BRIDGE REPLACEMENT
BRF-030-2(180)--38-24
CRAWFORD COUNTY

LETTING DATE
07-18-2028

INDEX OF SHEETS

No.	DESCRIPTION
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* A.1	Title Sheet
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B Sheets	Typical Cross Sections and Details
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D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - D.5	US 30 Plan and Profile Sheets
F Sheets	Detour or Temporary Pavement Sheets
* F.1	Temporary Crossover Plan Sheet
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* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
CRAWFORD COUNTY

BRIDGE REPLACEMENT

US 30 EB/WB BRIDGES OVER UPRR
Approx. 0.4 mi E of the W Junction of US 59

SCALES: As Noted

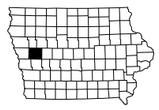
Refer to the Proposal Form for list of applicable specifications.

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

REVISIONS

	TOTAL
	49
PROJECT IDENTIFICATION NUMBER	
22-24-030-010	
PROJECT NUMBER	
BRF-030-2(180)--38-24	
R.O.W. PROJECT NUMBER	
NHSN-030-2(181)--2R-24	

For Project Location Map
Refer to Sheet No. A.2



DESIGN DATA URBAN			
2027	AADT	9,300	V.P.D.
2047	AADT	10,200	V.P.D.
2047	DHV	1,050	V.P.H.
TRUCKS		16	%
Total Design ESALs		--	

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 10/11/2024

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER A.1

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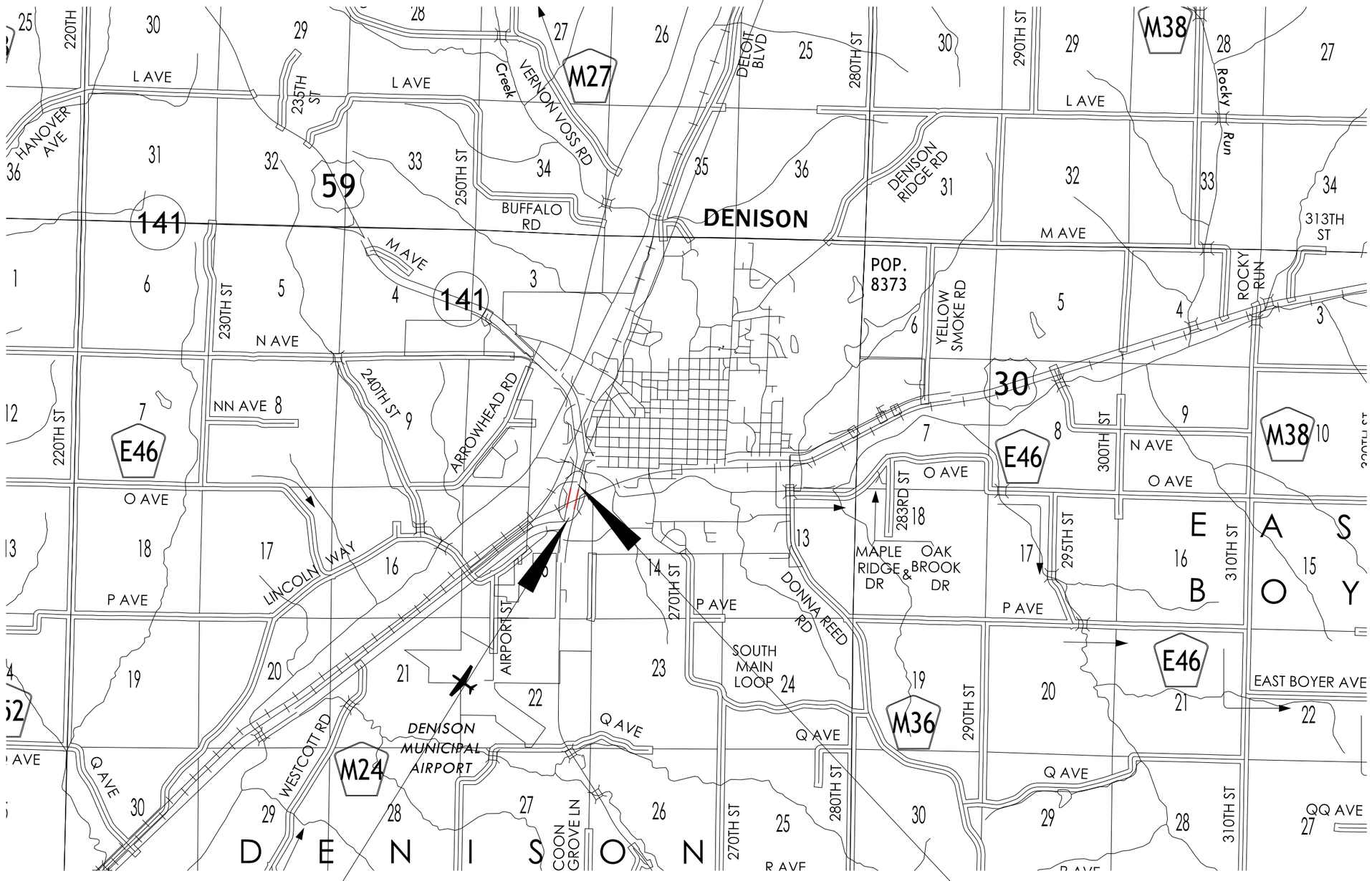
FHWA Numbers: 21330 (E.B.) & 21340 (W.B.)
Maint. Numbers: 2454.2R030 (E.B.) & 2454.2L030 (W.B.)
TWIN 432' x 40' CWPG BRIDGE



US 30 STA. 532+04.00
BEGIN CONSTRUCTION

LOCATION MAP SCALE
0 1 2 3
Miles

US 30 STA. 551+20.00
END CONSTRUCTION

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER A.2

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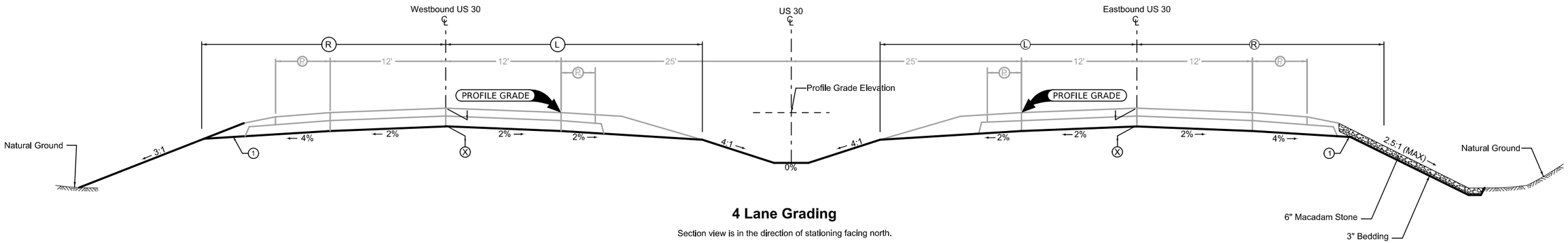


4 Lane Grading

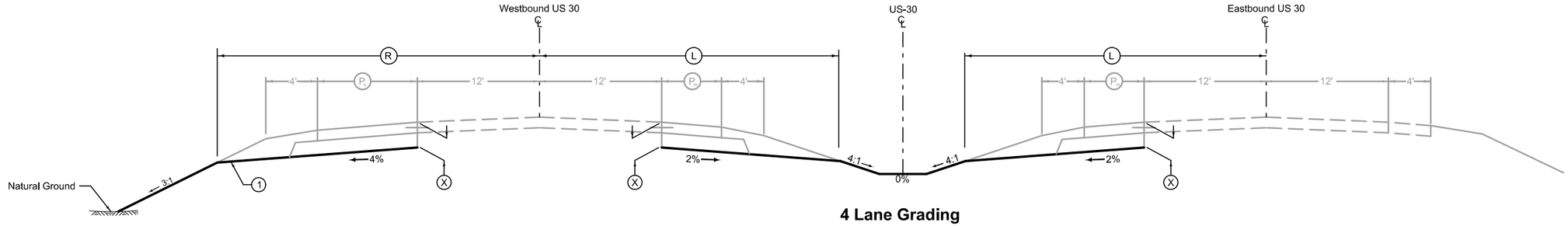
Section view is in the direction of stationing facing north.

LOCATION			DIMENSIONS		
ROAD INDENTIFICATION	STATION TO STATION		(X) Inches	(L) Feet	(R) Feet
US 30 EB	540+20.00	540+76.99	22	27	34
US 30 EB	546+74.88	548+25.00	22	27	34
US 30 WB	546+19.96	548+25.00	22	27	34

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

(1) Refer to project plan and cross sections for specific location of foreslope change and ditch details.

US HIGHWAY 30 GRADING



4 Lane Grading

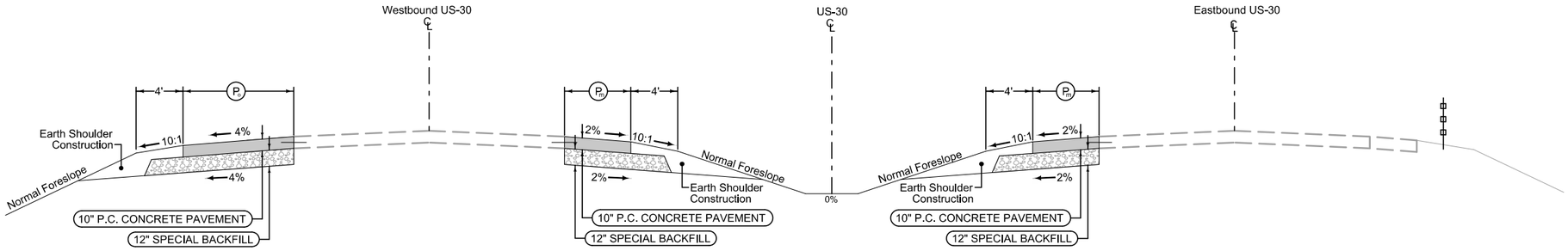
Section view is in the direction of stationing facing north.

LOCATION			DIMENSIONS		
ROAD INDENTIFICATION	STATION TO STATION		(X) Inches	(L) Feet	(R) Feet
US 30 EB	537+04.50	540+20.00	22	27	
US 30 EB	548+25.00	551+20.00	22	27	
US 30 WB	537+04.50	537+70.05	22	27	
US 30 WB	537+70.05	540+20.00	22	27	34
US 30 WB	548+25.00	551+20.00	22	27	34

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

(1) Refer to project plan and cross sections for specific location of foreslope change and ditch details.

US HIGHWAY 30 GRADING



Section view is in the direction of stationing facing north.

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: CD matching mainline jointing

Direction of Travel	BEGIN STATION	END STATION	P_n Feet
WB	537+70.05	540+20.00	5.8-8

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: CD matching mainline jointing

Direction of Travel	BEGIN STATION	END STATION	P_n Feet
WB	537+04.50	537+48.23	6
WB	539+55.20	540+20.00	6
WB	548+25.00	548+70.88	6
WB	550+78.00	551+20.00	6

Full Depth PCC Shoulder

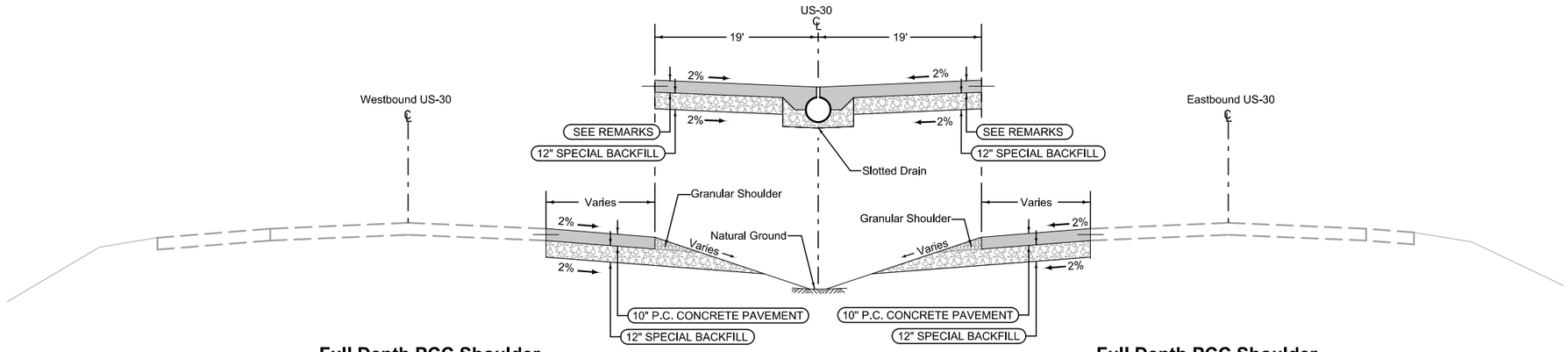
Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: CD matching mainline jointing

Direction of Travel	BEGIN STATION	END STATION	P_n Feet
EB	537+04.50	537+52.60	6
EB	539+48.29	539+92.90	6
EB	539+92.90	540+12.91	9.5
EB	540+12.91	540+20.00	9.5-9.2
EB	548+25.00	548+73.27	6
EB	550+71.02	551+20.00	6

US HIGHWAY 30
SHOULDER PAVING

Median Crossover Pavement

BEGIN STATION	END STATION	REMARKS
538+16.48	538+85.28	See Sheet U.1 for permanent crossover information.
549+39.20	550+08.01	See Sheet F.1 for temporary crossover information.



Section view is in the direction of stationing facing north.

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: CD matching mainline jointing

BEGIN STATION	END STATION	REMARKS
537+48.23	539+55.20	See Sheet U.1 for permanent crossover information.
548+70.88	550+78.00	See Sheet F.1 for temporary crossover information.

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: CD matching mainline jointing

BEGIN STATION	END STATION	REMARKS
537+52.60	539+48.29	See Sheet U.1 for permanent crossover information.
548+73.27	550+70.97	See Sheet F.1 for temporary crossover information.

US HIGHWAY 30
CROSSOVER PAVING

Full Depth PCC Shoulder

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

Direction of Travel	BEGIN STATION	END STATION	P_c Feet
WB	546+19.96	546+44.33	13-15.7
WB	546+44.33	546+64.33	15.7
WB	546+64.33	548+25.00	10

Full Depth PCC Shoulder

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

Direction of Travel	BEGIN STATION	END STATION	P_c Feet
WB	546+19.69	546+35.76	7.6
WB	546+35.76	546+83.53	7.6-9.5
WB	546+83.53	547+03.53	9.5
WB	547+03.53	548+25.00	6

Full Depth PCC Shoulder

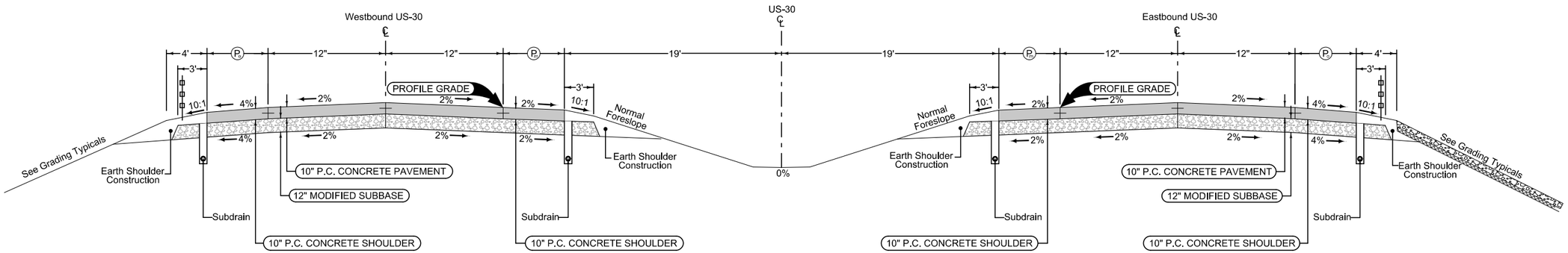
Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: CD at 17' spacing

Direction of Travel	BEGIN STATION	END STATION	P_c Feet
EB	540+20.00	540+60.85	9.2-7.6
EB	540+60.85	540+76.99	7.6
EB	546+74.88	548+25.00	6

Full Depth PCC Shoulder

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

Direction of Travel	BEGIN STATION	END STATION	P_c Feet
EB	540+20.00	540+32.10	10
EB	540+32.10	540+52.10	15.7
EB	540+52.10	540+76.99	15.7-13
EB	546+74.88	548+25.00	10



Section shown In the direction of stationing facing north.

