



PLANS OF PROPOSED IMPROVEMENT ON THE
**PRIMARY ROAD SYSTEM
HARRISON COUNTY
BRIDGE REPLACEMENT**
Over Stream, 0.8 Miles E of CO RD F58

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

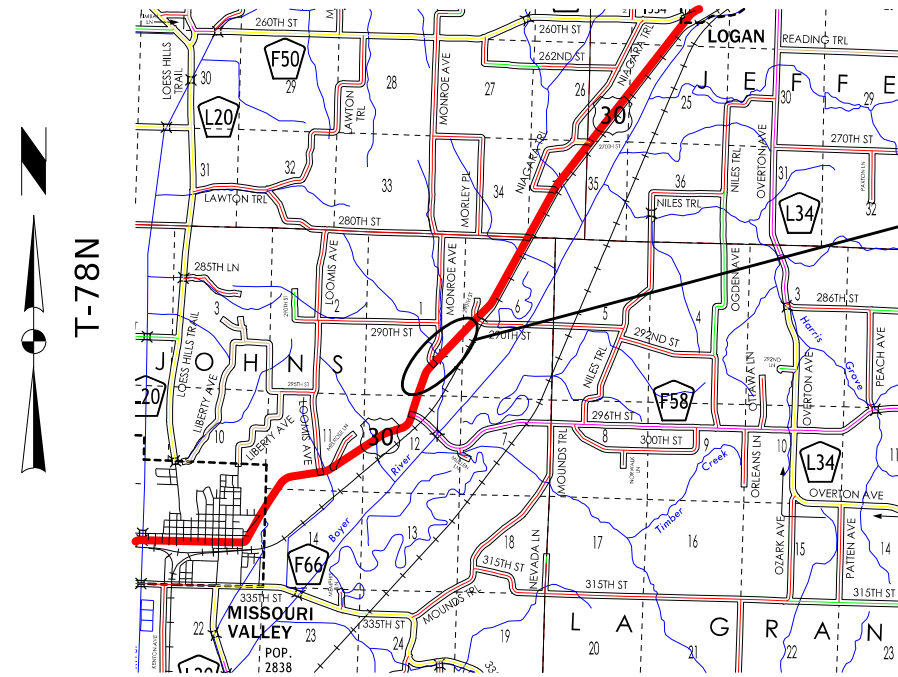
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



No.	DESCRIPTION
INDEX OF SHEETS	
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 5	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1 - 2	Project Description
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	US 30
F Sheets	Detour or Temporary Pavement Sheets
* F.1	Detour Plan and Profile Sheets
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G.3	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
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* J.3	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.4 - 5	Staging Typical
* J.6 - 22	Staging and Traffic Control Sheets
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X Sheets	Side Road Cross Sections
* X.1 - 19	Side Road Cross Sections
	* Color Plan Sheets

REVISIONS		TOTAL
		81
PROJECT IDENTIFICATION NUMBER		
21-43-030-020		
PROJECT NUMBER		
BRF-030-1(197)--38-43		
R.O.W. PROJECT NUMBER		
NHSN-030-1(198)--2R-43		

MILEAGE SUMMARY			
		105-1	
		09-27-94	
Div.	Location	Lin. Ft.	Miles
1	Sta. 152+74.36 to Sta. 162+79.17	1004.81	0.190
	Deduct Bridge at Sta. 158+11.20	40.00	0.007
	Total New Bridge at Sta. 158+11.20	40.00	0.007
Total Length of Roadway in Project:		964.81	0.183
Total Length of Bridge in Project:		40.00	0.007
Total Net Length of Project:		1004.81	0.190



PROJECT LOCATION
(REFER TO A.2 FOR DETAIL)

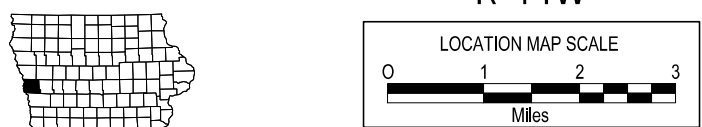
DESIGN DATA RURAL	
2026 AADT	7400 V.P.D.
2046 AADT	9300 V.P.D.
2046 DHV	960 V.P.H.
TRUCKS	17 %
Total Design ESALs	--

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Brian T. Higginbotham	Primary Signature Block
V.1	Jonathan E. Peterson	Hydraulic Design

PRELIMINARY PLANS

Subject to change by final design.

D3 PLAN-Date: 01/25/24



T-78N

290TH ST

1

30

6

290TH ST

5

END CONSTRUCTION
STA. 162+79.17

BEGIN CONSTRUCTION
STA. 152+74.36

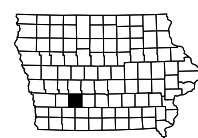
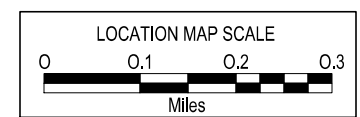
MONROE AVE

30

BOYER RIVER

296TH ST

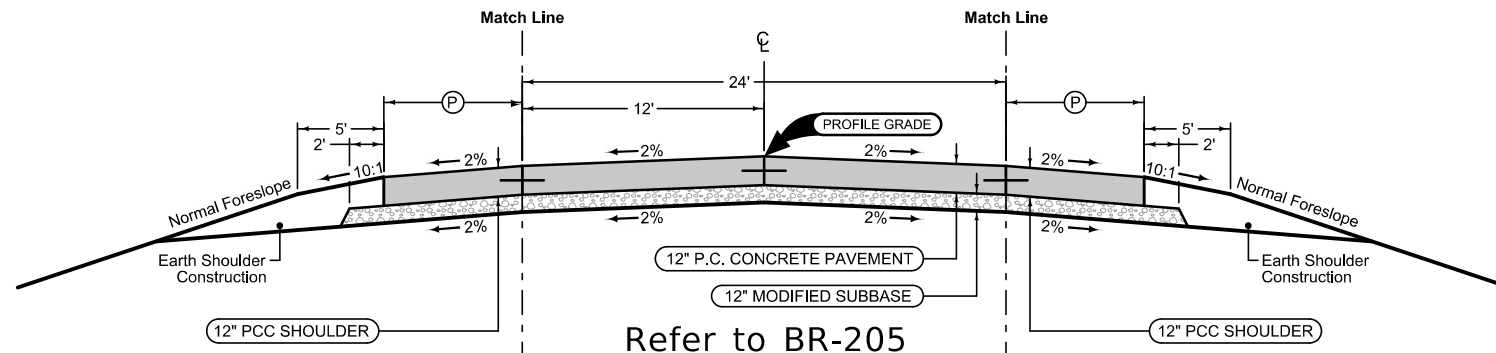
R-44W



Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

2_P_FullPCC_MODIFIED		
STATION TO STATION	(P)	Feet
157+11.50	157+41.50	11.6
Bridge		
158+80.90	159+10.90	11.6



Refer to BR-205

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

2P 04-21-20	
STATION TO STATION	
157+11.50	157+41.50
Bridge	
158+80.90	159+10.90

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

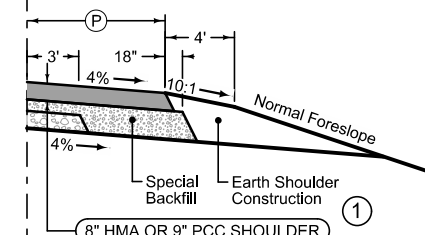
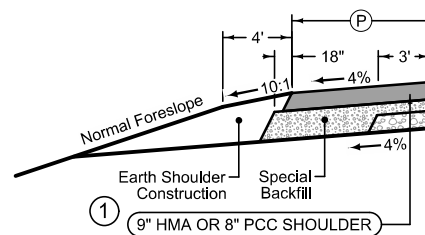
2_P_FullPCC_MODIFIED		
STATION TO STATION	(P)	Feet
157+11.50	157+41.50	11.6
Bridge		
158+80.90	159+10.90	11.6

Paved Shoulder at Guardrail

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

2_P_Guard_MODIFIED		
STATION TO STATION	(P)	Feet
156+39.24	156+59.24	13.6
156+59.24	157+06.66	13.6-11.6
157+06.66	157+11.50	11.6
Bridge		
159+10.90	159+15.59	11.6
159+15.59	159+34.51	11.6-13.4
159+34.51	159+41.02	13.4
159+41.02	159+88.44	13.4-15.3
159+88.44	160+08.44	15.3

① Refer to Detail 7157



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

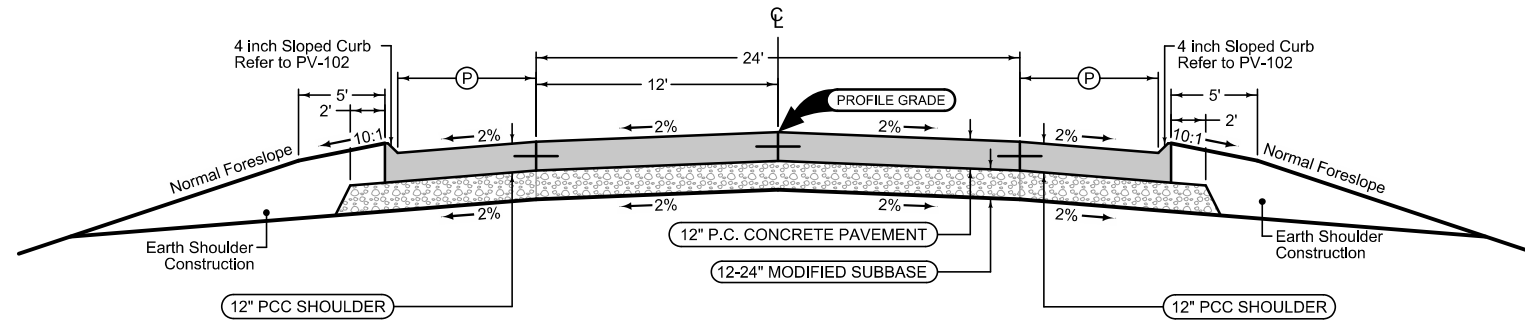
2_P_Guard_MODIFIED		
STATION TO STATION	(P)	Feet
156+13.96	156+33.96	15.3
156+33.96	156+81.38	15.3-13.4
156+81.38	156+87.89	13.4
156+87.89	157+06.81	13.4-11.6
157+06.81	157+11.50	11.6
Bridge		
159+10.90	159+15.74	11.6
159+15.74	159+63.16	11.6-13.6
159+63.16	159+83.16	13.6

① Refer to Detail 7157

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

2_P_FullPCC_MODIFIED		
STATION TO STATION		(P) Feet
157+41.50	157+98.13	11.6
Bridge		
158+31.20	157+84.27	11.6



Refer to BR-205

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

2_P_FullPCC_MODIFIED		
STATION TO STATION		(P) Feet
158+38.13	157+91.20	11.6
Bridge		
158+24.27	158+31.20	11.6

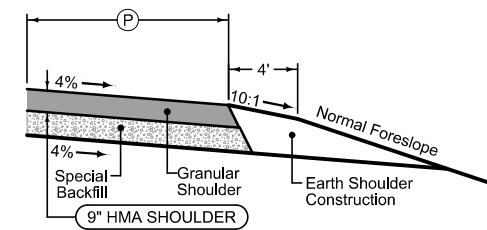
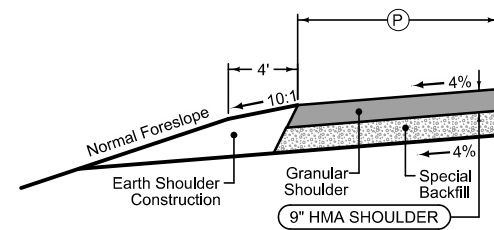
Mainline Jointing:
 Transverse joints: CD at 20' spacing
 Longitudinal joint: L-2

2P_MODIFIED		
STATION TO STATION		
157+41.02	157+91.20	
Bridge		
158+31.20	158+81.38	

HMA Shoulder

Shoulder Jointing:
 Longitudinal joint: B

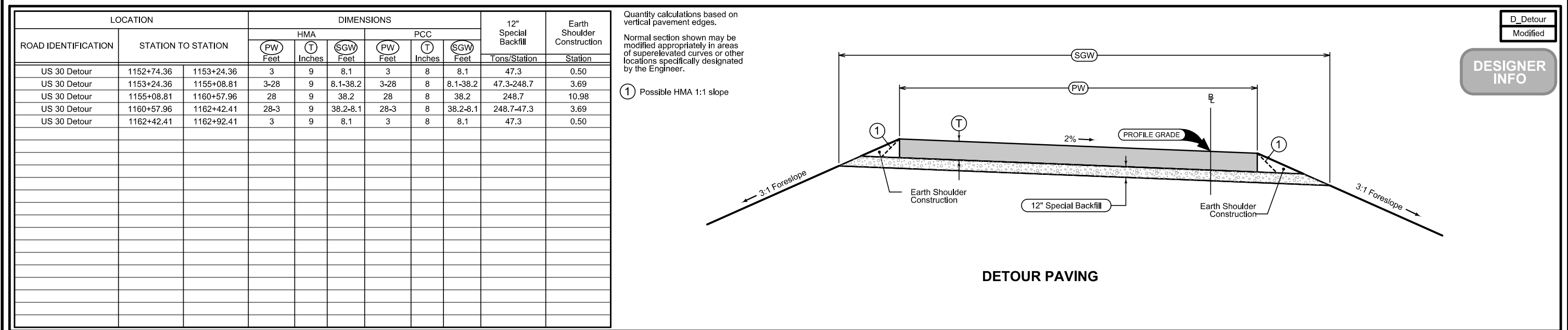
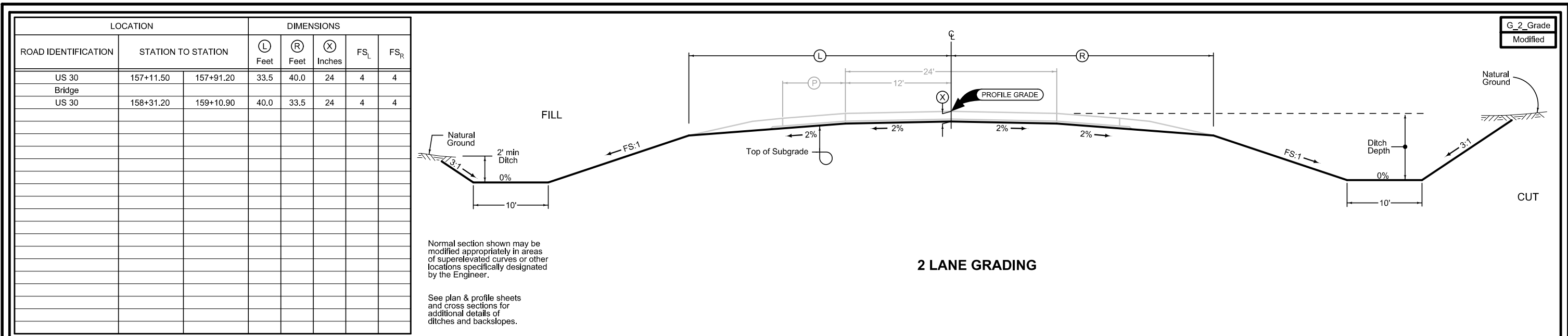
1L_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet

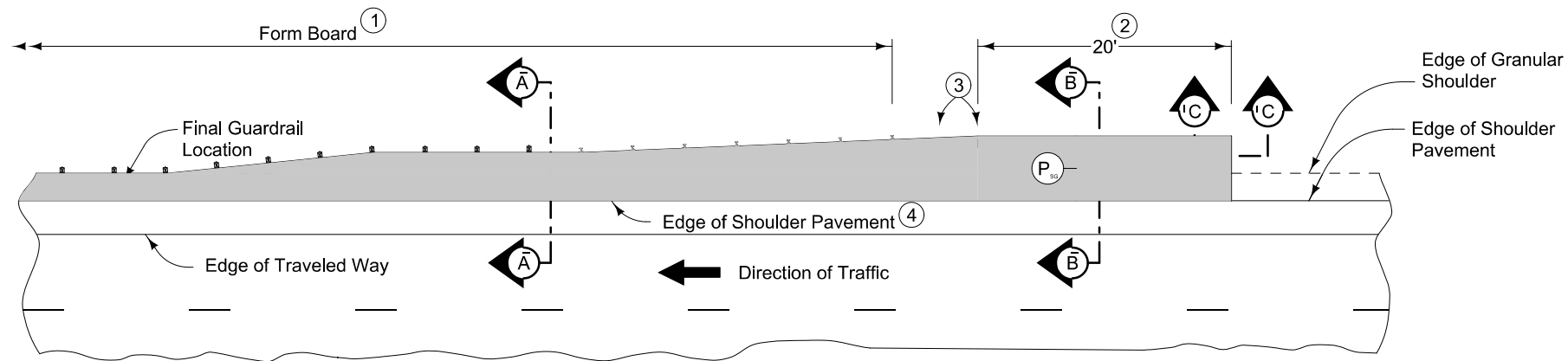


HMA Shoulder

Shoulder Jointing:
 Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
152+74.36	156+13.96	10
159+83.16	162+79.17	10





PLAN VIEW

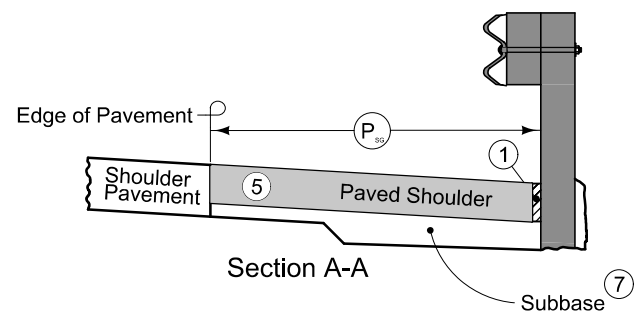
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

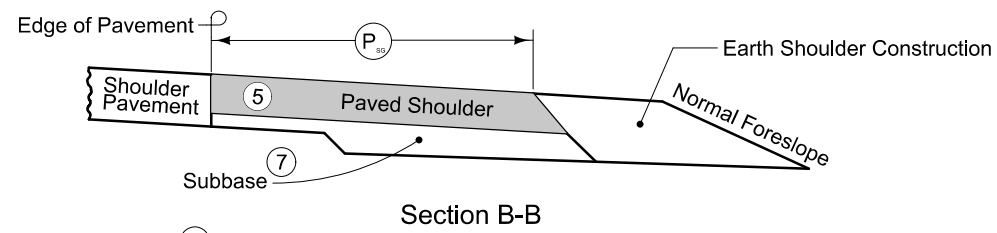
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

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-101) joint for PCC shoulder. 'B' (per PV-101) joint for HMA shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.

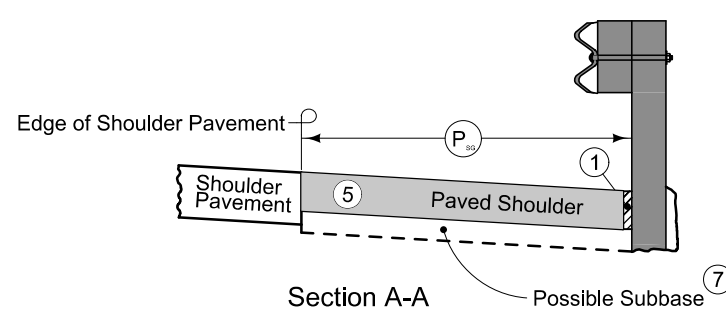


Section A-A

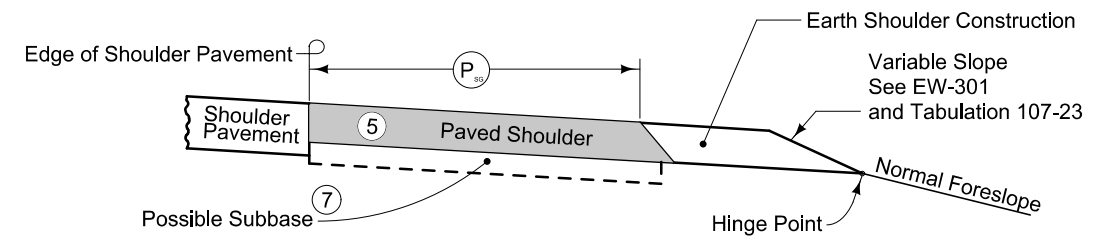


Section B-B

NEW CONSTRUCTION

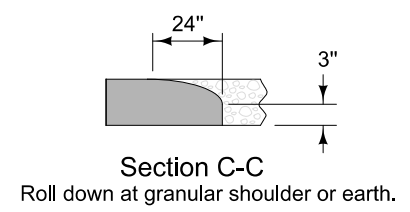


Section A-A



Section B-B

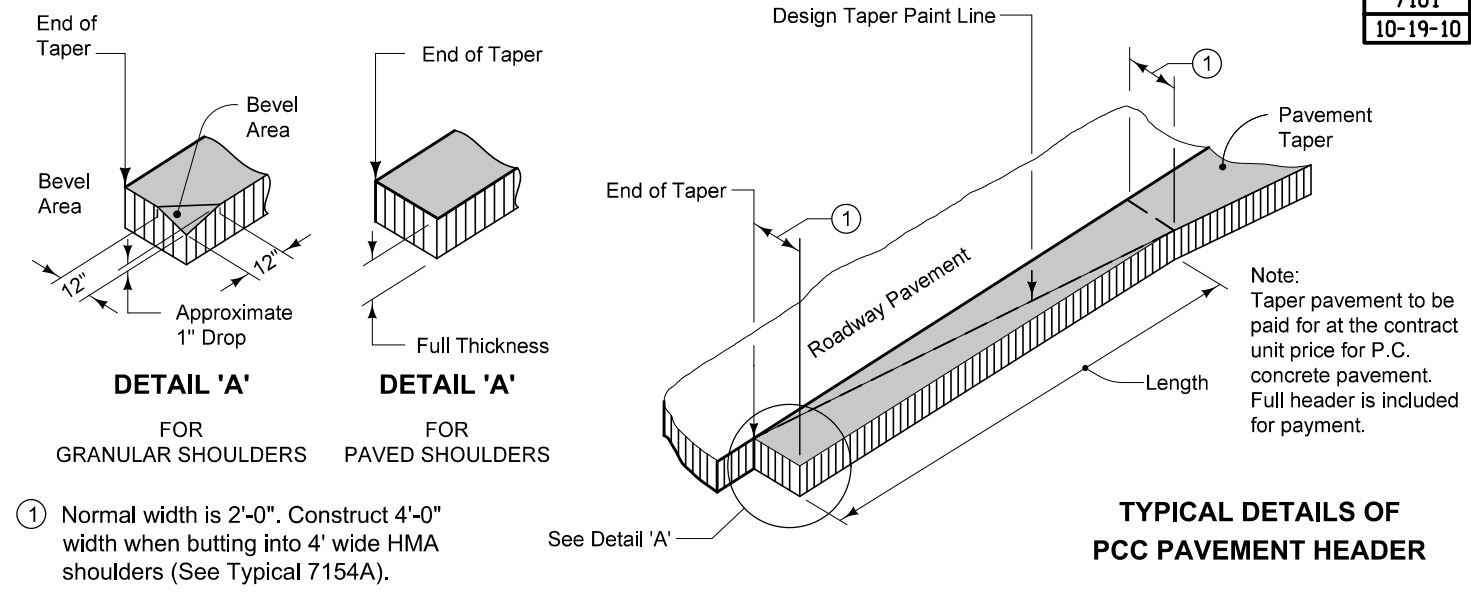
EXISTING SHOULDER



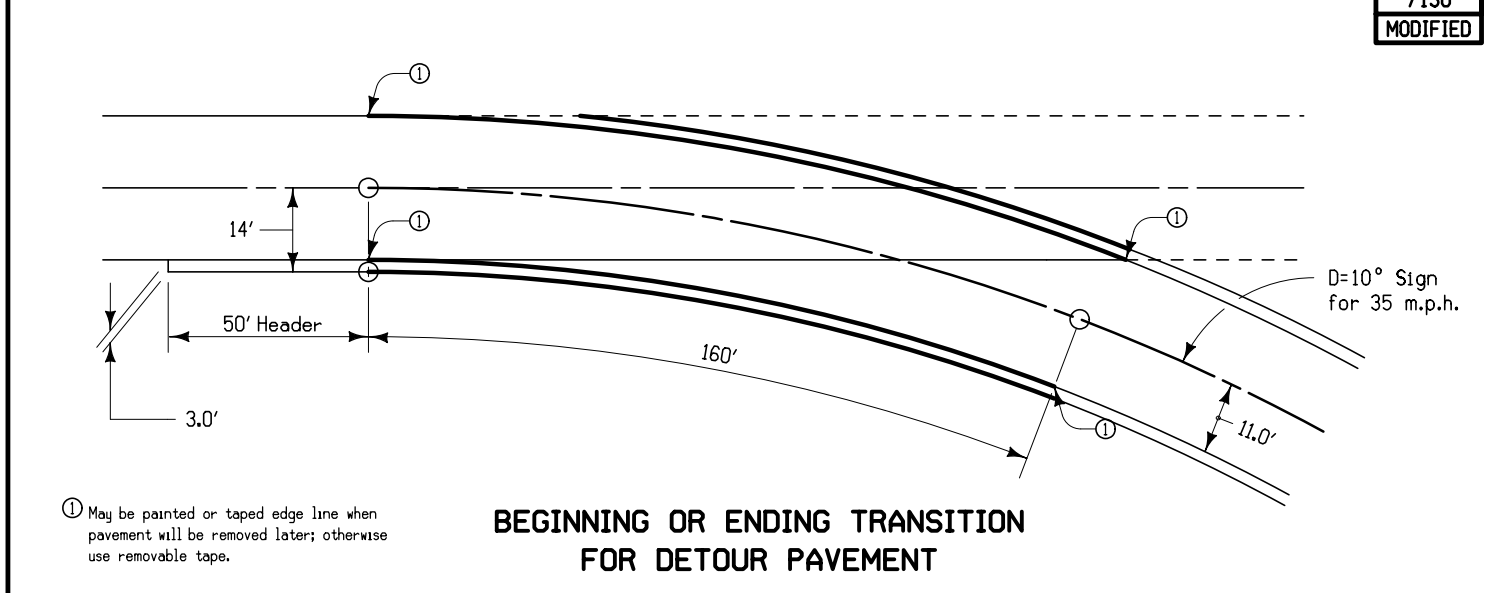
Section C-C

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

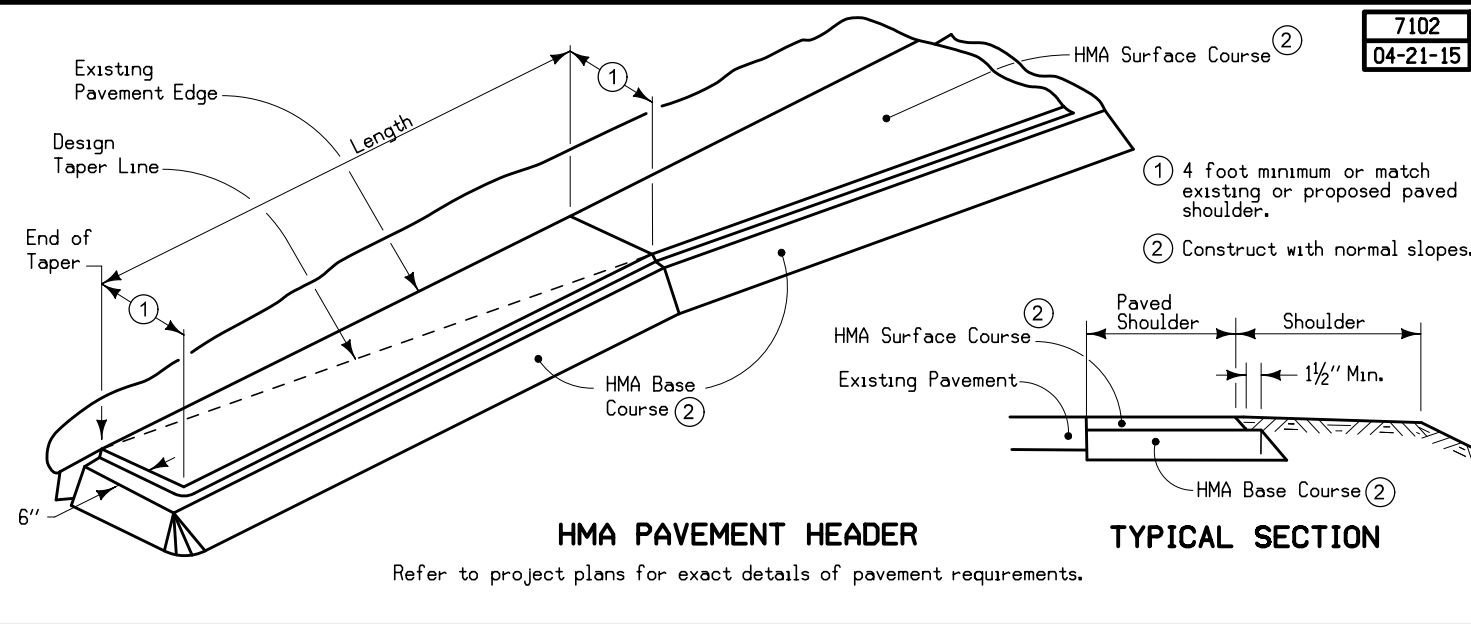
7101
10-19-10



7130
MODIFIED



7102
04-21-15



100_01D
8/15/22

PROJECT DESCRIPTION

This project involves the replacement of the US 30 bridge (Maint. No. 4314.15030) over Stream, 0.8 miles east of County Road F58 in Harrison County with a non-standard 40' x 44' Single Span, Slab Span Bridge.

