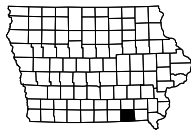


DAVIS COUNTY

BRIDGE REPLACEMENT - PPCB
BRFN-063-1(94)--39-26

LETTING DATE
01-01-2025



INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	US 63 Plan
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan and Staging Notes
V Sheets	Bridge and Culvert Situation Plans
* V.1 - 3	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
* W.1	Cross Sections Legend & Symbol Information Sheet
* W.2 - 10	Mainline Cross Sections
	* Color Plan Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
DAVIS COUNTY
BRIDGE REPLACEMENT - PPCB
US 63 BRIDGE OVER MIDDLE CHEQUEST CREEK
0.2 MI. N. OF JUNCTION 180TH STREET

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	
25	
PROJECT IDENTIFICATION NUMBER	
20-26-063-010	
PROJECT NUMBER	
BRFN-063-1(94)--39-26	
R.O.W. PROJECT NUMBER	

DESIGN DATA RURAL

2020 AADT 5800 V.P.D.
20 -- AADT -- V.P.D.
20 -- DHV -- V.P.H.
TRUCKS 10 %
Total
Design ESALs --

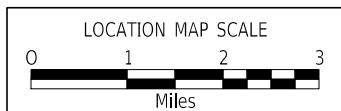
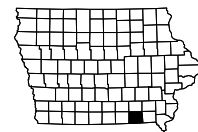
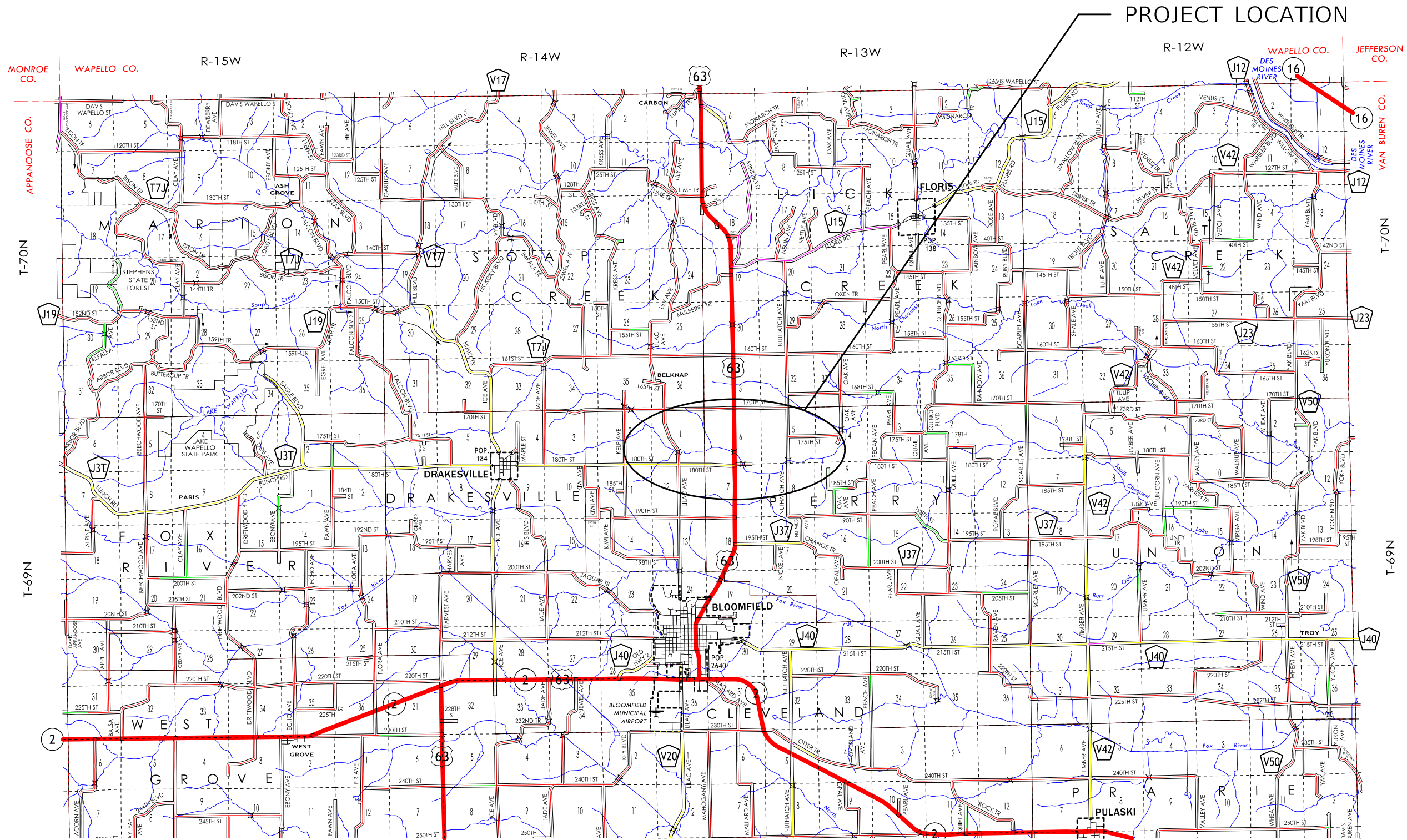
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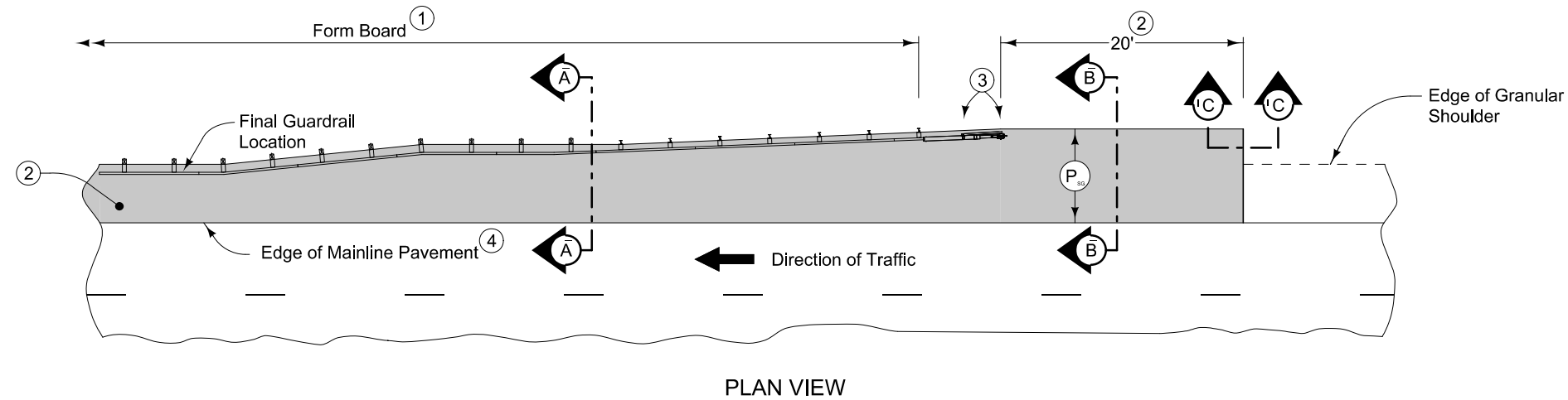
SHEET NO.	NAME	TYPE
A.1	Taylor R. Theulen	Roadway Design
V.1	Anthony J. Bower	Structural Design

