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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
CHEROKEE COUNTY
Preliminary Engineering
1.3 mi E of US 59 to 1.8 mi E of US 59,
including Little Sioux River and Overflow Bridges

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
20-18-003-030
PROJECT NUMBER
NHSX-003-2(78)--3H-18
R.O.W. PROJECT NUMBER
NHSN-003-2(85)--2R-18

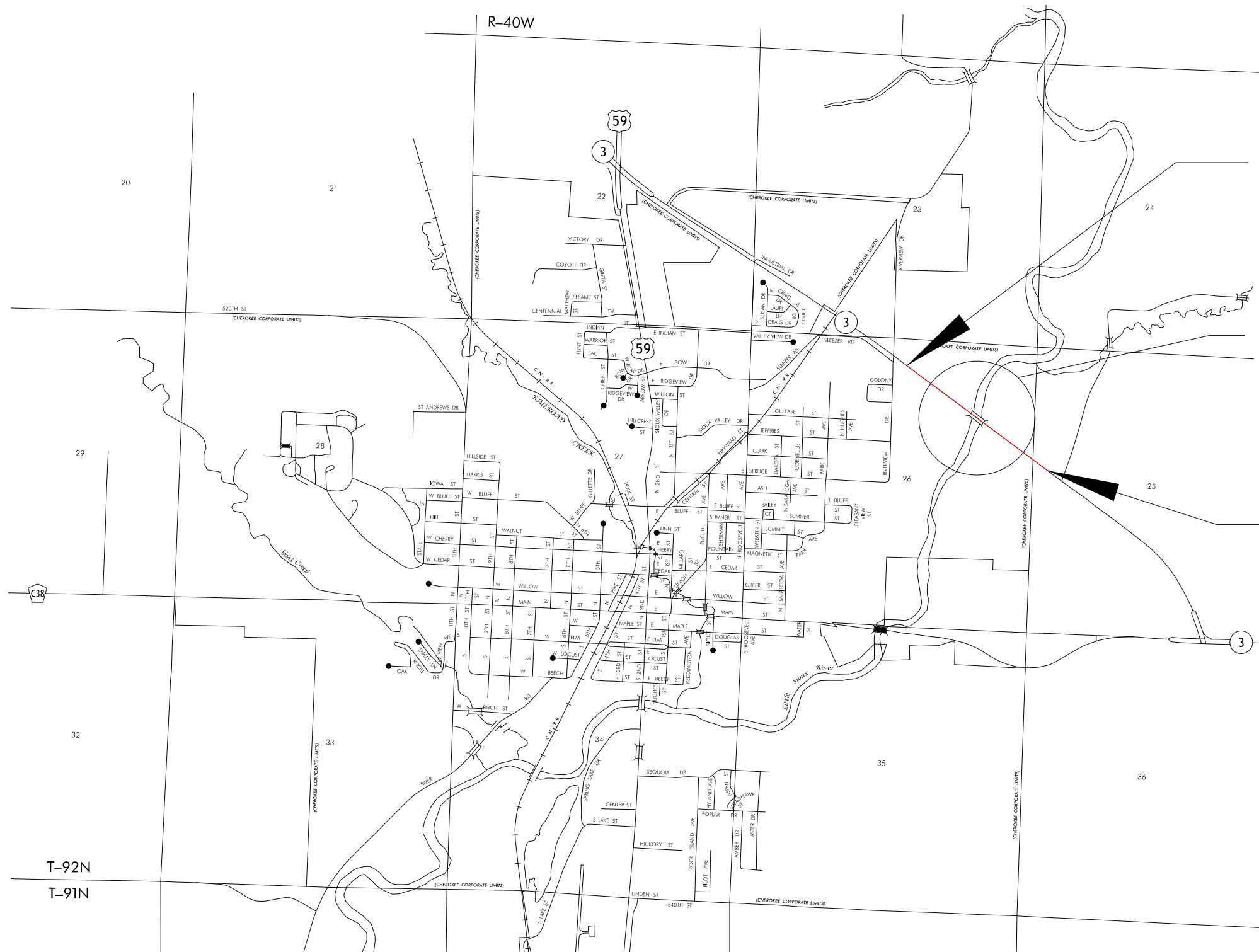
DESIGN DATA RURAL			
2026	AADT	3,400	V.P.D.
2046	AADT	3,500	V.P.D.
20 --	DHV	--	V.P.H.
	TRUCKS	24	%
	Total		
	Design ESALs	--	

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

PRELIMINARY PLANS

Subject to change by final design.

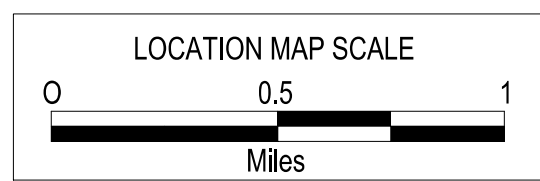
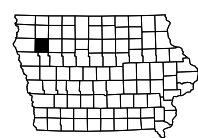
D2/D3 PLAN - Date: 3/20/2023



IA 3
 STA. 945+00.00
 MP 61.94
 BEGIN CONSTRUCTION

IA 3 Bridge Over Little Sioux
 FHWA #19460 (Existing)
 FHWA #XXXXX (New)
 Maint. #1862.0S003
 &
 FHWA #XXXXX (New)

IA 3
 STA. 972+00.00
 MP 62.45
 END CONSTRUCTION



IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 3 **DATE:** March 8, 2022
ATTENTION: Jessica Felix **PROJECT:** Cherokee County
FROM: John E. Bartholomew NHSX-003-2(78)--3H-18
BUREAU: Design 20-18-003-030
SUBJECT: Project Concept Statement; (Final Approval, D0)

- | | | |
|----------------|----------------|-------------------|
| C. Purcell | M. J. Kennerly | K. D. Nicholson |
| S. J. Megivern | J. S. Nelson | M. Nop |
| M. A. Swenson | R. A. Younie | D. E. Sprengeler |
| S. Majors | A. Poole | K. Brink |
| D. L. Newell | B. Bradley | J. W. Laaser-Webb |
| W. A. Sorenson | E. C. Wright | M. E. Ross |
| A. A. Welch | J. Harris | C. C. Poole |
| B. Hofer | G. Karssen | B. E. Azeltine |
| S. J. Gent | S. Anderson | D. Stokes |
| T. Jerman | K. K. Patel | S. Godbold |
| J. Vortherms | D. R. Claman | J. Hauber |
| A. Abu-Hawash | M. E. Khoda | K. Olson |
| S. Neubauer | J. Ellis | S. Seivert |
| D. Bishop | V. Brewer | M. Carlson |
| B. Dolan | T. Huju | K. Mulvihill |
| D. Schultz | S. Tymkowicz | L. Sievers |
| C. Cahill | | |

This project involves the replacement of the IA 3 bridge (Maint. No. 1862.0S003) over Little Sioux River. (FHWA No. 19460)

A concept review was held on October 11, 2021. Those present included Tony Lazarowicz, Shane Tymkowicz, John Jepsen, and Kelly Mulvihill from the District 3 Office; David Claman and Jimmy Ellis from the Bridges and Structures Bureau; Michael Carlson from the Location and Environment Bureau; Nicole Cuva and Eric Wright from ROW; and John Bartholomew, Kevin Patel, and Yuejia Gu from the Design Bureau.

The two alternatives considered were:

1. Replace structure with a new 396' x 44' main channel bridge and construct 150' x 44' overflow bridge; **Estimated Cost \$8,064,200**
2. Replace current structure with new 396' x 44' main channel bridge and construct 209' x 44' overflow bridge; **Estimated Cost \$8,480,400**

Alternative 2 is the preferred alternative due to its improved level of service and reduction in bridge velocities for NFIP 100-year events (see attached concept for details). Additional right of way will be required. Traffic will be maintained by an offsite detour.

The Draft Project Concept Statement was sent out for review and comment with concerns to be resolved by Wednesday, March 2, 2022. Comments received during the review period have been considered and resolved.

This project is recommended for construction in FY 2026. The Design Bureau will coordinate plan preparation with assistance from the Bridges and Structures Bureau.

JEB: jmb
Attach.
cc:

FINAL PROJECT CONCEPT STATEMENT

IA 3 Bridge over Little Sioux River and Overflow Bridge

Cherokee County
NHSX-003-2(78)--3H-18
20-18-003-030
Maint. No. 1862.0S003
FHWA No. 19460

Highway Division
Design Bureau

John Bartholomew, P.E.
515-239-1540

March 8, 2022

Cherokee County
NHSX-003-2(78)--3H-18
20-18-003-030
Page 2

leaching cracks, damp areas, and delamination on the bottom of the deck. The steel beams have had fatigue cracking in several locations and measured section loss. Due to the condition of the overall structure, it is recommended the bridge be replaced.

This project is for flood event level of service improvements on US 59 and IA 3 in the Cherokee area. To improve level of service the IA 3 bridge over the Little Sioux River (MP 62.0) is recommended for replacement.

The IA 3 crossing has the highest level of service in the Cherokee area at an 18 year return period. The US 59 and Main St. (CR 38) crossings have levels of service less than a 5 yr. event. Level of service improvements for the US 59 and Main St. crossings is not practical due to probable base flood elevation impacts at numerous insurable structures located in the regulatory floodplain as a result of the improvements. IA 3 appears to be the only crossing of the three located in Cherokee that can be improved without extensive mitigation of floodplain development regulation requirements.

I. STUDY AREA

A. Project Description

This project involves the replacement of the IA 3 bridge (Maint. No 1862.0S003) over the Little Sioux River and the construction of an overflow bridge.

The two alternatives considered were:

1. Replace structure with a new 396' x 44' main channel bridge and construct 150' x 44' overflow bridge
2. Replace current structure with new 396' x 44' main channel bridge and construct 209' x 44' overflow bridge

Alternative 2 is preferred due to satisfying 50-year flood event criteria and level of service. It was developed to attain a no-rise for the NFIP regulatory event due to the possibility of an impacted insurable structure upstream of the project site. This structure was subsequently determined to be abandoned, therefore both alternatives satisfy NFIP regulatory criteria. However, Alternative 2 provides a slight improvement for the level of service, opportunity to raise roadway grade, and a reduction in bridge velocities for NFIP 100-year events.

B. Need for Project

This is a 324' x 30' steel girder bridge that was built in 1960. Overlays were done in 1972 and 2001, and the overlay has reached the end of its service life. The deck has



Figure 1: Against route



Figure 2: With route



Figure 3: Right profile



Figure 4: Left profile

C. Present Facility

The existing structure is a 324' x 30' steel girder bridge constructed in 1960 and repaired in 2001. An overlay was added in 1972 and 2001. Bolts were loosened in two locations in 2011. A portion of the curb, slab, and welded steel girder were replaced in 1988. Revetment was constructed in 2020.

IA 3 in the project area was 24' wide, with gravel aggregate and 8" thick PCC pavement with 10' wide earth shoulders and 3:1 foreslopes, constructed in 1962. Resurfacing and granular shoulder placement was done in 1991 consisting of 1.5" type 'A' ACC surface course and 4.0" type 'A' ACC binder course. Microsurfacing was accomplished in 1997. The first 0.4 mi of the section beginning at MP 060.54 was milled 3" then resurfaced with 1.5" AAC surface course and 1.5" AAC base in 2004 (Plans for this project were not available on ERMS). HMA resurfacing and milling was done in 2011 consisting of 4" HMA subbase, 2.0" milling, 1.5" surface course, and 1.5" intermediate course. The roadway base was also widened to 32' wide (4' on each side) with 6' type 'B' granular shoulders in 2011.

D. Traffic Estimates

The 2026 construction year and 2046 design year average daily traffic estimates are approximately 3,400 ADT with 24% trucks and approximately 3,500 ADT with 24% trucks, respectively.

E. Sufficiency Ratings

IA 3 is classified as an "Area Development" route and is a maintenance service level "B" roadway. The federal bridge sufficiency rating is 69.2.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2016 through December 31, 2020, there were 9 crashes, including 1 personal injury crash and 8 personal property crashes.

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 - Replace with a new main channel bridge and shorter overflow bridge

The existing 324' x 30' steel girder type bridge will be replaced with a 81' (2) and 117' (2) span, 396' x 44', prestressed beam (BTC) bridge. An additional East Overflow (EOF), 150' x 44' continuous concrete slab bridge will be constructed at MP 62.1 further east of the main channel bridge. The roadway will be reconstructed on a new vertical alignment due to a 2.7' grade raise which will require approximately 4200' of roadway reconstruction, including raising the adjacent side road R Ave/525th St.

The typical cross section adjacent to the bridge will consist of a 24' roadway with 10' effective shoulders (4' paved and 6' granular) with 3:1 foreslopes. New pavement will consist of 9.5" PCC class C, class 3 over 12.0" modified subbase with 100% subdrain coverage.

New bridge approaches will be constructed. The existing guardrail will be replaced with new guardrail and the shoulders will be paved 20' beyond the ends of the guardrail. Class 10 will be necessary to flatten the existing foreslopes and to construct the 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.

It appears that right of way will be required for this project.

Traffic on IA 3 will be maintained by an off-site detour. Contractors will be required to maintain access to IA 3 for property owners along R Ave/525th St.

Bridge Items	<u>Estimated Costs</u>
New Main Channel Bridge	\$ 2,260,000
Overflow Bridge	794,400
Existing Bridge Removal	116,000
Revetment – MC bridge	106,000
Revetment – Overflow bridge	77,500
Cofferdam – MC bridge	75,000
Mobilization - 10%	342,900
M & C - 20%	<u>685,800</u>
Bridge Costs	\$4,457,600

Roadway Items

Bridge Approaches	\$338,100
Removal of Pavement	\$151,800
PCC Pavement	\$747,000
Modified Subbase	\$117,900
Granular Shoulder	\$139,100
Embankment in place, contractor furnished	\$123,300
Excavation Class 13 Waste	\$34,000
Guardrail (Includes Removal)	\$70,700
Paved Shoulders for Guardrail	\$220,500
Class 10 for Guardrail Blisters	\$131,000
Bridge End Drains	\$38,700
Subdrains	\$61,400
Subdrain Outlets	\$5,000
Pavement Markings	\$48,400
Clearing and Grubbing	\$7,900
Seeding and Fertilizing	\$4,200
Erosion Control	\$76,200
Right of Way	\$5,000
Wetland Mitigation	\$300,000
Traffic Control - 2.5%	\$89,700
Mobilization - 5%	\$179,400
M & C - 20%	<u>\$717,300</u>
Roadway costs	\$ 3,606,600
Project Total	\$8,064,200

Alternative #2 - Replace with a new main channel bridge and longer overflow bridge

The existing 324' x 30' steel girder type bridge will be replaced with a with a 81' (2) and 117' (2) span, 396' x 44' prestressed beam bridge (BTC). An additional East Overflow (EOF), 209' x 44' continuous concrete slab bridge will be constructed at milepost 62.1. The roadway will be reconstructed on a new vertical alignment due to a 2.7' grade raise which will require approximately 4200' of roadway reconstruction, including raising the adjacent side road R Ave/525th St.

The typical cross section adjacent to the bridge will consist of a 24' roadway with 10' effective shoulders (4' paved and 6' granular) with 3:1 foreslopes. Pavement will consist of 9.5" PCC class C, class 3 over 12.0" modified subbase with 100% subdrain coverage.

New bridge approaches will be constructed. The existing guardrail will be replaced with new guardrail and the shoulders will be paved 20' beyond the ends of the guardrail. Class 10 will be necessary to flatten the existing foreslopes and to construct the 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.

Right of way will be required for this project.

Traffic on IA 3 will be maintained by an off-site detour. Contractors will be required to maintain access to IA 3 for property owners along R Ave/525th St.

Bridge Items	<u>Estimated Costs</u>
New Main Channel Bridge	\$ 2,260,000
Overflow Bridge	1,100,700
Existing Bridge Removal	116,000
Revetment – MC bridge	106,000
Revetment – Overflow bridge	108,000
Cofferdam – MC bridge	75,000
Mobilization - 10%	376,600
M & C - 20%	<u>753,200</u>
Bridge Costs	\$ 4,895,500

Roadway Items	
Bridge Approaches	\$338,100
Removal of Pavement	\$150,400
PCC Pavement	\$730,700
Modified Subbase	\$117,900
Granular Shoulder	\$136,500
Embankment in place, contractor furnished	\$121,500
Excavation Class 13 Waste	\$34,000
Guardrail (Includes Removal)	\$70,100
Paved Shoulders for Guardrail	\$216,200
Class 10 for Guardrail Blisters	\$129,800
Bridge End Drains	\$38,700
Subdrains	\$60,600
Subdrain Outlets	\$4,800
Pavement Markings	\$49,200
Clearing and Grubbing	\$7,700
Seeding and Fertilizing	\$4,200
Erosion Control	\$83,600
Right of Way	\$5,000
Wetland Mitigation	\$300,000
Traffic Control - 2.5%	\$89,700
Mobilization - 5%	\$179,300
M & C - 20%	<u>\$716,900</u>
Roadway Costs	\$ 3,584,900

Project Total

\$8,480,400

B. Detour Analysis

IA 3 will be closed and an offsite detour will be utilized. It is anticipated the detour will be in place for approximately 180 days. The detour would follow U.S. 59 south, then east on Linden St and finally north on S Ave back to IA 3. Out of distance travel is 2.87 miles. The total distance user cost is anticipated to be \$482,968. The cost for county road maintenance will be \$39,890 as calculated by the Gas Tax Method. Detour signing costs will be \$10,000.

C. Recommendations

It is recommended that the present structure be replaced and a longer overflow bridge constructed as described in Alternative No. 2. The new profile and alignment are attached to this concept.

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 are no bike paths or sidewalks adjacent to IA 3; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

This will not be a traffic critical project.

The ABC Rating Score of 27 is less than the first stage filter threshold of 50, therefore this bridge will not be considered for ABC.

No bike path or sidewalk will be required as part of this project.

A partial DTM and full survey will be conducted.

Right of Way will be required for this project.

The Location and Environment Bureau has reviewed the project, and based on their findings, the project site largely does not meet the criteria to qualify as wetlands under Section 404. Fieldwork is proposed during the spring (May 2022) in order to document and map the areas that may qualify as wetland under Section 404. No wetland mitigation banks serving the project area offer forested wetland mitigation credits for sale and no new mitigation banks for the area are currently in the process to become available. Should additional fieldwork yield different results or the project scope increases, a wetland mitigation site will be developed.

In order to proceed with the concept, a lump sum for wetland mitigation has been added to the cost estimate.

A number of archaeological sites are recorded in this immediate area. A phase I archaeological (H01) survey will be required for this project.

G. Program Status

Site data has been developed by the Design Bureau. This project is listed in the 2022-2026 Iowa Transportation Improvement Program, with \$5,000 programmed for right of way in FY 2025; \$7,149,000 for replacement of the main bridge, \$1,495,000 for construction of the overflow bridge, and \$2,924,000 for grade and pave is programmed for FY 2026. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

JEB: YG

Utilities

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Field Engineer
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locate_IPL@alliantenergy.com

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712-225-0668
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CML Telephone Cooperative (CML)
Bruce Johnson
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cmltelco@netins.net

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MidAmerican Gas (M13G)
Heather Murphy
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Windstream Communications (MFS)
Locate Desk
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locate.desk@windstream.com

Nuvera (PE1)
Thomas Mier
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tommier@nuvera.net

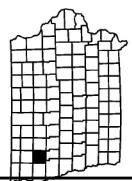
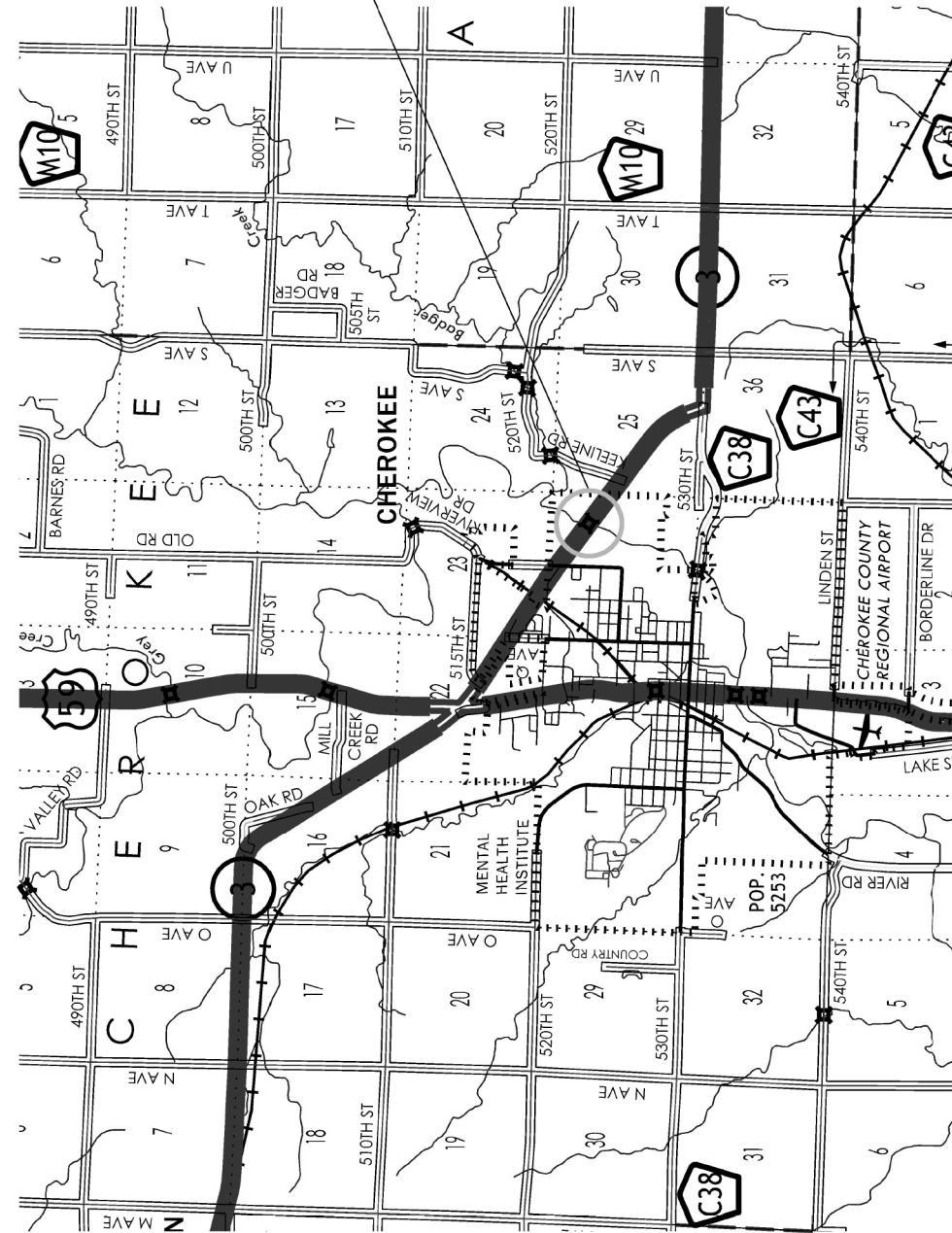
Mediacom (WINIA)
Mike Lawler
515-571-2183
mlawler@mediacomcc.com

Bridge Office Concept Attachment

1. Regulatory (Floodplain)/Drainage District:
 - a. Iowa DNR Floodplain Development Permit: Required.
 - b. Iowa DNR Sovereign Lands Permit: NOT required.
 - c. National Flood Insurance Program (NFIP): FIS in effect. Project vicinity Zone AE (detailed). See commentary in Bridge Concept Statement.
 - d. Drainage District: No Drainage District present at project site.
2. Special Environmental Criteria: None.
3. Special Construction/ABC:
 - a. ABC: Score 27. See ABC commentary in Bridge Concept Statement.
 - b. Special Construction: No special construction beyond ABC anticipated.
4. Non-Standard Survey/Valley Cross Section:
 - a. Non-Standard Survey: Survey beyond the typical scope required for construction plan development is NOT required. Channel profile beyond plan development limits is NOT required.
 - b. Valley Cross Section: NOT required.
 - c. Insurable Structure Survey: Residence/Bldgs., two locations, near h38 and h64 on the ConceptDrawings attachment, Flood Frequency/Impacts sheet.
 - d. Finished floor elevation and photographs.
5. Hydrologic/Hydraulic Analysis, RIDB Dataset
 - a. Hydrologic Analysis: Completed at concept stage.
 - b. Hydraulic Analysis: Completed at concept stage (2D Model). Update required for TSL development if roadway profile varies from that assumed at concept stage. See hydraulic analysis commentary in Bridge Concept Statement.
 - c. RIDB Dataset: Deliverable required with TSL. Stream network location LittleSiouxR_98.8.
6. Structure/Roadway Layout Considerations
 - a. Assumed Beam Type: BTC, CCS
 - b. Roadway Grade Raise: Required. Refer to option comments in Bridge Concept Statement for magnitude.
 - c. Cast-in-Place Or Precast Option: N/A
7. Other: None

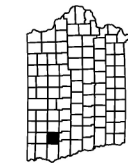
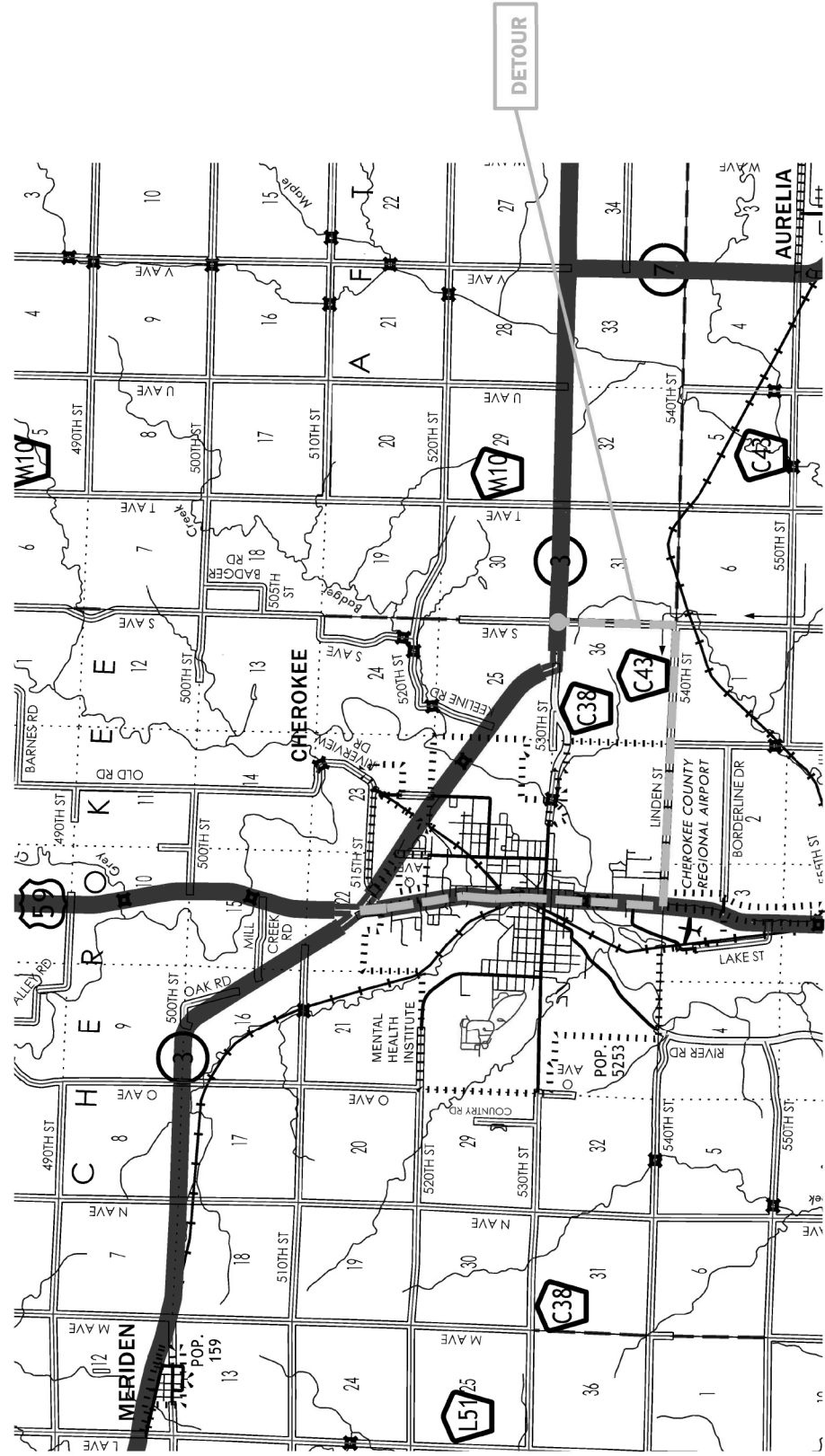


CHEROKEE COUNTY



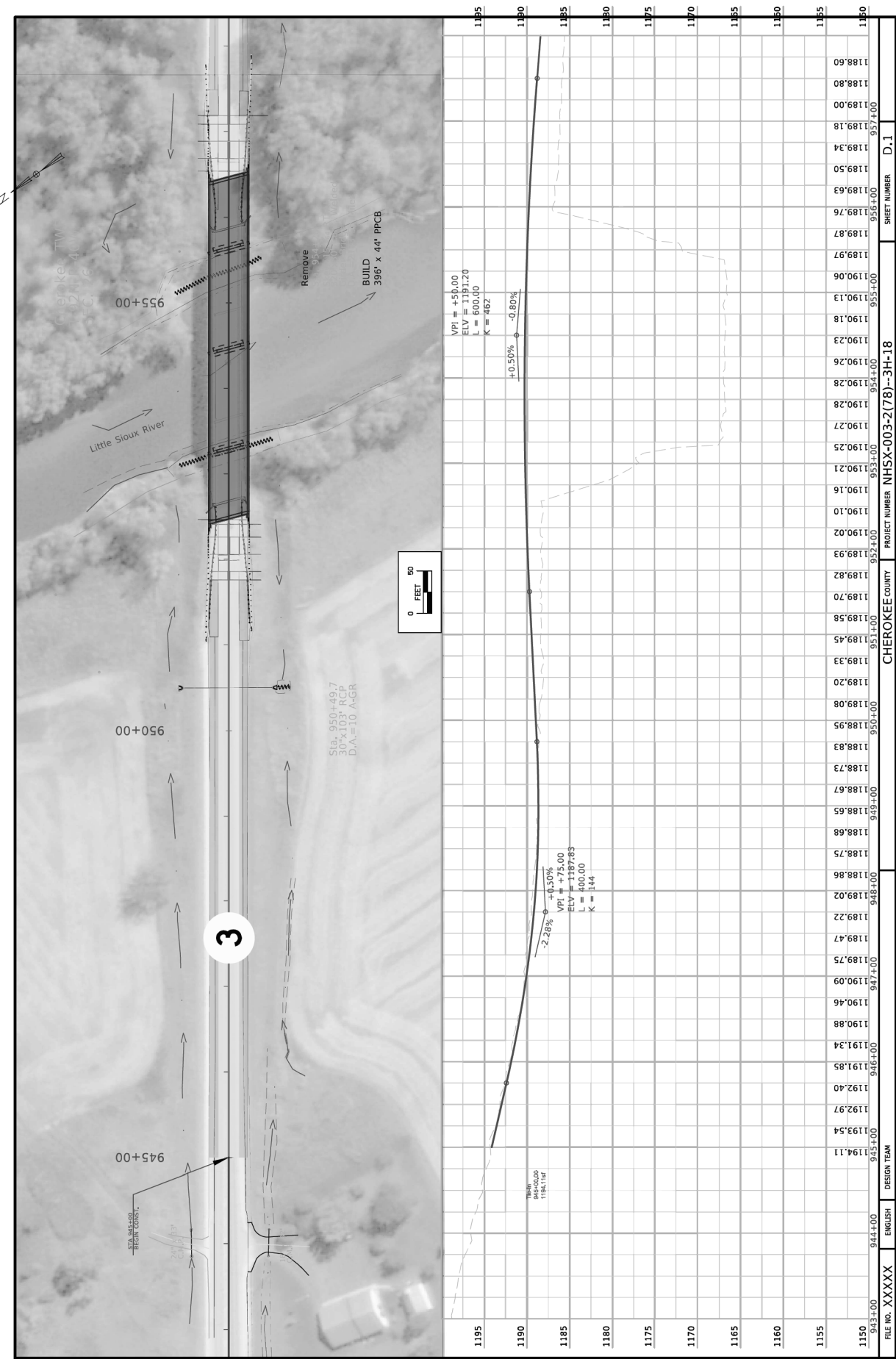
1.3 MI E TO 1.8 MI E OF US 59, INCLUDING
 LITTLE SIOUX RIVER AND OVERFLOW BRIDGES
 NHSX-003-2(78)--3H-18
 PIN: 20-18-003-030

