

LETTING DATE
10-15-2024

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

CHEROKEE COUNTY



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.

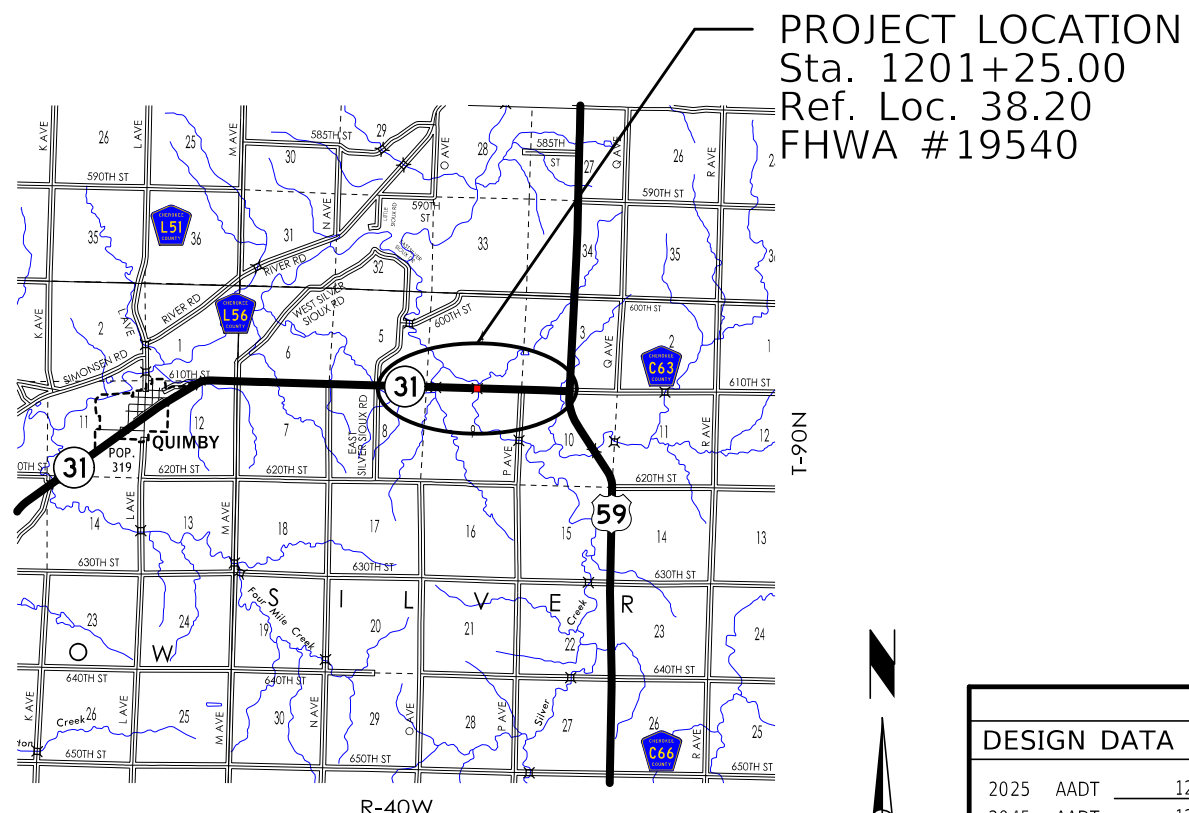


REVISIONS

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

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A.1	Location Map Sheet
A.2	Field Exam Notes/Questions
A.3	Project Criteria
A.4 - 12	Project Concept Statement
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
B.3	Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	TA 31
G Sheets	Survey Sheets
G.1	Survey Information
G.2	Control Point Vicinity Map
G.3	Horizontal and Vertical Project Control
J Sheets	Traffic Control and Staging Sheets
* J.1	Detour Map
W Sheets	Mainline Cross Sections
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	* Color Plan Sheets



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		
	X	
X	X	X

PRELIMINARY PLANS

Subject to change by final design.

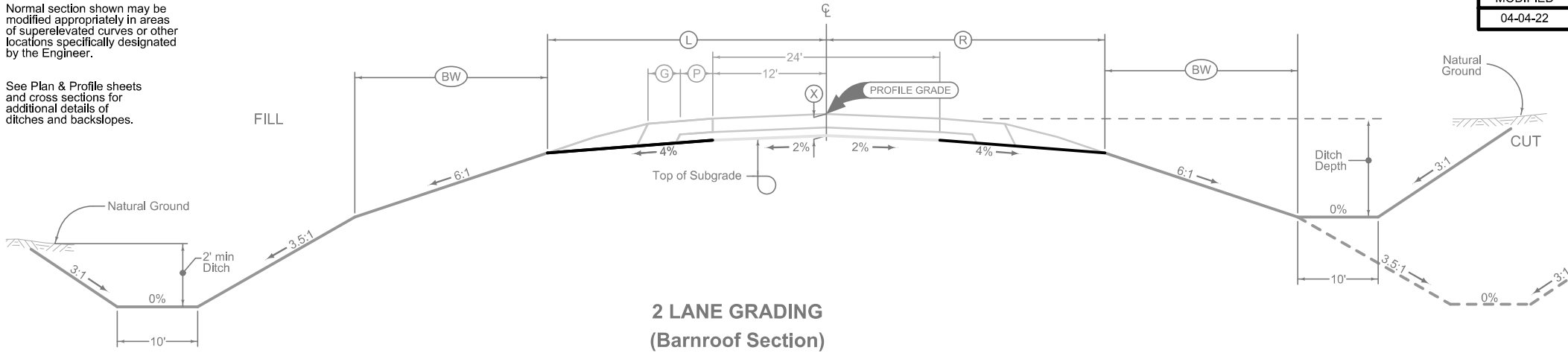
D3 PLAN - Date: 8-26-2022

MODIFIED
04-04-22

ROAD IDENTIFICATION	LOCATION		DIMENSIONS			
	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet
IA 31	2199+78.92	2200+38.92	39.5' - 47.4'	39.5' - 47.4'	24" - 36"	Var.
IA 31	2202+11.08	2202+71.08	47.4' - 39.5'	47.4' - 39.5'	36" - 24"	Var.

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

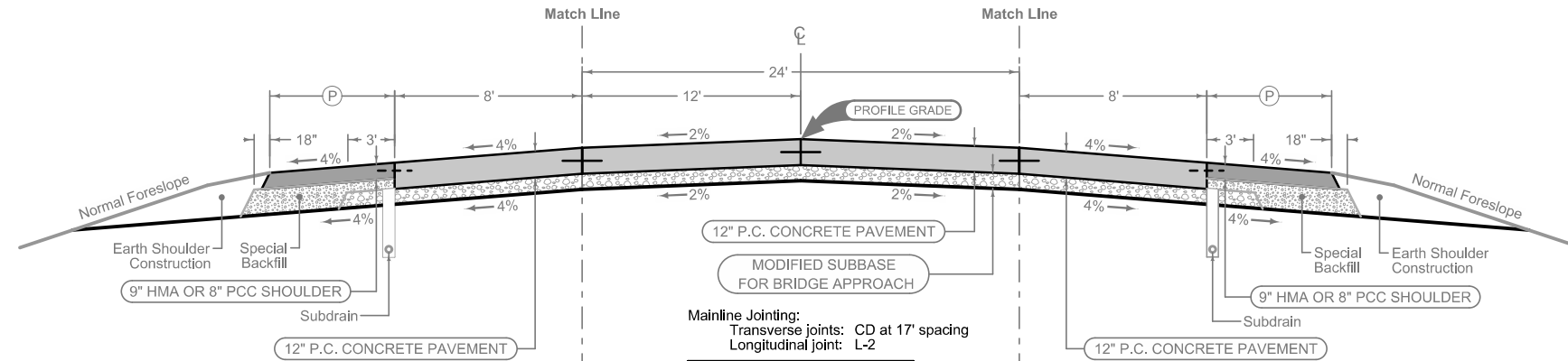
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



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



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

2P_04-21-20		
STATION TO STATION		(P) Feet
2199+78.92	2200+38.92	
2202+11.08	2202+71.08	

Paved Shoulder at Guardrail

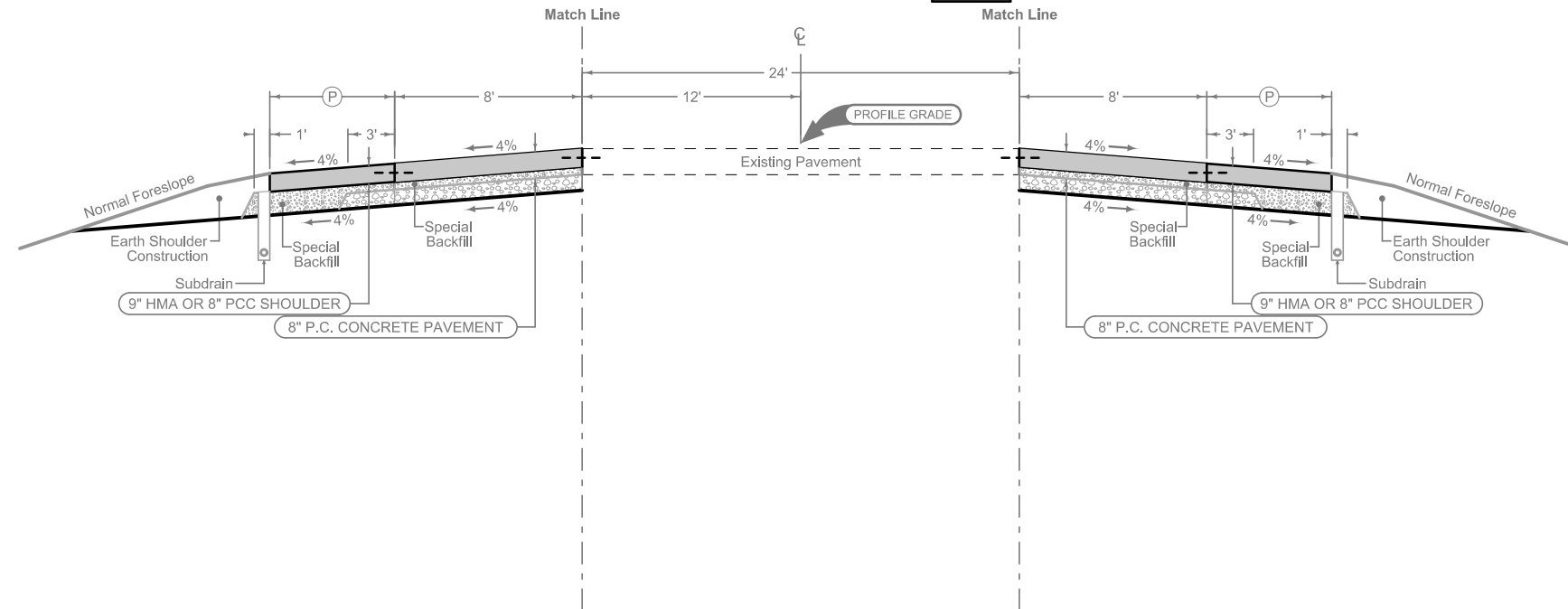
PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at mainline spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

