

Bridge Replacement - PPCB
BRF-031-3(13)--38-18

CHEROKEE COUNTY

LETTING DATE
12-16-2025



PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
CHEROKEE COUNTY
Bridge Replacement - PPCB

Silver Creek, 1.0 mi W 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

PROJECT IDENTIFICATION NUMBER

20-18-031-010

PROJECT NUMBER

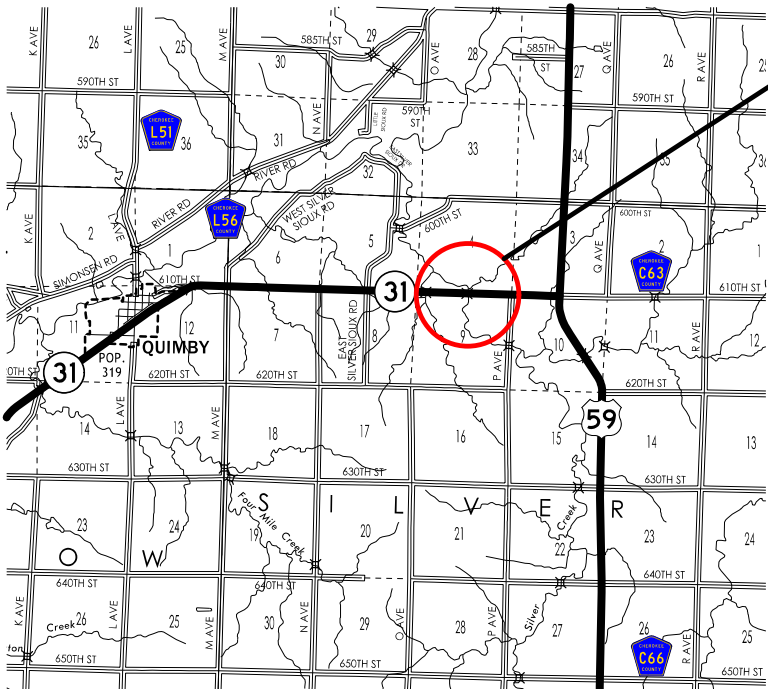
BRF-031-3(13)--38-18

R.O.W. PROJECT NUMBER

STPN-031-3(14)--2J-18

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 3	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	"IA 31"
G Sheets	Survey Sheets
G.1 - 2	Reference Ties and Bench Marks
G.3	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
* J.1	Detour Map
W Sheets	Mainline Cross Sections
* W.1 - 19	Mainline Cross Sections
	* Color Plan Sheets



PROJECT LOCATION
Sta. 1201+25.00
Ref. Loc. 38.20
FHWA # 19540

DESIGN DATA RURAL

2025	AADT	1200	V.P.D.
2045	AADT	1200	V.P.D.
20 -	DHV	-	V.P.H.
TRUCKS		20	%
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.

D5 PLAN - Date: 1-27-2025

FILE NO.

ENGLISH

DESIGN TEAM Strum\Prindle

CHEROKEE COUNTY

PROJECT NUMBER BRF-031-3(13)--38-18

SHEET NUMBER A.01

Paved Shoulder at Guardrail

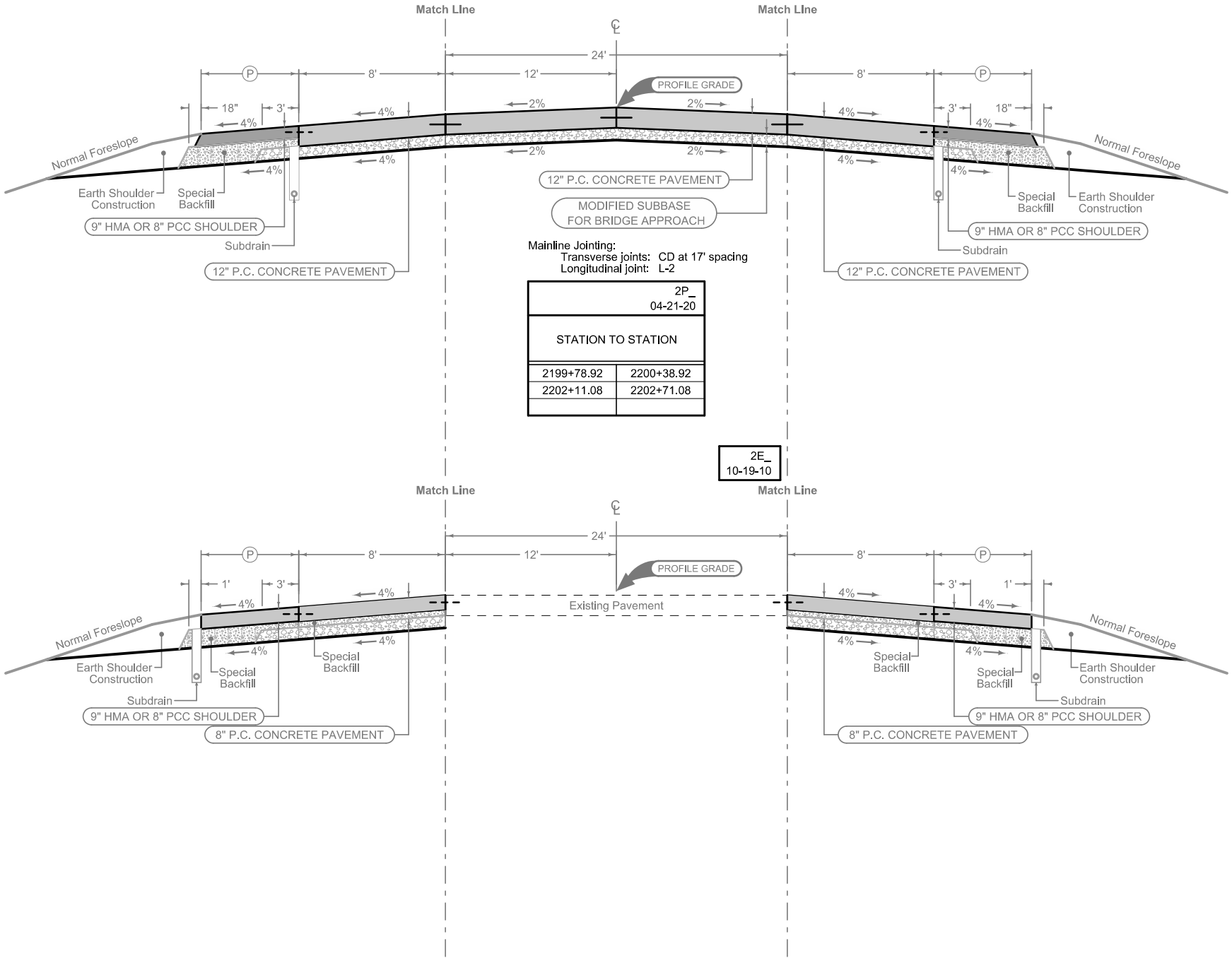
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
2199+78.92	2200+38.92	1.6 - 1.6
2202+11.08	2202+71.08	1.6 - 1.6

Paved Shoulder at Guardrail

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

2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
2199+11.65	2199+31.65	3.3 - 3.3
2199+31.65	2199+78.92	3.3 - 1.6
2202+71.08	2202+95.62	1.6 - 1.6
2202+95.62	2203+43.35	1.6 - 3.3
2203+43.35	2203+63.35	3.3 - 3.3



Paved Shoulder at Guardrail

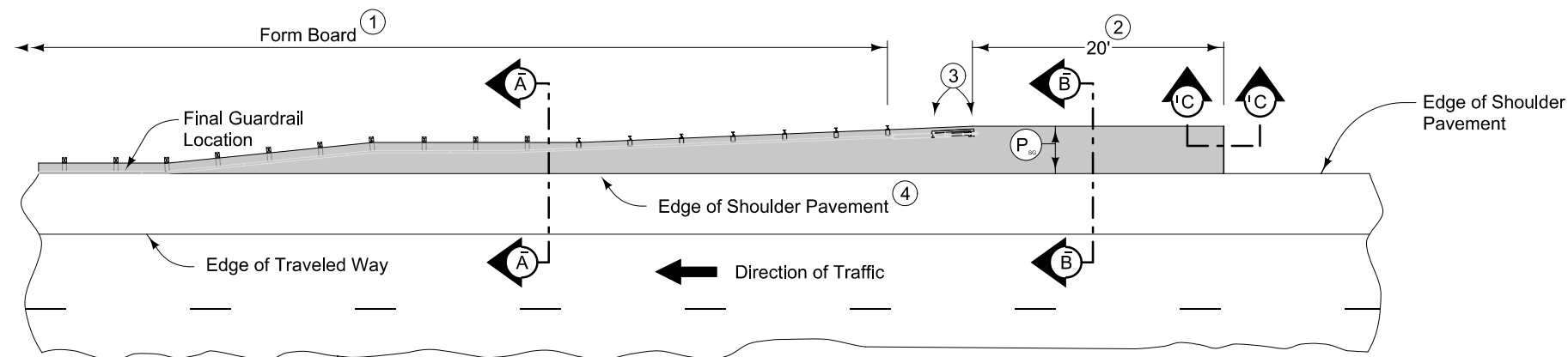
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
2199+78.92	2200+38.92	1.6 - 1.6
2202+11.08	2202+71.08	1.6 - 1.6

Paved Shoulder at Guardrail

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

2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
2198+86.65	2199+06.65	3.3 - 3.3
2199+06.65	2199+54.38	3.3 - 1.6
2199+54.38	2199+78.92	1.6 - 1.6
2202+71.08	2203+18.35	1.6 - 3.3
2203+18.35	2203+38.35	3.3 - 3.3



