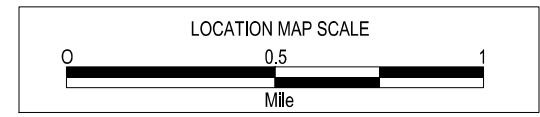
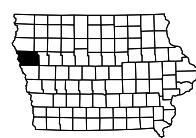


SERGEANT BLUFF

ML029 STA. 1679+25.57
END CONSTRUCTION

ML029 STA. 1596+32.80
BEGIN CONSTRUCTION

FHWA #XXXXX



FIELD EXAM CHECKLIST

1. General
 - a. Schedule
 - b. Coordinated Projects - Port Neal Rd. and I-29 Rest Area Decommissioning
 - c. Supplemental Survey
2. Roadway
 - a. Typical Sections / Pavement Recommendation
 - b. Vertical Geometry
 - c. Grading
3. Bridge
 - a. TSL
4. Drainage
 - a. Existing Drainage Patterns
 - b. Proposed Culverts
 - c. Drainage District Coordination
 - d. Subdrains
5. Geotech
 - a. Boring Program
 - b. Property Owner Access
 - c. Potential Remediation
 - d. Schedule
6. UPRR
 - a. Pending UPRR Concept Comments and Field Diagnostic
 - b. Schedule
7. Construction Staging
 - a. I-29
 - b. 235th St. / Old US 75
8. Utility Coordination
 - a. Carbon Capture Pipeline
 - b. Overhead Transmission
 - c. Irrigation
 - d. Other - 235th St.
9. ROW
 - a. Anticipated Impacts
 - b. Field Entrances
 - c. Restricted Access - 235th St.
10. Cost Estimate
 - a. Assumptions
11. Other Items
 - a. NEPA Reevaluation
 - b. Public Information Meeting (PIM)

FIELD EXAM NOTES (General)

Please refer to plan sheet notes for location specific notes and comments.

1. General

- The project is currently scheduled for letting in January 2026, with upcoming design events as follows in Masterworks:

- D03: 10/6/23
- B01 and B02: 11/3/23
- S02: 11/17/23
- D05: 12/1/23

- HNTB is preparing a supplemental survey request for Iowa DOT to capture the following: Port Neal Road reconstruction by Woodbury County, additional coverage on I-29 for deceleration / acceleration lane tie-ins, and additional coverage on Old US 75 to accommodate intersection improvements at 235th Street / UPRR / Old US 75.

2. Roadway - Please refer to plan sheet notes for notes and comments.

3. Bridge - Please refer to plan sheet notes for notes and comments.

4. Drainage

- The project consists of an open drainage system with culverts. The project area is generally flat.

- This project falls within the Orton Slough Drainage District. M. Nahra (Woodbury County) will provide drainage district information to HNTB. M. Nahra requested HNTB prepare a visual narrative showing no impact, which will be routed to the County Auditor and Board of Trustees for a resolution.

5. Geotech

- This project is in the Missouri River Valley and based on adjacent projects, poor soil conditions and remediations are possible.

- HNTB / Terracon are prioritizing borings within Iowa DOT and County ROW due to property owner access challenges.

- The majority of remaining borings will be drilled following harvest. HNTB is in the process of revising the boring program to shift proposed borings where property owner access cannot currently be obtained. These are lower fill locations but it may be recommended to drill one boring at the start of construction to confirm design assumptions.

- The water table is 25'-30' deep and thus far, no soft clay has been encountered in areas of large fill for borings obtained within Iowa DOT ROW. No rock has been encountered at 150' deep and it is assumed friction piling will be required at the bridge and abutments.

- Due to property owner access challenges, soil conditions and recommended remediations may be in progress at D05.

6. UPRR

- T. Quam sent the UPRR Concept Submittal to UPRR on 7/12/23 (8 weeks ago). The Field Diagnostic is scheduled for this afternoon.

- The 30% UPRR Submittal is pending receipt of Concept comments and the Field Diagnostic.

7. Construction Staging - Please refer to plan sheet notes for notes and comments.

8. Utility Coordination

- N. Cuva (ROW Bureau) requested utility easements be reflected in D05 Plans. K. Mulvihill (District 3) will coordinate with utility companies on potential timing for identifying easements.

9. ROW

- N. Cuva (ROW Bureau) inquired about AC05 ahead of D05. G. Reeder and S. Tymkowicz will coordinate this access control event.

10. Cost Estimate - Please refer to cost estimate PDF for specific notes and comments.

11. Other Items

- The NEPA cleared boundary will need to be updated to accommodate improvements to Banner Avenue and Old US 75.

- District 3 will confirm calendars and scheduling for one-on-one public information meetings with property owners in late October or early November at District offices.

FINAL PROJECT CONCEPT STATEMENT

Interstate 29 & Southbridge Interchange

Woodbury County
IM-029-6(278)139--13-97
Project Code: 06-97-029-010

Highway Division
District 3

Garret Reeder, P.E.
Garret.Reeder@iowadot.us

April 24, 2023

I. STUDY AREA

A. Project Description

This project involves construction of a new interchange on Interstate 29 (I-29) between the existing interchanges at Sergeant Bluff, Iowa, to the north (1st Street/Aviation Boulevard, Interchange 141) and Port Neal Landing in Salix, Iowa, to the south (County Road D51/260th Street, Interchange 135). The new interchange will add access to I-29 from 235th Street, both east and west of I-29. The proposed interchange is located in Woodbury County.

An Interchange Justification Report (IJR) for this interchange was signed by FHWA in September 2022. The IJR included a range of build alternative locations and configurations with a traditional diamond interchange being selected as the preferred alternative. NEPA documentation as a countersigned EA has been prepared and was signed in January 2020. The Finding of No Significant Impact (FONSI) was signed by the Federal Highway Administration (FHWA) in May 2020.

For additional information, please refer to the project documentation which can be found in the Projectwise links below:

- [IJR Document](#)
- [FONSI](#)

Woodbury County
IM-029-6(278)139--13-97
Project Code: 06-97-029-010
Page 2 of 6

B. Need for Project

The proposed interchange has been part of the long-term planning vision for the City of Sioux City and the Siouxland Interstate Metropolitan Planning Council (SIMPCO) since 2005. The interchange will support planned urban and industrial development in the southern portion of the Sioux City metropolitan area. Although the location of the proposed interchange is in an area that has been historically rural, the surrounding area has been developing into an industrial area with growing transportation system improvement needs.

As shown in Figure 1, an additional I-29 interchange between mile markers 141 and 135 is needed to support the projected economic development in southern Sioux City and between the City of Sioux City and the City of Salix. Existing access to I-29 in the vicinity of the proposed interchange is limited to Exit 141 in Sergeant Bluff and Exit 135 in Salix. The proposed interchange will provide a connecting link between I-29 and existing business and industrial parks and will provide improved east-west connectivity across I-29.



Figure 1: Project location

C. Present Facility

I-29 through the project area was originally constructed in the late 1950's. In 2008 an unbonded PCC overlay was constructed on NB lanes through the proposed interchange area. HMA resurfacing of the SB lanes will be completed in 2023. I-29 in the project area is a divided 4-lane facility, with two 12ft wide travel lanes in each direction, with a 6-foot inside (median side) shoulder and 10-foot outside shoulder. The existing median is 50 ft. in width between northbound and southbound travel-way edge lines.

II. PROJECT CONCEPT

A. Preferred Alternative – Traditional Diamond Interchange

In accordance with the approved IJR document, a traditional diamond interchange will be constructed as shown in Figure 2. ROW will be required for this project.



Figure 2: Preferred Alternative

The exit ramp terminals will be stop controlled as identified in the geometric sign concept layout (Figure 3). The new ramps will tie into existing I-29 pavement. Reconstruction of mainline I-29 is not anticipated with this project.

As shown in Figures 2 & 3, approximately 0.8 miles of 235th Street east of the interstate will be realigned as part of the interchange tie-in connections, and the realigned 235th Street will be extended approximately 0.25 miles west of the interstate to connect with Port Neal Road. 235th Street between the ramp terminals will be a two-lane roadway with a two-way left turn lane. 235th Street east of the NB ramp terminals will consist of a single lane in each direction with a dedicated right-turn lane to the NB entrance ramp and a painted median. 235th Street will transition to a two-lane rural roadway and will tie into Old US 75/Co Rd K45 to the east of the interchange.

235th Street west of the SB ramp terminals will also consist of a single lane in each direction with a dedicated right-turn lane to the SB entrance ramp and a painted median. 235th Street will transition to a two-lane rural roadway and will tie into existing Port Neal Road to the west of the interchange.

As part of the 235th Street realignment, a new bridge will be constructed over mainline I-29.



Figure 3: Preferred Alternative Guide Sign Layout

Coordination with the Union Pacific Railroad (UPRR) will be necessary as the at-grade railroad crossing near the intersection of 235th Street and Old US 75/Co Rd K45 will be impacted by this project. It is anticipated the existing railroad crossing will need to be widened to accommodate 3-lanes on 235th Street (one eastbound lane, one westbound lane, and one eastbound left turn lane). The alignment of Old US 75/Co Rd K45 will be improved within existing county roadway ROW to address elevation differences between the roadway and the UP railroad as well as explore the opportunity to provide a southbound to westbound right turn lane.

Due to the realignment of 235th Street, Banner Avenue on the east side of I-29 will need to be extended to avoid a dead end. Banner Avenue will be extended south, parallel to the NB entrance ramp where it will tie into the realigned 235th Street. The location of the proposed intersection of Banner Avenue and 235th Street should adhere to the most current guidelines for interchange area access control as described in the Iowa DOT Access Management Manual.

Staging and maintenance of traffic will be an important factor in the overall project design. It is anticipated that mainline I-29 will maintain two open lanes of traffic in each direction during construction. Nighttime lane closures may be necessary.

Local roadway traffic on existing 235th Street and Banner Avenue will be detoured as necessary. It is anticipated that Port Neal Road will remain open to traffic during construction with minimal closures possible for intersection tie-in work. Old US 75/Co Rd K45 may require closures to accommodate improvements at the intersection with relocated 235th Street.

Important features in the project corridor that introduce potential design risks include, but are not limited to:

- At-grade railroad crossing near the intersection of 235th Street and Old US 75/Co Rd K45
- Overhead electric transmission lines south of the proposed interchange (see Figure 2 for approximate locations)
- Geotechnical considerations

In addition to the design risks mentioned above, additional utility investigations in the project area will be necessary. Every effort should be made to avoid and/or minimize utility impacts with this project.

The current budget is estimated at \$27.8M, of which the DOT will be responsible for approximately \$500,000 in ROW costs. The remainder of the project will be locally funded. Updated cost information will be available Fall 2024.

B. Program Status

This project has been identified for funding in the DRAFT 2024-2028 Iowa Transportation Improvement Program. A preliminary schedule of events has been developed with a January 2026 letting. Estimated project costs are \$27,800,000.

Roadway	I-29 Southbridge		
PIN Number	06-97-029-010	Submittal Date	08/18/23
Project Number	IMN-029-6(170)139--0E-97		Approval Date
District	District 3	Assistant District Engineer	Shane Tymkowicz
County	Woodbury		
Route	I-29	Office Director	
Location	New I-29 Interchange approximately 2.5 mi S of the Co Rd D-38 Interchange at Sergeant Bluff		
Work Type	PCC Pavement - Grade and New		
Segment Manager			
Designer	HNTB		

Design Manual Section 1C-1
Last Updated: 04-29-19

Rural Interstates (Rural Freeways)

Design Element	Preferred	Acceptable	Project Values
Design speed (mph)	75	70	70
Maximum superelevation rate (%) (Refer to Section 2A-2)	6	8	6
Design lane width (ft)	12	12	12
Full depth paved width (ft)	Outside lane	12	12
	Inside lane(s)	12	12
Auxiliary-lane width (ft)	12	12	12
Pavement cross-slope (on tangent sections)	Through lanes	2%, However, when adjacent lanes slope in the same direction, increase slope by 0.5% per lane up to 3%	1.5% minimum, 3% maximum
	Auxiliary lanes	3%	3% maximum
	Crown break at centerline	4%	4% maximum
Shoulder cross-slope (on tangent sections)	Interstates	4%	6% max, but not less than the cross slope of the adjacent lane
	Freeways	4%	6% max, but not less than the cross slope of the adjacent lane
Curb type (Refer to Section 3C-2)	Interstates	4-inch sloped	4-inch sloped
	Freeways	4-inch sloped	4-inch sloped
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	4:1 for Interstates, 3:1 for Freeways*
	Beyond standard ditch depth and design clear zone	3.5:1	3:1
	Curbed roadways	2%	4:1 for Interstates, 3:1 for Freeways*
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1
Transverse Slopes	w/ drainage structures	8:1	6:1
	w/o drainage structures	10:1	6:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--
	Median ditch depth (ft)	4	2
Median width (ft) (Refer to Section 3E-1)	Interstates	82	36
	Freeways	64	50
Bridge width—new***	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths
Bridge width—existing***	Bridge length ≤ 200 ft	design lane widths + no less than 10' right and 3.5' left	design lane widths + 10' right shoulder and 3.5' left shoulder
	Bridge length > 200 ft	design lane widths + no less than 3.5' right and left	design lane widths + 3.5' right and left of the design lane widths
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16
	Over non-primary	16.5 at interchange locations, 15 ft at all other locations	14
	Over railroad	23.3	23.3
	Sign trusses and pedestrian crossings	17.5	17
Structural Capacity	Contact Office of Bridges and Structures		Contact Office of Bridges and Structures
Level of Service	Freeway segments	B	B
	Auxiliary facilities	B	B**

*Design Exception not required for Freeways

**LOS C may be acceptable in spot locations with FHWA approval

***FHWA notification via email is required if acceptable criteria is not met on the Interstate or NHS systems (No formal design exception required)

Roadway Design Speed (mph) = 70

Design Manual Section 1C-1
Last Updated: 04-29-19

Design Criteria for High Speed Roadways

Design Element	Preferred Criteria						Acceptable Criteria						Project Values								
	Design Speed, mph						Design Speed, mph														
	50	55	60	65	70	75	50	55	60	65	70	75									
Stopping sight distance (ft) (Refer to Section 6D-1)	425	495	570	645	730	820	425	495	570	645	730	820	*N/A								
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e _{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	*N/A						
		e _{max} = 8%	--	--	--	--	--	--	--	758	960	1200	1480	1810	2210	*N/A					
Minimum vertical curve length (ft) (Refer to Section 2B-1)	crest vertical curves						150	165	180	195	210	225	150	165	180	195	210	225	*N/A		
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	sag vertical curves	roadways without fixed-source lighting	84	114	151	193	247	312	84	114	151	193	247	312	84	114	151	193	247	312	*N/A
		roadways with fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	54	66	78	91	106	121	*N/A
Minimum gradient (%) (Refer to Section 2B-1)	0.5						0.3% with a curb, 0.0% without a curb						*N/A								
Maximum gradient (%) (Refer to Section 2B-1)	Urban roadways	4		3				7	6	6	--	--	--	*N/A							
	Rural roadways	4		3				5	5	4	4	4	4	*N/A							
	Interstates	4		3				5	5	4	4	4	4	*N/A							
Clear zone	See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						**See Notes								

* No reconstruction of I-29 thru lanes. Auxiliary lanes will be widened from existing I-29 outside lanes.

** I-29 thru lane clear zone = 34'

I-29 auxiliary lanes clear zone = 32'

Roadway	I-29 & Southbridge		
PIN Number	06-97-029-010	Submittal Date	08/18/23
Project Number	IMN-029-6(170)139--0E-97		Approval Date
District	District 3	Assistant District Engineer	Shane Tymkowicz
County	Woodbury	or	
Route	I-29	Office Director	
Location	New I-29 Interchange approximately 2.5 mi S of the Co Rd D-38 Interchange at Sergeant Bluff		
Work Type	PCC Pavement - Grade and New		
Segment Manager			
Designer	HNTB		

Design Manual Section 1C-1
Last Updated: 04-29-19

Ramps

Design Element		Preferred Values	Acceptable Values	Project Values
Design speed (mph)		See Design Speed for Ramps Table Below	See Design Speed for Ramps Table Below	60/40
Design lane width (ft)				
Turn-lane width (ft)	Interstate ramps	12	12	N/A
	Non-Interstate ramps	12	10	N/A
Pavement cross-slope (on tangent sections)		2%	1.5% minimum, 2% maximum	2%
Shoulder cross-slope (on tangent sections)		4	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	4:1 for interstates*, 3:1 for other roadways	10:1 / 6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3.5:1
	Curbed roadways	2%	not steeper than 3:1	N/A
Bridge width—new**		design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	N/A
Bridge width—existing**		design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	N/A
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	N/A
	over non-primary	16.5 at interchange locations, 15 at all other locations	14	N/A
	over railroad	23.3	23.3	N/A
	sign truss and pedestrian bridges	17.5	17	N/A
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	N/A

*Design Exception required for ramps on the Interstate system only

**FHWA notification via email is required if acceptable criteria is not met on the Interstate or NHS systems (No formal design exception required)

Effective Shoulder Width and Type for Ramps

Design Element	Ramp Type														Project Values	
	Preferred							Acceptable								
	Diagonal		Loop	Semi-Directional		Directional		Diagonal		Loop	Semi-Directional		Directional			
	one lane	two lane		one lane	two lane	one lane	two lane	Radius > 500 feet*			Radius > 500 feet*		Radius > 500 feet			
								one lane	two lane		one lane	two lane	one lane	two lane		
Full depth paved width (ft)	16	24	18	16	24	16	24	14	22	17	14	22	14	22	16	
Design lane width (ft)	16	12	18	16	12	16	12	14	11	17	14	11	14	11	16	
Paved shoulder width (ft) (in the direction of travel)**	Left	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Right	6	6	6	6	6	8	8	6	6	6	6	8	8	6	
***Granular shoulder width (ft) (in the direction of travel)	Left	4	-	-	-	-	-	-	4	-	-	-	-	-	N/A	
	Right	6	-	-	-	-	-	-	6	-	-	-	-	-	N/A	
Curb type	Interstate	4-inch sloped							4-inch sloped							N/A
	Non-Interstate	4-inch sloped							6-inch sloped							N/A

*For radii less than 500 feet, refer to design widths of pavement for turning roadways in [A Policy on Geometric Design of Highways and Streets](#)

**Left and right shoulders widths may be reversed if needed to provide additional sight distance

***Non-Interstate interchanges only

Notes:

Ramp Design Speed (mph) = 60 / 40

Design Manual Section 1C-1
Last Updated: 04-29-19

Design Criteria for Ramps Based Upon Design Speed

Design Element	Preferred Criteria								Acceptable Criteria								Project Values								
	Design Speed, mph								Design Speed, mph																
	25	30	35	40	45	50	55	60	25	30	35	40	45	50	55	60									
Stopping sight distance (ft) (Refer to Section 6D-1)	155	200	250	305	360	425	495	570	155	200	250	305	360	425	495	570	570 / 305								
Minimum horizontal curve radius (ft) and superelevation rate (Refer to Sections 2A-2 and 2A-3)	Method 2 superelevation and side friction distribution	e = 4% max See Table 10 in Section 2A-3								--								N/A							
	Method 5 superelevation and side friction distribution	e _{max} = 6% e _{max} = 8%								144	231	340	485	643	833	1060	1330	144	231	340	485	643	833	1060	1330
Minimum vertical curve length (ft) (Refer to Section 2B-1)	75	90	105	120	135	150	165	180	75	90	105	120	135	150	165	180	180 / 120								
Minimum Rate of Vertical Curvature (Refer to Section 2B-1)	crest vertical curves		12	19	29	44	61	84	114	151	12	19	29	44	61	84	114	151	151 / 44						
	sag vertical curves	roadways without fixed-source lighting	26	37	49	64	79	96	115	136	26	37	49	64	79	96	115	136	136 / 64						
		roadways with fixed-source lighting	26	37	49	64	79	96	115	136	14	20	27	35	44	54	66	78	136 / 64						
Minimum gradient (%) (Refer to Section 2B-1)	0.5								0.3% with a curb, 0.0% without a curb								0.5%								
Maximum gradient (%) on ramps (Refer to Sections 2B-1)	Upgrades		4								8	7	6	6	5	5	5	5	4						
	Downgrades										Equal to the maximum upgrade gradient. In special cases, may be 2% greater but in no case greater than 8%														
Clear zone	See "Preferred Clear Zone" table in Section 8A-2								See "Acceptable Clear Zone" table in Section 8A-2								32 / 16								

Ramp Design Speed (mph) = 60 / 40

Design Manual Section 1C-1
Last Updated: 04-29-19

Design Speed for Ramps

Design Element	Ramp Type										Project Values
	Preferred					Acceptable					
	All curves near free flow terminals	Diagonal Curves near at-grade terminals	Loop	Semi-Directional	Directional	All curves near free flow terminals	Diagonal Curves near at-grade terminals	Loop	Semi-Directional	Directional	
Design speed (mph)	60	40	30	50	60	50	35	25	40	40	60 / 40
Maximum superelevation rate (Refer to Section <u>2A-2</u> for details)	6%	4%	6%			8%					6%

Roadway	235th Street		
PIN Number	06-97-029-010	Submittal Date	8/18/2023
Project Number	IMN-029-6(170)139--0E-97	Revision Date	
District	District 3		
County	Woodbury		
Route	I-29		
Location	New I-29 Interchange approximately 2.5 mi S of the Co Rd D-38 Interchange at Sergeant Bluff		
Work Type	PCC Pavement - Grade and New		
Segment Manager			
Designer	HNTB		
Design year ADT =	4490		
<u>Design Manual Section 1C-1</u> Last Updated: 04-29-19	235th Street will be designed to 55 mph at the request of the County.	Secondary Roads	
Design Elements	Project value	Local Systems I.M. 3.210 value	Remarks
Design speed (mph)	50	40	
Design lane width (ft.)	12	10	
Shoulder width (ft.)	8	2	
Bridge width - new (ft.)	See Remarks	24	See I-29 for Bridge
Bridge width - existing (ft.)	N/A	22	
Maximum super elevation rate (%)	6	8	
Minimum radius (ft.)	833	444	
Stopping sight distance (ft.)	425	305	
Vertical curve length (ft.)	150	120	
Minimum rate of vertical curvature (K)	Crest	84	44
	Sag	96	64
Minimum gradient (%)	0.4		
Maximum gradient (%)	5	7	
Foreslope	6:1 / 3.5:1	3:1	Clear Zone / Foreslope
Backslope	3:1		
Traverse slopes			
Clearzone	16	7-10	

Notes:

Information obtained from I.M. 3.210, Page 4.

Roadway	Old US 75		
PIN Number	06-97-029-010	Submittal Date	8/18/2023
Project Number	IMN-029-6(170)139--0E-97	Revision Date	
District	District 3		
County	Woodbury		
Route	I-29		
Location	New I-29 Interchange approximately 2.5 mi S of the Co Rd D-38 Interchange at Sergeant Bluff		
Work Type	PCC Pavement - Grade and New		
Segment Manager			
Designer	HNTB		
Design year ADT =			

Design Manual Section 1C-1
Last Updated: 04-29-19

Secondary Roads

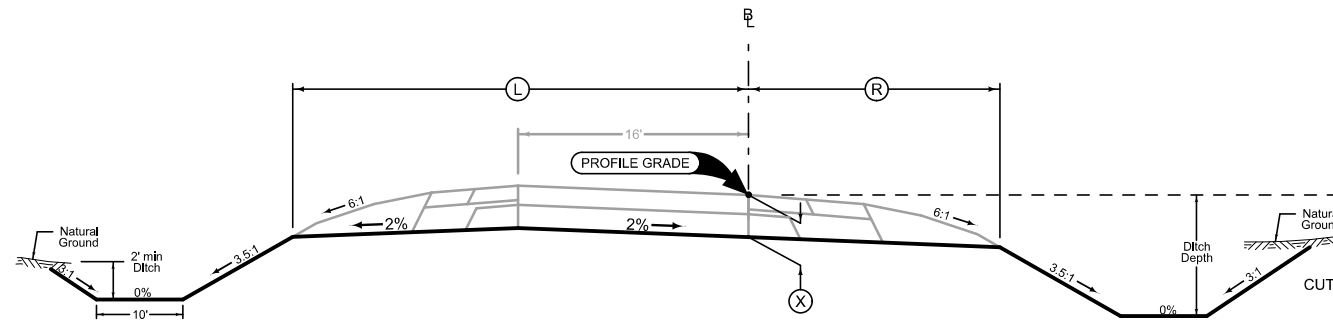
Design Elements		Project value	Local Systems I.M. 3.210 value	Remarks
Design speed (mph)		60	60	
Design lane width (ft.)		12	12	
Shoulder width (ft.)		3	6	
Bridge width - new (ft.)		N/A	34	
Bridge width - existing (ft.)		N/A	28	
Maximum super elevation rate (%)		N/A	8	
Minimum radius (ft.)		N/A	1200	
Stopping sight distance (ft.)		570	570	
Vertical curve length (ft.)		180	180	
Minimum rate of vertical curvature (K)	Crest	151	151	
	Sag	136	136	
Minimum gradient (%)		0.5		
Maximum gradient (%)		5	5	
Foreslope		3:1	3:1	
Backslope		3:1		
Traverse slopes				
Clearzone		30	30-40	

Notes:

Information obtained from I.M. 3.210, Page 4.

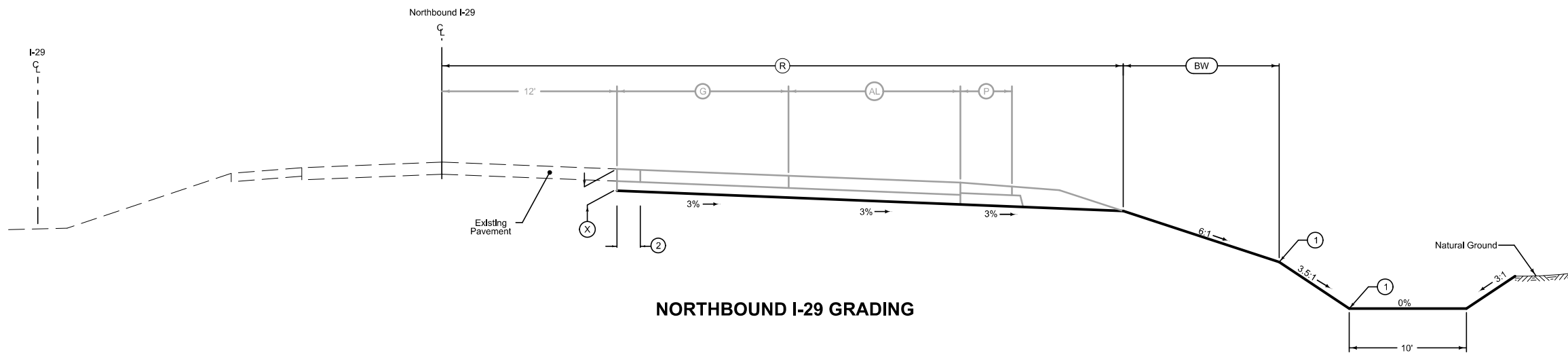
LOCATION				DIMENSIONS		
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches
235th Street	A	1000+20.00	1014+61.31	33	18	22
235th Street	B	2000+00.00	2015+31.10	33	18	22
235th Street	C	3000+00.00	3017+83.21	33	18	22
235th Street	D	4000+20.71	4016+72.70	33	18	22

Section view is in direction of traffic.
Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves



RAMP GRADING

Standard slopes are shown at all mainline, ramps and sideroads. Should geotechnical investigation results warrant, sideslopes may be flattened.



NORTHBOUND I-29 GRADING

Gore, Acceleration and Deceleration Lane

Section view is in the direction of traffic.

Direction of Travel	BEGIN STATION	END STATION	(X) Inches	(R) Feet	(BW) Feet
NB	1604+30.00	1607+30.00	16	28.5-41	4.5
NB	1607+30.00	1617+30.00	16	41	4.5
NB	1617+30.00	1618+20.00	16	41-47	4.5
NB	1618+20.00	1621+50.00	16	47-69	4.5
NB	1650+58.50	1652+08.50	16	65-47	4.5
NB	1652+08.50	1653+68.65	16	47-41	4.5
NB	1653+68.65	1665+00.00	16	41	4.5
NB	1665+00.00	1671+00.00	16	41-37	4.5

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

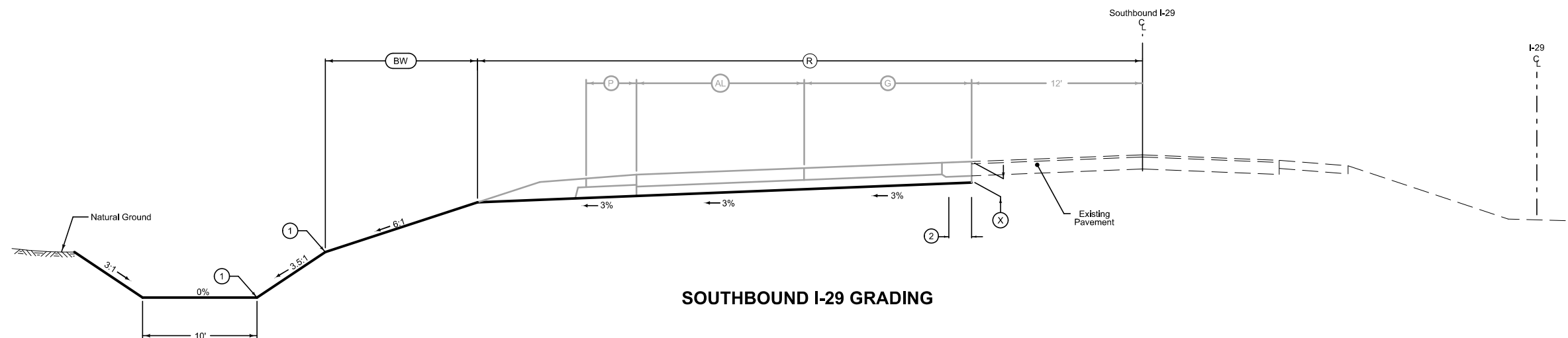
- 1 Refer to project plan and cross sections for specific location of foreslope change and ditch details.
- 2 Remove 2'-0" existing slab.

Gore, Acceleration and Deceleration Lane

Direction of Travel	BEGIN STATION	END STATION	(X) Inches	(R) Feet	(BW) Feet
SB	1606+00.00	1612+00.00	18	29.5-42.5	4.5
SB	1612+00.00	1622+00.00	18	42.5	4.5
SB	1622+00.00	1623+60.15	18	42.5-49	4.5
SB	1623+60.15	1625+10.15	18	49-66.5	4.5
SB	1654+00.00	1657+30.00	18	70.5-48.5	4.5
SB	1657+30.00	1658+20.00	18	48.5-42.5	4.5
SB	1658+20.00	1668+20.00	18	42.5	4.5
SB	1668+20.00	1671+20.00	18	42.5-36.5	4.5

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

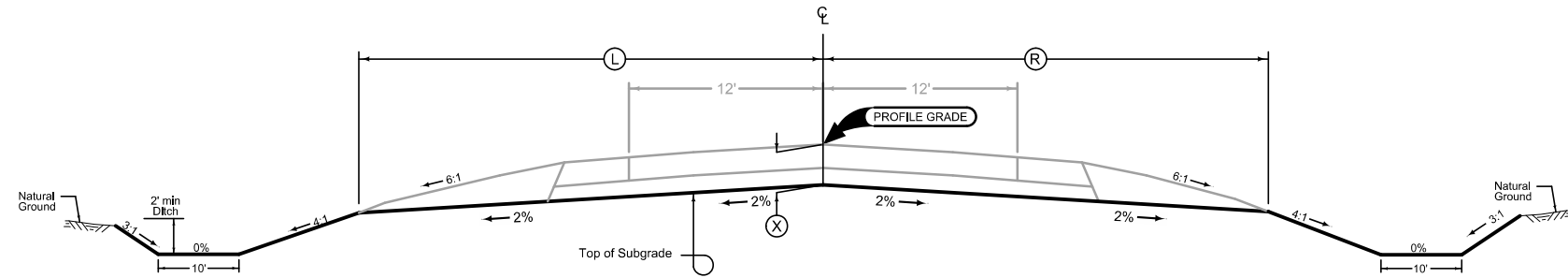
- 1 Refer to project plan and cross sections for specific location of foreslope change and ditch details.
- 2 Remove 2'-0" existing slab.



SOUTHBOUND I-29 GRADING

MAINLINE AND RAMP GRADING

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	Ⓐ Feet	Ⓑ Feet	Ⓒ Inches	
235th Street	5000+62.00	5001+77.00	41	39	15
235th Street	5001+77.00	5002+72.41	41-39	39	15
235th Street	5002+72.41	5006+28.05	39	39	15
235th Street	5006+28.05	5008+08.11	39	39-49	15
235th Street	5008+08.11	5010+10.83	39	49	15
235th Street	5010+10.83	5012+54.99	39	39	22
235th Street	5014+93.20	5018+23.83	39	39	22
235th Street	5018+23.83	5020+18.40	49	39	15
235th Street	5020+18.40	5021+98.40	49-39	39	15
235th Street	5021+98.40	5027+38.40	39-29	39-29	15
235th Street	5027+38.40	5056+20.15	29	29	15
235th Street	5056+20.15	5057+26.58	29	29-40	15
235th Street	5057+26.58	5058+41.59	29	40	15

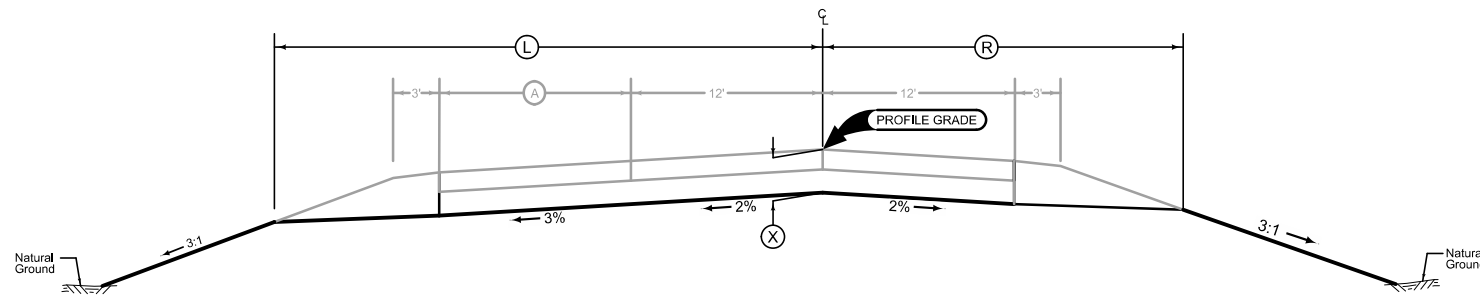


235TH STREET

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

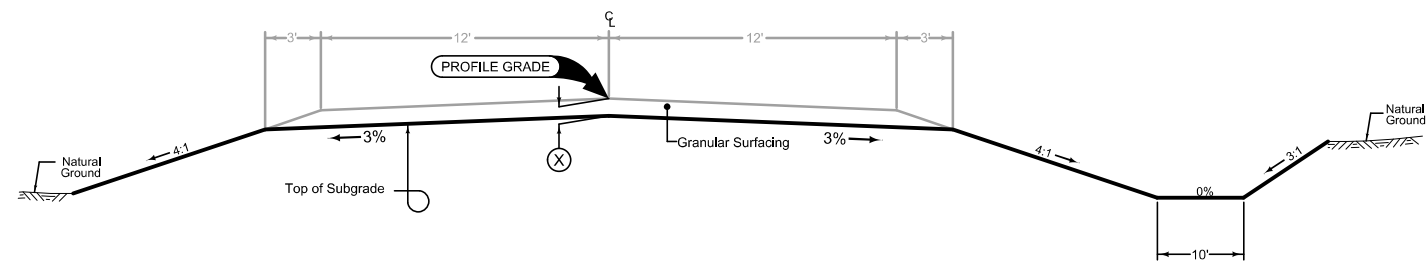
See plan & profile sheets and cross sections for additional details of ditches and backslopes.

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	Ⓐ Feet	Ⓑ Feet	Ⓒ Inches	
Old US 75	335+25.00	339+27.97	18	18	15
Old US 75	339+27.97	343+50.00	30	18	15
Old US 75	343+50.00	344+97.97	30	0	15
Old US 75	344+97.97	346+17.97	30-18	0	15



OLD US 75

LOCATION		DIMENSIONS	
ROAD IDENTIFICATION	STATION TO STATION	Ⓒ Inches	
Banner Avenue	8000+66.00	8006+62.00	3
Barker Avenue	9001+85.00	9002+47.84	3



BANNER AVENUE
BARKER AVENUE

SIDEROAD 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 backslopes.

PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C, Match Auxiliary Lane

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
SB	1606+00.00	1608+00.00	12-6
SB	1608+00.00	1625+10.15	6
SB	1625+10.15	1625+35.15	10
SB	1653+75.00	1654+00.00	10
SB	1654+00.00	1670+20.12	6
SB	1670+20.12	1671+20.00	6-10

PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-3
 Transverse joints: C, Matching Mainline Joints

Direction of Travel	BEGIN STATION	END STATION
SB	1603+46.93	1633+33.74
SB	1651+32.37	1679+25.57

PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-3
 Transverse joints: C Matching Mainline Joints

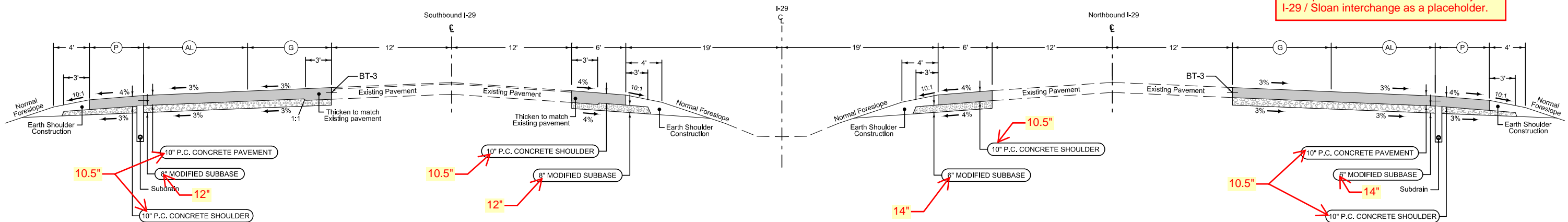
Direction of Travel	BEGIN STATION	END STATION
NB	1596+32.80	1624+25.62
NB	1643+67.25	1673+46.31

PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C, Match Auxiliary Lane

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
NB	1604+30.00	1605+29.88	10-6
NB	1605+29.88	1621+50.00	6
NB	1621+50.00	1621+75.00	10
NB	1650+33.50	1650+58.50	10
NB	1650+58.50	1665+00.00	6
NB	1665+00.00	1671+00.00	6-12

Pavement section shown at D02 reflects the same pavement section as the recently let I-29 / Sloan interchange as a placeholder.



Gore, Acceleration and Deceleration Lane

Longitudinal joint: KT-2
 Transverse joint: CD, Match Mainline

Direction of Travel	BEGIN STATION	END STATION	(G) Feet	(AL) Feet
SB	1606+00.00	1612+00.00	0	0-12
SB	1612+00.00	1622+00.00	0	12
SB	1622+00.00	1623+60.15	0	12-18
SB	1623+60.15	1625+10.15	2-20	16
SB	1654+00.00	1657+30.00	24-2	16
SB	1657+30.00	1658+20.00	0	18-12
SB	1658+20.00	1668+20.00	0	12
SB	1668+20.00	1671+20.00	0	12-0

Gore, Acceleration and Deceleration Lane

Longitudinal joint: KT-2
 Transverse joint: CD, Match Mainline

Direction of Travel	BEGIN STATION	END STATION	(G) Feet	(AL) Feet
NB	1604+30.00	1607+30.00	0	0-12
NB	1607+30.00	1617+30.00	0	12
NB	1617+30.00	1618+20.00	0	12-18
NB	1618+20.00	1621+50.00	2-24	16
NB	1650+58.50	1652+08.50	20-2	16
NB	1652+08.50	1653+68.65	0	18-12
NB	1653+68.65	1665+00.00	0	12
NB	1665+00.00	1671+00.00	0	12-0

See markups for preliminary pavement determination provided by C. Brakke on 8/30/23. D. Zeimen requested a PD Sheet be submitted to Systems Planning.

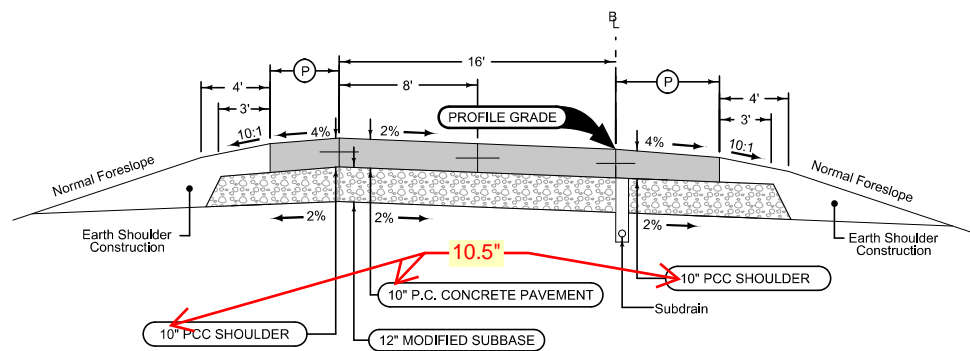
Pending Pavement Determination

I-29 PAVING

PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2
 Transverse joints: CD, Match Ramp

ROAD IDENTIFICATION	BEGIN STATION	END STATION	(P) Feet
Ramp A	1000+20.00	1014+61.31	4
Ramp B	2000+00.00	2016+31.10	4
Ramp C	3003+08.92	3017+83.21	4
Ramp D	4000+20.71	4013+63.78	4



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joints: L-2

ROAD IDENTIFICATION	BEGIN STATION	END STATION
Ramp A	1000+20.00	1014+61.31
Ramp B	2000+00.00	2016+31.10
Ramp C	3000+00.00	3017+83.21
Ramp D	4000+20.71	4016+72.70

PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2
 Transverse joints: CD, Match Ramp

ROAD IDENTIFICATION	BEGIN STATION	END STATION	(P) Feet
Ramp A	1000+20.00	1014+61.31	6
Ramp B	2000+00.00	2015+31.10	6
Ramp C	3000+00.00	3017+83.21	6
Ramp D	4000+20.71	4016+72.70	6

See markups for preliminary pavement determination provided by C. Brakke on 8/30/23. D. Zeimen requested a PD Sheet be submitted to Systems Planning.

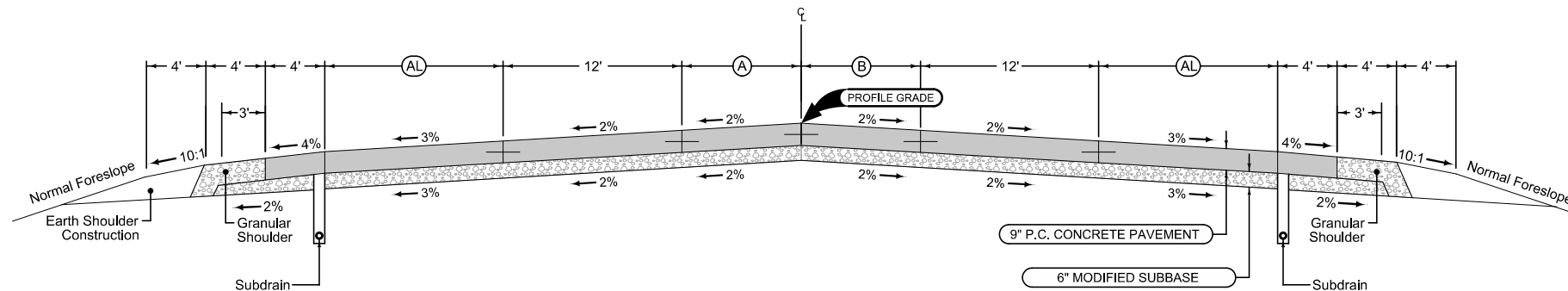
Pending Pavement Determination

RAMP PAVING

PCC Auxiliary Lane And Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2
 Transverse joints: CD, Match Ramp

ROAD IDENTIFICATION	BEGIN STATION	END STATION	AL Feet
235th Street	5000+62.00	5001+77.00	12
235th Street	5001+77.00	5002+72.41	12-0
235th Street	5002+72.41	5009+60.00	0
235th Street	5018+75.00	5020+18.40	12
235th Street	5020+18.40	5021+98.40	12-0
235th Street	5021+98.40	5058+29.56	0



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

STATION TO STATION		(A) Feet	(B) Feet
5000+12.00	5001+77.00	12	8
5001+77.00	5002+72.41	12-8	8
5002+72.41	5009+60.00	8	8
5018+75.00	5022+98.40	8	8
5022+98.40	5027+38.40	8-0	8-0
5027+38.40	5056+05.46	0	0
5056+05.46	5057+26.60	0-4	0
5057+26.60	5058+41.59	4	0

M. Nahra (Woodbury County) noted subdrains are not necessary on the County section of 235th Street. HNTB will include subdrains between the ramp terminals only.

Iowa DOT noted DR-303 specifies 500' spacing with double outlets due to limitations of televising distance.

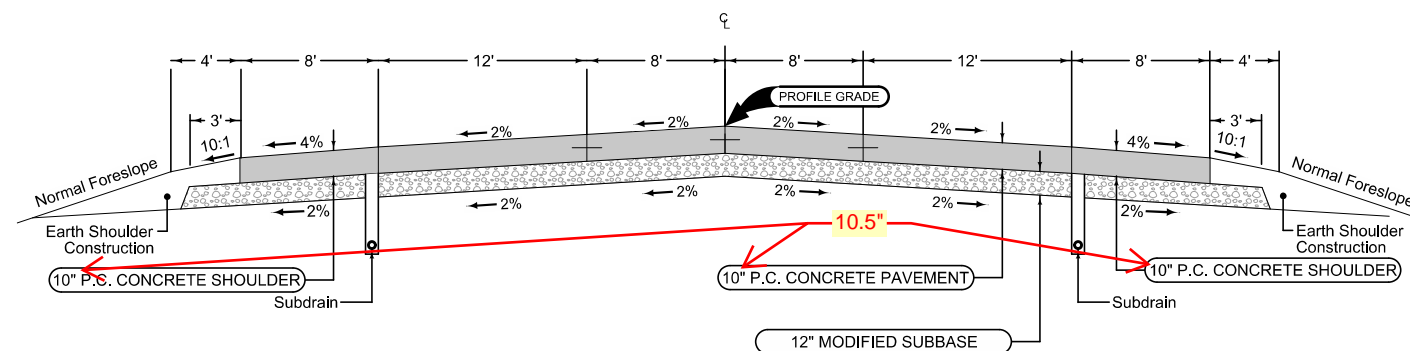
Confirm County preference for 6" or 8" Modified Subbase

M. Nahra (Woodbury County) confirmed 9" PCC over 6" modified subbase with no subgrade treatment is sufficient on their facility.
 M. Nahra confirmed including dowels in the wheel path at a minimum but preferably across joints.
 M. Nahra noted their standard joint spacing is 15', different than by Iowa DOT.

PCC Auxiliary Lane And Shoulder

PCC Shoulder Jointing:
 Longitudinal joint: L-2
 Transverse joints: CD, Match Ramp

ROAD IDENTIFICATION	BEGIN STATION	END STATION	AL Feet
235th Street	5000+62.00	5006+28.05	0
235th Street	5006+28.05	5008+08.11	0-12
235th Street	5008+08.11	5009+60.00	12
235th Street	5018+75.00	5056+20.15	0
235th Street	5056+20.15	5057+26.58	0-12
235th Street	5057+26.58	5058+41.59	12



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

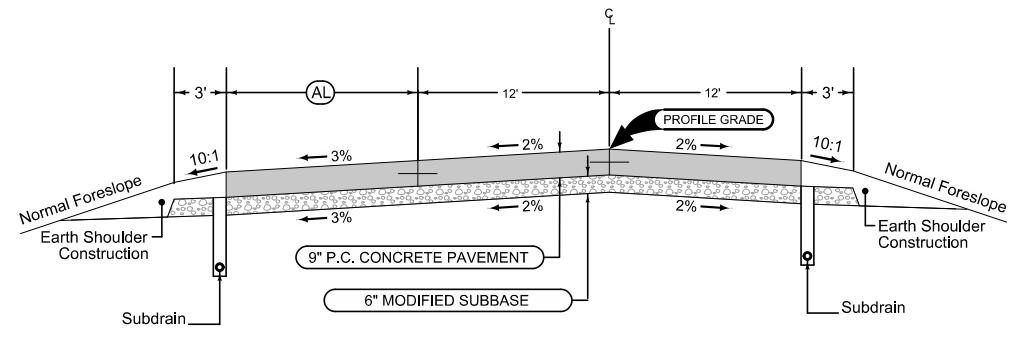
STATION TO STATION	
5009+60.00	5012+54.99
5014+93.20	5018+75.00

SIDEROAD PAVING 235TH STREET

Auxiliary Lane

Jointing:
Transverse joints: CD, Match Mainline
Longitudinal joints: L-2 or KT-2

STATION TO STATION		(AL) Feet
339+93.99	343+50.00	12



Section shown in the direction of stationing.

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

ROAD IDENTIFICATION	BEGIN STATION	END STATION
Old Hwy 75	335+00.00	346+17.97

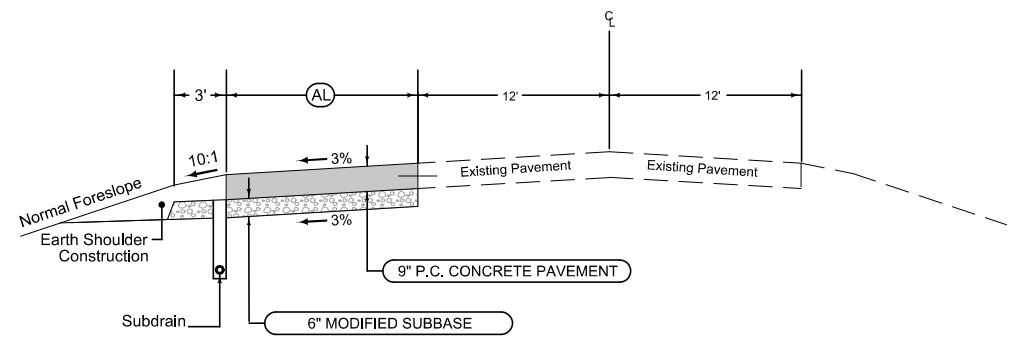
Confirm County preference for 6" or 8" Modified Subbase

M. Nahra (Woodbury County) confirmed 9" PCC over 6" modified subbase with no subgrade treatment is sufficient on their facility.
M. Nahra confirmed including dowels in the wheel path at a minimum but preferably across joints.
M. Nahra noted their standard joint spacing is 15', different than by Iowa DOT.

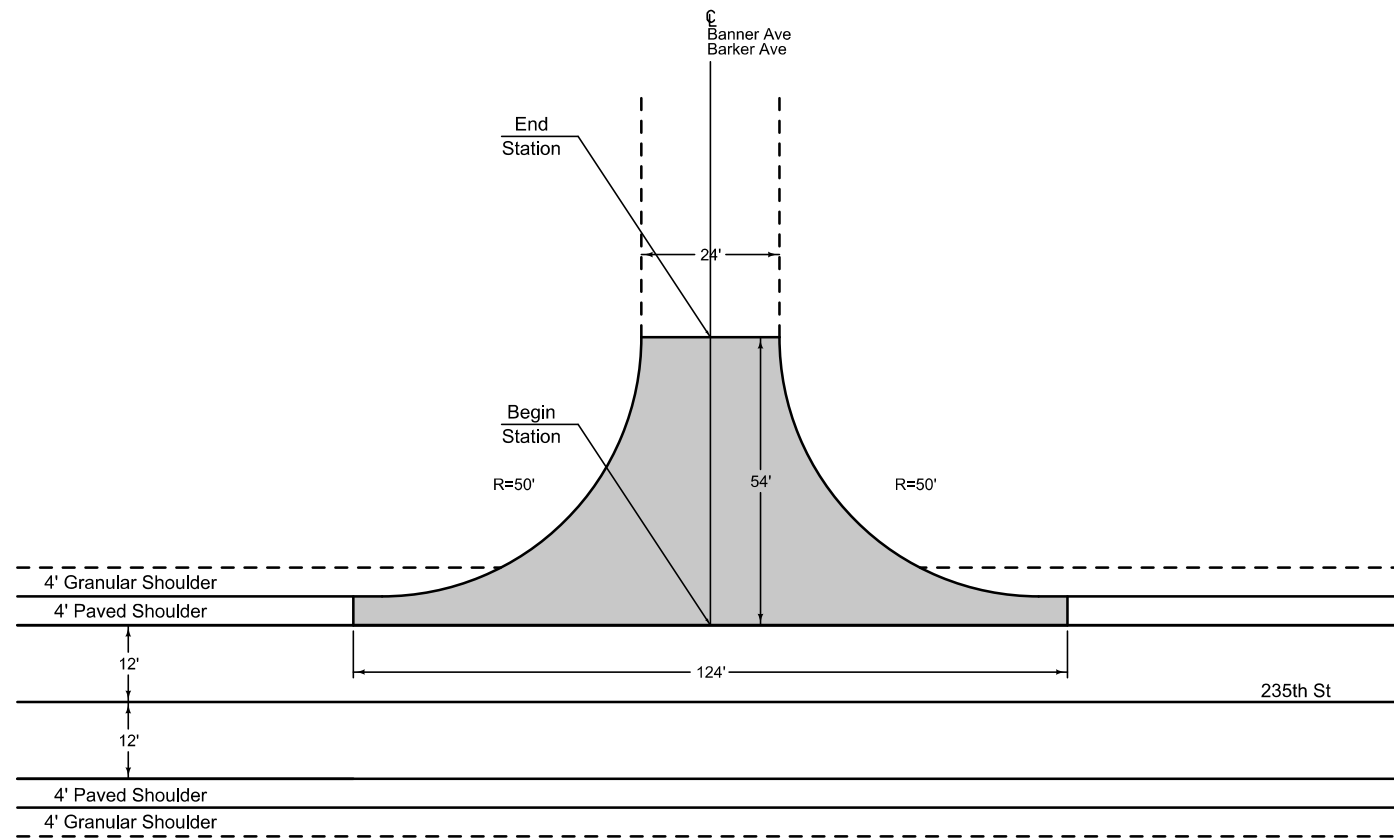
Auxiliary Lane

Jointing:
Transverse joints: CD, Match Mainline
Longitudinal joints: KT-2

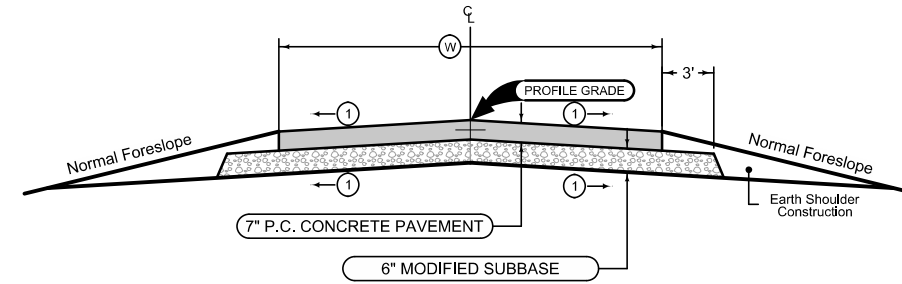
STATION TO STATION		(AL) Feet
343+50.00	344+97.97	12
344+97.97	346+17.97	12-0



**SIDEROAD PAVING
OLD US 75**



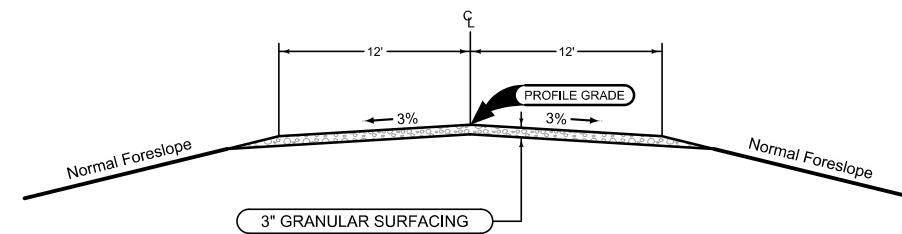
PAVED RETURNS



① Subgrade parallels pavement slope. See L sheets for details.

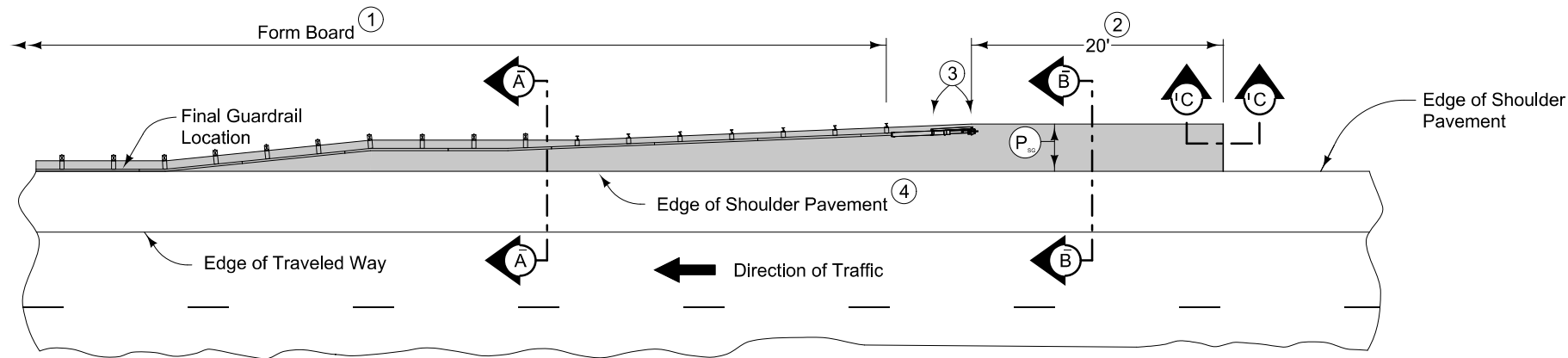
Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

LOCATION		DIMENSIONS
ROAD IDENTIFICATION	STATION TO STATION	⊙ Feet
Banner Avenue	8000+12.00 8000+66.00	124-24
Barker Avenue	9002+47.84 9003+01.84	124-24



LOCATION		DIMENSIONS
ROAD IDENTIFICATION	STATION TO STATION	
Banner Avenue	8000+66.00 8006+62.00	
Barker Avenue	9001+85.00 9002+47.84	

**SIDEROAD PAVING
BANNER AVENUE
BARKER AVENUE**



PLAN VIEW

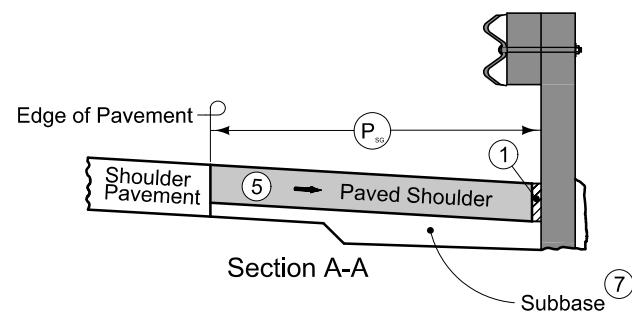
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

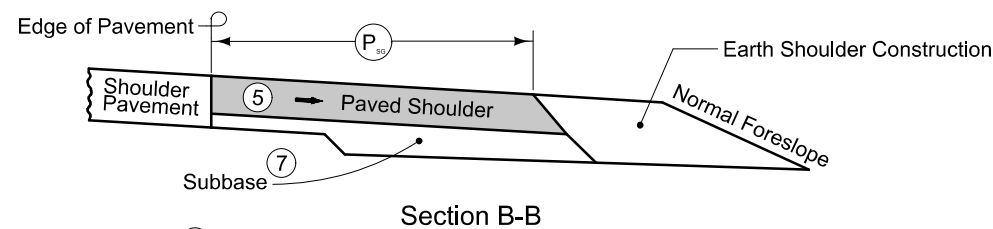
Refer to Tabulation 112-9 for shoulder quantities.

- 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 full width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.

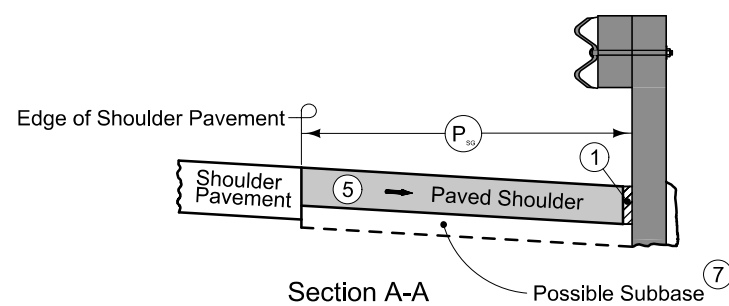


Section A-A

NEW CONSTRUCTION

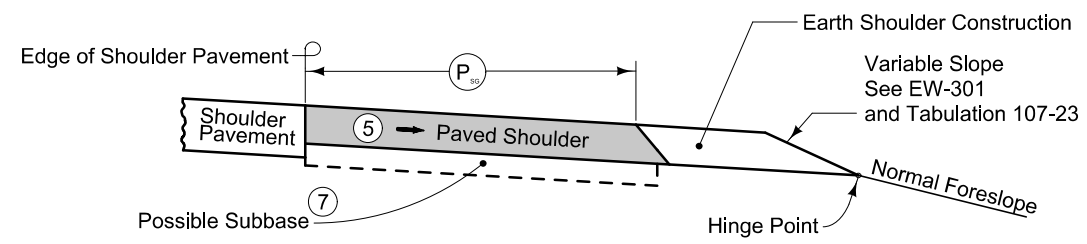


Section B-B

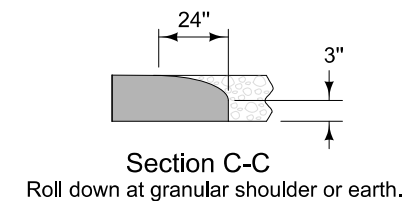


Section A-A

EXISTING SHOULDER



Section B-B



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

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Satellite TV Dish
	Fruit Tree		Water Hook Up
	Shrub (Bushes)		Radio Tower
	Timber		Tower Anchor
	Hedge		Guardrail (Beam or Cable)
	Stump		Guard Post (one or two)
	Swamp		Guard Post (over two)
	Rock Outcrop		Filler Pipe
	Broken Concrete		Gas Valve
	Revetment (Rip Rap)		Water Valve
	Cemetery		Speed Limit Sign
	Grave		Mile Marker Post
	Cave		Sign
	Sink Hole		Traffic Signal Control Box
	Board Fence		Rail Road Signal Control Box
	Chain Link or Security Fence		Telephone Switch Box
	Wire Fence		Electric Box
	Terrace		
	Earth Dam or Dike (Existing)		
	Tile Outlet		
	Edge of Water		
	Existing Drainage		
	Right of Way Rail or Lot Corner		
	Concrete Monument		
	Well		
	Windmill		
	Beehive Intake		
	Existing Intake		
	Existing Utility Access (Manhole)		
	Fire Hydrant		
	Water Hydrant (Rural)		

UTILITY LEGEND

- FO2 -	FIBERCOMM, L.C. SADIE HULL 9185470147 sadie.hull@lumen.com
- FO2 -	LONG LINES BROADBAND SHANNON MARLOW 8005723940 icnoutsidplantiowaonecall@iowa.gov
- FO2 -	MIDAMERICAN ENERGY (FIBER) CRAIG RANFELD 5152526632 mecdsmdesignlocates@midamerican.com
- E1 -	MIDAMERICAN ENERGY (ELECTRIC) JAMIE NEER 5152526972 mecdsmdesignlocates@midamerican.com
- G -	MIDAMERICAN ENERGY (GAS) WAYNE PATTERSON wayne.mitchellville@yahoo.com
- FO -	MIDWEST FIBER NETWORKS LCC Contact Name Contact Email
- G -	NORTHERN NATURAL GAS COMPANY ED CLARK 5153236244 onecallmaps@dmww.com
- W -	BLACK HILLS ENERGY COUNCIL BLUFF Contact Name: Contact Phone: Contact Email:
- SAN -	SIOUX CITY, CITY OF Contact Name: Contact Phone: Contact Email:
- E1 -	WOODBURY COUNTY RURAL ELECTRIC Contact Name: Contact Phone: Contact Email:

K. Mulvihill (District 3) will provide updated utility contact information.

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

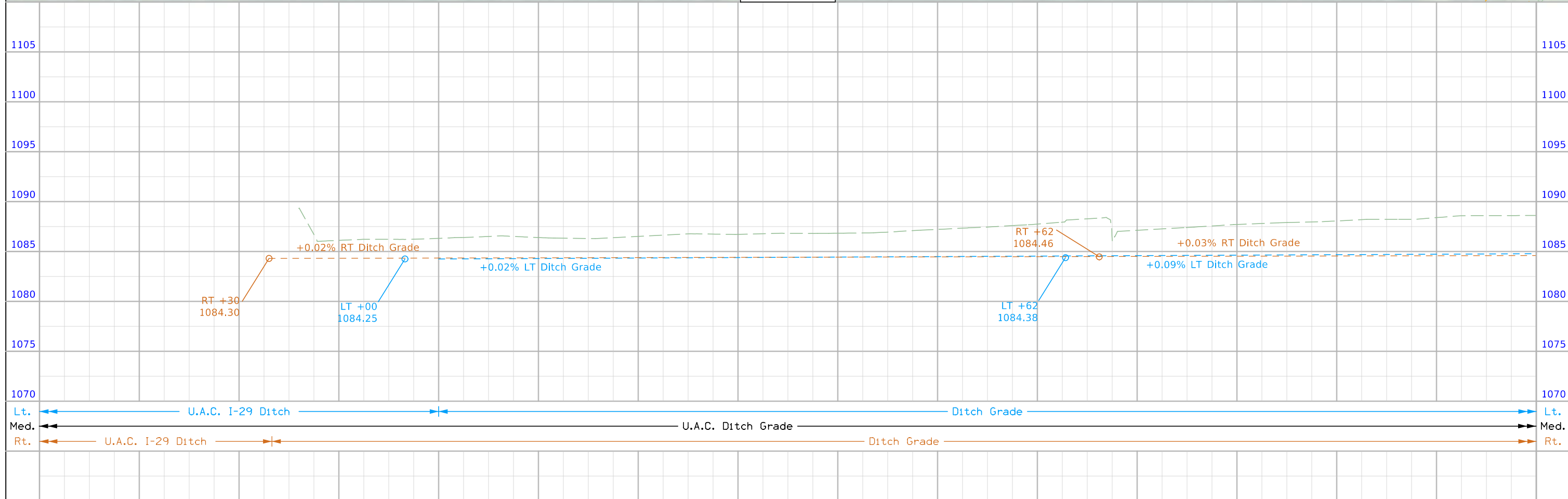
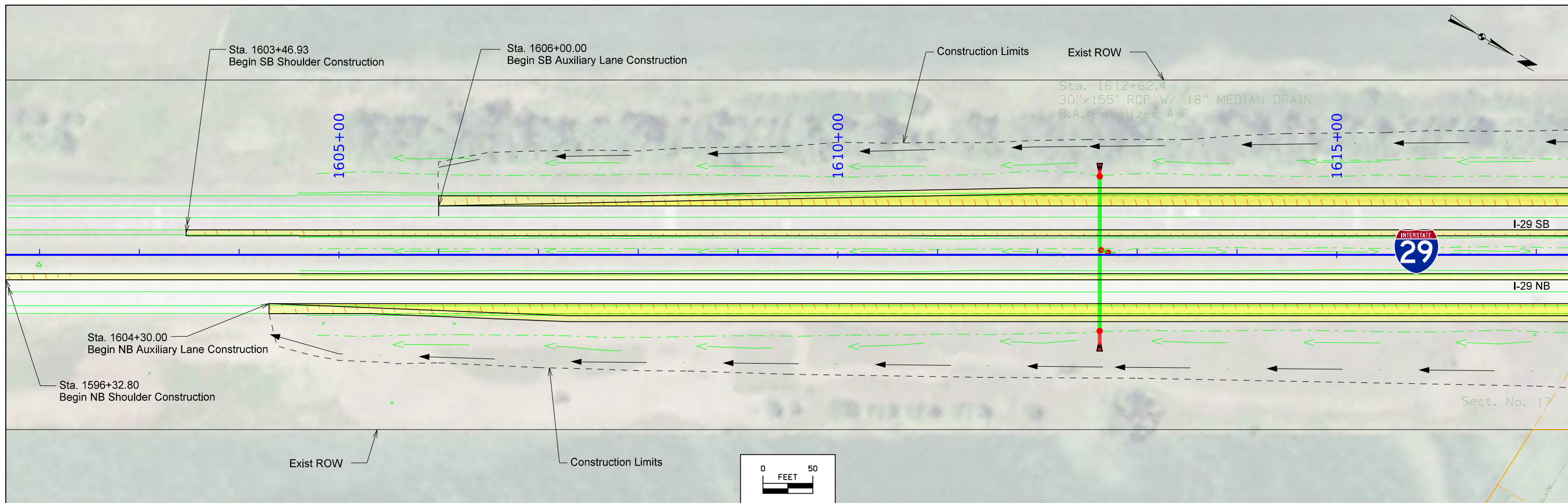
Reference Point	
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

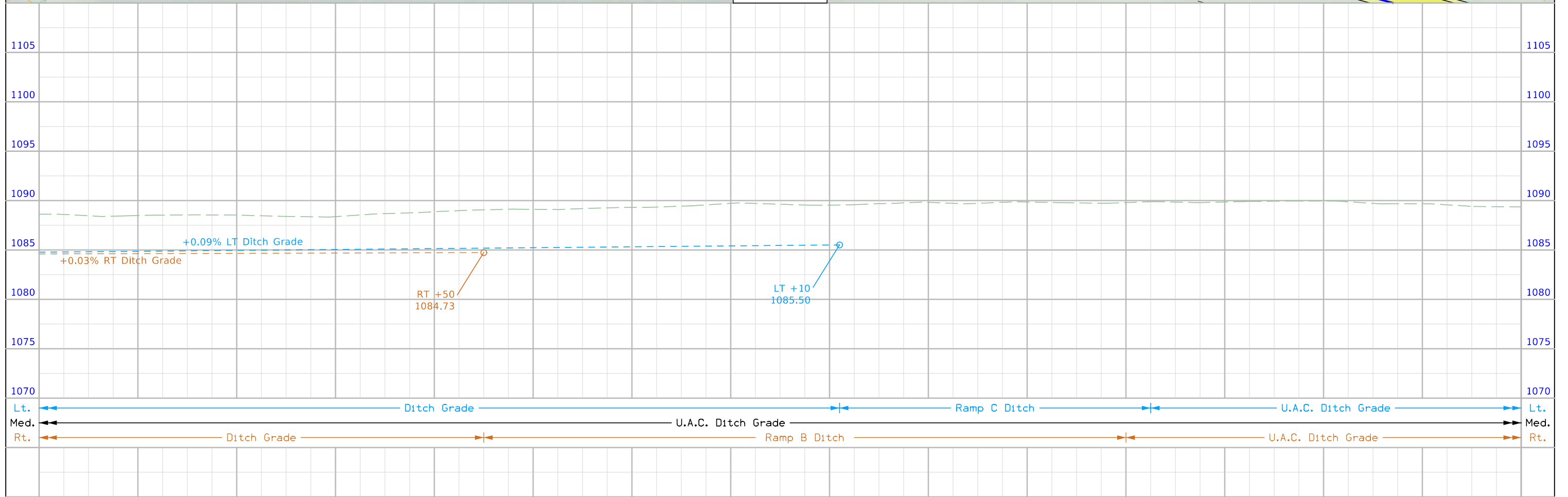
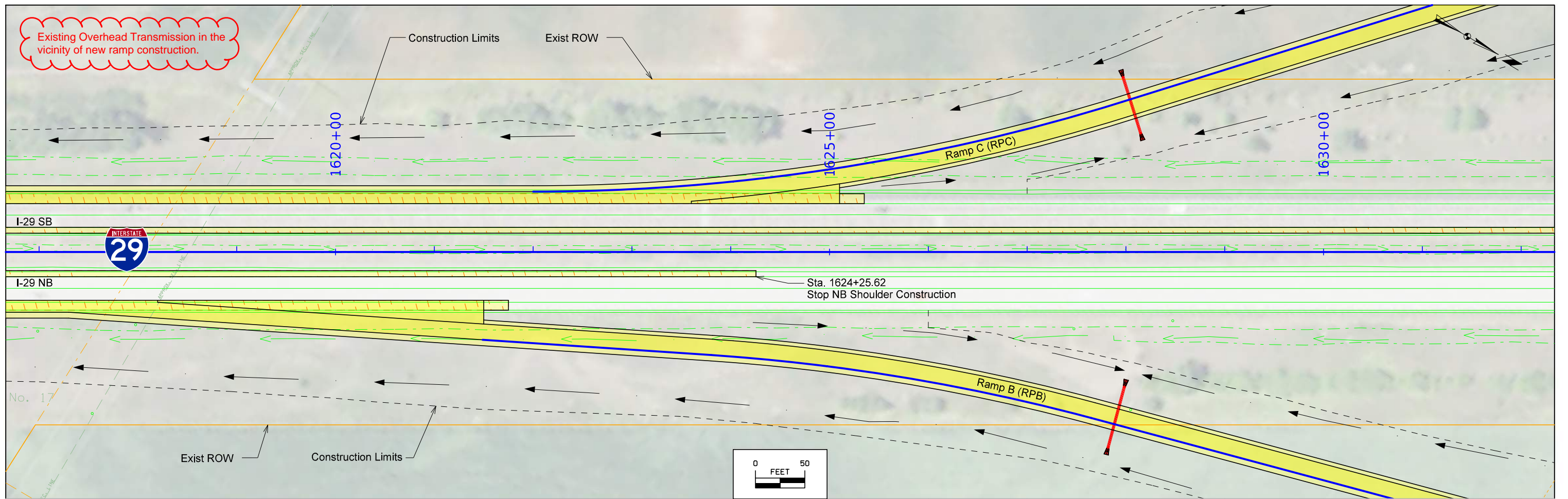
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

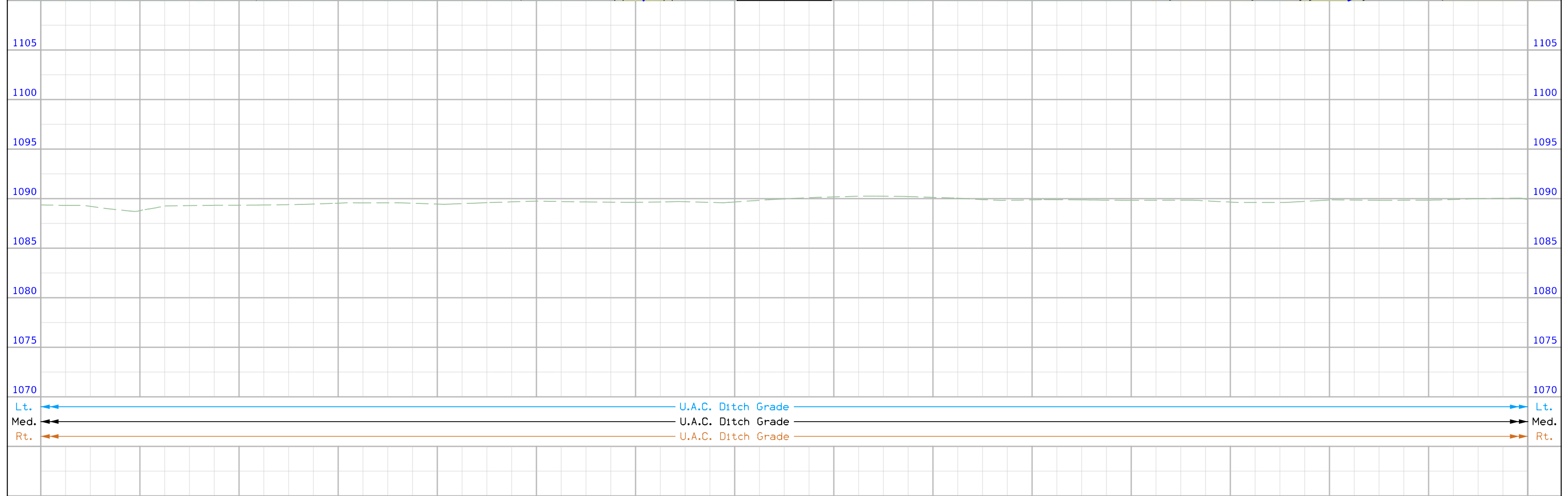
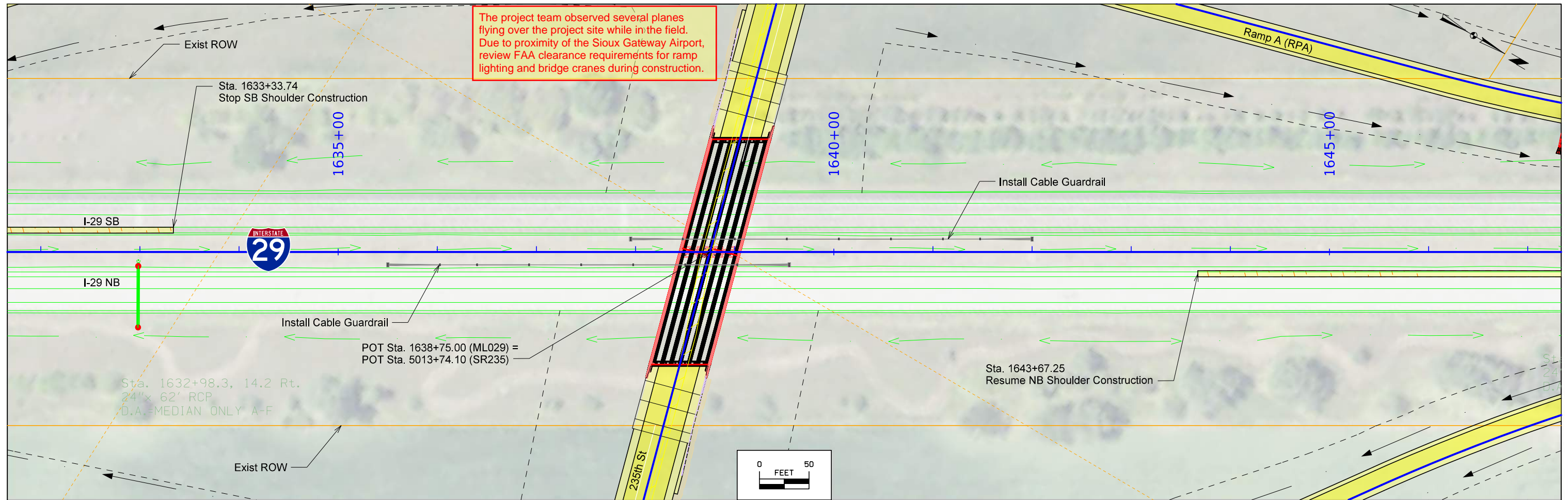


1602+00	1603+00	1604+00	1605+00	1606+00	1607+00	1608+00	1609+00	1610+00	1611+00	1612+00	1613+00	1614+00	1615+00	1616+00	1617+00
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB				WOODBURY COUNTY				PROJECT NUMBER IMN-029-6(170)139--0E-97				SHEET NUMBER D.2	

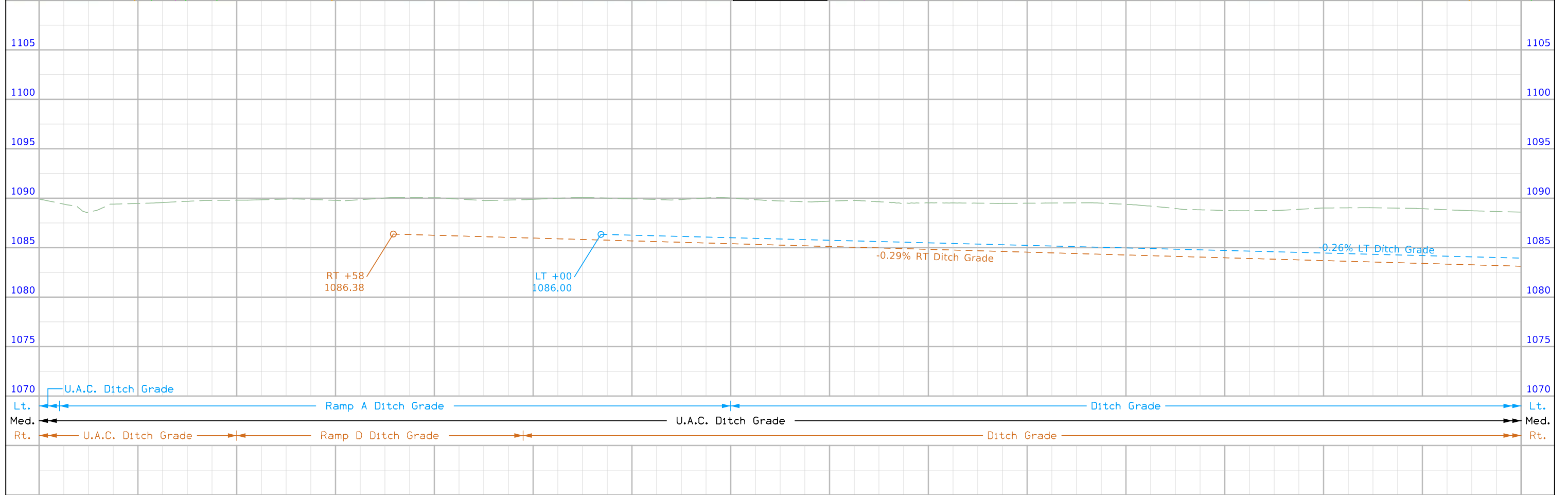
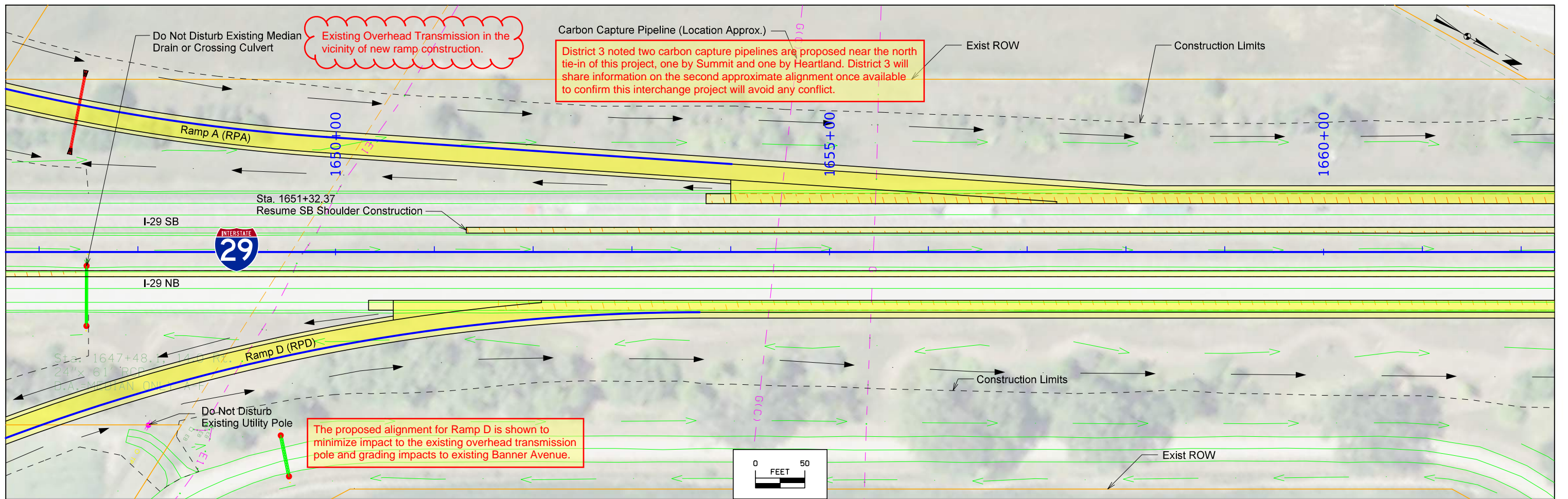


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FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB				WOODBURY COUNTY			PROJECT NUMBER IMN-029-6(170)139--0E-97				SHEET NUMBER D.3		

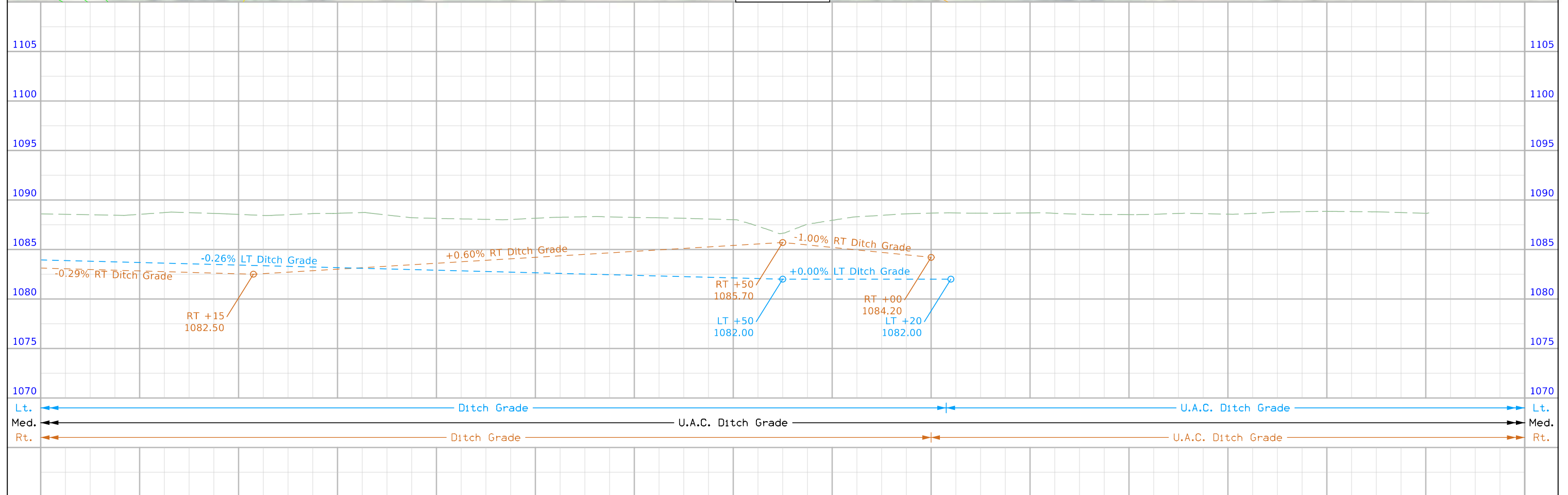
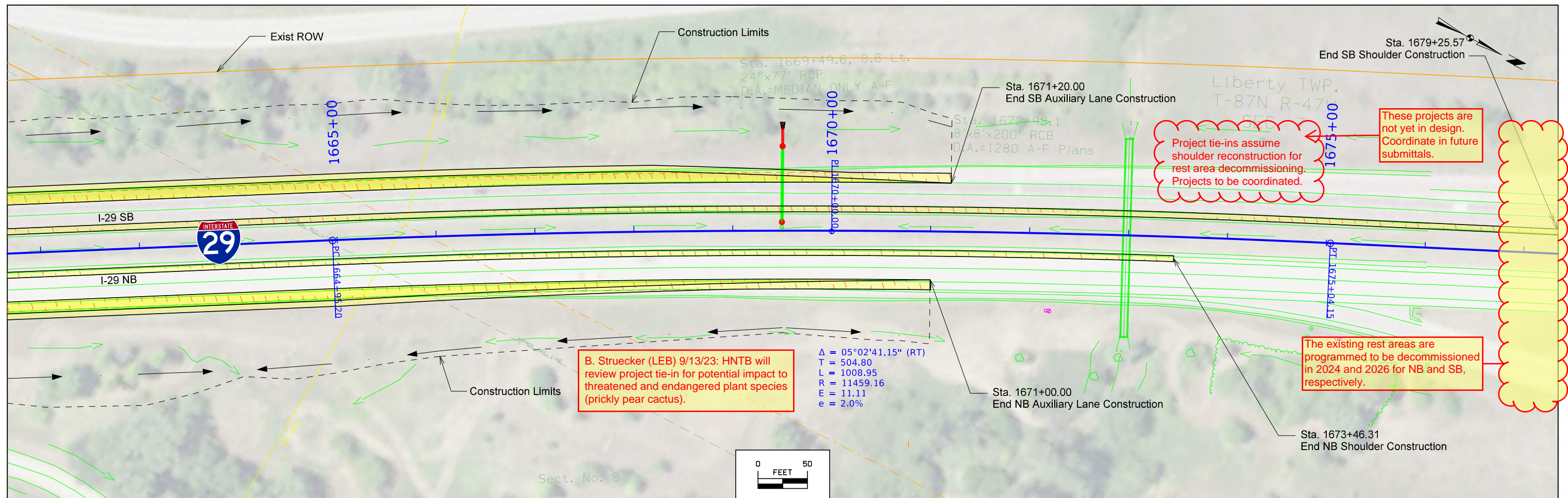
The project team observed several planes flying over the project site while in the field. Due to proximity of the Sioux Gateway Airport, review FAA clearance requirements for ramp lighting and bridge cranes during construction.