CHEROKEE COUNTY

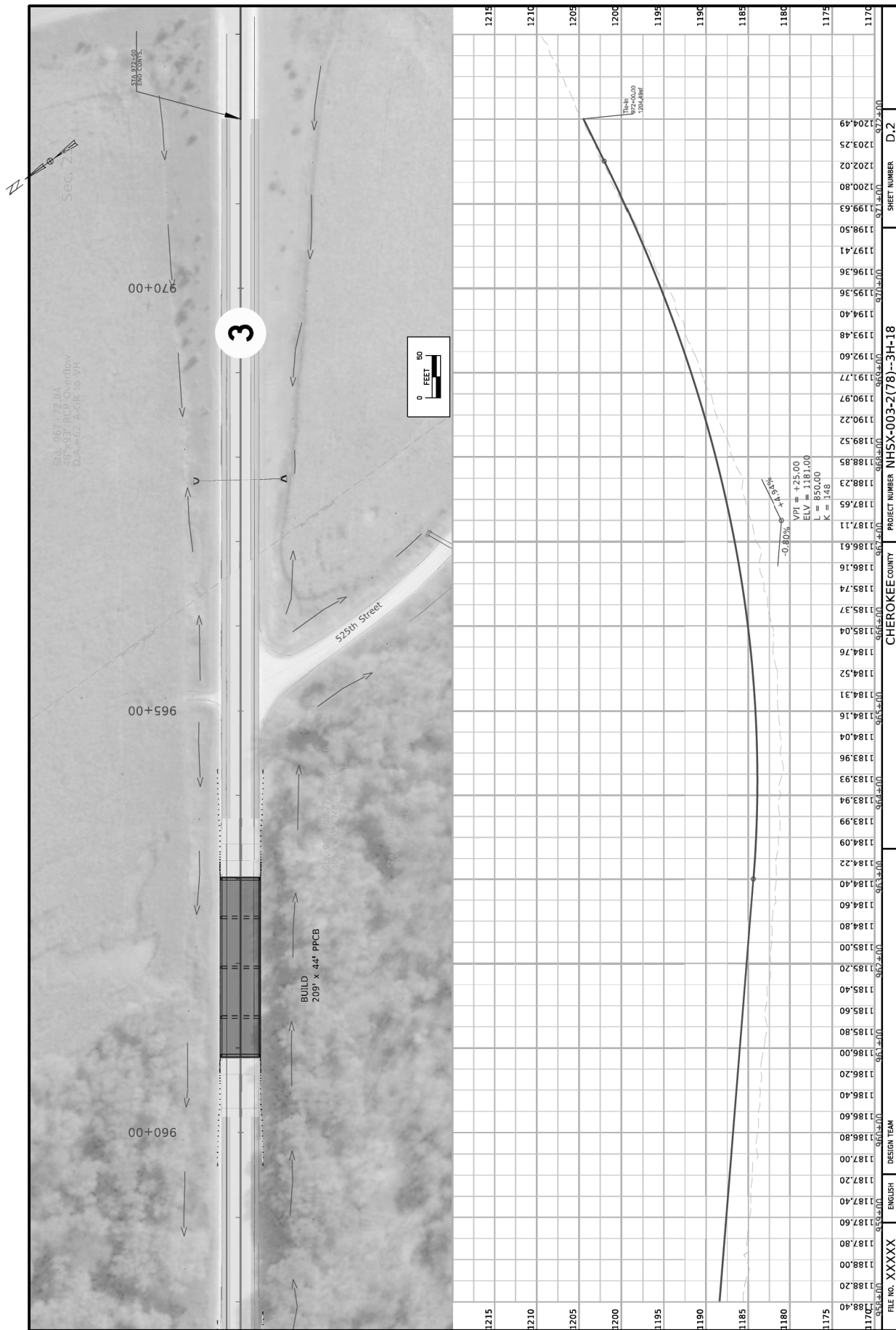


1.3 MI E TO 1.8 MI E OF US 59, INCLUDING
LITTLE SIOUX RIVER AND OVERFLOW BRIDGES
NHSX-003-2(78)--3H-18
PIN: 20-18-003-030

18

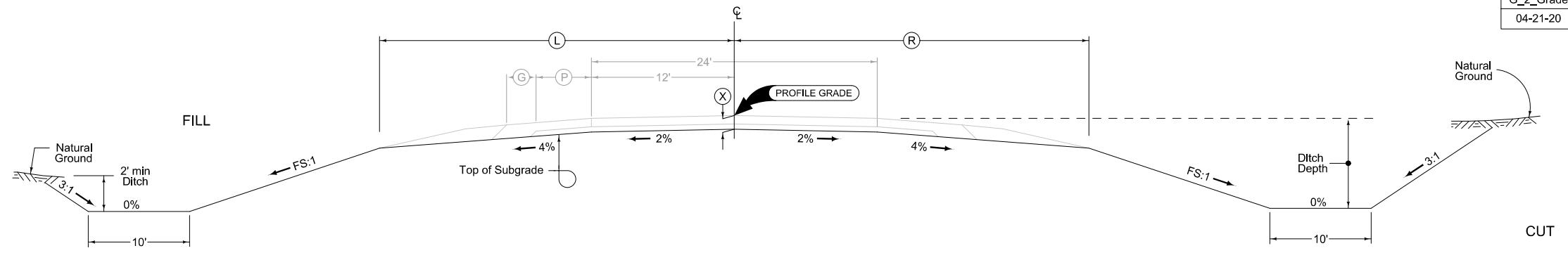


STATION	ELEVATION (FEET)	PROJECT NUMBER	SHEET NUMBER
945+00	1194.11	CHEROKEE COUNTY PROJECT NUMBER NHSX-003-2(78)--3H-18	D.1
946+00	1191.85		
947+00	1189.75		
948+00	1189.22		
949+00	1188.86		
950+00	1188.75		
951+00	1188.68		
952+00	1188.65		
953+00	1188.67		
954+00	1188.73		
955+00	1188.83		
956+00	1188.95		
957+00	1189.02		
958+00	1189.00		
959+00	1189.00		



FILE NO. XXXXX 1/27/2022 ENGLISH Kbell DESIGN TEAM
 PROJECT NUMBER NHSX-003-2(78)--3H-18 CHEROKEE COUNTY
 SHEET NUMBER D.2
 7:24:47 AM p:\NTP\wint1.dot.int.lan:PWMain\Documents\Projects\1800303020\Design\CADD_Files\Sheet_Files\A01_18003078Z04.dgn

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	Ⓛ Feet	Ⓡ Feet	Ⓧ Inches	FS
IA 3	945+00 - 972+00	31.29	31.29	21.5	3



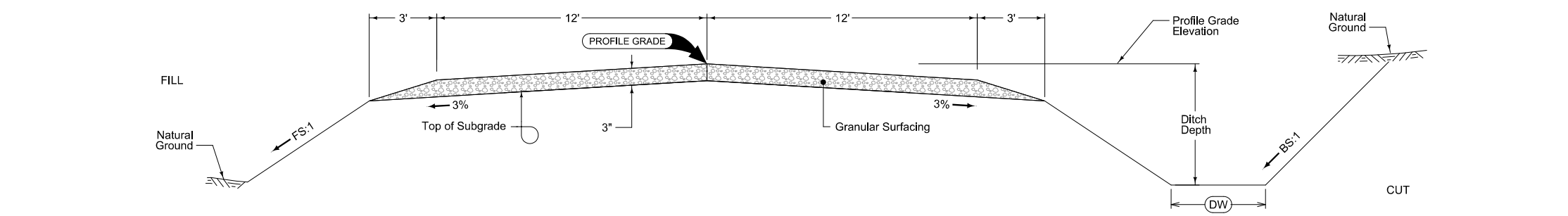
G_2_Grade
04-21-20

2 LANE GRADING

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 backstops.

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	FS	BS	Ⓣ Feet
R Avenue	162+75 - 165+53	3	3	5



G_2_GradeGran
10-17-17

GRADING AND GRANULAR SURFACING

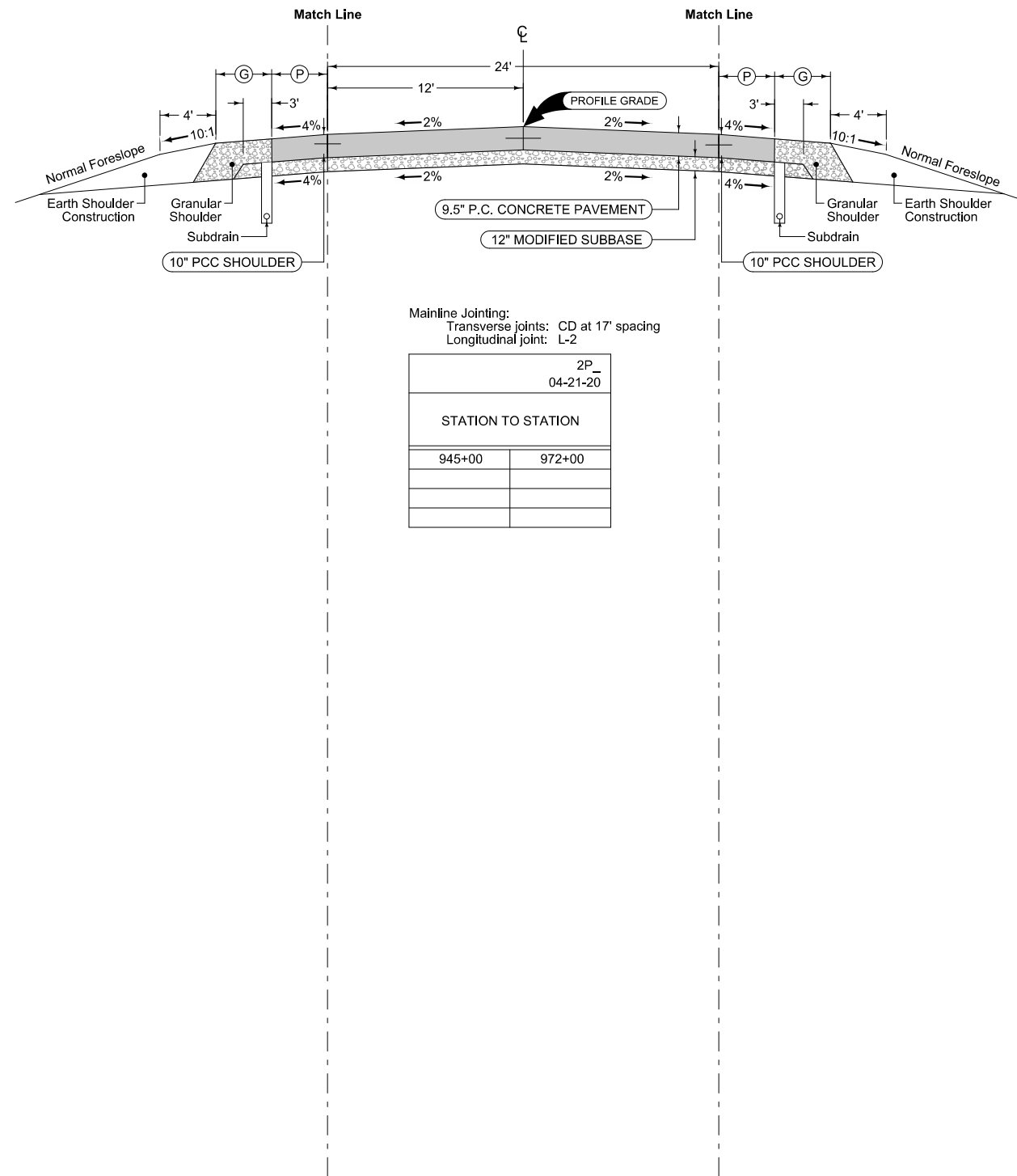
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backstops.

**Full Depth PCC
Combination Shoulder**

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

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
945+00	972+00	6	4



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

2P_04-21-20	
STATION TO STATION	
945+00	972+00

**Full Depth PCC
Combination Shoulder**

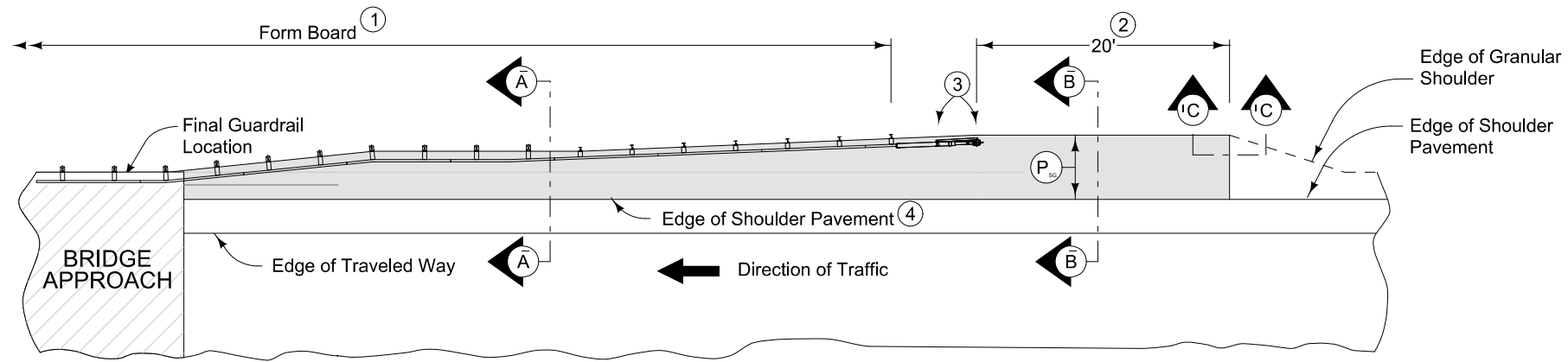
Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: C at 17' spacing

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
945+00	972+00	6	4

See Tab 100-24M

See Tab 112-9M for shoulder quantities.

IA HIGHWAY 3



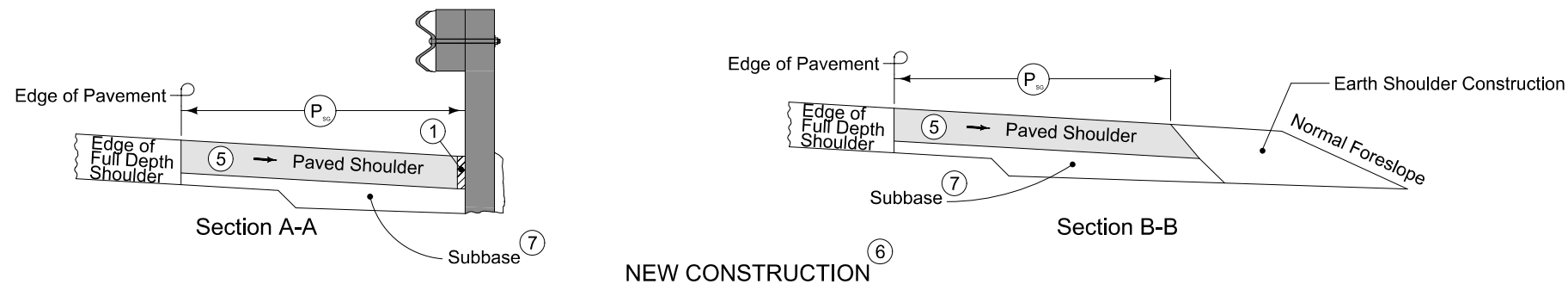
PLAN VIEW

6" PCC Paved Shoulder at guardrail with the following jointing layout:

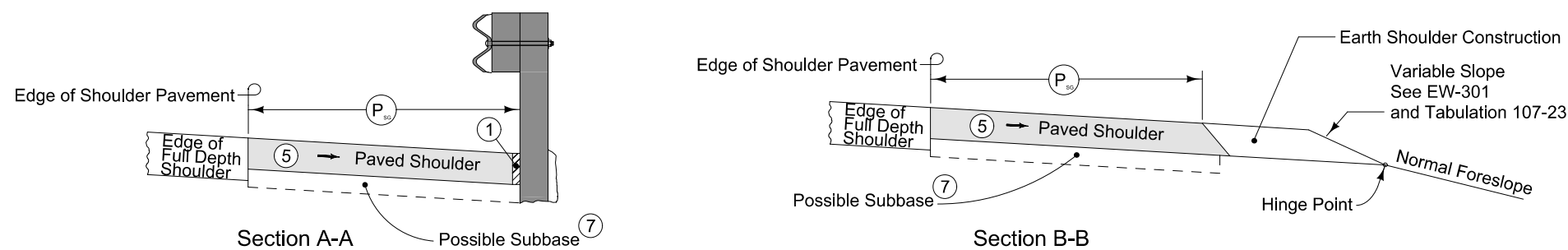
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal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

Refer to Tabulation 112-9 for shoulder quantities.

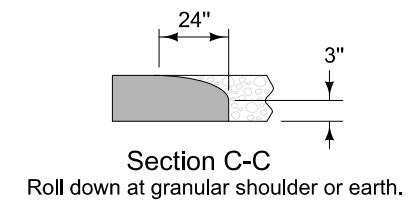
- ① When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-101) joint for PCC shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.



NEW CONSTRUCTION



EXISTING SHOULDER



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

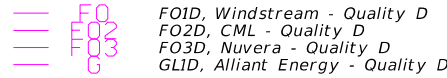
SURVEY SYMBOLS

- | | | | |
|--|-----------------------------------|--|------------------------------|
| | 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

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
 QLA Quality Level A Highest guideline quality level
 QLD Quality Level D Lowest guideline quality level



Alliant Energy (ANW)
 Field Engineer
 800-255-4268
 locate_IPL@alliantenergy.com

City of Cherokee (CKE)
 Mark Napier
 712-225-0668
 cityckwd@ncn.net

CML Telephone Cooperative (CML)
 Bruce Johnson
 712-443-8222
 cmltelco@netins.net

MidAmerican Electric (M13E)
 John Roest
 712-548-6157
 jhroest@midamerican.com

MidAmerican Gas (M13G)
 Heather Murphy
 712-548-6157
 hrmurphy@midamerican.com

Windstream Communications (MFS)
 Locate Desk
 800-289-1901
 locate.desk@windstream.com

Nuvera (PE1)
 Thomas Mier
 712-434-5989
 tommier@nuvera.net

Mediacom (WINIA)
 Mike Lawler
 515-571-2183
 mlawler@mediacomcc.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	(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

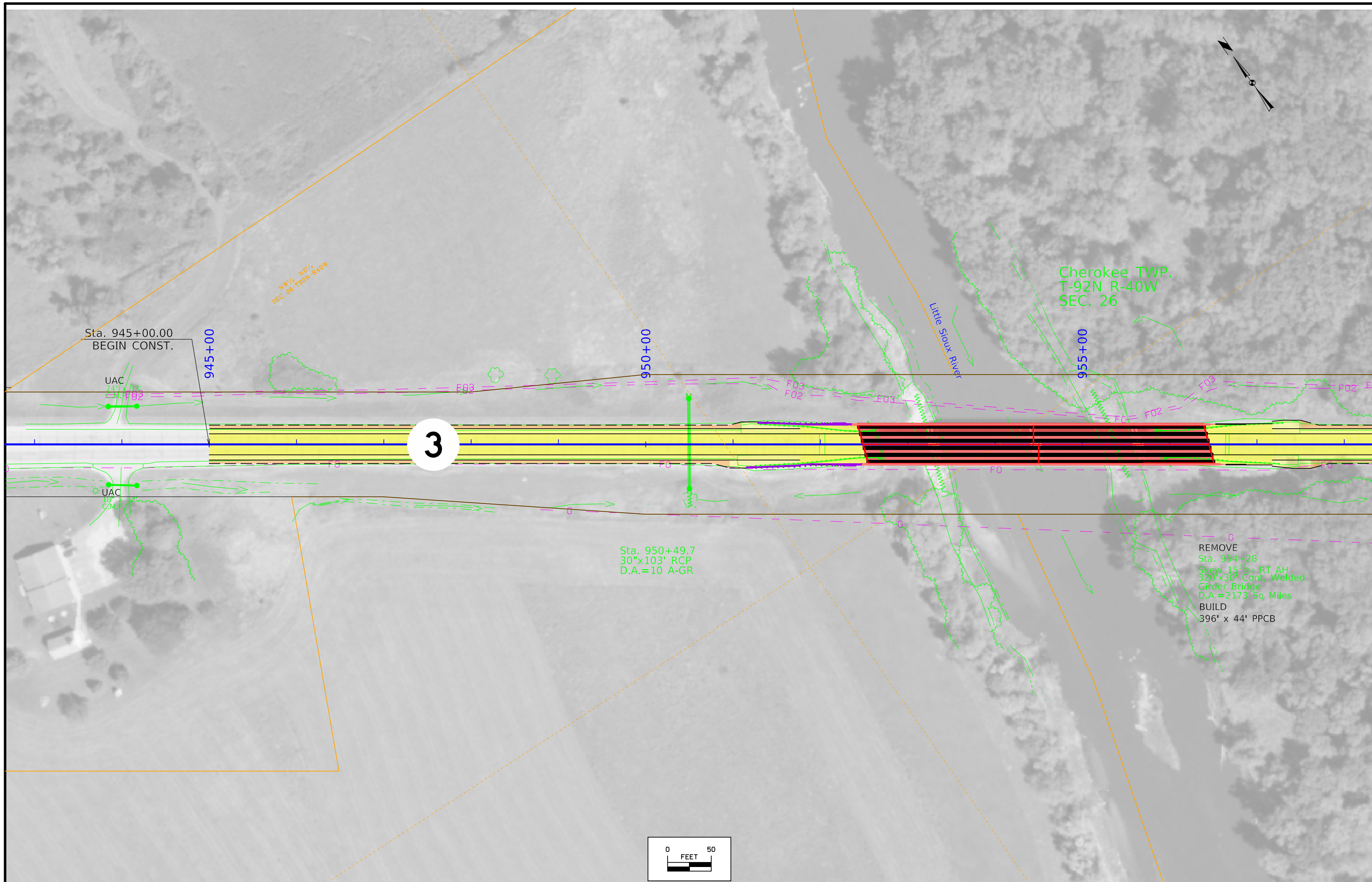
LINEWORK		Design Color No.	
Green	(10)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

- | | | | |
|--|-----------------------------|--|--------------------------|
| | Reference Point | | 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)



Sta. 945+00.00
BEGIN CONST.

945+00

950+00

955+00

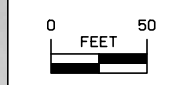
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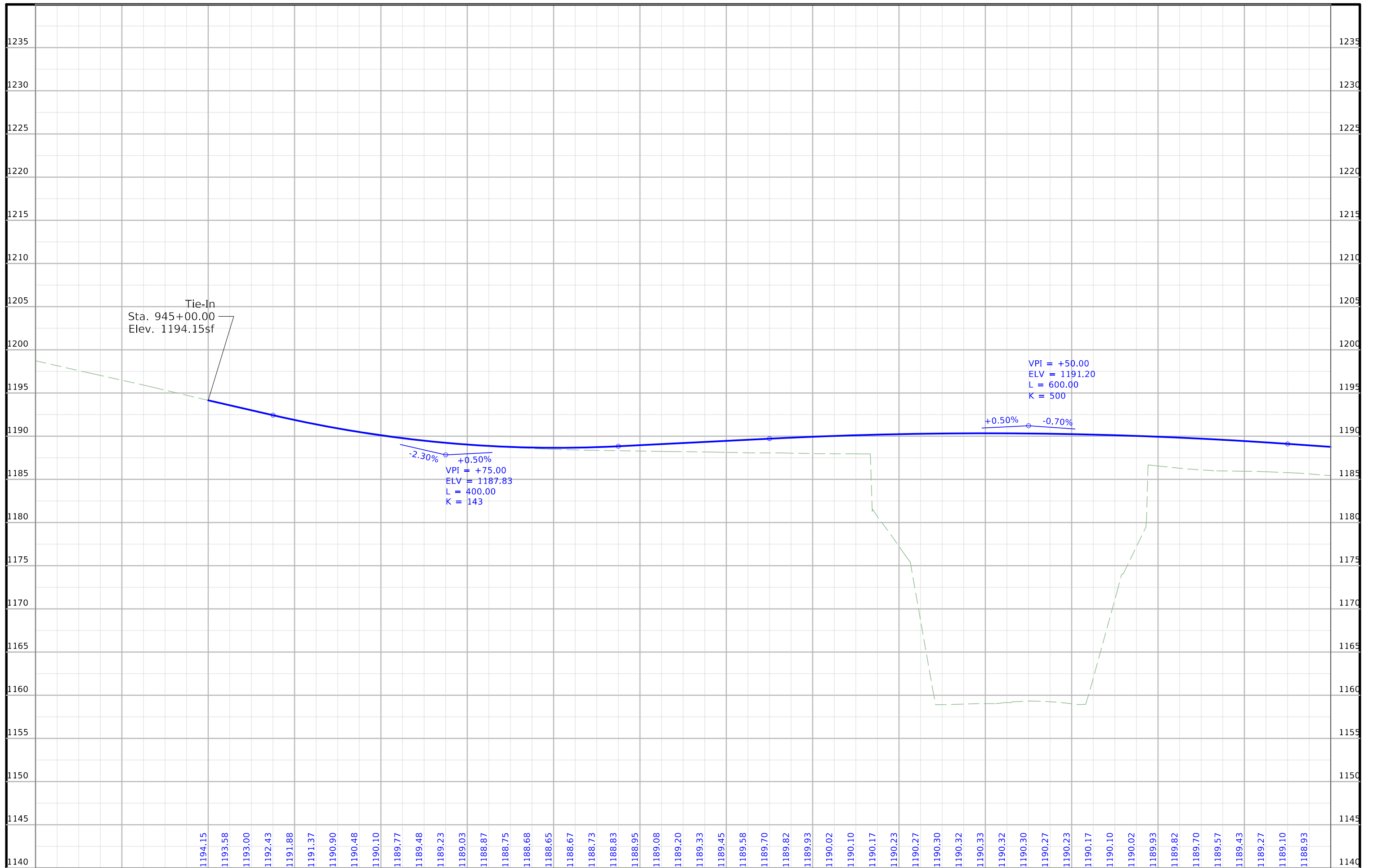
Little Sioux River

Cherokee TWP.
T-92N R-40W
SEC. 26

Sta. 950+49.7
30"x103' RCP
D.A.=10 A-GR

REMOVE
Sta. 954+28
Skew 15³/₆₄ RT AH
320'x30' Cont. Welded
Girder Bridge
D.A.=2173 Sq Miles
BUILD
396' x 44' PPCB



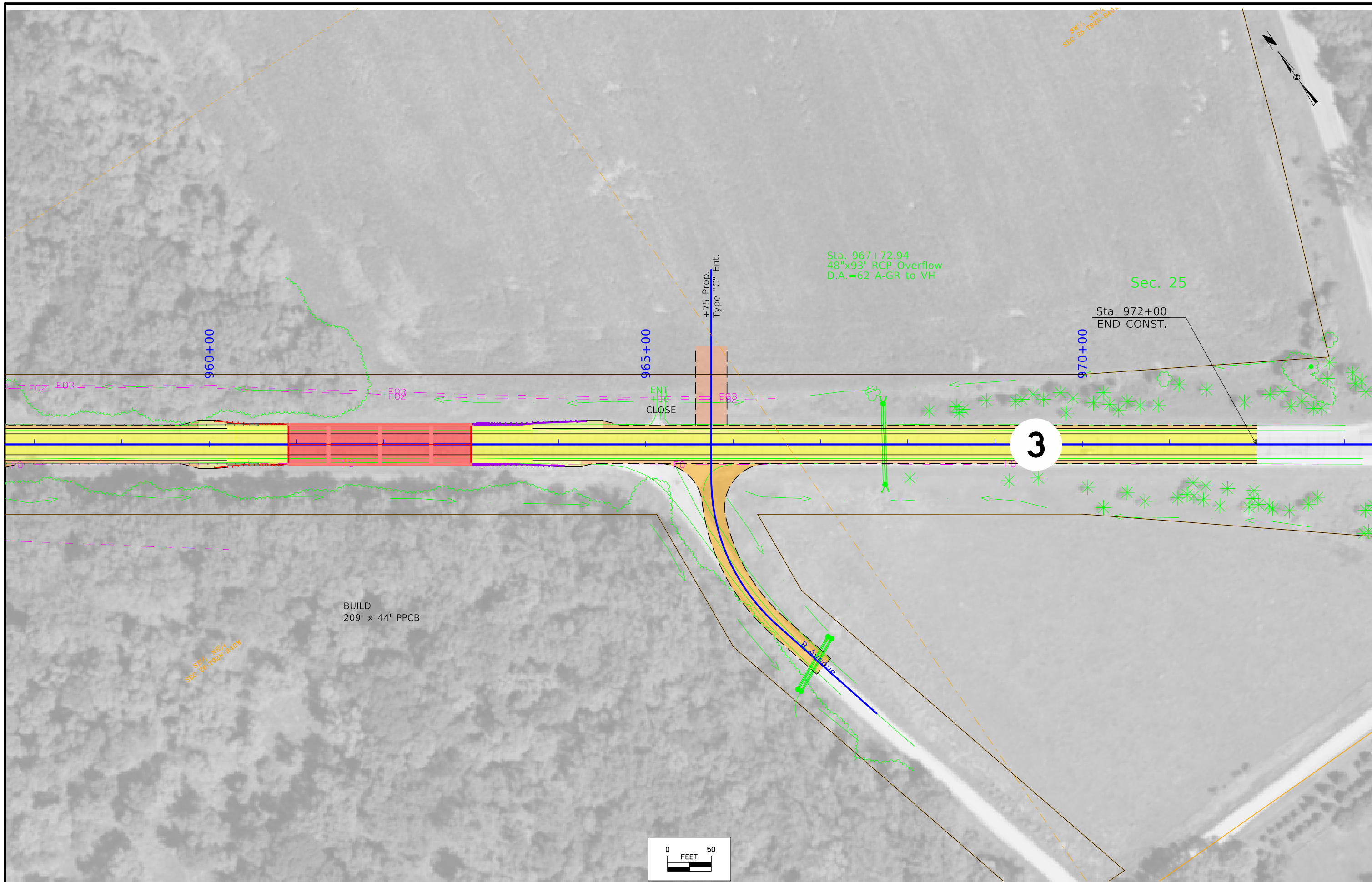


Tie-In
Sta. 945+00.00
Elev. 1194.15sf

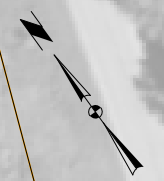
-2.30%
+0.50%
VPI = +75.00
ELV = 1187.83
L = 400.00
K = 143

VPI = +50.00
ELV = 1191.20
L = 600.00
K = 500

+0.50% -0.70%



SW 1/4, NW 1/4
SEC. 25-192N-R40E



Sta. 967+72.94
48"x93' RCP Overflow
D.A.=62 A-GR to VH

Sec. 25

Sta. 972+00
END CONST.

