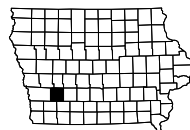


Cass COUNTY

PCC Pavement - Grade and Replace  
IMN-080-1(495)53--0E-15

LETTING DATE  
1/17/2024



PLANS OF PROPOSED IMPROVEMENT ON THE  
PRIMARY ROAD SYSTEM  
**Cass COUNTY**  
PCC Pavement - Grade and Replace  
570th St 2.0 mi W of IA 173

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

51

PROJECT IDENTIFICATION NUMBER

18-15-080-020

PROJECT NUMBER

IMN-080-1(495)53--0E-15

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
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 3	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	I-80
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1	570th St North Cul-de-sac
* E.2	570th St South Cul-de-sac
<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
<b>U Sheets</b>	<b>500 Series, Mod.Stds. and Detail Sheets</b>
U.1 - 10	Ditch Cross Sections
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 15	Mainline Cross Sections
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1 - 12	Side Road Cross Sections
	* Color Plan Sheets

INDEX OF SEALS

	X	
X	X	X

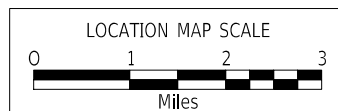
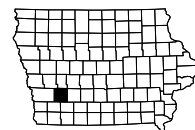
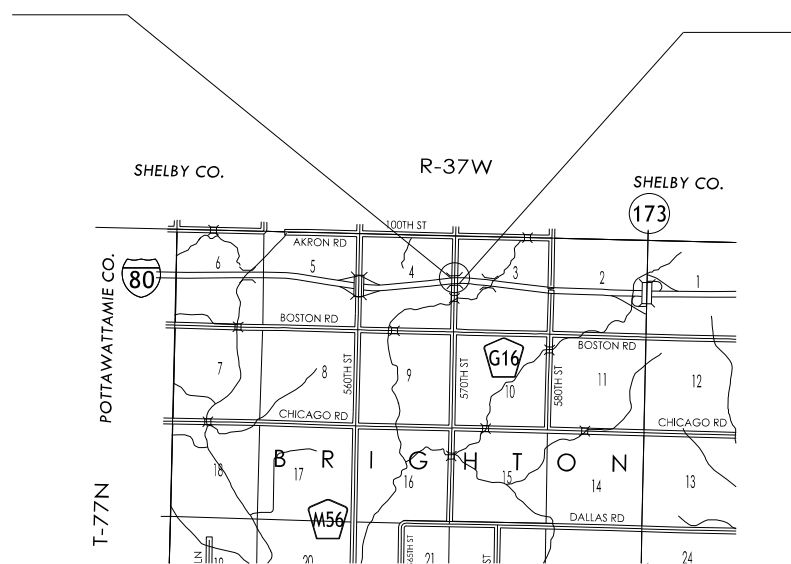
PRELIMINARY PLANS

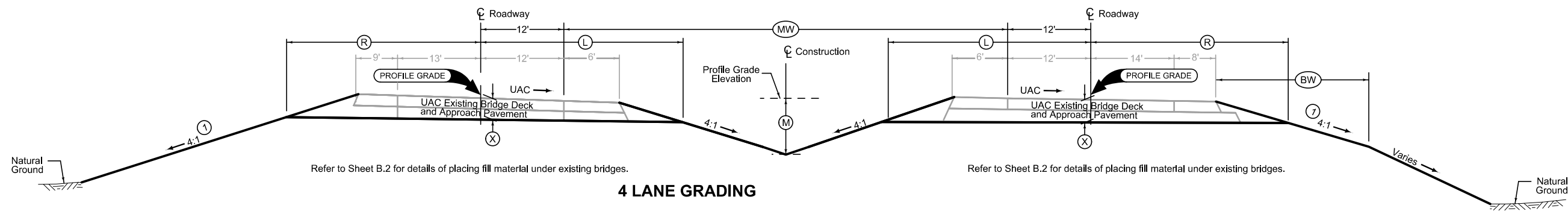
Subject to change by final design.

D5 PLAN - Date: 8/17/2022

I-80 EB Over 570th St.  
 FHWA 17980  
 Maint. # 1552.6R080

I-80 WB Over 570th St.  
 FHWA 17990  
 Maint. # 1552.6L080

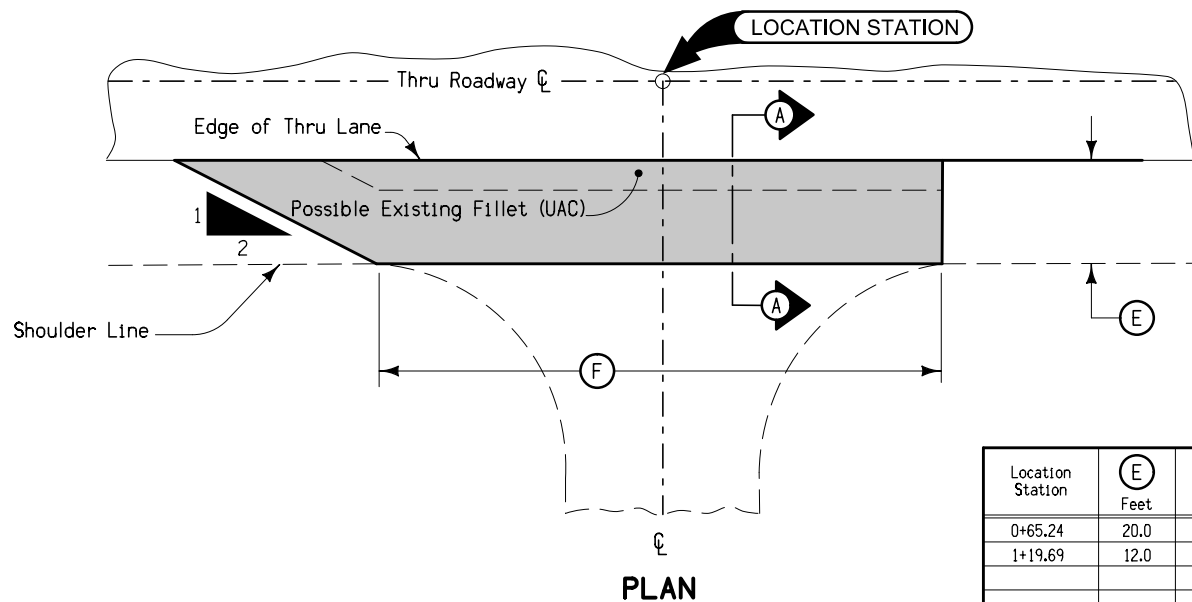




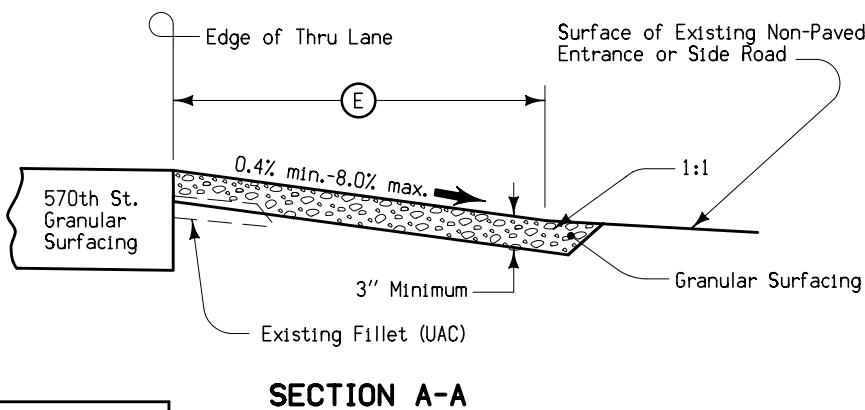
**4 LANE GRADING**

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	
I-80	152+76.65 - 155+46.36	31.6	35.6	UAC	33	50	Varies	

① Note that proposed foreslopes are to match existing adjacent foreslopes which vary due to bridge berms. Given slopes are based on as-builts which may not exactly represent field conditions.  
See Plan sheets and cross sections for additional details.

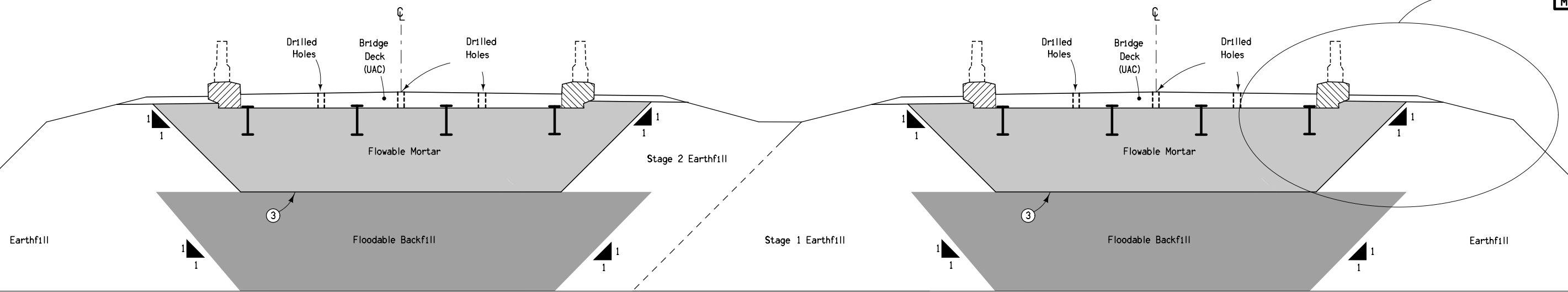


Location Station	E Feet	F Feet	Notes
0+65.24	20.0	42.5	570th St. South of I-80
1+19.69	12.0	22	570th St. North of I-80



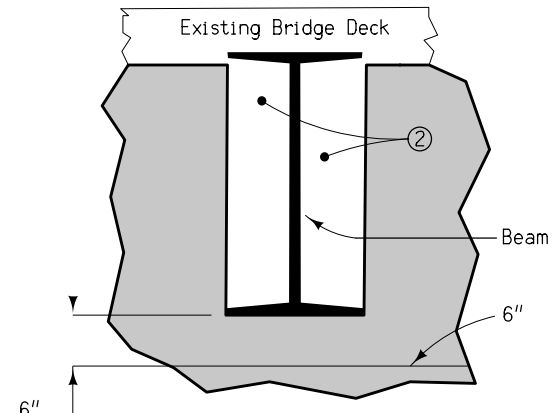
Special shaping of existing surface prior to placement of fillet may be required by the Engineer and is incidental to other work on the project.  
Quantities included with mainline quantities.

**FILLET FOR NON-PAVED ENTRANCES OR SIDE ROADS**

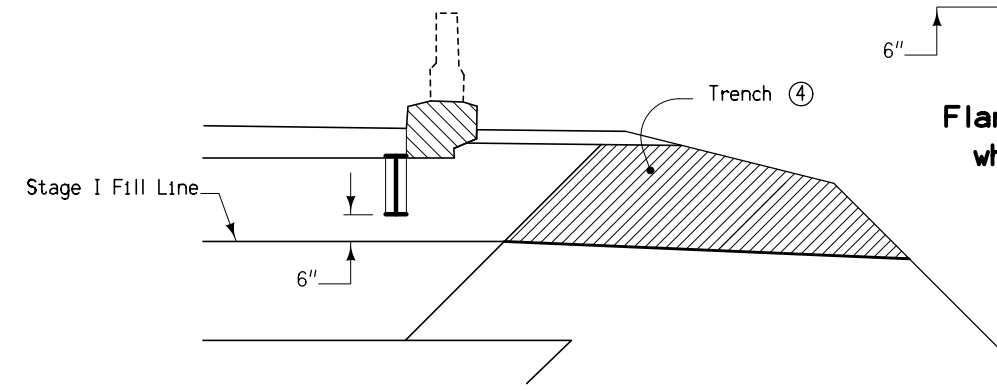


**Stage 1**  
-Complete grading, barrier and guardrail removals, and shoulder work on either WB or EB direction as shown in typical.

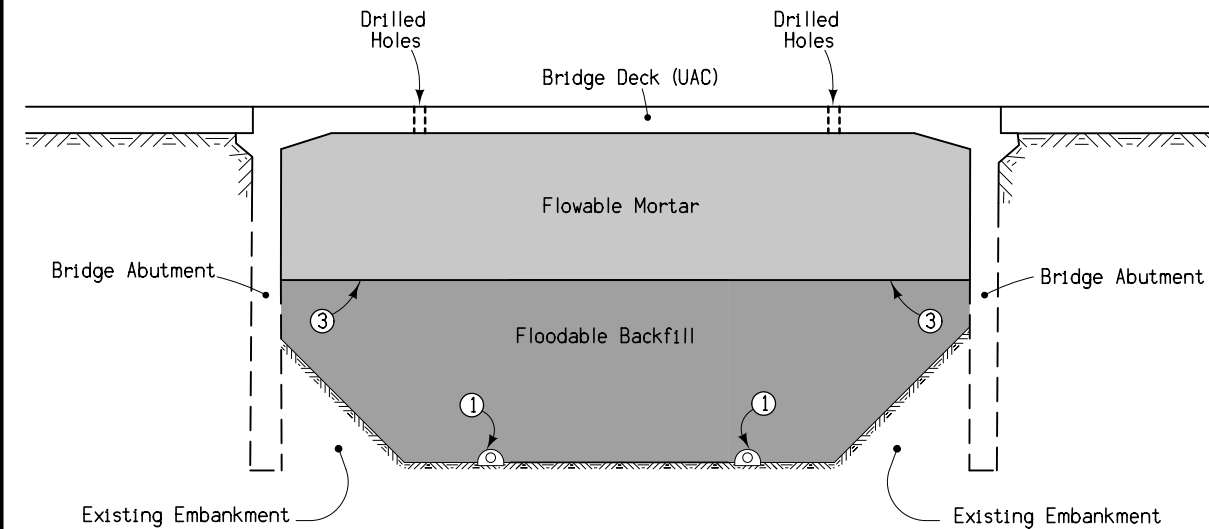
**Stage 2**  
-Complete grading, barrier and guardrail removals, and shoulder work on other direction. The earthfill in median area denoted by the dashed pattern in the typical will be reused from Stage 1.



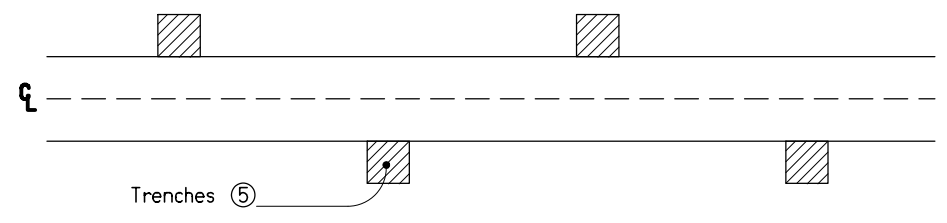
**Detail A**  
Flange Filler Material Area when beams are present



**Detail B (Beam Bridge)**



**Section along Centerline**

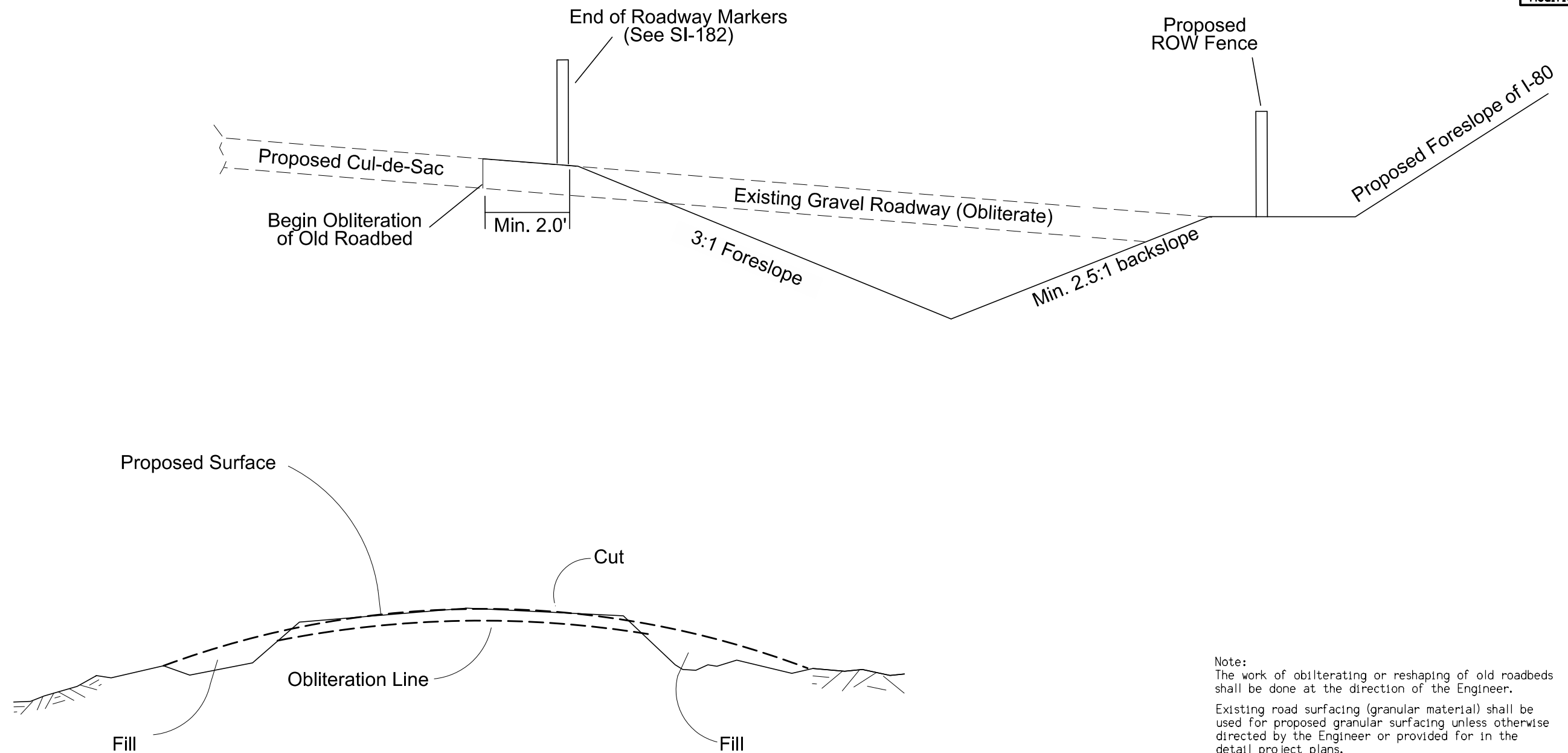


**Trench Layout**

Denotes pay limits for flowable mortar  
Denotes pay limits for flooded backfill

- ① 4" Subdrain at flowline elevation of culvert with 4" cover of porous backfill.
- ② Place Flange Filler Material to fill pocket area between flanges to prevent flowable mortar from building up. Flange Filler Material is incidental to flowable mortar.
- ③ Fill void with the maximum amount of Floodable Backfill possible. Distance from Floodable Backfill to bridge beams (when present) or bridge deck shall not exceed 5'.
- ④ Cut trenches in the soil plug to provide drainage for the flowable mortar. Backfill the trenches with open graded crushed stone, gravel, or recycled PCC to allow water to drain. Backfill material is incidental to flowable mortar.
- ⑤ Place trenches at 20' spacing with a minimum of two trenches on each side of the roadway.

**FILL USED IN BRIDGE REPLACEMENTS**



570th St.  
Obliteration Typical

Note:  
The work of obliterating or reshaping of old roadbeds shall be done at the direction of the Engineer.  
Existing road surfacing (granular material) shall be used for proposed granular surfacing unless otherwise directed by the Engineer or provided for in the detail project plans.  
The upper 4" to be Topsoil Material  
The Contractor shall take care to ensure utilities are not disturbed.  
Expected excavation of roadbed removal is 12".  
In order to maintain drainage, 12" should be the minimum depth of excavation.  
All work between end of proposed surface of cul-de-sac and proposed I-80 foreslope will be part of obliteration of roadbed.  
Note that the South Cul-de-sac does not require ditching, but roadbed should remain at 3% from crown of existing roadway or as otherwise requested by the Engineer.

