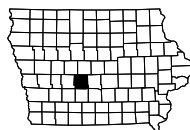


DALLAS COUNTY

PCC PAVEMENT - GRADE AND NEW  
NSIPX-006-3(076)—3L-25

LETTING DATE  
Jan 21 2026



INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 6	Project Concept Statement
A.7 - 12	Project Design Criteria
<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 - 5	US HIGHWAY 6
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1 - 3	School Street and Common Place
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1 - 13	Mainline Cross Sections
	* Color Plan Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**DALLAS COUNTY**  
**PCC PAVEMENT - GRADE AND NEW**  
US 6 & COMMON PLACE INTERSECTION  
0.3 MI SOUTH OF ADEL CITY LIMITS

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.  
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL	
PROJECT IDENTIFICATION NUMBER	..
25-25-006-010	
PROJECT NUMBER	
NSIPX-006-3(076)—3L-25	
R.O.W. PROJECT NUMBER	

January 7, 2025  
Field Exam

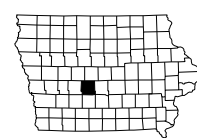
Wes Mayberry, Iowa DOT  
Cory Kirkpatrick, Iowa DOT  
Jeff Huntsman, Iowa DOT  
Dan Redmond, Iowa DOT  
Nate Epperson, Iowa DOT  
Austin Yates, Iowa DOT  
Todd Frank, Iowa DOT  
Andy Floy, FOTH  
Kip Overton, City of Adel  
Clair Asberry, Iowa DOT  
Travis Malone, Iowa DOT  
Jacob Woodcock, Iowa DOT  
Jill Garton, Iowa DOT  
John Bartholomew, Iowa DOT  
Nickie Cuva, Iowa DOT  
Orest Lechnowsky, Iowa DOT  
Greg Karrsen, Iowa DOT  
Jordan Provost, FOTH  
Adam Schott, FOTH  
Blair Spotts, FOTH

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

**PRELIMINARY PLANS**

Subject to change by final design.

**D2 PLAN - Date: Dec 20, 2024**



PROJECT LOCATION

**FINAL PROJECT CONCEPT STATEMENT**

US-6 and Common Place Intersection –  
Roundabout Design Concept

Dallas County  
Proj.# NSIPX-006-3(076)–3L-25

0.3 miles south of the Adel city limits

Prepared by Foth Infrastructure & Environment for  
the Iowa Department of Transportation  
District 4

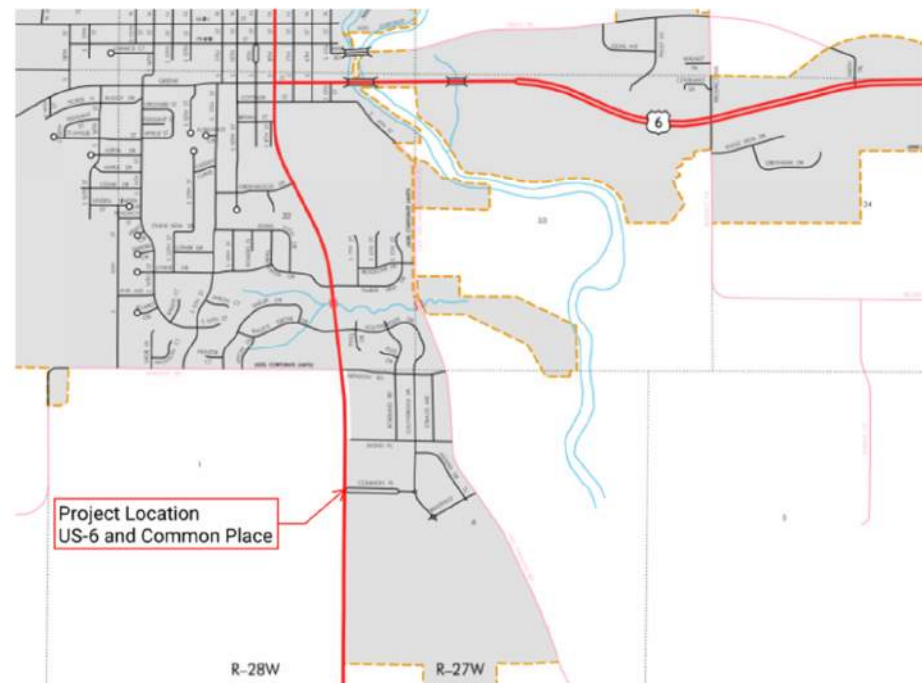
November 1, 2024

**I. STUDY AREA**

**A. Project Description**

The project consists of construction of a roundabout at the US-6 and Common Place intersection, south of Adel. The length of reconstruction along US-6 is approximately 0.3 miles.

**Figure 1 - Project Location Map**



**B. Need for Project**

The Adel De Soto Minburn (ADM) Community School District is proposing to build a new high school immediately west of the US-6 and Common Place intersection. A traffic impact study was performed for the US-6 corridor between Meadow Road and Southbridge Drive to determine appropriate traffic control, roadway geometric requirements, and impacts of the proposed high school. The recommendation from the traffic impact study was to construct a single-lane roundabout for opening day of the high school (2027). The design should be able to accommodate expansion to a hybrid multi-lane roundabout in the future if needed.

**C. Pavement History**

**M.P. 108.97 to M.P. 114.00**

Original Pavement: 8" PCC  
Year Constructed: 1951  
Coarse Aggregate Source: West Des Moines, Gravel  
Project: F-366(6)

Resurfaced: 1987 with 5" of AAC  
Coarse Aggregate Source: Early Chapel, C.LST.  
Project: FR-169-4(30)–2G-2

**D. Traffic Estimates**

The estimated Average Daily Traffic (ADT) for 2025 is 11,600 while the estimated ADT for the future design year (2045) is 22,600. The percent truck traffic for both 2025 and 2045 is 4%.

**E. Crash Analysis**

See Table 1 below for crash data obtained from the Iowa DOT's Iowa Crash Analysis Tool (ICAT). The intersections of US-6 and Common Place, Bradfield Street, and Southbridge have zero reported crashes. Both the intersection of US-6 and Meadow Road and US-6 and 302<sup>nd</sup> Place have negligible Potential for Crash Reduction (PCR) values, indicating that the intersections have less crashes than expected for similar intersection types within Iowa.

**Table 1 – Intersection Crash Summary**

Intersection	Crash Severity						Common Crash Types				
	Fatal	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	Total Crashes	Rear End	Left Turn	Broadside	Sideswipe	Not Reported/ Other
US Highway 6/169 at Meadow Road	0	0	1	2	6	9	2	0	2	3	2
US Highway 6/169 at 302nd Place	0	1	0	1	4	6	4	0	1	0	1
US Highway 6/169 at Common Place	0	0	0	0	0	0	0	0	0	0	0
US Highway 6/169 at Bradfield Street	0	0	0	0	0	0	0	0	0	0	0
US Highway 6/169 at Southbridge Drive	0	0	0	0	1	1	0	0	0	0	1

F. Coordination with the ADM Community School District

The design of the new high school site is underway and set to bid in January 2025 with completion in the fall of 2027. Coordination between the site design and the roundabout design will need to take place prior to bidding for the high school site and at each milestone for the roundabout project. Below are the main areas of coordination between the two projects:

- Property acquisition needed for roundabout construction
- Sanitary sewer service crossing US-6
- Water main service crossing US-6
- West leg of the roundabout acting as the main entrance for the high school
- Access to the high school site during construction of the roundabout

F. Existing Utilities

An Iowa One-Call design locate was performed to determine the presence of existing utilities located within the corridor and are shown in Table 2 – List of Existing Utilities. Utility mapping provided by the utilities can be found in Appendix A.

Based on maps received, the existing water main, gas, and overhead electric are located on the east side of US-6. The conceptual layout of the roundabout has the intersection and most of the improvements shifted to the west to minimize impacts to the major utilities.

To date, responses from the initial request for information have not been received from Mediacom, Precision Underground Utility, and the ADM School District.

**Table 2 – List of Existing Utilities**

Owner	Facility Type
Lumen	Communications
Iowa Communications Network (ICN)	Communications
MidAmerican	Electric
MidAmerican	Gas
Xenia Rural Water	Water Main
Unite Private Networks (UPN)	Communications
Mediacom	TV/Communications
Precision Underground Utility	Communications
City of Adel	
ADM Community School District	

II. PROJECT CONCEPT

A. Proposed Improvements

The purpose of this project is to construct a single-lane roundabout at the intersection of US-6 and Common Place to accommodate a new high school for the ADM Community School District. The roundabout will be designed to allow for expansion to a hybrid multi-lane roundabout in the future if needed.

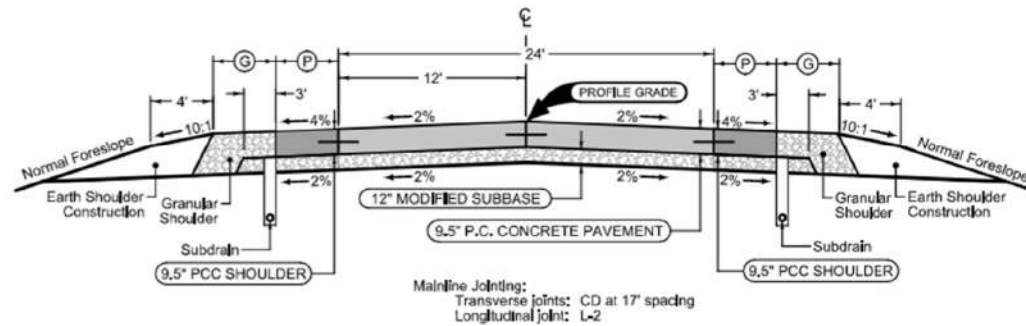
In the project corridor area, US-6 is a 2-lane rural roadway with a width of approximately 25 feet and a post speed limit of 55 MPH. Granular shoulders are present on both sides of the road, 12-ft wide on the east and 10-ft wide on the west. No sidewalks are present.

The proposed section of US-6 is a 2-lane rural section with 12-ft lanes and 10-ft shoulders (6-ft paved, 4-ft granular) as seen in Figure 1. Below are some of the key proposed design features being included:

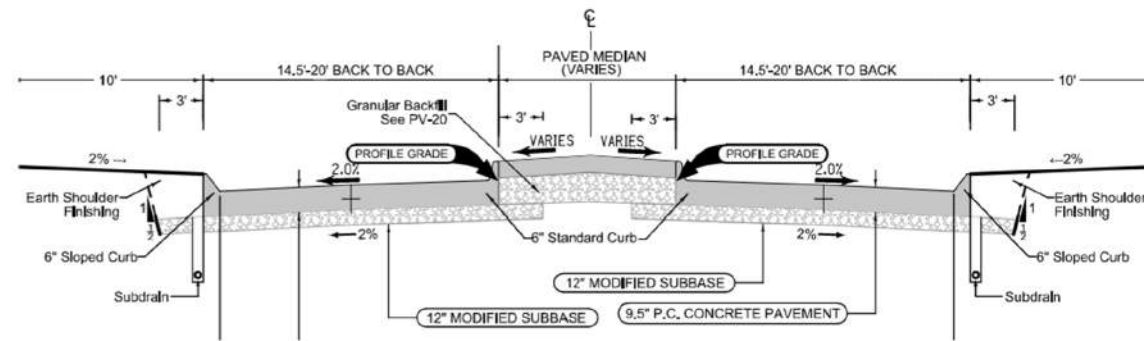
- Horizontal curvature will be added along northbound and southbound US-6 to help alert drivers to the roundabout and encourage speed reduction.
- A raised median splitter island will be added to help separate opposing traffic and guide vehicles in and out of the roundabout. The length of the splitter island on the north and south legs is approximately 250 feet.
- Curb along the outside edge of pavement will be introduced within approximately 75 feet of the yield line of the roundabout. This urban section width at the entrance and exit of the roundabout will be 20-ft from back-of-curb to back-of-curb, as shown in Figure 2.
- Pedestrian crossings will be added for all directions at the roundabout. A trail will most likely be added along the west side of US-6.
- A WB-67 will be used as the design vehicle for sizing the truck apron.
- The roundabout will be designed for expansion to the outside in the future if needed. Future US-6 was assumed to be a 64-ft wide 5-lane section with 12-ft

lanes and a 16-ft center turn lane. This width allows flexibility to include a 4-ft raised median with 12-ft turn lanes if access control is needed along the corridor.

**Figure 1 – Proposed Typical Section (2-Lane Rural)**



**Figure 2 – Proposed Typical Section (2-Lane Urban at Roundabout)**



Existing drainage patterns will be maintained with ditch flowlines regraded to match similarly to existing grades. Any existing culverts will be analyzed to verify proper sizes and either extended to match new grading or replaced. Storm sewer may be included near the roundabout where spread design criteria dictates the need for intakes. Longitudinal subdrain will be included along with subdrain outlet connections to the ditches.

The proposed vertical profile will match closely to the existing profile while focusing on allowing water to drain away from the roundabout through each leg.

A pavement recommendation from the Iowa DOT Construction and Materials Bureau has not been received yet, but for the purposes of this concept we have assumed a pavement section for the US-6 corridor that consists of 9.5" of PCC over 12" of modified subbase.

Permanent Right-of-Way acquisition is anticipated with the proposed improvements from the 2 properties located on the west side of US-6. Temporary Construction Easements are anticipated from the 5 properties located on the east side of US-6 for ditch grading.

A peer review will be conducted through the DOT on-call consultant for this project. Both the single-lane and future hybrid multi-lane roundabouts will be submitted for review and comments received will be considered for incorporation into the final design.

**B. Construction Sequence**

It is anticipated US-6 will have 2-lanes open to traffic for the duration of construction. Local traffic routing along with business signing will be needed during each stage of construction. The intersection at Common Place will need to be closed at some point and traffic can be detoured to 302<sup>nd</sup> Place or Bradfield Street.

Throughout the duration of construction, coordination will be needed between the roadway contractor and the high school site contractors. An access location will be agreed upon at either the north or south end of the site and maintained for construction access and deliveries.

It is expected that the roadway reconstruction work will be broken into multiple, separate stages of construction to maintain access to businesses, residents, schools, emergency response vehicles, and to minimize local disruption.

- Stage 1 - Work will begin on the west side of US-6 to not impact existing traffic. At the end of this stage, temporary pavement will be constructed at the far north and south ends of the project to utilize for traffic crossovers.
- Stage 2 – Existing US-6 pavement will be removed, and the tie-in locations constructed. The remainder of the east portion of the roundabout and tie-in with Common Place will be completed.

**C. Special Considerations**

The following conditions were identified for approval and will be implemented during the design process prior to construction:

- A search of the database of the National Register of Historic Places shows there are no buildings or structures located immediately adjacent to the project limits.
- Review of the Iowa DNR Facility Explorer data warehouse does not indicate any contaminated soils or leaky underground storage tanks along the US-6 project corridor.

**D. Program Status**

The project is currently programmed for FY 2027 with the following estimate:

**Table 3 – Cost Estimate (Today's Dollars)**

MODIFIED SUBBASE	CY	3800	\$55.00	\$209,000
PCC PAVEMENT, 9.5"	SY	7975	\$80.00	\$638,000
PAVED SHOULDERS, FULL-DEPTH	SY	1575	\$75.00	\$118,125
GRANULAR SHOULDERS	TON	675	\$32.50	\$21,938
CONCRETE MEDIAN, 6 IN.	SY	1310	\$125.00	\$163,750
TEMPORARY PAVEMENT	SY	5000	\$100.00	\$500,000
EXCAVATION, CLASS 10	CY	3000	\$12.00	\$36,000
EMBANKMENT IN PLACE	CY	10000	\$19.00	\$190,000
PCC SIDEWALK	SY	1650	\$60.00	\$99,000
INTAKES	EA	8	\$6,500.00	\$52,000
STORM MANHOLES	EA	4	\$6,000.00	\$24,000
STORM SEWER, RCP	LF	700	\$80.00	\$56,000
CULVERT EXTENSION, RCP, 18 IN.	LF	125	\$150.00	\$18,750
CULVERT EXTENSION, RCB, 4 FT. X 4 FT.	LF	24	\$1,500.00	\$36,000
PAVEMENT MARKINGS	STA	100	\$250.00	\$25,000
<b>SUBTOTAL ROADWAY CONSTRUCTION</b>				<b>\$2,301,563</b>
UNQUANTIFIED ITEMS (15%)	LS	1	\$345,234.38	\$345,234
MOBILIZATION (5%)	LS	1	\$115,078.13	\$115,078
TRAFFIC CONTROL (5%)	LS	1	\$115,078.13	\$115,078
<b>TOTAL ESTIMATED COSTS</b>				<b>\$2,876,953</b>

<b>Roadway</b>	US-6 (inside deceleration zone), Common Place RAB, Common Place		
<b>PIN Number</b>	25-25-006-010	<b>Submittal Date</b>	12/20/25
<b>Project Number</b>	HSIPX-006-3(076)--3L-25		<b>Approval Date</b>
<b>District</b>	District 4	<b>Assistant District Engineer</b>	Wes Mayberry
<b>County</b>	DALLAS	or	
<b>Route</b>	US-6	<b>Office Director</b>	
<b>Location</b>	Intersection of US-6 and Common Place 0.3 miles south of Adel city limits		
<b>Work Type</b>	PCC Pavement - Grade and New		
<b>Segment Manager</b>			
<b>Designer</b>	Foth		

[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	25
Maximum superelevation rate (Refer to Section <a href="#">2A-2</a> )	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	Design lane + curb
Right turn lane (ft)	12	10	N/A
Left turn lane (ft)	With raised or painted median	12 ft + median	N/A
	With depressed median	12	N/A
Two-way left turn lane	14	11	N/A
Parking lane width (ft)	10	7	N/A
Pavement cross-slope (on tangent sections)	Through lanes	2%	2%
	Auxiliary and turn lanes	3%	N/A
	Crown break at centerline	4%	4%
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 <a href="#">3C-2</a> )	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
Traverse Slopes	w/ drainage structures	8:1	6:1
	w/o drainage structures	10:1	6:1
Ditches (See Section <a href="#">3G-1</a> )	Outside ditch (depth x width) (ft)	5 x 10	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	N/A
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.