960+00

965+00

970+00

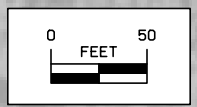
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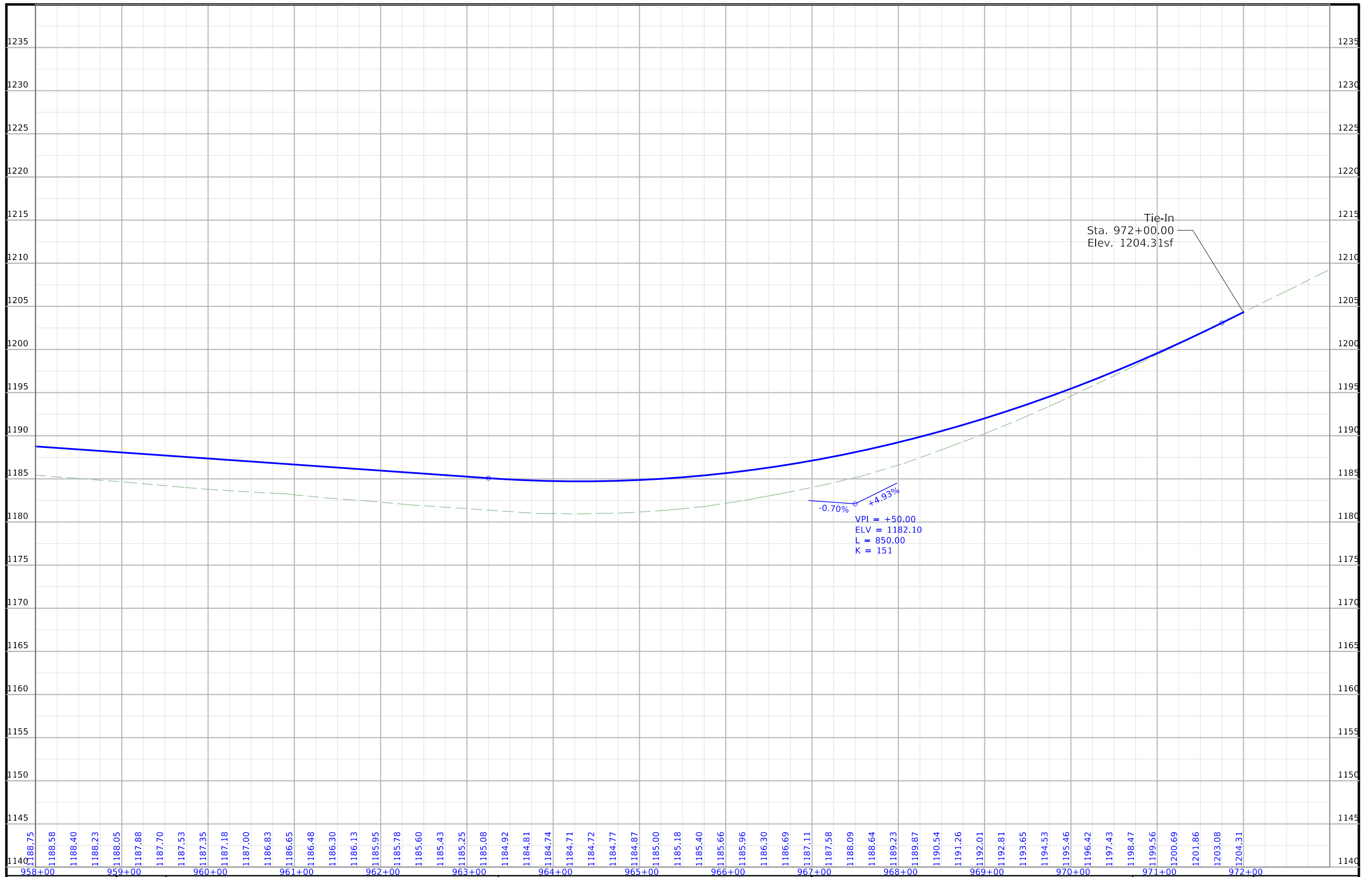
ENT
+16
CLOSE

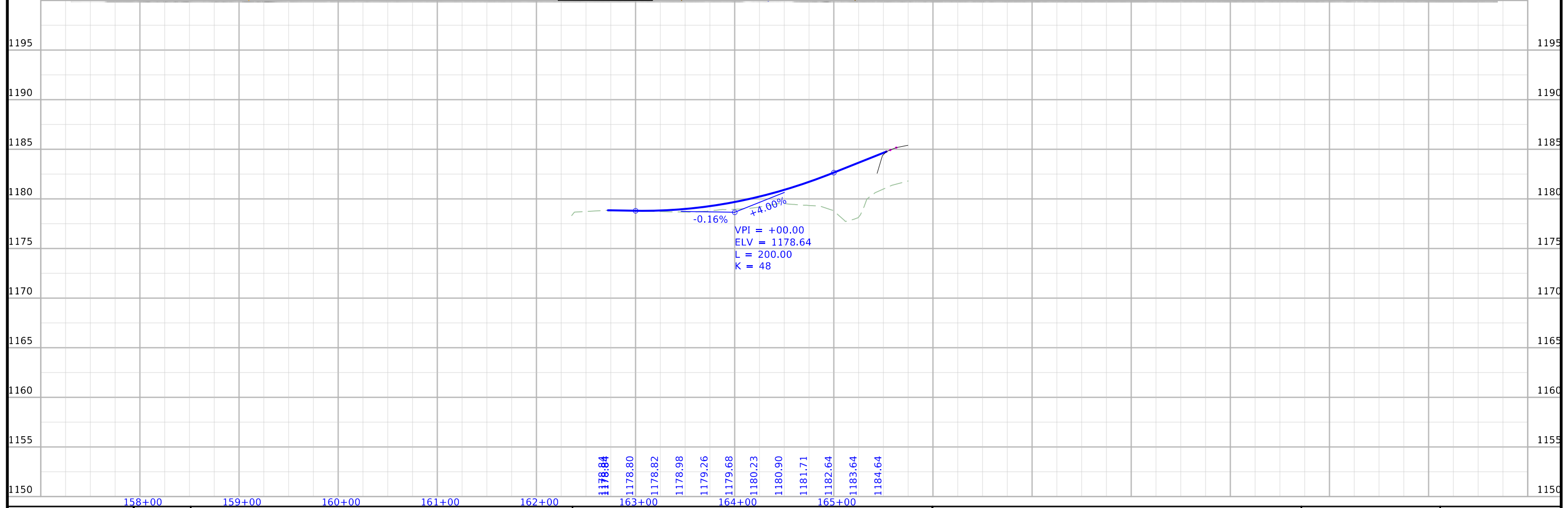
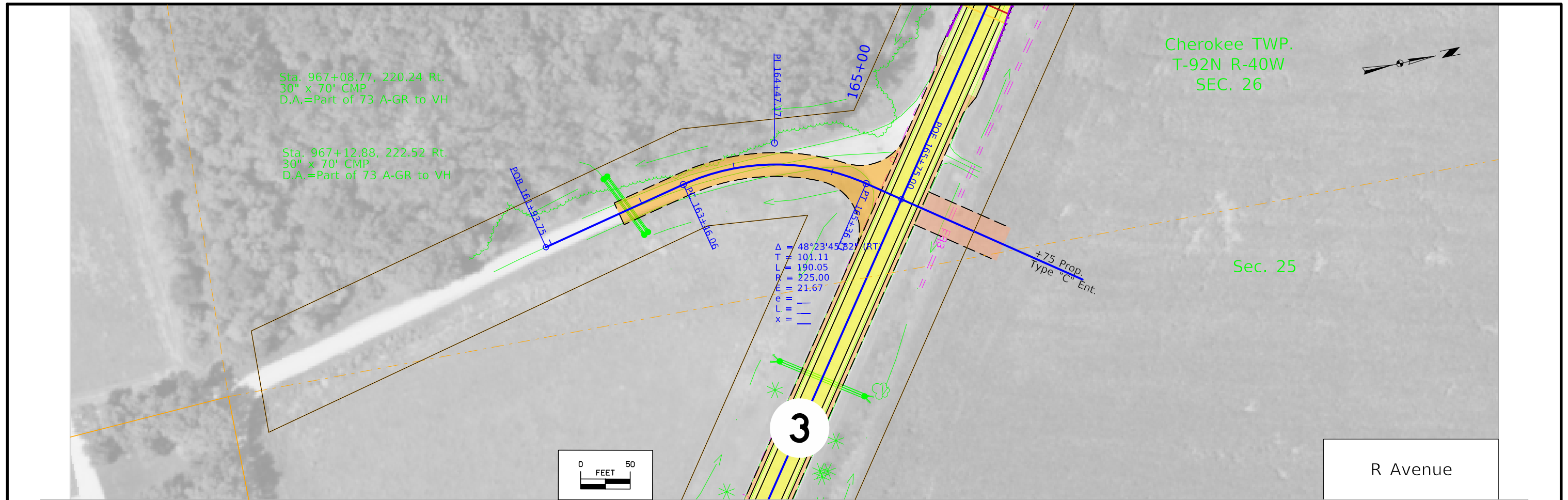
+75 Prop.
Type "C" Ent.

BUILD
209' x 44' PPCB

SE 1/4, NW 1/4
SEC. 25-192N-R10W







FILE NO.	ENGLISH	DESIGN TEAM Flattery\Bell	CHEROKEE COUNTY	PROJECT NUMBER NHSX-003-2(78)--3H-18	SHEET NUMBER E.1
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Survey Information

Cherokee County
NHSX-003-2(78)--3H-18
Location: 1.3 mi E of US 59 to 1.8 mi E of US 59, including Little Sioux
River and Overflow Bridges
Type of Work: Bridge Replacement; New Bridge
Project Directory: 1800303020
PIN: 20-18-003-030
Sap-0778.3

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

NGS mark designated B24 (PID NL0265) has a published E lev. of 1442.038
Survey E lev. = 1442.114

NGS mark designated Z25 (PID NL0512) has a published Elev. of 1214.725
Survey E lev. = 1214.538

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. 72, B24, Z25, 18003061, and 18003062.

Alignment Information

The horizontal alignment for this survey is a retrace of Paving Plans F-Project No. 1082(4). Survey stationing was equated to the plan POT at Sta. 973+94.0 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 973+94.0 Paving Plans F-Project No. 1082(4)
Survey POT Sta. 973+94.0

Party Personnel

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

Date(s) of Survey

Begin Date 09/27/2021
End Date 10/28/2021

General Information

Measurement units for this survey are U S survey feet. This survey is for proposed bridge reconstruction on US 3 over Little Sioux River 1.5 mile east 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. 72, B24, Z25, 18003061, and 18003062 by doing concurrent 5 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

This survey observed 1 County GPS control with published NAVD88 heights to compare to local ground control:

Cherokee County GPS Network mark designated 2000-072 has a published Elev. of 1208.92
Survey Elev. = 1208.77

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 - Ia. RCS Zone 04
VERT. DATUM: NAVD88 - Geoid Model g2012bu3

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
 1a. Regional Coordinate System Zone 04

VERT. DATUM: NAVD88
 Geoid Model g2012bu3
 Project Control Marks are Bench Marks

Point Name	North	East	Elevation	Feature Definition-Description
18003061	8684264.462	14312071.908	1207.773	CP 18003061 FROM THE INTERSECTION OF US 59 AND IA 3 AT THE NORTH END OF CHEROKEE GO 1.25 MILES SOUTHEAST ALONG IA 3 A ROW RAIL WITH A CUT X ON TOP IN THE NORTH DITCH 49 FEET NORTHEAST OF EDGE OF PAVEMENT 28 FEET SOUTHEAST OF WELL NEXT TO A METAL T POST WITH AN ORANGE SLEEVE
18003062	8682191.503	14314755.499	1210.074	CP 18003062 FROM THE INTERSECTION OF US 59 AND IA 3 AT THE NORTH END OF CHEROKEE GO 1.9 MILES SOUTHEAST ALONG IA 3 A FENO TYPE MONUMENT SET IN THE SOUTH DITCH ABOUT 0.3 DEEP 11 FEET WEST OF METAL SIGN POST 18 FEET NORTHWEST OF A FIBERGLASS GAS PIPELINE SIGN 23 FEET SOUTHWEST OF EDGE OF PAVEMENT
Z25	8682230.4	14308121.509	1214.538	BM Z25 FROM THE INTERSECTION OF US 59 AND E BLUFF ST IN CHEROKEE GO EAST 500 FEET ALONG E BLUFF ST TO CENTRAL ST THEN GO 1 BLOCK NORTHEAST ALONG CENTRAL ST TO THE INTERSECTION OF CENTRAL ST AND SPRUCE ST FOUND NGS DISK MARKED Z25 95 FEET WEST OF P POLE AT INTERSECTION OF CENTRAL ST AND SPRUCE ST 18 FEET WEST OF EDGE OF BIKE PATH 10 FEET SOUTH OF EDGE OF SPRUCE ST 7 FEET SOUTHEAST OF A P POLE

NOTE:

The first two digits in the control point name refer to the county number.
 The next 3 digits refer to the highway number.
 The next 3 digits refer to the highway milepost.
 The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic on IA 3 will be maintained via offsite detour.

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
			No Travel Restrictions Expected									

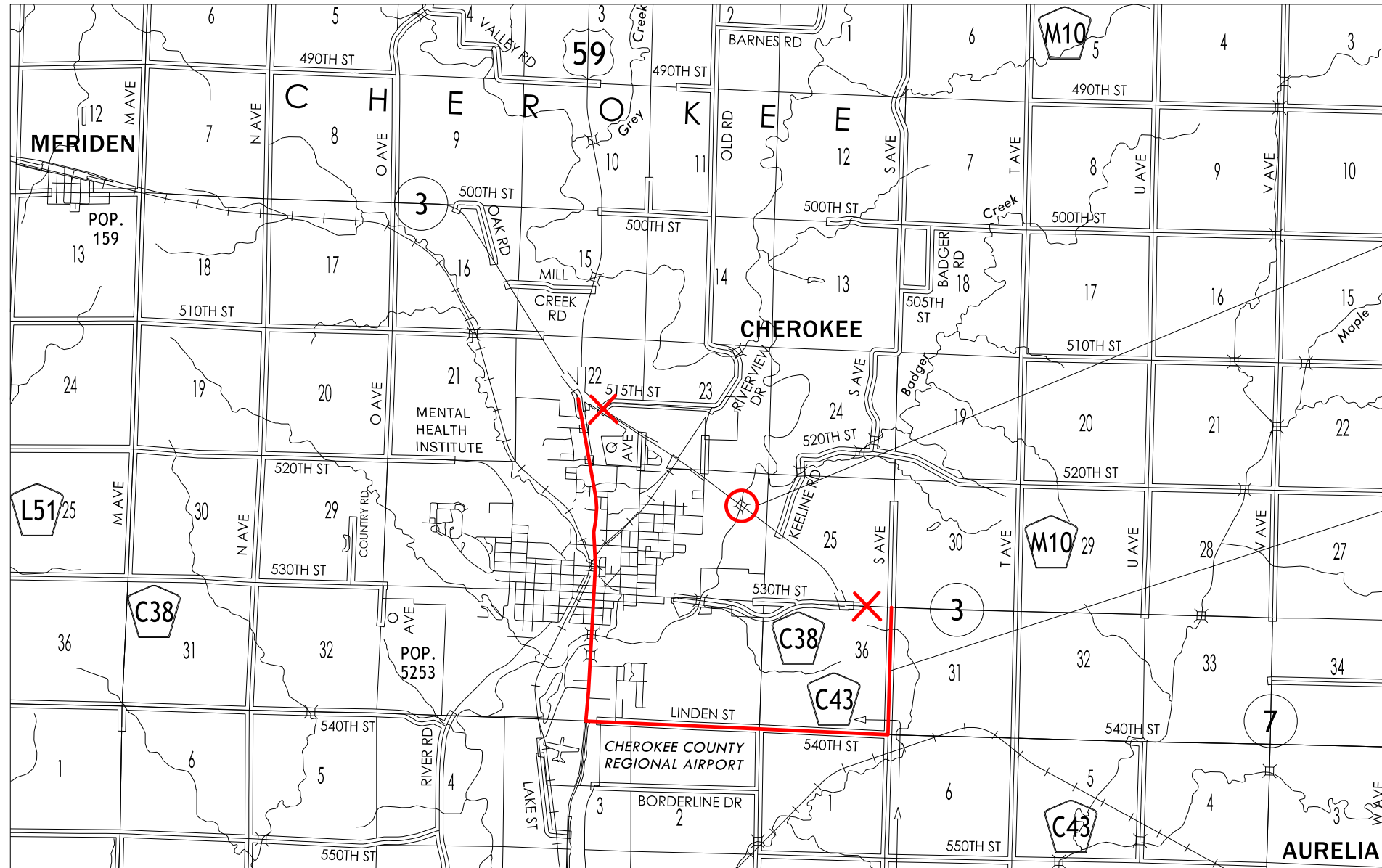
111-01
04-17-12

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	

CHEROKEE COUNTY

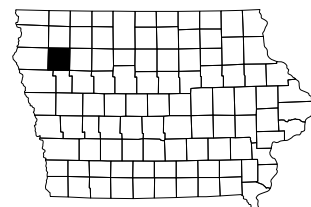


STA 954+28
 MP 62.10
 FHWA 19460
 Maint. 1862.0S003
 Design 4950

DETOUR

1.3 MI E TO 1.8 MI E OF US 59, INCLUDING
 LITTLE SIOUX RIVER AND OVERFLOW BRIDGES
 NHSX-003-2(78)--3H-18
 PIN: 20-18-003-030

18



CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
Aggregate			
(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			
(207)	HMA Base Course	(128)	Boulder Substrata
(207)	HMA Interim Course	(48)	Broken Weathered Substrata
(207)	HMA Surface Course	(3)	Core Out Substrata
Concrete			
(0)	Barrier Concrete	(203)	Existing Pavement Substrata
(0)	Barrier Concrete Footing	(6)	Loam Substrata
(0)	Curb Gutter	(80)	Rock Substrata
(48)	Flowable Mortar	(4)	Select Sand Substrata
(0)	Median Concrete	(3)	Shale Substrata
(0)	PCC Pavement	(10)	Topsoil Substrata
(0)	Sidewalk	Unsuitable / Waste	
Shoulder			
(209)	Shoulder HMA	(3)	Unsuitable Type A
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(11)	Unsuitable Type C
(3)		(3)	Waste
Existing			
(0)	Existing Pavement		

NOTES:

Text

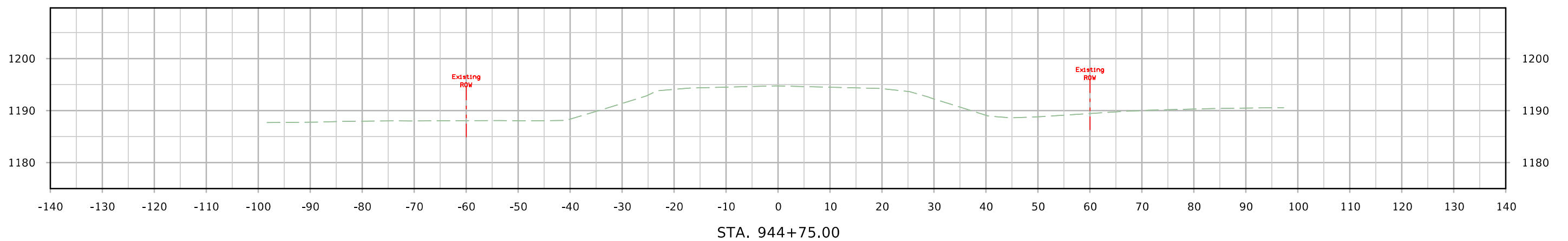
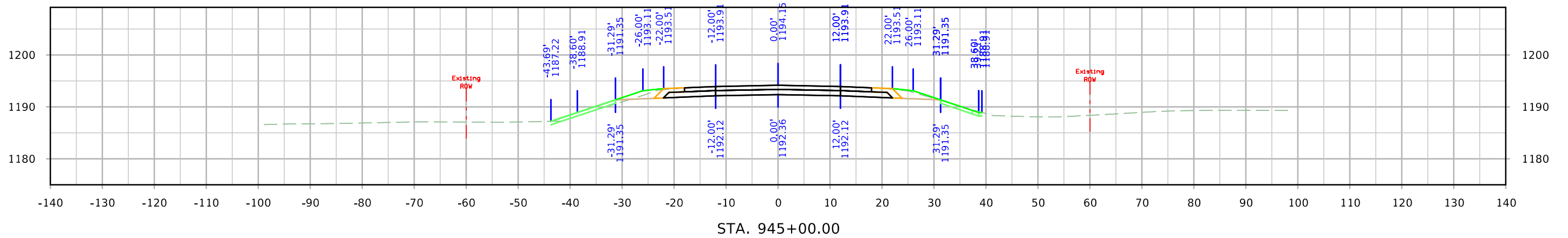
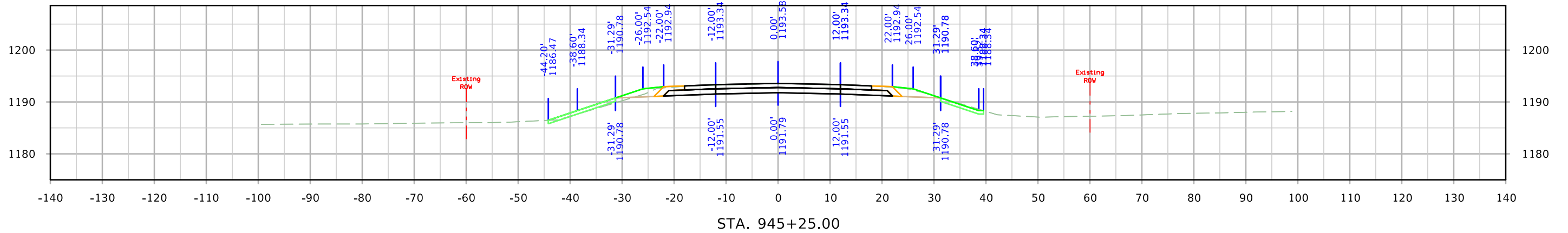
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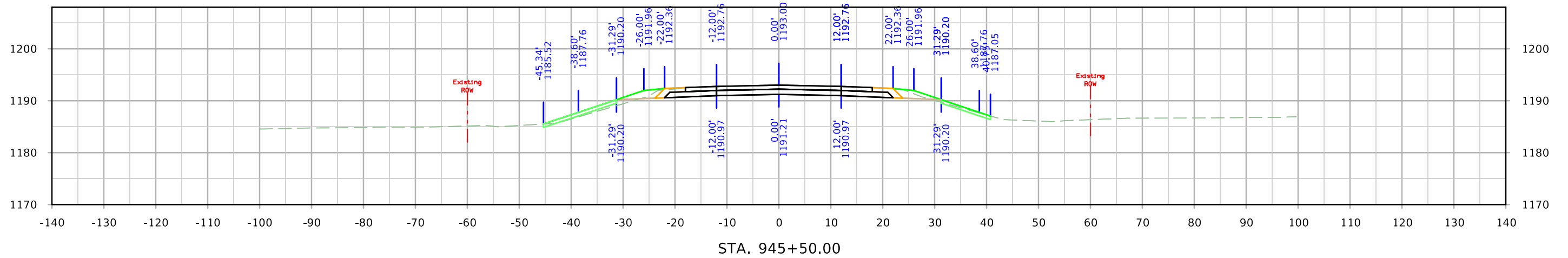
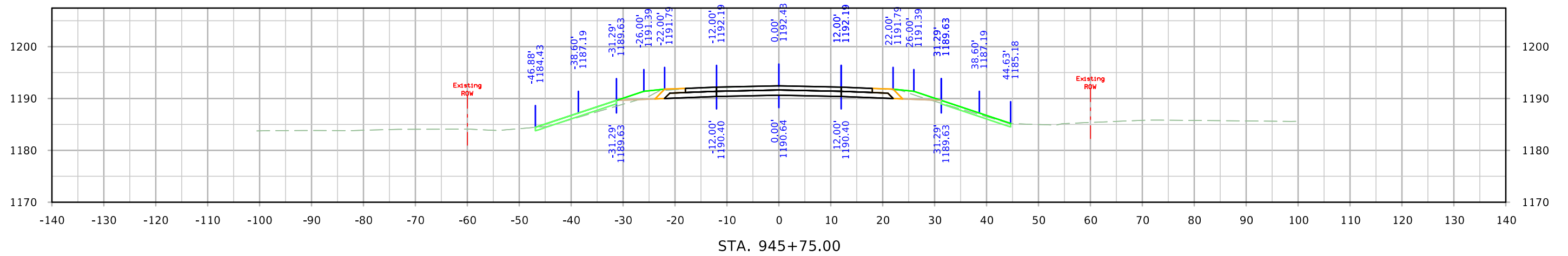
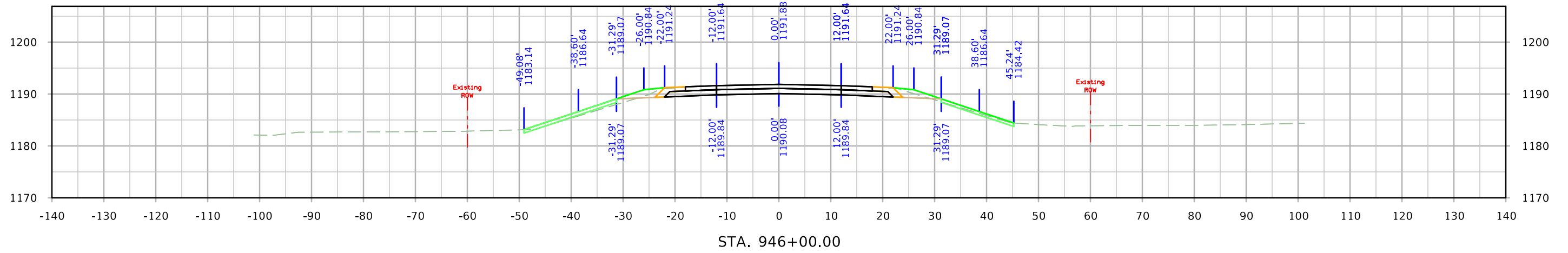
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(COVERS SHEET SERIES W, X, Y, & Z)

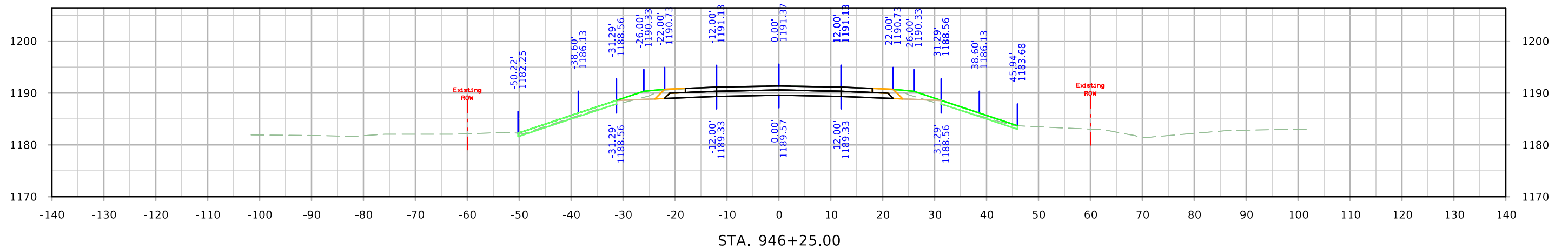
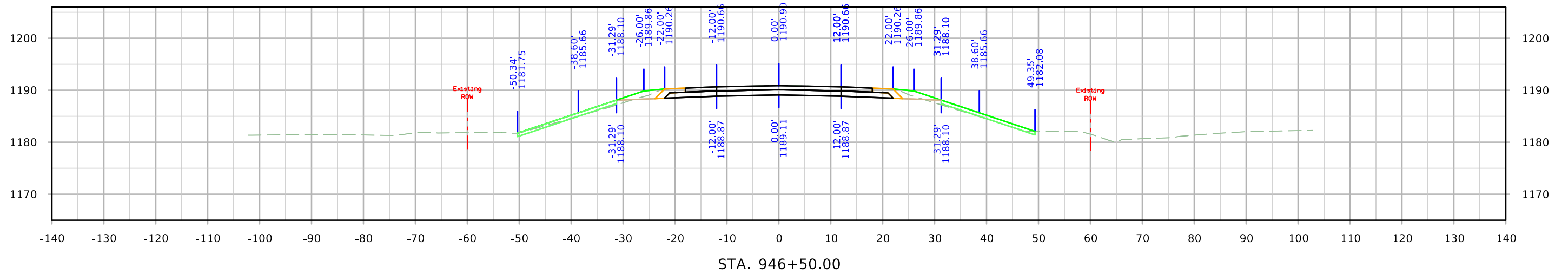
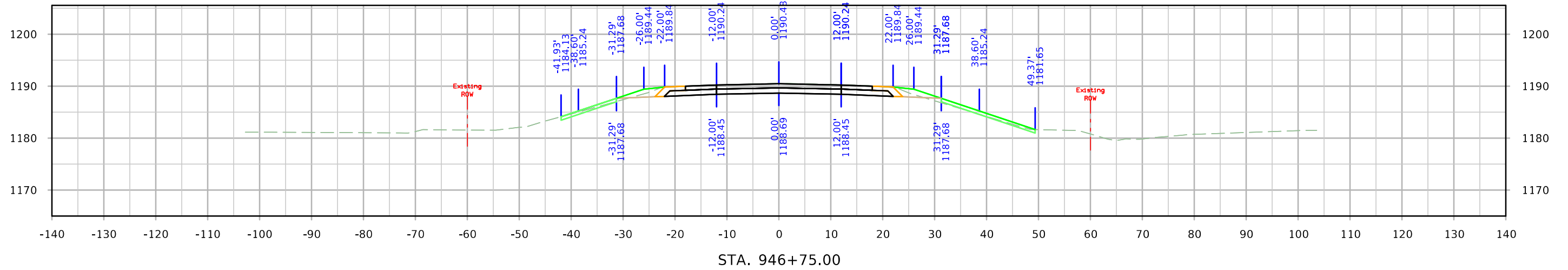
Iowa 3



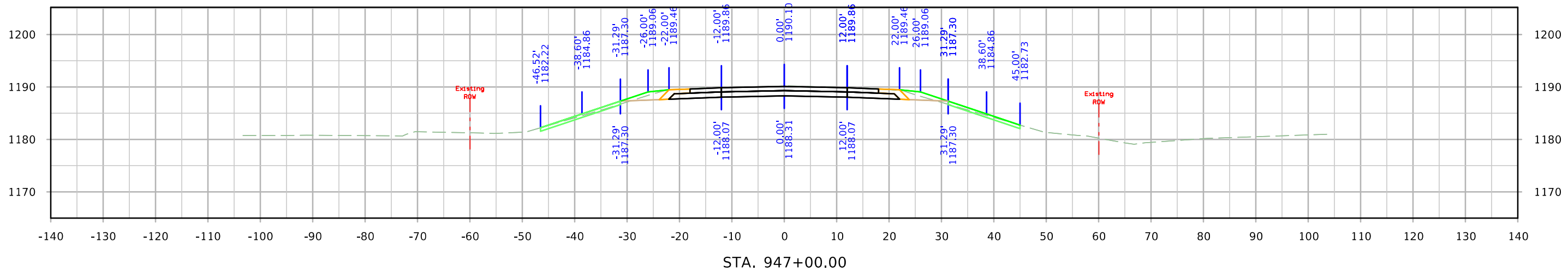
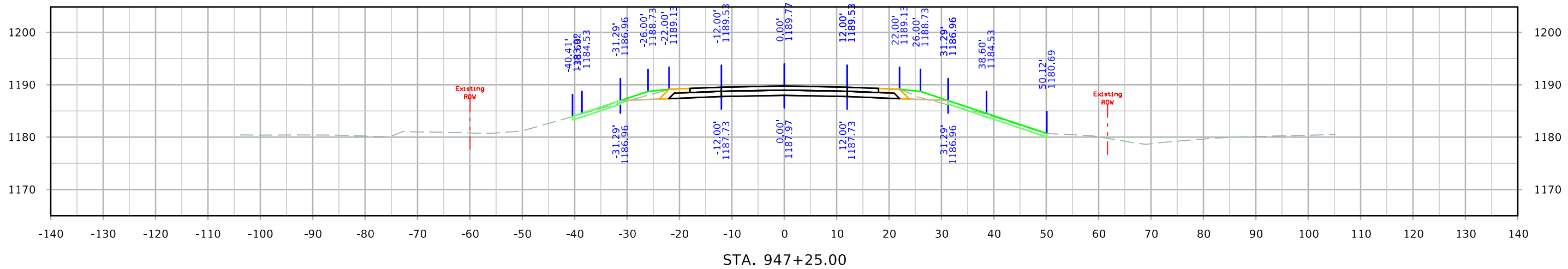
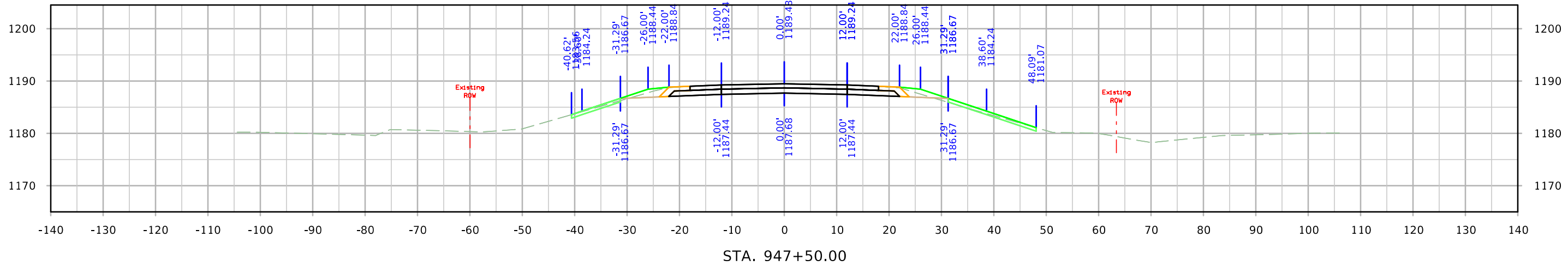
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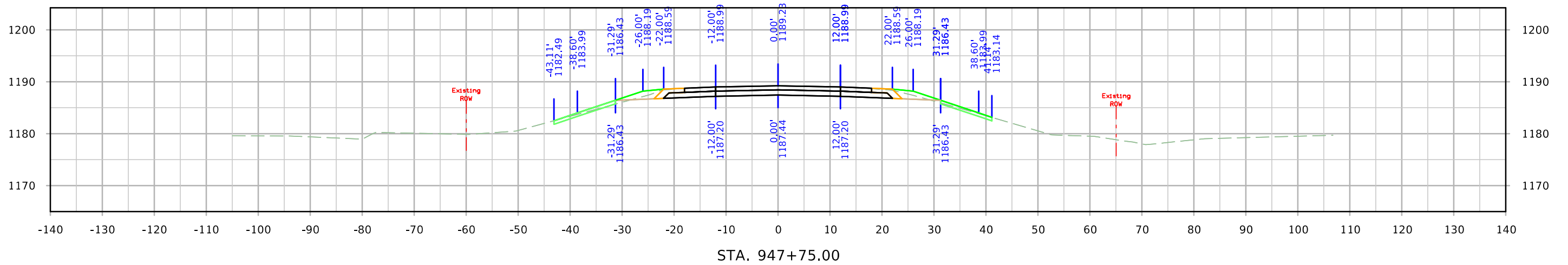
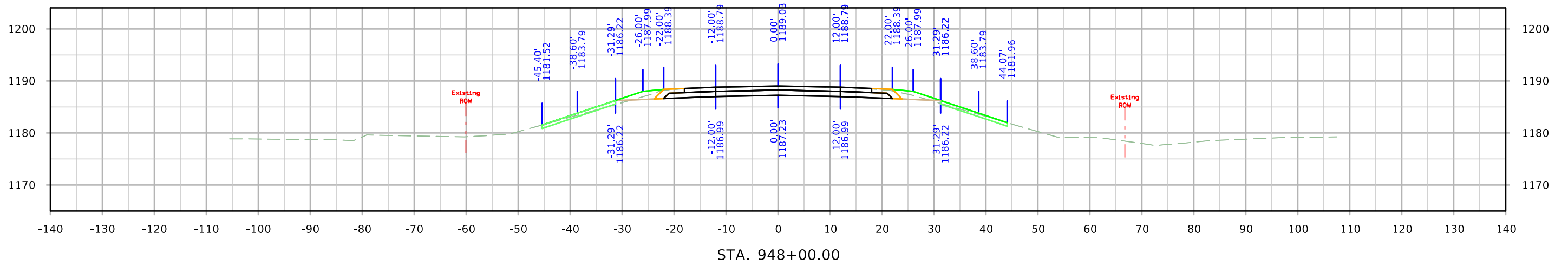
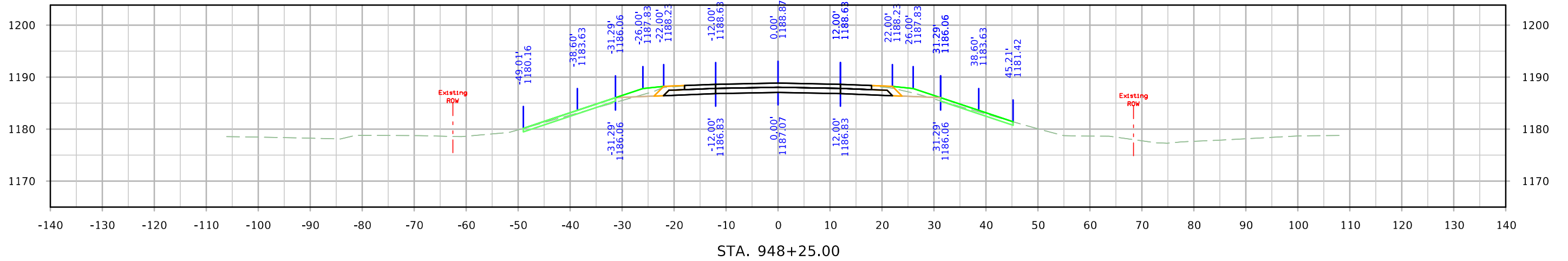
Iowa 3