PLAN VIEW

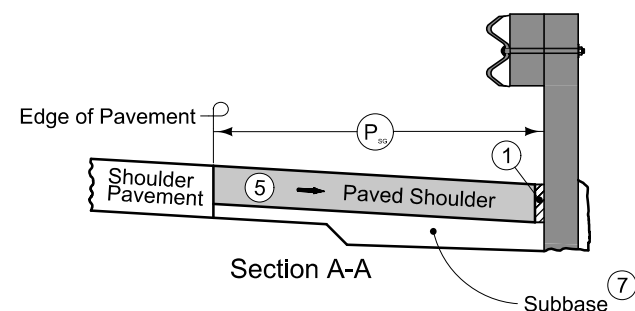
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

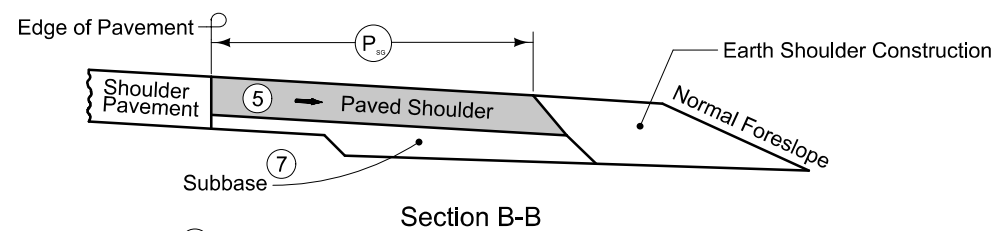
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

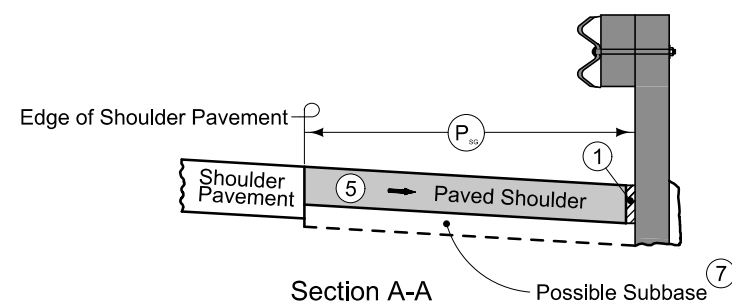
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-102) joint for PCC shoulder.
'B' (per PV-102) 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.



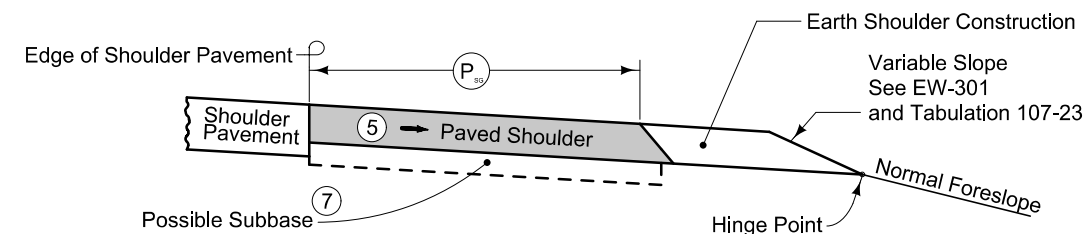
NEW CONSTRUCTION



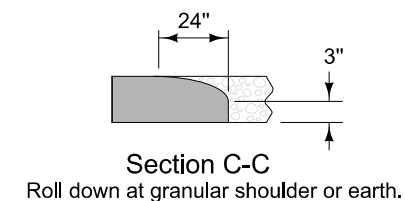
Section B-B



EXISTING SHOULDER



Section B-B

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

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Satellite TV Dish
	Fruit Tree		Water Hook Up
	Shrub (Bushes)		Radio Tower
	Timber		Tower Anchor
	Hedge		Guardrail (Beam or Cable)
	Stump		Guard Post (one or two)
	Swamp		Guard Post (over two)
	Rock Outcrop		Filler Pipe
	Broken Concrete		Gas Valve
	Revetment (Rip Rap)		Water Valve
	Cemetery		Speed Limit Sign
	Grave		Mile Marker Post
	Cave		Sign
	Sink Hole		Traffic Signal Control Box
	Board Fence		Rail Road Signal Control Box
	Chain Link or Security Fence		Telephone Switch Box
	Wire Fence		Electric Box
	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		
	Water Hydrant (Rural)		

UTILITY LEGEND

Nustar Pipeline	West Iowa Telephone
Keely Hosmann	Phil Klein
(316) 721-7073	(712) 786-5576
keenly.hosmann@nustarenergy.com	pklein@westelsystems.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.	
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	(70)		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

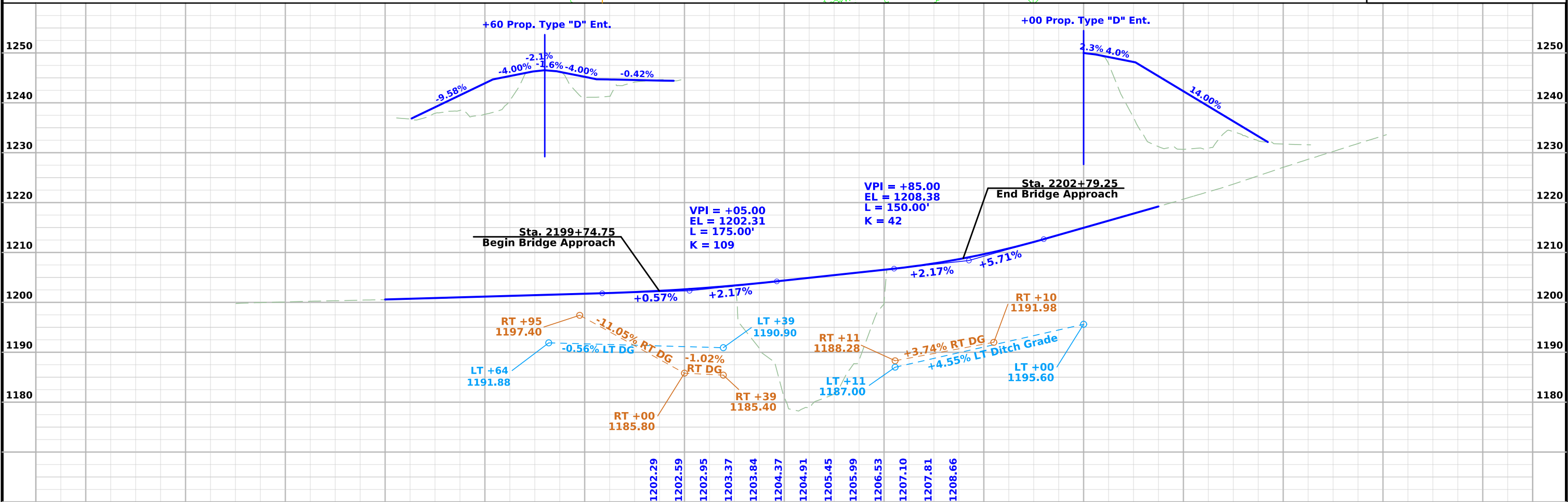
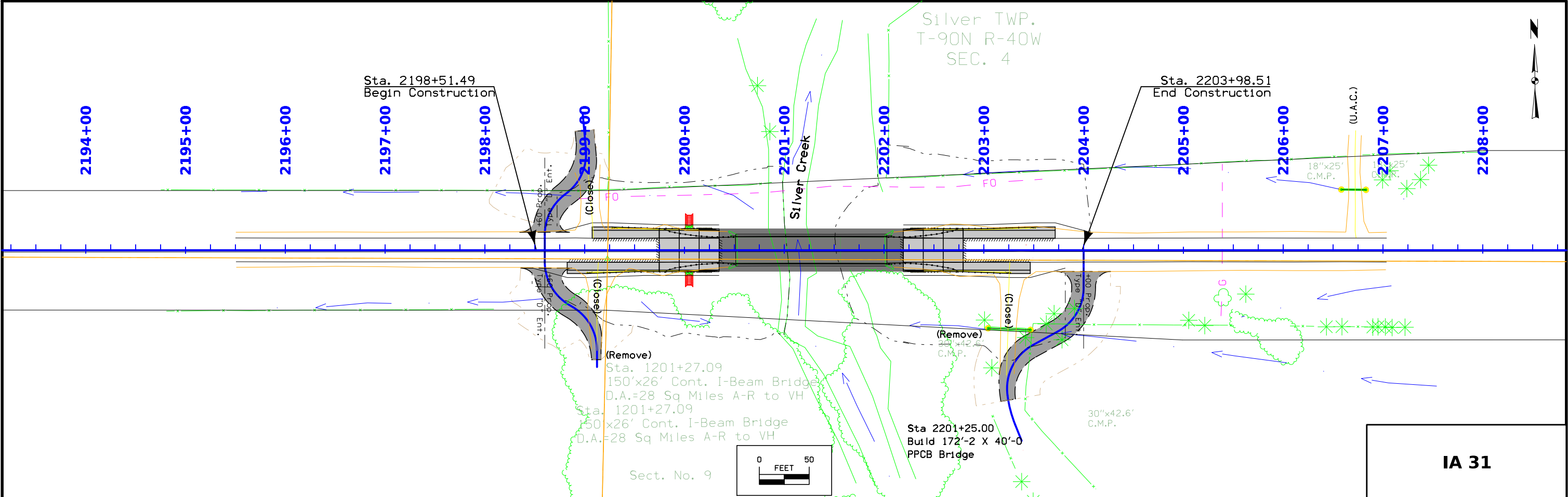
LINEWORK	Design	Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

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

	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)



Survey Information

Cherokee County
BRF-031-3(13)--38-18
Location: Silver Creek 1.0 mi W of US 59
Type of Work: Bridge-Unspecified
Project Directory: 1803101020
PIN: 20-18-031-010
Sap-0778.3

Party Personnel

Clayton Henningsen- Survey Party Chief
Jason Arn- Survey Party Chief

Date(s) of Survey

Begin Date 01/29/2021
End Date 02/08/2021

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction on IA 31 over Silver Creek 1.0 mile west of US 59. This is a partial field survey with photo control.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. REF384, REF422, REF432, REF453, REF473, REF483, REF513, REF522, REF572, 600, 2000-019, 2000-077 by doing concurrent 6 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

This survey observed 2 County GPS control with published NAVD88 heights to compare to local ground control:

Cherokee County GPS Network mark designated 2000-019 has a published Elev. Of 1164.35
Survey Elev. = 1164.145

Cherokee County GPS Network mark designated 2000-077 has a published Elev. Of 1155.51
Survey Elev. = 1155.433

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 4 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by conducting concurrent 6 hour static observations on Project Pts. REF384, REF422, REF432, REF453, REF473, REF483, REF513, REF522, REF572, 600, 2000-019, 2000-077.

