Bridge Replacement - PPCB
BRF-037-3(10)--38-43

LETTING DATE **Oct. 19, 2027**

HARRISON 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 - 3	Typical Cross Sections and Details
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	Iowa 37
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
G.4	Alignment Coordinates and Circular Curve Data
J Sheets	**Traffic Control and Staging Sheets**
J.1	Traffic Control Plan
* J.2	Detour Route
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 - 24	Iowa 37 Cross Sections
	* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

HARRISON COUNTY

Bridge Replacement - PPCB

Boyer River 0.1 mi W of US 30

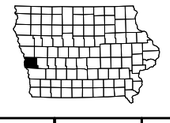
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

REVISIONS

	TOTAL 41
PROJECT IDENTIFICATION NUMBER	
21-43-037-010	
PROJECT NUMBER	
BRF-037-3(10)--38-43	
R.O.W. PROJECT NUMBER	
STPN-037-3(11)--2J-43	



DESIGN DATA RURAL			
2024	AADT	1300	V.P.D.
2044	AADT	1400	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		11	%
Total Design ESALs		--	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Kelly C. Bell	Primary Signature Block	X
V.3	Kate R. Barnes	Hydraulic Design	X

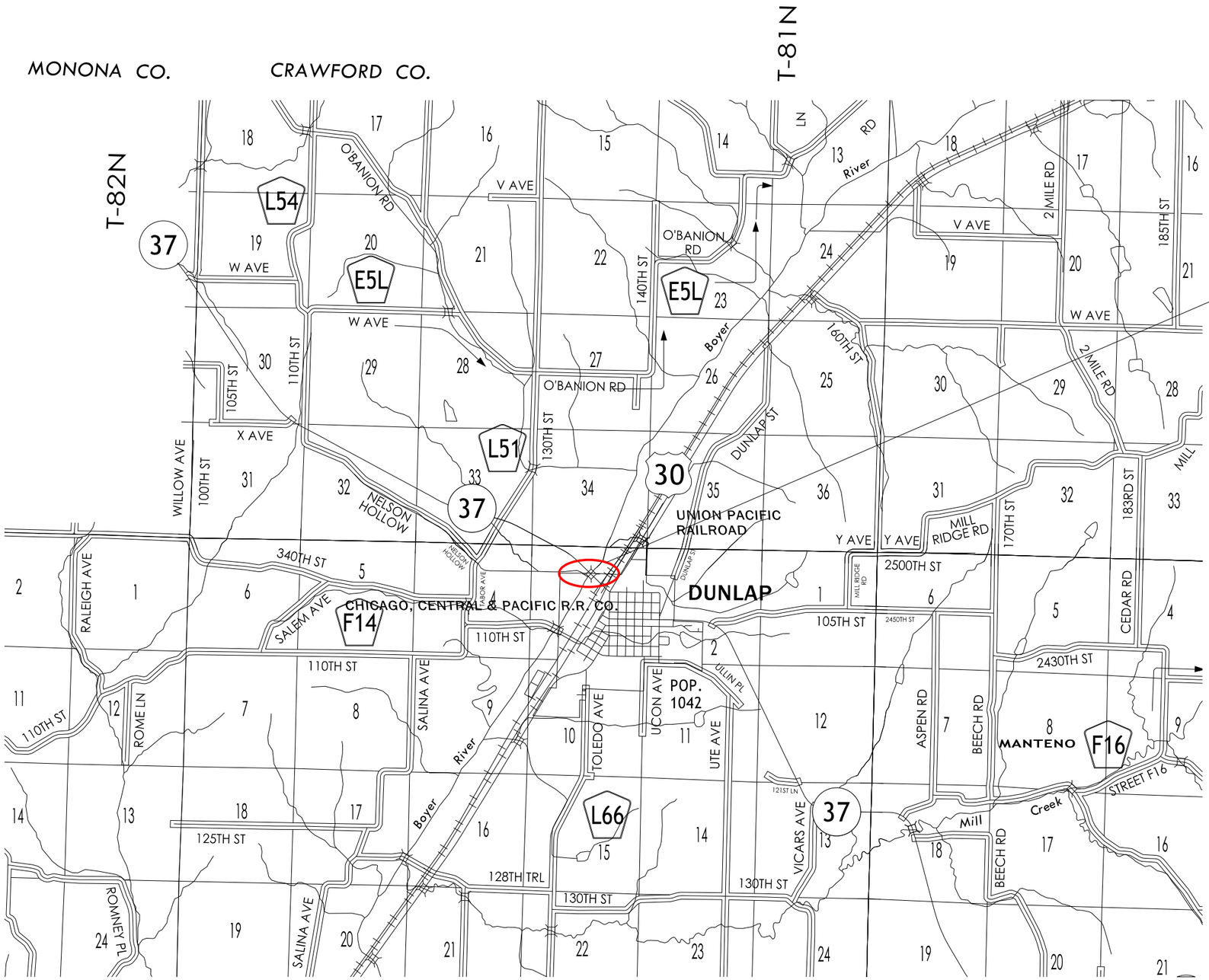
PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: Feb 19, 2025

FILE NO.	ENGLISH	DESIGN TEAM **Flattery\Bell\Gast\Jack**	**HARRISON** COUNTY	PROJECT NUMBER **BRF-037-3(10)--38-43**	SHEET NUMBER **A.1**

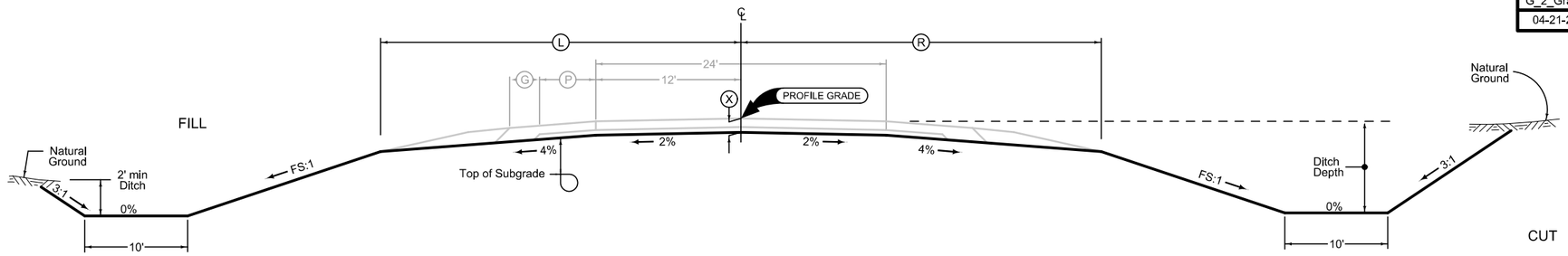
8:19:10 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Sheet_Files\SHT_A01_43037010Z06.dgn



FILE NO.	ENGLISH	DESIGN TEAM **Flattery\Bell\Gast\Jack**	**HARRISON** COUNTY	PROJECT NUMBER **BRF-037-3(10)--38-43**	SHEET NUMBER **A.2**

8:19:11 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Sheet_Files\SHT_A01_43037010Z06.dgn

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS
IA 37	1342+60.00	1344+90.60	26.82	26.82	21	3
Eq: Sta. 1344+30.90 (AH) = Sta. 1344+90.60 (BK)						
	1344+30.90	1345+01.50	26.82	26.82	21	3
	Bridge and Approaches					
IA 37	1349+33.50	1352+75.00	26.82	26.82	21	3



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.

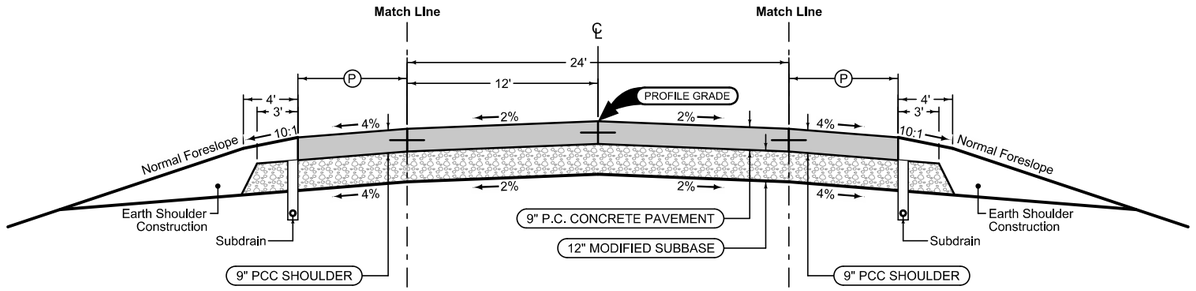
2 LANE GRADING

G_2_Grade
04-21-20

Full Depth PCC Shoulder

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

2_P_FullPCC_ 04-15-25		
STATION TO STATION		(P) Feet
1342+60.00	1344+90.60	8
Eq: Sta. 1344+30.90 (AH) = Sta. 1344+90.60 (BK)		
1344+30.90	1345+01.50	8
Bridge and Approaches		
1349+33.50	1352+75.00	8



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

2P_ 04-21-20	
STATION TO STATION	
1342+60.00	1344+90.60
Eq: Sta. 1344+30.90 (AH) = Sta. 1344+90.60 (BK)	
1344+30.90	1345+01.50
Bridge and Approaches	
1349+33.50	1352+75.00

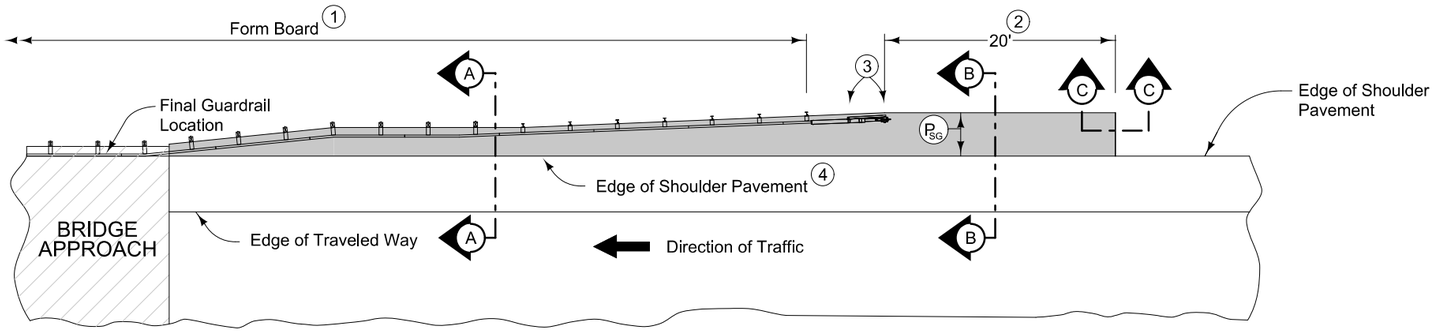
Full Depth PCC Shoulder

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

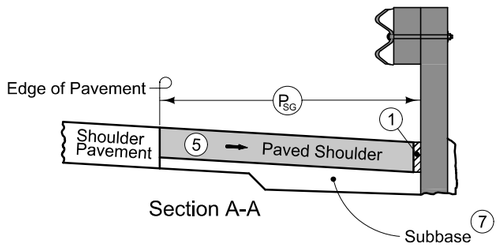
2_P_FullPCC_ 04-15-25		
STATION TO STATION		(P) Feet
1342+60.00	1344+90.60	8
Eq: Sta. 1344+30.90 (AH) = Sta. 1344+90.60 (BK)		
1344+30.90	1345+01.50	8
Bridge and Approaches		
1349+33.50	1352+75.00	8

See Tab. 100-24 and
Tab. 112-9 for Quantities

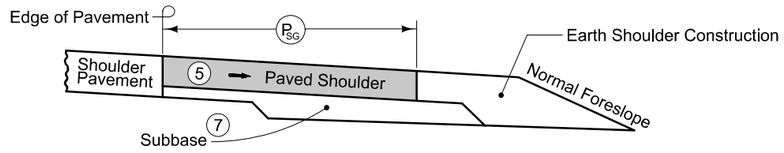
7158B
MODIFIED



PLAN VIEW

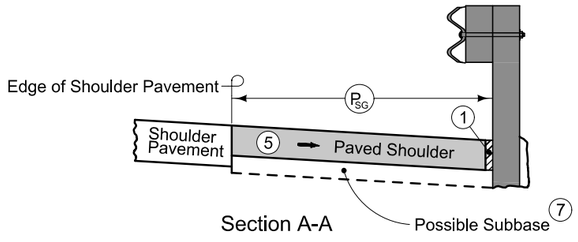


Section A-A

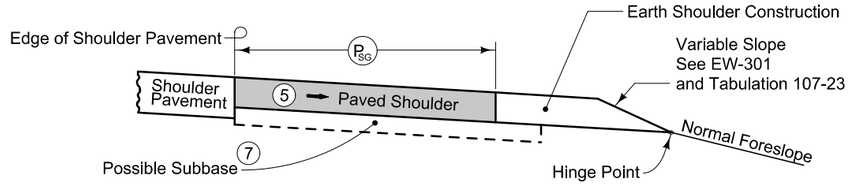


Section B-B

NEW CONSTRUCTION 6



Section A-A



Section B-B

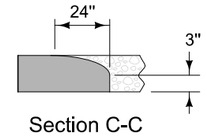
EXISTING SHOULDER

8" PCC Paved Shoulder at guardrail 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.

Refer to Tabulation 112-9 for shoulder quantities.

1. 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' joint (per PV-101) for PCC shoulder.
5. Match shoulder slope.
6. The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.
7. Refer to other details in the plan.



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

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
- 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

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- PPA, Power Pole Co. 1
- FO FO1D, Aureon - Quality D
- TI TL1D, Windstream - Quality D

Aureon Network Services
(Fiber Distribution, Fiber Transmission)
Jeff Klocko, OSP Engineer
7760 Office Plaza Drive South
West Des Moines, IA 50266
(515) 830-0445
jeff.klocko@aureon.com

City of Dunlap
(Water, Sanitary Sewer)
Tony Warnock, Street Supervisor
716 Iowa Avenue
Dunlap, IA 51529
(712) 643-5721
dunlapia@loganet.net

Farmers Mutual Cooperative Telephone Company
(Telephone, Fiber Distribution)
Gary Peterson, Plant Manager
801 19th St
Harlan, IA 51537
(712) 744-3131 Cell: (712) 579-2554
Gary@fmctc.com

Windstream Communications
(Fiber Distribution, Fiber Transmission, Telephone)
Chris Cook, Engineer II
236 W Maple
Centerville, IA 52544
(641) 437-4826 Cell: (641) 799-4179
christopher.l.cook@windstream.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.**		**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.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER D.1

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Harrison TWP.
T-81N R-41W
SEC. 3

EQN 1344+30.90(AH) =
1344+90.60(BK)

STA 1342+60.00 (ML037)
BEGIN CONSTRUCTION

PROPOSED TEMPORARY EASEMENT

STA 1352+75.00 (ML037)
END CONSTRUCTION

1345+00

1350+00

1355+00

UAC
24"x47.5'
C.M.P.

