

**WAPELLO CO.**  
**PCC PAVEMENT - GRADE AND NEW**  
**NHSX-063-2(155)--3H-90**  
**11-20-2018**

LETTING DATE  
11-20-2018

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A.3	Ownership Maps
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* E.3	Relocated Rabbit Run Road
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## Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM WAPELLO COUNTY PCC PAVEMENT - GRADE AND NEW

River Rd./Co. Rd. J12 to US 34 in Ottumwa

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



For Project Location Map  
Refer to Sheet A.2

DESIGN TRAFFIC DATA			
2007	AADT	6300	V.P.D.
2035	AADT	8300	V.P.D.
2035	DHV	850	V.P.H.
	TRUCKS	13	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Paul W. Flattery	Roadway Design

## PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN  
Date: AUGUST 31, 2012

REVISIONS

TOTAL

227

PROJECT IDENTIFICATION NUMBER

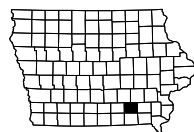
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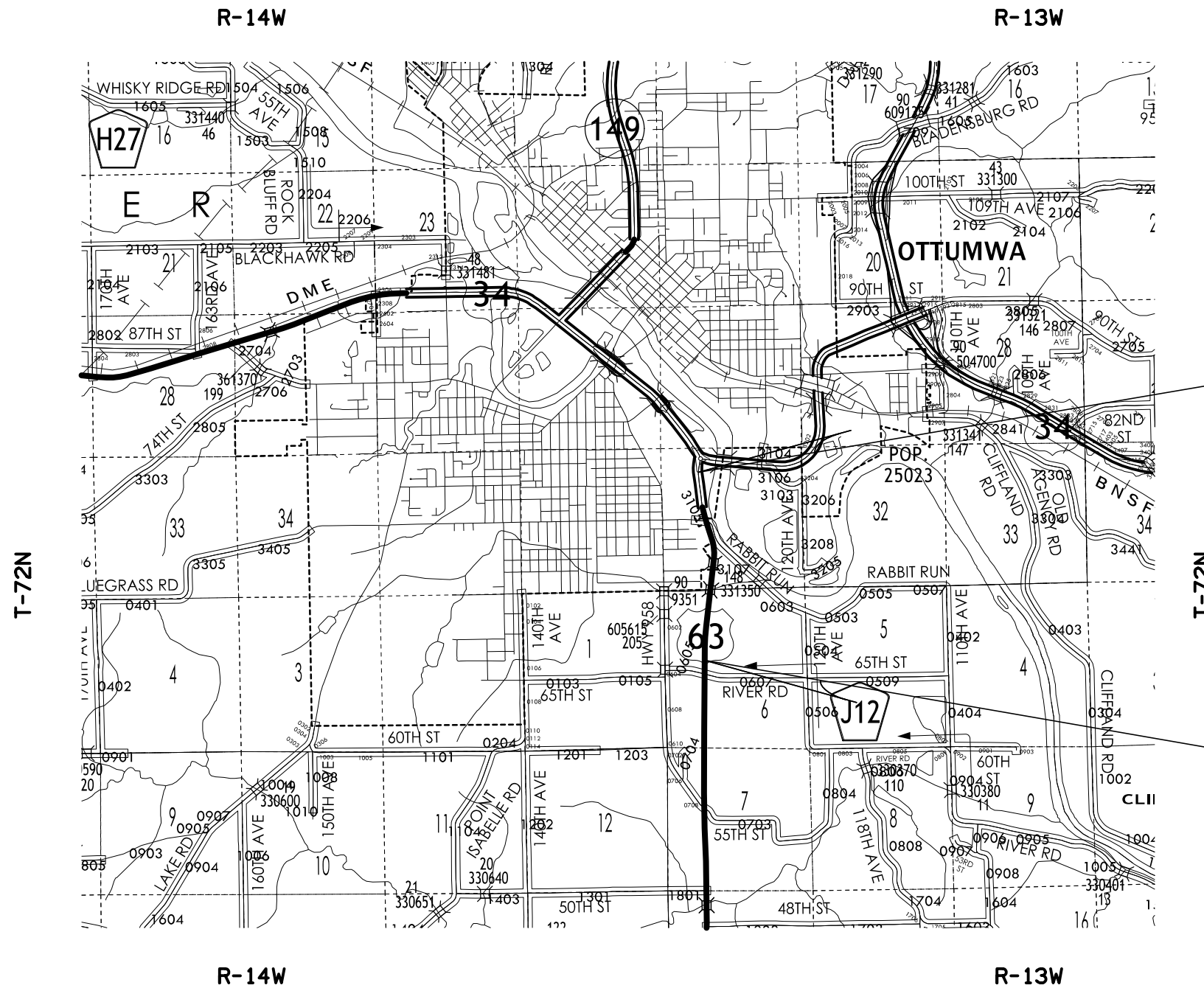
PROJECT NUMBER

NHSX-063-2(155)--3H-90

R.O.W. PROJECT NUMBER

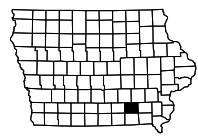
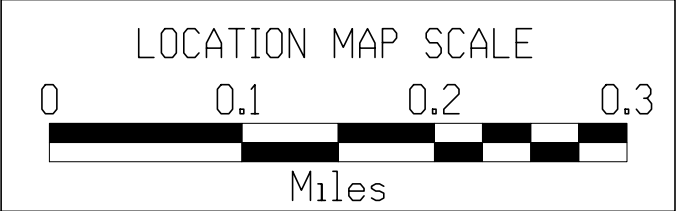
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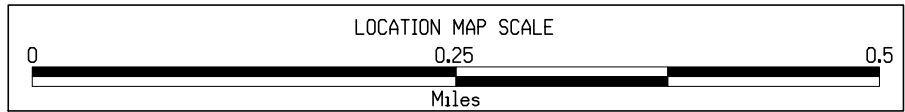
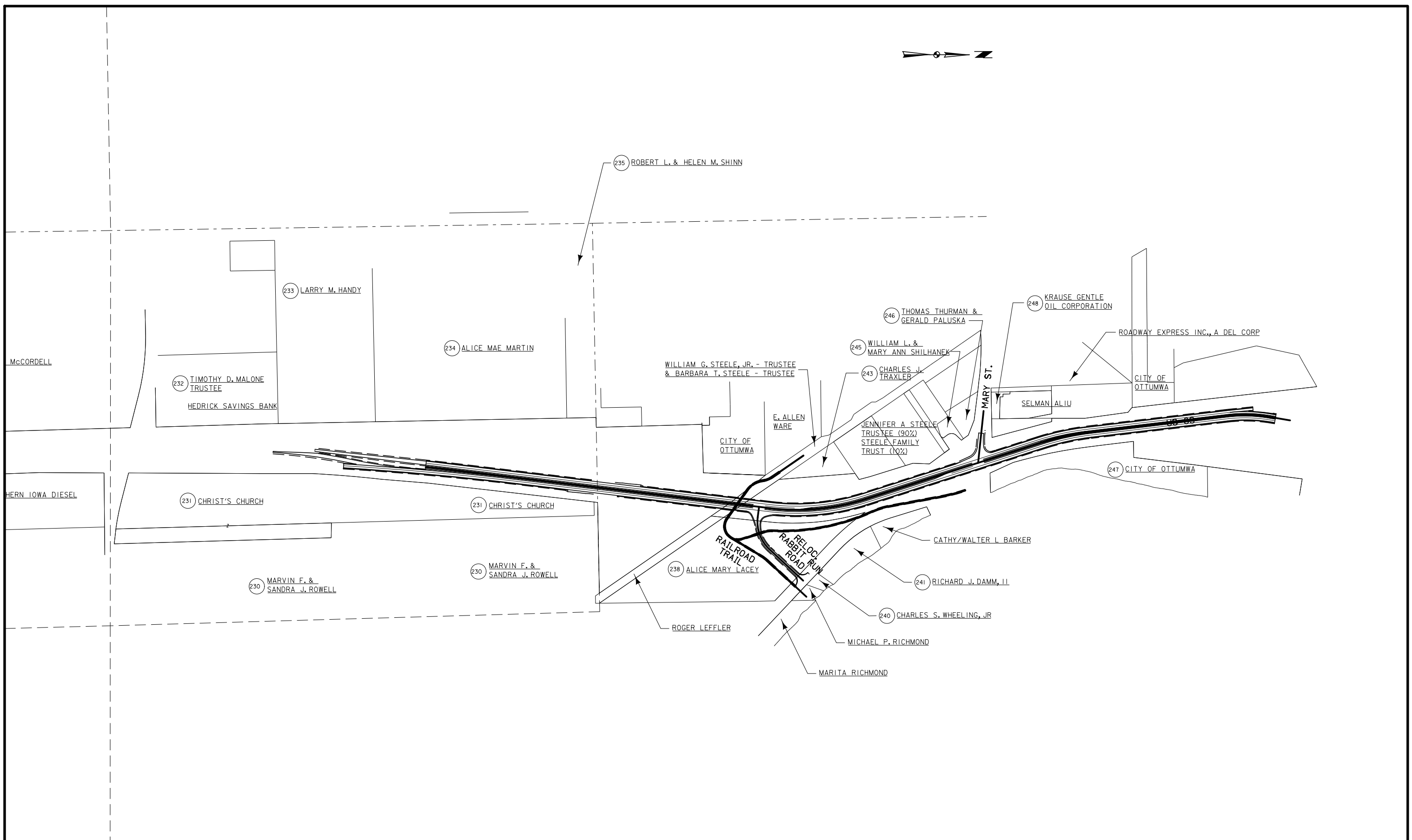
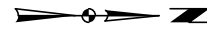




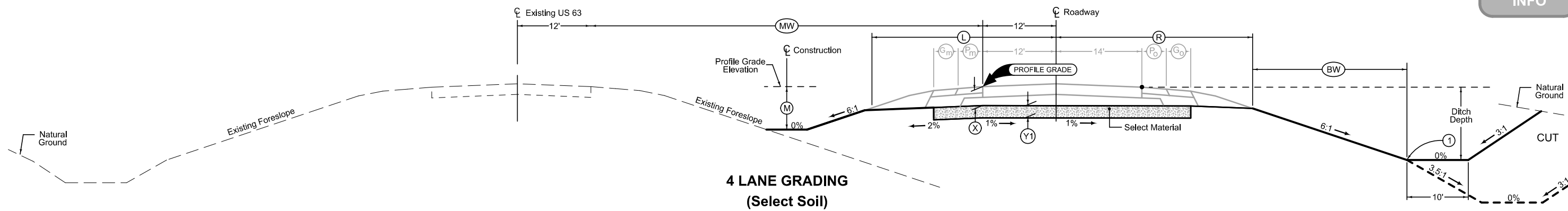
STA. 917+45.66  
 END PROJECT  
 END CONSTRUCTION  
 MILE POST 33.74

STA. 859+50.00  
 BEGIN PROJECT  
 BEGIN CONSTRUCTION  
 MILE POST 32.67

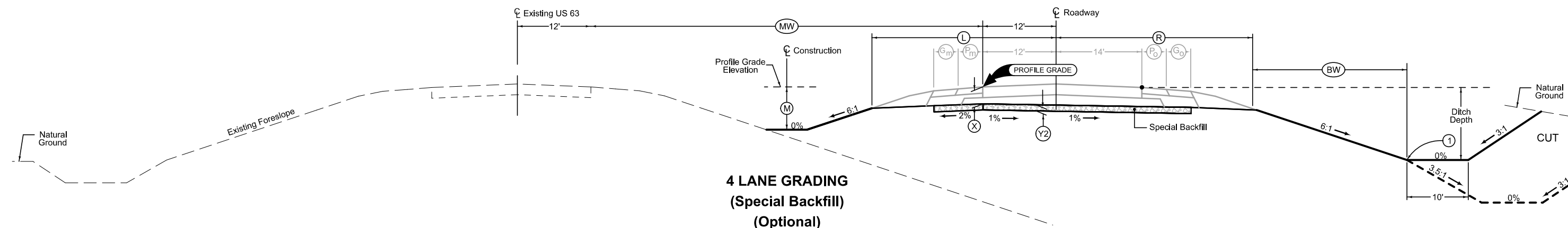




# Ownership Map Wapello / Davis Counties



**4 LANE GRADING  
(Select Soil)**



**4 LANE GRADING  
(Special Backfill)  
(Optional)**

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

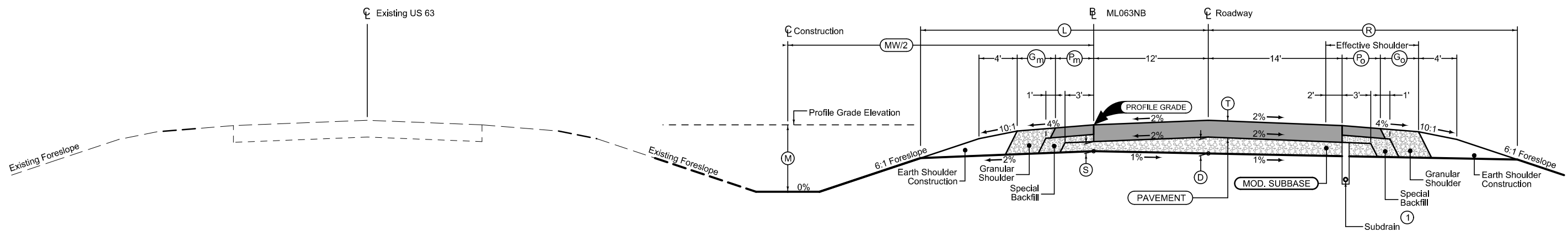
See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

Quantity calculations based on Select Soil.

LOCATION			DIMENSIONS							
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(MW) Feet	(M) Feet	(Y1) Inches	(Y2) Inches
US 63 NBL	854+00.00	859+50.00	28.09	31.82	16.0	19.86	(2)	4.0	24.0	12.0
US 63 NBL	859+05.00	859+50.00	28.09	31.82-33.12	16.0	19.86-18.56	(2)	4.0	24.0	12.0

① Refer to project plan and cross sections for specific location of foreslope change.

② Variable:  
Use baseline ML063NB, NBL inside edge of pavement  
Use baseline ML063SB, SBL inside edge of pavement.



LOCATION		MAINLINE							SHOULDER			
ROAD IDENTIFICATION	STATION TO STATION	T Inches	S Inches	D Inches	MW Feet	M Feet	L Feet	R Feet	P <sub>m</sub> Feet	G <sub>m</sub> Feet	P <sub>o</sub> Feet	G <sub>o</sub> Feet
US 63 NBL	854+00.00 859+50.00	10	6	10.32	②	4-1.76	28.89	32.09	4	2	4	4

① Refer to Standard Road Plan RF-19C for details of subdrain installation.

② Variable:  
Use baseline ML063NB, NBL inside edge of pavement.  
Use baseline ML063SB, SBL inside edge of pavement.

Shoulder:  
6" uniform thickness  
Longitudinal joint: B  
Refer to Typical 4-C\_ for shoulder design and locations.

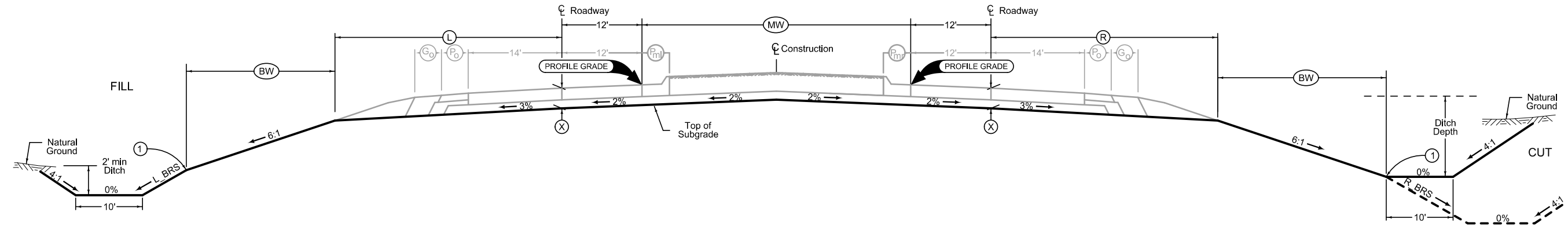
Mainline Pavement  
Transverse joints: CD at 20' spacing  
Longitudinal joint: L-2

Refer to Standard Road Plan PV-101 for Jointing Details

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.

**4-LANE DIVIDED ROADWAY  
WITH COMPOSITE SHOULDERS**



ROAD IDENTIFICATION	LOCATION		DIMENSIONS						
	STATION TO STATION		L Feet	R Feet	X Inches	BW Feet	MW Feet	L_BRS	R_BRS
US 63	859+50.00	860+50.00	33.12	33.12	16	18.56-12.88	(2)	3.5:1	3.5:1
US 63	860+50.00	865+77.23	33.12	33.12	16	12.88	(2)	3.5:1	3.5:1
US 63	865+77.23	875+00.00	33.12	33.12	16	12.88	24	3.5:1	3.5:1
US 63	875+00.00	875+75.00	33.12	33.12	16	12.88-2.88	24	3.5:1	3.5:1
US 63	875+75.00	884+00.00	33.12	33.12	16	2.88	24	3.5:1	3.5:1
US 63	884+00.00	884+50.00	33.12	33.12	16	2.88-0.88	24	3.5:1	3.5:1
US 63	884+50.00	901+46.24	33.12	33.12	16	0.88	24	3.5:1	3.5:1
US 63	901+46.24	904+99.63	33.12	33.12	16	0.88	24-17	3.5:1	3.5:1
US 63	904+99.63	914+18.63	33.12	33.12	16	0.88	17	3.5:1	3.5:1
US 63	914+18.63	914+42.76	33.12	33.12	16	0.88	17-17.02	3.5:1	3.5:1

**4-LANE DIVIDED ROADWAY  
GRADING WITH RAISED MEDIAN**

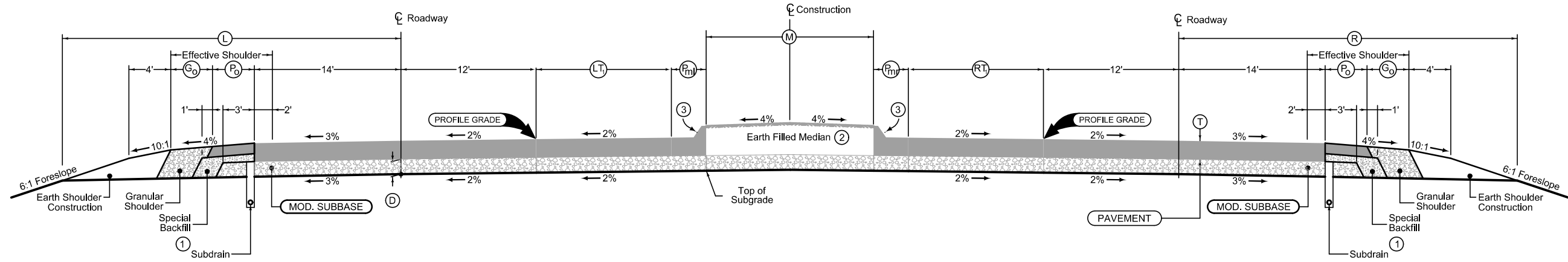
(X) is the distance between the Profile Grade and the 1.0% grade line.

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

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

① Refer to project plan and cross sections for specific location of foreslope change.

② Variable:  
Use baseline ML063NB, NBL inside edge of pavement  
Use baseline ML063SB, SBL inside edge of pavement.



ROAD IDENTIFICATION	LOCATION		MAINLINE							SHOULDER			
	STATION TO STATION		(T)	(D)	(M)	(LT)	(RT)	(L)	(R)	(Pml)	(Pmr)	(Po)	(Go)
			Inches	Inches	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet
US 63	859+50.00	865+77.23	10	6	19.39 - 10	0	0	33.12	33.12	7	7	4	4
US 63	865+77.23	881+61.00	10	6	10	0	0	33.12	33.12	7	7	4	4
US 63	881+61.00	882+39.00	10	6	0	12	0	33.12	33.12	0	0	4	4
US 63	882+39.00	884+40.00	10	6	4	12	0	33.12	33.12	1	7	4	4
US 63	884+40.00	885+00.00	10	6	4-10	12-6	0	33.12	33.12	1	7	4	4
US 63	885+00.00	885+60.00	10	6	10	6-0	0	33.12	33.12	1-7	7	4	4
US 63	885+60.00	894+05.00	10	6	10	0	0	33.12	33.12	7	7	4	4
US 63	894+05.00	894+65.00	10	6	10	0	0-6	33.12	33.12	7	7-1	4	4
US 63	894+65.00	895+25.00	10	6	10-4	0	6-12	33.12	33.12	7	1	4	4
US 63	895+25.00	896+76.00	10	6	4	0	12	33.12	33.12	7	1	4	4
US 63	896+76.00	897+54.00	10	6	0	0	12	33.12	33.12	0	0	4	4
US 63	897+54.00	901+46.24	10	6	10	0	0	33.12	33.12	7	7	4	4
US 63	901+46.24	901+64.56	10	6	10	0	0	33.12	33.12	7-6.90	7	4	4
US 63	901+64.56	901+83.02	10	6	10-10.30	0	0	33.12	33.12	6.90-6.53	7-6.76	4	4
US 63	901+83.02	904+63.71	10	6	10.30-14.83	0	0	33.12	33.12	6.53-1	6.76-1.56	4	4
US 63	904+63.71	904+99.63	10	6	14.83-15	0	0	33.12	33.12	1	1.56-1	4	4
US 63	904+99.63	914+18.63	10	6	15	0	0	33.12	33.12	1	1	4	4
US 63	914+18.63	914+19.65	10	6	15-15.38	0	0	33.12	33.12	1	0.63	4	4
US 63	914+19.65	914+42.76	10	6	15.75-15.77	0	0	33.12	33.12	0.63	0.63	4	4

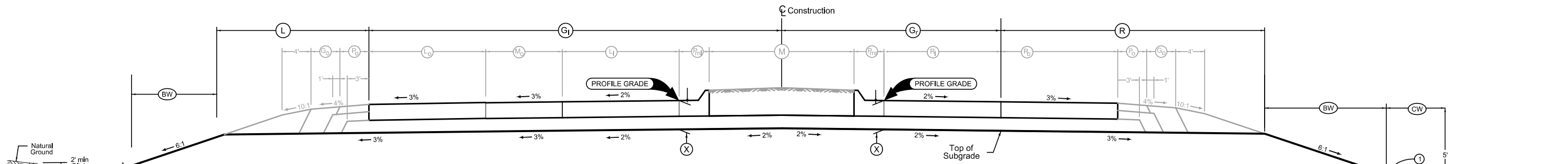
**4-LANE DIVIDED ROADWAY  
(COMPOSITE SHOULDERS)  
WITH RAISED MEDIAN AND AUXILIARY LANES**

- Notes:
- Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as inter-sections or super elevated curves.
- Refer to other drawings for details of shoulder design and construction.
- ① Refer to Standard Road Plan RF-19C for details of subdrain installation.
  - ② Refer to PV-102, and Typ. 6135 or Typ. 6136. Typical 6140m Concrete Median Sta. 870+75.00 to Sta. 872+50.00
  - ③ 6" Sloped Curb Typical  
6" Standard Curb Sta. 914+18.63 to Sta. 914+42.76 NB  
6" Standard Curb Sta. 914+19.65 to Sta. 914+42.76 SB

Shoulder:  
6" uniform thickness  
Longitudinal joint: B  
Refer to Typical 4-C for shoulder design and locations.

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

Refer to Standard Road Plan PV-101 for Jointing Details

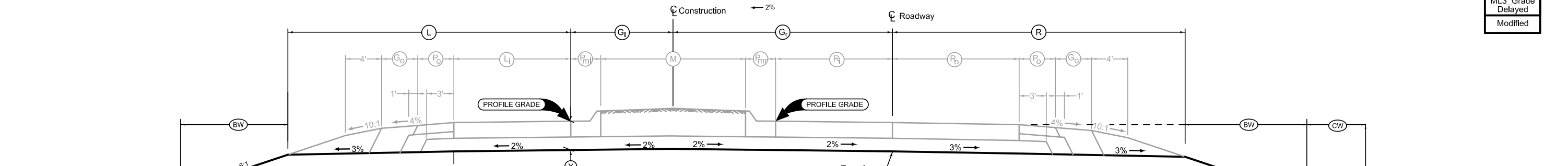


LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	(X) Inches	(L) Feet	(R) Feet	(G <sub>1</sub> ) Feet	(G <sub>2</sub> ) Feet	(BW) Feet	(CW) Feet
US 63	914+42.76 - 915+64.09	16	19.12	33.03-32.20	34.41-43.09	20.5-20.28	0.88	9.15
US 63	915+64.09 - 915+93.31	16	19.12	32.20-32.00	43.09-47.56	20.28-20.23	0.88	9.15

**3-LANE DIVIDED ROADWAY  
GRADING WITH ENTRY LANE & CURBED MEDIAN**

① Refer to project plan and cross sections for specific location of foreslope change.  
② Profile Grade of Outside Lane is Independent of ML Profile Grade

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.  
See Plan & Profiles sheets for additional details of ditches and backslopes.



LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	(X) Inches	(L) Feet	(R) Feet	(G <sub>1</sub> ) Feet	(G <sub>2</sub> ) Feet	(BW) Feet	(CW) Feet
US 63	915+93.31 - 917+07.12	16	30.85-30.50	32.00-31.21	8.59-8.63	20.23-20.00	0.88	9.15
US 63	917+07.12 - 917+25.00	16	30.50	30.21-30.70	8.63	20.00	0.88	9.15
US 63	917+25.00 - 917+45.66	16	30.50	30.70	8.63	20.00	0.88	9.15

**3-LANE DIVIDED ROADWAY  
GRADING WITH CURBED MEDIAN**

① Refer to project plan and cross sections for specific location of foreslope change.

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.  
See Plan & Profiles sheets for additional details of ditches and backslopes.

LOCATION	
ROAD IDENTIFICATION	STATION TO STATION
US 63	915+93.31 - 917+25.00



Notes:

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super elevated curves.

Refer to other drawings for details of shoulder design and construction.

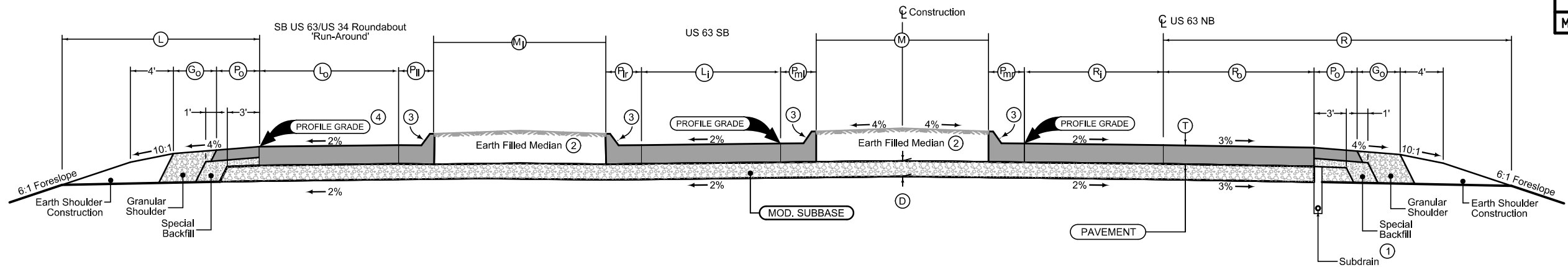
- ① Refer to Standard Road Plan RF-19C for details of subdrain installation.
- ② Refer to Typical 6135
- ③ 6" Standard Curb Typical
- ④ Profile Grade of Outside Lane is Independent of ML Profile Grade

Shoulder:

6" uniform thickness  
Longitudinal joint: B  
Refer to Typical 4-C for shoulder design and locations.