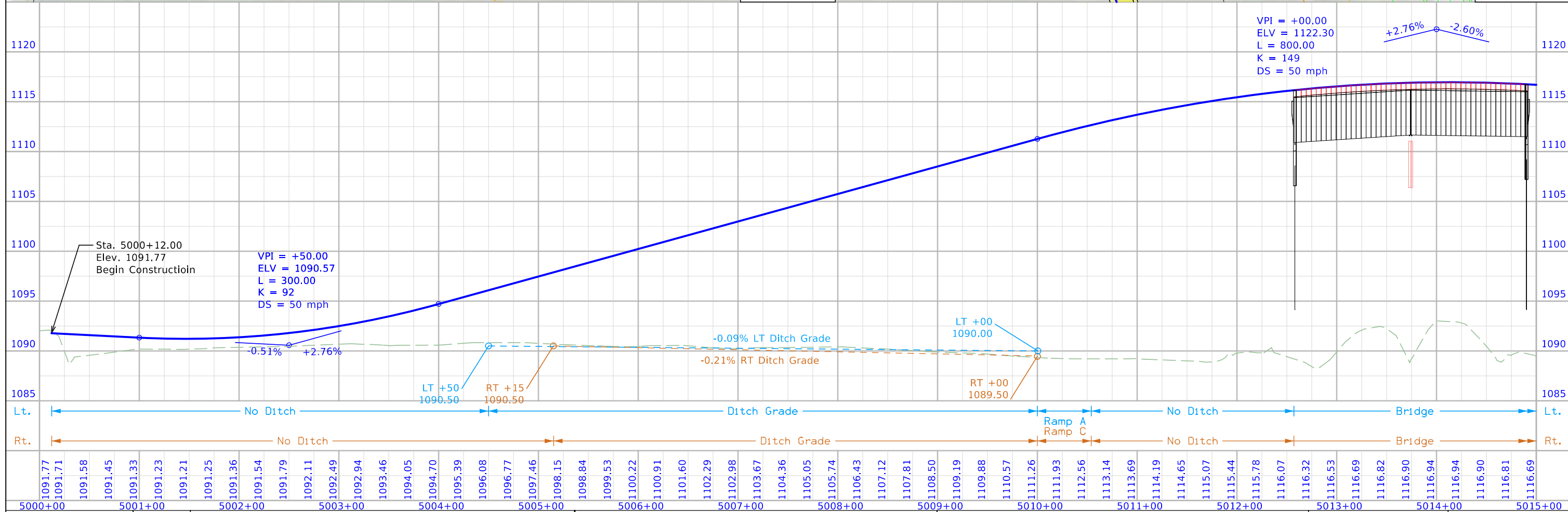
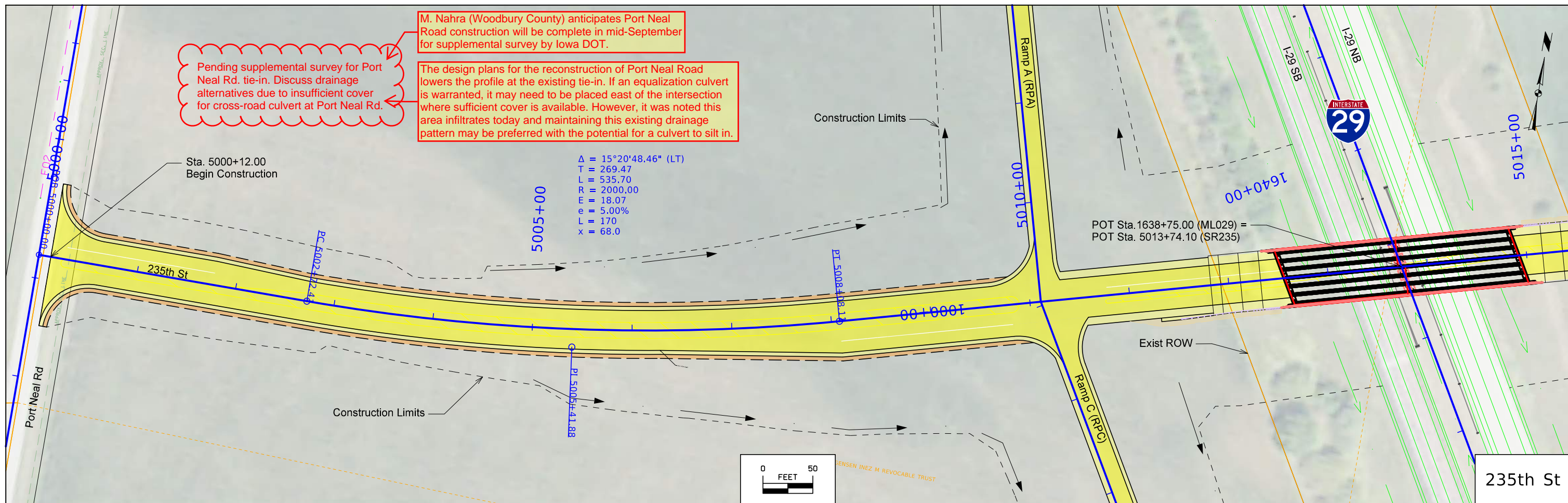
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FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB				WOODBURY COUNTY			PROJECT NUMBER IMN-029-6(170)139--0E-97				SHEET NUMBER D.4		



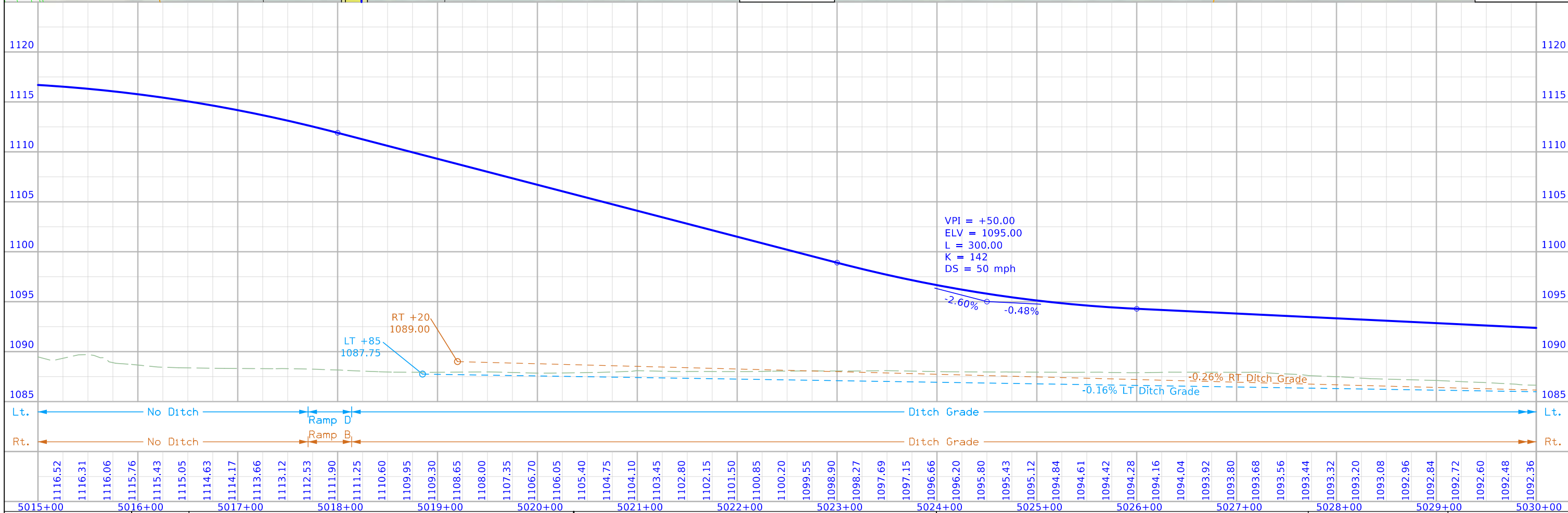
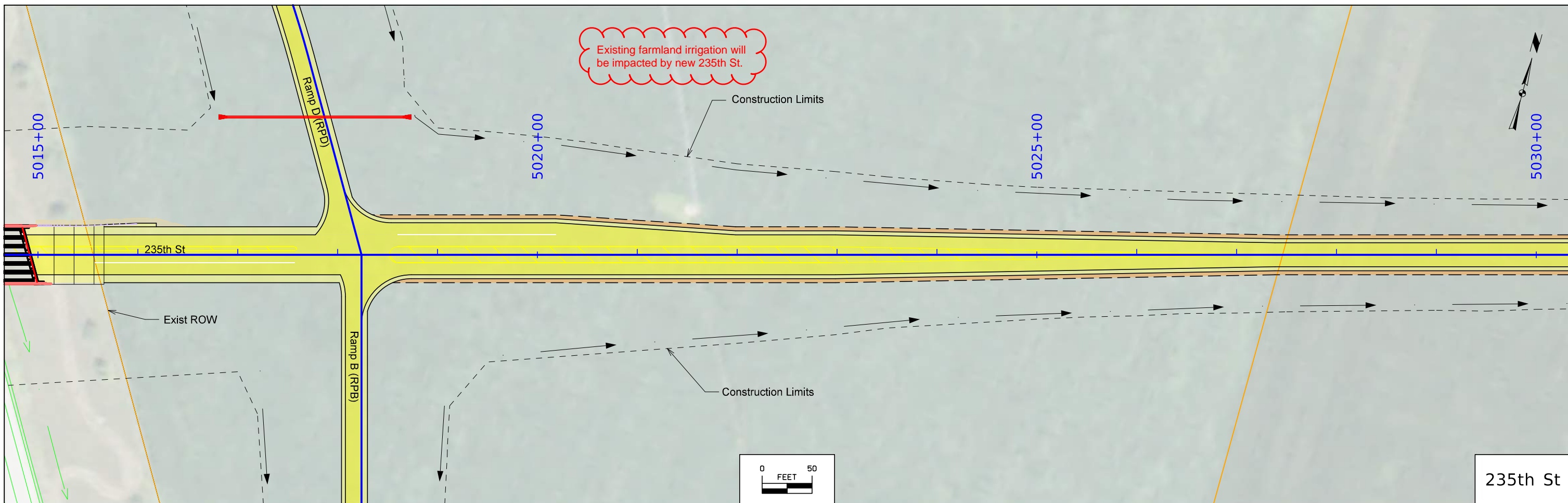
1647+00	1648+00	1649+00	1650+00	1651+00	1652+00	1653+00	1654+00	1655+00	1656+00	1657+00	1658+00	1659+00	1660+00	1661+00	1662+00
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY				PROJECT NUMBER	IMN-029-6(170)139--0E-97				SHEET NUMBER D.5			



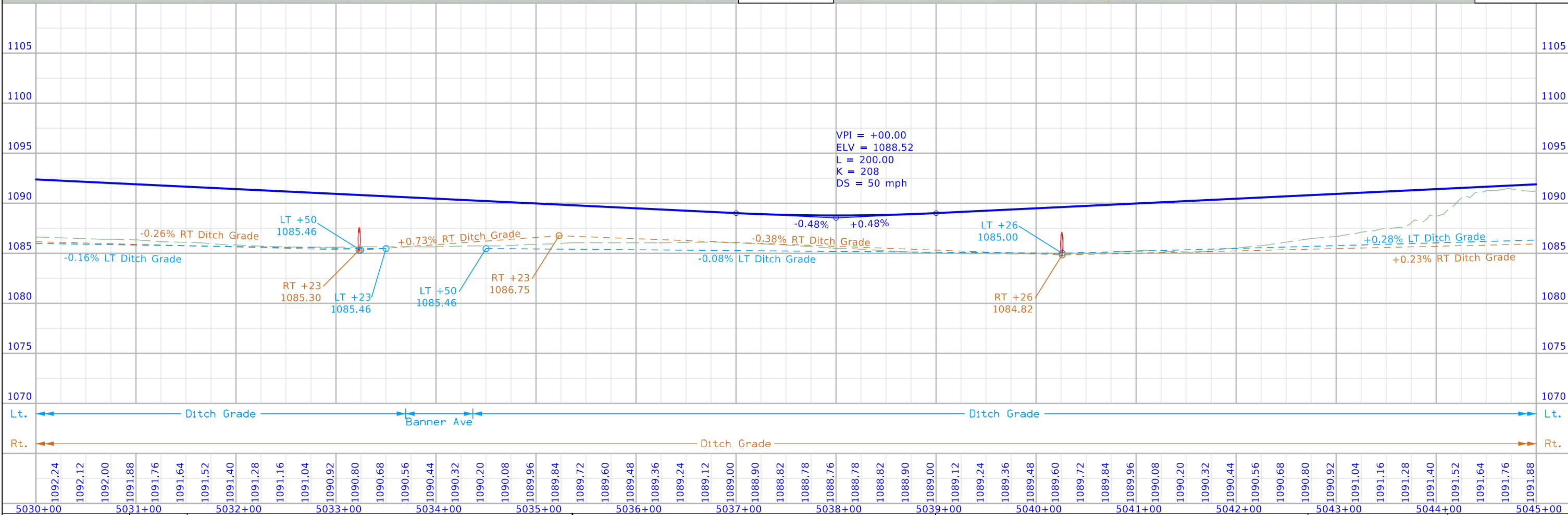
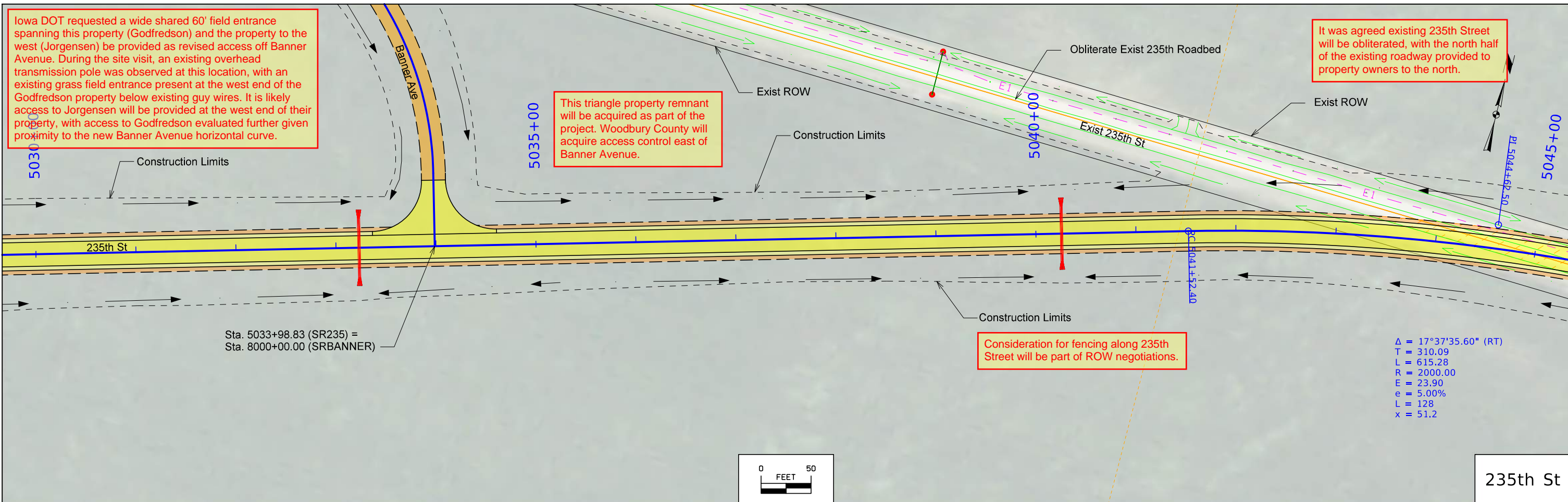
1662+00	1663+00	1664+00	1665+00	1666+00	1667+00	1668+00	1669+00	1670+00	1671+00	1672+00	1673+00	1674+00	1675+00	1676+00	1677+00
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB				WOODBURY COUNTY			PROJECT NUMBER IMN-029-6(170)139--0E-97				SHEET NUMBER D.6		



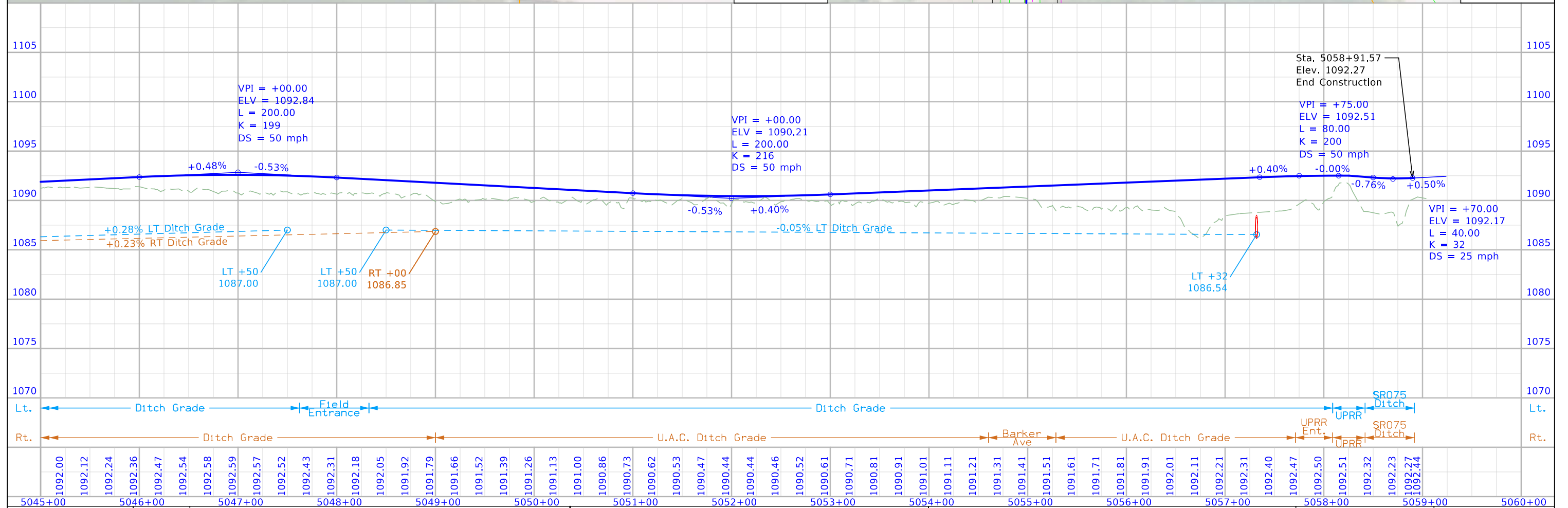
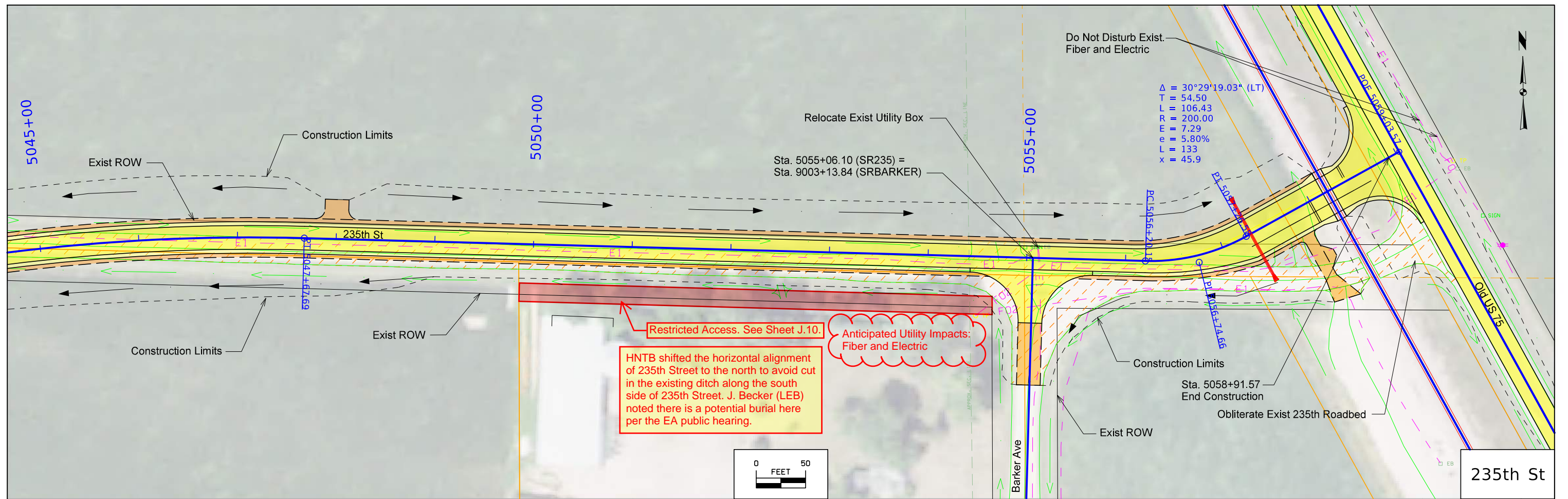
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER E.1
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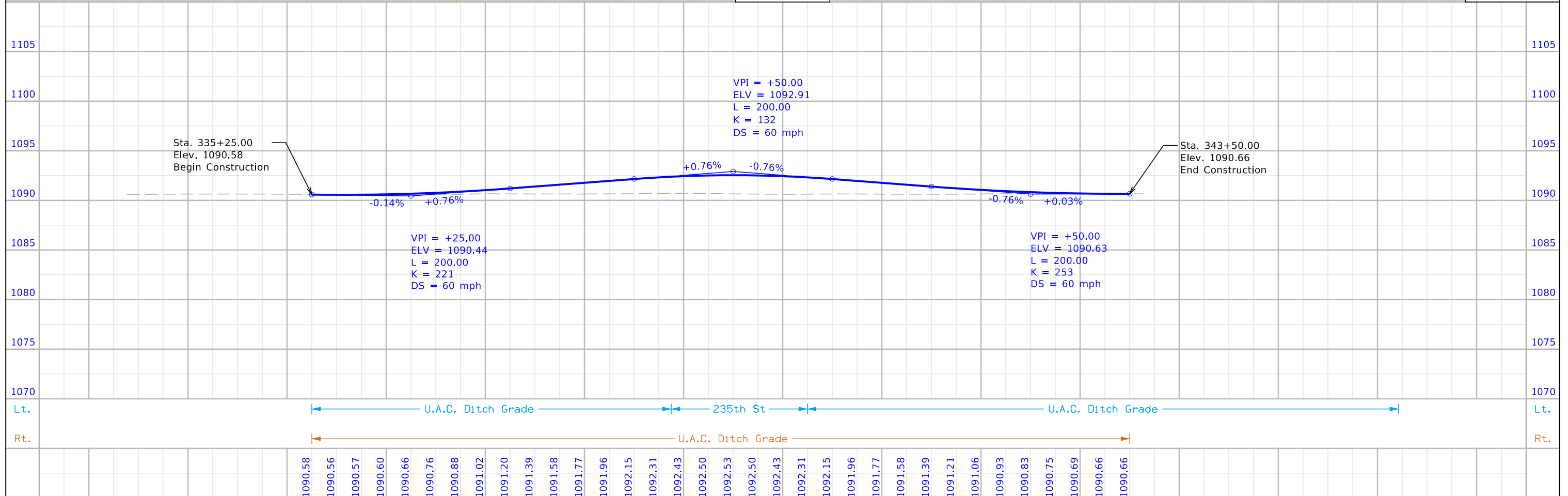
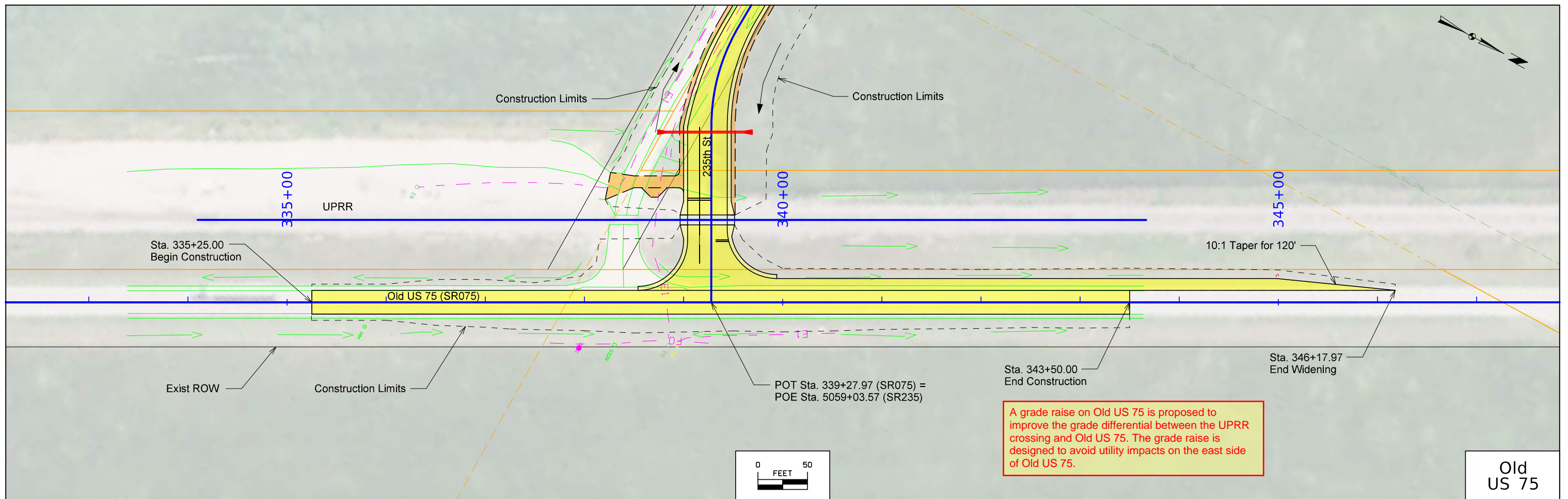
1116.52	1116.31	1116.06	1115.76	1115.43	1115.05	1114.63	1114.17	1113.66	1113.12	1112.53	1111.90	1111.25	1110.60	1109.95	1109.30	1108.65	1108.00	1107.35	1106.70	1106.05	1105.40	1104.75	1104.10	1103.45	1102.80	1102.15	1101.50	1100.85	1100.20	1099.55	1098.90	1098.27	1097.69	1097.15	1096.66	1096.20	1095.80	1095.43	1095.12	1094.84	1094.61	1094.42	1094.28	1094.16	1094.04	1093.92	1093.80	1093.68	1093.56	1093.44	1093.32	1093.20	1093.08	1092.96	1092.84	1092.72	1092.60	1092.48	1092.36
5015+00	5016+00	5017+00	5018+00	5019+00	5020+00	5021+00	5022+00	5023+00	5024+00	5025+00	5026+00	5027+00	5028+00	5029+00	5030+00																																												



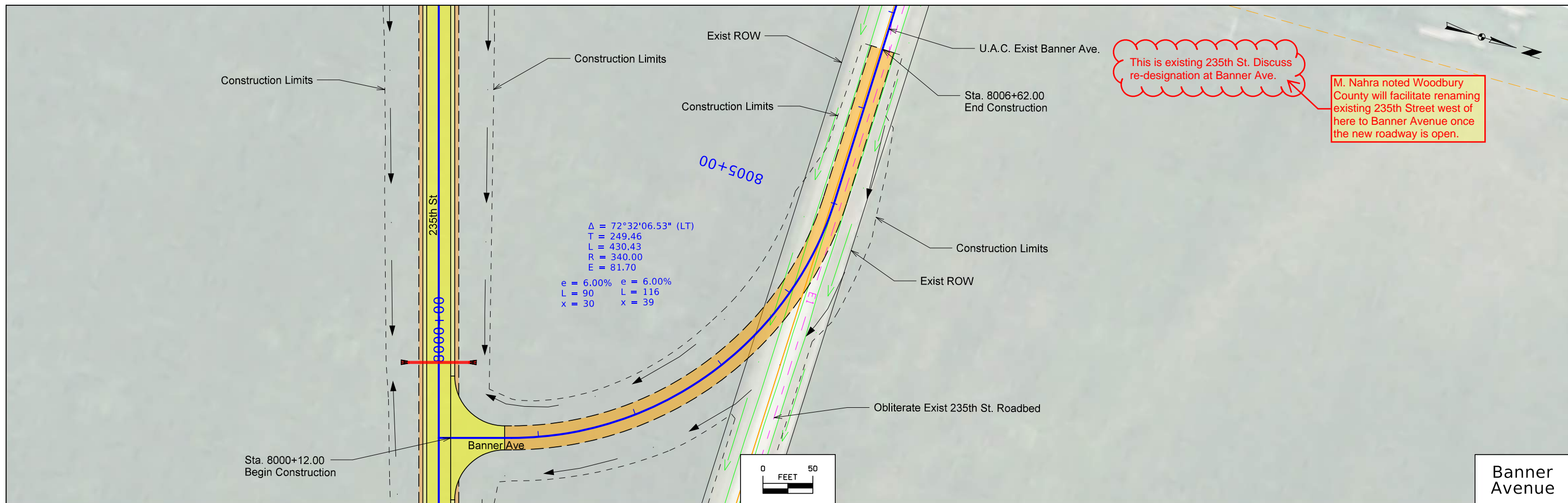
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FILE NO.	ENGLISH	DESIGN TEAM IOWA DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER	IMN-029-6(170)139--0E-97	SHEET NUMBER	E.4
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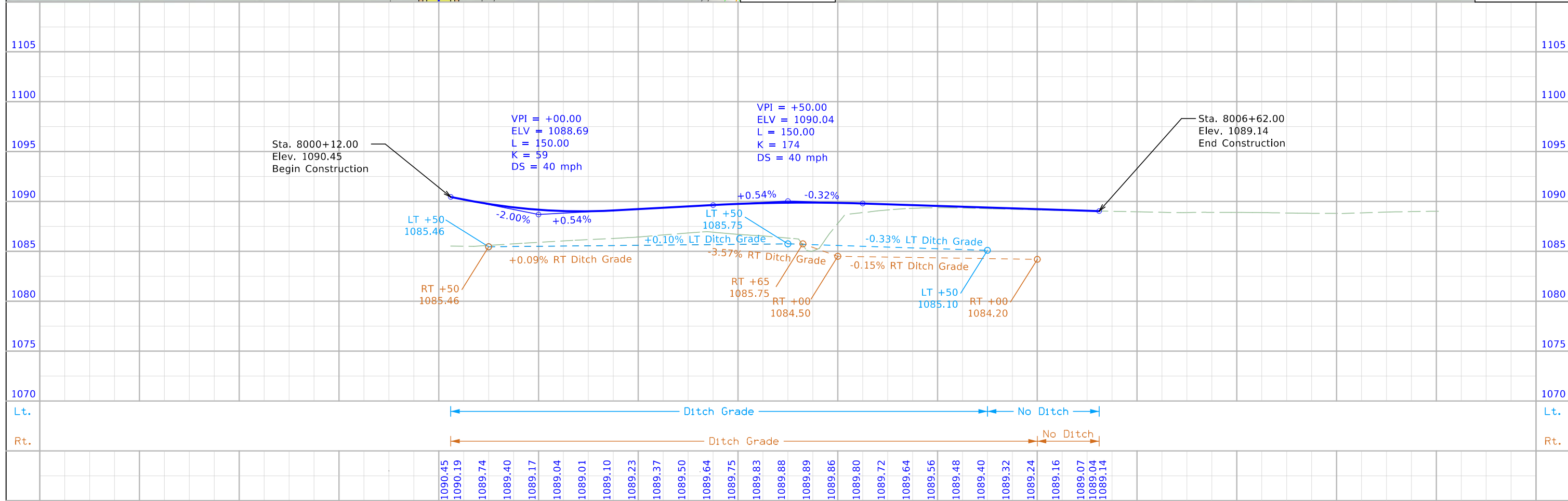


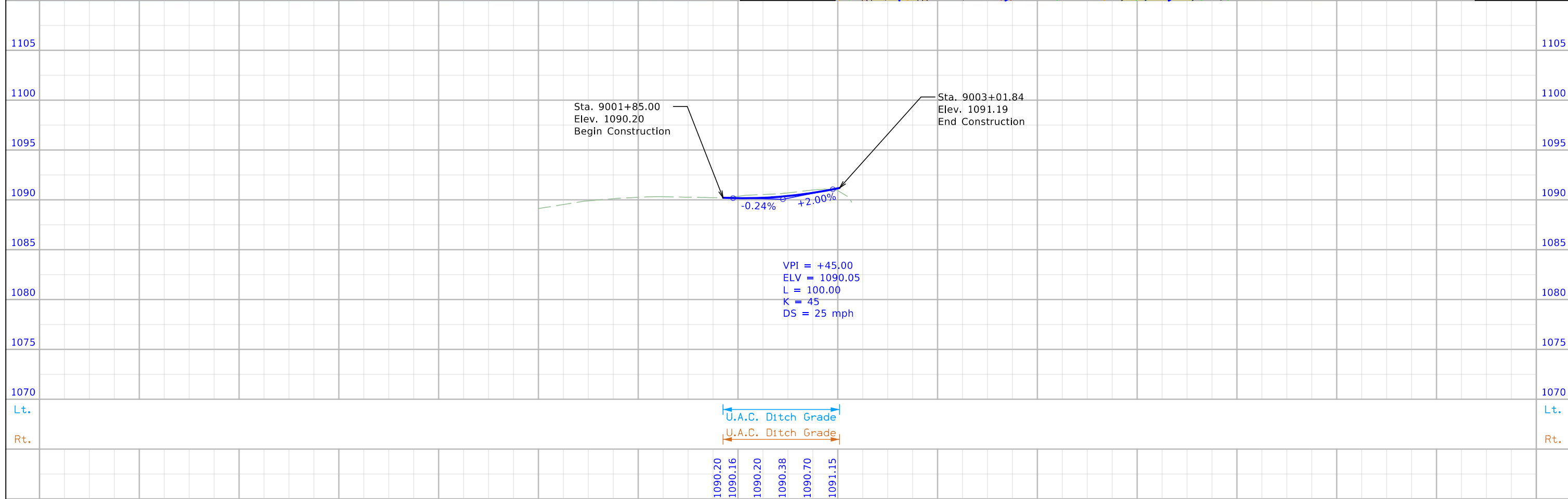
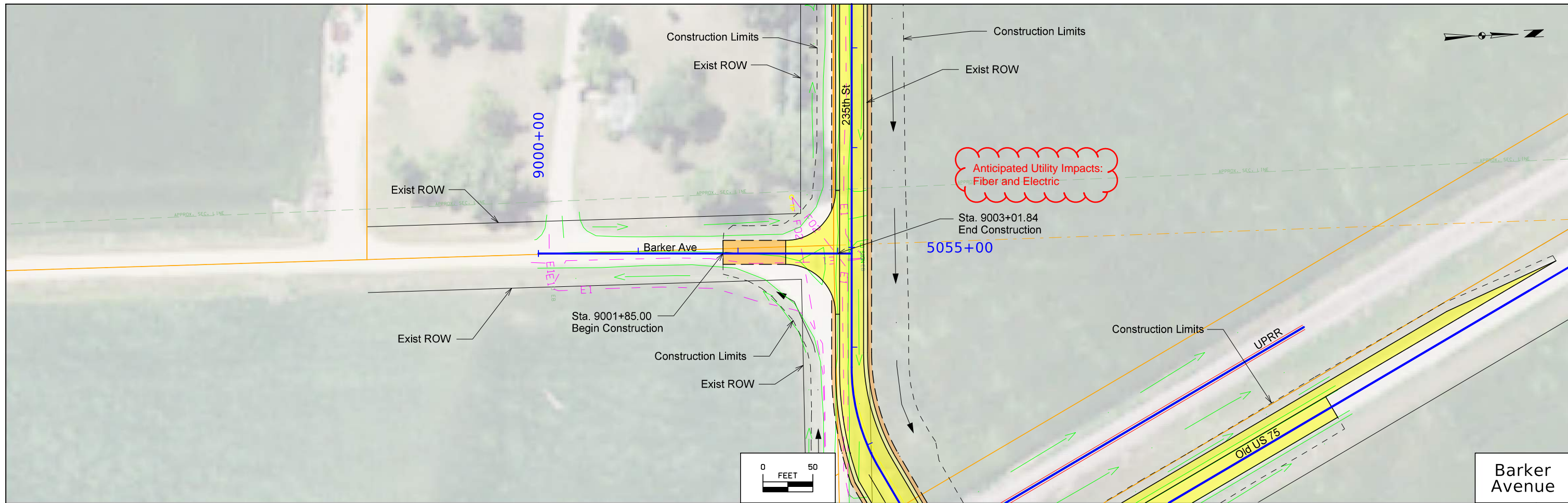
333+00	334+00	335+00	336+00	337+00	338+00	339+00	340+00	341+00	342+00	343+00	344+00	345+00	346+00	347+00
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This is existing 235th St. Discuss re-designation at Banner Ave.

M. Nahra noted Woodbury County will facilitate renaming existing 235th Street west of here to Banner Avenue once the new roadway is open.





FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER E.7
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Survey Information

SURVEY INDEX

County: Woodbury

PIN: 06-97-029-010

Project Number: IM-029-6(278)139--13-97

Location: New I-29 Interchange approx. 2.5 mi S of the Co Rd D38

Interchange at Sergeant Bluff

Work Code: 9040-Preliminary Engineering

Project Directory: 9702901006

Survey Personnel

Clayton Henningsen – Survey Party Chief

Jason Arn – Survey Party Chief

Robert Fredrickson – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 12/04/2023

End Date 05/30/2023

General Information

This survey is for New I-29 Interchange approx. 2.5 mi S of the Co Rd D38 Interchange at Sergeant Bluff. This survey request was for the I-29 corridor only. Partial Field DTM with Photo Control. Full Field DTM Survey was completed for survey area's not covered by Photo imagery.

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

Project Control

Coordinates were determined for primary project control points by conducting concurrent six-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)

COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 4

(U.S. SURVEY FOOT)

VERTICAL DATUM: NAVD88

GEOID MODEL: 2018u2

Alignment Information

SURMLA29

The horizontal alignment for I-29 this survey is a retrace of P.C.C. Paving Plans No. I-29-6(10)136. Survey stationing was equated to the plan PI at Sta. 1670+00 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PT Sta. 1591+06.81 P.C.C. Paving Plans No. I-29-6(10)136

Survey PT Sta. 1591+07.27

PI Sta. 1670+00 P.C.C. Paving Plans No. I-29-6(10)136

Survey PI Sta. 1670+00

TS Sta. 1754+64.76 P.C.C. Paving Plans No. I-29-6(10)136

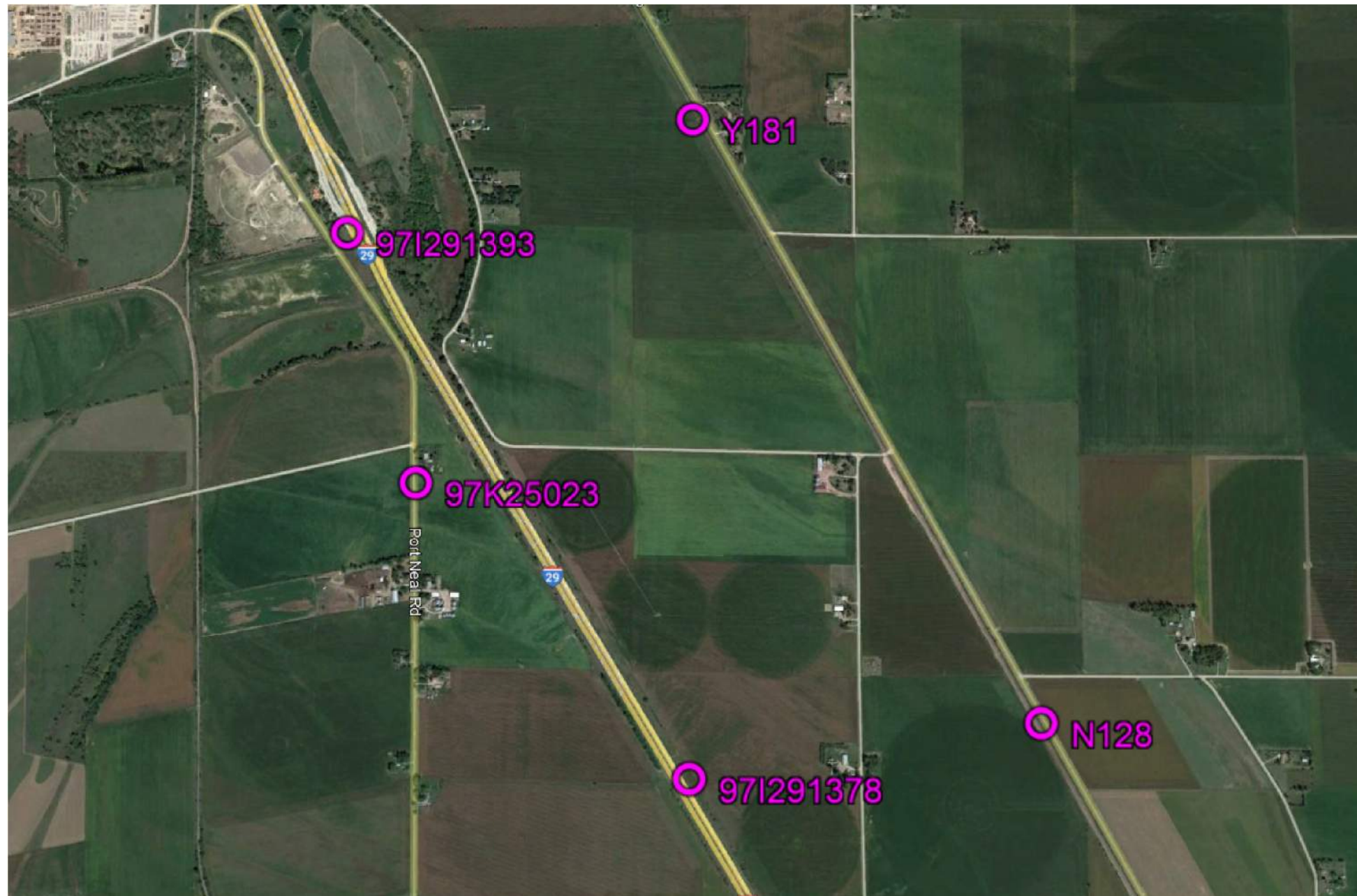
Survey TS Sta. 1754+64.64

SURMLB75

The horizontal alignment for county road K45 (old hwy 75) has been provided by the district 3 survey office.

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 04 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u2

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 04 (U.S. Survey Foot)
 VERT. DATUM: NAVD88
 Geoid Model: 2018u2

<u>Point Name</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>	<u>Feature Definition-Description</u>
97I291378	8538986.96	14093201.77	1084.33	CP FENO MONUMENT SET IN EAST ROW I-29
97I291393	8545559.95	14089126.55	1090.71	CP FENO MONUMENT SET IN TOP OF BACKSLOPE AT SOUTHBOUND I29 REST AREA APPROX 600 FT S OF BUILDING
97K25023	8542503.05	14089982.04	1091.12	CP FENO MONUMENT SET IN N EDGE OF FIELD ENT ON EAST SIDE K25 APPROX 450 FT S INTERSECTION K25 & 235TH ST
N128	8539694.98	14097356.05	1085.94	CP NGS MONUMENT AS DESCRIBED IN GOOD CONDITION
Y181	8546901.00	14093405.44	1090.94	CP NGS PIN AS DESCRIBED IN GOOD CONDITION

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)
ML I-29	Point ML029_1	1591+07.27	8537887.85	14093705.11															
	Curve ML029_2						1664+95.20	8544270.35	14089984.19	1670+00.00	8544706.45	14089729.95	1675+04.15	8545163.22	14089515.04				
	Point ML029_3	1754+64.31	8552365.97	14086126.16															
Ramp A	Point RPA_1	1000+00.00	8541911.23	14090953.36															
	Curve RPA_2						1006+60.12	8542548.14	14090779.82	1008+55.89	8542737.02	14090728.35	1010+50.42	8542912.34	14090641.24				
	Point RPA_3	1014+61.31	8543280.31	14090458.39															
Ramp B	Point RPB_1	2000+00.00	8540560.38	14092250.04															
	Curve RPB_2						2002+31.96	8540768.11	14092146.82	2004+27.73	8540943.42	14092059.70	2006+22.25	8541132.30	14092008.24				
	Point RPB_3	2016+51.10	8542124.96	14091737.76															
Ramp C	Curve RPC_1						3000+00.00	8540528.97	14092094.77	3003+05.19	8540792.63	14091941.06	3006+05.71	8540998.44	14091715.71				
	Curve RPC_2						3009+67.32	8541242.30	14091448.70	3012+72.51	8541448.11	14091223.35	3015+73.03	8541711.77	14091069.64				
	Point RPC_3	3018+03.91	8541911.23	14090953.36															
Ramp D	Point RPD_1	4000+00.00	8542124.96	14091737.76															
	Curve RPD_2						4001+98.68	8542296.60	14091637.70	4003+48.00	8542425.60	14091562.50	4004+92.90	8542512.68	14091441.20				
	Curve RPD_3						4008+32.05	8542710.47	14091165.70	4012+58.67	8542959.27	14090819.14	4016+72.70	8543327.84	14090604.27				
SR075	Point SR075_1	277+68.26	8537444.32	14098606.83															
	Point SR075_2	386+74.10	8547063.05	14093467.04															
SR235	Point SR235_1	5000+00.00	8541788.10	14089955.92															
	Curve SR235_2						5002+72.41	8541787.60	14090228.33	5005+41.88	8541787.10	14090497.79	5008+08.11	8541857.94	14090757.78				
	Curve SR235_3						5041+52.40	8542737.13	14093984.43	5044+62.50	8542818.65	14094283.62	5047+67.69	8542805.74	14094593.44				
	Curve SR235_4						5056+20.15	8542770.27	14095445.17	5056+74.66	8542768.00	14095499.62	5057+26.58	8542793.68	14095547.70				
	Point SR235_5	5059+03.57	8542877.06	14095703.83															
SRBANNER	Point SRBANNER_1	8000+00.00	8542539.02	14093257.36															
	Curve SRBANNER_2						8000+72.94	8542609.39	14093238.19	8003+22.40	8542850.09	14093172.63	8005+03.37	8542859.75	14092923.34				
	Point SRBANNER_3	8010+02.77	8542879.13	14092424.31															
SRBARKER	Point SRBARKER_1	9000+00.00	8542461.45	14095318.15															
	Point SRBARKER_2	9003+13.84	8542775.02	14095331.21															
SRPORTNEAL	Point SRPORTNEAL_1	6000+00.00	8541264.72	14089955.40															
	Point SRPORTNEAL_2	6012+38.38	8542503.10	14089957.23															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data											Remarks				
			Spiral Data						Curve Data									
			OS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L		R	E		
ML I-29	Curve ML029_2												5.045°	504.803	1008.953	11459.160	11.113	
Ramp A	Curve RPA_2												11.181°	195.768	390.294	2000.00	9.558	
Ramp B	Curve RPB_2												11.181°	195.768	390.284	2000.00	9.558	
Ramp C	Curve RPC_1												17.352°	305.194	605.715	2000.00	23.152	
Ramp C	Curve RPC_2												17.352°	305.194	605.715	2000.00	23.152	
Ramp D	Curve RPD_1												24.083°	149.319	294.227	700.00	15.749	
Ramp D	Curve RPD_2												24.083°	426.625	840.650	2000.00	44.996	
SR235	Curve SR235_2												15.347°	269.465	535.704	2000.00	18.071	
SR235	Curve SR235_3												17.627°	310.091	615.283	2000.00	23.896	
SR235	Curve SR235_4												30.489°	54.505	106.425	200.00	7.294	
SRBANNER	Curve SRBANNER_2												72.535°	249.46	430.43	340.00	81.70	

SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e	L	x														
			FT	FT	FT														
RPA	RPA_1	2000	3.4	82	48	PV-303	1006+50.72		1006+60.12	1006+84.72									
							1010+59.82		1010+50.42	1010+25.82									
RPB	RPB_1	2000	5.4	168	62	PV-303	2001+76.36		2002+31.96	2002+82.36					2002+38.80	2002+38.80			
							2006+77.85		2006+22.25	2005+71.85					2006+15.41	2006+15.41			
RPC	RPC_1	2000	5.4	168	62	PV-303	2999+44.40		3000+00.00	3000+50.40					3000+06.84	3000+06.84			
							3006+61.31		3006+05.71	3005+55.31					3005+98.87	3005+98.87			
RPC	RPC_2	2000	3.4	82	48	PV-303	3008+61.92	3009+09.92	3009+67.32	3009+91.92									
							3016+78.43	3016+30.43	3015+73.03	3015+48.43									
RPD	RPD_1	700	5.6	135	48	PV-303	4000+56.18	4001+04.18	4001+98.68	4002+39.18					4002+00.61	4002+00.61			
							4006+35.40	4005+87.40	4004+92.90	4004+52.40					4004+90.97	4004+90.97			
RPD	RPD_2	2000	5.4	168	62	PV-303	4007+76.45		4008+32.05	4008+82.45					4008+38.89	4008+38.89			
							4017+28.30		4016+72.70	4016+22.30					4016+65.86	4016+65.86			
SR235	SR235_1	2000	5.0	169	67	PV-301	5000+87.11	5001+54.11	5002+21.11	5003+23.11		5002+72.41			5002+89.31	5002+89.31			
							5009+93.41	5009+26.41	5008+59.41	5007+57.41		5008+08.11			5007+91.21	5007+91.21			
SR235	SR235_2	2000	5.0	127	50	PV-301	5040+13.50	5040+63.50	5041+13.50	5041+90.50		5041+52.40			5041+65.10	5041+65.10			
							5049+06.59	5048+56.59	5048+06.59	5047+29.59		5047+67.69			5047+54.99	5047+54.99			
SR235	SR235_3	200	5.8	132	45	PV-301	5054+82.75	5055+27.75	5055+72.75	5056+59.75		5056+20.15			5056+18.78	5056+18.78			
							5058+61.28	5058+15.38	5057+69.48	5056+82.38		5057+26.58			5057+23.35	5057+23.35			
SRBANNER	SRBANNER_1	340	6.0	90	30	PV-301	8000+19.94	8000+49.94	8000+49.94	8001+09.94		8000+72.94			8000+79.94	8000+79.94			
				116	39		8006+21.89	8005+83.89	8005+45.89	8004+68.89		8005+03.39			8005+07.56	8005+07.56			

TRAFFIC CONTROL PLAN

Interstate 29: Maintain traffic on NB and SB Interstate 29 at all times in accordance with J Sheets. Single lane closures will be permitted as necessary to complete inside shoulder strengthening and set TBR in accordance with Sheet J.2.

Sideroads: Portions of 235th Street, Old US 75, Banner Avenue and Barker Avenue will have closures at varying times. Access to Barker Avenue will be provided at all times.

Refer to Tab. 108-26A for Staging Notes.
For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices, Iowa DOT Standard Road Plan TC Series and the current Standard Specifications.

STAGING NOTES

Stage 1:

Traffic:

Interstate 29: Maintain traffic on Interstate 29 at all times in accordance with J Sheets. Single lane closures will be permitted as necessary to complete inside shoulder strengthening and set TBR in accordance with the allowable closure time frames shown on Sheet J.2.

Sideroads: Maintain traffic along existing 235th Street from Old US 75 to Barker Avenue in accordance with J Sheets. Close 235th Street to all traffic between Barker Avenue and Banner Avenue. Partial road closure at intersection of Banner Avenue and Port Neal Road per Standard Road Plan TC-252. Full road closure at last driveway before the work area on Banner Avenue per Standard Road Plan TC-252.

Construction:

Interstate 29: Construct I-29 inside shoulder strengthening in order to shift traffic in Stage 2. Construct Ramps A, B, C, and D except for within 30 feet of I-29.

Sideroads: Construct 235th Street between Port Neal Road and Barker Avenue, including new 235th Street bridge substructure.

Stage 2:

Traffic:

Interstate 29: Shift northbound and southbound traffic to the inside as shown in the J Sheets. Traffic will shift back to existing after the 235th street bridge construction. During girder setting over I-29, utilize rolling road blocks between the hours of 2:00AM and 5:00AM with DMS warning messages set in advance of the anticipated queue.

Sideroads: Fully close Old US 75 to all traffic south of 230th Street and north of 240th Street. Open new 235th Street between Banner Avenue and Barker Avenue. Close 235th Street east of Barker Avenue.

Construction:

Interstate 29: Construct remaining acceleration and deceleration lanes for Ramps A, B, C, and D.

Sideroads: Construct new thru lanes on Old US 75 along with the new southbound right turn lane to 235th Street. Construct 235th Street between Old US 75 and Barker Avenue. Complete new 235th Street bridge at I-29 and approach pavement.

Final:

Traffic:

Interstate 29: Open new ramps to all traffic. Place traffic back on existing lanes.

Sideroads: Open all roads to all traffic.

Set up pavement marking operations utilizing Standard Road Plan TC-433.

Set up rumble strip operations in accordance with Standard Road Plan TC-432.

Construction: Complete final pavement markings and mill rumble strips.

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.

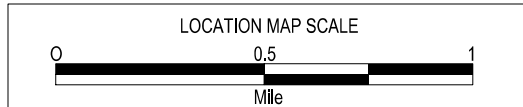
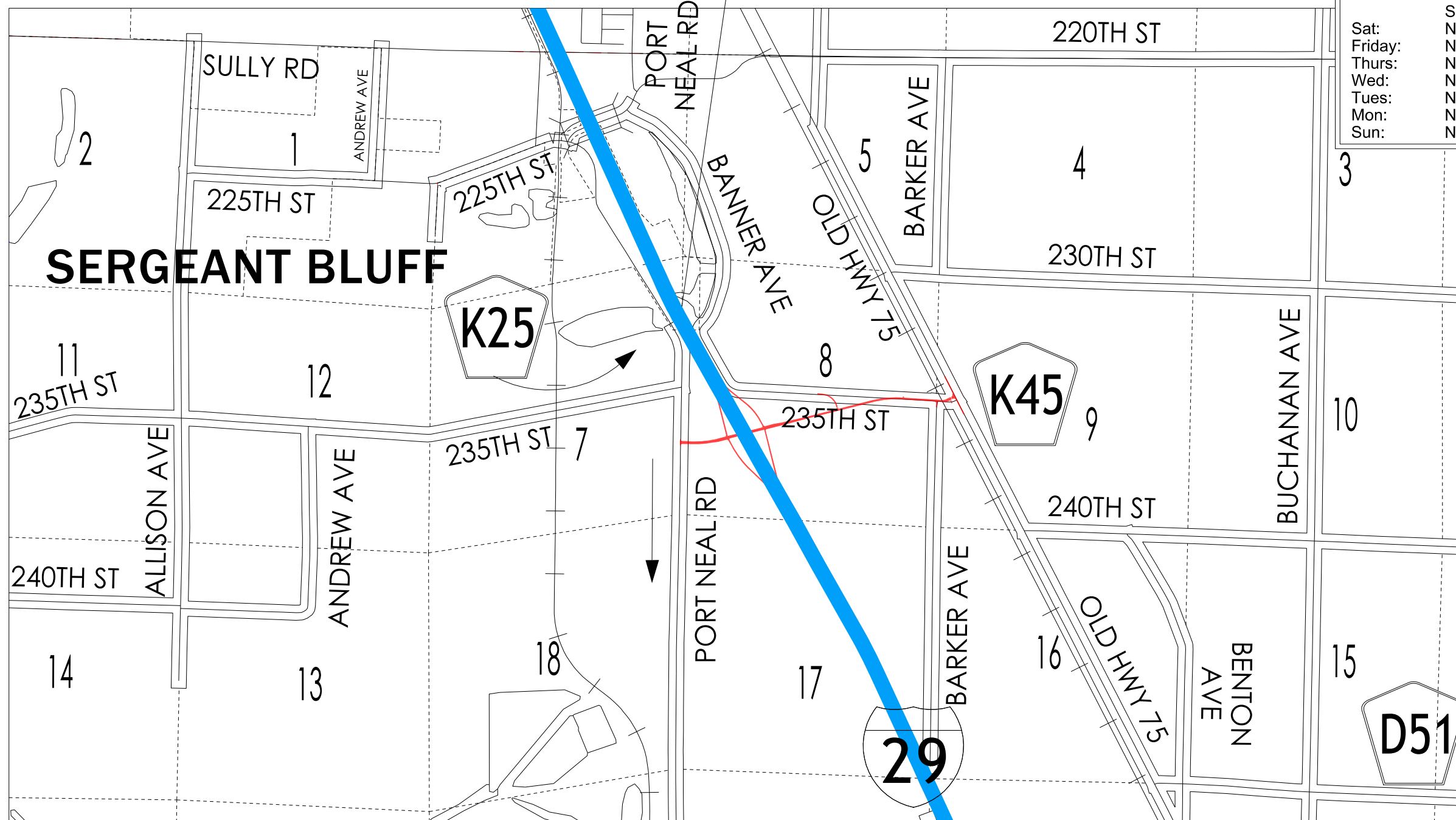
Project	Type of Work

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 Lane Closure Restrictions

I-29 From Exit 141 (1st St. Sgt Bluff) to Exit 127 (Sloan)	
Sat:	NB lane allowable closure No Restrictions
Friday:	No Restrictions
Thurs:	No Restrictions
Wed:	No Restrictions
Tues:	No Restrictions
Mon:	No Restrictions
Sun:	No Restrictions
Sat:	SB lane allowable closure No Restrictions
Friday:	No Restrictions
Thurs:	No Restrictions
Wed:	No Restrictions
Tues:	No Restrictions
Mon:	No Restrictions
Sun:	No Restrictions



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
	Lane Open To Traffic		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

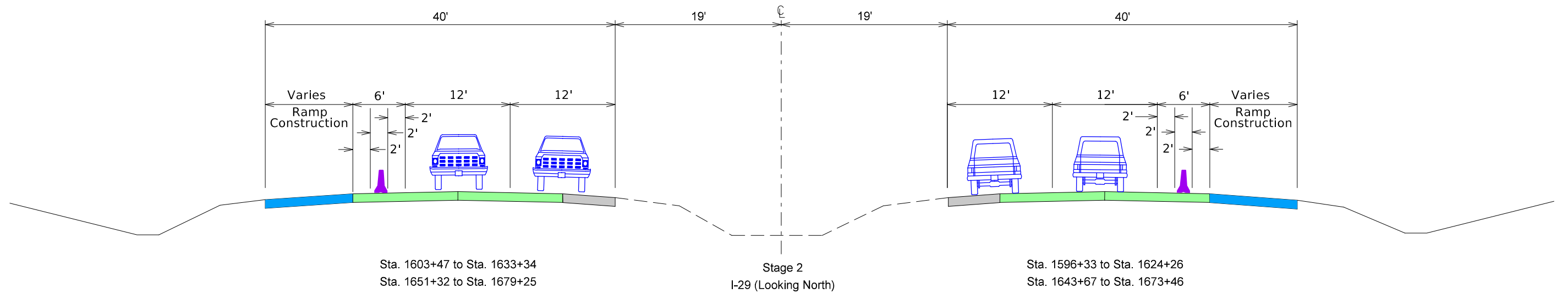
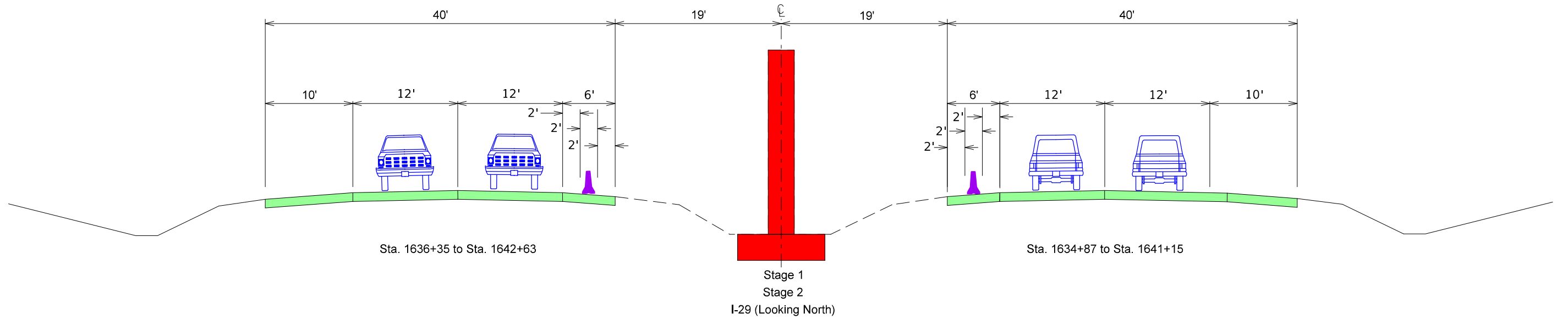
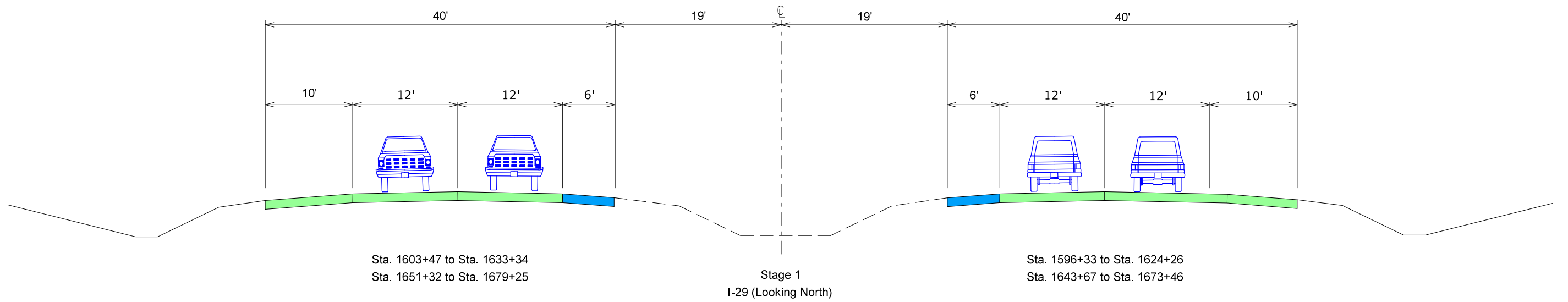
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	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
	Sawcut		

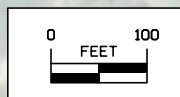
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

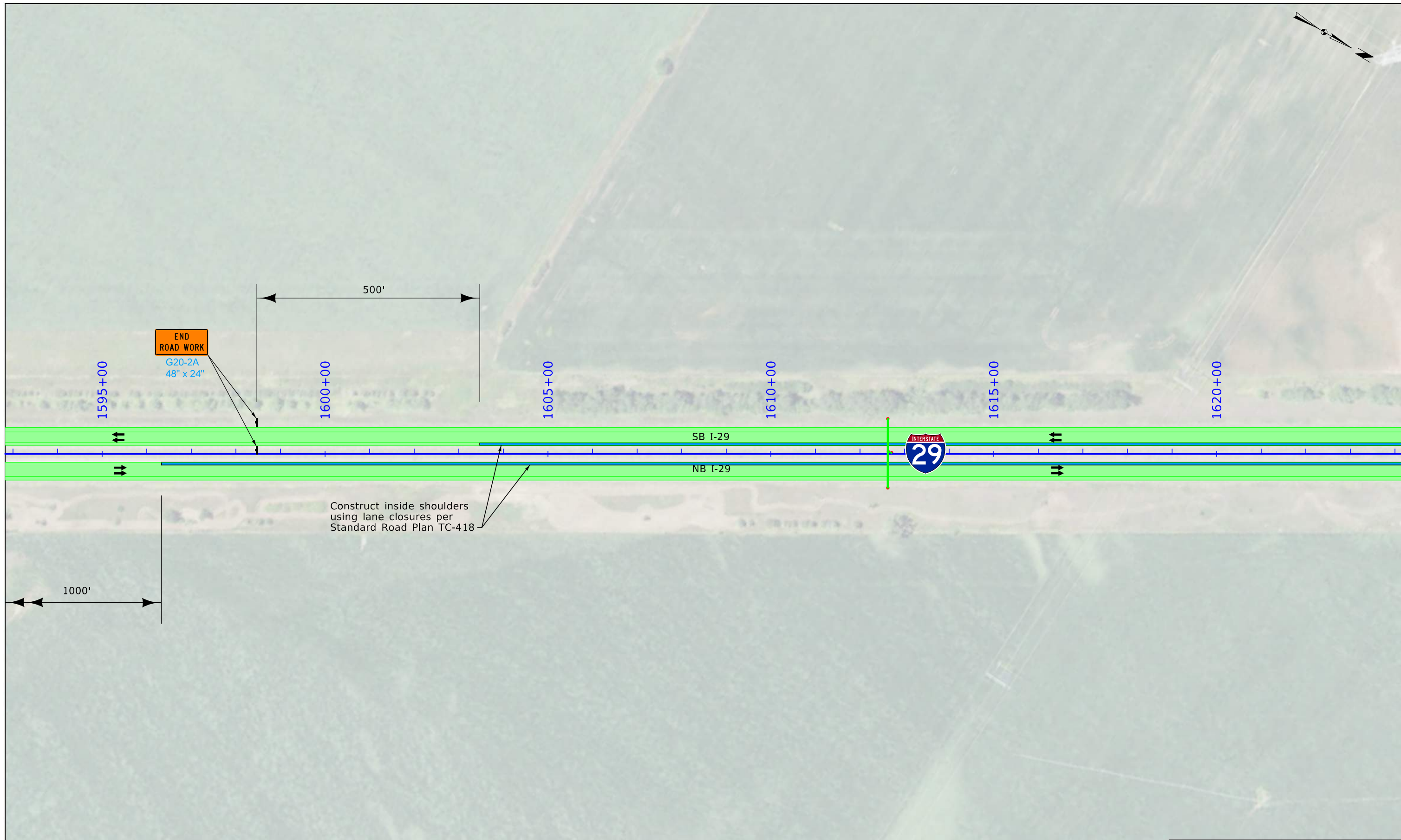
(COVERS SHEET SERIES J)



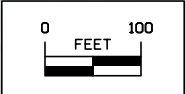
STAGING TYPICALS



Stage 1
Traffic Control Layout

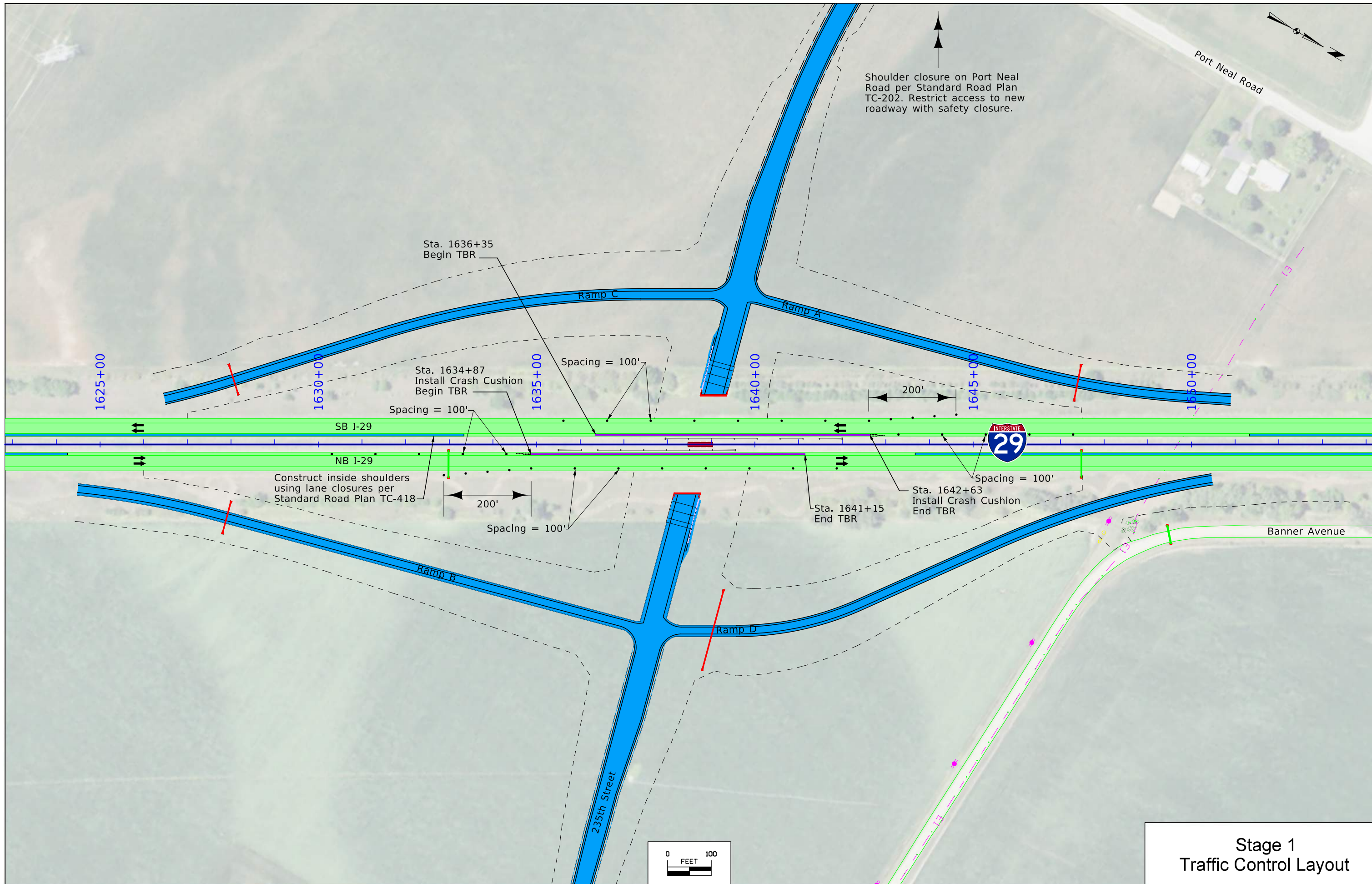


Construct inside shoulders
using lane closures per
Standard Road Plan TC-418

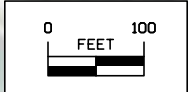
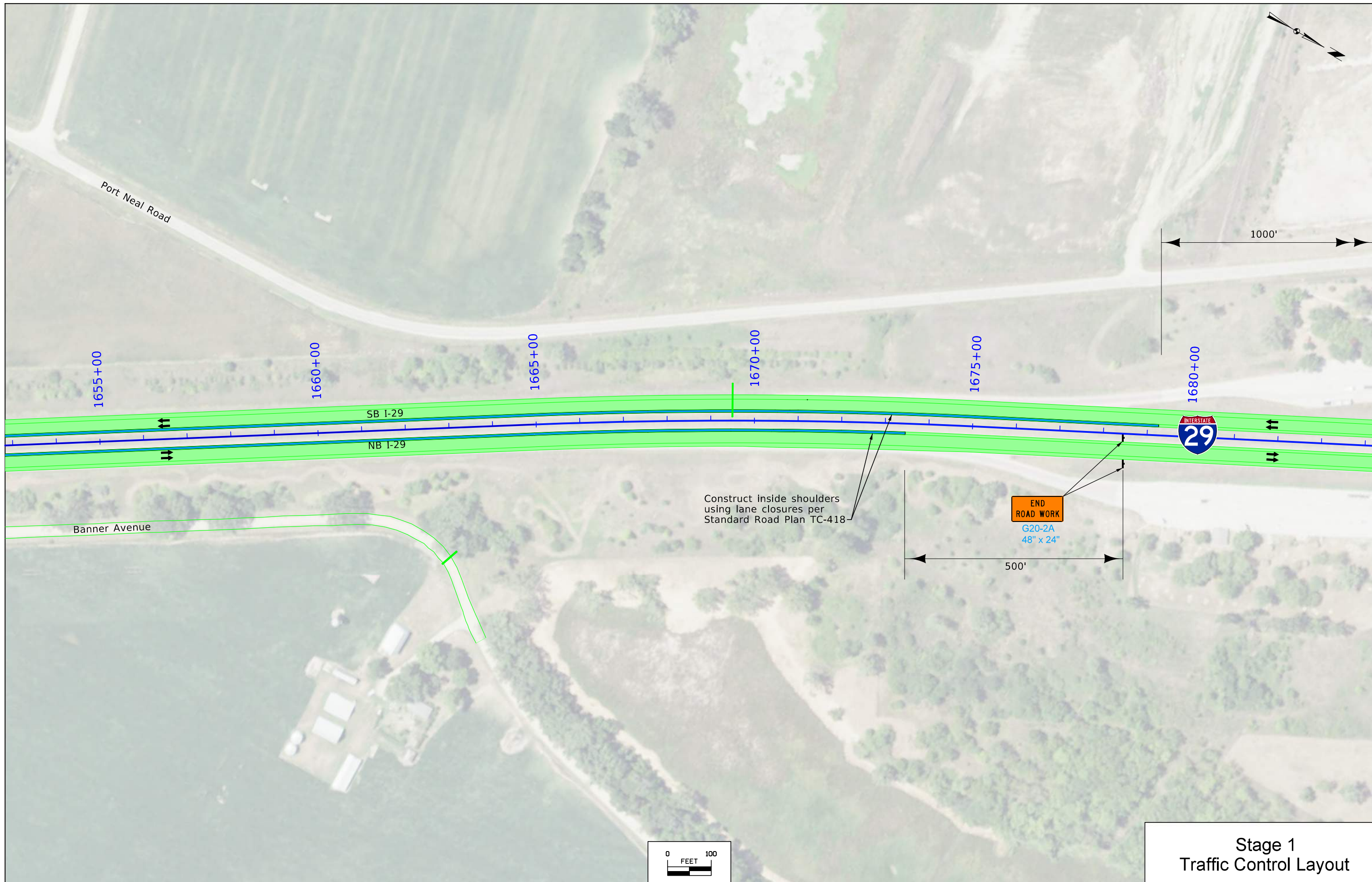


Stage 1
Traffic Control Layout

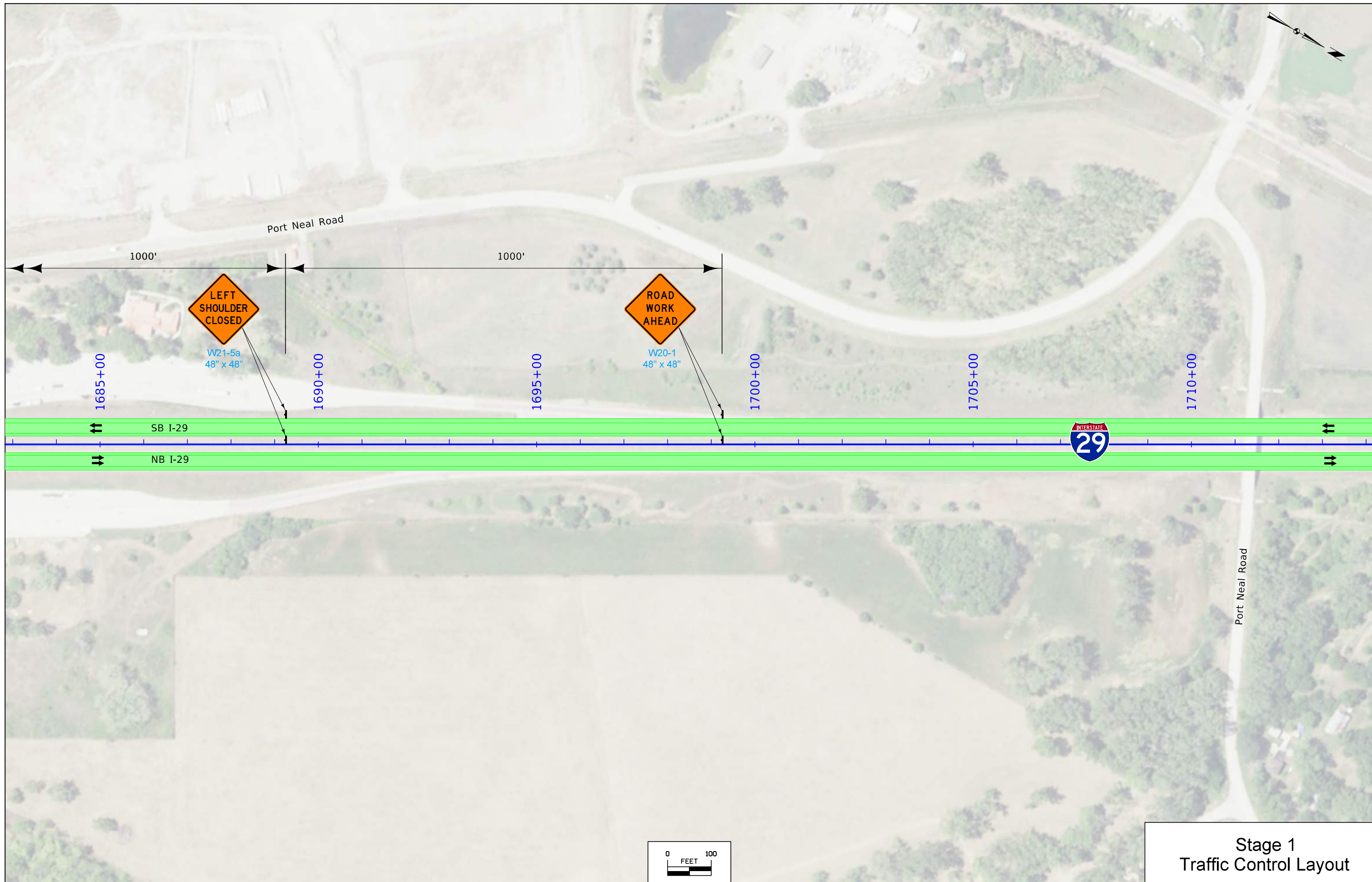
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER J.6
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Stage 1
Traffic Control Layout



Stage 1
Traffic Control Layout



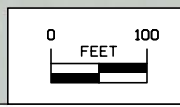
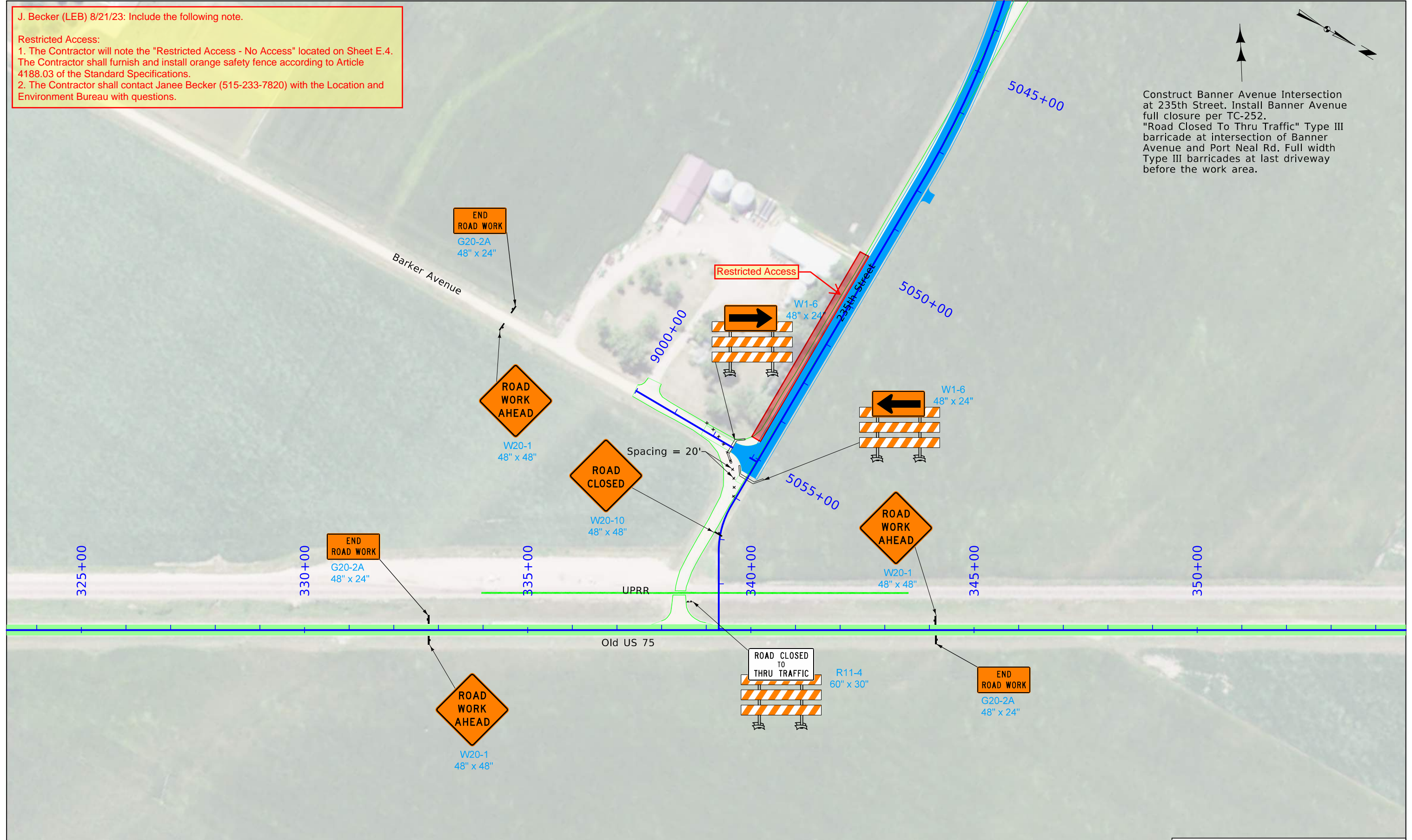
Stage 1
Traffic Control Layout

J. Becker (LEB) 8/21/23: Include the following note.

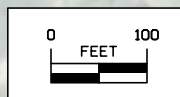
Restricted Access:

1. The Contractor will note the "Restricted Access - No Access" located on Sheet E.4. The Contractor shall furnish and install orange safety fence according to Article 4188.03 of the Standard Specifications.
2. The Contractor shall contact Janee Becker (515-233-7820) with the Location and Environment Bureau with questions.

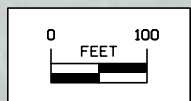
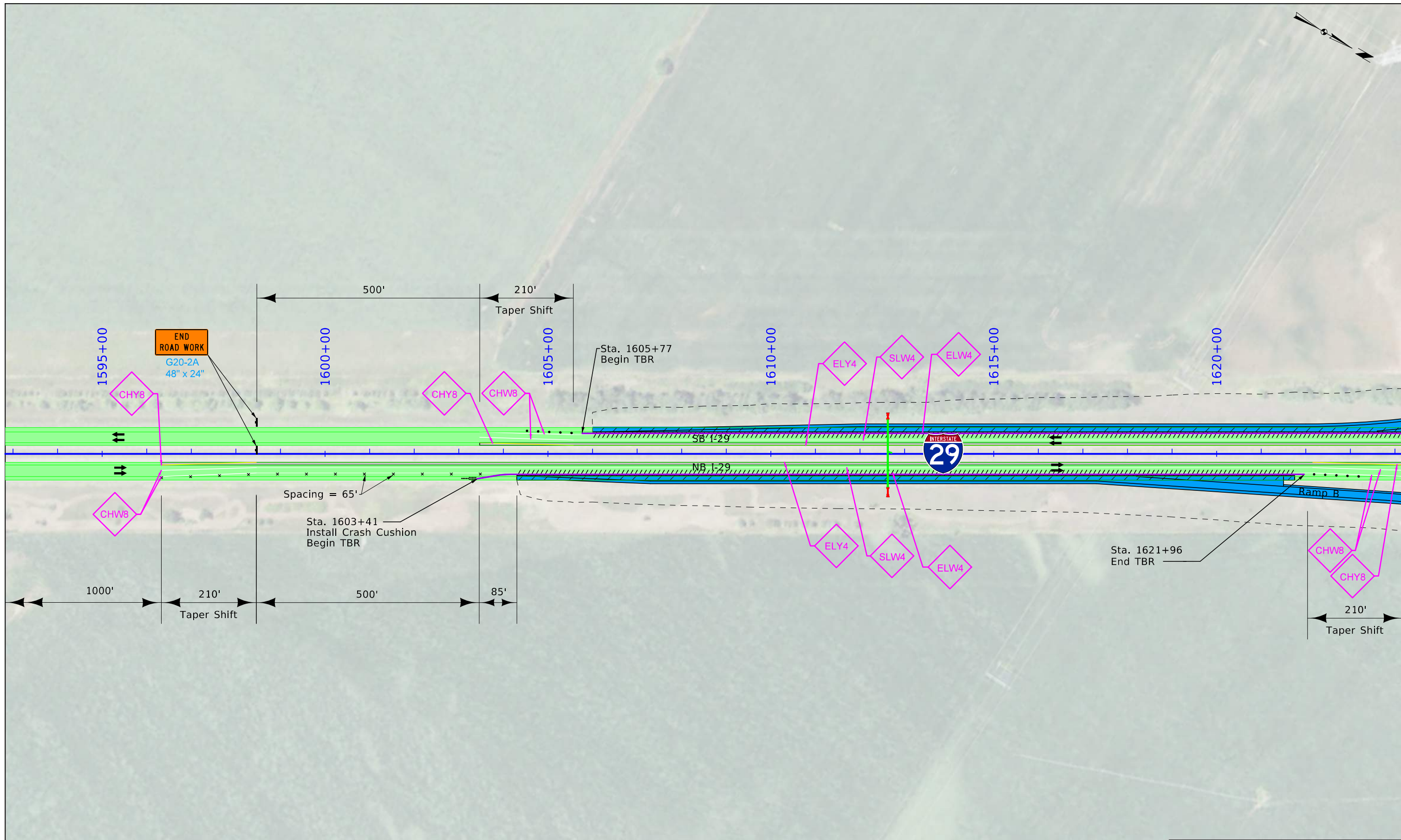
Construct Banner Avenue Intersection at 235th Street. Install Banner Avenue full closure per TC-252. "Road Closed To Thru Traffic" Type III barricade at intersection of Banner Avenue and Port Neal Rd. Full width Type III barricades at last driveway before the work area.



Stage 1
Traffic Control Layout



**Stage 2
Traffic Control Layout**



**Stage 2
Traffic Control Layout**

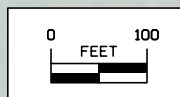
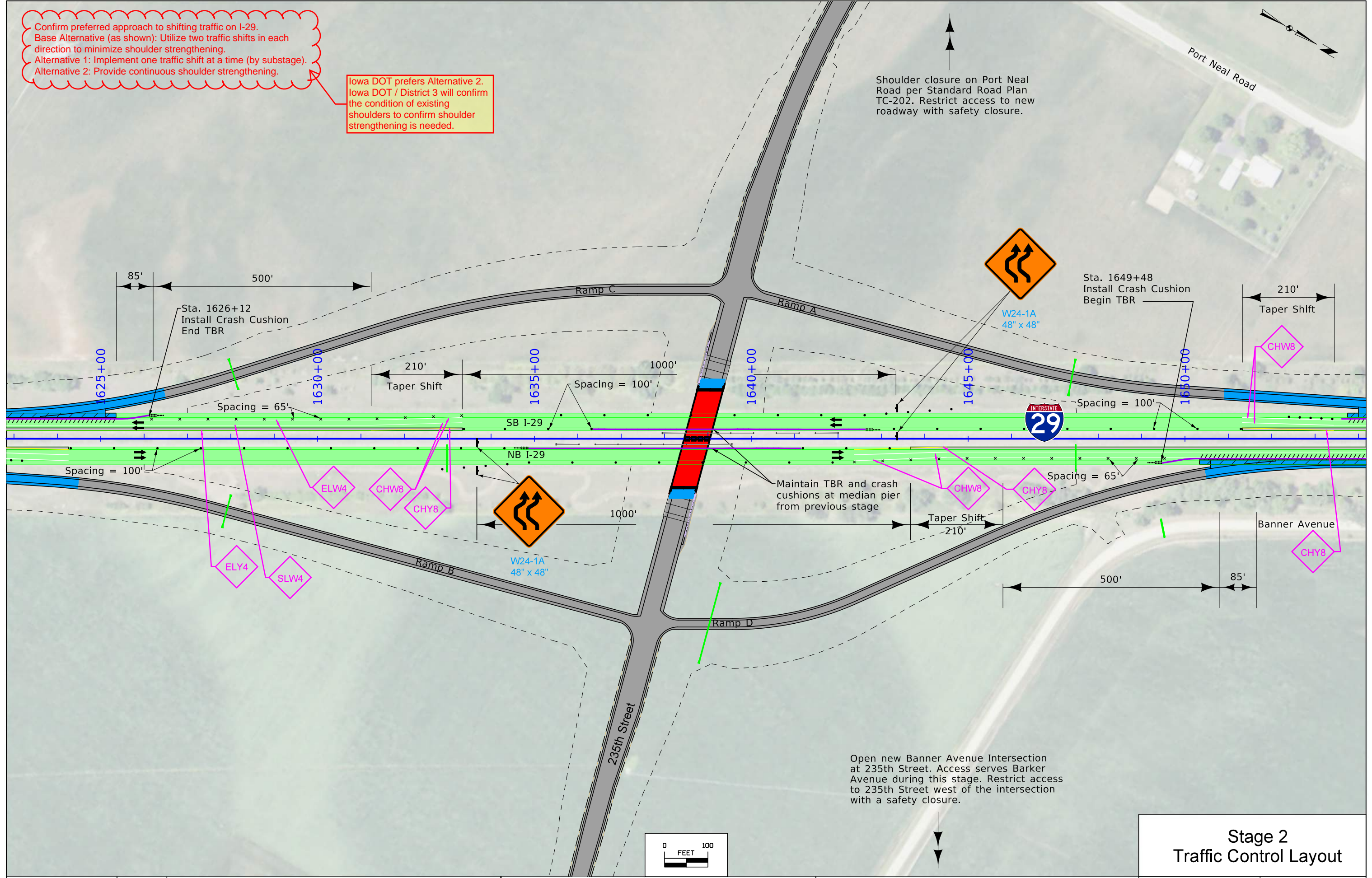
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Confirm preferred approach to shifting traffic on I-29.
 Base Alternative (as shown): Utilize two traffic shifts in each direction to minimize shoulder strengthening.
 Alternative 1: Implement one traffic shift at a time (by substage).
 Alternative 2: Provide continuous shoulder strengthening.

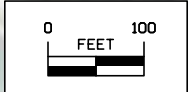
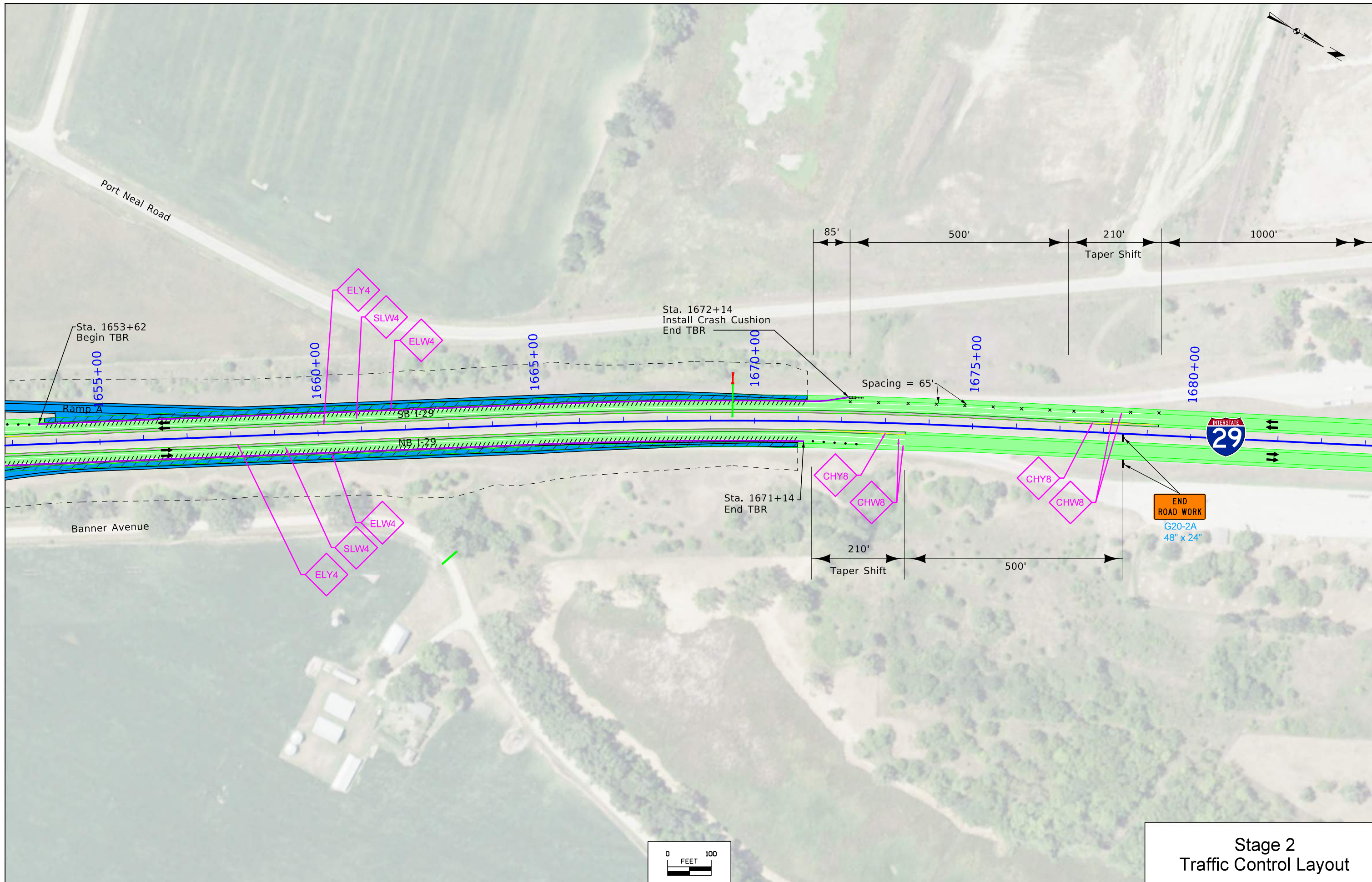
Iowa DOT prefers Alternative 2.
 Iowa DOT / District 3 will confirm the condition of existing shoulders to confirm shoulder strengthening is needed.

Shoulder closure on Port Neal Road per Standard Road Plan TC-202. Restrict access to new roadway with safety closure.

Open new Banner Avenue Intersection at 235th Street. Access serves Barker Avenue during this stage. Restrict access to 235th Street west of the intersection with a safety closure.

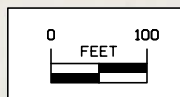
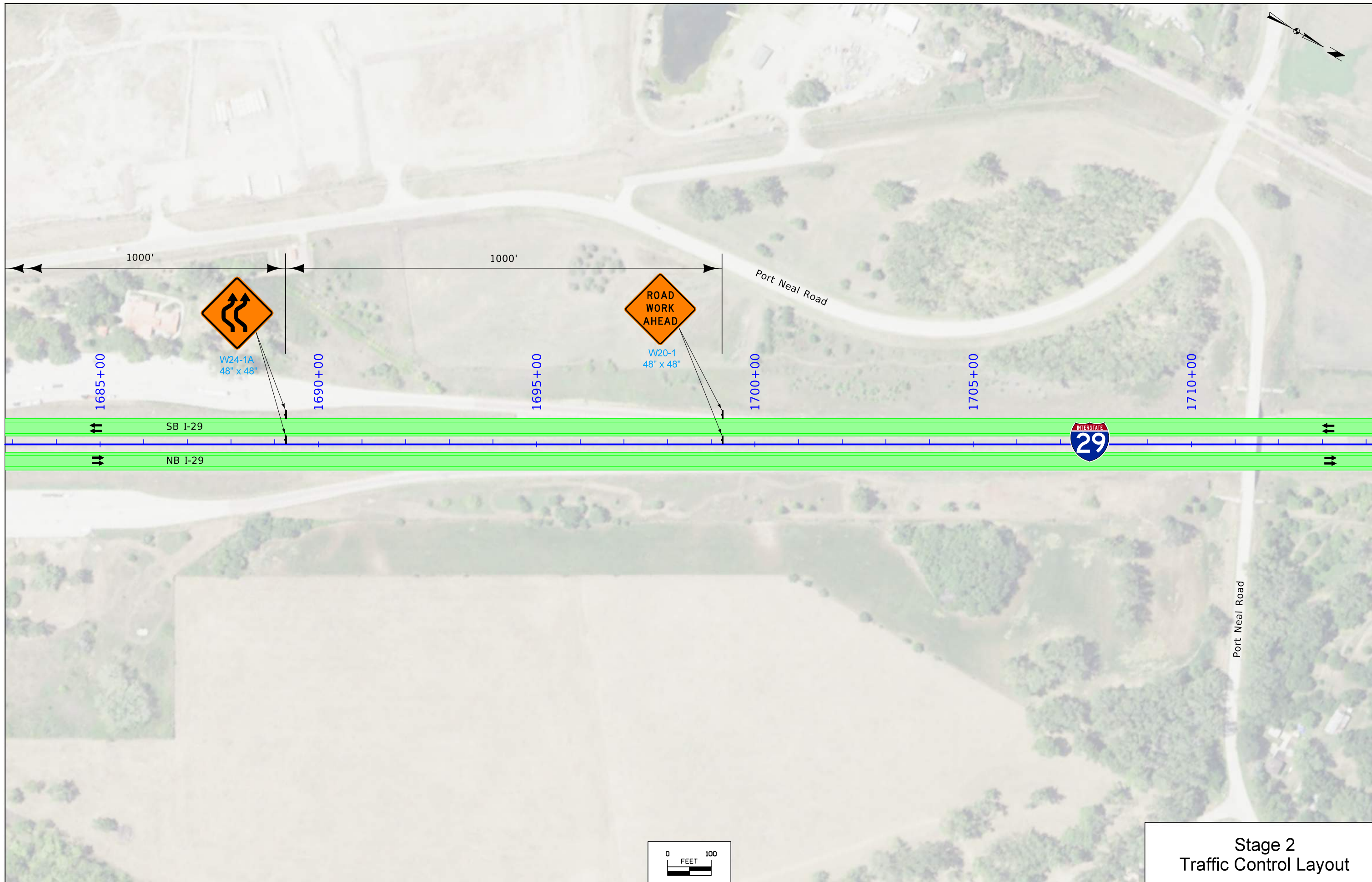


**Stage 2
 Traffic Control Layout**



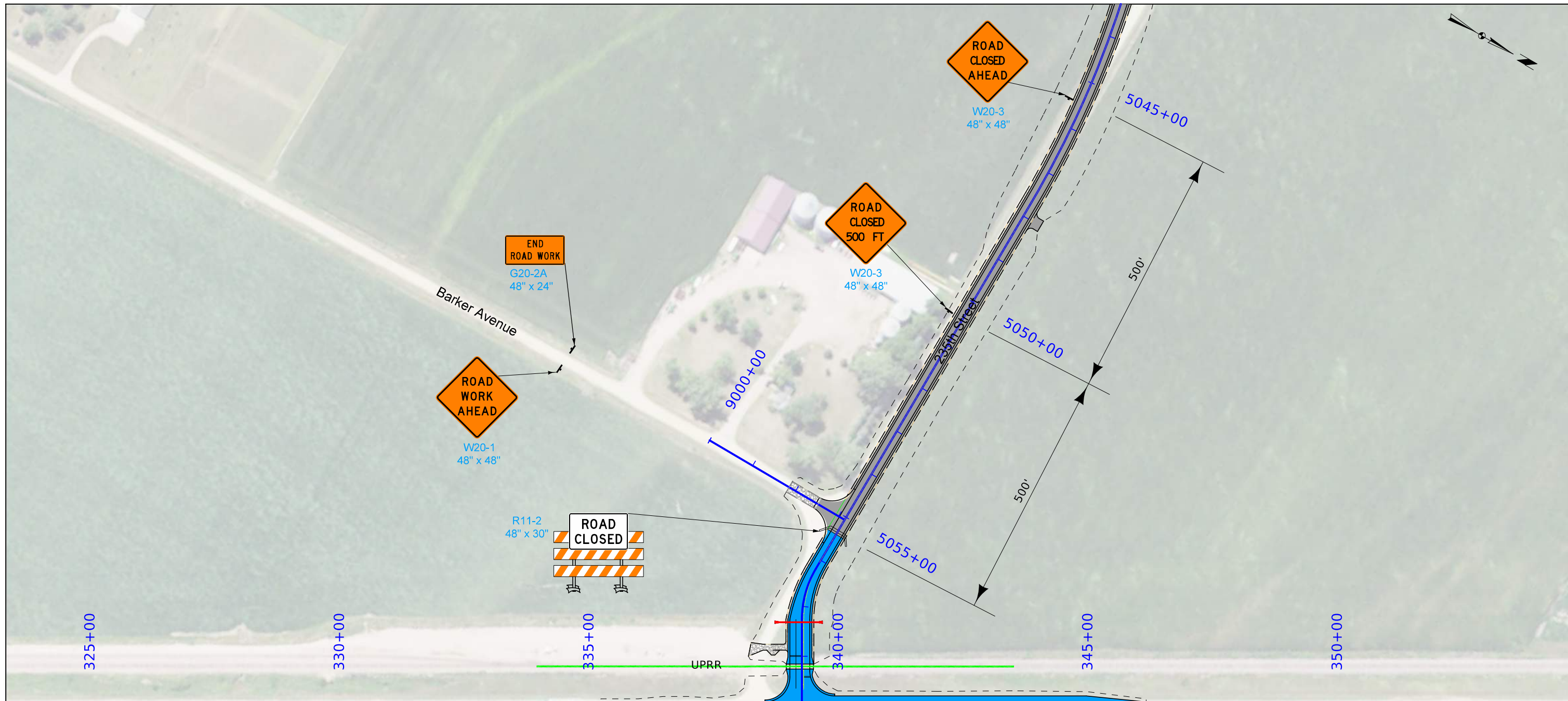
**Stage 2
Traffic Control Layout**

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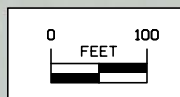
**Stage 2
Traffic Control Layout**

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER J.15
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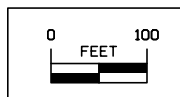
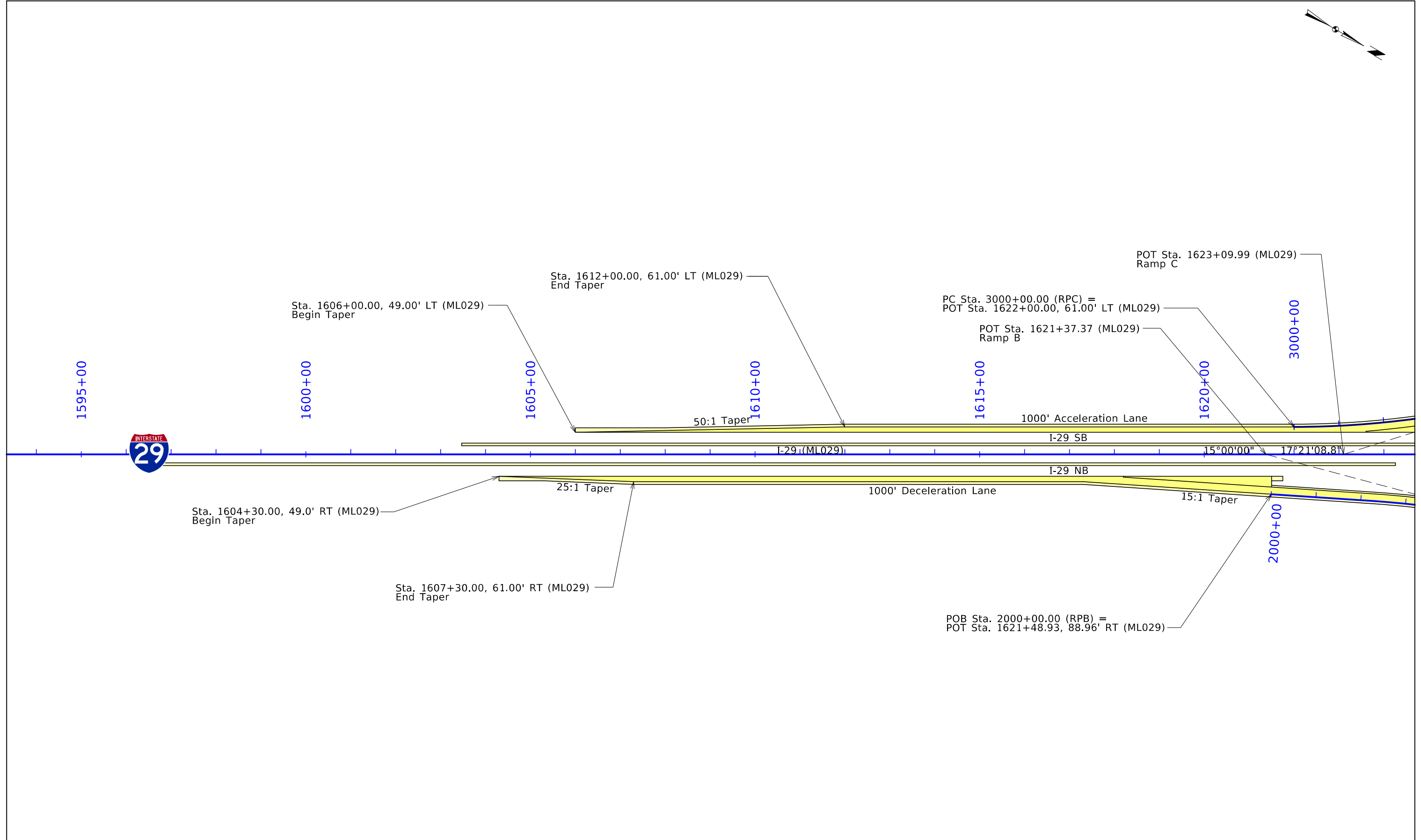
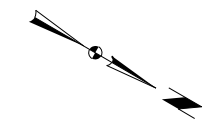


Full road closure
north of 240th Street per
Standard Road Plan TC-252.

Full road closure
south of 230th Street per
Standard Road Plan TC-252.