EXISTING PAVEMENT

Line No.	County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
	Harrison	US 30		11.66	13.66	2020	S	NHSX-030-1(171)--3H-43	HMA	1.5	HMA	1.5			MIL	1.5					
	Harrison	US 30		11.66	13.66	2019	M	MP-030-4(716)8--76-43													PCC patching, HMA patching, Slurry
	Hardin	US 30		11.66	13.66	1999		MP-30-4(704)12--76-43	MSS												
	Harrison	US 30		11.66	13.66	1994		NHS-30-1(76)--19-43	AAC	1.5	AAC	1.5			MIL	1.0	ANTHON	GRAVEL			
	Harrison	US 30		11.66	13.66	1972		MD-3335-69-43	BSC												
	Harrison	US 30		11.66	13.66	1956		FN-14	AAC	3.0							LOGAN	C.LST.			
	Harrison	US 30		11.66	13.66	1928		FA-14	PC7	7.0							LOUISVILLE- NE.	C.LST.	2		

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

CENTURY LINK
Sadie Hull
(918) 547-0147
sadie.hull@lumen.com

NORTHERN NATURAL GAS COMPANY
Andrew Messerschmidt
(402) 350-4758
andrew.messerschmidt@nngco.com

MIDAMERICAN-ELEC
David Fitch
(712) 366-5669
dfitch@midamerican.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 |

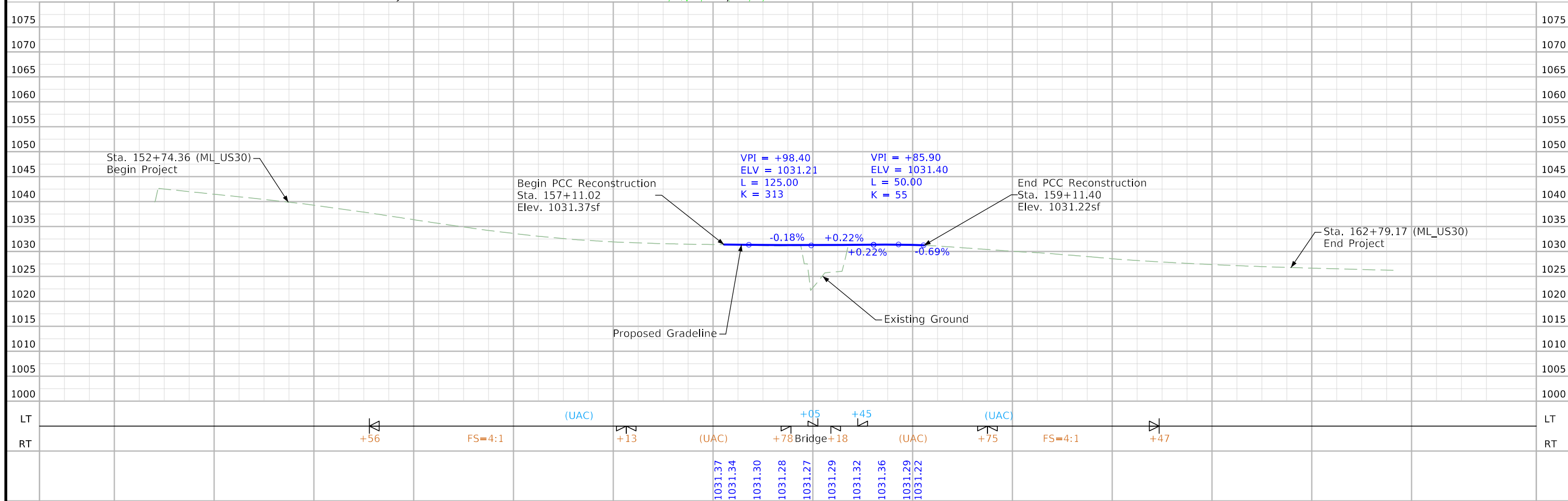
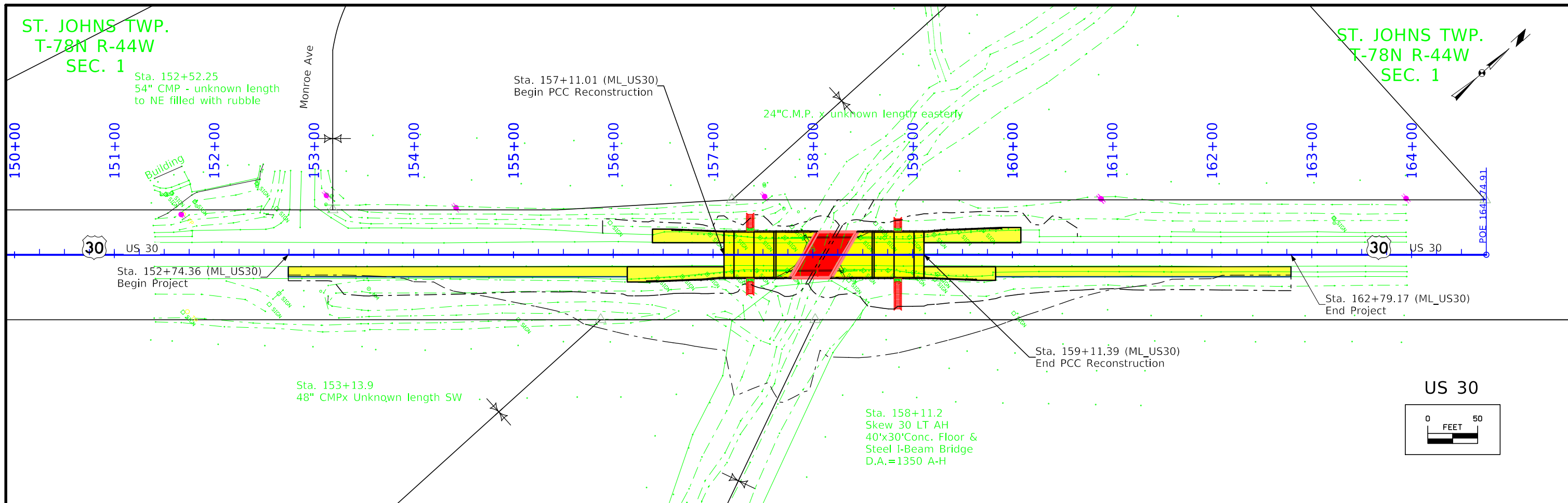
- ### RIGHT-OF-WAY LEGEND
- Proposed Right-of-Way
 - Existing Right of Way
 - Existing and Proposed Right-of-Way
 - Easement and Existing Right-of-Way
 - Easement (Temporary)
 - Easement
 - Access Control
 - Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

ST. JOHNS TWP.
T-78N R-44W
SEC. 1

ST. JOHNS TWP.
T-78N R-44W
SEC. 1



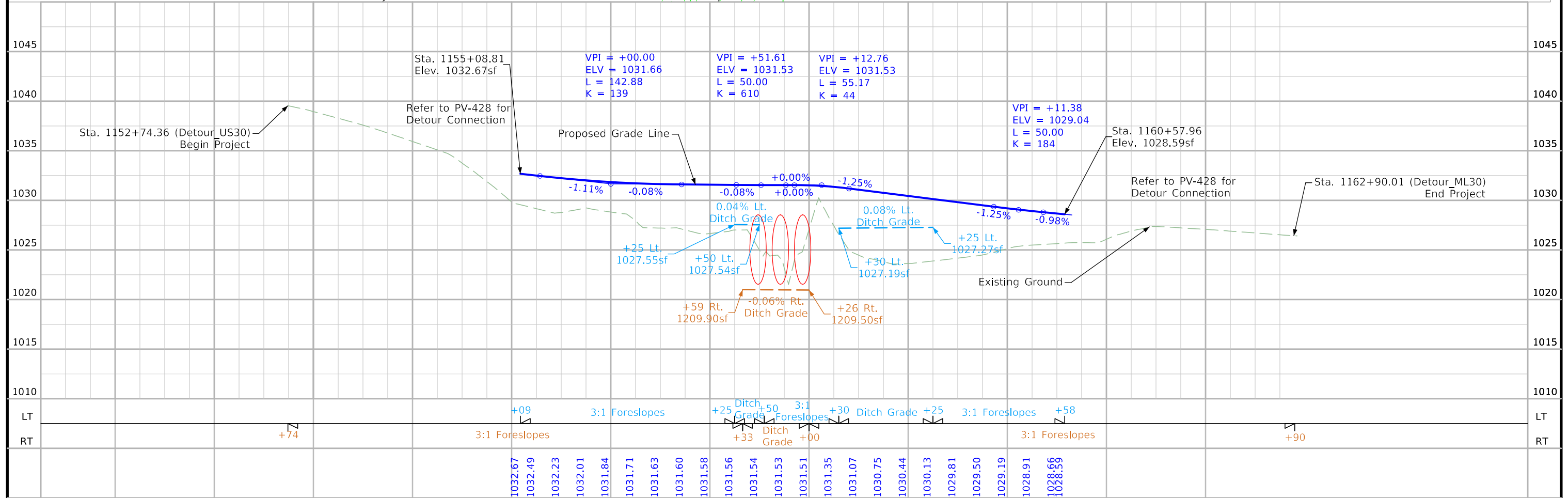
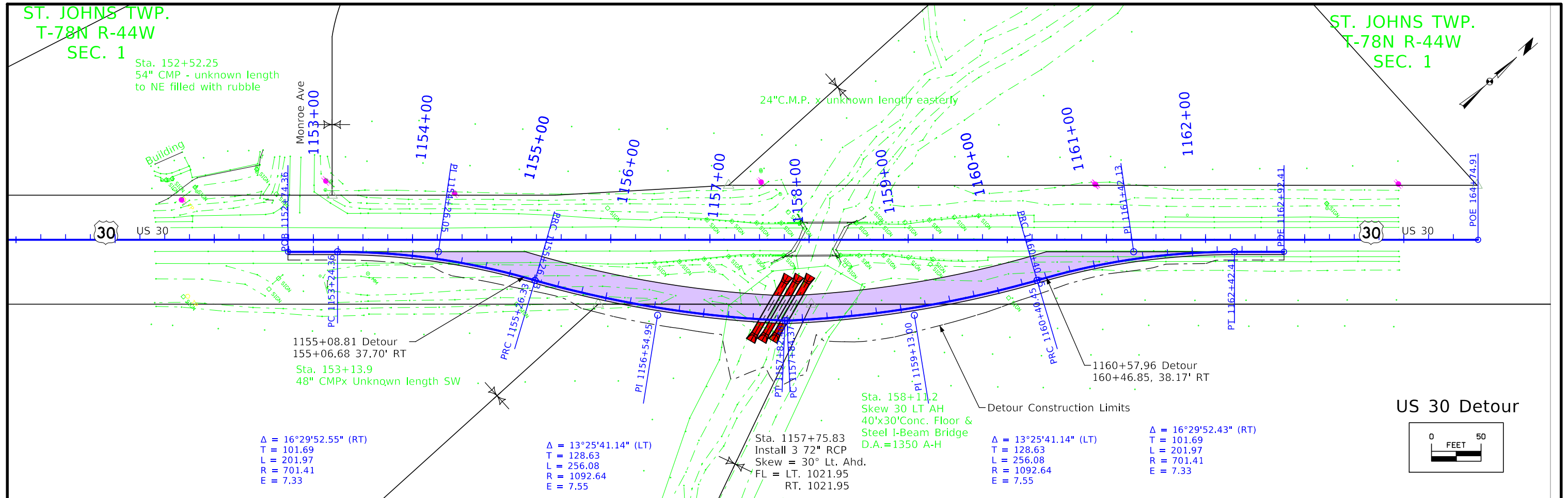
FILE NO. 32522	ENGLISH	DESIGN TEAM Mescher / HGM	HARRISON COUNTY	PROJECT NUMBER BRF-030-1(197)--38-43	SHEET NUMBER D.2
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ST. JOHNS TWP.
T-78N R-44W
SEC. 1

ST. JOHNS TWP.
T-78N R-44W
SEC. 1

Sta. 152+52.25
54" CMP - unknown length
to NE filled with rubble

24"C.M.P. x unknown length easterly



FILE NO. 32522	ENGLISH	DESIGN TEAM Mescher / HGM	HARRISON COUNTY	PROJECT NUMBER BRF-030-1(197)--38-43	SHEET NUMBER F.1
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CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 6 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: G12UAS

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
 HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
 Ia. Regional Coordinate System Zone 6 (U.S. Survey Foot)
 VERT. DATUM: NAVD88
 Geoid Model: G12UAS

POINTNAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
497	7085950.857	16468998.23	1041.58	FENO MONUMENT - SET
498	7086321.197	16469336.36	1029.34	FENO MONUMENT - SET
499	7086897.322	16469871.01	1023.54	FENO MONUMENT - SET

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
20000	ML_US30	149+68.48	7085707.19	16468860.67															
20001	ML_US30	164+74.91	7086824.76	16469870.81															
30000	Detour_US30	1152+74.36	7085926.06	16469074.68															
30001	Detour_US30	1153+24.36	7085963.16	16469108.21															
30002	Detour_US30						1153+24.36	7085963.16	16469108.21	1154+30.33	7086041.77	16469179.26	1155+34.94	7086098.01	16469269.07				
30003	Detour_US30						1155+34.94	7086098.01	16469269.07	1156+43.97	7086155.88	16469361.48	1157+51.61	7086236.76	16469434.58				
30004	Detour_US30	1157+51.61	7086236.76	16469434.58															
30005	Detour_US30	1158+12.76	7086282.13	16469475.59															
30006	Detour_US30						1158+12.76	7086282.13	16469475.59	1159+21.79	7086363.01	16469548.70	1160+29.42	7086460.78	16469596.96				
30007	Detour_US30						1160+29.42	7086460.78	16469596.96	1161+35.39	7086555.79	16469643.87	1162+40.01	7086634.41	16469714.92				
30008	Detour_US30	1162+40.01	7086634.41	16469714.92															
30009	Detour_US30	1162+90.01	7086671.50	16469748.45															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks										
			Spiral Data						Curve Data																
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E									
30002	Detour_US30																								
30003	Detour_US30																								
30006	Detour_US30																								
30007	Detour_US30																								

TRAFFIC CONTROL PLAN

108_23A
8/15/22

Traffic on US 30 will remain open at all times.

Traffic will be maintained utilizing flaggers, shoulder closures and detour pavement.

Use of lane closures will be minimized to the time required to construct and remove the Detour Connection.

STAGING NOTES

The bridge will be constructed in three stages.

Stage 1 - Construction of Detour

Stage 2 - Removal of Existing Bridge and Construction of New Bridge

Stage 3 - Removal of Detour and Construction of East Shoulder and Foreslopes

Stage 1 (Close East Shoulder)

- Close the eastbound lane of US 30 for the shoofly connection. Lane closure utilizes Standard Road Plan TC-213.
- Close the east shoulder of US 30 for construction of the shoofly detour. Shoulder closure utilizes Standard Road Plan TC-202.
- A temporary drainage structure (three - 72" RCP) will be constructed to accommodate drainage during construction.

Stage 2 (Close Bridge)

- Close both lanes of US 30 for Bridge removal and construction of the new Bridge. Lane closure utilizes Standard Road Plan TC-253.
- Traffic will be shifted to the temporary pavement while the existing bridge is removed.
- Two 14'-0" traffic lanes will be utilized.
- Temporary barrier rail (TBR) will be placed at the edges of pavement. This will require anchoring into the temporary pavement.
- The bridge, bridge approaches and guardrail will be constructed.










Stage 3 (Close East Shoulder)

- Traffic will be shifted back to US 30.
- Close the eastbound lane of US 30 for the removal of the shoofly connection. Lane closure utilizes Standard Road Plan TC-213.
- Close the east shoulder for construction of the east shoulder and foreslope. Shoulder closure utilizes Standard Road Plan TC-202.
- Removal of the temporary pavement and grading of the foreslopes, per Detail 4312.

**CROSS SECTION VIEW COLOR LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**





















	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

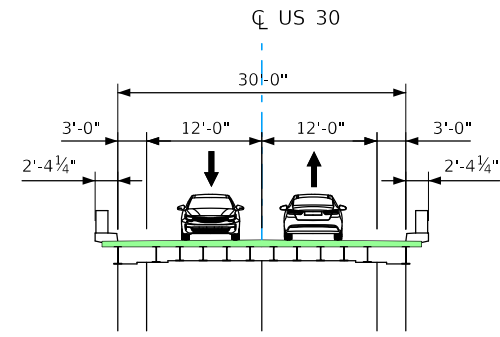
**PLAN VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

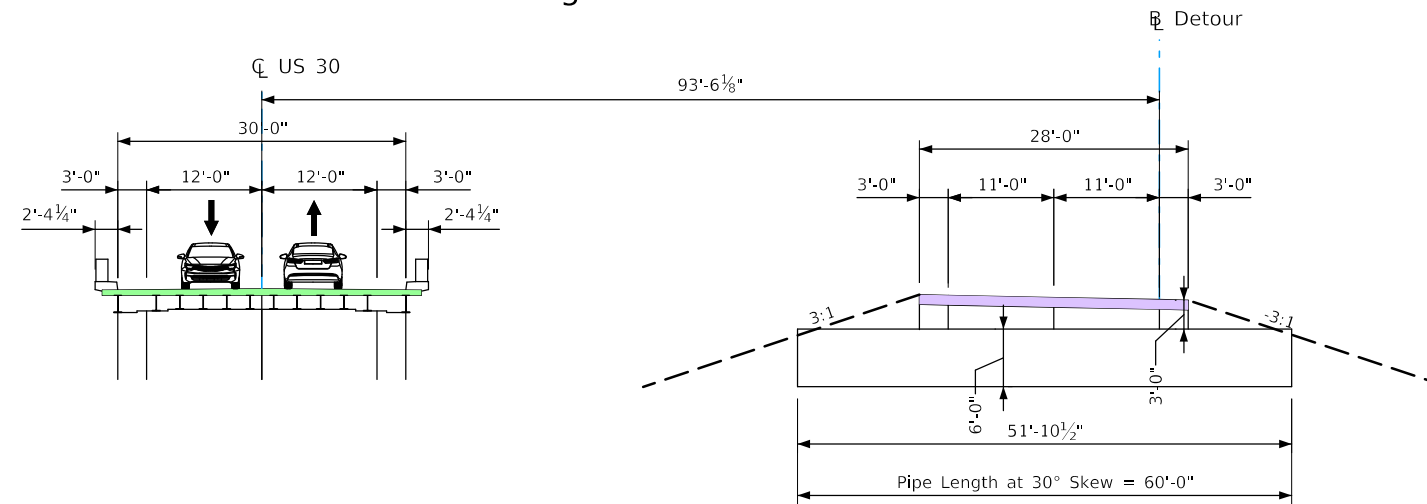
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

**TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET**

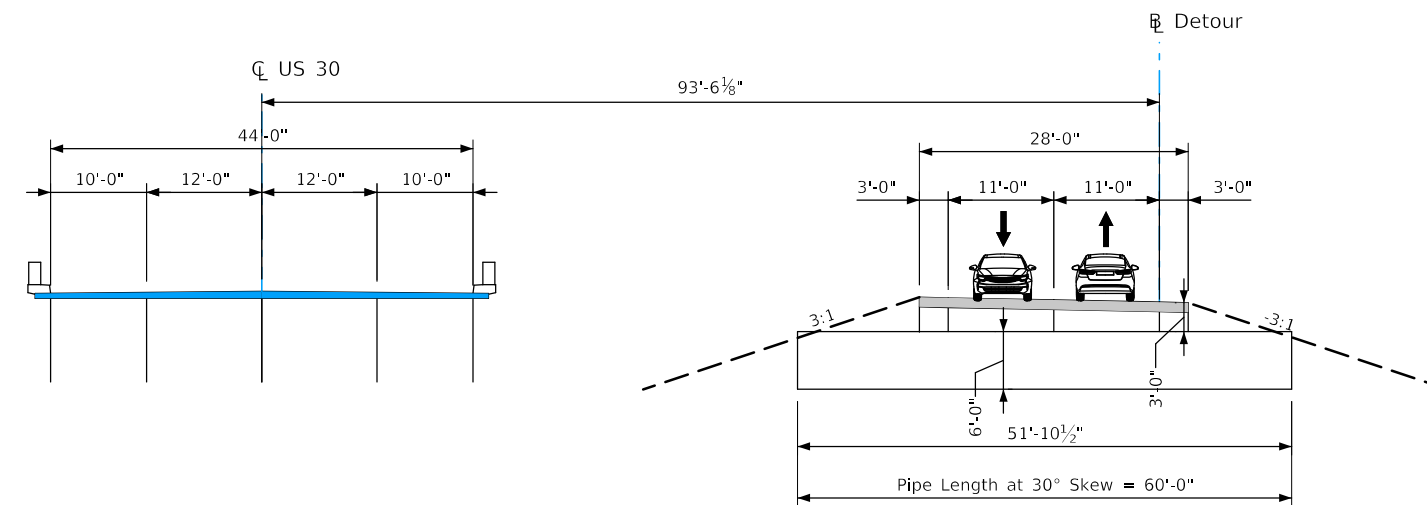
(COVERS SHEET SERIES J)



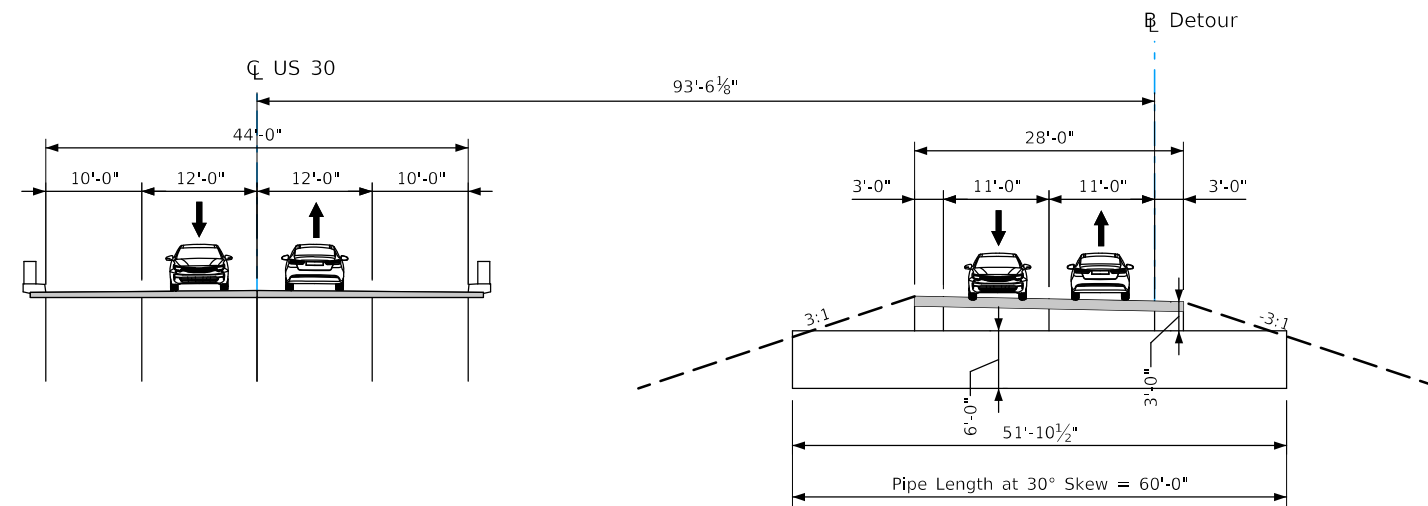
US 30
Existing Condition



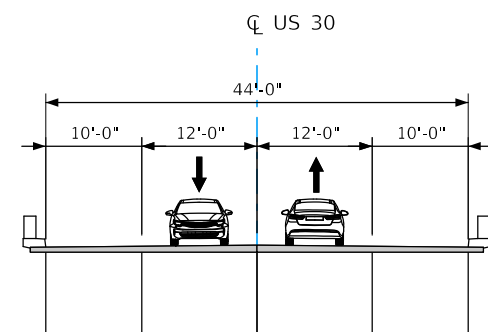
US 30
Stage 1
Construction of Detour Pavement



US 30
Stage 2
Traffic on Temporary Pavement
Removal of Existing Bridge and Construction of New Bridge



US 30
 Stage 3
 Traffic on Inside Lanes
 Removal of Detour Pavement



US 30
 Final



END
ROAD WORK

G20-2A
48" x 24"

ROAD
WORK
AHEAD

W20-1
48" x 48"

ONE LANE
ROAD
AHEAD

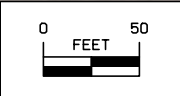
W20-4
48" x 48"



W20-7A
48" x 48"

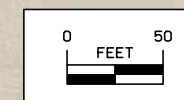
30 US 30

Traffic Control Layout
Stage 1A



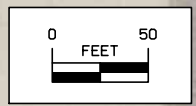


Traffic Control Layout
Stage 1A



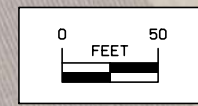


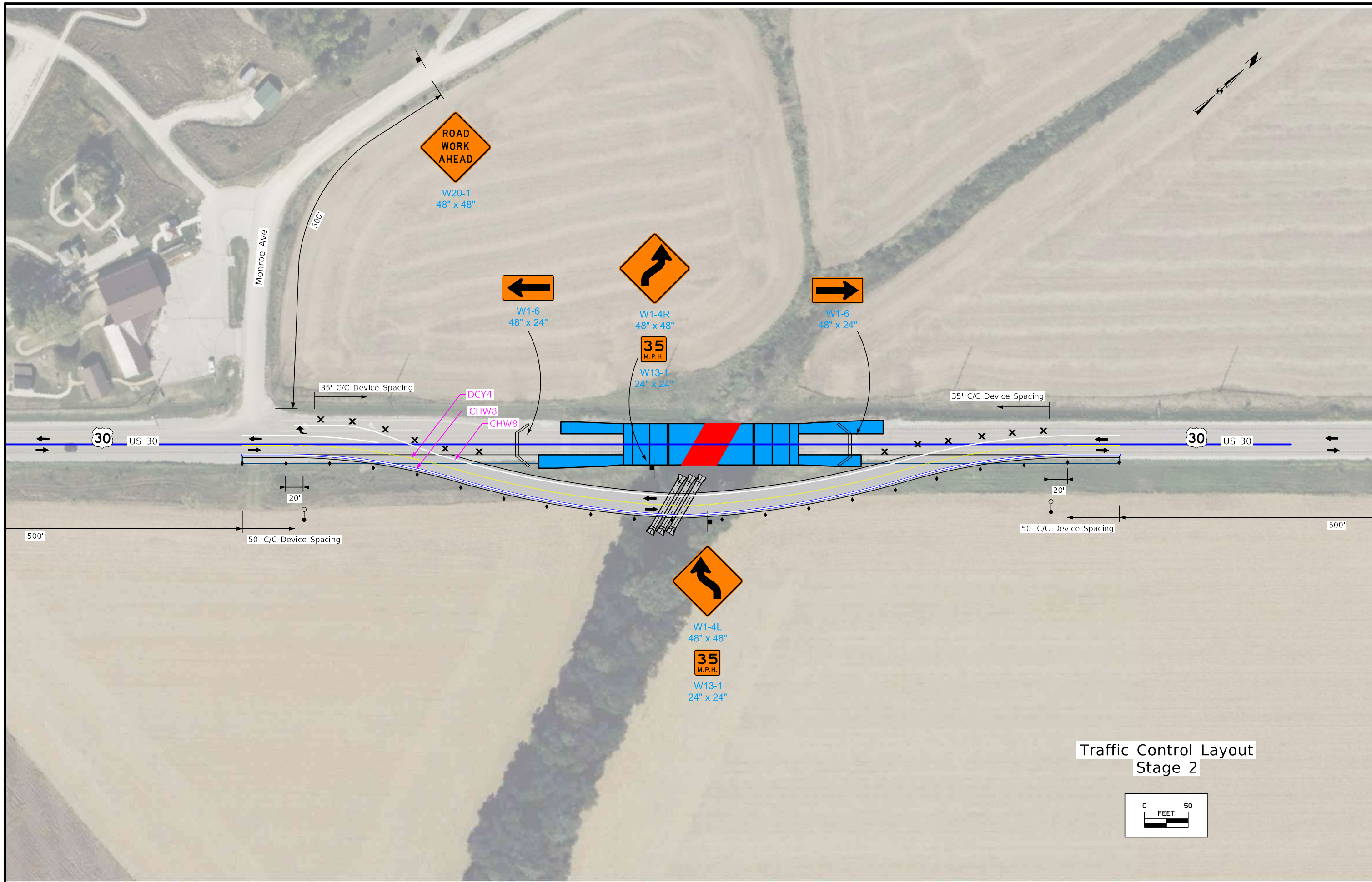
Traffic Control Layout
Stage 1B



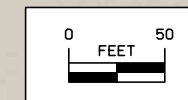


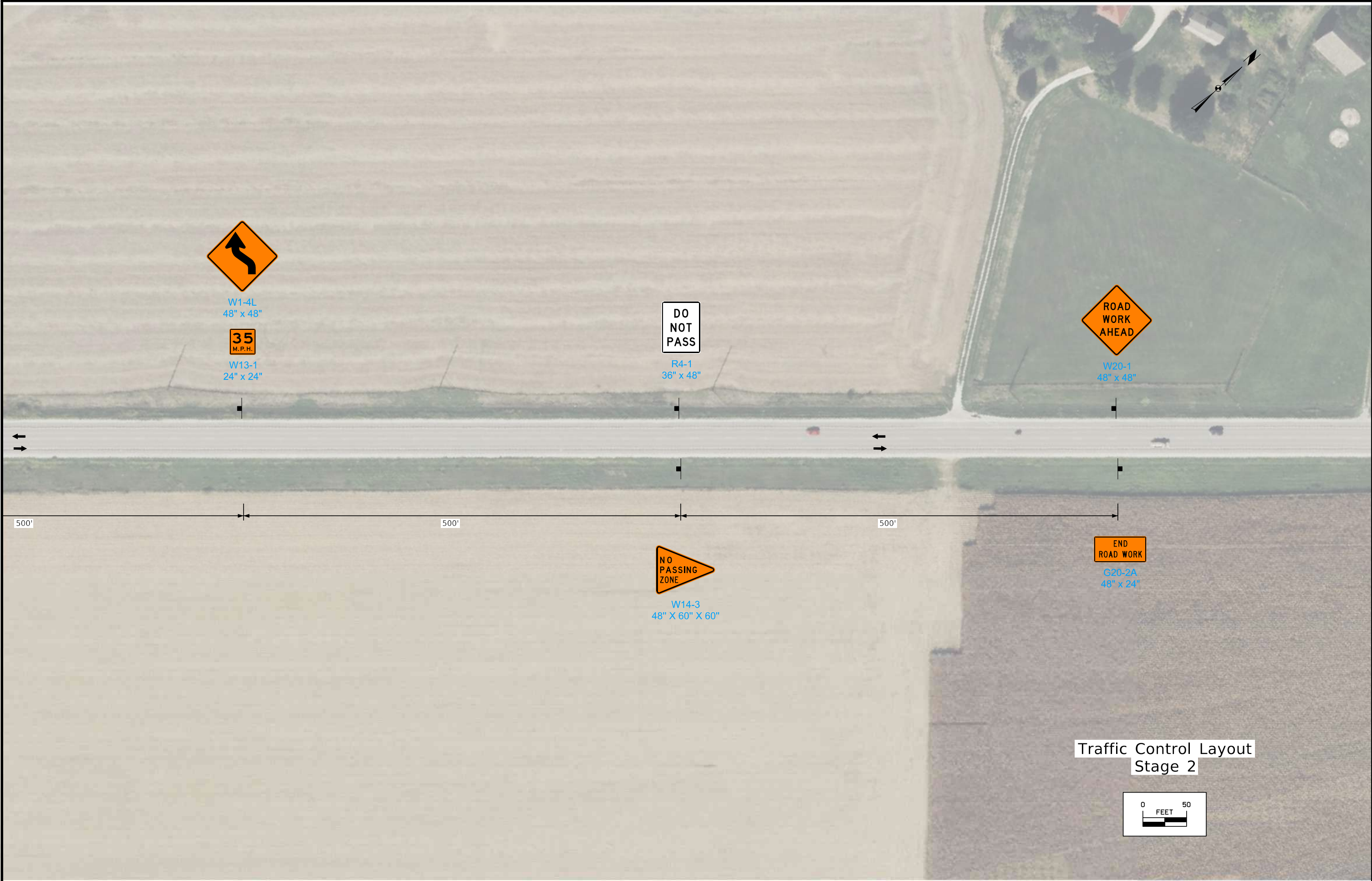
Traffic Control Layout
Stage 2



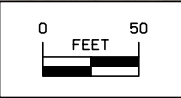


Traffic Control Layout
Stage 2



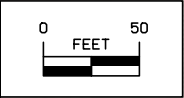


Traffic Control Layout
Stage 2





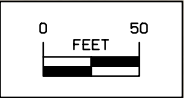
Traffic Control Layout
Stage 3A



Place Signs along Monroe Ave in accordance with TC-213.



