

MONROE CO. PCC PAVEMENT - GRADE AND REPLACE
NHSN-034-6(89)--2R-68

LETTING DATE
Jan. 17, 2017

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 6	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.1 - 3	U.S. 34
E Sheets	Side Road Plan and Profile Sheets
* E.1	S. C Street
* E.2	Ia. 5
* E.3	S. Main Street
G Sheets	Survey Sheets
G.1 - 2	Reference Ties and Bench Marks
G.3	Horizontal Control Tab.
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 32	U.S. 34 Cross Sections
X Sheets	Side Road Cross Sections
X.1 - 7	Ia. 5 Cross Sections
	* Color Plan Sheets



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM MONROE COUNTY

PCC PAVEMENT - GRADE AND REPLACE

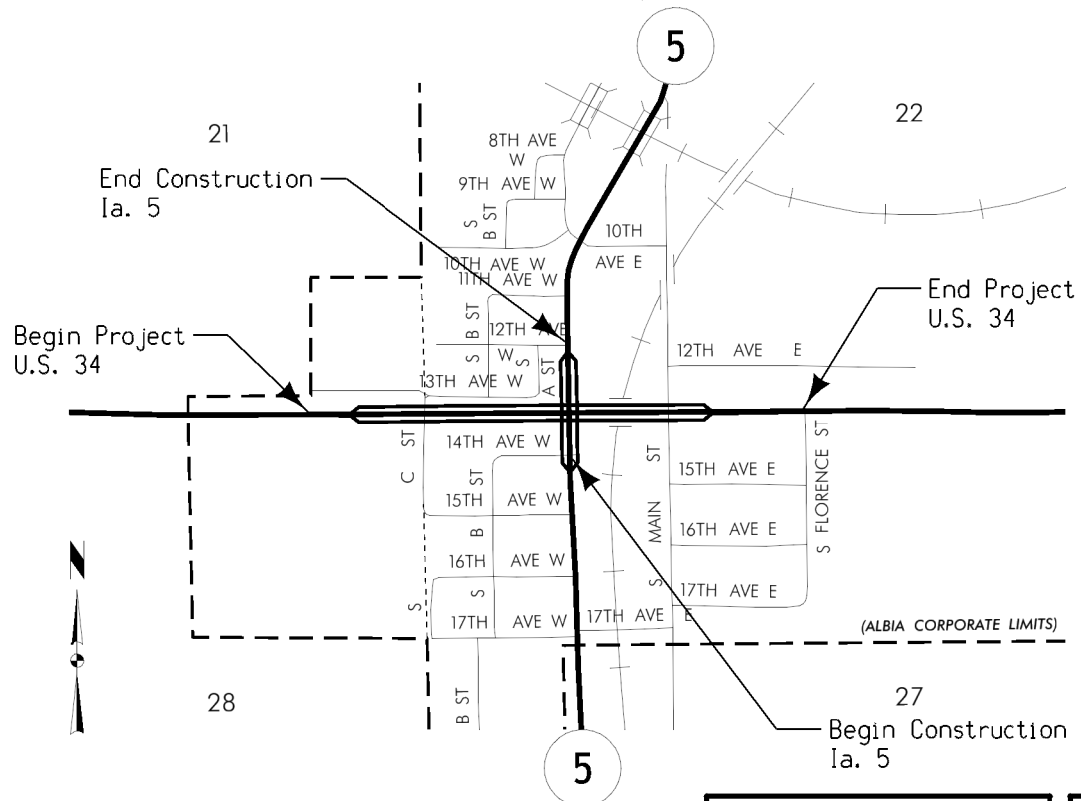
IA 5 INTERSECTION IN ALBIA

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

A Portion of the City of Albia



U.S. 34			
DESIGN DATA URBAN			
2017	AADT	5200	V.P.D.
2037	AADT	6100	V.P.D.
2037	DHV	630	V.P.H.
	TRUCKS	14	%
Total	Design ESALs	--	

Ia. 5			
DESIGN DATA URBAN			
2017	AADT	8800	V.P.D.
2037	AADT	10200	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	11	%
Total	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Yanxiao Jia	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 12-04-2015

Paved Shoulders Alternates

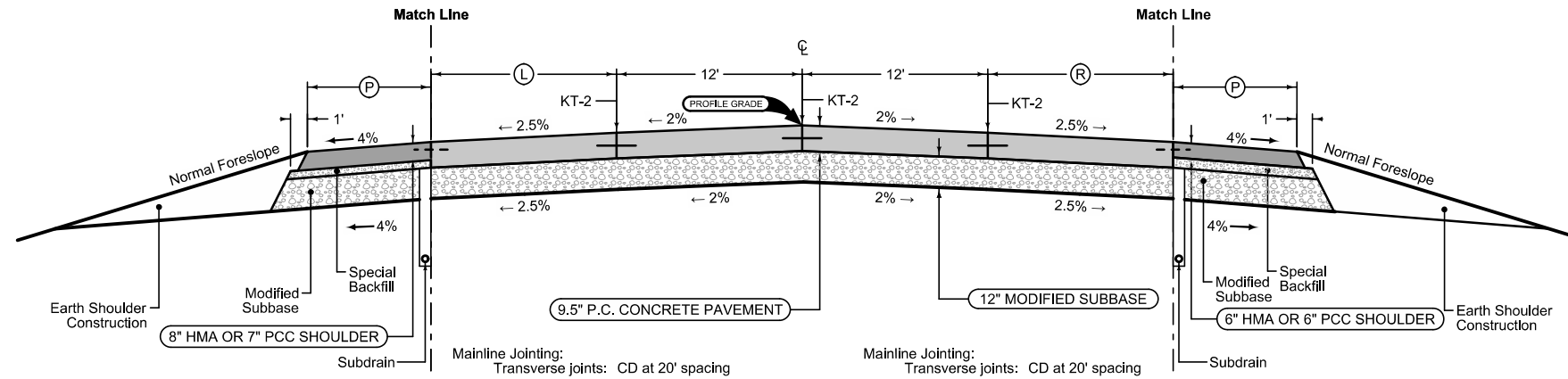
PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

STATION TO STATION		(P) Feet
812+00.00	817+73.79	8
818+93.79	824+19.08	8
827+72.38	831+09.97	8
832+40.98	838+79.33	8

Paved Shoulders Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

STATION TO STATION		(P) Feet
812+00.00	817+62.31	8
818+96.03	824+85.98	8
828+27.37	831+11.43	8
832+42.22	838+58.85	8



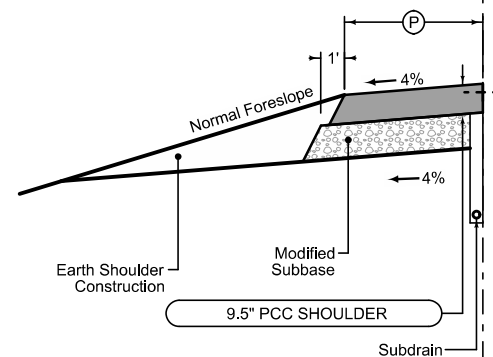
STATION TO STATION		(L) Feet
812+00.00	817+40.00	2-14
817+40.00	835+70.00	14
835+70.00	837+50.00	14-2
837+50.00	838+79.33	2

STATION TO STATION		(R) Feet
812+00.00	814+70.00	2
814+70.00	816+50.00	2-14
816+50.00	832+85.00	14
832+85.00	838+25.00	14-2
838+25.00	838+58.85	2

Full Depth PCC Shoulder

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

STATION TO STATION		(P) Feet
10+00.00	11+59.33	8
NW Return		



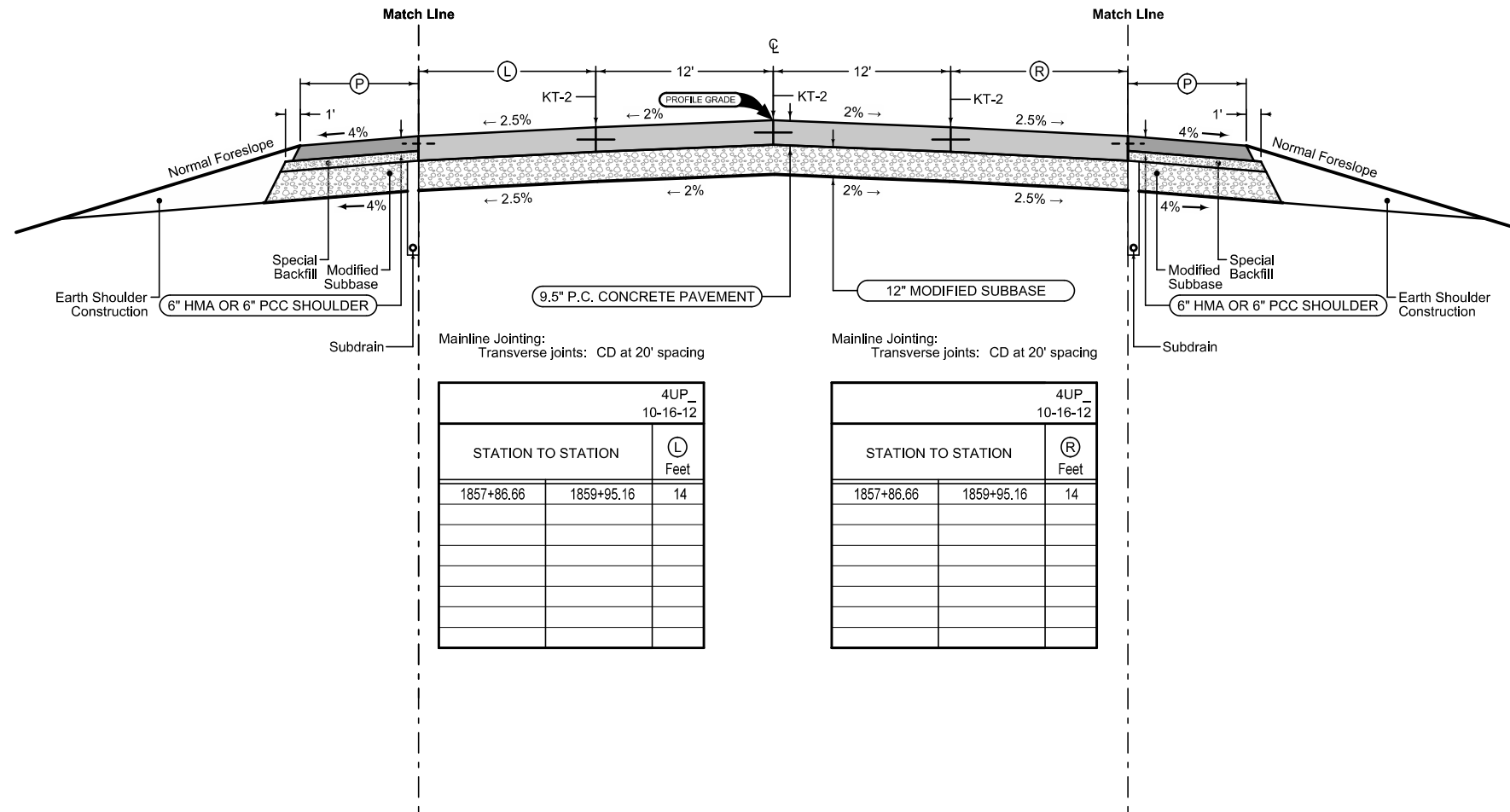
See Tab 100-24 or 100-25 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

U.S. 34

Paved Shoulders Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

4_P_ALT_10-21-14		
STATION TO STATION		(P) Feet
1857+86.66	1859+95.16	8



4UP_10-16-12

STATION TO STATION		(L) Feet
1857+86.66	1859+95.16	14

4UP_10-16-12

STATION TO STATION		(R) Feet
1857+86.66	1859+95.16	14

Paved Shoulders Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

4_P_ALT_10-21-14		
STATION TO STATION		(P) Feet
1857+86.66	1859+95.16	8

See Tab 100-24 or 100-25 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

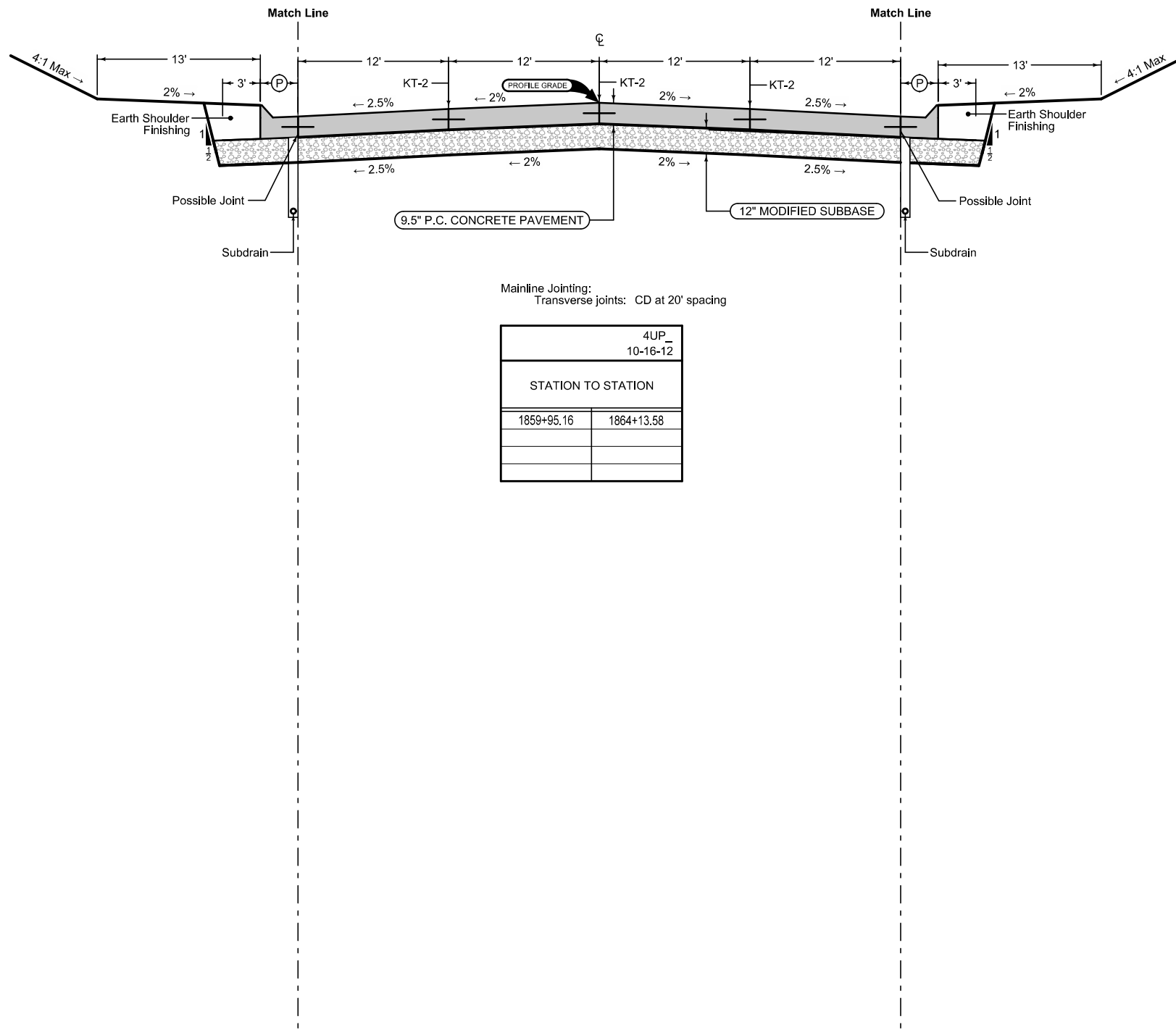
IA 5

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 20' spacing

		2_Curb_ 04-19-11	
STATION TO STATION		(P) Feet	Curb Type See PV-102
1859+95.16	1863+53.00	2.5	6" Std.



Mainline Jointing:
 Transverse joints: CD at 20' spacing

4UP_ 10-16-12	
STATION TO STATION	
1859+95.16	1864+13.58

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 20' spacing

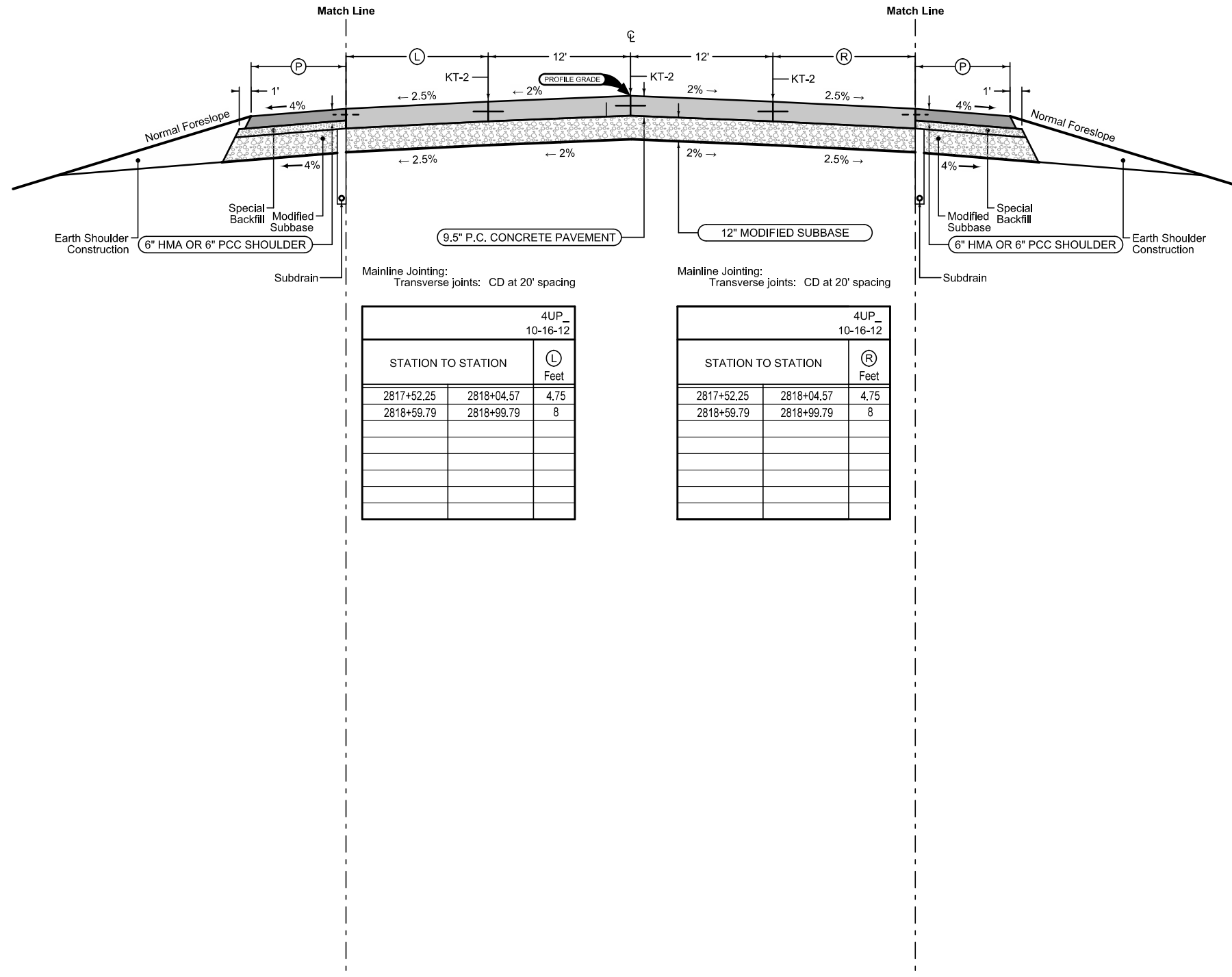
		2_Curb_ 04-19-11	
STATION TO STATION		(P) Feet	Curb Type See PV-102
1859+95.16	1863+51.90	2.5	6" Std.

See Tab 100-24 or 100-25 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

Paved Shoulders Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

2_4_ALT_ 10-21-14		
STATION TO STATION		(P) Feet
2817+52.25	2818+04.57	2-8
2818+59.79	2818+99.79	2-8



Paved Shoulders Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

4_P_ALT_ 10-21-14		
STATION TO STATION		(P) Feet
2817+52.25	2818+04.57	2-8
2818+59.79	2818+99.79	2-8

4UP_ 10-16-12		
STATION TO STATION		(L) Feet
2817+52.25	2818+04.57	4.75
2818+59.79	2818+99.79	8

4UP_ 10-16-12		
STATION TO STATION		(R) Feet
2817+52.25	2818+04.57	4.75
2818+59.79	2818+99.79	8

See Tab 100-24 or 100-25 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

S C Street

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 20' spacing

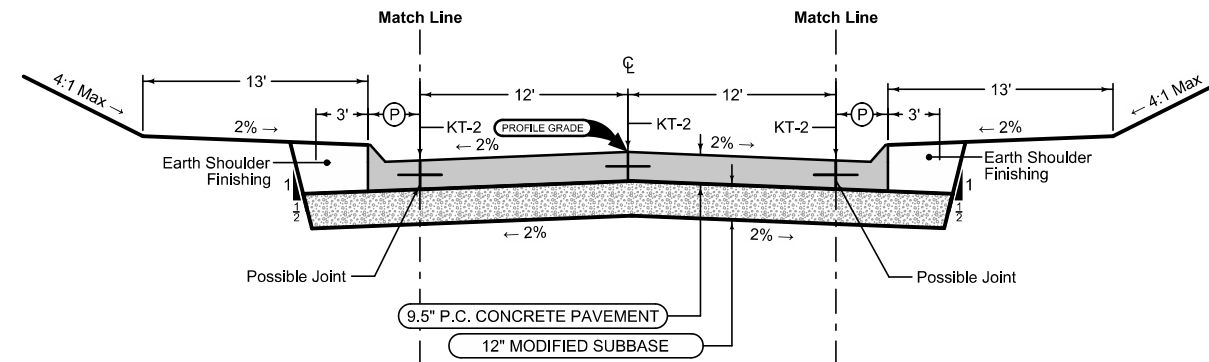
STATION TO STATION		(P) Feet	Curb Type See PV-102
3830+99.62	3831+50.09	3.5	6" Std.
3832+02.08	3832+52.88	3.5	6" Std.

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 20' spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
3830+99.62	3831+50.09	3.5	6" Std.
3832+02.08	3832+52.88	3.5	6" Std.



Mainline Jointing:
 Transverse joints: CD at 20' spacing

STATION TO STATION	
3830+99.62	3831+50.09
3832+02.08	3832+52.88

See Tab 100-24 or 100-25 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

S Main Street

SURVEY SYMBOLS

- ⊕ MH Utility Access (Manhole)
- UE Utility Elevation
- ⊙ INB Storm Sewer Beehive Intake
- ⊗ IN Storm Sewer Intake
- ⊙ WV WW Water Valve
- OUT Tile Outlet
- TIL Tile Line
- SOP Size of Pipe or Culvert
- ⊙ GV Gas Valve
- ⊙ TP TPD Telephone Pedestal
- CUL Culvert
- LIN Miscellaneous Line
- SH Paved Shoulder
- PPA Power Pole Co. 1
- LUM Luminaire
- SIGN SI Sign
- PR Electric Riser Pole
- D Centerline Draw or Stream (Down)
- ← DU Centerline Draw or Stream (Up)
- SNP Unpaved Shoulder
- EP Edge of Paved Roads (ML or SR)
- EG Edge of Gravel Road
- GU Gutter In Front of Curb
- CU Back of Curb
- SWK Sidewalk
- CON Concrete or A/C Slab
- ENP Edge Paved Entrance & Park Lot
- ENT Centerline BL of Entrance
- ENU Edge Unpaved Entrance & Parking
- St.S. ST1D Storm Sewer Co. 1 - Quality D
- W WL1D Water Line Co. 1 - Quality D
- San. SA1D Sanitary Sewer Co. 1- Quality D
- F0 FO1D Fiber Optic Co. 1 - Quality D
- T1 TL1D Telephone Line Co. 1 - Quality D
- G GL1D Gas Line Co. 1 - Quality D
- TV2 TV2D TV Cable Co. 2 - Quality D
- E1 EL1D Electric Line Co. 1 - Quality D
- PRO Profile Shot
- GDL Guard Rail Steel
- UB UB Utility Box
- RRS Railroad Signal
- RR Centerline of Railroad Tracks
- RRR Railroad Rail
- PIP Pipe Culvert
- F02 FO2D Fiber Optic Co. 2 - Quality D