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN – Date: 10-17-2022





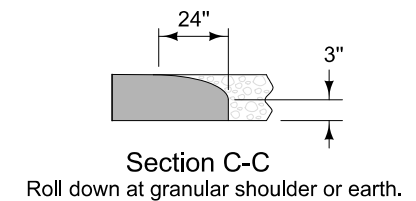
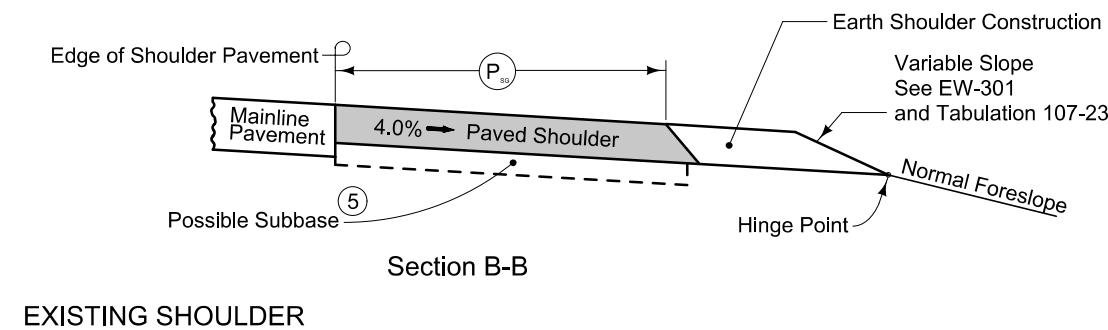
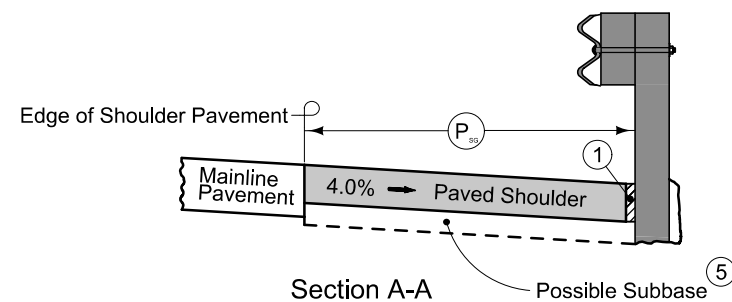
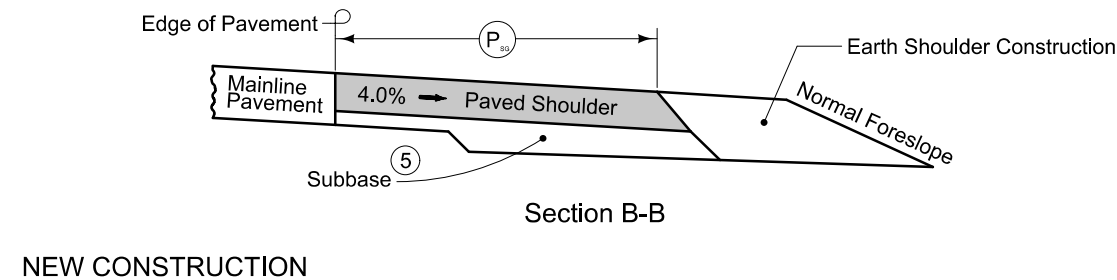
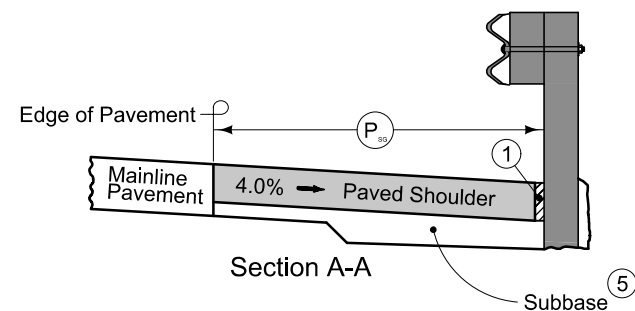
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

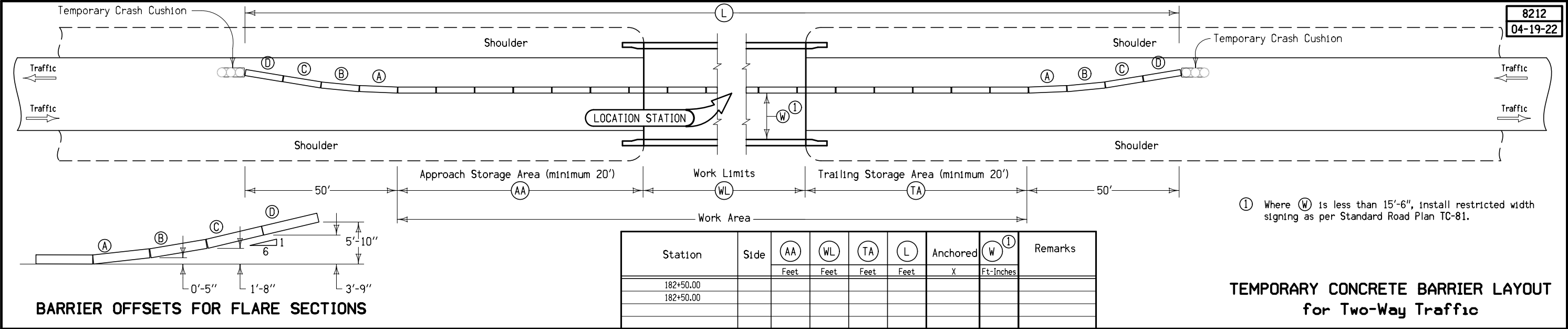
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

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' joint (per PV-101) for PCC shoulder.
'B' joint (per PV-101) for HMA shoulder.
- ⑤ Refer to other details in the plan.



PAVED SHOULDER AT GUARDRAIL
(GRANULAR SHOULDER ADJACENT TO MAINLINE)



PROJECT DESCRIPTION						100-1D 10-18-05
This project involves the replacement of the US 63 bridge (Maint. No. 2619.8S063) over Middle Chequest Creek.						

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)						100-1A 07-15-97
Item No.	Item Code	Item	Unit	Total	As Built Qty.	

ESTIMATE REFERENCE INFORMATION						100-4A 10-29-02
Item No.	Item Code	Description				

STANDARD ROAD PLANS			105-4 10-18-11
The following Standard Road Plans apply to construction work on this project.			
Number	Date	Title	
BA-200	04-20-21	Steel Beam Guardrail Components	
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)	
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor	
BA-205	10-19-21	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)	
BA-250	04-20-21	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)	
BA-401	04-20-21	Temporary Barrier Rail (Precast Concrete)	
BA-500	04-20-21	Temporary Crash Cushions Sand Barrel	
BR-203	10-19-21	Double Reinforced 12" Approach	
BR-212	10-18-22	Bridge Approach (Abutting HMA Pavement)	
DR-306	10-16-18	Precast Concrete Headwall for Subdrain Outlets	
EC-201	04-20-21	Silt Fence	
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices	
EW-301	04-20-21	Guardrail Grading	
PM-110	04-21-20	Line Types	
PV-12	10-20-20	Milled Shoulder Rumble Strips	
PV-101	04-19-22	Joints	
PV-102	04-21-20	PCC Curb Details	
SI-172	04-19-16	Delineators	
SI-173	04-19-16	Object Markers	
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail	
SI-881	04-16-19	Special Signs for Workzones	
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones	
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)	
TC-81	10-15-19	Restricted Width Signing (Less Than 14.5 Feet)	
TC-202	10-19-21	Work Within 15 ft of Traveled Way	
TC-213	10-18-22	Lane Closure with Flaggers	
TC-217	10-18-16	Lane Closure with Signals and TBR	

SURVEY SYMBOLS

(IN PROGRESS)

UTILITY LEGEND

Company Name: CenturyLink
Contact Name: Sadie Hull
Contact Phone: (918) 547-0147
Contact Email: sadie.hull@lumen.com

Company Name: Citizens Mutual Telephone
Contact Name: Kyndal Bodkins
Contact Phone: (641) 664-2074
Contact Email: kbodkins@mycmtech.com

Company Name: Iowa Communications Network
Contact Name: Shannon Marlow
Contact Phone: (800) 572-3940
Contact Email: icnoutsideplantiowaonecall@iowa.gov

Company Name: Rathbun Regional Water
Contact Name: Scott Jackson
Contact Phone: (641) 647-1086

Company Name: Southern Iowa Electric Cooperation
Contact Name: Greg Proctor
Contact Phone: (641) 664-2277
Contact Email: gproctor@sie.coop

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

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

Legend

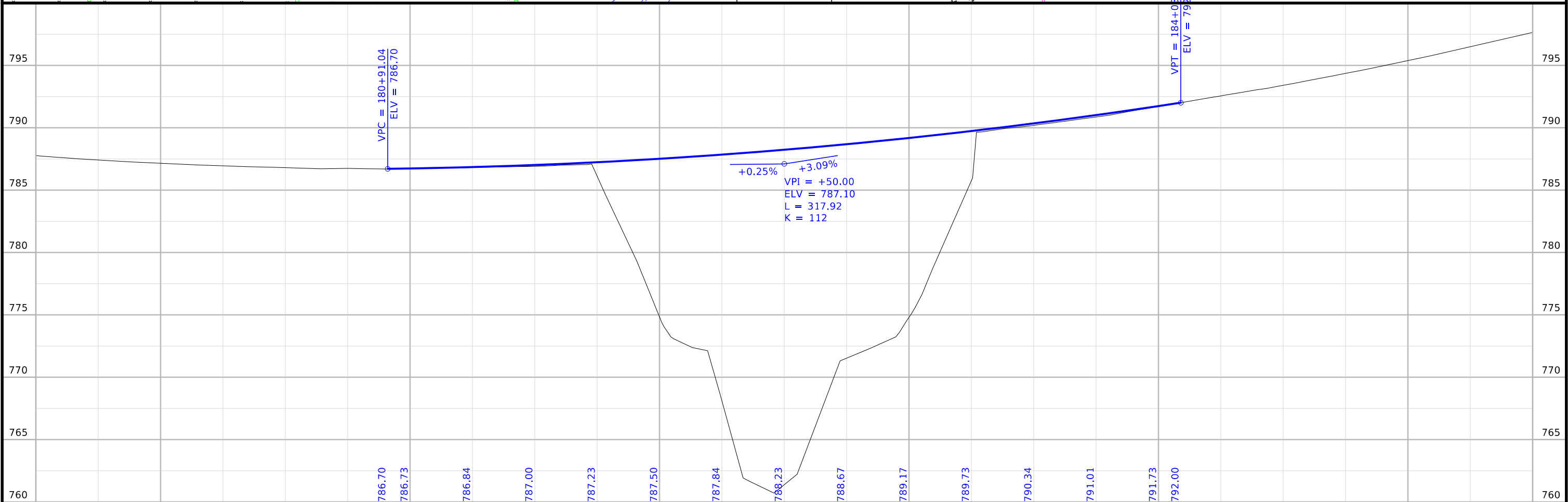
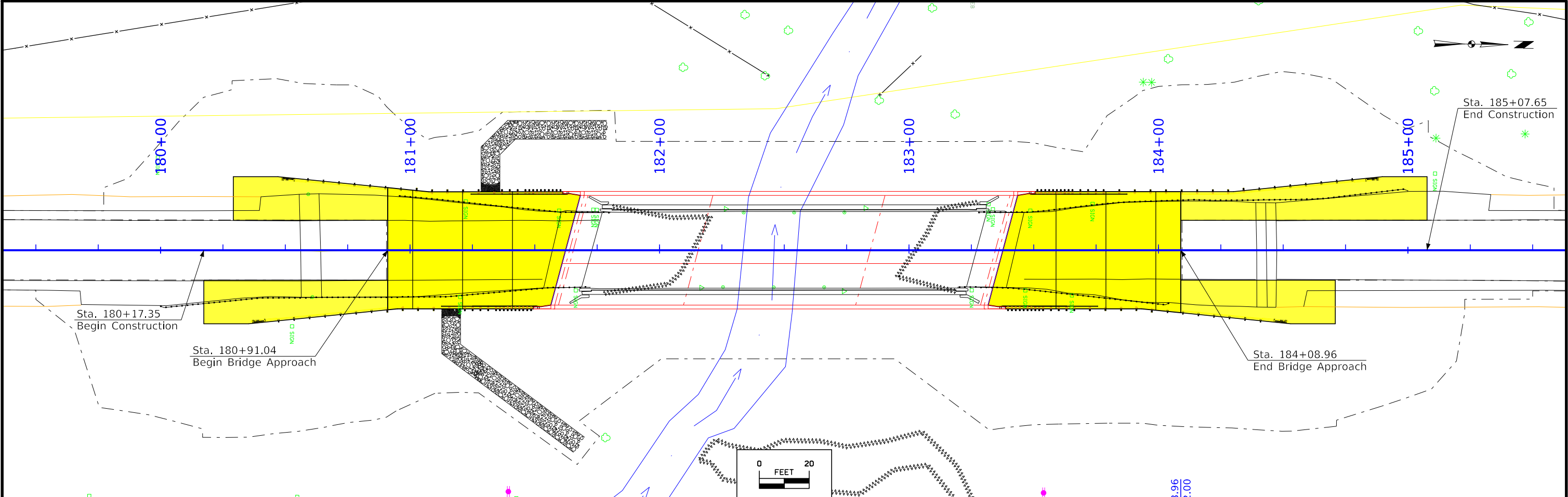
	Reference Point
	Survey Line
	Station
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