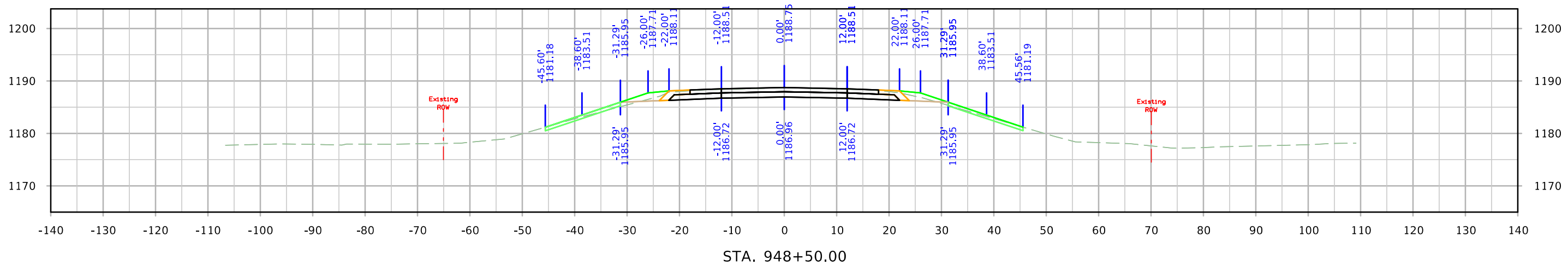
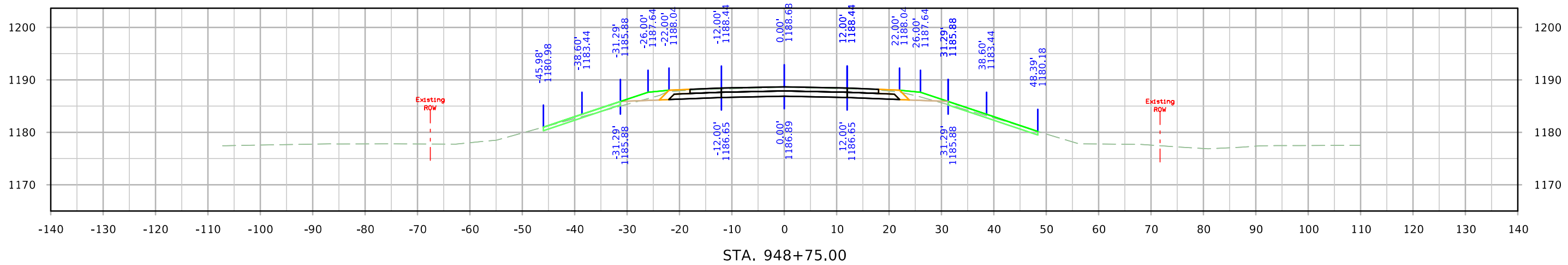
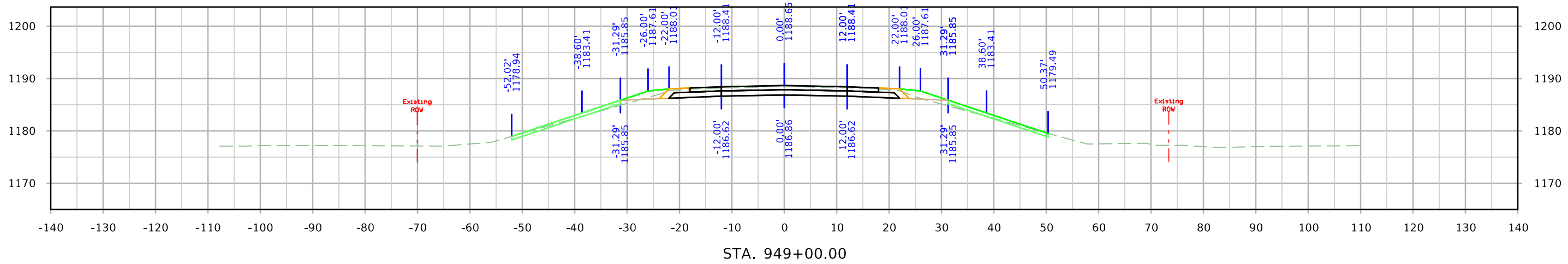
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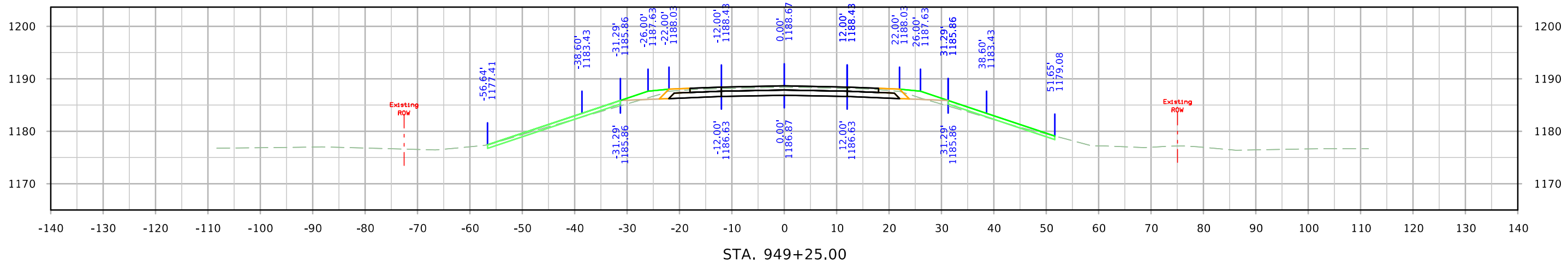
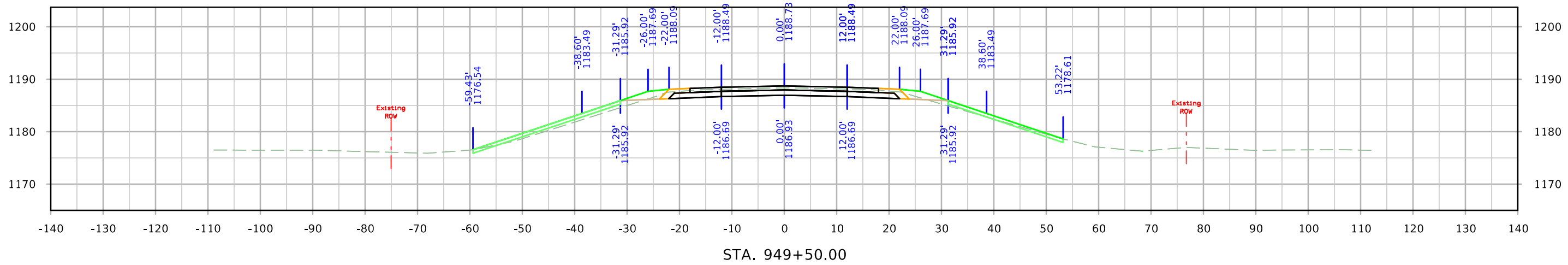
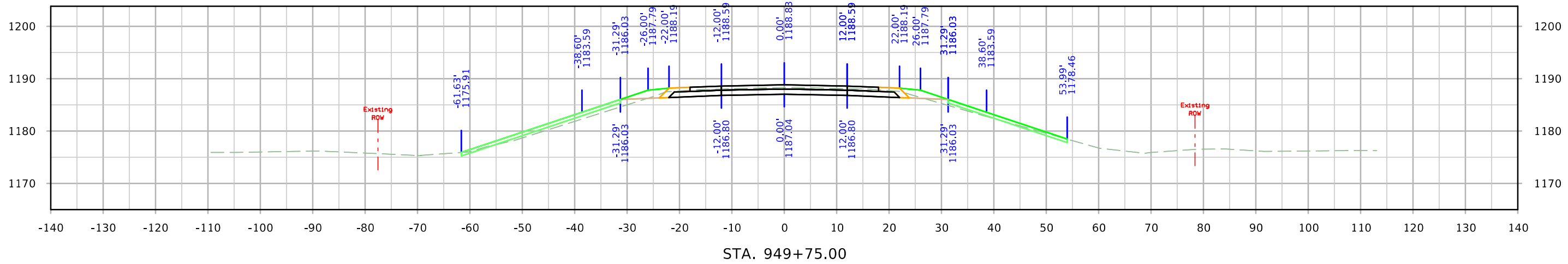
Iowa 3



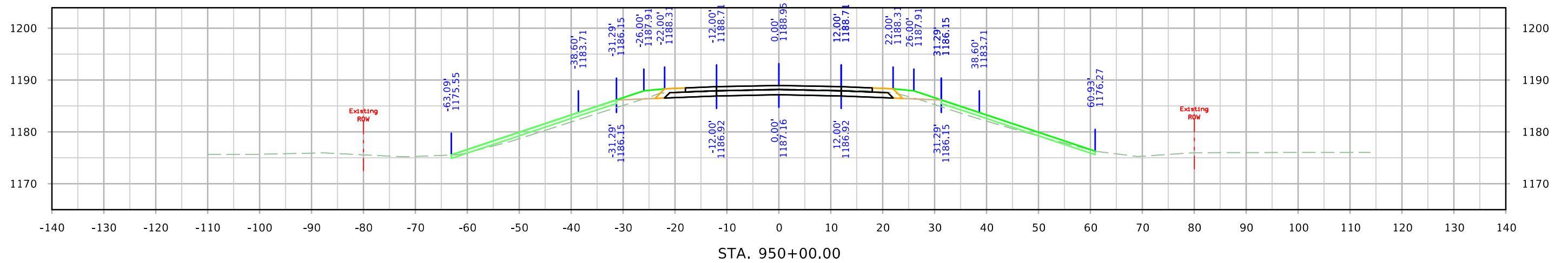
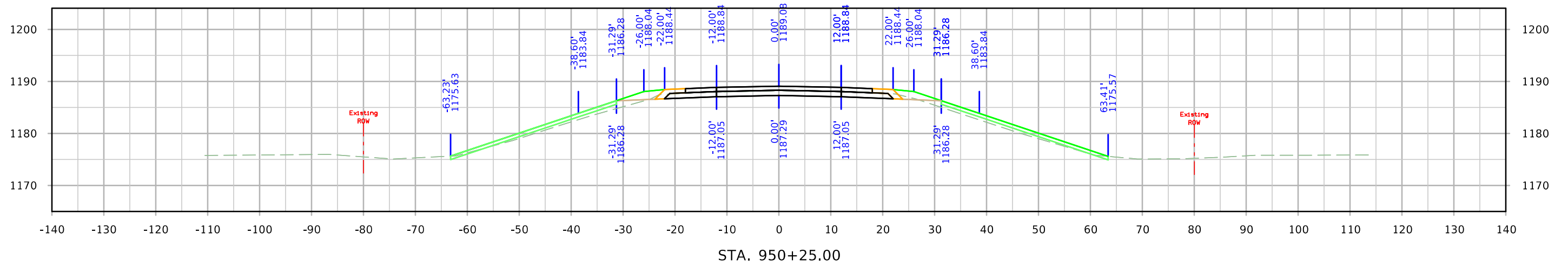
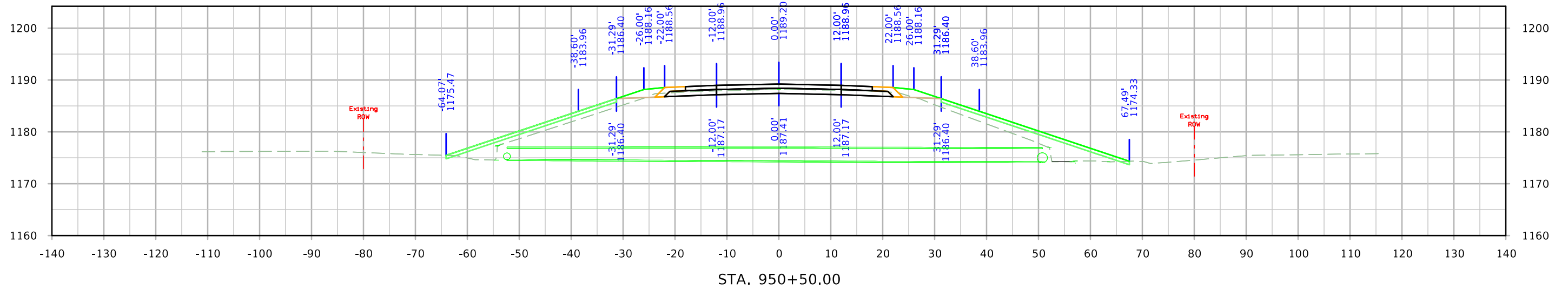
Iowa 3



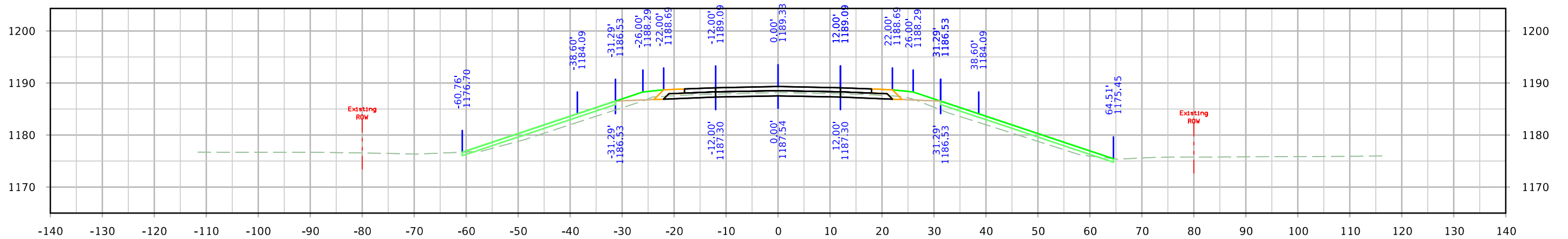
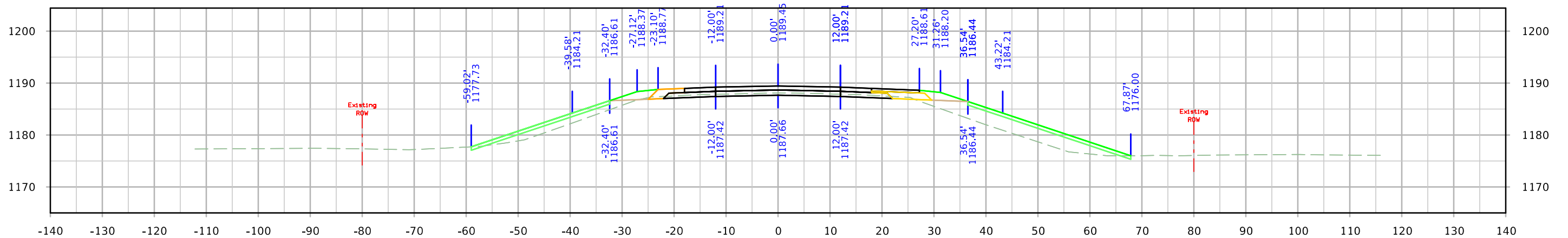
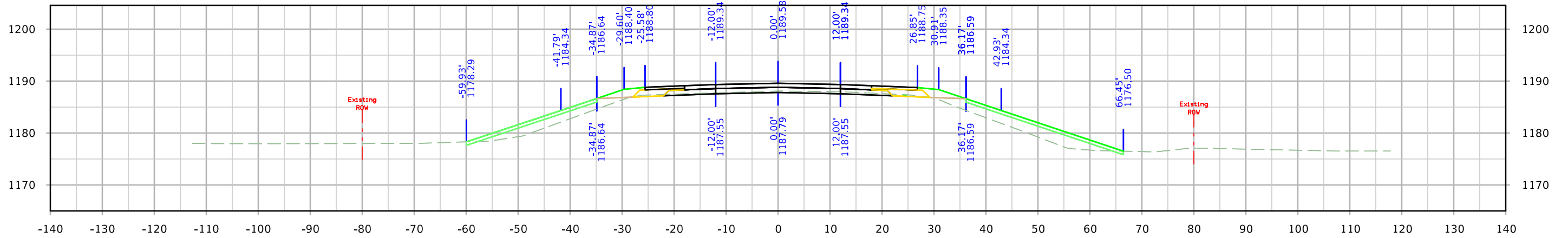
Iowa 3



