

SAC COUNTY

Grade and Replace  
NHSX-071-6(055)--3H-81

LETTING DATE  
10-17-2028



PLANS OF PROPOSED IMPROVEMENT ON THE  
PRIMARY ROAD SYSTEM  
**SAC COUNTY**  
Grade and Replace

Carroll Co to Jct IA 175 in Auburn

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



DESIGN DATA RURAL			
2029	AADT	3800	V.P.D.
2049	AADT	4000	V.P.D.
2049	DHV		V.P.H.
	TRUCKS	23	%
	Total Design ESALs		

REVISIONS

TOTAL

145

PROJECT IDENTIFICATION NUMBER

24-81-071-010

PROJECT NUMBER

NHSX-071-6(055)--3H-81

R.O.W. PROJECT NUMBER

INDEX OF SHEETS

No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 15	Concept and Project Information
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 2	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2 - 15	US 71
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Survey Information
G.2	Control Point Vicinity Map
G.3	Horizontal and Vertical Control Tab.
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
J.1	Traffic Control Plan
J.2	Detour Plan
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 108	US 71 Cross Sections

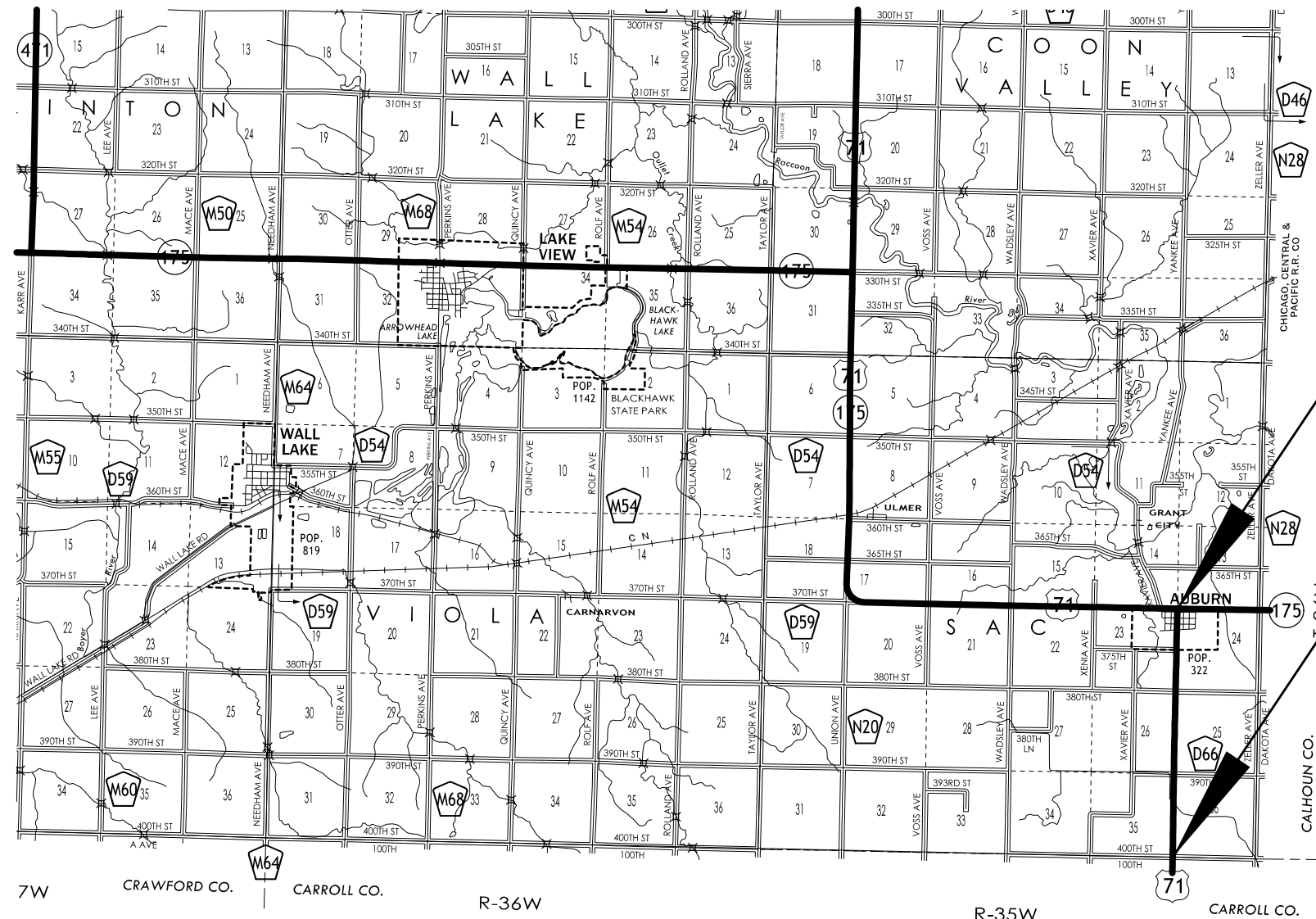
D3 PLAN Date: 6/5/26  
B2 PLAN Date: 9/4/26  
D5 PLAN Date: 10/2/26

Earthwork:  
Cut = 61,400 CY  
Fill = 40 CY  
Fill x 1.3 = 52 CY

**PRELIMINARY PLANS**

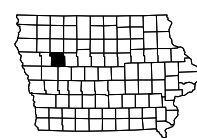
Subject to change by final design.

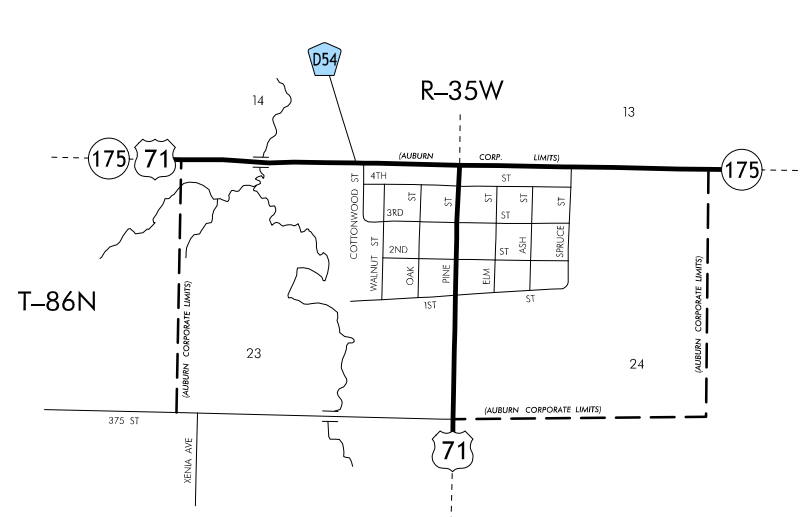
D2 PLAN Date: 5/14/26


















BEGIN CONSTRUCTION  
Sta. 946+09.40

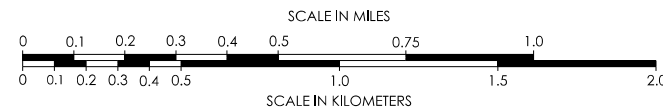
END CONSTRUCTION  
Sta. 1104+65.50





**LEGEND**

- INTERSTATE ROUTE 
- FREEWAY OR EXPRESSWAY ROUTE 
- U.S. NUMBERED ROUTE 
- BUSINESS ROUTE 
- STATE NUMBERED ROUTE 
- UNSIGNED ROUTE 
- COUNTY NUMBERED ROUTE 
- SECONDARY ROAD OR ADJOINING CITY STREET 
- CITY STREET 
- PARK, INSTITUTION, OR FEDERAL ROAD 
- RAILROAD 
- CORPORATION LINE 
- SECTION LINE 
- CUL-DE-SAC 
- SECTION, TOWNSHIP & RANGE NUMBERS  9, T-81N, R-30W



**HIGHWAY AND STREET MAP  
OF**

**AUBURN  
IOWA**

PREPARED BY  
 IOWA DEPARTMENT OF TRANSPORTATION  
 TRANSPORTATION DEVELOPMENT DIVISION  
 SYSTEMS PLANNING BUREAU  
 PHONE (515) 239-1664  
 IN COOPERATION WITH  
 UNITED STATES DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

81-0297



Overall, the pavement is in fair to poor condition with average IRI of 111. The distress data shows significant cracking and rolling down at the joints. The centerline joint and longitudinal shoulder joints show significant deterioration and spalling that has been maintained by joint sealing and some patching. Longitudinal cracking is also located at the outside wheel tracks where the 1957 PCC widening was completed. Transverse joints are also deteriorating and spalling. Because of the joint deterioration and age of the last overlay the ride is getting rough. Patching and the need for a functional overlay will continue to rapidly increase based on the mode of deterioration in this pavement. With the distresses that the pavement is exhibiting, it is not likely that a rehabilitation would perform for the desired period or provide the desired serviceability.

**CRASH HISTORY:**

During the five-year study period from January 1, 2018 through December 31, 2022, there were 12 crashes including, 0 fatal crashes, 4 personal injury crashes, and 8 property damage crashes.

The crash rate is 58/HMVM which is lower than the statewide rural average of 84/HMVM.

The Potential for Crash Reduction (PCR) rating is -0.05 to 0.41.

**Detour Analysis:**

US-71 will be closed, and an offsite detour will be utilized. It is anticipated the detour will be in place for approximately 180 days. The detour will start at the intersection of US-71 and 120<sup>th</sup> St, 2 miles South of the Beginning of the project (BOP). Heading West for 4 miles the detour will turn North at the intersection of 120<sup>th</sup> St and Hawthorne Ave / Union Ave. Heading North for 5 miles, the detour will turn East at the intersection of Union Ave / Hawthorne Ave and US-71. Heading 4 miles East, the detour will end at the end of project (EOP).

Additional detour traffic may cause reduced life expectancy on US-175 roadway. Before beginning this project, detour roadway condition should be evaluated.

A total out of distance travel of 8 miles. The total distance user cost is anticipated to be \$1,458,000. The cost for county road maintenance will be \$109,252 as calculated by the Gas Tax Method. Detour signing costs will be \$10,000.

**FEASIBLE ALTERNATES:**

This project proposes to reconstruct the mainline of US-71, from Carroll County line (MP 121.76) to US-175 on the north end of Auburn, a distance of 3 miles. This roadway is a 2-lane highway with 4ft inside and outside shoulders. This existing vertical and horizontal geometry will remain the same. Within town limits, 24ft wide of US-71 and intersection returns will be reconstructed. Gravel driveways will be paved up to the sidewalk. The contractor will maintain access within city limits at all times.

The existing mainline pavement and the paved/gravel shoulders will be removed. The new roadway typical section will consist of 9.5in PCC pavement over 6.0in Granular Backfill and 12in of special subbase. The new PPC pavement will be 24ft wide. New 4ft inside and outside full depth tied PCC Shoulders, outside city limits.

New longitudinal subdrain and outlets will be installed. Rumble strips will be milled in both inside and outside shoulders. Erosion control and rural seeding with fertilizer will be applied to all disturbed areas. Optional super 2 cost estimates are based on a 1-mile section per direction of travel.

Right of way does not appear to be required for this project. Right of way will need to be evaluated if the additional super 2 option is implemented. This evaluation will be based on the super 2 locations.

**ESTIMATED COST:**

Excavation, CL13, Waste	\$ 226,300
Pavement Removal	\$ 367,200
New Longitudinal Subdrain	\$ 216,600
Subdrain Outlets	\$ 24,000
Granular Subbase	\$ 499,200
Special Backfill	\$ 505,600
PCC Pavement	\$ 2,810,800
Milled Rumble Strips	\$ 13,700
Pavement Markings	\$ 41,000
Erosion Control	\$ 50,000
Traffic Control @ 5%	\$ 297,100
Mobilization @ 5%	\$ 297,100
<u>M&amp;C @ 10%</u>	<u>\$ 594,200</u>

**Project Total** **\$ 5,942,200**

**Super 2 Optional additional Estimated Cost:**

Embankment-In-Place, Contractor Furnish	\$ 168,300
Excavation, CI 10, Waste	\$ 312,800
Topsoil, Furn+Spread	\$ 224,500
Modified Subbase	\$ 519,300
Granular Shoulder	\$ 220,500
Shoulder Construction, Earth	\$ 38,900
ROW	\$ 85,000
<u>PCC Pavement</u>	<u>\$ 1,104,000</u>

**Super 2 Optional Addition Total** **\$ 2,673,400**

**RECOMMENDATIONS:**

The recommended method of rehabilitation for this project is reconstruction of the US-71 mainline pavement and paved shoulders. This project will span from 100<sup>th</sup> street to US-175 on the north end of Auburn. The approximate length is 3 miles.

The directional design hourly truck volume (DDHV) is approximately 36 vehicles per hour. AASHTO recommends that if the DDHV exceeds 250 vph, 12 ft. wide paved shoulders should be considered. As a 4 ft. outside paved shoulder will be constructed as part of this project to eliminate the need to grade the outside fore slopes.

**SPECIAL CONSIDERATION:**

There is an adjacent project south of this project, spanning 7.56 miles. The adjacent project number is NHSX-071-5(081)--3H-14 programmed to be completed in 2030.

This will be a traffic critical project. Traffic volumes during construction are not expected to be high enough to require special construction scheduling.

Culverts will be use as constructed (UAC).

There are no bike paths or sidewalks adjacent to US-71 outside city limits; therefore, no ADA accommodations are planned in conjunction with this project. Sidewalks and Bike paths inside city limits are excluded from this project.

Additional pavement is accounted for near the end of project, for potential of business parking area.

The Location and Environment Bureau has reviewed this project and (no) special concerns were noted.

**FUNDS PROGRAMMED:**

This proposed 3R project is not in the 2024-2028 program. It has been identified by the District 3 office for construction in FY29. This full replacement project has been estimated before this Concept Statement at a cost of \$4,600,800. A schedule of events for plan development will be determined following approval of the Project Concept.

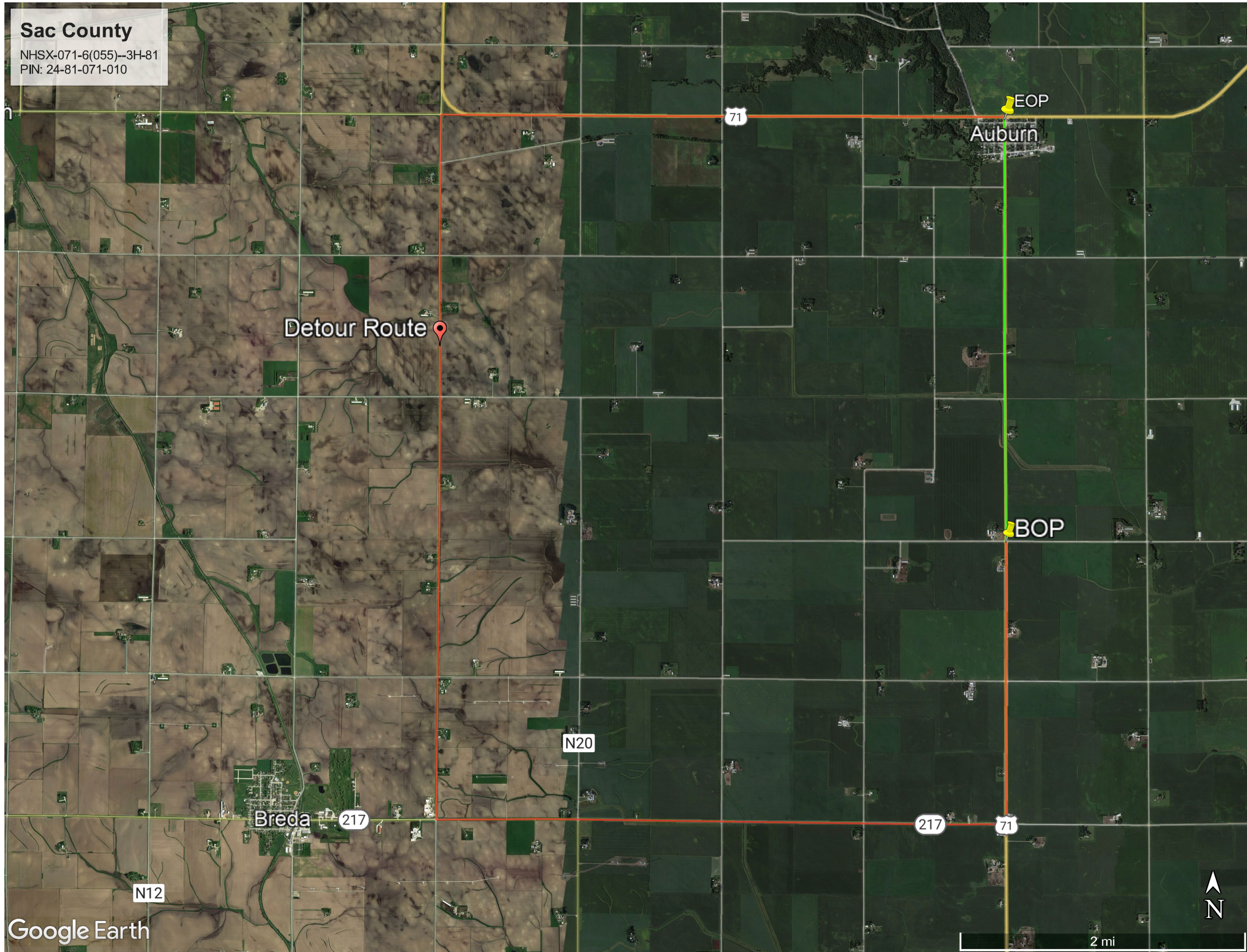
JEB:ARA

cc:

- |                |              |                |
|----------------|--------------|----------------|
| C. Purcell     | M. Dell      | M. Swenson     |
| S. Majors      | D. Newell    | W. Sorenson    |
| A. Welch       | B. Hofer     | S. Gent        |
| J. Vortherms   | T. Lovan     | M. Kennerly    |
| J. Nelson      | A. Poole     | B. Bradley     |
| E. Wright      | J. Harris    | G. Karssen     |
| S. Anderson    | K. Patel     | M. Todsen      |
| B. Dolan       | K. Nicholson | M. Nop         |
| D. Sprengeler  | K. Brink     | J. Laaser-webb |
| M. Ross        | C. Poole     | B. Azeltine    |
| D. Stokes      | R. Harris    | M. Van Dyke    |
| J. Bartholomew | T. Jerman    | J. Armstrong   |
| A. Yates       | D. Bishop    | J. Becker      |
| D. Schultz     | S. Ebel      | S. Tymkowicz   |
| T. Huju        | B. Struecker | M. Carlson     |
| K. Mulvihill   | L. Sievers   | C. Brakke      |
| T. Hanson      |              |                |

**Sac County**

NHSX-071-6(055)--3H-81  
PIN: 24-81-071-010



Google Earth

Sac County, NHSX-071-6(055)--3H-81 (Grade and Pave)

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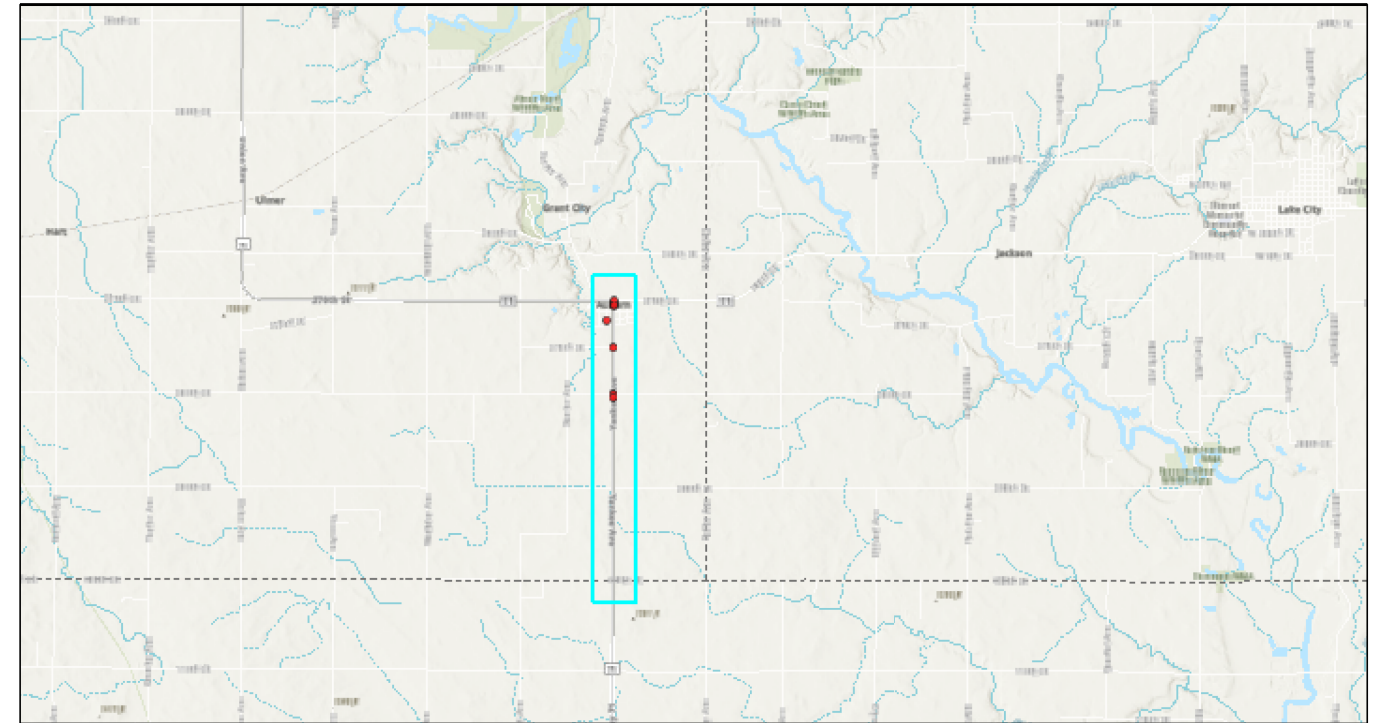
Iowa Crash Analysis Tool  
 Quick Report  
 2021-2025

Crash Severity	9
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	1
Possible/Unknown Injury Crash	1
Property Damage Only	6

Injury Status Summary	5
Fatalities	0
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	2
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	68,800.00
Average (per crash dollars):	7,644.44
Total Vehicles:	14.00
Average (per crash):	1.56
Total Occupants:	21.00
Average (per crash):	2.33

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.56
Major Injuries/Crash:	0.11
Minor Injuries/Crash:	0.22
Possible/Unknown Injuries/Crash:	0.22



<b>Roadway</b>	US-71		
<b>PIN Number</b>	24-81-071-010	<b>Submittal Date</b>	
<b>Project Number</b>	NHSX-071-6(055)--3H-81		<b>Approval Date</b>
<b>District</b>	District 3	<b>Assistant District Engineer</b>	
<b>County</b>	SAC	<b>or</b>	
<b>Route</b>	US-71	<b>Office Director</b>	
<b>Location</b>	Near Auburn, 100th St to 1st St		
<b>Work Type</b>	Reconstruction		
<b>Segment Manager</b>			
<b>Designer</b>	Miller/Krug		

[Design Manual Section 1C-1](#)  
[Last Updated: 04-29-19](#) **Urban Two-Lane Roadways (Urban Arterials)**

Design Element	Preferred	Acceptable Criteria	Project Values
Design speed (mph)	The anticipated posted speed limit	30	30
Maximum superelevation rate (Refer to Section 2A-2)	4%	6%	4%
Design lane width (ft)	12	11	12
Full depth paved width (ft)	Design lane width + curb and gutter unit or 14 feet for roadways with shoulders	Match design lane width	12
Right turn lane (ft)	12	10	-
Left turn lane (ft)	With raised or painted median	12 ft + median	10 ft + median
	With depressed median	12	10
Two-way left turn lane	14	11	-
Parking lane width (ft)	10	7	-
Pavement cross-slope (on tangent sections)	Through lanes	2%	1.5% minimum, 2% maximum
	Auxiliary and turn lanes	3%	3% maximum
	Crown break at centerline	4%	4% maximum
Shoulder cross-slope (on tangent sections)	Shoulders	4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders
	Curb and gutter units	Match pavement cross-slope	6% maximum
	Parking lanes	1% greater than pavement cross-slope	6% maximum
Curb type (See Section 3C-2)	Design speed ≤ 45 mph	6-inch standard	any shape
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	3:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1
	Curbed roadways	2%	not steeper than 3:1
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)	3:1	2.5:1	3:1
Traverse Slopes	w/ drainage structures	8:1	6:1
	w/o drainage structures	10:1	6:1
Ditches (See Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths (curbed or uncurbed) or design lane width + 3 ft each side (curbed) which ever is greater	design lane widths + effective shoulder widths or curb-to-curb width in curb and gutter section**
	Bridge length > 200 ft	design lane widths + effective shoulder widths (curbed or uncurbed) or design lane width + 3 ft each side (curbed) which ever is greater	design lane widths + 4 ft offset each side for roadways with shoulders or curb-to-curb width in curb and gutter section**
Bridge width—existing*	design lane widths + no less than 2 ft left and right		design lane widths + 2 ft left and right
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 at all other locations	14
	Over railroad	23.3	23.3
	Sign trusses and pedestrian bridges	17.5	17
Structural Capacity	Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	-
Level of Service	C	D	C

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

\*\* If travel lanes are less than 12 ft wide contact the Methods Section for assistance.



Roadway Design Speed (mph) = 30

[Design Manual Section 1C-1](#)  
Last Updated: 04-29-19

**Design Criteria for Low Speed Roadways**

Design Element	Preferred Criteria					Acceptable Criteria					Project Values						
	Design Speed, mph					Design Speed, mph											
	25	30	35	40	45	25	30	35	40	45							
Stopping sight distance (ft) (Refer to Section <a href="#">6D-1</a> )	155	200	250	305	360	155	200	250	305	360	200						
Minimum horizontal curve radius (ft) and superelevation rate (Refer to Sections <a href="#">2A-2</a> and <a href="#">2A-3</a> )	Method 2 superelevation and side friction distribution	e = 4% max					See Table 10 in Section <a href="#">2A-3</a>					--					
	Method 5 superelevation and side friction distribution	e <sub>max</sub> = 6%					144	231	340	485	643	144	231	340	485	643	231
		e <sub>max</sub> = 8%					--	--	--	--	--	134	214	314	444	587	-
Minimum vertical curve length (ft) (Refer to Section <a href="#">2B-1</a> )	75	90	105	120	135	75	90	105	120	135	90						
Minimum rate of vertical curvature (K) (Refer to Section <a href="#">2B-1</a> )	crest vertical curves		12	19	29	44	61	12	19	29	44	61	19				
	sag vertical curves	roadways without fixed-source lighting	26	37	49	64	79	26	37	49	64	79	37				
		roadways with fixed-source lighting	26	37	49	64	79	14	20	27	35	44	37				
Minimum gradient (%) (Refer to Section <a href="#">2B-1</a> )	0.5					0.3% with a curb, 0.0% without a curb					0.5						
Maximum gradient (%) (Refer to Section <a href="#">2B-1</a> )	Urban roadways		5					--	9	8	8	7	5				
	Rural roadways							--	--	--	6	6	wo_laneUrba				
Clear zone	See "Preferred Clear Zone" table in Section <a href="#">8A-2</a>					See "Acceptable Clear Zone" table in Section <a href="#">8A-2</a>											

<b>Roadway</b>	US-71		
<b>PIN Number</b>	24-81-071-010	<b>Submittal Date</b>	
<b>Project Number</b>	NHSX-071-6(055)--3H-81	<b>Approval Date</b>	
<b>District</b>	District 3	<b>Assistant District Engineer</b>	
<b>County</b>	SAC	<b>or</b>	
<b>Route</b>	US-71	<b>Office Director</b>	
<b>Location</b>	Near Auburn, 100th St to 1st St		
<b>Work Type</b>	Reconstruction		
<b>Segment Manager</b>			
<b>Designer</b>	Miller/Krug		

[Design Manual Section 1C-1](#)  
[Last Updated: 04-29-19](#)

### Rural Two-Lane Highways (Rural Arterials)

Design Element	Preferred	Acceptable	Project Values
Design speed (mph)	60	50	60
Maximum superelevation rate (Refer to Section 2A-2)	6%	8%	6%
Design lane width (ft)	12	12	12
Full depth paved width (ft)	12	12	12
Right turn lane (ft)	12	10	-
Climbing Lane (ft)	12	12	-
Left turn lane (ft)	12	10	-
Pavement cross-slope (on tangent sections)	Through lanes	1.5% minimum, 2% maximum	2%
	Auxiliary and turn lanes	3% maximum	-
	Crown break at centerline	4% maximum	4%
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%
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard
	Design speed ≥ 60 mph	4-inch sloped	6-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	3:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1
	Curbed roadways	2%	not steeper than 3:1
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)	3:1	2.5:1	3:1
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	--
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*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft. offset left and right
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 at all other locations	14
	Over railroad	23.3	23.3
	Sign trusses and pedestrian bridges	17.5	17
Structural Capacity	Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	-
Level of Service	B	B	B

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



Roadway Design Speed (mph) =		60														
<a href="#">Design Manual Section 1C-1</a> 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 <a href="#">6D-1</a> )		425	495	570	645	730	820	425	495	570	645	730	820	570		
Minimum horizontal curve radius (ft) (Refer to Sections <a href="#">2A-2</a> and <a href="#">2A-3</a> )	Method 5 superelevation and side friction distribution	$e_{max} = 6\%$	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	1330	
		$e_{max} = 8\%$	--	--	--	--	--	--	758	960	1200	1480	1810	2210	-	
Minimum vertical curve length (ft) (Refer to Section <a href="#">2B-1</a> )		150	165	180	195	210	225	150	165	180	195	210	225	180		
Minimum rate of vertical curvature (K) (Refer to Section <a href="#">2B-1</a> )	crest vertical curves	roadways without fixed source lighting	84	114	151	193	247	312	84	114	151	193	247	312	151	
		sag vertical curves	roadways without fixed source lighting	96	115	136	157	181	206	96	115	136	157	181	206	136
			roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	78
Minimum gradient (%) (Refer to Section <a href="#">2B-1</a> )		0.5						0.3% with a curb, 0.0% without a curb						0		
Maximum gradient (%) (Refer to Section <a href="#">2B-1</a> )	Urban roadways	4						3						3		
	Rural roadways	4						3						3		
	Interstates	4						3						3		
Clear zone		See "Preferred Clear Zone" table in Section <a href="#">8A-2</a>						See "Acceptable Clear Zone" table in Section <a href="#">8A-2</a>						40		

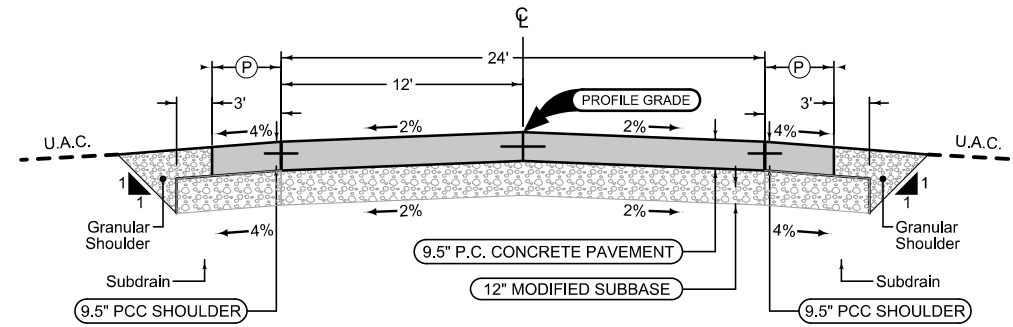
## Questions:

1) Are we planning to do any work on the sideroads or entrances, or do we plan to UAC?

2) If we are working on the sideroads, will we plan to ask the county if they want it paved 50'?

3) Discuss existing culvert pipes

4) ADA in Auburn limits?



**Full Depth PCC Combination Shoulder**

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

2_C_FullPCC_04-15-25			
STATION TO STATION		(P) Feet	(G) Feet
948+63.04	953+61.11	4	Varies

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

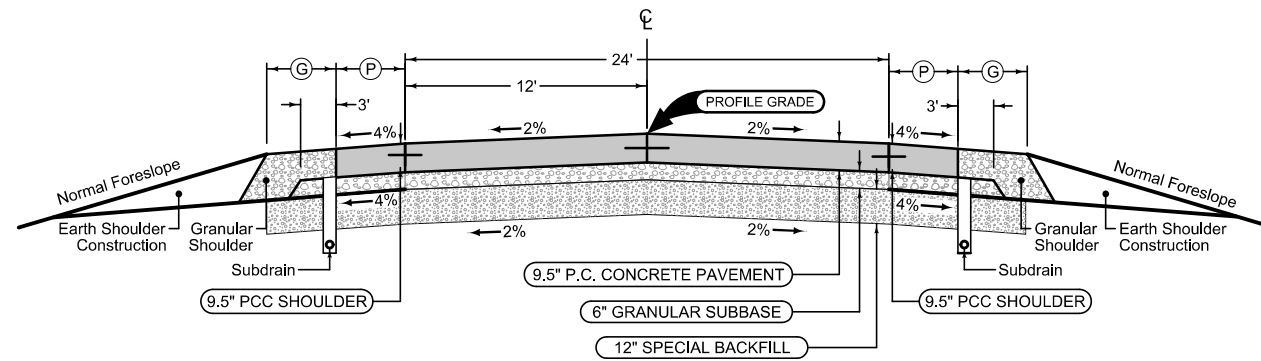
2P_04-21-20	
STATION TO STATION	
946+09.40	962+62.16

**Full Depth PCC Combination Shoulder**

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

2_C_FullPCC_04-15-25			
STATION TO STATION		(P) Feet	(G) Feet
946+09.40	953+32.26	4	Varies

US 71  
 (City of Auburn)



**Full Depth PCC Combination Shoulder**

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

2_C_FullPCC_04-15-25			
STATION TO STATION		(P) Feet	(G) Feet
962+62.16	1104+65.50	4	4

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

2P_04-21-20	
STATION TO STATION	
962+62.16	1104+65.50

**Full Depth PCC Combination Shoulder**

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

2_C_FullPCC_04-15-25			
STATION TO STATION		(P) Feet	(G) Feet
962+62.16	1104+65.50	4	4

**US 71  
 (Rural)**

### SURVEY SYMBOLS

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

### UTILITY LEGEND

#### SURVEYED UTILITY OWNER SYMBOLS

- E1 EL1D, Mid American - Quality D
- F0 FO1D, Breda Telephone Company - Quality D
- F02 FO2D, Cornbelt Telephone Company - Quality D
- F03 FO3D, Kramer Service Group - Quality D
- F04 FO4D, Windstream - Quality D
- SAN.(B) SA1B, City of Auburn - Quality B
- SAN. SA1D, City of Auburn - Quality D
- ST S(B) ST1B, City of Auburn - Quality B
- ST S ST1D, City of Auburn - Quality D
- T1 TL1D, Windstream - Quality D
- W WL1D, City of Auburn - Quality D
- W2 WL2D, West Central Iowa Rural Water - Quality D

### 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.	Transparency
Pink, Dark	(13)		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
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
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

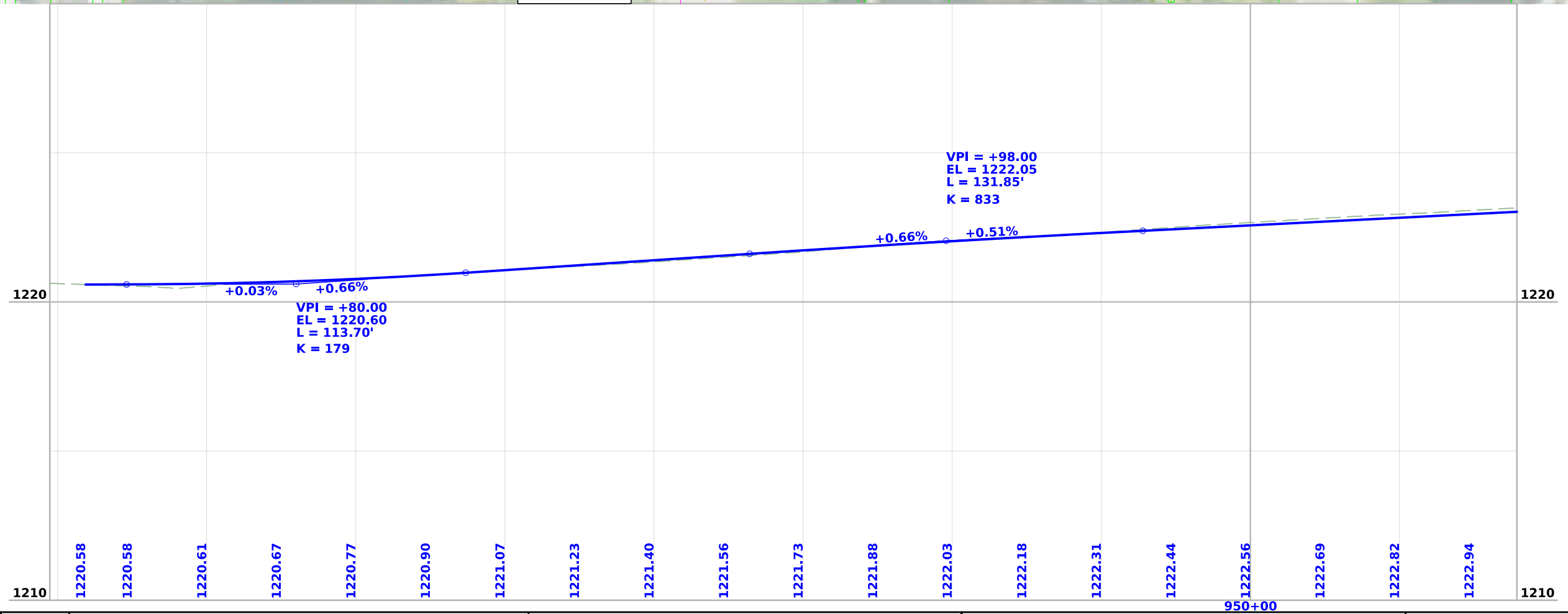
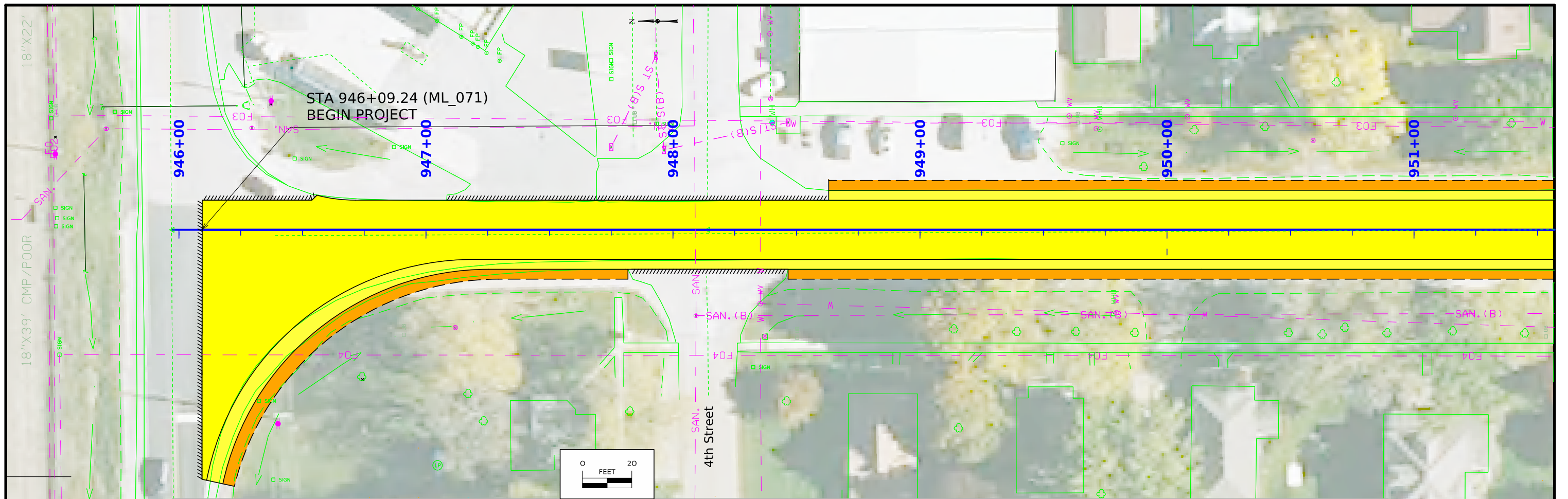
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

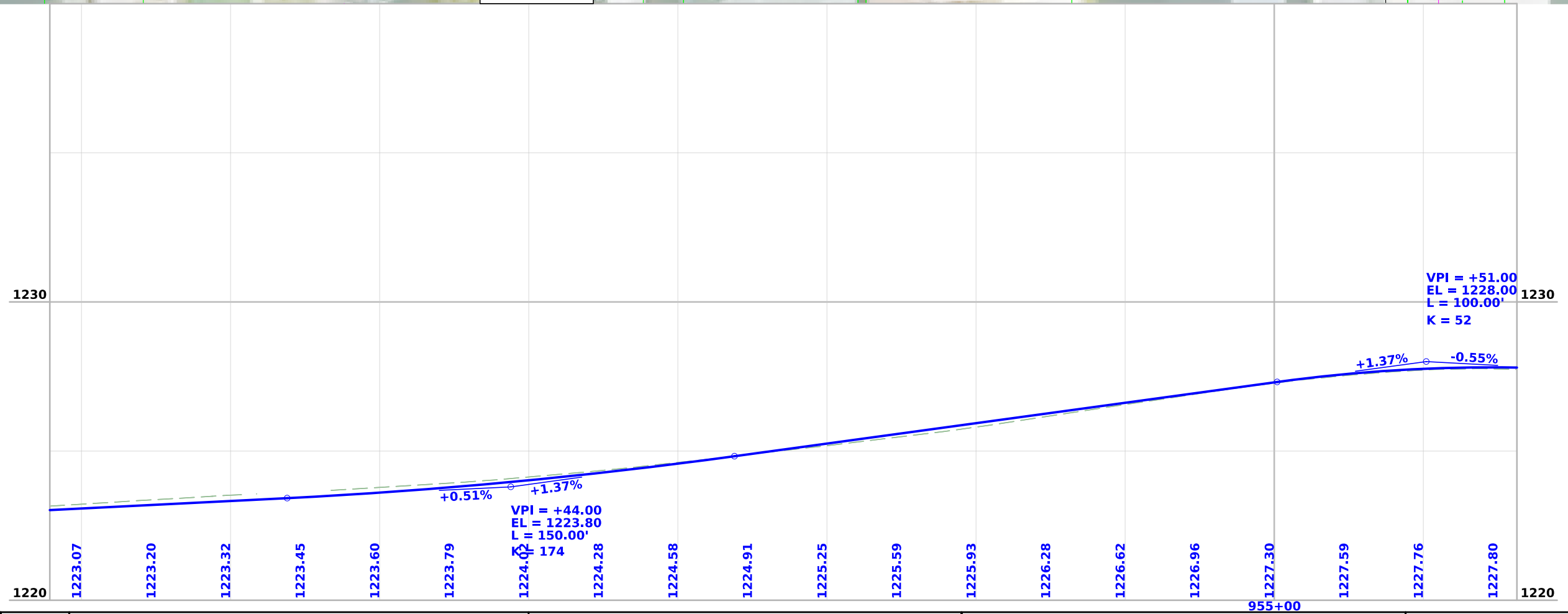
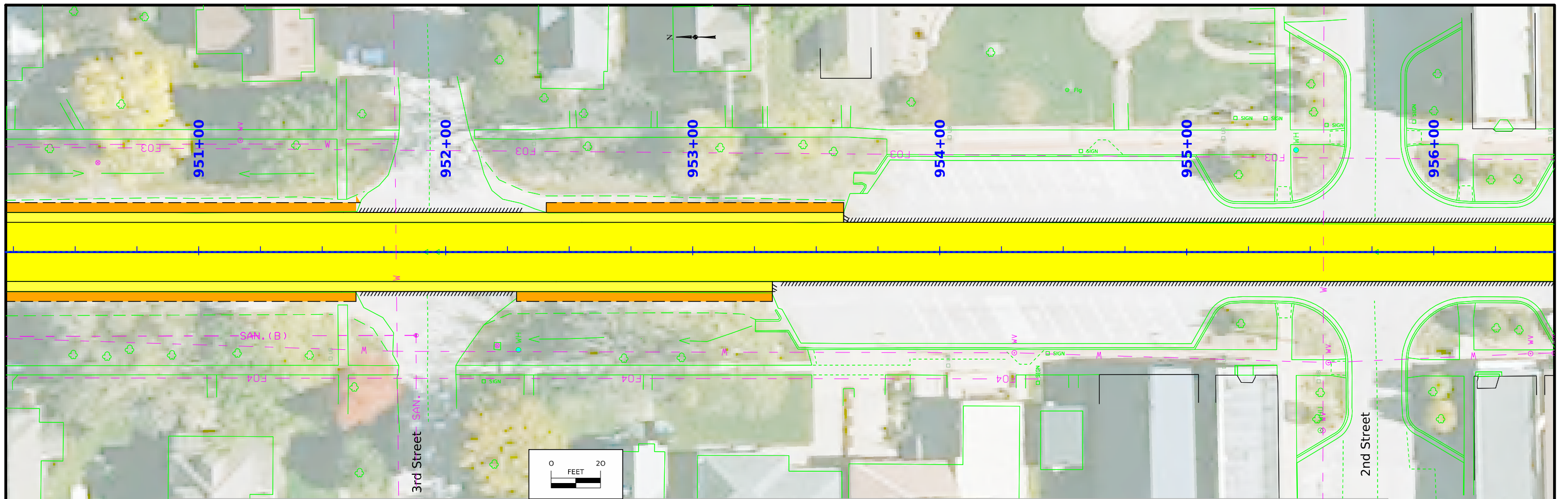
### RIGHT-OF-WAY LEGEND

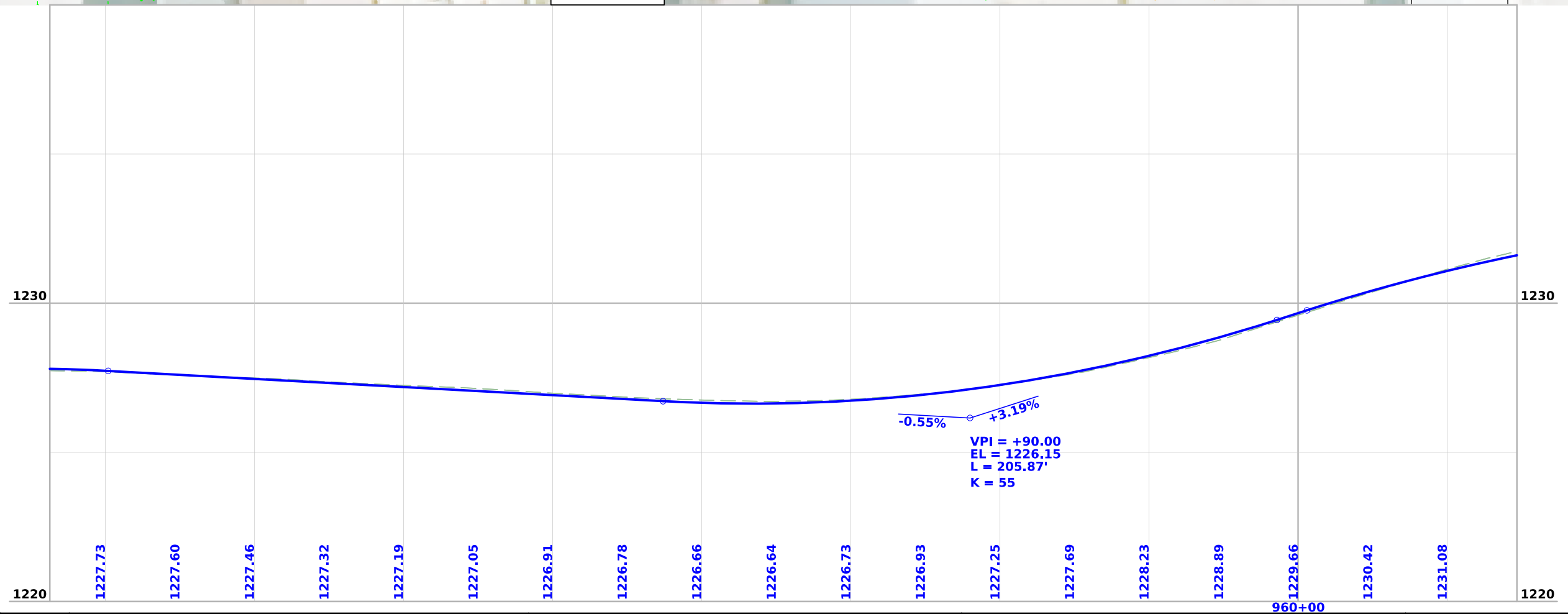
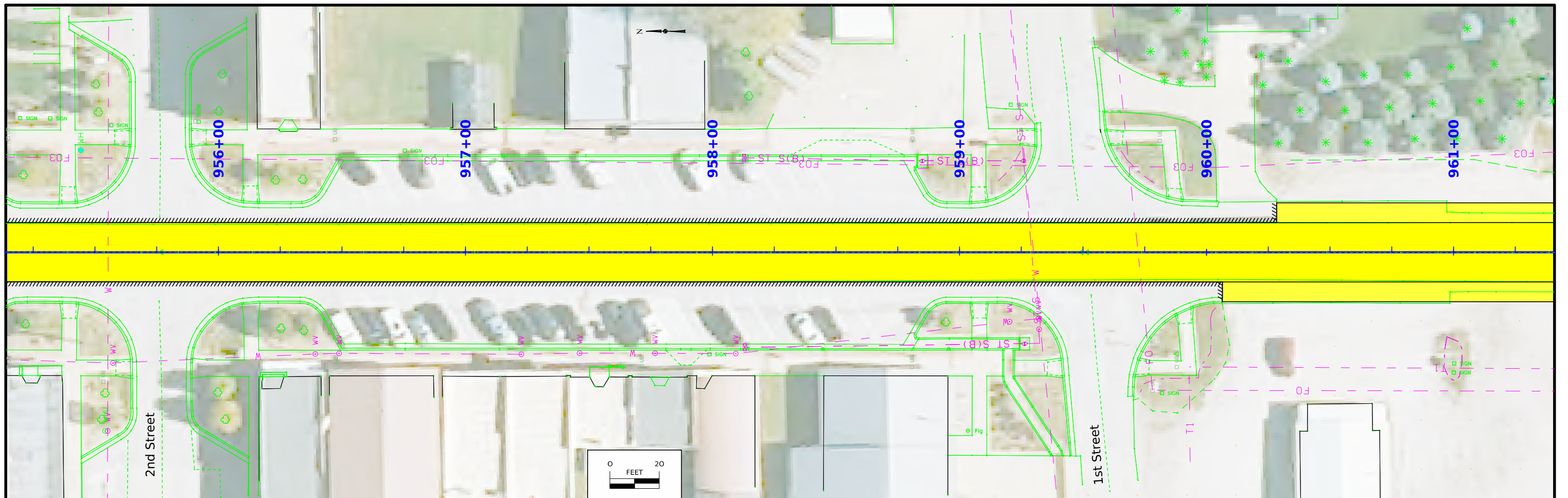
- Proposed Right-of-Way Symbol
- Proposed Right-of-Way Line
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary) Symbol
- Easement (Temporary) Line
- Easement
- C/A Access Control
- Property Line Symbol
- Property Line

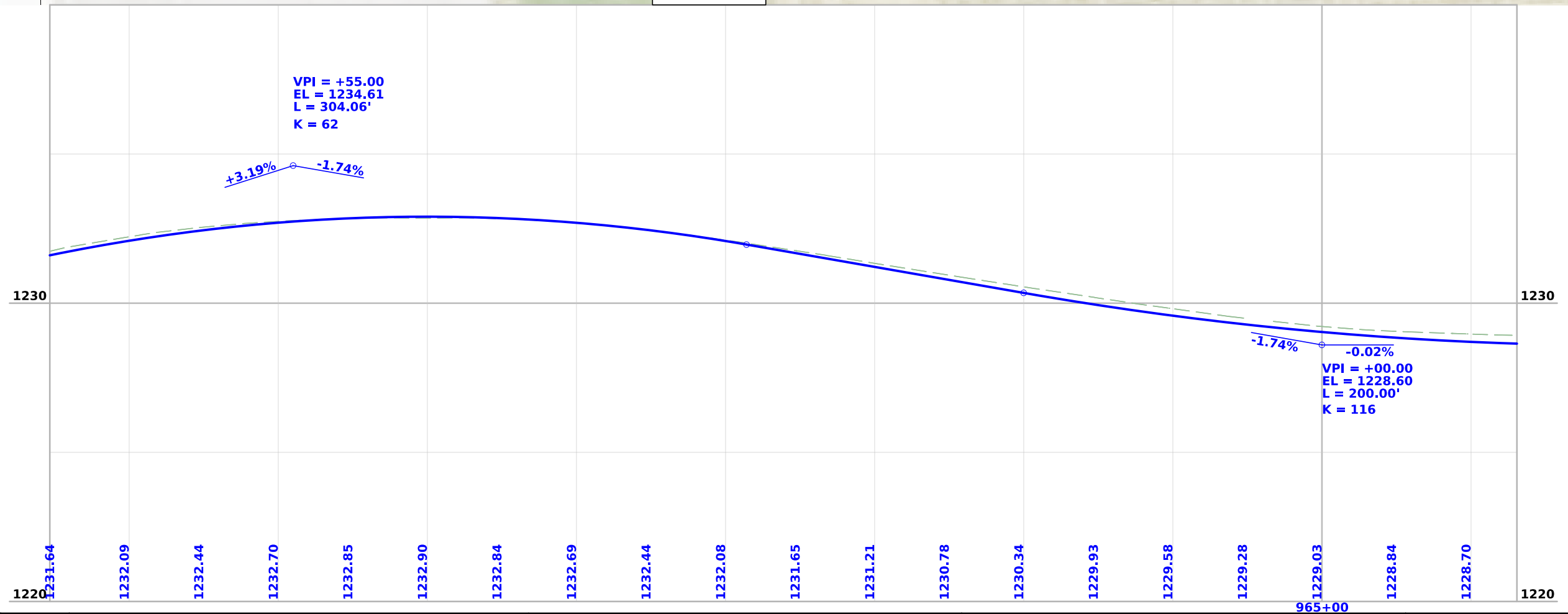
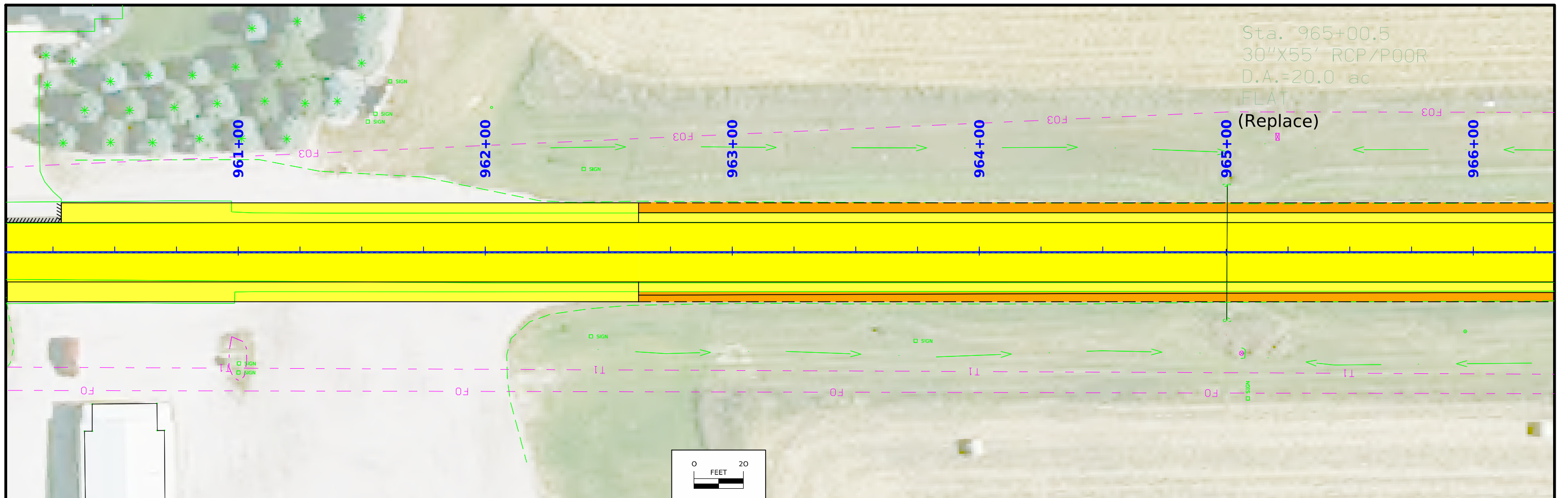
## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

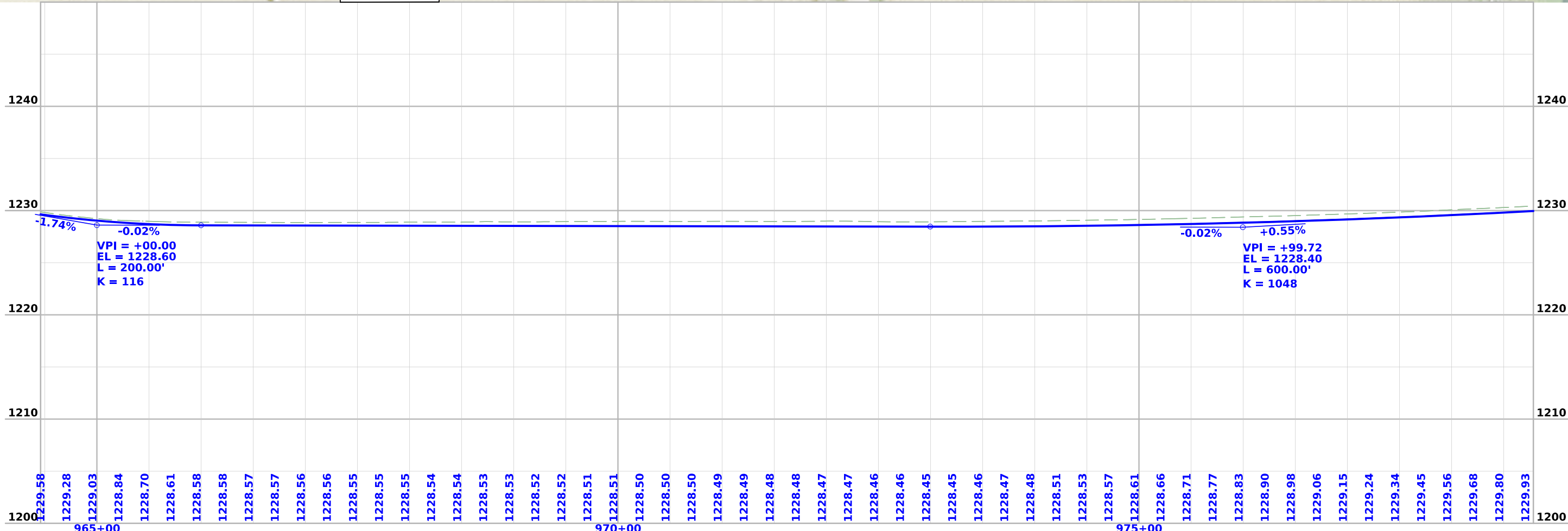
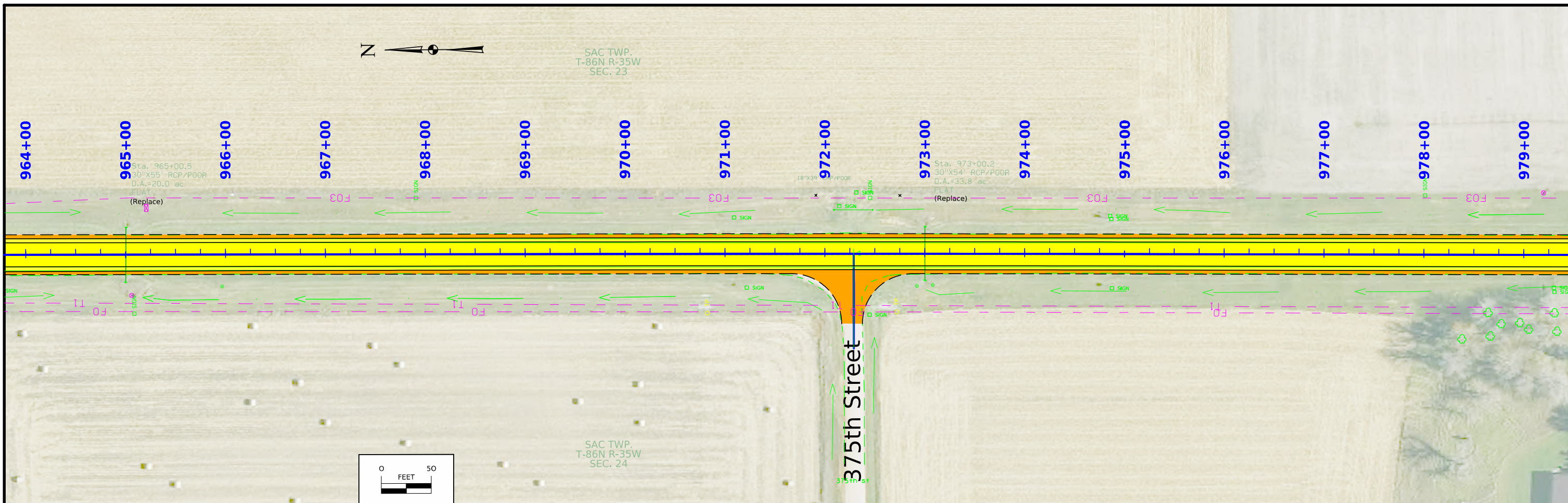
(COVERS SHEET SERIES D, E, F, & K)