**Design year ADT = 22,600 (2045)**

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

**Effective Shoulder Width and Type for Two-Lane Highways**

Preferred (values shown in feet)			Acceptable (values shown in feet)			Project Values
	Rural Roadways	Urban Roadways		Rural Roadways	Urban Roadways	
Turn lanes with shoulders	6	6	Turn lanes with shoulders	6	0	
Turn lanes with curbs	6	See Section <a href="#">3C-2</a>	Turn lanes with curbs	6	0	
	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	
Climbing Lanes	6	4	Climbing Lanes	4	0	
Two-Lane Highways	Effective Shoulder Width	Paved Width	Two-Lane Highways	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	Design year ADT > 2000 vpd	8	0*	10' effective (6' paved, 4' granular)
On roadways approaching urban areas (due to increased bike traffic)	10	10				
On all curves with a superelevation rate of 7.0% or greater	10	10				
On roadways with design year ADT > 5000	10	6	Design year ADT between 400 - 2000 vpd	6	0*	
On all other NHS	10	6	Design year ADT < 400 vpd	4	0*	
On non-NHS routes with design year ADT > 3000	10	6				
On non-NHS routes with design year ADT < 3000	8	0*				

\*Requires safety edge-Refer to Section [3C-6](#)

Curbs should be located beyond the outer edge of the effective shoulder width in rural areas

Refer to Section [3C-2](#) for curb offsets in urban areas

Notes:

Deceleration zone is within 460' from yield line



Roadway Design Speed (mph) = 25, 35

[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							
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	
		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							
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					
	sag vertical curves	roadways without fixed-source lighting	26	37	49	64	79	26	37	49	64	79					
		roadways with fixed-source lighting	26	37	49	64	79	14	20	27	35	44					
Minimum gradient (%) (Refer to Section <a href="#">2B-1</a> )	0.5					0.3% with a curb, 0.0% without a curb					.5						
Maximum gradient (%) (Refer to Section <a href="#">2B-1</a> )	Urban roadways		5					--	9	8	8	7	5				
	Rural roadways							--	--	--	6	6	5				
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-6 (outside deceleration zone)		
<b>PIN Number</b>	25-25-006-010	<b>Submittal Date</b>	12/20/25
<b>Project Number</b>	HSIPX-006-3(076)--3L-25	<b>Approval Date</b>	
<b>District</b>	District 4	<b>Assistant District Engineer</b>	Wes Mayberry
<b>County</b>	DALLAS	<b>or</b>	
<b>Route</b>	US-6	<b>Office Director</b>	
<b>Location</b>	Intersection of US-6 and Common Place 0.3 miles south of Adel city limits		
<b>Work Type</b>	PCC Pavement - Grade and New		
<b>Segment Manager</b>			
<b>Designer</b>	Foth		

[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 <a href="#">2A-2</a> )	6%	8%	2%
Design lane width (ft)	12	12	12
Full depth paved width (ft)	12	12	12
Right turn lane (ft)	12	10	N/A
Climbing Lane (ft)	12	12	N/A
Left turn lane (ft)	12	10	N/A
Pavement cross-slope (on tangent sections)	Through lanes	1.5% minimum, 2% maximum	2%
	Auxiliary and turn lanes	3% maximum	3%
	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 <a href="#">3C-2</a> )	Design speed = 50 or 55 mph	6-inch sloped	N/A
	Design speed ≥ 60 mph	4-inch sloped	N/A
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	10:1 for 4' then 6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3.5:1
	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	8:1
	w/o drainage structures	10:1	10:1
Ditches (Refer to Section <a href="#">3G-1</a> )	Outside ditch (depth x width) (ft)	5 x 10	5 x 10
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	N/A
	Bridge length > 200 ft	design lane widths + effective shoulder widths	N/A
Bridge width—existing*		design lane widths + no less than 2 ft left and right	N/A
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16
	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	N/A
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)

**Design year ADT = 22,600 (2045)**

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

### Effective Shoulder Width and Type for Two-Lane Highways

Preferred (values shown in feet)			Acceptable (values shown in feet)			Project Values
	Rural Roadways	Urban Roadways		Rural Roadways	Urban Roadways	
Turn lanes with shoulders	6	6	Turn lanes with shoulders	6	0	
Turn lanes with curbs	6	See Section <a href="#">3C-2</a>	Turn lanes with curbs	6	0	
	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	
Climbing Lanes	6	4	Climbing Lanes	4	0	
Two-Lane Highways	Effective Shoulder Width	Paved Width	Two-Lane Highways	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	Design year ADT > 2000 vpd	8	0*	10' effective (6' paved, 4' granular)
On roadways approaching urban areas (due to increased bike traffic)	10	10				
On all curves with a superelevation rate of 7.0% or greater	10	10				
On roadways with design year ADT > 5000	10	6	Design year ADT between 400 - 2000 vpd	6	0*	
On all other NHS	10	6	Design year ADT < 400 vpd	4	0*	
On non-NHS routes with design year ADT > 3000	10	6				
On non-NHS routes with design year ADT < 3000	8	0*				

\*Requires safety edge-Refer to Section [3C-6](#)

Curbs should be located beyond the outer edge of the effective shoulder width in rural areas

Refer to Section [3C-2](#) for curb offsets in urban areas

Notes:

Deceleration zone is within 460' from yield line


Roadway Design Speed (mph) = **60**

**Design Criteria for High Speed Roadways**

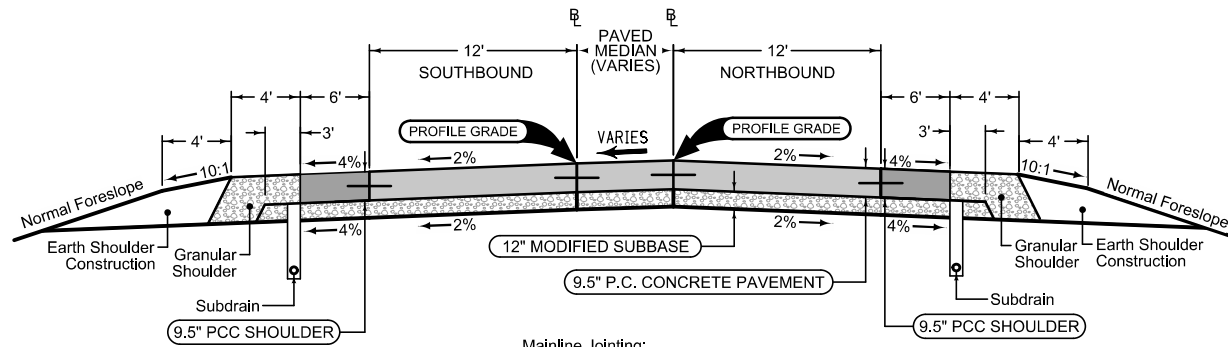
[Design Manual Section 1C-1](#)  
[Last Updated: 04-29-19](#)

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 <sub>max</sub> = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	1330
		e <sub>max</sub> = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	
Minimum vertical curve length (ft) (Refer to Section <a href="#">2B-1</a> )	crest vertical curves		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		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	136
Minimum gradient (%)	(Refer to Section <a href="#">2B-1</a> )		0.5						0.3% with a curb, 0.0% without a curb						.5
Maximum gradient (%)	(Refer to Section <a href="#">2B-1</a> )	Urban roadways	4		3				7	6	6	--	--	--	3
		Rural roadways	4		3				5	5	4	4	4	4	3
		Interstates	4		3				5	5	4	4	4	4	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>						32		

**Full Depth PCC Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: BT-2, L-2, or KT-2

2_C_FullPCC_MODIFIED			
STATION TO STATION	(P) Feet	(G) Feet	
	6	4	



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

2P_ 10-19-10	
STATION TO STATION	

**Full Depth PCC Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: BT-2, L-2, or KT-2

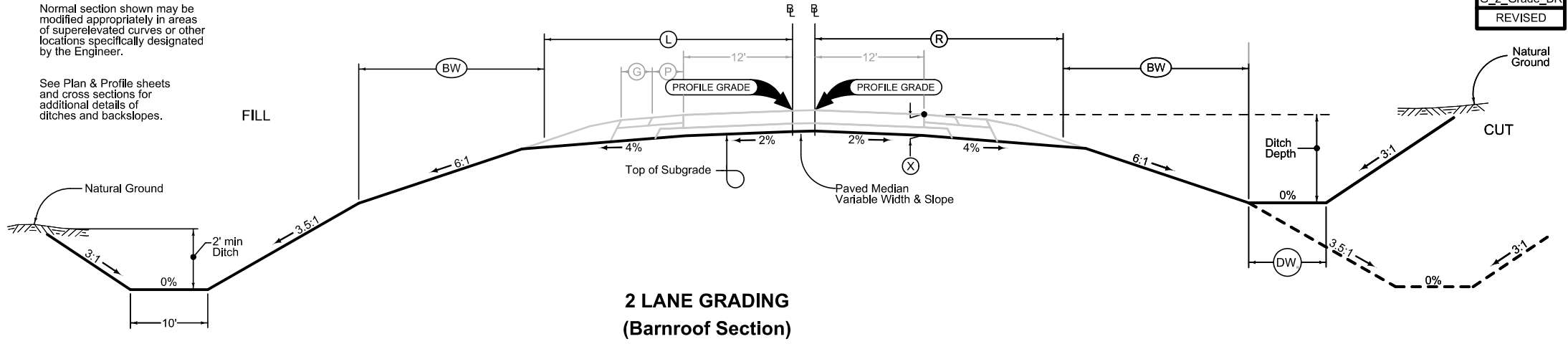
2_C_FullPCC_MODIFIED			
STATION TO STATION	(P) Feet	(G) Feet	
	6	4	

US 6

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(DW) Feet

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

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



**2 LANE GRADING (Barnroof Section)**

G\_2\_Grade\_BR  
REVISED

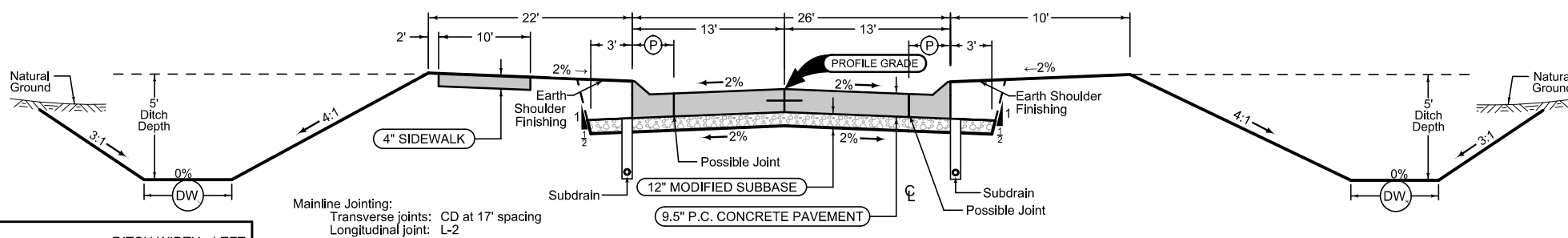
US 6

**Curbed Shoulder**

Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
Staged: KT-2  
Transverse: C at 17' spacing

2_Curb_ 10-17-17		
STATION TO STATION	(P) Feet	Curb Type See PV-102
		6" Standard



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

DITCH WIDTH - LEFT	
STATION TO STATION	(DW) Feet

2P_ 10-19-10	
STATION TO STATION	

DITCH WIDTH - RIGHT	
STATION TO STATION	(DW) Feet

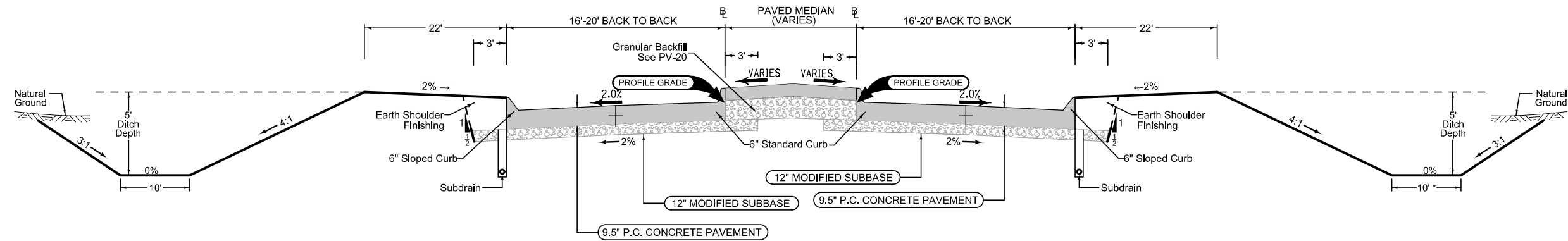
**Curbed Shoulder**

Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
Staged: KT-2  
Transverse: C at 17' spacing

2_Curb_ 10-17-17		
STATION TO STATION	(P) Feet	Curb Type See PV-102
		6" Standard

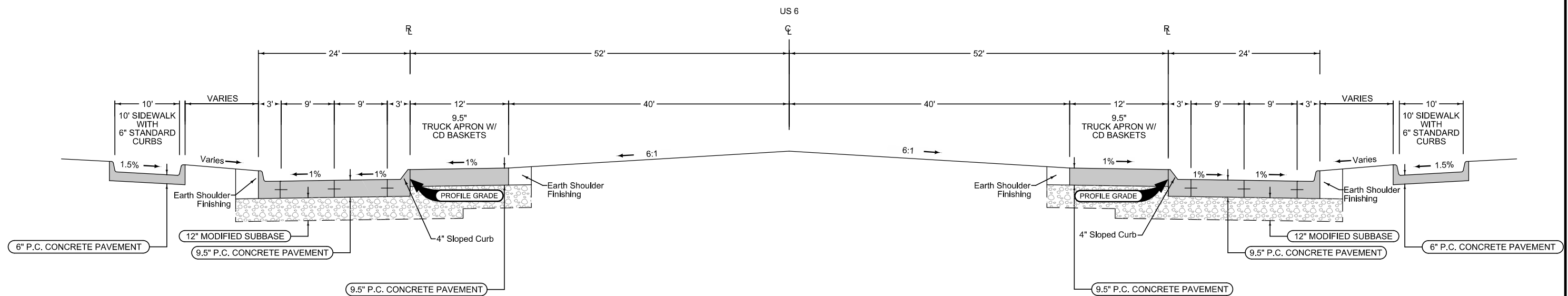
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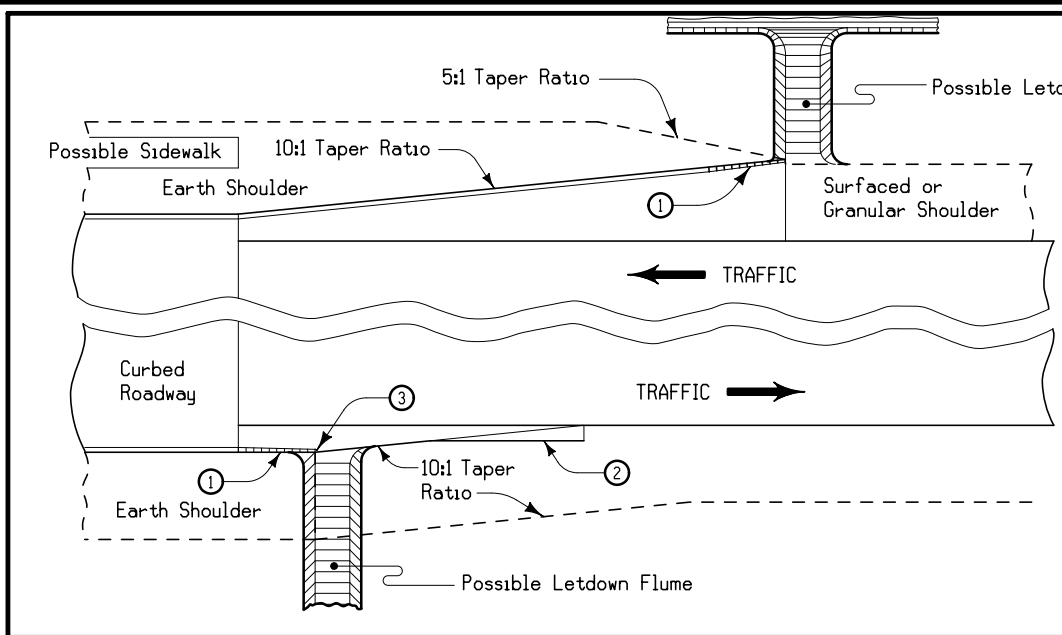
Mainline Jointing:  
 Transverse joints: CD at 20' spacing  
 Longitudinal joint: L-2

2P	
10-19-10	
STATION TO STATION	

**US 6  
COMMON PLACE**



**US 6 ROUNDABOUT**



- ① Runout curb according to PV-102
- ② End of Taper Details see Typical Detail 7101
- ③ End earth shoulder at the end of the curb transition when no flume is needed.

