Bridge - Unspecified
BRF-002-1(143)--38-36

LETTING DATE
Oct 19 2027

Fremont COUNTY

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	**Typical Cross Sections and Details**
B.1 - 2	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Access Points and Safety Ramp Tabulations
D Sheets	**Mainline Plan and Profile Sheets**
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2	IA 2
G Sheets	**Survey Sheets**
G.1	Survey Information
G.2	Reference Ties and Bench Marks
G.3	Horizontal Control Tab. & Super for all Alignments
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 - 3	Bridge and Culvert Situation Plans
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 21	Mainline Cross Sections
X Sheets	**Entrance Cross Sections**
X.1	Entrance Cross Sections

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

Fremont COUNTY

Bridge - Unspecified

West Nishnabotna River
1.7 mi E of E Jct US 275
--

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	
21-36-002-010	
PROJECT NUMBER	
BRF-002-1(143)--38-36	
R.O.W. PROJECT NUMBER	
STPN-002-1(144)--2J-36	
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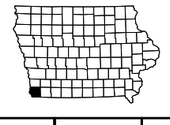

DESIGN DATA RURAL			
2027	AADT	2100	V.P.D.
2047	AADT	2300	V.P.D.
2047	DHV	230	V.P.H.
TRUCKS		10	%
Total Design ESALs		-	

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 02/13/2026

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER A.1

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PROJECT LOCATION
FHWA # 025380
REF LOC 17

R-42W

R-41W

T-69N

190 ST

270 AVE

275

285 AVE

295 AVE

L63

22

23

24

19

20

21

22

195 ST

200 ST

280TH ST

300 AVE

320 AVE

340 AVE

342 AVE

SIDNEY

Creek

ILLINOIS ST

NORTH RIDGE RD

27

30

29

28

27

26

2

25

290 AVE

330 AVE

POP.
1070

35

36

31

32

33

34

35

215 ST

220 ST

River

9

226 ST

10

11

12

7

8

224 ST

223 ST

RIVERTON
WILDLIFE AREA

J42

230 ST

Nishnabotna

T-69N

R-42W

R-41W

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER A.2

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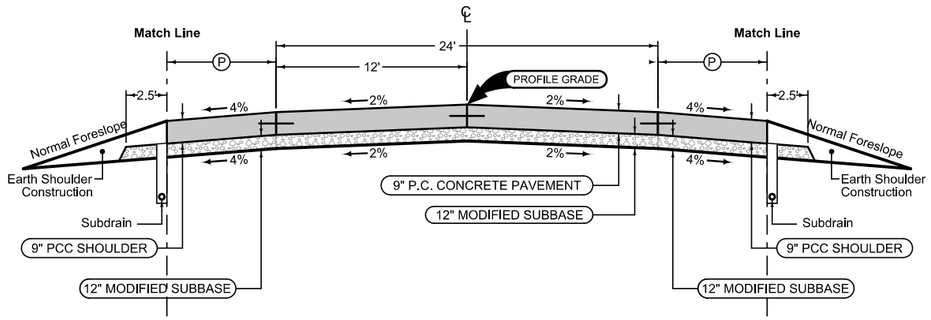
Full Depth PCC Shoulder

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

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
118+89.50	120+73.71	8
128+60.22	128+80.00	8



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

2P_ 04-21-20	
STATION TO STATION	
118+89.50	121+89.50
127+60.50	128+80.00

Full Depth PCC Shoulder

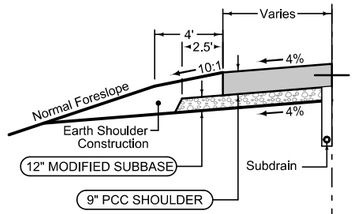
Shoulder Jointing:
Longitudinal joint: BT-2, L-2
Transverse joints: C at 17' spacing

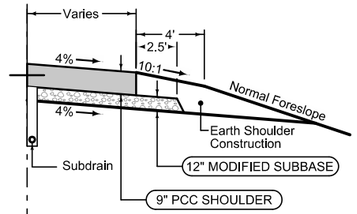
2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
118+89.50	120+89.78	8
128+35.22	128+80.00	8

Paved Shoulder at Guardrail

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

2_P_Guard_ 04-21-20	
STATION TO STATION	
120+73.71	121+89.50
127+60.50	128+60.22





Paved Shoulder at Guardrail

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

2_P_Guard_ 04-21-20	
STATION TO STATION	
120+89.78	121+89.50
127+60.50	128+35.22

IA 2

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER B.1	

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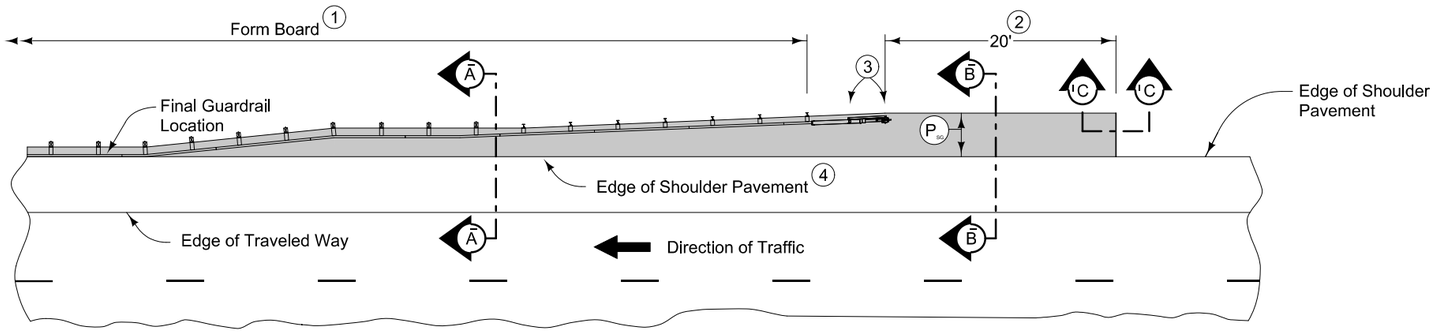
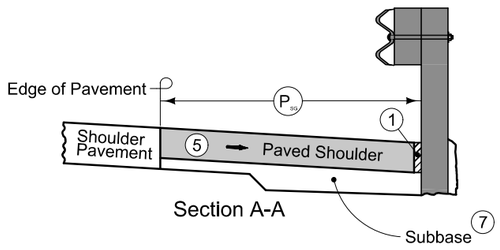
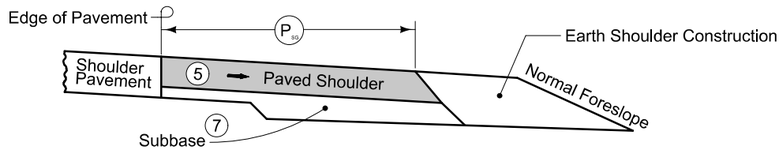


PLAN VIEW

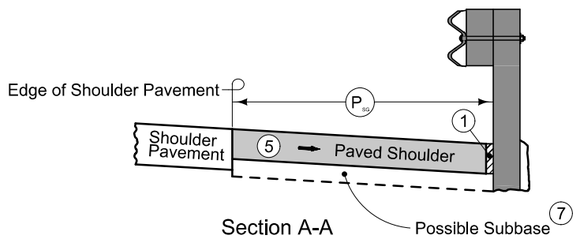


Section A-A

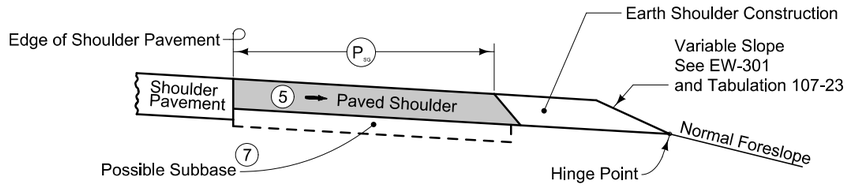


Section B-B

NEW CONSTRUCTION 6



Section A-A



Section B-B

EXISTING SHOULDER

DESIGNER INFO

7158
Modified

9" PCC Paved Shoulder at guardrail should use 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.

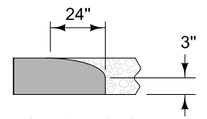
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(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.



Section C-C
Roll down at granular shoulder or earth.

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

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of Unclassified Pipe calculated is based on using Corrugated Metal Pipe.
(1) Refer to MI-210.
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

Line No.	Station	Side	Access Type	Descriptor	Case	Curb Type	Curb Length (1) (LF)	Width (FT)	PR (1) (2) (FT)	SR (2) (FT)	Pipe Culvert (H) (3) (FT)	Pipe Culvert Size (3) (IN)	Culvert Length (3) (LF)	Pipe Culvert Lt. (3) (LF)	Pipe Culvert Rt. (3) (LF)	Culvert Aprons (3) (No.)	Driveway Surface Type	Driveway Surface Area (SY)	Driveway Surfacing Material (TON)	Remarks
1.0	121+15.00	Left	D					30.0		30.0										

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
- WH Water Hydrant (Rural)
- ST Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM 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

FO

Windstream Communications Fiber Distribution
Mark Hussman, Construction Manager - CLEC
9850 M ST
Omaha, IA 68127
Mark.Hussman@windstream.com
ph: (402) 827-6355 cell: (402) 677-5874

FO2

Iowa Communications Network Fiber Transmission
Michael Dalen, OSP Engineer
400 East 14th Street
Des Moines, IA 50319
mike.dalen@iowa.gov
ph: (515) 725-4707 cell: (515) 499-1642

MidAmerican Energy Company Electric Distribution
Scott Behrens, Lead, Electric Distribution Engineering SW Iowa
3003 S. 11th St
Council Bluffs, IA 51501
scott.behrens@midamerican.com
ph: (712) 366-5636 cell: (402) 657-1059

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.**		**Transparency**
Pink, Dark	(13)	Temporary Pavement Shading	50%
Yellow	(4)	Proposed Pavement Shading	50%
Orange	(6)	Proposed Granular Shading	50%
Orange	(70)	Proposed Shoulder Granular Shading	50%
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading	50%
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading	50%
Brown, Light	(236)	Grading Shading	50%
Orange, Light	(134)	Proposed Granular Entrance Shading	50%
Yellow	(220)	Proposed Paved Entrance Shading	50%
Tan	(8)	Proposed Sidewalk Shading	50%
Blue, Light	(230)	Proposed Sidewalk Landing Shading	50%
Pink	(11)	Proposed Sidewalk Ramp Shading	50%
Red	(3)	Proposed Structure Shading	50%
Red	(3)	Delineates Restricted Areas	0%

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 Symbol
- Proposed Right-of-Way Line
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary) Symbol
- Easement (Temporary) Line
- Easement
- C/A Access Control
- Property Line Symbol
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER D.1

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Sidney TWP.
T-69N R-42W
SEC. 30

Prairie TWP.
T-69N R-41W
SEC. 29

48" C.M.P.

48" C.M.P.

+15.0 Prop. Type 'D' Ent. (W= 30.0')

+70.0 Prop. Type 'D' Ent. (W= 30.0')

+25.0 Prop. Type 'D' Ent. (W= 30.0')

118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00

FO2 FO2 FO2 FO2

FO FO FO

2

(REMOVE)
Sta. 124+75.0
410'x26'
Continuous I-Beam Bridge
DA= 1620 Sq. Mi. (Plan)

Sta. 124+75.00
Build: 428'-0" x 40'-0" PPCB Bridge
Skew: 0°
Design No. 0228

STA 118+89.50 (ML002)
BEGIN PROJECT (143)

STA 128+81.00 (ML002)
END PROJECT (143)

0 50 FEET

IA 2

BEGIN PROJECT (143)
118+89.50
942.60

VPI = +75.04
EL = 948.34
L = 450.00'
K = 229

+0.98% -0.98%

END PROJECT (143)
128+81.00
944.43

-0.98% +0.79%

VPI = +60.00
EL = 943.57
L = 250.00'
K = 141

955 950 945 940 935 930 925 920 915 910

941.84 942.02 942.22 942.45 942.69 942.94 943.18 943.43 943.67 943.92 944.16 944.41 944.66 944.90 945.15 945.39 945.64 945.88 946.13 946.36 946.57 946.75 946.90 947.02 947.11 947.18 947.22 947.24 947.22 947.18 947.11 947.02 946.90 946.74 946.57 946.36 946.13 945.88 945.64 945.39 945.15 944.90 944.66 944.47 944.31 944.21 944.14 944.12 944.15 944.22 944.33 944.49 944.69 944.88 945.08 945.28 945.48

118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER D.2

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SURVEY INDEX

County: Fremont
PIN: 21-36-002-010
Project Number: BRF-002-1(143)—38-36
Location: W Nishnabotna River 1.7mi E of Jct US 275
Type of Work: Bridge Unspecified
Project Directory: 3600201021

Survey Personnel

Paul Harry – Survey Party Chief
Robert Fredrickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date	10/16/2023
End Date	01/18/2024

General Information

This survey is for Hwy 2 bridge over the west Nishnabotna river. This project is a Full Field 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

Coordinates were determined for primary project control points by conducting concurrent six-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.