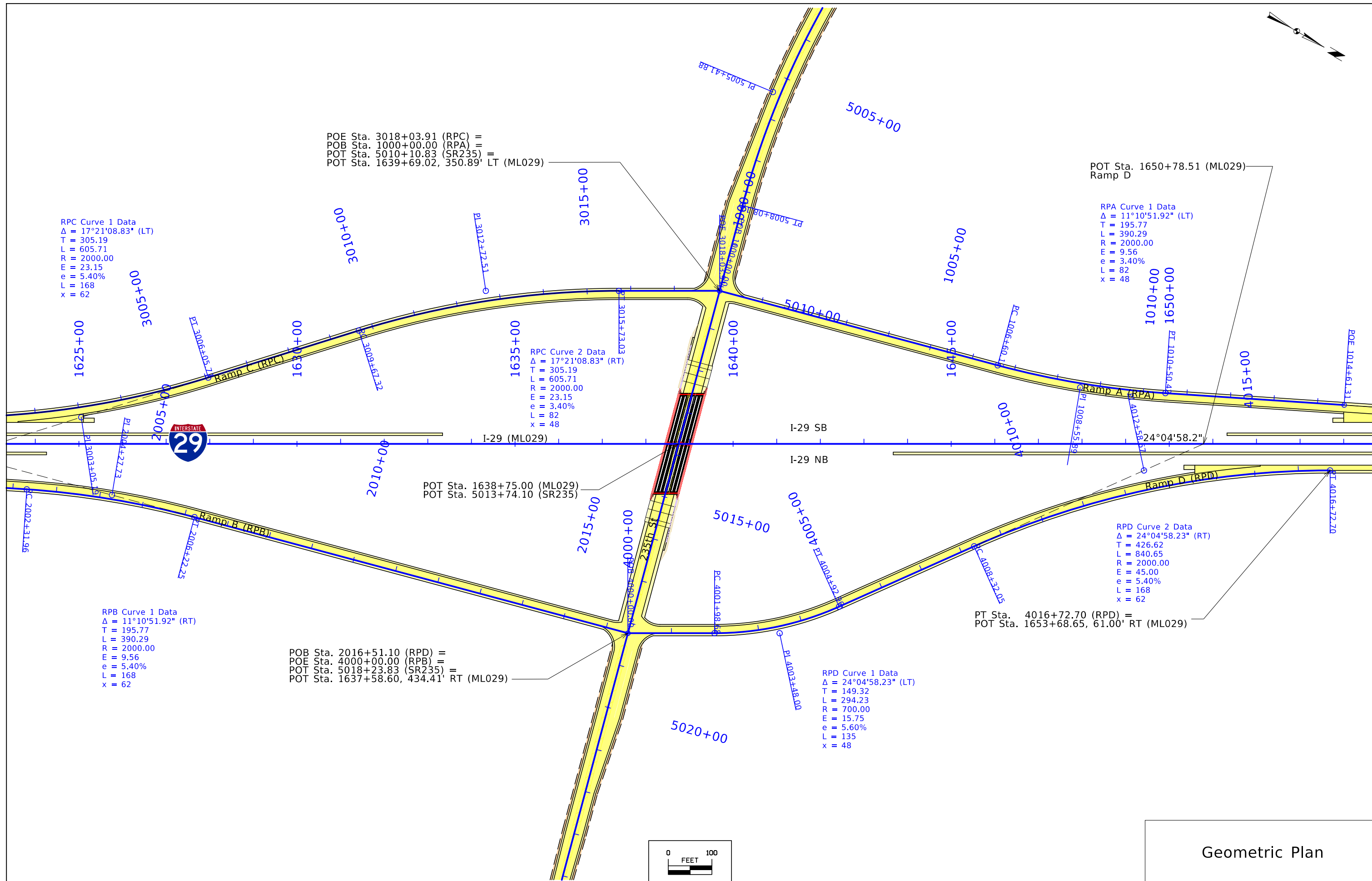


Stage 2
Traffic Control Layout

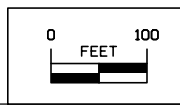
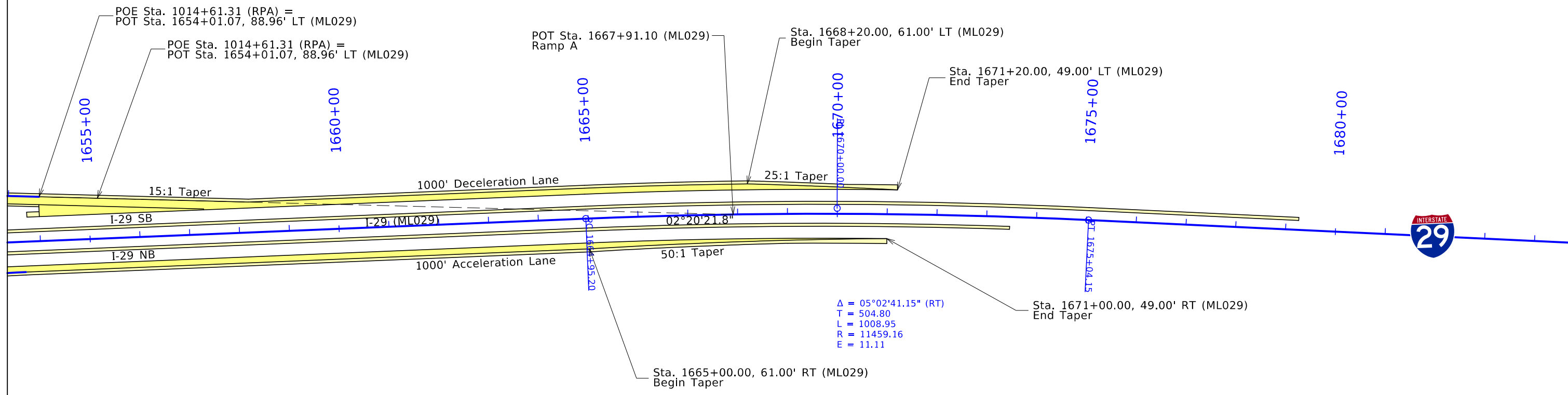
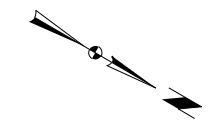


Geometric Plan

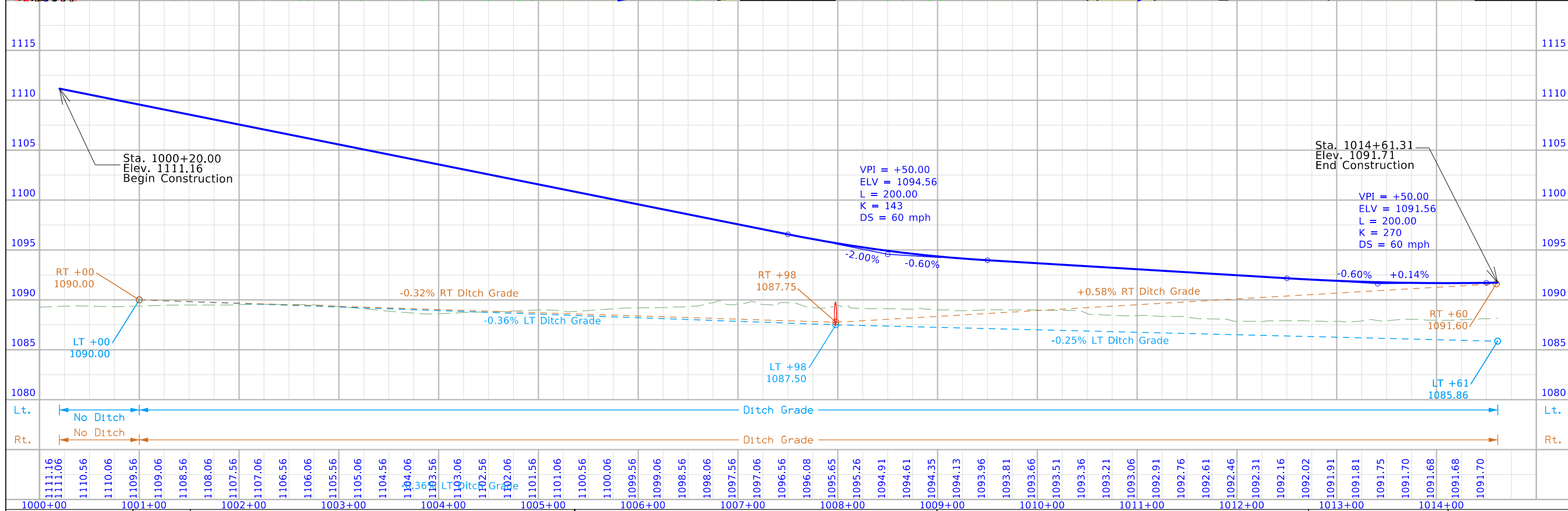
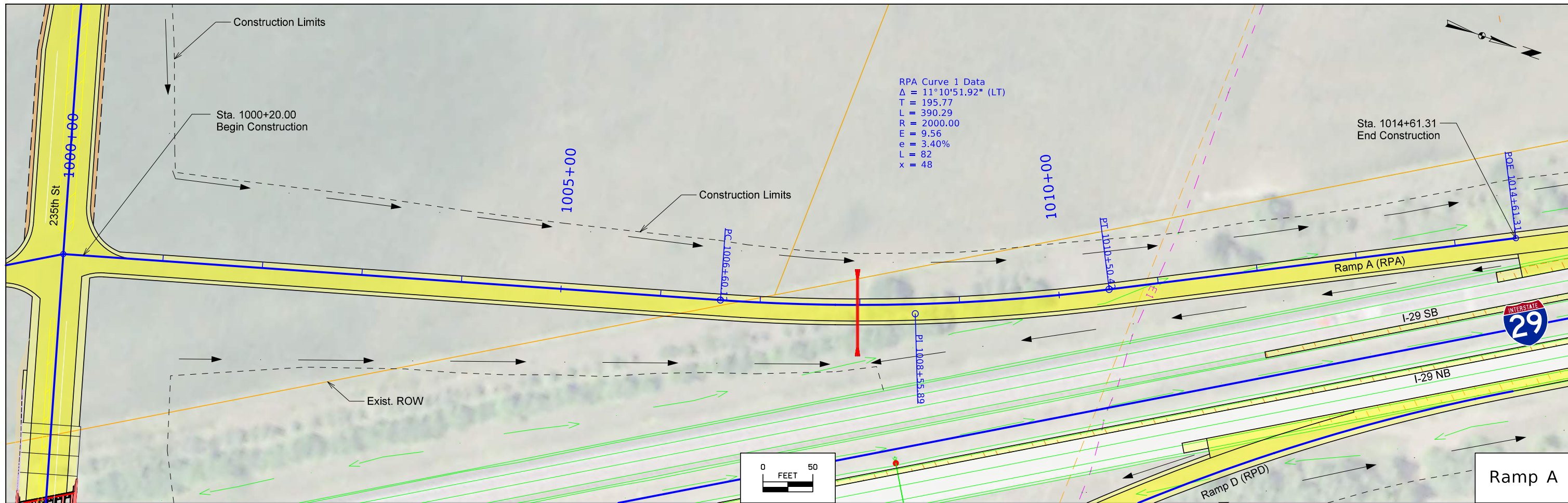
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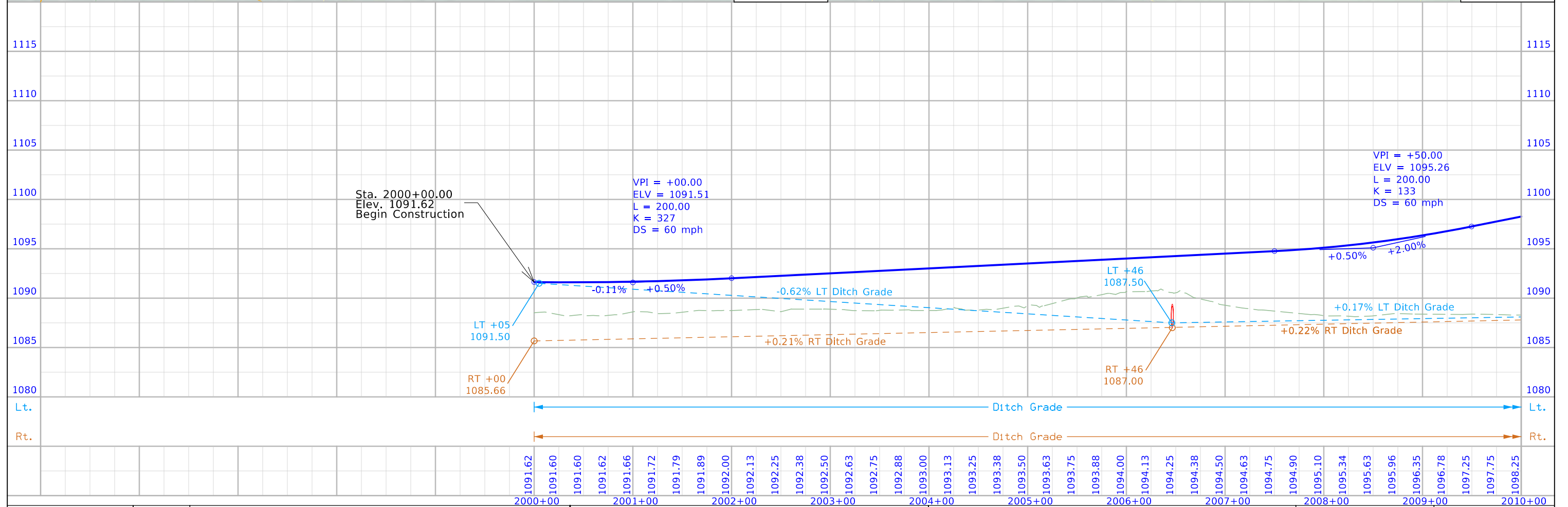
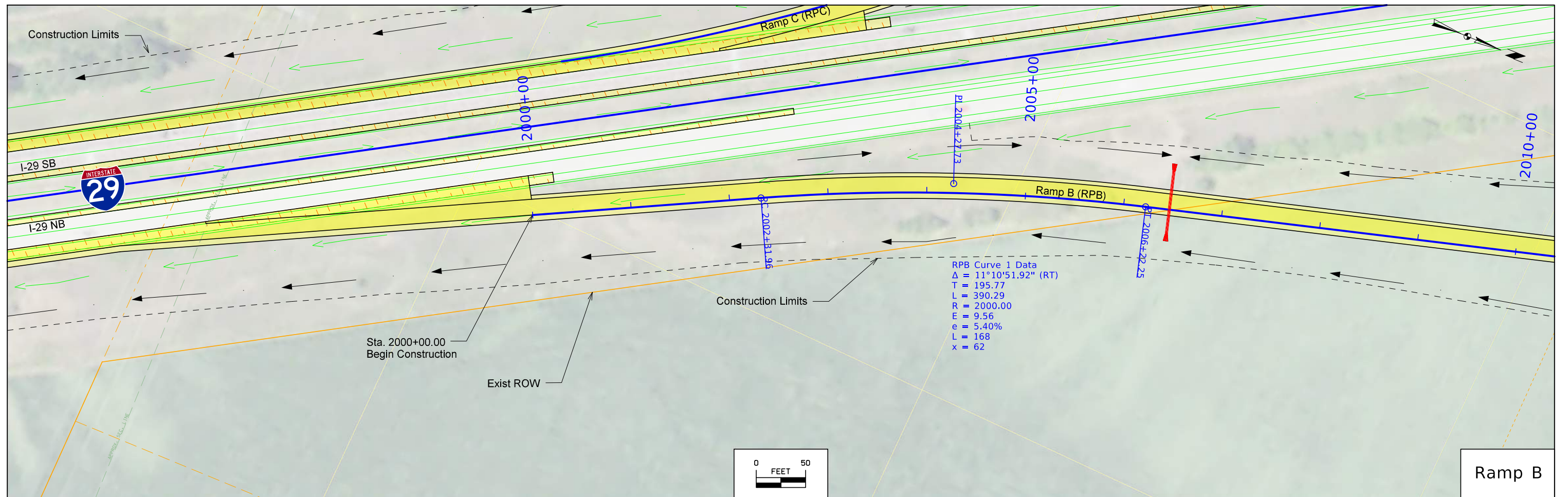
Geometric Plan

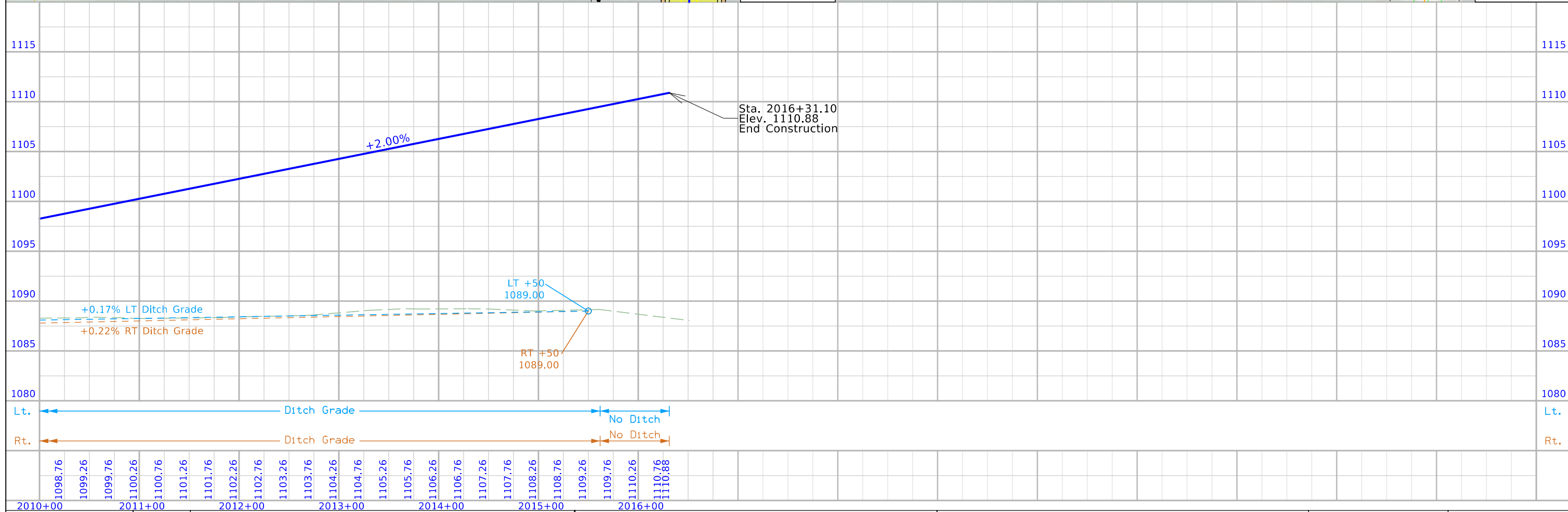
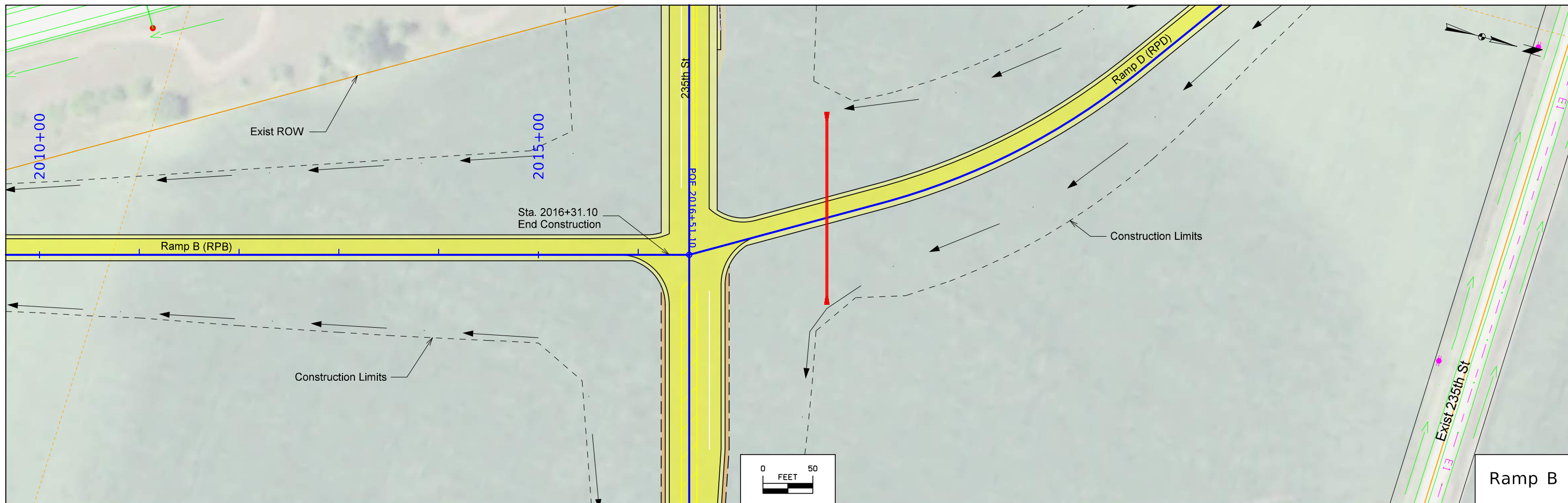


Geometric Plan

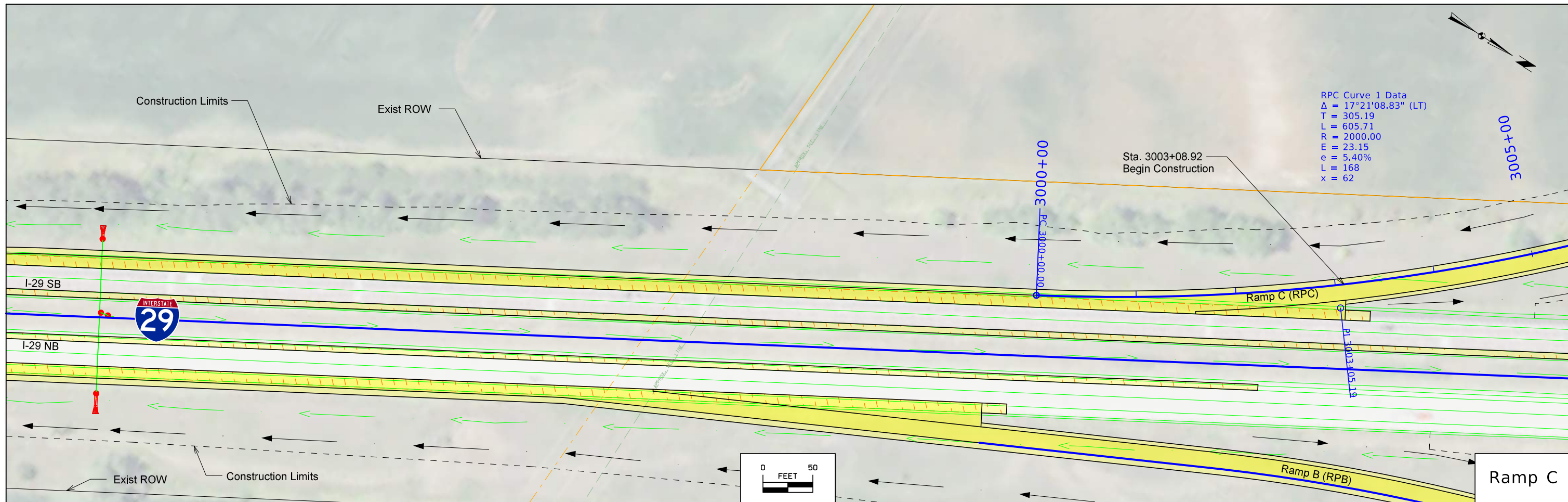


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER K.4
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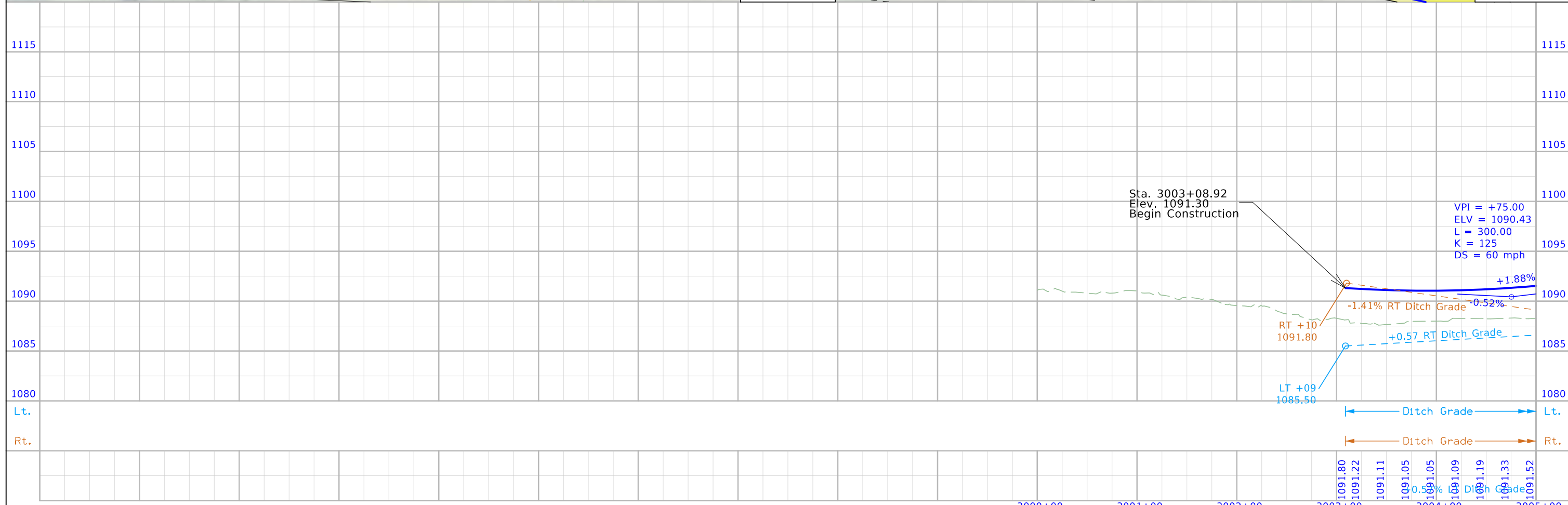




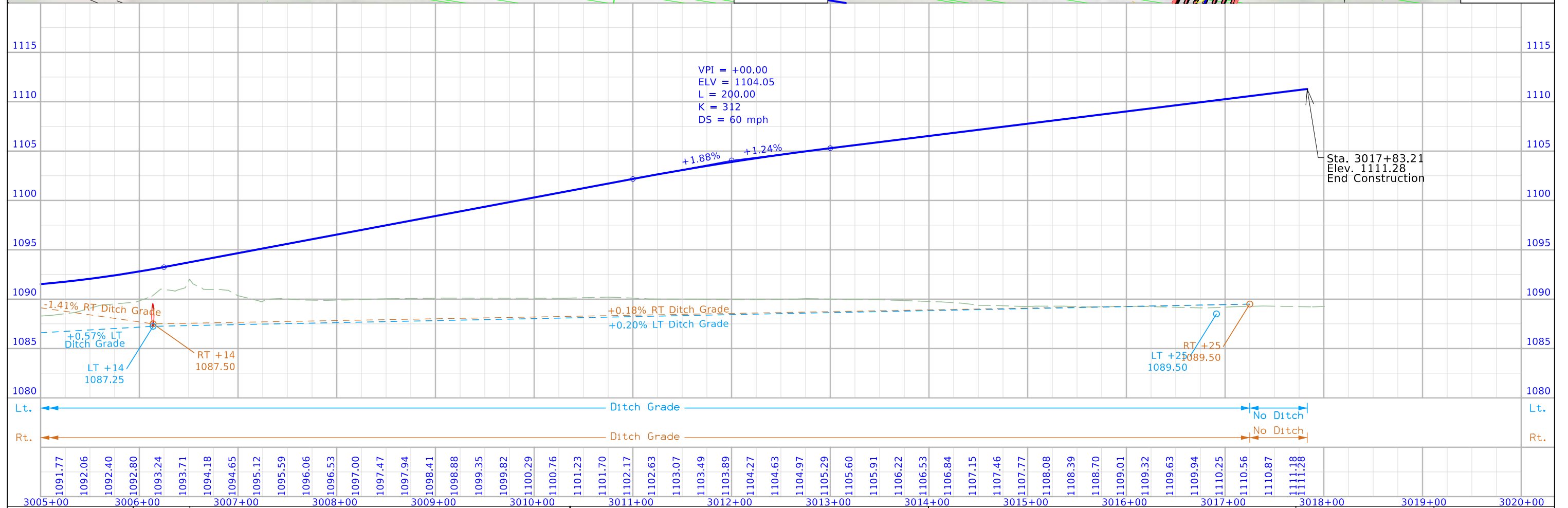
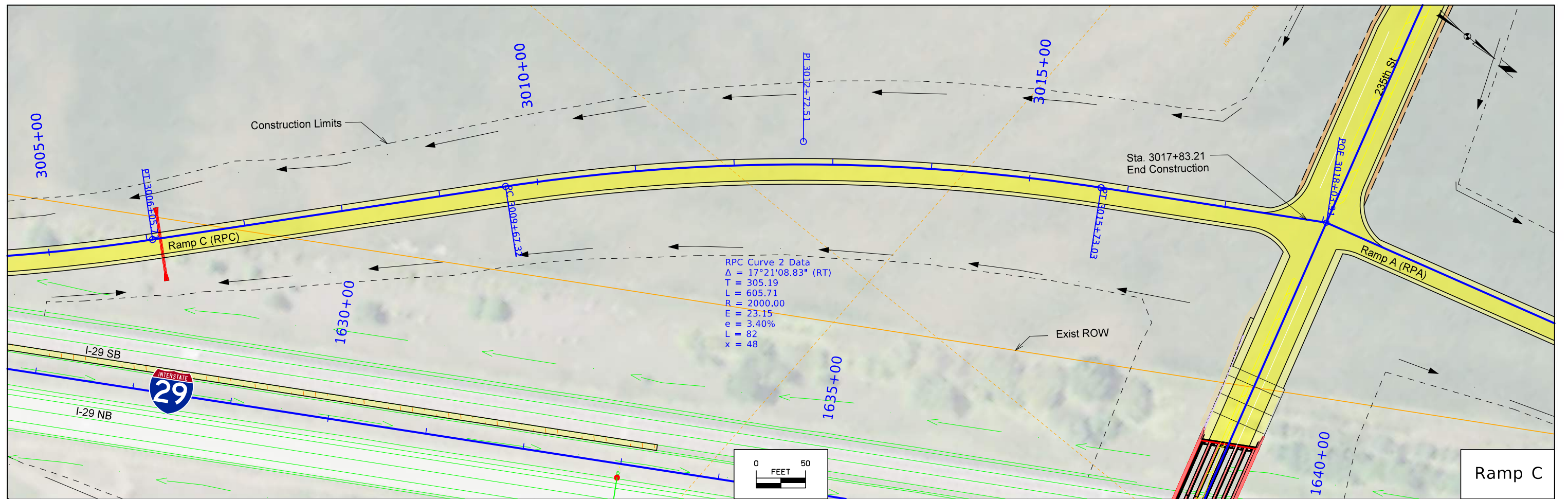
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2010+00	2011+00	2012+00	2013+00	2014+00	2015+00	2016+00																			



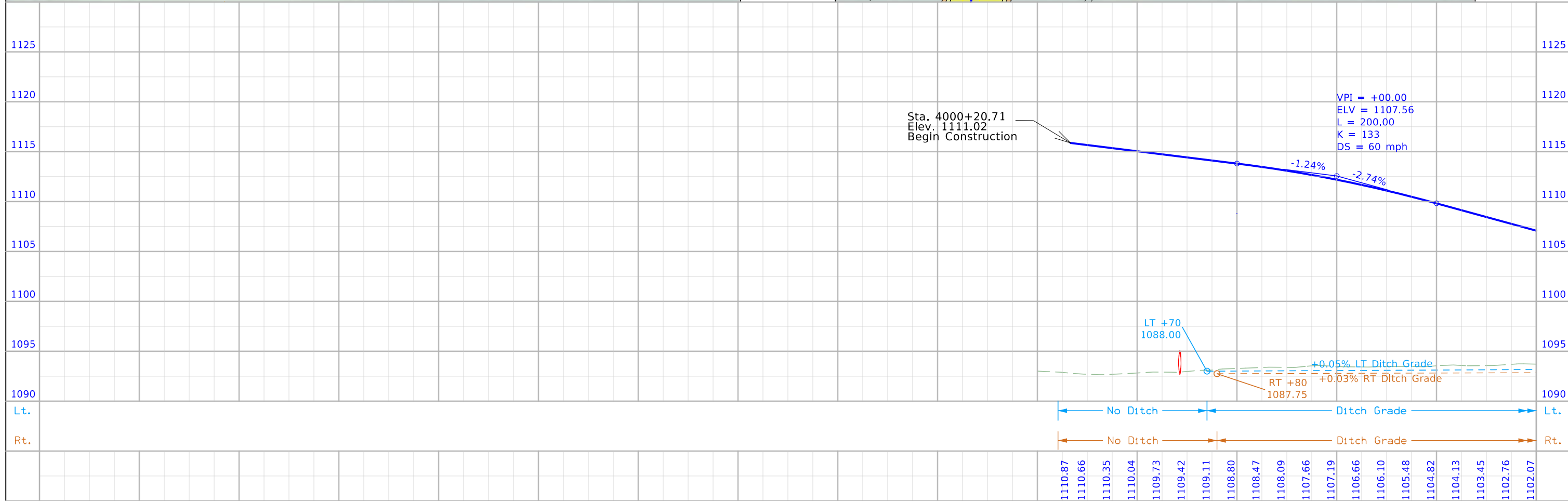
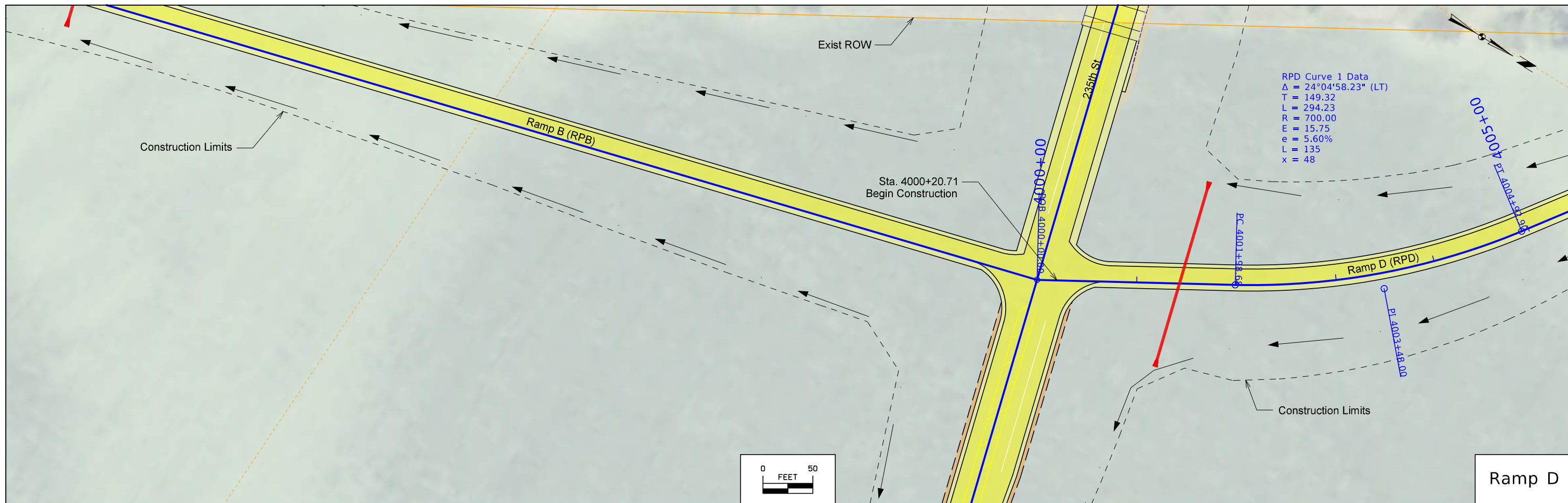
RPC Curve 1 Data
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 $x = 62$



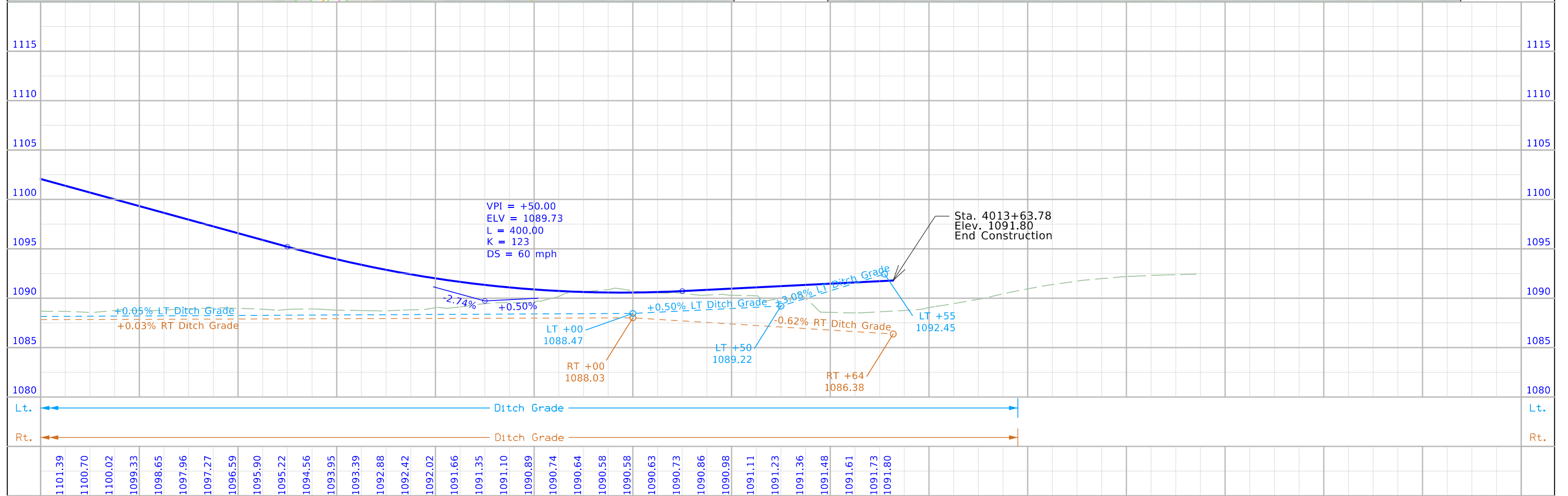
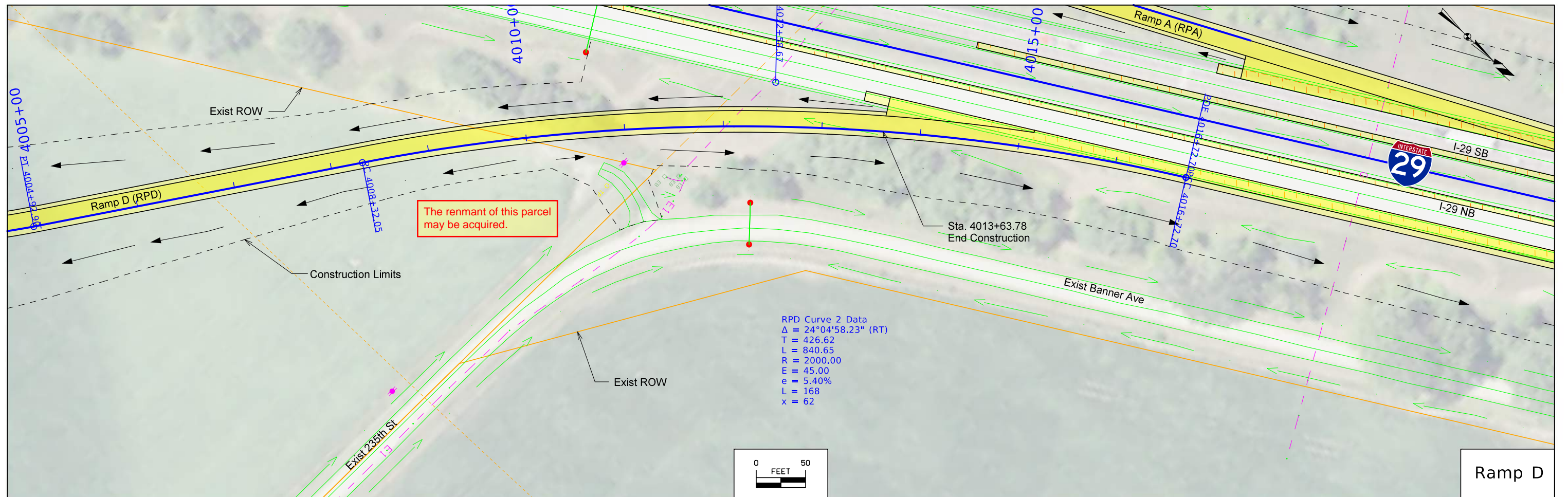
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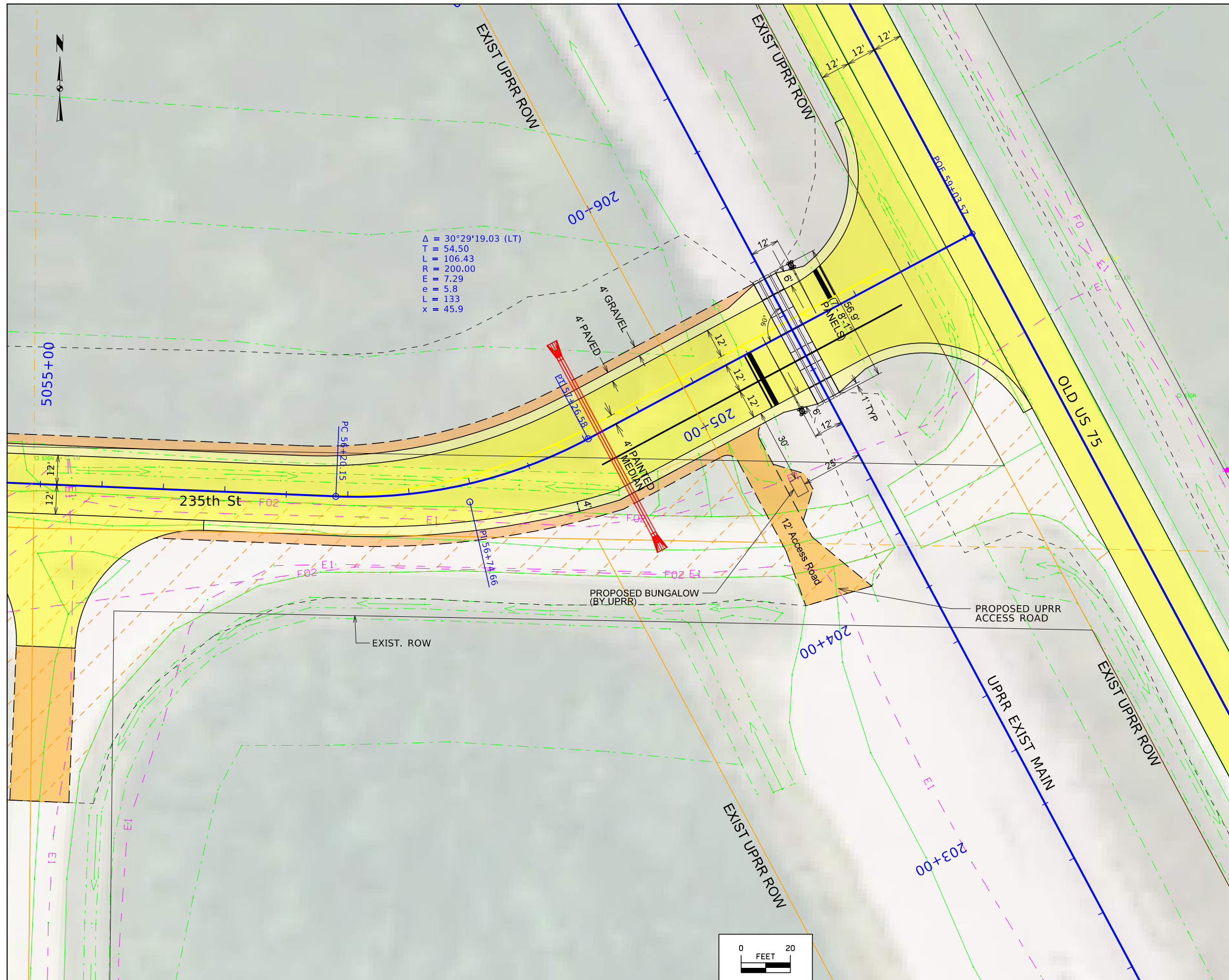
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FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER K.9
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FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HNTB	WOODBURY COUNTY	PROJECT NUMBER IMN-029-6(170)139--0E-97	SHEET NUMBER K.10
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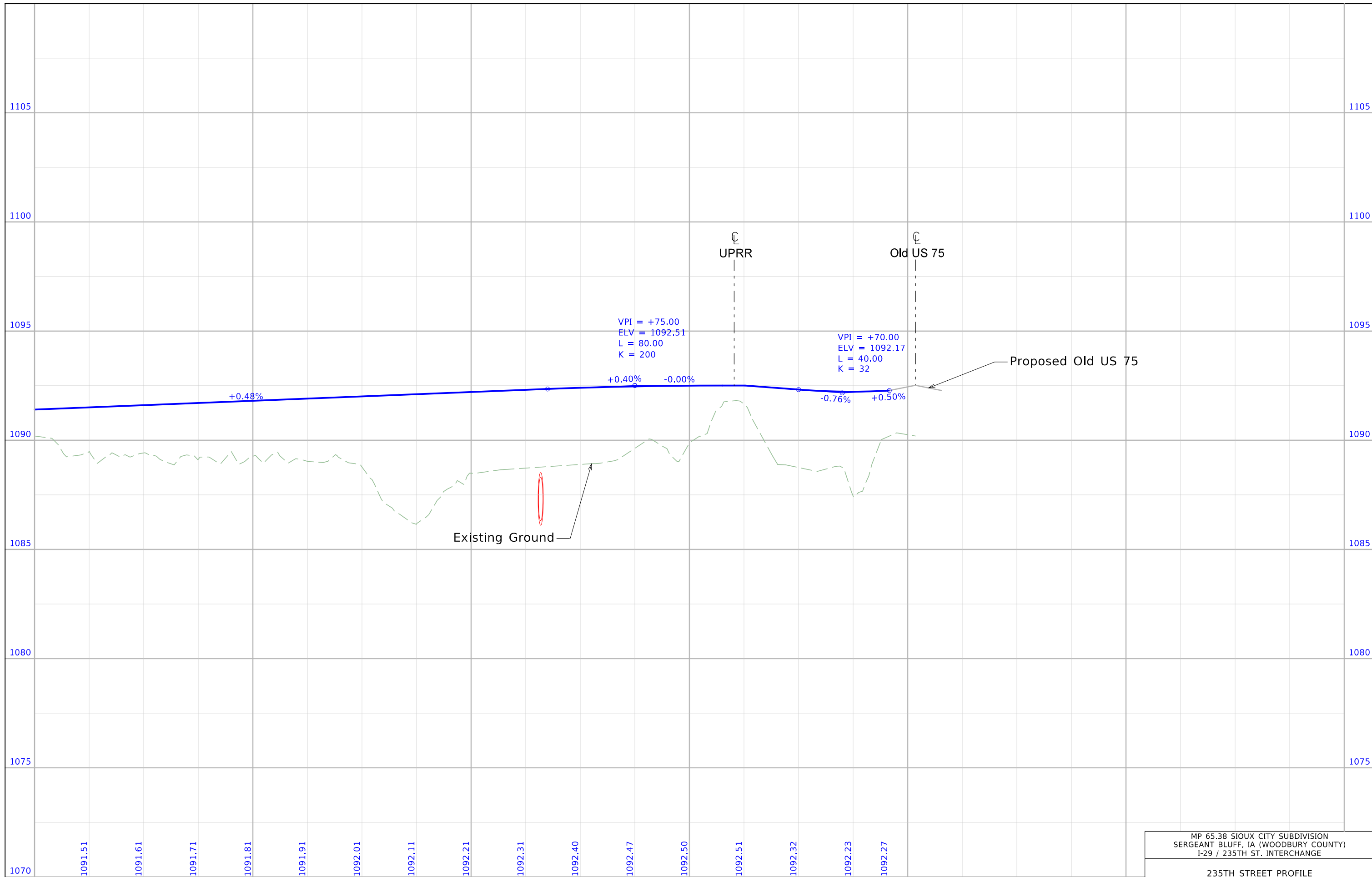
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 $e = 5.8$
 $L = 133$
 $x = 45.9$

- CONSTRUCTION NOTES**
1. ALL SIGNING, PAVEMENT MARKINGS, AND WARNING DEVICES SHALL BE CONSTRUCTED / INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND STATE HIGHWAY STANDARDS.
 2. FULL ROAD CLOSURE WITH DETOUR IS ANTICIPATED TO COMPLETE ROADWAY WORK.

- UPRR**
1. EXISTING AT-GRADE CROSSING TO REMAIN IN SERVICE DURING CONSTRUCTION.
 2. UPRR TO PERFORM TRACK WORK AND INSTALL NEW CONCRETE PANELS, WARNING DEVICES AND BUNGALOW.
 3. AFTER PROPOSED ROADWAY CONSTRUCTION AND CUT OVER, UPRR SHALL REMOVE EXISTING CROSSING PANELS, ROADWAY SURFACE AND PASSIVE WARNING DEVICES TO BE DISPOSED BY IOWA DOT CONTRACTOR.

- CONTRACTOR**
1. CONSTRUCT PROPOSED ROADWAY ADJACENT TO PROPOSED UPRR WORK LIMITS.
 2. CONSTRUCT PROPOSED ACCESS ROAD AND BUNGALOW PAD.
 3. AFTER PROPOSED ROADWAY CONSTRUCTION AND CUT OVER, REMOVE EXISTING ROADWAY APPROACHES AND PERFORM NECESSARY GRADING ALONG UPRR ROW.

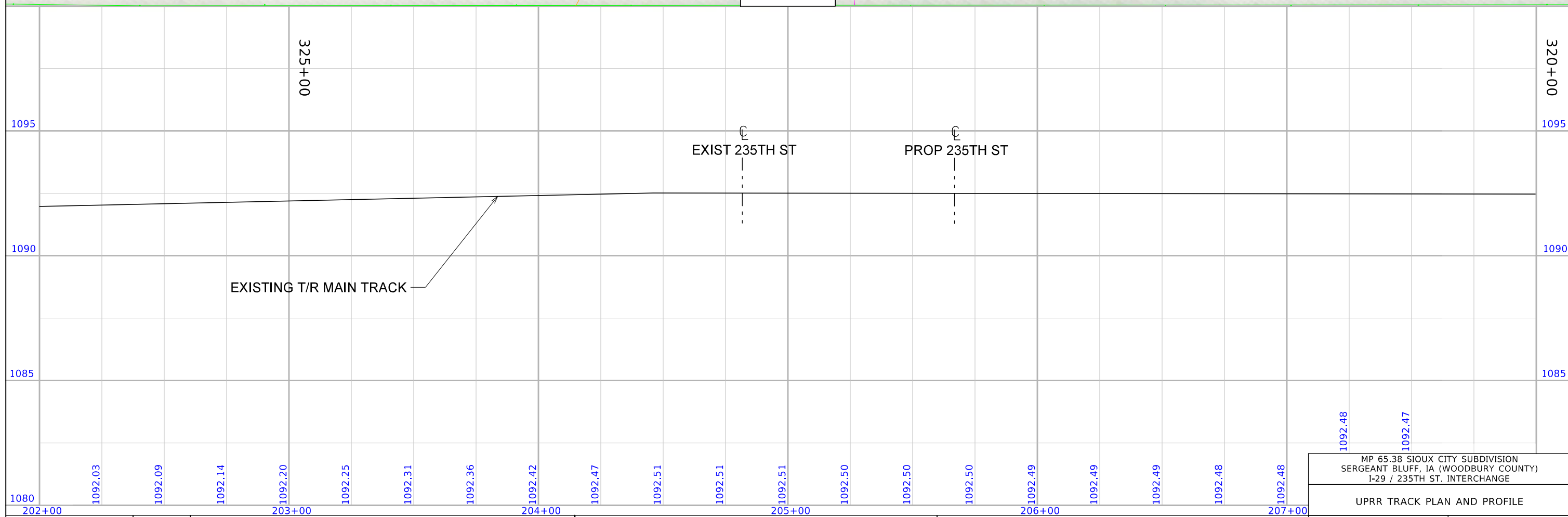
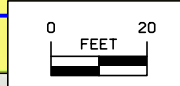
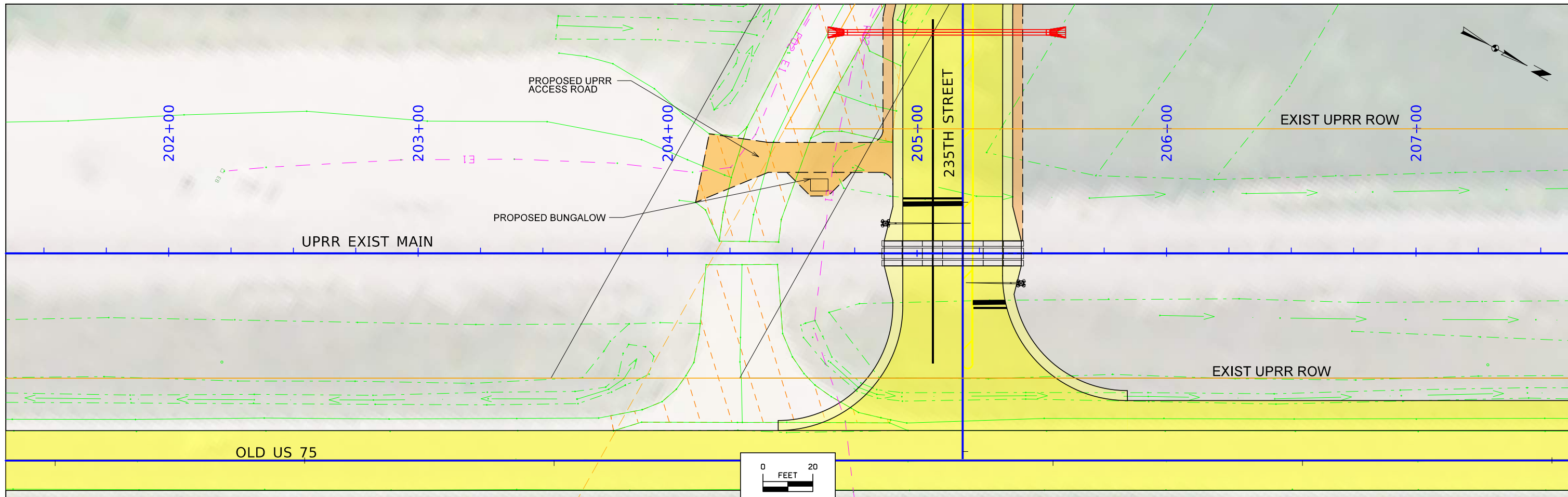
MP 65.38 SIOUX CITY SUBDIVISION
 SERGEANT BLUFF, IA (WOODBURY COUNTY)
 I-29 / 235TH ST. INTERCHANGE
PROPOSED UPRR CROSSING DETAIL
 235TH STREET PLAN



5055+00	1091.51	1091.61	1091.71	1091.81	1091.91	1092.01	1092.11	1092.21	1092.31	1092.40	1092.47	1092.50	1092.51	1092.32	1092.23	1092.27	5059+00
FILE NO.	ENGLISH	DESIGN TEAM IOWA DOT \ HNTB						WOODBURY COUNTY				PROJECT NUMBER IMN-029-6(170)139--0E-97				SHEET NUMBER U.2	

MP 65.38 SIOUX CITY SUBDIVISION
 SERGEANT BLUFF, IA (WOODBURY COUNTY)
 I-29 / 235TH ST. INTERCHANGE

235TH STREET PROFILE



MP 65.38 SIOUX CITY SUBDIVISION
 SERGEANT BLUFF, IA (WOODBURY COUNTY)
 I-29 / 235TH ST. INTERCHANGE

UPRR TRACK PLAN AND PROFILE

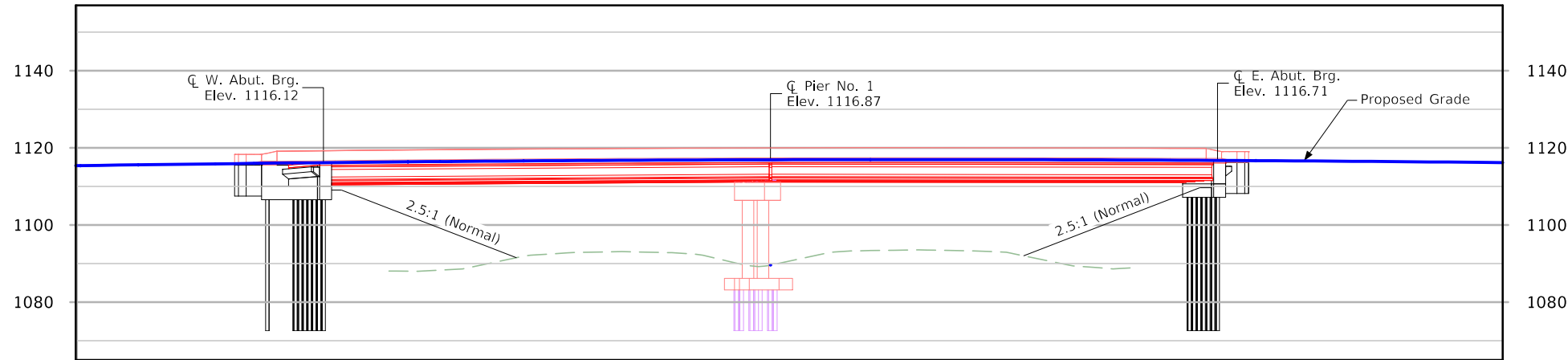
SHEET NUMBER **U.3**

Control Point:

No pedestrian accommodations and limited to no aesthetics are planned for this bridge.

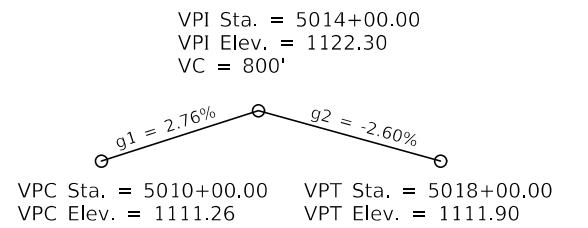
The proposed bridge may include an additional beam line for freight accommodations.

The proposed profile over I-29 will be refined and lowered following D02. The standard minimum vertical clearance is proposed.



Longitudinal Section Along Centerline of 235th Street

Note:
Top of bridge deck at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.
Profile grade line (PGL) is at centerline.



Proposed Profile Grade 235th St.

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

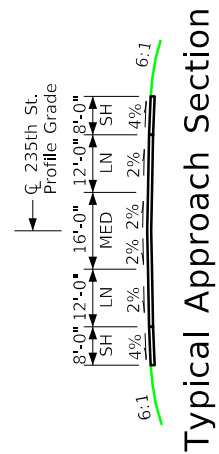
Traffic Estimate

I-29	
2022 AADT	20600 V.P.D.
2022 AADT	- V.P.D.
20-- DHV	- V.P.H.
TRUCKS	26.1 %
Total Design ESALs	--

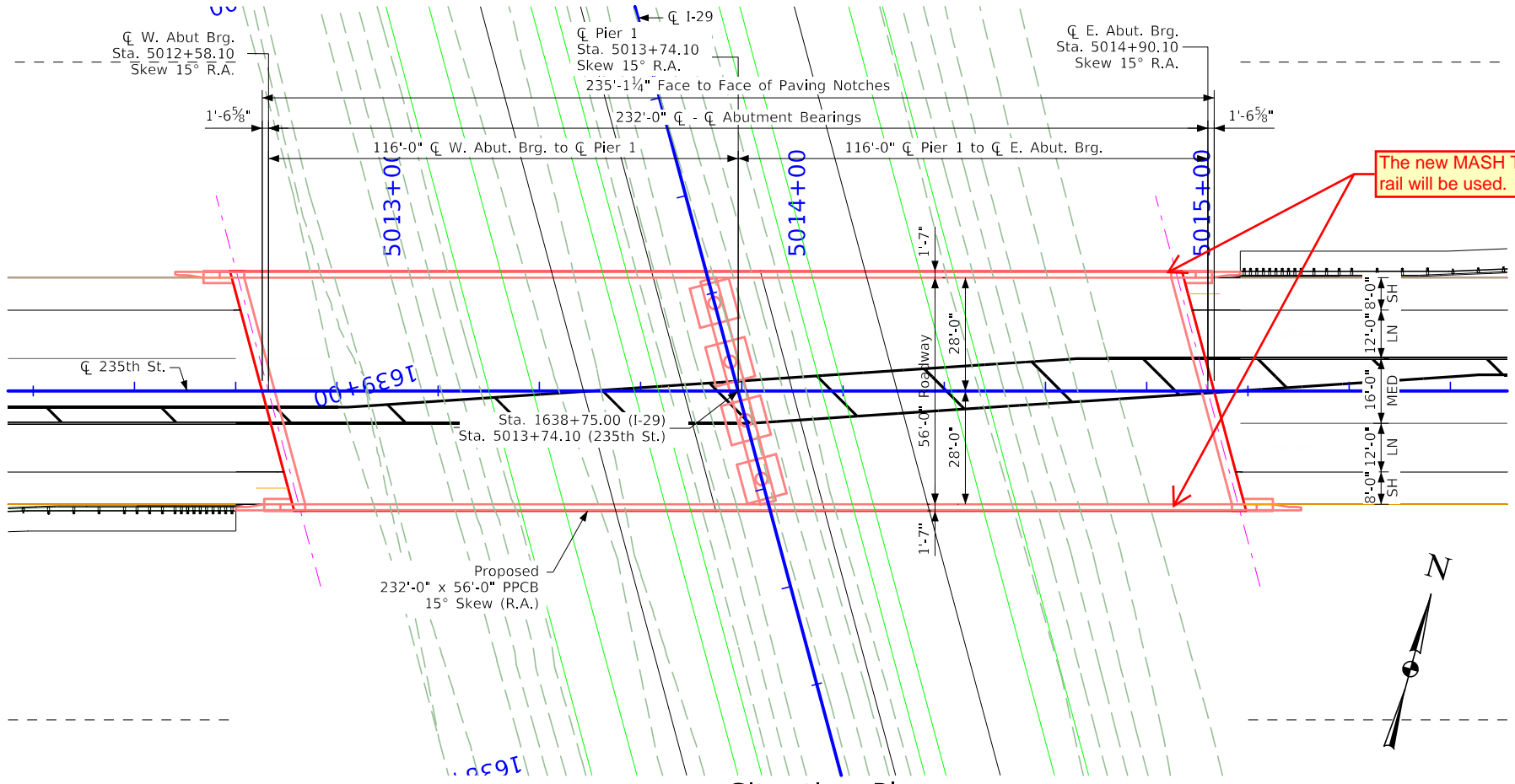
Traffic Estimate

235th Street	
20?? AADT	?? V.P.D.
20?? AADT	?? V.P.D.
20?? DHV	?? V.P.H.
TRUCKS	?? %
Total Design ESALs	??

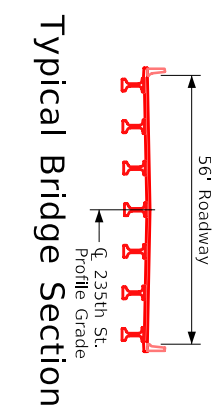
The new MASH TL-5 single slope barrier rail will be used.



Typical Approach Section



Situation Plan



Typical Bridge Section

Location

235th Street over I-29
T-87N R-47W
Section 8
Liverty Township
Woodbury County
FHWA No. ??
Bridge Maint. No. ??
Asset ID No. ??
Latitude 42.364207°
Longitude -96.345550°

Design For 15° Skew (R.A.)
232'-0" x 56'-0" Pretensioned Prestressed Conc. Beam Bridge
116'-0" End Spans BTC Beams

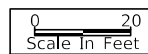
Situation Plan

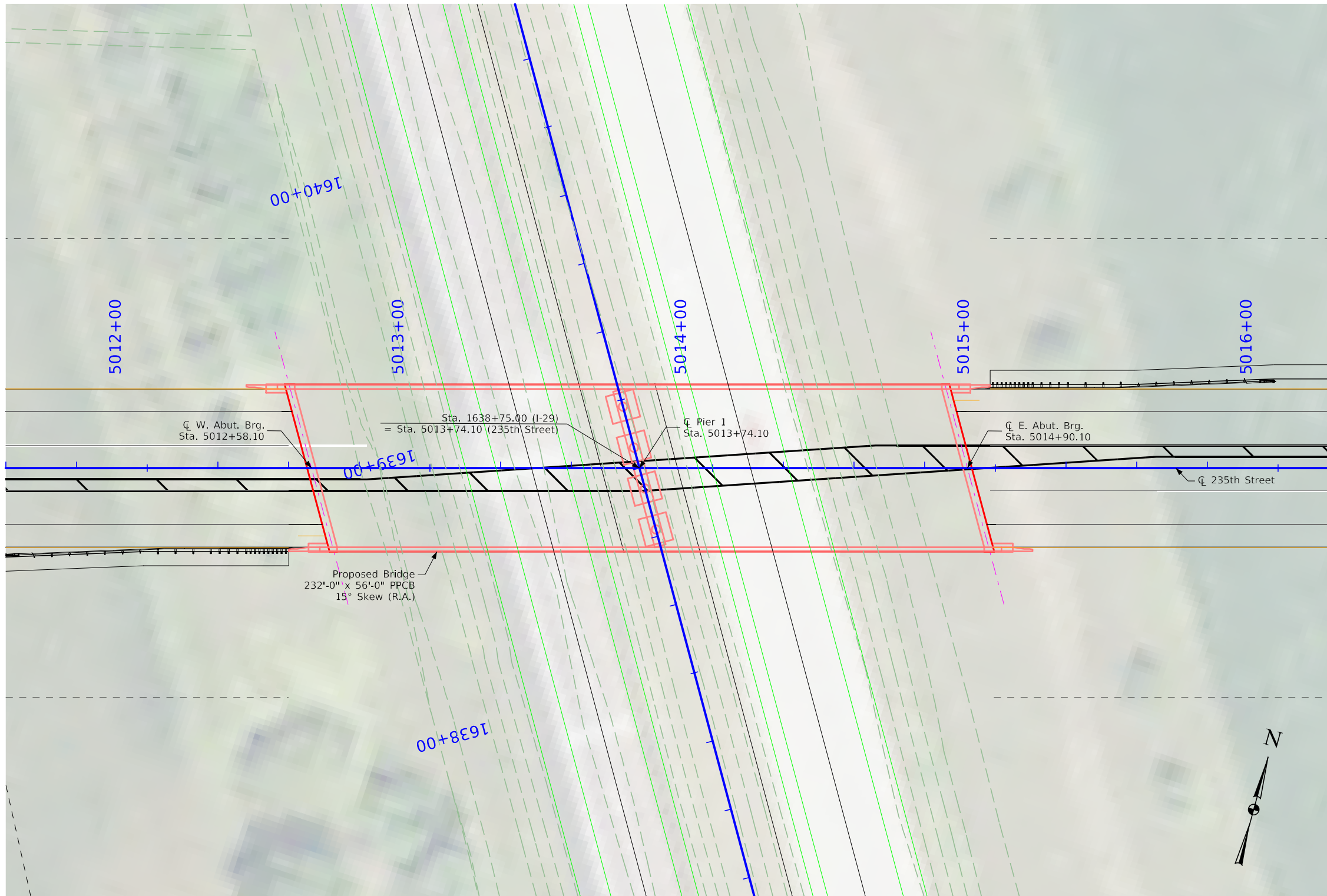
STA. 1638+75.00 (I-29)

Woodbury County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. xxxx Design Sheet No. 1 of 2 FHWA No. FHWANO





Site Plan

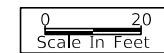
Design For 15° Skew (R.A.)
**232'-0" x 56'-0" Prestressed
 Prestressed Conc. Beam Bridge**
 116'-0" End Spans BTC Beams

Site Plan

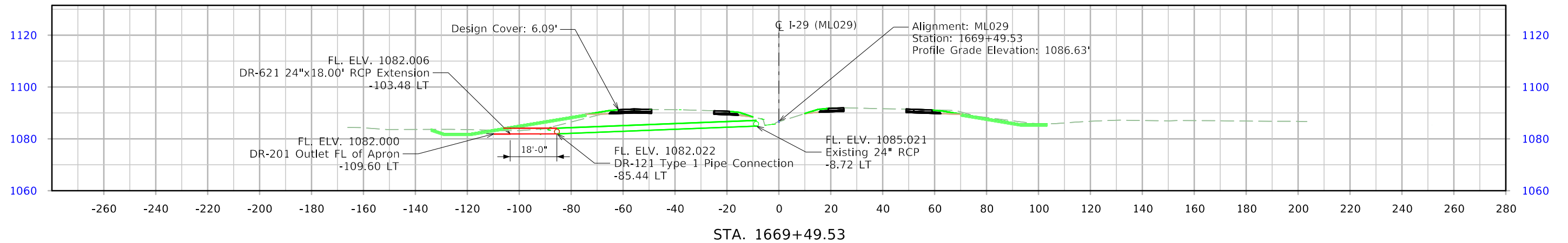
STA. 1638+75.00 (I-29) Turn-In Date: mmm yyyy

Woodbury County
 IOWA DEPARTMENT OF TRANSPORTATION

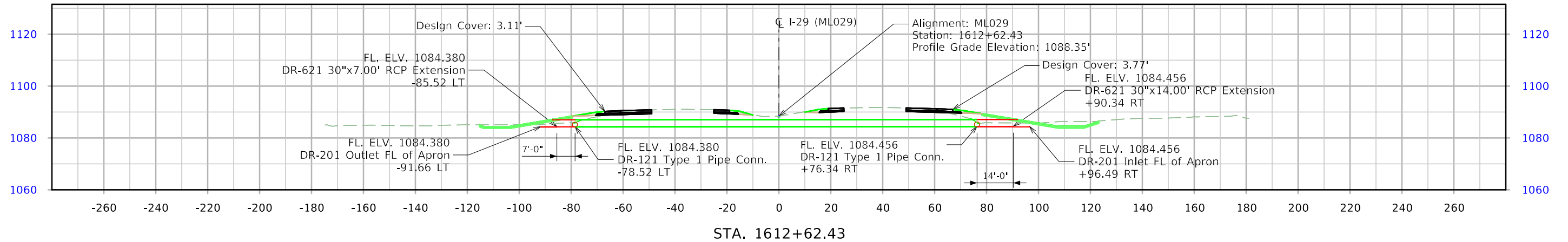
Design No. xxxx Design Sheet No. 2 of 2 FHWA No. FHWANO



Remove existing apron and lay 18ft of 24" RCP and place DR-201 outlet apron and a DR-121 pipe connection. Install culvert extension and apron during Stage 2.



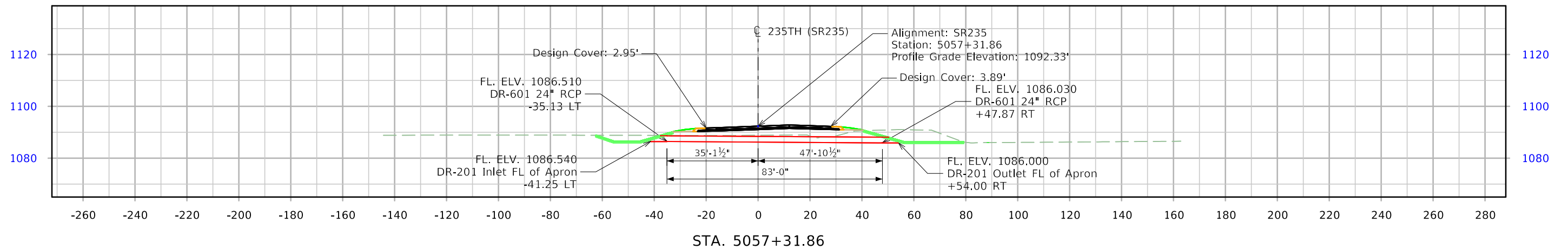
Remove existing apron both ends. Left end lay 7ft of 30" RCP, place DR-201 outlet apron and DR-121 pipe connection. Right end lay 14ft of 30" RCP, place DR-201 inlet apron and DR-121 pipe connection. Install both culvert extensions and aprons during Stage 2.



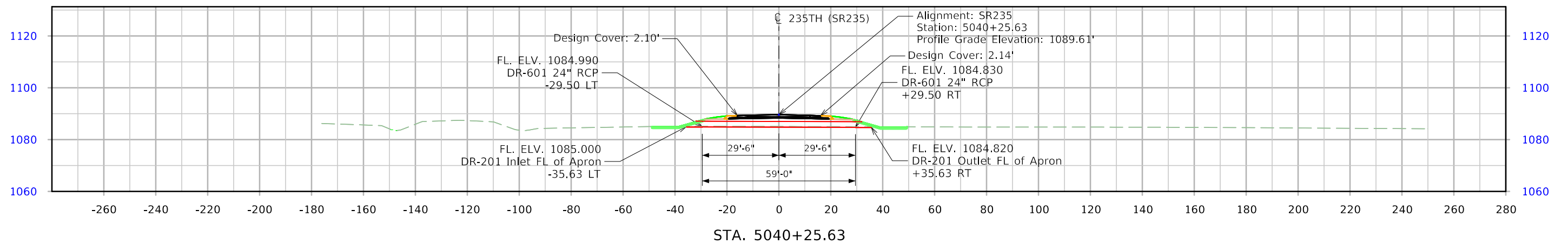
J. Felix (District 3) requested high class culverts be considered for freight accommodations, especially at minimum cover culvert locations.

235th Street

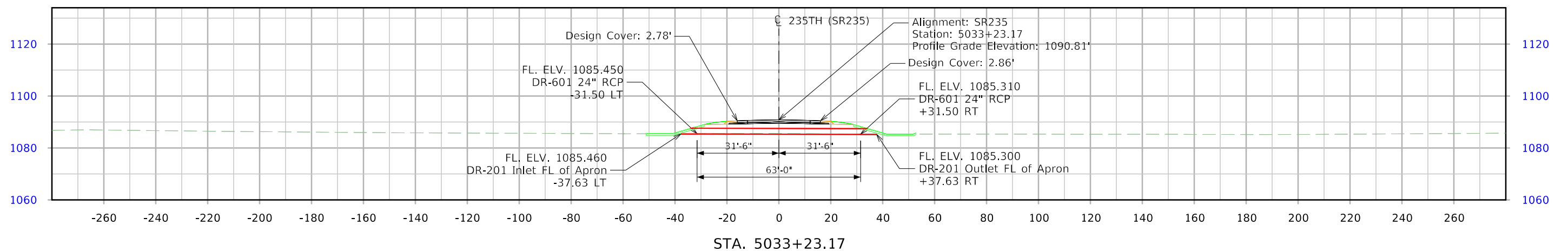
Lay 83ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Install culvert and aprons during Stage 2.



Lay 59ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Install culvert and aprons during Stage 1.

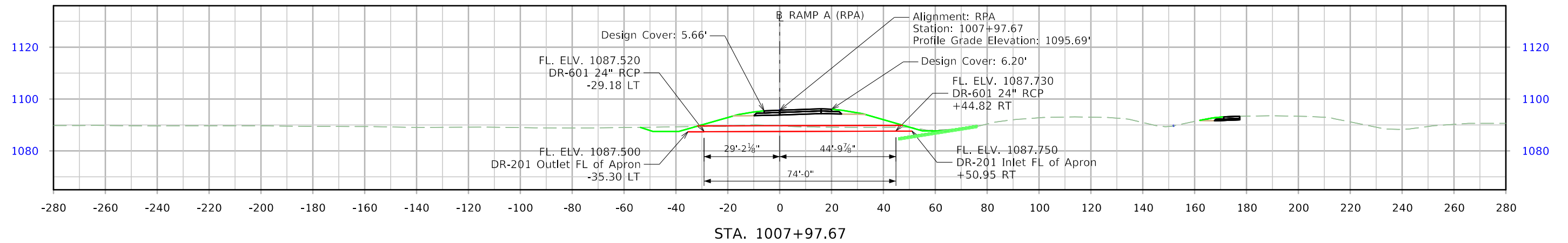


Lay 63ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Install culvert and aprons during Stage 1.



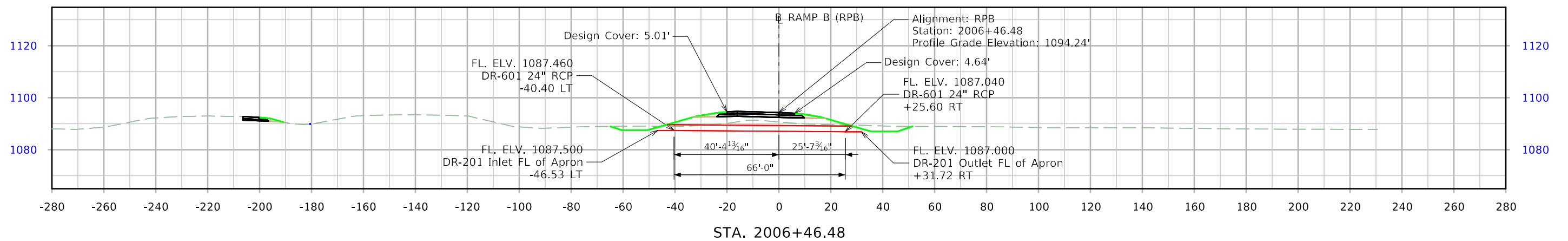
I-29 Ramp A

Lay 74ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Install culvert and aprons during Stage 1.



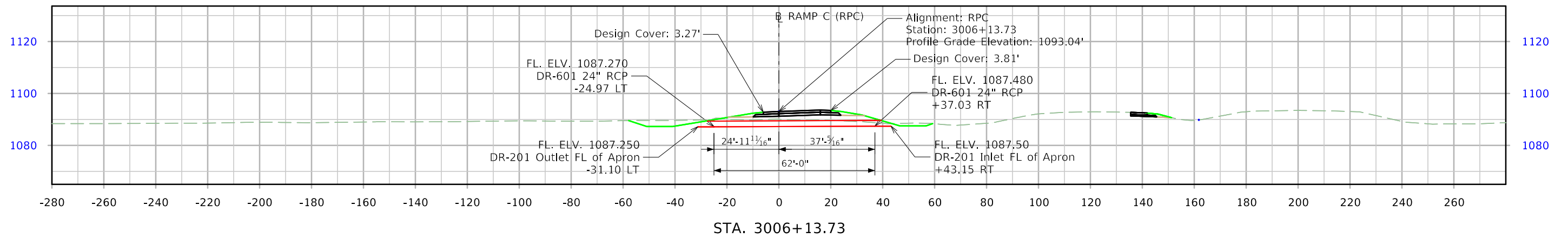
I-29 Ramp B

Lay 66ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Install culvert and aprons during Stage 1.



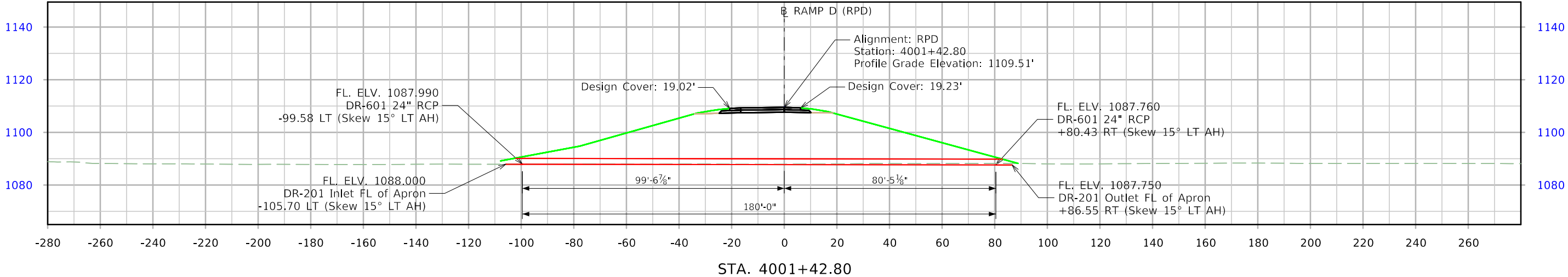
I-29 Ramp C

Lay 62ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Install culvert and aprons during Stage 1.



I-29 Ramp D

Lay 180ft 24" RCP with DR-201 apron on Inlet and DR-201 on outlet. Skew LT ahead 15 degrees. Install culvert and aprons during Stage 1.



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:

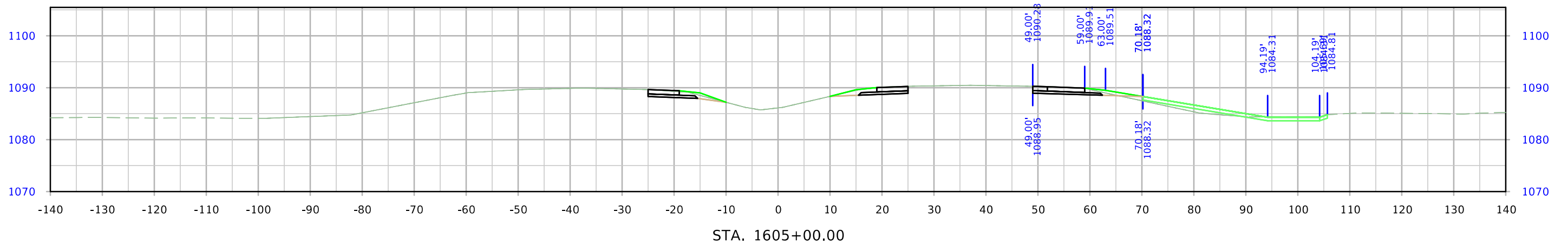
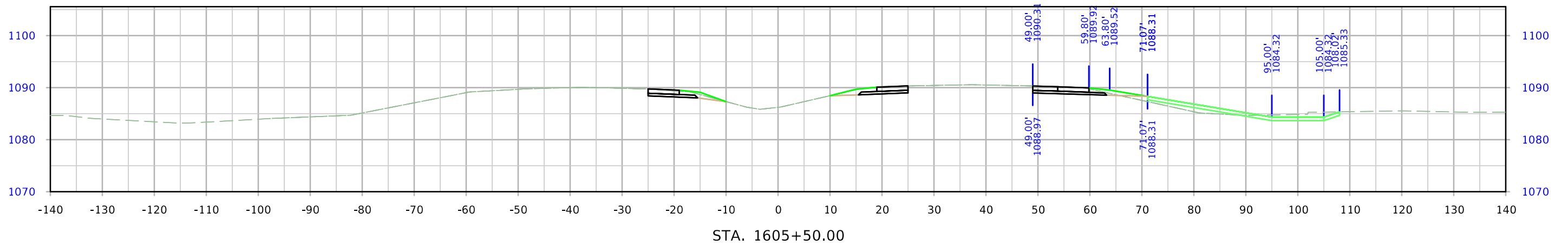
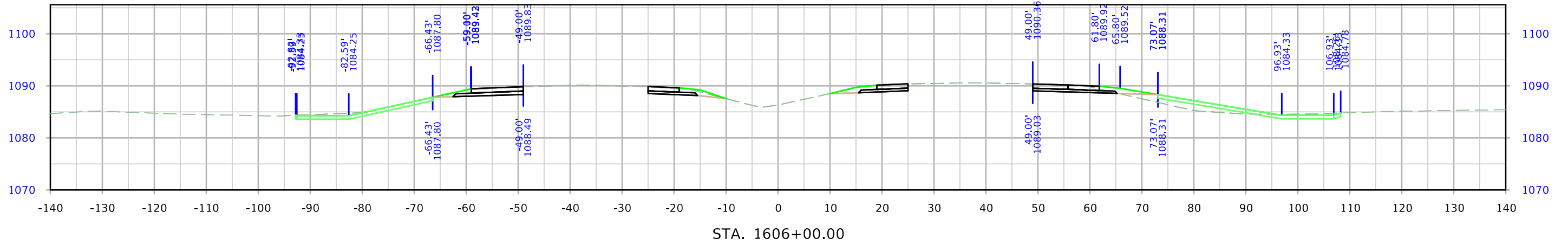
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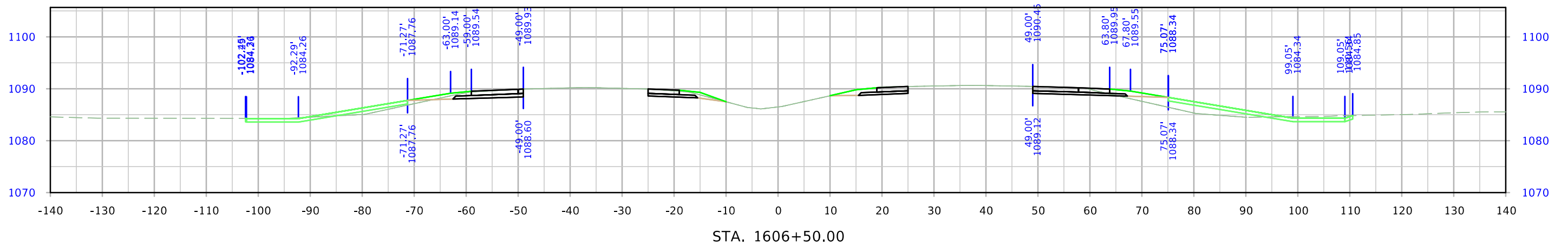
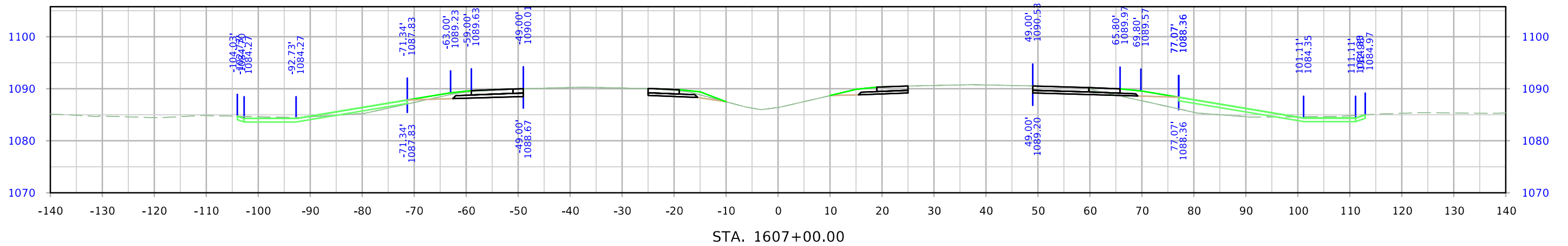
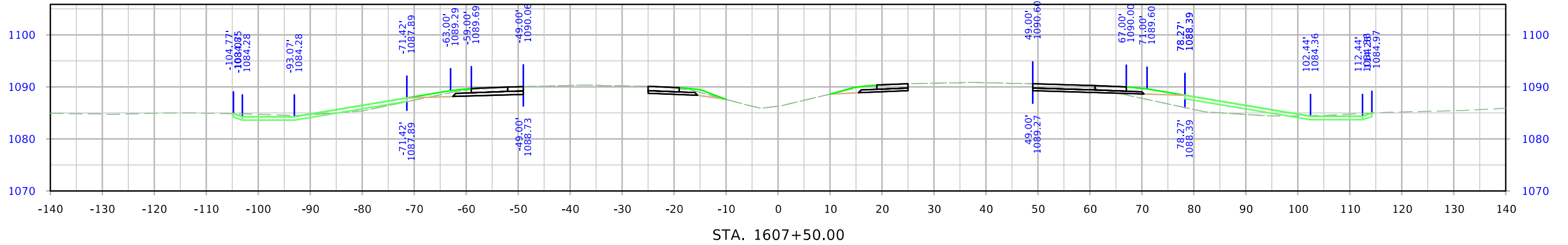
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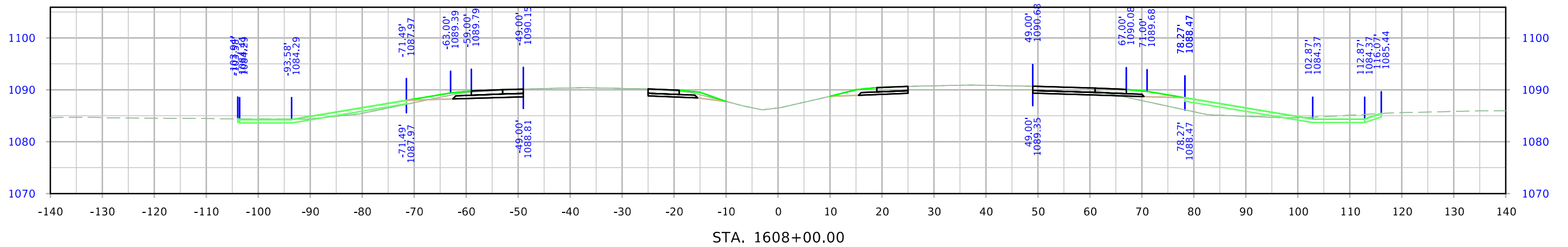
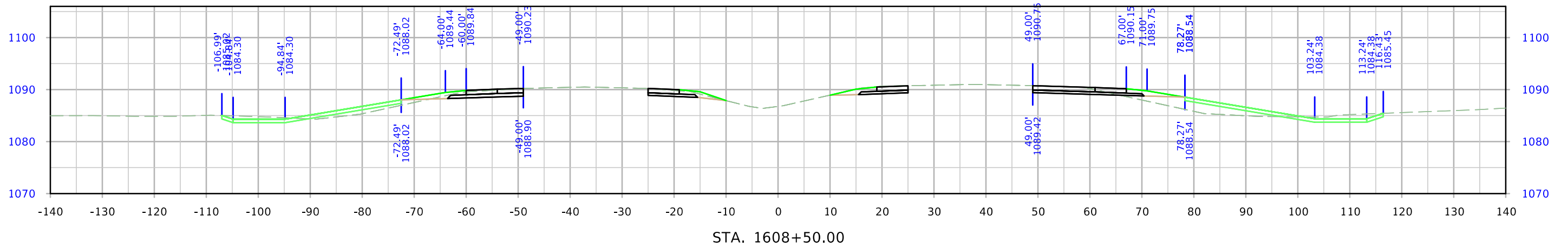
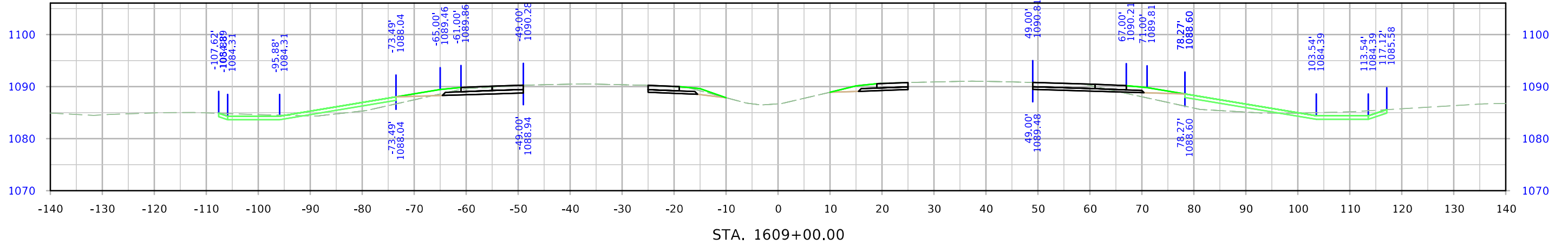
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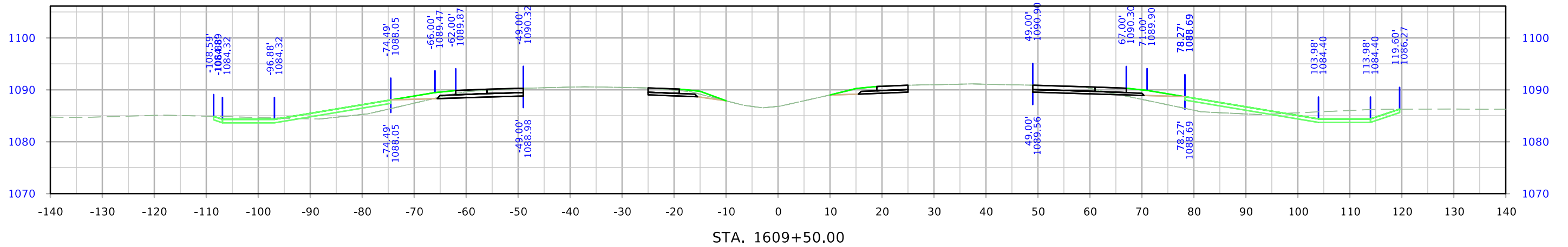
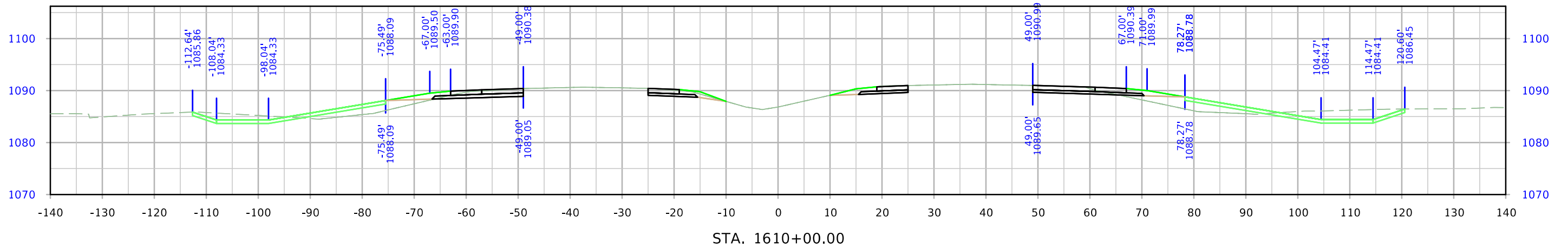
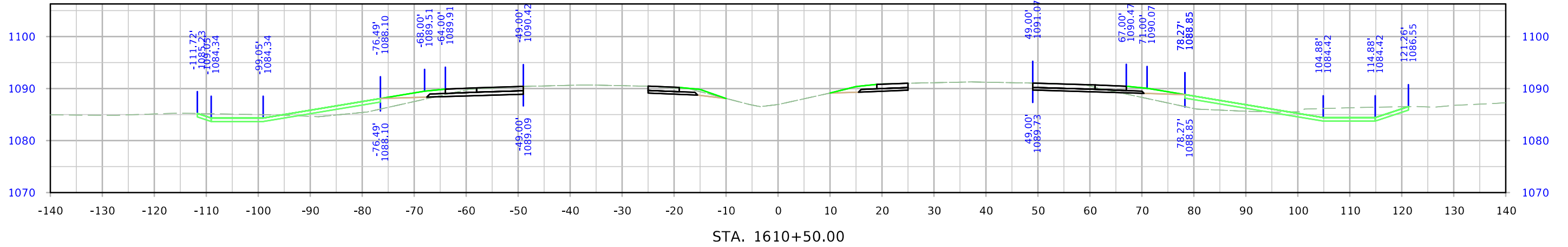
CROSS SECTIONS LEGEND AND INFORMATION SHEET

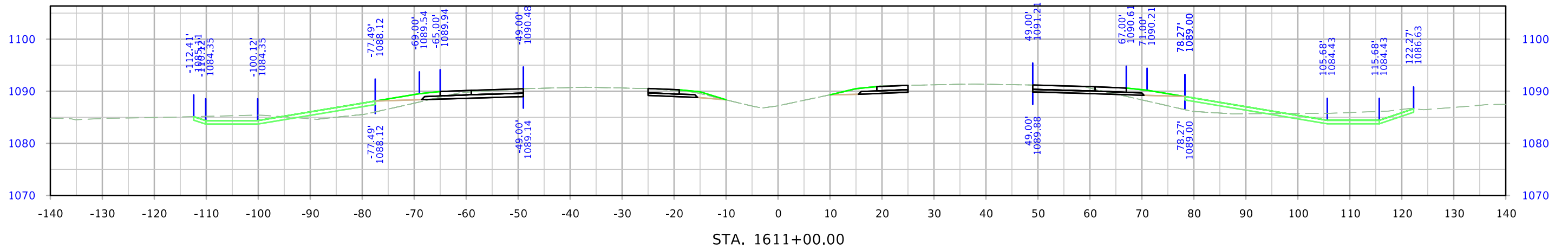
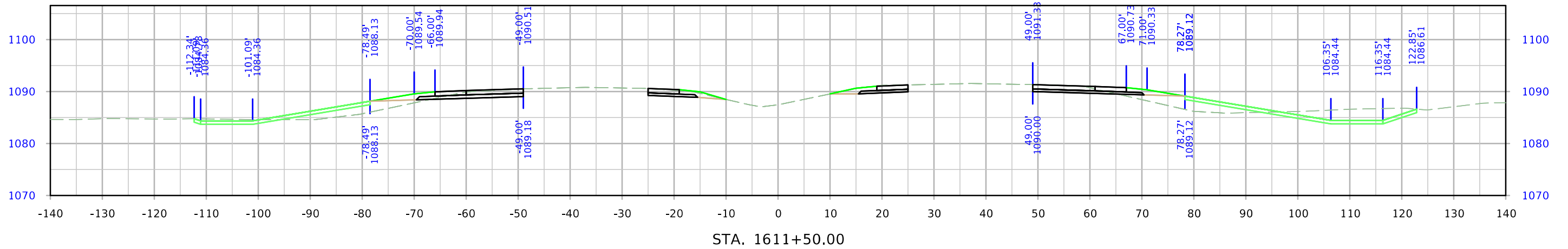
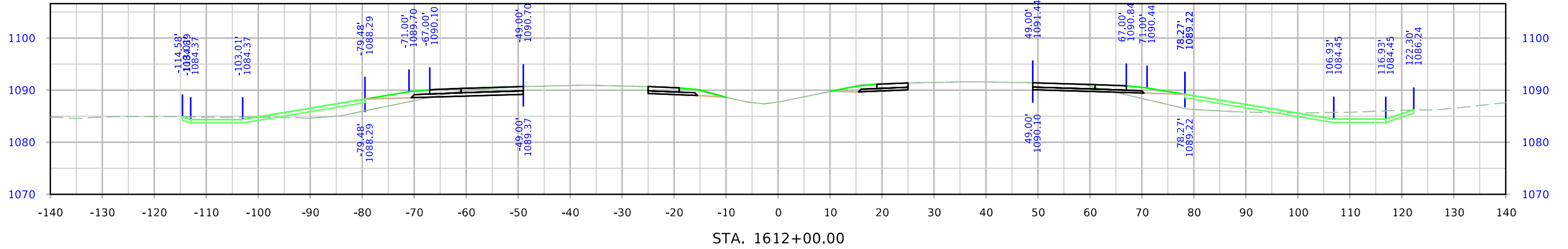
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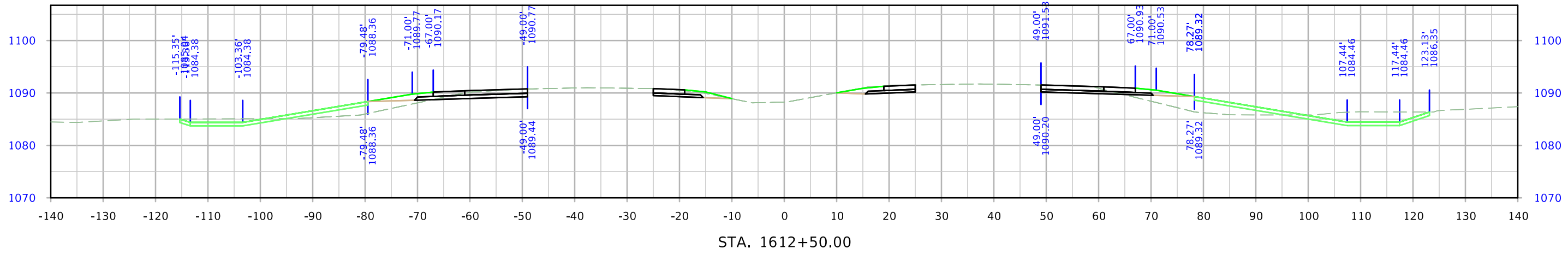
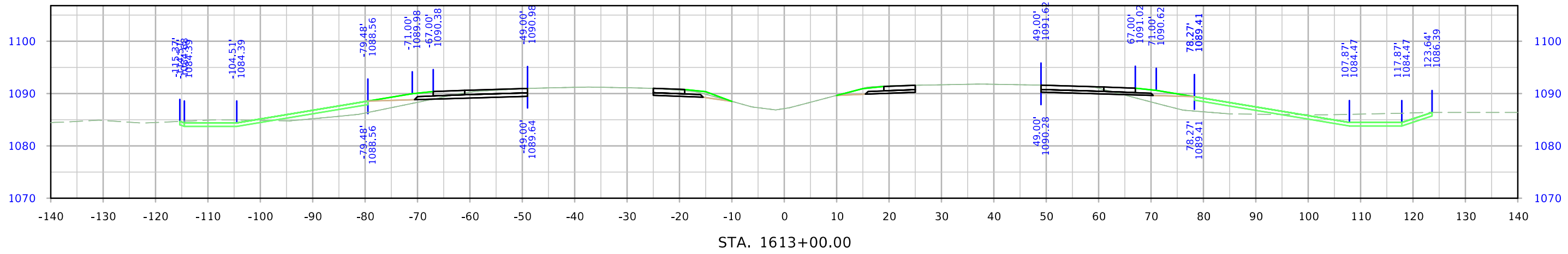
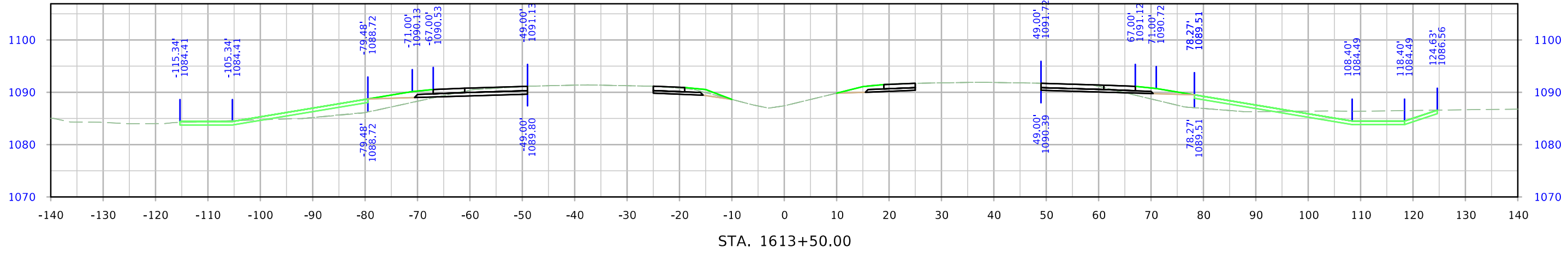


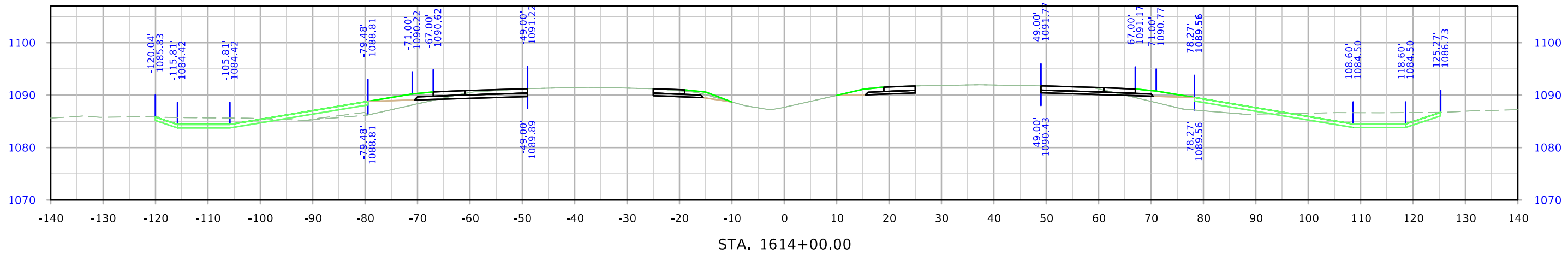
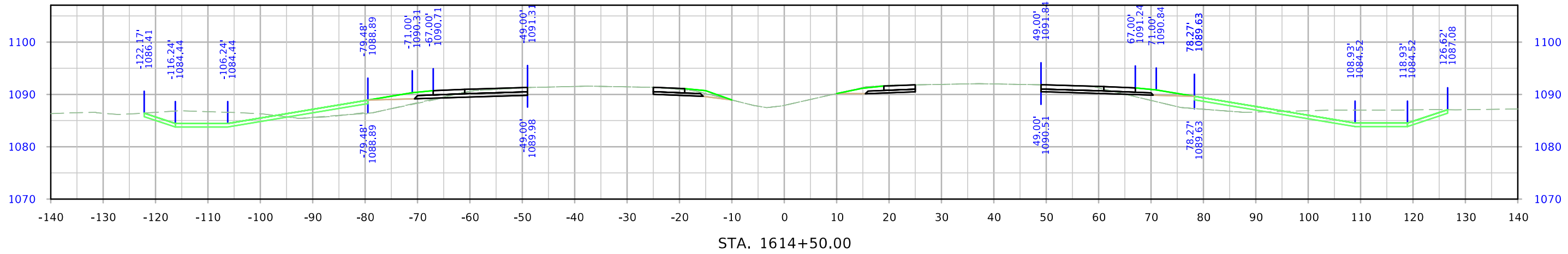
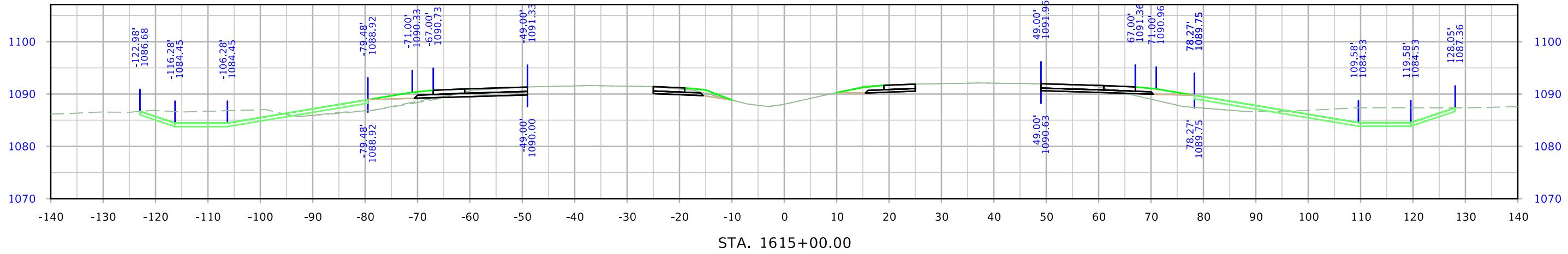