IN PROGRESS

IN PROGRESS

FILE NO.	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	DAVIS COUNTY	PROJECT NUMBER BRFN-063-1(94)--39-26	SHEET NUMBER G.2
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IN PROGRESS

FILE NO.	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	DAVIS COUNTY	PROJECT NUMBER BRFN-063-1(94)--39-26	SHEET NUMBER G.3
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101-16 10-20-09																			
ALIGNMENT COORDINATES																			
Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	US 63	176+50.00	6160312.59	22874047.74															
2	US 63	188+50.00	6161512.48	22874031.57															

108-23A 08-01-08 TRAFFIC CONTROL PLAN 1. At least one lane of traffic in both directions shall be maintained on US 63 at all times. 2. Refer to Standard Road Plans shown on Tab 105-4 in C Sheets for other information. 3. Refer to Staging Notes (Tabulation 108-26A) and other J sheets for details of specific closures.
--

108-26A 08-01-08 STAGING NOTES Stage 1A Traffic Control: Close SB US 63 using TC-213. Construction: Construct Shoulder Strengthening per Tab SS-1 in C sheets. Stage 1B Traffic Control: Close NB US 63 lane using temporary traffic signals and temporary barrier rail (TBR). Construction: Replace the NB US 63 lane bridge deck and approaches. Construct Shoulder Strengthening per Tab SS-1 in C sheets. Stage 2 Traffic Control: Close SB US 63 lane using temporary traffic signals and temporary barrier rail (TBR). Construction: Replace the SB US 63 lane bridge deck and approaches.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
None provided	

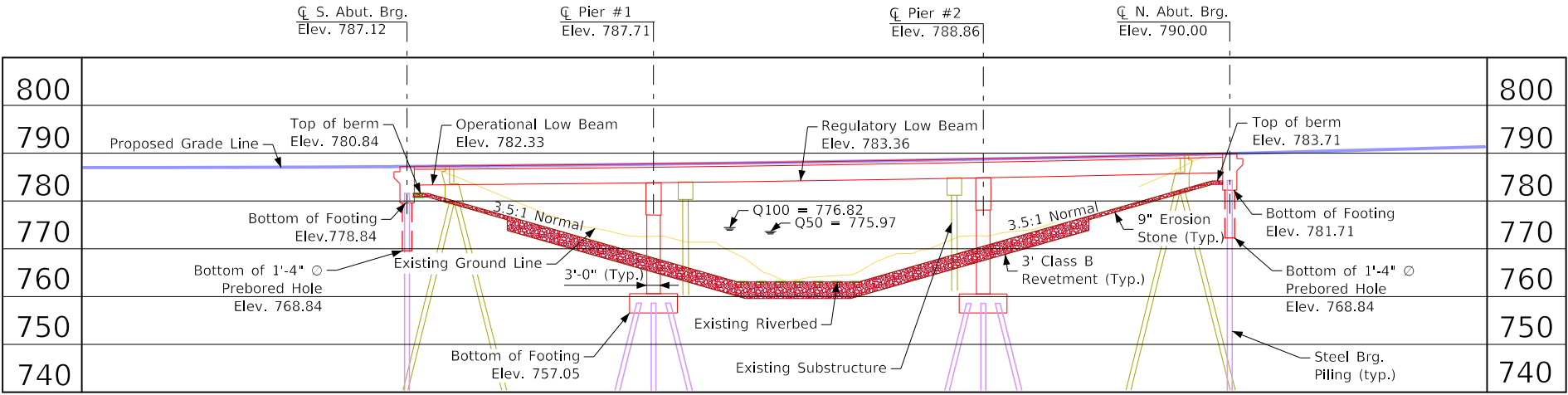
108-25 10-21-14 511 TRAVEL RESTRICTIONS												
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
US 63	NB/SB	Davis	0.2 mi. North of Junction 180th Street	Middle Chequest Creek	Barrier	2619.8S063	Horizontal	N/A	13'-5"	12'-5"		Stage 1B
US 63	NB/SB	Davis	0.2 mi. North of Junction 180th Street	Middle Chequest Creek	Barrier	2619.8S063	Horizontal	N/A	14'-3.5"	13'-3.5"		Stage 2
US 63	NB/SB	Davis	0.2 mi. North of Junction 180th Street	Middle Chequest Creek	Temporary Signal	2619.8S063	Vertical	N/A	15'-0"	14'-0"		Stage 1B
US 63	NB/SB	Davis	0.2 mi. North of Junction 180th Street	Middle Chequest Creek	Temporary Signal	2619.8S063	Vertical	N/A	15'-0"	14'-0"		Stage 2

LOCATION

US 63 Over Chequest Creek
T-69N R-13W
Section 6
Perry Township
Davis County
FHWA No. 022530
Bridge Maint. No. 2619.8S063
Latitude 40.801275°
Longitude -92.399026°

