

BRIDGE REPLACEMENT - CCS
BRF-039-1(30)--38-24

CRAWFORD COUNTY

LETTING DATE
10/21/2025



PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM CRAWFORD COUNTY BRIDGE REPLACEMENT - CCS

East Otter Creek
0.4 miles E of Co Rd M35

PROJECT LOCATION

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

20-24-039-010

PROJECT NUMBER

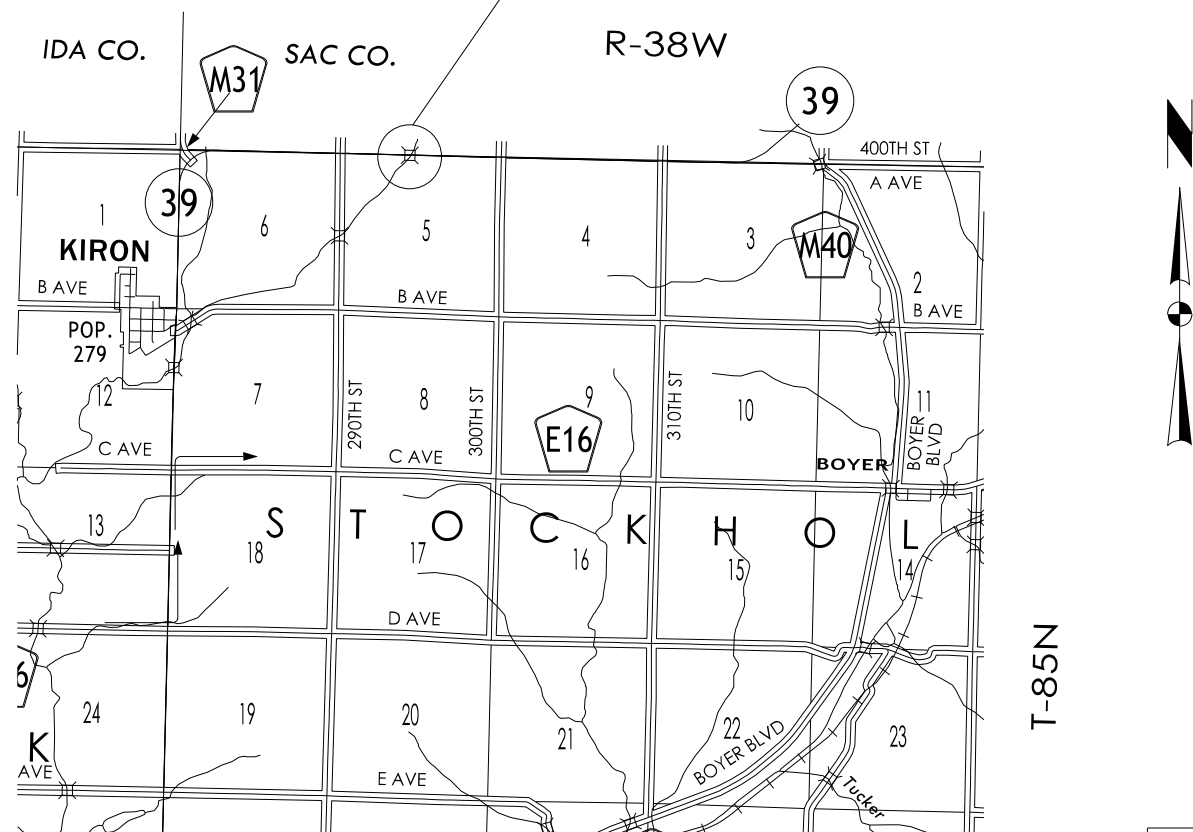
BRF-039-1(30)--38-24

R.O.W. PROJECT NUMBER

STPN-039-1(31)--2J-24

INDEX OF SHEETS

No. No.	DESCRIPTION DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 39
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
* J.2	Detour Map Sheet
V Sheets	Bridge and Culvert Situation Plans
V.1	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 8	Mainline Cross Sections
	* Color Plan Sheets



D5 PLAN - Date: 09/08/2023

D4 PLAN - Date: 06/04/2025

PRELIMINARY PLANS

Subject to change by final design.

D3 PLAN - Date: 05/05/2023

DESIGN DATA RURAL

2025	AADT	1800	V.P.D.
2045	AADT	2000	V.P.D.
2045	DHV	200	V.P.H.
	TRUCKS	35	%
	Total		
	Design ESALs	-	

INDEX OF SEALS

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

FILE NO. --

ENGLISH

DESIGN TEAM JIA \ COOPER \ MCCLANAHAN

CRAWFORD COUNTY

PROJECT NUMBER BRF-039-1(30)--38-24

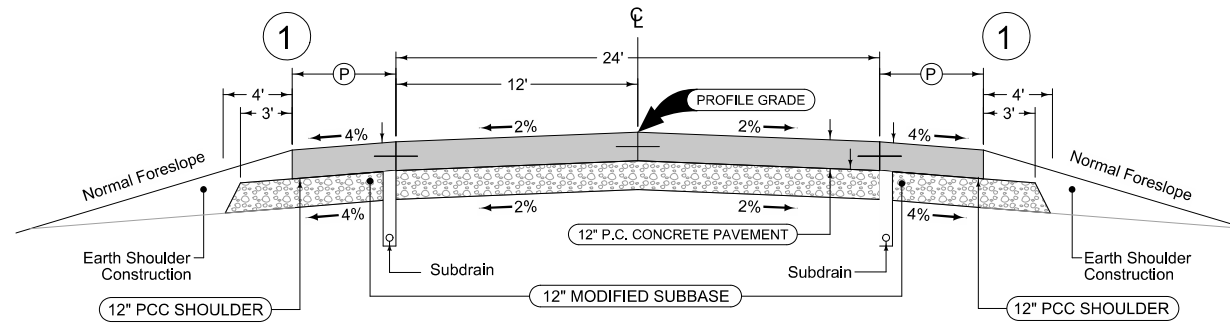
SHEET NUMBER A.1

REVISED

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		
STATION TO STATION		(P) Feet
876+77.17	877+28.81	8
880+31.19	880+84.04	8



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

2P_04-21-20		
STATION TO STATION		(P) Feet
876+77.17	877+28.81	8
880+31.19	880+84.04	8

Full Depth PCC Shoulder

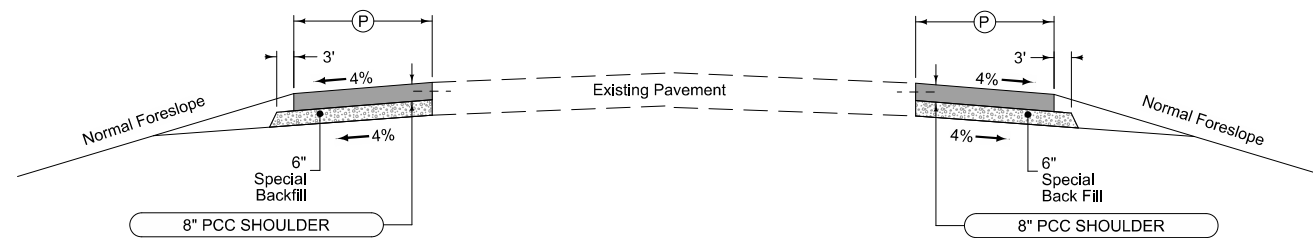
Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		(P) Feet
876+77.17	877+28.81	8
880+31.19	880+84.04	8