**TRANSITION  
BETWEEN CURBED AND  
NON-CURBED ROADWAYS**

### 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 Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

### UTILITY LEGEND

- W2 City of Adel  
Contact: KIP OVERTON  
Phone: 5154907430  
Email: koverton@adeliowa.org  
Quality D
- F04 ADM SCHOOL DISTRICT  
Contact: JENNIFER HOLLIDAY  
Phone: 5152627686  
Email: locates@gotoci.com  
Quality D
- F02 LUMEN  
Contact: SADIE HULL  
Phone: 5185470147  
Email: sadie.hull@lumen.com  
Quality D
- F0 IOWA COMMUNICATIONS NETWORK  
Contact: DAVE AUGSPURGER  
Phone: 5157254604  
Email: icnoutsideplantiowaonecall@iowa.gov  
Quality D
- F03 MEDIACOM  
Contact: JERRY BROUGHTON  
Phone: 8455872521  
Email: jrbroughton@mediacomcc.com  
Quality D
- E1 G MIDAMERICAN-ELEC  
MIDAMERICAN-GAS  
Contact: JAIME NEER  
Phone: 5152526972  
Email: mecdsmdesignlocates@midamerican.com  
Quality D
- W PRECISION UNDERGROUND UTILITY  
Contact: DOUG ROSE  
Phone: 5157826733  
Email: doug.r@precisionundergroundia.com  
Quality D
- W XENIA RURAL WATER DISTRICT  
Contact: LAIRD VAN DEE  
Phone: 5156762117  
Email: lvandee@xeniawater.org  
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.	
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

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

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

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

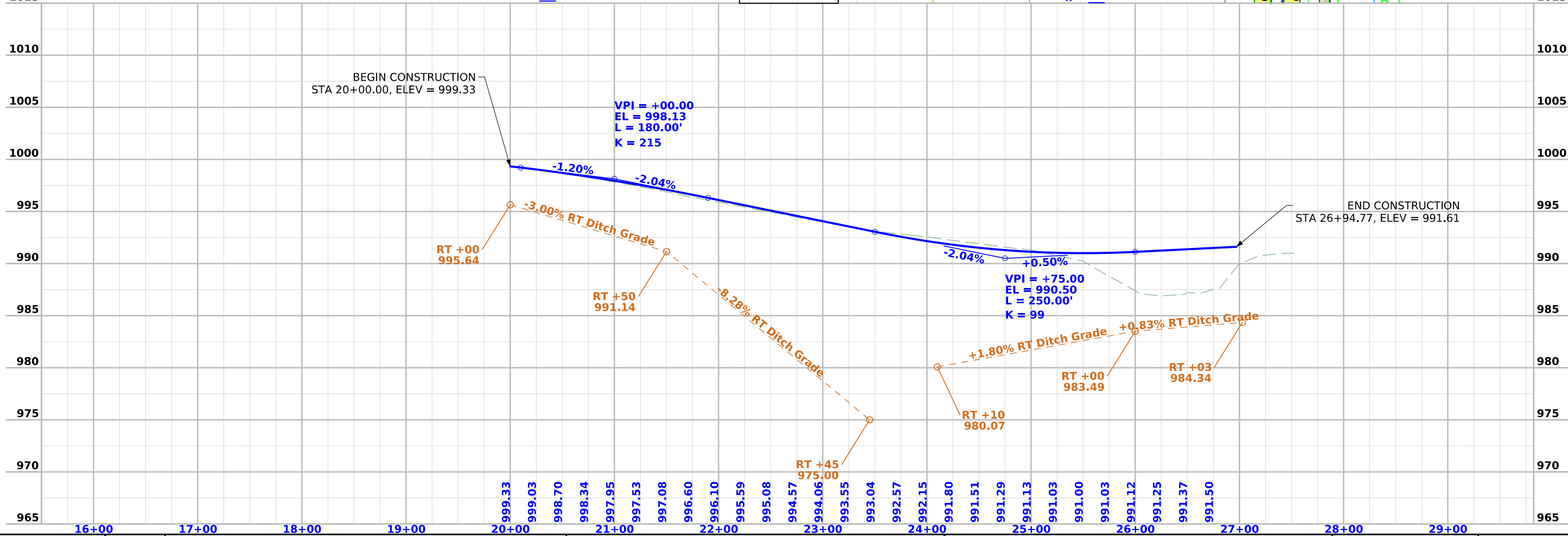
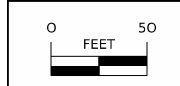
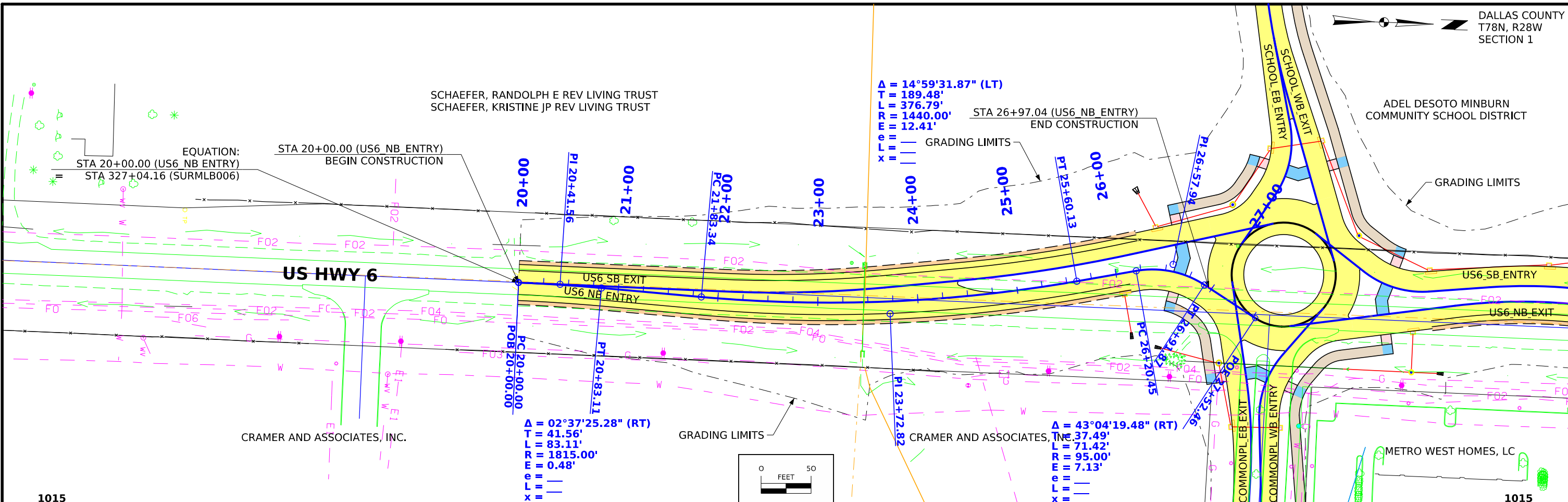
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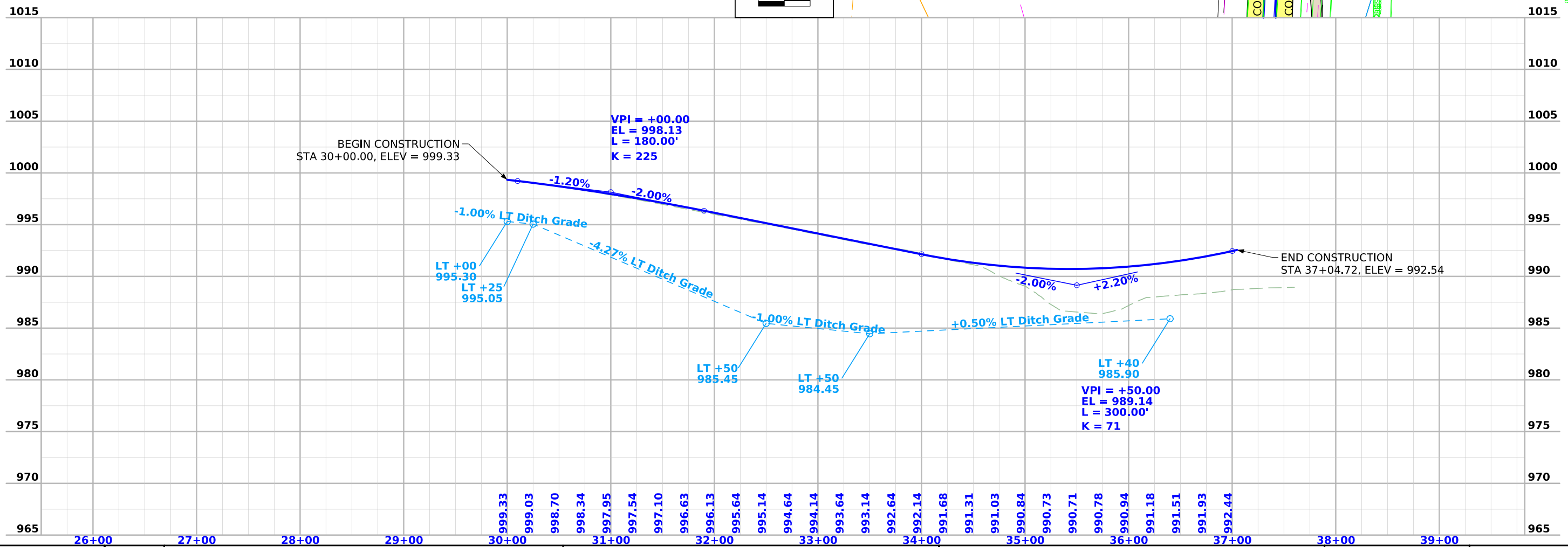
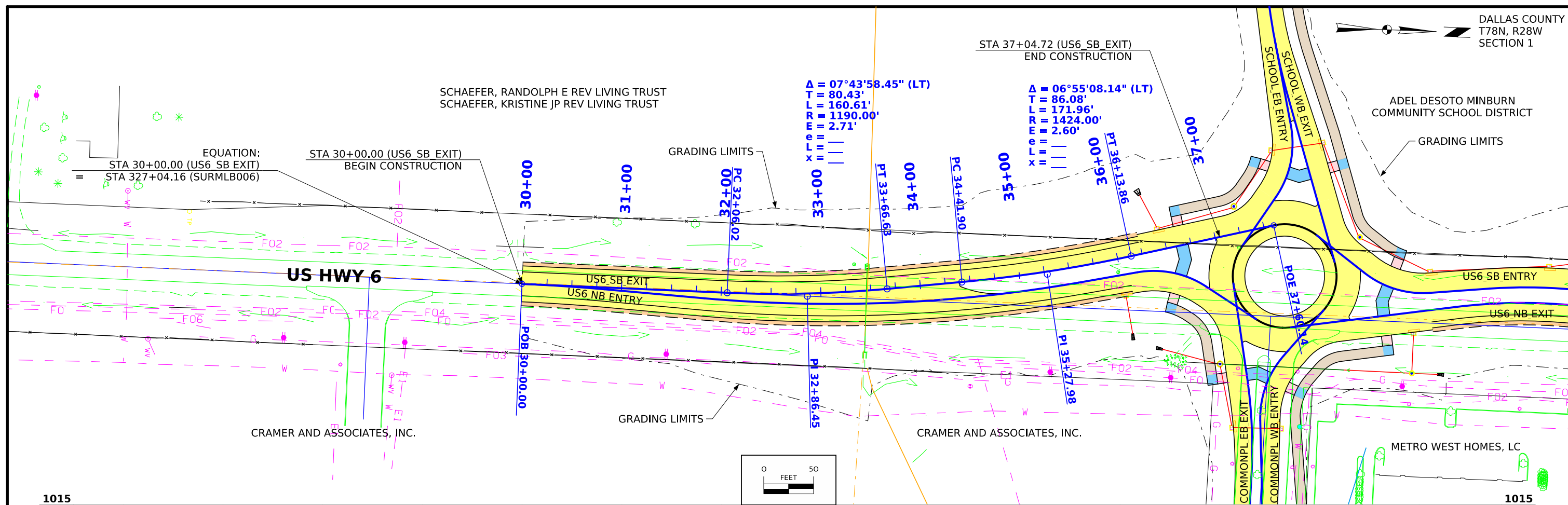
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



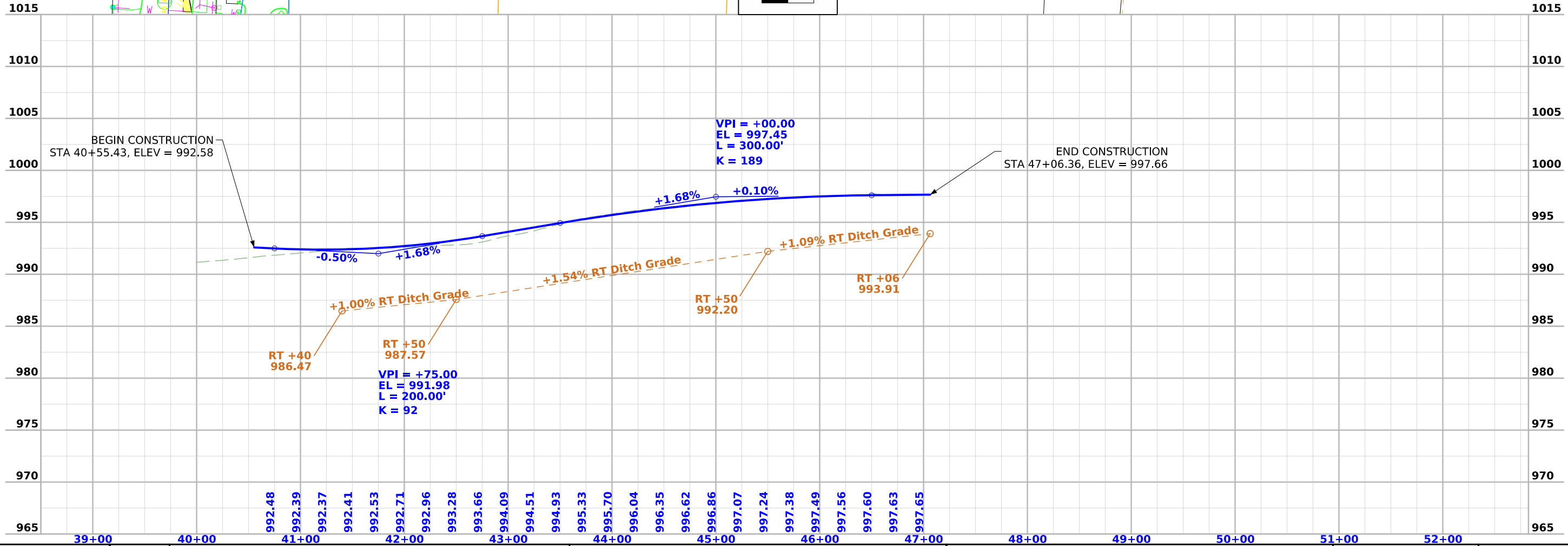
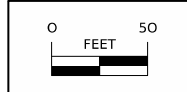
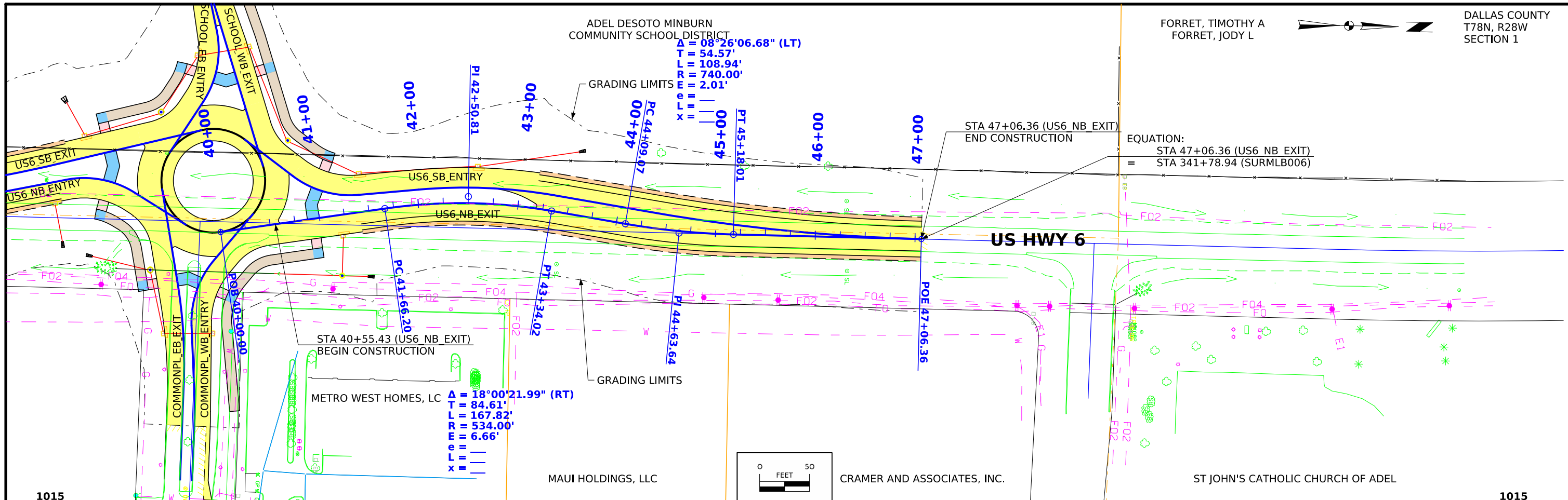




