BRIDGE REPLACEMENT
BRF-006-7(94)--38-52

LETTING DATE
NOV 2027

JOHNSON COUNTY

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
* A.1	Title Sheet
A.2	Location Map Sheet
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A.10 - 12	Project Design Criteria
A.13	Field Exam Notes/Questions
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 - 5	US 6
G Sheets	**Survey Sheets**
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G.4	Horizontal Control Tab. for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
J.1	Traffic Control Plan
J.2	511 Travel Restrictions
J.3	US 6 Detour Route
V Sheets	**Bridge and Culvert Situation Plans**
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W Sheets	**Mainline Cross Sections**
* W.1	Cross Sections Legend & Symbol Information Sheet
* W.2 - 17	Mainline Cross Sections
	* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
JOHNSON COUNTY
BRIDGE REPLACEMENT
US 6 OVER IOWA RIVER 0.2 MI E OF
E JCT IA 1 IN IOWA CITY

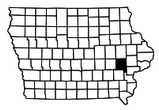
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

REVISIONS

	TOTAL
	46
PROJECT IDENTIFICATION NUMBER	
21-52-006-010	
PROJECT NUMBER	
BRF-006-7(94)--38-52	
R.O.W. PROJECT NUMBER	



DESIGN DATA URBAN		
2027 AADT	35,400	V.P.D.
2047 AADT	37,800	V.P.D.
20 -- DHV	–	V.P.H.
TRUCKS	3	%
Total Design ESALs	–	

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

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - Date: MAY 30, 2025

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER A.1

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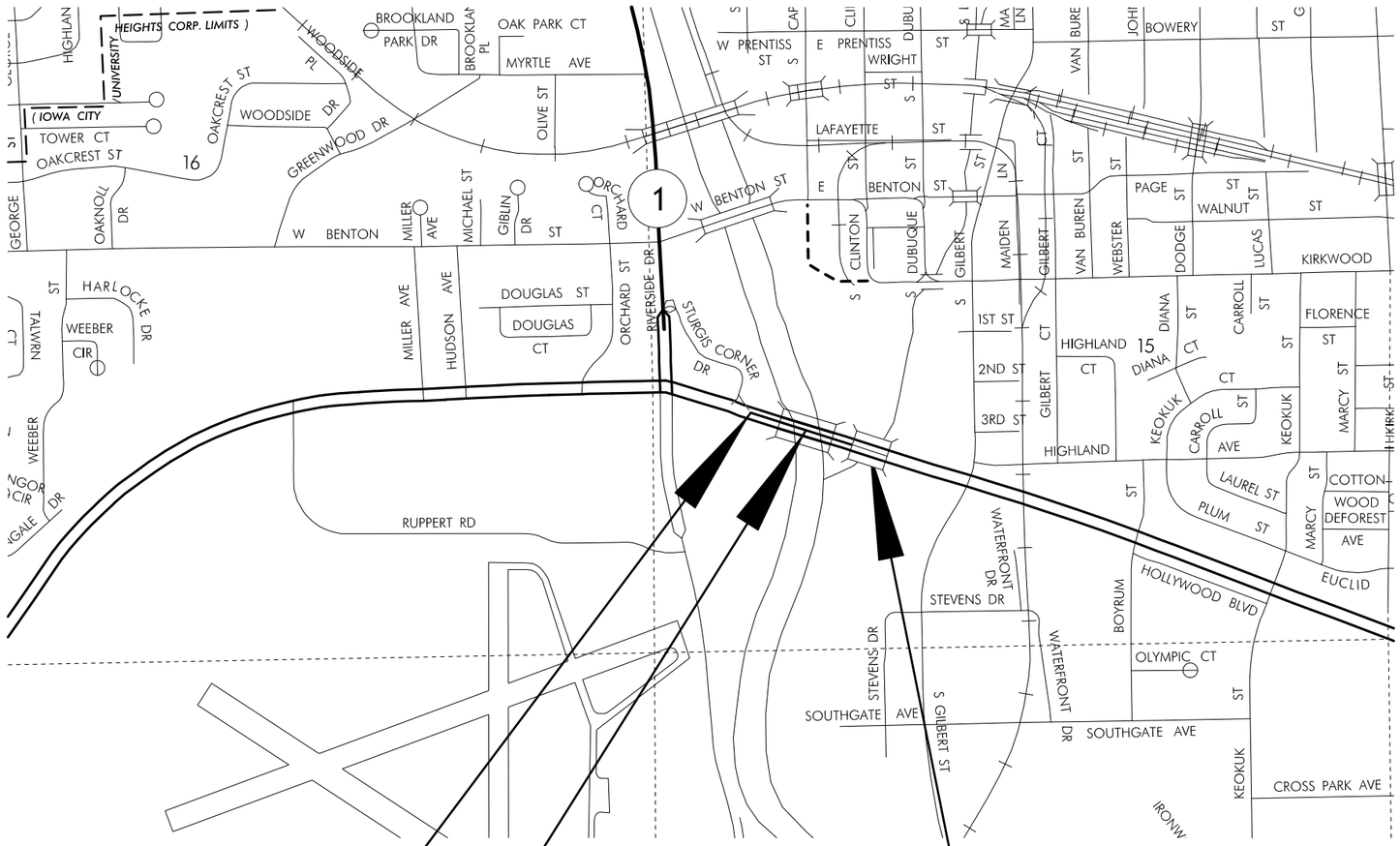

BEGIN CONSTRUCTION
STA 146+50

BRIDGE
US 6 OVER IOWA RIVER
STA 150+65.90
MAINT. # 5252.2S006
FHWA# 031570 (EXST)
FHWA# 031571 (NEW)

END CONSTRUCTION
STA 155+28.78

LOCATION MAP SCALE
0 1 2 3
Miles

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER A.2	

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IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 6 **DATE:** July 15, 2024

ATTENTION: Jim Schnoebelen **PROJECT:** Johnson County
BRF-006-7(94)--38-52
Project Code: 21-52-006-010

FROM: Ryan Brown / Jimmy Deng (Jacobs)

BUREAU: Design

SUBJECT: Project Concept Statement; (Draft, D0)

This project involves the replacement of the U.S. 6 bridge (Maint. No 5252.2S006, FHWA 031570) over Iowa River.

A concept review was held on December 4, 2023. Those present included Jimmy Deng and Denilson Saavedra from Jacobs Consultants; Jeff Bacon, Jimmy Ellis, Matthew Erickson, Steven Flockhart, Kevin Patel, Hollie Richey, Christine Schwake, Mark Sloppy, and Brock Struecker from Iowa DOT.

The alternative considered was:

1. Replace with a 366' x 56' pretensioned prestressed concrete beam bridge **(Estimated bridge cost $6,758,190)**

Alternative 1 is the preferred alternative. Additional right of way may be required. Traffic will be maintd by a detour.

The Draft Project Concept Statement was sent out for review and comments with concerns to be resolved by Friday, December 1, 2023. Comments received during the review period have been considered and resolved.

This project is recommended for construction in FY 2028. The Design Bureau will coordinate plan preparation with assistance from the Bridges and Structures Bureau.

RB/JD
Attach.
cc.

C. Purcell
M. Dell
M.A. Swenson
S. Majors
D.L. Newell
W. A. Sorenson
A. A. Welej
B. Hofer
S. J. Gent
T. Jerman
J. Vortherms
T. Lovan
R. Meyer
M. E. Khoda
J. Ellis
J. Tibodeau
S. Shea
S. Flockhart
C. Cutler
M. Erickson
S. Sloppy
M. J. Kennerly
J.S. Nelson
J. Schnoebelen
A. Poole
B. Bradley
E. C. Wright
J. Harris
G. Karssen
S. Anderson
K. K. Patel
M. Todsen
L. Su
J. Hauber
K. Olson
S. Seivert
D. Alvarez
J. R. Phillips
G. Morrell
H. Richey
M. Harle
K.D. Nicholson
M. Nop
D. E. Sprengeler
K. Brink
J. W. Lasser-Webb
M. E. Ross
C. C. Poole
B. E. Azeltine
D. Stokes
R. Harris
M. Van Dyke
B. Dolan
S. Sersland
S. Neubauer
N. Abuissa
J. Bacon
B. Struecker
M. Wood
A. Simonson
C. Schwake

FINAL PROJECT CONCEPT STATEMENT

U.S. 6 Bridge over Iowa River

Johnson County
BRF-006-7(94)--38-52
Project Code: 21-52-006-010
Maint. No. 5252.2S006
FHWA No. 031570

Highway Division
Design Bureau

July 16, 2024

I. STUDY AREA

A. Project Description

This project involves the replacement of the U.S. 6 bridge (Maint. No 5252.2S006, FHWA 031570) over Iowa River.

The alternative considered was:
1. Replace with a 366' x 56' pretensioned prestressed concrete beam bridge **(Estimated bridge cost $6,758,190)**

Alternative 1 is the preferred alternative.

B. Need for Project

This is a 320' x 56' steel beam bridge that was built in 1957 and was overlaid in 1979 and 2012. The overlay has reached the end of its service life. The deck is thin and has many areas of leaching cracks, hollows, and spalling with exposed steel. The substructure has cracking and spalling with exposed steel and hollows. Due to the overall condition of the bridge, a replacement is recommended.

Figure 1: Right profile, 2022

Figure 2: Curb rail section loss, 2022

Figure 3: With route, 2022

Figure 4: Against route, 2022

C. Present Facility

The existing structure is a 320' x 56' steel beam bridge that was built in 1957 and was overlaid in 1979 and 2012.

U.S. 6 in the project area is a 4-lane divided roadway with a 4' raised median consisting of 24' wide, 10" thick PCC pavement with 8' outside shoulders and normal foreslopes, constructed in 1957. ACC resurfacing with 1-¾" type "B" surface course was accomplished in 1979. HMA resurfacing with 1.5" surface course and 1.5" intermediate course, was completed in 2012.

D. Traffic Estimates

The 2027 construction year and 2047 design year average daily traffic estimates are 35,400 ADT with 3% trucks and 37,800 with 3% trucks, respectively.

E. Sufficiency Ratings

U.S. 6 is classified as an "Area Development" route and is a maintenance service level "B" roadway. The Bridge Condition Index is 64.2 and the Bridge Condition Rating is "Fair".

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

To Be Completed

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 – Replace with a bridge

The exisitng 320' x 56', continous I-beam bridge will be replaced with a four span, 366' x 56', prestressed pretentioned concrete beam bridge 30 degrees R.A.

The typical cross section adjacent to the bridge will consist of a 68' wide pavement with 2-12' lanes each direction, 8' outside shoulders, and a 4' raised median.

This bridge will be constructed on the exisitng horizontal alignment with an approximate 10" vertical grade raise at the bridge abutments. New bridge approaches (68' wide) will be constructed. The existing guardrail will be replaced with new guardrail on the northeast and southwest quadrants of the bridge. Roadway reconstruction will occur for approximatly 250' either side of the bridge to account for the vertical grade raise. Class 10 will be placed to account for the vertical grade raise and new guardrail blisters. Class E revetment will be placed under the bridge for slope protection. New bridge end drains will be constructed on both ends of the bridge.

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

Additional right of way may be required for this project.

Traffic will be maintained during construction of this project by an off-site detour.

Johnson County
BRF-006-7(94)--38-52
PIN: 21-52-006-010

Bridge Items	**Estimated Costs**
New Bridge	$3,524,850
Complex Bridges	261,100
Bridge Removal	212,790
Cofferdam for Peir Construction	150,000
Revetment	270,000
Bridge Aesthetics	132,570
Mobilization - 10%	441,880
M & C - 20%	998,640
Bridge Costs	**$5,991,830**

Roadway Items	**Estimated Costs**
Bridge Approaches	$238,000
Paved Shoulder	29,050
New Pavement	157,760
Granular Subbase	33,045
Raised Median	21,400
Longitudinal Grooving	15,550
Bridge End Drain	24,800
Guardrail Removal	2,060
New Guardrail	14,600
Pavement Removal	52,050
Safety Closure	400
Right of Way	10,000
Traffic Control - 3%	17,960
Mobilization - 5%	29,940
M & C - 20%	119,740
Roadway Costs	**$766,360**
Project Total	**$6,758,190**

B. Staging Analysis

Traffic will be maintained with an off-site detour.

C. Recommendations

It is recommended that the present structure be replaced with a new bridge, as described in Alternative No. 1.

D. Construction Sequence

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

E. ADA Accommodations

There is a trail located in front of the east abutment that will not be impacted by the construction. A 10' wide sidewalk will be constructed on the north side of the bridge. The proposed bridge may also need to accommodate a new trail in front of the west abutment.

F. Special Considerations

The ABC Rating Score is 55, however it is not preferred due to the need for a roadway raise.

A 10' wide sidewalk will be constructed on the north side of the bridge due the prevalence of pedestrian/bike accommodations in the area.

Waterway is not on a state water trail or paddling route.

Special survey will be obtained for the upstream and downstream buildings on the west bank of the river channel and ponds on the east bank of the river channel. Also the low beam superstructure elevations for the upstream and downstream bridges.
Right of Way may be required for this project.

The Location and Environment Bureau has not reviewed this project at this time.

This bridge is Eligible for National Register of historical structures.

If utilities exist underneath the bridge, they should be attached underneath the new bridge deck.

G. Program Status

Site data has been developed by the Design Bureau. This project is listed in the 2024-2028 Iowa Transportation Improvement Program, with $10,000 programmed for right of way in FY 2028, and $9,548,000 for replacement in FY 2028. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

RB/JD

Bridge Bureau Attachment for Concept Statement

Date: 12/8/2023
By: Silviu Nicolae, Ryan Brown, and Jimmy Deng
Location: Iowa River 0.2 mi E of E Jct IA 1 in Iowa City

County: Johnson
Phase No.: BRF-006-7(94)--38-52
Project Code: 21-52-006-010

1. Regulatory/Coordination
   a. Iowa DNR Flood Plain permit = Yes
   b. Iowa DNR Sovereign Lands permit = Yes. The Iowa River from the Mississippi River to the west line of Section 7, Township 81 North, Range 11 West, Iowa County. A request will be submitted to the DNR as part of the Joint Application Permit.
   c. Local Record of Coordination = No
   d. Flood Insurance Study = Yes. Zone AE Panel 19103C0195E, eff. 2/16/2007
   e. Drainage District = No, per Iowa GIS shapefile (December 2020)
   f. Corps of Engineers Section 408 = No, however, a request will be submitted to the DNR as part of the Joint Application Permit
   g. State Water Trail or Paddling Route = Yes, per RIDB Stream WebApp.
   h. Historic Structure = Yes, Eligible for National Register per Structure Inventory and Appraisal
   i. Federally owned land in vicinity = No
   j. USGS or Iowa Flood Center (IFC) gage or sensor impacted? No

2. Hydrologic/Hydraulic Analysis/RIDB Dataset
   a. Design discharges determined = Yes. Stream gage/effective FIS and Regulated flow frequency Study
   b. Hydraulic analysis done = Not done at the concept phase, however, use preliminary FIS results for the issues.
   c. Riverine Infrastructure Database (RIDB) = Yes. The updated data set will be required for the B1 event.
   d. Project development hydraulic analysis will comply with the RIDB Guidelines at a minimum.

3. Structure/Roadway Layout Considerations
   a. Widen the bridge sidewalk to meet the five-foot minimum width requirement per Iowa DOT LRFD Bridge Design Manual 1.5.1. Note that a 10' wide sidewalk is anticipated on the north trail of the bridge due to the prevalence of pedestrian/bike accommodations in the area.
   b. A roadway profile grade raise is anticipated to keep the existing low chord for the proposed bridge.
   c. Reconstruct bridge approach pavement both approaches.
   d. Install a new guardrail on the right side of each approach.
   e. Construct new paved shoulders at each guardrail installation. Pave non-guardrail shoulders through the approach pavement to match existing paved shoulder widths.
   f. Construct a granular shoulder behind the guardrail wide enough to match the bridge sidewalk width.

g. Some roadway embankment construction is anticipated in the NW and SE quadrants because of the wider bridge.
h. Existing plans indicate no Shallow rock. However, the existing plans indicate hard limestone may be present at a depth of about 30 ft.
i. No Channel shift is recommended.