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

Refer to Standard Road Plan PV-101 for Jointing Details



ROAD IDENTIFICATION	STATION TO STATION	MAINLINE										SHOULDER					
		T Inches	D Inches	L <sub>o</sub> Feet	M Feet	L <sub>i</sub> Feet	M <sub>i</sub> Feet	R <sub>i</sub> Feet	R <sub>o</sub> Feet	L Feet	R Feet	P <sub>ml</sub> Feet	P <sub>mr</sub> Feet	P <sub>o</sub> Feet	G <sub>o</sub> Feet		
US 63	914+42.76 - 915+64.09	10	6	13.91-14.95	0-7.65	11.98-11.80	15.77-15.88	11.98-11.80	13.99-13.52	19.12	33.03-32.20	0	0	0.63	0.63	4	4
US 63	915+64.09 - 915+93.31	10	6	14.95-15.20	7.65-7.8	11.80-11.73	15.88-15.91	11.80-11.74	13.52-13.32	19.12	32.20-32.00	1	3	0.63	0.63	4	4

3-LANE DIVIDED ROADWAY  
(COMPOSITE SHOULDERS)  
WITH ENTRY LANE & CURBED MEDIAN

Notes:

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super elevated curves.

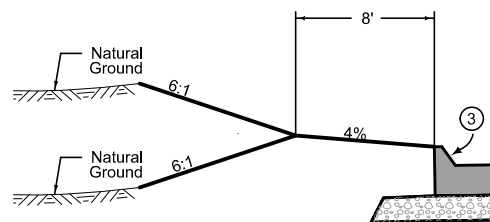
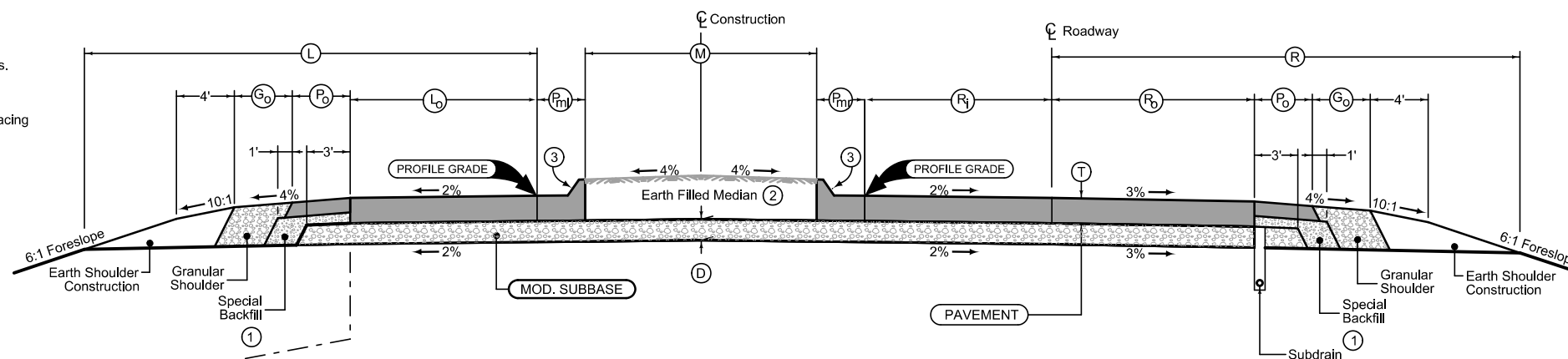
Refer to other drawings for details of shoulder design and construction.

- ① Refer to Standard Road Plan RF-19C for details of subdrain installation.
- ② Refer to Typical 6135
- ③ 6" Standard Curb Typical

Shoulder:  
6" uniform thickness  
Longitudinal joint: B  
Refer to Typical 4-C for shoulder design and locations.

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

Refer to Standard Road Plan PV-101 for Jointing Details



LOCATION		
ROAD IDENTIFICATION	STATION TO STATION	
US 63	915+93.31	917+25.00

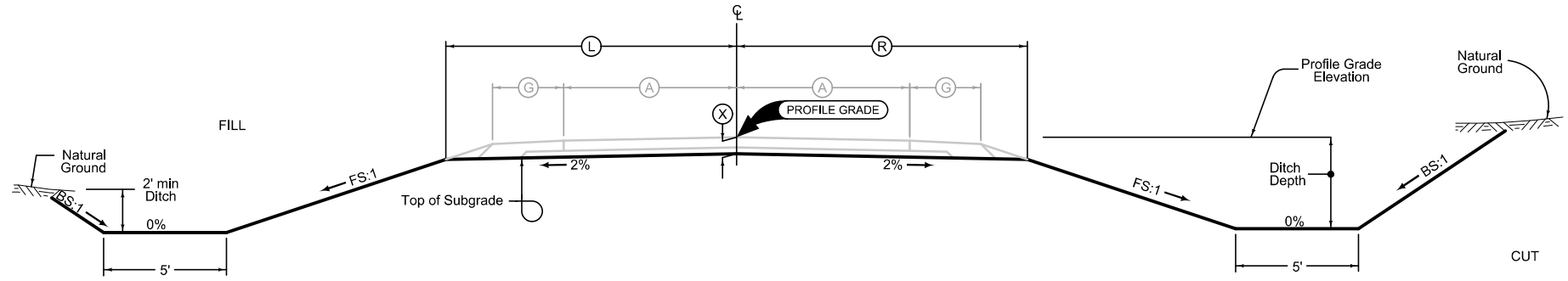
ROAD IDENTIFICATION	STATION TO STATION	MAINLINE							SHOULDER				
		T Inches	D Inches	M Feet	L <sub>o</sub> Feet	R <sub>i</sub> Feet	R <sub>o</sub> Feet	L Feet	R Feet	P <sub>ml</sub> Feet	P <sub>mr</sub> Feet	P <sub>o</sub> Feet	G <sub>o</sub> Feet
US 63	915+93.31 - 917+07.12	10	6	15.91-16.00	11.73-11.38	11.74-11.38	13.32-12.14	30.85-30.50	32.20-31.21	0.63	0.63	4	4
US 63	917+07.12 - 917+25.00	10	6	16.00	11.38	11.38	12.14-12	30.50	31.21-30.70	0.63	0.63	4	4
US 63	917+25.00 - 917+45.66	10	6	16.00	11.38	11.38	12	30.50	30.70	0.63	0.63	4	4

3-LANE DIVIDED ROADWAY  
(COMPOSITE SHOULDERS)  
WITH CURBED MEDIAN

LOCATION		DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	FS	BS	
Rabbit Run Road	8820+38.00 8826+05.79	20.87	20.87	16	3	2.5	
Mary St	8966+75.00 8964+73.46	28.71	28.71	16	3	2.5	

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

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



### 2 LANE GRADING

2-Grade Modified

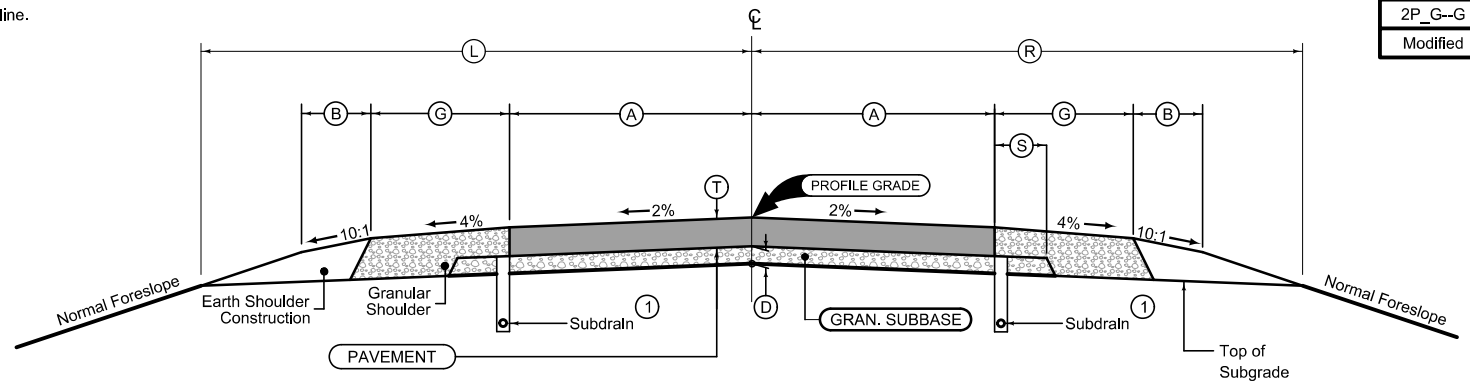
LOCATION		MAINLINE						SHLDR	
ROAD IDENTIFICATION	STATION TO STATION	(A) Feet	(T) Inches	(D) Inches	(L) Feet	(R) Feet	(B) Feet	(G) Feet	(S) Feet
Rabbit Run Rd.	8820+38.00 8826+05.79	11.0	10	6	20.87	20.87	0	6.0	3
Mary St.	8966+75.00 8964+73.46	16.5	10	6	28.71	28.71	0	8.5	3

Dimensions are symmetrical about the centerline.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

1 Refer to Standard Road Plan RF-19C for details of subdrain installation.

Mainline Pavement:  
Longitudinal joint: L-2  
Refer to Standard Road Plan PV-101 for Jointing Details



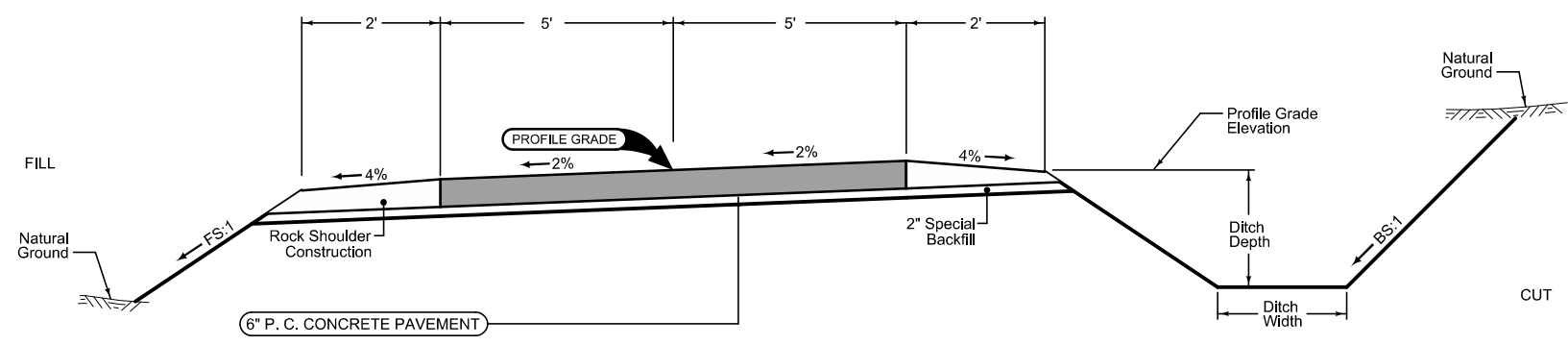
### 2-LANE PAVING (Granular Shoulders)

2P\_G-G Modified

LOCATION		DIMENSIONS	
ROAD IDENTIFICATION	STATION TO STATION	FS	BS
Trail	8796+82.31 8799+77.44	3	3
Trail	8801+63.51 8808+62.35	3	3

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

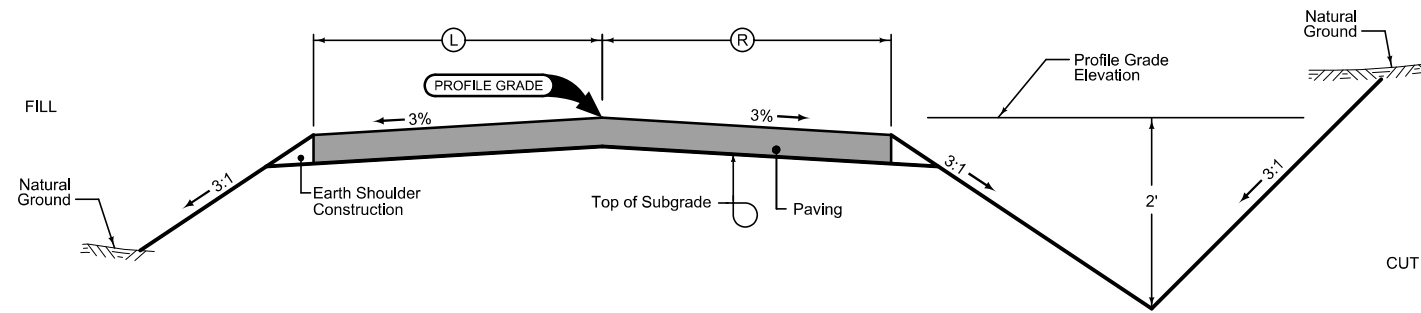
See plan & profile sheets and cross sections for additional details of ditches and backslopes.



### TRAIL GRADING AND SURFACING

Trail Modified

LOCATION				DIMENSIONS		
ACCESS IDENTIFICATION	STATION TO STATION		ACCESS TO	SIDE	(L) Feet	(R) Feet
Mary Entrance 1	0+17.00	0+29.00	Mary, +80	North	37-34	25-11
Mary Entrance 1	0+29.00	0+47.00	Mary, +80	North	34-11	11
Mary Entrance 1	0+47.00	0+55.00	Mary, +80	North	11	11
Mary Entrance 2	0+75.00	1+32.00	Mary, +14	South	10-63	14-50



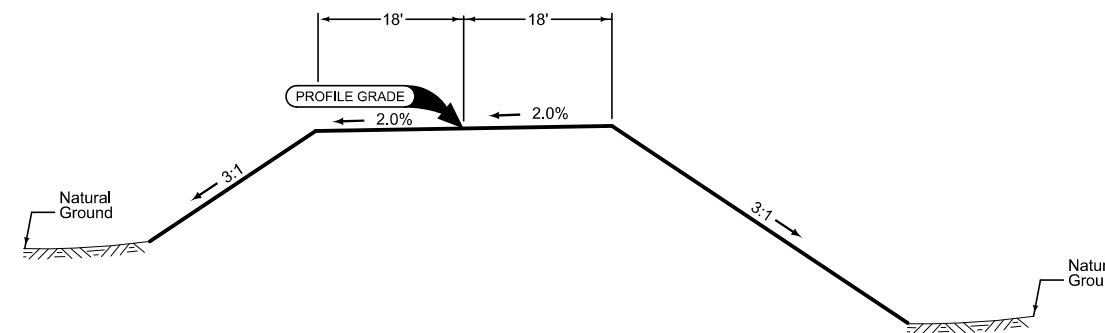
**PAVED ACCESS GRADING AND PAVING**

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.

Paved Access  
Modified

LOCATION			
DIKE IDENTIFICATION	STATION TO STATION	ADJACENT ROADWAY	SIDE
Safety Dike Mary	8970+56.54	8971+65.00	US 63 East



**SAFTY DIKE GRADING**

Normal section shown may be modified appropriately in areas specifically designated by the Engineer.

See cross sections for additional details of Safety Dike grading.

Safety Dike  
Modified

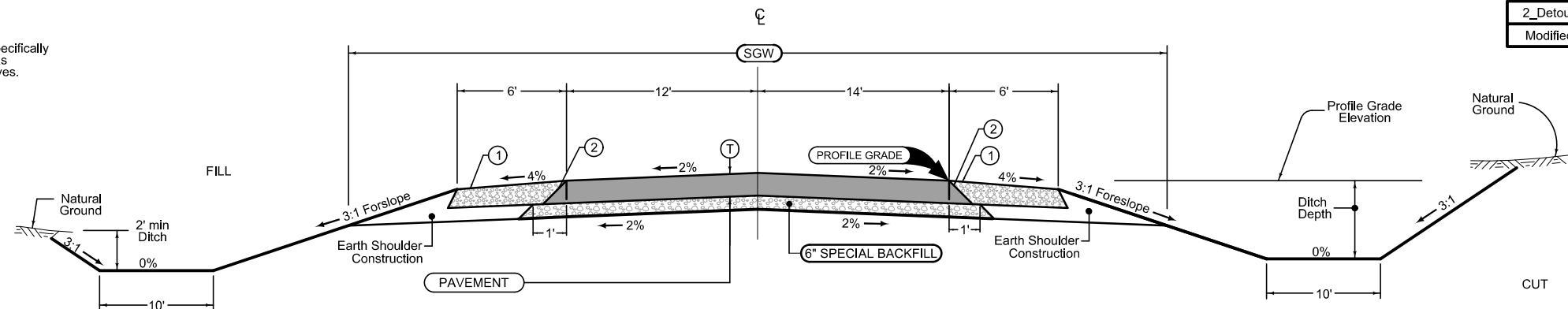
LOCATION		DIMENSIONS	
ROAD IDENTIFICATION	STATION TO STATION	(SGW) Feet	(T) Inches
Detour A	4260+00.00	4268+94.71	45.74 10
Detour B	7425+04.11	7430+50.00	45.74 10
Detour C	7750+50.00	7760+15.07	45.74 10

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super-elevated curves.

- ① 6" Granular Shoulder
- ② Possible 1:1 Slope

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

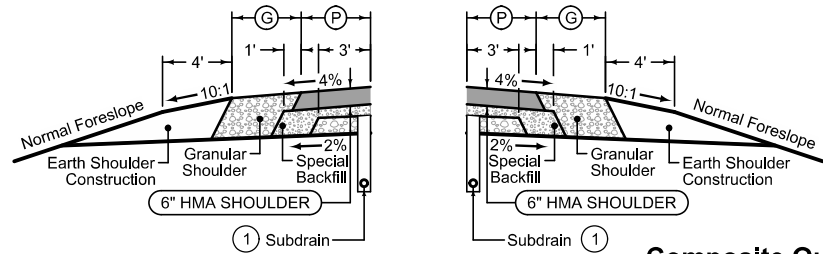
See plan & profile sheets and cross sections for additional details of ditches and backslopes.



**2-LANE DETOUR PAVING & GRADING**

2\_Detour  
Modified

2-C\_ 10-19-10

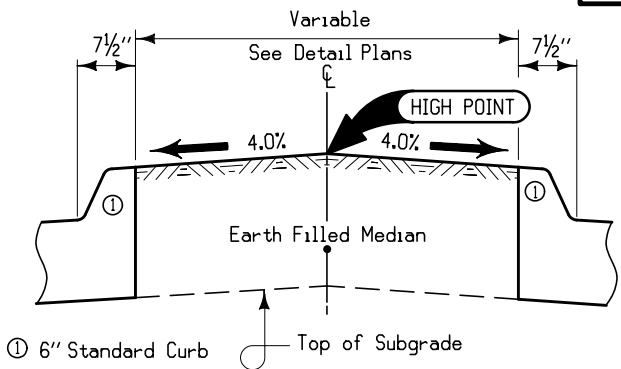


**Composite Outside Shoulder**

	STATION TO STATION	(P) Feet	(G) Feet	
NB	859+50.00	917+45.66	4	4
SB	859+50.00	915+90.86	4	4
SB	917+25.00	917+45.66	4	4

① Refer to Standard Road Plan RF-19C for details of subdrain installation.  
Shoulder Jointing: Longitudinal joint: B Refer to Standard Road Plan PV-101 for Jointing Details

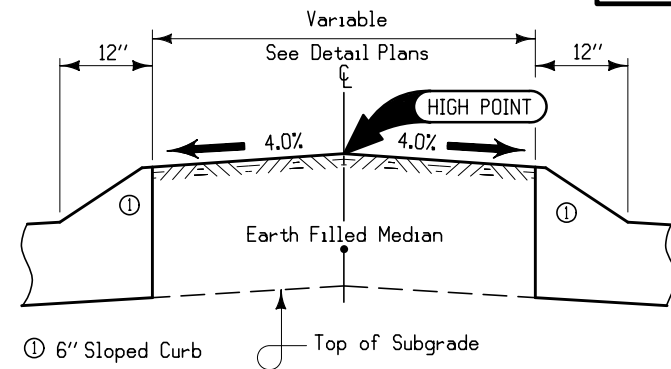
6135 11-10-92



**RAISED EARTH MEDIAN WITH STANDARD CURB**

Note: This section is typical only, and may be appropriately modified in areas specifically designated by the engineer. Material for filling median and the necessary finishing of the median surface are included in the appropriate items of "Estimate of Quantities".

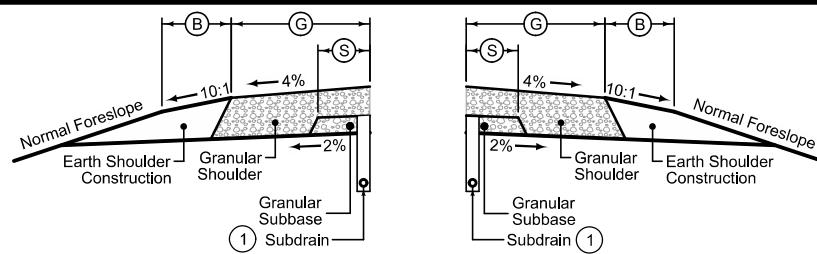
6136 11-10-92



**RAISED EARTH MEDIAN WITH SLOPED CURB**

Note: This section is typical only, and may be appropriately modified in areas specifically designated by the engineer. Material for filling median and the necessary finishing of the median surface are included in the appropriate items of "Estimate of Quantities".

2-G\_SR\_ Modified

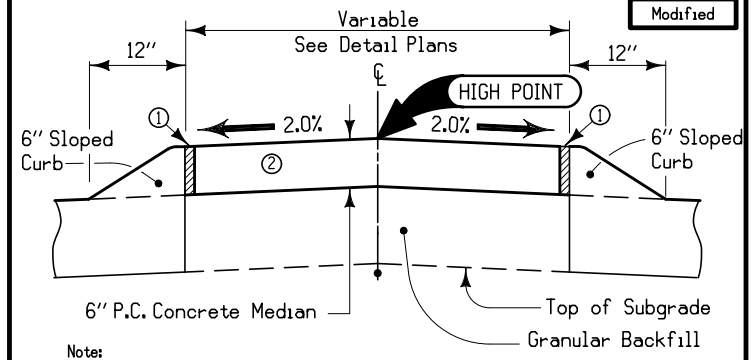


**Granular Shoulder**

ROAD IDENTIFICATION	STATION TO STATION	(G) Feet	(B) Feet	(S) Feet	
Rabbit Run Rd.	8820+38.00	8826+05.79	6.0	0	3
Mary St.	8966+75.00	8969+73.46	8.5	0	3

① Refer to Standard Road Plan RF-19C for details of subdrain installation.

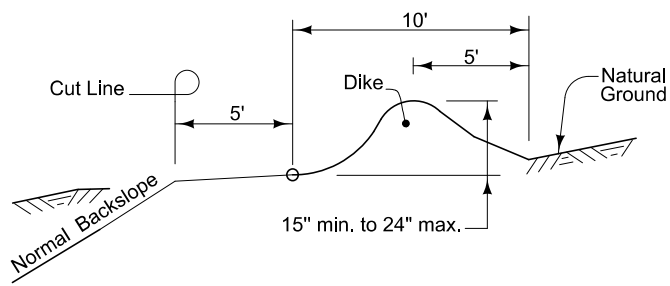
6140m Modified



**PAVED MEDIAN WITH SLOPED CURB**

Note: This section is typical only, and may be appropriately modified in areas specifically designated by the Engineer. The furnishing and placing of granular backfill shall be incidental to the price bid for Portland Cement Concrete Median.  
① 'E' Joint, refer to Standard Road Plan PV-101 for details.  
② Construct 'C' Joints according to Standard Road Plan PV-101; match joints in adjacent pavement.

4101 04-20-10



**TYPICAL CROSS SECTION INTERCEPTING DITCH**

Refer to plans for locations of intercepting ditches. Dike for intercepting ditch shall be made by taking earth from roadway side. Do not excavate back of dike.

### SURVEY SYMBOLS

- SI Sign
- LUM Luminaire
- MH Utility Access (Manhole)
- ROW Approx. Right of Way Rail
- PPA Power Pole Co. 1
- MM Mile Marker Post
- TDC Tree Deciduous
- SL Speed Limit Sign
- EW Edge of Water
- DIK Centerline of Dike or Dam
- D Centerline Draw or Stream (Down)
- BB Billboard
- FCL Chain Link and Security Fence
- GDL Guard Rail (Rail and Cable)
- RET Retaining Walls
- T2 TLB Underground Telephone Line Co. 2
- F0 FOA Underground Fiber Optic Co. 1
- F02 FOB Underground Fiber Optic Co. 2
- T1 TLA Underground Telephone Line Co. 1
- E1 ELA Underground Electric Line Co. 1
- G GLA Underground Gas Line Co. 1
- W WLA Underground Water Line Co. 1
- W2 WLB Underground Water Line Co. 2
- IN Storm Sewer Intake
- FW Wire Fence
- MIS Miscellaneous
- LC Approx. Lot Corner
- TPD Telephone Pedestal
- TA Tower Anchor
- EB Electrical Box
- WEL Well
- TEV Evergreen Tree
- FWD Wood Fence
- FHD Fire Hydrants
- GP Guard Post (Less Than 4 Posts)
- WHU RV Water Hook Up
- INB Storm Sewer Beehive Intake

### UTILITY LEGEND

- T1
- T2
- F0
- F02
- E1
- G
- W
- W2

### UTILITY CONTACT INFORMATION

Citizens Mutual Telephone  
 Gary Mishler  
 114 W. Jefferson  
 Bloomfield, IA 52537  
 (641)-664-2074  
 gmishler@cmstel.com

Southern Iowa Electric Cooperative  
 Jeremy Wilcox  
 P.O. Box 70 22458 Hwy. 2  
 Bloomfield, IA 52537  
 641-664-2277  
 jwilcox@sie.coop

Windstream/PAETEC  
 Tim Flickinger  
 3630 109th Street  
 Urbandale, IA 50322  
 515-309-1135  
 timothy.flickinger@paetec.com

CenturyLink/QWEST  
 Steve Parker  
 2103 E University Ave., 1st Floor  
 Des Moines, IA 50317  
 515-265-0968  
 steven.parker4@centurylink.com

Wapello Rural Water  
 Lee Asher  
 PO Box 538  
 Ottumwa, IA 52501  
 641-682-8351  
 LAsher@wrh2o.com

Alliant Energy  
 Jason Hogan  
 4902 N Billmore Lane  
 Madison, WI 53718-2148  
 608-458-4871  
 jasonhogan@alliantenergy.com

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 546 Southgate Ave.  
 Iowa City, IA 52240  
 319-351-0408  
 teagan@mediacomcc.com

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 Phillip Davis  
 302 S Vine  
 Ottumwa, IA 52501  
 641-683-4171  
 pcdavis@midamerican.com

MidAmerican Energy  
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 2411 N Market Street  
 Oskaloosa, IA 52577  
 641-660-3068  
 jaferguson@midamerican.com

City of Ottumwa  
 Larry Seals  
 105 E Third Street  
 Ottumwa, IA 52501  
 641-683-0680  
 lseals@ci.ottumwa.ia.us

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

LINEWORK	Design Color No.	Description
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.	Description
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.	Description
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