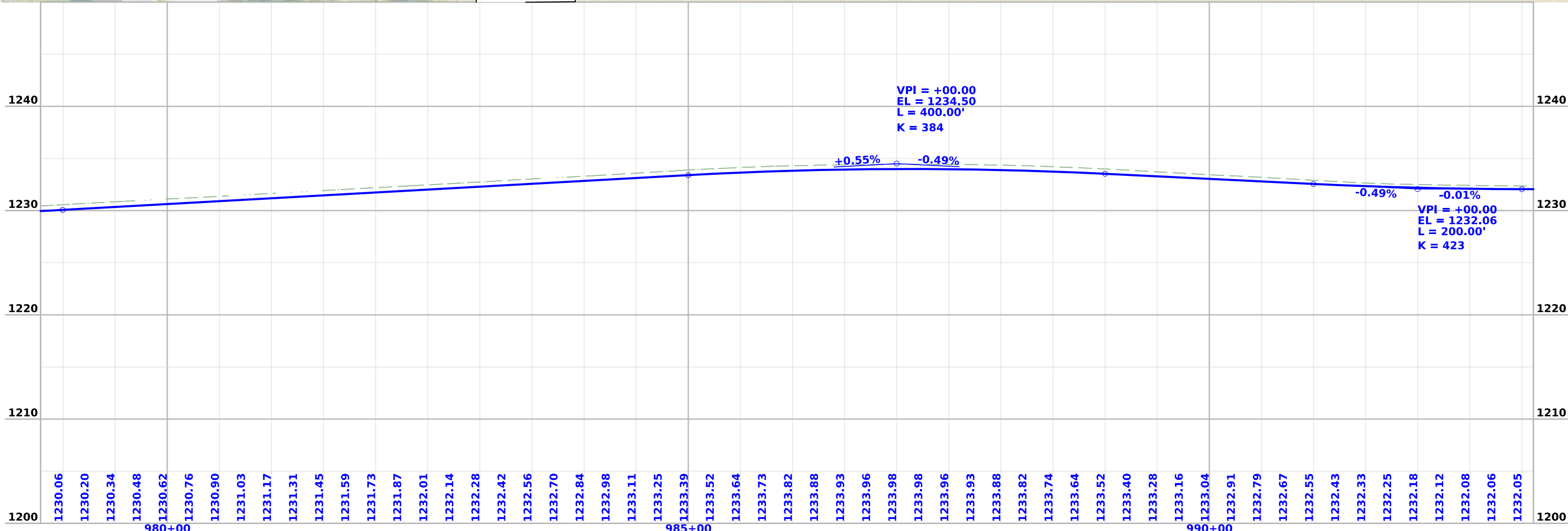
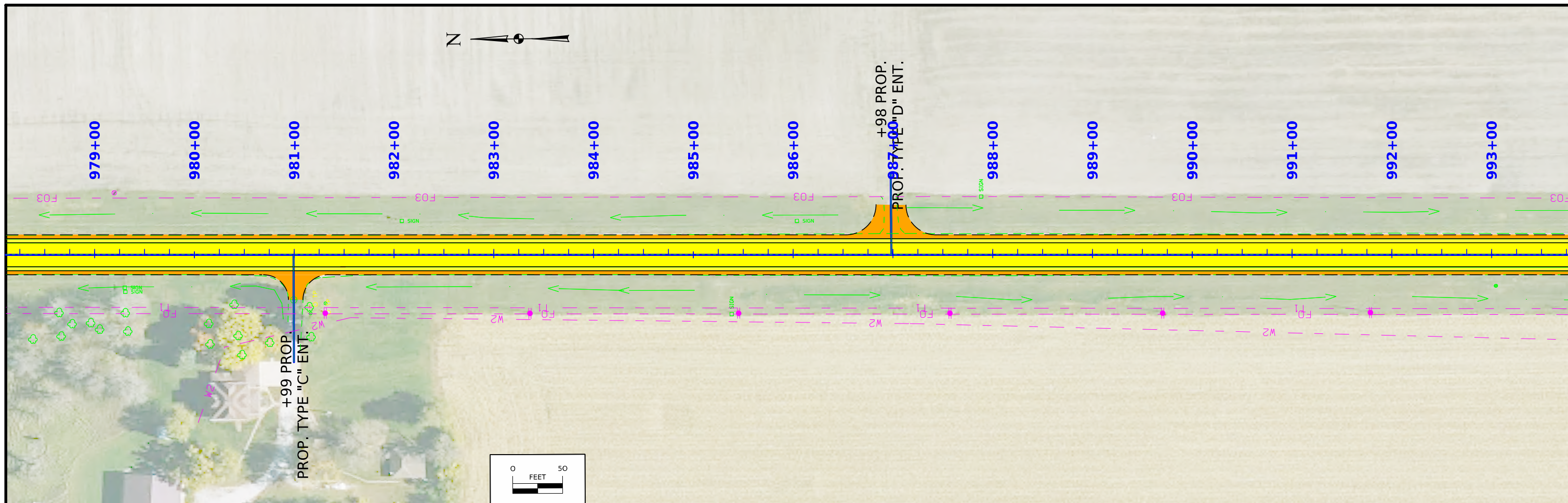




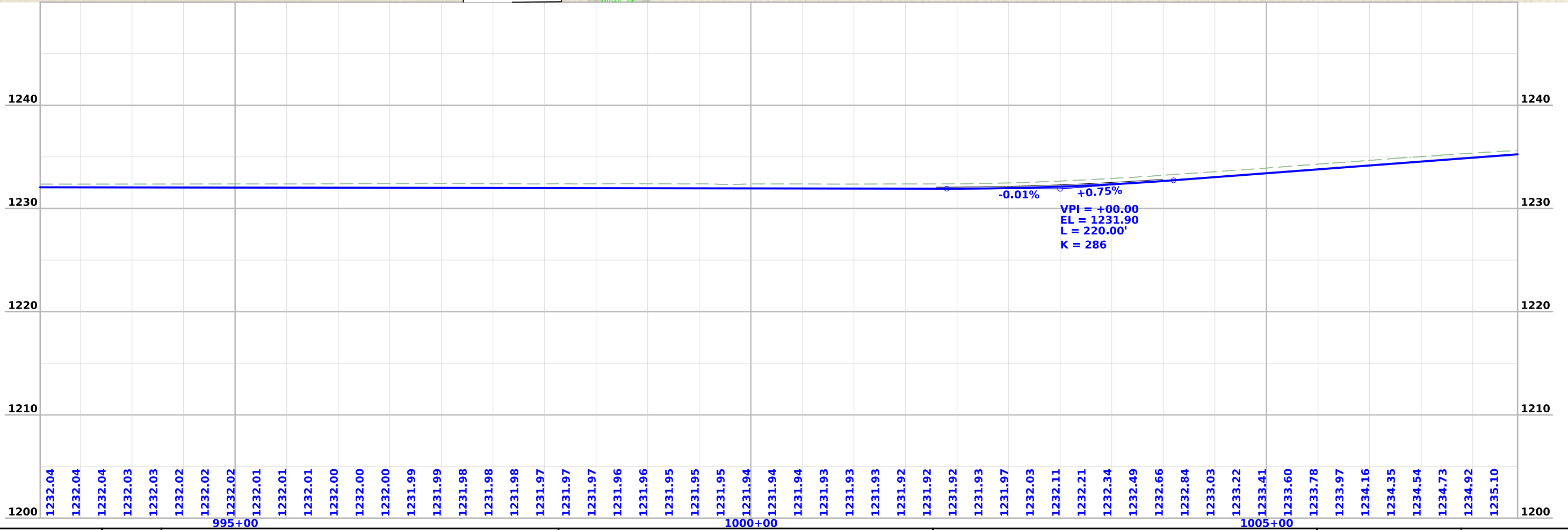
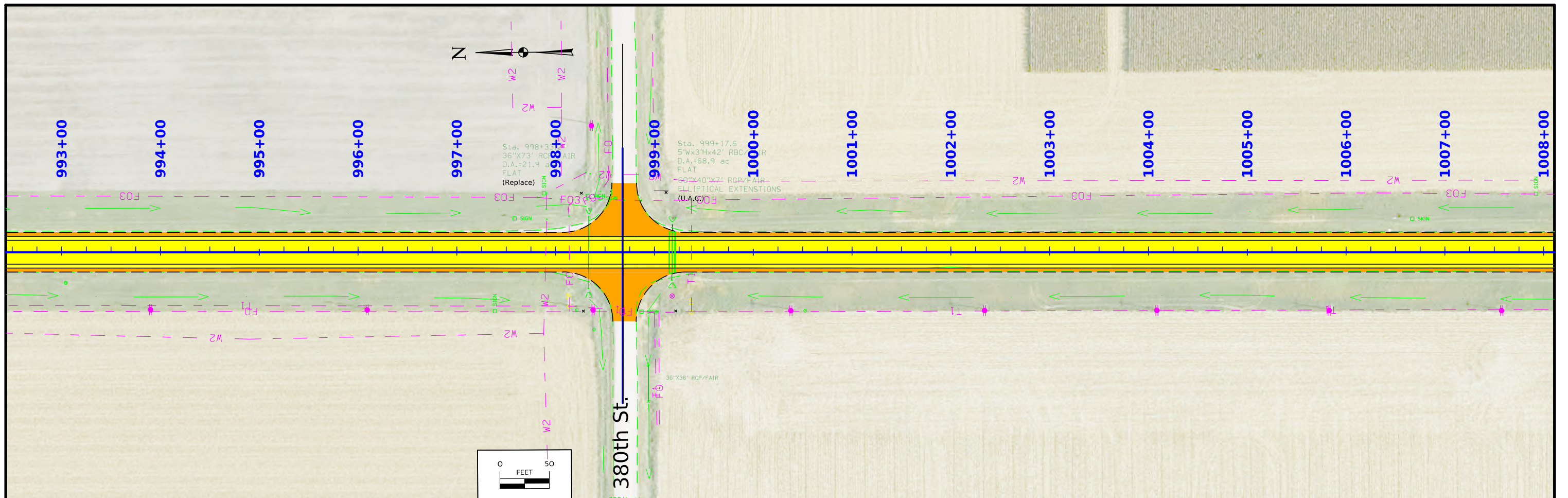








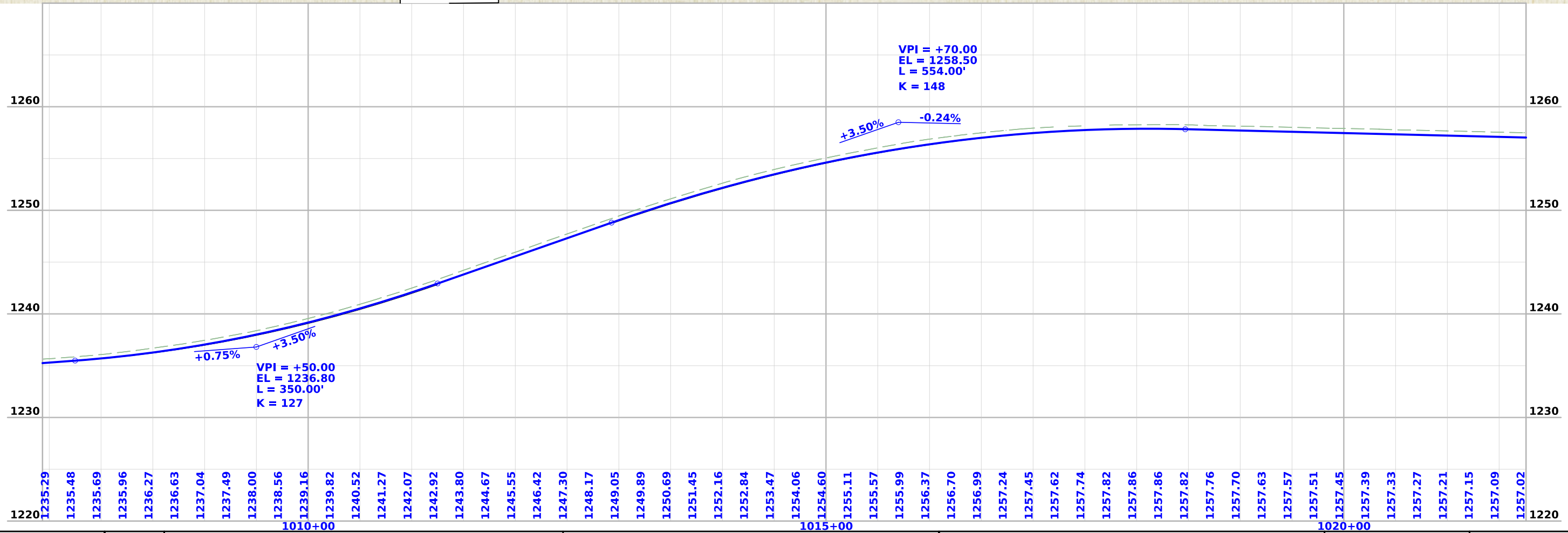
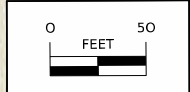
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		Miller/Krug		NHSX-071-6(055)--3H-81	D.7



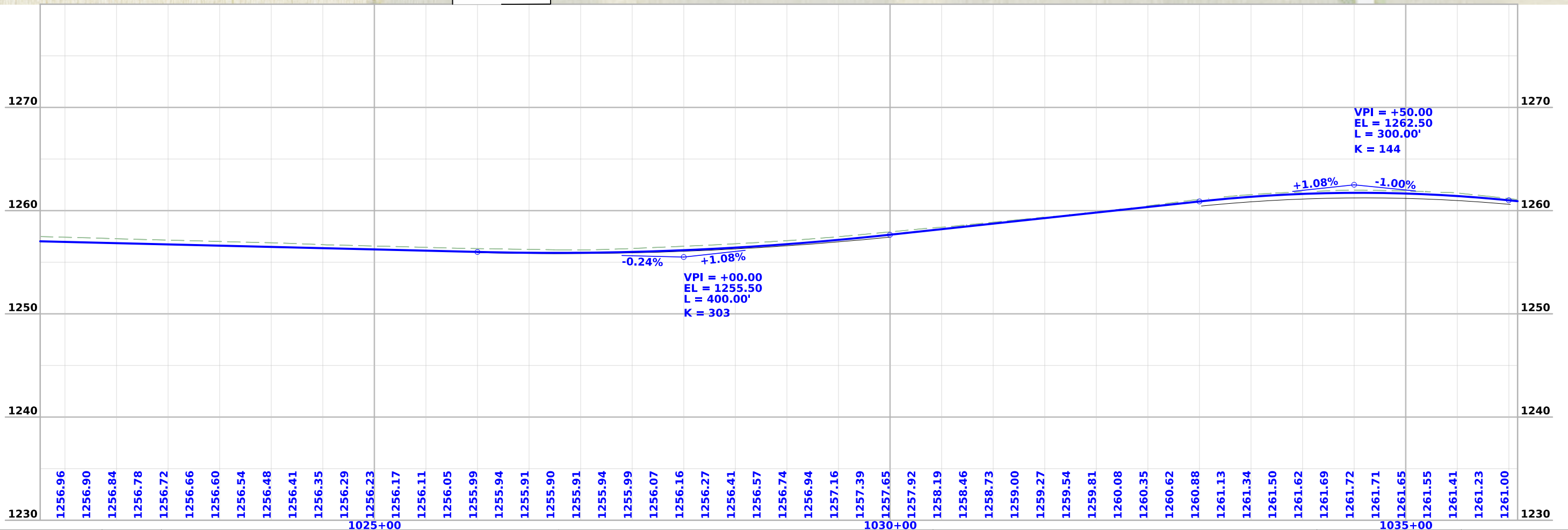
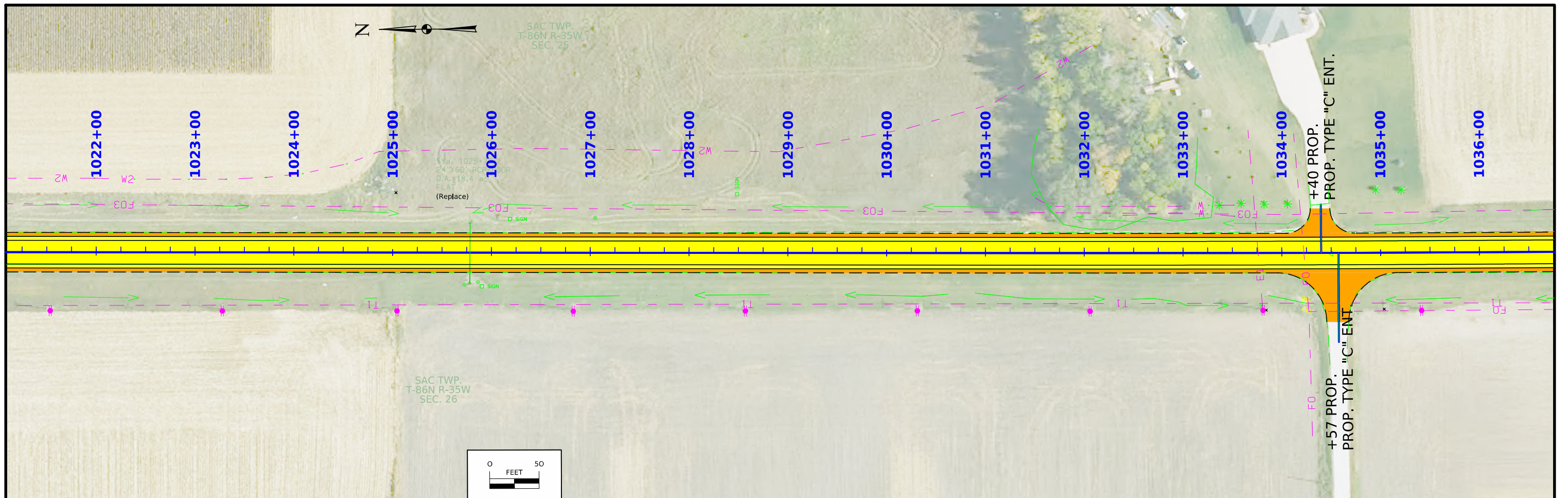
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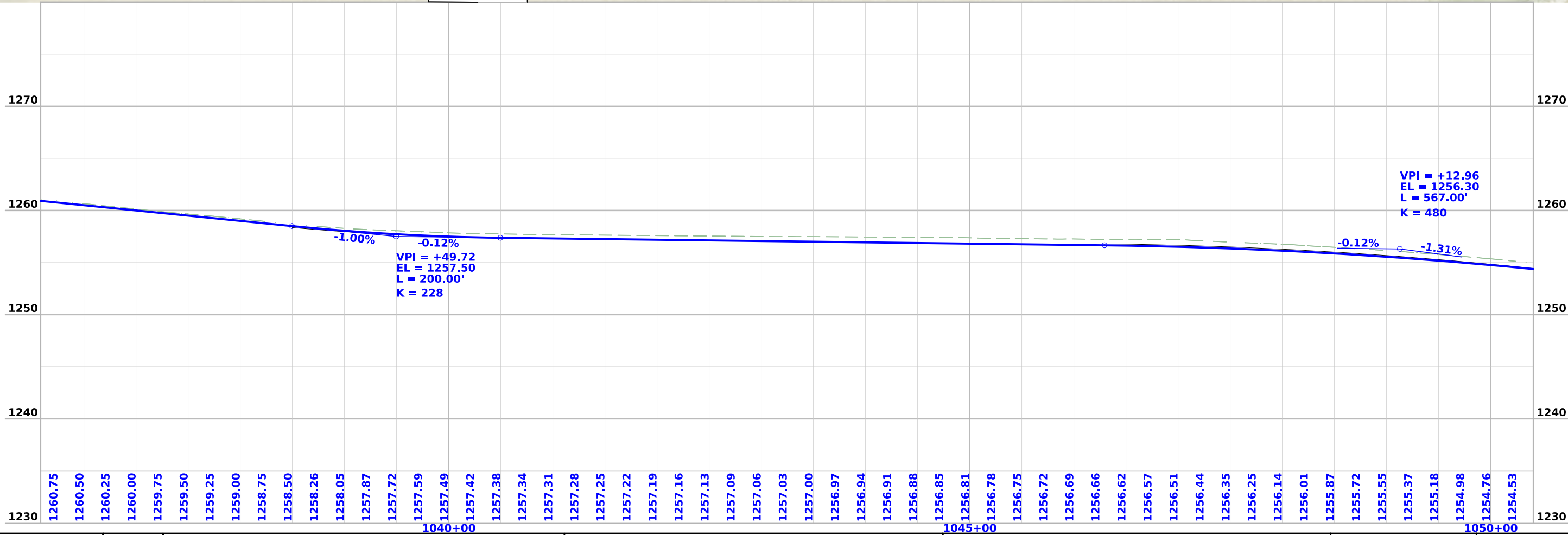
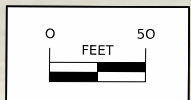
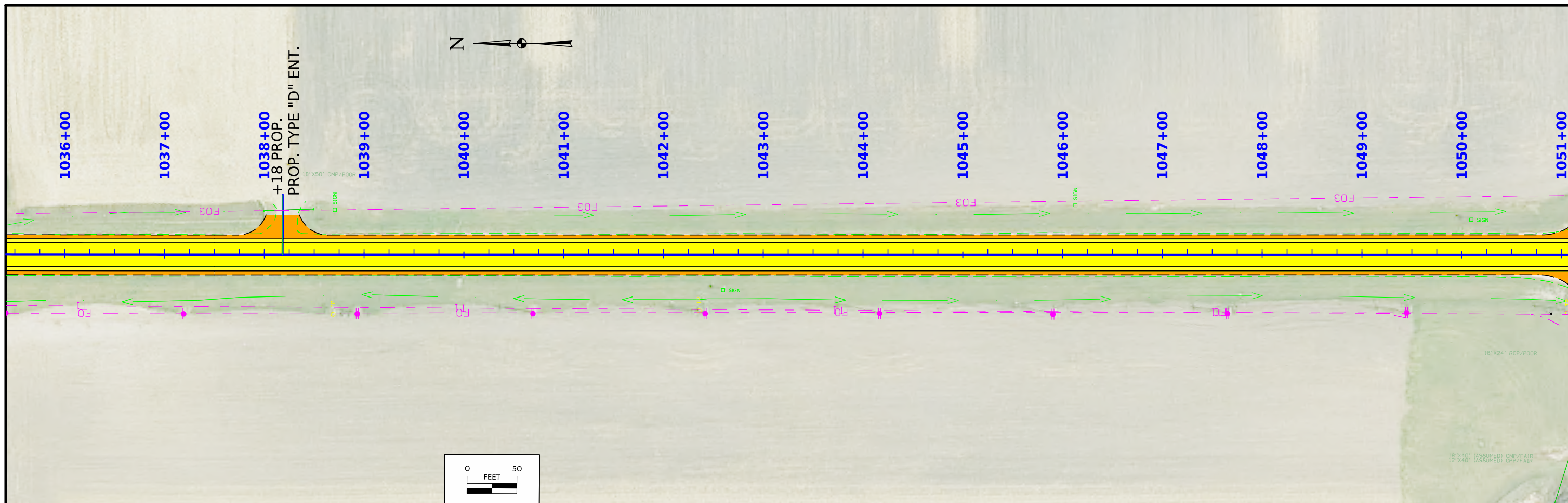


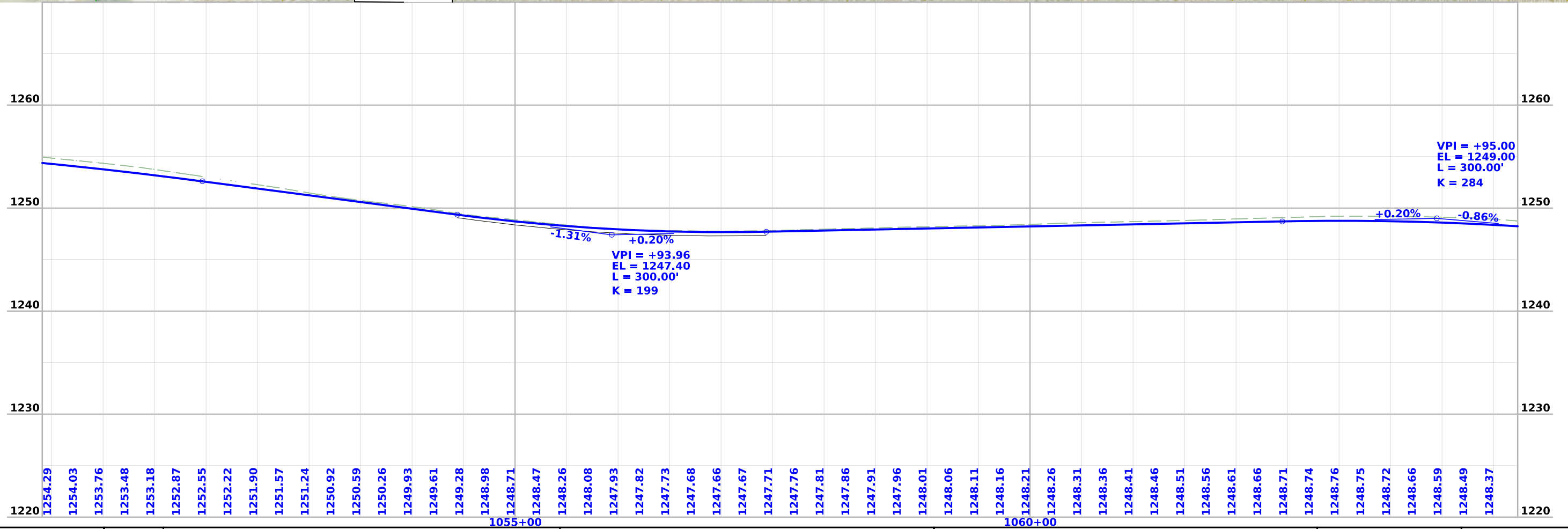
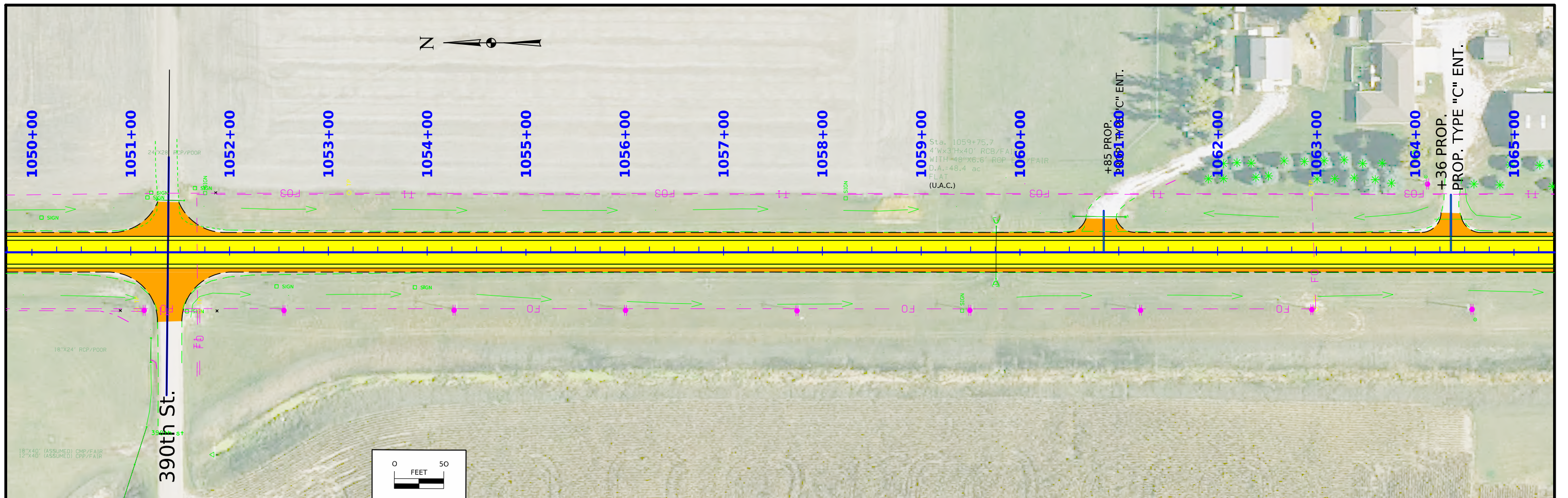
1007+00 1008+00 1009+00 1010+00 1011+00 1012+00 1013+00 1014+00 1015+00 1016+00 1017+00 1018+00 1019+00 1020+00 1021+00 1022+00

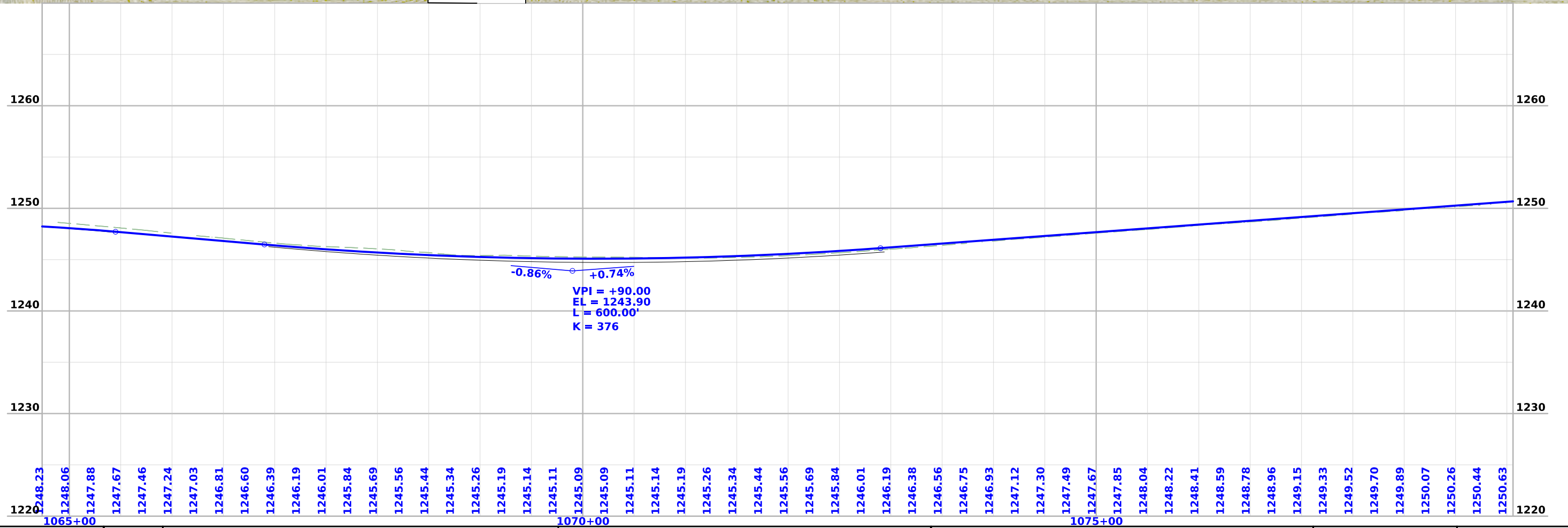
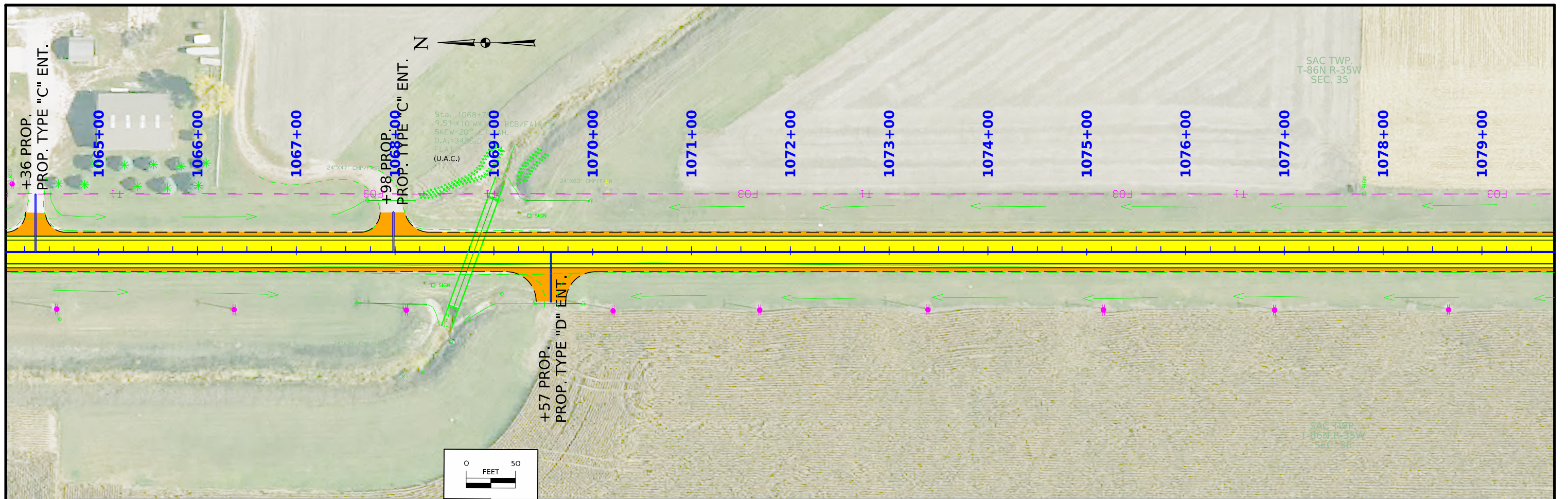


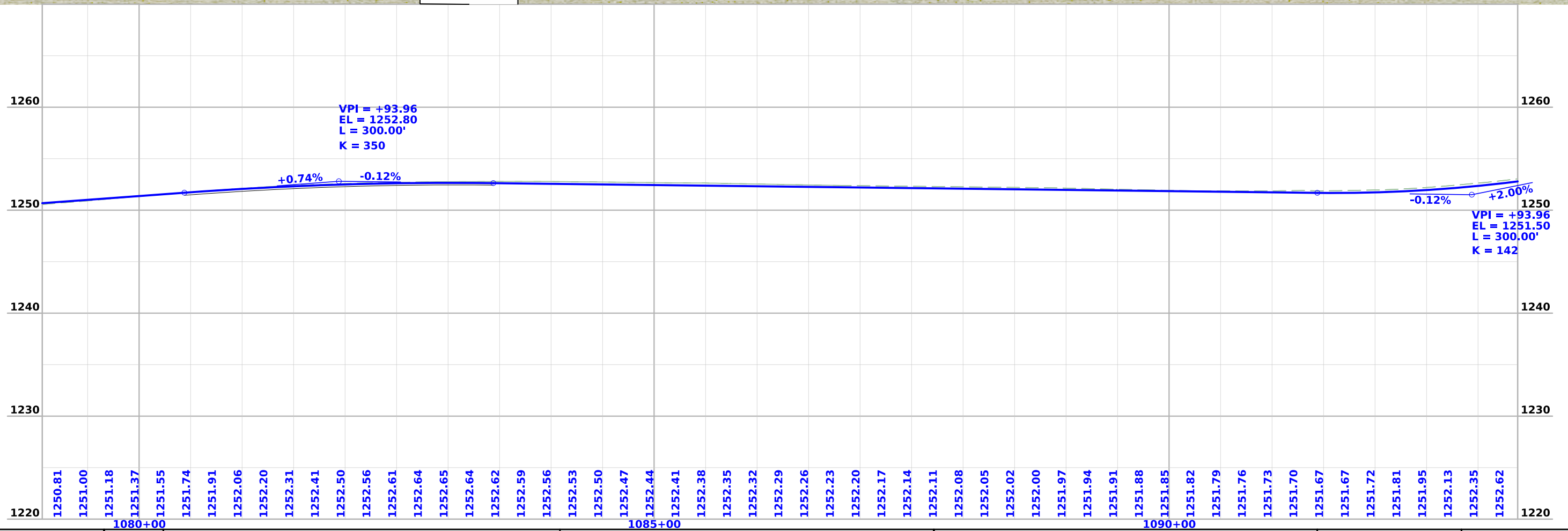
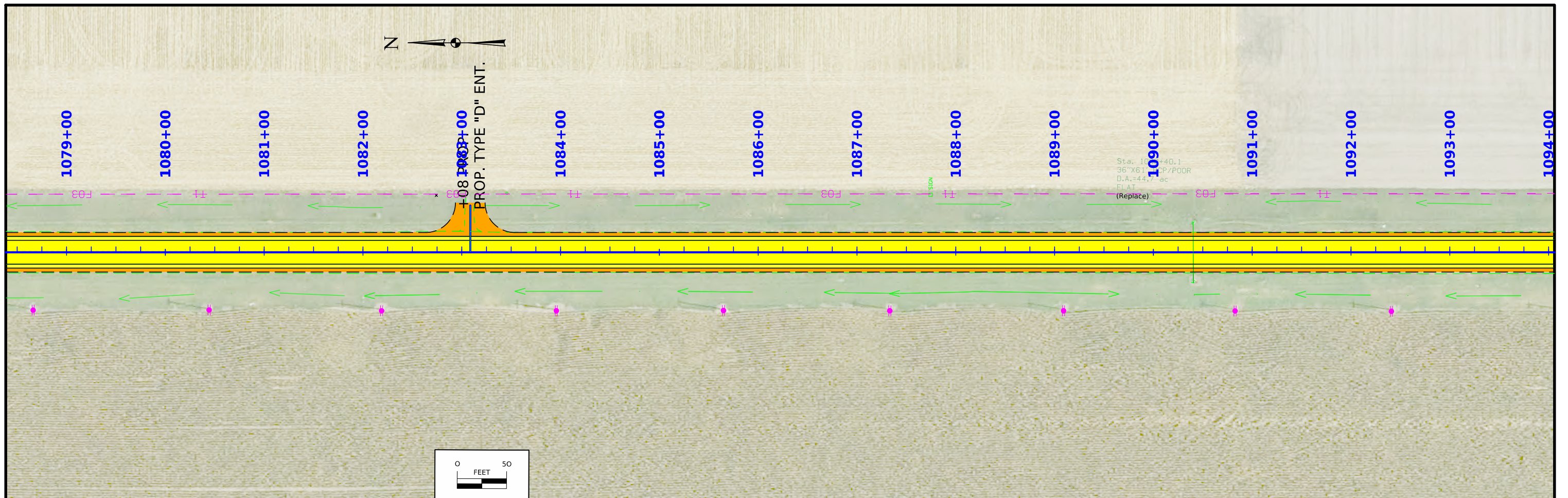
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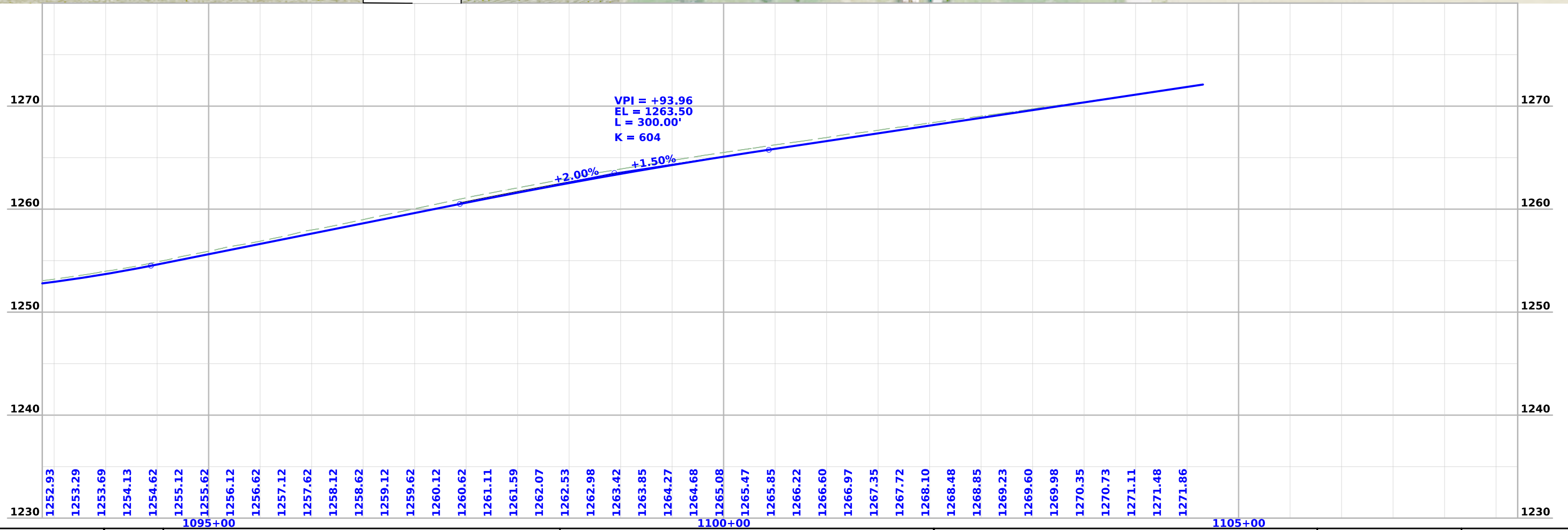
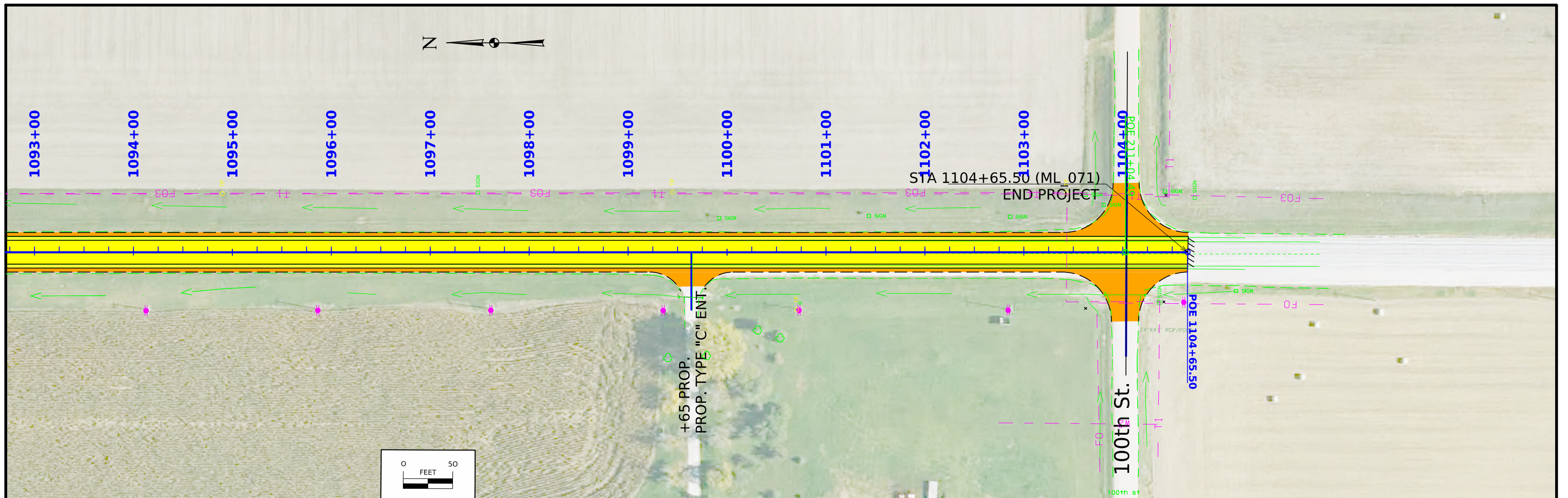












# Survey Information

## SURVEY INDEX

County : Sac  
Project Code : 24-81-071-010  
Phase Number : NHSX-071-6(055)--3H-81  
Location : Carroll Co to Jct IA 175 in Auburn  
Work Code : 1034-Unknown Pavement - Grade and Replace  
Project Directory : 8107101024

## Survey Personnel

Tom Hoyle – Lead Survey Technician  
Dave Ciskowski – Survey Technician  
Brad Duffy – Survey Technician  
Max Phillips – Survey Technician

## Date(s) of Survey

Begin Date 10/13/2025  
End Date 11/03/2025

## General Information

This survey is for US Hwy 71 from Carroll County N to Hwy 175. This project is a Partial Field DTM with Project Control, Post Flight Photo Control, Alignment, Drainage Structures and SUE QLD.

## 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

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Between three and four (300 epoch) five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values.

Since SAP 435.1 and SAP 435.2 adjoin one another but are in different IaRCS zones. To insure both projects match vertically. A double-run level loop was run through the control points of both projects. Control points 1 through 11 as well as historical control points G032, G031, G029, G027, G025, G023, G021, G020, G018, G164 and 14201.

Control point 1 is common to both projects. The RTN elevation of CP1 was 0.004' different when computing the coordinates for each IaRCS zone. The two elevation of 1264.891 and 1264.895 were average. The resulting elevation of 1264.893 was held fixed for both projects. Additionally the RTN elevations of following control points 1 – 4, 6, 9 and 11 were also held fixed. The estimated standard error of the observed height differences from loop closures was 0.0060 ft/mile. The estimated standard error of the observed height differences from the network adjustment was 0.0067 ft/mile. Historical control point G027 record orthometric height of 1250.41 is 0.297' lower than the leveled elevation of 1250.707. Historical control point G029 record orthometric height of 1254.54 is 0.290' lower than the leveled elevation of 1254.830. Historical control point G031 record orthometric height of 1229.20 is 0.205' lower than the leveled elevation of 1229.405. Historical control point G032 record orthometric height of 1219.33 is 0.161' lower than the leveled elevation of 1219.491. Historical control point G023 record orthometric height of 1256.03 is 0.262' lower than the leveled elevation of 1265.292. Historical control point G025 record orthometric height of 1253.74 is 0.312' lower than the leveled elevation of 1254.052. Historical control point G021 record orthometric height of 1262.20 is 0.264' lower than the leveled elevation of 1262.464. Historical control point G020 record orthometric height of 1258.95 is 0.280' lower than the leveled elevation of 1259.230. Historical control point G018 record orthometric height of 1260.84 is 0.292' lower than the leveled elevation of 1261.132. Historical control point 14201 record orthometric height of 1284.37 is 0.019' lower than the leveled elevation of 1284.389. Historical control point G164 record orthometric height of 1346.45 is 0.383' lower than the leveled elevation of 1346.833.

**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: 2018**

## Alignment Information

The horizontal alignment for U.S. Hwy 71 this survey is a retrace of As-built Plans No. FA-742A(3), F-743(4) and F-743(5). Survey stationing was equated to the plan PI at Sta. 945+97.4 and carried back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 892+96.6 As-built Plans Project No. FA-742A(3)  
Survey PI Sta. 892+98.17

PI Sta. 945+97.4 As-built Plans Project No. FA-742A(3)  
Survey PI Sta. 945+97.40

PI Sta. 972+33.8 As-built Plans Project No. FA-742A(3)  
Survey PI Sta. 972+33.76

PI Sta. 1034+52.0 As-built Plans Project No. FA-742A(3)  
Survey PI Sta. 1034+49.81

PI Sta. 1104+07.5 As-built Plans Project No. FA-742A(3)  
Survey PI Sta. 1104+02.67

The horizontal alignment for Iowa Hwy 175 this survey is a retrace of As-built Plans No. F-743(5). Survey stationing was equated to the plan PI at Sta. 100+00 and carried ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 100+00 As-built Plans Project No. F-743(5).  
Survey PI Sta. 100+00.00

Survey POT Sta. 105+60.09

### 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 4 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3 or 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 4 (U.S. Survey Foot)**  
**VERT. DATUM: NAVD88**  
**Geoid Model: 2018u3 or 2018u2**

Point Name	Northing	Easting	Elevation	Code-Description
1	8482121.017	14488137.783	1264.893	CP SET FENO MONUMENT STAMPED 1 IN THE NE QUADRANT OF US 71 AND 100TH ST 180 FT E OF US 71 E EDGE OF PAVEMENT 158.3 FT NE OF A FD 5/8 INCH REBAR 38 FT N OF THE CL OF 100TH ST W OF A FIELD ENTRANCE
2	8487373.395	14487754.753	1253.074	CP SET FENO MONUMENT STAMPED 2 IN THE NW QUADRANT OF US 71 AND 390TH ST 166 FT W OF US 71 W EDGE OF PAVEMENT 143.4 FT NW OF A FD 5/8 INCH REBAR 77.5 FT NE OF A WESTERN IOWA FIBER OPTIC WARNING SIGN 26.6 FT N OF THE C
3	8492652.420	14488032.295	1227.654	CP SET FENO MONUMENT STAMPED 3 IN THE NE QUADRANT OF US 71 AND 380TH ST 53 FT E OF US 71 E EDGE OF PAVEMENT 78.3 FT NE OF A FD 1/2 INCH SQUARE ROD IN A CONCRETE MONUMENT 59 FT W OF A PP 47.4 FT SE OF A FIBER OPTIC CAE
4	8497938.247	14487011.539	1224.580	CP SET FENO MONUMENT STAMPED 4 IN THE SE QUADRANT OF US 71 AND XAVIER AVE. IN AUBURN 45.1 FT E OF THE CL OF US 71 92 FT SE OF A CROSSWALK SIGNAL 31 FT S OF A CROSSWALK SIGNAL 23.1 FT SW OF A LIGHT POLE

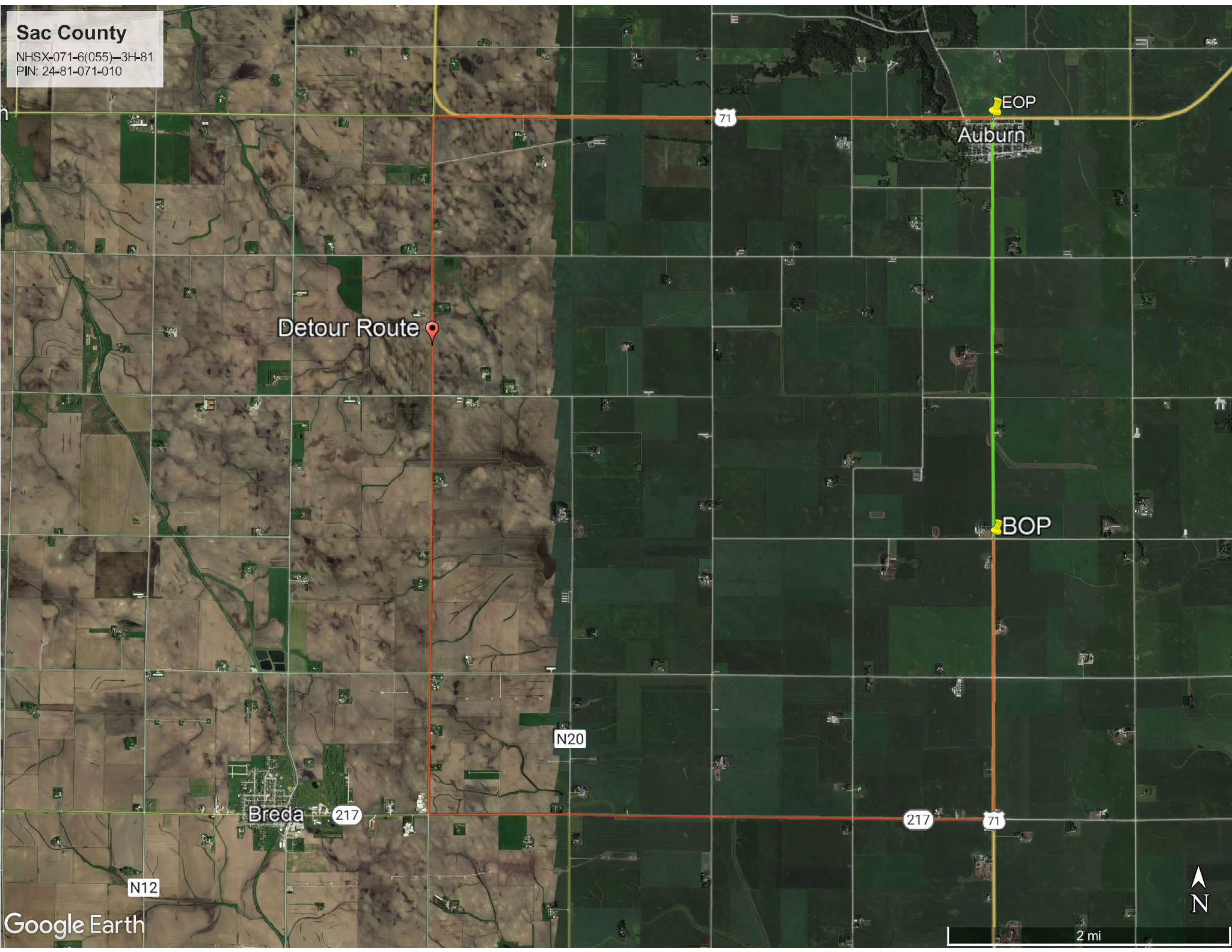
108\_23A  
8/15/22

### TRAFFIC CONTROL PLAN

Traffic on US 71 shall be maintained at all times via an off-site detour. Refer to J.2 for Detour Route.

**Sac County**

NHSX-071-6(055)-3H-81  
PIN: 24-81-071-010



Detour Route

EOP  
Auburn

BOP

Breda 217

N12

N20

217

71

Google Earth

2 mi



## CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
<b>Aggregate</b>			
(64)	Choke Stone	(8)	Behind Curb Cut
(42)	Engineering Fabric	(6)	Granular
(8)	Flooded Backfill	(13)	Granular Back Fill
(92)	Macadam Stone	(48)	Rock Undercut
(20)	Modified	(8)	Shoulder Earth Fill
(12)	Plowing Shaping	(2)	Side Slopes
(14)	Porous Backfill	(226)	Side Slopes Dressing
<b>Grading</b>			
(8)	Revetment Class A	(128)	Boulder
(6)	Revetment Class B	(209)	Boulder Removed
(62)	Revetment Class C	(48)	Broken Weathered
(188)	Revetment Class D	(210)	Broken Weathered Removed
(28)	Revetment Class E	(3)	Core Out
(12)	Shoulder Special Backfill	(115)	Core Out Remove Only
(12)	Special Backfill	(195)	Core Out Remove and Replace
(20)	Subbase	(203)	Existing Pavement
(20)	Subbase Lower	(184)	Existing Pavement Remove Only
(20)	Subbase Upper	(200)	Existing Pavement Remove and Replace
(118)	Subgrade Treatment	(6)	Loam
<b>Substrata</b>			
(207)	HMA Base Course	(211)	Loam Removed
(207)	HMA Interim Course	(80)	Rock
(207)	HMA Surface Course	(212)	Rock Removed
(0)	Bridge	(4)	Select Sand
(0)	Barrier Concrete	(214)	Select Sand Removed
(0)	Barrier Concrete Footing	(3)	Shale
(0)	Curb Gutter	(215)	Shale Removed
(48)	Flowable Mortar	(10)	Topsoil
(0)	Median Concrete	(2)	Topsoil Remove Only
(0)	PCC Pavement	(4)	Topsoil Remove and Replace
(0)	Sidewalk	<b>Unsuitable / Waste</b>	
(0)	Existing Pavement	(3)	Unsuitable Type A
(209)	Shoulder HMA	(216)	Unsuitable Type A Removed
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(217)	Unsuitable Type B Removed
(112)	Noise Wall	(11)	Unsuitable Type C
(112)	Noise Wall Footing	(218)	Unsuitable Type C Removed
(112)	Retaining Wall Back	(3)	Waste
(112)	Retaining Wall Back Excavate	(219)	Waste Removed
(112)	Retaining Wall Face		
(112)	Retaining Wall Front Excavate		
(112)	Retaining Wall Front Footing		
(112)	Retaining Wall MSE Gutter		
(112)	Retaining Wall Reinforced Earth		
<b>Concrete</b>			
<b>Asphalt</b>			
<b>Bridge</b>			
<b>Shoulder</b>			
<b>Structural</b>			

**NOTES:**

Text

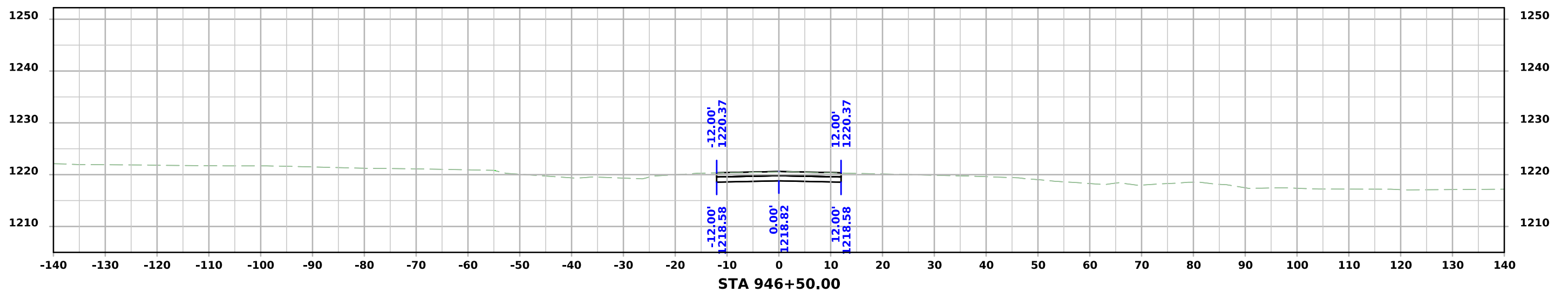
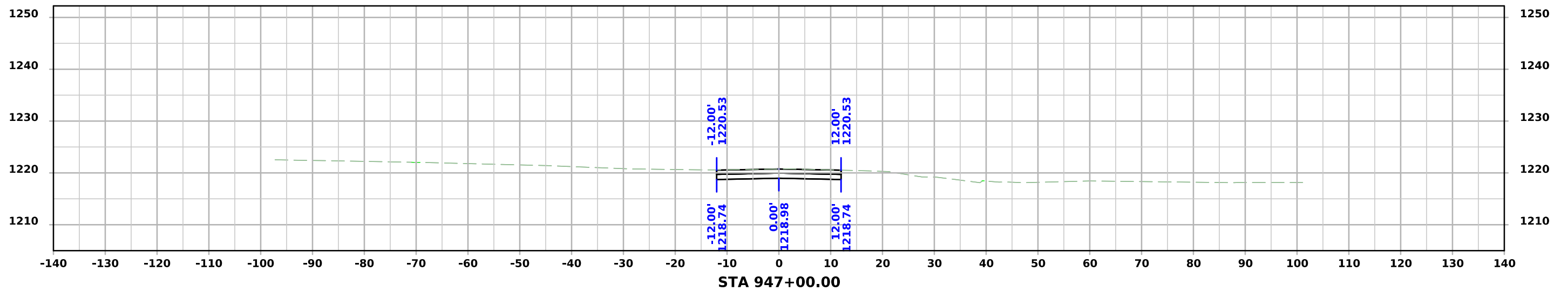
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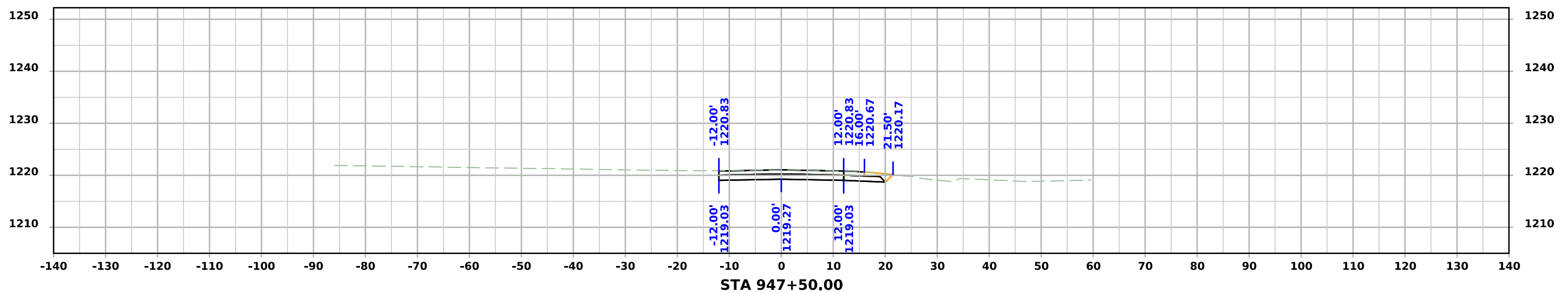
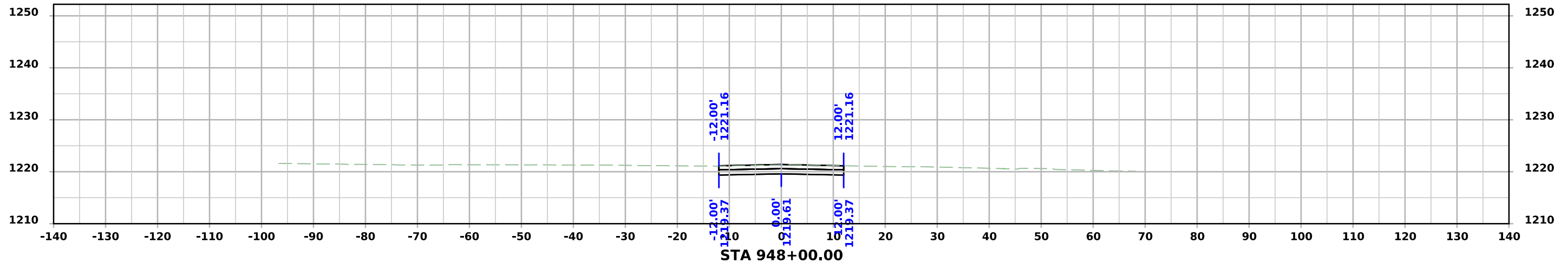
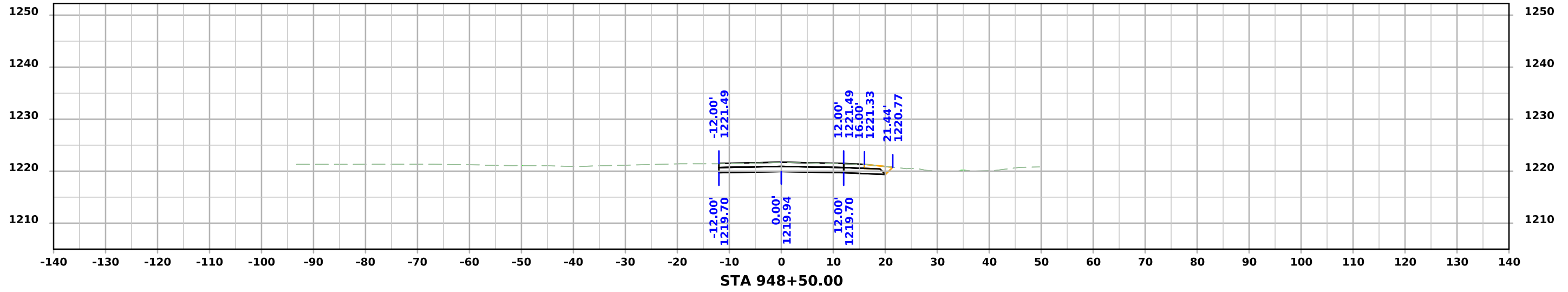
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(COVERS SHEET SERIES W, X, Y, & Z)