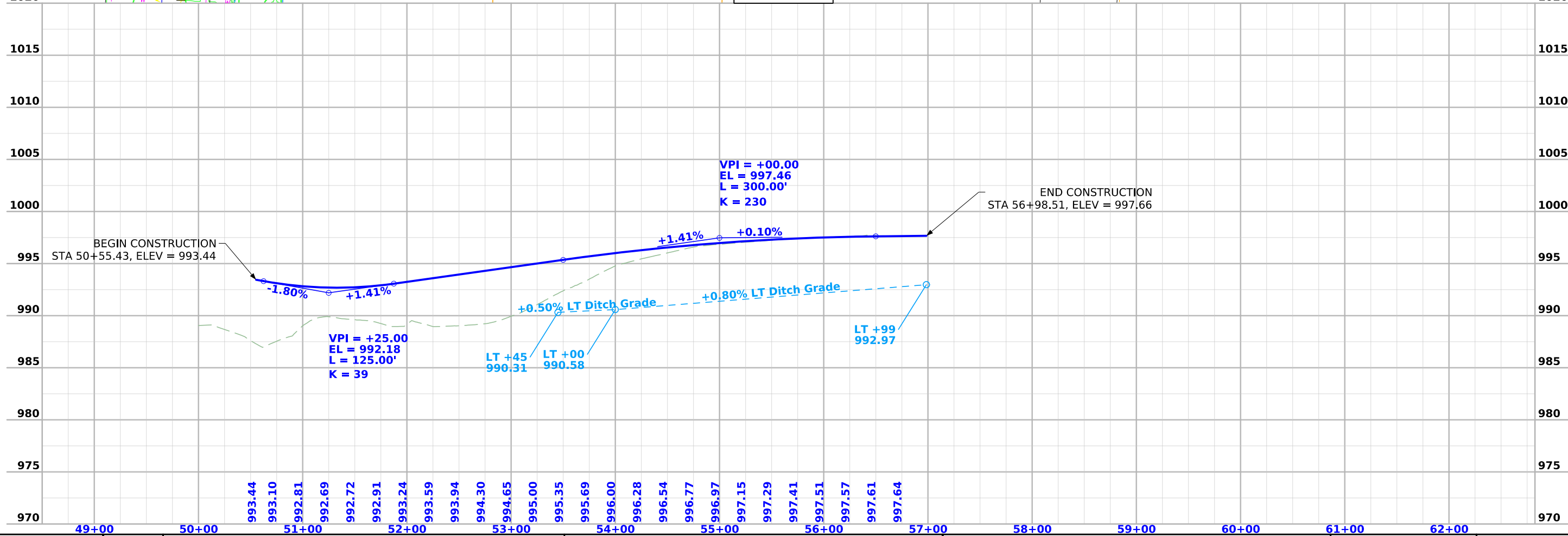
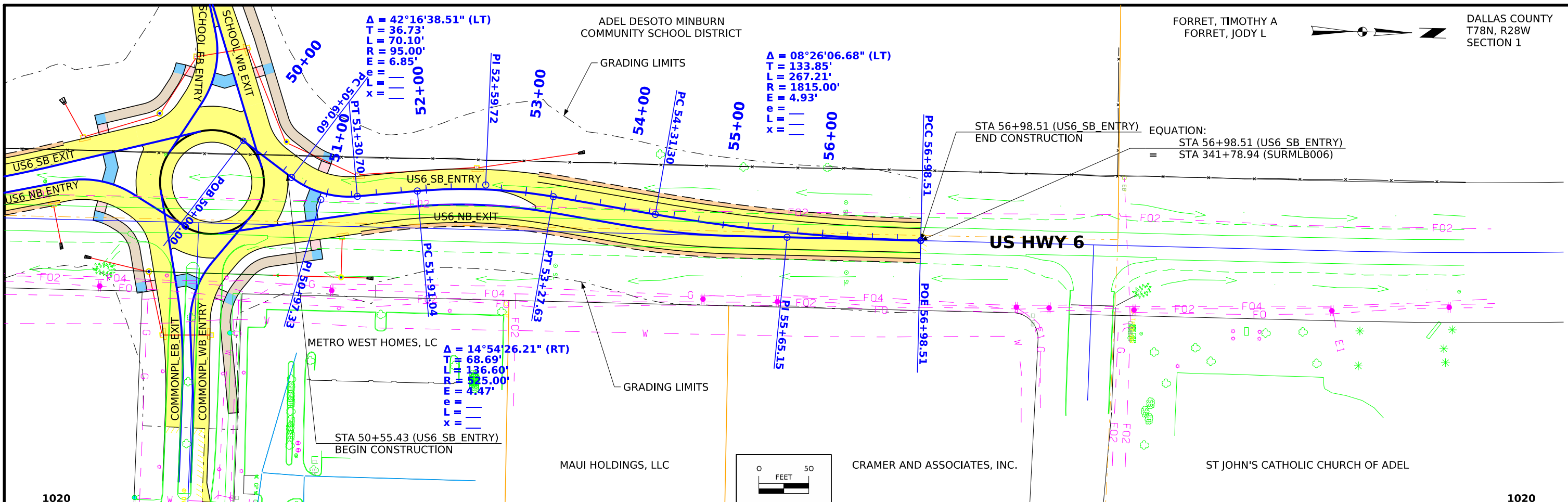
ADEL DESOTO MINBURN  
COMMUNITY SCHOOL DISTRICT

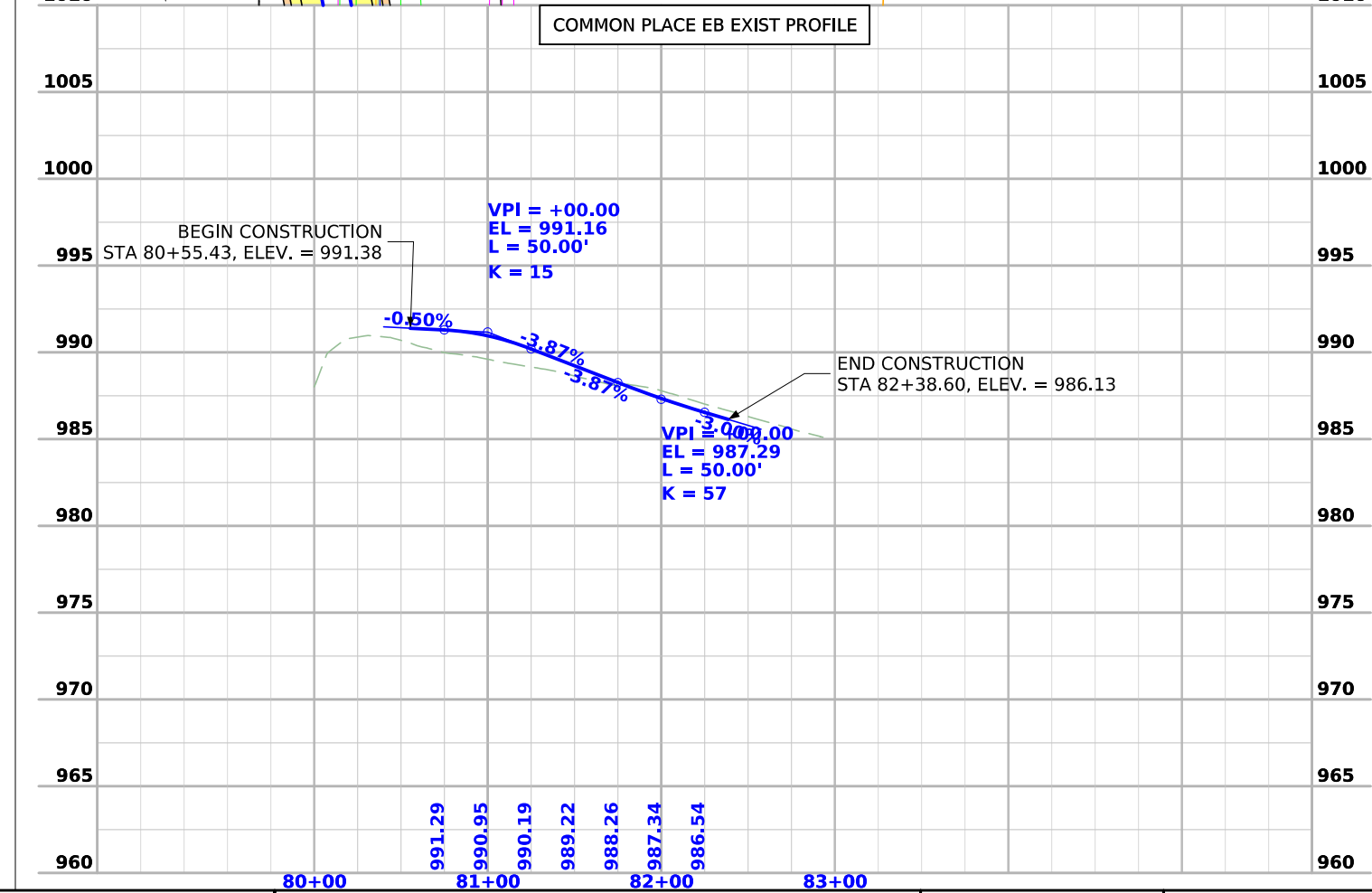
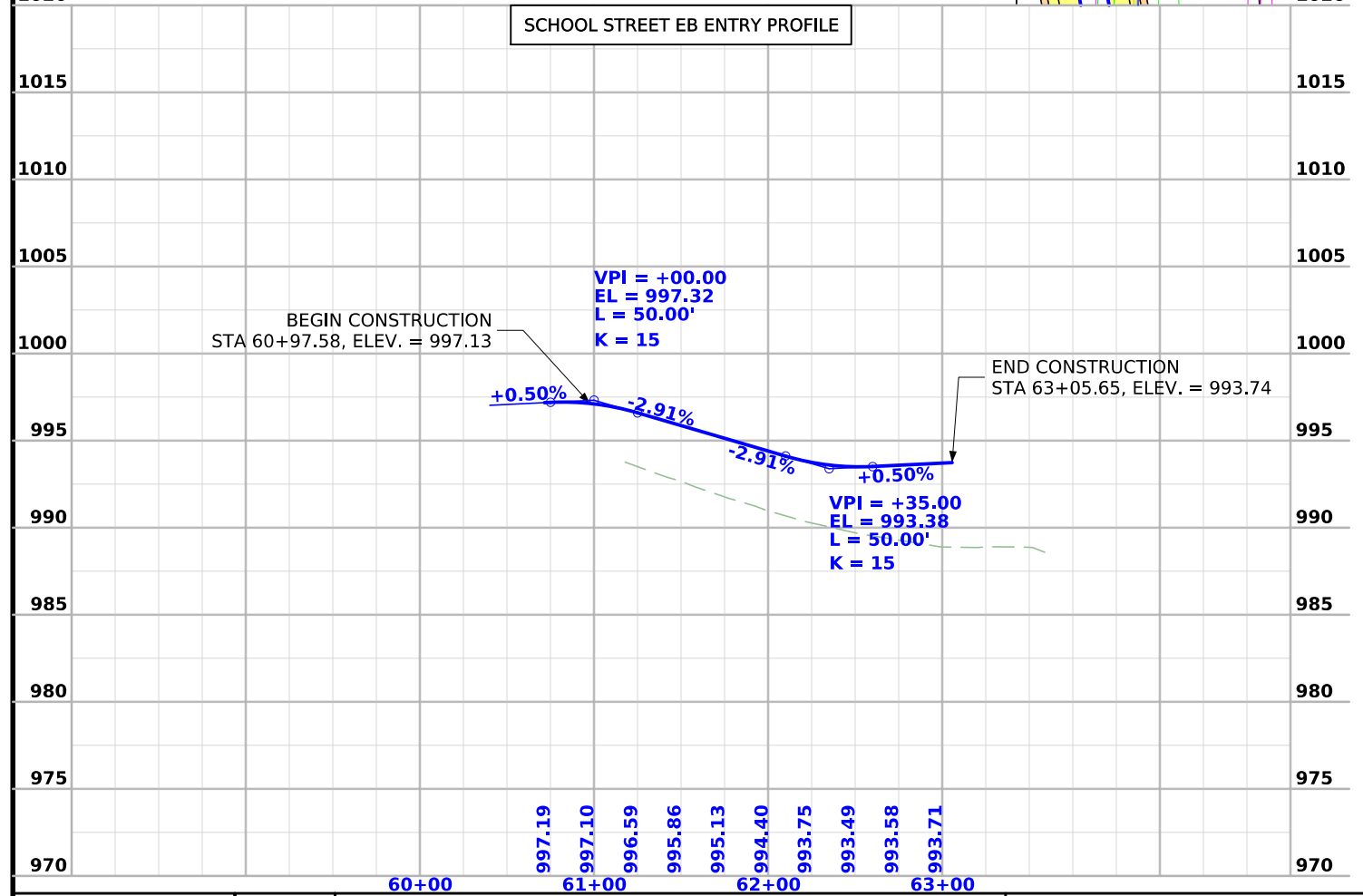
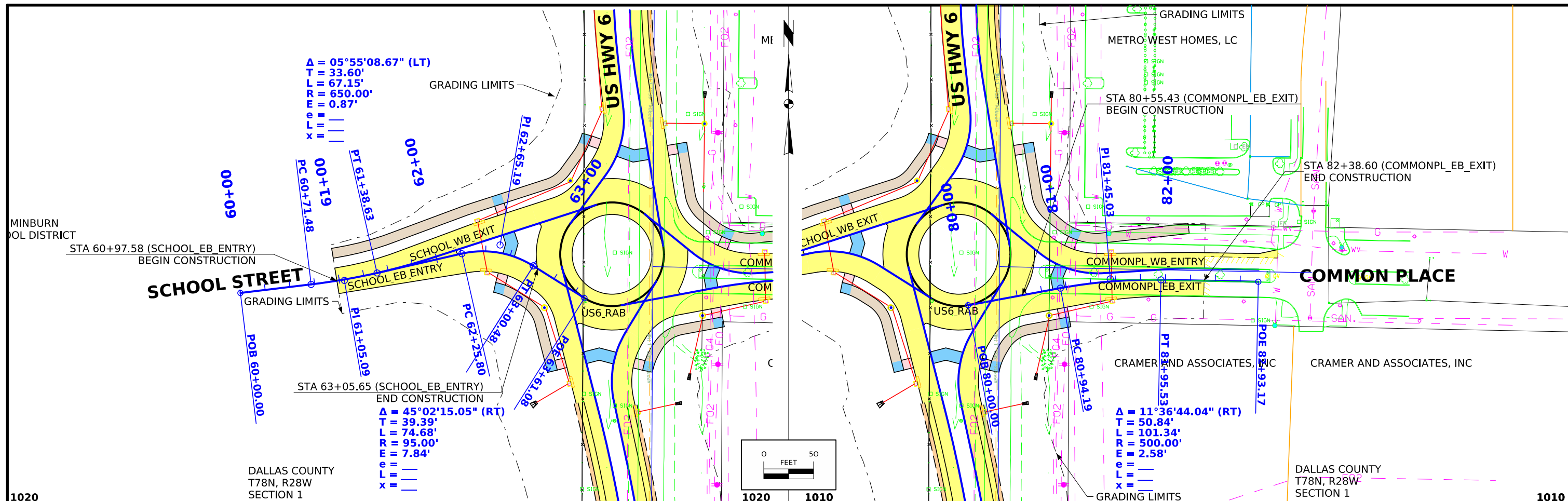
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FORRET, JODY L

