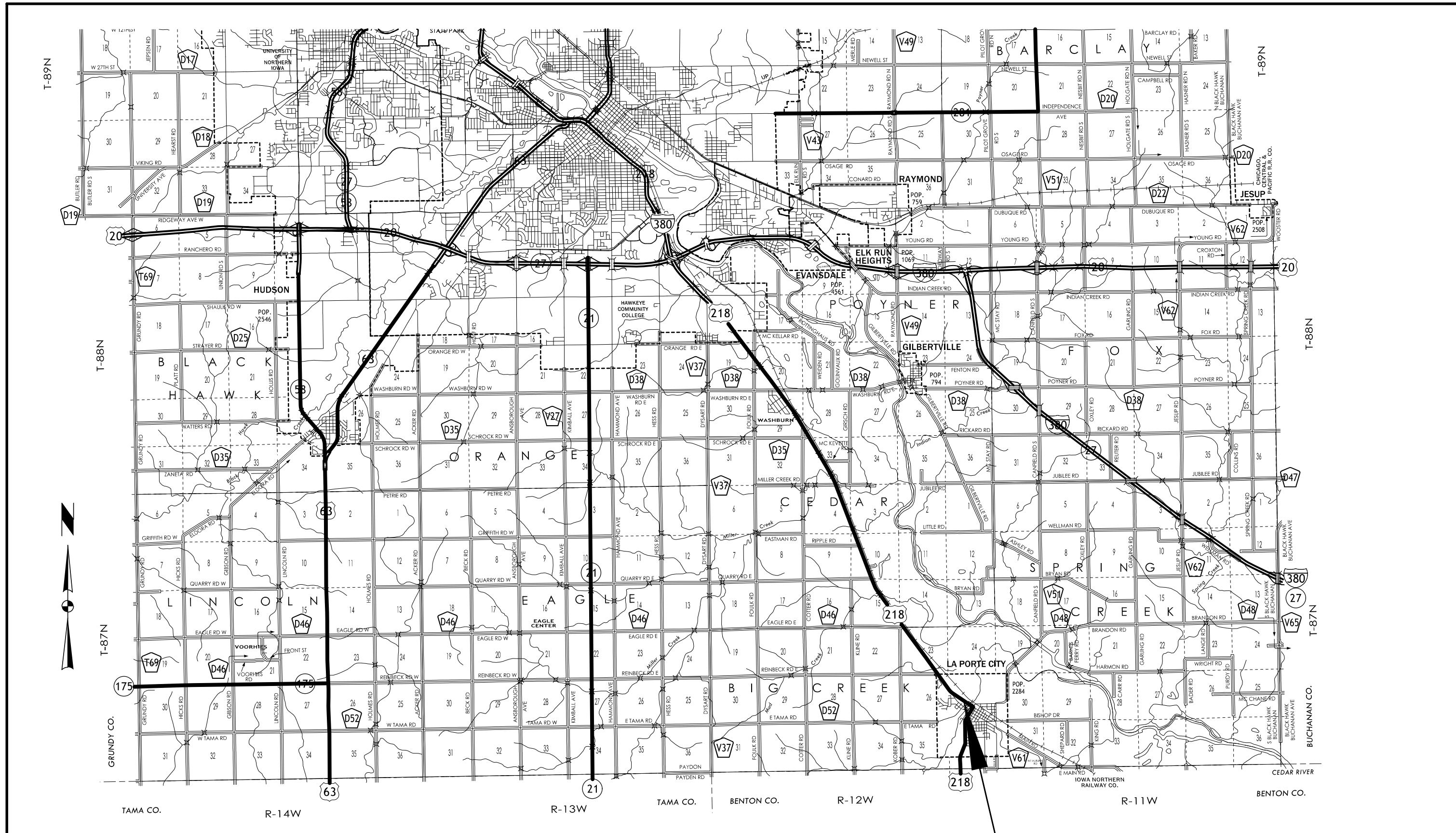
DESIGN DATA URBAN			
20 21	AADT	3,530	V.P.D.
20 45	AADT	3,960	V.P.D.
20 45	DHV	430	V.P.H.
	TRUCKS	7	%
	Total Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
V.1/ V.2	Mark D. Werner	Hydraulics

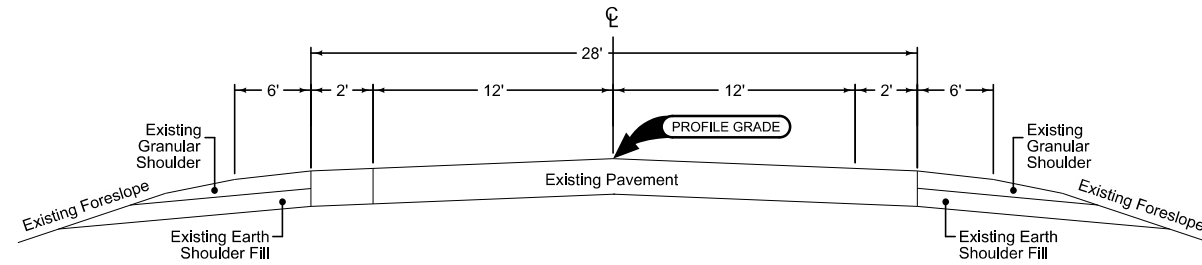
**PRELIMINARY PLANS**

Subject to change by final design.

**D5 PLAN - Date: 11/08/2023**



**US 218 BRIDGE REPLACEMENT**  
**FHWA NO. 14791**  
**MAINT. 0767.3S218**  
**STA. 85+50.00**

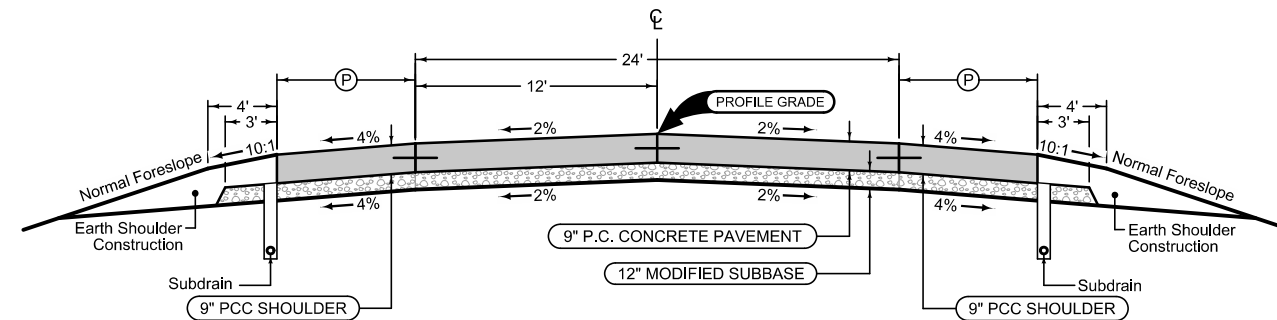


EXISTING US 218

**Full Depth PCC Shoulder**

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

2_P_FullPCC_04-20-21		(P)
STATION TO STATION		Feet
82+91.09	84+22.56	10
86+77.44	87+58.00	10



**Full Depth PCC Shoulder**

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

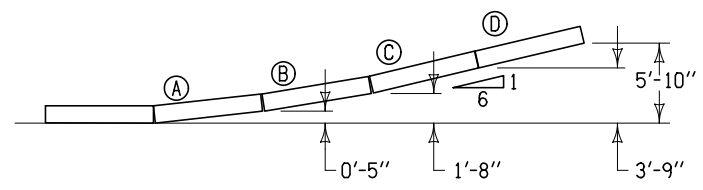
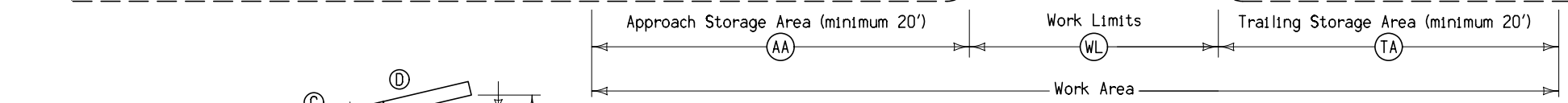
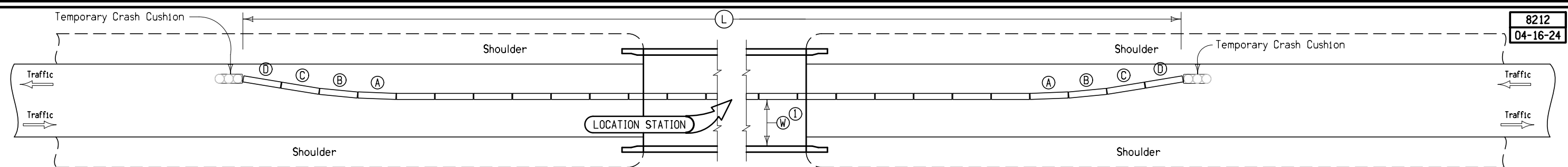
2_P_FullPCC_04-20-21		(P)
STATION TO STATION		Feet
82+91.09	84+22.56	10
86+77.44	87+58.00	10

Refer to Standard Road Plan BR-205  
 for Reinforced Approach Pavement

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

2P_04-21-20	
STATION TO STATION	
82+91.09	84+22.56
86+77.44	87+58.00

US 218



**BARRIER OFFSETS FOR FLARE SECTIONS**

Station	Side	AA	WL	TA	L	Anchored	W <sup>①</sup>	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
85+50.00	RT	22.4	466.9	22.4	611.7	X	12 - 6	Stage 1B
85+50.00	LT	22.4	466.9	22.4	611.7		14 - 2	Stage 2

① Where W is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.

**TEMPORARY CONCRETE BARRIER LAYOUT  
for Two-Way Traffic**



### SURVEY SYMBOLS

	AST, Above Ground Storage Tank		PR, Electric Riser Pole
	BB, Billboard		PRO, Profile Shot
	BBB, Bottom of Bridge Beam		PT, Curve Point
	BCL, Bridge Centerline		REF, Reference Tie Point
	BD, Bridge Deck		RET, Retaining Walls
	BIN, Grain Bin		RIP, Rip-Rap
	BL, Topo Breakline		ROC, Rock Outcropping
	BLD, Building or Foundation		ROW, Right of Way Mark
	BLS, Bridge Low Steel		RR, Centerline of Railroad Tracks
	BM, Bench Mark		RRB, Railroad Signal Box
	BNK, Stream Bank		RRF, Railroad Frog
	BRG, Bridge		RRR, Railroad Rail
	C, Centerline BL of Road -ML or SR		RRS, Railroad Signal
	CAV, Cave		RRW, Railroad Switch
	CEL, Cell Phone Tower		RT, Radio Tower
	CIS, Cistern		S, Soil Sampling Site -Wetlands
	CON, Concrete or A/C Slab		SBR, Size of Bridge
	CP, Control Point		SC, Spiral Point
	CRP, Corporation Line		SCR, Section Corner
	CS, Curve Point		SEP, Septic Tank
	CU, Back of Curb		SF, Silt Fence -Wetlands
	CUL, Culvert		SG, Staff Gauge -Wetlands
	D, Centerline Draw or Stream -Down		SH, Paved Shoulder
	DAB, Drainage Area Boundary		SHR, Shrub
	DIK, Centerline of Dike or Dam		SI, Sign
	DTM, Photogrammetry Elv Control Check		SL, Speed Limit Sign
	DU, Centerline Draw or Stream -Up		SLN, Section Line
	EB, Electrical Box		SLO, Silo
	EG, Edge of Gravel Road		SNK, Sink Hole
	ENP, Edge Paved Entrance and Park Lot		SNP, Unpaved Shoulder
	ENT, Centerline BL of Entrance		SP, Stream Profile
	ENU, Edge Unpaved Entrance and Parking		STP, Stump
	EP, Edge of Paved Roads -ML or SR		SWK, Sidewalk
	EW, Edge of Water		SWP, Swamp or Marsh
	FCL, Chain Link and Security Fence		TA, Tower Anchor
	FENO, FENO Monument		TBO, Telephone Booth
	FHD, Fire Hydrants		TCB, Traffic Signal Box
	FLG, Flag Poles		TDC, Tree Deciduous
	FP, Filler Pipe		TDL, Traffic Detection Loop
	FW, Wire Fence		TER, Terrace
	FWD, Wood Fence		TEV, Evergreen Tree
	GDC, Guard Rail Cable		TFR, Tree Fruit
	GD, Guard Rail Steel		TGP, Telegraph Pole
	GP, Guard Post -Less Than 4 Posts		TLNL, Tree Line Left
	GPR, Guard Post -4 or More Posts		TLNR, Tree Line Right
	GR, Ground Shot		TOP, Top of Bridge Pier
	GRV, Grave		TPA, Telephone Pole Co. 1
	GU, Gutter In Front of Curb		TPB, Telephone Pole Co. 2
	GV, Gas Valve		TPC, Telephone Pole Co. 3
	HDG, Hedge Row		TR, Telephone Riser Pole
	HS, Hydric Soil -Wetlands		TRL, Trail
	HT, Electrical Highline Tower		TS, Spiral Point
	IN, Storm Sewer Intake		TSB, Telephone Switch Box
	INB, Storm Sewer Beehive Intake		TSG, Traffic Signal
	LC, Lot Corner		TSL, Traffic Signal and Luminare
	LIN, Miscellaneous Line		TV, Satellite TV Dish
	LP, L.P. Tank		TVP, TV Pedestal
	LUM, Luminaire		TW, Top of Water
	MH, Utility Access -Manhole		UB, Utility Box
	MIS, Miscellaneous		UE, Utility Elevation
	MM, Mile Marker Post		UPH, Utility Pot Hole - Quality A
	OUT, Tile Outlet		UST, Underground Tank
	PC, Curve Point		UV, Underground Utility Vault
	PCP, Photo Control Point		VS, Channel Cross Section
	PCT, Photo Control Target		WC, Wild Card -Misc. Field Shot
	PI, Tangent Point		WEL, Well
	PIP, Pipe Culvert		WHD, Water Hydrant
	PL, Location of Photo -Wetlands		WHU, RV Water Hook Up
	PLG, Location of General Photo		WM, Wind Mill
	POC, Curve Point		WND, Wind Turbine
	POST, Spiral Point		WV, Water Valve

### SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CII/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

	FOID, MEDIACOM - Quality D Brian Kadner 845-544-9656 bkadner@mediacomcc.com
	ELID, LA PORTE CITY UTILITIES - Quality D Bill Matthes 319-239-4918 bmatthesutil@lpctel.net
	TLID, LA PORTE CITY TELEPHONE - Quality D David Powell 319-342-3369 lpctel@netins.net
	GLID, BLACK HILLS ENERGY - Quality D Chuck Woods 515-343-2037 chuck.woods@blackhillscorp.com
	FOID, PEOPLESERVICE LA PORTE CITY - Quality D Jordan Cooper 563-568-9135 jcooper@peopleservice.com

### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINework	Design Color No.	Description
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.	Description	
(9)	Temporary Pavement Shading	Lavender
(4)	Proposed Pavement Shading	Yellow
(6)	Proposed Granular Shading	Orange
(70)	Proposed Shoulder Granular Shading	Orange
(68)	Proposed Shoulder Paved Full Depth Shading	Yellow
(132)	Proposed Shoulder Paved Partial Depth Shading	Yellow
(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"	Gray, Dark
(236)	Grading Shading	Brown, Light
(134)	Proposed Granular Entrance Shading	Orange, Light
(220)	Proposed Paved Entrance Shading	Yellow
(8)	Proposed Sidewalk Shading	Tan
(230)	Proposed Sidewalk Landing Shading	Blue, Light
(11)	Proposed Sidewalk Ramp Shading	Pink
(225)	Existing Pavement Shading	Green, Light
(3)	Proposed Structure Shading	Red
(3)	Delineates Restricted Areas	Red

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINework	Design Color No.	Description
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

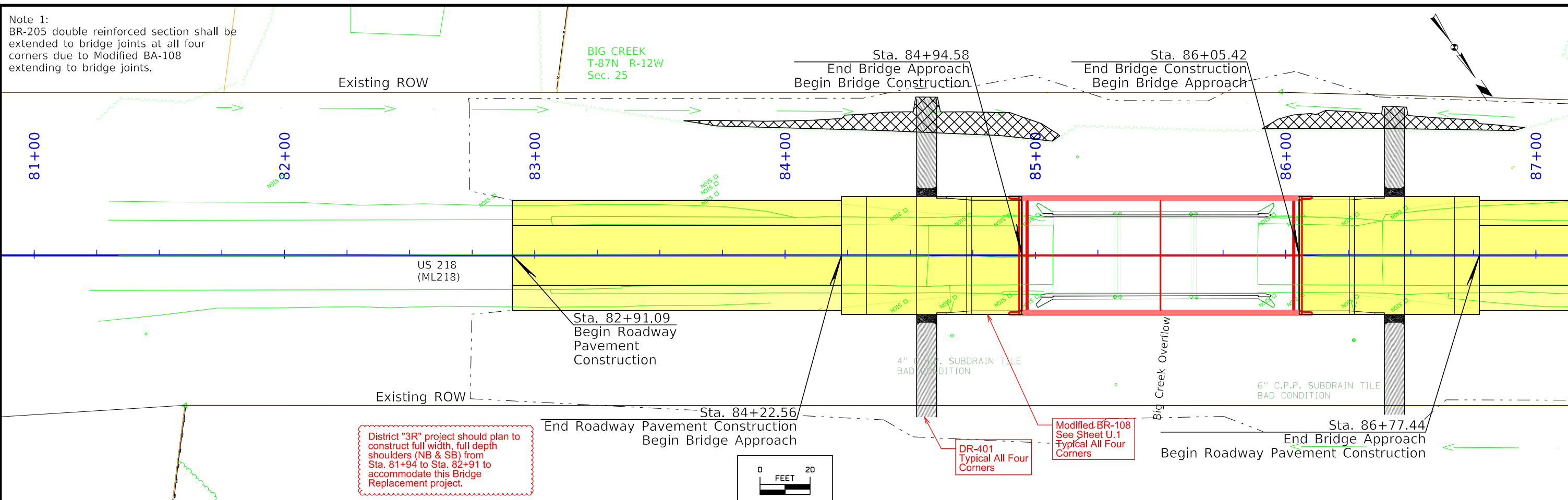
Symbol	Description
	Reference Point
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

Symbol	Description
	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

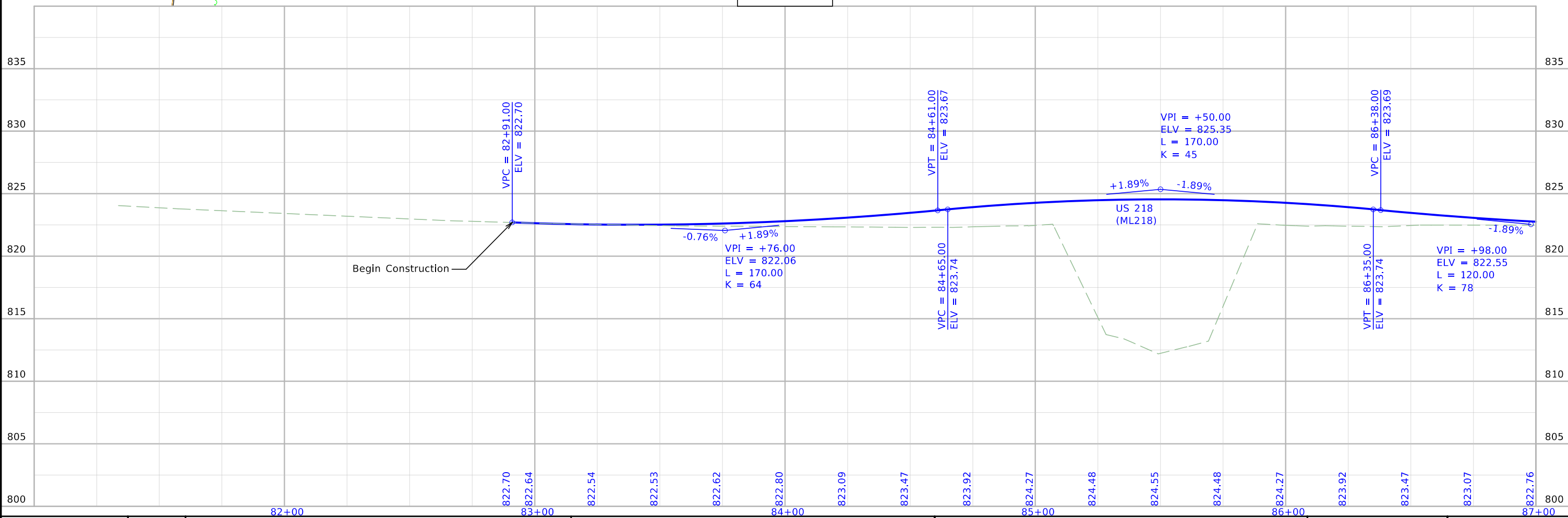
## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

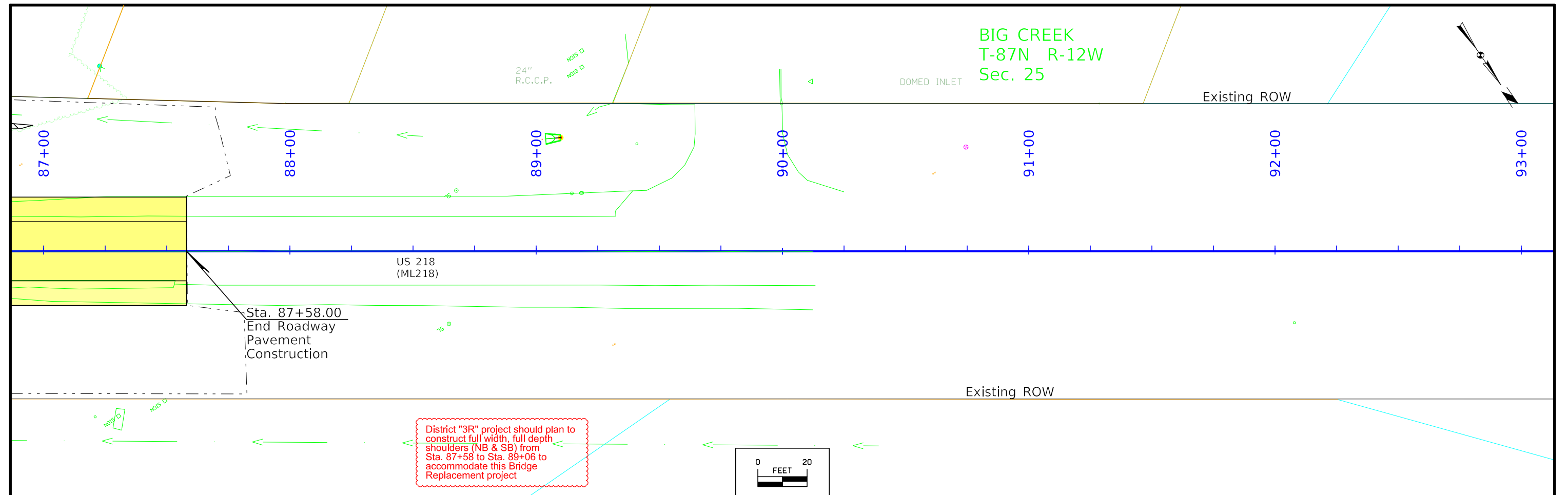
(COVERS SHEET SERIES D, E, F, & K)

Note 1:  
BR-205 double reinforced section shall be extended to bridge joints at all four corners due to Modified BA-108 extending to bridge joints.

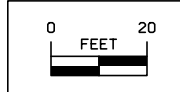


District "3R" project should plan to construct full width, full depth shoulders (NB & SB) from Sta. 81+94 to Sta. 82+91 to accommodate this Bridge Replacement project.





District "3R" project should plan to construct full width, full depth shoulders (NB & SB) from Sta. 87+58 to Sta. 89+06 to accommodate this Bridge Replacement project





## Survey Information

### SURVEY INDEX

County: Blackhawk

PIN: 21-07-218-050

Project Number: BRF-218-7(242)--38-07

Location: Big Creek overflow 0.3 mi. north of Co. Rd. in La Porte City.

Type of Work: Bridge Replacement

VERTICAL DATUM: NAVD88  
GEOID MODEL: GEOID12B

### Alignment Information

NO alignment

### Survey Personnel

Matthew Fouts – PLS

Daniel Marti – PLS

Drake Marti – Survey Technician

Joshua Randolph – Survey CADD Technician

### Date(s) of Survey

Begin Date 01/16/2023

End Date 01/26/2023

### General Information

This survey is for preliminary design for the section of approximately 0.2 miles of roadway, there is one bridge along the route. Project datum is provided by Design Survey Office. This project is a full DTM Survey.