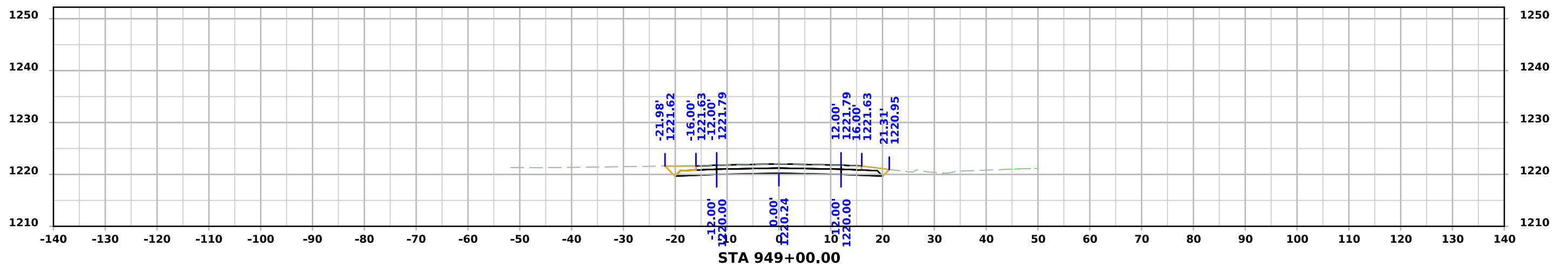
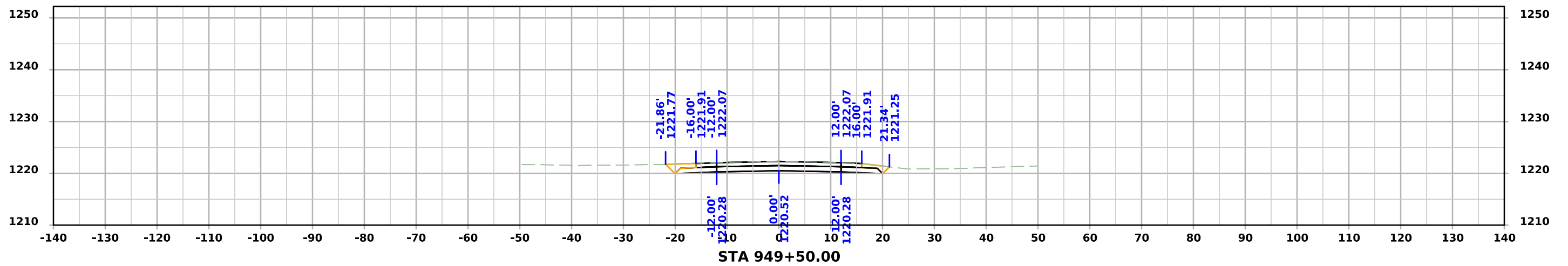
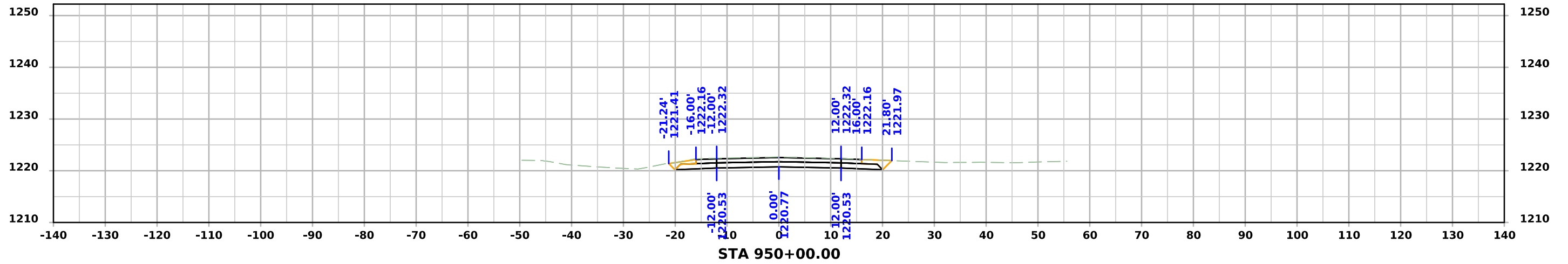
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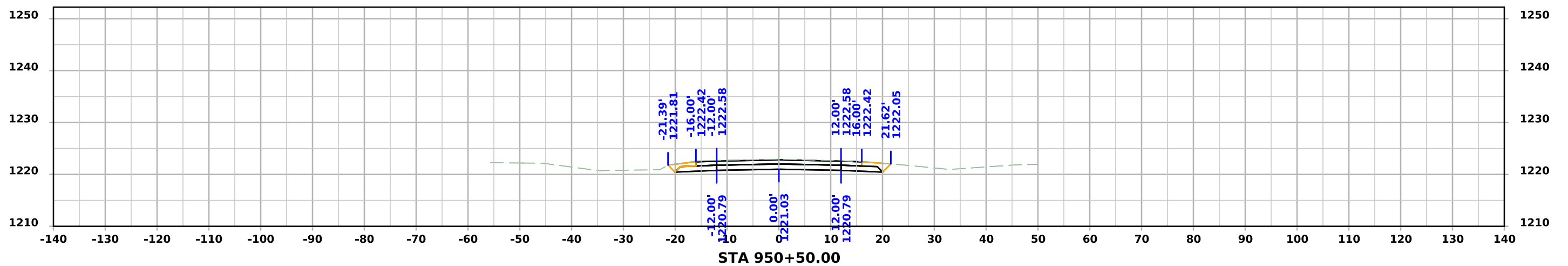
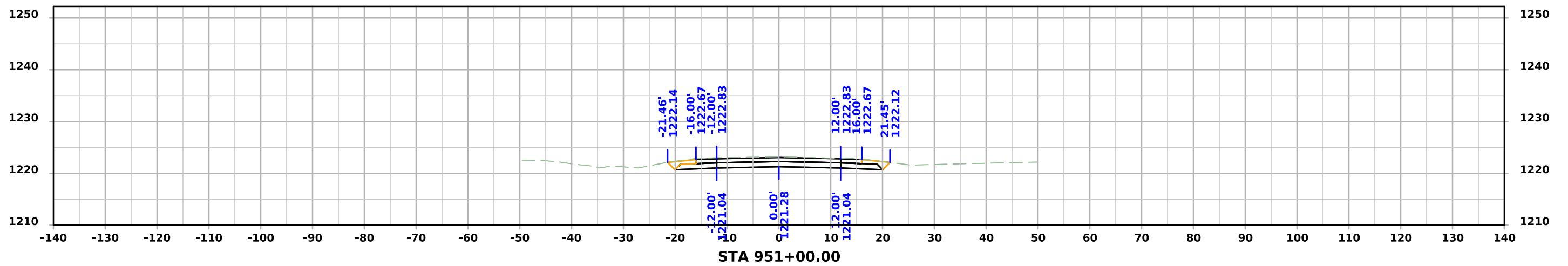
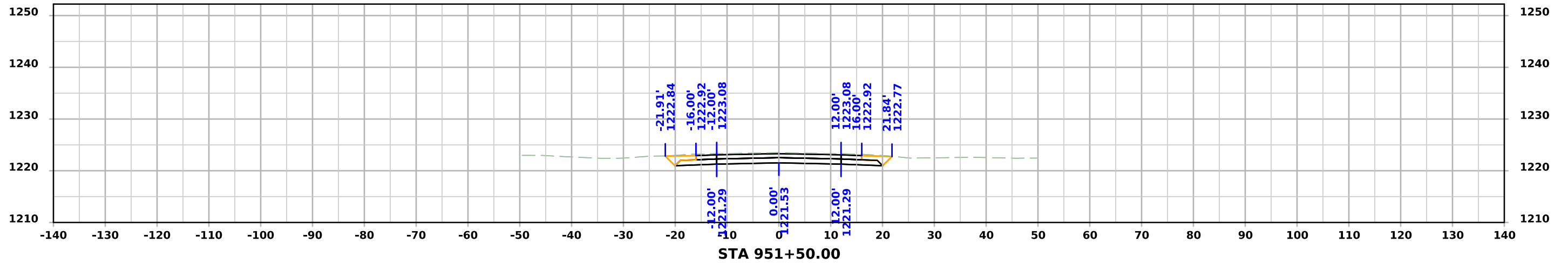
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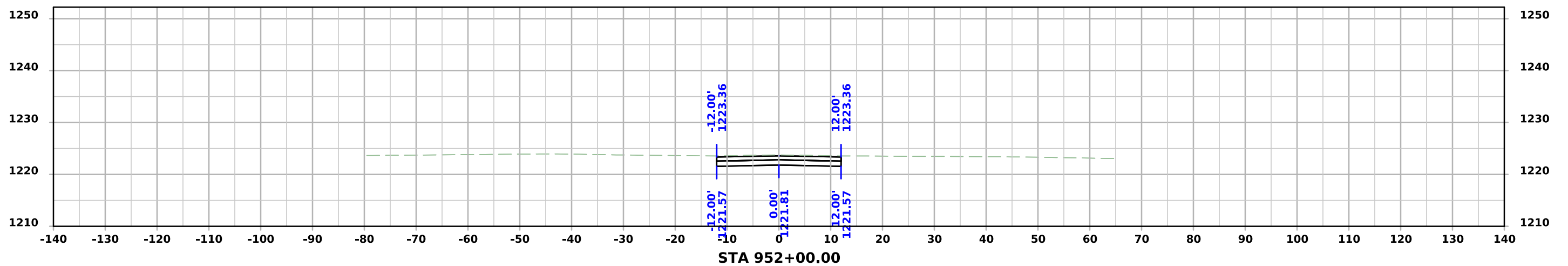
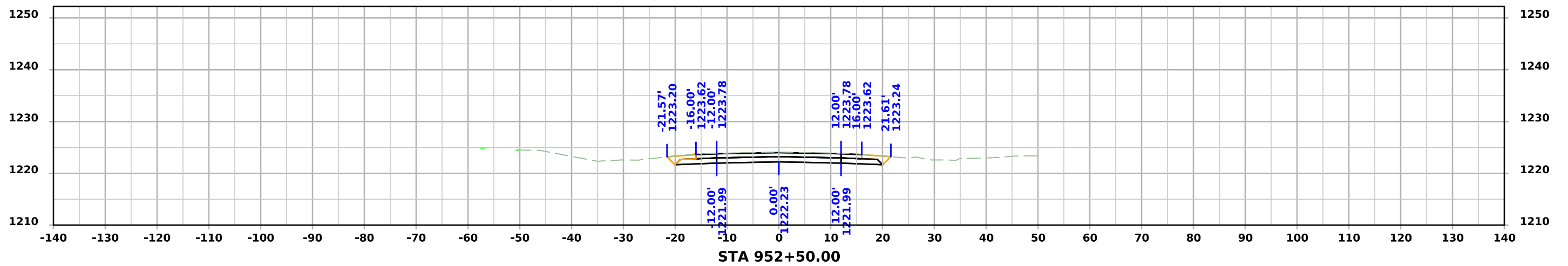
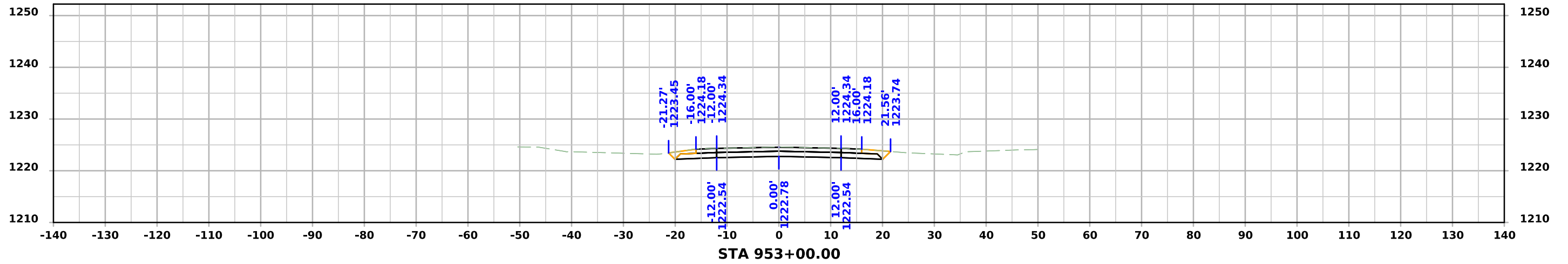
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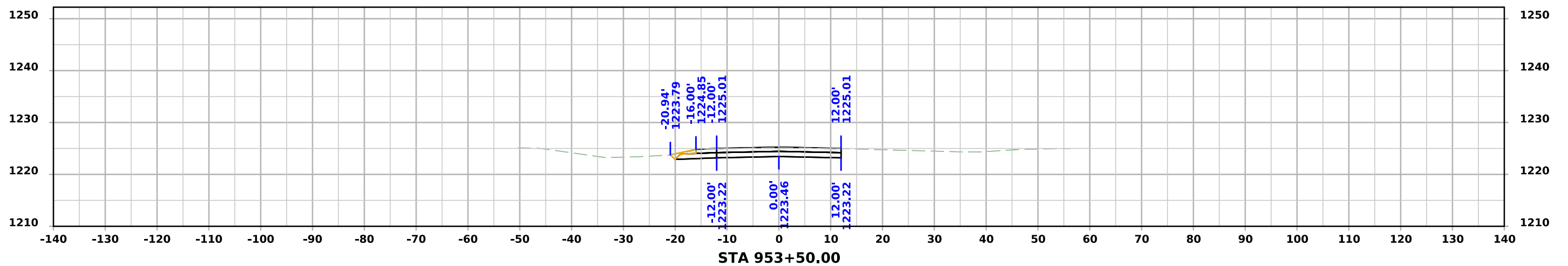
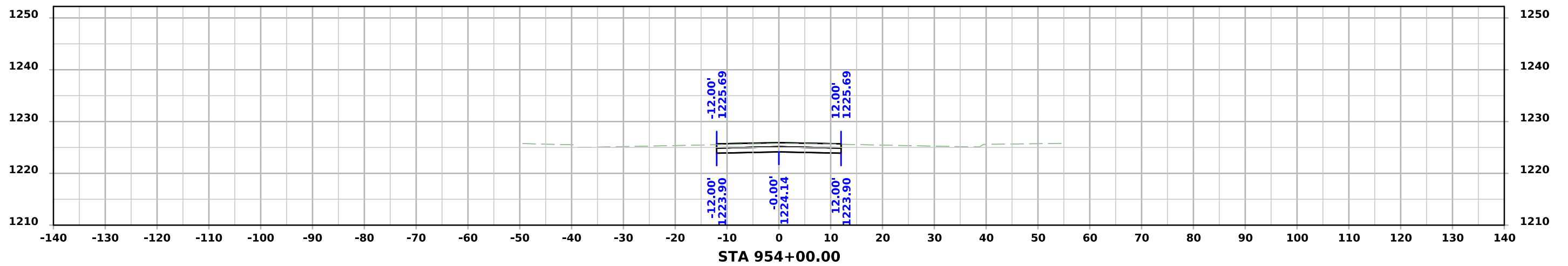
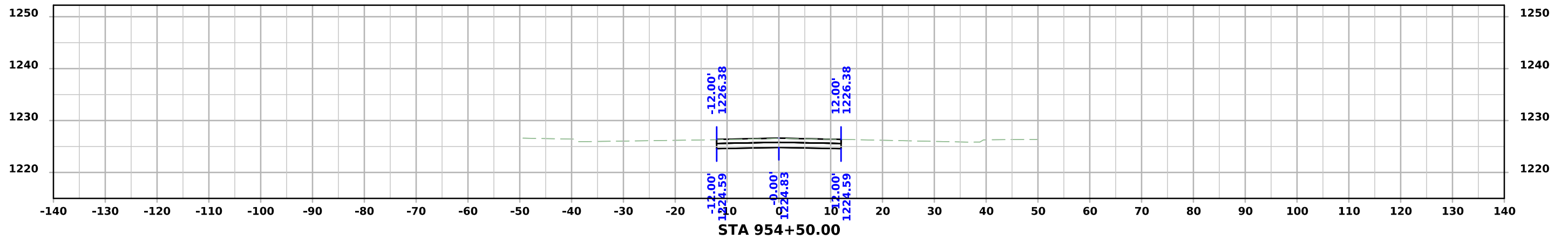
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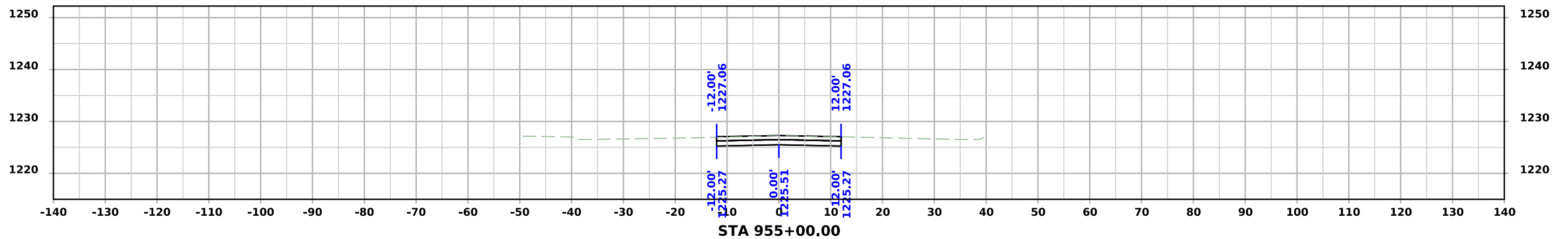
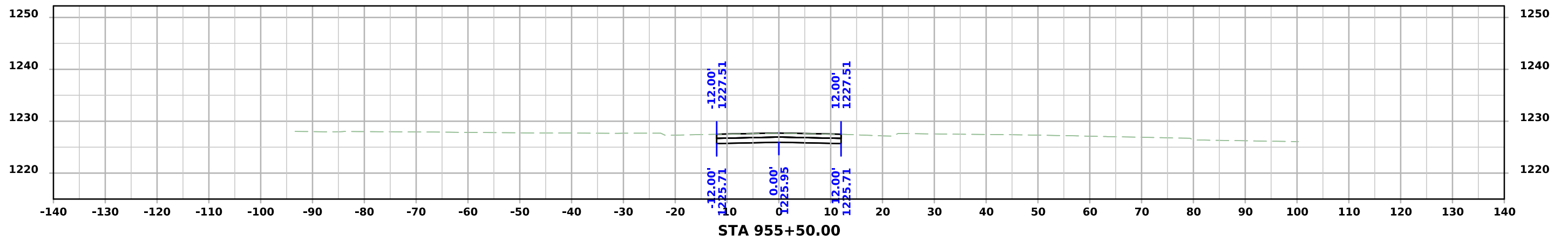
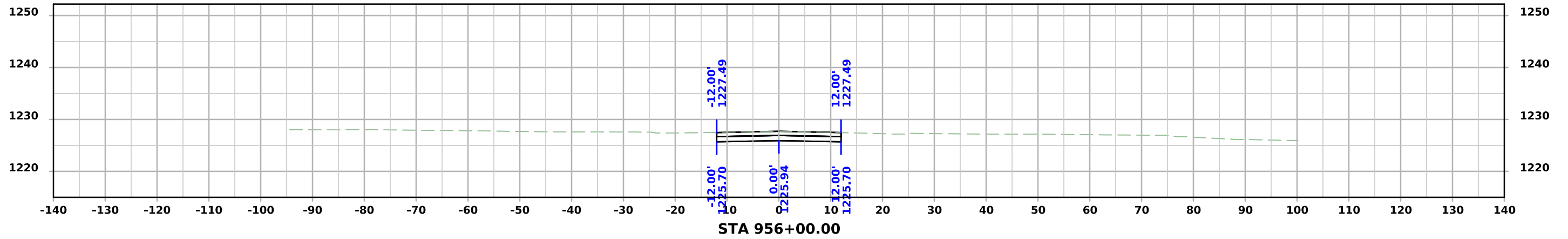
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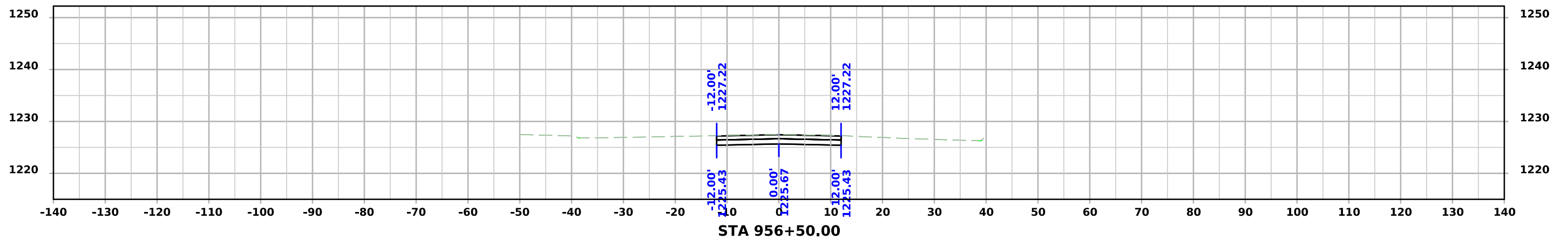
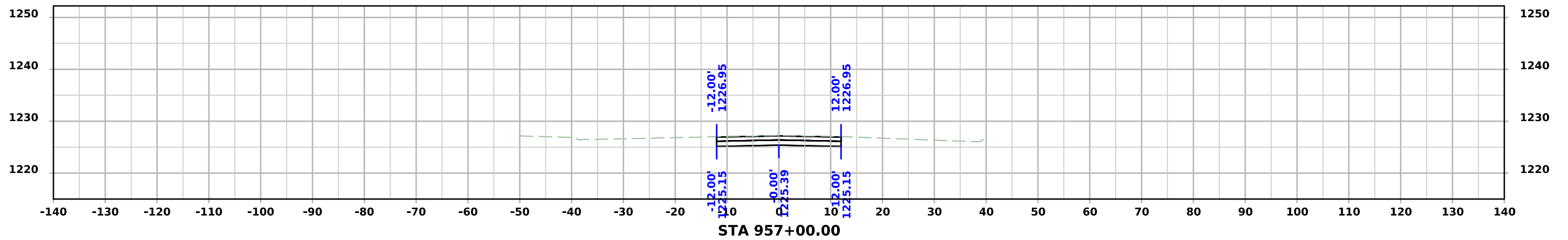
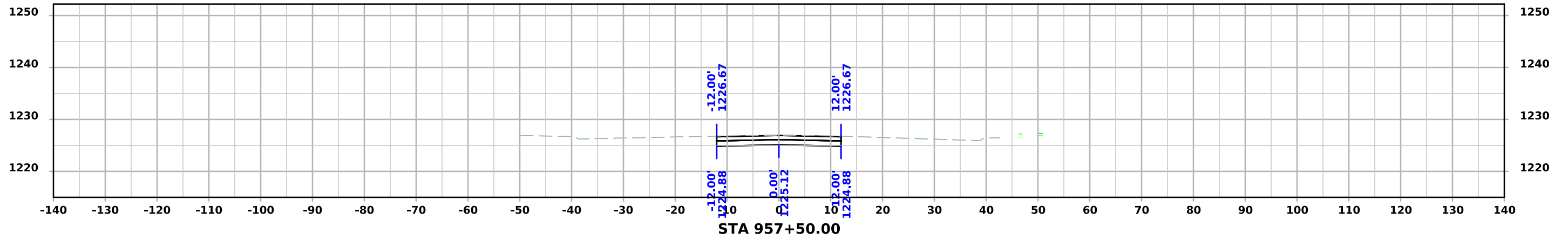
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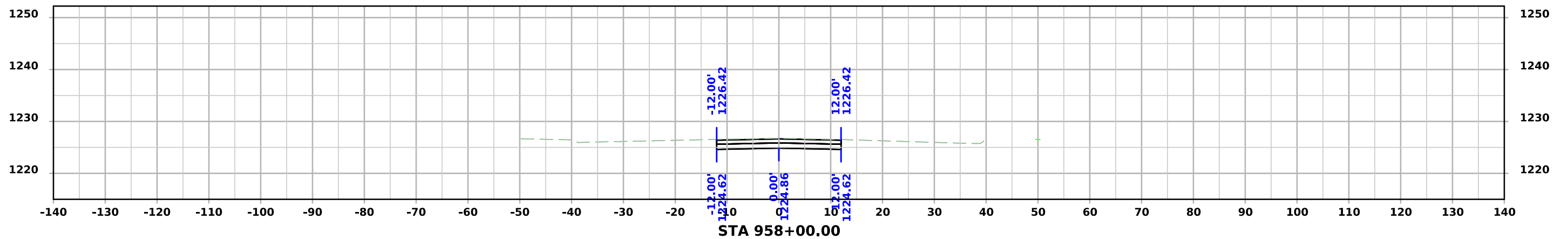
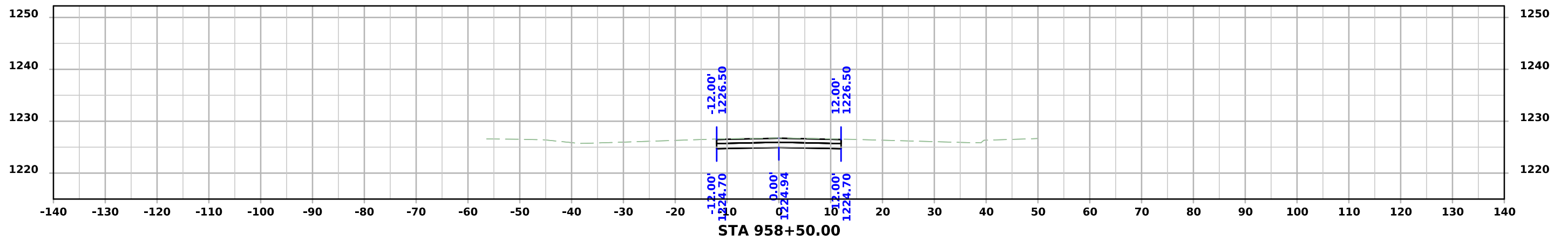
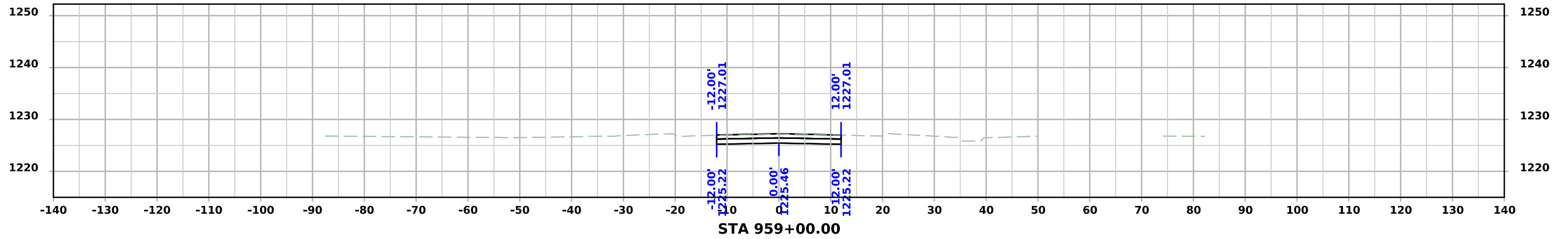
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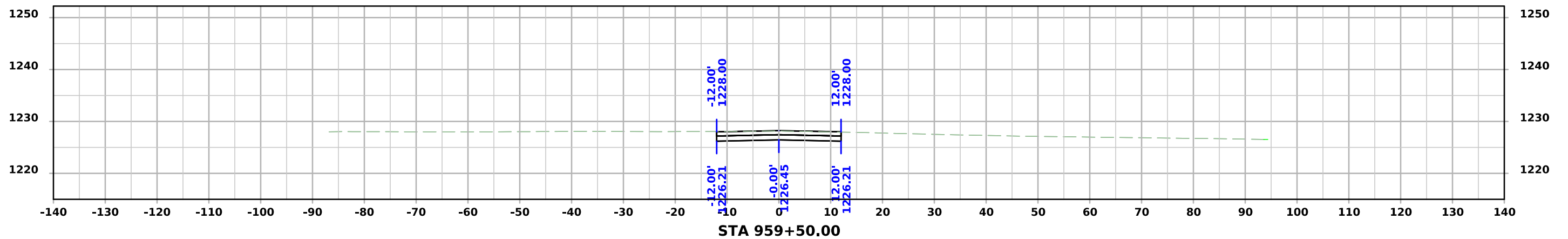
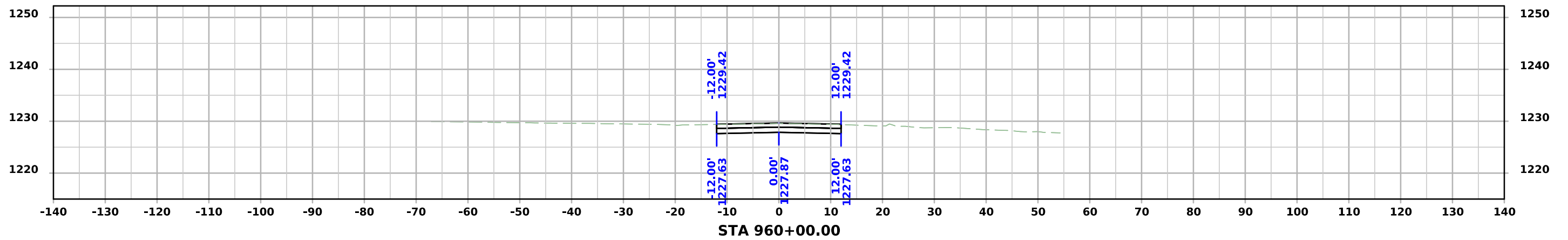
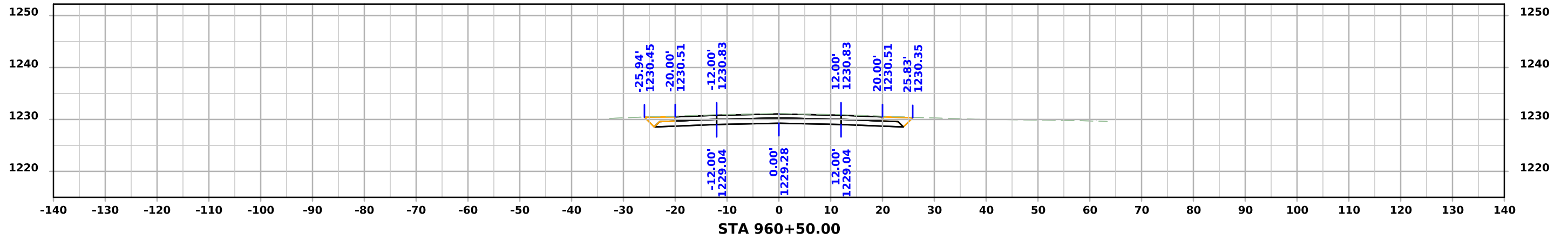
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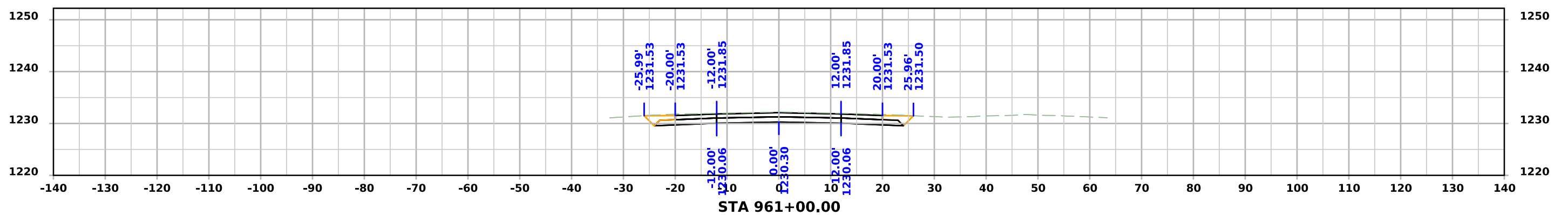
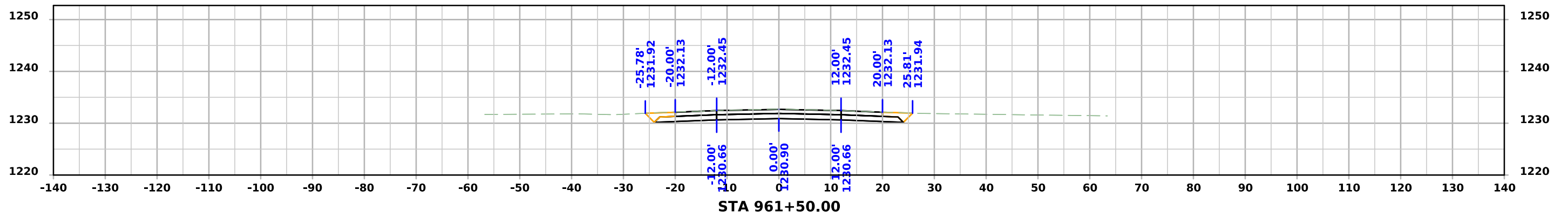
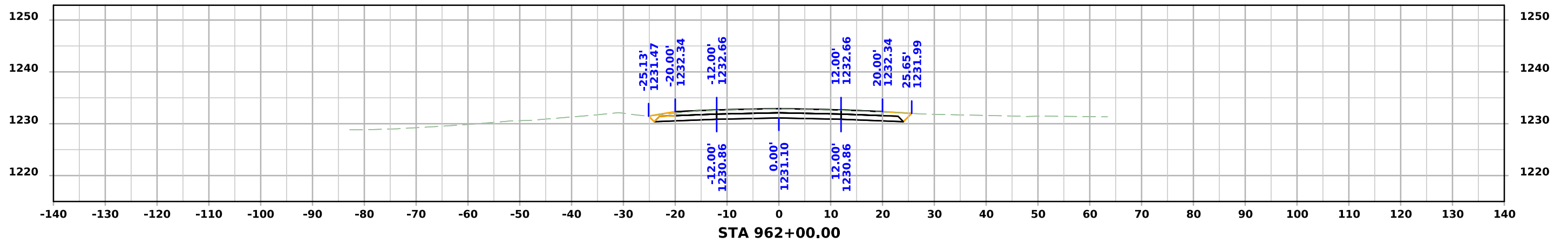
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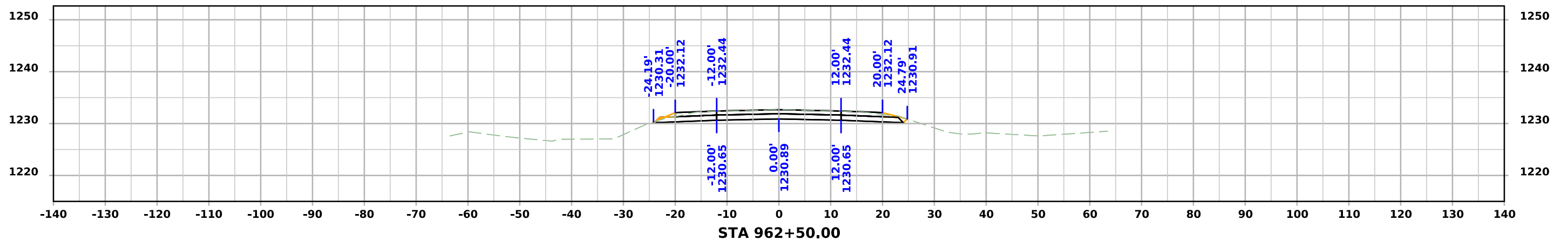
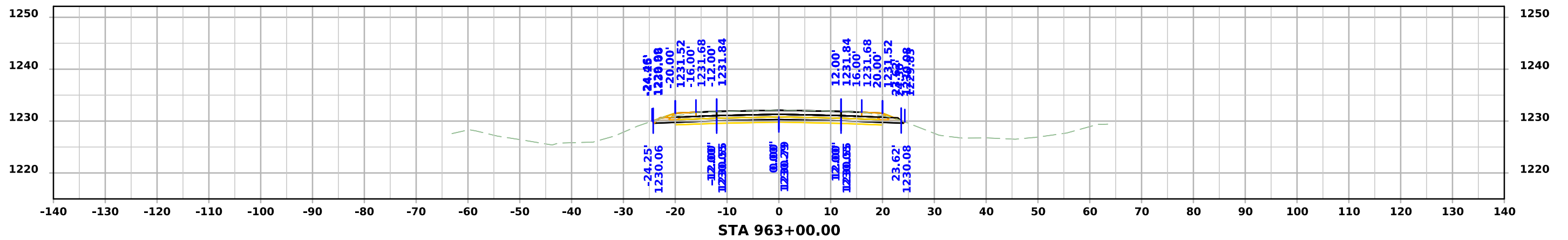
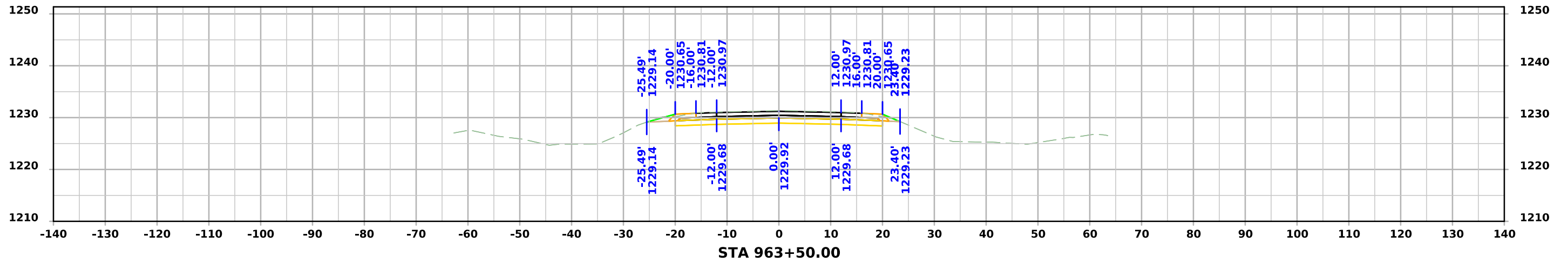
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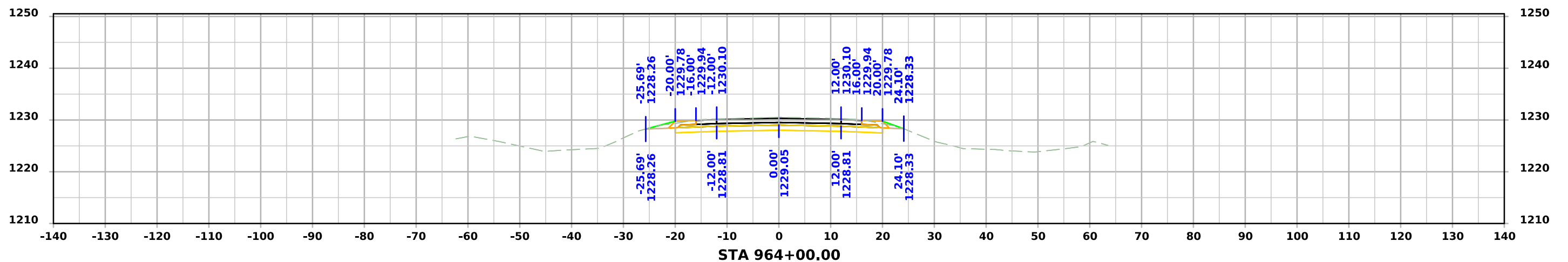
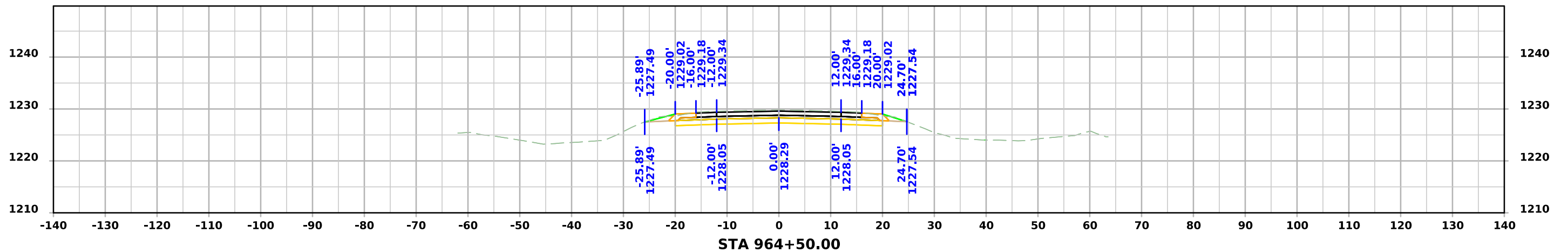
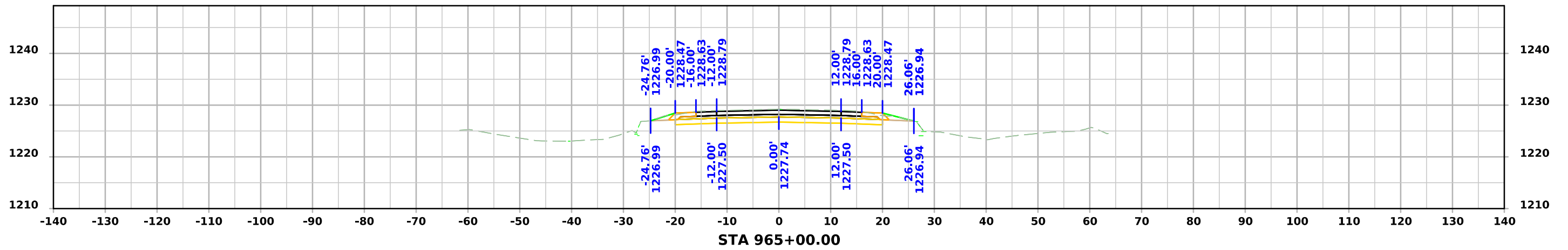
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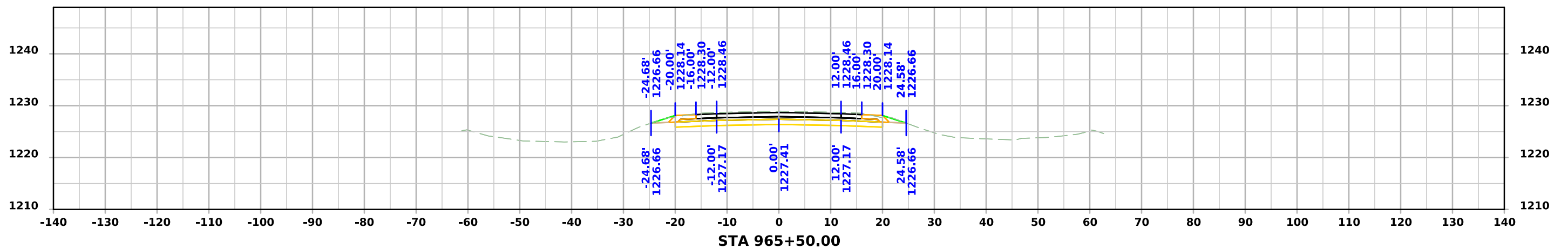
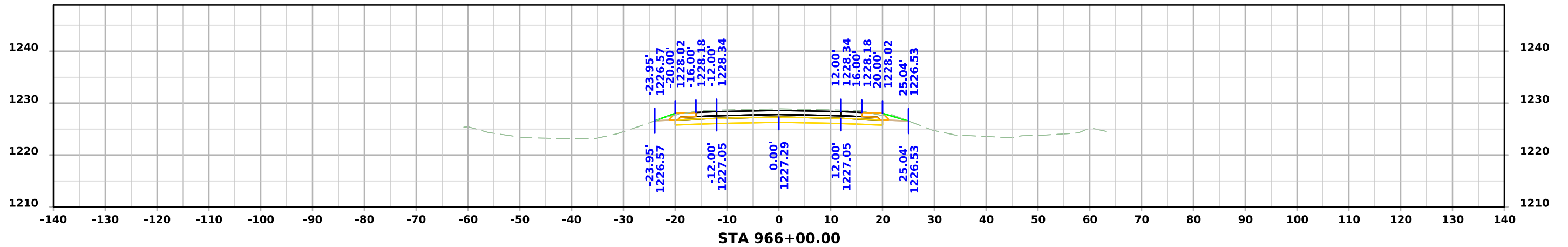
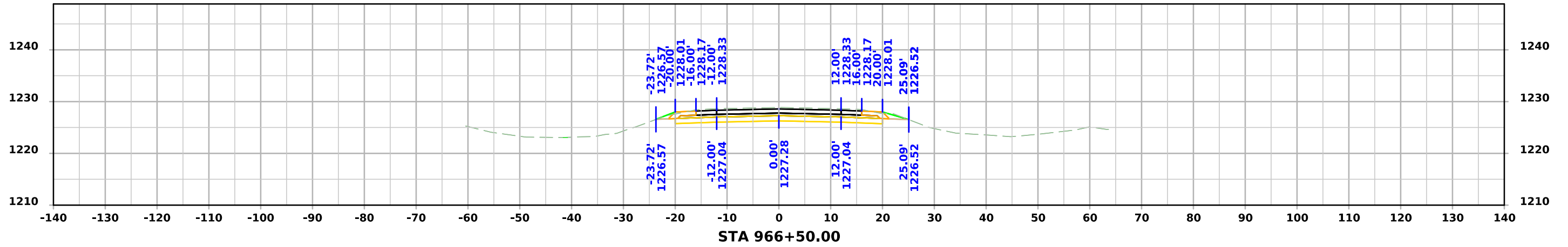
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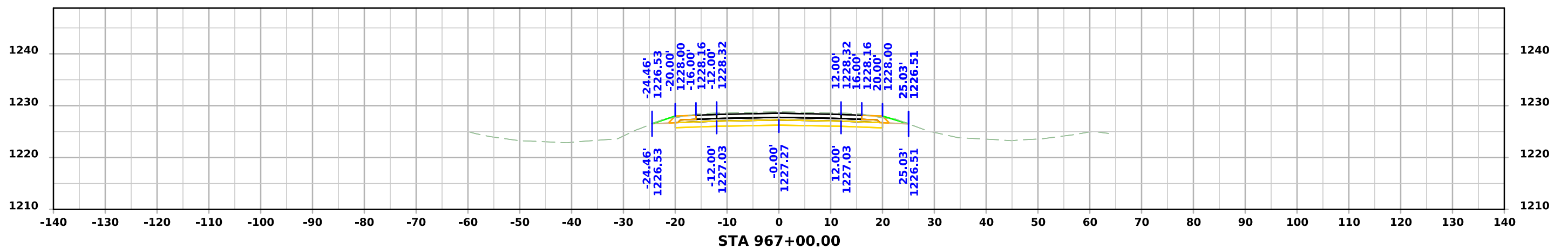
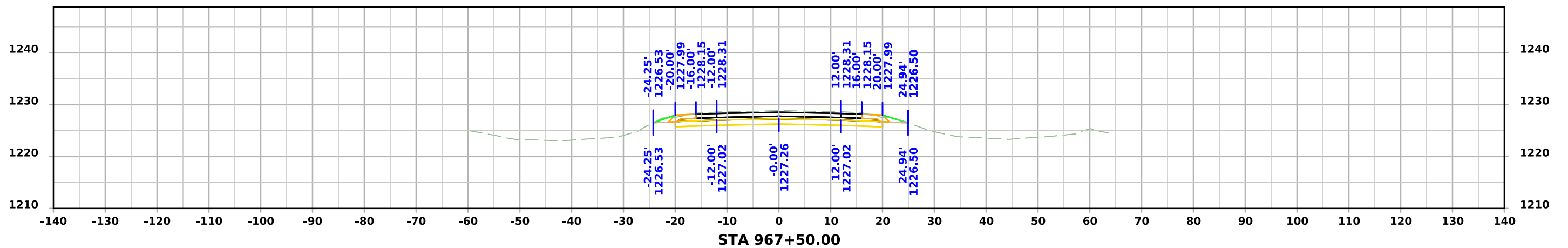
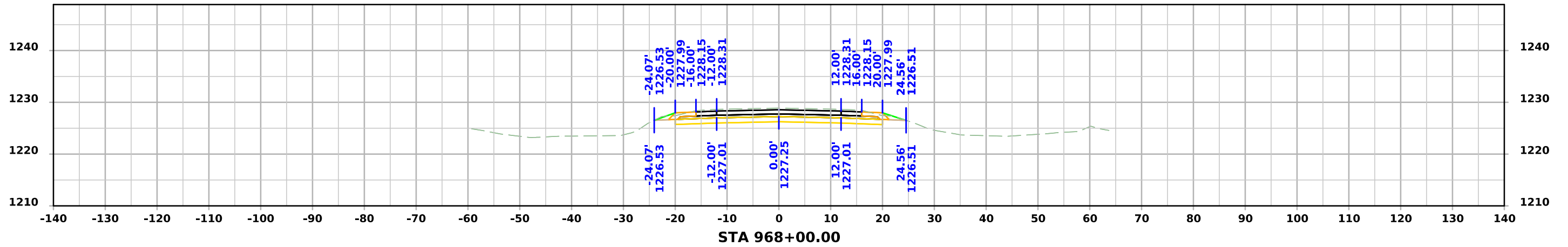
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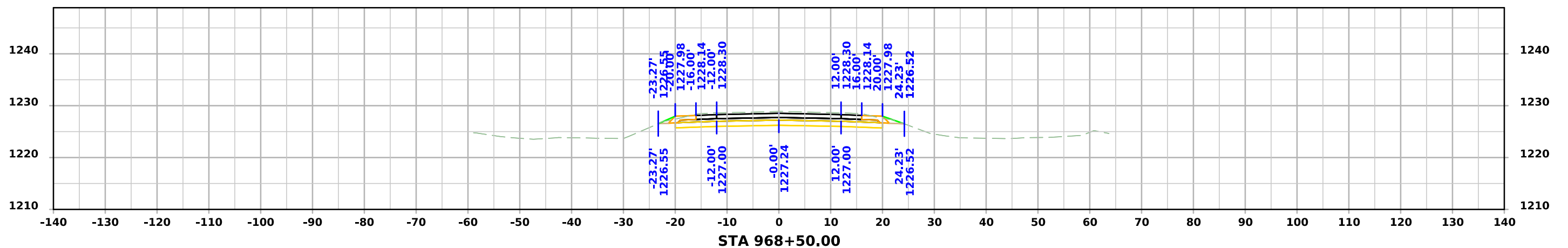
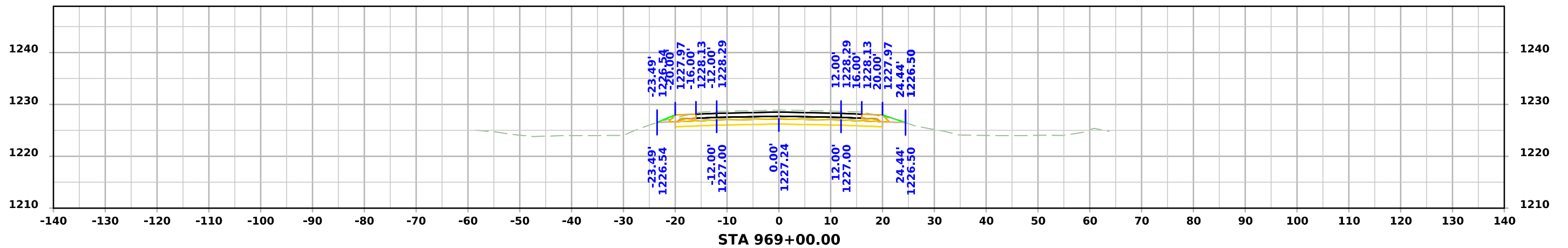
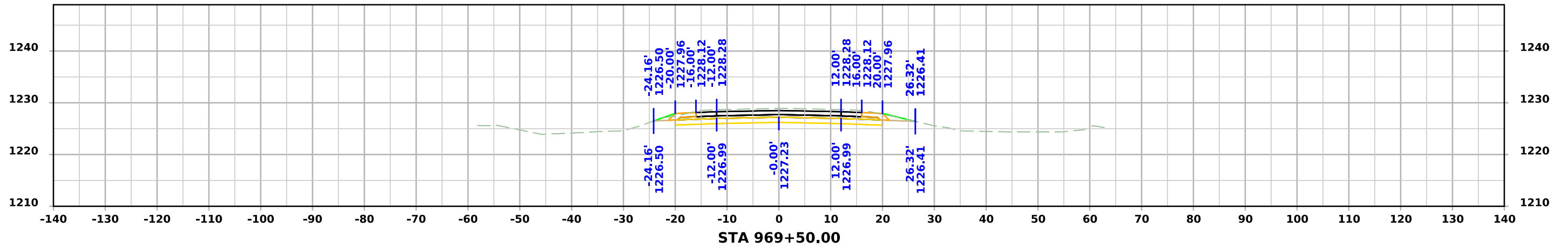
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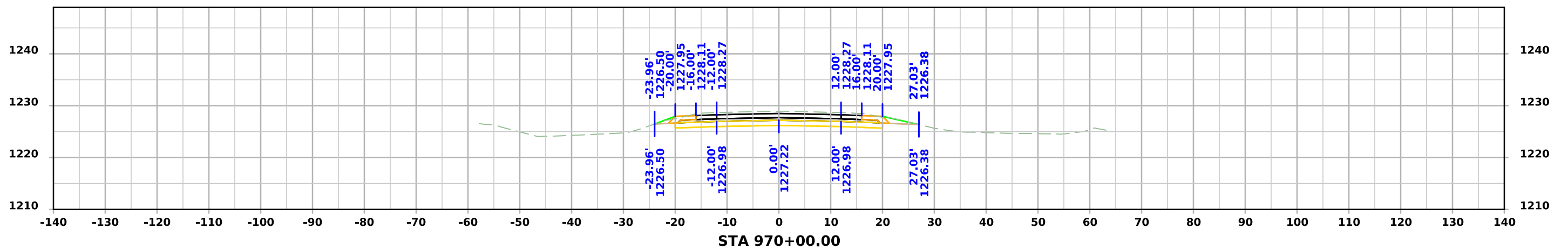
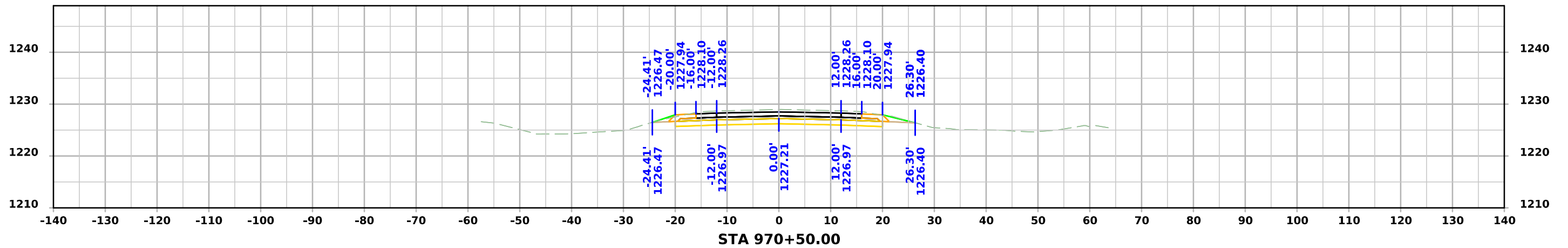
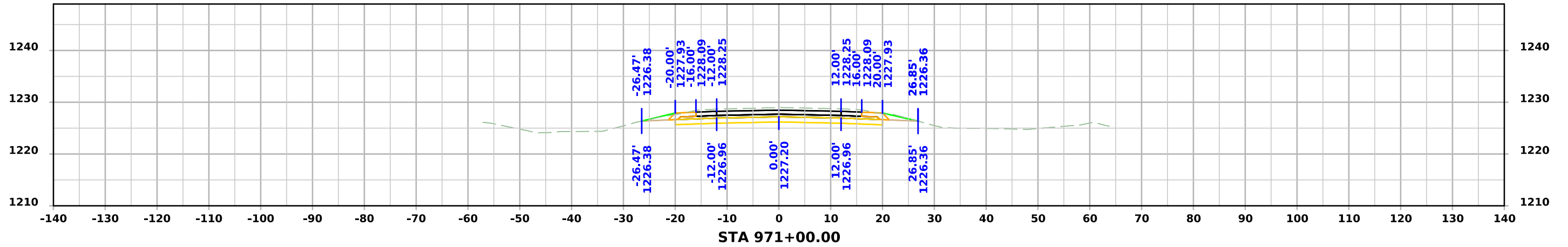
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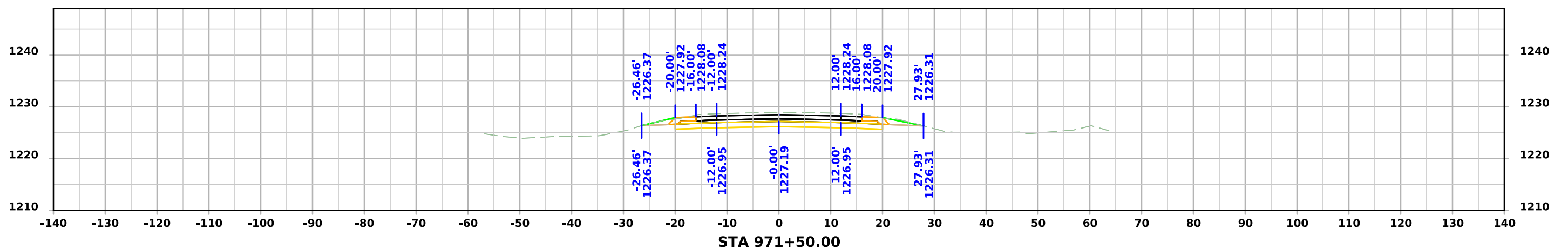
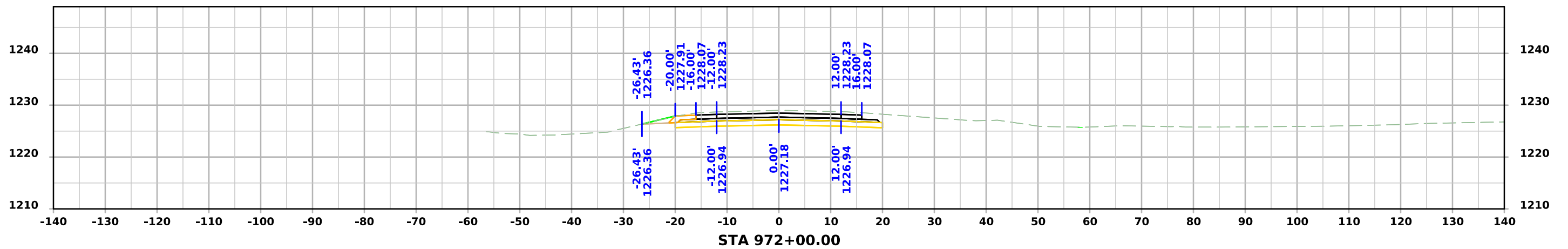
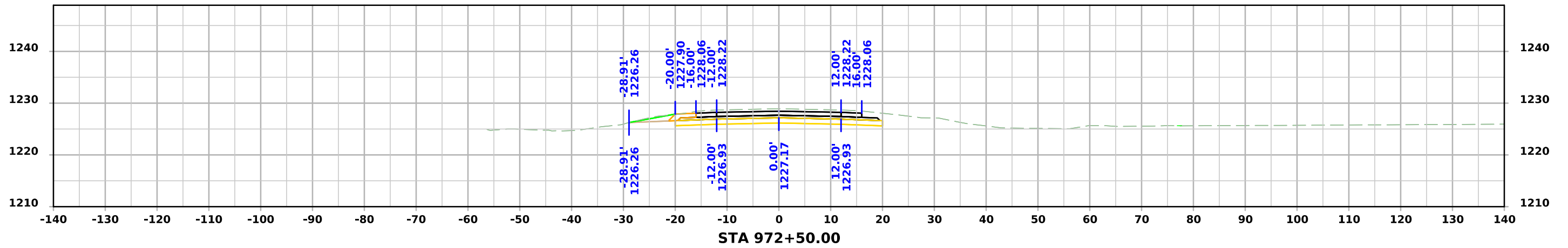
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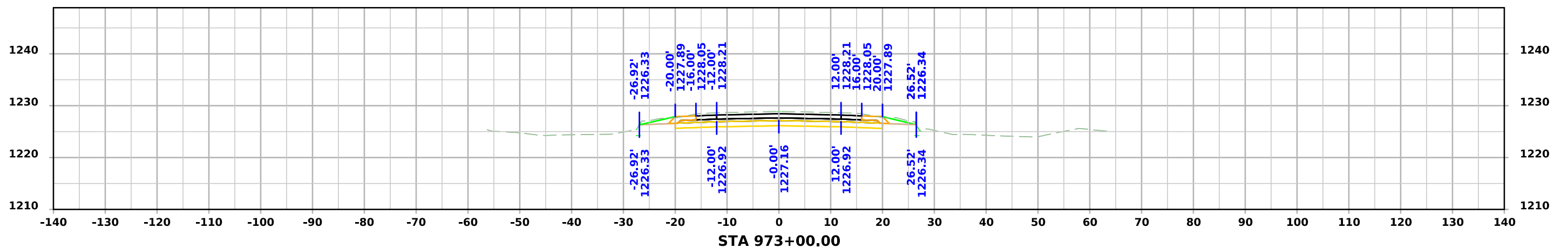
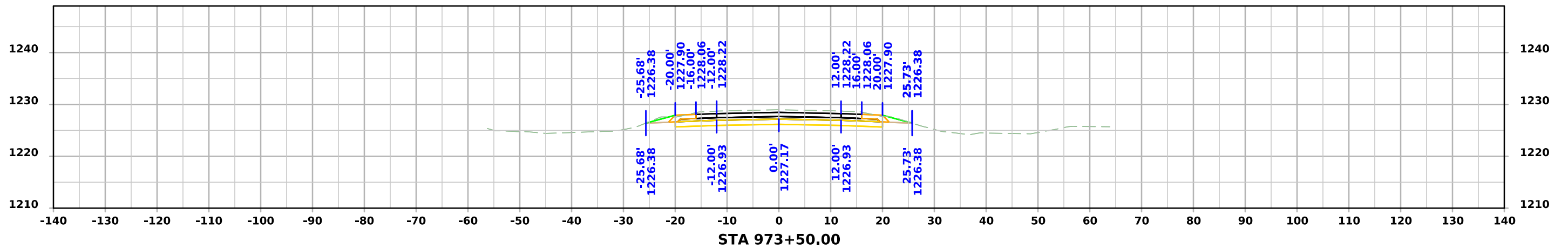
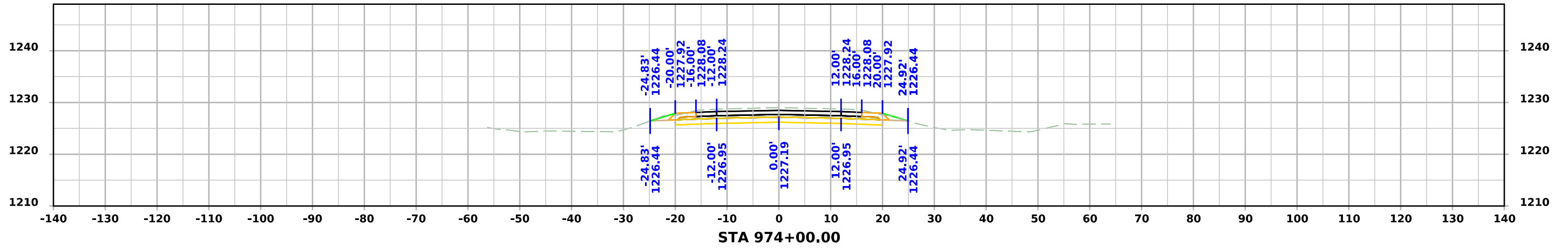
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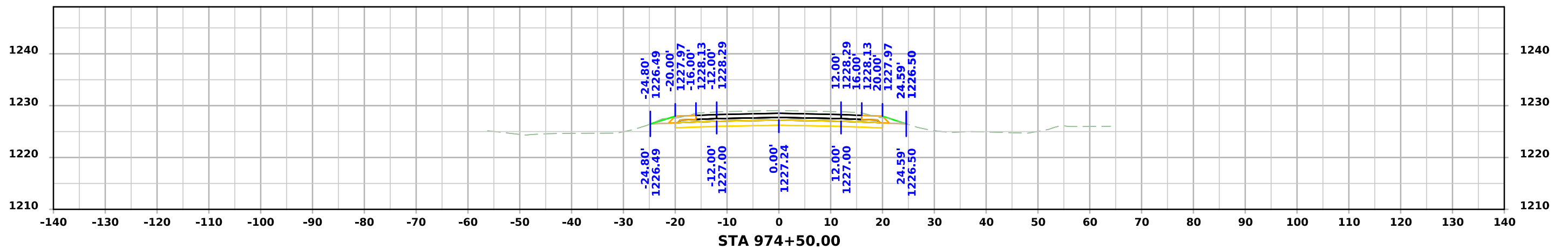
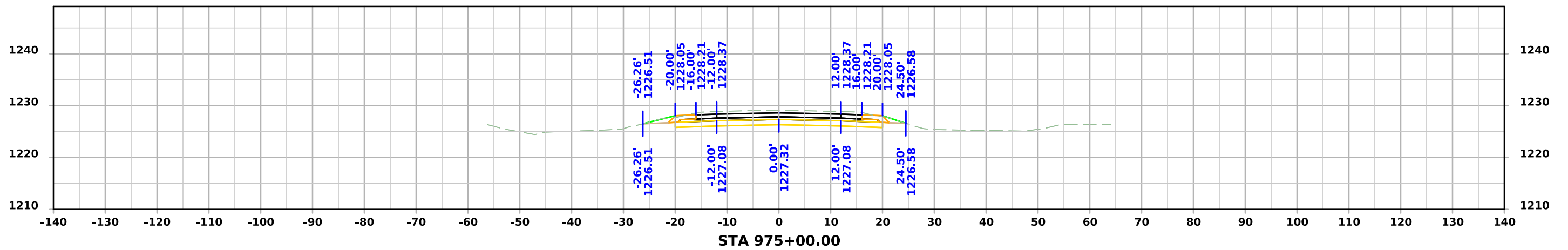
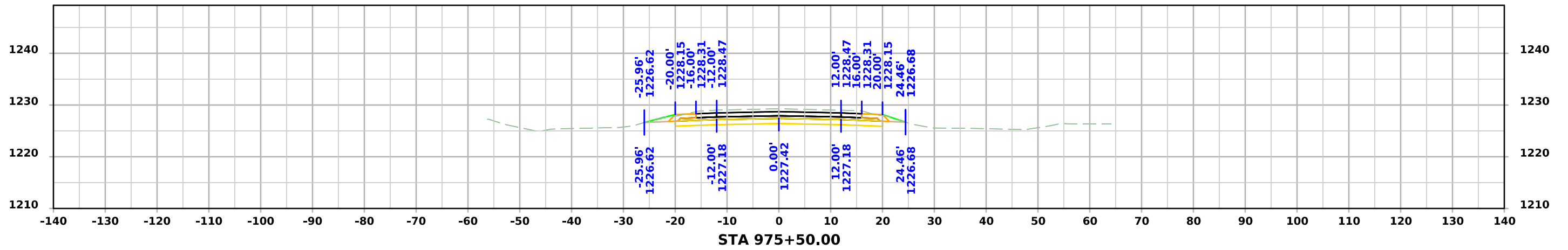
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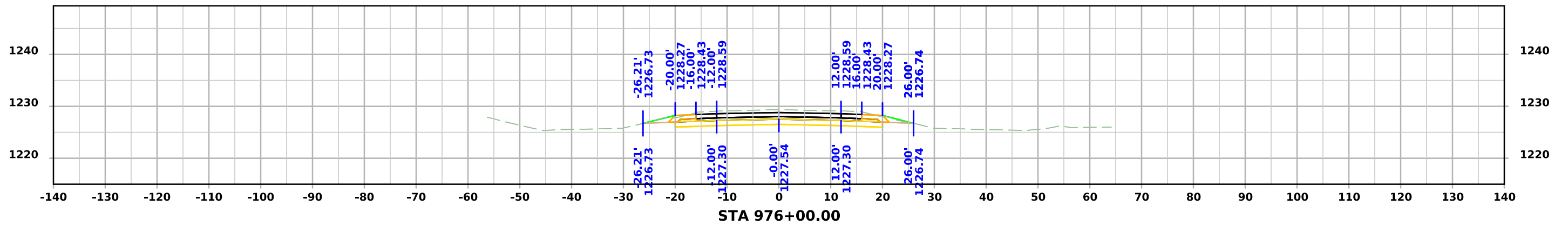
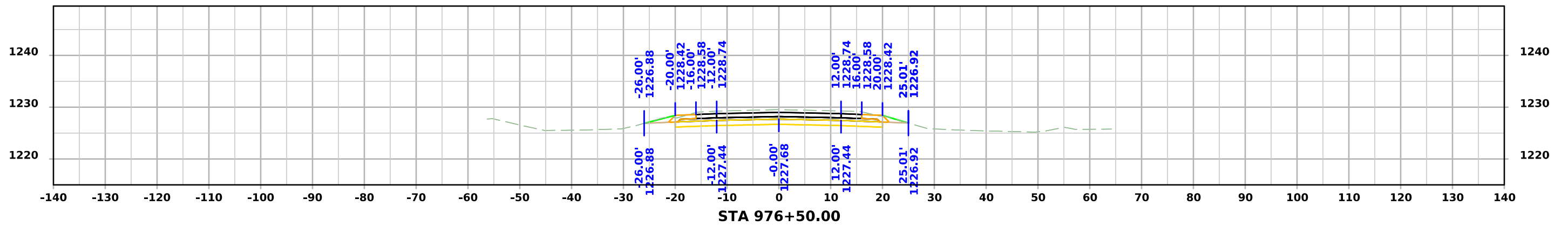
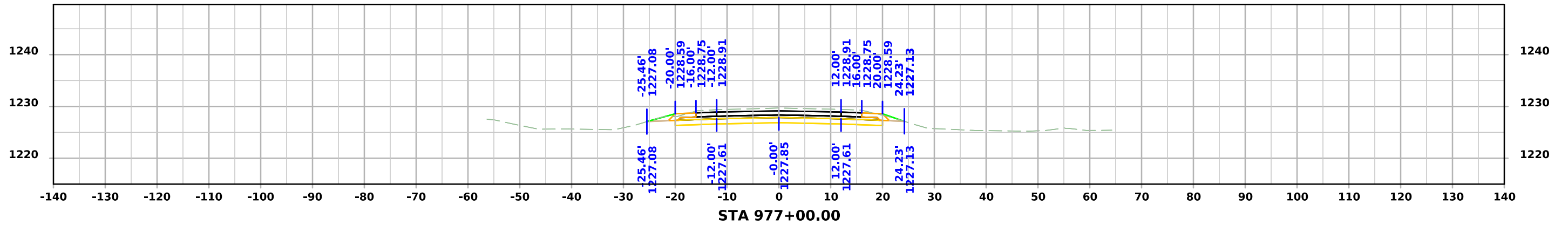
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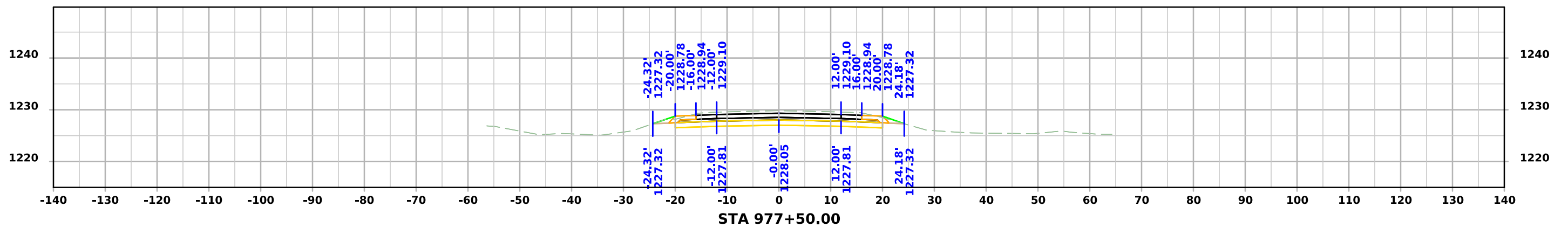
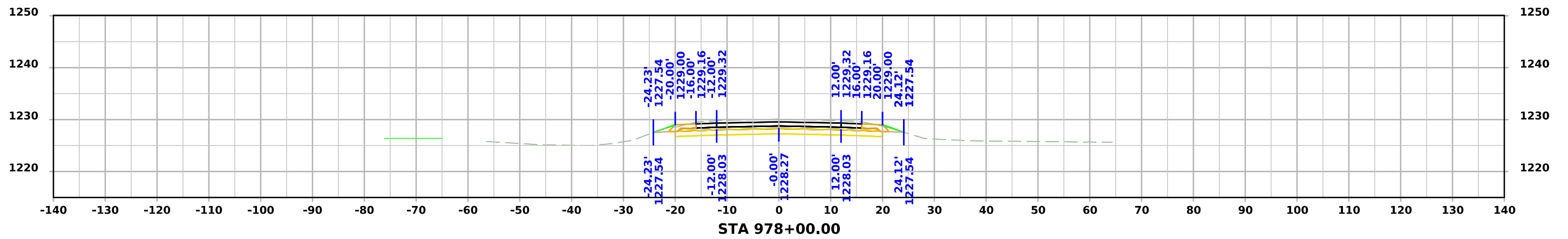
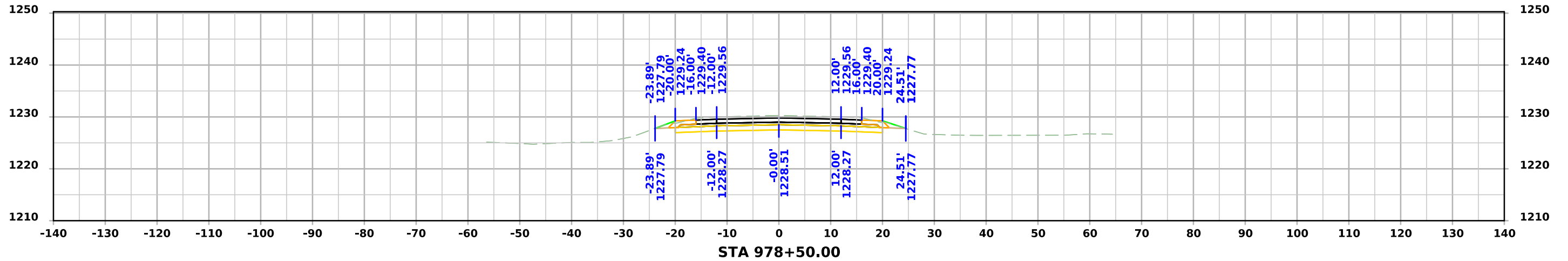
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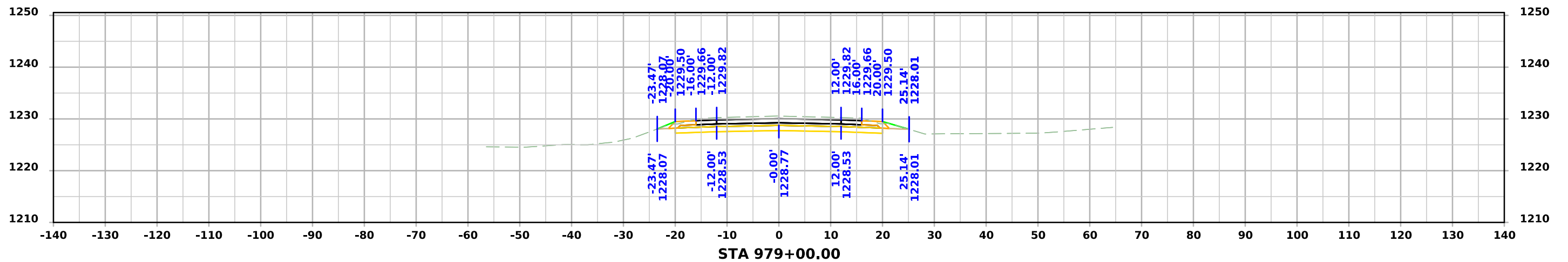
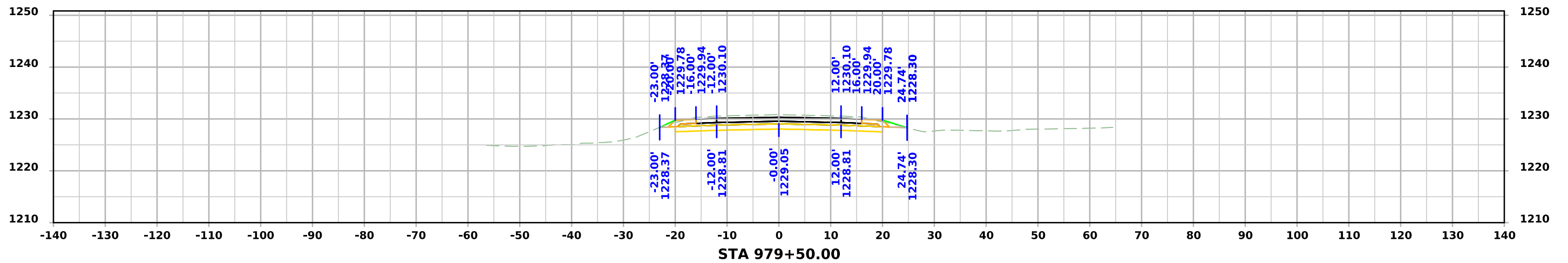
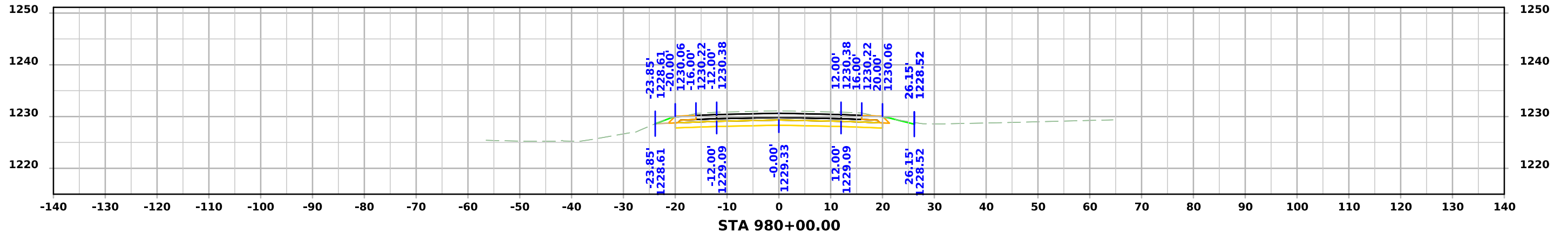
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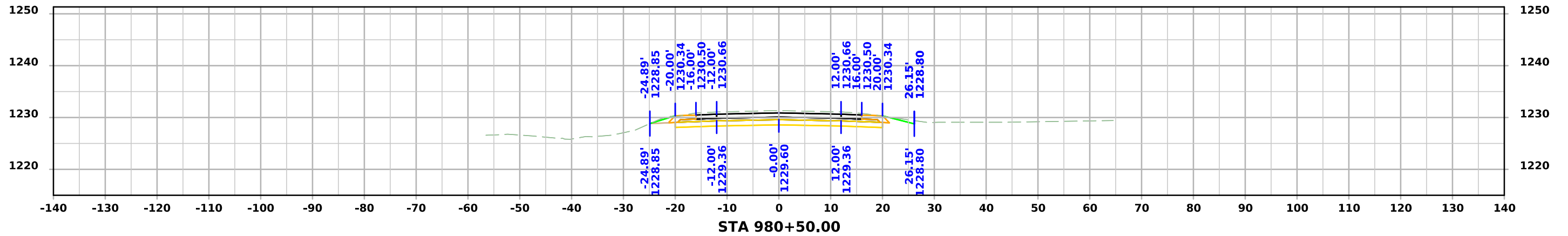
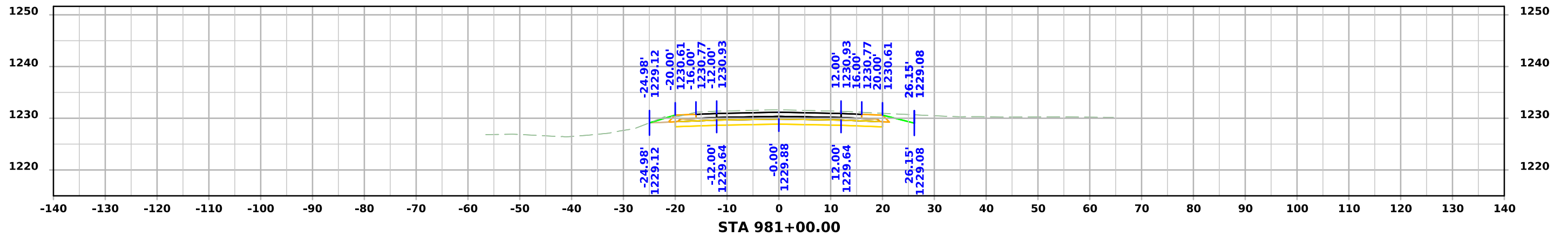
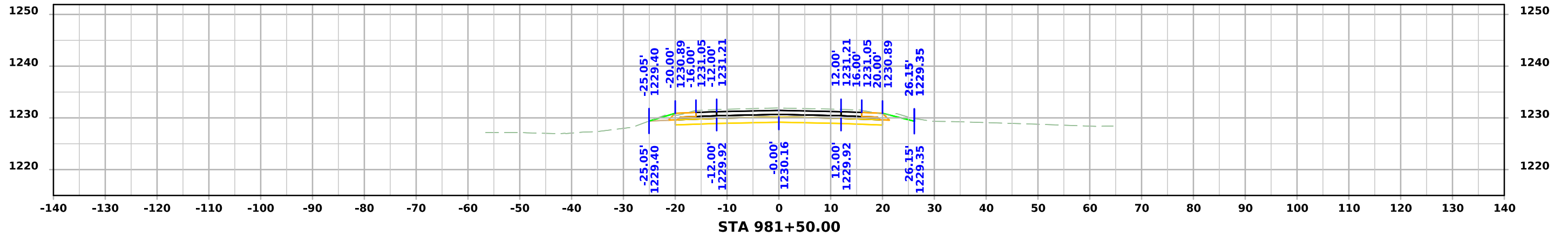
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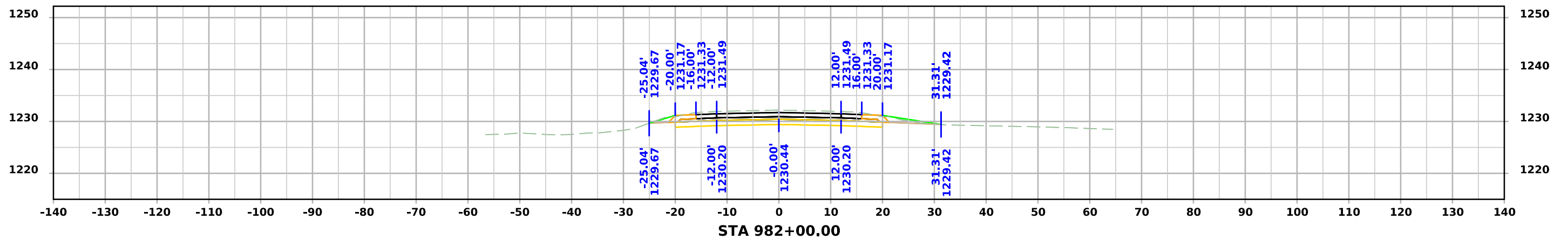
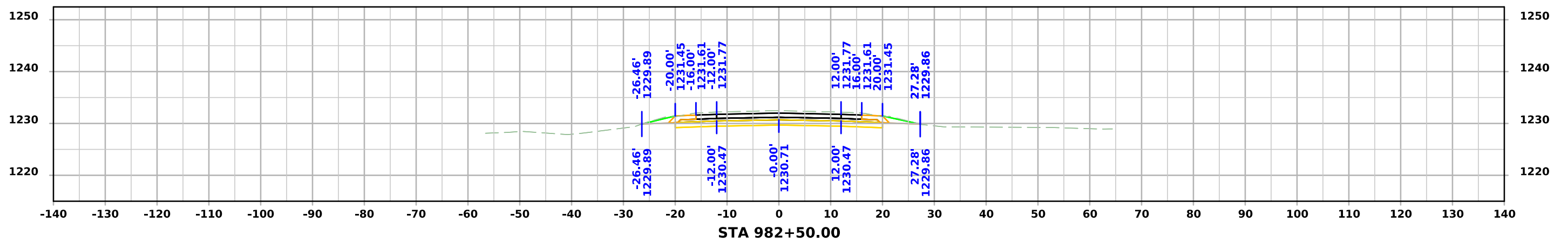
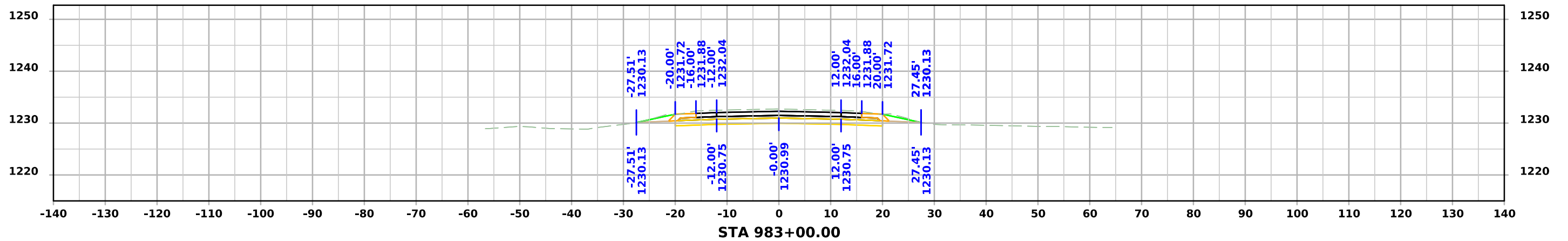
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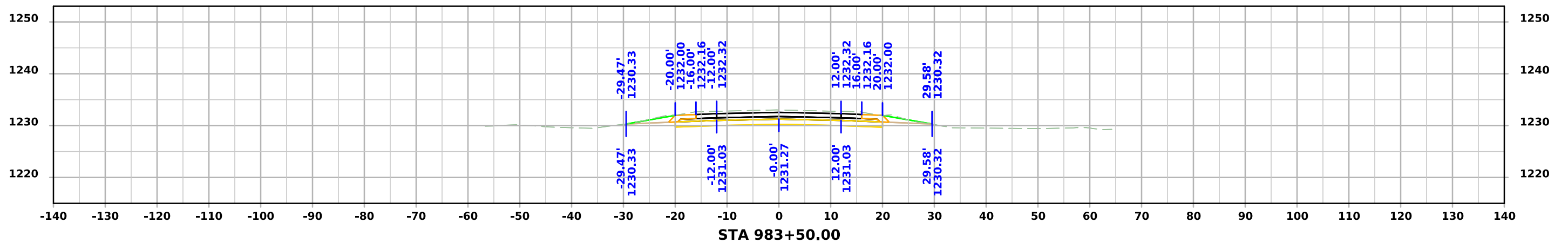
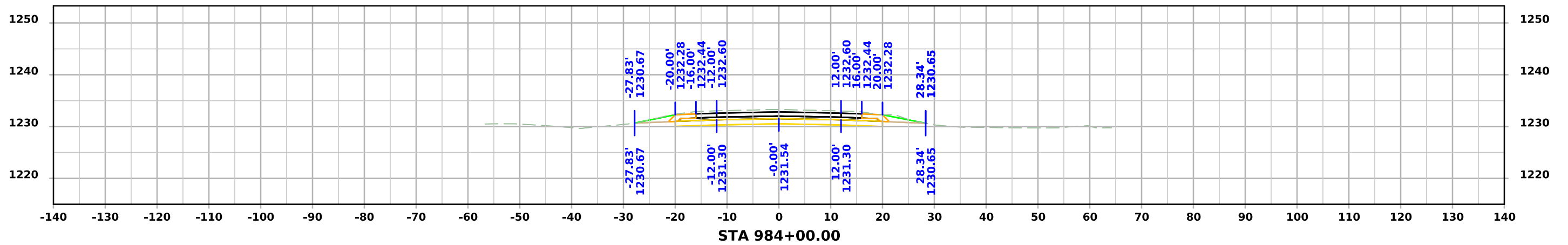
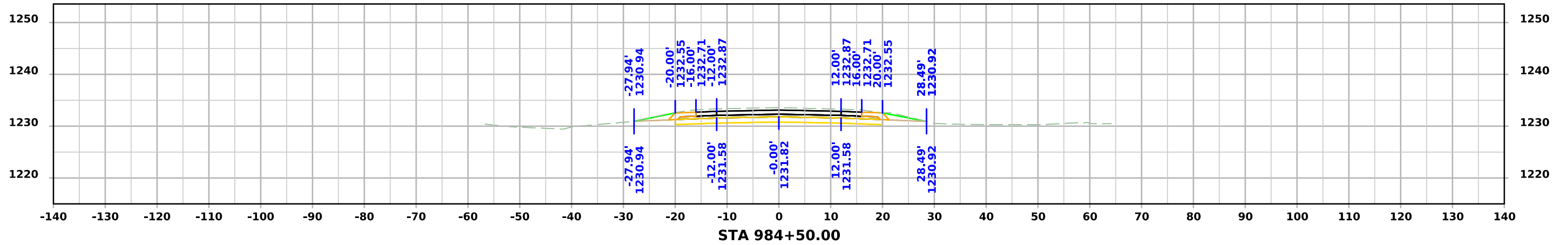
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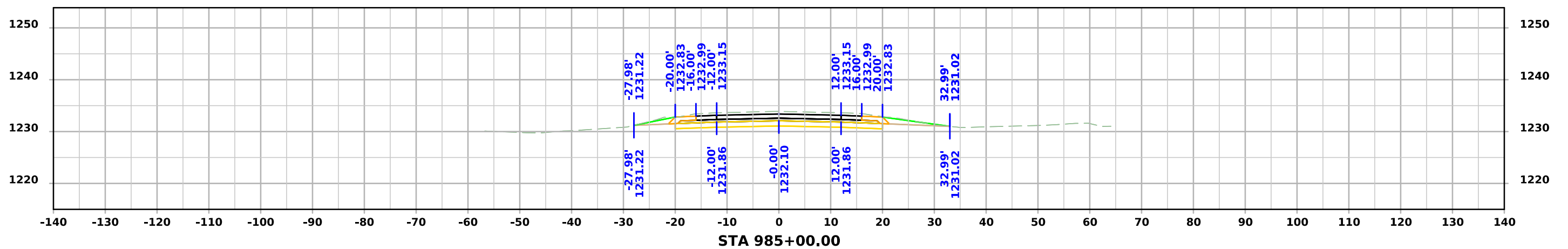
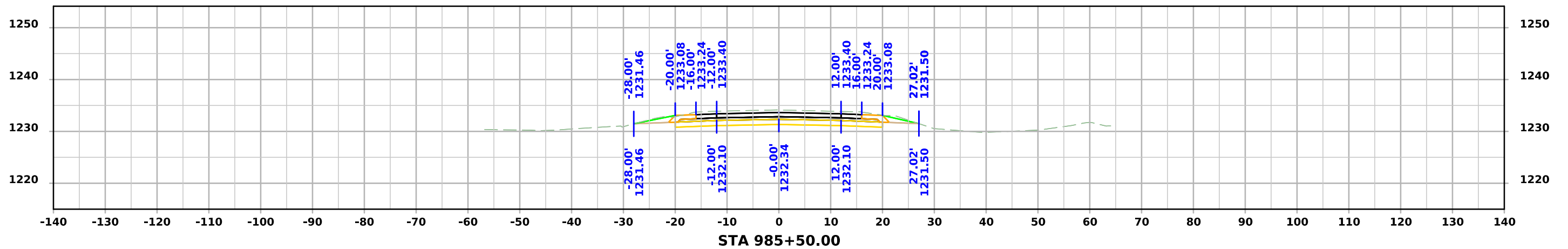
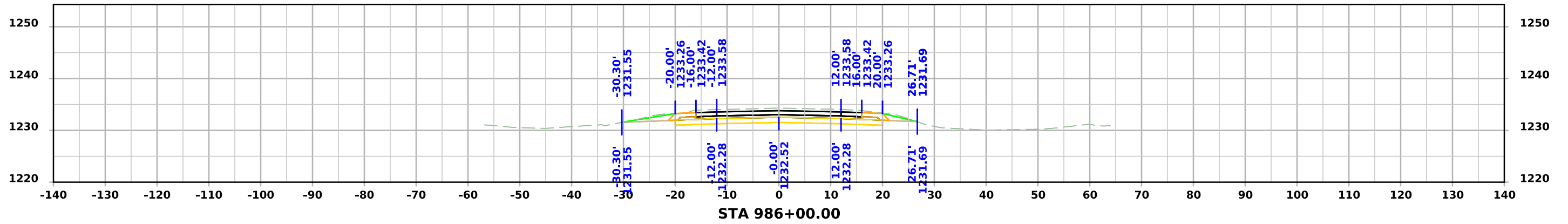
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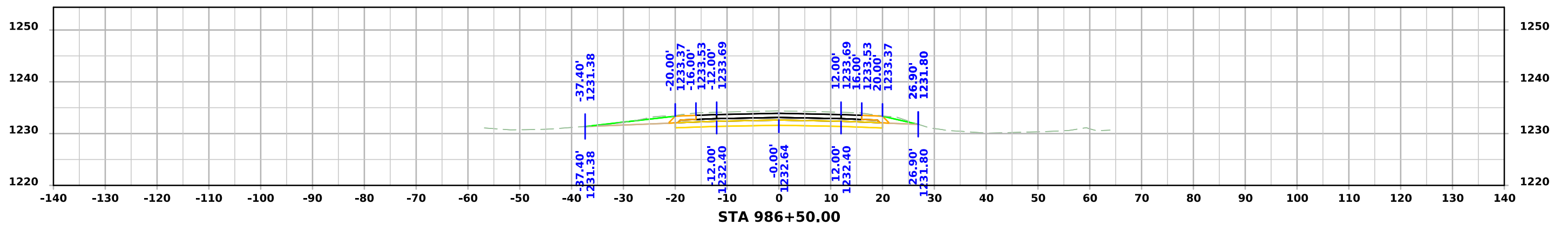
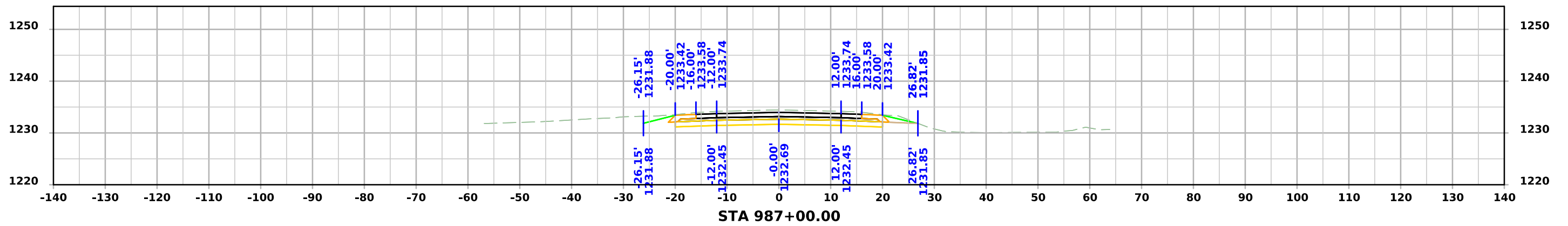
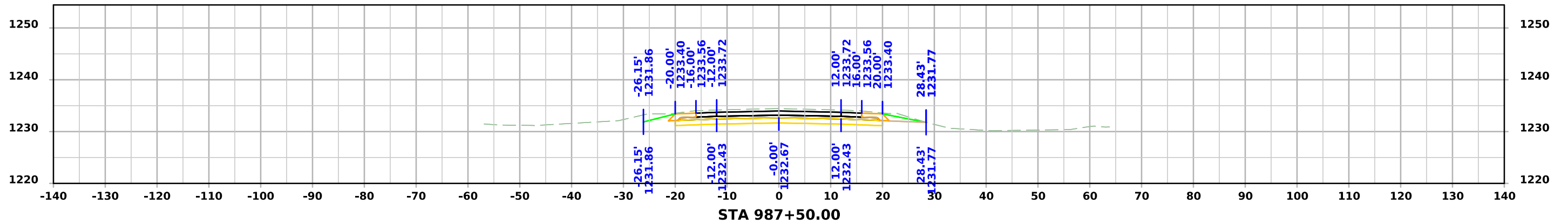
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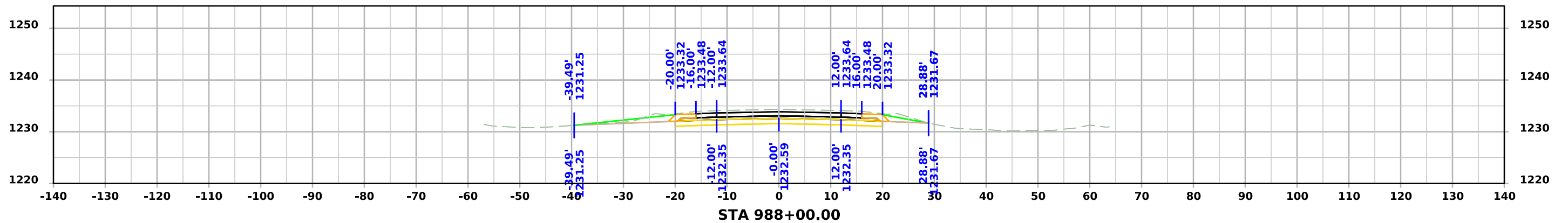
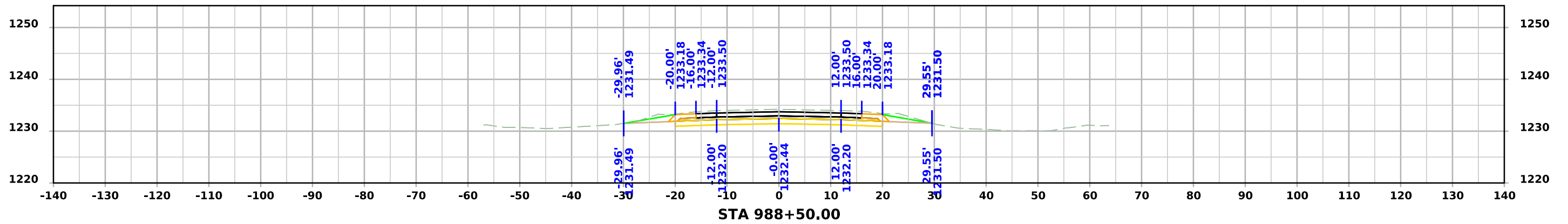
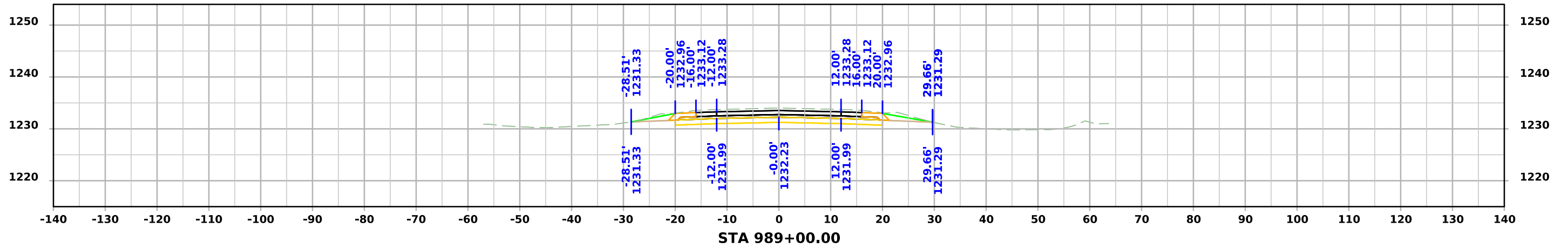
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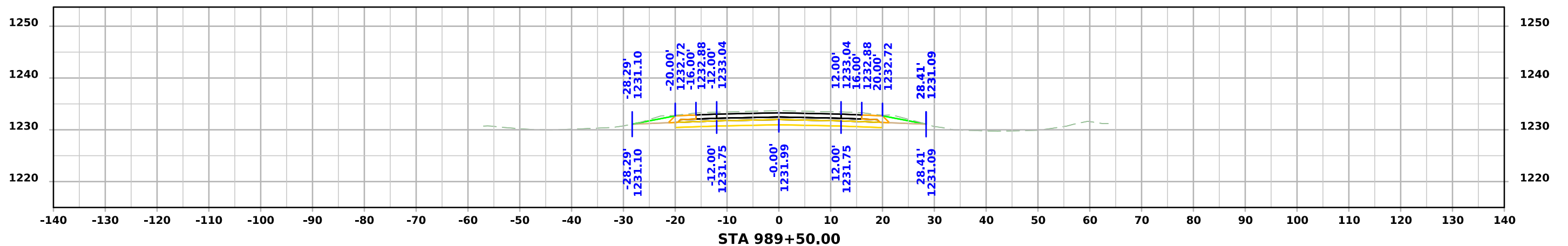
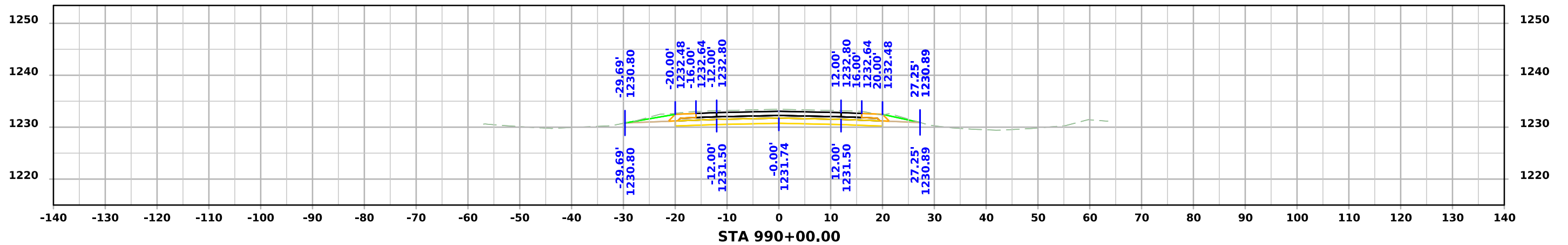
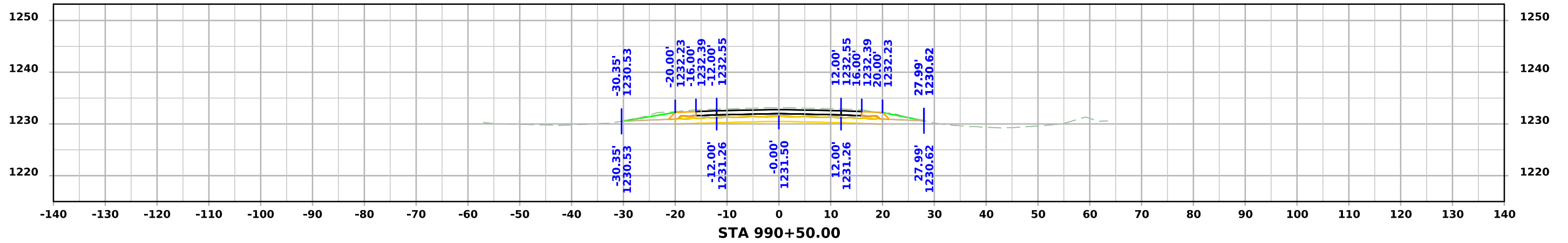
# ML - US071