UTILITY LEGEND

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

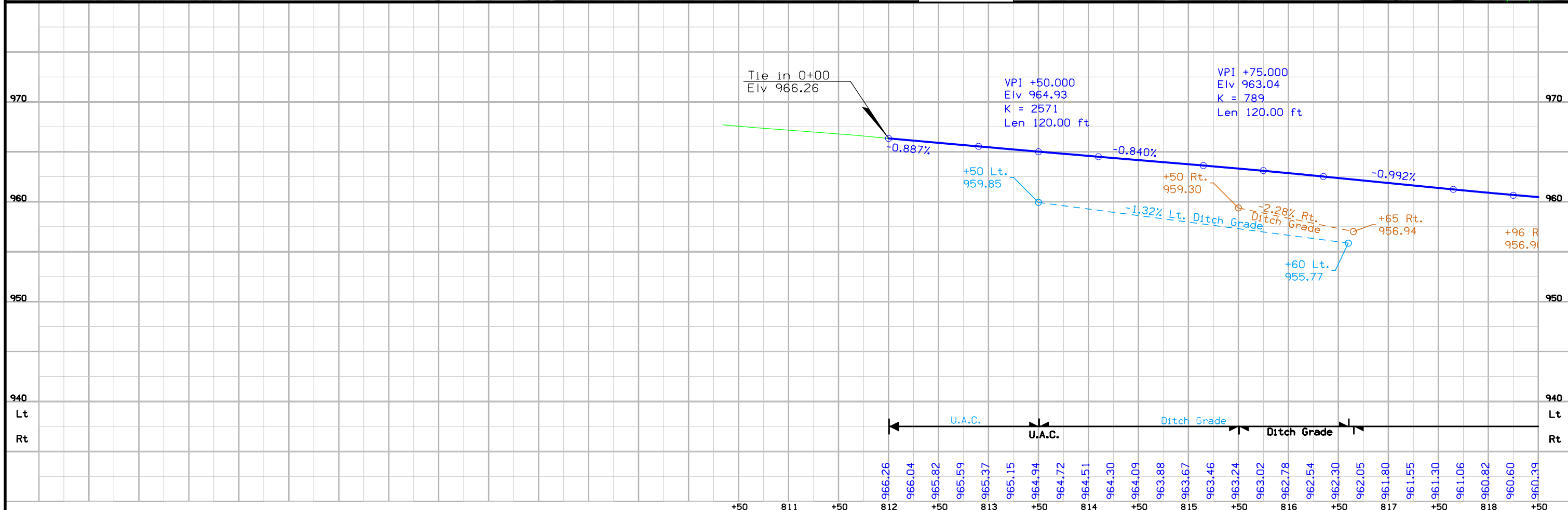
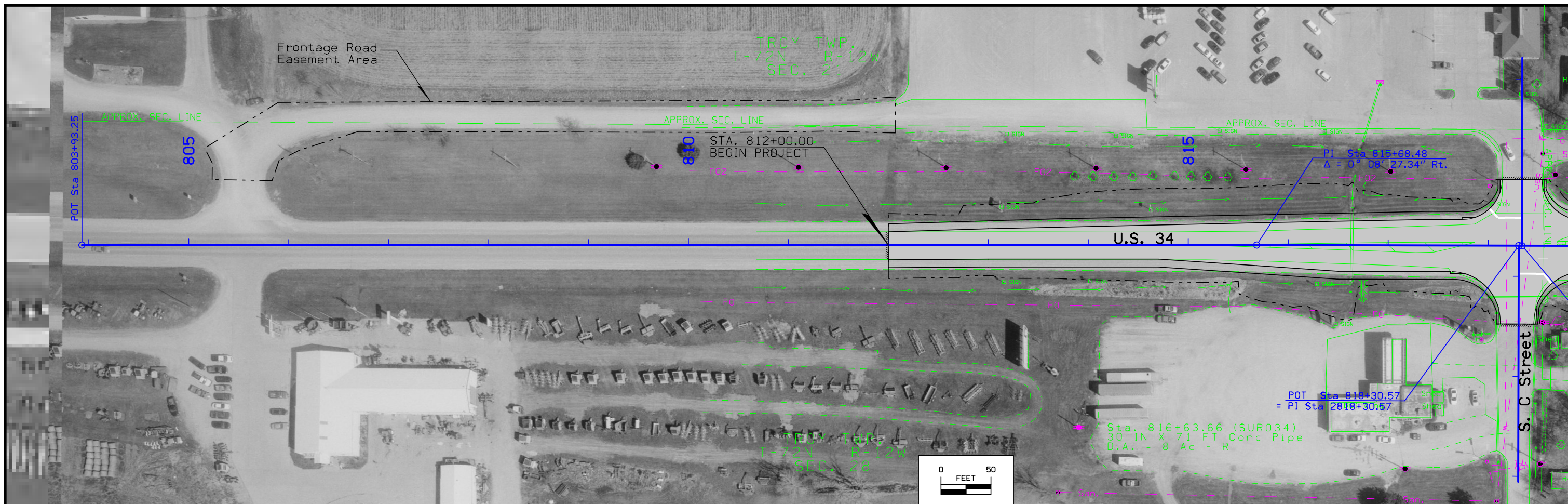
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

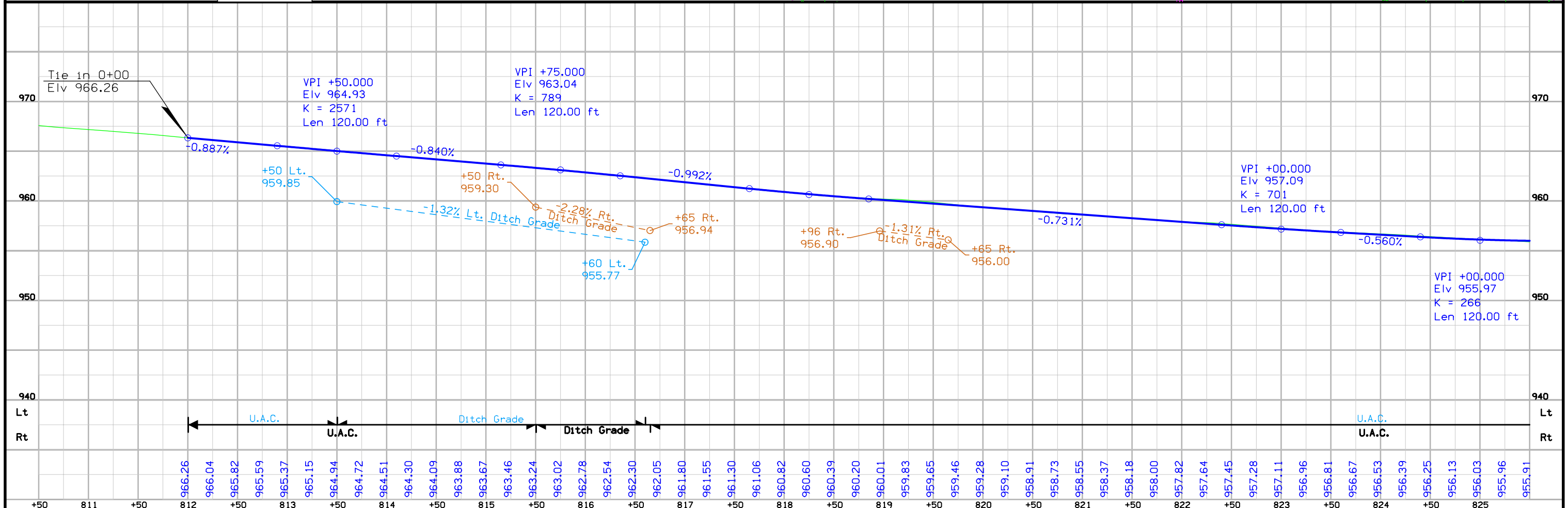
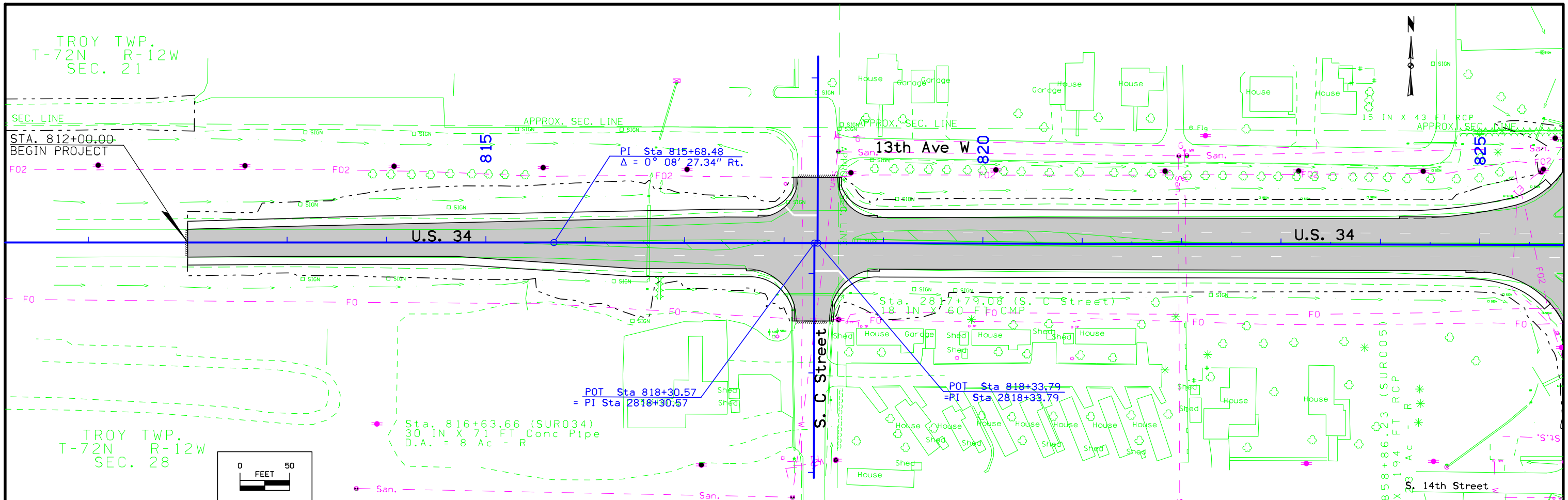
RIGHT-OF-WAY LEGEND

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

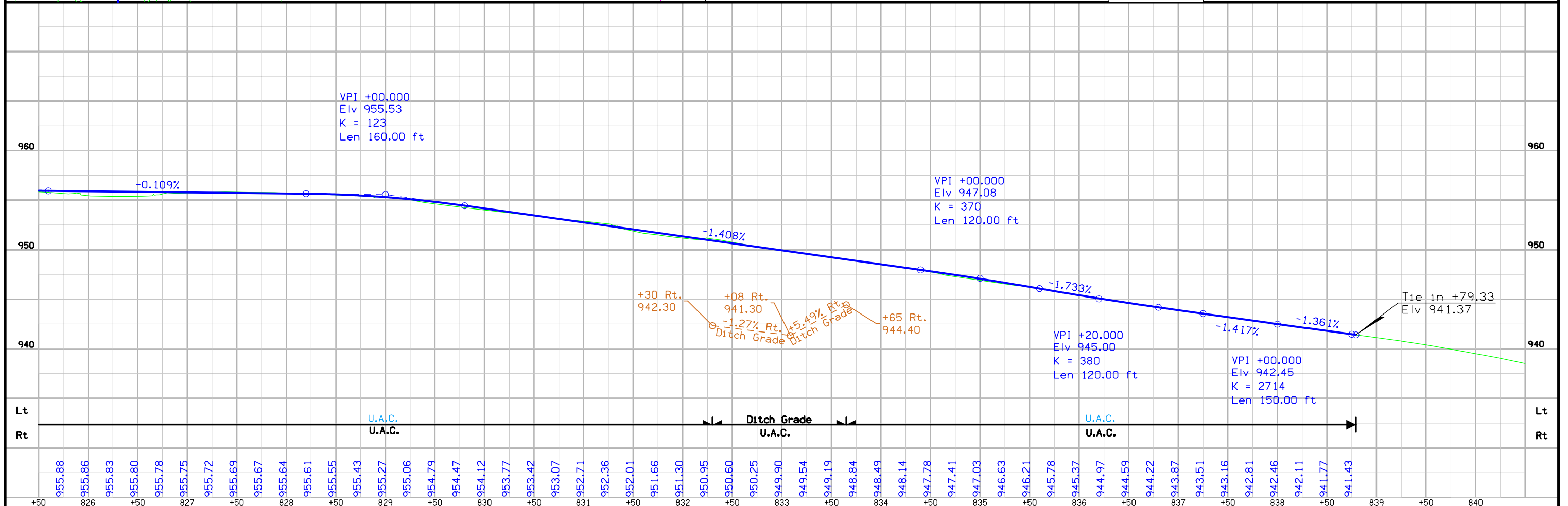
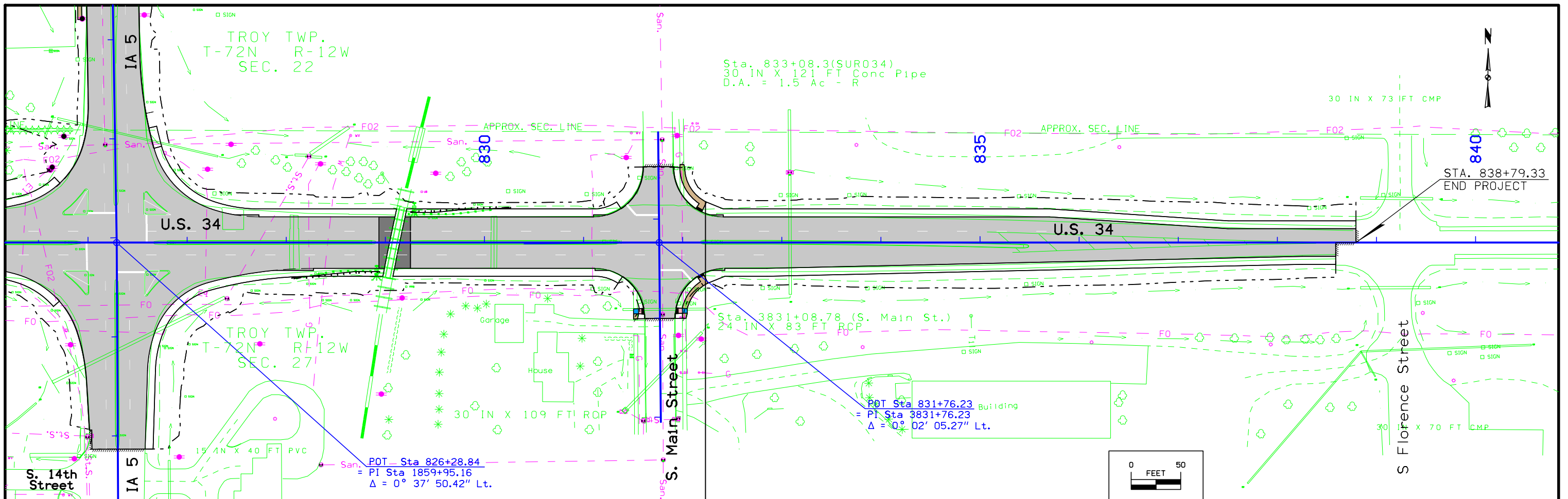
**PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET**

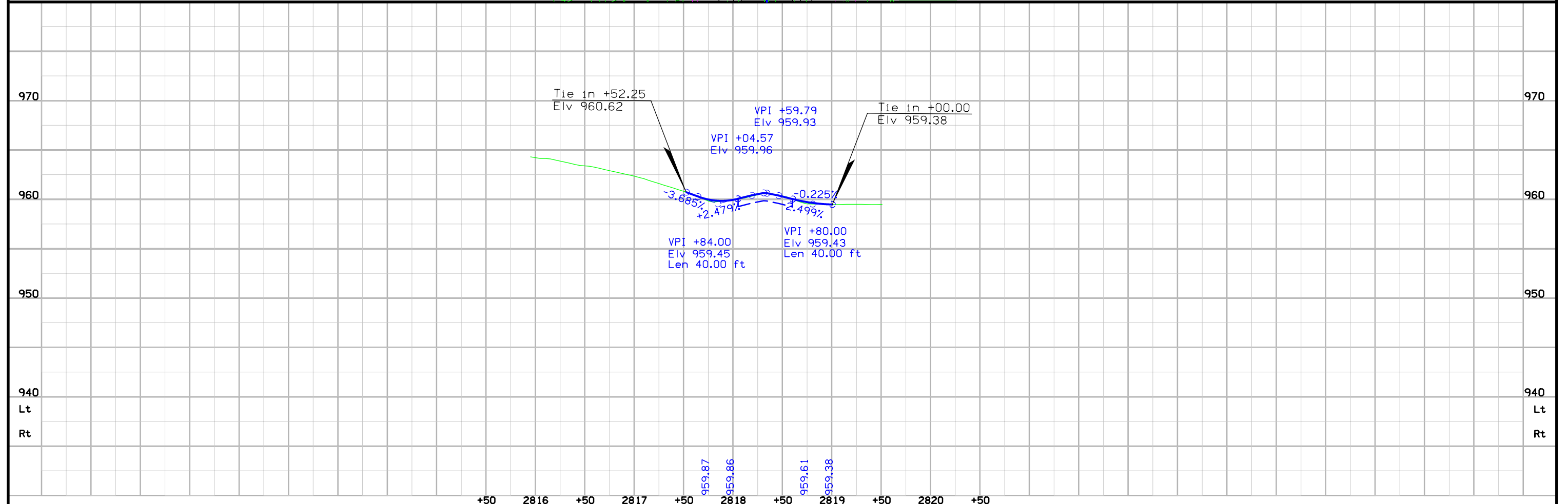
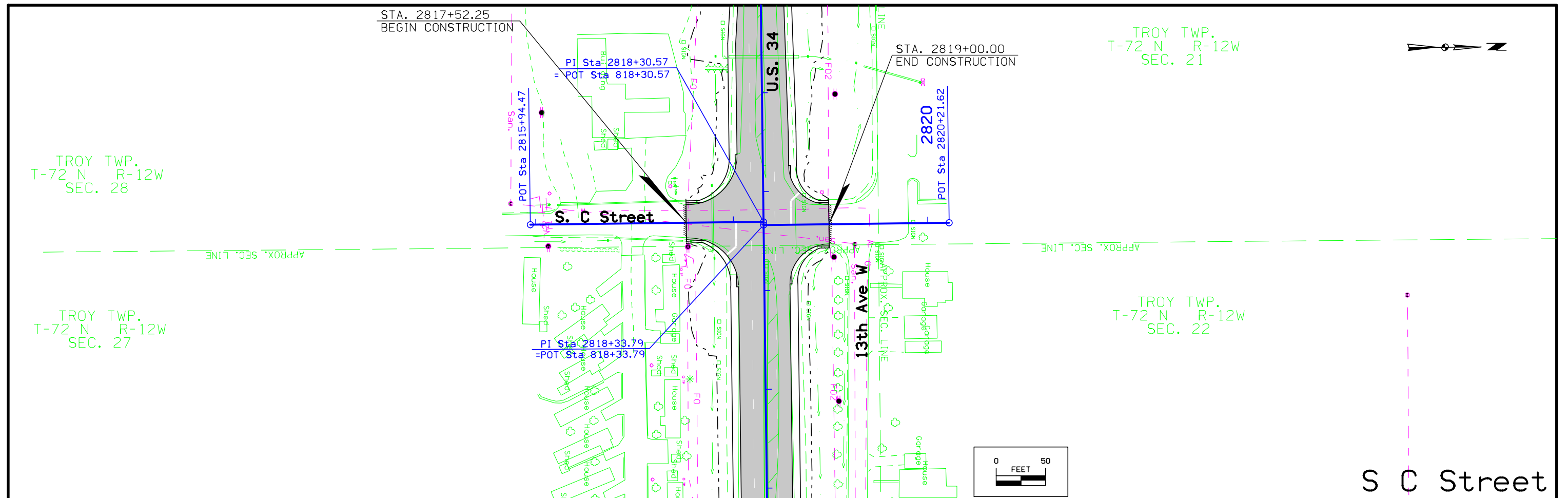
(COVERS SHEET SERIES D, E, F, & K)

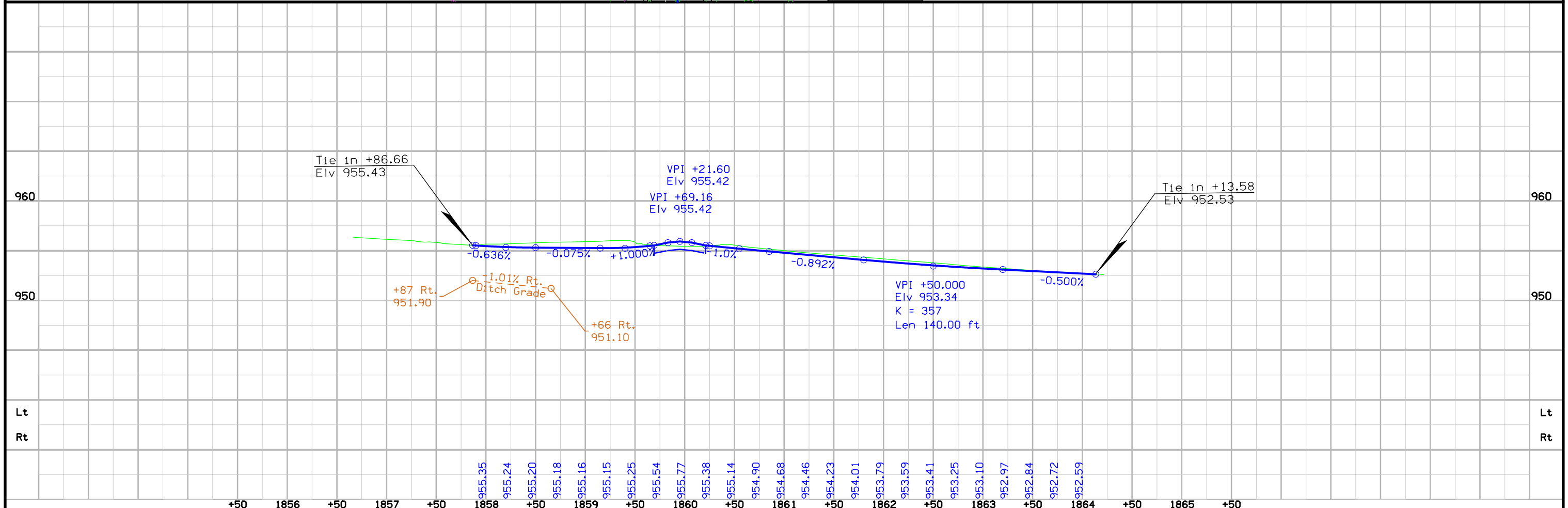
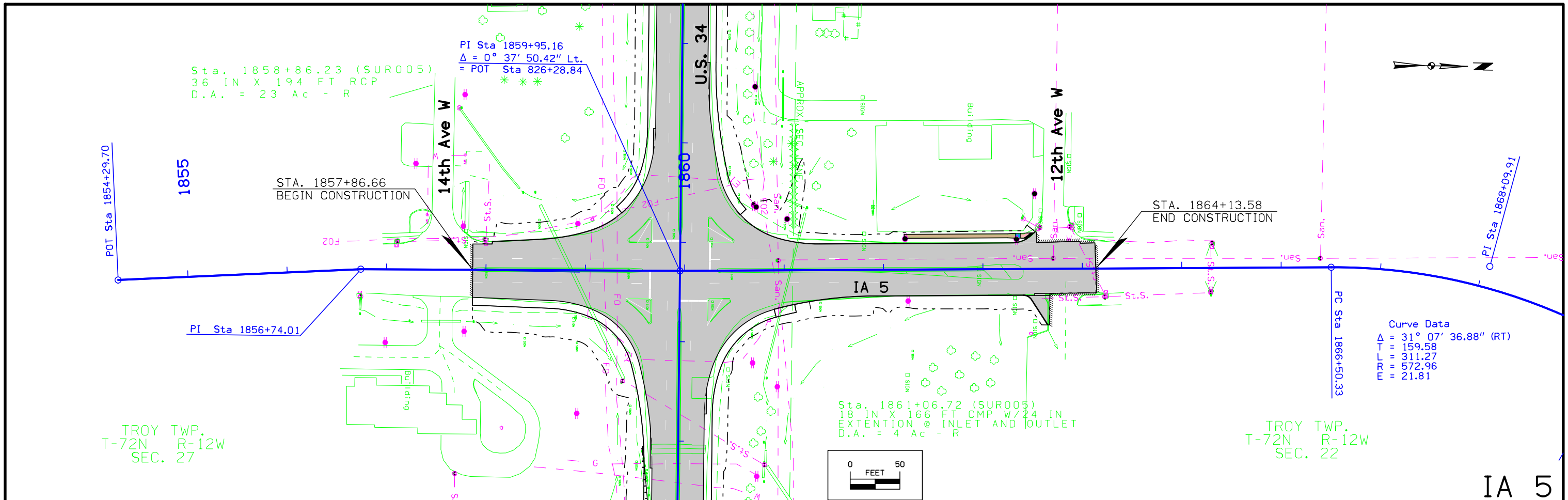




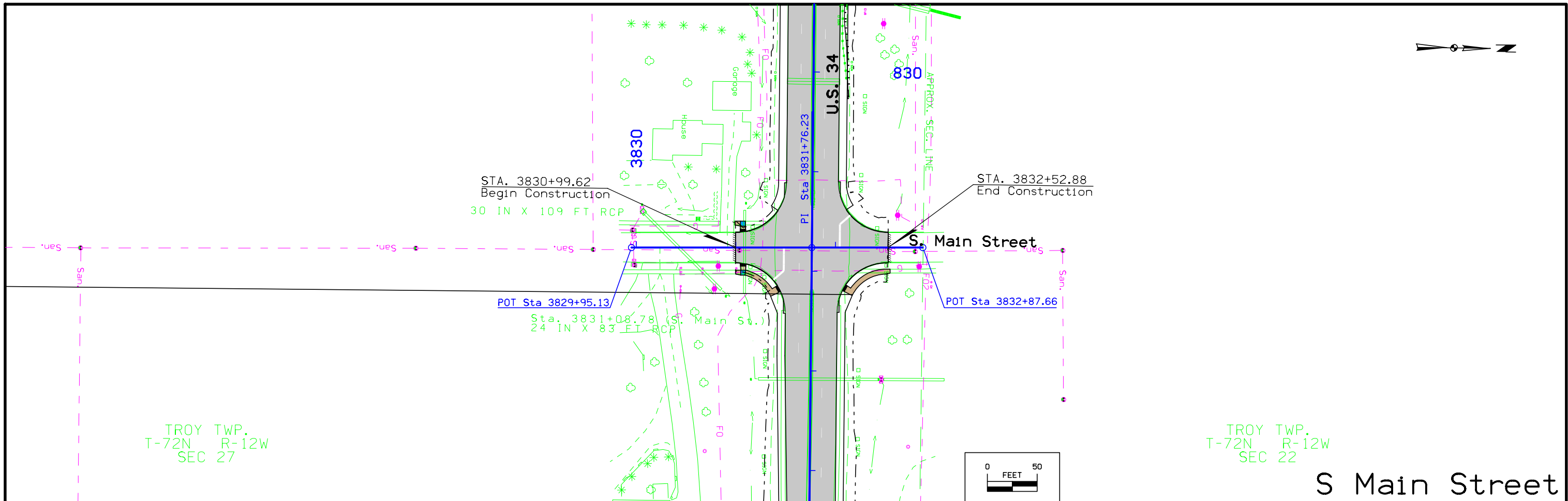
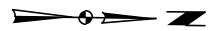
FILE NO.	ENGLISH	DESIGN TEAM	JIA \ ROMSEY \ CAMPBELL	MONROE COUNTY	PROJECT NUMBER	NHSN-034-6(89)--2R-68	SHEET NUMBER	D.3
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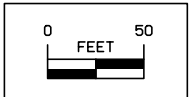


FILE NO.	ENGLISH	DESIGN TEAM	JIA \ ROMSEY \ CAMPBELL	MONROE COUNTY	PROJECT NUMBER	NHSN-034-6(89)--2R-68	SHEET NUMBER	E.2
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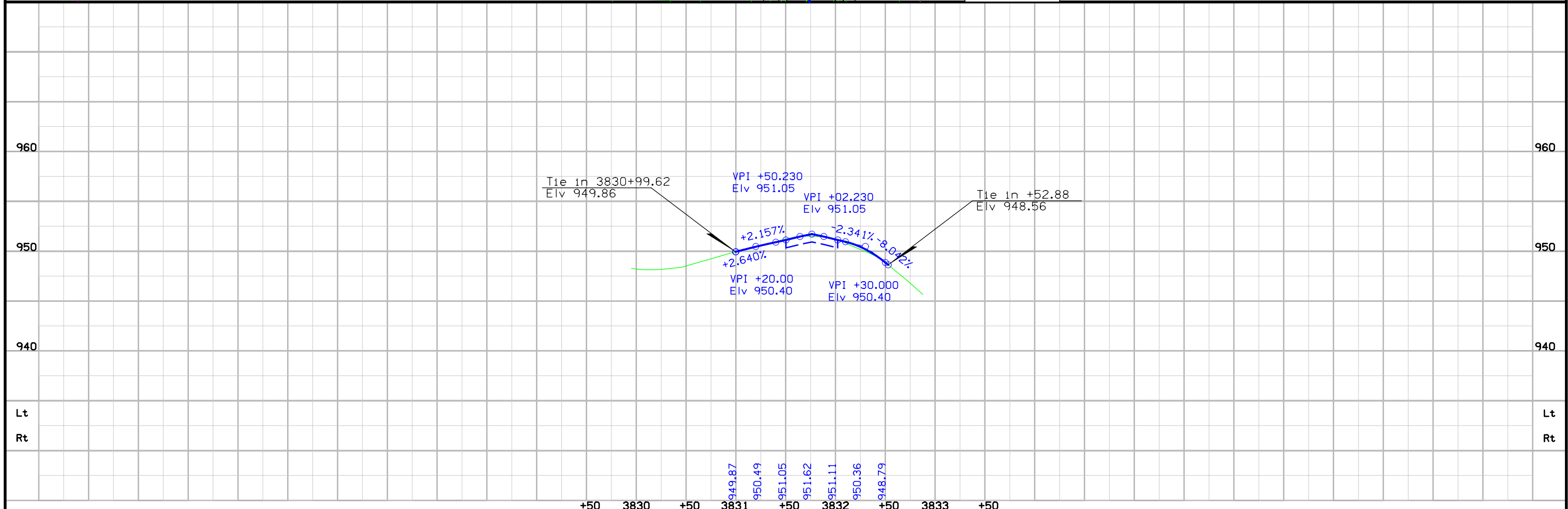


TROY TWP.
T-72N R-12W
SEC 27

TROY TWP.
T-72N R-12W
SEC 22



S Main Street



Survey Information

Monroe County
 NHSN-034-6(89)--2R-68
 Ia. 5 Intersection in Albia
 PIN 14-68-034-010
 Sap-0817

General Information

Measurement units for this survey are US survey feet. This survey is for the reconstruction of the U.S. 34 and IA 5 intersection in Albia in Monroe County. This project is a Partial DTM with Photo control. Terrestrial Lidar was captured nearby the RR crossing.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12A). GRS80 Ellipsoidal Height was computed at project Pt. 68001 by doing 6 hour static observations. The project control is relative to nearby CORS Stations.