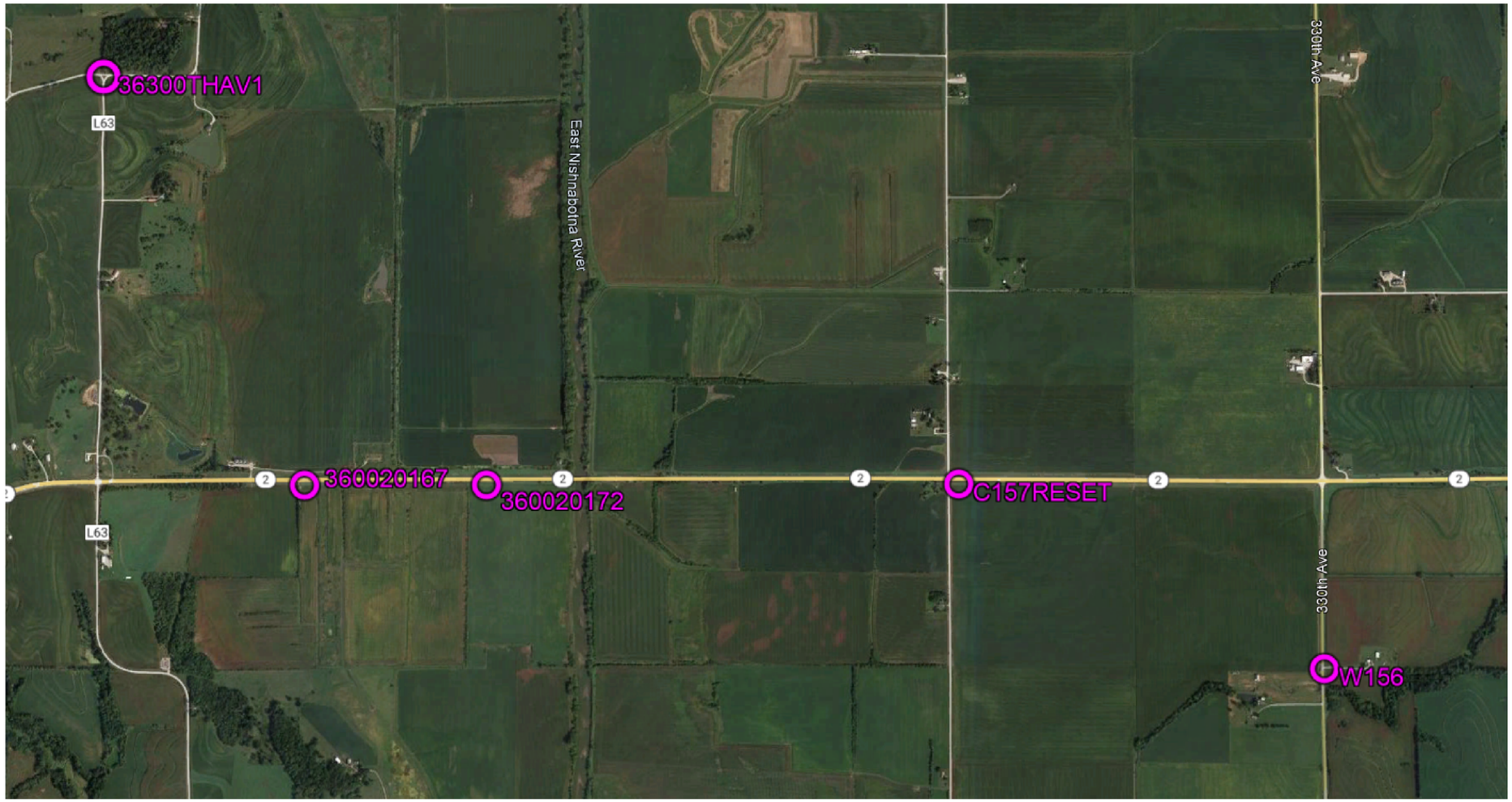
PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 06 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u2

Alignment Information

The horizontal alignment for Hwy 2 was provided by the District 4 ROW 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) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 06 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u2

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

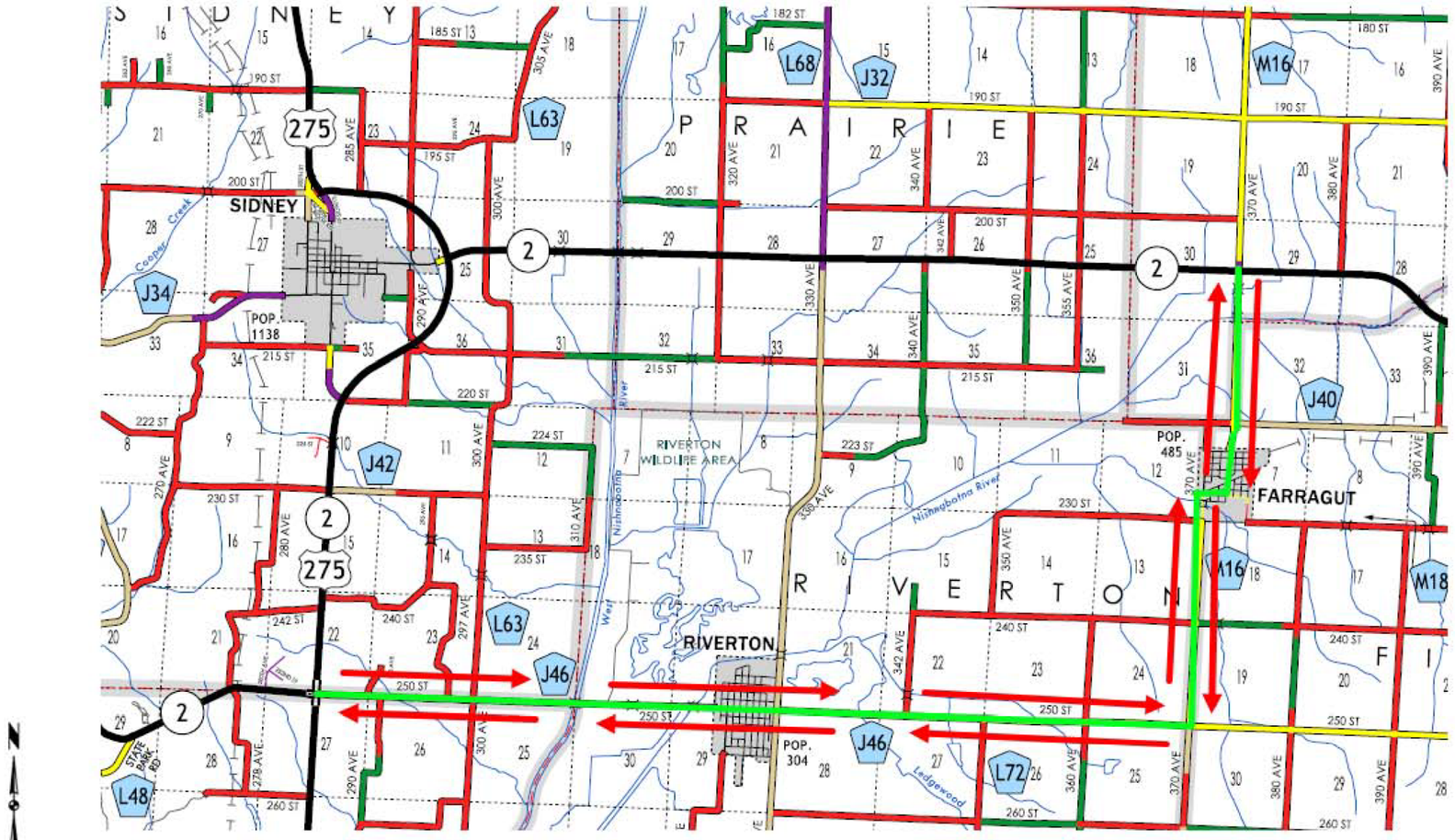
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 06 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u2

Point Name	Northing	Easting	Elevation	Feature Definition-Description
36300THAV1	6788029.61	16531764.67	1081.29	CP SET FENO MON IN CENTER ISLAND AT INTERSECTION OF 300TH AVE AND 195TH ST
360020167	6782278.32	16534635.17	930.69	CP SET FENO MON 0.9 MILES EAST OF HWY 275 ALONG HWY 2 NEAR FIELD INT
360020172	6782275.30	16537199.23	931.52	CP SET FENO MON 1.4MILES EAST OF HWY 275 ALONG HWY 2 NEAR FIELD INT
C157RESET	6782309.95	16543865.00	942.62	CP FND NGS 3RD ORDER VERTICAL MARK AS DESCRIBED
W156	6779713.72	16549056.54	964.08	CP FND NGS 2ND ORDER CLASS 0 VERTICAL MARK AS DESCRIBED

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic on IA 2 will be maintained at all times via an off-site detour.
Refer to sheet J.2 for detour route.



Fremont County

West Nishnabotna River 1.7 mi E of E Jct US 275
BRF-002-1(143)--38-36
PIN: 21-36-002-010

36

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER J.2

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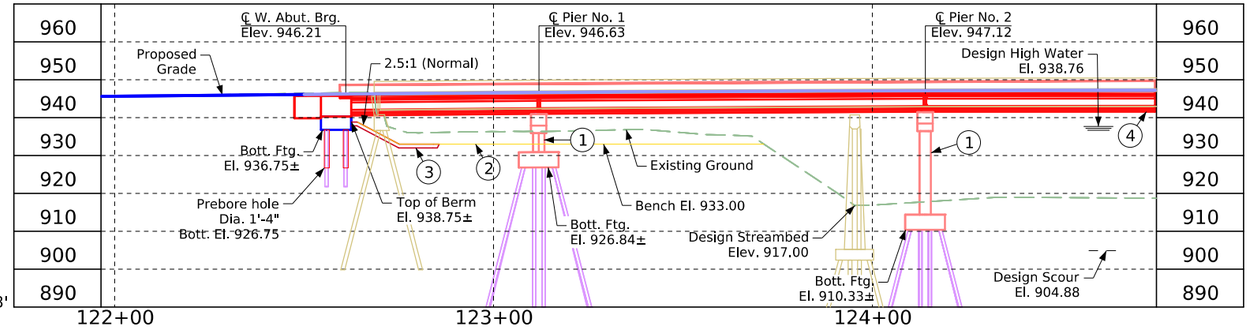
Control Point: 360020172: N 6782275.295, E 16537199.225; CP Set FENO Monument 1.4 Miles East of Hwy 275 Along Hwy 2 Near Field Int Elev. 931.52



Longitudinal Section Along ℄ Prop. IA 2

1. T-Pier
2. Grading Surface
3. Class E Revetment (Embedded)
4. Channel Low Superstructure Elev. 941.50

VPI Sta. = 124+75.00
VPI Elev. = 948.34
VC = 450'

0.981% -0.984%

VPC Sta. = 122+50.00
VPC Elev. = 946.14
VPT Sta. = 127+00.00
VPT Elev. = 946.13

Proposed Profile Grade IA 2

Note:
Top of bridge deck at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.
This design is for the replacement of the existing 410'-0" x 26'-0" Continuous Steel I-Beam Bridge, Design No. 251, FHWA No. 25380, Maint. No. 3617.5S002.
Class E revetment stone is embedded.

Design Notes:
1. TSS TL-4 single slope bridge railing proposed.
2. BTD beams proposed.
3. Pier Type - T-pier and assumed width of 3' proposed.
4. An Iowa DNR Flood Plain Permit is required. Preliminary Design will submit the application and place the permit in the PW Regulatory_Permits subdirectory folder upon receipt.
5. Density used for Class E revetment quantity calculations is 1.5 T/cy. Density used for Erosion Stone quantity calculations is 1.6 T/cy.
6. Requirements for a state water trail or paddling route are applicable. Signage, plane notes, and bid items shall be addressed by the Design Bureau and included in the road plans.
7. Bottom of footing elevations and pier piles shall be designed for scour.
8. The bridge will be designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q_{100} [BDM 3.2.2.4].

Utilities Note:

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

General Utility Symbols:

E - Electric Line
G - Gas Line
SAN. - Sanitary Sewer
T - Telephone Line
W - Water Line
FO - Fiber Optic Line
GHP - Gas High Pressure
ST S - Storm Sewer
TV - TV
- Power Poles

Hydraulic Data

RIDB: NishnabotnaR_W_12.06
Drainage Area = 1620 Sq. Mi.
Stream Slope = 0.857 ft./Mi.
Avg. Low Water Stage = 920.56

Operational Low Beam = 940.51
Channel Low Beam = 941.50

Q_{50} = 26276 cfs
Stage = 938.03
Operational Freeboard = 2.48 ft.
Avg. Bridge Velocity = 8.53 fps

Q_{100} = 48416 cfs
Stage = 938.76
Operational Freeboard = 1.75 ft
Backwater = 0.19 ft.
Avg. Bridge Velocity = 8.76 fps

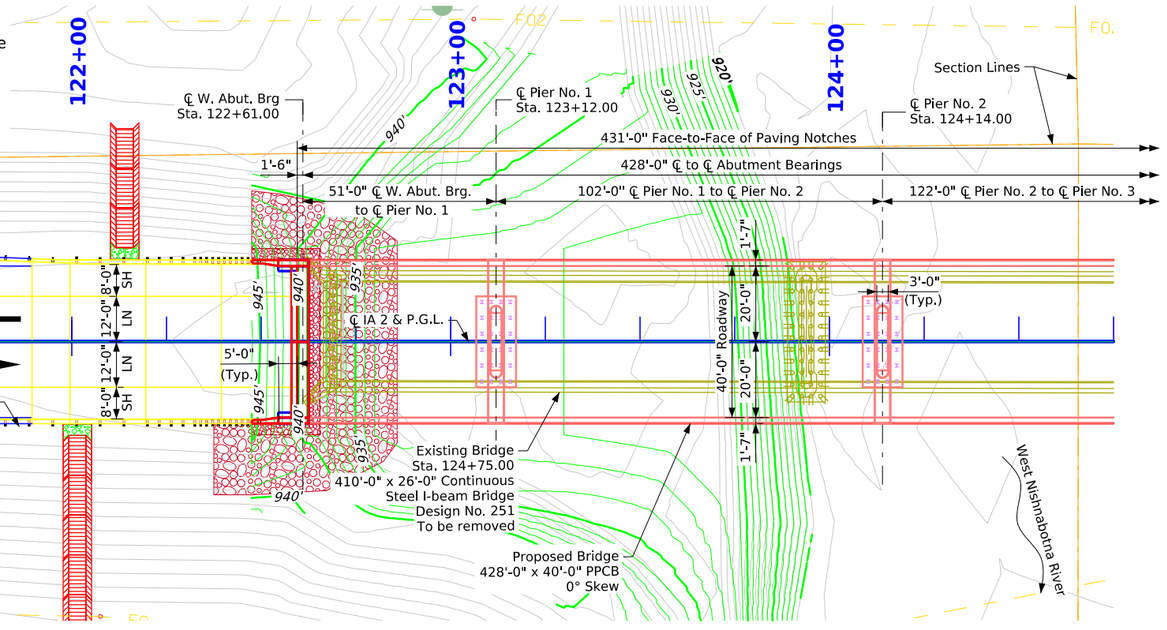
Q_{200} = 51897 cfs
Stage = 938.85
Calculated Design Scour = 904.88

Q_{500} = 62397 cfs
Stage = 939.28
Channel Freeboard = 1.23 ft.
Avg. Bridge Velocity = 8.87 fps
Calculated Check Scour = 905.26

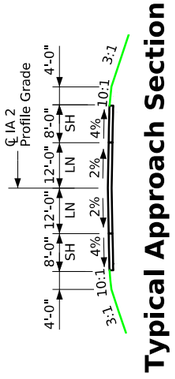
Roadway Overtop 941.03
Sta. 113+18

Traffic Estimate

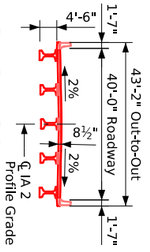
2027 AADT	2,100 V.P.D.
2047 AADT	2,300 V.P.D.
2047 DHV	230 V.P.H.
TRUCKS	10 %
Total Design ESALs	-



Situation Plan



Typical Approach Section



Typical Bridge Section

N

0 20
Scale In Feet

Location

IA 2 over West Nishnabotna River
T-69N R-41W
Section 29
Prairie Township
Fremont County
FHWA No. 25381
Bridge Maint. No. 3617.5S002
Latitude 40.750558°
Longitude -95.594968°

PRELIMINARY

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.