PCC Shoulder

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

2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
874+90.00	876+77.17	8'
880+84.04	882+60.00	8'

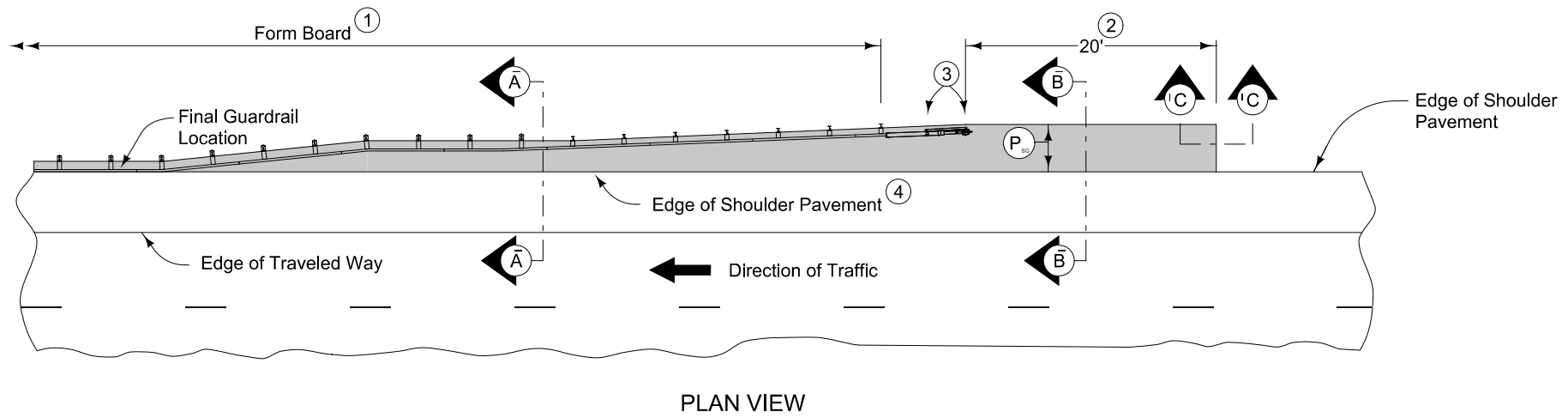


PCC Shoulder

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

2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
874+90.00	876+77.17	8'
880+84.04	882+60.00	8'

① Refer to Tab 112-9 for additional information.



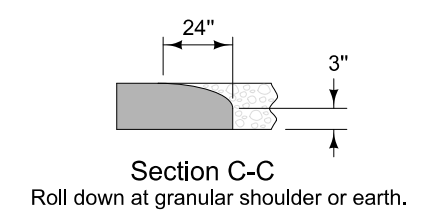
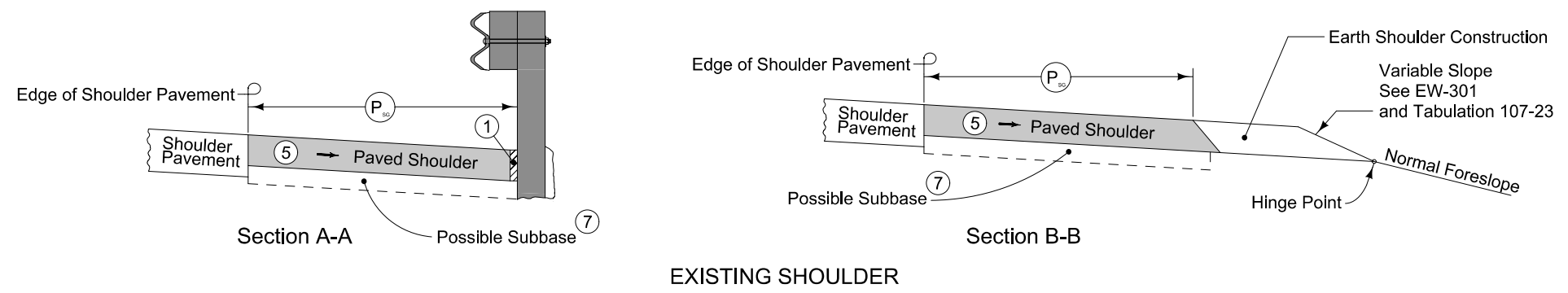
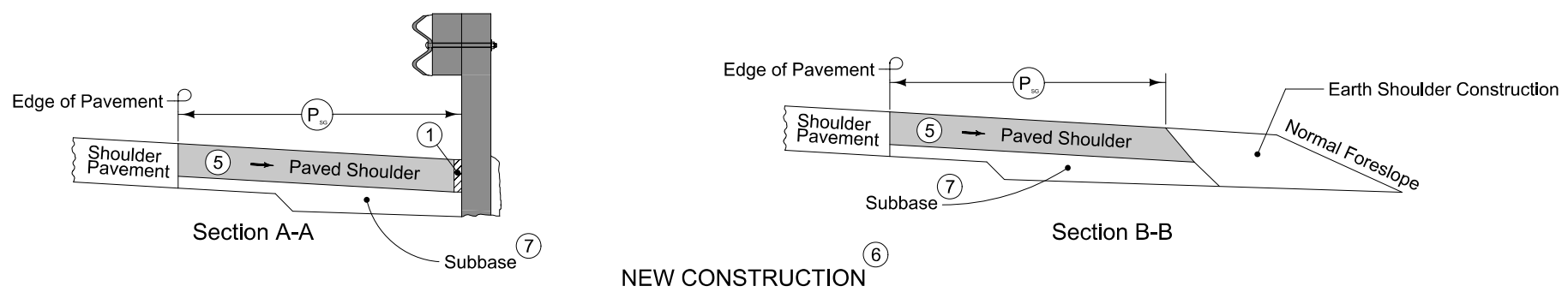
8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

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

Refer to Tabulation 112-9 for shoulder quantities.

- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-101) joint for PCC shoulder. 'B' (per PV-101) joint for HMA shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the full width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.



PAVED SHOULDER AT GUARDRAIL
(ADJACENT TO FULL WIDTH PAVED SHOULDER)

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
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box

UTILITY LEGEND

- FO1D Schaller Telephone Company - Quality D
Jim Kestel
111 West Second St.
Schaller, IA 51053
(712) 275-4211
jkestel@schallertel.net
- WL1D West Central Iowa Rural Water - Quality D
Jason Meredith
P.O. Box 188
Manning, IA 51455
(712) 655-2534
jason@wcirwa.com
- EL1D Western Iowa Power Cooperative - Quality D
Jeremy Kreger
809 Highway 39 North, P.O. Box 428
Denison, IA 51442
(712) 263-2943
jeremy.kreger@wipco.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