### Utility Information

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

### Project Control

(RTN)

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. For additional details of the control survey, contact the Preliminary Survey department.

(Static)

Static observations were not used for this survey.

**PROJECT DATUM: NAD83(2011) for EPOCH 2010.00**

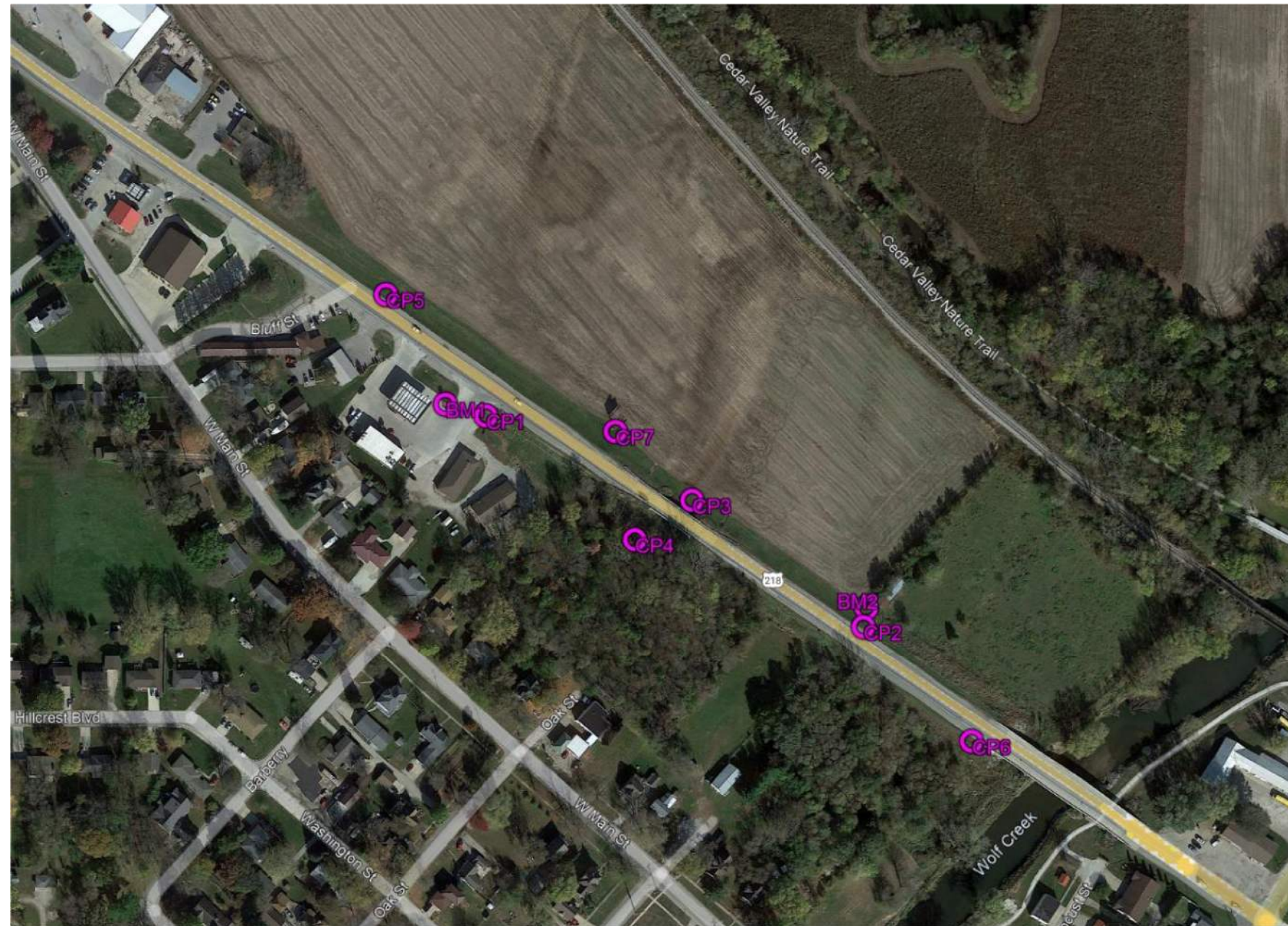
**COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 5**

**(Waterloo).**

**(U.S. SURVEY FOOT)**

## CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 05 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 12B

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING  
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)  
Ia. Regional Coordinate System Zone 05 (U.S. Survey Foot)  
VERT. DATUM: NAVD88  
Geoid Model: 12B

POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	8779299.37	15514573.04	820.70	SET 5/8" REBAR SOUTH OF LA PORTE ROAD AND NORTH OF JOE'S GYM
CP2	8778910.15	15515271.65	822.39	SET 5/8" REBAR IN FIELD ENTRANCE EAST OF BRIDGE ON NORTH SIDE OF ROAD
CP3	8779146.27	15514963.76	813.89	SET 5/8" REBAR NORTH OF THE MIDDLE OF THE BRIDGE
CP4	8779062.63	15514924.96	814.31	SET 5/8" REBAR SOUTH OF THE BRIDGE
CP5	8779510.47	15514394.14	821.67	FENO MONUMENT IN FIELD DRIVE 14'+/- EAST OF ROAD
CP6	8778700.22	15515470.77	825.21	FENO MONUMENT 4' W OF EOR
CP7	8779266.13	15514817.10	814.81	FENO MONUMENT 10' S OF BILLBOARD SIGN
NGS	8766930.23	15534189.10	817.19	NGS MONUMENT IN CONCRETE HEADWALL STAMPED G-157 (SURVEY DISK) PID=NK0076
NGS	8780678.09	15502398.14	951.55	NGS MONUMENT STAMPED PORTE ET 1970 (SURVEY DISK) PID=NK0536
BM1	8779318.57	15514500.40	821.75	SET NORTHEAST BOLT ON THE CASEY'S SIGN
BM2	8778942.75	15515274.99	816.84	SET RAILROAD SPIKE IN SOUTH SIDE OF FENCE

**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	US218(ML218)	75+07.45	8778523.37	15515779.05															
2	US218(ML218)	95+93.20	8779704.80	15514060.17															

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



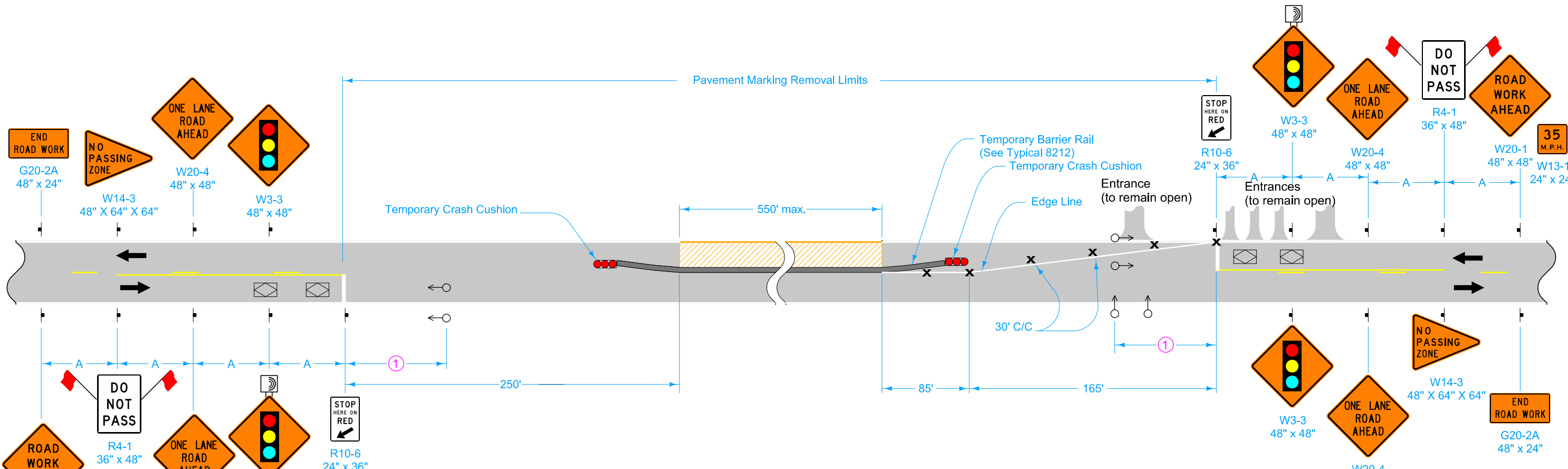
<b>108-23A</b> 08-01-08
<b>TRAFFIC CONTROL PLAN</b>
<p>1. At least one lane of traffic shall be maintained on US 218 at all times.</p> <p>2. Refer to Standard Road Plans shown on Tab 105-4 in C Sheets for other information.</p> <p>3. Refer to Staging Notes (Tabulation 108-26A) and other J sheets for details of specific closures.</p>

<b>111-01</b> 04-17-12								
<b>COORDINATED OPERATIONS</b>								
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.								
<table border="1" style="width: 100%;"> <tr> <th style="width: 50%;">Project</th> <th style="width: 50%;">Type of Work</th> </tr> <tr> <td>None provided</td> <td></td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	Project	Type of Work	None provided					
Project	Type of Work							
None provided								

<b>108-25</b> 10-21-14
<b>511 TRAVEL RESTRICTIONS</b>

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
US 218	NB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Barrier	Maint. No.0767.3S218	Horizontal	N/A	12'-6"	11'-6"	N/A	Stage 1B
US 218	SB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Barrier	Maint. No.0767.3S218	Horizontal	N/A	14'-2"	13'-2"	N/A	Stage 2
US 218	NB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Temporary Signal	Maint. No.0767.3S218	Vertical	N/A	15'-0"	N/A	N/A	Stage 1B
US 218	SB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Temporary Signal	Maint. No.0767.3S218	Vertical	N/A	15'-0"	N/A	N/A	Stage 2

<b>108-26A</b> 08-01-08
<b>STAGING NOTES</b>
<p><b>Stage 1A</b> Traffic Control: Close US 218 NB lane. Maintain traffic using single lane closure with flaggers (SRP TC-213). Construction: Construct US 218 NB lane shoulder strengthening.</p> <p><b>Stage 1B</b> Traffic Control: Close US 218 SB lane using temporary traffic signals and temporary barrier rail (TBR) per Sheet J.2. Construction: Construct west half of US 218 bridge, approaches, and shoulders.</p> <p><b>Stage 2</b> Traffic Control: Close US 218 NB lane using temporary traffic signals and temporary barrier rail (TBR) per Sheet J.2. Construction: Construct east half of US 218 bridge, approaches, and shoulders.</p>



Final Design Note:  
Request modified signal timing from Iowa DOT TAS for a third signal phase for Casey's southerly driveway.

- Contract Items:
- Pavement Marking Items
  - Pavement Markings Removed
  - Temporary Barrier Rail
  - Temporary Crash Cushions
  - Temporary Traffic Signals
  - Traffic Control

- Tabulations:
- 108-22
  - 108-28
  - 108-30
  - 108-33

**LEGEND**

- Vehicle Detection Area
- Temporary Crash Cushion
- Direction of Traffic
- Traffic Sign
- Drum
- Type 'B' High-Intensity Flashing Warning Light
- Work Area
- Temporary Traffic Signal

**TIMING FOR ACTUATED SIGNALS**

Recommended Settings, secs.

	Distance Between Stop Lines	All Red (secs.)*
Initial = 12.0	1050'	20.4-35.7
Extension = 2.5	950'	18.5-32.3
Maximum Green = 45.0	850'	17-30
Yellow = 5.0	750'	15-27
All Red = (see table)	650'	14-23
	550'	12-20

\* Range of values are based on operating speeds between 20 and 35 mph

SPEED LIMIT (mph)*	A
35 or less	250'
40 - 45	350'
50 or greater	500'

Place Concrete Barrier Markers at 10 ft C/C on bridge rail.

① Locate signal heads 70 to 100 feet beyond stop bar. Adjust location of signal heads as field conditions warrant.

\* Speed Limit refers to regulatory speed limit before road work.