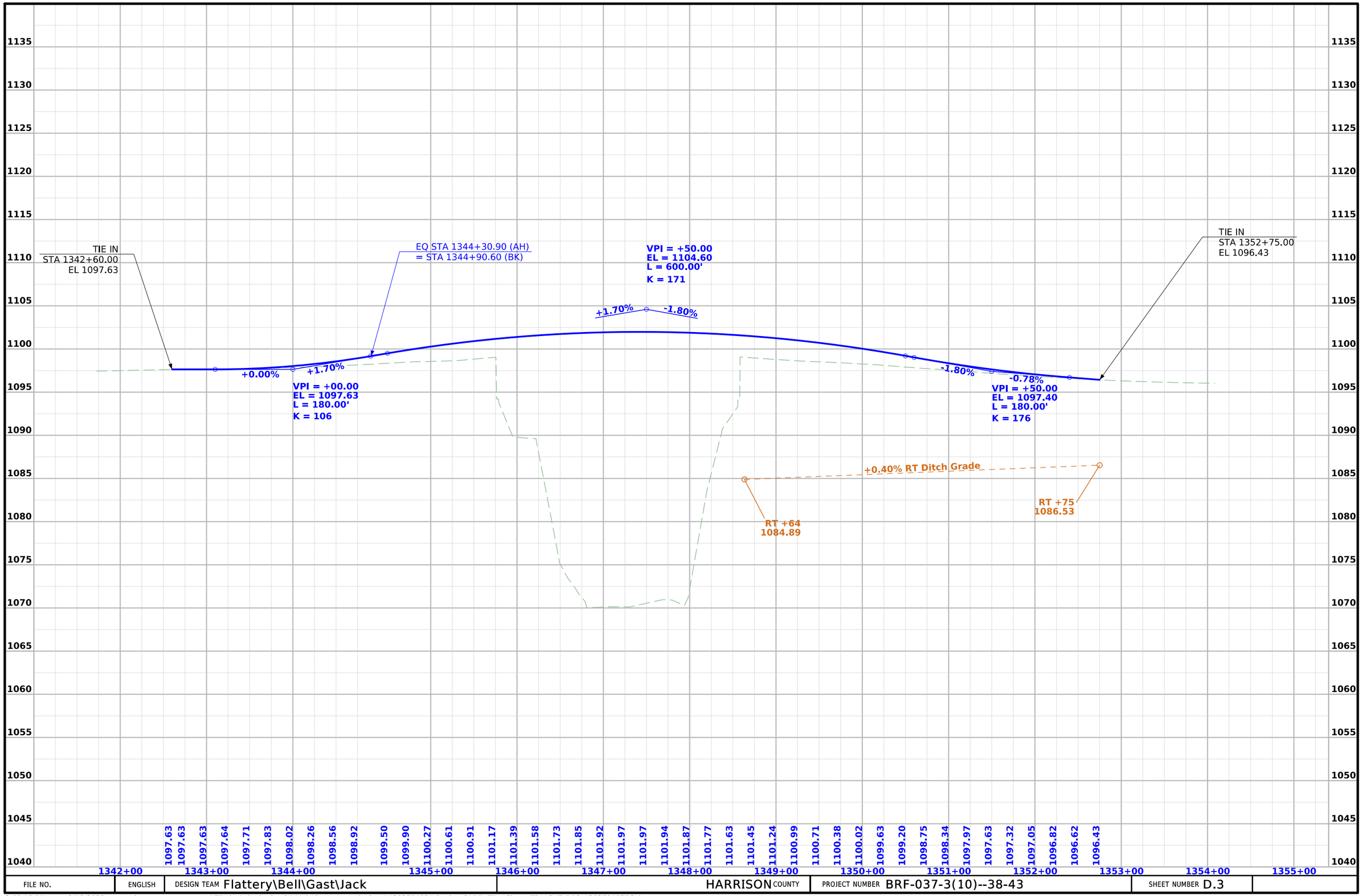
84"x43.2'
Conc Pipe
UAC

Remove
Sta. 1347+16.76
280'x28' Continuous
I-Beam Bridge
D.A.=691 SQ M-R
Build 289' x 40' PPCB Bridge

0 50
FEET

FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER D.2

3:00:12 PM 2/19/2025 kgast pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Sheet_Files\SHT_D02_43037010Z06.dgn



FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER D.3

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SURVEY INDEX

Harrison County
BRF-037-3(10)--38-43
Boyer River 0.1 mi W of US 30
PIN: 21-43-037-010
Type of Work: Bridge
Project Directory: 4303701021
SAP: 784.2

Survey Personnel

Clayton Henningsen – Survey Party Chief
Jason Arn – Survey Party Chief

Date(s) of Survey

Begin Date	08/08/2023
End Date	10/30/2023

General Information

This survey is for IA Hwy 37 Boyer River bridge located 0.1 mi west of US Hwy 30. This survey request was for the IA Hwy 37 corridor only. 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: 2018u3

Alignment Information

The horizontal alignment for IA Hwy 37 this survey is a retrace of ACC Plans No. F-861(7). Survey stationing was equated to the plan PI at Sta. 1334+81.2 and carried back and ahead throughout the survey with equation at station1344+90.6=1344+30.9.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 1334+81.2 ACC Plans No. F-861(7)
Survey PI Sta. 1334+81.2

PI Sta. 1358+91.6 ACC Plans No. F-861(7)
Survey PI Sta. 1358+90.52

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: 2018u3

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

FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER G.2	

10:03:18 AM 9/9/2024 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Sheet_Files\SHT_G01_43037010Z06.dgn

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: 2018u3

Point Name	Northing	Easting	Elevation	Feature Definition-Description
430300383	7187522.23	16536908.62	1096.69	CP FOUND X ON SOUTHERNMOST END OF SIDEWALK AT SULLIVAN FIELDS IN DUNLAP
240370221	7188703.94	16531365.08	1116.70	CP CONC MONUMENT ON SOUTHSIDE IA 37 APPROX 500 FT EAST INTERSECTION IA 37 & 130TH ST
430370228	7187139.75	16534256.06	1092.82	CP CONC MONUMENTON SOUTHSIDE IA 37 APPROX 700 FT WEST OF WEST END BOYER RIVER BRG
430370231	7186163.14	16535490.31	1091.30	CP FENO MONUMENT ON NORTHSIDE IA 37 APPROX 65 FT WEST OF WEST RAIL CN RAILROAD

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML037							1330+61.996	7187673.29	16533588.64	1334+81.200	7187488.14	16533964.74	1338+94.496	7187202.99	16534272.02			
2	ML037	A 1358+90.516	7185804.49	16535778.74															

SPIRAL OR CIRCULAR CURVE DATA

Name	Chain	ΔSCS	Horizontal Alignment Data												Remarks
			Spiral Data								Curve Data				
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E	
C1	ML037										16.649	419.204	832.500	2865.000	30.506	

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED.

FILE NO.	ENGLISH	DESIGN TEAM	IOWA DOT * OFFICE OF ROW	COUNTY	PROJECT NUMBER	SHEET NUMBER	

Harrison TWP.
T-81N R-41W
SEC. 3

BOYER RIVER

NE 1/4 NW 1/4 SEC. 3

NW 1/4 NE 1/4 SEC. 3

SE 1/4 NW 1/4 SEC. 3

SW 1/4 NE 1/4 SEC. 3

1 HOUSTON MANAGEMENT LLC

LOT 1

LOT 2

LOT 3

3 JOHN L & DEDE SULLIVAN

3D UPPER BOYER D.D.

TEMPORARY EASEMENT TO REPLACE BRIDGE

2 DENNIS & LORI ANN TOPF

2D ROTH D.D.

ROTH DITCH

3 JOHN L & DEDE SULLIVAN

4 COGDILL FARM SUPPLY

MICHEAL D BONSALL

1341+00 1342+00 1343+00 1344+00 1345+00 1346+00 1347+00 1348+00 1349+00 1350+00 1351+00 1352+00 1353+00 1354+00 1355+00

1345+17 ℄ 126'

1345+17 ℄ 85'

1344+56±℄ Cor. ℄ 80'

1344+76 ℄ 60'±EX.R/W

1348+50 ℄ 85'

1349+18 ℄ 126'

1349+18 ℄ 75'±Prop.R/W

1350+22 ℄ 60'±EX.R/W

STA 1342+60.00 (ML037)
BEGIN CONSTRUCTION

STA 1352+75.00 (ML037)
END CONSTRUCTION

Iowa Highway 37

Iowa Highway 37

UAC
24"x47.5'
C.M.P.

1344+34 ℄ 60'±EX.R/W

1346+13±℄ ℄ 87'

1347+30±℄ ℄ 101'

1348+11±℄ ℄ 96'

1348+63 ℄ 105'

1350+09 ℄ 92'

1350+32 ℄ 85'

Remove
Sta. 1347+16.76
280'x28' Continuous
I-Beam Bridge
D.A.=691 SQ M-R
Build 289' x 40' PPCB Bridge

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Larson / Hughes
ROW #: STPN-037-3(11)--2R-21
Plan Date: 4-21-2025
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition
- Permanent Acquisition County
- Permanent Acquisition City

0 50 FEET

FILE NO. 98765	ENGLISH	DESIGN TEAM Flattery \ Bell \ Gast \ Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER H.1

10:35:19 AM 4/21/2025 CHUGHES pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\ROW\ROW_43037011.dgn

108-23A
08-01-08

TRAFFIC CONTROL PLAN

IA 37 will be closed to thru traffic during construction.

IA 37 traffic shall be maintained via offsite detour. Iowa DOT will establish and maintain detour route. See J.2 for detour.

111-01
04-17-12

COORDINATED OPERATIONS

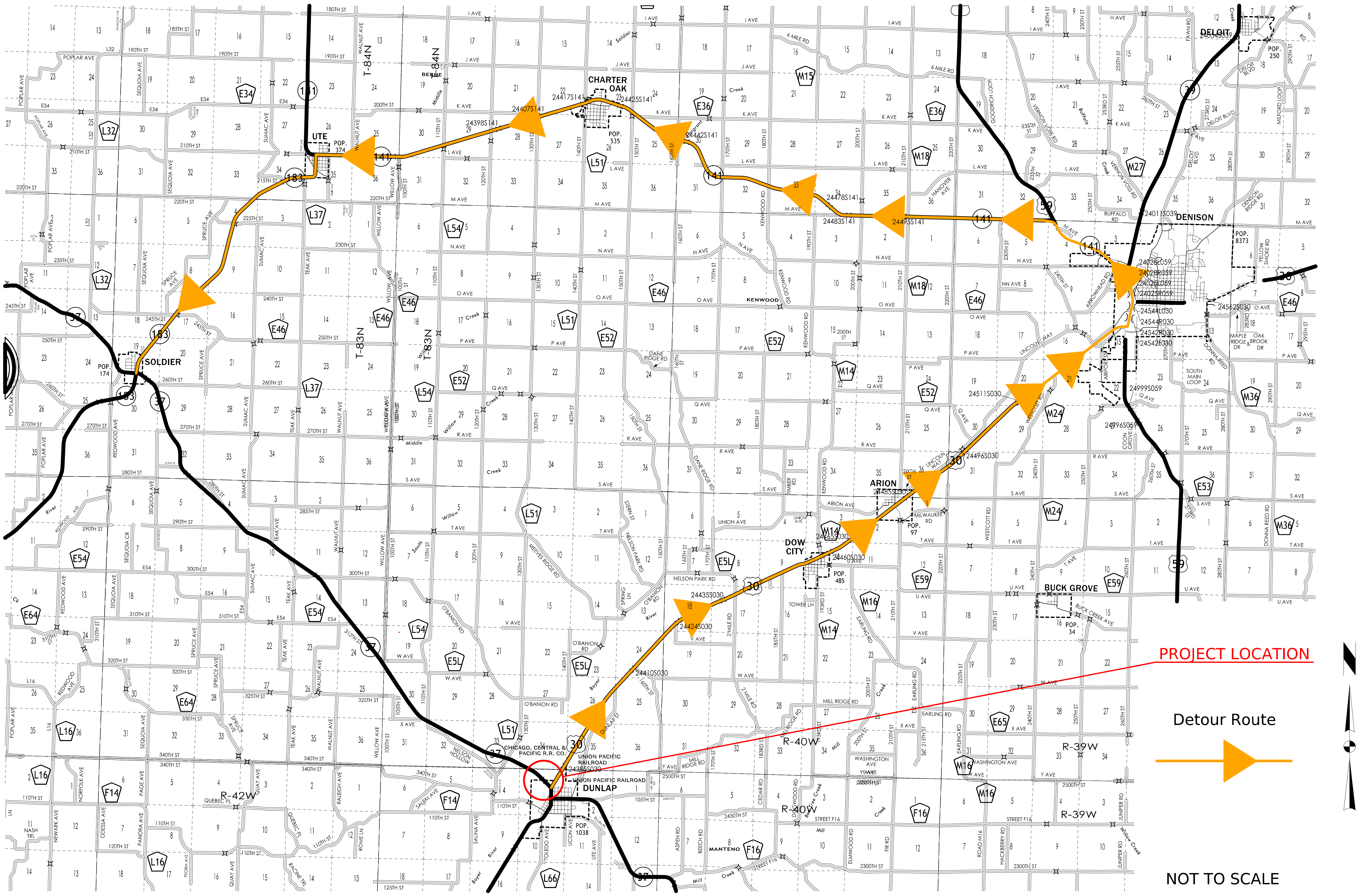
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None provided.	

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.									



FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER J.2

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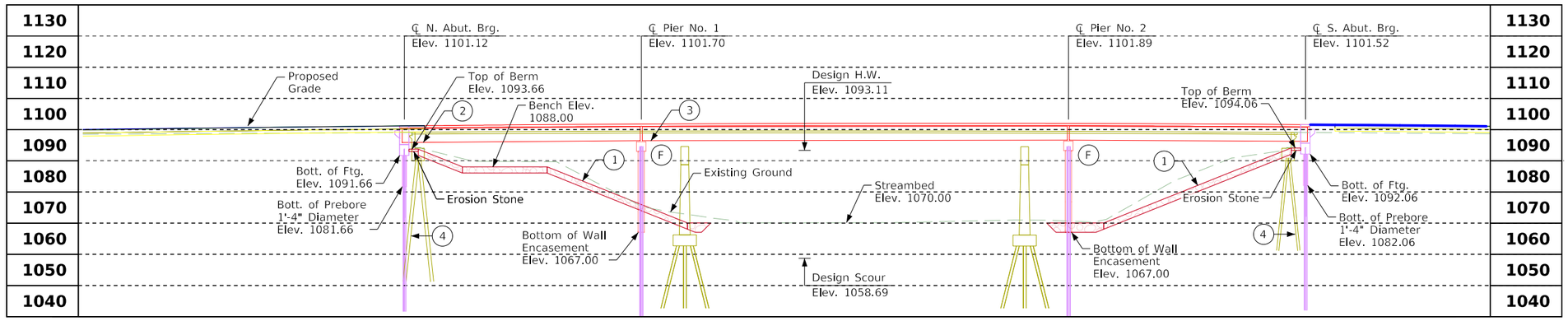
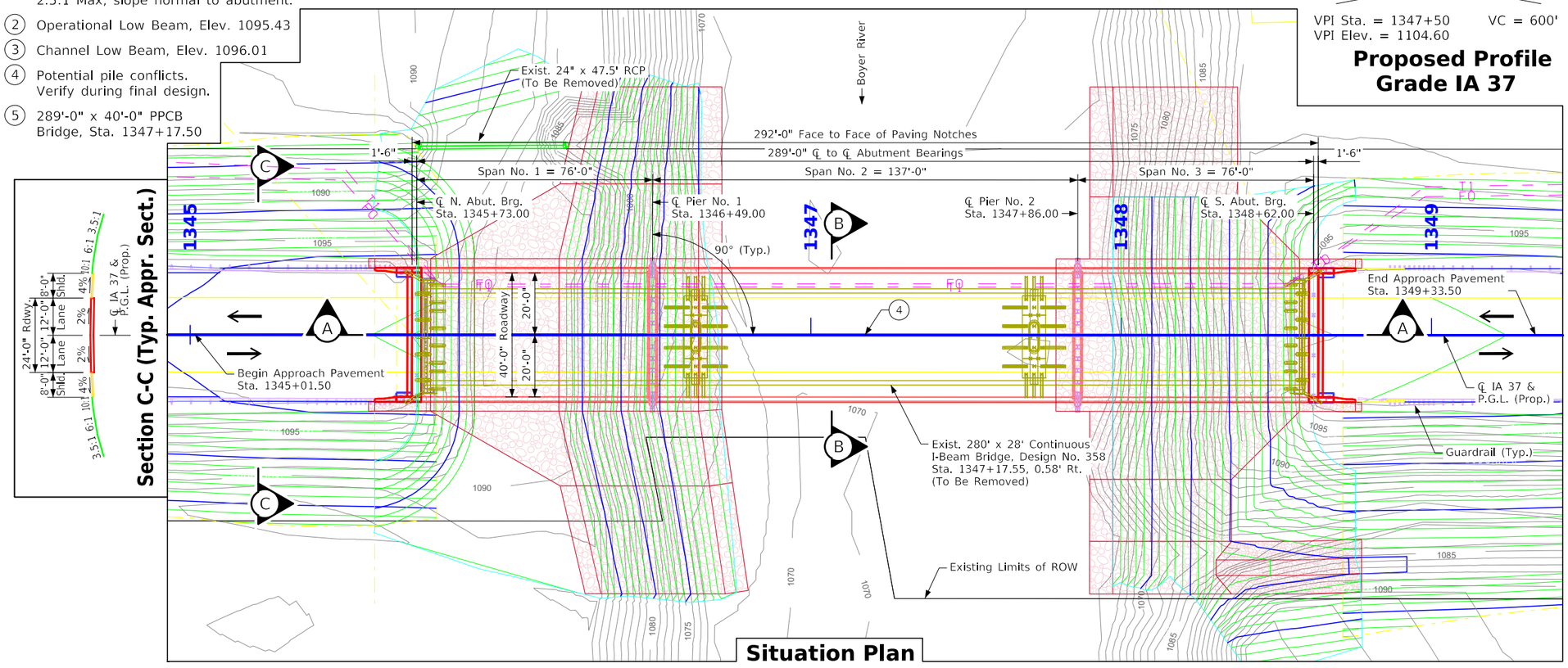
Control Point: No. 430370228; N=7187139.75, E=16534256.06, Elev. 1092.82, CP Conc. Monument Southside IA 37 Approx. 700 Ft. West of West End Boyer River BRG.



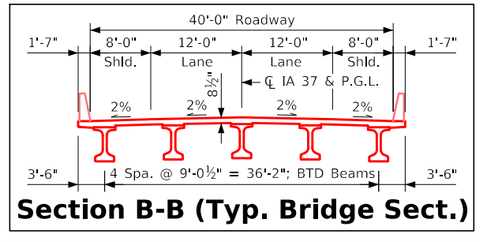
Section A-A (Longitudinal Section Along ℄ Prop. IA 37)

1. Class E Revetment - 2' Thickness, 2.5:1 Max, slope normal to abutment.
2. Operational Low Beam, Elev. 1095.43
3. Channel Low Beam, Elev. 1096.01
4. Potential pile conflicts. Verify during final design.
5. 289'-0" x 40'-0" PPCB Bridge, Sta. 1347+17.50



Situation Plan

Section C-C (Typ. Appr. Sect.)