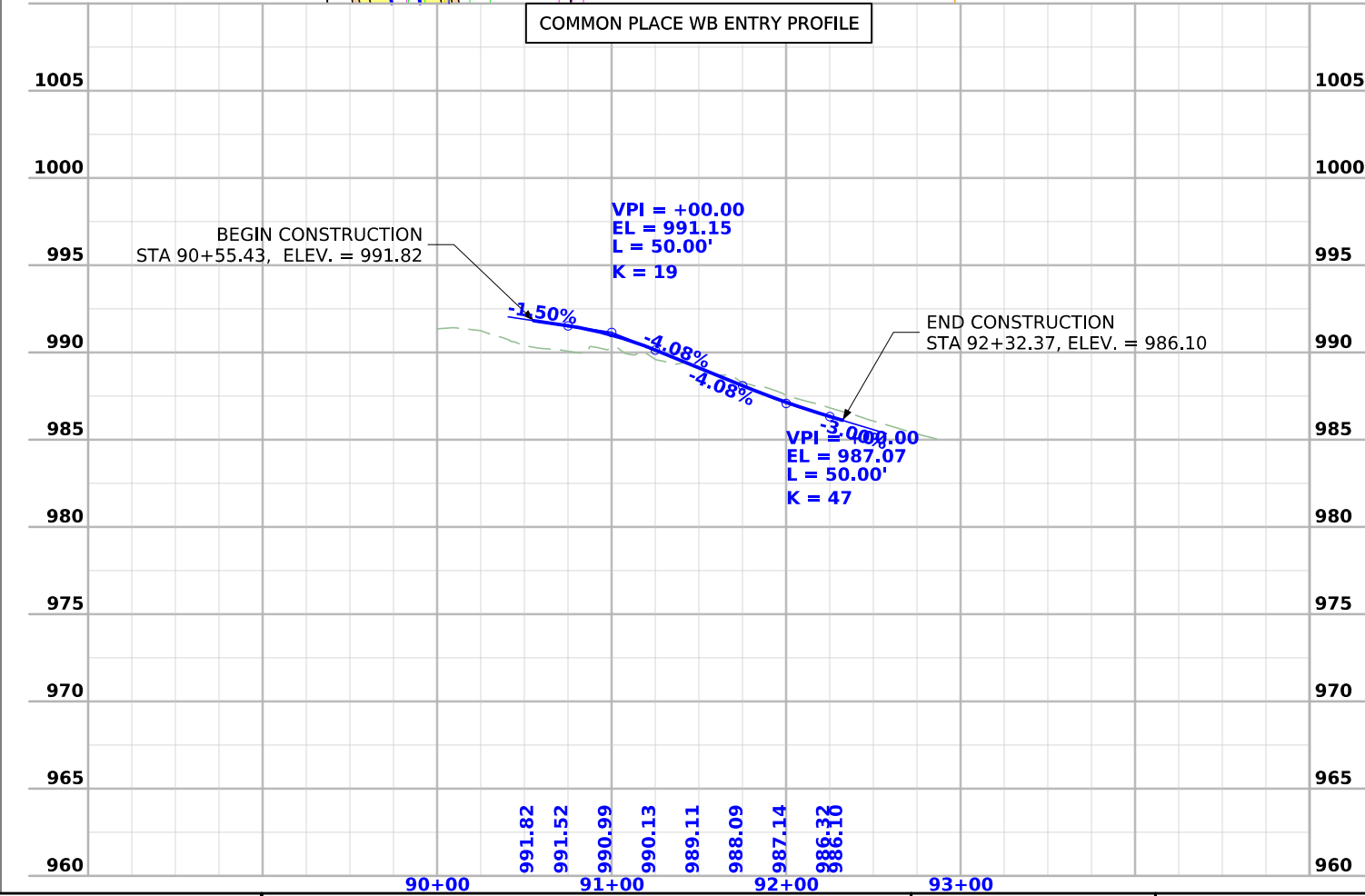
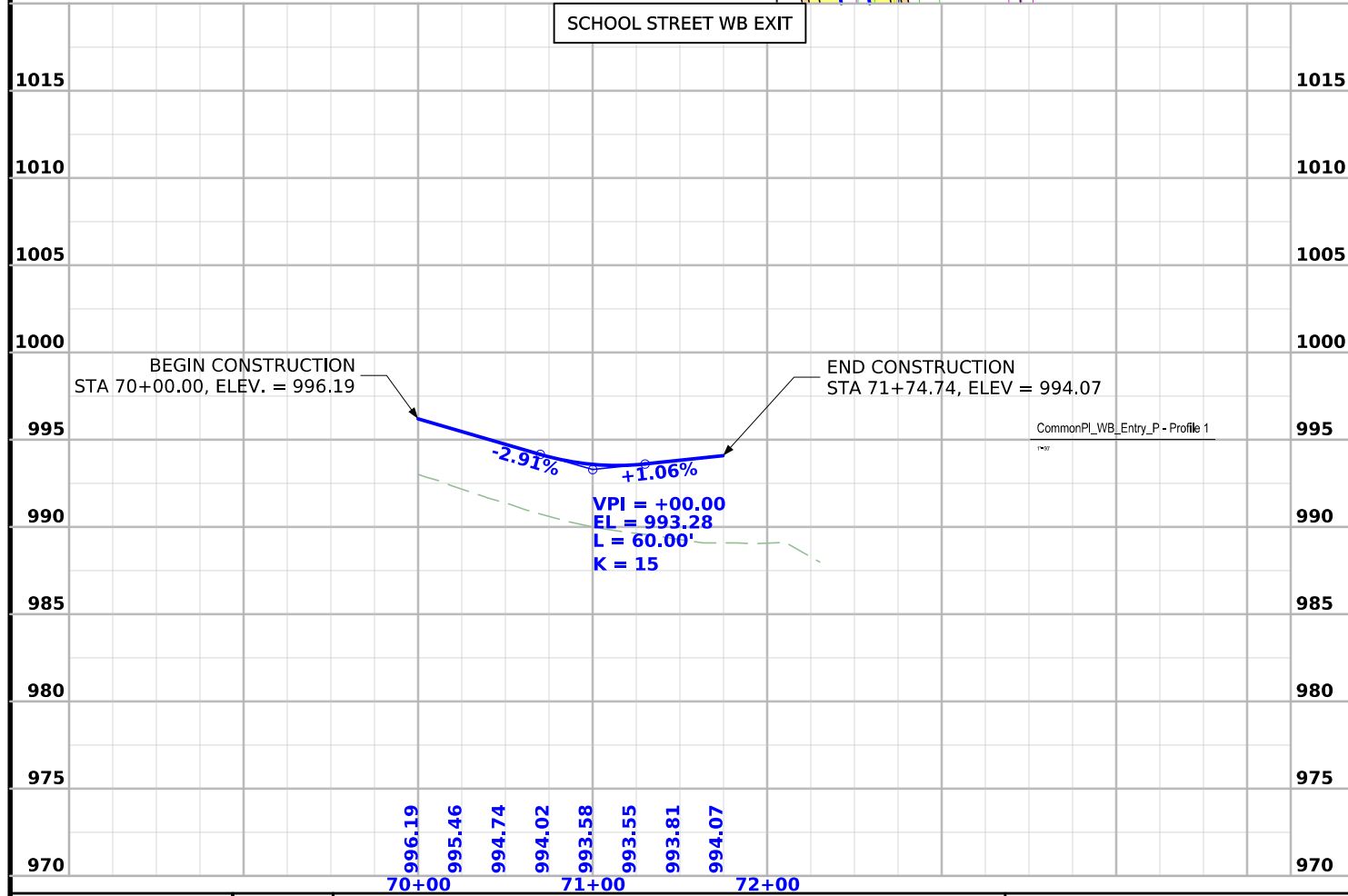
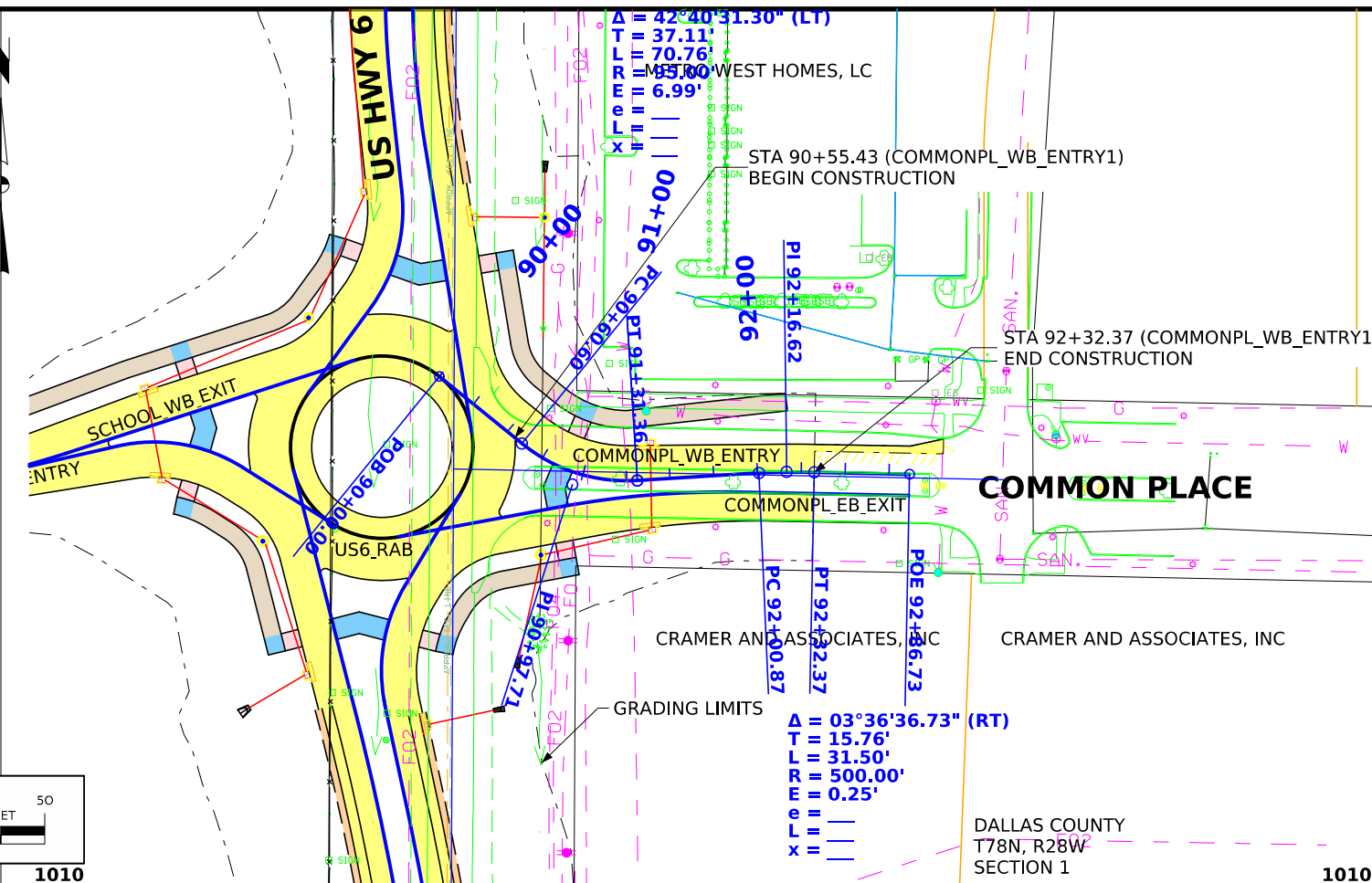
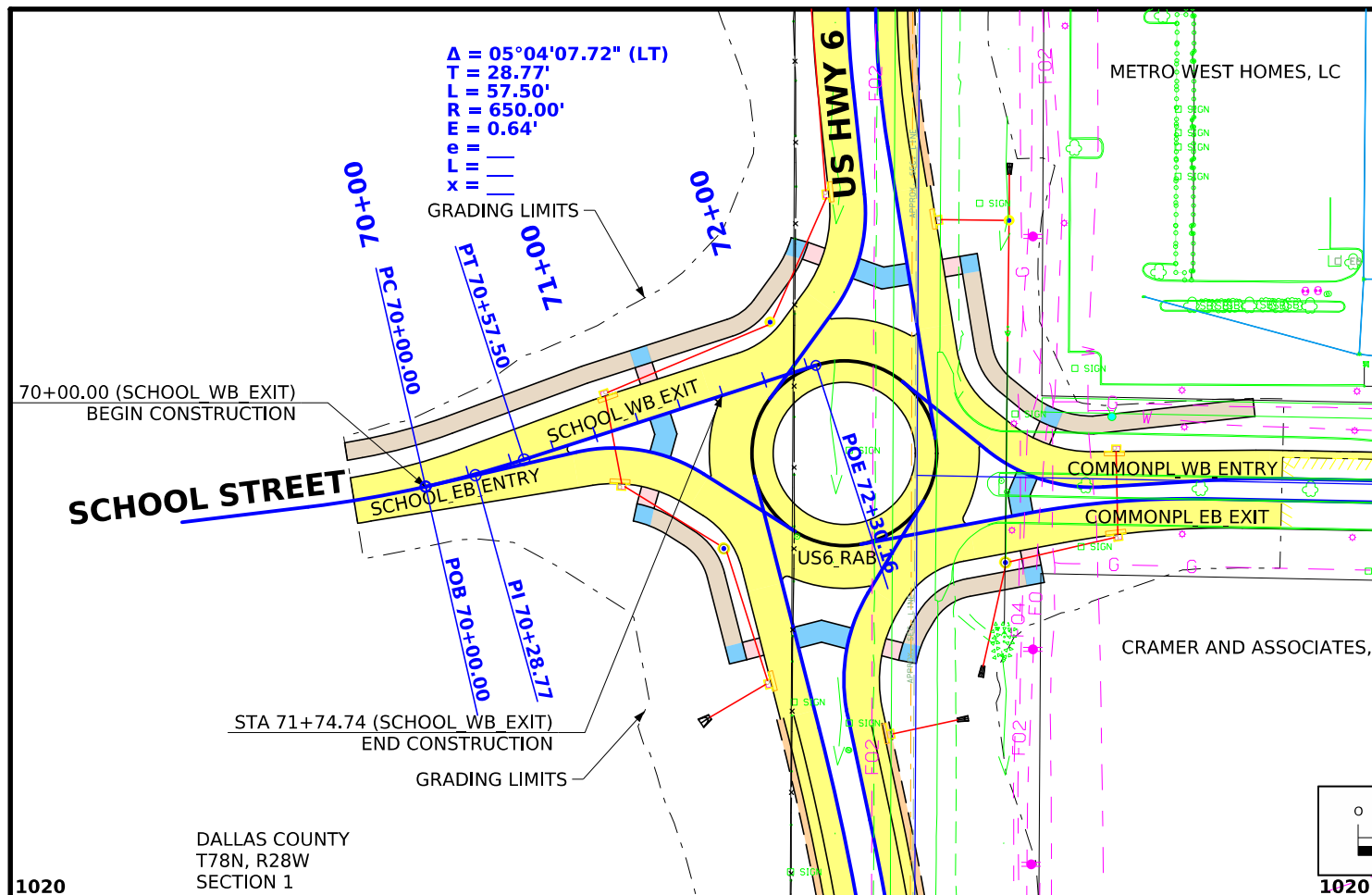
DALLAS COUNTY  
T78N, R28W  
SECTION 1