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

NGS 2nd. order class II mark designated Z11 has a published Elev. Of 961.99
 Survey Elev. = 961.75

NGS 2nd. order class II mark designated Y11 has a published Elev. Of 961.59
 Survey Elev. = 961.27

Horizontal Control

The project coordinate system is modified Iowa State Plane South Zone (U.S. Survey Feet) scaled around Pt. 68001 at 370634.025 N, 1829272.699 E, 966.643 Elev.

Horizontal datum is NAD83 (2011) for Epoch 2010.00. Coordinates were determined by doing 6 hour static observations.

1/Combined Scale Factor of project= 1.000087608084

The 1/Combined Scale Factor, scaled about Pt. 68001, may be used for GNSS stakeout and location to survey in the Project Coordinate system. A scale factor of 1 should be used with total station stakeout.

Alignment Information

Hwy US 34

The horizontal alignment for this survey is a retrace of As-built Plans No. F-FG-1027(12). Survey stationing was equated to the plan PI at STA 815+68.48 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PC Sta. 815+68.48 As-built Plans Project No. F-FG-1027(12)
 Survey PC Sta. 815+68.48

PI Sta 803+91.06 Project No. F-FG-1027(12)
 Survey PI STA 803+93.25

PC Sta. 895+36.73 As-built Plans Project No. NHS-34-6(48)--19-68
 Survey PI Sta. 860+76.38

Iowa Hwy 5

The horizontal alignment for this survey is a retrace of As-built Plans No. NHS-5-2(28)--19-68. Survey stationing was equated to the plan PI at STA 1868+09.91 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 1868+09.91 As-built Plans Project No. NHS-5-2(28)--19-68
 Survey PI Sta. 1868+09.91

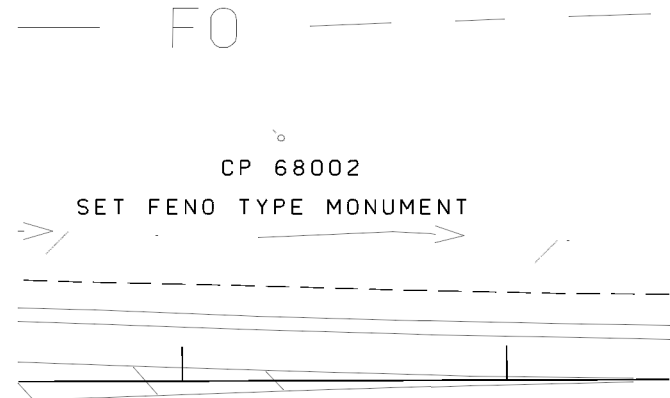
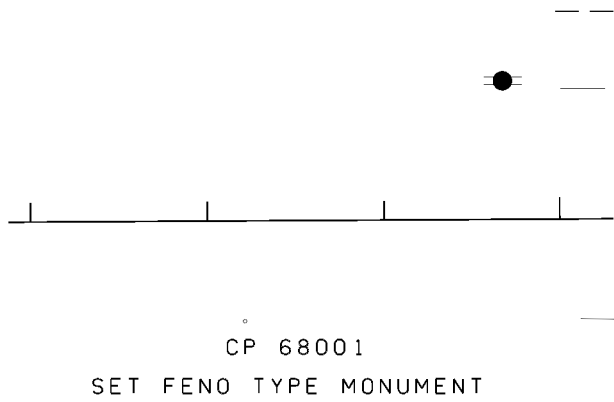
POT Sta 1859+95.20 Project No. NHS-5-2(28)--19-68
 Survey PI STA 1859+95.17

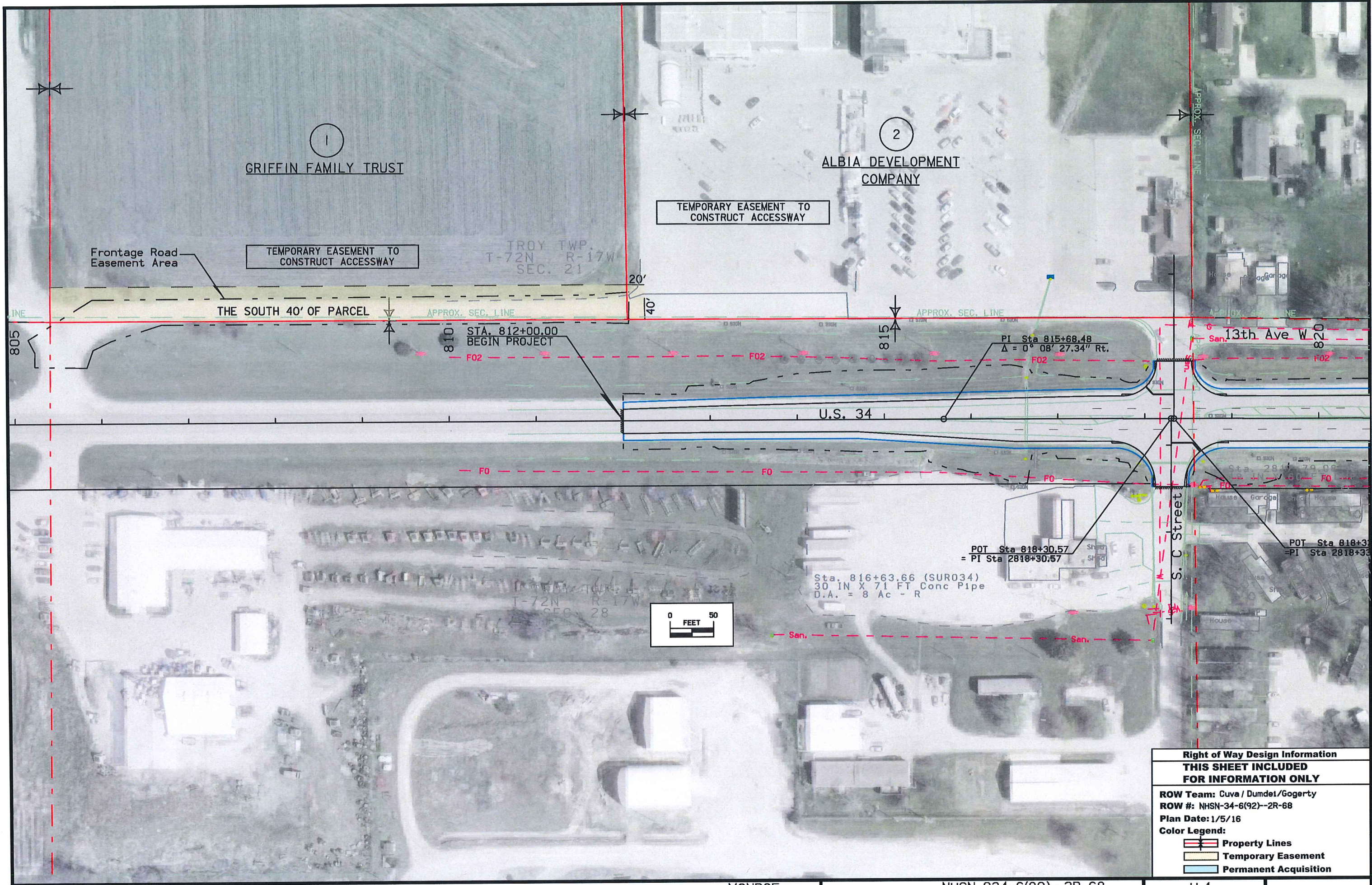
VERTICAL CONTROL

Point	North	East	Elevation	Station(SUR034)	Offset	Feature	Description
68001	370634.0250	1829272.6990	966.6430	808+21.01	56.8079	CP	68001 SET FENO MONUMENT
68002	370777.4790	1832181.7530	946.0710	837+30.67	-75.1923	CP	68002 SET FENO MONUMENT

CP STA 808+21.01, 57 FT RT
CP 68001 SET FENO TYPE MONUMENT
N=370634.0250, E=1829272.6990

CP STA 837+30.67, 75 FT LT
CP 68002 SET FENO TYPE MONUMENT
N=370777.4790, E=1832181.7530





1
GRIFFIN FAMILY TRUST

2
ALBIA DEVELOPMENT COMPANY

TEMPORARY EASEMENT TO CONSTRUCT ACCESSWAY

Frontage Road Easement Area

TEMPORARY EASEMENT TO CONSTRUCT ACCESSWAY

TROY TWP.
T-72N R-17W
SEC. 21

THE SOUTH 40' OF PARCEL

APPROX. SEC. LINE

APPROX. SEC. LINE

STA. 812+00.00
BEGIN PROJECT

PI Sta 815+68.48
 $\Delta = 0^\circ 08' 27.34''$ Rt.

13th Ave W

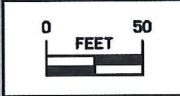
U.S. 34

S. C Street

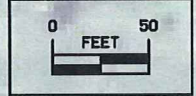
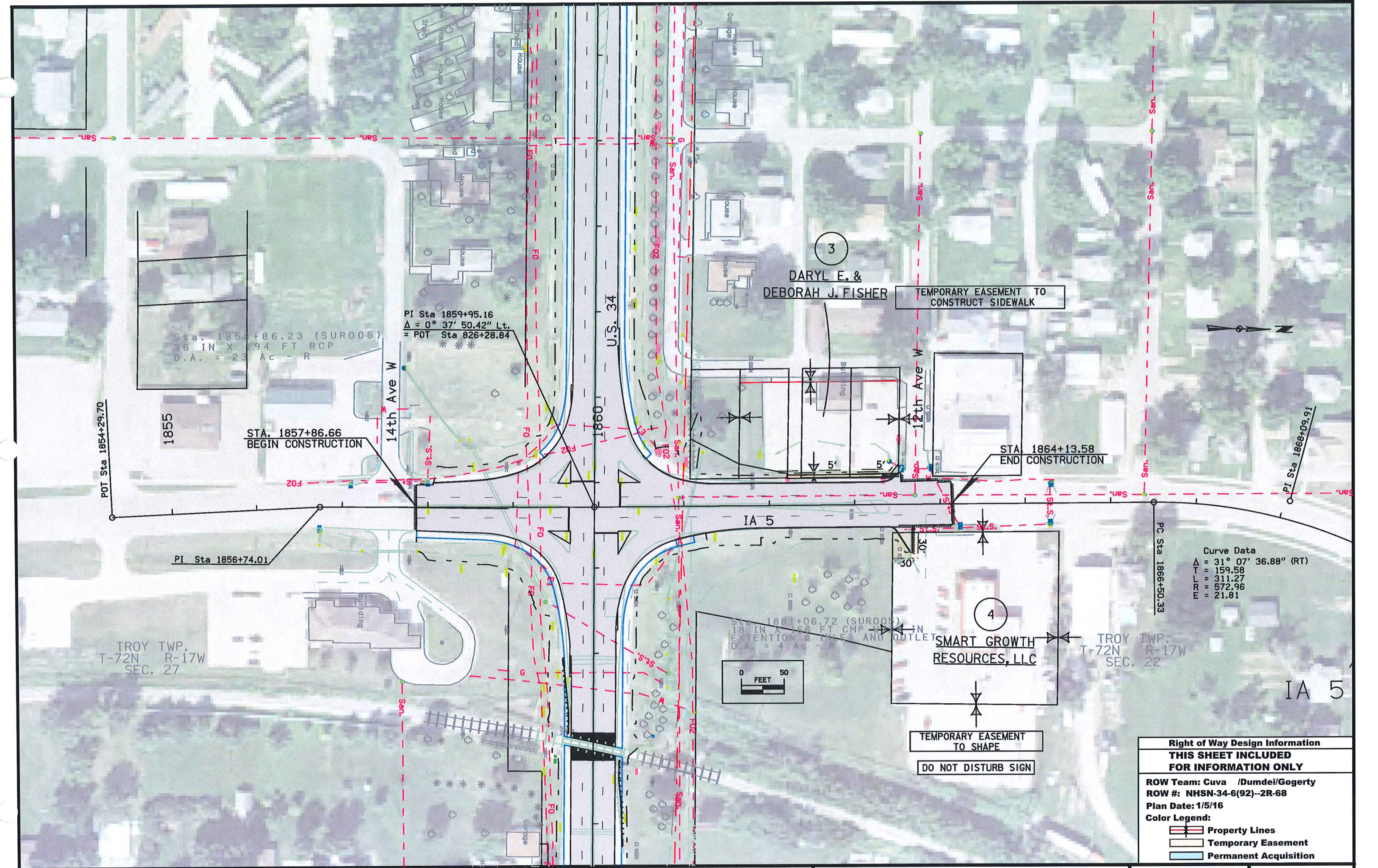
Sta. 816+63.66 (SUR034)
30 IN X 71 FT Conc Pipe
D.A. = 8 Ac - R

POT Sta 818+30.57
= PI Sta 2818+30.57

POT Sta 818+30.57
= PI Sta 2818+30.57



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: Cuva / Dumdel / Gogerty	
ROW #: NHSN-34-6(92)--2R-68	
Plan Date: 1/5/16	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



Curve Data
 $\Delta = 31^\circ 07' 36.88''$ (RT)
 T = 159.58
 L = 311.27
 E = 572.96
 R = 21.81

Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: Cuva /Dumdei/Gogerty	
ROW #: NHSN-34-6(92)--2R-68	
Plan Date: 1/5/16	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- - - - - - Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- - - - - Additional Topsoil Removal
- Subgrade Treatment
- - - - - Granular Shoulder
- Pavement
- - - - - Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS————— Topsoil (Class 10)
- SLOPE DRESSING — Slope Dressing Only
- CL 10————— Class 10 Materials
- SEL L0————— Select Loams And Clay-Loams
- SEL SA————— Select Sand
- UNS A————— Unsuitable Type A Disposal
- UNS B————— Unsuitable Type B Disposal
- UNS C————— Unsuitable Type C Disposal
- SHALE————— Shale
- WASTE————— Waste
- B&W LS————— Broken and Weathered Rock
- ROCK————— Solid Rock
- BLDRS————— Boulders

Note: All layer lines and descriptions identify layers above the line.

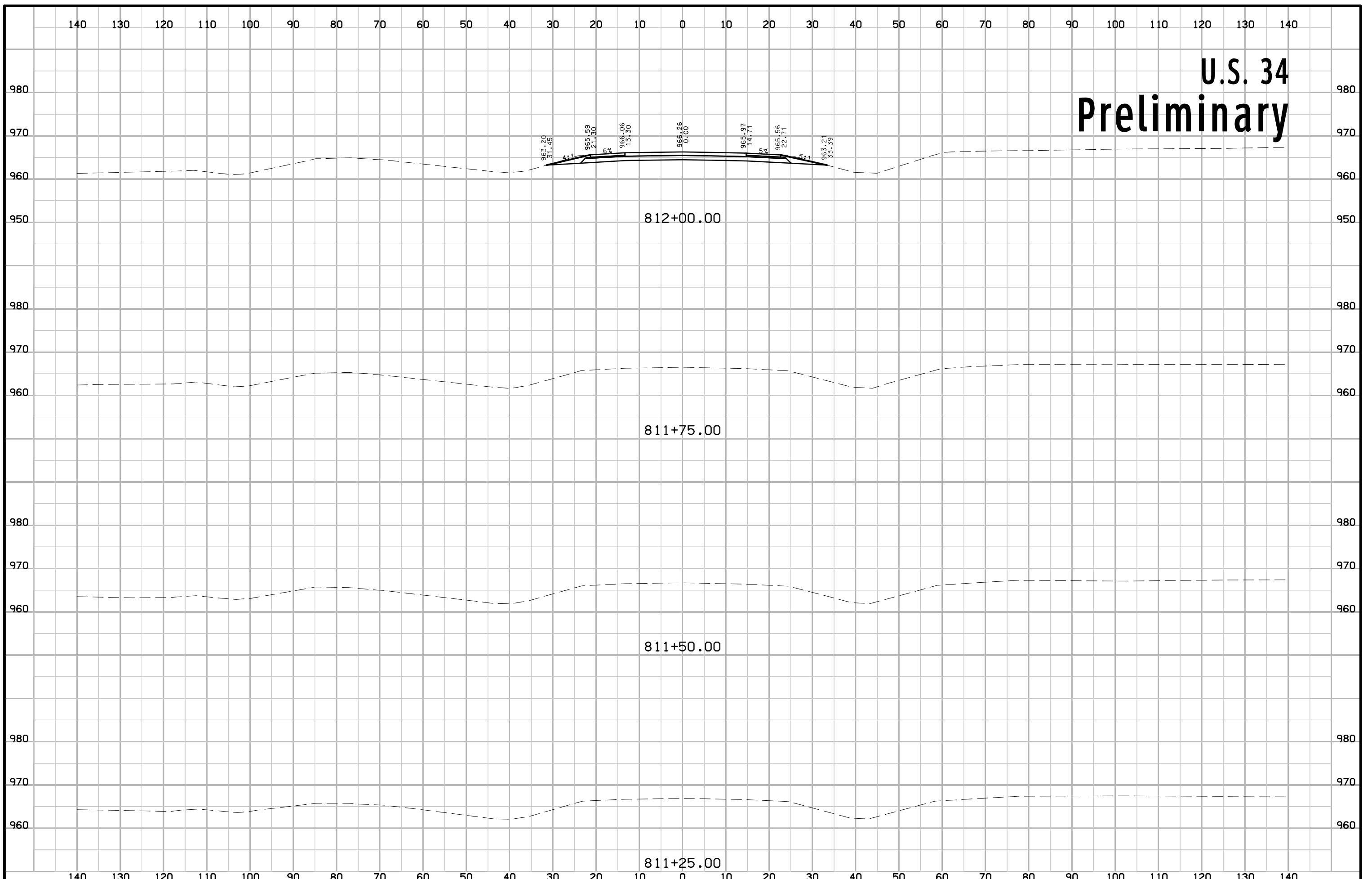
Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

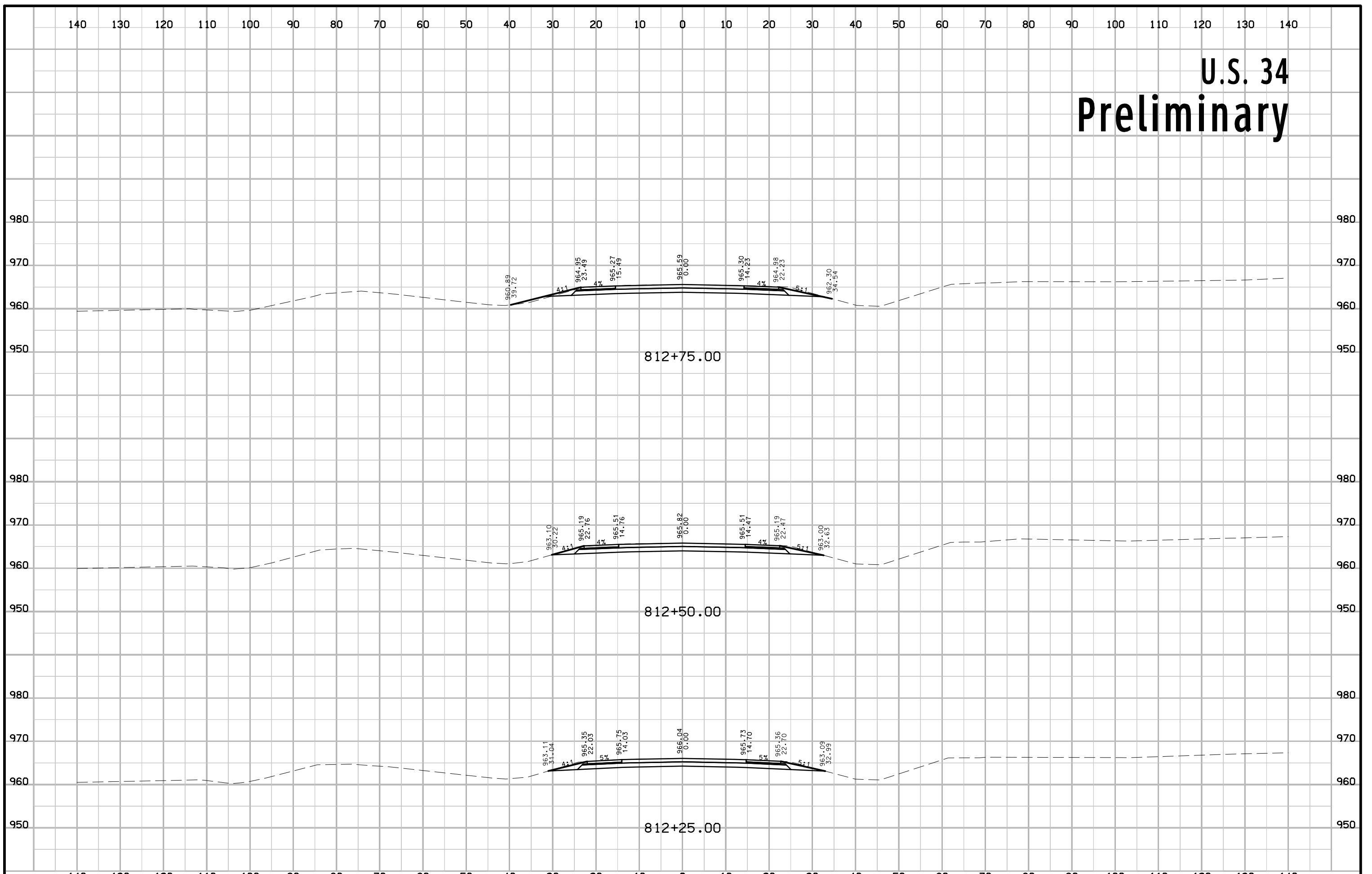
- Existing ROW
|
Existing Right-of-Way Limit
- Proposed ROW
|
Proposed Right-of-Way Limit
- Temporary ROW
|
Temporary Right-of-Way Limit