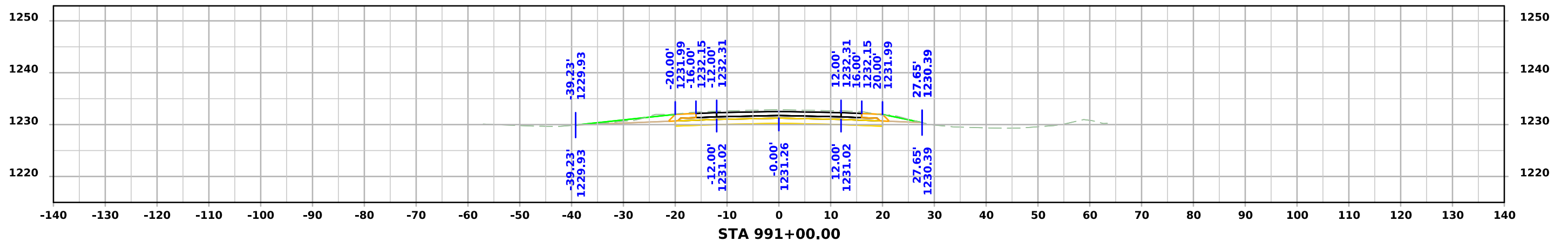
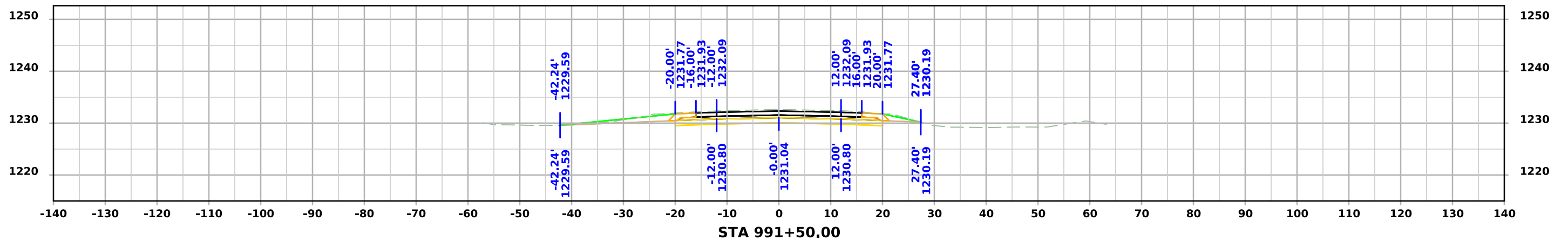
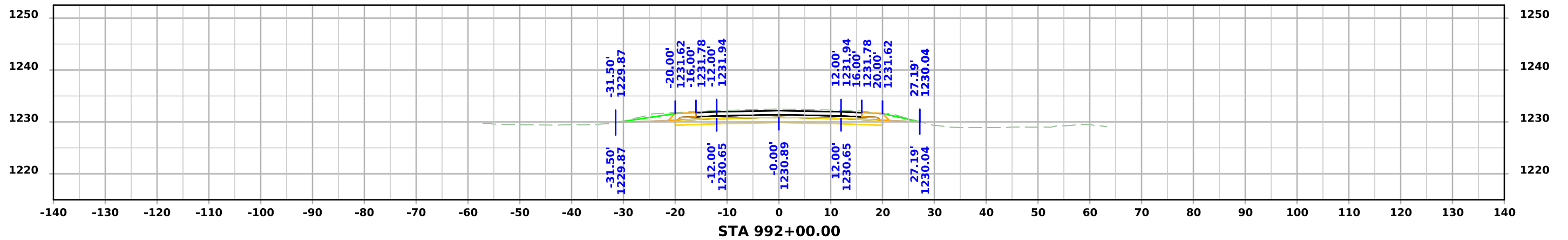
# ML - US071



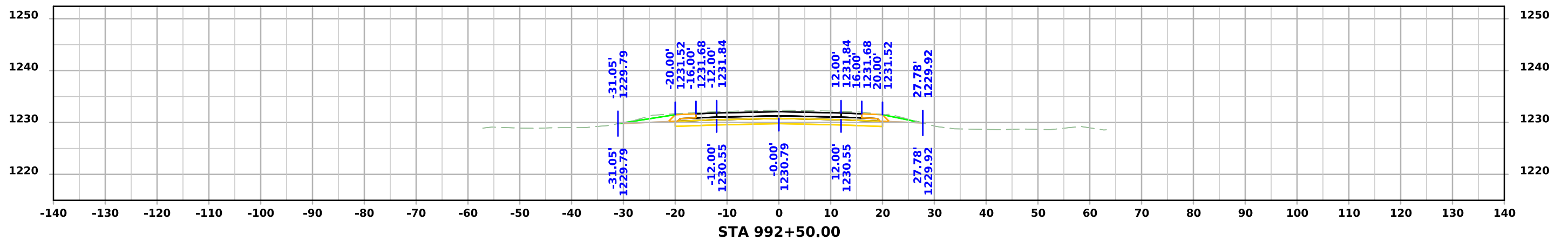
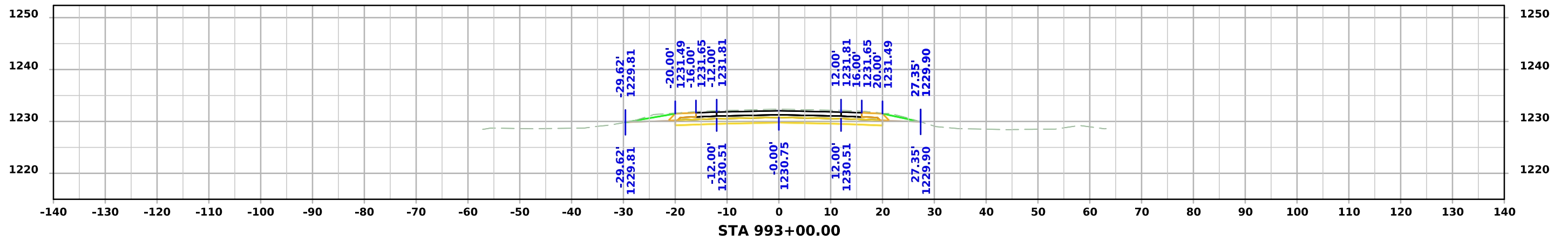
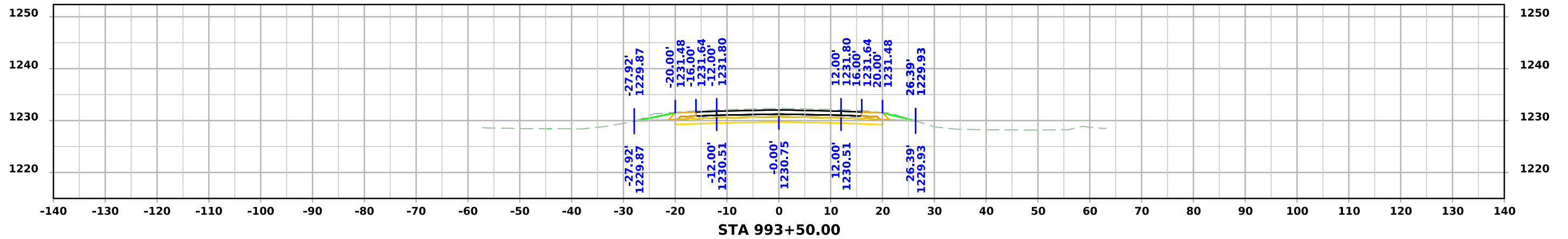
# ML - US071



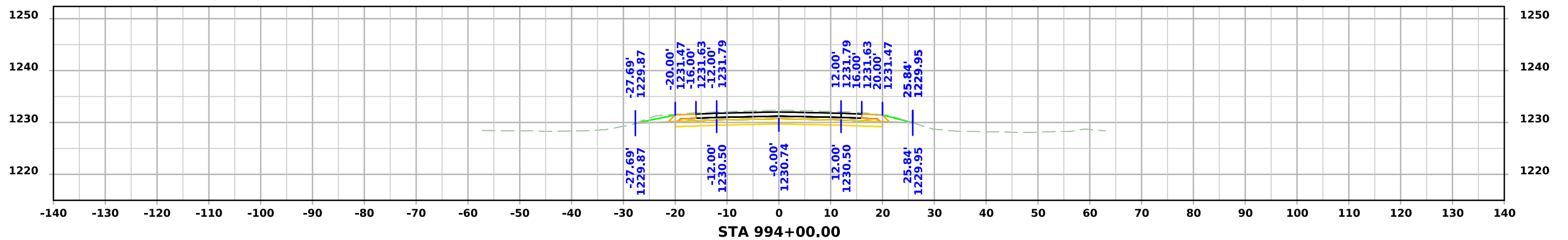
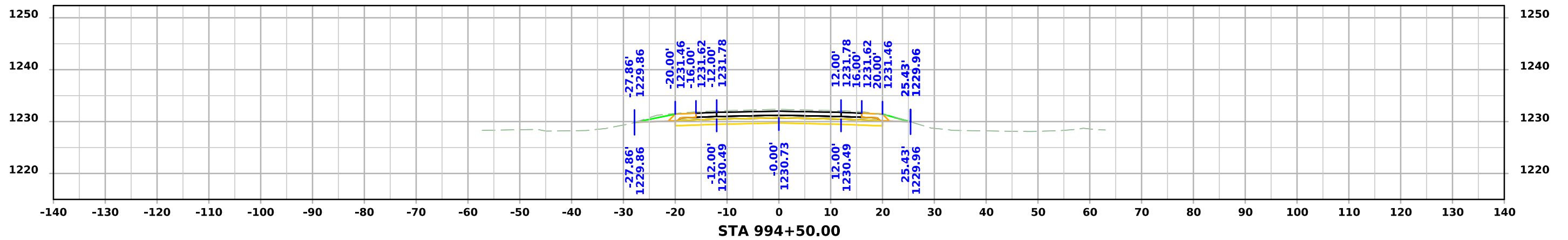
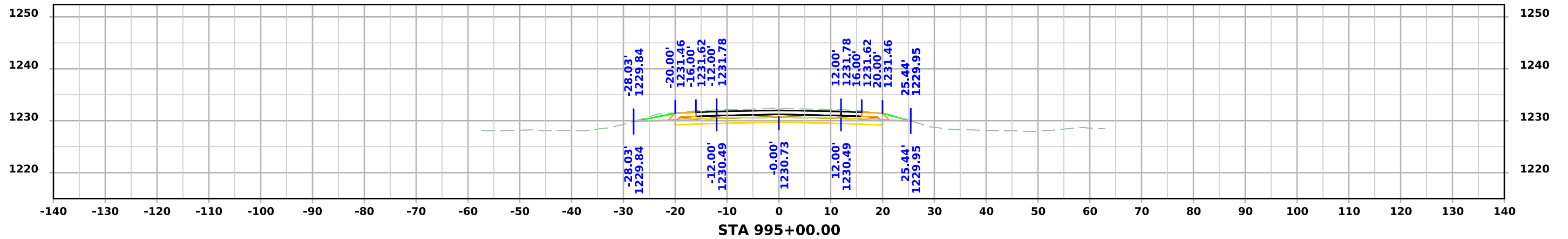
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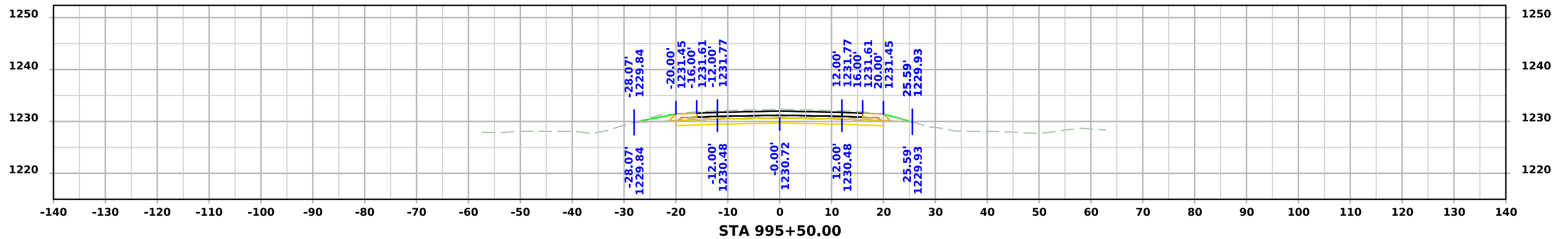
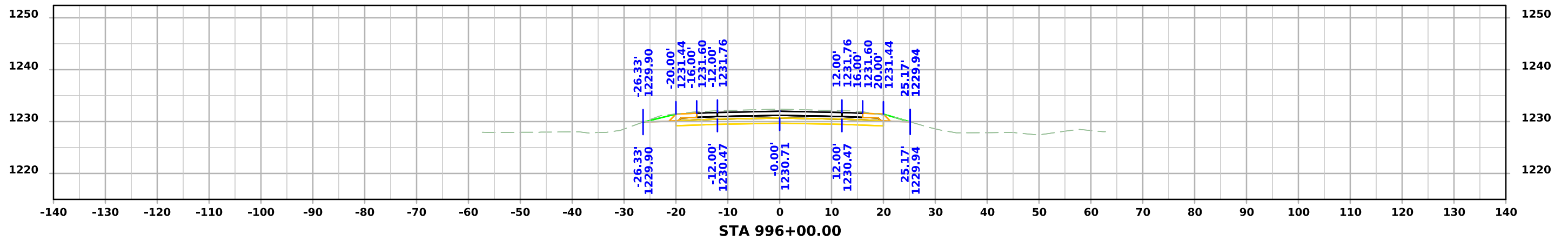
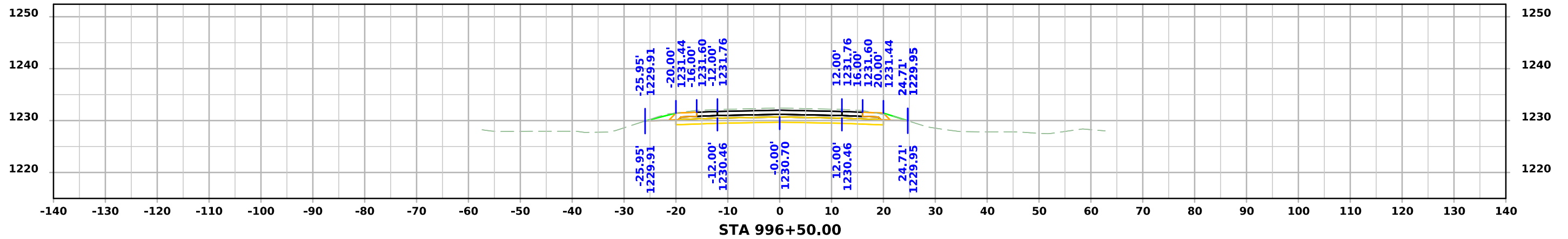
# ML - US071