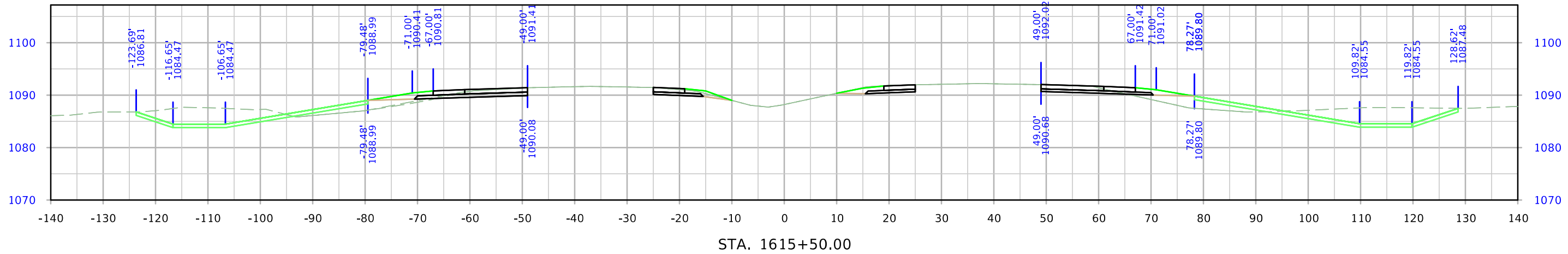
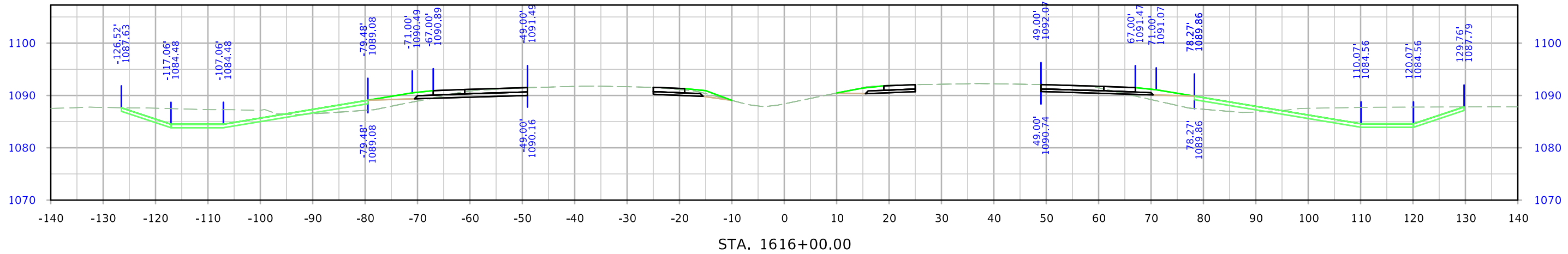
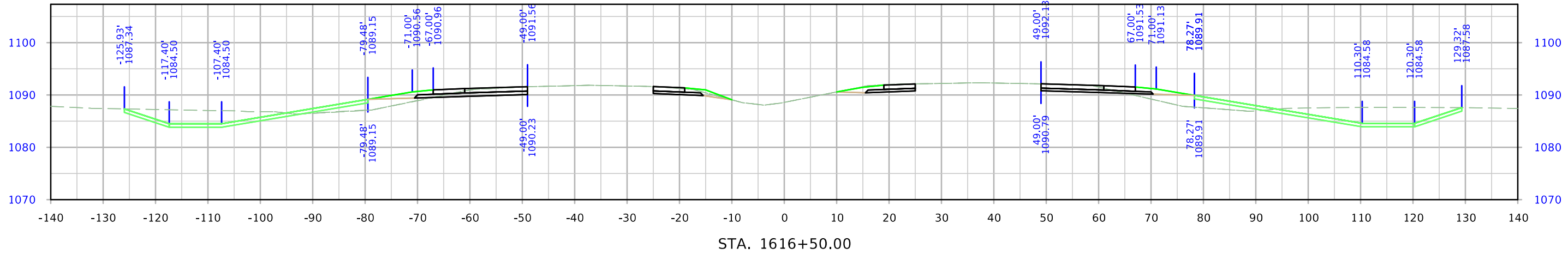


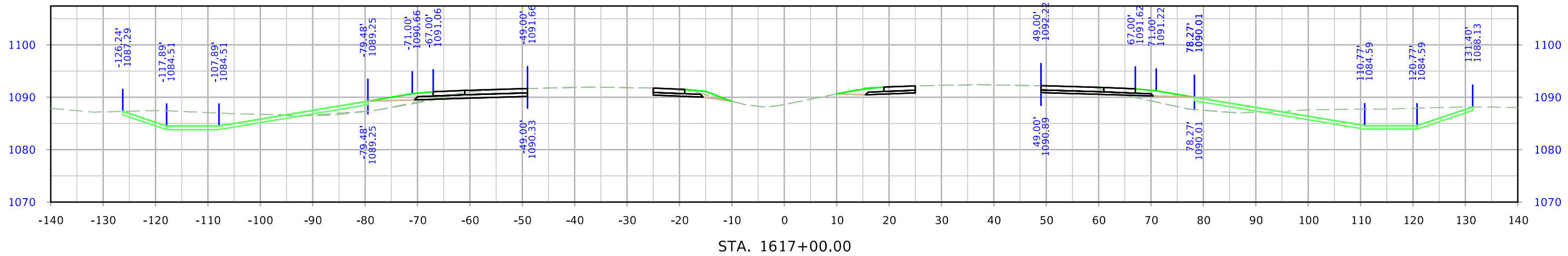
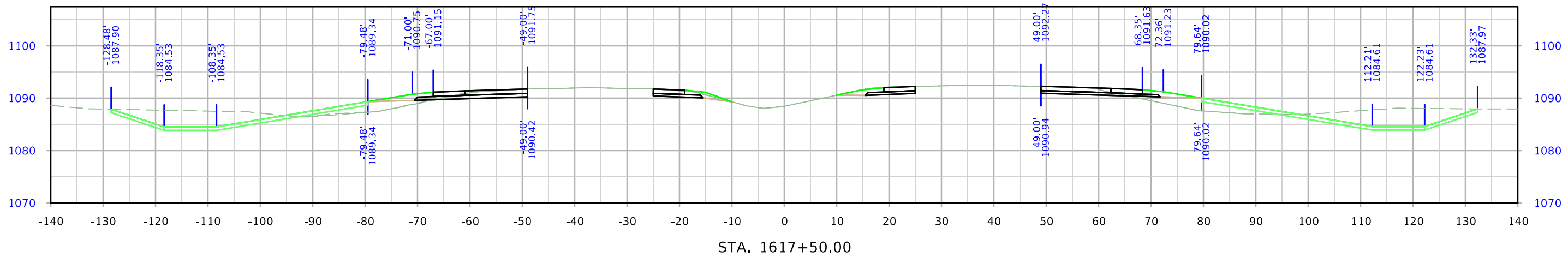
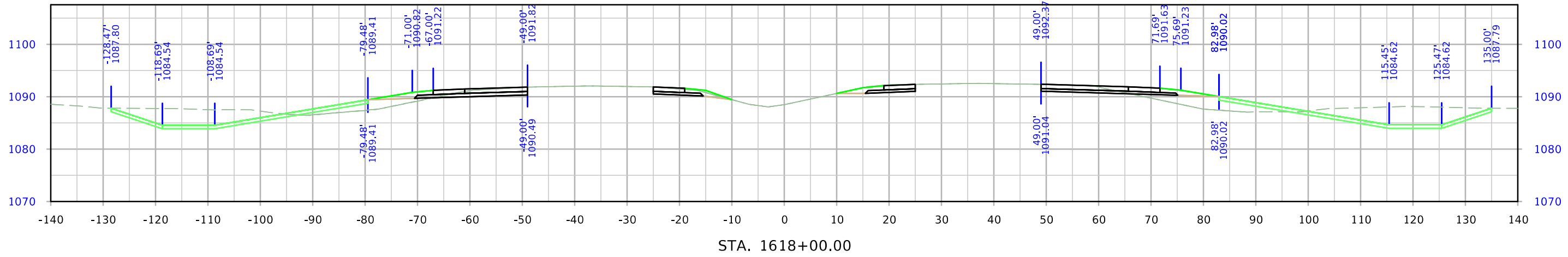


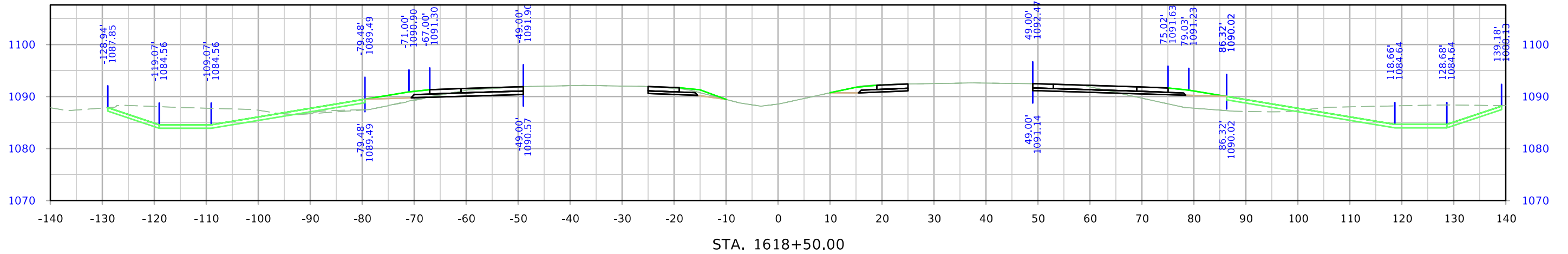
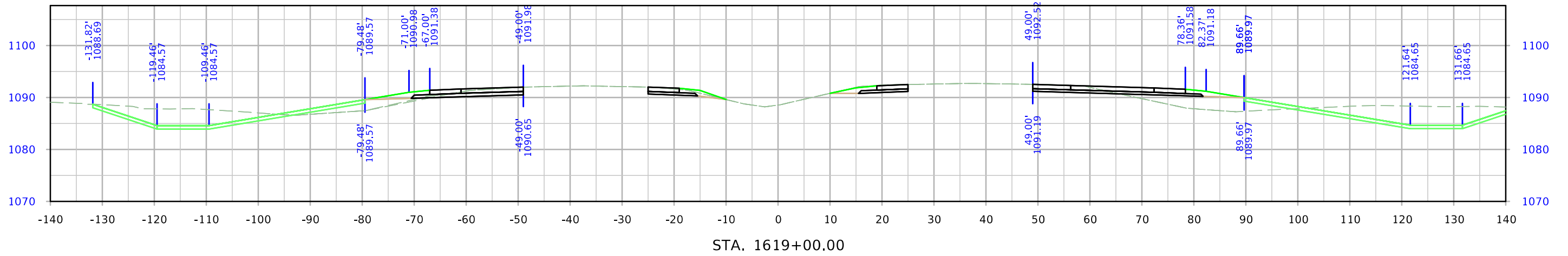
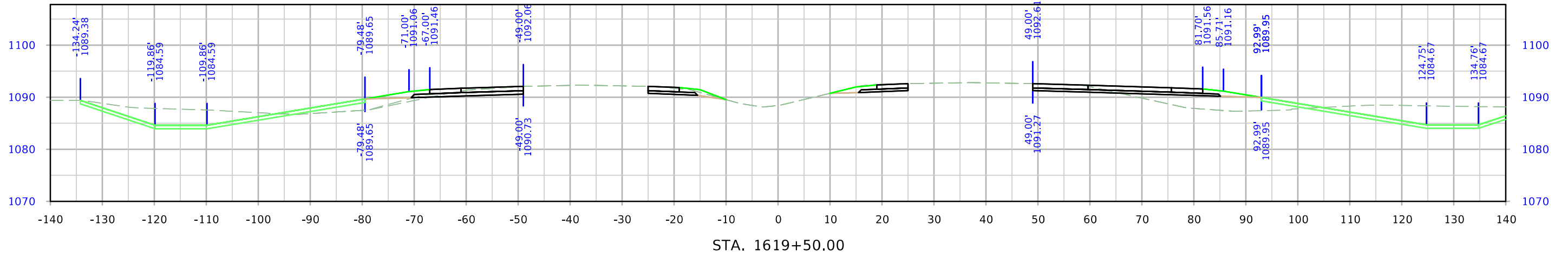


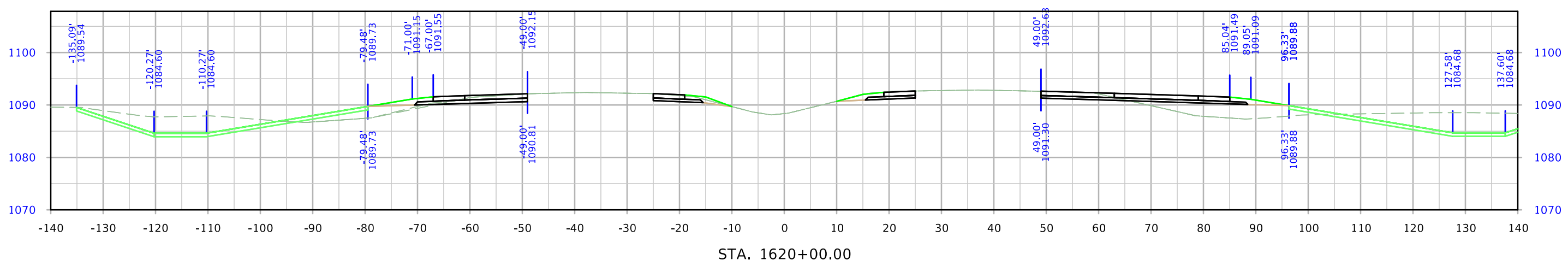
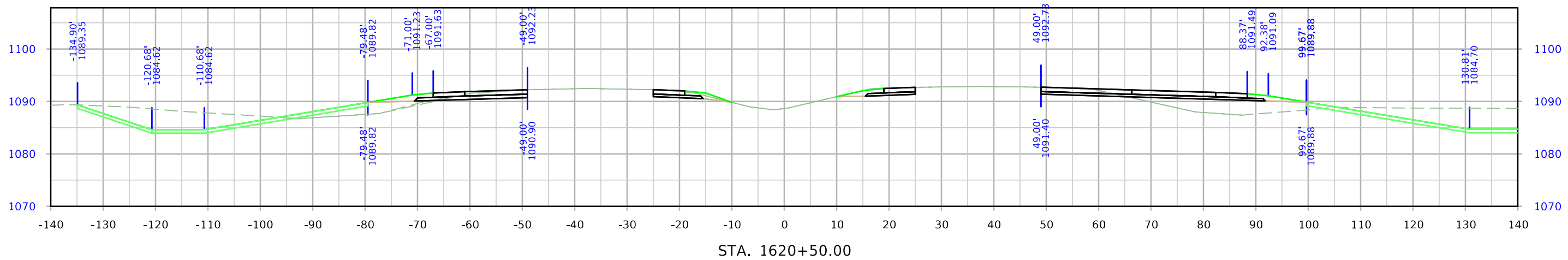
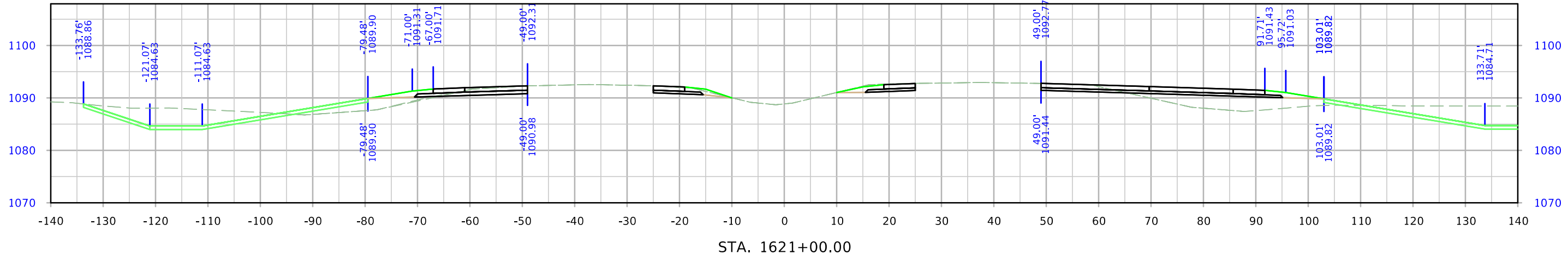


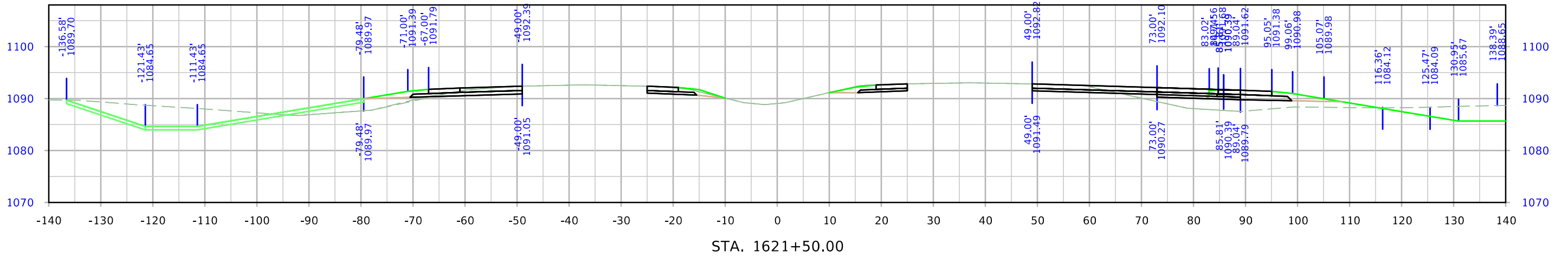
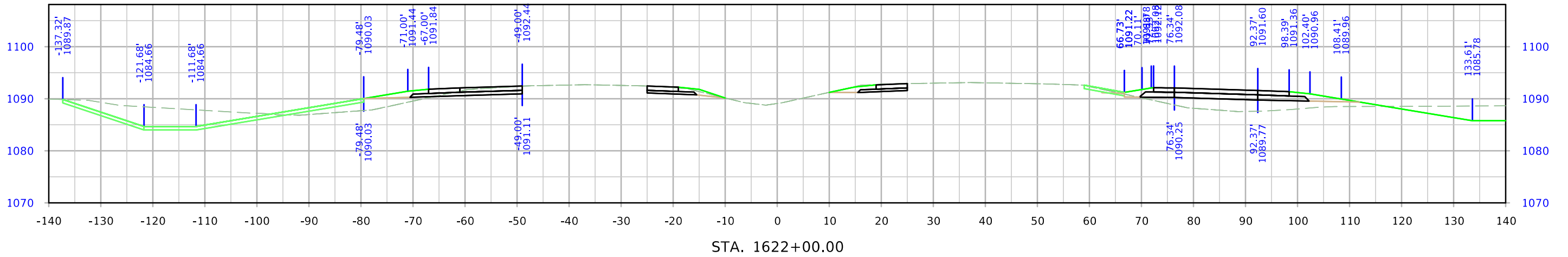
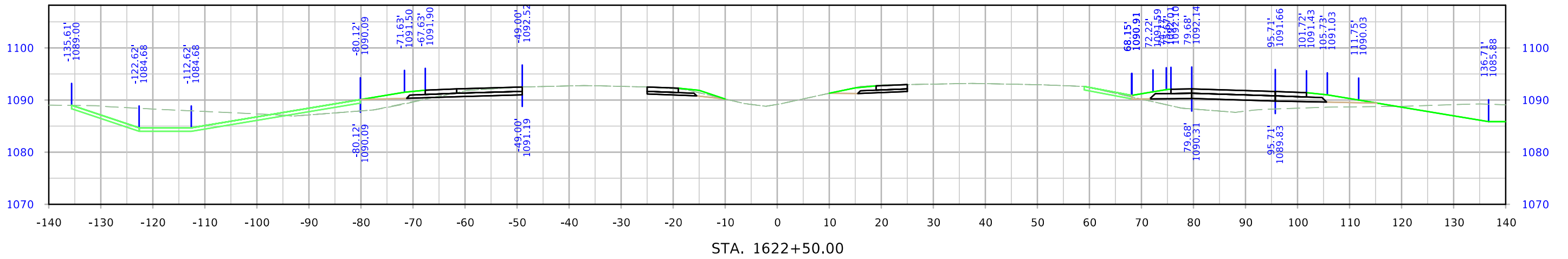


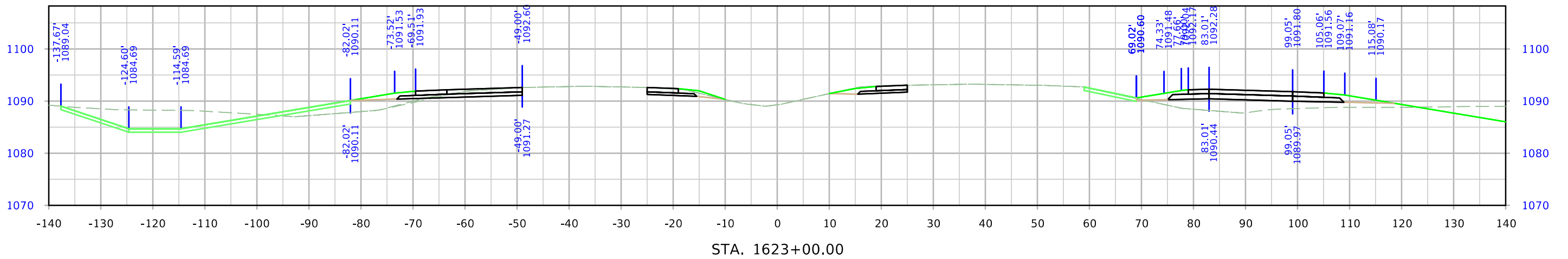
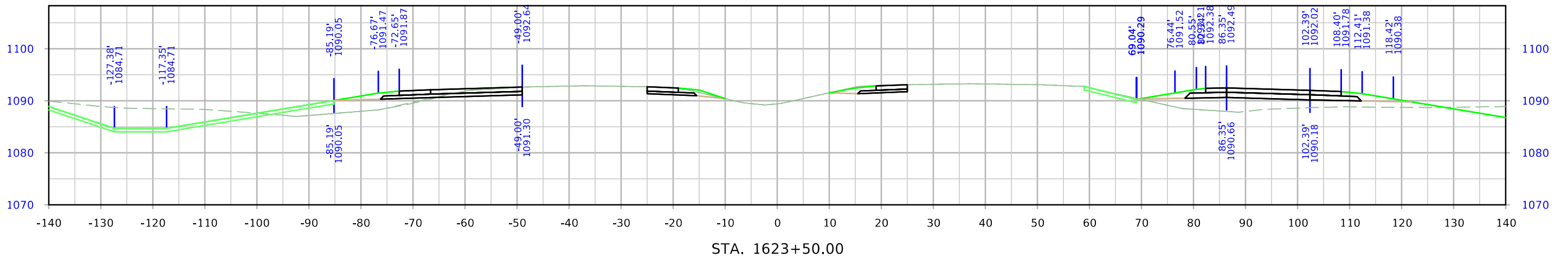
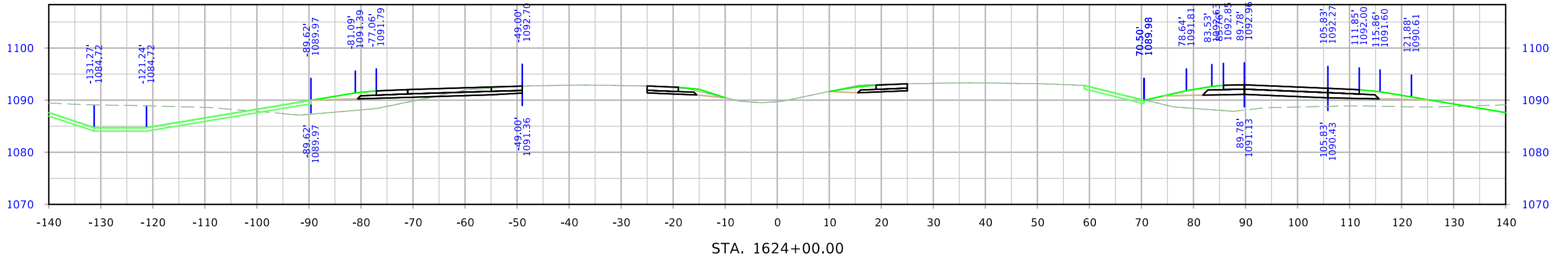


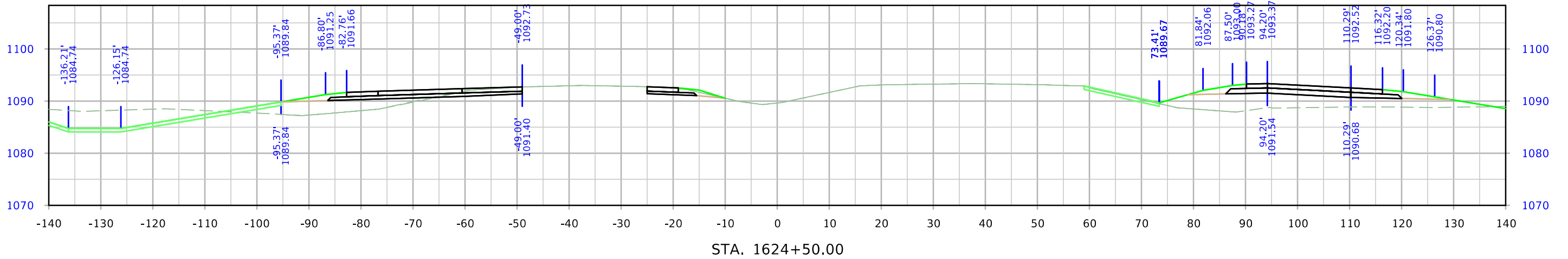
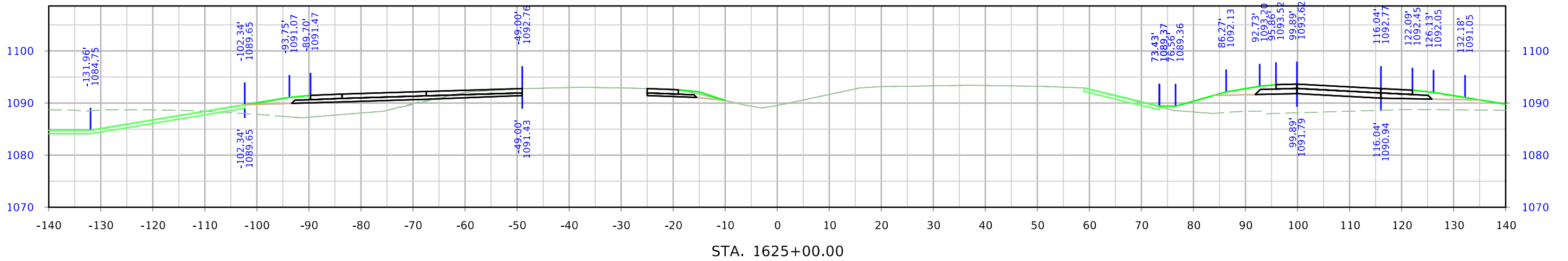
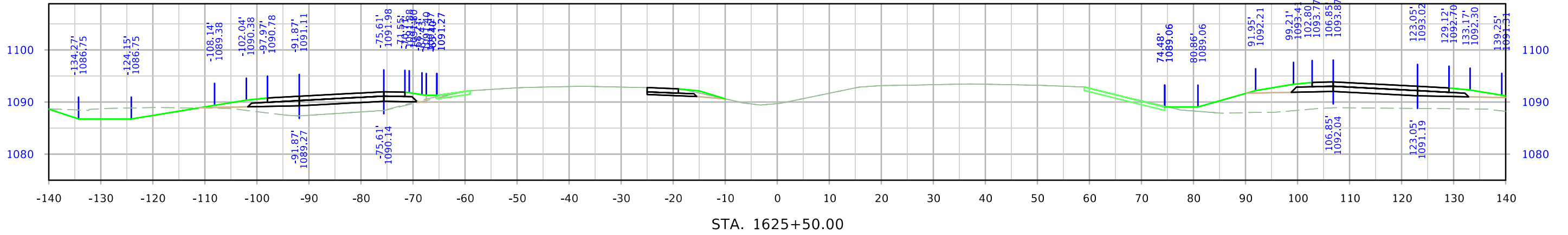


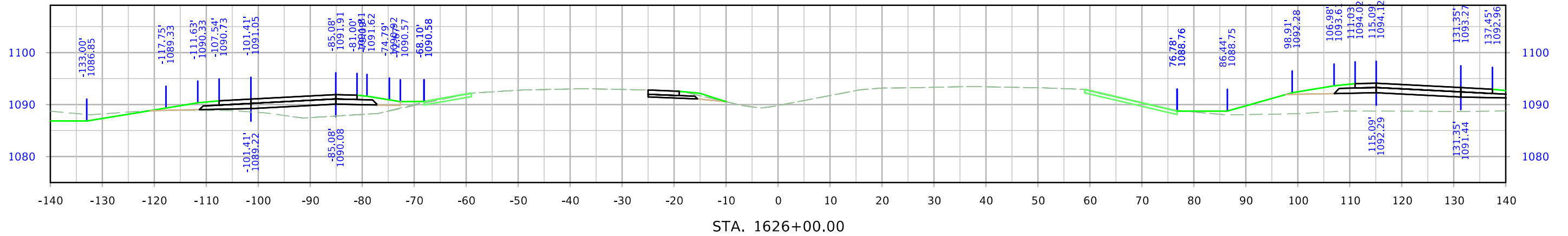
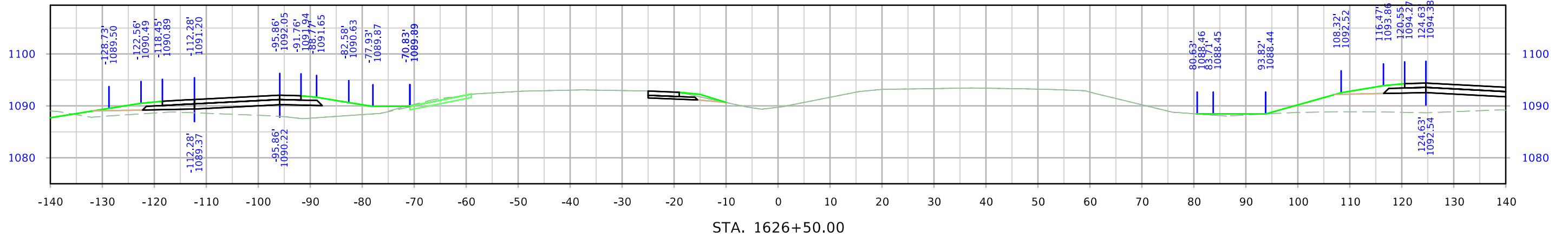
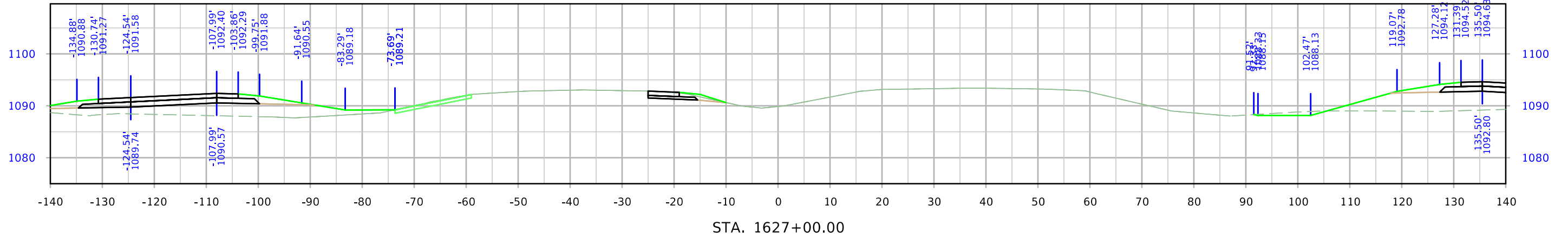


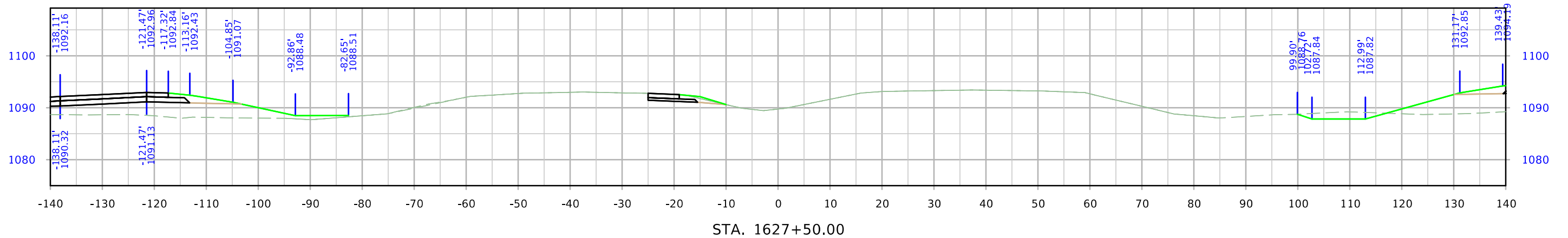
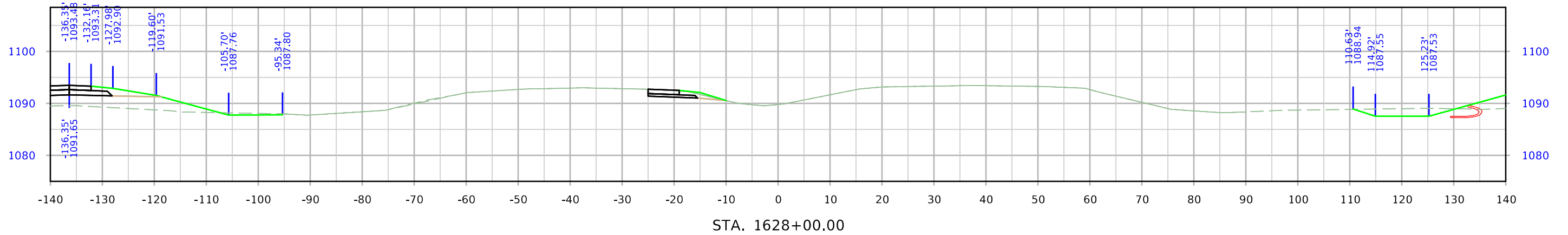
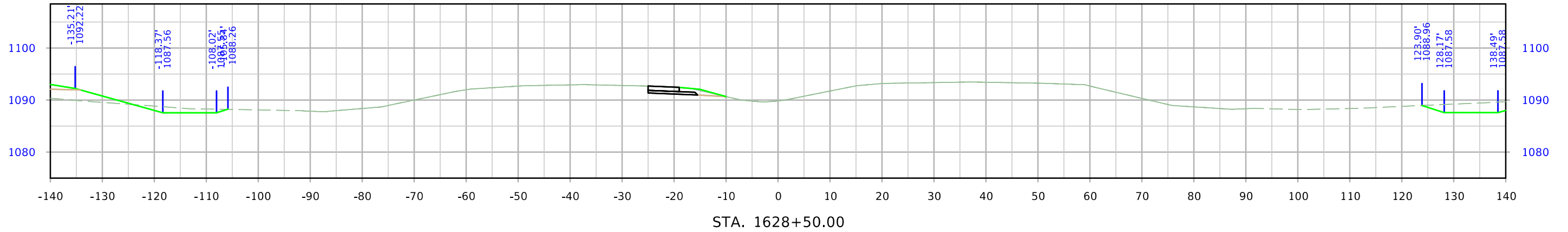


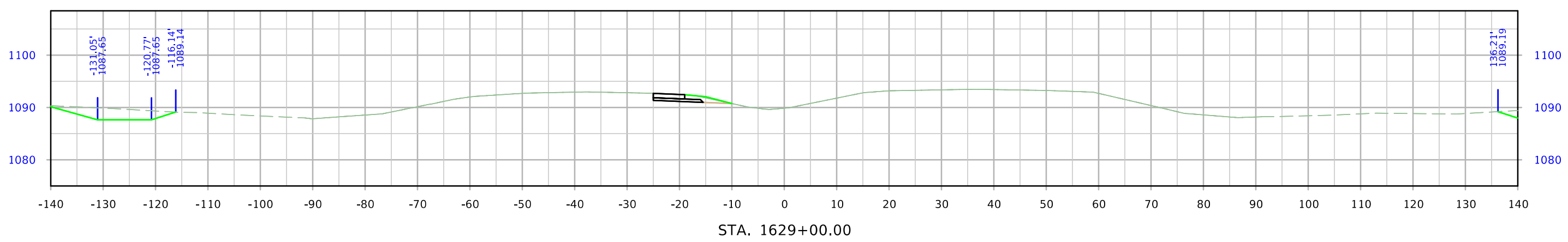
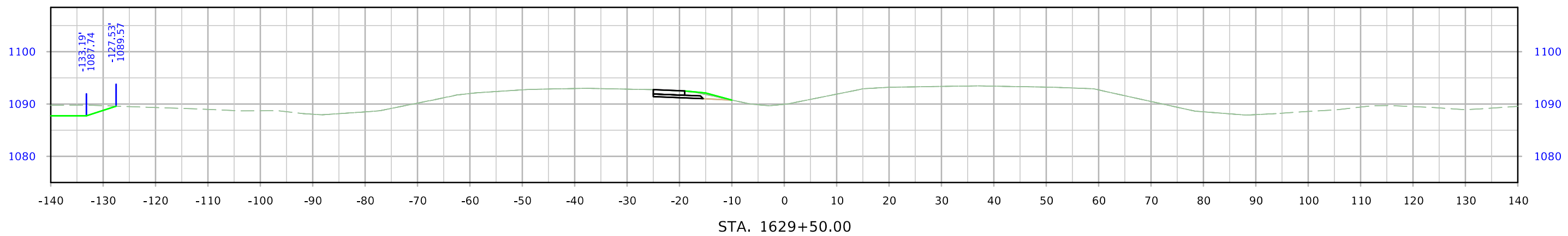
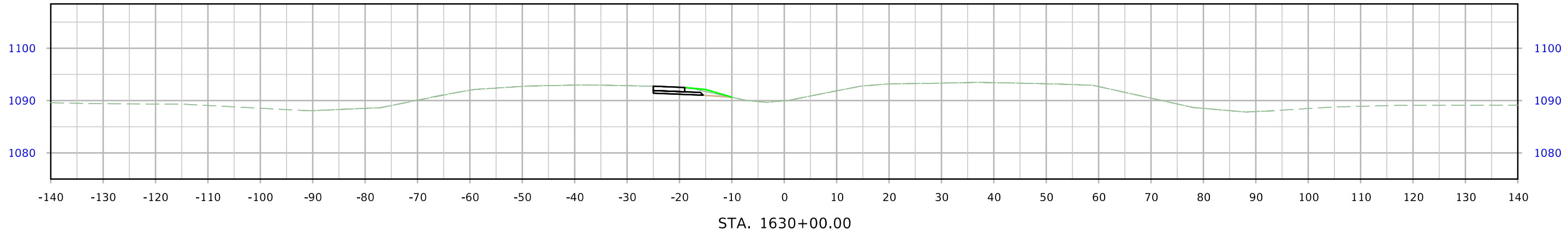


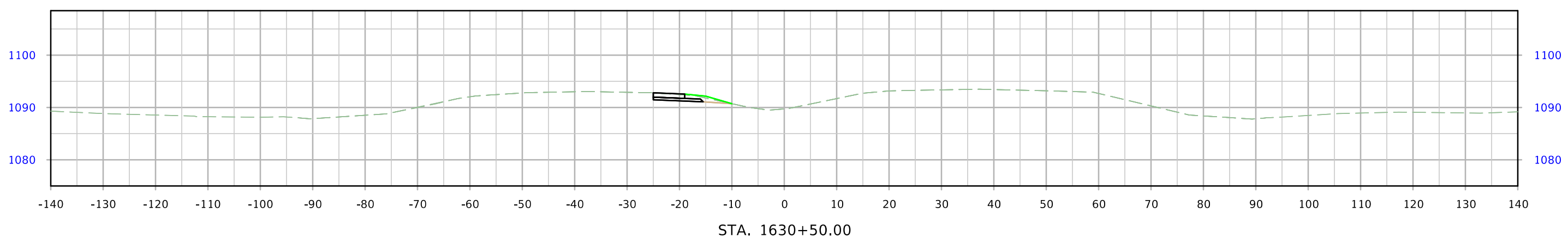
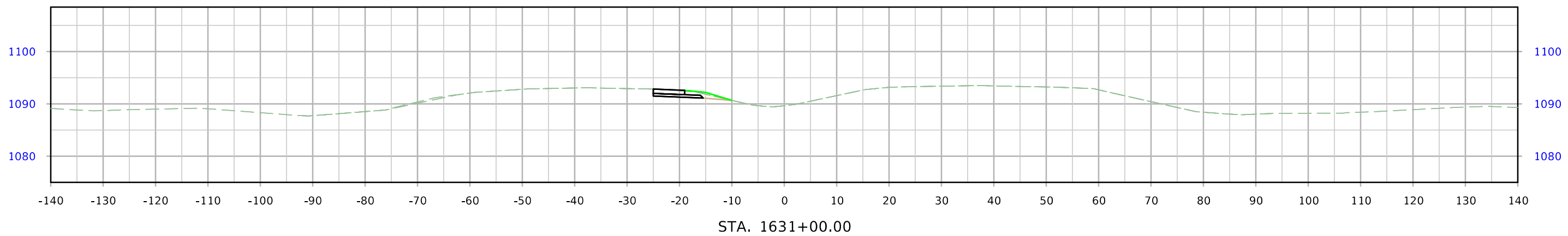
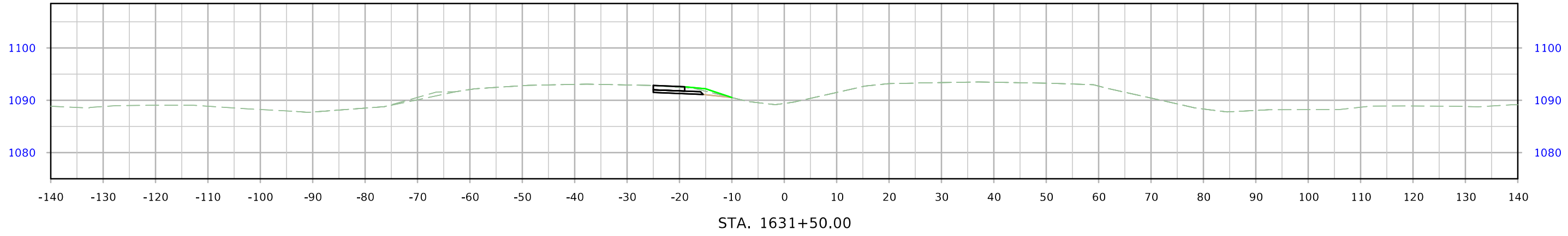


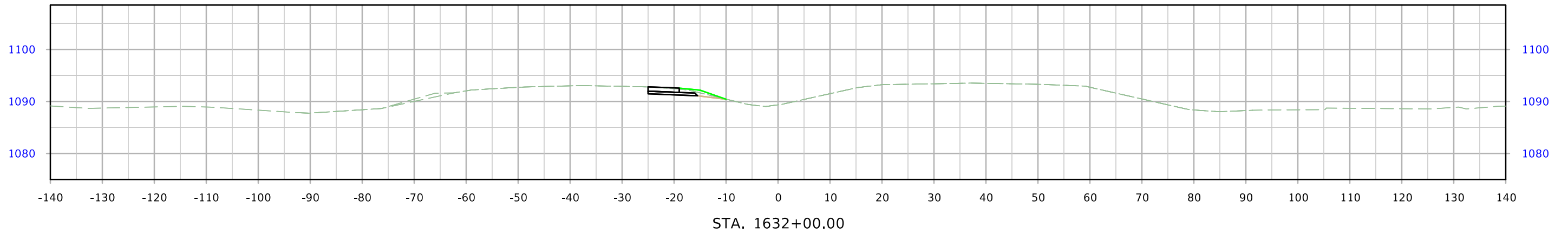
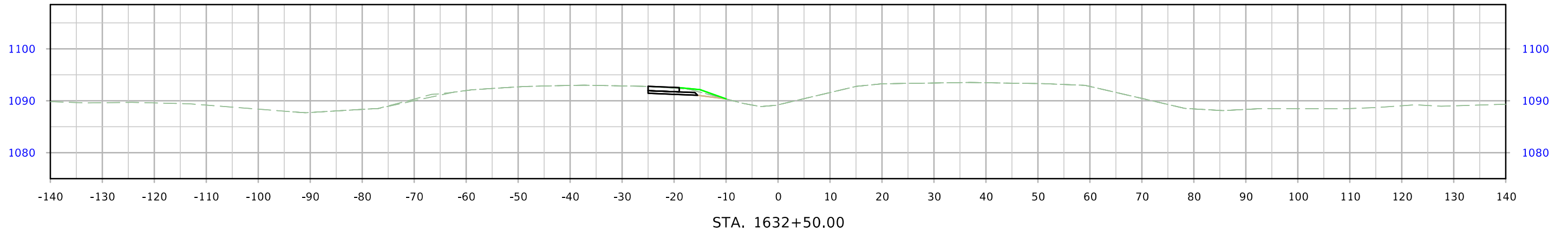
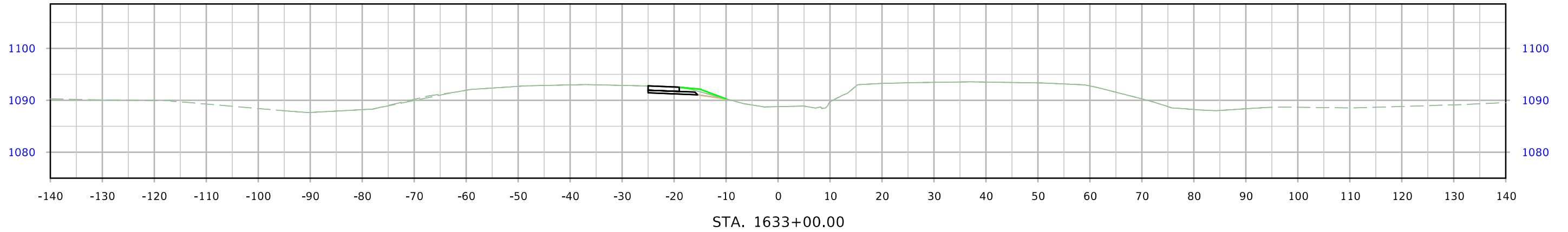


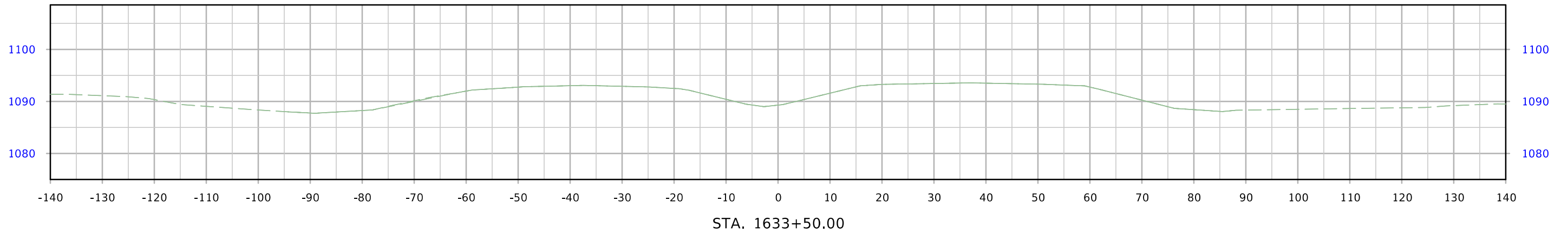
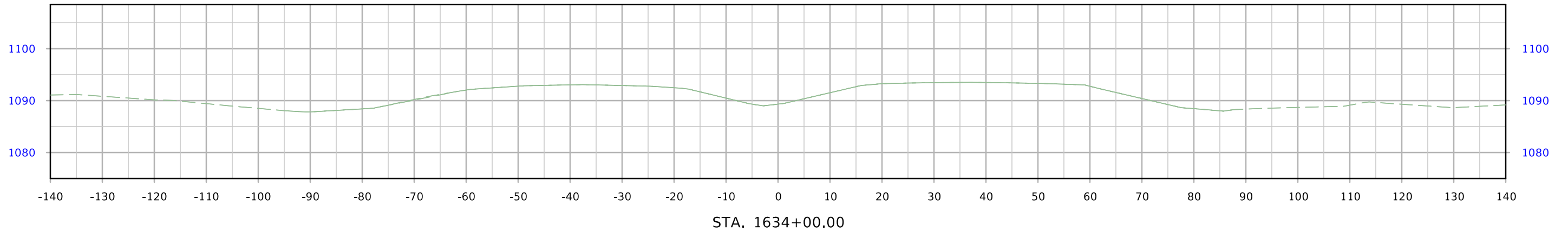
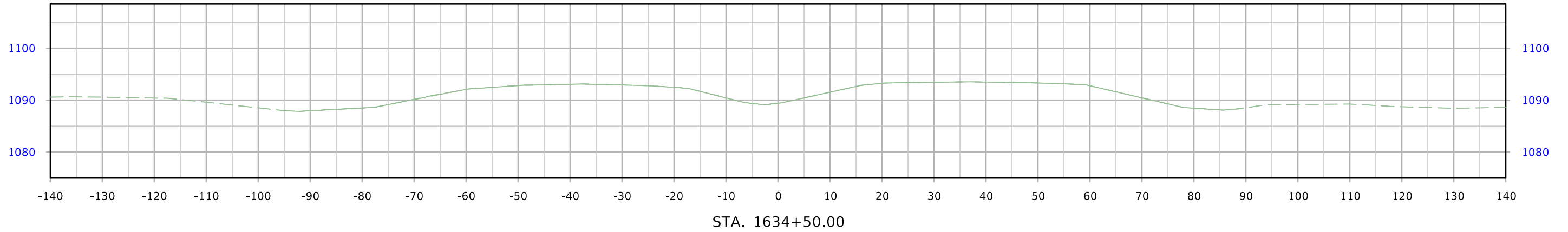


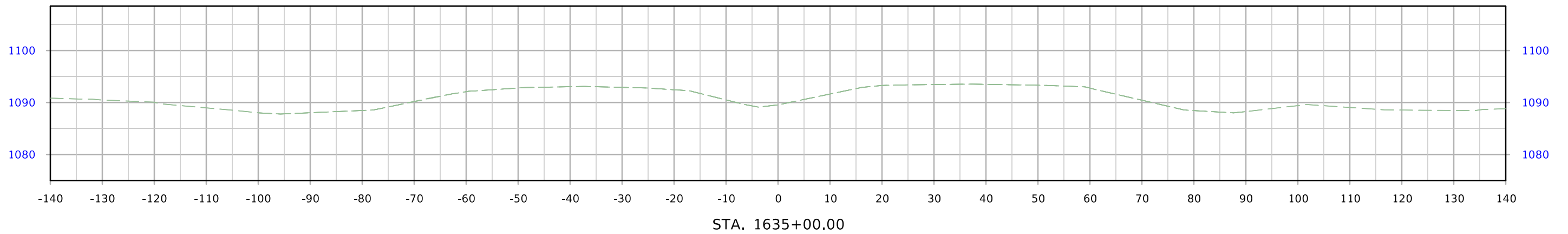
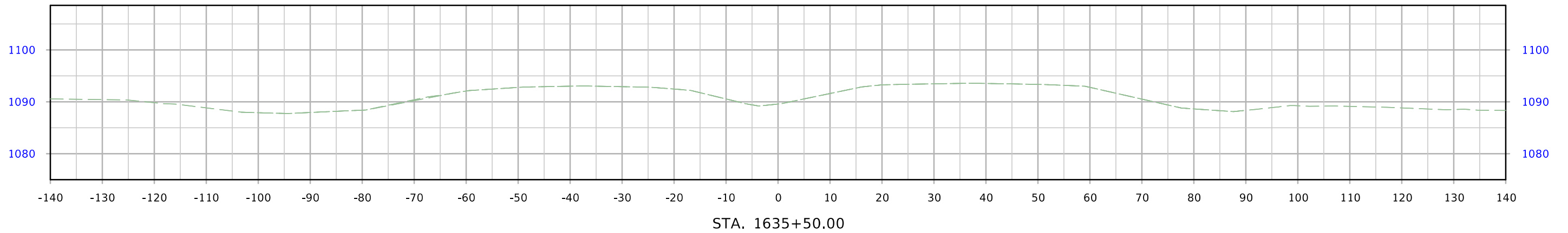
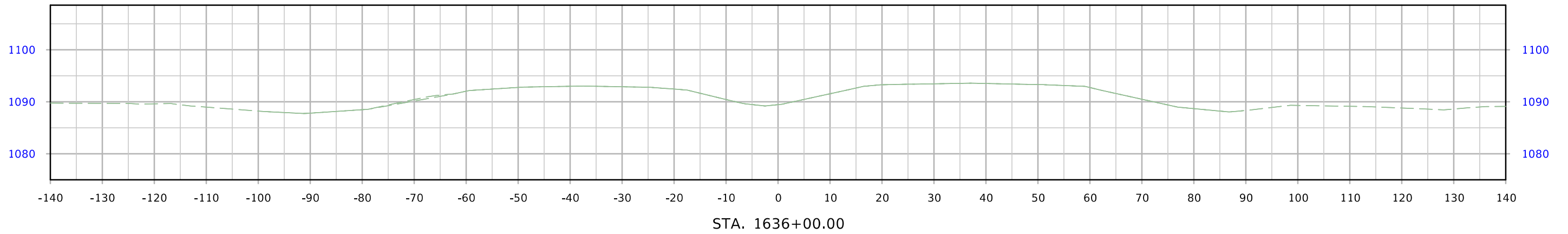


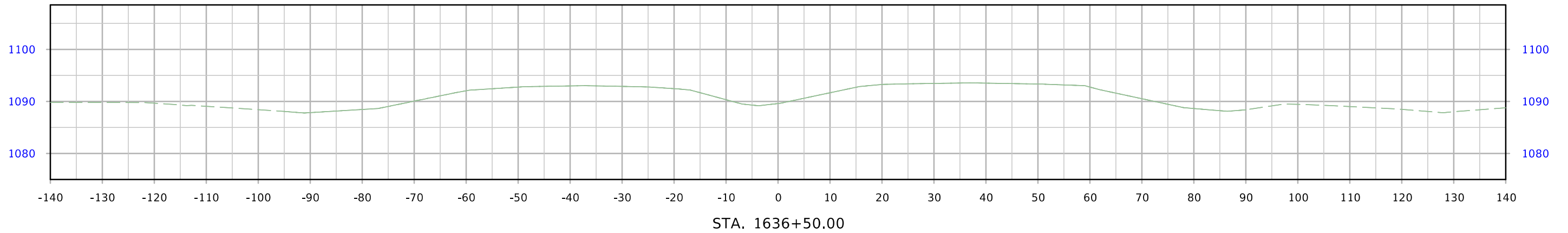
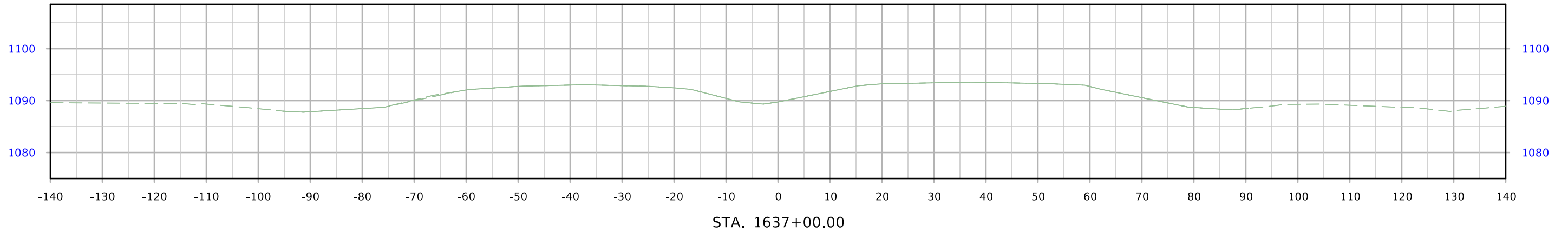
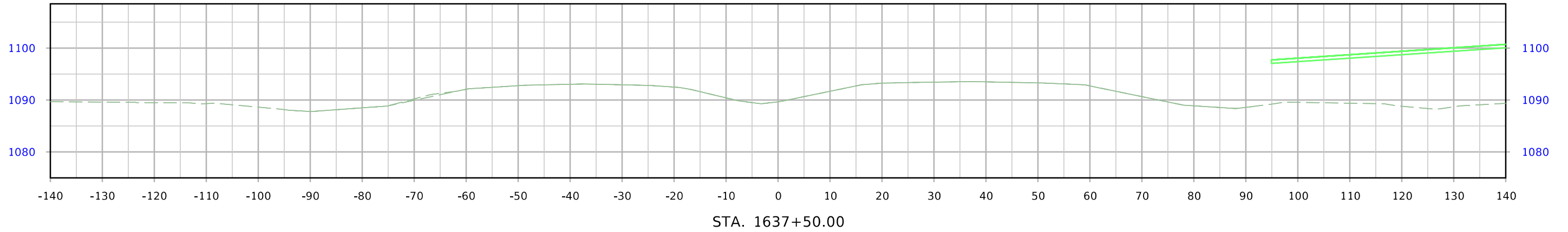


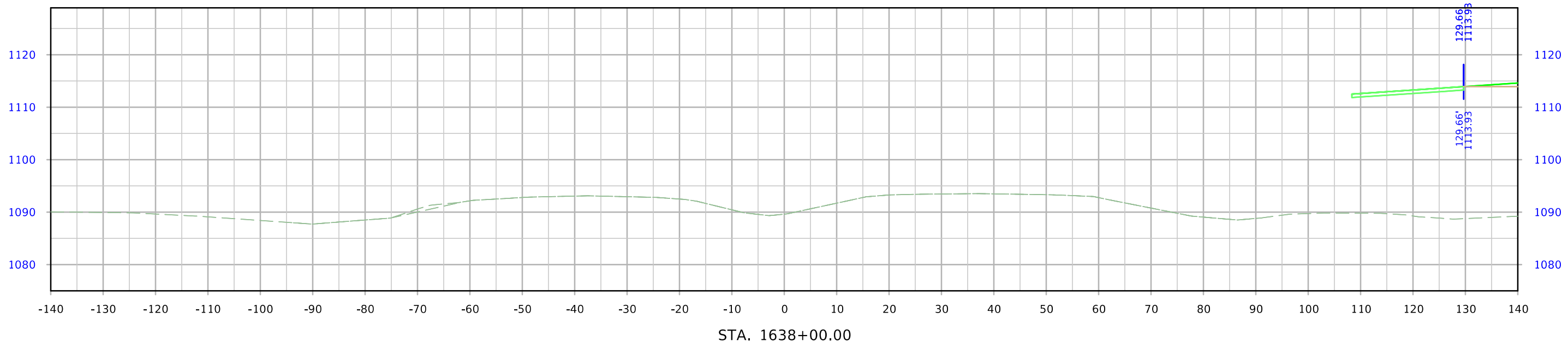
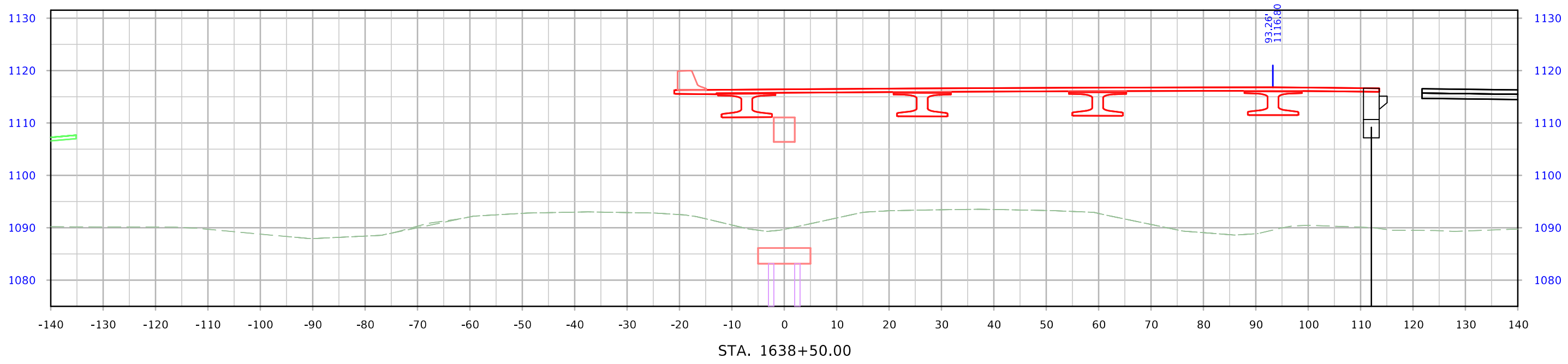


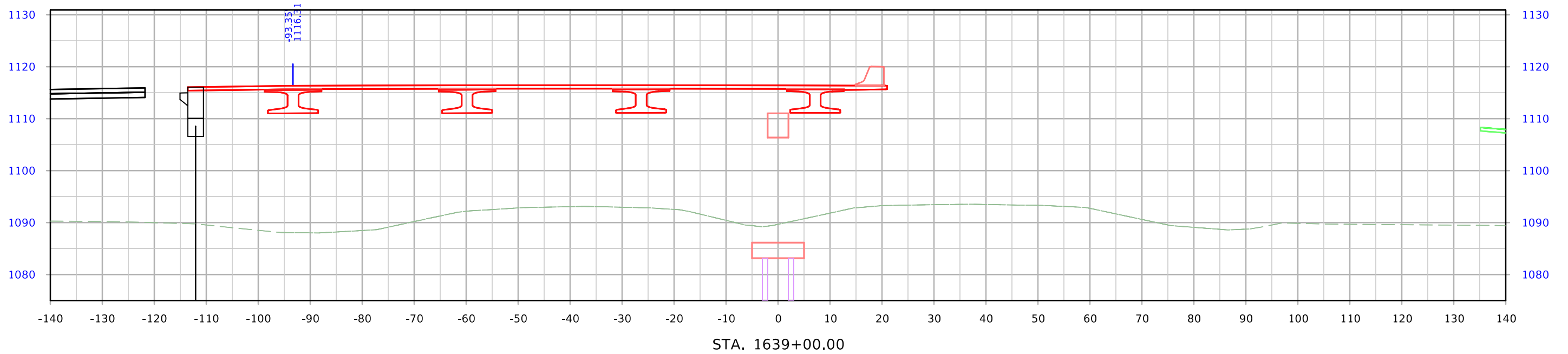
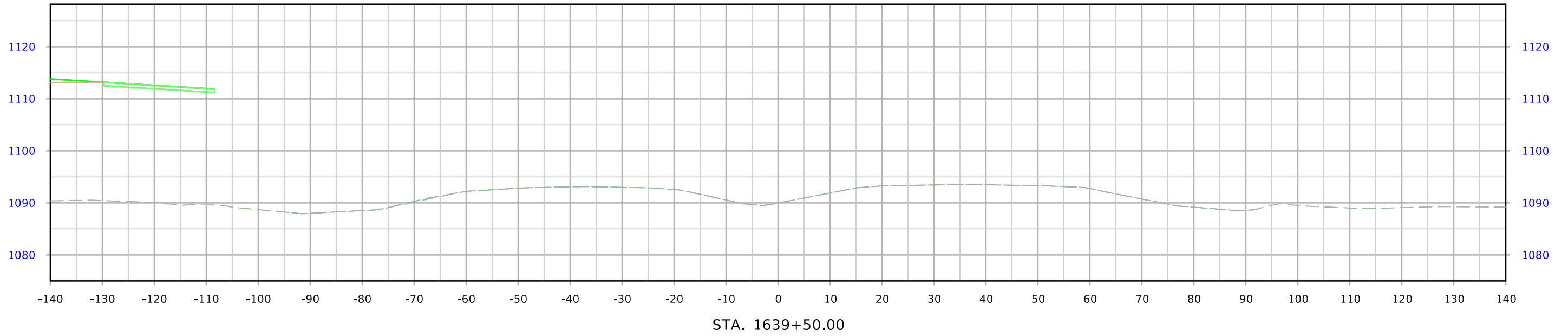


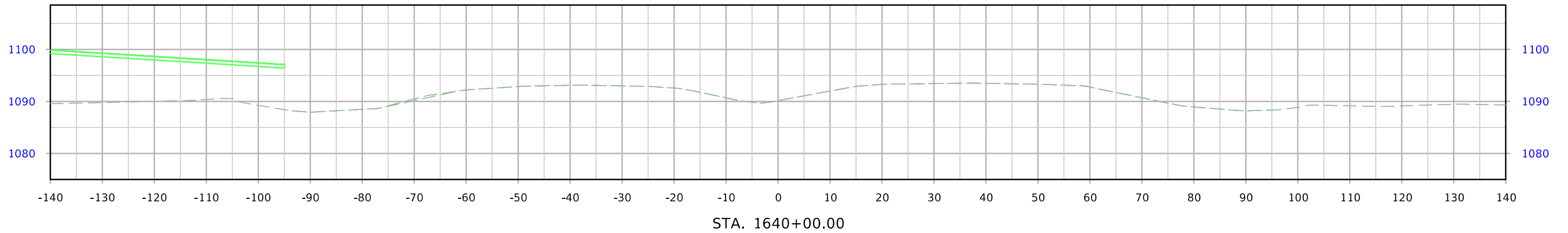
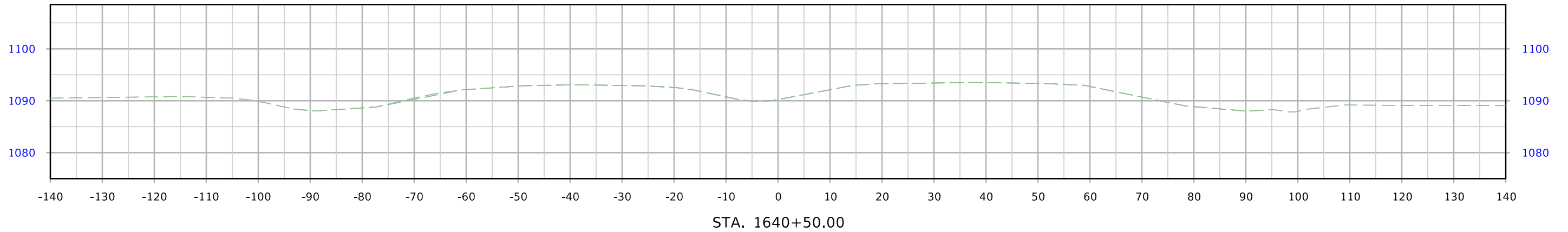
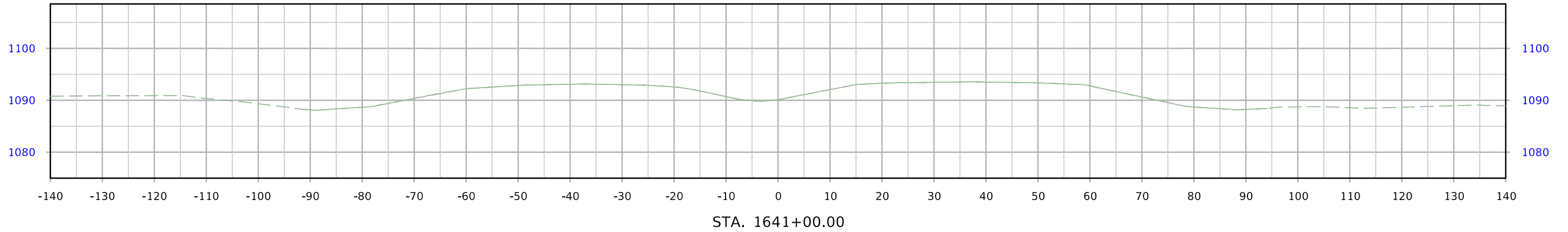


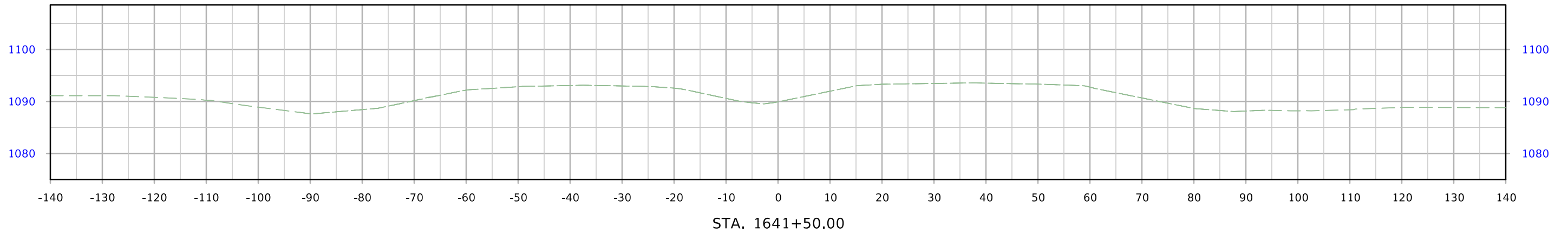
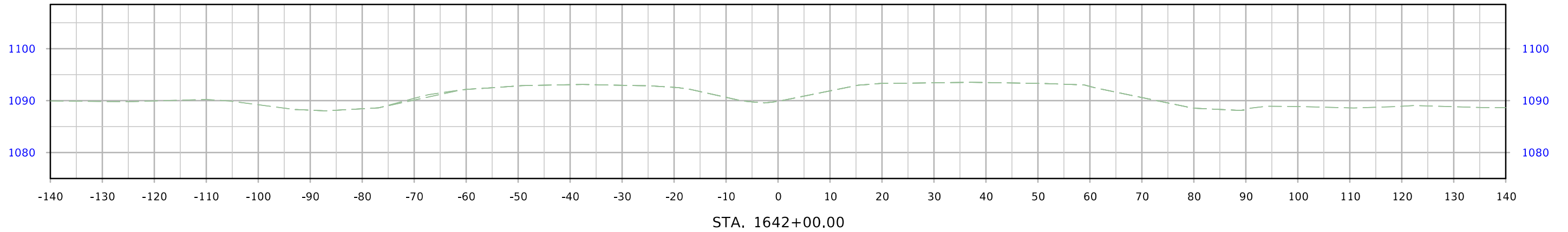
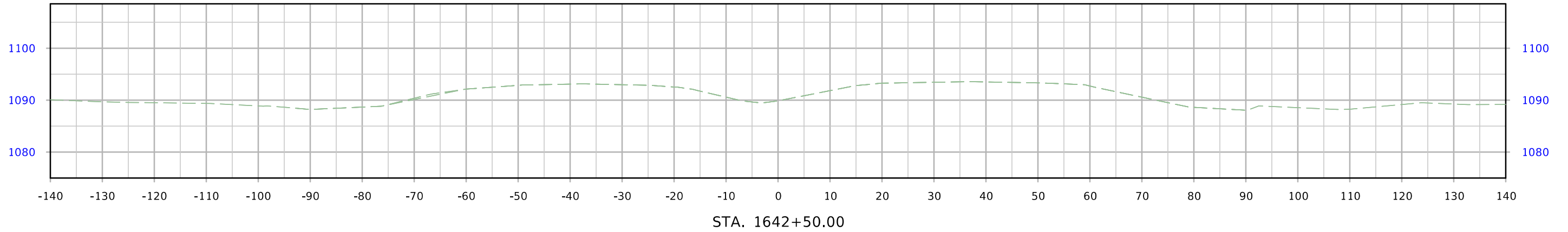


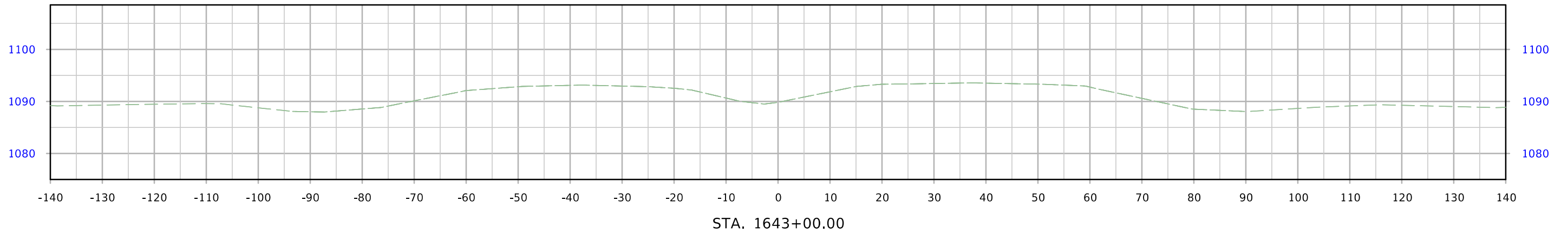
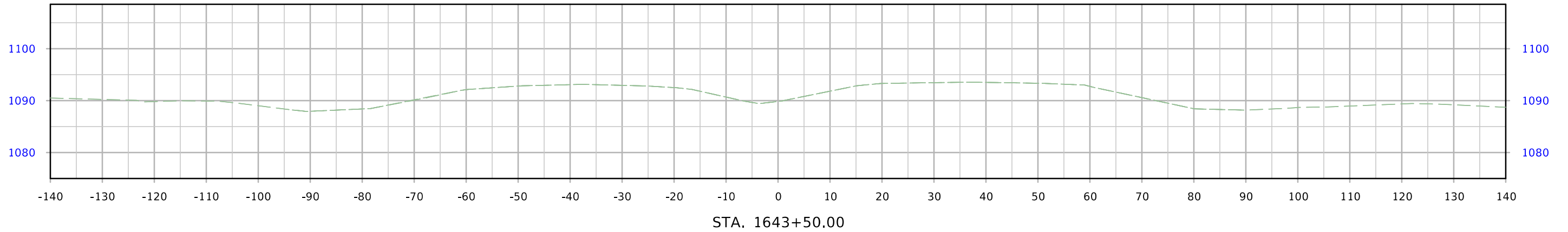
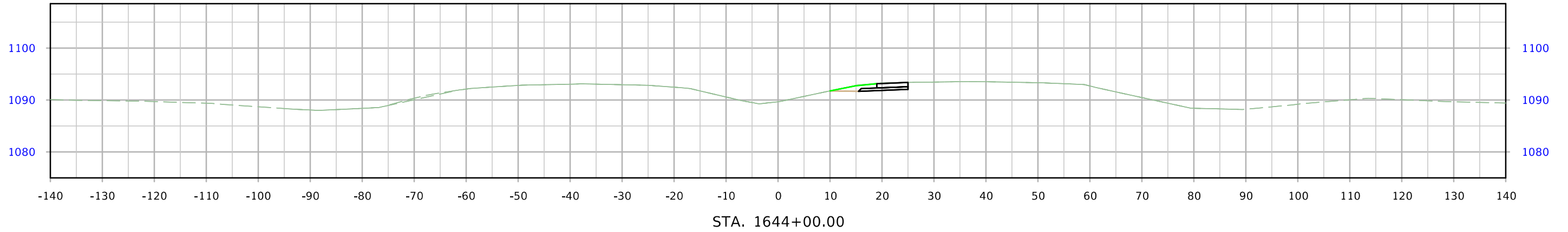


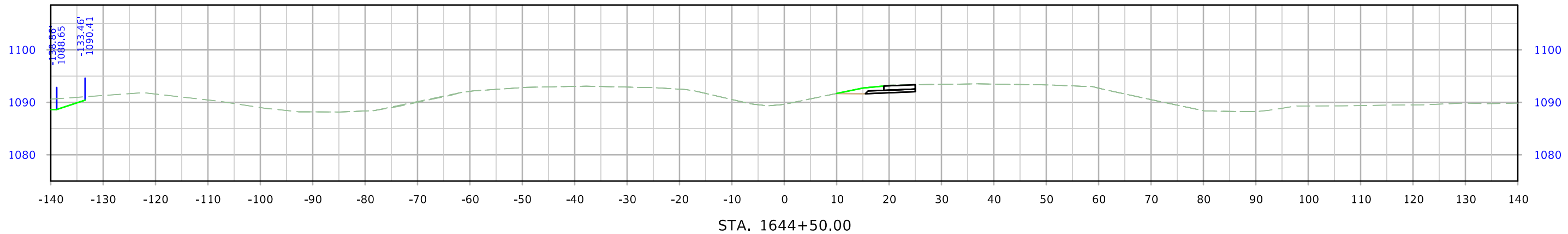
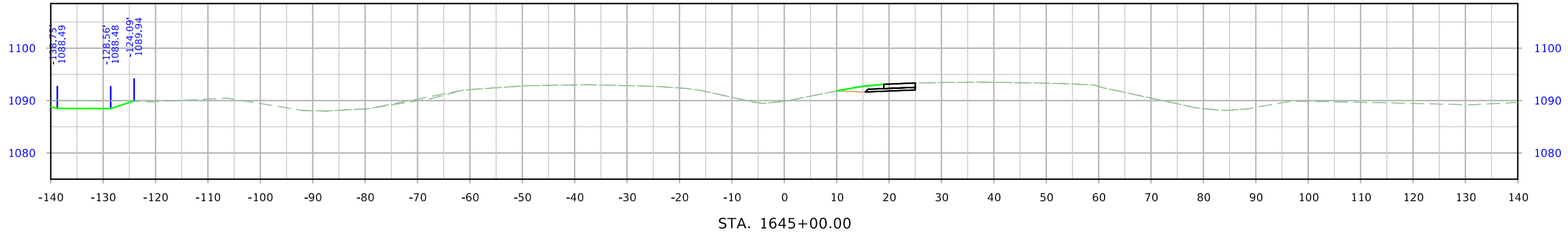
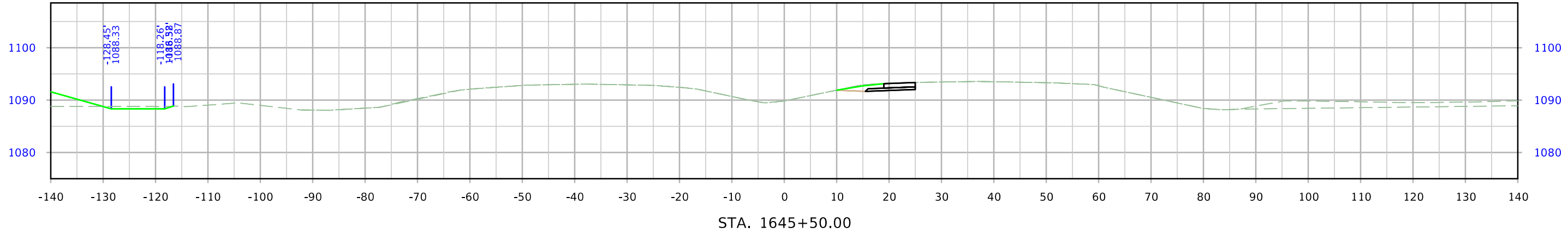


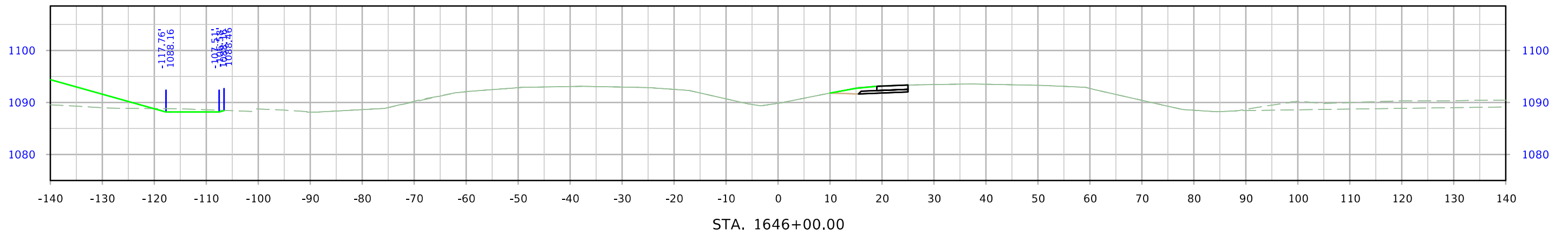
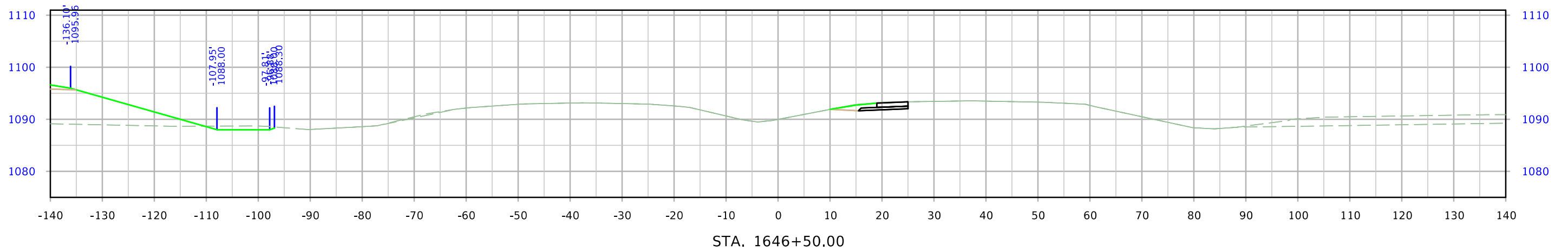
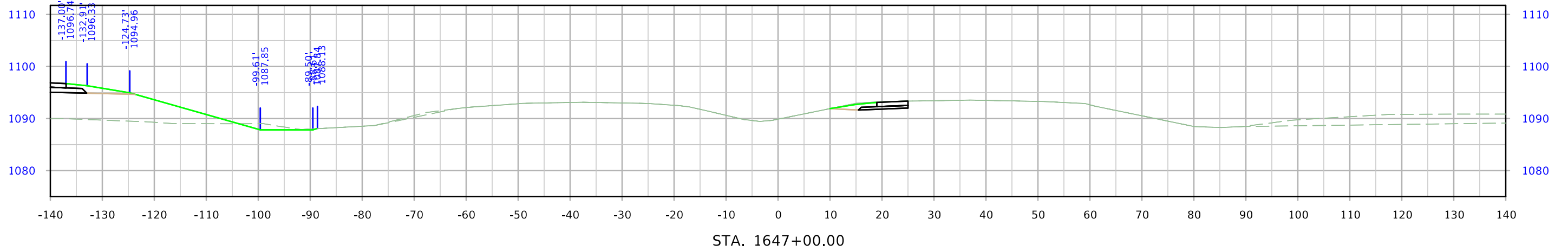


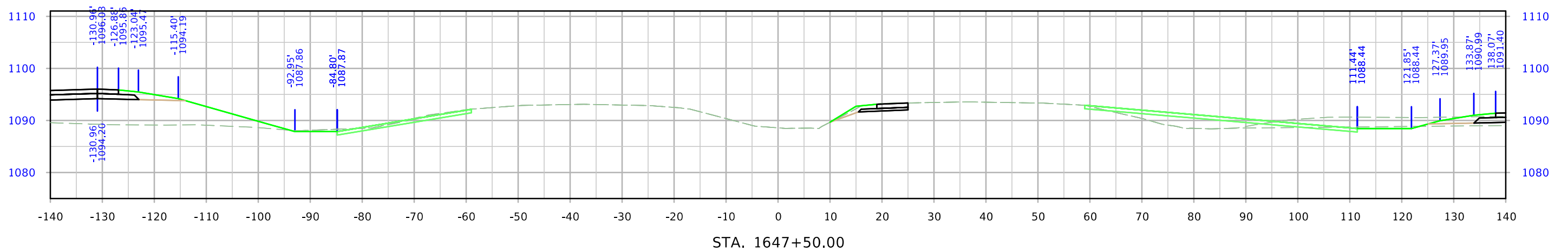
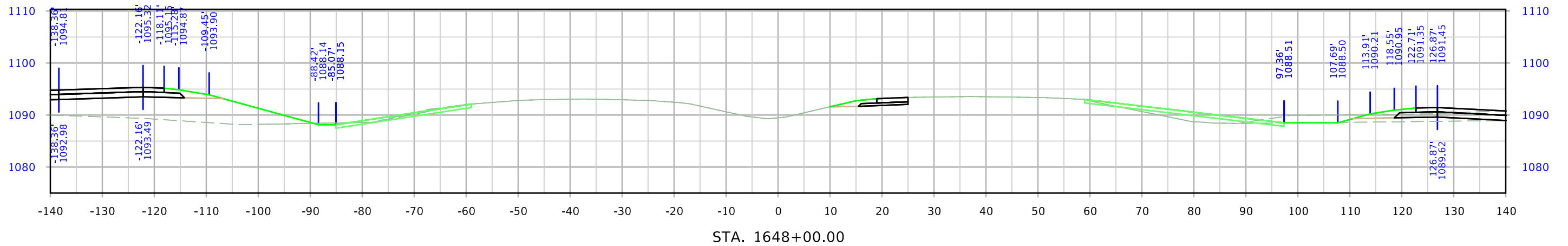
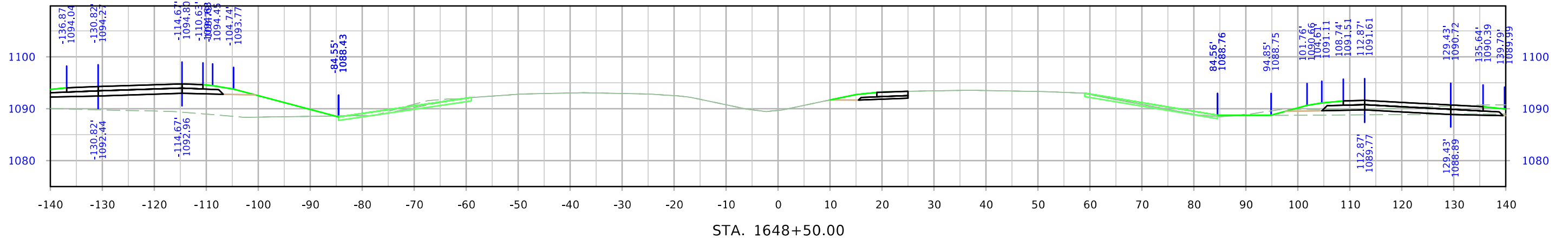


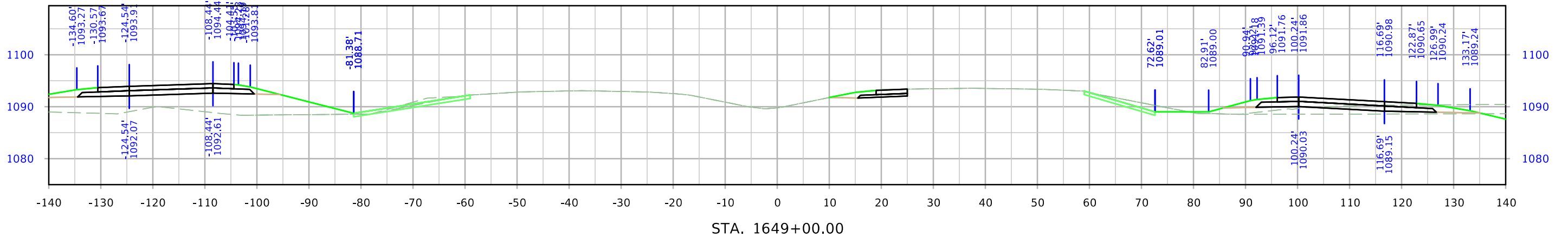
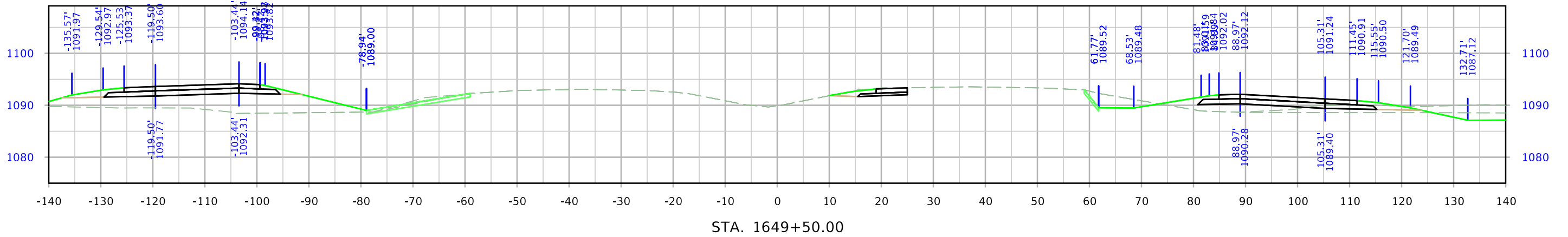
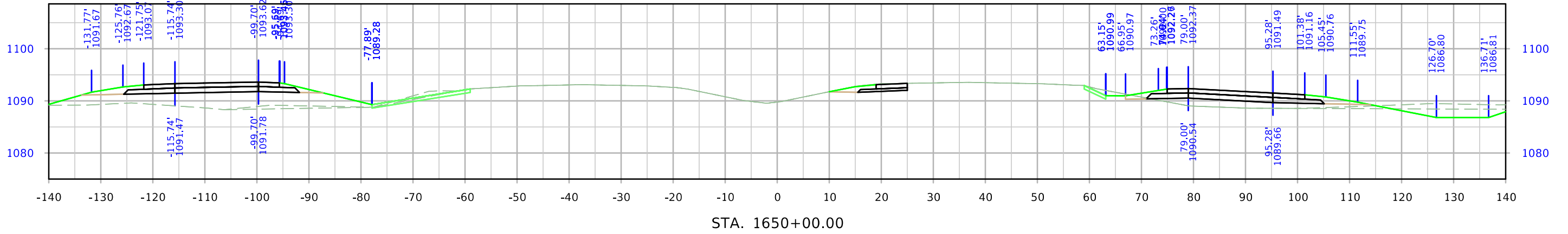


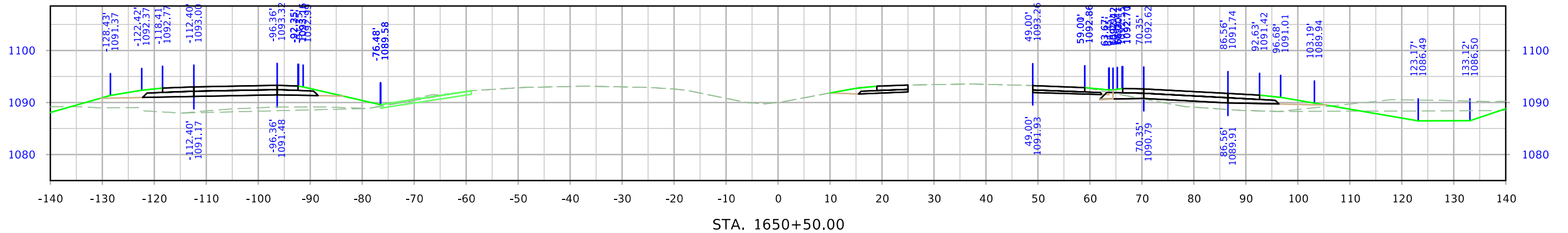
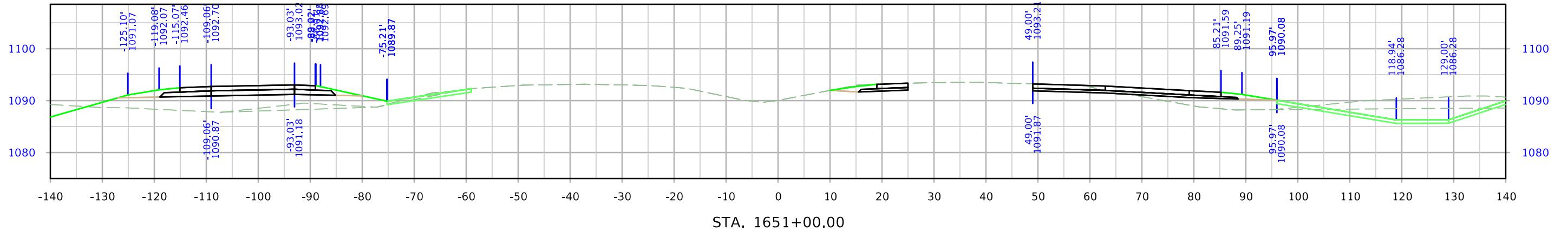
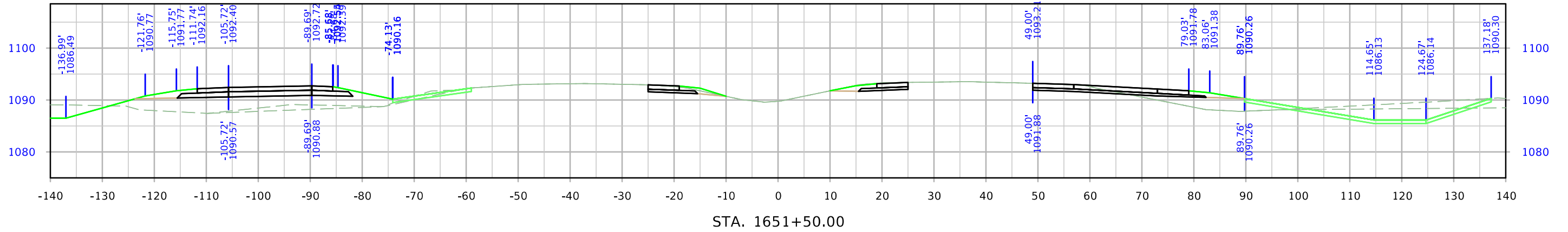


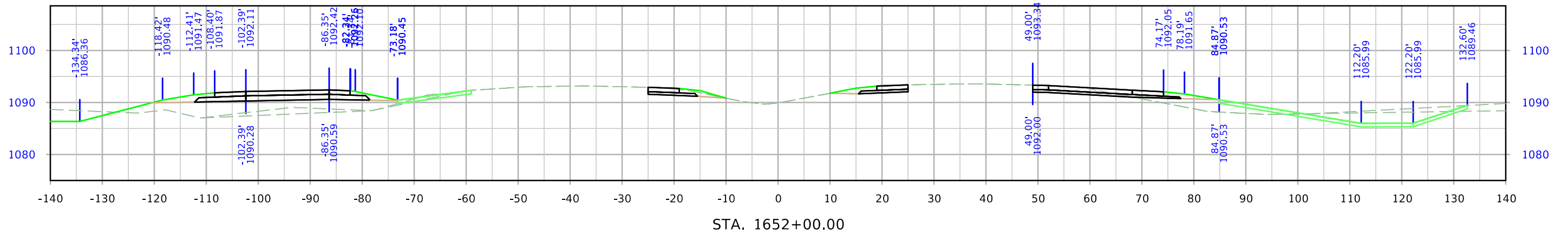
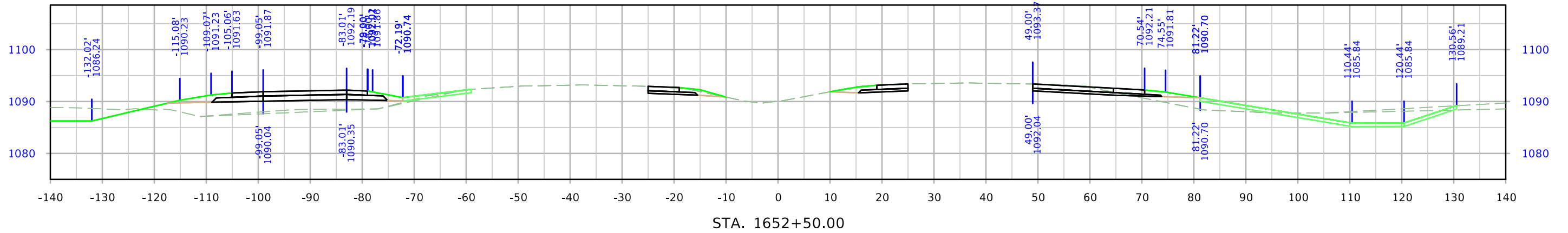
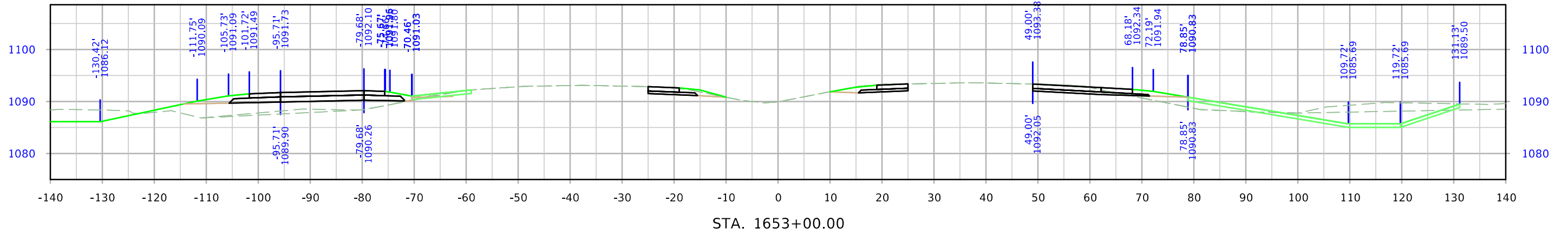


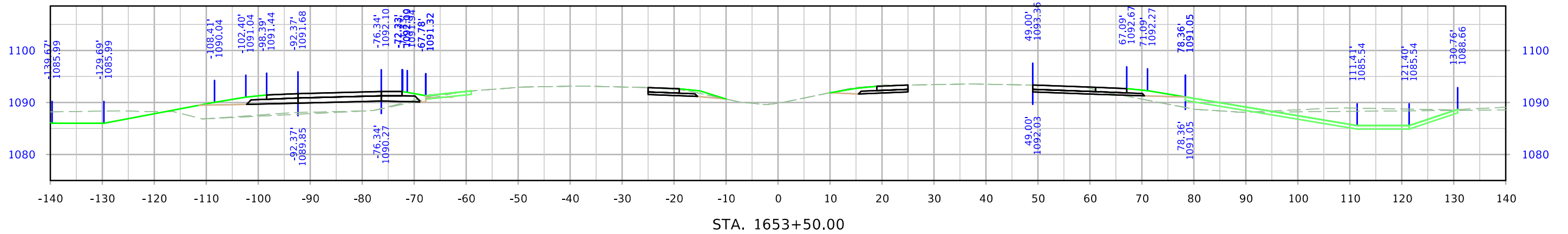
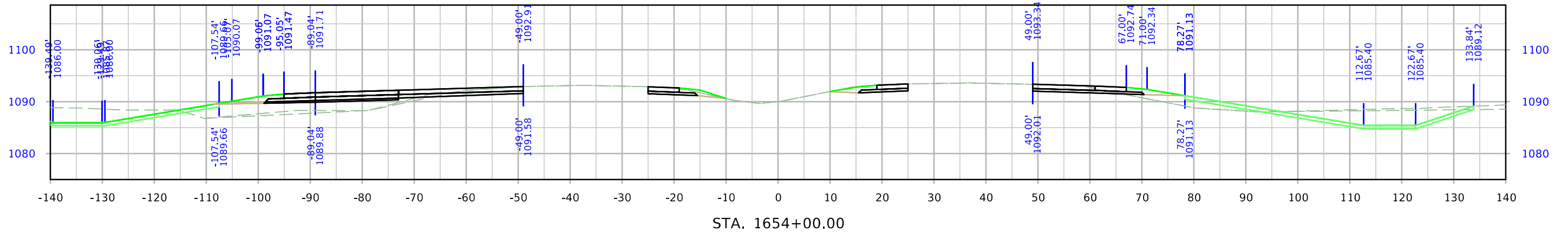
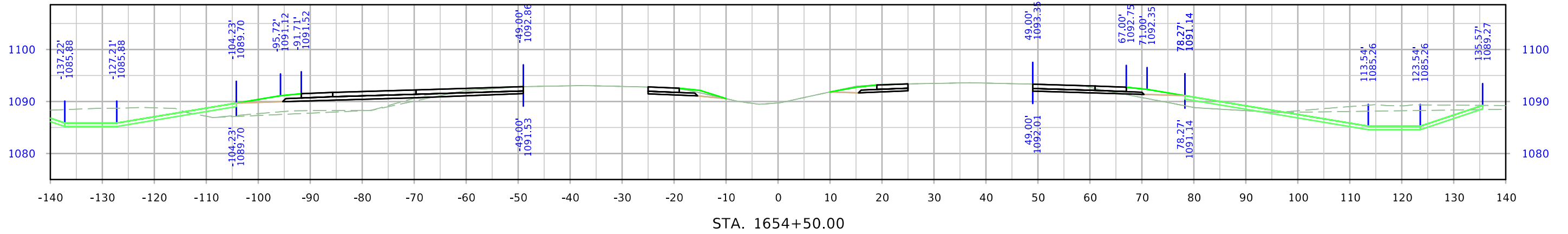