Heidi J. Lane P23539 Iowa

Signature 1/27/2026 Date

Heidi Lane
Printed or Typed Name

My license renewal date is December 31, _____

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

Design For 0° Skew

428'-0" x 40'-0" Pretensioned Prestressed Conc. Beam Bridge

51'-0" End Spans BTD Beams 102', 122', 102' Interior Spans

Situation Plan

STA. 124+75.00 (IA 2) Turn-in Date: Jan 2026

Fremont County

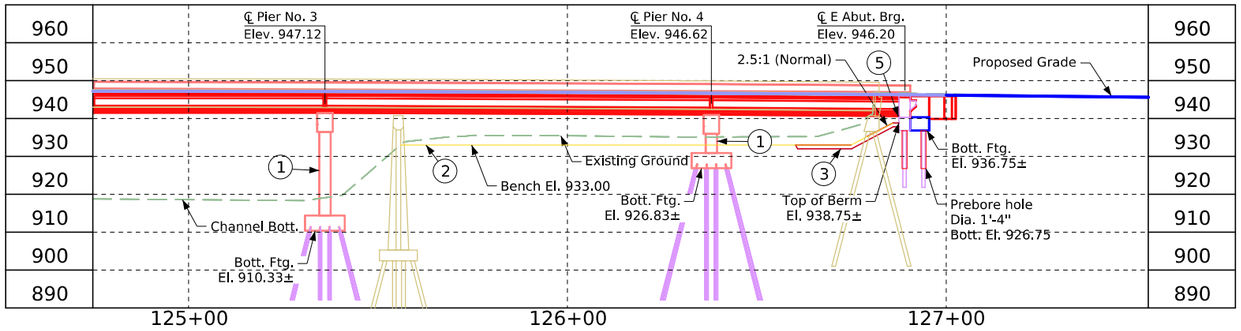
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0228 Design Sheet No. 1 of 3 FHWA No. 25381

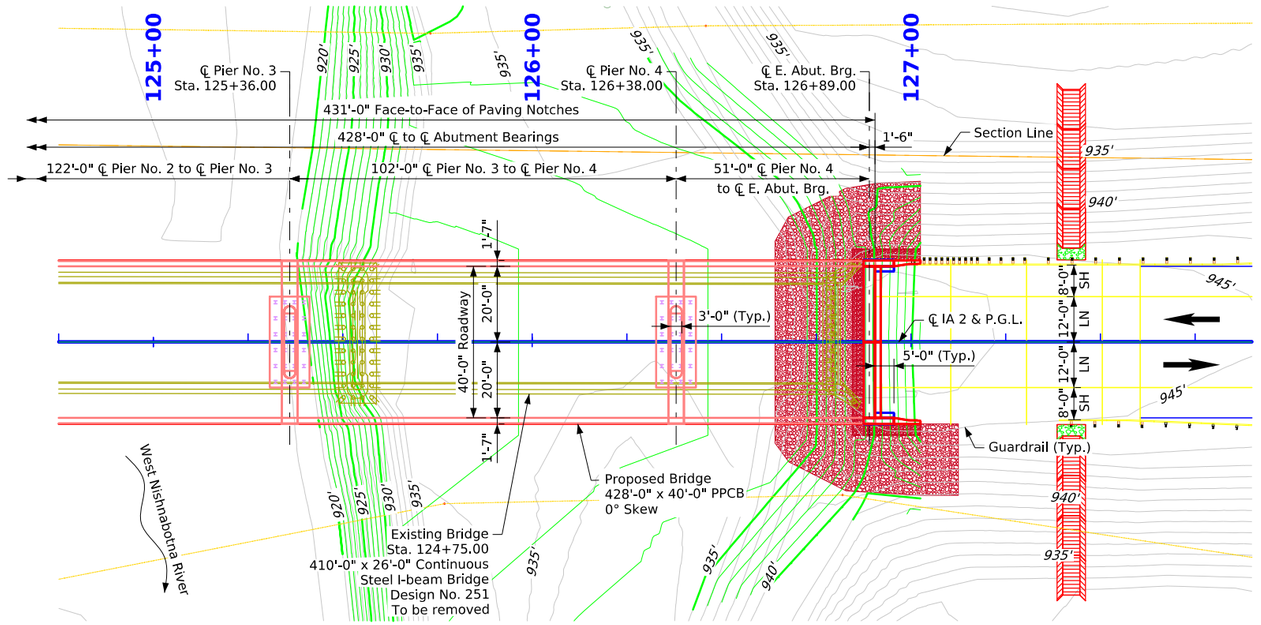
FILE NO. 32898	ENGLISH	DESIGN TEAM HNTB	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER V.1

2:58:02 PM 1/12/2026 jwilke pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\3600201021\Bridge\(143)_Bridge-Unspecified\SHT_36002143_HNTB_DSN_FHWANO.dgn

Control Point: 360020172: N 6782275.295, E 16537199.225; CP Set FENO Monument 1.4 Miles East of Hwy 275 Along Hwy 2 Near Field Int Elev. 931.52

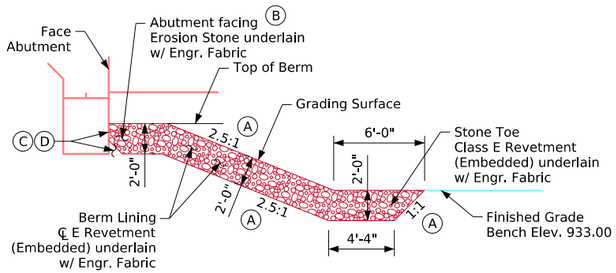


Longitudinal Section Along ℄ Prop. IA 2



Situation Plan

1. T-Pier
2. Grading Surface
3. Class E Revetment (Embedded)
5. Operational Low Superstructure Elev. 940.51



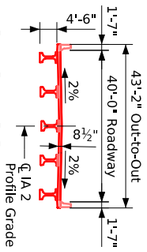
Section through Berm Lining and Stone Toe

A. Slope normal to ℄ Abut. / Grading Control Line.

B. Extend facing out to lateral limits of wing armoring.

C. 1' x 1' soil wedge at face abutment.

D. Carry engineering fabric up soil wedge and face abutment.



Typical Bridge Section

N

0 20
Scale In Feet

PRELIMINARY

Design For 0° Skew

428'-0" x 40'-0" Pretensioned Prestressed Conc. Beam Bridge

51'-0" End Spans BTD Beams 102', 122', 102' Interior Spans

Situation Plan

STA. 124+75.00 (IA 2) Turn-in Date: Jan 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0228 Design Sheet No. 2 of 3 FHWA No. 25381

FILE NO. 32898	ENGLISH	DESIGN TEAM HNTB	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER V.2

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Control Point: 360020172: N 6782275.295, E 16537199.225; CP Set FENO Monument 1.4 Miles East of Hwy 275 Along Hwy 2 Near Field Int Elev. 931.52

(1) T-Pier

(3) Class E Revetment (Embedded)

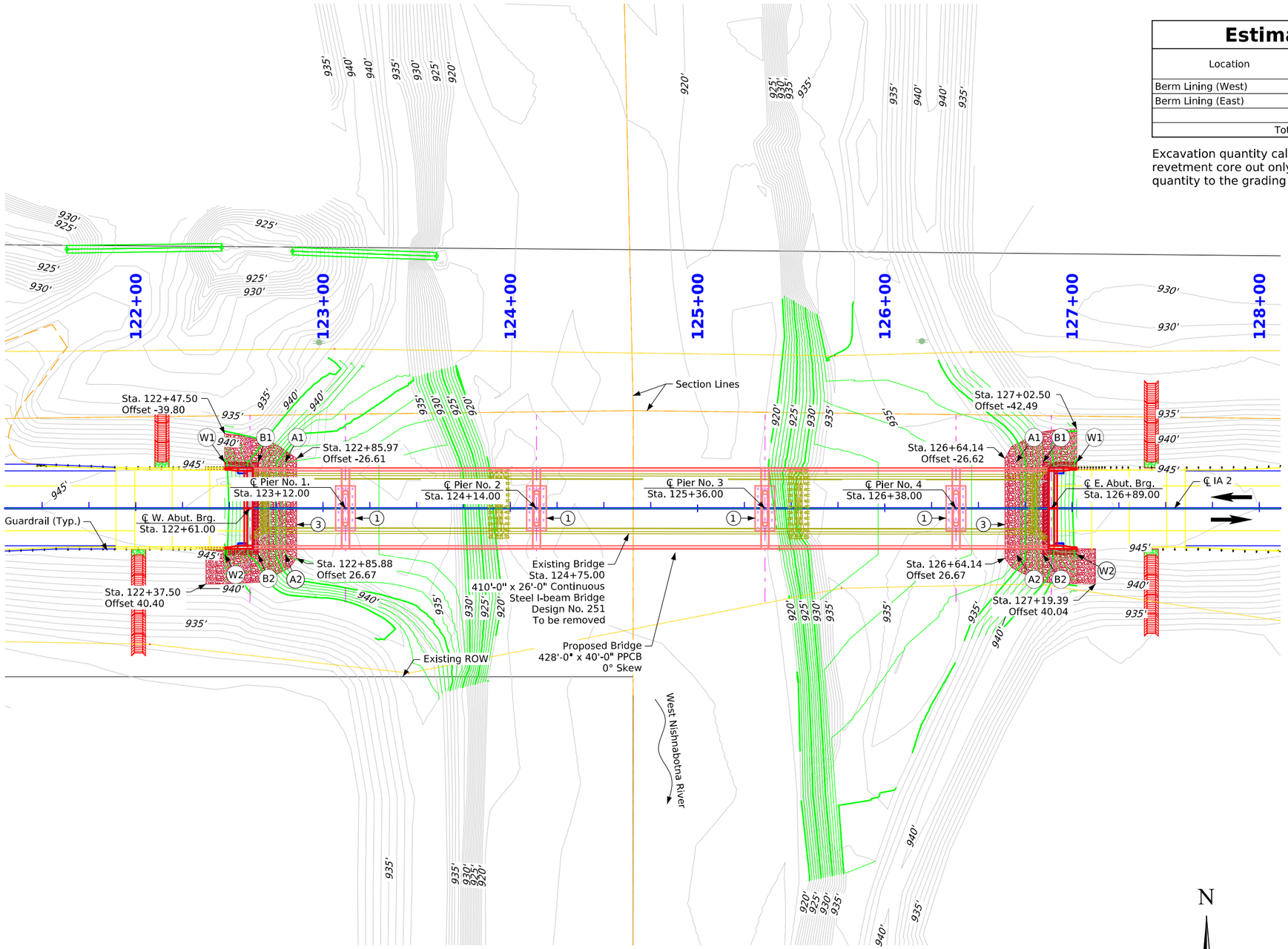
Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining (West)	250	28	276	184
Berm Lining (East)	265	28	291	194
Totals	515	56	567	378

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.

Berm Slope Location Table

Points	West Abutment Station	West Abutment Offset	West Abutment Elev.	East Abutment Station	East Abutment Offset	East Abutment Elev.
A1	122+79.88	24.67' Lt.	933.00	126+70.14	24.67' Lt.	933.00
A2	122+79.88	24.67' Rt.	933.00	126+70.14	24.67' Rt.	933.00
B1	122+65.50	24.67' Lt.	938.75	126+84.50	24.67' Lt.	938.75
B2	122+65.50	24.67' Rt.	938.75	126+84.50	24.67' Rt.	938.75
W1	122+47.50	24.67' Lt.	945.56	127+02.50	24.67' Lt.	945.55
W2	122+47.50	24.67' Rt.	945.56	127+02.50	24.67' Rt.	945.55



Site Plan

N

0 30
Scale In Feet

Design Notes:
1. TSS TL-4 single slope bridge railing proposed.
2. BTD beams proposed.
3. Pier Type - T-pier and assumed width of 3' proposed.
4. An Iowa DNR Flood Plain Permit is required. Preliminary Design will submit the application and place the permit in the PW Regulatory_Permits subdirectory folder upon receipt.
5. Density used for Class E revetment quantity calculations is 1.5 T/cy. Density used for Erosion Stone quantity calculations is 1.6 T/cy.
6. Requirements for a state water trail or paddling route are applicable. Signage, plane notes, and bid items shall be addressed by the Design Bureau and included in the road plans.
7. Bottom of footing elevations and pier piles shall be designed for scour.