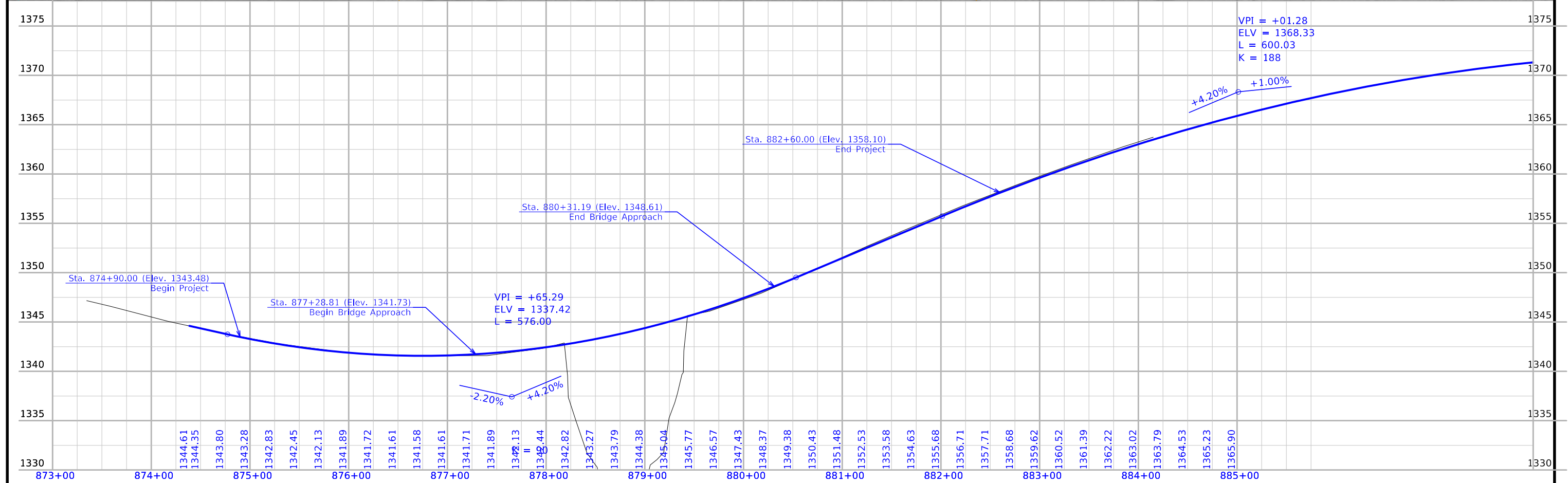
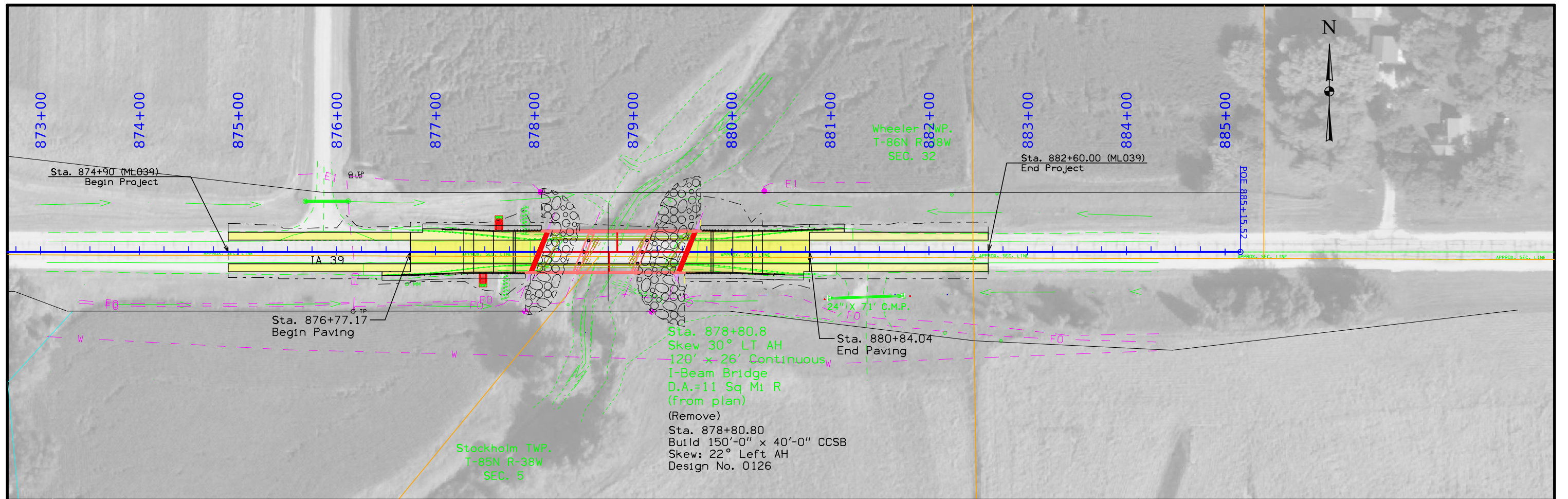
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



FILE NO. --	ENGLISH	DESIGN TEAM JIA \ COOPER \ MCCLANAHAN	CRAWFORD COUNTY	PROJECT NUMBER BRF-039-1(30)--38-24	SHEET NUMBER D.2
-------------	---------	---------------------------------------	-----------------	-------------------------------------	------------------

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 6

<u>Point Number</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>	<u>Point Description</u>
24039001	7314838.81	16616868.79	1346.53	CP 24039001 FOUND I.H.C BUTTON ON INLET HDWL OF BOX CULVERT 25 FEET WEST OF CO RD M35 SIGN 43 FEET NORTH OF CL HWY 39
24039002	7314855.51	16618949.71	1359.21	CP 24039002 FOUND IRON PIN IN CONC MONUMENT 23 FEET EAST OF ROW RAIL 46 FEET EAST OF CONC MONUMENT 59 FEET NORTH OF CL OF HWY 39
24039003	7314727.37	16621618.28	1373.12	CP 24039003 FOUND IRON PIN SET IN CONC MONUMENT 25 FEET EAST OF CONC CORNER FENCE POST 65 FEET EAST OF CL OF 300 ST 70 FEET SOUTH CL IA 39
F 94	7310322.42	16627374.37	1368.07	CP FD NGS F 94 CONCRETE MONUMENT AS DESCRIBED IN GOOD CONDITION

Survey Information

Crawford County
BRF-039-1(30)- -38-24
East Otter Creek 0.4 mi E of Co Rd M35
Project Directory: 2403901020
PIN 20-24-039-010
Sap-0338.1

Party Personnel

Clayton Henningsen- Survey Party Chief
Jason Arn- Survey Party Chief
Paul Harry- Asst. Party Chief

Date(s) of Survey

Begin Date 06/01/2020
End Date 07/09/2020

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction on US 39 east of Kiron. This is a partial terrain and underground structure field survey with aerial image and lidar acquired terrain added in the Photogrammetry section of the Design Office.

Utility Information

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

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. 24039001, 24039002, 24039003, H 186, and F 94 by doing concurrent 6 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

This survey observed 2 NGS GPS control with published NAVD88 heights to compare to local ground control:

NGS mark designated F 94 (PID NL0331) has a published Elev. of 1368.06
Survey Elev. = 1368.074

NGS mark designated H 186 (PID DP4672) has a published Elev. of 1421.31
Survey Elev. = 1421.144