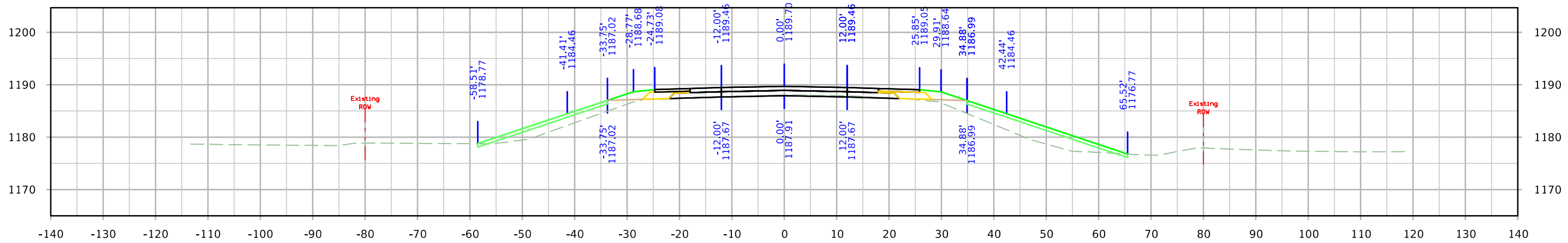
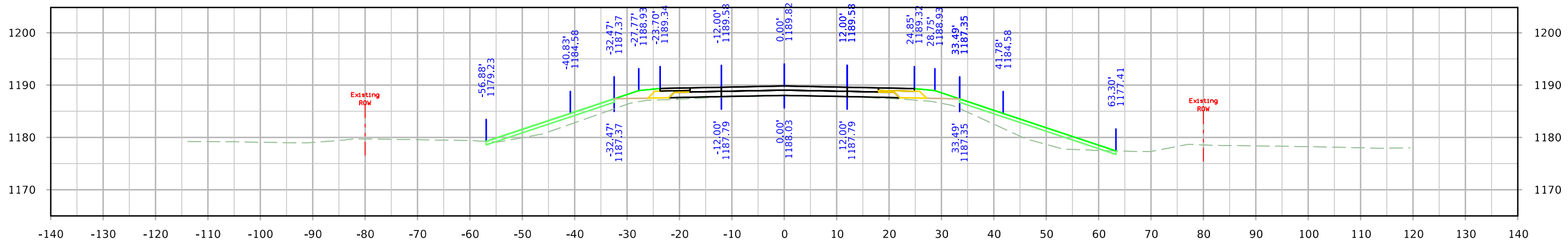
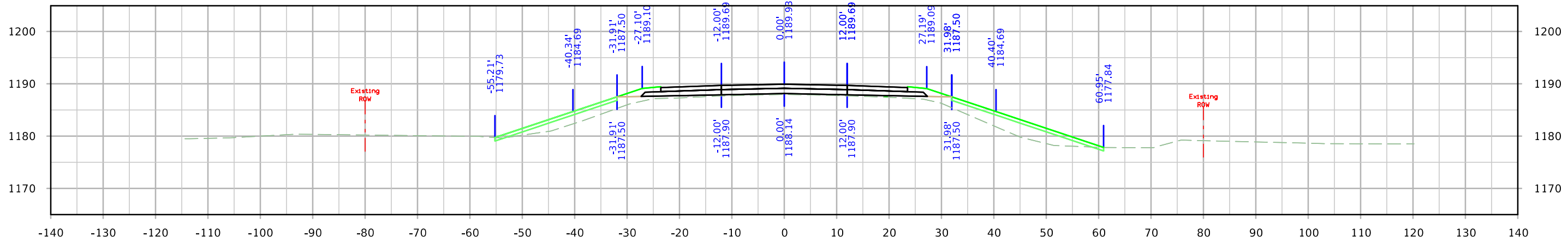
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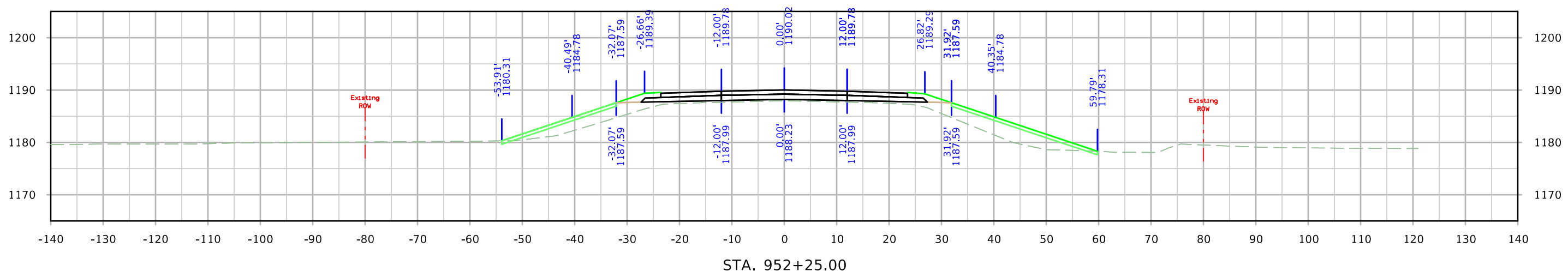
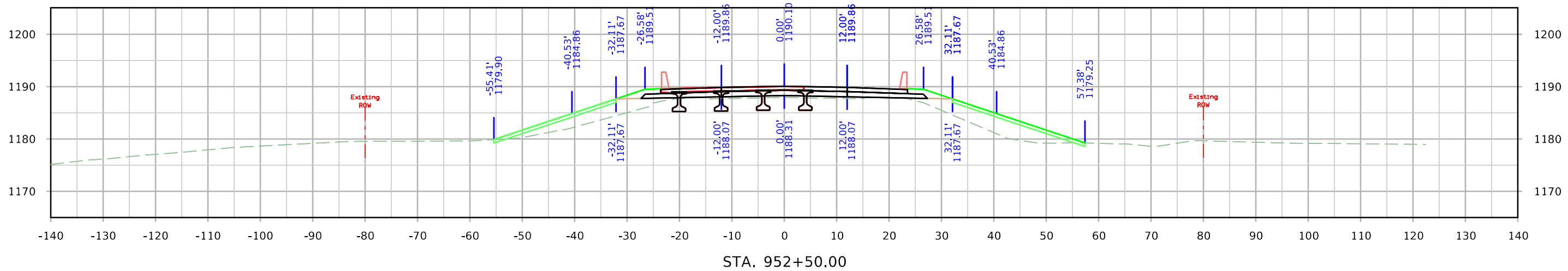
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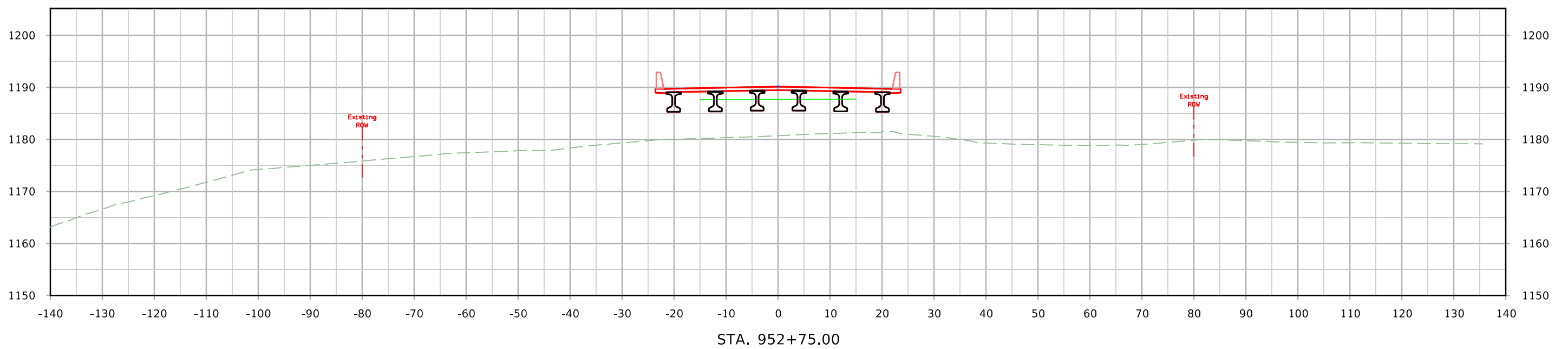
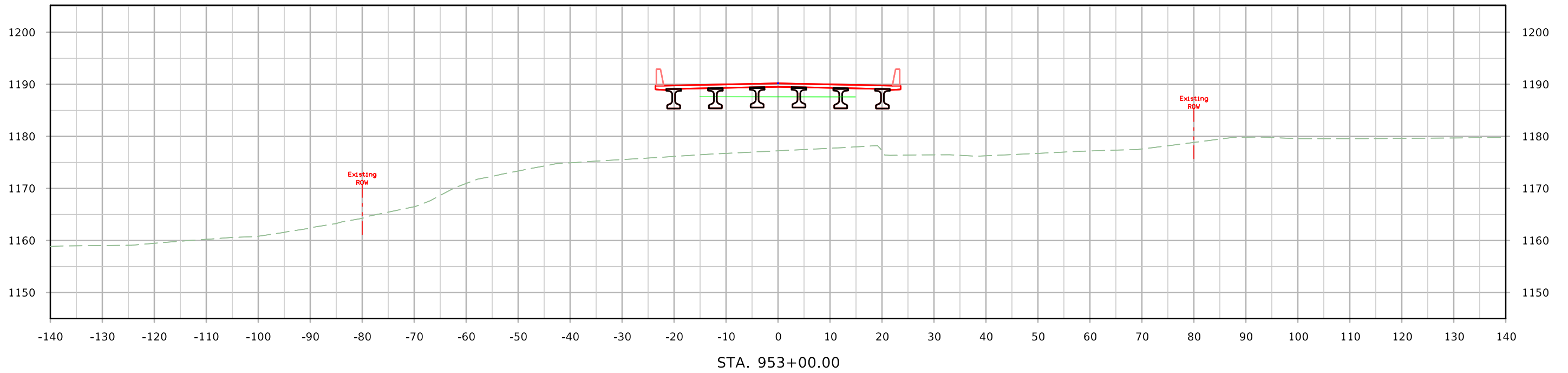
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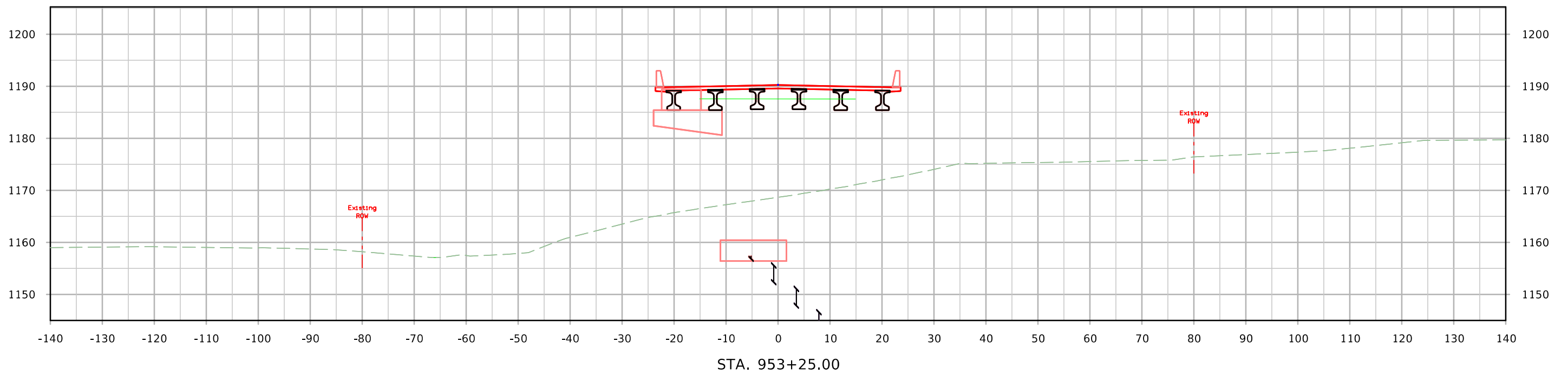
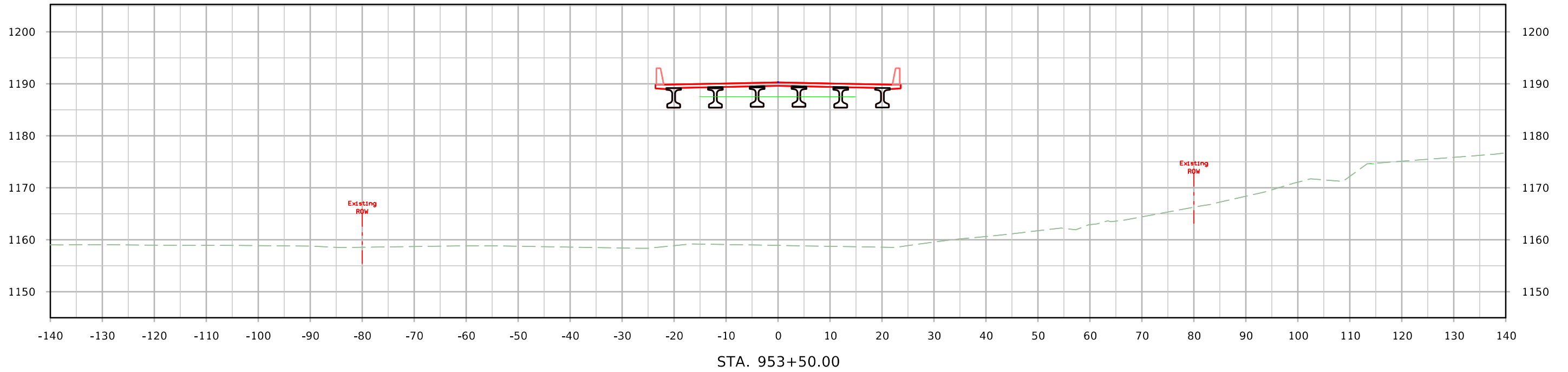
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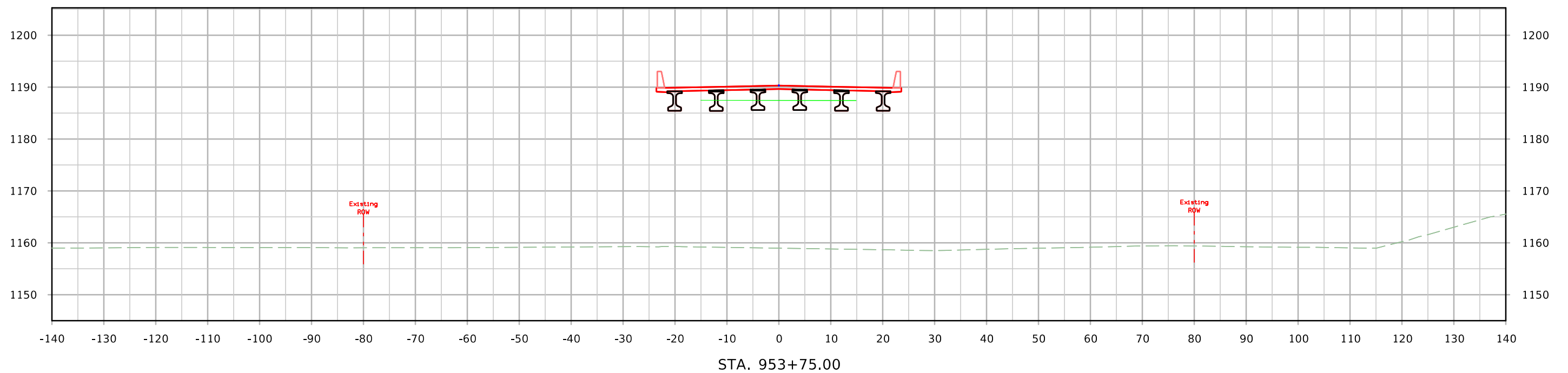
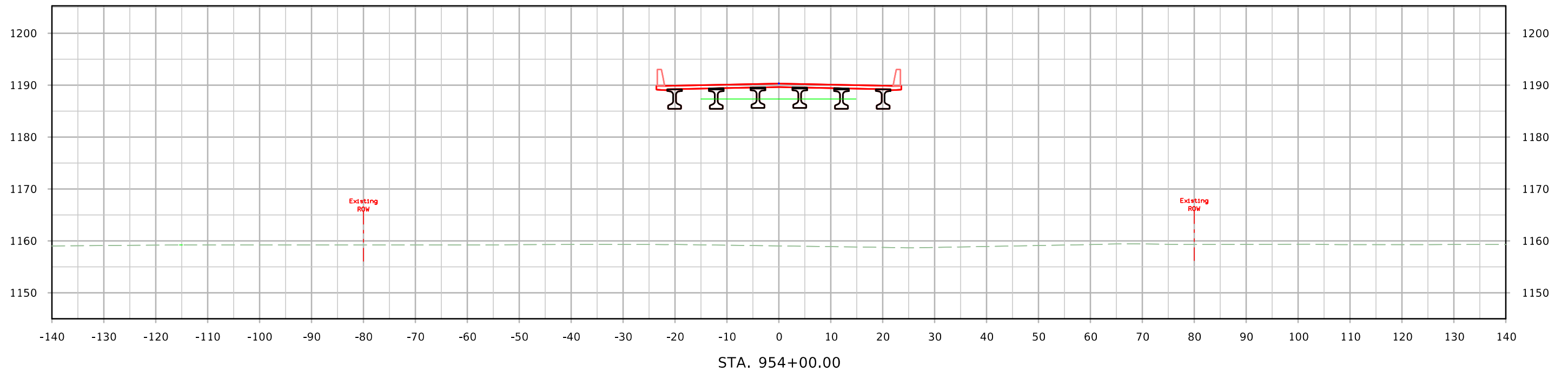
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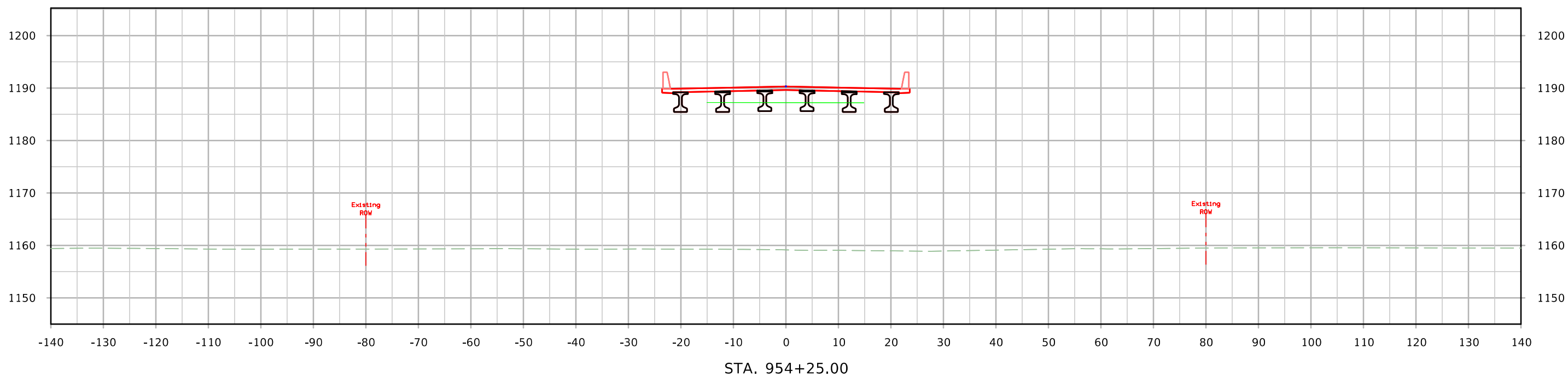
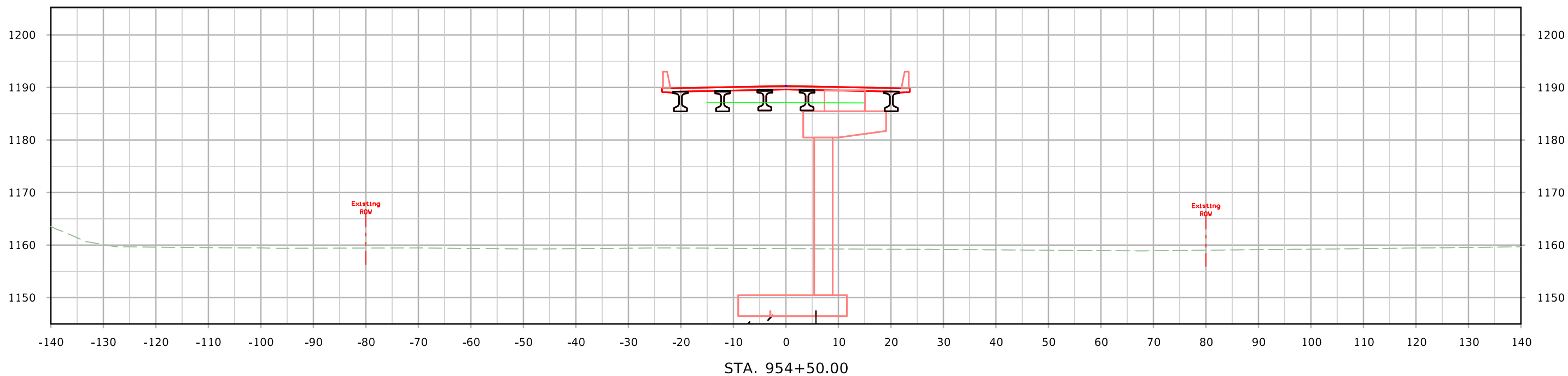
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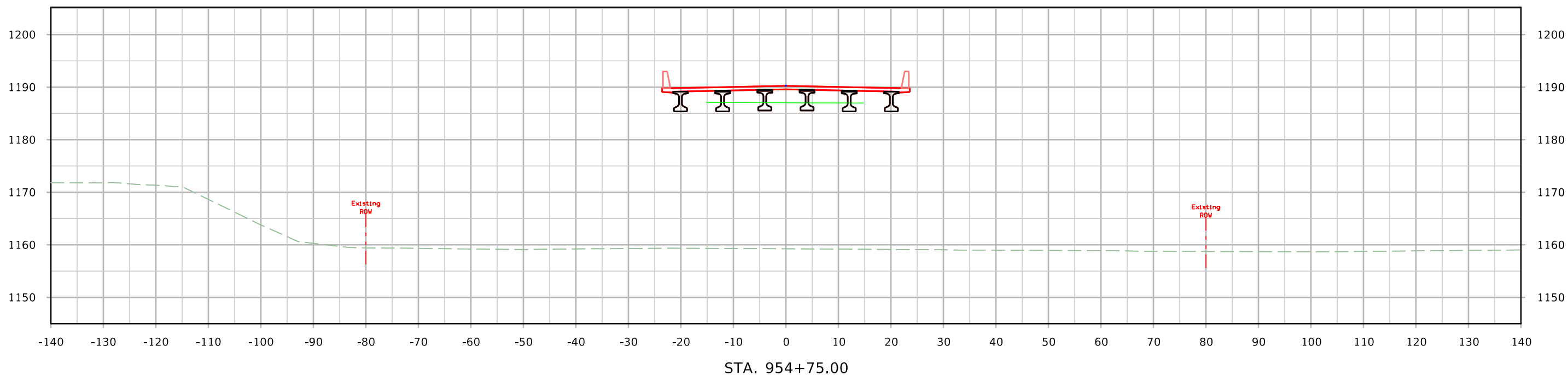
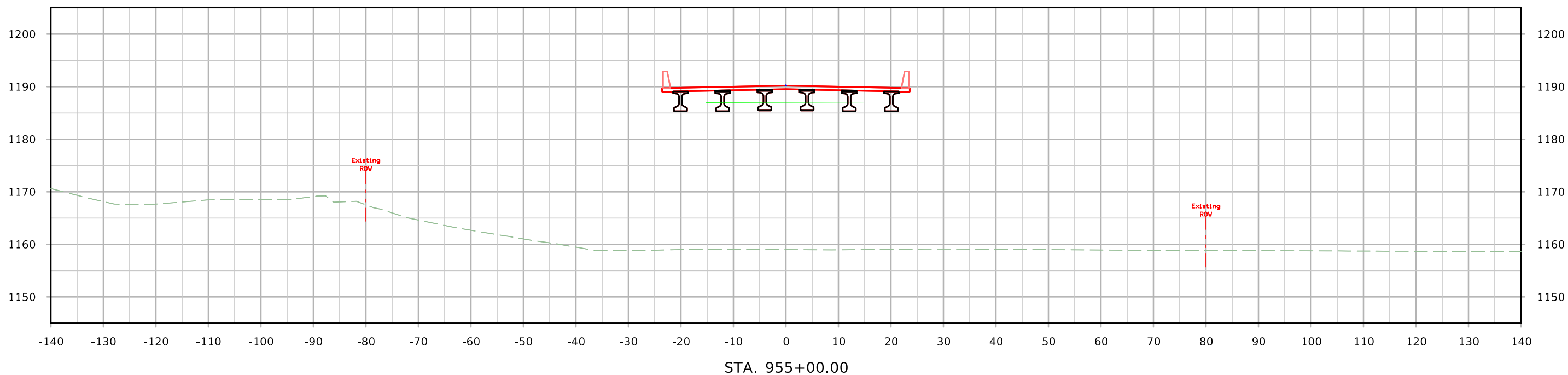
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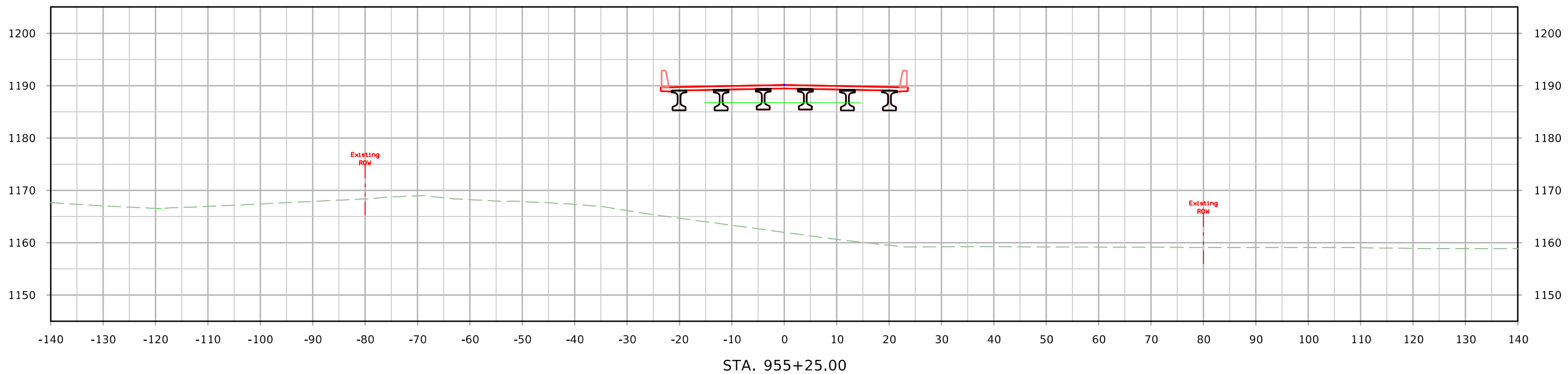
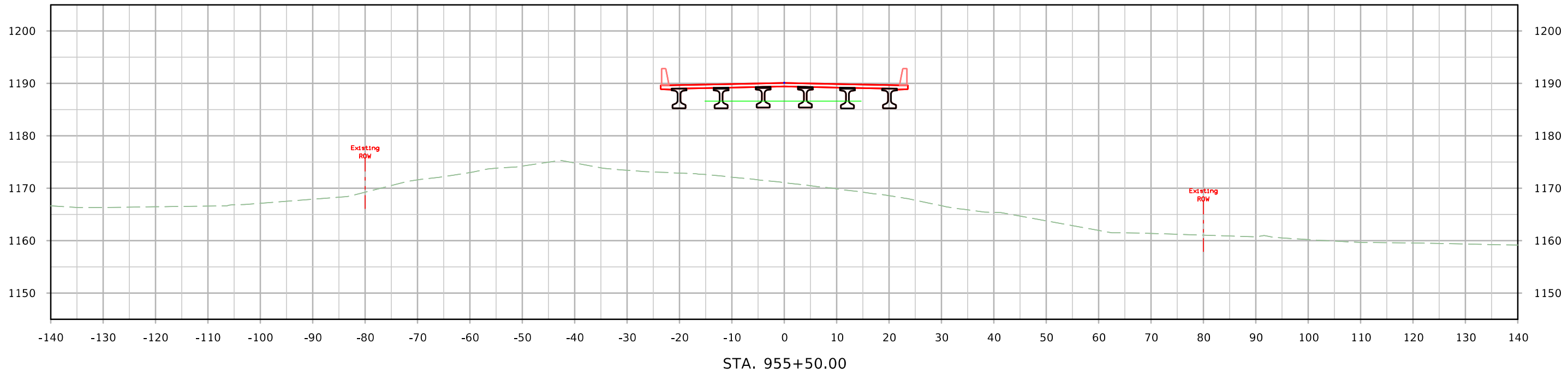
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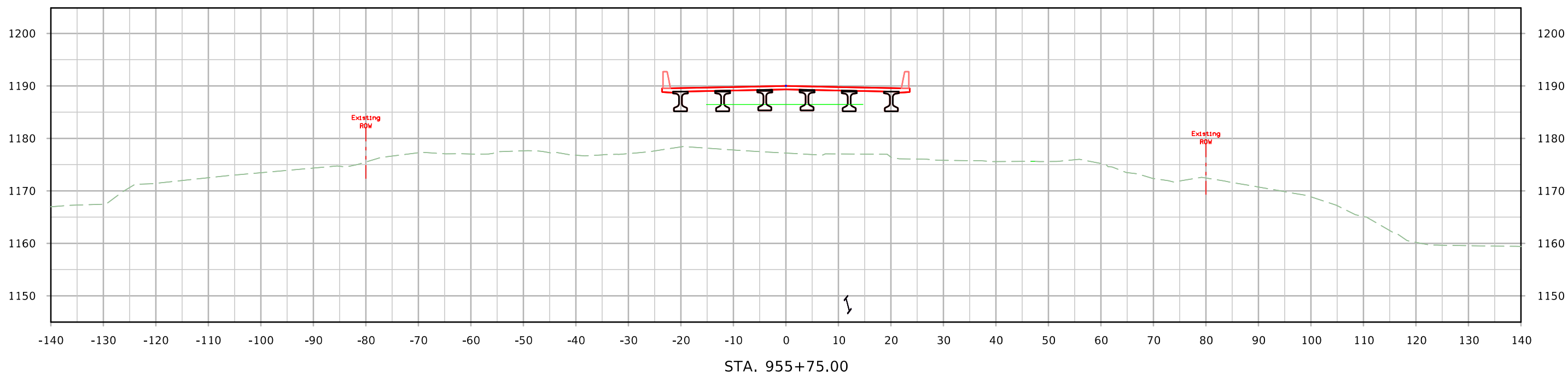
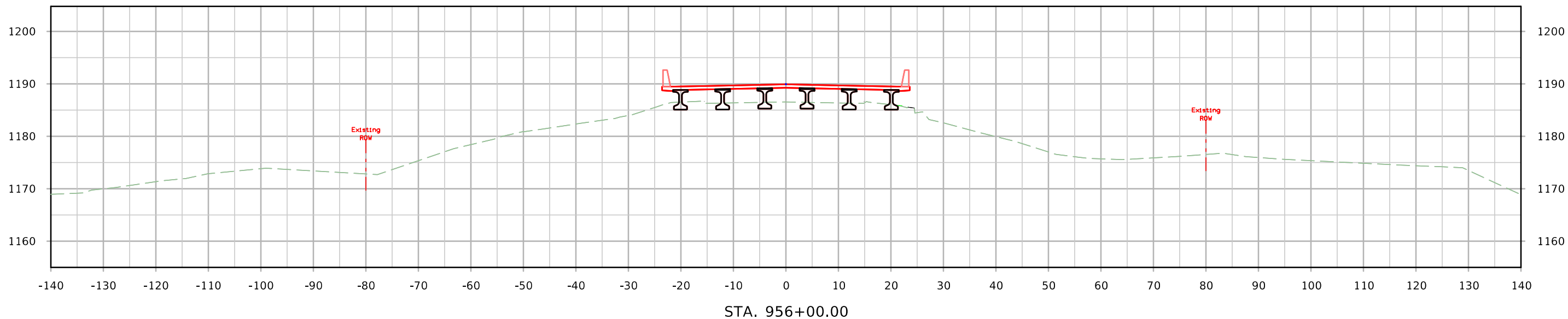
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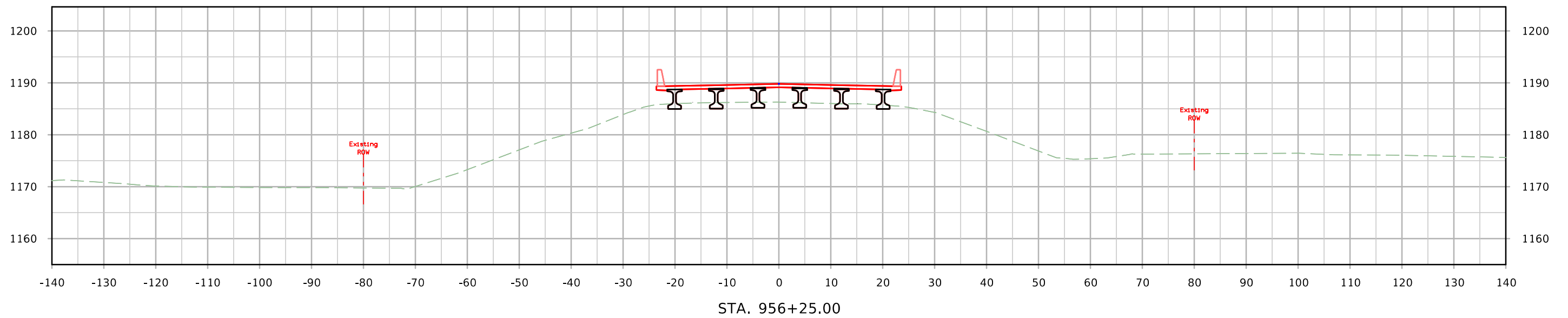
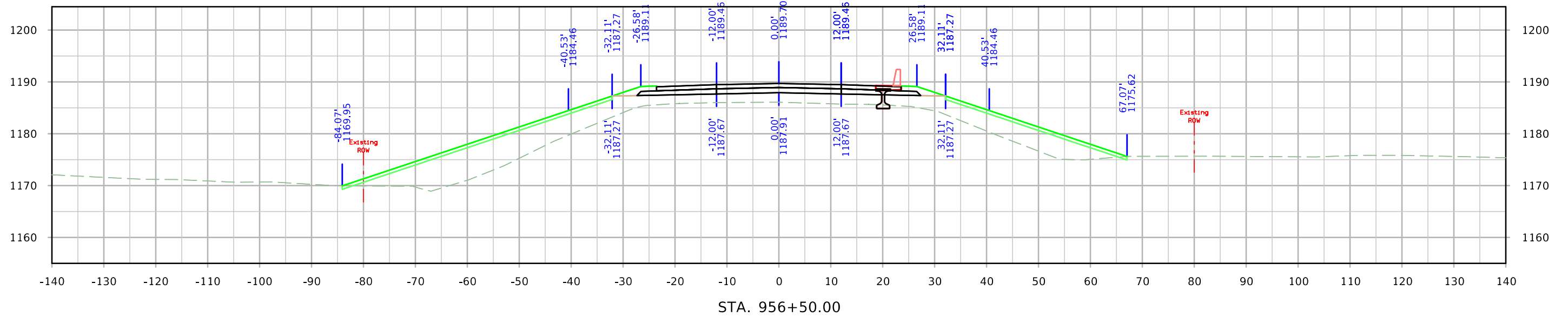
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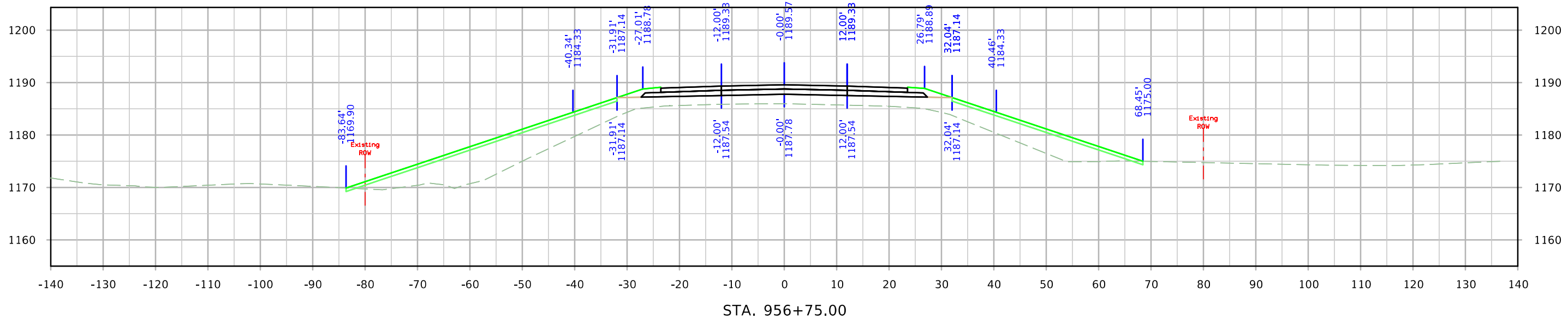
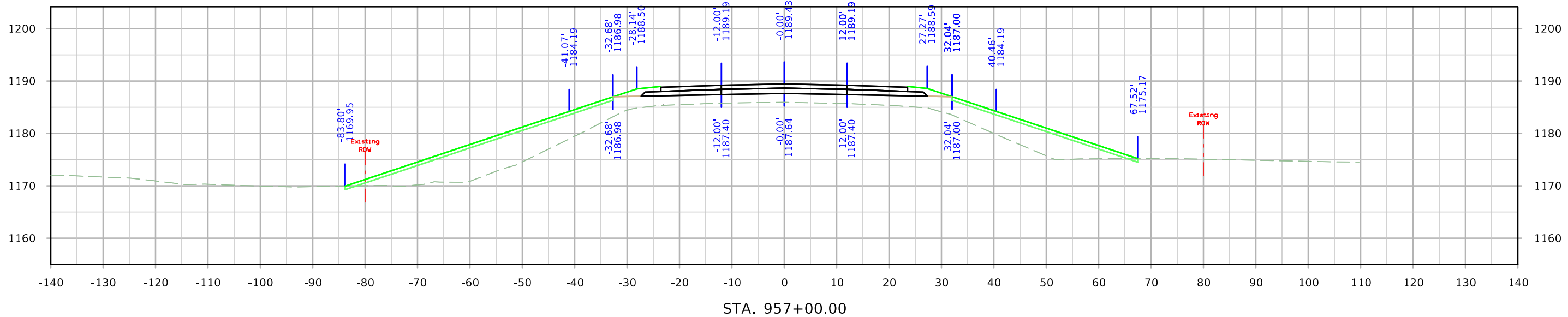
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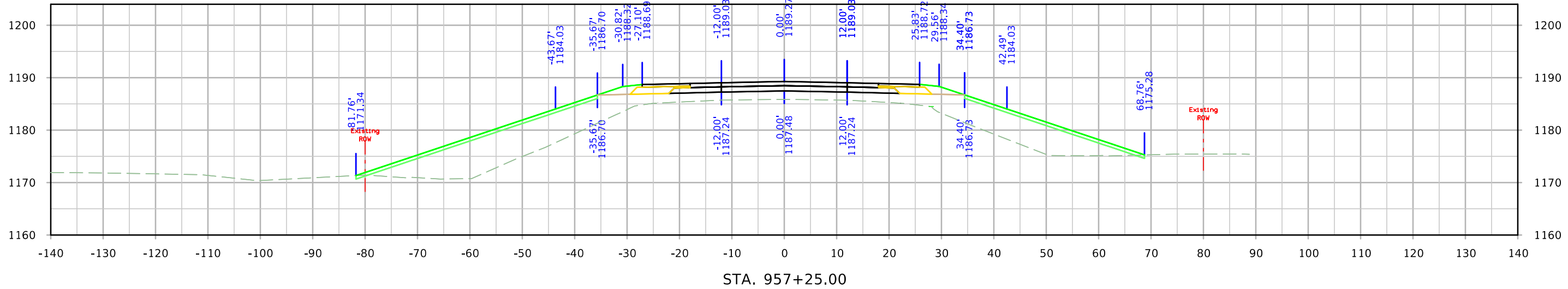
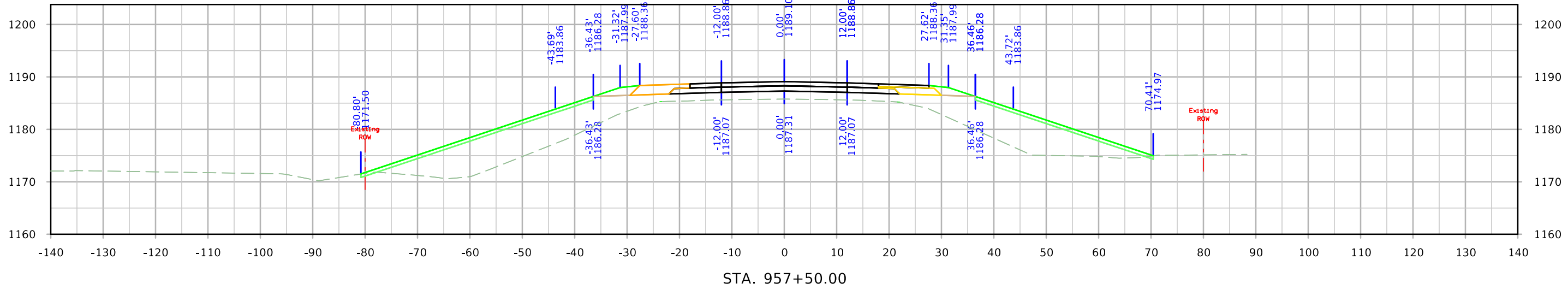
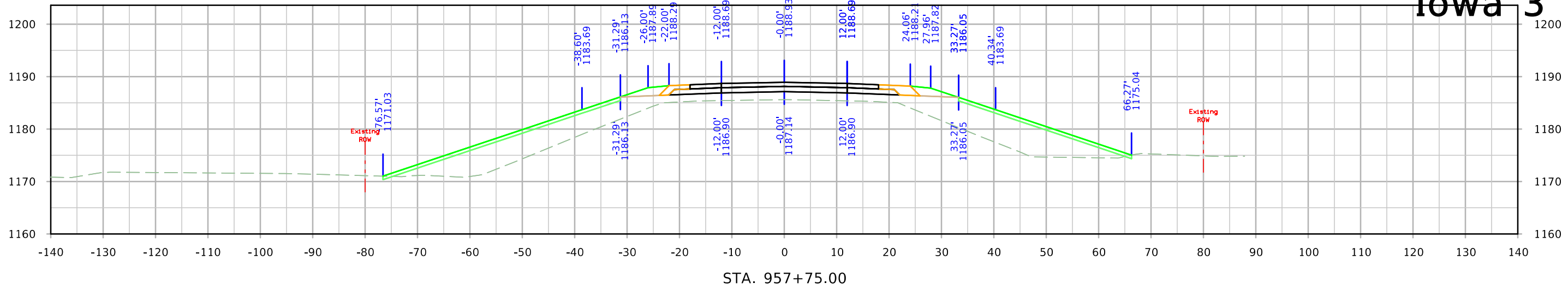
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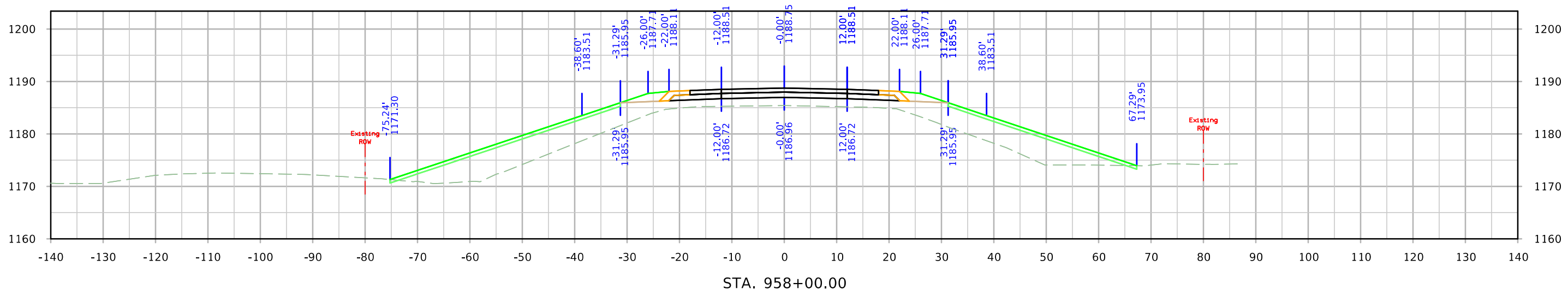
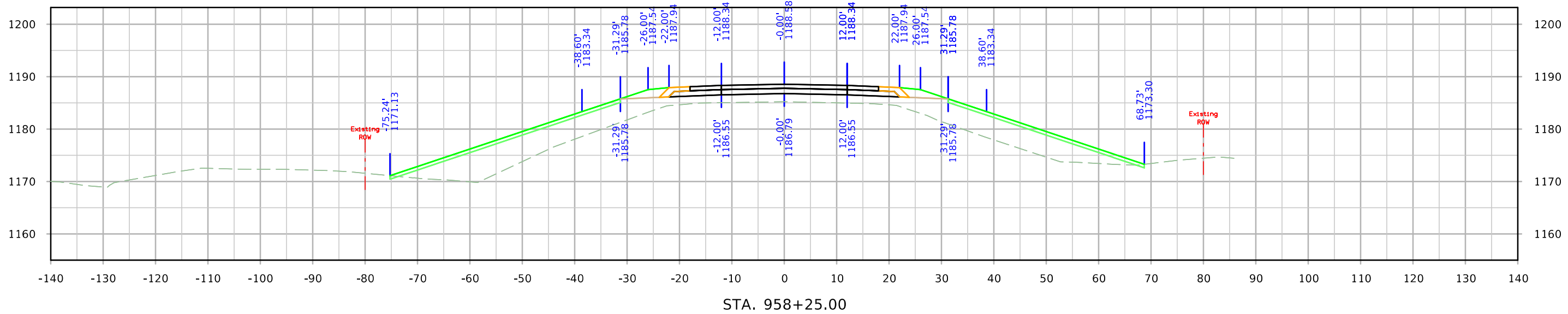