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
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 Longitudinal joint: B

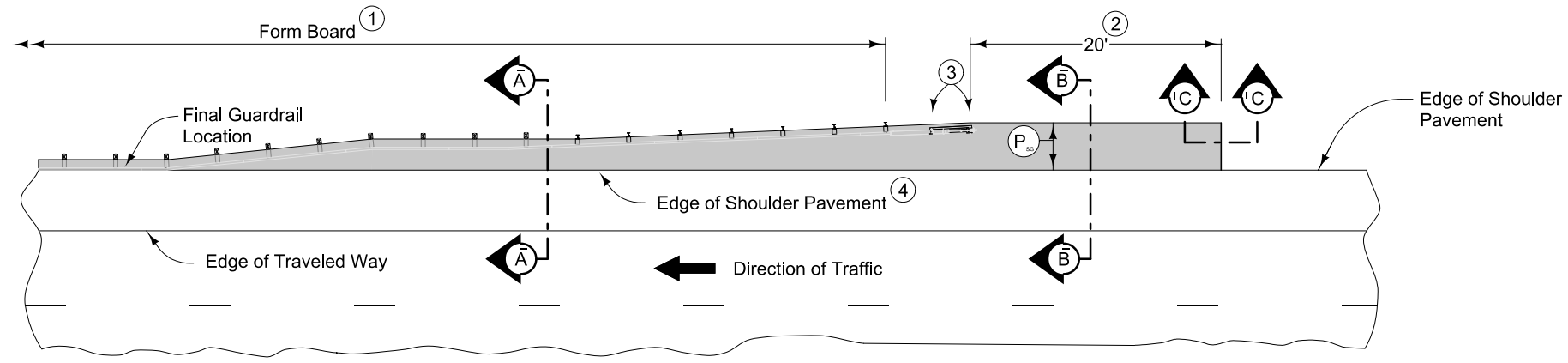
2_P_Guard_04-21-20		
STATION TO STATION		(P) Feet
2199+11.65	2199+31.65	3.3 - 3.3
2199+31.65	2199+78.92	3.3 - 1.6
2202+71.08	2202+95.62	1.6 - 1.6
2202+95.62	2203+43.35	1.6 - 3.3
2203+43.35	2203+63.35	3.3 - 3.3



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
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

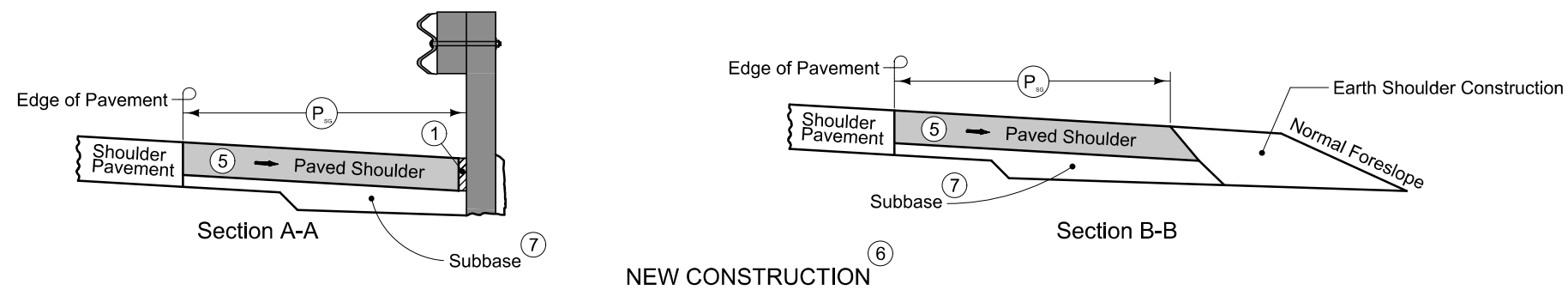
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

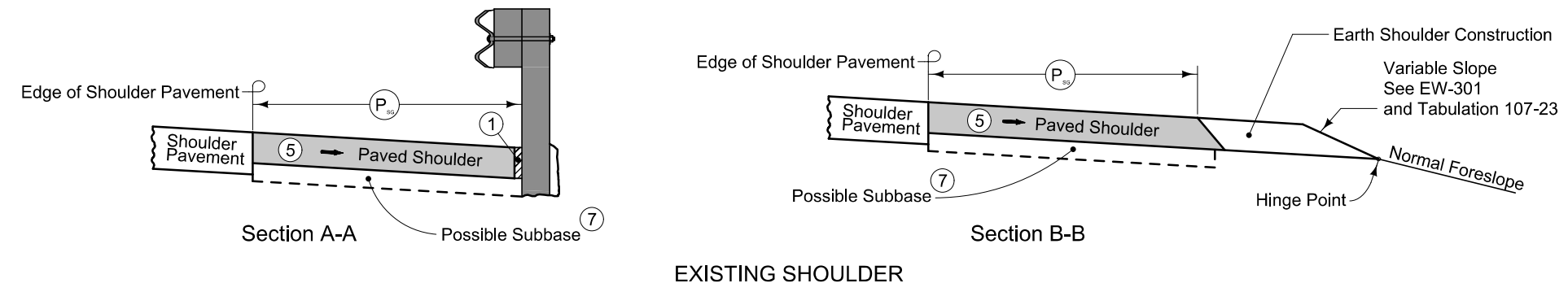
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

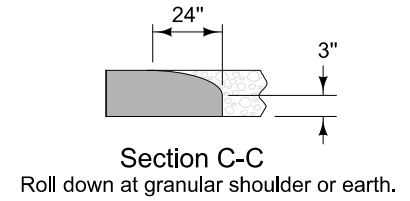
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves 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



EXISTING SHOULDER



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
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- Sign
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box

UTILITY LEGEND

Nustar Pipeline
Keely Hosmann
(316) 721-7073
keely.hosmann@nustarenergy.com

West Iowa Telephone
Phil Klein
(712) 786-5576
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