4. Special construction issues

a. No Shallow bedrock is present. However, the existing plans indicate hard limestone may be present at a depth of about 30 ft.
b. It is desirable for new structure foundations to avoid existing foundations when possible.
c. The existing trail in front of the East Abutment will need to be temporarily closed during the bridge construction.

5. Special survey = Yes-See below

6. Aesthetic enhancements = Yes. TBD later and requires esthetic studies on it.

7. Other

a. Due to the high traffic volume (2027 program year traffic ADT = 35,446), staged construction by keeping one lane in each direction will likely cause significant traffic delays and is not considered the ideal option. Offsite Detour is preferred for this bridge. The proposed detour plan is to close Highway 6 between Riverside Drive and Gilbert Street. The detour route will include 1.3 miles south on Gilbert Street to McCollister Boulevard, 0.9 miles west to Old Highway 218, and 1.2 miles north to Highway 6. Four existing traffic signals on the detour route will likely need timing adjustments for the shift in traffic volumes because of the detour. The proposed detour route will be re-evaluated and confirmed with the city.
b. See the special survey needed below.
c. The proposed bridge may need to accommodate a new trail in front of the West Abutment.
d. If utilities/conduits exist underneath the bridge, they should be attached to the bridge underneath.
e. A relocation survey is needed due to presence of mussels in the Iowa River.

Special Survey:

The upstream and downstream buildings are on the west bank of the river channel and ponds are on the east bank of the river channel. Also, the upstream bridge on W Benton Street and the downstream railroad bridge. Both bridges may affect hydraulics. Obtain foundation and low opening elevations for the upstream buildings, and low beam superstructure elevations for the upstream and downstream bridges.

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER A.8	

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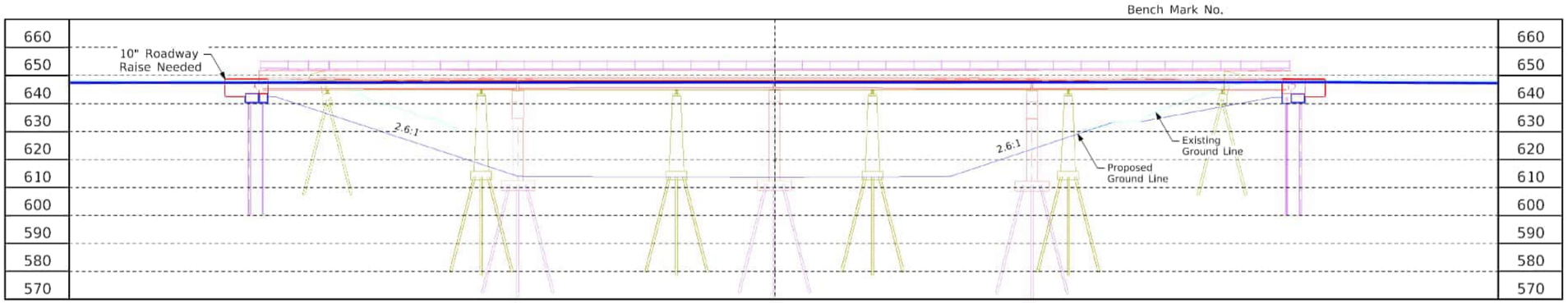
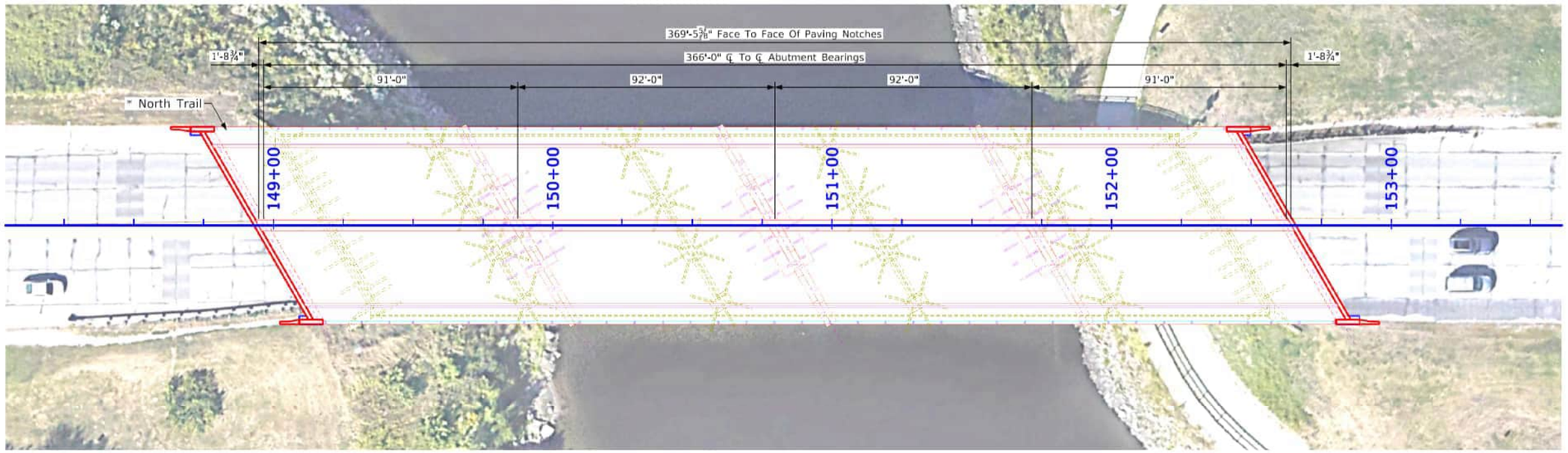
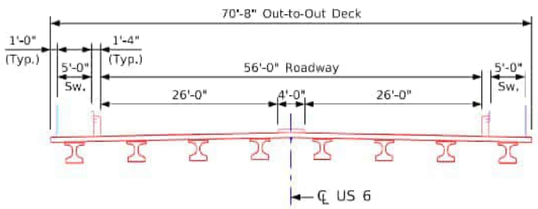


Longitudinal Section Along ℄ US 6



Situation Plan



Typical Bridge Section
(Looking East)

* A 10' Wide Sidewalk Is Anticipated at the North Trail

N

0 20
Scale In Feet

Location

US 6 Over Iowa River
In City of Iowa City
T-79N R-6W
Section 15
West Lucas & East Lucas Townships
Johnson County
FHWA No. 031571
Bridge Maint. No. 5252.2S006
Latitude 41.646659°
Longitude -91.537068°

Design For 30° Skew (RA)

366'-0" X 56'-0" Pretensioned Prestressed Conc. Beam Bridge

91'-0" End Spans 92'-0" Interior Spans

Situation Plan

STA. 150+79.50 (US 6) October 2023

Johnson County
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0227 Design Sheet No. 1 of 1 FHWA No. 031571

Progress Plans, Not For Construction

FILE NO. 32494	ENGLISH	DESIGN TEAM Jacobs	Johnson COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER V.1	

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FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER A.9	

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Roadway	**US 6**			
PIN Number	21-52-006-010		**Submittal Date**	05/15/25
Project Number	BRF-006-7(94)--38-52			**Approval Date**
District	District 6	**Assistant District Engineer**	Tibodeau	
County	JOHNSON	**or**		
Route	US 6	**Office Director**		
Location	Iowa River 0.2 mi E of E Jct IA 1 in Iowa City			
Work Type	Bridge Replacement			
Segment Manager				
Designer	Jacobs			

Design Manual Section 1C-1
Last Updated: 04-29-19

Urban Multilane Roadways (Urban Arterials)

Design Element		Preferred	Acceptable Criteria	Project Values
Design speed (mph)		The anticipated posted speed limit	30	35
Maximum superelevation rate (Refer to Section 2A-2)		4%	8%	N/A
Design lane width (ft)		12	11	12
Full depth paved width (ft)	Outside lane	Design lane width + curb and gutter unit or 12 feet for roadways with shoulders	Match design lane width	12
	Inside lane(s)	Design lane width + curb and gutter unit. 12' for roadways without a curb and gutter unit	Match design lane width	12.625
Right turn lane or an auxiliary lane (ft)		12	10	12'
Left turn lane (ft)	With raised or painted median	12 ft + median	10 ft + median	N/A
	With depressed median	12	10	N/A
Two-way left turn lane (ft)		14	11	N/A
Parking lane width (ft)		10	7	N/A
Pavement cross-slope (on tangent sections)	Through lanes	2%, However, when adjacent lanes slope in the same direction, increase slope by 0.5% per lane up to 3%	1.5% minimum, 3% maximum	2%
	Auxiliary and turn lanes	3%	3% maximum	2%
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)	Shoulders	4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
	Curb and gutter units	Match pavement cross-slope	6% maximum	2%
	Parking lanes	1% greater than pavement cross-slope	6% maximum	N/A
Curb type (Refer to Section 3C-2)	Design speed ≤ 45 mph	6-inch standard	any shape	6-inch Standard
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	10:1 for 4' then 6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3:1
	Curbed roadways	2%	not steeper than 3:1	2% for 2' then 3:1
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	3:1
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	N/A
Median width (ft) (Refer to Section 3E-1)		See Section 3E-1	0	4
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths or design lane width + 3 ft each side in curb and gutter section	design lane widths + effective shoulder widths or curb-to-curb width in curb and gutter section**	N/A
	Bridge length > 200 ft	design lane widths + effective shoulder widths or design lane width + 3 ft each side in curb and gutter section	design lane widths + 4 ft offset each side for roadways with shoulders or curb-to-curb width in curb and gutter section**	92.67'
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft left and right of the design widths	56'
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	N/A
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	N/A
	Over railroad	23.3	23.3	N/A
	Sign truss and pedestrian crossings	17.5	17	N/A
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	
Level of Service		C	D	

*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exception required)
** If travel lanes are less than 12 ft wide contact the Methods Section for assistance.

Design year ADT =	37,800

Design Manual Section 1C-1
Last Updated: 04-29-19

Effective Shoulder Width and Type for Multilane Arterials

Preferred (Values shown in feet)					Acceptable (Values shown in feet)					Project Values
	Rural Roadways		Urban Roadways			Rural Roadways		Urban Roadways		
Auxiliary lanes or turn lanes with shoulders	6		6		Auxiliary lanes or turn lanes with shoulders	6		0		0
Turn lanes with curbs	6		See Section 3C-2		Turn lanes with curbs	6		0		0
Expressways	Outside		Median Side		Expressways	Outside		Median Side		
	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	6	6	Routes where bicycles are to be accommodated	8	4	4	4	Outside: 8' Paved Median Side: 0 (match existing)
On roadways approaching urban areas (due to increased bike traffic)	10	10	6	6						
On all curves with a superelevation rate of 7.0% or greater	10	10	6	6	On all other Expressways (Multilane Arterials)	8	0*	4	4	
On roadways with design year ADT > 6500 vpd	10	6	6	6						
On all other Expressways (Multilane Arterials)	10	6	6	6						

*Requires safety edge-See Section 3C-6
Curbs should be located beyond the outer edge of the effective shoulder width in rural areas
Refer to Section 3C-2 for curb offsets in urban areas

Notes:

Roadway Design Speed (mph) =	35

Design Manual Section 1C-1
Last Updated: 05-26-17

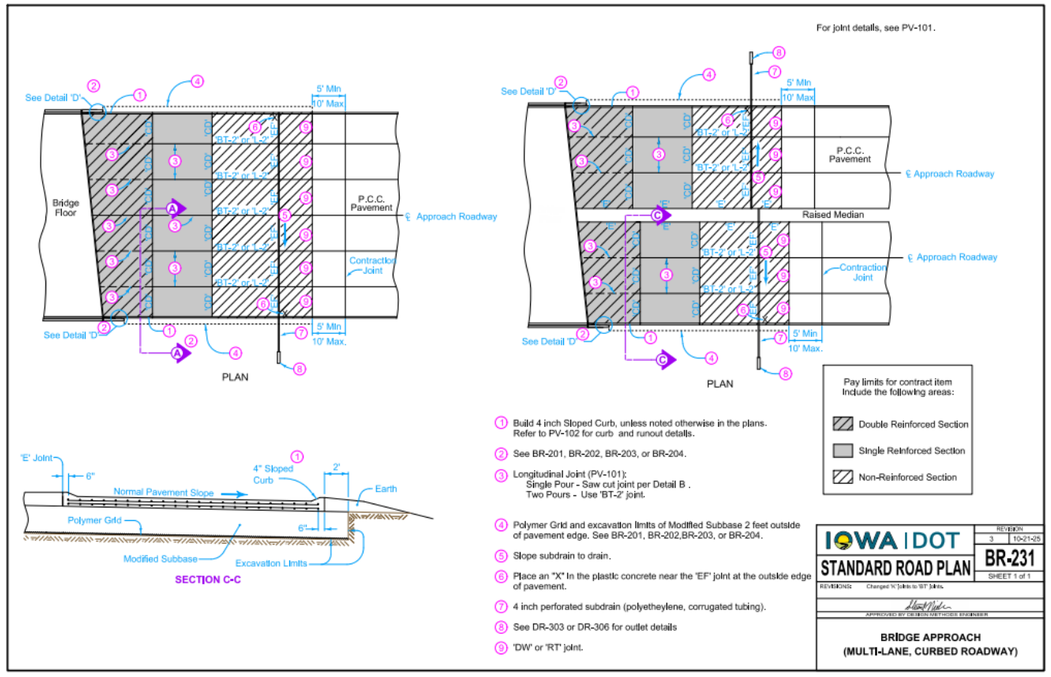
Design Criteria for Low Speed Roadways

Design Element			Preferred Criteria, Design Speed, mph					Acceptable Criteria, Design Speed, mph					Project Values
			25	30	35	40	45	25	30	35	40	45	
Stopping sight distance (ft) (Refer to Section 6D-1)			155	200	250	305	360	155	200	250	305	360	250
Minimum horizontal curve radius (ft) and superelevation rate (Refer to Sections 2A-2 and 2A-3)	Method 2 superelevation and side friction distribution	e = 4% max	See Table 10 in Section 2A-3					--					371
	Method 5 superelevation and side friction distribution	e_{max} = 6%	144	231	340	485	643	144	231	340	485	643	N/A
		e_{max} = 8%	--	--	--	--	--	134	214	314	444	587	N/A
Minimum vertical curve length (ft) (Refer to Section 2B-1)			75	90	105	120	135	75	90	105	120	135	105
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		12	19	29	44	61	12	19	29	44	61	29
	sag vertical curves	roadways without fixed-source lighting	26	37	49	64	79	26	37	49	64	79	49
		roadways with fixed-source lighting	26	37	49	64	79	14	20	27	35	44	49
Minimum gradient (%)	(Refer to Section 2B-1)		0.5					0.3% with a curb, 0.0% without a curb					0.5
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	5					--	9	8	8	7	5
		Rural roadways						--	--	--	6	6	N/A
Clear zone			See "Preferred Clear Zone" table in Section 8A-2					See "Acceptable Clear Zone" table in Section 8A-2					16

FIELD EXAM NOTES/QUESTIONS

1. Discuss 4 ft median design.

2. Bridge Approach Pavement BR-231 - approach pavement designed with raised median separation?



3. Salvage and reinstall existing bridge signs? Contractor responsibility?

4a. Ongoing discussions between DOT and City on extent of trails to be included with this project. Any updates?

4b. Do we need to address vertical clearance for the existing trail at the east abutment?

