

POTTAWATTAMIE COUNTY

Bridge-Unspecified
BRFN-092-1(75)--39-78

LETTING DATE
Jan 22 2025



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
POTTAWATTAMIE COUNTY
Bridge-Unspecified
Indian Creek 0.7 mi W of Co Rd M47

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

PROJECT IDENTIFICATION NUMBER

20-78-092-010

PROJECT NUMBER

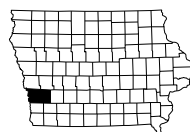
BRFN-092-1(75)--39-78

R.O.W. PROJECT NUMBER

STPN-092-1(76)--2J-78

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
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* D.2	IA 92
E Sheets	Drainage Ditch
* E.1	ML Drainage Ditch
G Sheets	Survey Sheets
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INDEX OF SEALS

SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Paul Flattery	Primary Signature Block	X

PRELIMINARY PLANS

Subject to change by final design.

D2/D3 PLAN - 02/17/23

FILE NO.

ENGLISH

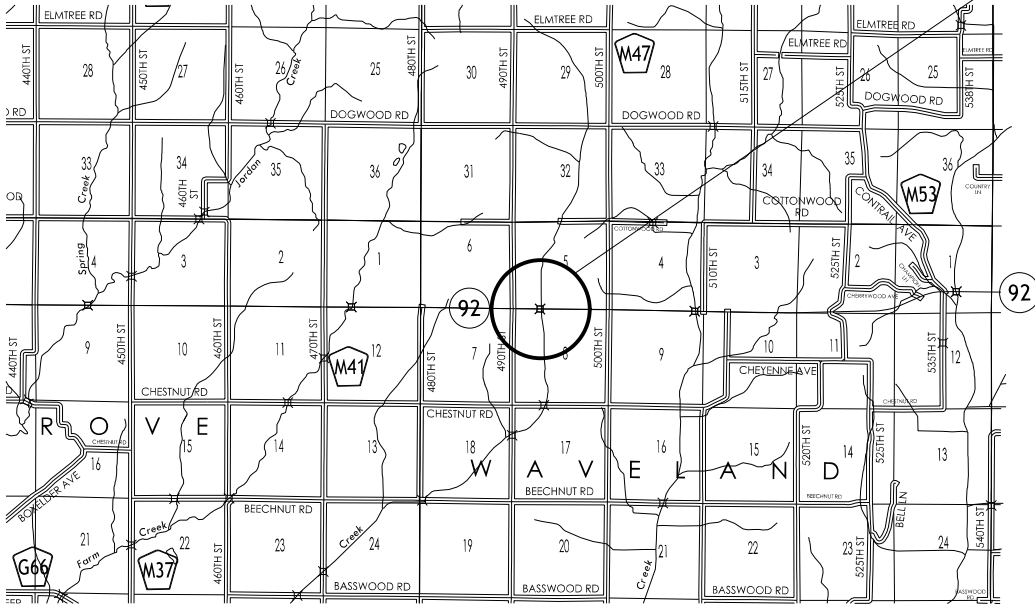
DESIGN TEAM Flattery\Carlson

POTTAWATTAMIE COUNTY

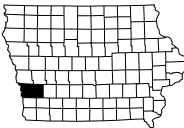
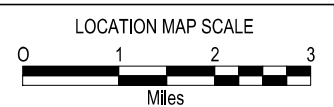
PROJECT NUMBER BRFN-092-1(75)--39-78

SHEET NUMBER A.1

PROJECT LOCATION



T-74N



FINAL PROJECT CONCEPT STATEMENT

IA 92 bridge over Indian Creek, 0.7 mi W of Co Rd M47.

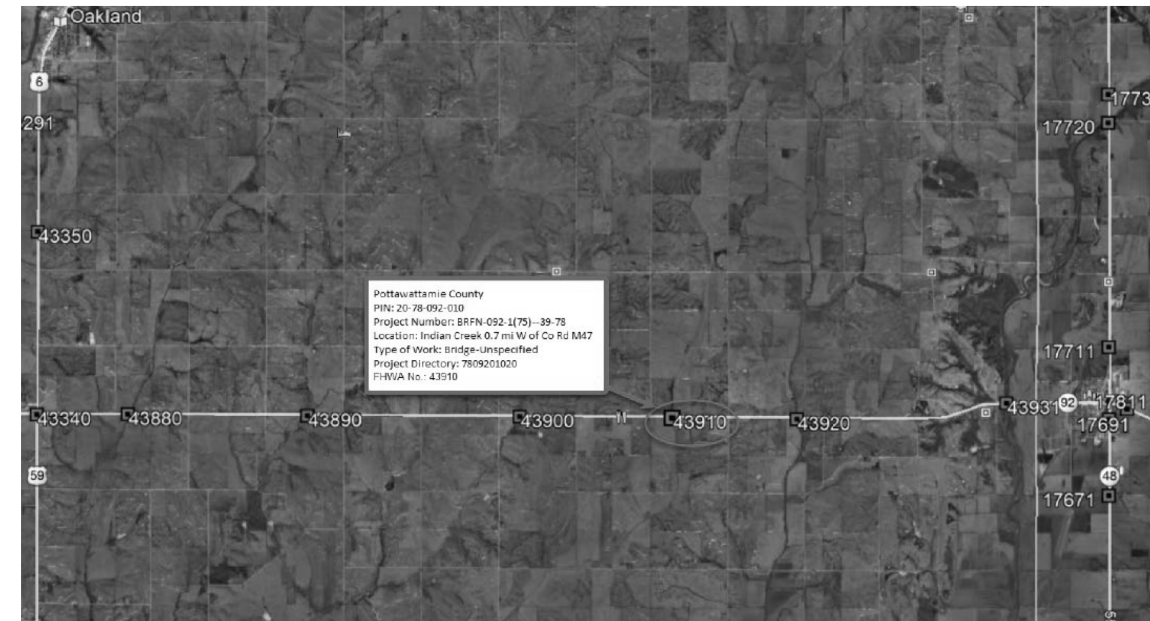
Pottawattamie County
BRFN-092-1(75)--39-78
20-78-092-010
Maint. No. 7836.9S092
FHWA No. 43910

Highway Division
Design Bureau

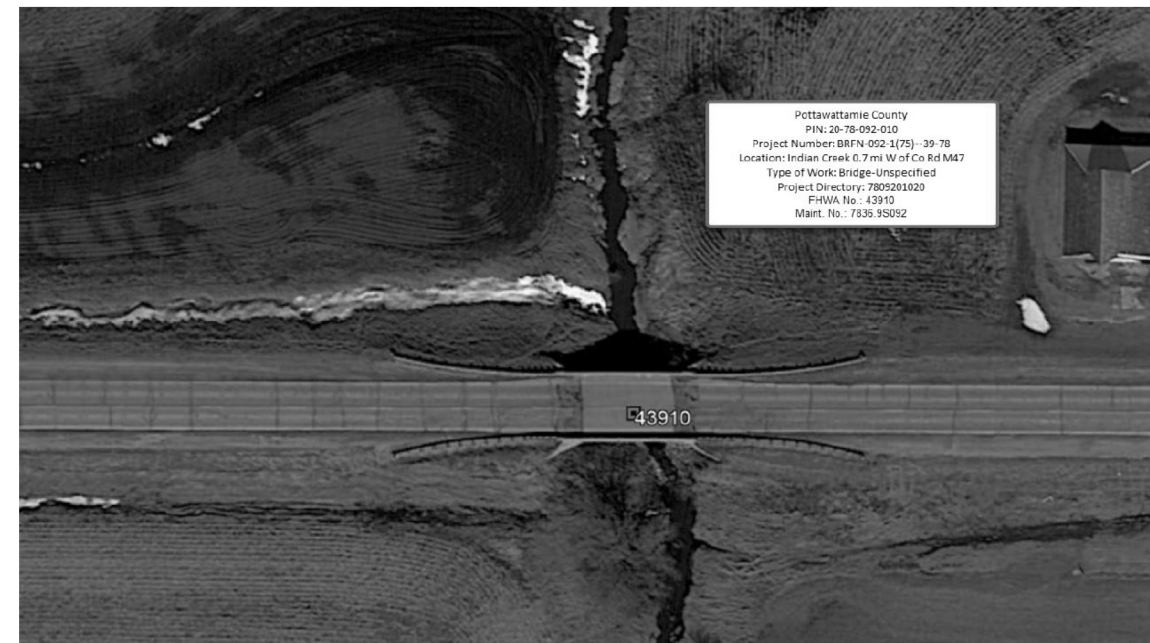
John Bartholomew, P.E.
515-239-1540

January 18, 2022

Pottawattamie County
BRFN-092-1(75)--39-78
20-78-092-010
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Aerial Map



Bridge Aerial

I. STUDY AREA

A. Project Description

This project involves the replacement of the IA 92 bridge (Maint. No 7836.9S092) over Indian Creek, 0.7 mi W of Co Rd M47.

The alternative considered was:

1. 11' x 12' Twin reinforced concrete box culvert utilizing flowable mortar method.

Alternative 1 is the preferred alternative due to low cost and the ability to maintain traffic on the bridge during construction, avoiding an offsite detour.

B. Need for Project

This is a 30' wide, 43' long steel beam bridge that was built in 1938. The current overlay has reached the end of its service life. The deck has large areas of delamination and full depth cracking. The steel beams have severe rust, and one section has a hole rusted through the web. The abutments have leaching cracks and spalls with exposed reinforcement. Due to the condition of the overall structure, it is recommended the bridge be replaced.



Facing East



Facing West



Left profile



Right profile

C. Present Facility

The existing structure is a 30' x 43' steel beam bridge constructed in 1938 and reconstructed in 1956. An overlay was added in 1978. A cast in place barrier rail was added in 1992. Rip-rap was added in 2010.

IA 92 in the project area was constructed in 1957 to be 24' wide with 6" soil aggregate subbase, 12" rolled stone base, 3" AAC binder course, 1.5" AAC surface course, and approximately 10' wide granular shoulders and 3:1 foreslopes. Resurfacing was accomplished in 1964 with two 1.5" AAC binder course layers and 1.5" AAC surface course; in 1971 it consisted of 1.0" AAC surface course. Resurfacing in 1993 consisted of 0.75" milling with 1.5" type 'B' ACC and 1.5" type 'A' ACC asphalt placed. The centerline and transverse joints were slurry sealed in 2002.