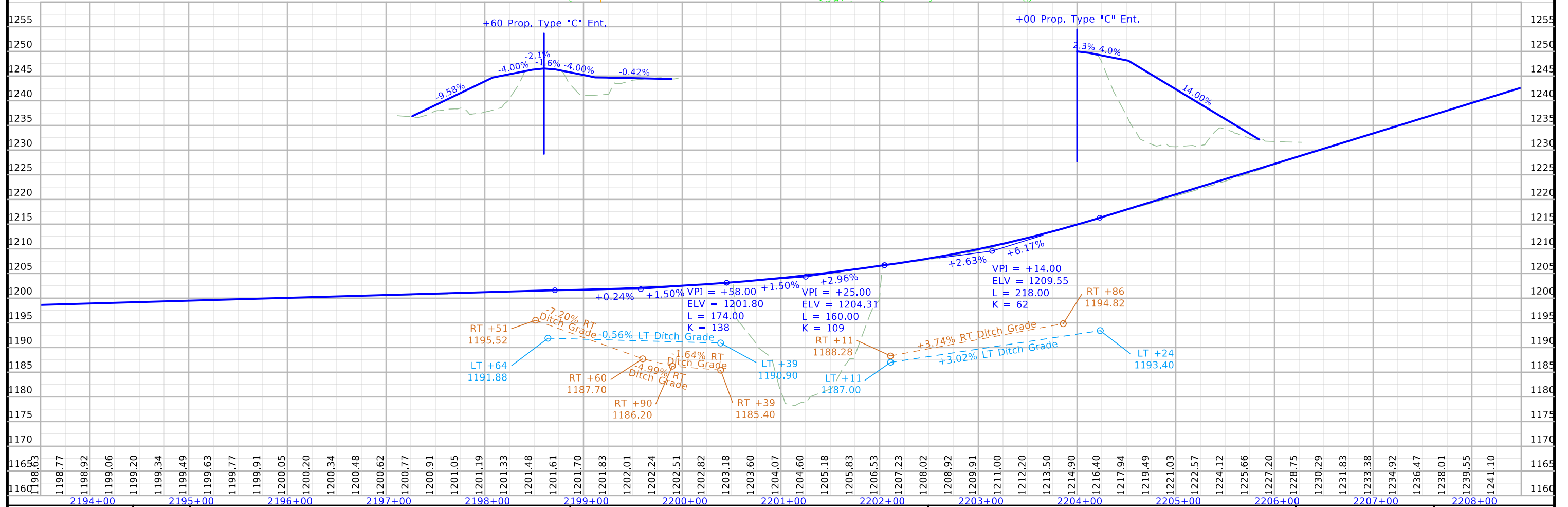
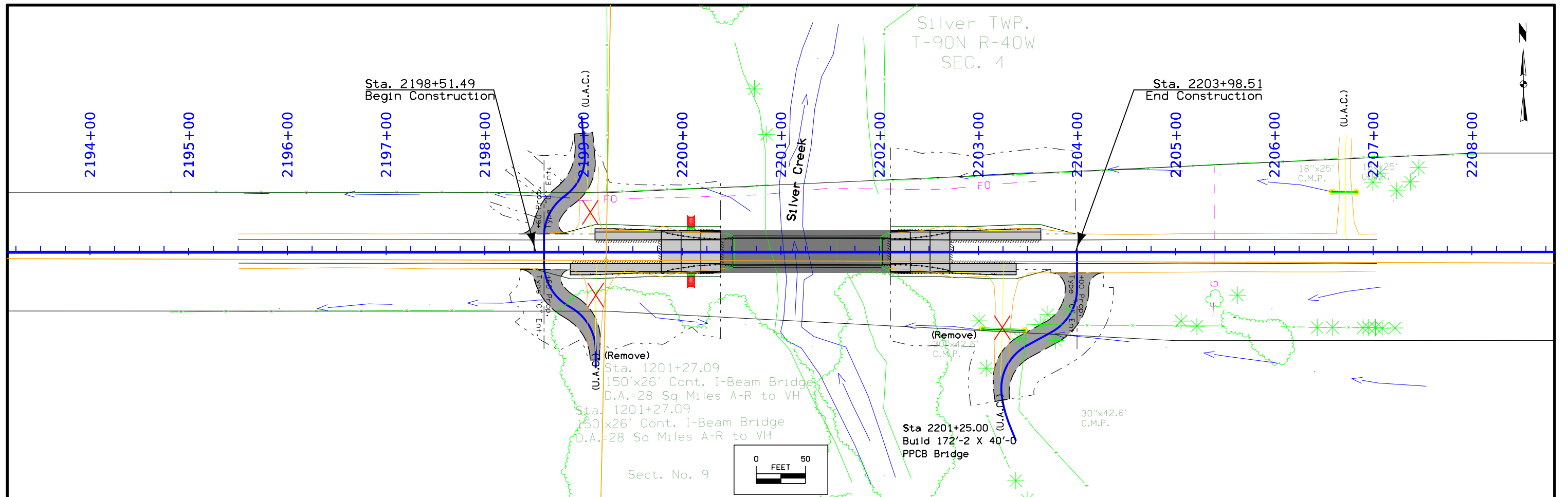
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

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
- Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



FILE NO. 98765	ENGLISH	DESIGN TEAM Strum\Prindle	CHEROKEE COUNTY	PROJECT NUMBER BRF-031-3(13)--38-18	SHEET NUMBER D.2
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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

1a. Regional Coordinate System Zone 04

Coordinate listing from next sheet will be used with 1aRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

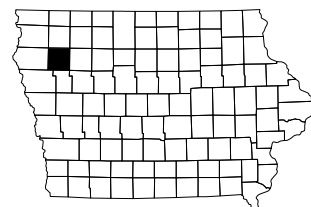
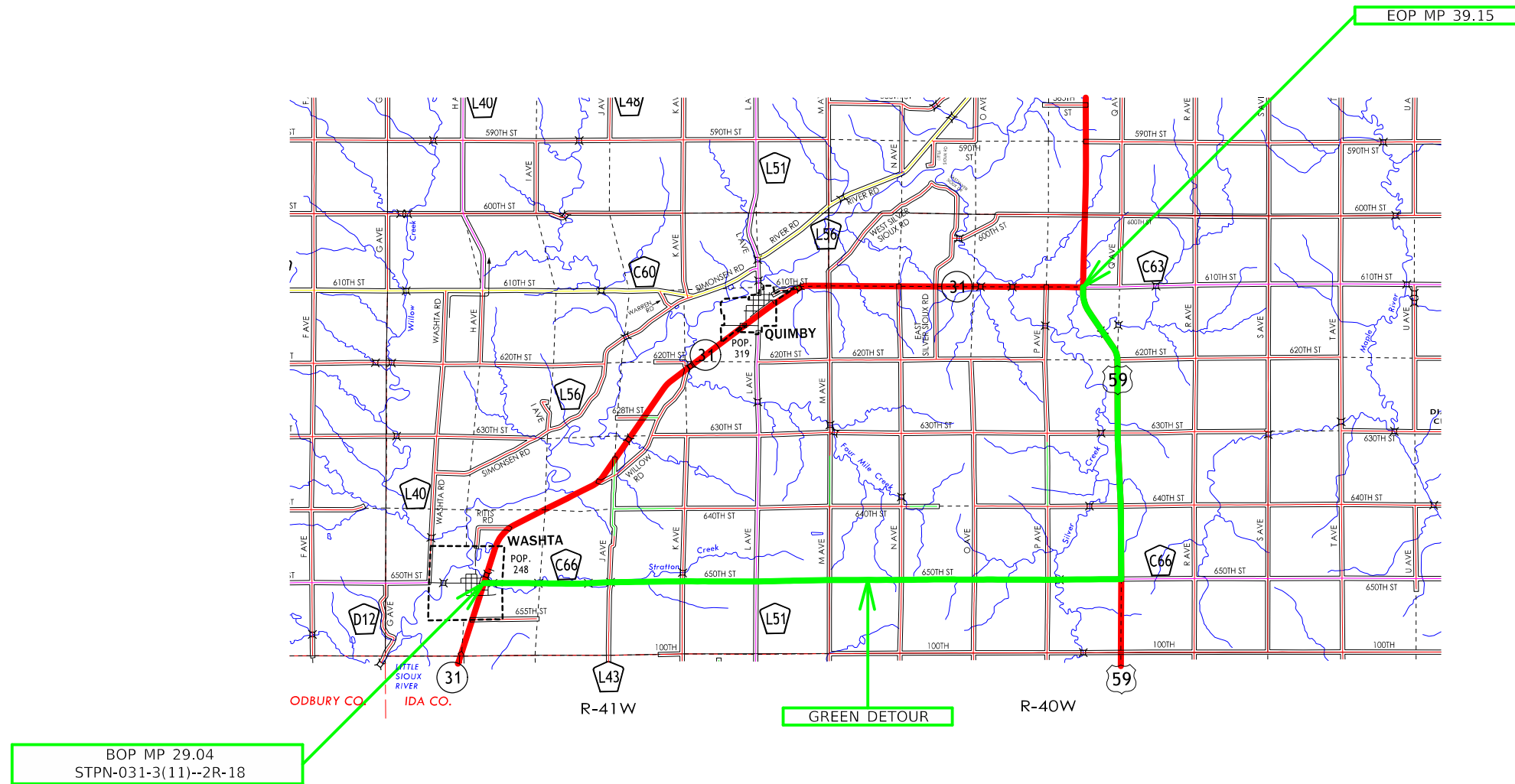
VERT. DATUM: NAVD88

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

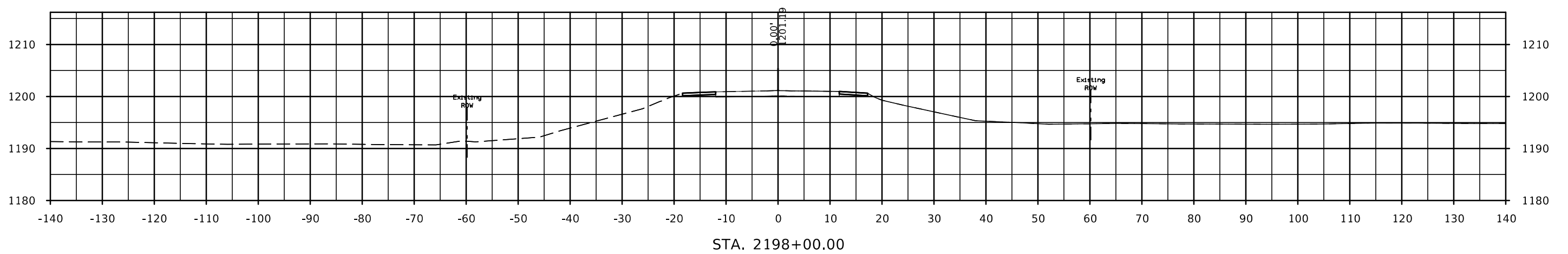
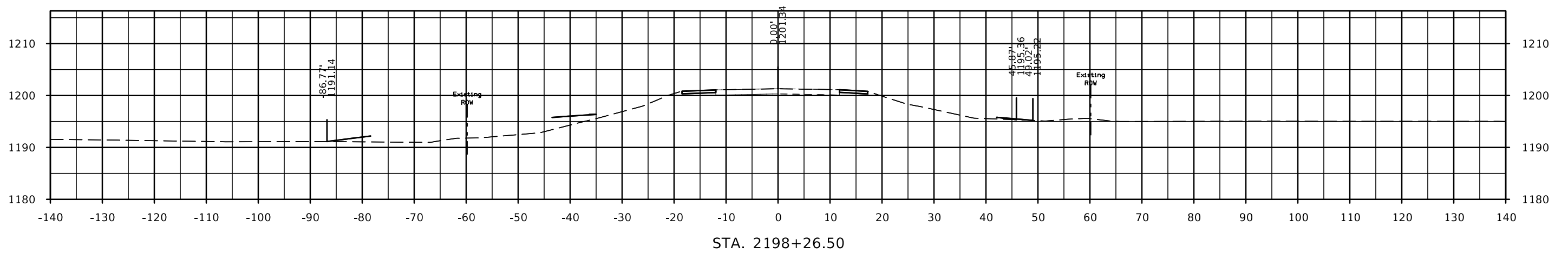
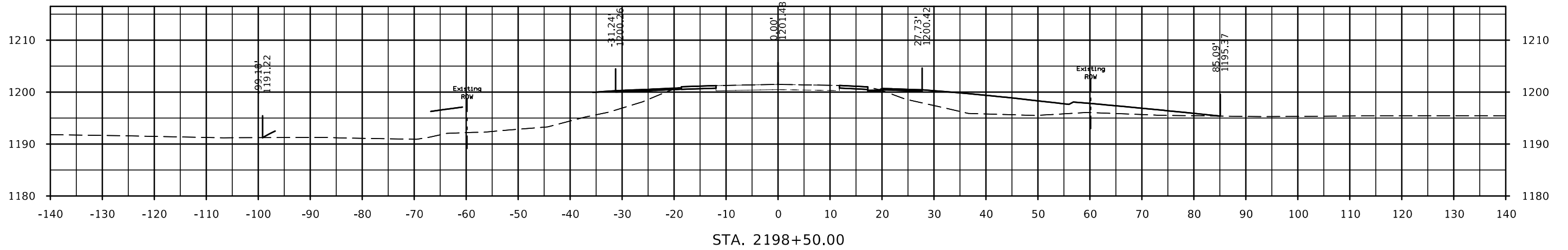
CHEROKEE COUNTY