5. Disposal of guardail? Pavement removal?

6. Historical bridge site - any updates from Cultural Resources?

FIELD EXAM NOTES/QUESTIONS

7. Any updates from LEB?

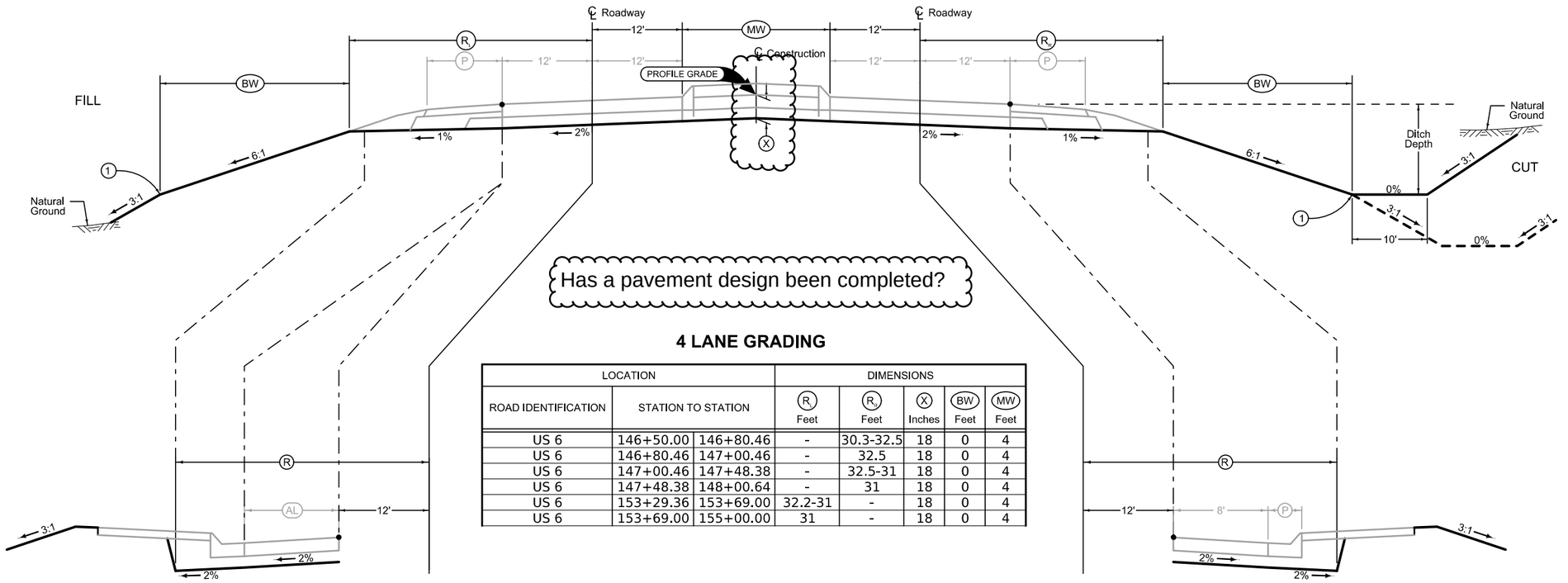
8. Any comments from Soils Design?

9. Preliminary Bridge design:

Should we add additional beam line or design non-standard beams for this bridge? We are showing 12 beam lines. The beam spacing is now exceeding the maximum standard beam spacing for BTB100.

- Max. standard spacing = 8'-0 3/8" (IADOT Standard Sheet 4765) (10 ksi concrete)
- Current Beam spacing with 3.5 ft overhang = 8'-1 7/8"

G_4D_Grade_Aux
Modified



4 LANE GRADING

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(R1) Feet	(R2) Feet	(X) Inches	(BW) Feet	(MW) Feet
US 6	146+50.00	146+80.46	-	30.3-32.5	18	0	4
US 6	146+80.46	147+00.46	-	32.5	18	0	4
US 6	147+00.46	147+48.38	-	32.5-31	18	0	4
US 6	147+48.38	148+00.64	-	31	18	0	4
US 6	153+29.36	153+69.00	32.2-31	-	18	0	4
US 6	153+69.00	155+00.00	31	-	18	0	4

Auxiliary Lane Grading

LOCATION			(R) Feet
ROAD IDENTIFICATION	STATION TO STATION		
US 6	146+50.00	147+90.64	28.3
US 6	147+90.64	148+00.64	28.3-27.7

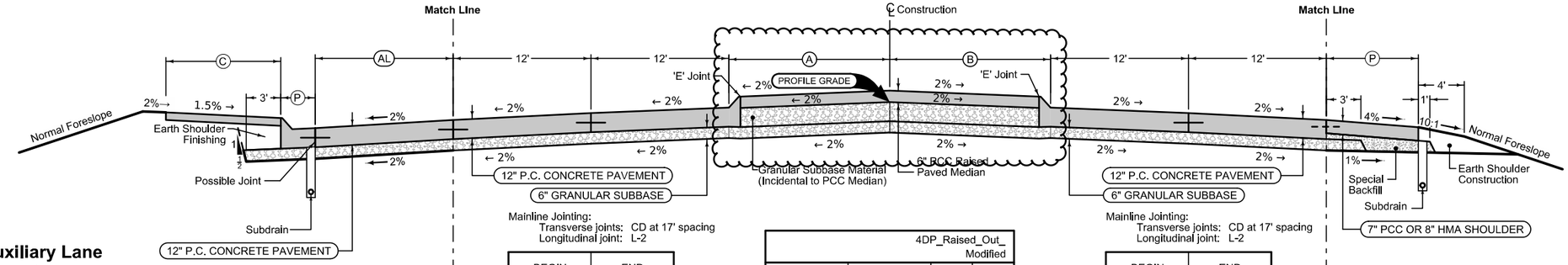
Curbed Shoulder Grading

LOCATION			(R) Feet
ROAD IDENTIFICATION	STATION TO STATION		
US 6	153+29.36	155+00.00	24.3

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.

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



Auxiliary Lane

Longitudinal joint: L or BT
Transverse joint: Match Mainline

4_AuxLane_PCC_ 04-15-25

Direction of Travel	BEGIN STATION	END STATION	(AL) Feet
WB	146+50.00	147+90.64	12
WB	147+90.64	148+00.64	12-11.3

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

BEGIN STATION	END STATION
146+50.00	148+00.64
153+29.36	155+00.00

4DP_Raised_Out_ Modified

BEGIN STATION	END STATION	(A) Feet	(B) Feet
146+50.00	148+00.64	2	2
153+29.36	155+00.00	2	2

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

BEGIN STATION	END STATION
146+50.00	148+00.64
153+29.36	155+00.00

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

4_P_ALT_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
EB	146+50.00	146+80.46	8

Paved shoulder alternates - PCC or HMA?

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : BT-2
Transverse: C at 17' spacing

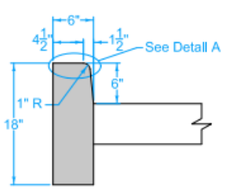
2_Curb_ 04-15-25

STATION TO STATION		(P) Feet	(C) Feet	Curb Type See PV-102
146+50.00	148+00.64	1.33	10	6" STD

4 ft Median Design

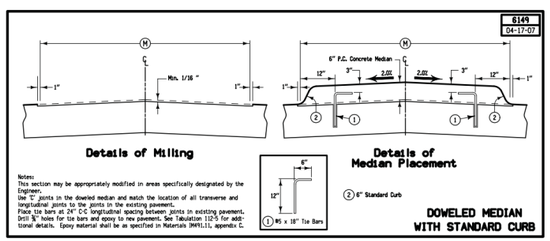
Standard curb and gutter widths put the joint in the wheel path. Two potential options:

1. Beam Curb for median curb



BEAM CURB*
*For short replacement sections, match existing curb profile

2. Doweled Median with Standard Curb - Design Detail 6149

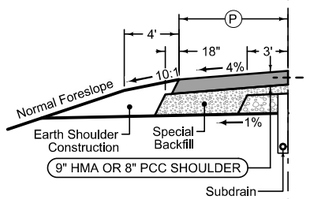


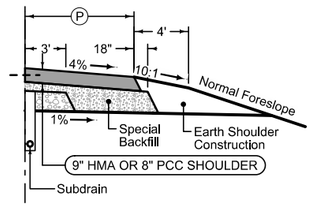
Paved Shoulder at Guardrail

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

4_P_Guard_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
WB	153+29.36	155+28.78	9.5



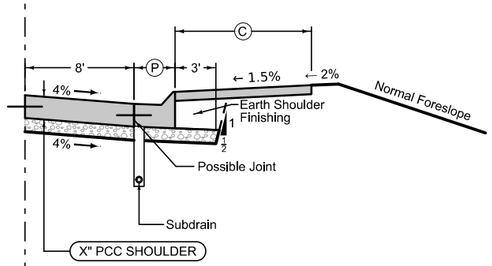


Paved Shoulder at Guardrail

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

4_P_Guard_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
EB	146+80.46	147+00.46	11.4
EB	147+00.46	147+48.38	11.4-9.5
EB	147+48.38	148+00.64	9.5



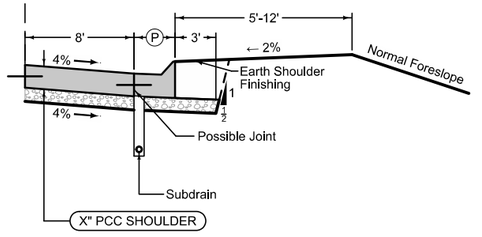
Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : BT-2
Transverse: C at 17' spacing

2_Curb_ 04-15-25

STATION TO STATION		(P) Feet	(C) Feet	Curb Type See PV-102
153+29.36	154+75.00	1.33	10	6" STD



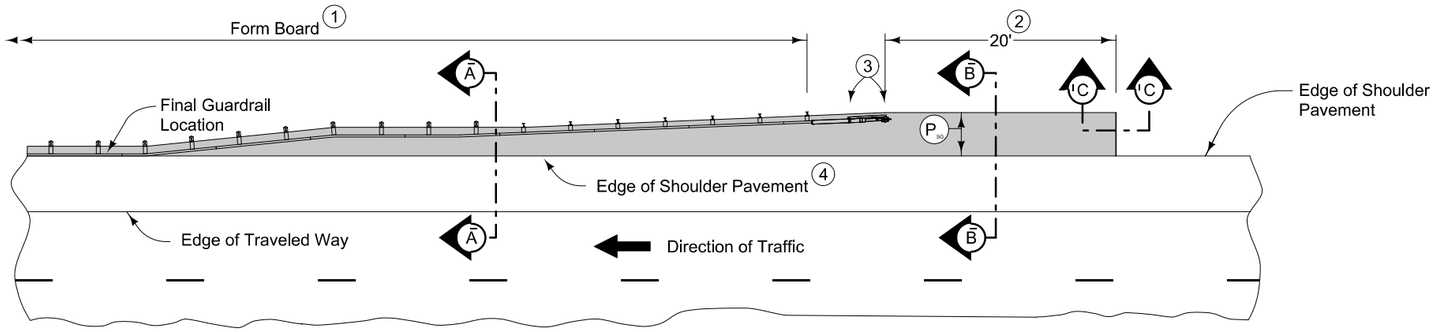
Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

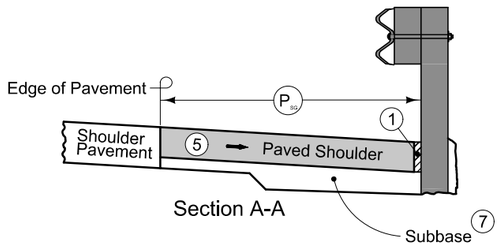
Single pour: L-2
Staged : BT-2
Transverse: C at 17' spacing

2_Curb_ 04-15-25

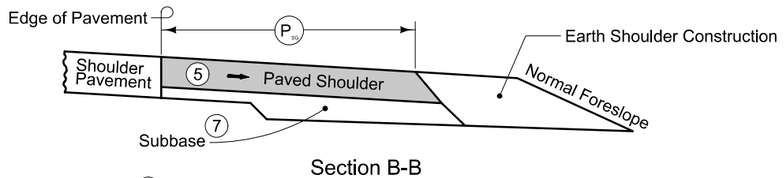
STATION TO STATION		(P) Feet	Curb Type See PV-102
154+75.00	155+00.00	1.33	6" STD



PLAN VIEW

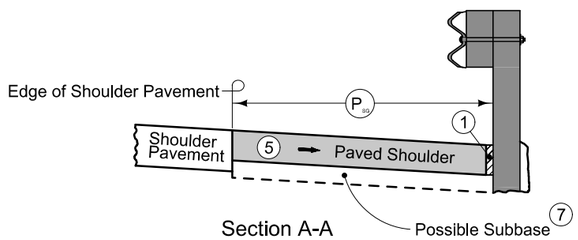


Section A-A

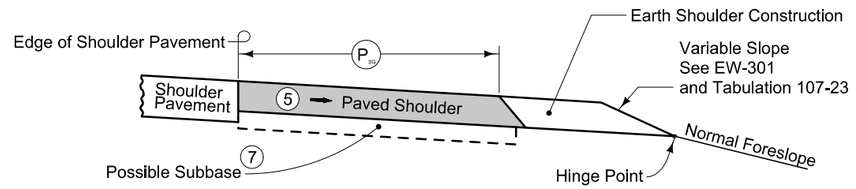


Section B-B

NEW CONSTRUCTION 6



Section A-A



Section B-B

EXISTING SHOULDER

DESIGNER INFO

7158
10-21-25

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.

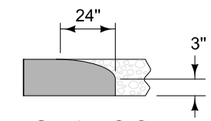
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(4) 'BT' (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
- 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

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER D.1

5:14:46 PM 5/28/2025 jroggatz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5200601021\Design_(94)_Bridge Replacement\CADD_Files\Sheet_Files\SHT_52006094Z10_Legend.dgn

Sta. 145+04.0, 75.0' Lt.
12"x19.5' RCP
(U.A.C.)

Sta. 145+70.4, 90.6' Lt.
12"x33.6' RCP
(U.A.C.)

Sta. 146+91.4, 77.0' Lt.
12"x256.1' RCP
(U.A.C.)

East Lucas TWP.
T-79N R-6W
SEC. 15

Sta. 150+65.9
Skew 30° RT AH
320' x 56'
Continuous I-Beam Bridge
D.A.=3230 sq. mi. -H-R-F
(REMOVE)

Sta. 150+65.00
Build 356' x 92.67'
Prestressed Concrete
Beam Bridge
Skew 30° RT AH

Sta. 145+37.9, 76.3' Lt.
12"x44.0' RCP
(U.A.C.)

145+00 146+00 147+00 148+00 149+00 150+00 151+00

RETAINING WALL

STA 146+50.00 (ML006)
BEGIN PROJECT

US HWY 6

STA 148+00.64 (ML006)
BEGIN BRIDGE APPROACH
PAVING

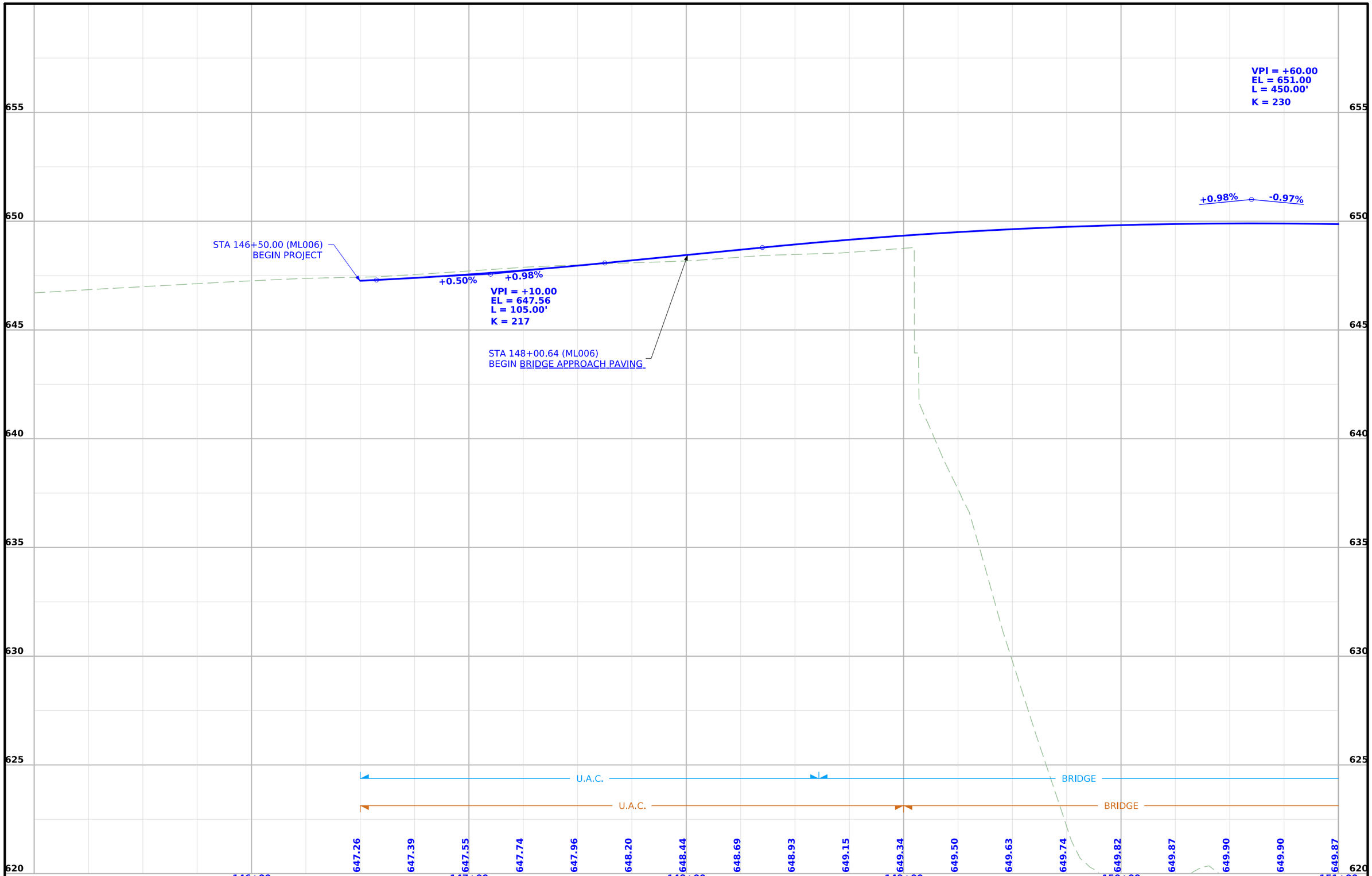
Sta. 147+44.8, 78.9' Rt.
72"x344.4' RCP
(U.A.C.)