D. Traffic Estimates

The 2025 construction year and 2045 design year average daily traffic estimates are 1,300 ADT with 16% trucks and 1,400 ADT with 16% trucks, respectively.

E. Sufficiency Ratings

IA 92 is classified as an "Area Development" route and is a maintenance service level "C" roadway. The federal bridge sufficiency rating is 67.9.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2016 through December 31, 2020, there was 1 personal injury crash.

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 - Replace with a culvert utilizing the flowable mortar method

A twin 11' x 12' reinforced concrete box (RCB) will be constructed under the existing 30' x 43' bridge utilizing the flowable mortar method. The typical cross section will consist of a 24' wide pavement with 10' granular shoulders. (See statements above.)

The new RCB can be built under the existing bridge without disturbing the bridge. Prior to RCB construction, the top 4' of the existing soils will be cored out and replaced with a granular material. The limits and thickness of this excavated material may change after further investigation and soil borings have been obtained. After the culvert has been constructed, flooded granular backfill and flowable mortar will be used to fill the void between the RCB and bridge deck. Once the new embankment for the shoulders have been placed adjacent to the bridge, the existing concrete bridge barrier, curb, and guardrail can be removed. Deck patching will be done to address delamination and any cracking. The existing cross section of the roadway will be maintained and the bridge approaches will be kept in place. The flow line of the box

will be buried 1' below the existing flow line in the channel. This will allow the bottom of the box to silt in and provide a natural bottom for fish passage. The existing ditches will need to be relocated to meet the inlet and outlet flowlines of the new RCB. Class E revetment will be placed at the ends of the RCB.

Apply erosion control and rural seeding and fertilizing to all disturbed areas.

Right of way may be required for this project.

Traffic will be maintained at all times. However, it will be necessary to reduce traffic down to one lane via the use of flaggers during the removal of the bridge rail, guardrail, deck patching, and placement of the flowable mortar.

Due to likely settlement of the RCB after initial construction, the contractor will be required to place an additional application of flowable mortar after several months to ensure that contact is maintained between the bottom of the bridge deck floor and the top of the previous flowable mortar application. The amount of settlement and time period in which the settlement is likely to occur will be reviewed after soil borings have been taken and any consolidation tests have been performed.

	<u>Estimated Cost</u>
Bridge Items	
New Culvert	\$ 315,000
Bridge Removal	15,000
Mobilization - 10%	31,540
M & C - 15%	<u>54,300</u>
Bridge Costs	\$ 415,840
Roadway Items	
Class 13 waste	\$ 18,400
Right of Way	5,000
Flooded backfill	16,400
Flowable mortar	44,300
Embankment in place, contractor furnished	26,200
Granular Material	3,400
Erosion Control	50,000
Removal of Steel Beam Guardrail	2,600
Groove Cut – Pavement Markings	100
Deck Repair/Patching (lump sum)	50,000
Seed & Fertilize	400
Wetland Mitigation	50,000
Flaggers	2,300
Mobilization – 7.5%	32,300
M&C - 30%	<u>124,100</u>
Roadway Total	\$425,500
Project Total	\$841,340

B. Detour Analysis

There will be no off-site detour. Traffic will be maintained via staged construction with traffic reduced down to one lane via the use of flaggers during the removal of the bridge rail, guardrail and placement of the flowable mortar.

C. Recommendations

It is recommended that the present structure be replaced with a twin RCB culvert utilizing the flowable mortar method, as described in Alternative No. 1.

D. Construction Sequence

It is anticipated that all work on this project will be awarded to one prime contractor. The Bridges and Structures Bureau will coordinate the plan preparation with assistance from the Design Bureau.

This project will be timed in coordination with a 3R project near Carson, IA in FY 2024 or 2025 with details below:

County: Pottawattamie
PIN: 21-78-092-010
Project Number: STP-092-1(77)--2C-78
Location: Treynor to Carson
Type of Work: HMA Resurfacing
Project Directory: 7809201021

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to IA 92; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

This will not be a traffic critical project.

No bike path or sidewalk will be required as part of this project.

No special survey is needed.

Right of Way may be required for this project.

The Location and Environment Bureau has reviewed this project and based on preliminary desktop observations, has determined that a Section 404 Permit will be required. It is expected that the work will be covered by Nationwide Permit 14. They also anticipate that stream mitigation will be required, to be let under a separate project.

G. Program Status

Site data has been developed by the Design Bureau. This project is listed in the 2022-2026 Iowa Transportation Improvement Program, with \$761,000 for bridge replacement and \$5,000 for right of way in FY 2025. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

JEB: YG

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20-78-092-010
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Utilities

Griswold Cooperative Telephone (GWT)
Brent Milner
712-778-2121
gctcbrent@netins.net

Aureon Network Services (INS)
Jeff Klocko
515-830-0445
jeff.klocko@aureon.com

Verizon (MC1)
John Bachelder
972-729-7000
asg.investigationsteam@asgin

Nishnabotna Valley Rec (NVR)
Shadon Blum
712-755-2166
sblum@nvrec.com

CenturyLink (WCG)
Tech on Duty
877-366-8344
nationalrelo@centurylink.com

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20-78-092-010
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Bridge Concept Statement
Pottawattamie County
BRF-059-3(47)--38-78

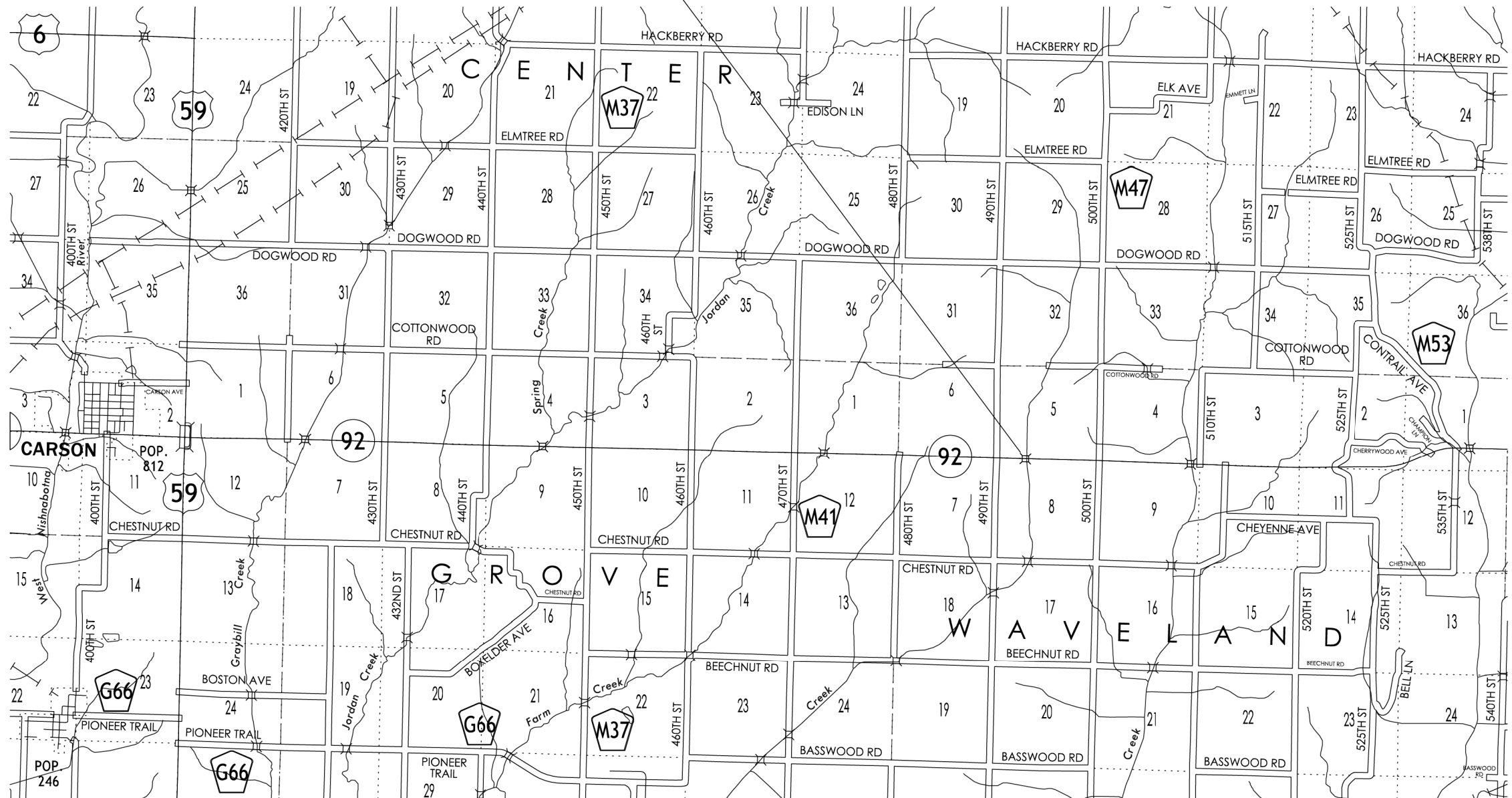
9/14/2021

Bridge Bureau Attachment for Concept Statement

1. Regulatory/Coordination
 - a. Iowa DNR Flood Plain permit = No
 - b. Iowa DNR Sovereign Lands permit = No
 - c. Local Record of Coordination = Yes
 - d. Flood Insurance Study = Yes. Zone A Panel 19155CV000B, April 16, 2013
 - e. Drainage District = No, district will need to verify.
 - f. Corps of Engineers Section 408 = No
2. Hydrologic/Hydraulic Analysis/RIDB Dataset
 - a. Design discharges determined = Yes (87-4132)
 - b. Hydraulic analysis done = Yes (Lidar and ICH)
 - c. Riverine Infrastructure Database (RIDB) = No
3. Structure/Roadway Layout Considerations
 - a. Void below the bridge will be filled with flowable mortar after construction of the culvert.
4. Special construction issues
 - a. It is desirable for new structure foundations to avoid existing foundations when possible.
5. Special survey = No.
6. Aesthetic enhancements = No.