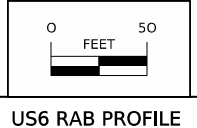
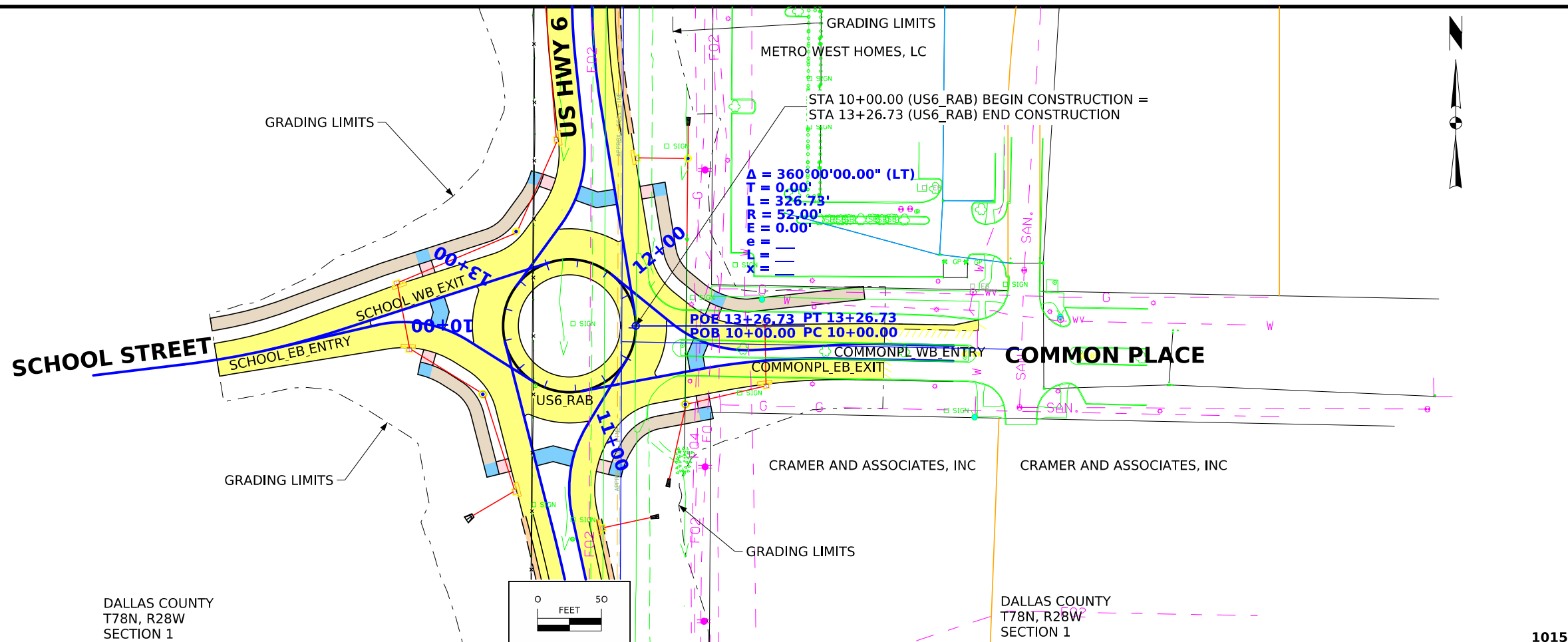


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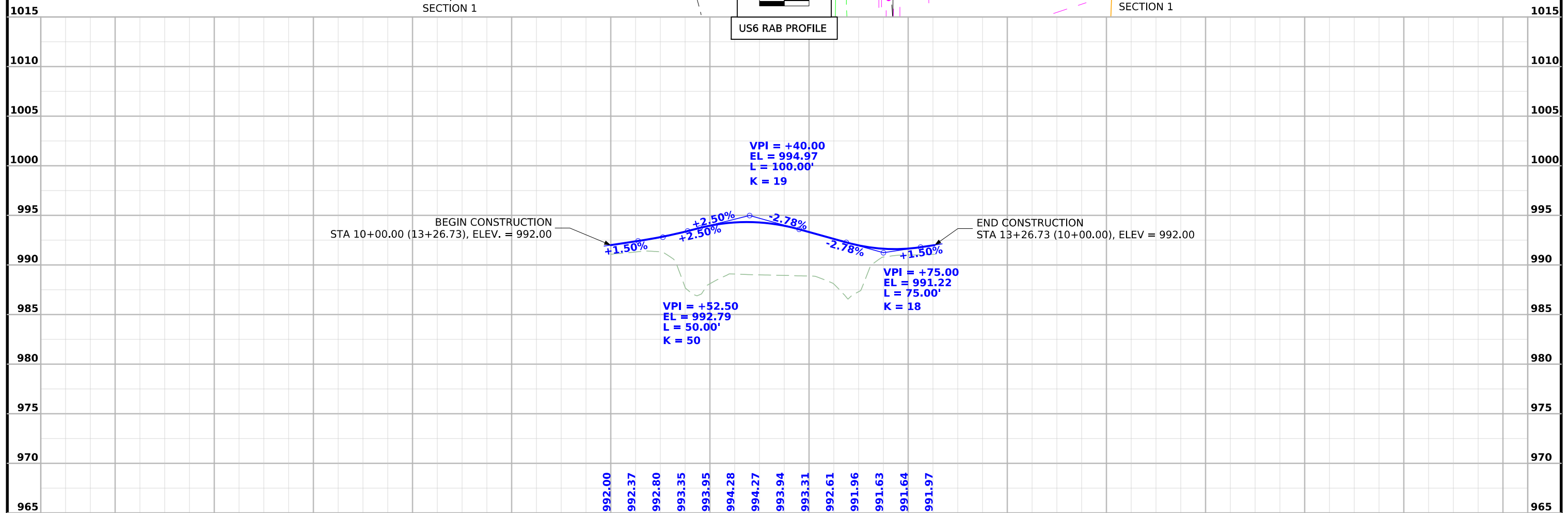




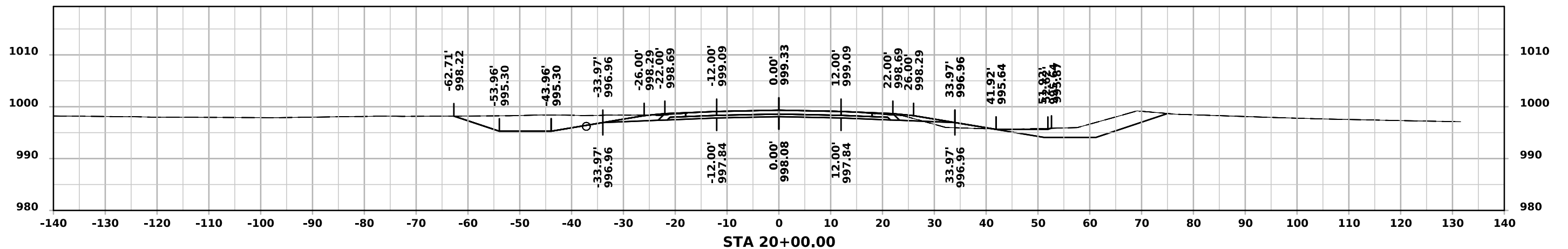
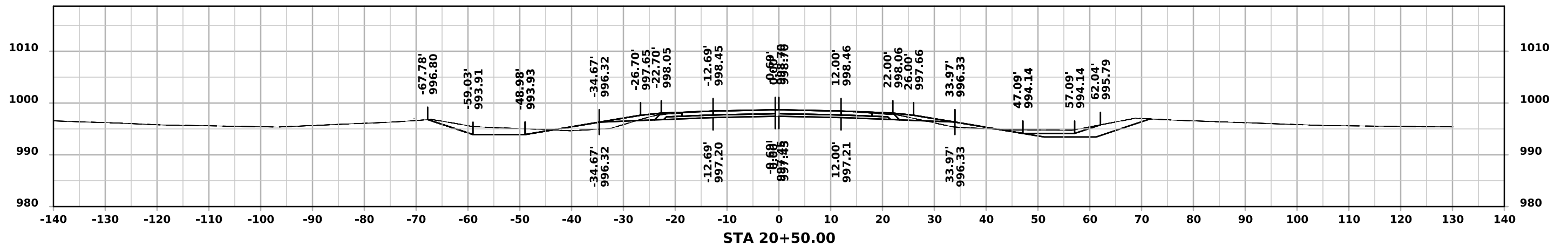
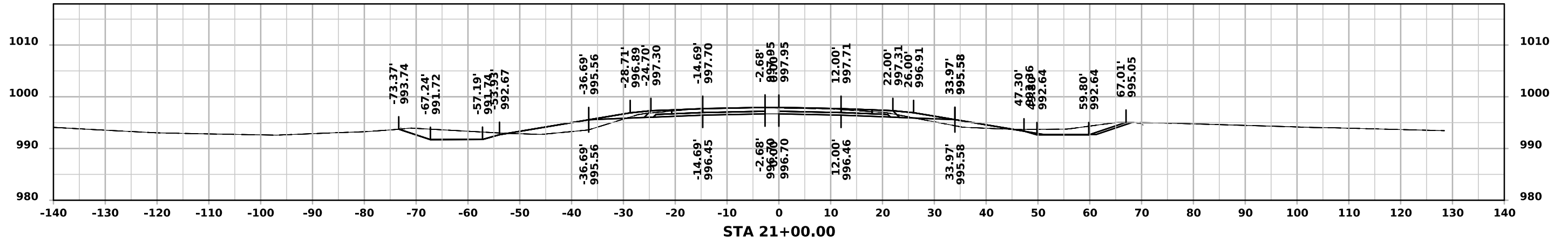




US6 RAB PROFILE

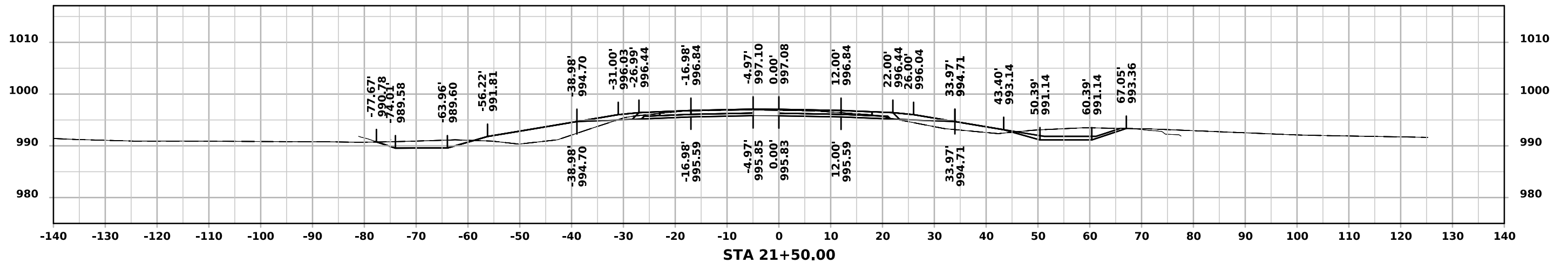
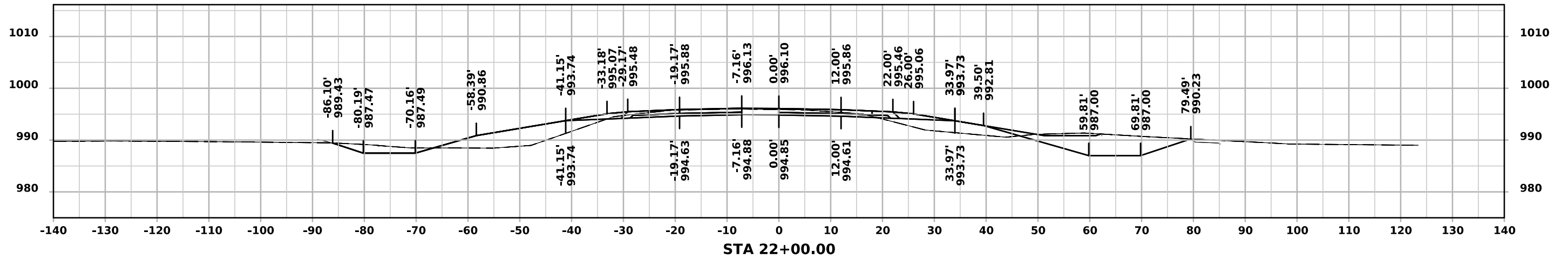
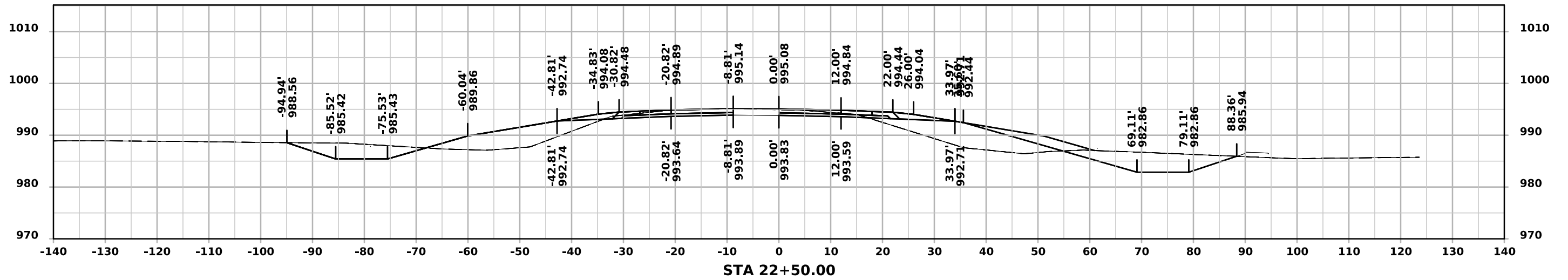


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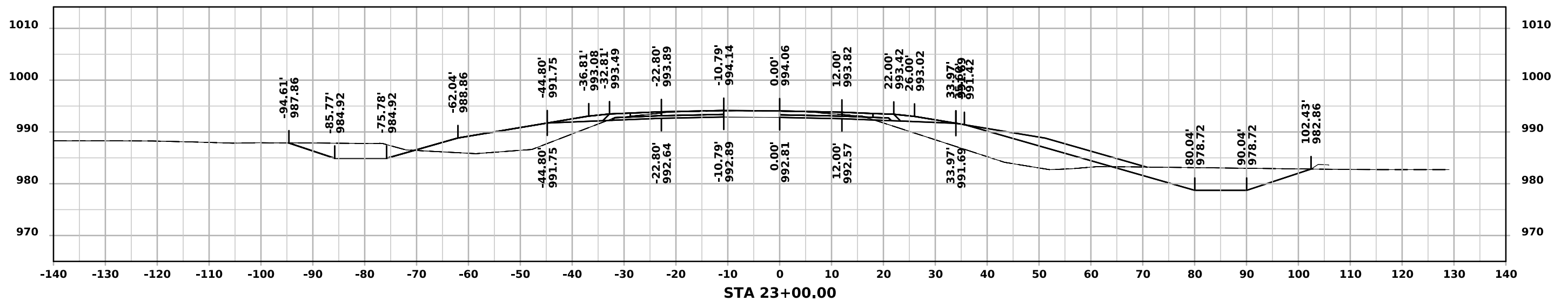
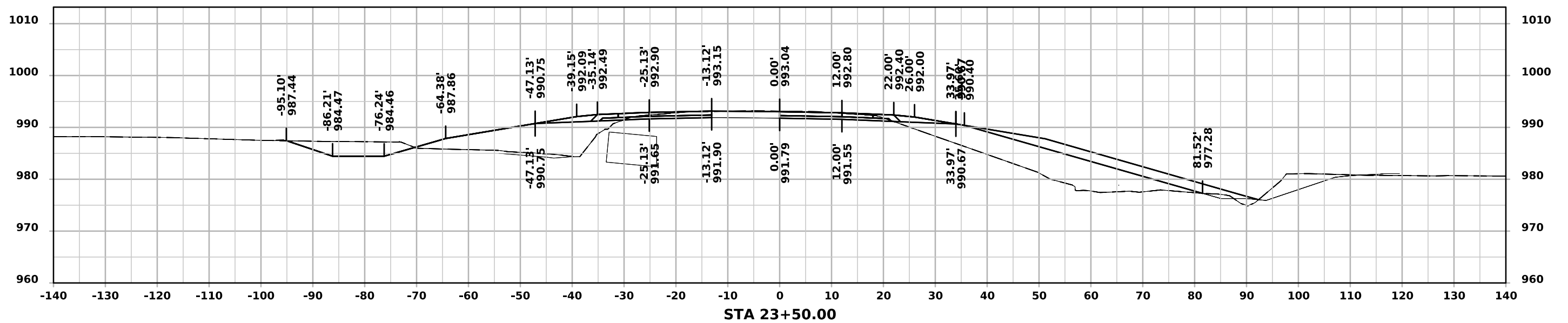