Alignment Information

The horizontal alignment for this survey is a retrace of Paving Plans F-Project No. 744. Survey stationing was equated to the plan POT at Sta. 1199+22.9 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 1199+22.9 Paving Plans F-Project No. 744
Survey POT Sta. 1199+22.9

POT Sta. 1225+58.9 Paving Plans F-Project No. 744
Survey POT Sta. 1225+59.95

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) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 04

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

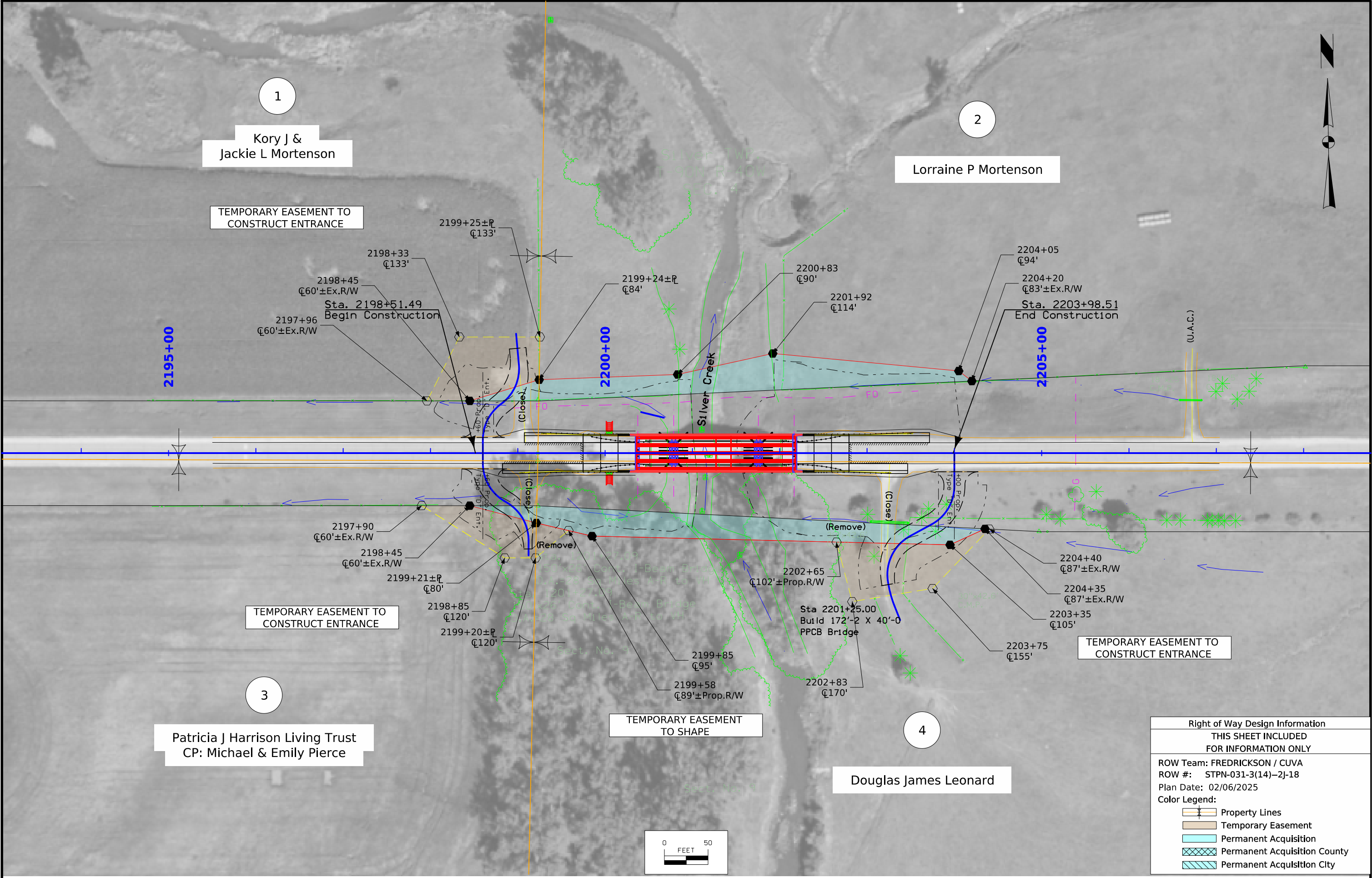
HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 04
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Feature Definition-Description
REF522	8637754.621	14295165.48	1274.31	CP REF522 FROM INTERSECTION OF HWY 59 AND HWY 31 SOUTH OF CHEROKEE GO WEST ON HWY 31 2.0 MI FOUND IP SET IN CONC MON ON NORTH SIDE OF HWY 100FT NORTH OF CL HWY 43FT EAST OF CL E SILVER SIOUX RD 7FT SE IA 31/E SILVER SIOUX RD SIGN
REF572	8637636.918	14300462.28	1193.66	CP REF572 FROM INTERSECTION OF HWY 59 AND HWY 31 SOUTH OF CHEROKEE GO WEST ON HWY 31 1.0 MI FOUND IP SET IN CONC MON ON NORTH SIDE OF HWY 60FT NORTH OF HWY 31 CL 102FT NW COR BR WING 42FT EAST OF CL ENT 26FT EAST OF CORNER FENCE POST

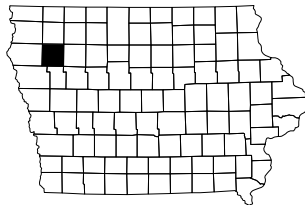
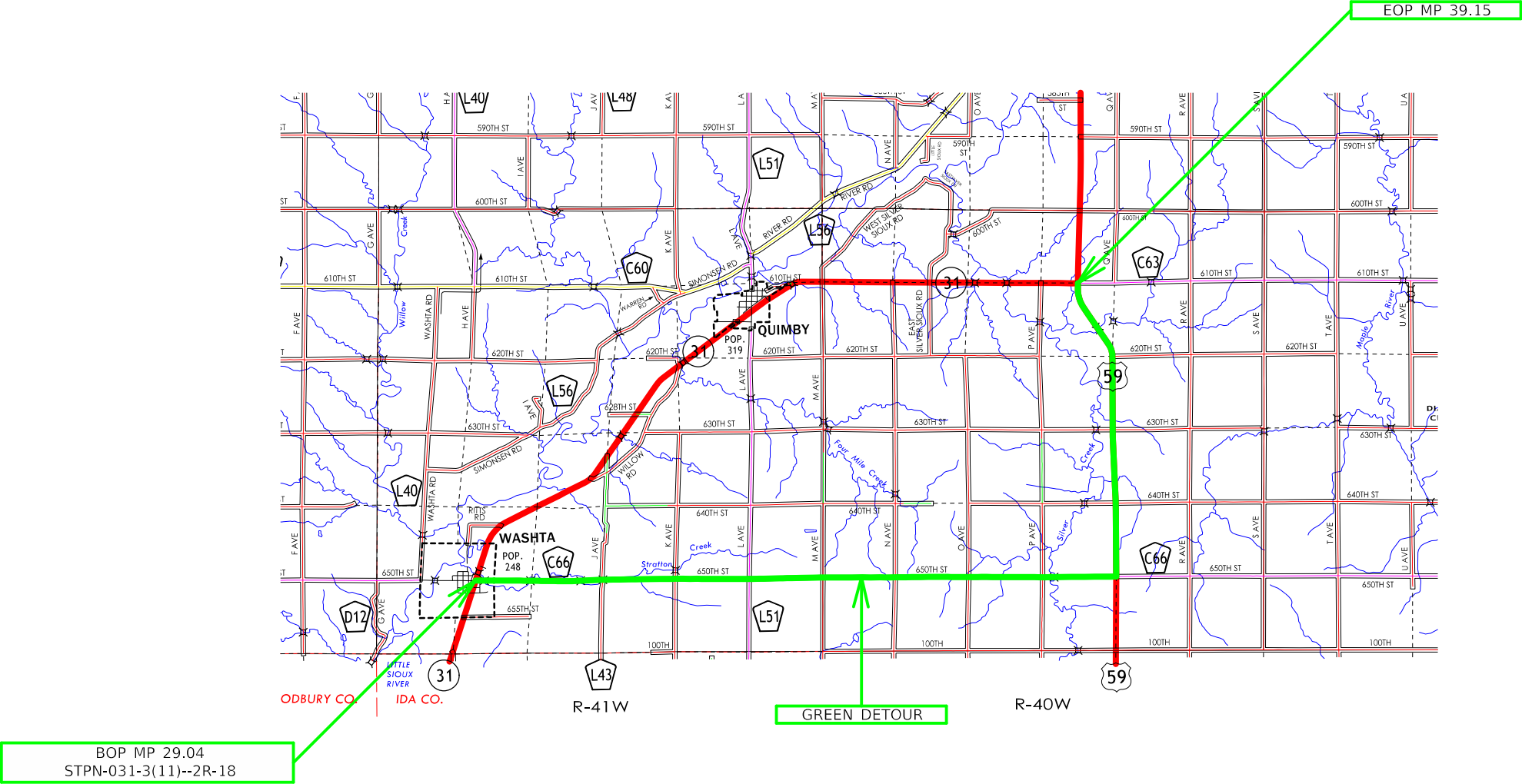
NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: FREDRICKSON / CUVA	
ROW #: STPN-031-3(14)-2J-18	
Plan Date: 02/06/2025	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City