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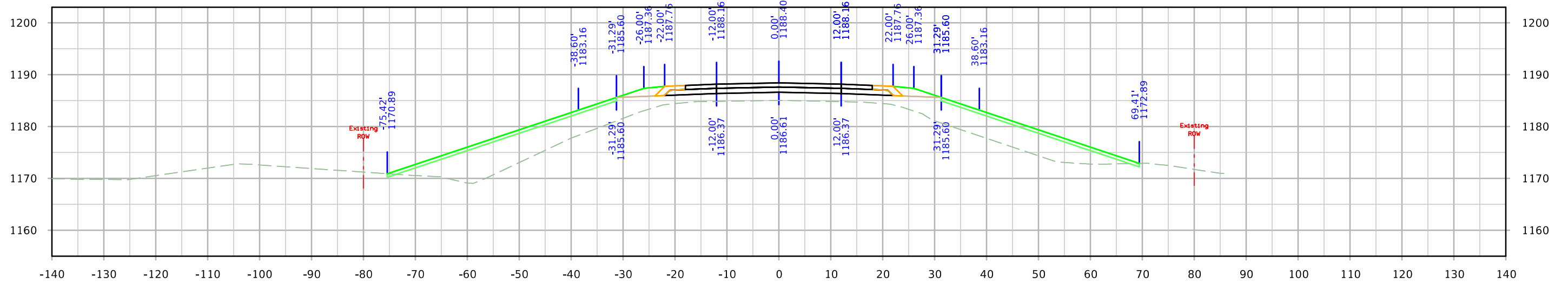
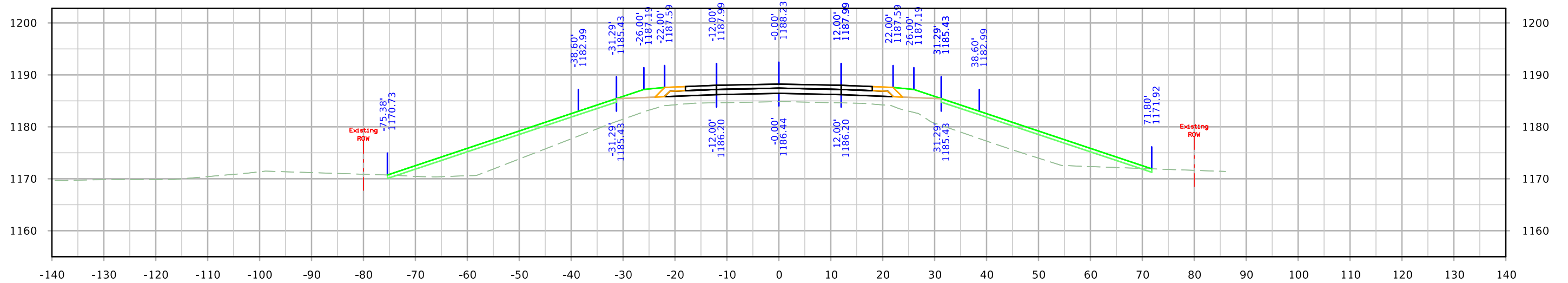


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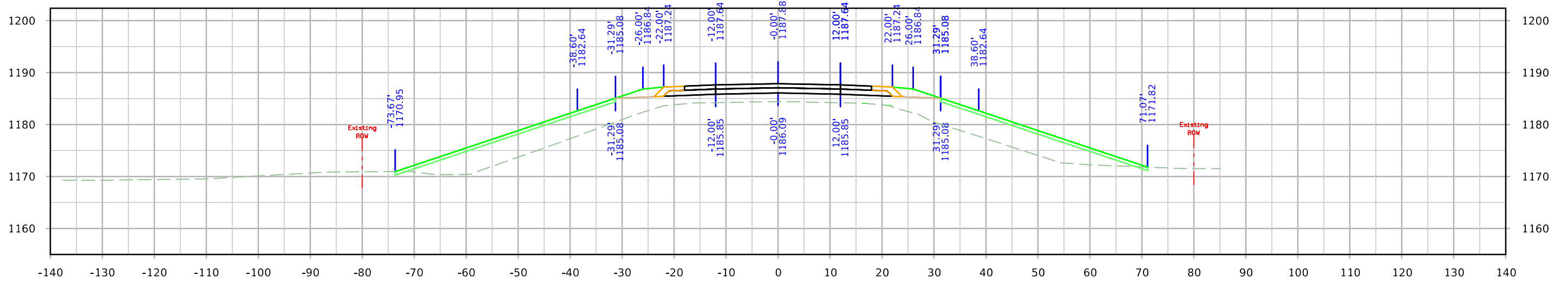




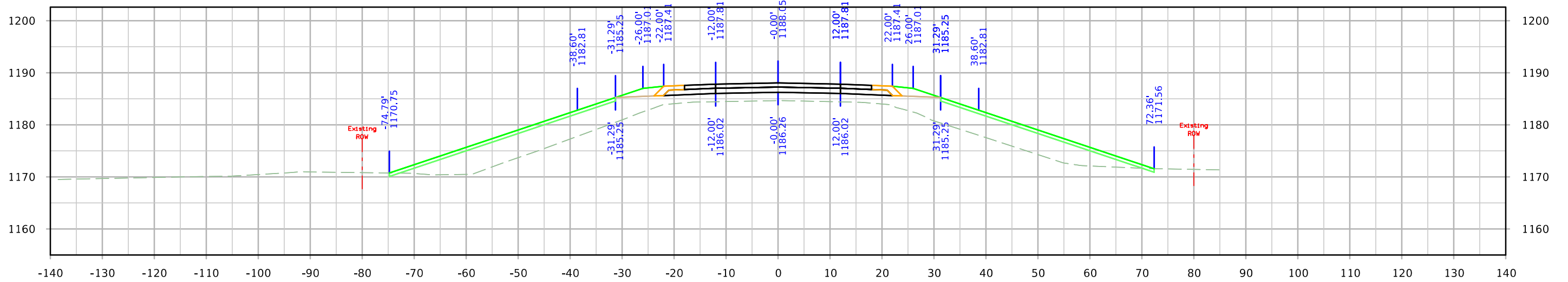
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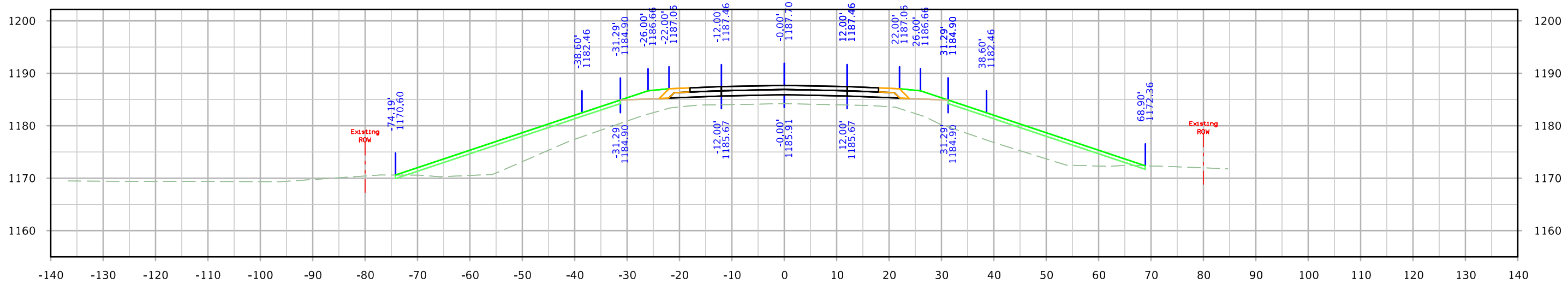
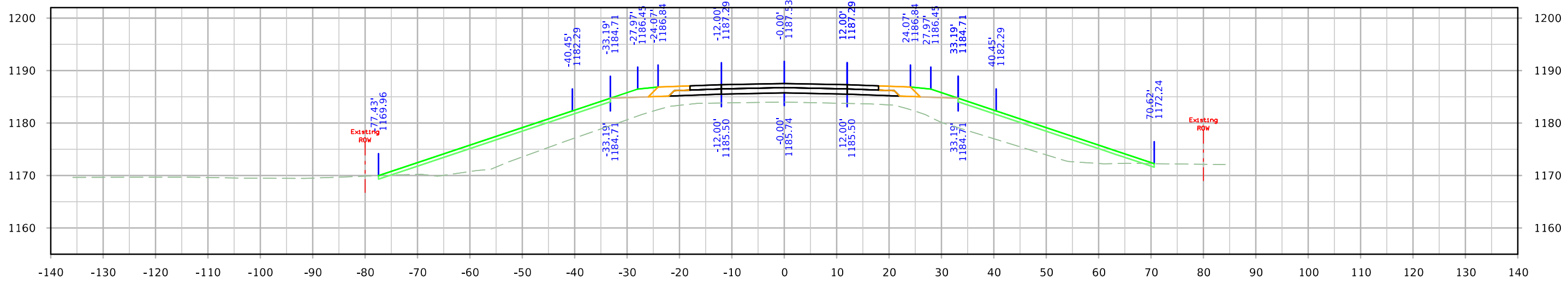
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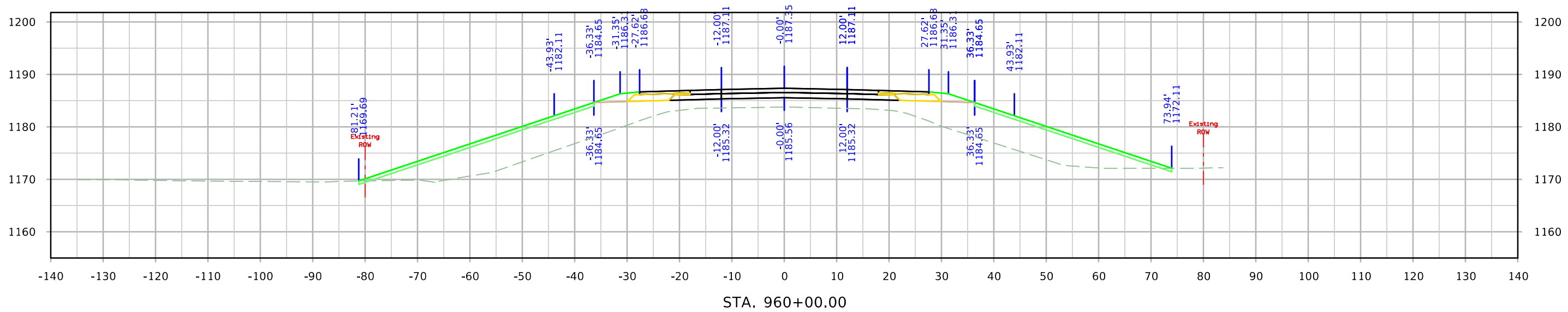
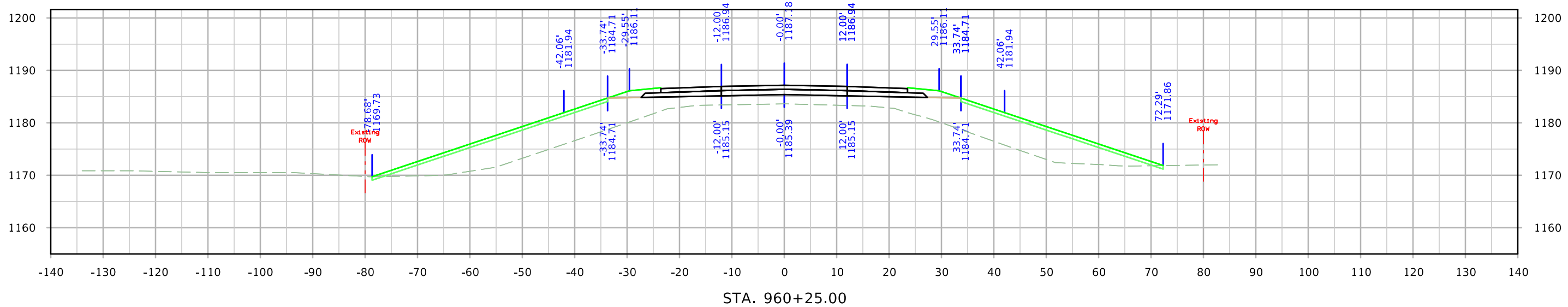


STA. 959+25.00

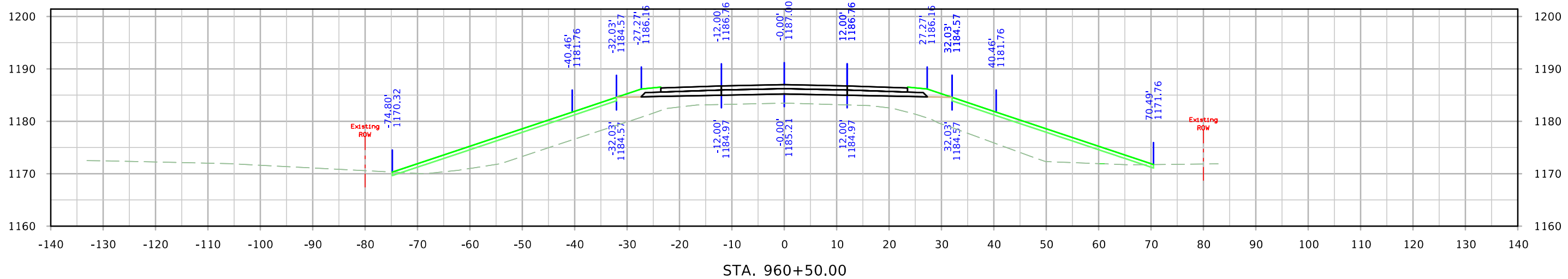
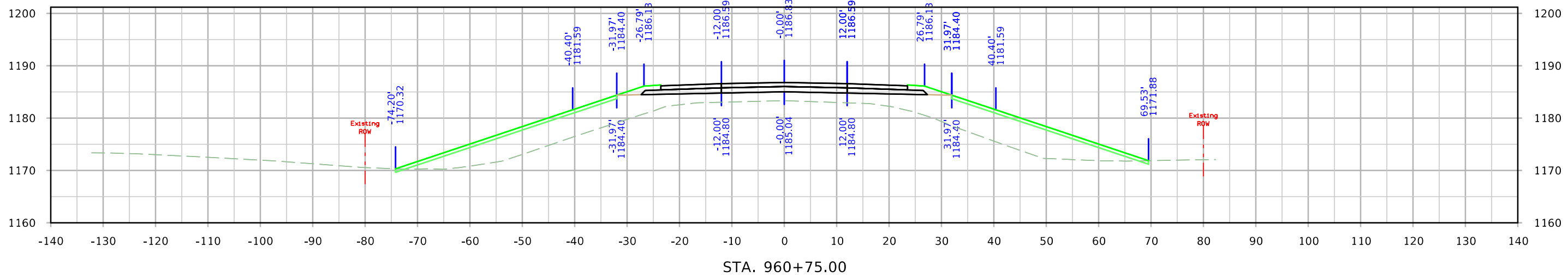
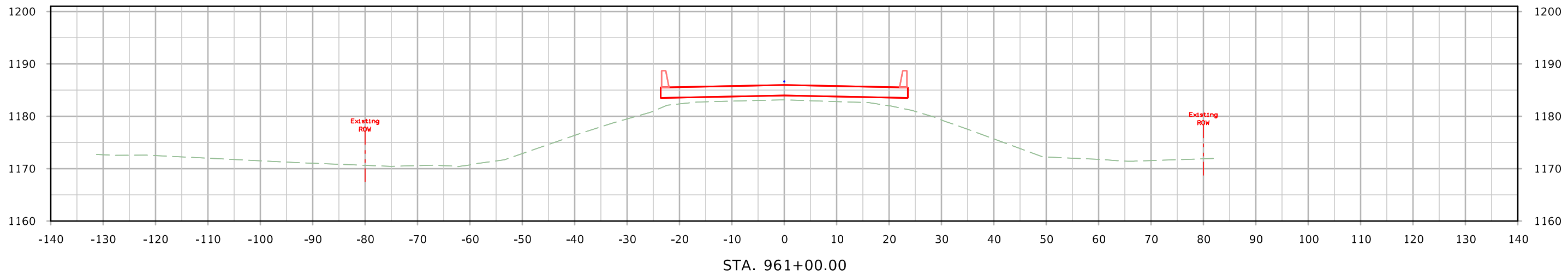


STA. 959+00.00

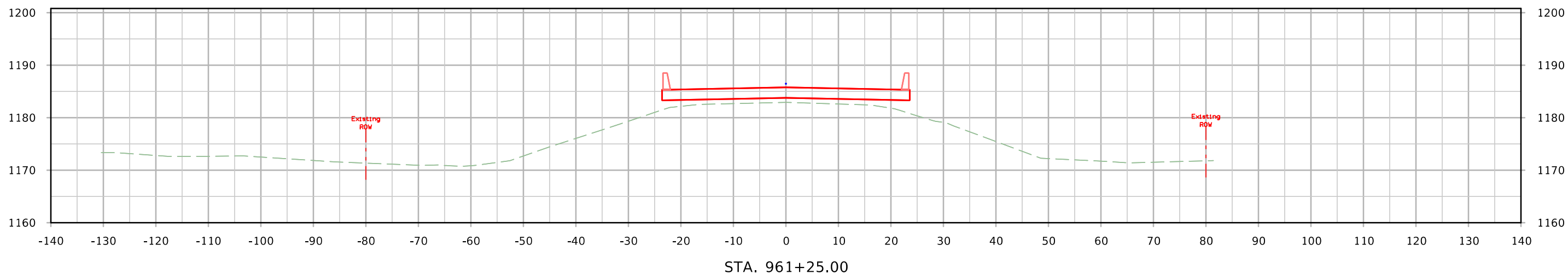
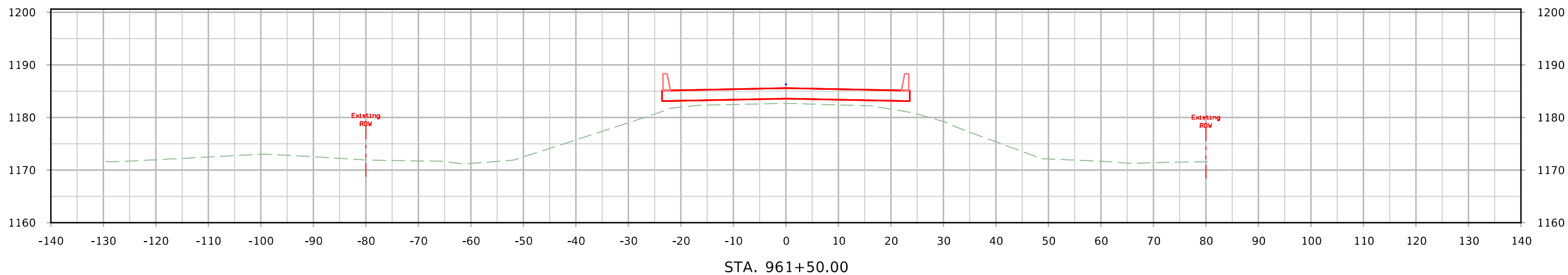
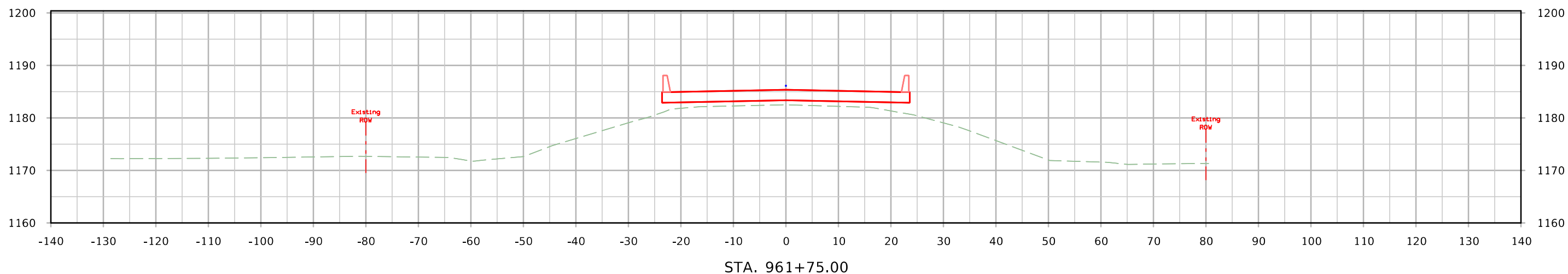