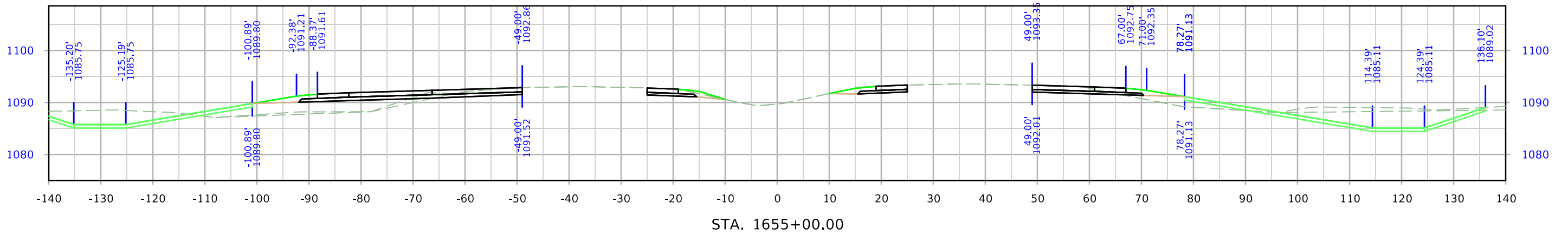
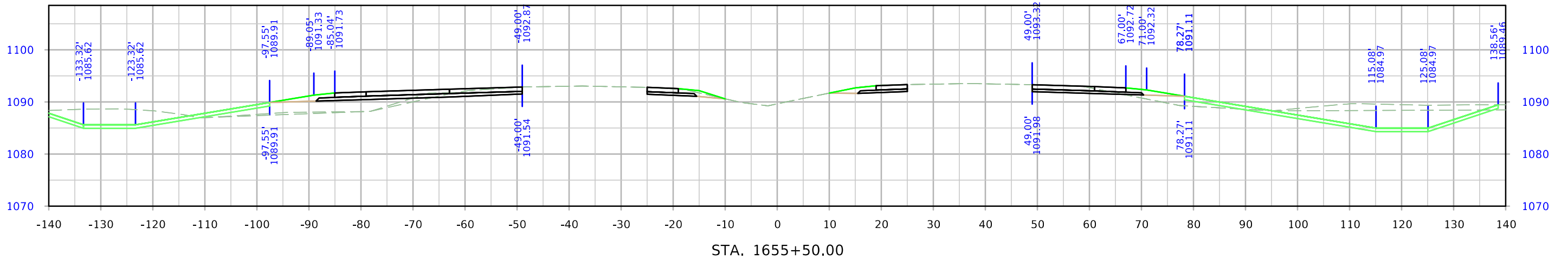
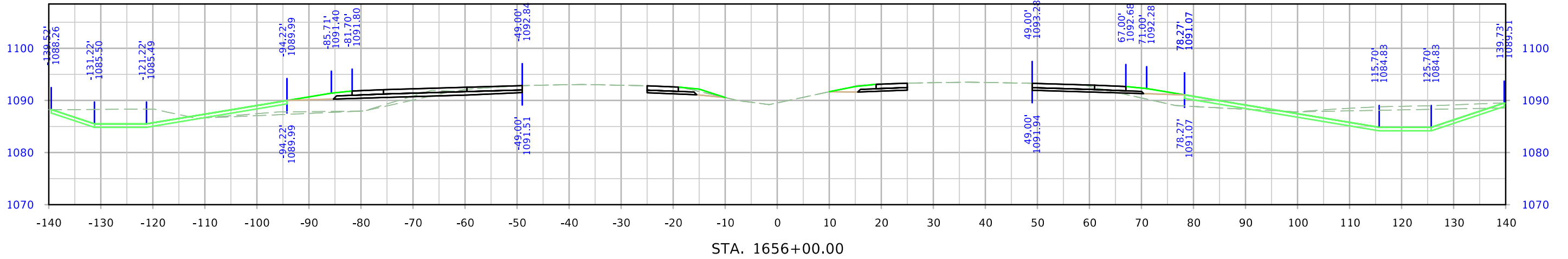


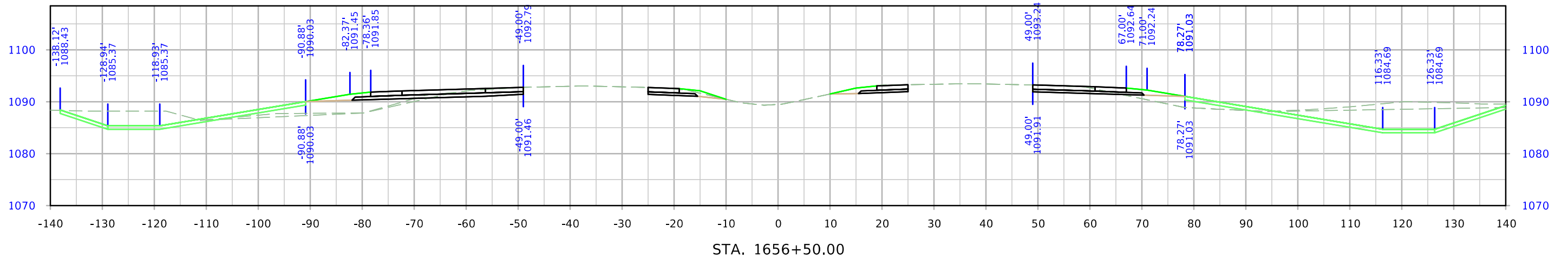
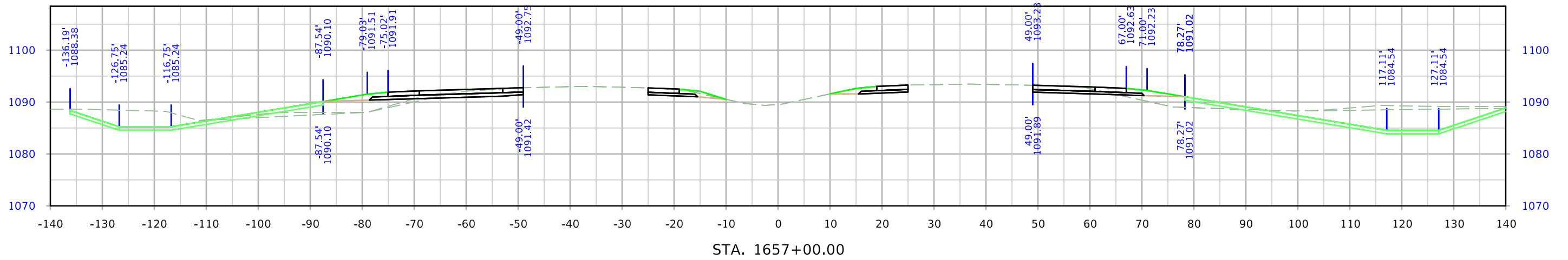
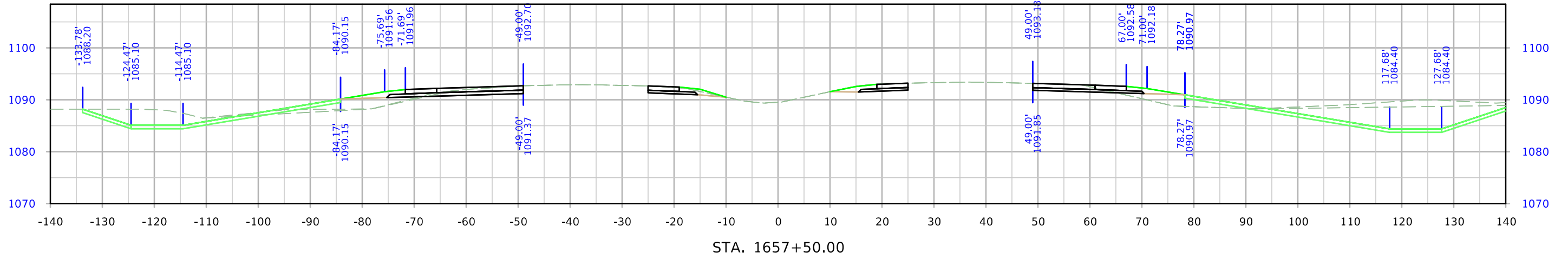


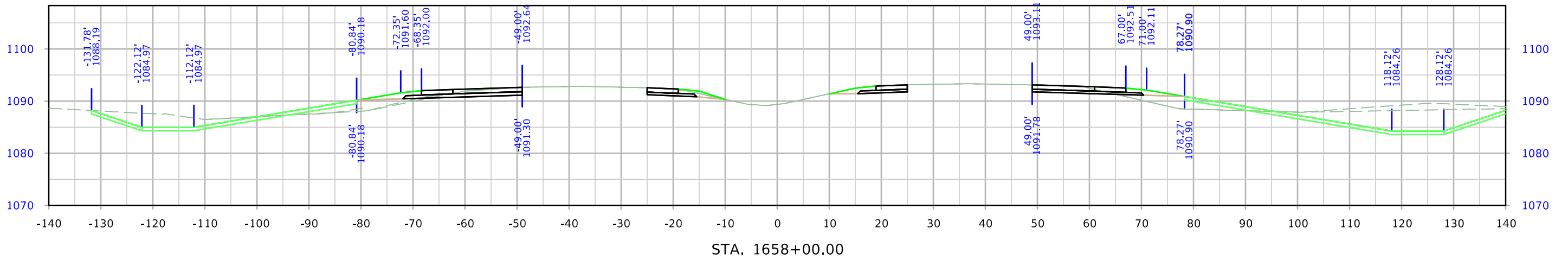
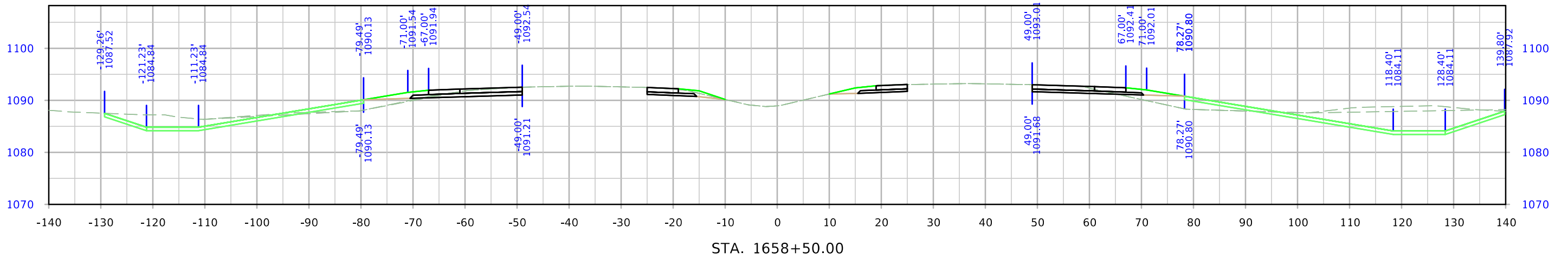
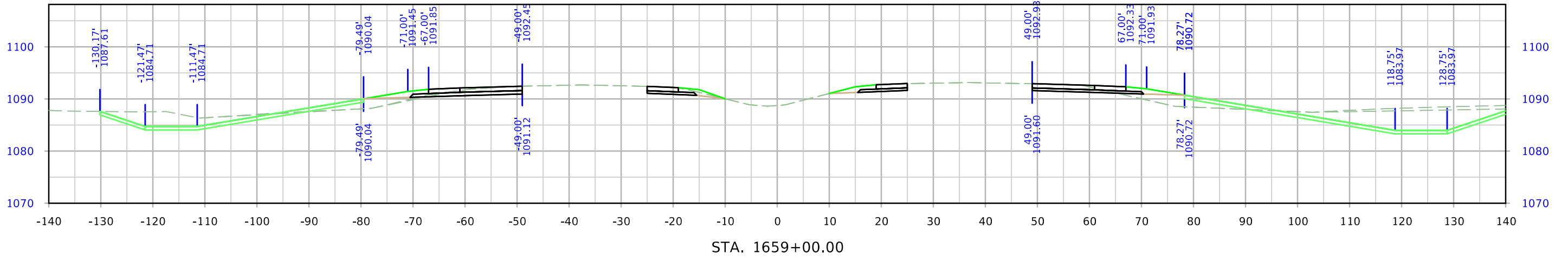


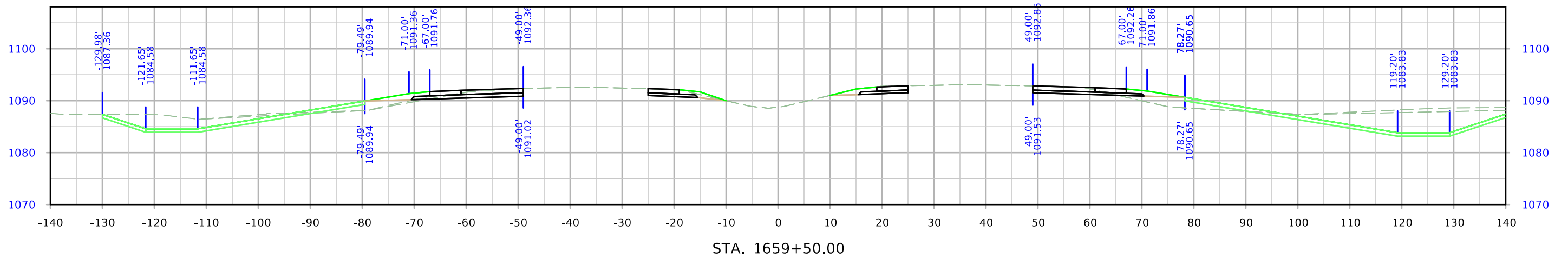
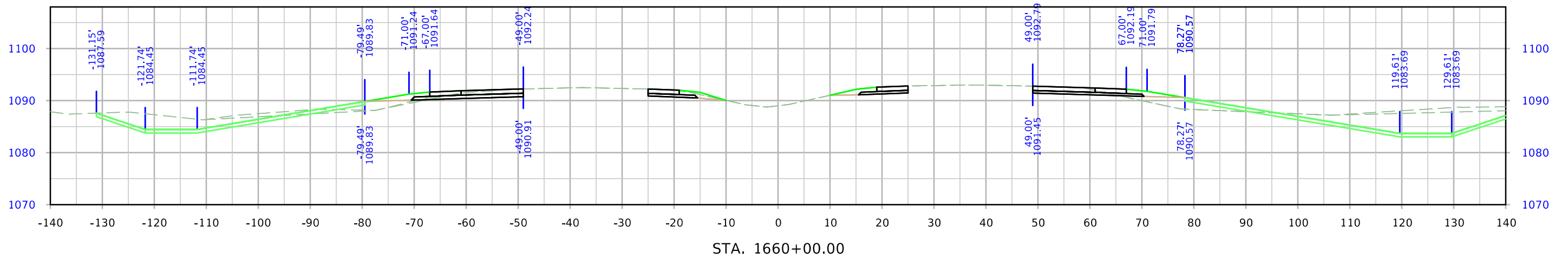
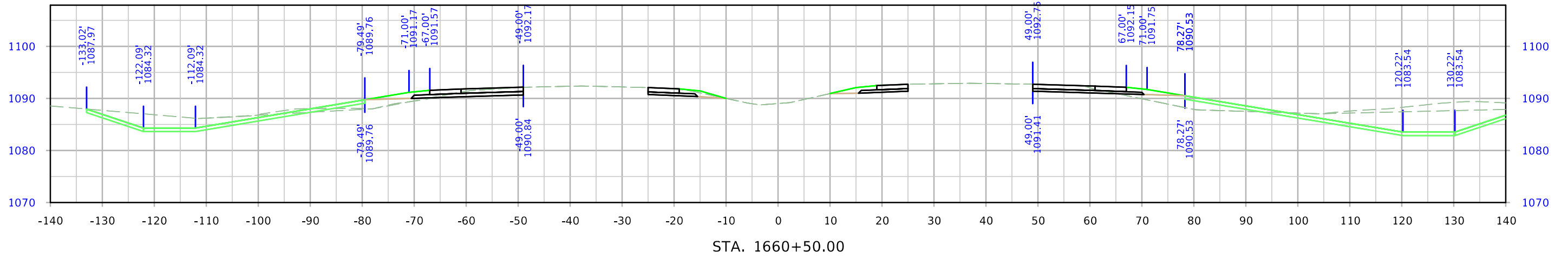


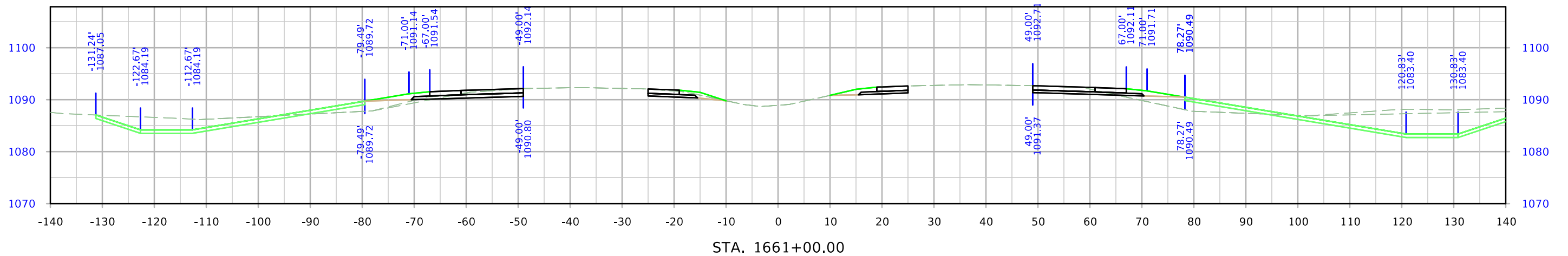
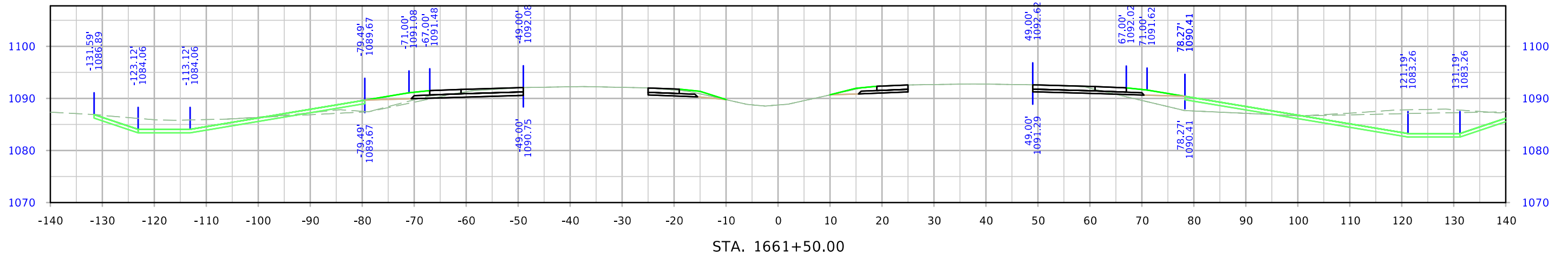
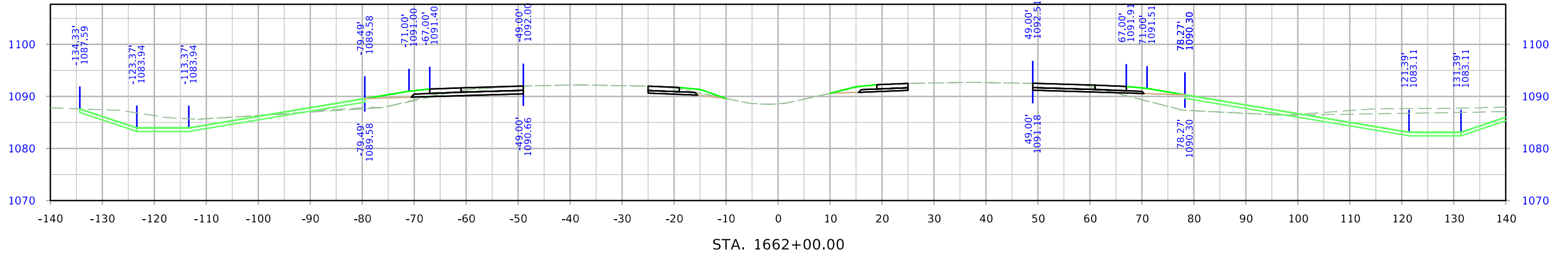


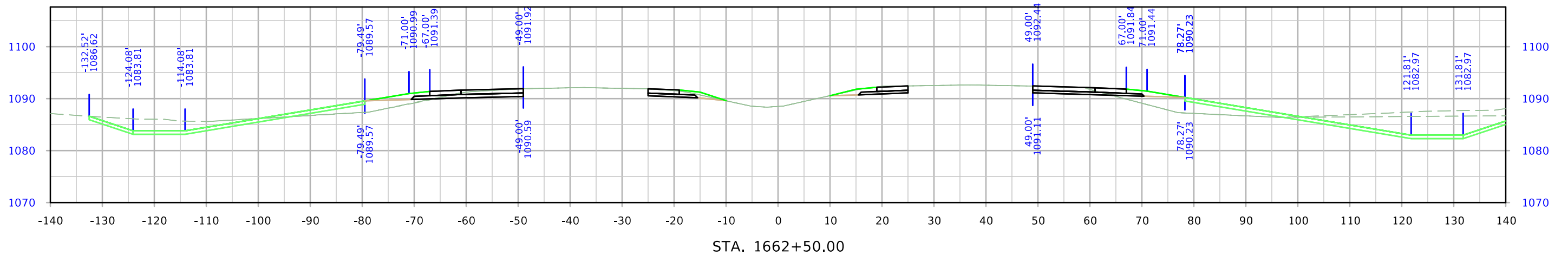
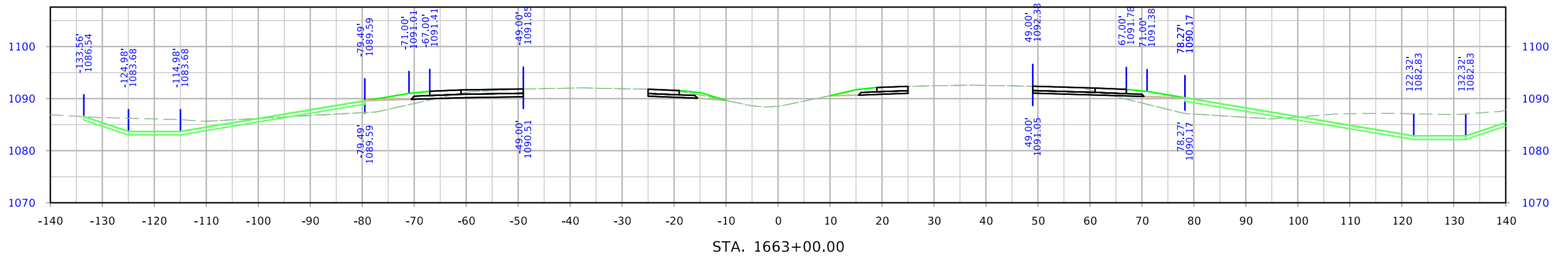
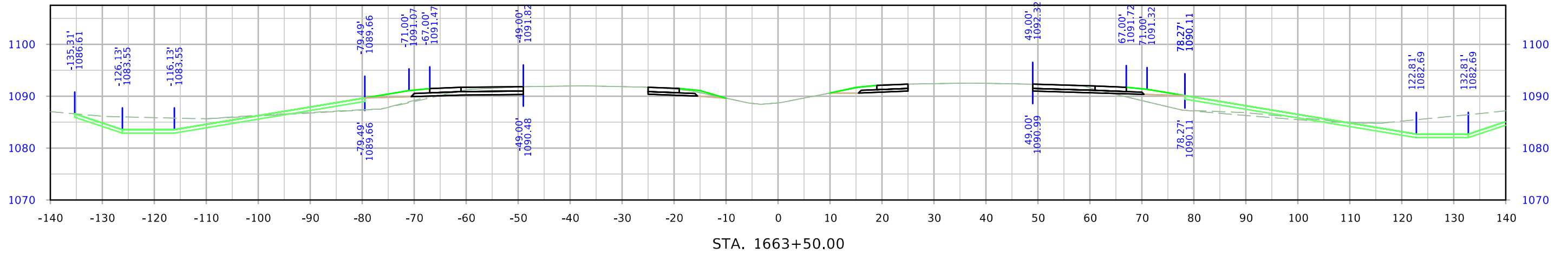


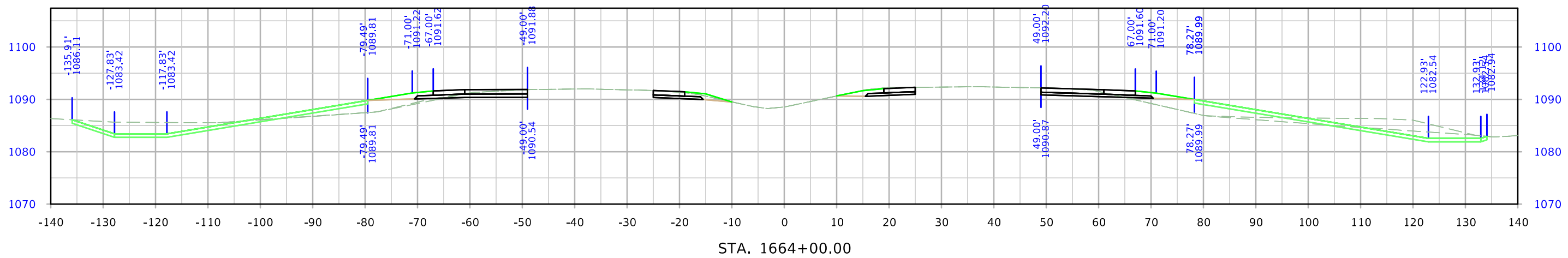
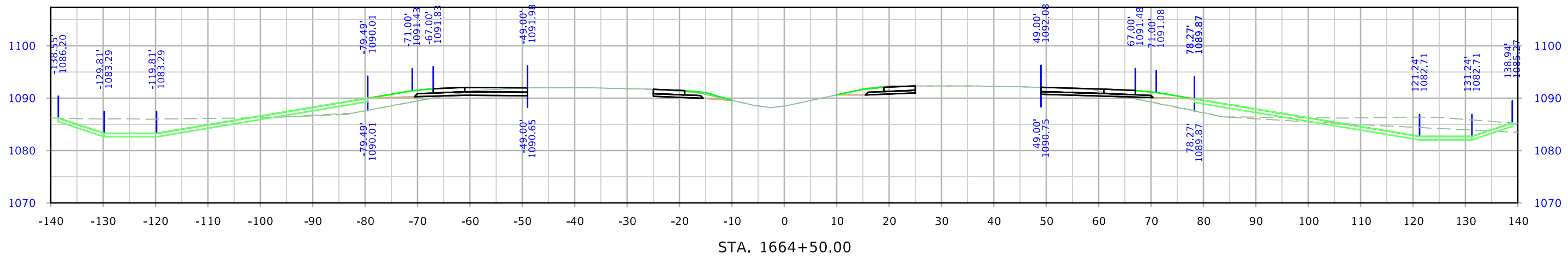
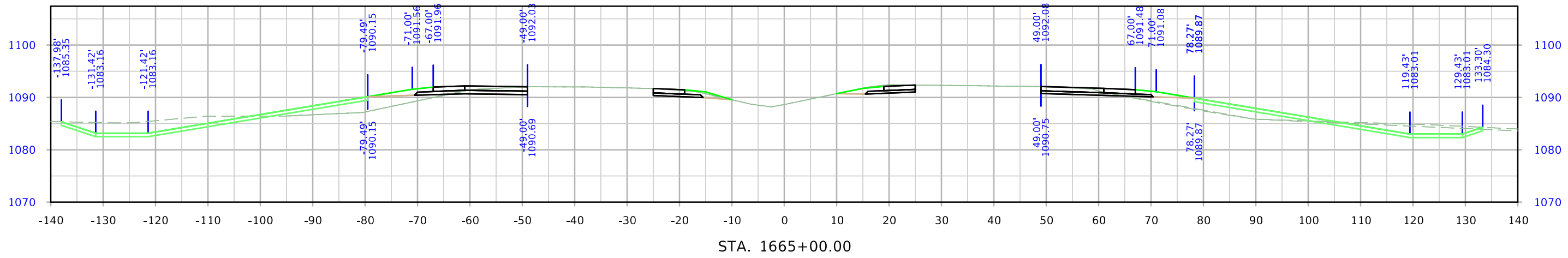


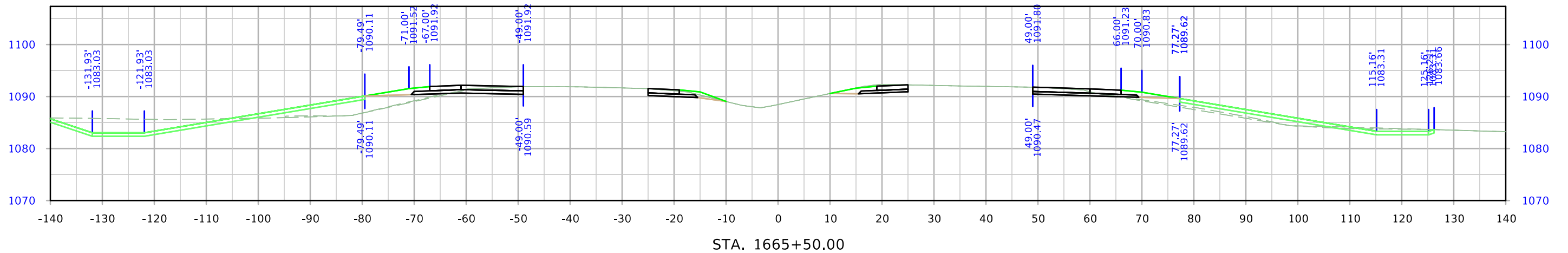
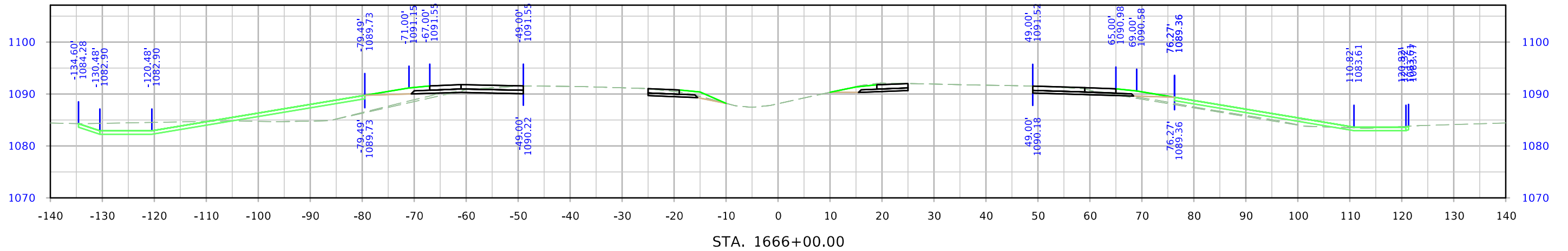
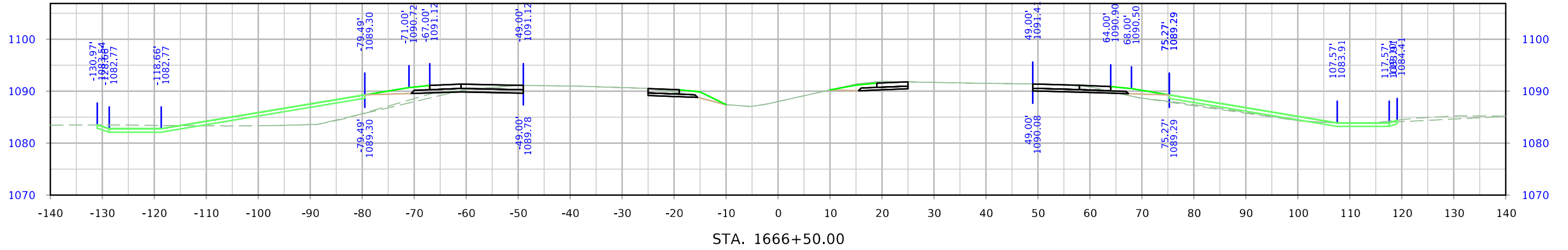


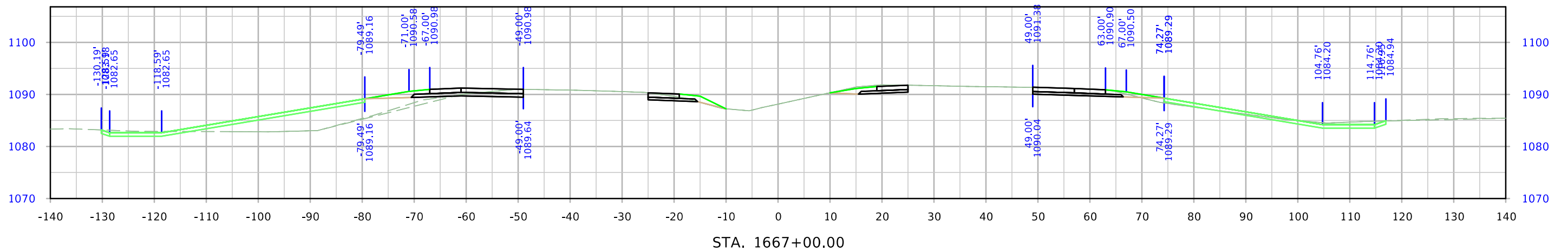
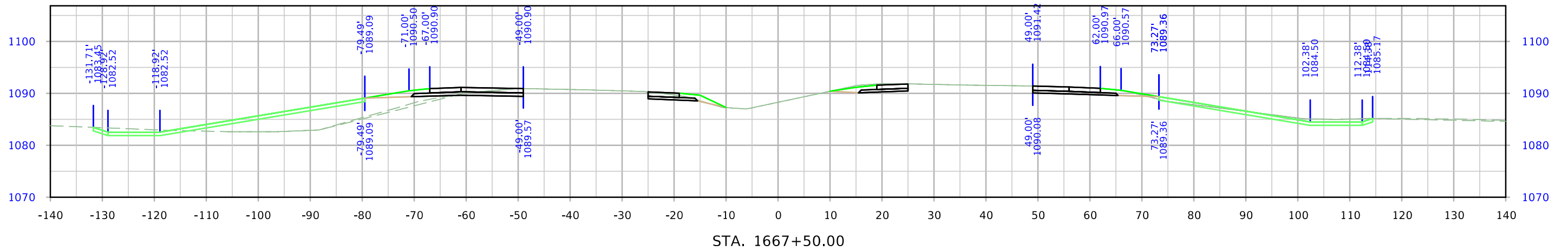
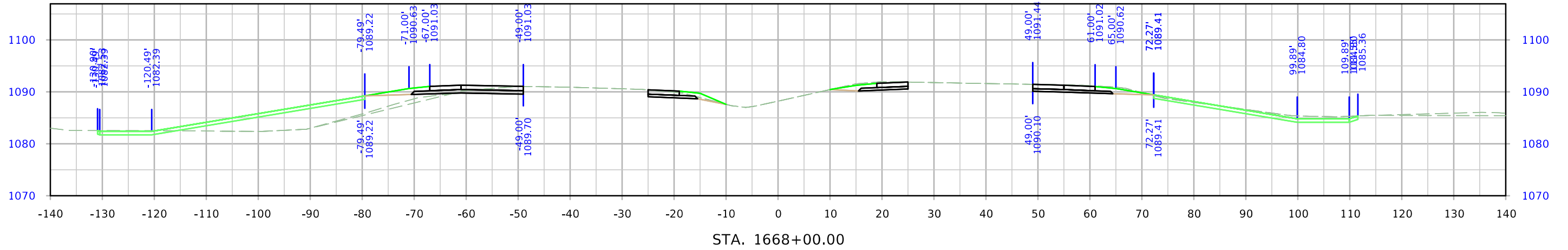


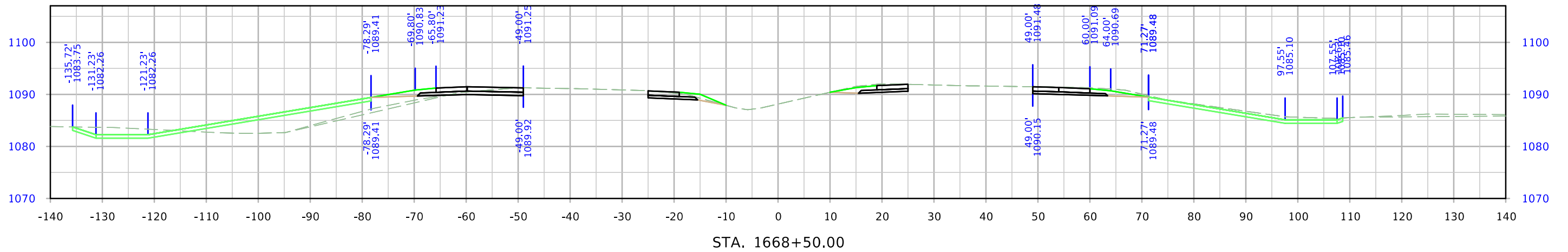
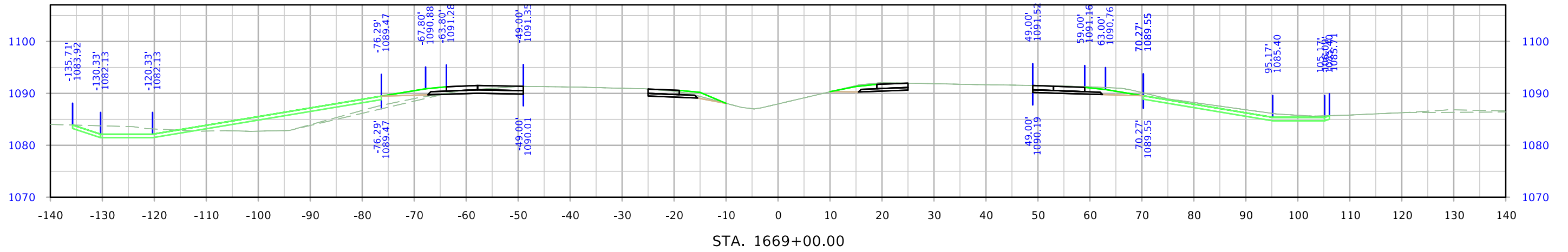
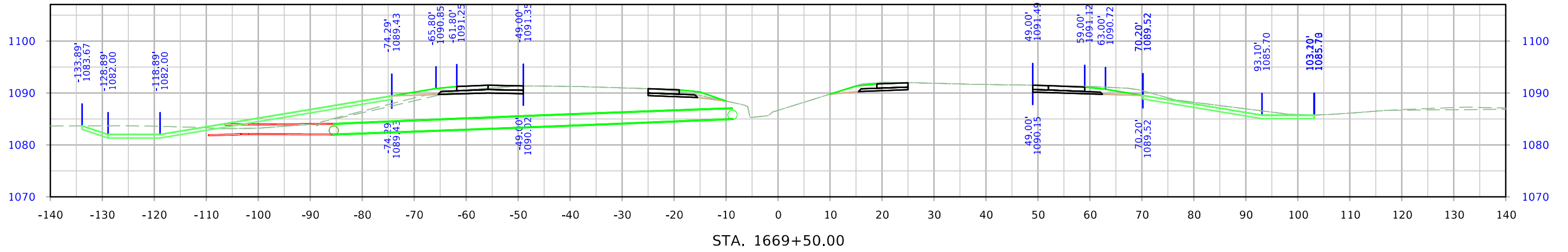


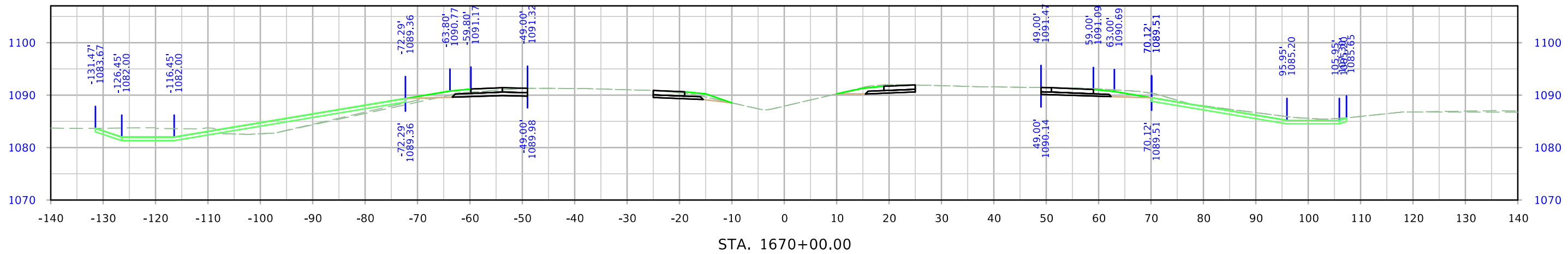
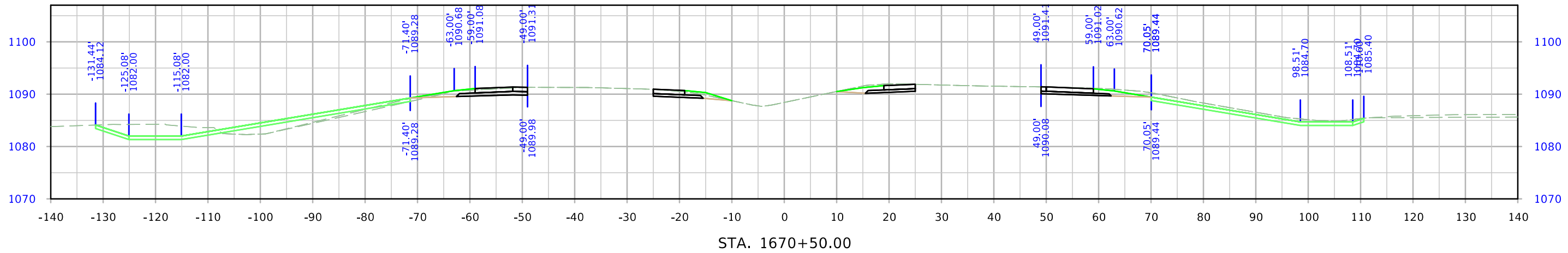
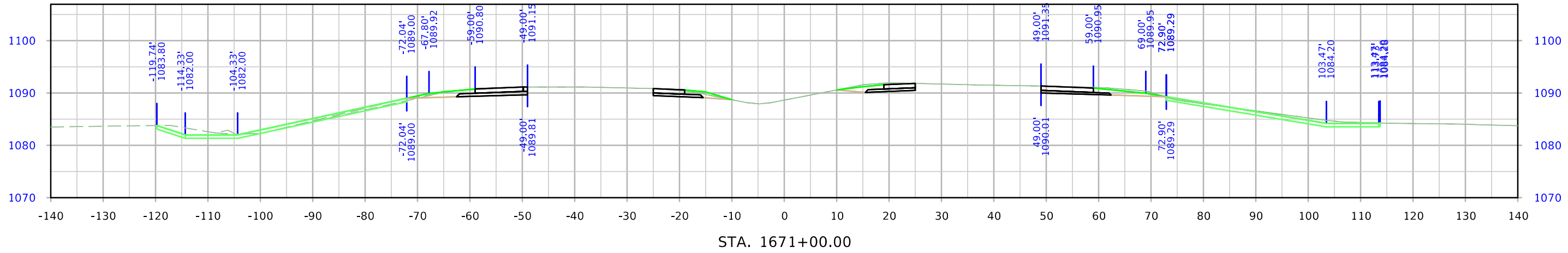




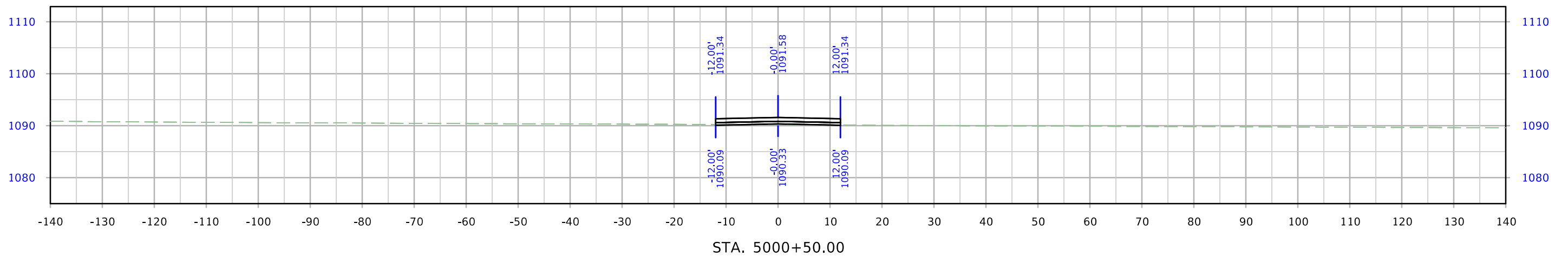
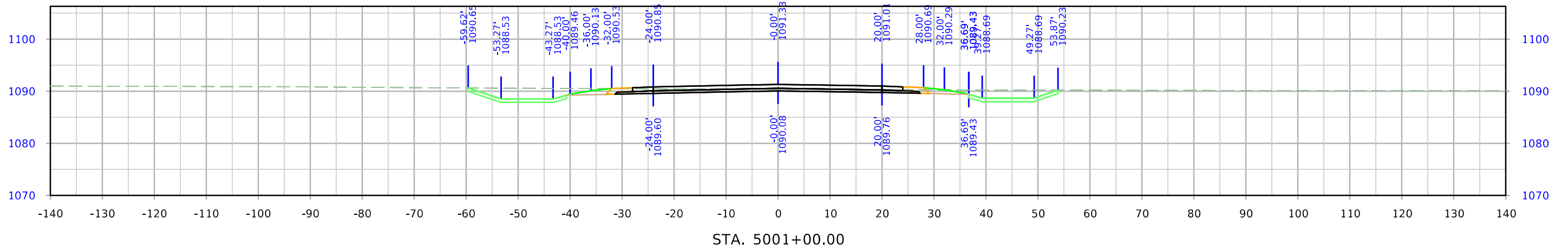
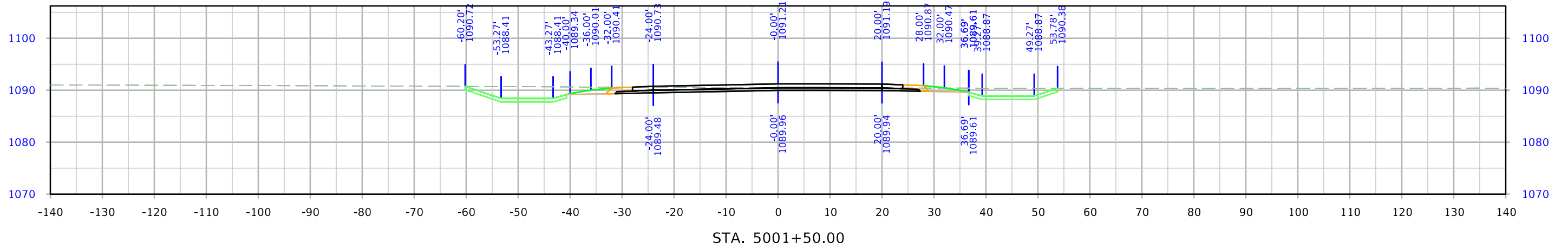




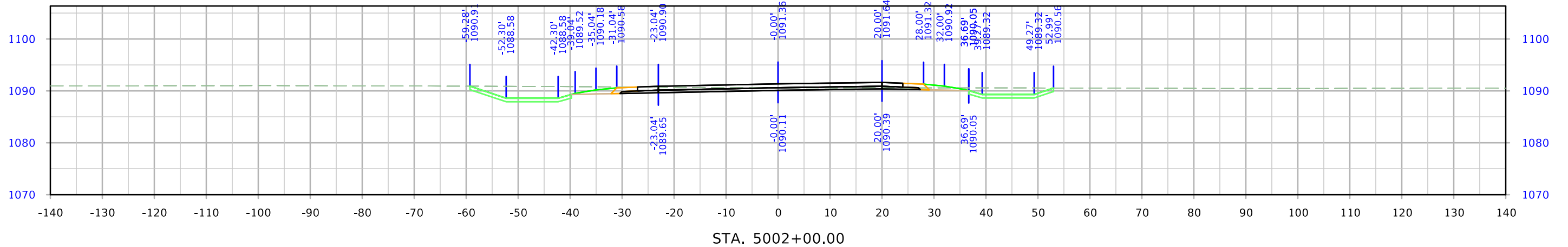
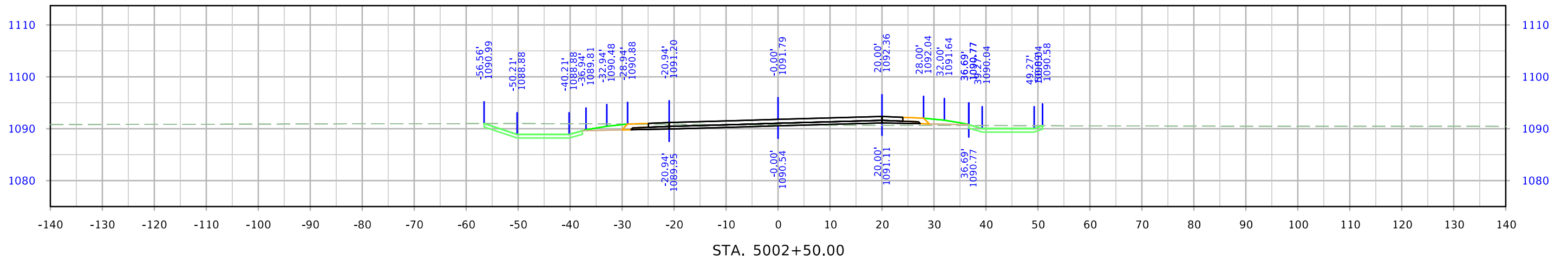
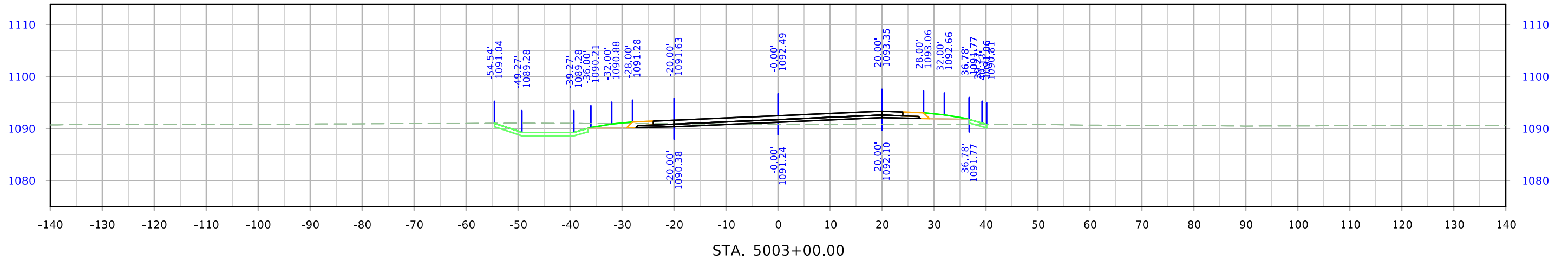




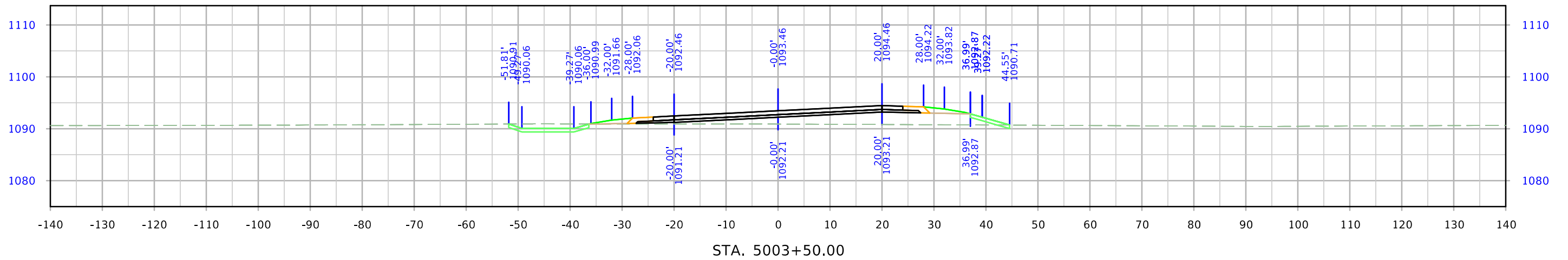
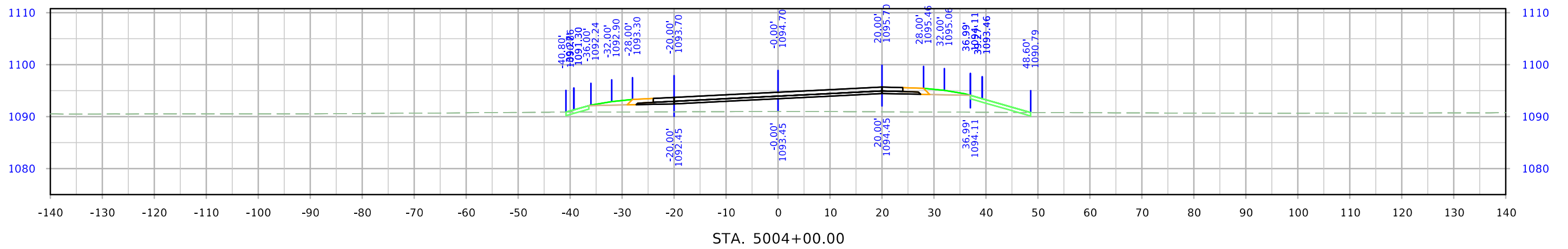
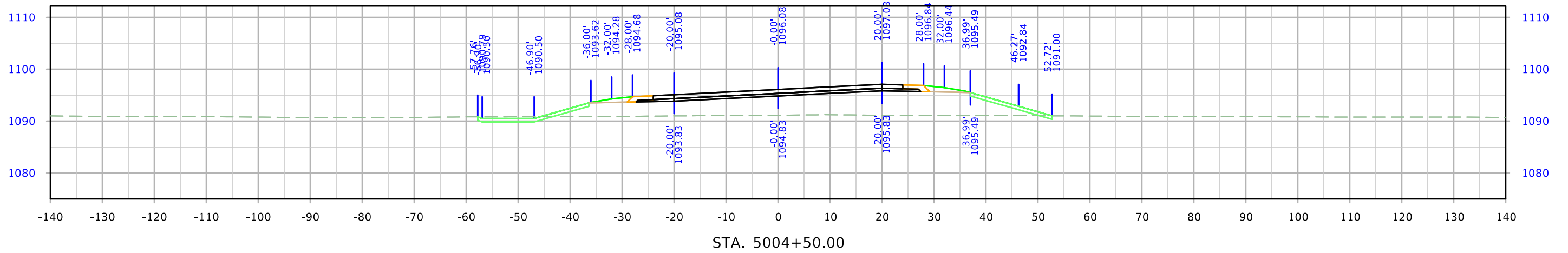
235th Street



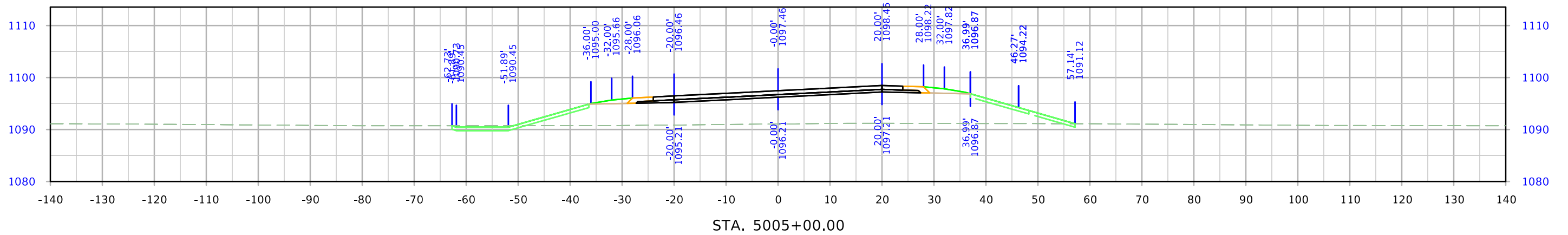
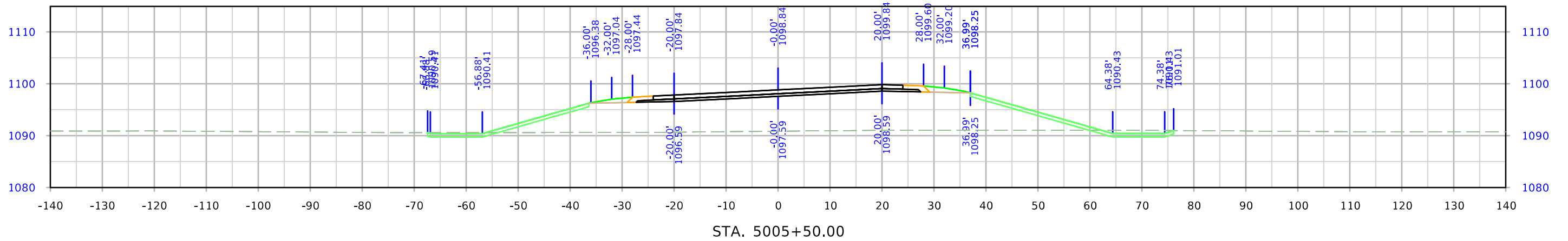
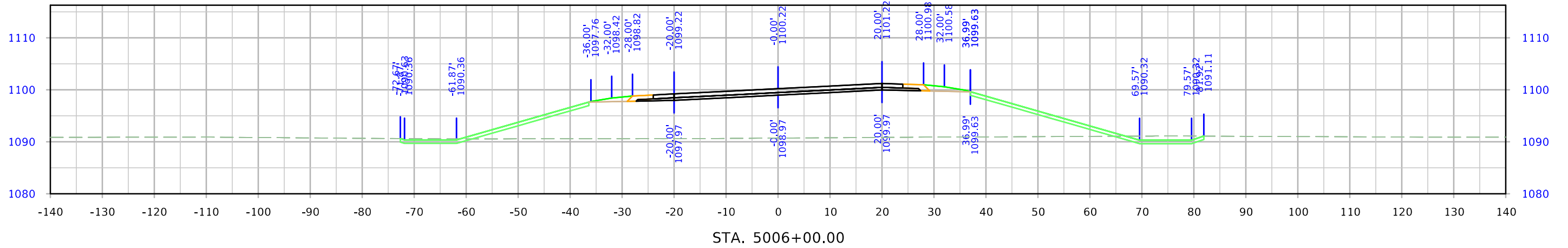
235th Street