CHEROKEE COUNTY

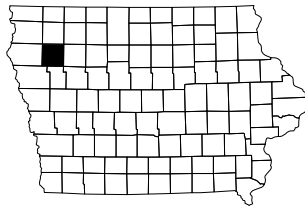
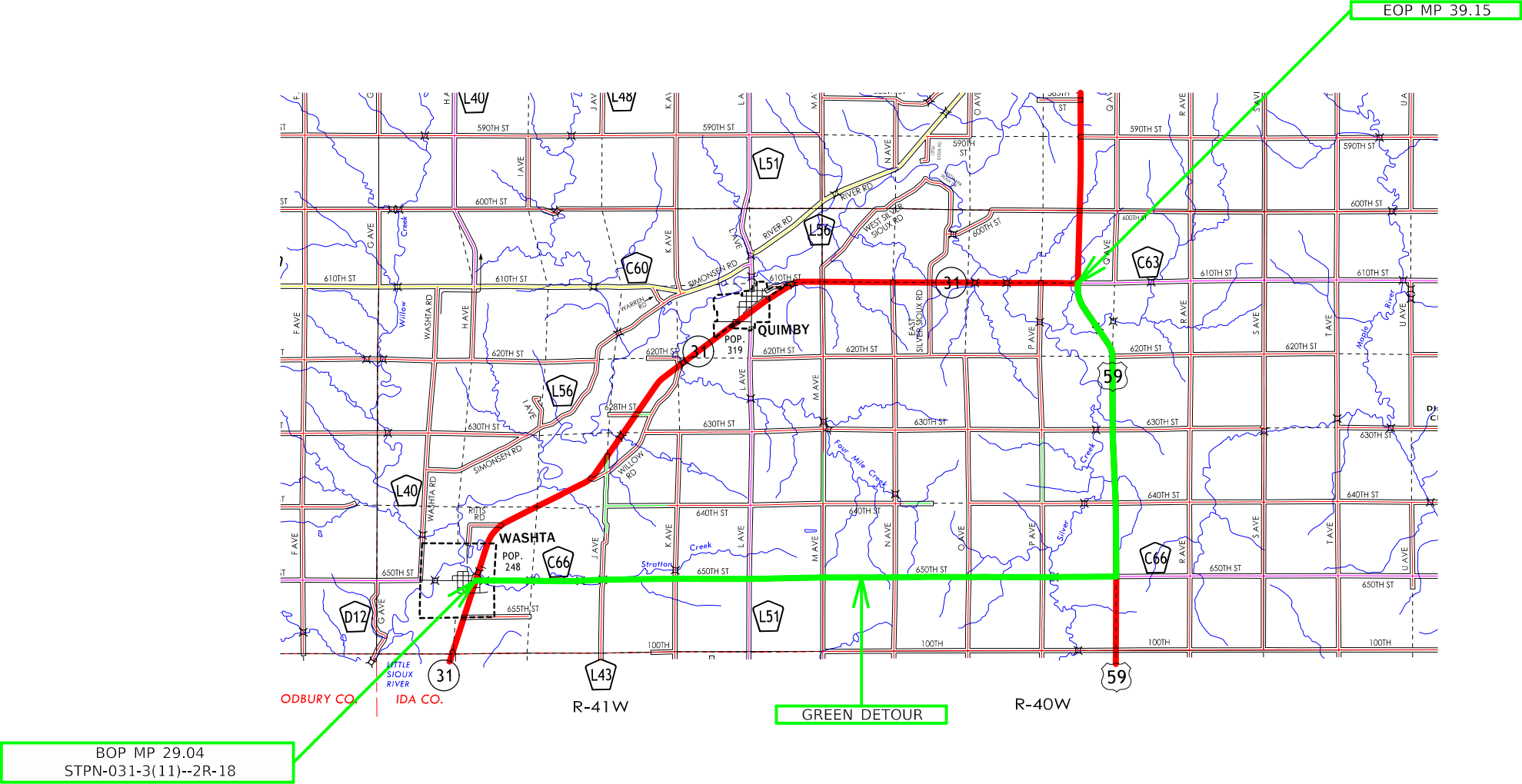
Proposed Detour Route



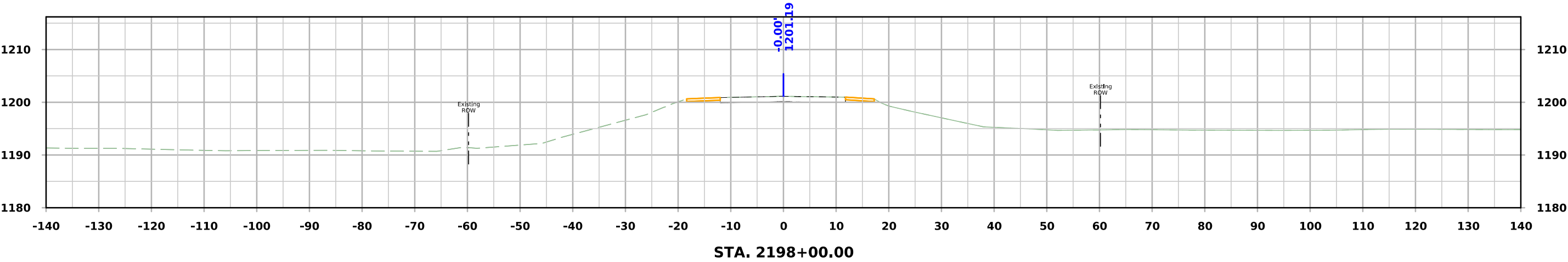
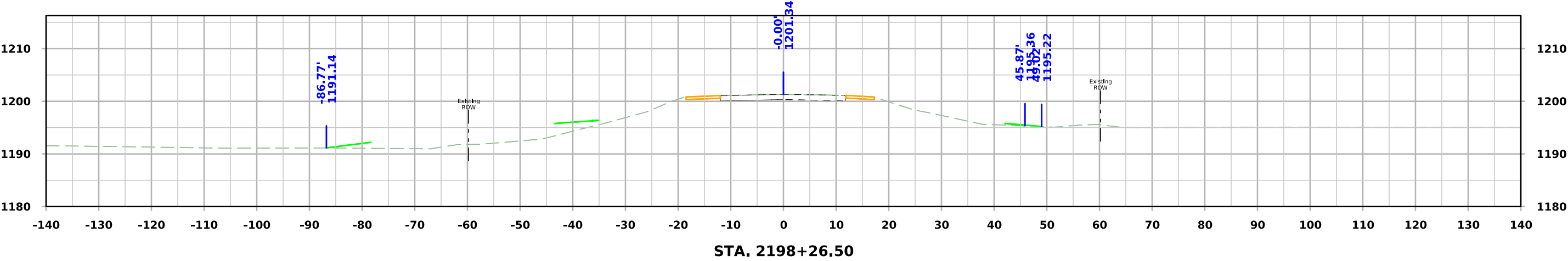
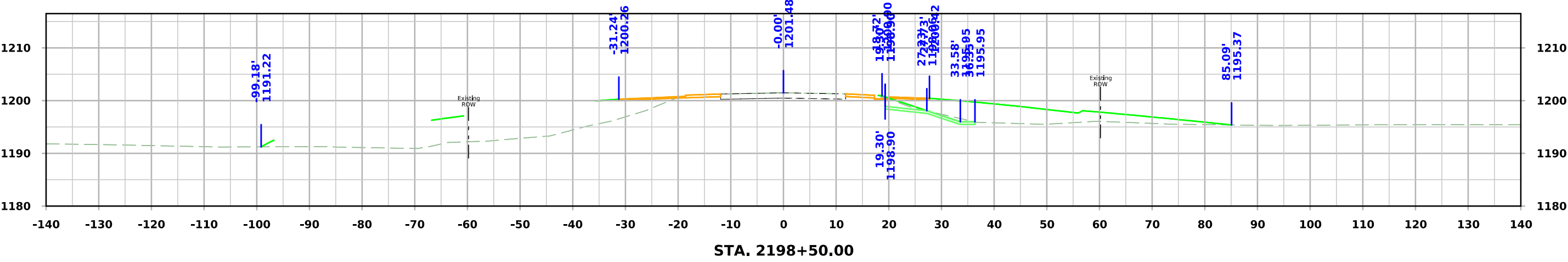
18