TYPICAL DETAIL FOR OBLITERATION OF ROADBED FOR CUL-DE-SAC

### SURVEY SYMBOLS

- BM Bench Mark
- WC Wild Card (Misc. Field Shot)
- SNP Unpaved Shoulder
- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- BL Topo Breakline
- TL1D Telephone Line Co. 1 - Quality D
- D Centerline Draw or Stream (Down)
- BNK Stream Bank
- DU Centerline Draw or Stream (Up)
- EL1D Electric Line Co. 1 - Quality D
- EW Edge of Water
- GR Ground Shot
- OUT Tile Outlet
- TIL Tile Line
- RIP Rip-Rap
- CON Concrete or A/C Slab
- CUL Culvert
- PRO Profile Shot
- CP Control Point
- PIP Pipe Culvert
- TDC Tree Deciduous
- TEV Evergreen Tree
- PLG Location of General Photo
- SOP Size of Pipe or Culvert
- DAB Drainage Area Boundary

### UTILITY LEGEND

- Iowa Communications Network- Quality D  
Person  
Title  
Address 1  
Address 2  
Phone  
Email
- MidAmerican Energy Company - Quality D  
Person  
Title  
Address 1  
Address 2  
Phone  
Email

### 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.	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

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

### RIGHT-OF-WAY LEGEND

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

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D)

Brighton TWP.  
T-77N R-37W

Sect. No. 4

Sect. No. 3

(UAC)  
Sta. 151+70.0  
Skew 15° LT/AH  
5' x 5' x 226' R.C.B.  
W/8' x 6' Tapered Inlet & Flume  
D.A.=196 A-R

(UAC)  
Sta. 153+09.2, 1.0 Lt.  
24" x 104' RCP W/18" C.M.P.  
on Inlet  
D.A.= Median Only

(UAC)  
Sta. 154+40.6, 190.0' Lt.  
24" x 31' R.C.P.  
D.A.=5 A-R

Begin Proposed Foreslopes  
Sta. 152+76.65

Remove Existing Guardrail

Remove Existing Guardrail

146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00

Remove Existing Guardrail

Begin Proposed Median  
Sta. 153+51.79

End Project  
Sta. 155+46.36

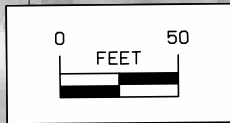
Sta. 153+00.00  
Replace Median Pipe/Guard  
DR-212

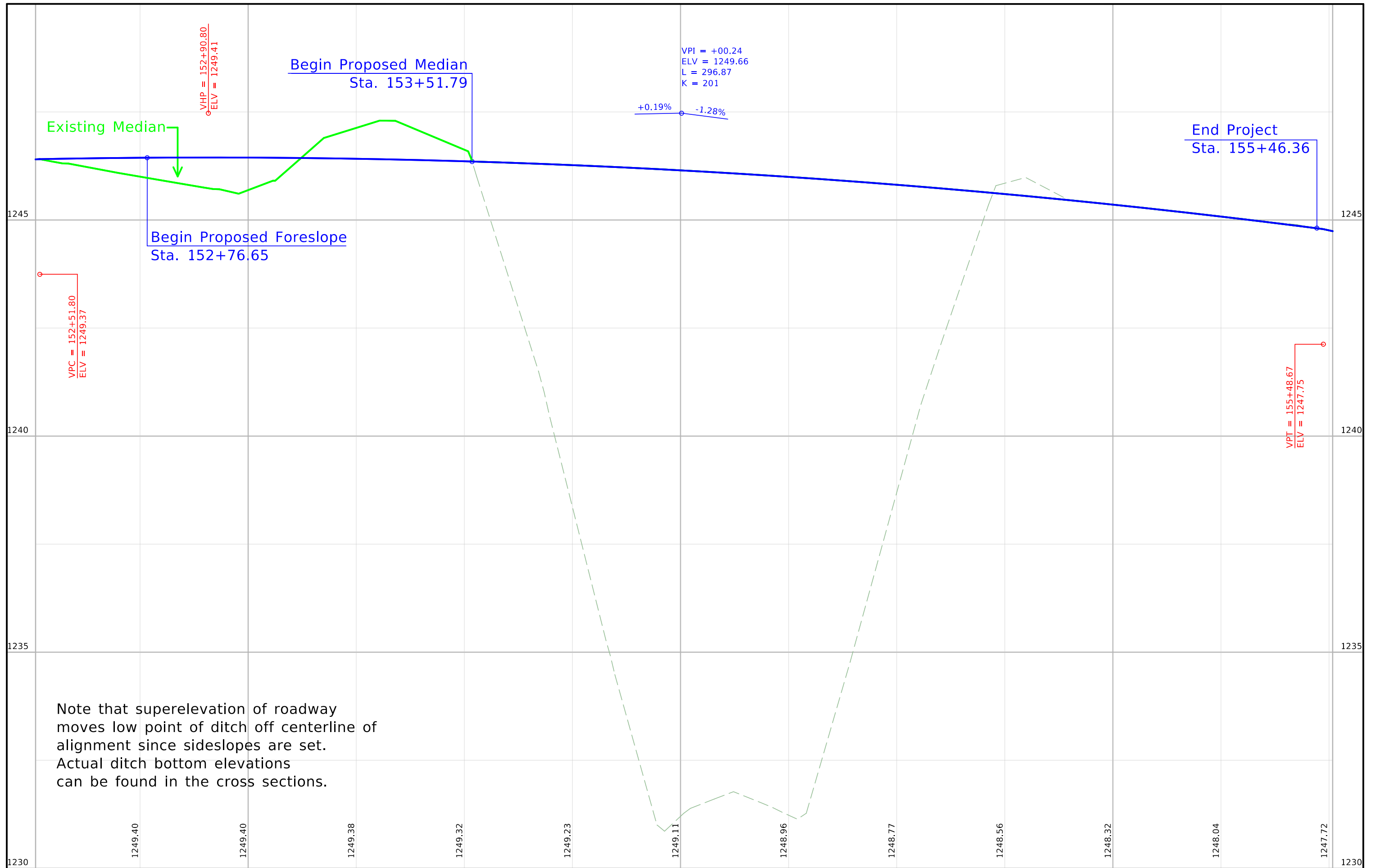
Remove Existing Guardrail

(UAC)  
18" x 50' H.D.P.E

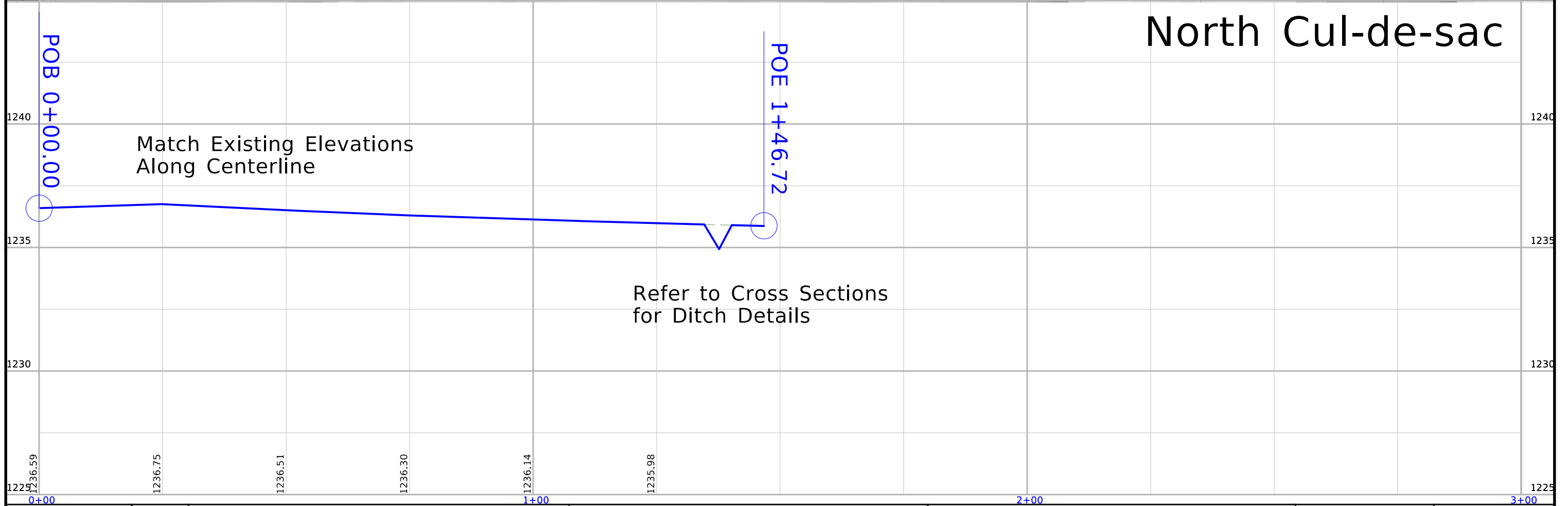
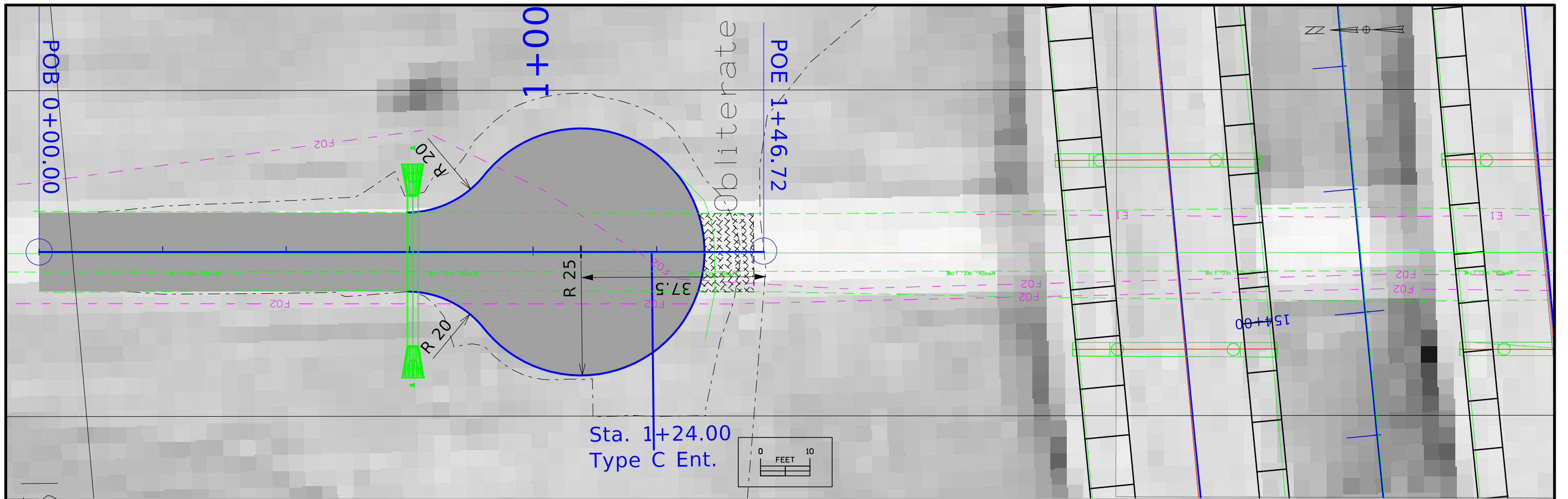
(UAC Decks/Remove Rails)  
Sta. 154+11.57  
Skew 5° RT/AH  
115'-6" x 39'  
Dual Concrete Slab Bridges

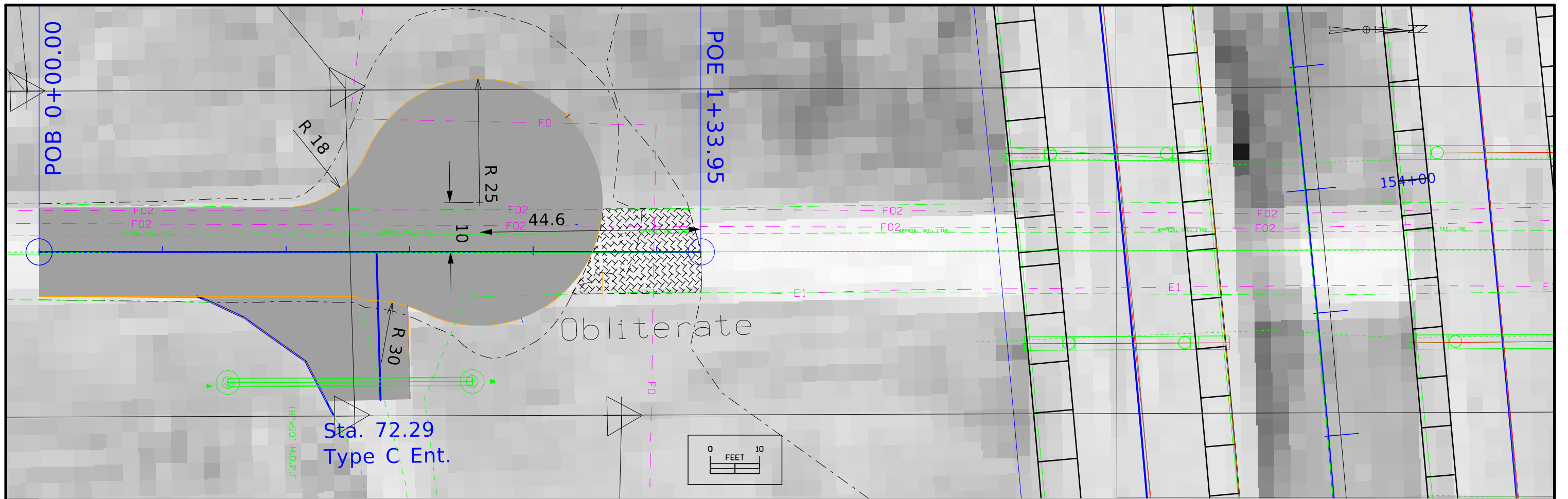
Δ = 12°52'59.74" (RT)  
T = 646.89  
L = 1288.33  
M = 5729.58  
E = 36.40



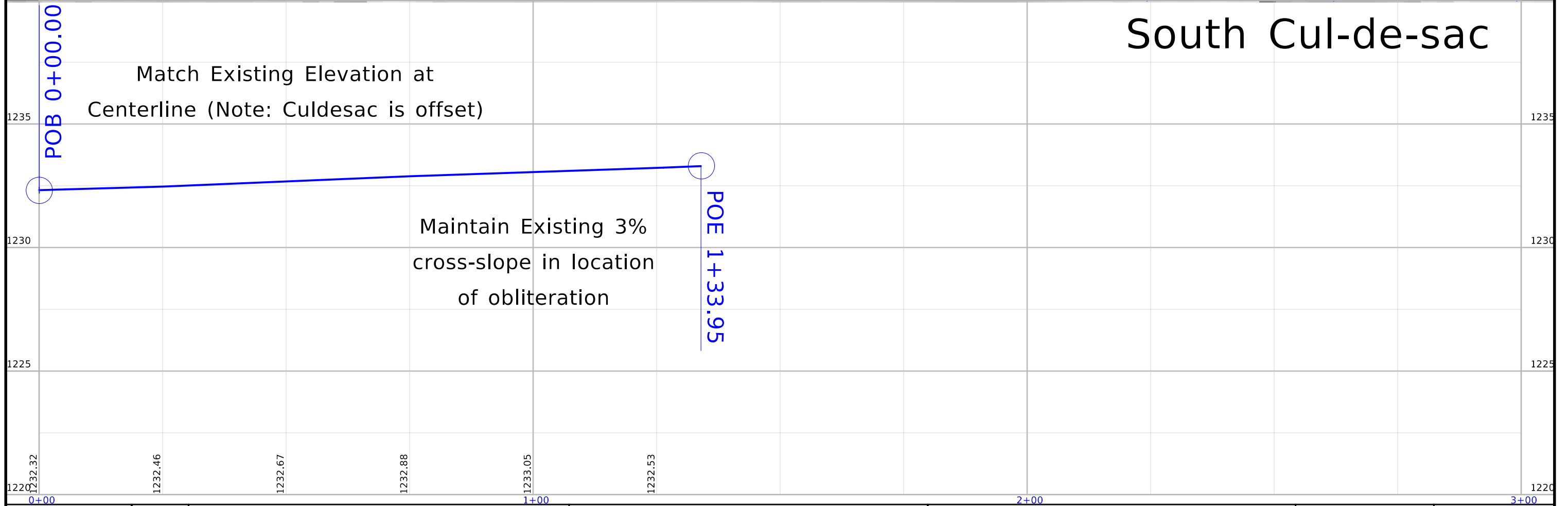








# South Cul-de-sac



## Survey Information

**Cass County**  
**IMN-080-1(495)53- -0E-15**  
**570<sup>th</sup> St 2.0 mi W of IA 173 (EB/WB)**  
**Project Directory: 1508002018**  
**PIN 18-15-080-020**  
**Sap-0880**

### Party Personnel

Clayton Henningsen- Survey Party Chief  
Jason Page- Survey Party Chief  
Jeffery Duncan- Design Tech Specialist  
Paul Harry- Asst. Party Chief

### Date(s) of Survey

Begin Date                    02/27/2020  
End Date                      03/12/2020

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed reconstruction of I-80 bridges in Cass County. This is a partial terrain and underground structure field survey with aerial and terrestrial scanning acquired terrain added in the survey section of the Design Office.

### Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. FENO1, ATLANTIC, and MARNE by doing concurrent 6 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

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

NGS mark designated MARNE (PID MJ1187) has a published Elev. of 1315.00  
Survey Elev. = 1316.044

NGS mark designated ATLANTIC (PID MJ0425) has a published Elev. of 1280.53  
Survey Elev. = 1280.487

### Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 7 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by conducting concurrent 6 hour static observations on Project Pts. FENO1, ATLANTIC, and MARNE.

### Alignment Information

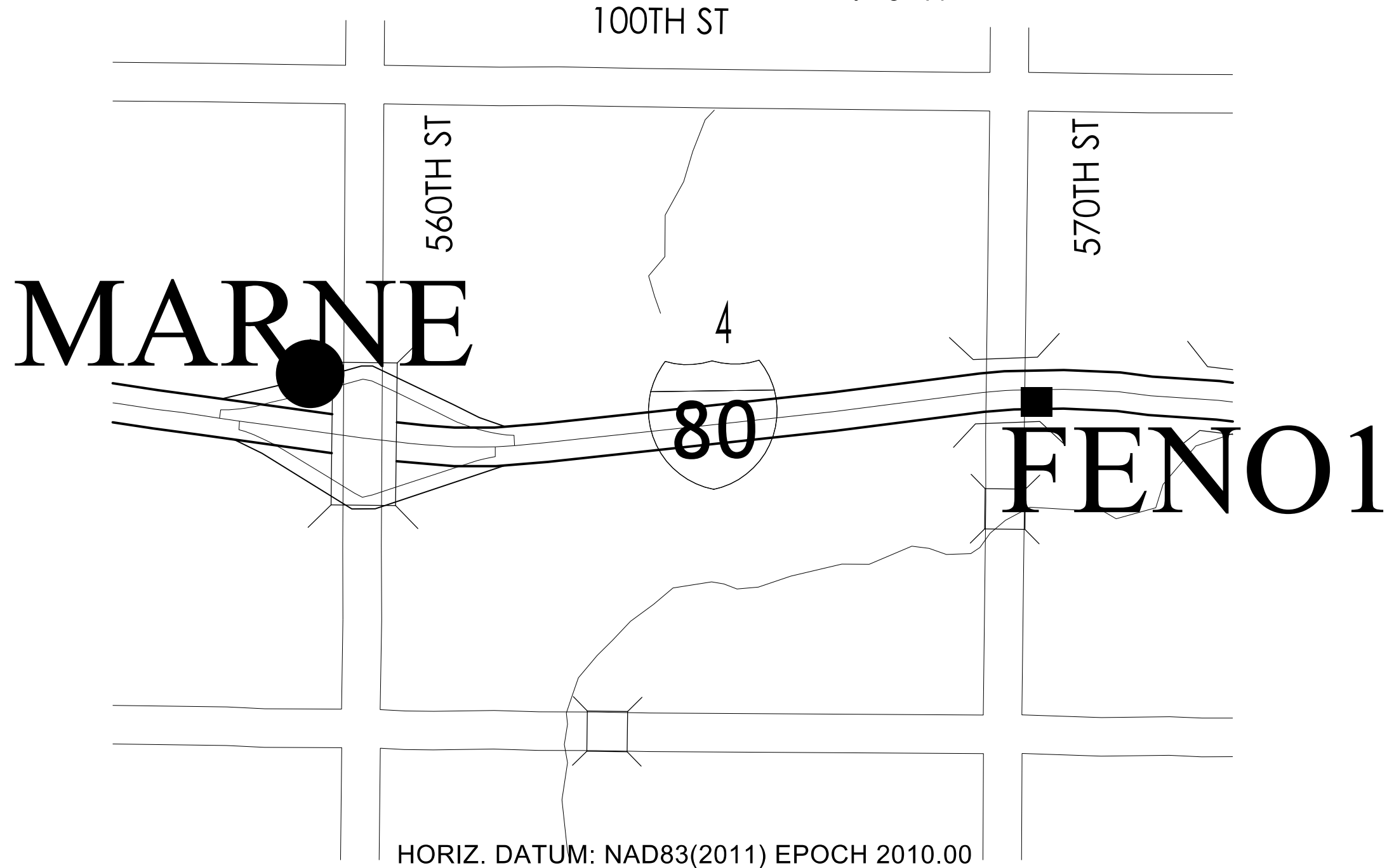
The horizontal alignment for this survey is a retrace of Paving Plans Project No. I-80-1(39)55. Survey stationing was equated to the plan PI at Sta. 158+60.71 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 158+60.71 Paving Plans Project No. I-80-1(39)55  
Survey PI Sta. 158+60.71

### CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 7

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 7

Point Name	North Coordinate	East Coordinate	Elevation	Feature Code-Description
MARNE	7255297.264	17366786.3	1316.04	CP NGS MON 155FT N OF CENTER OF WB ENT TO I-80 22FT ESE OF PP 5FT S OF ROW FENCE AND METAL WITNESS POST
FENO1	7255065.736	17372745.77	1248.57	FENO 250FT E OF CL GRAVEL ROAD 75FT S OF CL EB I-80 48FT N OF FENCE LINE
ATLANTIC	7217653.319	17396701.02	1280.49	CP NGS MON 58FT W OF CL OF BRYN MAWR BLVD 58FT SW OF THE SW COR CONC SLAB 28FT NW OF THE NW COR CONC SLAB