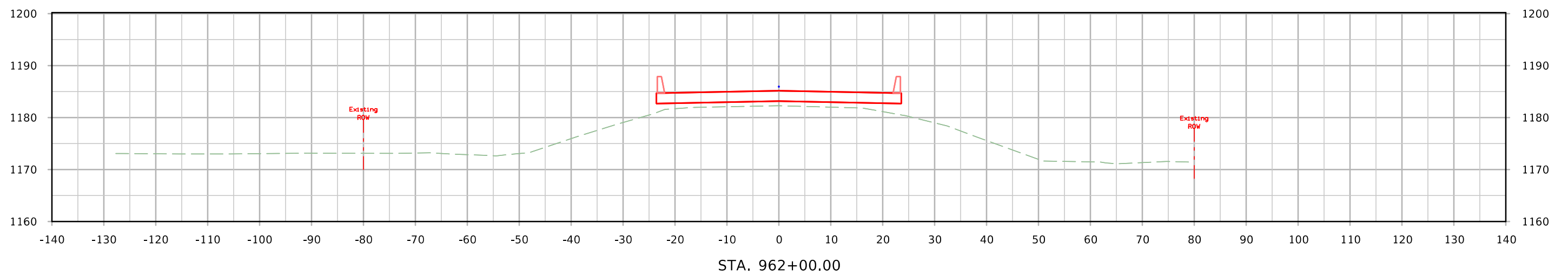
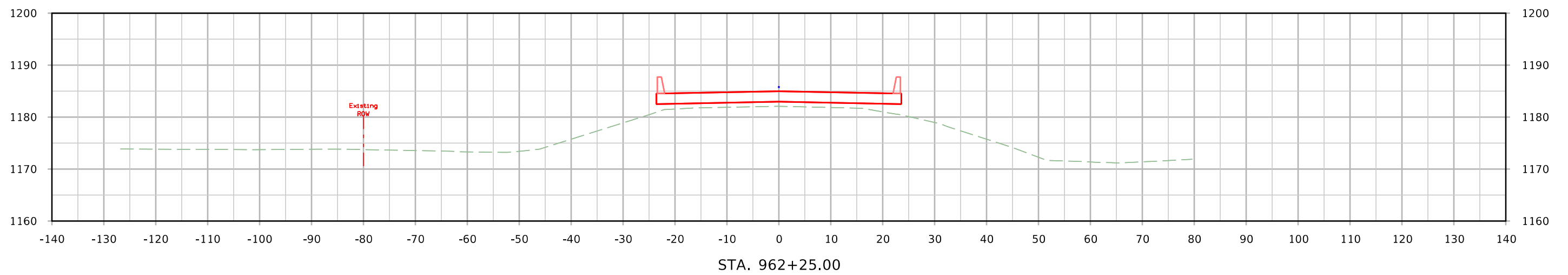
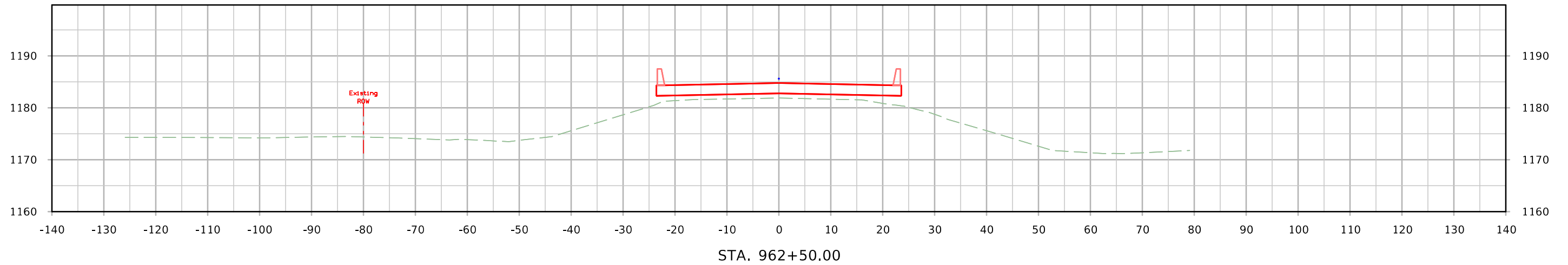
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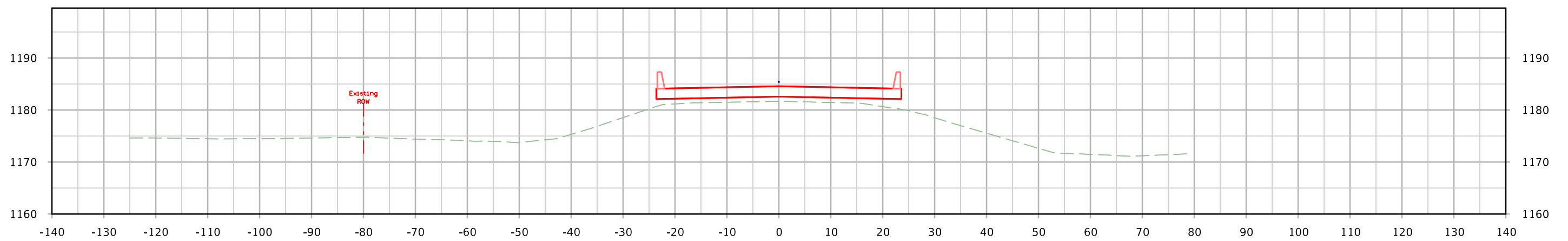
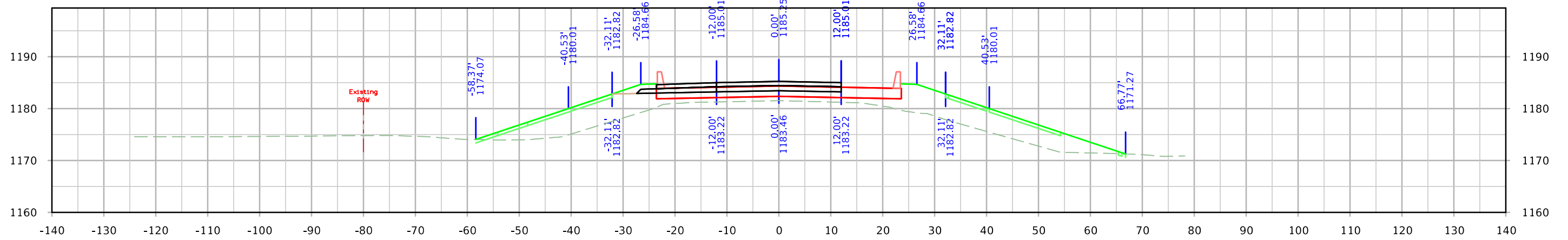
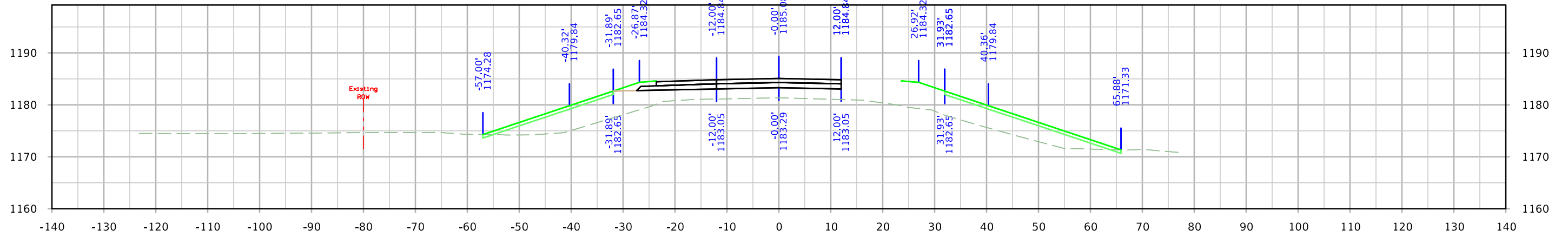
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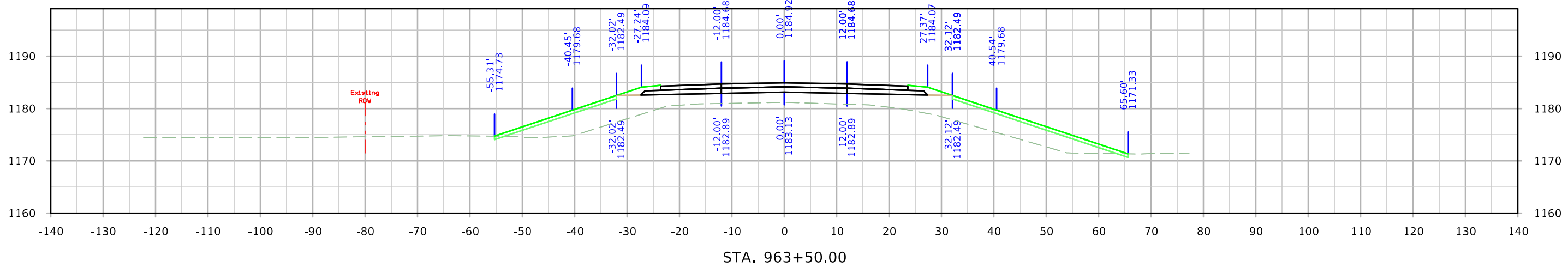
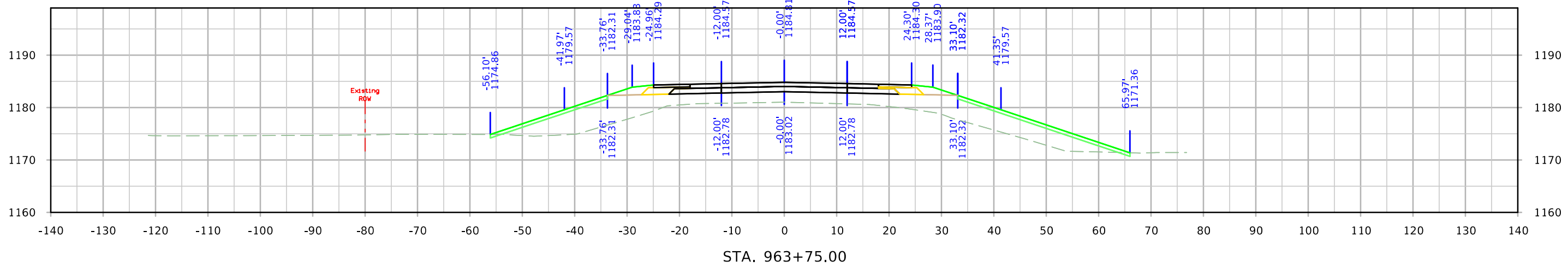
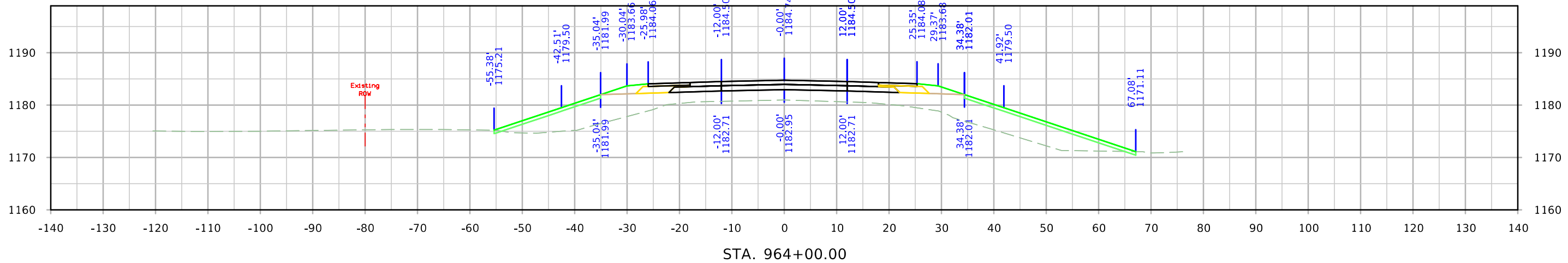
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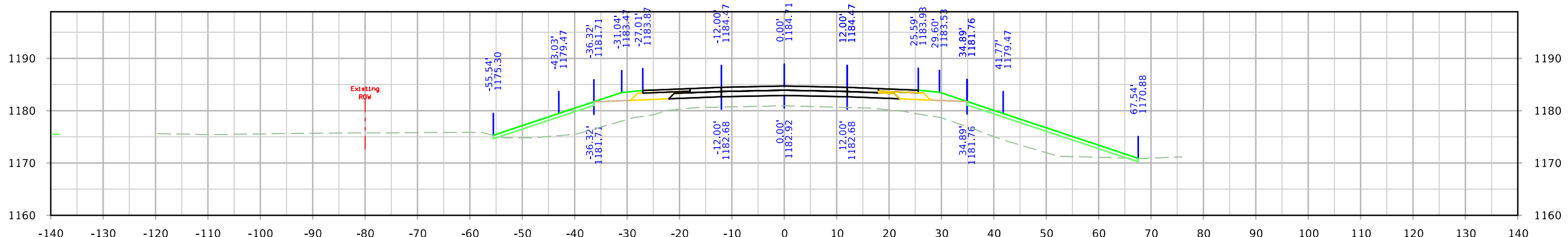
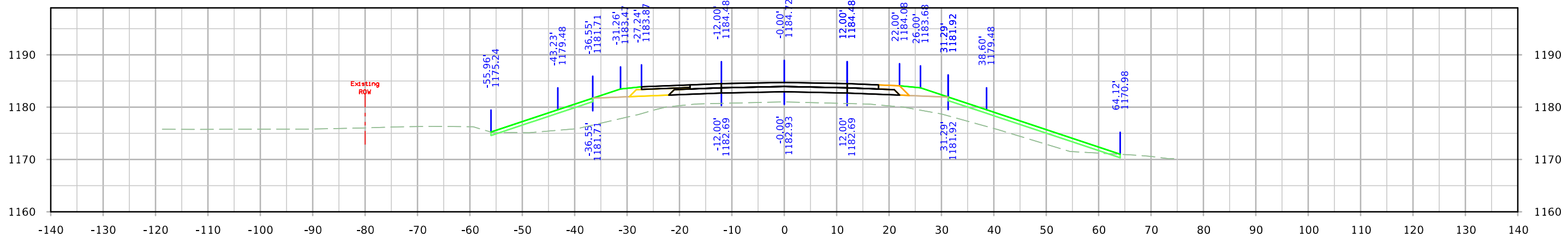
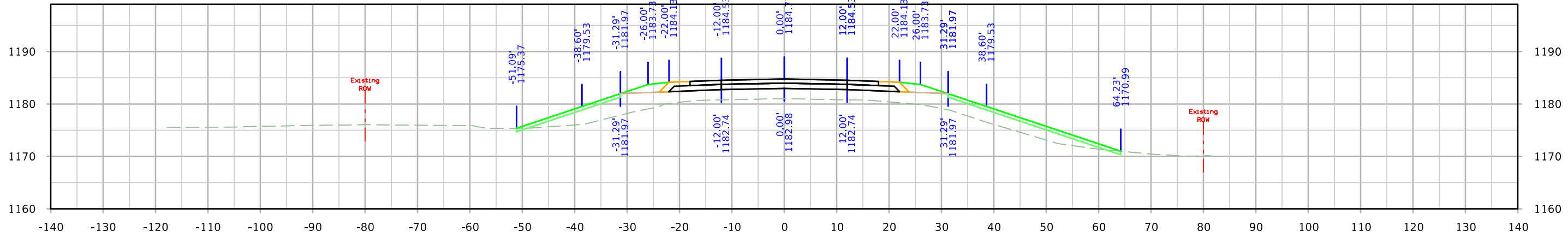
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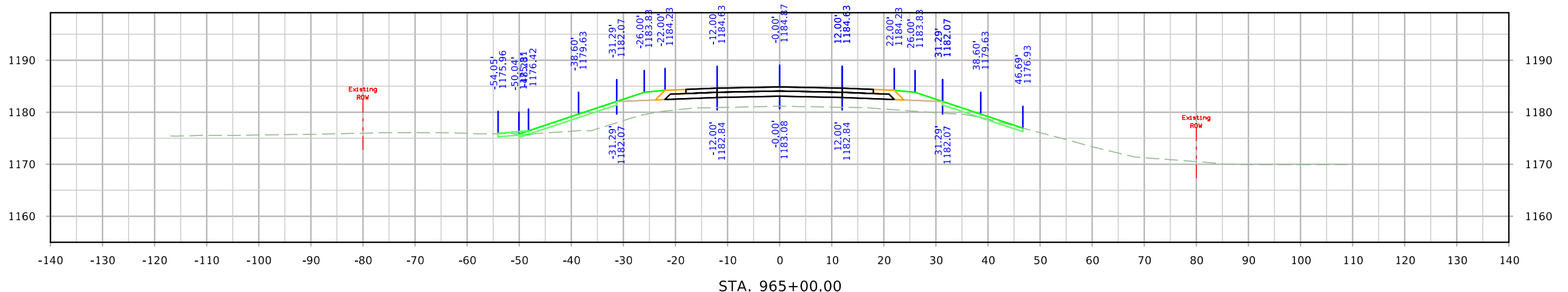
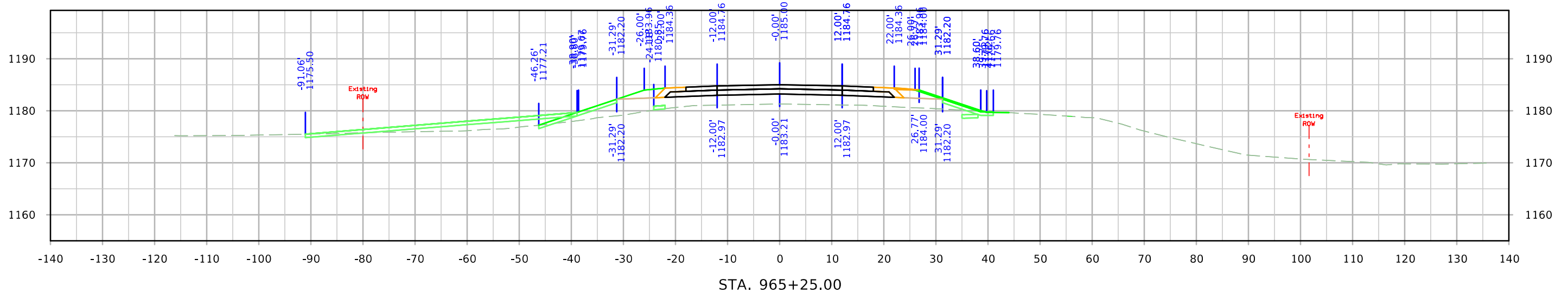
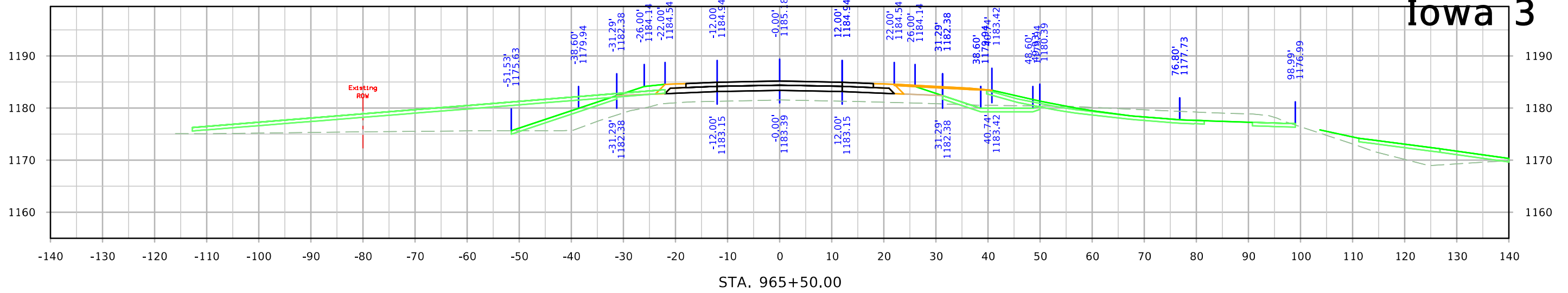
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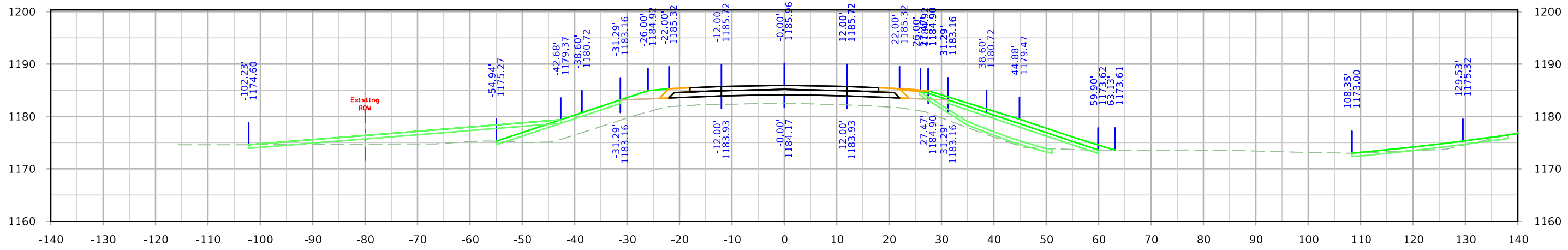
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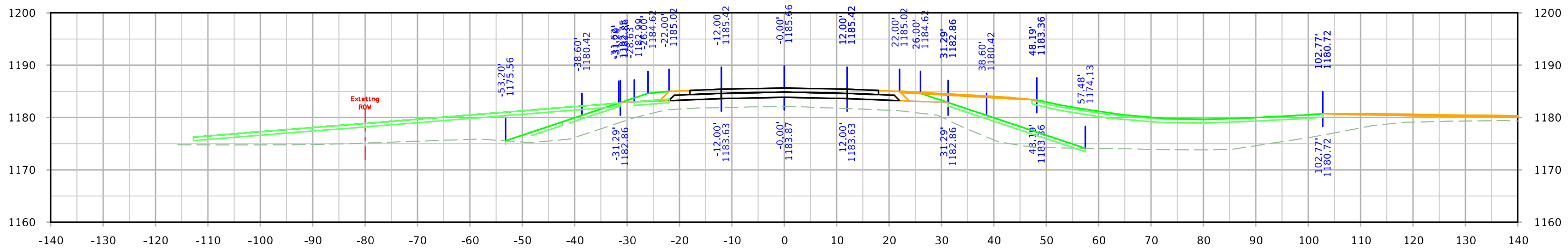
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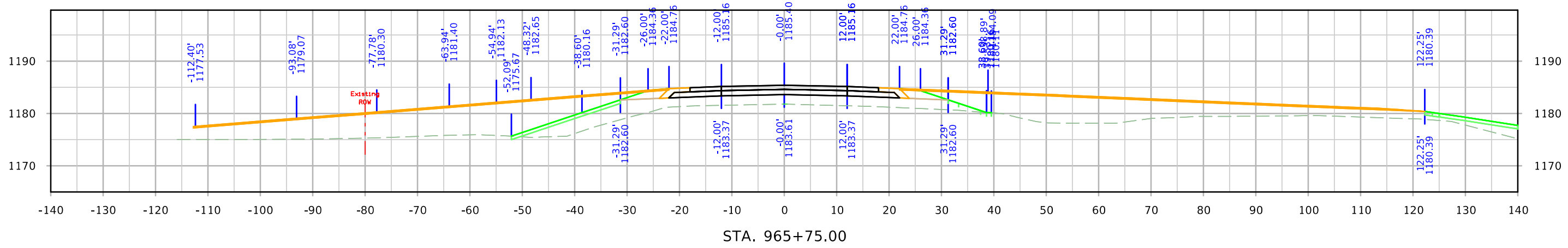
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STA. 966+25.00

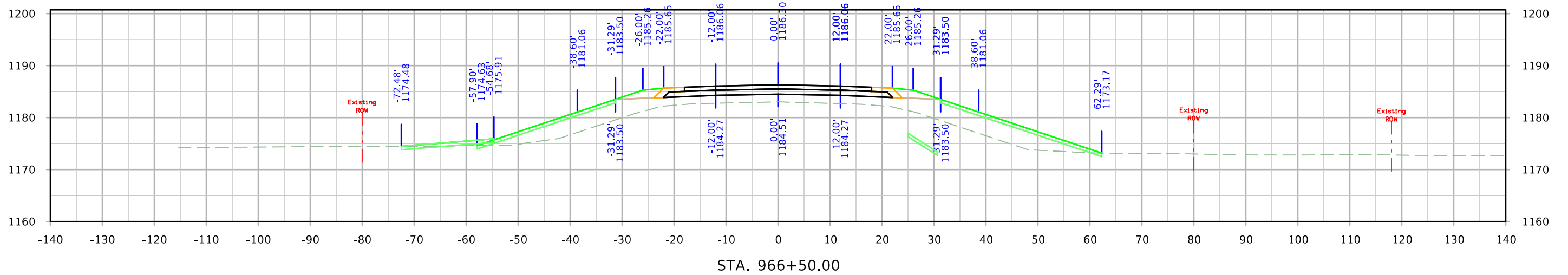
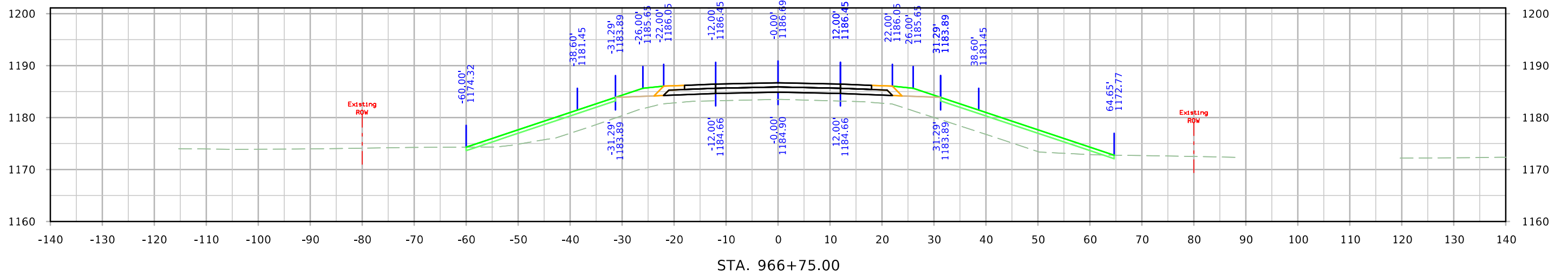
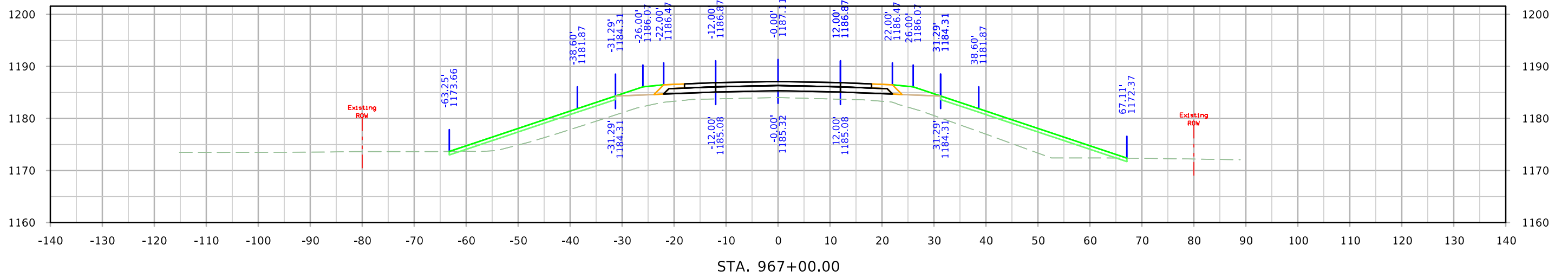


STA. 966+00.00

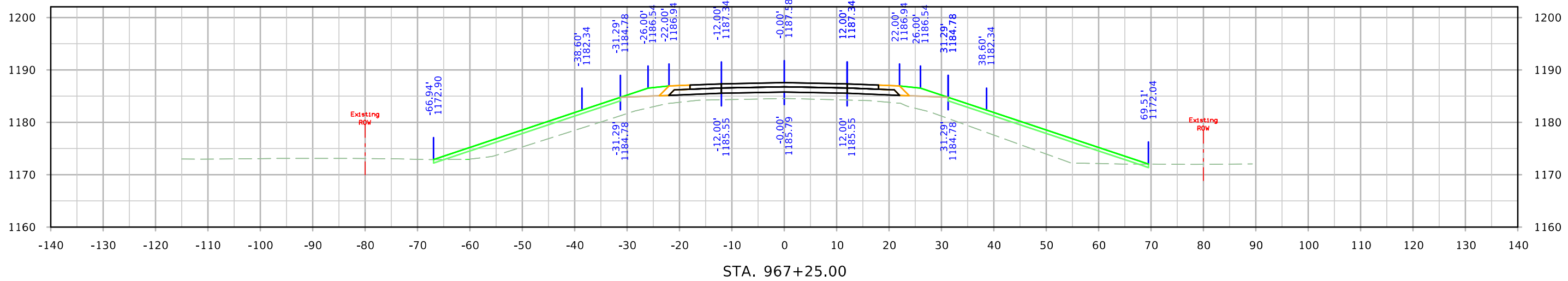
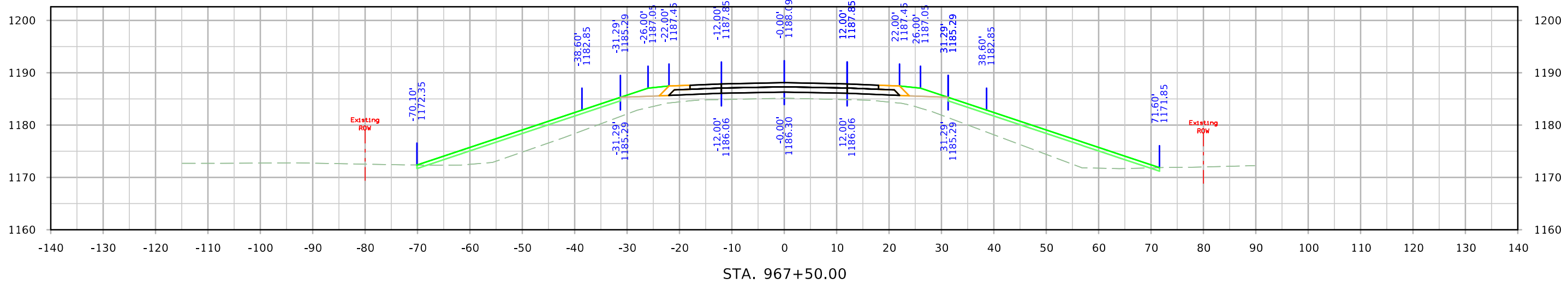
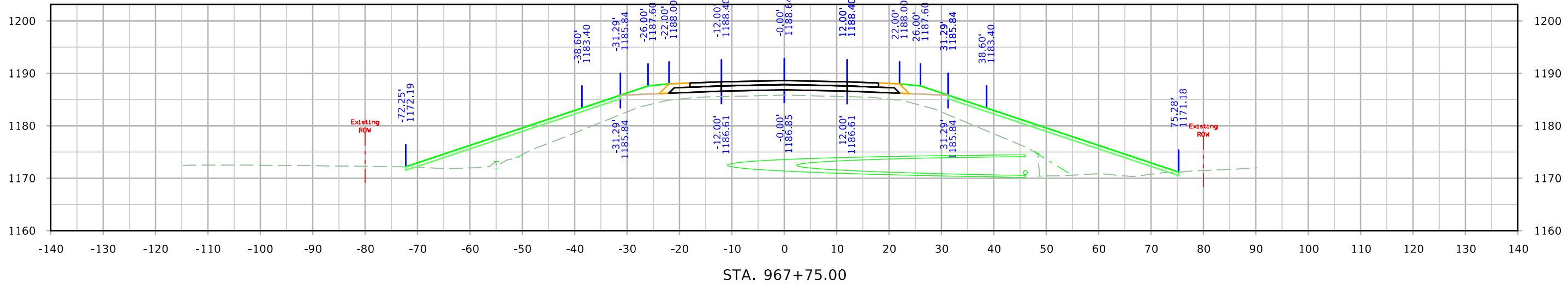


STA. 965+75.00

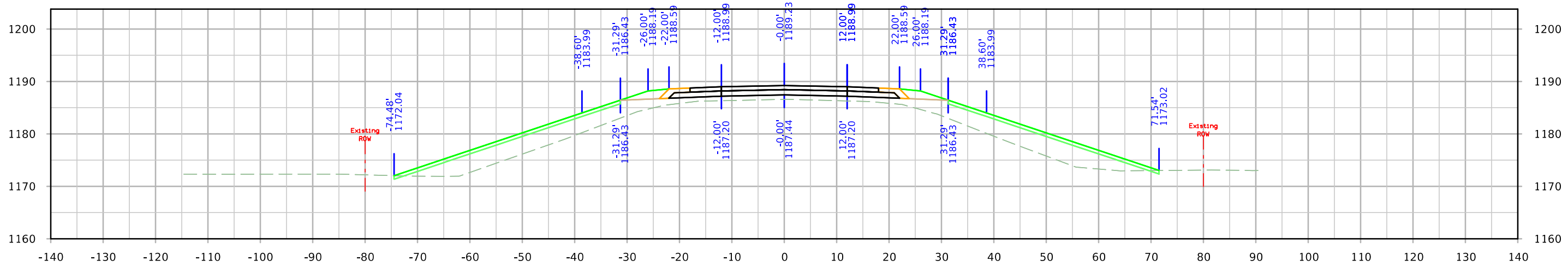
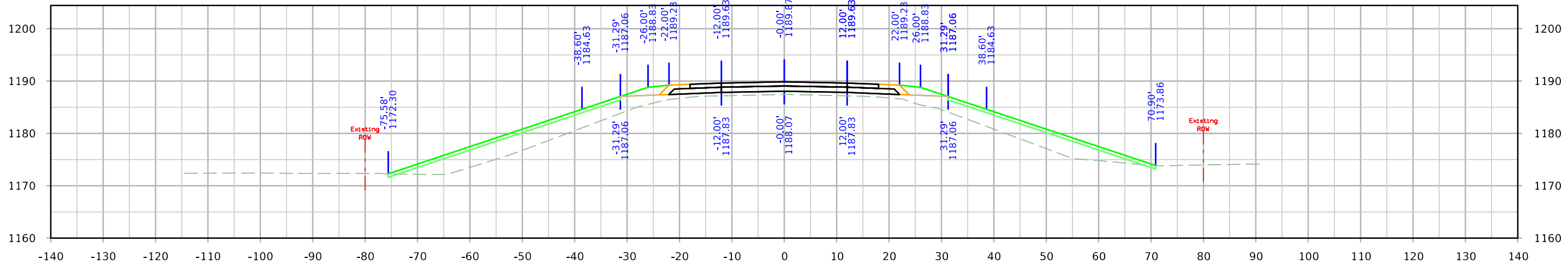
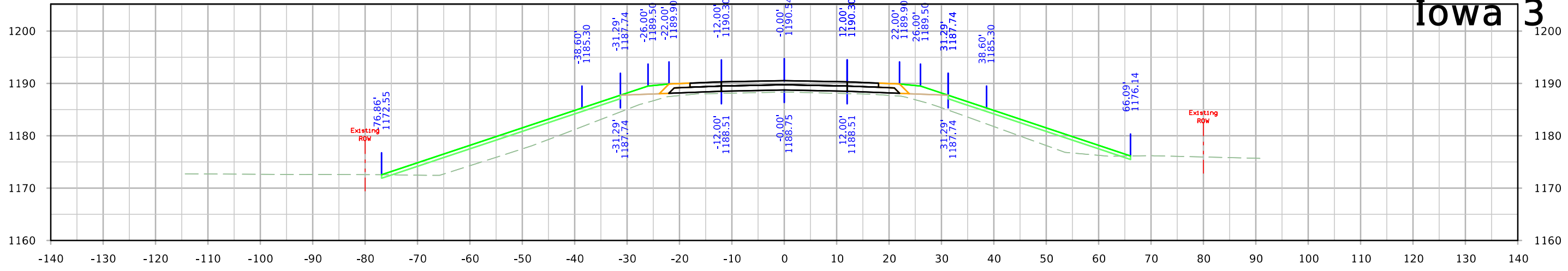
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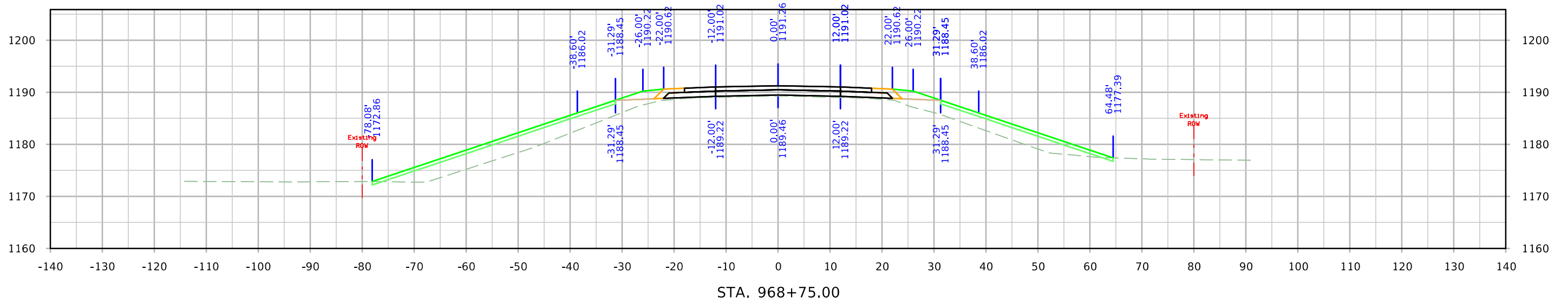
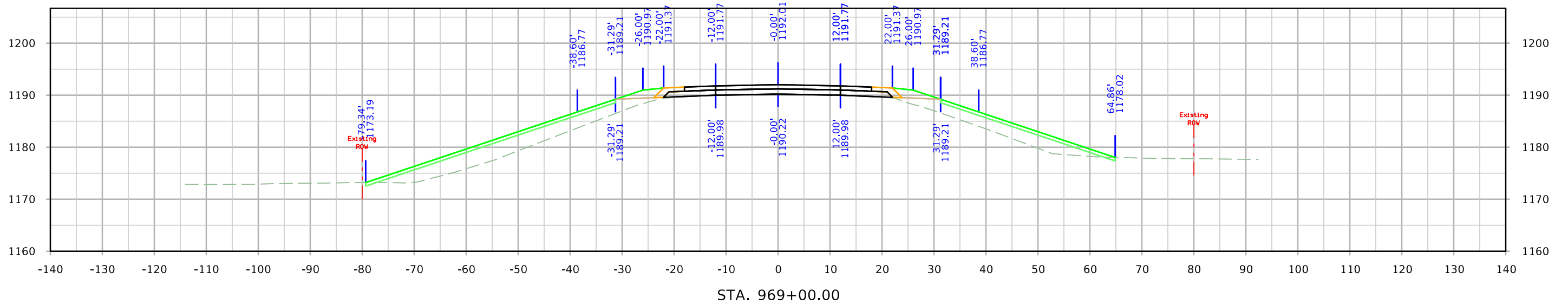


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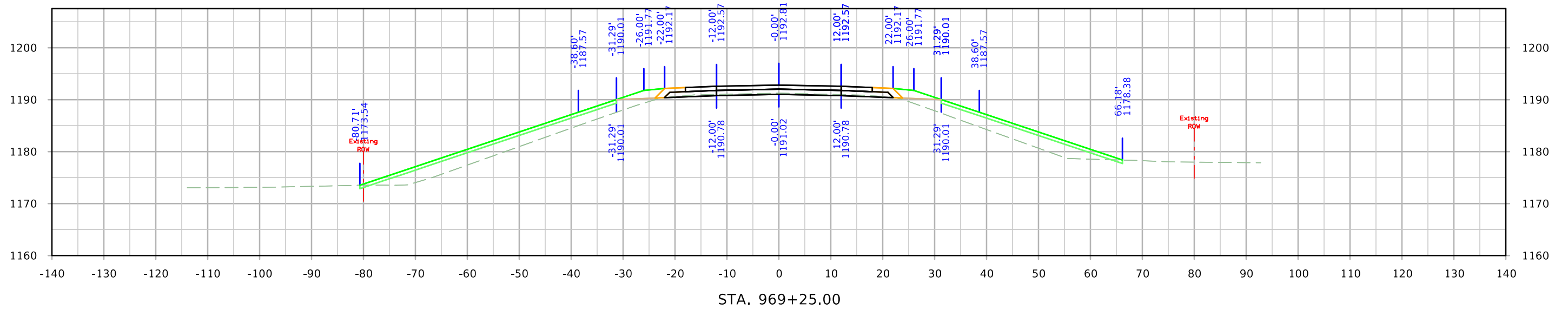
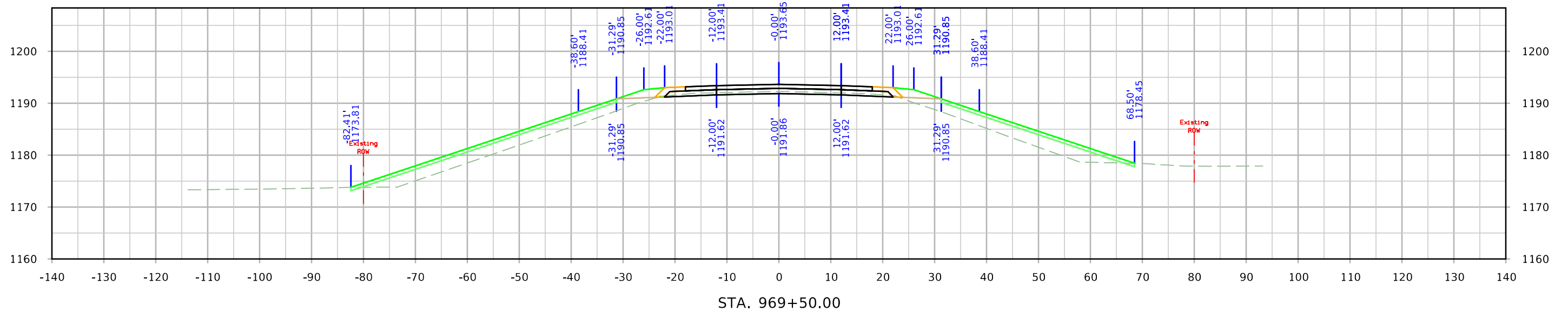


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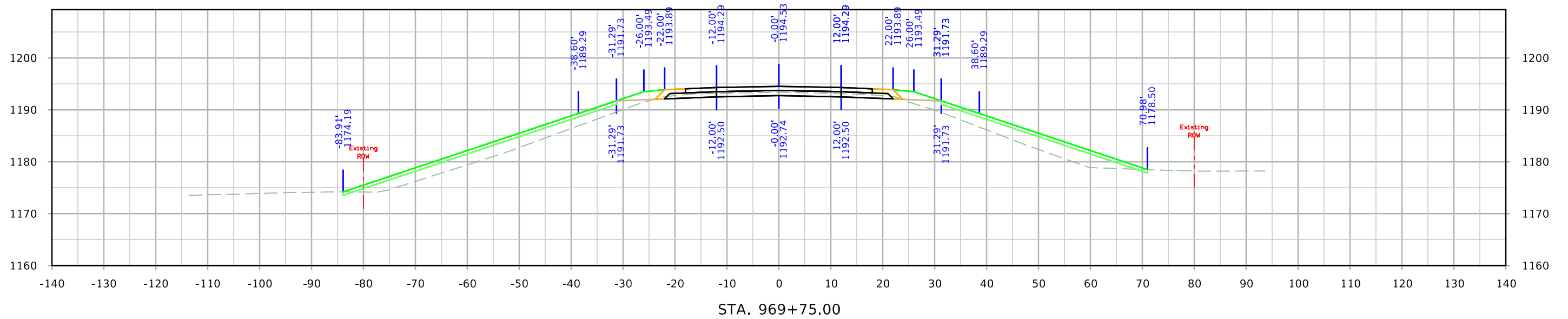
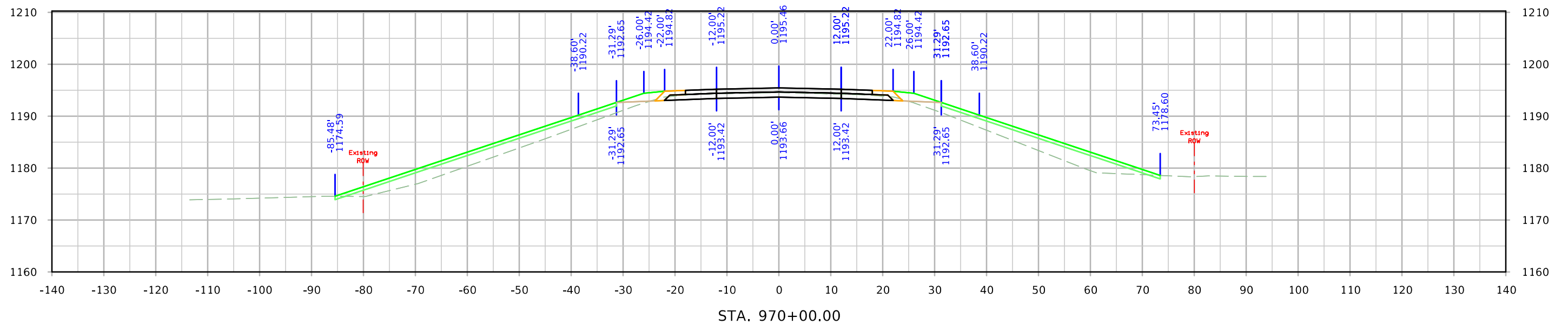