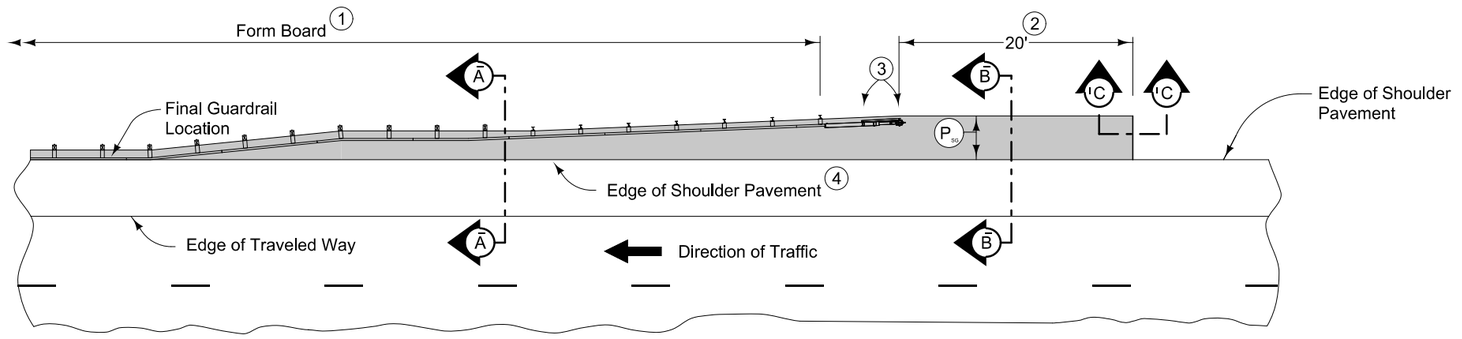
Mainline Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 17' spacing

Direction of Travel	BEGIN STATION	END STATION
WB	546+19.69	548+25.00

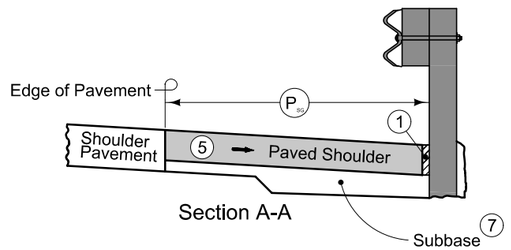
Mainline Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 17' spacing

Direction of Travel	BEGIN STATION	END STATION
EB	540+20.00	540+76.99
EB	546+74.88	548+25.00

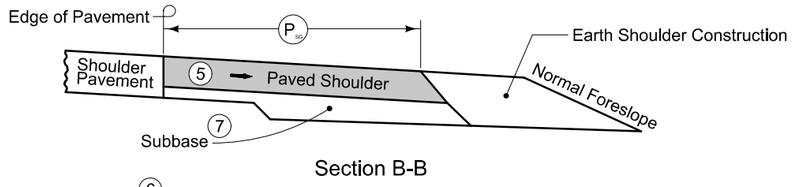
US HIGHWAY 30
PAVING



PLAN VIEW

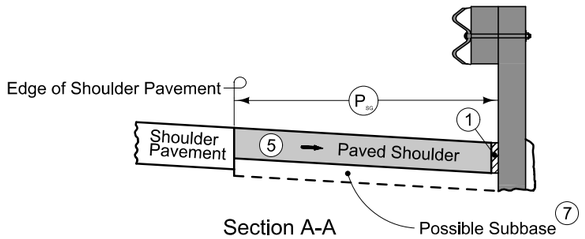


Section A-A

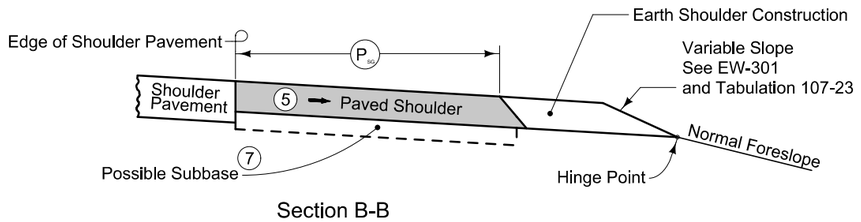


Section B-B

NEW CONSTRUCTION 6



Section A-A



Section B-B

EXISTING SHOULDER

DESIGNER INFO 7158 04-19-22

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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

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

Refer to Tabulation 112-9 for shoulder quantities.

(1) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.

(2) Continue paved shoulder 20 feet beyond the center of the first post.

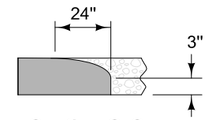
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(4) 'KT' (per PV-101) joint for PCC shoulder.
'B' (per PV-101) joint for HMA shoulder.

(5) Match shoulder slope.

(6) The Contractor has the option to pave the paved shoulder at guardrail and the full width paved shoulder as one operation.

(7) Refer to other details in the plan.



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)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- 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

- G - Black Hills Energy Distribution
Brad Fleming
(402) 221-2714
brad.fleming@blackhillscorp.com

- E1 - Denison Municipal Utilities
- W - (Electric/Sanitary/Water)
- SAN - Mike Wight
(712) 263-4154
mwight@dmuonline.com

- FO - Iowa Communications Network
(Fiber/Telephone)
Michael Dalen
(515) 725-4707
mike.dalen@iowa.gov

- FO2 - Mediacom Communications Corporation
(Cable/Fiber)
Tim Adreon
(515) 233-4646
tadreon@mediacomcc.com

- FO3 - Frontier Communications Fiber Distribution
Trent Flockhart
(515) 573-1268
Trent.Flockhart@ftr.com

Lumen Centurylink
(Fiber/Telephone)
Steve Parker
(515) 265-0968
Steve.Parker4@lumen.com

Western Iowa Networks
(Telephone)
Mike Ludwig
(712) 673-2311
mludwig@westianet.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.**	
Pink, Dark	(13)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas
Gray	(64)	Revetment, Class E

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D & F)

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER D.1

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Sta. 538+50.00 Stage 1
Install 111.33' DR-502
Permanent Median Crossover

Construction Limits

Exist UPRR ROW

Exist UPRR ROW

Exist ROW

Sta. 540+20.00
Begin WB Approach

Do Not Disturb
Existing Light Pole

Remove and Relocate
Existing Sign Structure

Sta. 539+71.06
Begin WB Outside Shoulder Construction

538+00

539+00

540+00

541+00

542+00

543+00

544+00

Sta. 540+85.64
24"x113' RCP
D.A.=Median

Sta. 537+04.50
Begin WB Inside Shoulder Construction

US 30 WB

Remove Existing
Median Turnaround

30

Remove Existing
Manhole

Sta. 537+04.50
Begin EB Inside Shoulder Construction

US 30 EB

Sta. 532+04.00
Begin Cable Guardrail Construction

Sta. 540+20.00
Begin EB Approach

Install Storm Pipe

Do Not Disturb
Existing Storm Pipe

Construction Limits

Remove Exist. Storm Pipe

Sta. 541+99.77
24"x128' RCP
D.A.=Median

Sta. 542+19.41
Skew 30° RT/LT AHD
2'x3'x297' RCB
D.A.=5-A.C.G.R.
(Per Asbuilt Plans)

Exist ROW

Sta. 540+85.66 Stage 3
Install 120.75' DR-641
US 30

Do Not Disturb
Existing Power Pole

0 20

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER D.2

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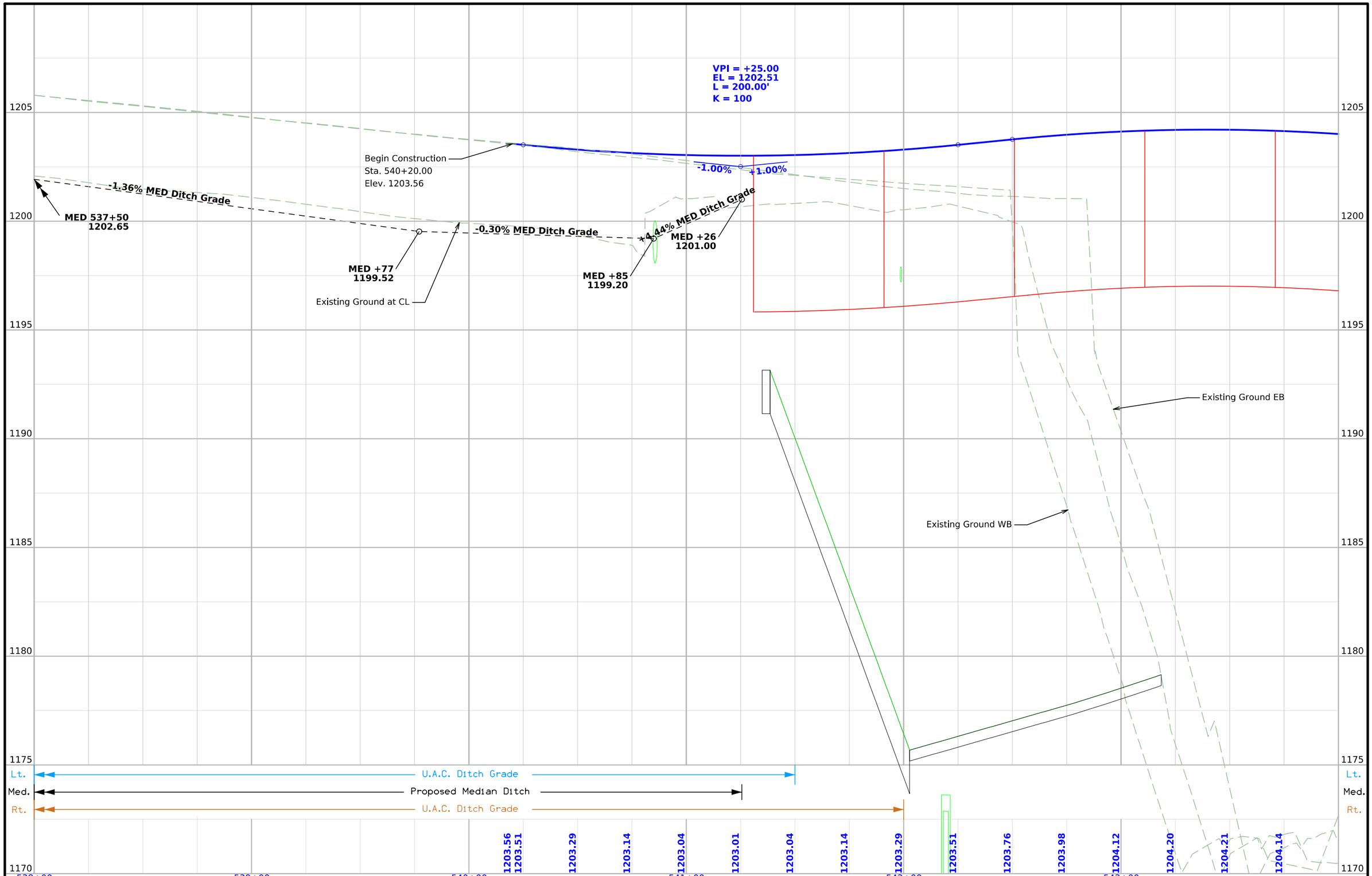

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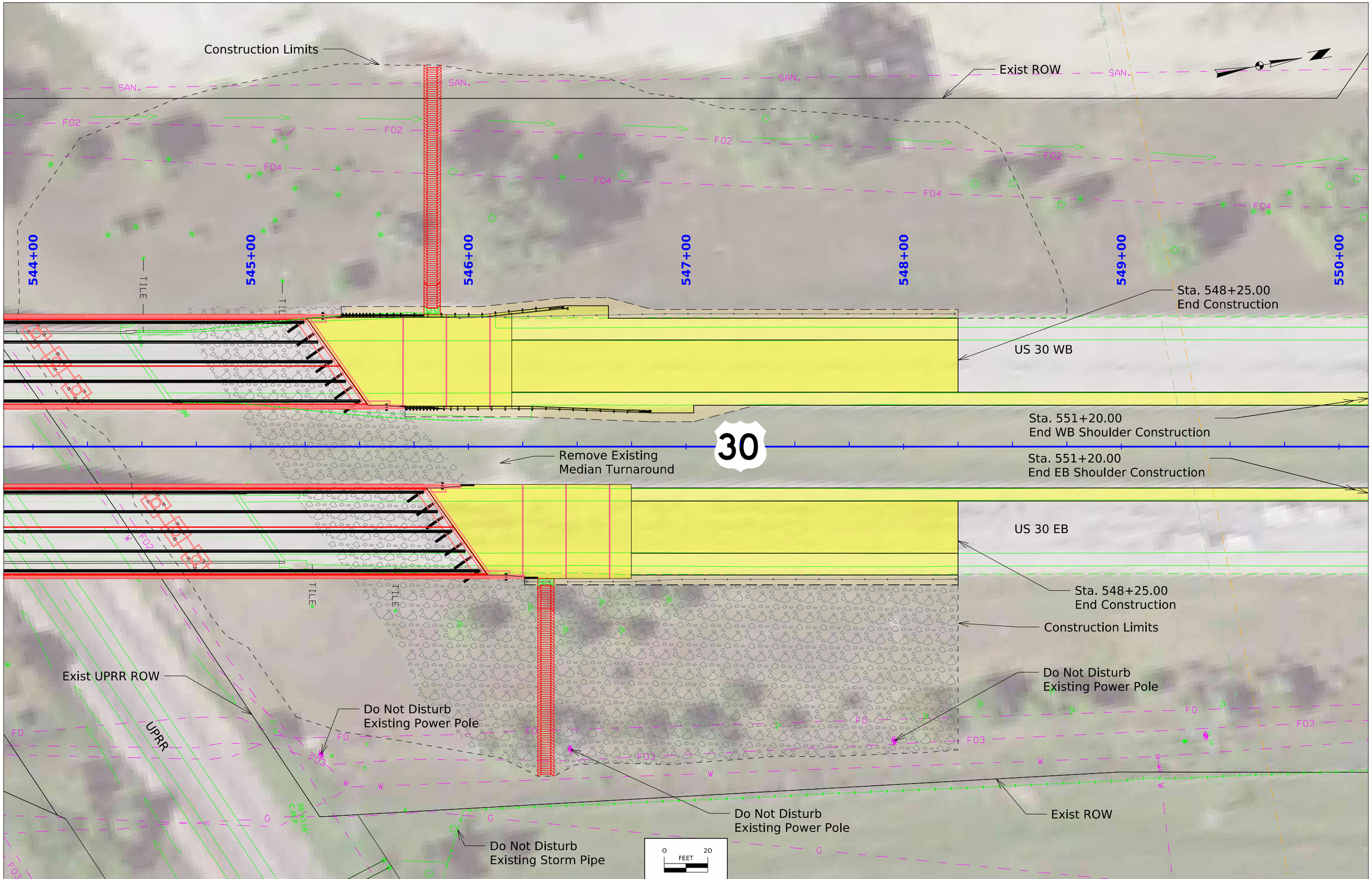

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VPI = +50.00
EL = 1205.76
L = 400.00'
K = 90

+1.00%

-3.44%

VPI = +50.00
EL = 1195.44
L = 150.00'
K = 121

-3.44%

-2.20%

MED +70
1198.60

-3.20% MED Ditch Grade

MED +00
1194.44

-3.68% MED Ditch Grade

End Construction
Sta. 548+25.00
Elev. 1193.79

Existing Ground at CL

Existing Ground WB

Existing Ground EB

MED +25
1189.84

-2.55% MED Ditch Grade

MED 551+20
1182.33

1205
1200
1195
1190
1185
1180
1175
1170

Lt. — U.A.C. Ditch Grade
Med. — Proposed Median Ditch
Rt. — U.A.C. Ditch Grade

1204.01 1203.81 1203.54 1203.20 1202.79 1202.31 1201.77 1201.15 1200.46 1199.71 1198.88 1198.02 1197.19 1196.40 1195.67 1194.99 1194.37 1193.79

544+00 545+00 546+00 547+00 548+00 549+00

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER D.5

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Construction Limits

549+00

550+00

551+00

US 30 WB

Sta. 548+71.76
Off. 19.02' Lt.

Sta. 550+78.87
Off. 18.98' Lt.

Sta. 550+61.62
Off. 16.51' Lt.

2.00%

2.00%

2.00%

Sta. 548+88.93
Off. 16.54' Lt.

R = 330.5'

Sta. 549+40.08
Off. 3.50' Lt.

2.00%

R = 330.5'

Sta. 550+08.88
Off. 3.30' Lt.

R = 330.5'

Sta. 549+40.08
Off. 2.50' Rt.

Sta. 548+88.97
Off. 16.25' Rt.

Sta. 550+08.88
Off. 2.71' Rt.

Sta. 550+71.89
Off. 19.03' Rt.

2.00%

2.00%

2.00%

2.00%

Sta. 548+74.14
Off. 18.99' Rt.

R = 330.5'

Sta. 550+59.14
Off. 16.57' Rt.

US 30 EB

0 10
FEET

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER F.1

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SURVEY INDEX

County: Crawford
PIN: 22-24-030-010
Project Number: BRF-030-2(180)--38-24
Location: UP RR 0.4 mile E of W Jct US 59 in Denison (EB/WB)
Type of Work: 2001-Bridge-Unspecified
Project Directory: 2403001022

Survey Personnel

Wes Shimp – Lead Land Surveyor, PLS
Lee Budde – Geospatial Specialist
Katerina Wyatt – Geospatial Technician
Matt Svec – Survey Party Chief
Nate Theis-Barnett – Survey Party Chief
Alexis Avila – Assistant Survey Party Chief

Date(s) of Survey

Begin Date	02/07/2024
End Date	06/30/2024

General Information

This survey is for US 59 Bridge Replacement over the UP railroad in Denison, Iowa. The corridor starts near the intersection of US 59 and Boyer Valley Road and runs southerly to the intersection of US 30. 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

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Two FENO monuments were set using the following method. Three five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values. A three-minute verification shot was taken on existing point DP4456. 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 this survey is a retrace of As-built Plans No. F-FG 1059(3). Survey stationing was equated to the plan POT at Sta. 527+20.23 and carried back and ahead with/without equation throughout the survey.