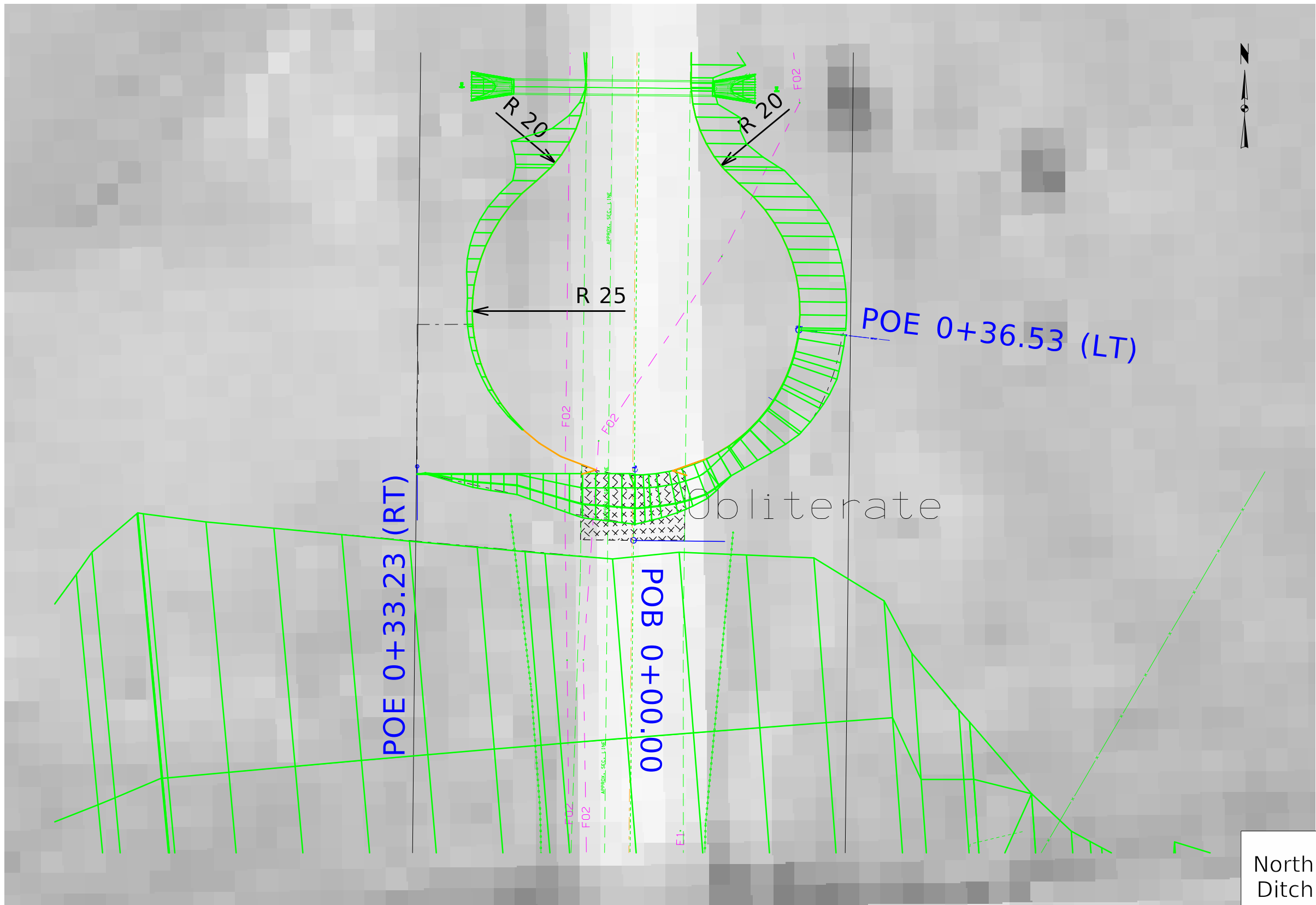
108-23A 08-01-08
<b>TRAFFIC CONTROL PLAN</b>
<p>Traffic on I-80 in both directions shall be maintained at all times.</p> <p>Single lane closures and shoulder closures will be used for this project. All lane closures shall be done at night between the hours of 6 pm and 5 am.</p> <p>The Engineer maintains the right to modify closure hours based on unexpected heavy traffic.</p>

111-01 04-17-12								
<b>COORDINATED OPERATIONS</b>								
<p>Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.</p>								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Project</th> <th style="width: 50%;">Type of Work</th> </tr> </thead> <tbody> <tr> <td style="height: 15px;">None Provided</td> <td></td> </tr> <tr> <td style="height: 15px;"></td> <td></td> </tr> <tr> <td style="height: 15px;"></td> <td></td> </tr> </tbody> </table>	Project	Type of Work	None Provided					
Project	Type of Work							
None Provided								

108-25  
10-21-14

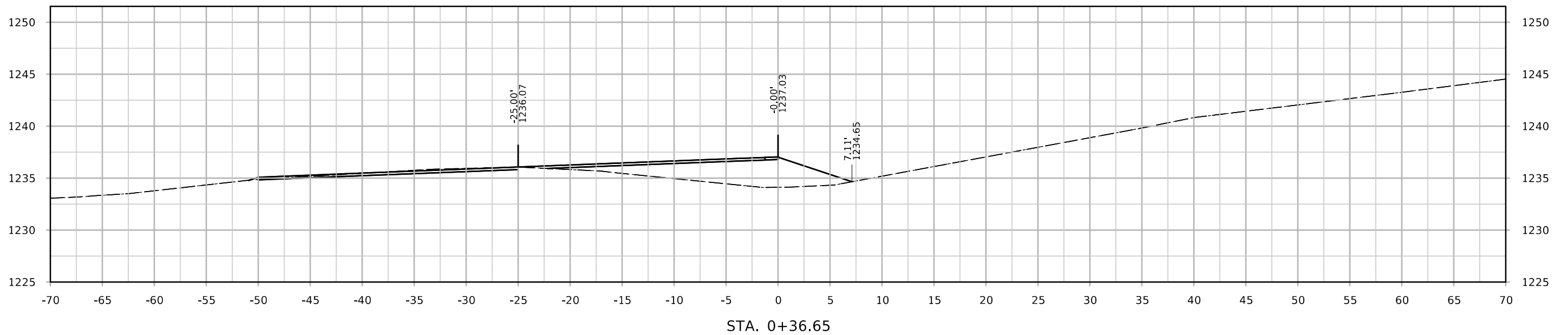
**511 TRAVEL RESTRICTIONS**

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			None Anticipated									



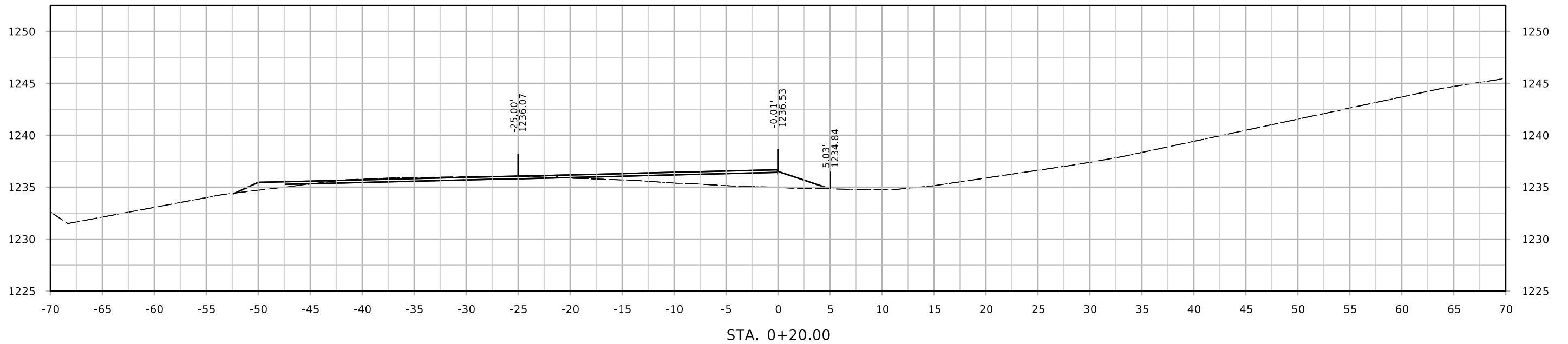
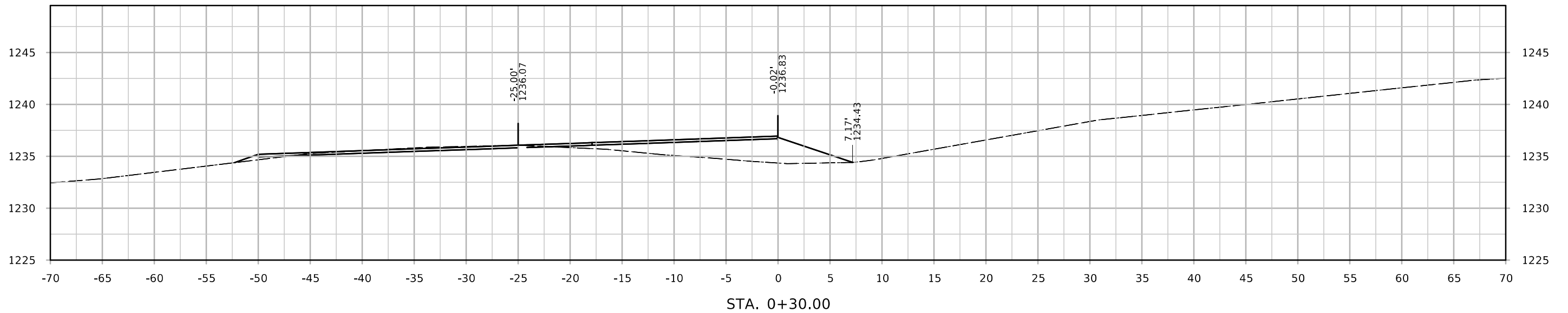
North Cul-de-sac  
Ditching Around  
Southern Edge

# Ditching between I-80 WB/570th St. (Lt. of 570th St. N CL)

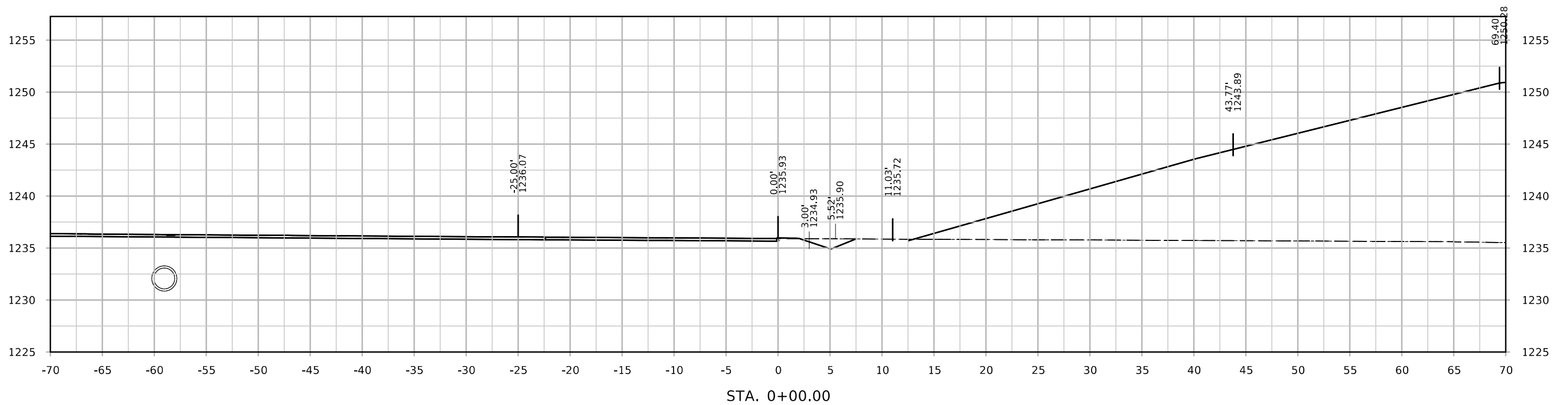
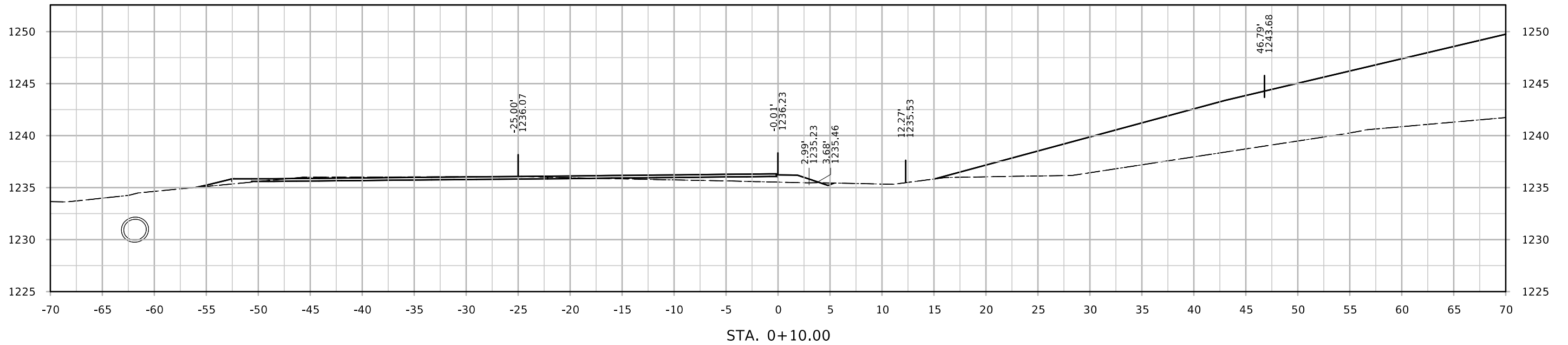




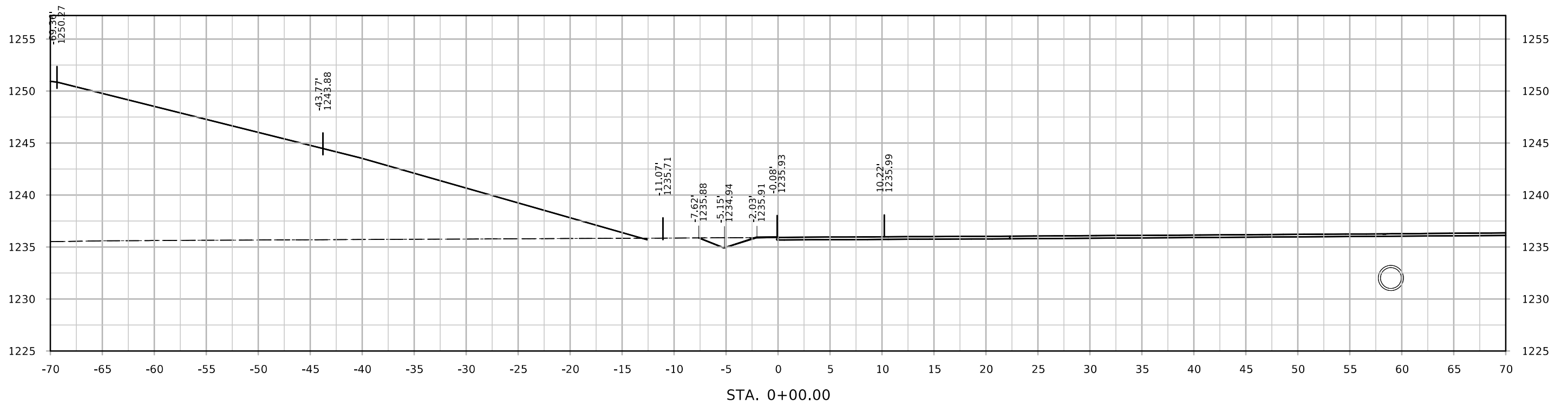
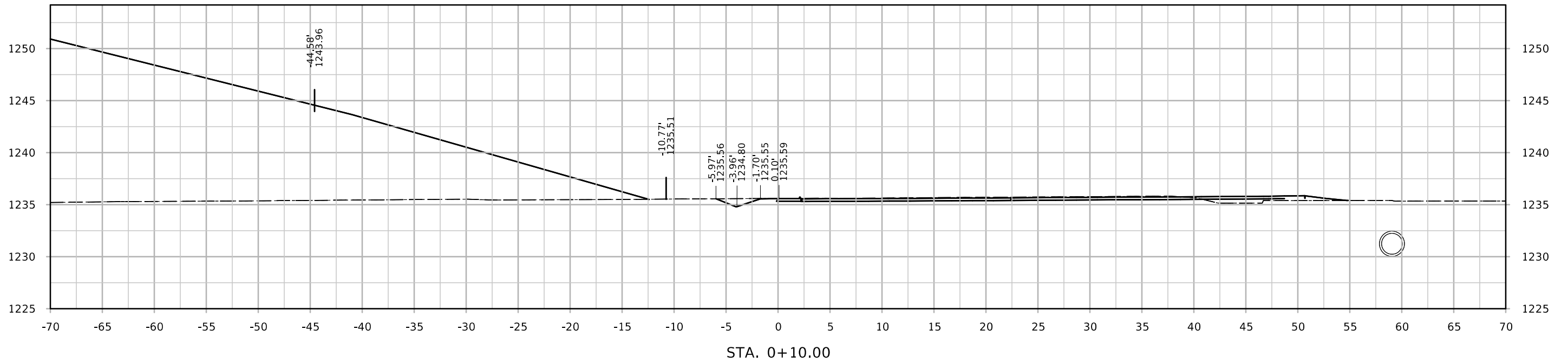
# Ditching between I-80 WB/570th St. (Lt. of 570th St. N CL)



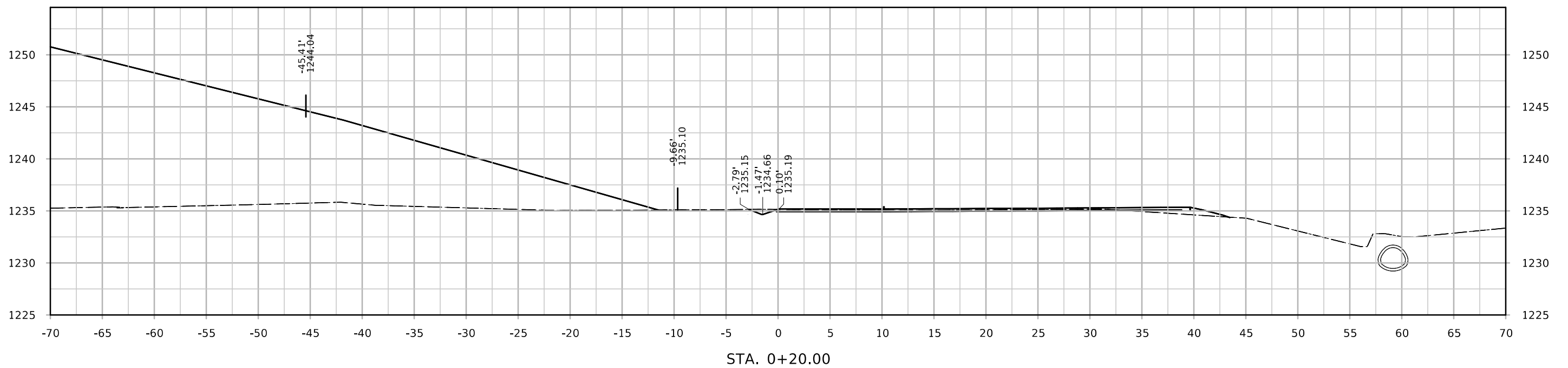
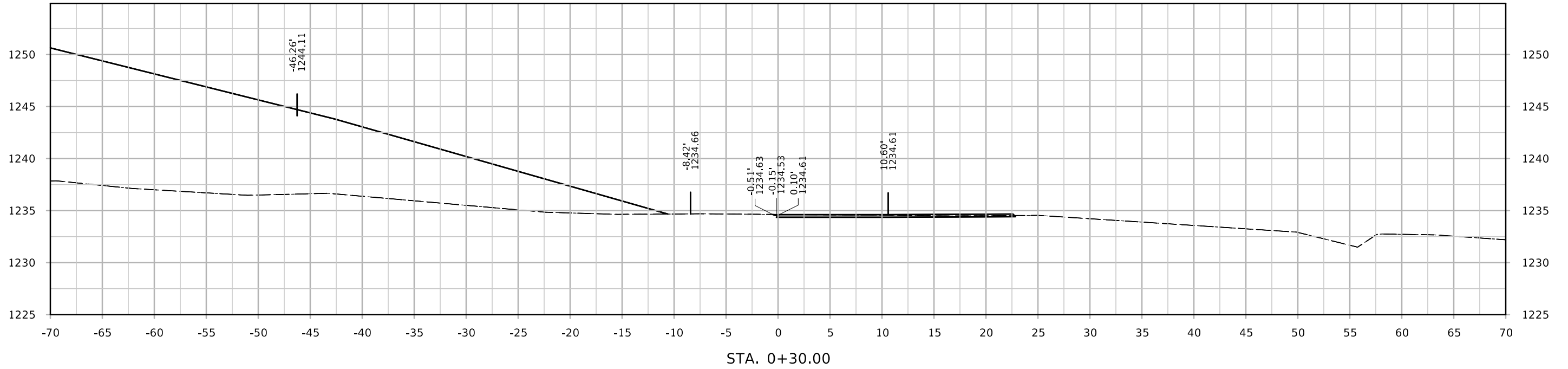
# Ditching between I-80 WB/570th St. (Lt. of 570th St. N CL)