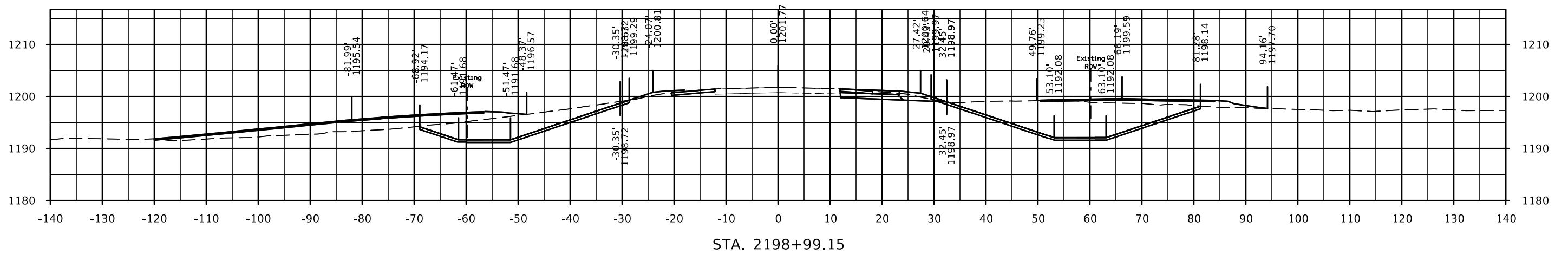
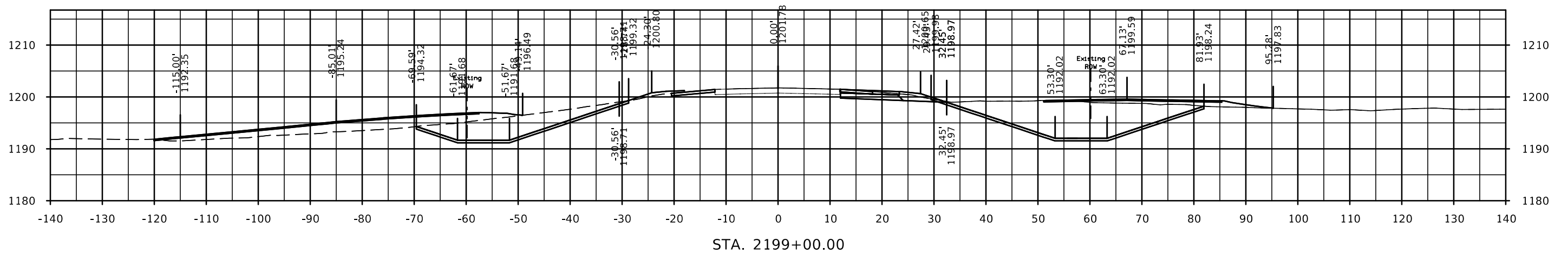
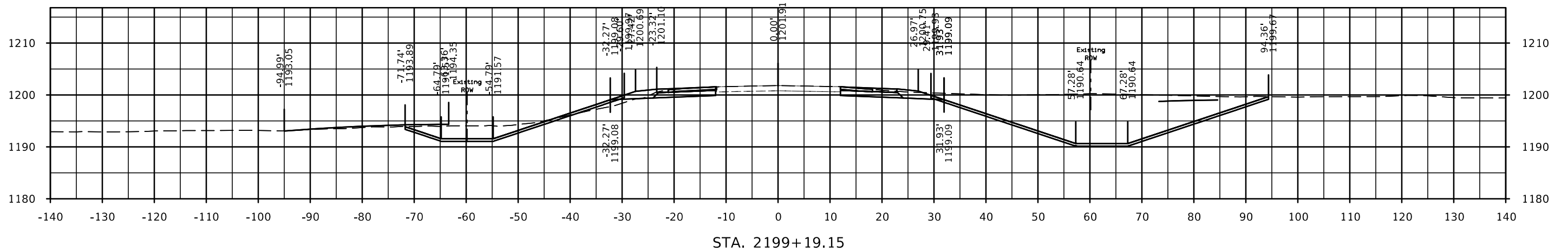
Proposed Detour Route



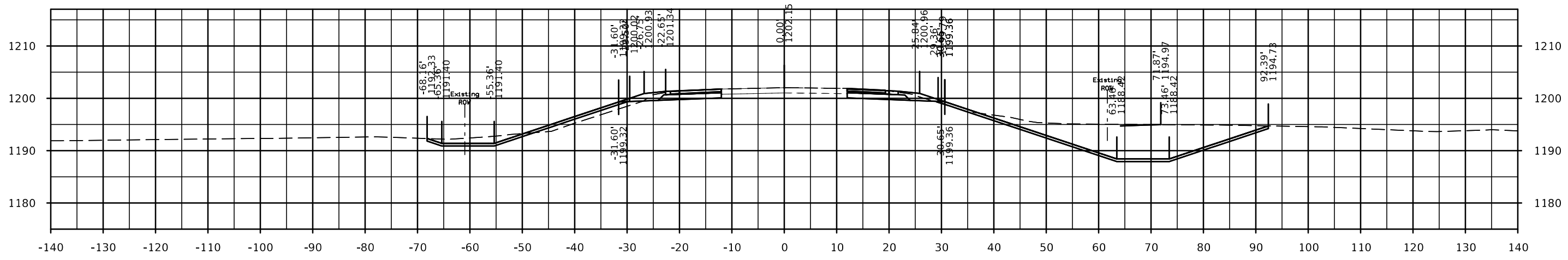
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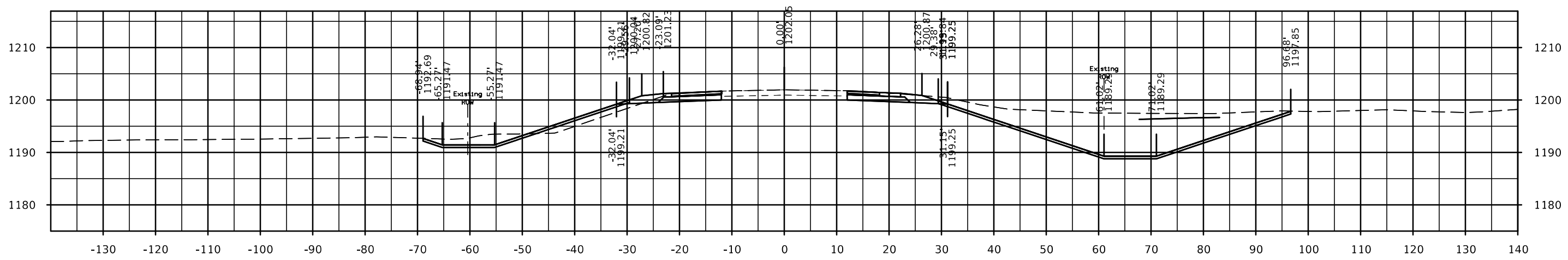




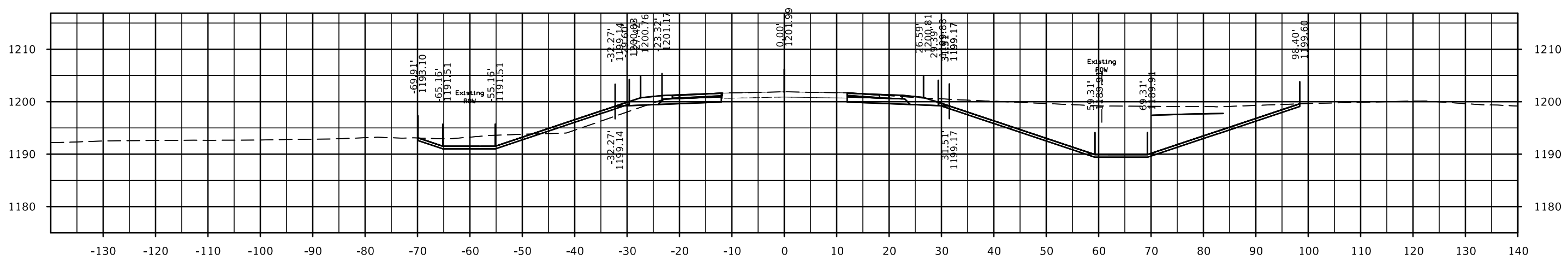
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STA. 2199+50.00