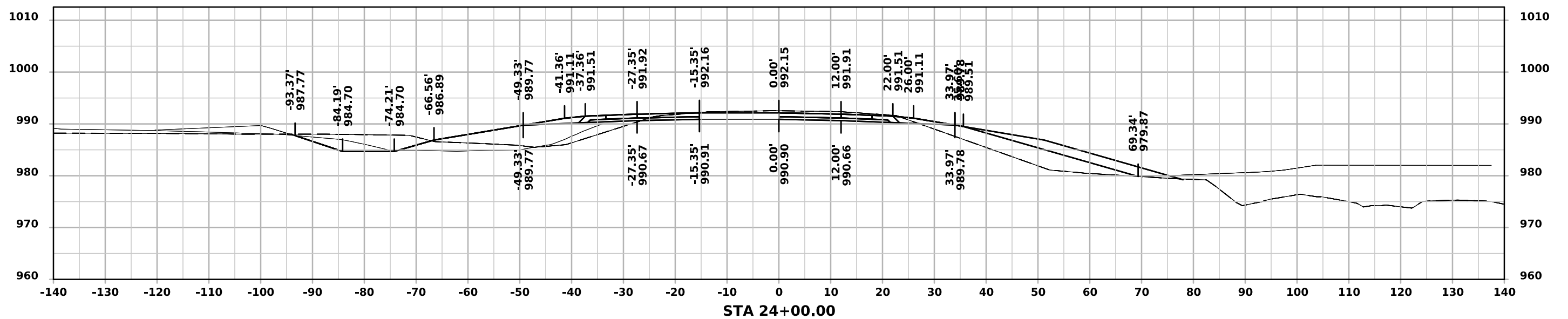
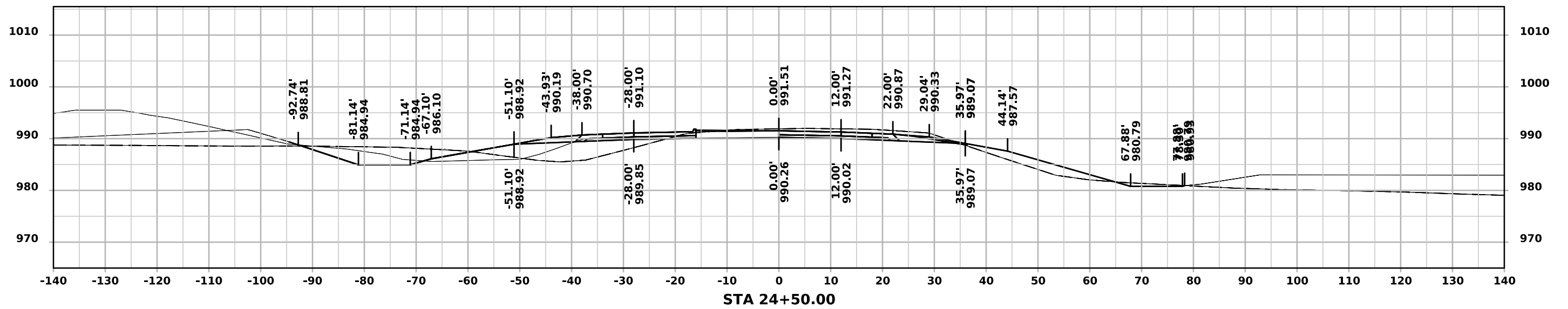
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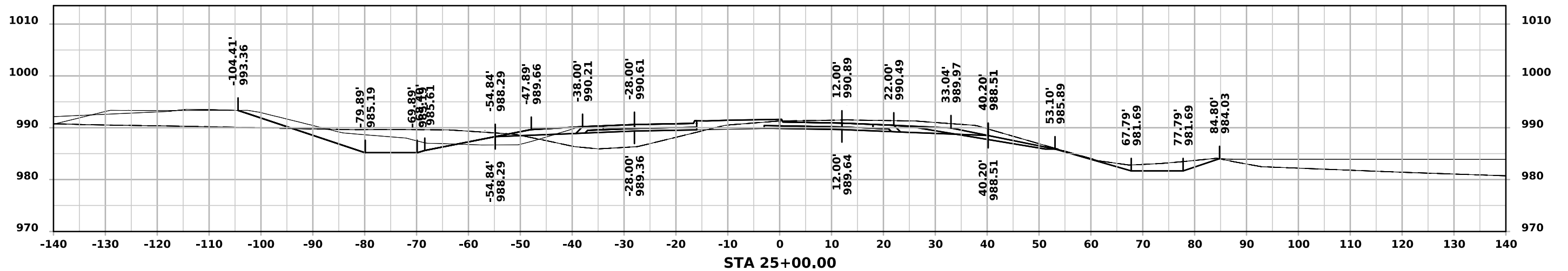
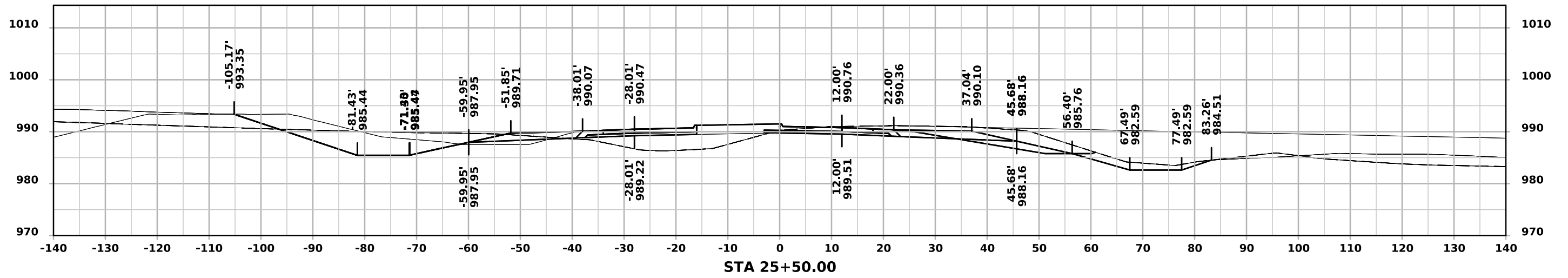
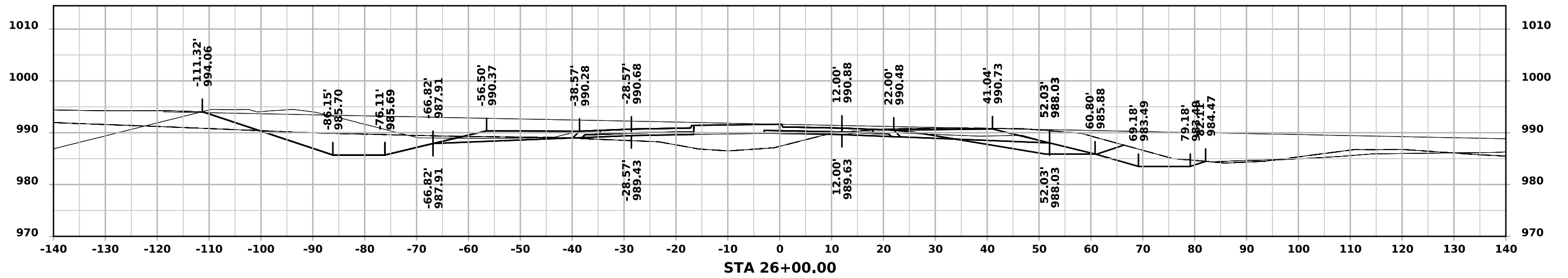
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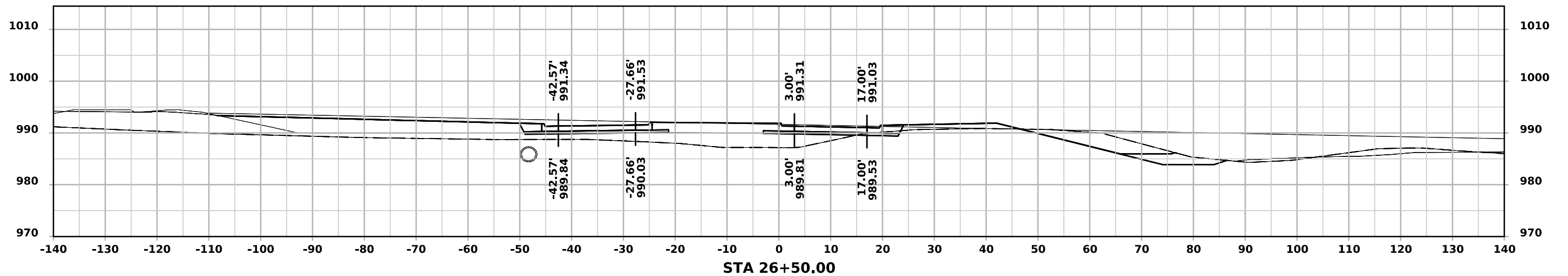
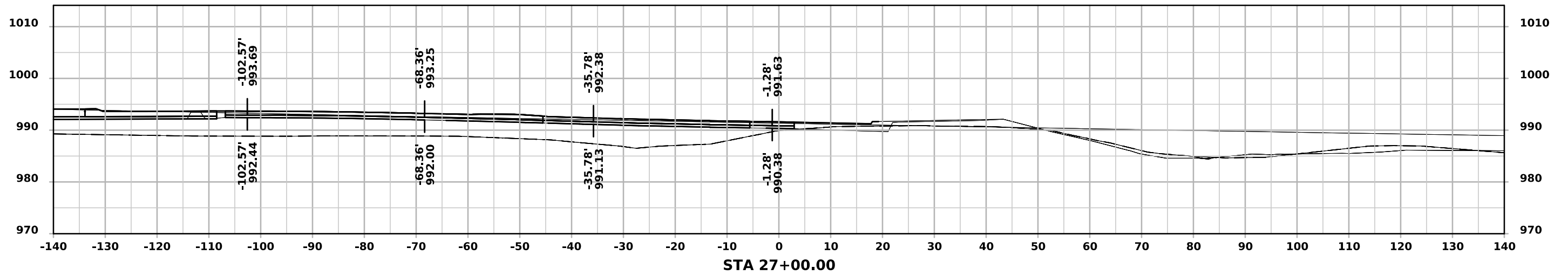
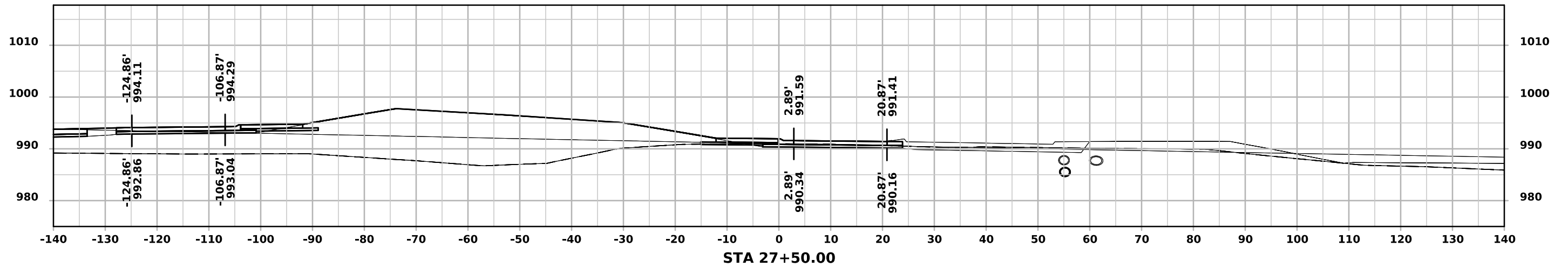
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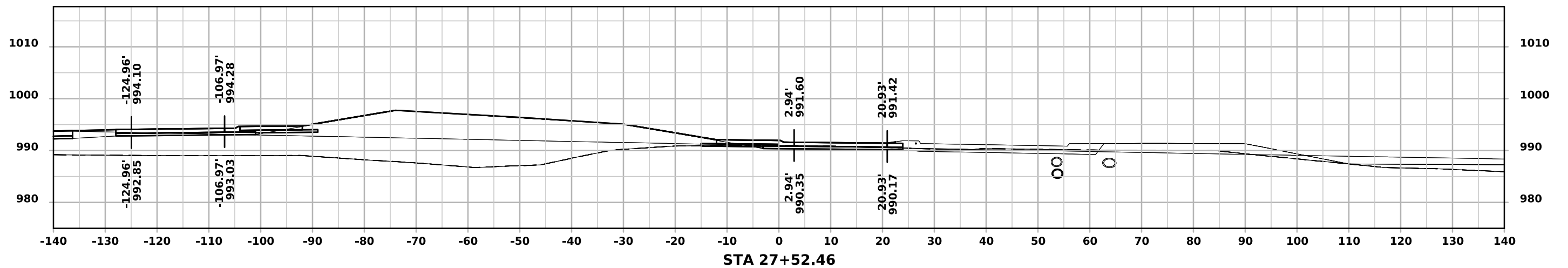
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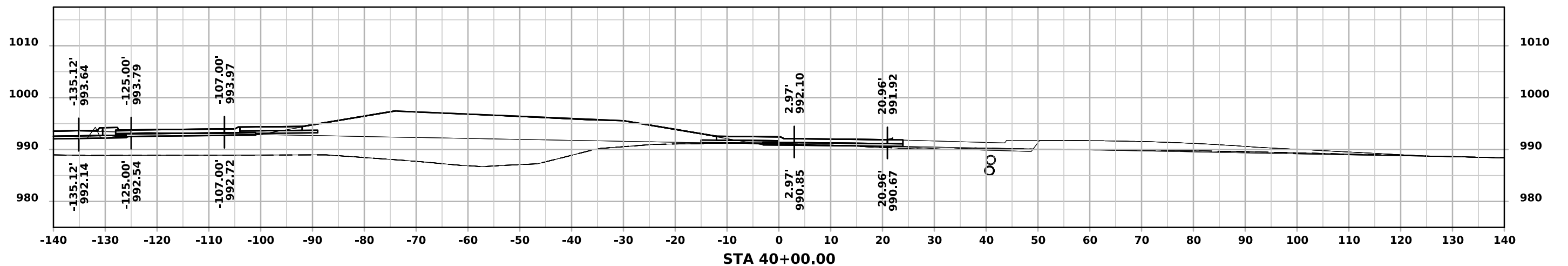
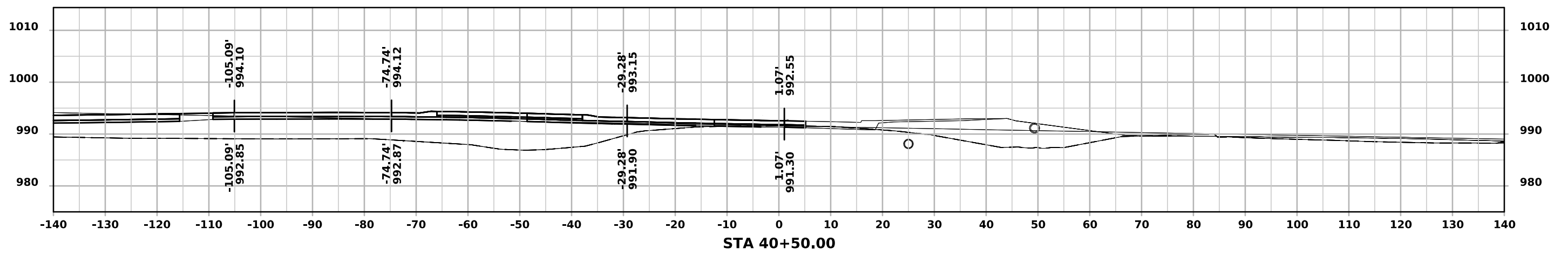
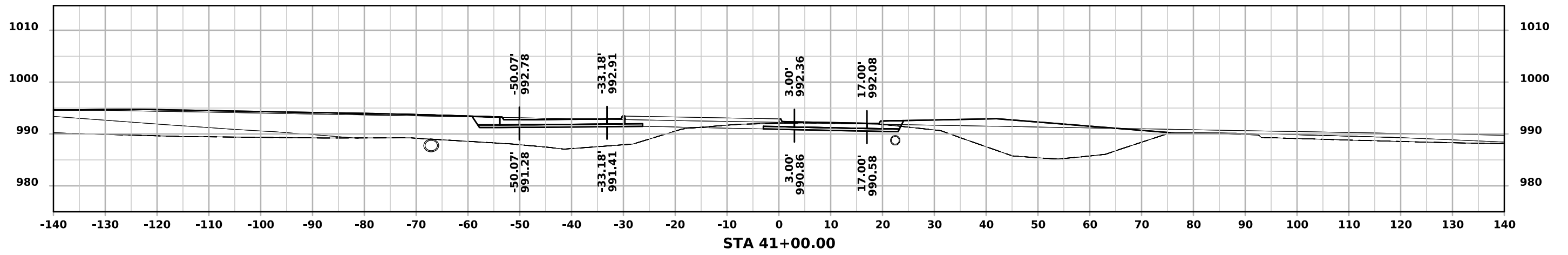
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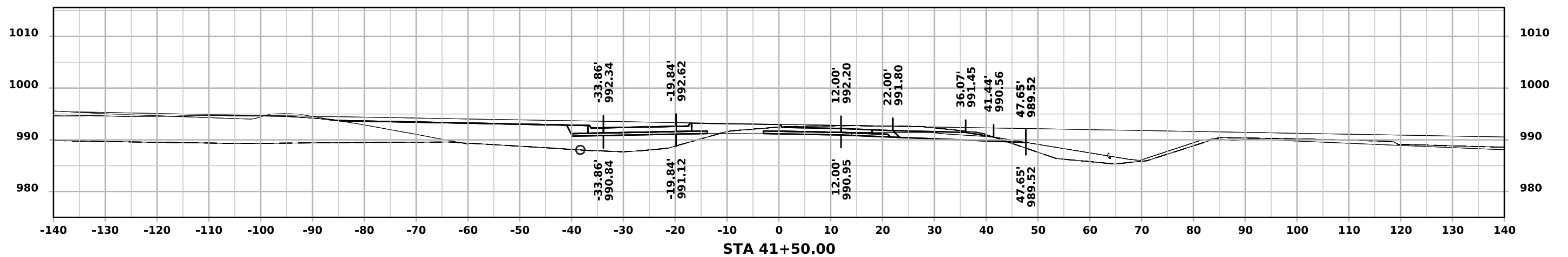
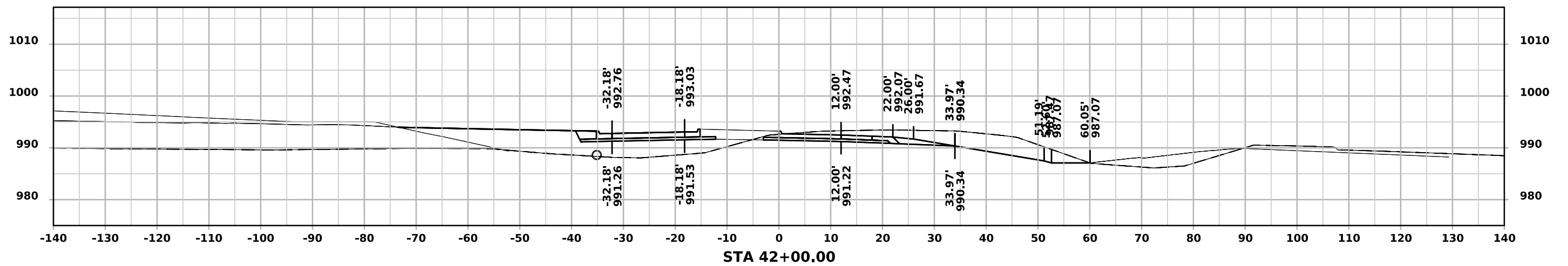
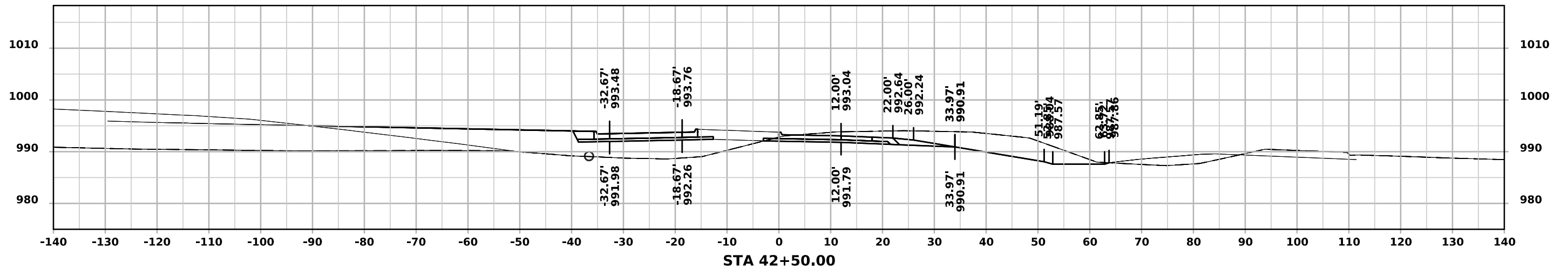
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# ML - US6