**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET
(COVERS SHEET SERIES W, X, Y, & Z)**

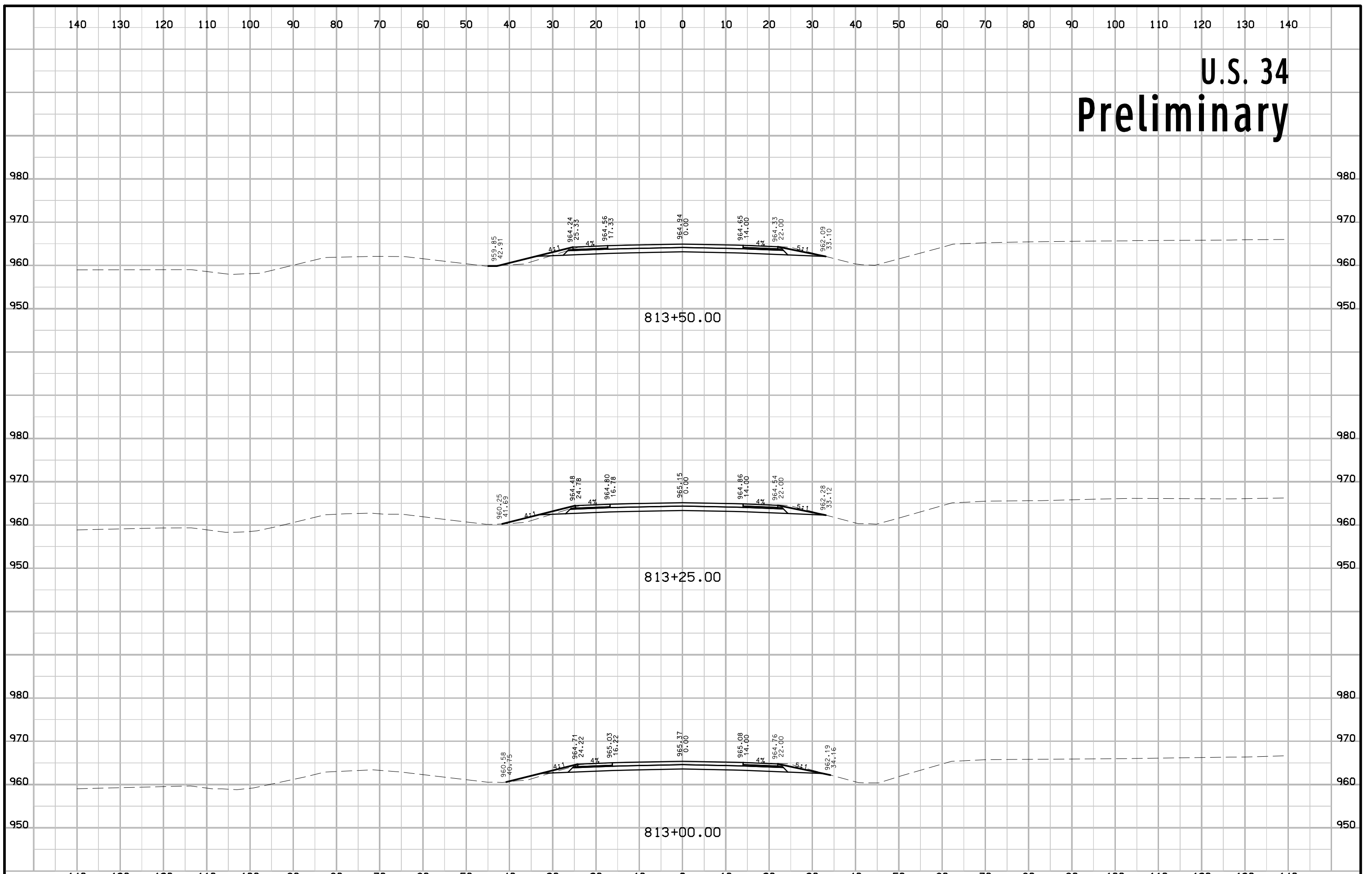
U.S. 34 Preliminary



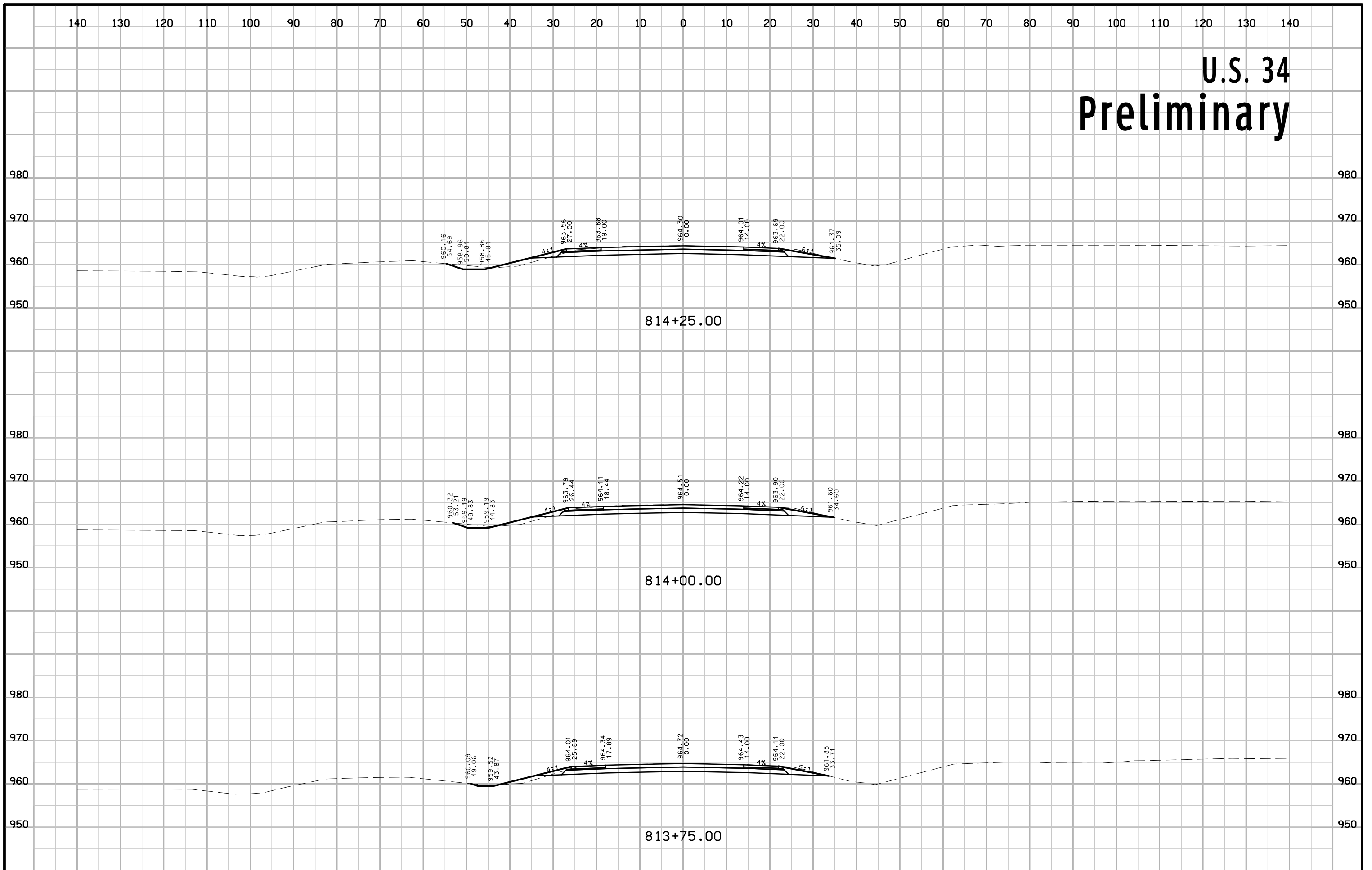
U.S. 34 Preliminary



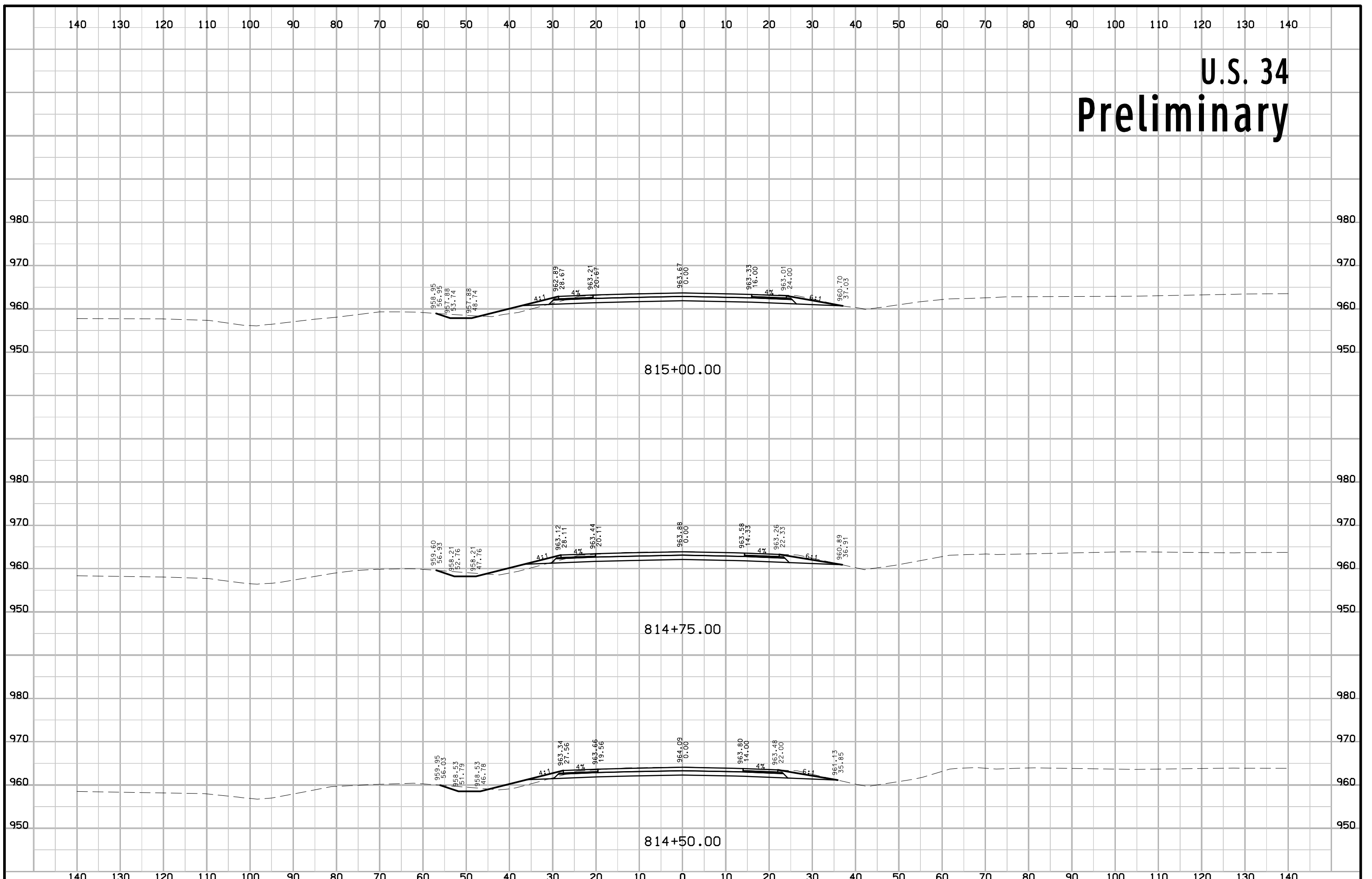
U.S. 34 Preliminary



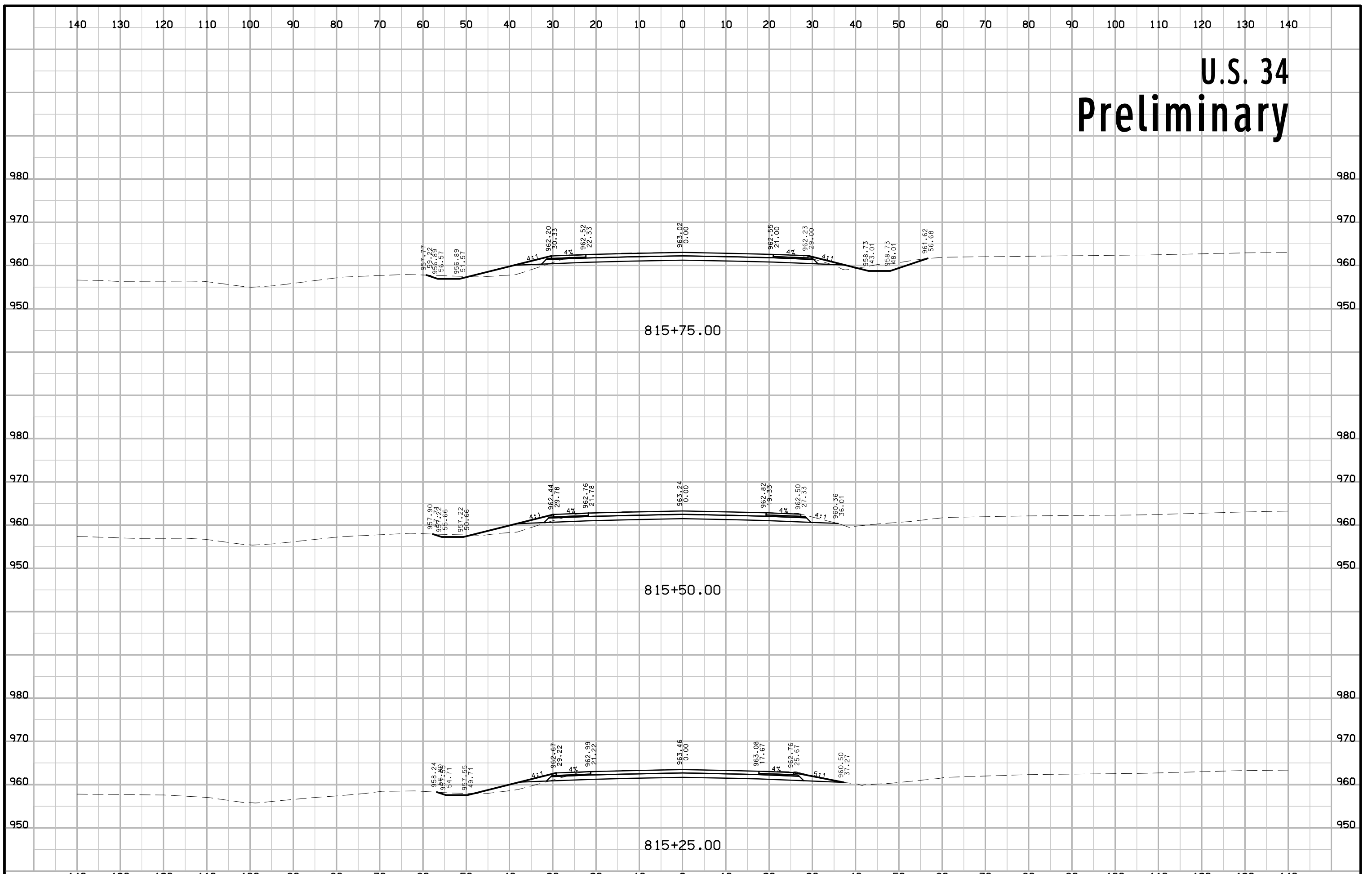
U.S. 34 Preliminary



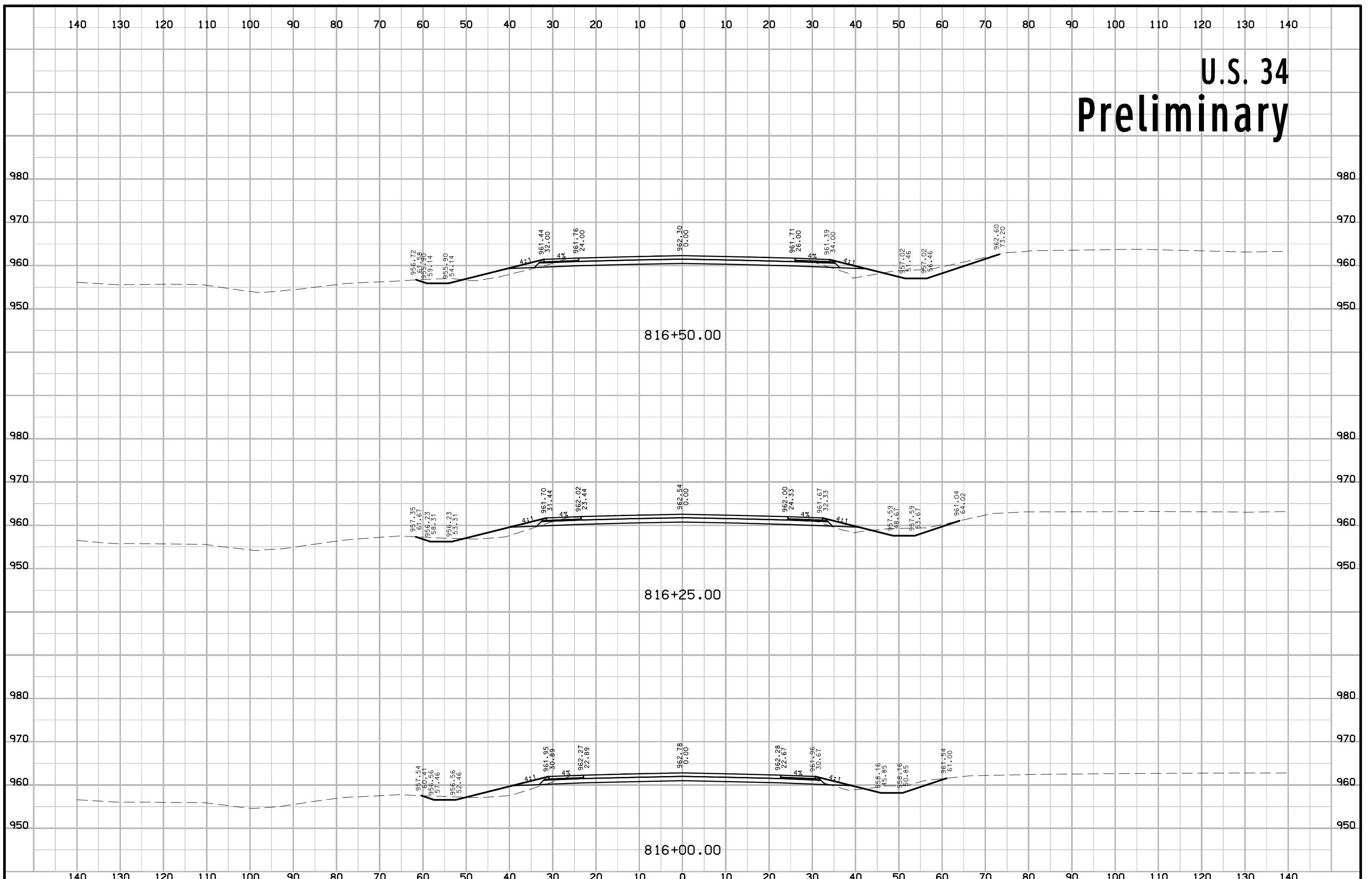
U.S. 34 Preliminary



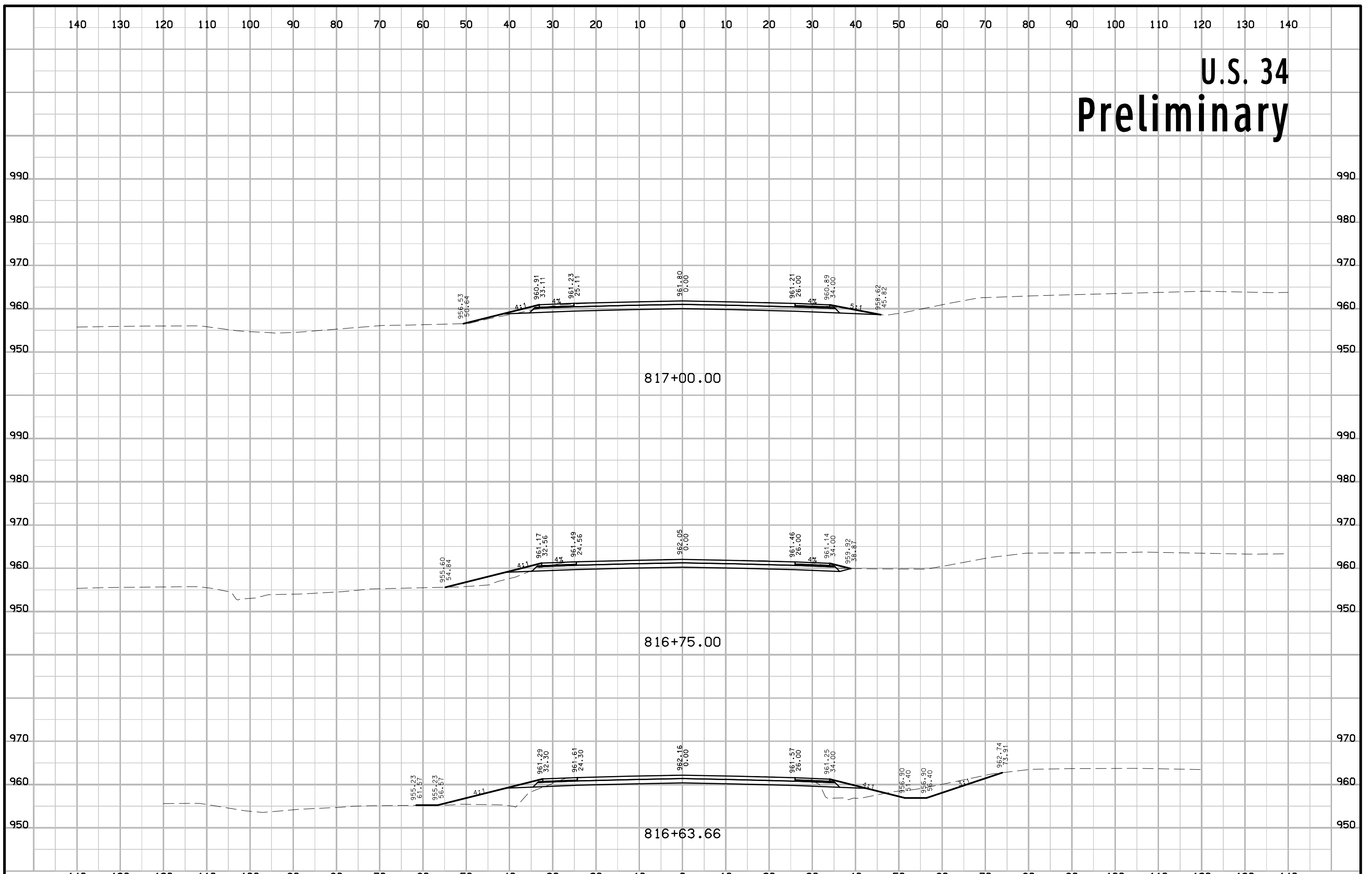