Traffic Control Layout
Stage 3A





W20-7A
48" x 48"



W20-4
48" x 48"



W20-1
48" x 48"



G20-2A
48" x 24"

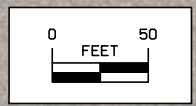
30 US 30

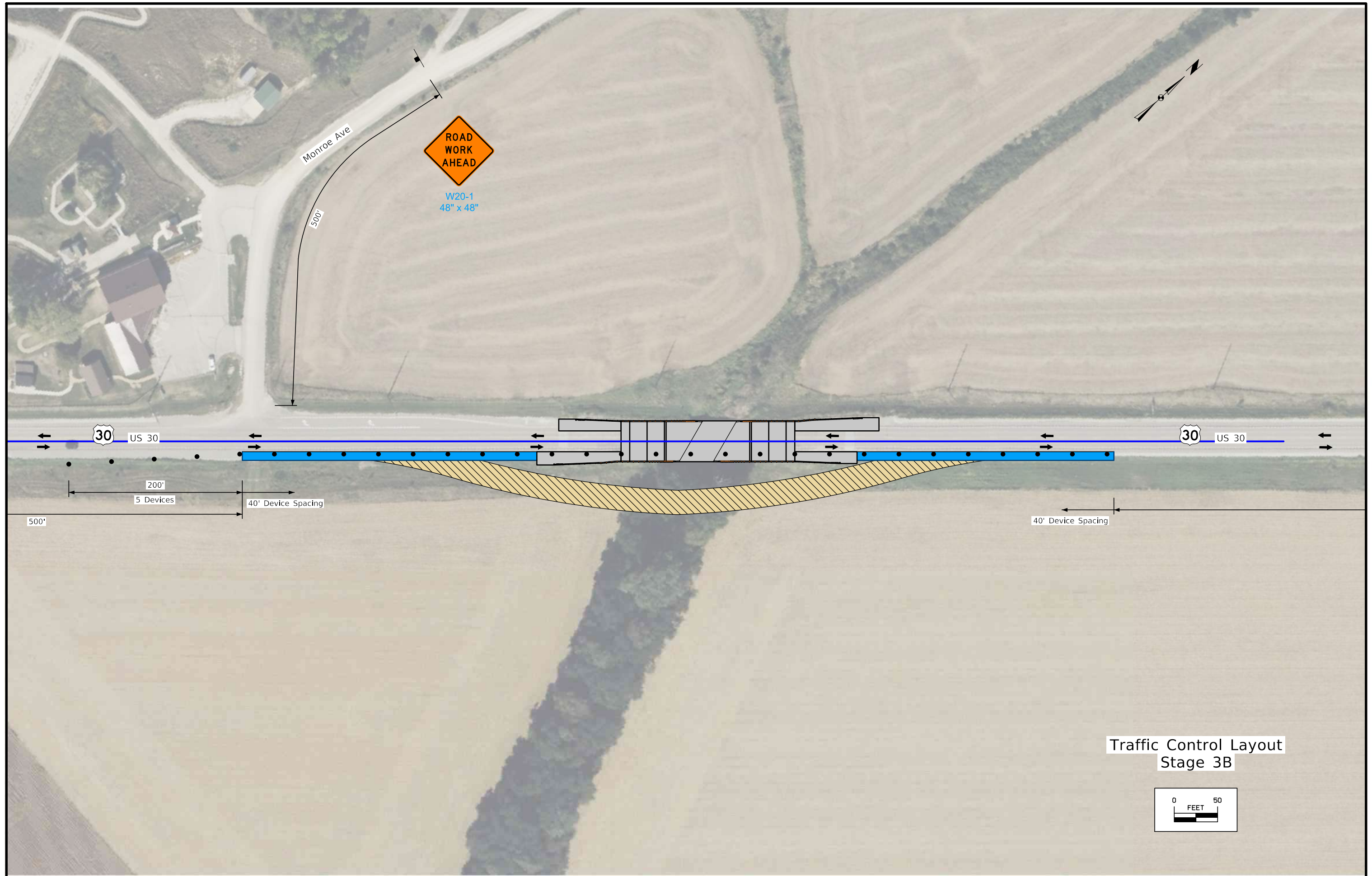
500' - 1500'

500'

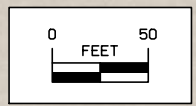
500'

Traffic Control Layout
Stage 3A



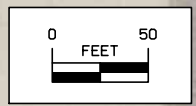


Traffic Control Layout
Stage 3B





Traffic Control Layout
Stage 3B

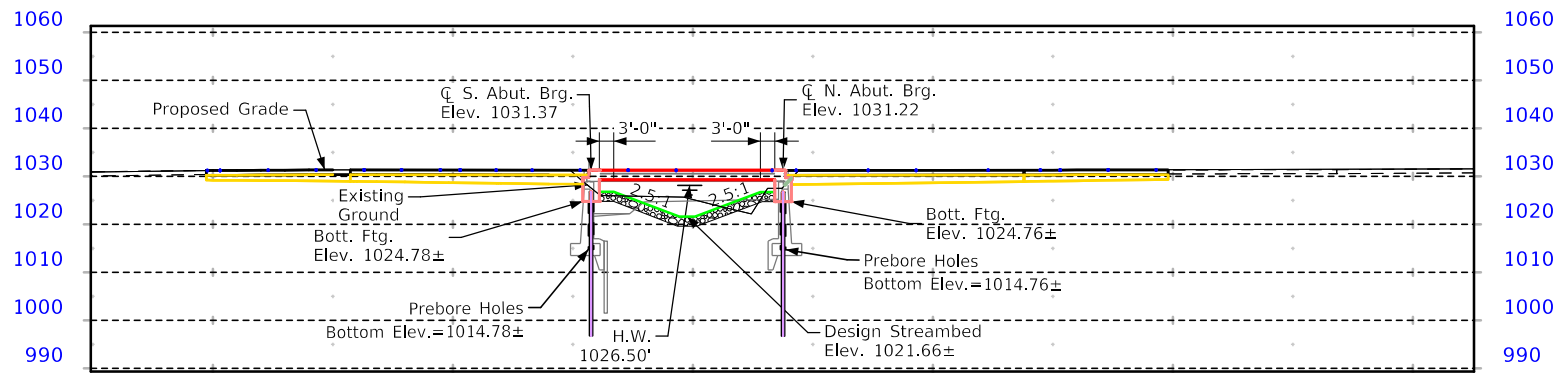


The temporary run around shall be monitored for the duration that it is under traffic. When the construction of the run around is installed, the contractor shall notify the Preliminary Design Unit Leader at 515-233-7949 so a Flood Management Plan can be developed in advance of the temporary run being put into service. Upon notification, the DOT will add the site to the Bridge Watch Management Plan for monitoring.

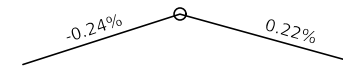
Location

US 30
0.8 mi East of CR F58
T-78N R-44W
Section 1
St. Johns Township
Harrison County
FHWA No. 27410
Bridge Maint. No. 4314.15030
Asset ID No.

Latitude 41.584659°
Longitude -95.845168°



Control Point: 1496
Northing: 7086342.16
Easting: 16469376.68
Elev.: 1030.00



VPI Sta. = 157+98.40
VPI Elev. = 1031.21
VC = 125

**Proposed Profile
Grade US 30**

BRG TSL Longitudinal Section Along Centerline Approach Roadway

Hydraulic Data

RIDB: Not Applicable
Drainage Area = 2.15 Sq. Mi.
Stream Slope (HGL) = 35.4 Ft./Mi.
Avg. Low Water Stage = Dry

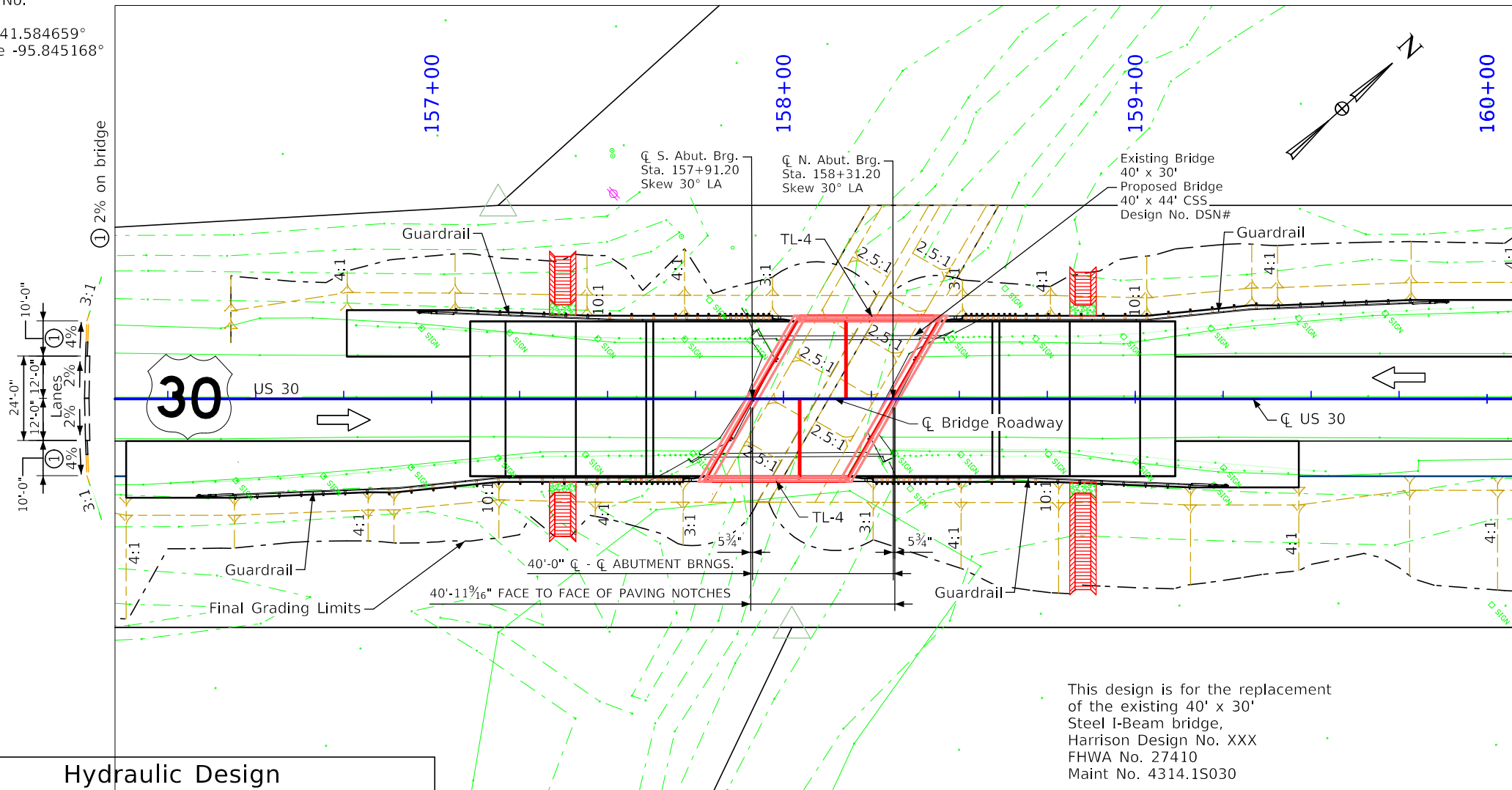
Q₅₀ = 2,374 cfs
Stage = 1026.50
Regulatory Low Beam = 1028.86
Avg. Bridge Velocity = 14.4 fps

Q₁₀₀ = 2,976 cfs
Stage = 1026.5
Operational Low Beam = 1028.78
Backwater = 0.0 Ft.
Avg. Bridge Velocity = 16.6 fps

Calculated Design Scour = 1017.59

Q₅₀₀ = 4,320 cfs
Stage = 1026.5
Avg. Bridge Velocity = 20.8 fps
Calculated Check Scour = 1015.39

Roadway Overtop 1026.0
Sta. 163+84.2



Hydraulic Design

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

Signature: *Jonathan E. Peterson* Date: 01-18-2024
Printed or Typed Name: Jonathan E. Peterson
My license renewal date is December 31, 2024



Pages or sheets covered by this seal: V.1-V.3

Traffic Estimate

2026 AADT	7400 V.P.D.
2046 AADT	9300 V.P.D.
2046 DHV	960 V.P.H.
TRUCKS	17 %
Total Design ESALs	

Notes:
TL-4 Bridge Railing Proposed

Utilities Note:

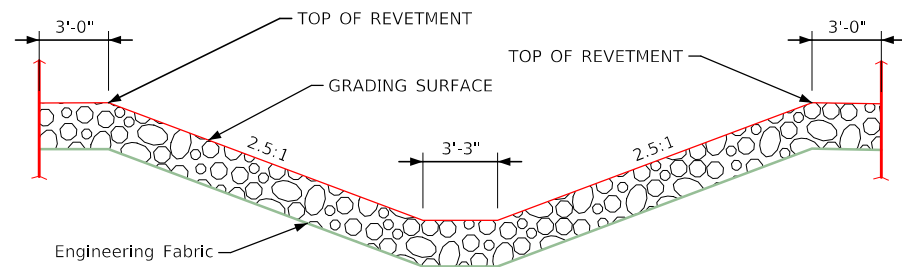
Utilities shown on this sheet are for information only. See Road Design sheets for utility information.

General Utility Symbols:

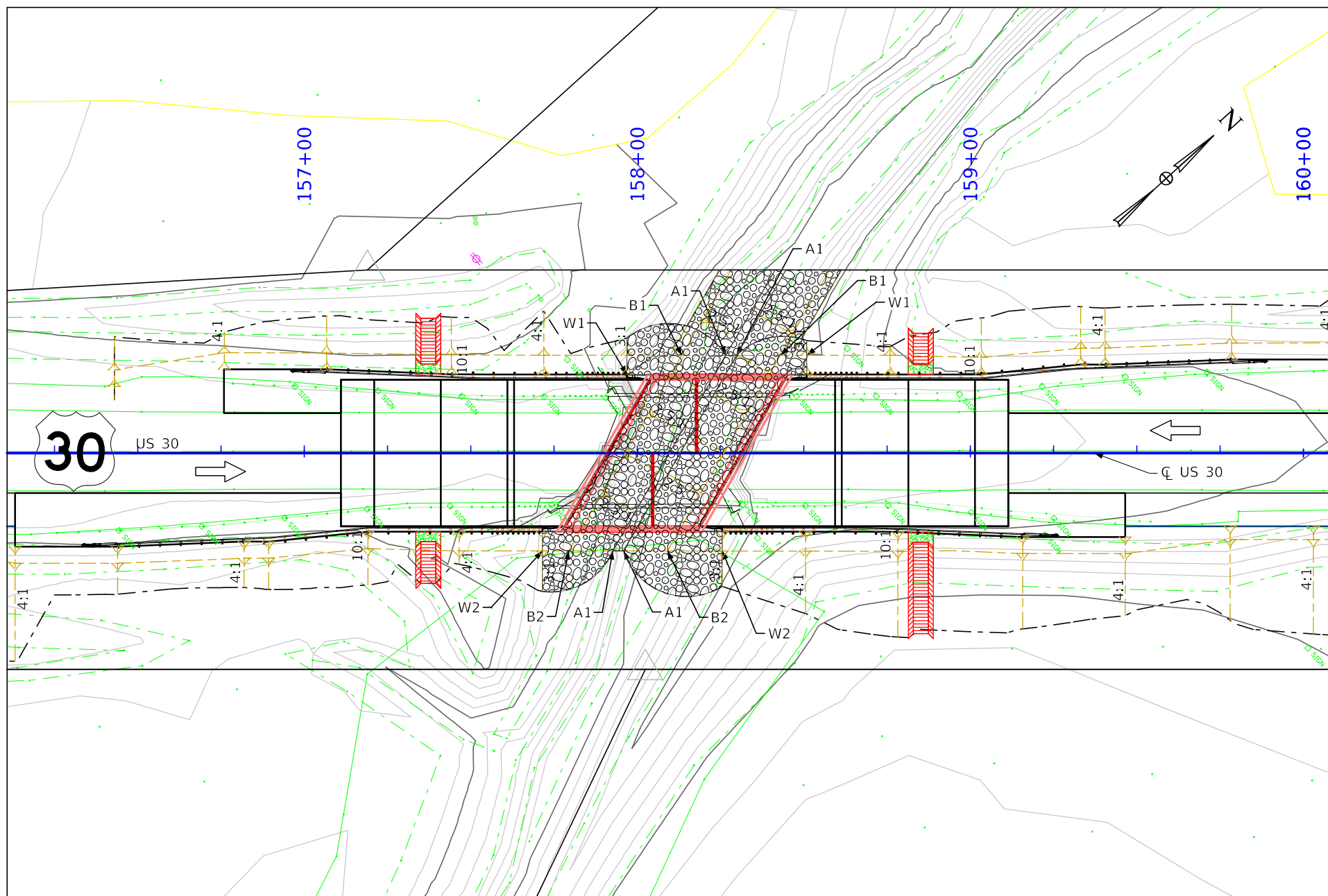
- E - Electric Line
- G - Gas Line
- SAN. - Sanitary Sewer
- T - Telephone Line
- W - Water Line
- FO - Fiber Optic Line
- GHP - Gas High Pressure
- ST S - Storm Sewer
- TV - TV
- ⊕ - Power Poles

Situation Plan

Design For 30 Degree LA
**40' x 44' Non-Standard
Single-Span Slab Span Bridge**
40'-0" End Spans 40'-0" Interior Span
Situation Plan
STA. 158+11.20 (US 30) Turn-In Date:
HARRISON County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. DSN # Design Sheet No. 1 of 2 FHWA No. 27410



SECTION THU EMBEDDED REVETMENT BERM



Site Plan

Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	158+26.54	29.33' LT	1021.66	158+29.76	29.33' LT	1021.66
A2	157+92.61	29.38' RT	1021.66	157+95.87	29.38' RT	1021.66
B1	158+13.32	29.33' LT	1026.78	158+42.95	29.33' LT	1026.78
B2	157+79.45	29.38' RT	1026.78	158+09.03	29.38' RT	1026.78
W1	157+96.91	29.33' LT	1030.64	158+50.90	29.33' LT	1030.64
W2	157+71.50	29.38' RT	1030.64	158+25.50	29.38' RT	1030.64

Berm slope elevations reflect the grading surface.

Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - South Abutment	218.0	0	230.6	153.8
Berm Lining - North Abutment	219.0	0	231.8	154.5
Totals	437.0	0	462.4	308.3

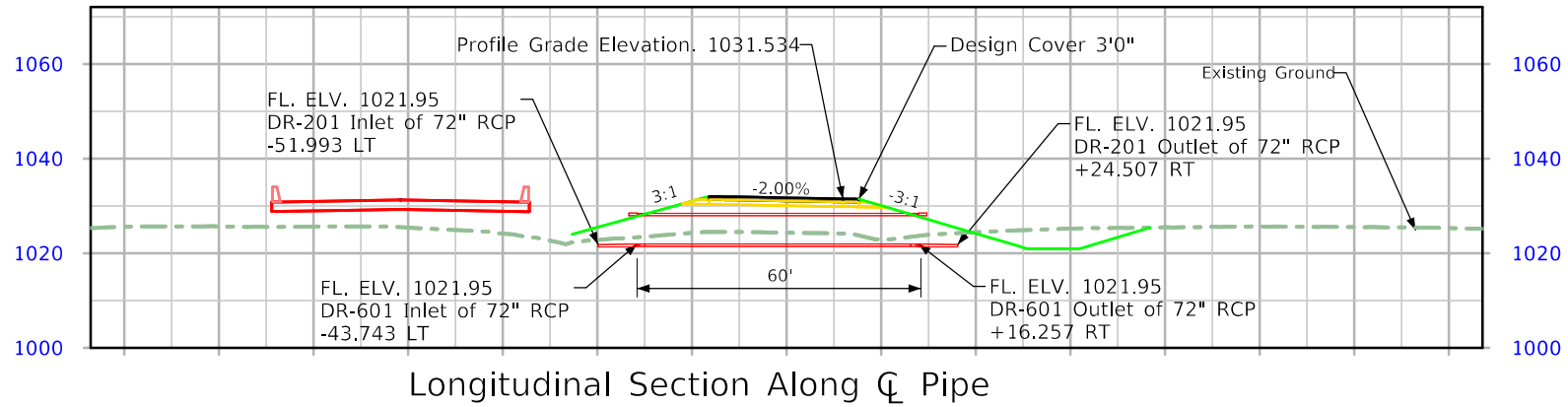
Bridge Coordinates

Location	CL S. Abut. Brg.	CL N. Abut. Brg.
West Slab Edge	X=16469403.977 Y=7086343.452	X=16469430.799 Y=7086373.127
CL US 30	X=16469412.342 Y=7086317.537	X=16469439.178 Y=7086347.226
East Slab Edge	X=16469420.705 Y=7086291.613	X=16469447.530 Y=7086321.297

NOTE: AN ELECTRONIC FILE CONTAINING THE BRIDGE COORDINATE DATA IS AVAILABLE AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY THESE COORDINATES WITH THE PROJECT HORIZONTAL CONTROL INFORMATION IN THE ROAD PLANS.

Note:
Bridge berm revetment extended upstream to the ROW line to prevent future streambed erosion.

Design For 30 Degree LA
**40' x 44' Non-Standard
 Single-Span Slab Span Bridge**
 Bridge Preliminary Grading Plan
 STA. 158+11.20 (US 30) Turn-in Date:
HARRISON County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. DSN # Design Sheet No. 2 of 2 FHWA/Asset 27410



Control Point: 1496
 Northing: 7086342.16
 Easting: 16469376.68
 Elev.: 1030.00

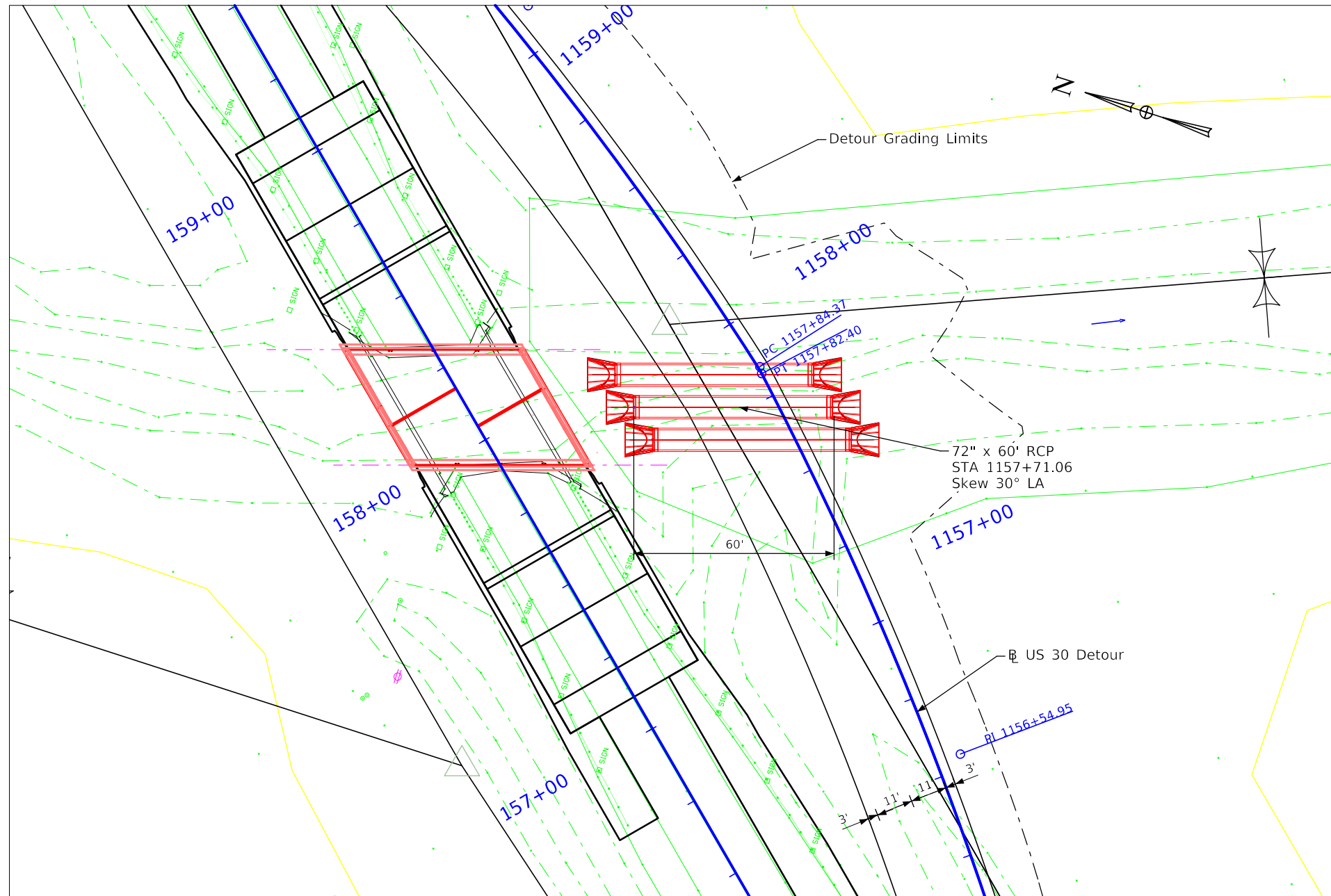
Location

US 30 Detour
 0.8 mi East of CR F58
 T-78N R-44W
 Section 1
 St. Johns Township
 Harrison County
 FHWA No. 27410
 Bridge Maint. No.

Latitude 41.584659°
 Longitude -95.845168°

Hydraulic Data

RIDB: Not Applicable
 Drainage Area = 1408 Acres
 $Q_5 = 795$ cfs
 HW Elev. = 1,020.22
 Exit Velocity = 16.77 fps
 Stream Slope = 35.4 Ft./Mi.



Sta. 1157+75.83
 3 x 72" x 60' RCP

Traffic Estimate

2026 AADT	7400 V.P.D.
2046 AADT	9300 V.P.D.
2046 DHV	960 V.P.H.
TRUCKS	17 %
Total Design ESALS	

Utilities Note:

Utilities shown on this sheet are for information only.
 See Road Design sheets for utility information.