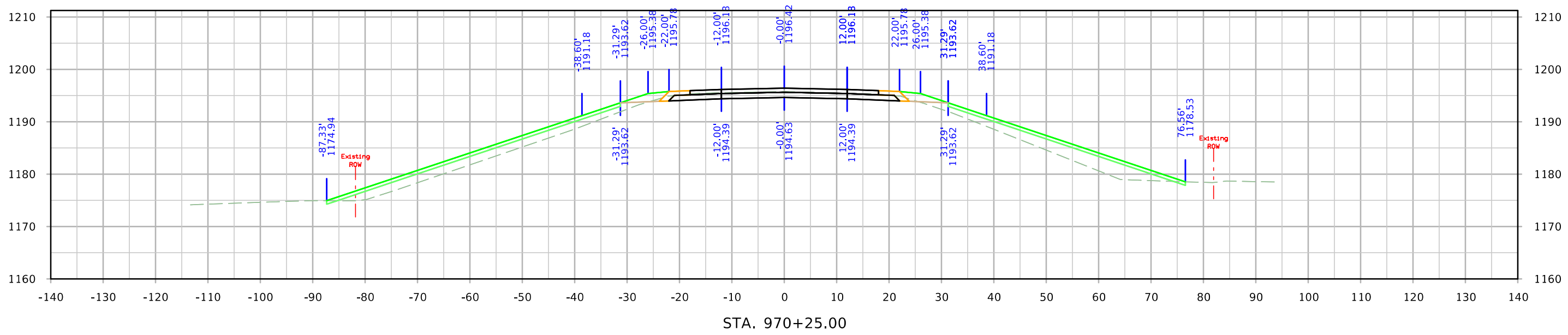
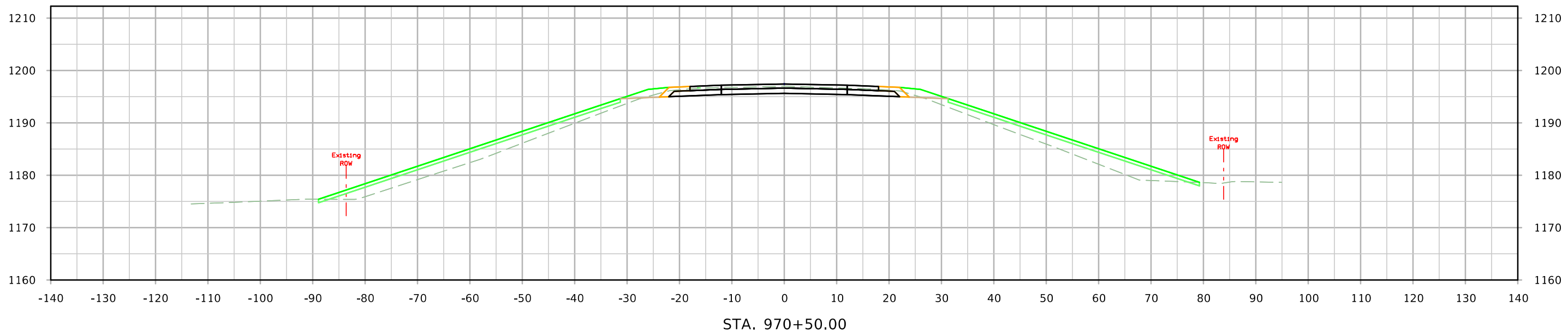
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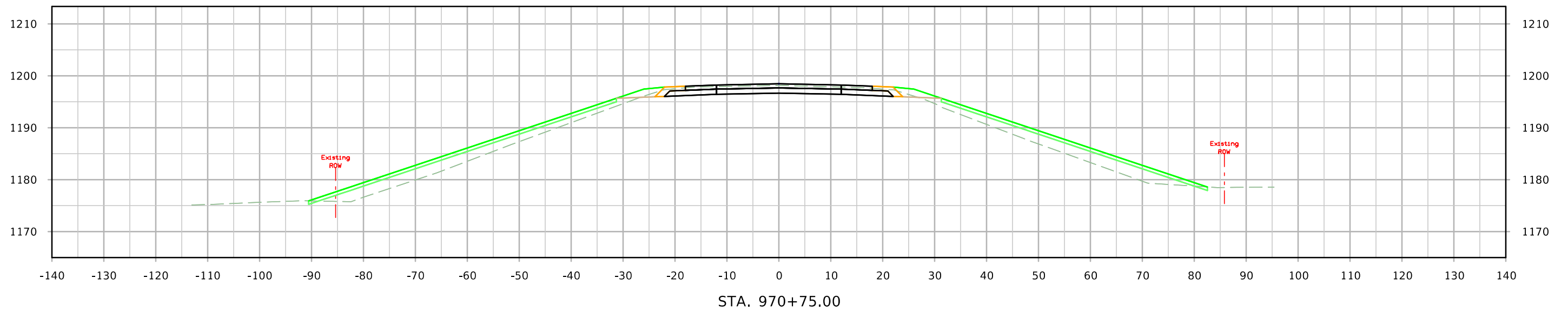
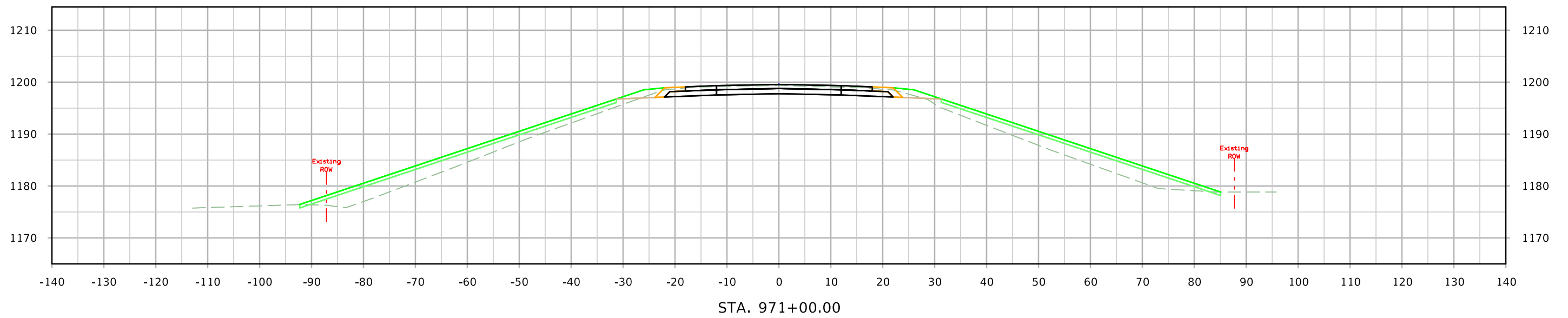
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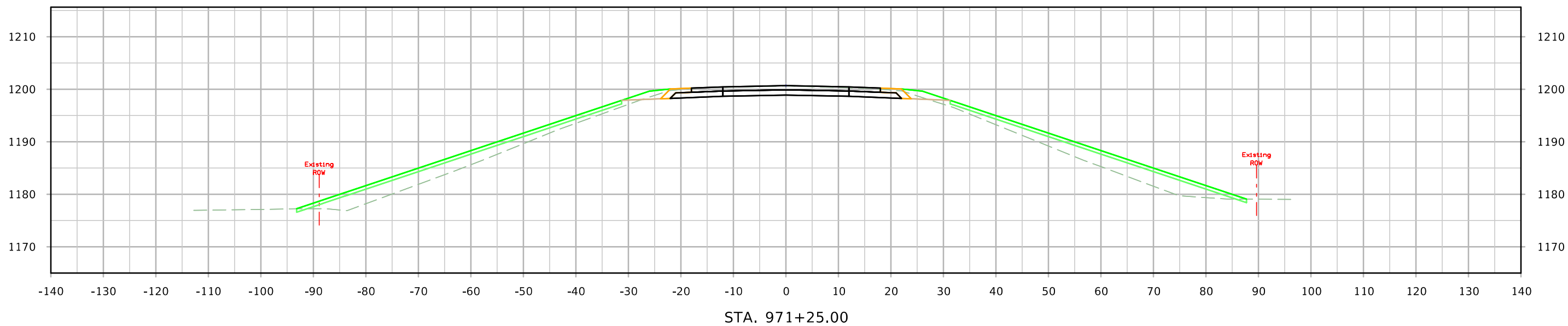
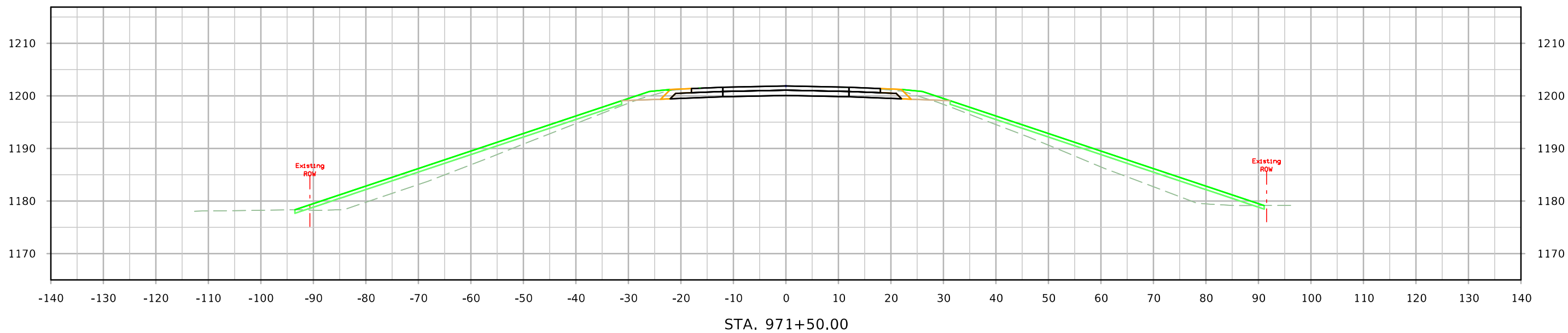
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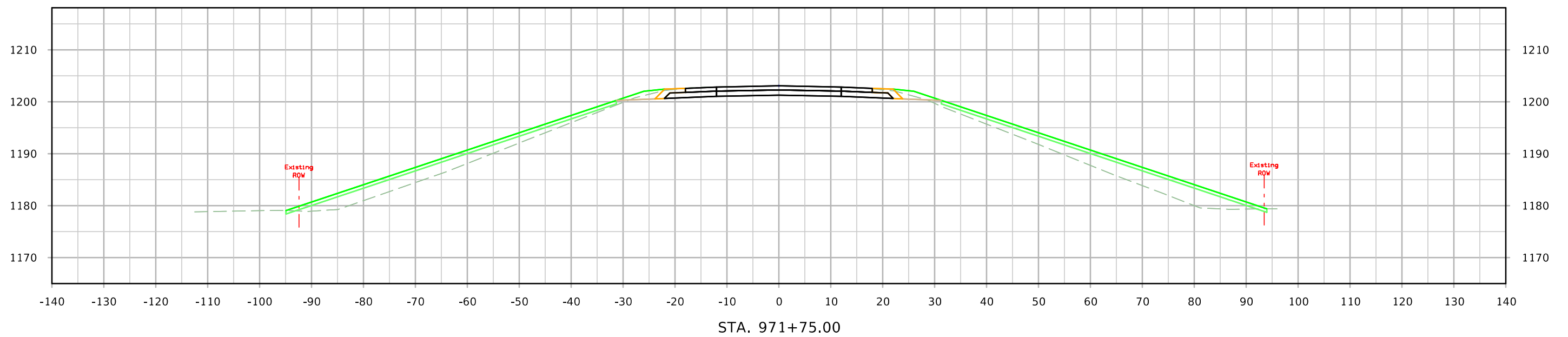
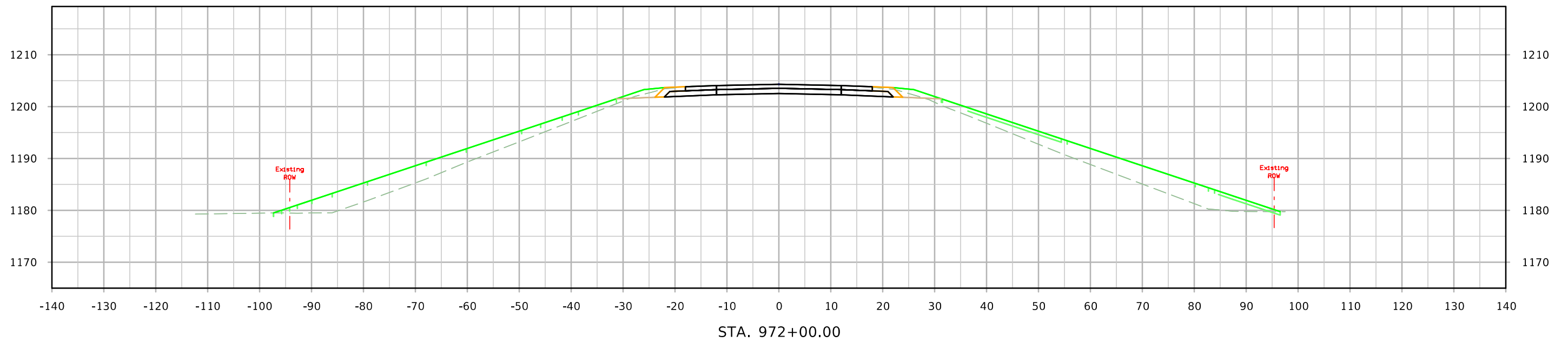
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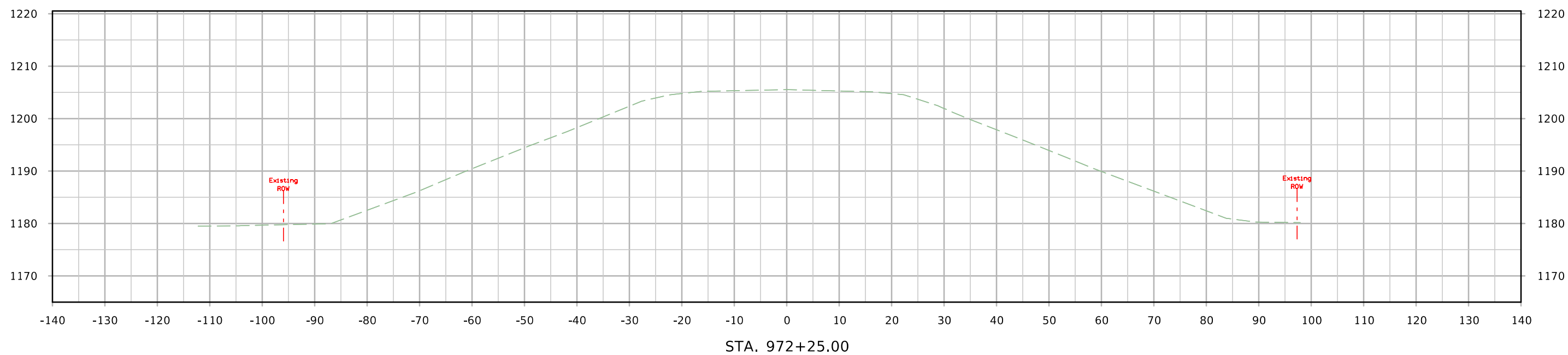
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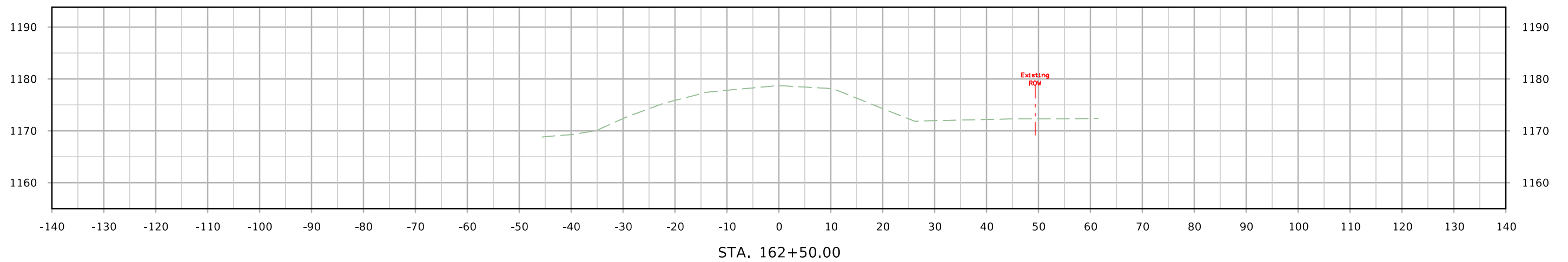
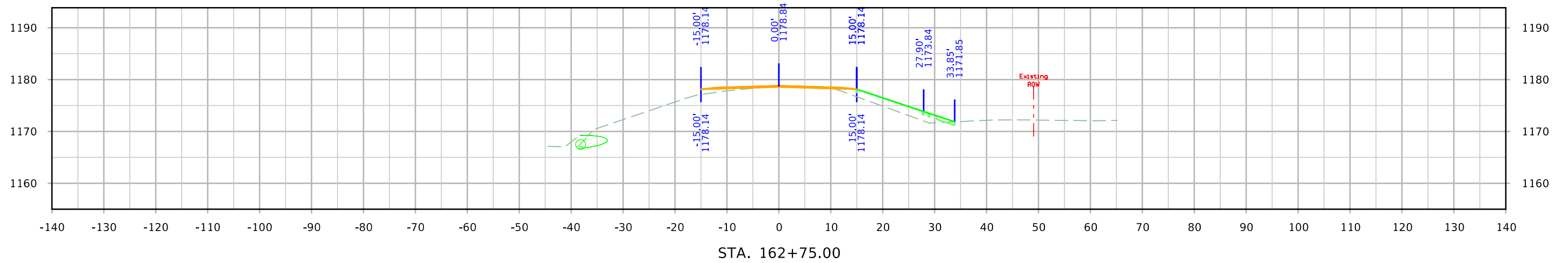
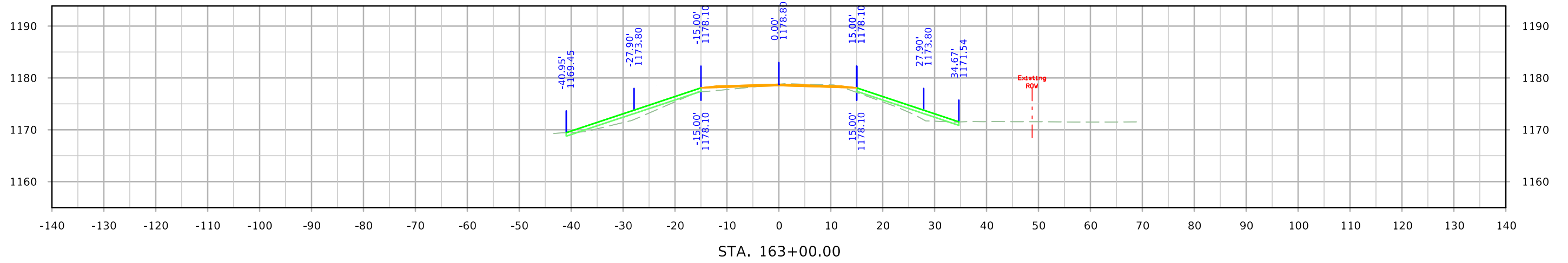
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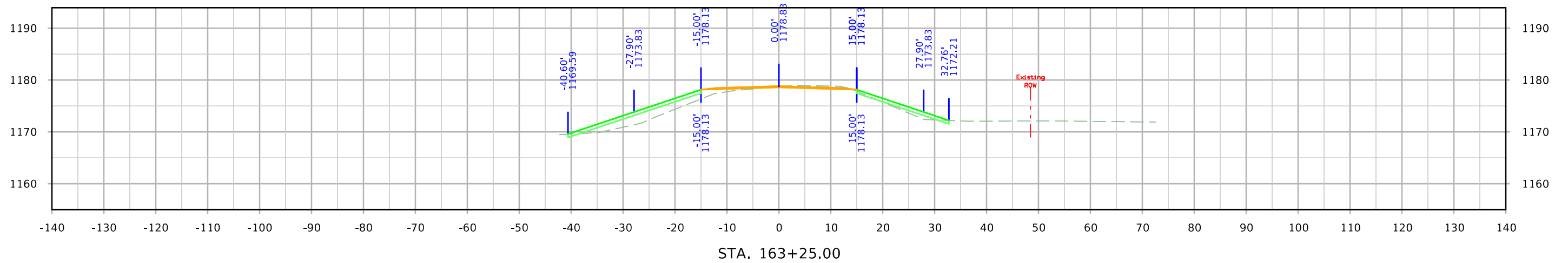
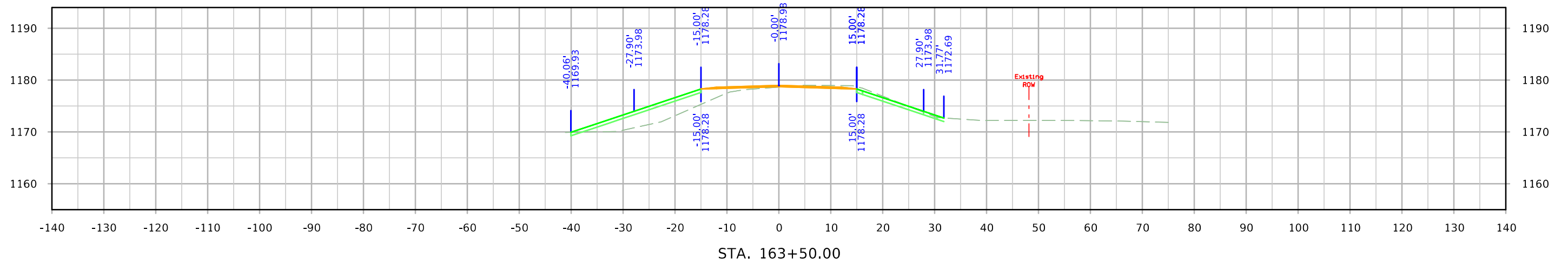
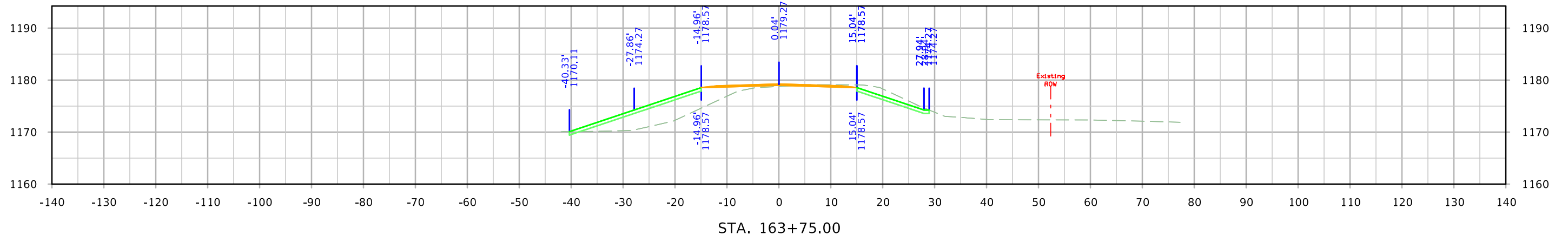
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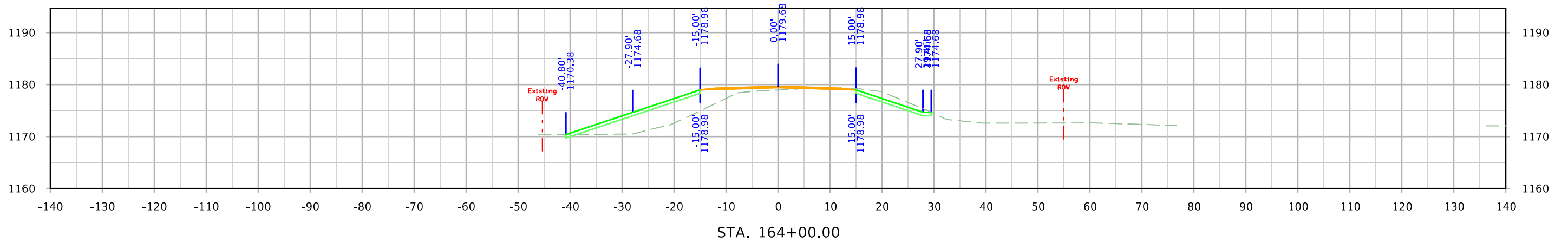
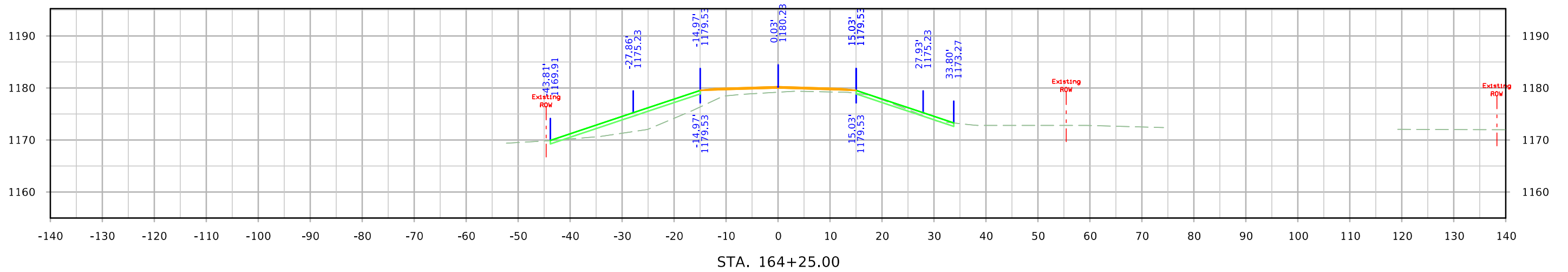
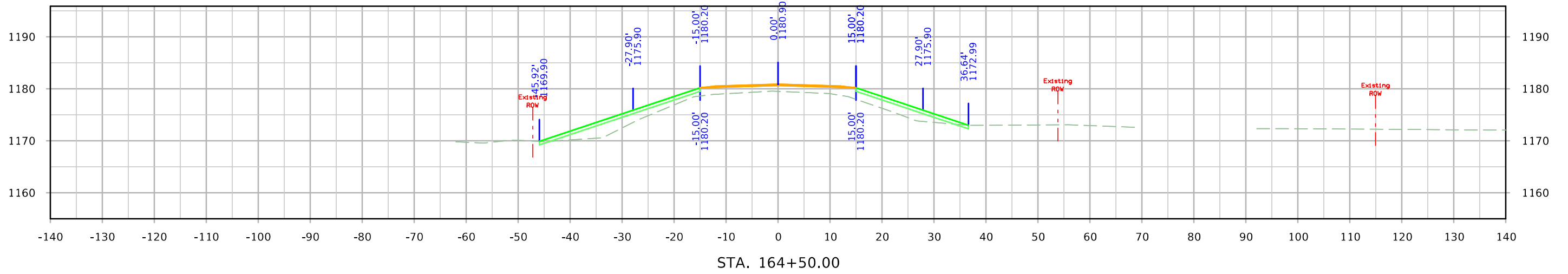
R Avenue



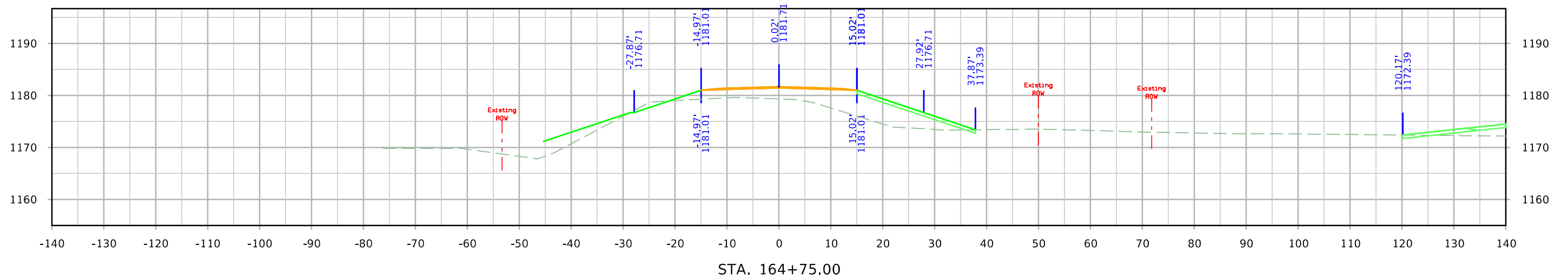
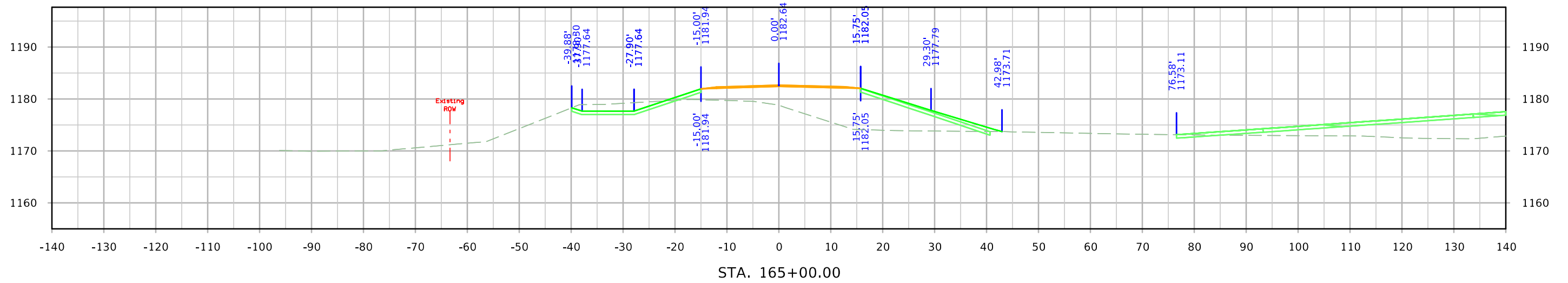
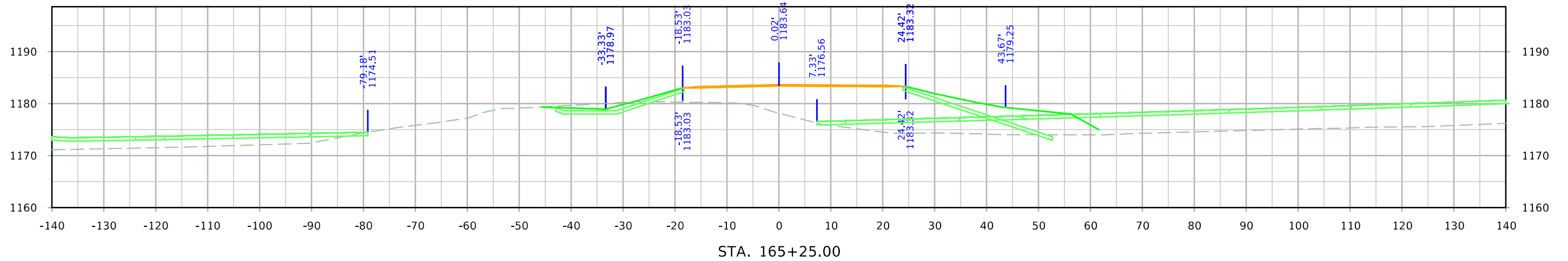
R Avenue



R Avenue



R Avenue



R Avenue