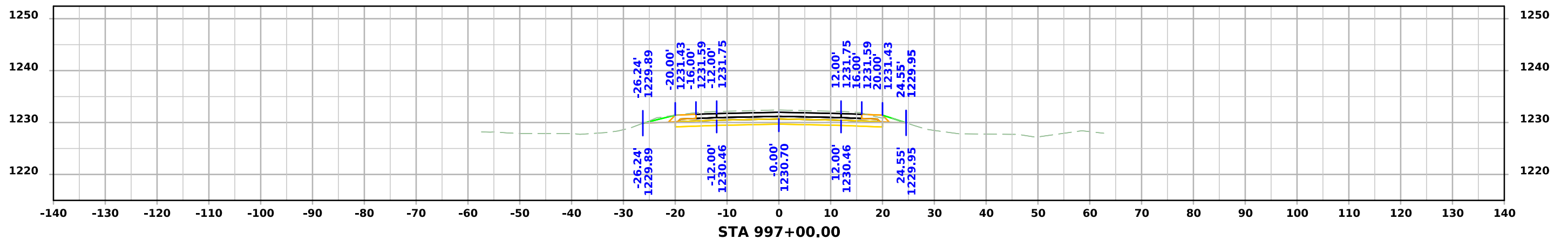
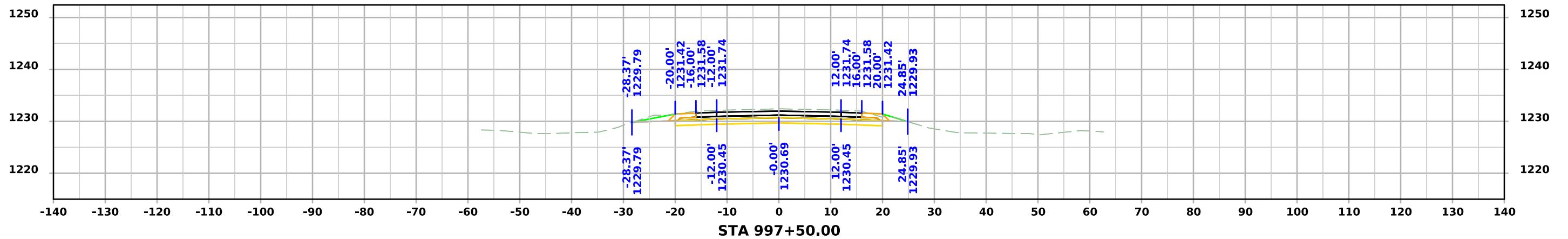
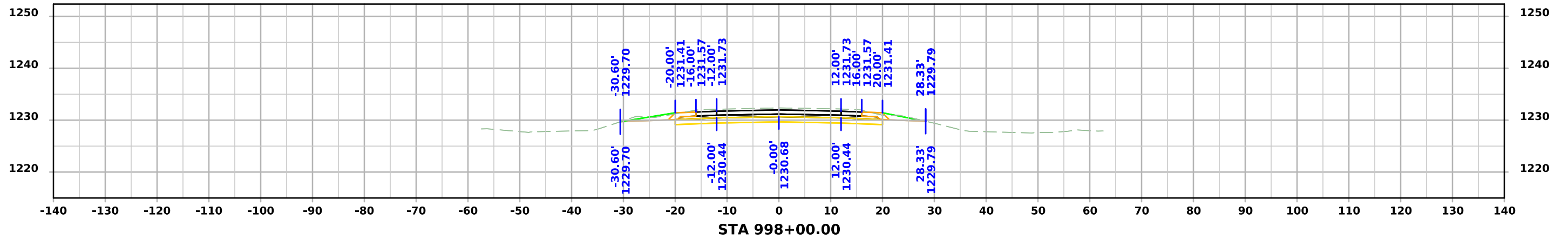
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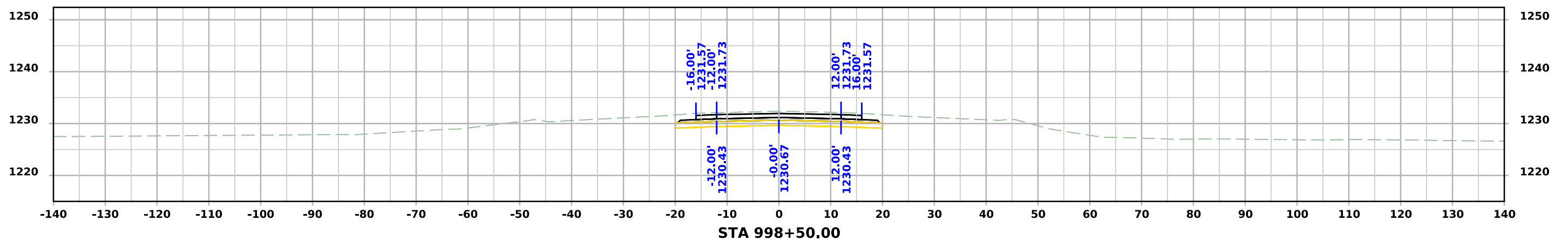
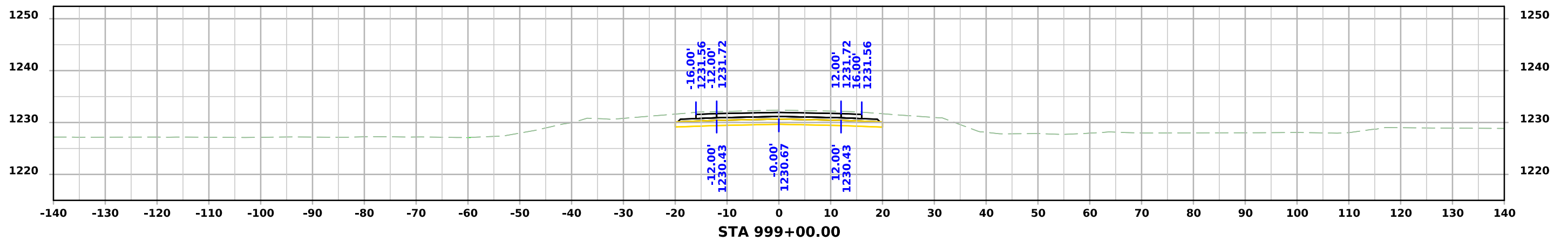
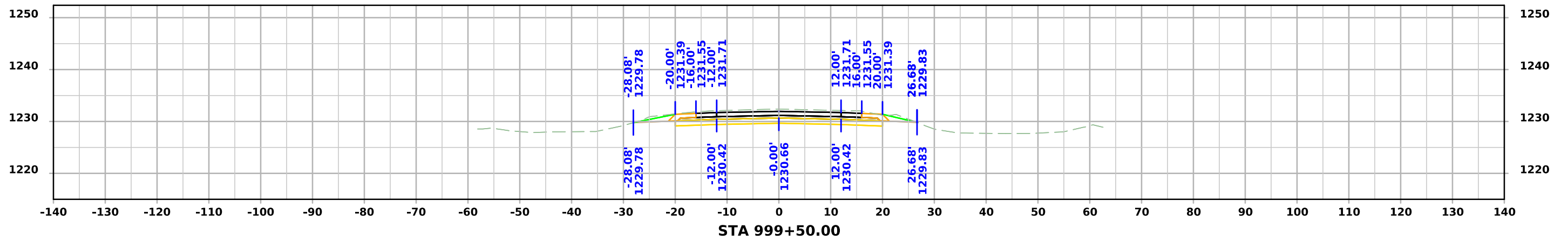
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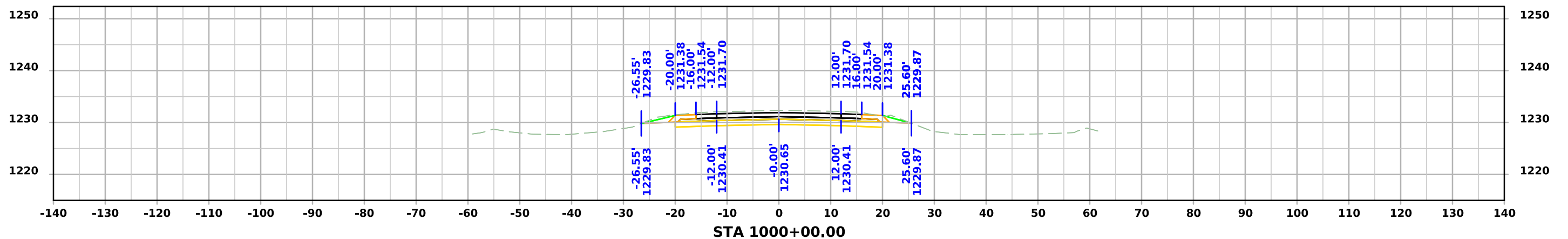
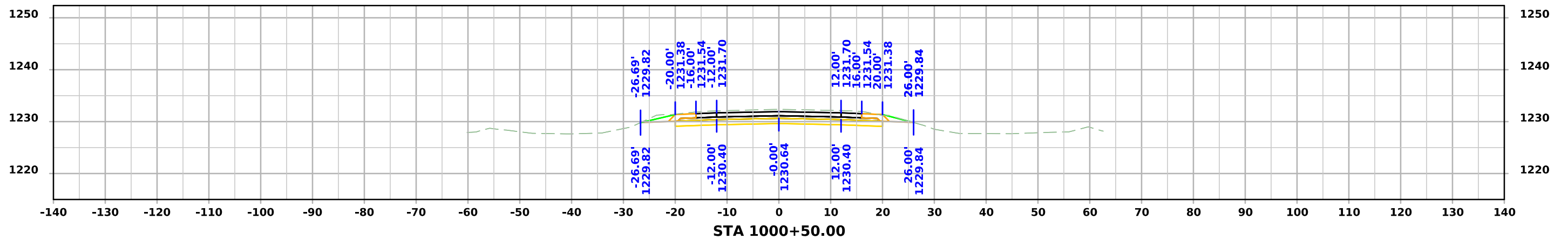
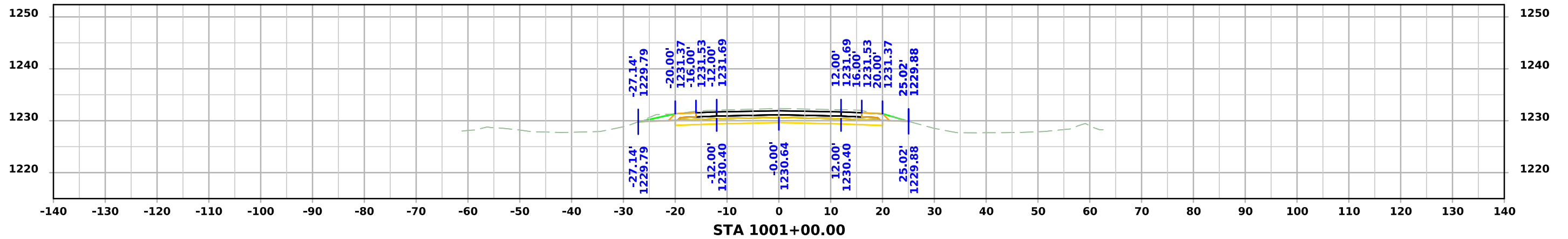
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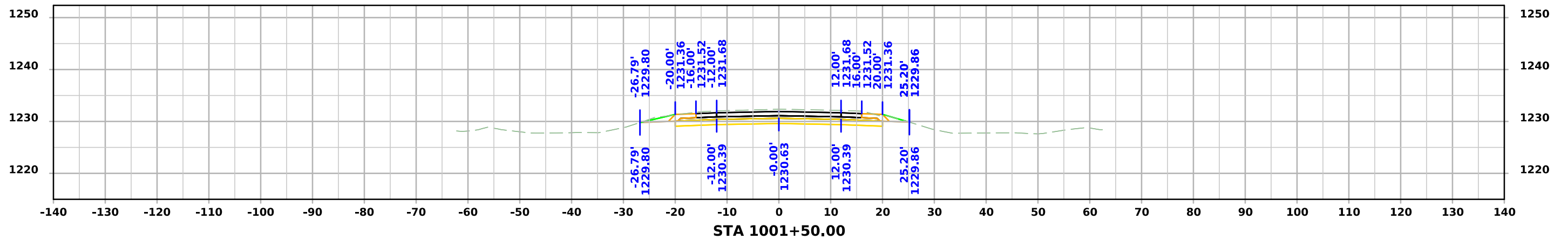
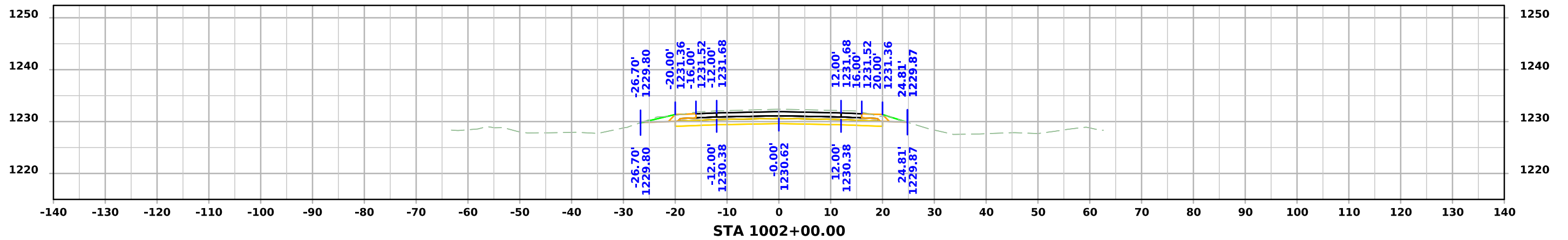
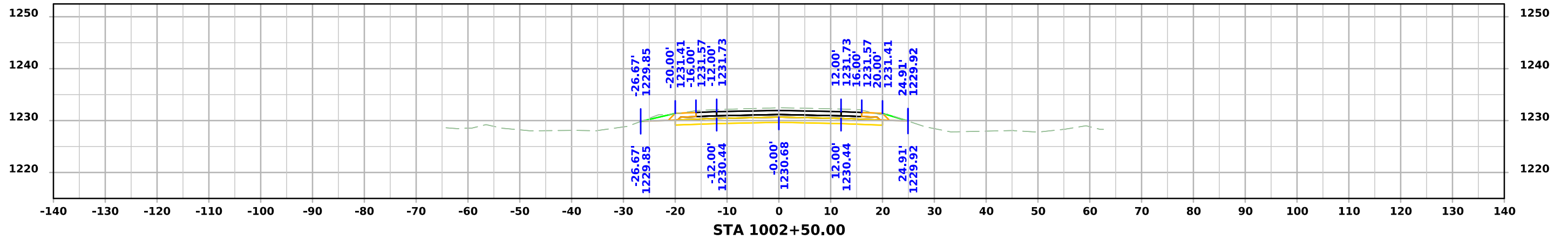
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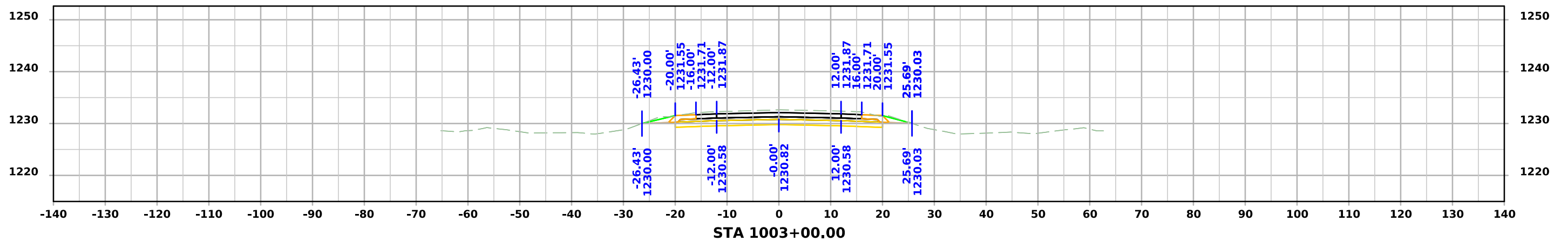
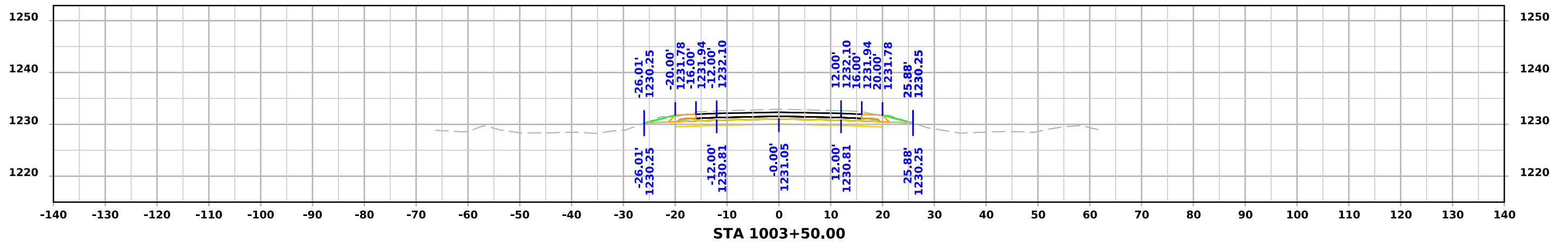
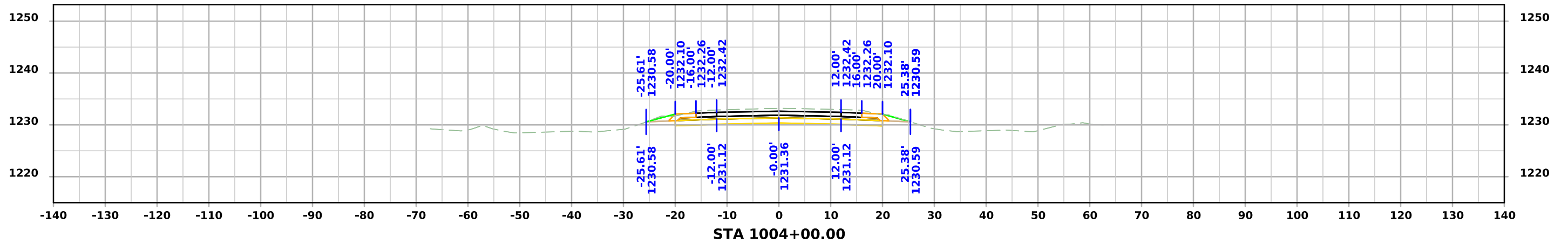
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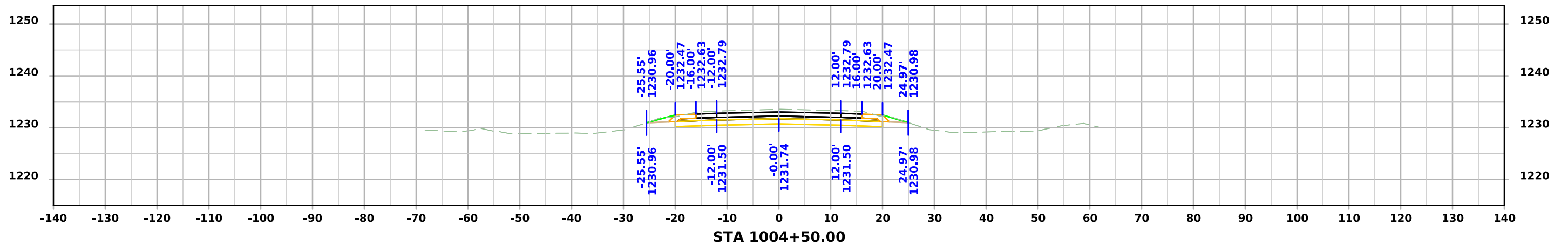
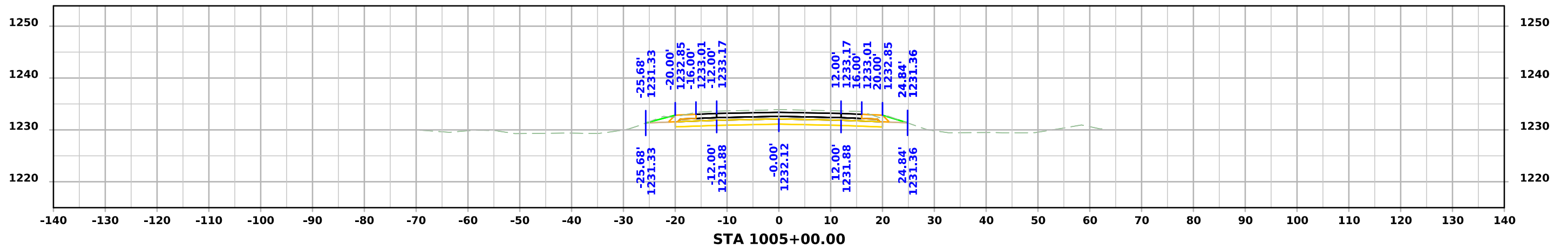
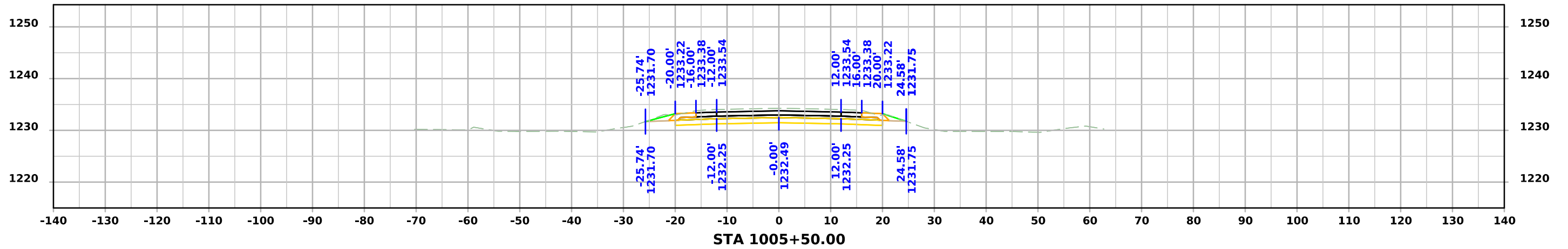
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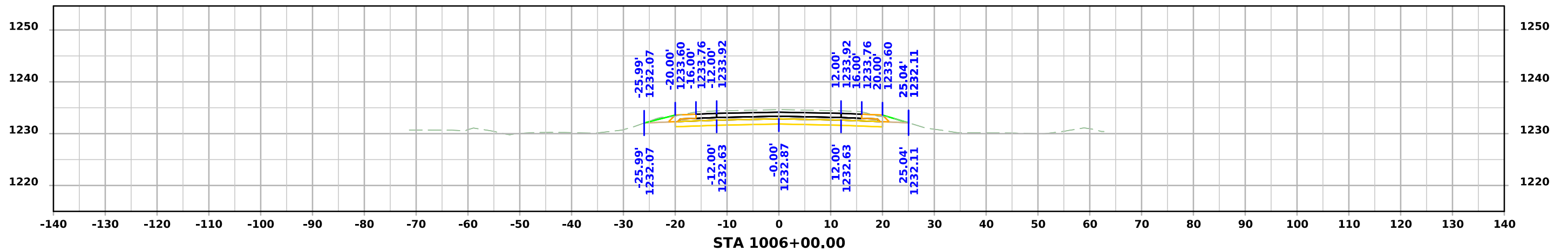
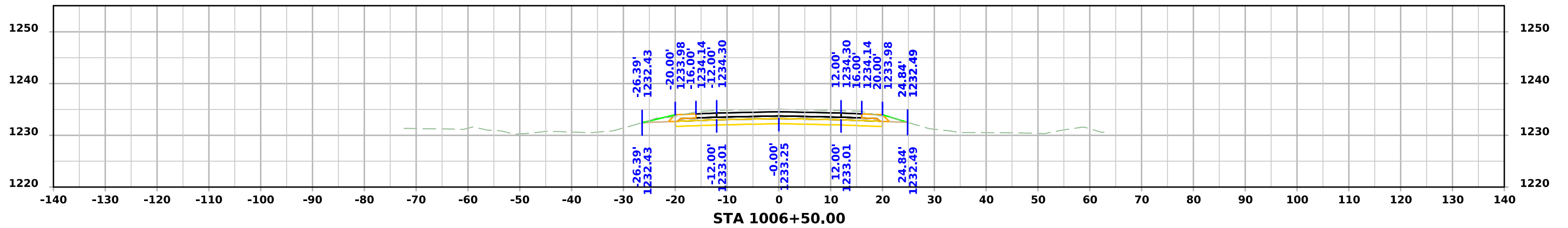
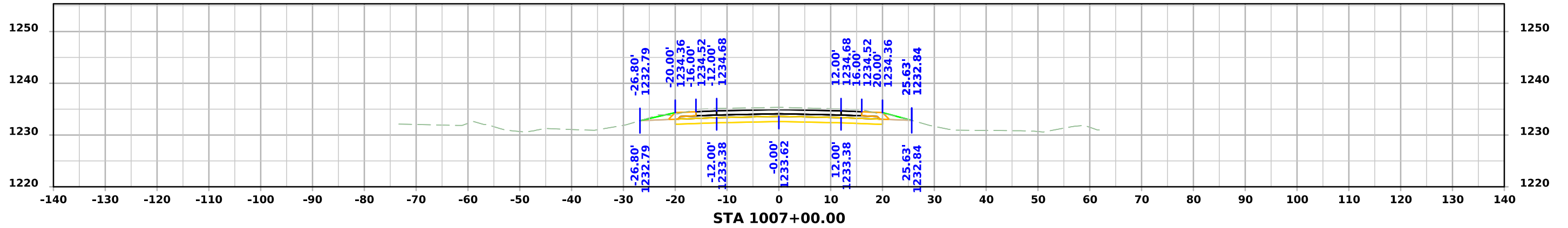
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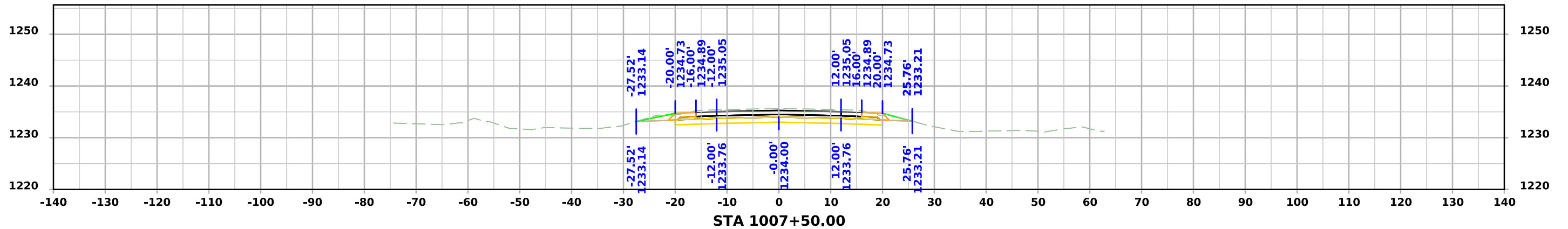
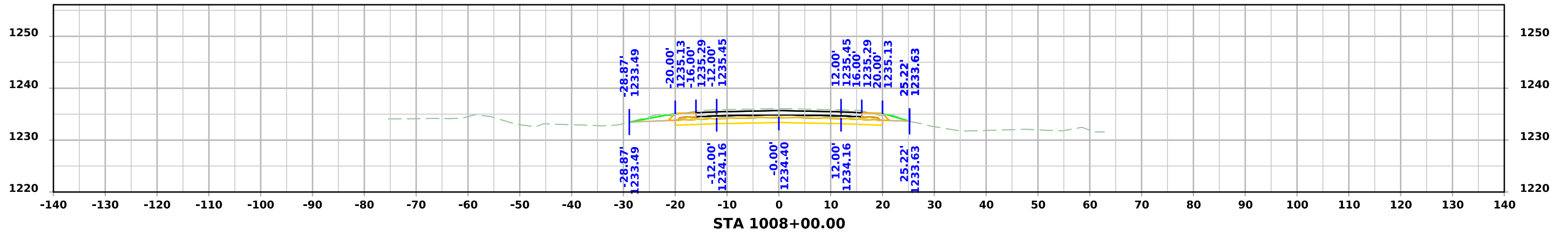
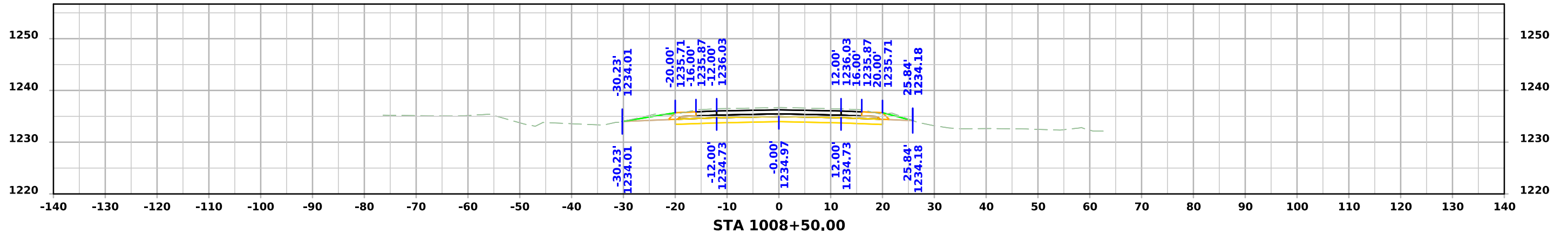
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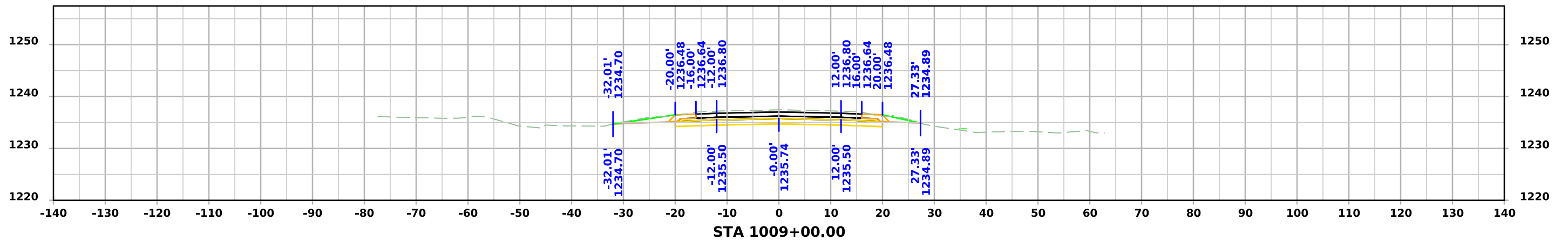
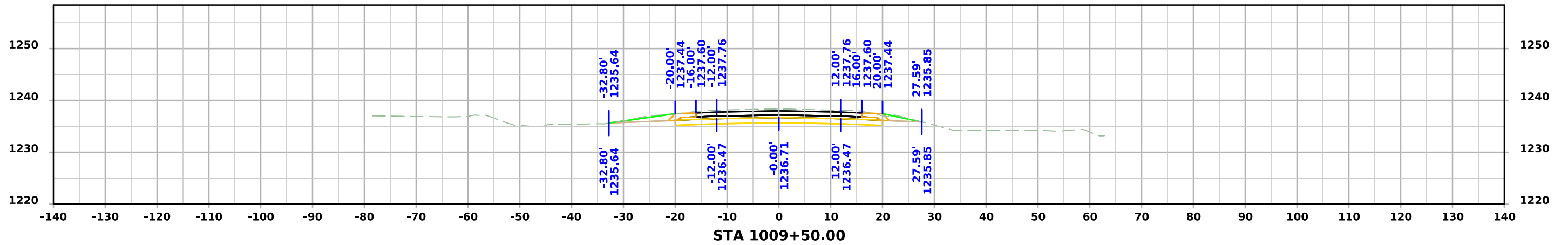
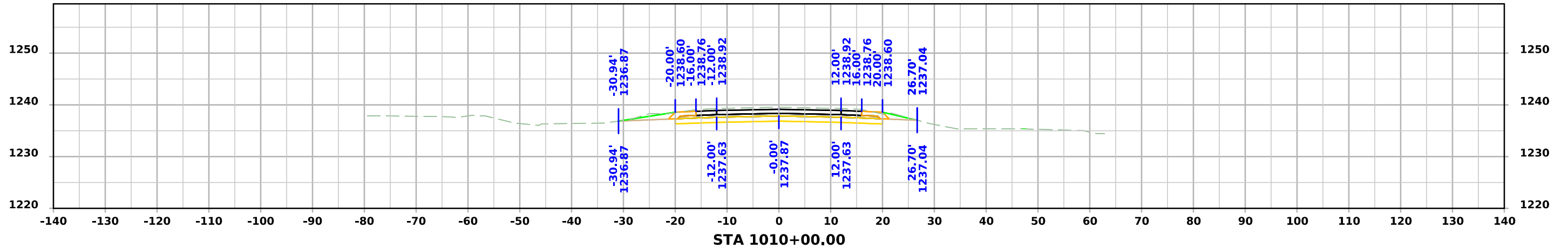
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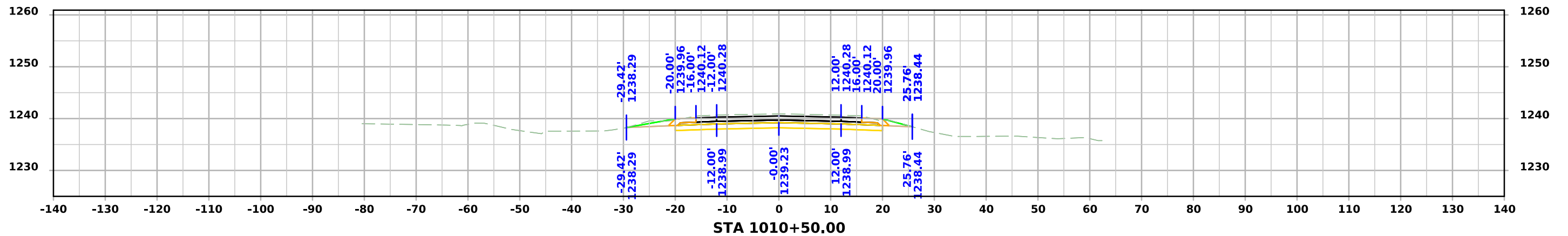
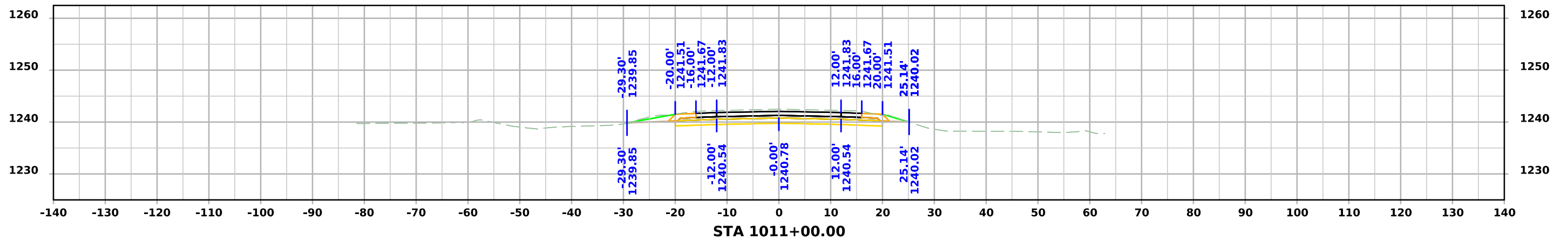
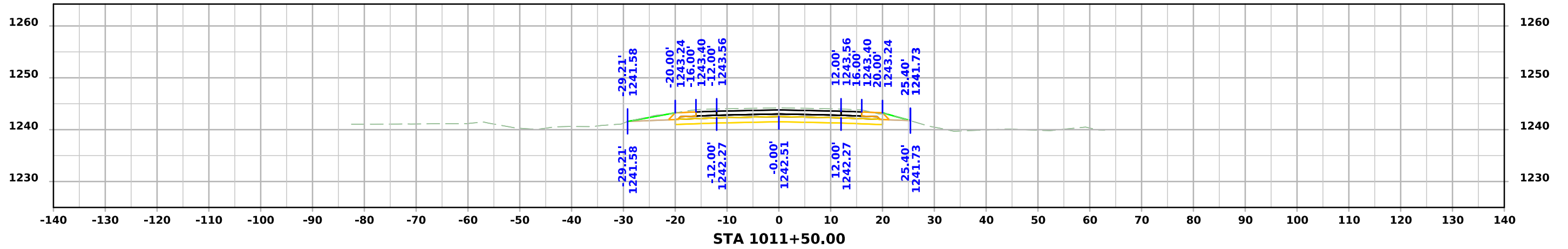
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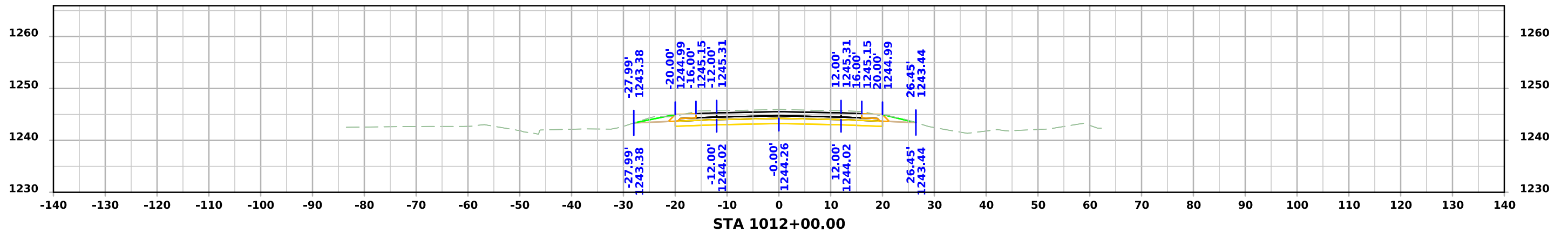
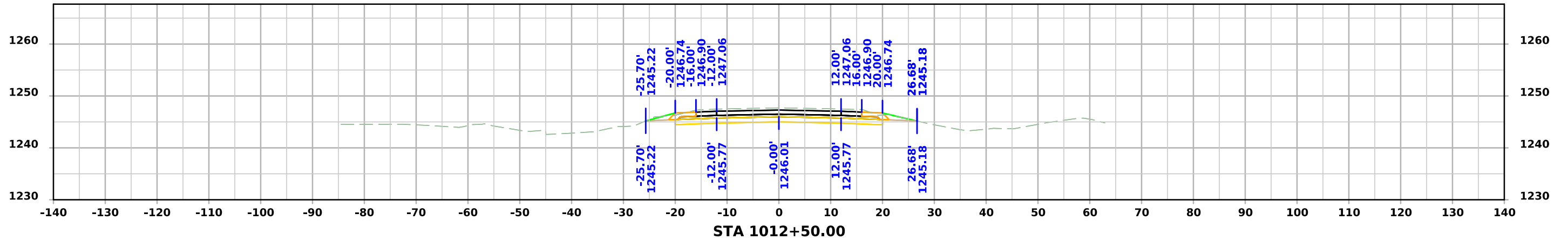
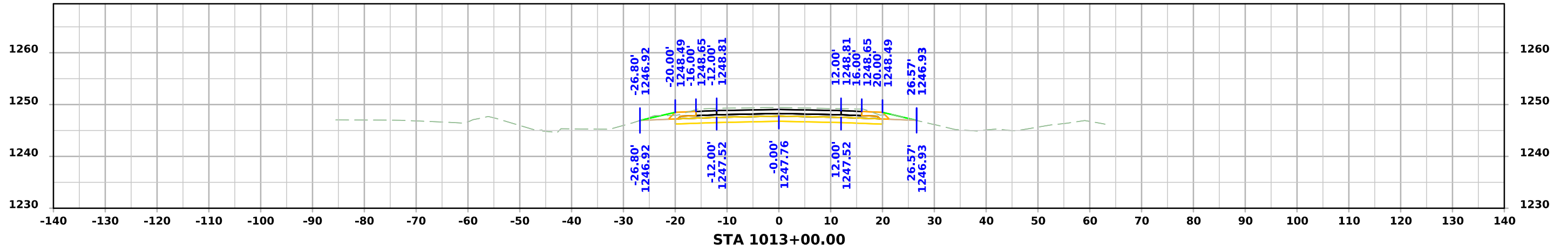
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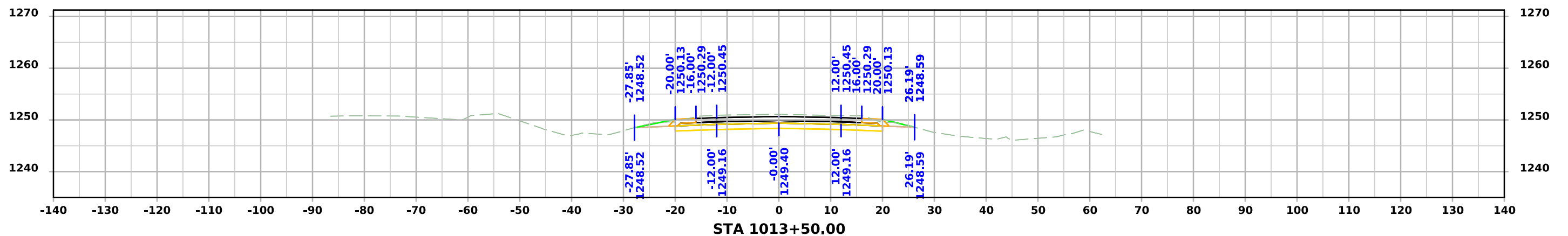
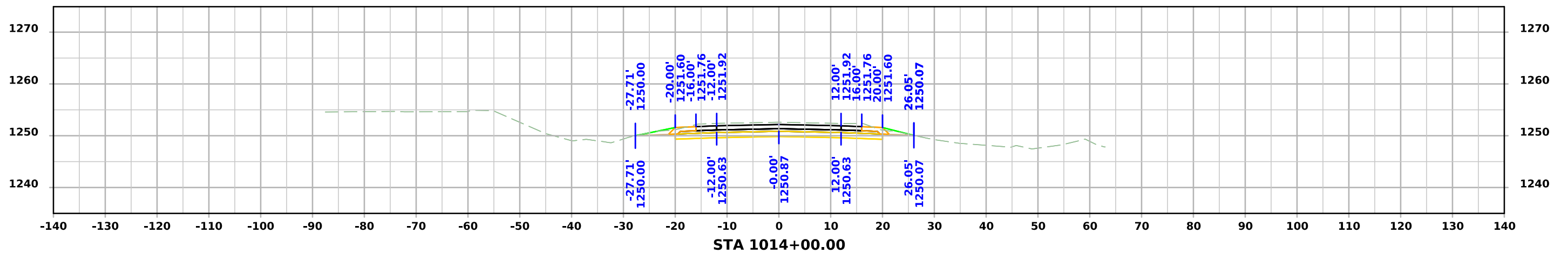
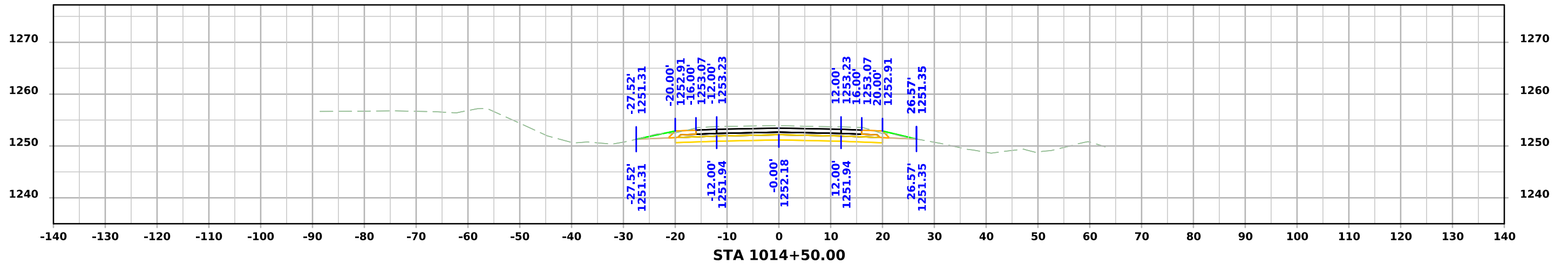
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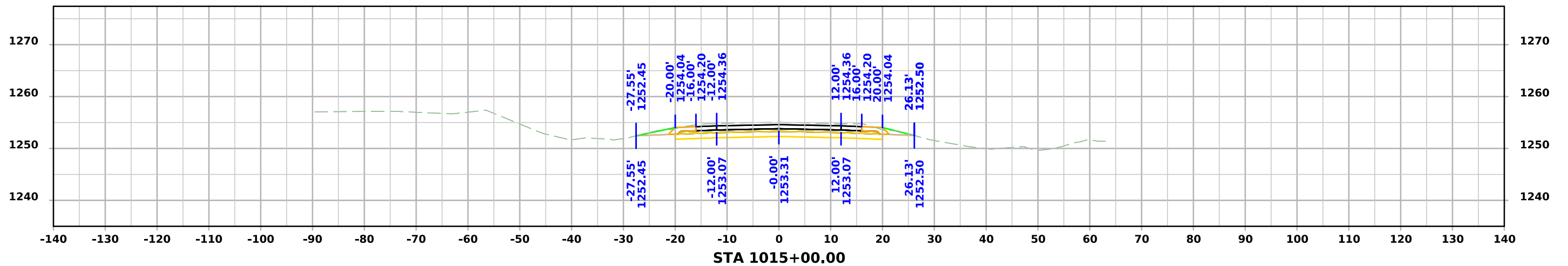
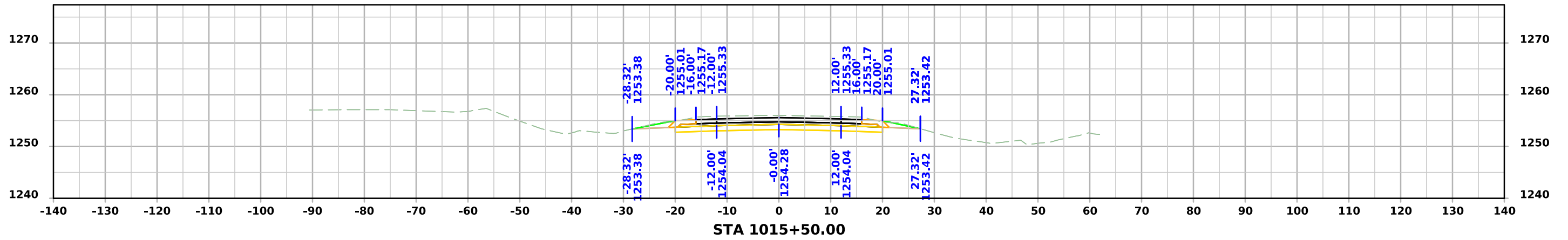
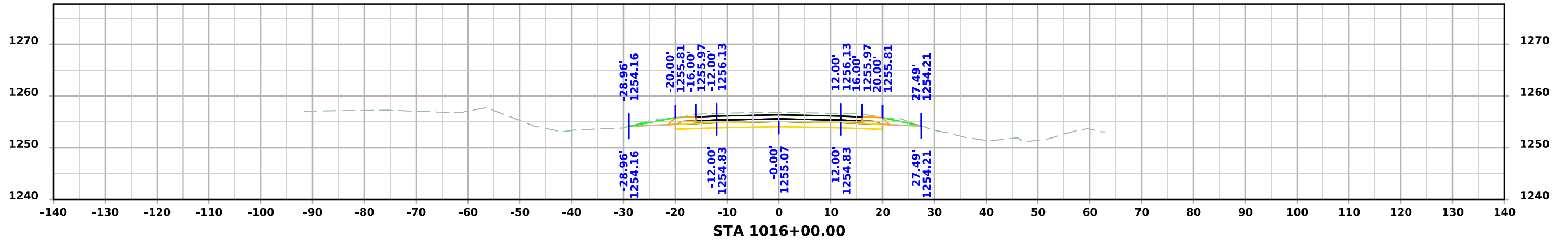
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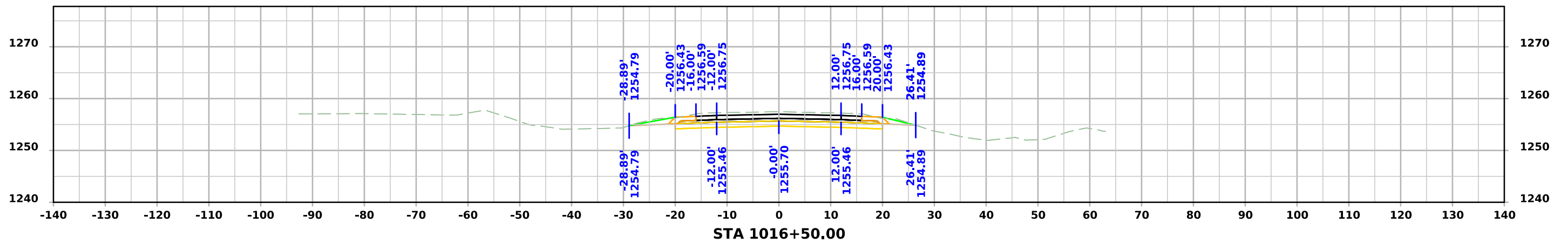
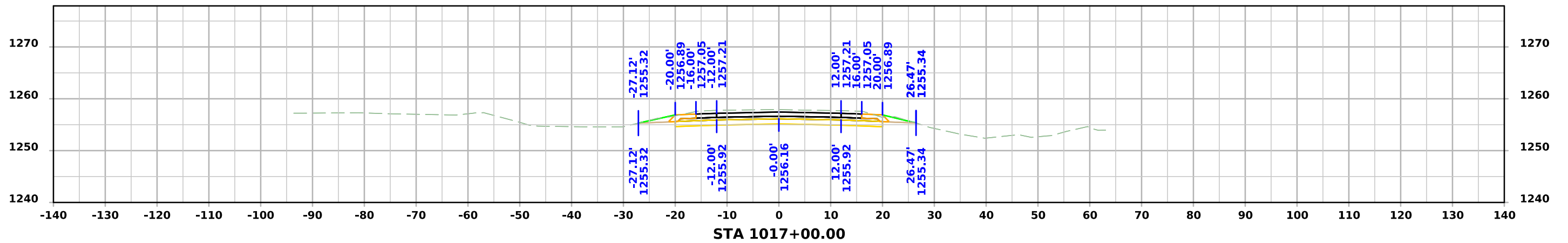
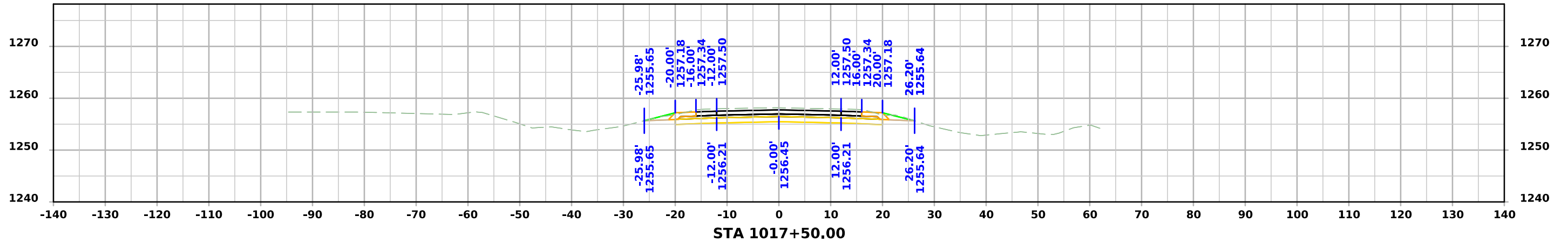
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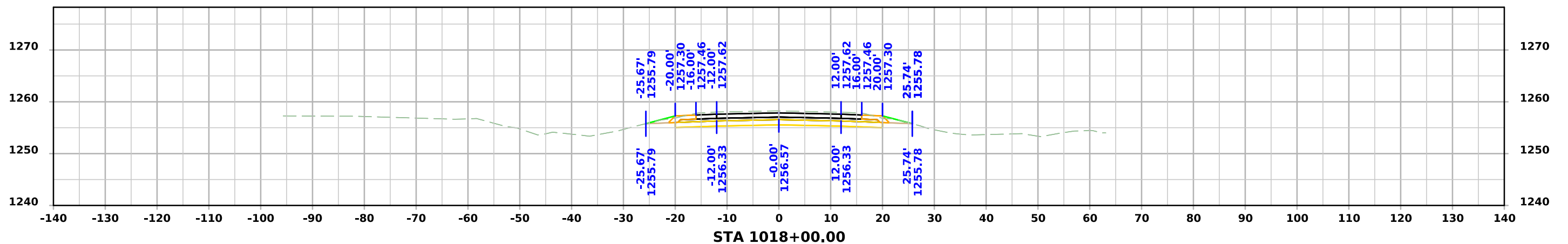
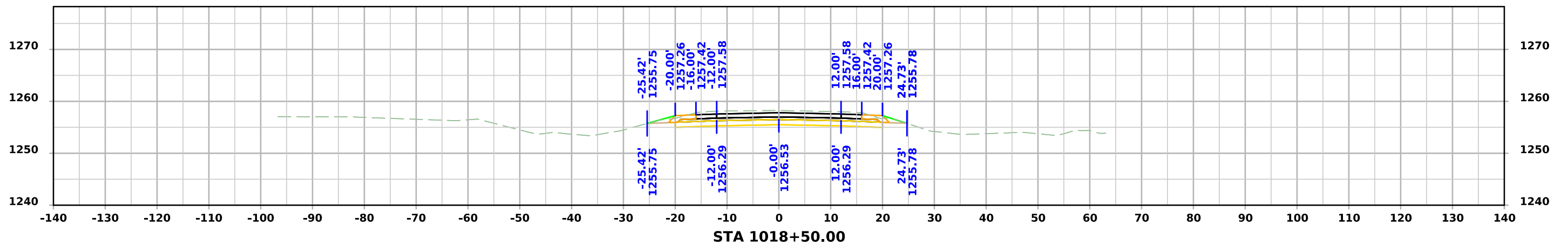
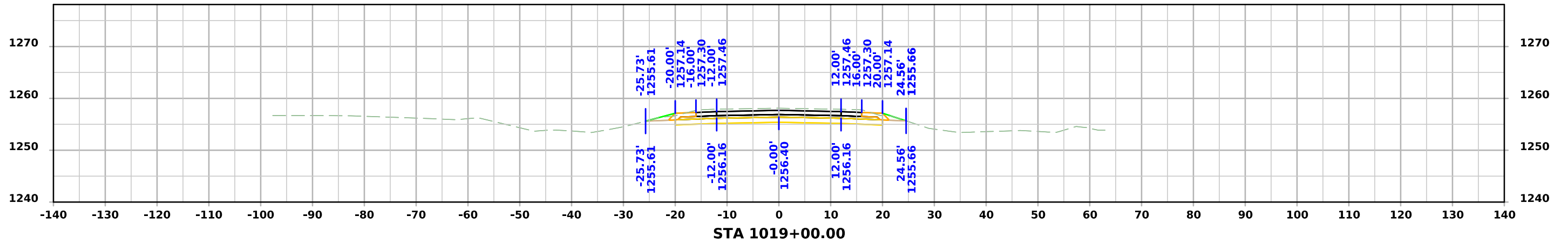
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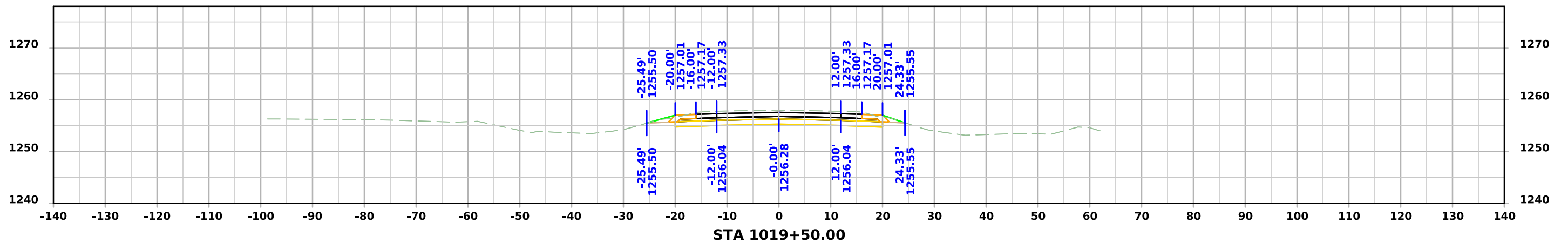
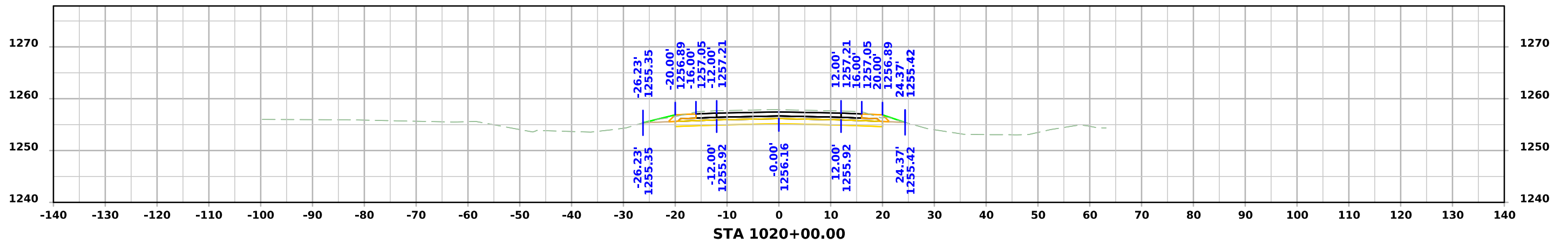
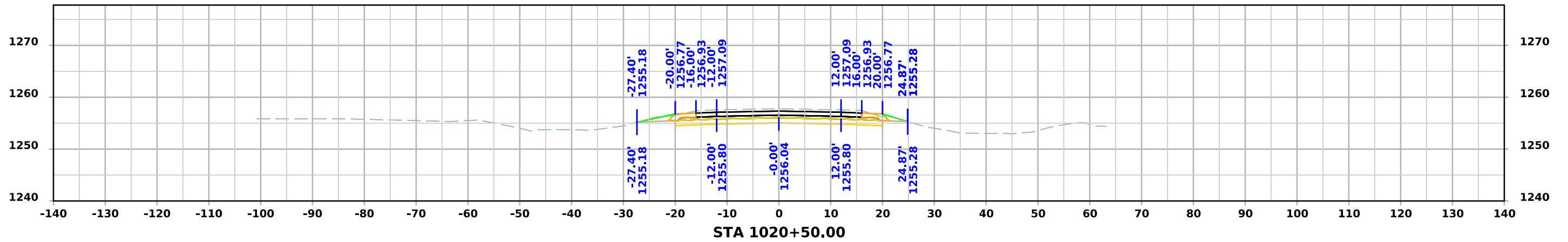
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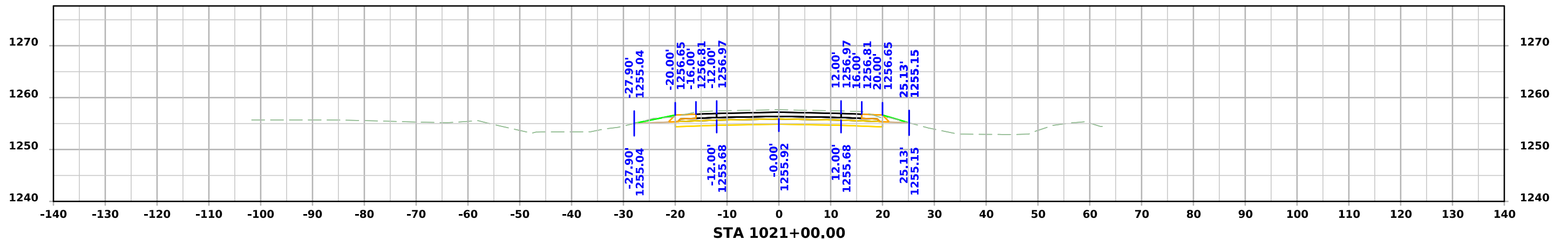
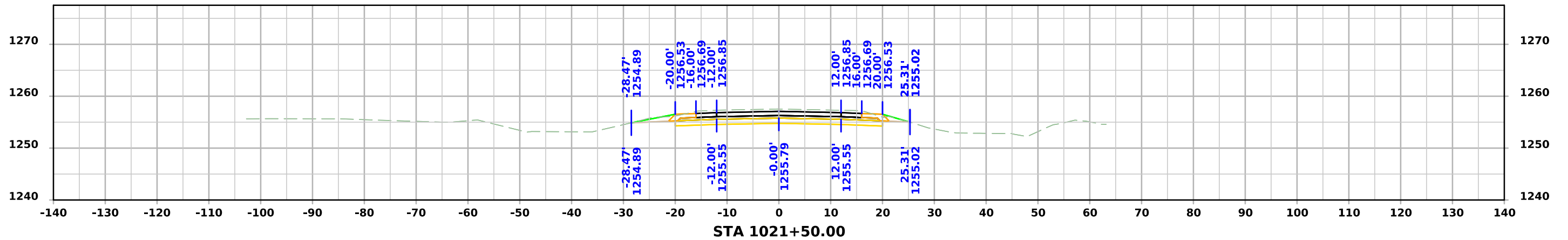
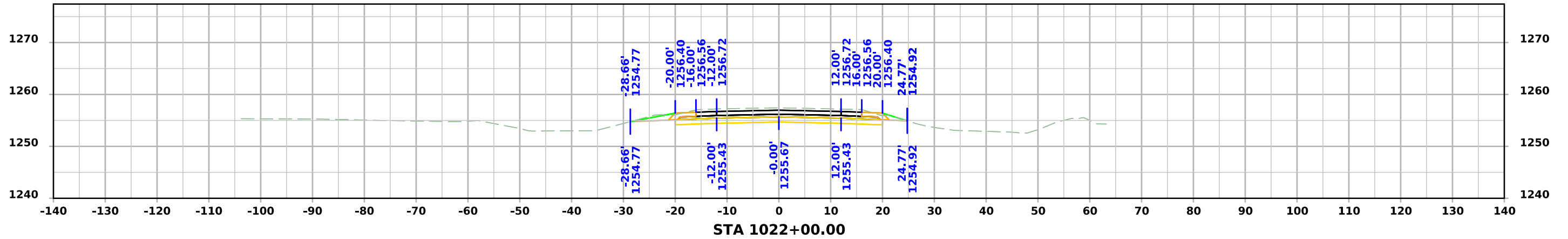
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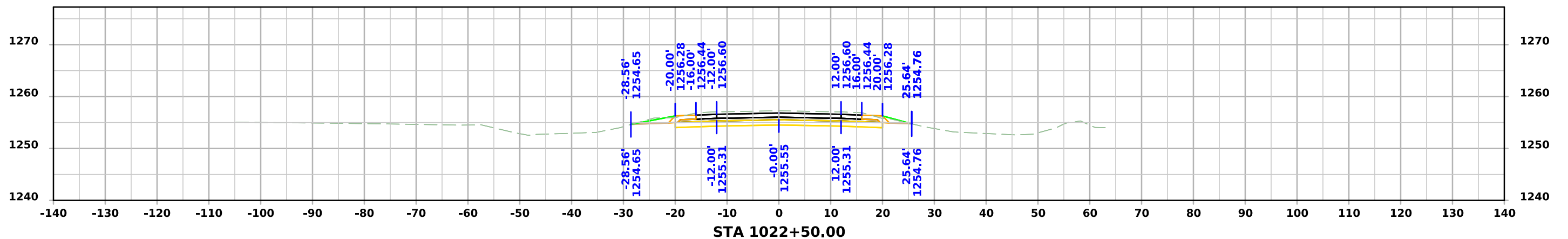
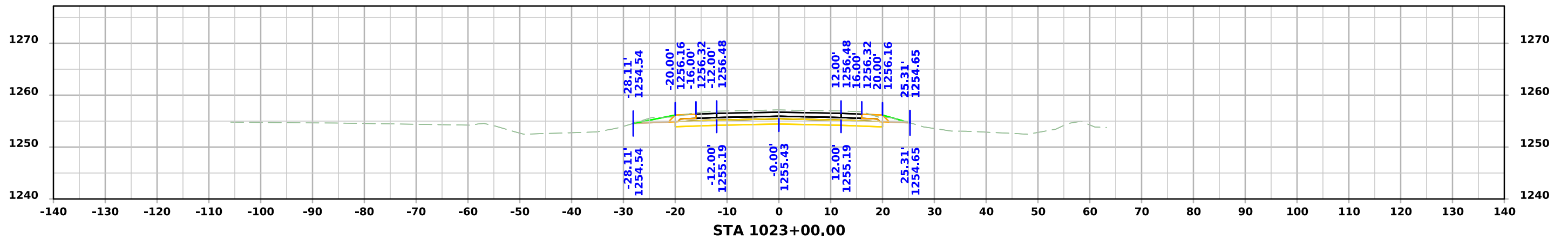
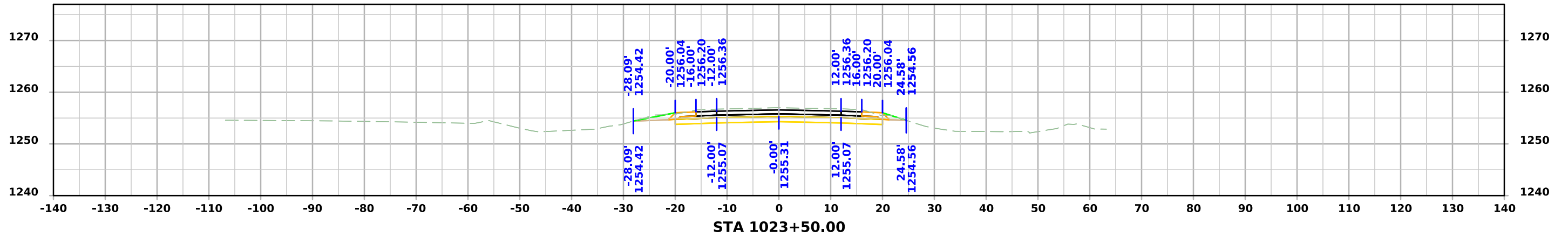
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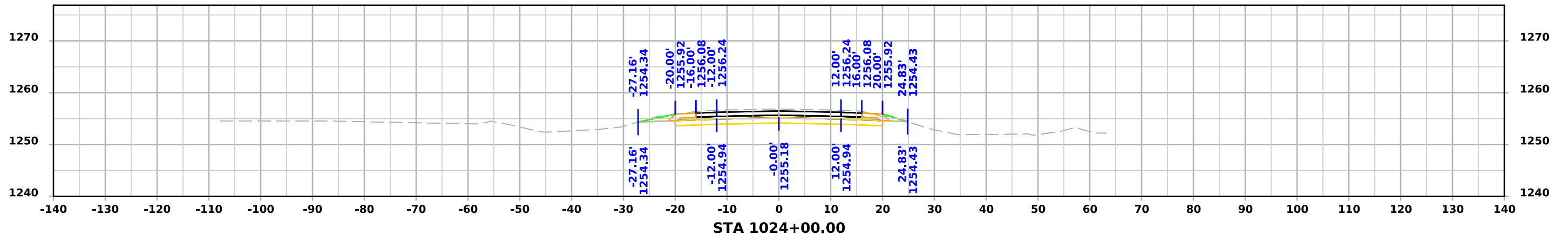
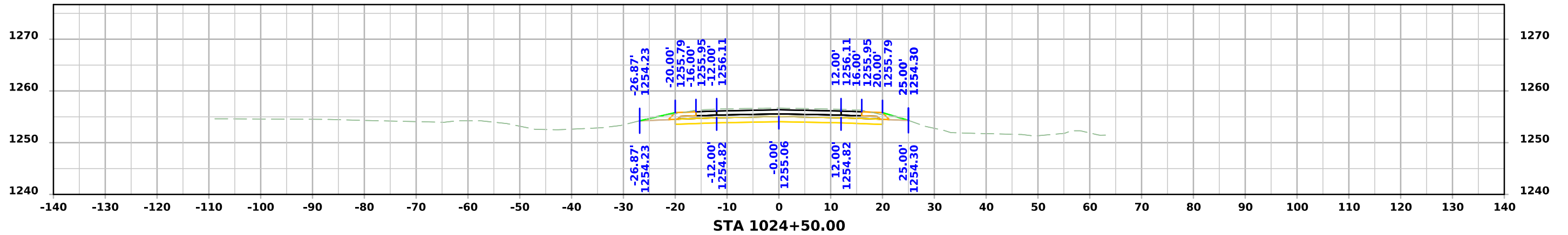
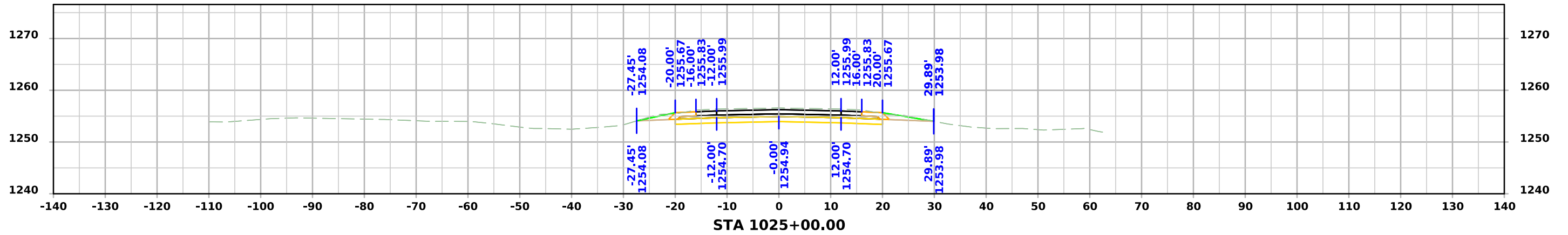