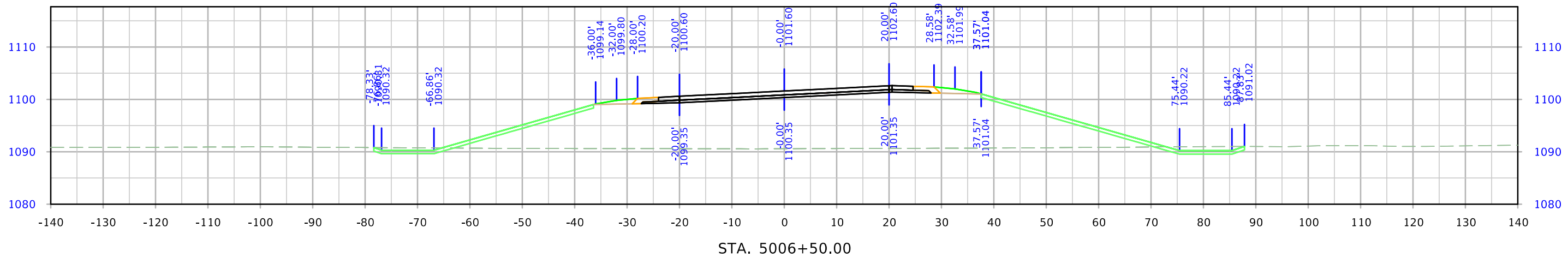
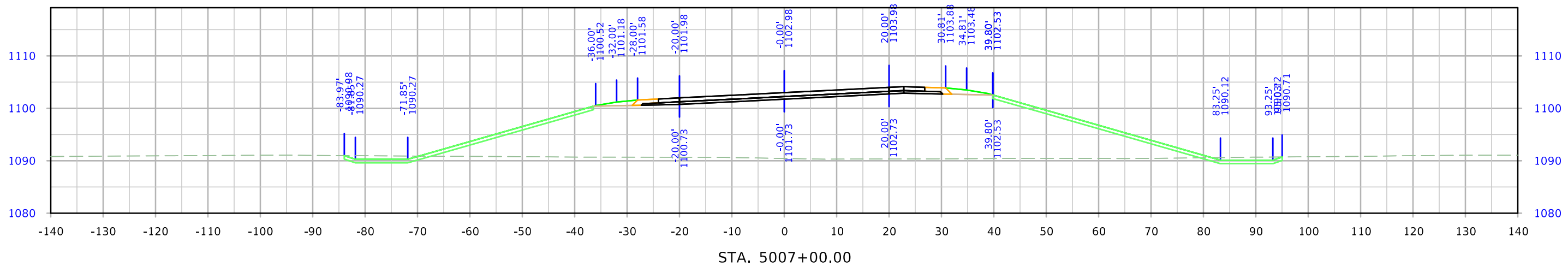
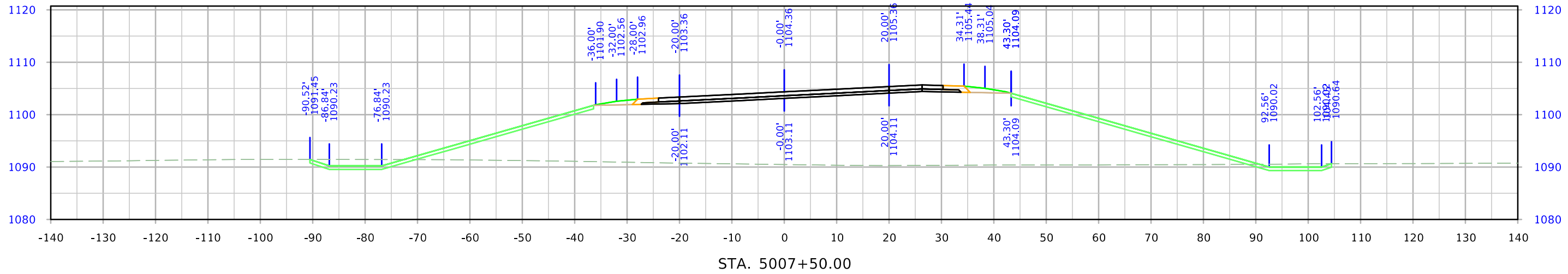
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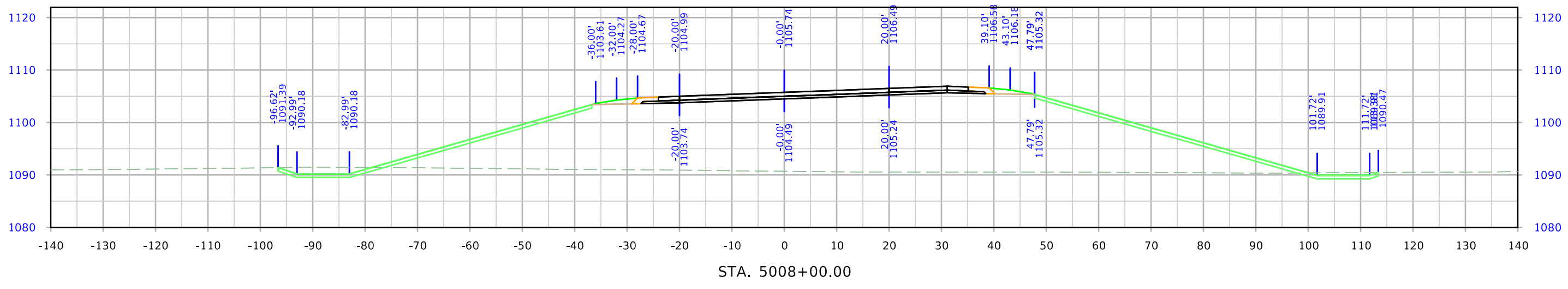
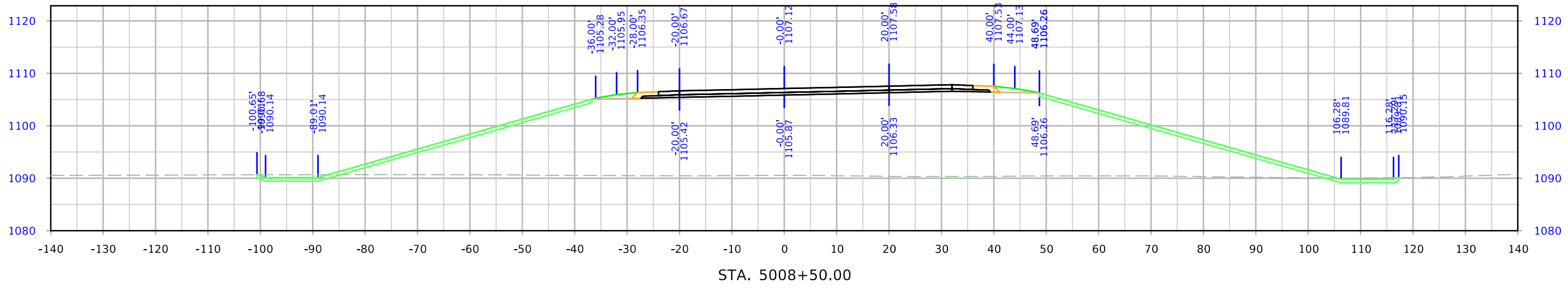
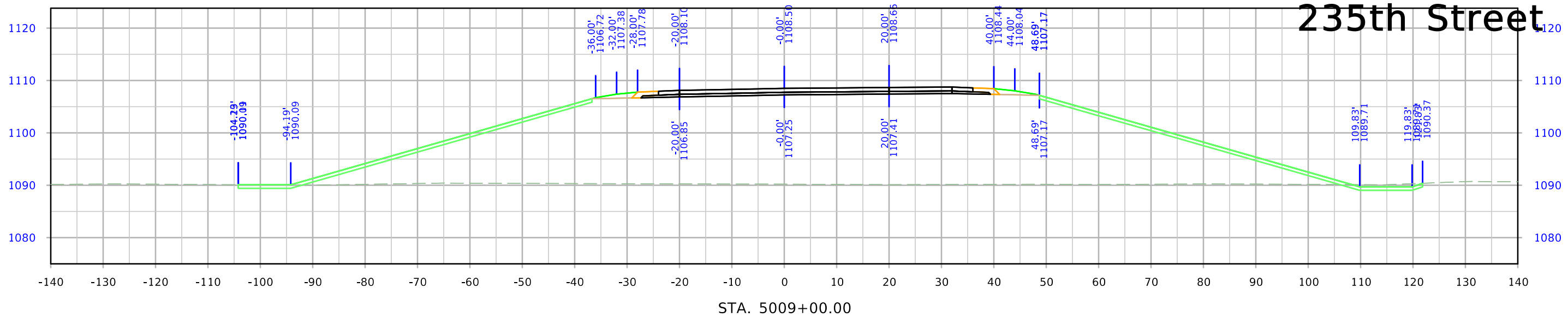
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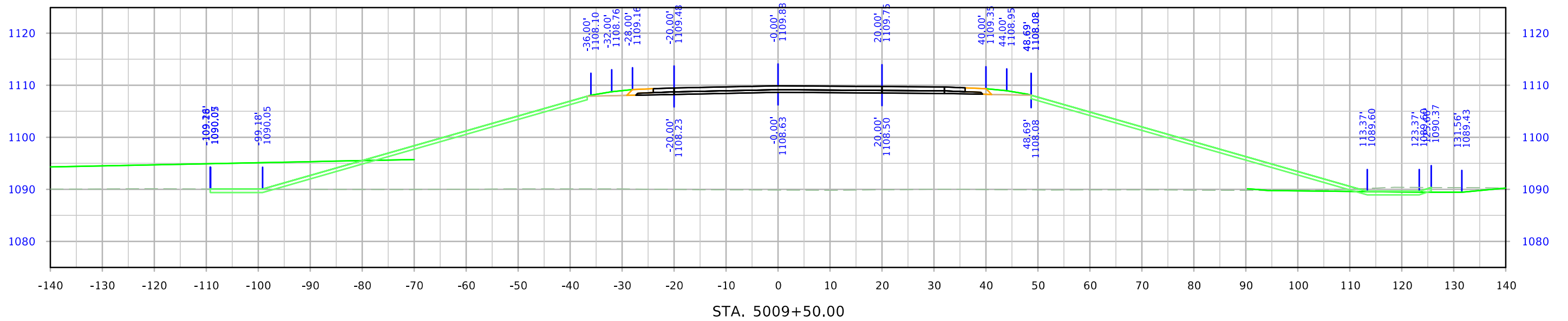
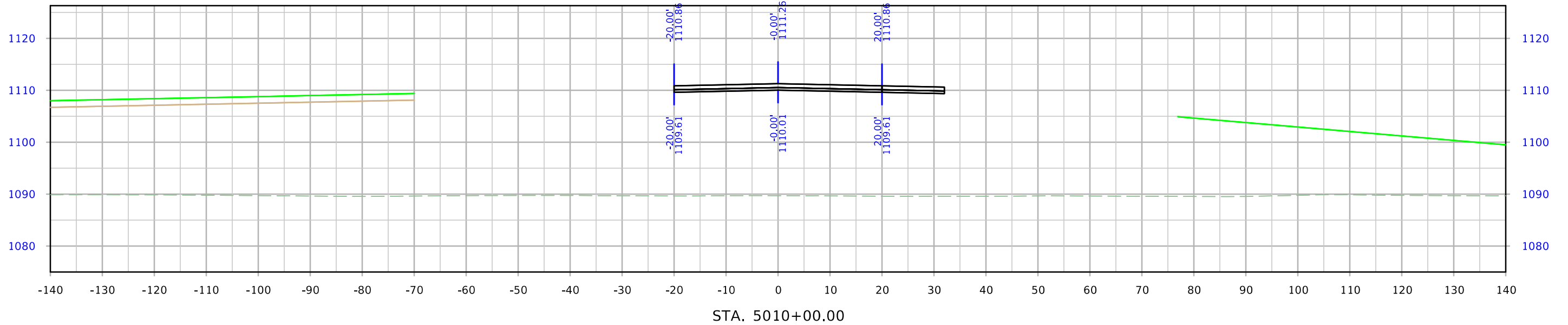
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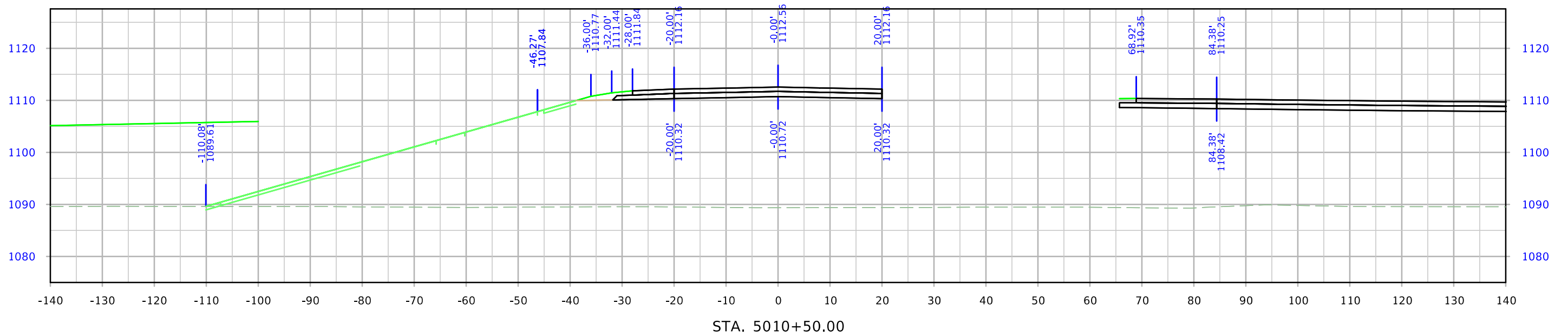
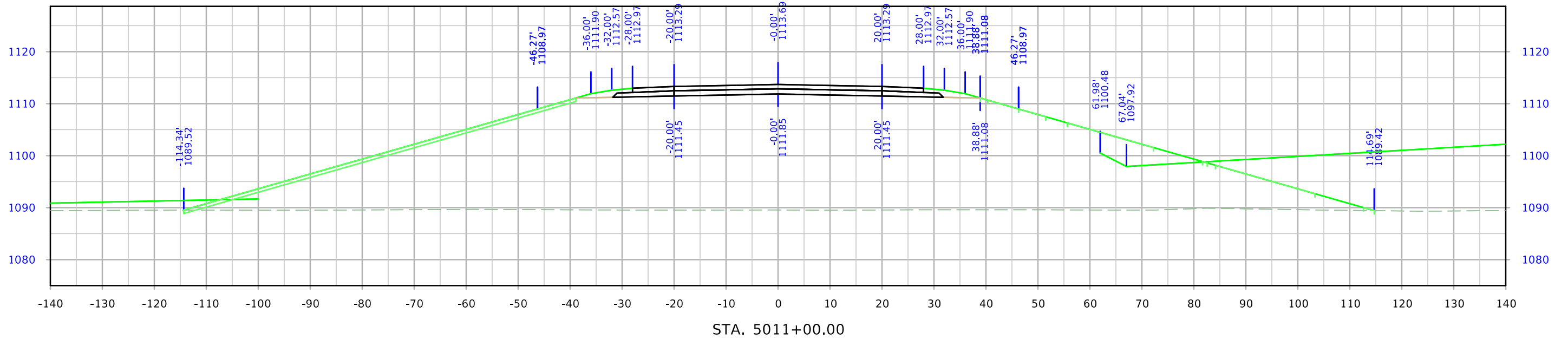
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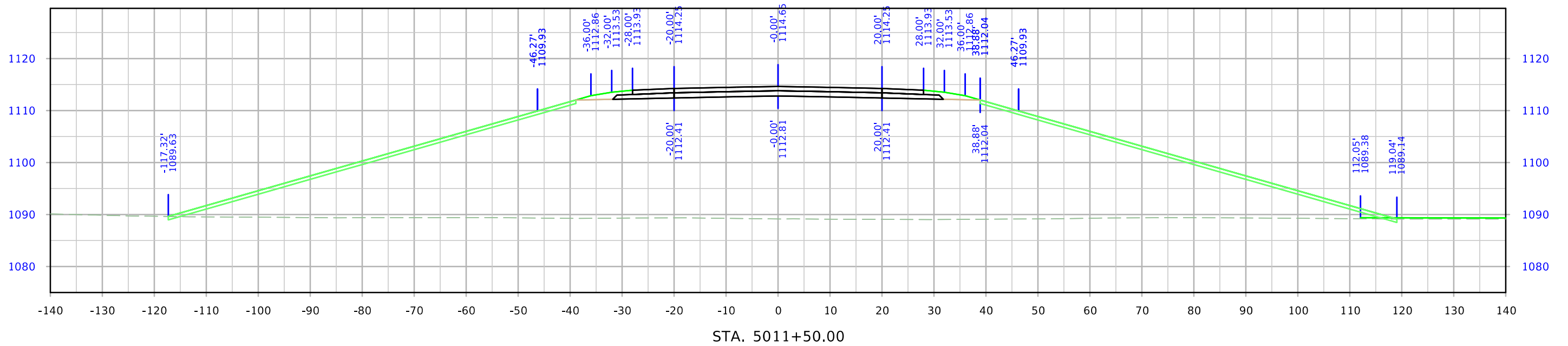
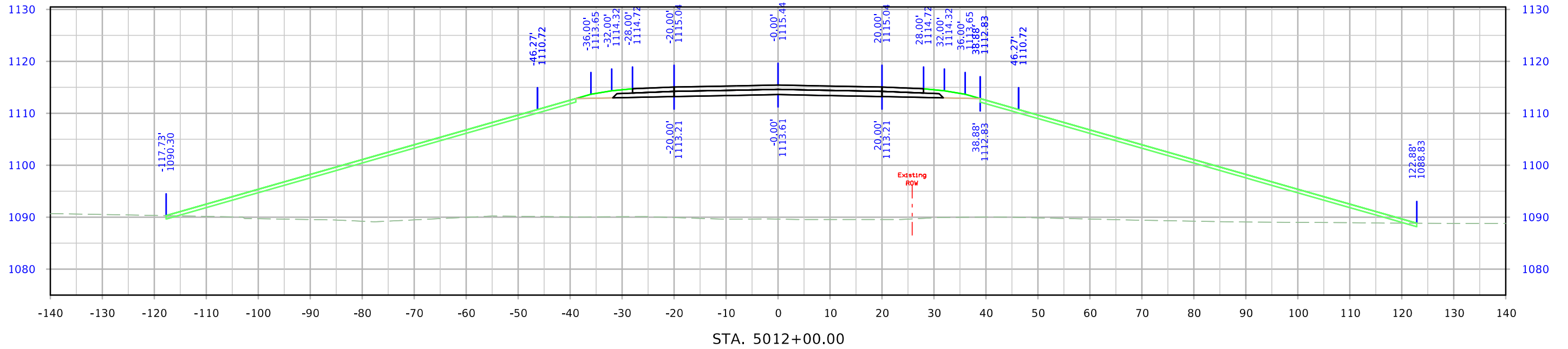
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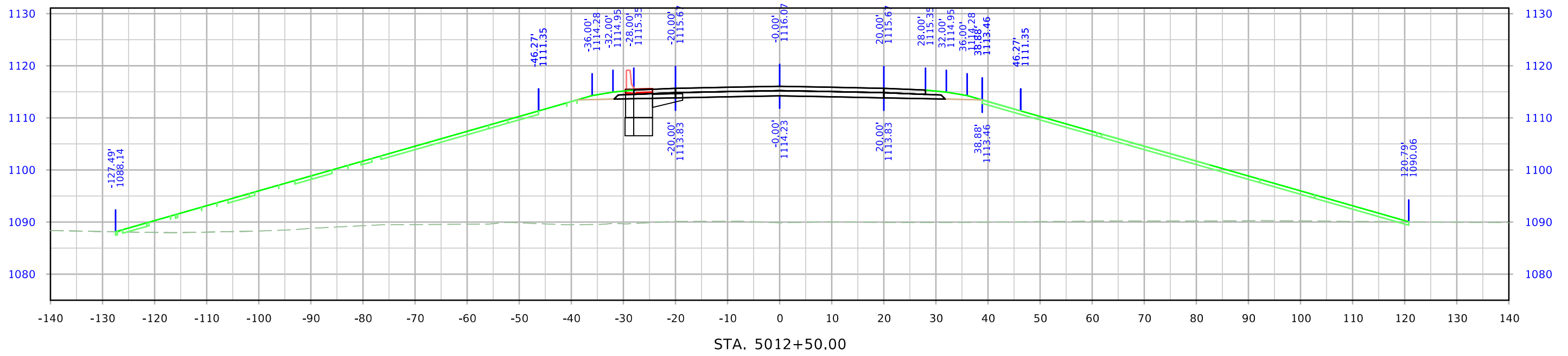
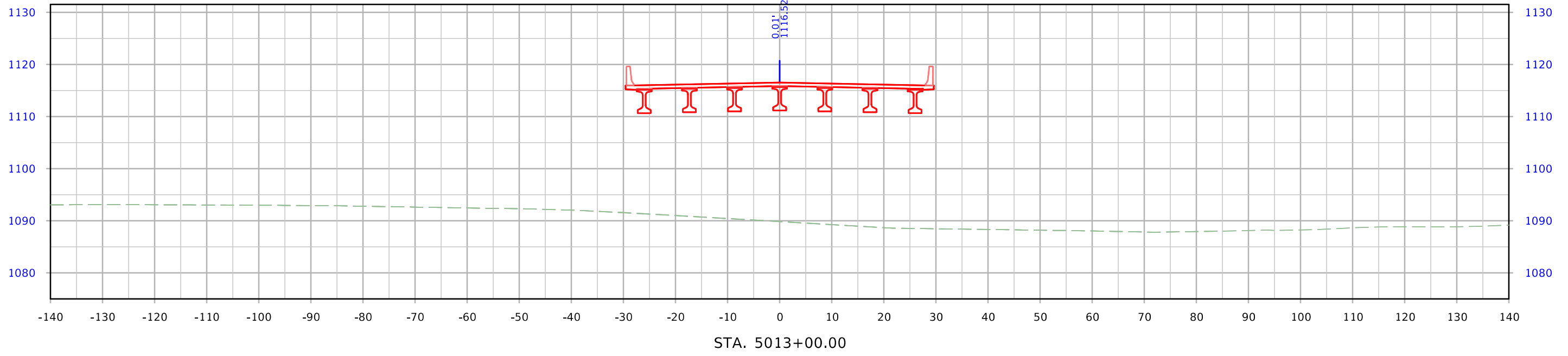
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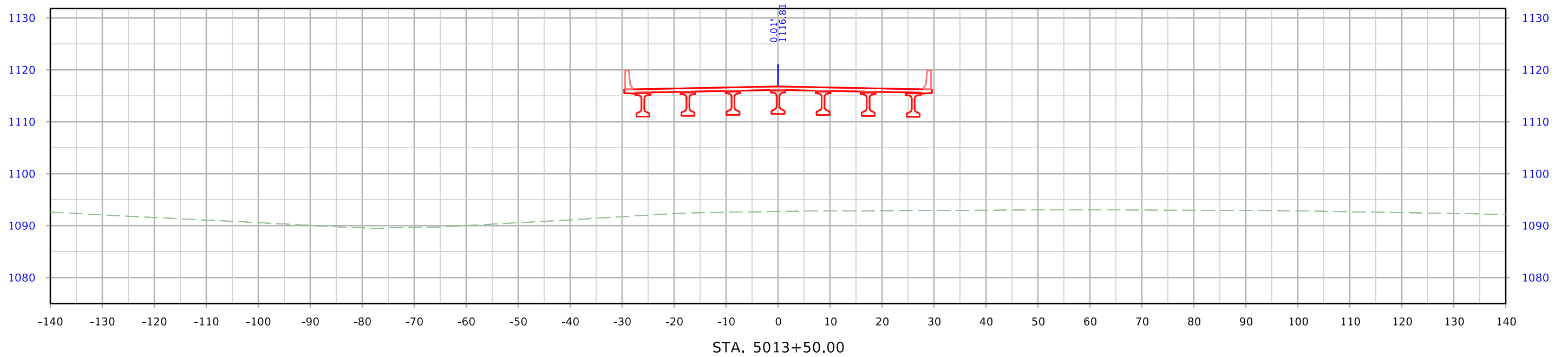
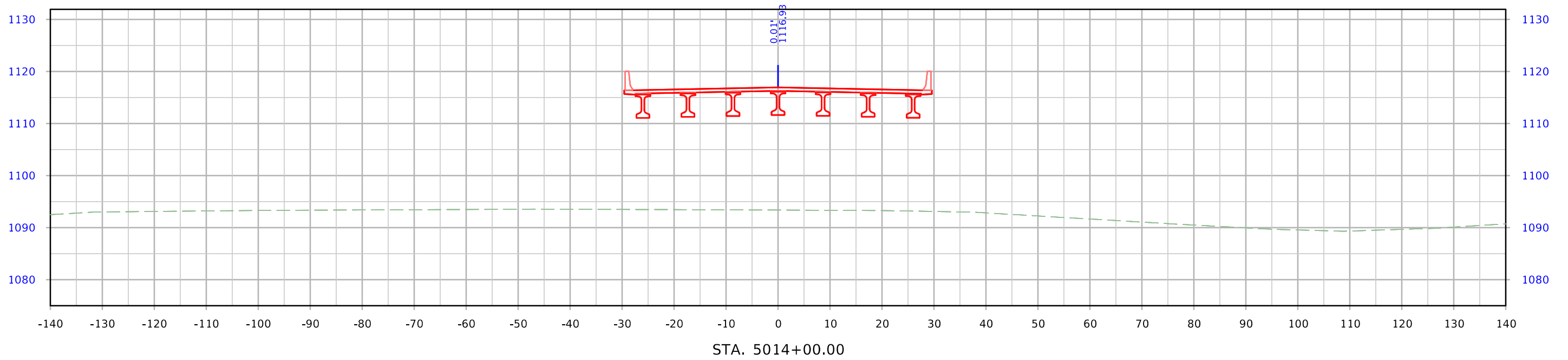
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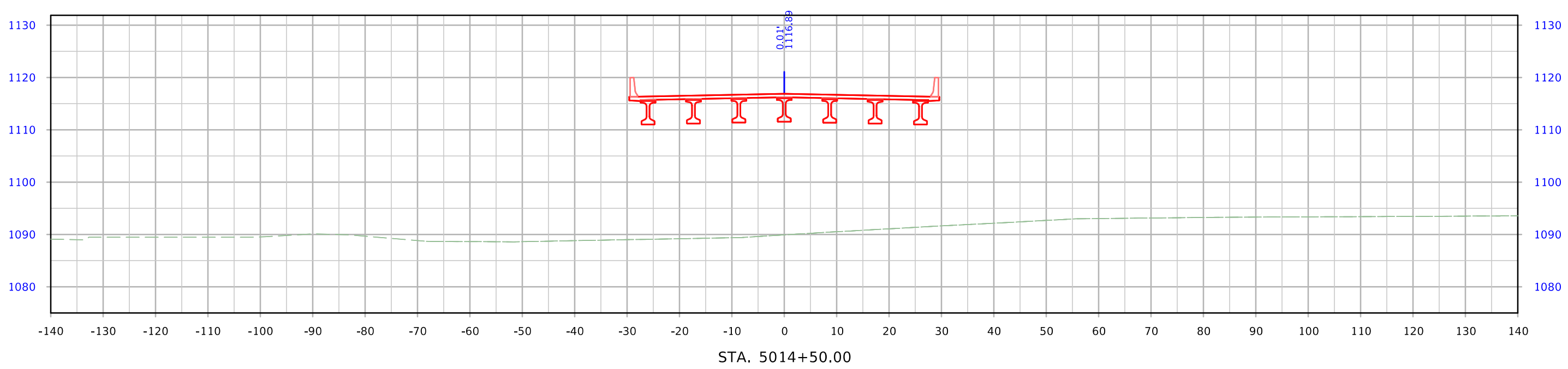
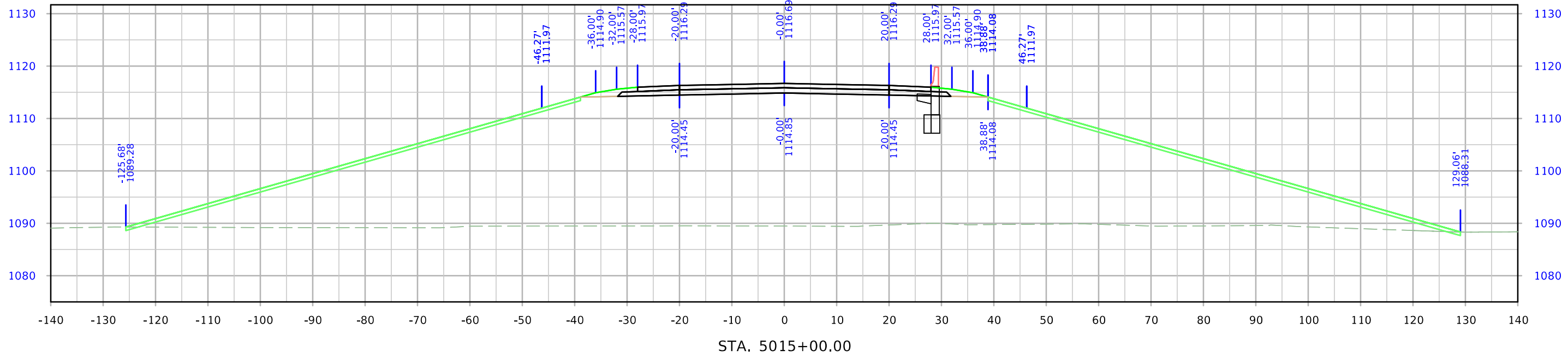
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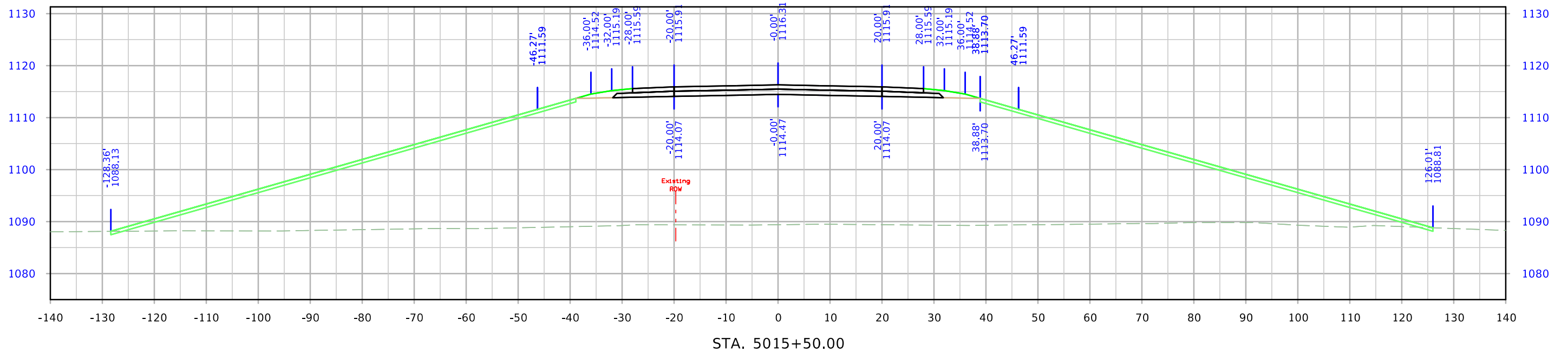
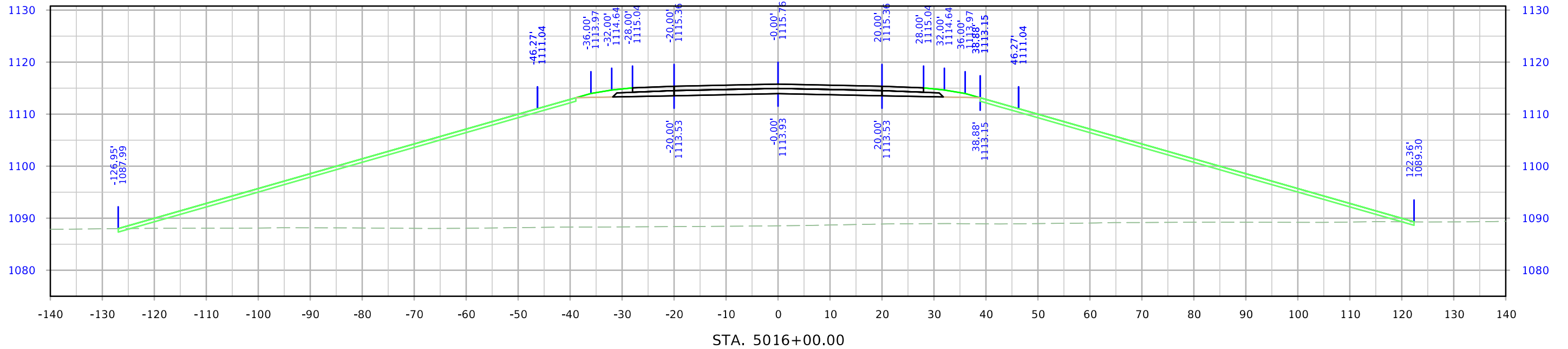
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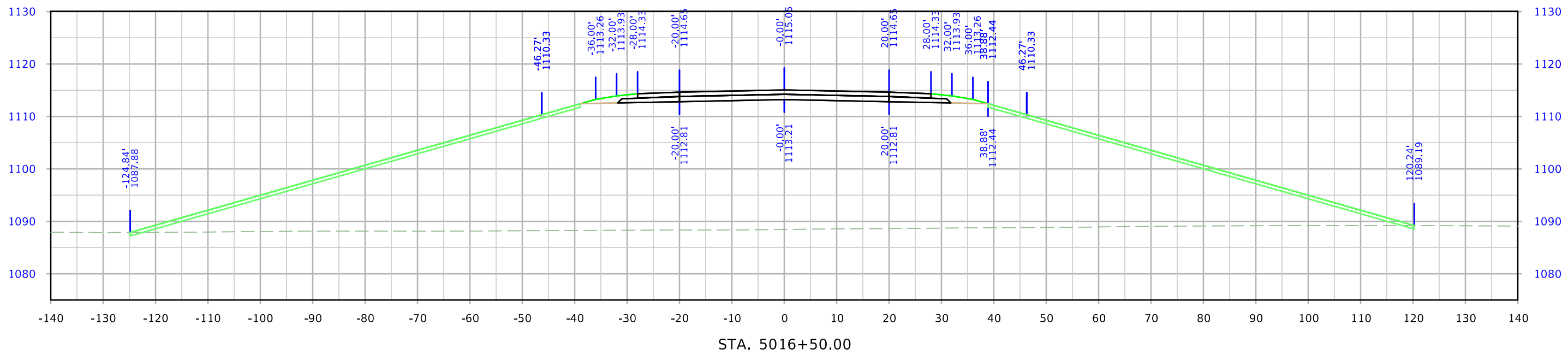
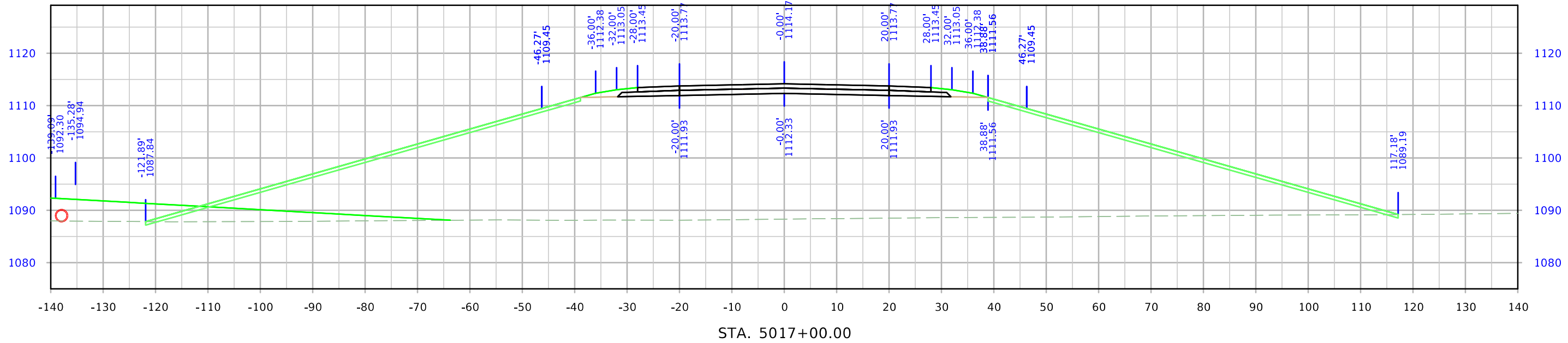
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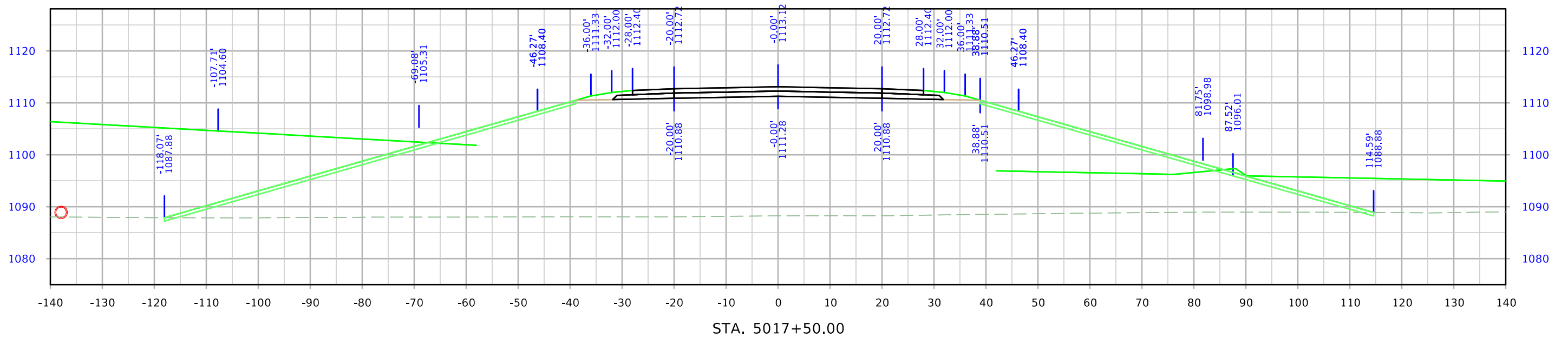
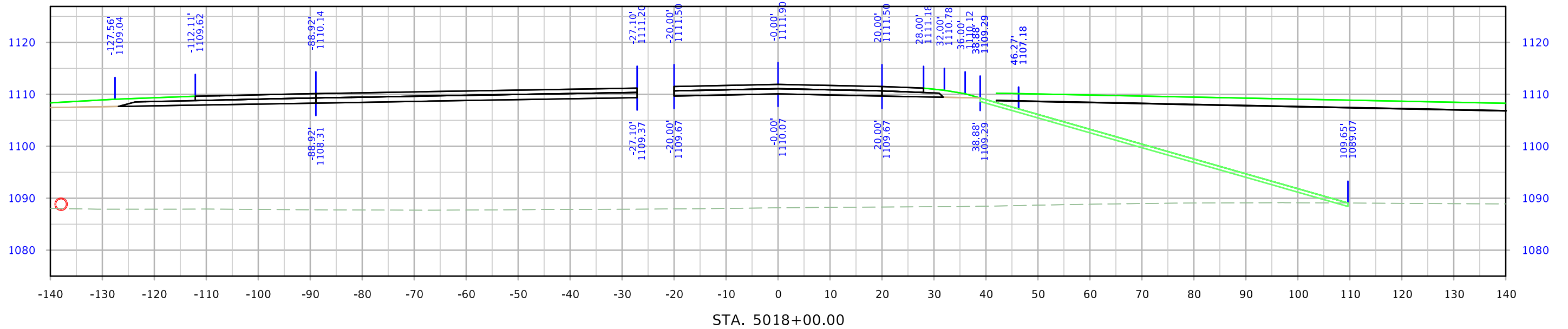
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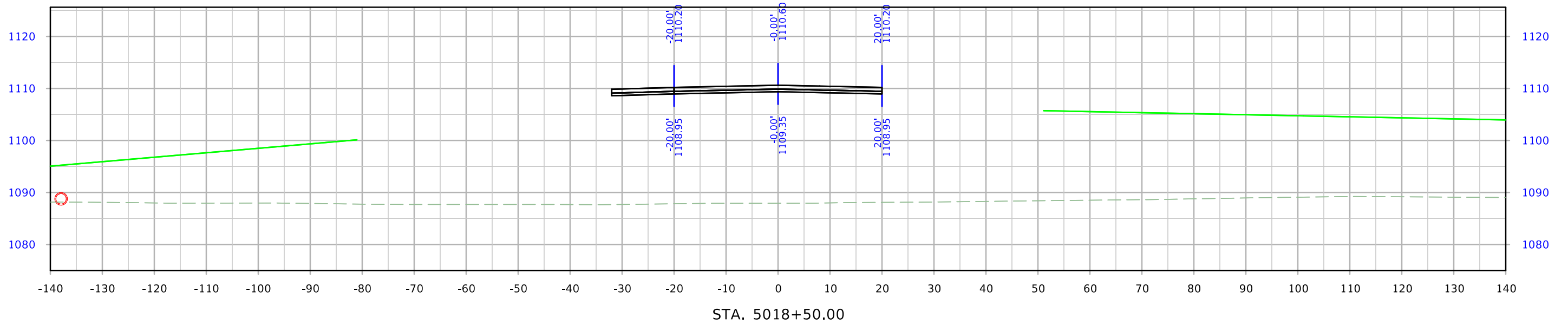
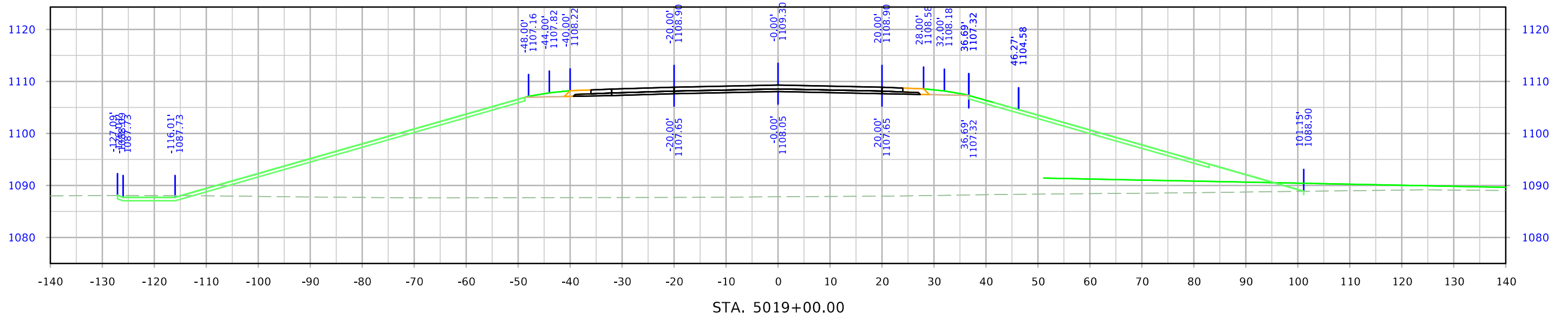
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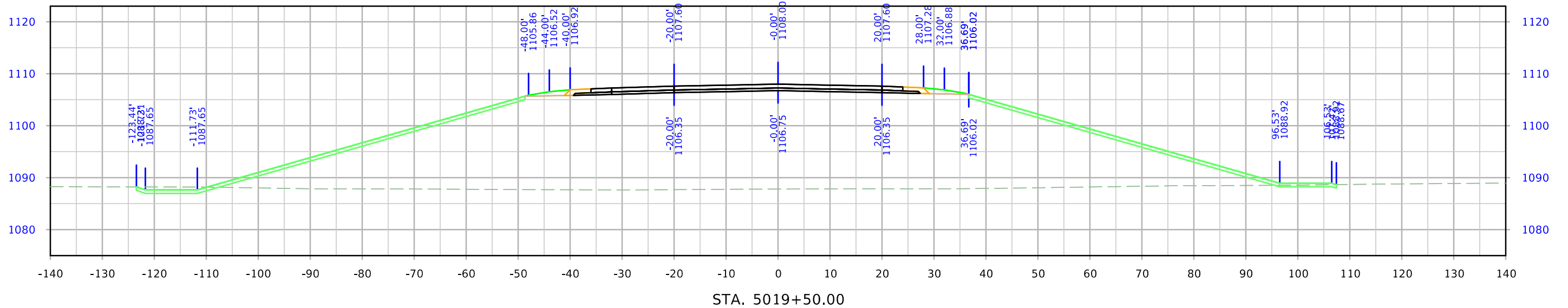
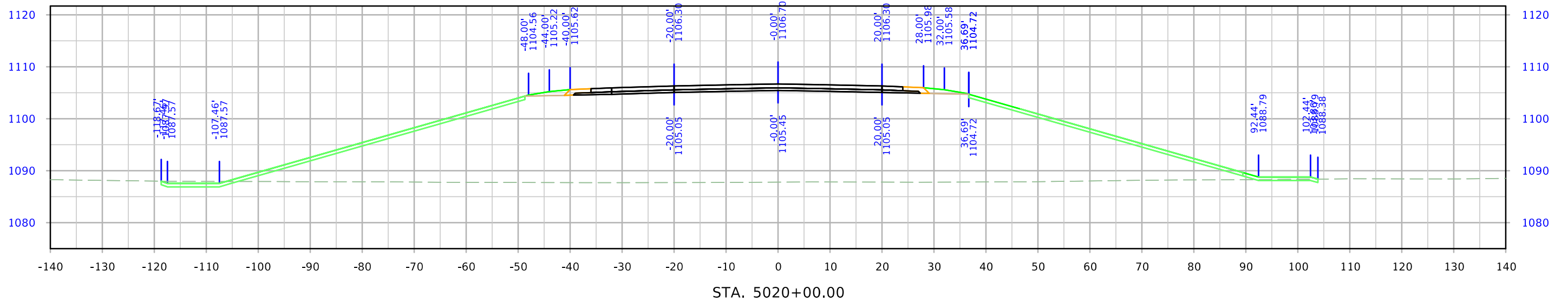
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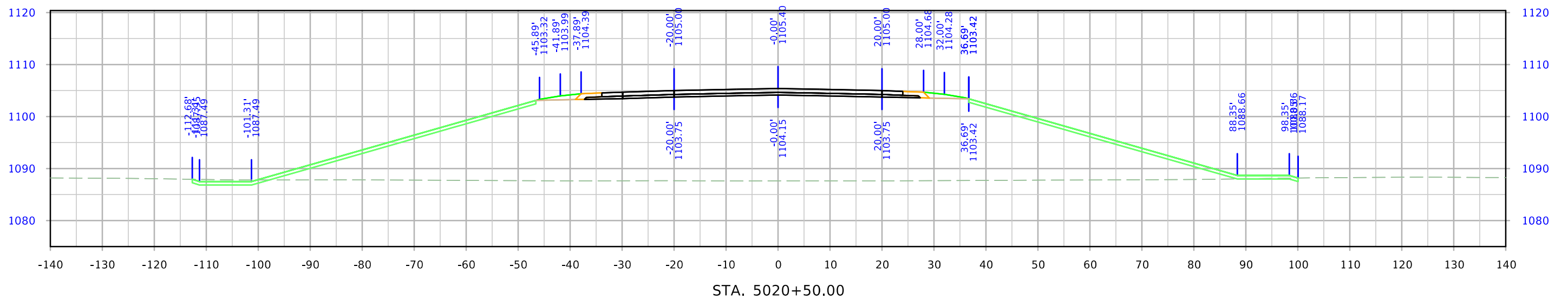
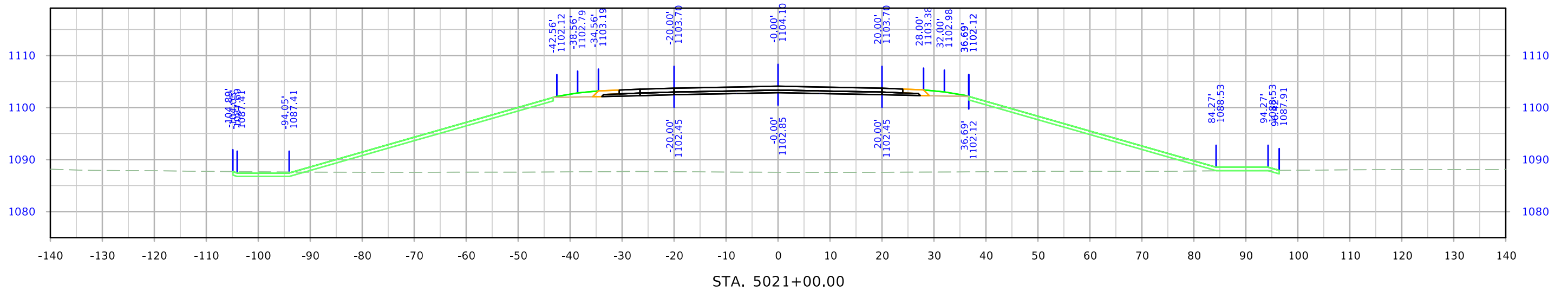
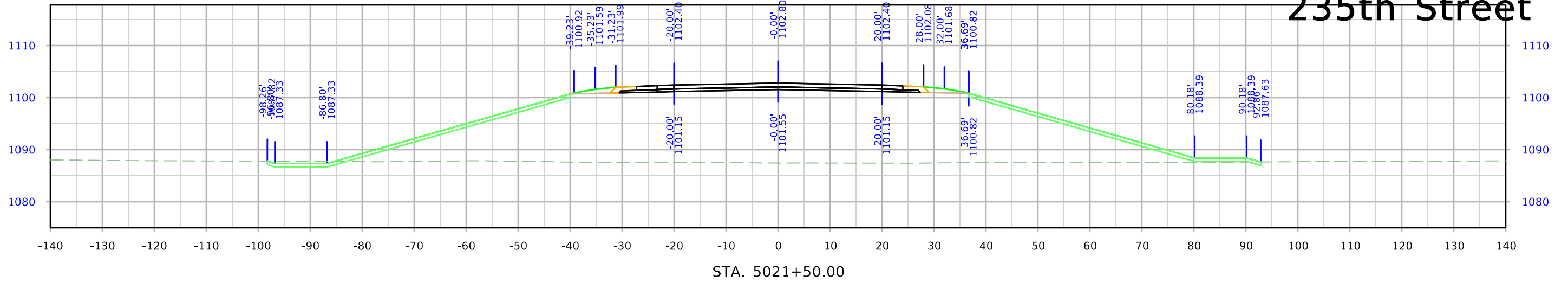
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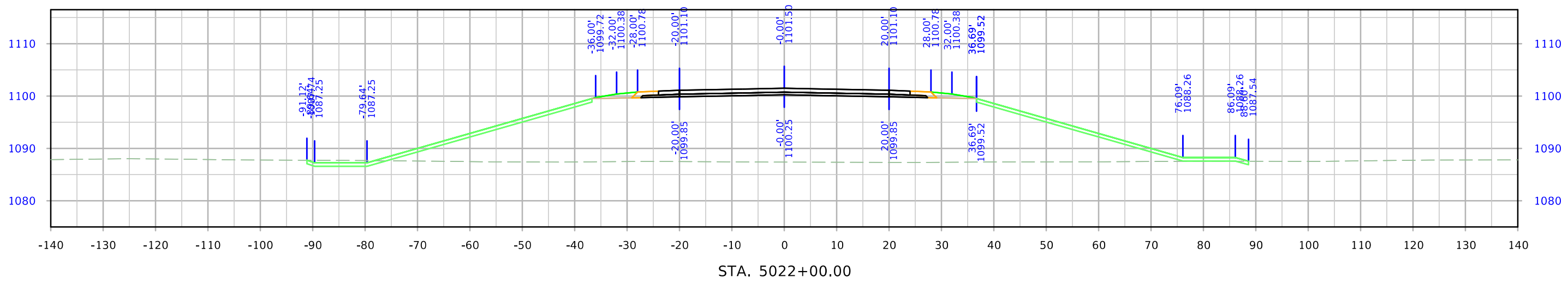
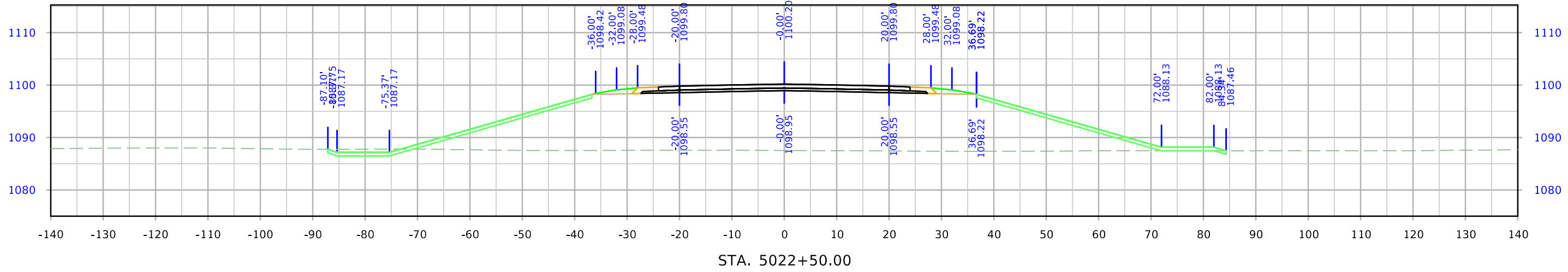
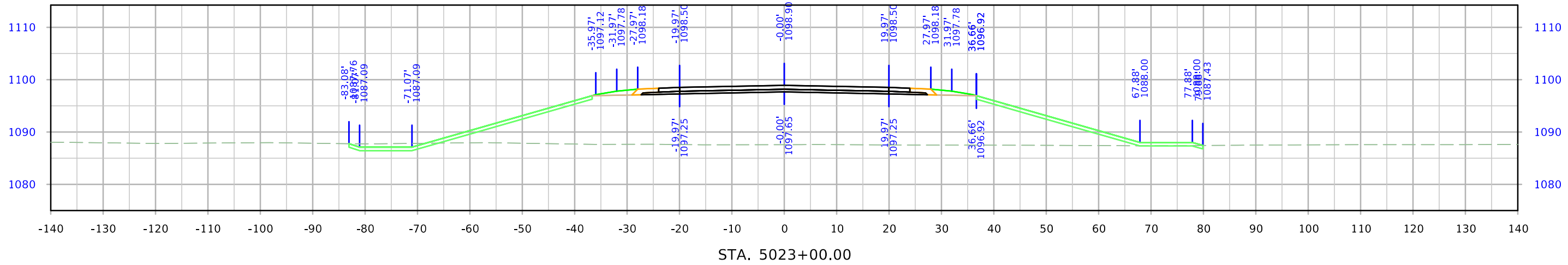
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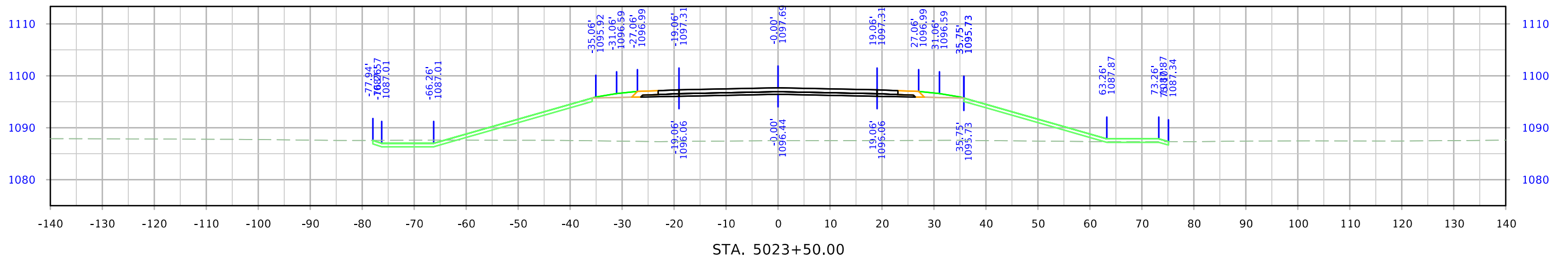
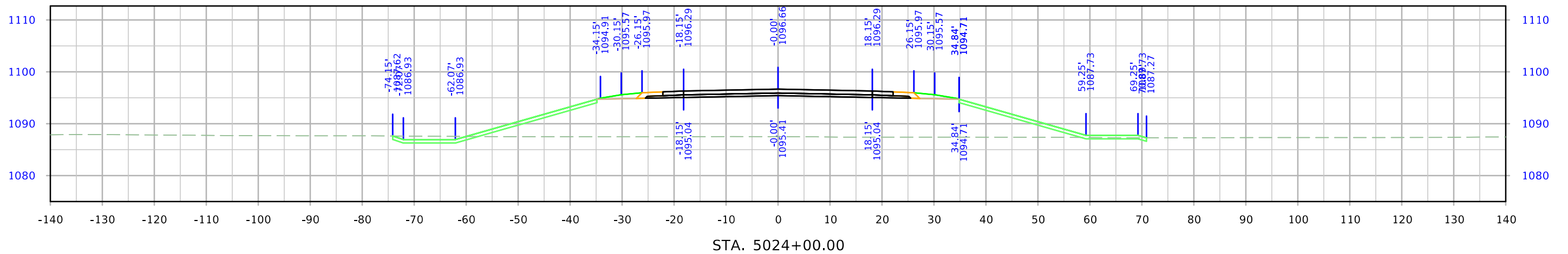
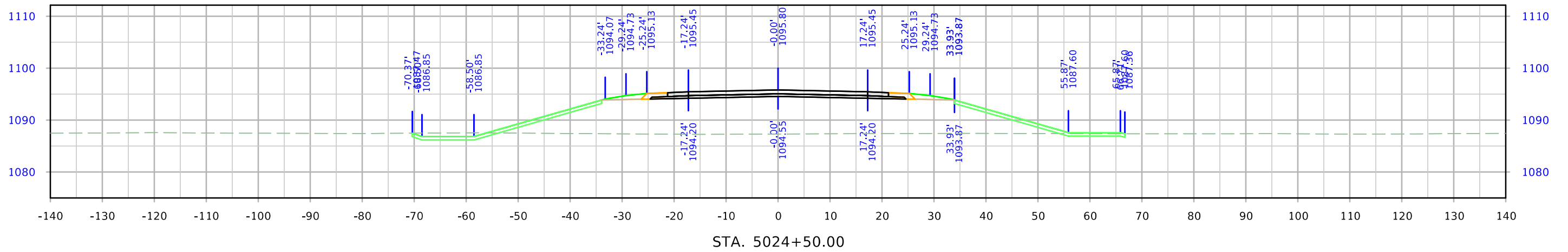
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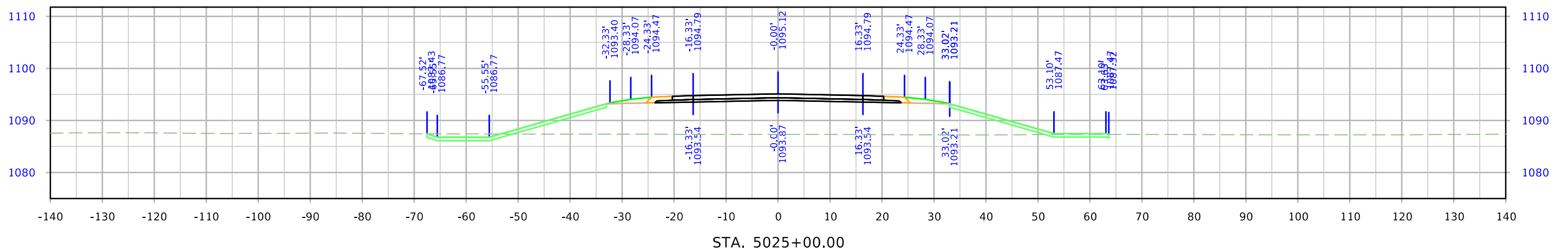
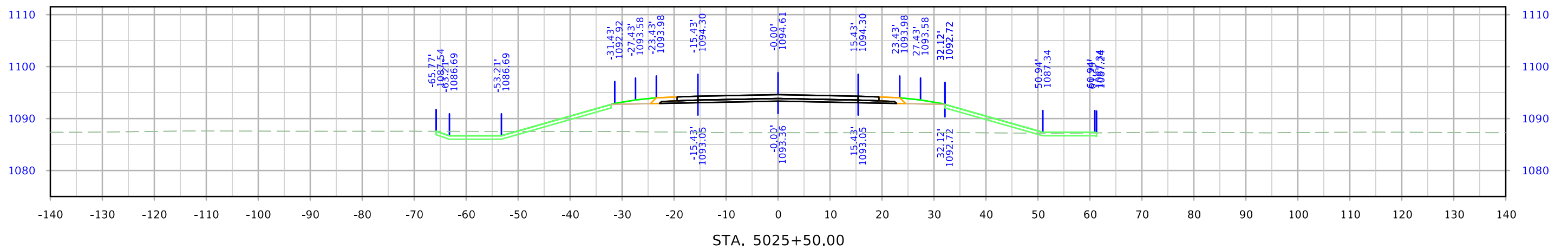
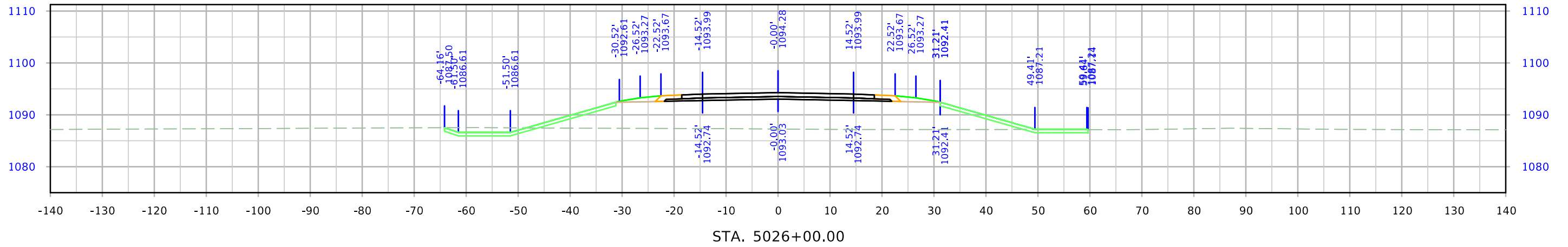
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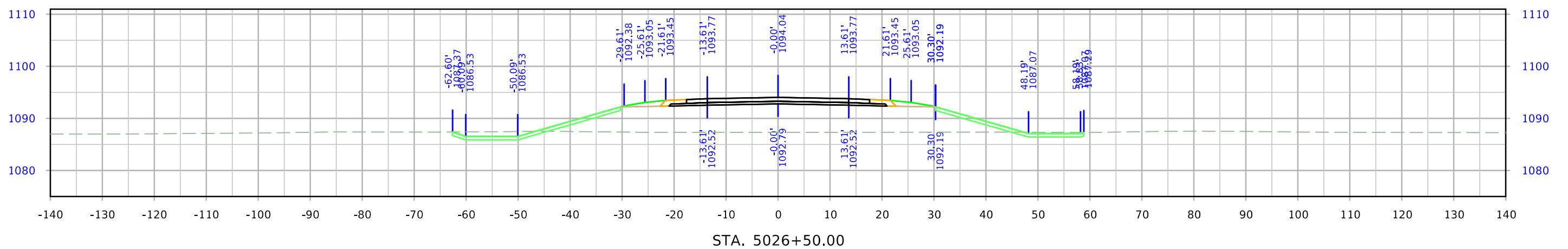
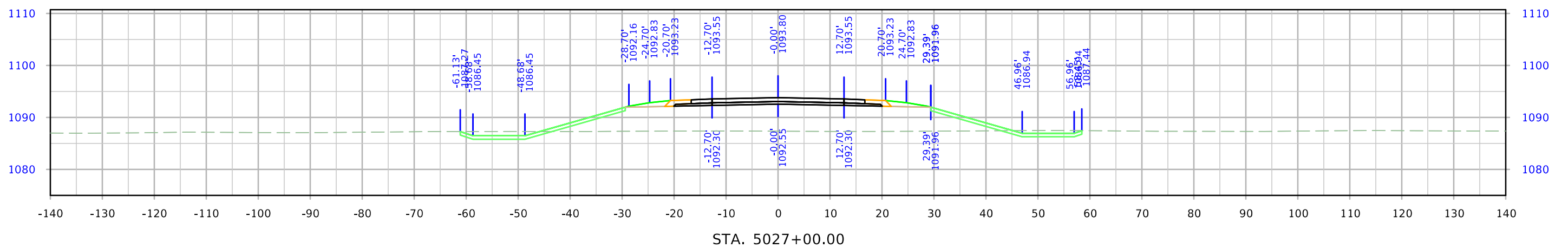
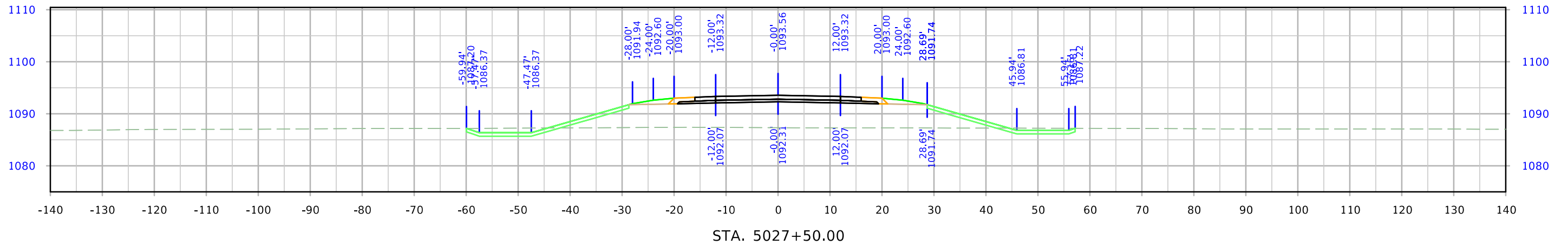
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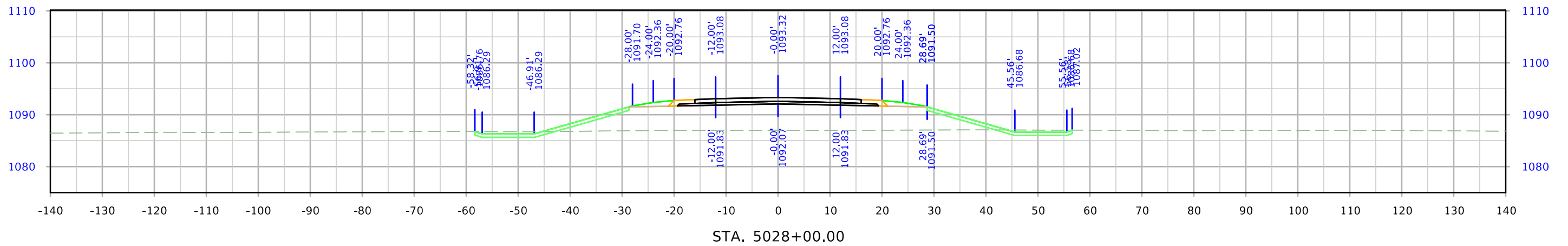
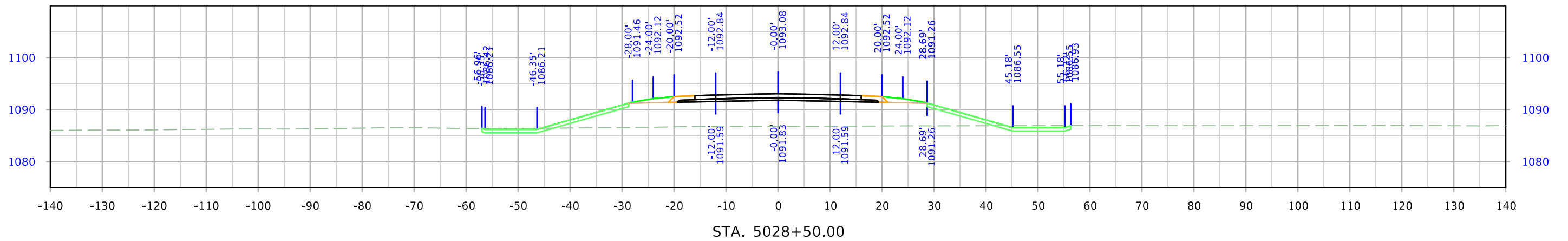
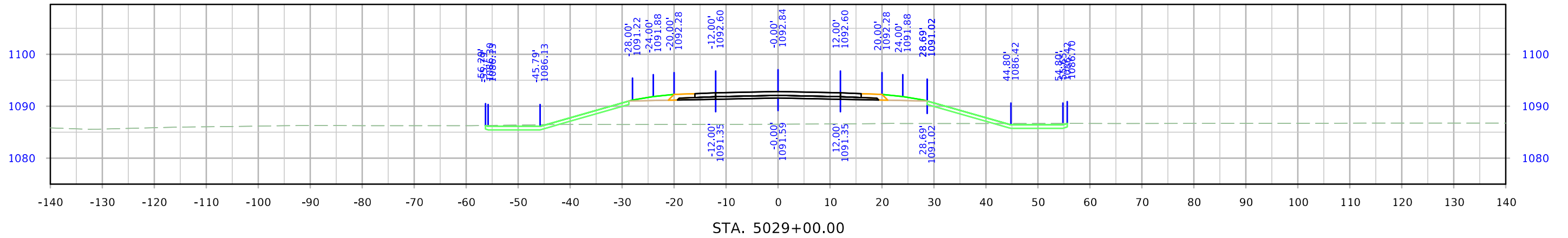
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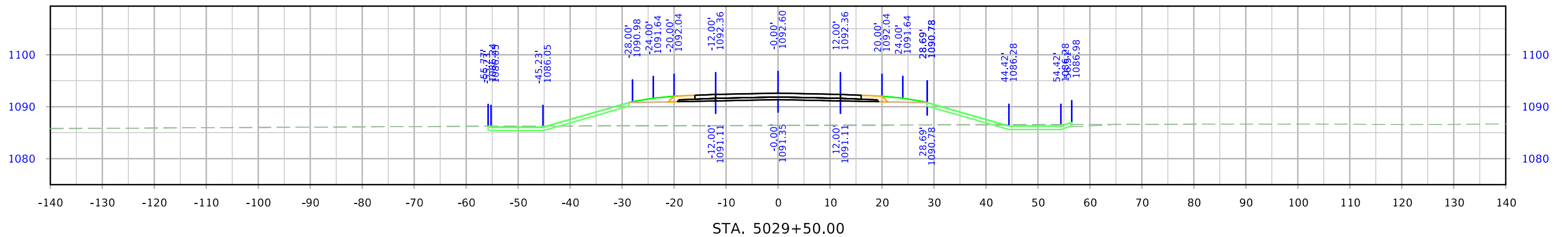
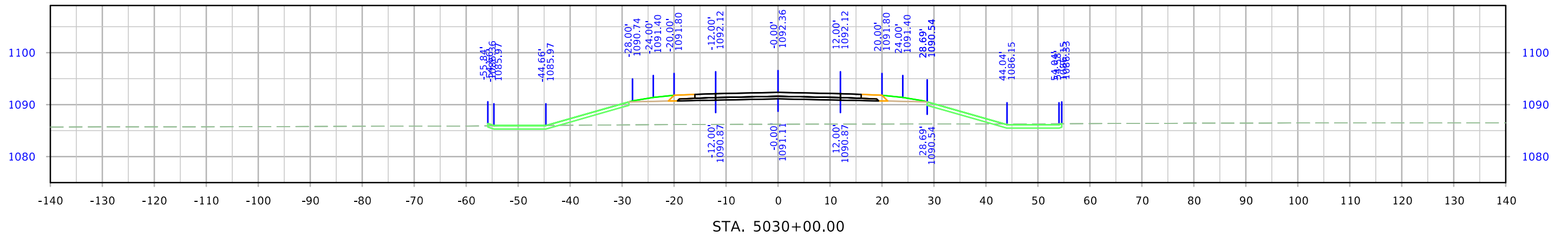
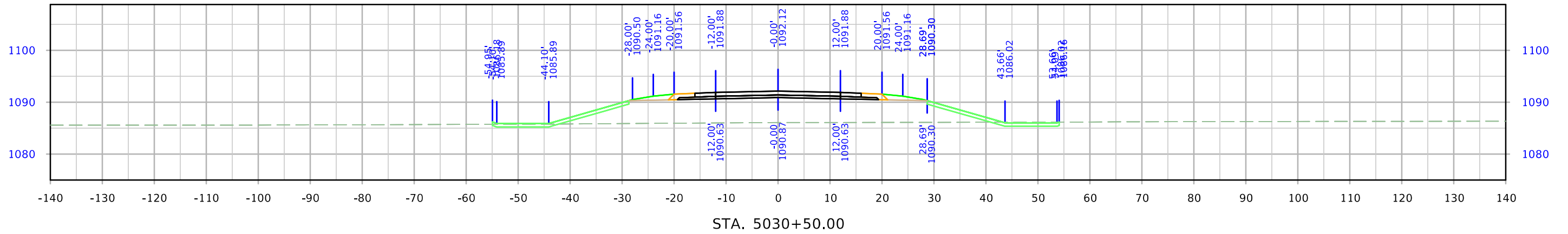
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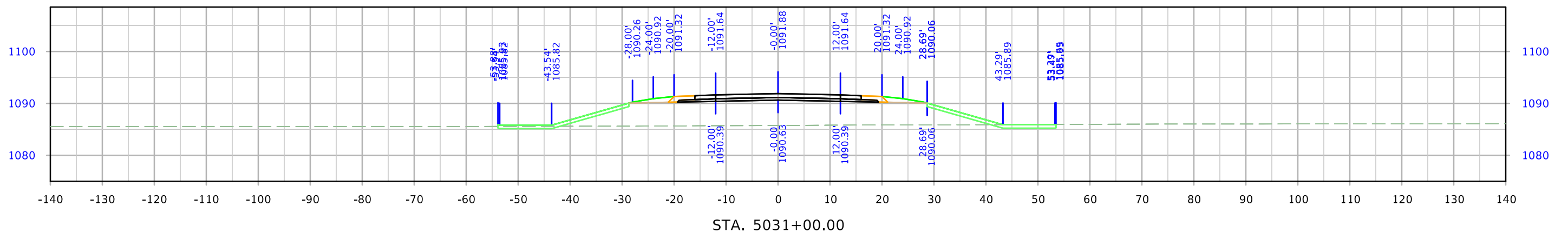
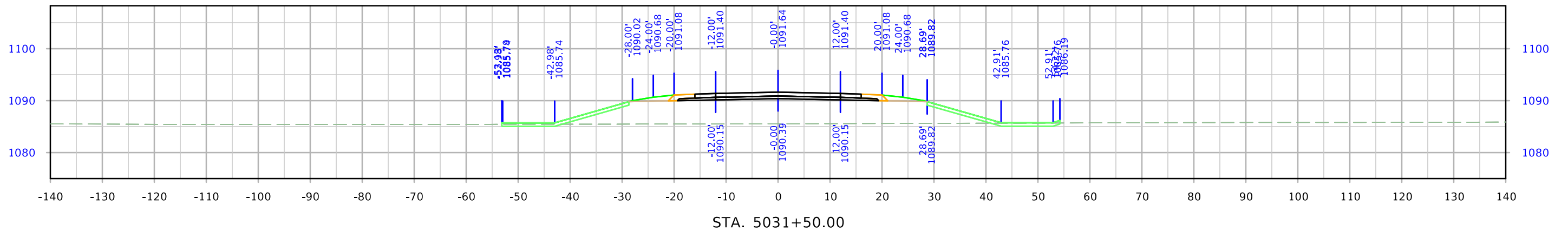
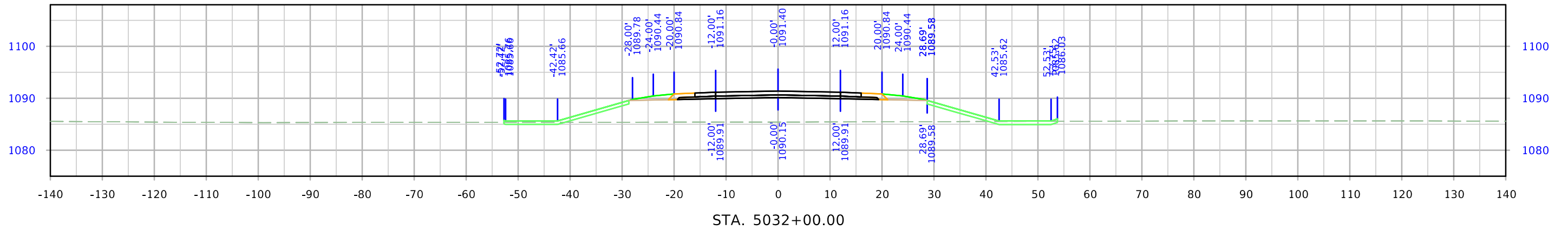
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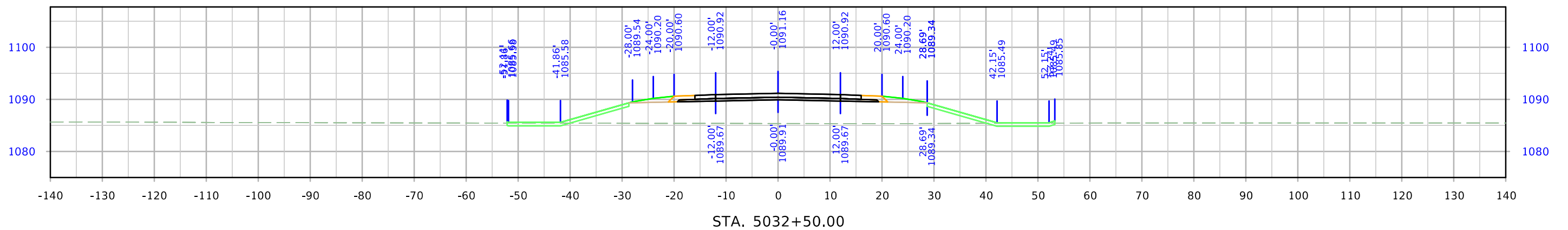
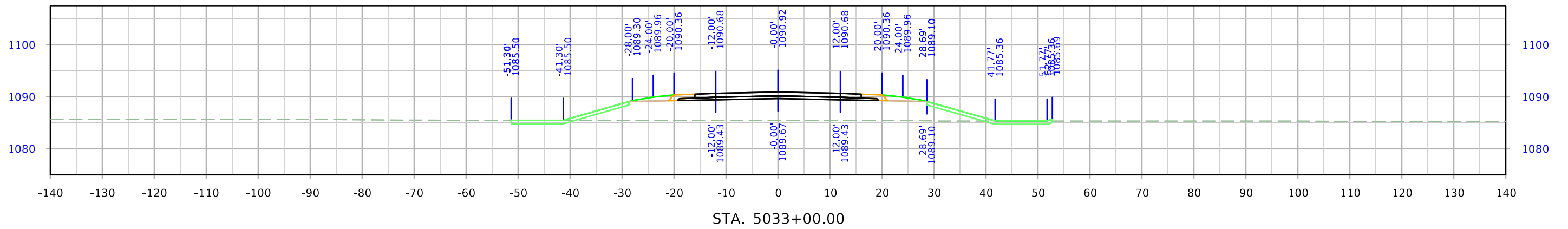
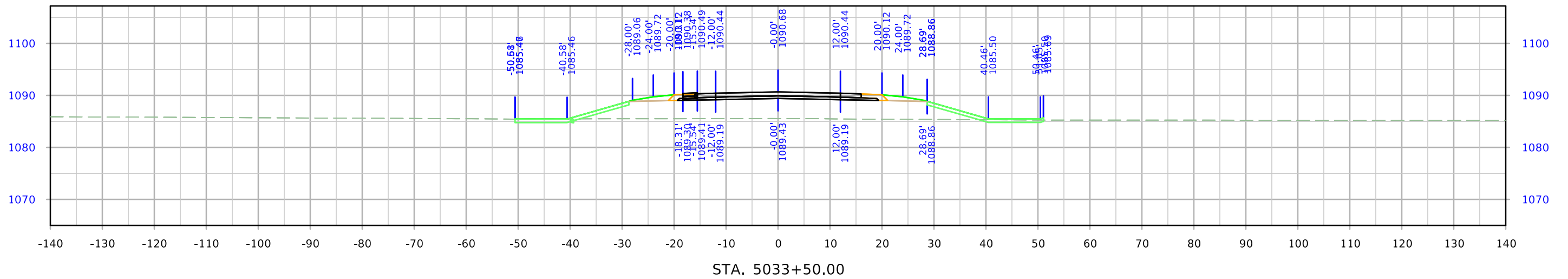
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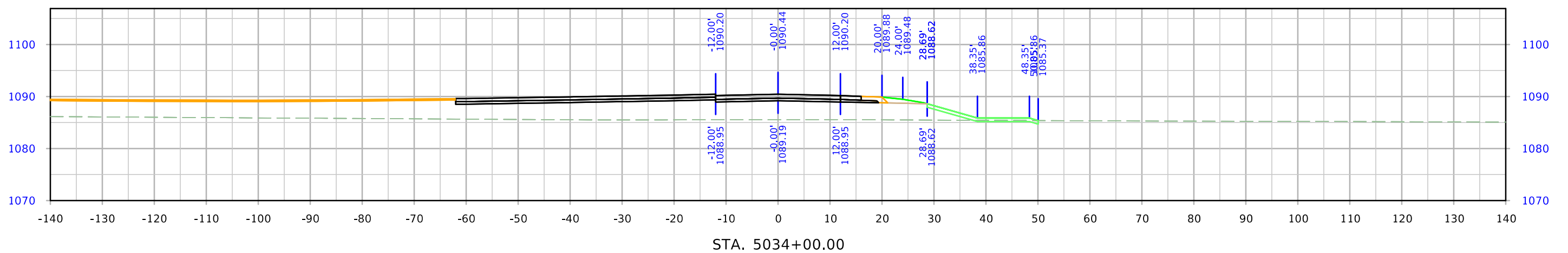
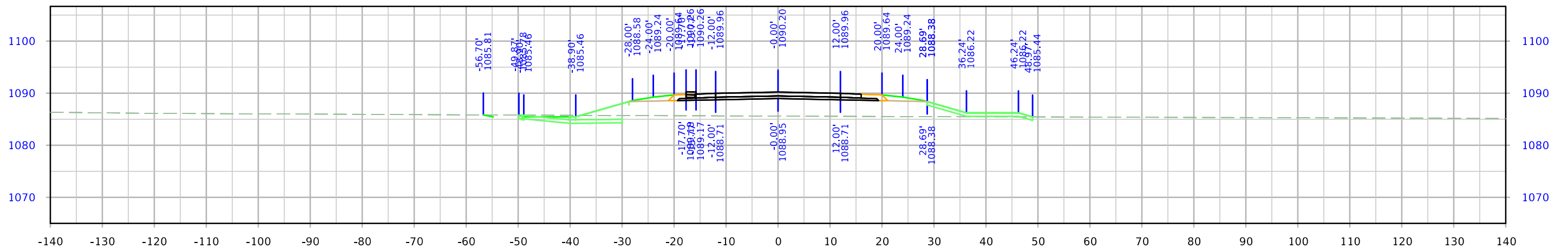
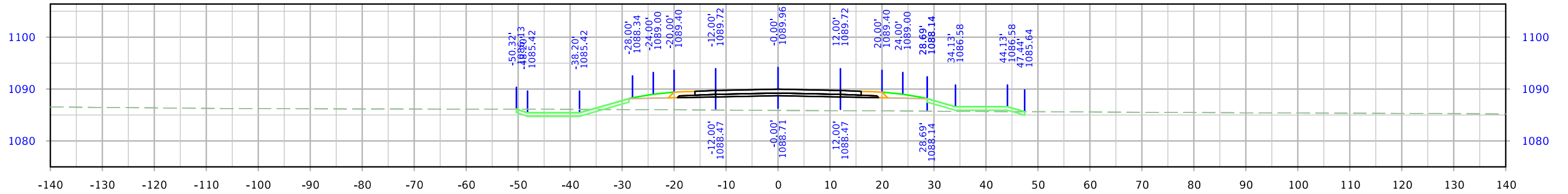
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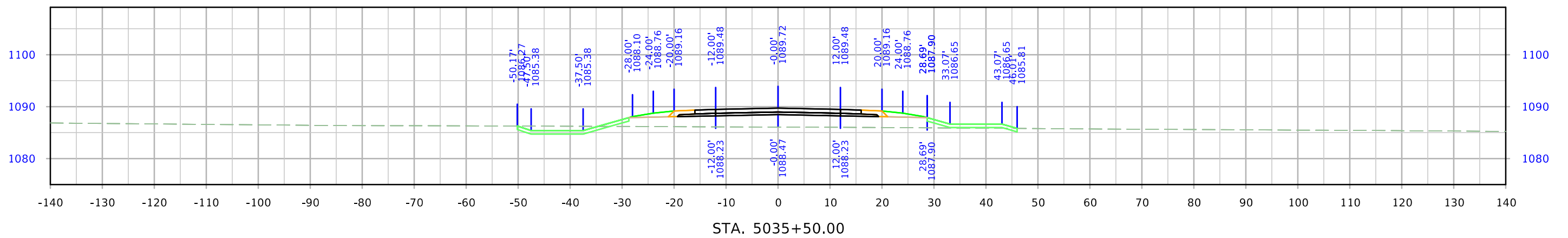
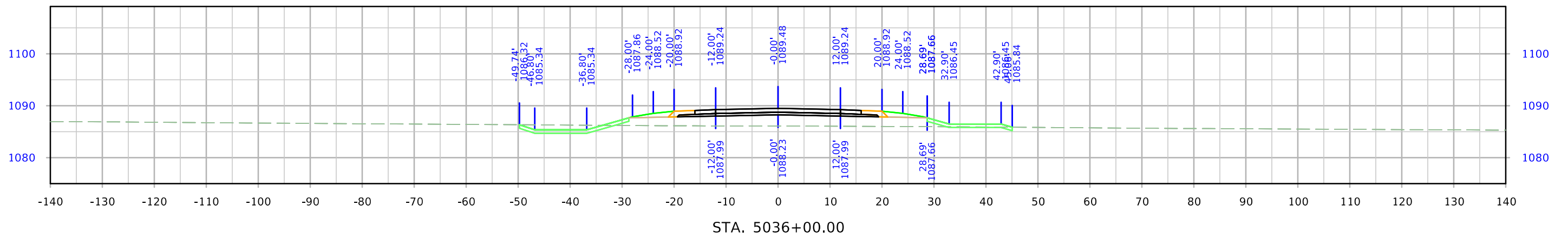
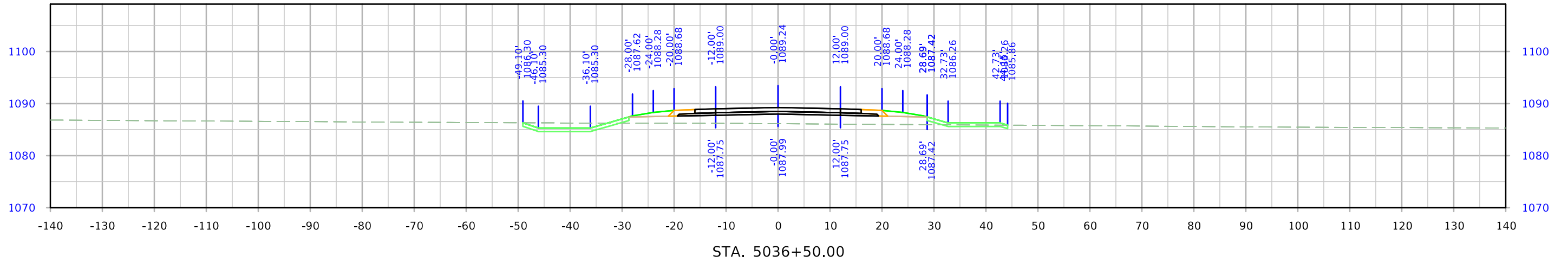
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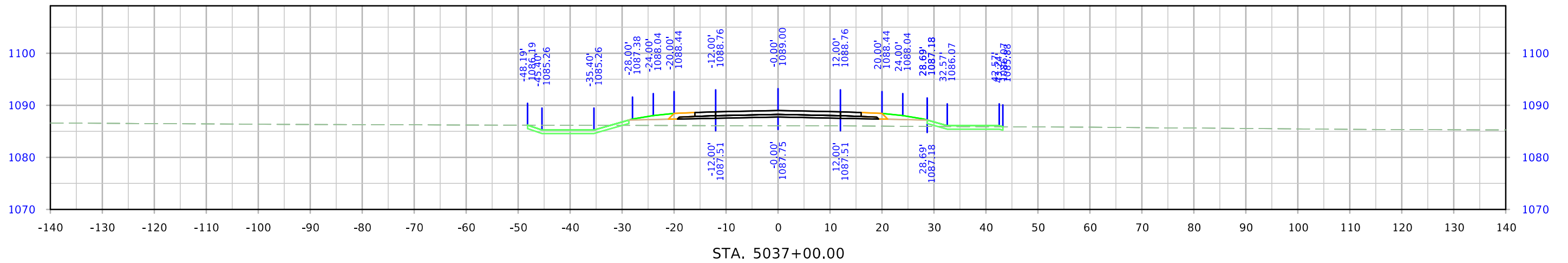
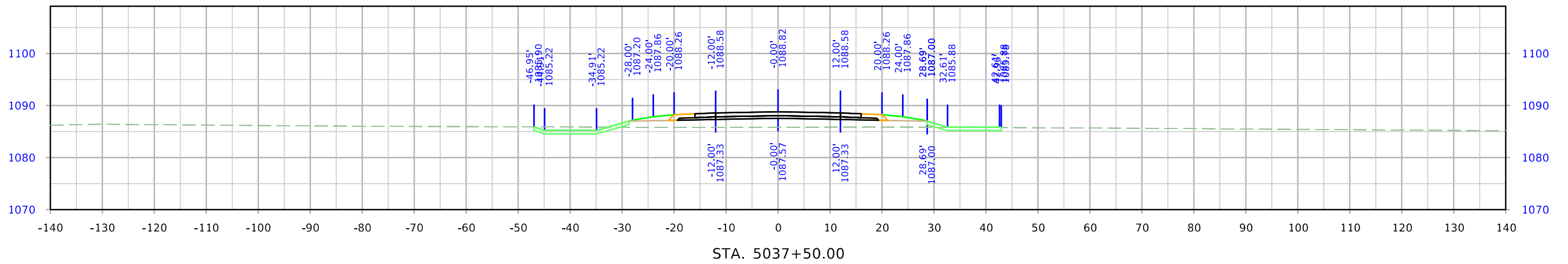
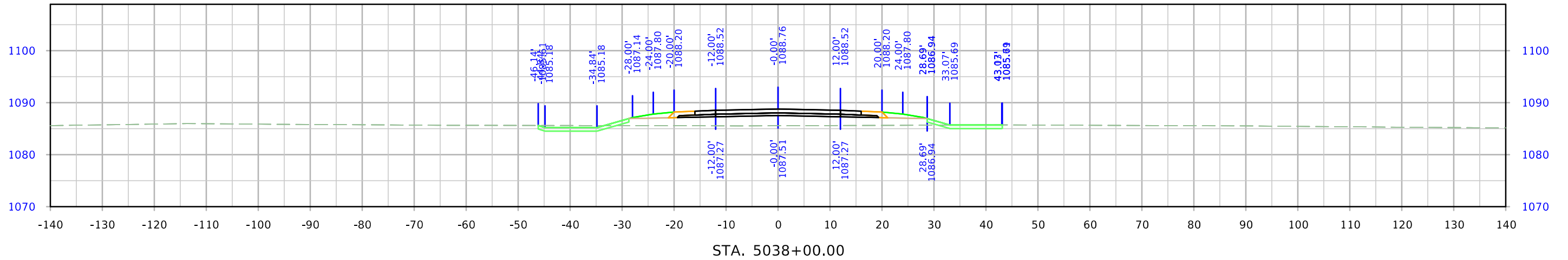
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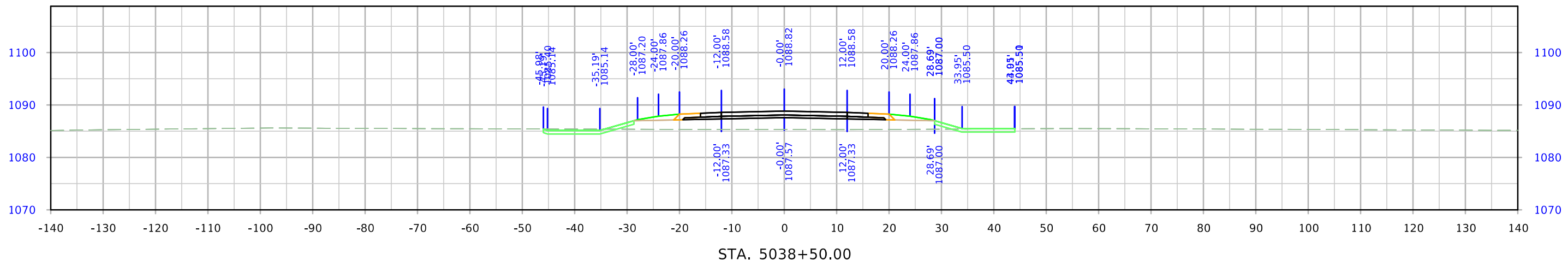
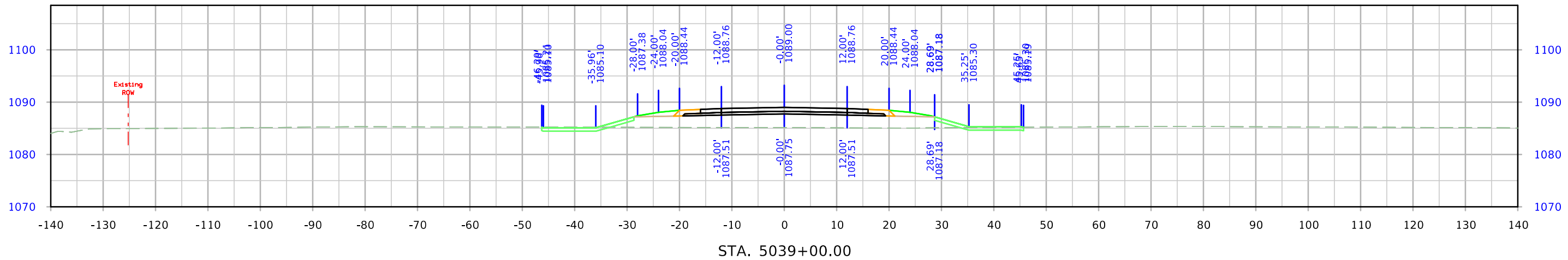
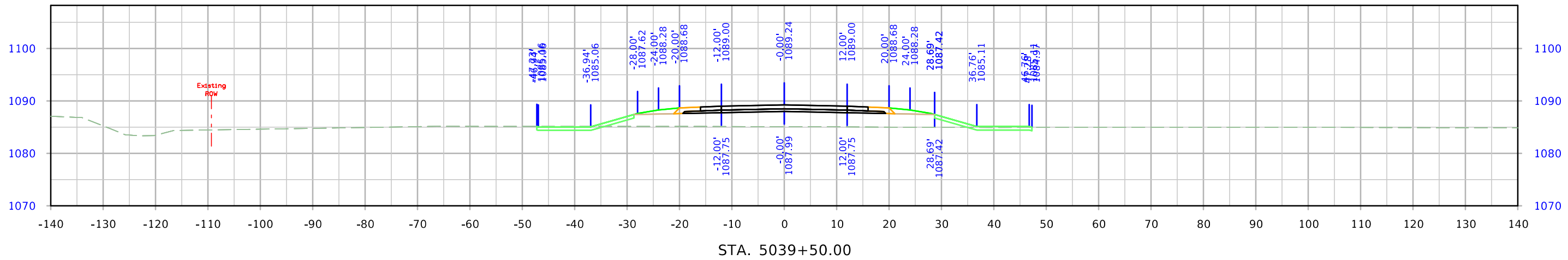
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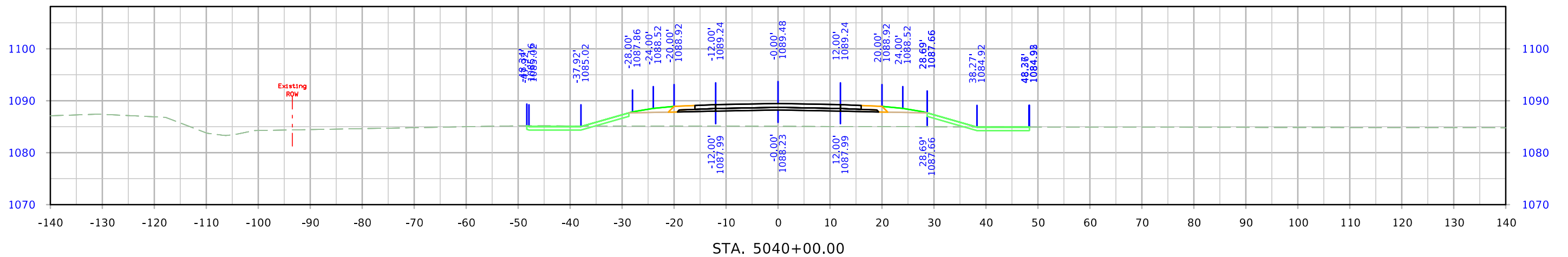
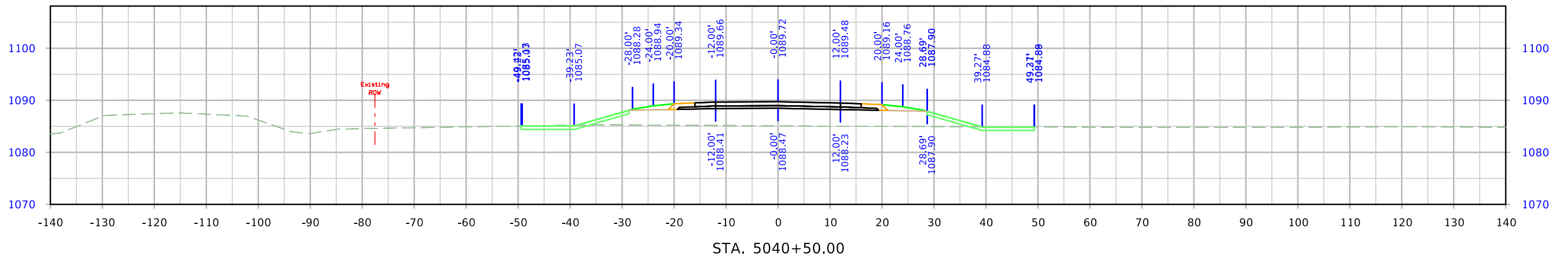
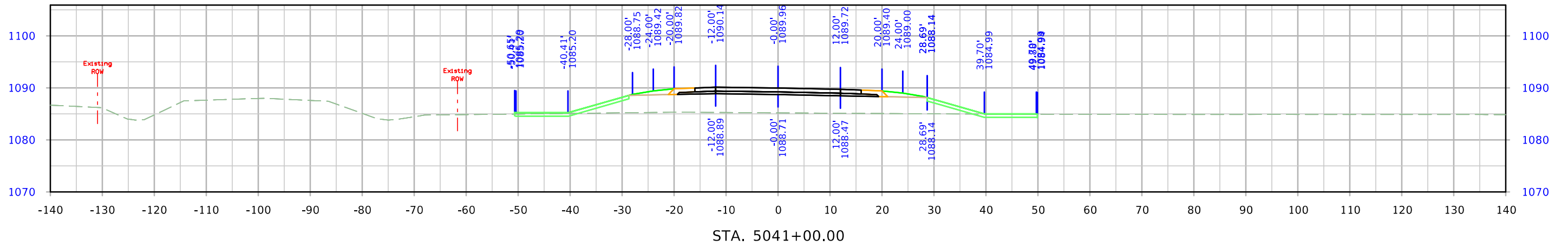
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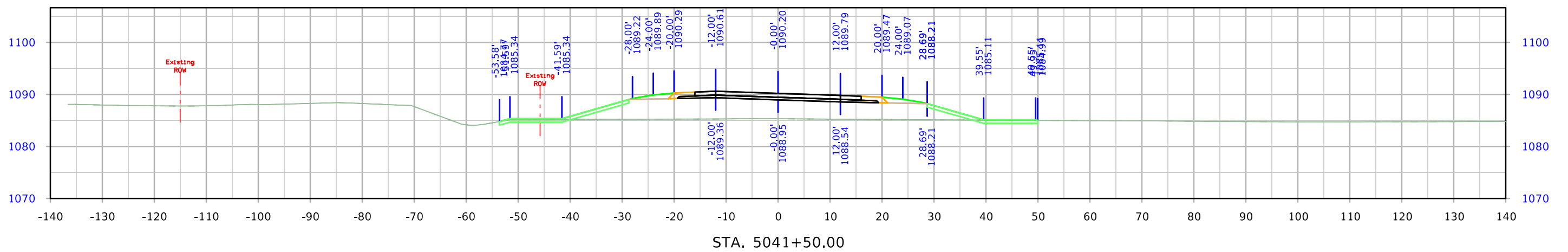
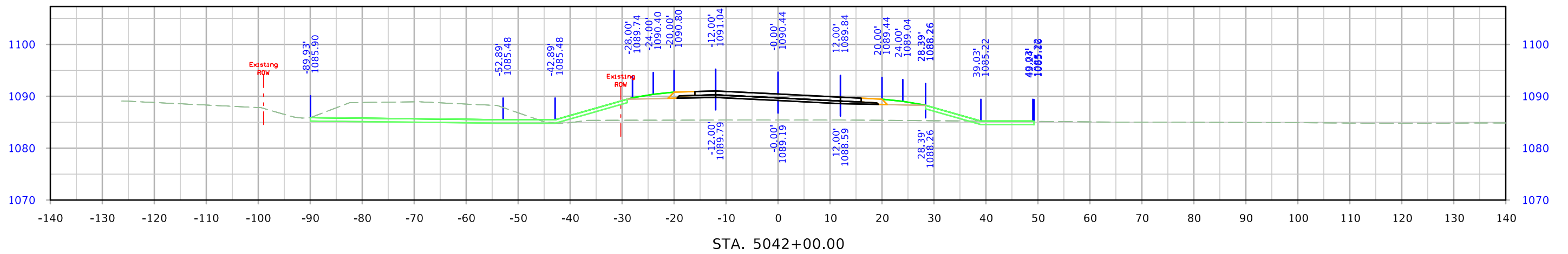
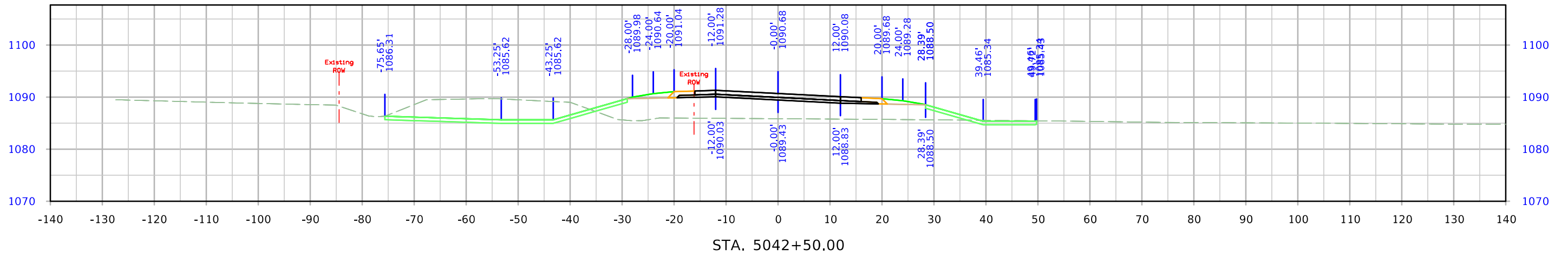
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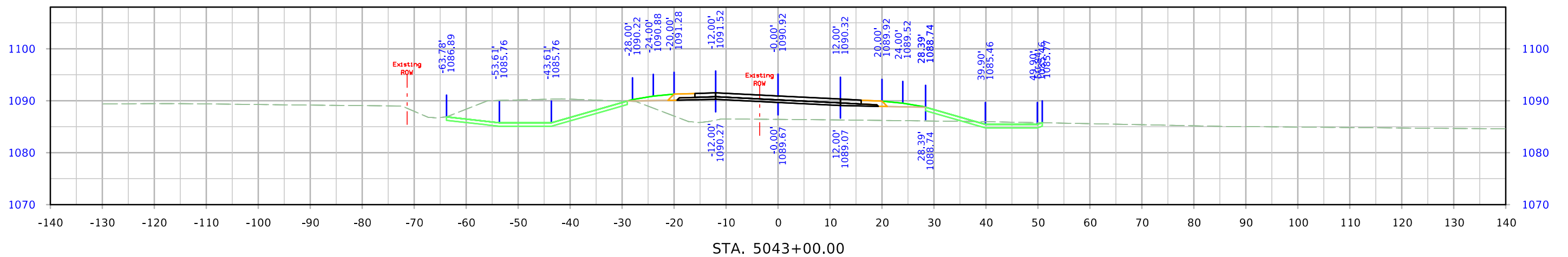
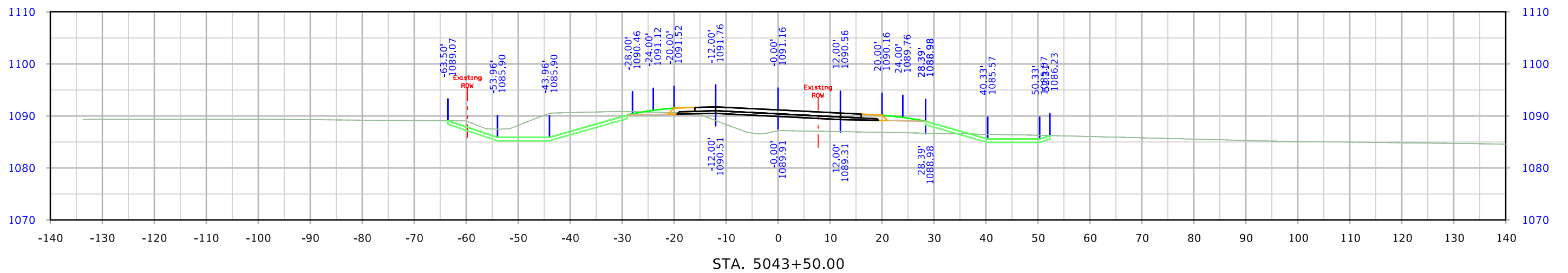
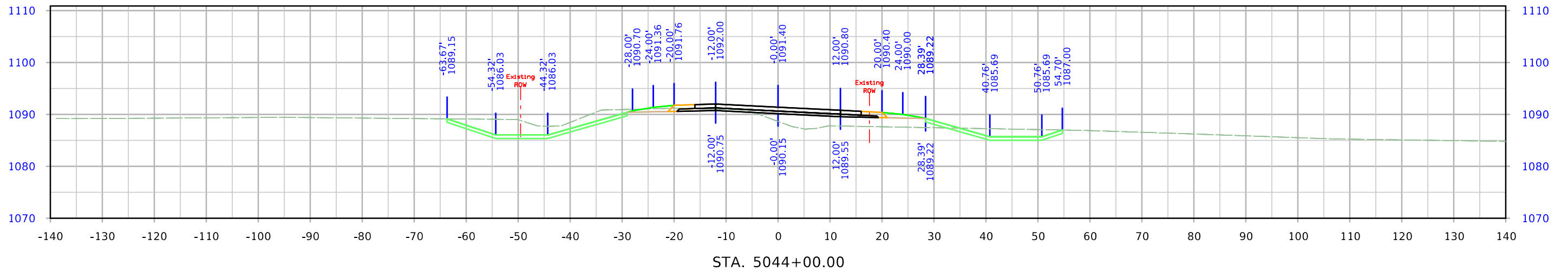
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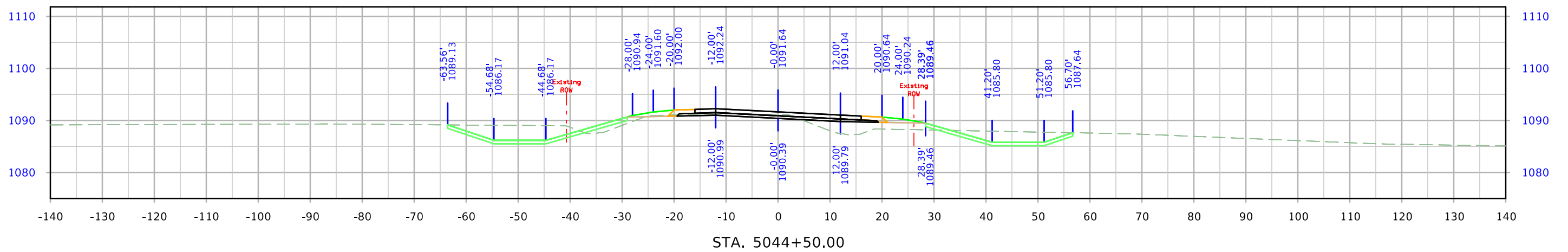
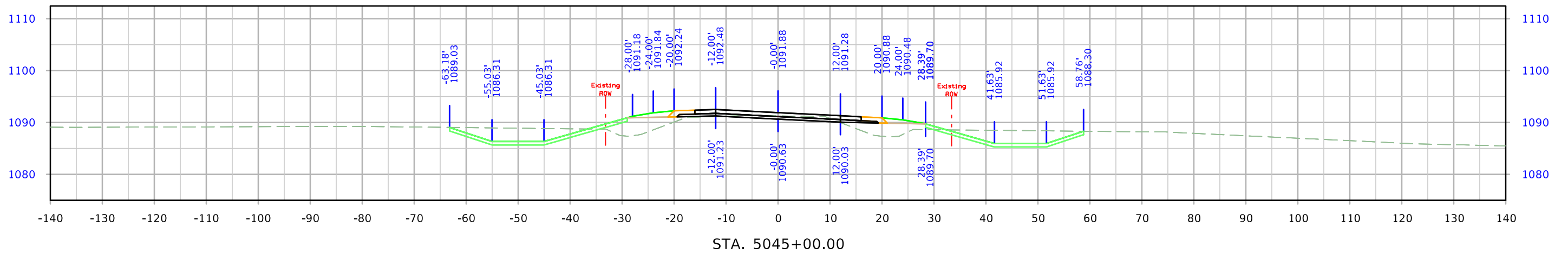
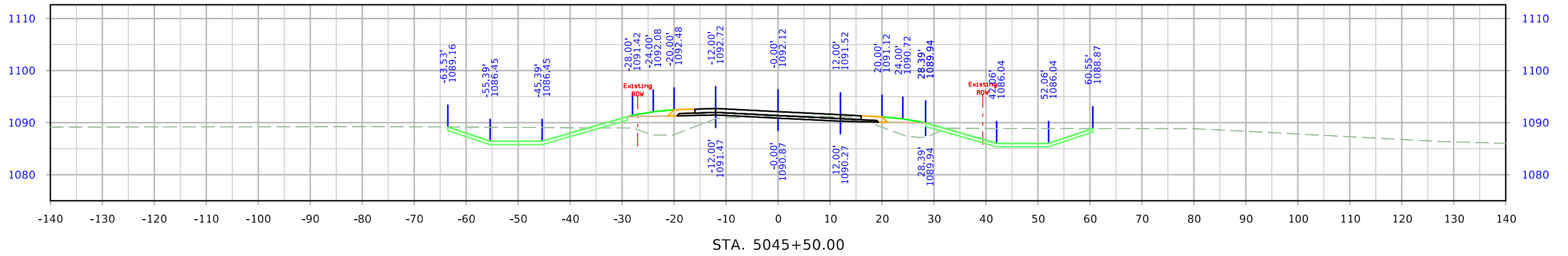
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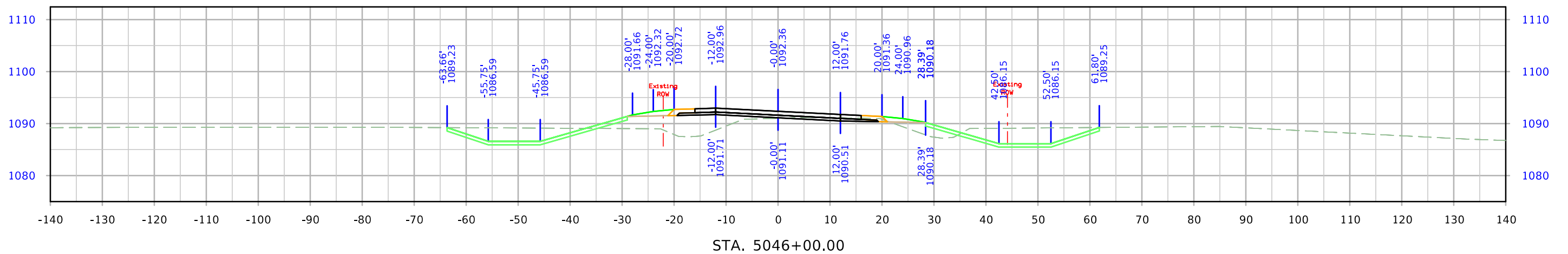
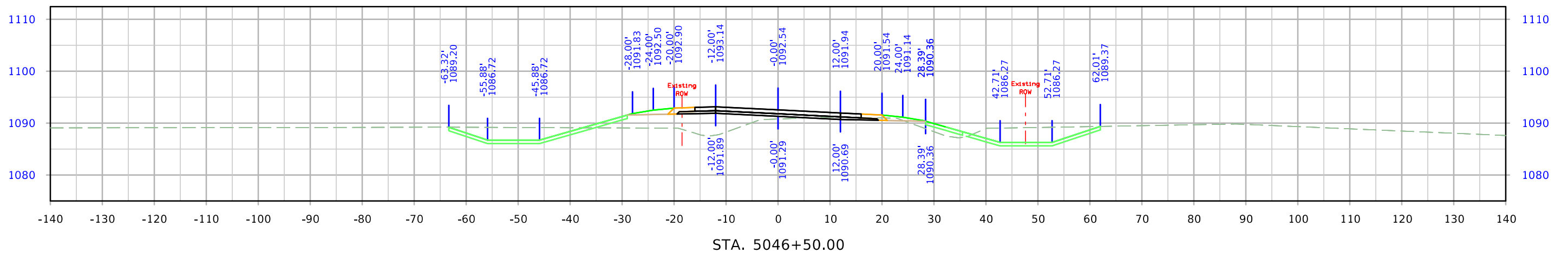
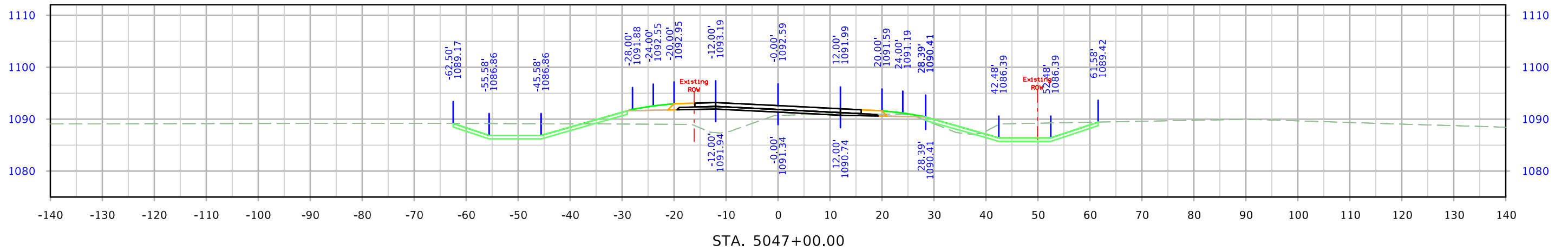
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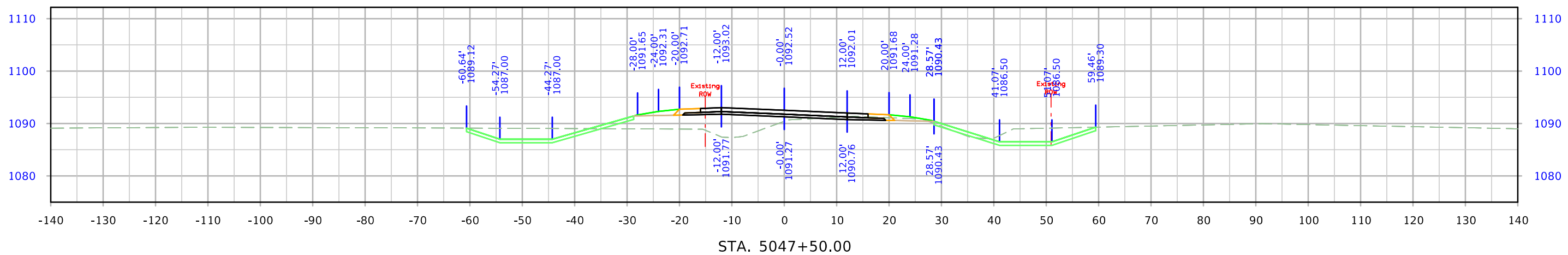
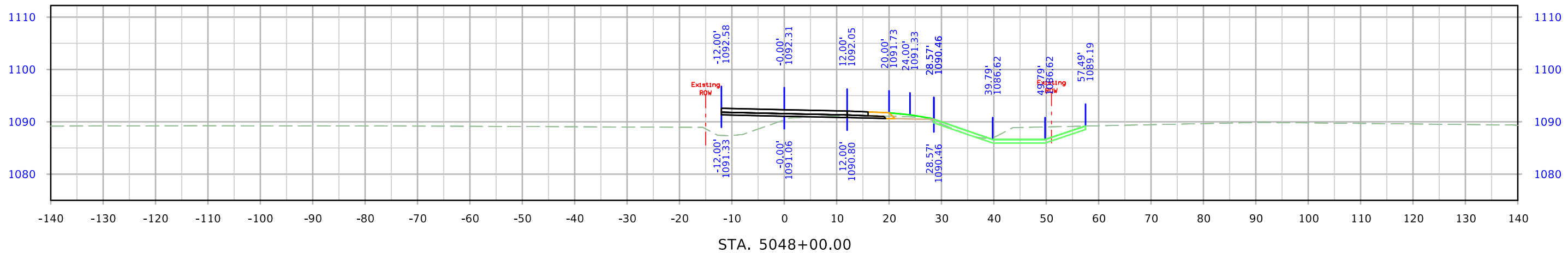
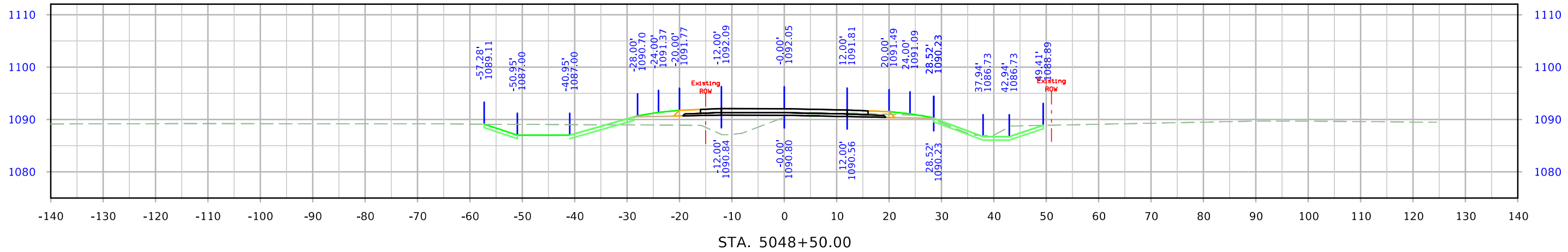
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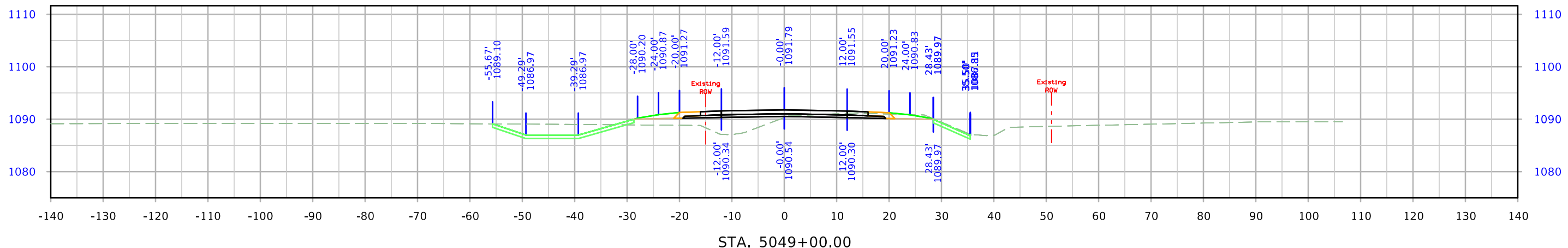
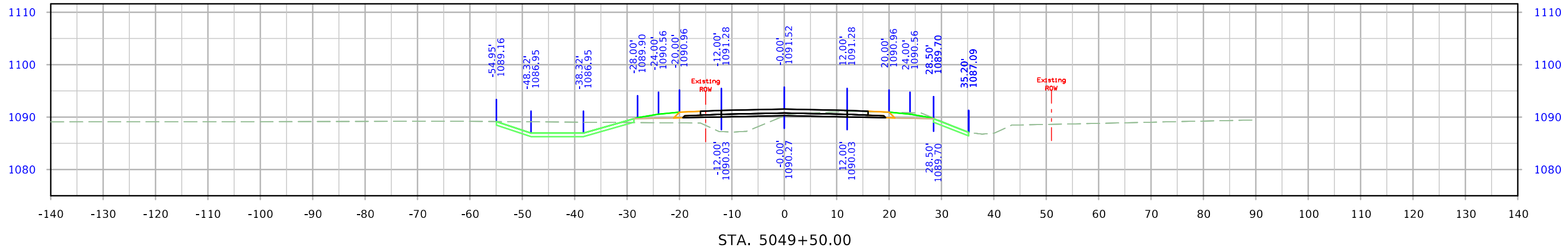
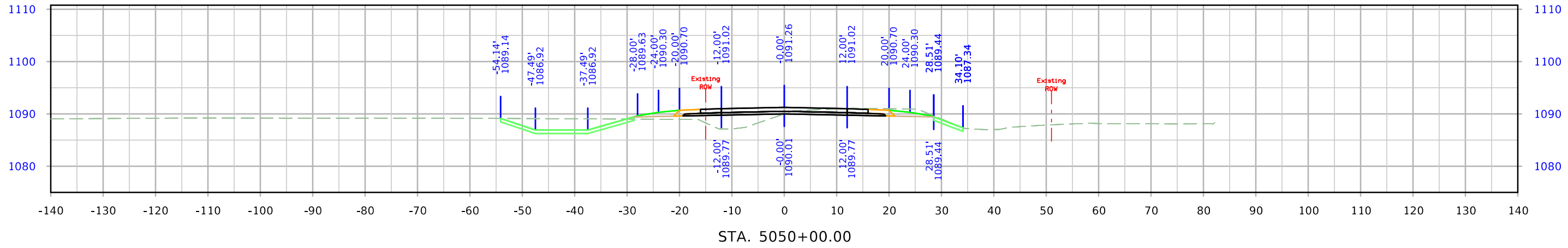
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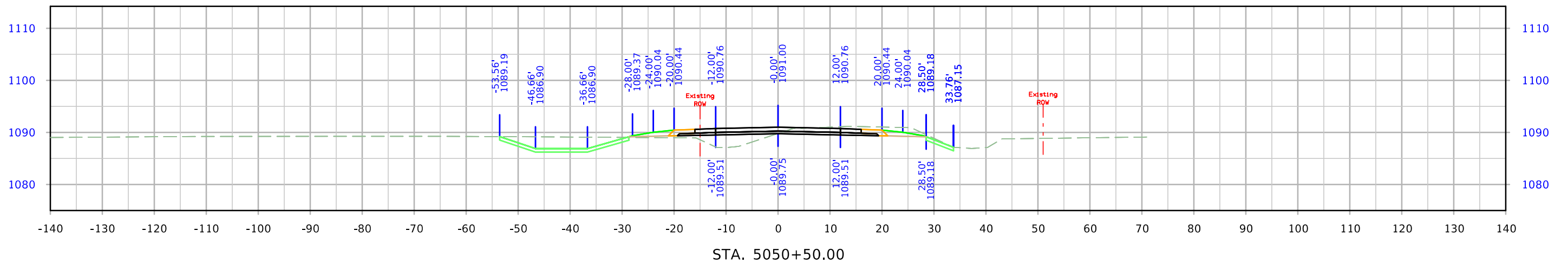
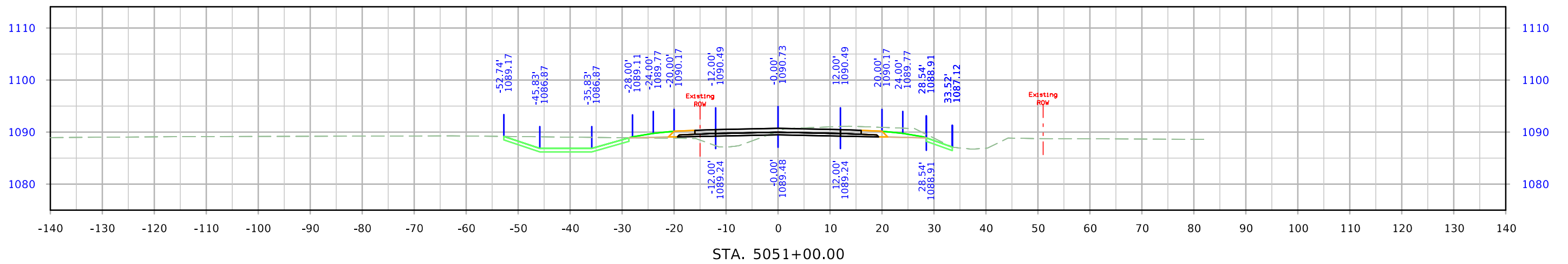
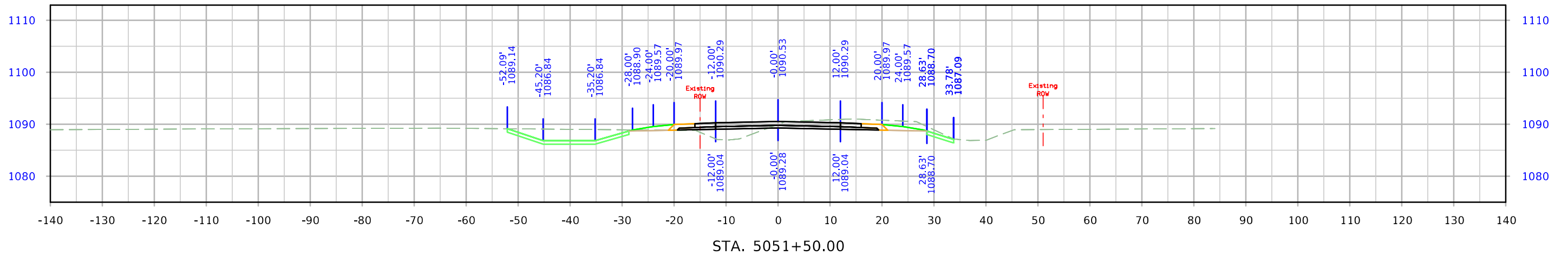
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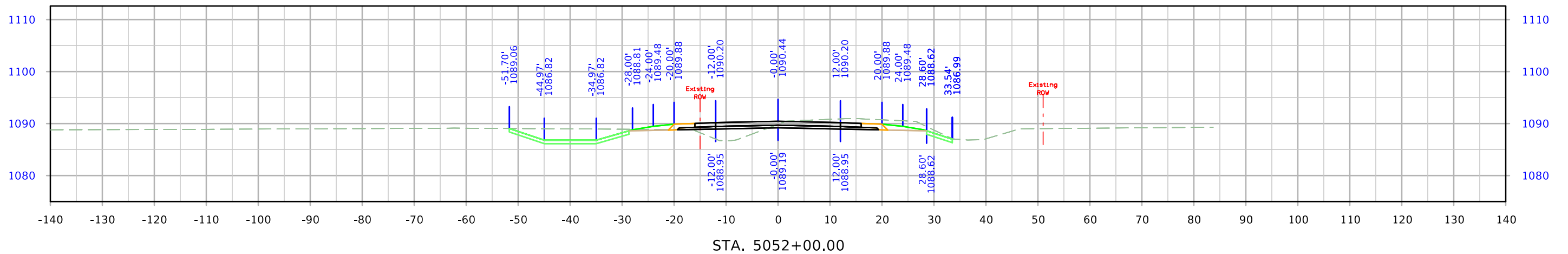
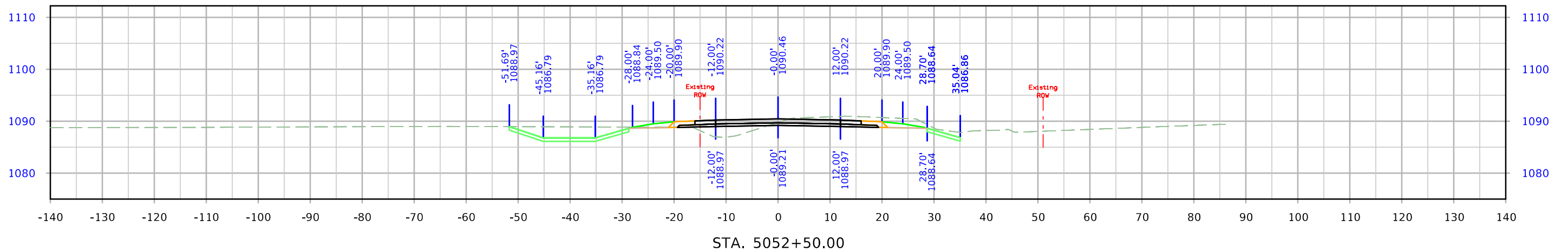
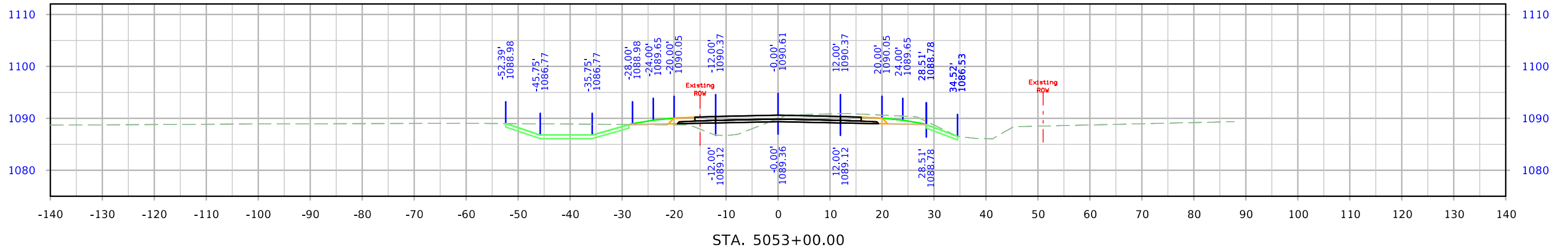
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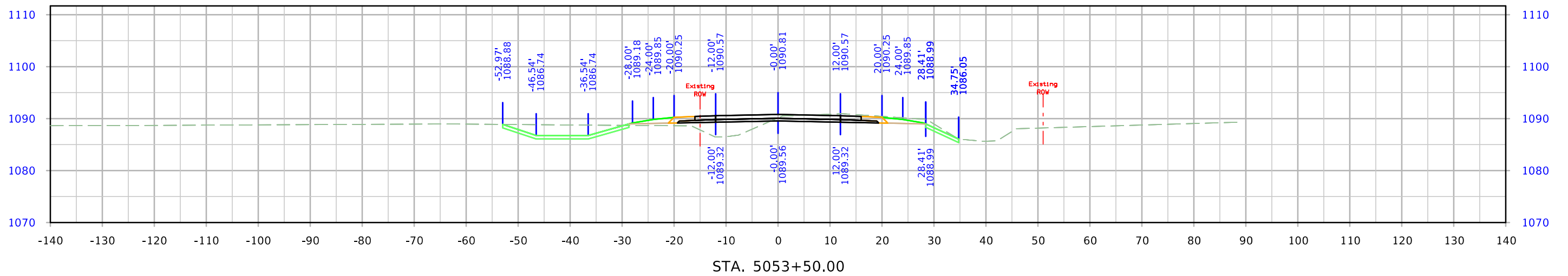
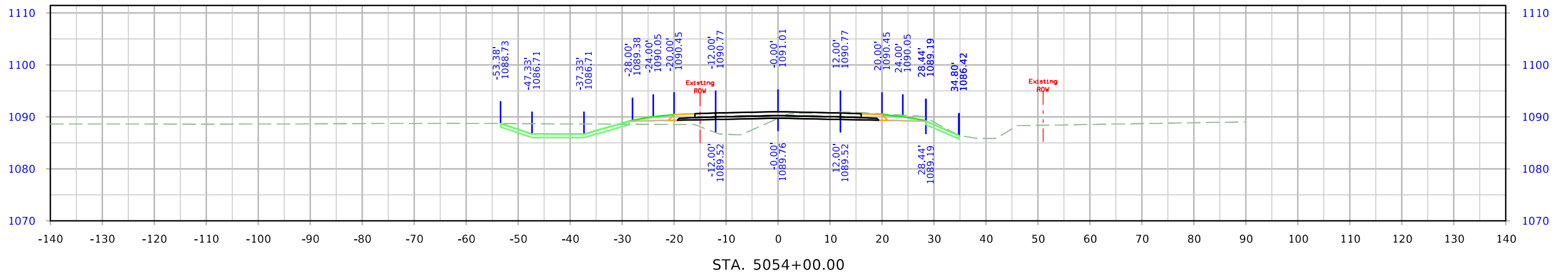
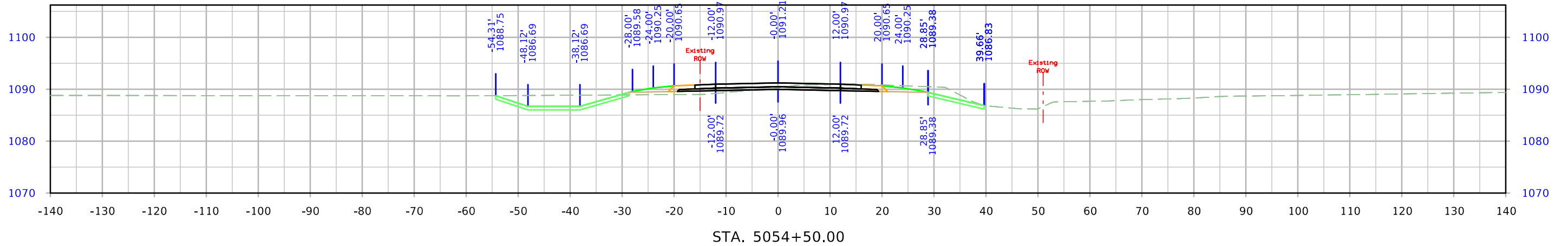
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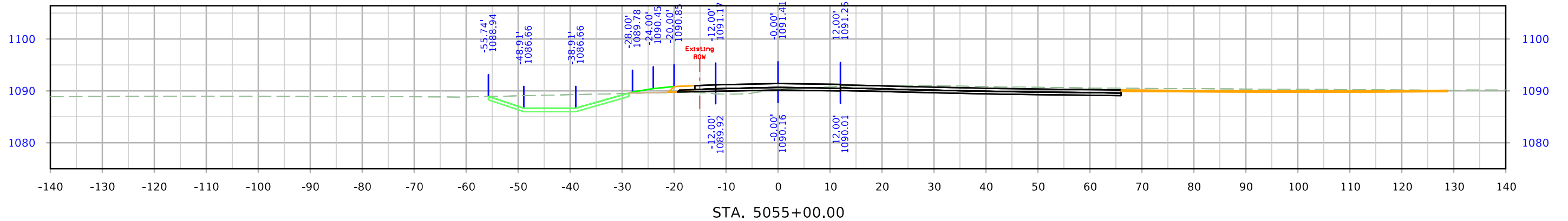
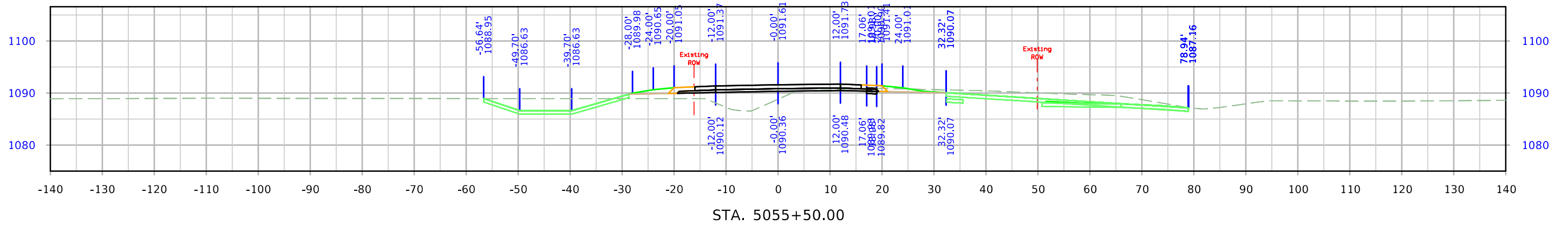
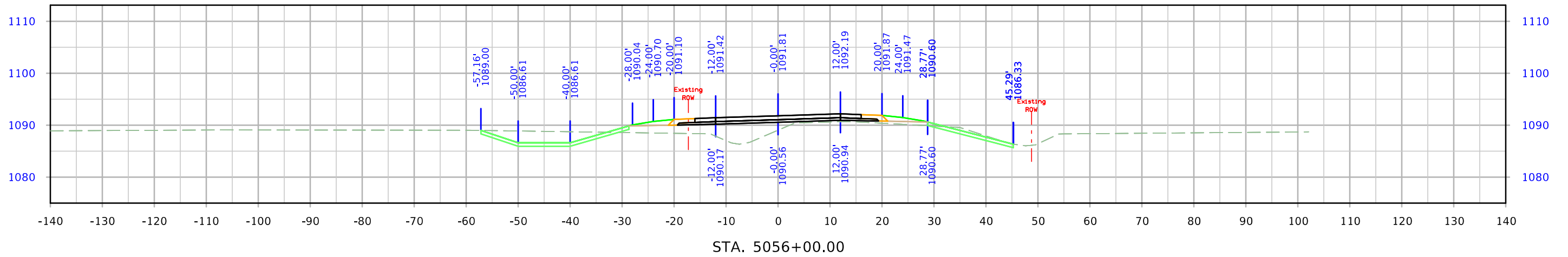
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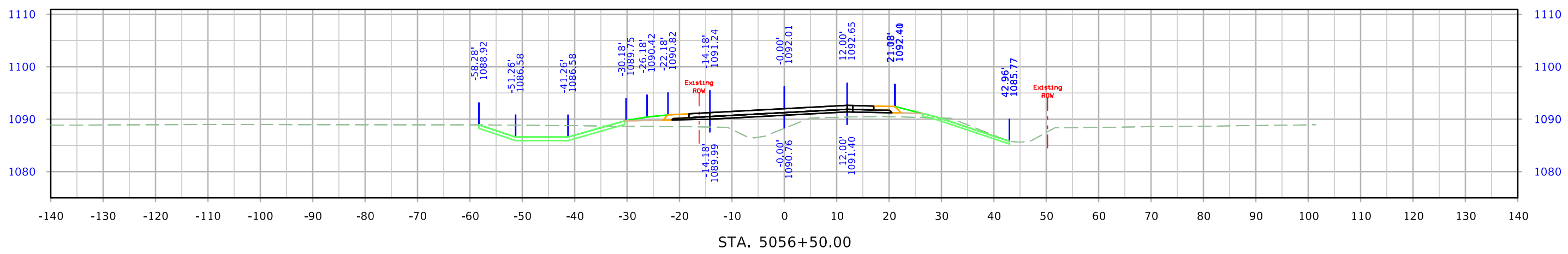
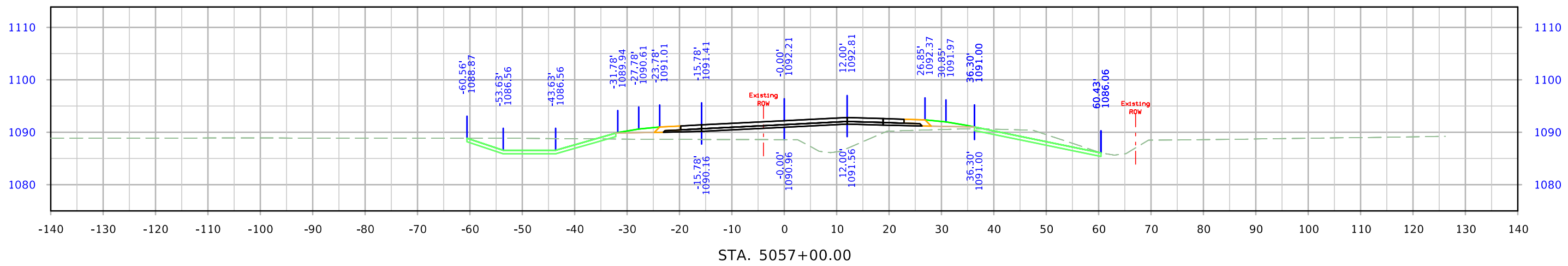
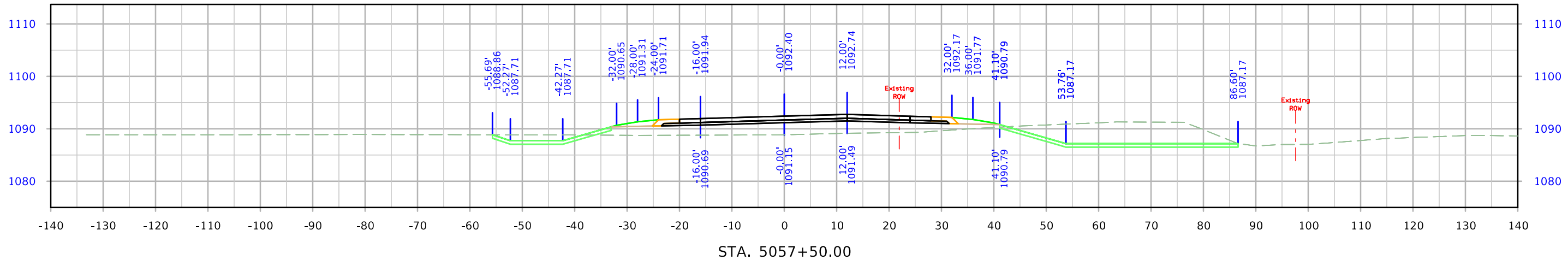
235th Street