U.S. 34 Preliminary



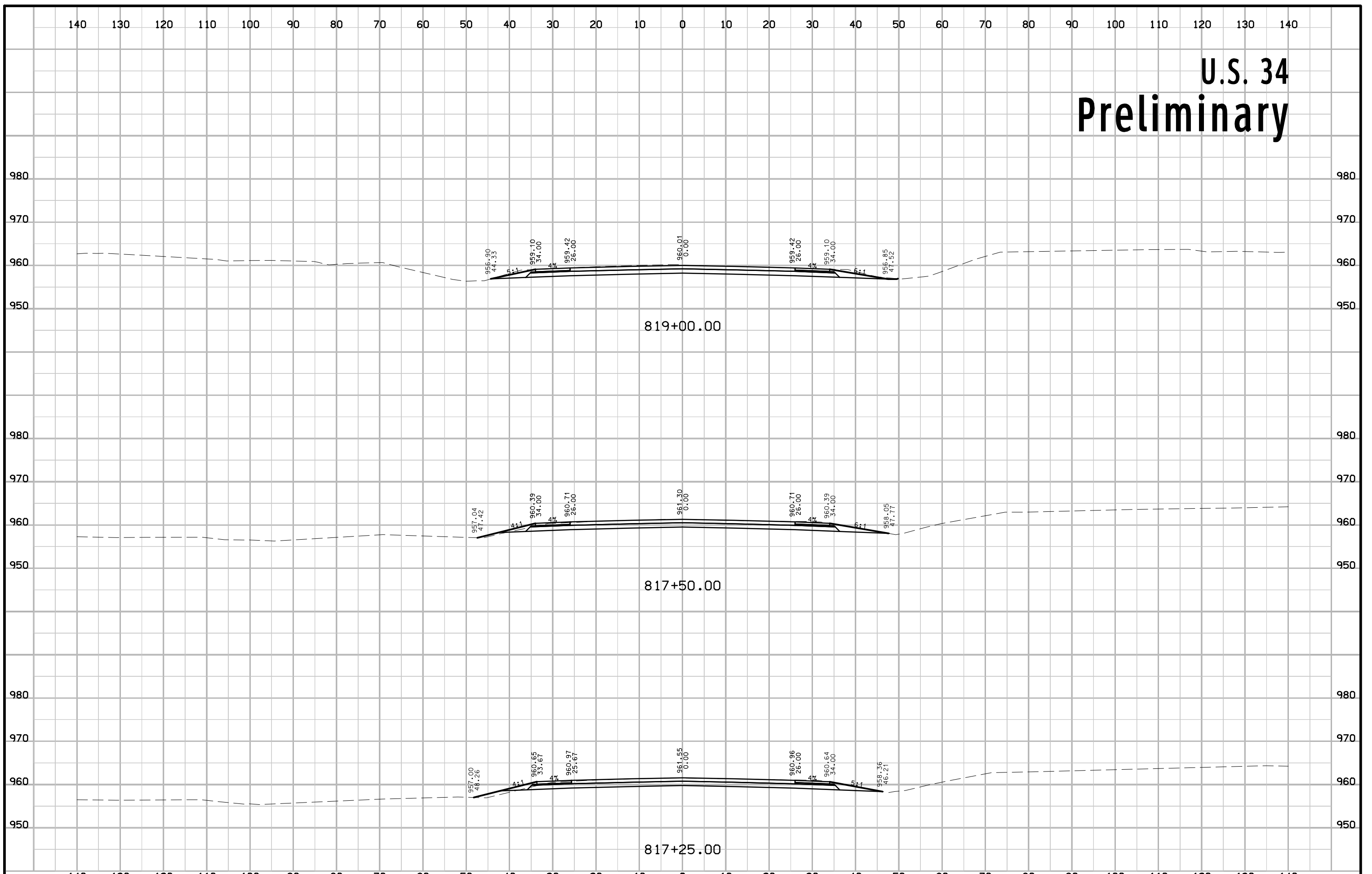
U.S. 34 Preliminary



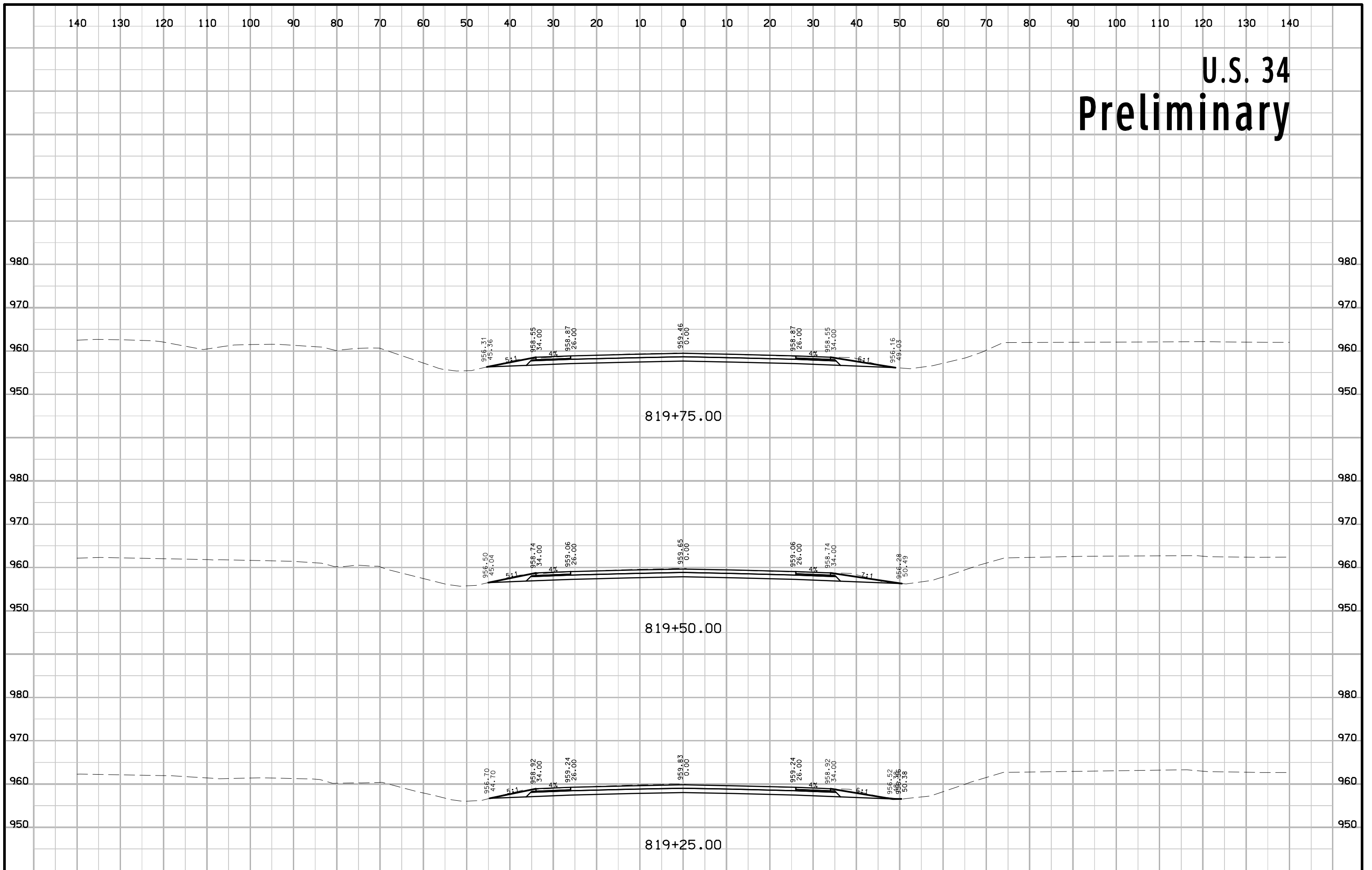
U.S. 34 Preliminary



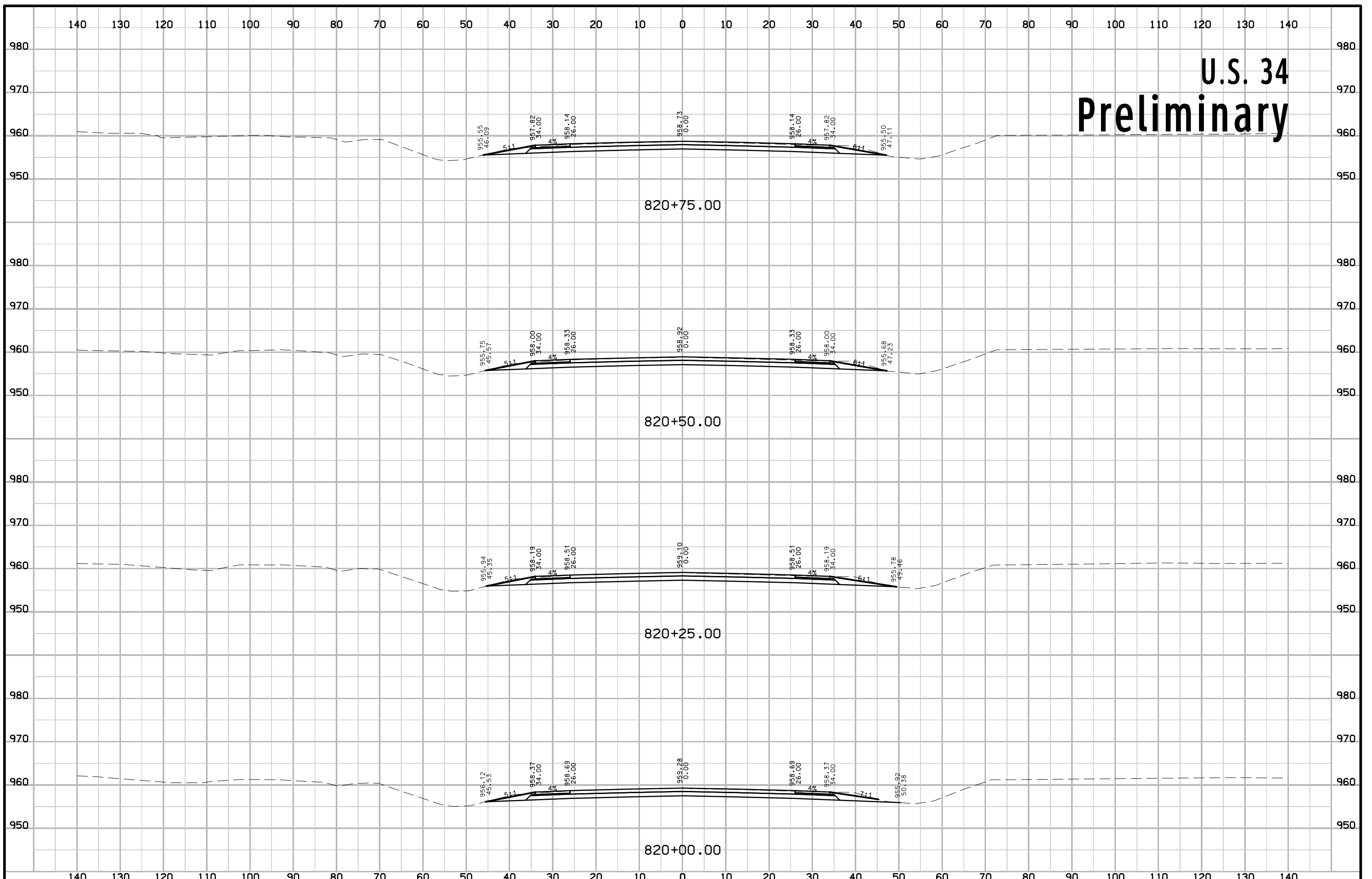
U.S. 34 Preliminary



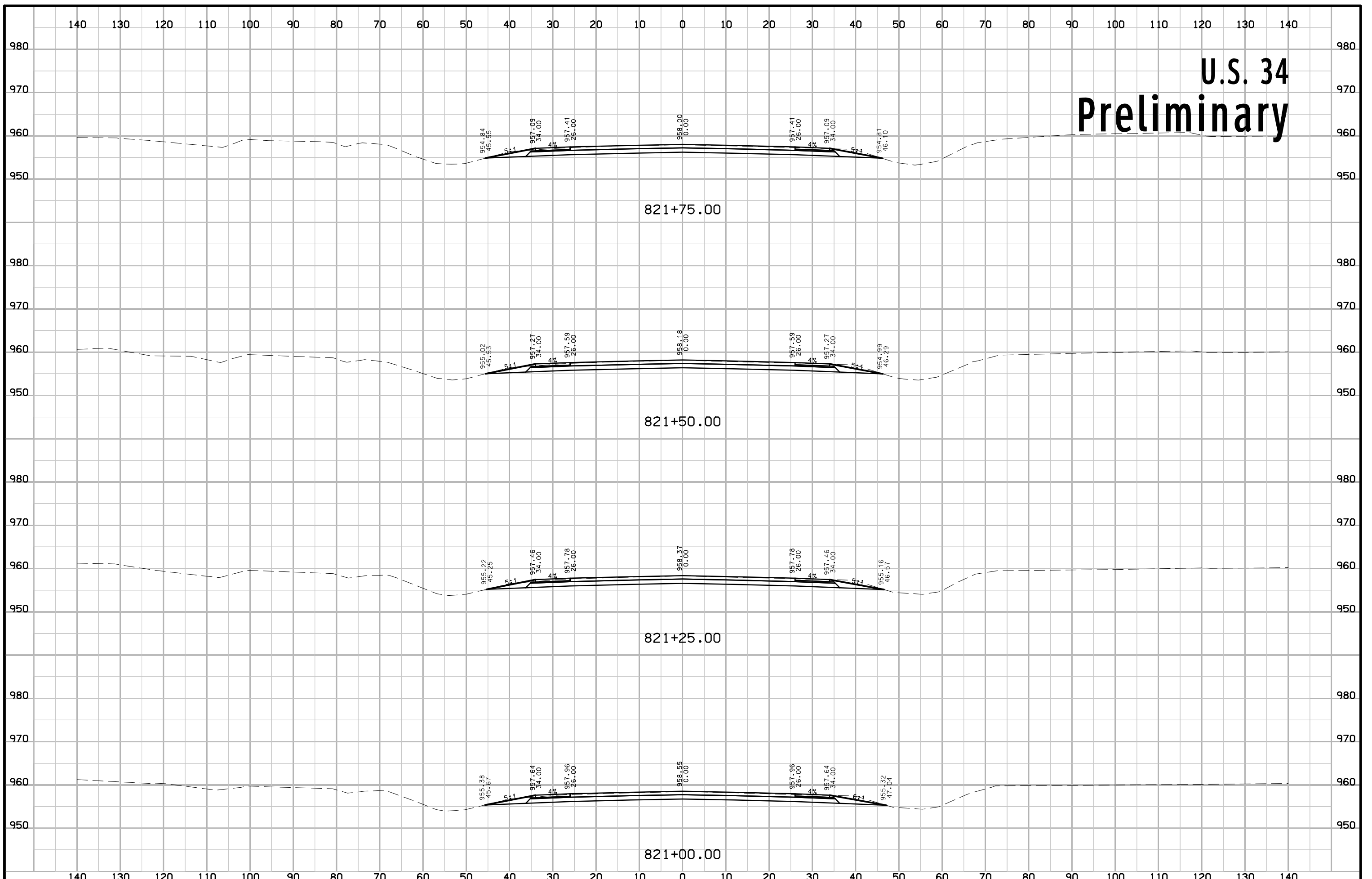
U.S. 34 Preliminary



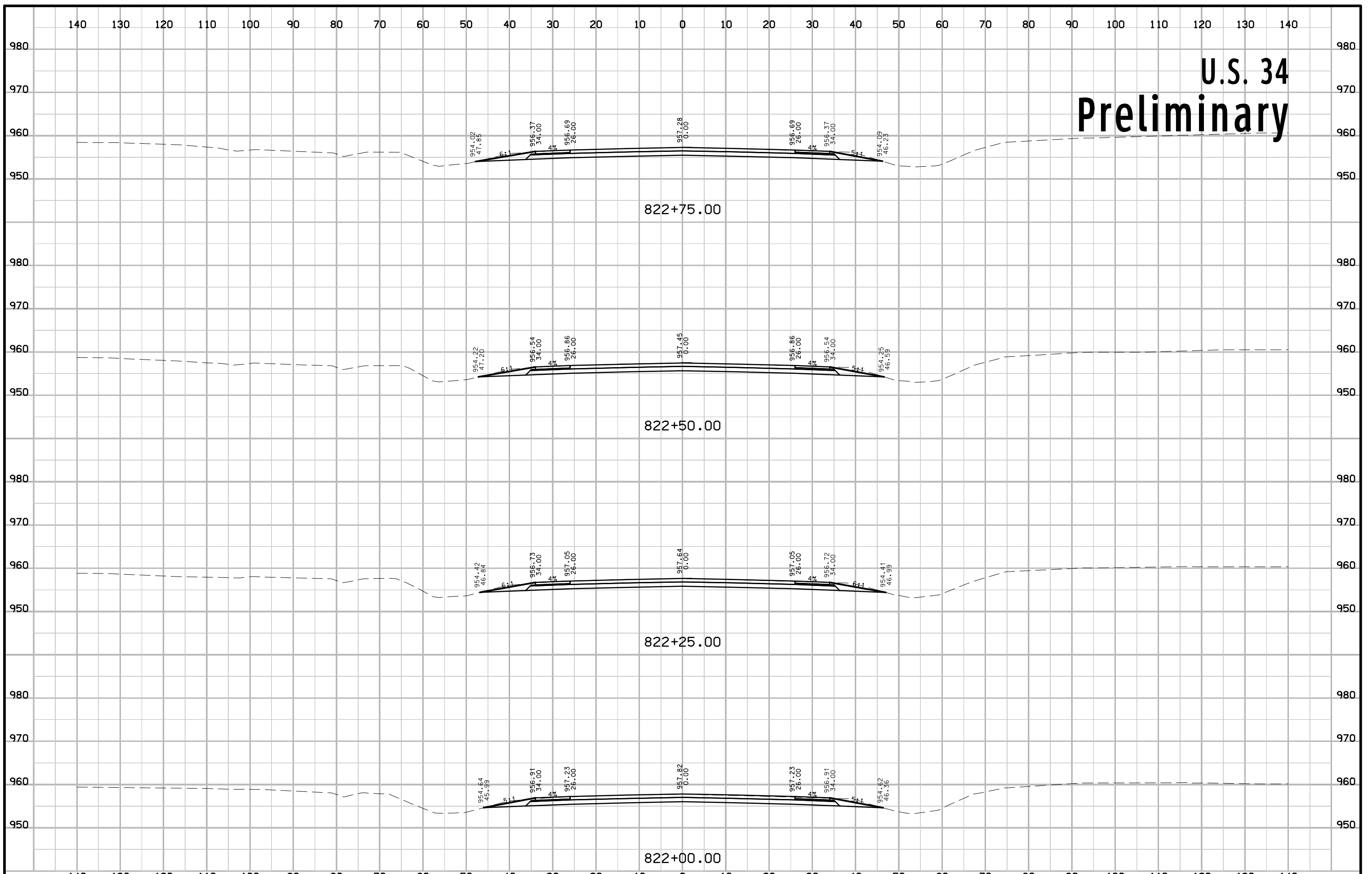
U.S. 34 Preliminary



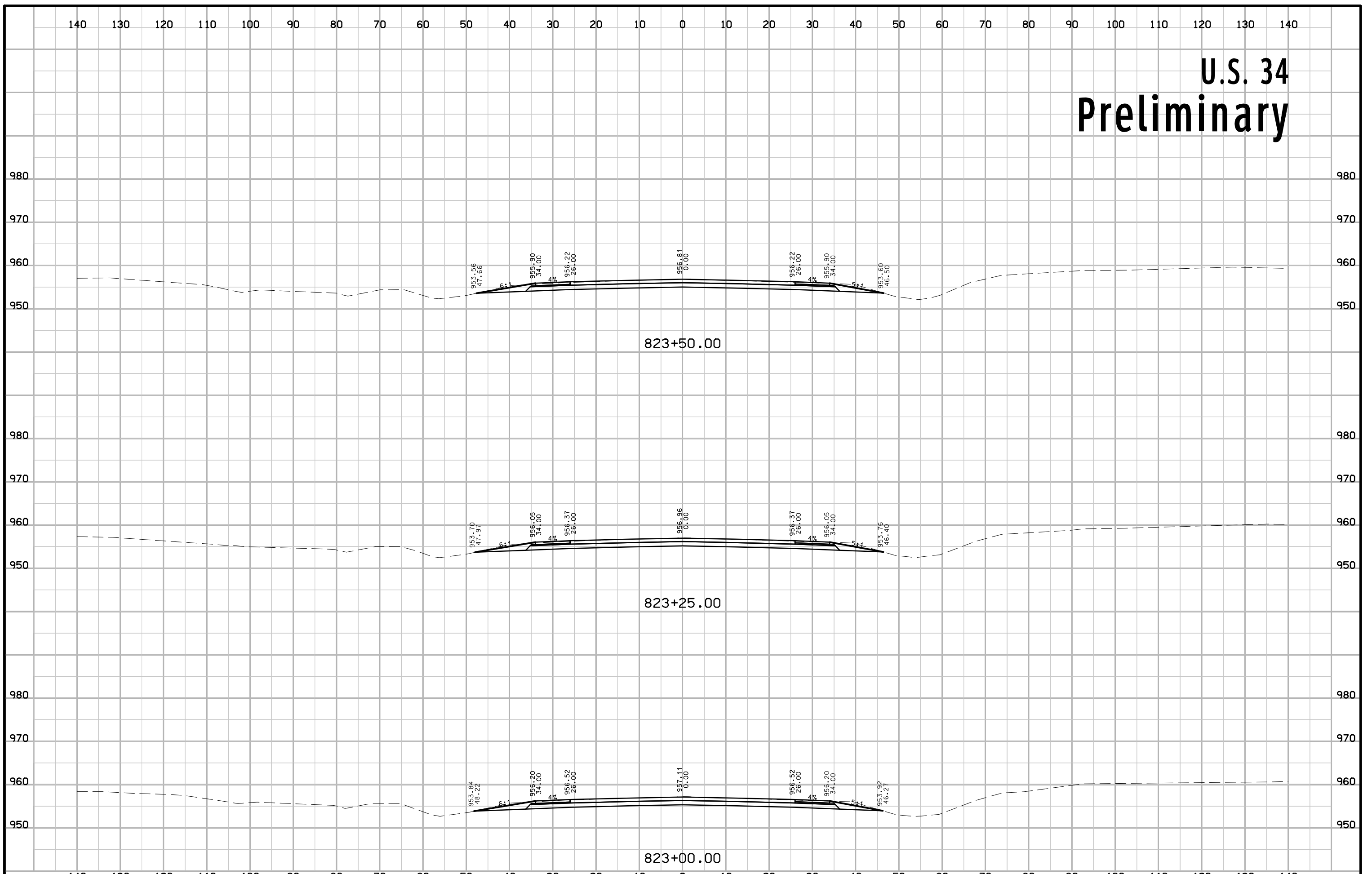
U.S. 34 Preliminary



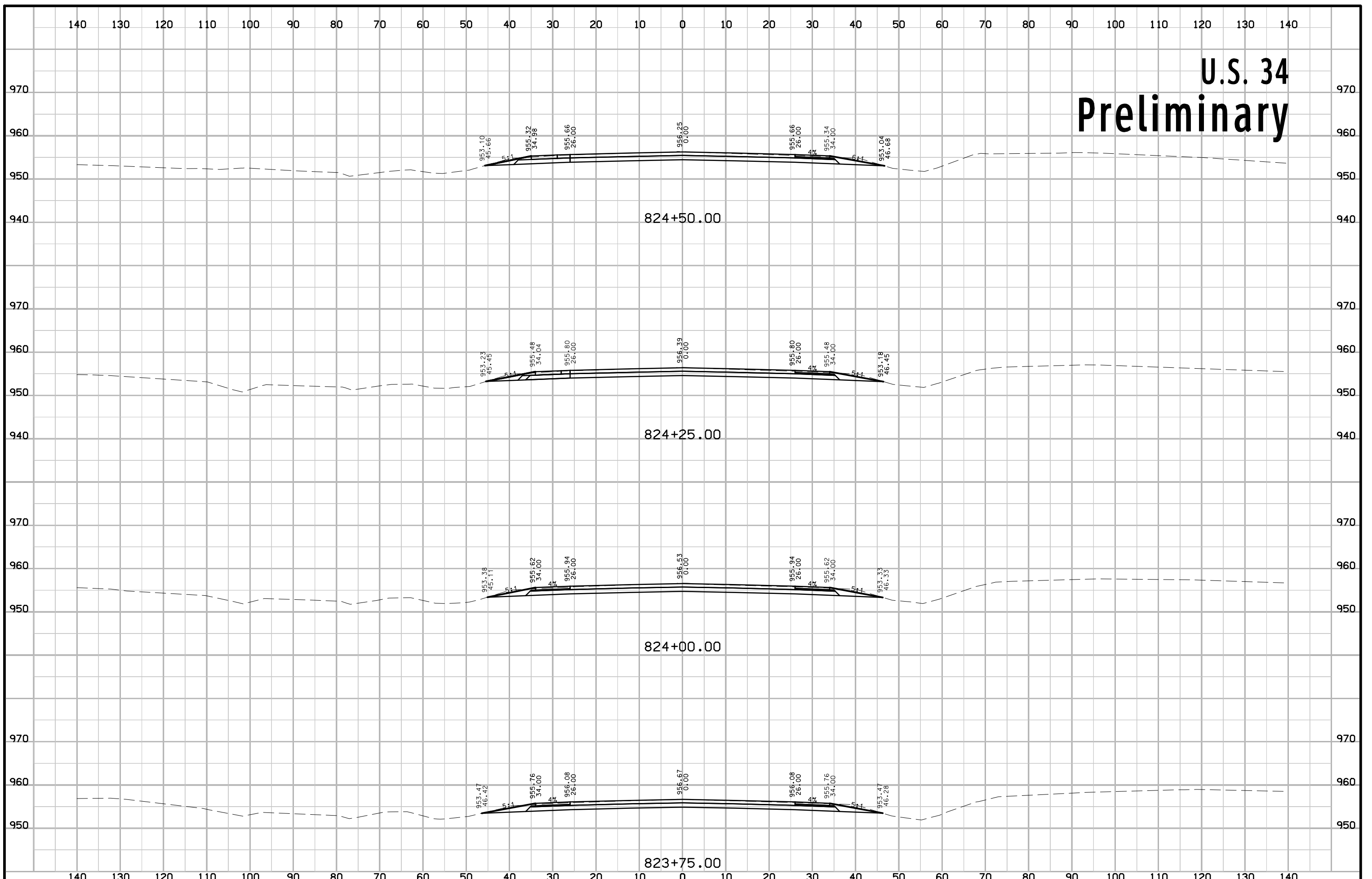