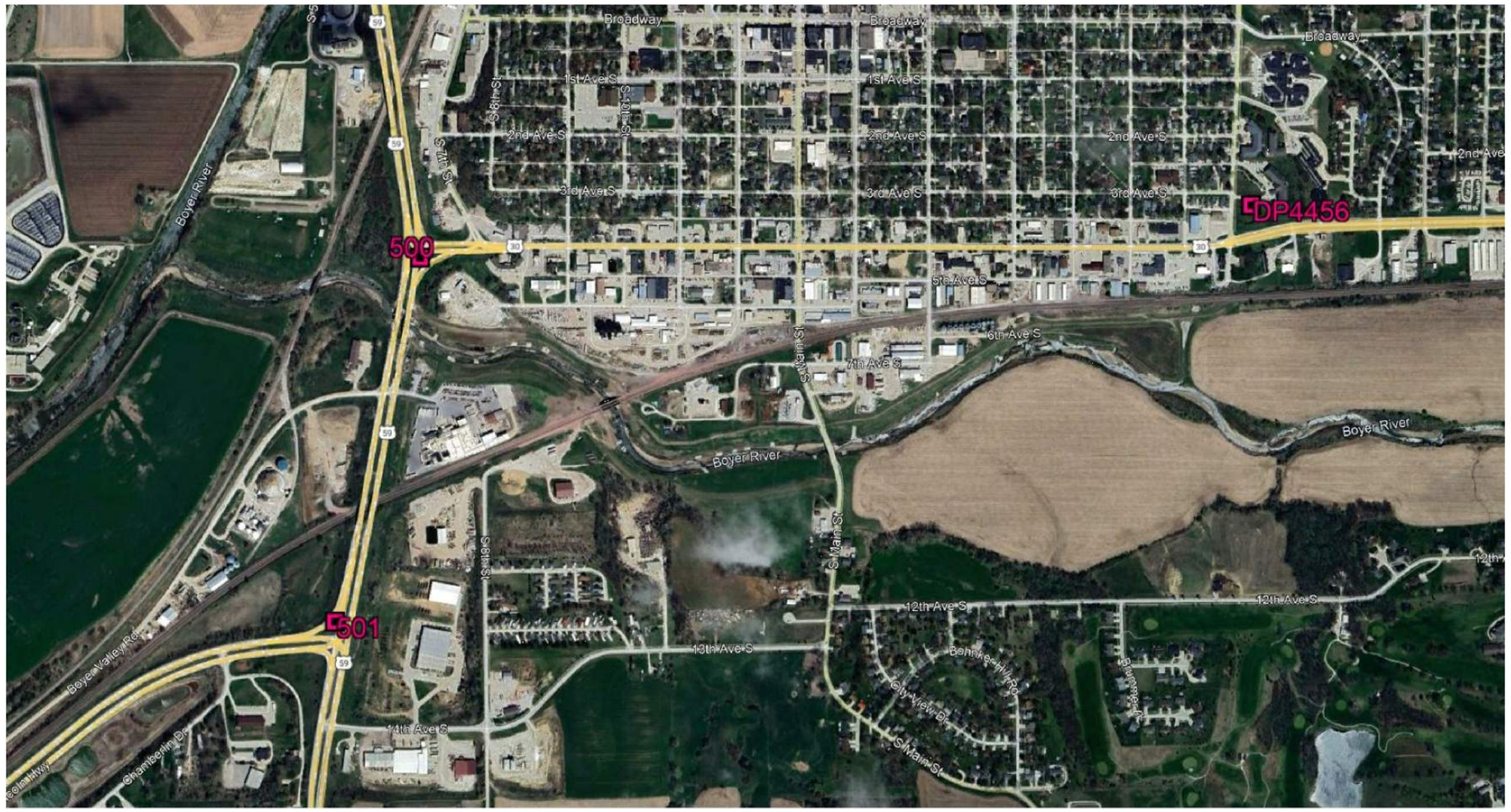
Survey stationing relates to as built plan stationing as follows:

POT Sta. 527+20.23 As-built Plans Project No. F-FG 1059(3)
Survey POT Sta. 527+20.23

POT Sta. 555+00.00 As-built Plans Project No. F-FG 1059(3)
Survey POT Sta. 555+00.00

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	DESCRIPTION
500	7242312.08	16600081.63	1173.54	Set FENO Monument in median near the northern intersection of Highway 30 and Highway 59
501	7239745.53	16599491.90	1205.60	Set FENO Monument in median near the southern intersection of Highway 30 and Highway 59
DP4456	7242707.04	16605947.61	1183.75	Found existing flange encased rod as described in the NGS Data Sheet

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)
ML030	Point ML030 1	527+20.23	7238927.84	16599407.47															
	Curve ML030							559+11.57	7242065.81	16599988.67	562+39.17	7242387.94	16600048.33	565+60.46	7242711.53	16599997.24			
	Point ML030 2	578+85.97	7244020.83	16599790.52															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E	
ML030	Curve ML030										12°27'54.96"	327.600	648.890	1910	27.89'	

1R

2

UP RR

15-83-39

STATE OF IOWA

Crawford County, Iowa

Exist. UPRR ROW

Exist. UPRR ROW

Exist. ROW

Exist. ROW

Exist. ROW

543+29.00
℄ 210.00' LT

543+00.00
℄ 286.00' LT

542+72.98
℄ 198.79' LT±EX R/W

543+40.00
℄ 245.00' LT

543+88.00
℄ 311.00' LT

543+94.00
℄ 260.00' LT

544+23.00
℄ 210.00' LT

545+18.00
℄ 303.00' LT

545+30.00
℄ 252.00' LT

549+24.88
℄ 533.17' LT±EX R/W

549+55.58
℄ 493.10' LT±EX R/W

545+74.00
℄ 239.00' LT

544+27.89
159.91' LT±EX R/W

545+85.00
190.00' LT

547+90.00
℄ 210.00' LT

547+46.00
159.96' LT±EX R/W

548+39.00
℄ 159.98' LT±EX R/W

542+43.00
℄ 104.00' LT

541+93.41
138.23' LT±EX R/W

543+51.00
℄ 52.00' RT

543+62.49
℄ 96.00' RT±EX R/W

TEMPORARY EASEMENT FOR CONTRACTOR ACCESS

TEMPORARY EASEMENT TO SHAPE

536+00 537+00 538+00 539+00 540+00 541+00 542+00 543+00 544+00 545+00 546+00 547+00 548+00 549+00 550+00 551+00

30

30

Double L Holdings LLC

15-83-39

0 50
FEET

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Larson / Hinrichsen
ROW #: NHSN-030-2(181)–2R-24
Plan Date: 1/10/2025
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition
- Permanent Acquisition County
- Permanent Acquisition City

FILE NO. 32646	ENGLISH	DESIGN TEAM DOT / HNTB	Crawford COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER H1	

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

US 30:
Median crossovers will be utilized to maintain traffic on US 30 at all times in accordance with J Sheets. Traffic will be head to head in Stages 2 and 3. Inside lane closures will be permitted to construct the inside shoulders and median crossovers in Stage 1.

All traffic movements at the US 30 and US 59 junctions north and south of the project area will be maintained. All traffic will be required to stop before entering the work zone due to the low design speed of the median crossovers.

Sideroads:
Boyer Valley Road west of the US 30 intersection will be closed during construction and traffic will be detoured. See Sheet J.15 for detour route.

The entrance on the east of the US 30 and Boyer Valley Road intersection will remain open during construction.

Portable DMS shall be deployed two weeks prior to the start of construction.

Refer to Tab. 108-26A for Staging Notes.

For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices, Iowa DOT Standard Road Plan TC Series and the current Standard Specifications.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work

108-26A
08-01-08

STAGING NOTES

Stage 1:

Traffic:
Close the inside lanes for both eastbound and westbound US 30 in accordance with the J Sheets.

Construction:
Construct the inside shoulders and median crossovers as shown in the J Sheets.

Stage 2:

Traffic:
Shift westbound traffic to the eastbound lanes using the median crossovers. Maintain head to head traffic on the existing eastbound bridge in accordance with the J Sheets.
Close Boyer Valley Road west of the US 30 intersection and detour traffic. See Sheet J.15 for detour route.
Maintain access to the entrance on the east side of Boyer Valley Road and US 30 intersection at all times.

Construction:
Remove existing westbound bridge and bridge approach.
Construct new westbound bridge and bridge approach.
Remove and replace the existing guardrail on the north side of the westbound bridge.
Construct new westbound pavement and shoulders.
Construct new high tension cable guardrail on the outside north end of the westbound bridge.
Construct revetment at both abutments of the westbound bridge and slope protection on the sideslopes.

Stage 3:

Traffic:
Shift eastbound traffic to the westbound lanes using the median crossovers. Maintain head to head traffic on the new westbound bridge in accordance with the J Sheets.
Close Boyer Valley Road west of the US 30 intersection and detour traffic. See Sheet J.15 for detour route.
Maintain access to the entrance on the east side of Boyer Valley Road and US 30 intersection at all times.

Construction:
Remove existing eastbound bridge and bridge approach.
Construct new eastbound bridge and bridge approach.
Remove and replace the existing guardrail on the south side of the eastbound bridge.
Construct new eastbound pavement and shoulders.
Construct new high tension cable guardrail on the outside eastbound shoulder on both sides of the bridge.
Construct revetment at both abutments of the eastbound bridge and slope protection on the sideslopes.

Final:

Traffic: Open all roads to all traffic

Restore north median area utilizing Standard Road Plan TC-402.
Set up pavement marking operations utilizing Standard Road Plan TC-433.
Set up rumble strip operations in accordance with Standard Road Plan TC-432.

Construction:
Regrade median in the areas of the temporary crossover. Sawcut the pavement at the edge of inside shoulder six feet from the edge of lane, remove the north temporary crossover pavement and regrade to original condition. Maintain the south crossover pavement as a new median turnaround following project completion.
Complete final pavement marking and mill rumble strips.

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

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout	1	Lane Identification
	Temporary Rumble Strips		

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)

59

ROAD WORK AHEAD

W20-1
48" x 48"

W3-1
48" x 48"

Install Rumble Strips

700'

200'

900'

0 50
FEET

Stage 1

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.3	

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ROAD WORK AHEAD
W20-1
48" x 48"

700'
200'
200'
300'

W3-1
48" x 48"

END ROAD WORK
G20-2A
48" x 24"

END ROAD WORK
G20-2A
48" x 24"

SPEED LIMIT 50
R2-1
48" x 60"

30

STOP
R1-1
48" x 48"

24" x 24" 24" x 24"
59 30
M6-2L 21" x 15"
M6-2R 21" x 15"

UPRR

530+00

535+00

540+00

Construct permanent median crossover

Spacing = 40'

59

30

Install Rumble Strips

LEFT LANE CLOSED AHEAD
W20-5
48" x 48"

STOP
R1-1
48" x 48"

STOP
Exist.

YIELD
R1-2
48" x 48" x 48"

Spacing = 35'

Spacing = 40'

Remove Exist. Median Turnaround

SPEED LIMIT 25
R2-1
48" x 60"

200'
200'
300'
900'
200'

14th Ave S

0 50
FEET

Stage 1

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.4

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Place Road Closure Barrier after
Material Yard Entrance

Boyer Valley Rd

ROAD CLOSED
TO
THRU TRAFFIC

R11-4
60" x 30"

SPEED
LIMIT
25

R2-1
48" x 60"

180'

150'

W4-2
48" x 48"

Monogram Quality Food

W6-1
24" x 12"

545+00

550+00

555+00

Construct temporary median crossover

Spacing = 40'

Spacing = 35'

30

Spacing = 40'

Sta. 549+75.00 Stage 1
Install 113' DR-502
Temporary Median Crossover

MERGE

W4-2M
48" x 48"

UPRR

0 FEET 50

Stage 1

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.5	

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150'
900'
700'
300'
200'
200'
200'
LEFT LANE CLOSED AHEAD
W20-5
48" x 48"
560+00
STOP
R1-1
48" x 48"
565+00
570+00
W3-1
48" x 48"
ROAD WORK AHEAD
W20-1
48" x 48"
59
Install Rumble Strips
STOP
Exist.
ROAD WORK AHEAD
W20-1
48" x 48"
30
S 7th St
0 50
FEET
Stage 1

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.6	

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Stage 2

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.7	

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ROAD WORK AHEAD
W20-1
48" x 48"

700'
200'
200'
300'

W3-1
48" x 48"

END ROAD WORK
G20-2A
48" x 24"

END ROAD WORK
G20-2A
48" x 24"

SPEED LIMIT 50
R2-1
48" x 60"

30

59

530+00

535+00

540+00

STOP
R1-1
48" x 48"

24" x 24"
59
M6-2L
21" x 15"

24" x 24"
30
M6-2R
21" x 15"

DO NOT PASS
R4-1
36" x 48"

Mount on back of barricade; back-to-back with R4-7B sign.

R4-7B
36" x 48"

UPRR

W6-3
48" x 48"

CHW8

85'

DCY4

Permanent Rumble Strips

STOP
R1-1
48" x 48"

STOP
Exist.

YIELD
R1-2
48" x 48" x 48"

W4-2
48" x 48"

CHY8

Spacing = 25'

ELY6

W6-3
48" x 48"

DO NOT ENTER
R5-1
30" x 30"

W1-4R
48" x 48"

25 MPH
W13-1p
18" x 18"

DO NOT PASS
R4-1
36" x 48"

200'
200'
300'
900'
200'
100'
180'
150'

14th Ave S

0 50
FEET

Stage 2

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.8	

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Place Road Closure Barrier after
Material Yard Entrance

Boyer Valley Rd

ROAD CLOSED
TO
THRU TRAFFIC

R11-4
60" x 30"

150' 150' 180' 250'

555+00

Spacing = 35'

SPEED
LIMIT
25

R2-1
48" x 60"

W1-4L
48" x 48"

W13-1p
18" x 18"

25
MPH

CHW8

W6-1
24" x 12"

Spacing = 40'

550+00

85'

545+00

Temp Crash Cushion

30

DCY6

Spacing = 40'

DO
NOT
PASS

R4-1
36" x 48"

85'

W6-3
48" x 48"

CHY8

ELY6

Spacing = 40'

ELW6

END
ROAD WORK

G20-2A
48" x 24"

MERGE

W4-2M
48" x 48"

W4-2
48" x 48"

UPRR

150' 175'

0 50
FEET

Stage 2

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.9	

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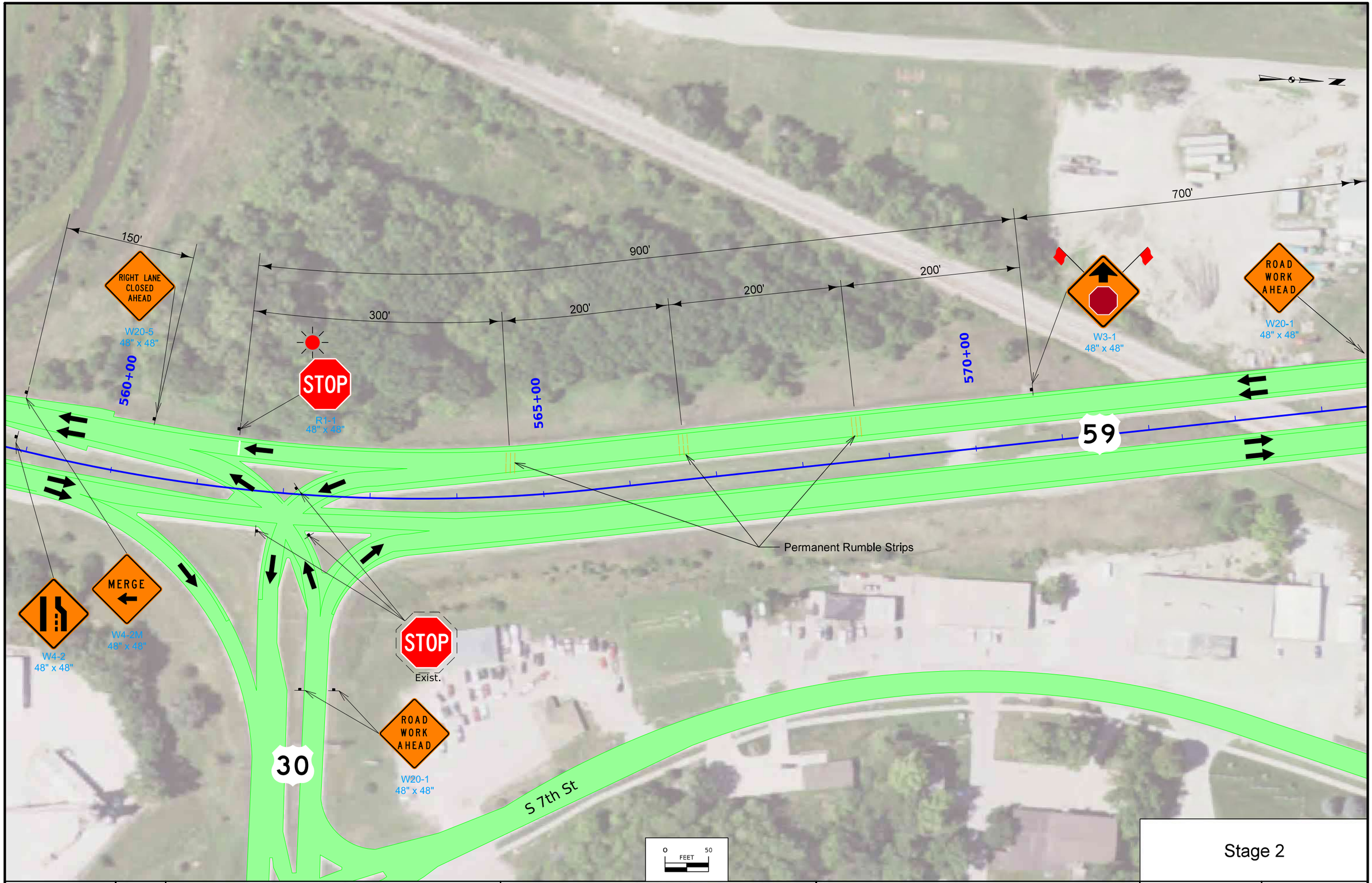

Stage 2

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.10

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59

ROAD
WORK
AHEAD

W20-1
48" x 48"

W3-1
48" x 48"

Permanent
Rumble Strips

700'

200'

900'

0 50
FEET

Stage 3

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.11	

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ROAD WORK AHEAD
W20-1
48" x 48"

700'
200'
200'
300'

W3-1
48" x 48"

END ROAD WORK
G20-2A
48" x 24"

END ROAD WORK
G20-2A
48" x 24"

SPEED LIMIT 50
R2-1
48" x 60"

STOP
R1-1
48" x 48"

W4-1
48" x 48"

530+00

535+00

540+00

UPRR

100'
170'
150'

DO NOT PASS
R4-1
36" x 48"

85'

W6-3
48" x 48"

Spacing = 30'

CHY8

DCY6

59

30

STOP
R1-1
48" x 48"

STOP
Exist.