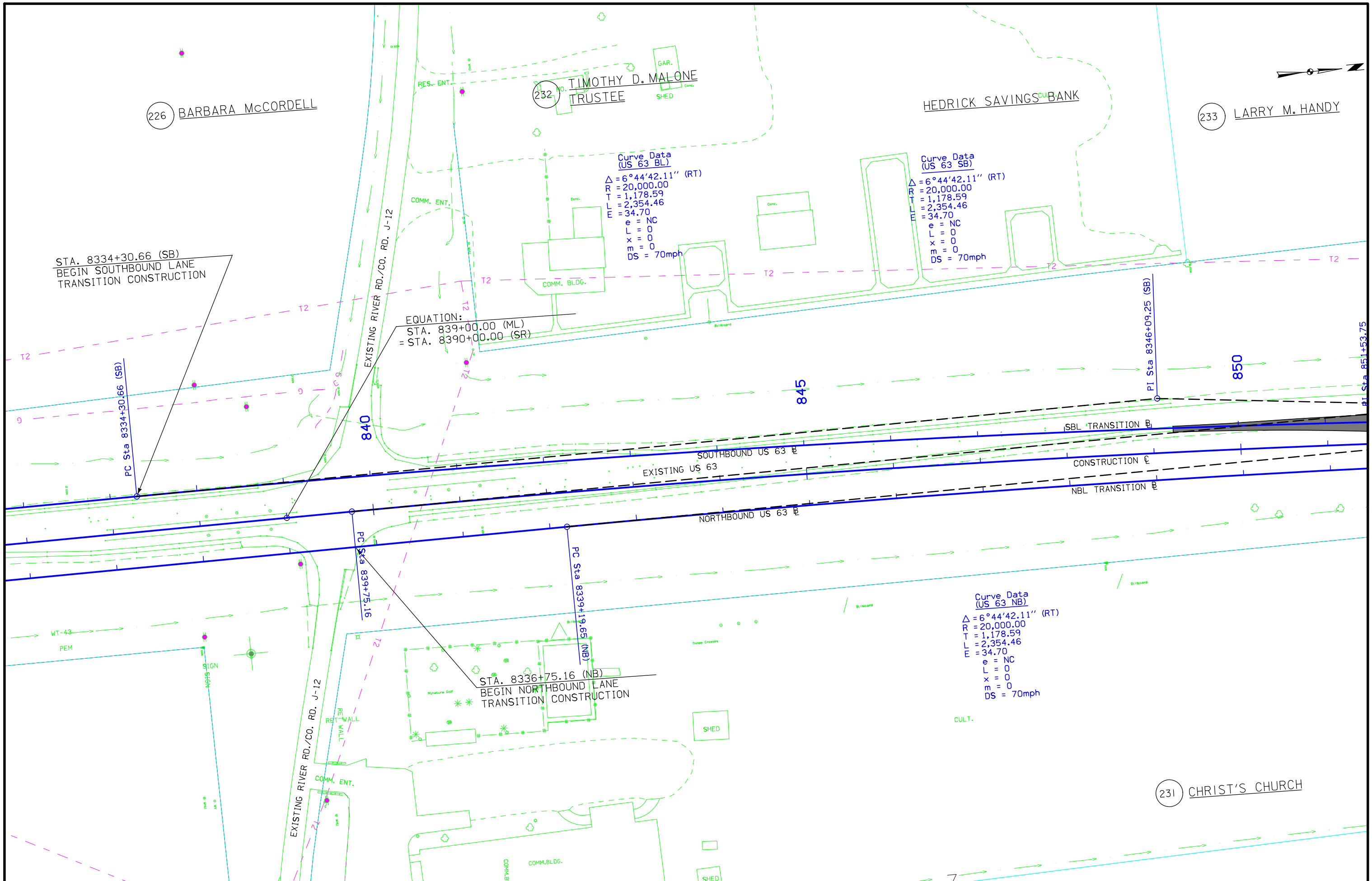
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

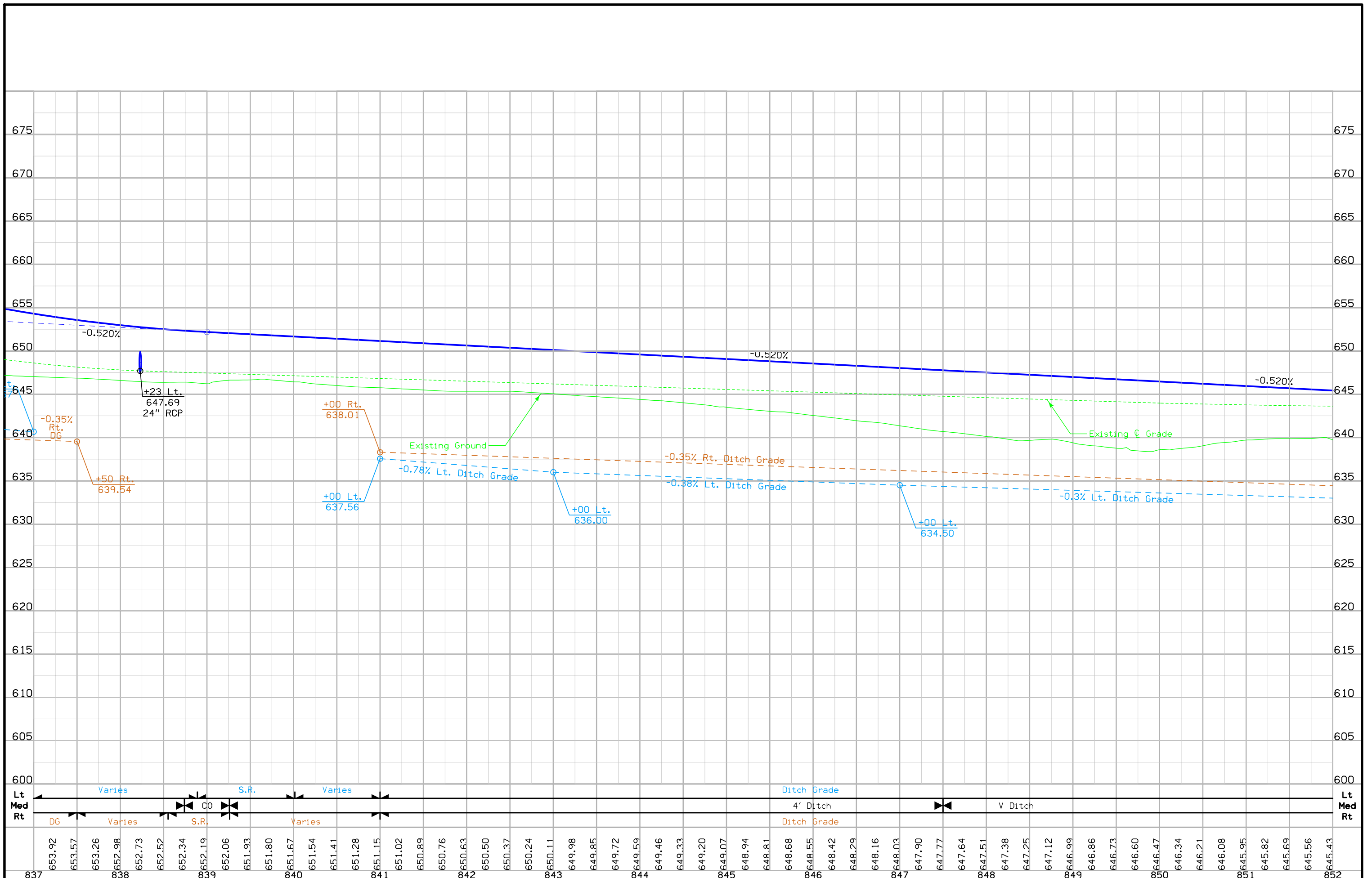
### RIGHT-OF-WAY LEGEND

- 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	Flattery \ Buttolph	WAPELLO COUNTY	PROJECT NUMBER	NHSX-063-2(155)--3H-90	SHEET NUMBER	D.03
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233 LARRY M. HANDY

234 ALICE MAE MARTIN

Curve Data  
(US 63 SB)

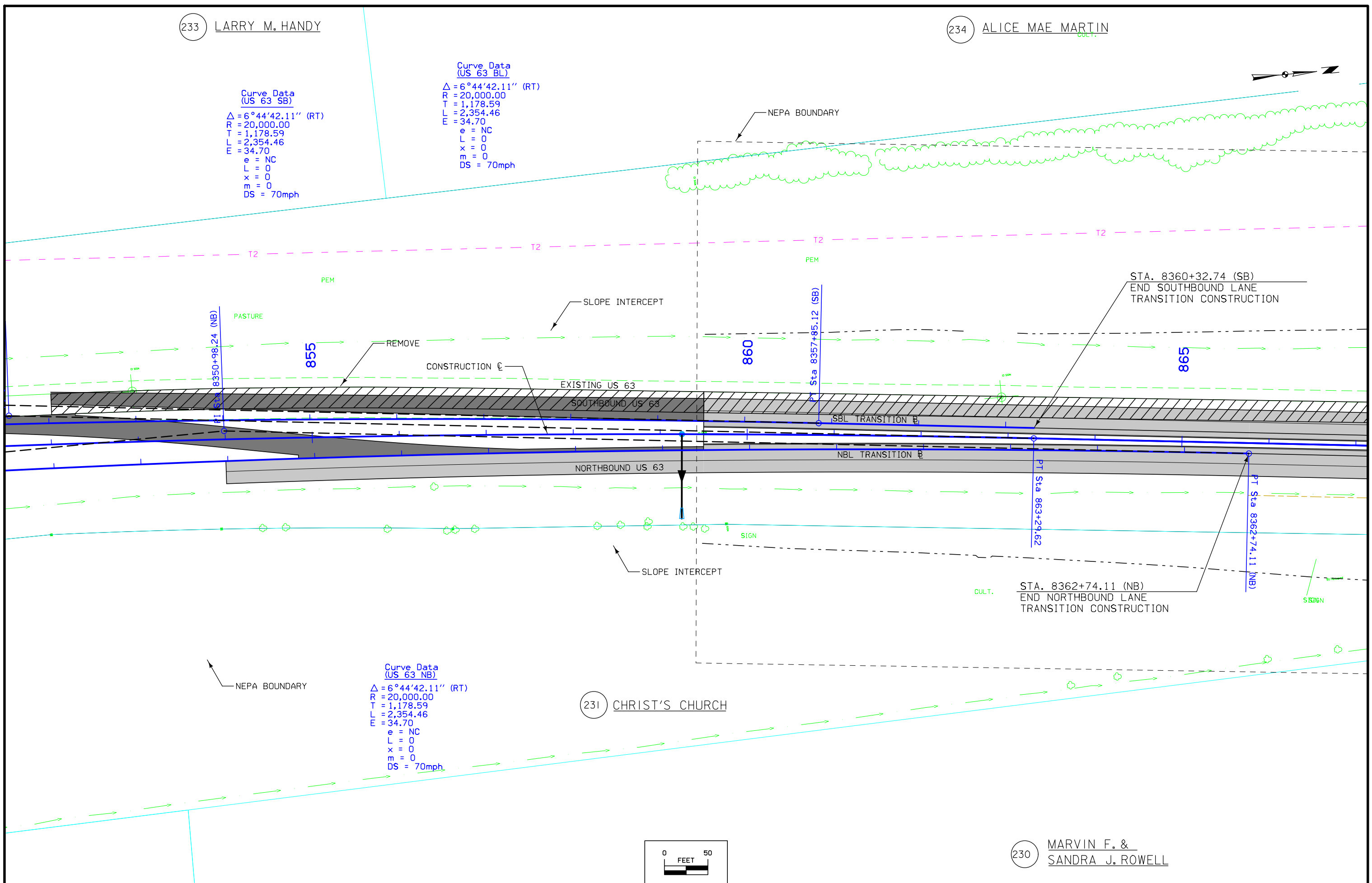
$\Delta = 6^{\circ}44'42.11''$  (RT)  
 R = 20,000.00  
 T = 1,178.59  
 L = 2,354.46  
 E = 34.70  
 e = NC  
 L = 0  
 x = 0  
 m = 0  
 DS = 70mph

Curve Data  
(US 63 BL)

$\Delta = 6^{\circ}44'42.11''$  (RT)  
 R = 20,000.00  
 T = 1,178.59  
 L = 2,354.46  
 E = 34.70  
 e = NC  
 L = 0  
 x = 0  
 m = 0  
 DS = 70mph

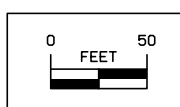
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(US 63 NB)

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 L = 0  
 x = 0  
 m = 0  
 DS = 70mph

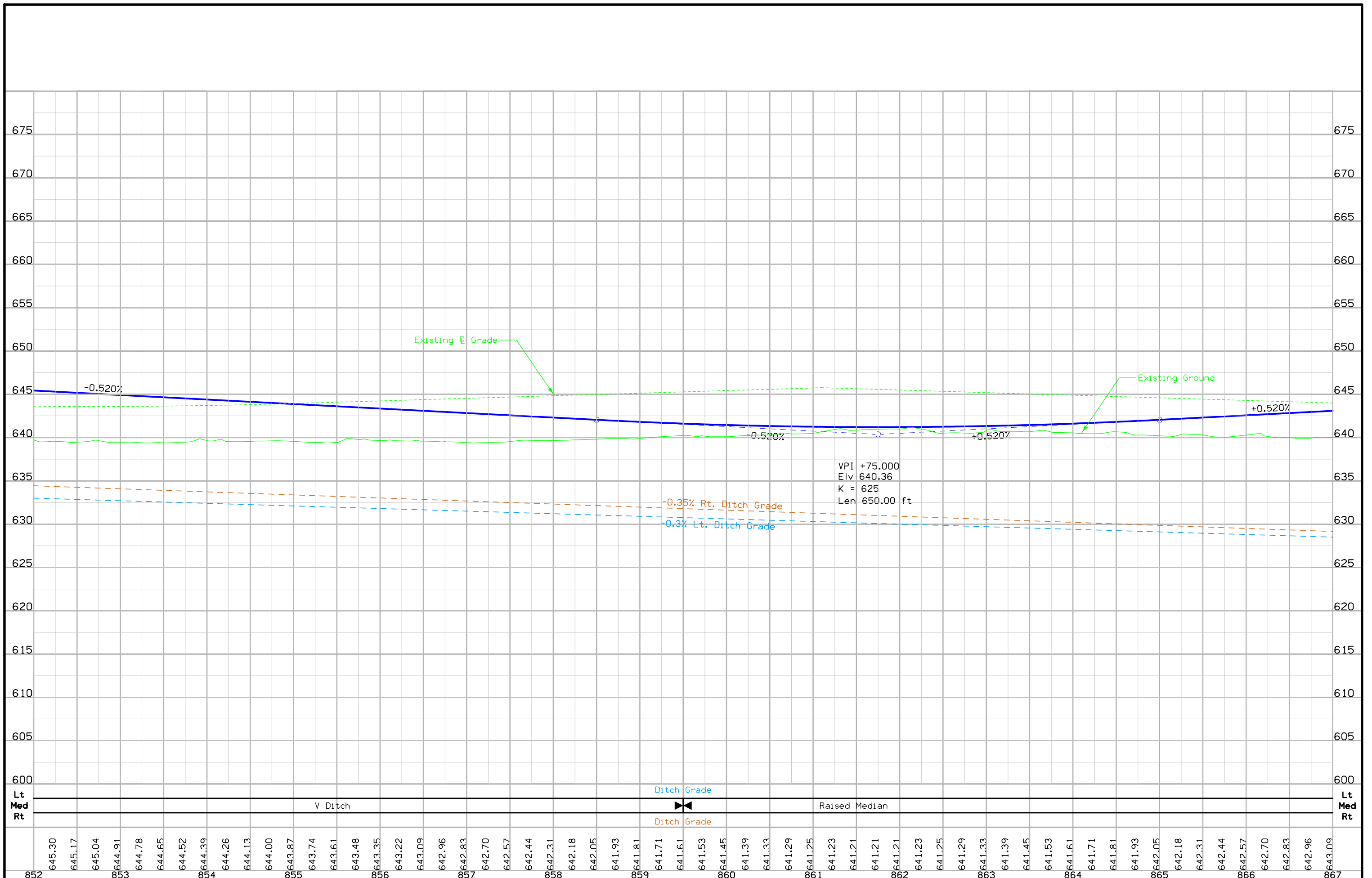


(231) CHRIST'S CHURCH

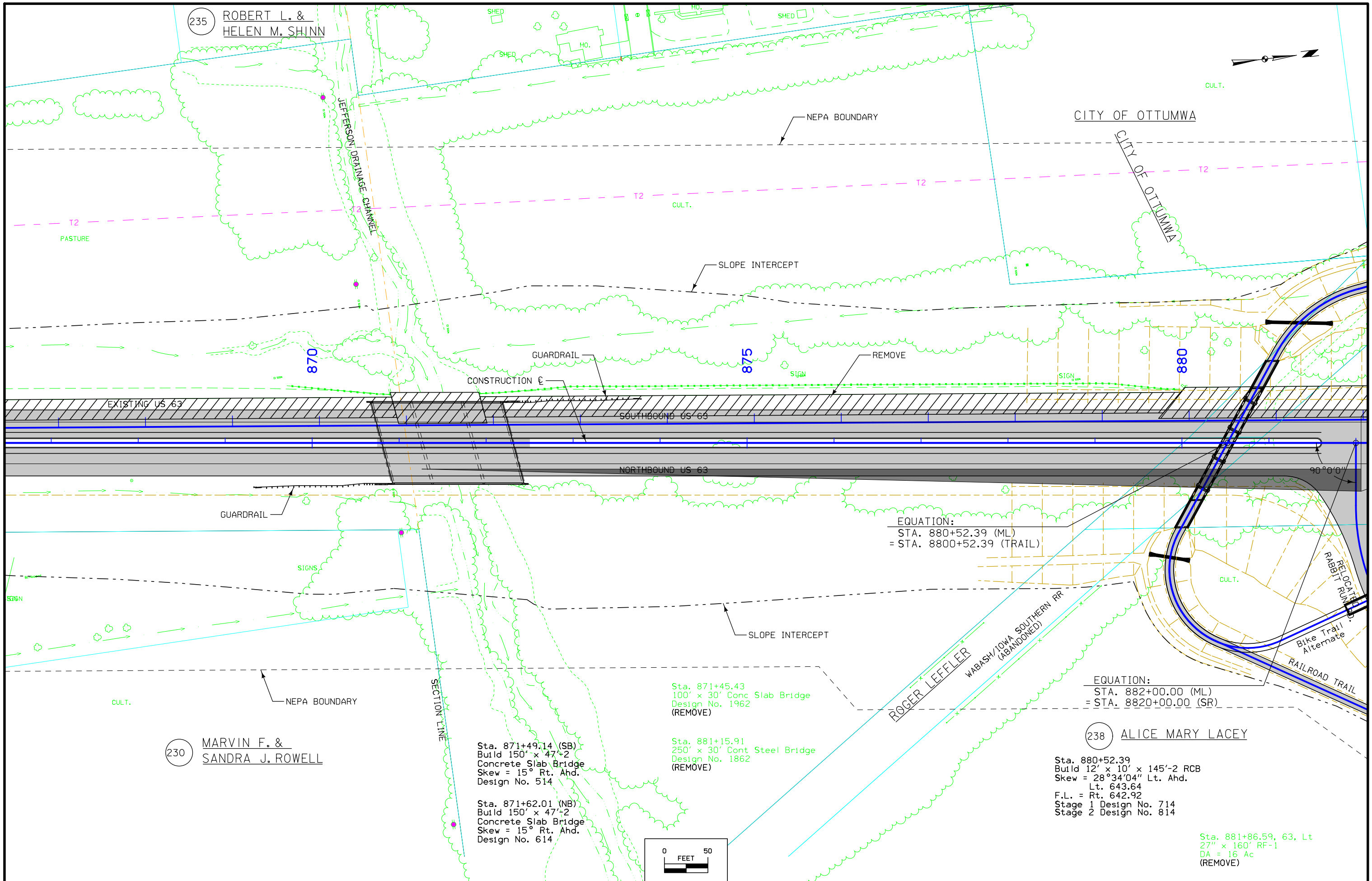
(230) MARVIN F. & SANDRA J. ROWELL







FILE NO.	ENGLISH	DESIGN TEAM	<b>Flattery \ Buttolph</b>	WAPELLO COUNTY	PROJECT NUMBER	<b>NHSX-063-2(155)--3H-90</b>	SHEET NUMBER	<b>D.05</b>
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235 ROBERT L. & HELEN M. SHINN

230 MARVIN F. & SANDRA J. ROWELL

CITY OF OTTUMWA

238 ALICE MARY LACEY

Sta. 871+49.14 (SB)  
Build 150' x 47'-2"  
Concrete Slab Bridge  
Skew = 15° Rt. Ahd.  
Design No. 514

Sta. 871+62.01 (NB)  
Build 150' x 47'-2"  
Concrete Slab Bridge  
Skew = 15° Rt. Ahd.  
Design No. 614

Sta. 871+45.43  
100' x 30' Conc Slab Bridge  
Design No. 1962  
(REMOVE)

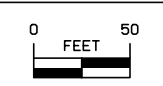
Sta. 881+15.91  
250' x 30' Cont Steel Bridge  
Design No. 1862  
(REMOVE)

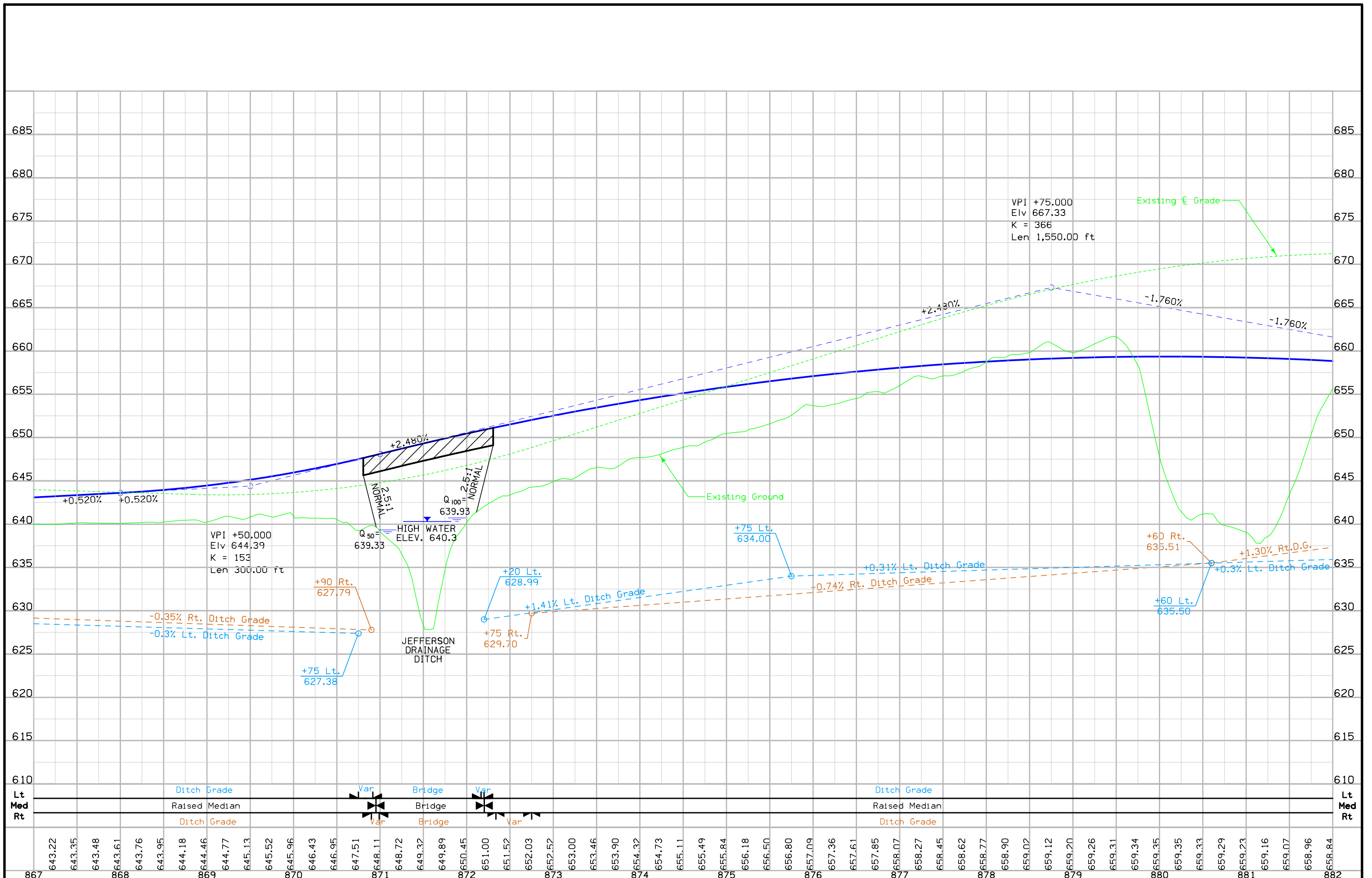
EQUATION:  
STA. 880+52.39 (ML)  
= STA. 8800+52.39 (TRAIL)

EQUATION:  
STA. 882+00.00 (ML)  
= STA. 8820+00.00 (SR)

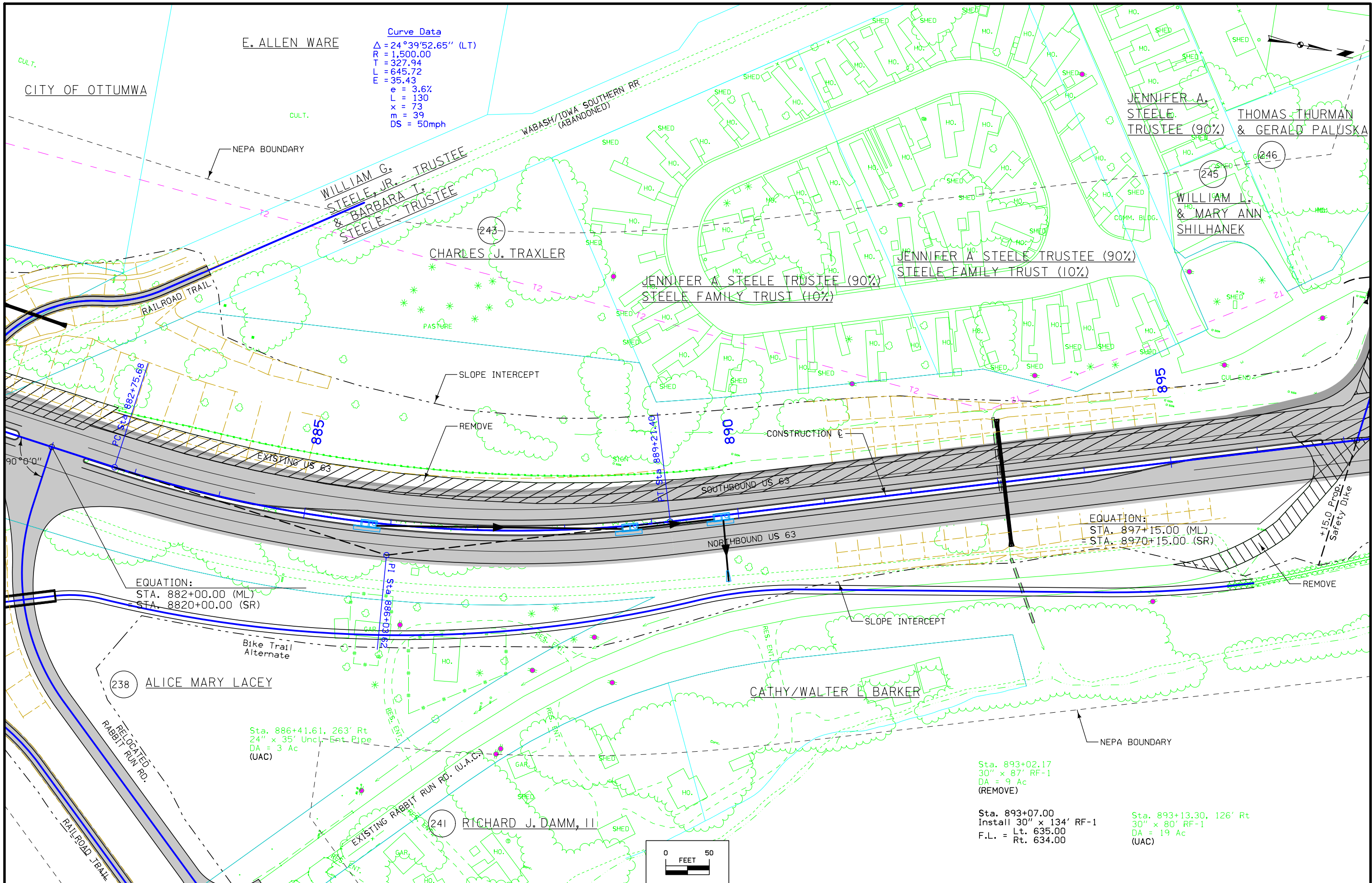
Sta. 880+52.39  
Build 12' x 10' x 145'-2 RCB  
Skew = 28°34'04" Lt. Ahd.  
Lt. 643.64  
F.L. = Rt. 642.92  
Stage 1 Design No. 714  
Stage 2 Design No. 814