PRELIMINARY

Design For 0° Skew

428'-0" x 40'-0" Pretensioned Prestressed Conc. Beam Bridge

51'-0" End Spans BTD Beams 102', 122', 102' Interior Spans

Situation Plan-Site

STA. 124+75.00 (IA 2) Turn-in Date: Jan 2026

Fremont County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0228 Design Sheet No. 3 of 3 FHWA No. 25381

FILE NO. 32898	ENGLISH	DESIGN TEAM HNTB	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER V.3	

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CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature
Aggregate	
(64)	Choke Stone
(42)	Engineering Fabric
(8)	Flooded Backfill
(92)	Macadam Stone
(20)	Modified
(12)	Plowing Shaping
(14)	Porous Backfill
(8)	Revetment Class A
(6)	Revetment Class B
(62)	Revetment Class C
(188)	Revetment Class D
(28)	Revetment Class E
(12)	Shoulder Special Backfill
(12)	Special Backfill
(20)	Subbase
(20)	Subbase Lower
(20)	Subbase Upper
(118)	Subgrade Treatment
Asphalt	
(207)	HMA Base Course
(207)	HMA Interim Course
(207)	HMA Surface Course
Bridge	
(0)	Bridge
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Existing	
(0)	Existing Pavement
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Structural	
(112)	Noise Wall
(112)	Noise Wall Footing
(112)	Retaining Wall Back
(112)	Retaining Wall Back Excavate
(112)	Retaining Wall Face
(112)	Retaining Wall Front Excavate
(112)	Retaining Wall Front Footing
(112)	Retaining Wall MSE Gutter
(112)	Retaining Wall Reinforced Earth

Design Color No.	Feature
Grading	
(8)	Behind Curb Cut
(6)	Granular
(13)	Granular Back Fill
(48)	Rock Undercut
(8)	Shoulder Earth Fill
(2)	Side Slopes
(226)	Side Slopes Dressing
Substrata	
(128)	Boulder
(209)	Boulder Removed
(48)	Broken Weathered
(210)	Broken Weathered Removed
(3)	Core Out
(115)	Core Out Remove Only
(195)	Core Out Remove and Replace
(203)	Existing Pavement
(184)	Existing Pavement Remove Only
(200)	Existing Pavement Remove and Replace
(6)	Loam
(211)	Loam Removed
(80)	Rock
(212)	Rock Removed
(4)	Select Sand
(214)	Select Sand Removed
(3)	Shale
(215)	Shale Removed
(10)	Topsoil
(2)	Topsoil Remove Only
(4)	Topsoil Remove and Replace
Unsuitable / Waste	
(3)	Unsuitable Type A
(216)	Unsuitable Type A Removed
(13)	Unsuitable Type B
(217)	Unsuitable Type B Removed
(11)	Unsuitable Type C
(218)	Unsuitable Type C Removed
(3)	Waste
(219)	Waste Removed

NOTES:

Text

NOTES:

Text

CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.1

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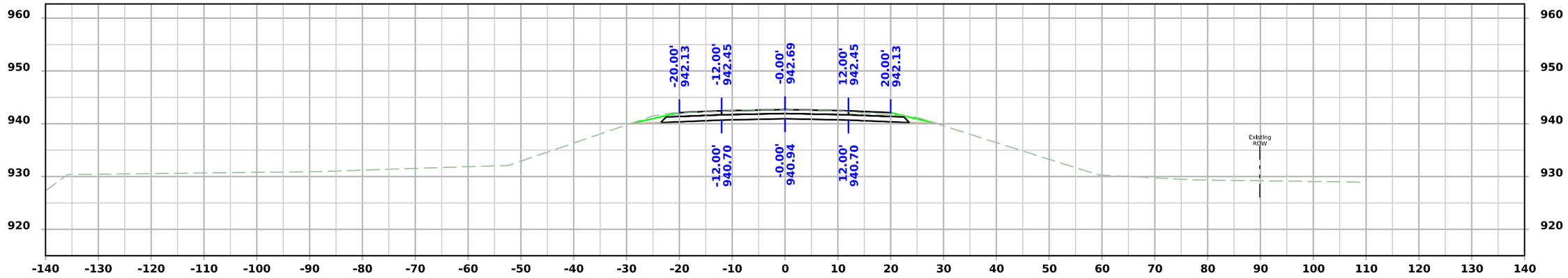

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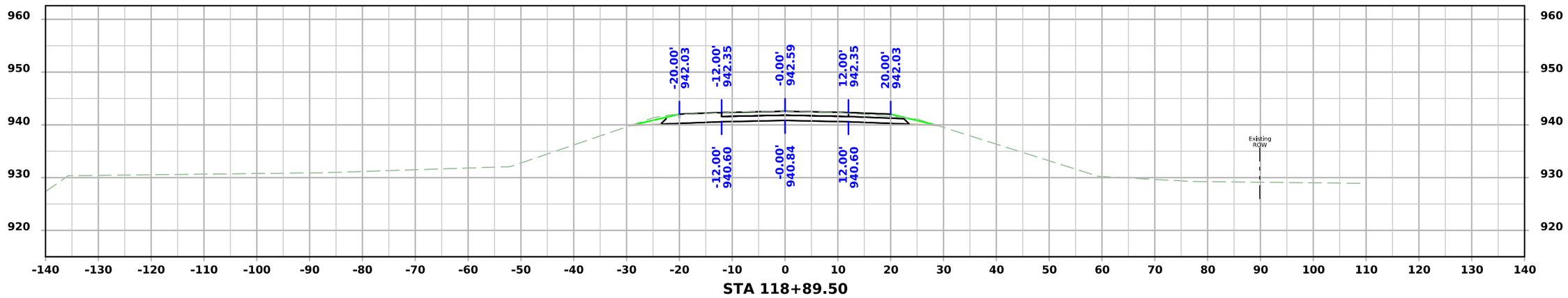

STA 118+89.50

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.2

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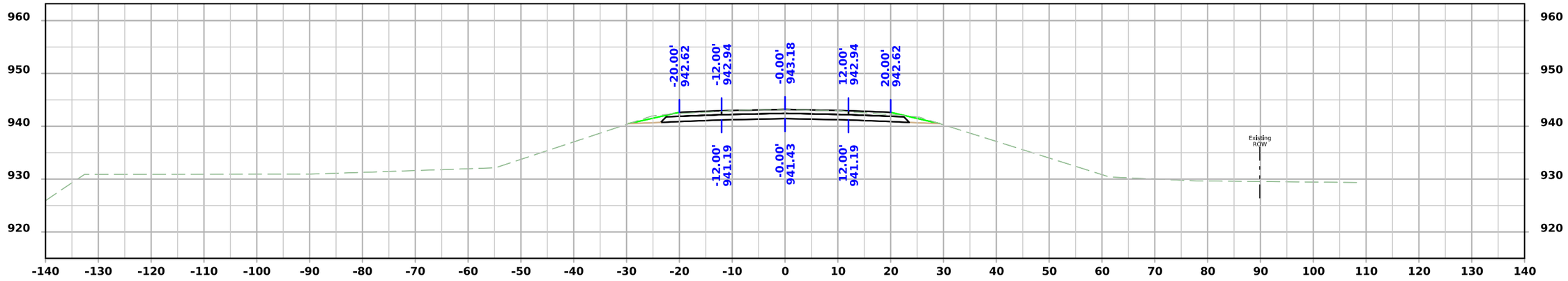
ML - IA 2



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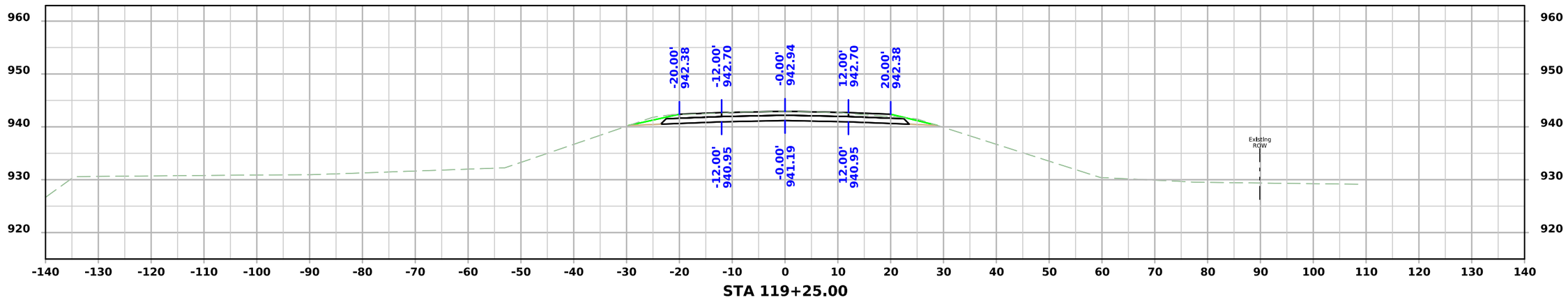

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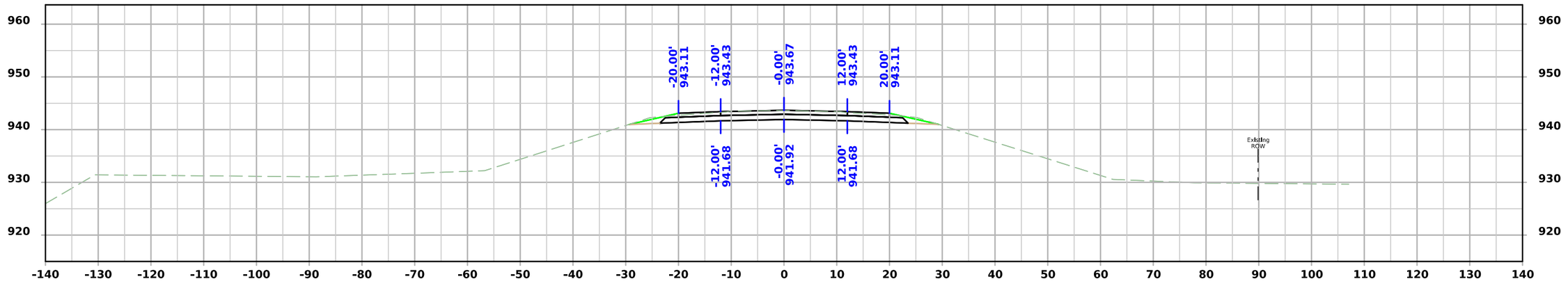

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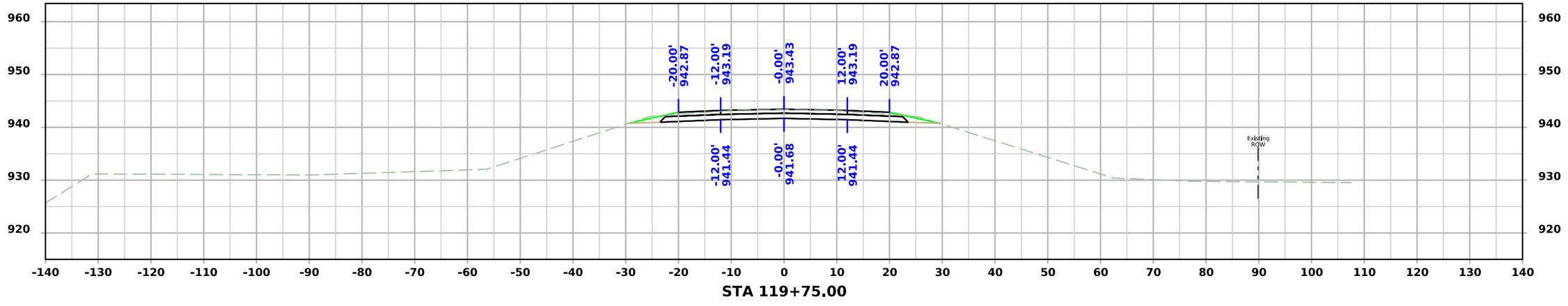

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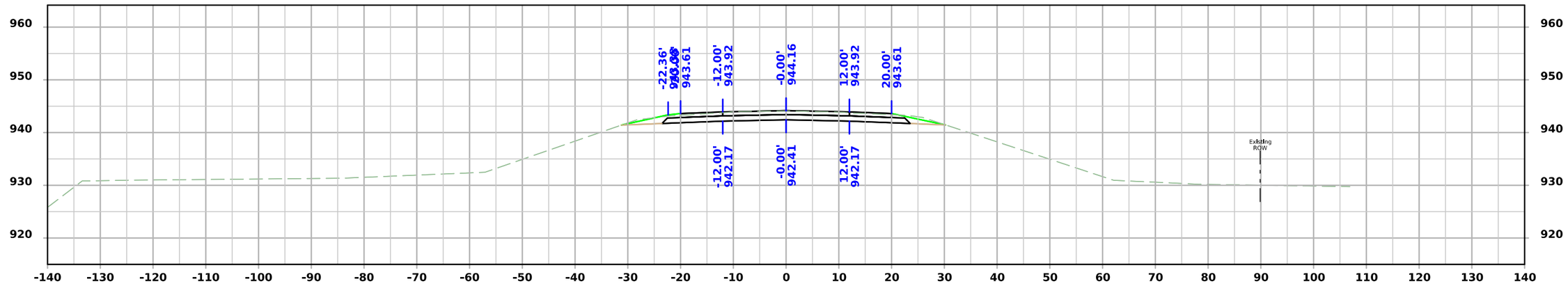

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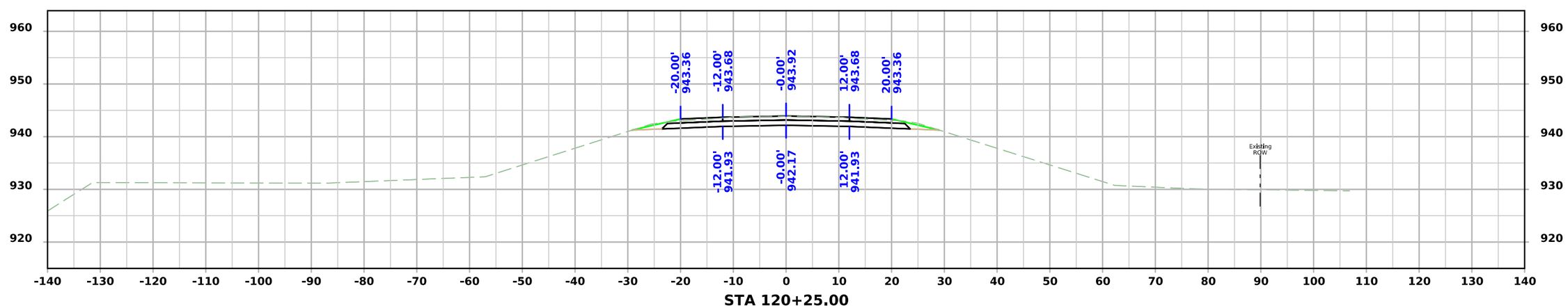