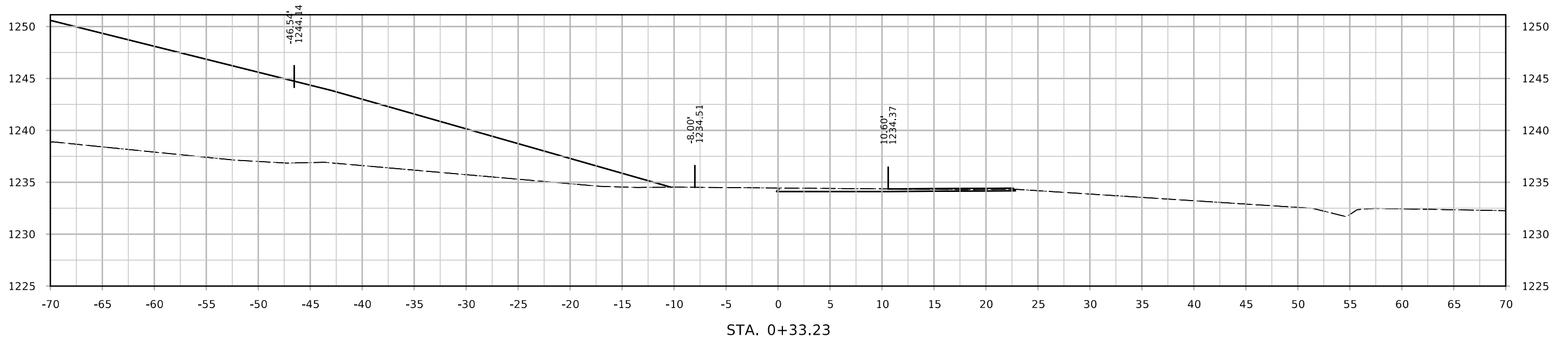
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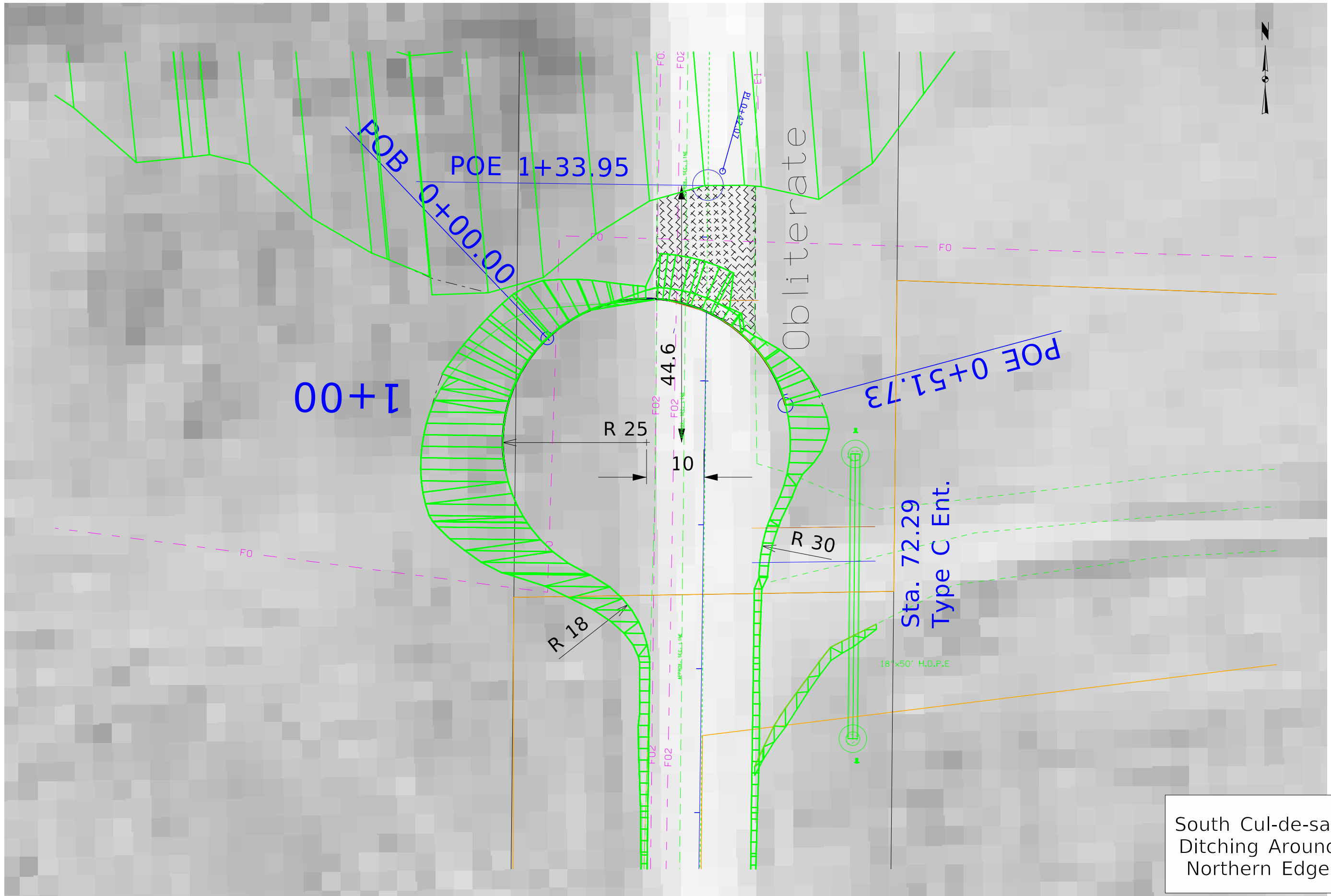


# Ditching between I-80 WB/570th St. (Rt. of 570th St. N CL)



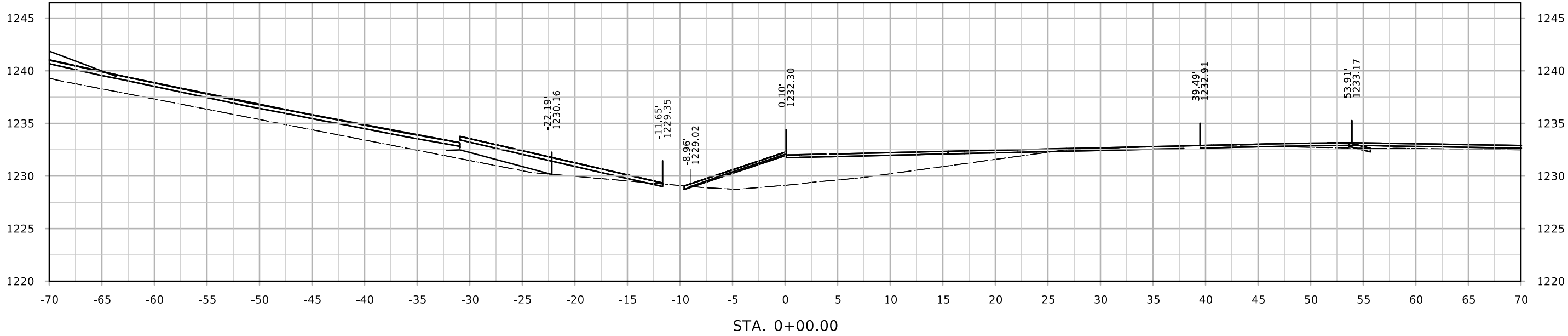
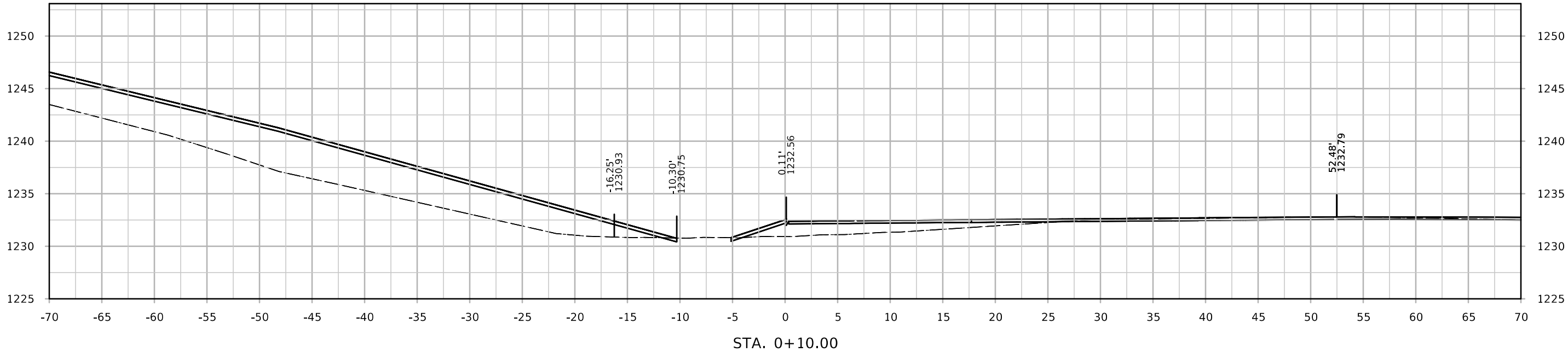
# Ditching between I-80 WB/570th St. (Rt. of 570th St. N CL)



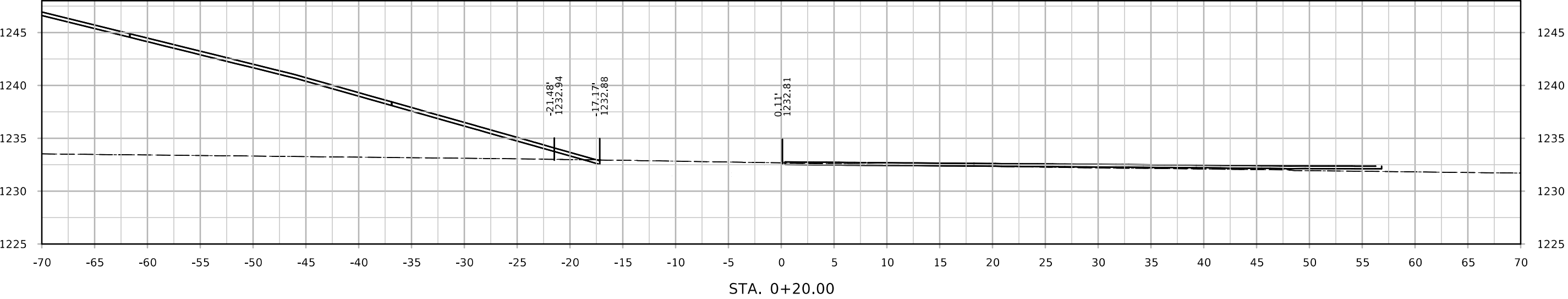
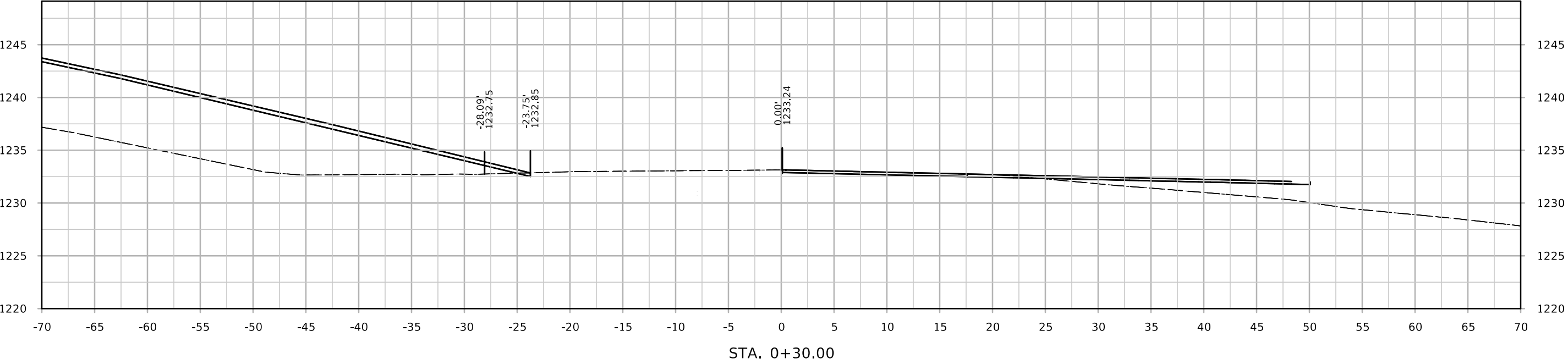


South Cul-de-sac  
Ditching Around  
Northern Edge

# Ditching Between I-80 EB/570th St.

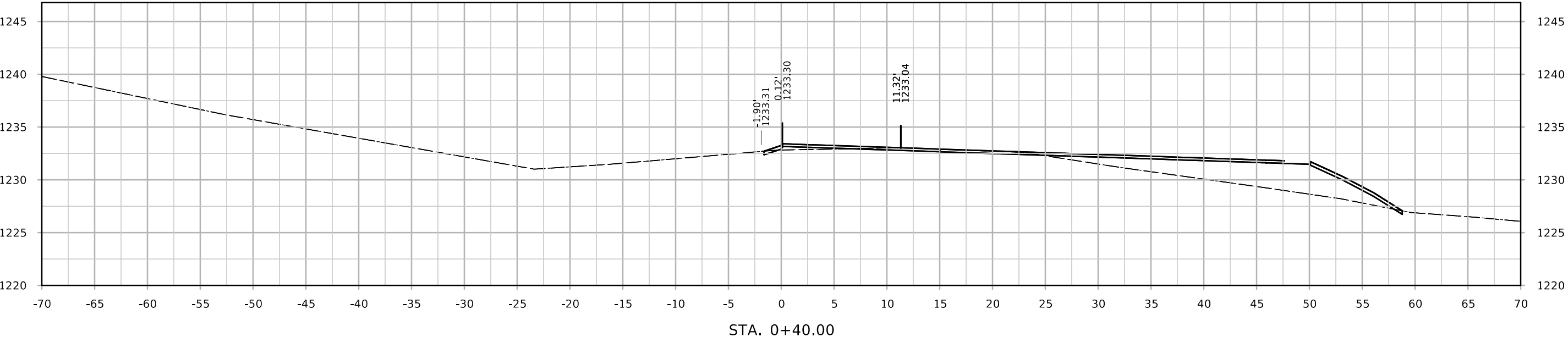
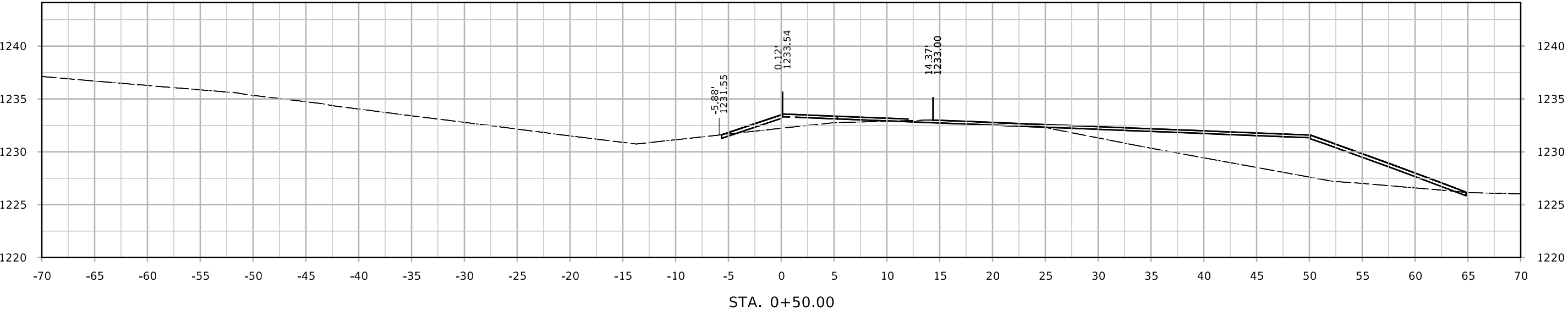


# Ditching between I-80 EB/570th St.

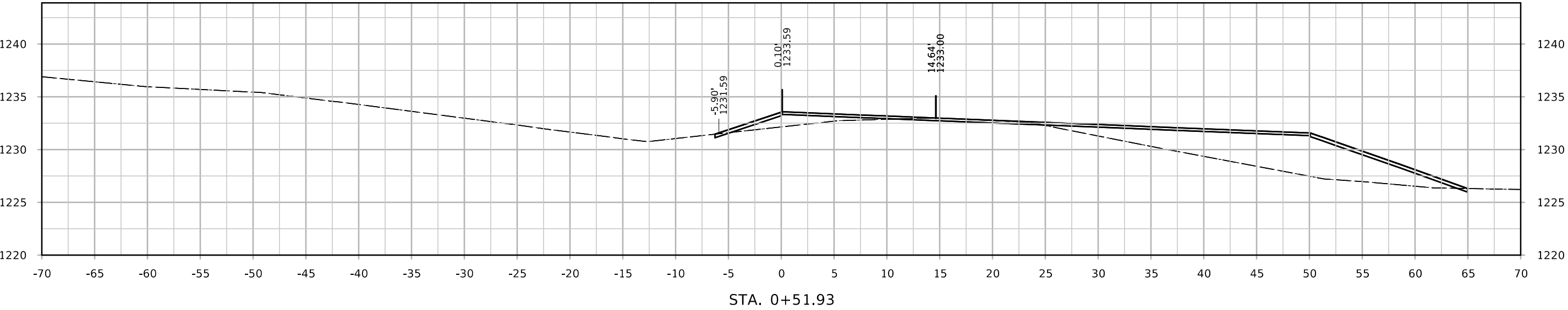




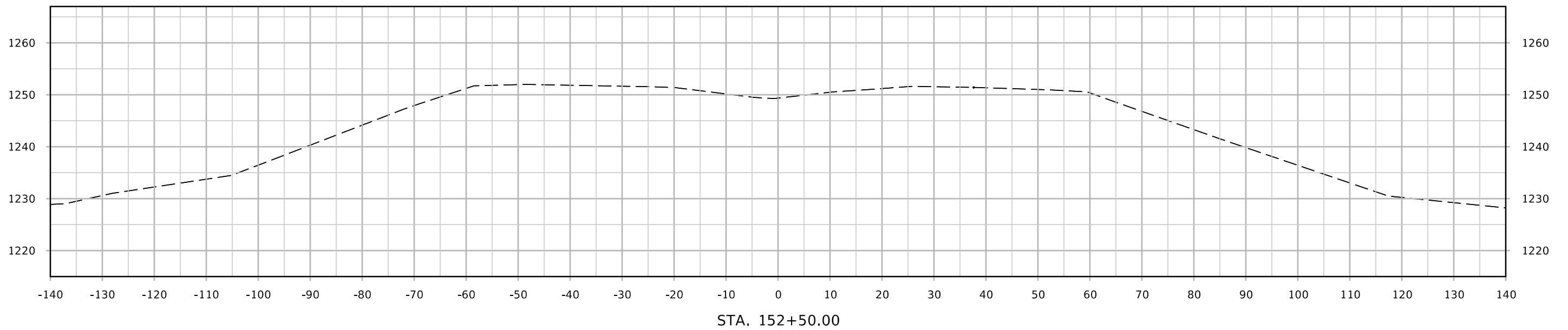
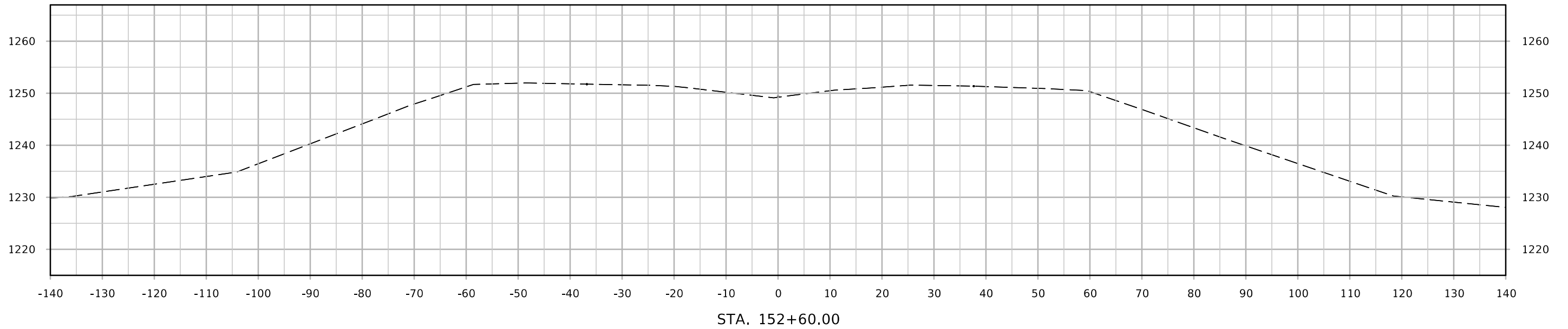
# Ditching between I-80 EB/570th St.