Horizontal Control

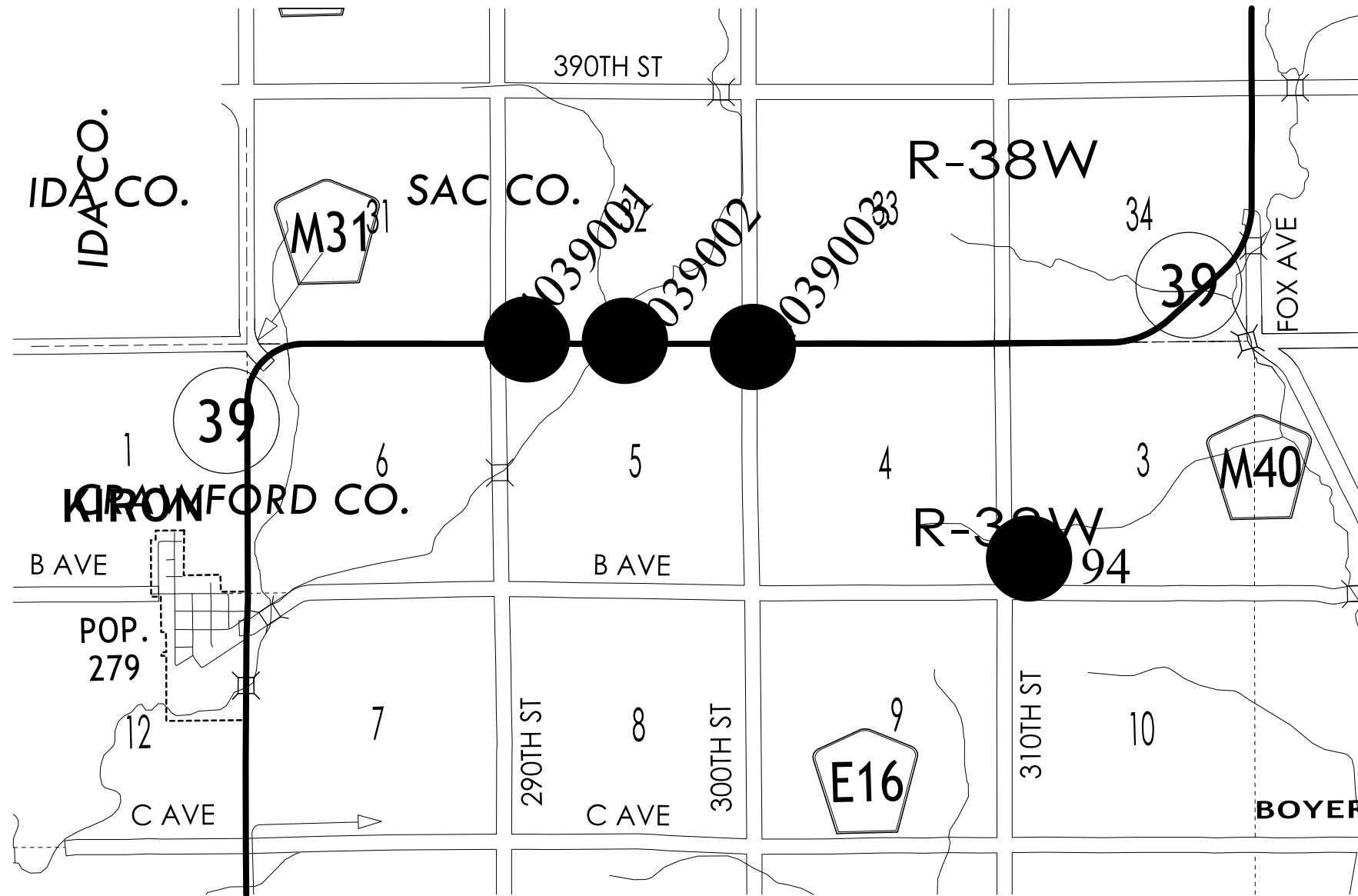
The project coordinate system for this survey is Iowa RCS Zone 6 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by conducting concurrent 6 hour static observations on Project Pts. 24039001, 24039002, 24039003, H 186, and F 94.

Alignment Information

The horizontal alignment for Iowa Hwy. 39 this survey is a retrace of As-built Plans No. F-412(5). Survey stationing was equated to the plan POT at Sta. 856+25.2 and run ahead without equation throughout the survey. This alignment was created by the Preliminary Survey Office with data collected and provided by the District 3 Land Survey Office.

CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 6

Coordinate listing from next sheet will be used with 1aRTN for monument
 recovery. No other reference ties are given.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

IA 39 will be closed during construction. Through traffic on IA 39 will be detoured to County Road M35 north from the junction of IA 39 and County Road M35 to County Road D59, and then east on County Road D59 to IA 39. Refer to Sheets J.2 and J.3 for the proposed detour. Detour signing will be installed and maintained by the Contractor.

111-01
04-17-12

COORDINATED OPERATIONS

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.

Project	Type of Work

108-25
10-21-14

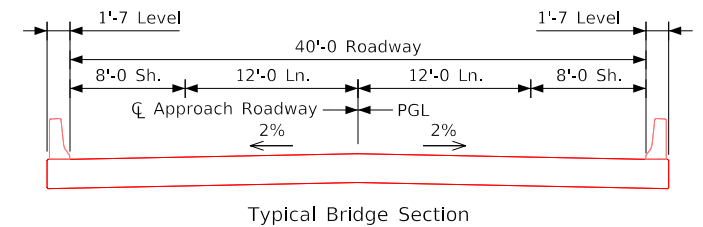
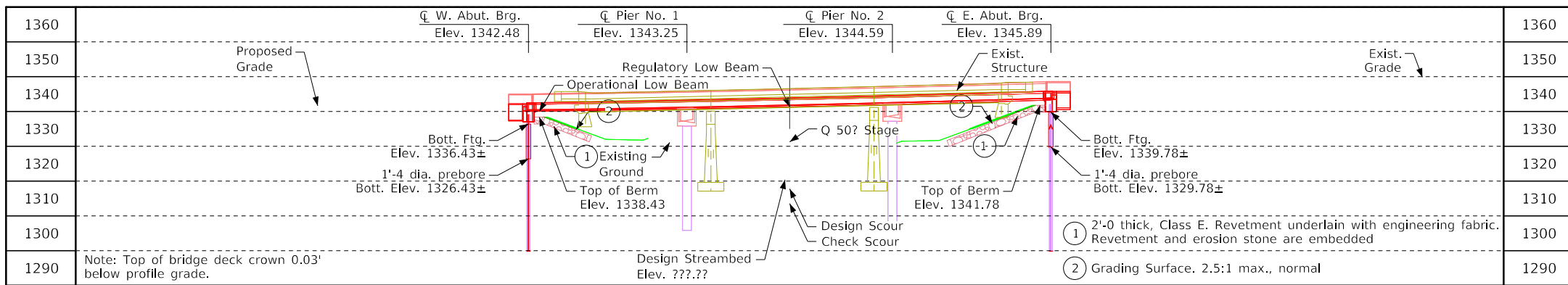
511 TRAVEL RESTRICTIONS