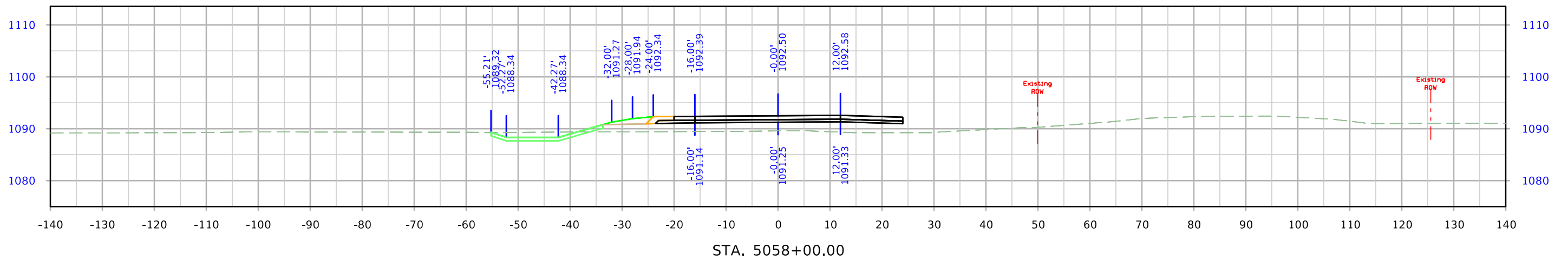
235th Street



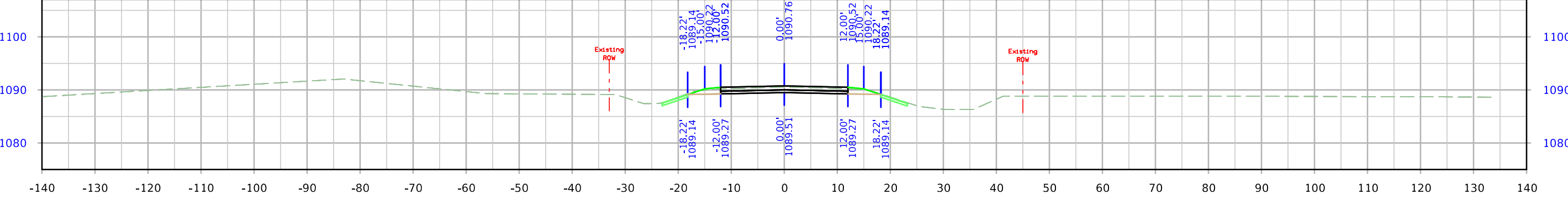
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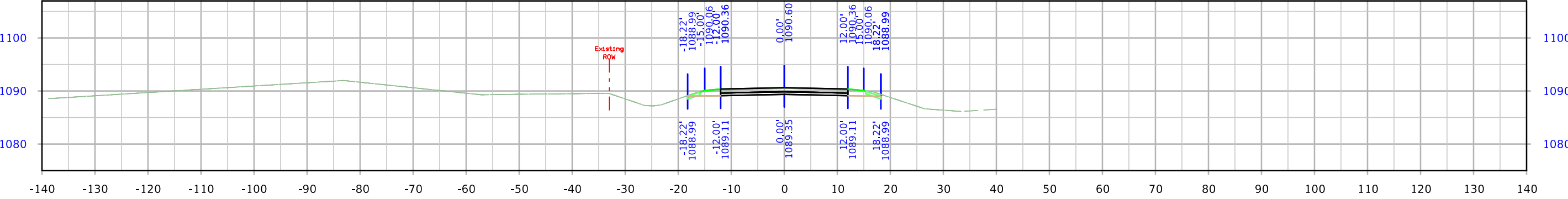
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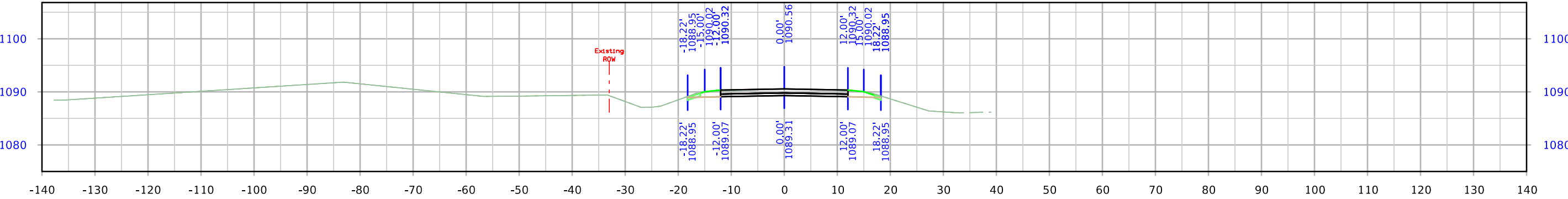
Old US 75



STA. 336+50.00

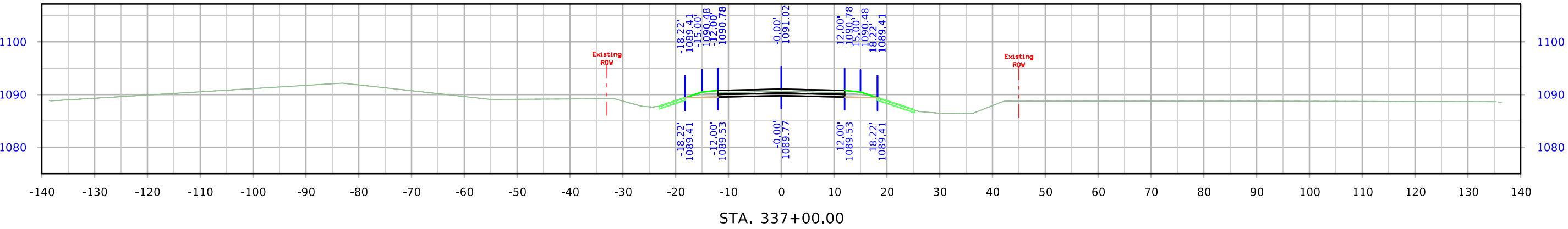
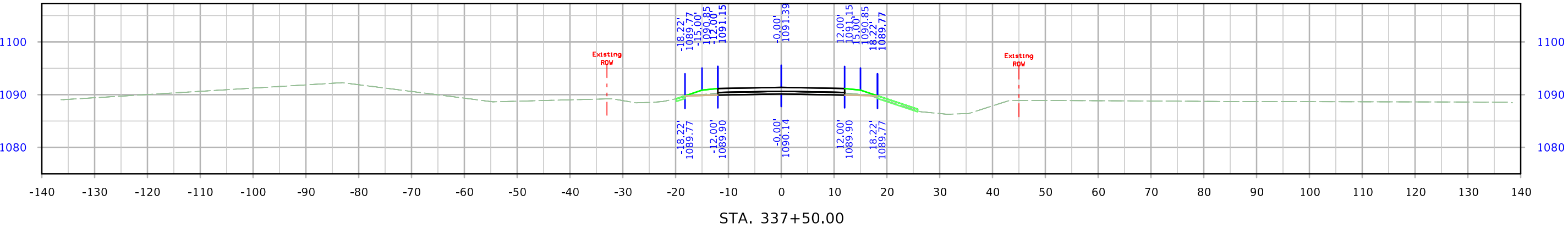
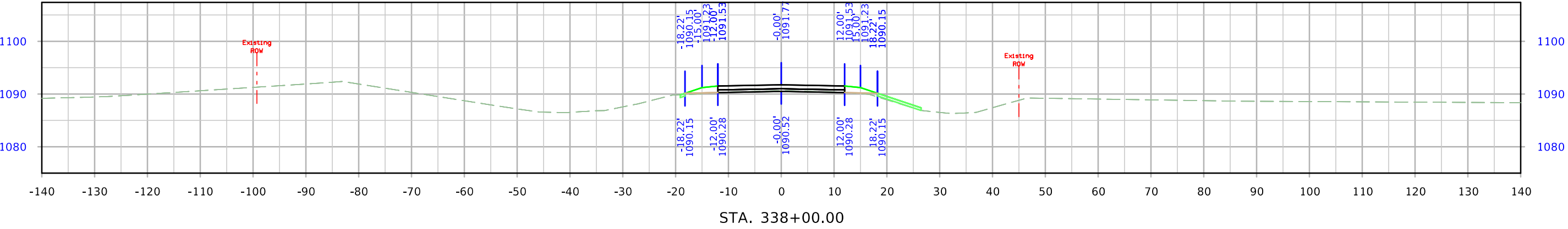


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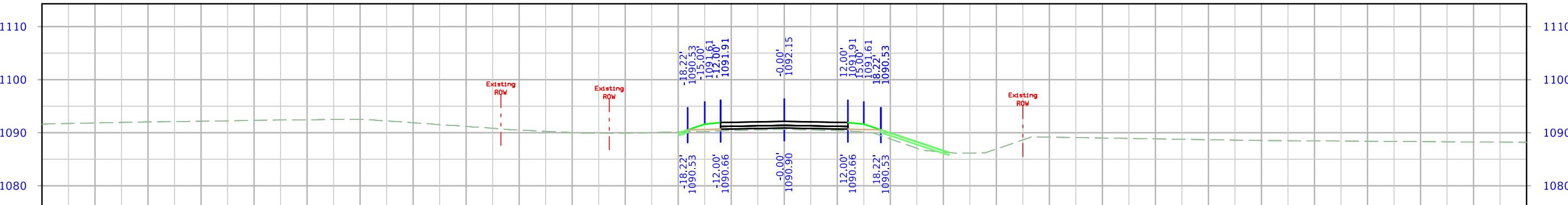
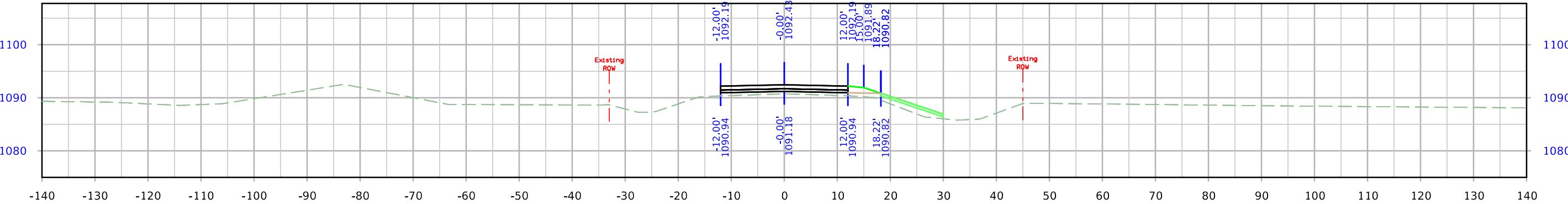
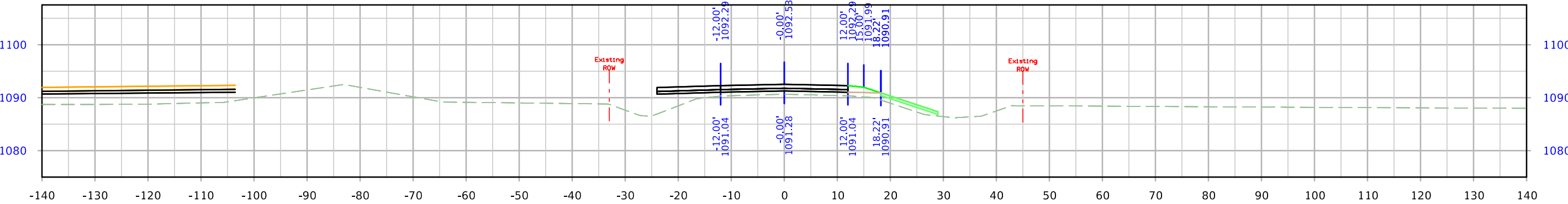


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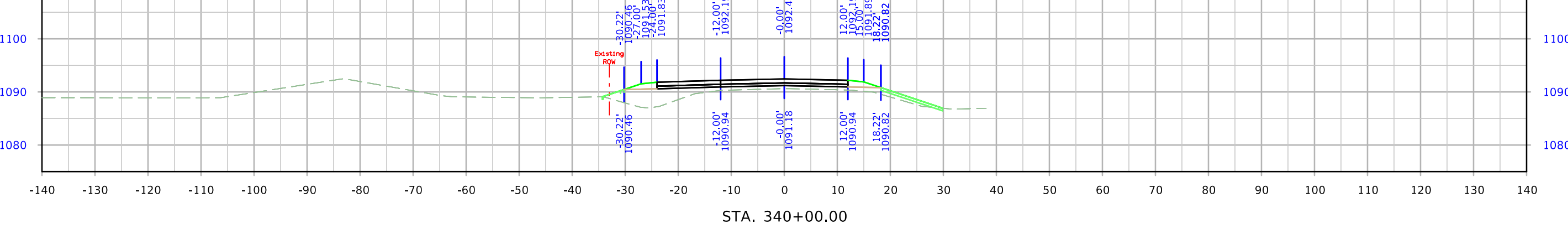
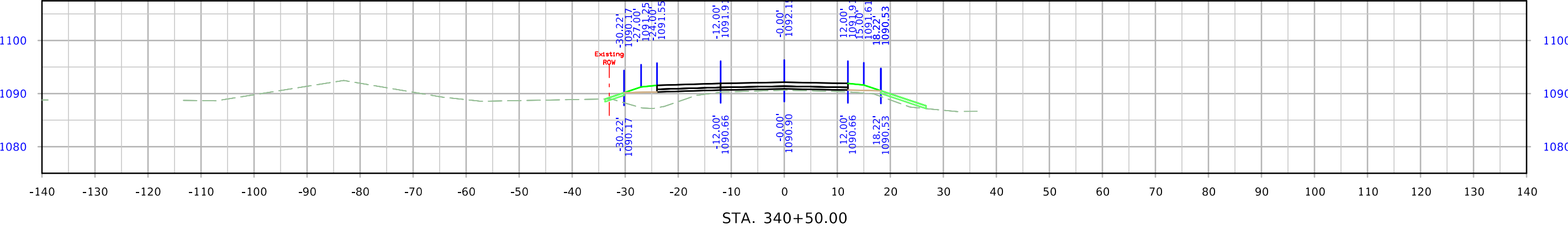
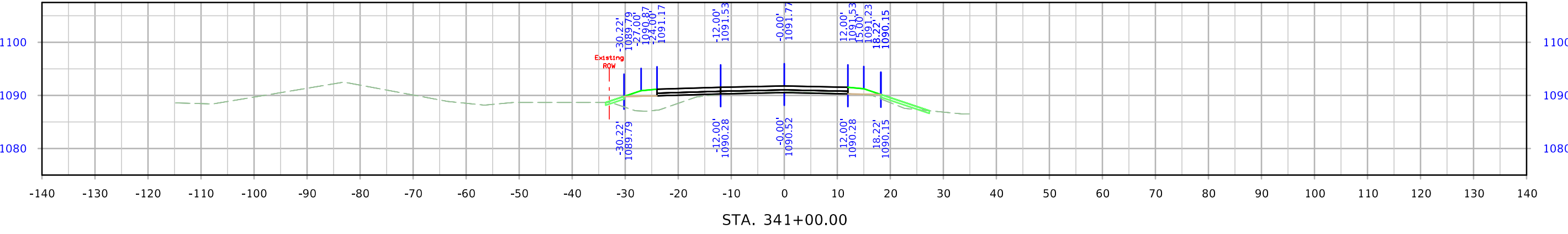
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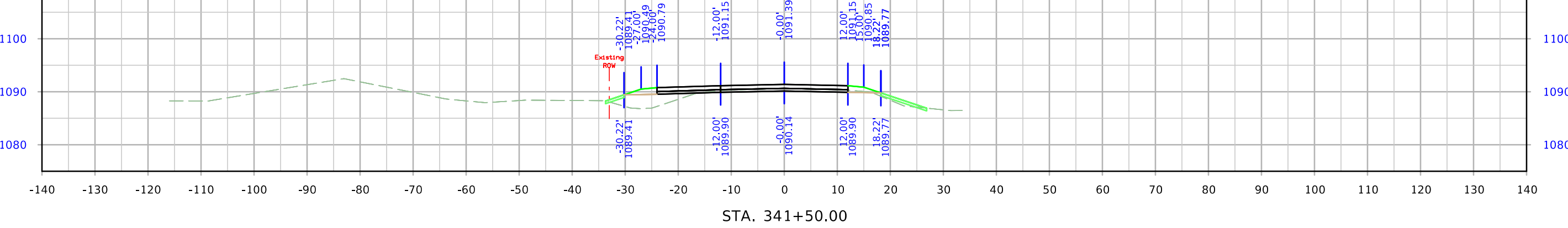
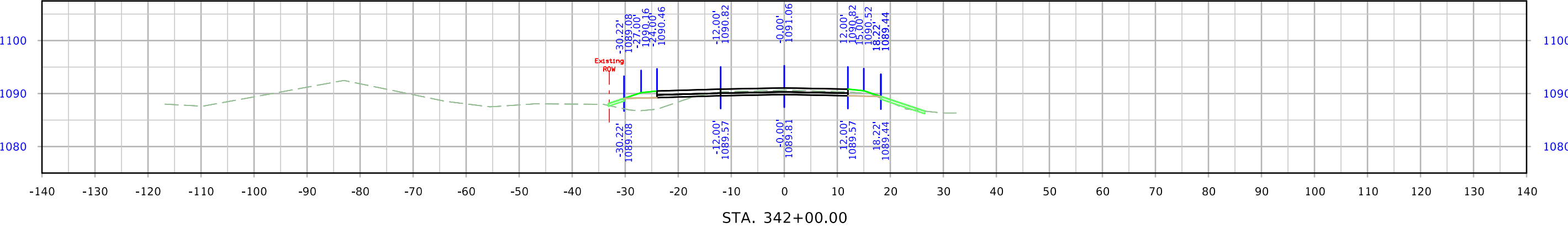
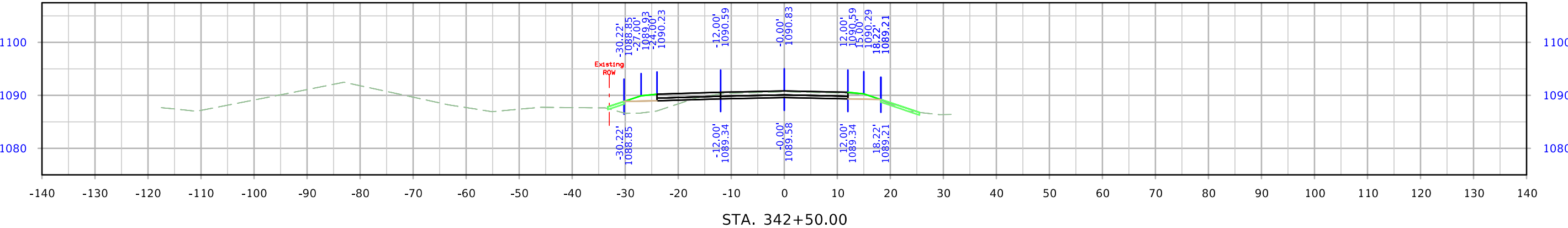
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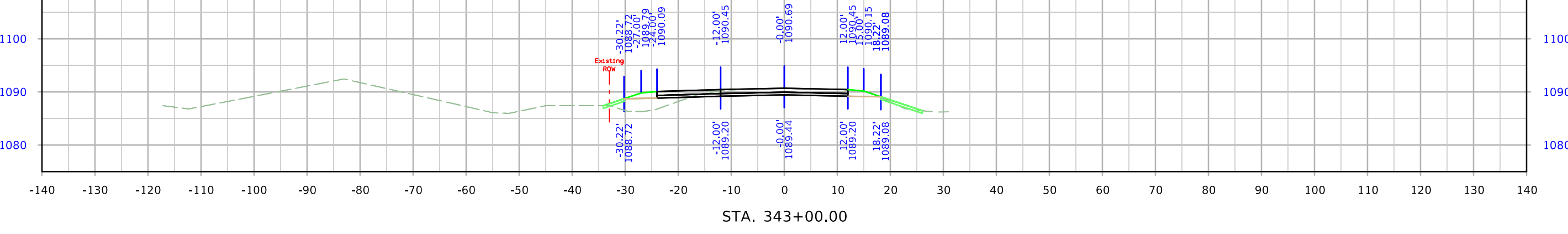
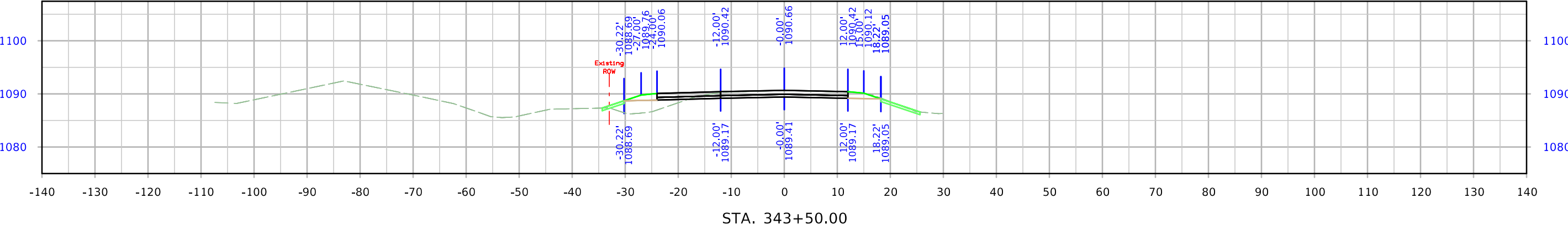
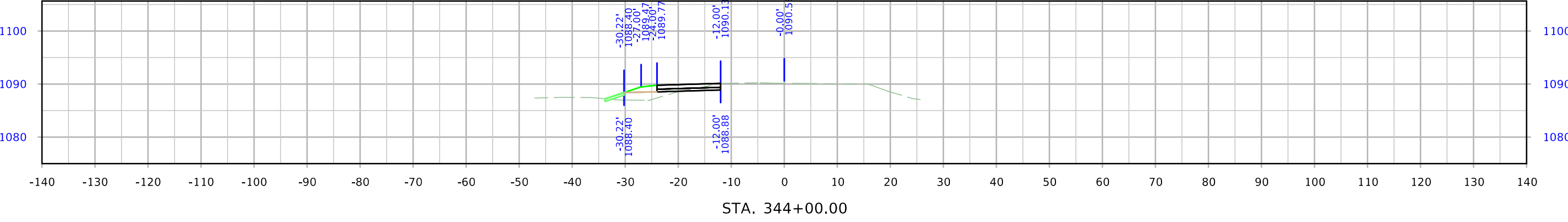
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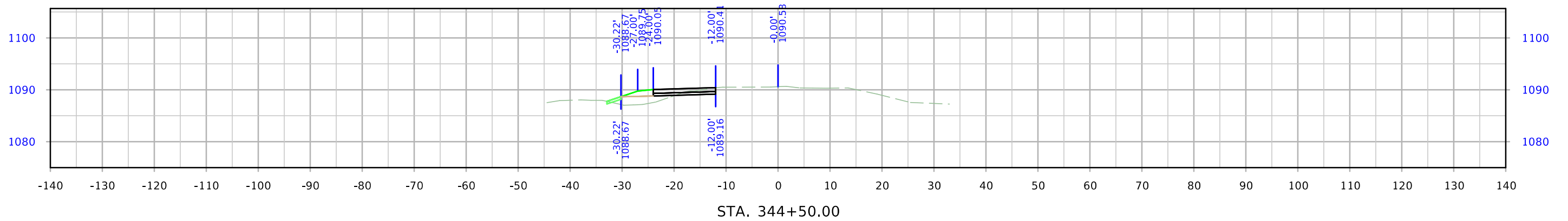
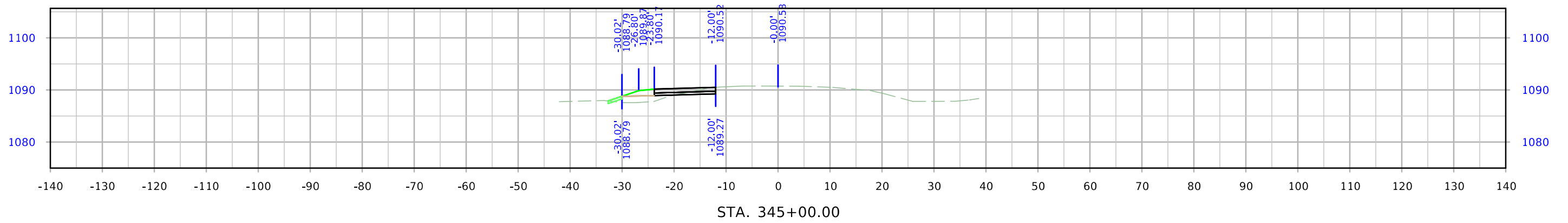
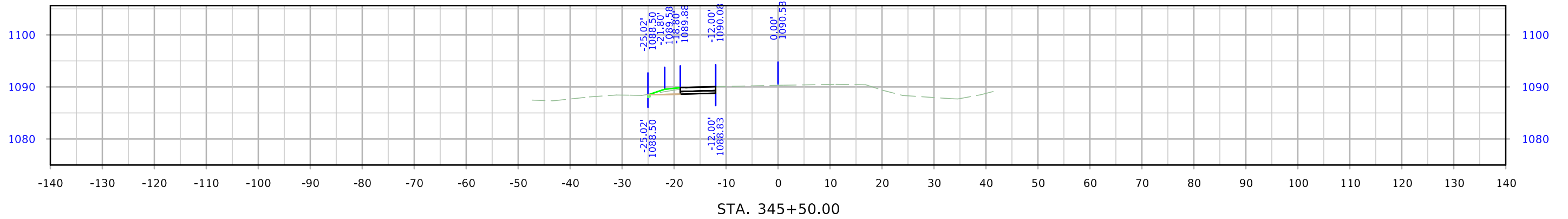
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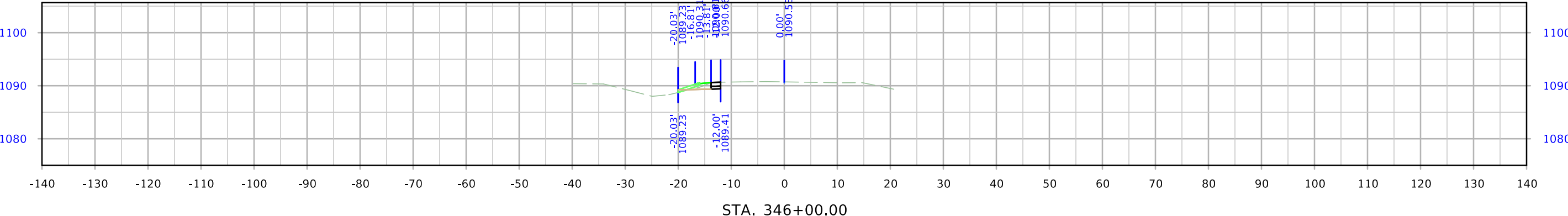
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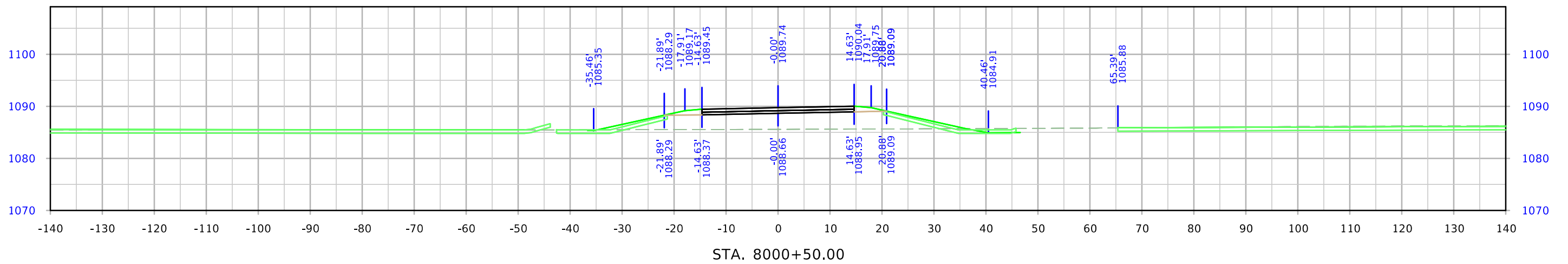
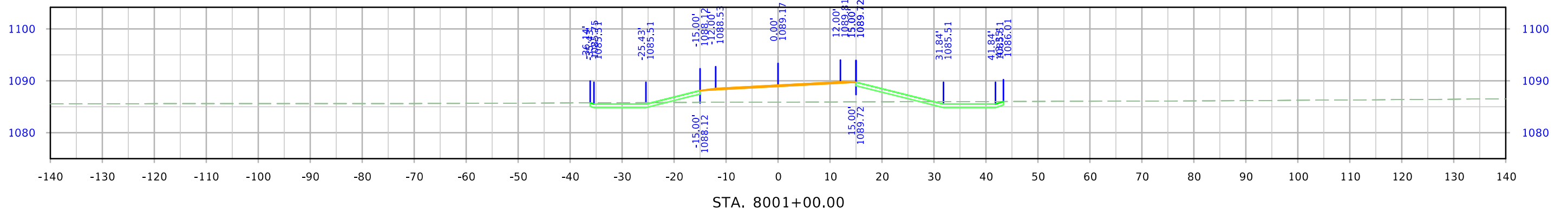
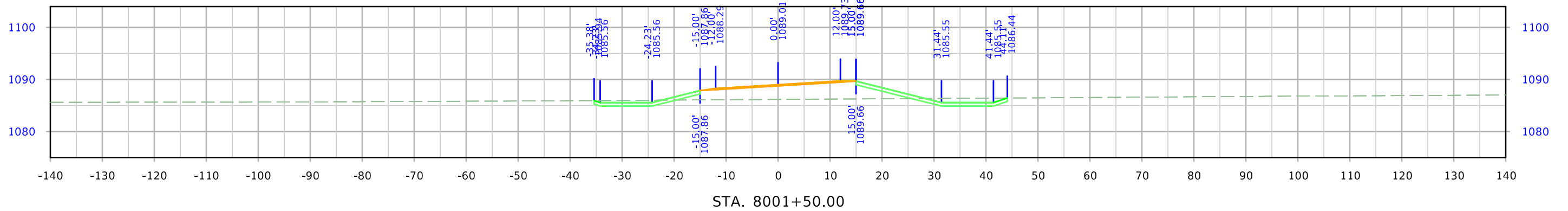
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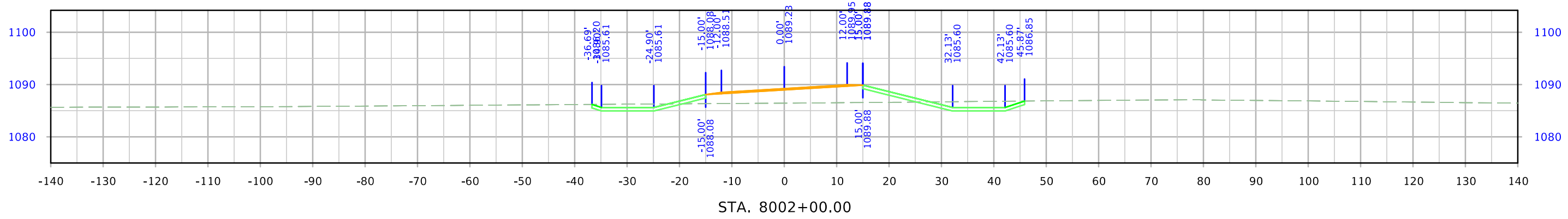
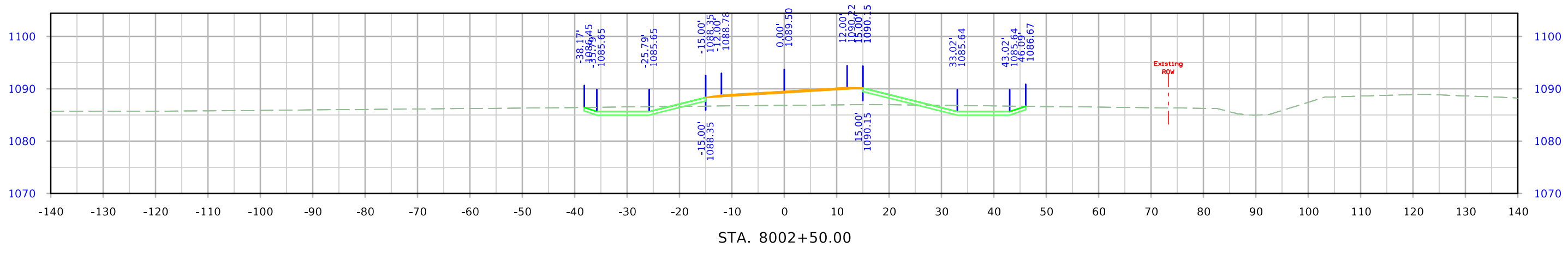
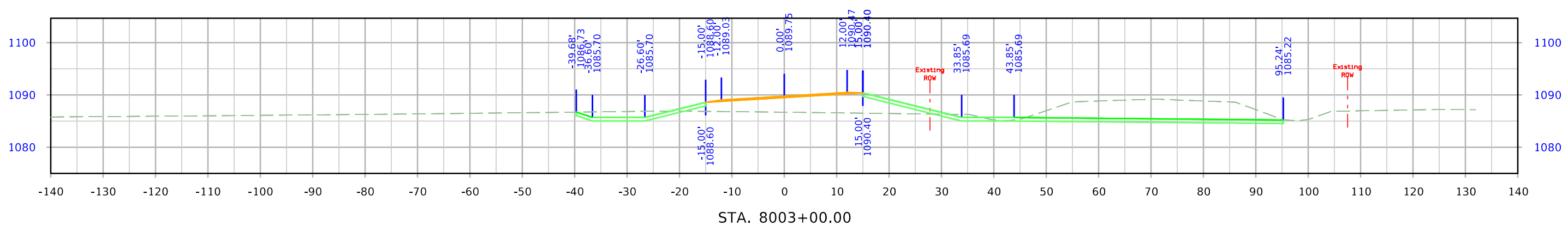
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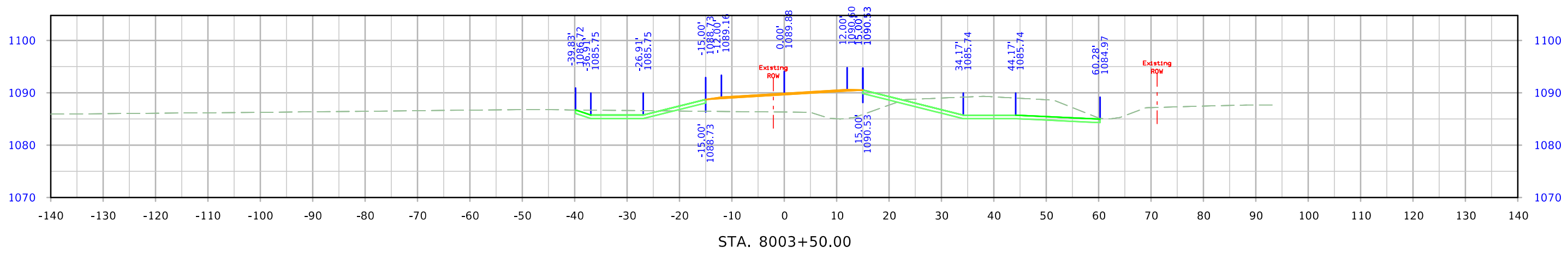
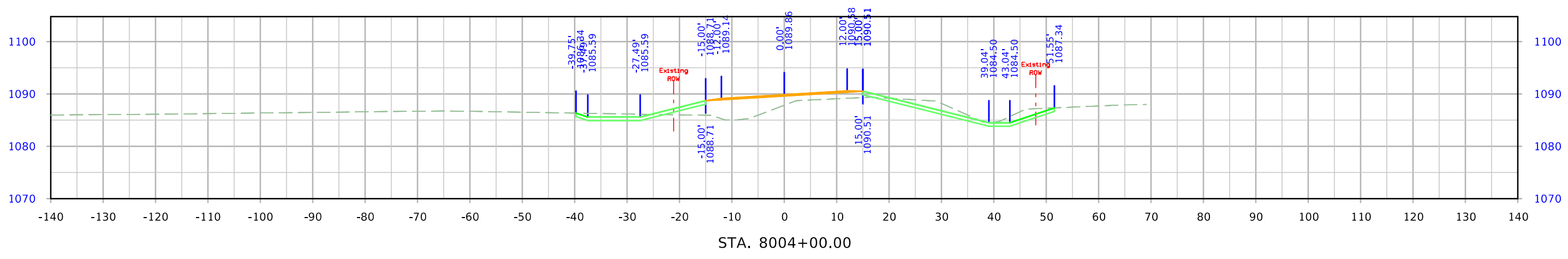
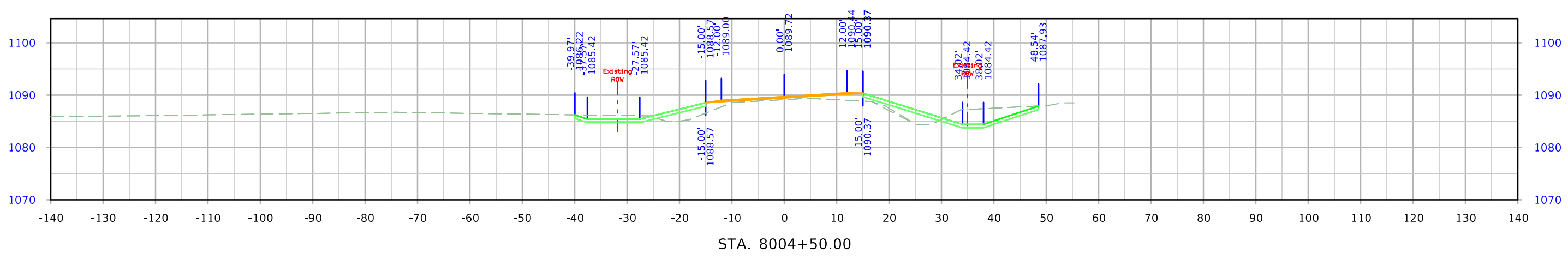
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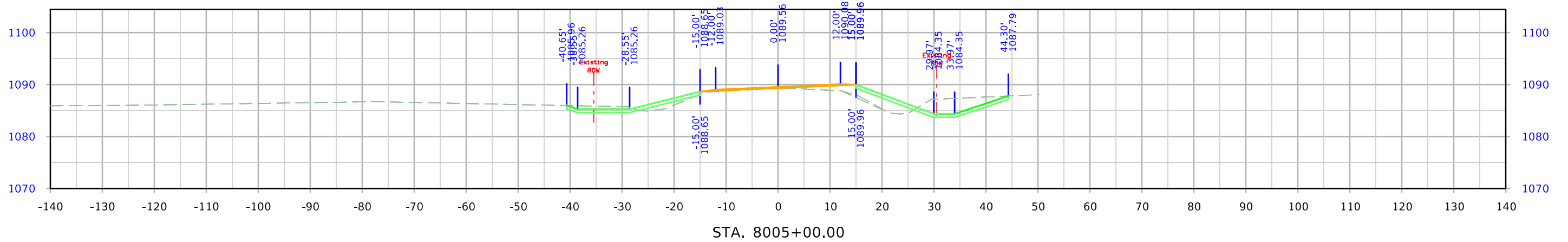
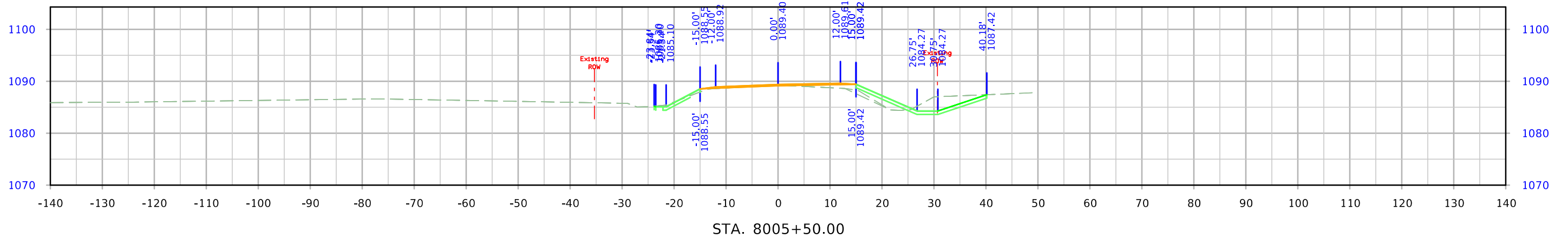
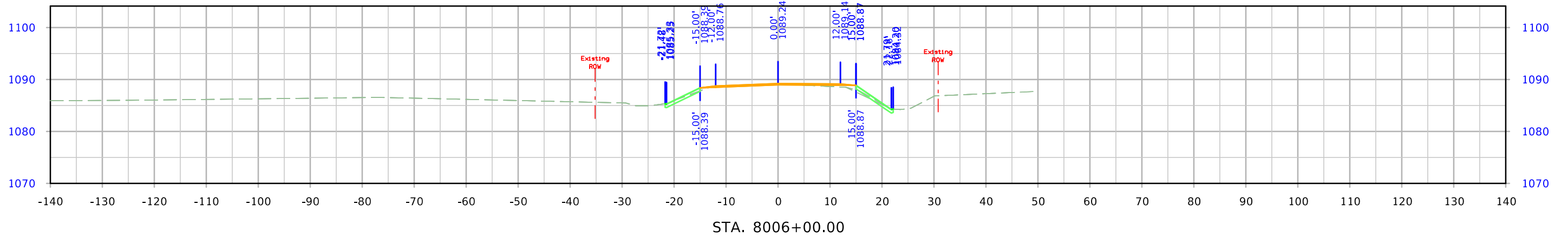
Banner Avenue



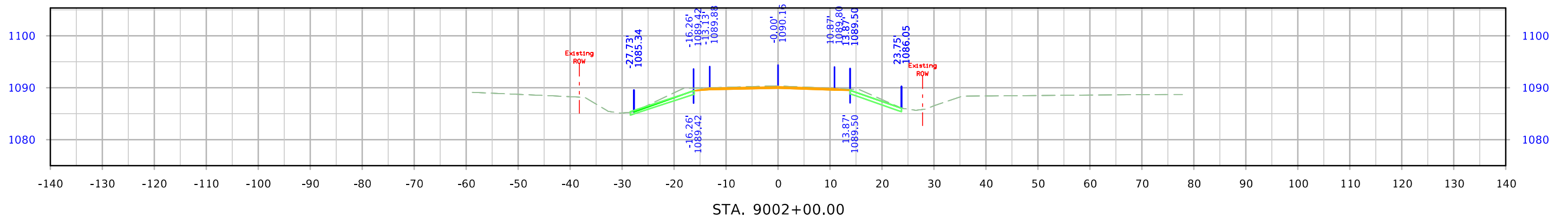
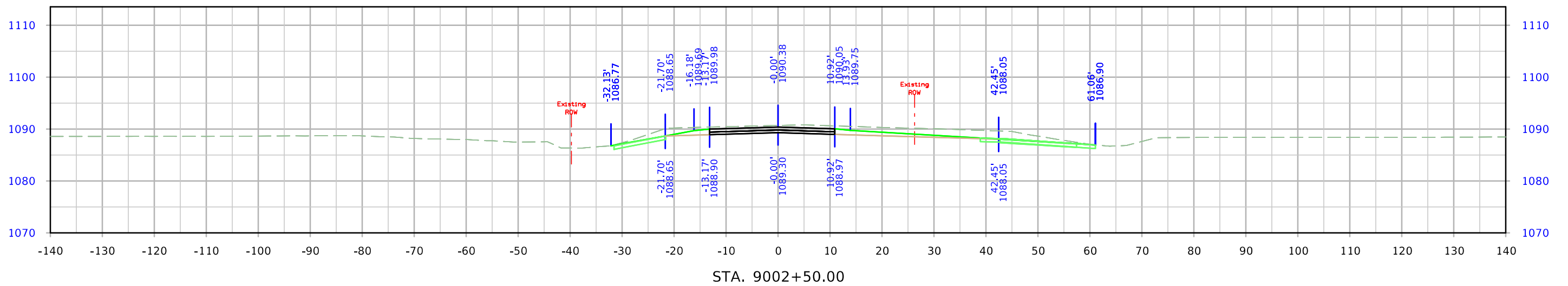
Banner Avenue



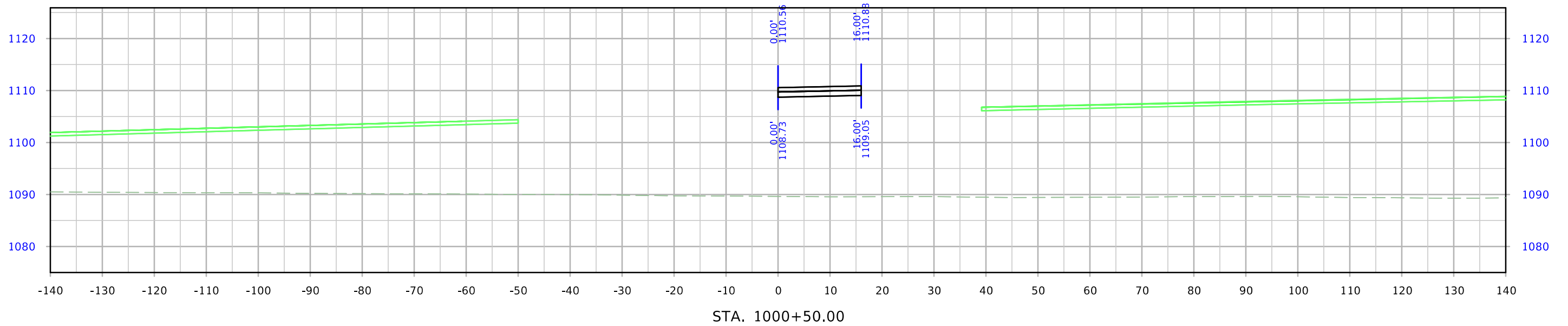
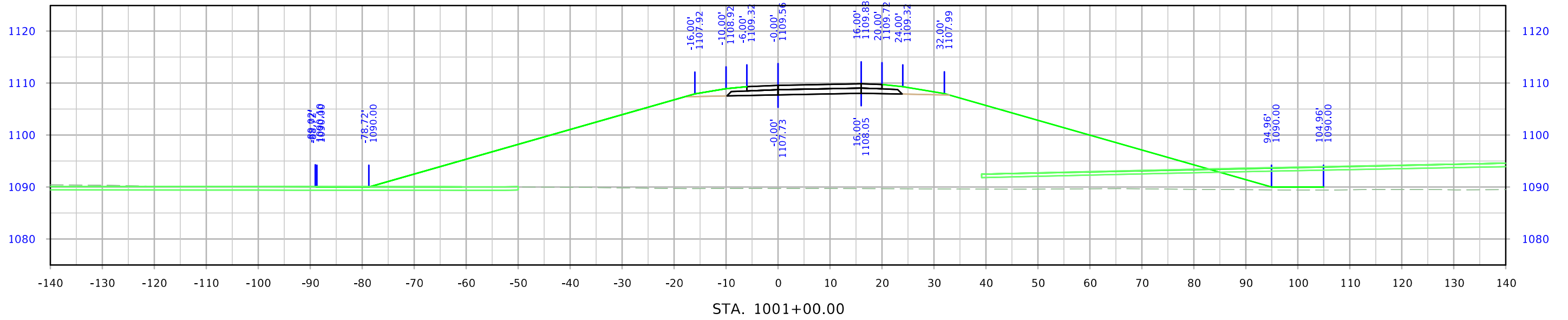
Banner Avenue



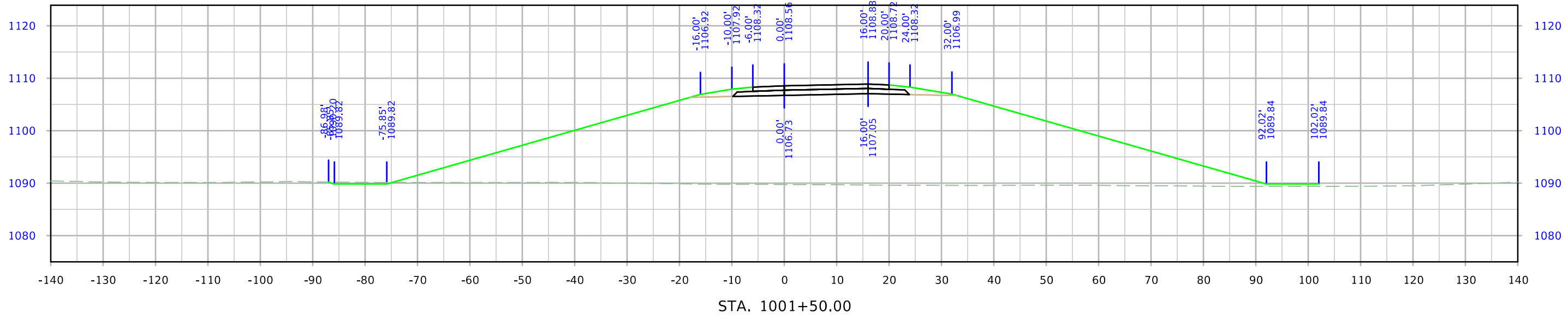
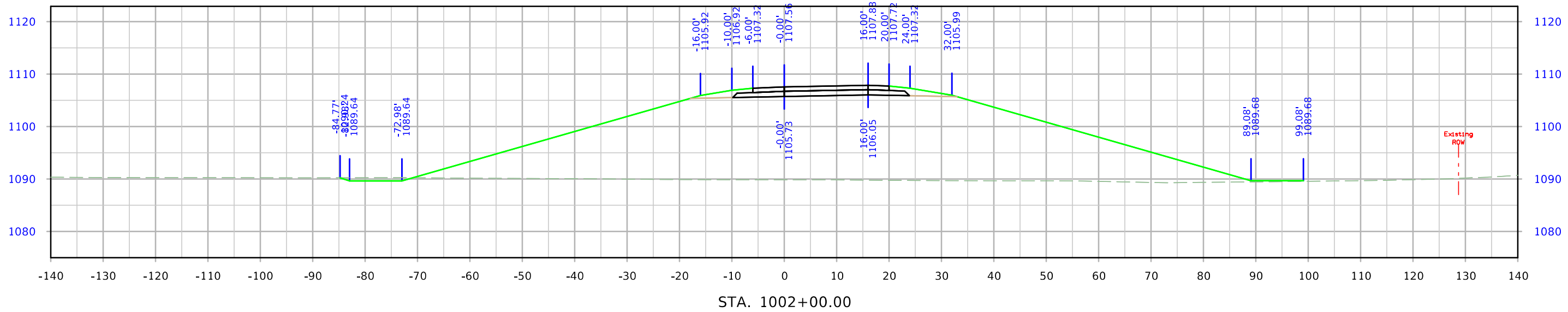
Barker Avenue



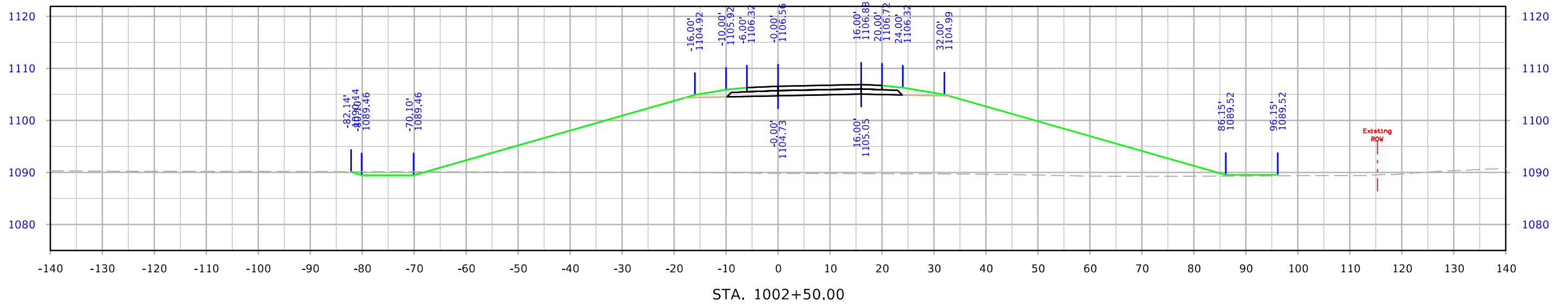
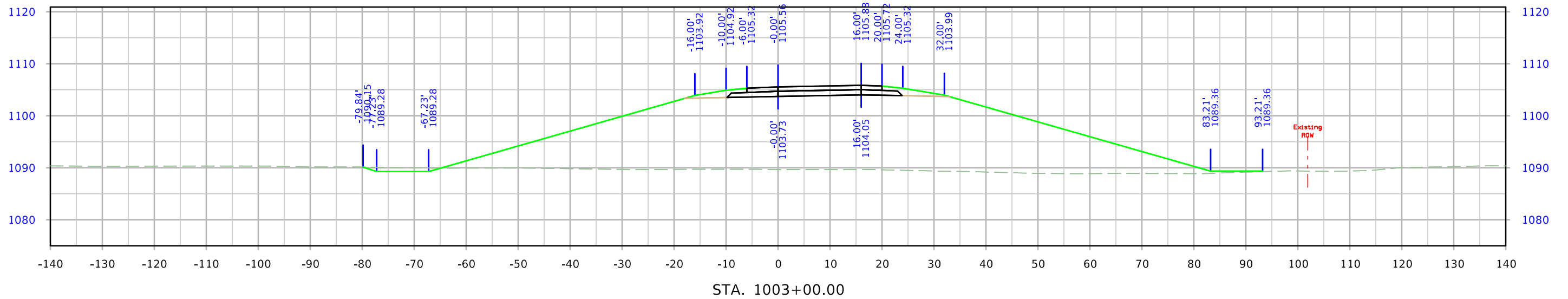
I-29 Ramp A



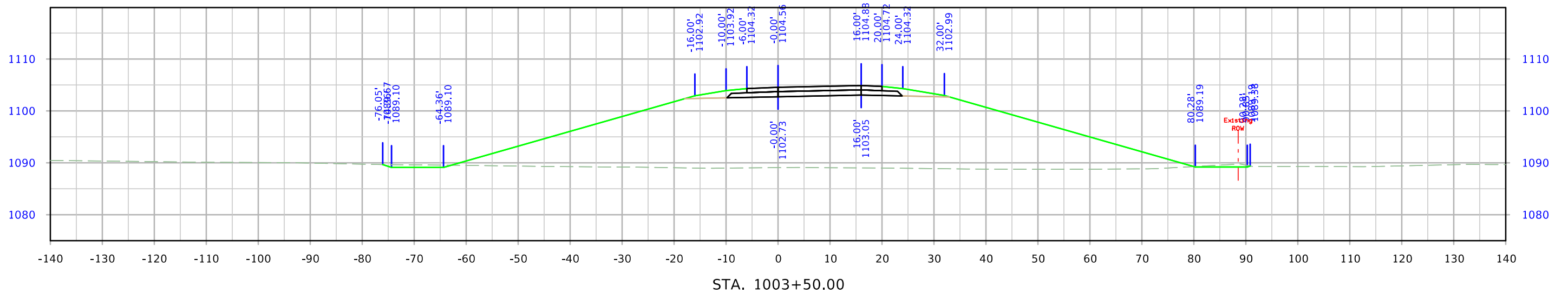
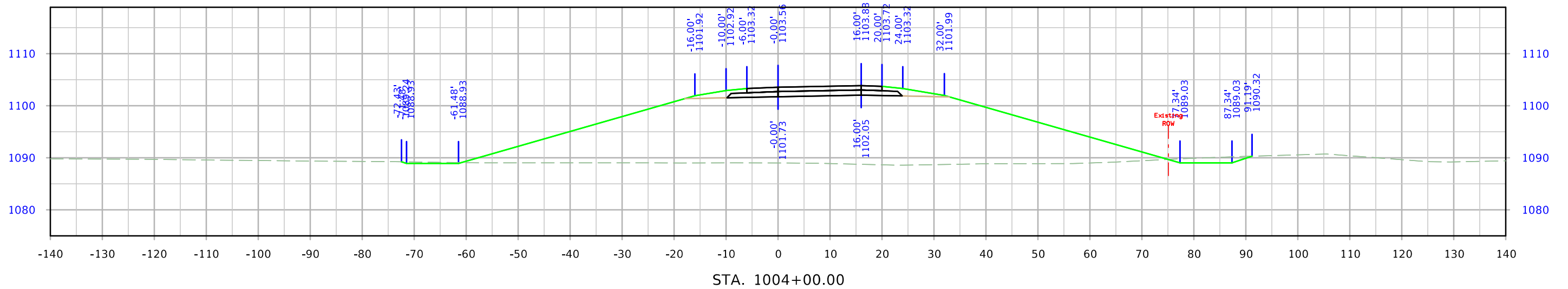
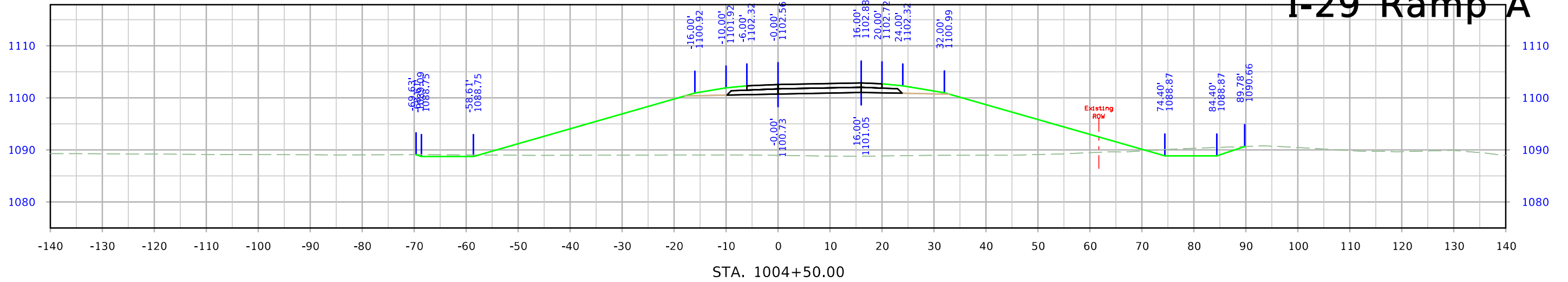
I-29 Ramp A



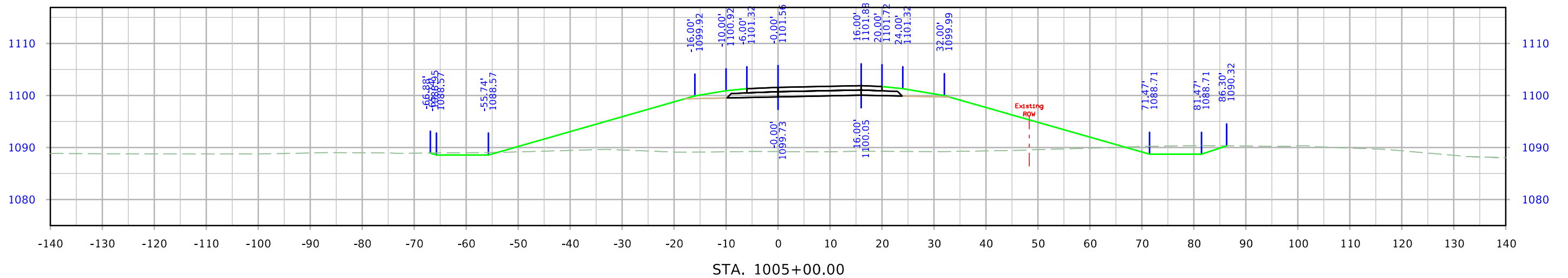
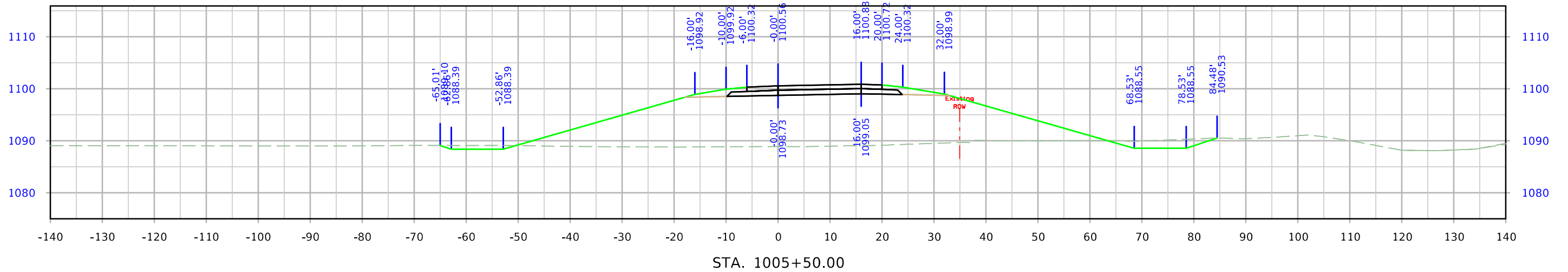
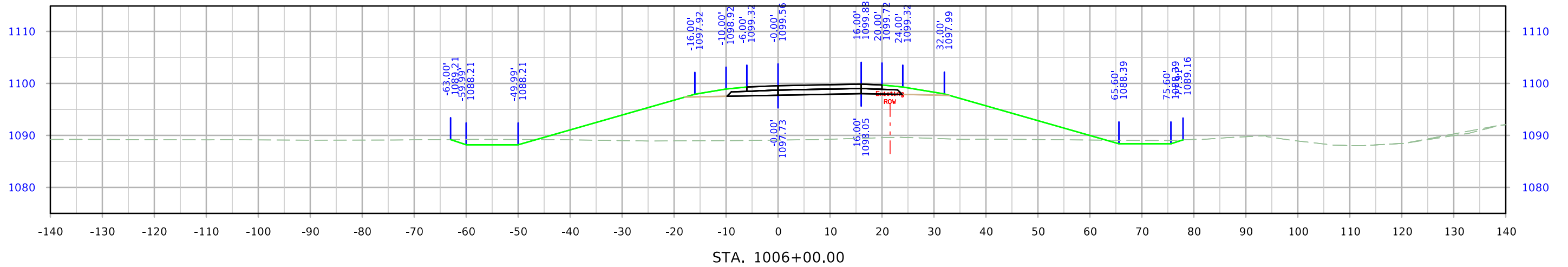
I-29 Ramp A



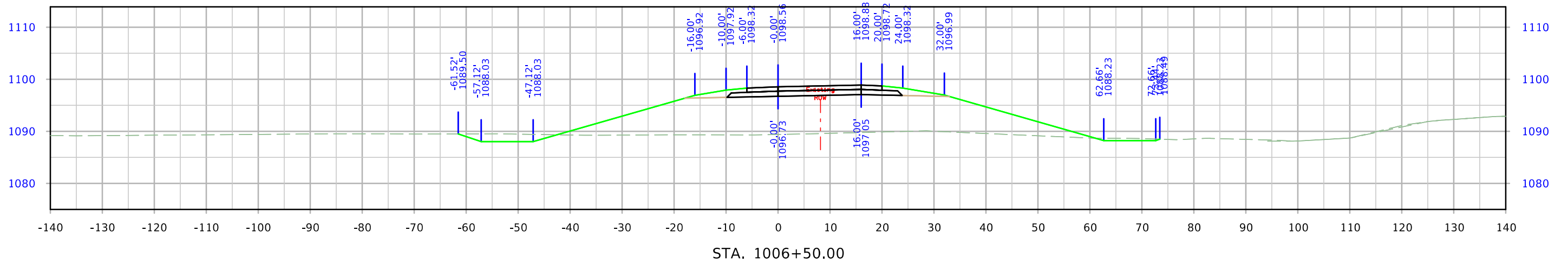
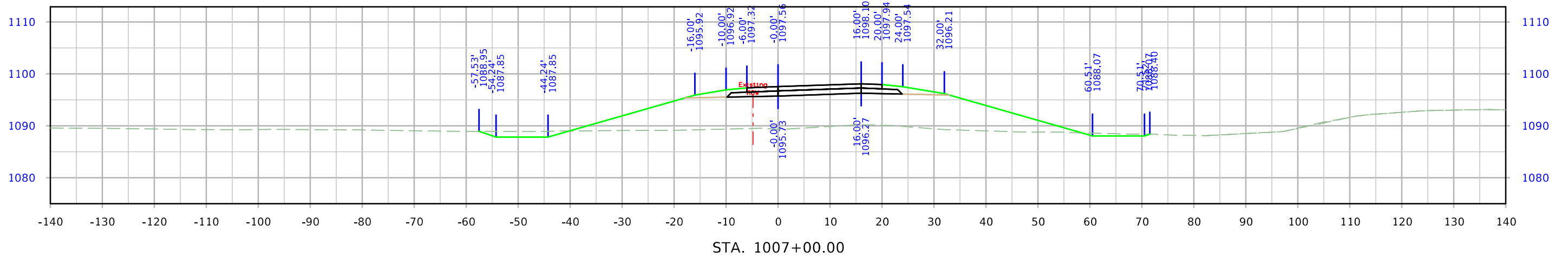
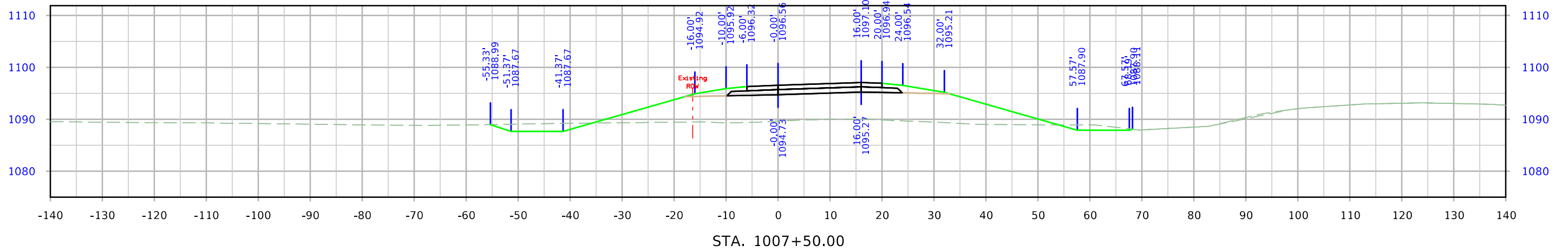
I-29 Ramp A



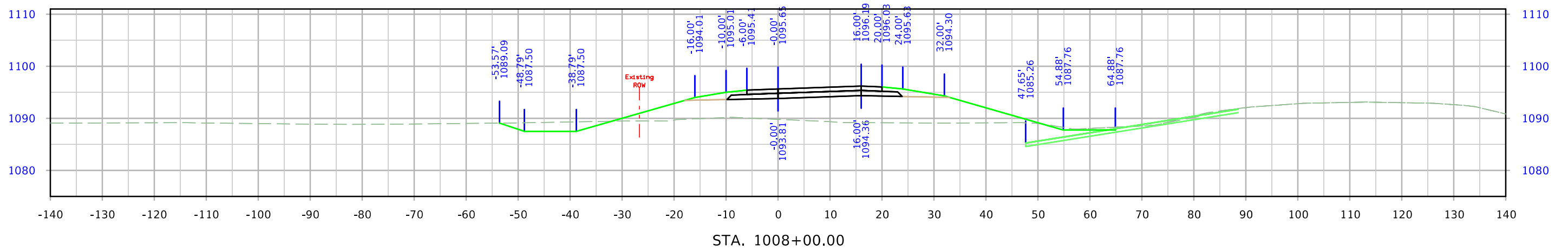
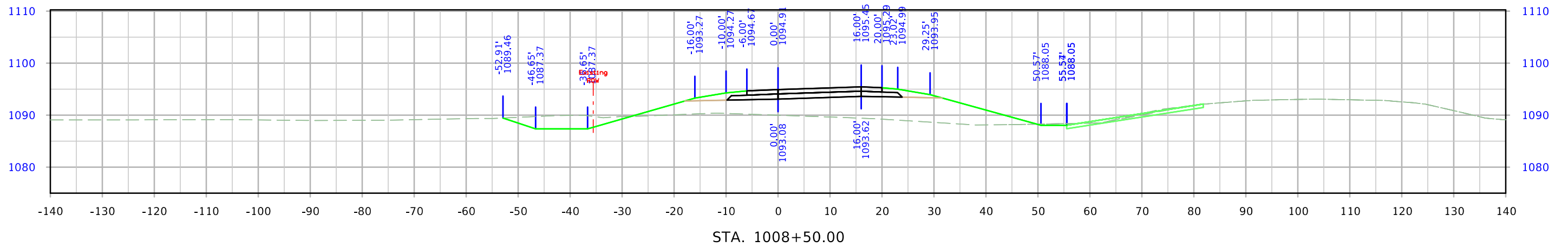
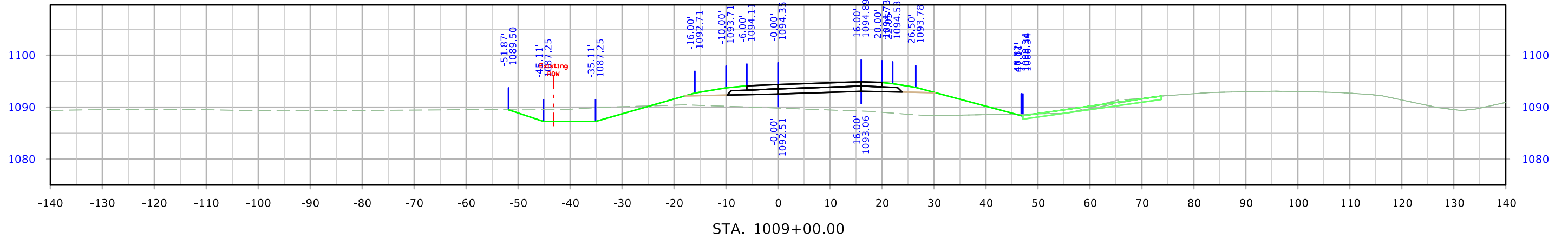
I-29 Ramp A



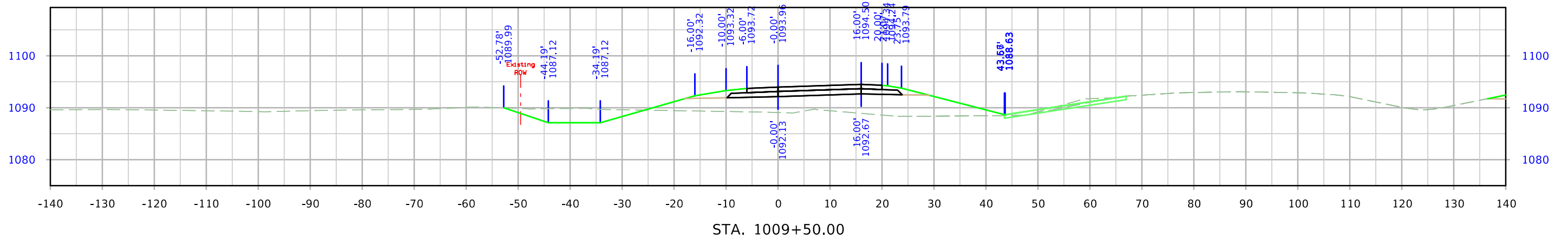
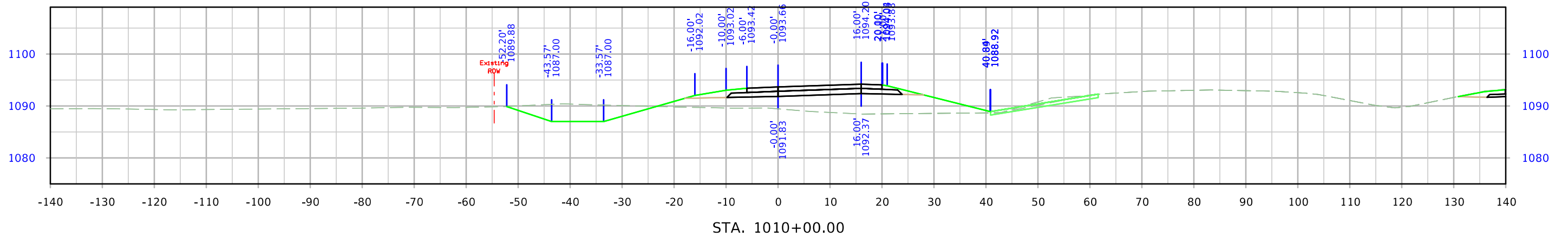
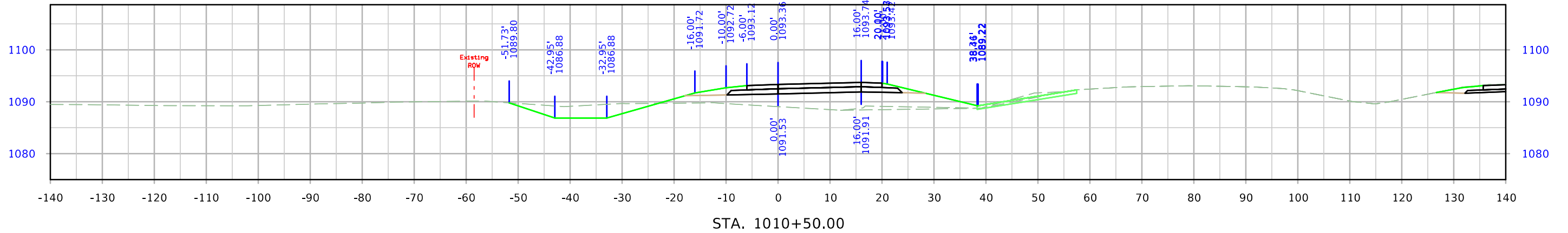
I-29 Ramp A



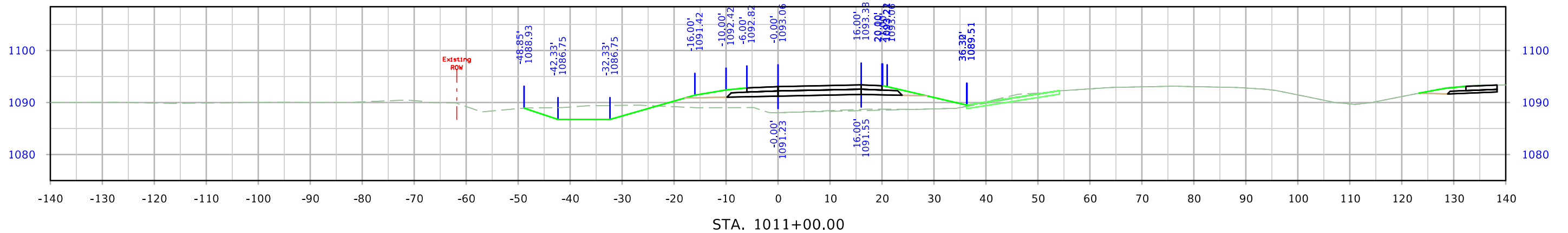
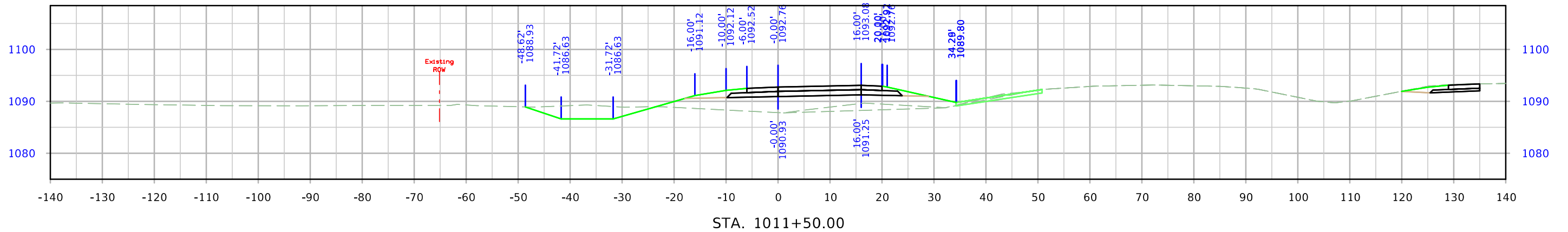
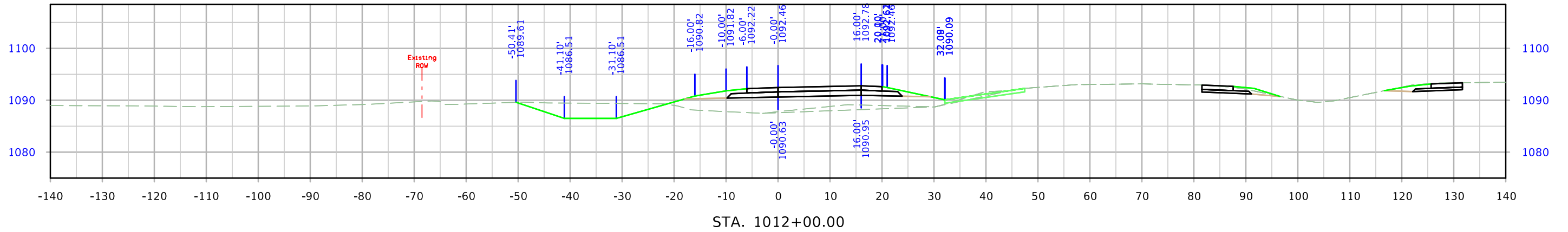
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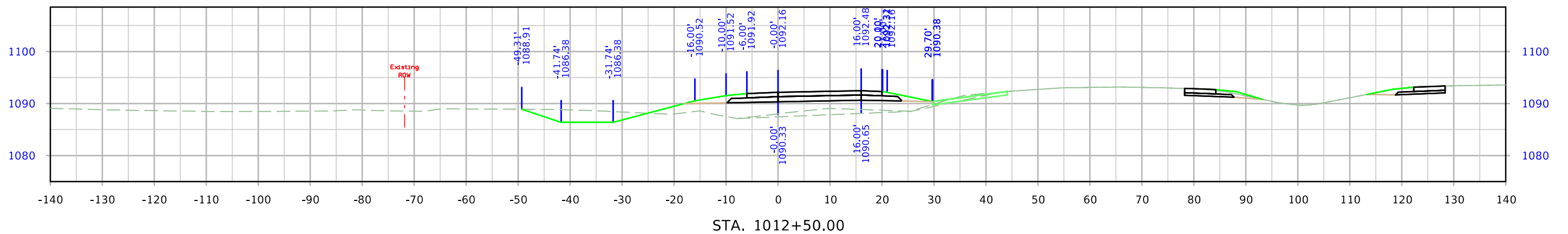
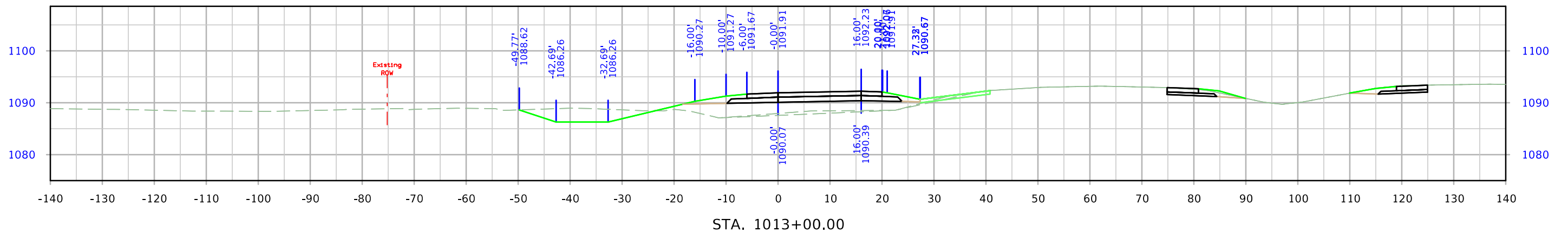
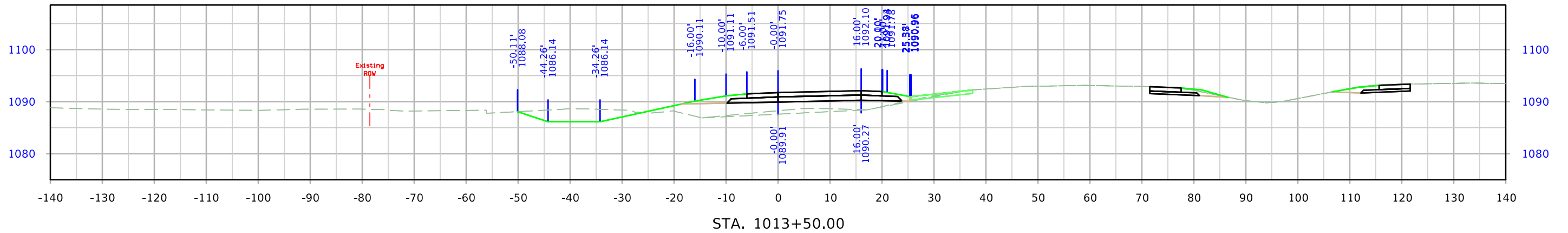
I-29 Ramp A



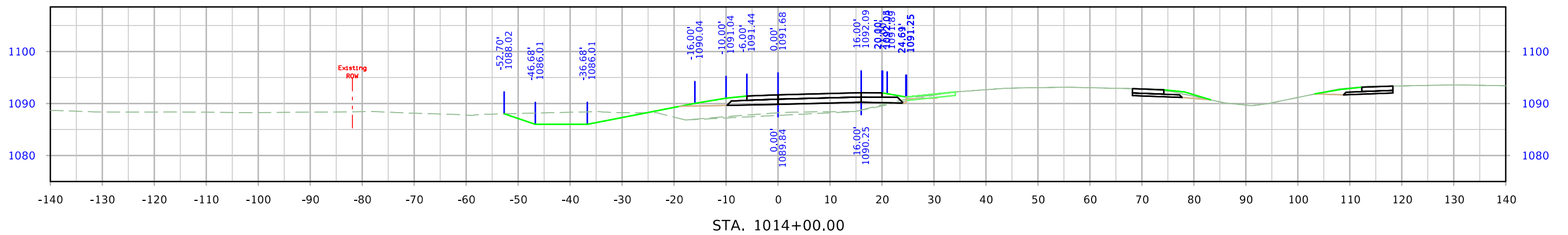
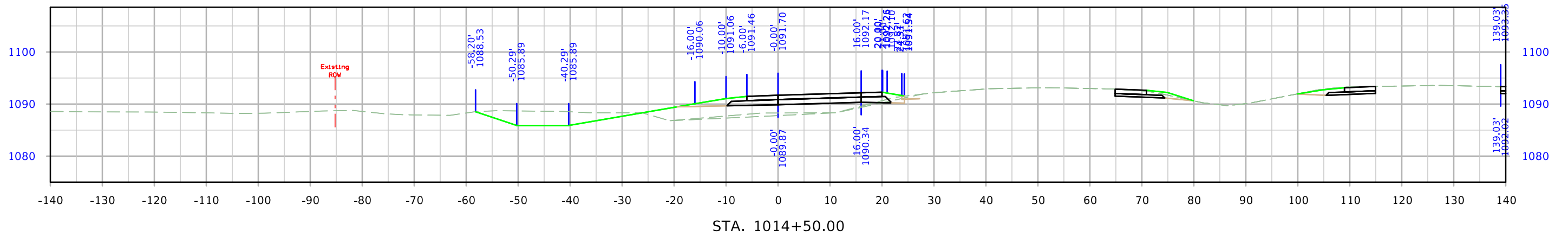
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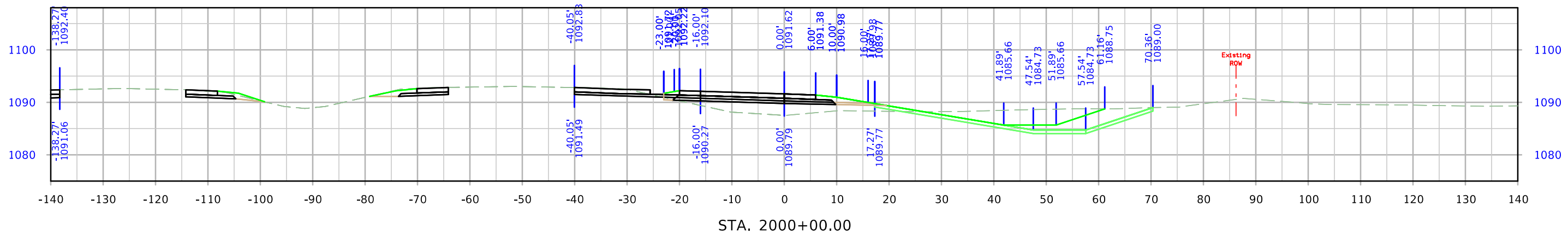
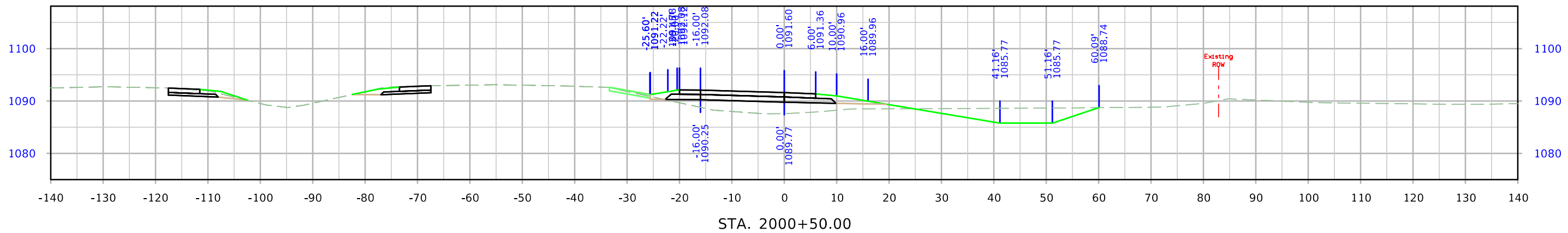
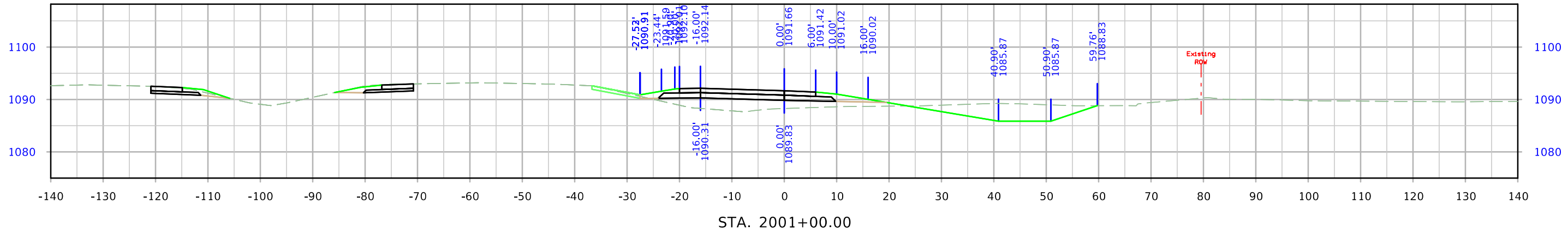
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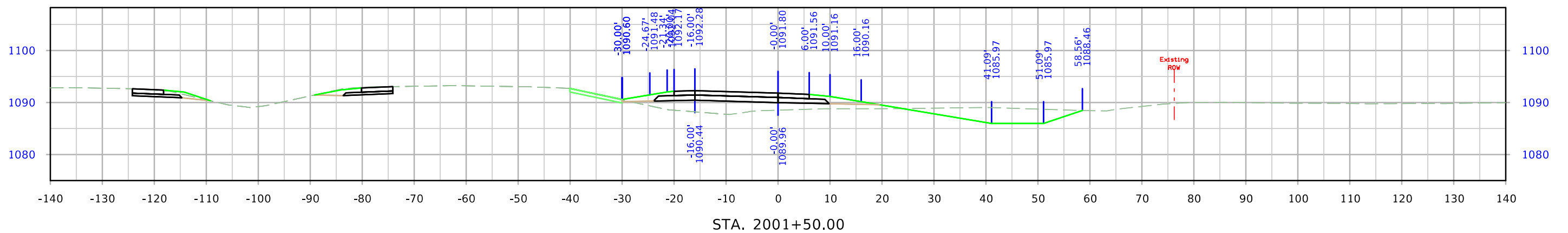
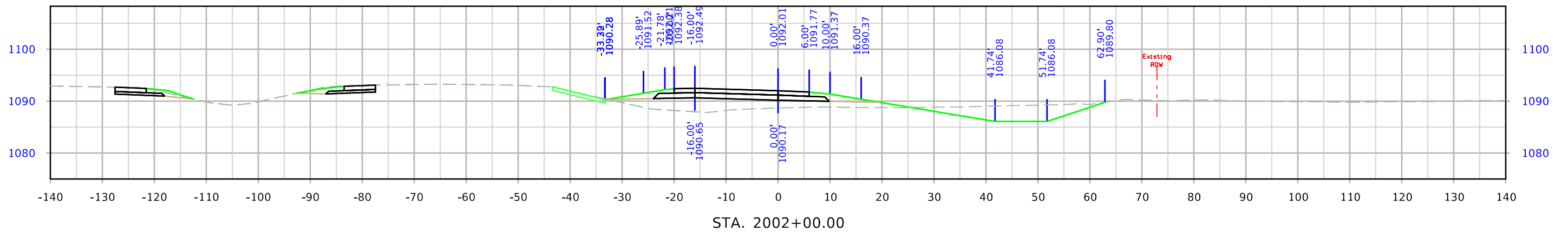
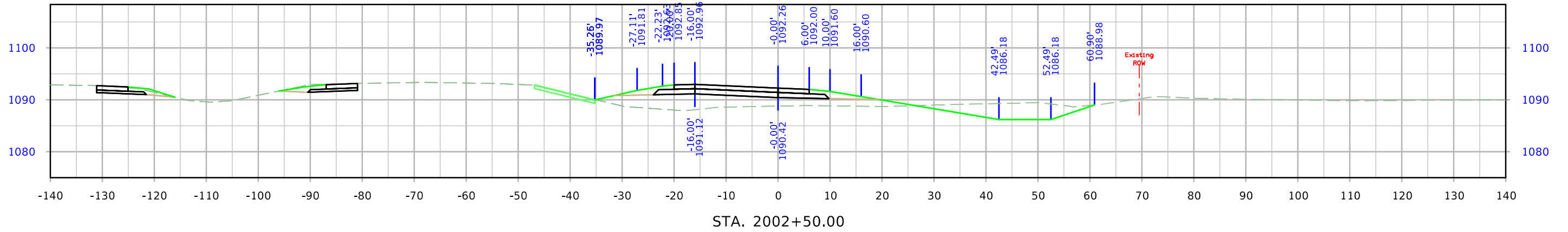
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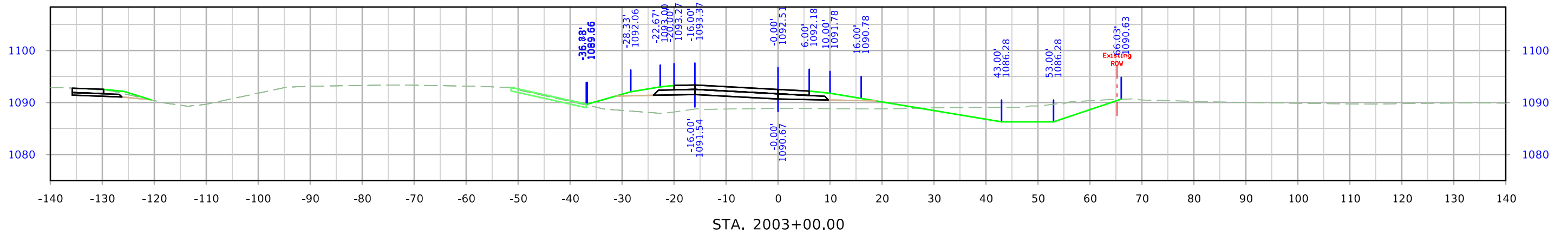
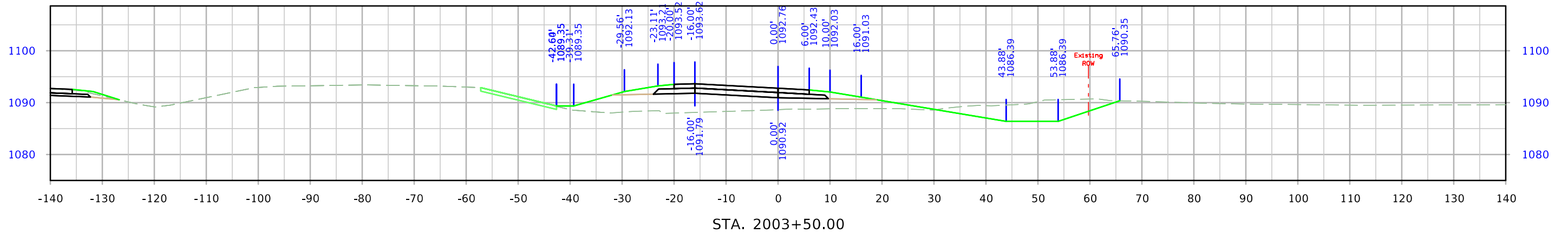
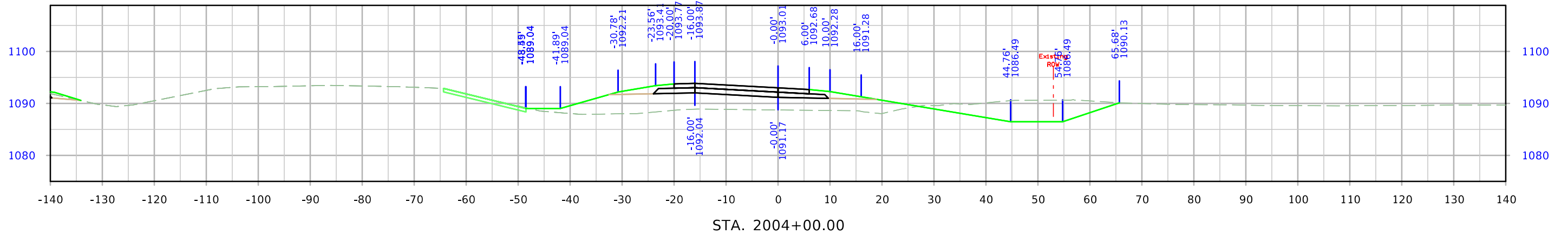
I-29 Ramp B



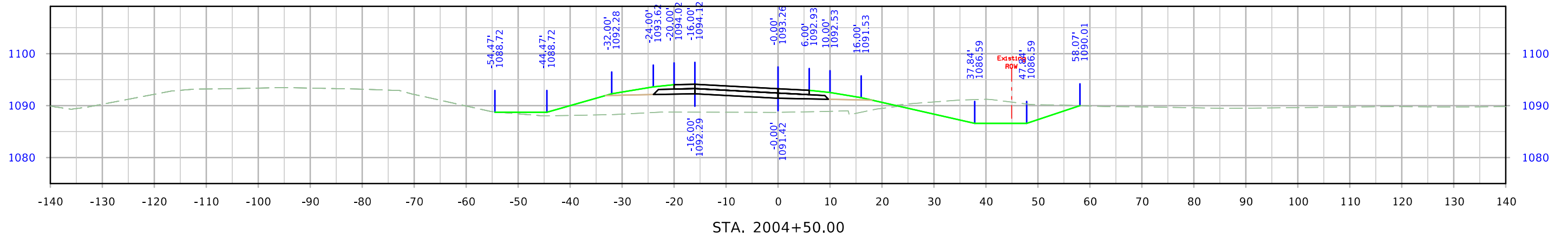
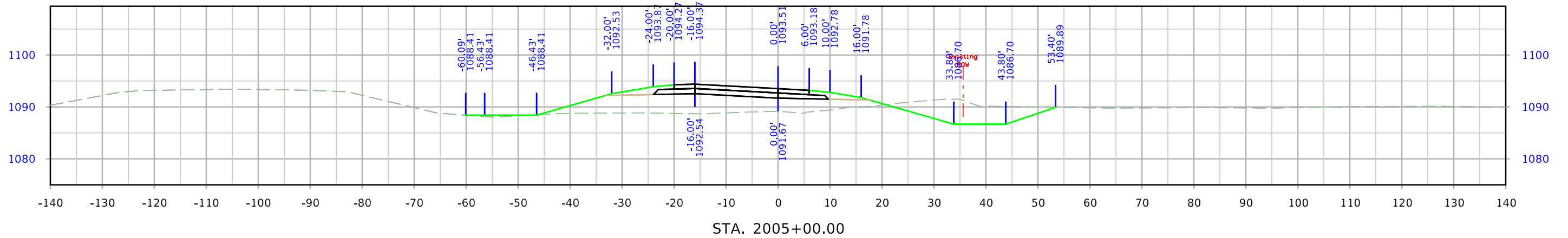
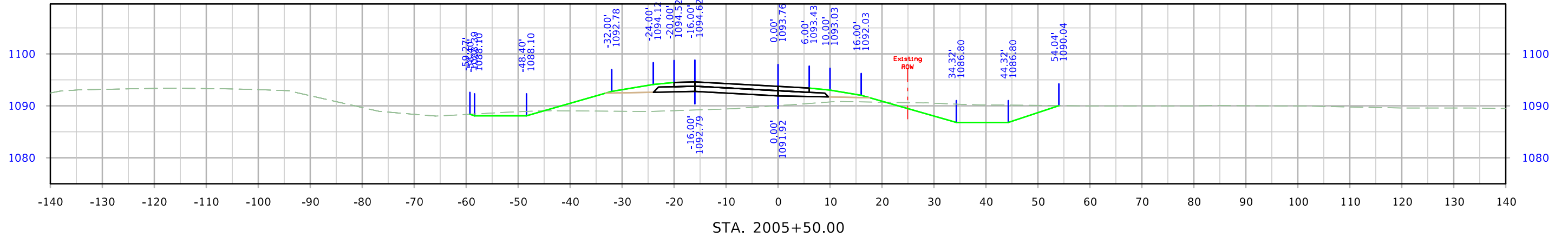
I-29 Ramp B



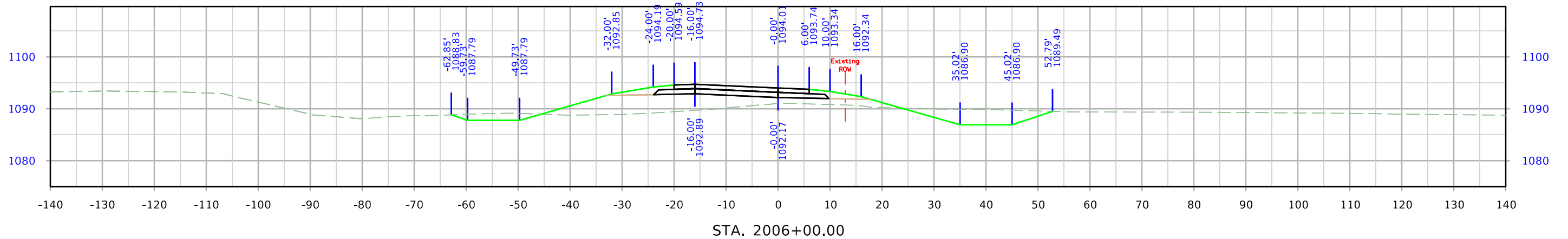
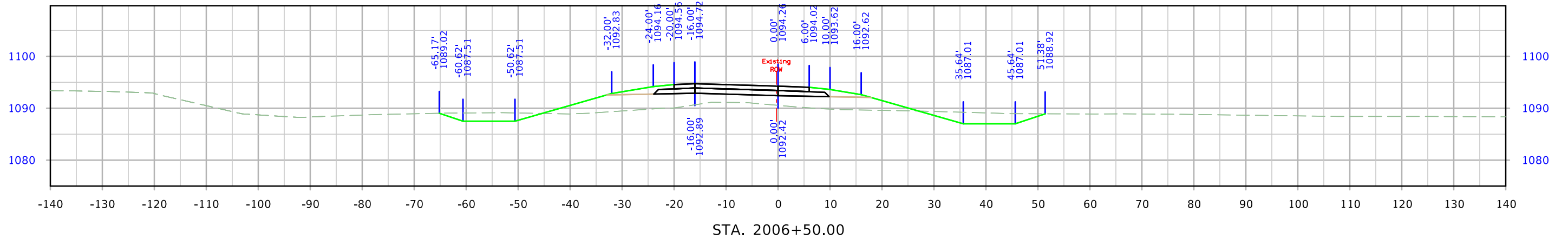
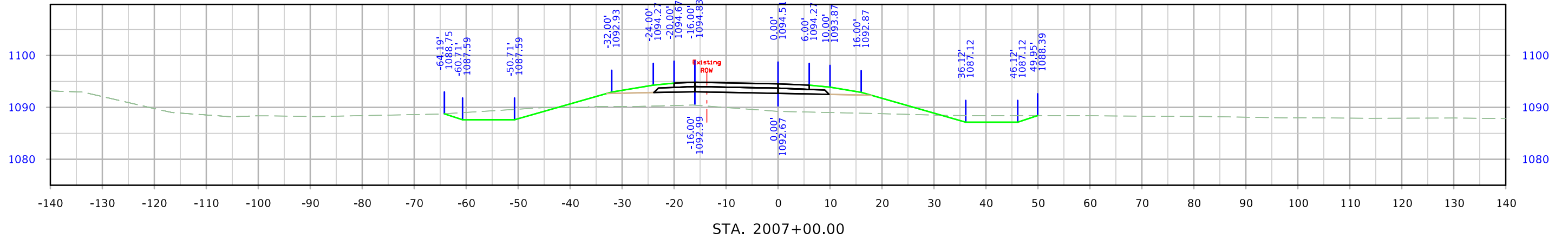
I-29 Ramp B