0 20
FEET

Sta. 149+43.3, 83.4' Rt.
72"x47.1' RCP
(U.A.C.)

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER D.2

5:15:06 PM 5/28/2025 jroggatz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5200601021\Design_(94)_Bridge Replacement\CADD_Files\Sheet_Files\SHT_52006094Z10_D01.dgn



FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER D.3	

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Sta. 151+90.0, 96.0' Lt.
12"x63.6' RCP
(U.A.C.)

East Lucas TWP.
T-79N R-6W
SEC. 15

Sta. 155+55.2
Skew 30° LT AH
14'x14'x112.9' Twin RCB
D.A.=10 sq. mi.-R
(U.A.C.)

151+00
152+00
153+00
154+00
155+00
156+00
157+00

STA 153+29.36 (ML006)
END BRIDGE APPROACH PAVING

US HWY 6

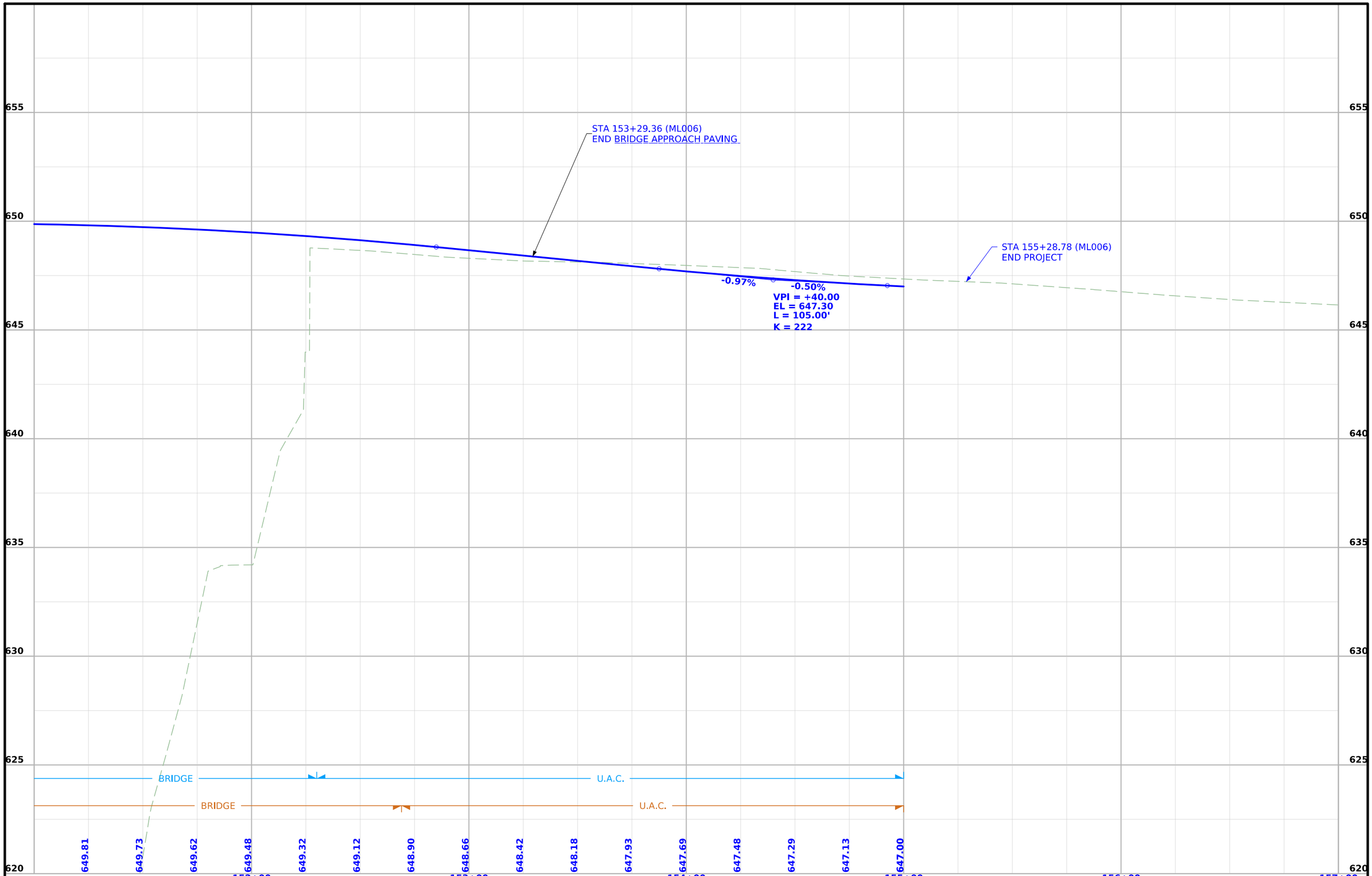
END PROJECT
STA 155+28.78

+74 PROP.
TYPE "C" ENT.
REMOVE

0 20
FEET

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER D.4

5:15:09 PM 5/28/2025 jroggatz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\52006601021\Design_(94)_Bridge Replacement\CADD_Files\Sheet_Files\SHT_52006094Z10_D01.dgn



FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER D.5	

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SURVEY INDEX

County: Johnson
PIN: 21-52-006-010
Project Number: BRF-006-7(94)--38-52
Location: Iowa River 0.2 mi E of E Jct IA 1 in Iowa City
Type of Work: Bridge Work
Project Directory: 5200601021

Survey Personnel

Samuel Schilb – Assistant Survey Party Chief
Robert Fredrickson - Assistant Survey Party Chief

Date(s) of Survey

Begin Date	08/14/2023
End Date	12/20/2023

General Information

This survey is for unspecified bridge work over the Iowa River 0.2 mi E of E Jct IA 1 in Iowa City. This survey request was for the US Hwy 6 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 10 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignment for U.S. Hwy 18 this survey is a retrace of As-built Plans No. DU-DF-1052(5). Survey stationing was equated to the plan PI at Sta. 172+26.15 and carried back without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 172+26.15 As-built Plans Project No. DU-DF-1052(5)
Survey PI Sta. 172+26.15

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 10 (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.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 10 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code Description
595545	7930171.64	20540168.82	690.15	CP 5/8th" rebar Davenport RCE CP fnd as described
595546	7932352.49	20532000.48	679.30	CP 5/8th" rebar Davenport RCE CP fnd as described
300	7931775.17	20536316.94	644.37	CP Set 5/8th" x 42" Rebar from the intersection of S Gilbert St proceed on hwy 6 East 485' point is +- 40' N of CL of hwy 6

ALIGNMENT COORDINATES

Line No.	Name	Location	Point on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
	1	ML006	140+00.00	7932315.95	20534577.48															
	2	ML006	172+26.15	7931276.36	20537631.54															

108_23A
8/15/22

TRAFFIC CONTROL PLAN

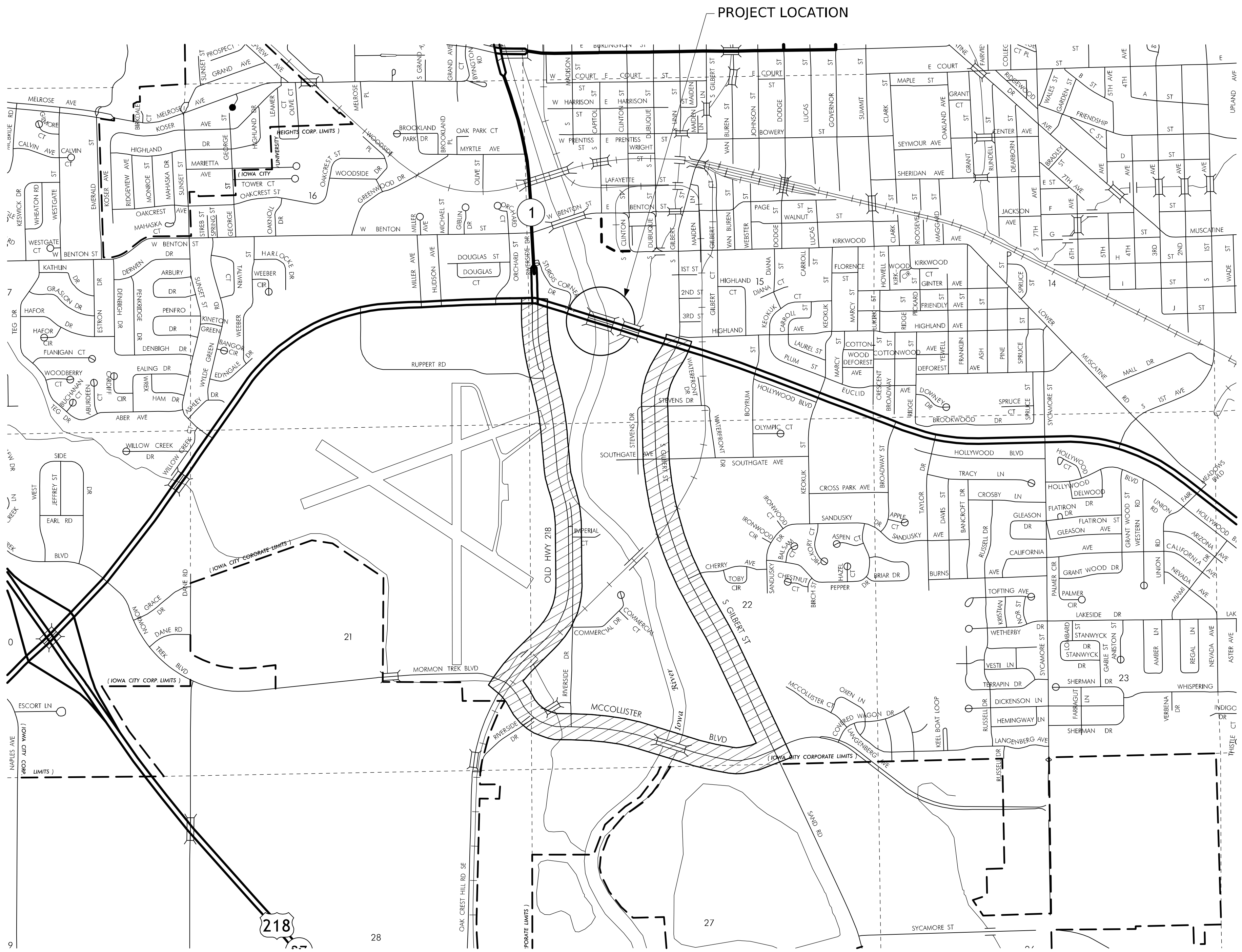
1. US 6 will be closed at the bridge over the Iowa River during construction. Detour route will include 1.3 miles south on Gilbert Street to McCollister Boulevard, 0.9 miles west to Old Highway 218, and 1.2 miles north to Highway 6. The detour will be signed and maintained by Iowa DOT. See US 6 detour on Sheet J.3.

2. Access to properties adjacent to the construction site shall be maintained at all times.

3. Traffic Control shall be in accordance with Iowa DOT Standard Road Plans TC-1 and TC-252. For additional traffic control information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the current Iowa DOT Standard Specifications.

511 TRAVEL RESTRICTIONS

Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
	US 6	Both	Johnson	US 6 closed at the Iowa River	Iowa River	Bridge	5252.2S006						



LEGEND

Proposed Detour Route

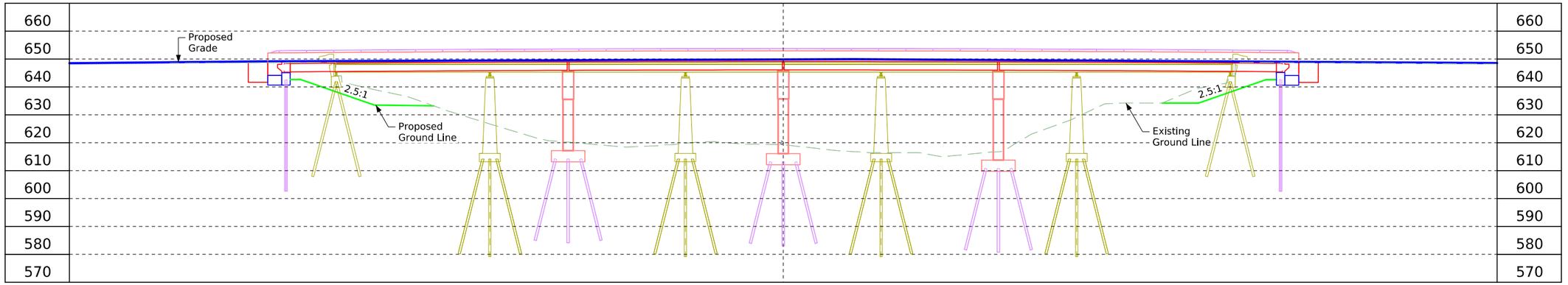
Any additional measures needed to manage traffic or mitigate potential traffic congestion?