YIELD
R1-2
48" x 48" x 48"

W1-4L
48" x 48"

W13-1p
18" x 18"

25 MPH

85'

W1-6
24" x 12"

CHW8

Spacing = 35'

Temp Crash Cushion

Permanent Rumble Strips

200'
200'
300'
900'
150'
100'
135'

14th Ave S

0 50
FEET

Stage 3

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.12

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Place Road Closure Barrier after Material Yard Entrance

Boyer Valley Rd

ROAD CLOSED TO THRU TRAFFIC

R11-4
60" x 30"

W1-4R
48" x 48"

W13-1p
18" x 18"

25 MPH

W6-3
48" x 48"

150'

75'

DO NOT PASS

R4-1
36" x 48"

DO NOT ENTER

R5-1
30" x 30"

85'

W6-3
48" x 48"

Spacing = 30'

545+00

550+00

Spacing = 40'

Monogram Quality Food

W6-1
24" x 12"

SPEED LIMIT 25

R2-1
48" x 60"

ELY6

ELY6

555+00

CHY8

180'

150'

W4-2
48" x 48"

30

85'

CHY8

CHW8

Spacing = 25'

Spacing = 35'

DCY6

R4-7B
36" x 48"

DO NOT PASS

R4-1
36" x 48"

Mount on back of barricade; back-to-back with R4-7B sign.

END ROAD WORK

G20-2A
48" x 24"

MERGE

W4-2M
48" x 48"

UPRR

0 50 FEET

Stage 3

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.13

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150'
900'
300'
200'
200'
200'
700'
LEFT LANE CLOSED AHEAD
W20-5
48" x 48"
560+00
STOP
R1-1
48" x 48"
565+00
570+00
W3-1
48" x 48"
ROAD WORK AHEAD
W20-1
48" x 48"
59
Permanent Rumble Strips
STOP
Exist.
ROAD WORK AHEAD
W20-1
48" x 48"
30
S 7th St
0 50
FEET
Stage 3

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.14	

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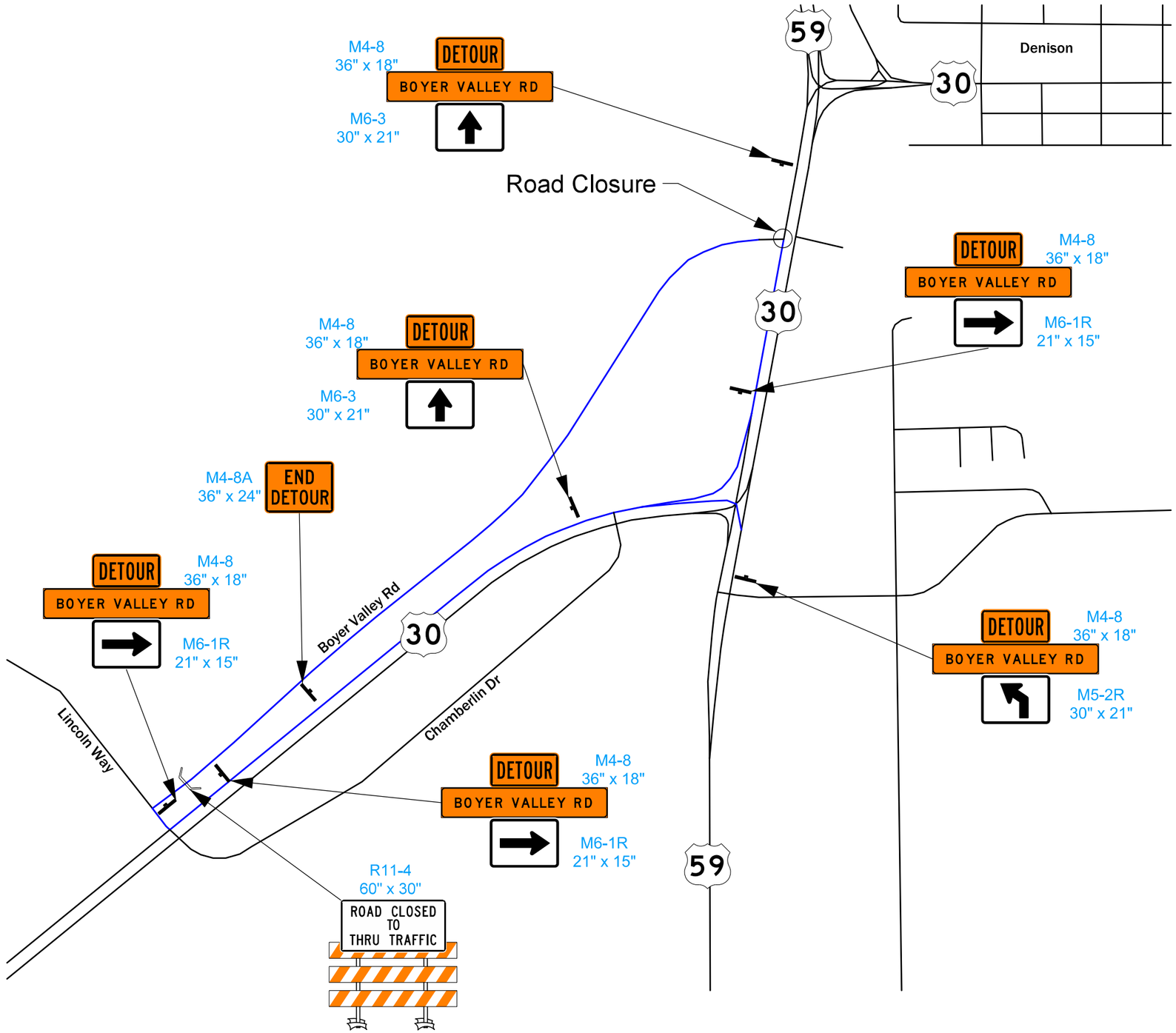

DETOUR
BOYER VALLEY ROAD
IF NEEDED

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER J.15

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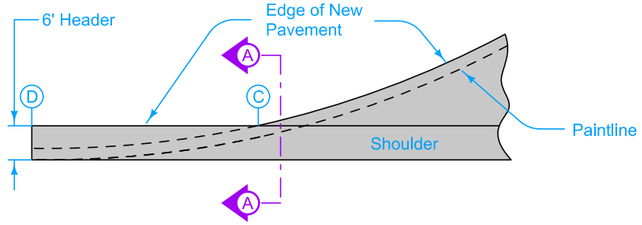
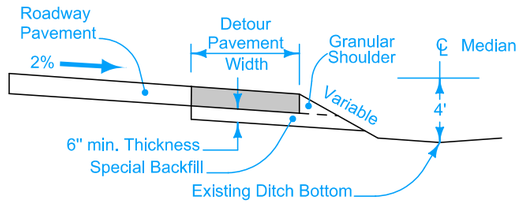
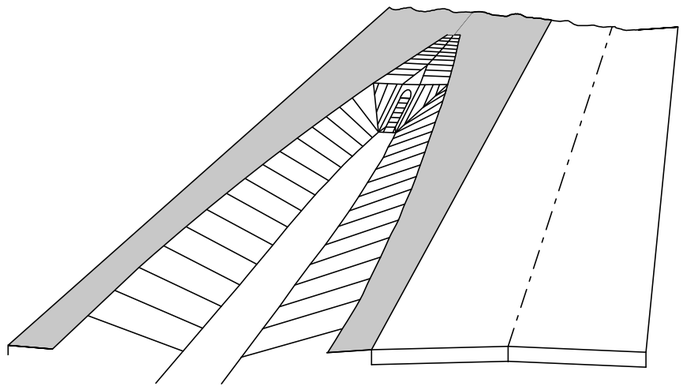


DETAIL 'A'



SECTION A-A



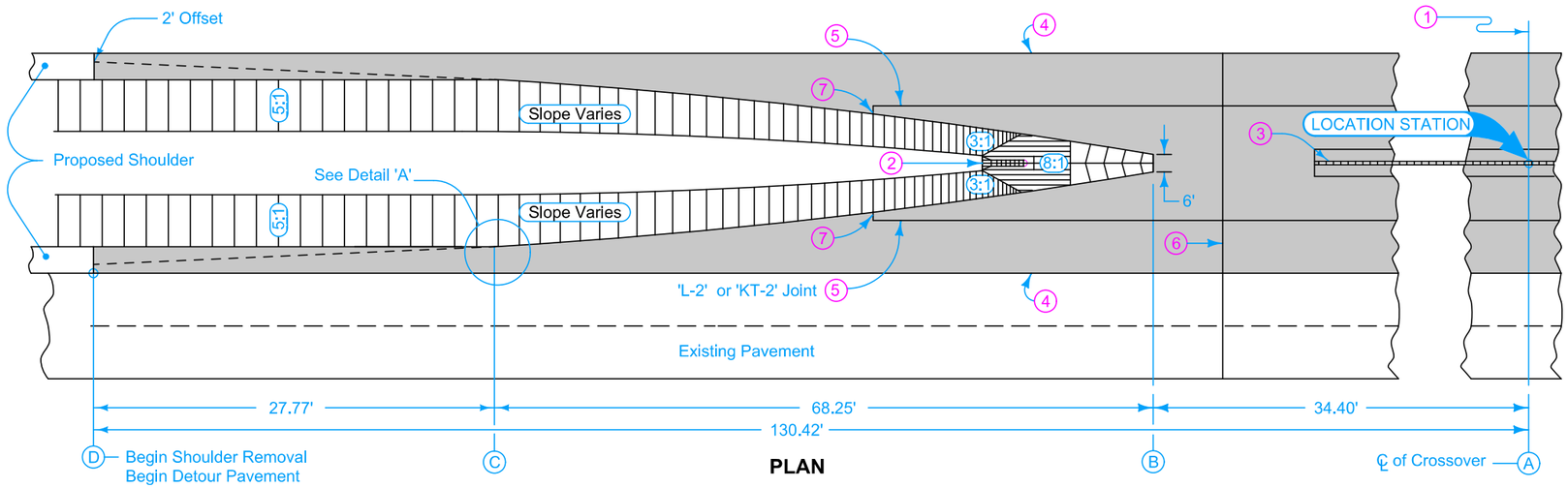
PERSPECTIVE VIEW
DITCH SLOPE AND BEVELED PIPE

Detour Pavement options: 9" PCC or 12" HMA

For joint details, see PV-101.

1. Median crossover is symmetrical about centerline.
2. Beveled pipe and guard. See DR-212.
3. Slotted drain for median crossover. See DR-502.
4. 'KT-2' or 'L-2' joint if mainline pavement is new construction. Bend bars out.
   'BT-3' joint if mainline pavement is existing.
   'B' joint if Detour Pavement is HMA.
5. For PCC Detour Pavement, 'KT-2' or 'L-2' spaced at one-quarter median width.
6. For PCC Detour Pavement, match existing roadway joints. 'CD' joints are required.
7. For PCC Detour Pavement, 2 foot 'C' Joint.

DESIGN QUANTITY TABLE		
Detour Pavement Sq. Yds.	Special Backfill Tons	Granular Shoulder Tons
824	320	35



PLAN

Detour Pavement

Possible Contract Items:
- Granular Shoulders, Type A
- Detour Pavement
- Embankment In Place
- Excavation, Class 10, Roadway and Borrow
- Excavation, Class 13, Roadway and Borrow
- Removal of Pavement
- Special Backfill

Possible Tabulation:
112-8

TABLE OF OFFSETS AND DROPS (PAVED SHOULDERS)																
Distance from Location Station (Feet)	130.42	120	110	102.65	100	90	80	70	60	50	40	34.40	30	20	10	0
Offset from inside edge of Pavement (Feet)	6.00	6.00	6.00	6.00	6.38	7.82	9.33	11.21	13.52	16.28	19.42	21.50	24.51	24.54	24.56	24.59
Cross-Slope from inside edge of Pavement	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Drop from inside edge of Pavement (Feet)	0.12	0.12	0.12	0.12	0.13	0.16	0.19	0.22	0.27	0.33	0.39	0.43	0.49	0.49	0.49	0.49
POINT LOCATION	D			C								B				A

MODIFIED
STANDARD ROAD PLAN

REVISION	
5	04-21-15

PV-500

SHEET 1 of 1

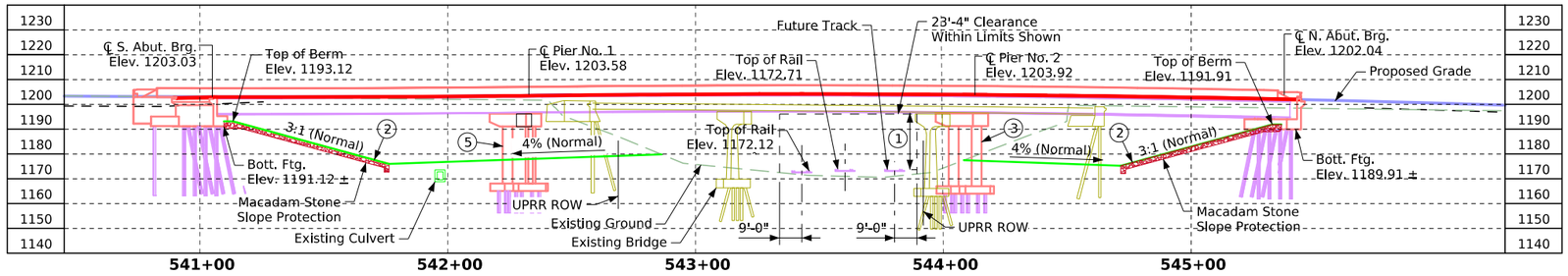
MODIFICATIONS: Updated crossover to meet 25 mph standards.

APPROVED BY DESIGN METHODS ENGINEER

MEDIAN CROSSOVER
(50' MEDIAN)

Control Point: N 7239745.53, E 16599491.90; Set FENO Monument in median near the southern intersection of Highway 30 and Highway 59. Elev. 1205.60

1. Minimum vertical clearance = 24.11'
2. Grading Surface
3. Frame Pier
4. Macadam Stone Slope protection (Embedded)
5. Frame Pier or Drilled Shaft (See design notes)



Longitudinal Section Along WB ℄ US 30

Note:
Top of bridge deck at centerline roadway is 0.21' above the profile grade to account for deck cross slope and parabolic crown.

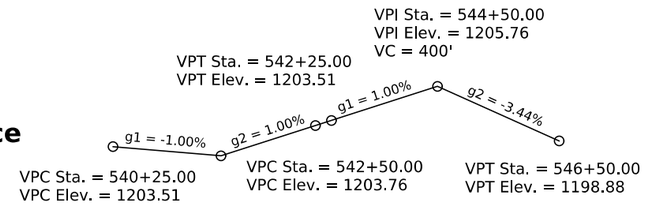
Design Notes
1. TSS TL-5 Bridge Railing Proposed
2. Frame Type Pier Proposed assumed 4'-0" column width, pier type may change in final design and will require a review of heavy construction requirements.
3. Substantial shoring is required to build the buried pile cap. During final design, consider replacing piles, pile cap and columns with drilled shafts installed from EL 1190 ±. Final grading below Pier No. 1 and the south approach would occur after traffic is shifted to the new WB bridge, thereby minimizing the need for shoring.
4. Wing extensions are 11'-0"
5. Note possible pile conflicts at Pier 2. Review need for pre-drilling of proposed pile.
6. This design is for the replacement of the existing 210'-0" x 30'-0" continuous steel I-beam bridge, Crawford Design No. 660, FHWA No. 021340, Maint. No. 2454.2L030

Traffic Estimate

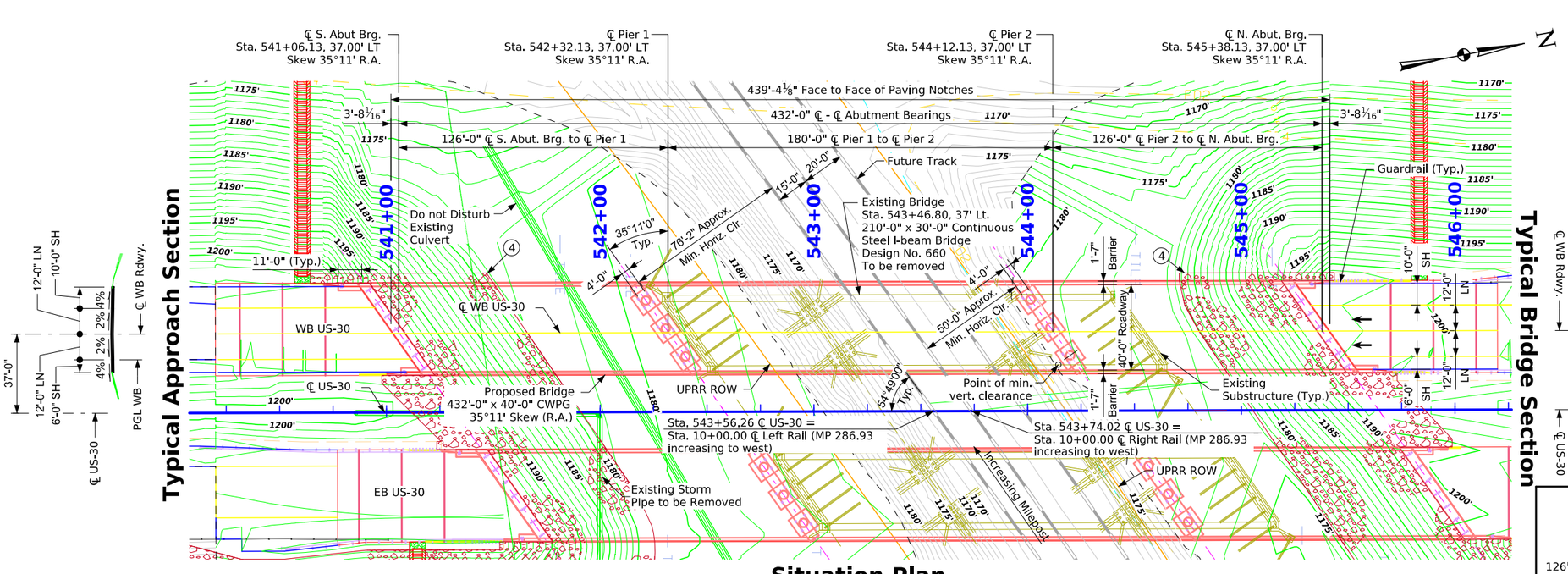
US-30	
2027 AADT	9,300 V.P.D.
2047 AADT	10,200 V.P.D.
2047 DHV	1,050 V.P.H.
TRUCKS	16 %
Total Design ESALs	--

Minimum Vertical Clearance

Overhead Station = 543+94.95, Offset 20.92' Lt.
Overhead Elevation = 1203.96
Depth of Superstructure = 7.2 ft.
Deck Thickness = 8.5 in.
Estimated Haunch = 2 in.
Beam Depth = 6.325 ft.
Underpass Station = 10+06.29, 29.0' Rt.
Top of Rail Elevation = 1172.65
Minimum Vertical Clearance = 24.11'



Proposed Profile Grade US-30 WB



Situation Plan

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

Location

WB US-30 over UPRR
T-83N R-39W
Section 15
Denison Township
Crawford County
FHWA No. 021341
Latitude 42.007644°
Longitude -95.366600°

PRELIMINARY

Design For 35°11' Skew (R.A.)