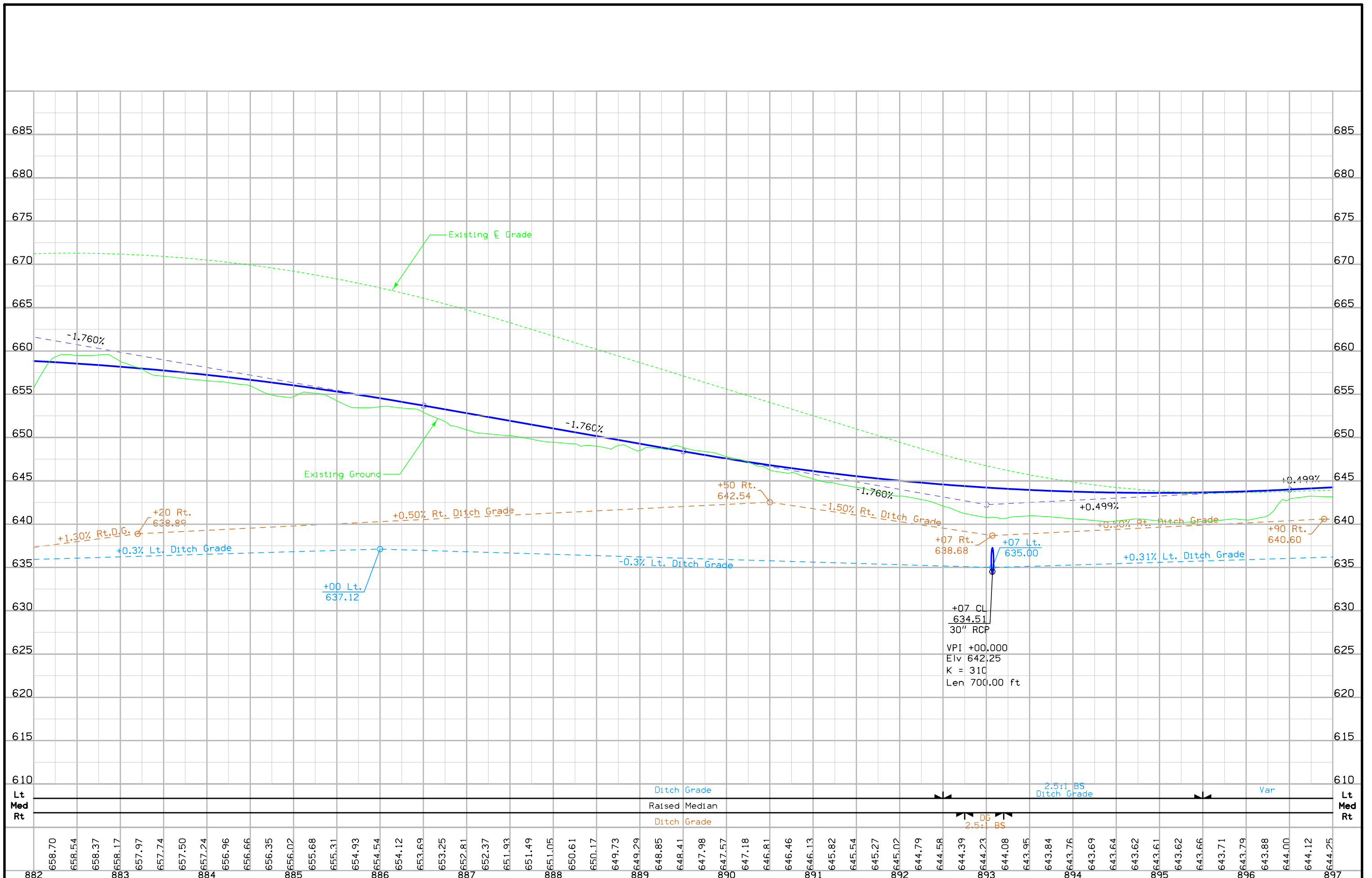
Sta. 881+86.59, 63, Lt  
27" x 160' RF-1  
DA = 16 Ac  
(REMOVE)



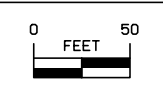
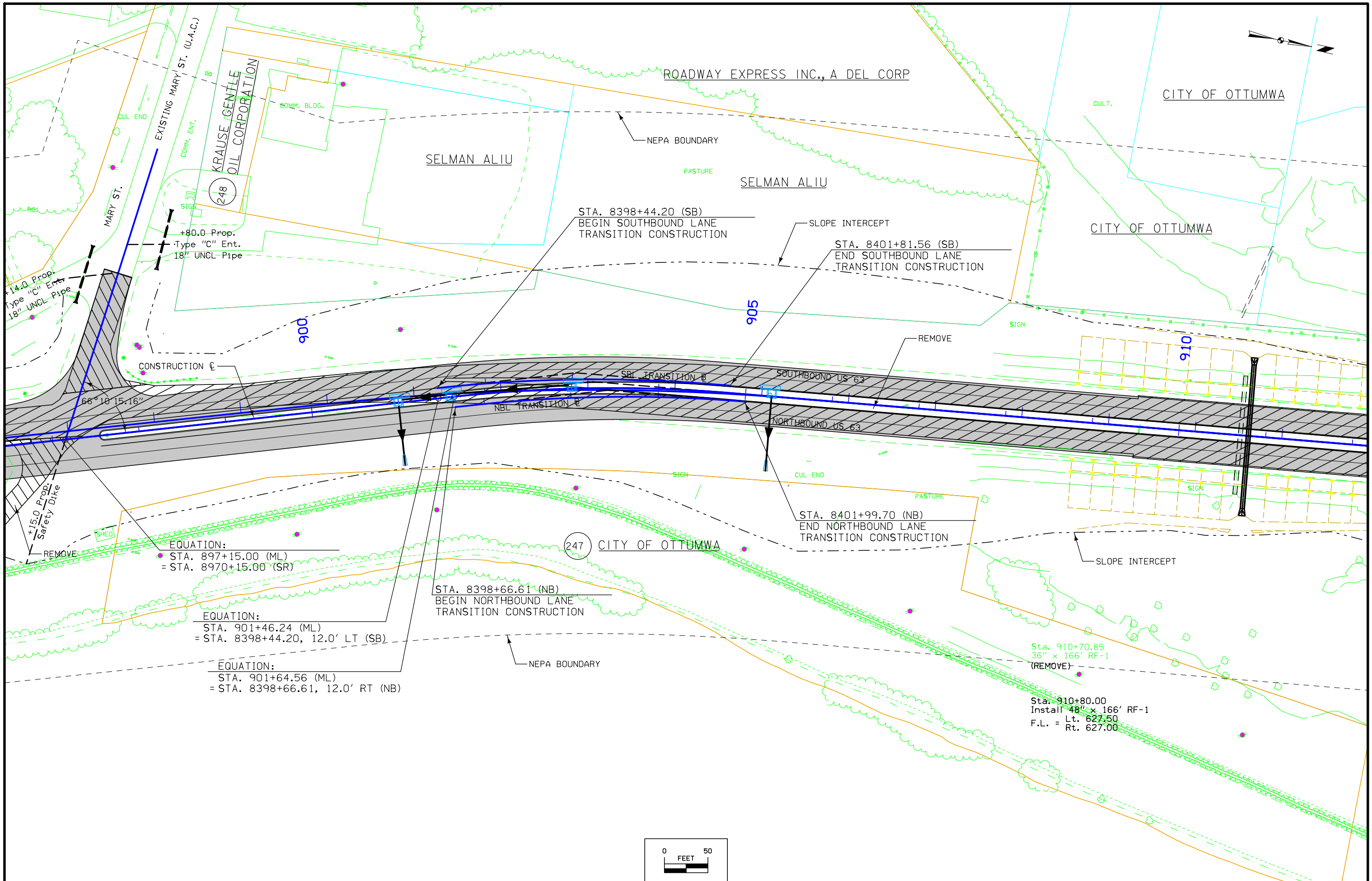


FILE NO.	ENGLISH	DESIGN TEAM	Flattery \ Buttolph	WAPELLO COUNTY	PROJECT NUMBER	NHSX-063-2(155)--3H-90	SHEET NUMBER	D.07
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FILE NO.	ENGLISH	DESIGN TEAM	Flattery \ Buttolph	WAPELLO COUNTY	PROJECT NUMBER	NHSX-063-2(155)--3H-90	SHEET NUMBER	D.09
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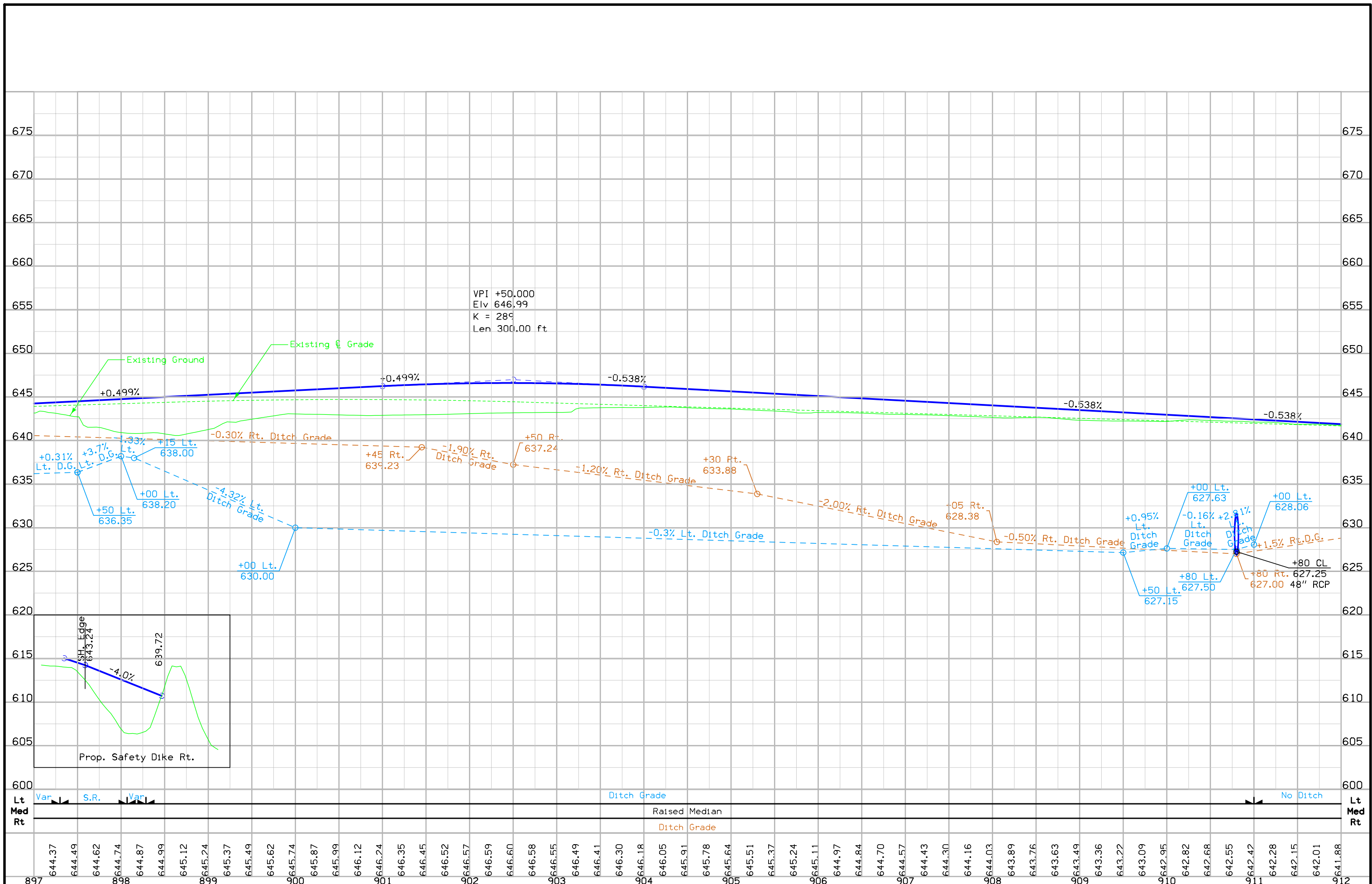
EQUATION:  
 STA. 897+15.00 (ML)  
 = STA. 8970+15.00 (SR)

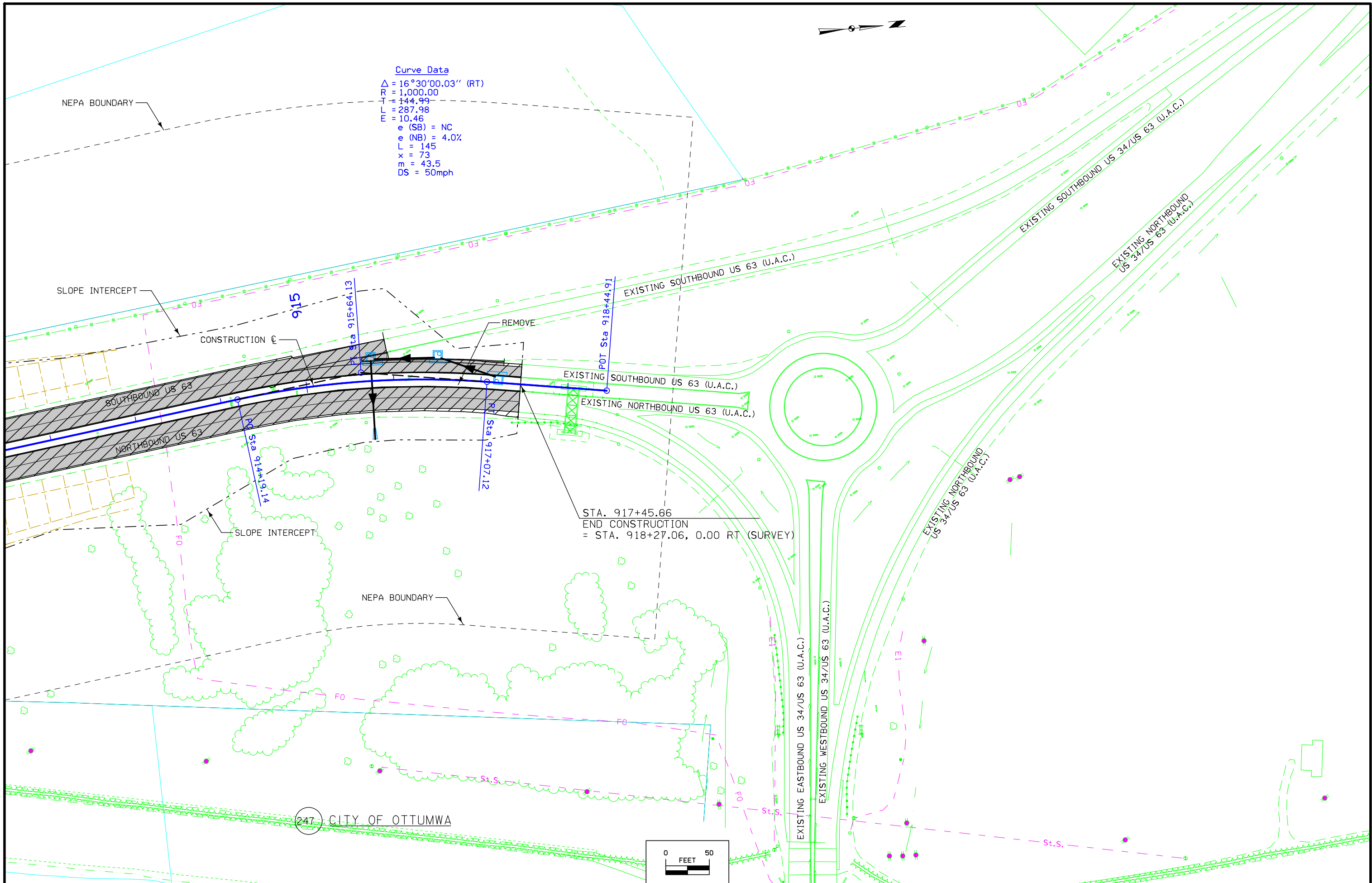
EQUATION:  
 STA. 901+46.24 (ML)  
 = STA. 8398+44.20, 12.0' LT (SB)

EQUATION:  
 STA. 901+64.56 (ML)  
 = STA. 8398+66.61, 12.0' RT (NB)

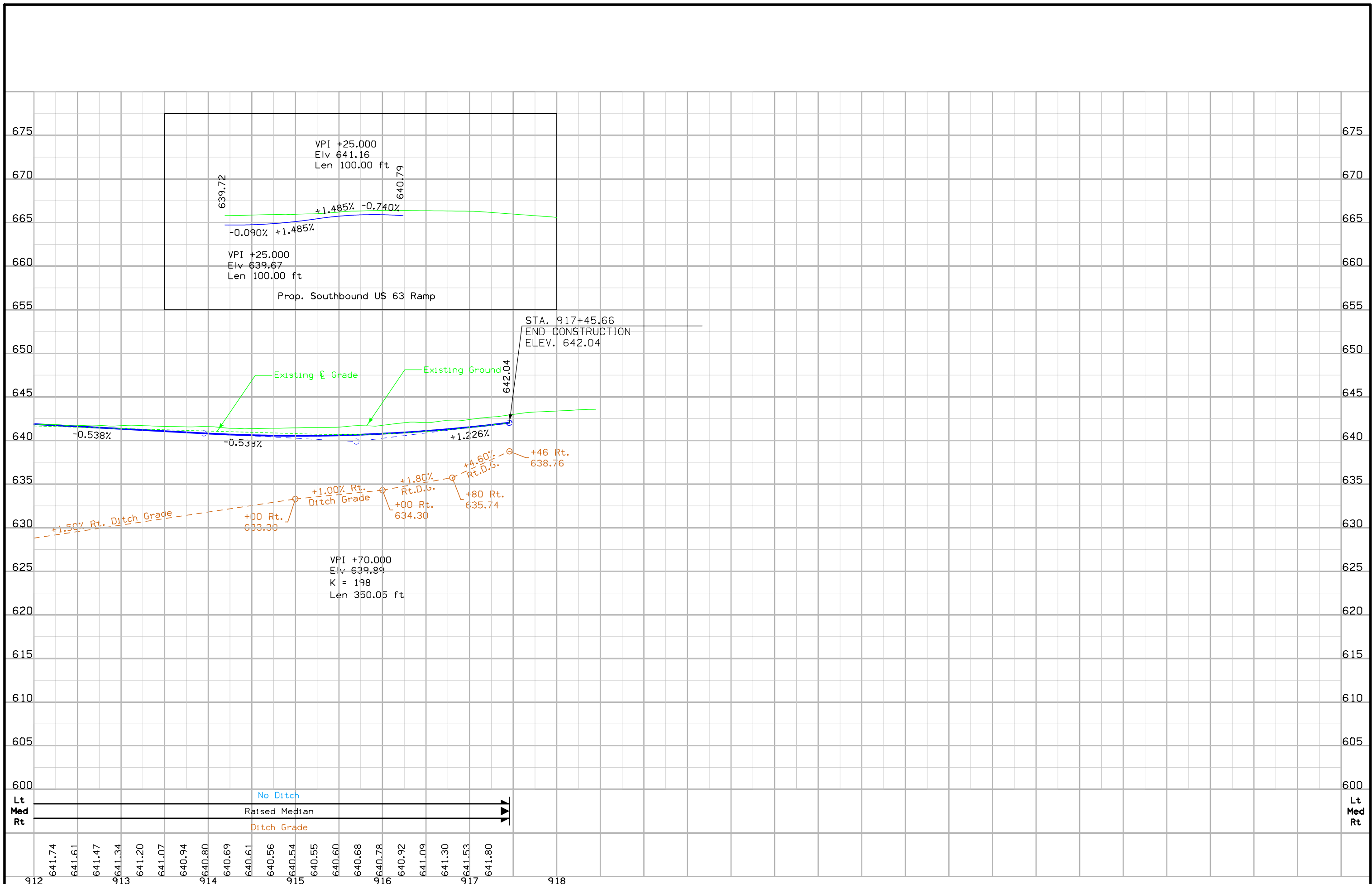
Sta. 910+70.85  
 36" x 166' RF-1  
 (REMOVE)

Sta. 910+80.00  
 Install 48" x 166' RF-1  
 Lt. 627.50  
 F.L. = Rt. 627.00









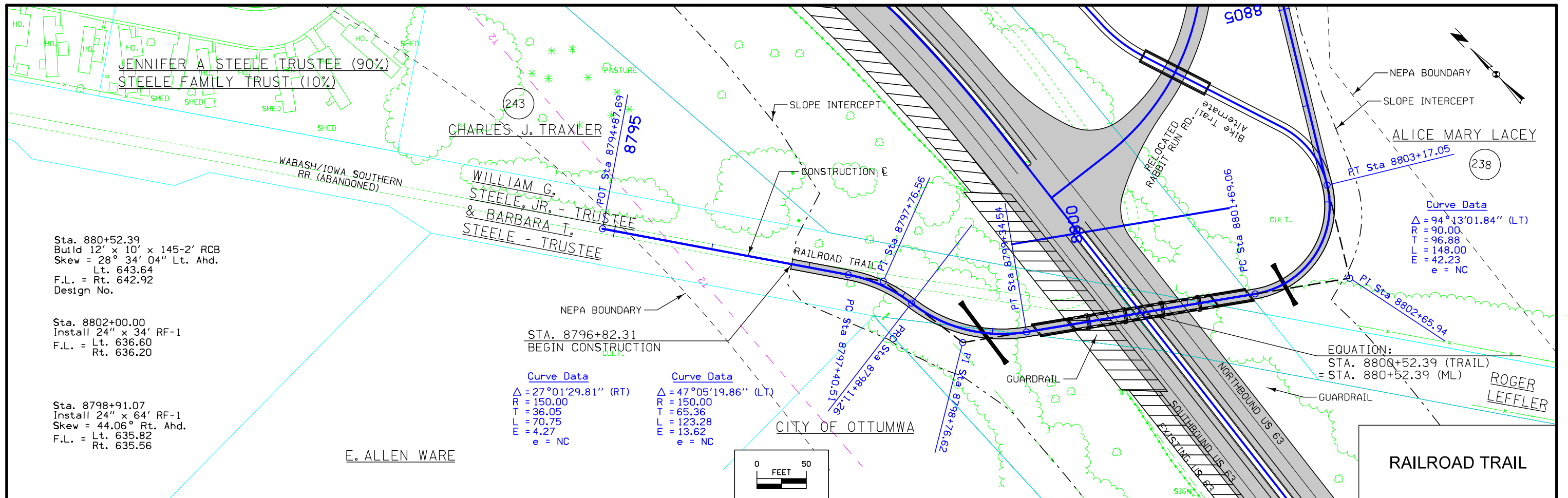
VPI +25.000  
Elv 641.16  
Len 100.00 ft

VPI +25.000  
Elv 639.67  
Len 100.00 ft

Prop. Southbound US 63 Ramp

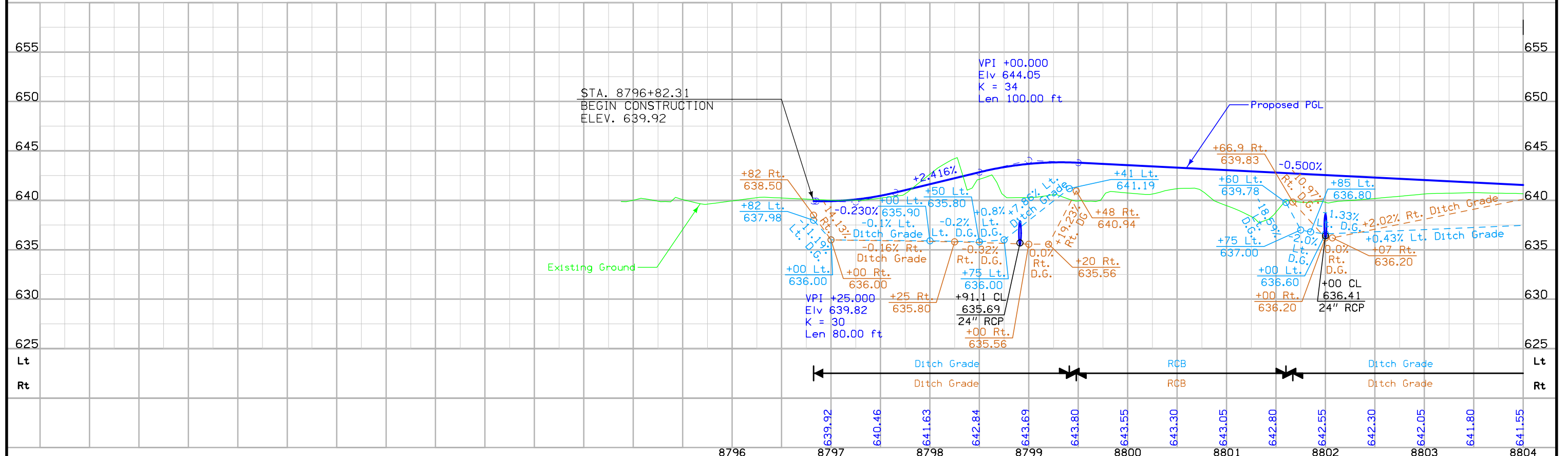
STA. 917+45.66  
END CONSTRUCTION  
ELEV. 642.04

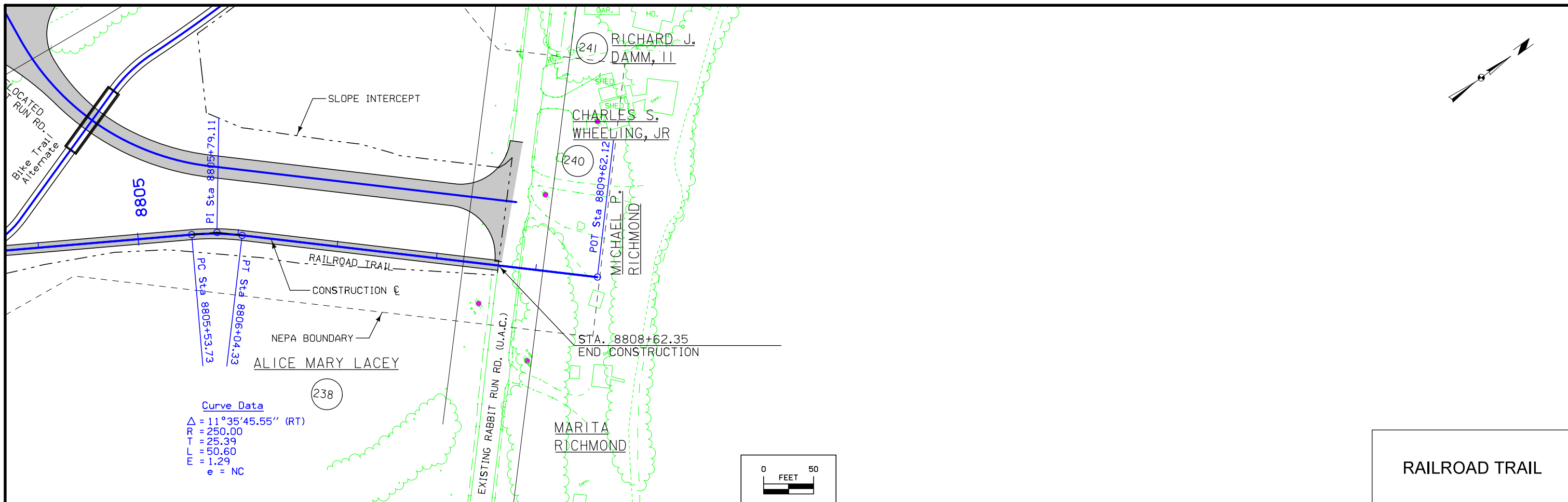
VPI +70.000  
Elv 639.89  
K = 198  
Len 350.05 ft