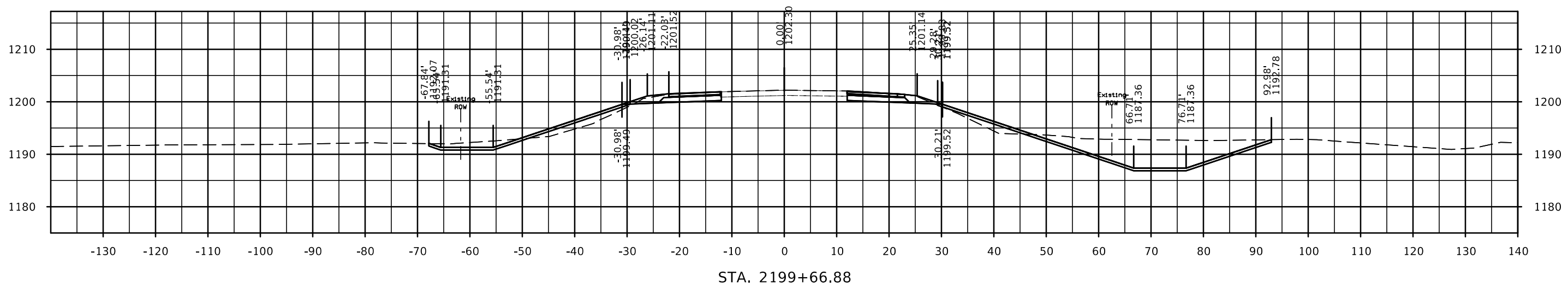
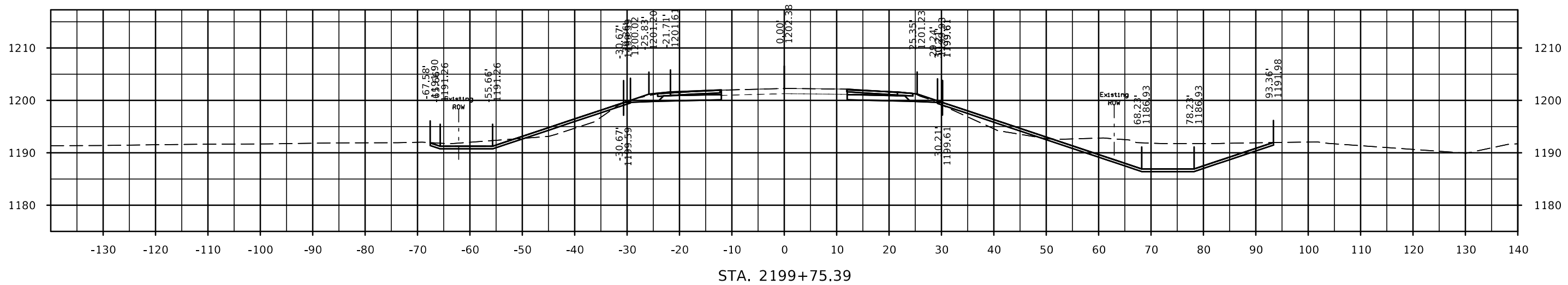
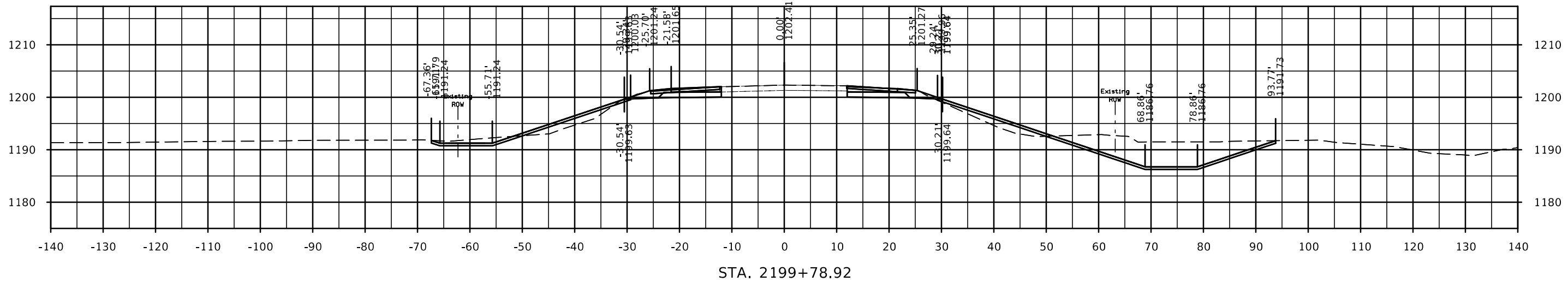


STA. 2199+37.91

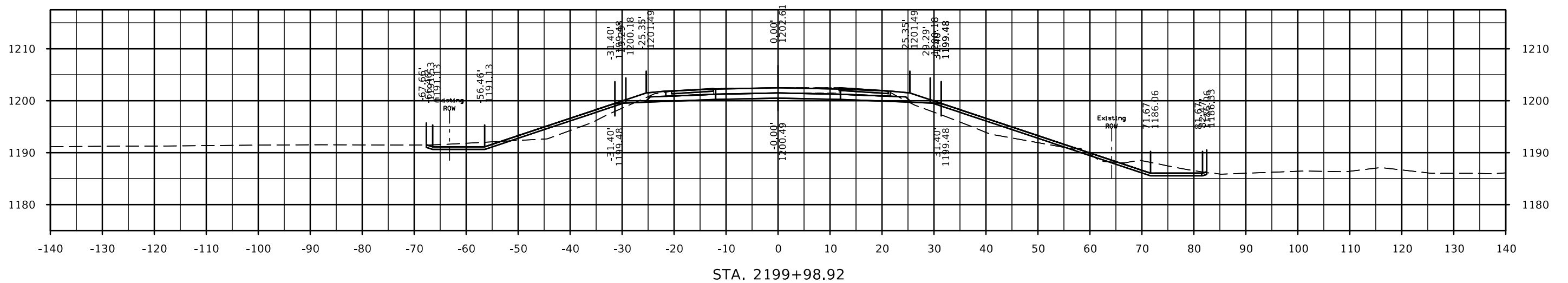
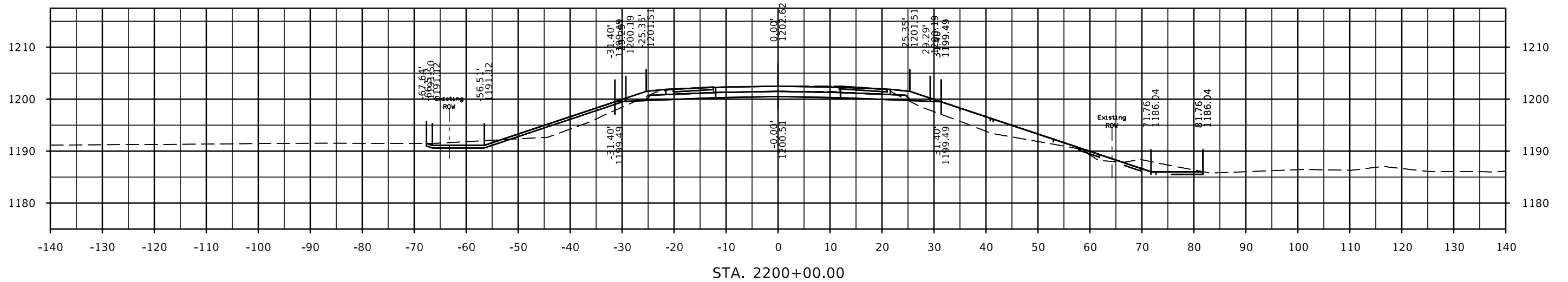
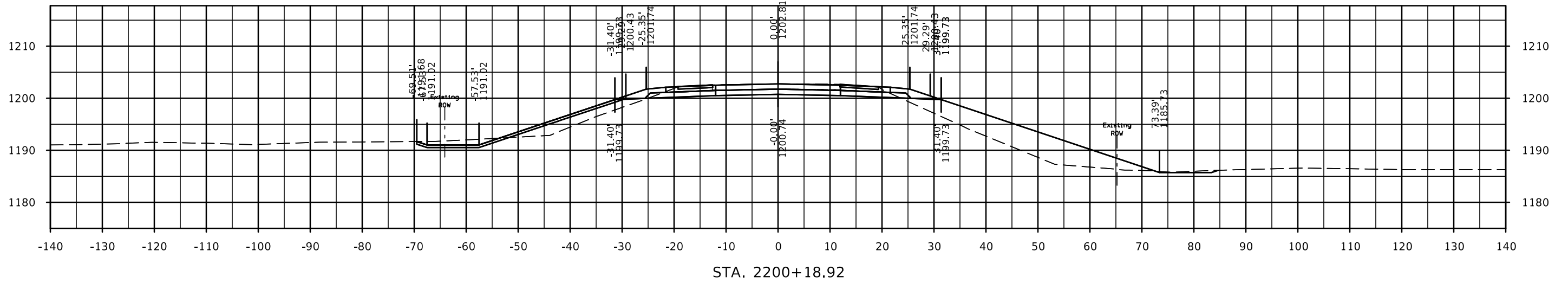