432'-0" x 40'-0" Continuous Welded Plate Girder Bridge

126'-0" End Spans — 180'-0" Interior Span

Situation Plan

STA. 543+22.13 (US 30 WB)

Turn-in Date: Sept. 2024

Crawford County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0229 — Design Sheet No. 1 of 5 — FHWA No. 021341

FILE NO. 32646	ENGLISH	DESIGN TEAM HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER V.1

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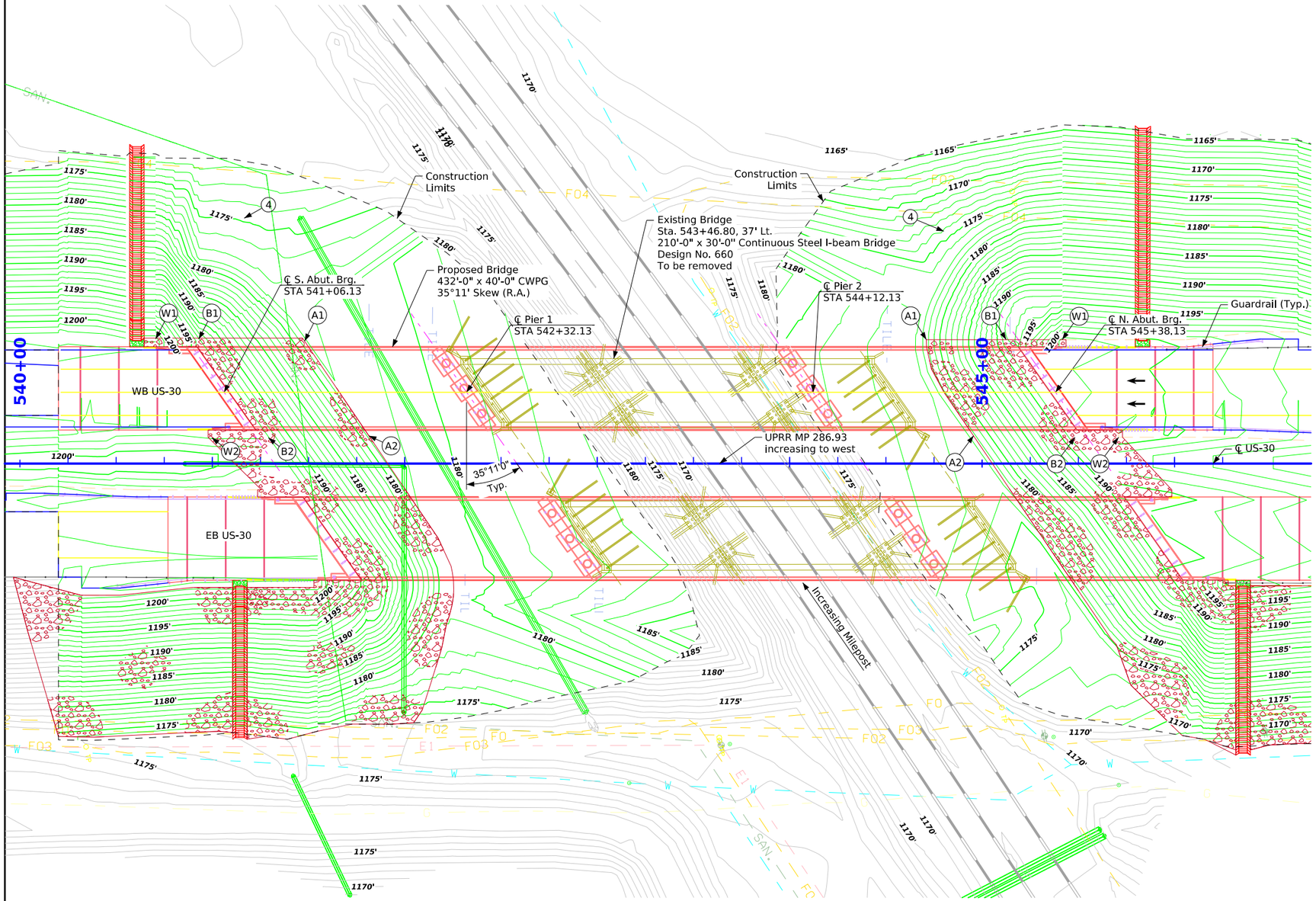
Control Point: N 7239745.53, E 16599491.90; Set FENO Monument in median near the southern intersection of Highway 30 and Highway 59. Elev. 1205.60



Site Plan

4 Macadam Stone Slope Protection (Embedded)

Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	541+47.92	63.58' Lt.	1178.35	544+71.04	63.58' Lt.	1177.63
A2	541+81.33	14.42' Lt.	1178.71	544+93.56	14.42' Lt.	1177.70
B1	540+93.81	63.58' Lt.	1193.12	545+12.97	63.58' Lt.	1191.91
B2	541+28.47	14.42' Lt.	1193.12	545+47.63	14.42' Lt.	1191.91
W1	540+70.56	63.58' Lt.	1202.61	545+41.62	63.58' Lt.	1201.38
W2	540+99.82	14.42' Lt.	1202.66	545+70.93	14.42' Lt.	1200.86

Berm slope elevations reflect the grading surface.

Design Notes
1. TSS TL-5 Bridge Railing Proposed
2. Frame Type Pier Proposed assumed 4'-0" column width, pier type may change in final design
3. Substantial shoring is required to build the buried pile cap. During final design, consider replacing piles, pile cap and columns with drilled shafts installed from EL 1190 ±. Final grading below Pier No. 1 and the south approach would occur after traffic is shifted to the new WB bridge, thereby minimizing the need for shoring.

PRELIMINARY

Design For 35°11' Skew (R.A.)

432'-0" x 40'-0" Continuous Welded Plate Girder Bridge

126'-0" End Spans 180'-0" Interior Span

Situation Plan-Site

STA. 543+22.13 (US 30 WB) Turn-in Date: Sept. 2024

Crawford County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0229 Design Sheet No. 2 of 5 FHWA No. 021341

0 30 Scale In Feet

FILE NO. 32646	ENGLISH	DESIGN TEAM HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER V.2	

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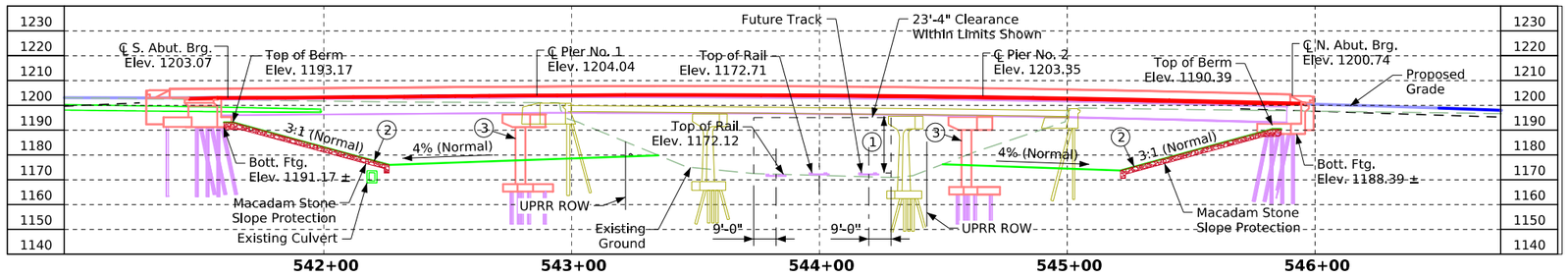
Control Point: N 7239745.53, E 16599491.90; Set FENO Monument in median near the southern intersection of Highway 30 and Highway 59. Elev. 1205.60

1. Minimum vertical clearance = 23.41'
2. Grading Surface
3. Frame Pier
4. Macadam Stone Slope protection (Embedded)



Longitudinal Section Along ℄ EB US 30

Note:
Top of bridge deck at centerline roadway is 0.21' above the profile grade to account for deck cross slope and parabolic crown.

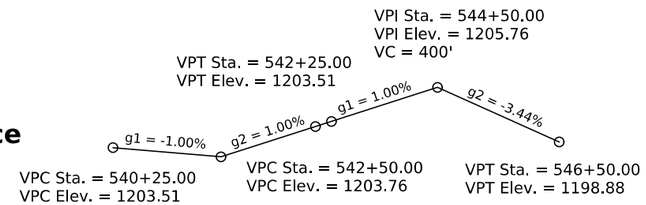
Design Notes
1. TSS TL-5 Bridge Railing Proposed
2. Frame Type Pier Proposed assumed 4'-0" column width, pier type may change in final design and will require a review of heavy construction requirements.
3. Wing extensions are 11'-0"
4. Note possible pile conflicts at Pier 2. Review need for pre-drilling of proposed pile.
5. This design is for the replacement of the existing 210'-0" x 30'-0" continuous steel I-beam bridge, Crawford Design No. 660, FHWA No. 021330, Maint. No. 2454.2L030

Traffic Estimate

US-30	
2027 AADT	9,300 V.P.D.
2047 AADT	10,200 V.P.D.
2047 DHV	1,050 V.P.H.
TRUCKS	16 %
Total Design ESALs	--

Minimum Vertical Clearance

Overhead Station = 544+49.21, Offset 57.08' Rt.
Overhead Elevation = 1203.39
Depth of Superstructure = 7.2 ft.
Deck Thickness = 8.5 in.
Estimated Haunch = 2 in.
Beam Depth = 6.325 ft.
Underpass Station = 9+10.55, 29.0' Rt.
Top of Rail Elevation = 1172.78
Minimum Vertical Clearance = 23.41'



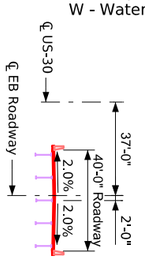
Proposed Profile Grade US-30 WB

Utilities Note:

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

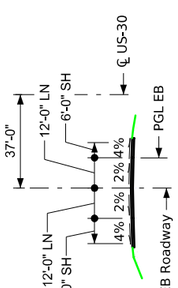
General Utility Symbols:

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

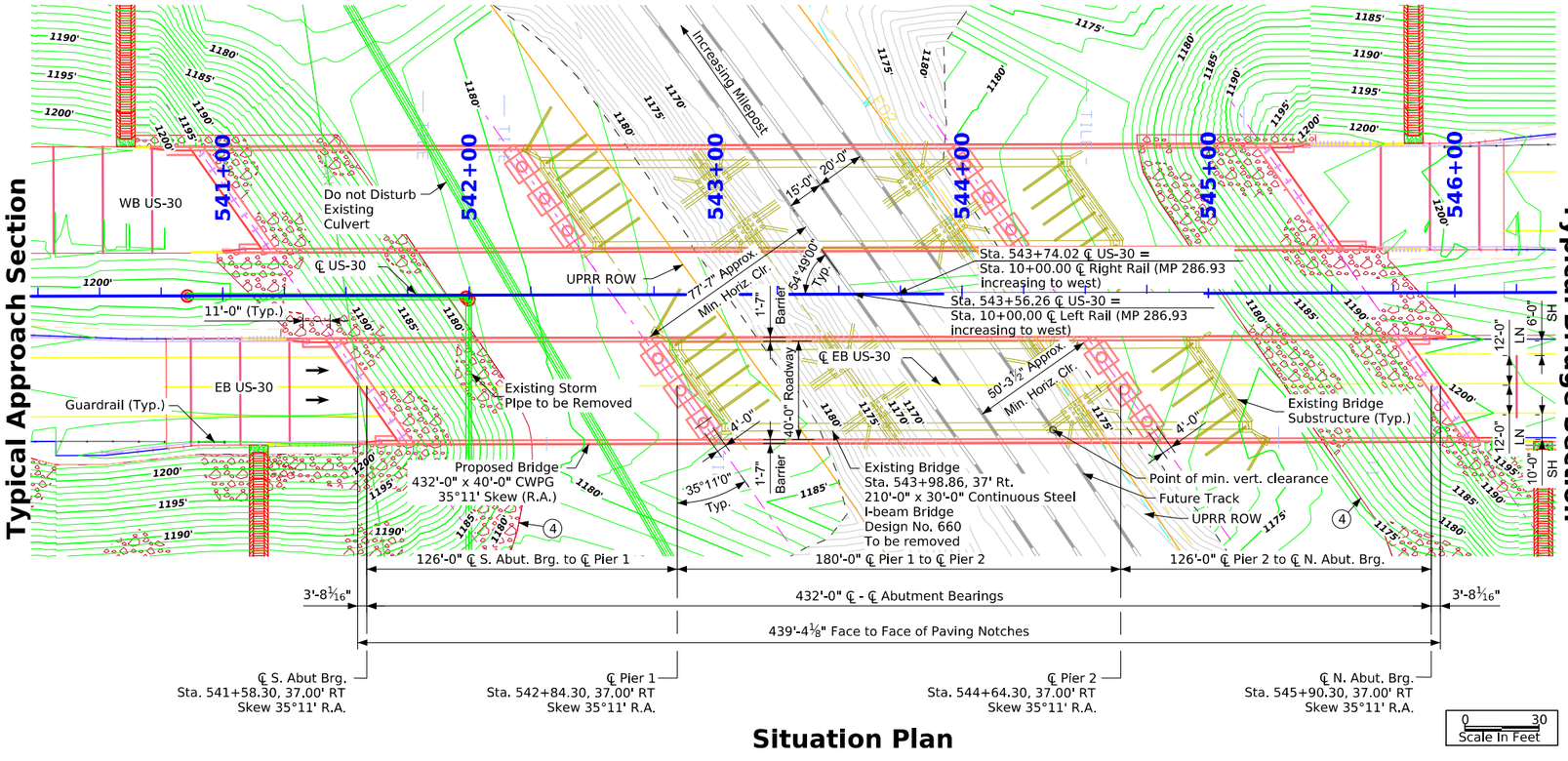


Location

EB US-30 over UPRR
T-83N R-39W
Section 15
Denison Township
Crawford County
FHWA No. 021331
Latitude 42.007027°
Longitude -95.366470°



Typical Approach Section



Situation Plan

Typical Bridge Section

PRELIMINARY

Design For 35°11' Skew (R.A.)

432'-0" x 40'-0" Continuous Welded Plate Girder Bridge

126'-0" End Spans — 180'-0" Interior Span

Situation Plan

STA. 543+74.30 (US 30 EB) — Turn-in Date: Sept. 2024

Crawford County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0129 — Design Sheet No. 3 of 5 — FHWA No. 021331

FILE NO. 32646	ENGLISH	DESIGN TEAM HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER V.3

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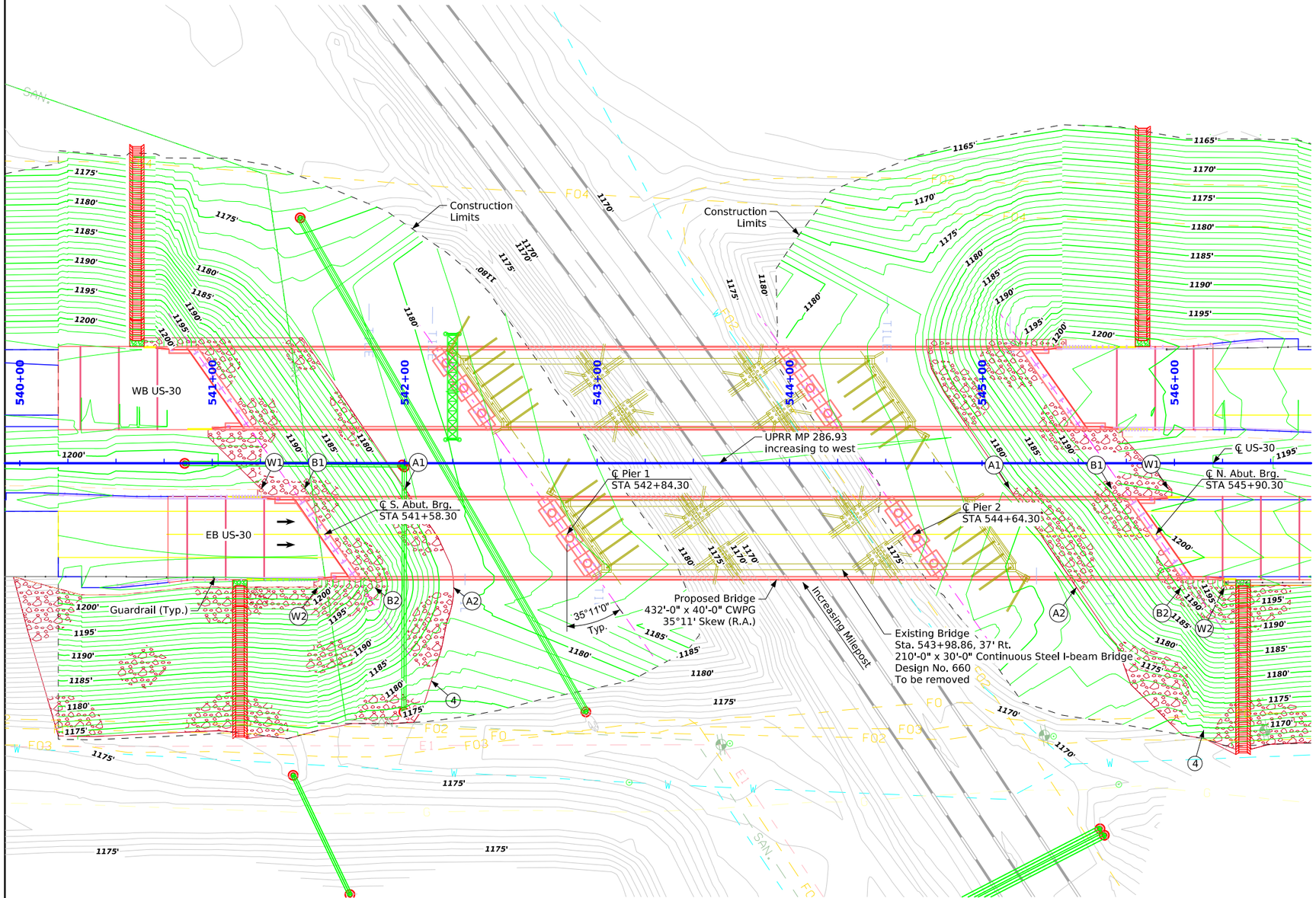
Control Point: N 7239745.53, E 16599491.90; Set FENO Monument in median near the southern intersection of Highway 30 and Highway 59. Elev. 1205.60



Site Plan

4 Macadam Stone Slope Protection (Embedded)

Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	542+01.37	14.42' Rt.	1178.81	545+11.55	14.42' Rt.	1176.39
A2	542+24.75	63.58' Rt.	1179.13	545+44.88	63.58' Rt.	1174.63
B1	541+48.80	14.42' Rt.	1193.17	545+67.96	14.42' Rt.	1190.39
B2	541+83.46	63.58' Rt.	1193.17	546+02.62	63.58' Rt.	1190.39
W1	541+25.55	14.42' Rt.	1202.62	545+96.61	14.42' Rt.	1200.14
W2	541+54.81	63.58' Rt.	1202.49	546+25.86	63.58' Rt.	1199.13

Berm slope elevations reflect the grading surface.