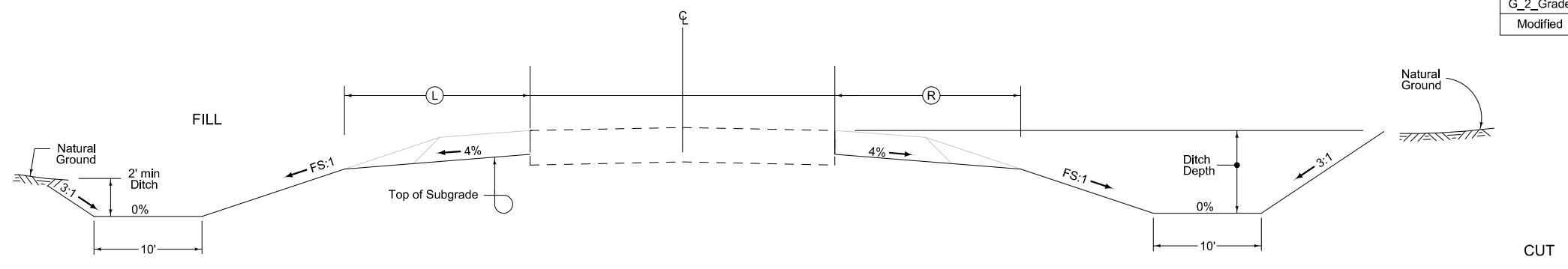
STA 177+25
 FHWA 43910
 MAINT. 7836.9S092
 DESIGN 256

POTTAWATTAMIE COUNTY



IA 92, INDIAN CREEK BRIDGE
0.7 MILES WEST OF
COUNTY ROAD M-47
BRFN-092-1(75)-39-78
PIN: 20-78-092-010

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L)	(R)	(X)	FS
			Feet	Feet	Inches	
IA 9	175+36.41	178+97.25	(1)	(1)	6"	(1)
IA 9	175+51.48	179+17.48	(1)	(1)	6"	(1)
			(1) See XS for Details			



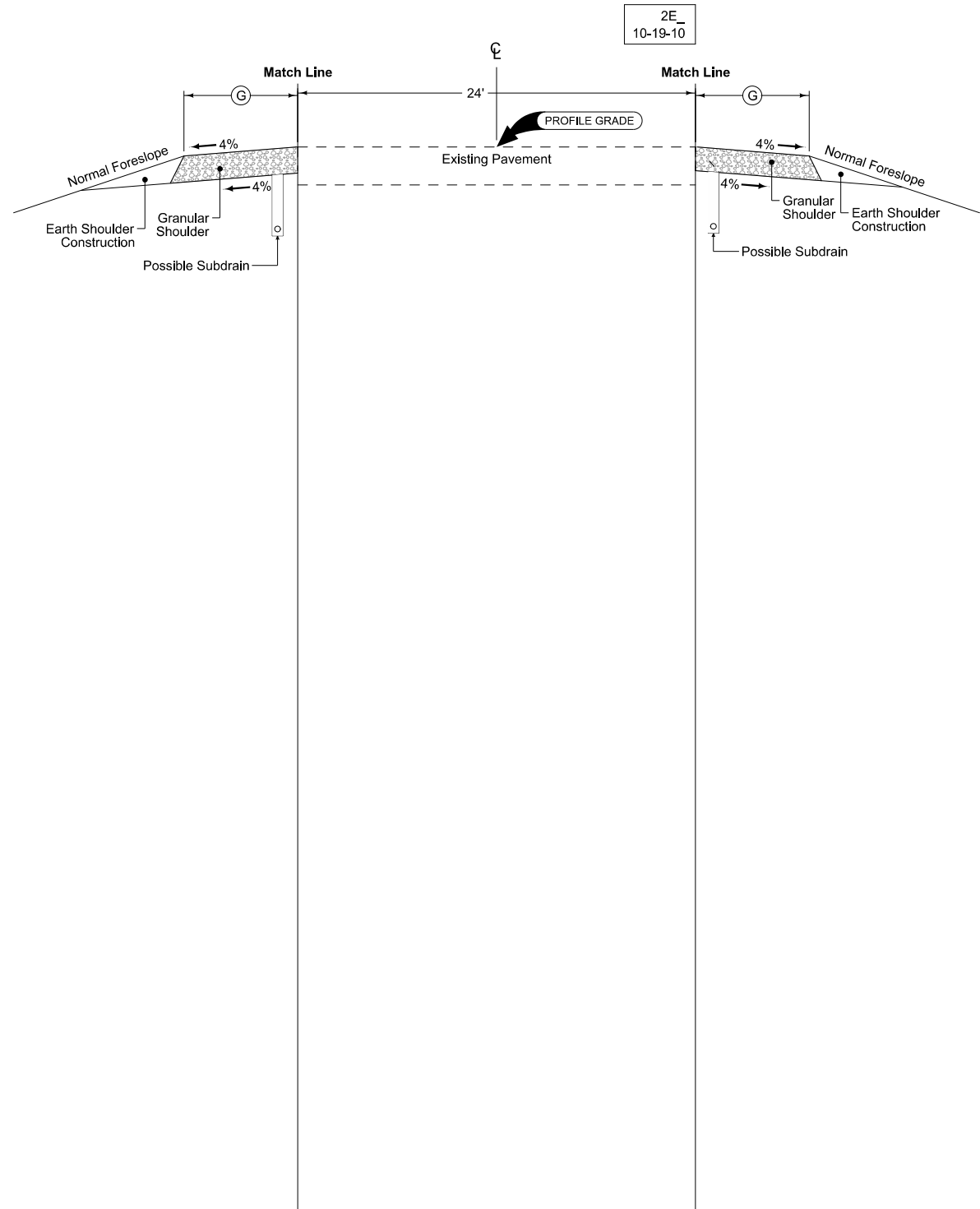
2 LANE SHOUDER GRADING

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

G_2_Grade
Modified

2E_10-19-10



Granular Shoulder

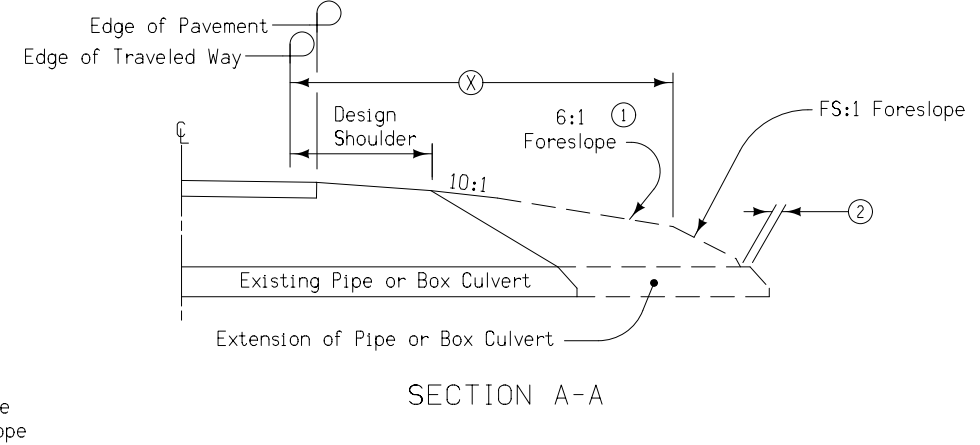
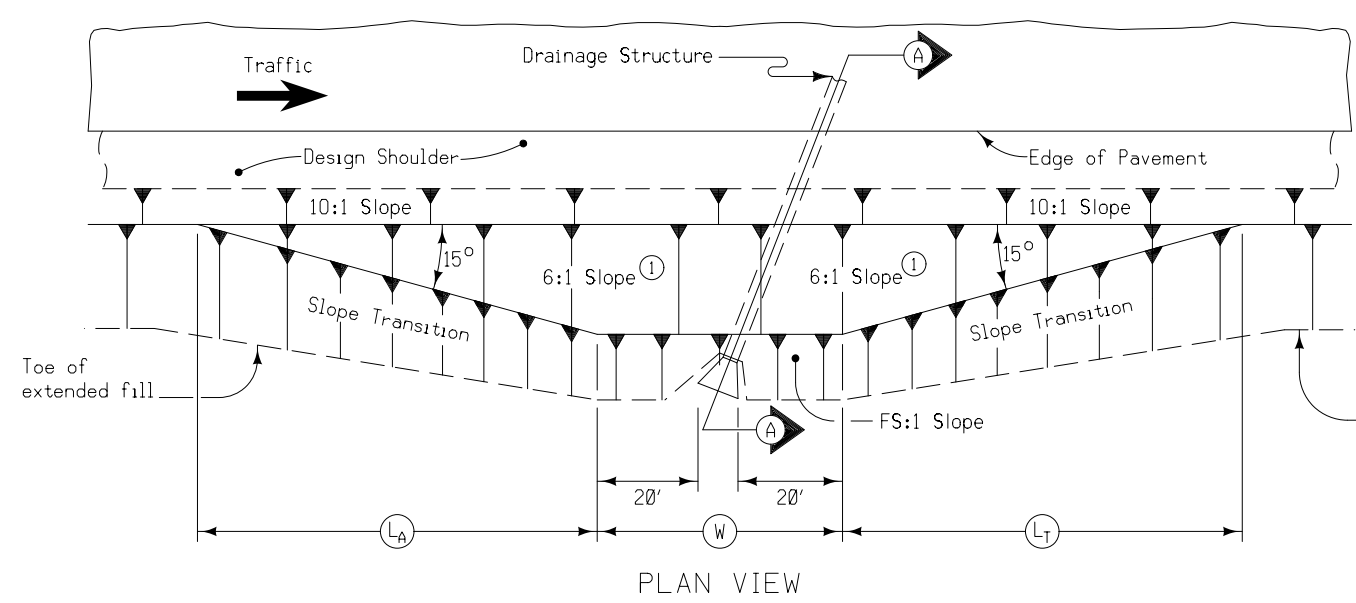
1R_G_10-19-10		
BEGIN STATION	END STATION	(G) Feet
175+36.41	178+97.25	10'

Granular Shoulder

1R_G_10-19-10		
BEGIN STATION	END STATION	(G) Feet
175+51.48	179+17.48	10'

IA 92

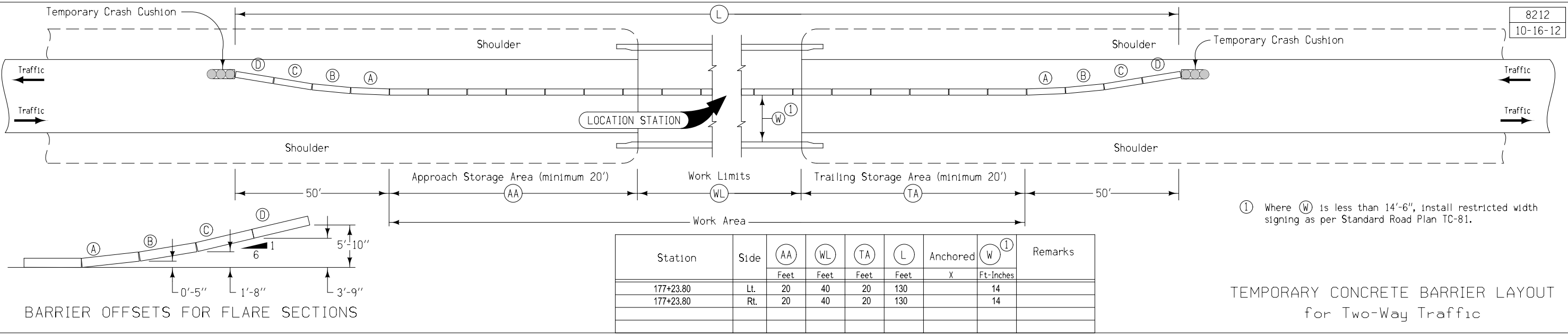
See Tab 112-9 for shoulder quantities.