Section B-B (Typ. Bridge Sect.)

+1.70% -1.80%
VPI Sta. = 1347+50
VPI Elev. = 1104.60
VC = 600'

Proposed Profile Grade IA 37

Hydraulic Data

RIDB: BoyerR_34.03
Drainage Area = 680.0 Sq. Mi.
Stream Slope (HGL) = 2.5 Ft./Mi.
Avg. Low Water Stage = 1073.75

Q_{25} = 22,685 cfs
Stage = 1092.09

Q_{50} = 25,918 cfs
Stage = 1092.80
Channel Low Beam = 1096.01
Avg. Bridge Velocity = 5.81 fps

Q_{100} = 29,490 cfs
Stage = 1093.25
Operational Low Beam = 1095.43
Backwater = (+)0.23 Ft.
Avg. Bridge Velocity = 6.41 fps

Q_{200} = 32,930 cfs
Stage = 1093.81
Calculated Design Scour = 1058.66

Q Overtop= 35,237 cfs
Avg. Bridge Velocity = 6.75 fps
Calculated Check Scour = 1062.78

Q_{500} = 36,890 cfs

Roadway Overtop 1096,25
Sta. 1354+00.00

Site is located within
Harrison County, City of Dunlap,
F.I.S., Dated 1/29/2021.
F.I.S. Datum UTM Zone 15 / 1983 NAD83
F.I.S. Base Flood Zone A, No Base Flood Elevations Determined

Scour depths based on preliminary data and shall be verified once geotechnical report is available.

The bridge does not meet Iowa DOT's desired (operational or regulatory) freeboard per BDM 3.2.2.4.
- The proposed bridge channel freeboard is increased as compared to the existing bridge to the extent feasible.
- The proposed bridge provides channel freeboard (>=0) for the 500-year event.

Plan Notes:
1. Top of bridge deck at centerline roadway is 0.03" below the profile grade to account for parabolic crown.
2. Class E Revetment Stone is embedded.
3. The bridge will be designed to withstand the applicable effects of ice and horizontal stream loads and uplift forces associated with the Q_{100} flow.

See Design Sheet 3 for General Notes and Design Notes.

Preliminary

Location

IA 37 over Boyer River
T-81N R-41W
Sections 3
Walnut Township
Harrison County
City of Dunlap
Bridge Maint. No. 4323.0S037
FHWA No. 27601
Latitude 41.859892°
Longitude -95.605223°

IA 37 Traffic Est.

2024	AADT	1,300	V.P.D.
2044	AADT	1,400	V.P.D.
2044	DHV	--	V.P.H.
Trucks		11	%
Total			
Design ESALs		---	

Utilities Legend

-FO- Aureon - Quality D
-T1- Windstream - Quality D
PPA, Power Pole Co. 1
Utilities shown on this sheet are for information only, see Road Design sheets for final utility information.

N

0 40
Scale In Feet

Design For 0° Skew

289'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge

76'-0" End Spans — 137'-0" Interior Span

Situation Plan

STA. 1347+17.50 (IA 37) — Turn-in Date: July 2024

Harrison County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627 — Design Sheet No. 1 of 3 — FHWA No. 27601

FILE NO. 32500	ENGLISH	DESIGN TEAM HR Green, Inc.	Harrison COUNTY	PROJECT NUMBER BRG-037-3(010)--38-43	SHEET NUMBER V.1

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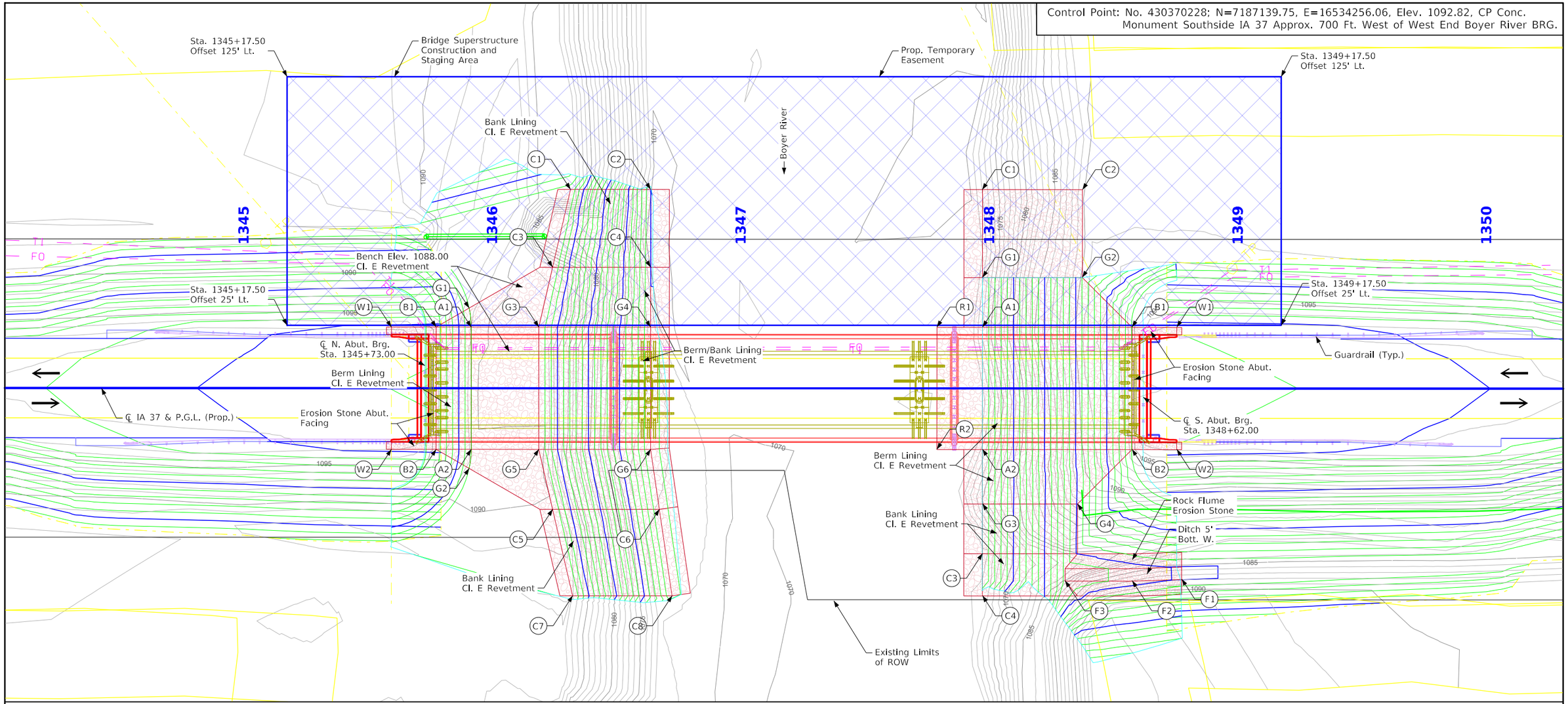

Site Plan

See Design Sheet 3 for Revetment Layout Details.

Berm Slope Location Table

Points	North Abutment			South Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	1345+91.65	24.58' Lt.	1088.00	1347+97.35	24.58' Lt.	1070.00
A2	1345+91.65	24.58' Rt.	1088.00	1347+97.35	24.58' Rt.	1070.00
B1	1345+77.50	24.58' Lt.	1093.66	1348+57.50	24.58' Lt.	1094.06
B2	1345+77.50	24.58' Rt.	1093.66	1348+57.50	24.58' Rt.	1094.06
W1	1345+59.50	24.58' Lt.	1100.46	1348+75.50	24.58' Lt.	1100.90
W2	1345+59.50	24.58' Rt.	1100.46	1348+75.50	24.58' Rt.	1100.90

Berm Slope Elevations Reflect The Grading Surface

Notes:
GCL - Grading Control Line

HRGreen

North Berm/Bank Grading Control:

(G1) 1345+90.78, 32.25' Lt., Toe/Berm, GCL, Elev. 1088.00
(G2) 1345+90.78, 32.25' Rt., Toe/Berm, GCL, Elev. 1088.00
(G3) 1346+18.83, 24.58' Lt., Top/Bank/Berm, GCL, Elev. 1088.00
(G4) 1346+63.83, 24.58' Lt., Toe/Bank/Berm, GCL, Elev. 1070.00
(G5) 1346+18.83, 24.58' Rt., Top/Bank/Berm, GCL, Elev. 1088.00
(G6) 1346+63.83, 24.58' Rt., Toe/Bank/Berm, GCL, Elev. 1070.00

North Bank Grading Control:

(C1) 1346+31.57, 80.00' Lt., Top/Bank, GCL, Elev. 1088.00
(C2) 1346+63.83, 80.00' Lt., Toe/Bank, GCL, Elev. 1070.00
(C3) 1346+24.37, 48.68' Lt., Top/Bank/Berm, GCL, Elev. 1088.00
(C4) 1346+63.83, 48.68' Lt., Toe/Bank/Berm, GCL, Elev. 1070.00
(C5) 1346+31.89, 83.48' Rt., Top/Bank, GCL, Elev. 1088.00
(C6) 1346+72.45, 83.48' Rt., Toe/Bank, GCL, Elev. 1070.00

South Berm/Bank Grading Control:

(G1) 1347+97.35, 44.58' Lt., Toe/Berm, GCL, Elev. 1070.00
(G2) 1348+37.50, 44.58' Lt., Edge Berm Lining, GCL, Elev. 1086.06
(G3) 1347+97.35, 46.48' Rt., Toe/Bank/Berm, GCL, Elev. 1070.00
(G4) 1348+35.60, 46.48' Rt., Top/Bank/Berm, GCL, Elev. 1085.50

South Bank Grading Control:

(C1) 1347+97.35, 80.00' Lt., Toe/Bank, GCL, Elev. 1070.00
(C2) 1348+37.50, 80.00' Lt., Top/Bank, GCL, Elev. 1086.06
(C3) 1347+97.35, 83.48' Rt., Toe/Bank, Elev. 1070.00
(C4) 1348+04.69, 66.48' Rt., Toe/Bank, Elev. 1070.00

Ditch/Flume Grading Control:

(F1) 1348+77.50, 76.81' Rt., Bott./Edge Ditch, Elev. 1085.16
(F2) 1348+57.58, 77.48' Rt., Bott./Edge Ditch, Elev. 1084.38
(F3) 1348+30.60, 77.48' Rt., Top/Bank/Flume, Elev. 1083.30

Revetment Grading Control:

(R1) 1347+79.00, 25.58' Lt., Stream Bed, Elev. 1070.00
(R2) 1347+79.00, 25.58' Rt., Stream Bed, Elev. 1070.00

N

0 40
Scale In Feet

Preliminary

Design For 0° Skew

289'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge

76'-0" End Spans 137'-0" Interior Span

Situation Plan - Site

STA. 1347+17.50 (IA 37) Turn-in Date: July 2024

Harrison County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627 Design Sheet No. 2 of 3 FHWA No. 27601

FILE NO. 32500	ENGLISH	DESIGN TEAM HR Green, Inc.	Harrison COUNTY	PROJECT NUMBER BRG-037-3(010)--38-43	SHEET NUMBER V.2	

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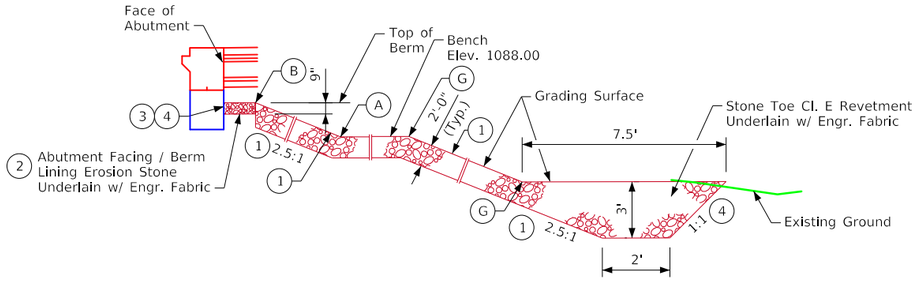
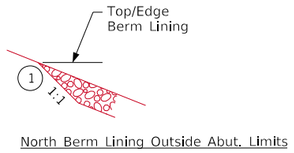
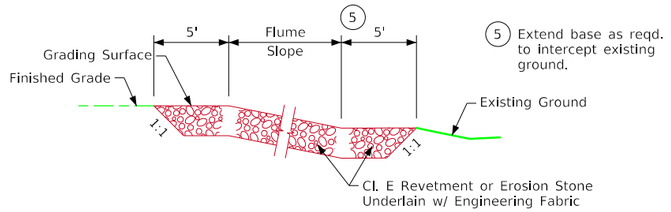
Control Point: No. 430370228; N=7187139.75, E=16534256.06, Elev. 1092.82, CP Conc.
Monument Southside IA 37 Approx. 700 Ft. West of West End Boyer River BRG.



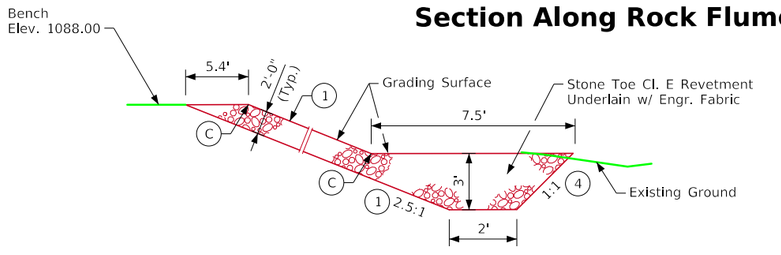
Section Through Embedded Berm/Bank Lining and Stone Toe North Berm



North Berm Lining Outside Abut. Limits



Section Along Rock Flume

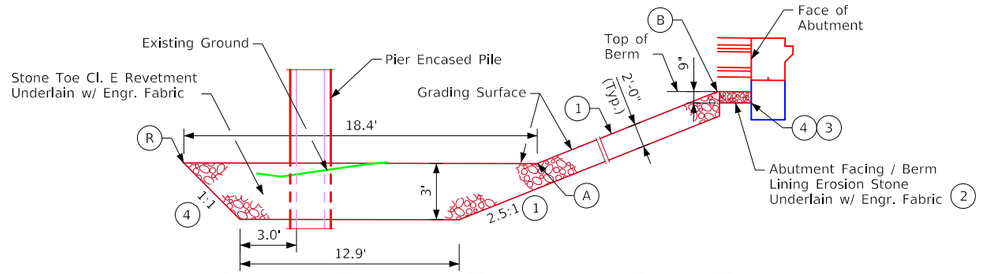


Section Through Embedded Bank Lining and Stone Toe North Bank

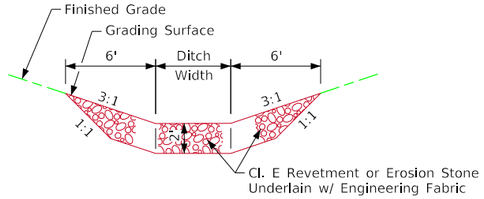
Estimated Berm Armoring Quantities

Revetment Type - Location	Revetment Cl. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	Excavation Class 10, Channel (CY)
Berm Lining, Stone Toe - North	1,025.0	11.1	904.1	647.6
Bank Lining, Stone Toe - North	449.7	-	339.9	281.1
Berm Lining, Stone Toe - South	831.6	11.1	737.1	526.7
Bank Lining, Stone Toe - South	452.3	-	354.7	282.7
Rock Flume - Southwest	-	78.9	62.2	49.3
Totals	2,758.6	101.1	2,398.0	1,787.3

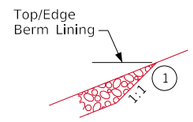
Excavation quantity calculated from grading surface.
Revetment and Erosion Stone estimated at 1.6 Ton/CY



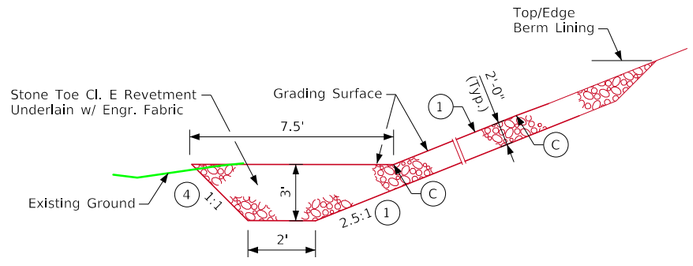
Section Through Embedded Berm/Bank Lining and Stone Toe South Berm



Section Through Rock Flume



South Berm Lining Outside Abut. Limits



Section Through Embedded Bank Lining and Stone Toe South Bank

1. Slope normal to ℄ Abut. / Grading Control Line.
2. Extend facing out to lateral limits of wing armoring.
3. Carry engineering fabric up to face of abutment.
4. Slope normal to bank grading control line (GCL).

Hydraulic Design

LICENSED PROFESSIONAL ENGINEER
Kate R. Barnes
P26428
IOWA

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.