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



Detour Route
Out of Distance Travel
0.28 mi
Total Length 6.98 mi

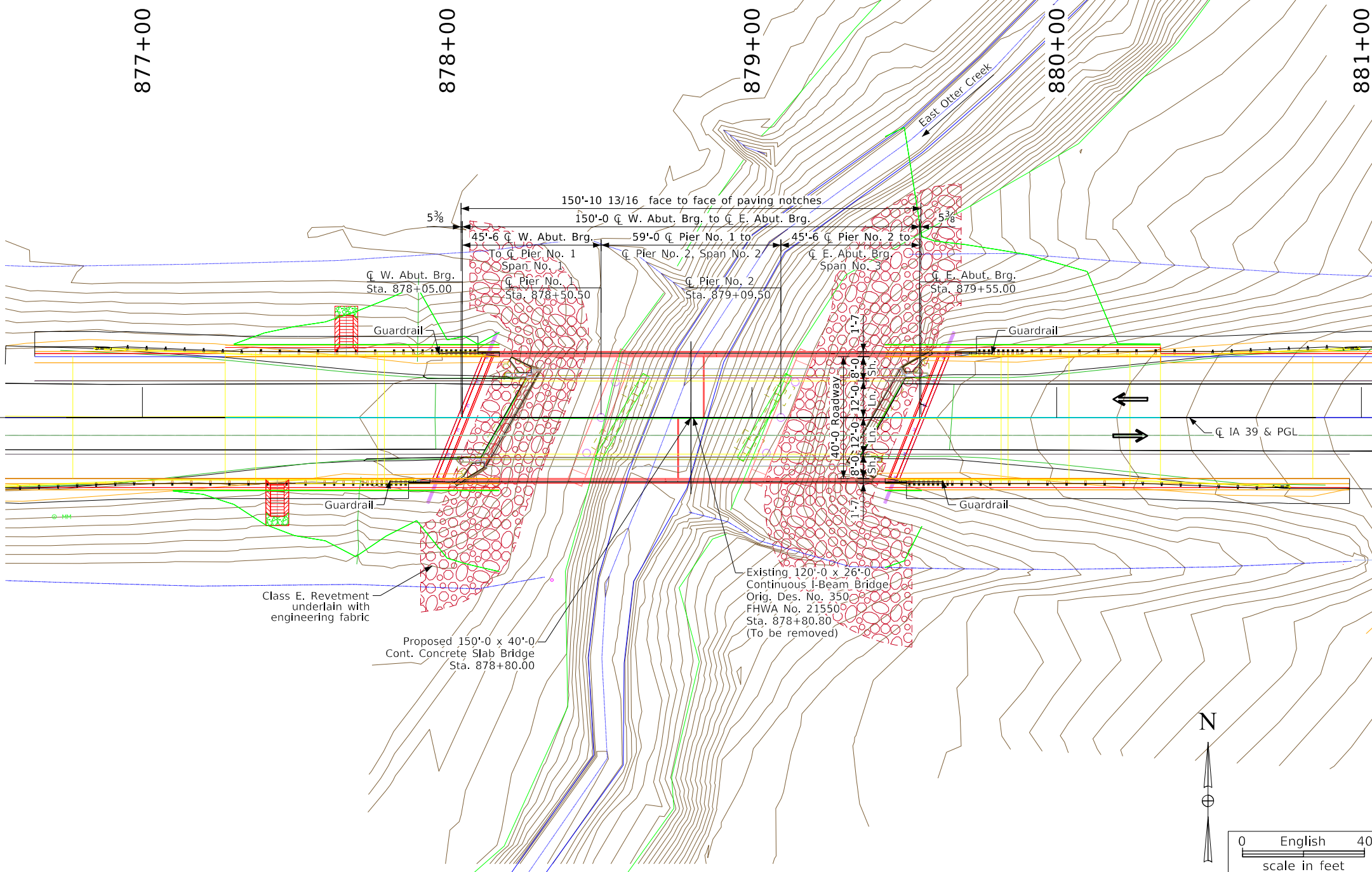
Control Point, CP24039001: N 7314838.81, E 16616868.79, Found I.H.C button on inlet hdwl. of box culvert 25 feet West of Co. Rd. M35 sign 43 feet North of \bar{C} Hwy 39, Elev. 1346.53



General Notes
 This design is for the replacement of the existing 120'-0 x 26' I-Beam Bridge, Original Design No. 0350, FHWA No. 21550, Maint. No. 2414.85039

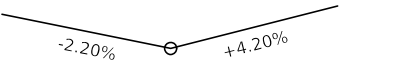
Design Notes
 TL-4 Bridge Railing Proposed
 Pier Type - ?Fully? / ?Individually? Encased Pile Bent - ?'-0 Width Assumed

Longitudinal Section Along \bar{C} IA 39 Approach Roadway



Location
 IA 39 Over East Cooper Creek
 T-85N and T-86N, R-38W
 Sections 5 and 32
 Stockholm and Wheeler Township
 Crawford and Sac County Line
 FHWA No. 21551
 Maint. No. 2414.85039
 Latitude 42.2108368° SIA
 Longitude -95.2959271° SIA

IA 39 Traffic Est.
 20-- AADT --- V.P.D.
 20-- AADT --- V.P.D.
 20-- DHV --- V.P.H.
 Trucks --- %
 Total ---
 Design ESALs ---



VPI Sta. = 877+65.292 VC = 576'
 VPI Elev. = 1337.418
Proposed Profile IA 14

Preliminary
 Design For 22° LA
150'-0 x 40'-0 Continuous Concrete Slab Bridge
 45'-6 End Spans 59'-0 Interior Span
Situation Plan
 STA. 878+80.00 IA 39 (IA 39) Turn-In Date: Jan 01 2025
Crawford County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0126 Design Sheet No. 001 of 1 FHWA No. 215??

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
(0)	Shoulder Granular	(3)	Waste
Existing			
(0)	Existing Pavement		

NOTES:

Text

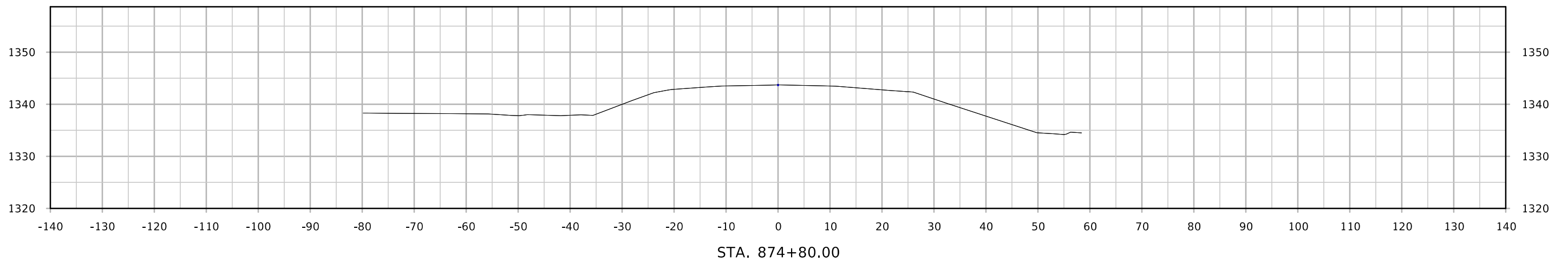
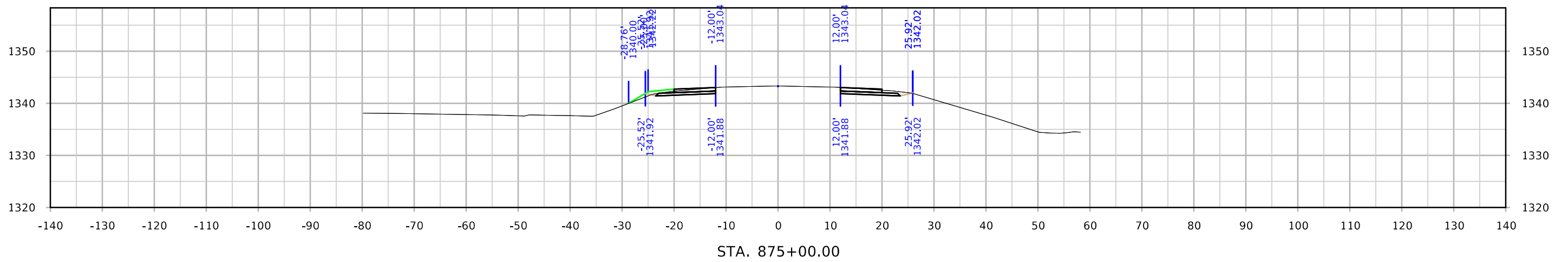
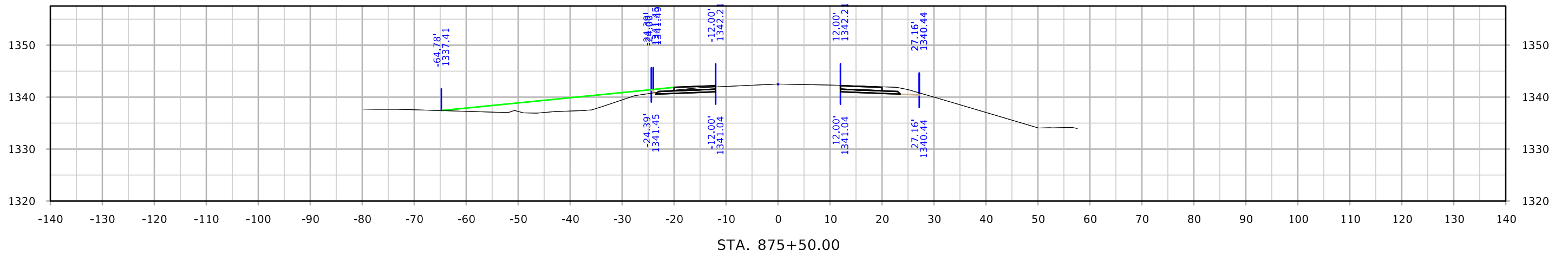
NOTES:

Text

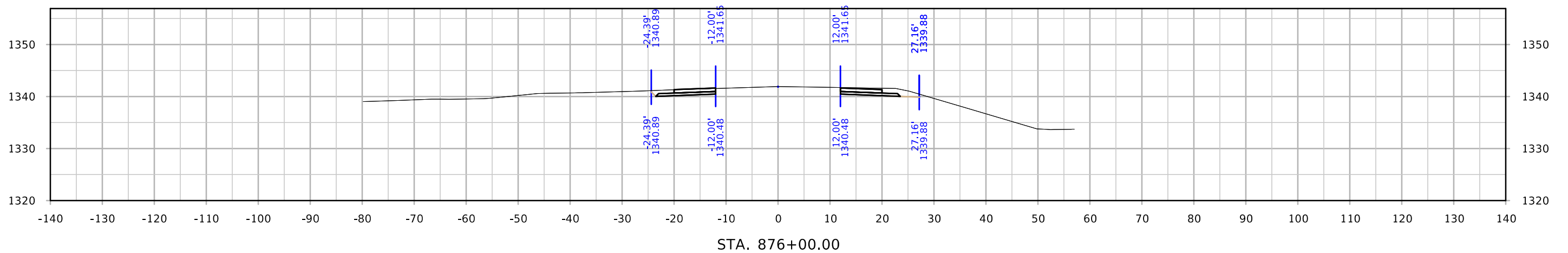
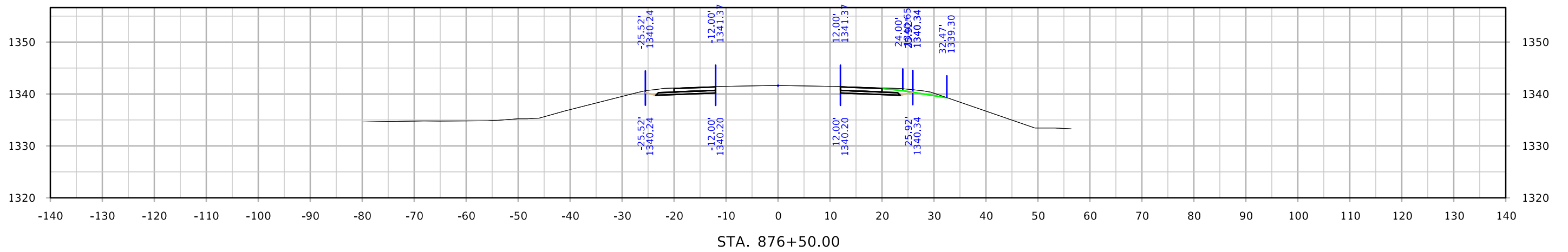
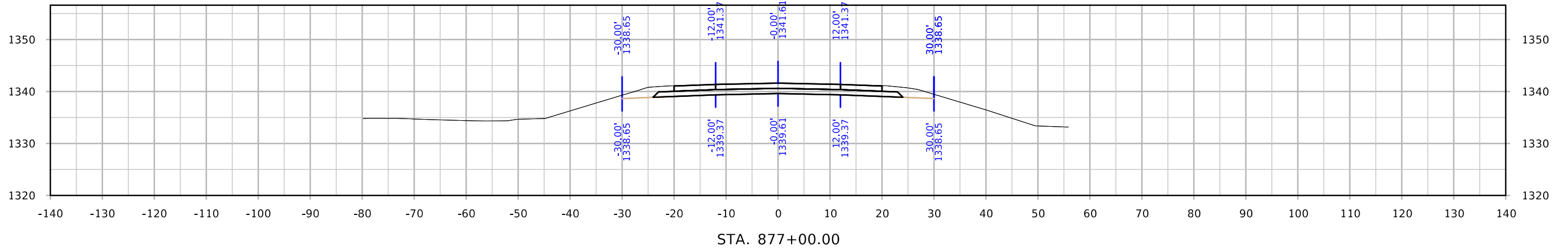
CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