STRUCTURE LOCATION		W	LA	LT	X	FS
STATION ③	SIDE	Feet	Feet	Feet	Feet	
177+22.65	RT.	66.6	149.8	149.8	51.4	3
177+22.65	LT.	68.0	146.7	146.7	49.3	3

- At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten as indicated so as to cover the structure. Minimum earth cover is 6 inches.
- ① Slope may be flatter than 6:1.
 - ② 6 inch minimum for pipe installations or to top of headwall on RCB.
 - ③ At ϕ of road.
 - W = Pipe or RCB opening width plus 20 feet each side.

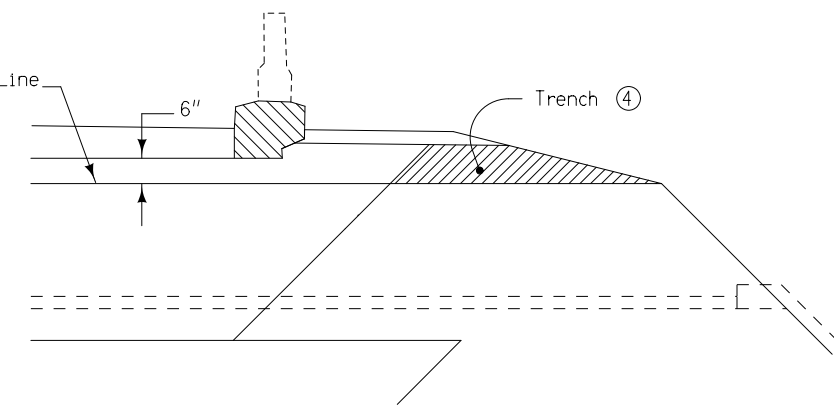
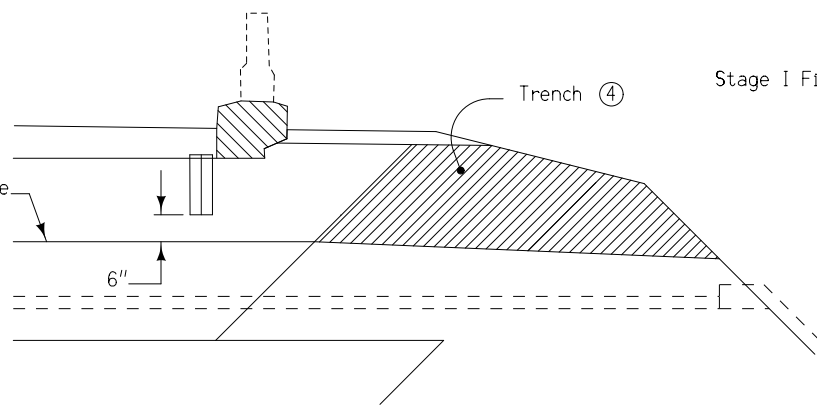
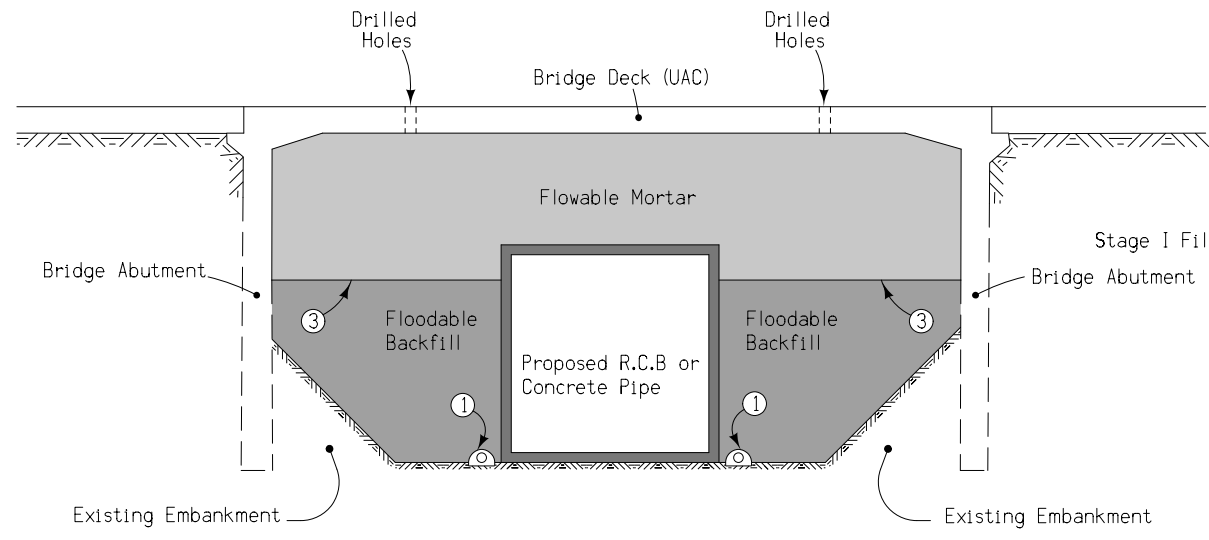
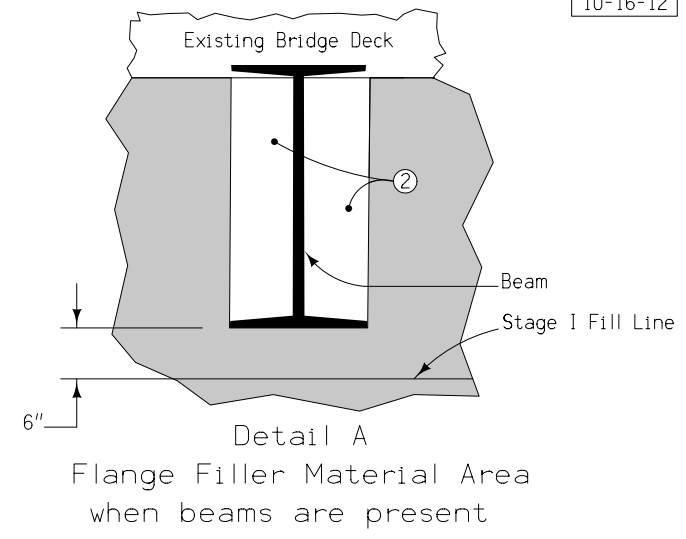
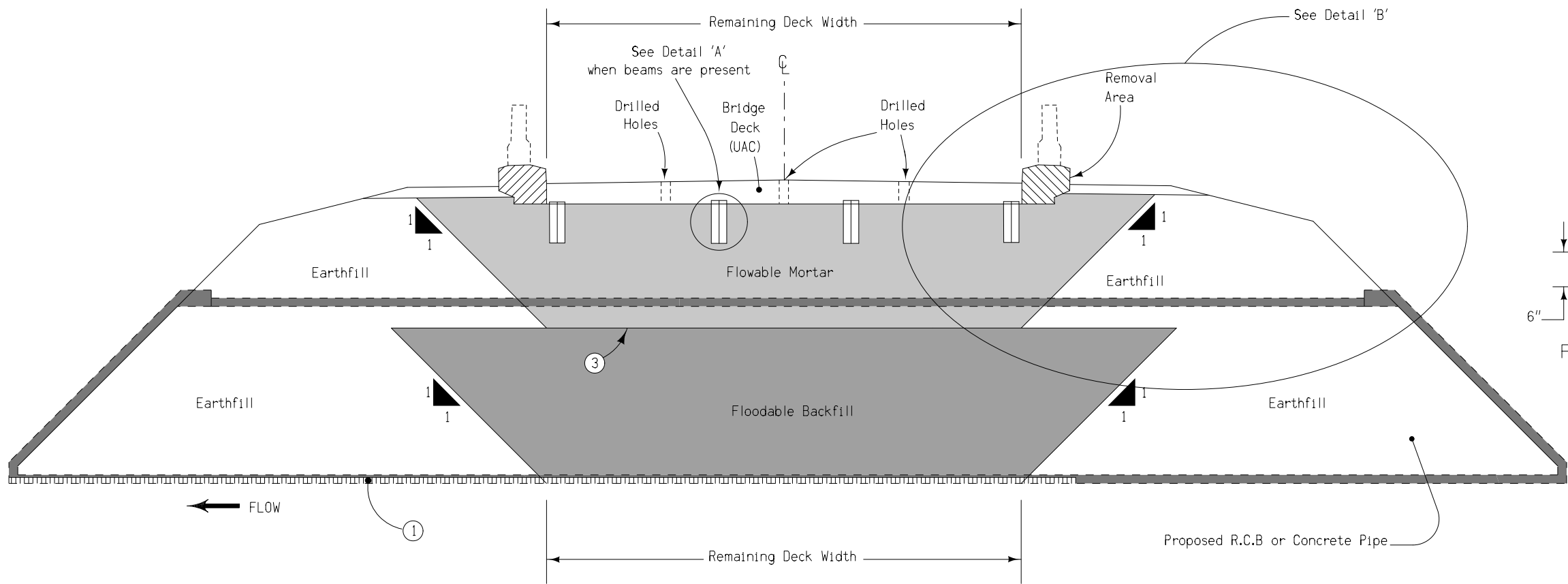
BARNROOF FORESLOPE AT SKEWED DRAINAGE STRUCTURE



Station	Side	AA	WL	TA	L	Anchored	W ^①	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
177+23.80	Lt.	20	40	20	130		14	
177+23.80	Rt.	20	40	20	130		14	

① Where W is less than 14'-6", install restricted width signing as per Standard Road Plan TC-81.