Design Notes
1. TSS TL-5 Bridge Railing Proposed
2. Frame Type Pier Proposed assumed 4'-0" column width, pier type may change in final design.

0 30
Scale In Feet

PRELIMINARY

Design For 35°11' Skew (R.A.)

432'-0" x 40'-0" Continuous Welded Plate Girder Bridge

126'-0" End Spans 180'-0" Interior Span

Situation Plan-Site

STA. 543+74.30 (US 30 EB) Turn-in Date: Sept. 2024

Crawford County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0129 Design Sheet No. 4 of 5 FHWA No. 021331

FILE NO. 32646	ENGLISH	DESIGN TEAM HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER V.4	

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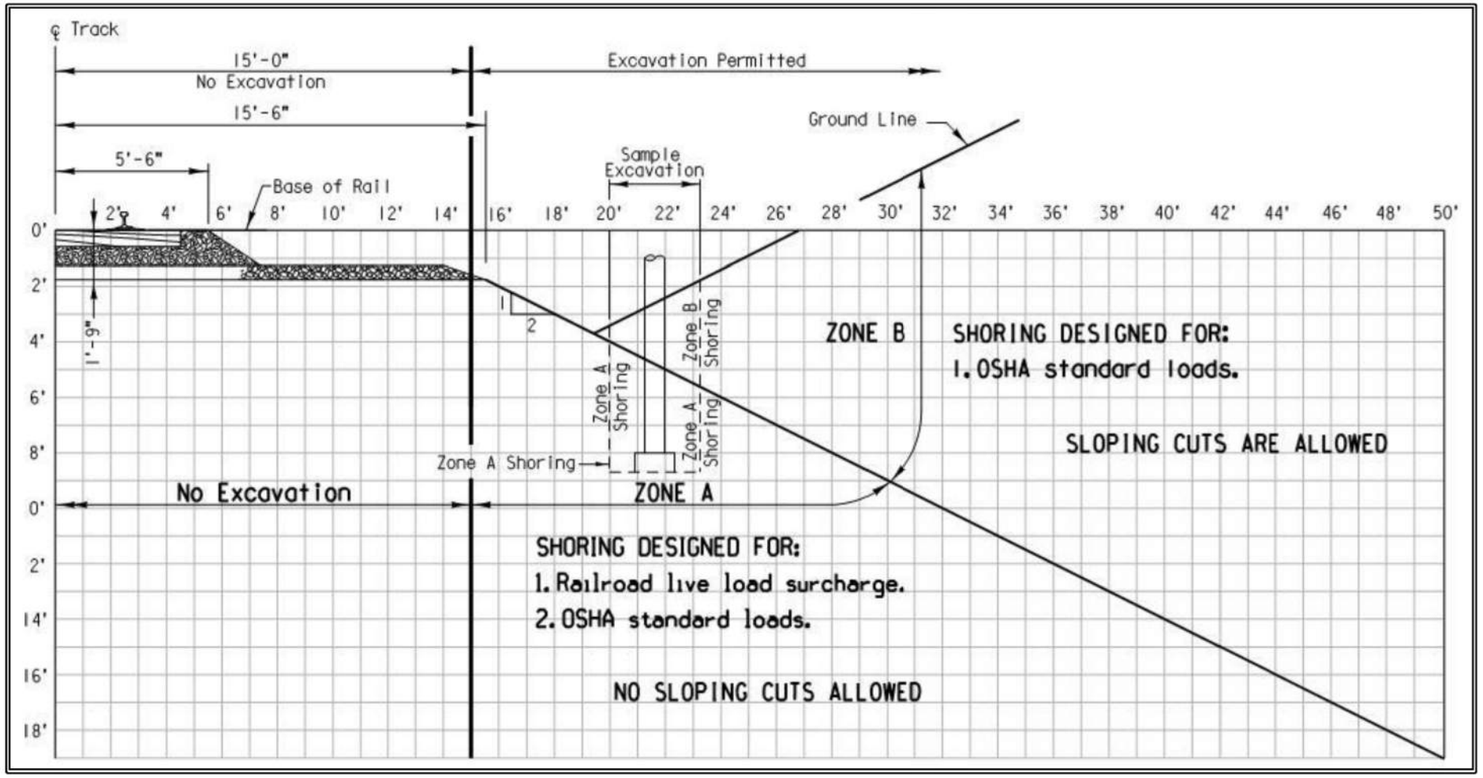


General Excavation Zones

Source: UPRR Guideline for Temporary Shoring, 2021

Railroad General Notes:

Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the railroad's ditches and/or drainage structures.

The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the railroad prior to construction.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the railroad.

All shoring systems that impact the railroad's operations and/or supports the railroad's embankment shall be designed and constructed per current railroad guidelines for temporary shoring.

All demolitions within the railroad's right-of-way and/or demolition that may impact the railroad's tracks or operations shall be in compliance with the railroad's demolition guidelines.

Erection over the railroad's right-of-way shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

All construction phasing that may impact the railroad operations shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

False-work clearances shall comply with minimum construction clearances.

All permanent clearances shall be verified before project closing.

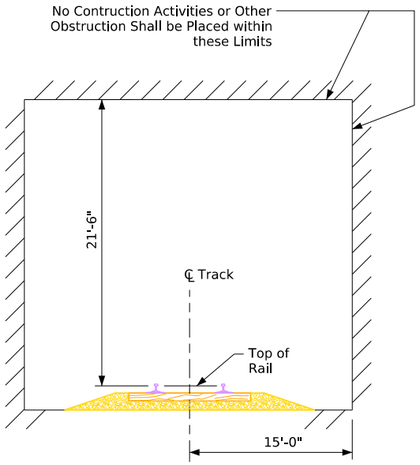
For railroad coordination please refer to the railroad coordination requirements as part of special provisions.

General Shoring Notes:

All dimensions are measured perpendicular to track.

Prior to commencing any work, the Contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The Contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system to comply with UPRR Guidelines for Temporary Shoring.

For excavations which encroach into Zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the State of Iowa.



Minimum Construction Clearance Envelope

(Normal to Railroad)

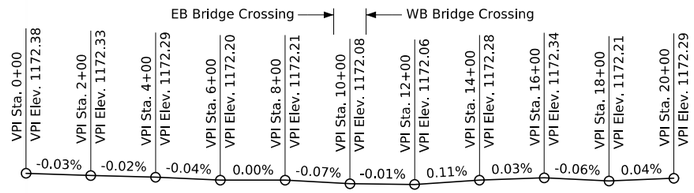
Top of Rail Elevations

(Stations Increase with Milepost Increase)

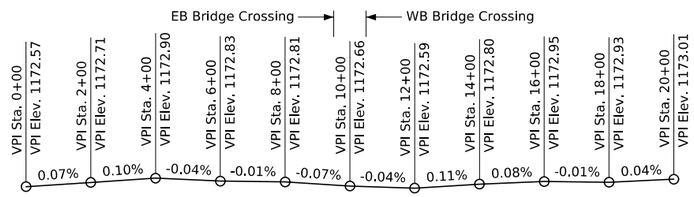
Main Line

Alignment: Left Rail		Alignment: Right Rail	
Station	Elevation	Station	Elevation
0+00	1172.38	0+00	1172.57
1+00	1172.38	1+00	1172.62
2+00	1172.33	2+00	1172.71
3+00	1172.33	3+00	1172.87
4+00	1172.29	4+00	1172.90
5+00	1172.21	5+00	1172.82
6+00	1172.20	6+00	1172.83
7+00	1172.20	7+00	1172.85
8+00	1172.21	8+00	1172.81
9+00	1172.15	9+00	1172.79
①10+00	1172.08	①10+00	1172.66
11+00	1172.05	11+00	1172.58
12+00	1172.06	12+00	1172.59
13+00	1172.16	13+00	1172.80
14+00	1172.28	14+00	1172.80
15+00	1172.35	15+00	1172.98
16+00	1172.34	16+00	1172.95
17+00	1172.32	17+00	1172.86
18+00	1172.21	18+00	1172.93
19+00	1172.24	19+00	1172.93
20+00	1172.29	20+00	1173.01

①Existing Track Sta. 10+00



Left Rail Profile



Right Rail Profile

UPRR General Notes & Shoring Details

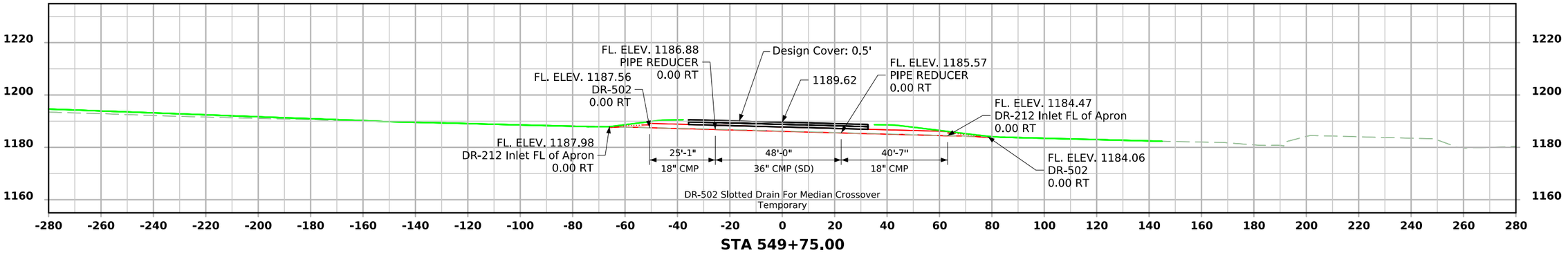
Revised 07-2019: For UPRR, Changed Horizontal Distance of Minimum Construction Clearance Envelope to 15'-0" (Was 12'-0").
Revised 03-2022: Updated "General Excavation Zones" Detail and "General Shoring Notes" to Follow the "UPRR & BNSF Guidelines for Temporary Shoring, 2021".
Issued 12-2008.
MiscellaneousBridges.dgn - 1067 - This Sheet Re-Issued 11-2023. Sheet Format Update.

FILE NO. 32646	ENGLISH	DESIGN TEAM HNTB	BNSF & UPRR General Notes & Shoring	Standard Sheet 1067	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER V.5	

2:27:35 PM 9/27/2024 mmaresko pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\2403001022\Bridge\BRPrelim\SHT_24030180_HNTB_129_021331_Z06.dgn

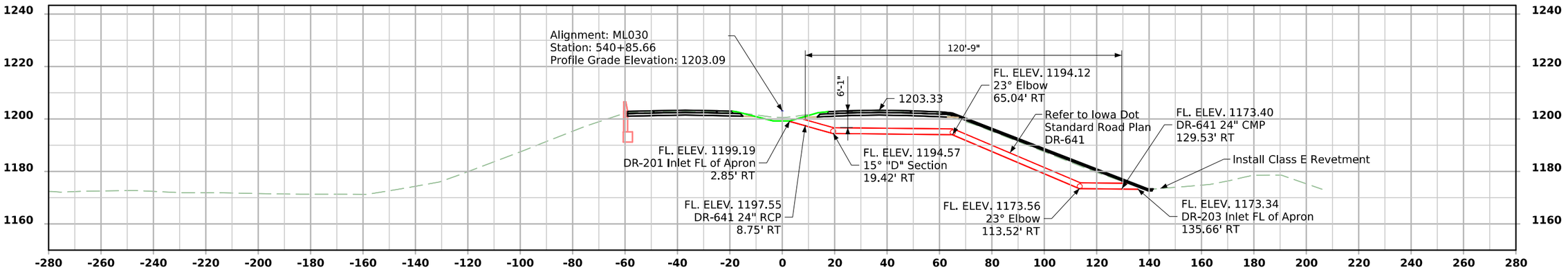
US 30

Refer to Iowa Dot Road Design Detail 531-02 for Median Crossover.
Refer to Iowa Dot Standard Road Plan DR-502 for Slotted Drain for Median Crossover.
Construct during Stage 1.



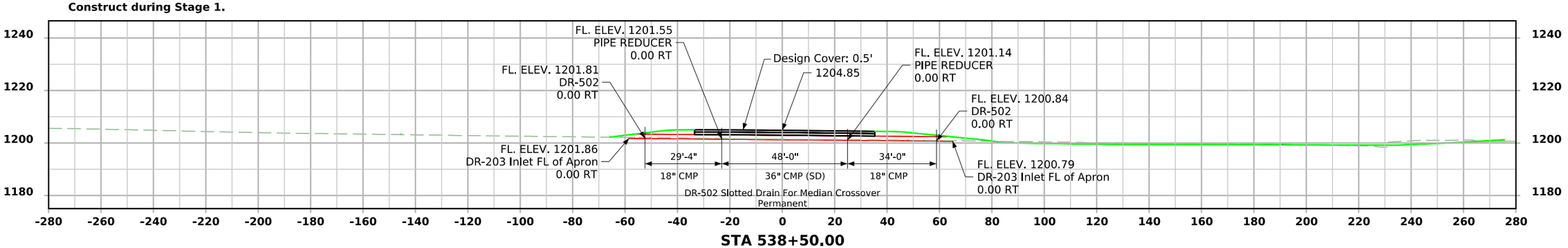
STA 549+75.00

Refer to Iowa Dot Standard Road Plan DR-641.
Construct during Stage 3.



STA 540+85.66

Refer to Iowa Dot Road Design Detail 531-02 for Median Crossover.
Refer to Iowa Dot Standard Road Plan DR-502 for Slotted Drain for Median Crossover.
Construct during Stage 1.