U.S. 34 Preliminary



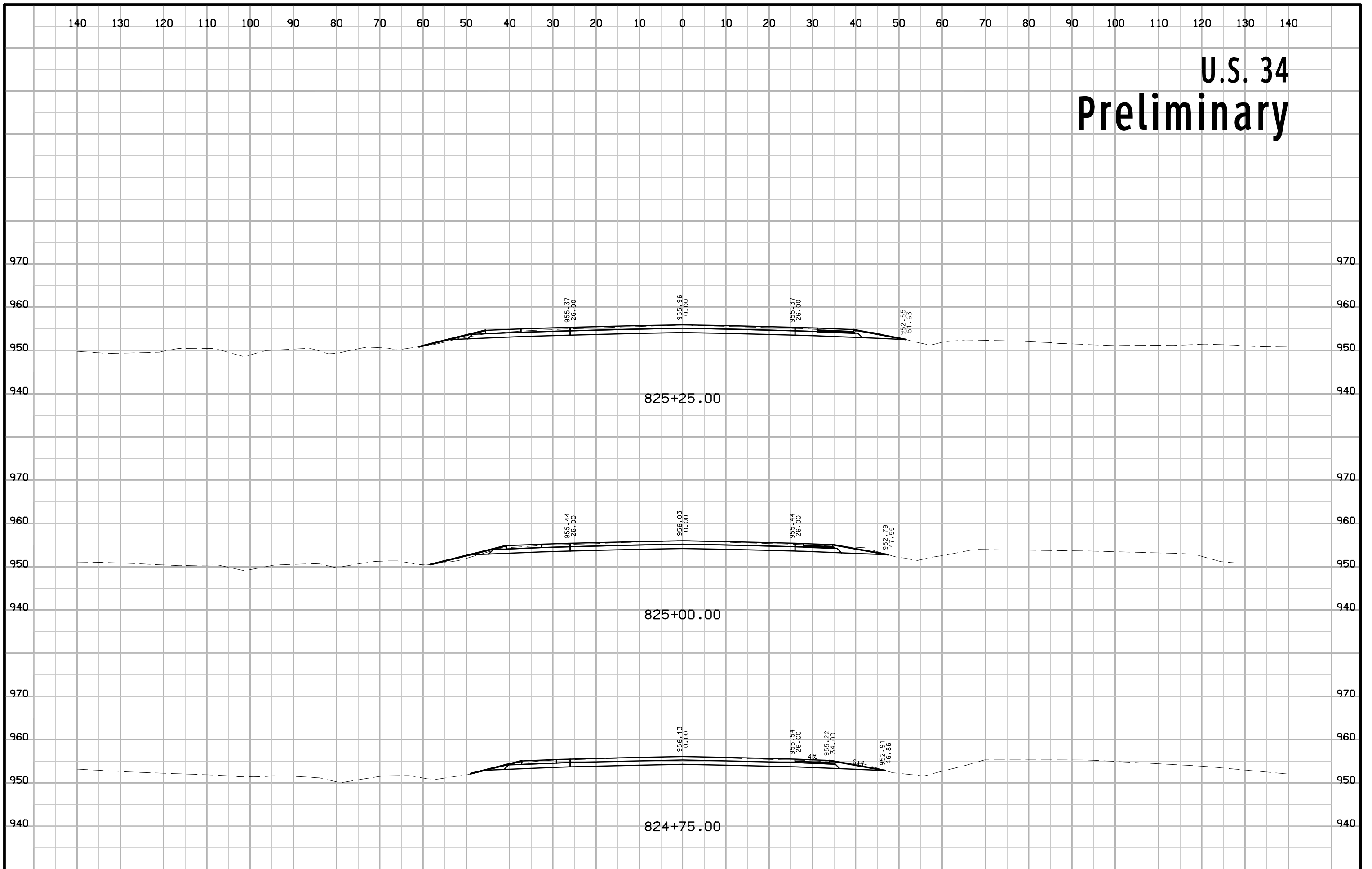
U.S. 34 Preliminary



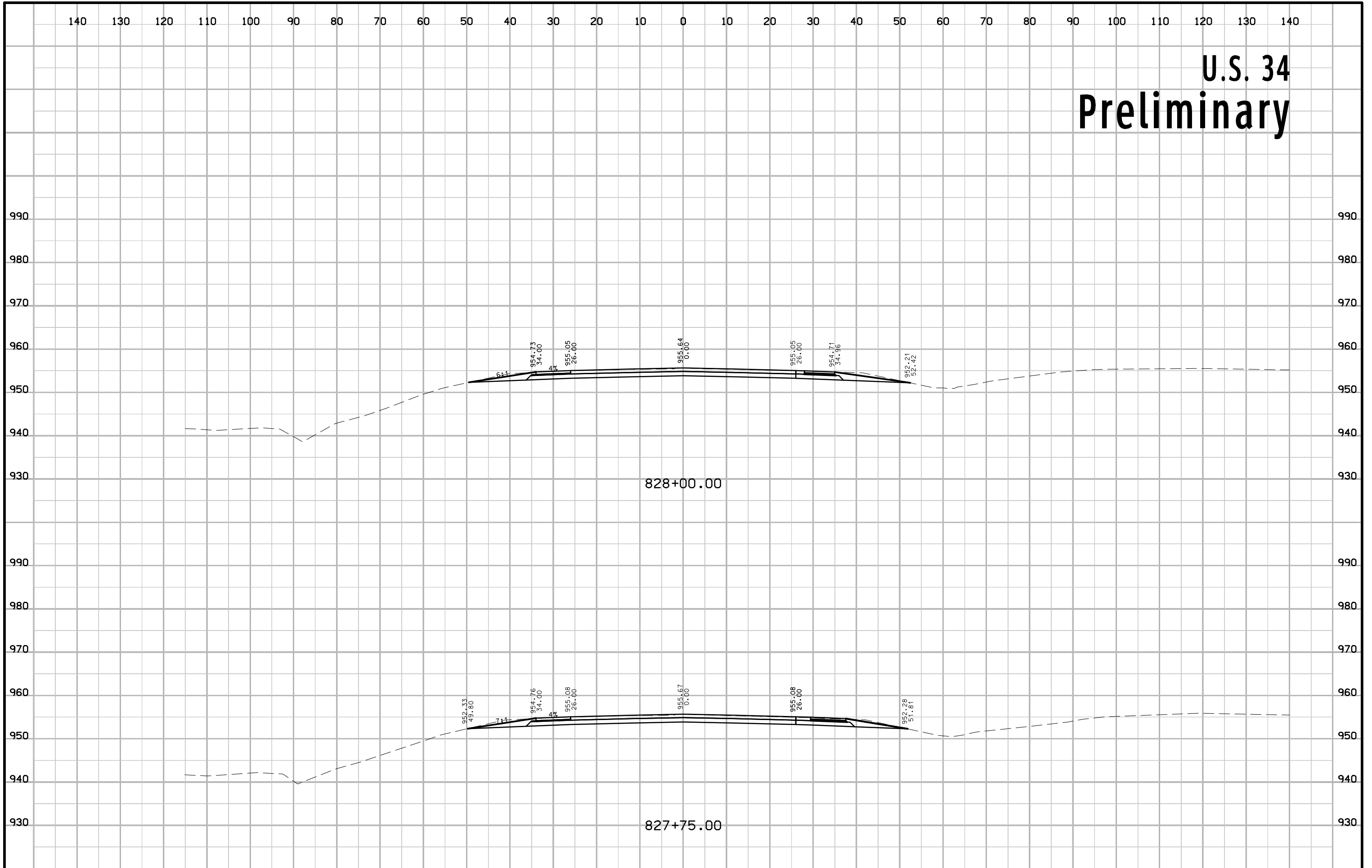
U.S. 34 Preliminary



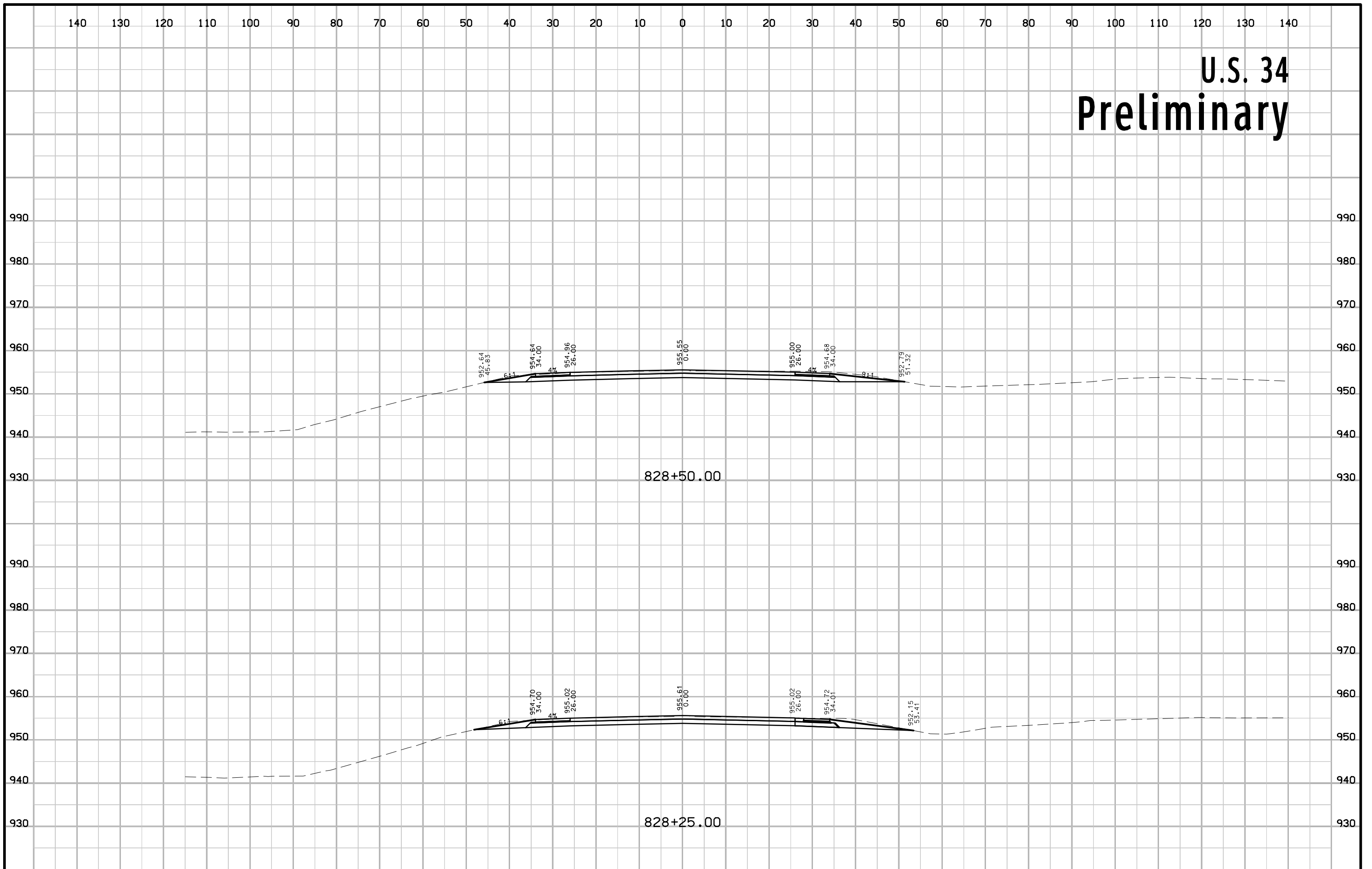
U.S. 34 Preliminary



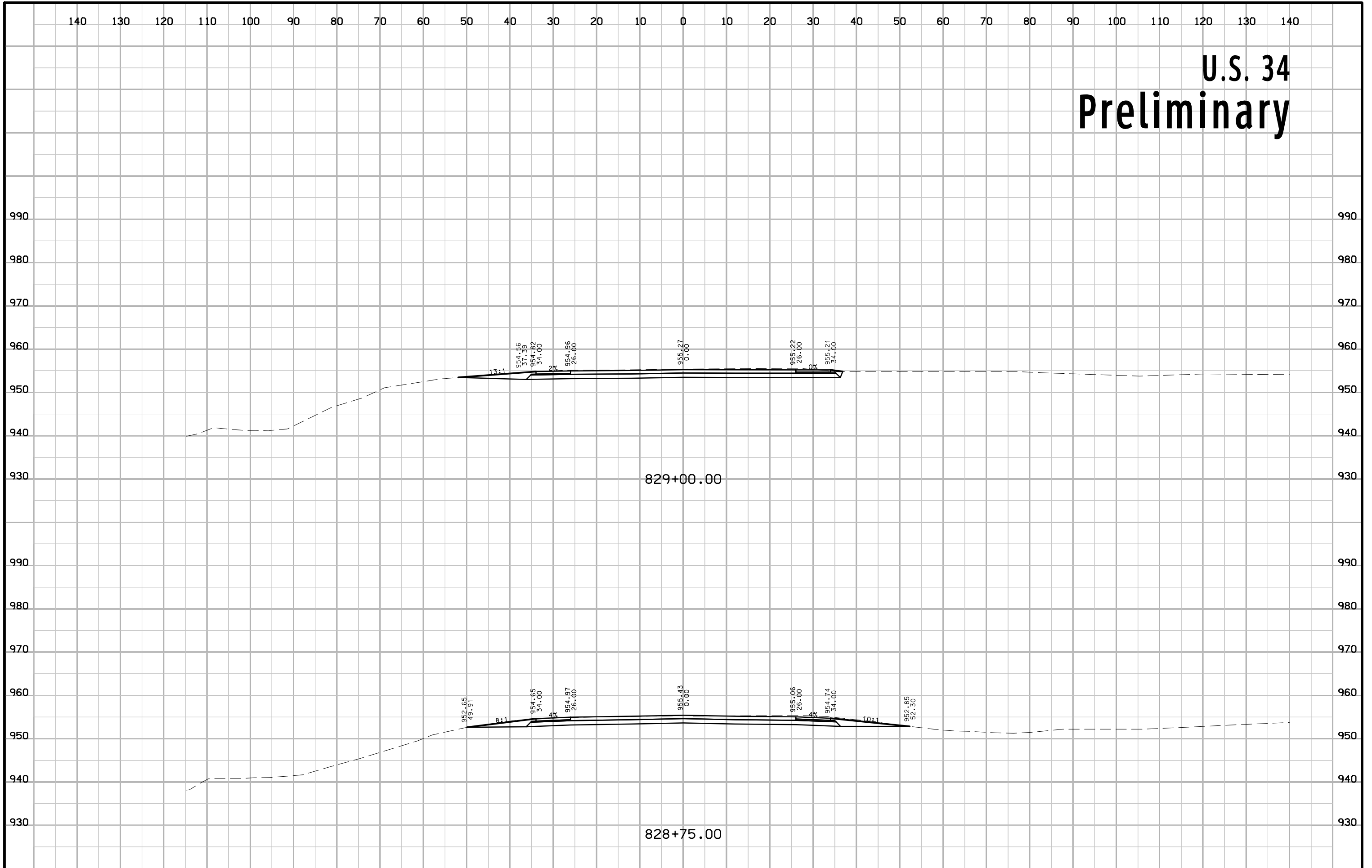
U.S. 34 Preliminary



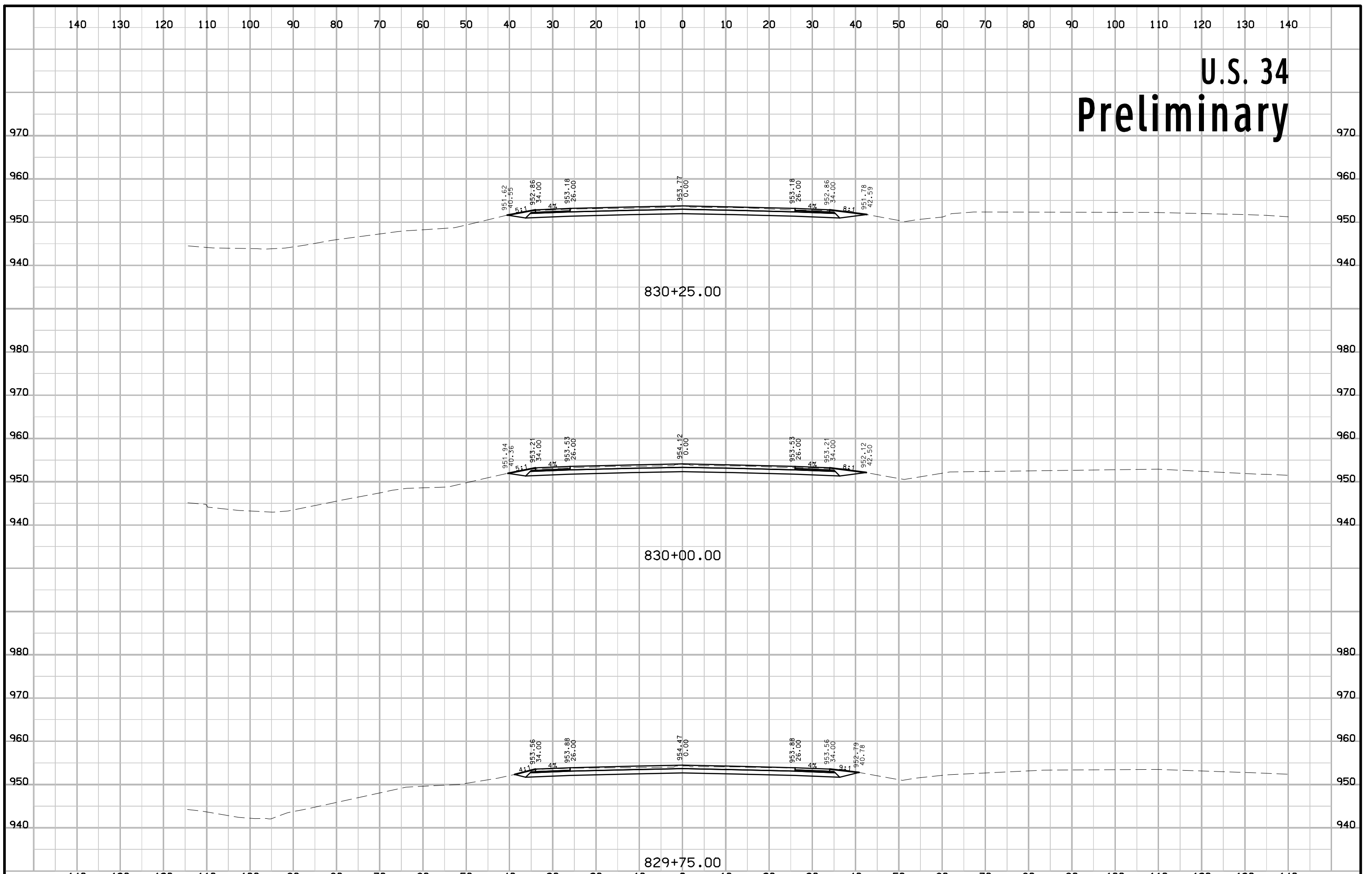
U.S. 34 Preliminary



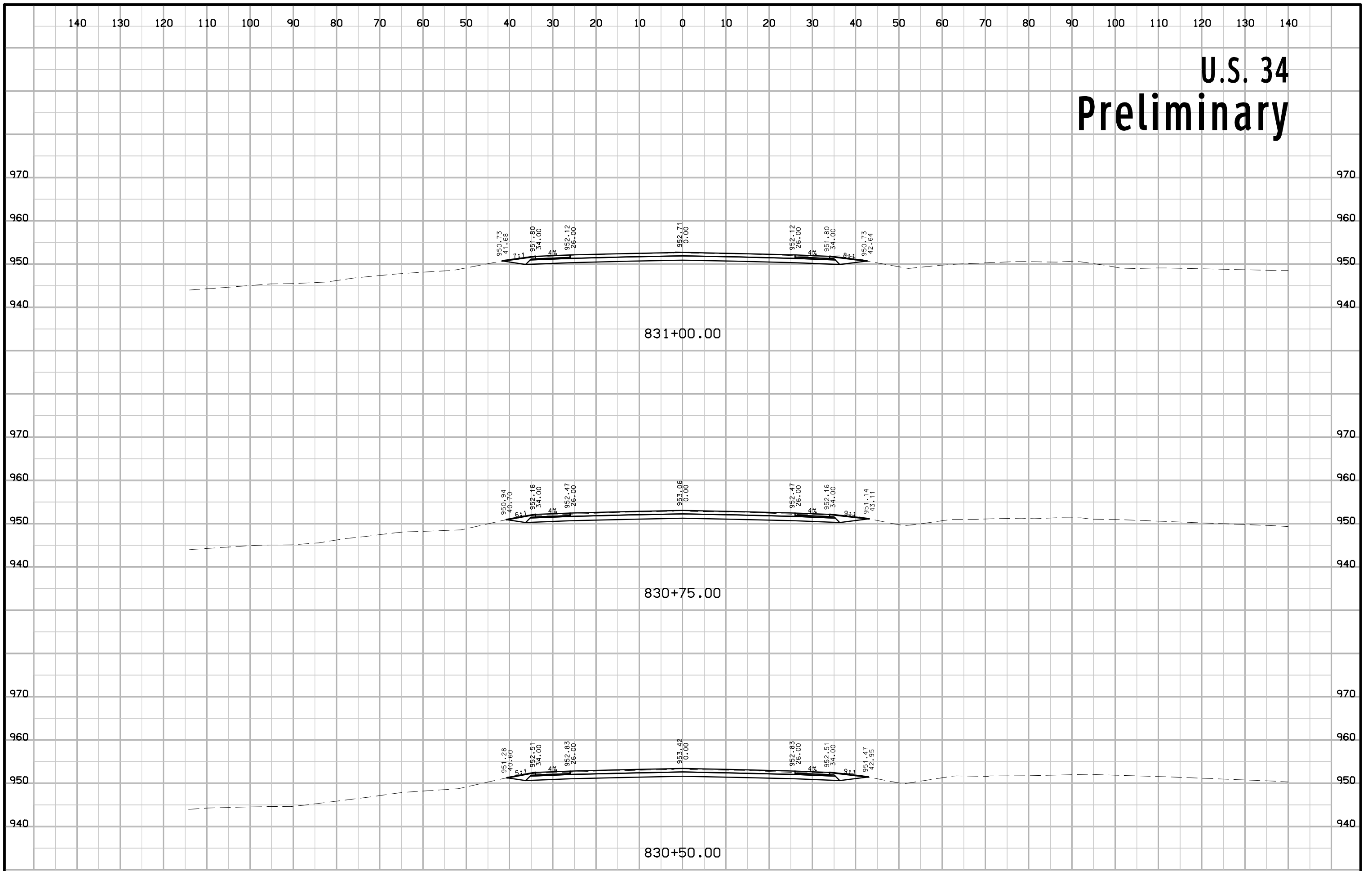
U.S. 34 Preliminary



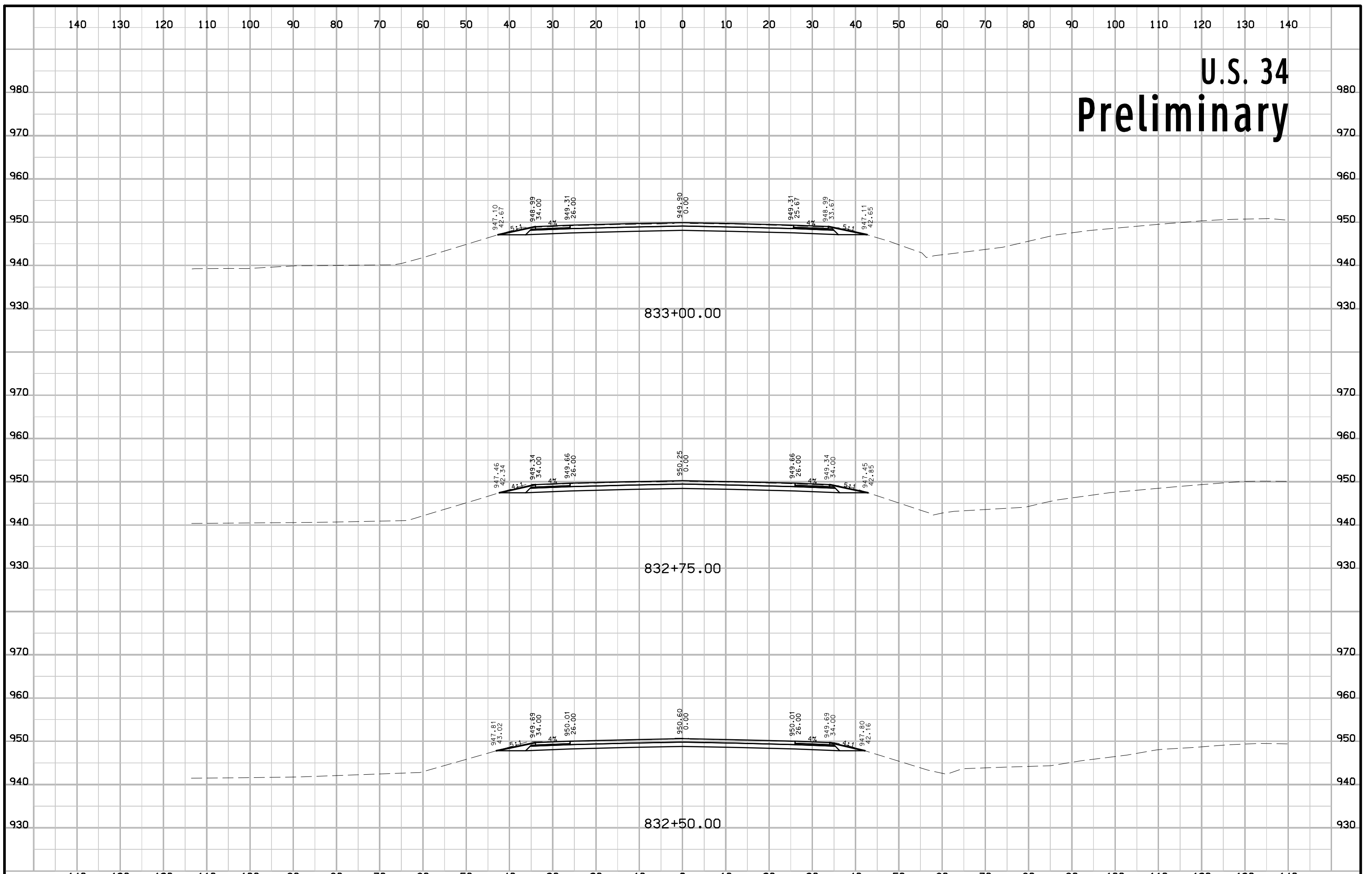