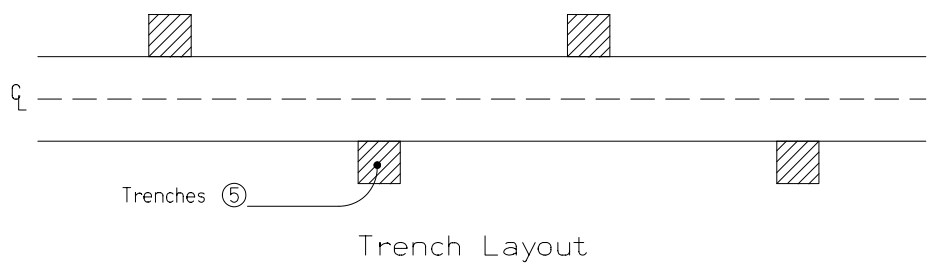
TEMPORARY CONCRETE BARRIER LAYOUT for Two-Way Traffic



Section along Centerline

Detail B (Beam Bridge)

Detail B (Slab Bridge)



Trench Layout

Denotes pay limits for flowable mortar
 Denotes pay limits for flooded backfill

- ① 4" Subdrain at flowline elevation of culvert with 4" cover of porous backfill.
- ② Place Flange Filler Material to fill pocket area between flanges to prevent flowable mortar from building up. Flange Filler Material is incidental to flowable mortar.
- ③ Fill void with the maximum amount of Floodable Backfill possible. Distance from Floodable Backfill to bridge beams (when present) or bridge deck shall not exceed 5'.
- ④ Cut trenches in the soil plug to provide drainage for the flowable mortar. Backfill the trenches with open graded crushed stone, gravel, or recycled PCC to allow water to drain. Backfill material is incidental to flowable mortar.
- ⑤ Place trenches at 20' spacing with a minimum of two trenches on each side of the roadway.

FILL FOR CULVERT USED IN BRIDGE REPLACEMENTS

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

- E1 --- ELID, Nishnabotna Valley REC - Quality D
- F0 --- FO1D, Centurylink - Quality D
- F02 --- FO2D, Griswold Cooperative Telephone - Quality D
- F03 --- FO3D, Aureon Network Services - Quality D

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(10)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

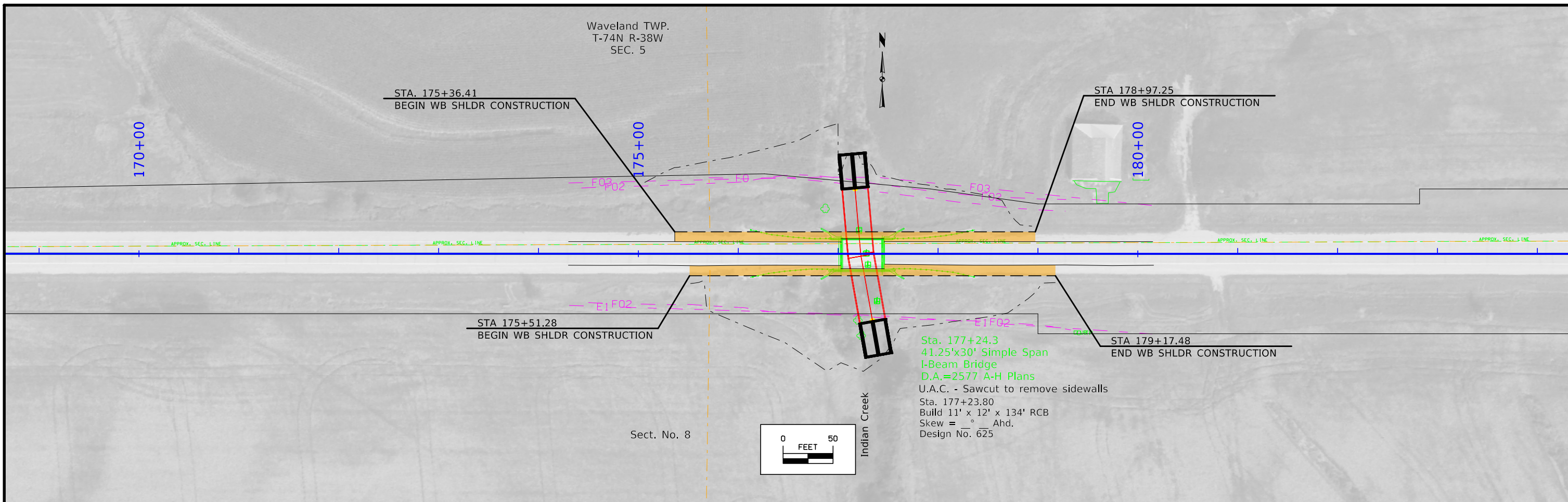
- Reference Point
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

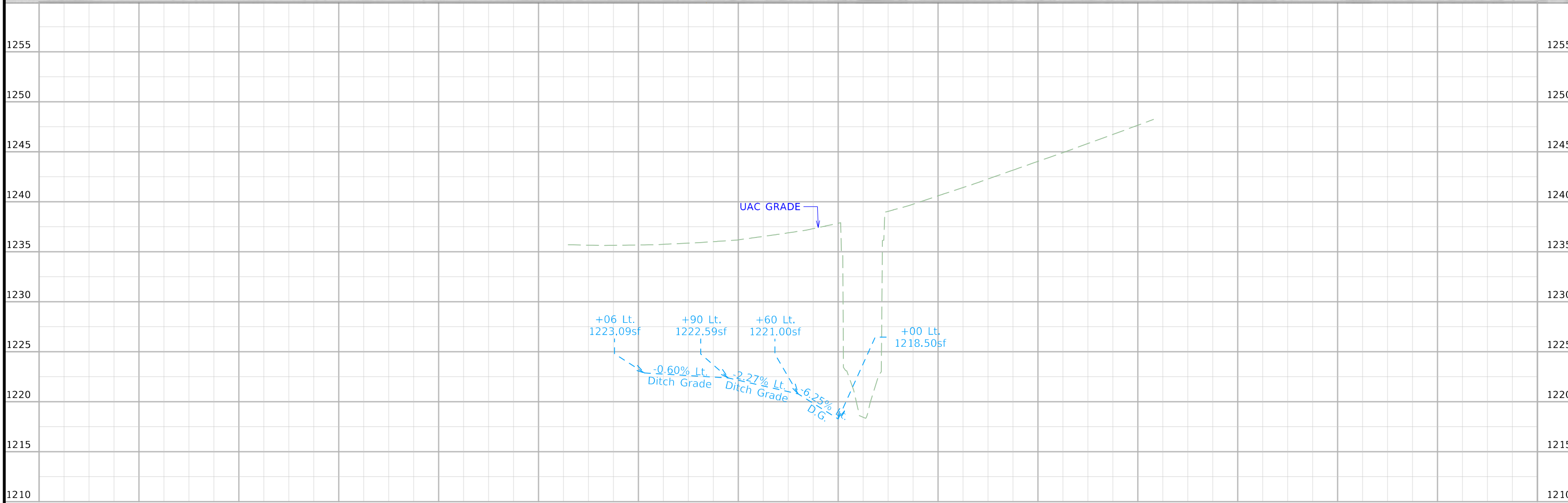
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

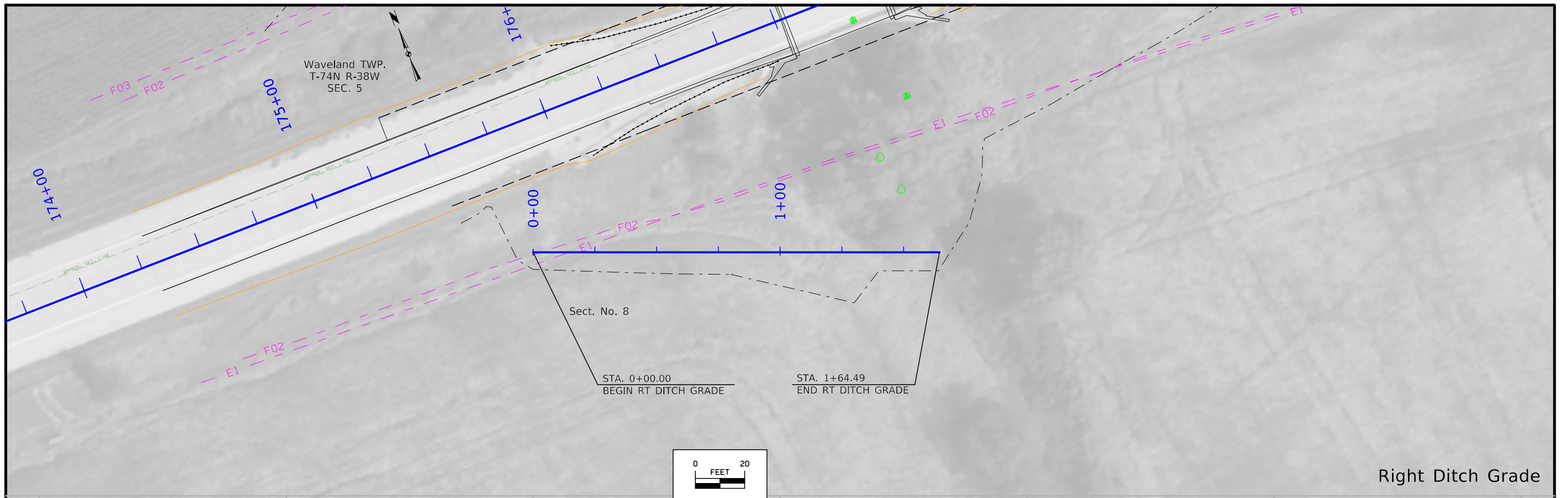
(COVERS SHEET SERIES D, E, F, & K)