CHEROKEE COUNTY

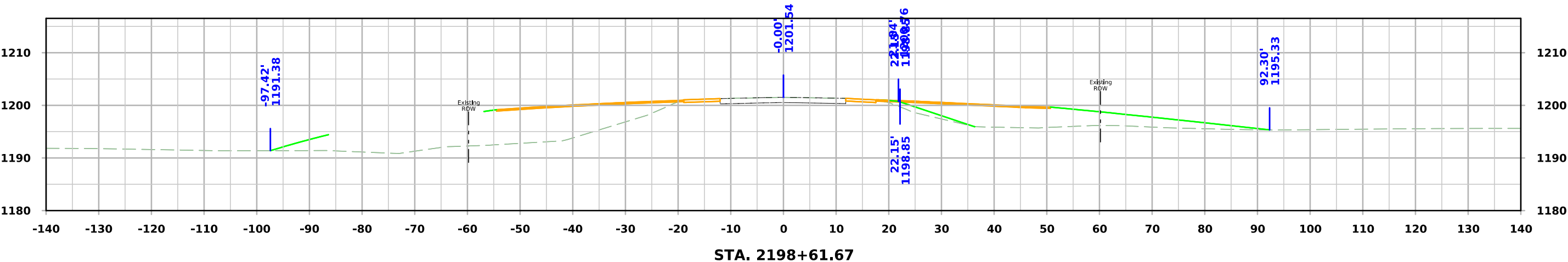
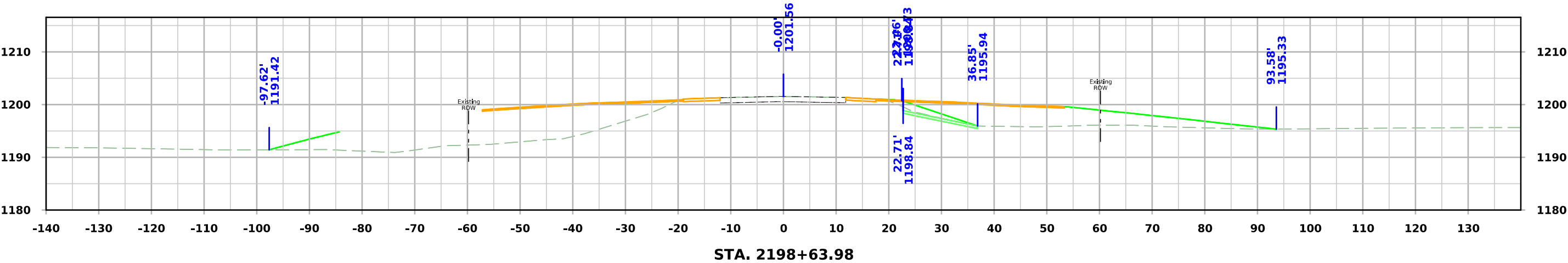
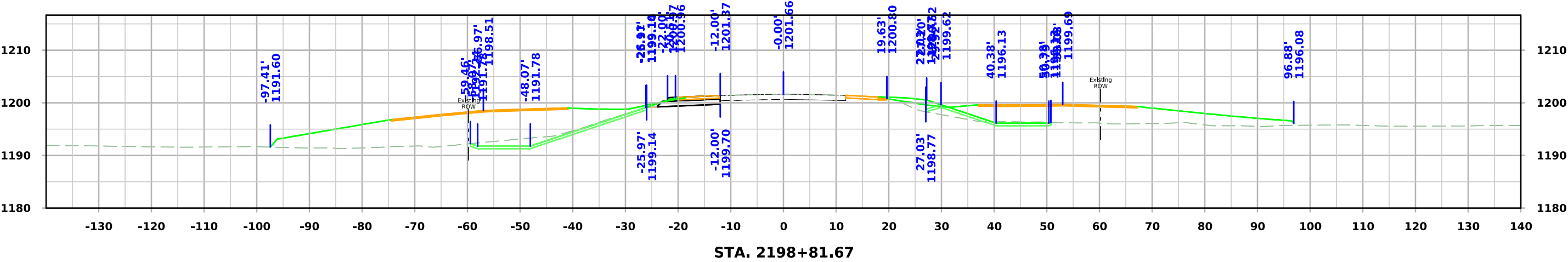
Proposed Detour Route

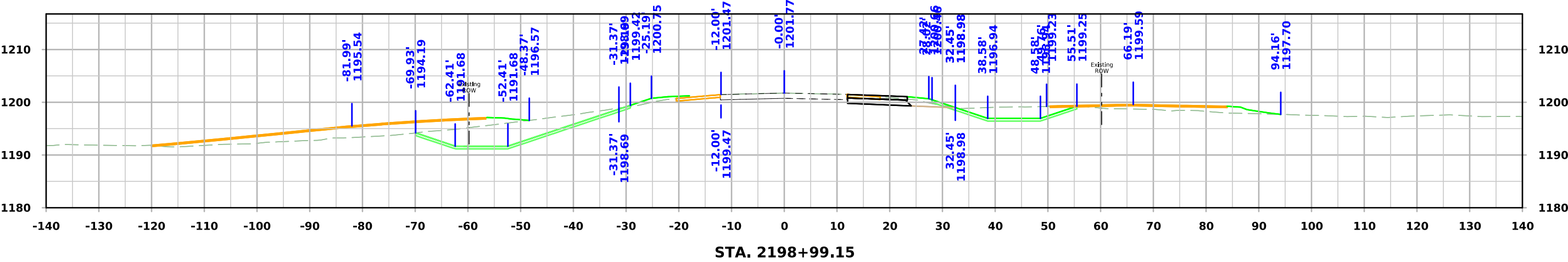
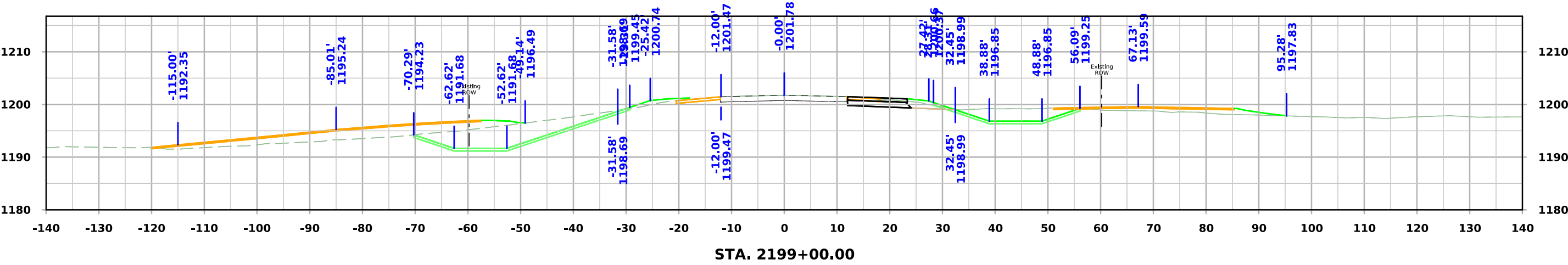
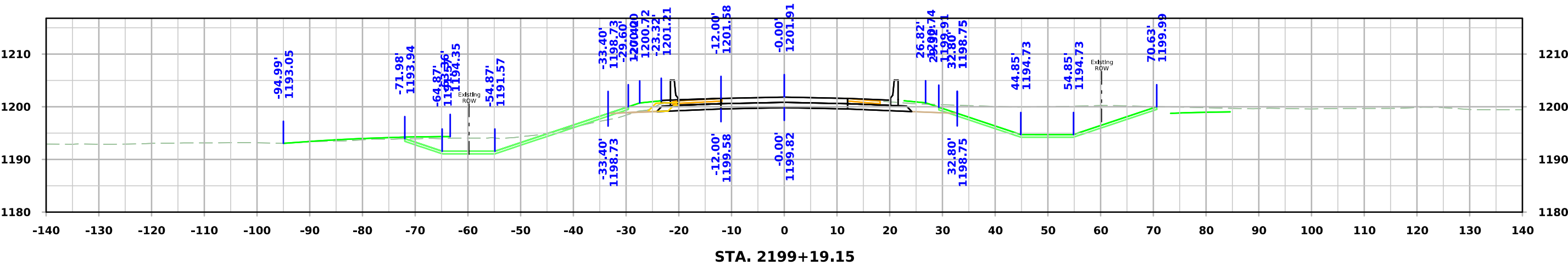