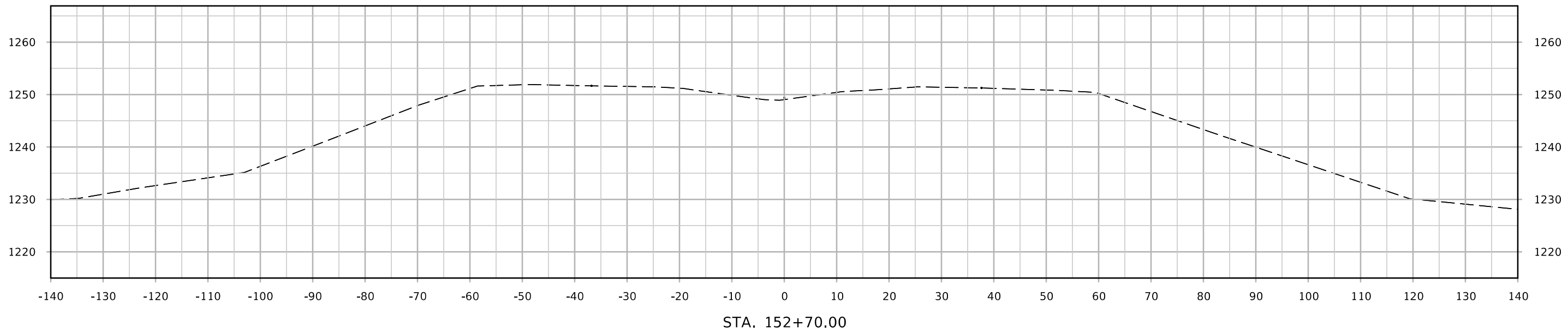
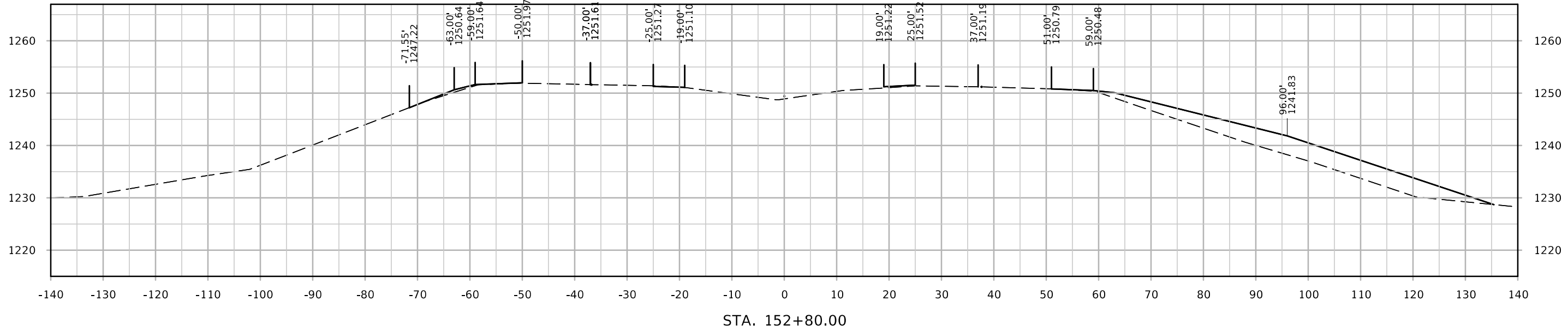


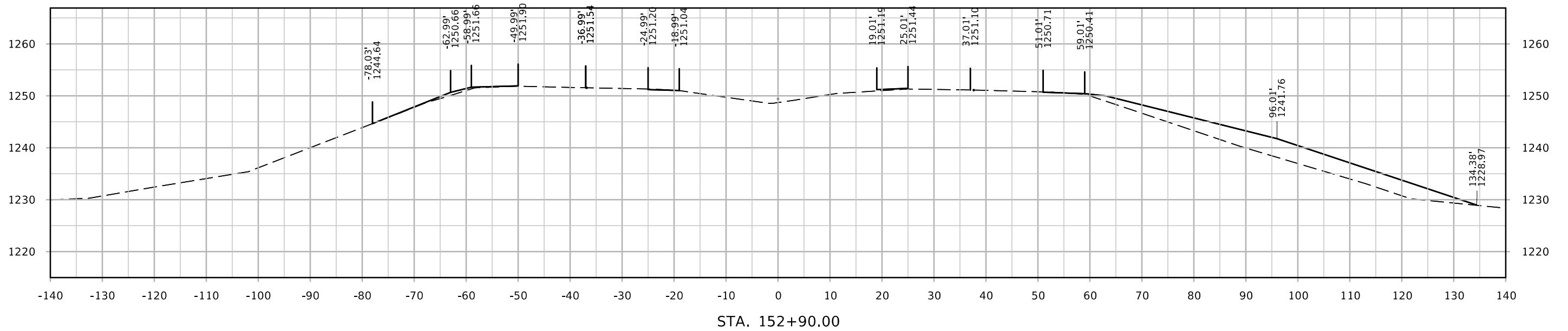
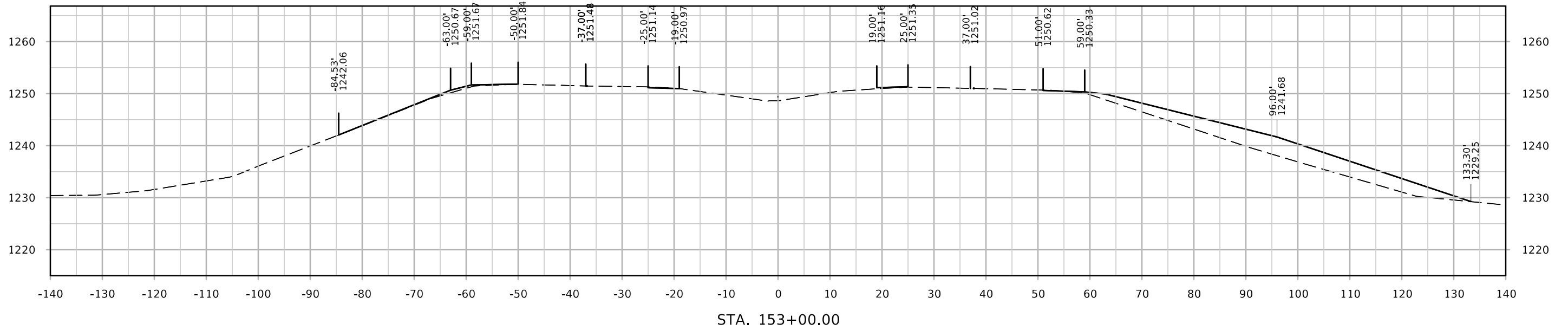
# Ditching between I-80 EB/570th St.

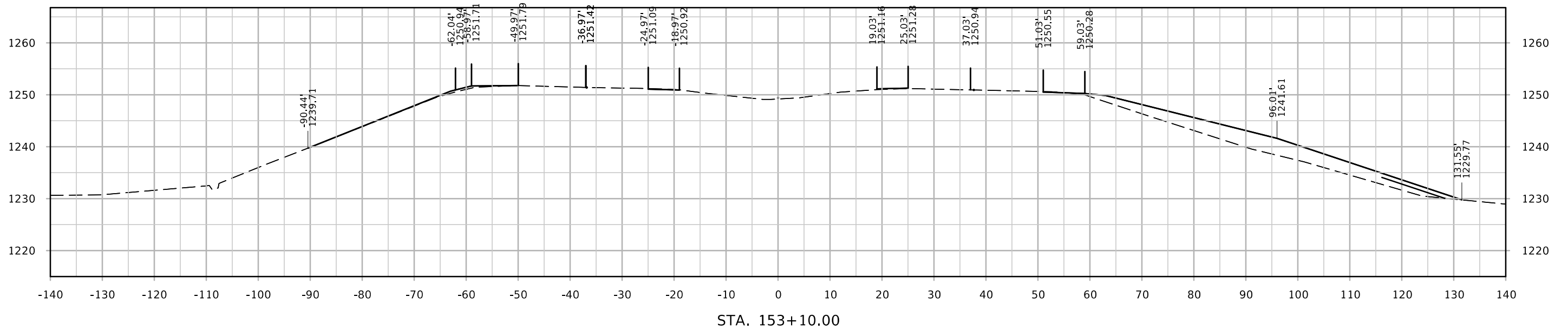
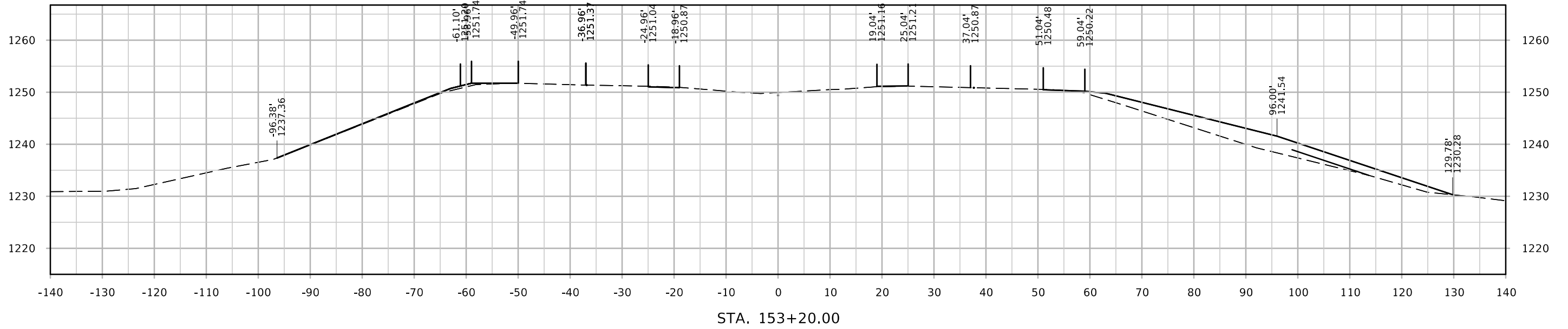


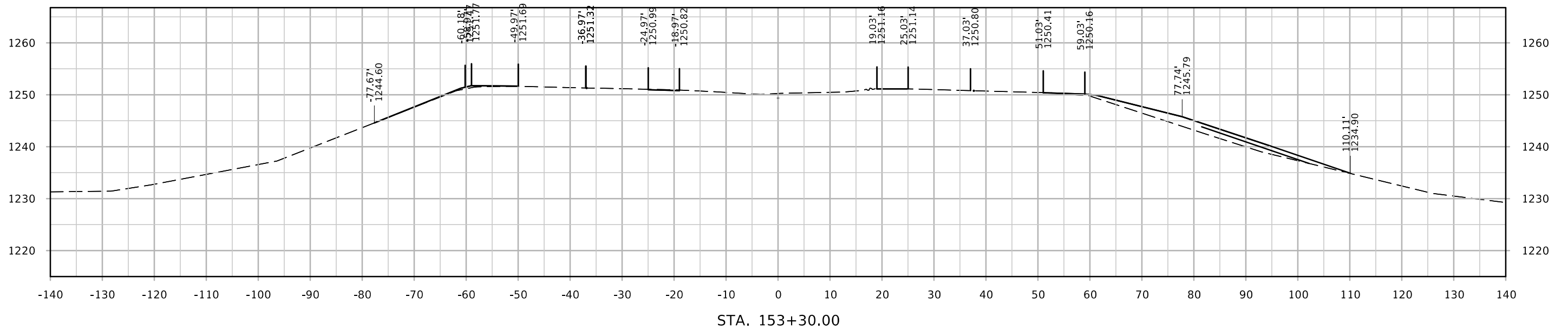
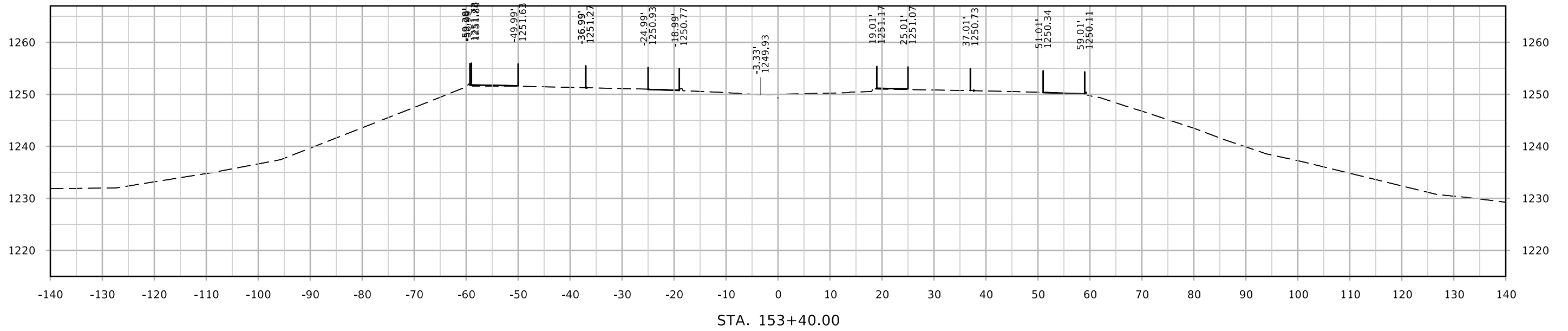
# I-80

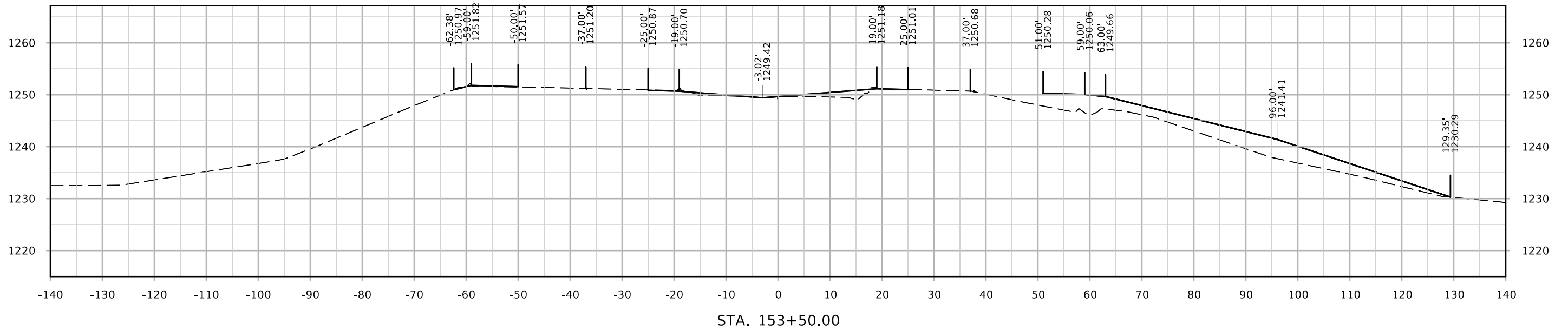
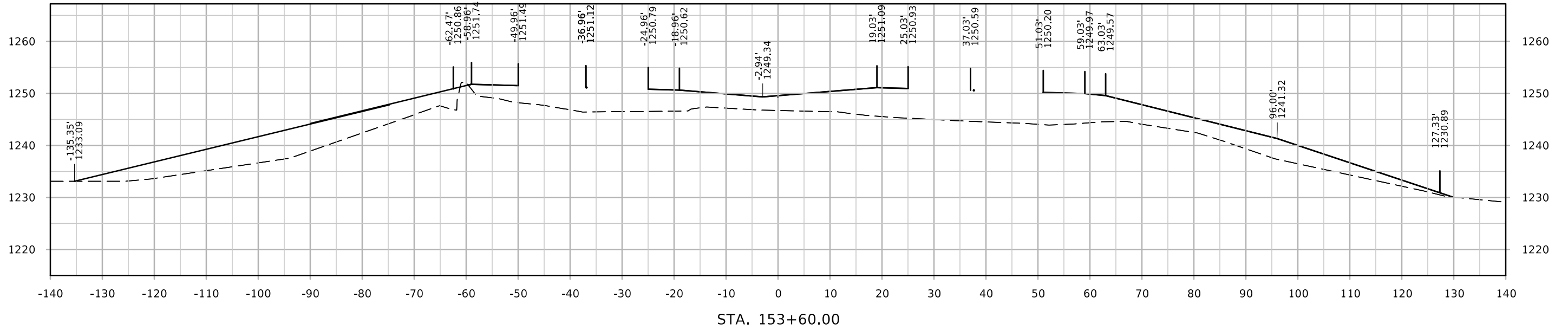




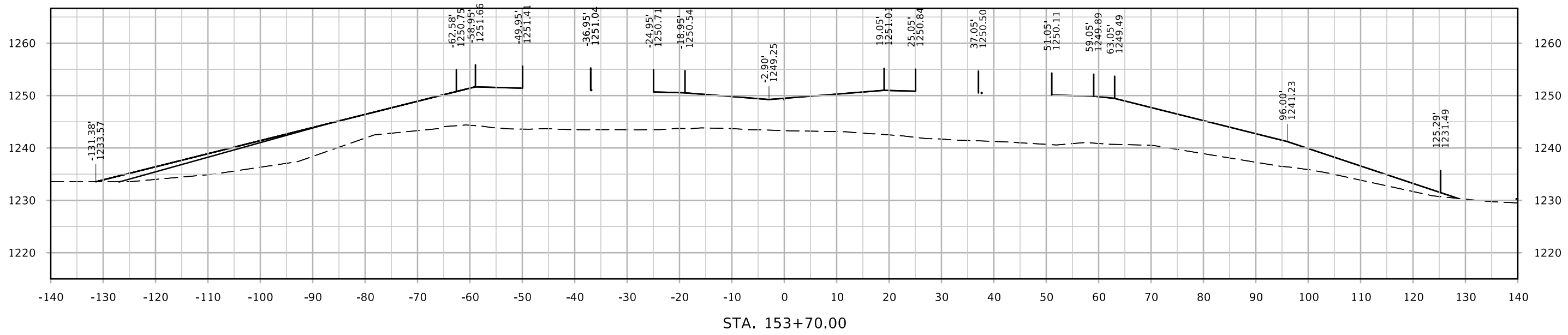
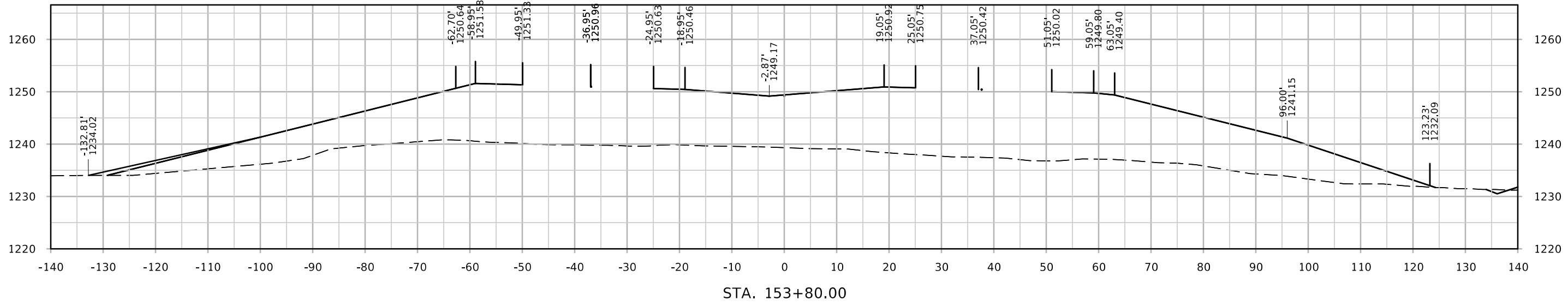


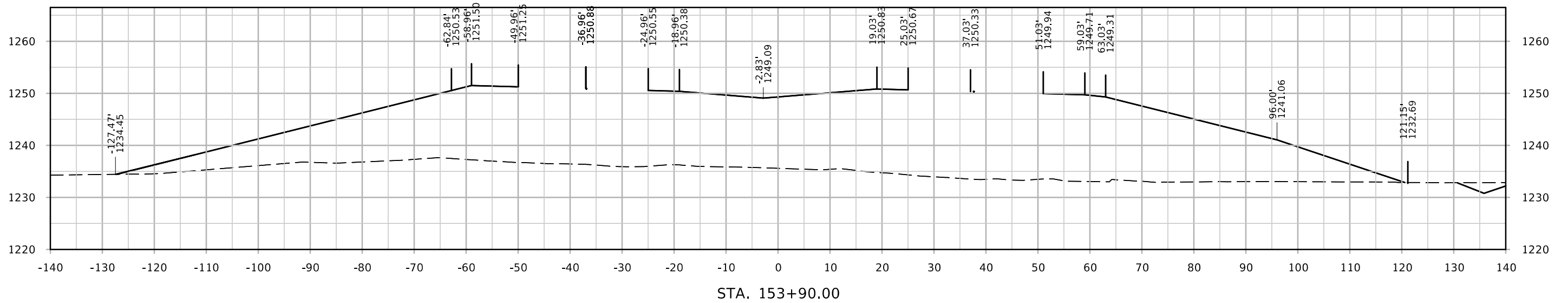
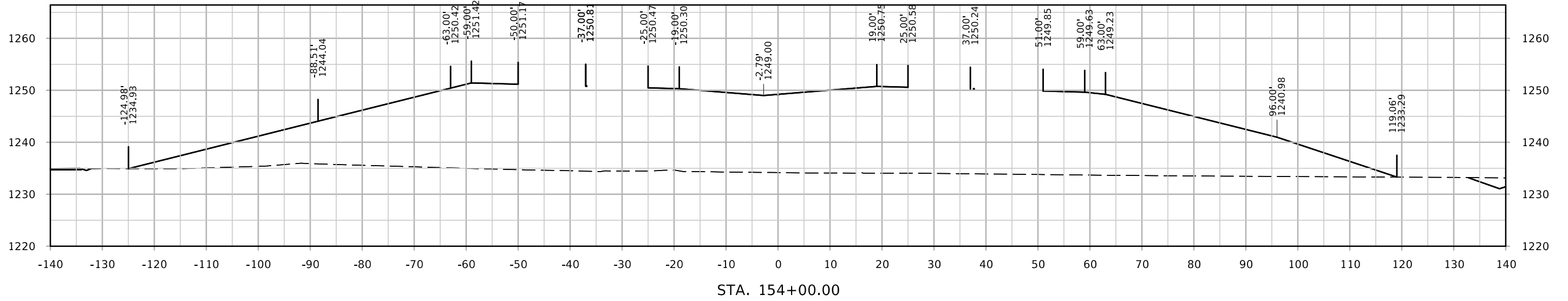