**Project 3, Stage 3:**  
Cut = 1,414 CY  
Fill + 30% = 502 CY  
Waste = 939 CY

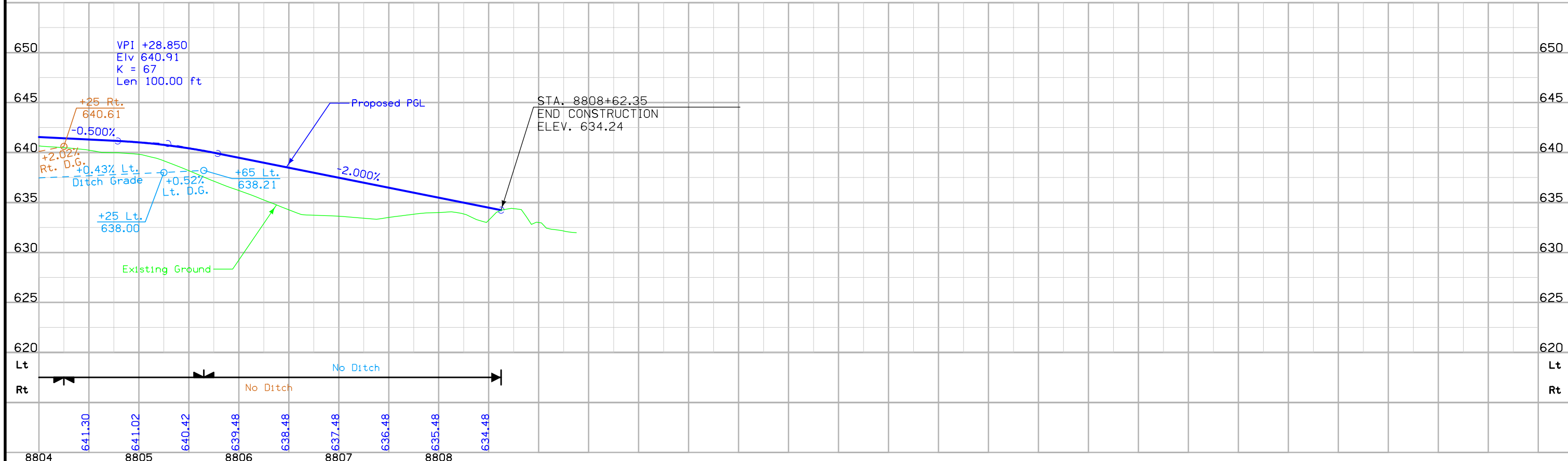
**Project 2, Stage 1:**  
Cut = 1,848 CY  
Fill + 30% = 142 CY  
Waste = 1,706 CY

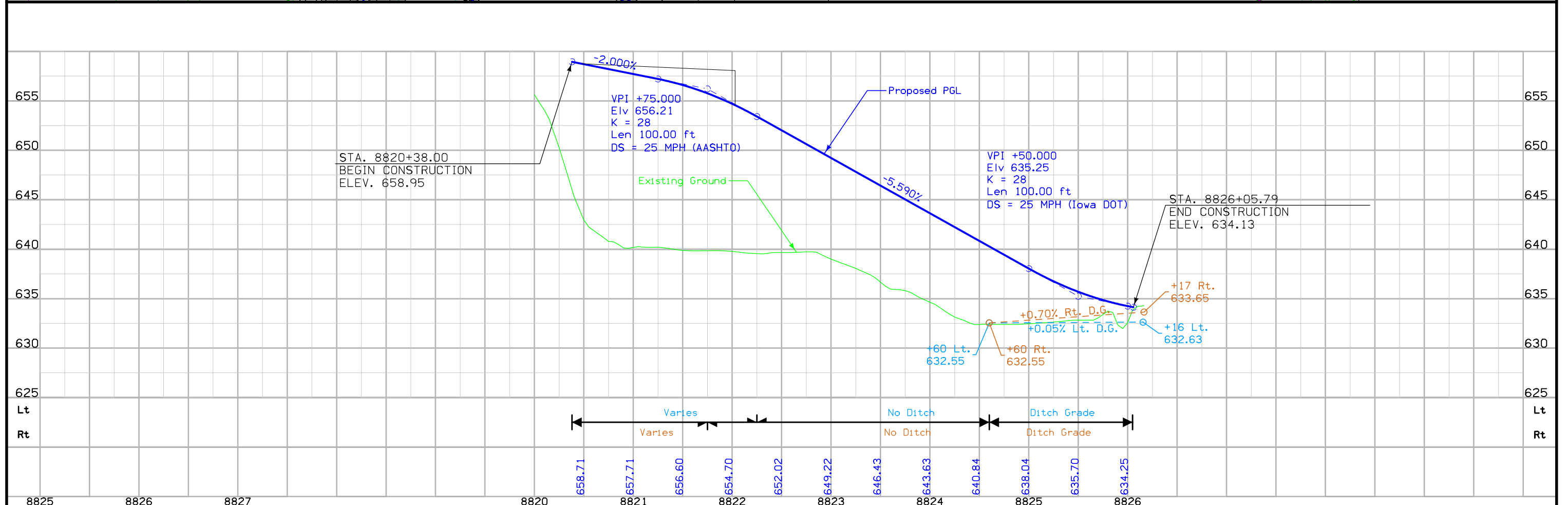
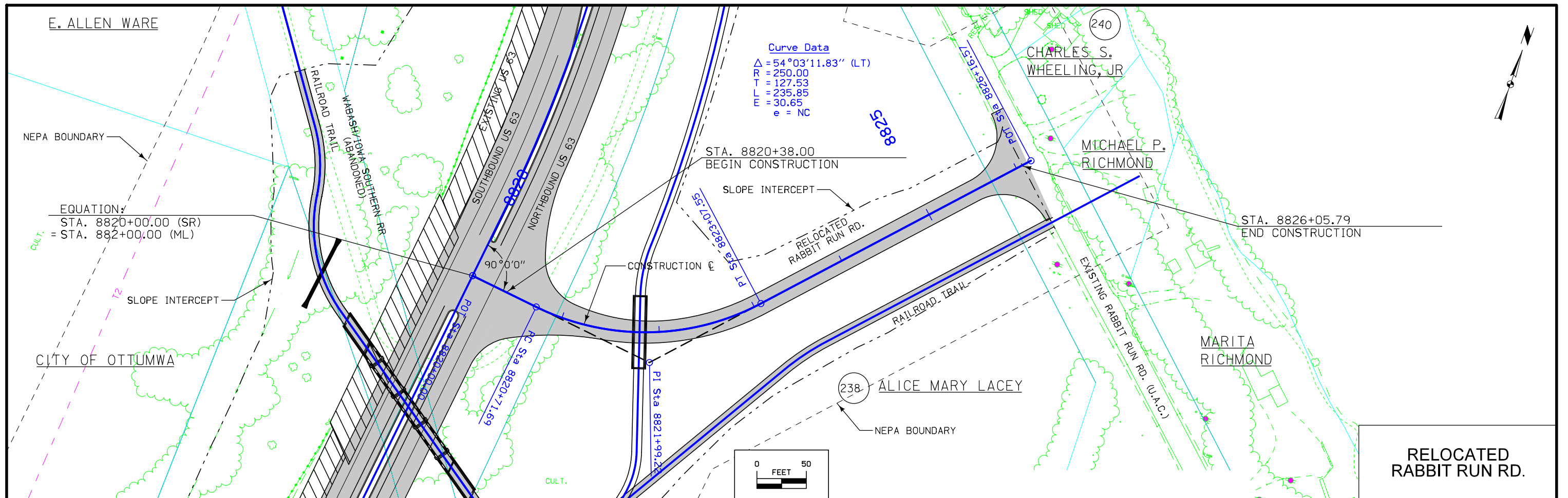


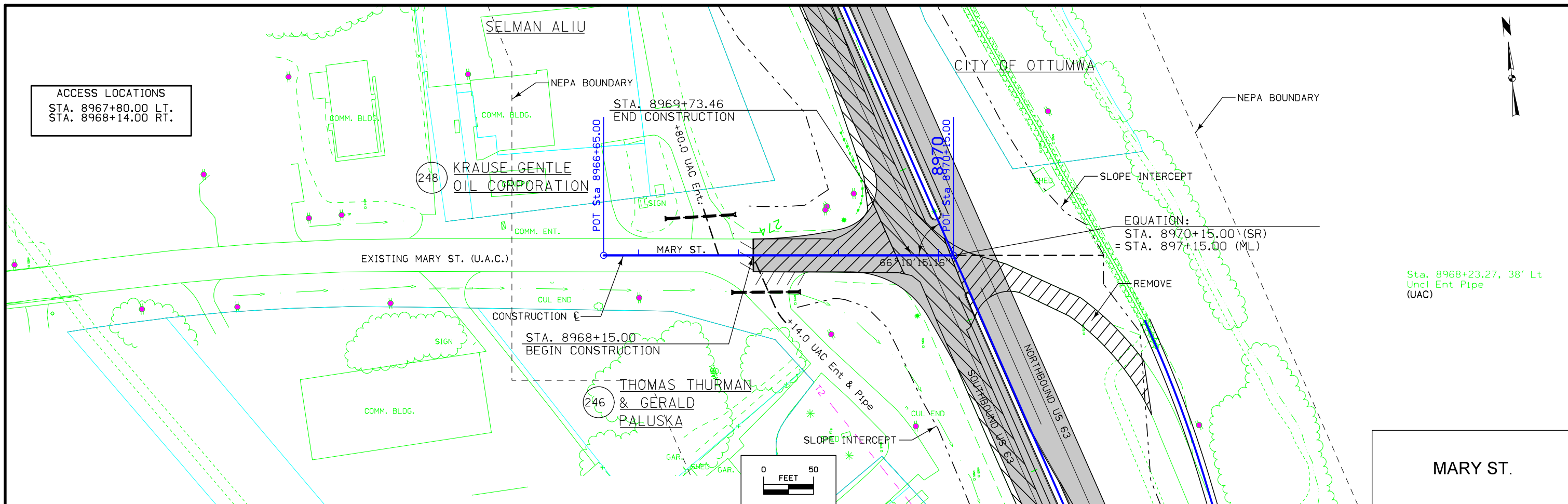


RAILROAD TRAIL

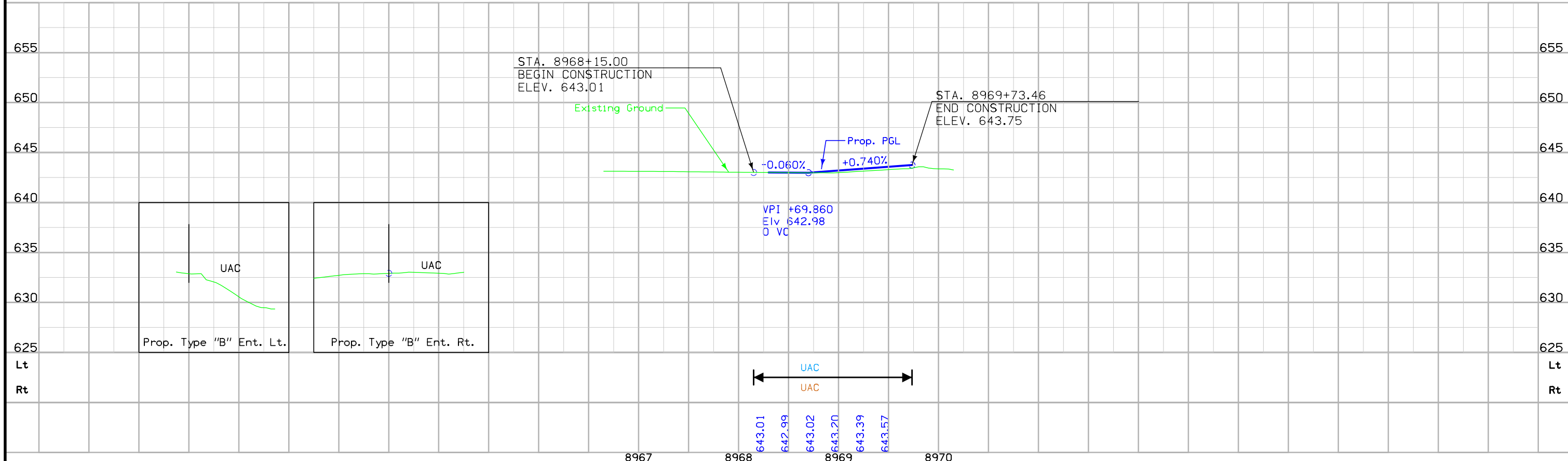
Project 2, Stage 1:  
 Cut = 495 CY  
 Fill + 30% = 824 CY  
 Waste = 329 CY

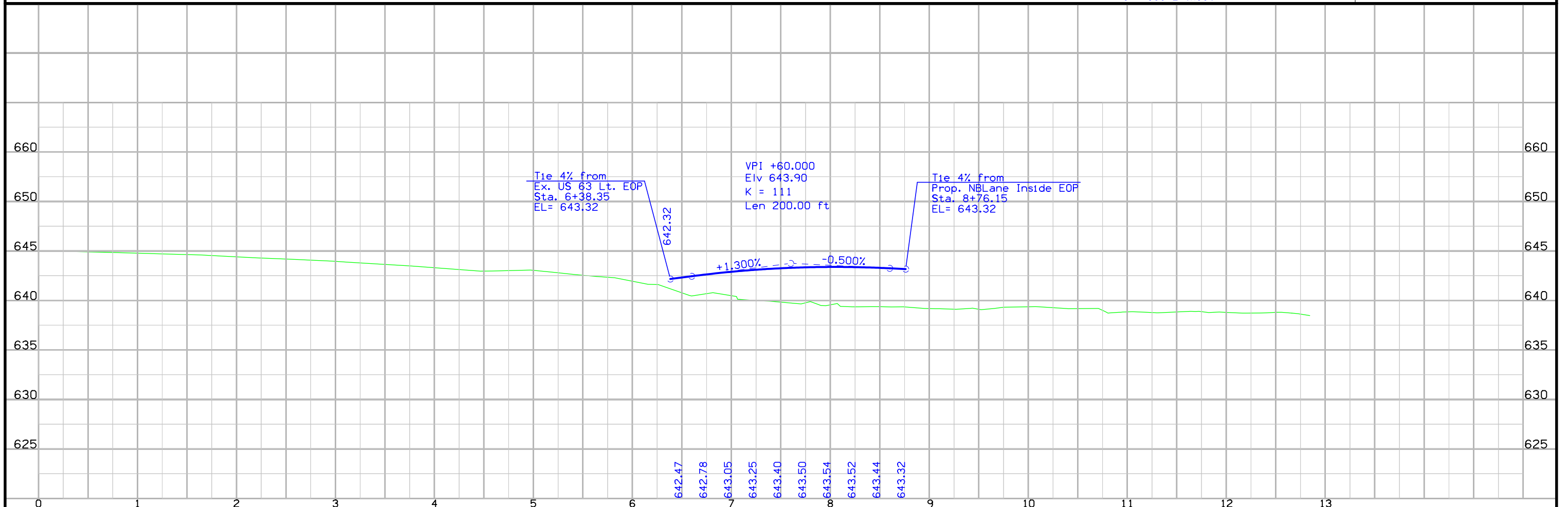
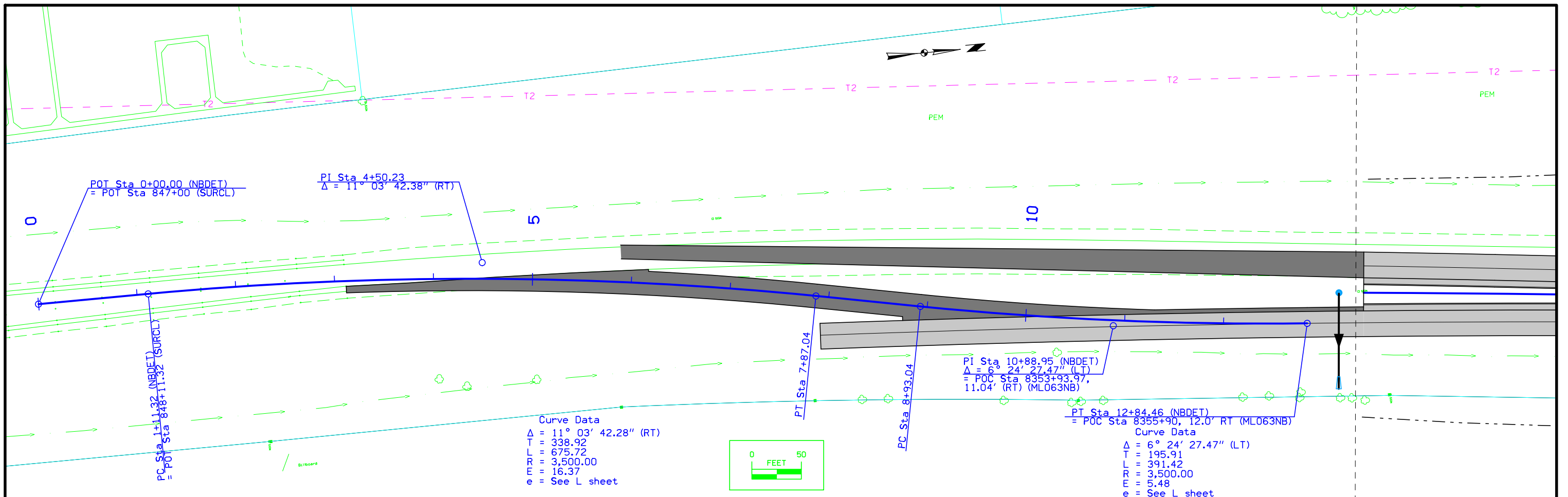


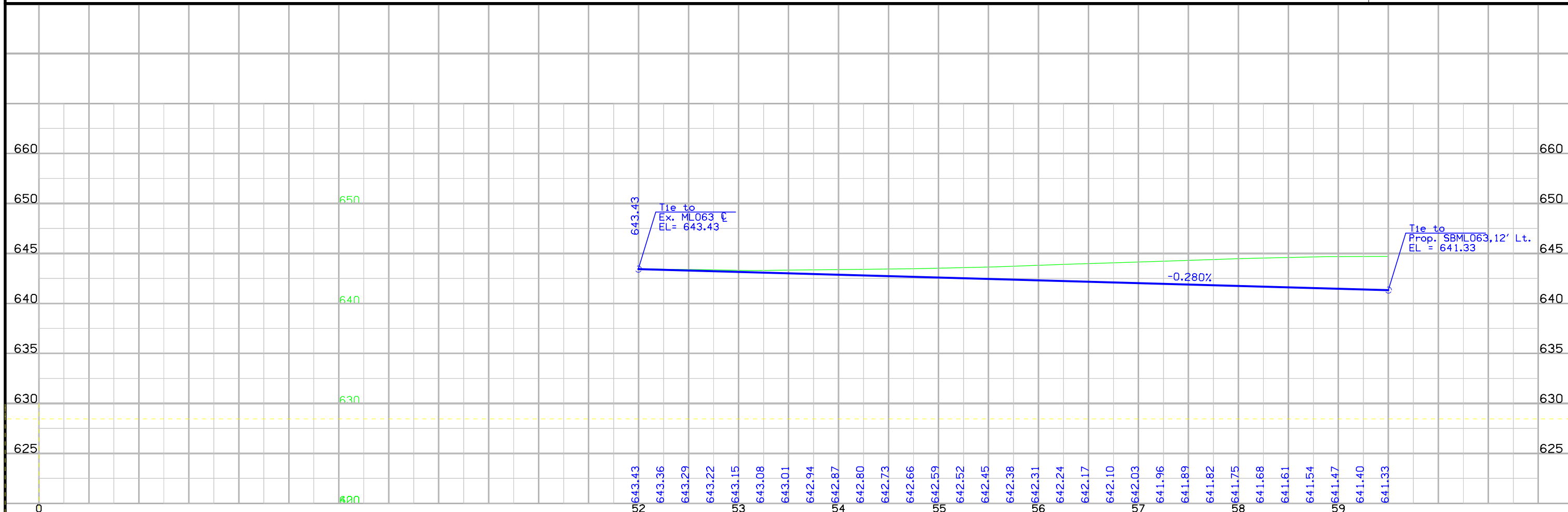
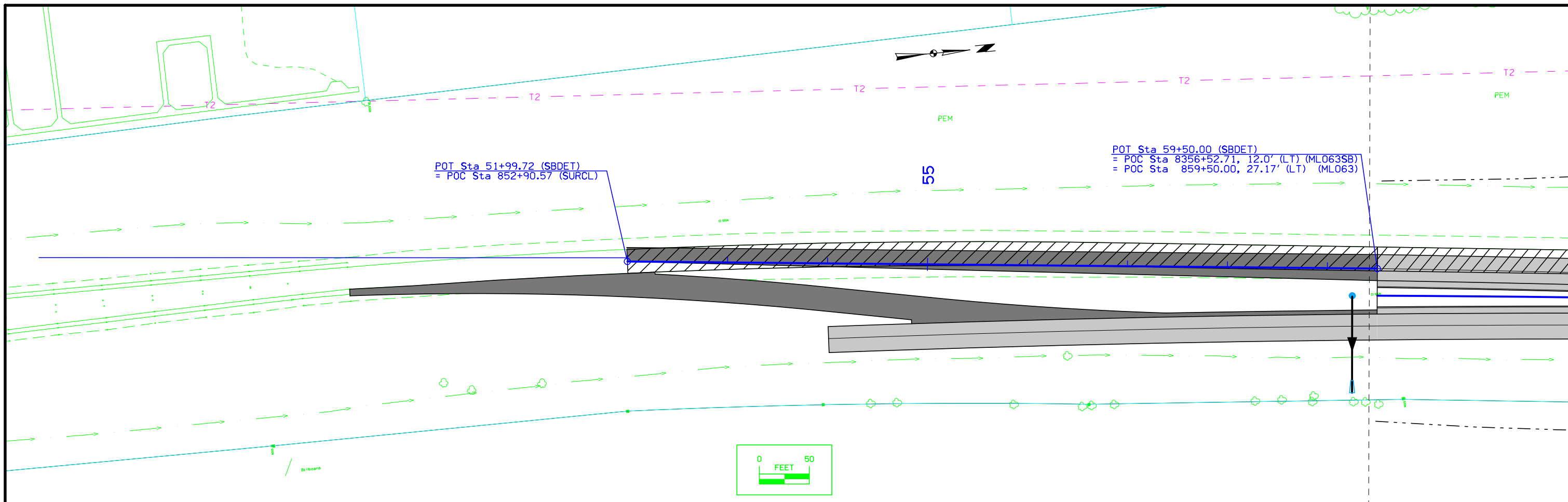




Project 3, Stage 3:  
 Cut = 2,773 CY  
 Fill + 30% = 244 CY  
 Waste = 2,529 CY







HORIZONTAL DATUM INFORMATION:

THE COORDINATES FOR ALL THE GPS POINTS (REFERRED TO AS CONTROL MONUMENTS), WERE PROVIDED BY THE IOWA DEPARTMENT OF TRANSPORTATION SURVEY AND PHOTOGRAMMETRY DEPARTMENT. THE COORDINATES USED ARE ON A MODIFIED STATE PLANE COORDINATE SYSTEM (REFERRED TO AS THE LOCAL PROJECT PLANE COORDINATES). THE CONTROL MONUMENT ELEVATIONS LISTED IN THESE G-SHEETS WERE ESTABLISHED FROM THE BENCHMARK LEVEL LOOP FOR THE PROJECT.

THE SUPPLEMENTAL CONTROL POINTS (REFERRED TO AS CONTROL POINTS), WERE SET FROM THE GPS CONTROL MONUMENTS. ELEVATIONS FOR SUPPLEMENTAL CONTROL WERE ESTABLISHED FROM THE BENCHMARK LEVEL LOOP.

THE ALIGNMENT FOR THIS SURVEY WAS ESTABLISHED BY LOCATING OR SETTING THE AS-BUILT P.I.'s. THIS SURVEY ALIGNMENT RUNS ALONG THE EXISTING CENTERLINE OF US 63.

ALL STATIONS AND OFFSETS ARE BASED ON THE SURVEY ALIGNMENT.

VERTICAL DATUM INFORMATION:

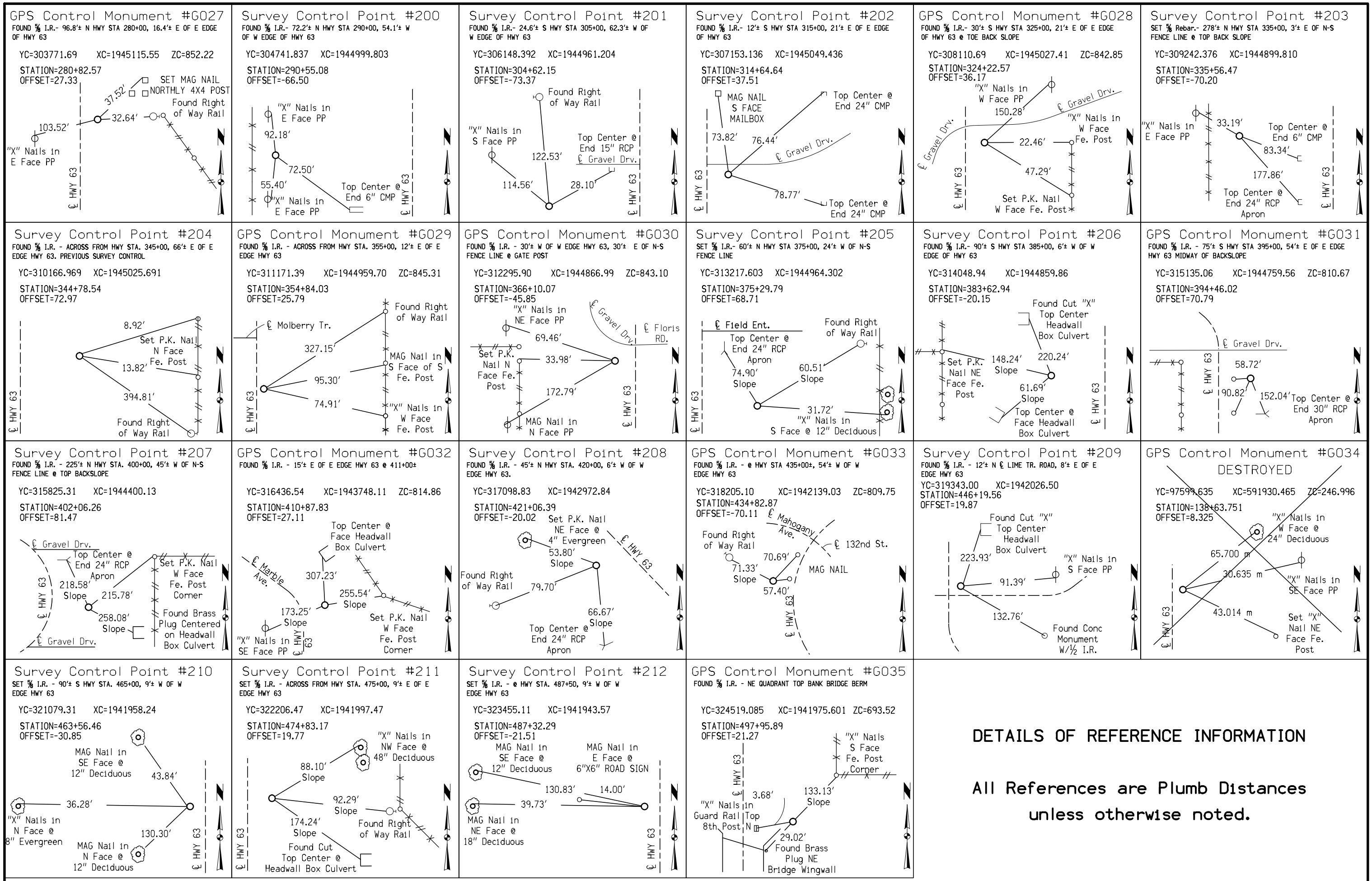
STANDARD ELEVATION BASED ON THE SEA-LEVEL DATUM NAVD 1988. U.S.C.G.S. SECOND ORDER LEVELING.

NOTES:

⊗ DENOTES G.P.S. CONTROL MONUMENTS (GPS???) AND SUPPLEMENTAL CONTROL POINTS (CP ???). FOR CONVERSION OF GPS CONTROL MONUMENT AND CONTROL POINT PROJECT COORDINATES TO STATE PLANE COORDINATES, CONTACT THE SURVEY/PHOTOGRAMMETRIC SECTION OF THE OFFICE OF DESIGN I-DOT. ALL COORDINATES AND DISTANCES ARE IN U.S. SURVEY FEET.