0 1000
FEET

US 6
DETOUR

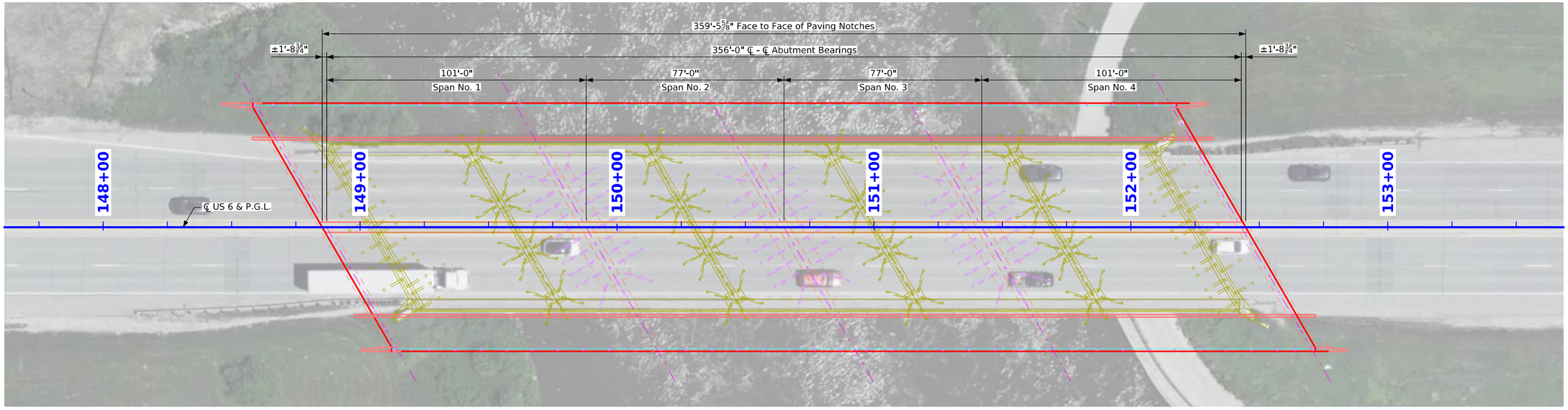
FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER J.3

2:02:03 PM 5/23/2025 jroggatz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5200601021\Design_(94)_Bridge Replacement\CADD_Files\Sheet_Files\SHT_52006094Z10_J01.dgn

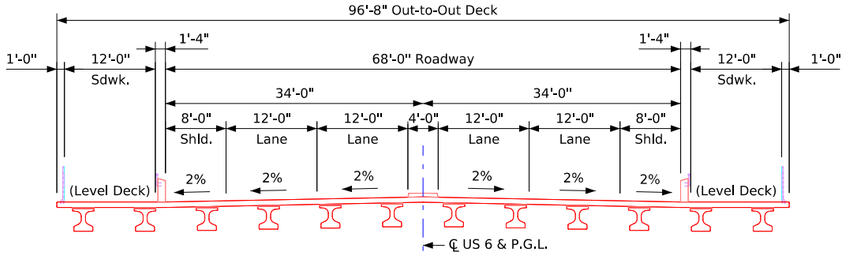


Note: Slopes are Normal to ℄ Abut./Grading Control Line.

Longitudinal Section Along ℄ US 6



Situation Plan



Typical Bridge Section

(Looking East)

Location

US 6 Over Iowa River
In City of Iowa City
T-79N R-6W
Section 15
West Lucas & East Lucas Townships
Johnson County
FHWA No. 031571
Bridge Maint. No. 5252.2S006
Latitude 41.646659°
Longitude -91.537068°

Design For 30° Skew (RA)

356'-0" X 68'-0" Pretensioned Prestressed Conc. Beam Bridge

101'-0" End Spans — 77'-0" Interior Spans

Situation Plan

STA. 150+65.00 (US 6) — May 2025

Johnson County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0227 — Design Sheet No. 1 of 1 — FHWA No. 031571

Progress Plans, Not For Construction

FILE NO. **32494** | ENGLISH | DESIGN TEAM **Jacobs** | **Johnson** COUNTY | PROJECT NUMBER **BRF-006-7(94)--38-52** | SHEET NUMBER **V.1**

10:18:57 PM 5/28/2025 saaveddj pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5200601021\Bridge\(94)_Bridge-Unspecified\SHT_52006094_JACOBS_0227_031571_Z10.dgn

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, X, Y, & Z)

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER W.1	

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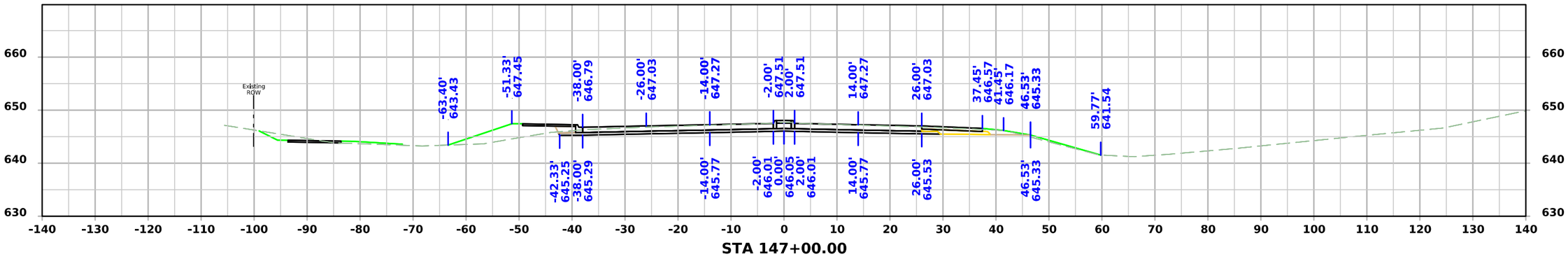
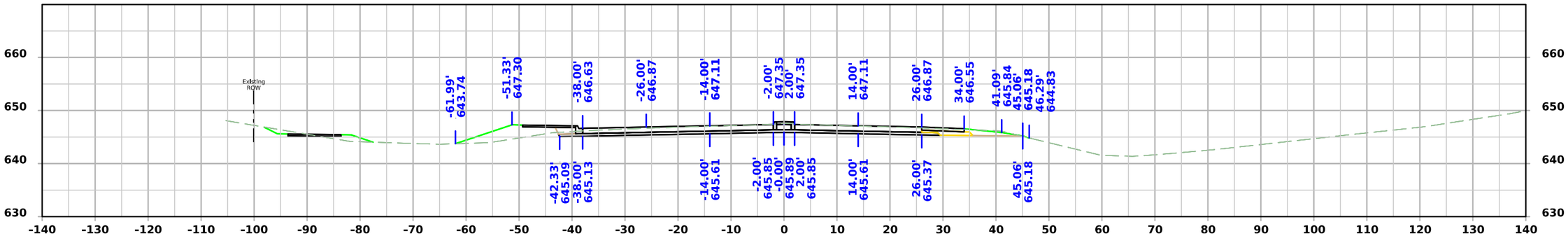
ML - US 6



STA 147+00.00



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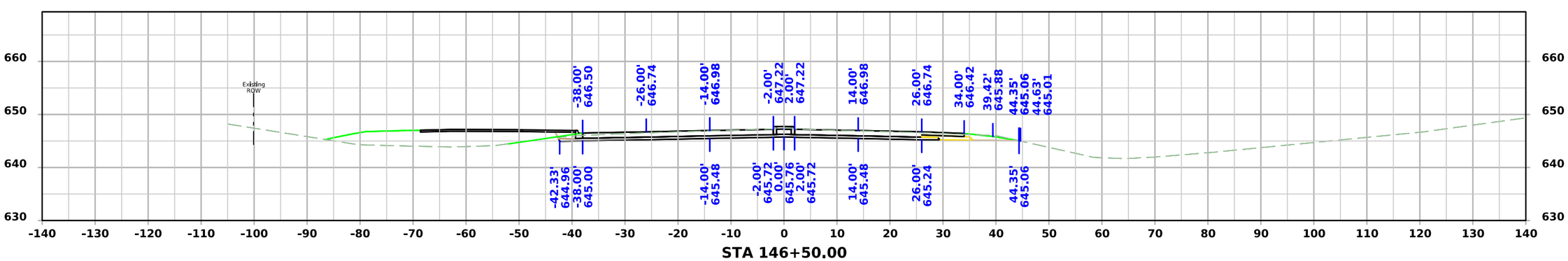

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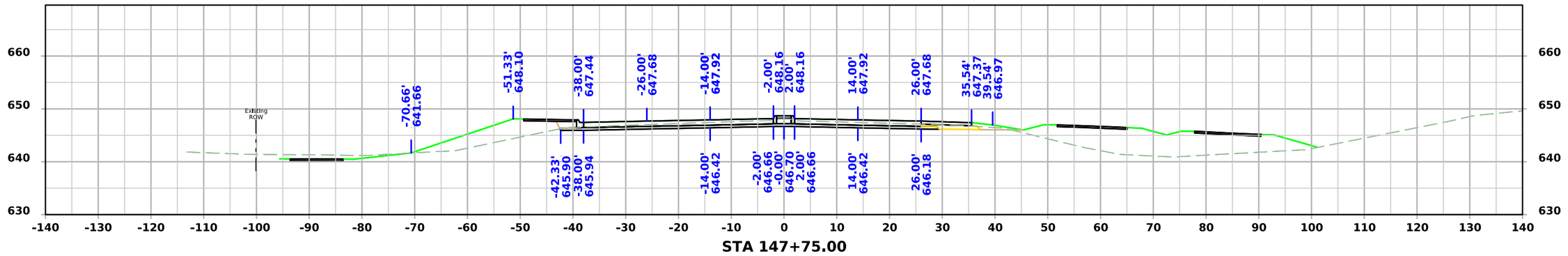
ML - US 6



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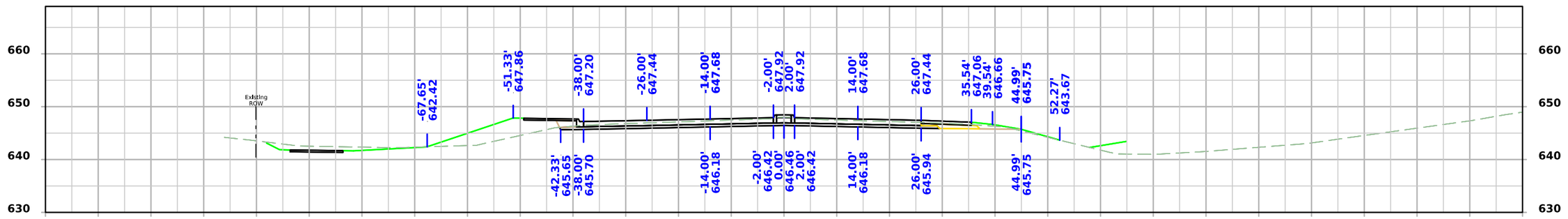

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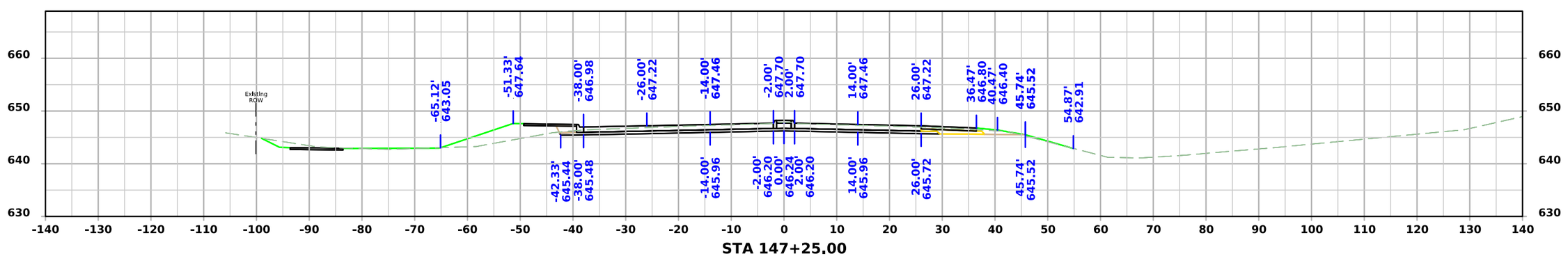

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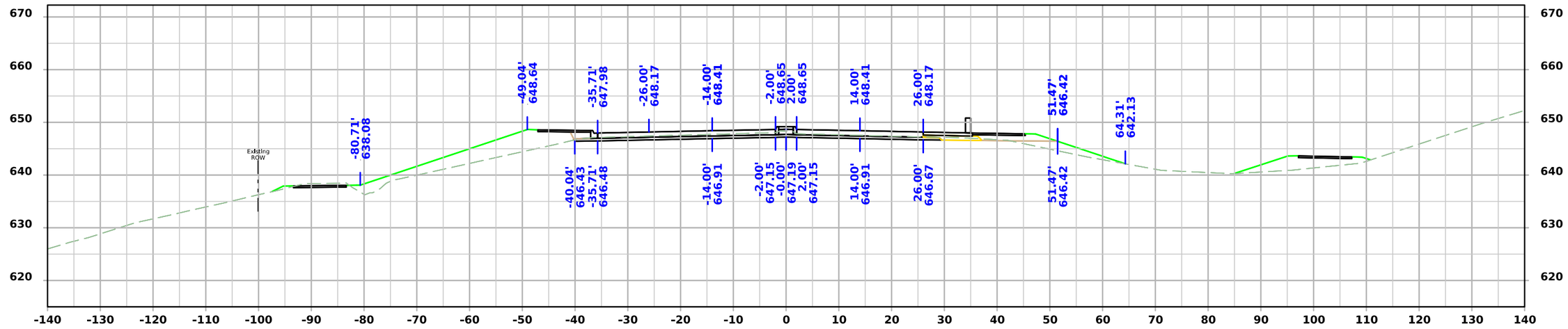
ML - US 6



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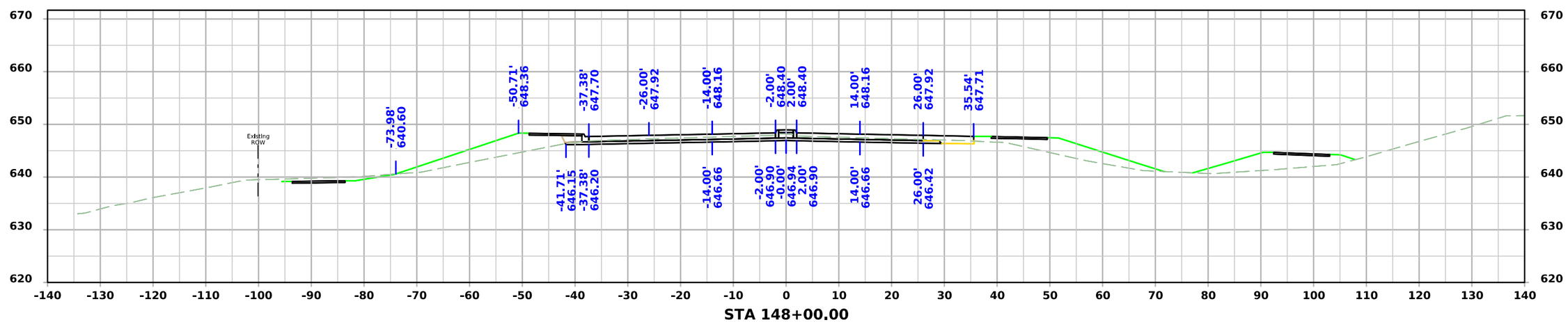

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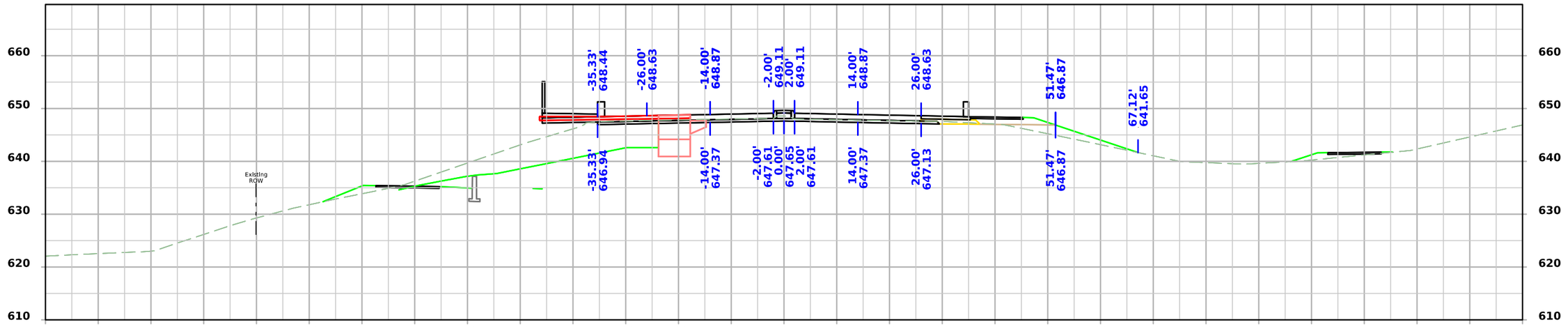
ML - US 6