TRAFFIC ESTIMATE

2021 AADT	5800	V.P.D.
Trucks	10	%
Total	1,694,000	
Design ESALs		

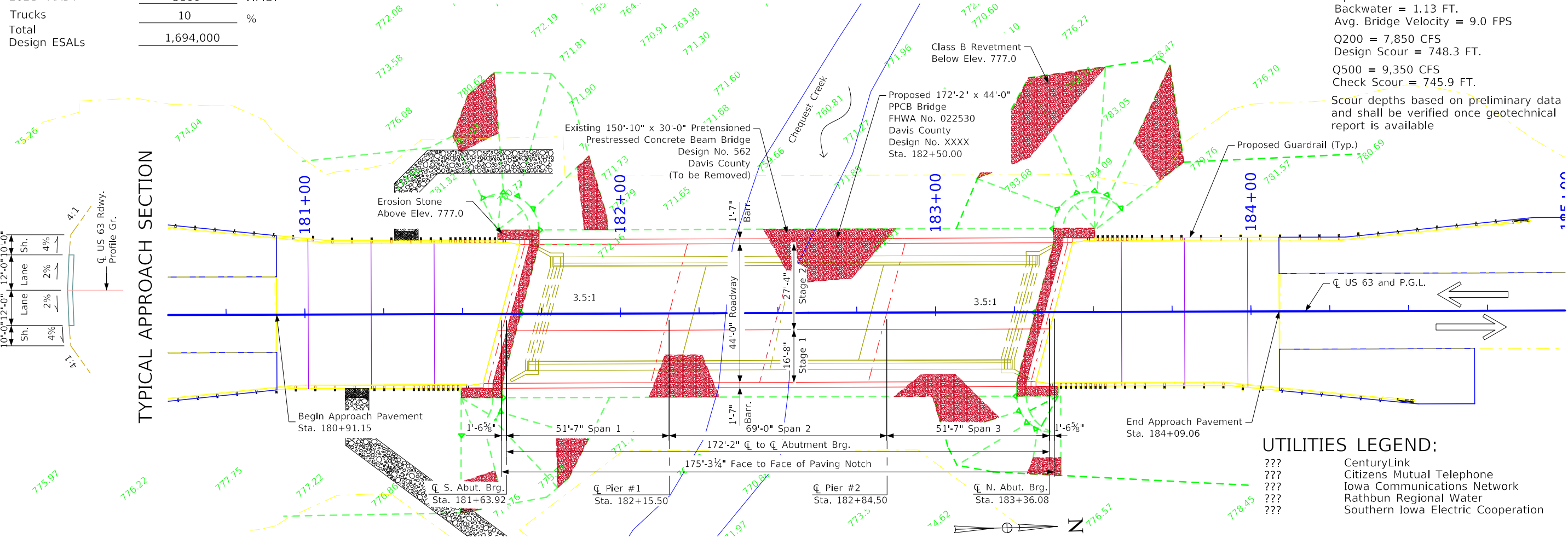


LONGITUDINAL SECTION ALONG US 63

Proposed Profile
Grade US 63

HYDRAULIC DATA

Drainage area = 11.1 SQ. MI.
Stream Slope = 11.7 FT./MI.
Q50= 5,420 CFS
Stage = 775.97
Regulatory Low Beam = 783.36
Avg. Bridge velocity = 7.9 FPS
Q100= 6,590 CFS
Stage = 776.82
Operational Low Beam = 782.33
Backwater = 1.13 FT.
Avg. Bridge Velocity = 9.0 FPS
Q200 = 7,850 CFS
Design Scour = 748.3 FT.
Q500 = 9,350 CFS
Check Scour = 745.9 FT.
Scour depths based on preliminary data
and shall be verified once geotechnical
report is available

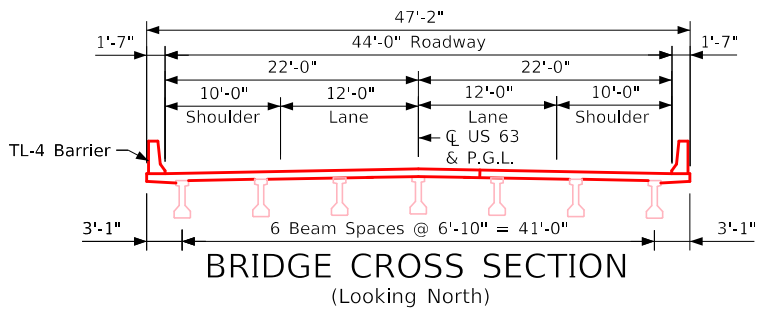


SITUATION PLAN

UTILITIES LEGEND:

??? CenturyLink
??? Citizens Mutual Telephone
??? Iowa Communications Network
??? Rathbun Regional Water
??? Southern Iowa Electric Cooperation

Utilities shown on this sheet are for information
only, see road design sheets for final utility information.



BRIDGE CROSS SECTION
(Looking North)

PLAN NOTES:

- Top of bridge deck at centerline US 63 is 0.03' below the profile grade to account for parabolic crown.
- Class B Revetment stone is embedded.

GENERAL NOTES:

- This design is for the replacement of the existing 150'-10" x 30'-0" pretensioned prestressed concrete beam bridge, Davis County, Design No. 562, FHWA No. 022530, Maint. 2619.8S063.

Hydraulic Design

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Mark D. Werner
Printed or Typed Name: Mark D. Werner
My license renewal date is December 31, XXXX

Pages or sheets covered by this seal: XXXX

PRELIMINARY

Design For 15° Skew (L.A.)
**172'-2" x 44'-0" Pretensioned
Prestressed Concrete Beam Bridge**
51'-7" End Spans (B Beams) 69'-0" Interior Span
Situation Plan
STA. 182+50.00 (US 63) Letting Date:
Davis County
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY ADMINISTRATION
Design No. Design Sheet No. 1 of 3 FHWA No. 022530

DESIGN NOTES:

All units are in feet unless noted otherwise

TL-4 Bridge railing proposed

Pier Type - Wall Piers due to staging

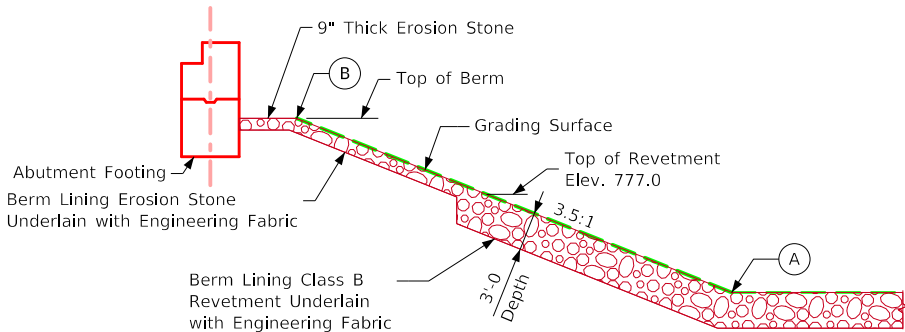
Beam Type - B Beams

Steel H-Pile Foundations for Abutments and Piers

Foundation type to be confirmed during final design

Berm slopes to be confirmed during final design

BENCH MARK: XXXX

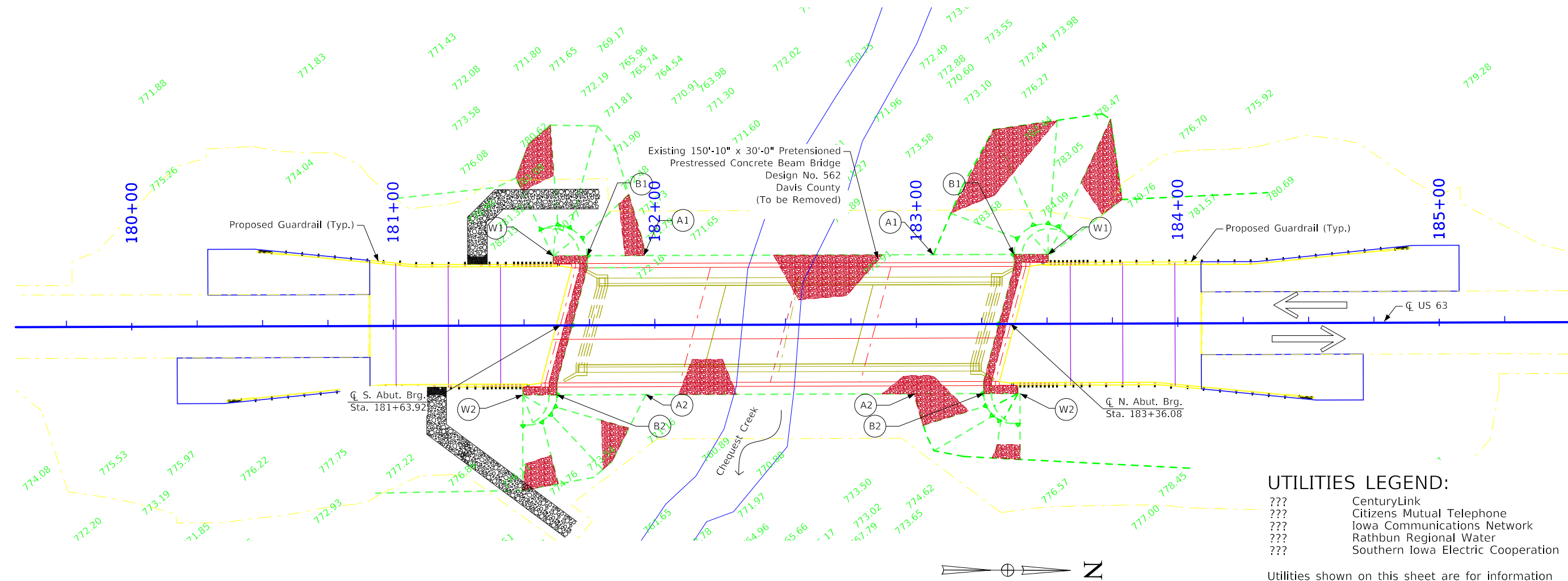


Section Thru Embedded Revetment Berm

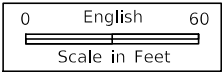
Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	181+96.34	26.58' LT	774.57	183+06.78	26.58' LT	774.91
A2	181+96.54	26.58' RT	771.12	182+99.26	26.58' RT	776.15
B1	181+74.29	26.58' LT	780.84	183+37.48	26.58' RT	783.71
B2	181+62.51	26.58' RT	780.84	183+25.64	26.58' RT	783.71
W1	181+61.26	26.58' LT	786.34	183+50.53	26.58' LT	789.60
W2	181+49.47	26.58' RT	786.24	183+38.74	26.58' RT	789.30

Berm slope elevations reflect the grading surface.



SITE PLAN



UTILITIES LEGEND:

- ??? CenturyLink
- ??? Citizens Mutual Telephone
- ??? Iowa Communications Network
- ??? Rathbun Regional Water
- ??? Southern Iowa Electric Cooperation

Utilities shown on this sheet are for information only, see road design sheets for final utility information.