Kate Barnes — 11/21/2024
Signature — Date
Kate R. Barnes
Printed or Typed Name
My license renewal date is December 31, 2025
Pages or sheets covered by this seal: Sheets V.1 thru V.3

General Notes:
This design is for the replacement of the existing 280' x 28' Continuous I-Beam Bridge, Harrison Design No. 358. FHWA No. 27600. Maint. No. 4323.0S037

Design Notes:
1. The proposed bridge will be constructed using Accelerated Bridge Construction (ABC) methods. The Bridge Slide method has been chosen as the preferred method with a selected closure duration of 45 days.
2. TL-4 single slope Bridge Railing Proposed.
3. Standard integral abutments.
4. Pier Type - Wall Encased Bent Pile Pier (Assumed Width = 2'-0"). Foundation type to be confirmed during final design.
5. Beam Type - BTD.
6. Class E Revetment Stone.
7. Existing substructure and piles to be removed to 1' below prop. grade.
8. Final design to take into account that proposed abutment piling may be in conflict with existing piling.
9. Final design to account for active utilities on existing superstructure.
10. Requirements for a state water trail or paddling route are applicable. Signage, plan notes, and bid items shall be addressed by the Design Bureau and included in the road plans.
11. An Iowa DNR Flood Plain Permit is required. Preliminary Design will submit the application and place the permit in the PW Regulator_Permits subdirector folder upon receipt.

Preliminary

Design For 0° Skew
289'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge
76'-0" End Spans — 137'-0" Interior Span
Situation Plan - Misc.
STA. 1347+17.50 (IA 37) — Turn-in Date: July 2024
Harrison County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 627 — Design Sheet No. 3 of 3 — FHWA No. 27601

HRGreen

FILE NO. **32500** | ENGLISH | DESIGN TEAM **HR Green, Inc.** | **Harrison** COUNTY | PROJECT NUMBER **BRG-037-3(010)--38-43** | 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.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.1

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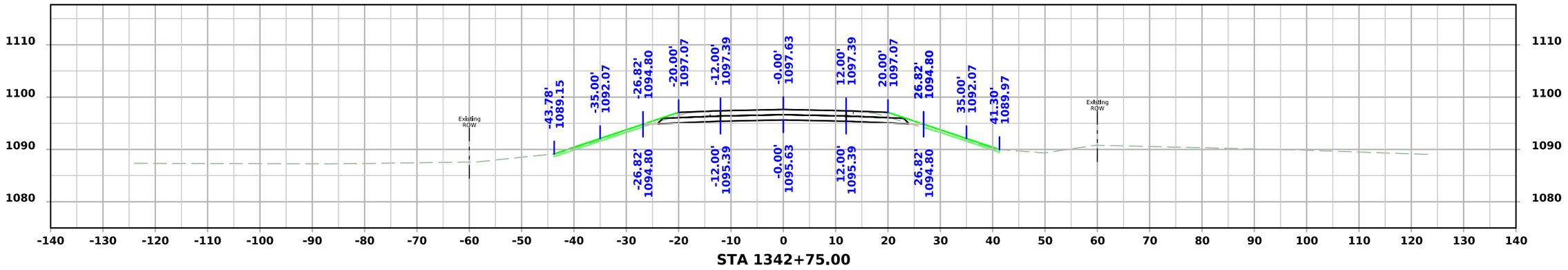
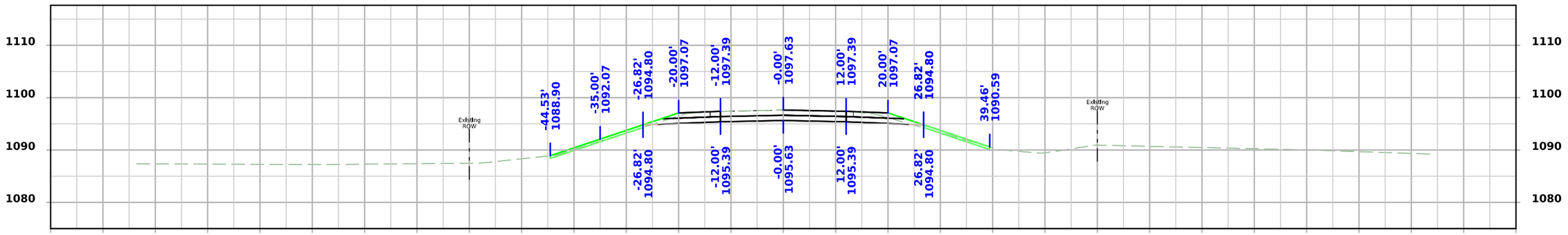
Iowa 37



STA 1342+75.00



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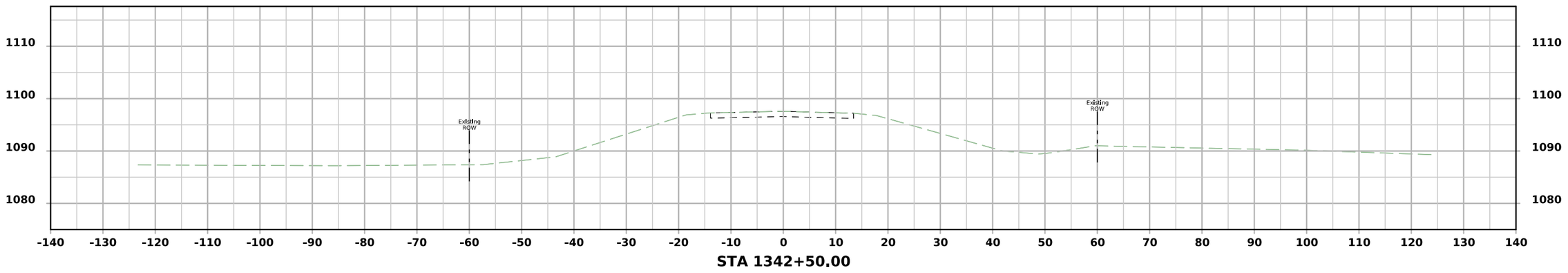

STA 1342+50.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.2	

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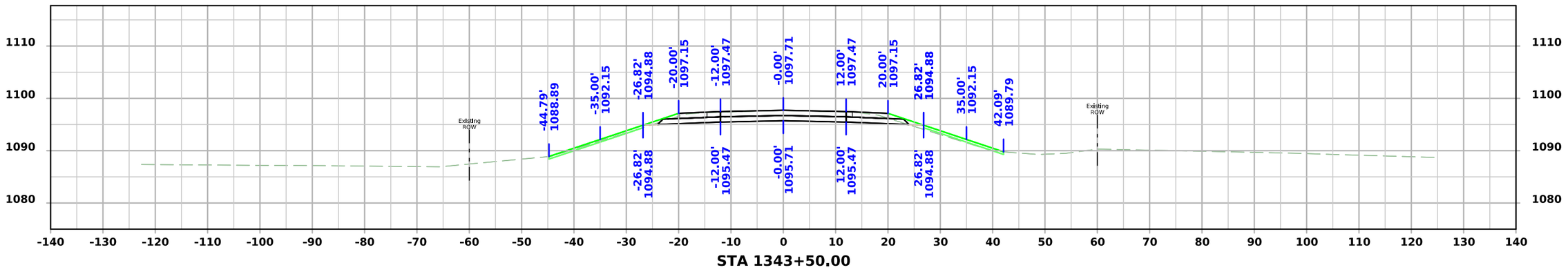
Iowa 37



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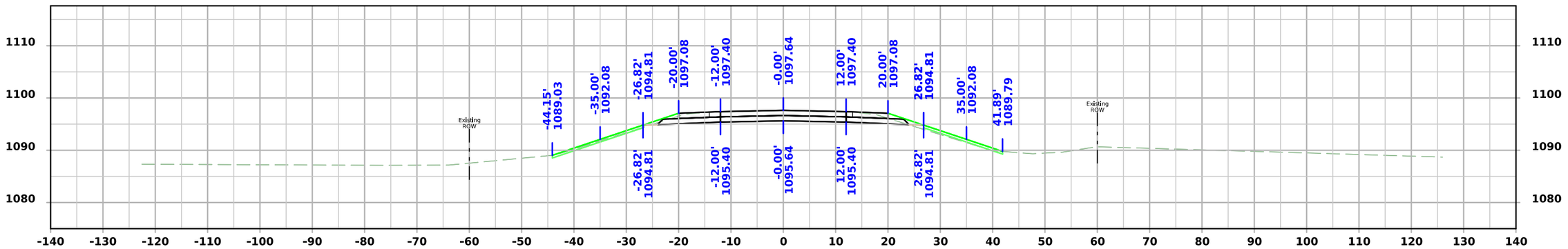

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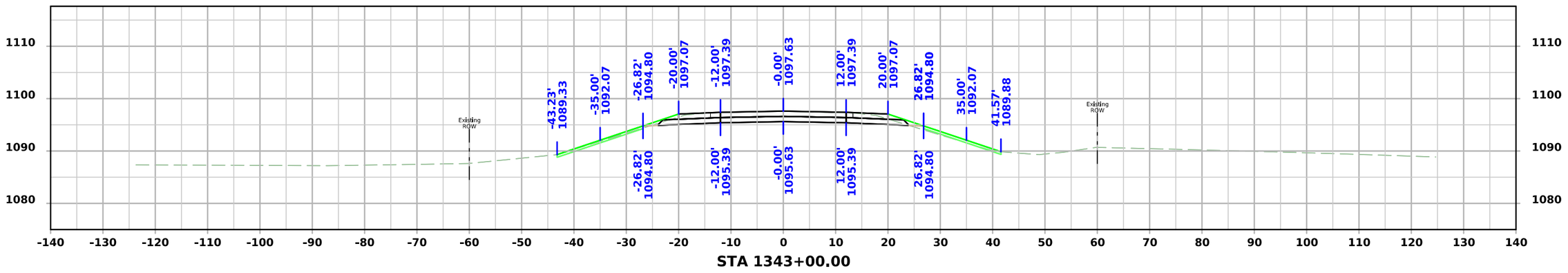

STA 1343+00.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.3

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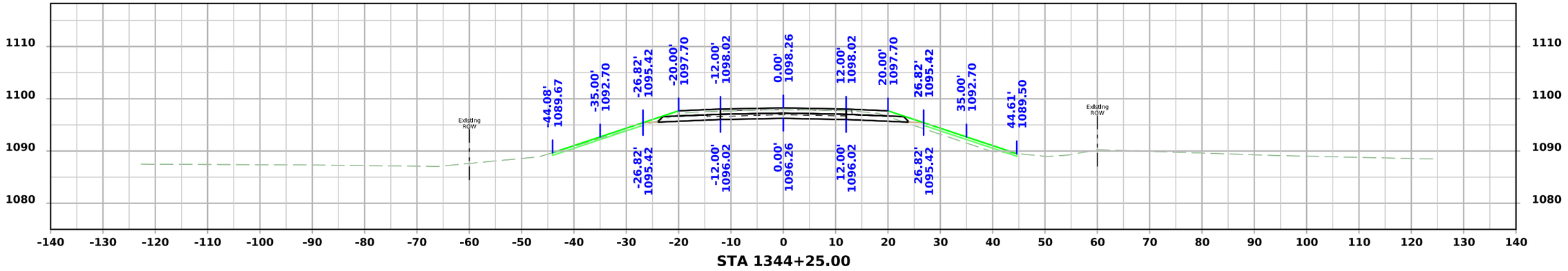
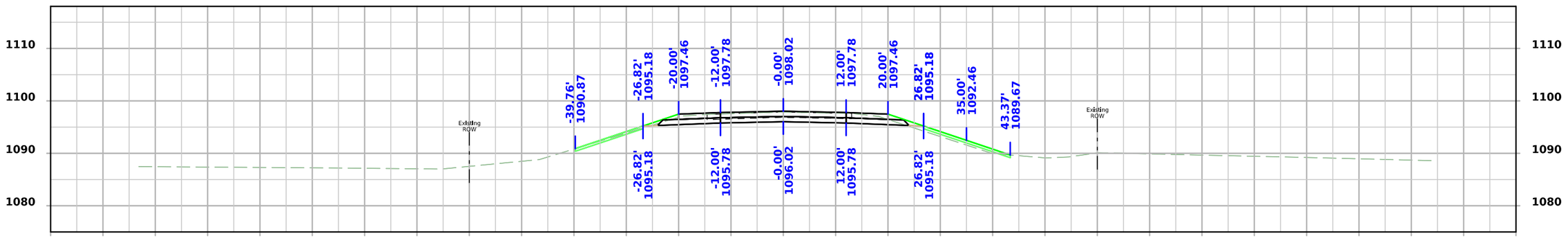
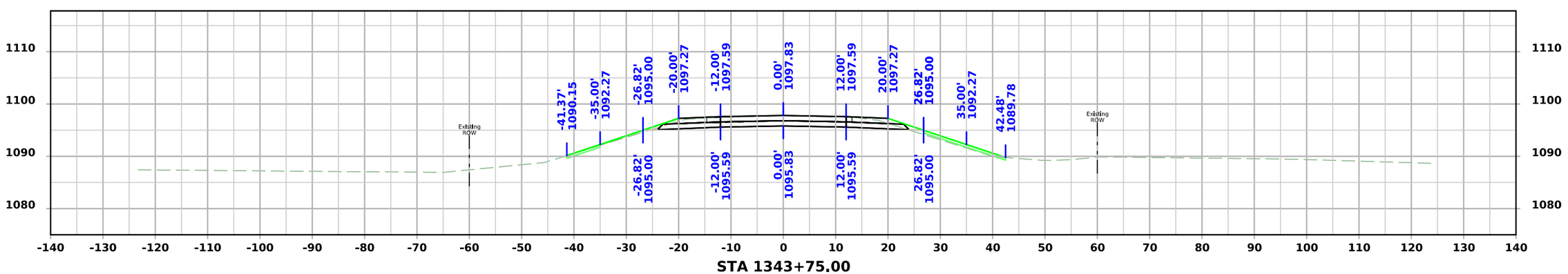
Iowa 37



STA 1344+25.00



STA 1344+00.00

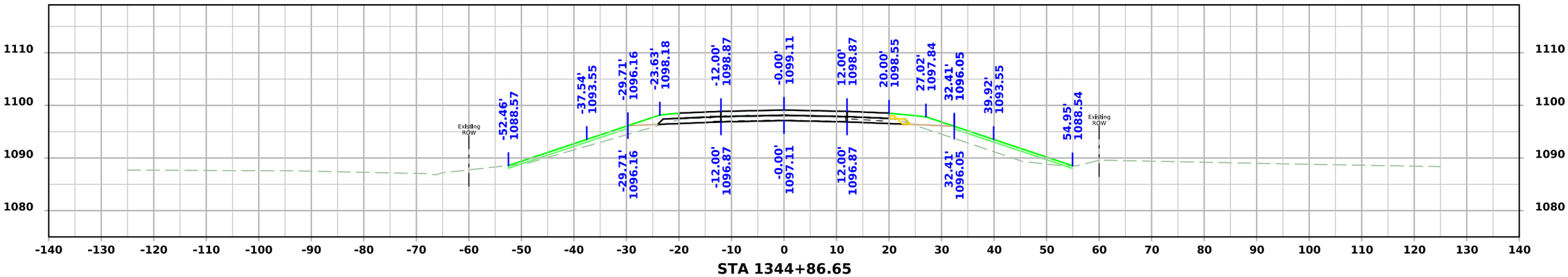


STA 1343+75.00

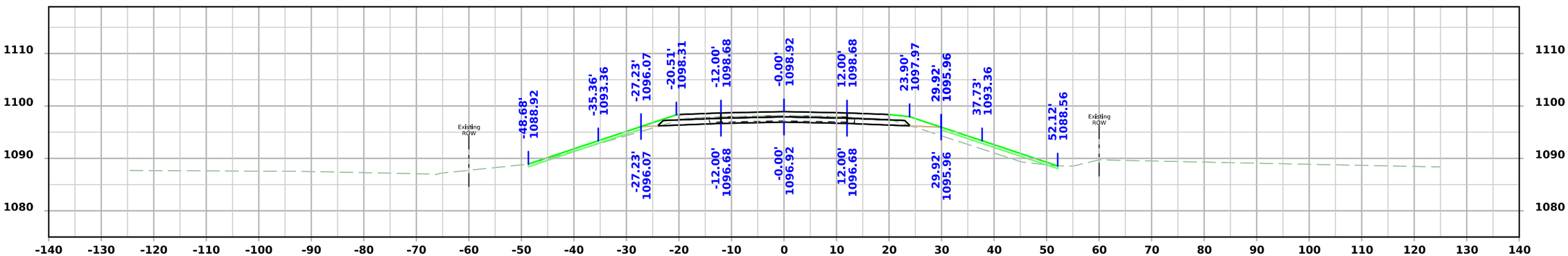
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.4