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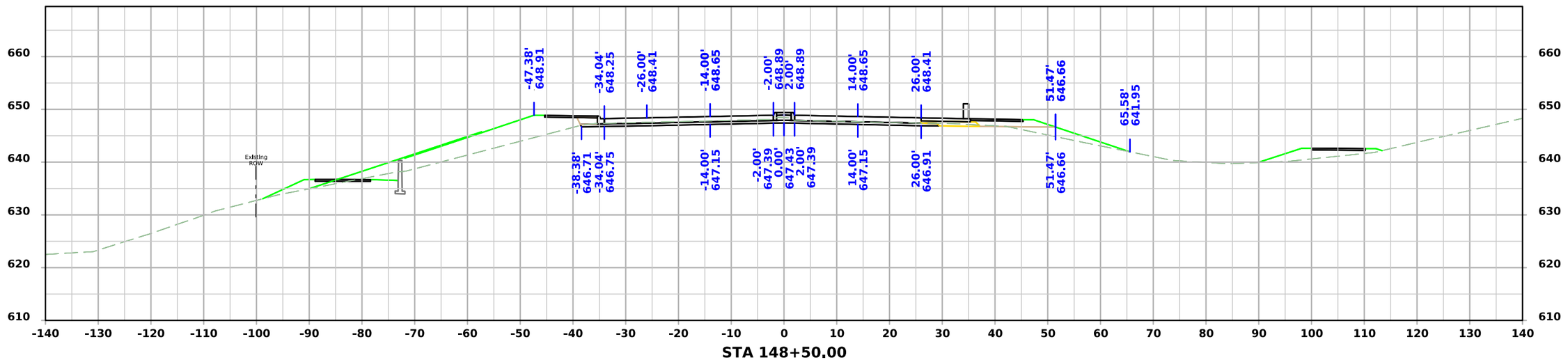

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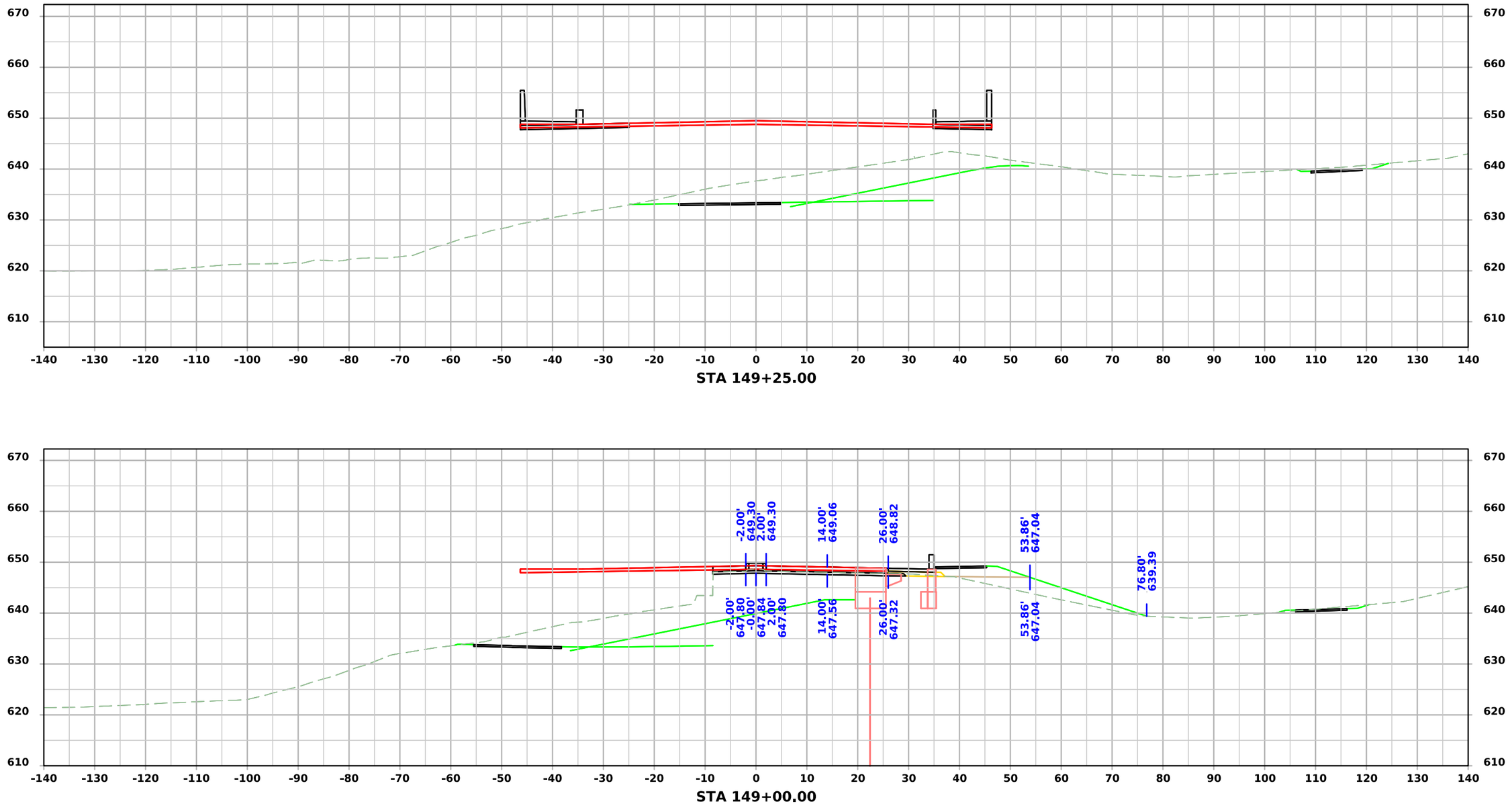
ML - US 6



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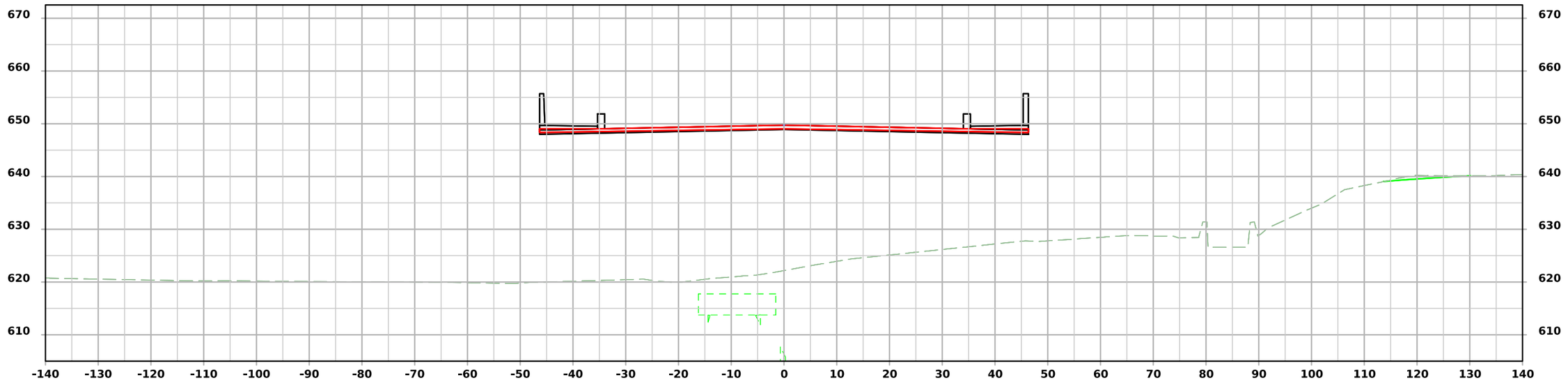
ML - US 6



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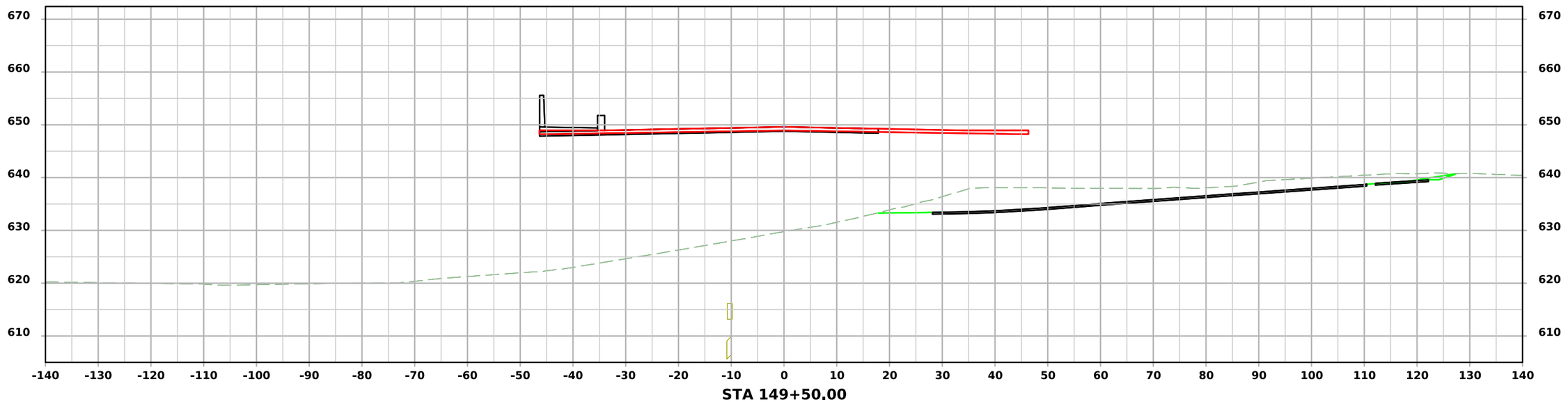

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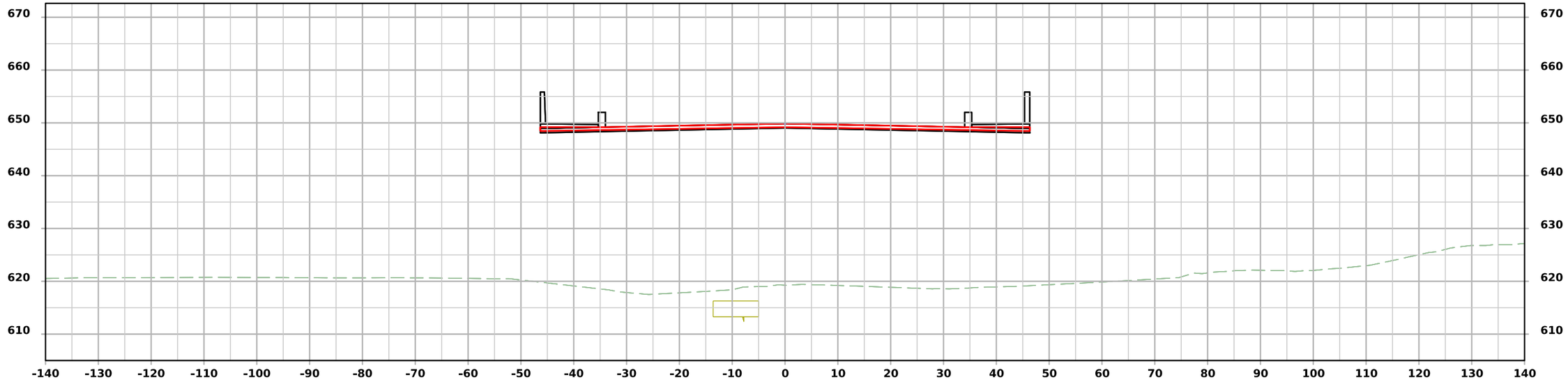
ML - US 6



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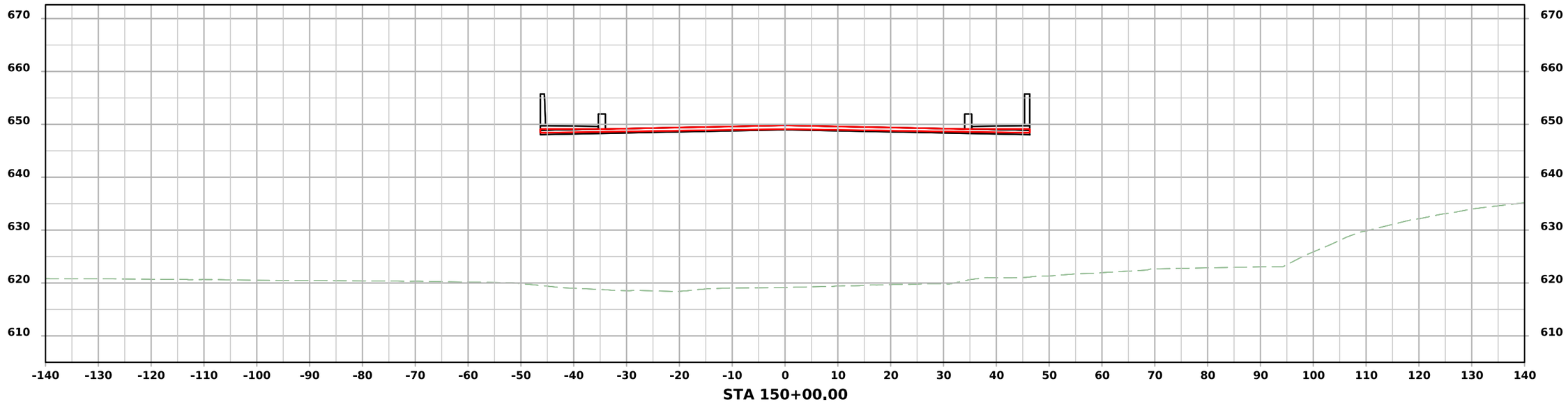

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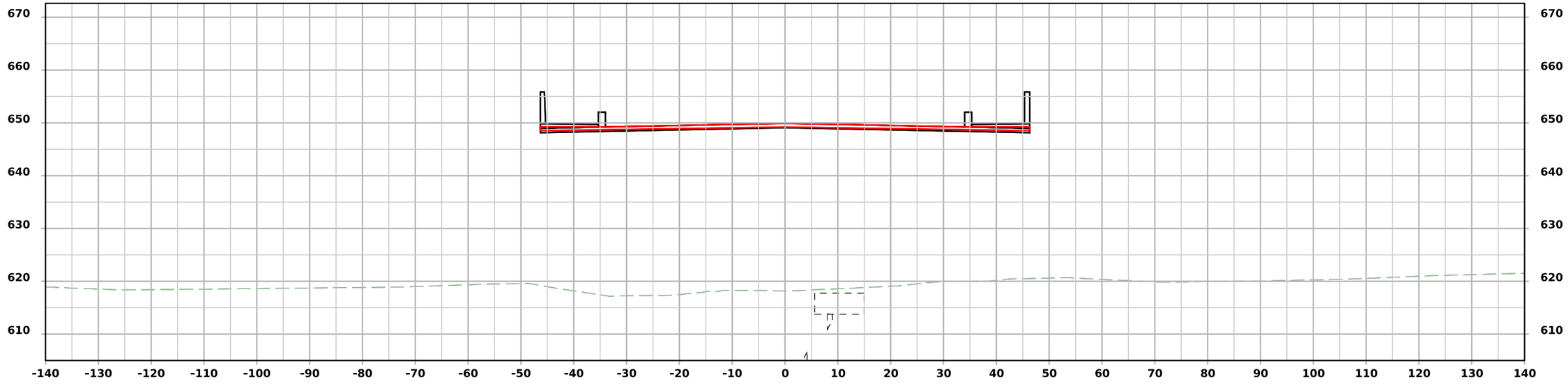
ML - US 6