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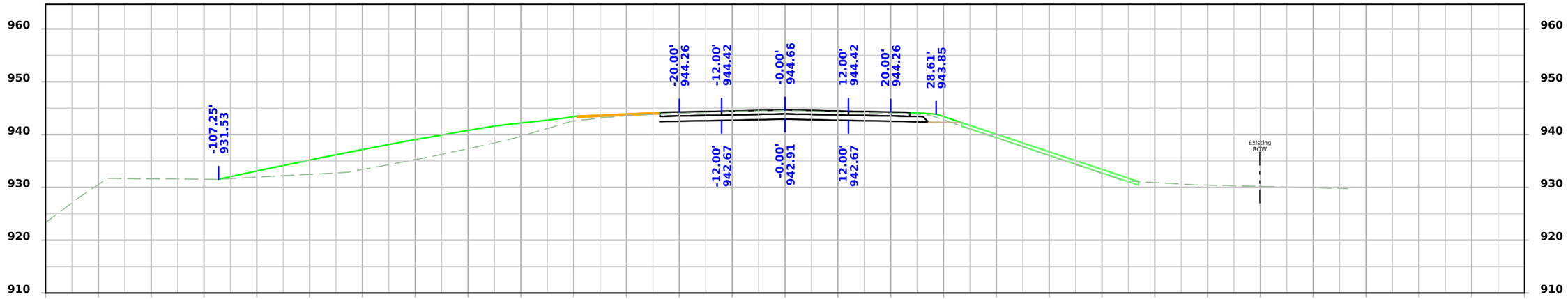
ML - IA 2



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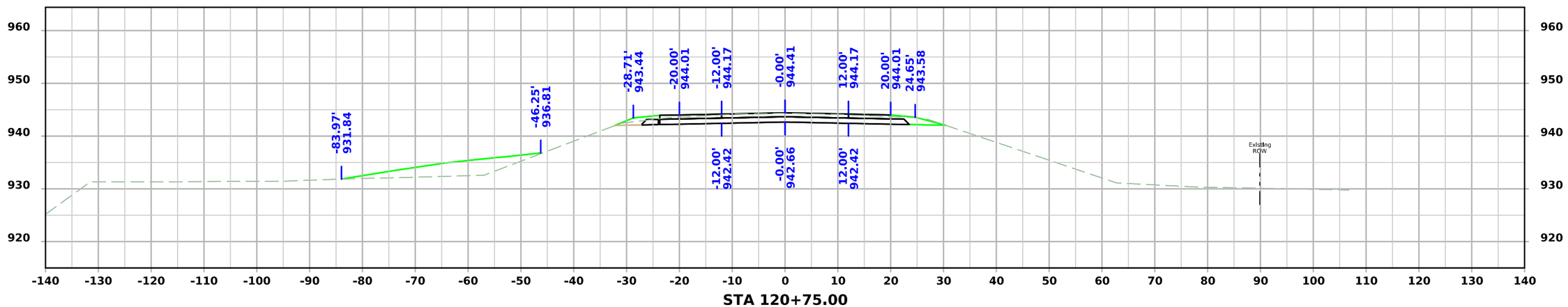

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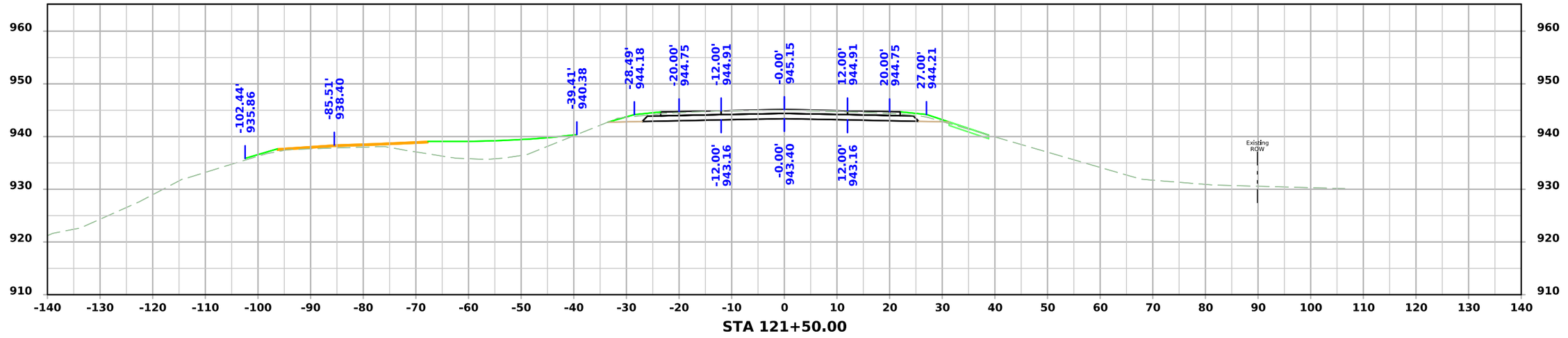

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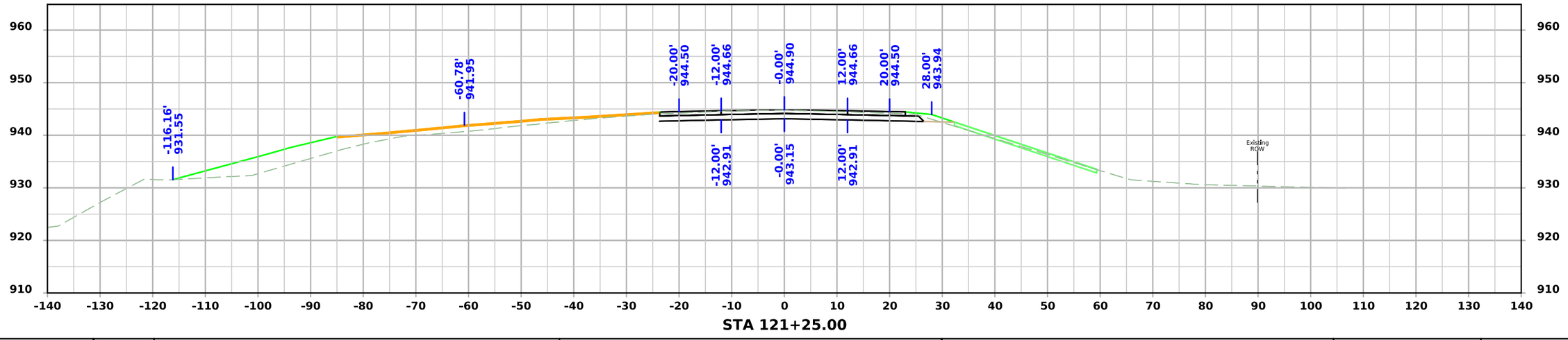

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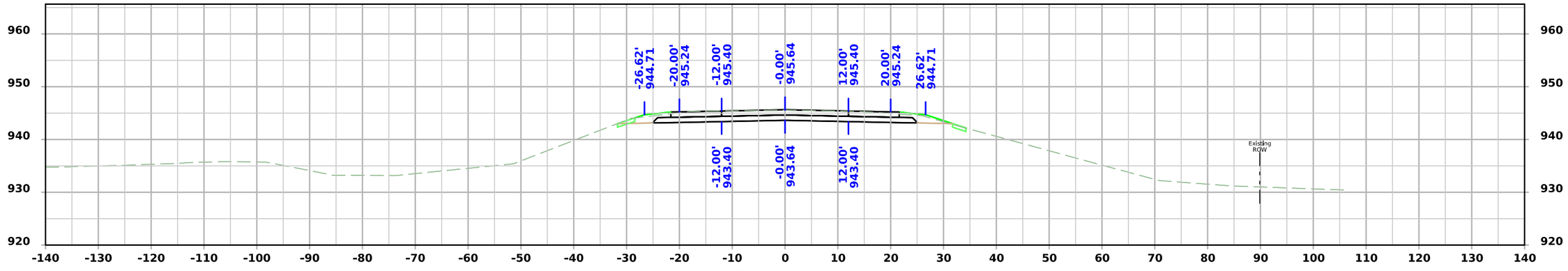

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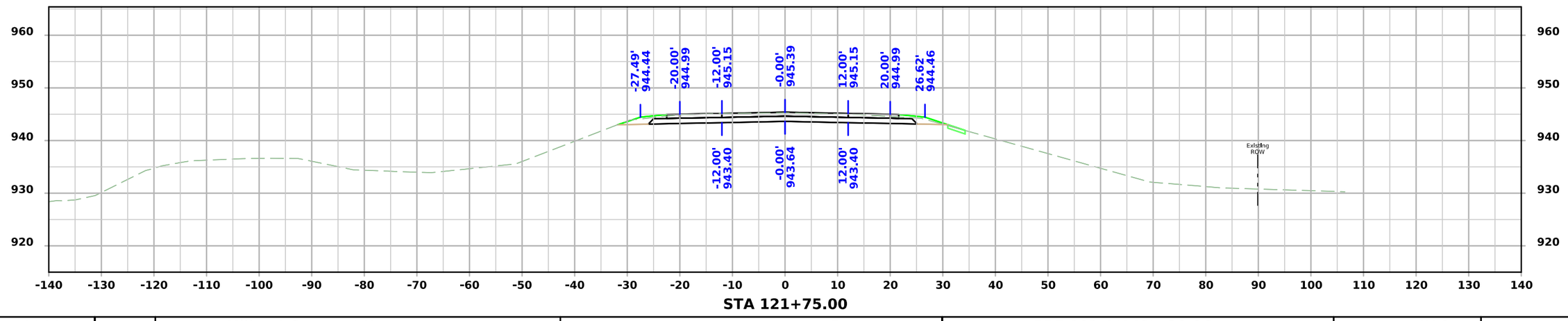

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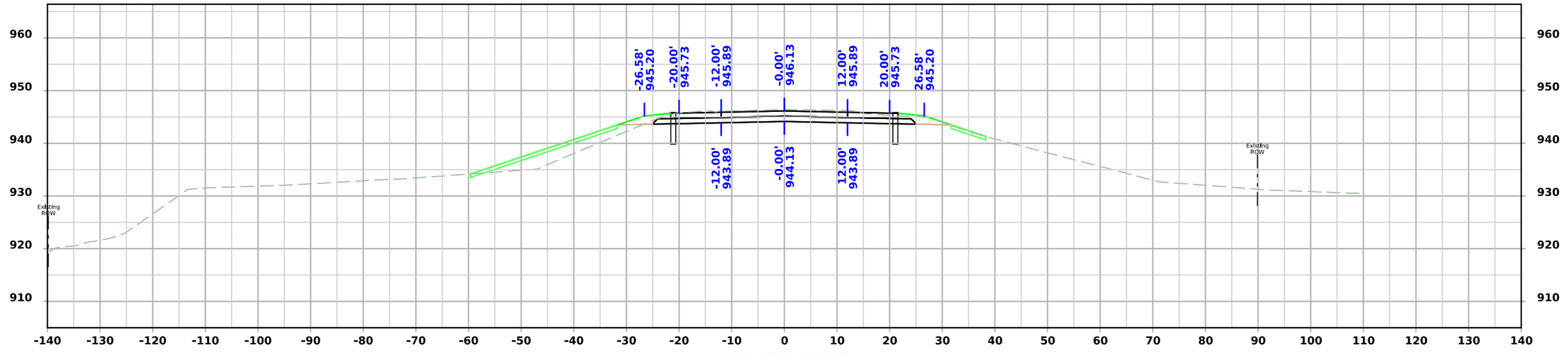
ML - IA 2



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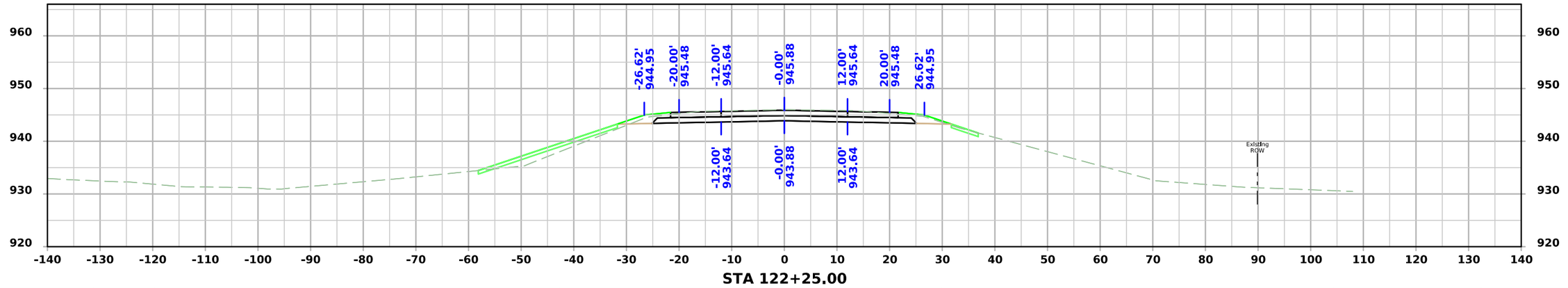

STA 122+25.00

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.9

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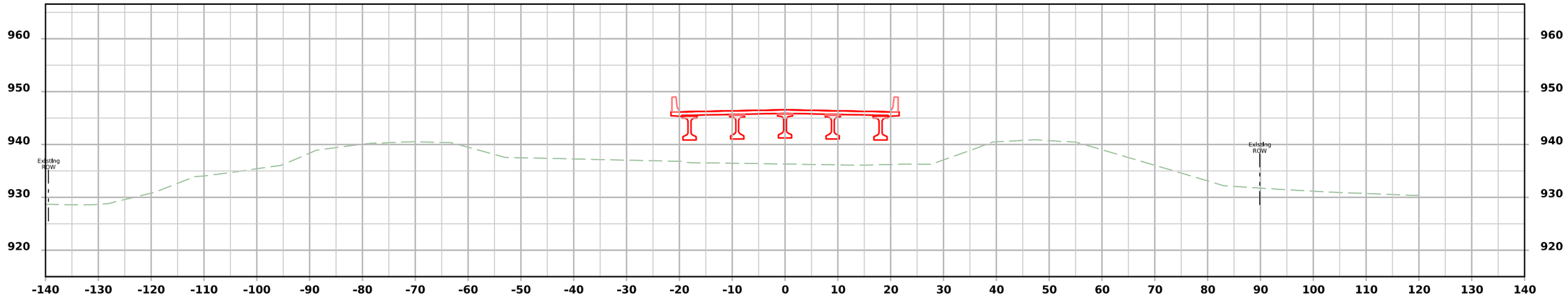
ML - IA 2