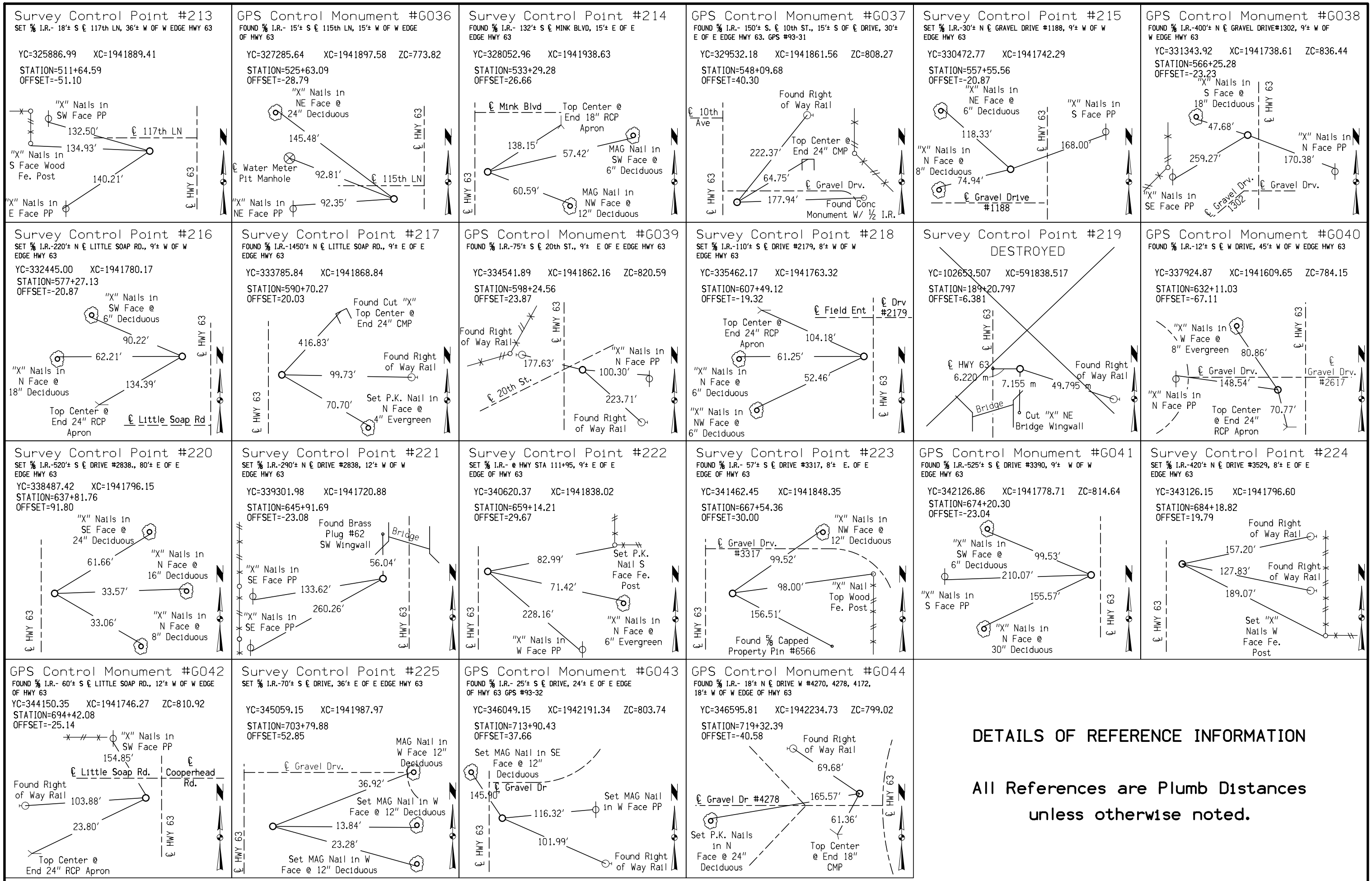
POINT NUMBER	STATION	OFFSET	DESCRIPTION	ELEVATION	POINT NUMBER	STATION	OFFSET	DESCRIPTION	ELEVATION
29	337+97.442	34.15ft Lt.	BRASS PLUG IN CENTERLINE OF 3'2" RCB, WEST SIDE OF HWY 63	821.409	59	620+47.786	18.82ft Lt.	BRASS PLUG IN NORTHWEST CORNER OF HWY 63	784.826
30	352+71.038	61.16ft Lt.	RAILROAD SPIKE IN TRANSFORMER POLE, WEST SIDE OF HWY 63	848.223	60	631+20.258	38.30ft Rt.	X IN CENTERLINE OF 24" RCP EAST SIDE OF HWY 63	776.424
31	358+64.029	79.58ft Lt.	RAILROAD SPIKE IN POWER POLE AT N.W. COR OF HWY 63 & MULBERRY TR	843.548	61	640+24.977	100.97ft Lt.	RAILROAD SPIKE IN POWER POLE, WEST SIDE OF HWY 63	760.423
32	367+15.117	310.90ft Rt.	X ON WEST BOLT OF WEST LEG OF WATER TOWER @ NE COR HWY 63 AND COUNTY ROAD J-15	845.059	62	646+47.571	18.71ft Lt.	BRASS PLUG IN SOUTHWEST CORNER OF HWY 63 BRIDGE	725.564
34	385+83.115	48.41ft Lt.	X IN CENTERLINE OF 36" RCP, WEST SIDE OF HWY 63	788.274	63	656+92.182	81.31ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	745.979
35	392+64.285	63.38ft Lt.	X IN CENTERLINE OF 30" RCP, WEST SIDE OF HWY 63	791.504	64	670+74.187	70.14ft Lt.	BRASS PLUG IN CENTERLINE OF 3'X2' RCB, WEST SIDE OF HWY 63	790.609
36	399+57.384	83.31ft Rt.	BRASS PLUG IN CENTERLINE, 3 FT 2" RCB, EAST SIDE OF HWY 63	787.314					
37	407+19.079	138.28ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	833.762					
					69	705+80.341	80.72ft Lt.	CUT SQUARE IN EAST BASE OF AMOCO SIGN, WEST OF HWY 63	808.155
39	417+76.908	67.15ft Lt.	BRASS PLUG IN CENTERLINE OF 3'X2' RCB, WEST SIDE OF HWY 63	796.526	70	712+58.988	31.80ft Rt.	X IN CENTERLINE OF 2' SQ RCB, EAST SIDE OF HWY 63	802.089
40	428+29.140	46.56ft Rt.	X IN CENTERLINE 30" RCP, EAST SIDE OF HWY 63	793.466	71	717+13.925	68.02ft Lt.	RAILROAD SPIKE IN POWER POLE, WEST SIDE OF HWY 63	806.829
41	439+74.486	61.51ft Rt.	X IN CENTERLINE OF 24" RCP, EAST SIDE OF HWY 63	793.190	72	724+15.685	79.58ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	790.938
43	455+52.753	100.76ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	815.112	73	728+37.525	84.40ft Rt.	BRASS PLUG IN CENTERLINE OF 3'X2' RCB, EAST SIDE OF HWY 63	744.197
45	472+15.181	101.50ft Lt.	BRASS PLUG IN CENTERLINE 4 FT 2" RCB, WEST SIDE OF HWY 63	725.517	74	734+57.389	60.88ft Lt.	X IN CENTERLINE OF 24" RCP, WEST SIDE OF HWY 63	733.335
					75	745+95.763	97.42ft Lt.	RAILROAD SPIKE IN TRANSFORMER POLE, WEST SIDE OF HWY 63	694.792
47	494+79.901	18.80ft Lt.	BRASS PLUG IN SOUTHWEST CORNER OF BRIDGE	695.149	76	755+38.146	18.76ft Lt.	BRASS PLUG IN NORTHWEST CORNER OF HWY 63 BRIDGE OVER VILLAGE CREEK	666.625
					77	765+08.715	81.78ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	678.466
49	520+59.496	101.38ft Lt.	RAILROAD SPIKE IN POWER POLE, WEST SIDE OF HWY 63	768.844					
50	528+83.828	64.42ft Rt.	X IN CENTERLINE OF 30" RCP, EAST SIDE OF HWY 63	763.294	79	783+53.301	78.47ft Lt.	RAILROAD SPIKE IN POWER POLE, WEST SIDE HWY 63	760.558
					80	790+95.879	116.76ft Lt.	RAILROAD SPIKE IN POWER POLE @ SOUTHWEST CORNER HWY 63 AND PAVED ROAD TO THE WEST	780.812
52	549+35.028	147.94ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	810.937	81	796+86.612	63.96ft Lt.	BRASS PLUG IN CENTERLINE OF 3'X2' RCB, WEST SIDE OF HWY 63	765.301
53	558+86.808	41.87ft Rt.	BRASS PLUG IN CENTERLINE OF 3'X2' RCB, EAST SIDE OF HWY 63	820.960	82	806+55.554	130.01ft Lt.	RAILROAD SPIKE IN POWER POLE, WEST SIDE OF HWY 63	763.410
54	564+85.789	75.30ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	836.931	85	838+80.807	147.42ft Rt.	RAILROAD SPIKE IN POWER POLE @ SOUTHEAST CORNER OF HWY 63 AND EAST-WEST PAVED ROAD	643.969
55	572+96.034	60.18ft Rt.	RAILROAD SPIKE IN POWER POLE, EAST SIDE OF HWY 63	824.022	87	871+90.898	4.63ft Lt.	CUT SQUARE IN SOUTHEAST CORNER OF HWY 63 BRIDGE	647.436
56	583+52.282	89.89ft Lt.	BRASS PLUG IN CENTERLINE OF 4'X3' RCB, WEST SIDE OF HWY 63	773.333	88	883+51.211	39.97ft Lt.	BRASS PLUG @ NORTHWEST CORNER OF HWY 63 BRIDGE OVER RAILROAD TRACKS	669.179
57	594+85.268	37.10ft Rt.	X IN CENTERLINE OF 24" RCP, EAST SIDE OF HWY 63	813.312	89	898+88.685	89.16ft Lt.	RAILROAD SPIKE IN POWER POLE @ NORTHWEST CORNER OF HWY 63 AND MARY STREET	640.092
58	602+25.191	65.54ft Lt.	BRASS PLUG IN CENTERLINE OF 3'X2' RCB, WEST SIDE OF HWY 63	803.802					





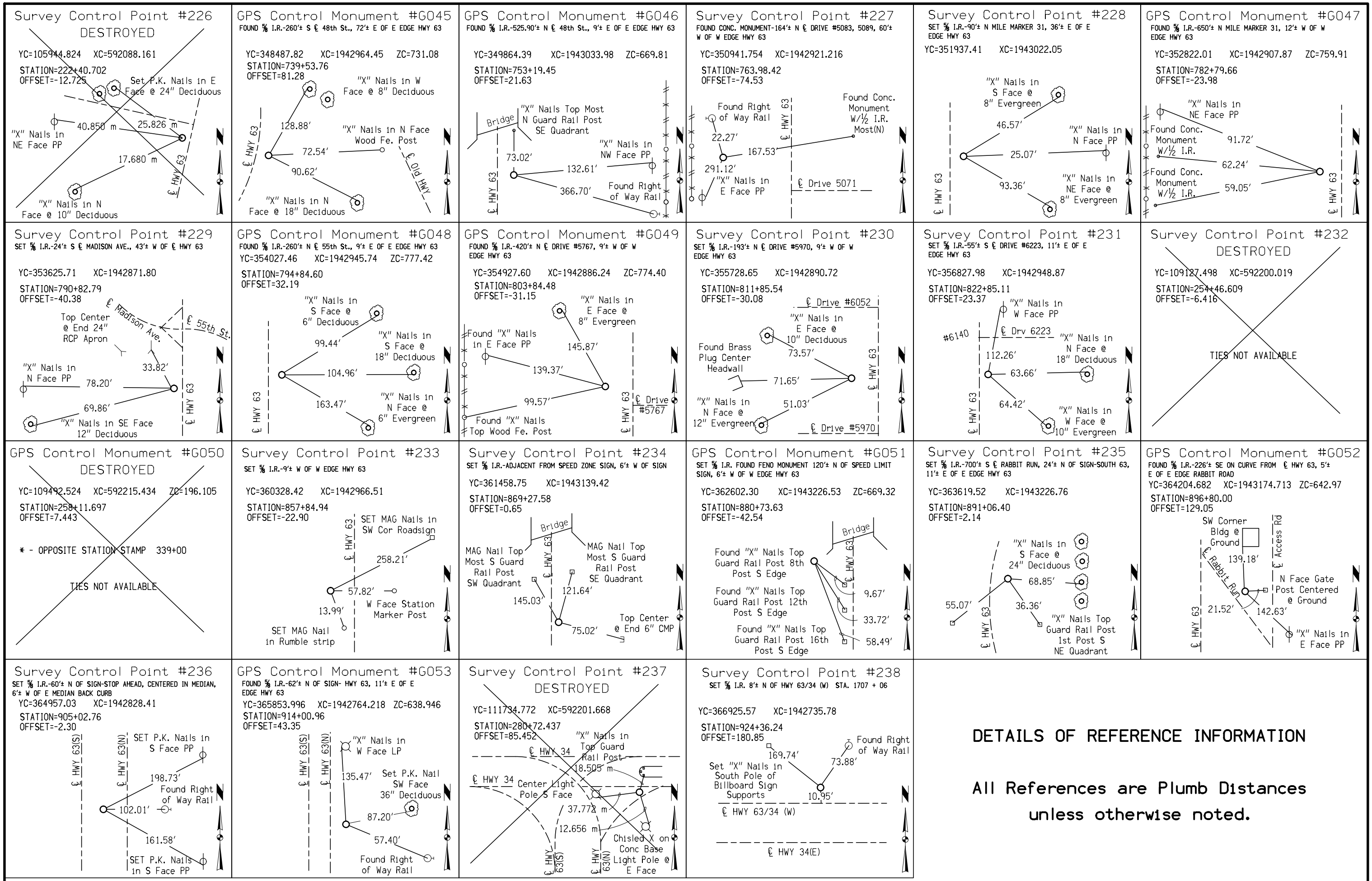
**DETAILS OF REFERENCE INFORMATION**

**All References are Plumb Distances unless otherwise noted.**



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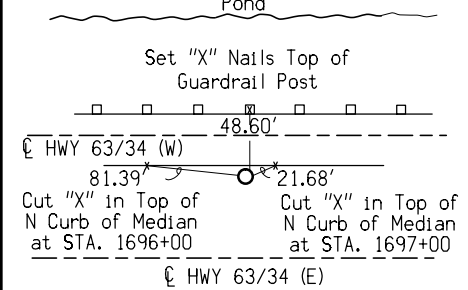


**DETAILS OF REFERENCE INFORMATION**

**All References are Plumb Distances unless otherwise noted.**

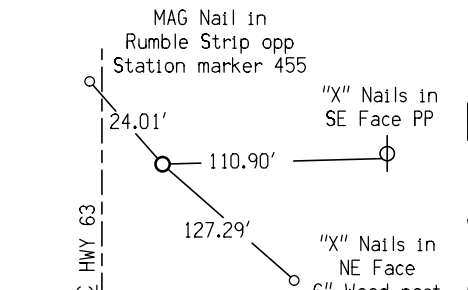
**Survey Control Point #239**

SET  $\frac{1}{8}$  I.R. 5'± N OF N CURB (HWY 63/34 EASTBOUND)  
 STA. 696480  
 YC=367697.18 XC=1942060.97  
 STATION=934+11.15  
 OFFSET=-2.89



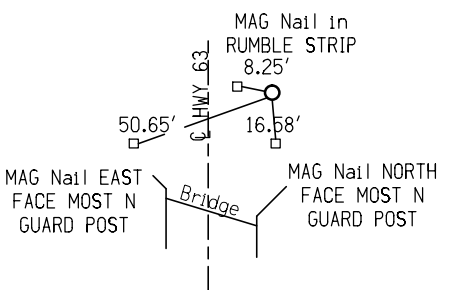
**Survey Control Point #250**

SET  $\frac{1}{8}$  I.R. 12'± WEST OF HWY 63  
 YC=320192.87 XC=1942025.96  
 STATION=454+69.38  
 OFFSET=27.91



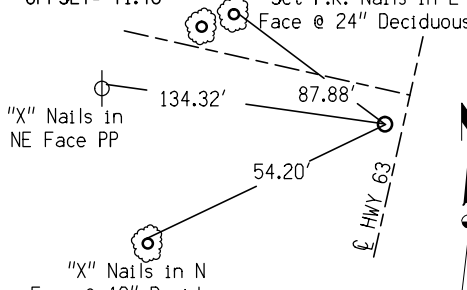
**Survey Control Point #251**

SET  $\frac{1}{8}$  I.R. 12'± WEST OF HWY 63  
 YC=336888.61 XC=1941718.11  
 STATION=621+75.70  
 OFFSET=21.52



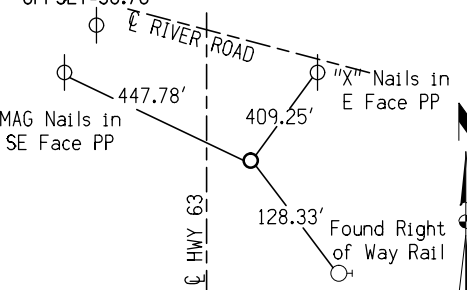
**Survey Control Point #252**

SET  $\frac{1}{8}$  I.R.-25'± S  $\frac{1}{4}$  48th St., 18'± W OF W EDGE HWY 63  
 YC=347582.01 XC=1942541.15  
 STATION=729+62.56  
 OFFSET=-41.46



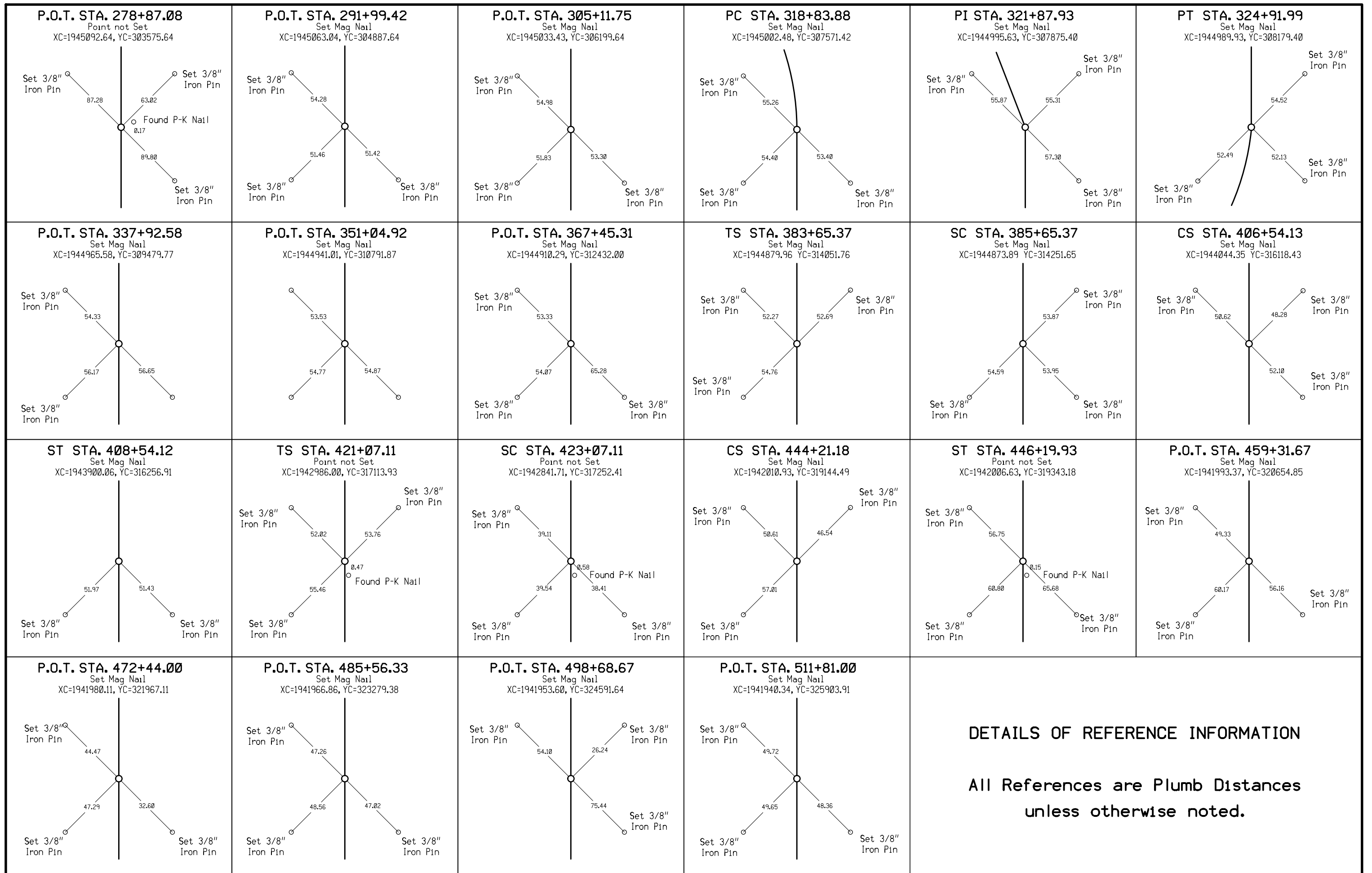
**Survey Control Point #253**

SET  $\frac{1}{8}$  I.R.-25'± E  $\frac{1}{4}$  HWY 63  
 YC=358027.46 XC=1942969.38  
 STATION=834+84.67  
 OFFSET=38.78



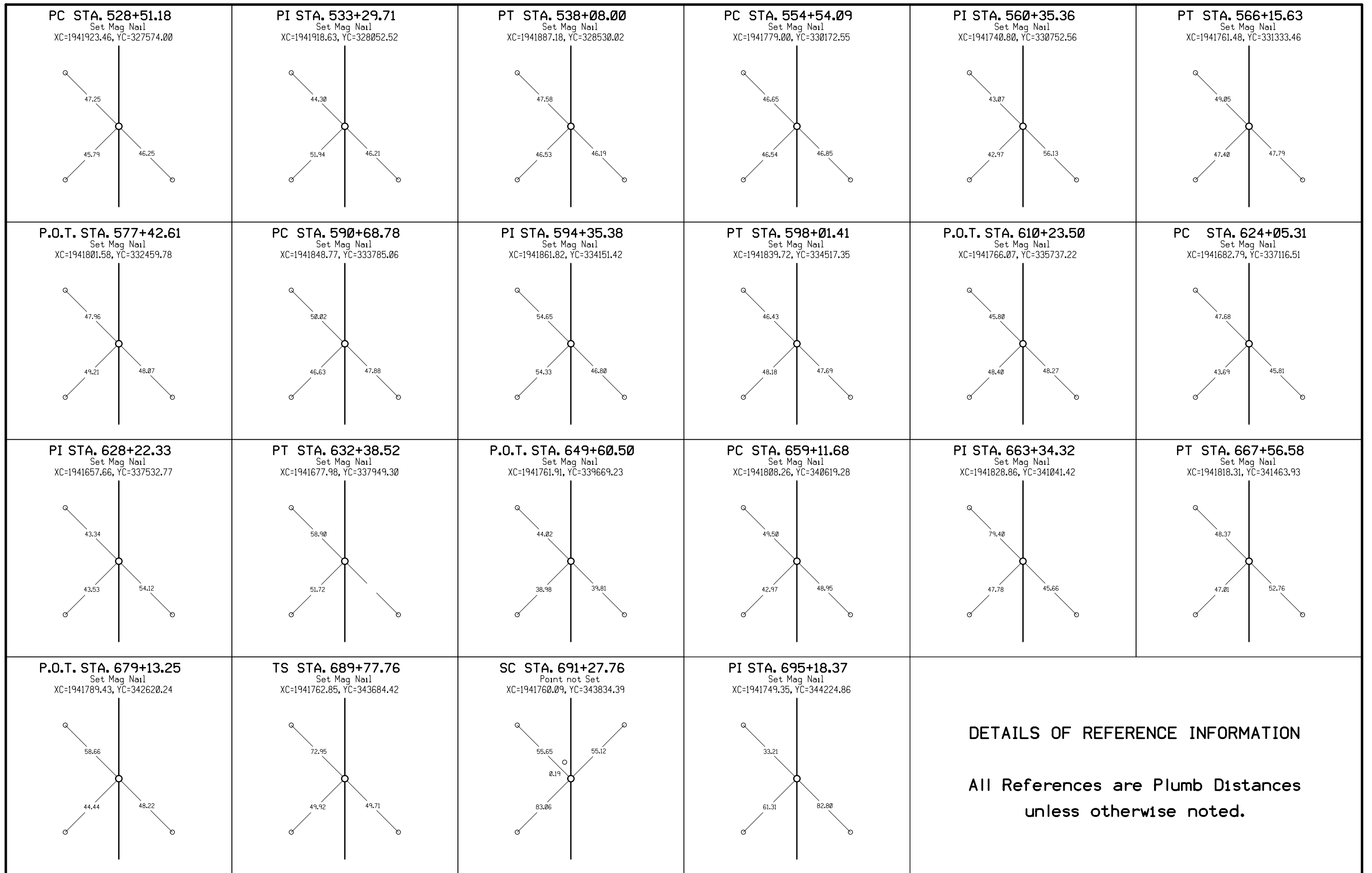
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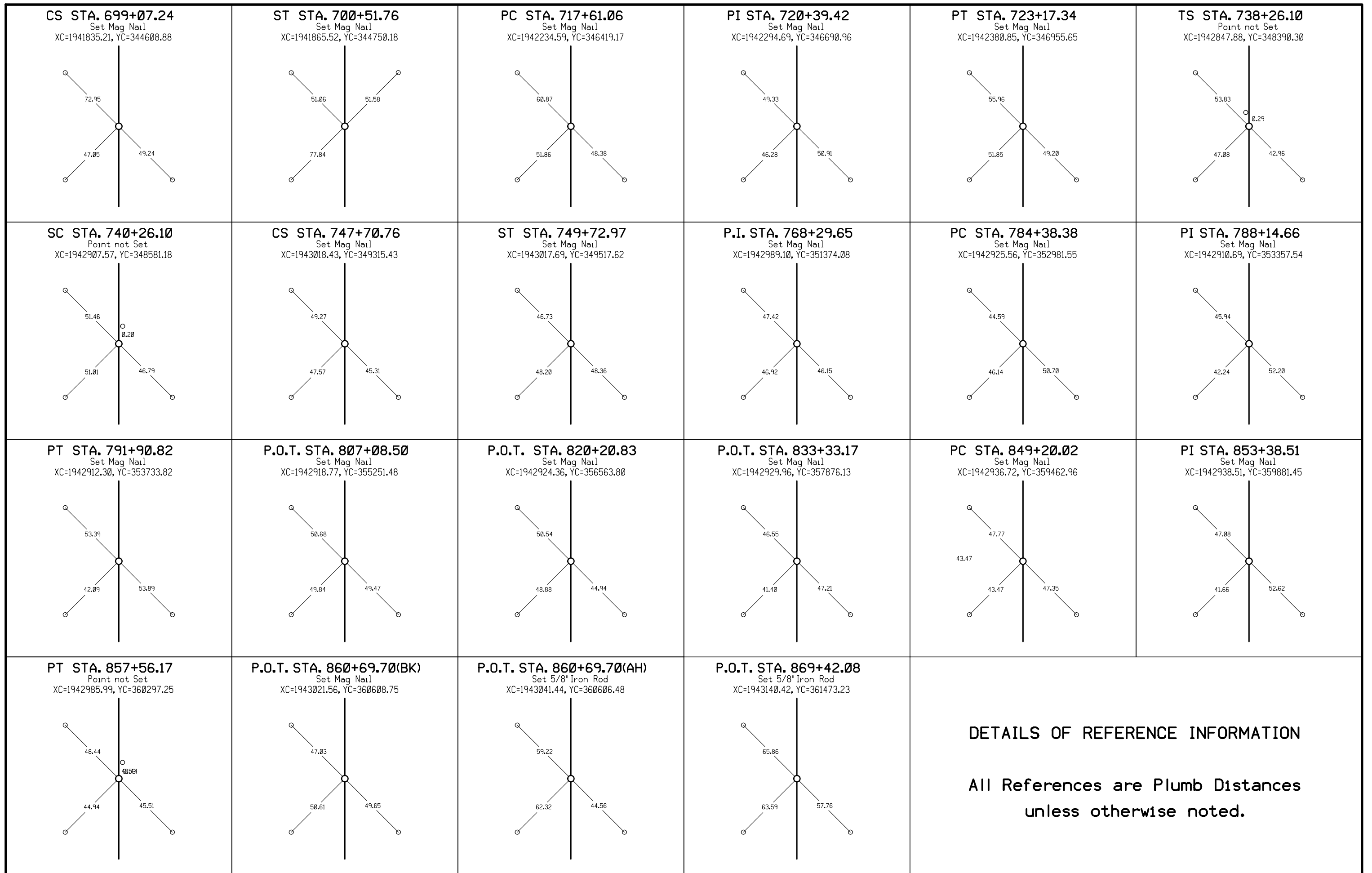
All References are Plumb Distances unless otherwise noted.