PRELIMINARY

Estimated Berm Armoring Quantities

Location	Revetment Cl. B (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	Excavation (CY)
Berm Lining - South	1141.3	100.2	936.5	665.7
Berm Lining - North	729.0	213.4	1003.9	517.5
Totals	1870.3	313.6	1940.4	1183.2

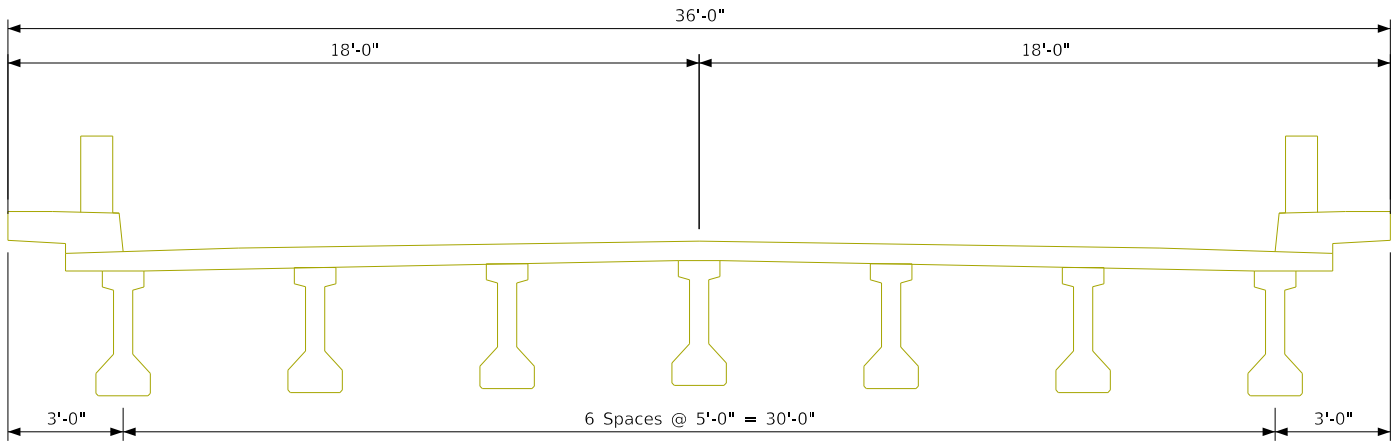
Excavation quantity calculated from grading surface.

Design For 15° Skew (L.A.)
172'-2" x 44'-0" Pretensioned Prestressed Concrete Beam Bridge
51'-7" End Spans (B Beams) 69'-0" Interior Span
Site Plan

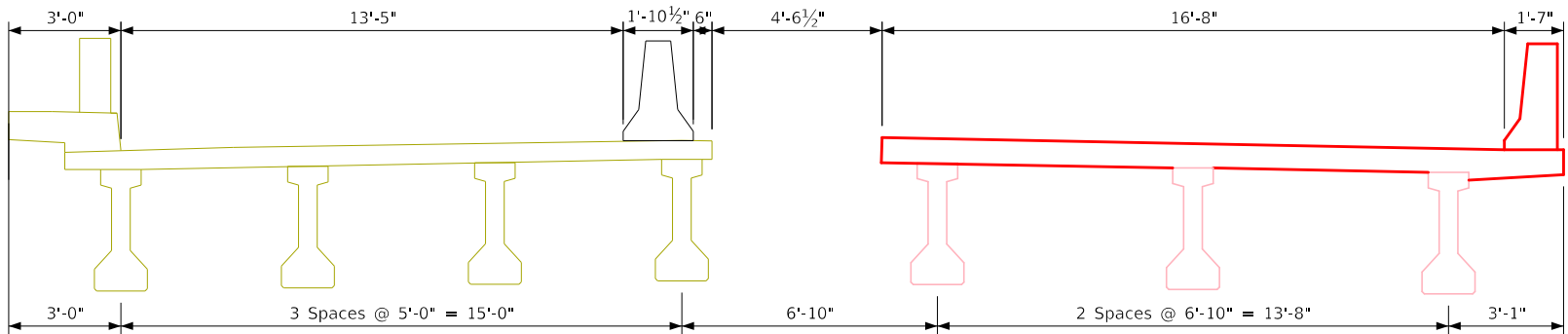
STA. 182+50.00 (C US63) Letting Date:

Davis County

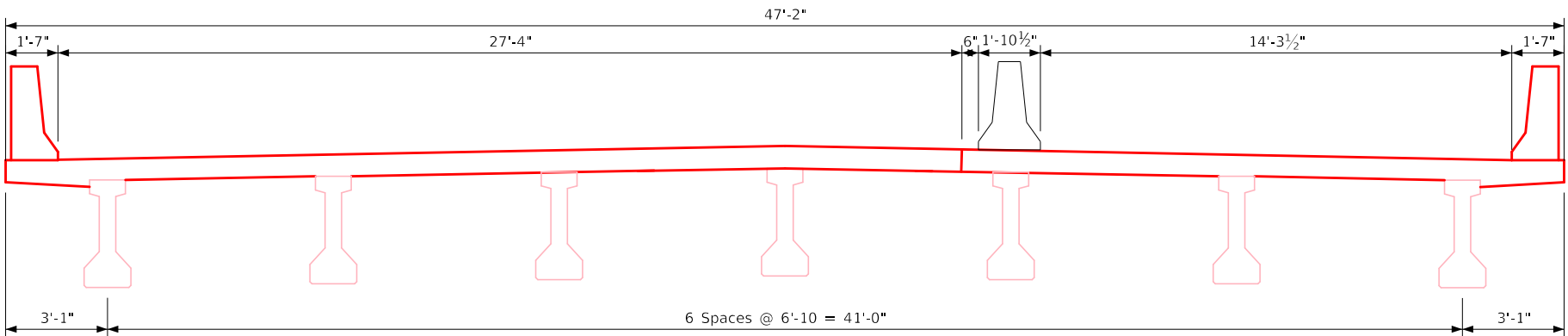
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY ADMINISTRATION
Design No. Design Sheet No. 2 of 3 FHWA No. 022530



EXISTING BRIDGE CROSS SECTION
(Looking North)



STAGE 1 CROSS SECTION
(Looking North)



STAGE 2 CROSS SECTION
(Looking North)

Note:
Widening Beam Spacing to 7'-0" Would Provide
Stage 2 Traffic Width of 14'-7½" and 1'-0"
Extra Roadway Width

PRELIMINARY

Design For 15° Skew (L.A.)

172'-2" x 44'-0" Prestensioned
Prestressed Concrete Beam Bridge

51'-7" End Spans (B Beams) 69'-0" Interior Span

Staging Details

STA. 182+50.00 (C U563) Letting Date:

Davis County

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY ADMINISTRATION

Design No. Design Sheet No. 3 of 3 FHWA No. 022530

CROSS SECTION VIEW COLOR LEGEND			
Design Color No.	Feature	Design Color No.	Feature
Aggregate		Structural	
(64)	Choke Stone	(112)	Noise Wall
(42)	Engineering Fabric	(112)	Noise Wall Footing
(8)	Flooded Backfill	(112)	Retaining Wall Back
(92)	Macadam Stone	(112)	Retaining Wall Back Excavate
(20)	Modified	(112)	Retaining Wall Face
(12)	Plowing Shaping	(112)	Retaining Wall Front Excavate
(14)	Porous Backfill	(112)	Retaining Wall Front Footing
(8)	Revetment Class A	(112)	Retaining Wall MSE Gutter
(6)	Revetment Class B	(112)	Retaining Wall Reinforced Earth
(62)	Revetment Class C	Grading	
(188)	Revetment Class D	(8)	Behind Curb Cut
(28)	Revetment Class E	(6)	Granular
(12)	Shoulder Special Backfill	(13)	Granular Back Fill
(12)	Special Backfill	(48)	Rock Undercut
(20)	Subbase	(8)	Shoulder Earth Fill
(20)	Subbase Lower	(2)	Side Slopes
(20)	Subbase Upper	(226)	Side Slopes Dressing
(118)	Subgrade Treatment	Substrata	
Asphalt		(128)	Boulder Substrata
(207)	HMA Base Course	(48)	Broken Weathered Substrata
(207)	HMA Interim Course	(3)	Core Out Substrata
(207)	HMA Surface Course	(203)	Existing Pavement Substrata
Concrete		(6)	Loam Substrata
(0)	Barrier Concrete	(80)	Rock Substrata
(0)	Barrier Concrete Footing	(4)	Select Sand Substrata
(0)	Curb Gutter	(3)	Shale Substrata
(48)	Flowable Mortar	(10)	Topsoil Substrata
(0)	Median Concrete	Unsuitable / Waste	
(0)	PCC Pavement	(3)	Unsuitable Type A
(0)	Sidewalk	(13)	Unsuitable Type B
Shoulder		(11)	Unsuitable Type C
(209)	Shoulder HMA	(3)	Waste
(0)	Shoulder PCC		
(6)	Shoulder Granular		
Existing			
(0)	Existing Pavement		