General Utility Symbols:

E - Electric Line	FO - Fiber Optic Line
G - Gas Line	GHP - Gas High Pressure
SAN. - Sanitary Sewer	ST S - Storm Sewer
T - Telephone Line	TV - TV
W - Water Line	⊕ - Power Poles

0 20
 Scale in Feet

Design For 30 Degree LA
Reinforced Concrete Pipes
Triple 72" x 60'
 Situation Plan
 STA. 1157+75.83 (US 30 Detour) Turn-In Date:
HARRISON County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. DSN # Design Sheet No. 1 of 1 FHWA/Asset 27410

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
(0)	Shoulder	(3)	Waste
Existing			
(0)	Existing Pavement		

NOTES:

Text

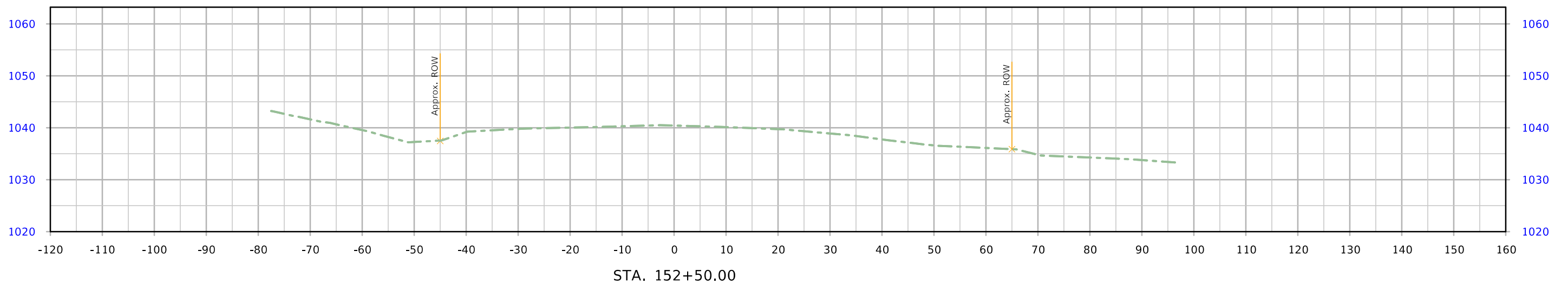
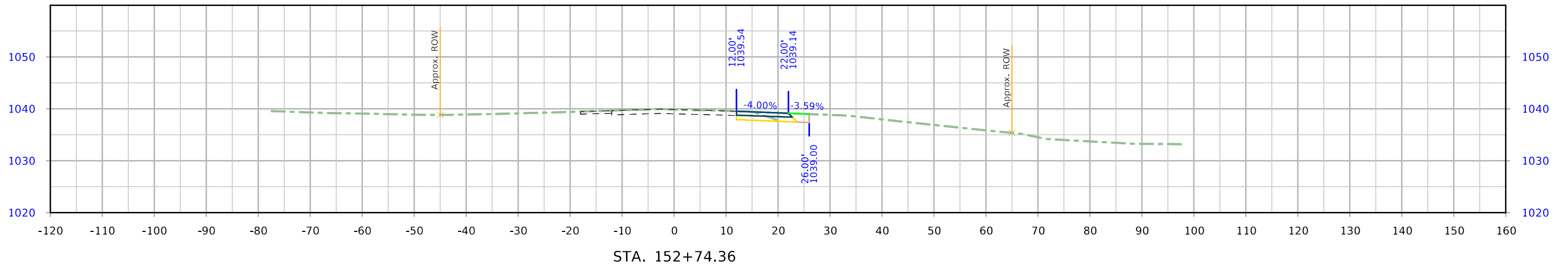
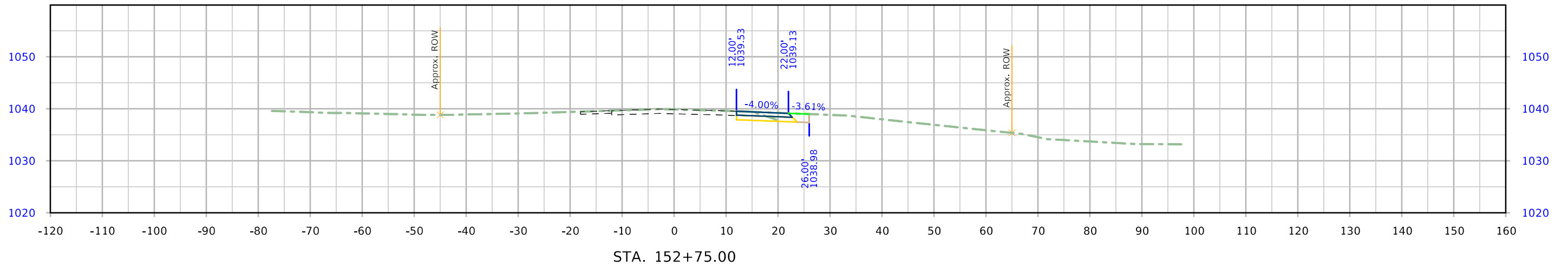
NOTES:

Text

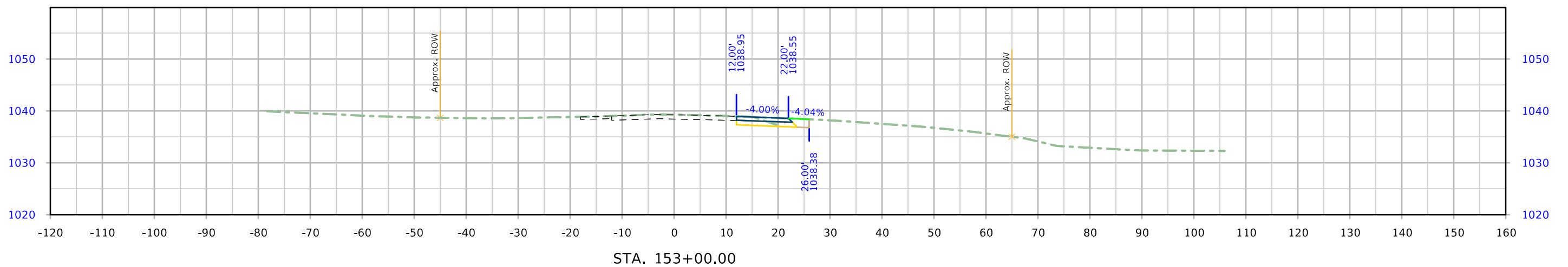
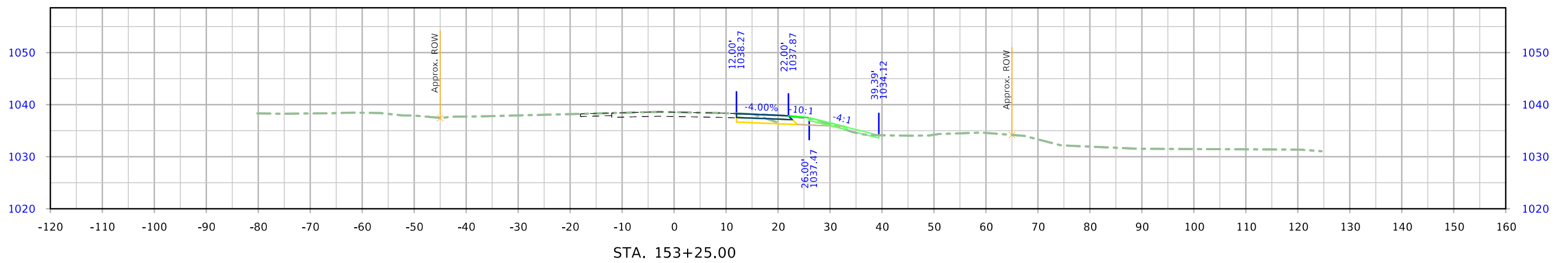
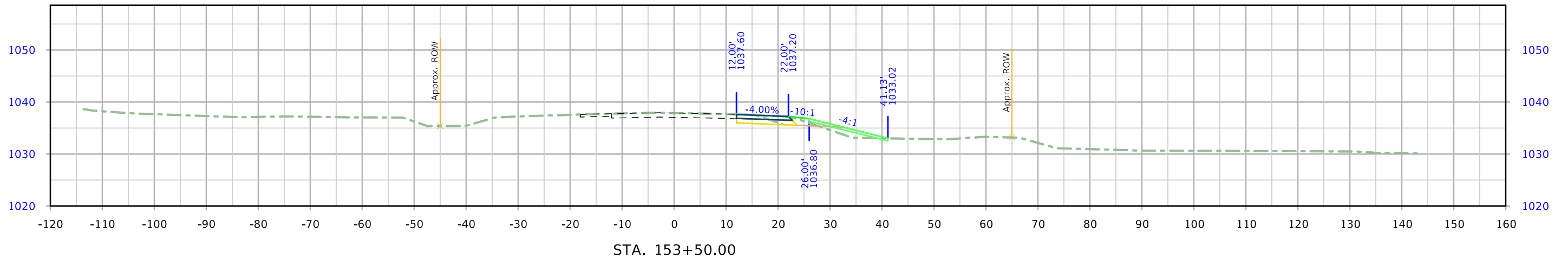
CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

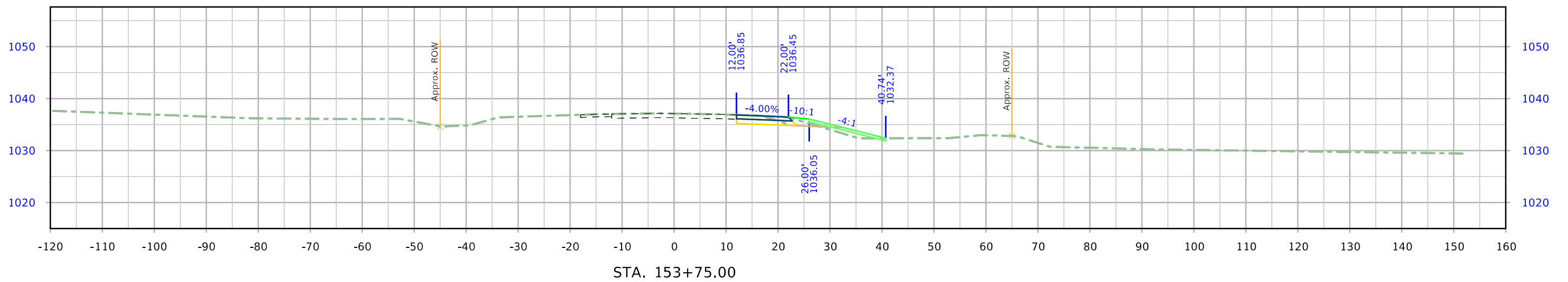
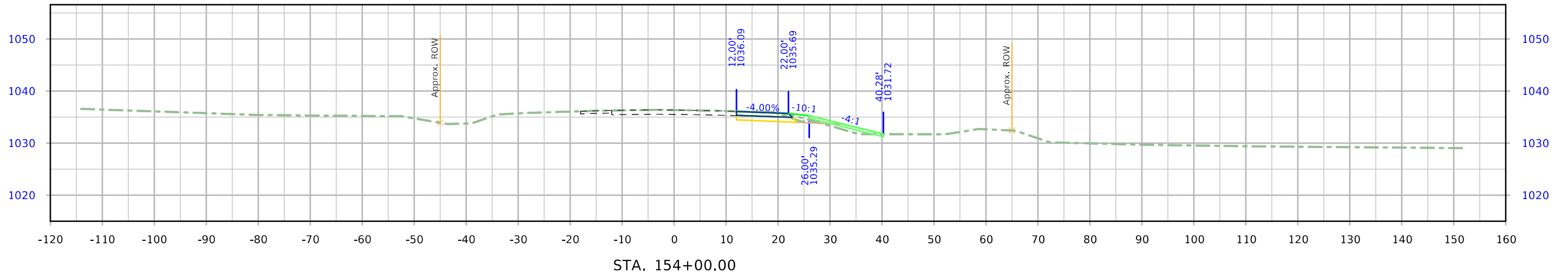
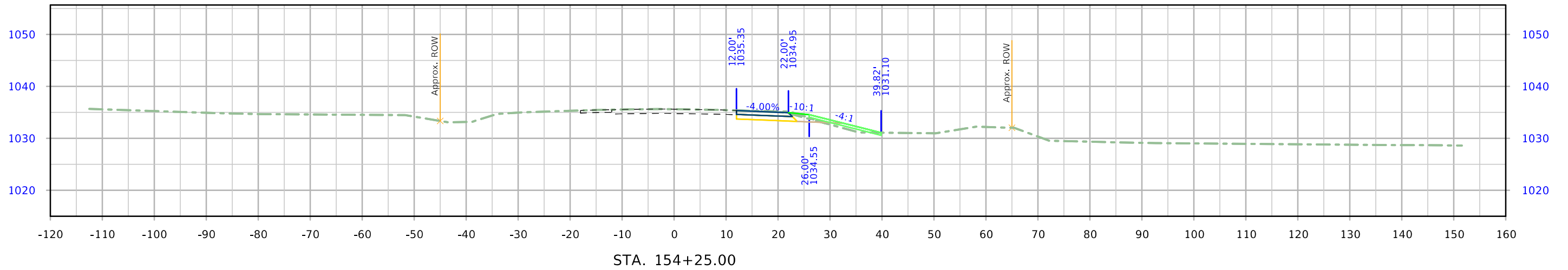
Preliminary ML - US 30



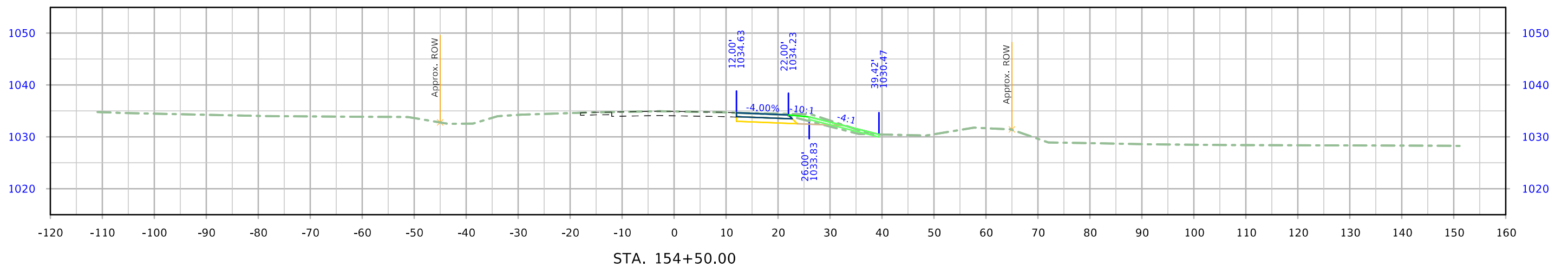
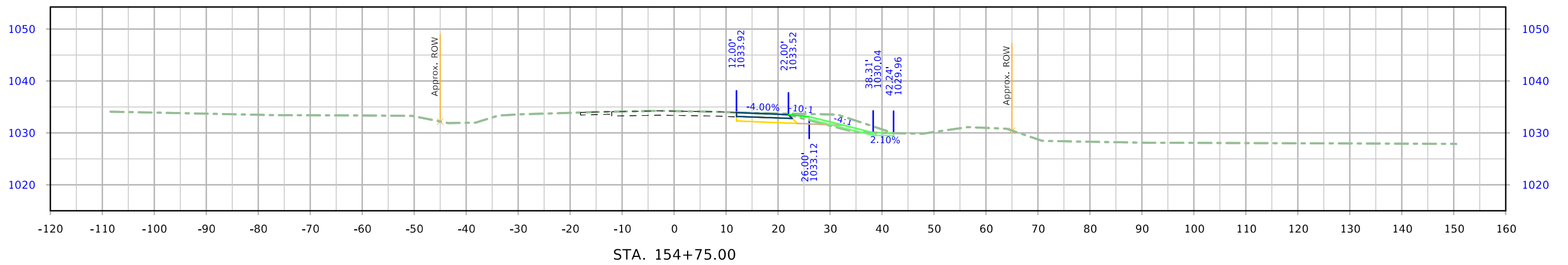
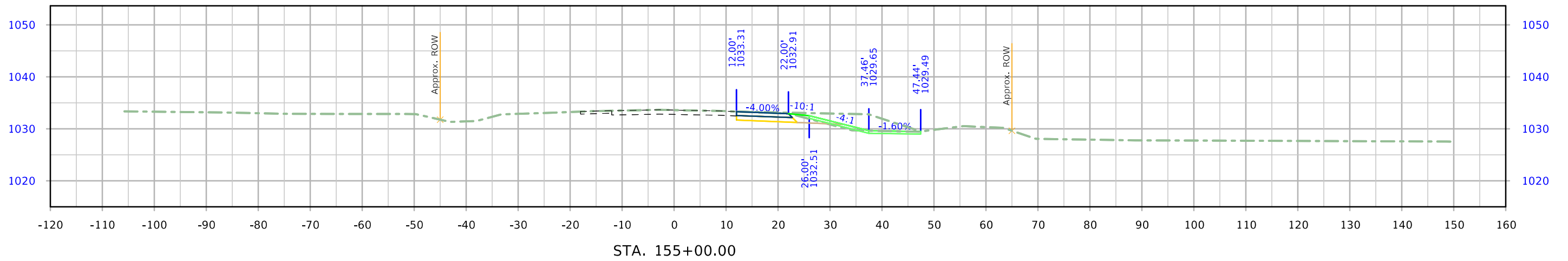
Preliminary ML - US 30



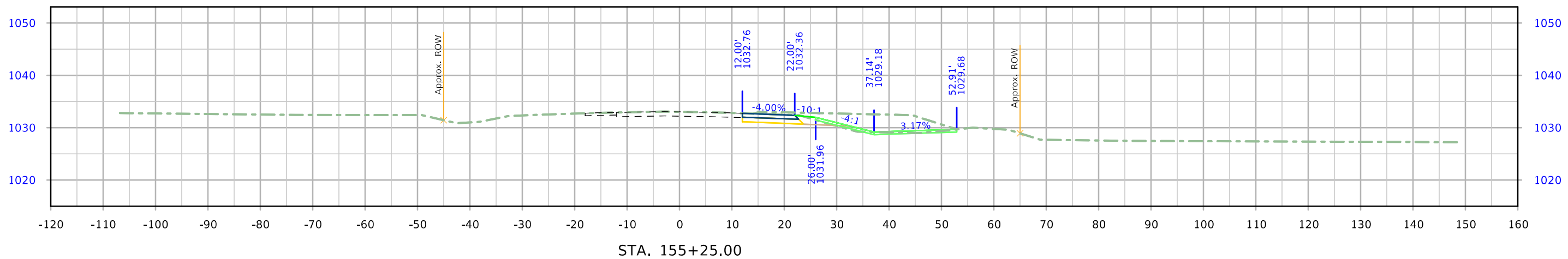
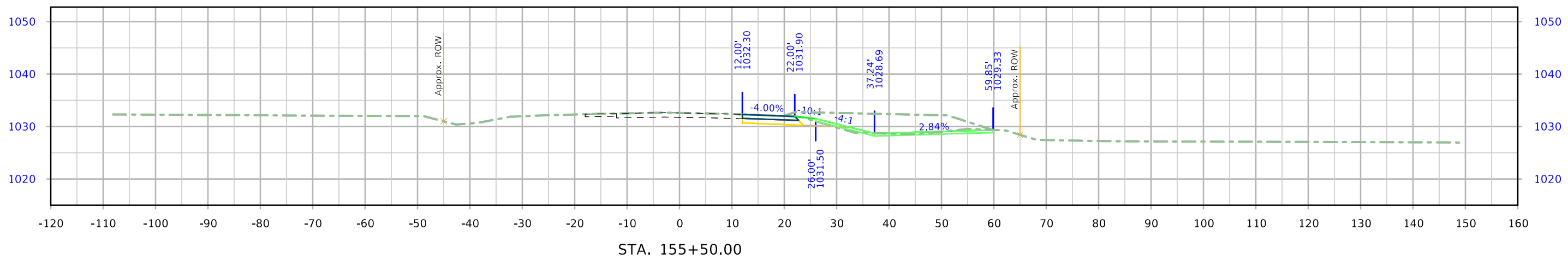
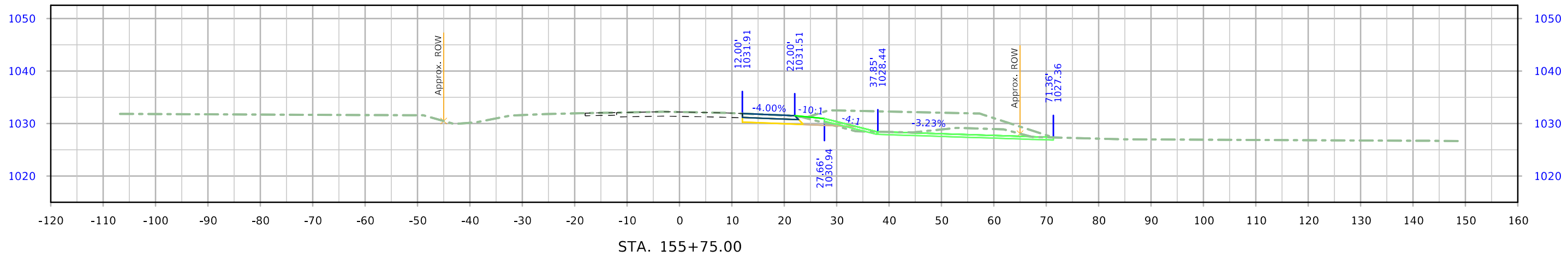
Preliminary ML - US 30