8:29:15 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

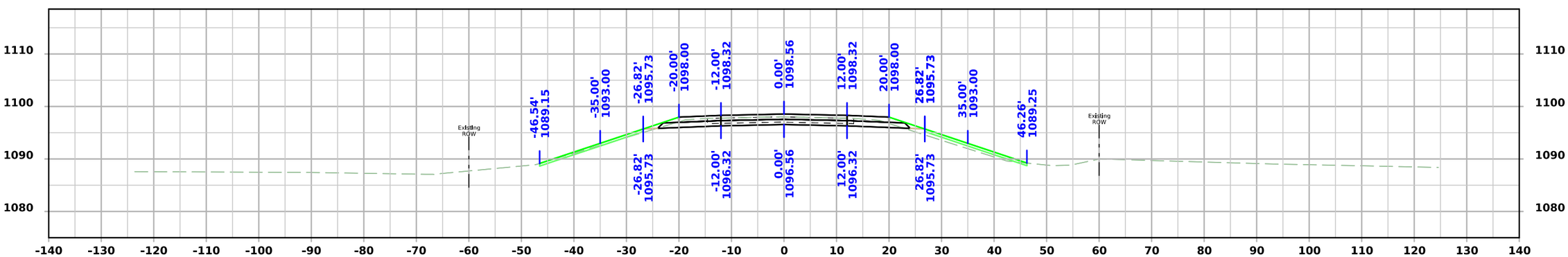
Iowa 37



STA 1344+86.65



STA 1344+75.00

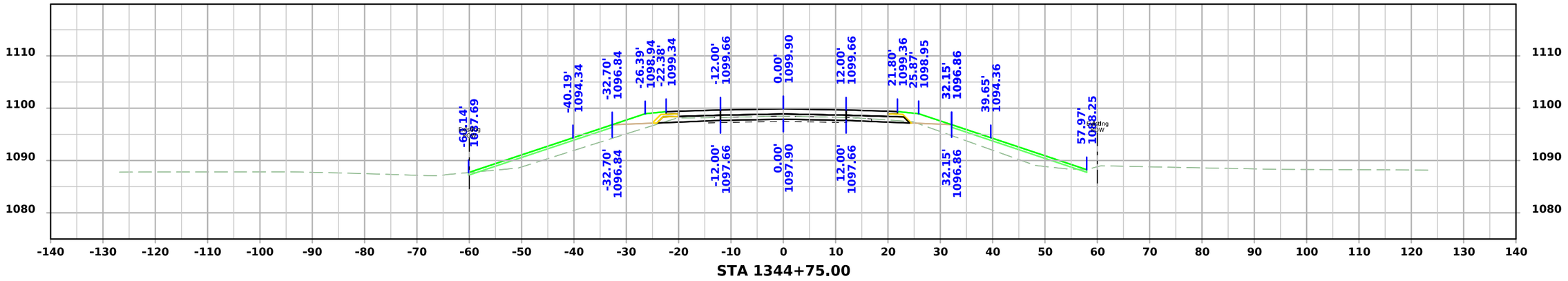


STA 1344+50.00

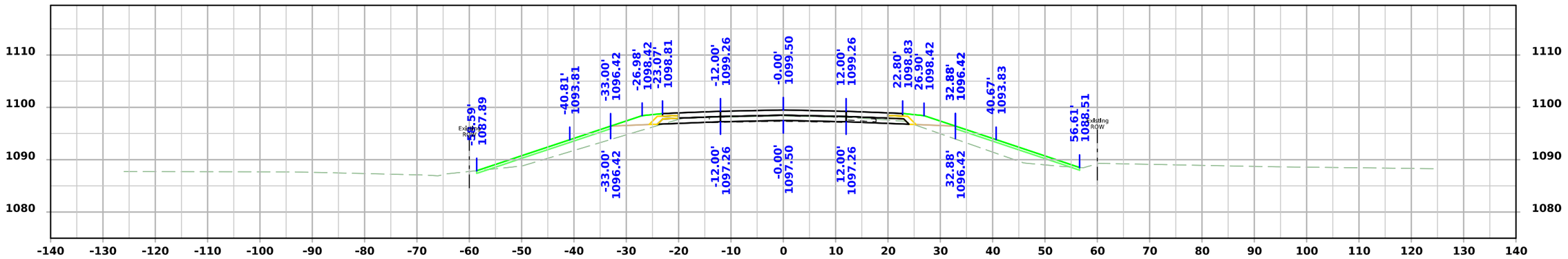
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.5

8:29:16 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

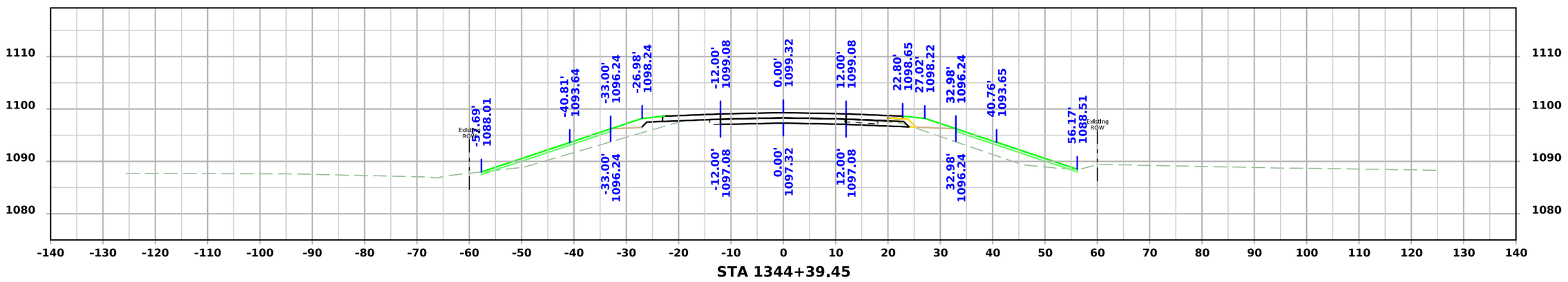
Iowa 37



STA 1344+75.00



STA 1344+50.00

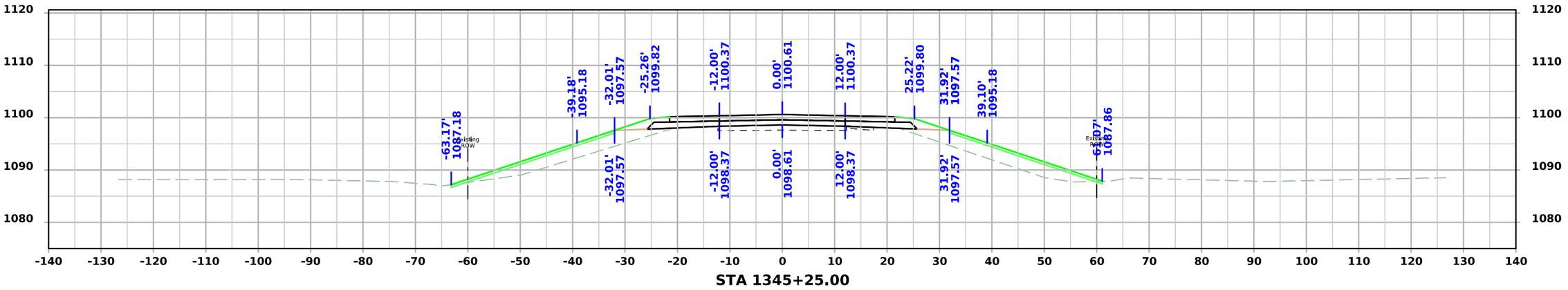


STA 1344+39.45

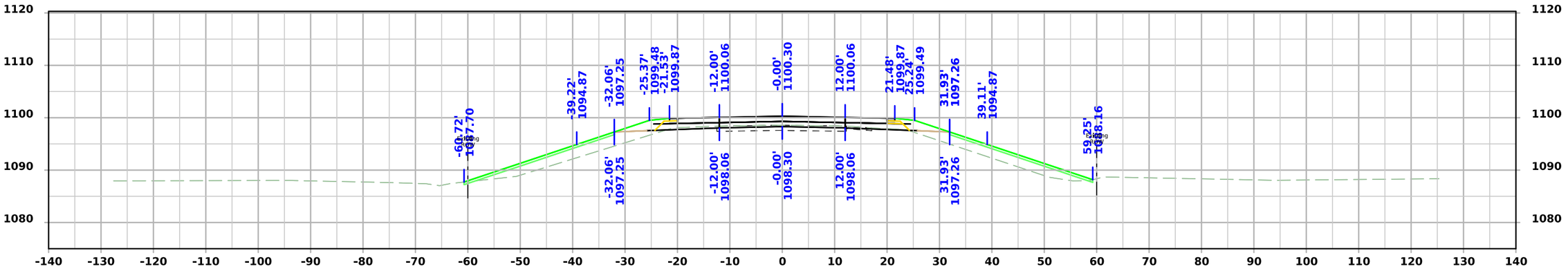
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.6

8:29:17 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

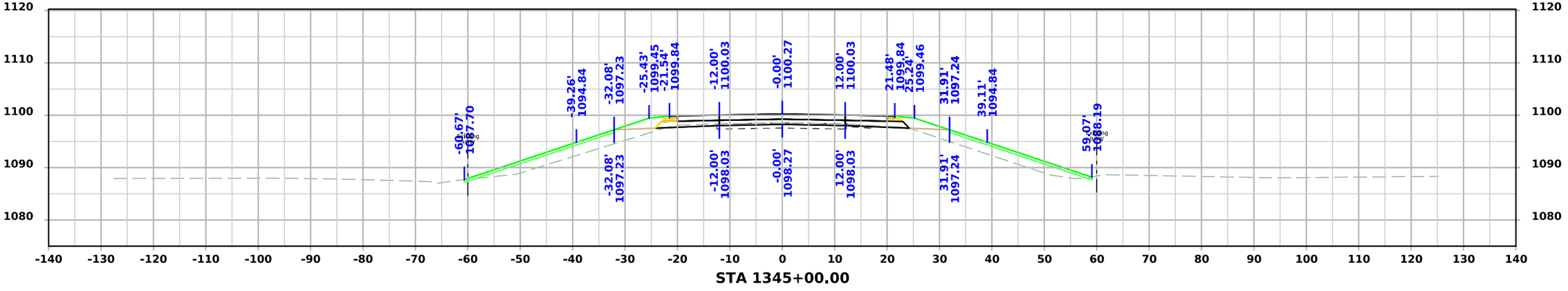
Iowa 37



STA 1345+25.00



STA 1345+01.50

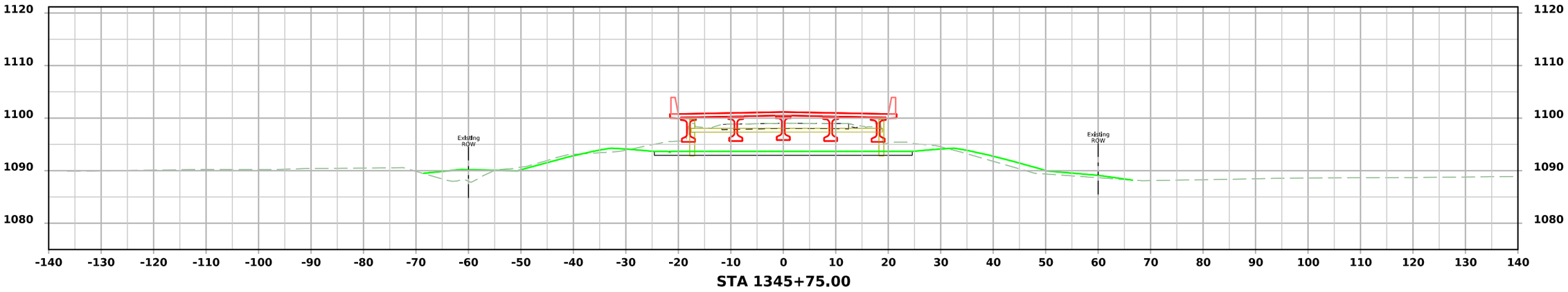


STA 1345+00.00

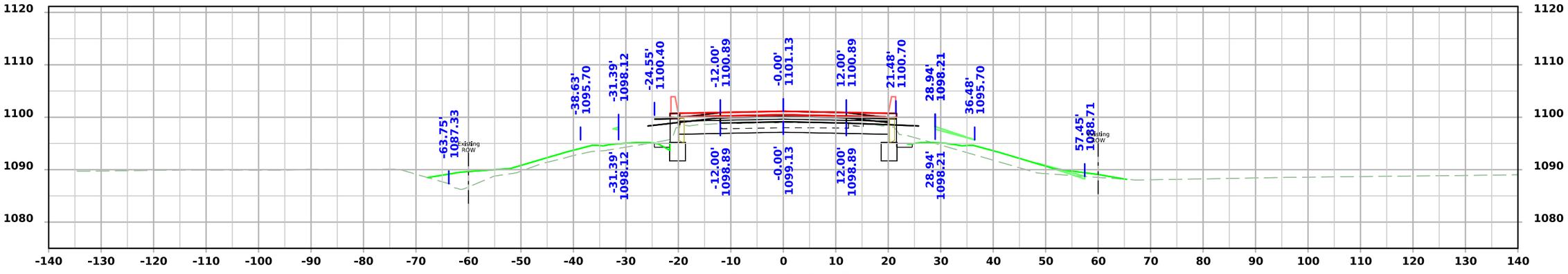
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.7

8:29:18 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

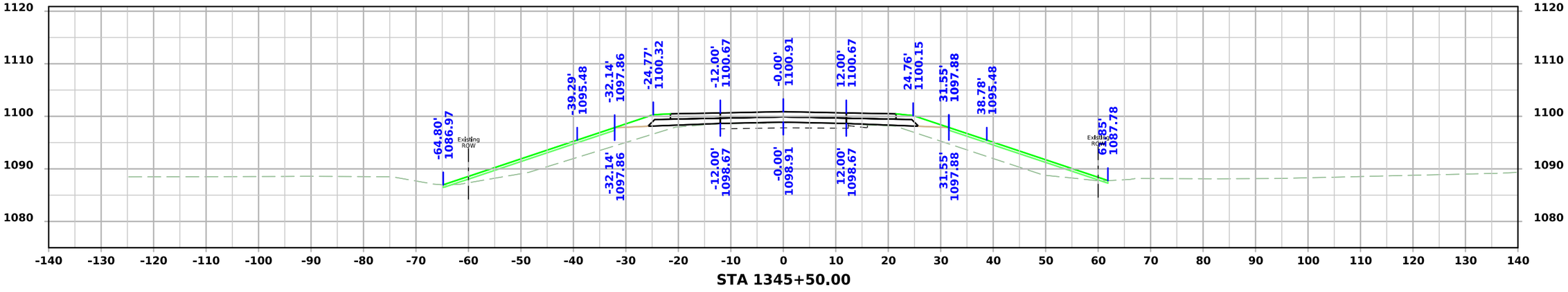
Iowa 37



STA 1345+75.00



STA 1345+71.50

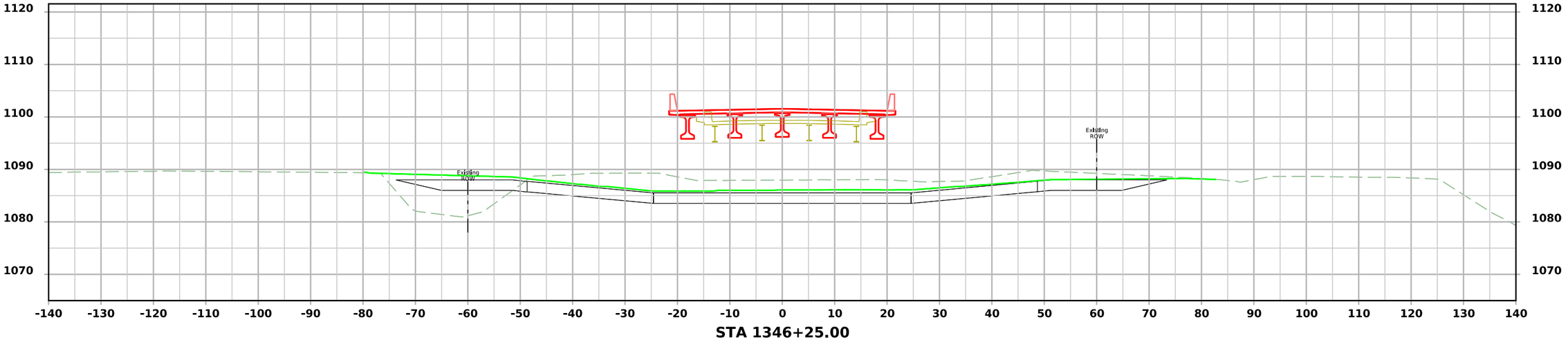


STA 1345+50.00

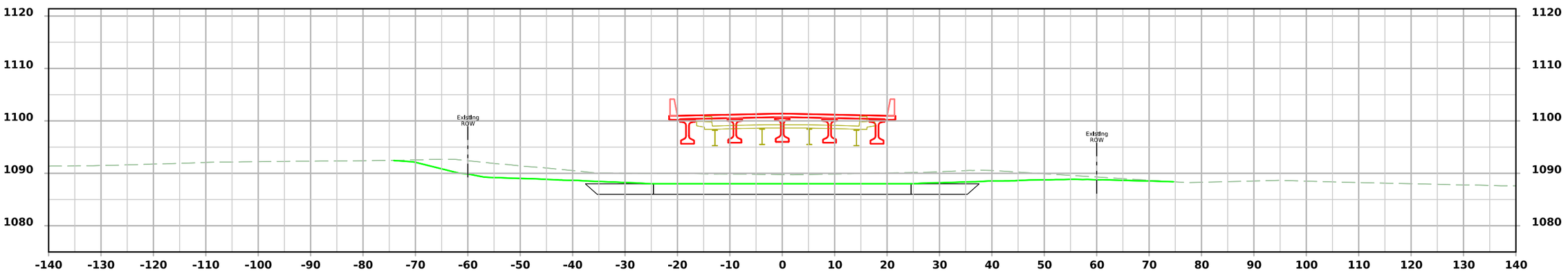
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.8