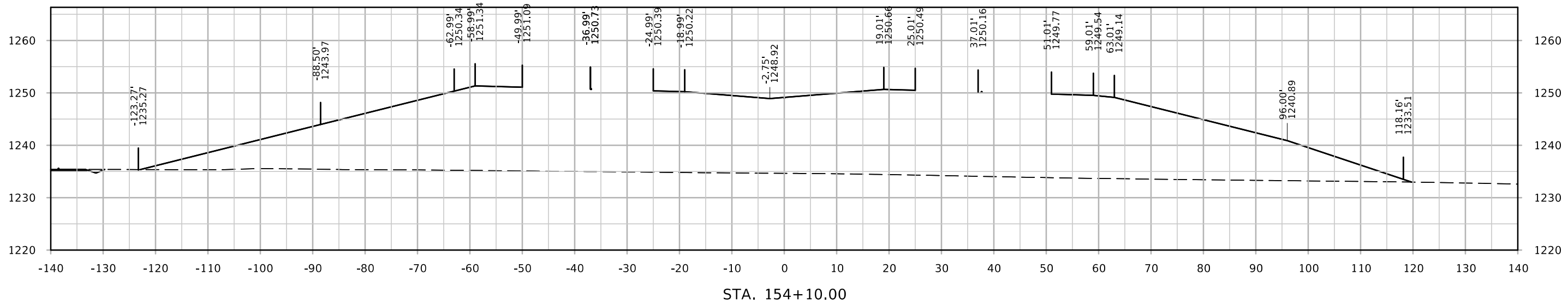
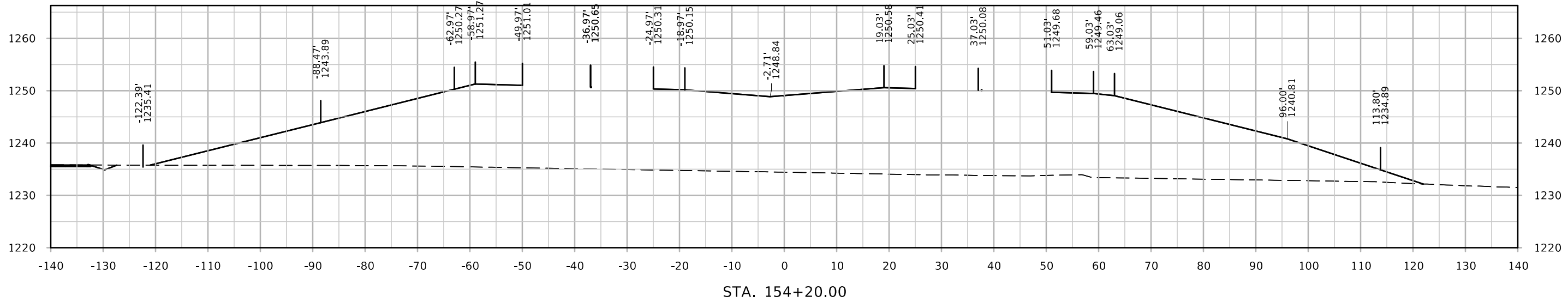


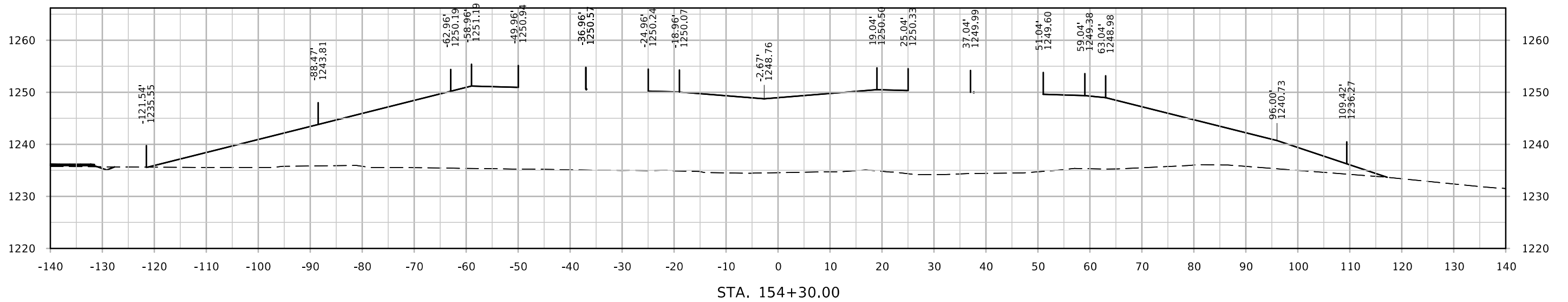
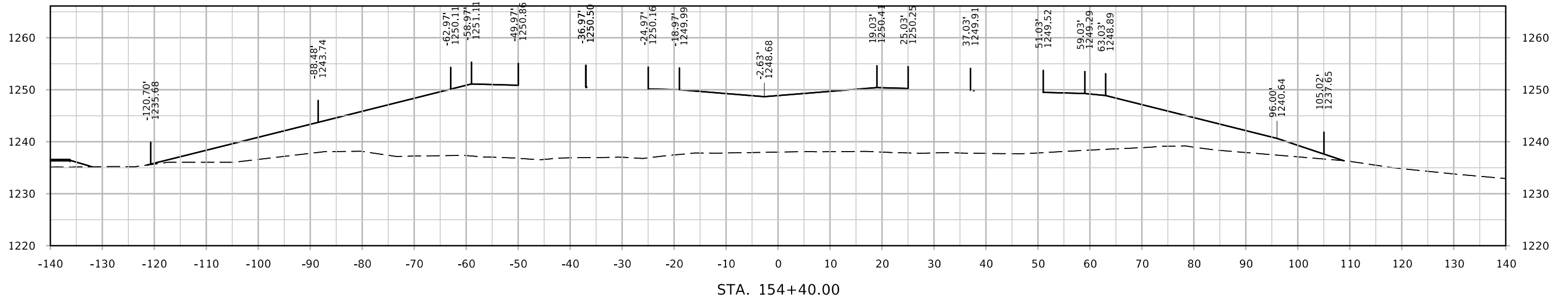




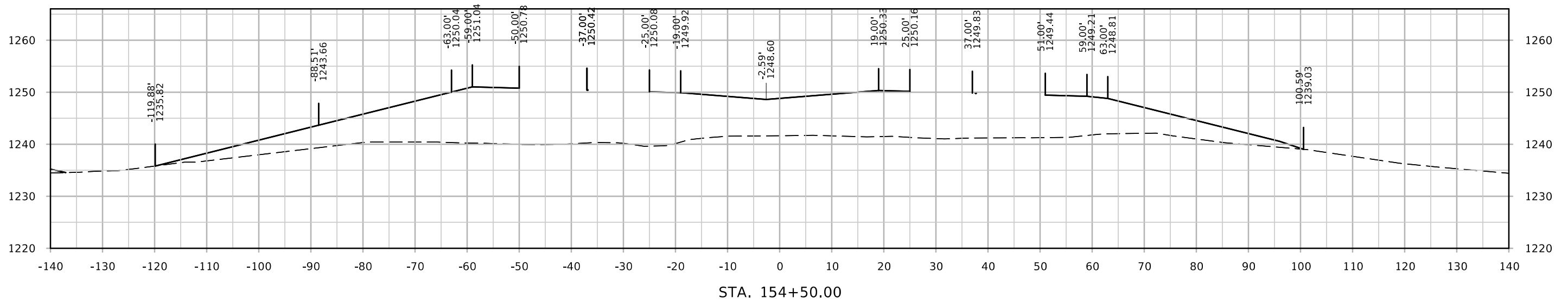
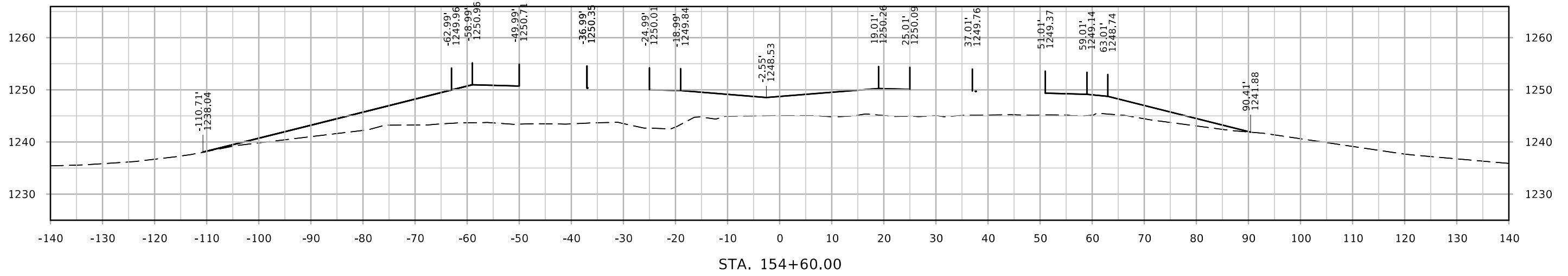
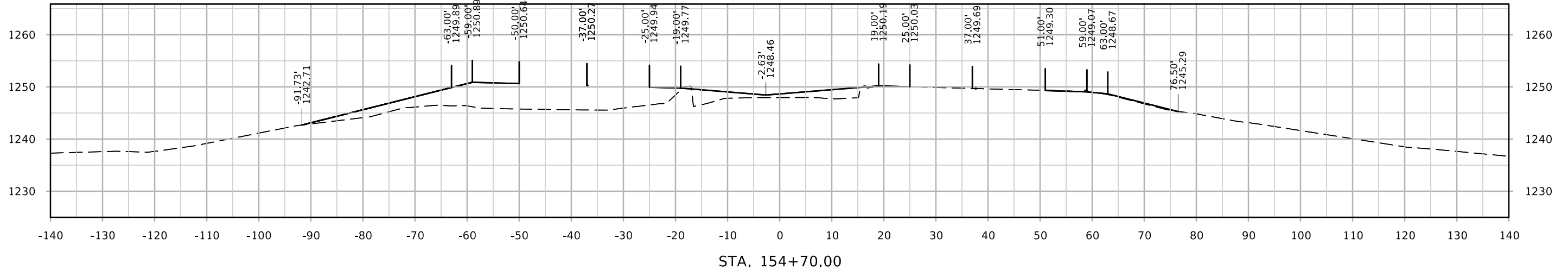




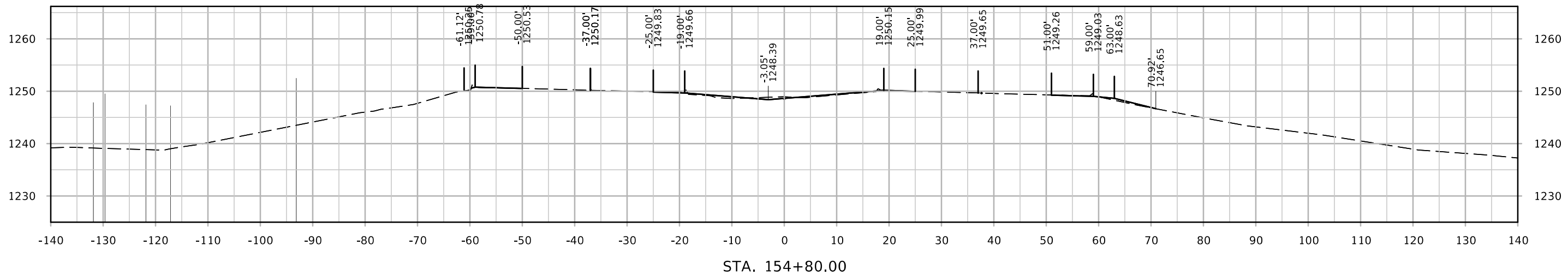
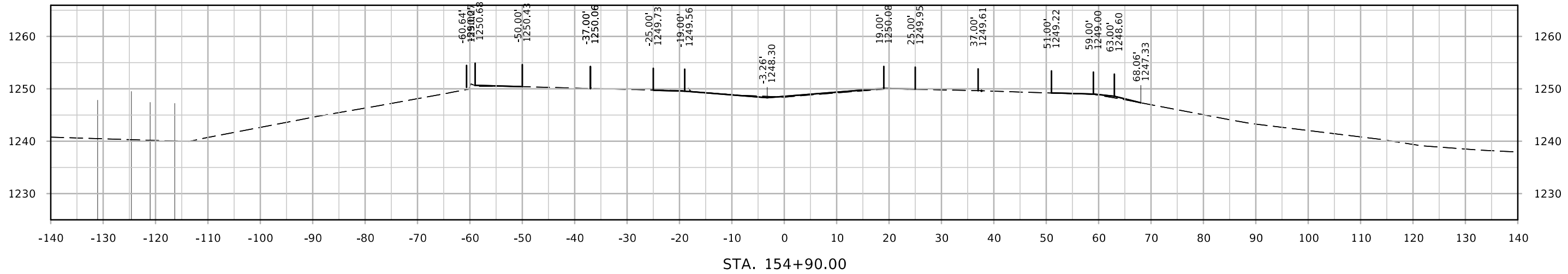
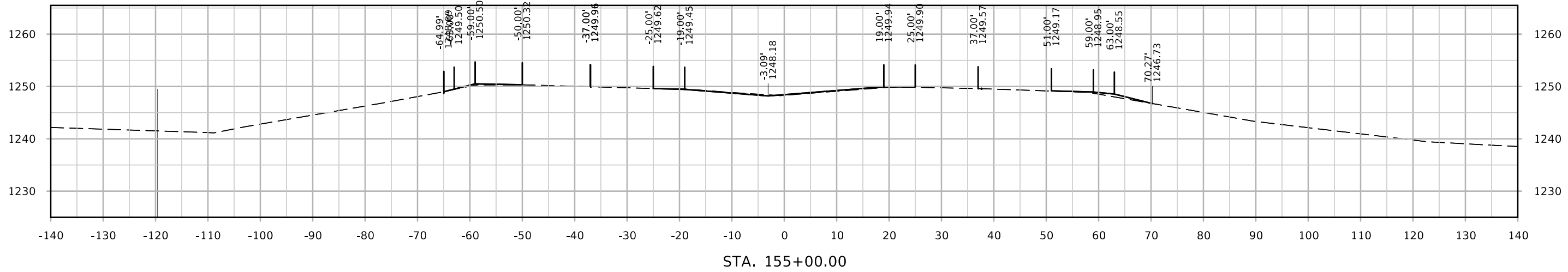