**DETAILS OF REFERENCE INFORMATION**

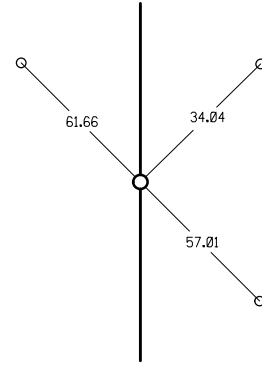
**All References are Plumb Distances unless otherwise noted.**





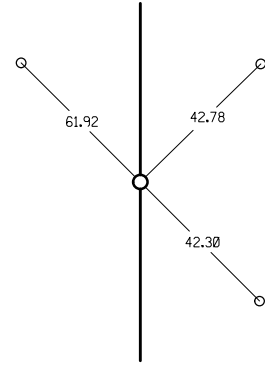
PC STA. 883+50.05

Set 5/8" Iron Rod  
XC=1943300.17, YC=362872.10



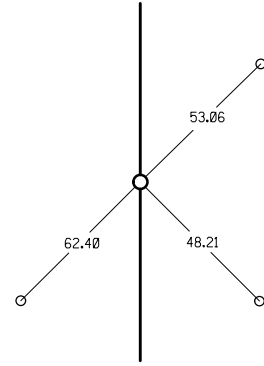
PT STA. 890+90.80

Set 5/8" Iron Rod  
XC=1943229.42, YC=363604.00



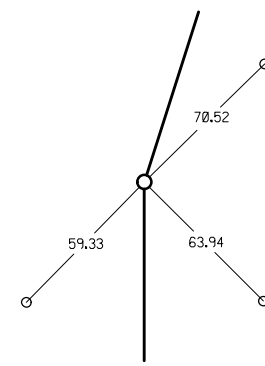
PC STA. 901+01.05

Set Survey Marker Nail  
XC=1942924.66, YC=364567.19



PI STA. 903+70.90

Set 5/8" Iron Rod  
XC=1942843.25, YC=364824.48



DETAILS OF REFERENCE INFORMATION

All References are Plumb Distances  
unless otherwise noted.



**ALIGNMENT COORDINATES**

**101-16**  
**10-20-09**

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
63100	US 63	328+76.75	308,546.62	1,944,844.90															
63101	US 63						385+61.29	314,230.13	1,944,766.48	397+26.30	315,394.93	1,944,754.26	407+65.24	316,189.29	1,943,902.07				
63102	US 63						420+37.09	317,056.50	1,942,971.72	432+15.59	317,860.06	1,942,109.65	442+63.88	319,038.50	1,942,096.96				
63103	US 63						527+44.07	327,518.20	1,942,005.65	532+87.32	328,061.42	1,941,999.80	538+30.30	328,603.51	1,941,964.47				
63104	US 63						554+67.11	330,236.86	1,941,858.03	559+97.17	330,765.80	1,941,823.56	565+26.33	331,295.52	1,941,842.53				
63105	US 63						584+88.47	333,256.40	1,941,912.76	590+45.45	333,813.02	1,941,932.69	596+01.56	334,368.96	1,941,898.74				
63106	US 63						621+01.07	336,863.83	1,941,746.39	626+49.95	337,411.69	1,941,712.94	631+97.11	337,958.98	1,941,754.62				
63107	US 63						652+54.38	340,010.31	1,941,910.85	658+00.94	340,555.29	1,941,952.36	663+46.68	341,101.75	1,941,941.99				
63108	US 63						691+58.47	343,913.04	1,941,888.66	696+92.53	344,447.01	1,941,878.53	702+21.63	344,968.51	1,941,993.66				
63109	US 63						718+06.56	346,516.18	1,942,335.35	723+45.59	347,042.53	1,942,451.55	728+83.76	347,555.00	1,942,618.66				
63110	US 63						733+63.03	348,010.66	1,942,767.25	738+99.93	348,521.11	1,942,933.70	744+28.04	349,058.01	1,942,934.76				
63111	US 63						839+75.16	358,605.11	1,942,953.62	851+53.75	359,783.70	1,942,955.95	863+29.62	360,953.86	1,943,096.69				
63112	US 63						882+75.68	362,885.99	1,943,329.07	886+03.62	363,211.59	1,943,368.24	889+21.40	363,523.82	1,943,267.95				
63113	US 63						901+64.56	364,707.43	1,942,887.79	903+23.59	364,858.84	1,942,839.16	904+81.64	365,016.75	1,942,820.34				
63114	US 63						914+19.14	365,947.66	1,942,709.40	915+64.13	366,091.64	1,942,692.24	917+07.12	366,234.56	1,942,716.68				
63115	US 63	918+44.91	366,370.38	1,942,739.91															
64200	US 63 NB	8330+50.00	357,979.87	1,942,993.39															
64201	US 63 NB						8339+19.65	358,849.52	1,942,995.11	8350+98.24	360,028.11	1,942,997.43	8362+74.11	361,198.27	1,943,138.17				
64202	US 63 NB						8379+72.56	362,884.56	1,943,340.99	8383+03.12	363,212.76	1,943,380.46	8386+23.44	363,527.49	1,943,279.38				
64203	US 63 NB						8398+84.93	364,728.55	1,942,893.61	8400+42.80	364,878.85	1,942,845.33	8401+99.70	365,035.62	1,942,826.65				
64204	US 63 NB						8411+18.70	365,948.16	1,942,717.90	8412+62.53	366,090.98	1,942,700.88	8414+04.38	366,232.76	1,942,725.12				
64205	US 63 NB	8415+42.52	366,368.92	1,942,748.41															
65100	US 63 SB	8330+50.00	357,980.04	1,942,911.39															
65101	US 63 SB						8334+30.66	358,360.70	1,942,912.14	8346+09.25	359,539.29	1,942,914.47	8357+85.12	360,709.44	1,943,055.21				
65102	US 63 SB						8379+78.80	362,887.43	1,943,317.16	8383+04.12	363,210.42	1,943,356.01	8386+19.35	363,520.15	1,943,256.53				
65103	US 63 SB						8398+44.20	364,686.31	1,942,881.97	8400+04.38	364,838.82	1,942,832.98	8401+63.57	364,997.88	1,942,814.03				
65104	US 63 SB						8411+19.58	365,947.17	1,942,700.90	8412+65.73	366,092.29	1,942,683.60	8414+09.86	366,236.35	1,942,708.24				
65105	US 63 SB	8415+47.30	366,371.83	1,942,731.40															
10100	REL. MULBERRY TR.	3474+00.00	310,556.73	1,943,229.26															
10101	REL. MULBERRY TR.	3482+17.56	310,571.26	1,944,046.70															
10102	REL. MULBERRY TR.	3490+17.00	310,586.51	1,944,845.99															
11100	FLORIS RD./J-15	3660+42.00	312,311.19	1,944,813.09															
11101	FLORIS RD./J-15	3663+40.29	312,316.88	1,945,111.32															
11102	FLORIS RD./J-15	3664+81.79	312,321.80	1,945,252.74															
11103	FLORIS RD./J-15	3665+98.02	312,324.57	1,945,368.94															
11200	138TH ST.	3953+05.00	315,352.29	1,944,907.03															
11201	138TH ST.	3953+73.43	315,346.73	1,944,975.24															
11202	138TH ST.	3954+95.00	315,344.13	1,945,096.78															
11300	RELOC.MARBLE AVE.	4118+25.00	316,356.48	1,943,429.38															
11301	RELOC.MARBLE AVE.	4120+25.00	316,502.78	1,943,565.75															
11501	MAHOGANY AVE.	4344+73.06	317,863.07	1,942,029.22															
11502	MAHOGANY AVE.						4348+34.30	318,224.27	1,942,023.76	4349+11.99	318,301.95	1,942,022.58	4349+66.40	318,322.29	1,942,097.56				
11503	MAHOGANY AVE.	4350+65.00	318,348.11	1,942,192.73															
11400	132ND ST.	4350+65.00	318,348.11	1,942,192.73															
11400	132ND ST.						4351+62.00	318,373.50	1,942,286.34	4351+98.06	318,382.95	1,942,321.15	4352+29.76	318,363.12	1,942,351.27				
11401	132ND ST.						4352+49.76	318,352.12	1,942,367.98	4353+69.01	318,286.56	1,942,467.59	4354+64.82	318,343.01	1,942,572.62				
11403	132ND ST.	4356+36.46	318,424.26	1,942,723.81															
11610	RELOC. LIME TR.	4496+98.87	319,331.81	1,941,011.39															
11611	RELOC. LIME TR.						4499+23.87	319,331.28	1,941,236.39	4502+39.42	319,330.54	1,941,551.94	4504+86.85	319,615.07	1,941,688.40				
11612	RELOC. LIME TR.						4506+60.45	319,771.60	1,941,763.47	4508+15.94	319,911.80	1,941,830.71	4509+38.66	319,913.48	1,941,986.19				
11613	RELOC. LIME TR.						4512+18.73	319,916.49	1,942,266.25	4513+44.40	319,917.84	1,942,391.90	4514+64.96	319,978.45	1,942,501.99				
11614	RELOC. LIME TR.						4517+33.95	320,108.17	1,942,737.63	4518+71.89	320,174.69	1,942,858.48	4520+06.79	320,193.86	1,942,995.08				
11615	RELOC. LIME TR.	4520+66.74	320,202.19	1,943,054.45															
13130	117TH LANE	5108+01.00	325,906.70	1,941,788.99															
13131	117TH LANE	5110+35.00	325,909.22	1,942,022.98															
13120	115TH LANE	5247+96.02	327,292.45	1,941,774.55															
13121	115TH LANE						5248+70.77	327,301.06	1,941,848.80	5248+83.87	327,302.57	1,941,861.81	5248+96.94	327,302.71	1,941,874.90				
13122	115TH LANE	5250+30.00	327,304.14	1,942,007.96															
13100	114TH LANE	5337+89.79	328,136.68	1,941,769.00															
13101	114TH LANE						5338+07.10	328,139.00	1,941,786.15	5338+37.11	328,143.02	1,941,815.89	5338+64.19	328,166.44	1,941,834.65				
13102	114TH LANE						5338+64.19	328,166.44	1,941,834.65	5338+98.17	328,192.96	1,941,855.89	5339+28.00	328,194.49	1,941,889.83				
13103	114TH LANE	5340+25.00	328,198.83	1,941,986.73															
11710	RELOC. MINK BLVD.	5340+25.00	328,198.83	1,941,986.73															
11710	RELOC. MINK BLVD.						5341+28.48	328,203.47	1,942,090.10	5342+86.76	328,210.56	1,942,248.23	5344+31.52	328,112.48	1,942,372.47				
11712	RELOC. MINK BLVD.	5349+43.84	327,795.05	1,942,774.60															
11800	10TH ST.	5496+86.05	329,823.08	1,941,492.21															
11801	10TH ST.	5500+78.00	329,848.57	1,941,883.33															
11900	NATURE CENTER DR.	5620+00.00	330,969.26	1,941,835.92															
11901	NATURE CENTER DR.						5621+14.95	330,968.72	1,941,950.87	5621+82.85	330,968.40	1,942,018.77	5622+39.36	330,911.26	1,942,055.46				
11902	NATURE CENTER DR.	5624+00.00	330,776.09	1,942,142.26															
12000	LITTLE SOAP RD.	5729+99.93	332,556.68	1,940,958.72															
12001	LITTLE SOAP RD.						5736+03.31	332,252.31	1,941,479.72	5737+29.10	332,188.86	1,941,588.33	5738+49.78	332,184.35	1,941,714.04				
12002	LITTLE SOAP RD.	5740+10.00	332,178.62	1,941,874.16															

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
12110	RELOC. 20TH ST.	5959+24.76	334,490.31	1,940,767.42															
12111	RELOC. 20TH ST.						5964+24.76	334,469.63	1,941,266.99	5965+57.75	334,464.13	1,941,399.86	5966+90.04	334,482.09	1,941,531.63				
12112	RELOC. 20TH ST.						5967+92.24	334,495.89	1,941,632.90	5968+66.77	334,505.96	1,941,706.73	5969+41.22	334,510.50	1,941,781.12				
12113	RELOC. 20TH ST.						5971+47.00	334,523.04	1,941,986.52	5972+30.41	334,528.13	1,942,069.78	5973+10.77	334,570.22	1,942,141.79				
12114	RELOC. 20TH ST.						5974+99.77	334,665.58	1,942,304.97	5976+32.30	334,732.45	1,942,419.38	5977+58.87	334,733.88	1,942,551.90				
12116	RELOC. 20TH ST.	5979+64.36	334,736.08	1,942,757.39															
12210	CO. RD. H-47	6935+39.53	344,003.69	1,941,465.22															
12211	CO. RD. H-47	6935+97.17	344,039.07	1,941,510.72															
12212	CO. RD. H-47						6937+00.15	344,109.54	1,941,585.81	6938+15.44	344,188.44	1,941,669.87	6939+18.49	344,183.80	1,941,785.07				
12213	CO. RD. H-47						6941+22.00	344,175.61	1,941,988.42	6941+67.87	344,173.76	1,942,034.25	6942+13.22	344,183.79	1,942,079.01				
12214	CO. RD. H-47						6943+78.42	344,219.90	1,942,240.22	6945+08.26	344,248.28	1,942,366.91	6946+32.48	344,211.44	1,942,491.41				
12216	CO. RD. H-47	6949+12.92	344,131.85	1,942,760.32															
12300	RELOC. 43RD ST.	7290+00.00	347,570.45	1,942,623.70			7290+97.00	347,540.37	1,942,715.92	7291+41.52	347,526.57	1,942,758.24	7291+82.53	347,542.63	1,942,799.76				
12301	RELOC. 43RD ST.						7292+62.60	347,571.51	1,942,874.44	7293+28.73	347,595.37	1,942,936.12	7293+91.91	347,585.60	1,943,001.53				
12302	RELOC. 43RD ST.																		
12303	RELOC. 43RD ST.	7294+30.96	347,579.84	1,943,040.15															
12400	48TH ST.	7450+80.75	349,210.72	1,942,935.06															
12401	48TH ST.	7452+68.31	349,210.35	1,943,122.63															
12402	48TH ST.	7453+89.52	349,210.32	1,943,243.83															
12403	48TH ST.	7455+31.23	349,212.13	1,943,385.53															
12404	48TH ST.	7455+95.20	349,211.82	1,943,449.50															
12500	50TH ST.	7583+00.00	350,539.83	1,942,226.70															
12501	50TH ST.	7586+95.06	350,541.59	1,942,621.75															
12502	50TH ST.	7590+11.00	350,540.97	1,942,937.69															
12700	REL. MADISON AVE.	7890+64.16	354,360.50	1,942,325.54															
12701	REL. MADISON AVE.						7892+65.60	354,196.27	1,942,442.20	7893+73.39	354,108.40	1,942,504.62	7894+80.03	354,007.73	1,942,543.13				
12702	REL. MADISON AVE.						7896+50.13	353,848.85	1,942,603.90	7898+21.80	353,688.51	1,942,665.24	7899+51.00	353,688.17	1,942,836.91				
12702	REL. MADISON AVE.	7900+58.00	353,687.96	1,942,943.91															
12600	RELOC. 55TH ST.	7900+58.00	353,687.96	1,942,943.91															
12601	RELOC. 55TH ST.						7901+55.00	353,687.77	1,943,040.91	7902+97.99	353,687.49	1,943,183.90	7903+80.74	353,544.51	1,943,185.61				
12602	RELOC. 55TH ST.						7905+17.43	353,407.83	1,943,187.25	7907+52.89	353,172.39	1,943,190.08	7908+95.15	353,161.12	1,943,425.26				
12603	RELOC. 55TH ST.	7908+95.15	353,161.12	1,943,425.26															
12807	REL. CO. RD. J-12	8378+06.42	358,736.76	1,941,803.24															
12800	REL. CO. RD. J-12	8381+21.57	358,738.81	1,942,118.38															
12800	REL. CO. RD. J-12						8382+37.69	358,737.92	1,942,234.50	8384+35.12	358,736.41	1,942,431.92	8386+23.78	358,637.90	1,942,603.01				
12801	REL. CO. RD. J-12						8387+72.88	358,563.49	1,942,732.22	8388+39.45	358,530.28	1,942,789.91	8389+03.00	358,530.15	1,942,856.47				
12802	REL. CO. RD. J-12						8391+24.00	358,529.71	1,943,077.47	8392+15.39	358,529.53	1,943,168.87	8393+06.28	358,512.78	1,943,258.71				
12803	REL. CO. RD. J-12						8394+11.28	358,493.55	1,943,361.93	8395+88.75	358,461.03	1,943,536.40	8397+65.30	358,459.75	1,943,713.87				
12806	REL. CO. RD. J-12	8399+67.49	358,458.28	1,943,916.06															
75100	RAILROAD TRAIL	8795+82.41	363,037.57	1,943,048.75															
75101	RAILROAD TRAIL	8797+02.76	362,938.39	1,943,116.94															
75102	RAILROAD TRAIL						8797+02.76	362,938.39	1,943,116.94	8797+48.96	362,900.33	1,943,143.11	8797+92.39	362,854.13	1,943,143.33				
75104	RAILROAD TRAIL						8797+92.39	362,854.13	1,943,143.33	8798+69.31	362,777.21	1,943,143.70	8799+34.55	362,732.62	1,943,206.38				
75105	RAILROAD TRAIL	8799+34.55	362,732.62	1,943,206.38															
75106	RAILROAD TRAIL	8801+69.07	362,596.68	1,943,397.48															
75107	RAILROAD TRAIL						8801+69.07	362,596.68	1,943,397.48	8802+58.00	362,545.13	1,943,469.95	8803+09.37	362,616.98	1,943,522.36				
75108	RAILROAD TRAIL	8803+09.37	362,616.98	1,943,522.36															
75109	RAILROAD TRAIL	8808+60.93	363,062.59	1,943,847.41															
12900	RABBIT RUN RD.	8820+00.00	362,810.86	1,943,320.04															
12901	RABBIT RUN RD.						8820+71.69	362,802.30	1,943,391.22	8821+99.22	362,787.07	1,943,517.83	8823+07.55	362,880.63	1,943,604.49				
12902	RABBIT RUN RD.	8826+16.57	363,107.35	1,943,814.47															
12999	MARY ST.	8966+65.00	364,316.13	1,942,677.20															
13000	MARY ST.	8970+15.00	364,279.40	1,943,025.27															
100	Ex Survey CL	278+87.08	303575.64	1945092.64															
101	Ex Survey CL						318+83.88	307571.42	1945002.48	321+87.93	307875.40	1944995.63	324+91.99	308179.39	1944989.93				
102B	Ex Survey CL				383+65.37	314051.75	1944879.96			384+98.72	314185.07	1944877.46				385+65.37	314251.65	1944873.89	
102	Ex Survey CL									396+58.61	315343.31	1944815.28	406+54.13	316118.44	1944044.35				
102A	Ex Survey CL				385+65.37	314251.65	1944873.89			407+20.80	316165.71	1943997.33				408+54.12	316256.91	1943900.07	
103B	Ex Survey CL				421+07.11	317113.93	1942986.00			422+40.46	317205.14	1942888.73				423+07.11	317252.41	1942841.71	
103	Ex Survey CL									423+07.11	317252.41	1942841.71							
103A	Ex Survey CL				444+21.18	319144.49	1942010.93			434+14.87	318037.84	1942060.53	444+21.18	319144.49	1942010.93				
104	Ex Survey CL									444+87.44	319210.68	1942007.97				446+19.93	319343.18	1942006.63	
105	Ex Survey CL						528+51.18	327574.00	1941923.46	533+29.71	328052.52	1941918.63	538+08.00	328530.02	1941887.18				
106	Ex Survey CL						554+54.09	330172.55	1941779.00	560+35.36	330752.56	1941740.80	566+15.63	331333.46	1941761.48				
107	Ex Survey CL						590+68.78	333785.06	1941848.77	594+35.38	334151.42	1941861.82	598+01.41	334517.35	1941839.72				
108	Ex Survey CL						624+05.31	337116.51	1941682.79	628+22.33	337532.77	1941657.66	632+38.52	337949.30	1941677.98				
108	Ex Survey CL						659+11.68	340619.28	1941808.26	663+34.32	341041.42	1941828.86	667+56.58	341463.93	1941818.31				
109B	Ex Survey CL				689+77.76	343684.42	1941762.85			690+77.77	343784.39	1941760.36				691+27.76	343834.39	1941760.09	
109	Ex Survey CL						691+27.76	343834.39	1941760.09	695+18.86	344225.48	1941758.00	699+07.24	344608.88	1941835.21				
109A	Ex Survey CL				699+07.24	344608.88	1941835.21			699+55.41	344656.11	1941844.72				700+51.76	344750.18	1941865.52	
110	Ex Survey CL						717+61.06	346419.17	1942234.59	720+39.42	346690.96	1942294.69	723+17.34	346955.65	1942380.85				
111B	Ex Survey CL				738+26.10	348390.30	1942847.88			739+59.44	348517.09	1942889.15				740+26.10	348581.18	1942907.57	
111	Ex Survey CL						740+26.10	348581.18	1942907.57	744+00.54	348941.06	1943010.98	747+70.76	349315.42	1943018.43				
111A	Ex Survey CL				747+70.76	349315.42	1943018.43			748+38.17									



**SPIRAL OR CIRCULAR CURVE DATA**

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Name	Location	$\Delta_{scs}$	Horizontal Alignment Data											Remarks			
			Spiral Data				Curve Data										
			$\theta_s$	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	$\Delta_c$	T	L		R	E	
63101	US 63											45° 55' 07.90" (LT)	1,165.01'	2,203.95'	2,750.00'	236.59'	
63102	US 63											46° 23' 41.38" (RT)	1,178.50'	2,226.79'	2,750.00'	241.88'	
63103	US 63											3° 06' 42.55" (LT)	543.25'	1,086.23'	20,000.00'	7.38'	
63104	US 63											5° 46' 47.70" (RT)	530.06'	1,059.22'	10,500.00'	13.37'	
63105	US 63											5° 32' 44.44" (LT)	556.98'	1,113.09'	11,500.00'	13.48'	
63106	US 63											7° 50' 59.16" (RT)	548.88'	1,096.03'	8,000.00'	18.81'	
63107	US 63											5° 26' 31.41" (LT)	546.56'	1,092.29'	11,500.00'	12.98'	
63108	US 63											13° 32' 11.45" (RT)	534.06'	1,063.16'	4,500.00'	31.58'	
63109	US 63											5° 36' 38.85" (RT)	539.03'	1,077.19'	11,000.00'	13.20'	
63110	US 63											17° 56' 50.38" (LT)	536.91'	1,065.02'	3,400.00'	42.13'	
63111	US 63											6° 44' 42.11" (RT)	1,178.59'	2,354.46'	20,000.00'	34.70'	
63112	US 63											24° 39' 52.65" (LT)	327.94'	645.72'	1,500.00'	35.43'	
63113	US 63											11° 00' 37.00" (RT)	159.03'	317.07'	1,650.00'	7.65'	
63114	US 63											16° 30' 00.03" (RT)	144.99'	287.98'	1,000.00'	10.46'	
64201	US 63 NB											6° 44' 42.11" (RT)	1,178.59'	2,354.46'	20,000.00'	34.70'	
64202	US 63 NB											24° 39' 52.65" (LT)	330.56'	650.88'	1,512.00'	35.71'	
64203	US 63 NB											11° 00' 37.00" (RT)	157.87'	314.77'	1,638.00'	7.59'	
64204	US 63 NB											16° 30' 00.03" (RT)	143.83'	285.68'	992.00'	10.37'	
65101	US 63 SB											6° 44' 42.11" (RT)	1,178.59'	2,354.46'	20,000.00'	34.70'	
65102	US 63 SB											24° 39' 52.65" (LT)	325.32'	640.55'	1,488.00'	35.15'	
65103	US 63 SB											11° 00' 37.00" (RT)	160.18'	319.38'	1,662.00'	7.70'	
65104	US 63 SB											16° 30' 00.03" (RT)	146.15'	290.28'	1,008.00'	10.54'	
11502	MAHOGANY AVE.											75° 41' 15.67" (RT)	77.69'	132.10'	100.00'	26.63'	
11400	132ND ST.											48° 31' 57.50" (RT)	36.06'	67.76'	80.00'	7.75'	
11401	132ND ST.											61° 36' 36.63" (LT)	119.25'	215.06'	200.00'	32.85'	
11611	RELOC. LIME TR.											64° 30' 46.48" (LT)	315.56'	562.98'	500.00'	91.25'	
11612	RELOC. LIME TR.											63° 45' 40.81" (RT)	155.49'	278.21'	250.00'	44.41'	
11613	RELOC. LIME TR.											28° 12' 56.08" (LT)	125.66'	246.23'	500.00'	15.55'	
11614	RELOC. LIME TR.											20° 50' 36.38" (RT)	137.94'	272.84'	750.00'	12.58'	
13121	115TH LANE											5° 59' 46.00" (RT)	13.09'	26.16'	250.00'	0.34'	
13101	114TH LANE											43° 36' 48.91" (LT)	30.01'	57.09'	75.00'	5.78'	
11710	RELOC. MINK BLVD.											40° 51' 17.03" (RT)	158.29'	303.05'	425.00'	28.52'	
11901	NATURE CENTER DR.											57° 01' 25.86" (RT)	67.90'	124.41'	125.00'	17.25'	
12001	LITTLE SOAP RD.											28° 14' 33.26" (LT)	125.79'	246.46'	500.00'	15.58'	
12111	RELOC. 20TH ST.											10° 07' 59.07" (LT)	132.99'	265.28'	1,500.00'	5.88'	
12112	RELOC. 20TH ST.											4° 16' 04.06" (RT)	74.52'	148.97'	2,000.00'	1.39'	
12113	RELOC. 20TH ST.											26° 48' 35.38" (LT)	83.41'	163.77'	350.00'	9.80'	
12114	RELOC. 20TH ST.											29° 41' 23.96" (RT)	132.53'	259.09'	500.00'	17.27'	
12212	CO. RD. H-47											45° 29' 26.96" (RT)	115.29'	218.34'	275.00'	23.19'	
12213	CO. RD. H-47											14° 56' 00.56" (LT)	45.87'	91.22'	350.00'	2.99'	
12214	CO. RD. H-47											29° 06' 46.48" (RT)	129.83'	254.06'	500.00'	16.58'	
12301	RELOC. 43RD ST.											39° 12' 17.54" (LT)	44.52'	85.53'	125.00'	7.69'	
12302	RELOC. 43RD ST.											29° 38' 07.14" (RT)	66.14'	129.31'	250.00'	8.60'	
12701	RELOC. MADISON AVE.											14° 27' 14.53" (RT)	107.79'	214.43'	850.00'	6.81'	
12702	RELOC. MADISON AVE.											68° 57' 12.27" (LT)	171.67'	300.87'	250.00'	53.27'	
12601	RELOC. 55TH ST.											89° 11' 58.03" (RT)	142.99'	225.74'	145.00'	58.64'	
12602	RELOC. 55TH ST.											86° 34' 05.58" (LT)	235.46'	377.73'	250.00'	93.42'	
12800	RELOC. CO. RD. J-12											29° 29' 41.79" (RT)	197.42'	386.09'	750.00'	25.55'	
12801	RELOC. CO. RD. J-12											29° 49' 14.97" (LT)	66.57'	130.12'	250.00'	8.71'	
12802	RELOC. CO. RD. J-12											10° 26' 37.35" (RT)	91.39'	182.28'	1,000.00'	4.17'	
12803	RELOC. CO. RD. J-12											10° 08' 30.85" (LT)	177.47'	354.02'	2,000.00'	7.86'	
75102	RAILROAD TRAIL											34° 14' 08.11" (RT)	46.20'	89.63'	150.00'	6.95'	
75104	RAILROAD TRAIL											54° 17' 58.17" (LT)	76.92'	142.16'	150.00'	18.57'	
75107	RAILROAD TRAIL											89° 19' 05.39" (LT)	88.94'	140.30'	90.00'	36.53'	
12901	RELOC. RABBIT RUN RD.											54° 03' 11.83" (LT)	127.53'	235.85'	250.00'	30.65'	
70101	RET_MLBRYSW											90° 00' 00" (RT)	50.00'	78.54'	50.00'	20.71'	
70111	RET_MLBRYNW											90° 00' 00" (LT)	50.00'	78.54'	50.00'	20.71'	
70121	RET_J15SE											14° 43' 59.52" (RT)	22.63'	45.00'	175.00'	1.46'	
70123	RET_J15SE											53° 21' 34.53" (RT)	25.13'	46.57'	50.00'	5.96'	
70125	RET_J15SE											21° 54' 25.95" (RT)	65.80'	130.00'	340.00'	6.31'	
70131	RET_J15NE											21° 38' 42.26" (LT)	43.01'	85.00'	225.00'	4.07'	
70133	RET_J15NE											54° 01' 48.67" (LT)	33.14'	61.30'	65.00'	7.96'	
70135	RET_J15NE											14° 19' 26.20" (LT)	25.13'	50.00'	200.00'	1.57'	
70641	RET_138SE											90° 00' 00" (RT)	25.00'	39.27'	25.00'	10.36'	
70651	RET_138NE											90° 00' 00" (LT)	25.00'	39.27'	25.00'	10.36'	
70156	RET_MARBLESW											90° 00' 00" (RT)	25.00'	39.27'	25.00'	10.36'	
70151	RET_MARBLENW											90° 00' 00" (LT)	25.00'	39.27'	25.00'	10.36'	
70161	RET_MAHOGSW											90° 19' 29.72" (RT)	25.14'	39.41'	25.00'	10.46'	
70171	RET_MAHOGNW											79° 36' 21.93" (LT)	41.66'	69.47'	50.00'	15.08'	
70181	RET_132NDSE											139° 45' 29.64" (RT)	136.48'	121.96'	50.00'	95.35'	
70191	RET_132NDNE											79° 32' 49.12" (RT)	41.62'	69.42'	50.00'	15.06'	
70201	RET_LIMEWSW											97° 18' 30.84" (RT)	56.82'	84.92'	50.00'	25.69'	
70211	RET_LIMEWNW											85° 40' 43.64" (LT)	46.36'	74.77'	50.00'	18.19'	