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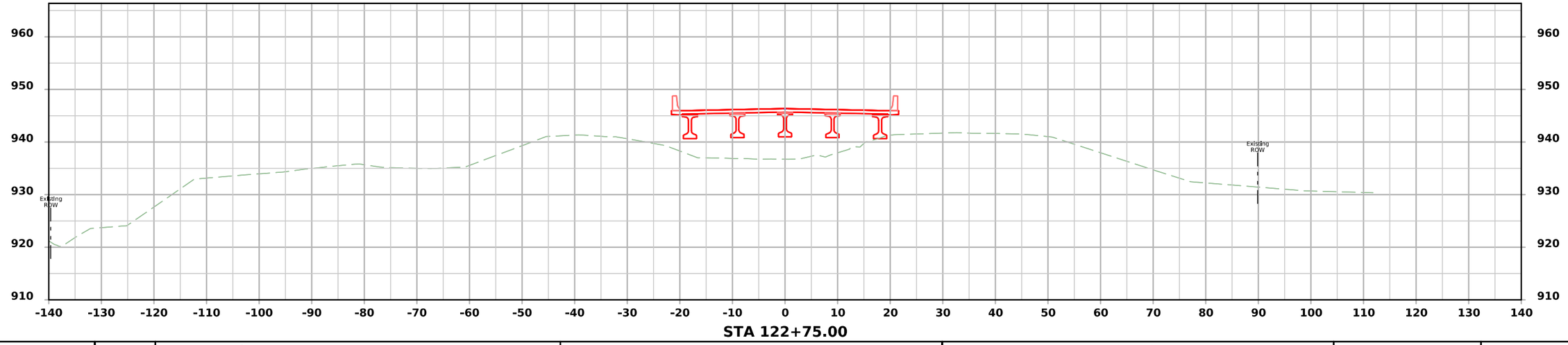

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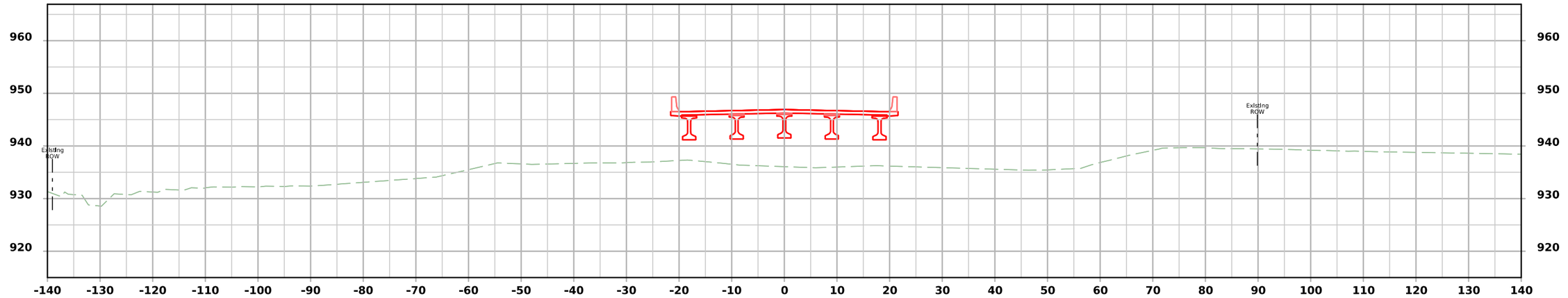
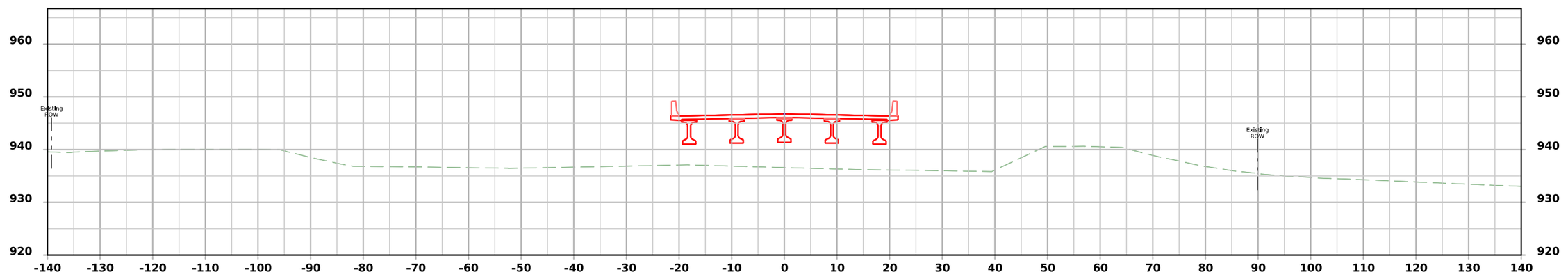
ML - IA 2



STA 123+50.00

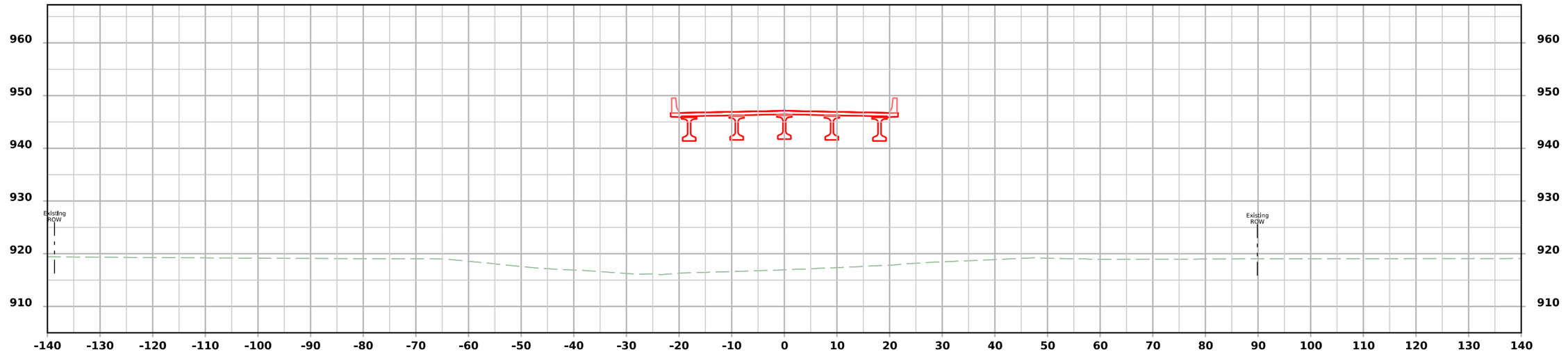


STA 123+25.00

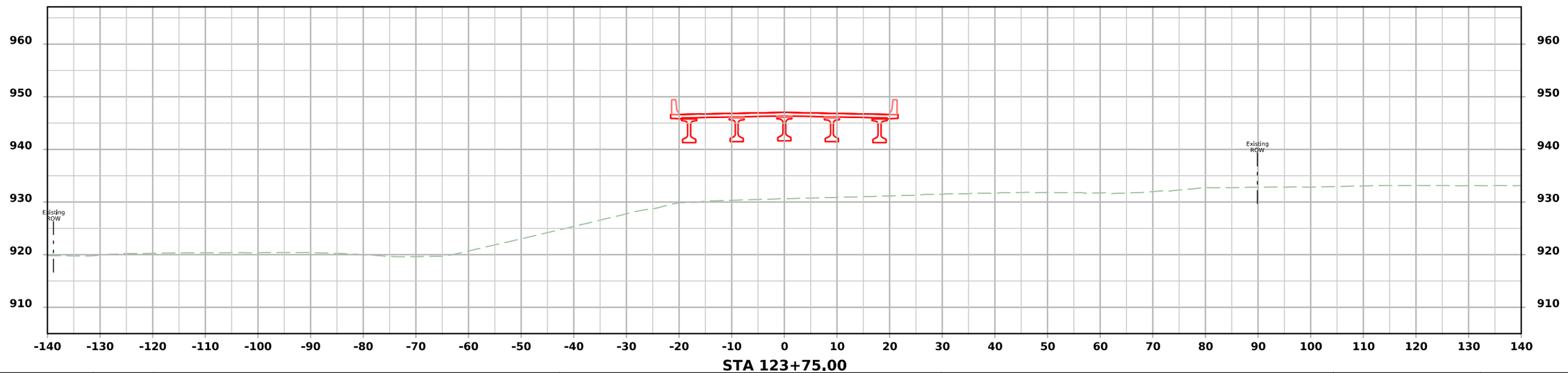
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.11

3:25:21 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 124+00.00

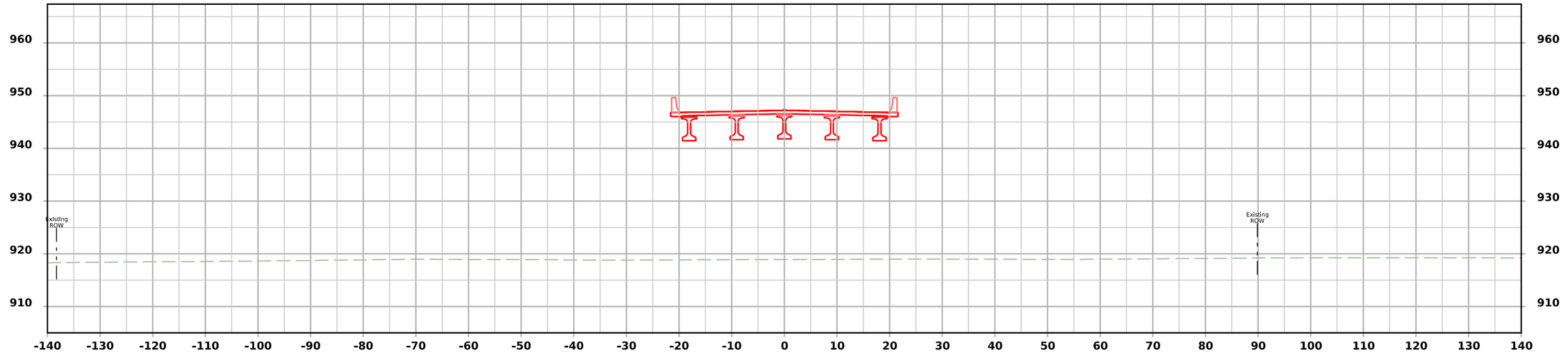


STA 123+75.00

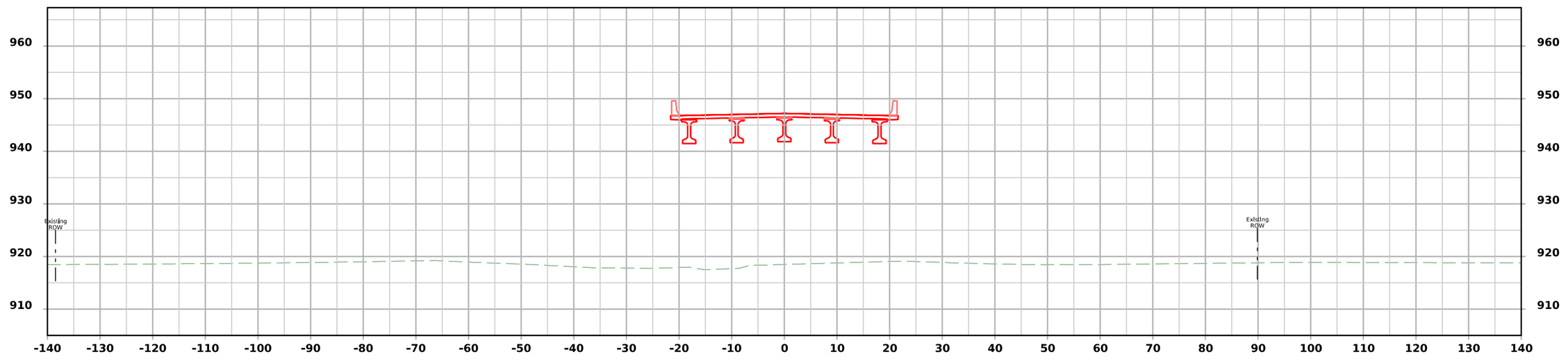
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.12

3:25:23 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 124+50.00

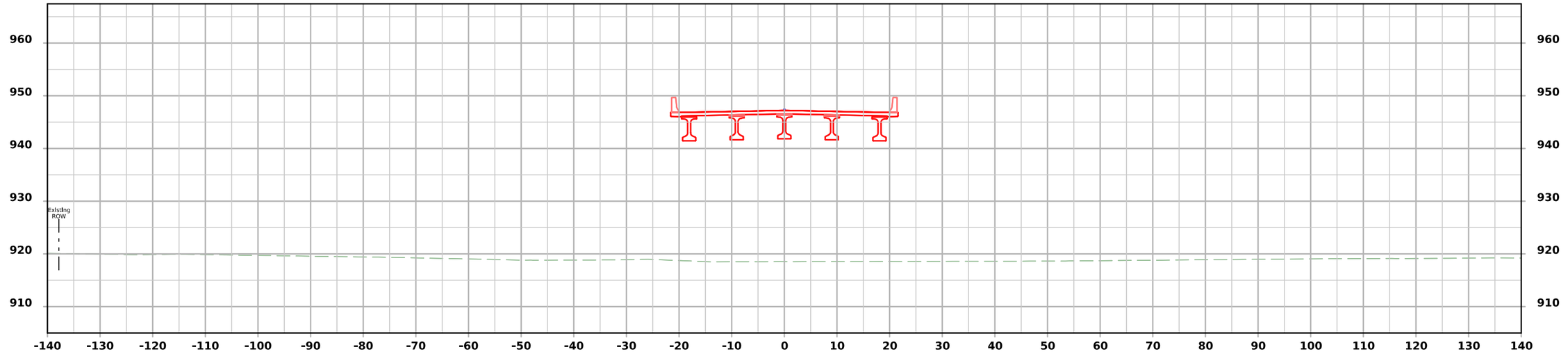


STA 124+25.00

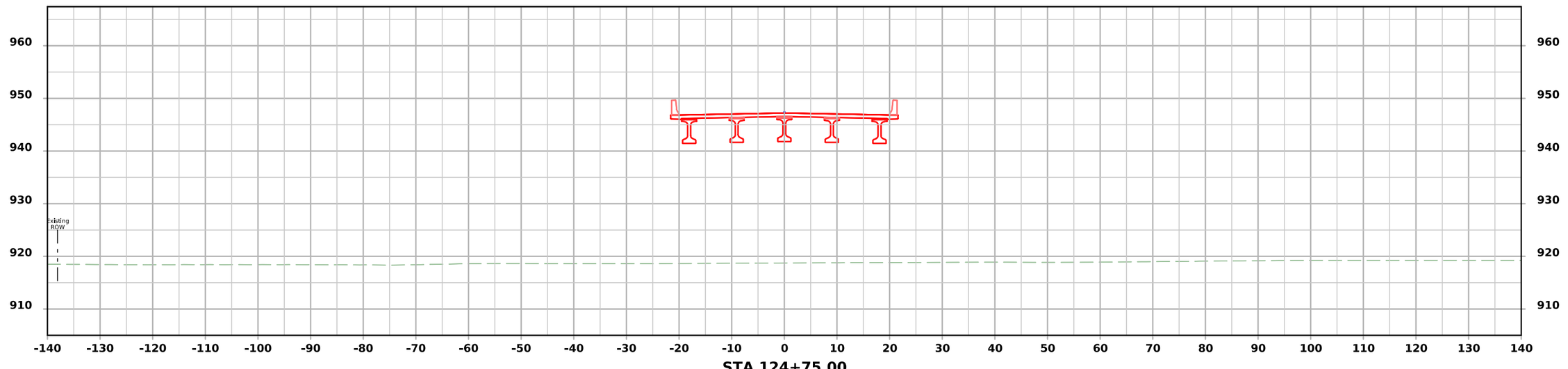
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.13