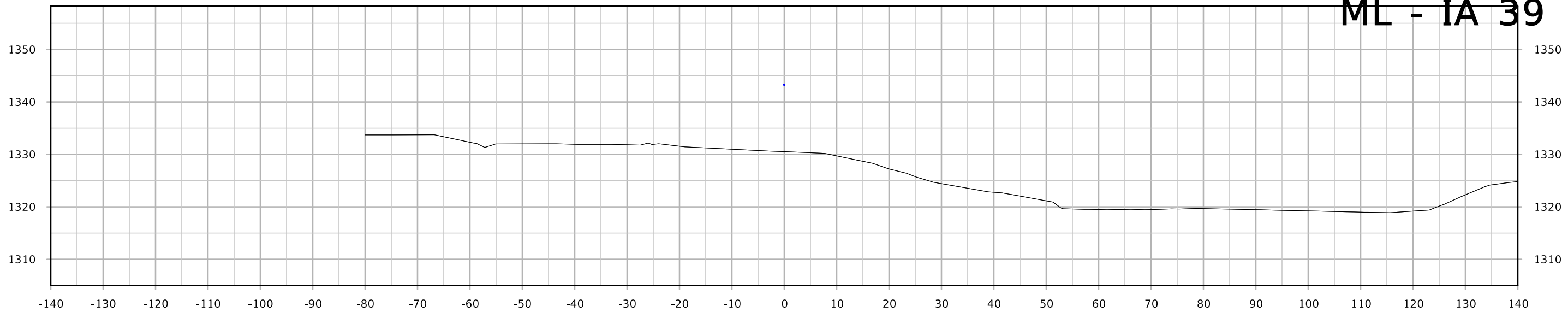
ML - IA 39



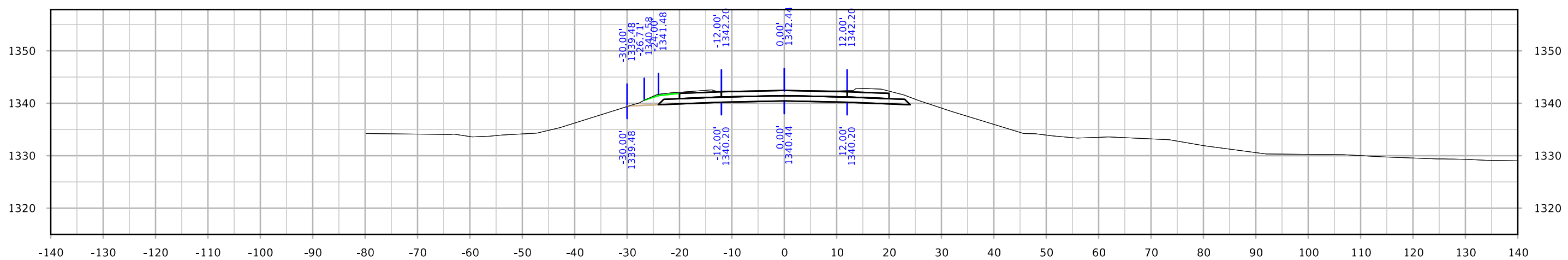
ML - IA 39



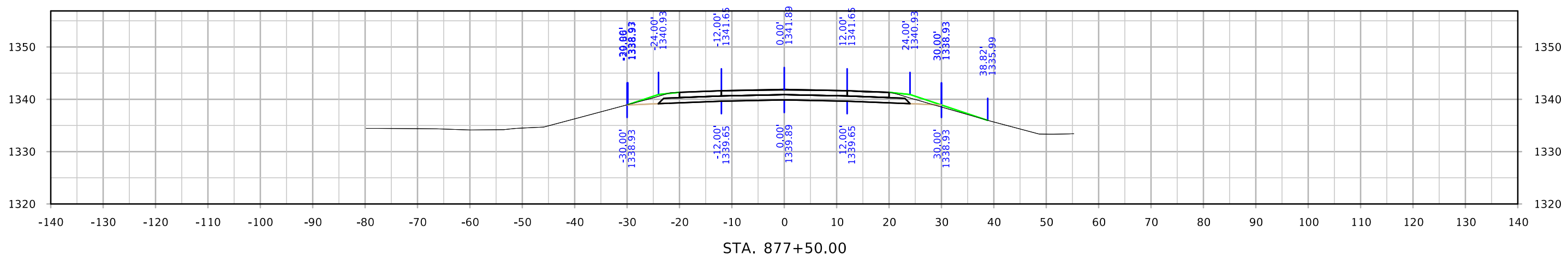
ML - IA 39



STA. 878+50.00

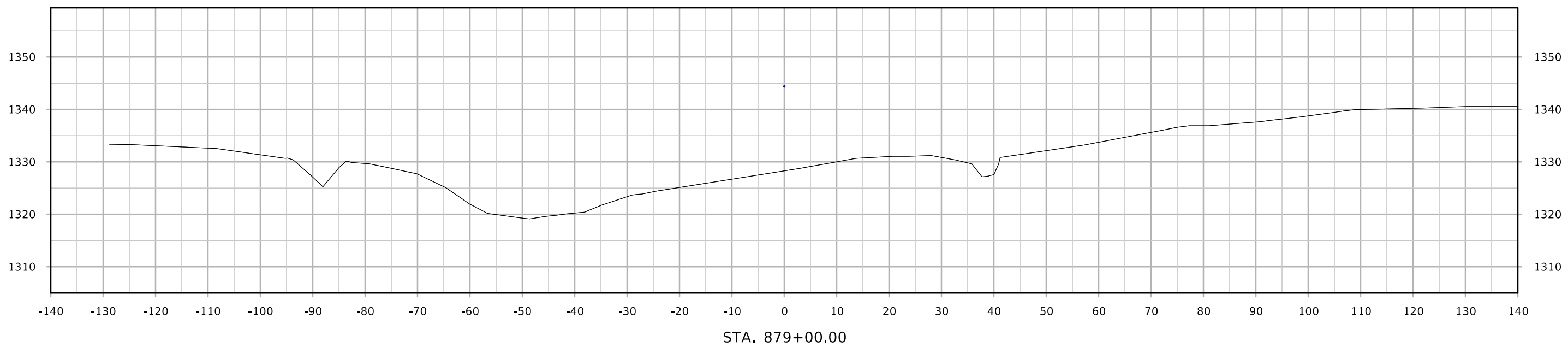
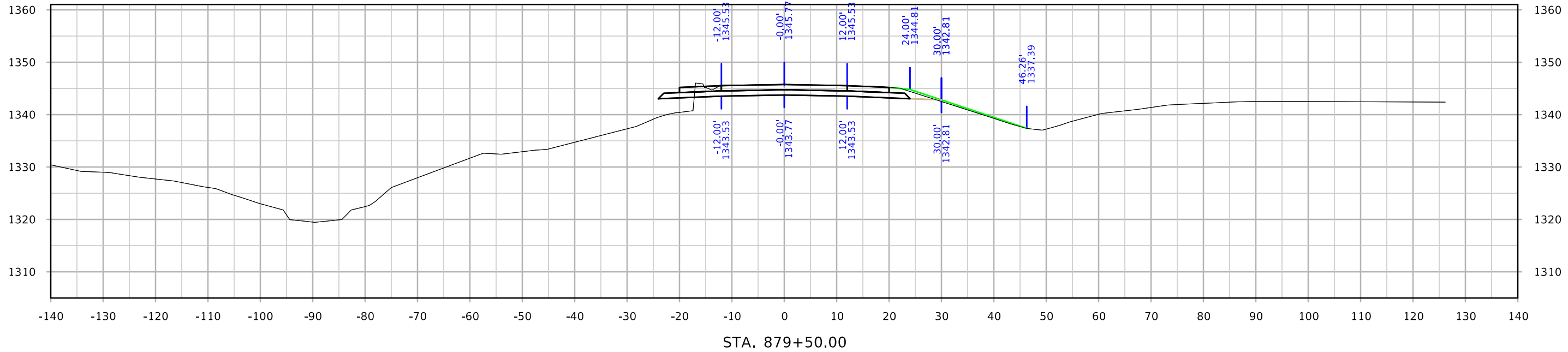