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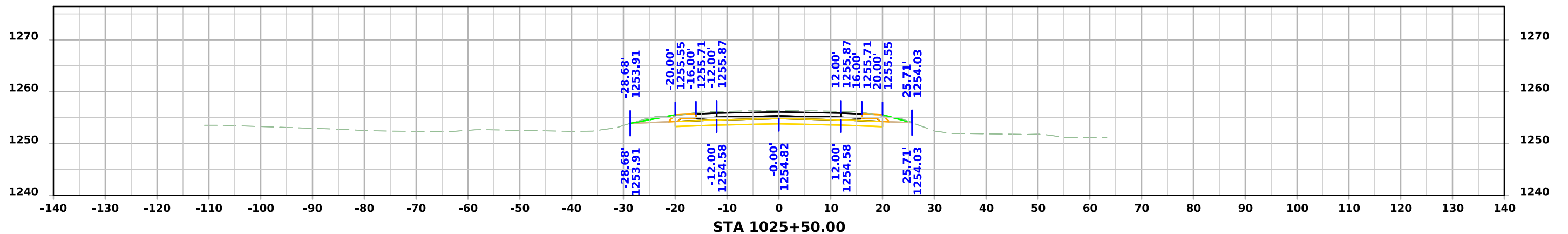
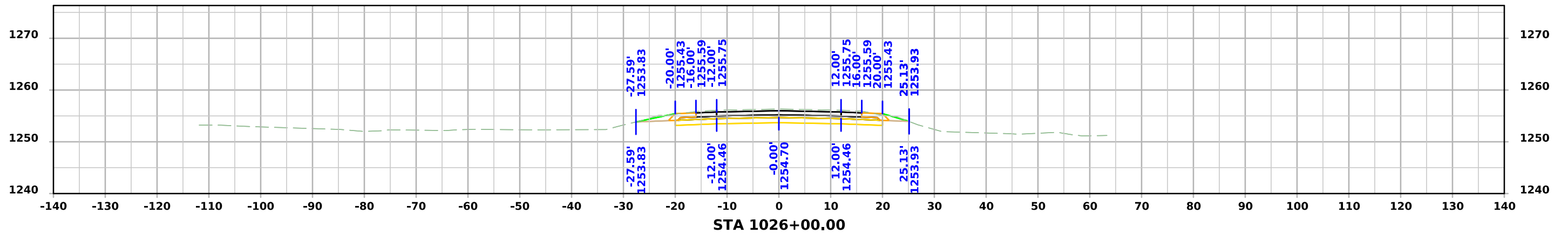
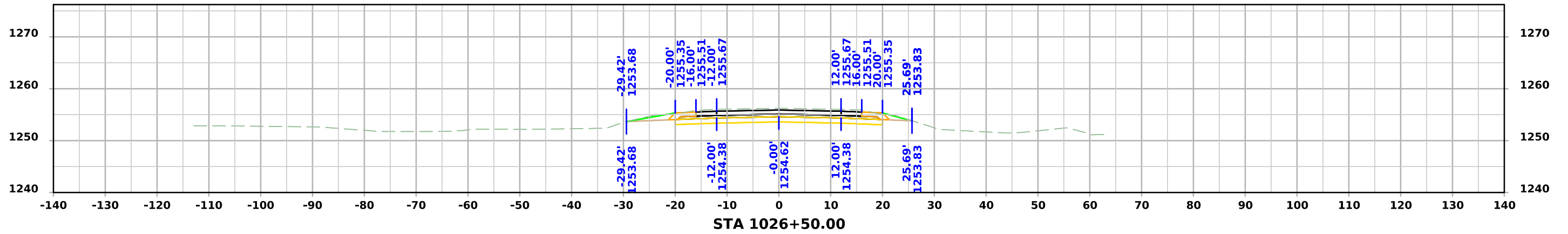
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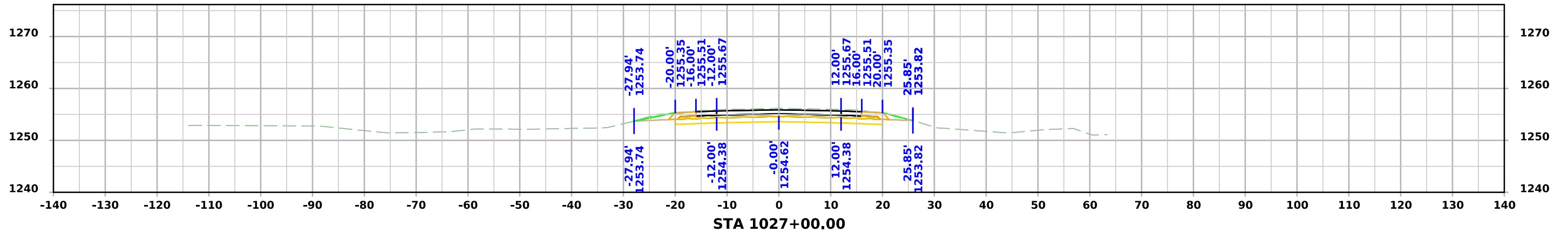
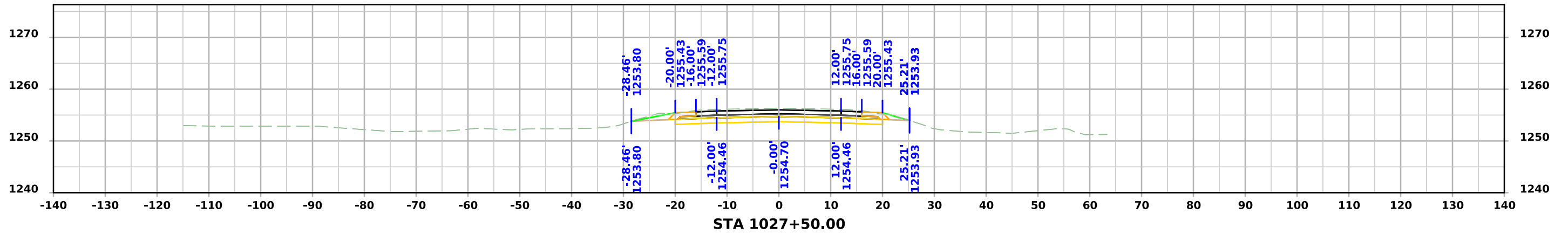
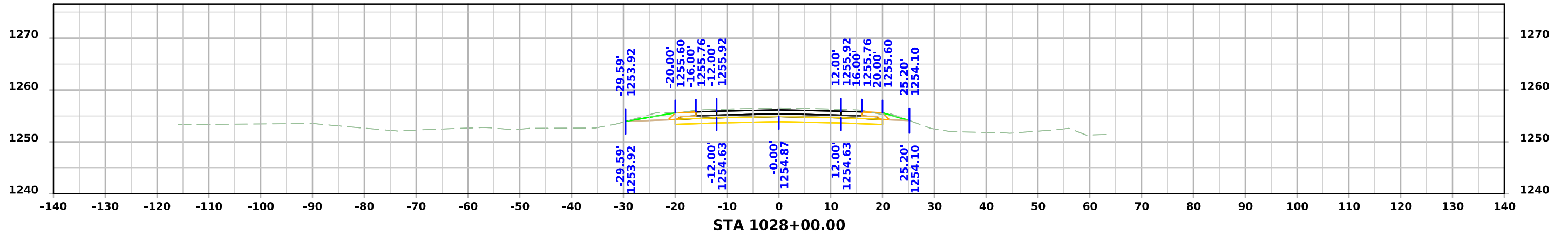
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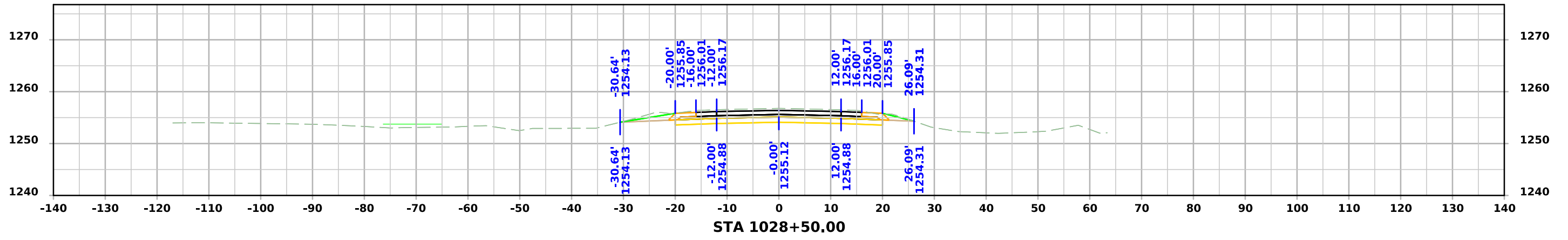
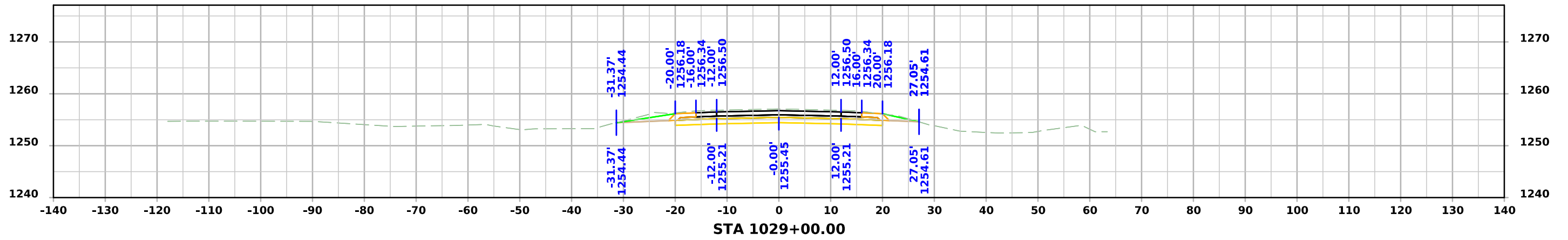
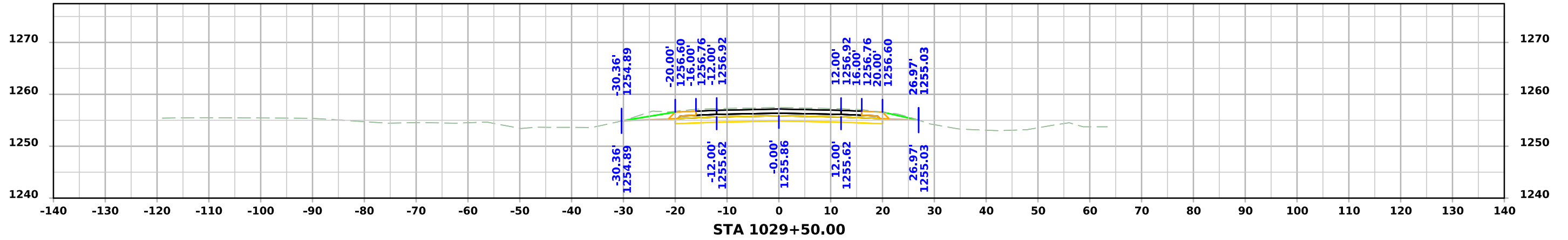
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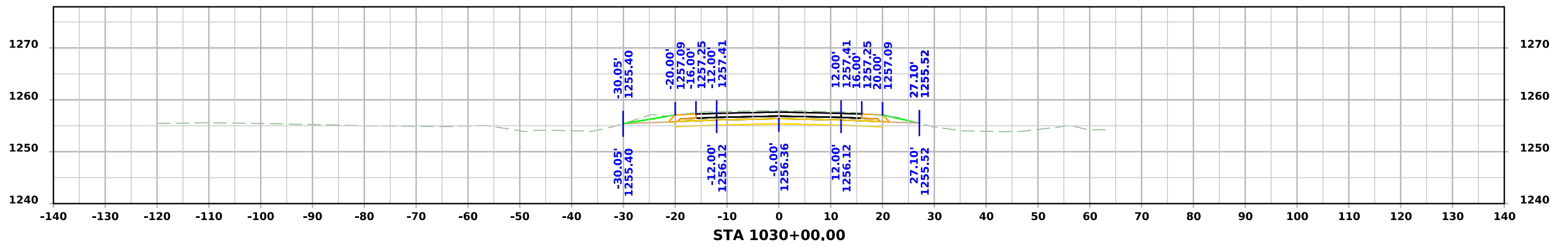
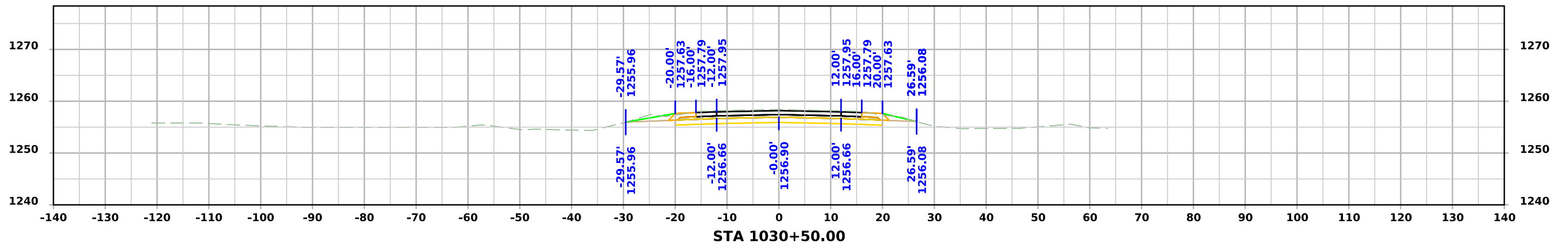
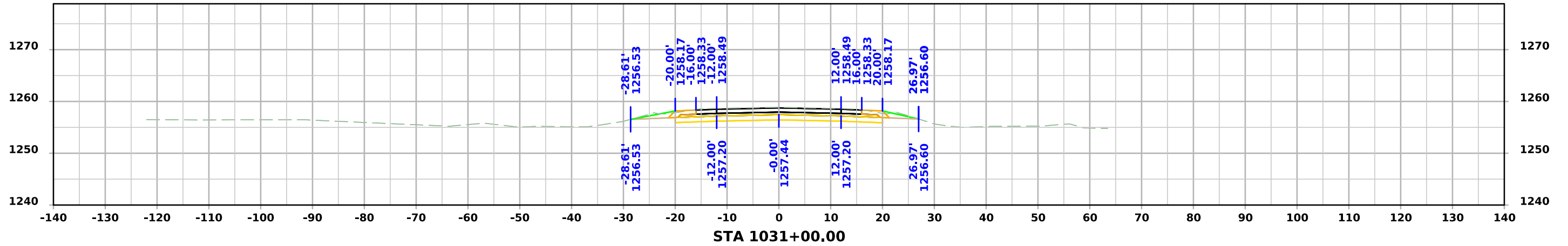
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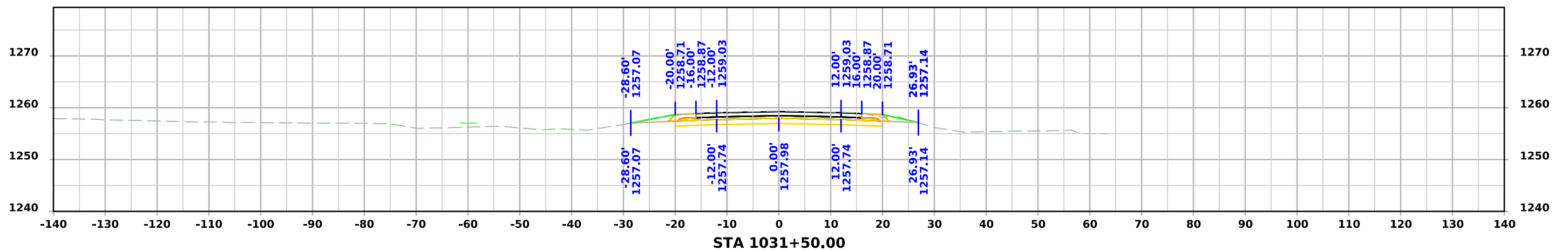
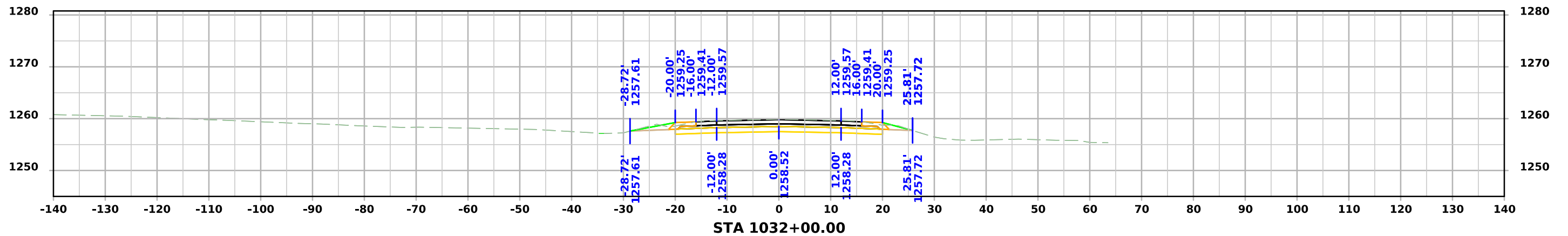
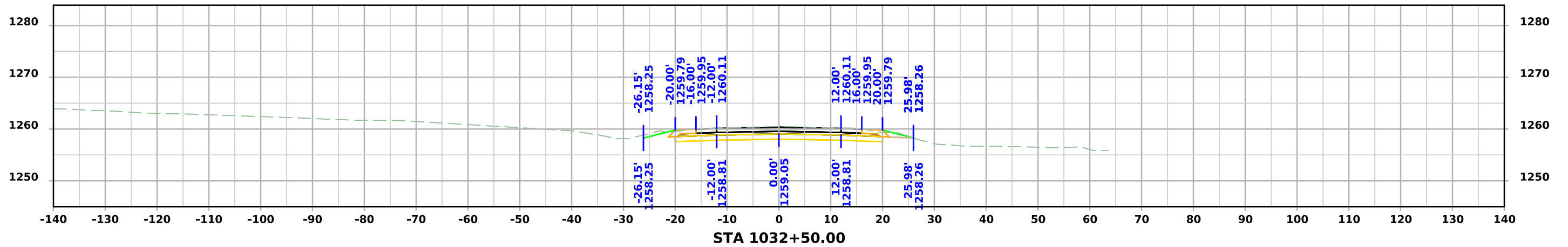
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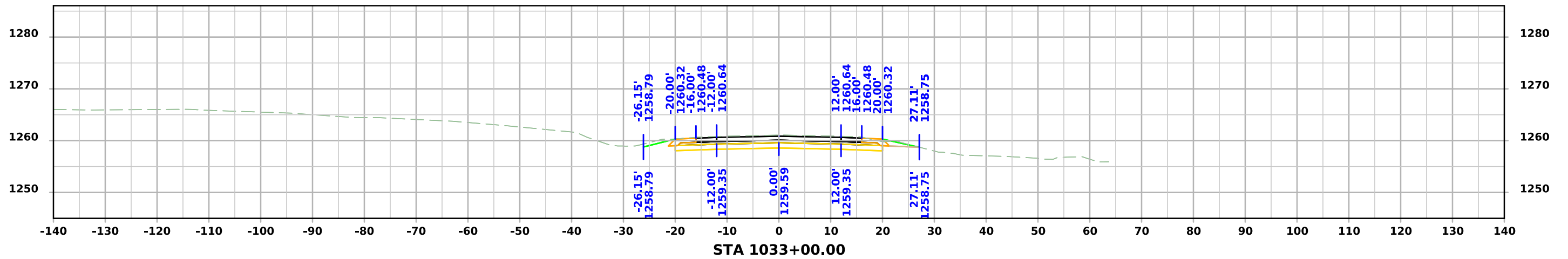
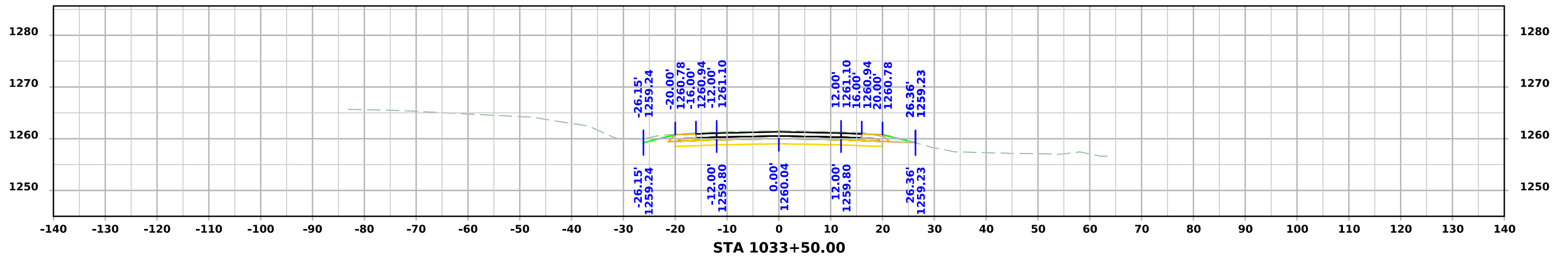
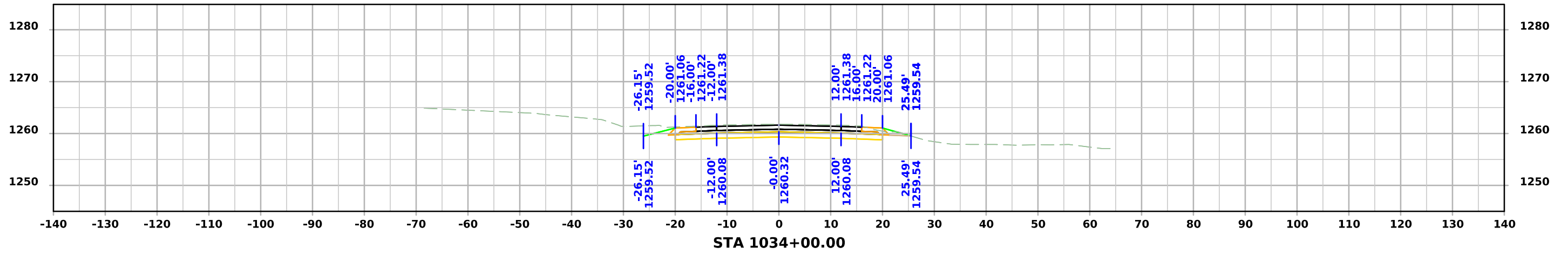
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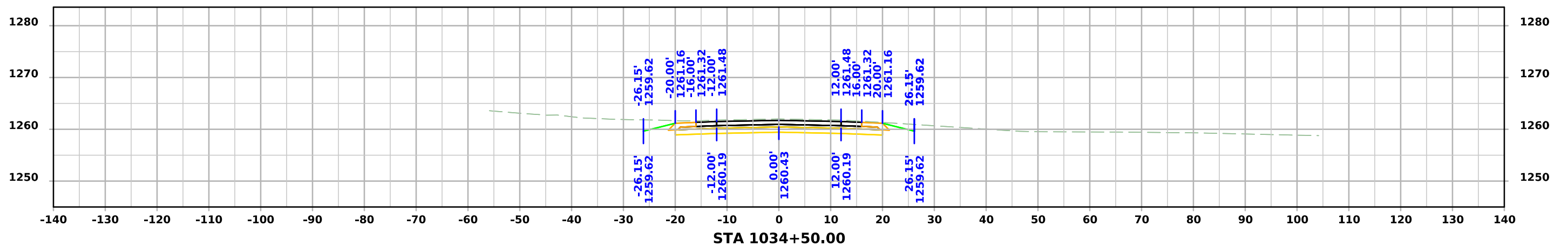
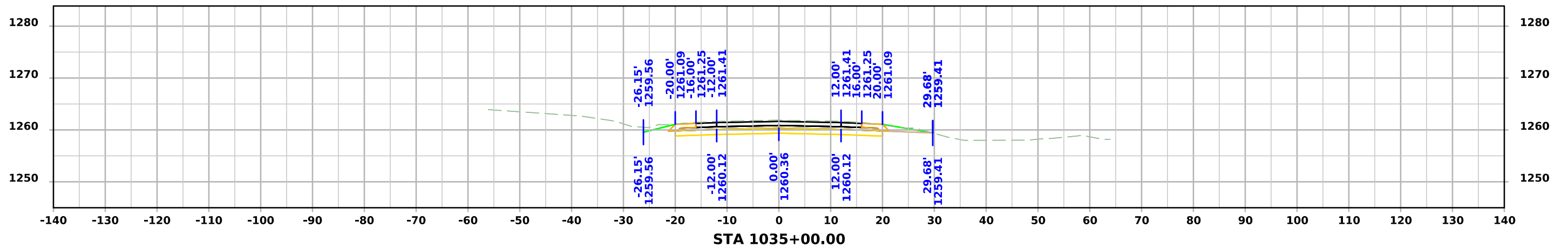
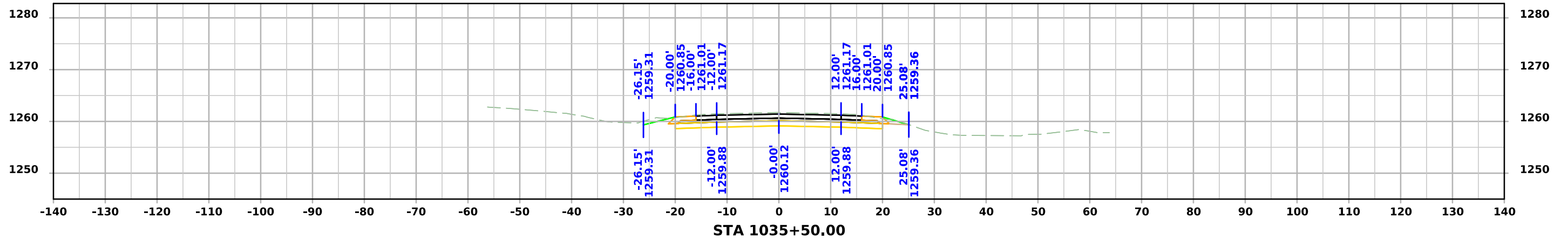
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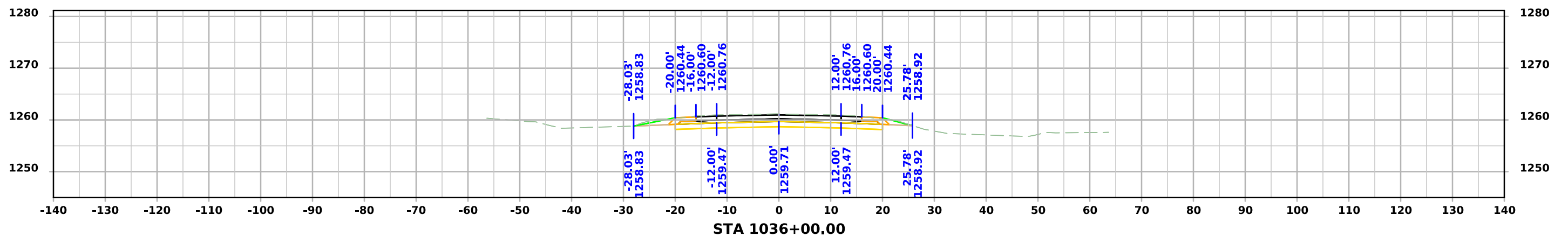
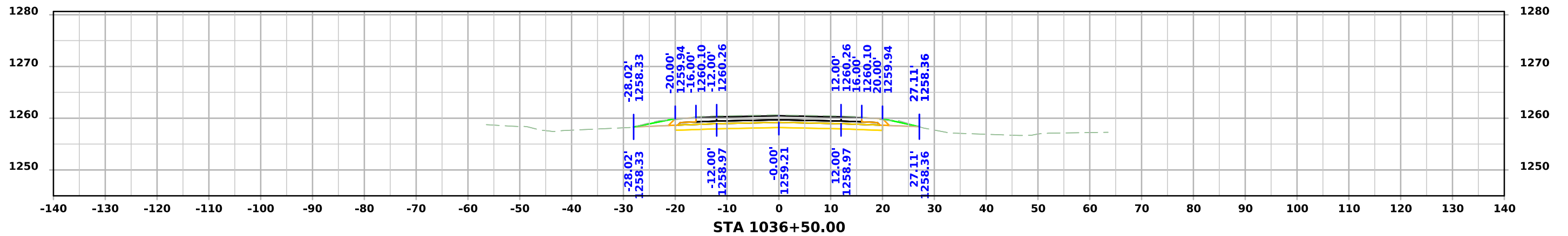
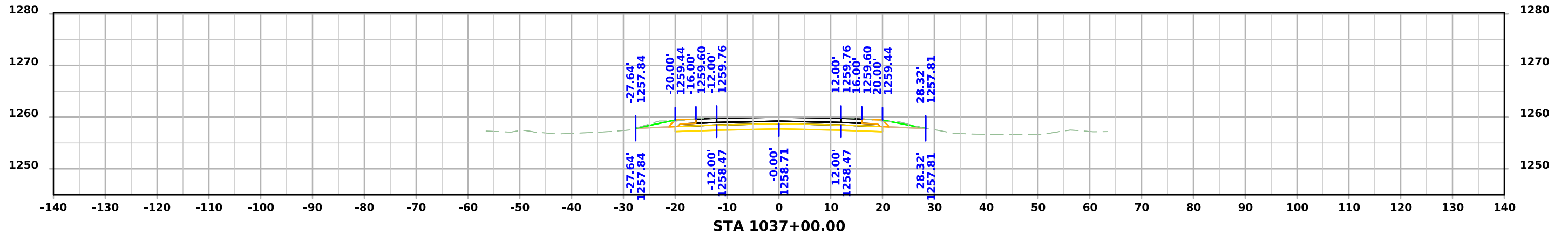
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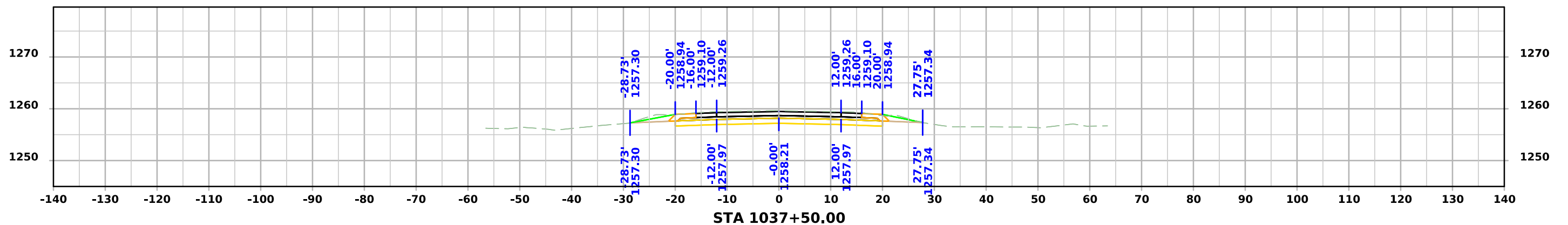
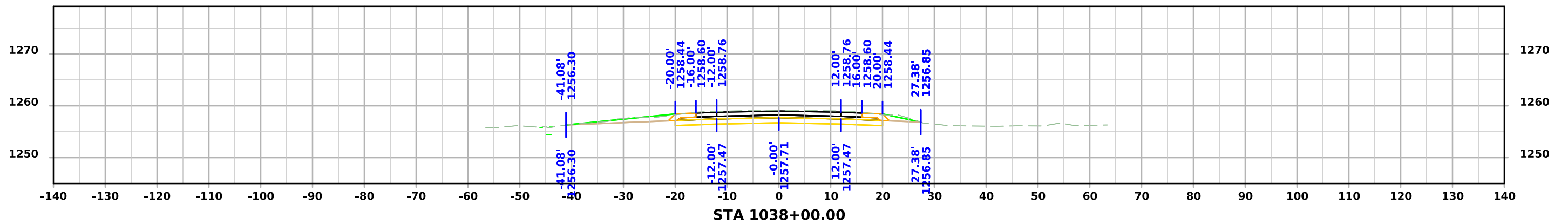
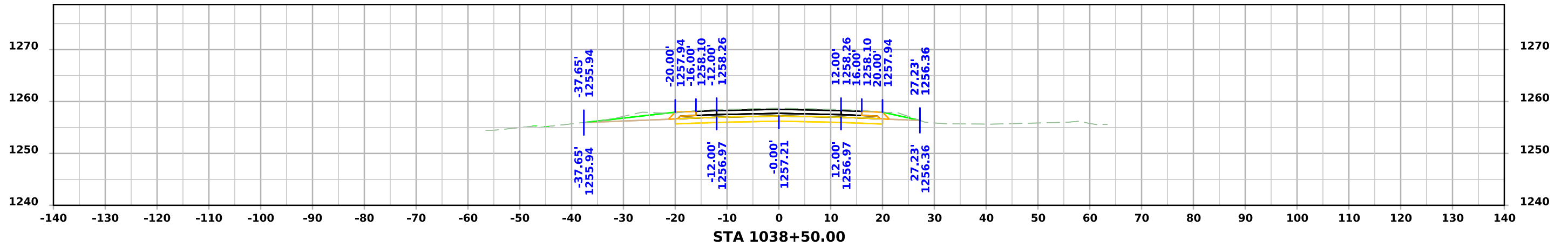
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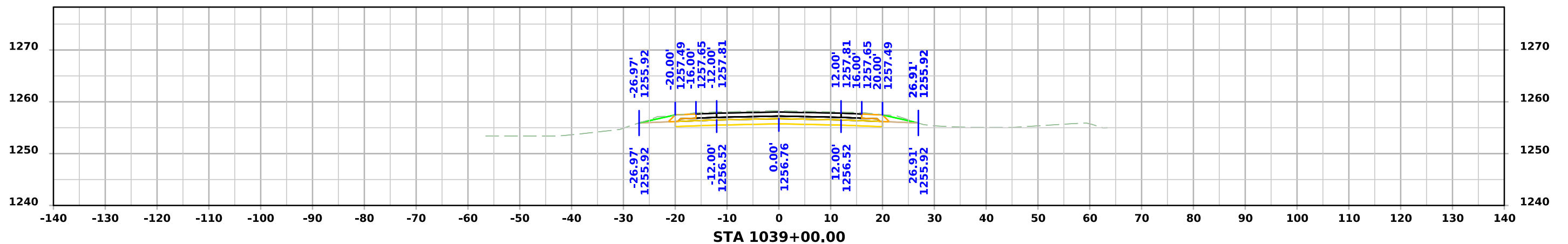
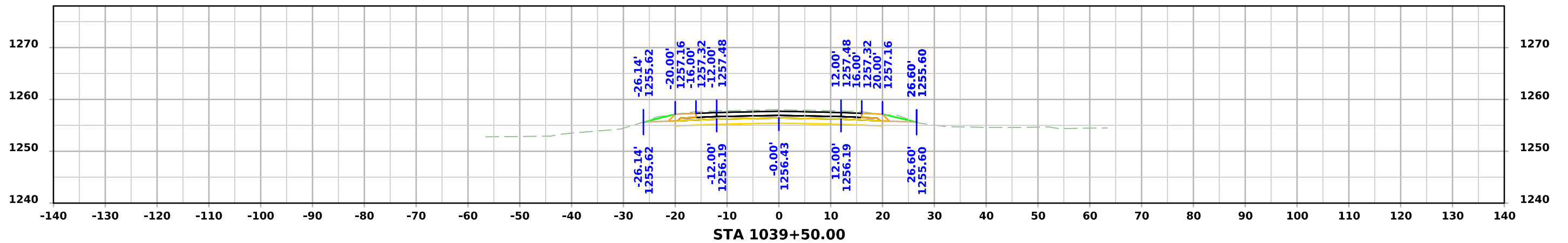
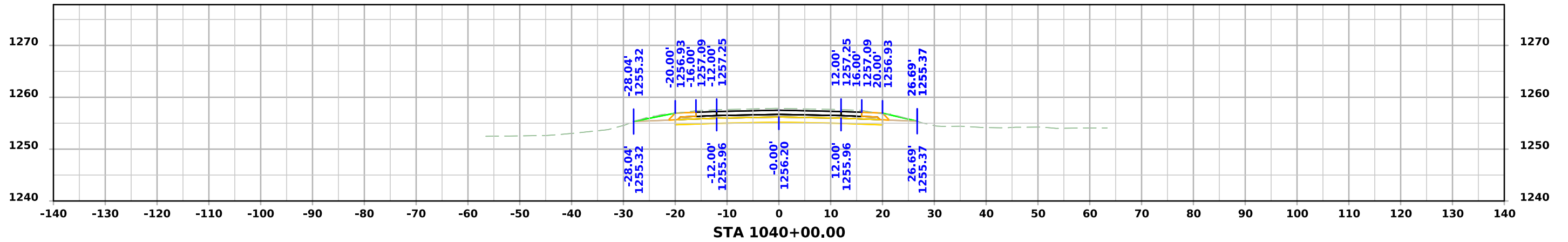
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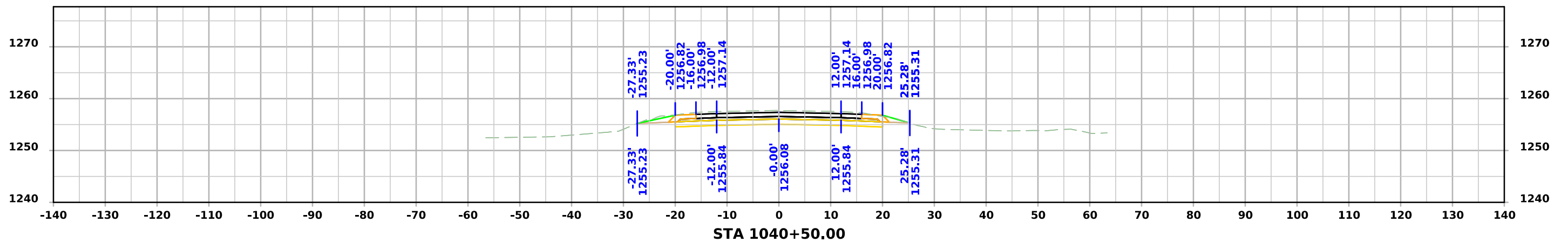
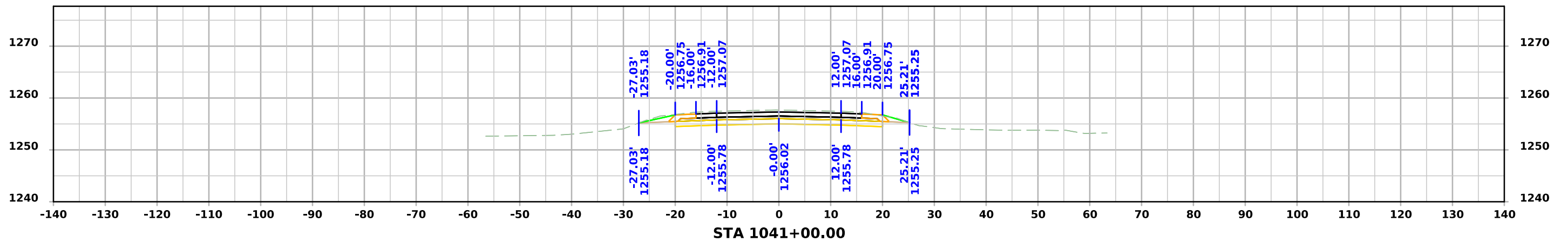
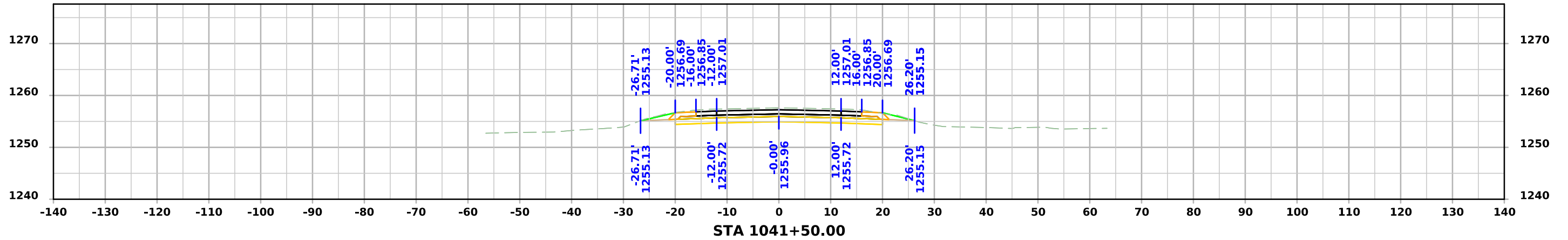
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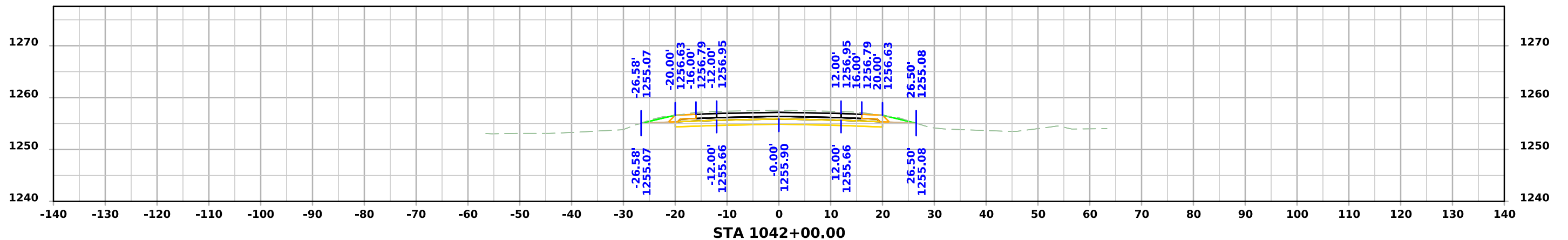
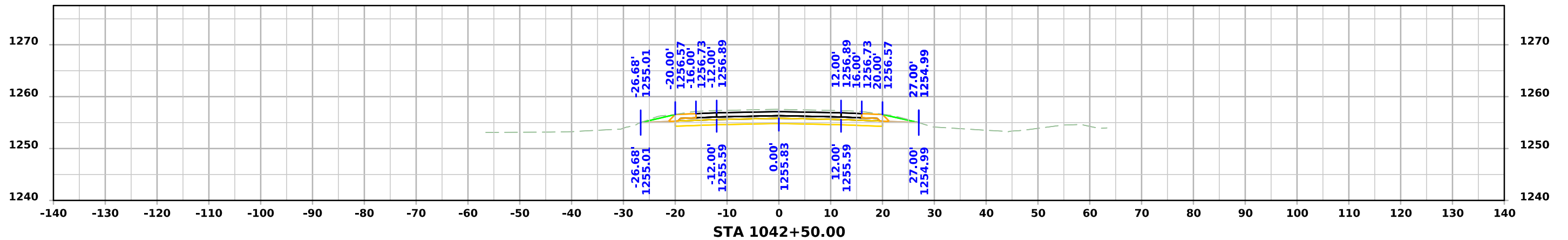
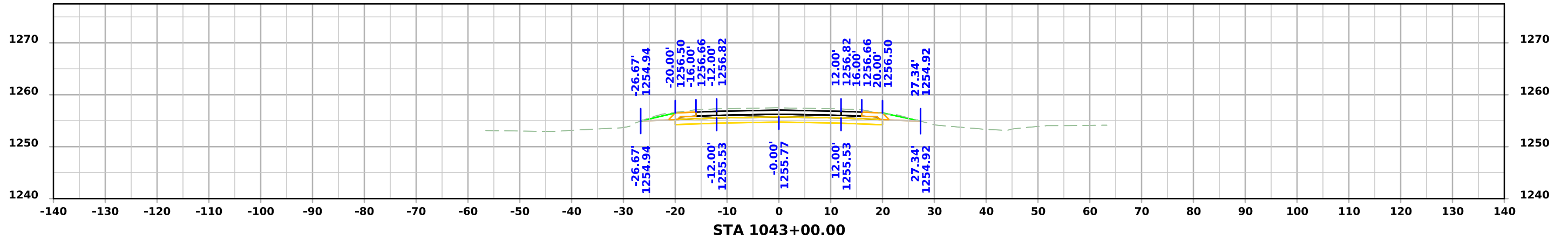
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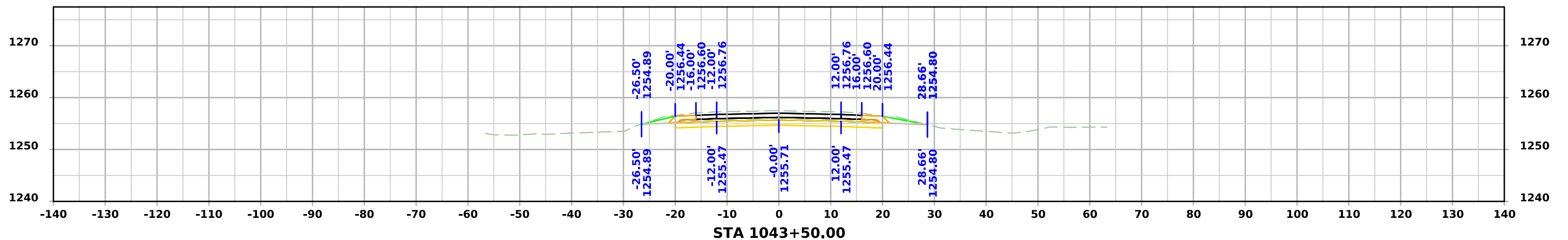
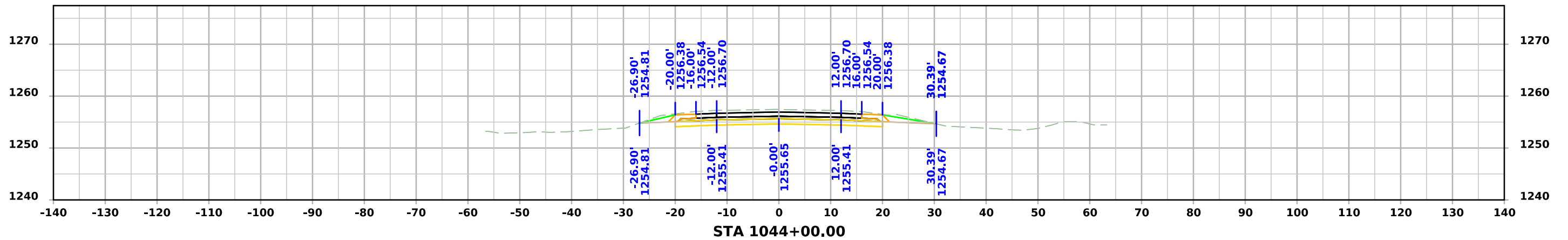
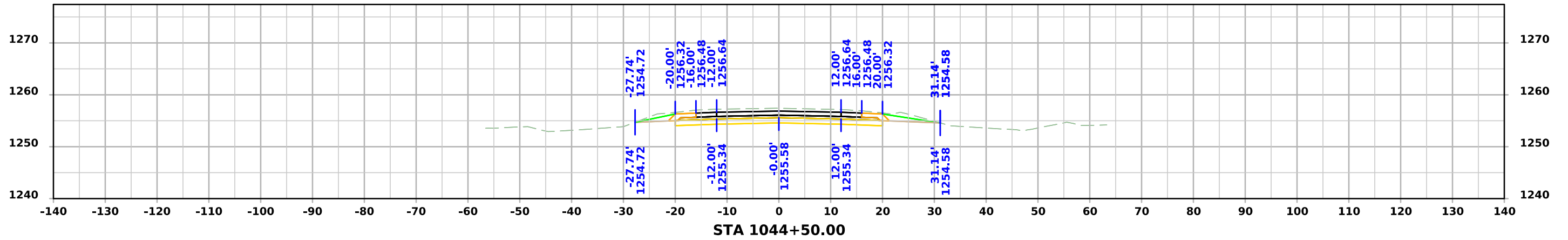
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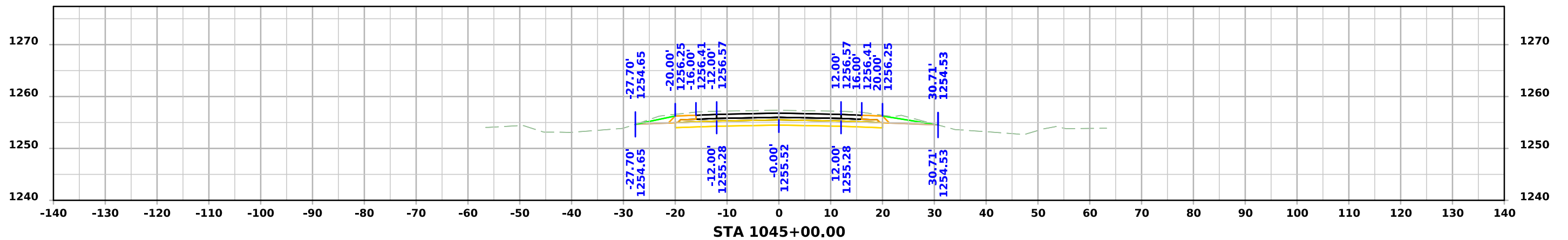
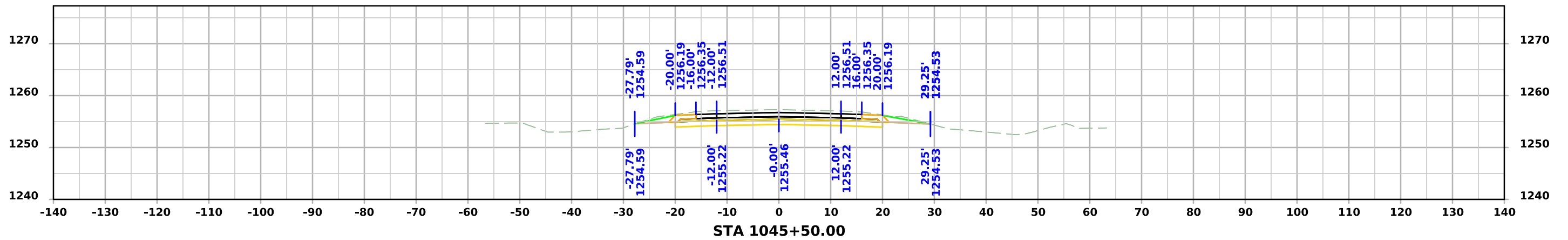
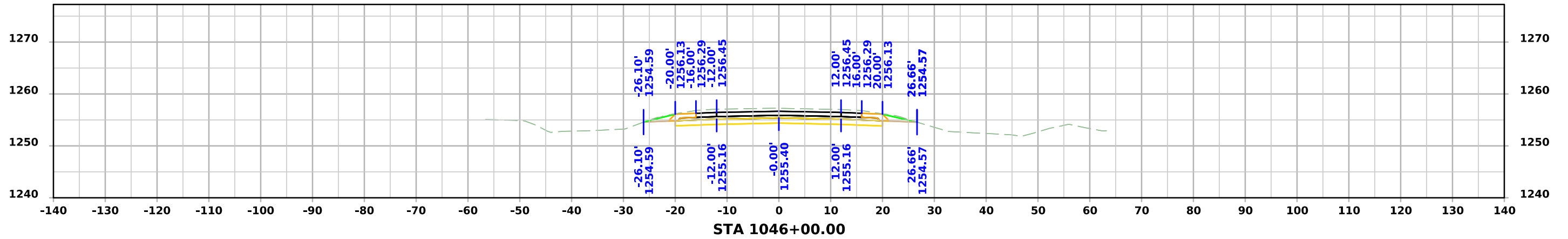
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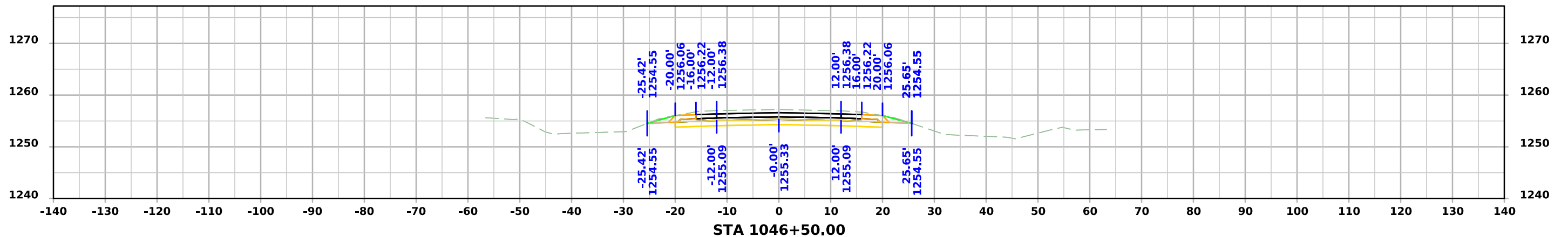
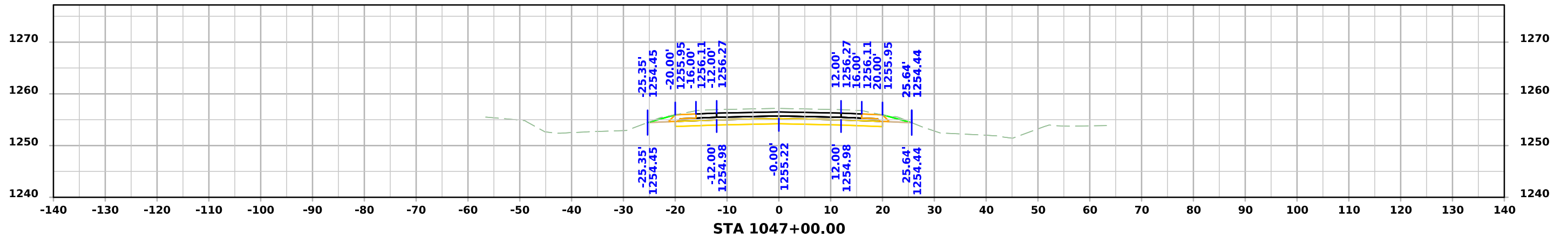
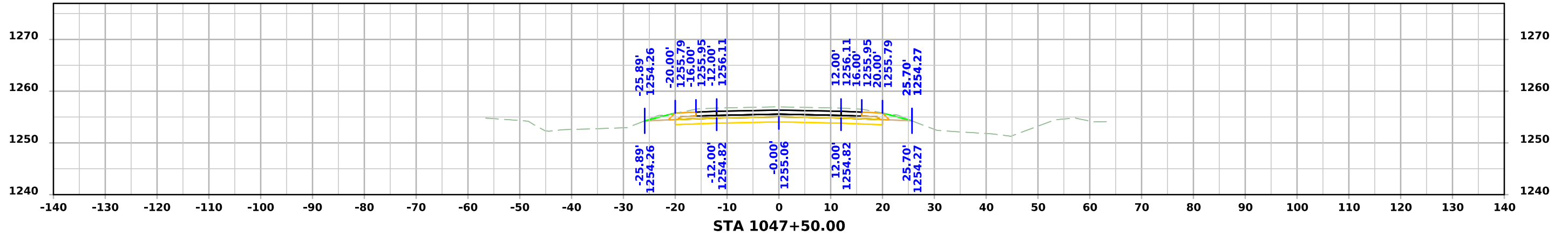
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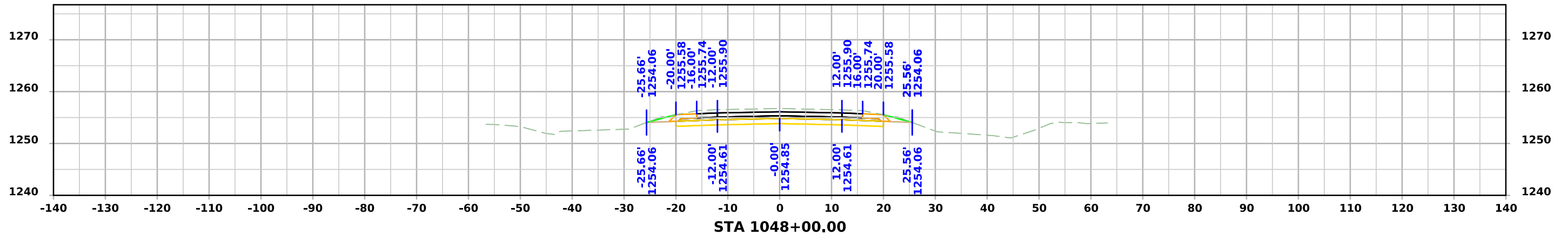
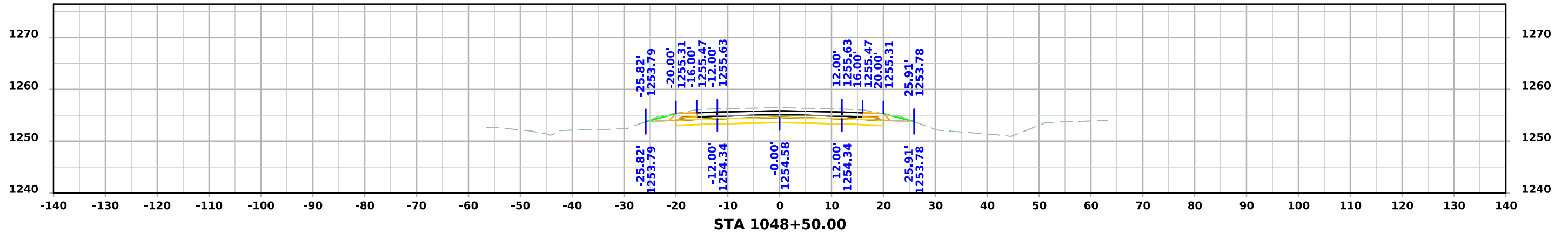
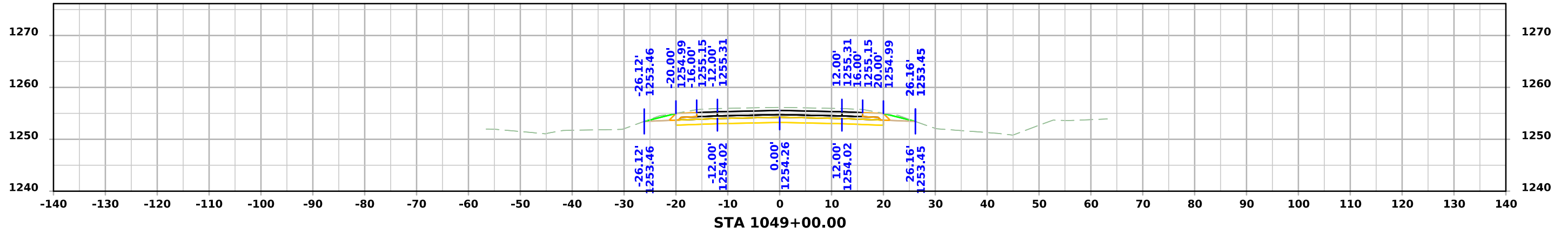
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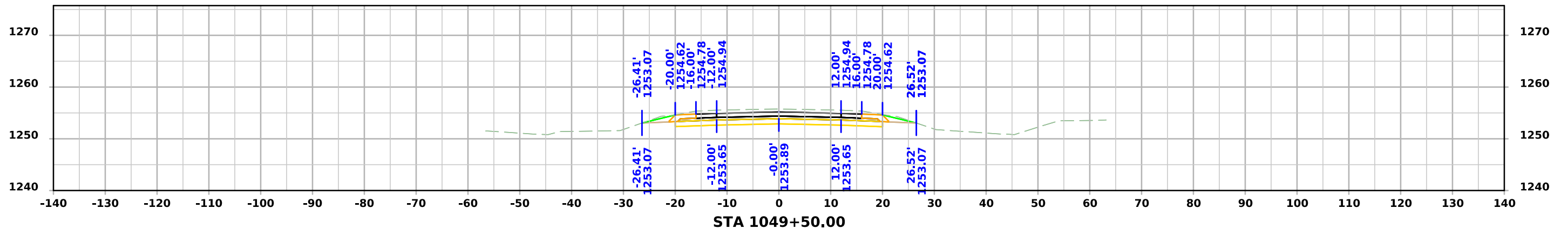
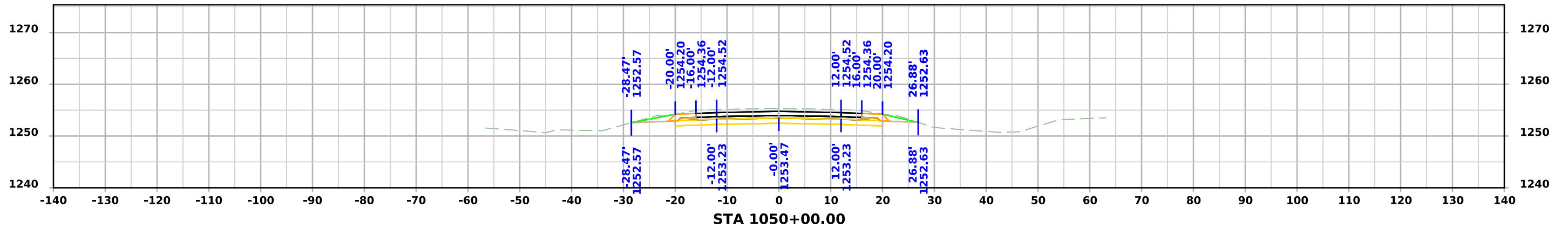
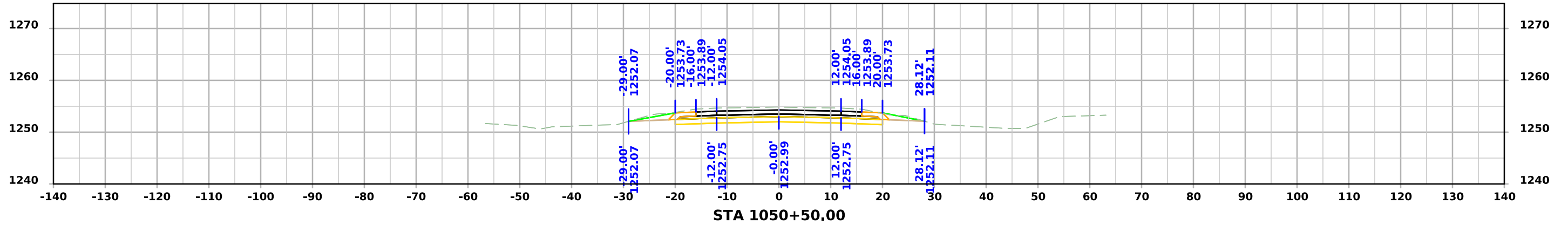
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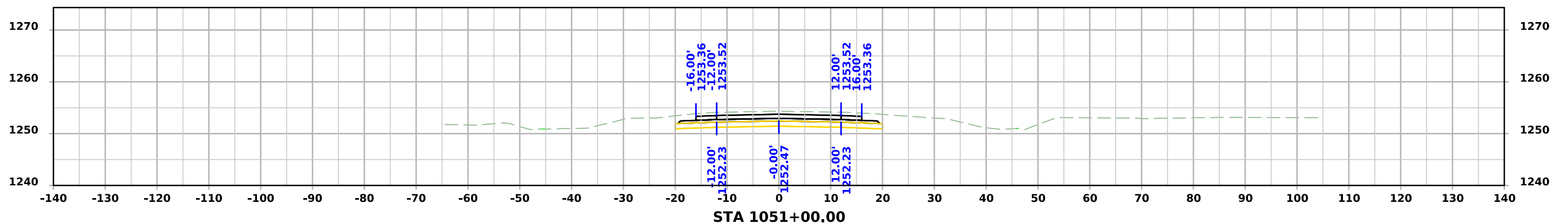
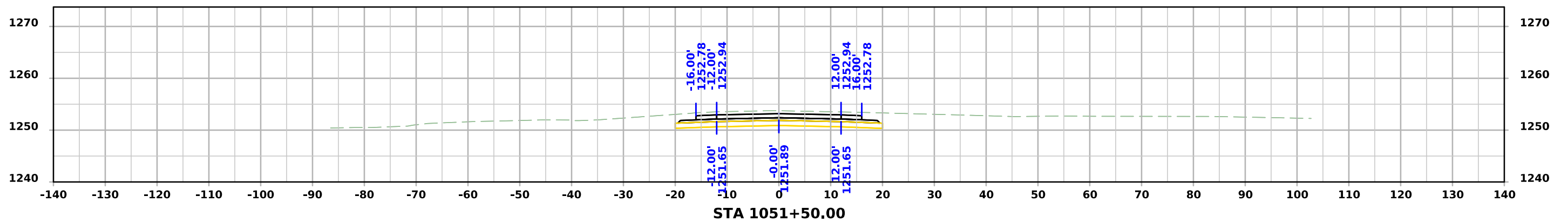
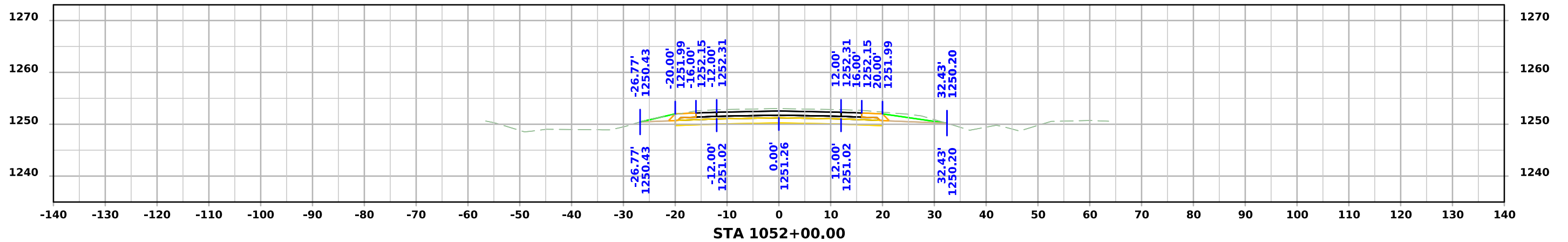
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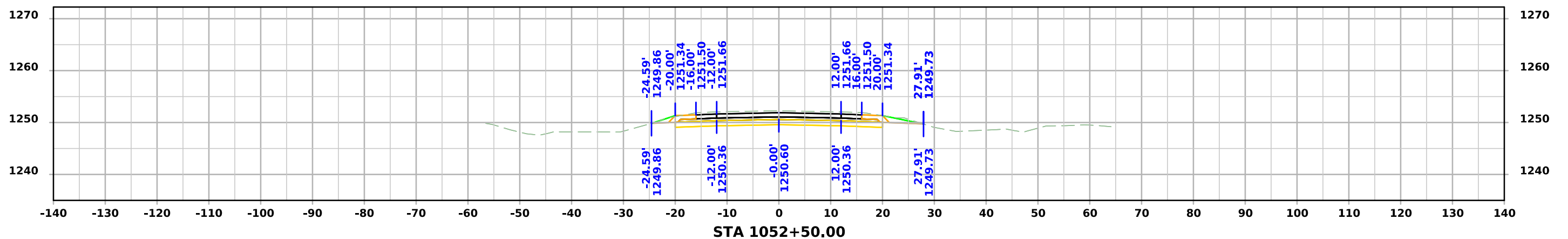