<b>MODIFIED STANDARD ROAD PLAN</b>	REVISION	
	9	4-18-23
<b>TC-217</b>		SHEET 1 of 1

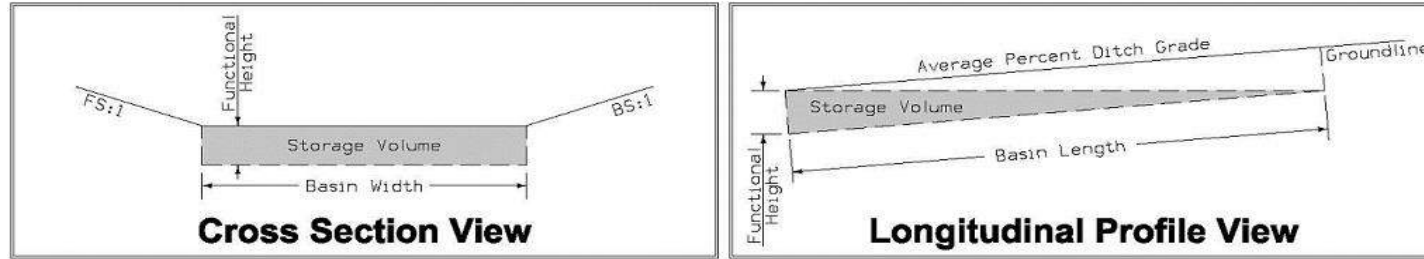
MODIFICATIONS: Added 5 entrances and traffic signals.

**LANE CLOSURE WITH SIGNALS AND TBR**



100-14  
10-17-17

**SILT BASINS**  
Possible Standard: EW-403

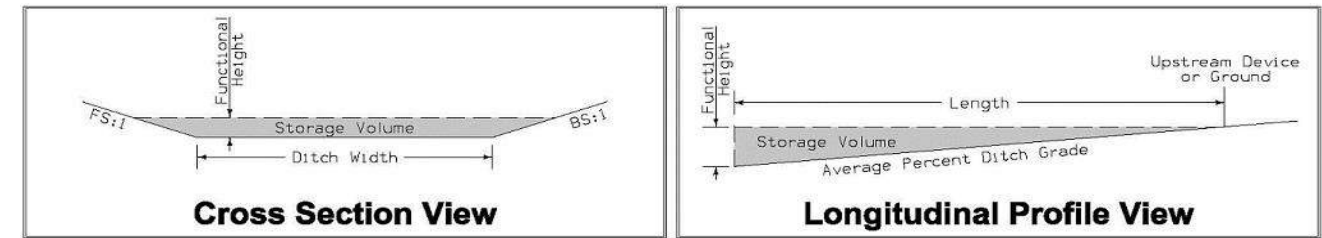


\* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.  
\* Volume equation:  $(0.5 * \text{Length} * (\text{Width} * \text{Height} + \text{Width} * (\text{Height} - \text{Length} * \text{Avg} \% \text{Slope})))$

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
1	85+48.00	Rt	1	1	10.0	50.0	2.85	0.4%	1380.0	

100-18  
10-16-18

**SILT FENCES FOR DITCH CHECKS**  
Possible Standard: EC-201



\* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.  
\* Volume equation:  $[0.5 * \text{Spacing} * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
1	1	83+65.00	Rt	46.0	4.6	23.0	3.0	0.0	0.0	1.7%	101.5	
1	1	84+40.00	Rt	49.0	4.9	24.5	3.0	0.0	0.0	1.7%	101.5	
1	1	85+15.00	Rt	49.0	4.9	24.5	3.0	0.0	0.0	1.7%	101.5	
1	1	83+65.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.7%	101.5	
1	1	84+40.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.7%	101.5	
1	1	85+15.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.7%	101.5	
1	1	85+79.00	Rt	60.0	6.0	30.0	3.0	0.0	0.0	0.5%	135.3	
1	1	86+79.00	Rt	45.0	4.5	22.5	3.0	6.0	0.0	0.5%	324.7	
1	1	85+79.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.8%	135.3	
1	1	86+79.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.8%	108.2	
1	1	85+47.00	Rt	70.0	7.0	35.0	3.0	3.0	40.0	0.8%	1921.8	
Totals:				619.0	61.9	309.5					3233.9	

100-19  
10-19-21

**PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES**  
Possible Standards: EC-204

Begin Station	End Station	Side	Perimeter and Slope			Ditch Check			Remarks
			Length of Installation			Length of Installation			
			9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia	20 inch Dia		
			LF	LF	LF	LF	LF		
82+75.00	87+75.00	Rt		500.0					
82+75.00	87+75.00	Lt		500.0					
82+80.00	85+40.00	Rt		260.0					
85+55.00	87+75.00	Rt		220.0					
82+80.00	85+40.00	Lt		260.0					
85+55.00	87+75.00	Lt		220.0					
85+10.00	85+10.00	Both		60.0					
85+54.00	85+54.00	Both		60.0					
85+40.00	85+40.00	Both		60.0					
85+84.00	85+84.00	Both		60.0					
Totals:				2200.0					

100-34  
10-17-17

**STORMWATER DRAINAGE BASIN AND STORAGE**  
Refer to EC Standards and 570s Details.  
Summary of Stormwater Storage

Basin No.	Drainage Basin Location		Discharge Point	Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Best Management Practice	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	Remarks
	Station to Station	Side									
1	82+91.00	87+58.00	Both	1.2	1.2	0.0	Silt Fence for Ditch Check (EC-201)	3233.9	4314.9	Yes	
							Silt Basin (EW-403)	1380.0			
							Totals:	4613.9			

**POLLUTION PREVENTION PLAN**

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

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

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

**I. ROLES AND RESPONSIBILITIES**

- A. Designer:
  1. Prepares Base PPP included in the project plan.
  2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
  3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.
- B. Contractor:
  1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
  3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
  4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
  5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
  6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
  7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
  8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.
- C. Subcontractors:
  1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or performing work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Implement good housekeeping practices according to Paragraph III, C, 2.
- D. RCE/Project Engineer:
  1. Is Project Storm Water Manager.
  2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
  3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
  4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
  5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
  6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
  7. Is familiar with the Project PPP and storm water site map.
  8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
  9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
  10. Is signature authority on Notice of Discontinuation.
  11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
  12. Makes information to determine permit compliance available to the DNR upon their request.
- E. Inspector:
  1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
  2. Makes information to determine permit compliance available to the DNR upon their request.
  3. Conducts joint required inspections of the site with the contractor/subcontractor.
  4. Completes an inspection report after each inspection.
  5. Is signature authority on storm water inspection reports.

**II. PROJECT SITE DESCRIPTION**

- A. This Pollution Prevention Plan (PPP) is for the construction of a Bridge Replacement.
- B. This PPP covers approximately 1.3 acres with an estimated 1.2 acres being disturbed. The portion of the PPP covered by this contract has 1.2 acres disturbed.
- C. The PPP is located in an area of 1 soil association Kenyon - Clyde - Floyd. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.44.
- D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.
- E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be

**POLLUTION PREVENTION PLAN**

documented by fieldbook entries and amended PPP site map.  
F. Runoff from this work will flow into Big Creek Overflow.

**III. CONTROLS**

- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.
  - 1. EROSION AND SEDIMENT CONTROLS
    - a. Stabilization Practices
      - 1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
      - 2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
        - a) Permanently ceased on any portion of the site, or
        - b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
      - 3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
      - 4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
      - 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
      - 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.
    - b. Structural Practices
      - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
      - 2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.
    - c. Storm Water Management
 

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

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

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

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

### POLLUTION PREVENTION PLAN

**IV. MAINTENANCE PROCEDURES**

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

**V. INSPECTION REQUIREMENTS**

- A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
  1. Date of the inspection.
  2. Summary of the scope of the inspection.
  3. Name and qualifications of the personnel making the inspection.
  5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
  6. Major observations related to the implementation of the PPP.
  7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

**VI. NON-STORM WATER DISCHARGES**

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

**VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION**

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

**VIII. DEFINITIONS**

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

**CERTIFICATION STATEMENT**

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed or Typed Name

\_\_\_\_\_  
Signature

\_\_\_\_\_

### LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINETYPE	Design Element
-----	Living Snow Fence Single Row
-----	Living Snow Fence Double Row
-----	Mechanical Edge

### CELL LEGEND OF LANDSCAPE SHEETS

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

### PATTERN LEGEND OF LANDSCAPE SHEETS

	Brush Clearing		Spray Area
	Clearing & Grubbing		

### LINE STYLE LEGEND OF EROSION CONTROL SHEETS

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

### CELL LEGEND OF EROSION CONTROL SHEETS

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

### PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

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

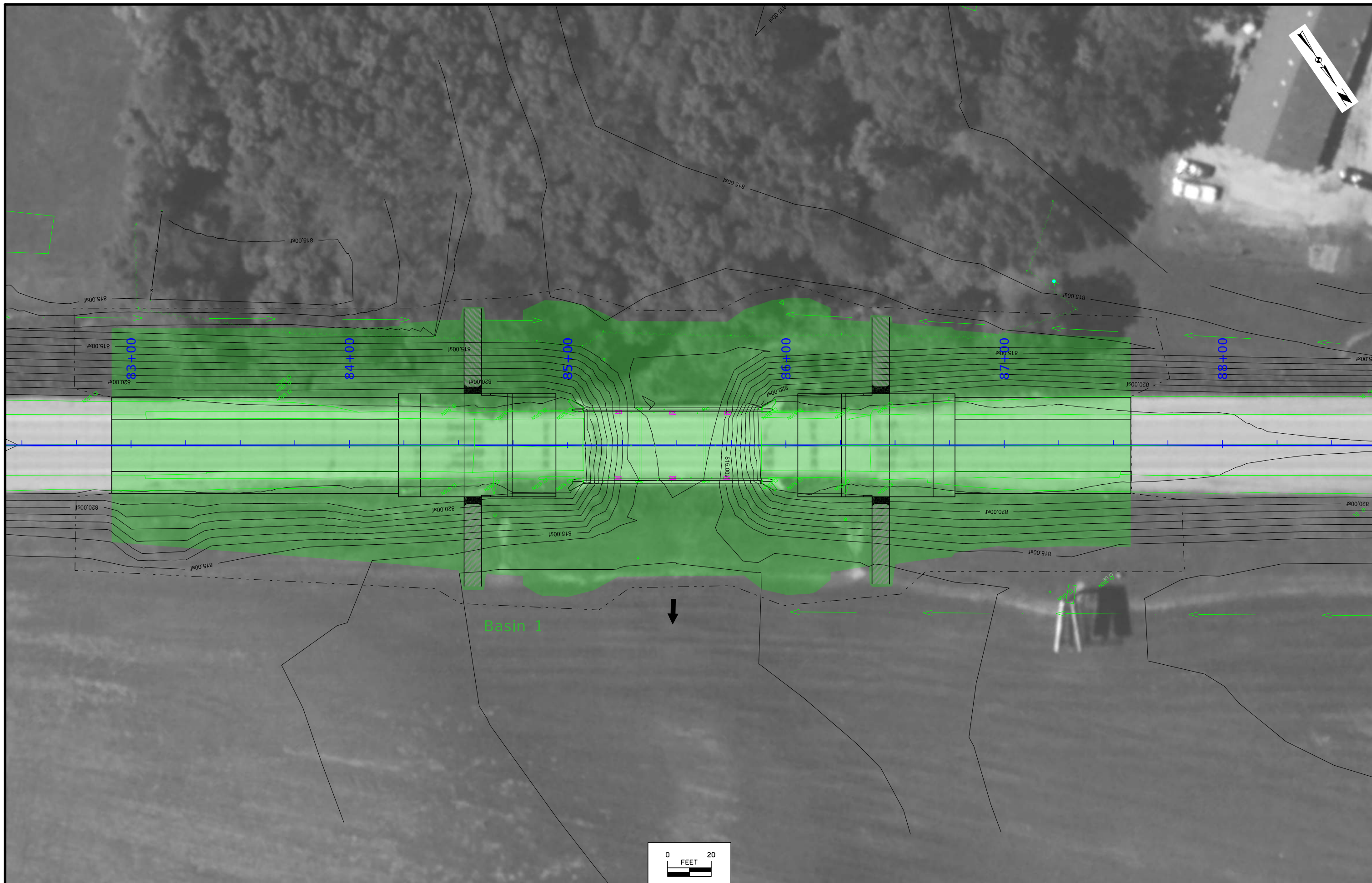
SHADING	Design Color No.	Design Element	Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