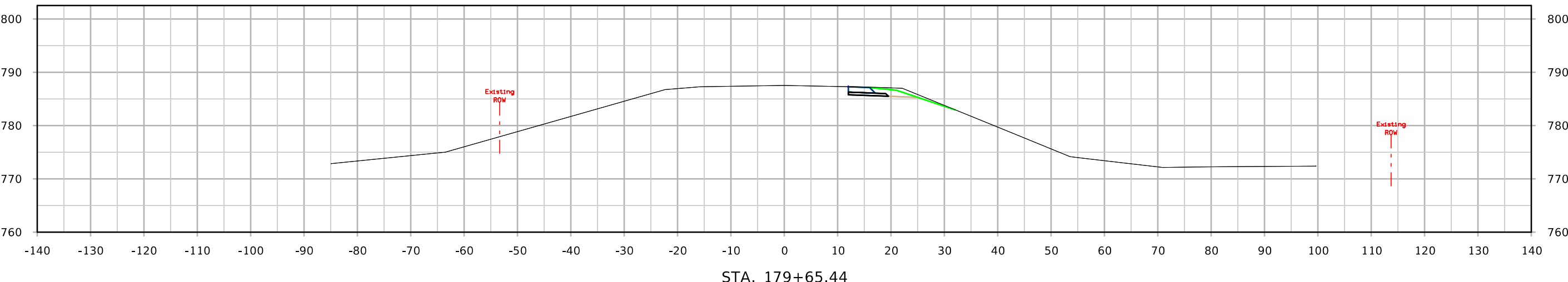
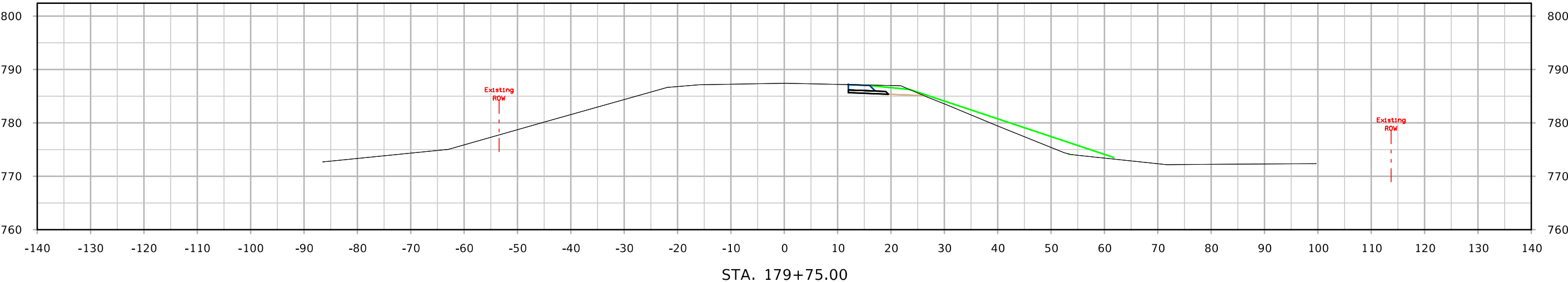
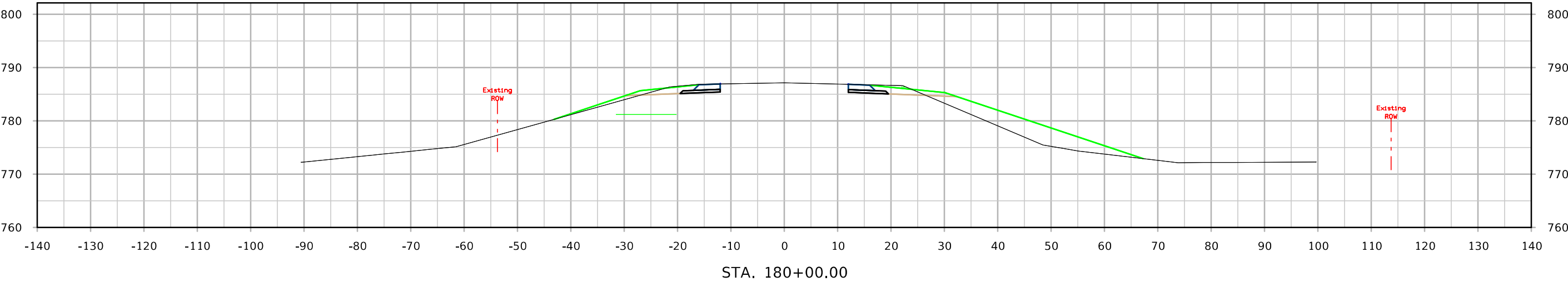
NOTES:

NOTES:

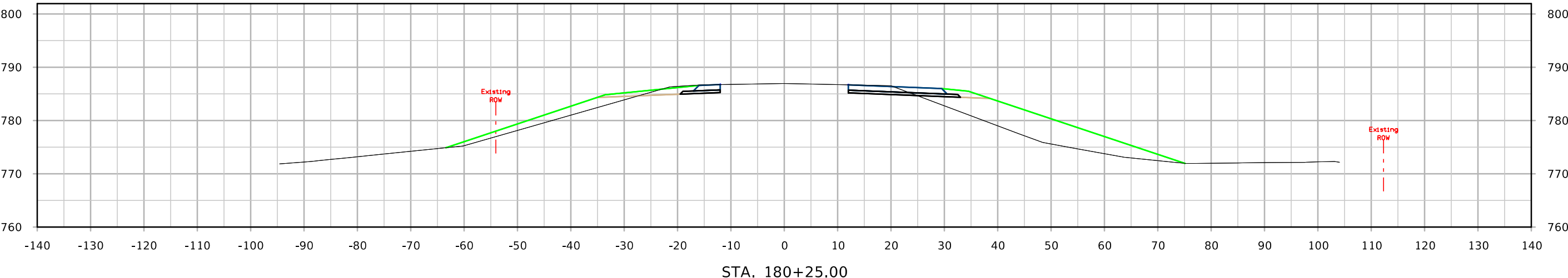
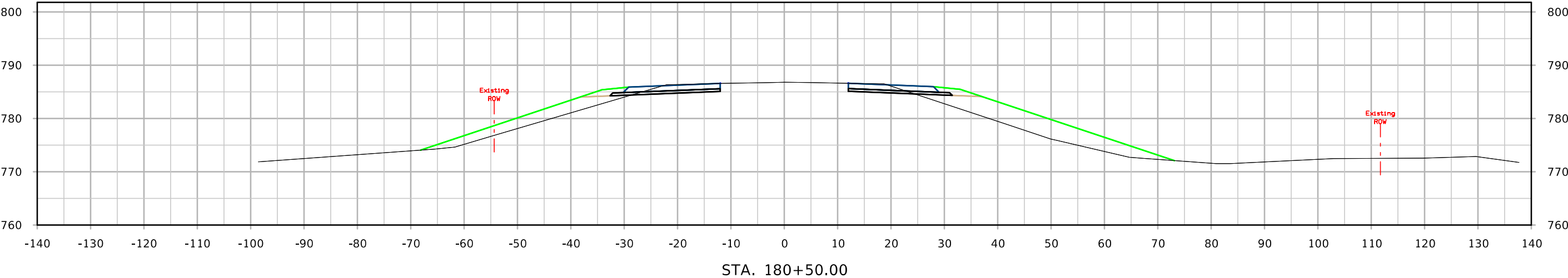
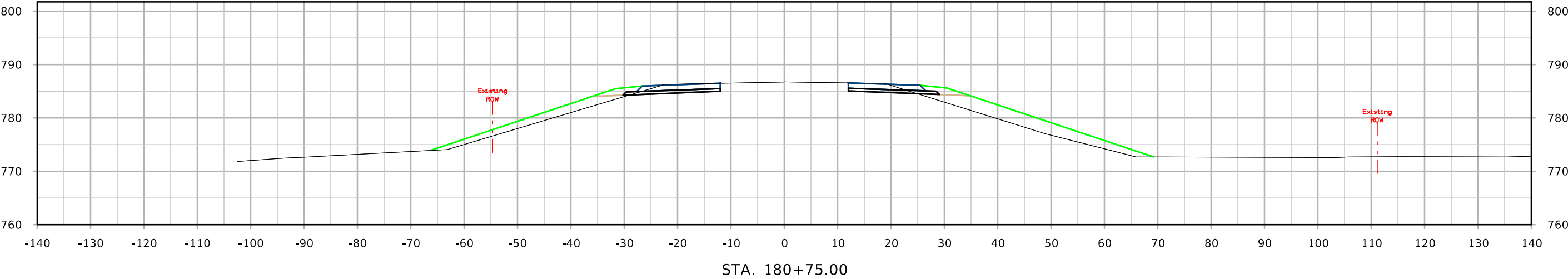
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