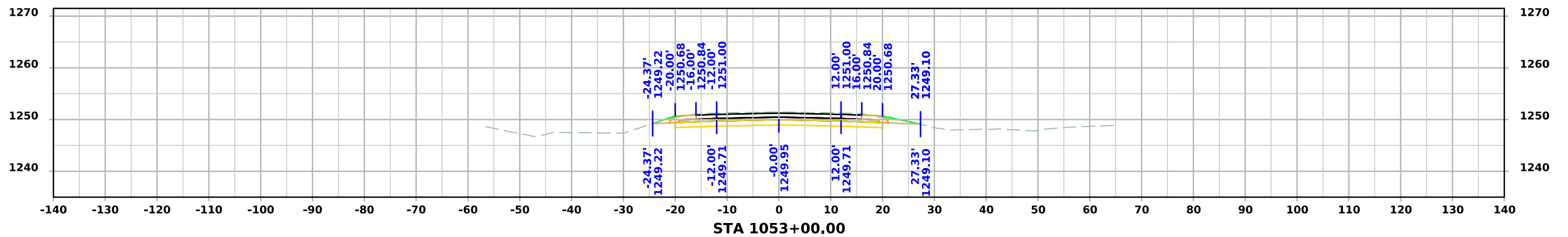
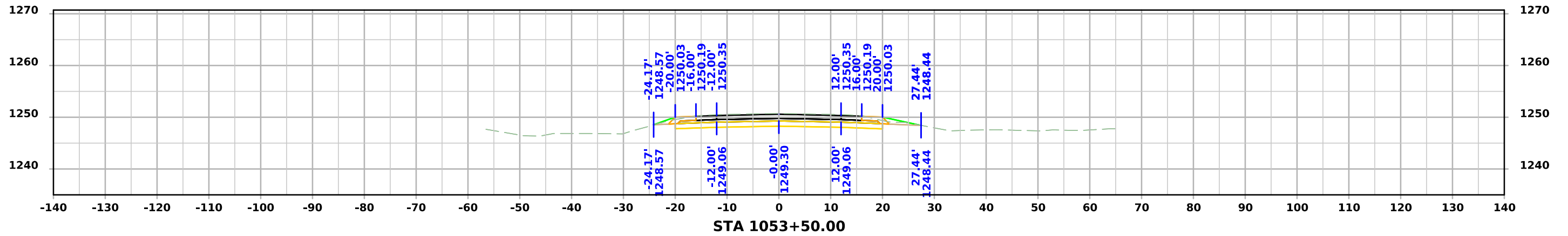
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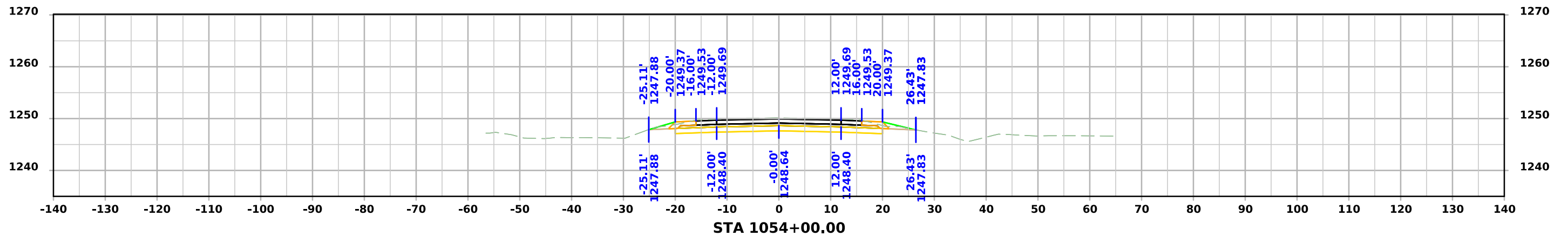
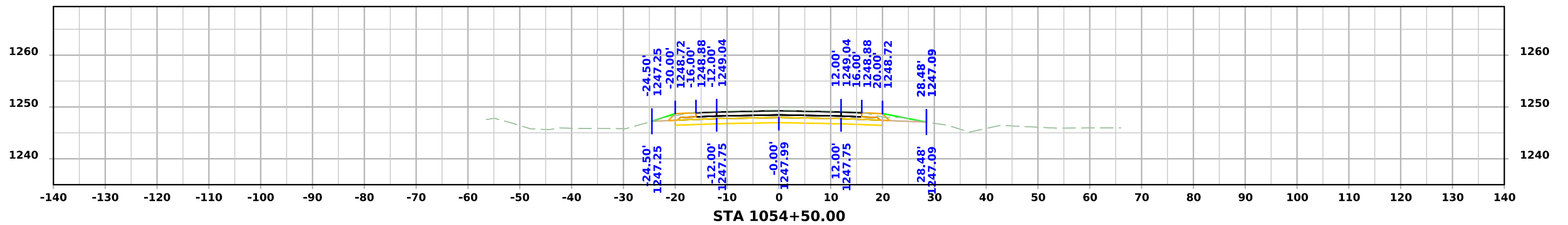
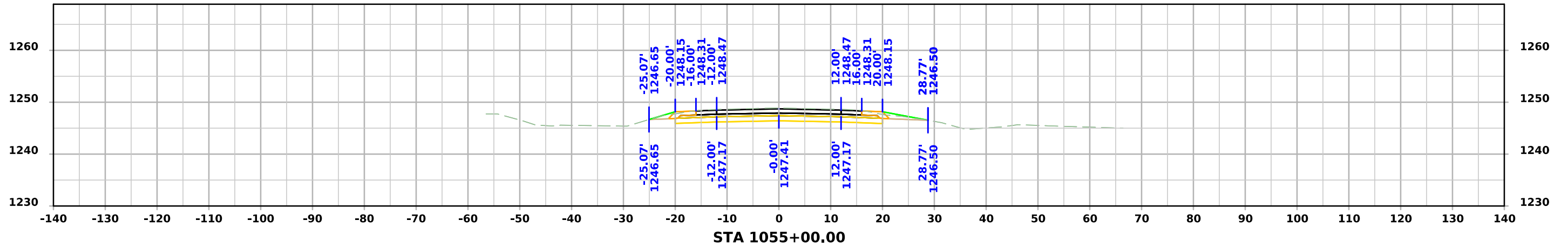
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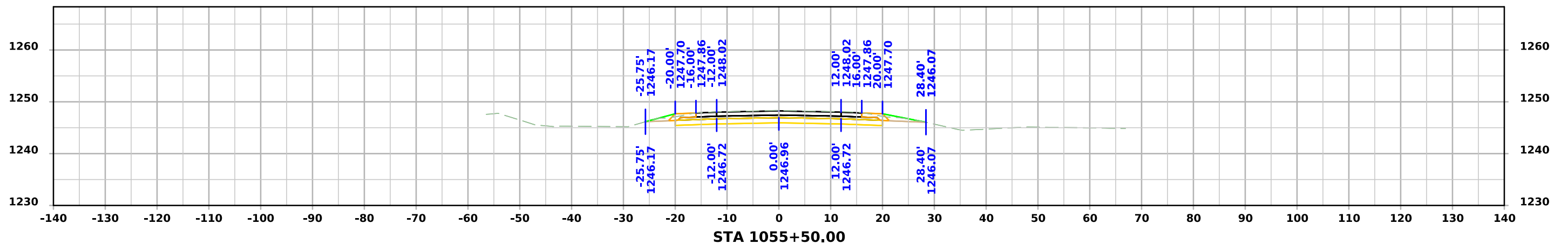
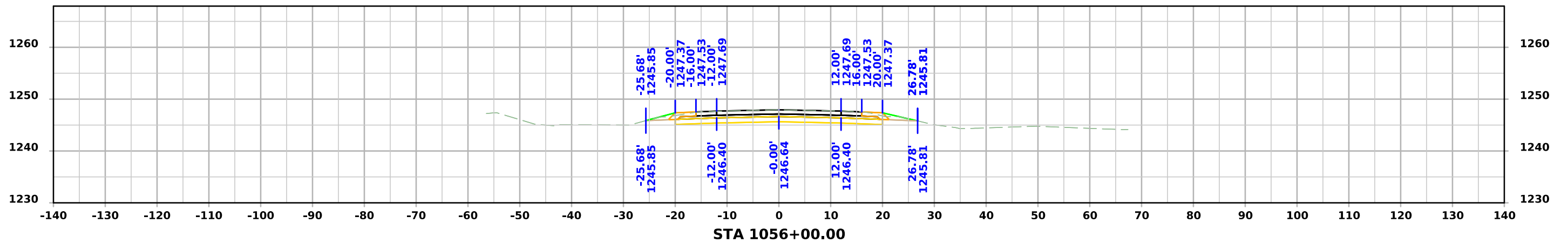
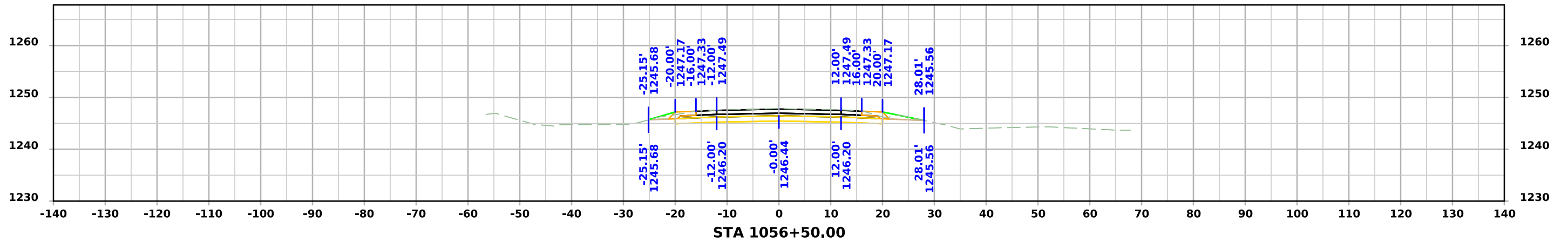
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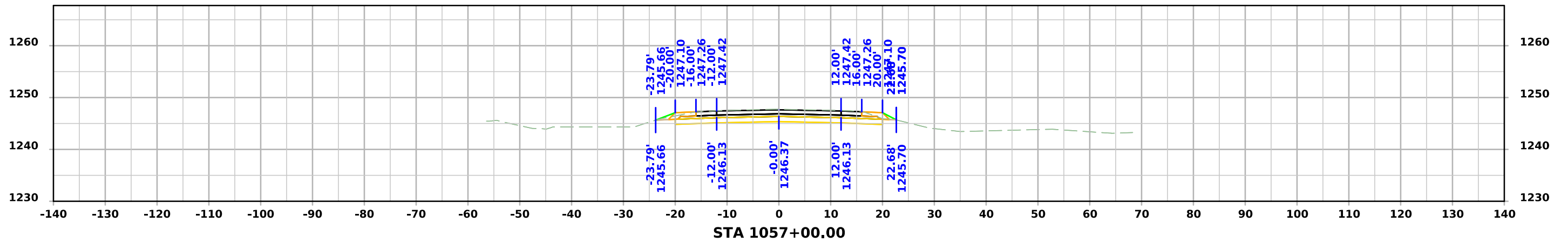
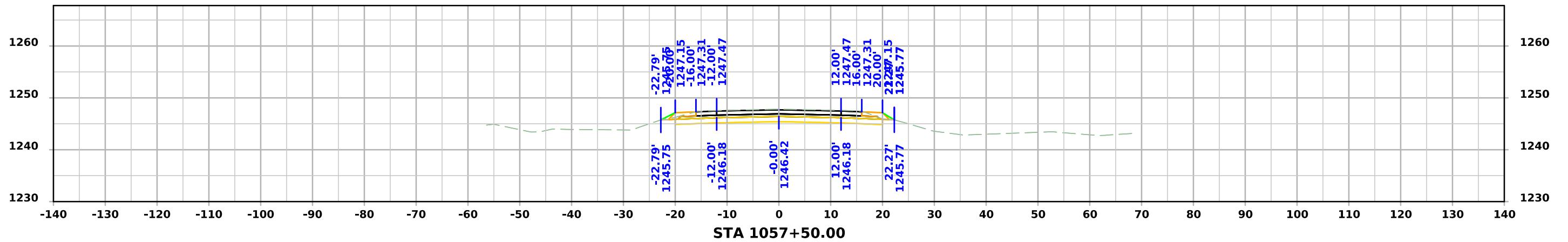
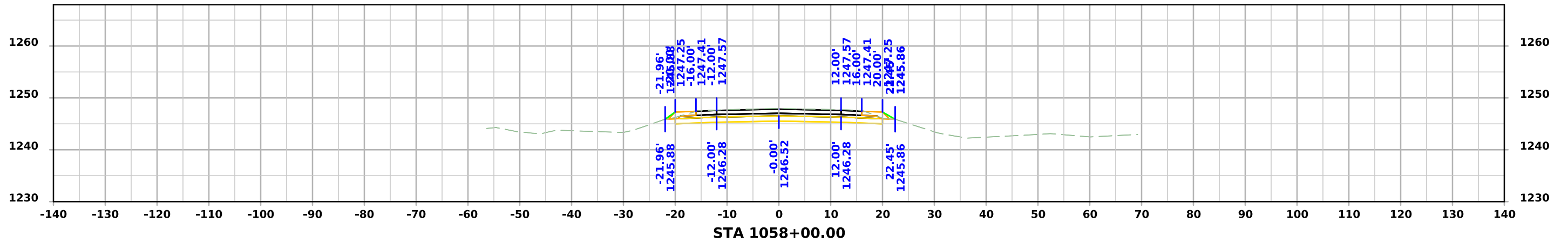
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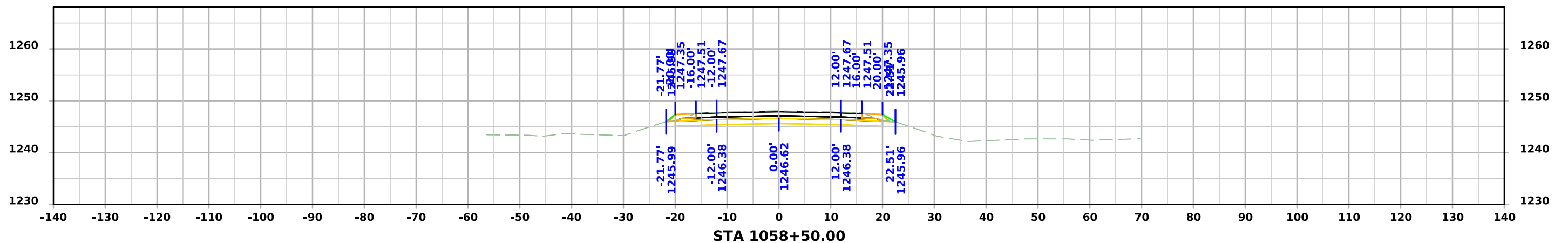
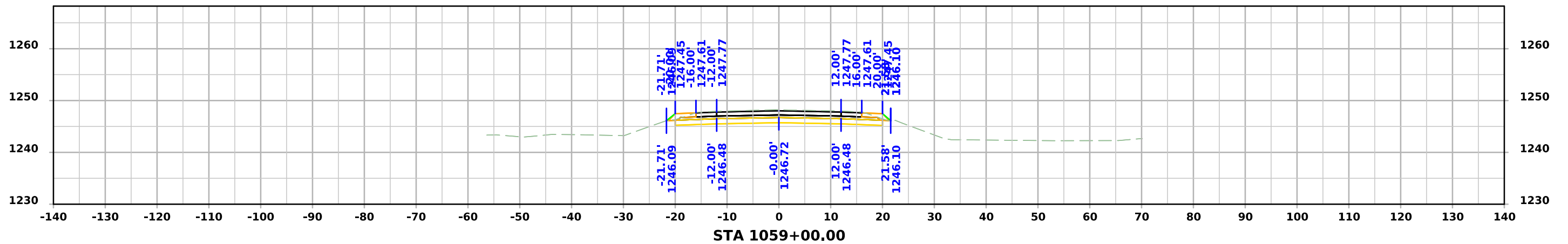
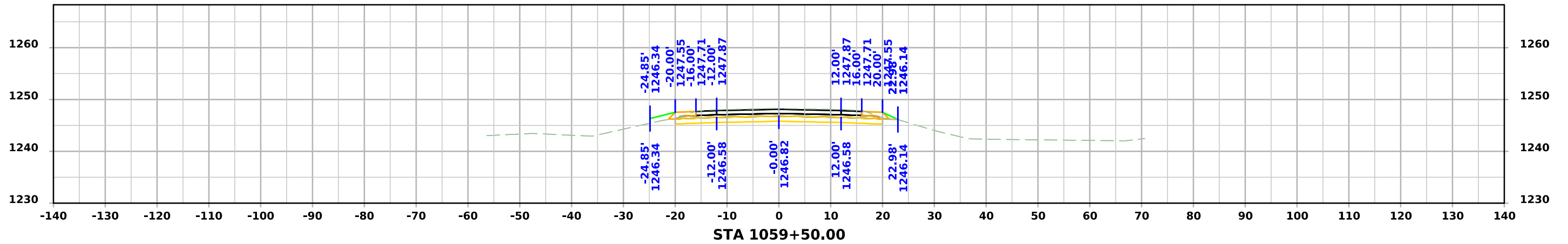
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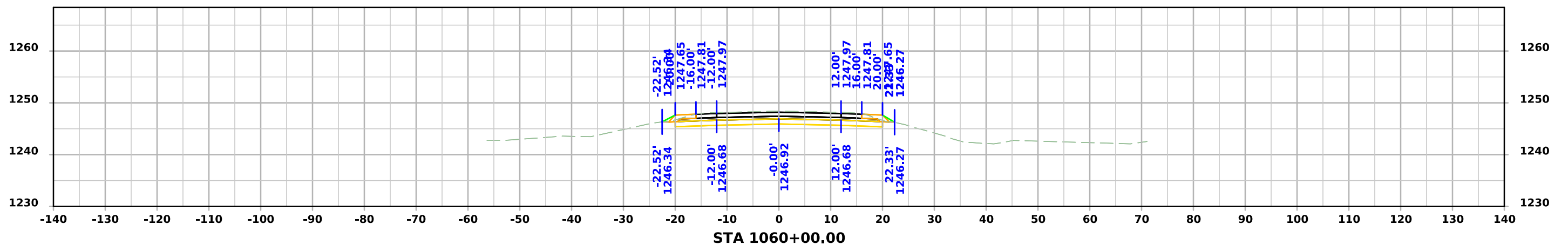
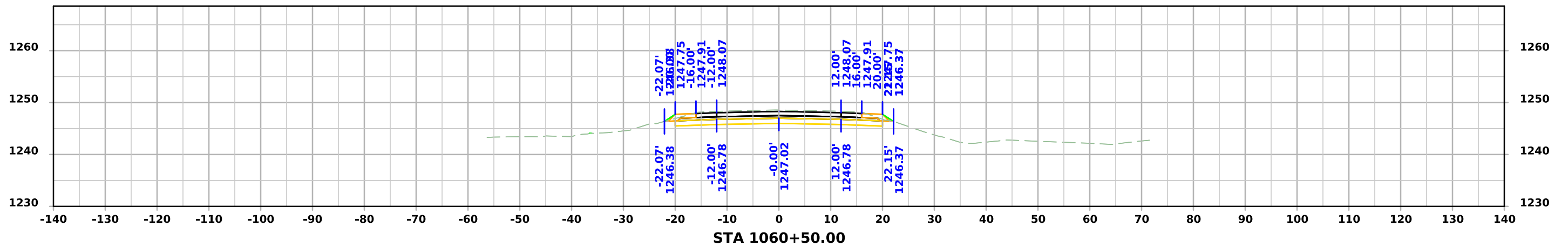
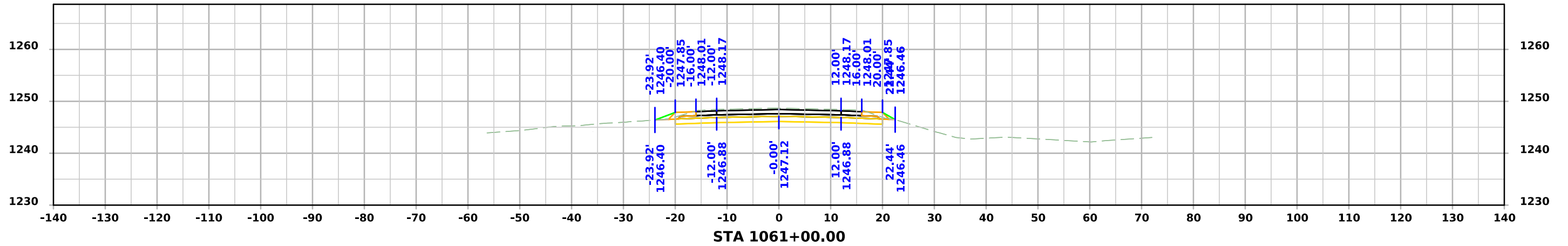
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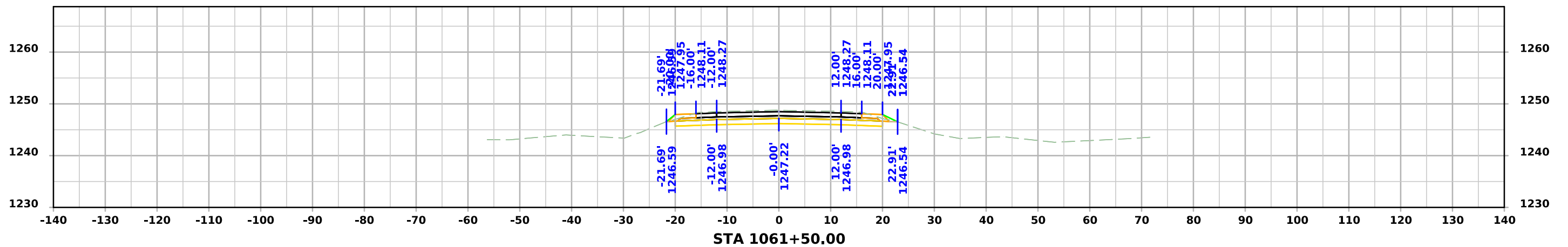
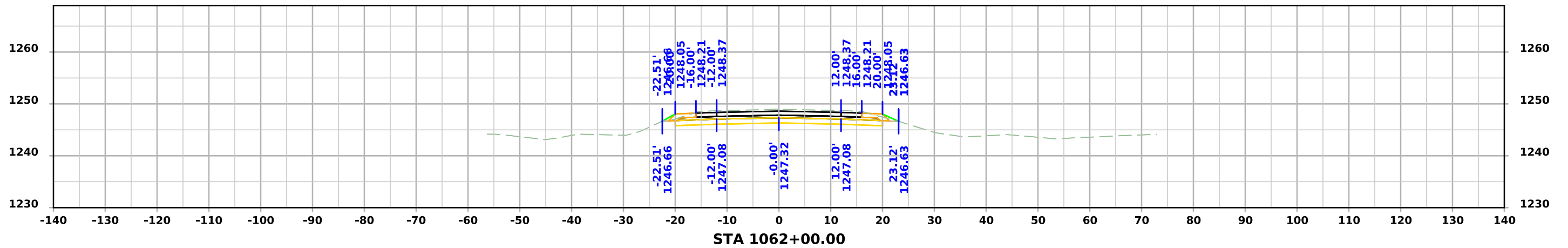
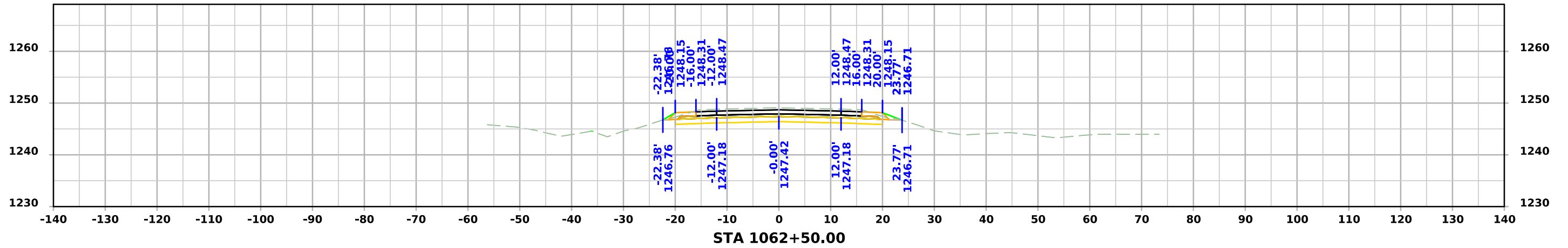
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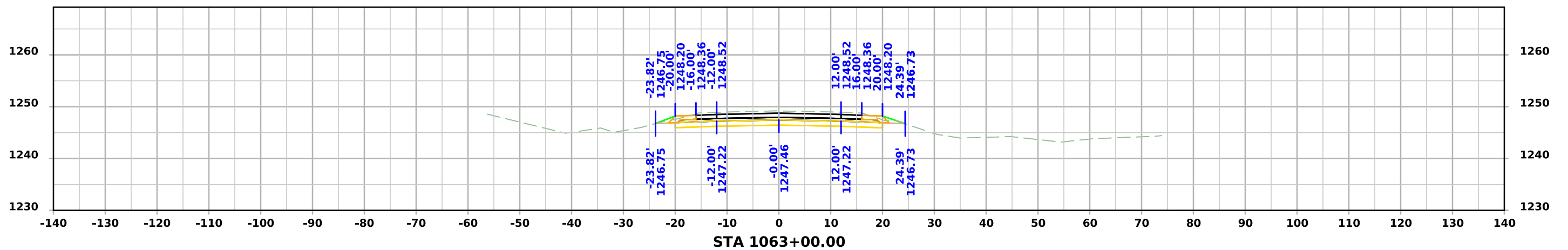
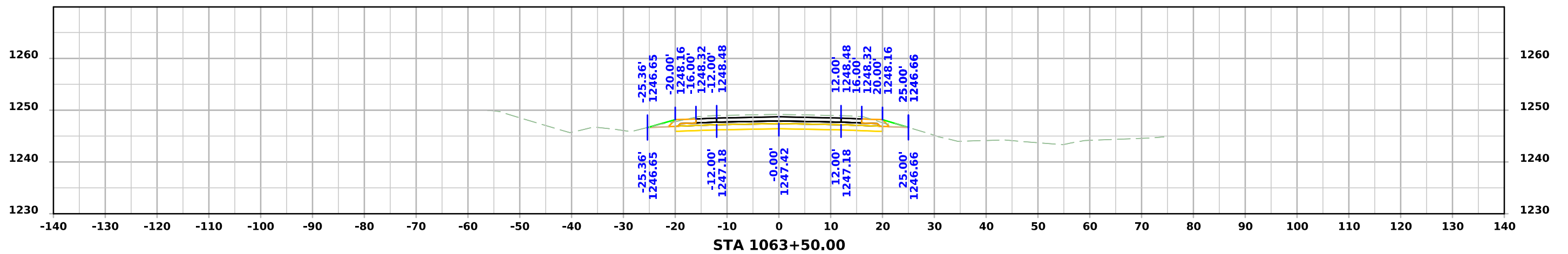
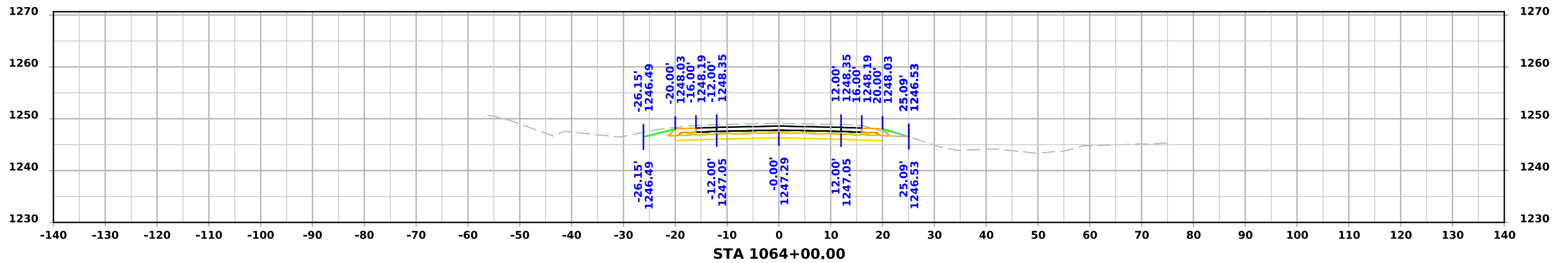
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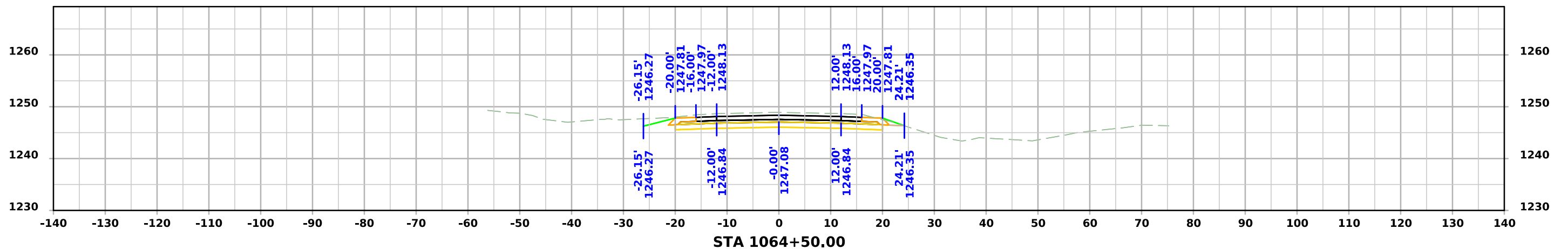
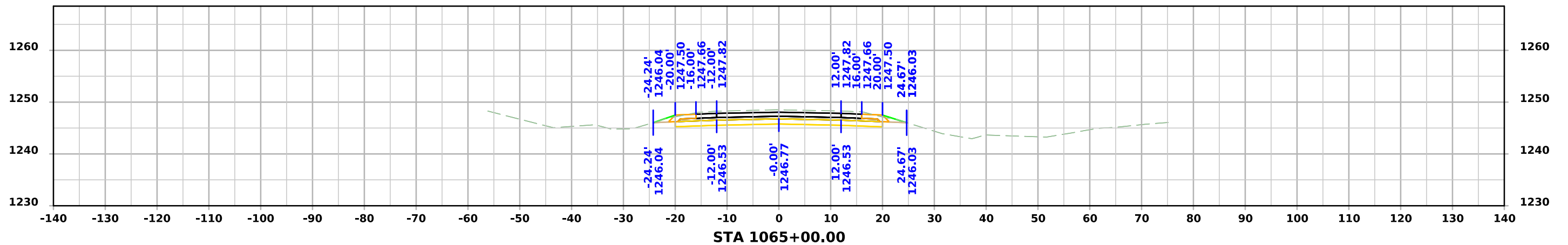
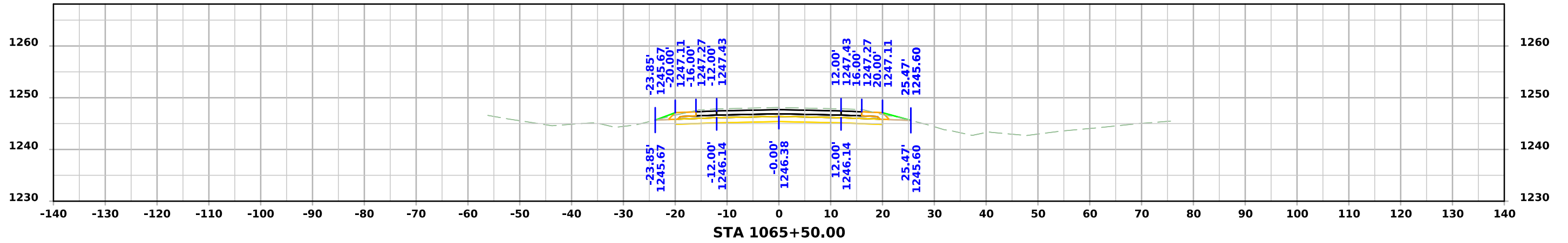
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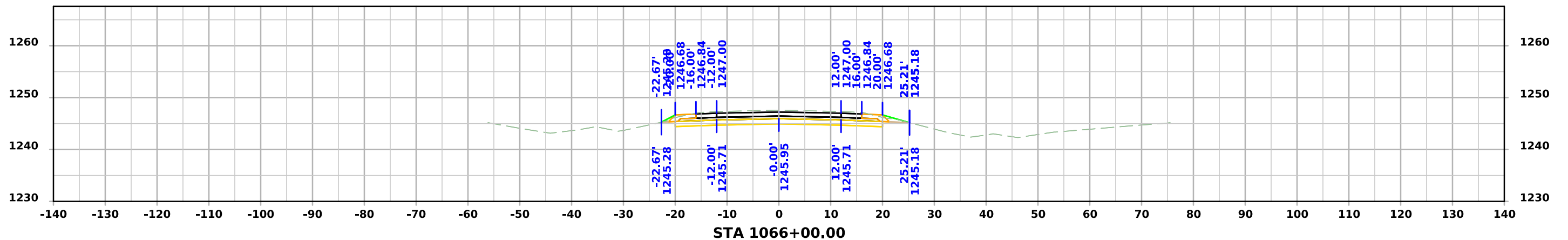
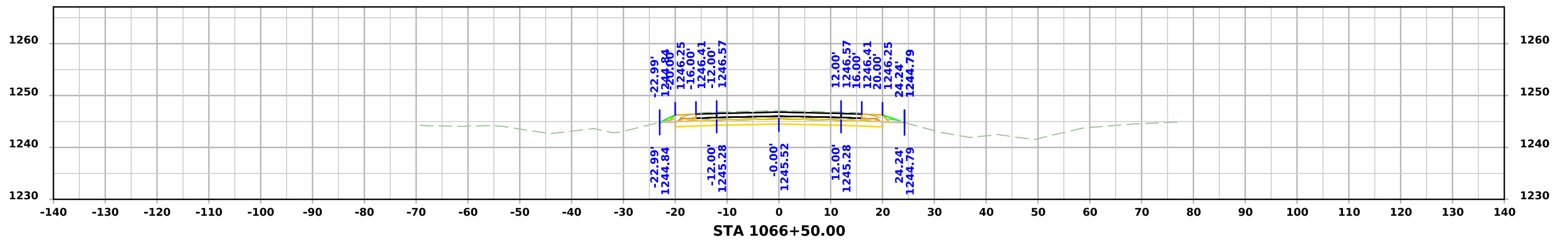
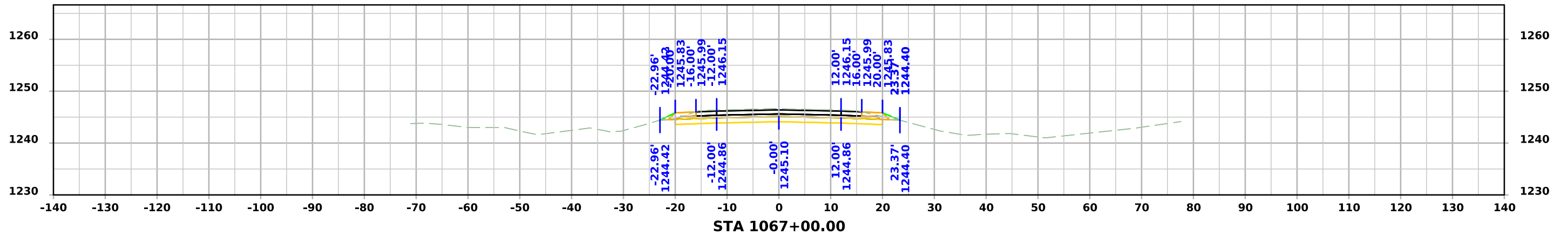
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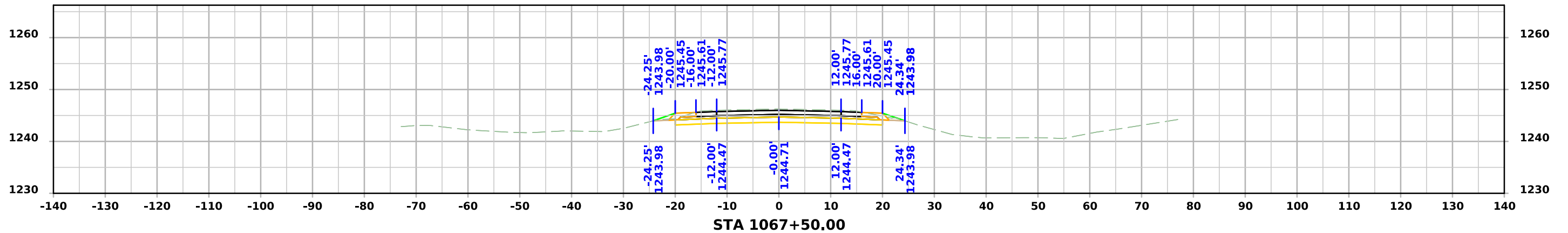
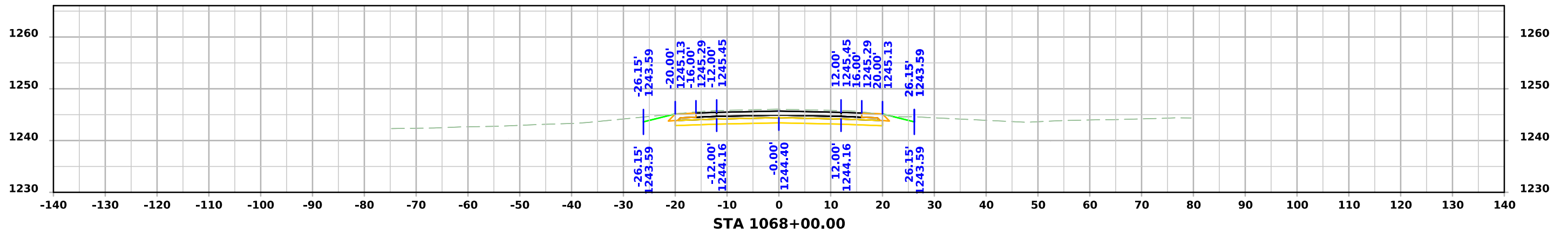
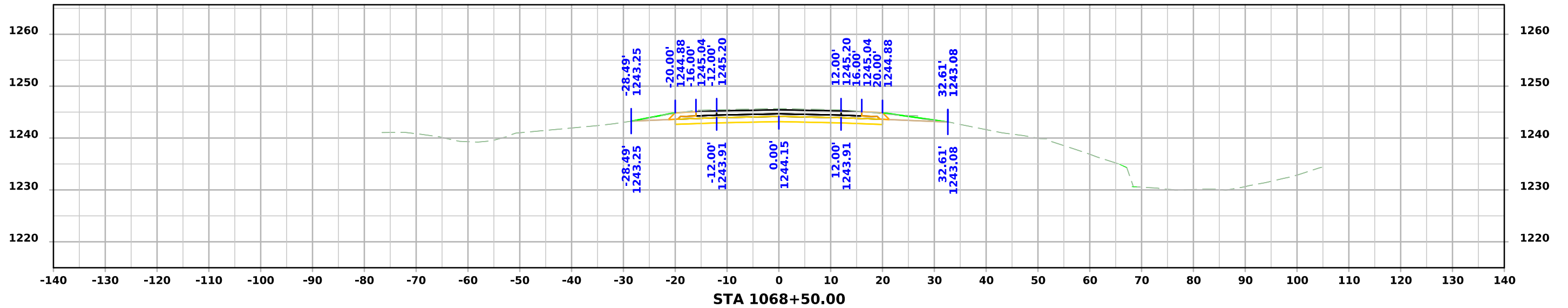
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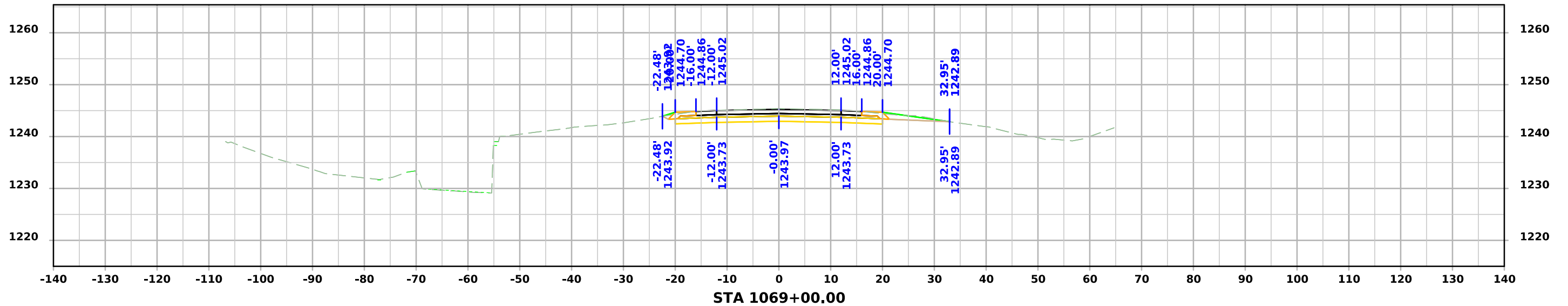
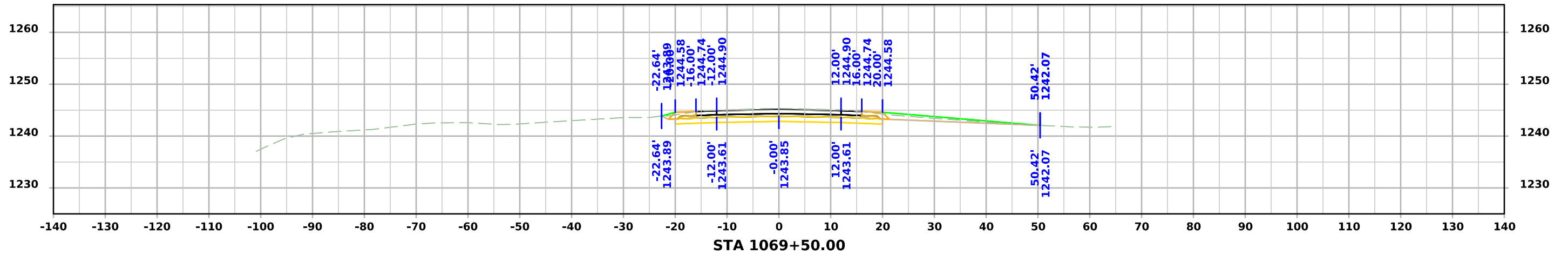
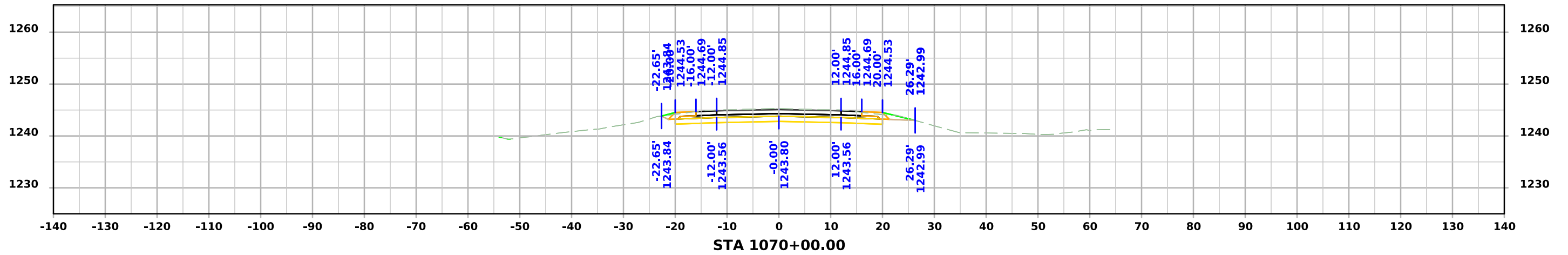
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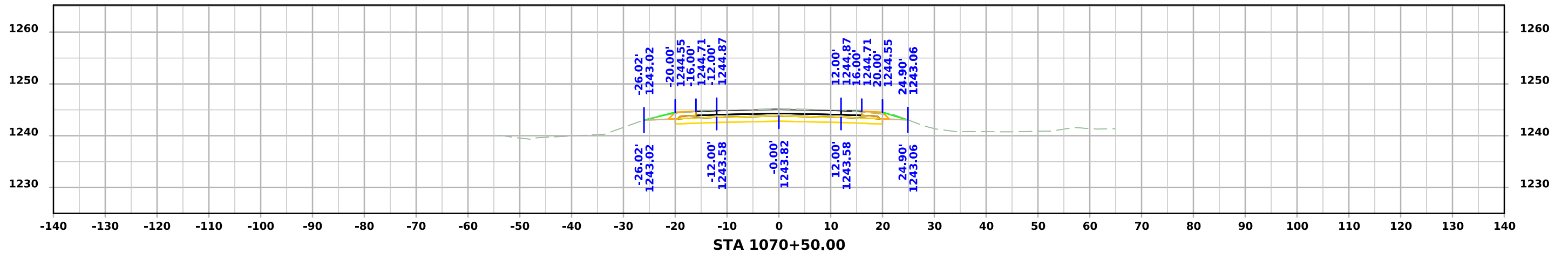
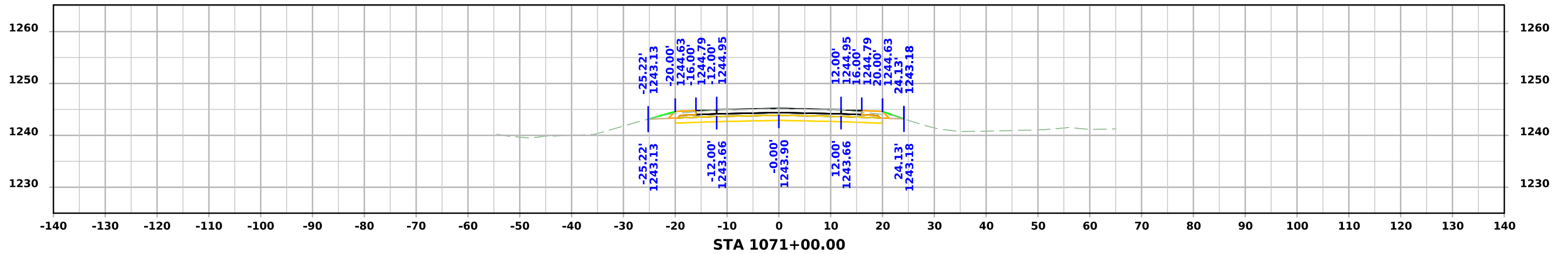
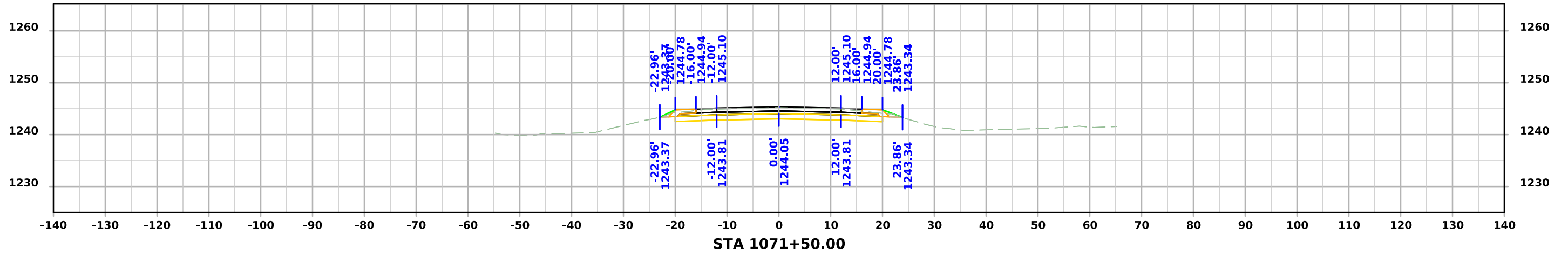
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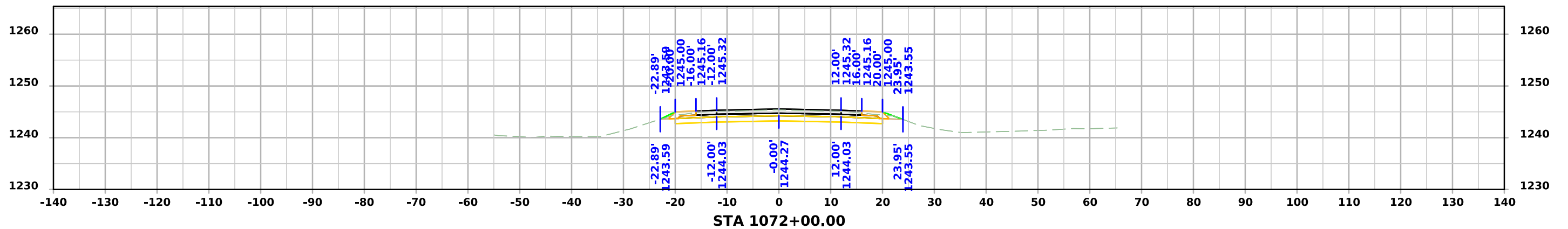
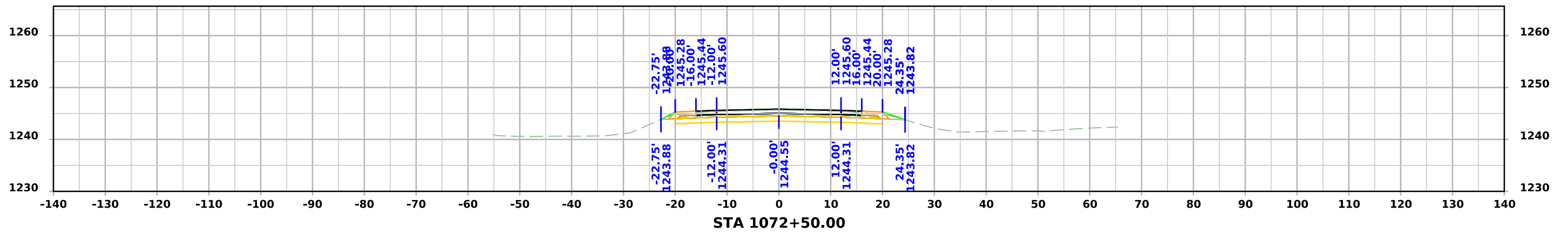
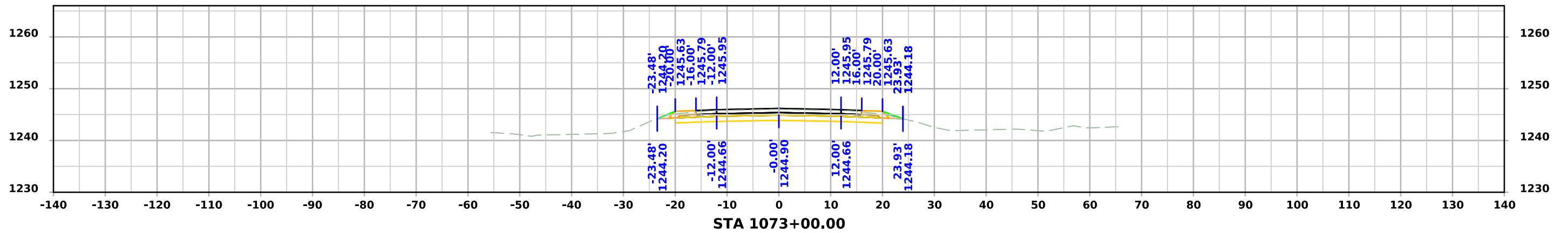
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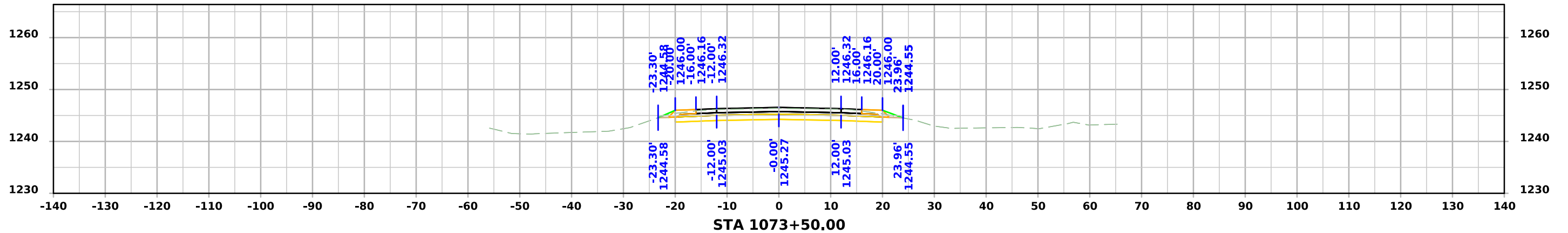
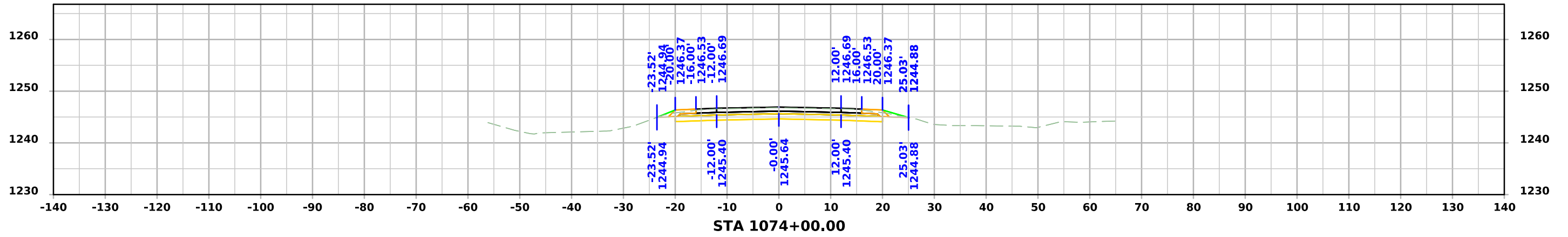
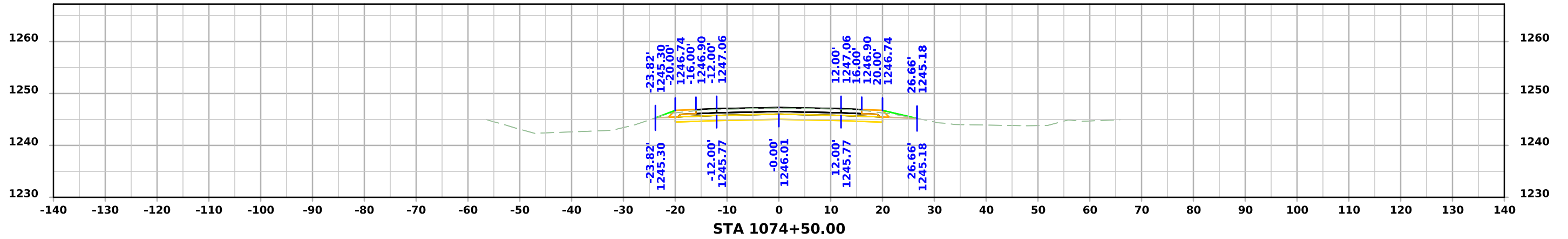
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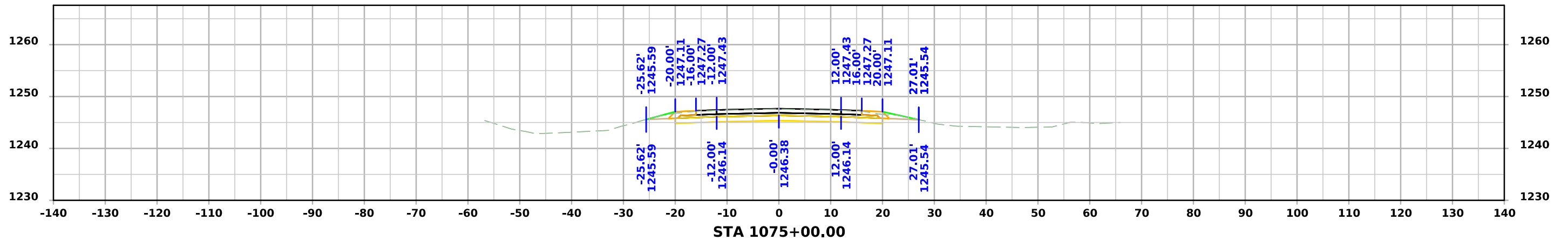
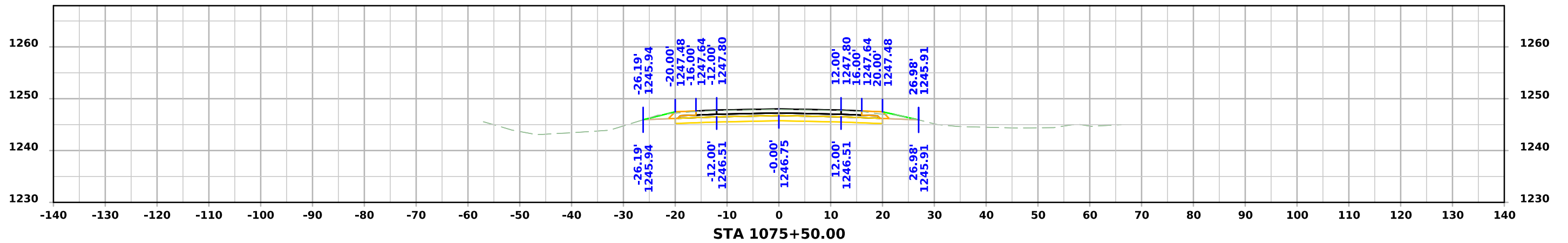
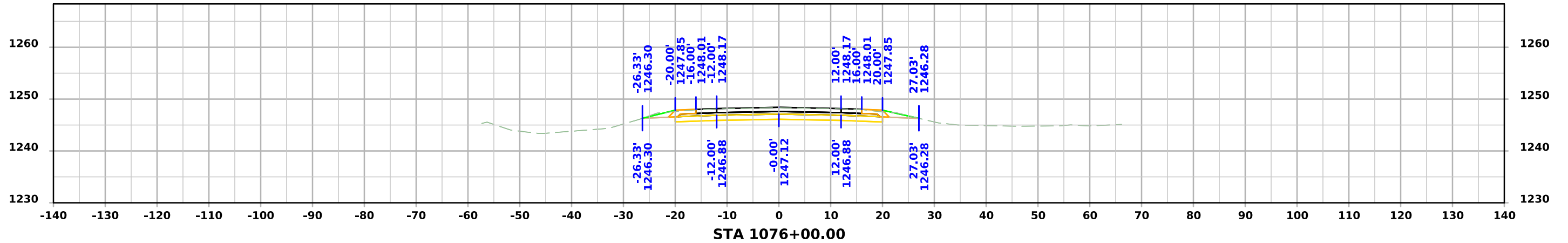
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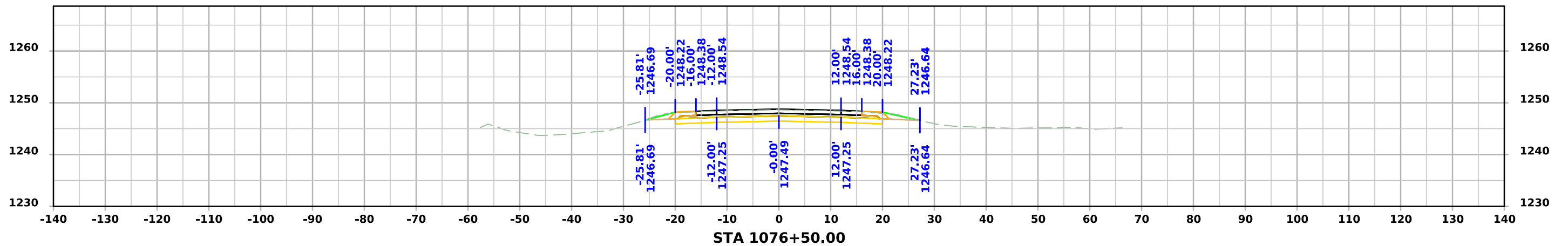
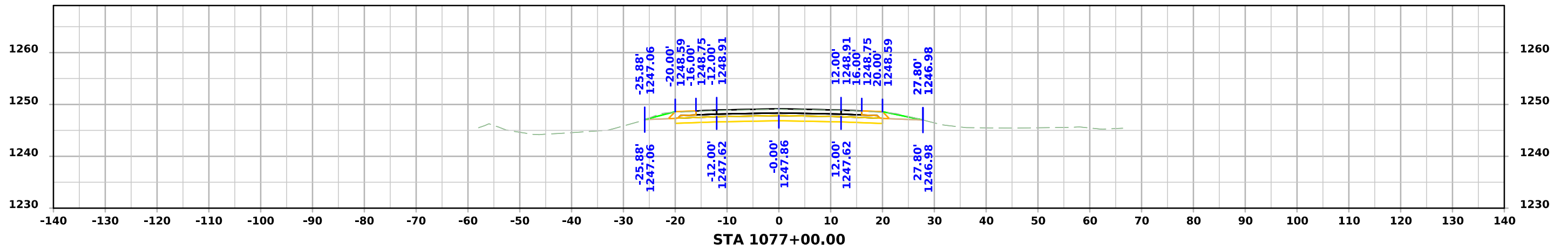
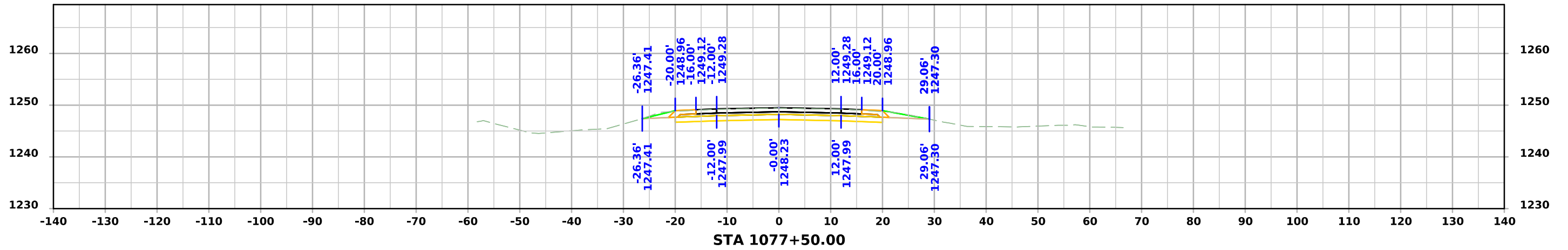
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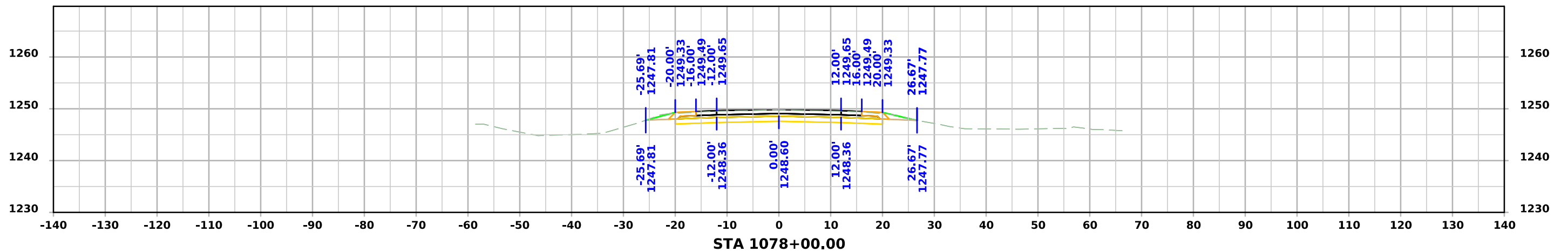
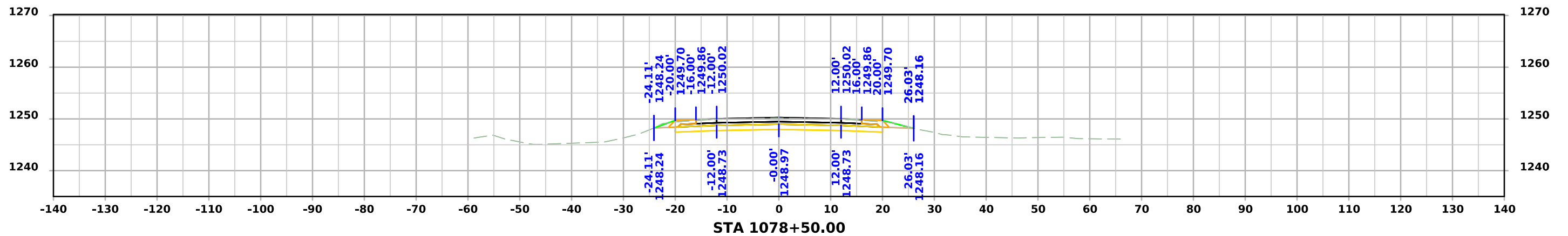
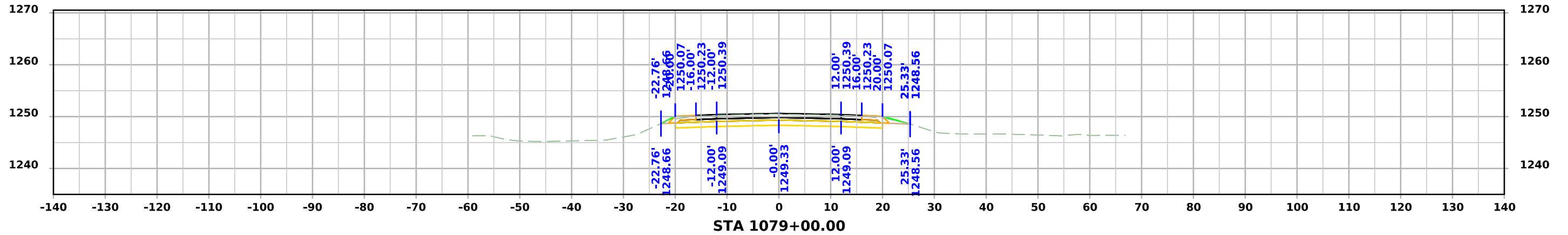
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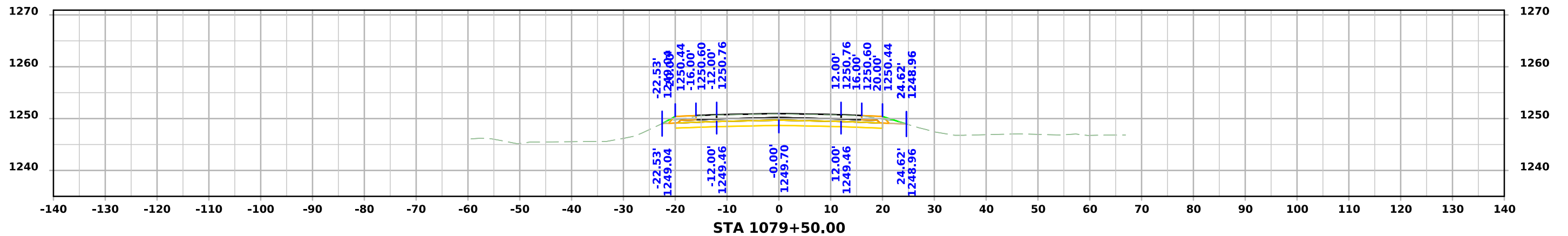
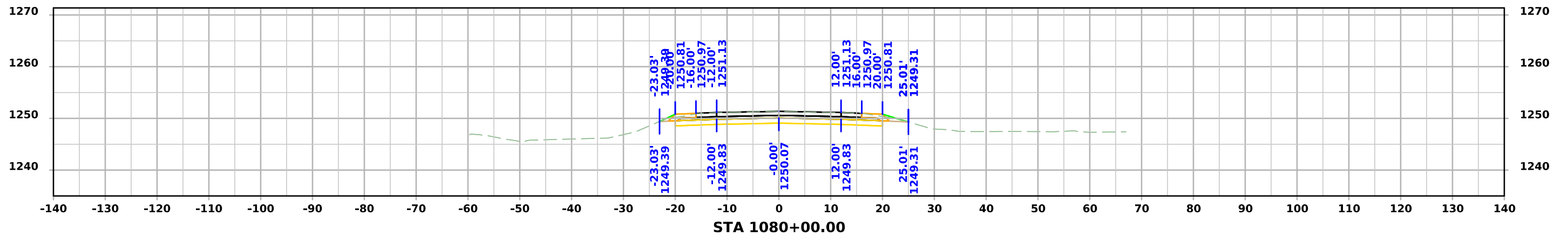
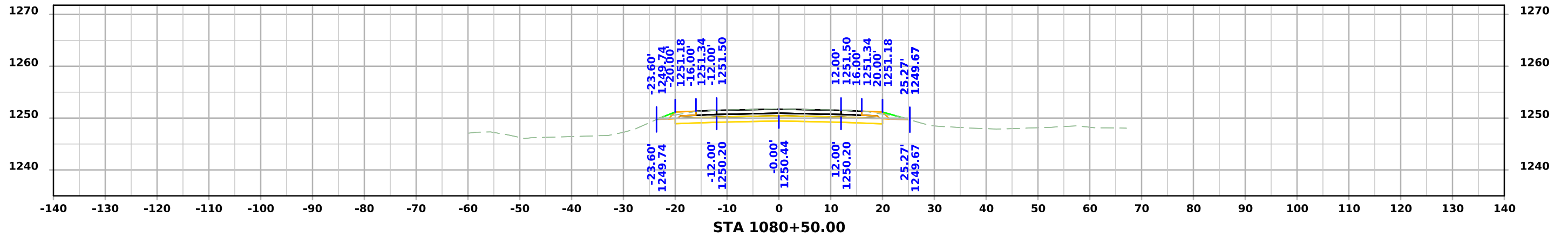
# ML - US071