### PATTERN LEGEND OF EROSION CONTROL SHEETS

	Seeding and Fertilizing		Turf Reinforcement Mat Type 1
	Seeding and Fertilizing (Rural)		Turf Reinforcement Mat Type 2
	Seeding and Fertilizing (Urban)		Turf Reinforcement Mat Type 3
	Native Grass Seeding		Turf Reinforcement Mat Type 4
	Salt Tolerant Seeding		Slope Protection, Wood Excelsior Mat
	Wetland Grass Seeding		Transition Mat
	Wildflower Seeding		Rock Features, Permanent
	Sodding		Rock Features, Temporary

## EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

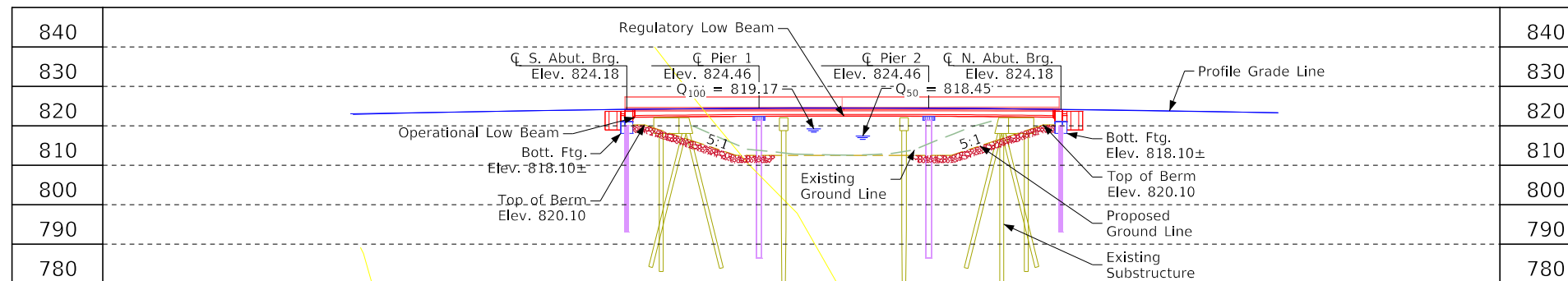
(COVERS SHEET SERIES R)





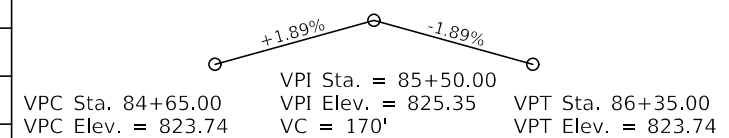


PROGRESS PLANS, NOT FOR CONSTRUCTION



Longitudinal Section along Q US 218

BENCH MARK NO. CP3, N:8779146.27, E:15514963.76, ELEV 813.89;  
SET 3/8" REBAR NORTH OF THE MIDDLE OF THE BRIDGE



Proposed Profile Grade US 218

Hydraulic Data

RIDB: WolfC\_Black\_3.0  
Drainage Area = 326 sq. mi.  
Stream Slope (HGL) = 3.19 ft./mi.  
Avg. Low Water Stage = N/A

Q<sub>50</sub> = 16,000 cfs  
Stage = 818.45  
Regulatory Low Beam = 822.56  
Avg. Bridge Velocity = 1.23 fps

Q<sub>100</sub> = 18,465 cfs  
Stage = 819.17  
Operational Low Beam = 822.23  
Backwater = 0.03 ft.  
Avg. Bridge Velocity = 1.33 fps

Q<sub>200</sub> = 20,135 cfs  
Stage = 819.63  
Calculated Design Scour = 809.8

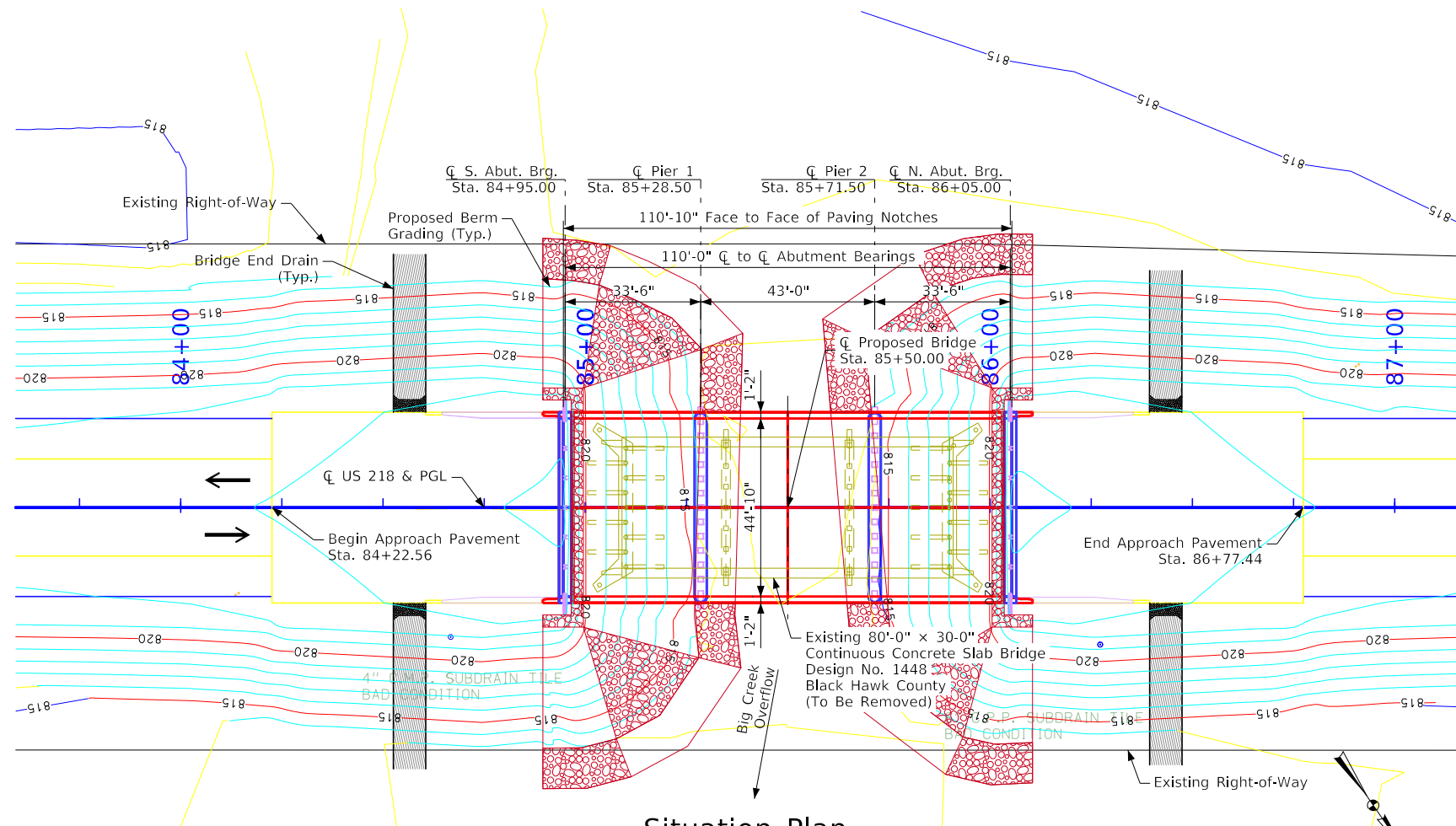
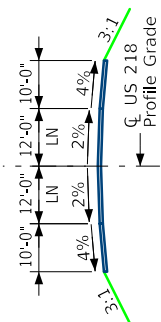
Q<sub>500</sub> = 23,070 cfs  
Stage = 820.49  
Avg. Bridge Velocity = 1.56 fps  
Calculated Check Scour = 809.7

50-, 100-, 500-year stages and discharges from FEMA HEC-RAS Model  
F.I.S datum = NAVD88

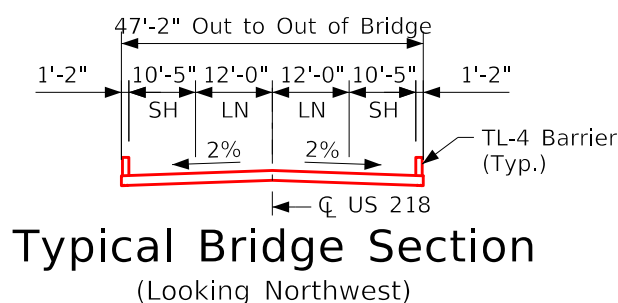
Notes

- Top of bridge slab at Q US 218 is 0.03' below the profile grade to account for parabolic crown.
- All units are in feet unless otherwise noted.
- Standard Bridge Index J44.
- Special Bridge Railing proposed to match nearby Project No. BRF-218-7(227)--38-07.
- Pier Type - Fully Encased Pile Bents
- Foundation type to be confirmed during final design.
- Berm slope to be determined during final design.

Typical Approach Section



Situation Plan



Typical Bridge Section (Looking Northwest)

Location

US 218 over Big Creek Overflow  
In City of La Porte City  
T-87N R-12W  
Section 25  
Big Creek Township  
Black Hawk County  
FHWA No. 14791  
Bridge Maint. No. 0767.3S218  
Latitude 42.318244°  
Longitude -92.194698°

Utilities Legend

No Known Utilities

Traffic Estimate

2021 AADT 3,530 V.P.D.  
Trucks 7 %



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.

*Mark D Werner 10-19-2023*  
Signature: MARK D. WERNER Date: 10-19-2023  
Printed or Typed Name: MARK D. WERNER  
My license renewal date is December 31, 2023

Pages or sheets covered by this seal: V.01 & V.02

PRELIMINARY

Design For 0° Skew  
**110'-0" × 44'-0" Continuous Concrete Slab Bridge**  
33'-6" End Spans 43'-0" Interior Span  
Situation Plan  
STA. 85+50.00 (Q US 218)  
**Black Hawk County**  
IOWA DEPARTMENT OF TRANSPORTATION  
Design No. 126 Design Sheet No. 1 of 3 FHWA No. 14791



PROGRESS PLANS, NOT FOR CONSTRUCTION

### Design Notes

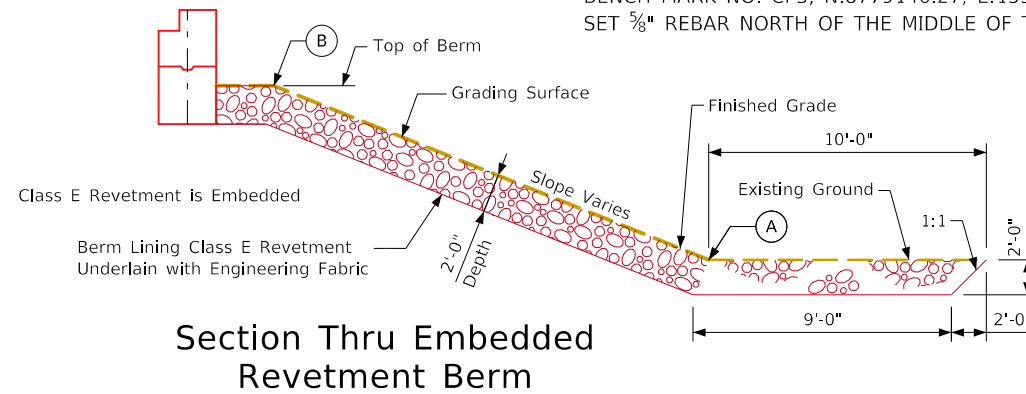
This design is for the replacement of the existing 80'-0" x 30'-0" Continuous Concrete Slab Bridge, Black Hawk Design No. 1448, FHWA No. 14790, Maint. No. 0767.35218.

An Iowa DNR Flood Plain Permit is required. Preliminary designer will submit the application and place the permit in the PW Regulatory\_Permits subdirectory folder upon receipt.

Barrier aesthetics and turndown sections shall match Black Hawk County Design No. 111, Project No. BRF-218-7(227)--38-07.