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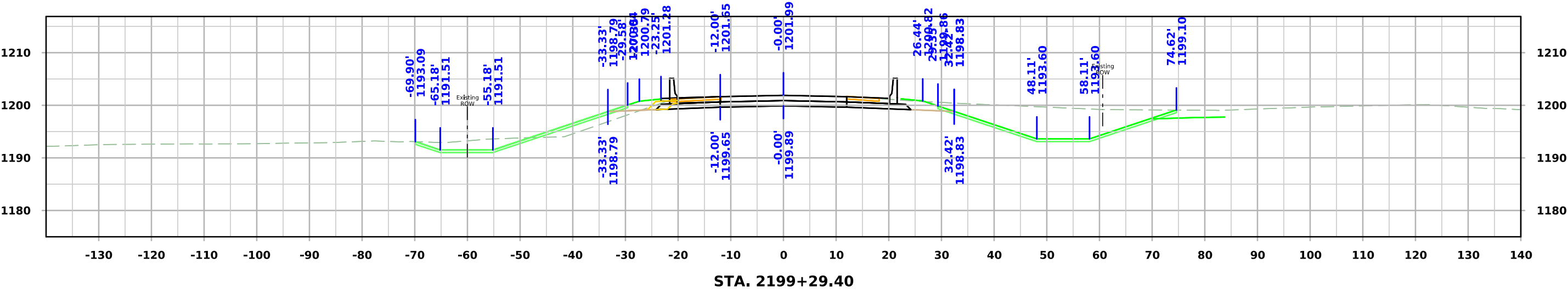
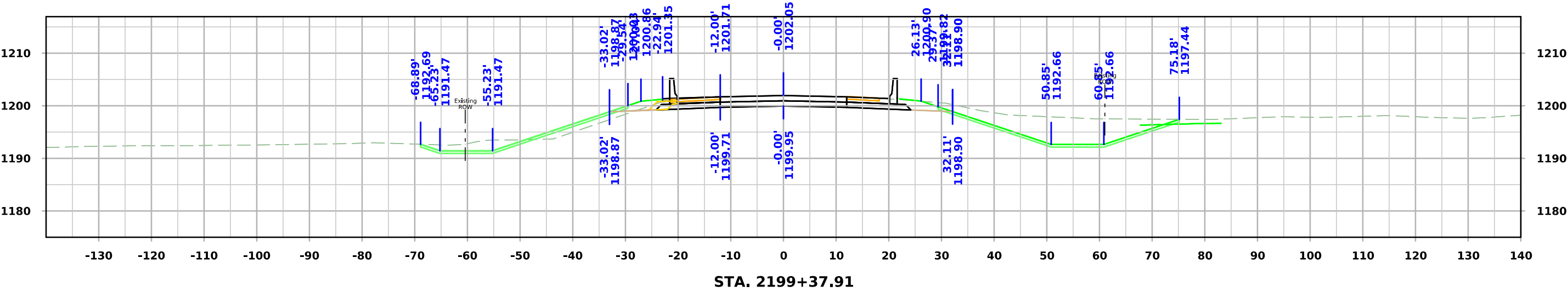
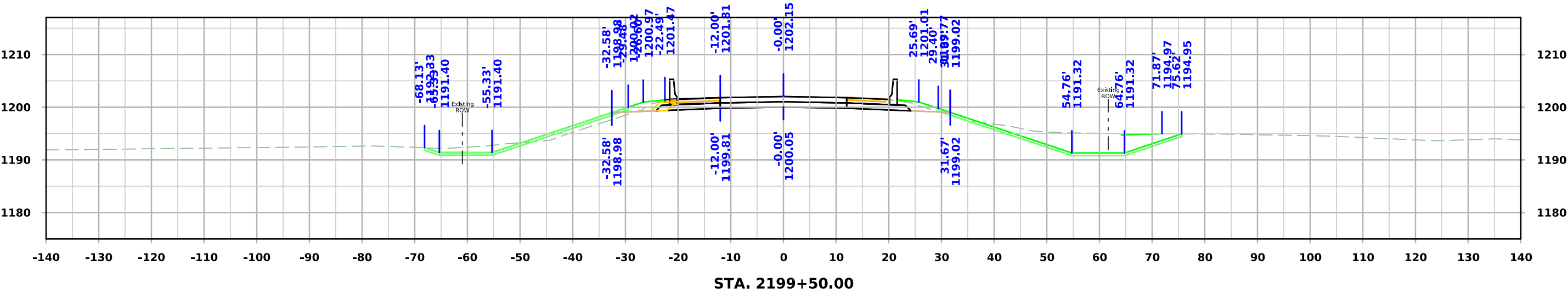


ML031

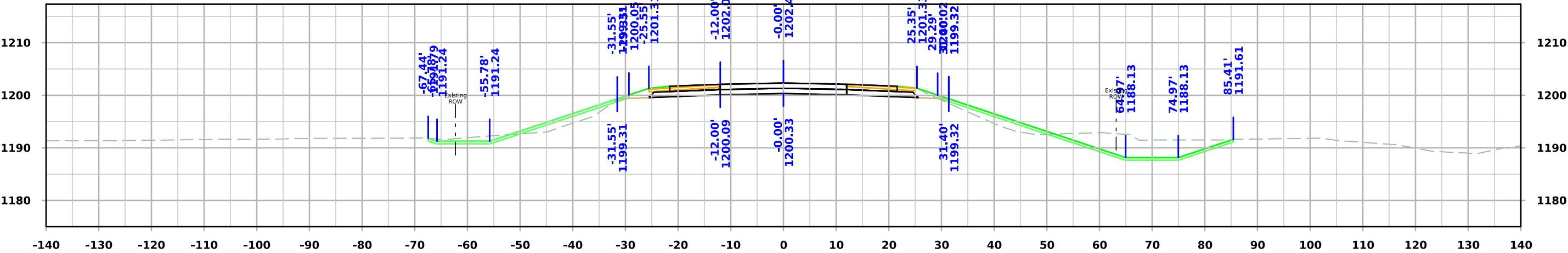




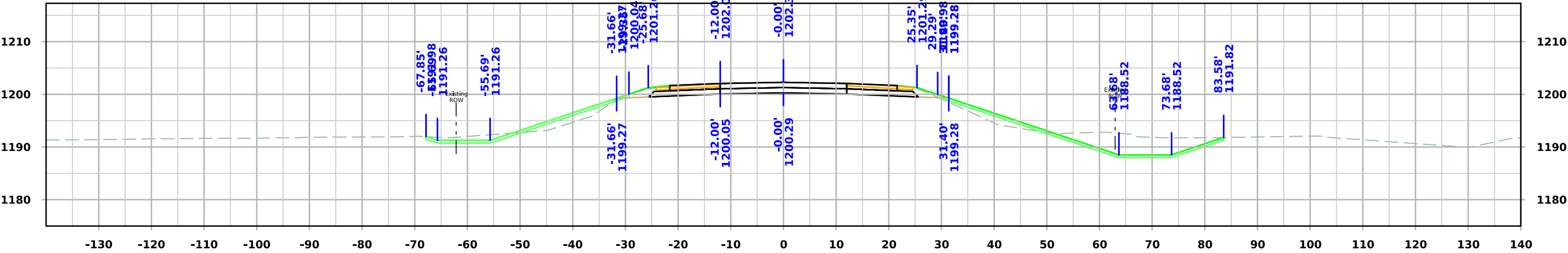
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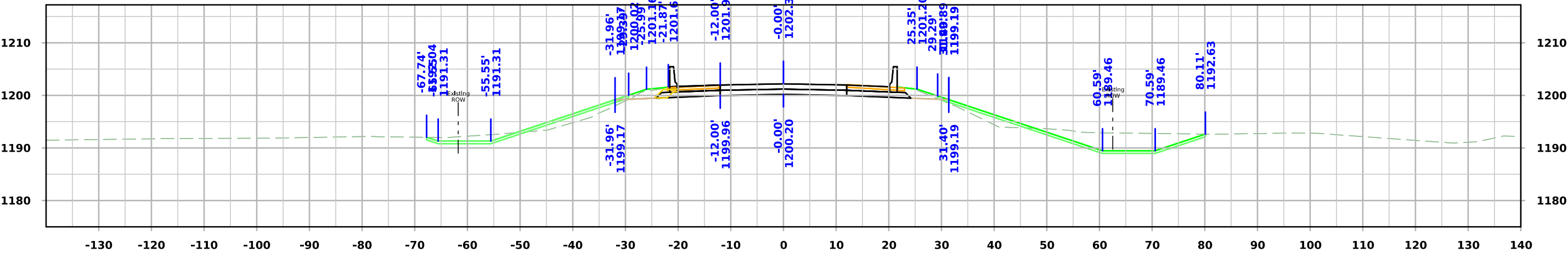
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STA. 2199+78.92