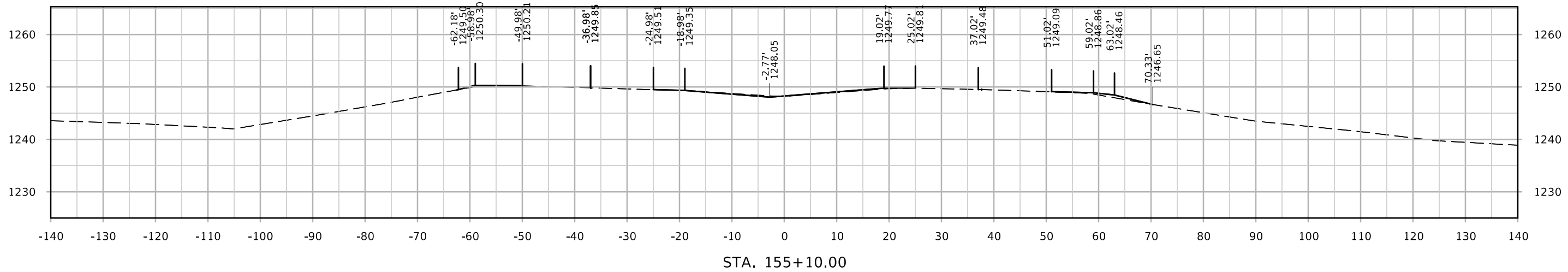
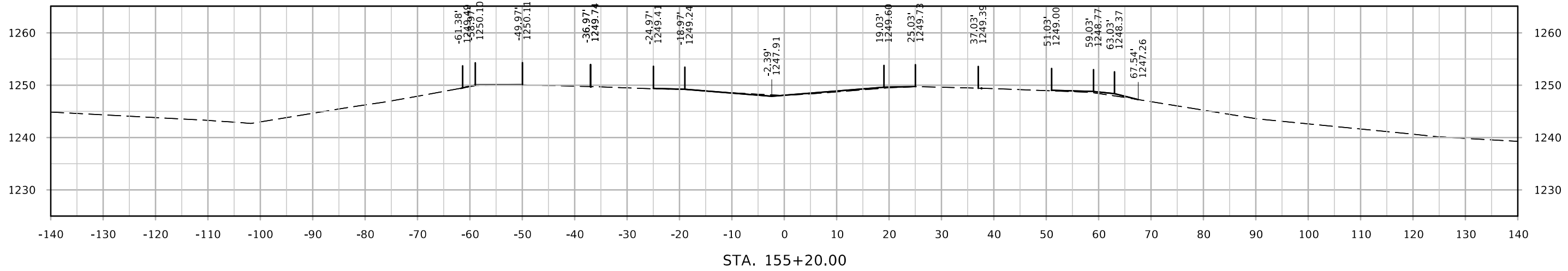
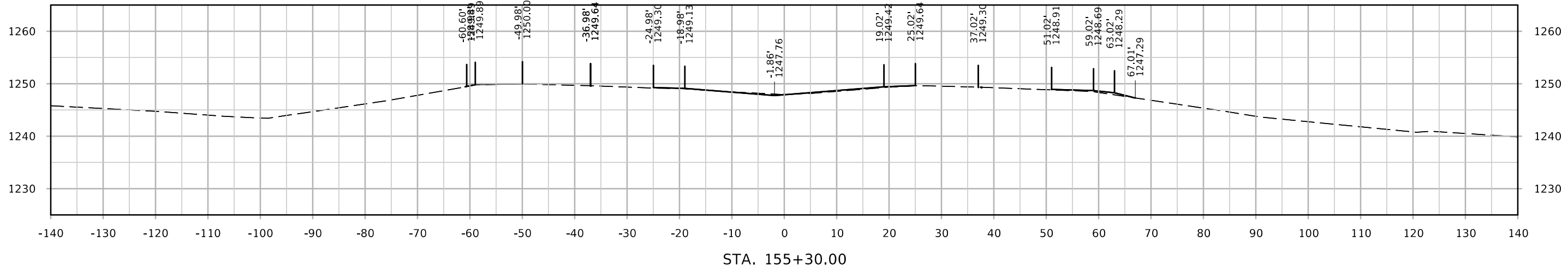
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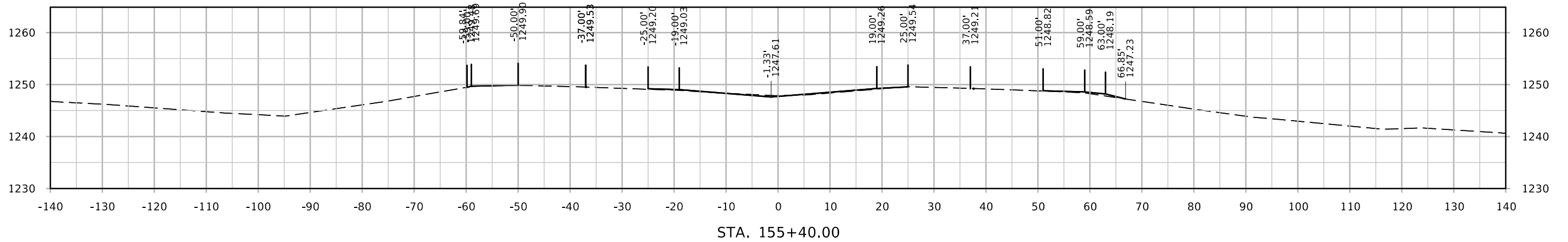
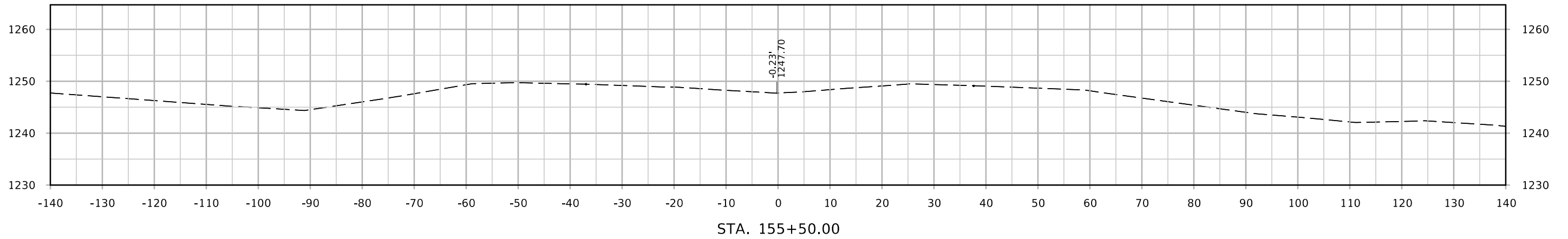
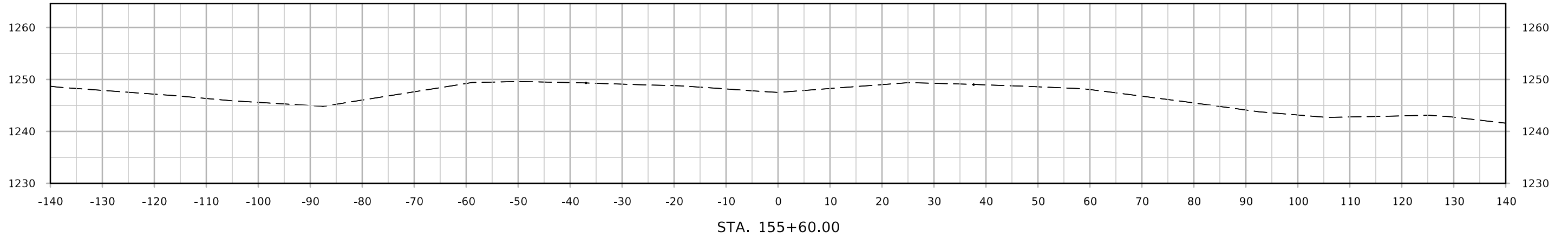
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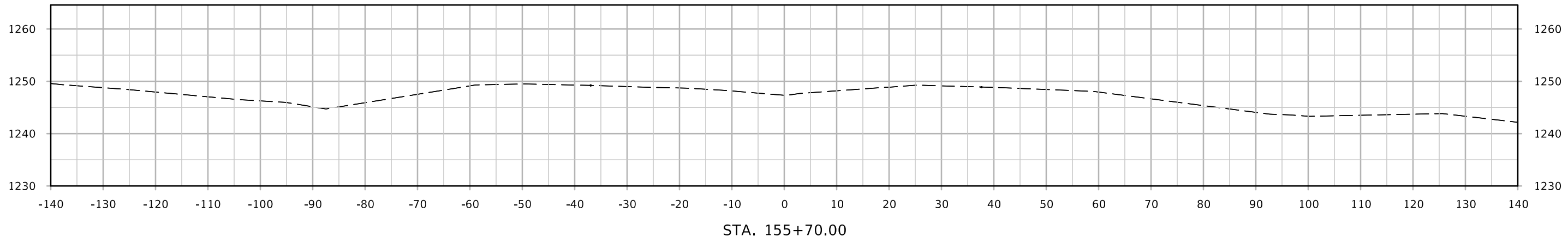
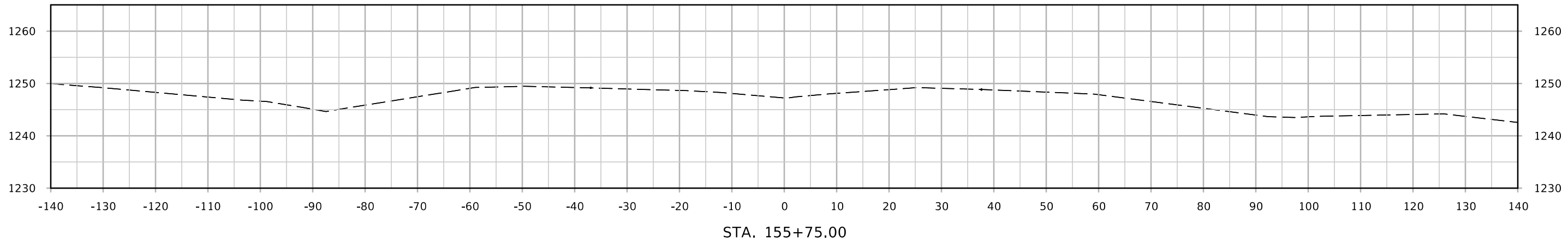
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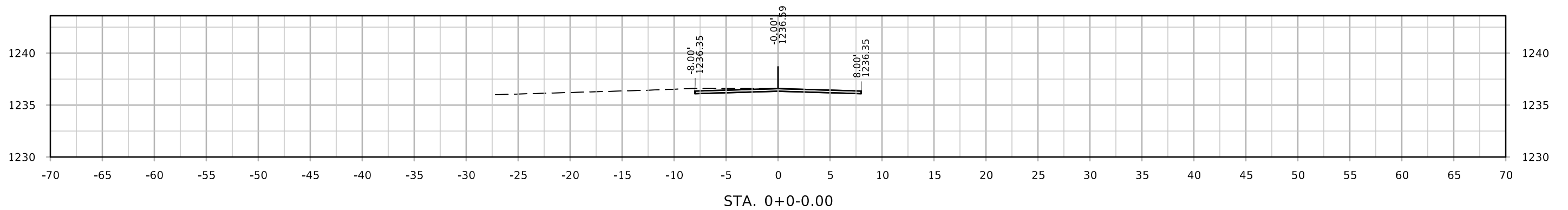
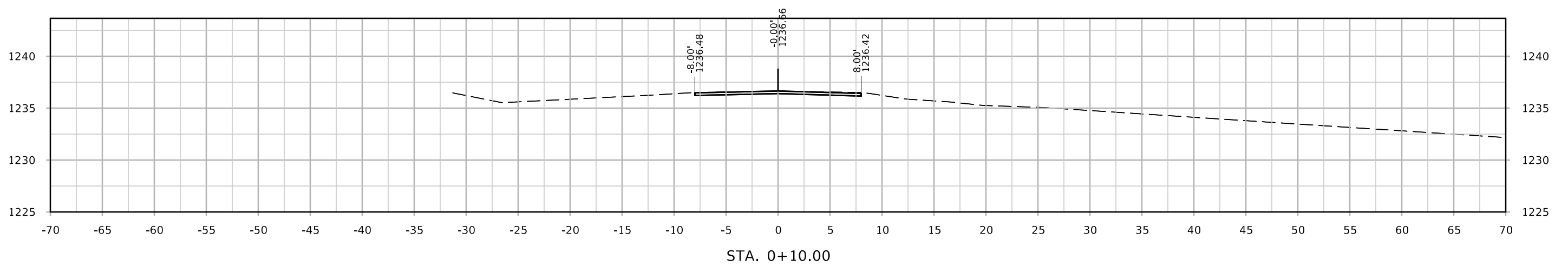
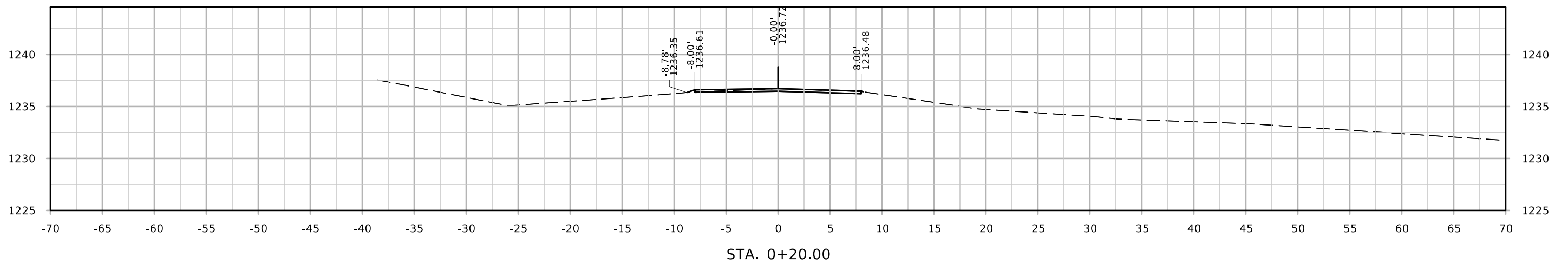
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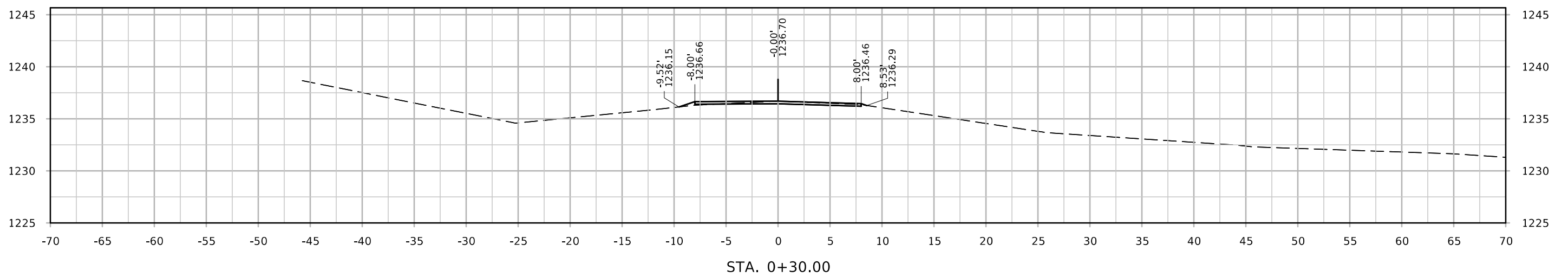
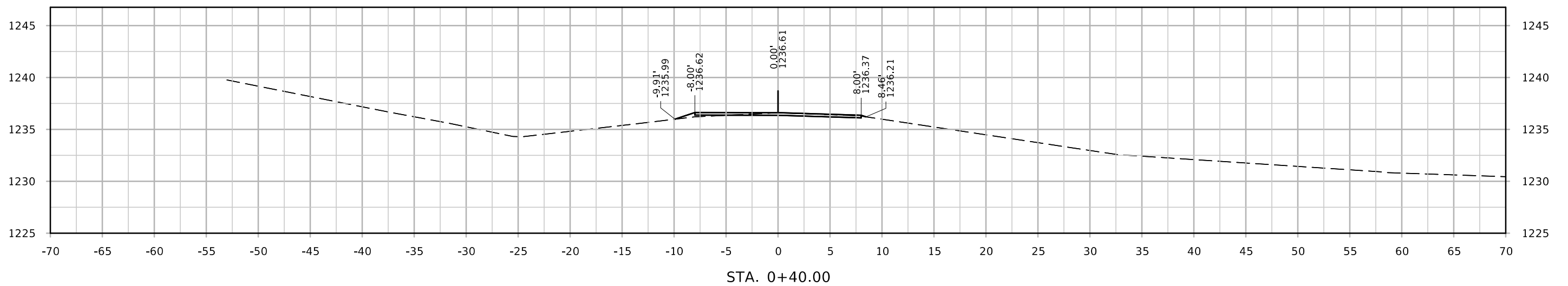




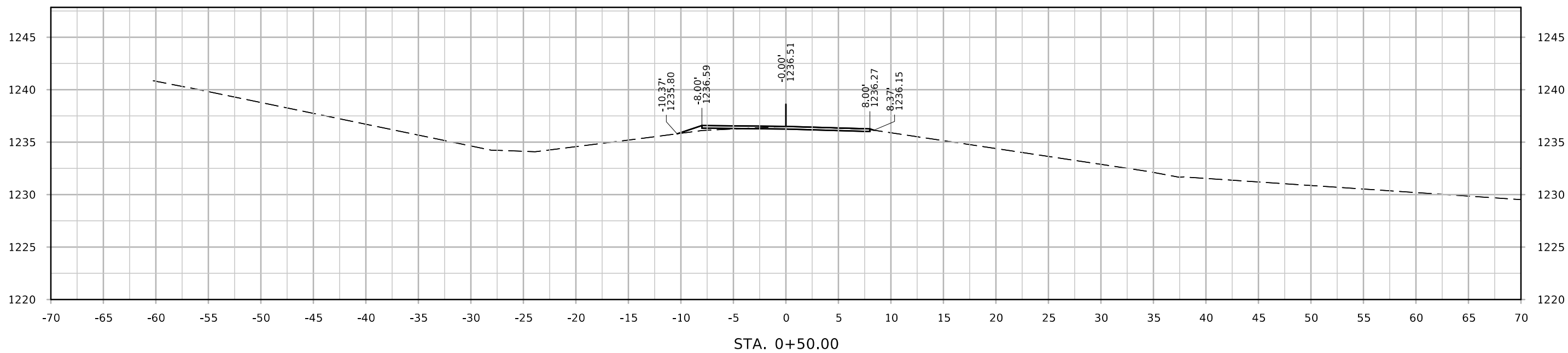
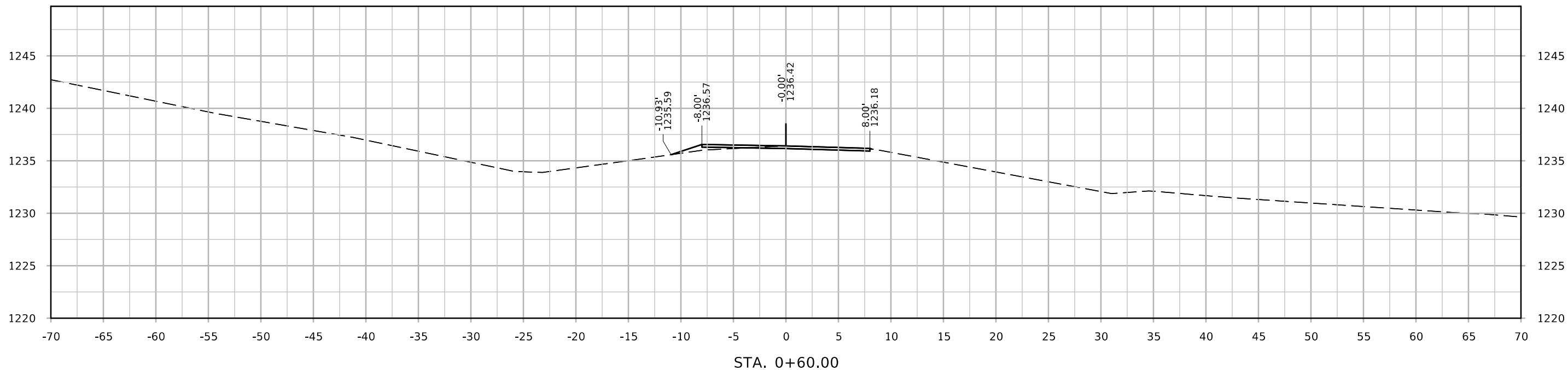
# North Cul-de-sac



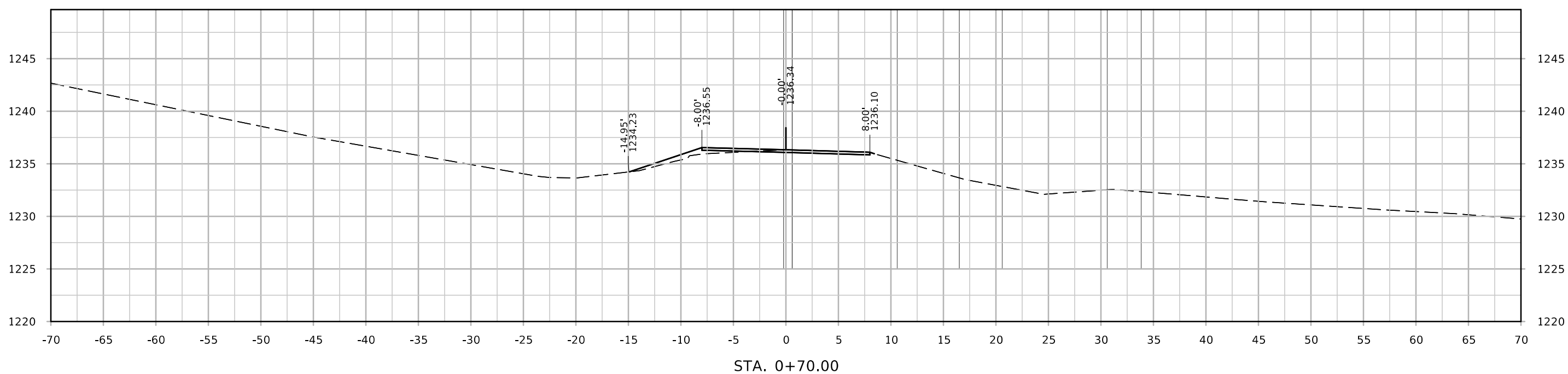
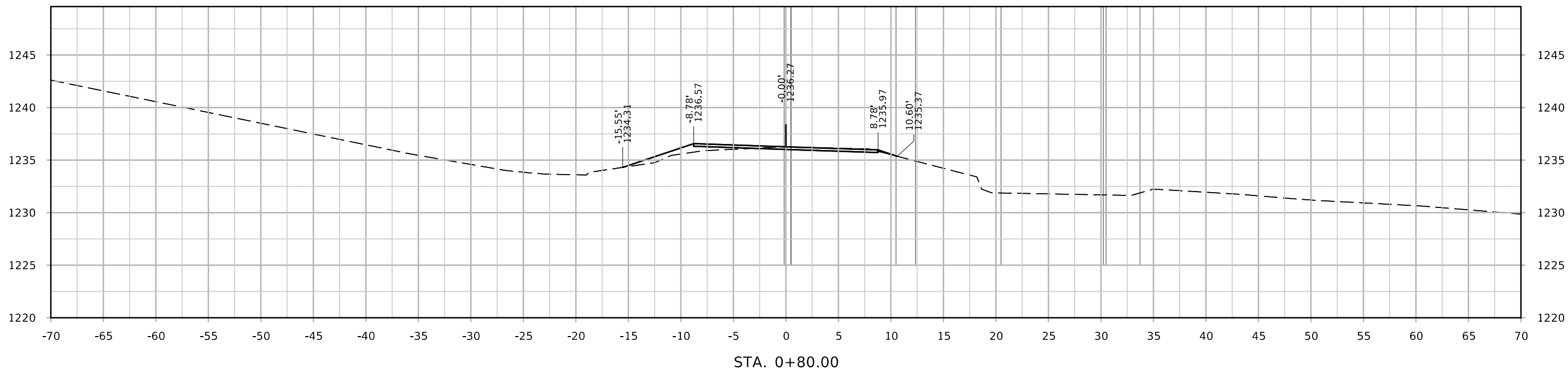
# North Cul-de-sac



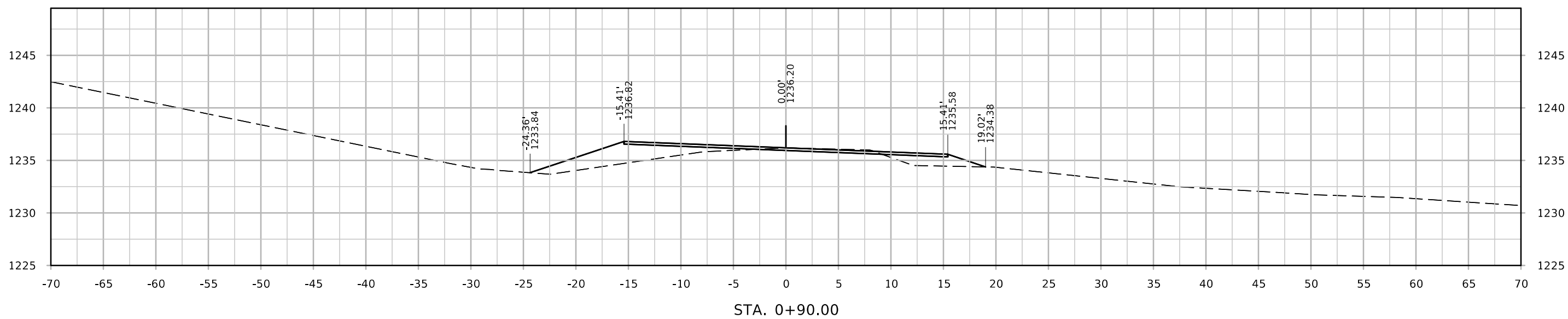
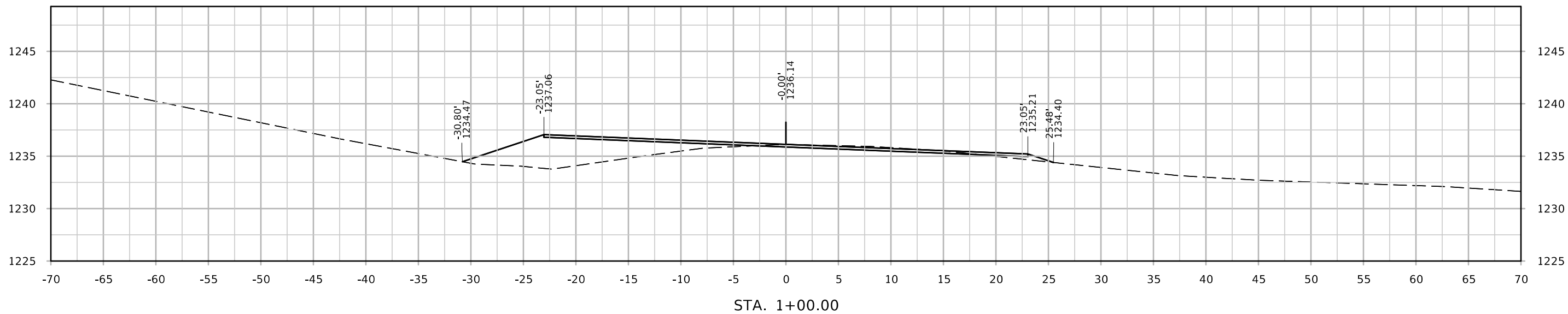
# North Cul-de-sac



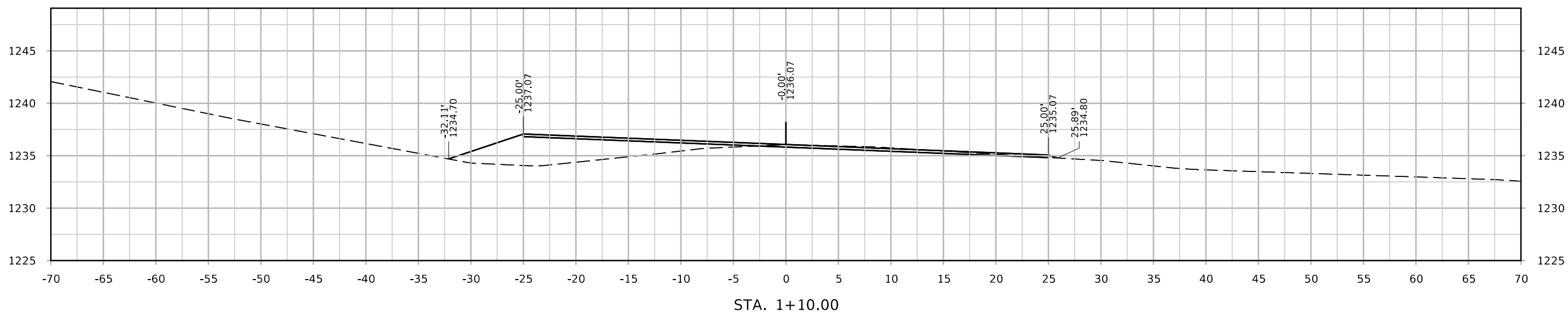
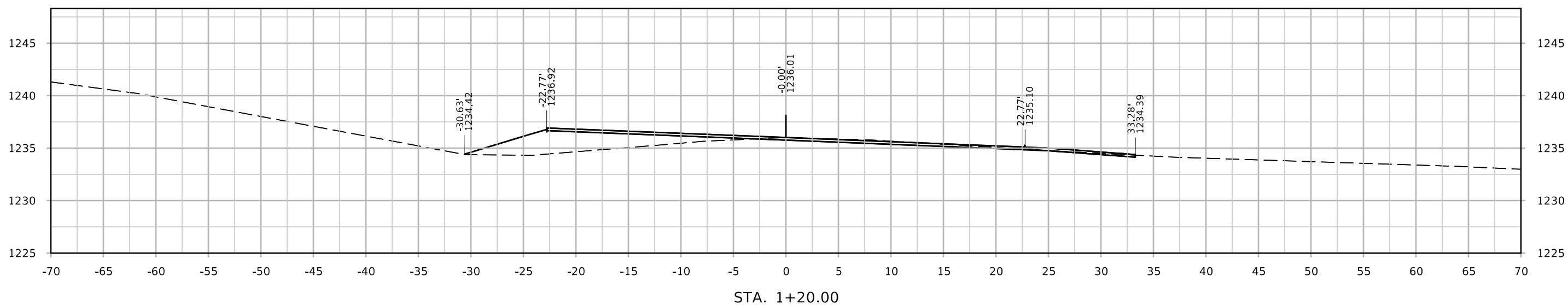
# North Cul-de-sac