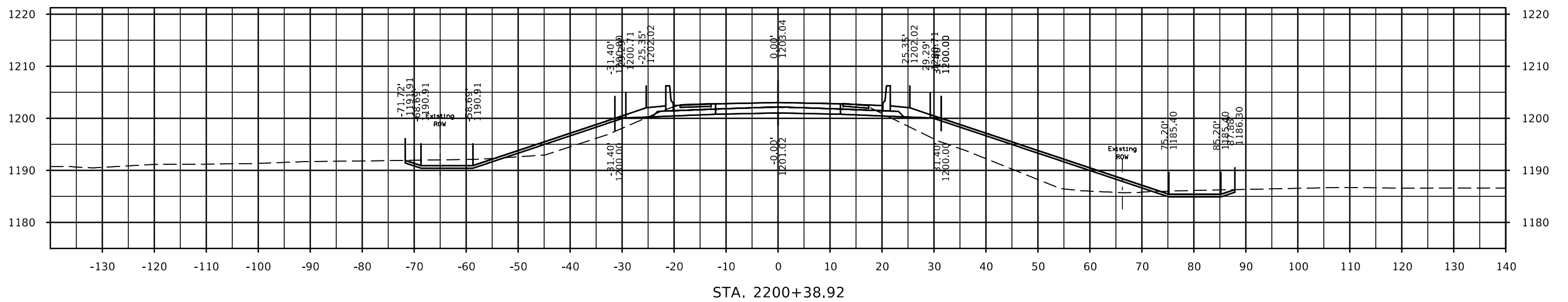
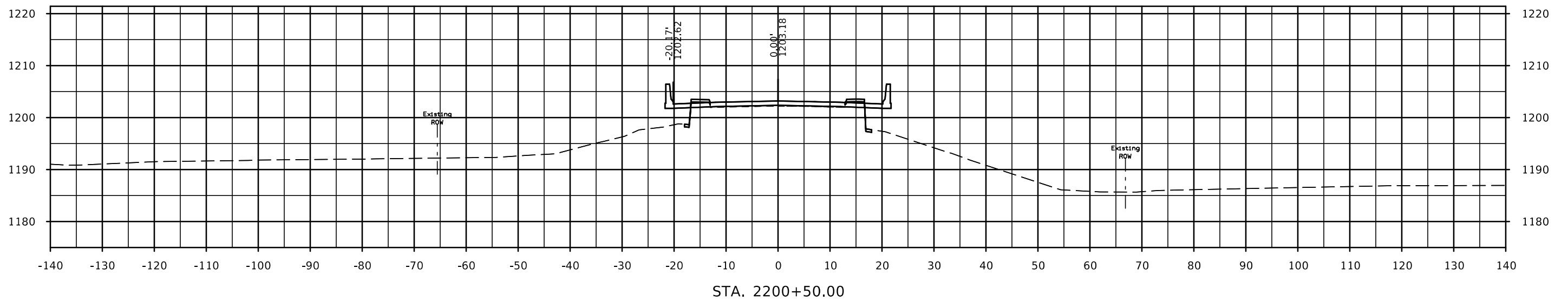
STA. 2199+29.40

ML031

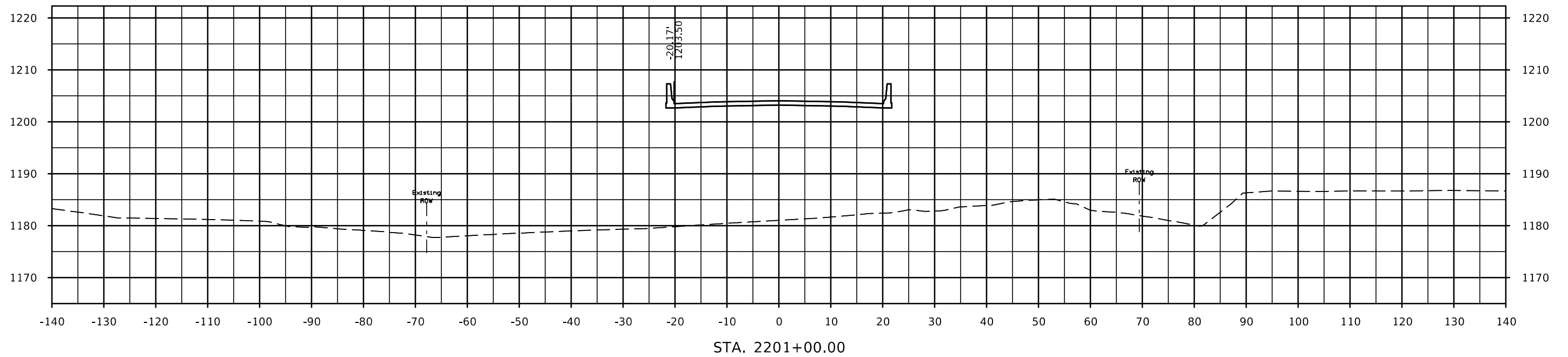
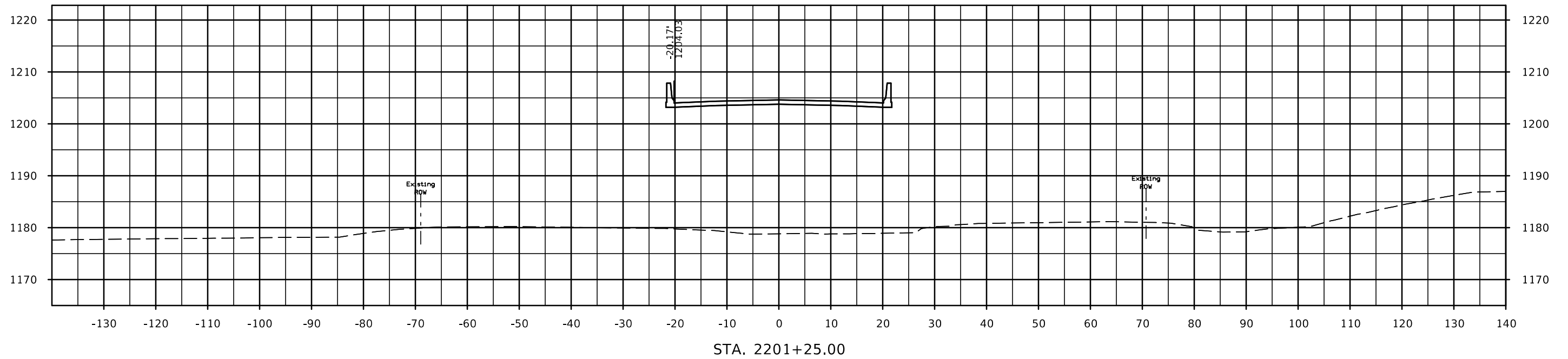


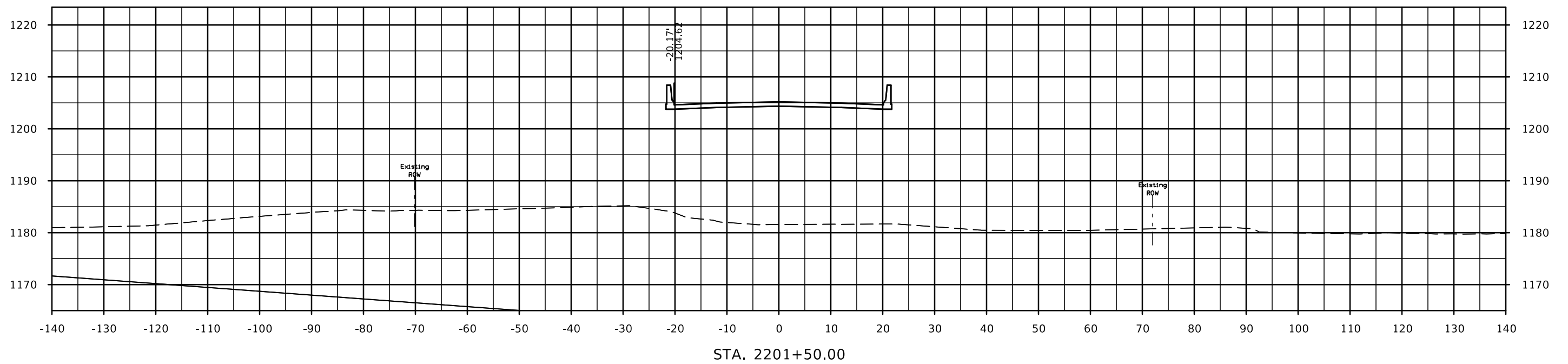
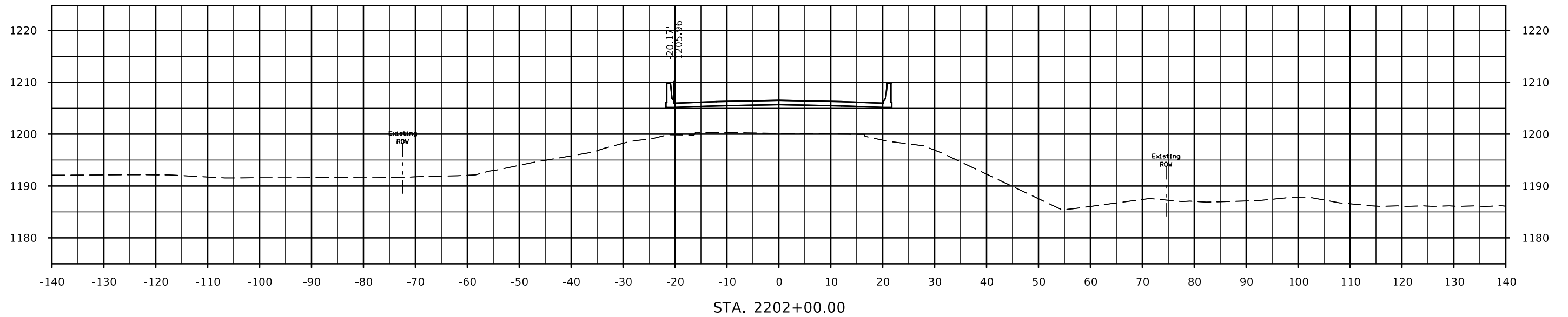
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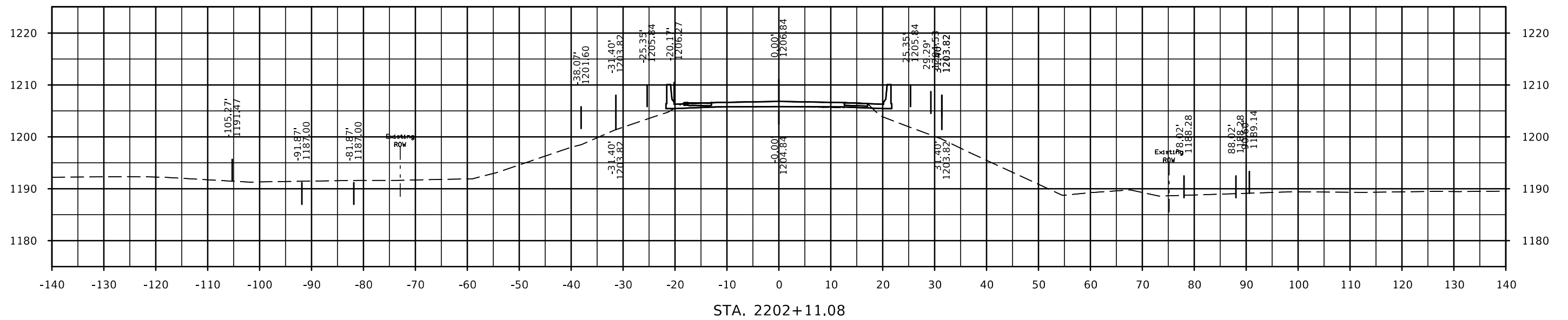
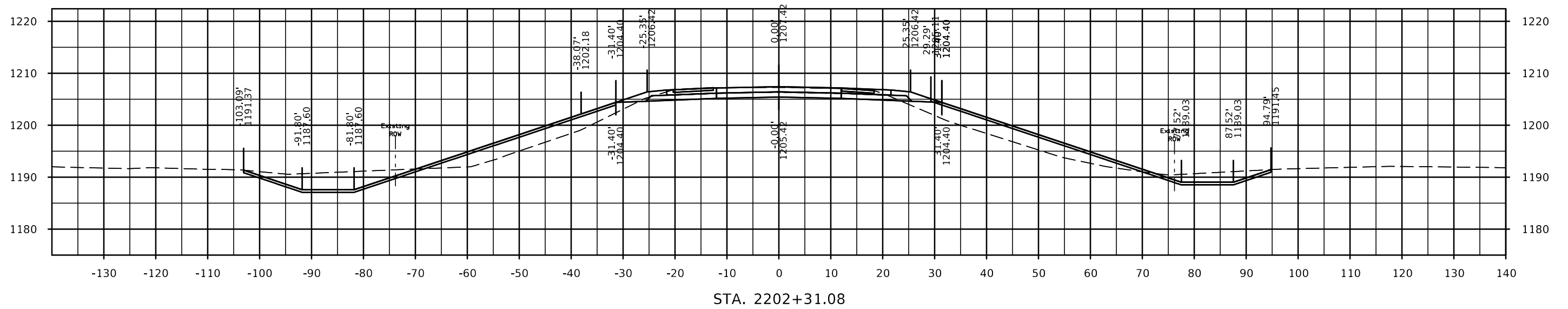