8:29:20 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1346+25.00

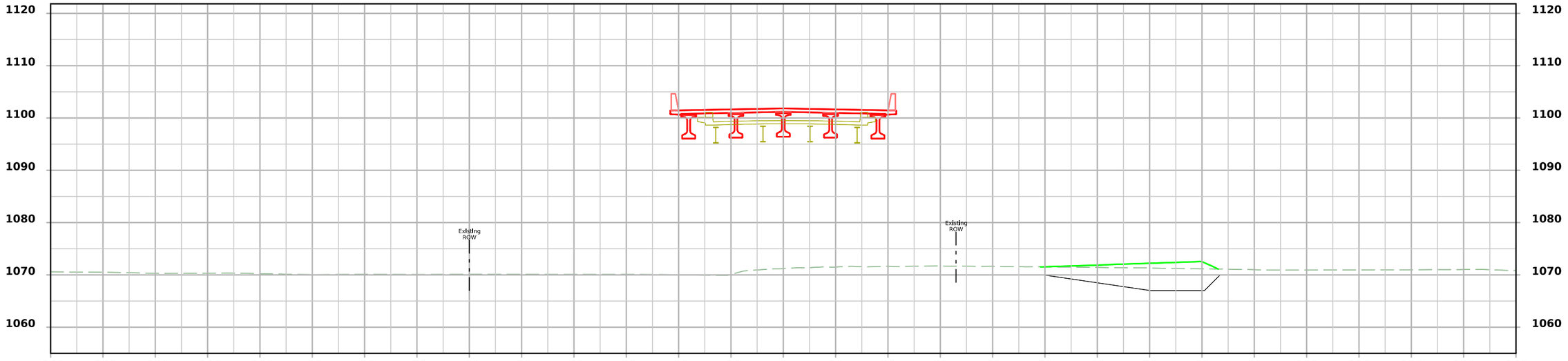


STA 1346+00.00

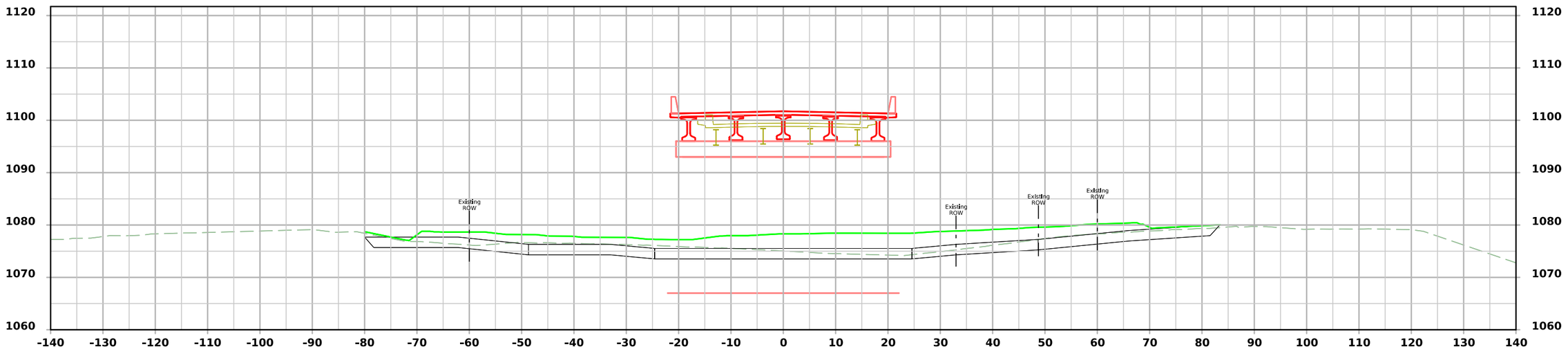
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.9

8:29:22 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1346+75.00

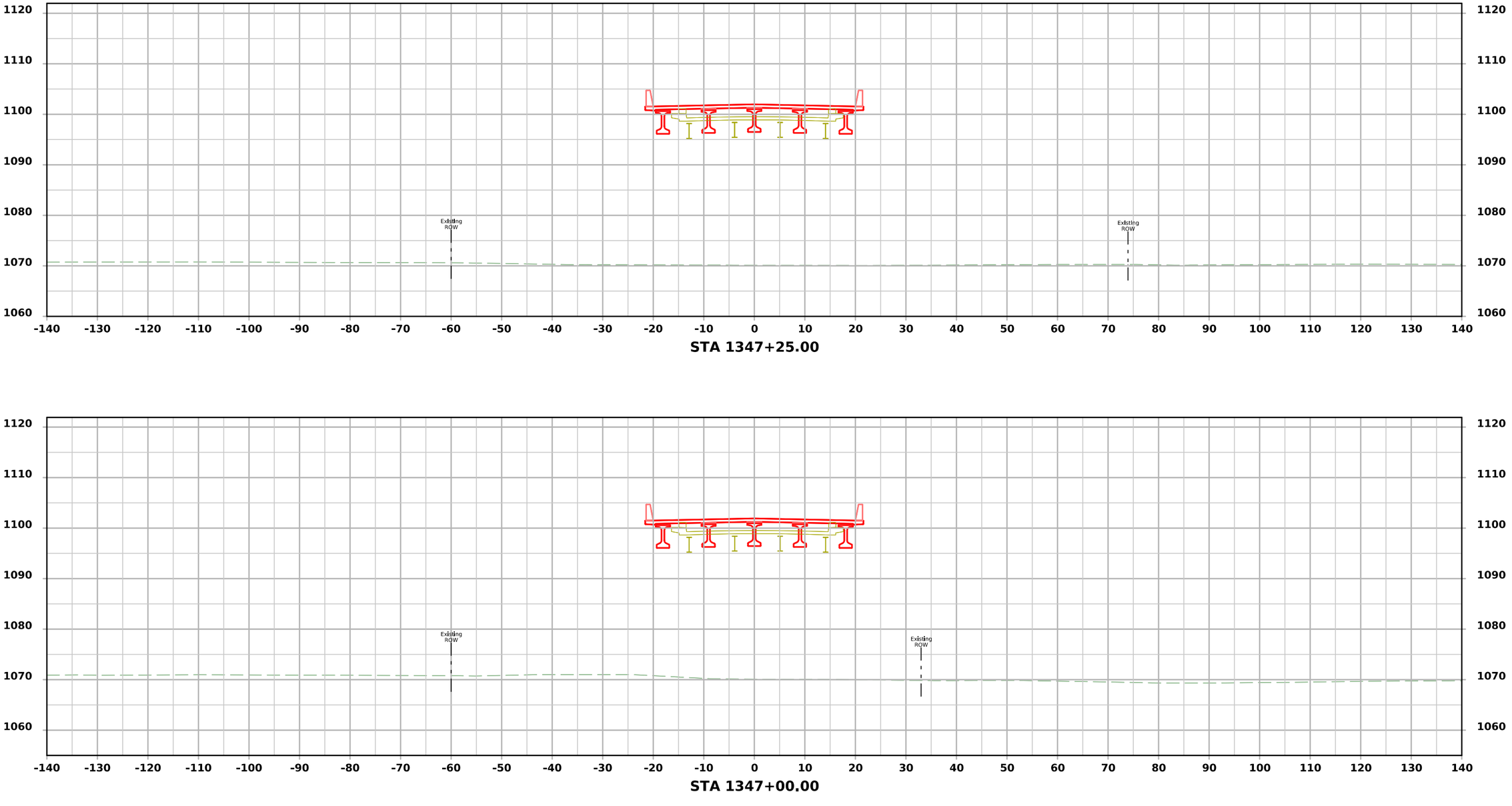


STA 1346+50.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.10

8:29:23 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

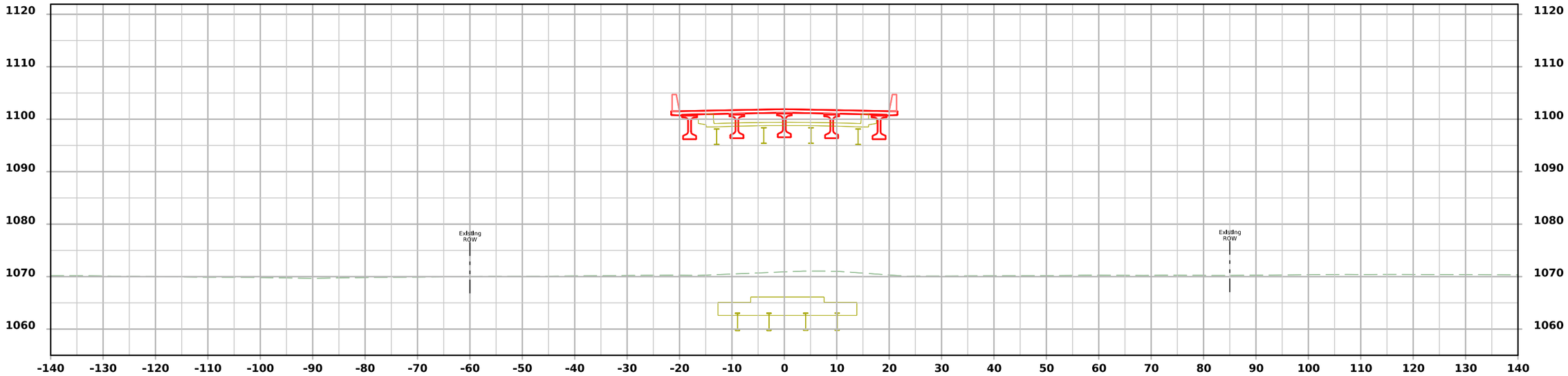
Iowa 37



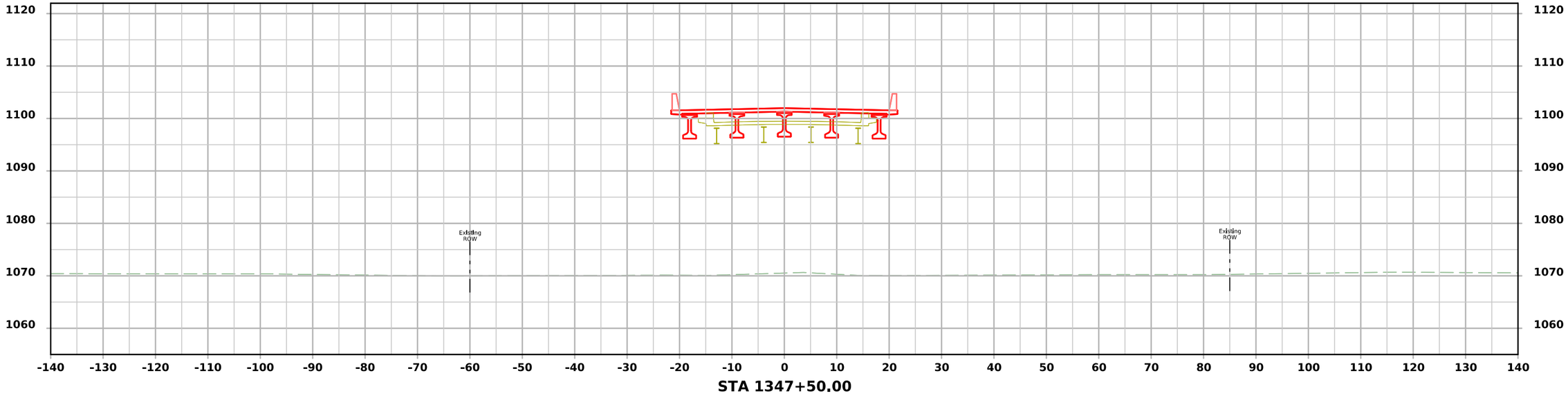
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.11

8:29:24 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1347+75.00

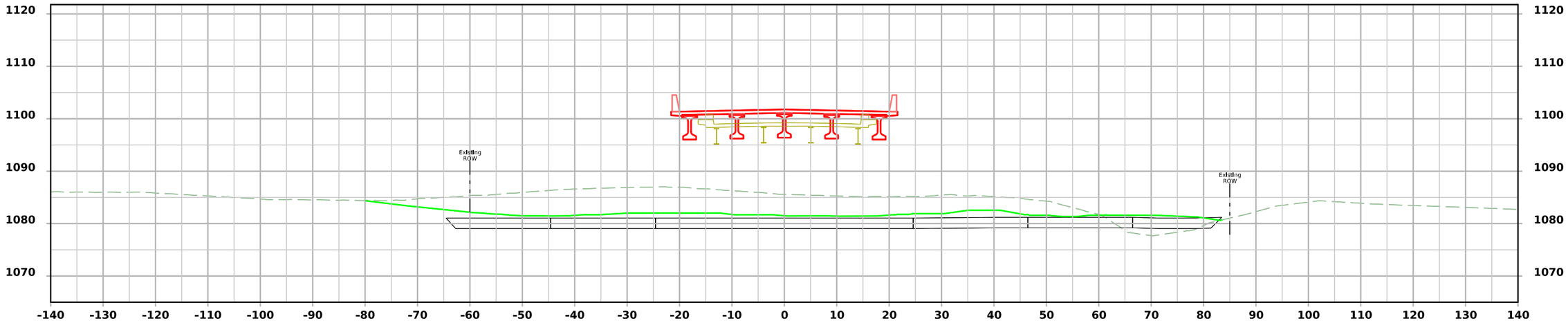


STA 1347+50.00

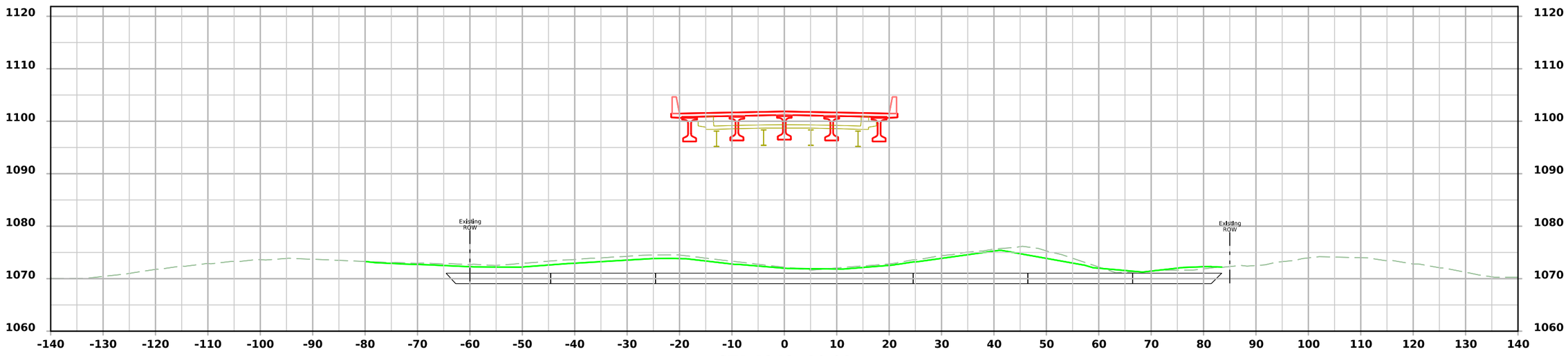
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.12

8:29:26 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1348+25.00

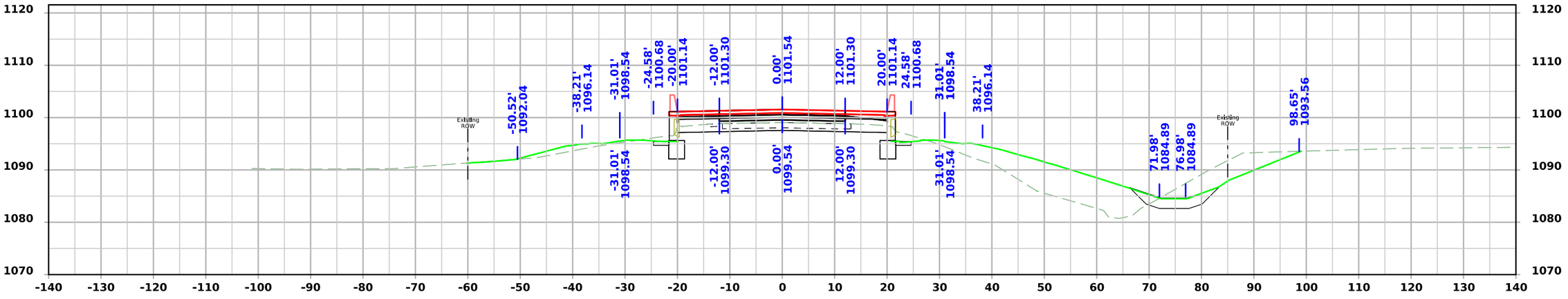


STA 1348+00.00

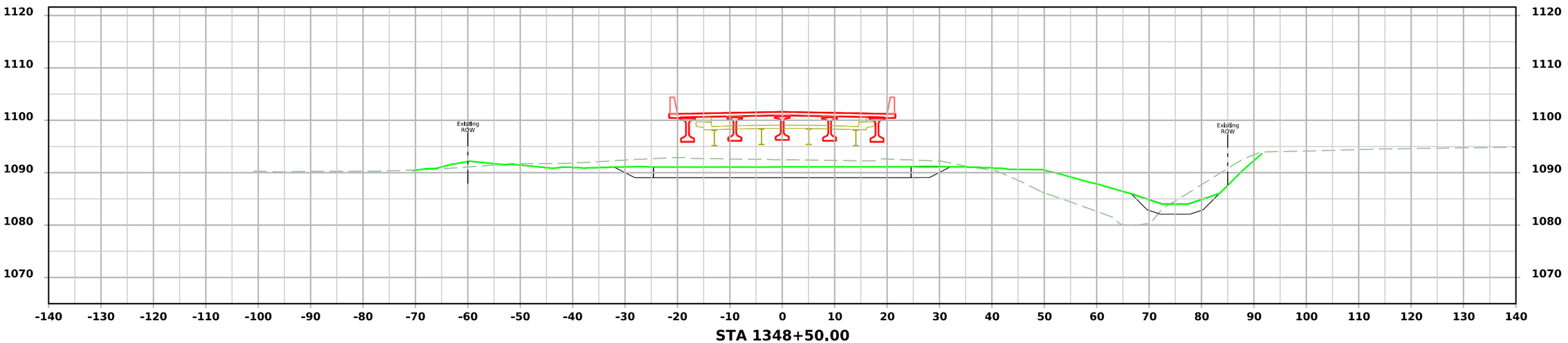
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.13