U.S. 34 Preliminary



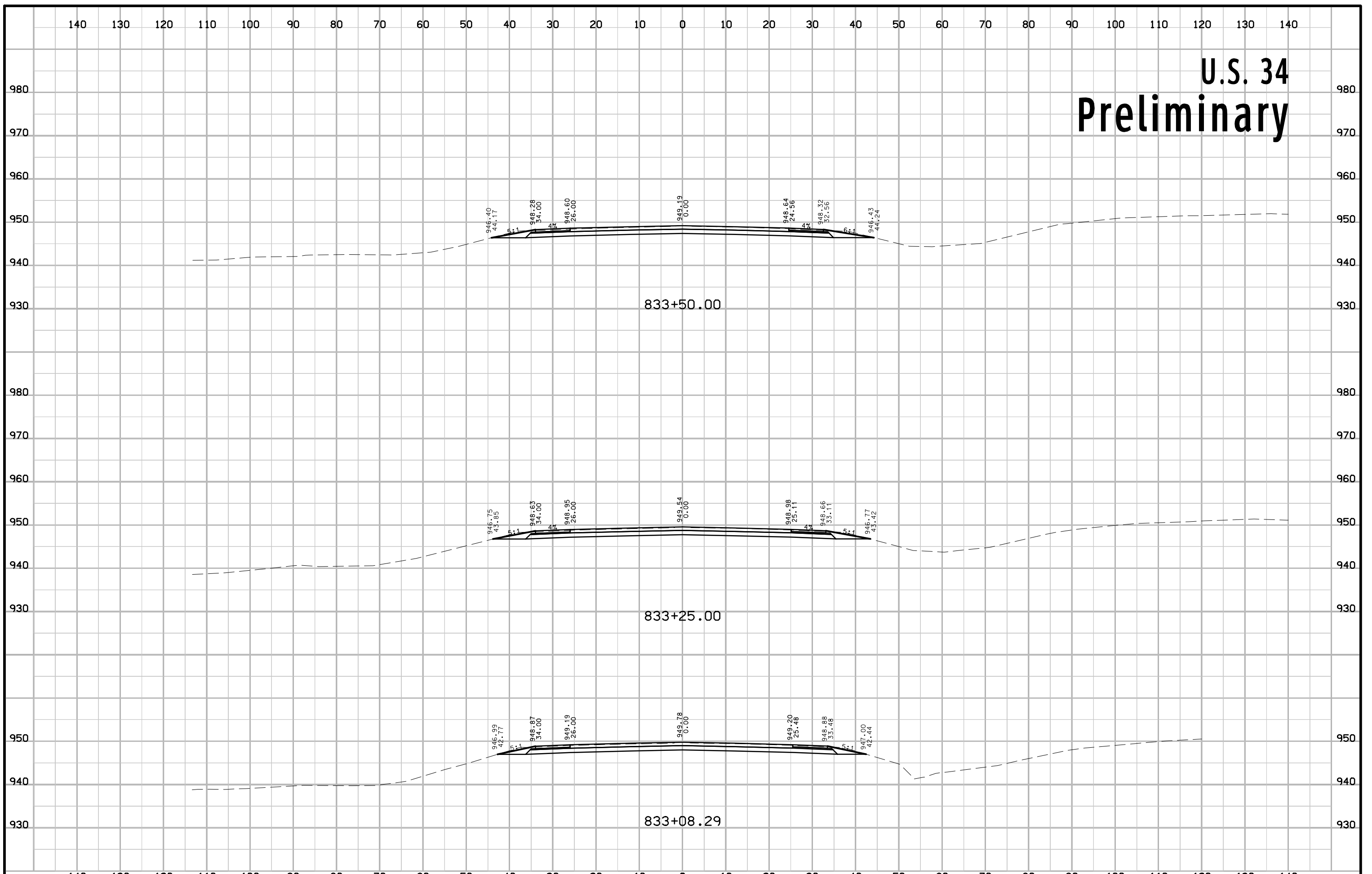
U.S. 34 Preliminary



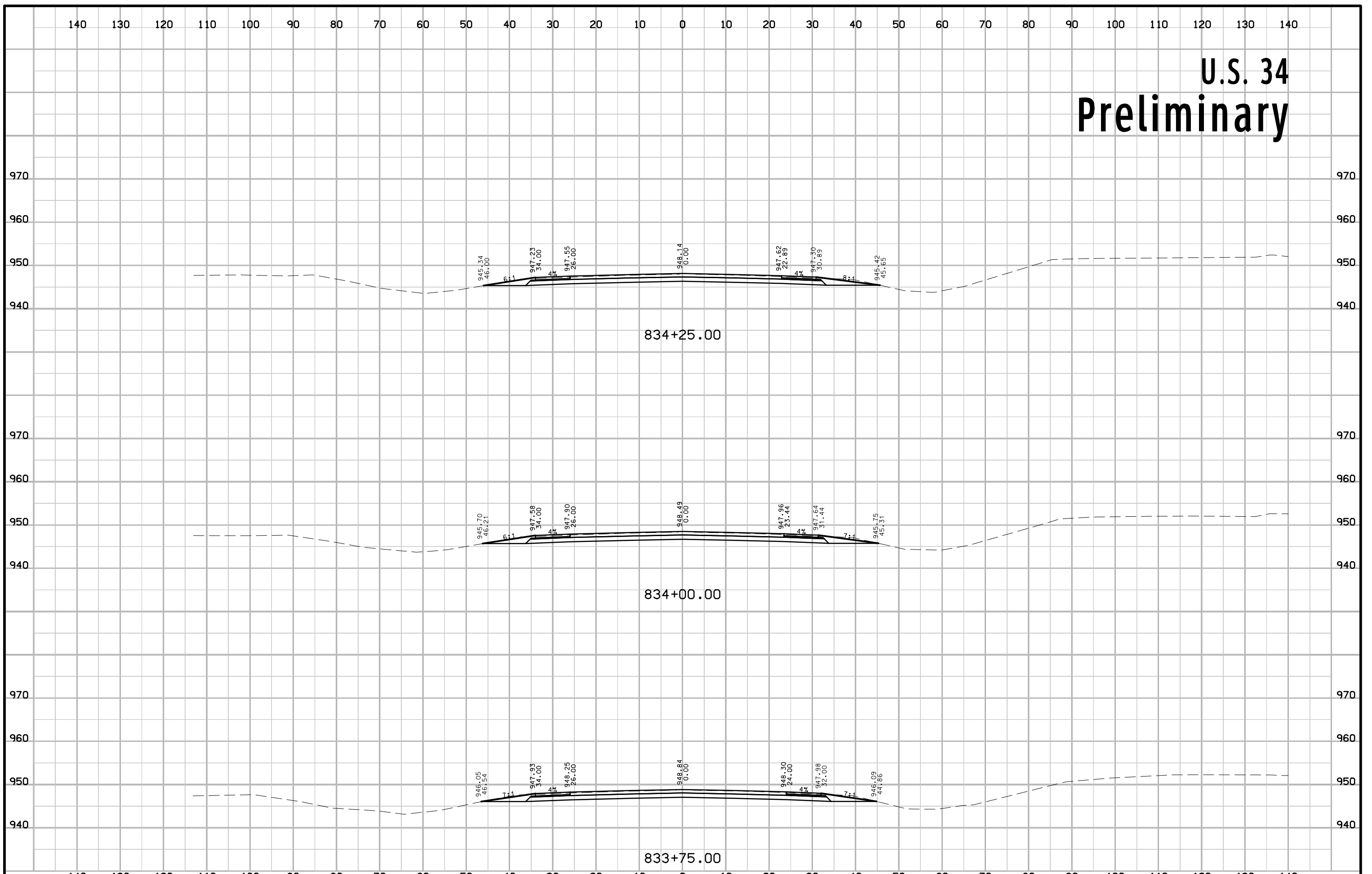
U.S. 34 Preliminary



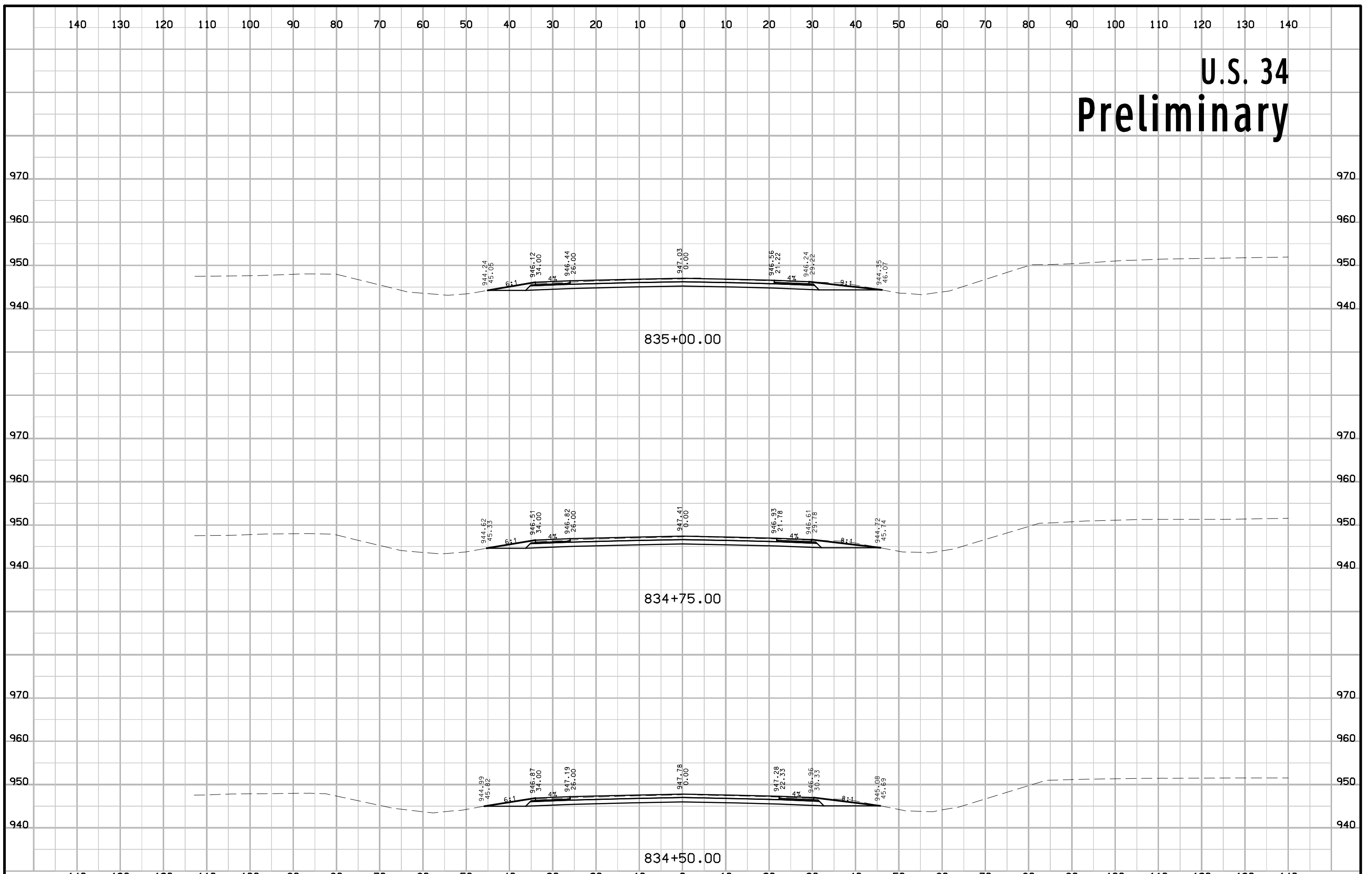
U.S. 34 Preliminary



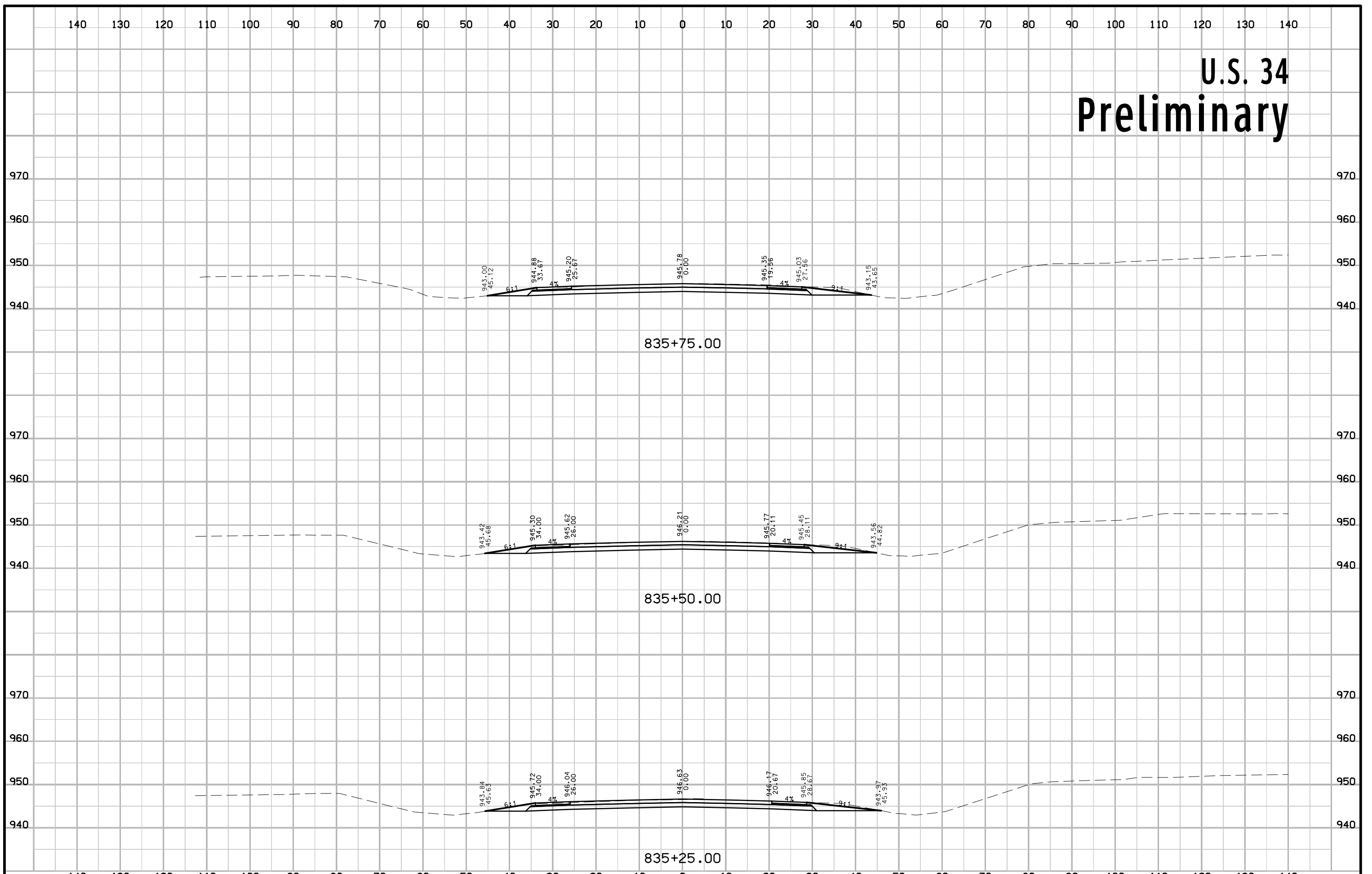
U.S. 34 Preliminary



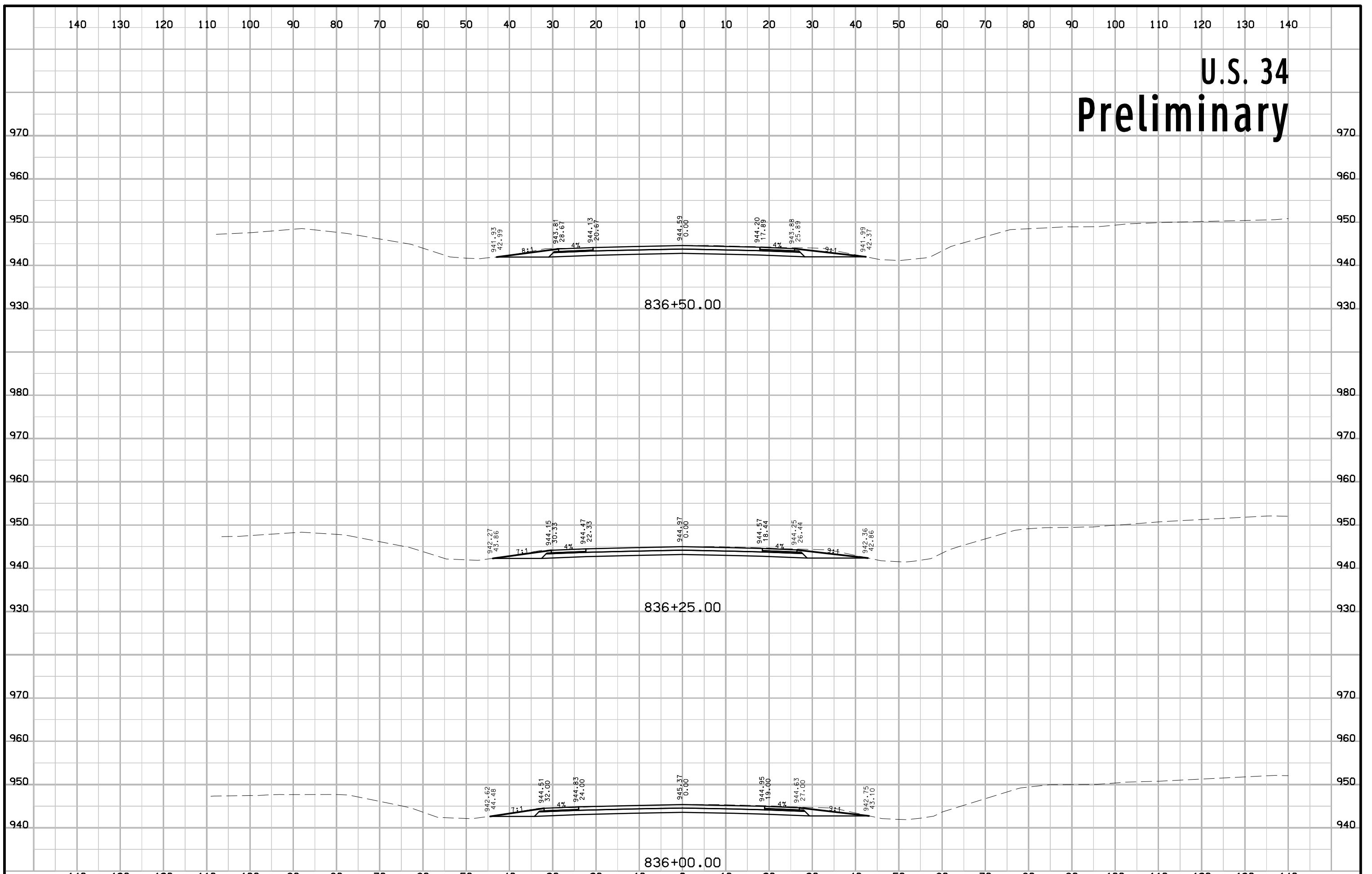
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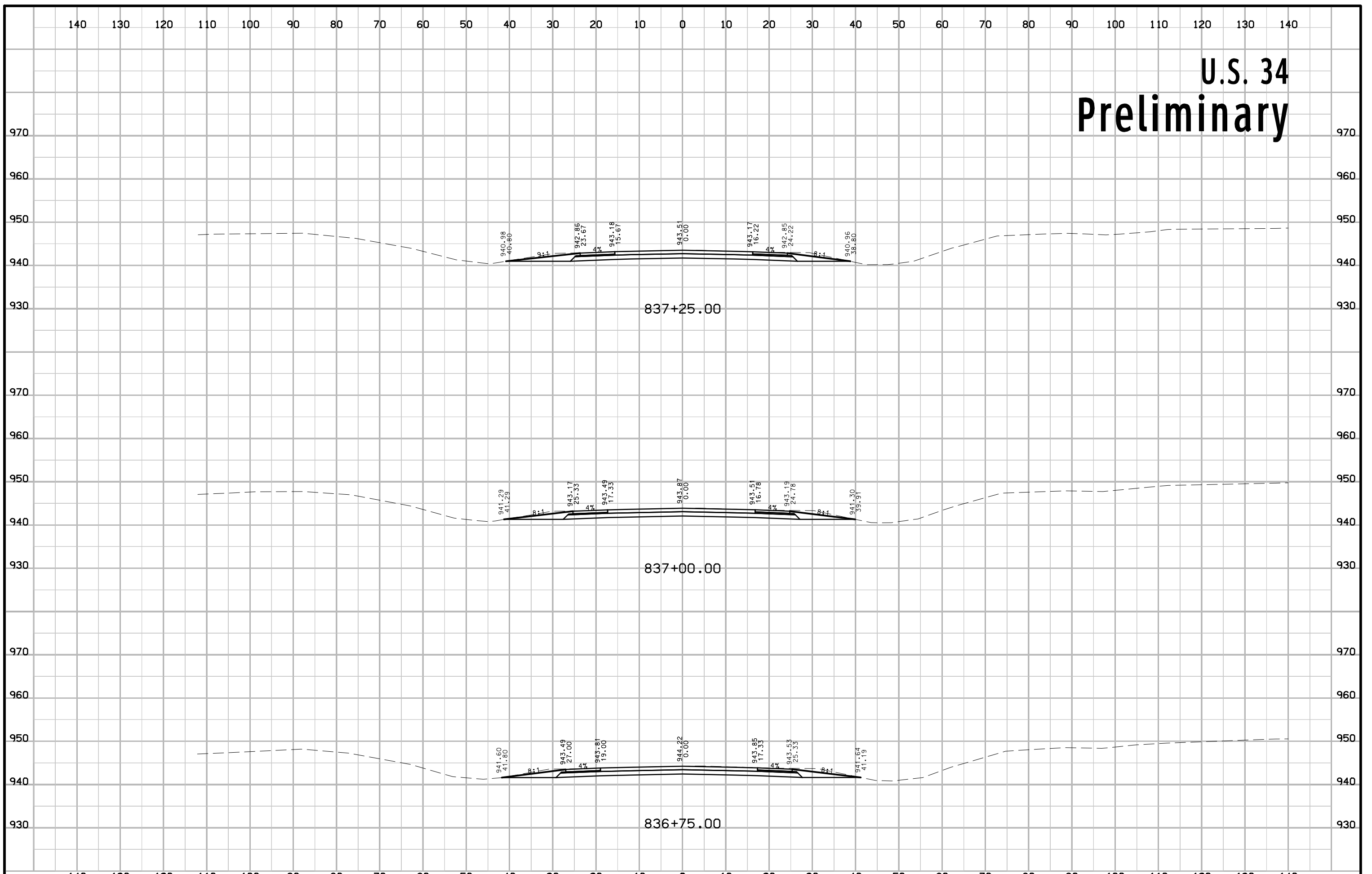
U.S. 34 Preliminary