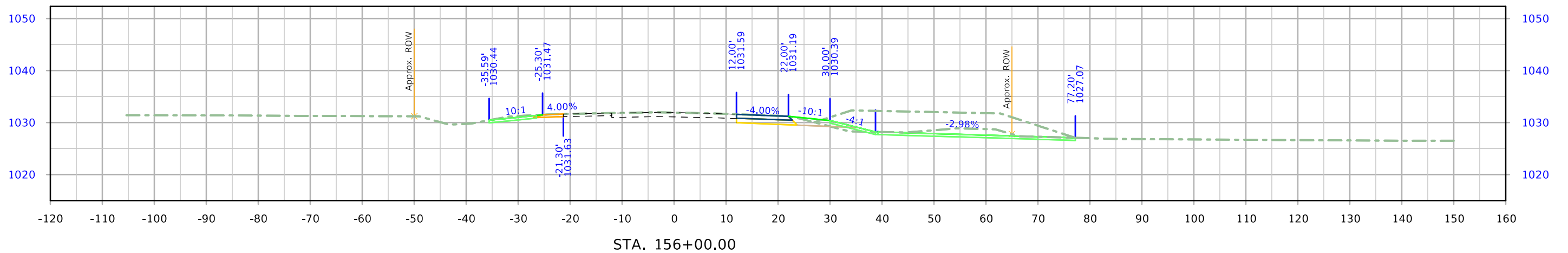
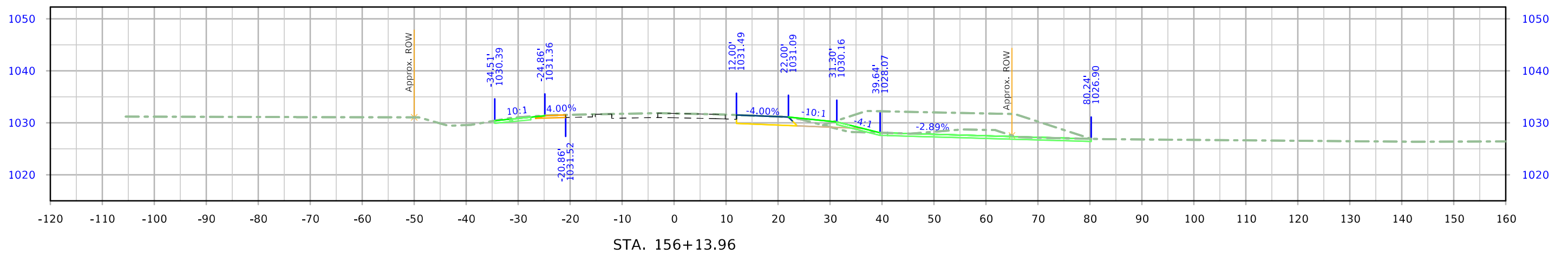
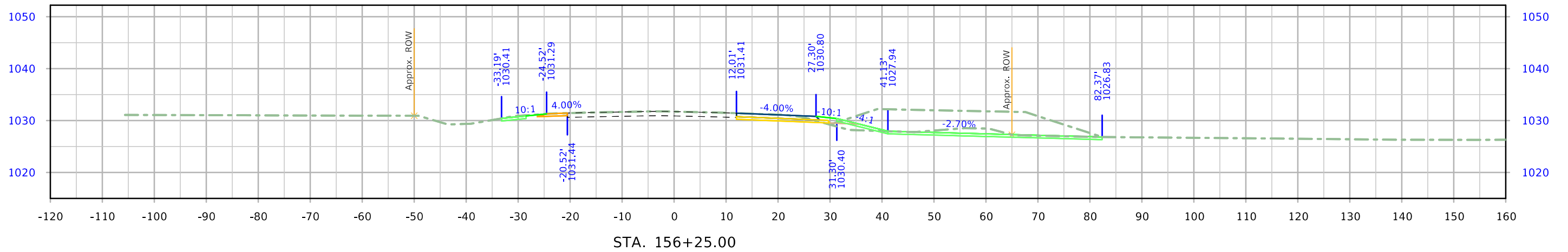
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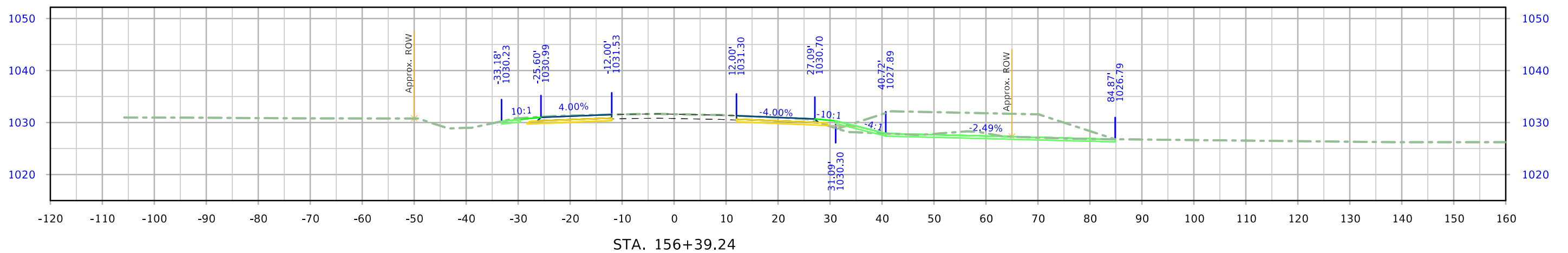
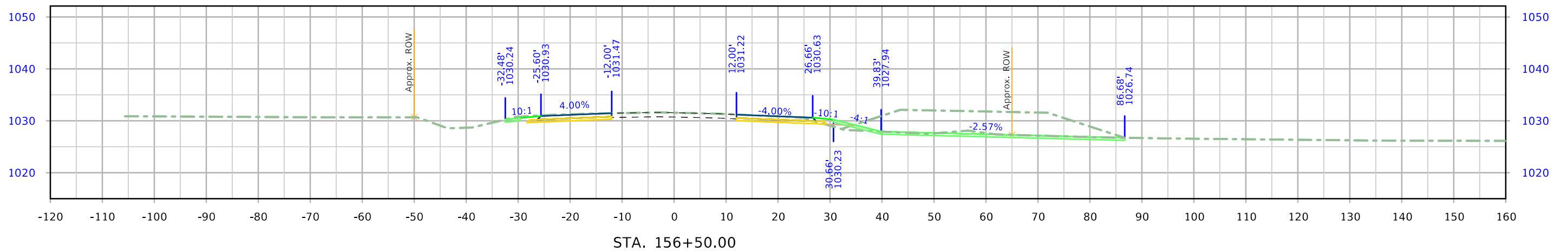
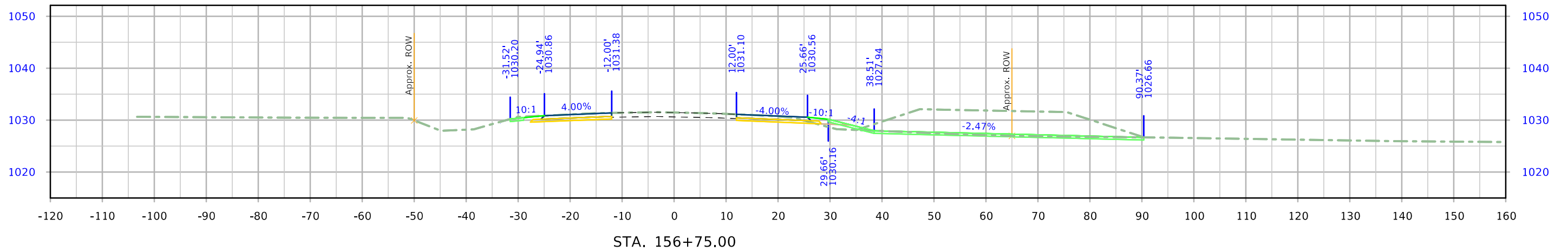
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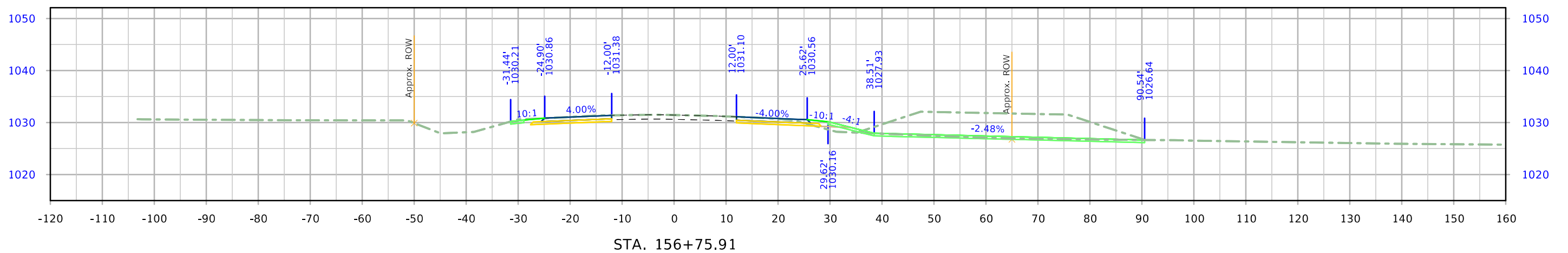
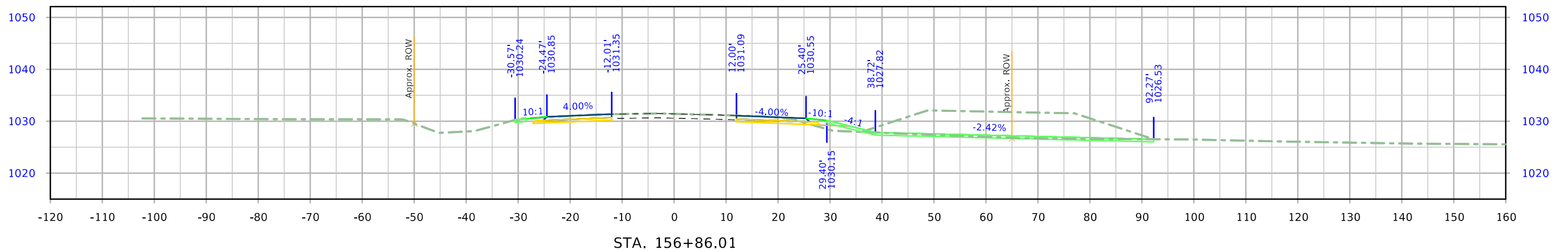
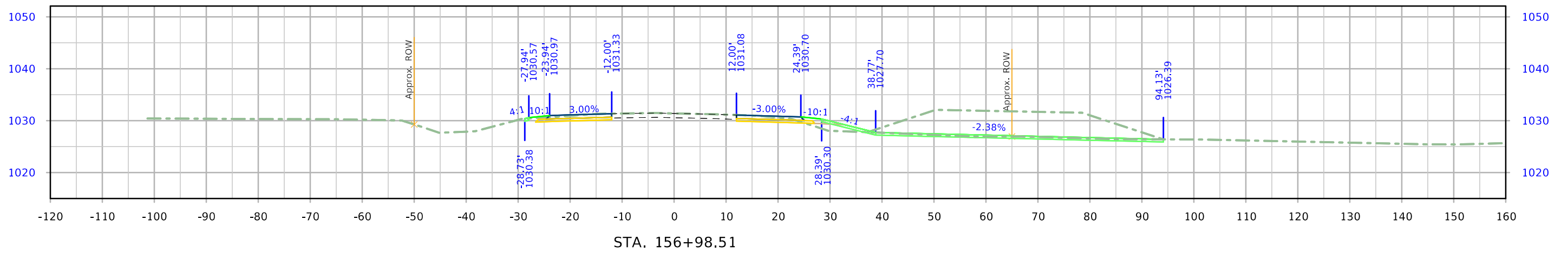
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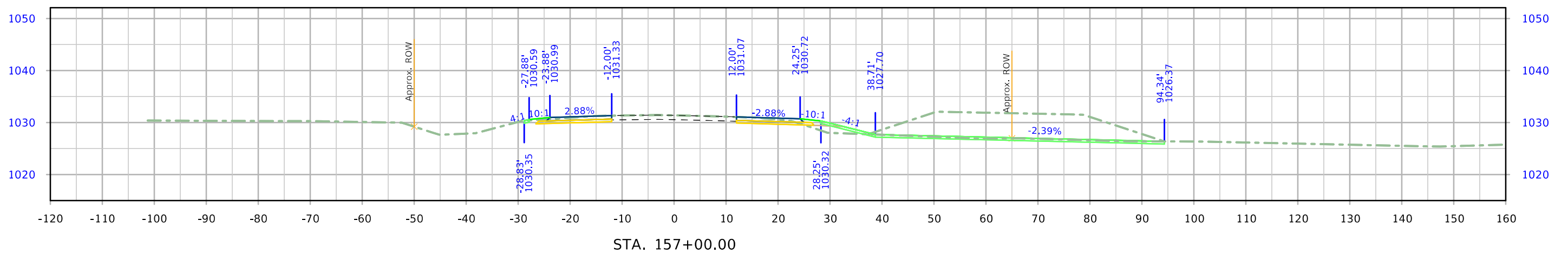
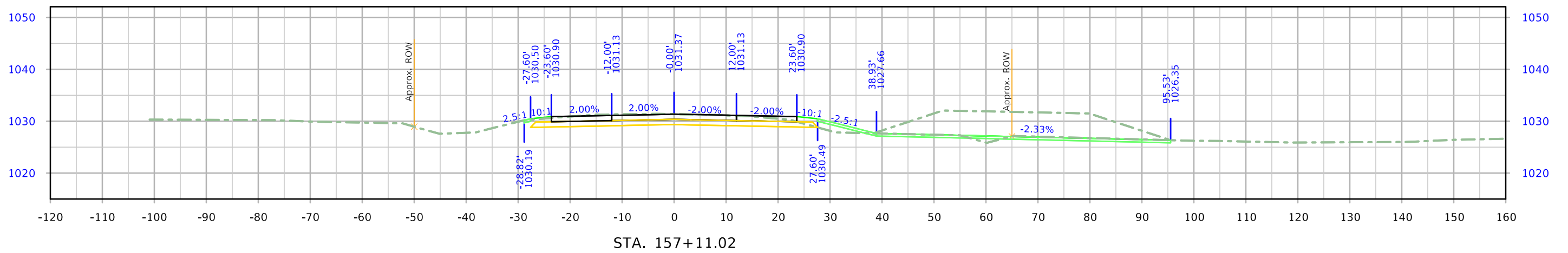
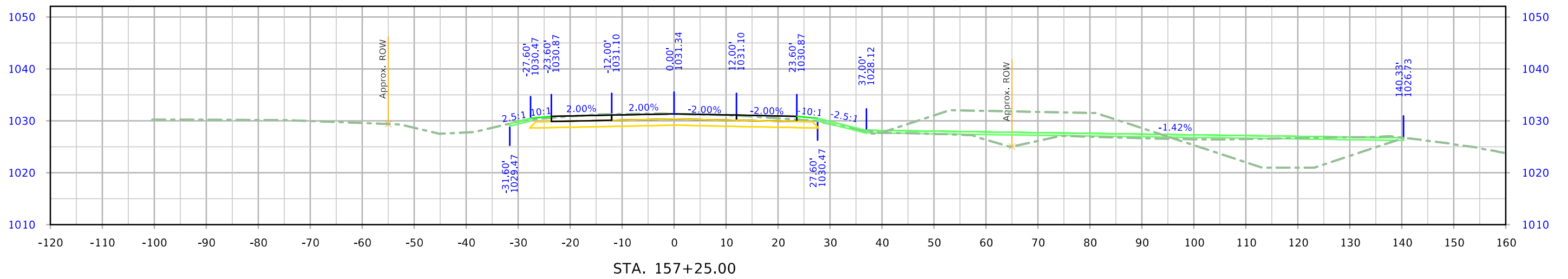
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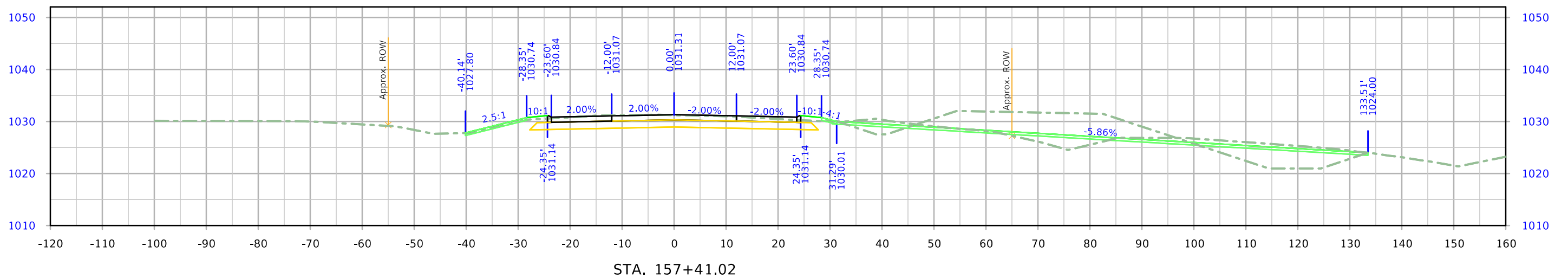
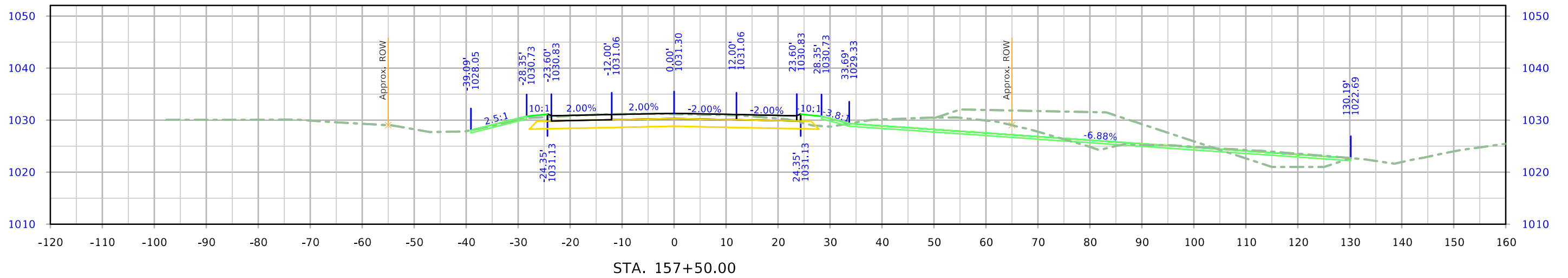
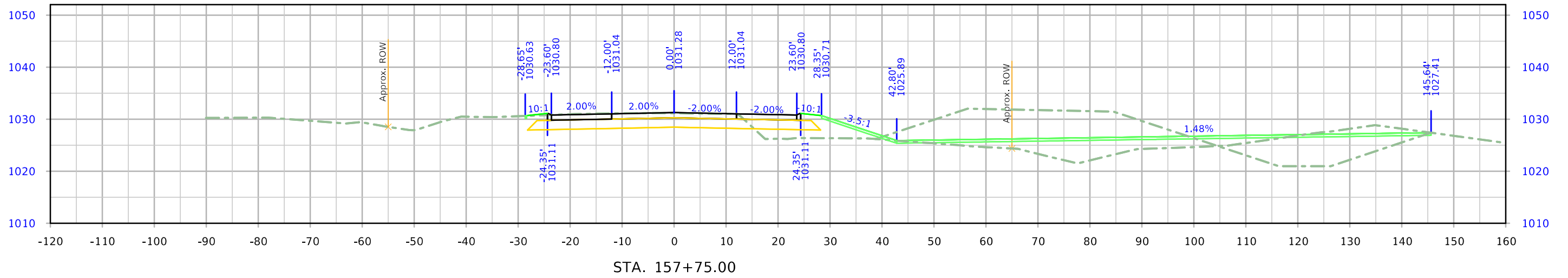
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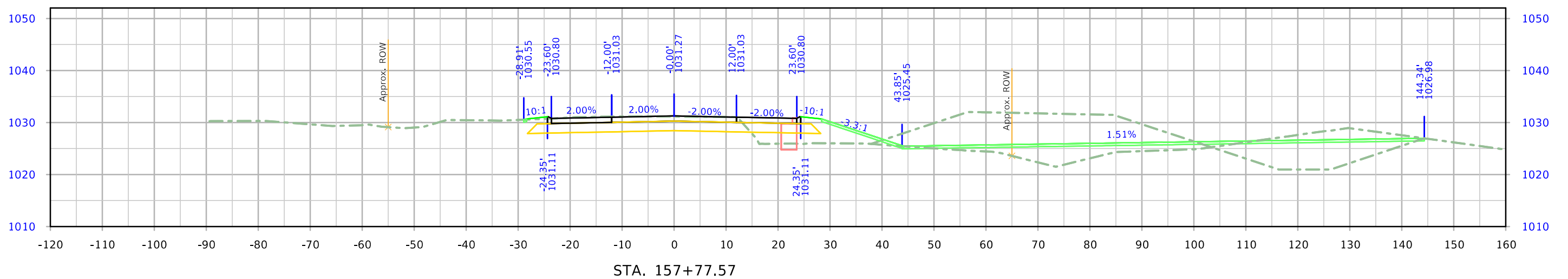
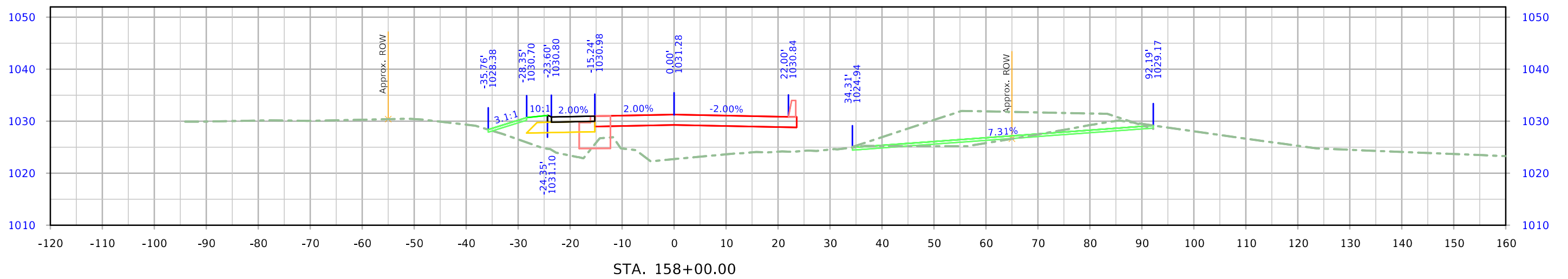
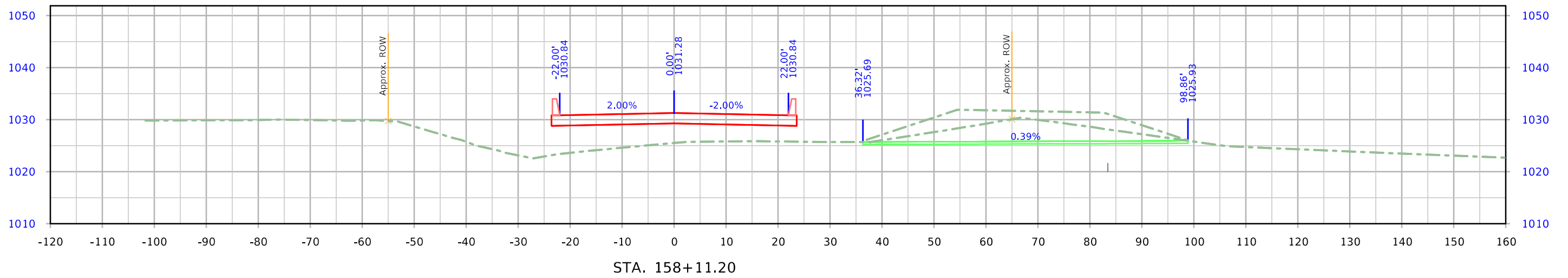
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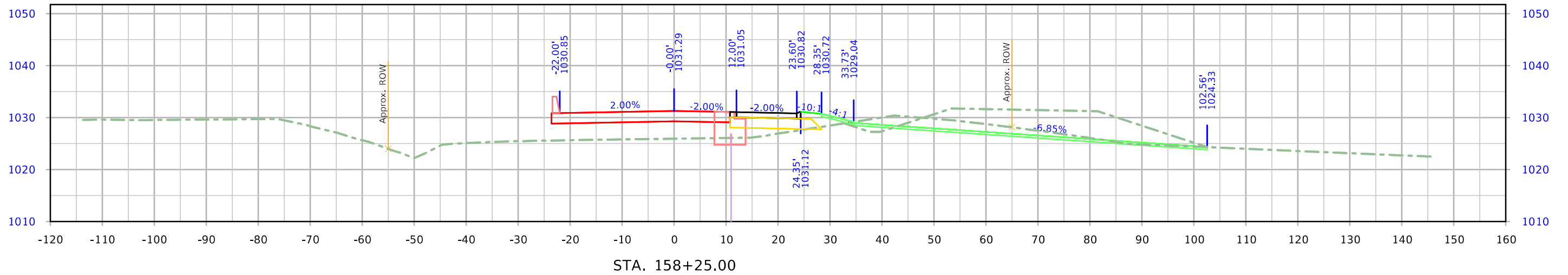
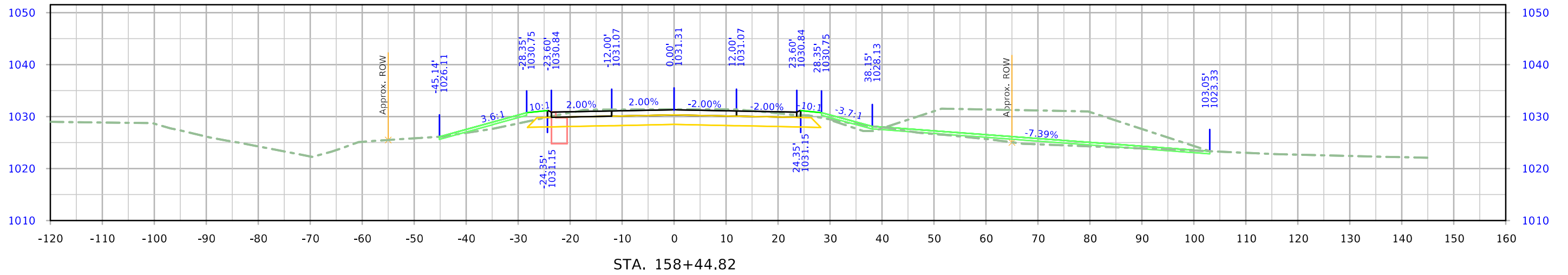
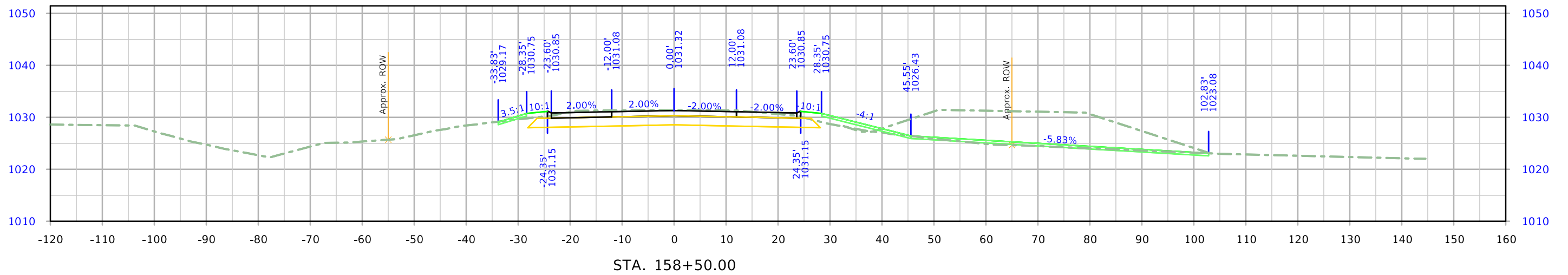
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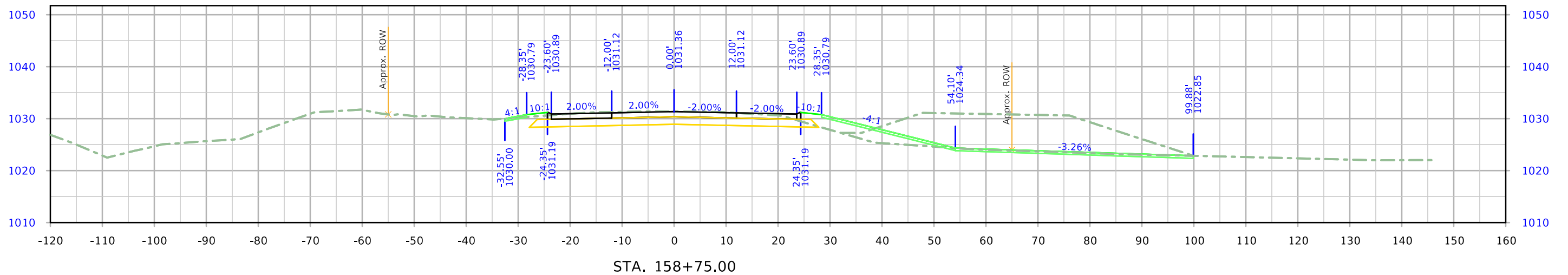
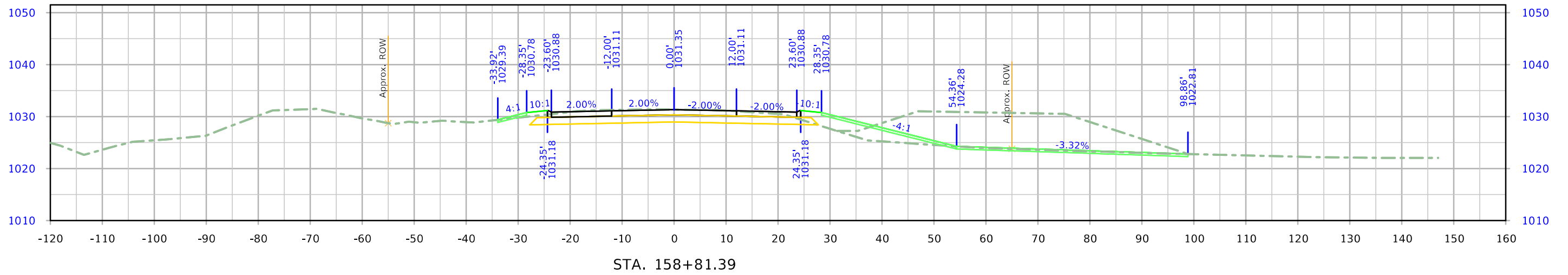
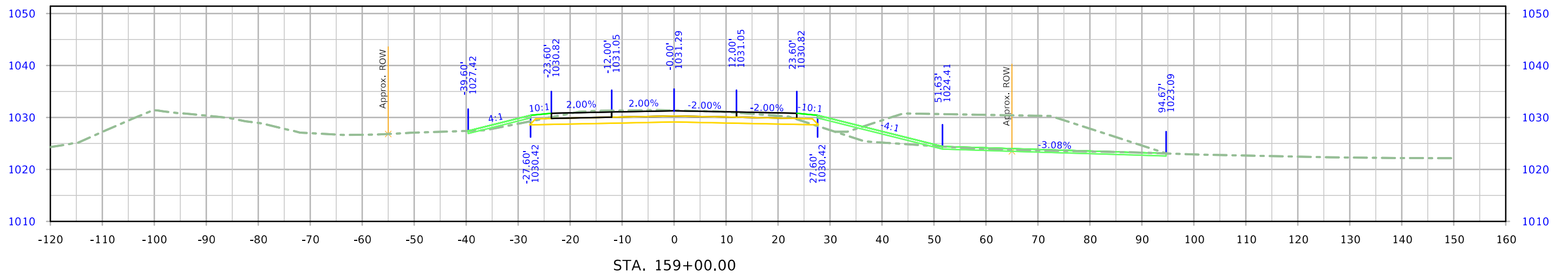
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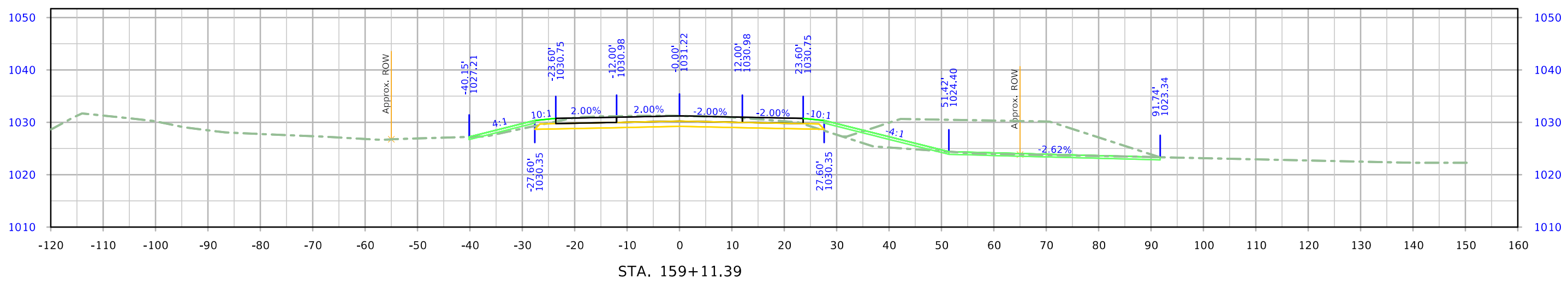
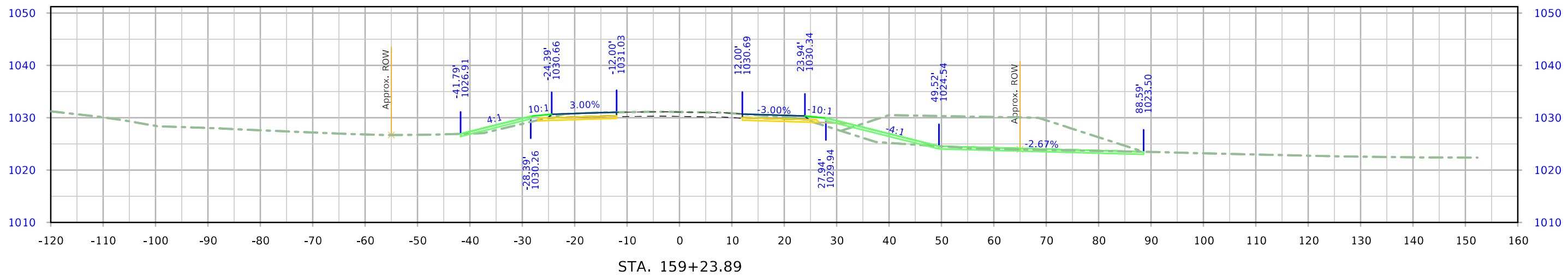
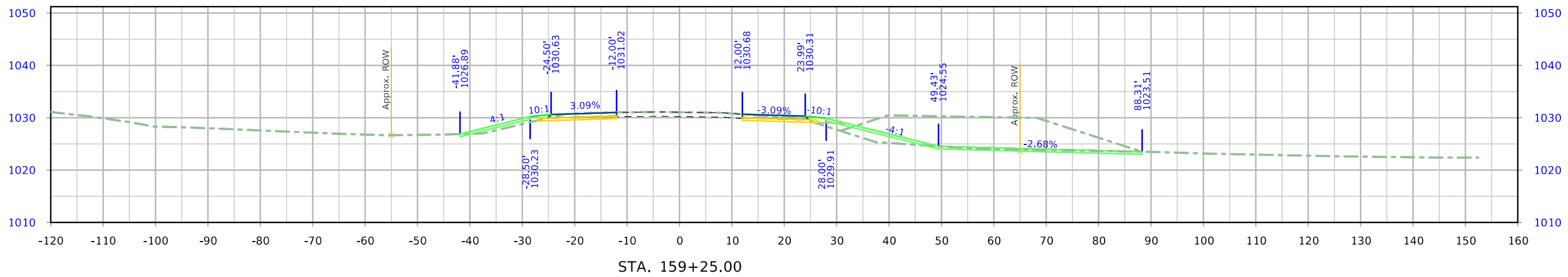
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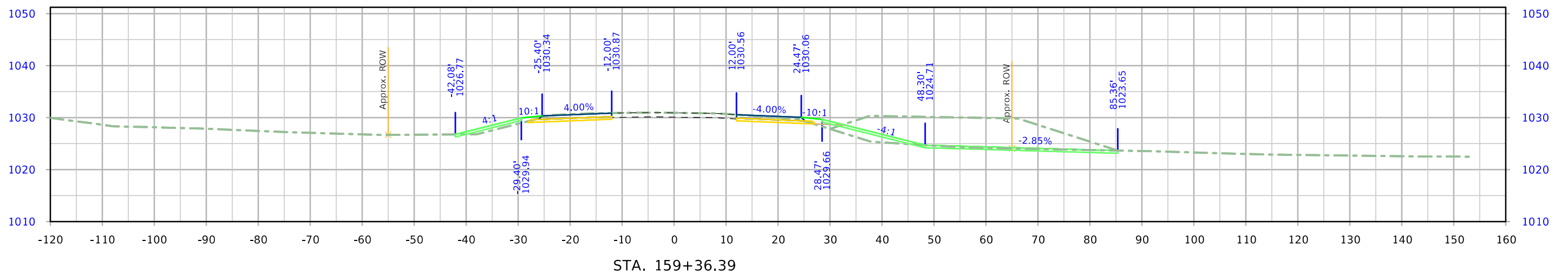