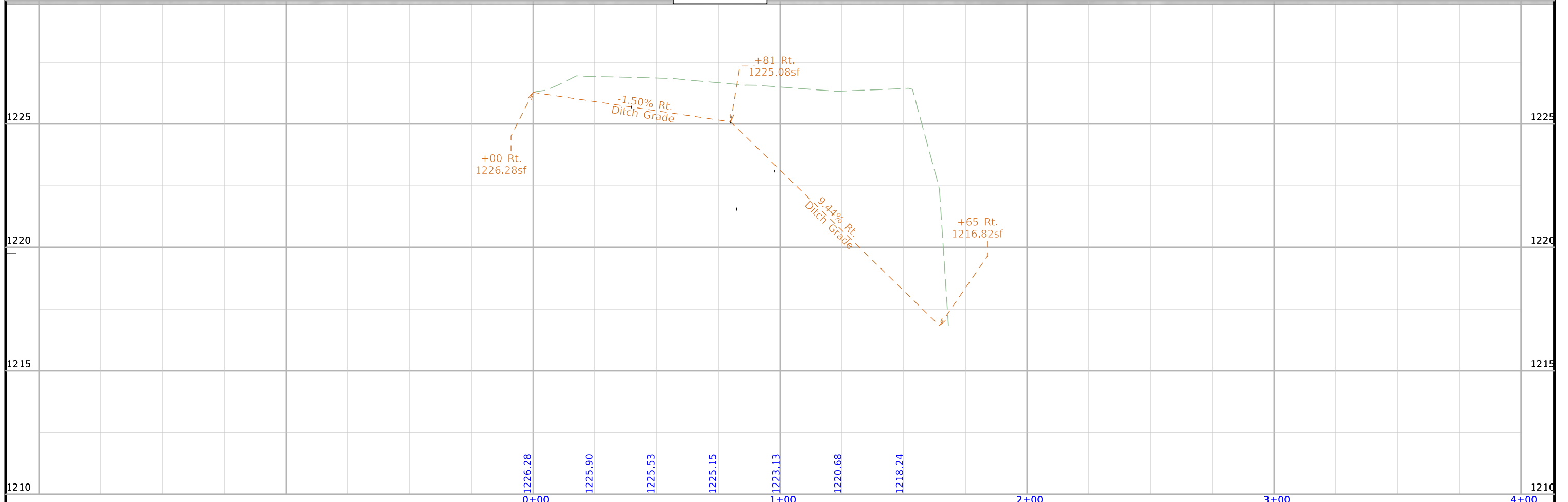
Sta. 177+24.3
 41.25'x30' Simple Span
 I-Beam Bridge
 D.A.=2577 A-H Plans
 U.A.C. - Sawcut to remove sidewalls
 Sta. 177+23.80
 Build 11' x 12' x 134' RCB
 Skew = 0° Ahd.
 Design No. 625



169+00	170+00	171+00	172+00	173+00	174+00	175+00	176+00	177+00	178+00	179+00	180+00	181+00	182+00	183+00	184+00
FILE NO.	ENGLISH	DESIGN TEAM	Flattery\Carlson				POTTAWATTAMIE COUNTY			PROJECT NUMBER	BRFN-092-1(75)--39-78		SHEET NUMBER D.2		



Right Ditch Grade



FILE NO.	ENGLISH	DESIGN TEAM Flattery\Carlson	POTTAWATTAMIE COUNTY	PROJECT NUMBER BRFN-092-1(75)--39-78	SHEET NUMBER E.1
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Survey Information

SURVEY INDEX

County: Pottawattamie
PIN: 20-78-092-010
Project Number: BRFN-092-1(75)--39-78
Location: Indian Creek 0.7 mi W of Co Rd M47
Type of Work: Bridge
Project Directory: 9417503020

Survey Personnel

Clayton Henningsen – Survey Party Chief
Jason Arn – Survey Party Chief
Robert Fredrickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 12/01/2021
End Date 12/09/2021

General Information

Measurement units for this survey are US survey feet. This survey is for IA Hwy 92 bridge repair or replacement. Located over Indian Creek 0.7 mi west of county road M47. Survey is a full field.

Project Control

Coordinates were determined for primary project control points by conducting concurrent five-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
VERTICAL DATUM: NAVD88
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 6

Alignments Information

Alignment is a retrace of As-built Plan FN-92-1(15)—21-78. Stationing is held at POT 162+39.7 and carried ahead without equation.

Survey stationing relates to As-built plan stationing as follows:

POT Sta. 162+39.7 As Built Plans FN-92-1(15)—21-78
= Survey POT Sta. 162+39.7

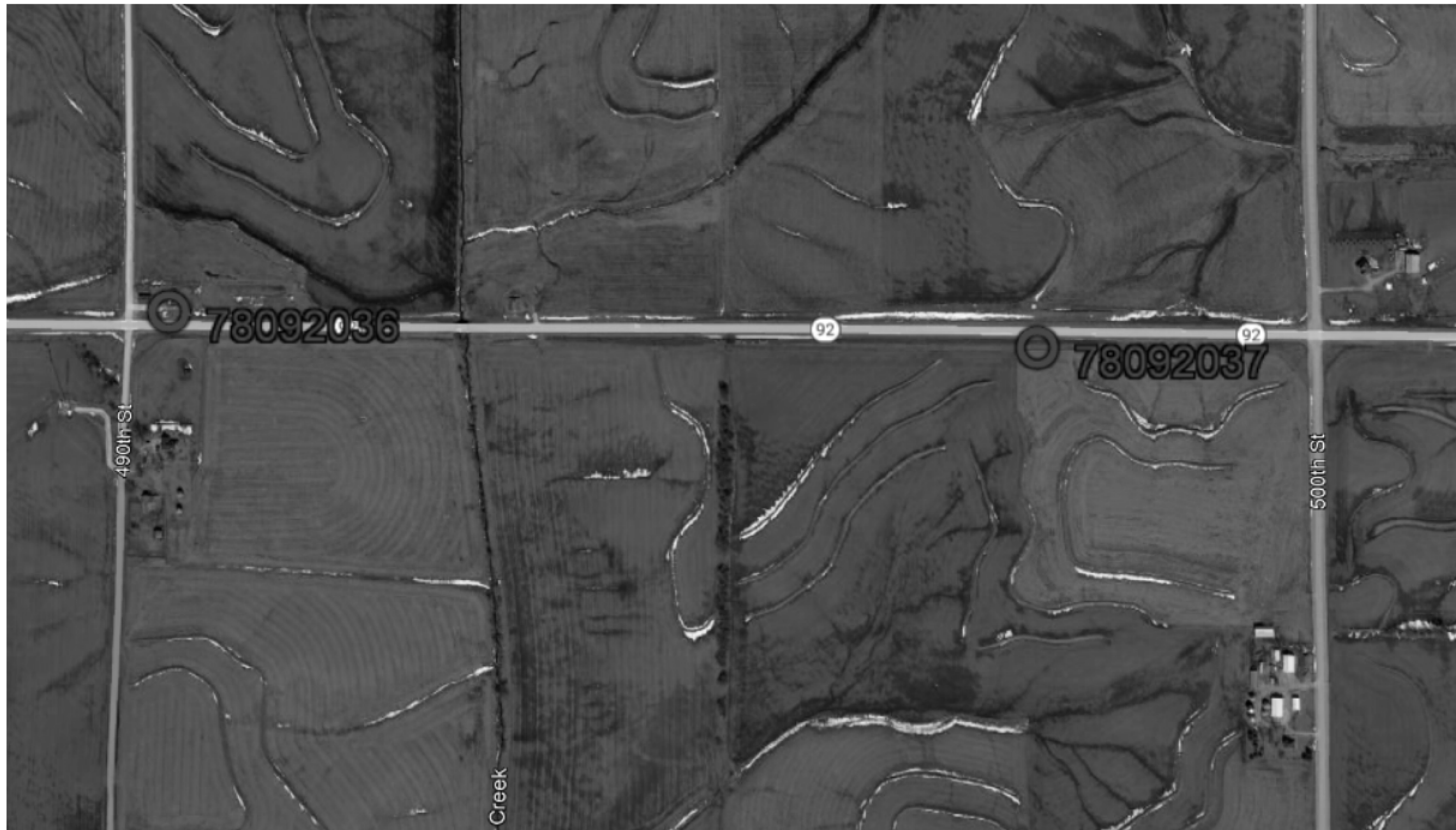
PI Sta. 196+60.5 As Built Plans FN-92-1(15)—21-78
= Survey PI Sta. 196+60.33

Utility Information

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

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 - Ia. RCS Zone 06
VERT. DATUM: NAVD88 - Geoid Model g2012bu3

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
 1a. Regional Coordinate System Zone 06

VERT. DATUM: NAVD88
 Geoid Model g2012bu3
 Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Feature Definition-Description
78092036	6958240.325	16632711.91	1259.978	CP 78092036 FROM THE INTERSECTION OF STATE HIGHWAY 92 AND STATE HIGHWAY 48 IN GRISWOLD GO WEST ALONG HWY 92 5.9 MILES A FENO TYPE MONUMENT 0.3 DEEP ALONGSIDE AN ENTRANCE ON NORTH SIDE 52 FEET N OF HWY 92 CENTERLINE 14 FEET NORTHEAST OF TOP CENTER INLET OF CMP 7 FEET SOUTH OF A CHAINLINK FENCE 22 FEET SOUTHEAST OF A LUM POLE
78092037	6958102.694	16635958.87	1293.754	CP 78092037 FROM THE INTERSECTION OF STATE HIGHWAY 92 AND STATE HIGHWAY 48 IN GRISWOLD GO WEST ALONG HWY 92 5.2 MILES A FOUND IRON PIN SET IN A CONC MONUMENT IN THE SOUTH DITCH 74 FEET SOUTH OF THE EDGE OF PAVEMENT 101 FEET EAST OF A WOOD FIBER OPTIC POST 117 FEET EAST OF STATION MARKER 195 0.6 FEET SOUTH OF A T POST

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.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic shall be maintained on IA 92 at all times. However, it will be necessary to reduce traffic down to one lane via the use of flaggers during the removal of the bridge rail, guardrail, deck patching, and placement of the flowable mortar.