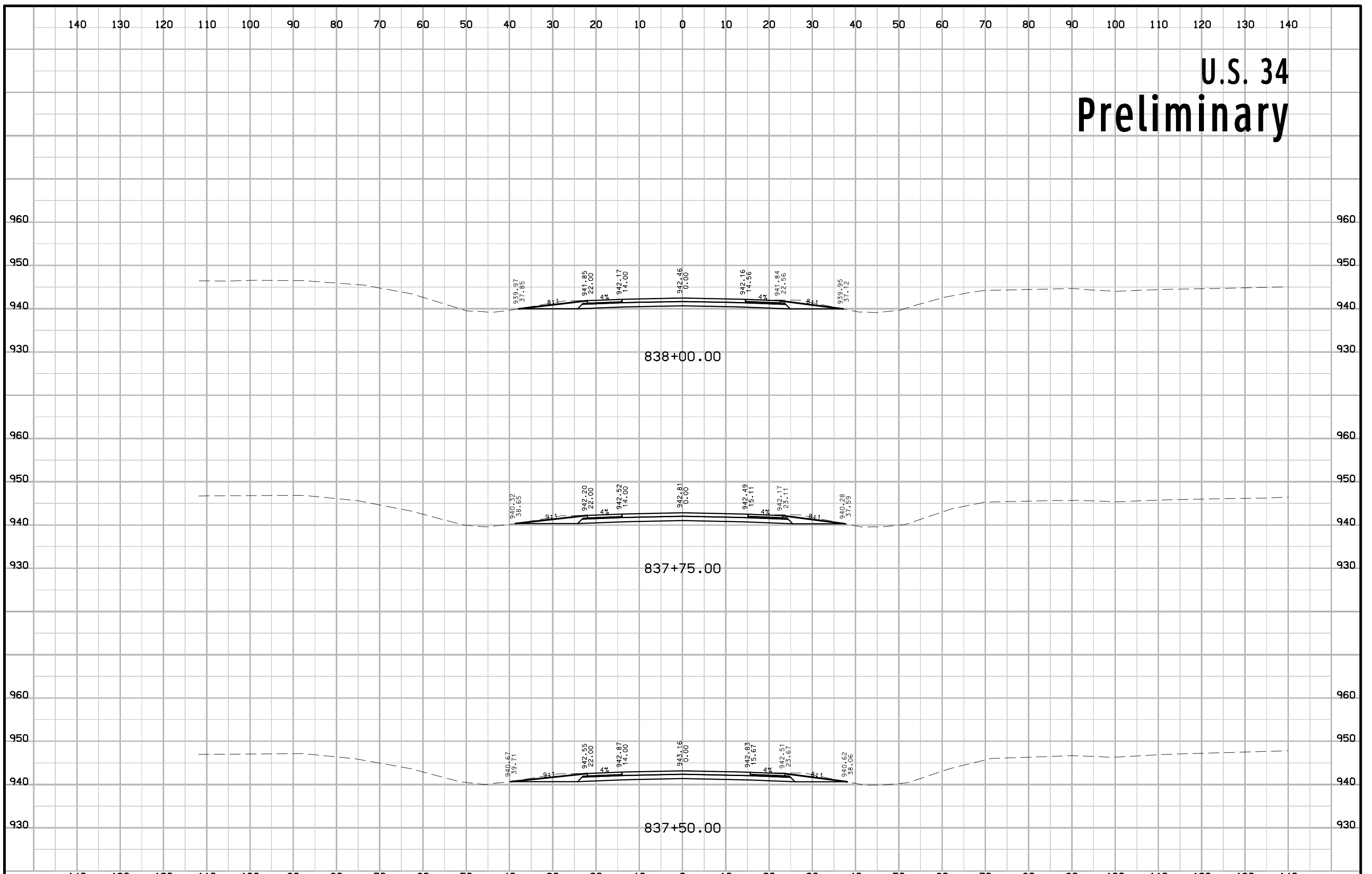
U.S. 34 Preliminary



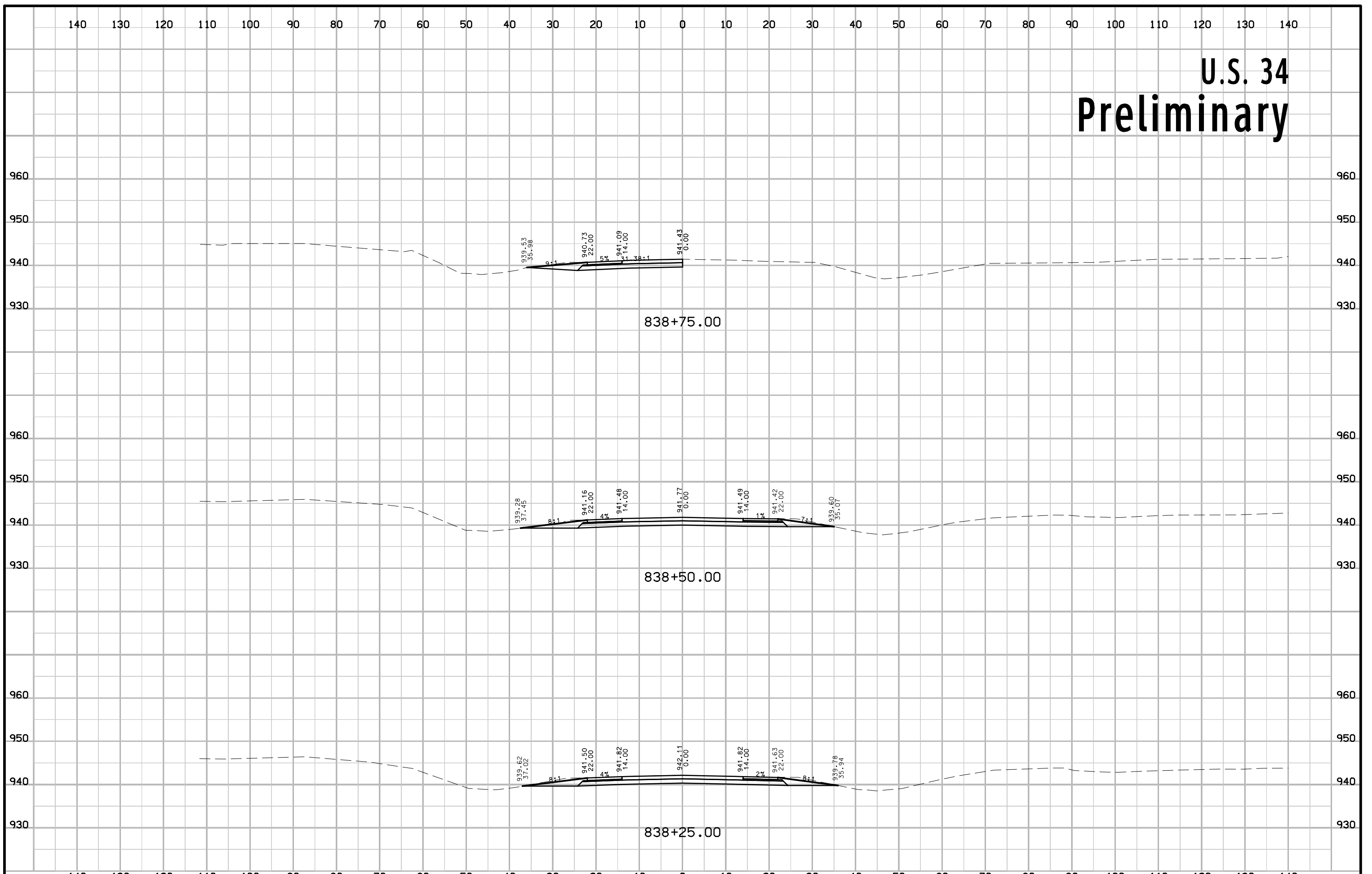
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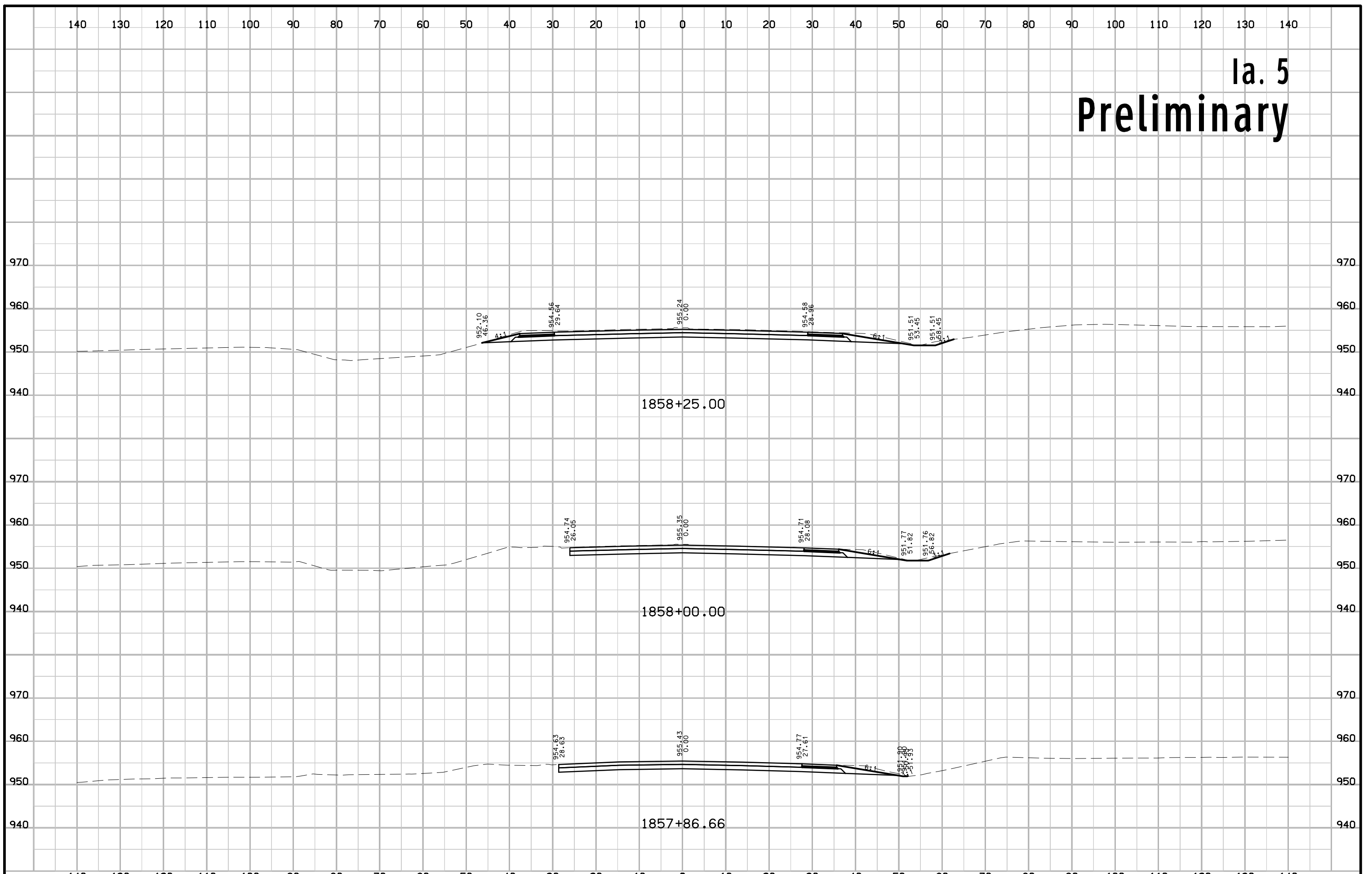
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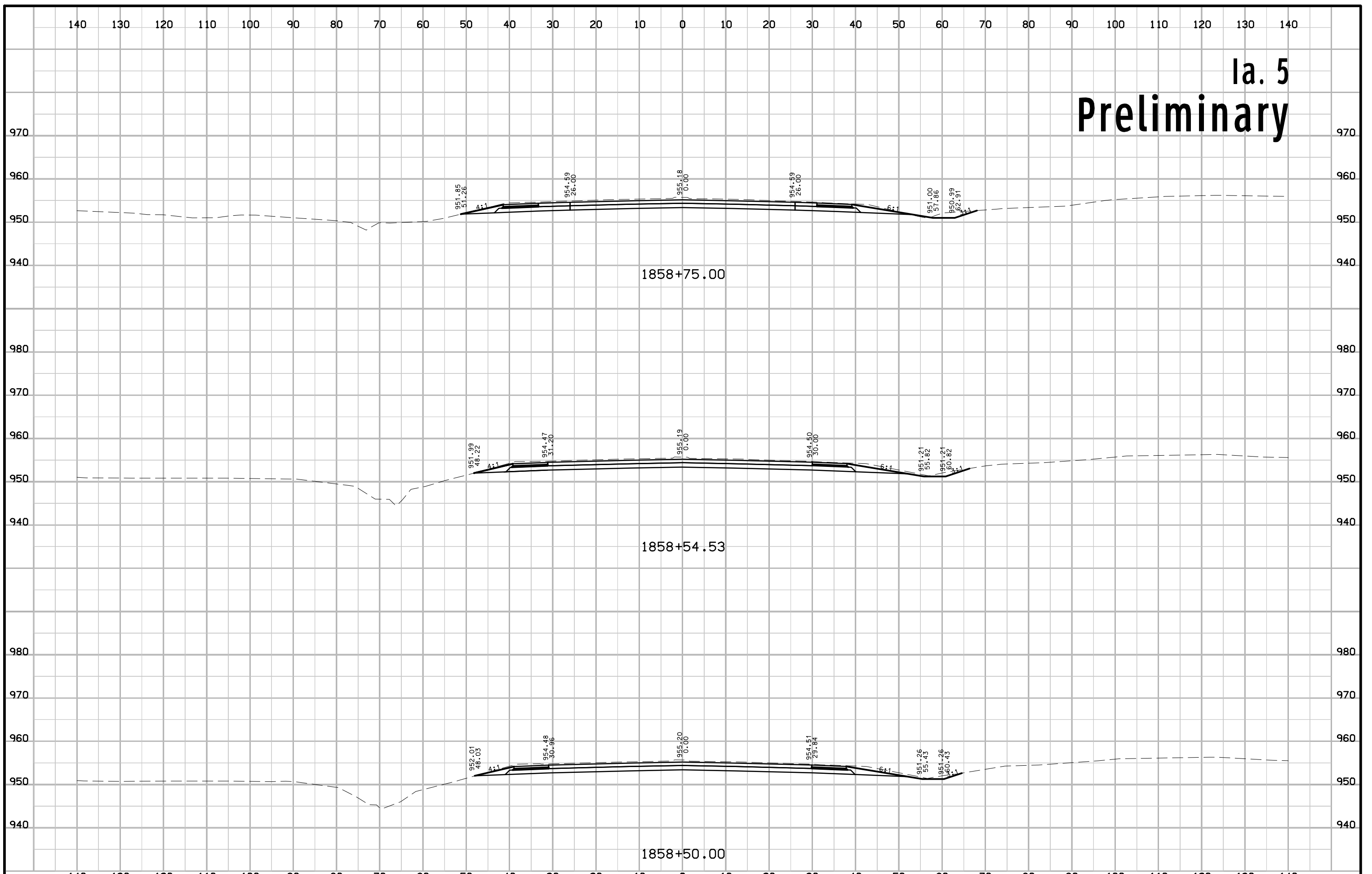
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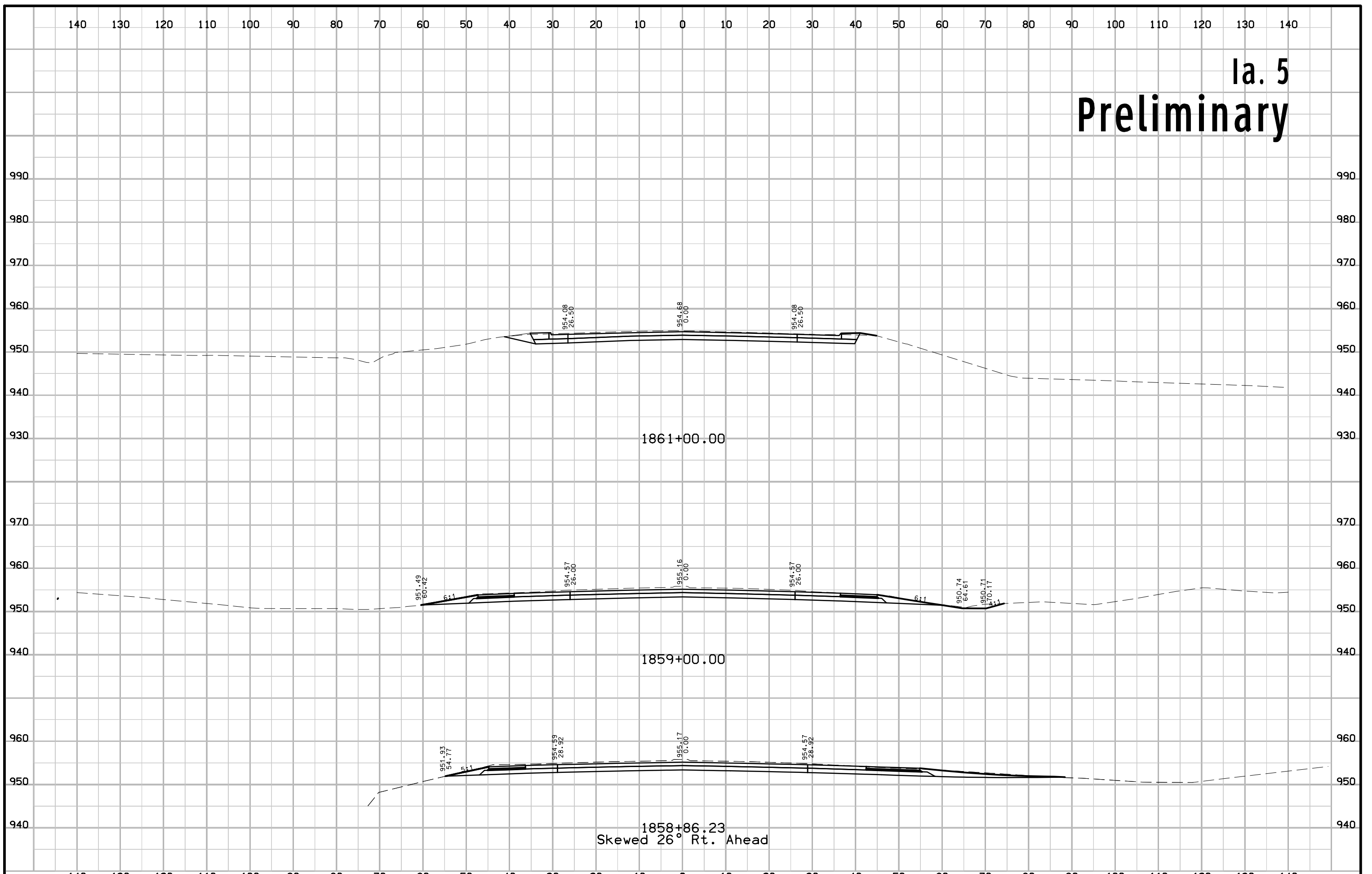
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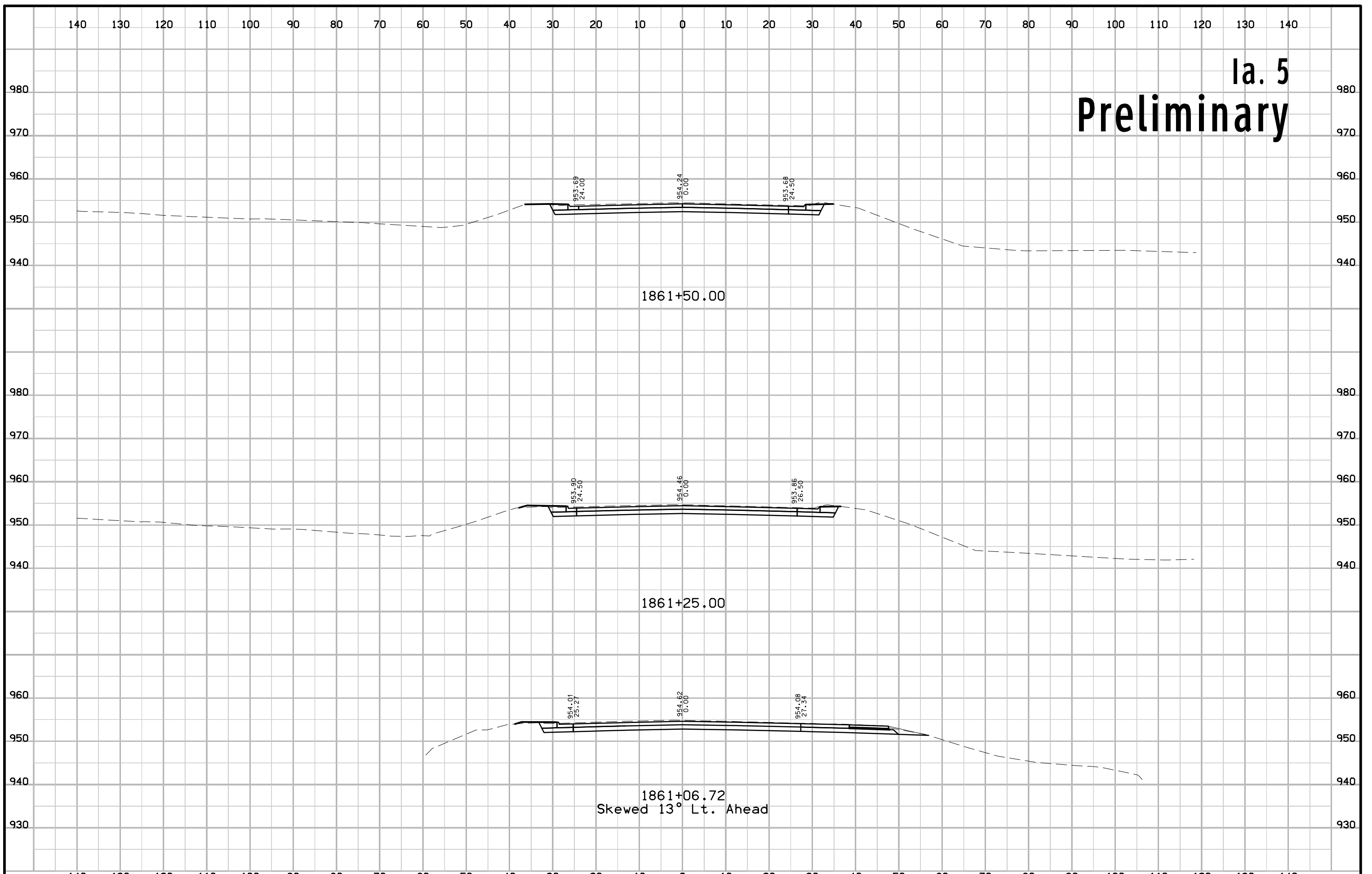
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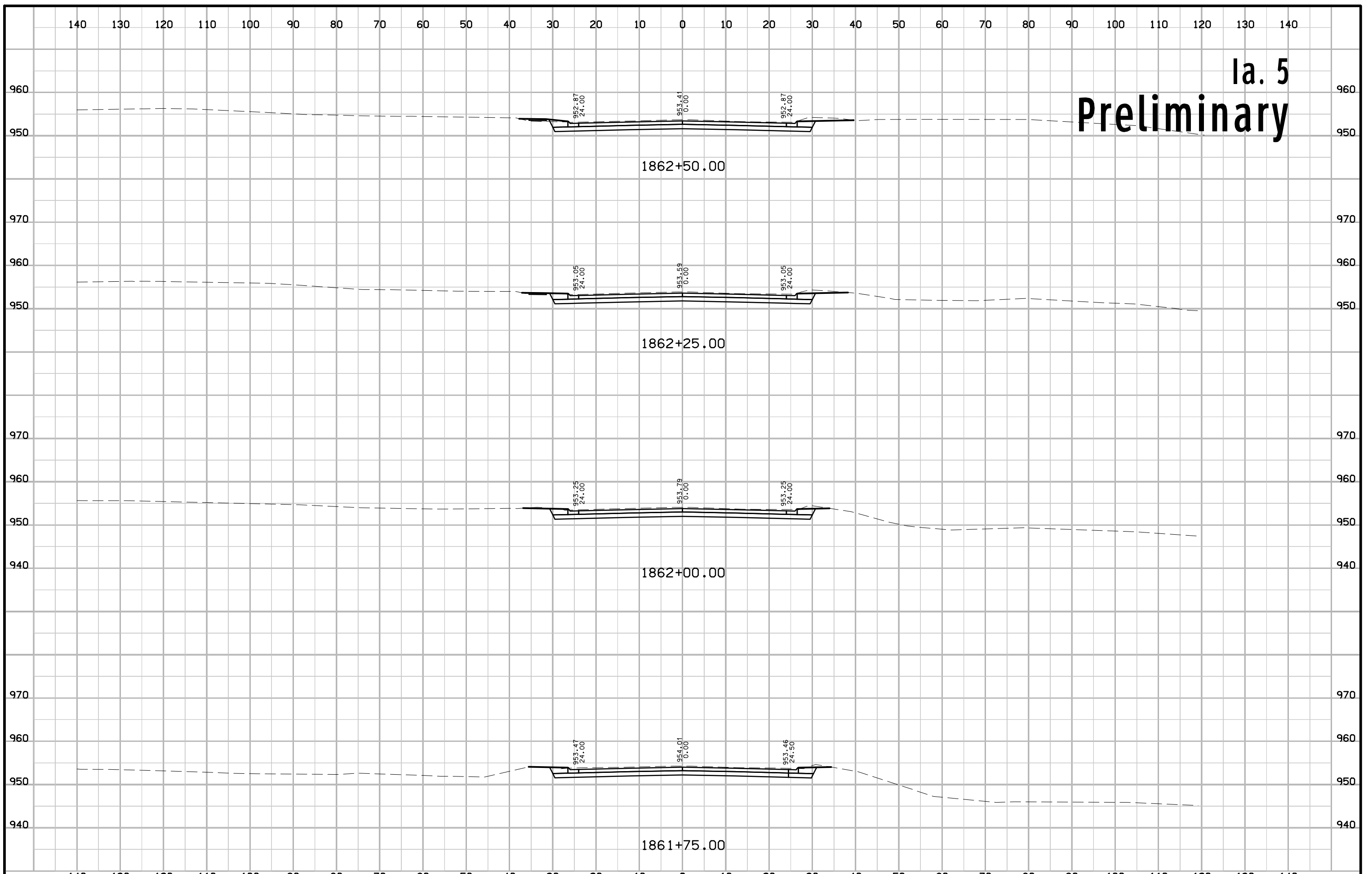
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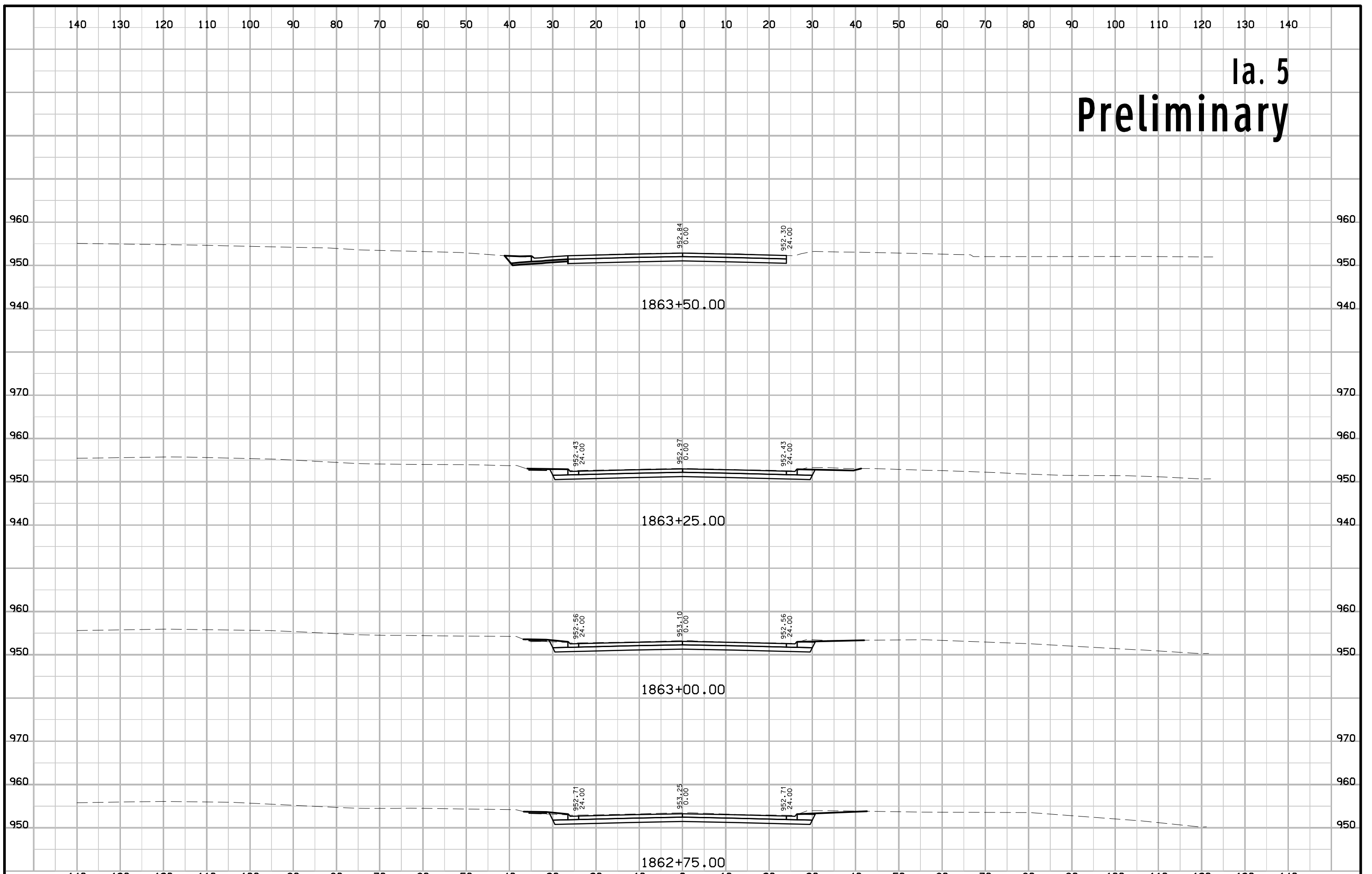
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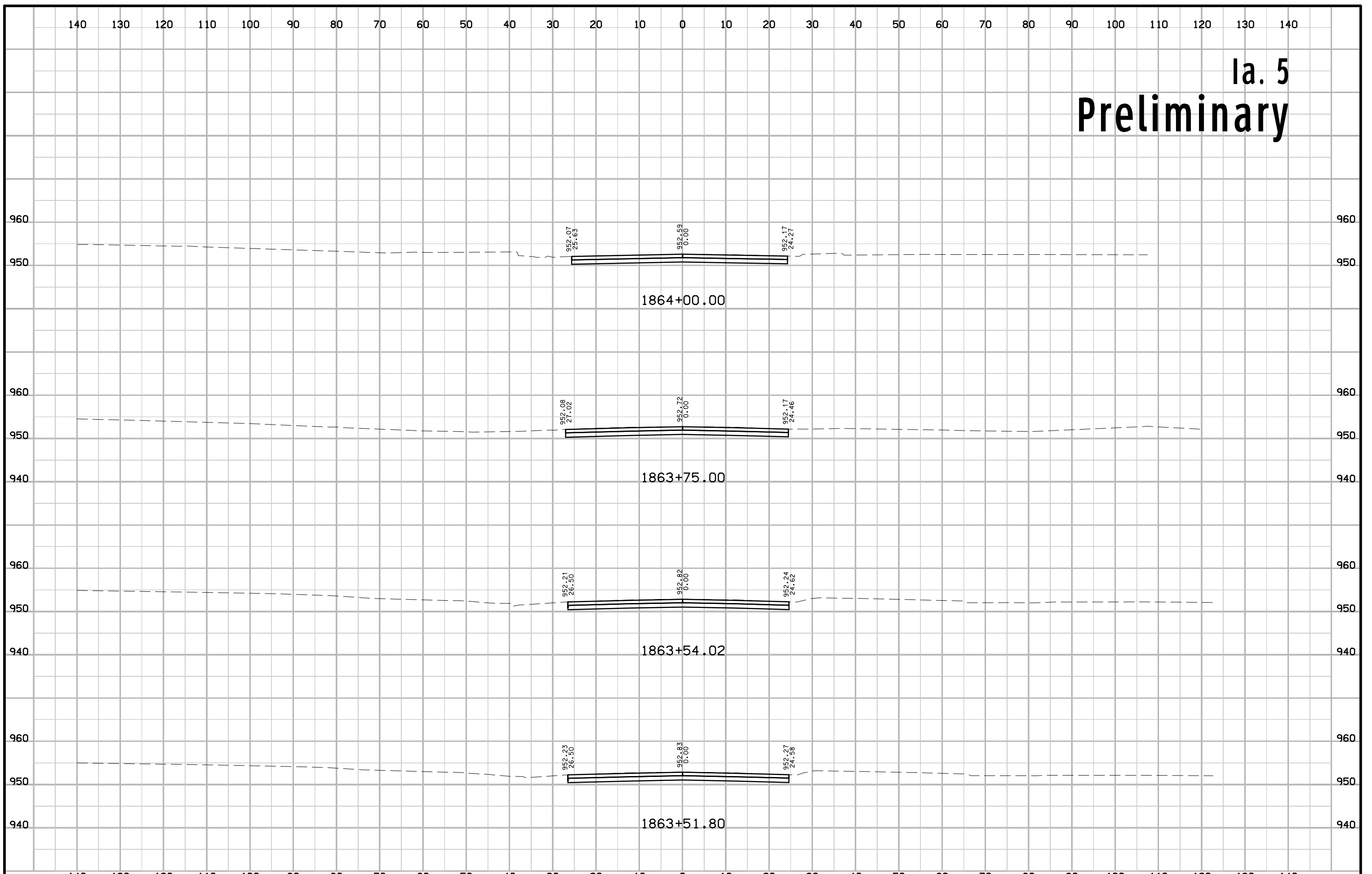
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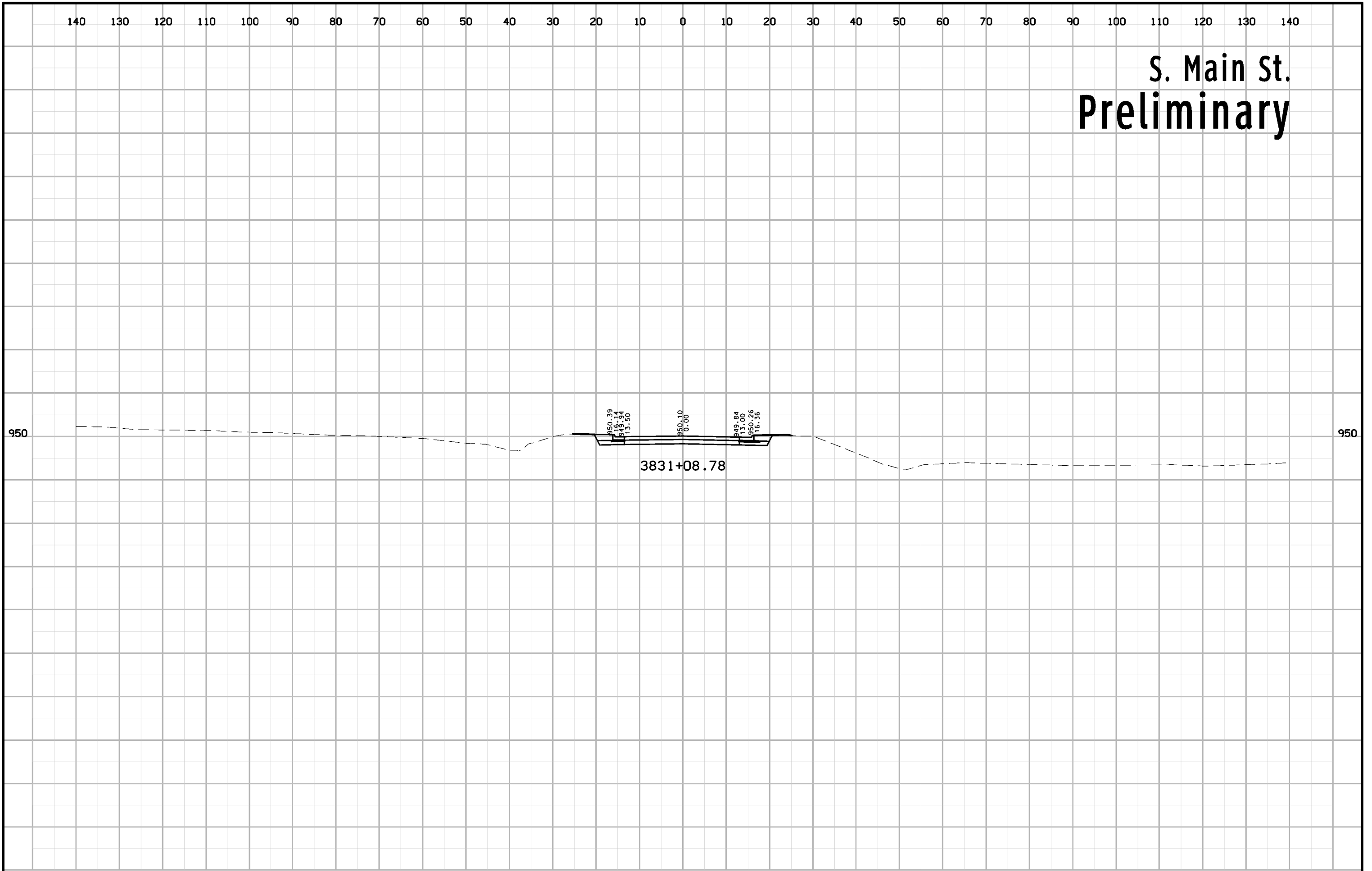
Ia. 5 Preliminary



Ia. 5 Preliminary



S. Main St. Preliminary



S. C Street Preliminary