8:29:27 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1348+63.50

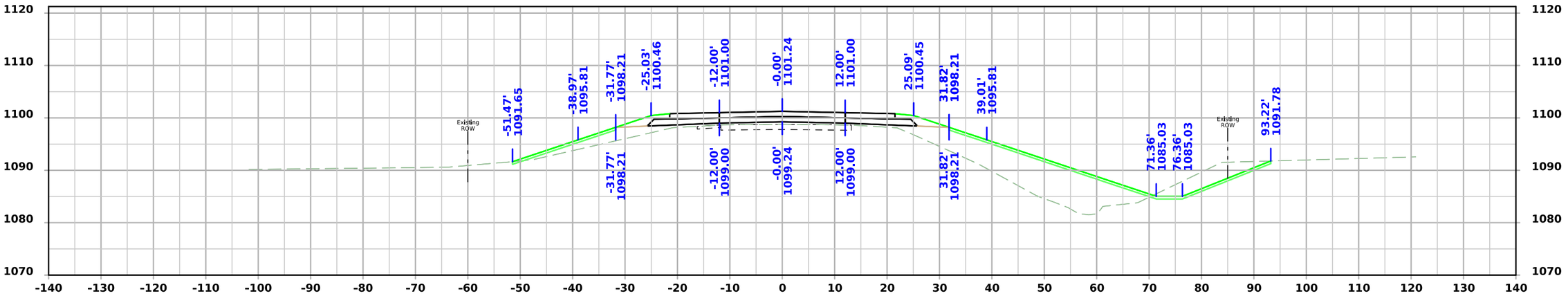


STA 1348+50.00

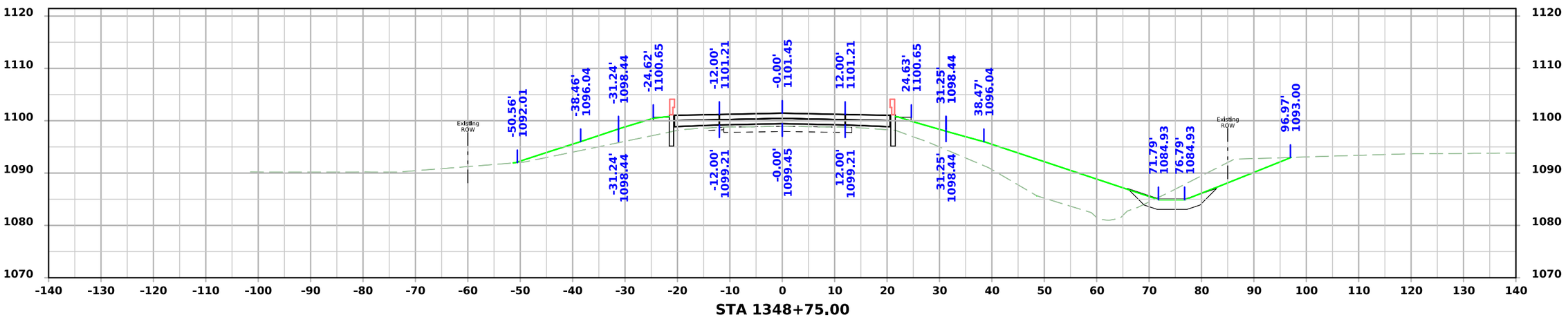
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.14

8:29:28 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1349+00.00

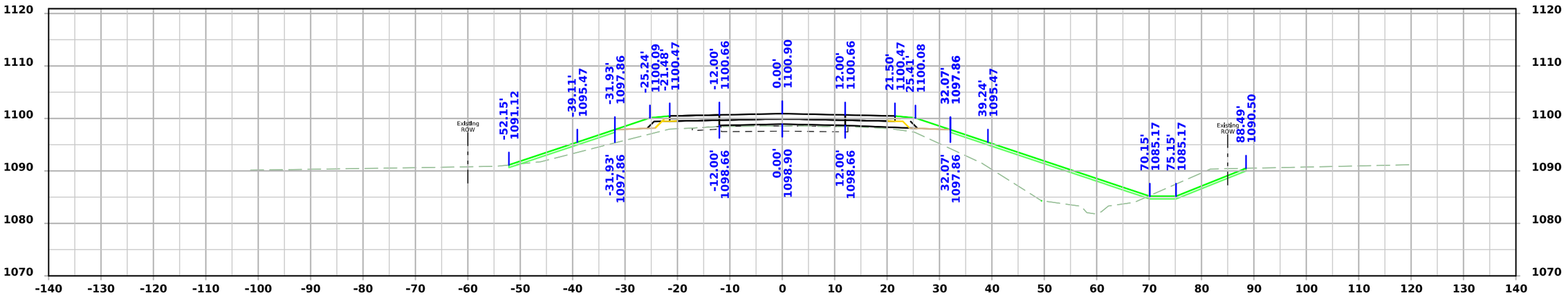


STA 1348+75.00

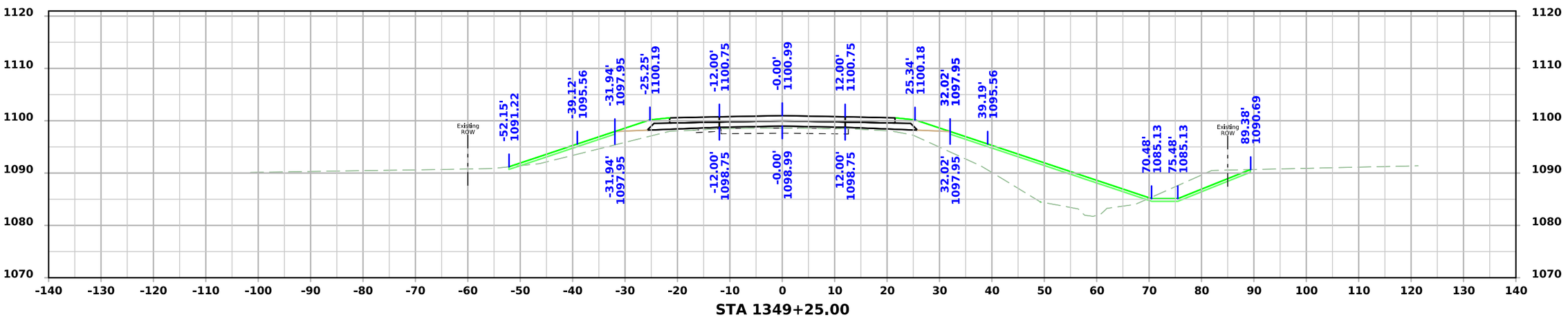
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.15

8:29:29 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1349+33.50

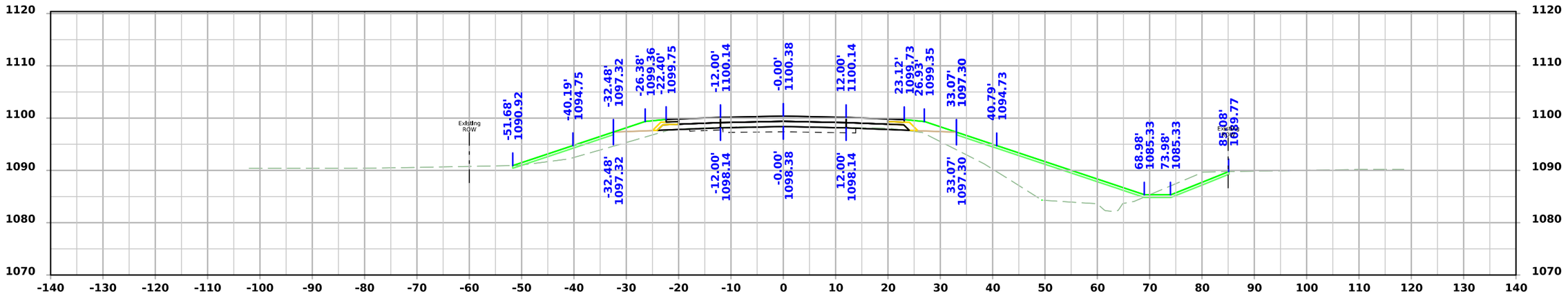


STA 1349+25.00

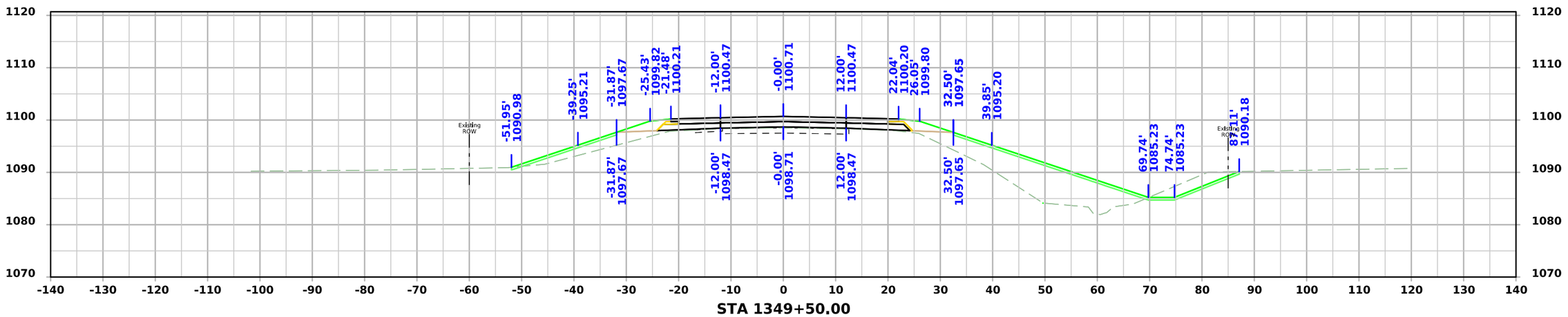
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.16

8:29:30 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1349+75.00

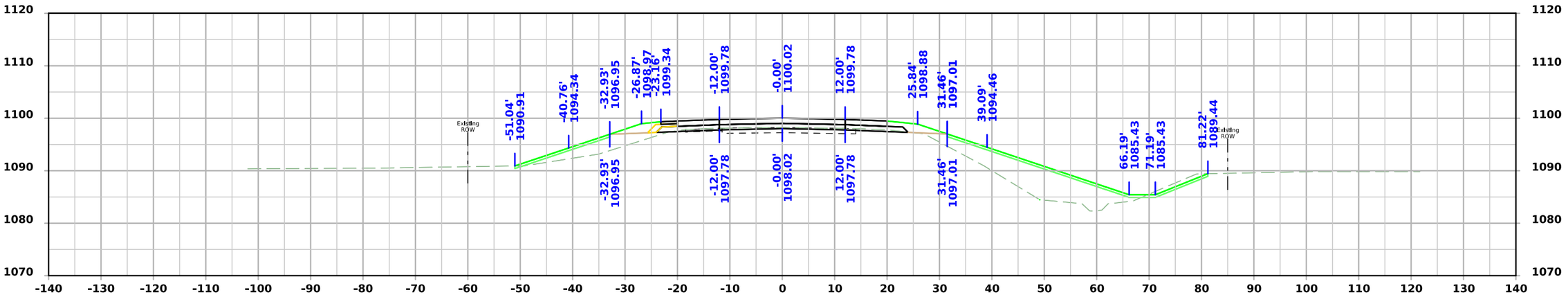


STA 1349+50.00

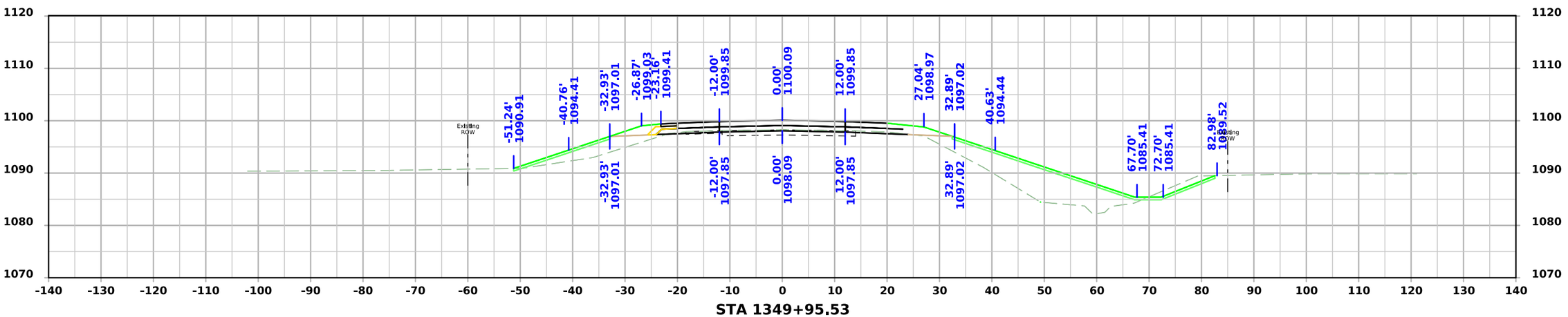
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.17

8:29:31 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1350+00.00

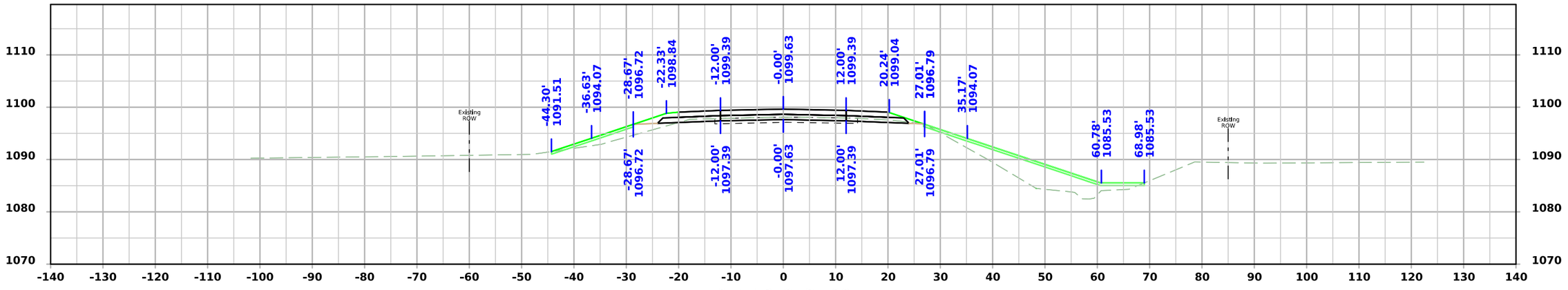


STA 1349+95.53

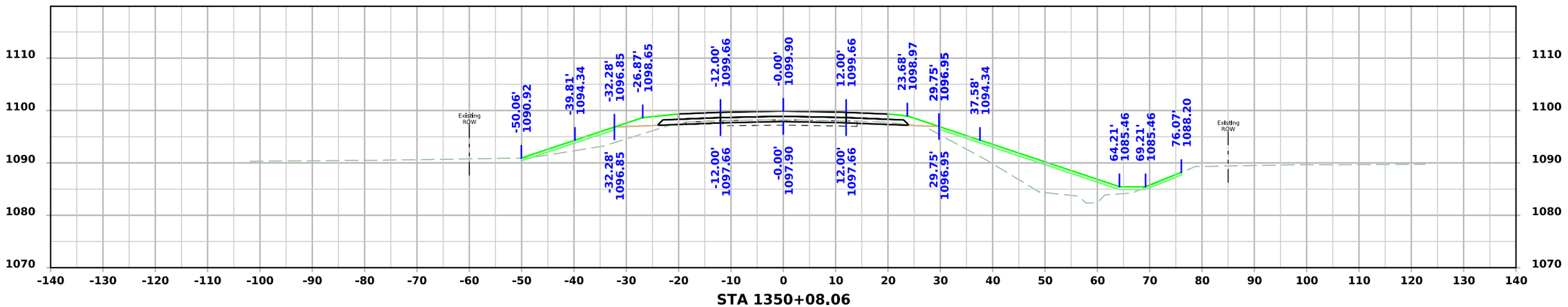
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.18