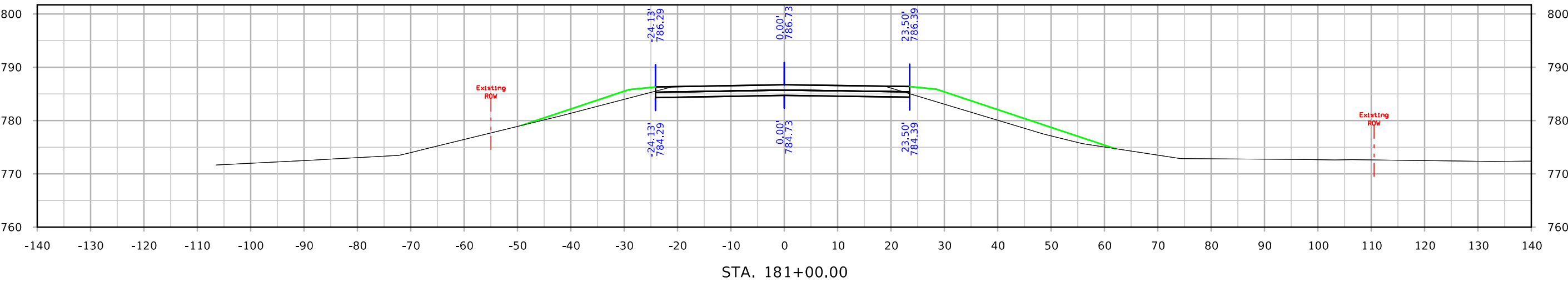
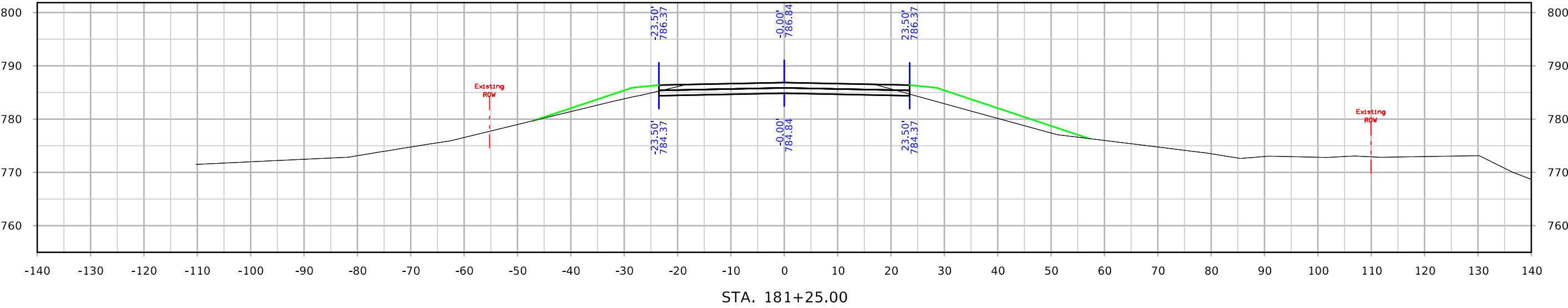
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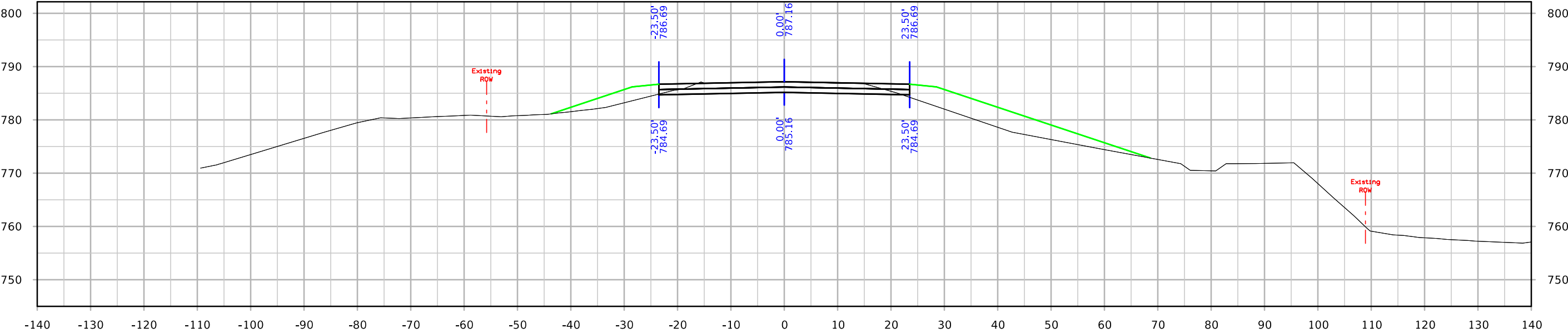
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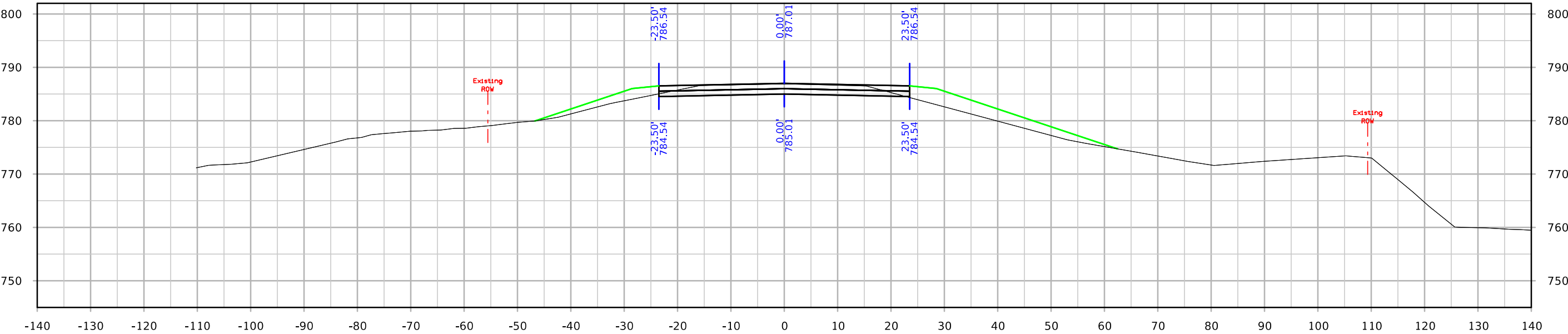
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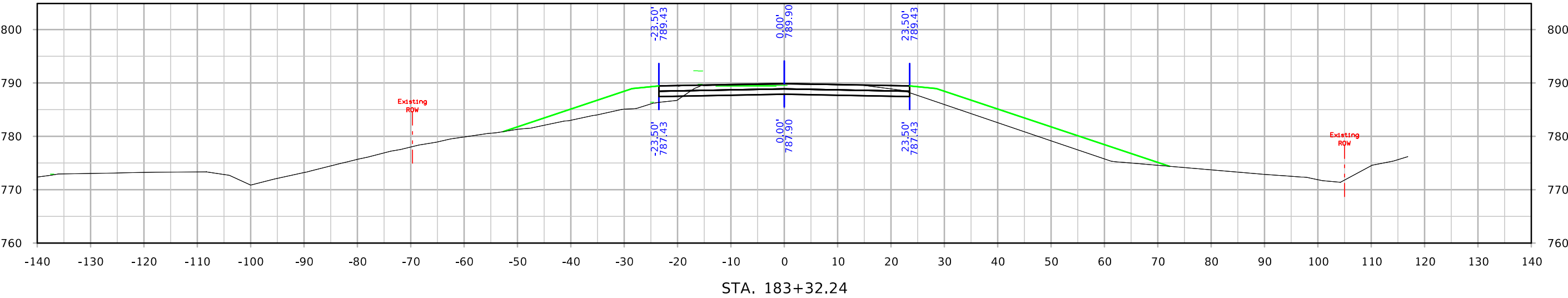
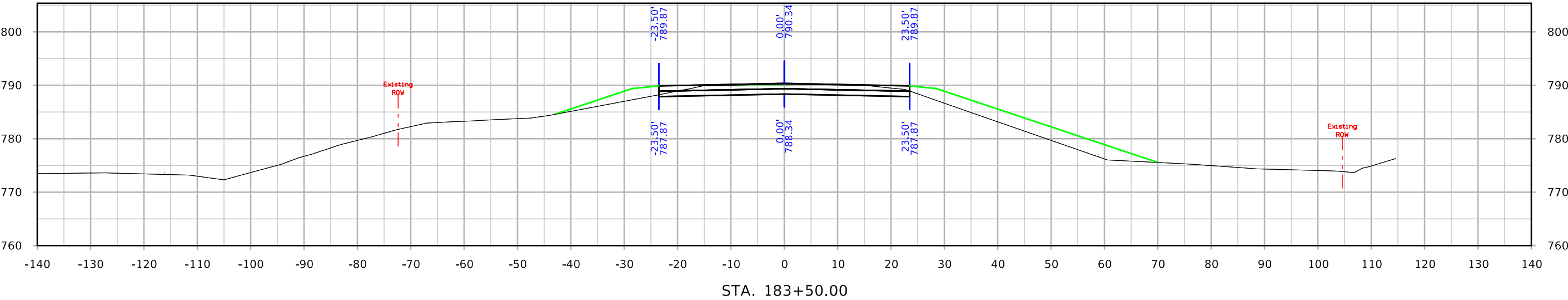