STA 538+50.00

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER VW.1

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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
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Existing	
(0)	Existing Pavement
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
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 Substrata
(48)	Broken Weathered Substrata
(3)	Core Out Substrata
(203)	Existing Pavement Substrata
(6)	Loam Substrata
(80)	Rock Substrata
(4)	Select Sand Substrata
(3)	Shale Substrata
(10)	Topsoil Substrata
Unsuitable / Waste	
(3)	Unsuitable Type A
(13)	Unsuitable Type B
(11)	Unsuitable Type C
(3)	Waste

NOTES:

Text

NOTES:

Text

CROSS SECTIONS
LEGEND AND INFORMATION SHEET

(COVERS SHEET SERIES W)

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER W.1

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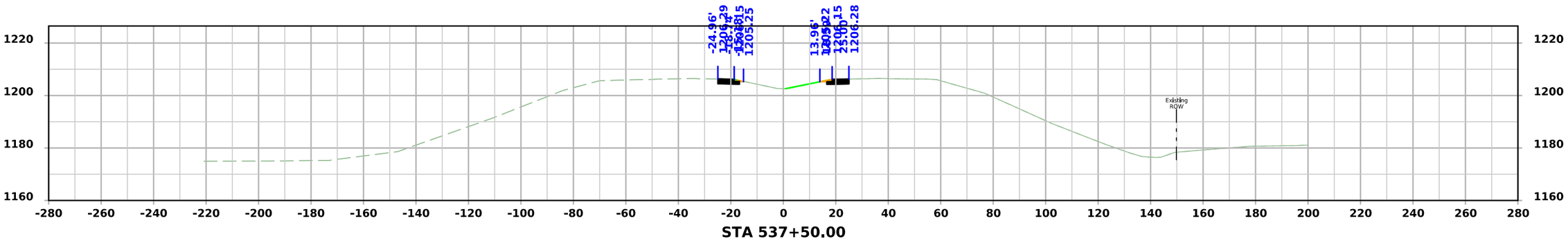
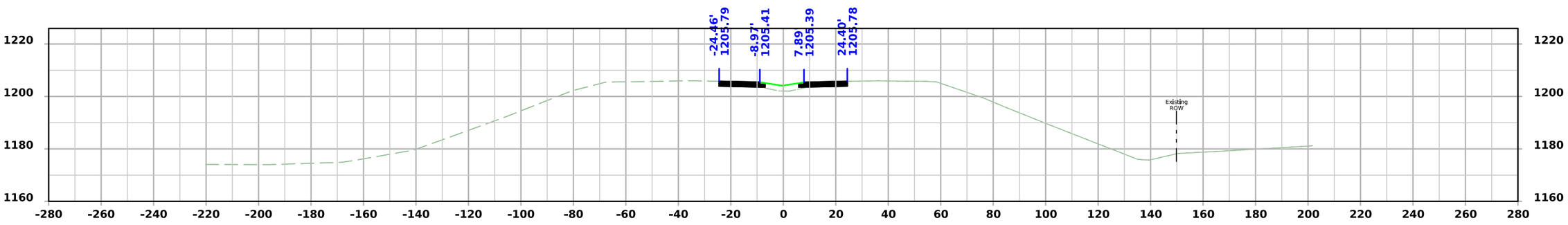
US 30



STA 537+50.00



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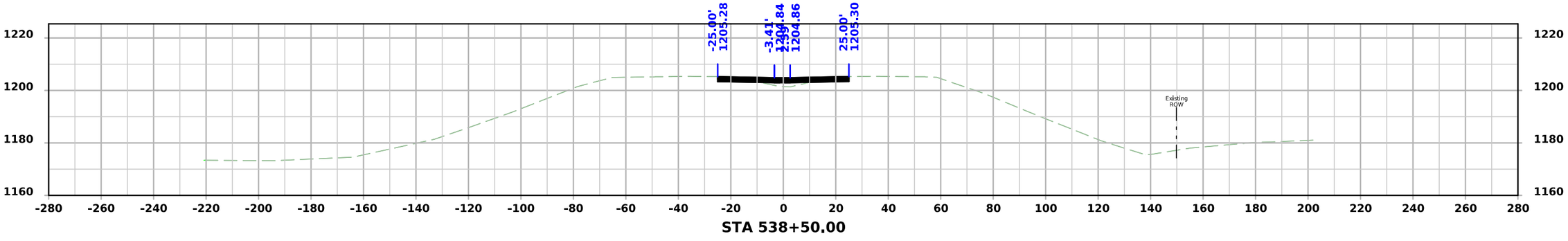

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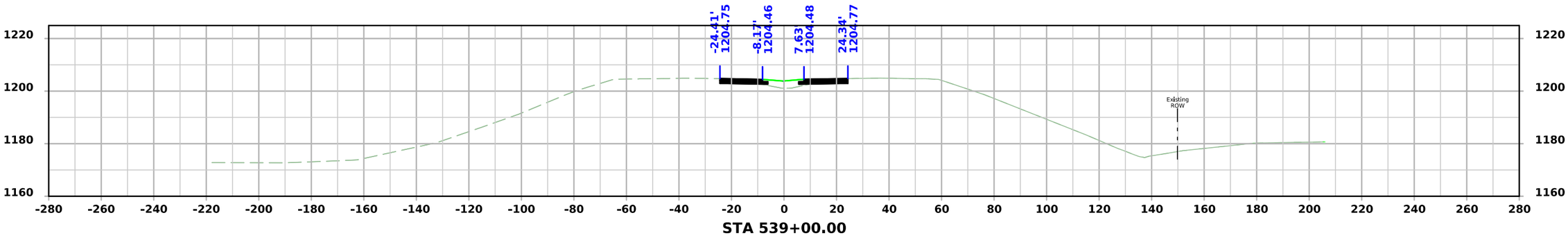

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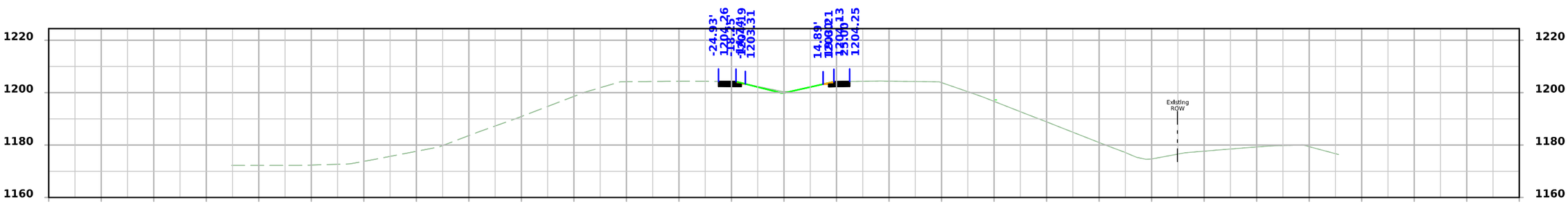

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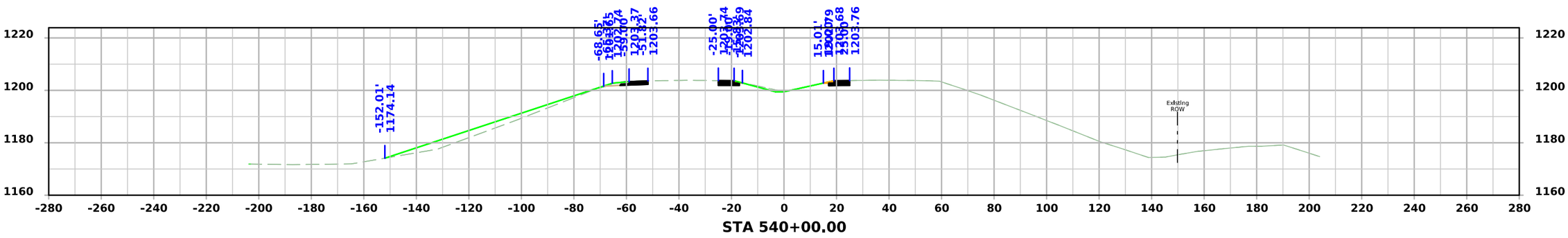

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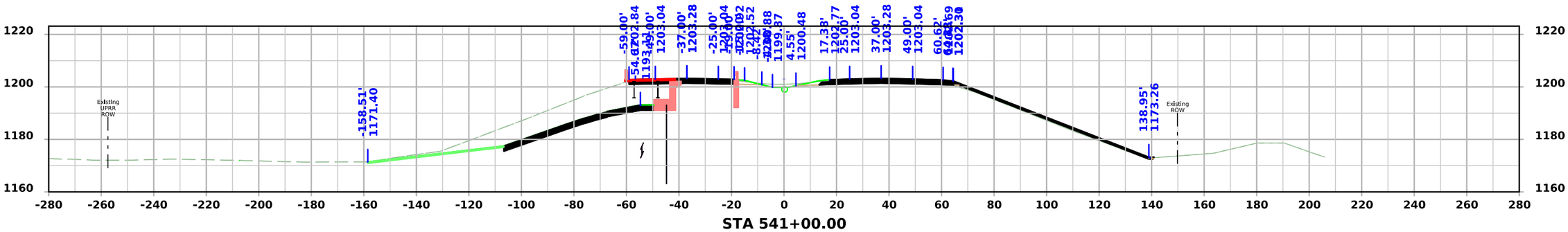
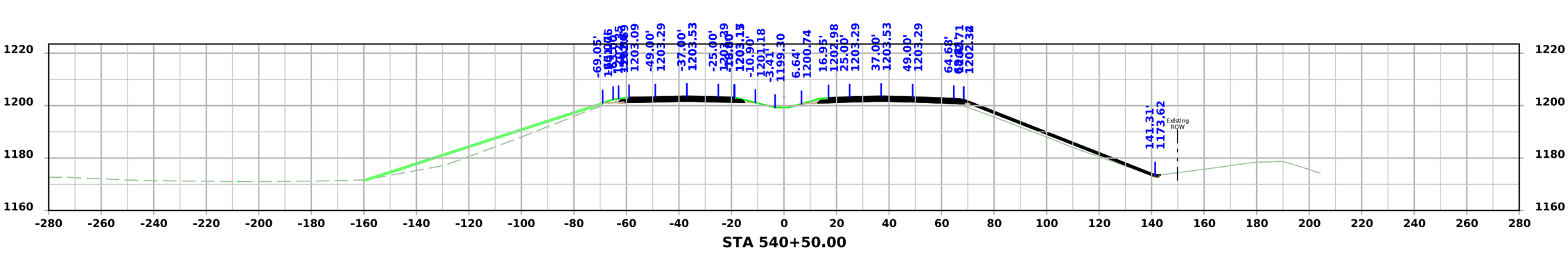
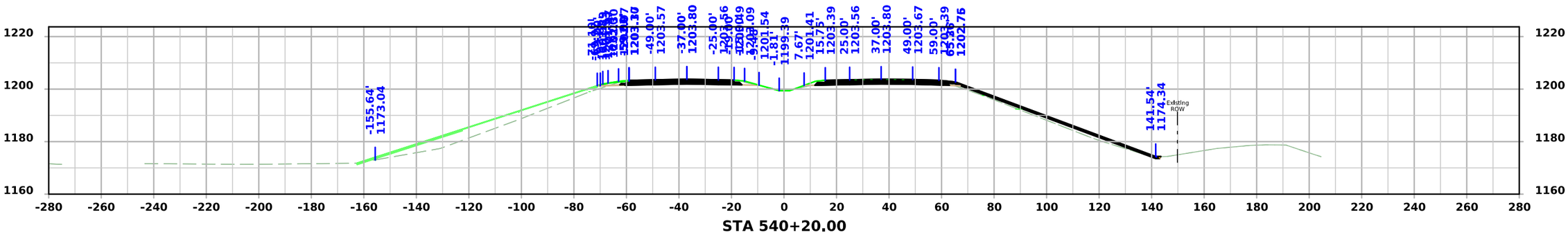
US 30







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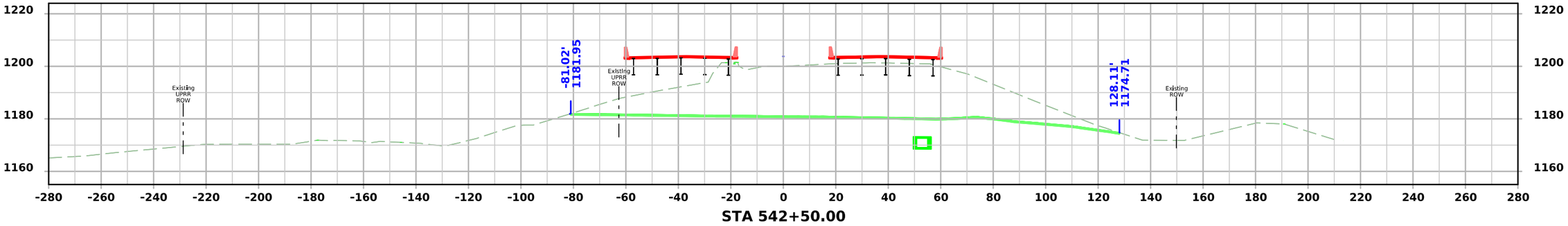
US 30



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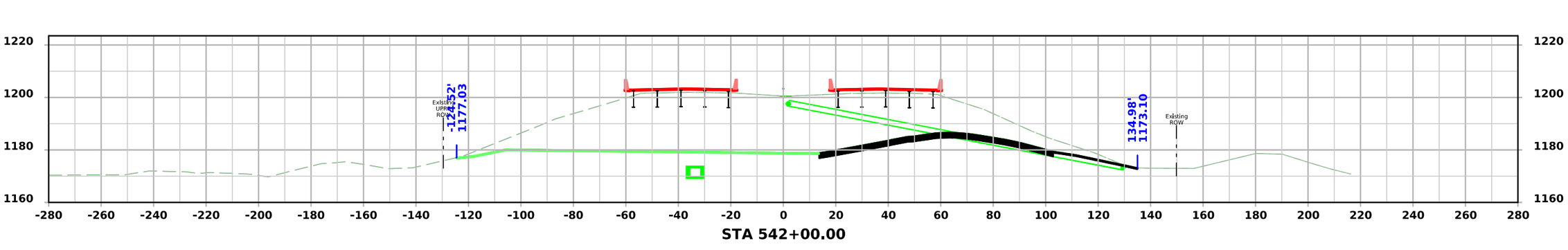

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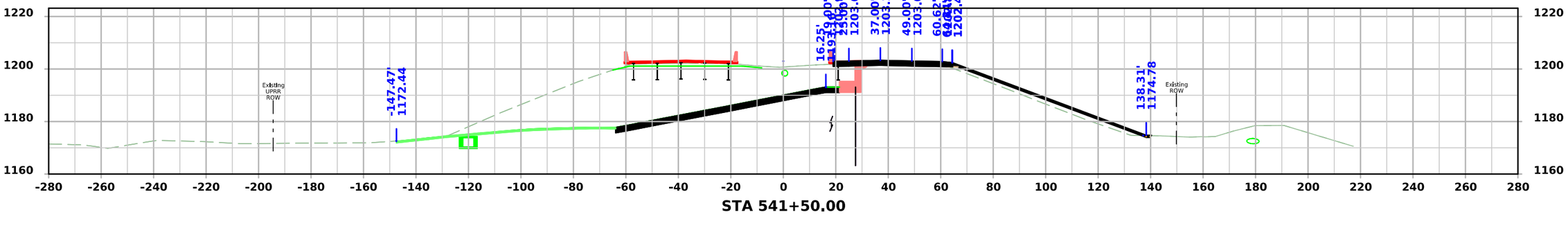

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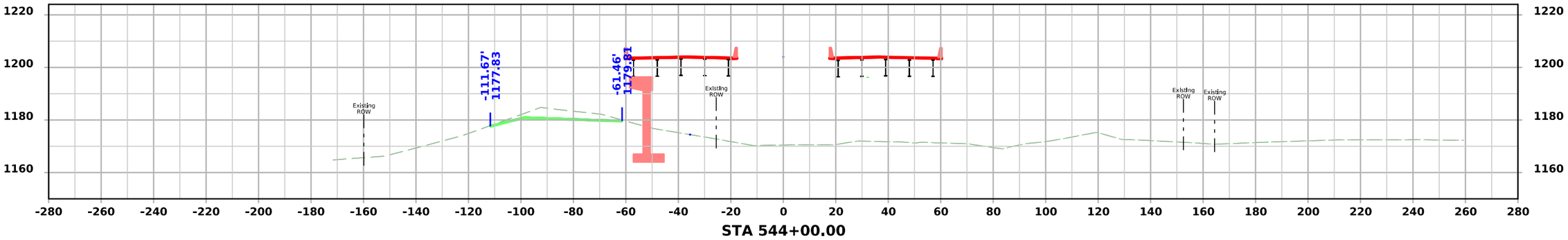
US 30



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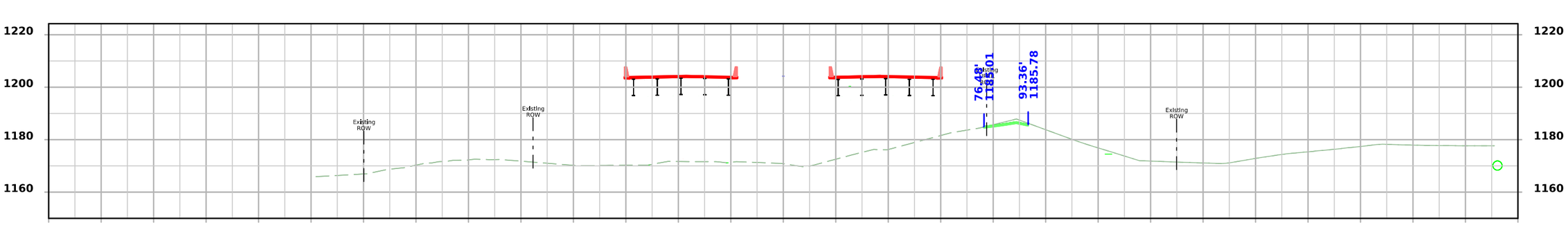

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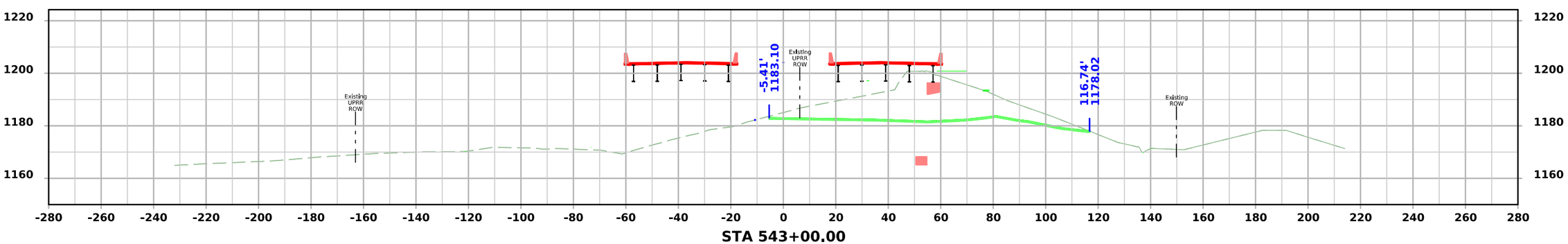

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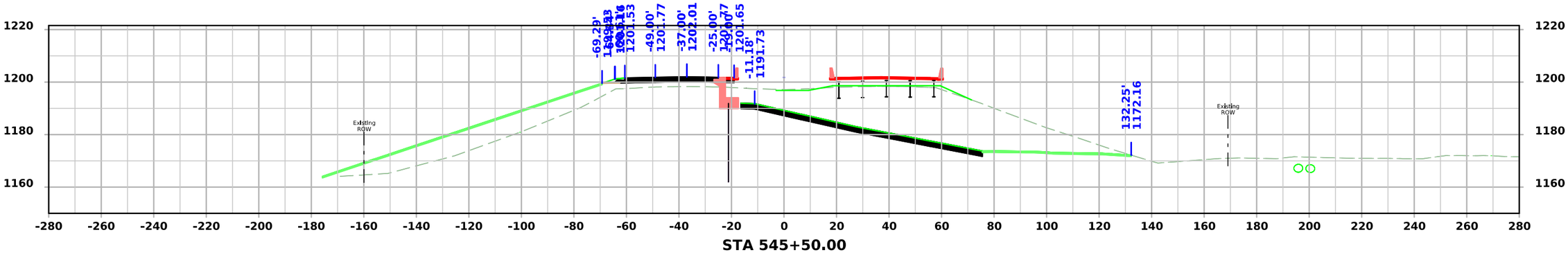
US 30