3:25:24 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 125+00.00

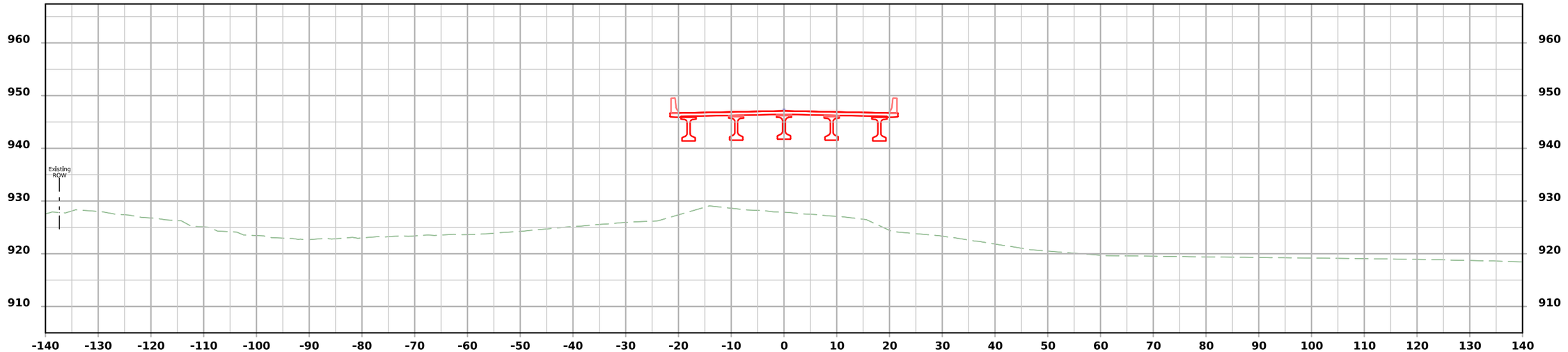


STA 124+75.00

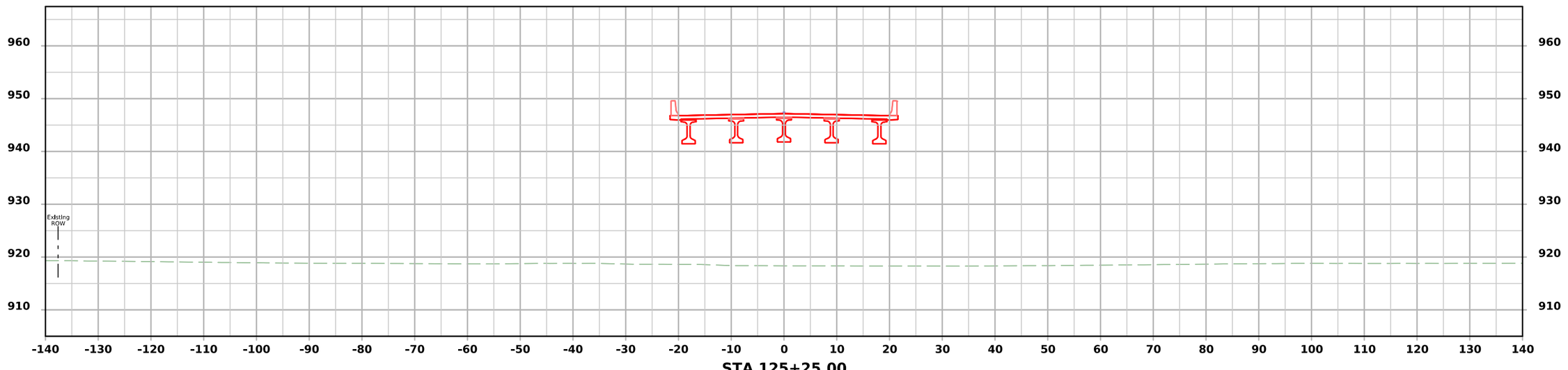
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.14

3:25:25 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 125+50.00

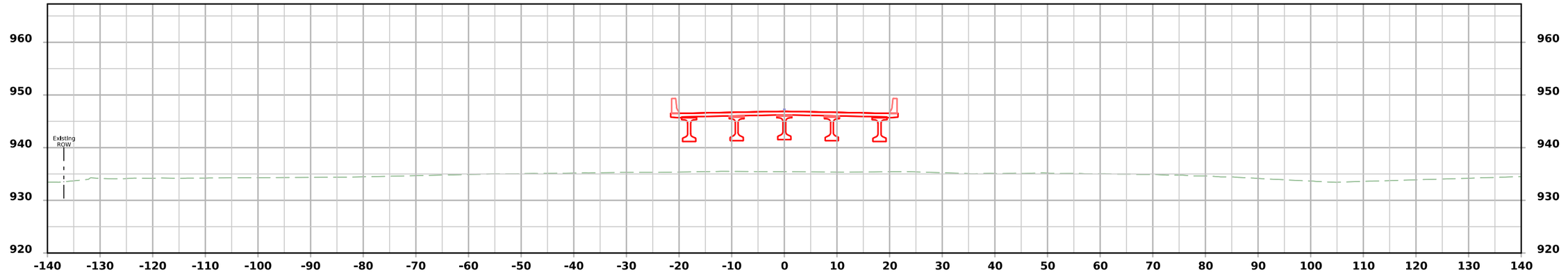


STA 125+25.00

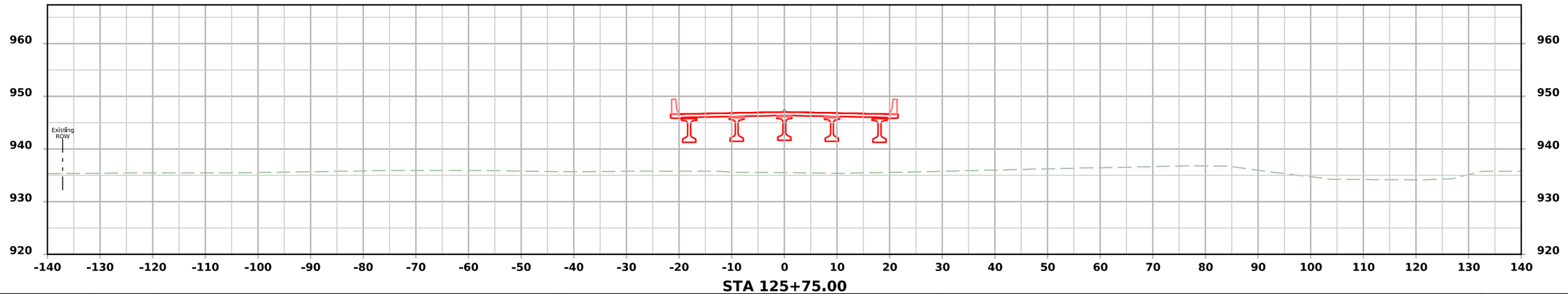
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.15

3:25:26 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 126+00.00

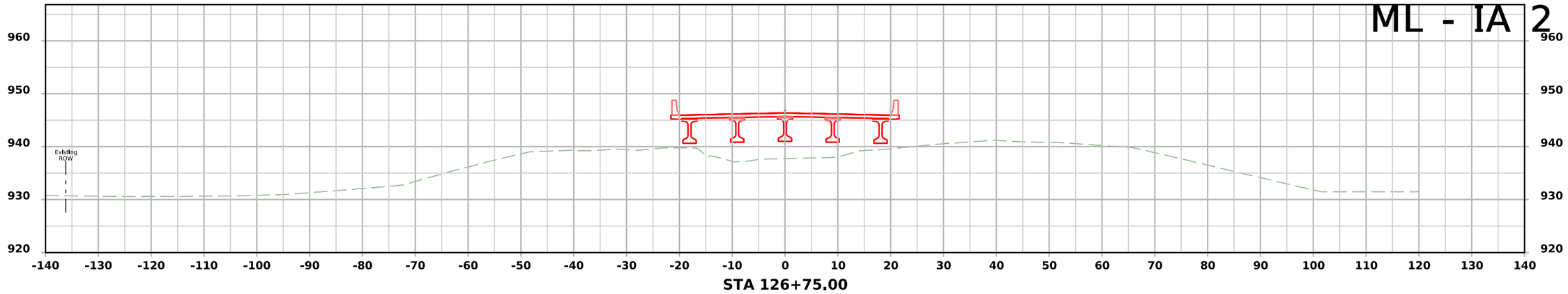


STA 125+75.00

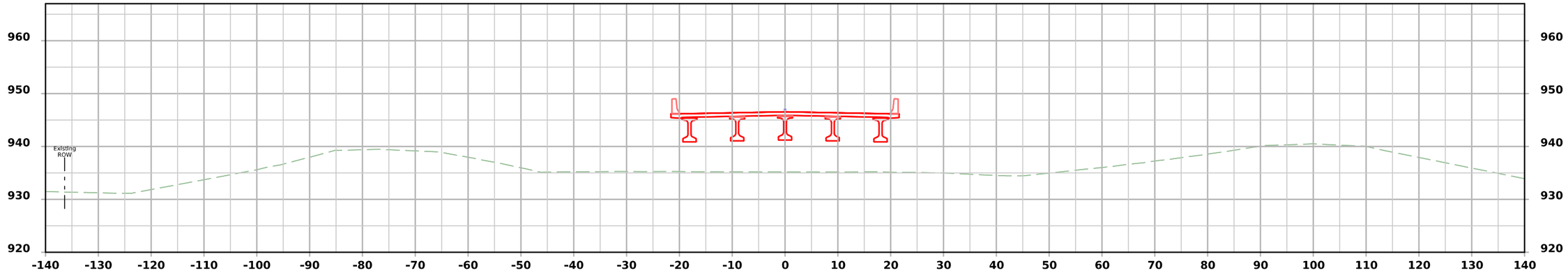
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.16

3:25:27 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

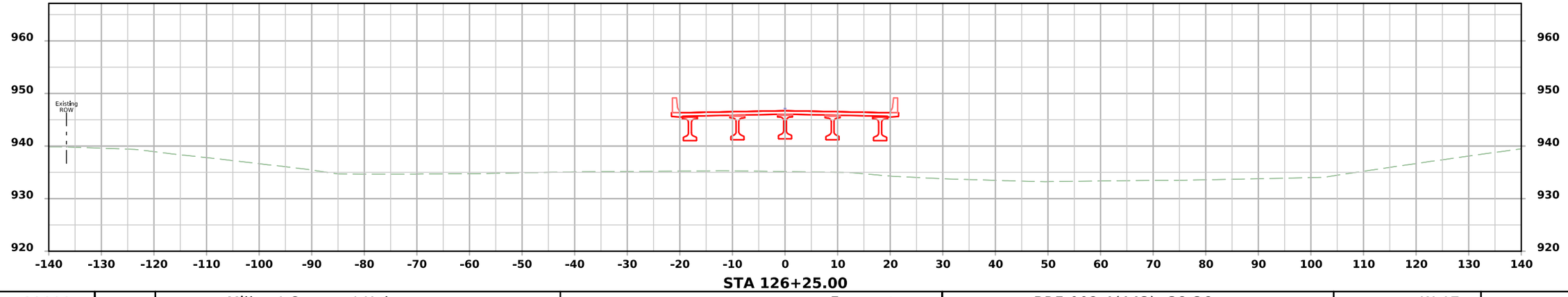
ML - IA 2



STA 126+75.00



STA 126+50.00

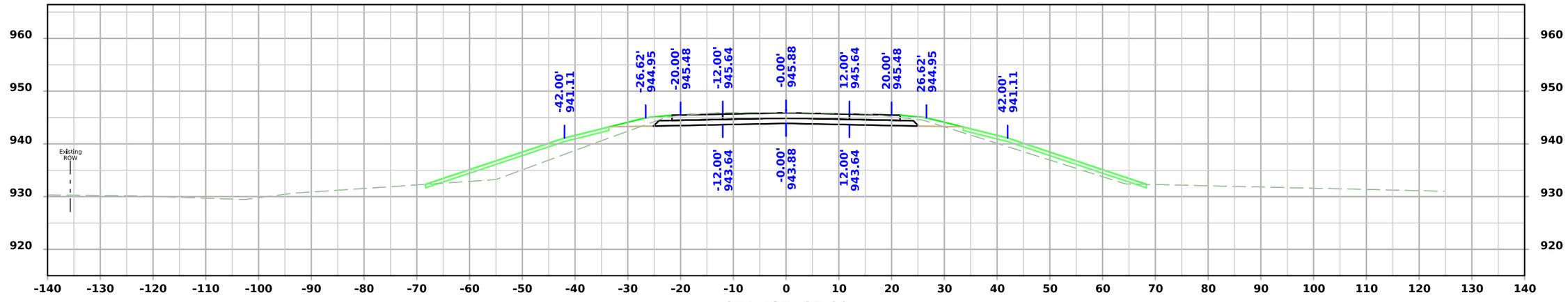


STA 126+25.00

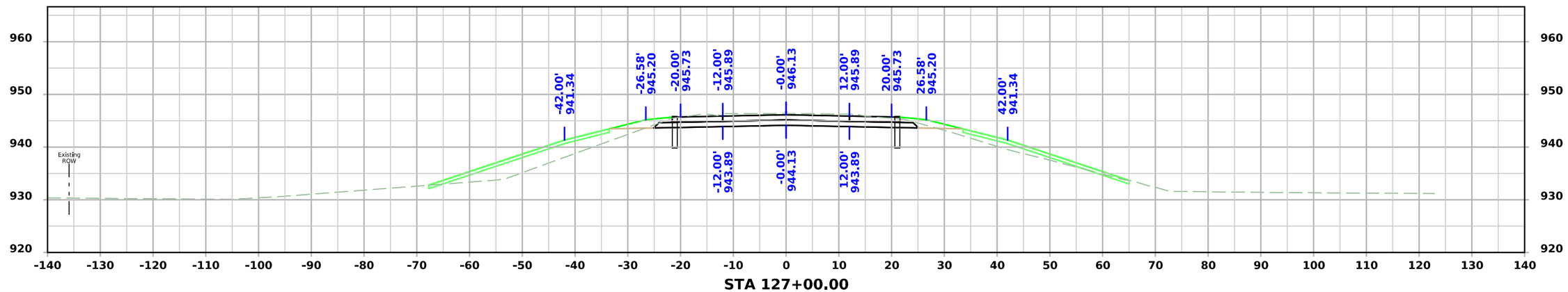
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.17