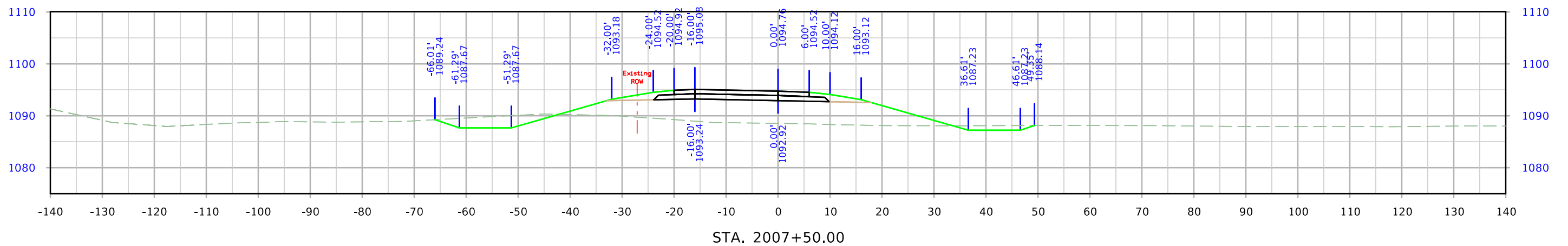
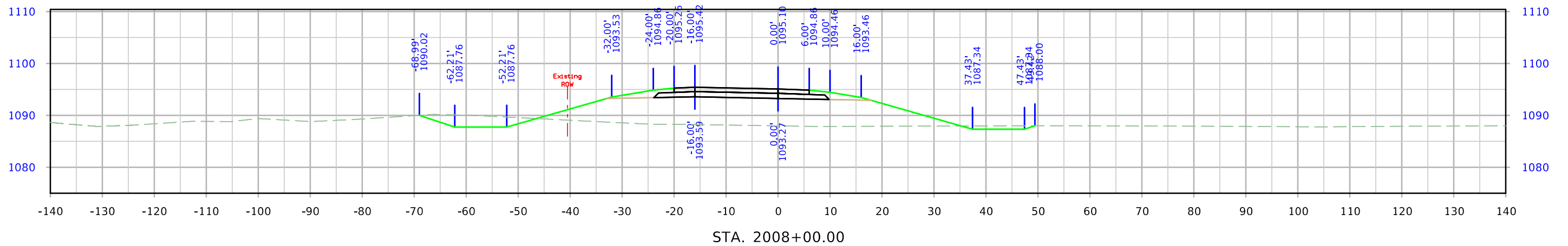
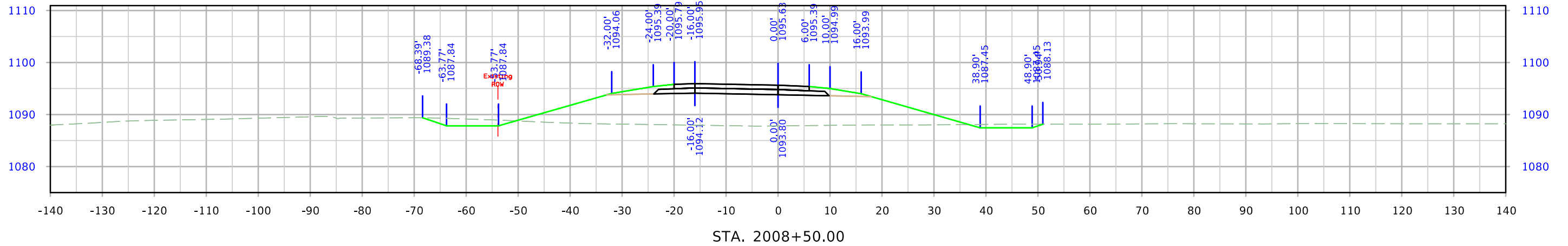
I-29 Ramp B



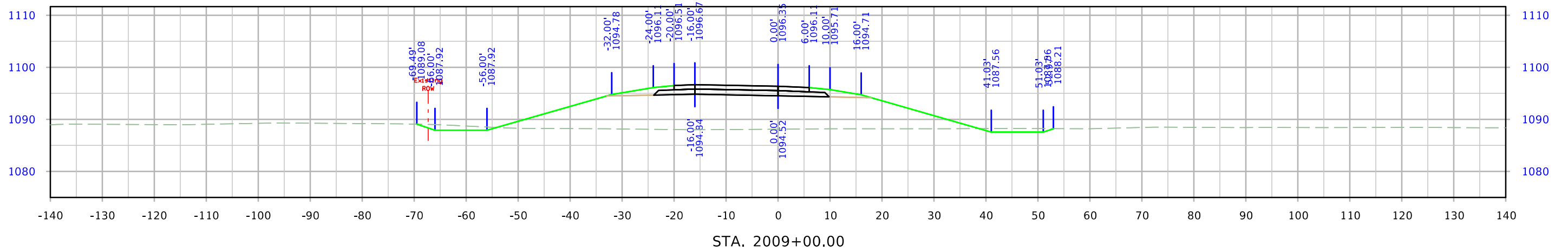
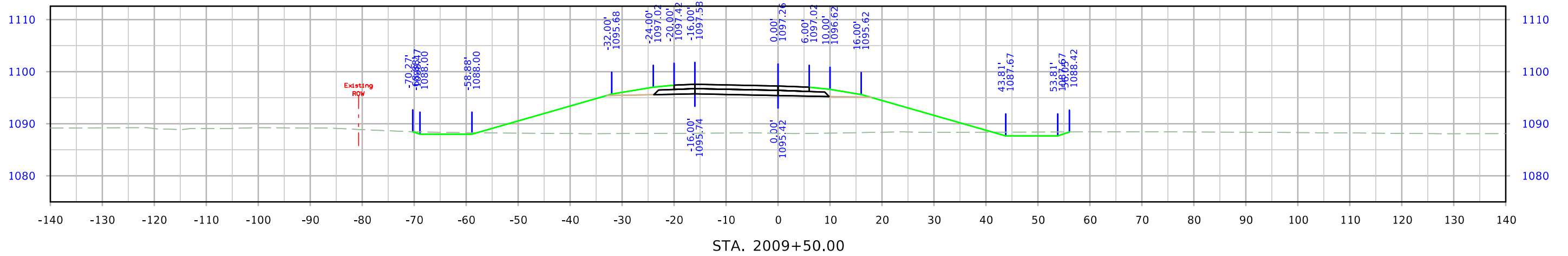
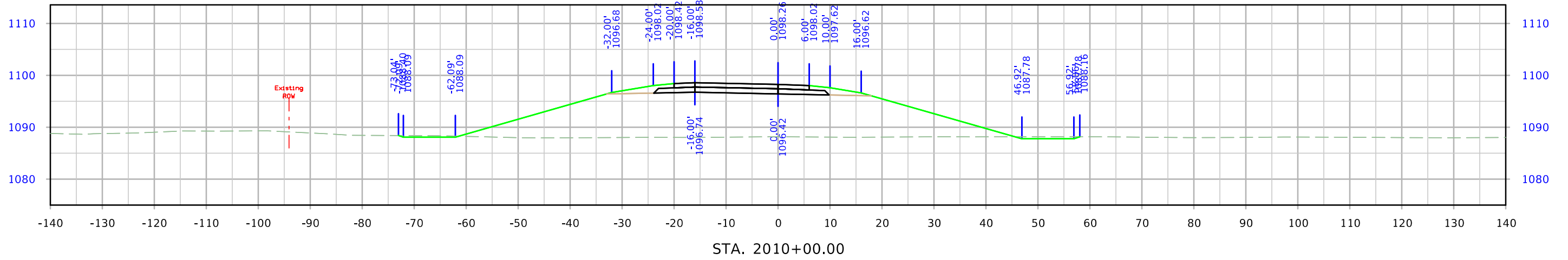
I-29 Ramp B



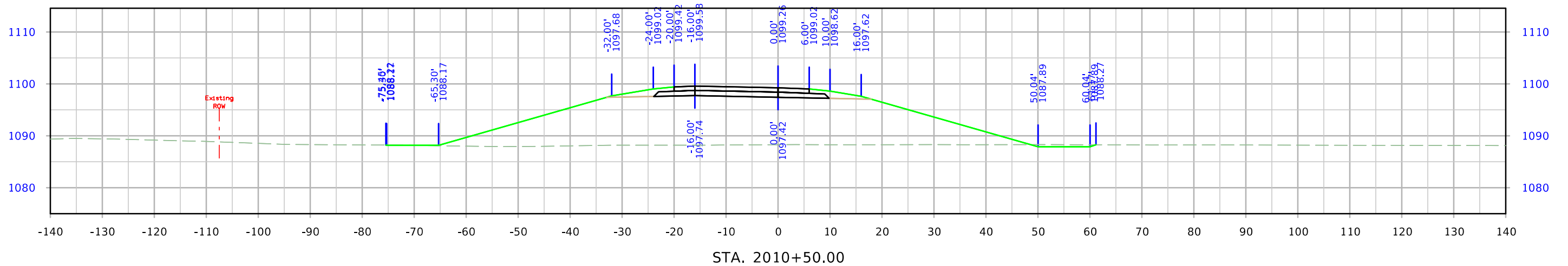
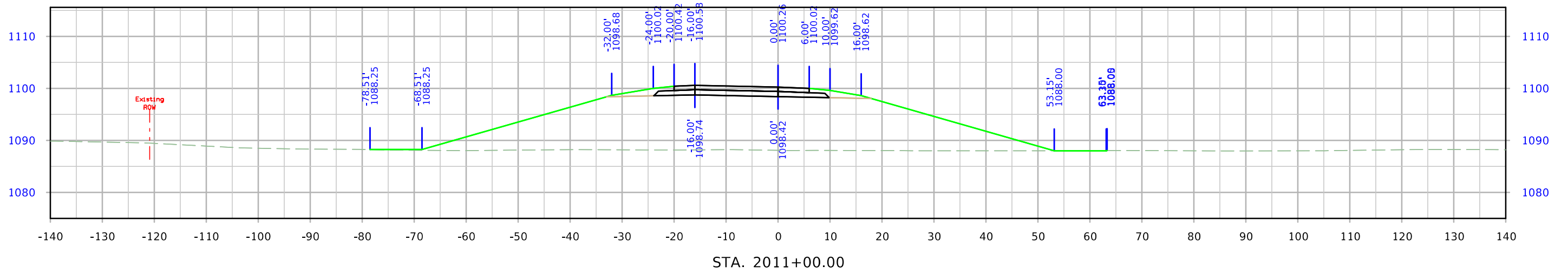
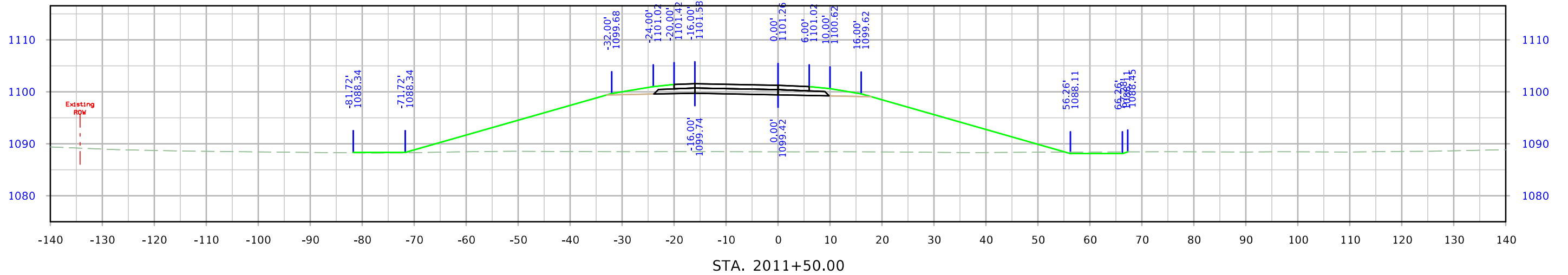
I-29 Ramp B



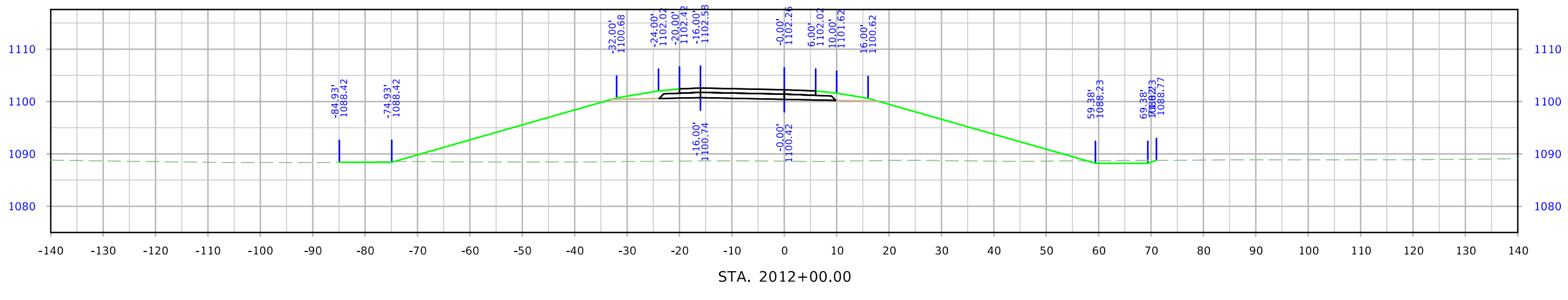
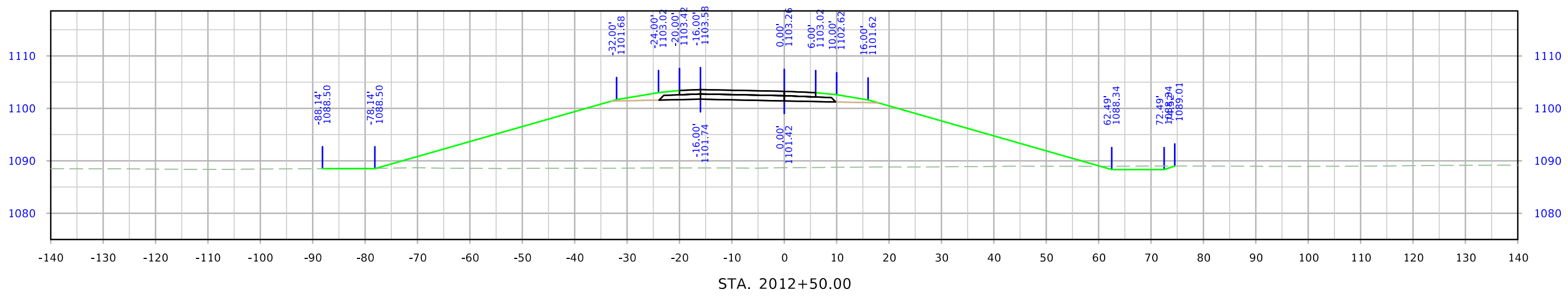
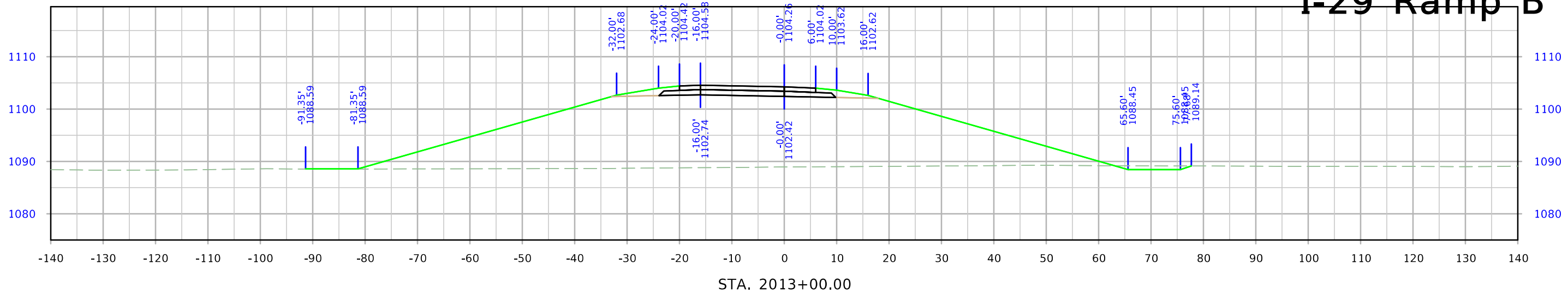
I-29 Ramp B



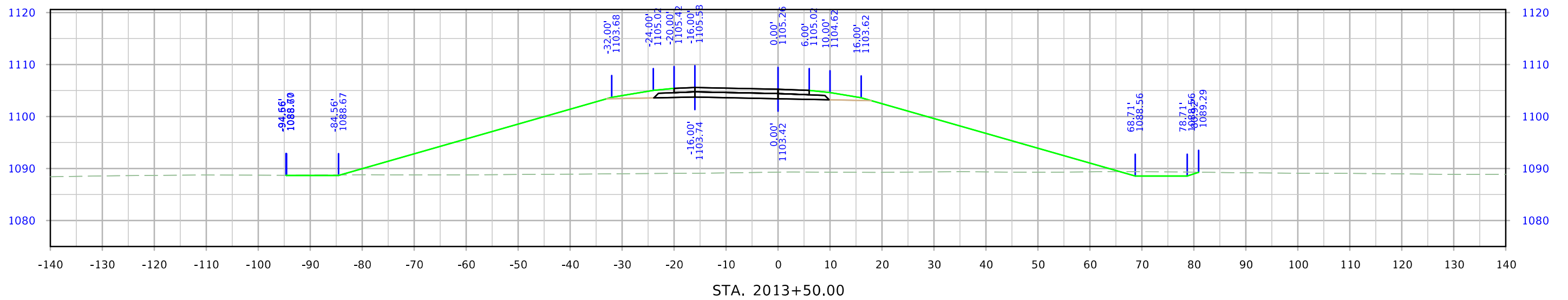
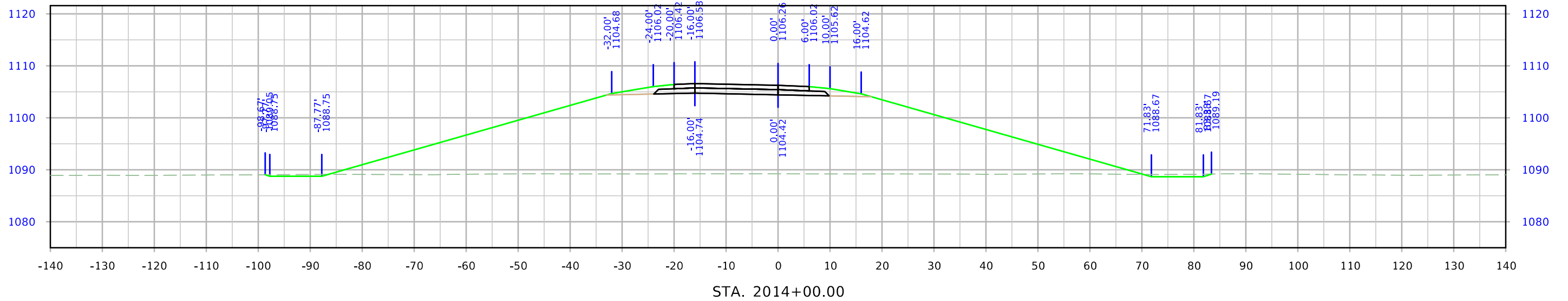
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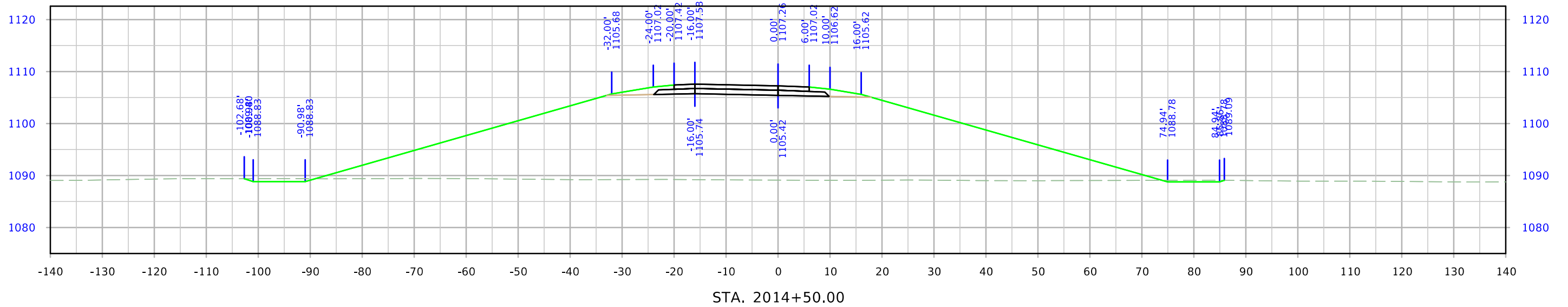
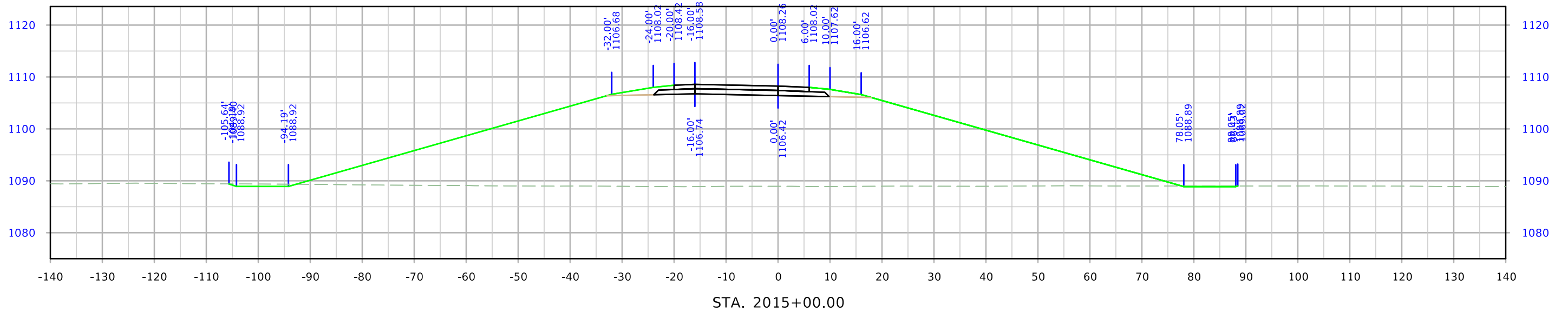
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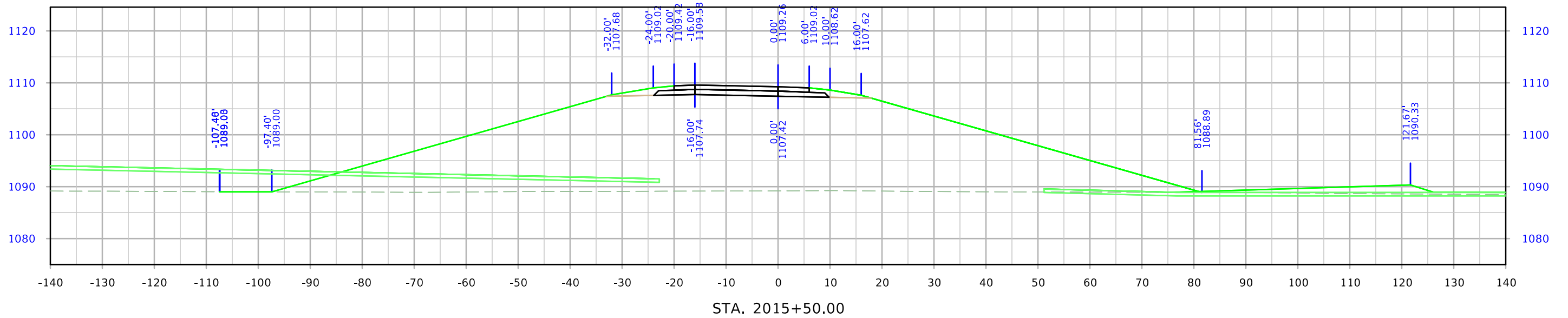
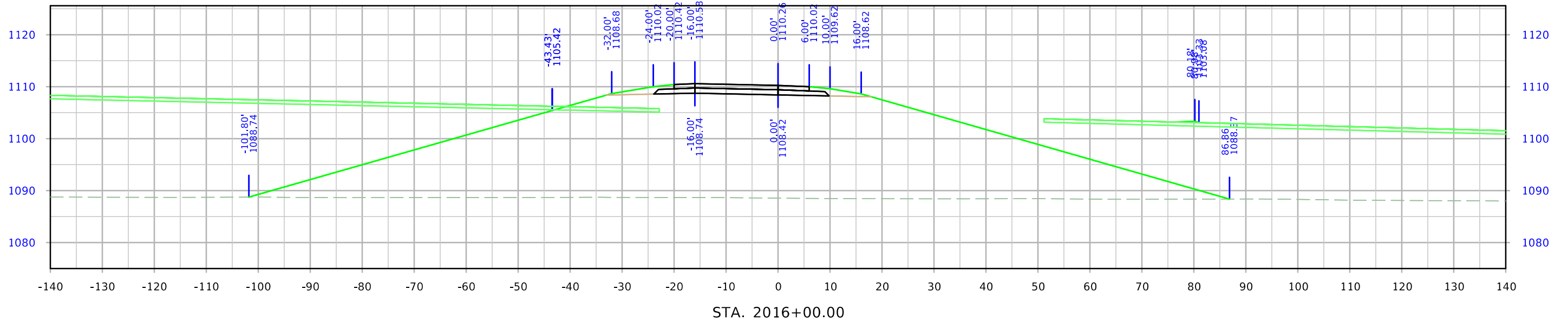
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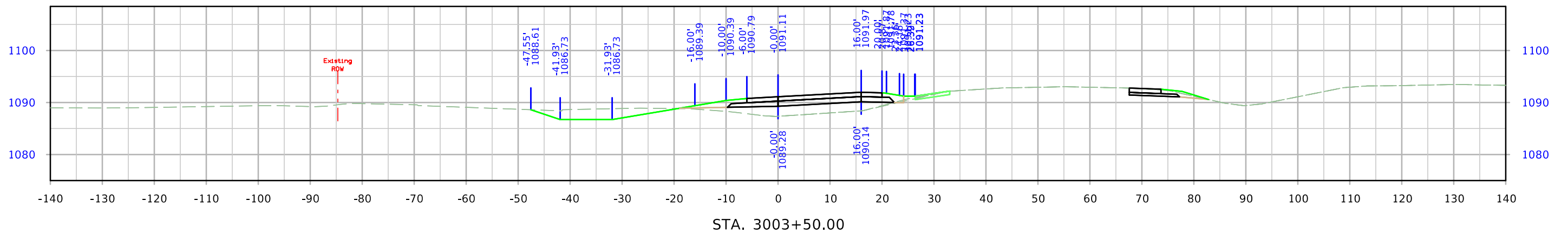
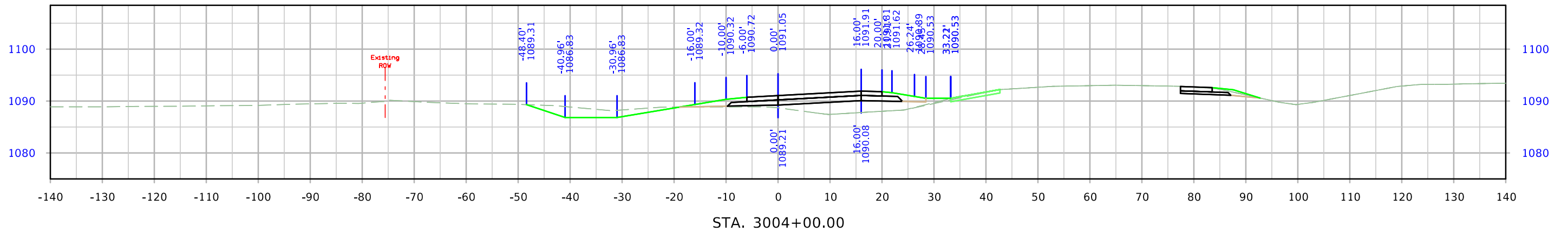
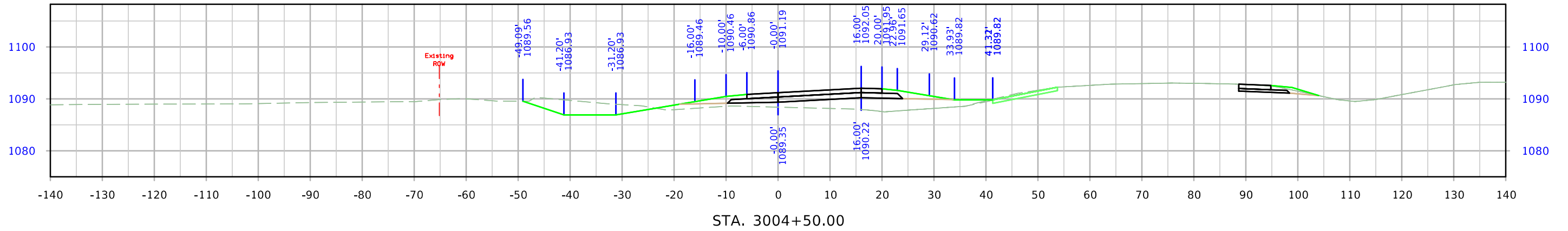
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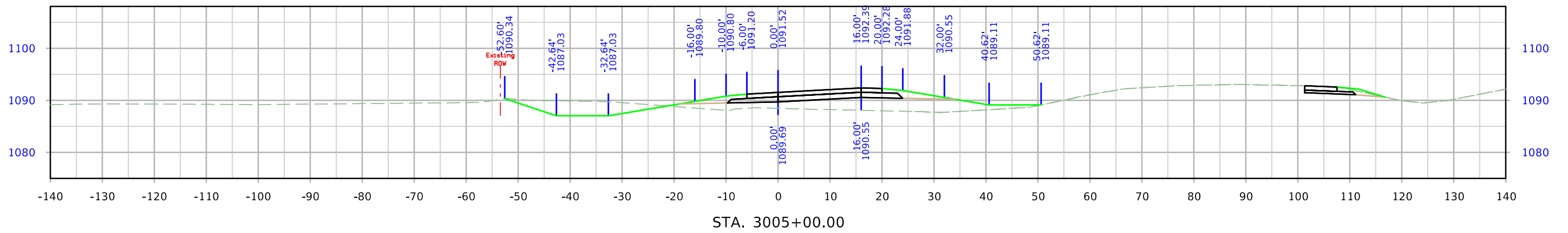
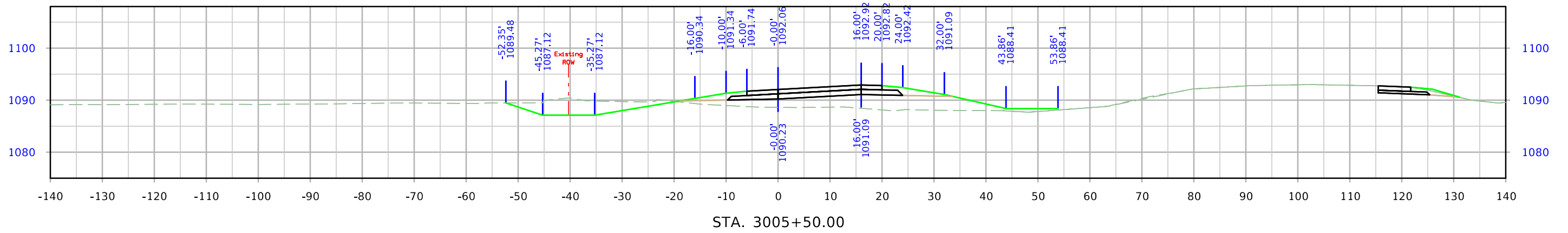
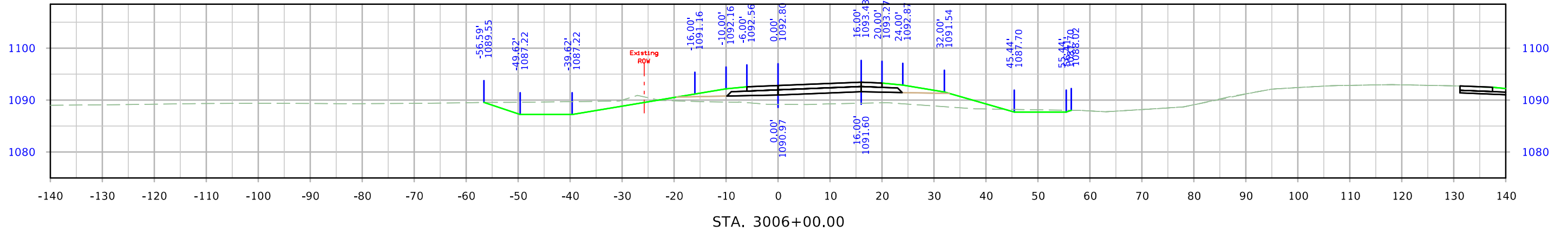
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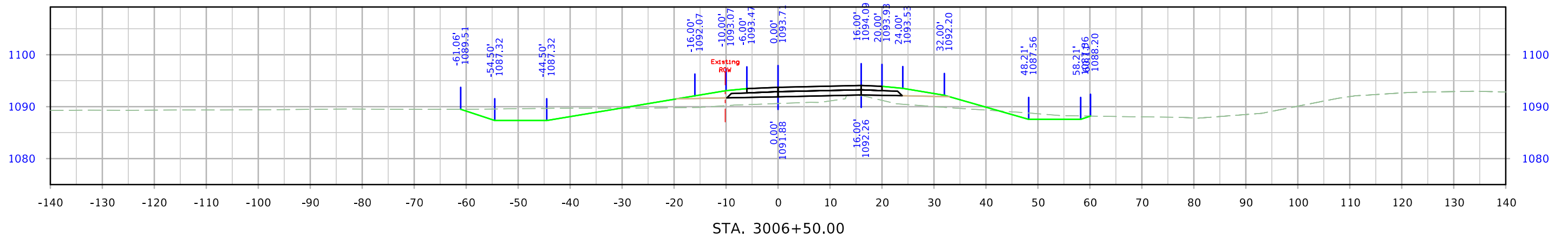
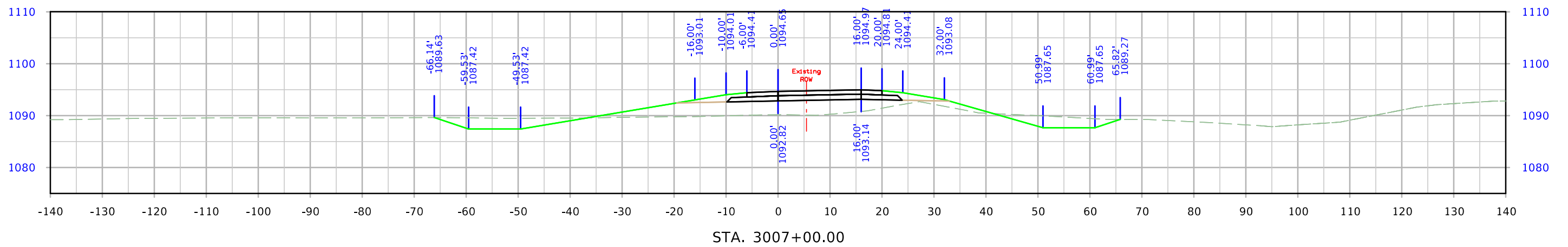
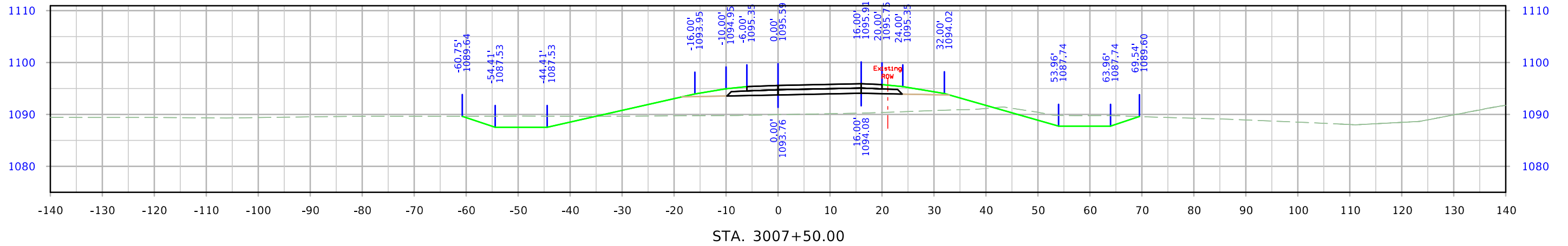
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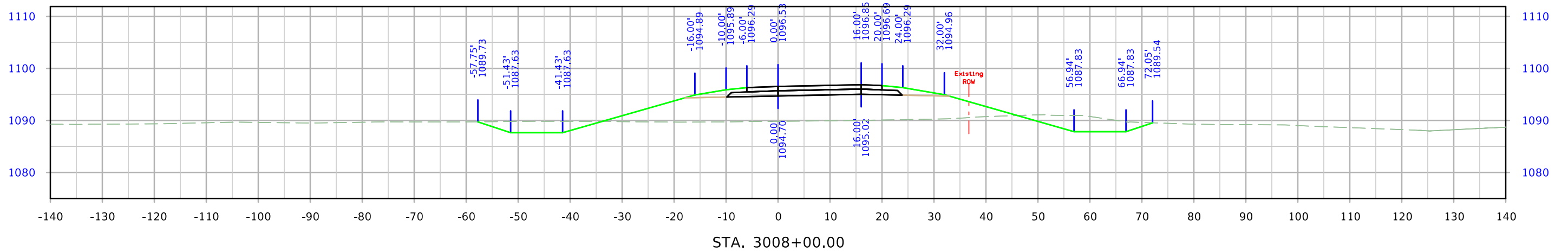
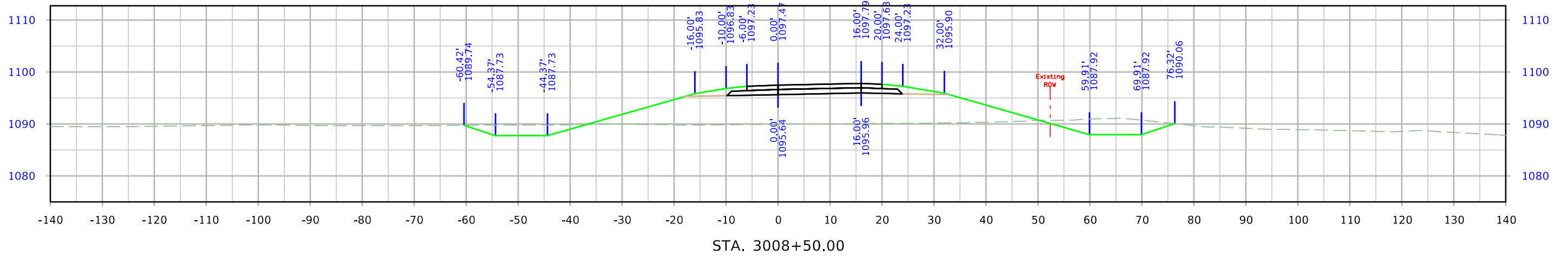
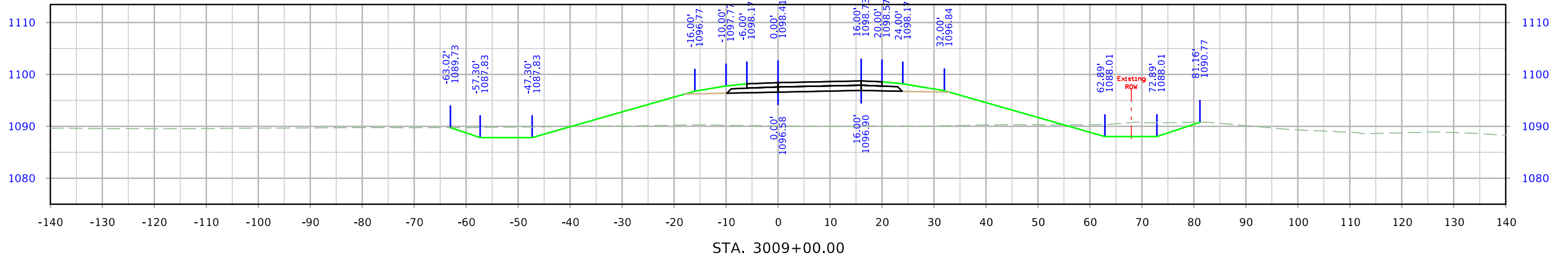
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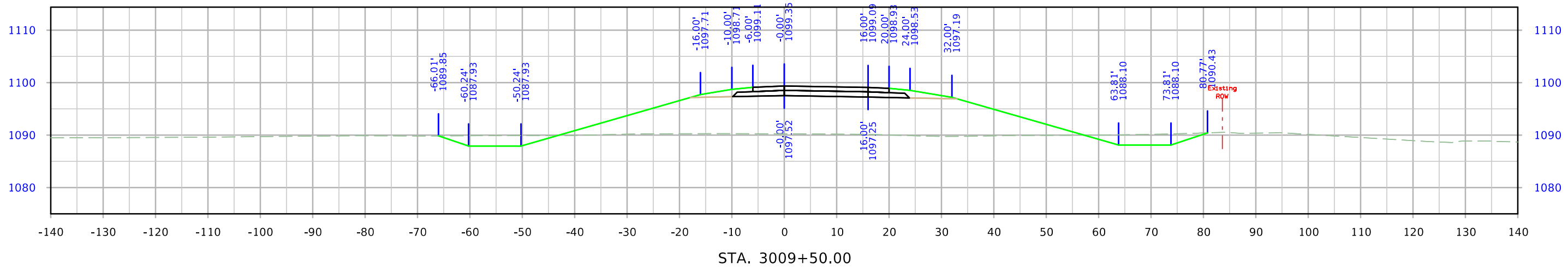
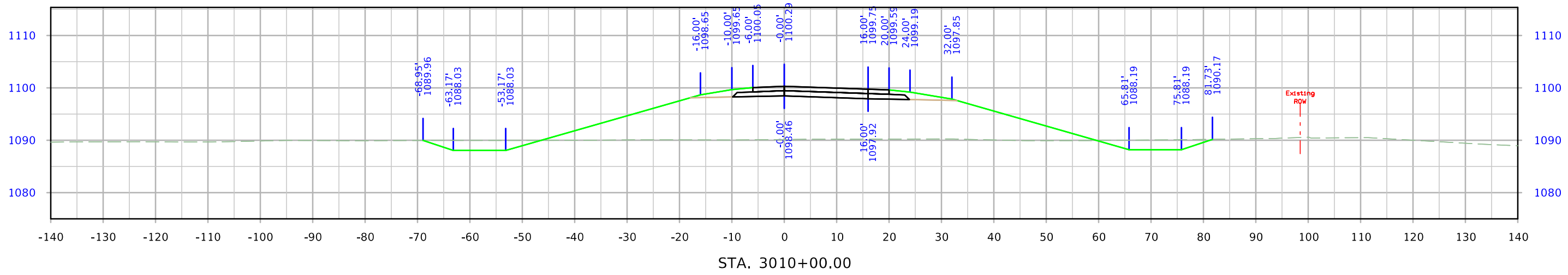
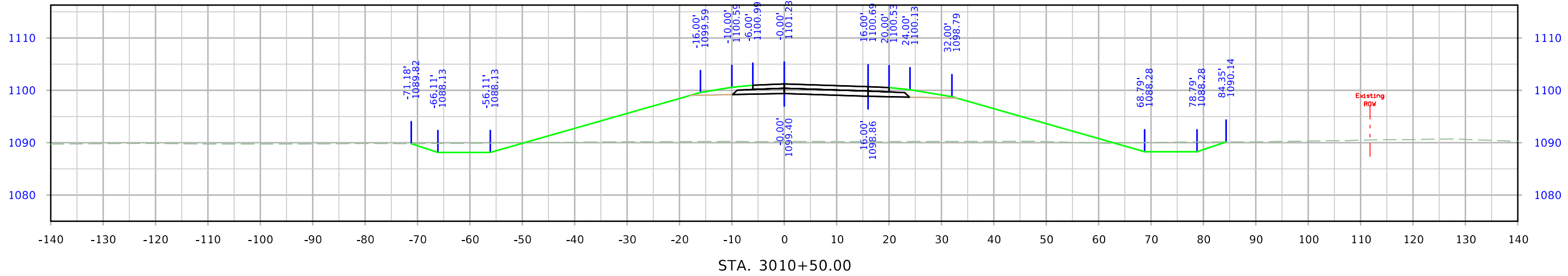
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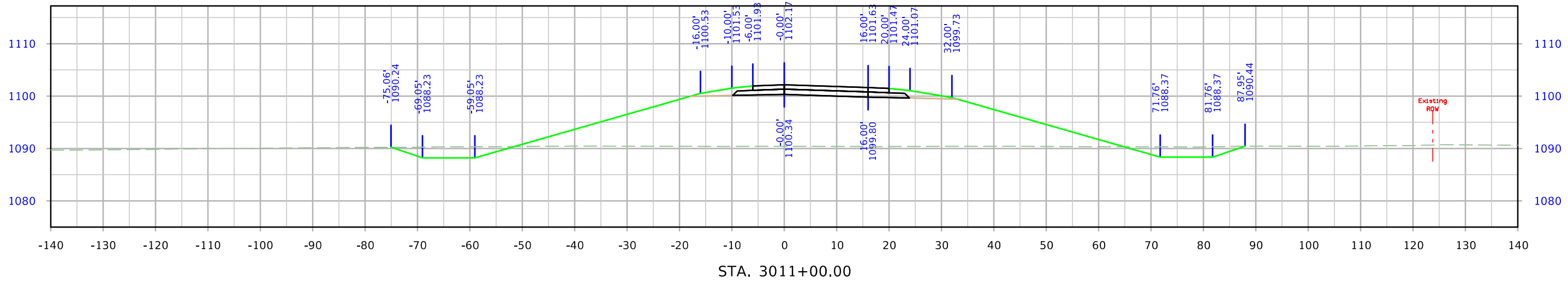
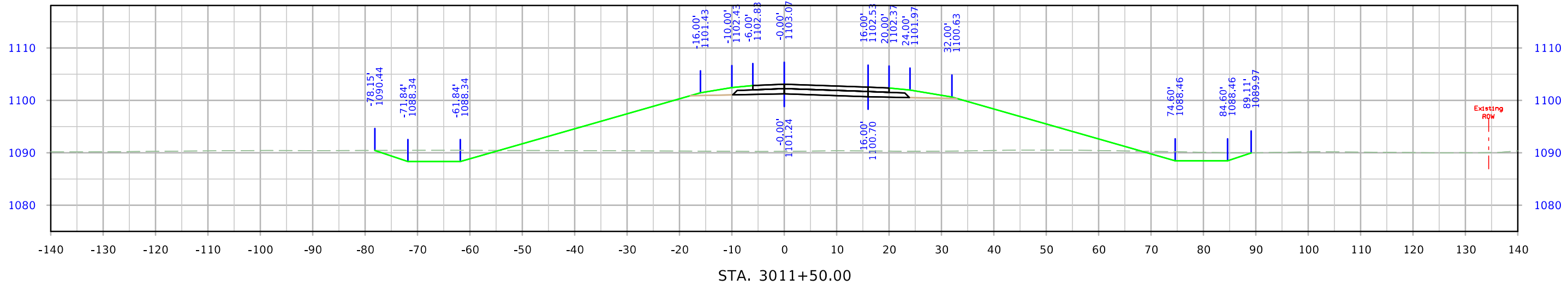
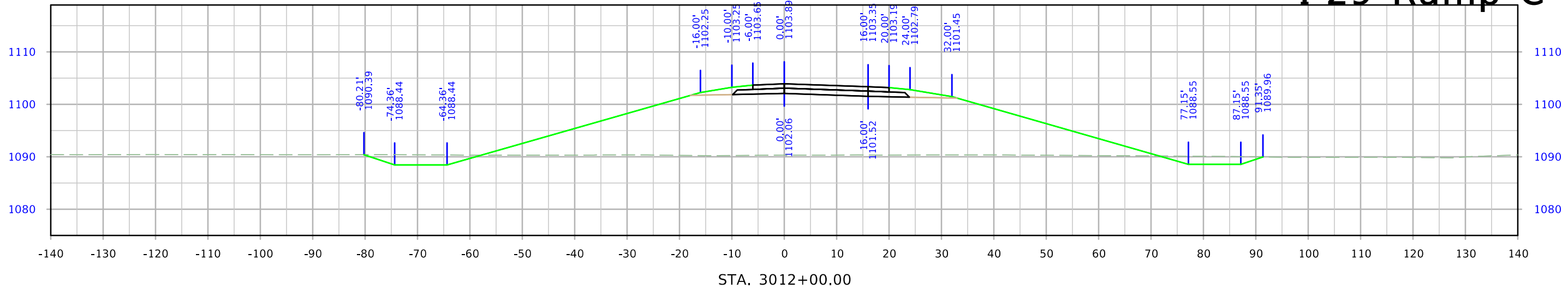
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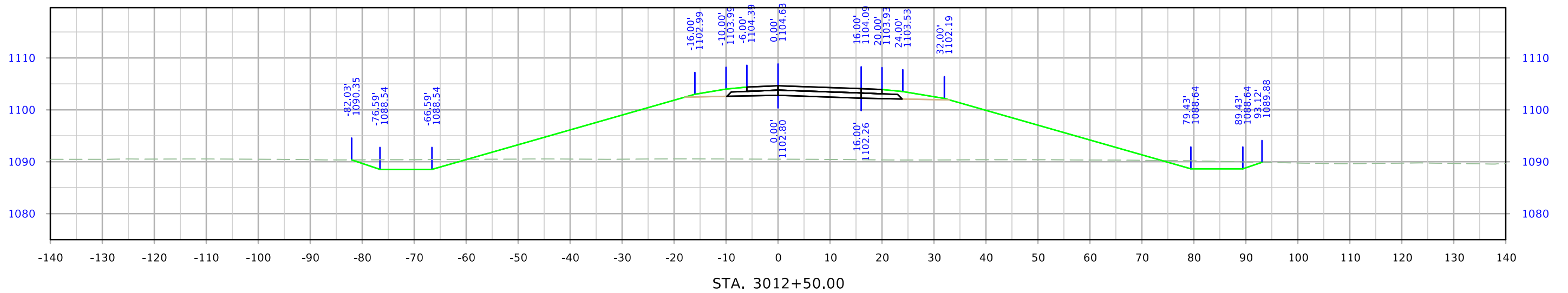
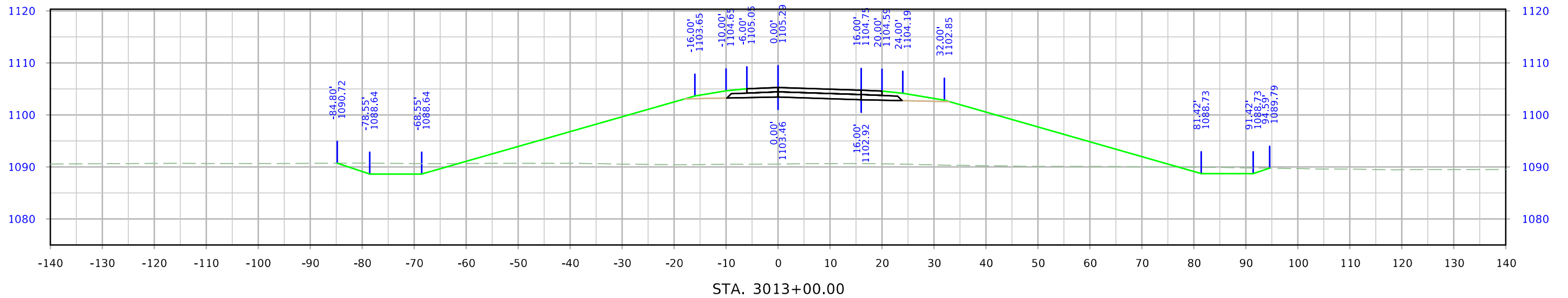
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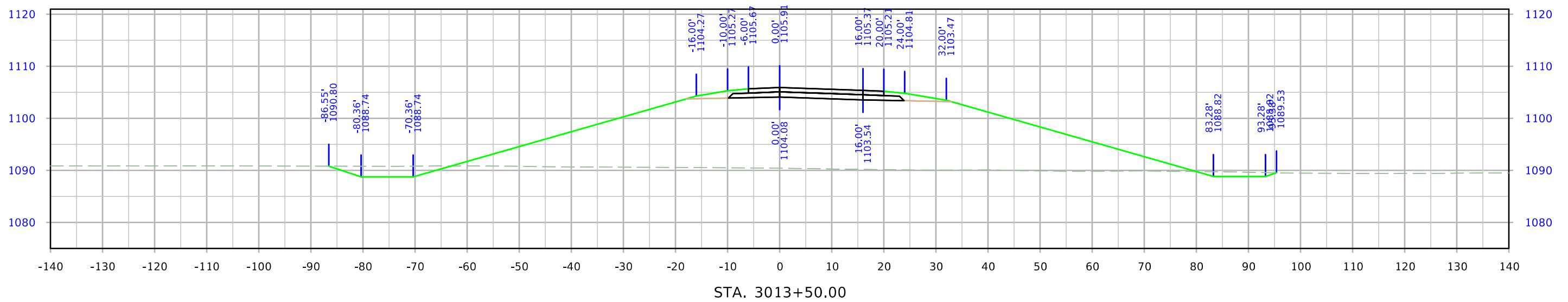
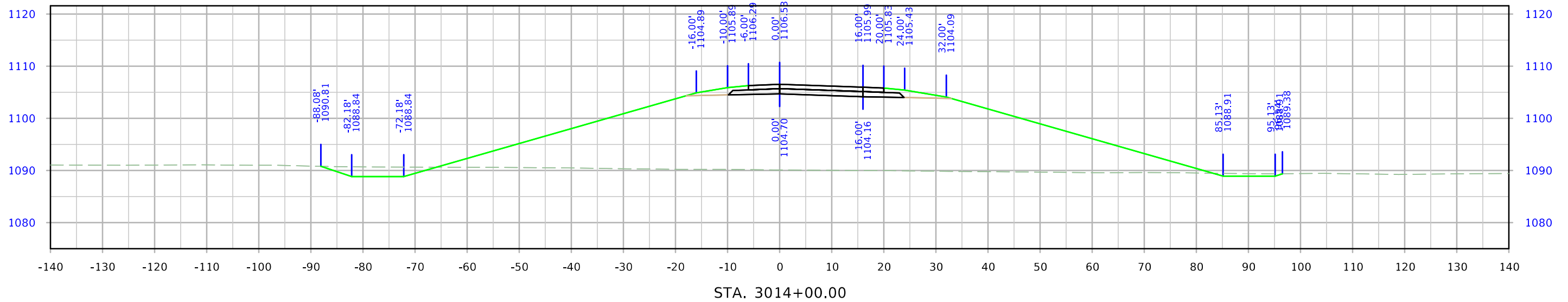
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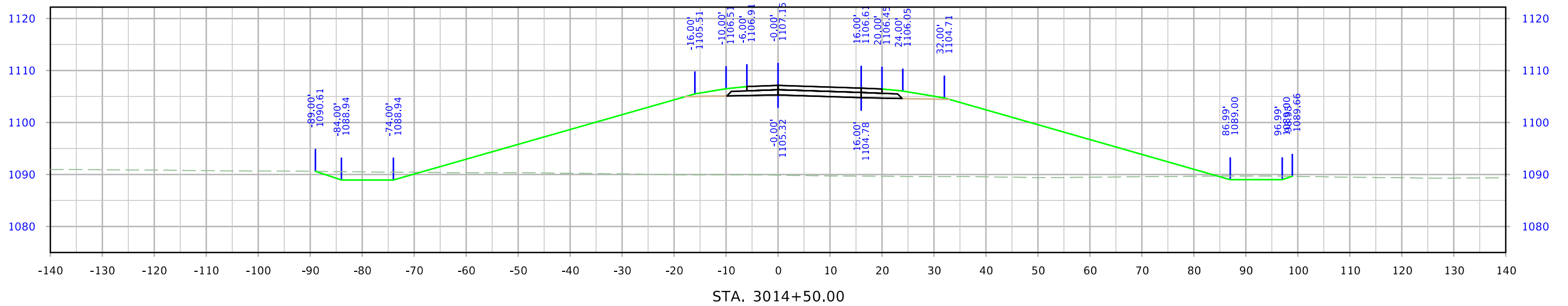
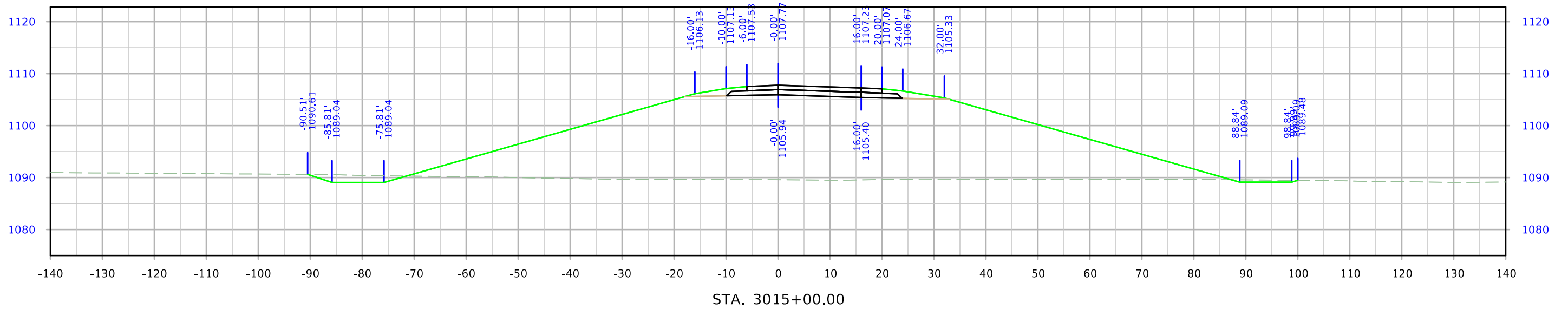
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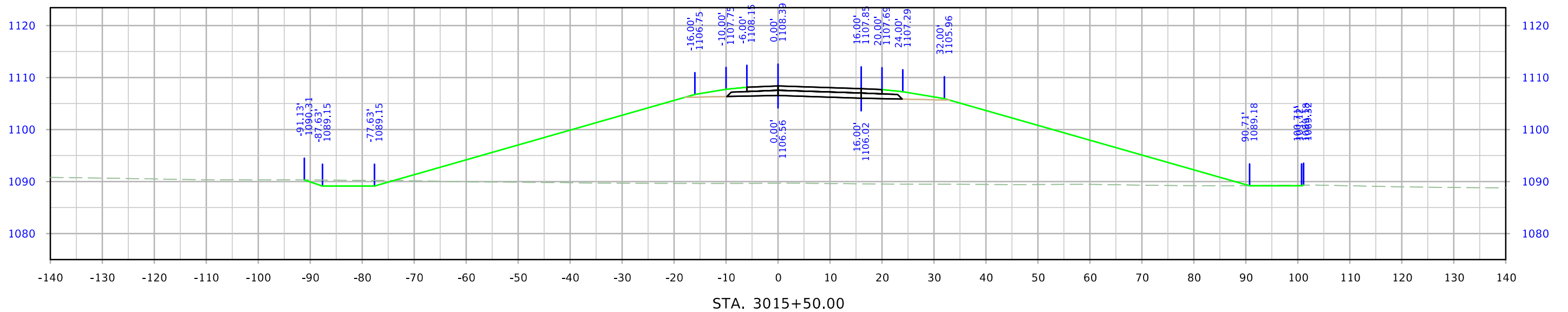
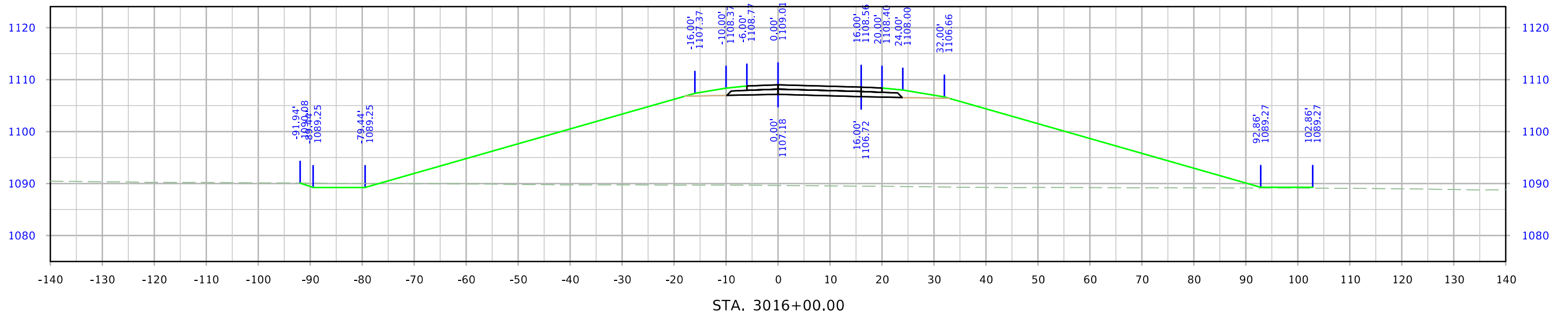
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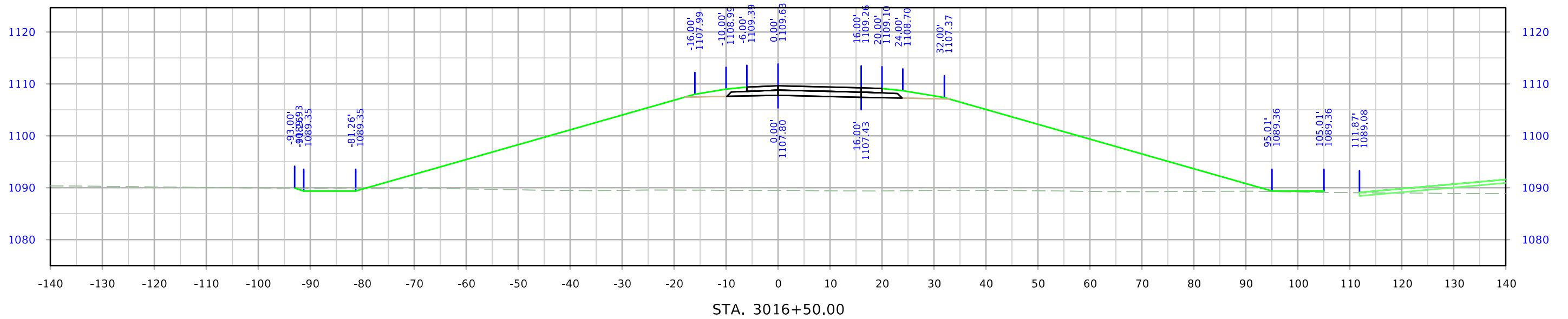
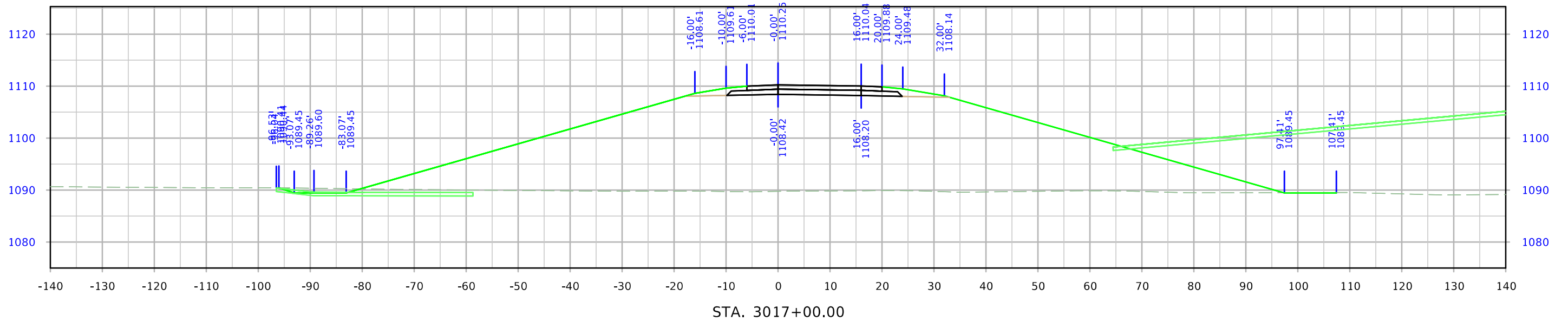
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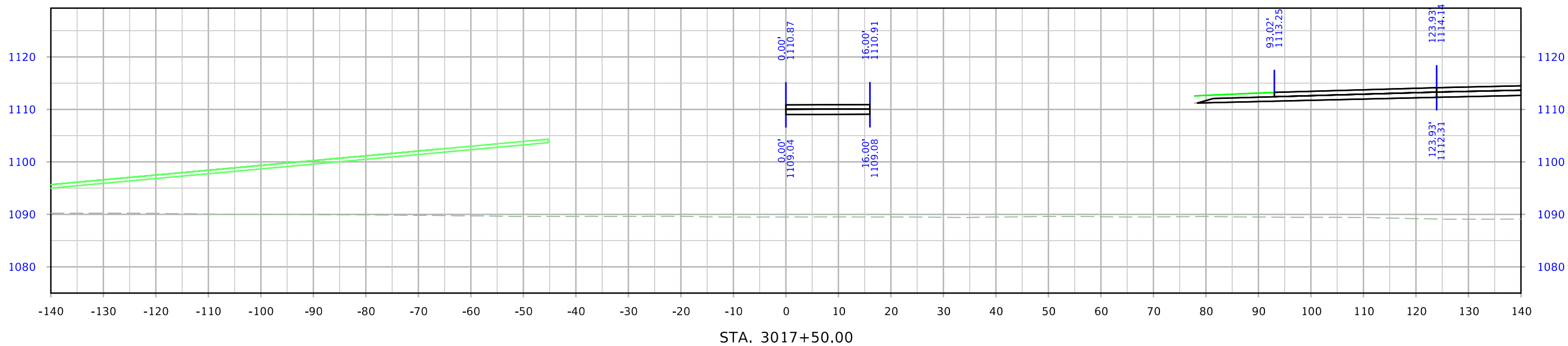
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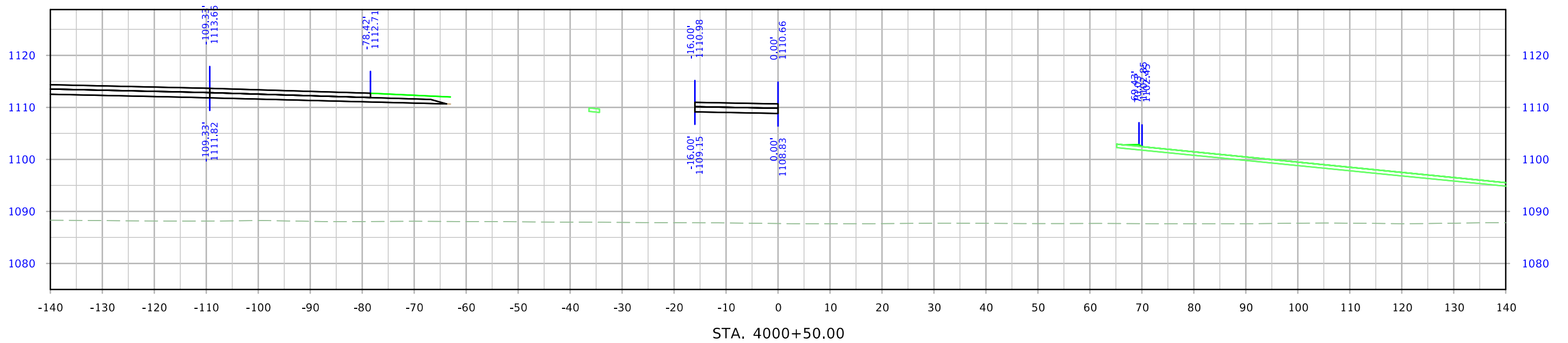
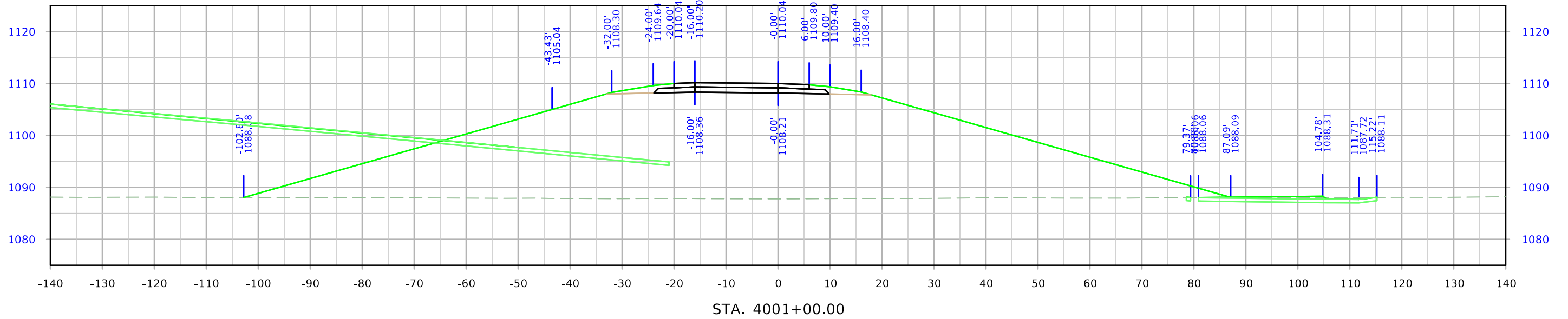
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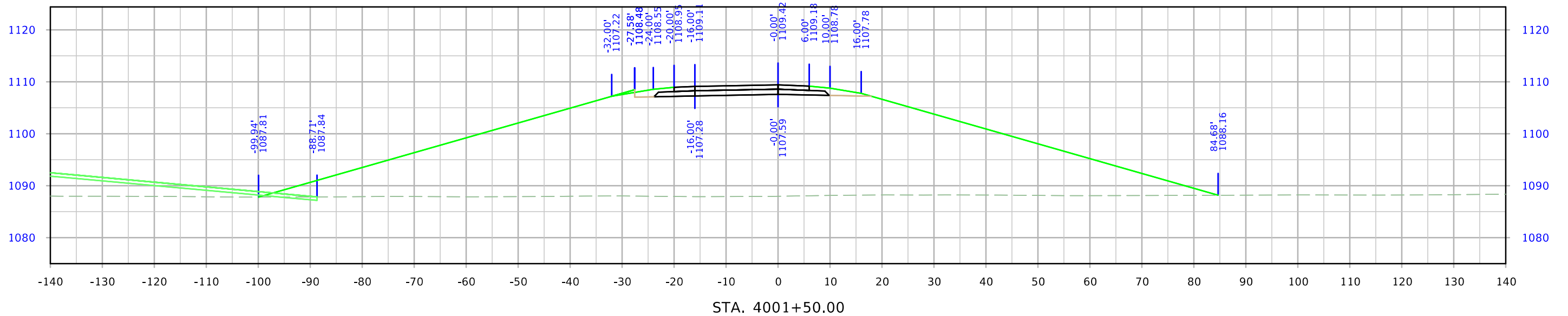
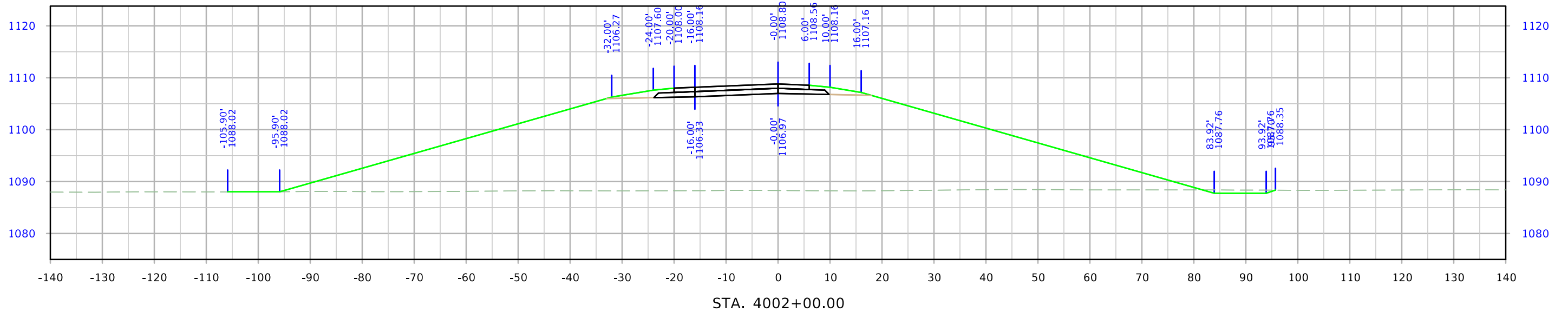
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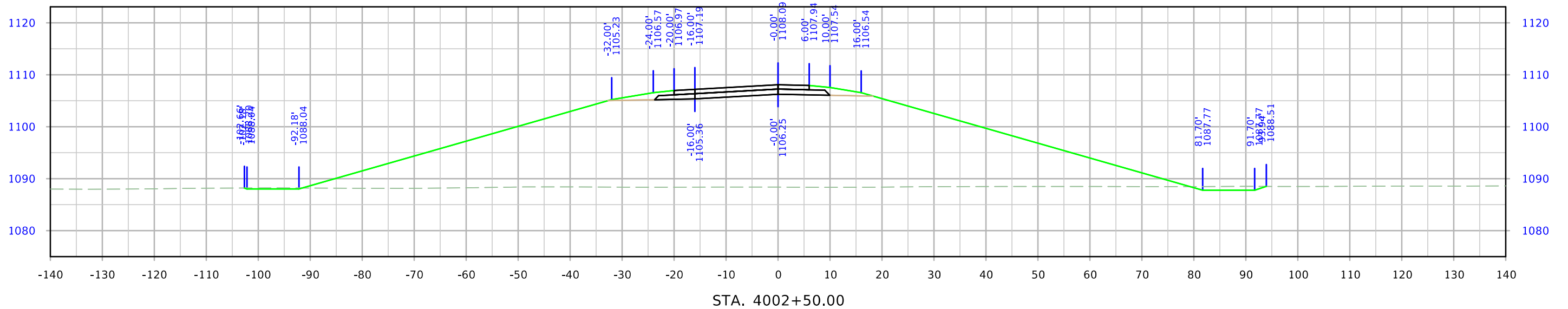
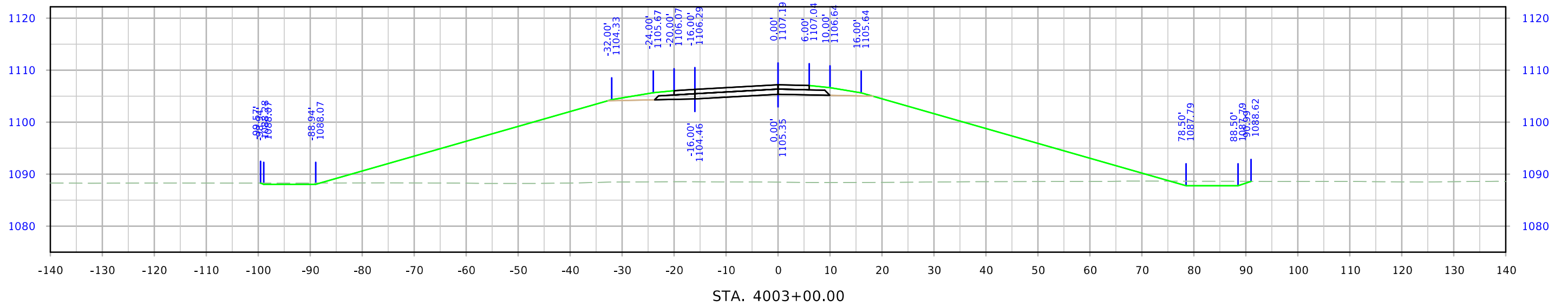
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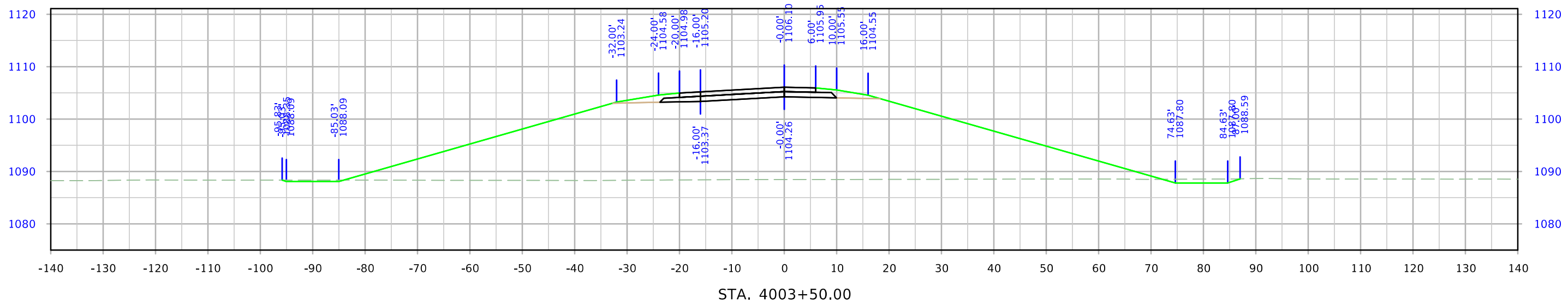
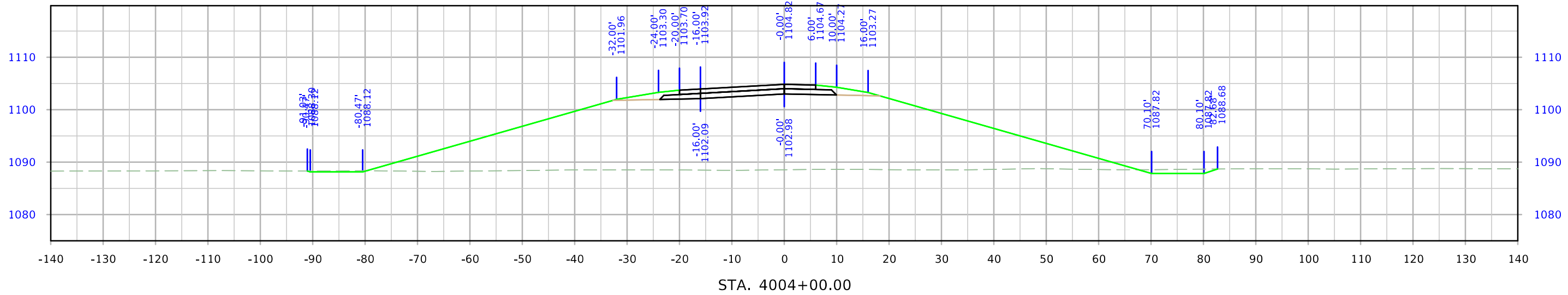
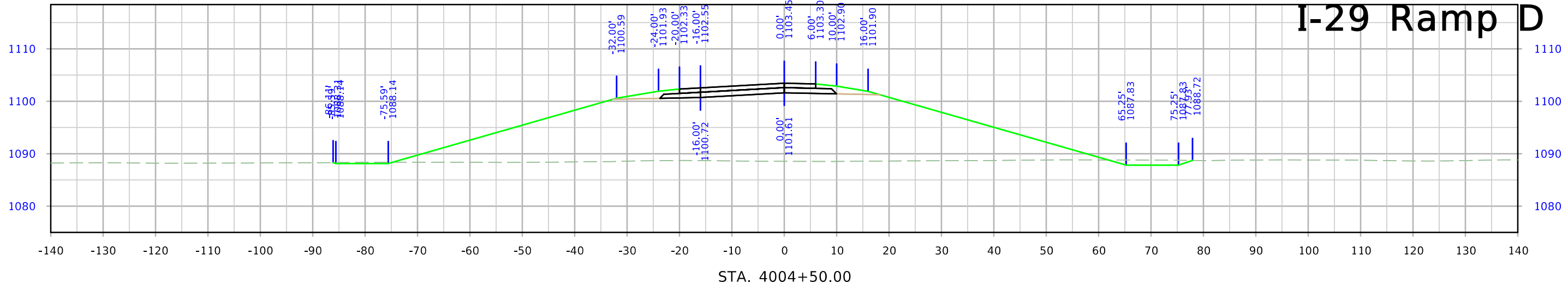
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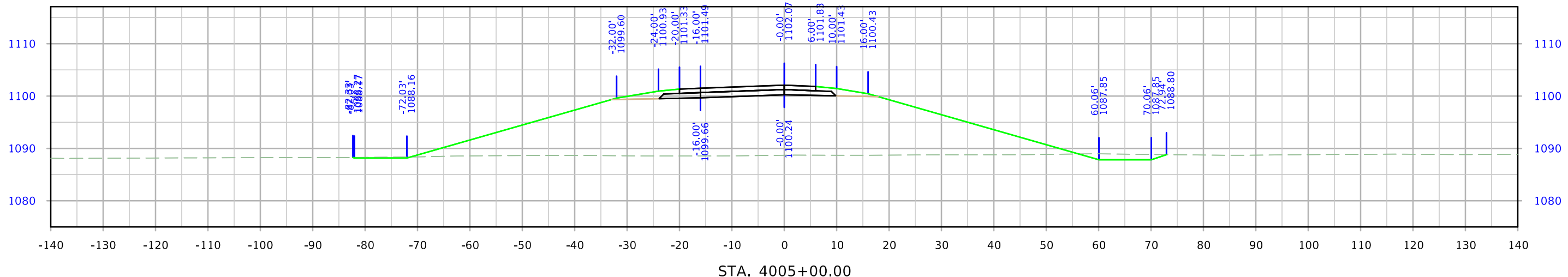
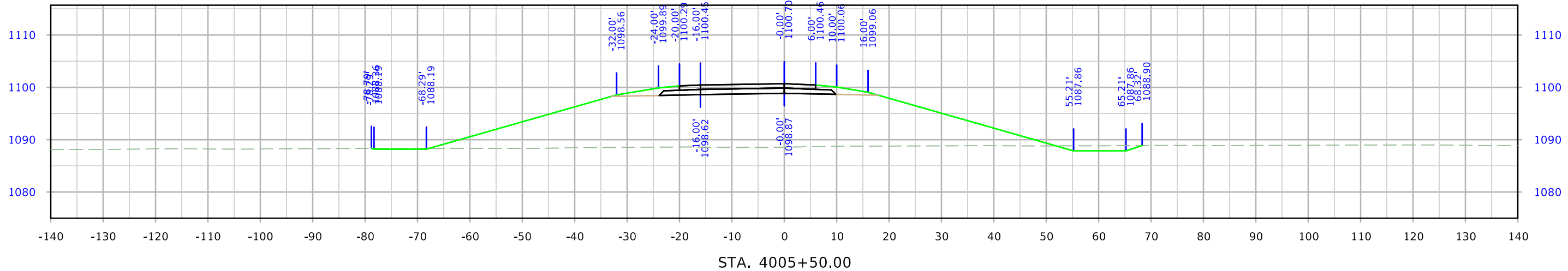
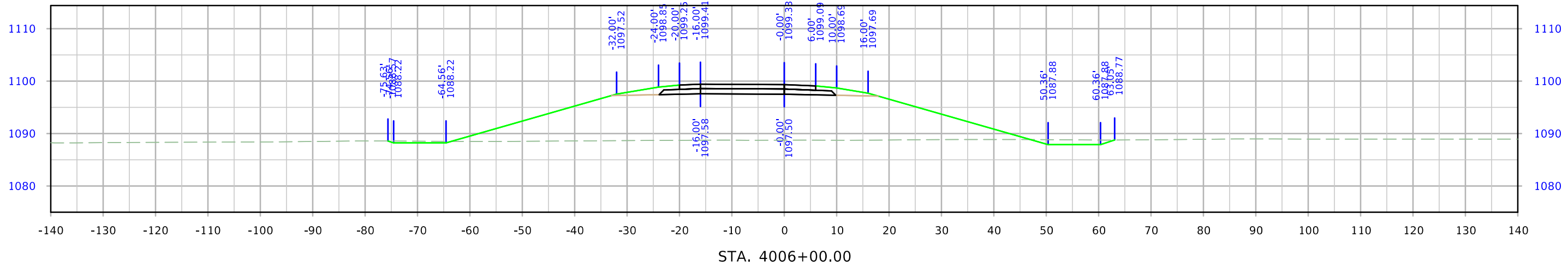
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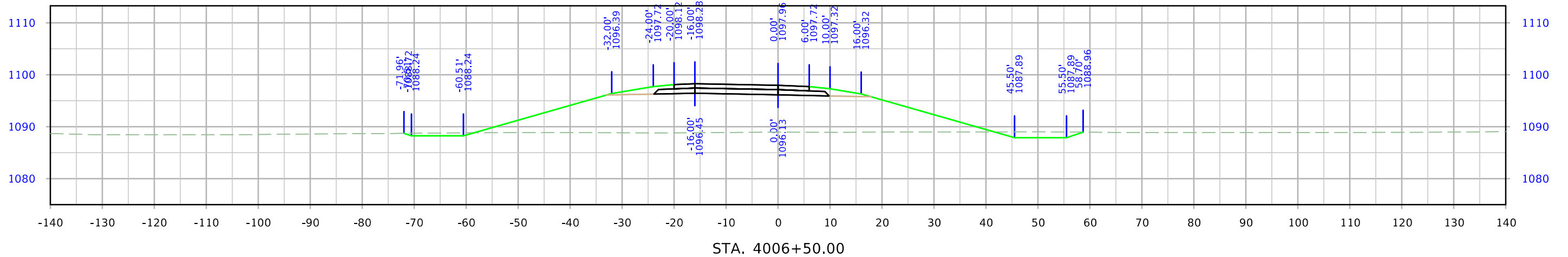
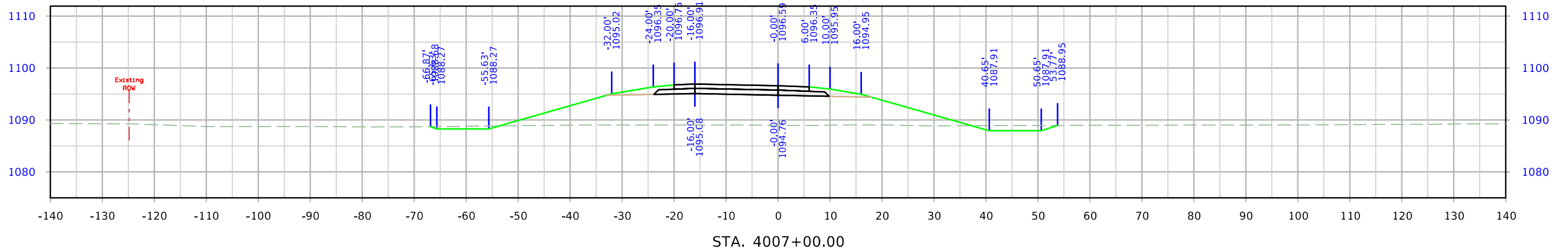
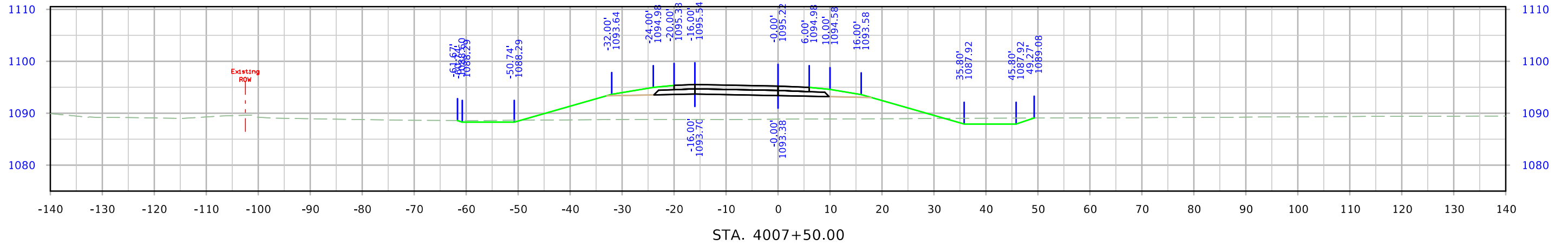
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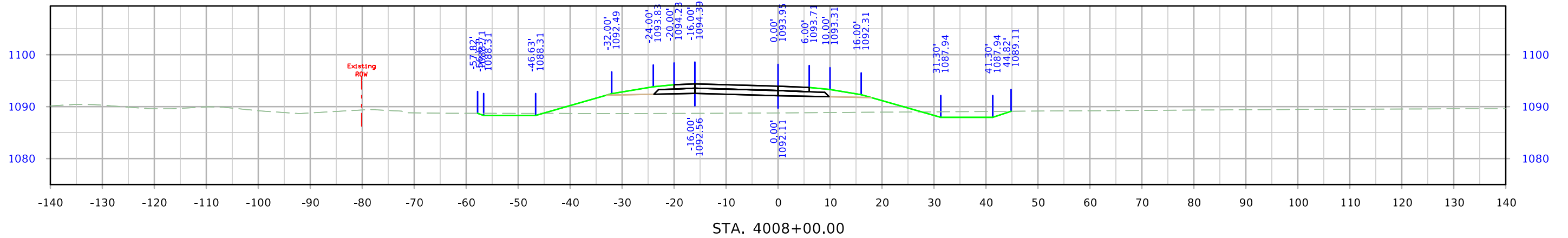
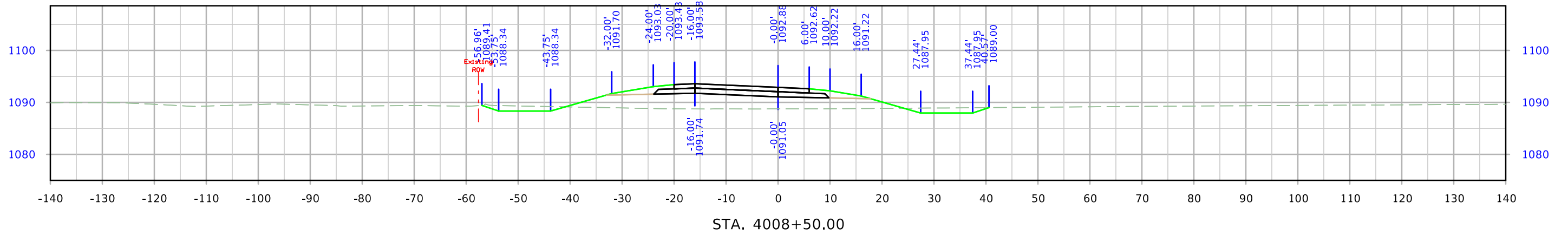
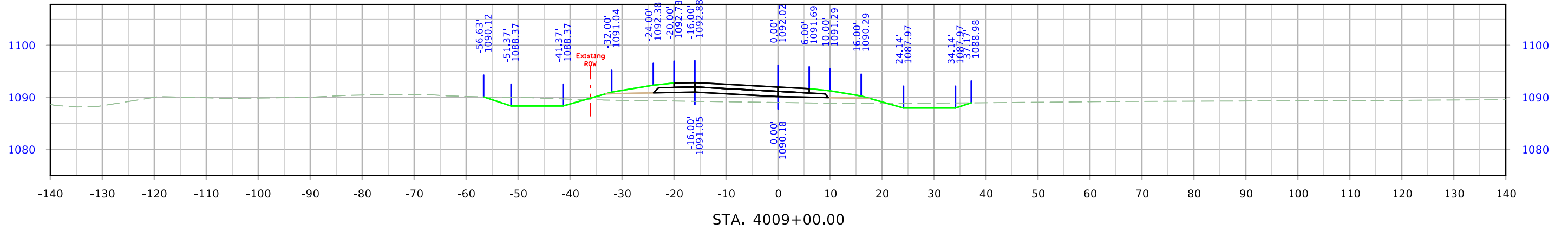
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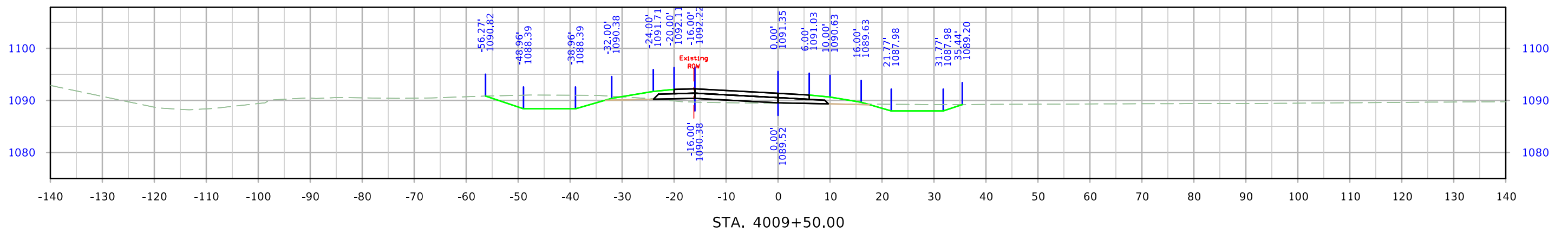
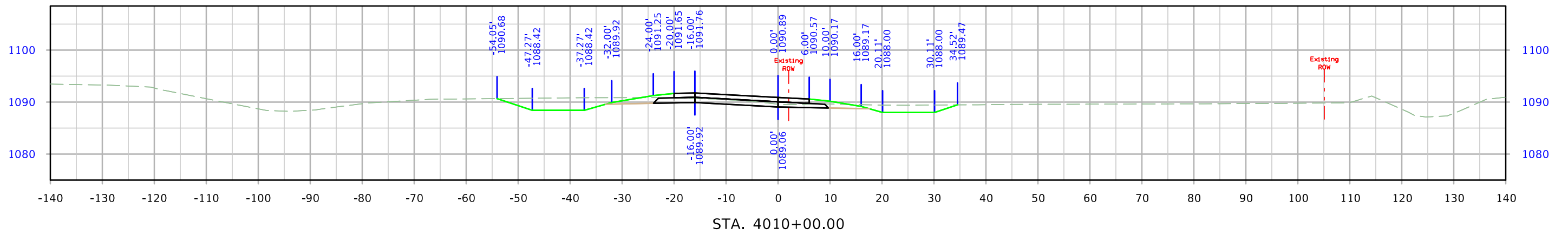
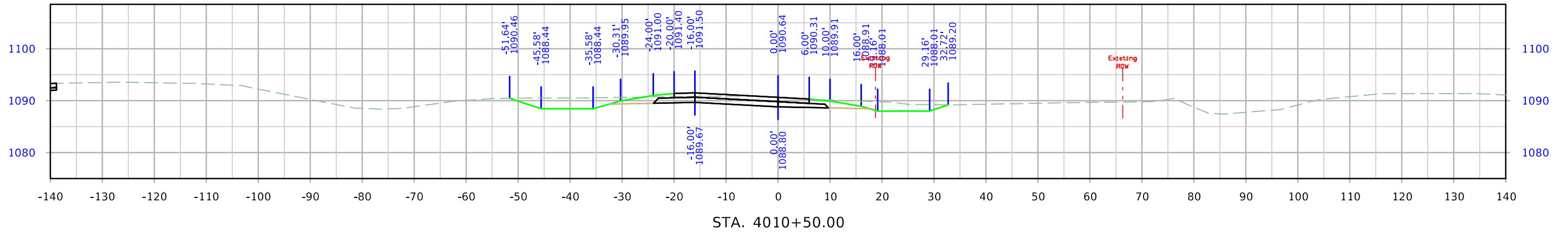
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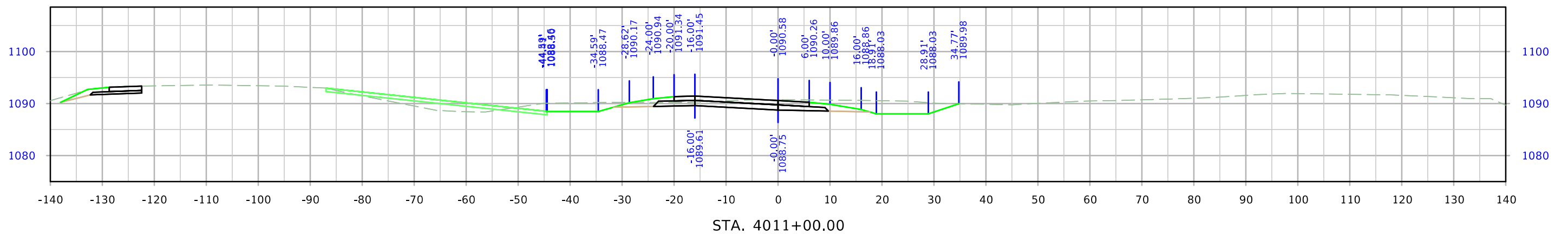
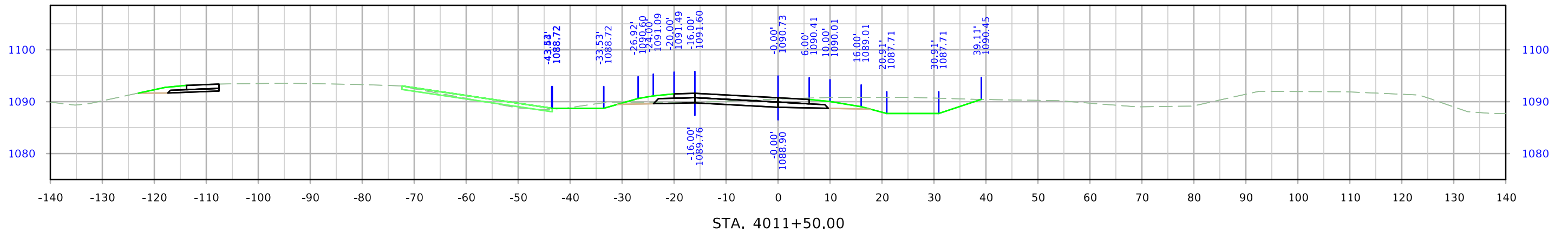
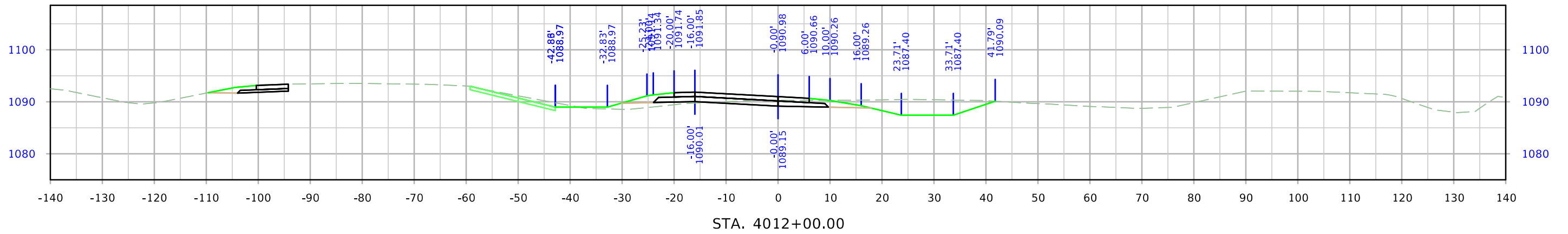
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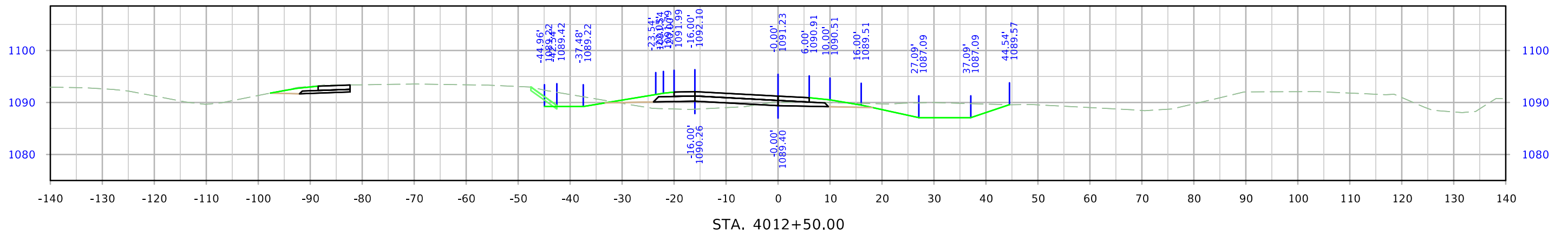
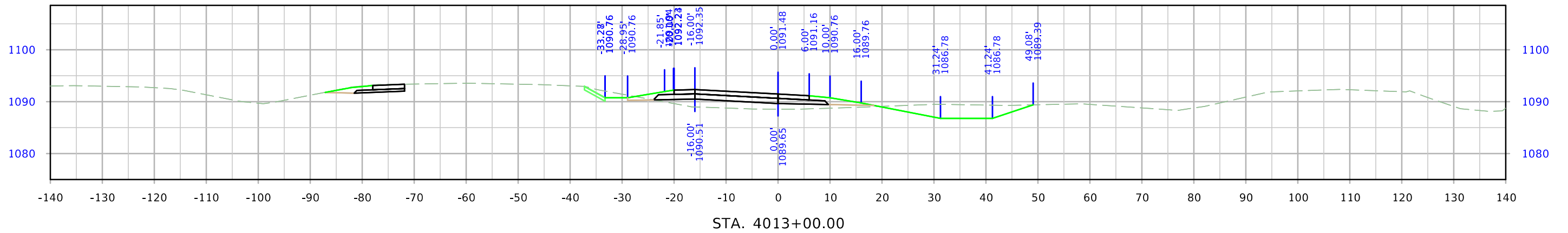
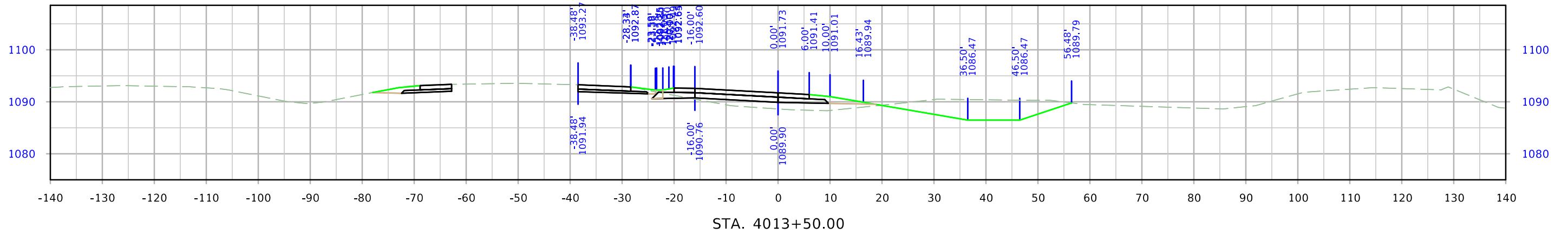
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