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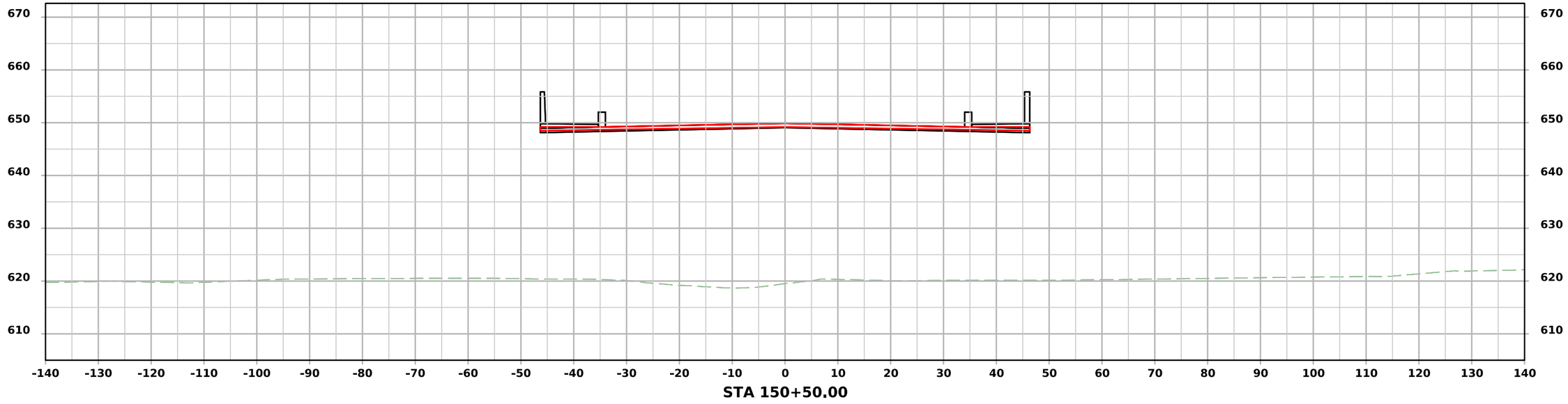

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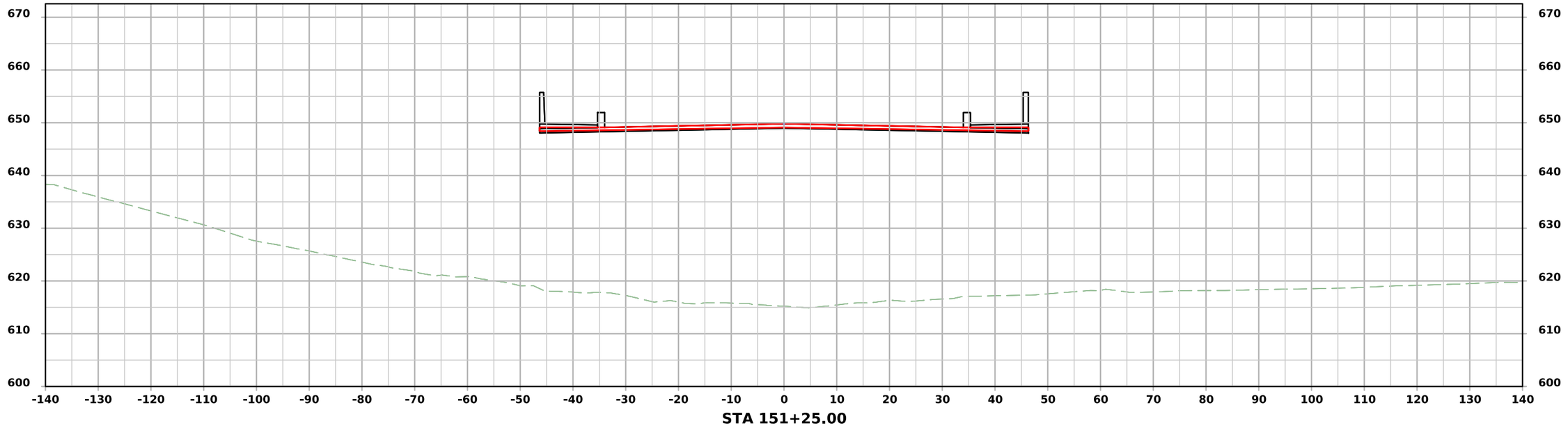
ML - US 6



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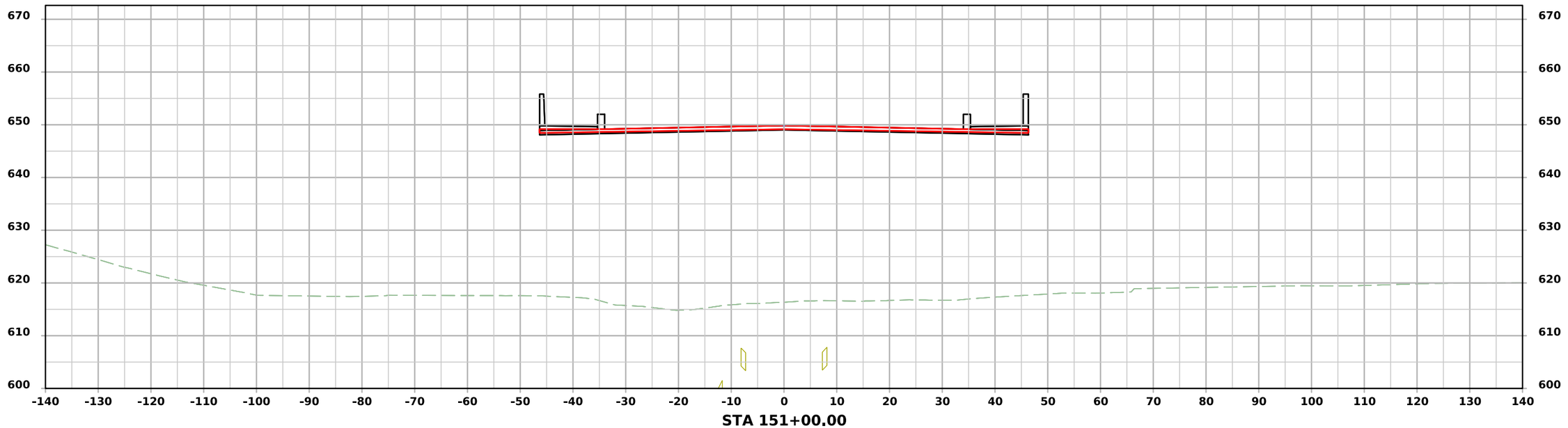

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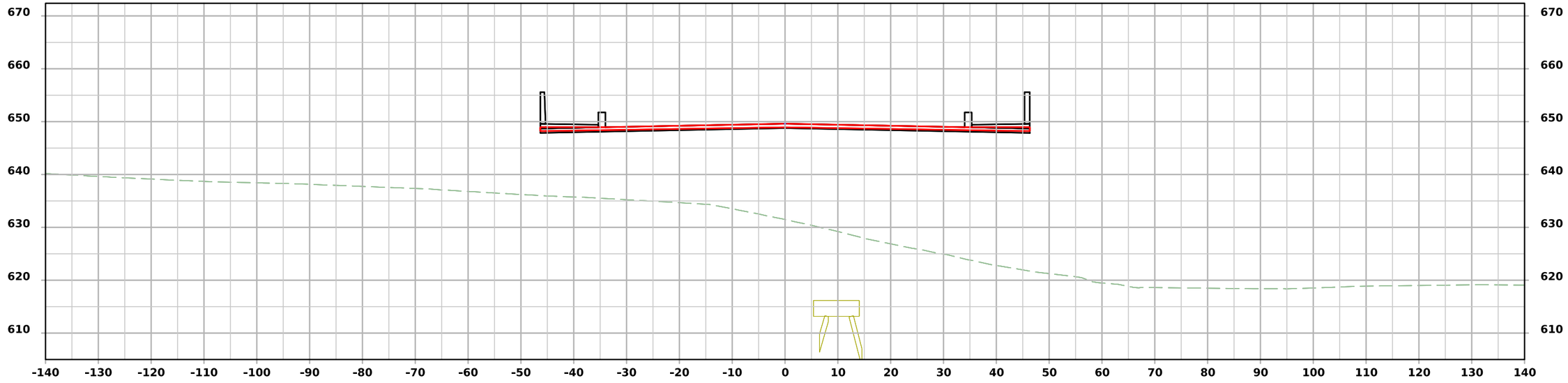
ML - US 6



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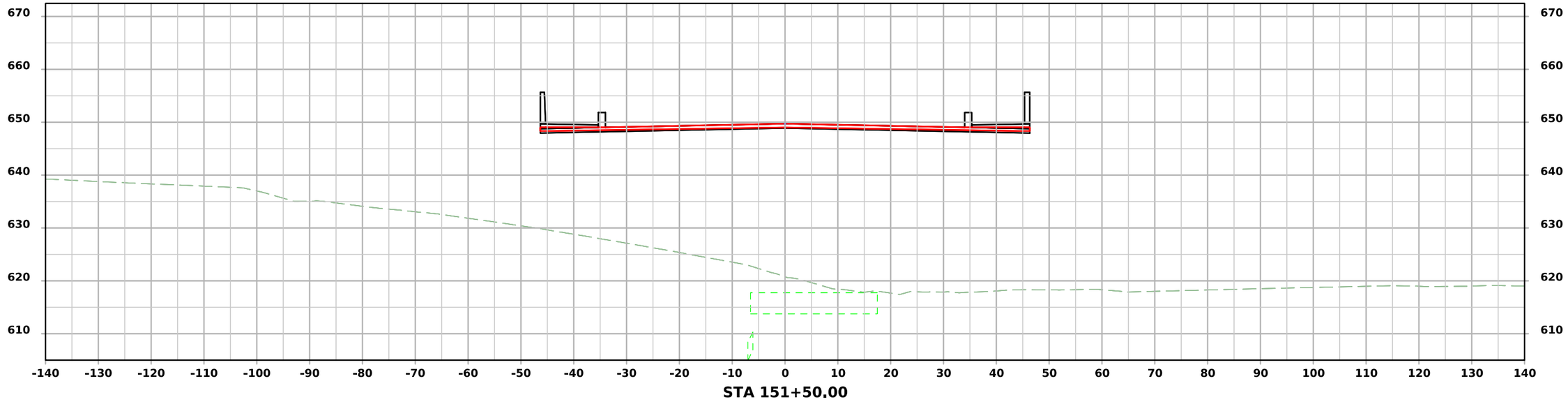

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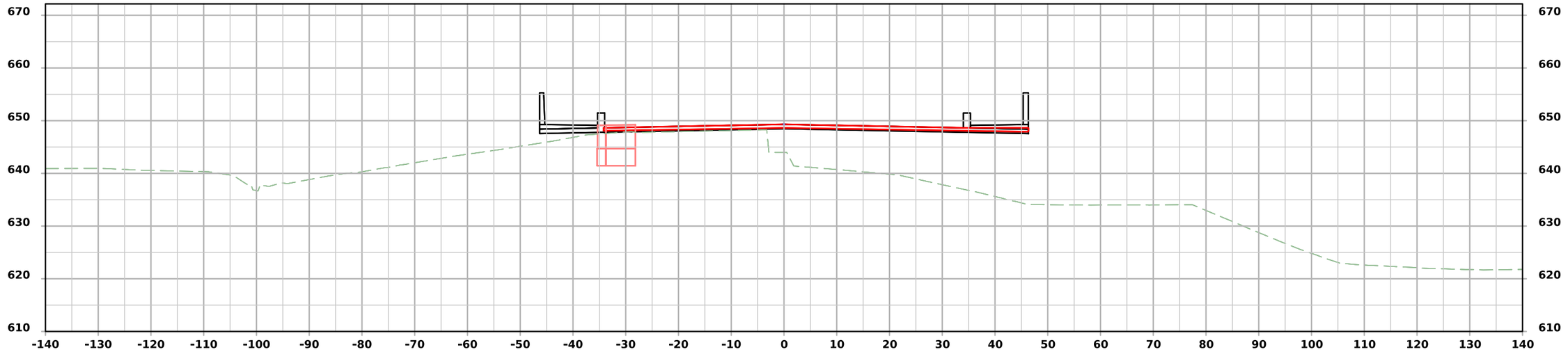
ML - US 6



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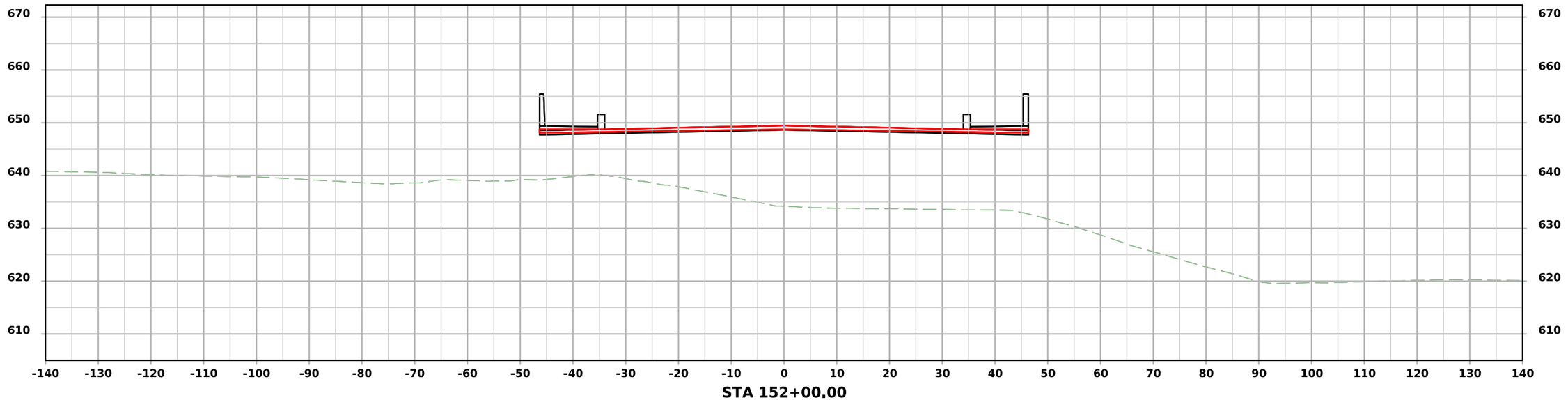

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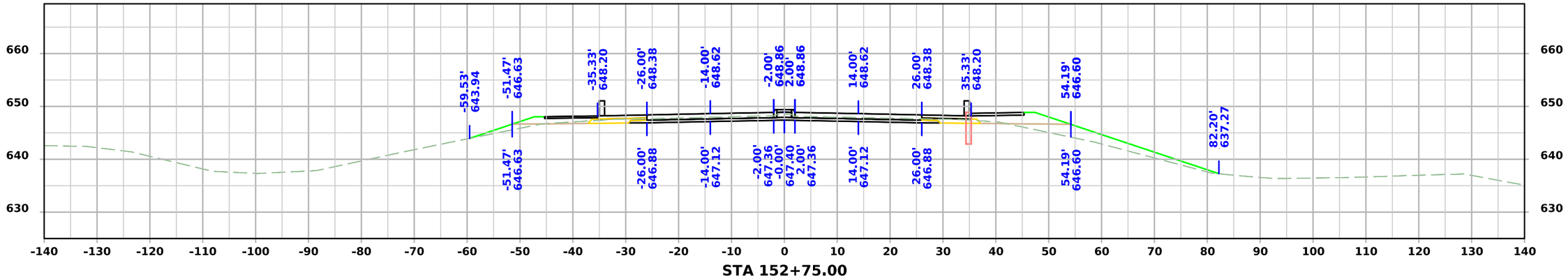
ML - US 6



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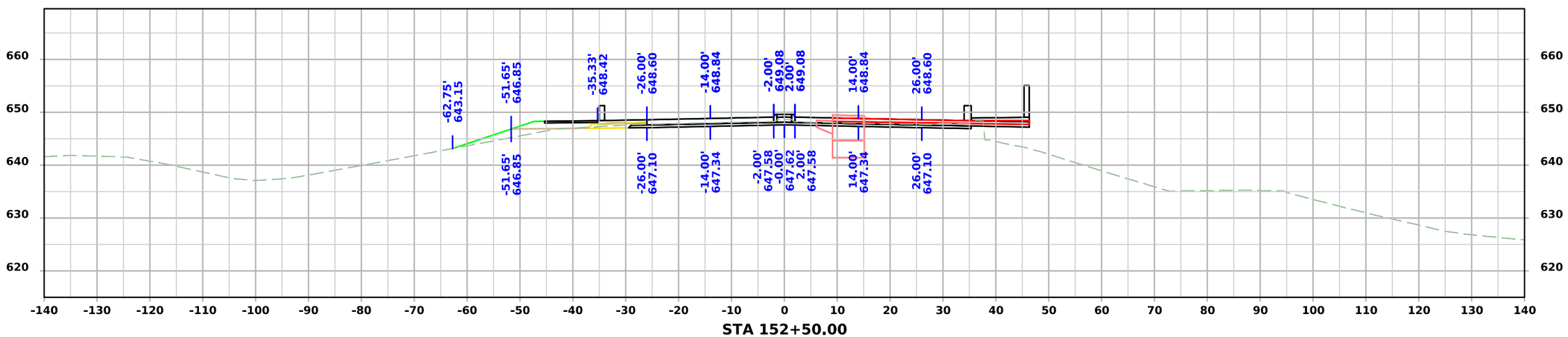