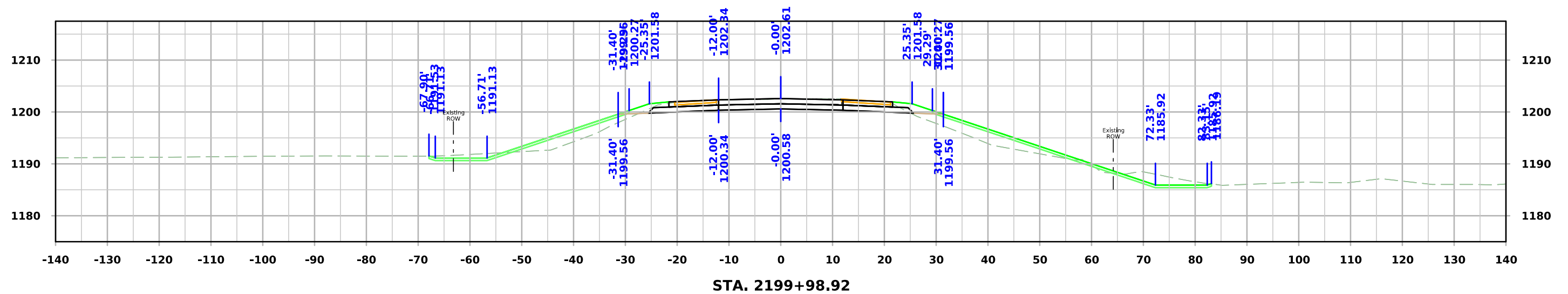
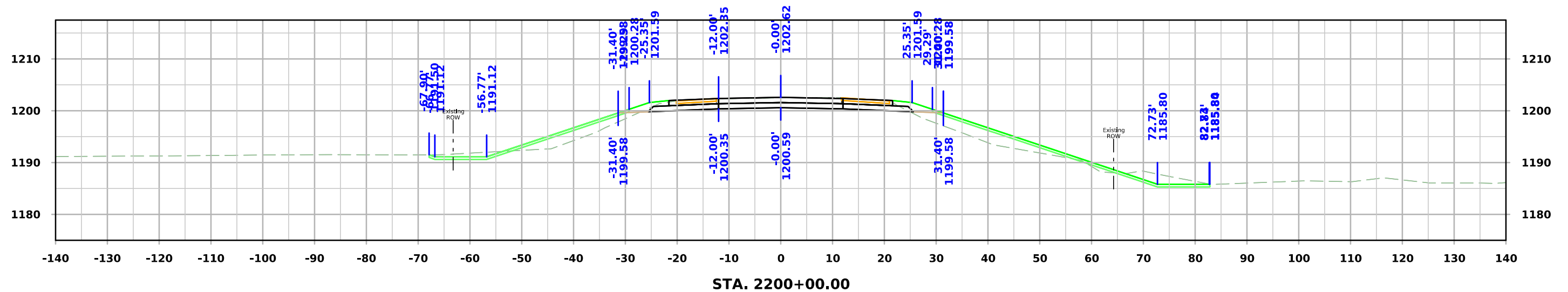
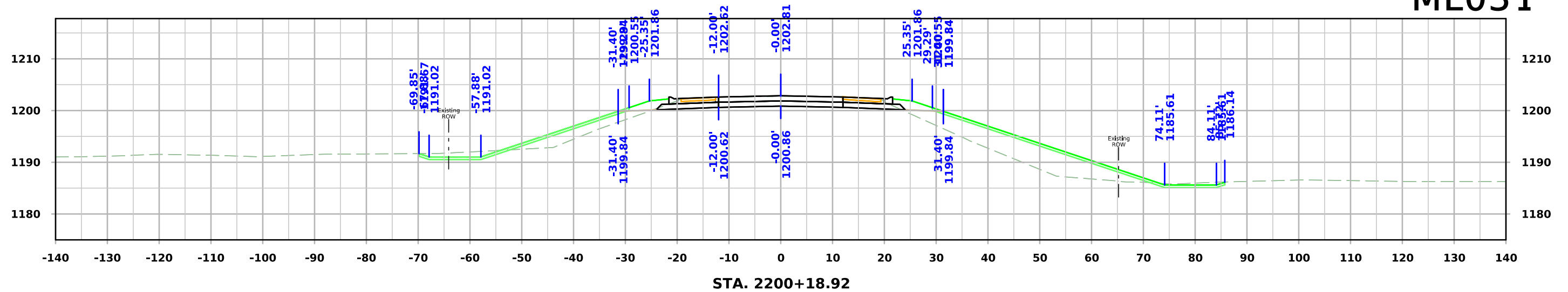


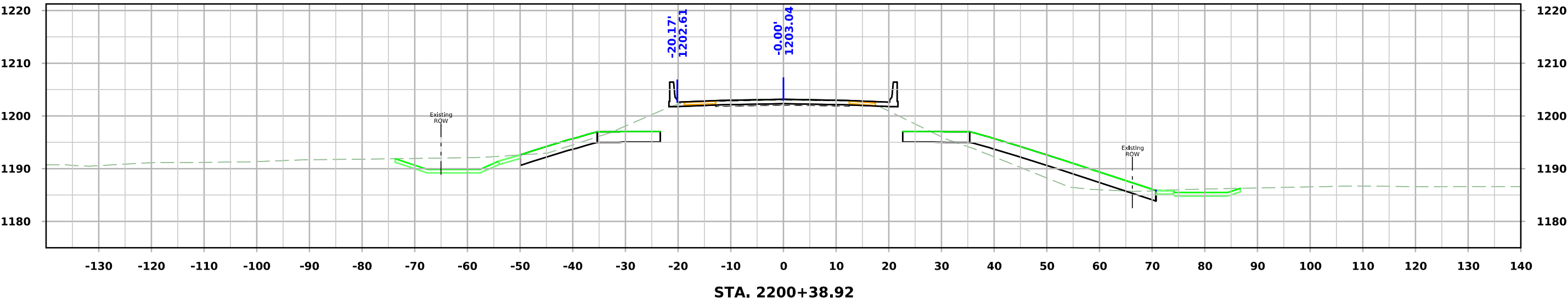
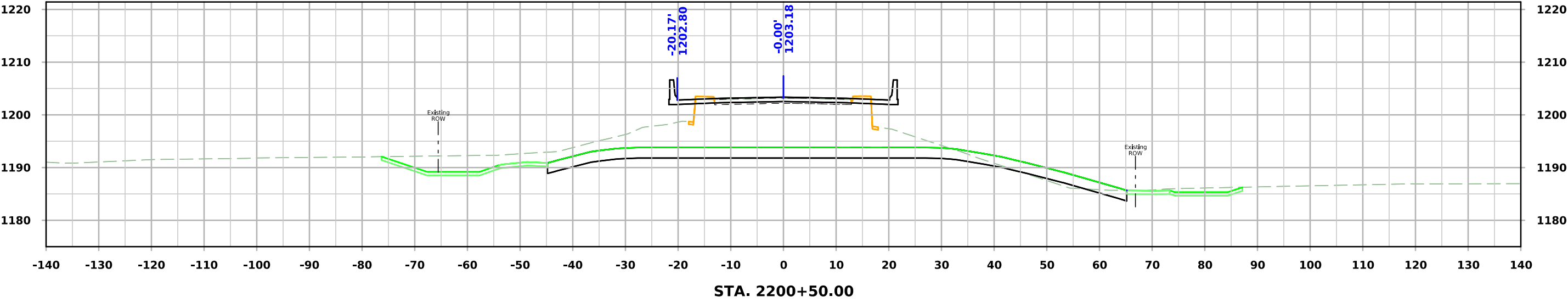
STA. 2199+75.39

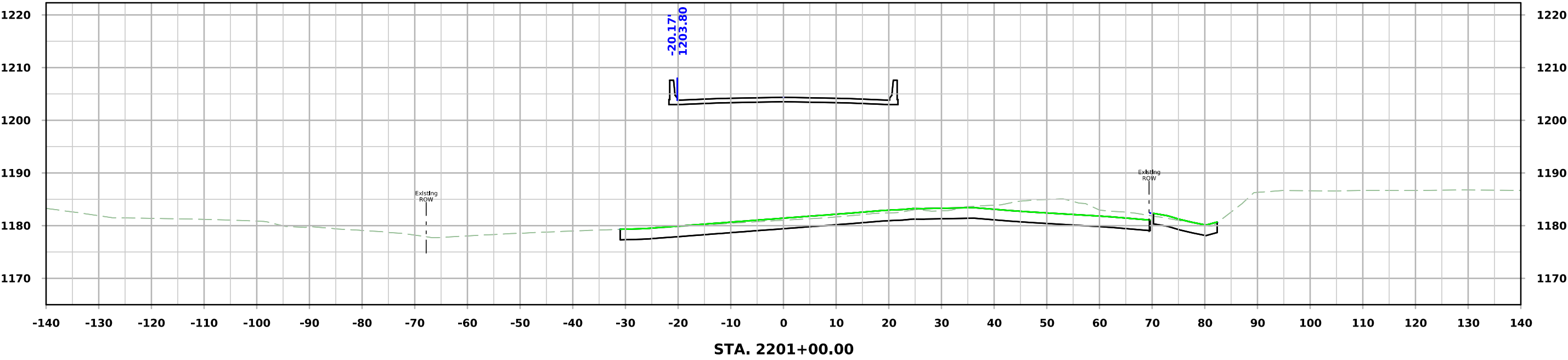
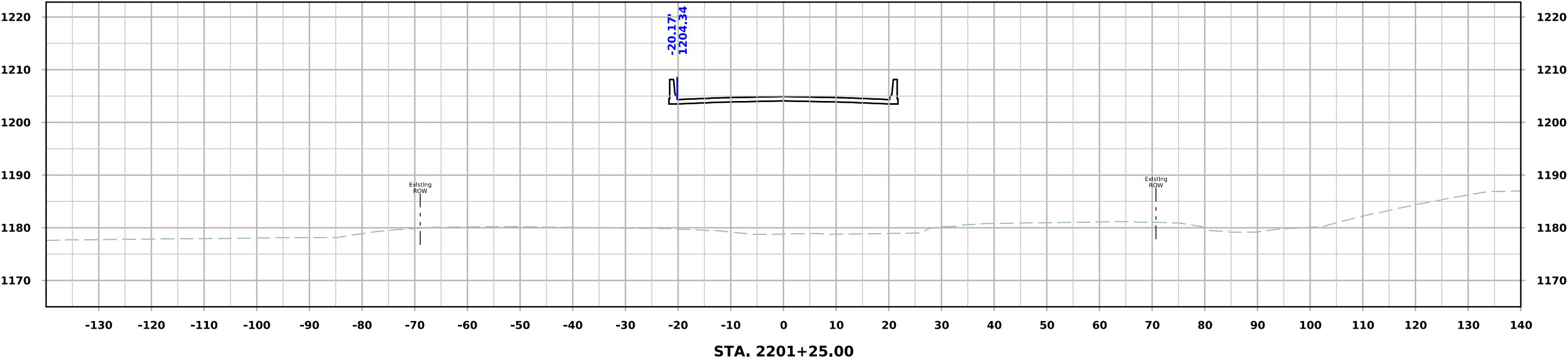