3:25:28 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 127+25.00

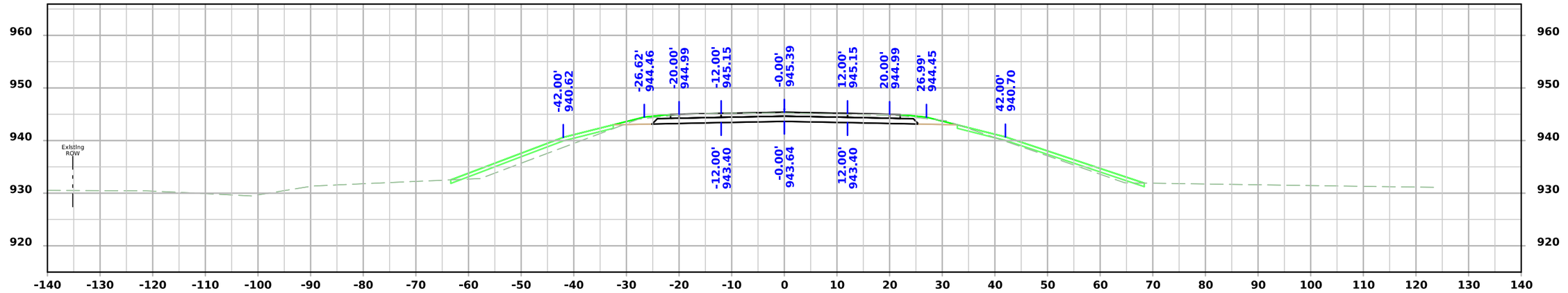


STA 127+00.00

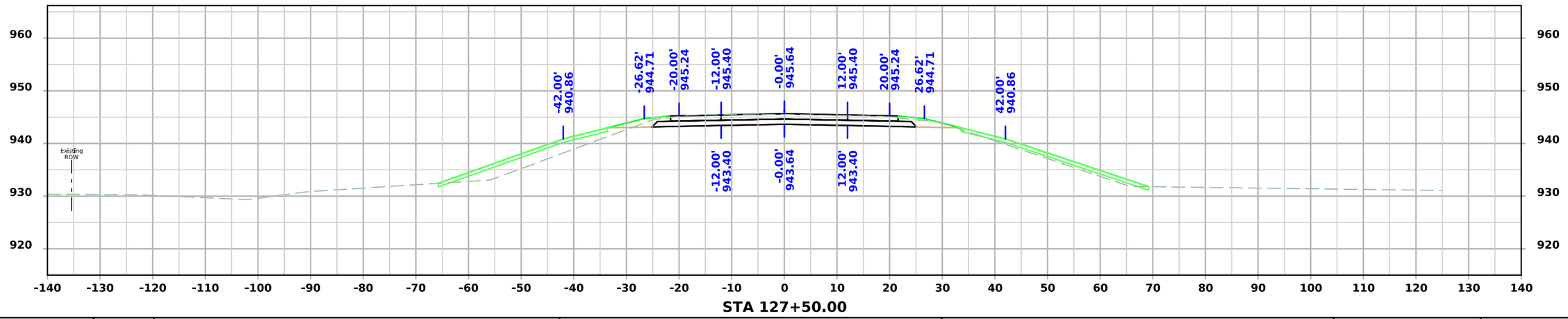
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.18

3:25:29 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 127+75.00

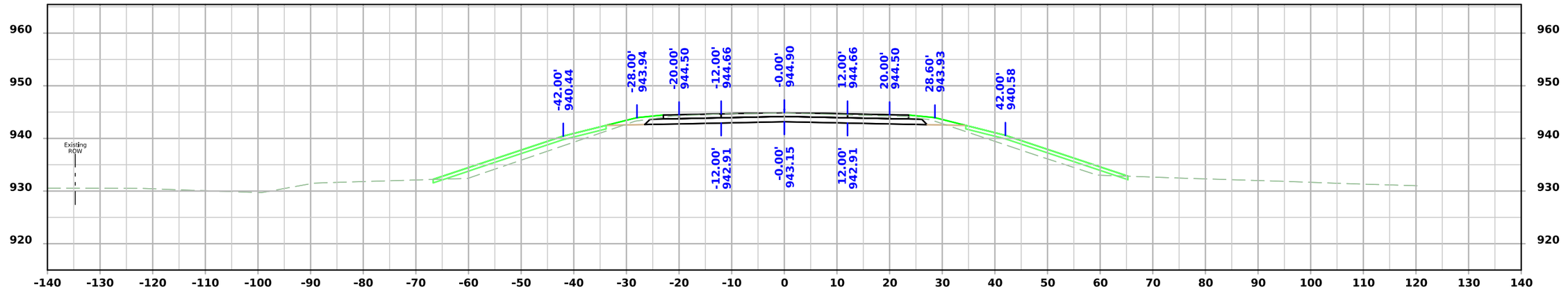


STA 127+50.00

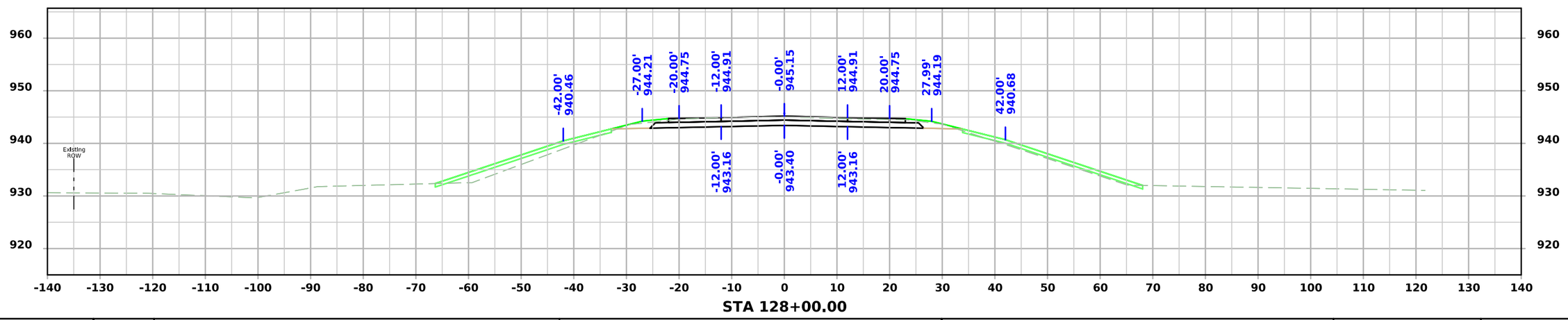
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.19

3:25:29 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - IA 2



STA 128+25.00

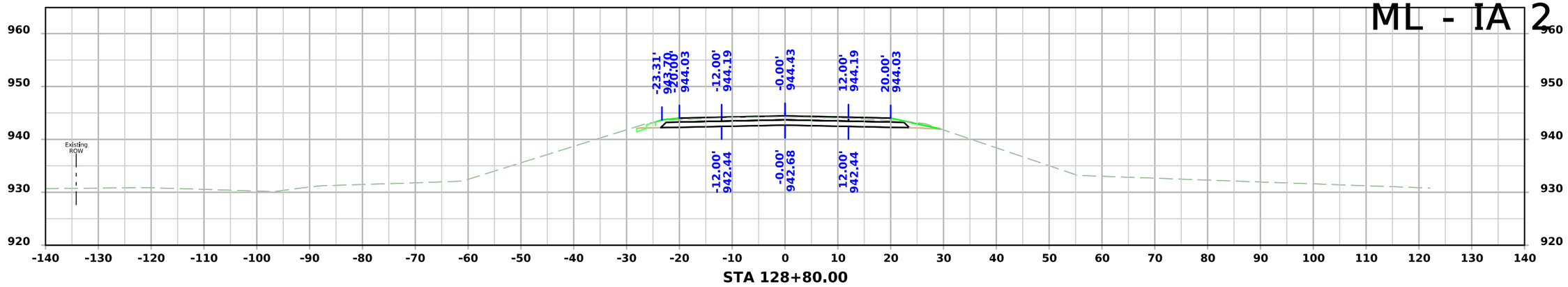


STA 128+00.00

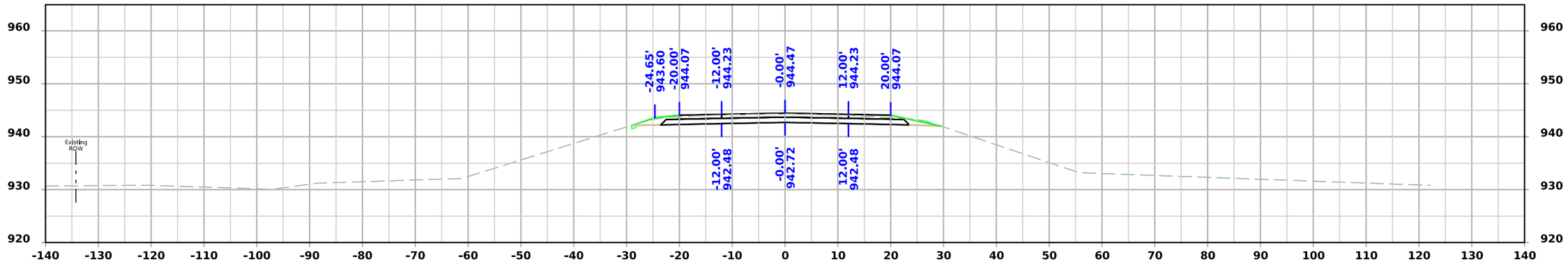
FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.20

3:25:30 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

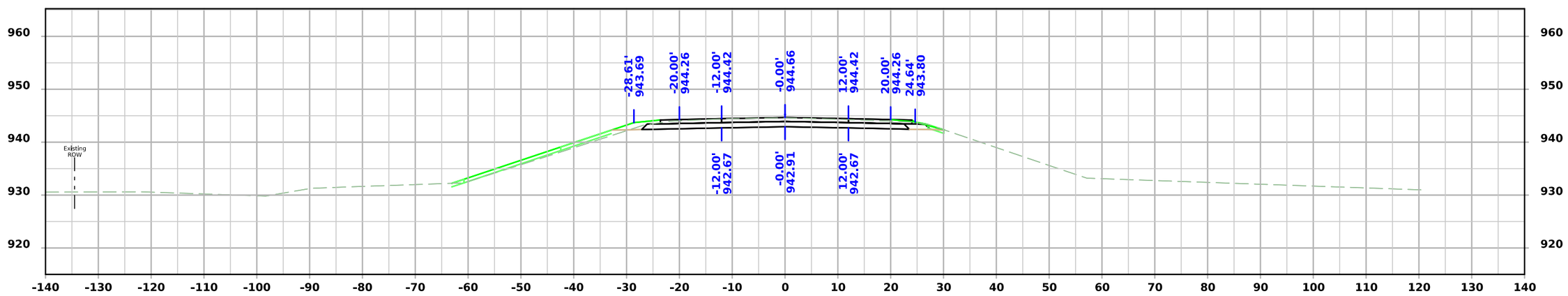
ML - IA 2



STA 128+80.00



STA 128+75.00

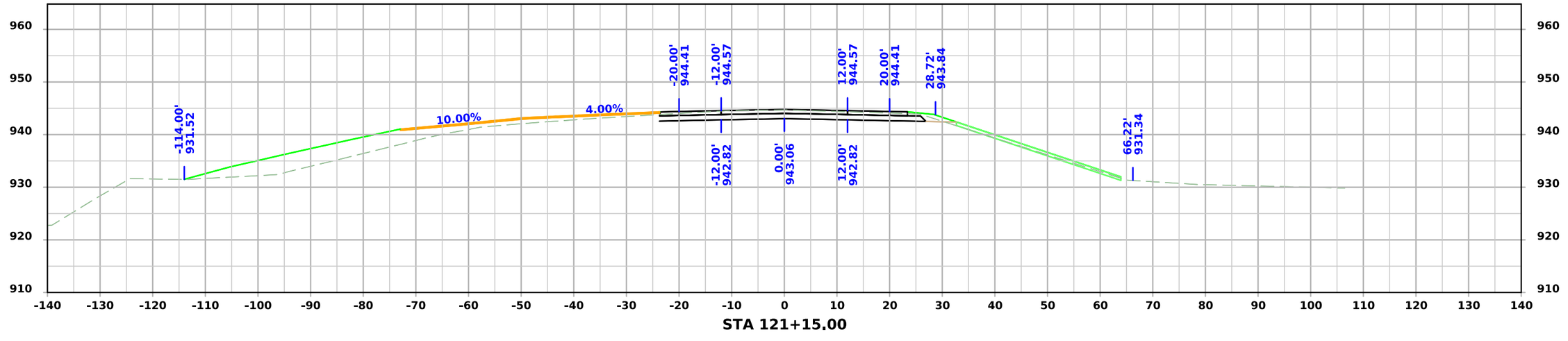


STA 128+50.00

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER W.21

3:25:31 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ML002_36002143_Z06.dgn

ML - ENT121



STA 121+15.00

FILE NO. 32898	ENGLISH	DESIGN TEAM Miller / Cooper / Hobson	Fremont COUNTY	PROJECT NUMBER BRF-002-1(143)--38-36	SHEET NUMBER X.1

3:25:36 PM 2/13/2026 hcooper pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\3600201021\Design\CADD_Files\Cross_Sections\XS_ENT_36002143_Z06.dgn