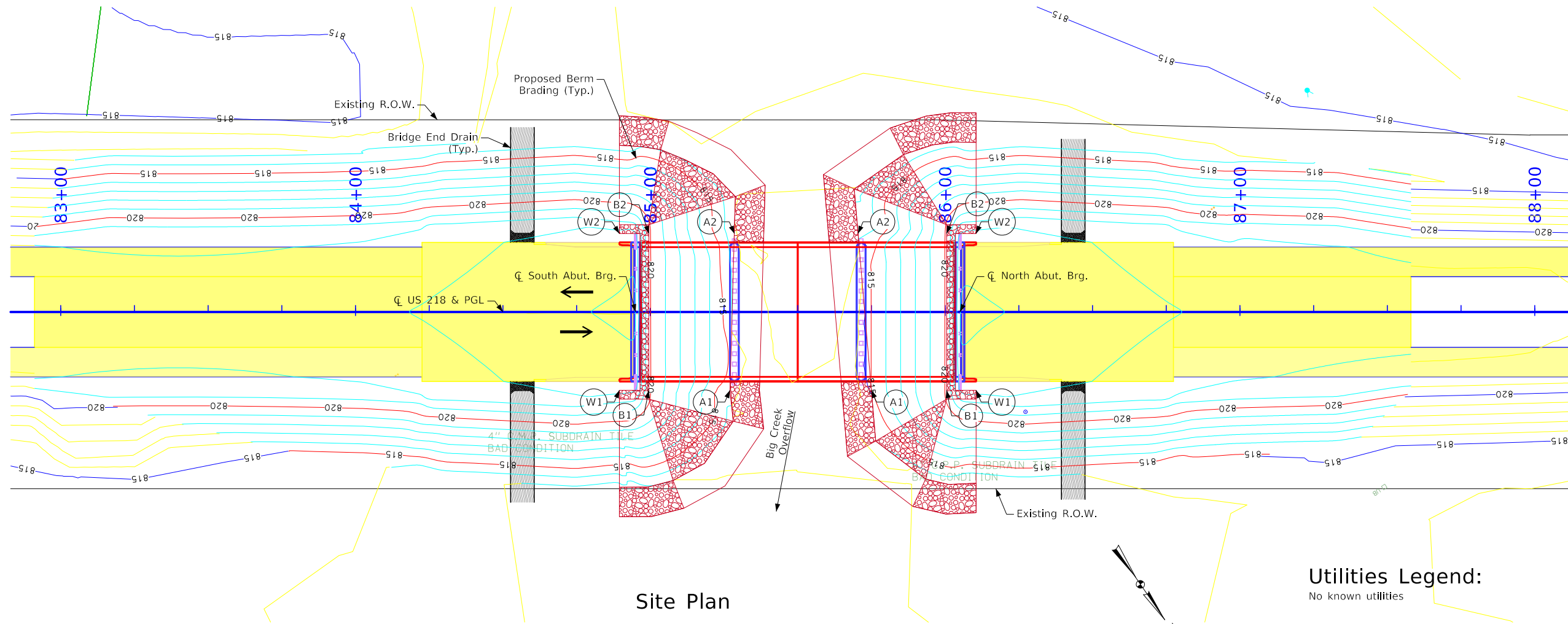
Final designer shall check barrier and deck overhang system for capacity appropriate for MASH TL-3 crash load.

BENCH MARK NO. CP3, N:8779146.27, E:15514963.76, ELEV 813.89;  
SET 5/8" REBAR NORTH OF THE MIDDLE OF THE BRIDGE



Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	85+23.37	26.58 Rt.	815.33	85+72.13	26.58 Rt.	814.38
A2	85+24.52	26.58 Lt.	815.10	85+77.36	26.58 Lt.	814.58
B1	84+99.50	26.58 Rt.	820.10	86+00.50	26.58 Rt.	820.10
B2	84+99.50	26.58 Lt.	820.10	86+00.50	26.58 Lt.	820.10
W1	84+87.50	26.58 Rt.	823.49	86+12.50	26.58 Rt.	823.49
W2	84+87.50	26.58 Lt.	823.49	86+12.50	26.58 Lt.	823.49

Berm slope elevations reflect the grading surface.



Utilities Legend:  
No known utilities

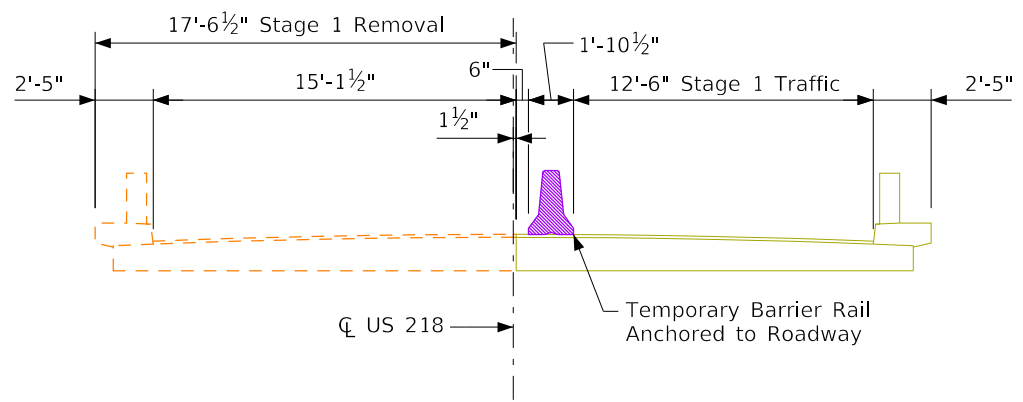
### Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - South Abut.	545		634	517
Berm Lining - North Abut.	563		658	536
Totals	1,108		1,292	1,053

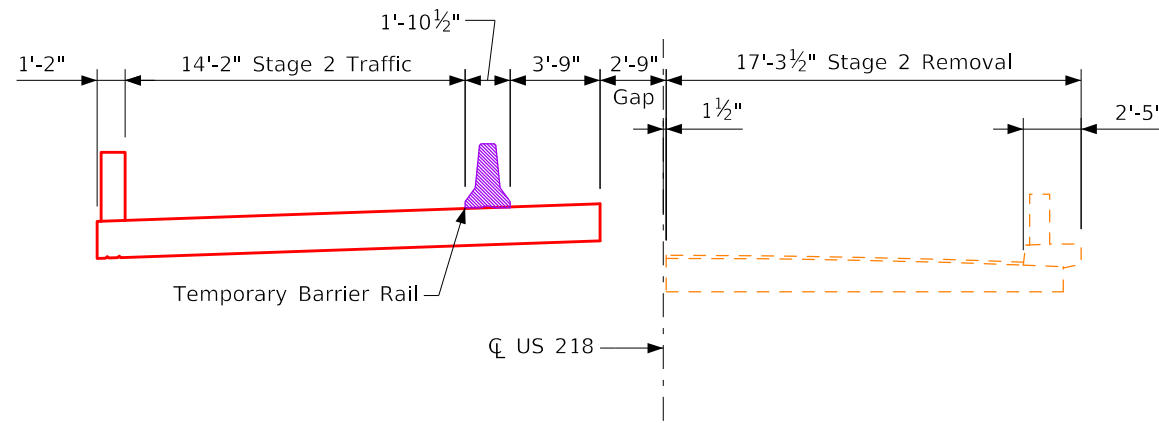
Excavation quantity calculated from grading surface. Excavation quantity if for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans.

PRELIMINARY

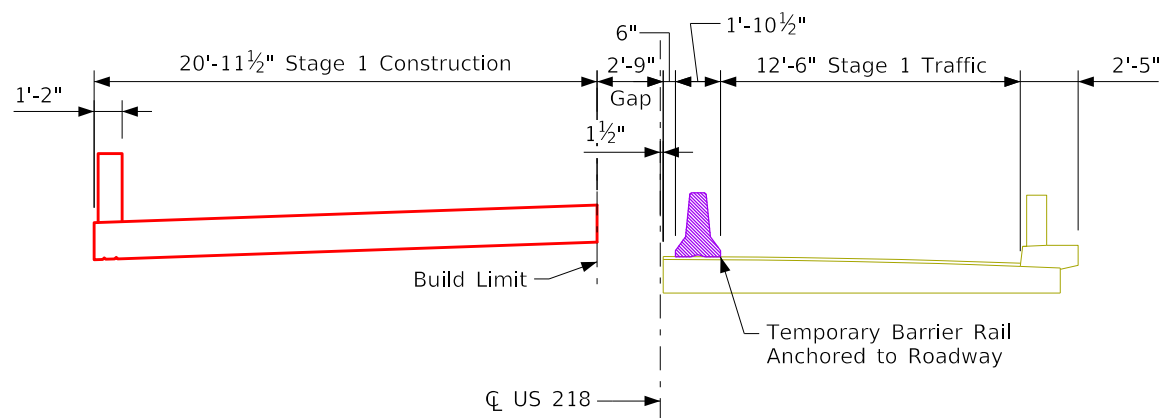
Design For 0° Skew  
**110'-0" x 44'-0" Continuous Concrete Slab Bridge**  
 33'-6" End Spans 43'-0" Interior Span  
**Site Plan**  
 STA. 85+50.00 (CL US 218)  
**Black Hawk County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 126 Design Sheet No. 2 of 3 FHWA No. 14791



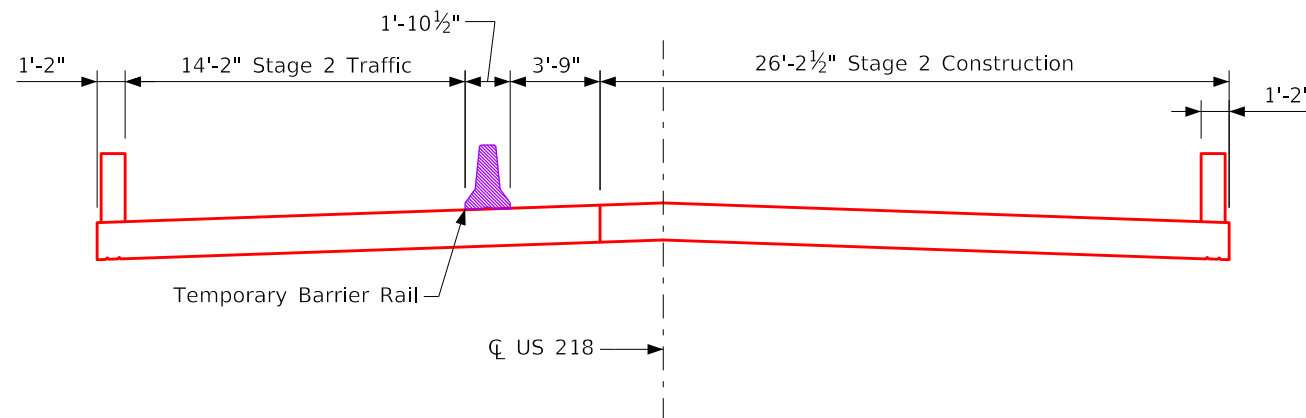
**Stage 1 Removals**  
(Looking North, Typ.)



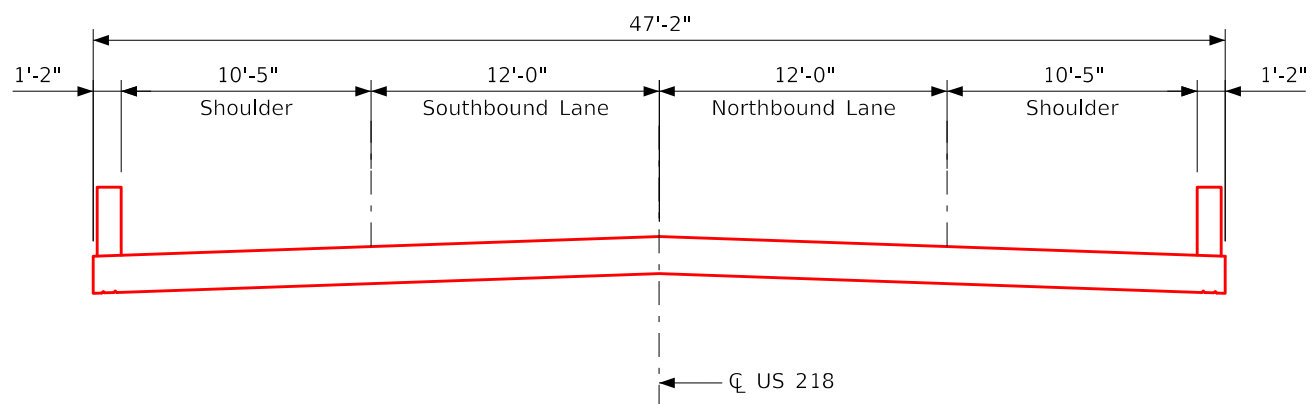
**Stage 2 Removals**



**Stage 1 Construction**



**Stage 2 Construction**



**Final Bridge Cross Section**

PRELIMINARY

Design For 0° Skew

**110'-0" × 44'-0" Continuous Concrete Slab Bridge**

33'-6" End Spans      43'-0" Interior Span

**Staging Details**

STA. 85+50.00 (CL US 218)