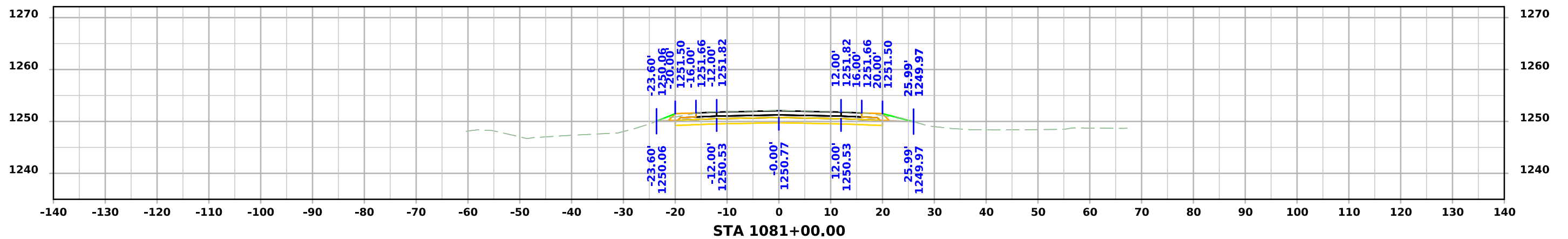
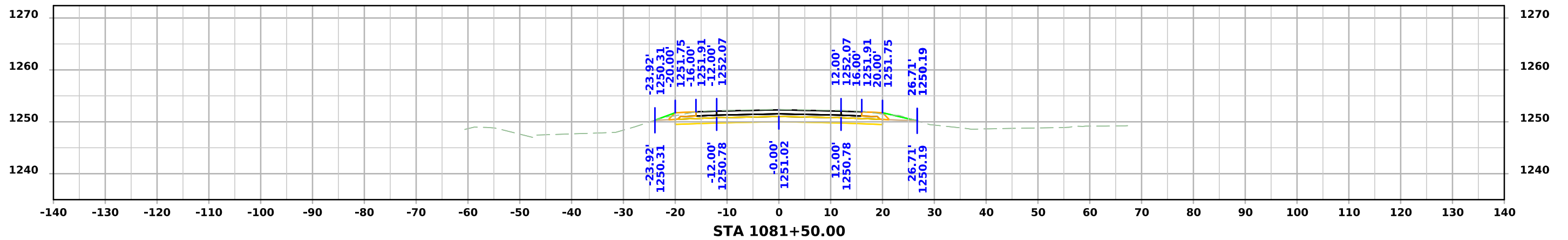
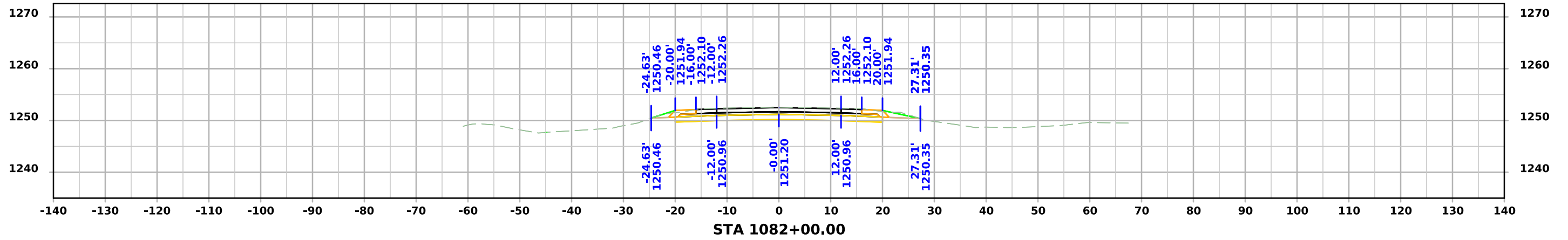
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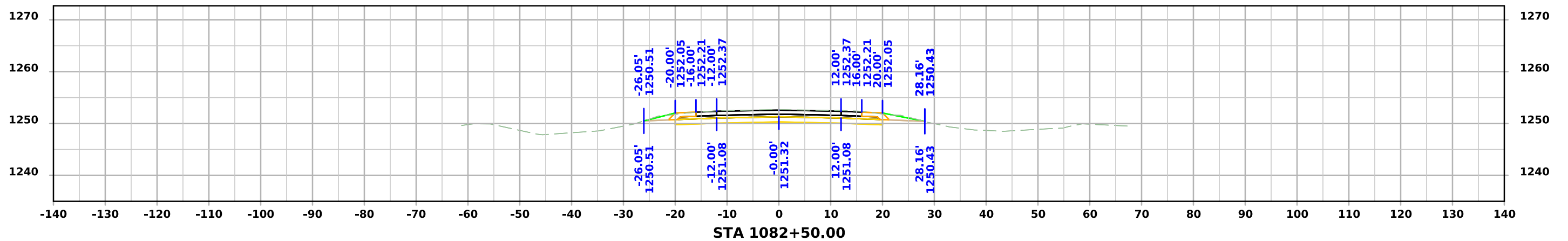
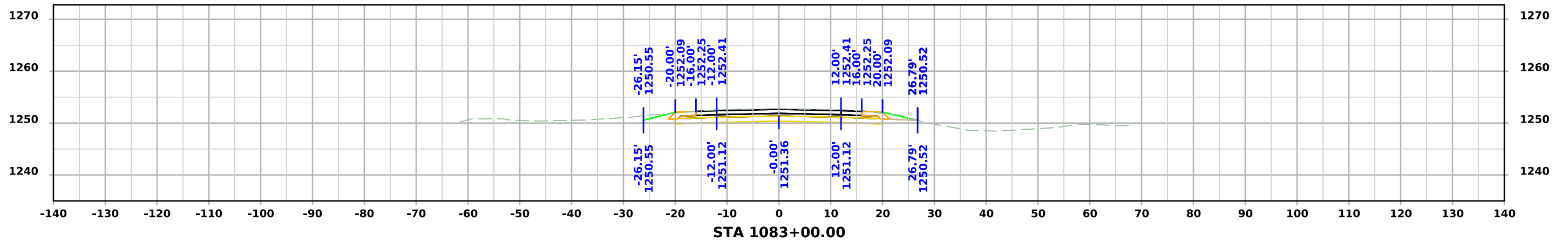
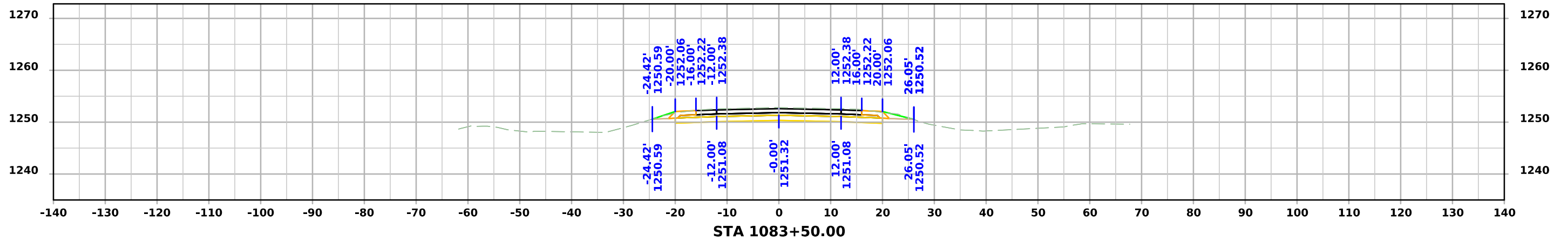
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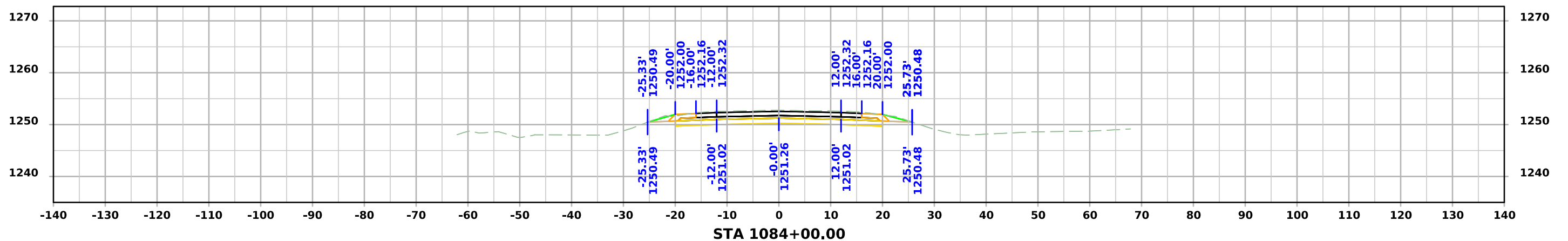
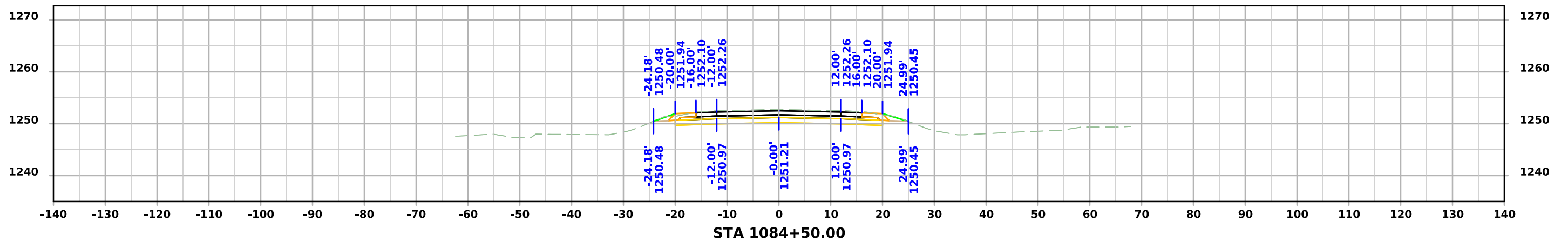
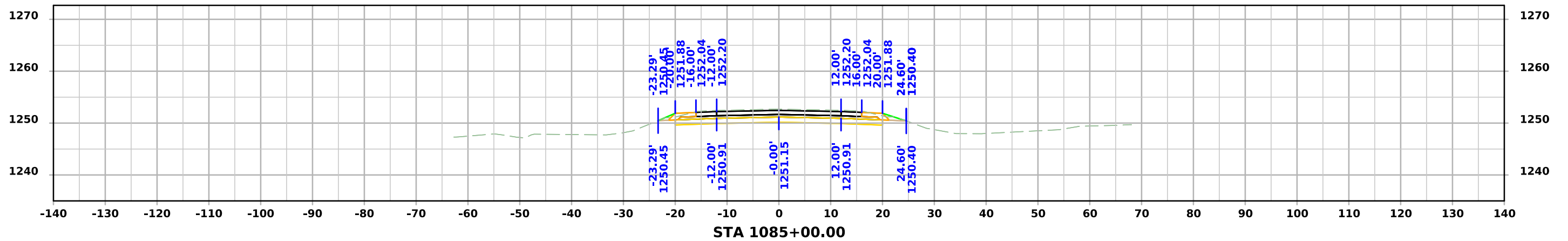
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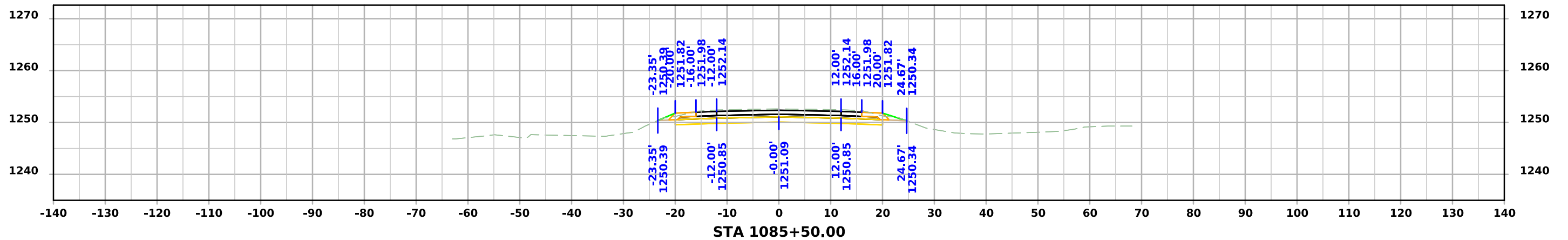
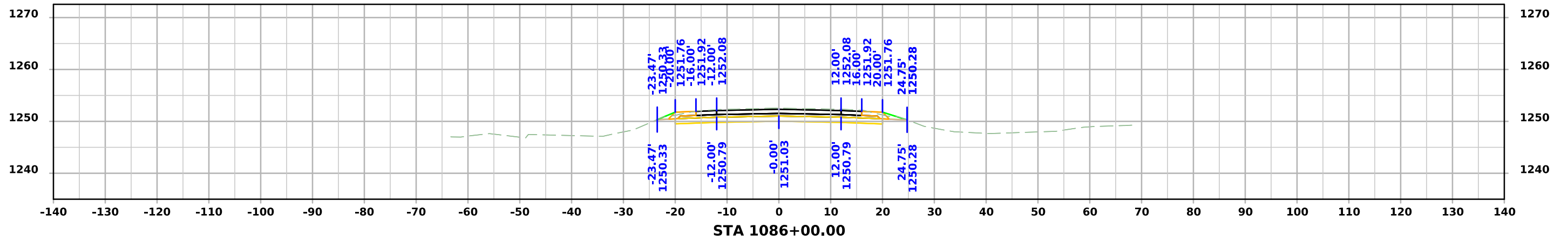
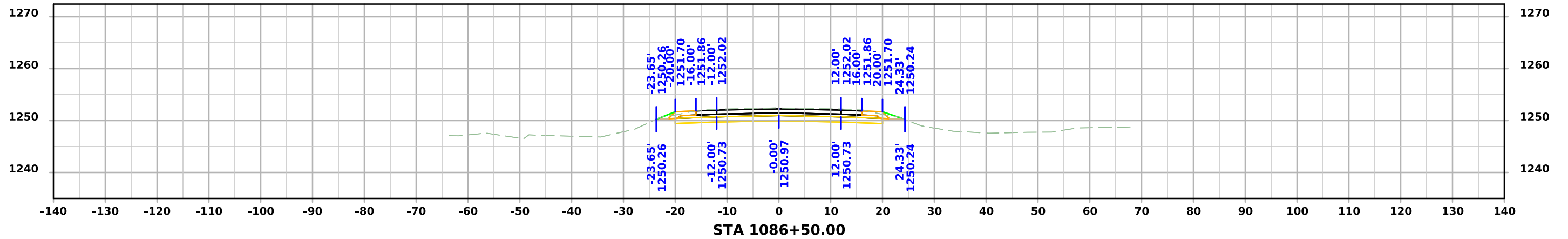
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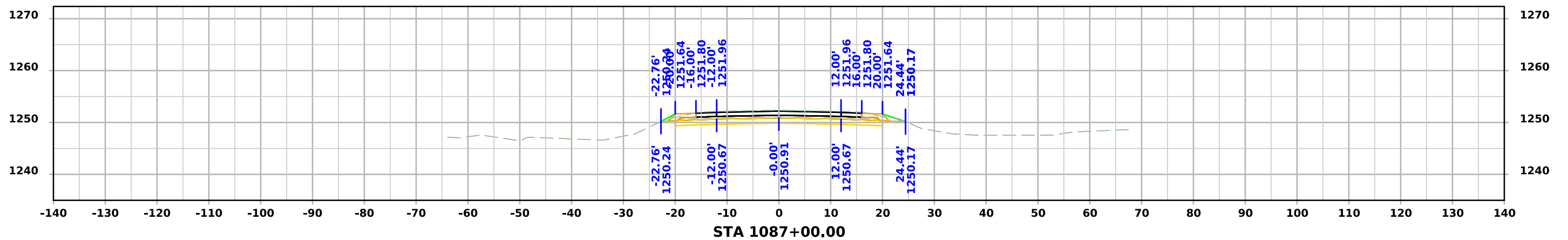
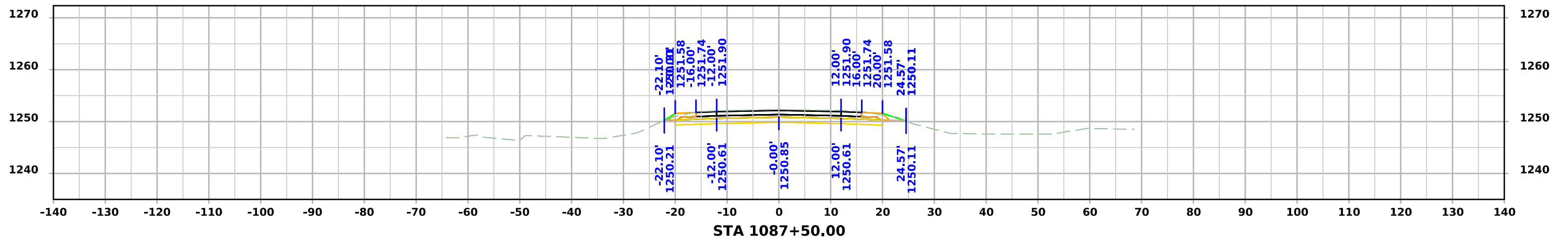
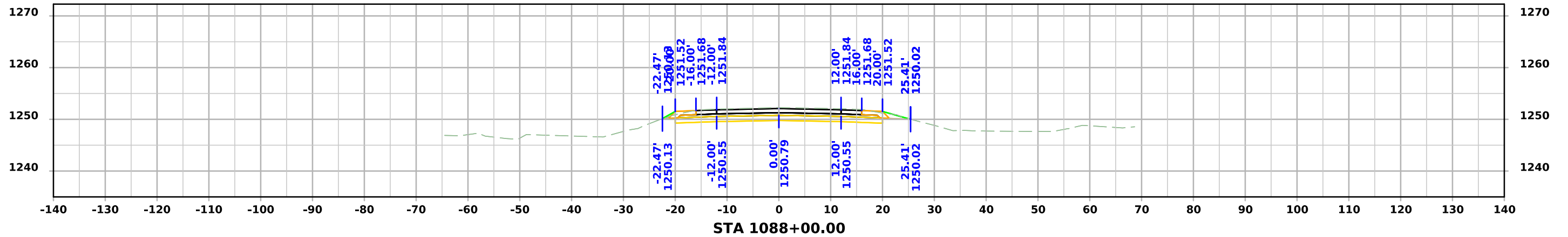
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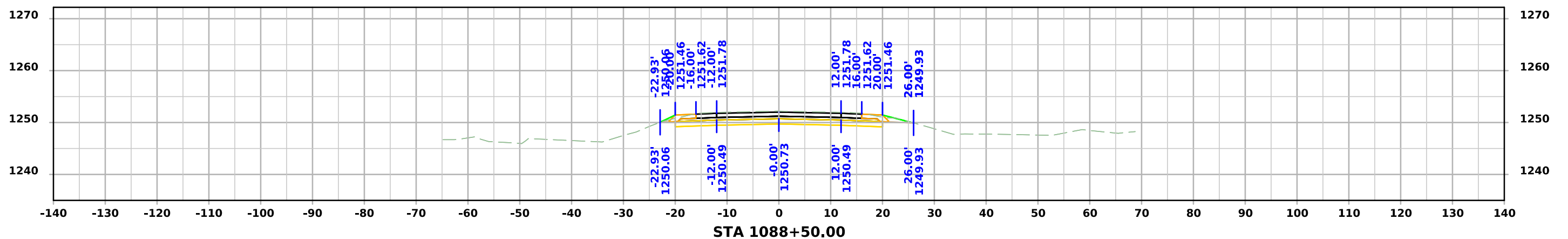
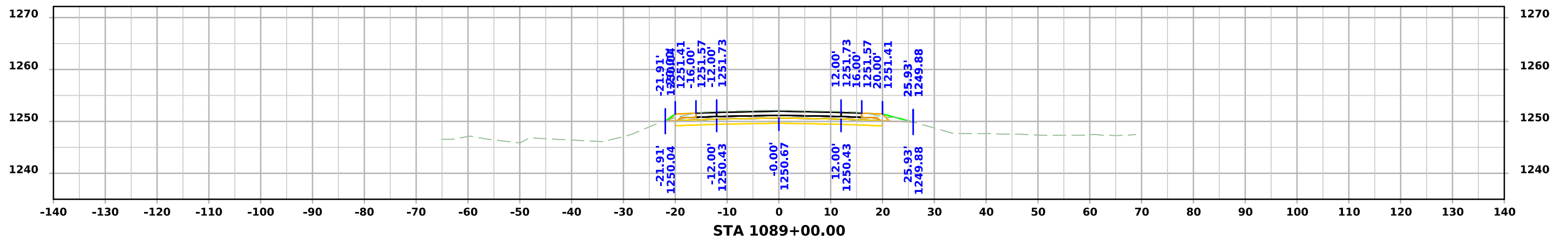
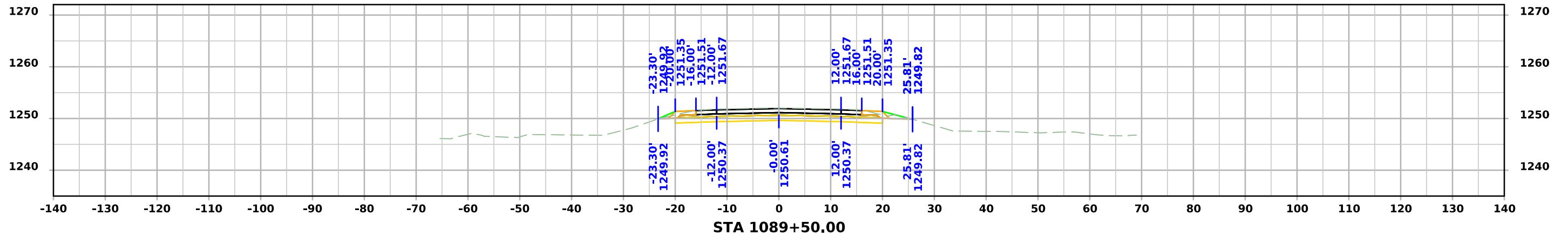
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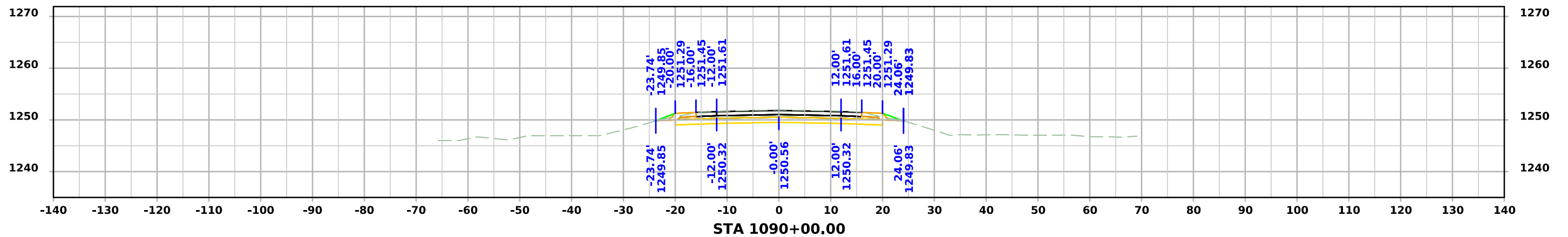
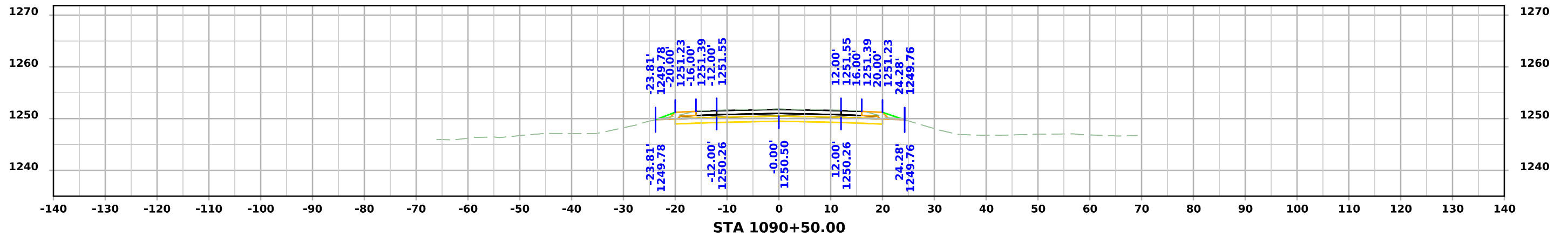
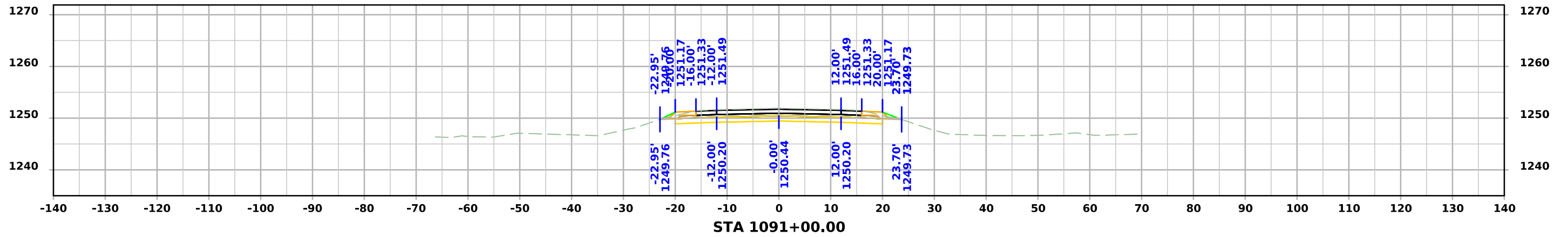
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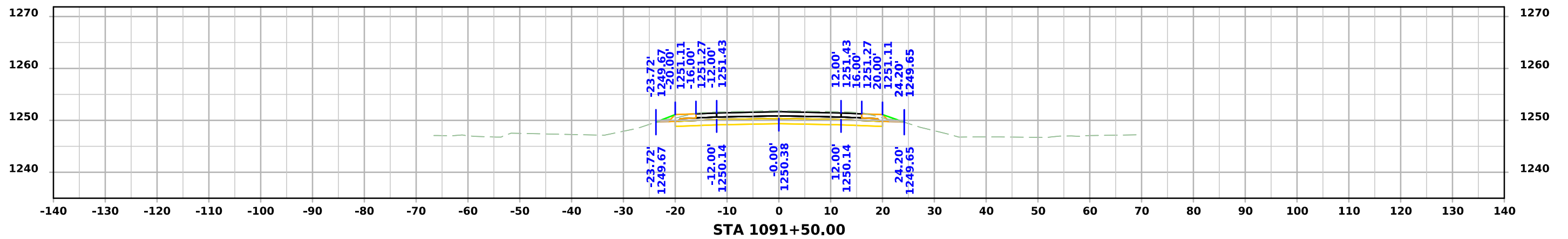
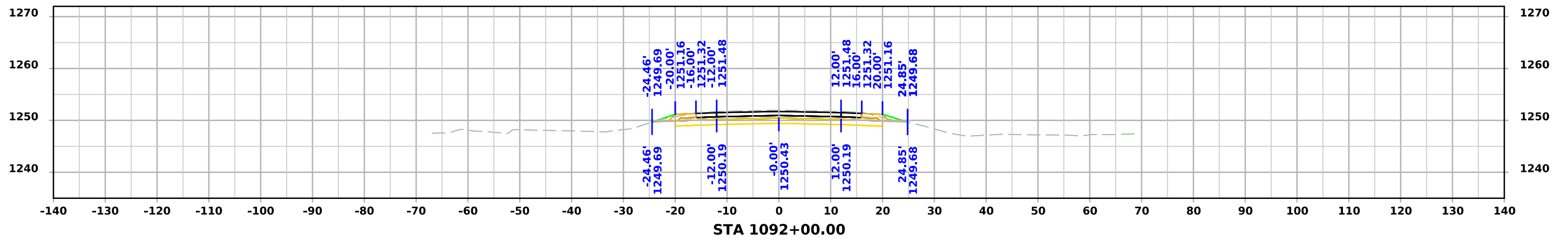
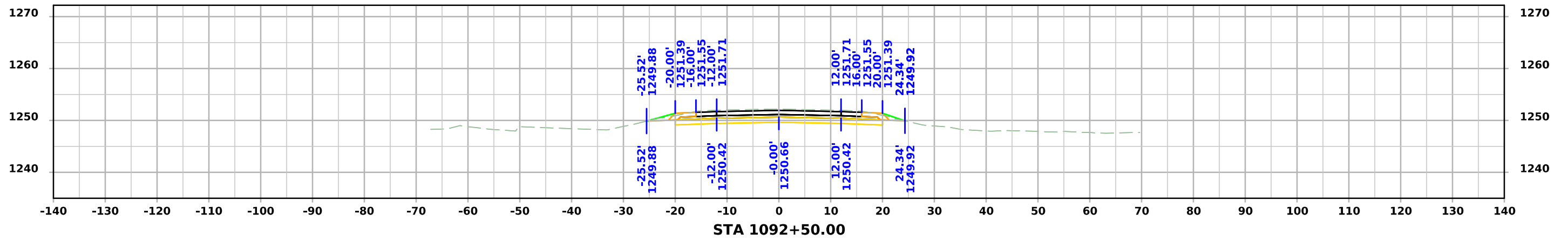
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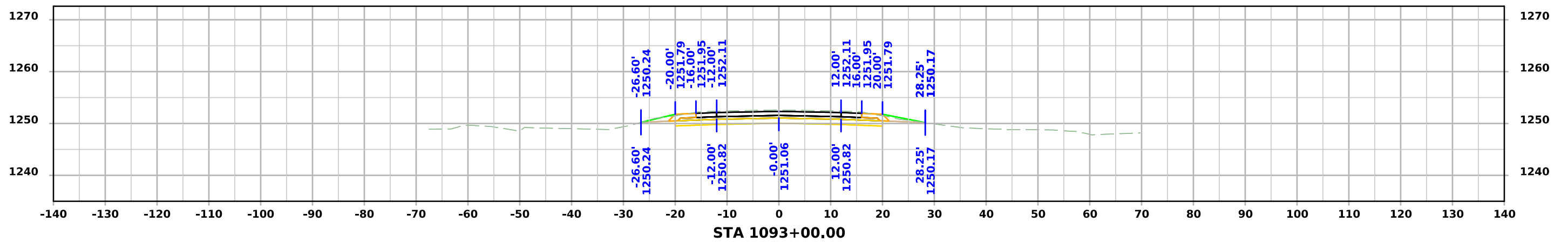
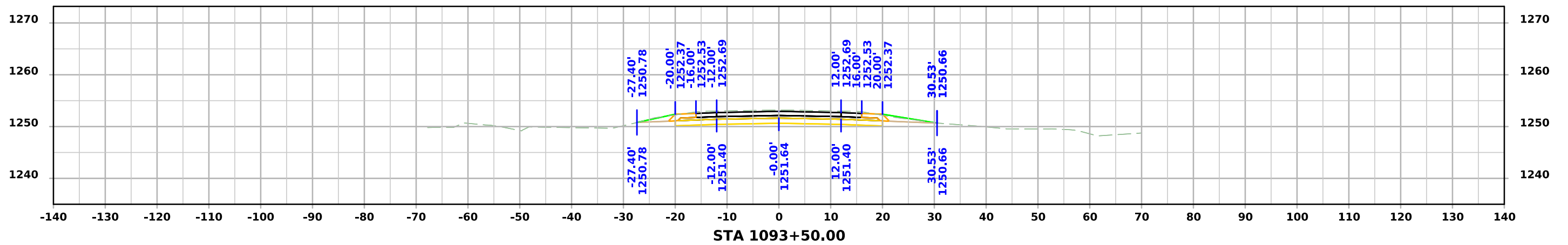
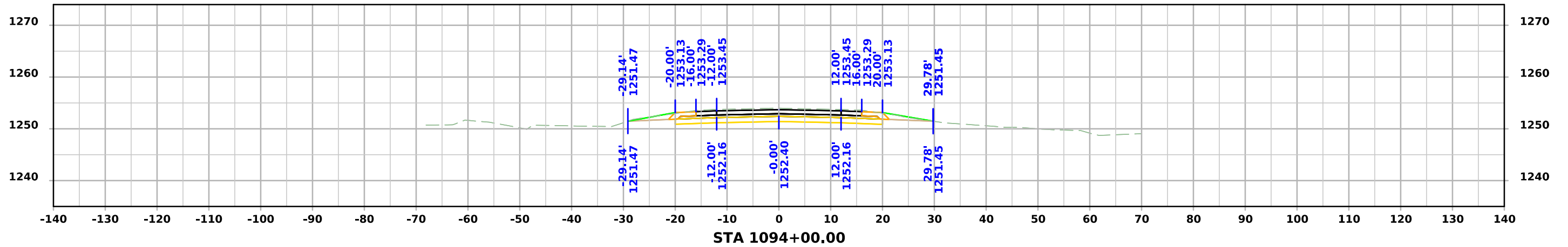
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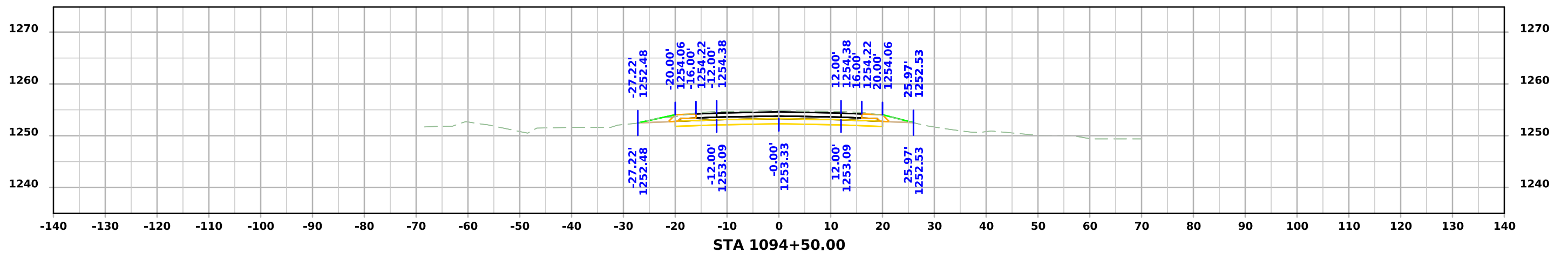
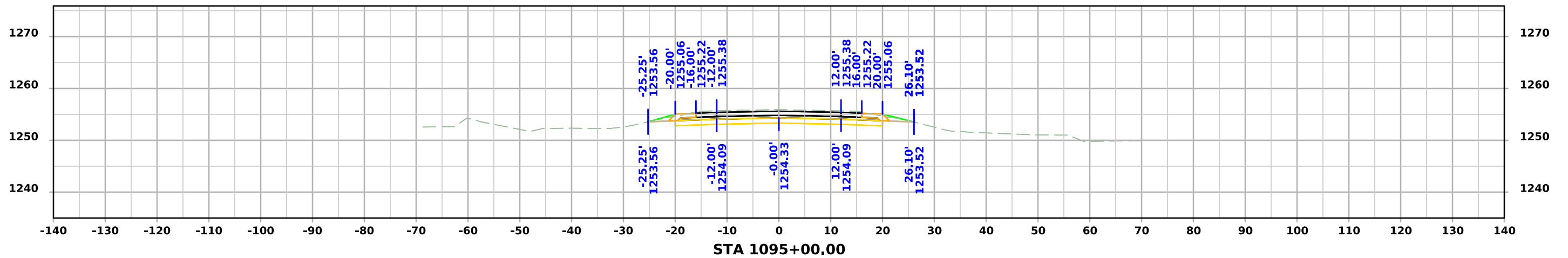
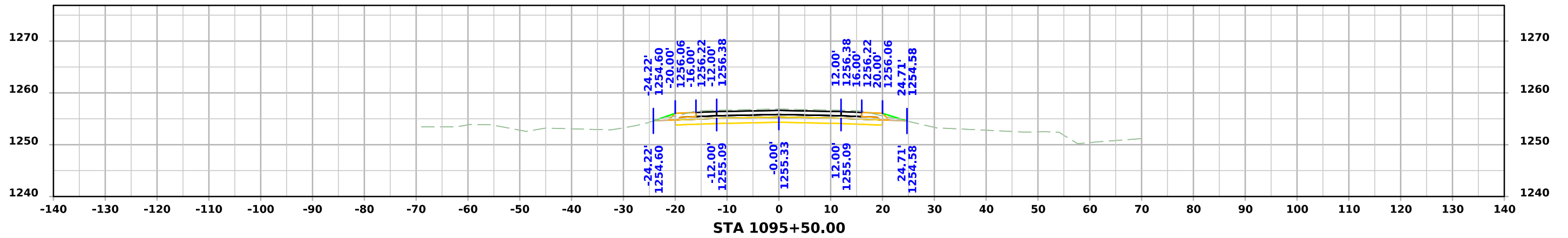
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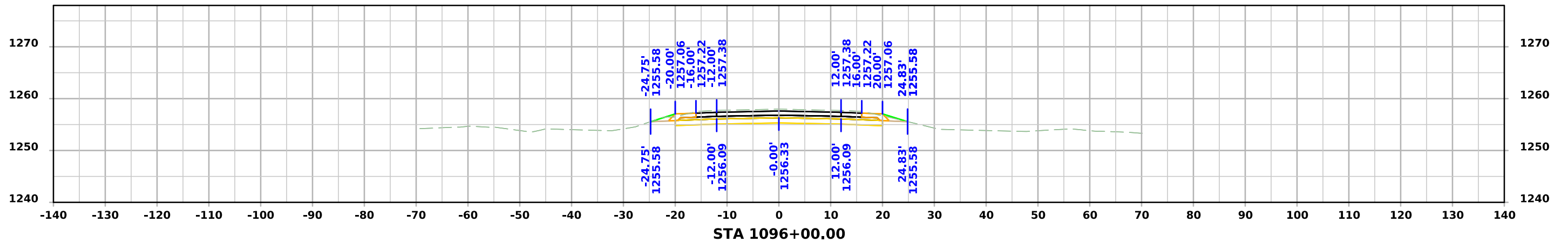
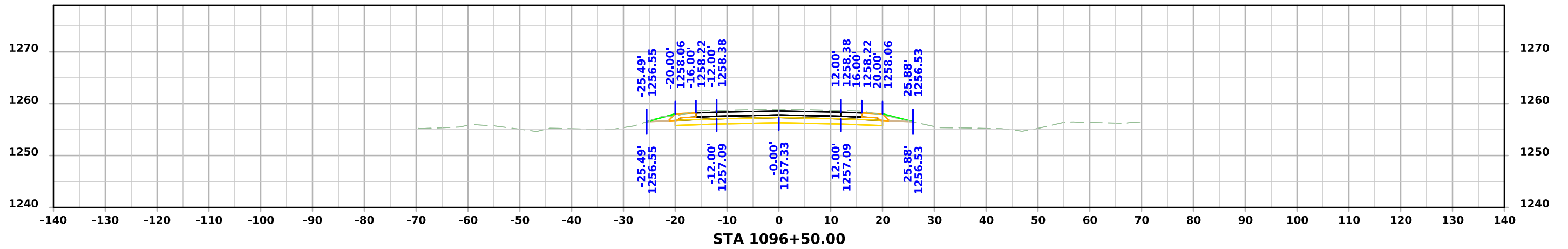
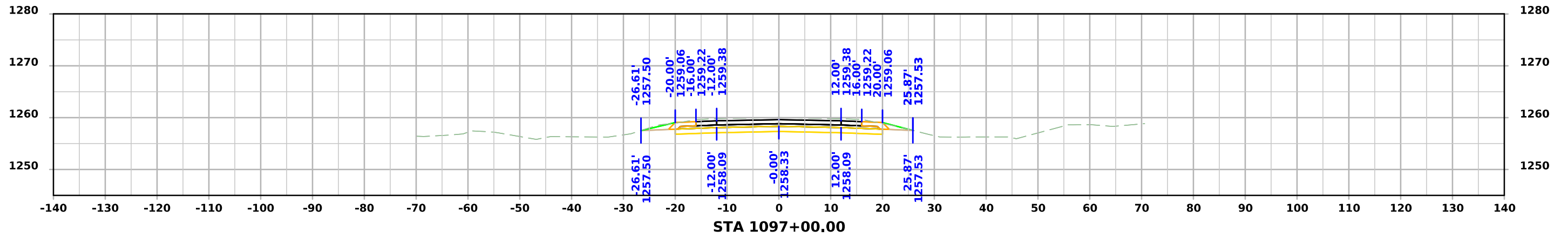
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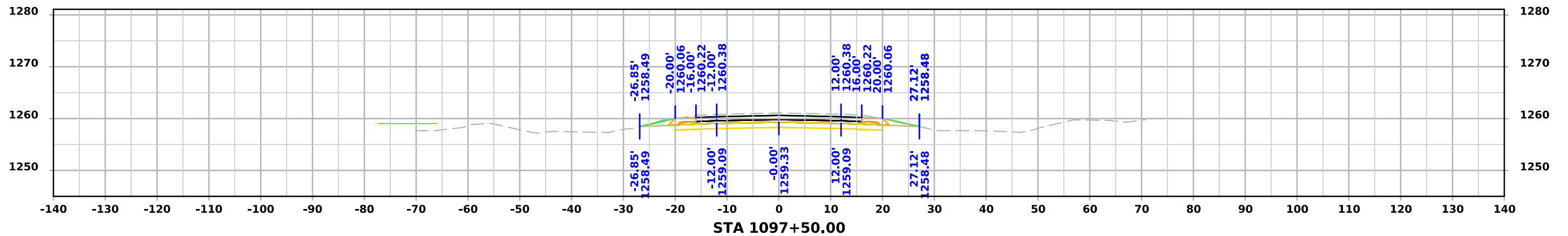
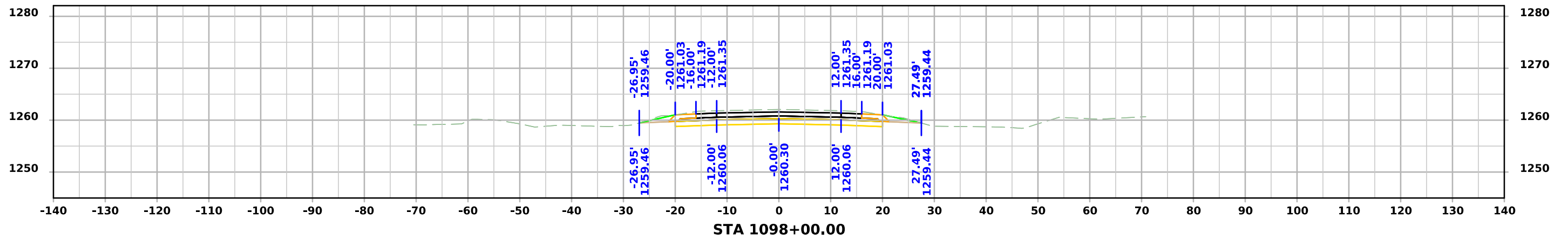
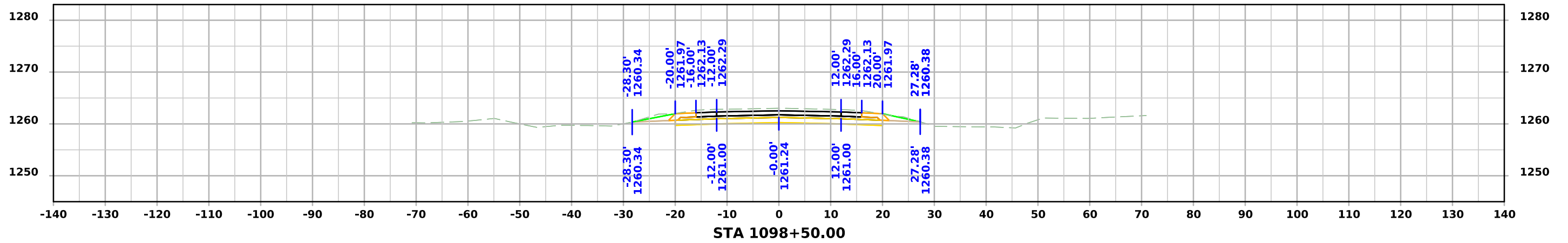
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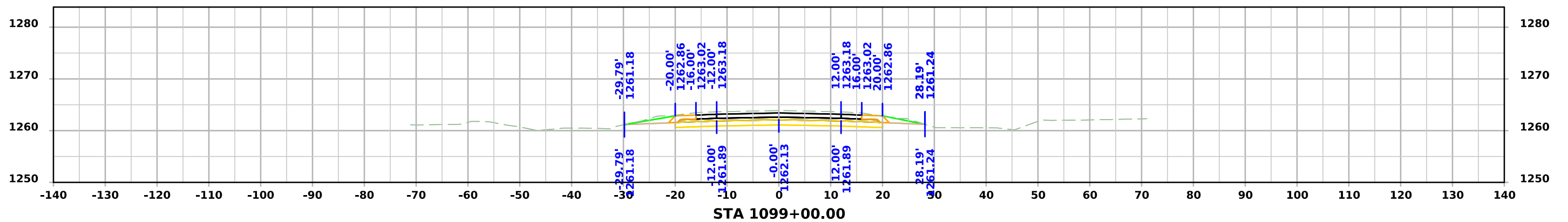
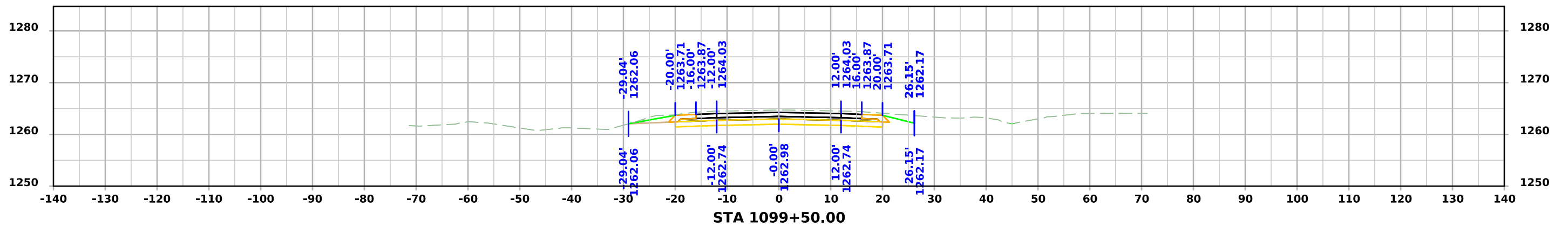
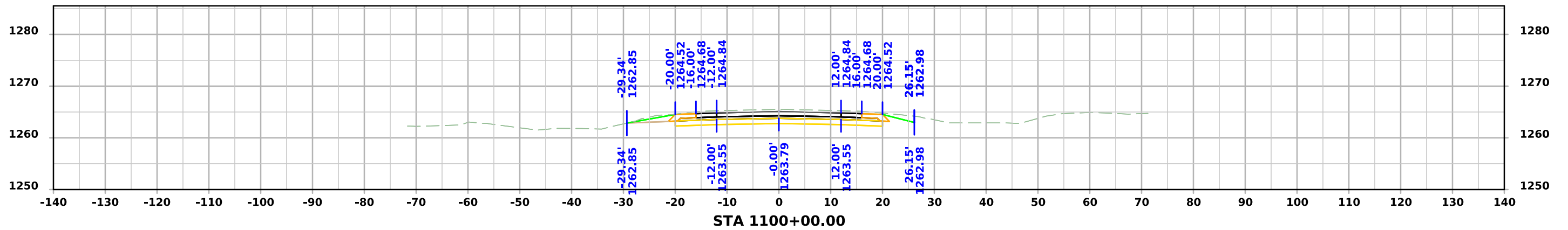
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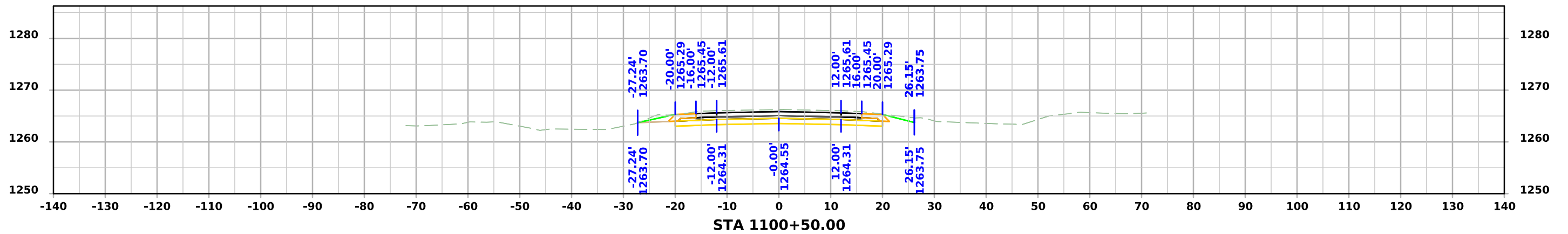
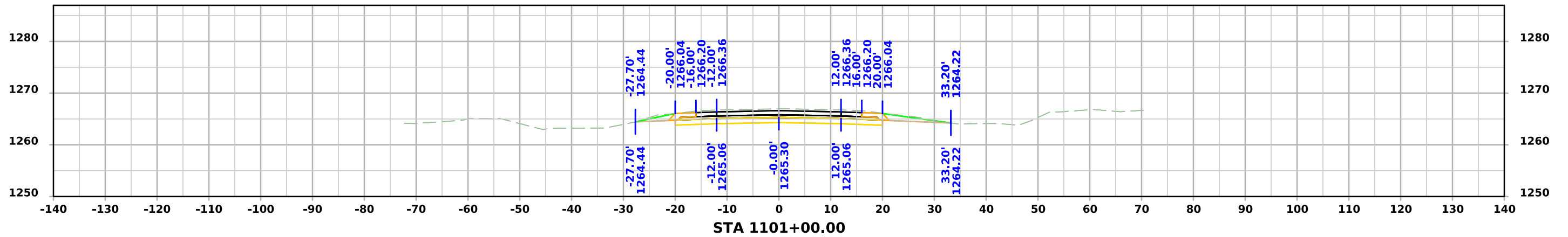
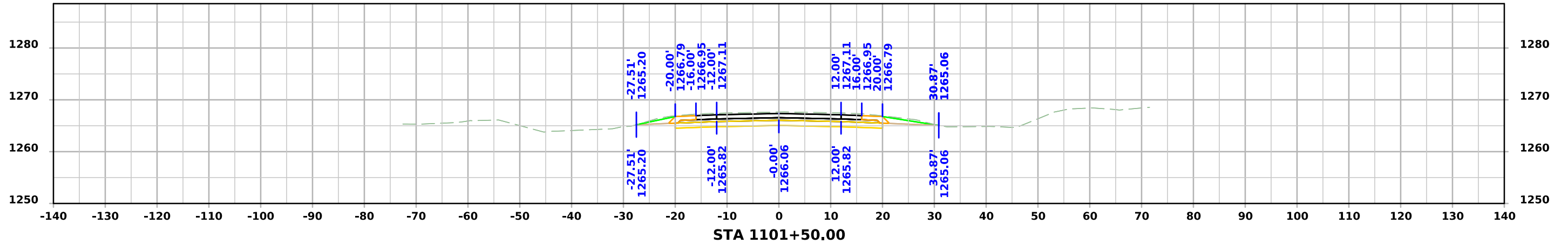
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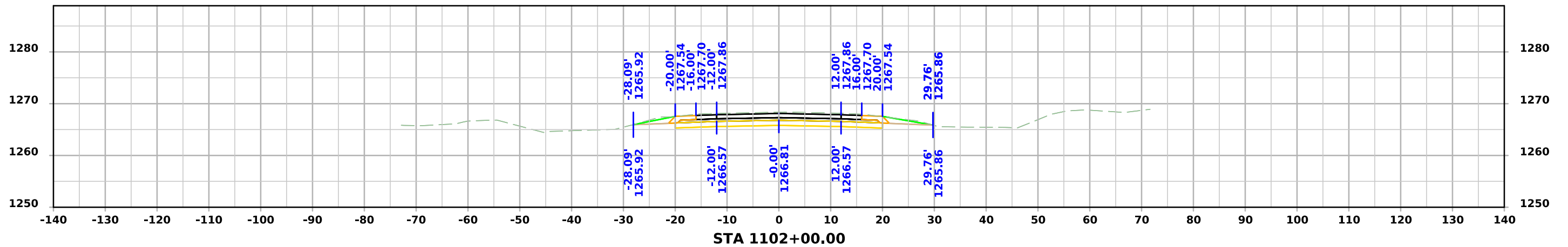
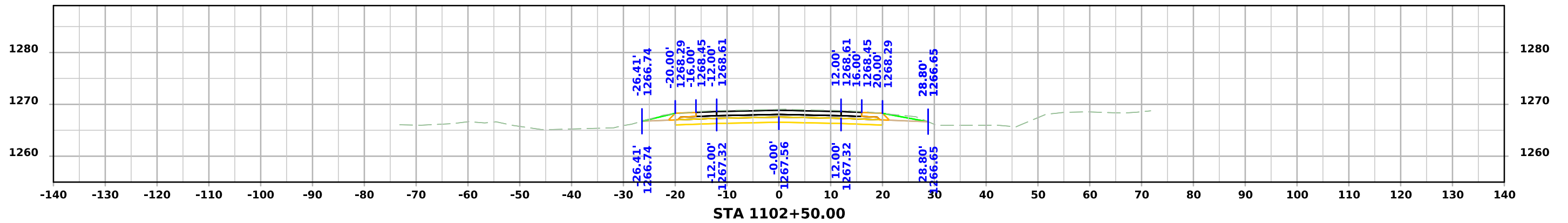
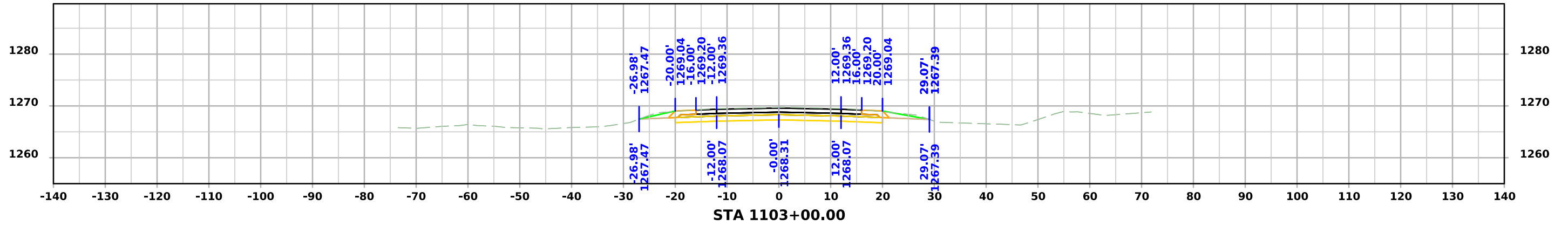
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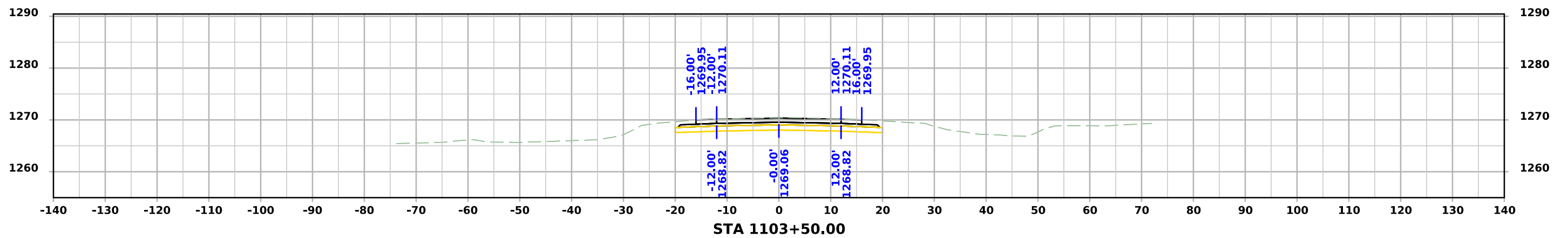
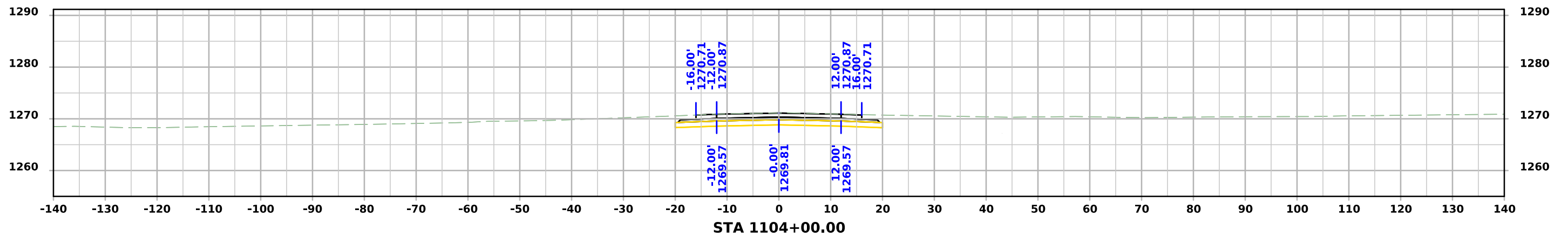
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# ML - US071



# ML - US071



# ML - US071