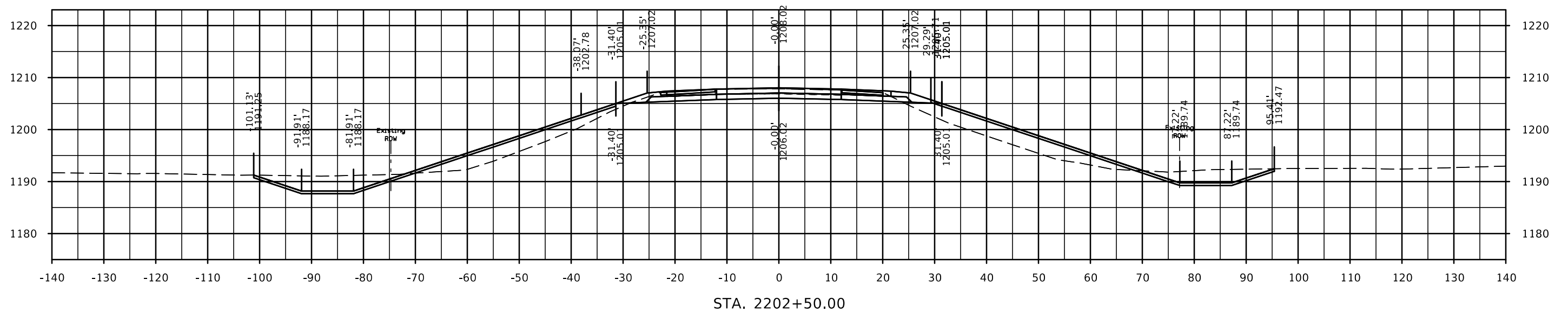
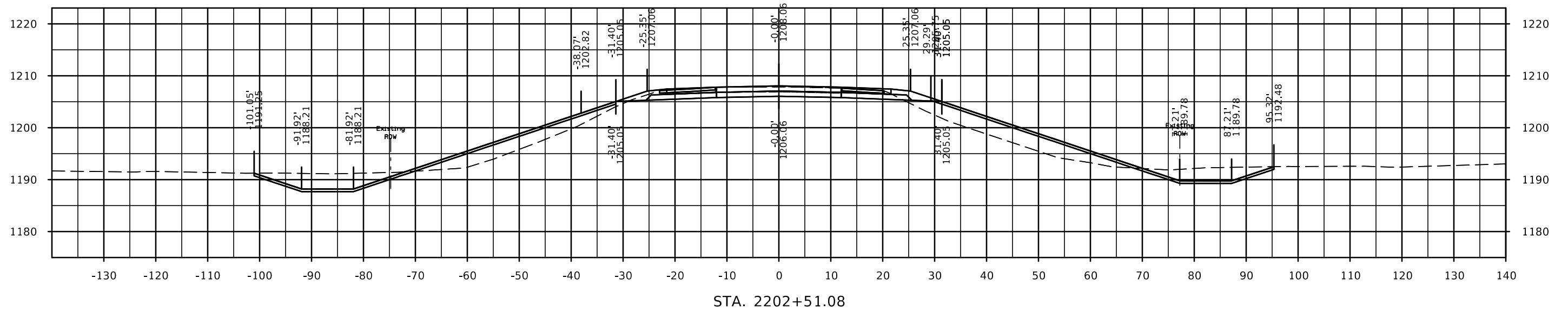