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Travel Restrictions Expected									

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
Aggregate			
(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	Grading	
(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	Substrata	
Asphalt			
(207)	HMA Base Course	(128)	Boulder Substrata
(207)	HMA Interim Course	(48)	Broken Weathered Substrata
(207)	HMA Surface Course	(3)	Core Out Substrata
Concrete			
(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	Unsuitable / Waste	
Shoulder			
(209)	Shoulder HMA	(3)	Unsuitable Type A
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(11)	Unsuitable Type C
(6)	Shoulder Granular	(3)	Waste
Existing			
(0)	Existing Pavement		

NOTES:

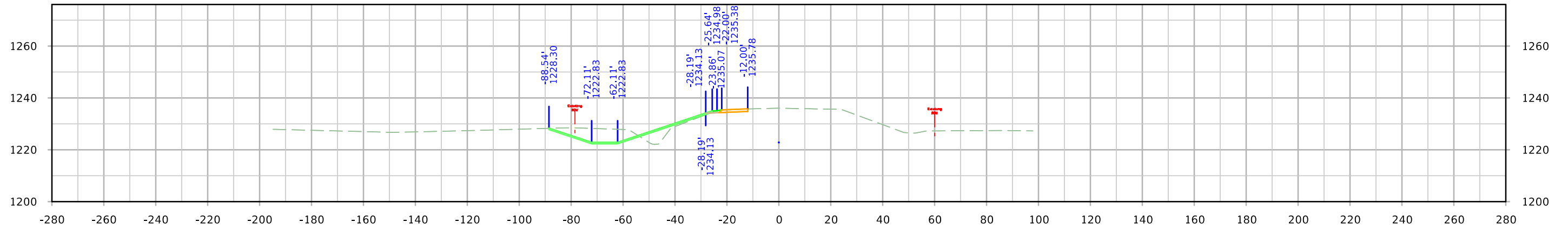
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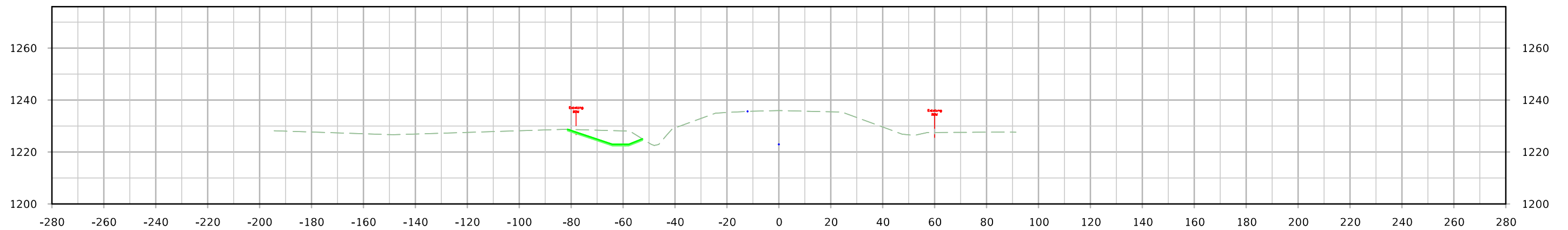
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CROSS SECTIONS LEGEND AND INFORMATION SHEET

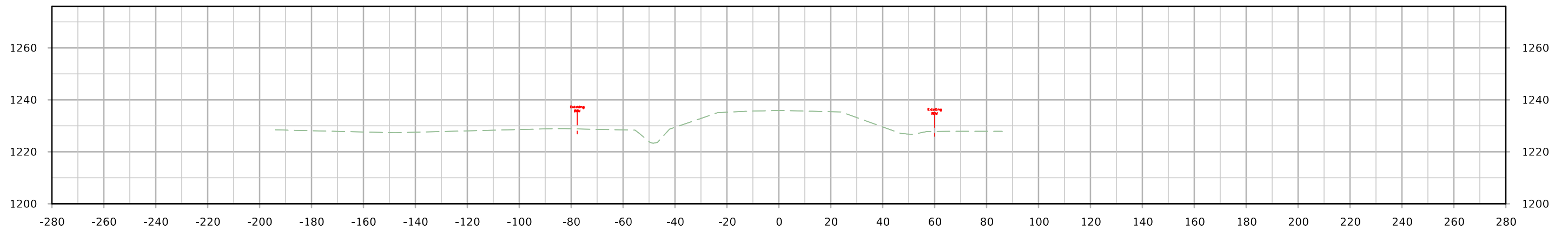
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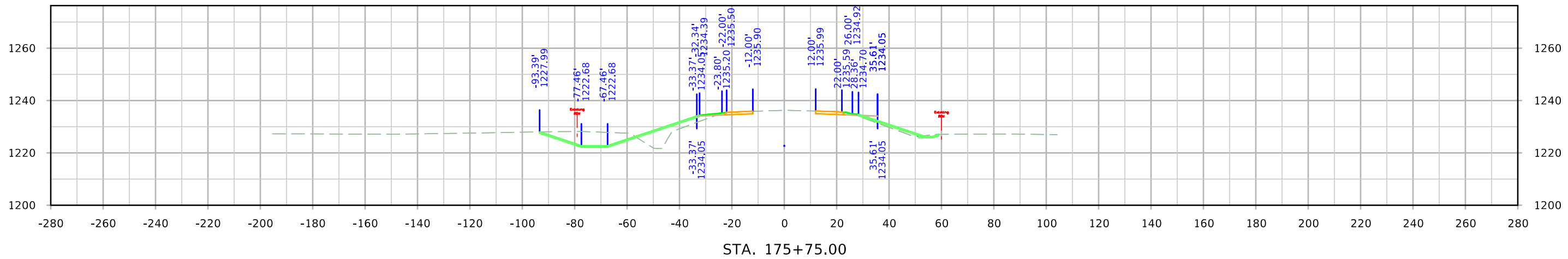
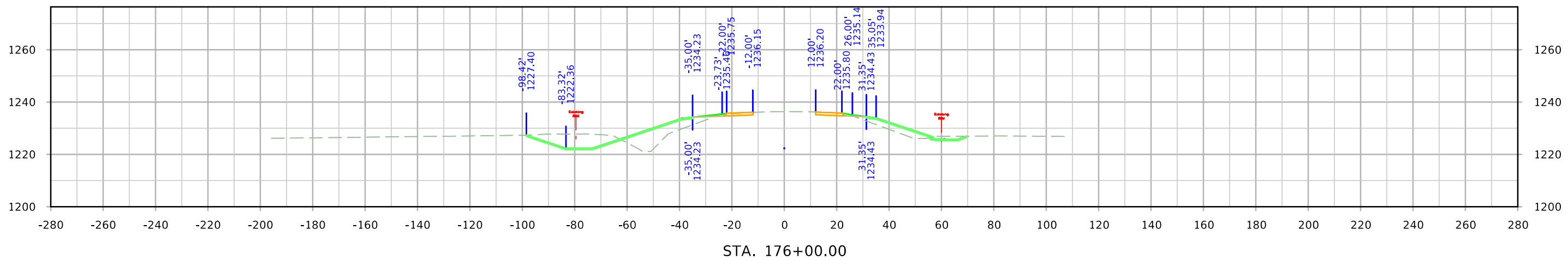
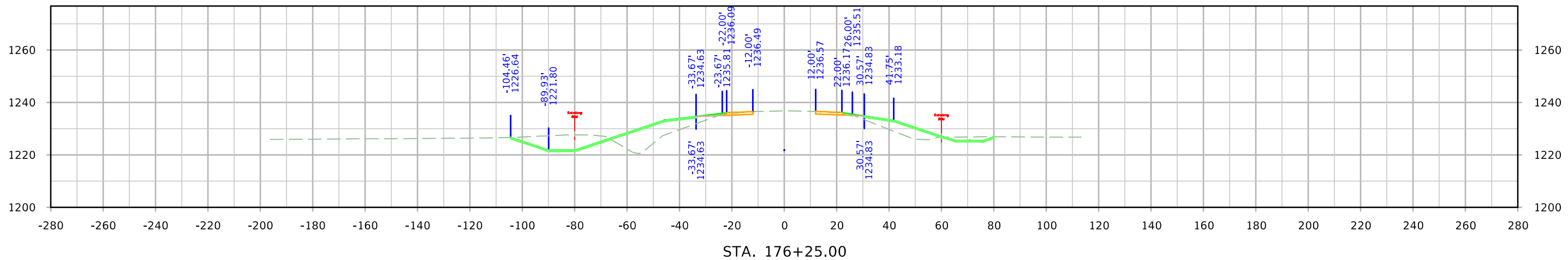
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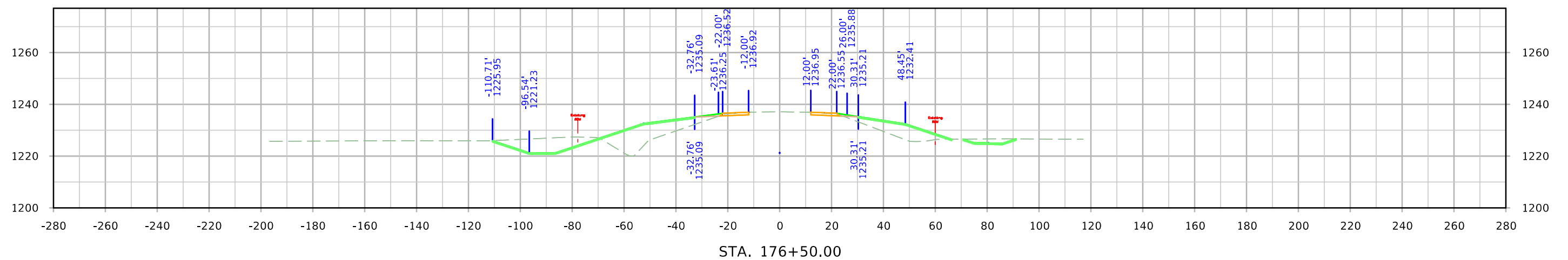
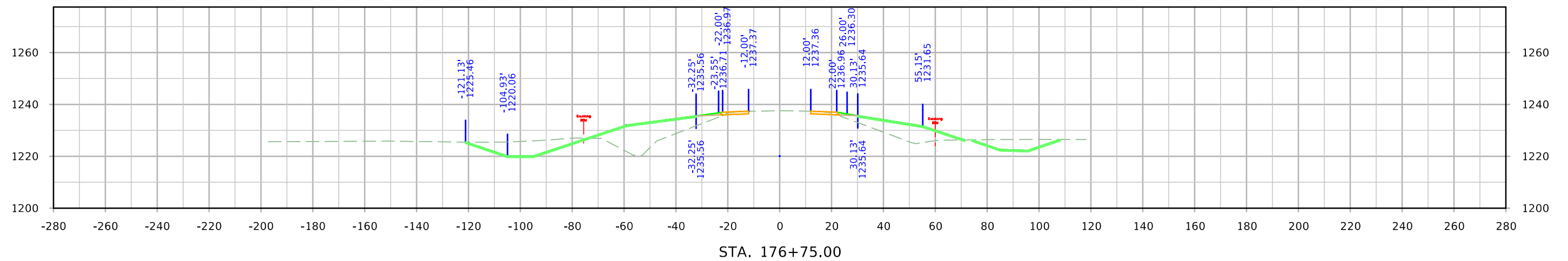
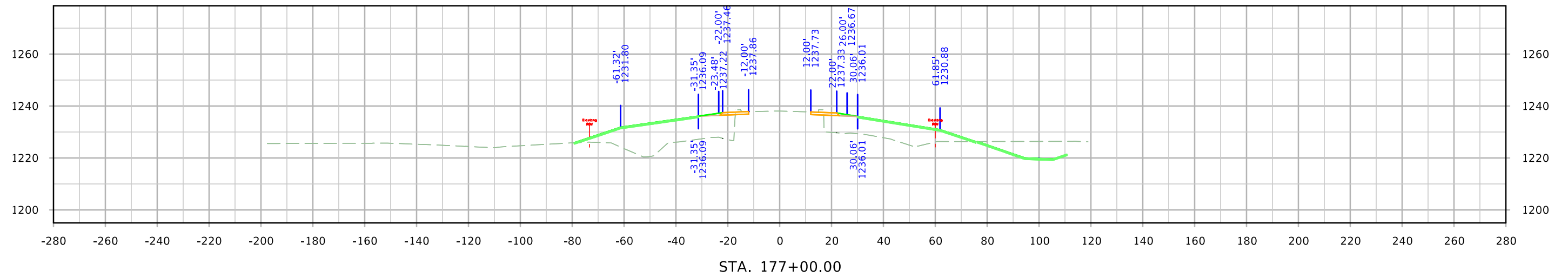