**Black Hawk County**

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126      Design Sheet No. 3 of 3      FHWA No. 14791

### CROSS SECTION VIEW COLOR LEGEND

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

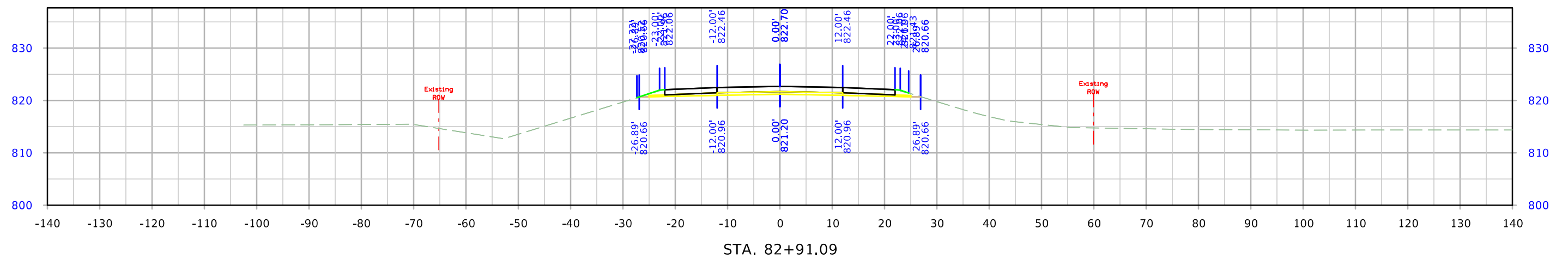
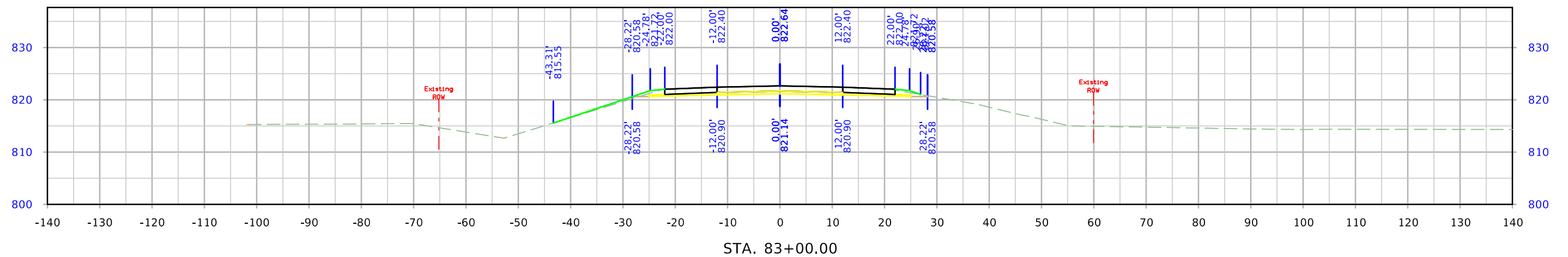
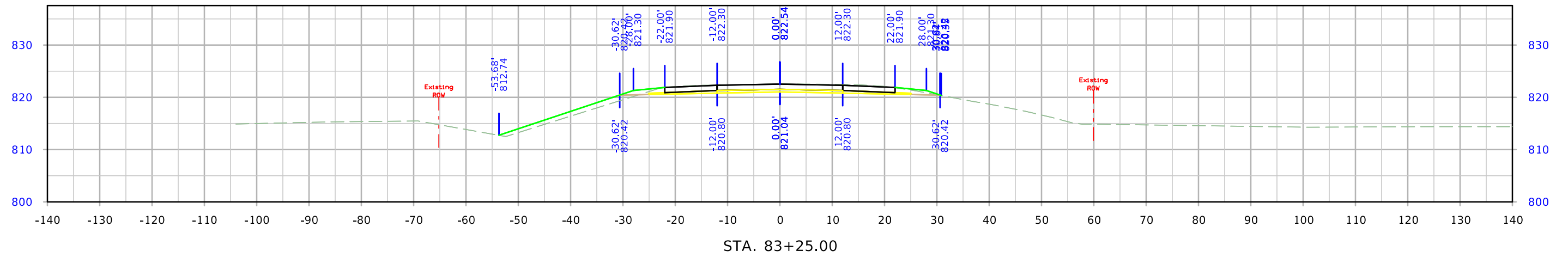
NOTES:

NOTES:

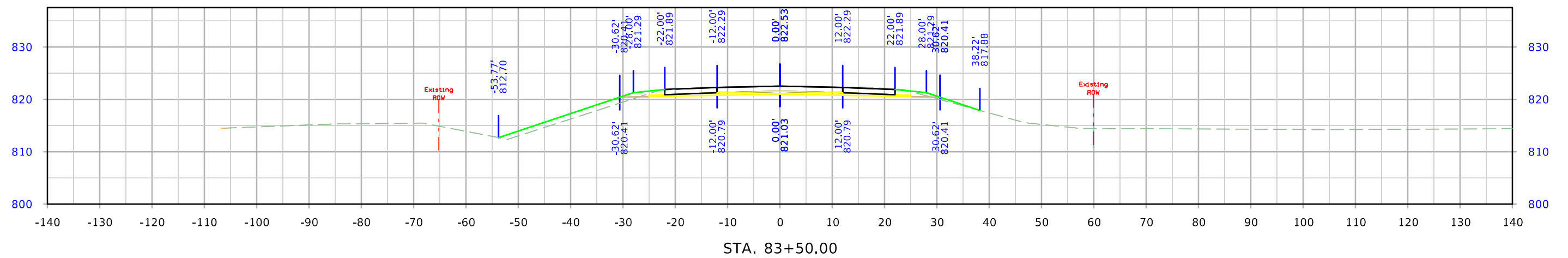
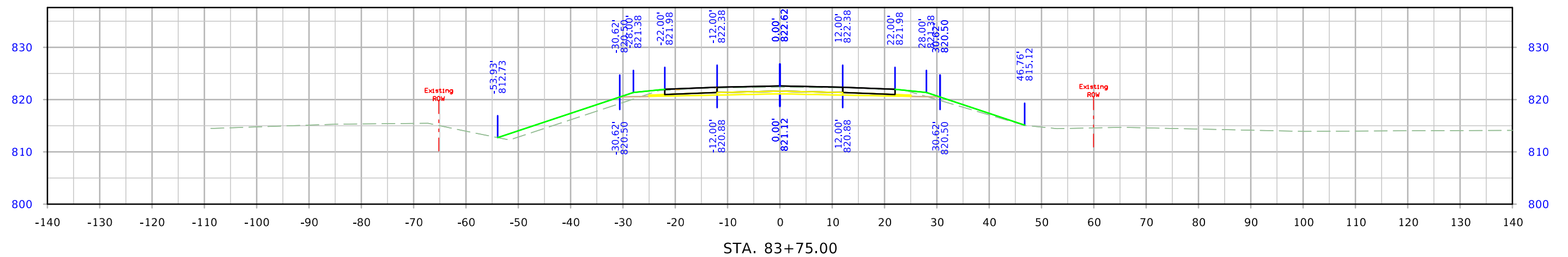
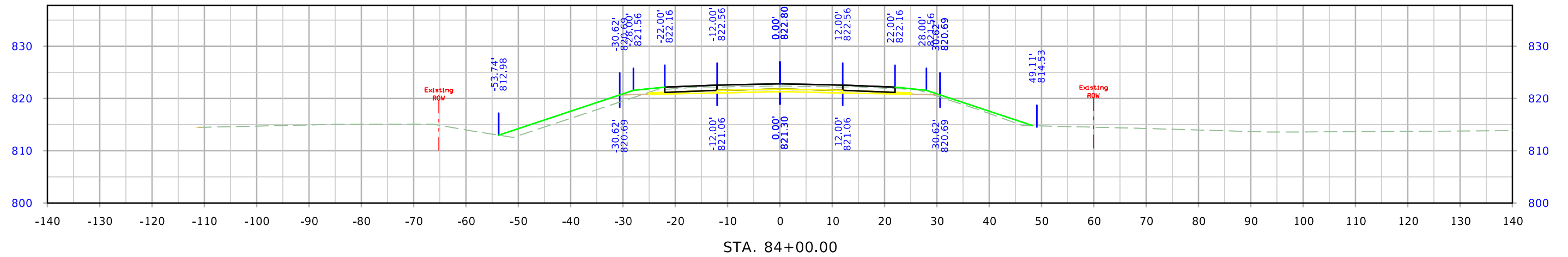
## CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

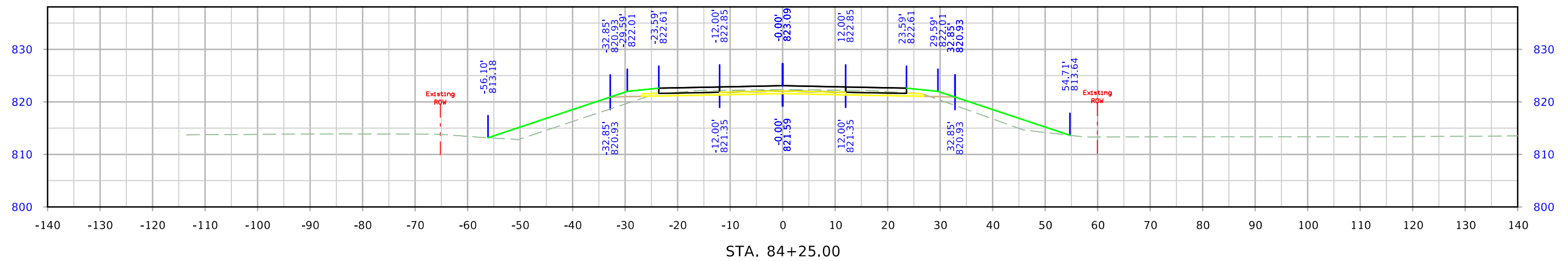
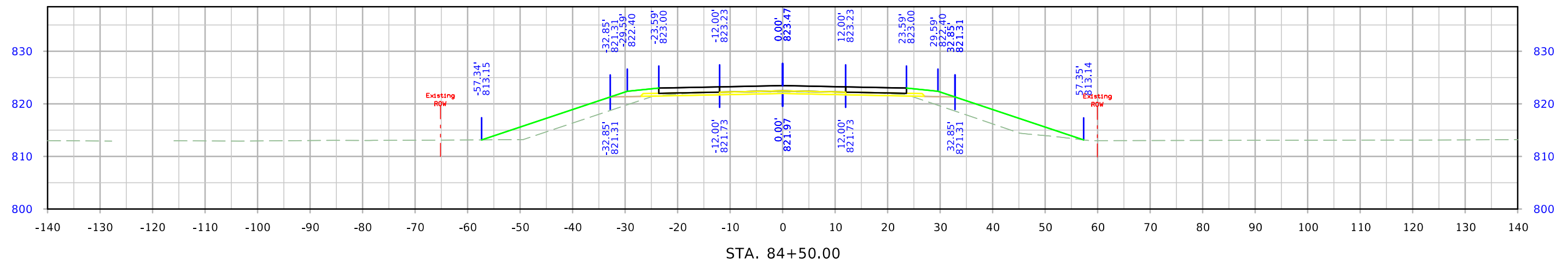
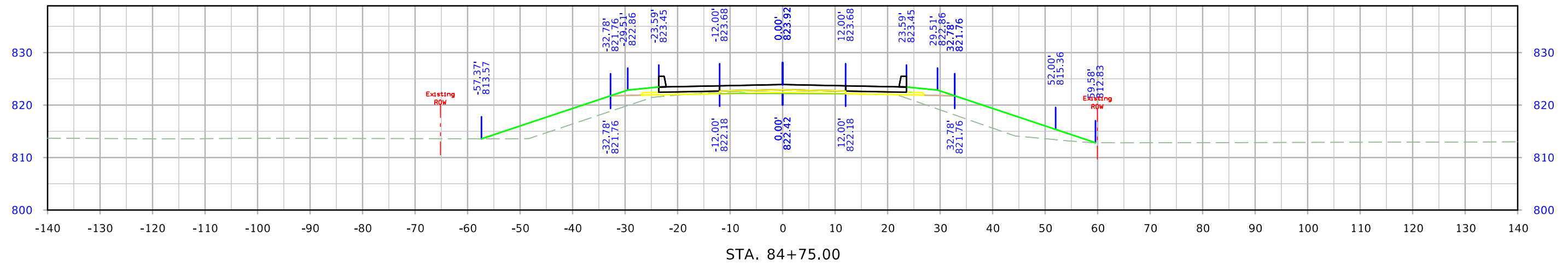
# US 218