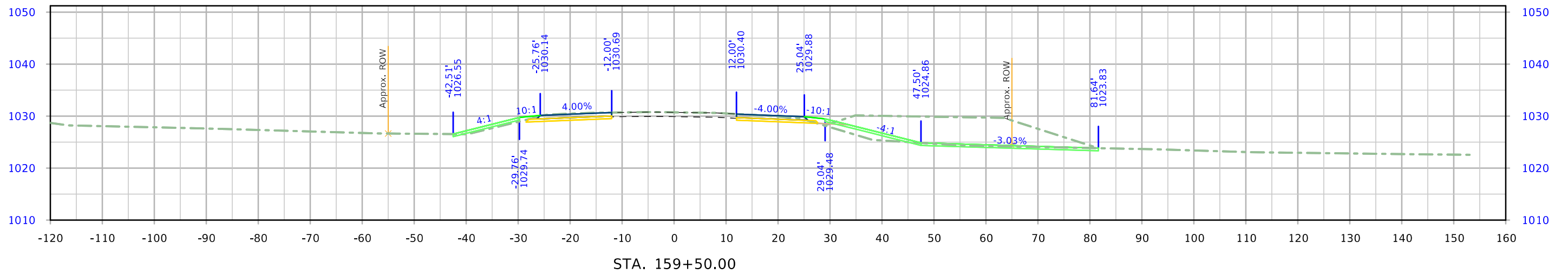
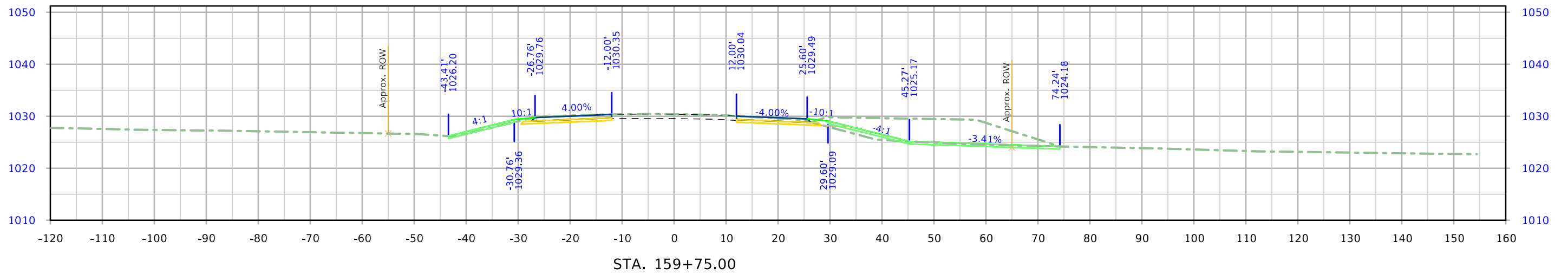
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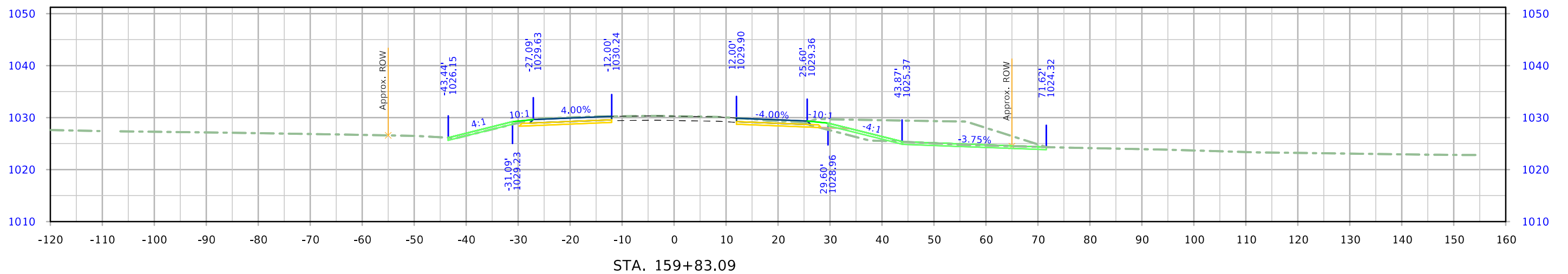
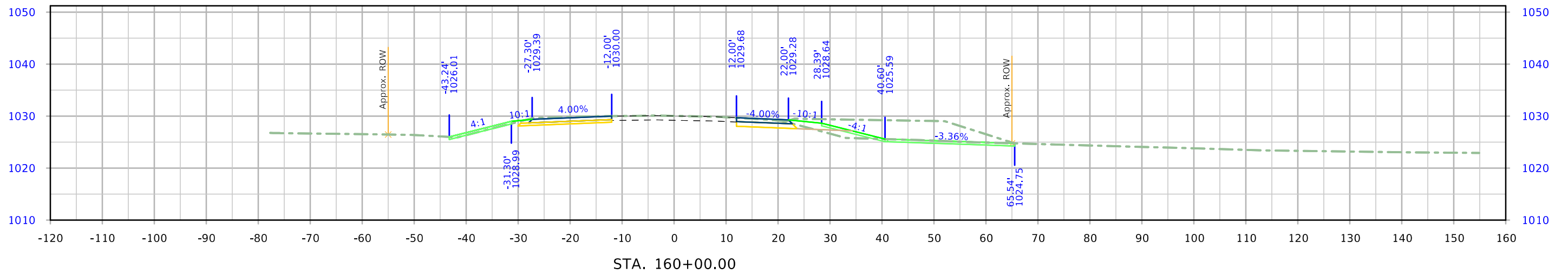
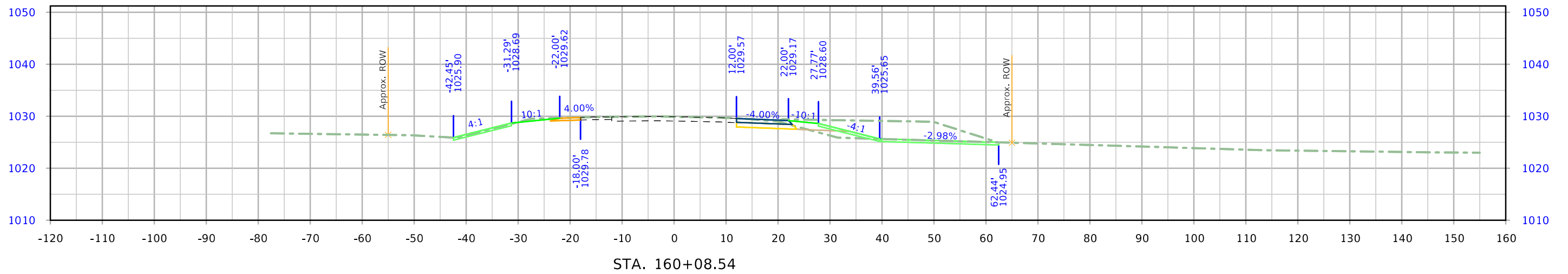
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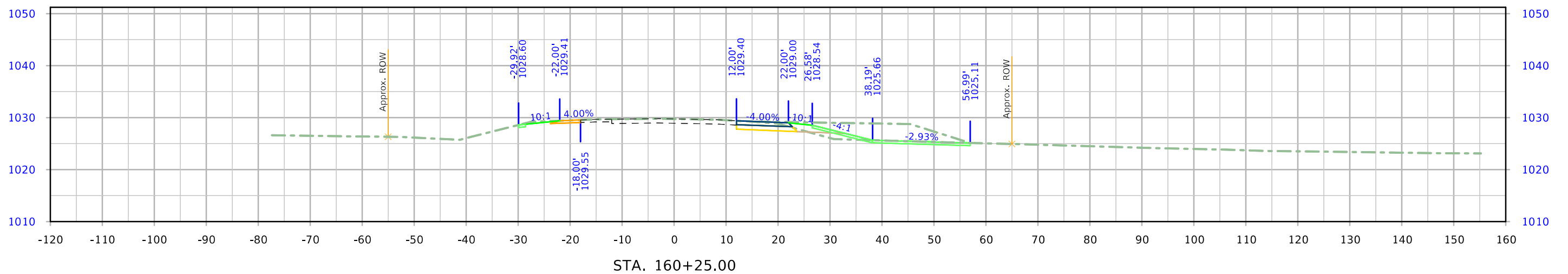
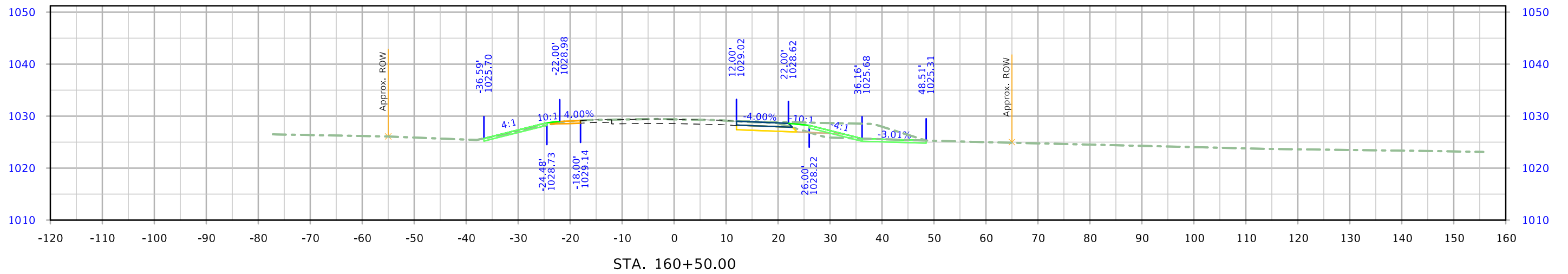
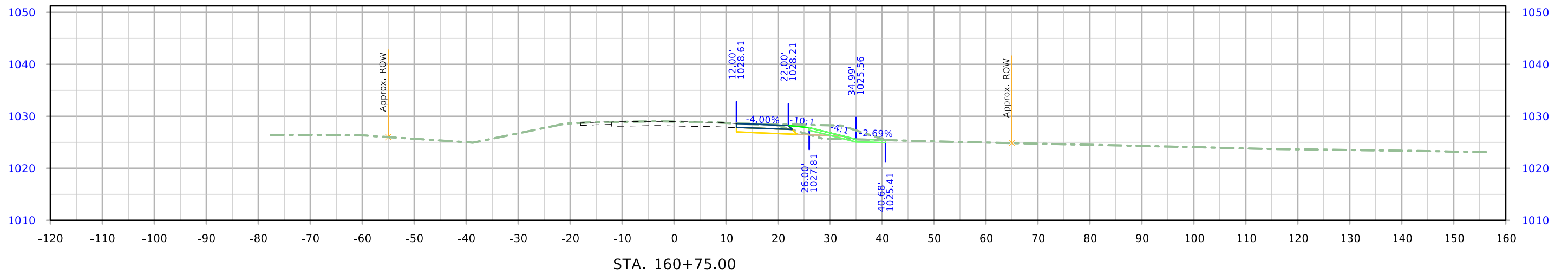
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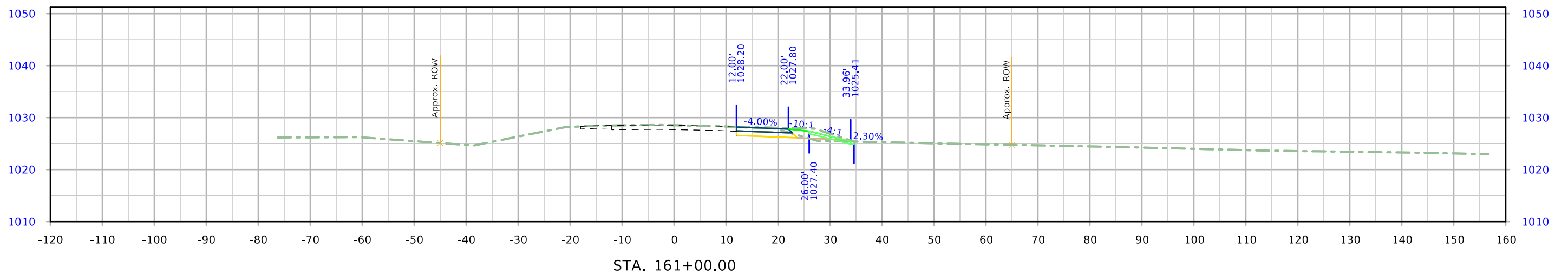
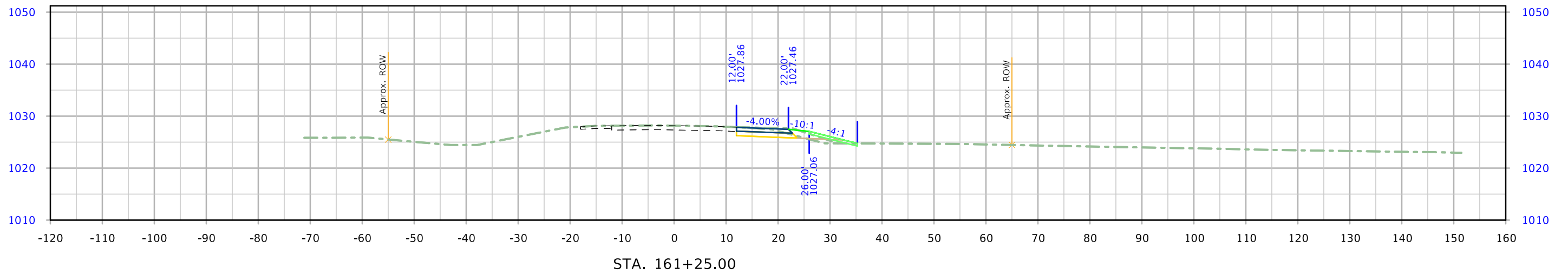
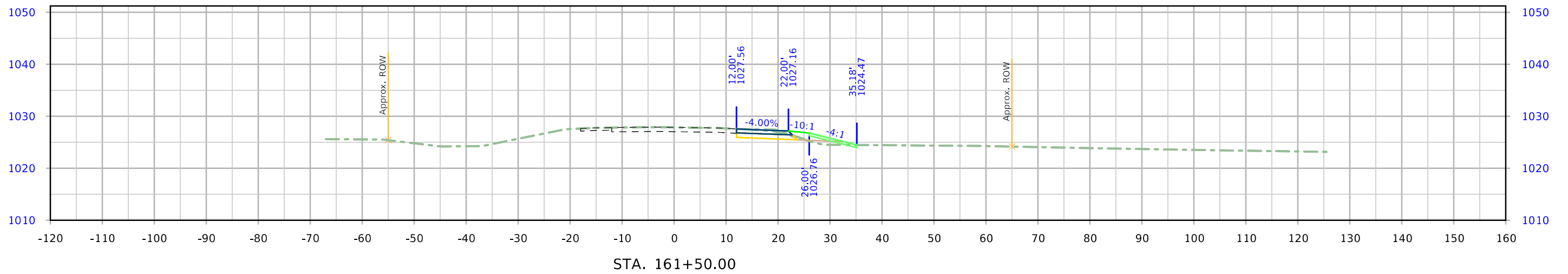
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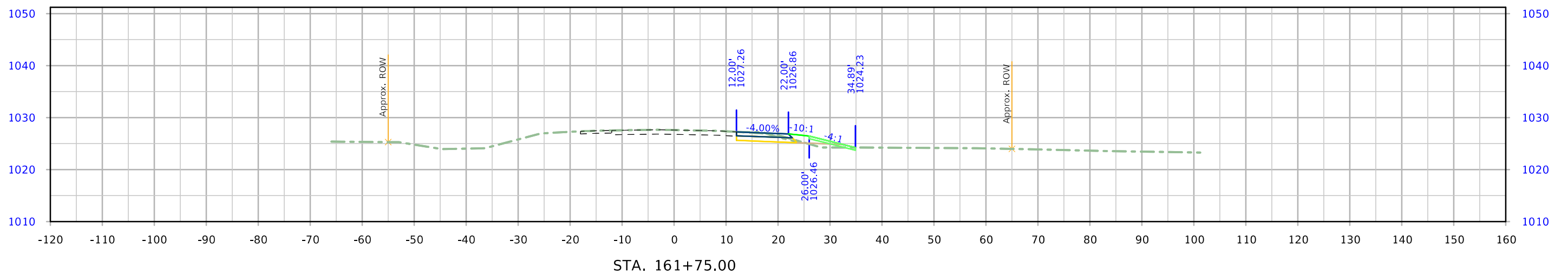
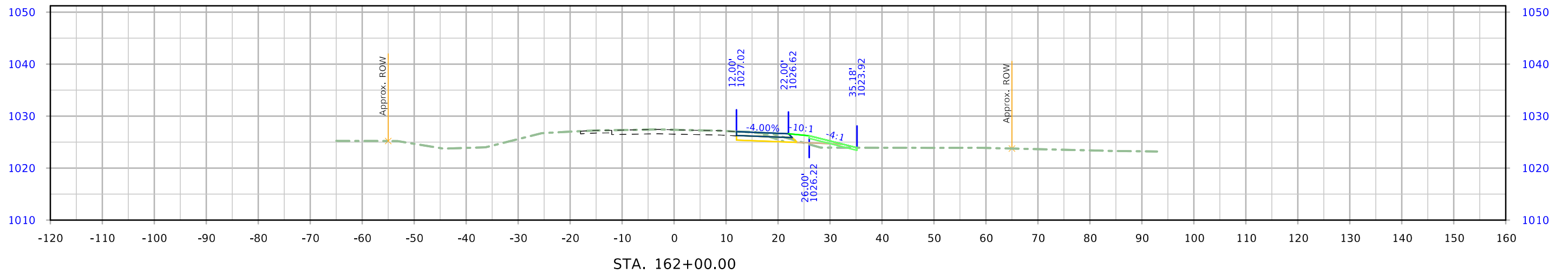
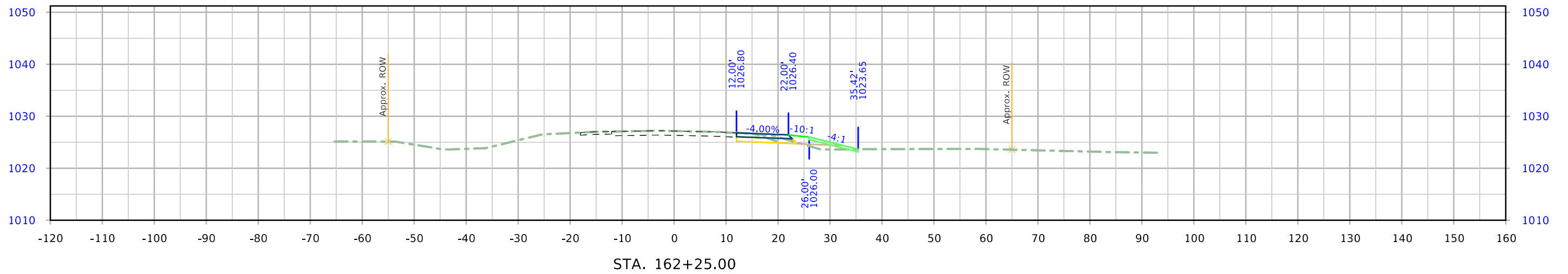
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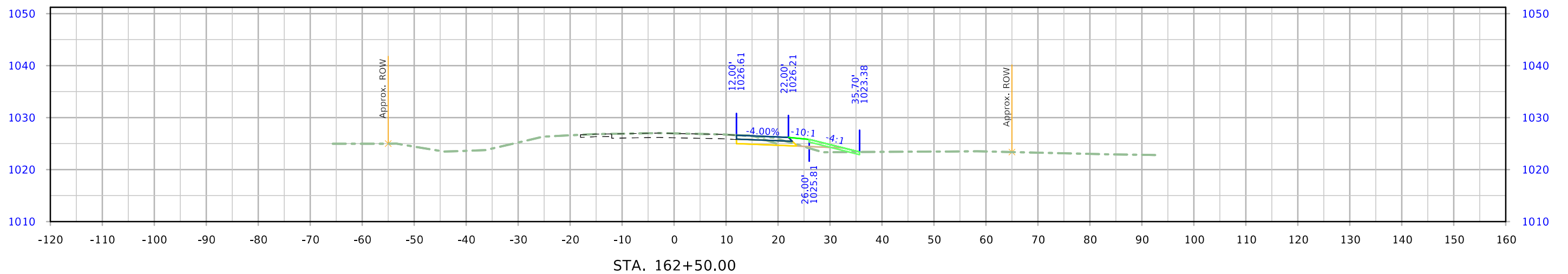
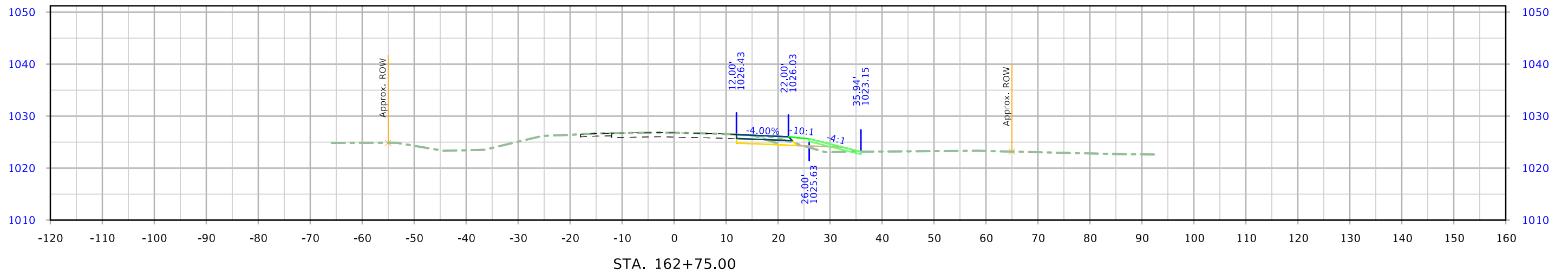
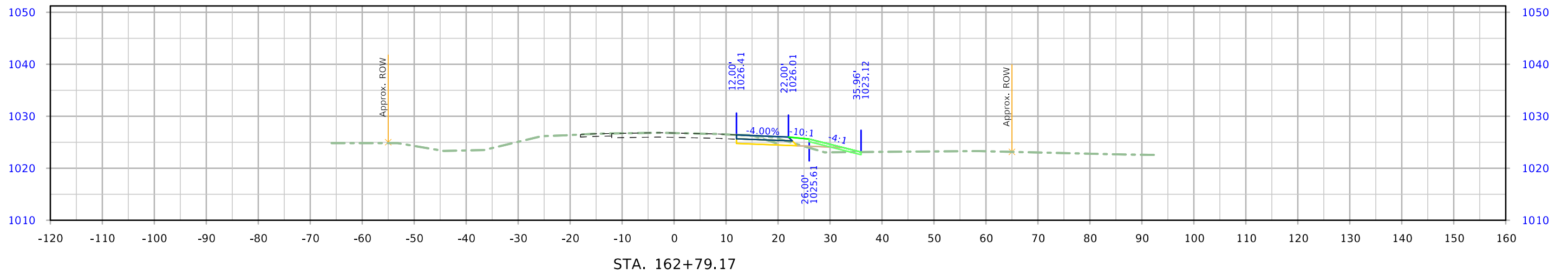
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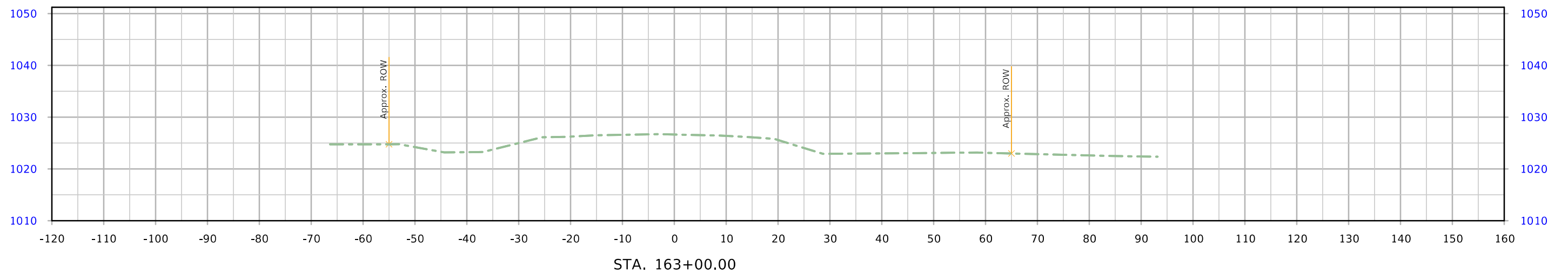
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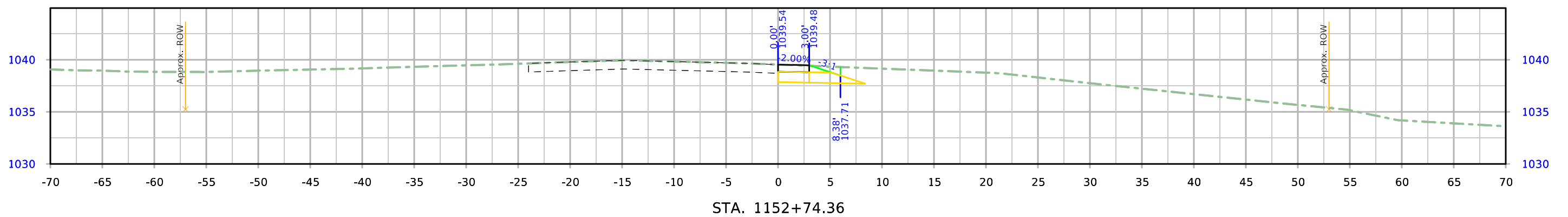
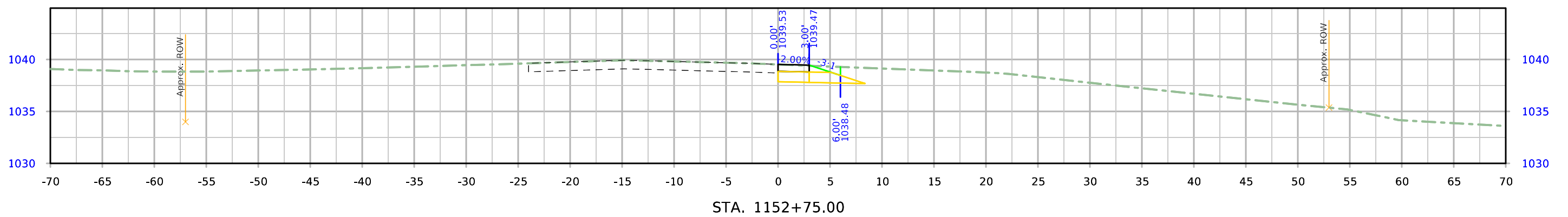
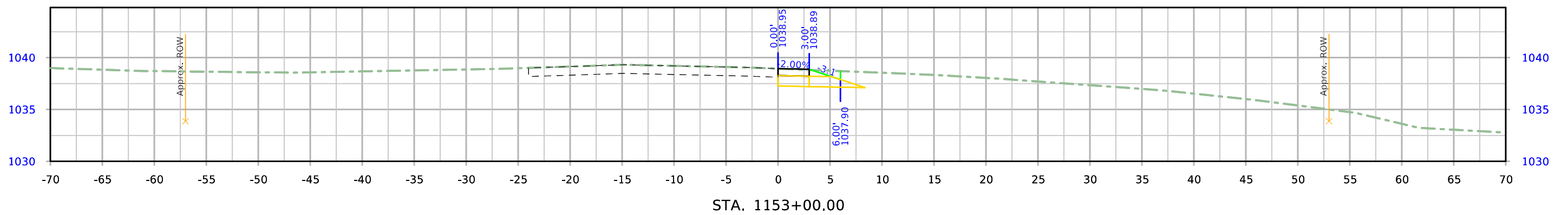
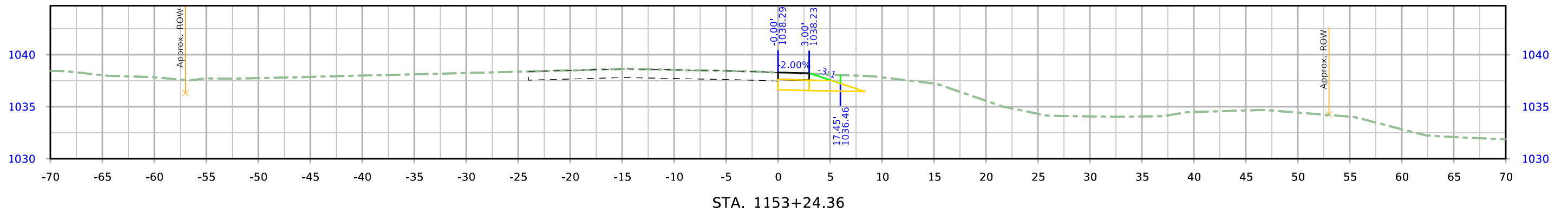
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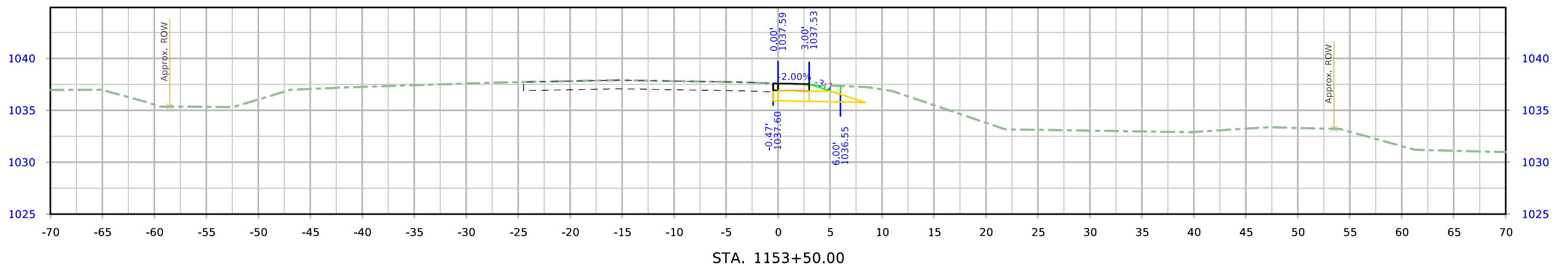
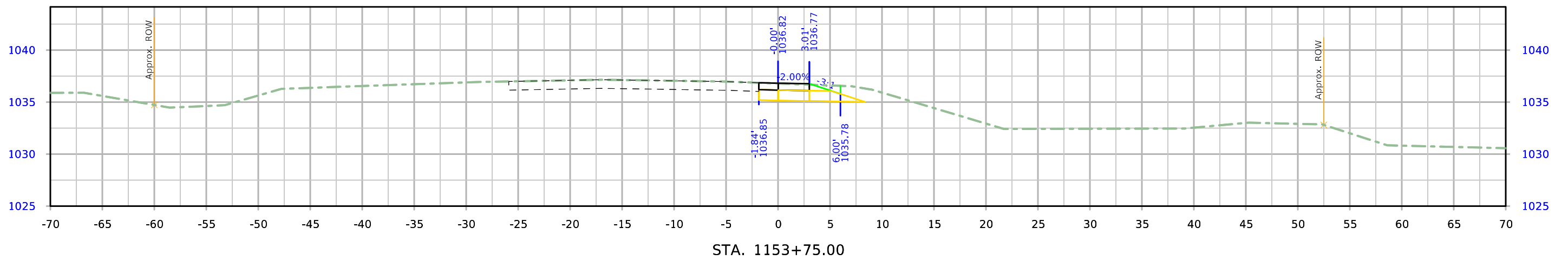
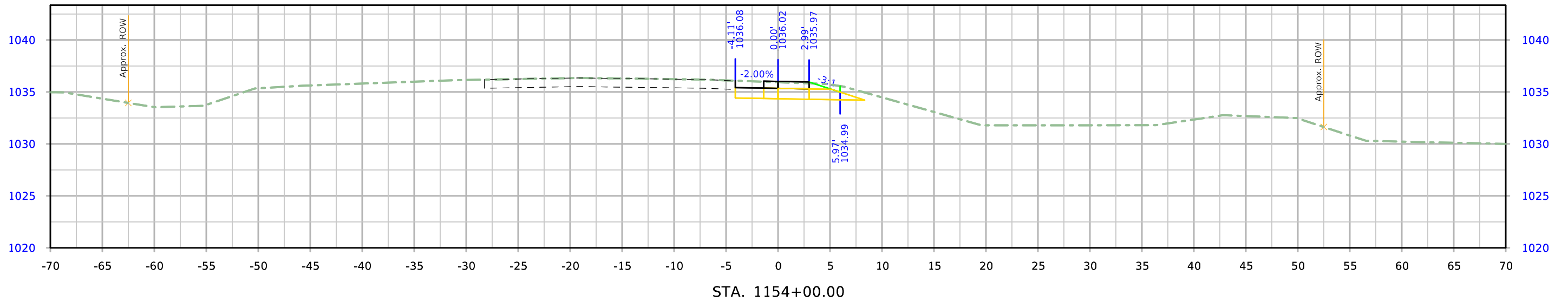
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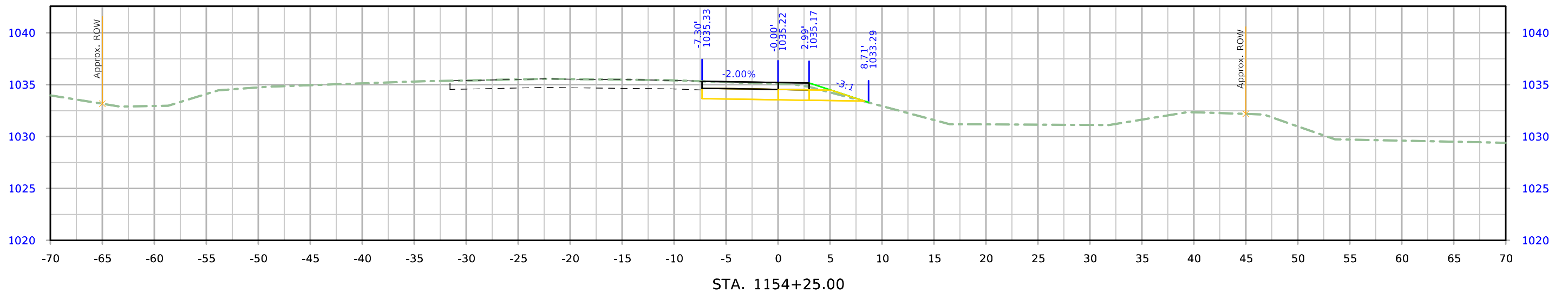
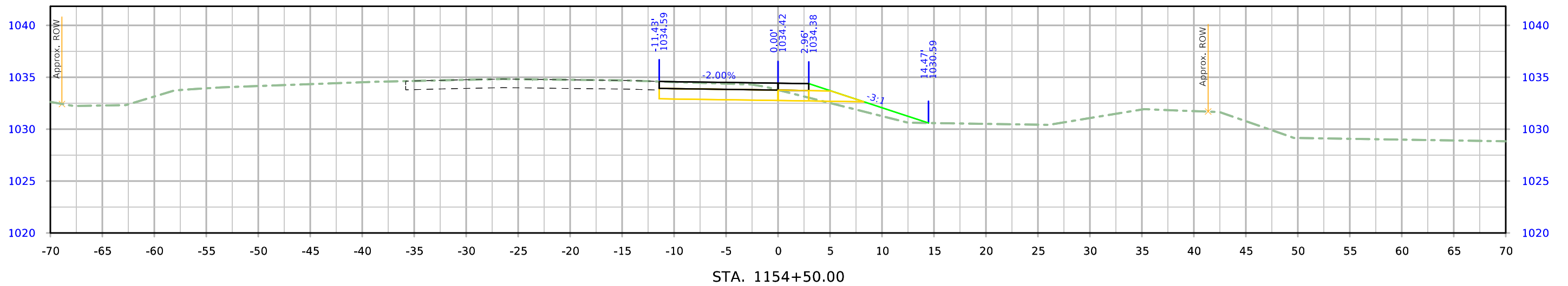
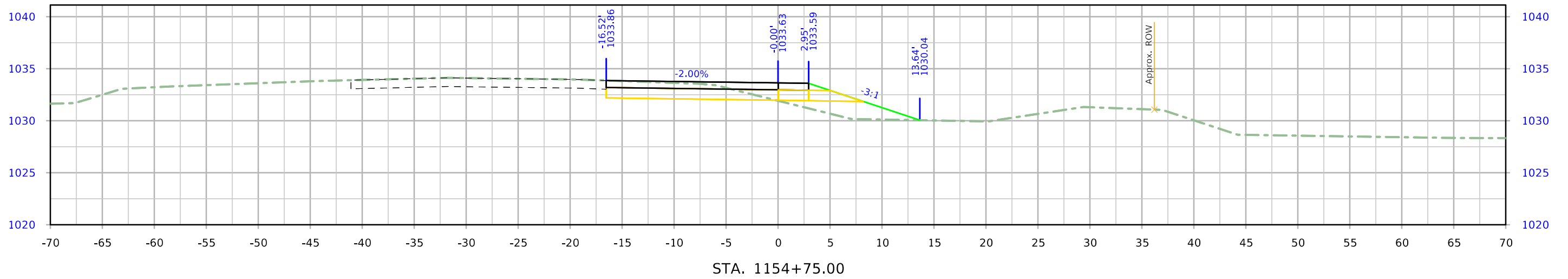
Detour Pavement