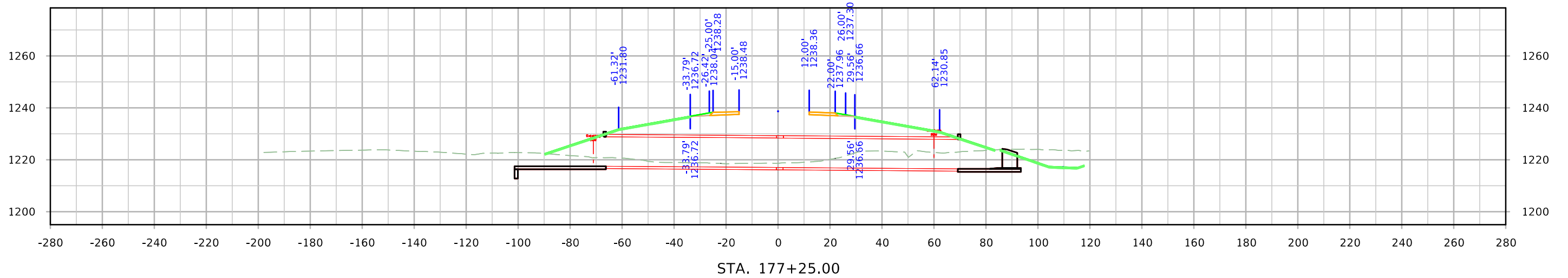
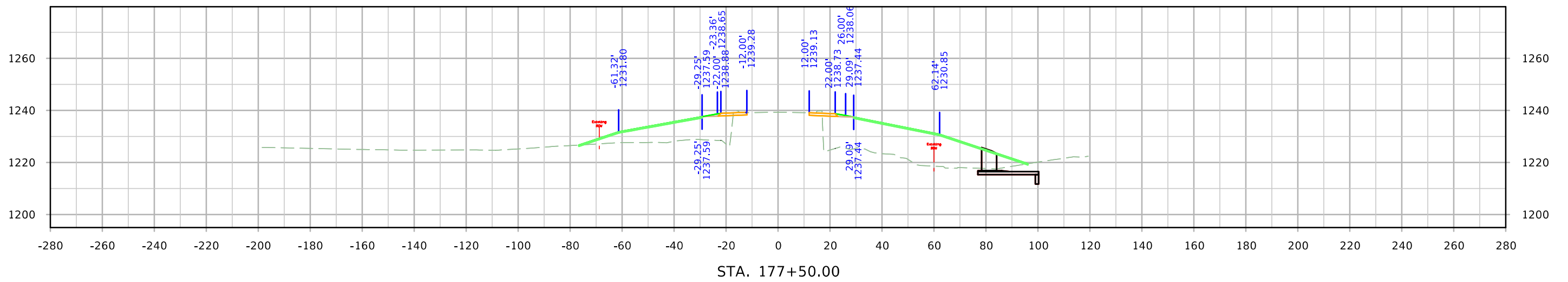
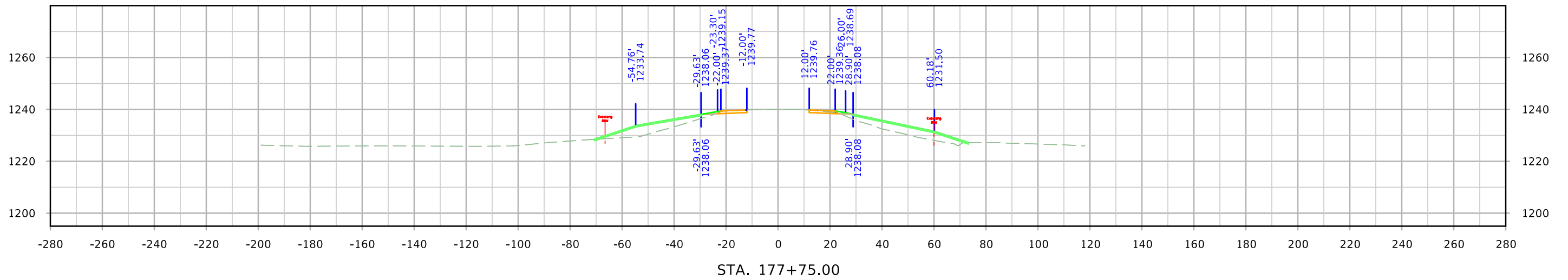
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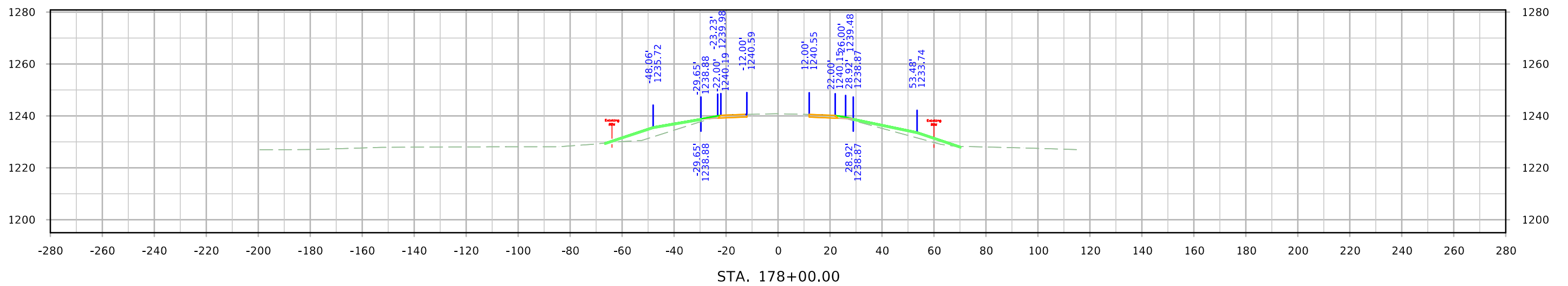
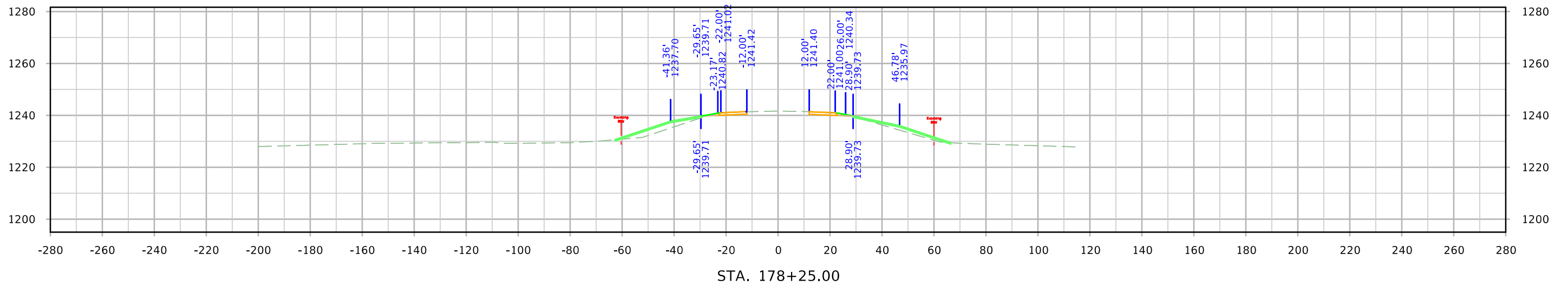
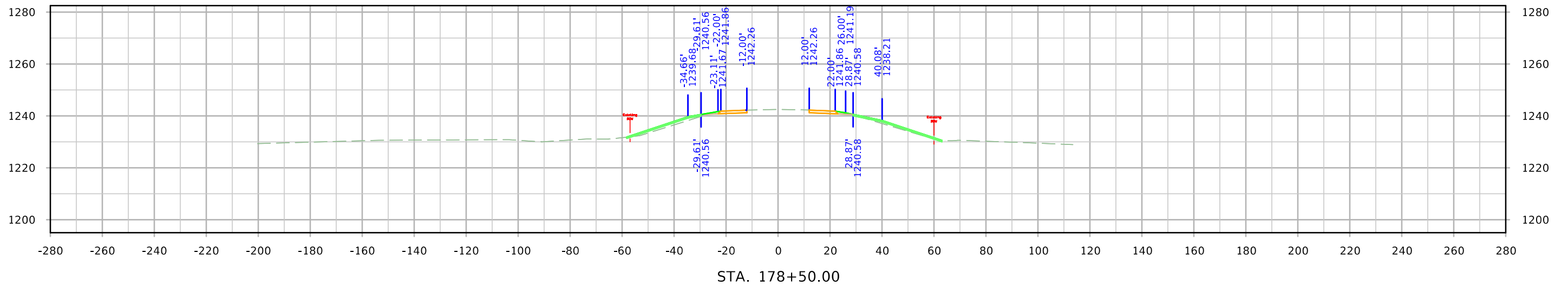


STA. 175+00.00









IA 92