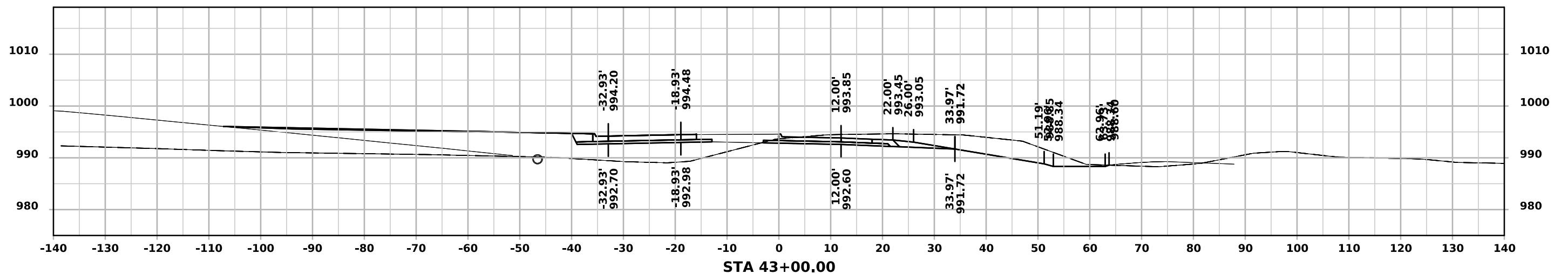
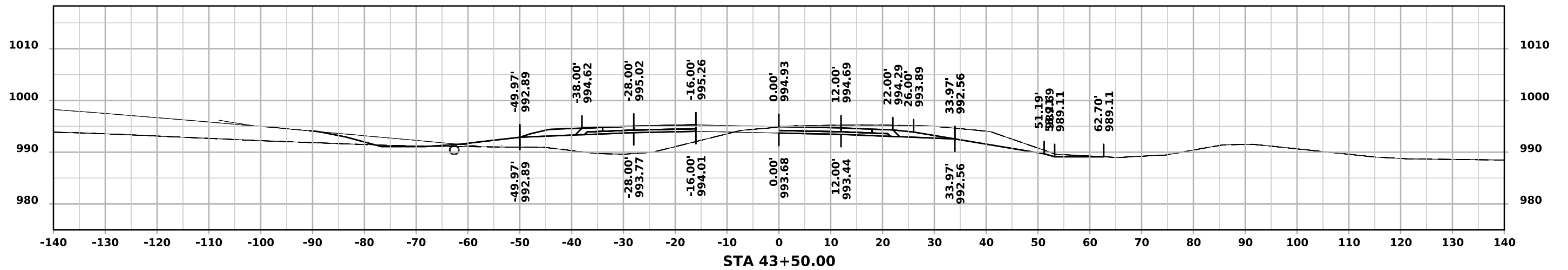
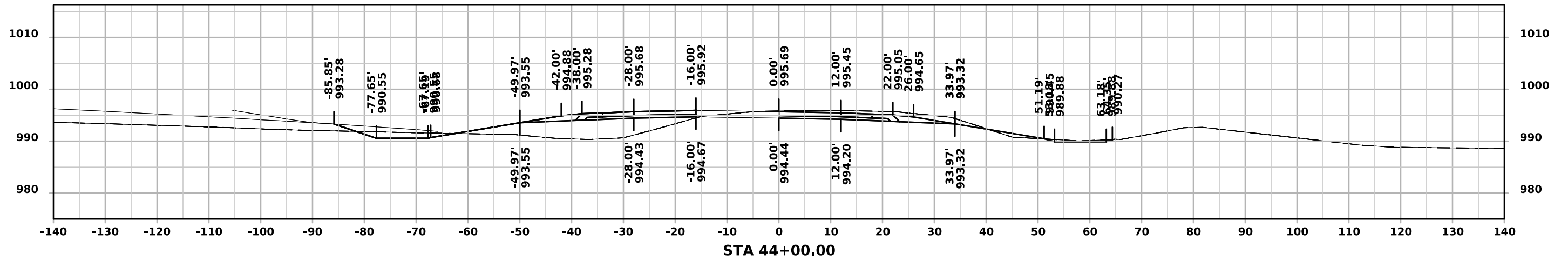


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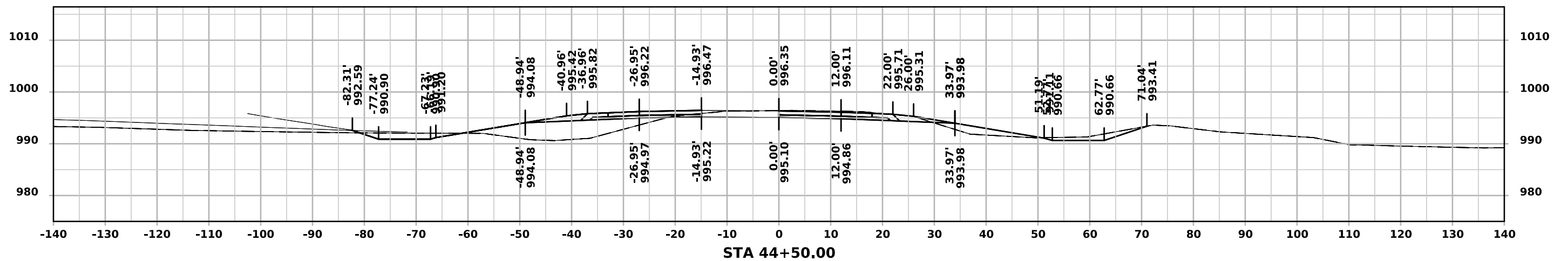
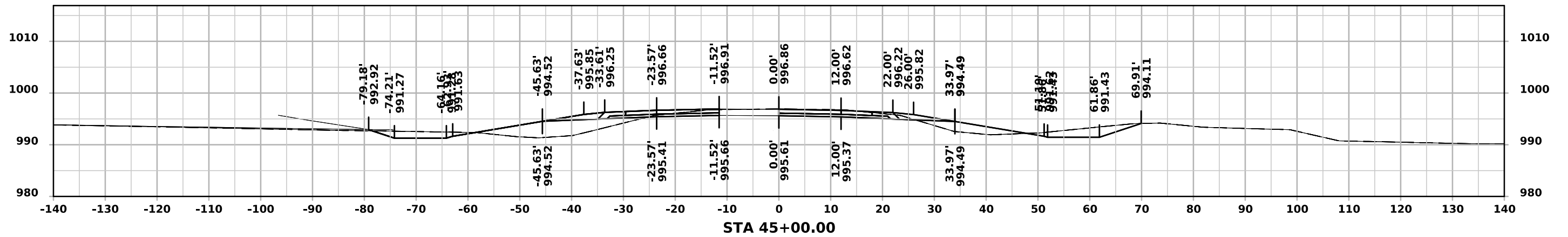
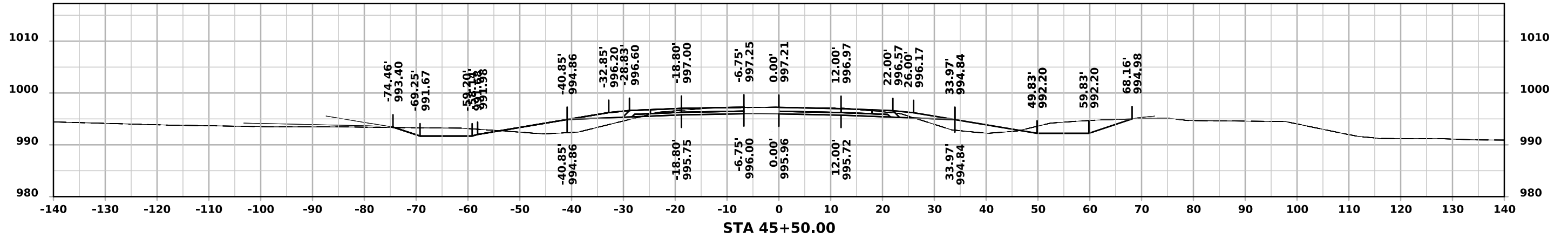




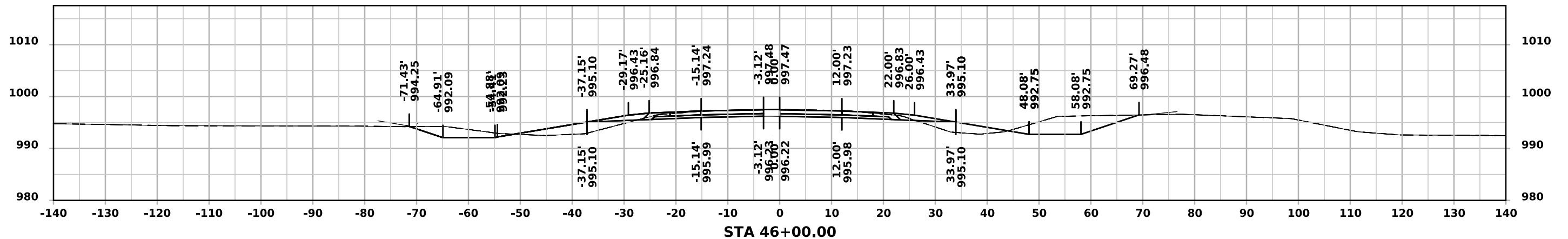
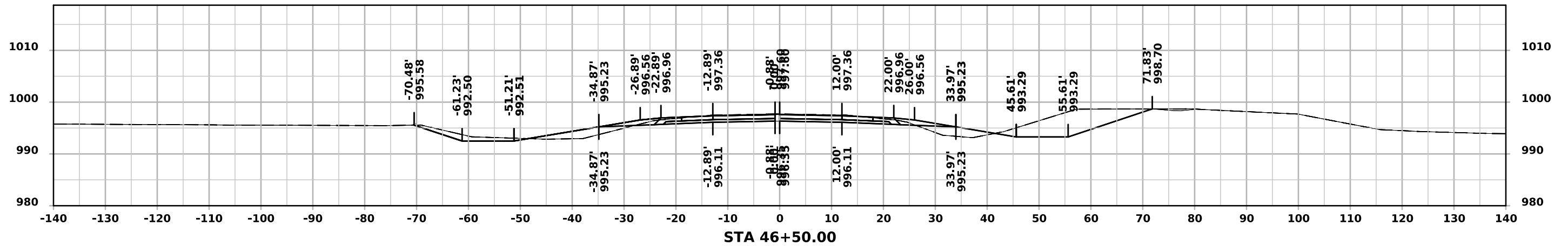
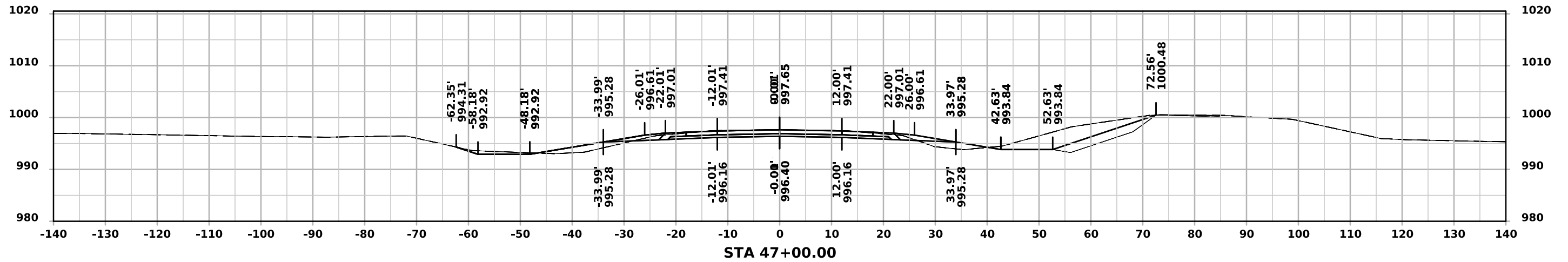
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# ML - US6



# ML - US6



# ML - US6