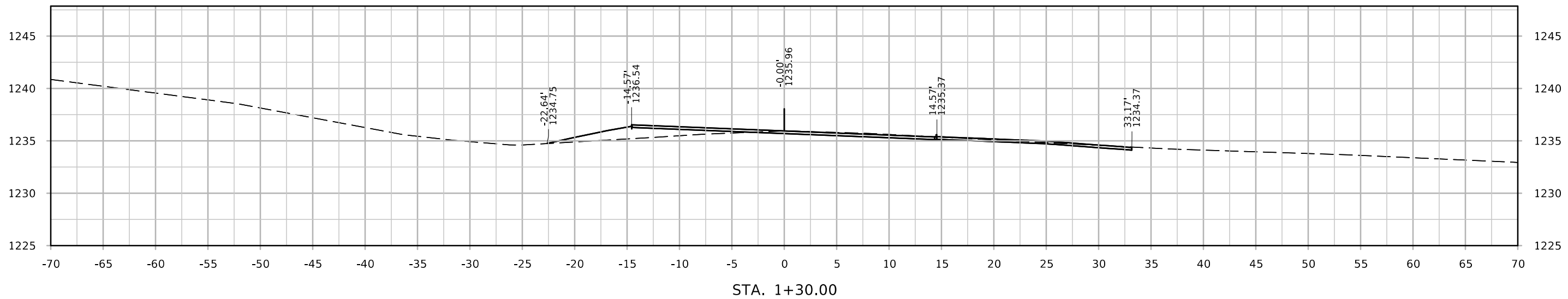
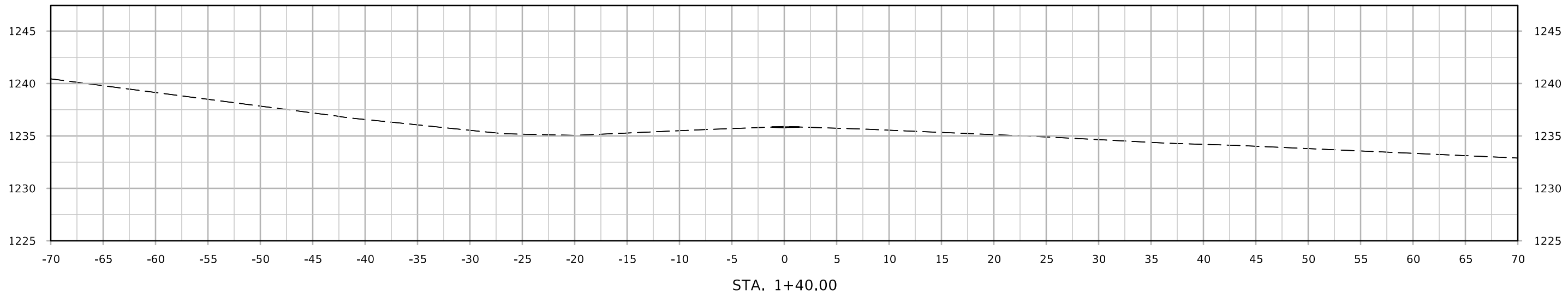
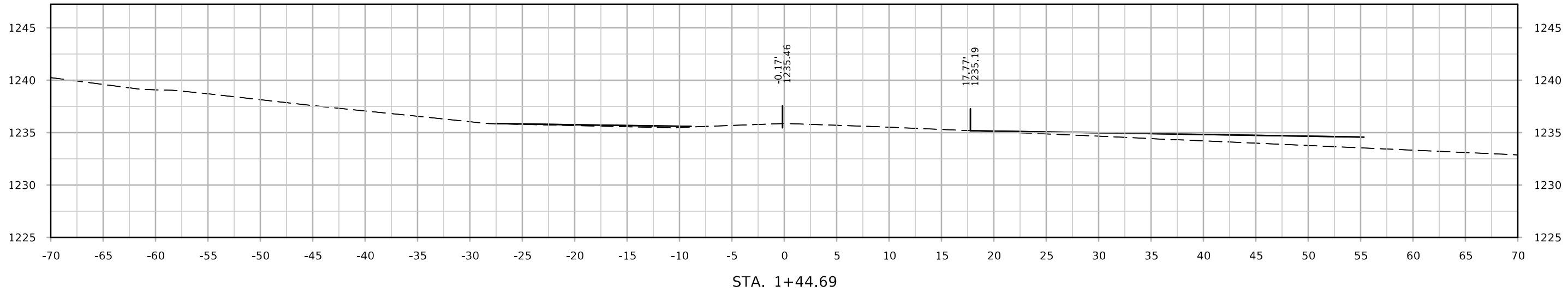
# North Cul-de-sac



# North Cul-de-sac

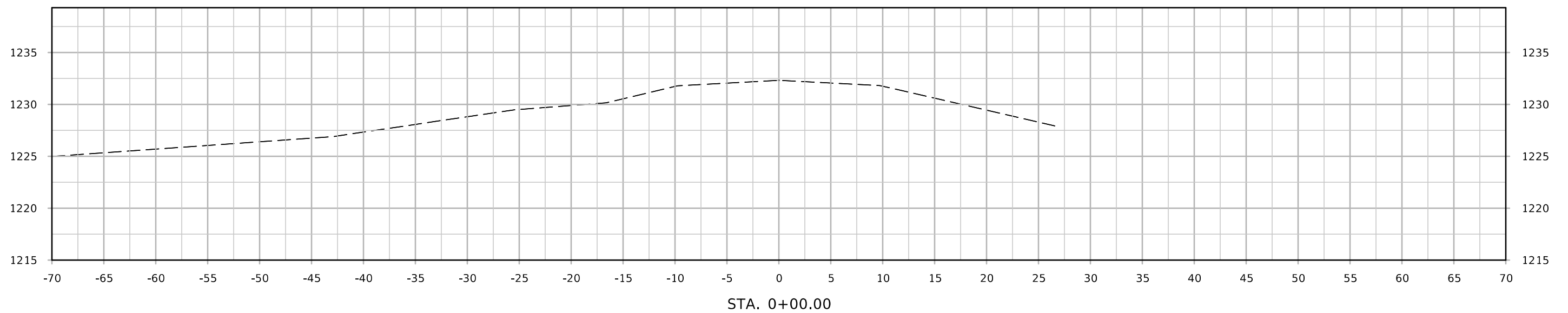
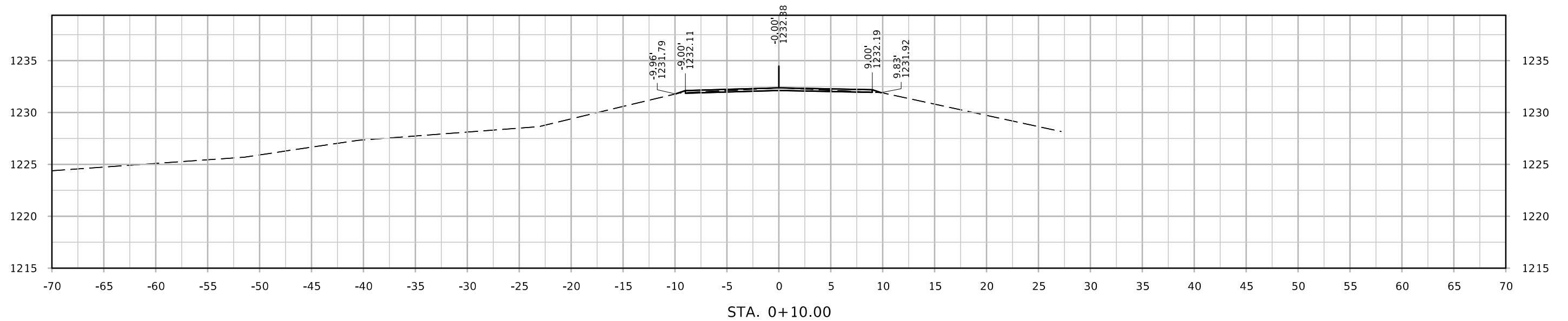


# North Cul-de-sac

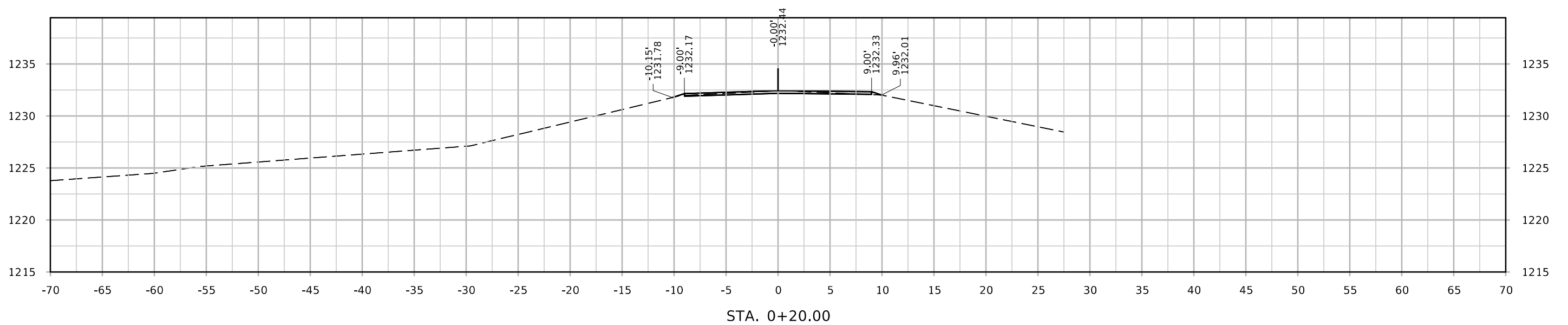
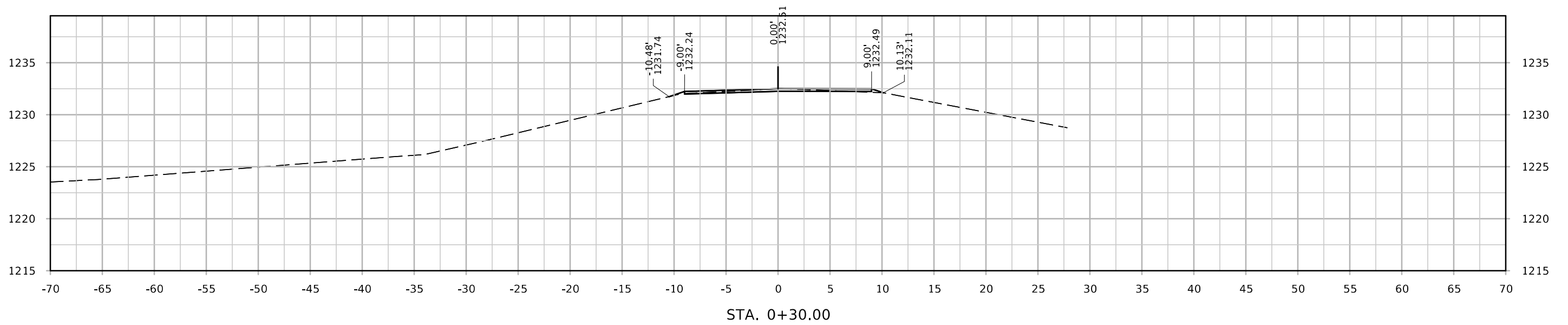




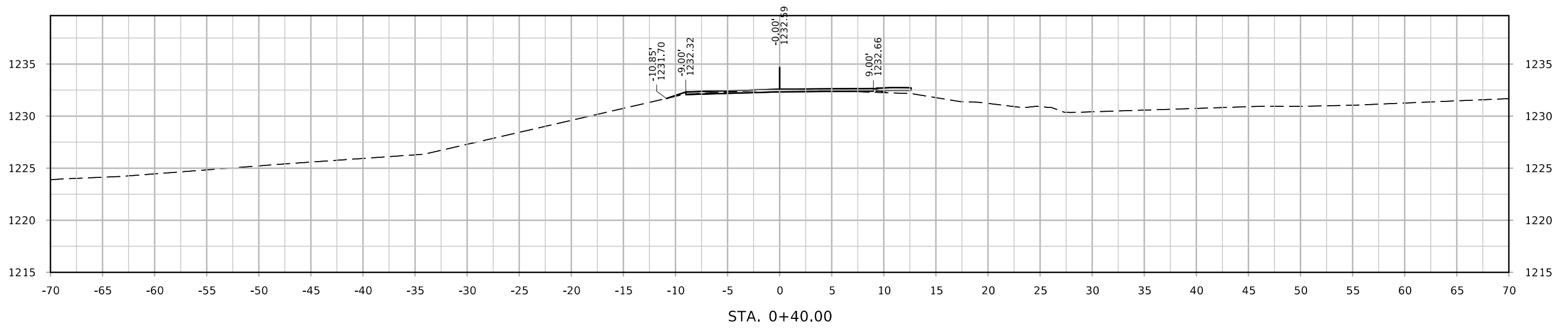
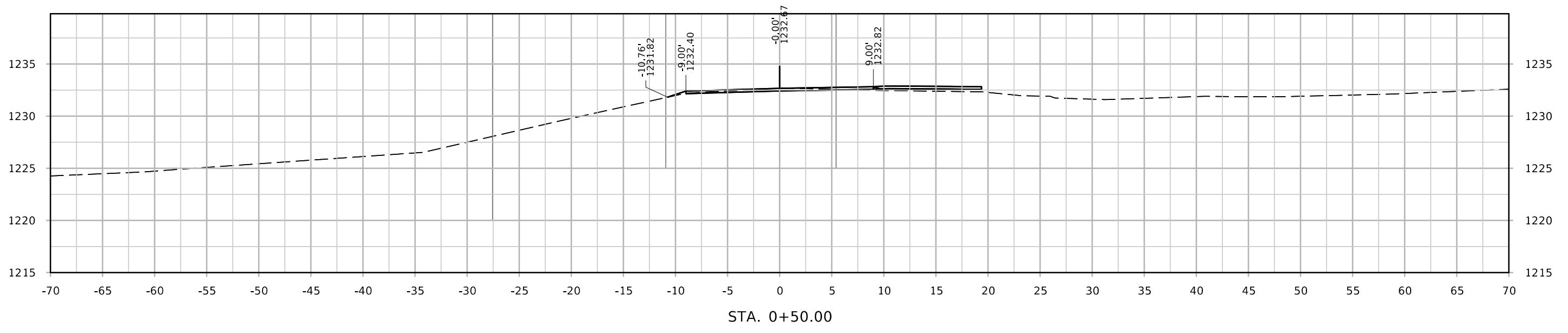
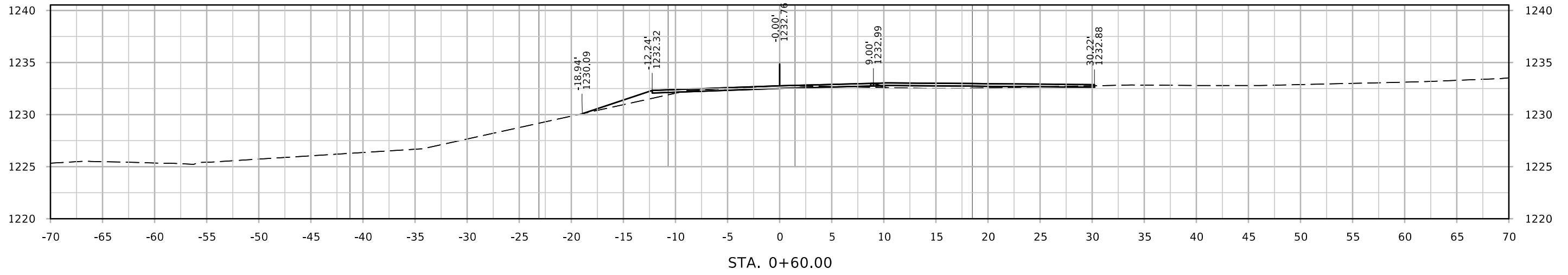
# South Cul-de-sac



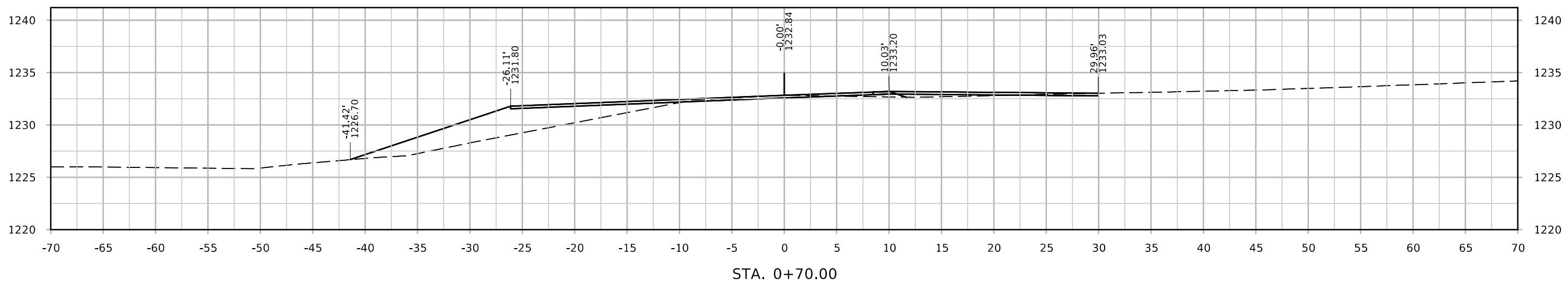
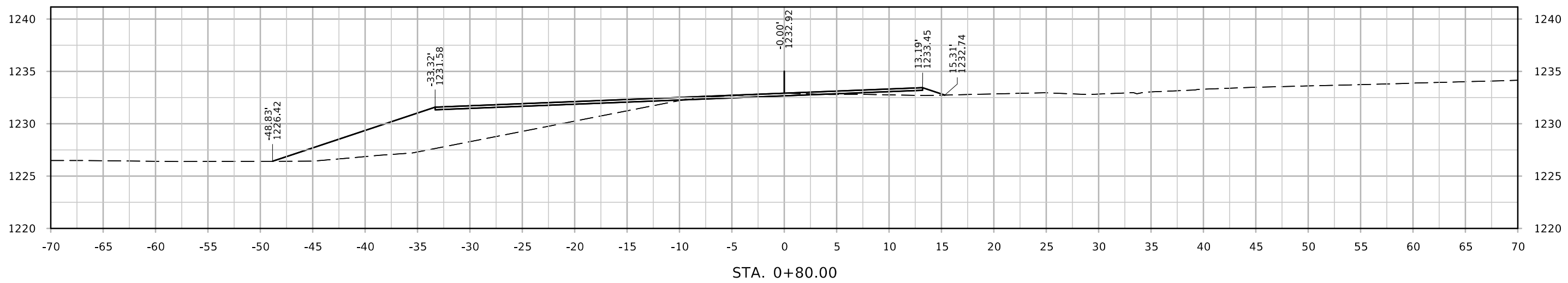
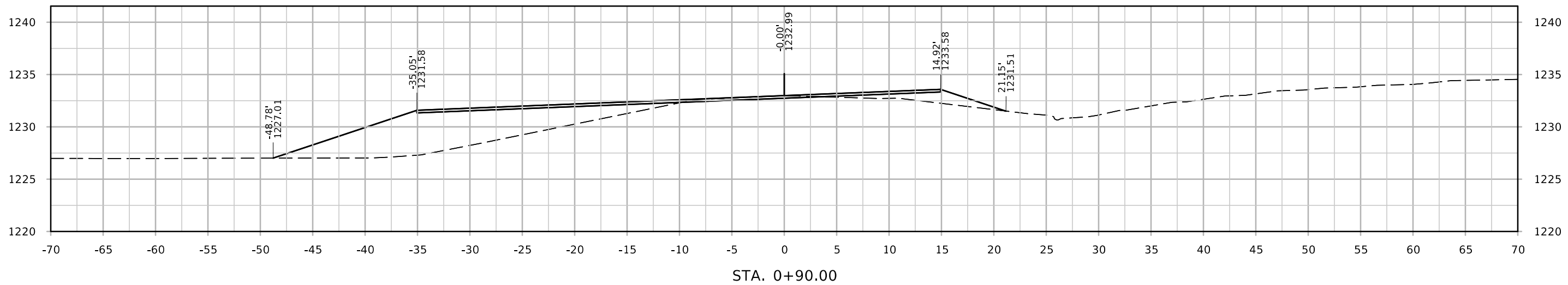
# South Cul-de-sac



# South Cul-de-sac



# South Cul-de-sac



# South Cul-de-sac