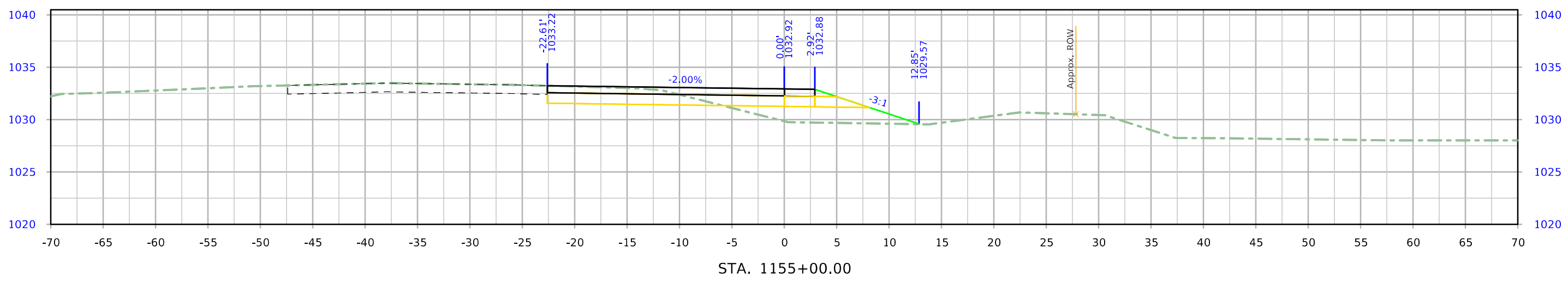
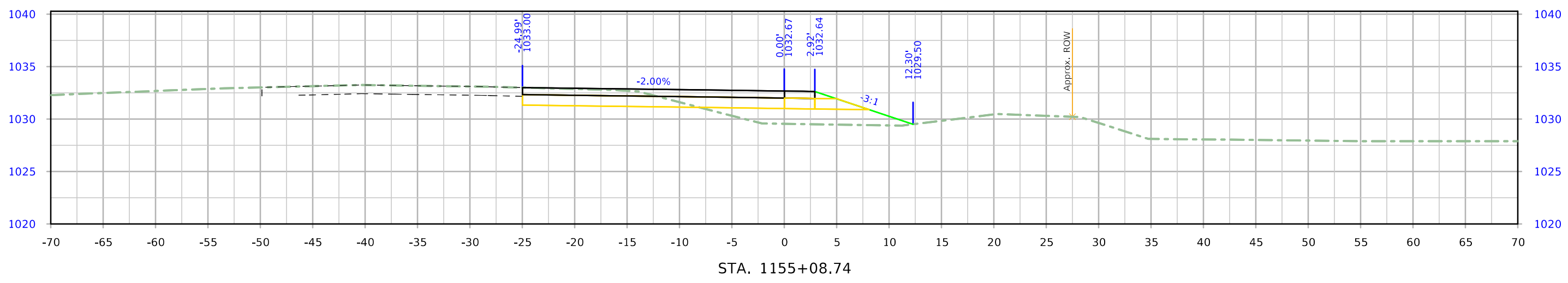
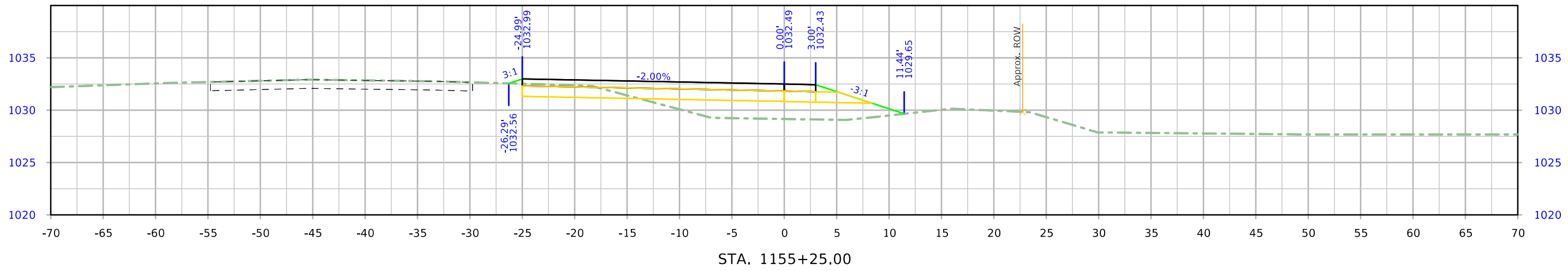
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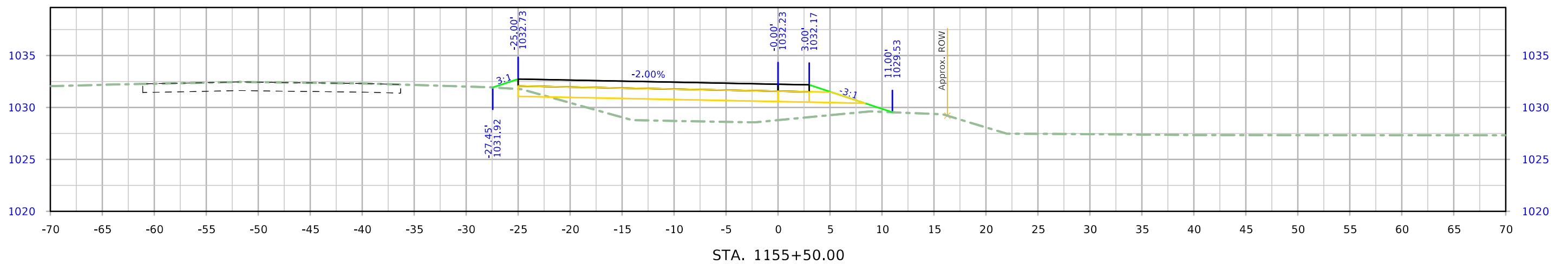
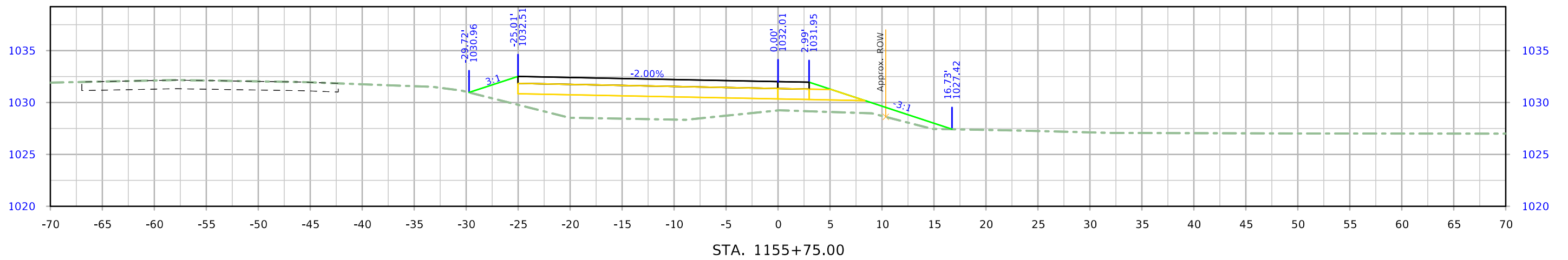
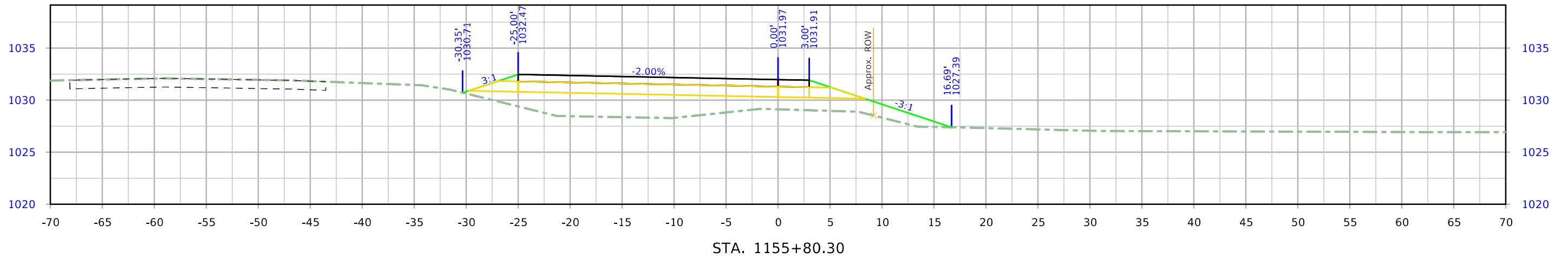
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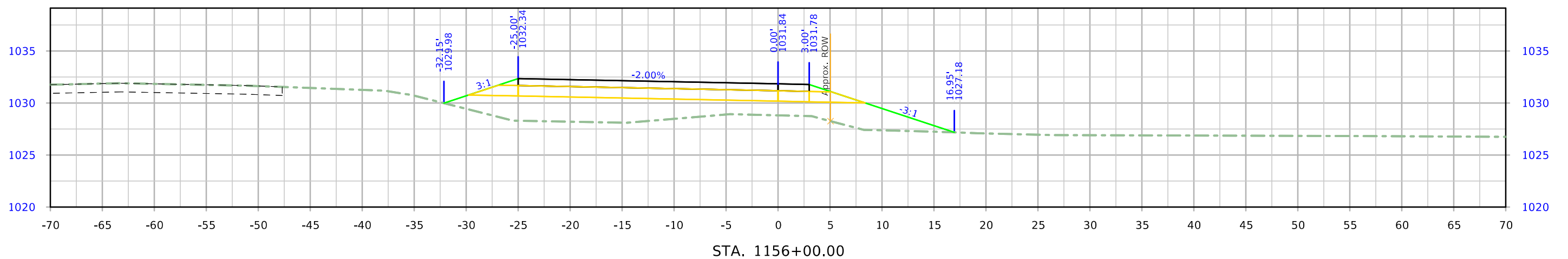
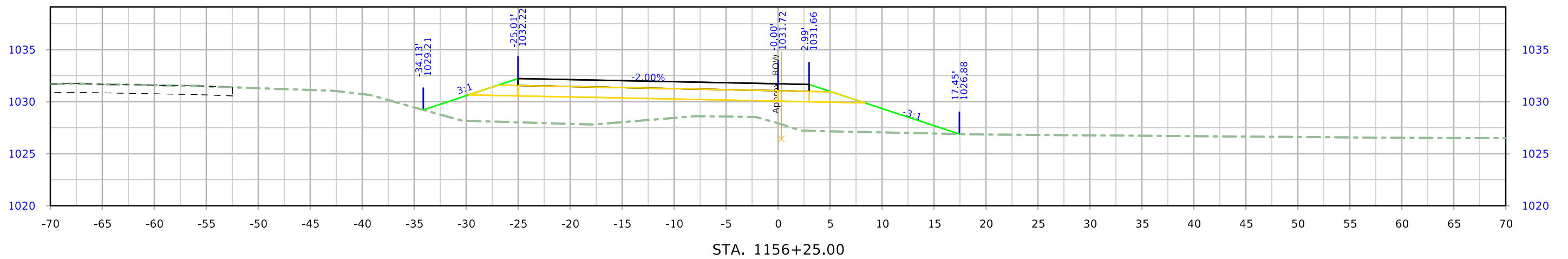
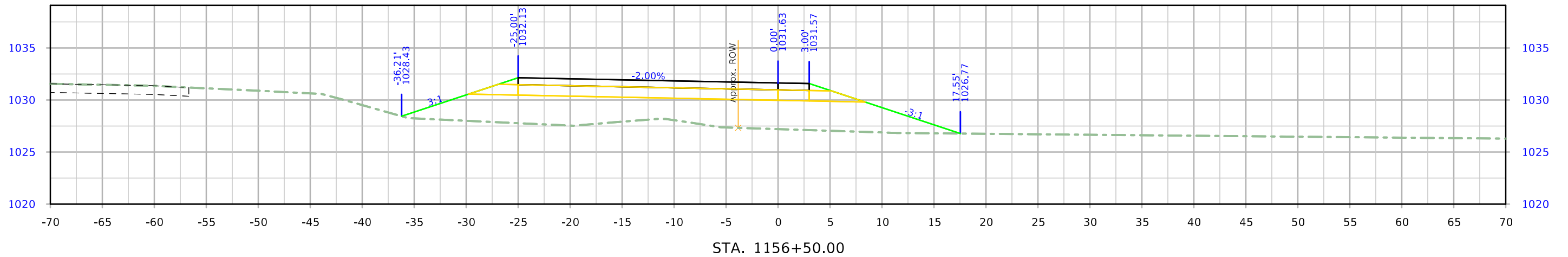
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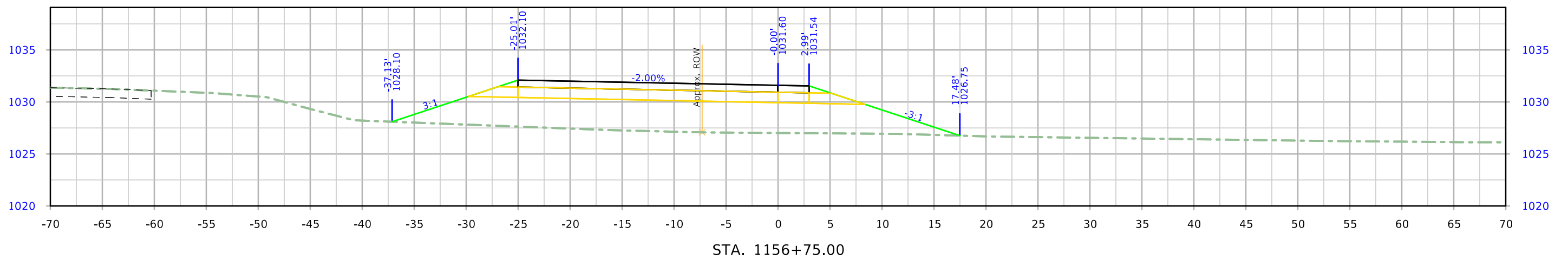
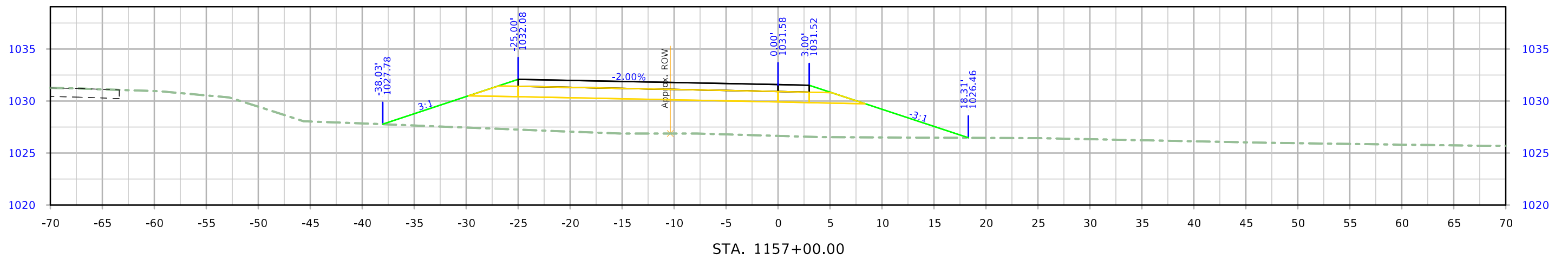
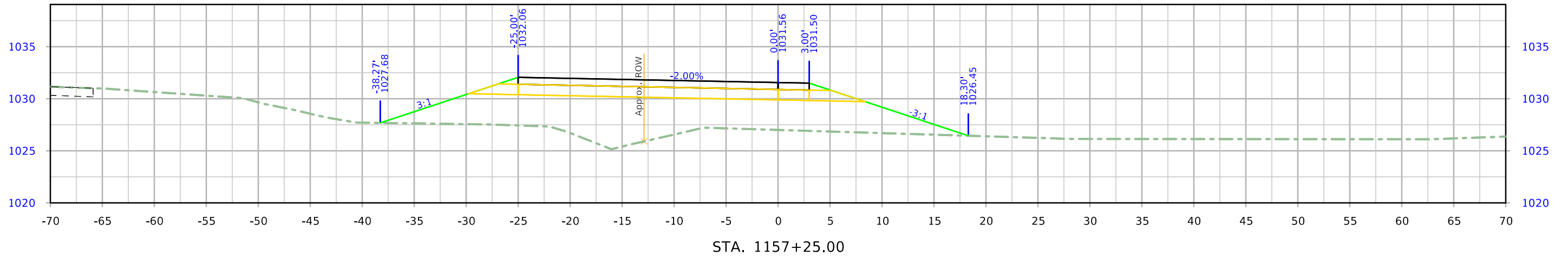
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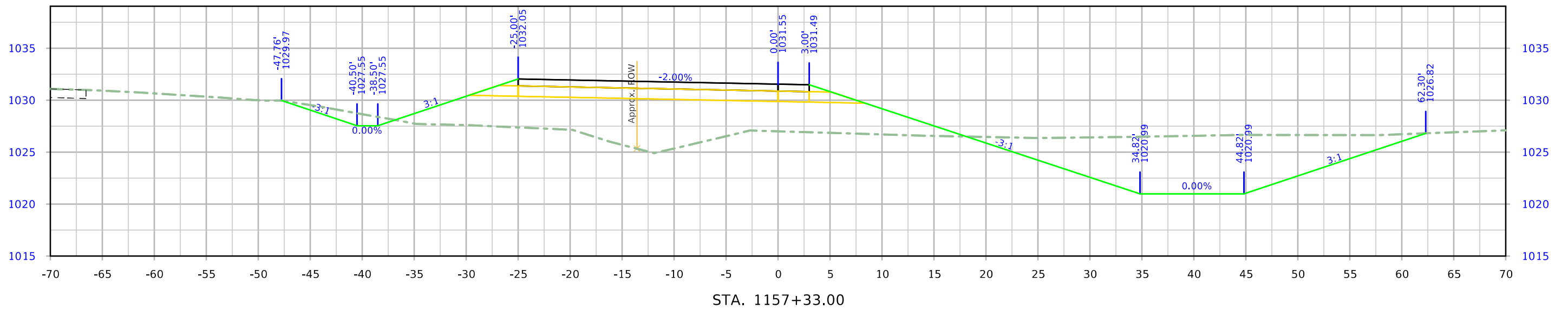
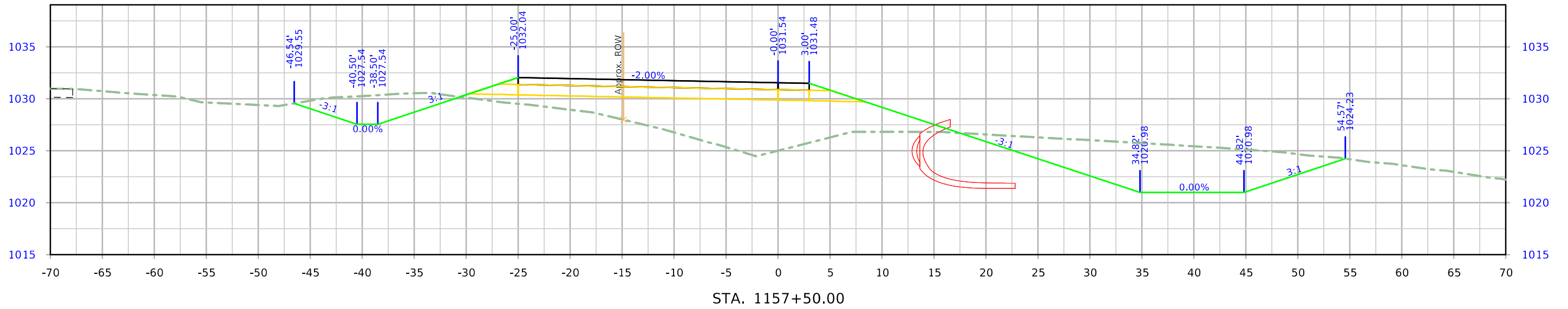
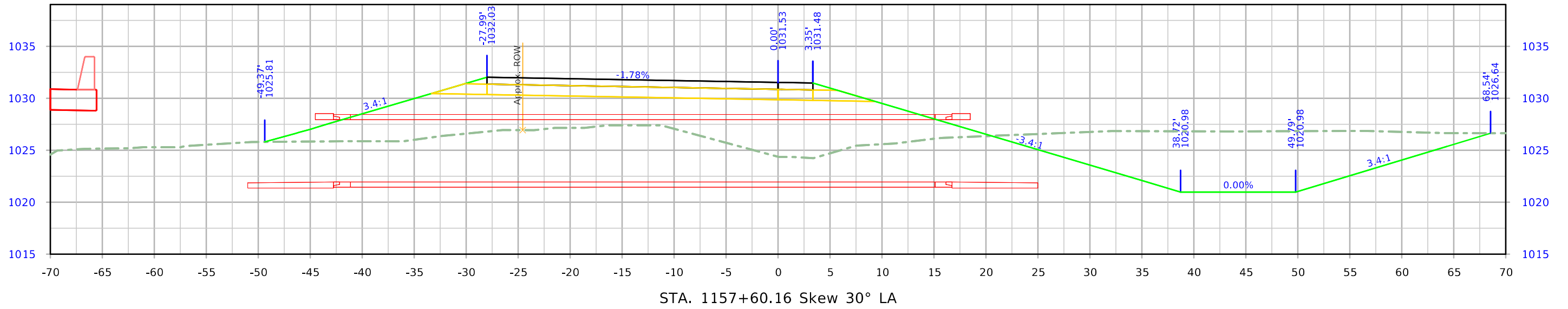
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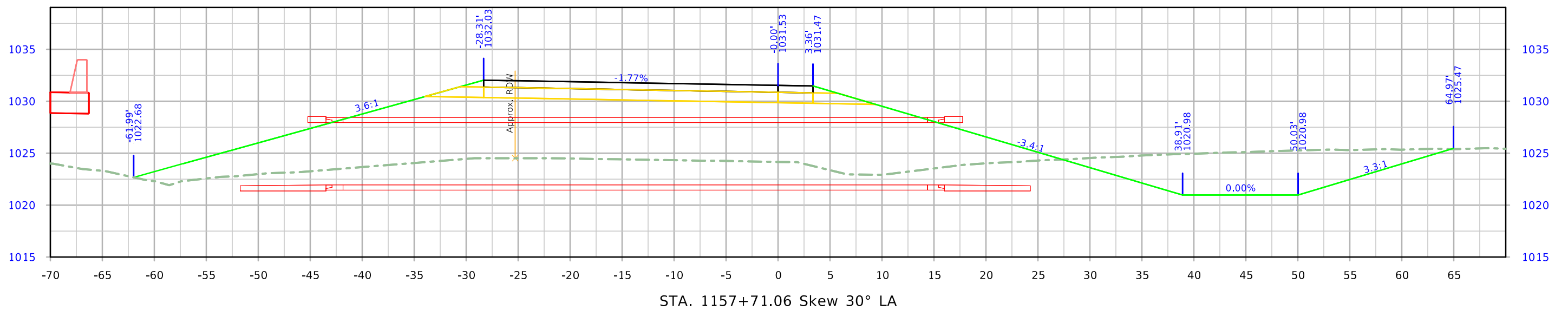
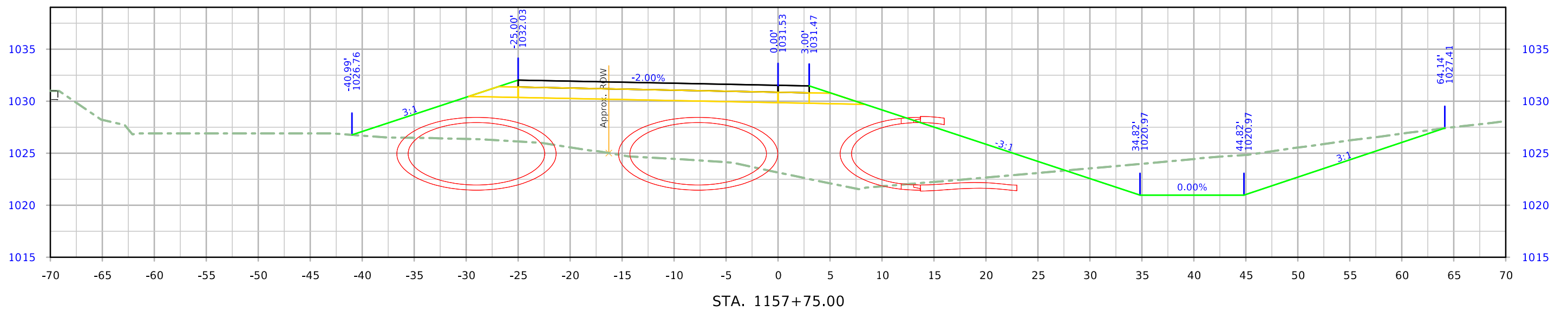
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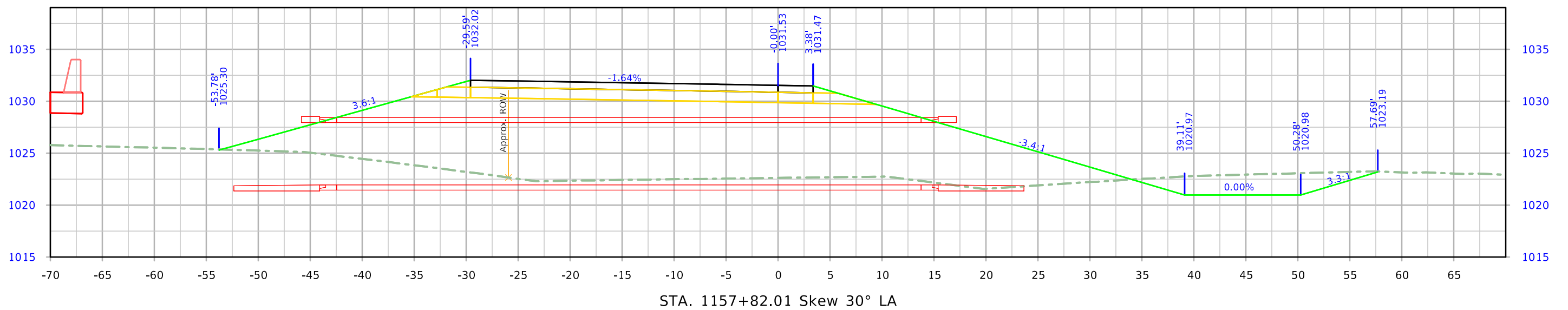
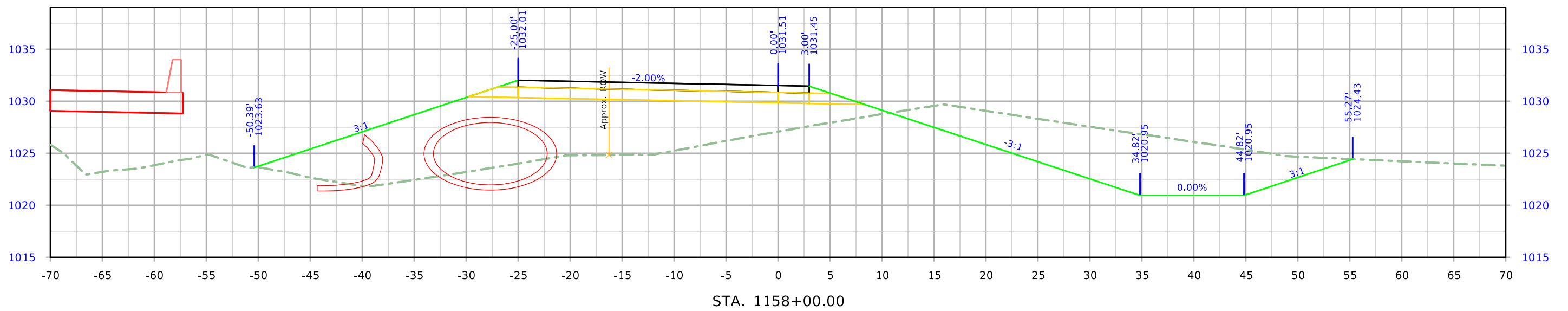
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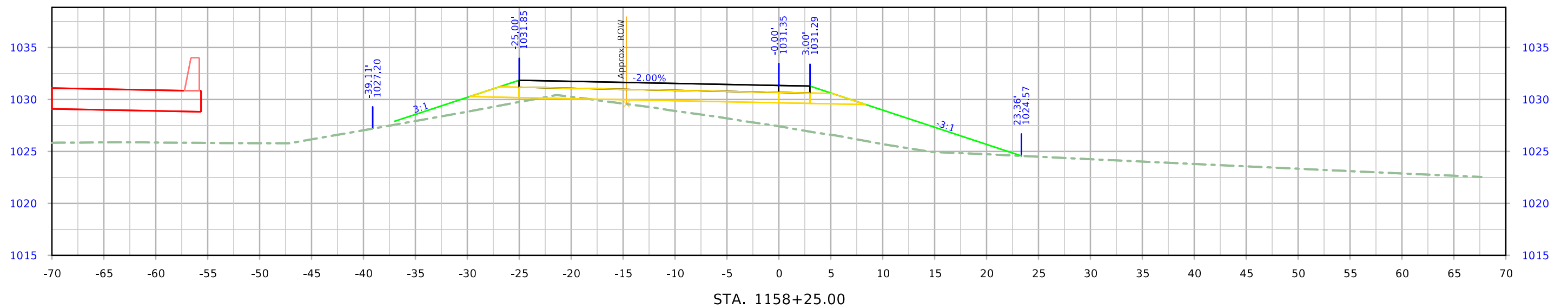
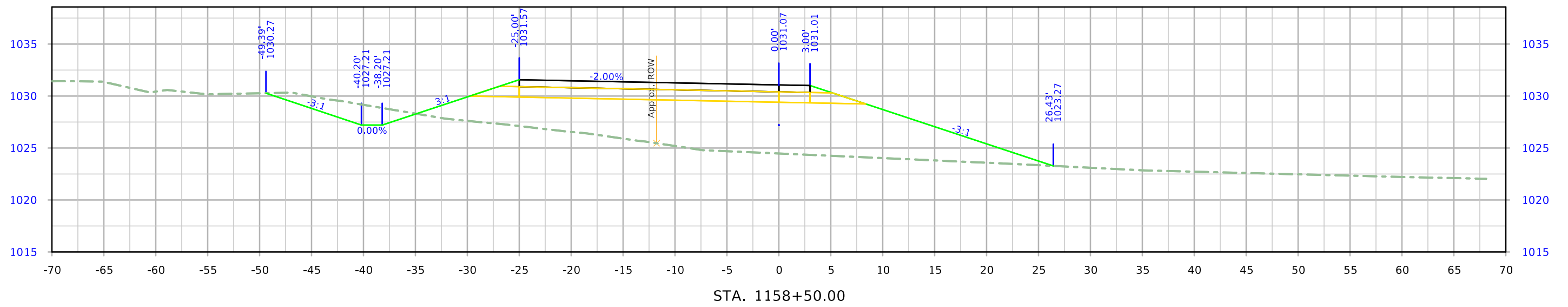
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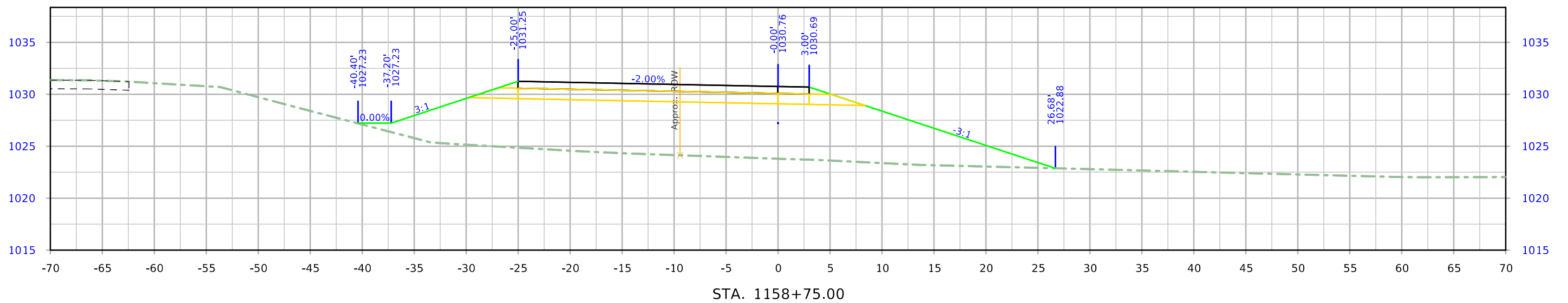
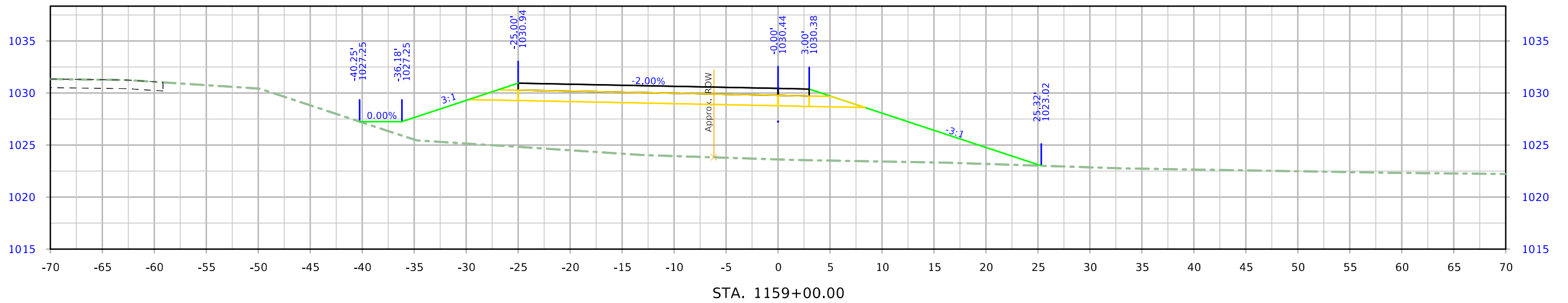
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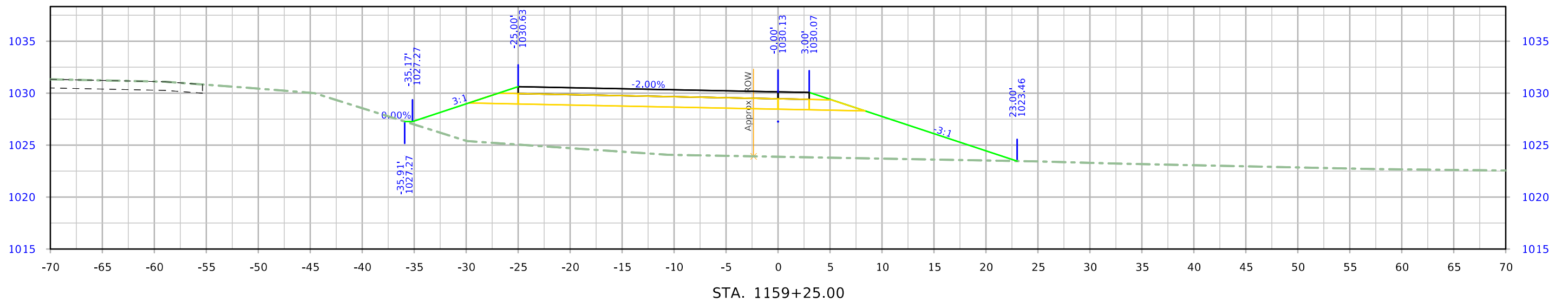
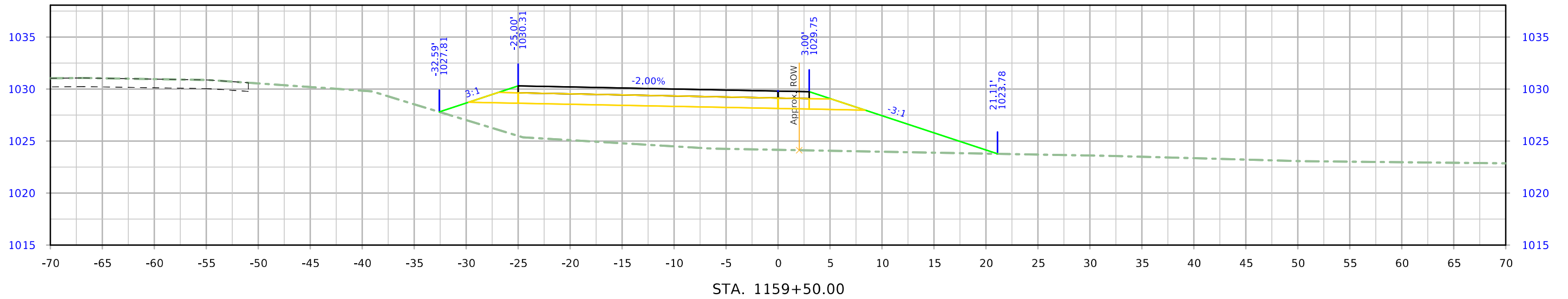
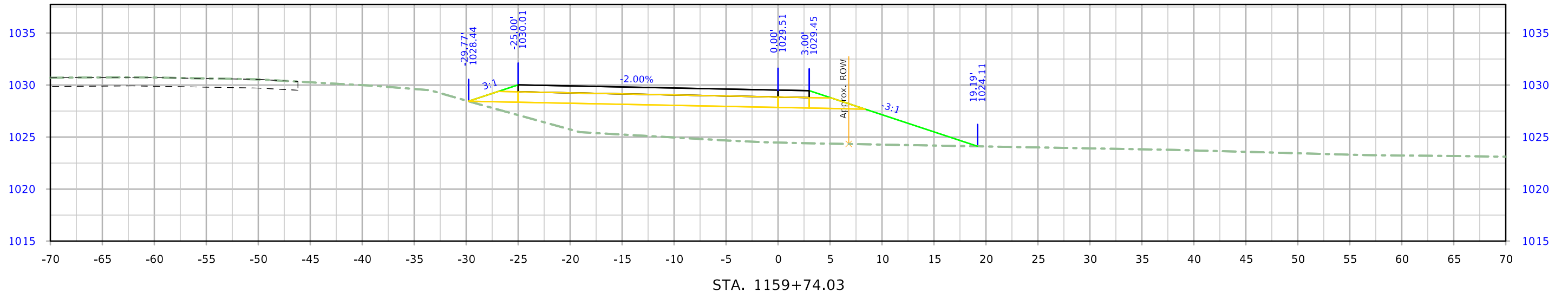
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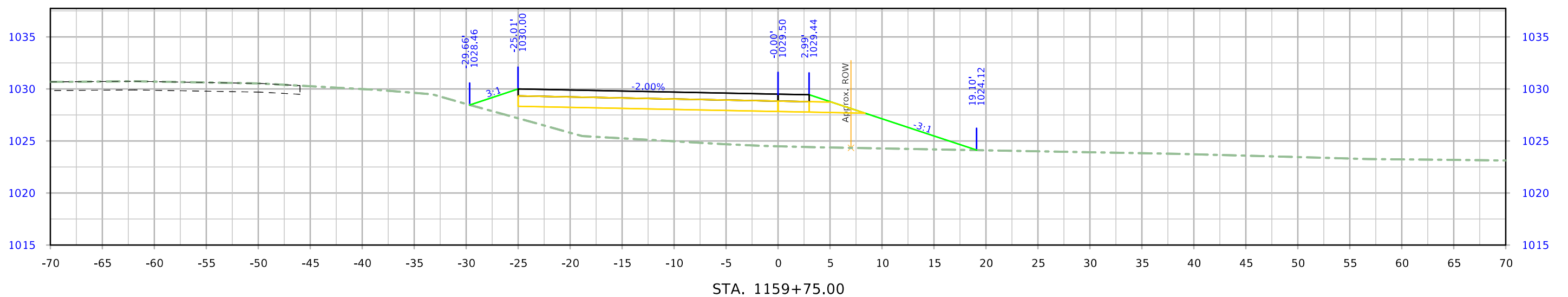
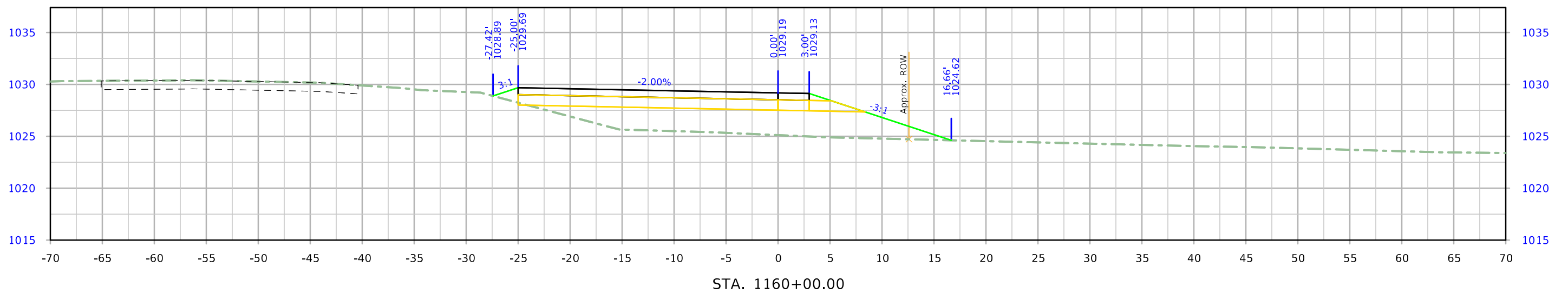
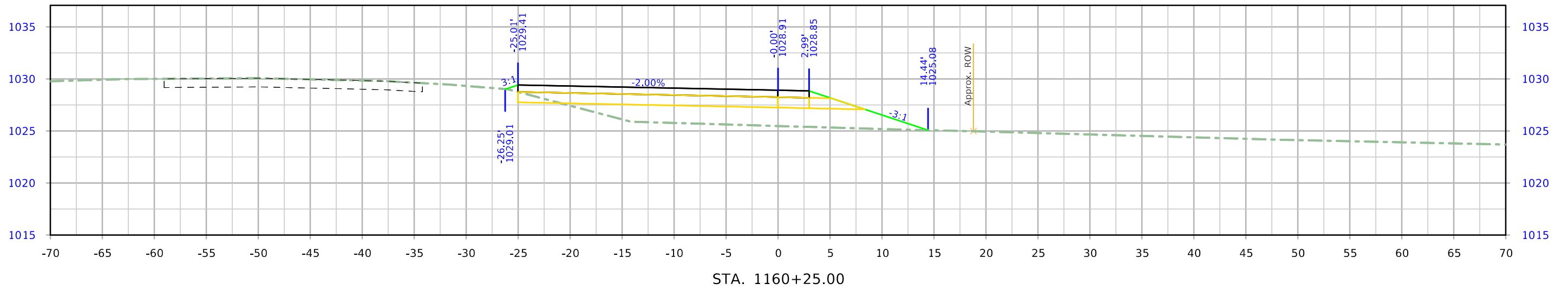
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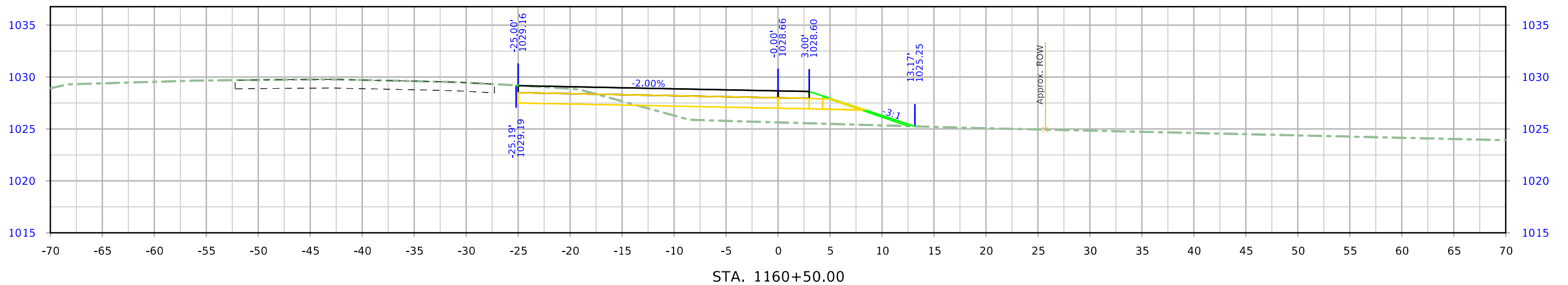
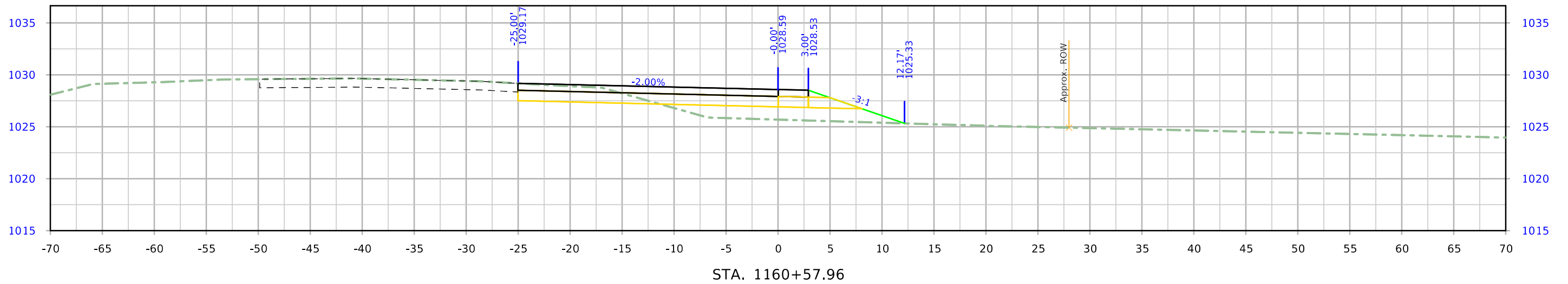
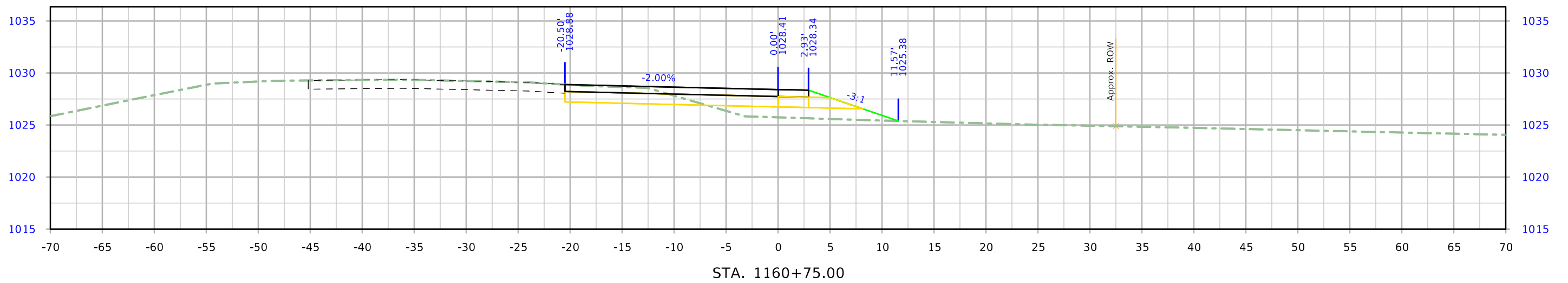
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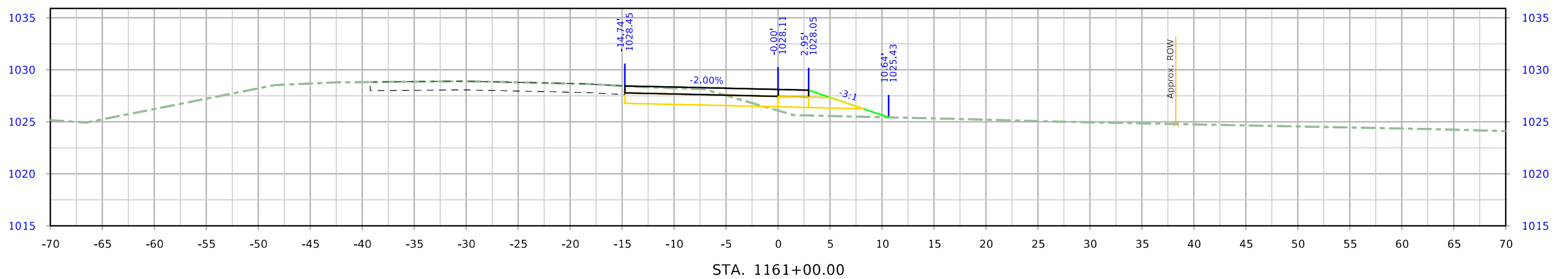
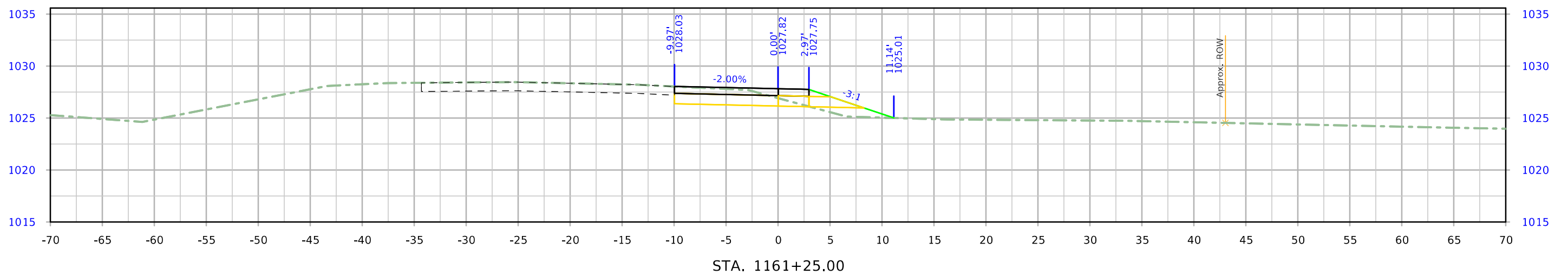
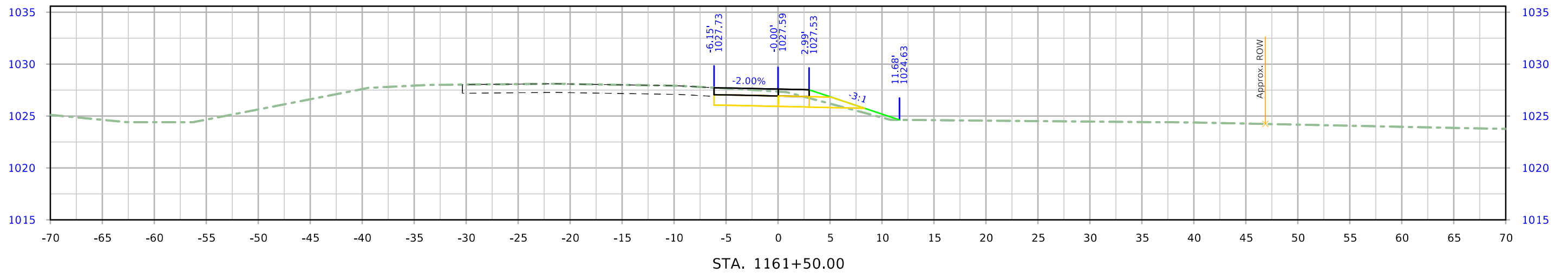
Detour Pavement