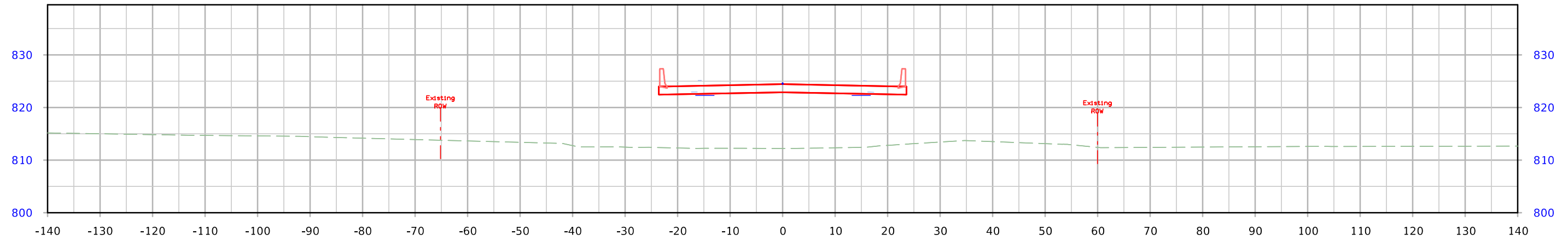
# US 218



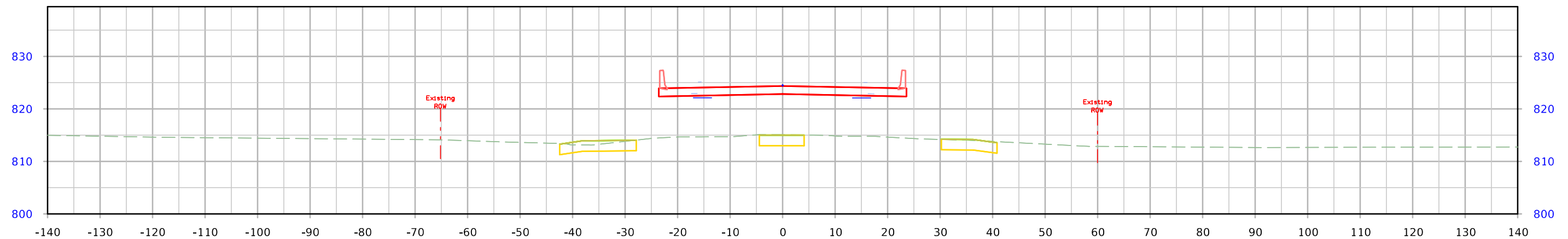
# US 218



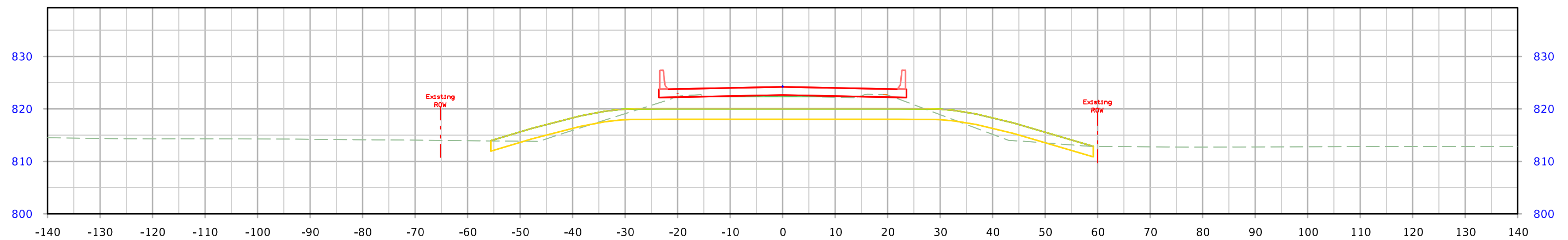
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STA. 85+50.00

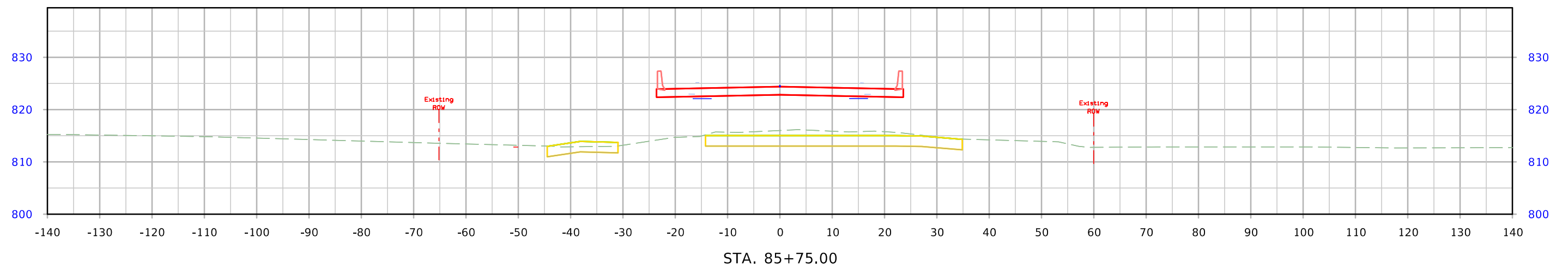
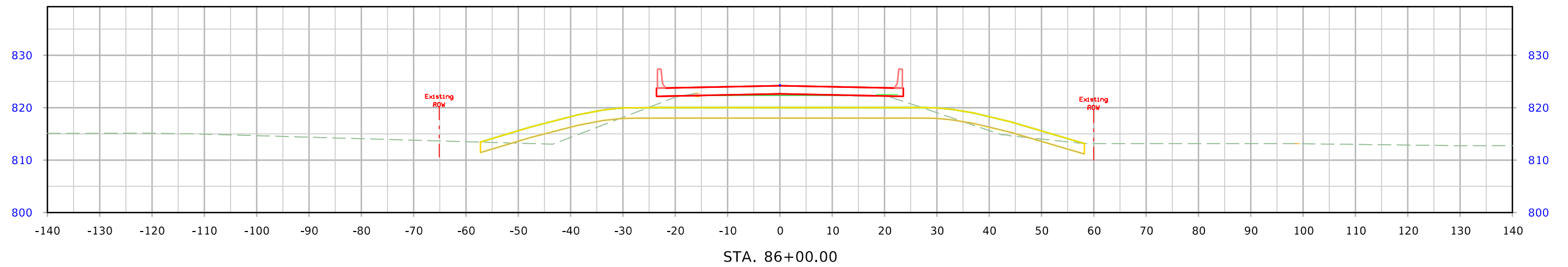
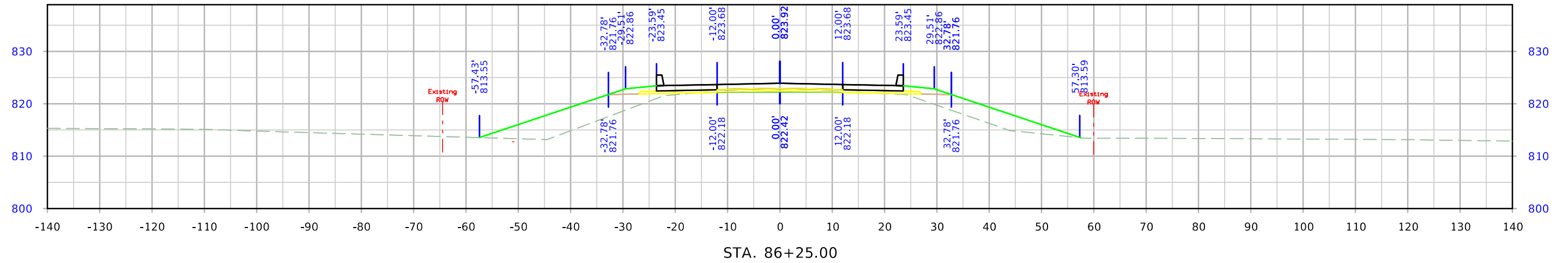


STA. 85+25.00



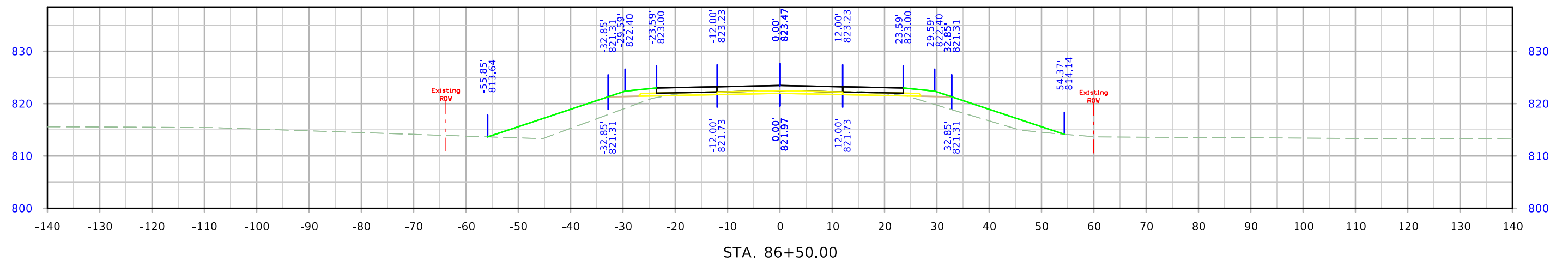
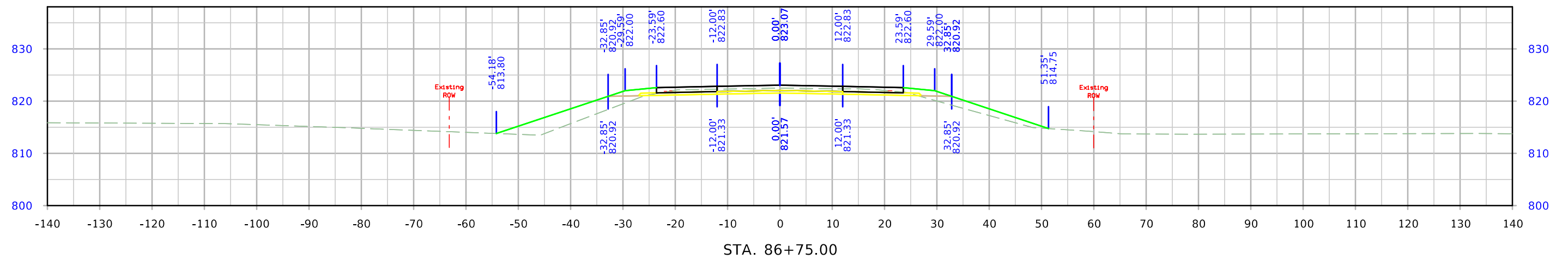
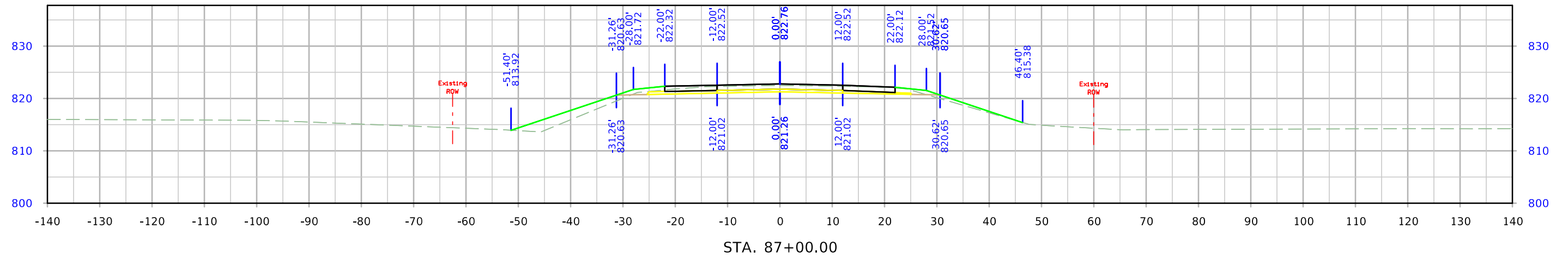
STA. 85+00.00

# US 218





# US 218



# US 218