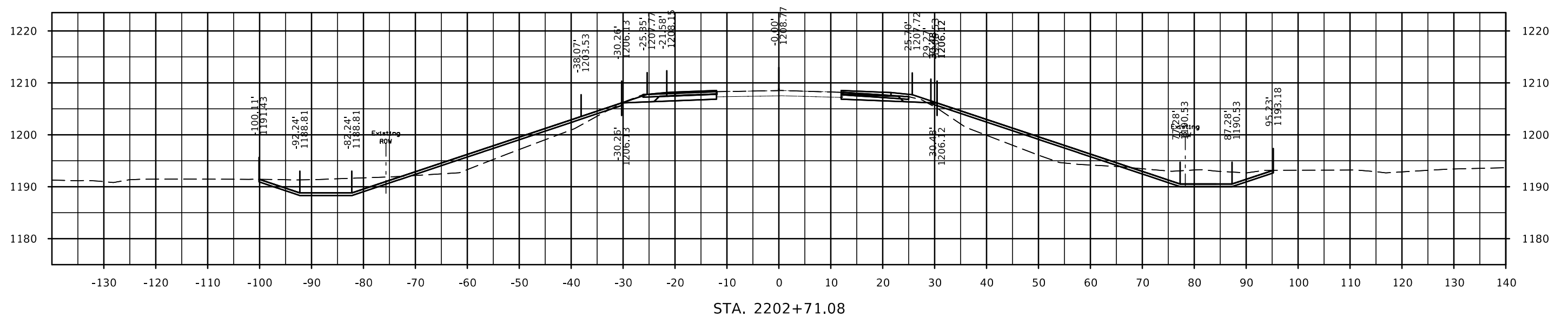
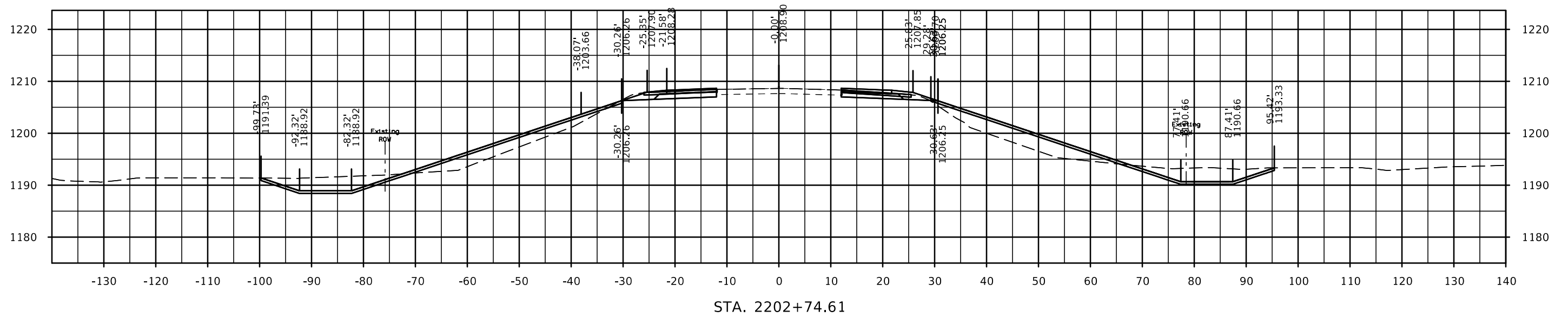
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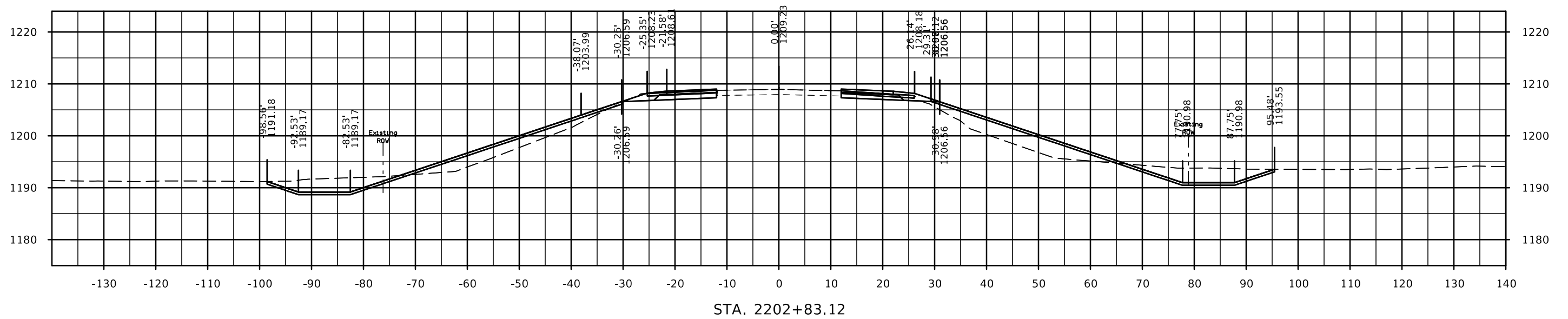
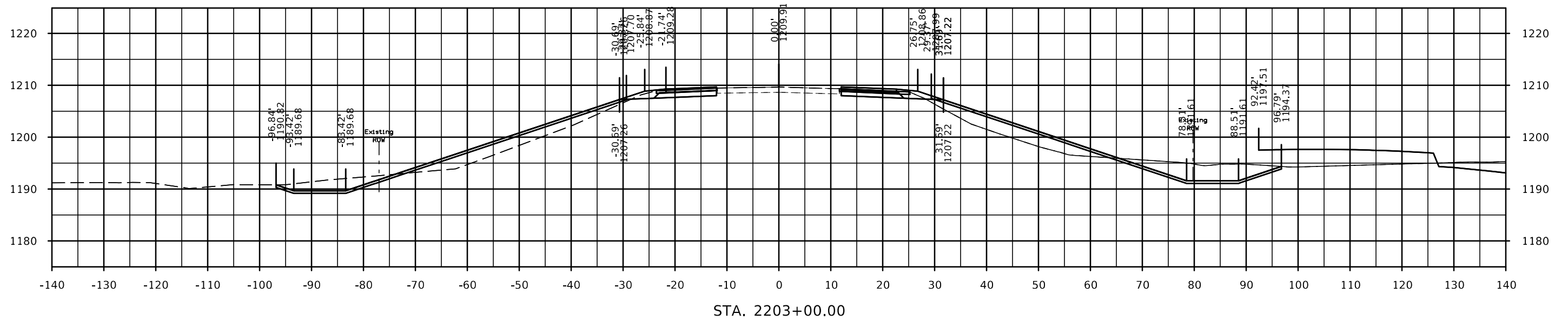


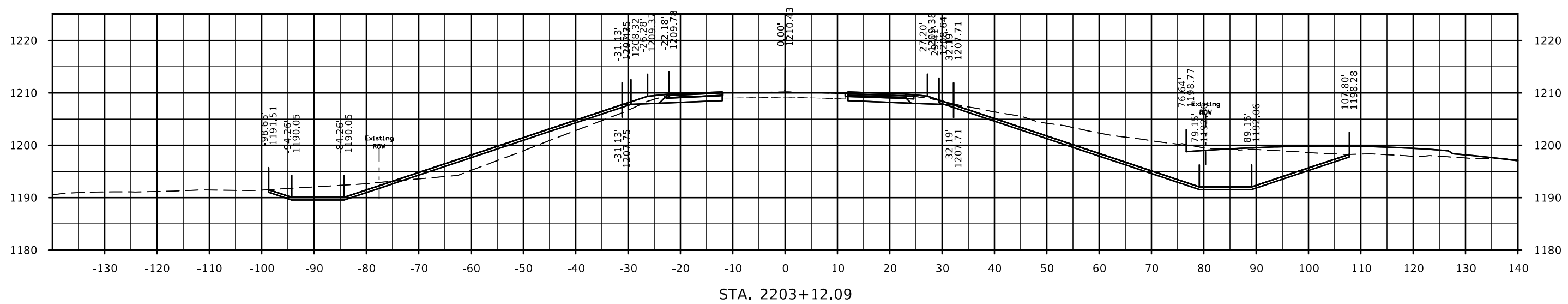
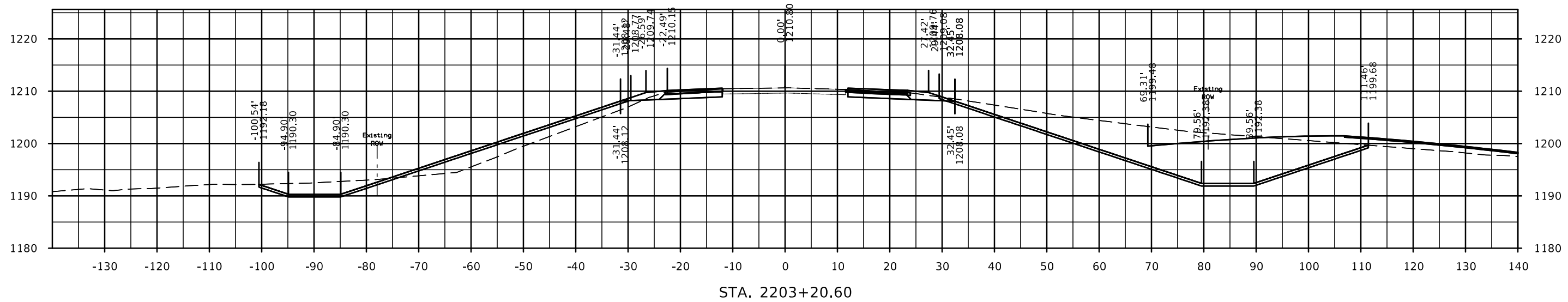


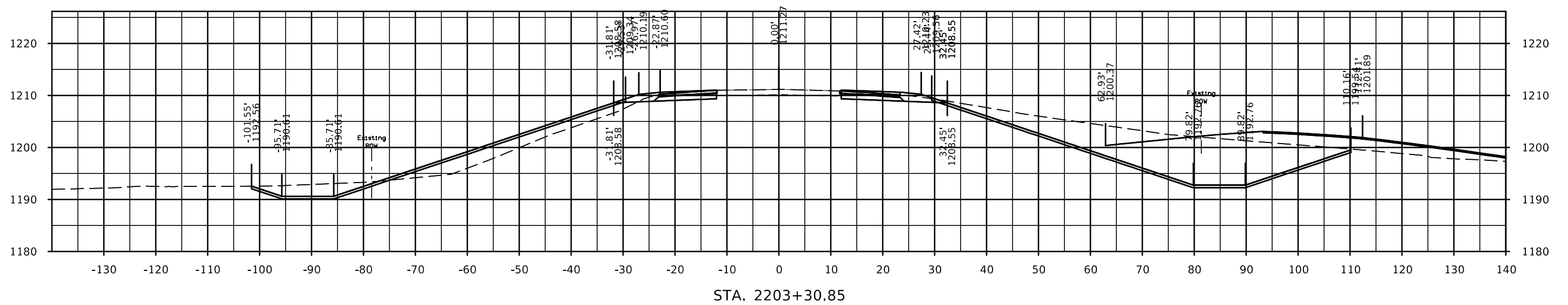
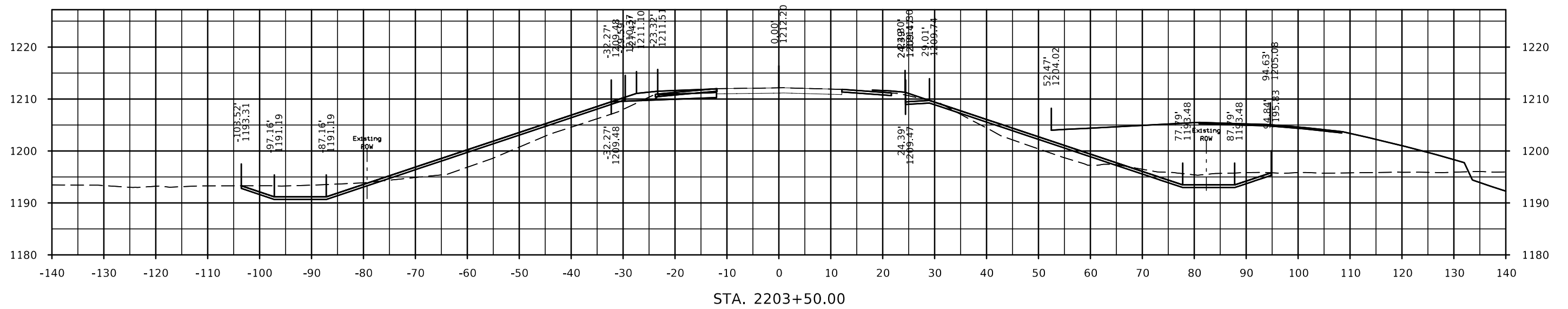




ML031







ML031