8:29:32 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1350+25.00

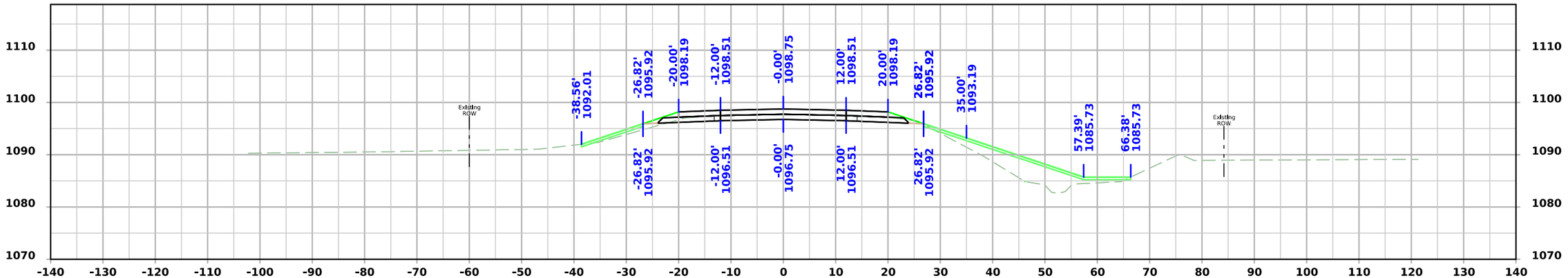


STA 1350+08.06

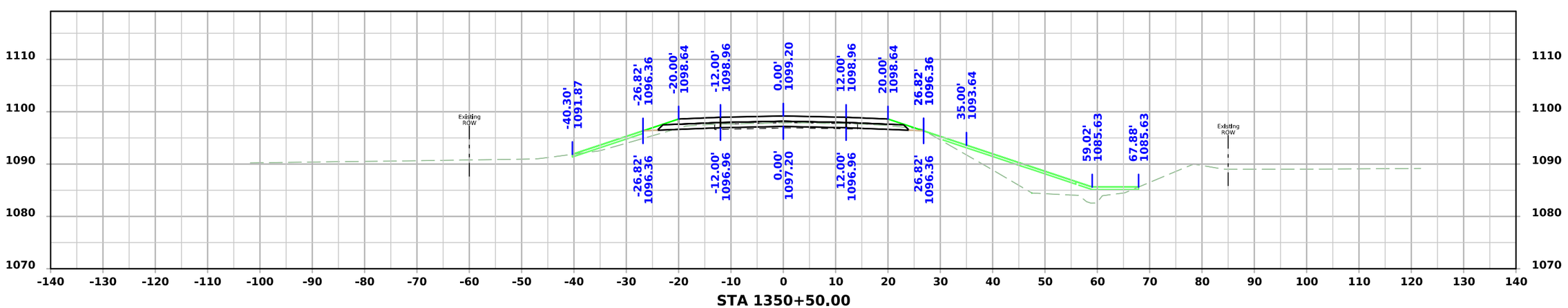
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.19

8:29:32 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1350+75.00

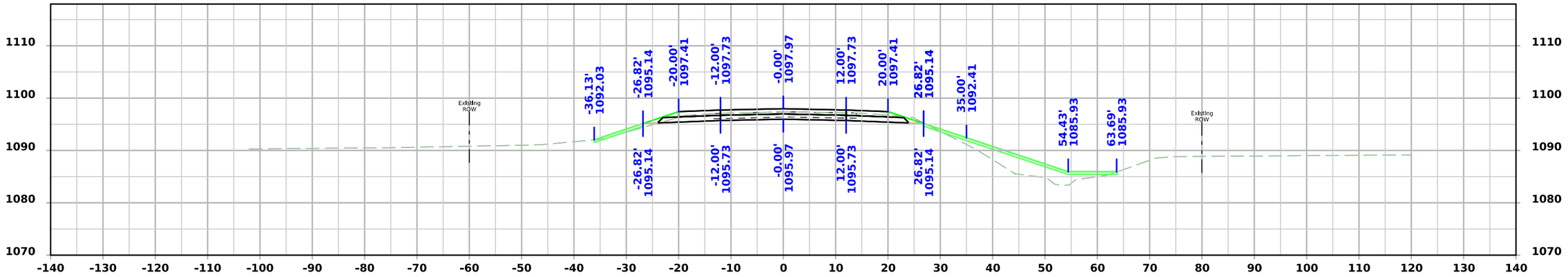


STA 1350+50.00

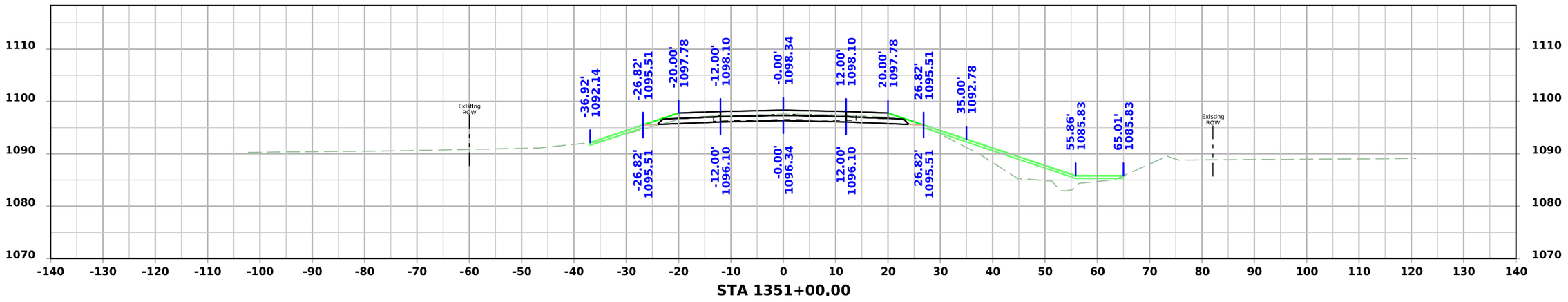
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.20

8:29:33 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1351+25.00

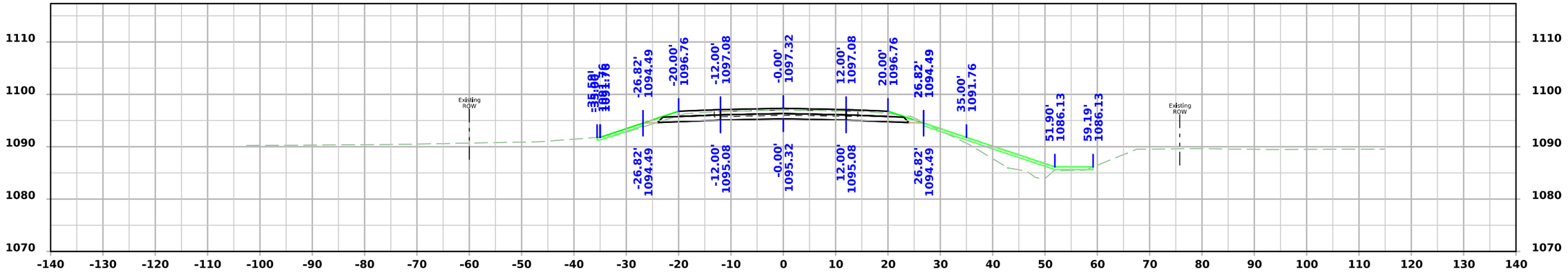


STA 1351+00.00

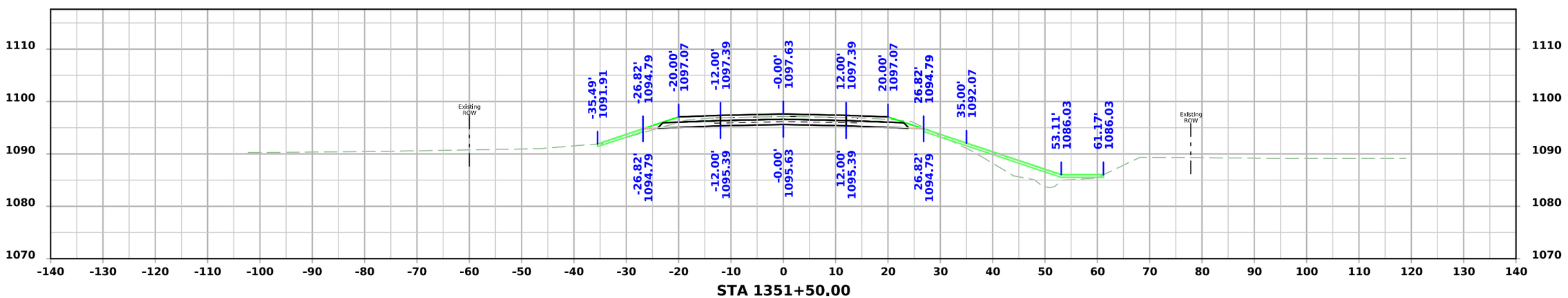
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.21

8:29:34 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



STA 1351+75.00

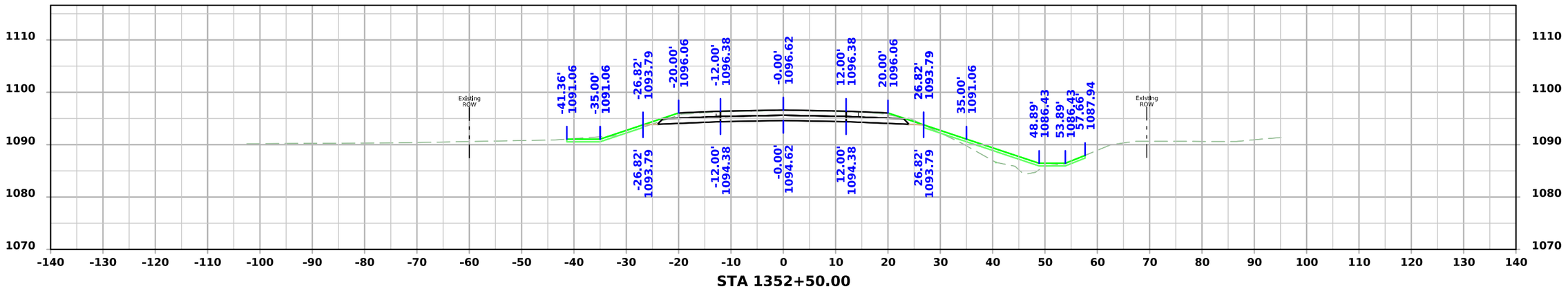


STA 1351+50.00

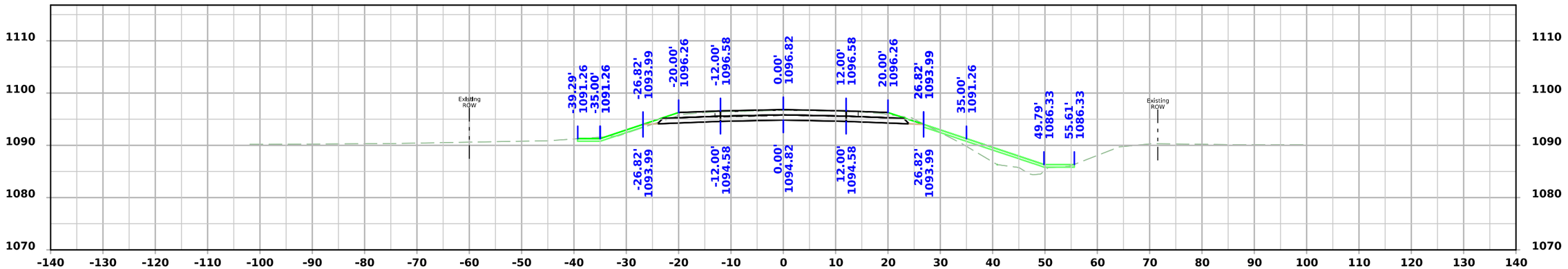
FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.22

8:29:35 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

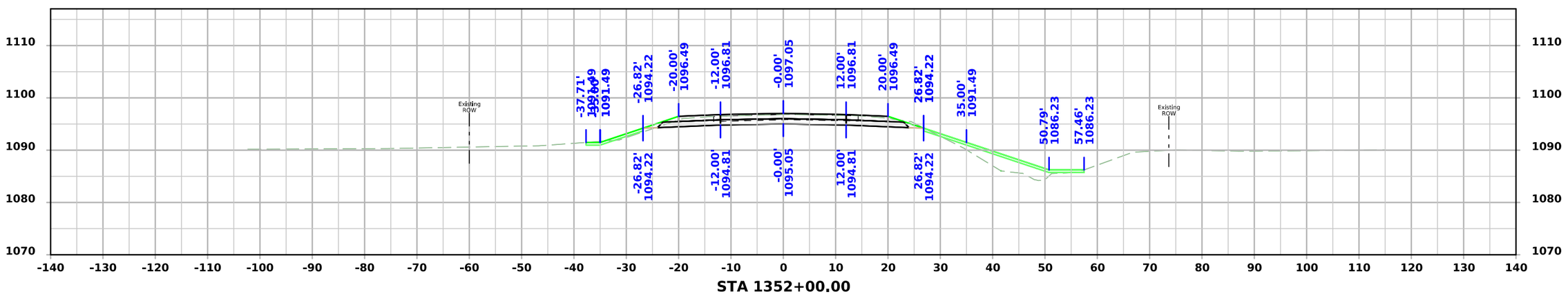
Iowa 37



STA 1352+50.00



STA 1352+25.00

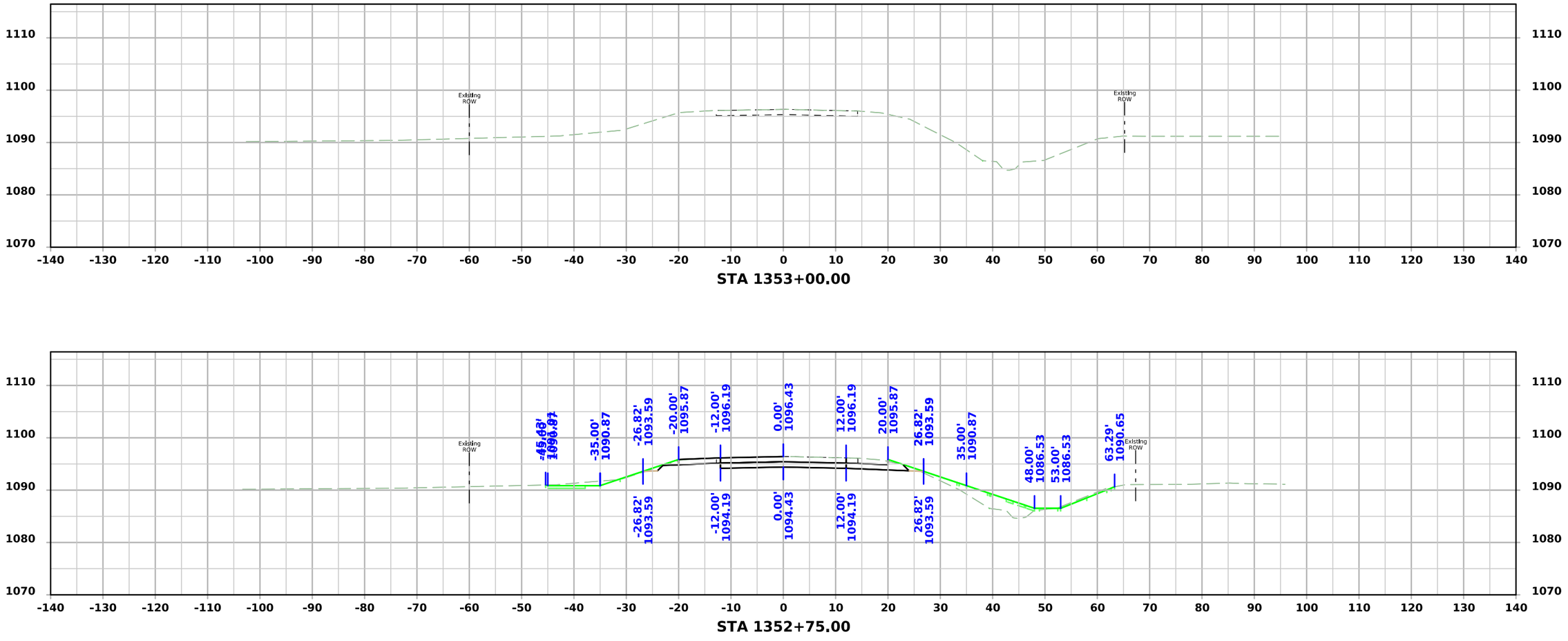


STA 1352+00.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.23

8:29:36 AM 2/19/2025 mjack pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\4303701021\Design\CADD_Files\Cross_Sections\SHT_W02_43037010Z06.dgn

Iowa 37



FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell\Gast\Jack	HARRISON COUNTY	PROJECT NUMBER BRF-037-3(10)--38-43	SHEET NUMBER W.24

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