STA 152+50.00

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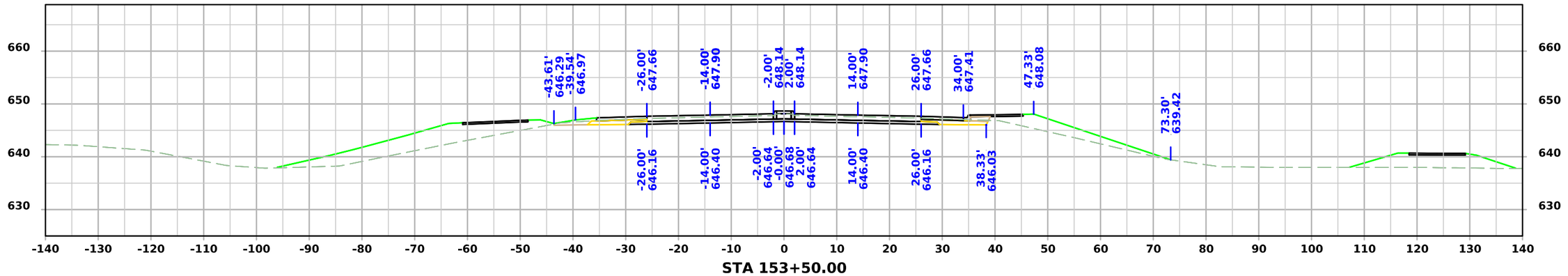
ML - US 6



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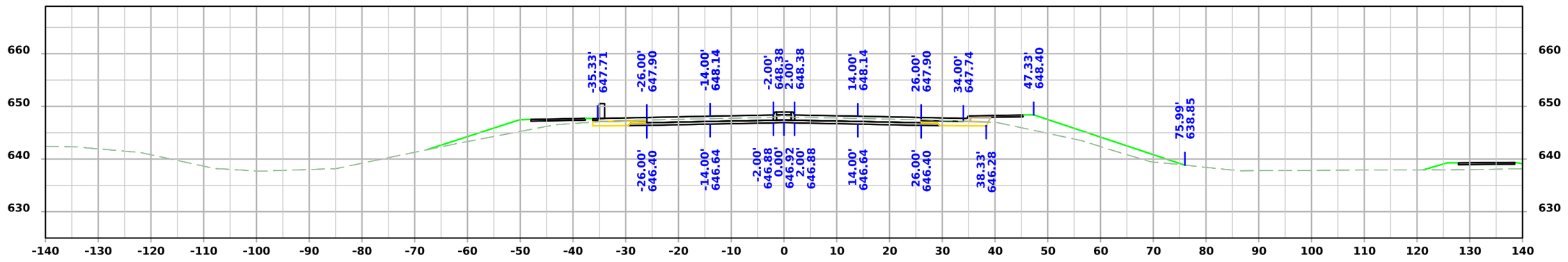

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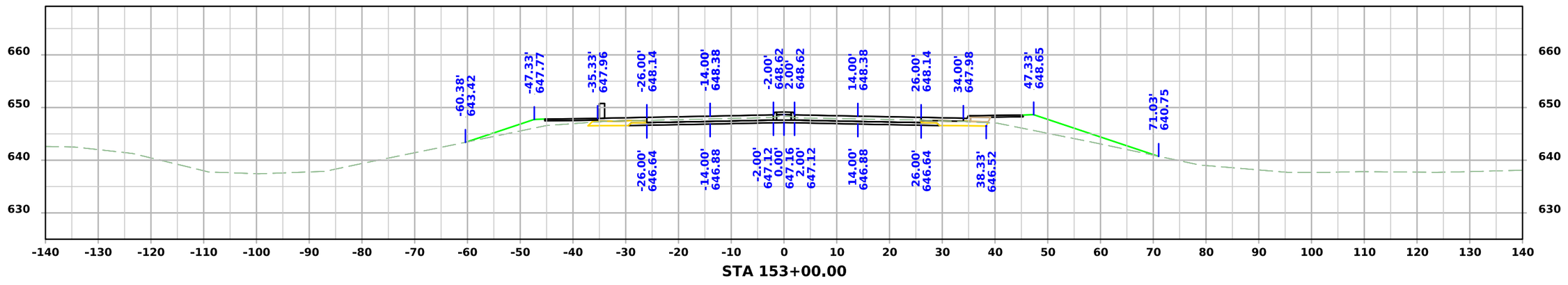

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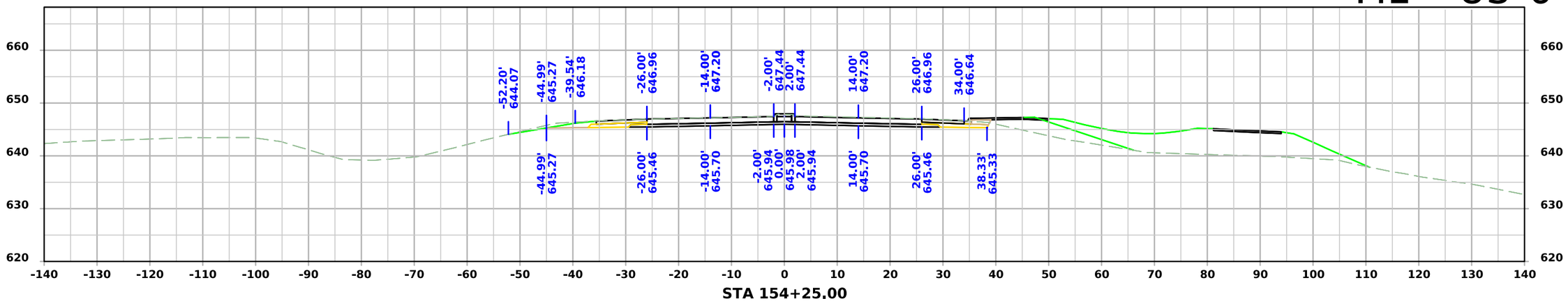
ML - US 6



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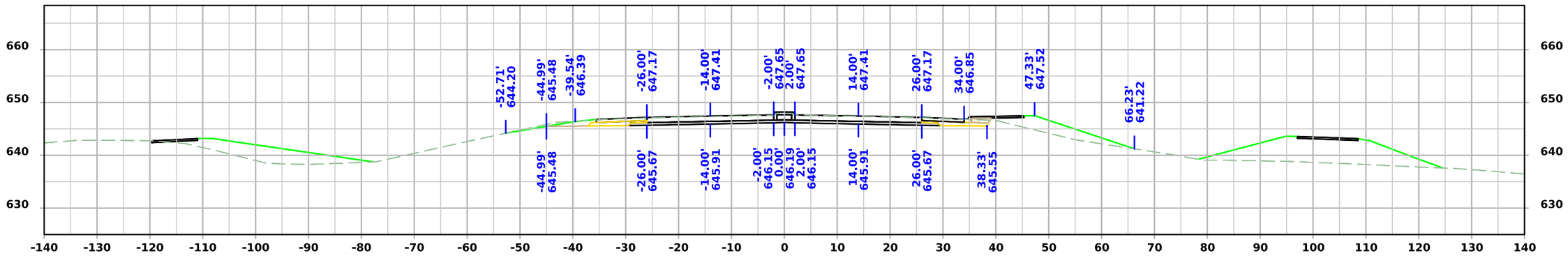
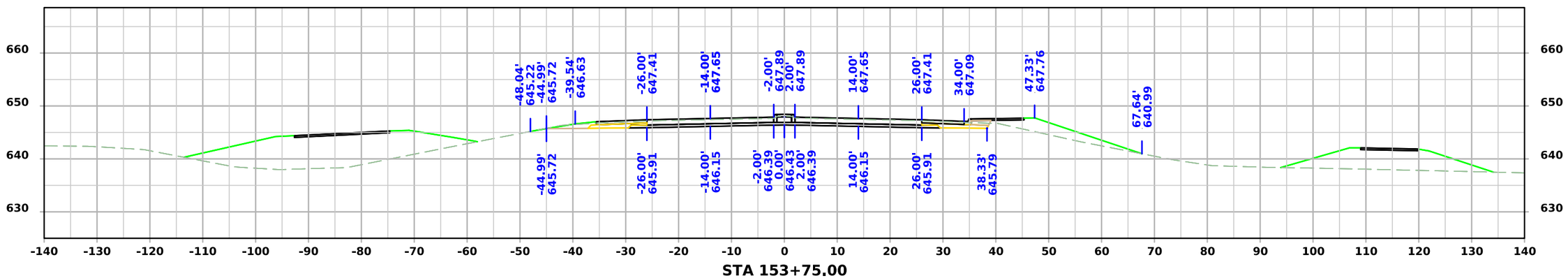


STA 154+00.00



STA 153+75.00

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER W.15

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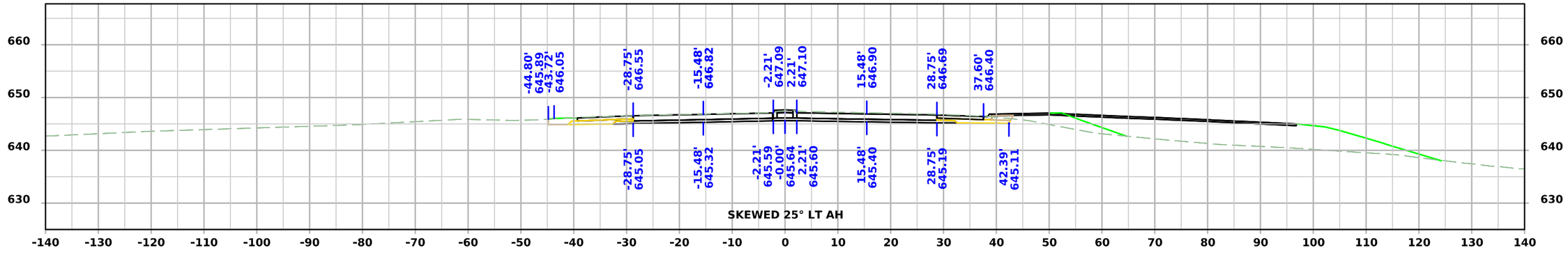
ML - US 6



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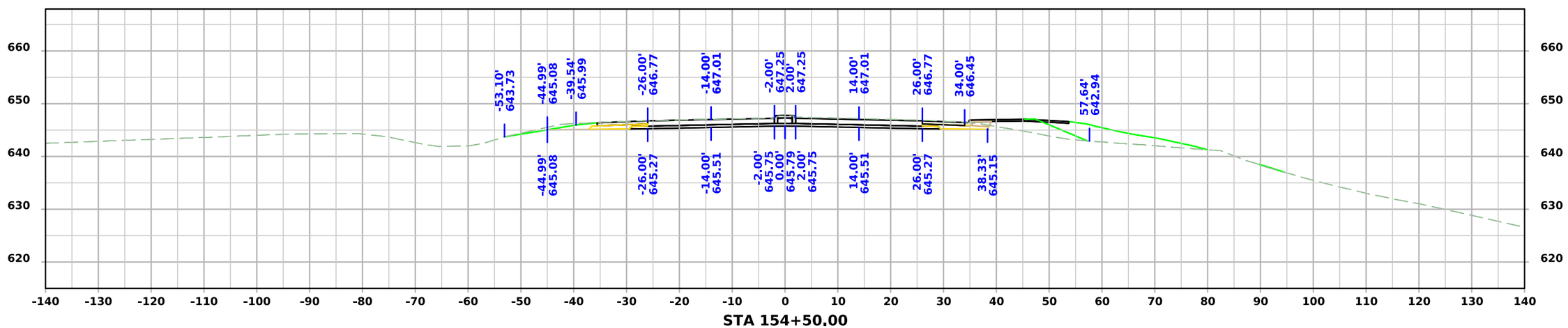

STA 154+50.00

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER W.16

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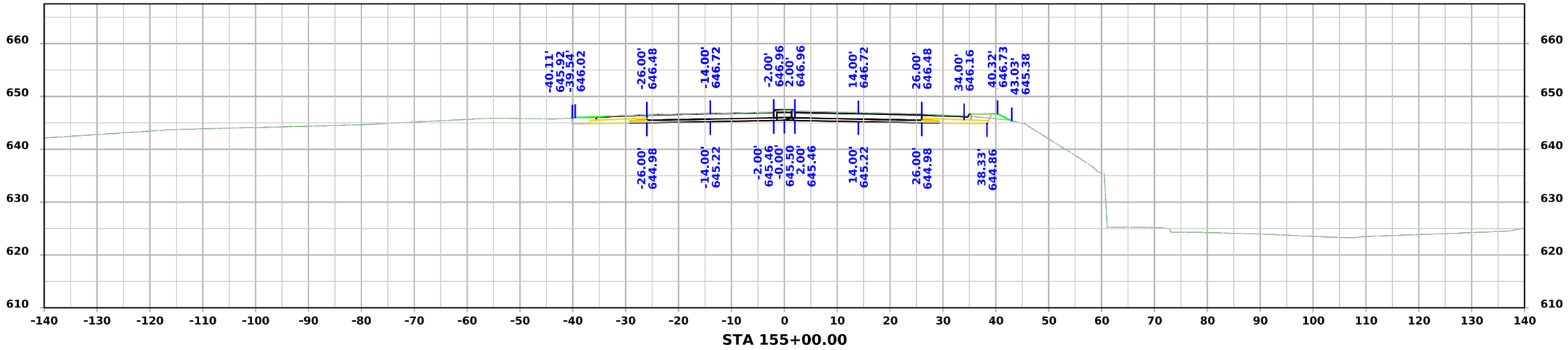

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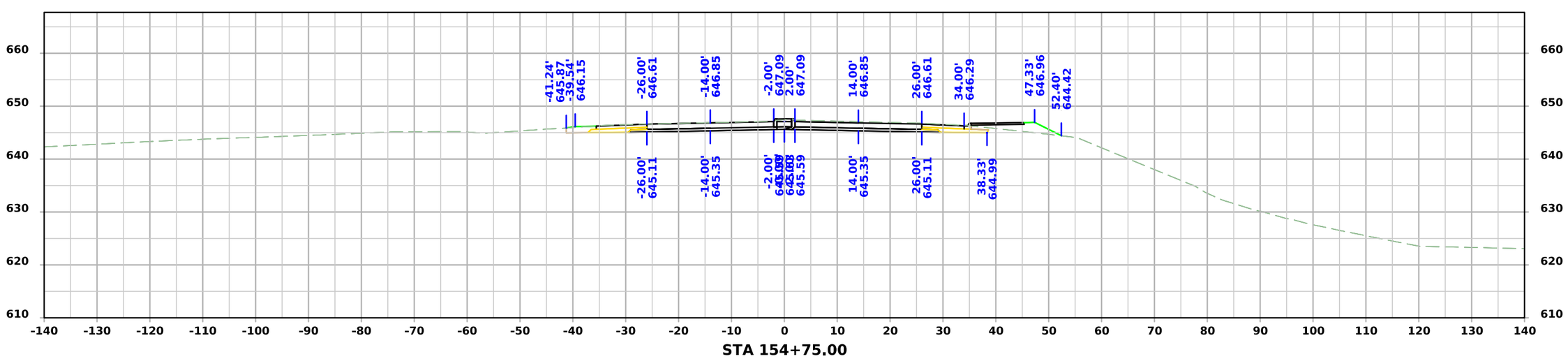

STA 154+75.00

FILE NO. 32494	ENGLISH	DESIGN TEAM Jia\JACOBS	JOHNSON COUNTY	PROJECT NUMBER BRF-006-7(94)--38-52	SHEET NUMBER W.17

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