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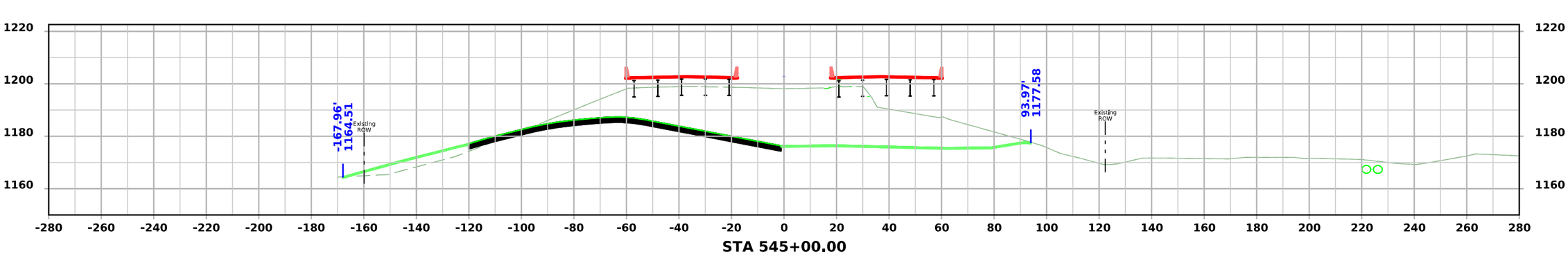

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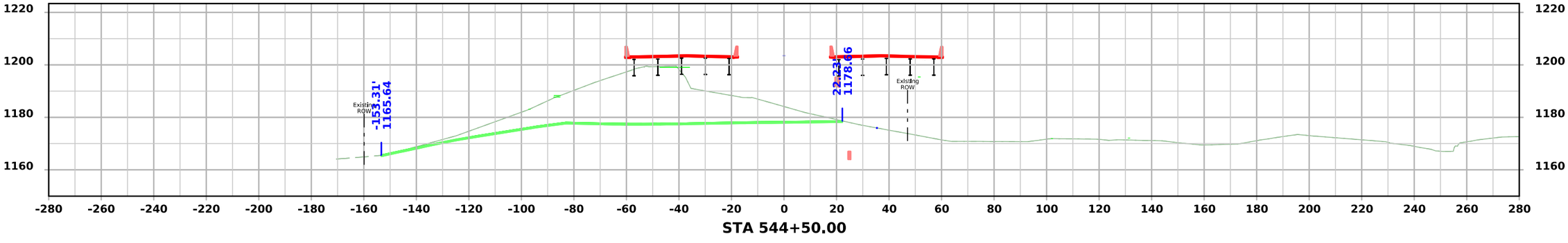

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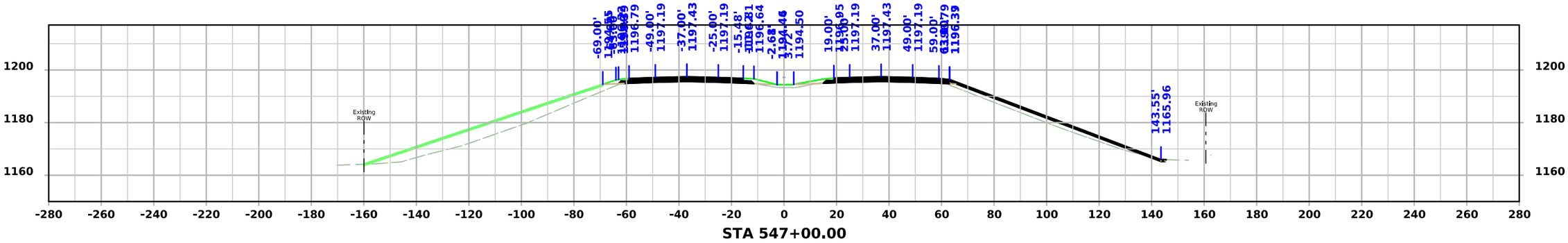
US 30



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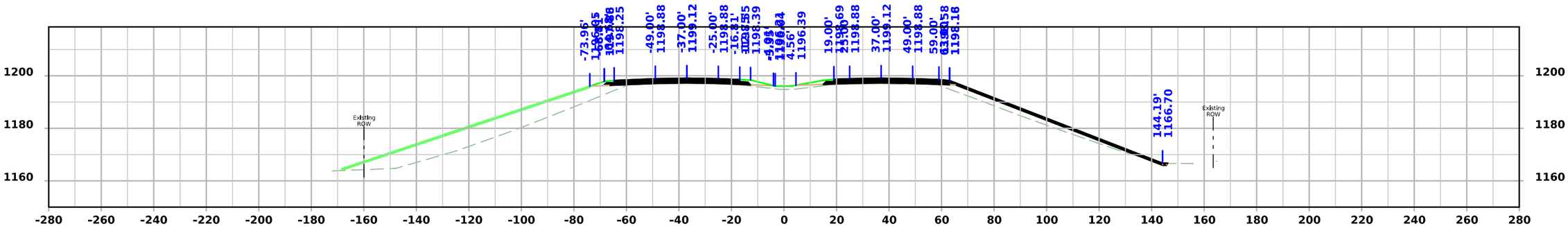

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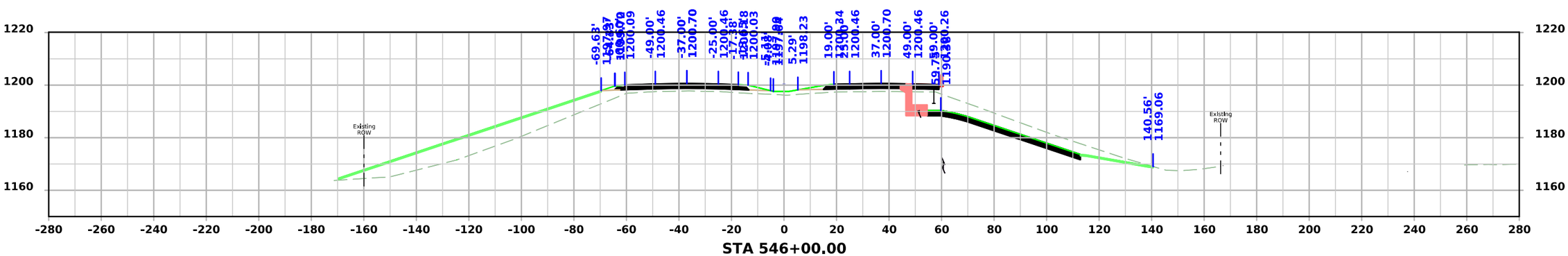

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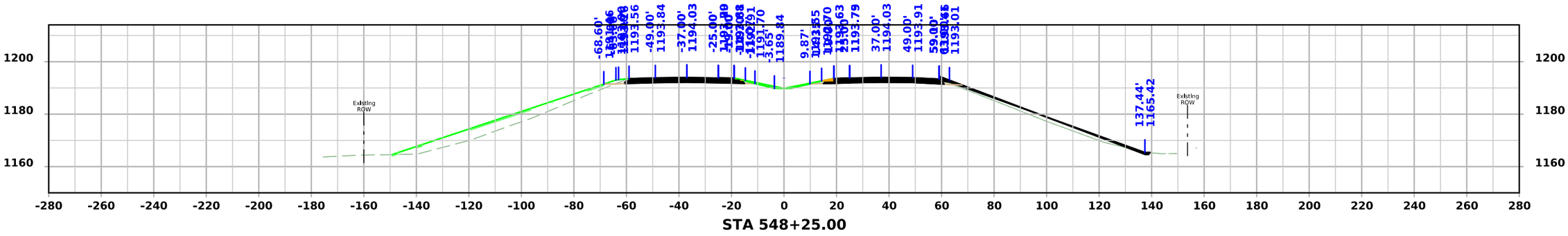

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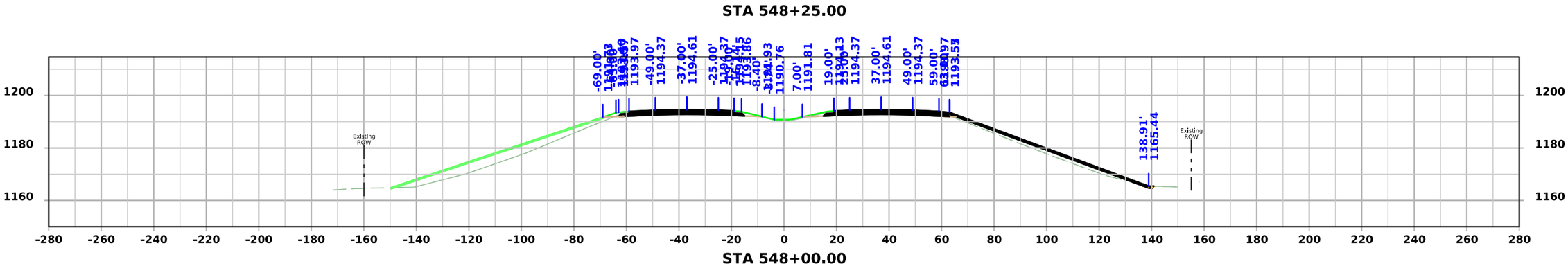

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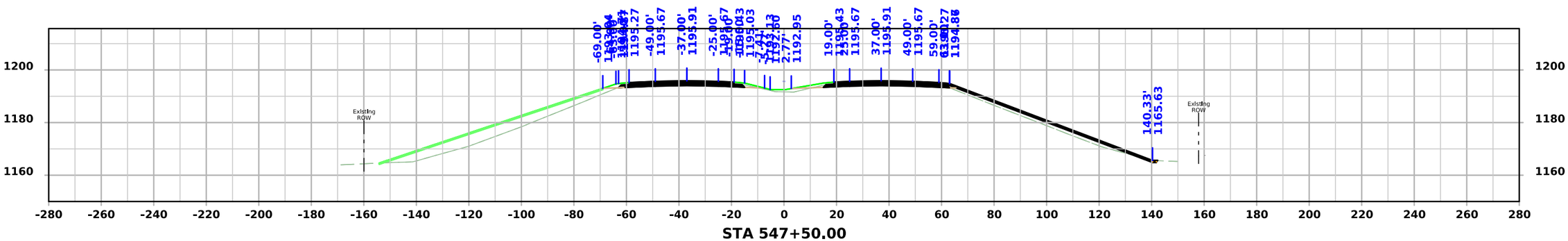

STA 547+50.00

FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER W.9

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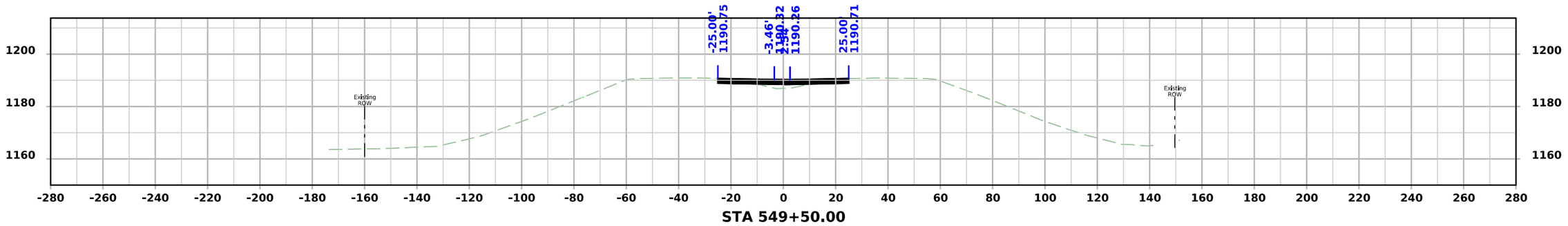
US 30



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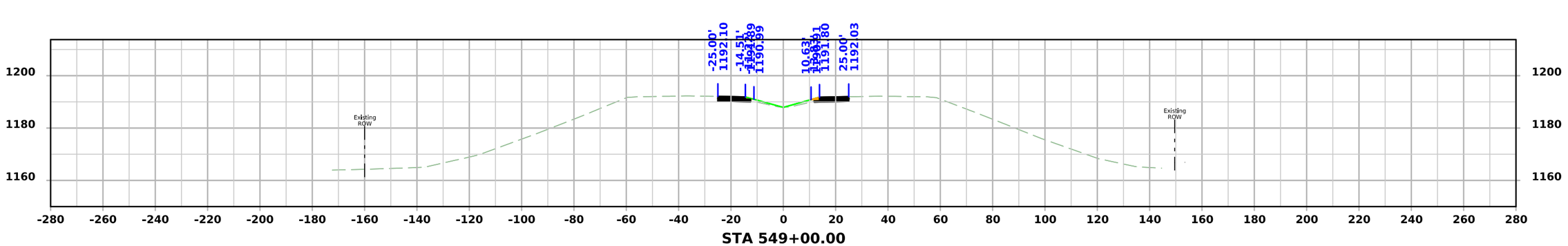

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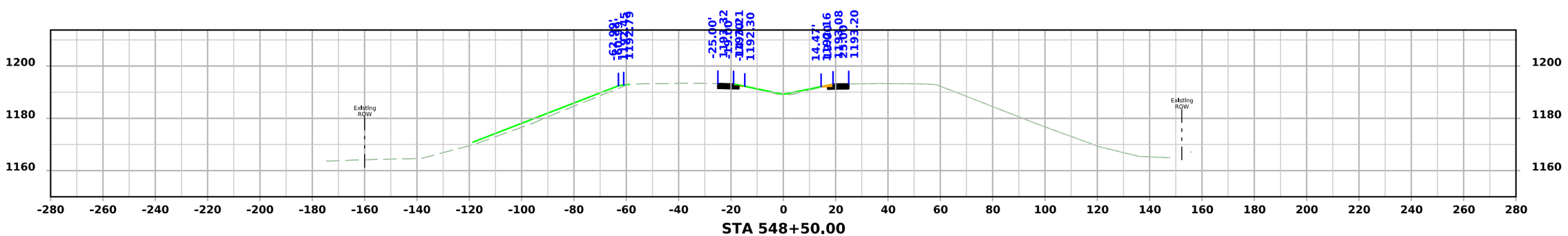

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FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER W.10

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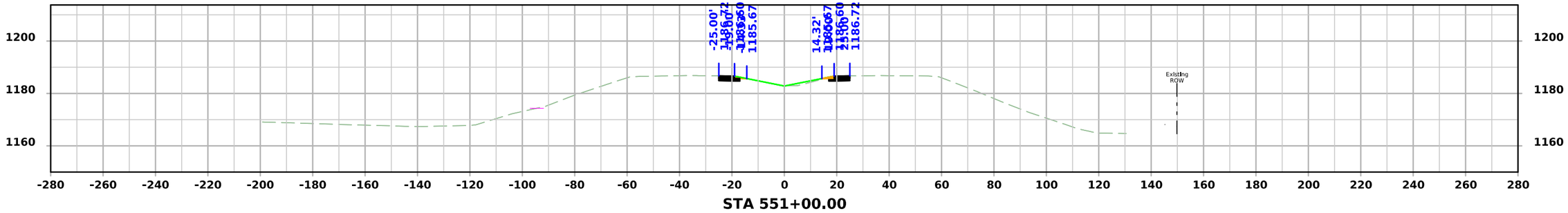
US 30



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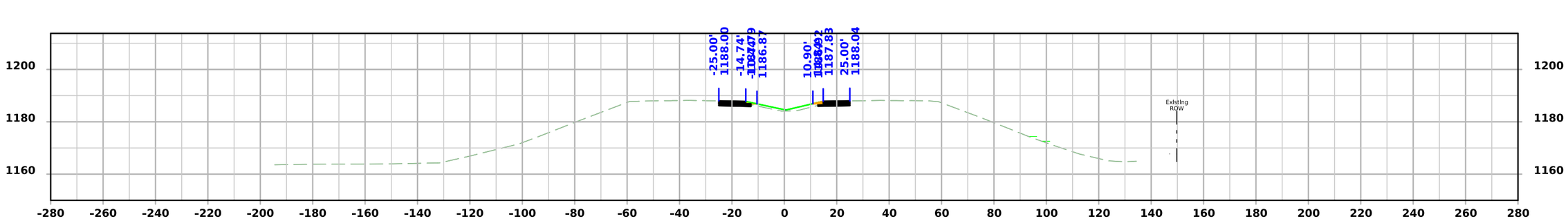

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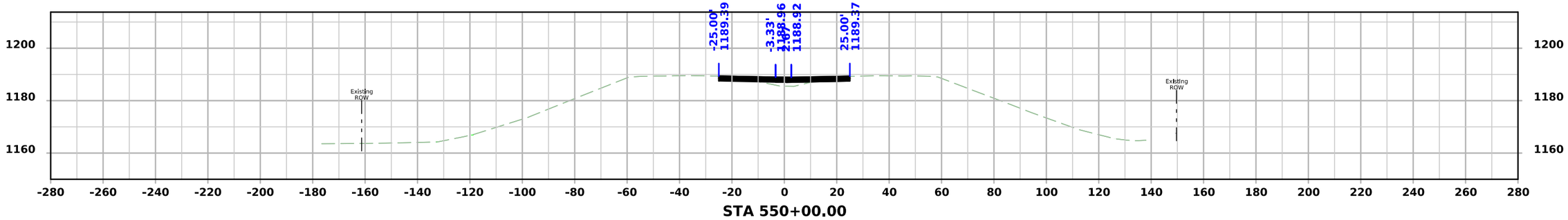

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FILE NO. 32646	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	CRAWFORD COUNTY	PROJECT NUMBER BRF-030-2(180)--38-24	SHEET NUMBER W.11

11:14:52 AM 9/27/2024 bcharipar pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\2403001022\Design\CADD_Files\Cross_Sections\XS_US030_24030180Z06.dgn