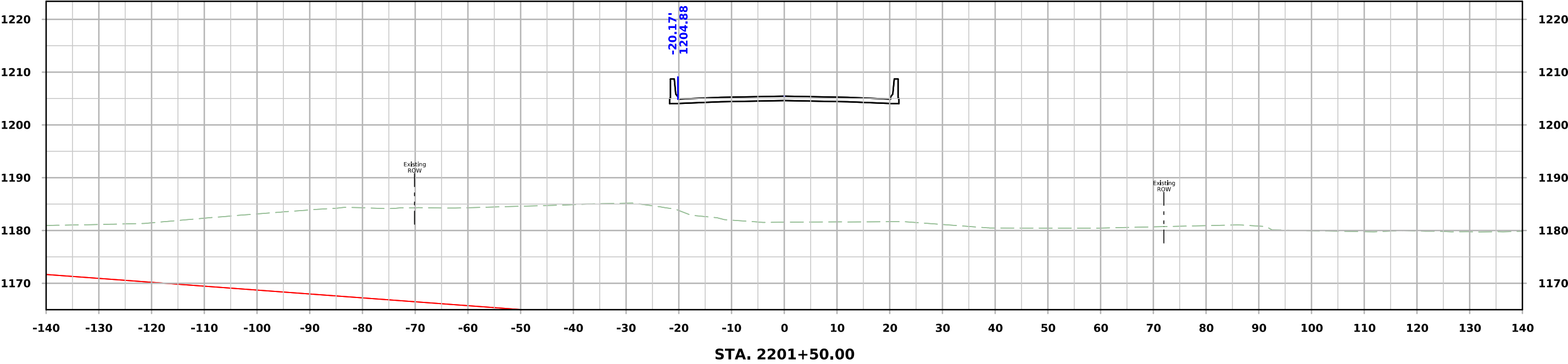
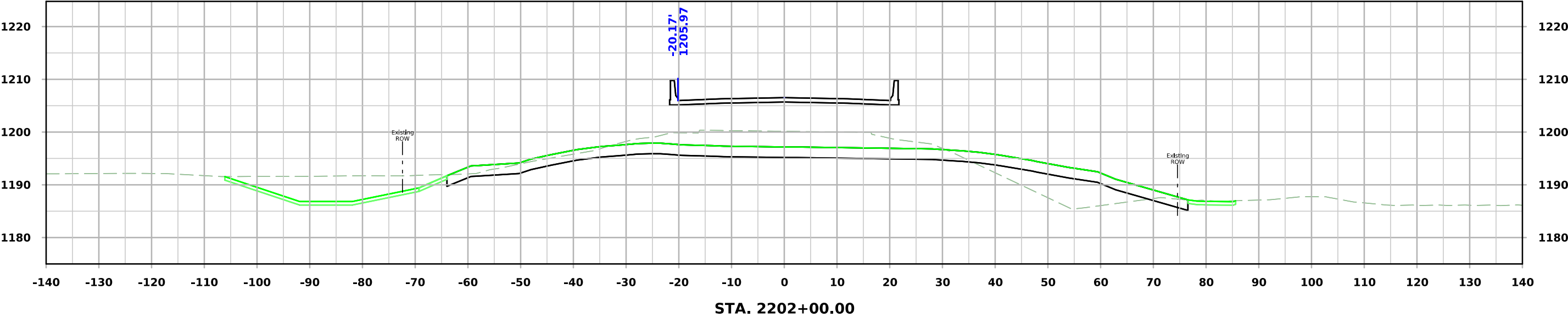
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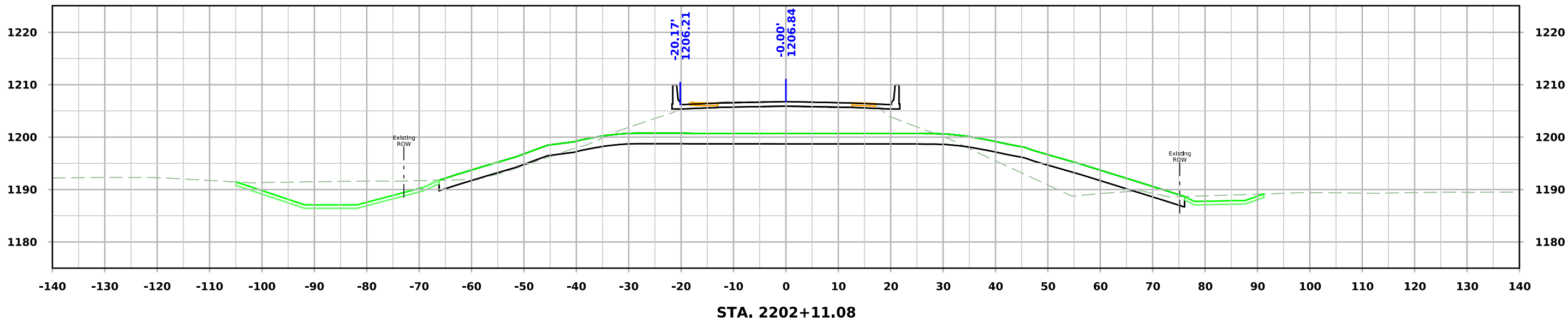
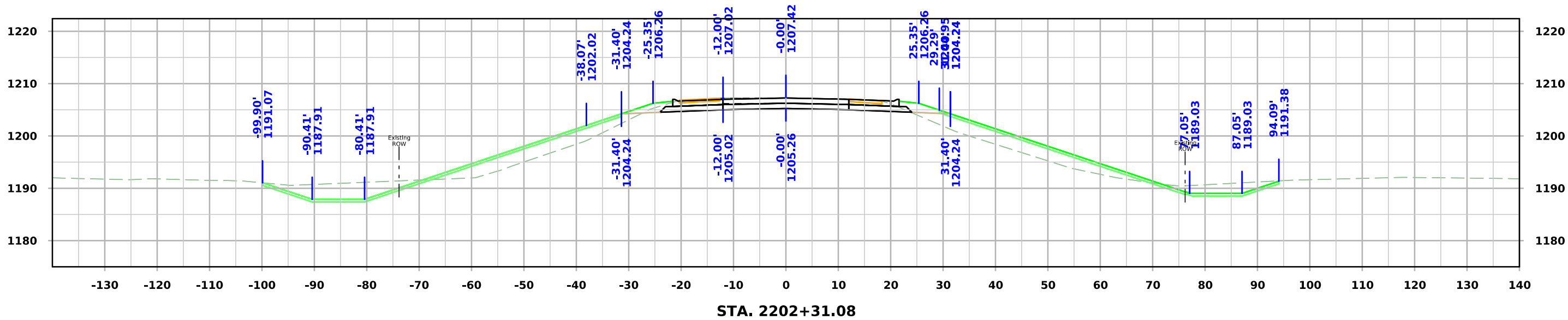
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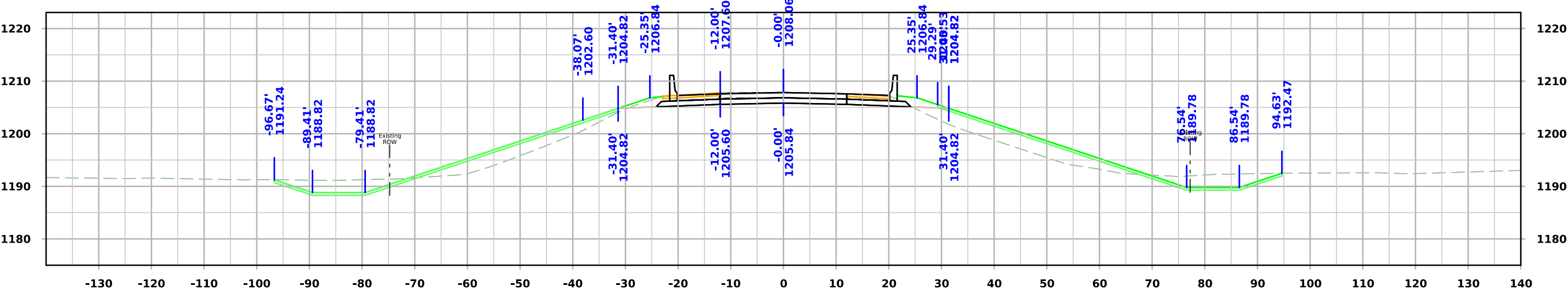




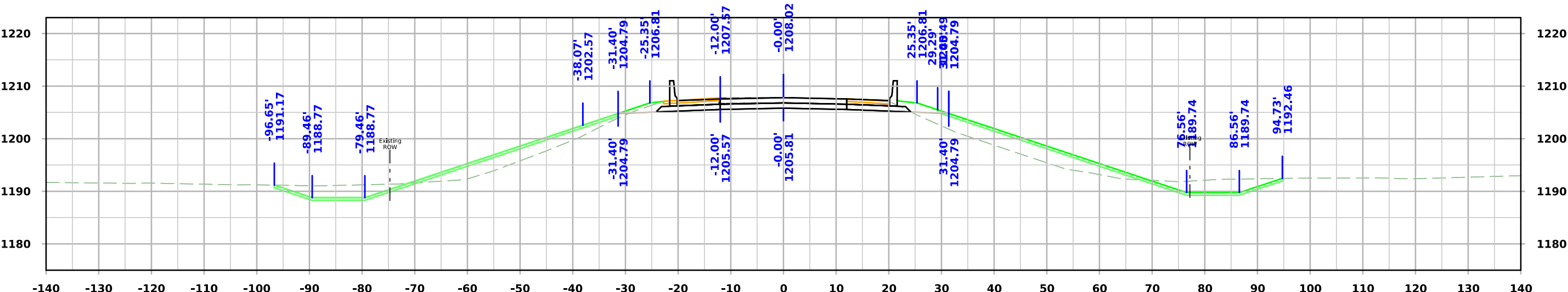








STA. 2202+51.08



STA. 2202+50.00