STA. 878+00.00

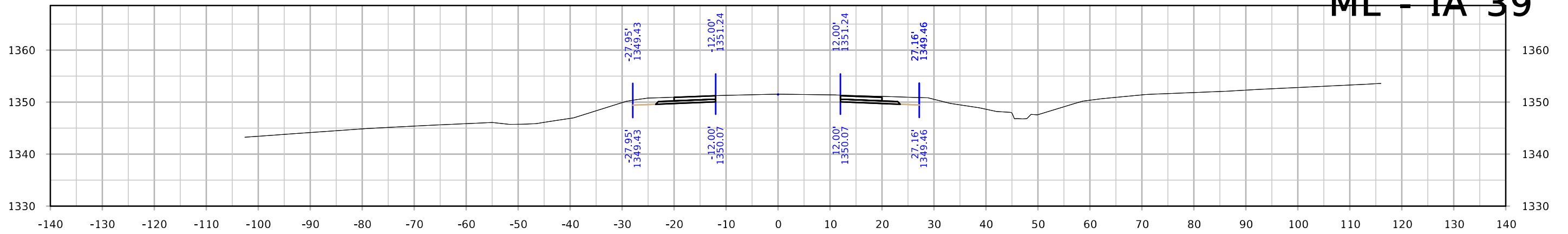


STA. 877+50.00

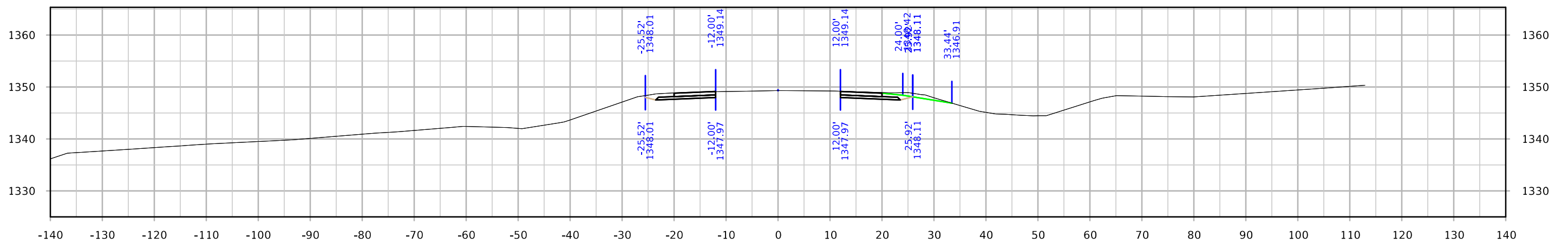
ML - IA 39



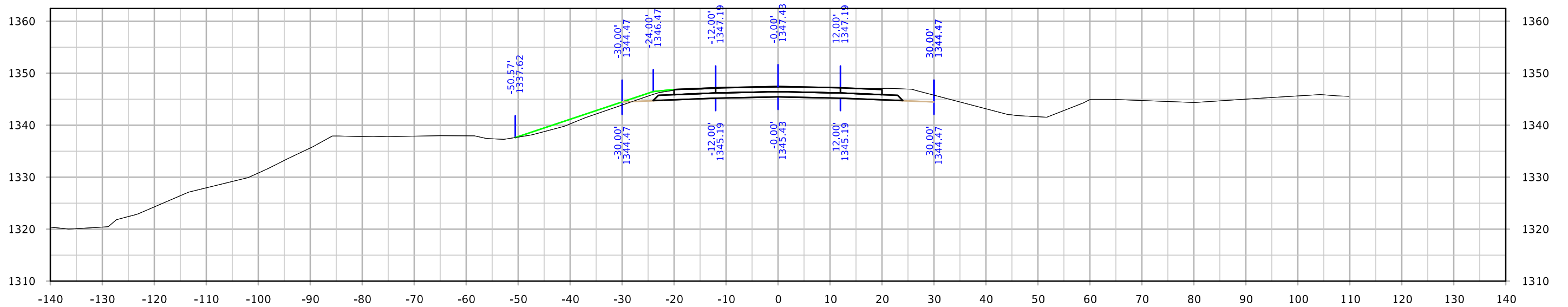
ML - IA 39



STA. 881+00.00

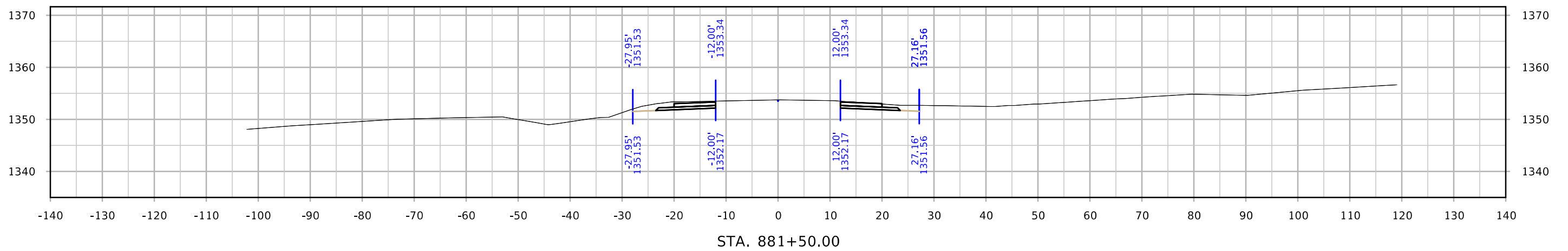
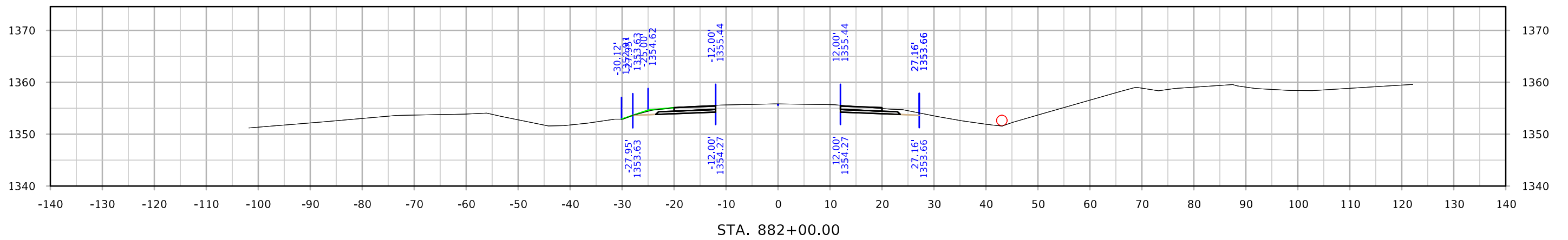
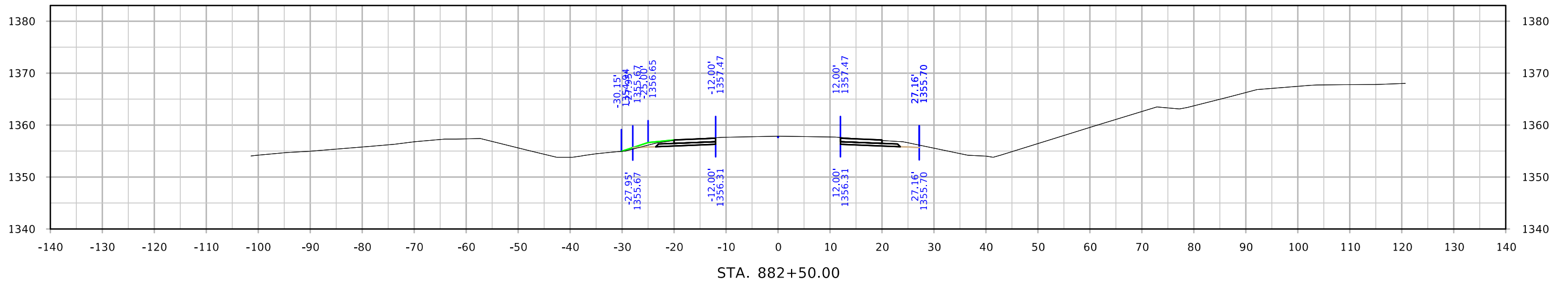


STA. 880+50.00



STA. 880+00.00

ML - IA 39



ML - IA 39