STA. 181+67.76

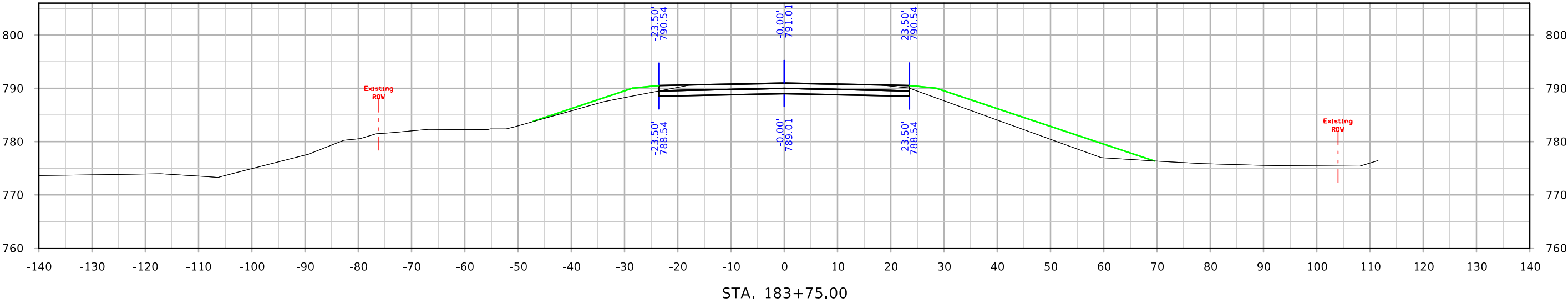
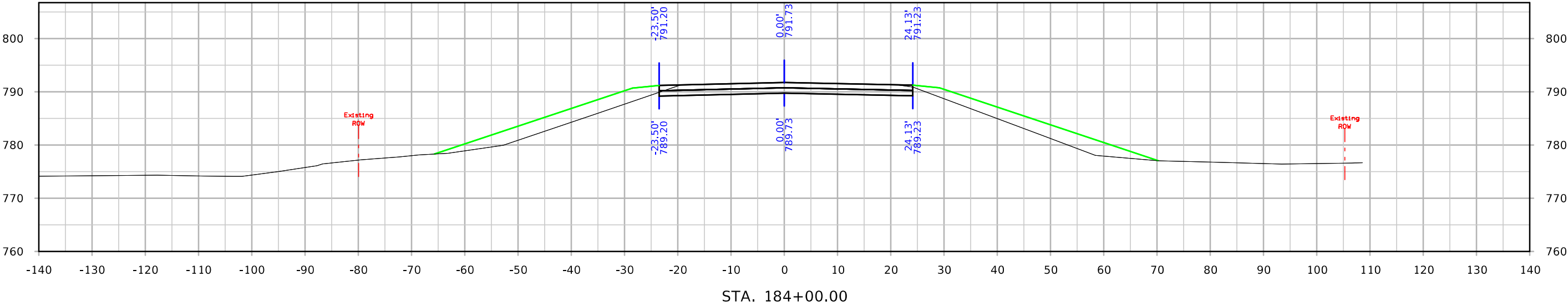


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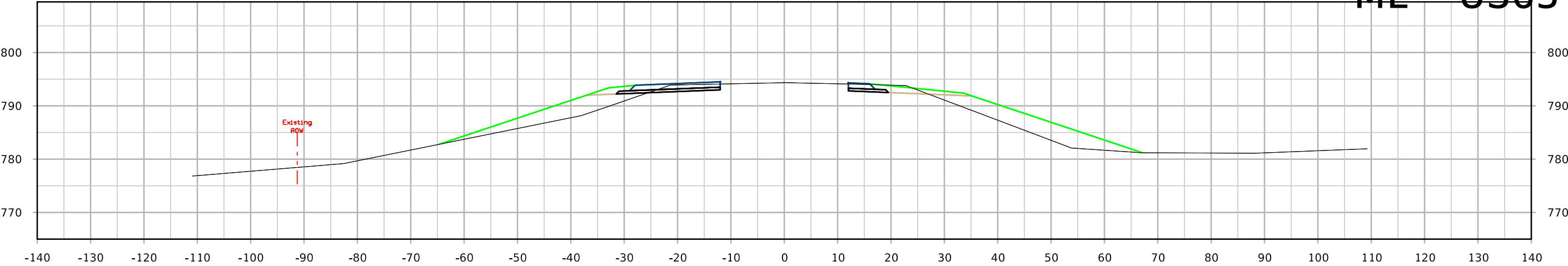
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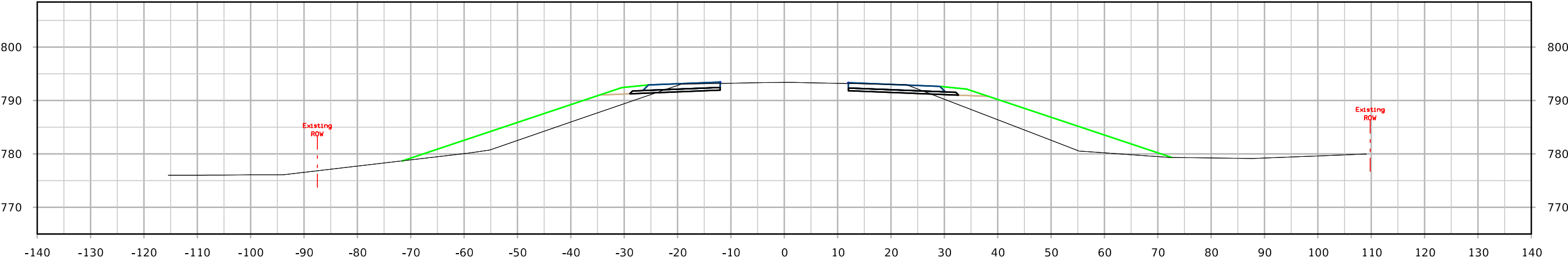
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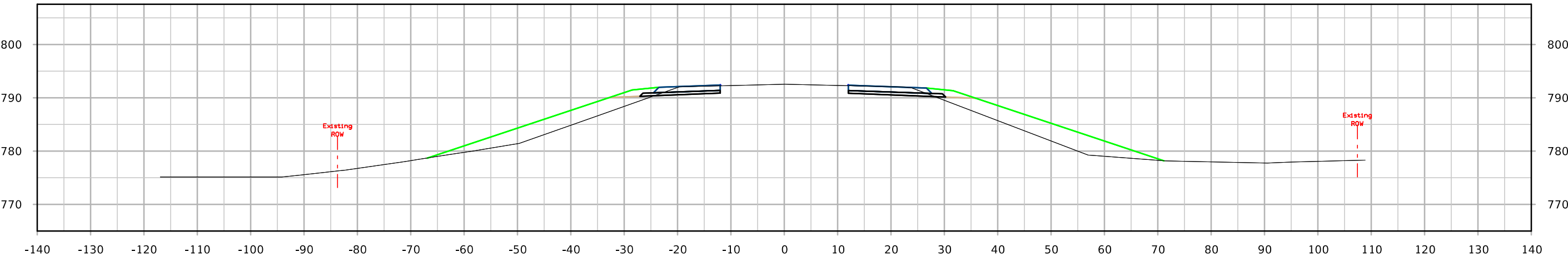
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STA. 184+75.00

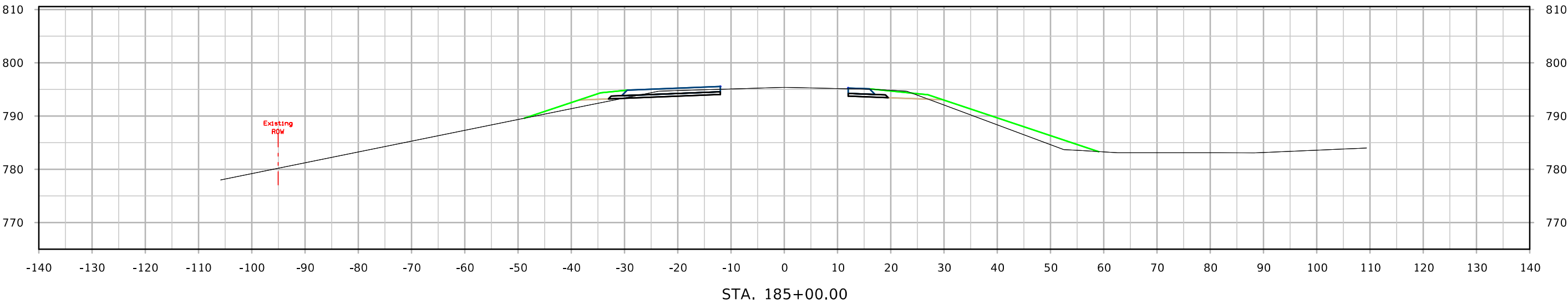
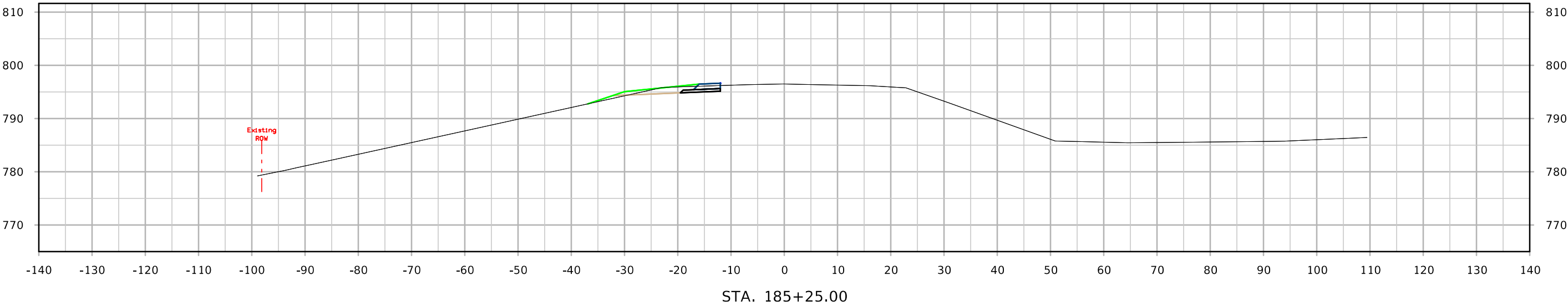


STA. 184+50.00



STA. 184+25.00

ML - US63



ML - US63