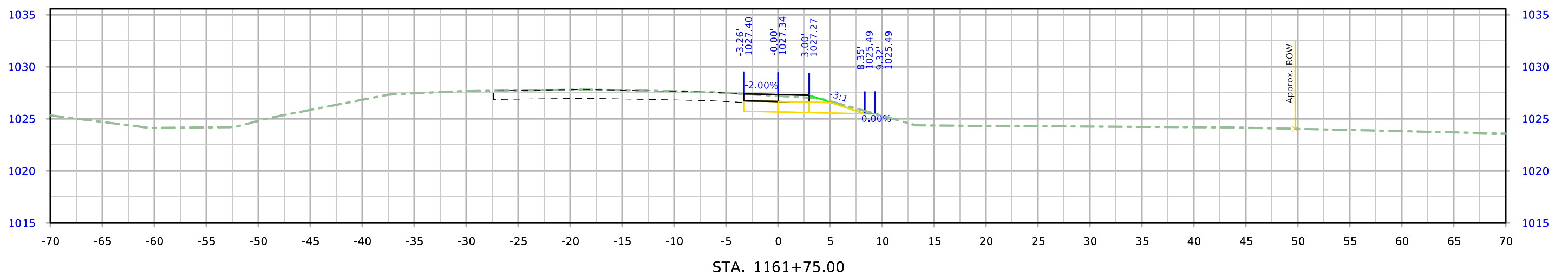
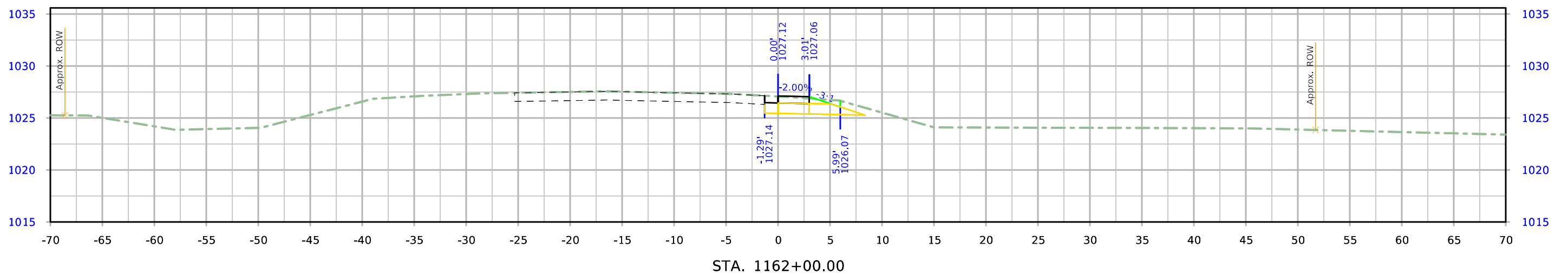
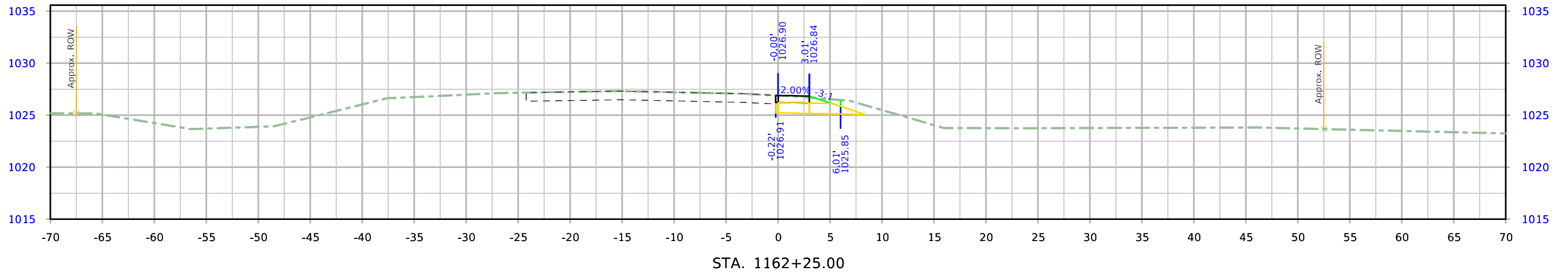
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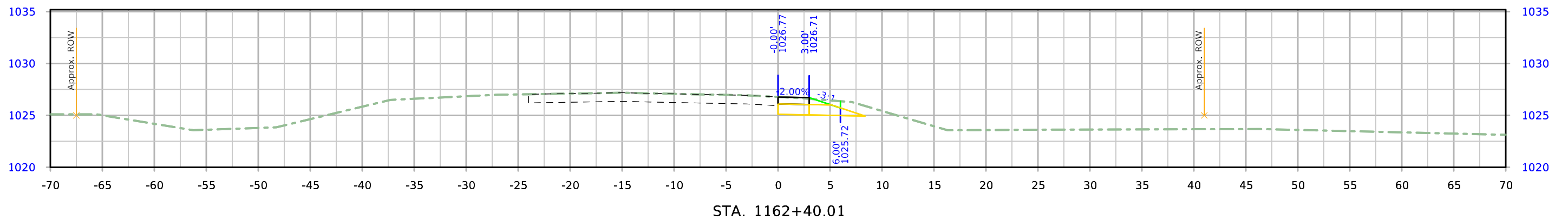
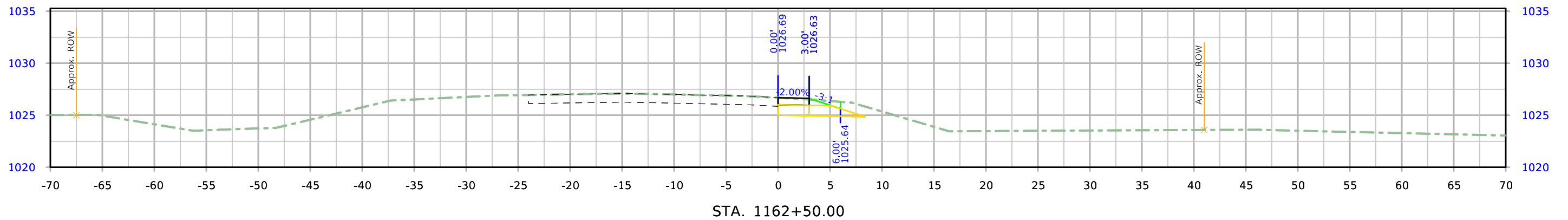
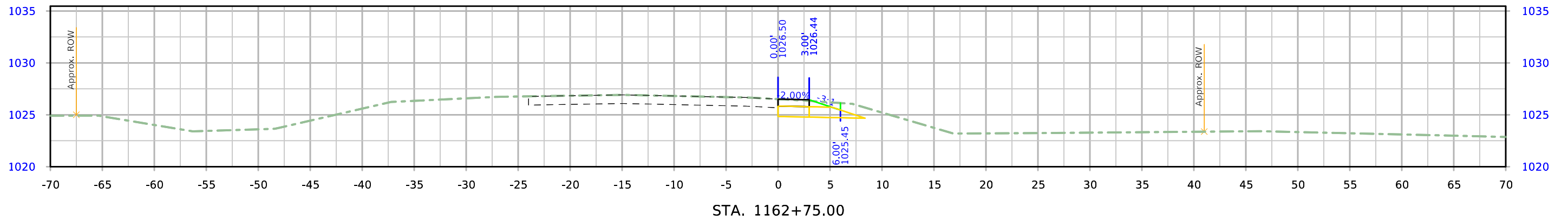
Detour Pavement



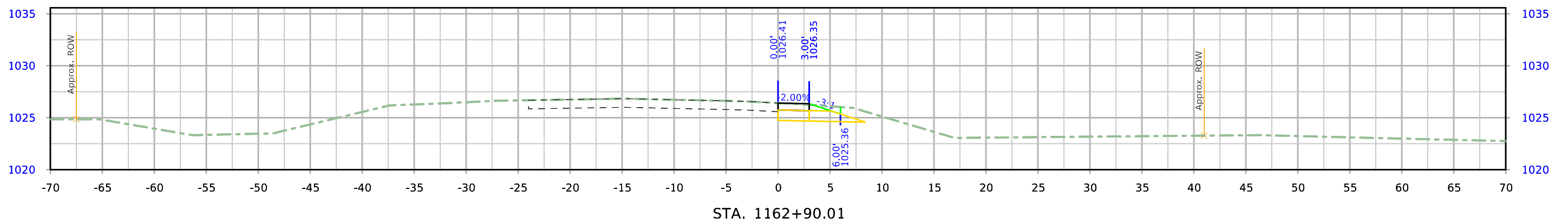
Detour Pavement



Detour Pavement



Detour Pavement



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