**SPIRAL OR CIRCULAR CURVE DATA**

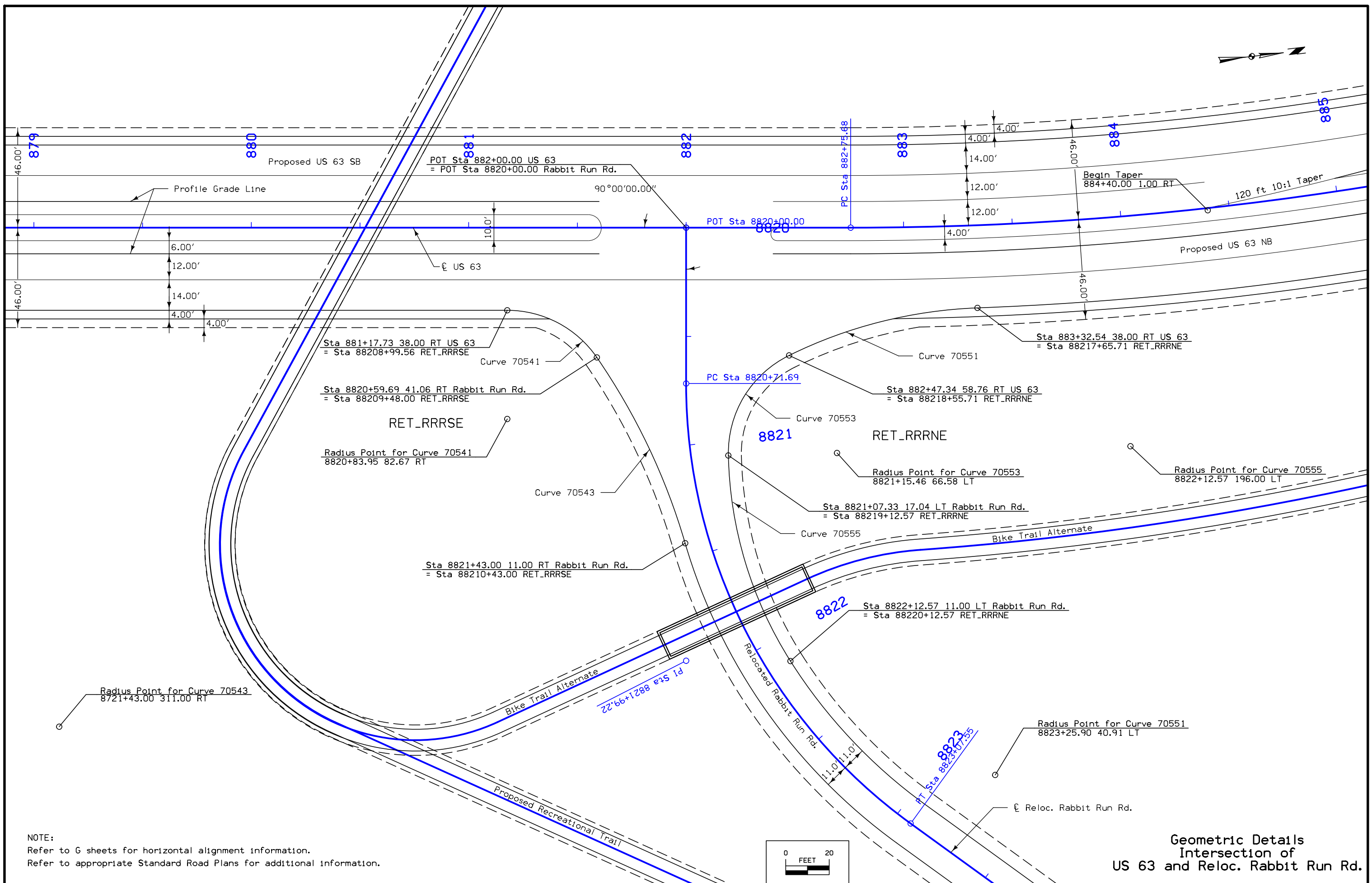
101-17  
04-19-11

Name	Location	Δ <sub>scs</sub>	Horizontal Alignment Data													Remarks		
			Spiral Data								Curve Data							
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ <sub>c</sub>	T	L	R	E			
70221	RET_L_IMEESE												76° 36' 27.63" (RT)	35.54'	60.17'	45.00'	12.34'	
70223	RET_L_IMEESE												13° 22' 08.46" (RT)	35.16'	70.00'	300.00'	2.05'	
70231	RET_L_IMEENE												90° 00' 00" (LT)	50.00'	78.54'	50.00'	20.71'	
70701	RET_117SW												90° 00' 00.61" (RT)	25.00'	39.27'	25.00'	10.36'	
70611	RET_117NW												90° 00' 07.45" (LT)	25.00'	39.27'	25.00'	10.36'	
70621	RET_115SW												90° 00' 00.00" (RT)	25.00'	39.27'	25.00'	10.36'	
70631	RET_115NW												90° 00' 00.68" (LT)	25.00'	39.27'	25.00'	10.36'	
70581	RET_114SW												94° 38' 53.88" (RT)	27.12'	41.30'	25.00'	11.88'	
70591	RET_114NW												88° 33' 14.25" (LT)	24.38'	38.64'	25.00'	9.92'	
70241	RET_MINKSE												10° 54' 48.54" (RT)	20.06'	40.00'	210.00'	0.96'	
70243	RET_MINKSE												68° 17' 43.94" (RT)	40.70'	71.52"	60.00'	12.50'	
70245	RET_MINKSE												33° 12' 46.58" (RT)	76.05'	147.82"	255.00'	11.10'	
70251	RET_MINKNE												19° 05' 54.94" (LT)	35.33'	70.00'	210.00'	2.95'	
70253	RET_MINKNE												53° 13' 25.99" (LT)	30.06'	55.74'	60.00'	7.11'	
70255	RET_MINKNE												7° 55' 59.75" (LT)	22.54'	45.00'	325.00'	0.78'	
70257	RET_MINKNE												7° 40' 08.08" (RT)	36.19'	72.28'	540.00'	1.21'	
70262	RET_10SW												90° 00' 00.29" (RT)	30.00'	47.12'	30.00'	12.43'	
70271	RET_10NW												11° 27' 45.04" (LT)	20.07'	40.01'	200.00'	1.00'	
70272	RET_10NW												78° 32' 14.96" (LT)	32.70'	54.83'	40.00'	11.67'	
70281	RET_NATURESE												93° 55' 58.79" (RT)	53.56'	81.97'	50.00'	23.27'	
70282	RET_NATURESE												29° 40' 18.72" (RT)	26.49'	51.79'	100.00'	3.45'	
70691	RET_NATURENE												87° 12' 13.91" (LT)	47.62'	76.10'	50.00'	19.05'	
70301	RET_LITTLESW												74° 43' 16.05" (RT)	38.17'	65.21'	50.00'	12.91'	
70303	RET_LITTLESW												15° 16' 43.95" (RT)	40.24'	80.00'	300.00'	2.69'	
70311	RET_LITTLENW												31° 08' 20.44" (LT)	64.09'	125.00'	230.00'	8.76'	
70313	RET_LITTLENW												53° 42' 57.98" (LT)	27.85'	51.56'	55.00'	6.65'	
70315	RET_LITTLENW												12° 53' 29.59" (LT)	22.60'	45.00'	200.00'	1.27'	
70321	RET_20SW												90° 28' 47.96" (RT)	50.42'	78.96'	50.00'	21.01'	
70331	RET_20NW												89° 32' 59.21" (LT)	49.61'	78.15'	50.00'	20.43'	
70341	RET_20SE												89° 07' 19.06" (RT)	46.73'	75.16'	50.00'	18.43'	
70351	RET_20NE												95° 37' 06.16" (LT)	55.16'	83.44'	50.00'	24.45'	
70361	RET_H47SW												20° 41' 24.52" (RT)	32.86'	65.00'	180.00'	2.97'	
70363	RET_H47SW												65° 36' 29.93" (RT)	35.45'	62.98'	55.00'	10.44'	
70365	RET_H47SW												22° 08' 13.23" (RT)	43.04'	85.00'	220.00'	4.17'	
70371	RET_H47NW												13° 54' 52.88" (LT)	42.71'	85.00'	350.00'	2.60'	
70373	RET_H47NW												51° 08' 34.83" (LT)	26.32'	49.09'	55.00'	5.97'	
70375	RET_H47NW												9° 32' 57.45" (LT)	15.03'	30.00'	180.00'	0.62'	
70381	RET_H47SE												86° 53' 03.69" (RT)	47.35'	75.82'	50.00'	18.86'	
70391	RET_H47NE												96° 34' 25.23" (LT)	56.09'	84.28'	50.00'	25.14'	
70401	RET_43SE												10° 11' 09.30" (RT)	20.05'	40.00'	225.00'	0.89'	
70403	RET_43SE												62° 32' 19.07" (RT)	30.36'	54.58'	50.00'	8.50'	
70405	RET_43SE												4° 05' 33.17" (RT)	12.51'	25.00'	350.00'	0.22'	
70411	RET_43NE												9° 18' 38.03" (LT)	32.57'	65.00'	400.00'	1.32'	
70413	RET_43NE												101° 16' 23.45" (LT)	54.86'	79.54'	45.00'	25.95'	
70415	RET_43NE												18° 37' 16.07" (LT)	32.79'	65.00'	200.00'	2.67'	
70421	RET_48SE												90° 00' 01.48" (RT)	50.00'	78.54'	50.00'	20.71'	
70431	RET_48NE												90° 00' 01.29" (LT)	50.00'	78.54'	50.00'	20.71'	
70711	RET_50SW												90° 00' 00" (RT)	50.00'	78.54'	50.00'	20.71'	
70451	RET_50NW												90° 00' 00.00" (LT)	50.00'	78.54'	50.00'	20.71'	
70461	RET_MADISONSW												59° 43' 09.25" (RT)	48.80'	88.60"	85.00'	13.01'	
70463	RET_MADISONSW												21° 19' 09.70" (RT)	40.47'	80.00'	215.00'	3.77'	
70471	RET_MADISONNW												10° 55' 20.57" (LT)	14.82'	29.55'	155.00'	0.70'	
70472	RET_MADISONNW												101° 06' 36.72" (LT)	103.31'	150.00'	85.00'	48.79'	
70481	RET_55SE												110° 13' 28.44" (RT)	71.71'	96.19'	50.00'	37.42'	
70491	RET_55NE												82° 18' 02.62" (LT)	43.70'	71.82"	50.00'	16.40'	
70501	RET_J12SW												66° 10' 45.58" (RT)	52.13'	92.40'	80.00'	15.49'	
70503	RET_J12SW												14° 19' 26.20" (RT)	37.70'	75.00"	300.00'	2.36'	
70601	RET_J12NW												28° 21' 56.18" (LT)	44.23'	86.64'	175.00'	5.50'	
70603	RET_J12NW												90° 41' 19.32" (LT)	75.91'	118.71'	75.00'	31.71'	
70521	RET_J12SE												80° 43' 42.19" (RT)	59.50'	98.63'	70.00'	21.87'	
70523	RET_J12SE												14° 50' 17.85" (RT)	47.53'	94.53'	365.00'	3.08'	
70531	RET_J12NE												16° 22' 12.80" (LT)	45.31'	90.00'	315.00'	3.24'	
70533	RET_J12NE												72° 09' 59.95" (LT)	54.66'	94.47'	75.00'	17.80'	
70541	RET_RRRSE												55° 30' 46.69" (RT)	26.31'	48.44"	50.00'	6.50'	
70543	RET_RRRSE												18° 08' 37.19" (RT)	47.90'	95.00"	300.00'	3.80'	
70551	RET_RRRNE												23° 59' 03.41" (LT)	45.67'	90.00'	215.00'	4.80'	
70553	RET_RRRNE												65° 09' 33.48" (LT)	31.95'	56.86"	50.00'	9.34'	
70555	RET_RRRNE												30° 58' 14.49" (LT)	51.25'	100.00"	185.00'	6.97'	
70561	RET_MARYSW												60° 27' 35.58" (RT)	52.44'	94.97'	90.00'	14.17'	
70571	RET_MARYNW												12° 48' 44.76" (LT)	44.91'	89.45'	400.00'	2.51'	
70572	RET_MARYNW												101° 01' 00.08" (LT)	54.61'	79.34'	45.00'	25.76'	

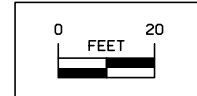
**SPIRAL OR CIRCULAR CURVE DATA**

101-17  
04-19-11

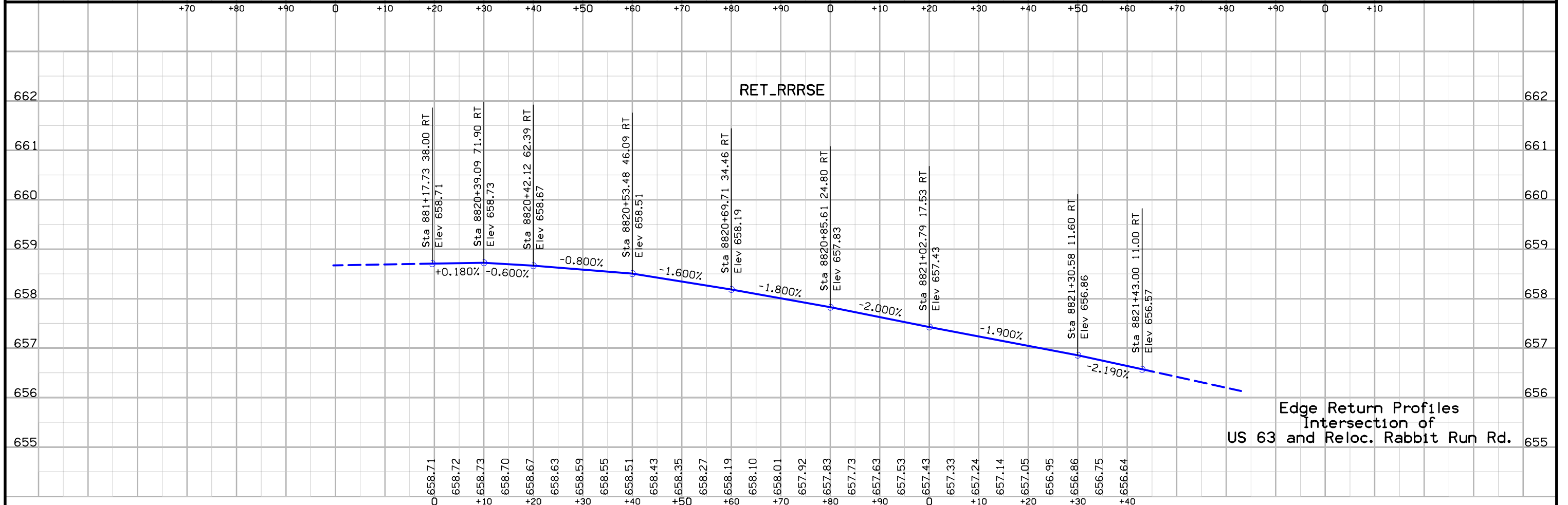
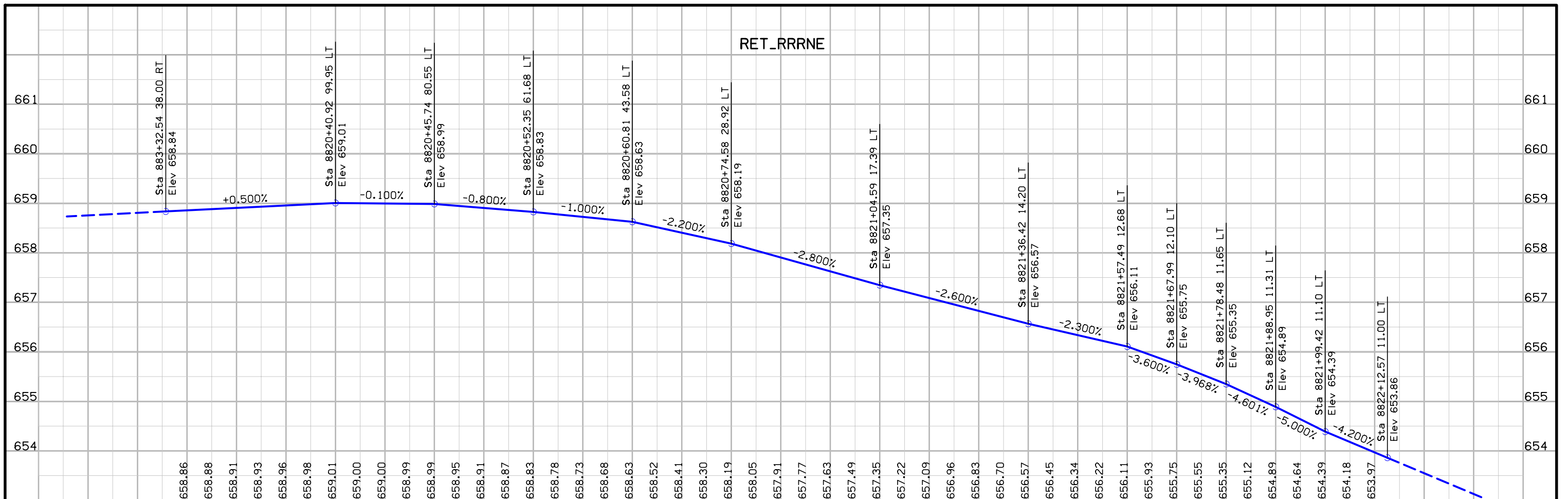
Name	Location	$\Delta_{scs}$	Horizontal Alignment Data										Remarks				
			Spiral Data					Curve Data									
			$\theta_s$	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	$\Delta_c$	T		L	R	E	
101	Ex Survey CL																
102B	Ex Survey CL	45° 46' 17.85" (LT)	1° 59' 59.48"	200.00	1309.63	245.43	199.98	2.33	133.34	66.67	0° 13' 10.45" (RT)	304.05	608.10	158681.48	0.29		
102	Ex Survey CL																
102A	Ex Survey CL	45° 46' 17.85" (LT)	1° 59' 59.12"	199.99	1309.62	245.43	199.97	2.33	133.34	66.67	41° 46' 19.24" (LT)	1093.23	2088.75	2864.99	201.49		
103B	Ex Survey CL	46° 15' 56.16" (RT)	1° 59' 59.48"	200.00	1324.2	251.12	199.98	2.33	133.34	66.67							
103	Ex Survey CL																
103A	Ex Survey CL	46° 15' 56.16" (RT)	1° 59' 14.49"	198.75	1323.59	251.12	198.73	2.30	132.51	66.26	42° 16' 42.19" (RT)	1107.76	2114.07	2864.99	206.70		
104	Ex Survey CL																
105	Ex Survey CL										3° 11' 21.08" (LT)	478.54	956.82	17189.97	6.66		
106	Ex Survey CL										5° 48' 26.18" (RT)	581.27	1161.54	11459.98	14.73		
107	Ex Survey CL										5° 29' 39.56" (LT)	366.60	732.63	7639.98	8.79		
108	Ex Survey CL										6° 14' 55.20" (RT)	417.02	833.22	7639.98	11.37		
109B	Ex Survey CL	13° 54' 00.05" (RT)	1° 07' 29.71"	150.00	540.61	28.52	149.99	0.98	100.00	50	4° 13' 27.10" (LT)	422.64	844.90	11459.98	7.79		
109	Ex Survey CL																
109A	Ex Survey CL	13° 54' 00.05" (RT)	1° 05' 01.76"	144.52	538.01	28.52	144.51	0.91	96.35	48.17	11° 41' 28.58" (RT)	391.09	779.47	3819.99	19.97		
110	Ex Survey CL																
111B	Ex Survey CL	18° 54' 50.44" (LT)	1° 59' 59.48"	200.00	577.36	40.07	199.98	2.33	133.34	66.67	5° 33' 44.48" (RT)	278.36	556.28	5729.99	6.76		
111	Ex Survey CL																
111A	Ex Survey CL	18° 54' 50.44" (LT)	2° 01' 19.04"	202.21	578.39	40.07	202.18	2.38	134.82	67.41	14° 53' 31.92" (LT)	374.44	744.66	2864.99	24.37		
113	Ex Survey CL										2° 30' 28.70" (RT)	376.28	752.45	17189.97	4.12		
114	Ex Survey CL										6° 16' 13.76" (RT)	418.50	836.16	7640.27	11.45		
117	Ex Survey CL										24° 04' 21.23" (LT)	375.92	740.75	1763.08	39.63		
118	Ex Survey CL										10° 45' 41.70" (LT)	269.85	538.12	2864.99	12.68		
221	Ex Survey CL										16° 30' 00.02" (RT)	138.47	275.02	955.00	9.99		



NOTE:  
Refer to G sheets for horizontal alignment information.  
Refer to appropriate Standard Road Plans for additional information.

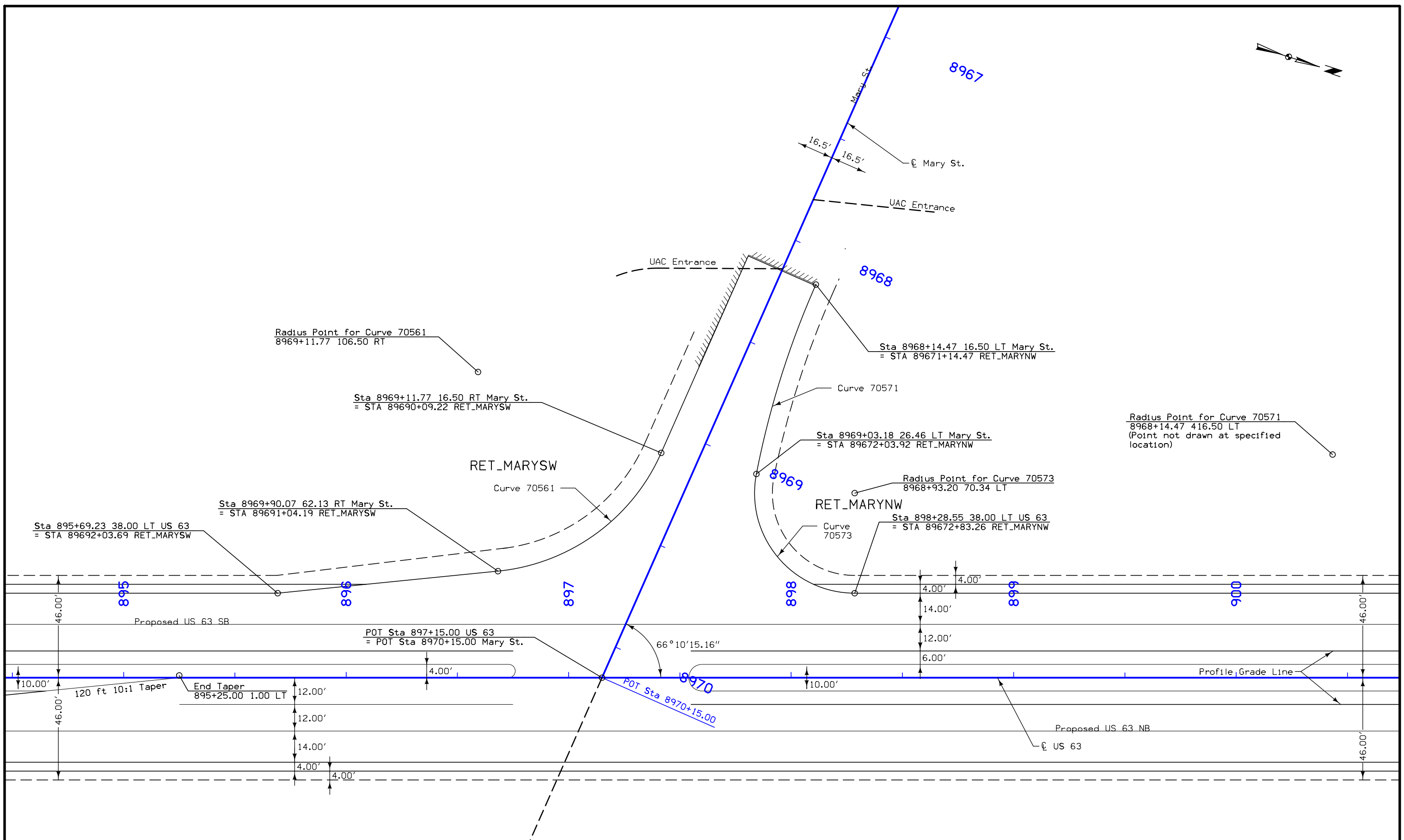


Geometric Details  
Intersection of  
US 63 and Reloc. Rabbit Run Rd.

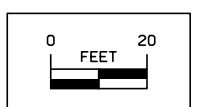


Edge Return Profiles  
Intersection of  
US 63 and Reloc. Rabbit Run Rd.



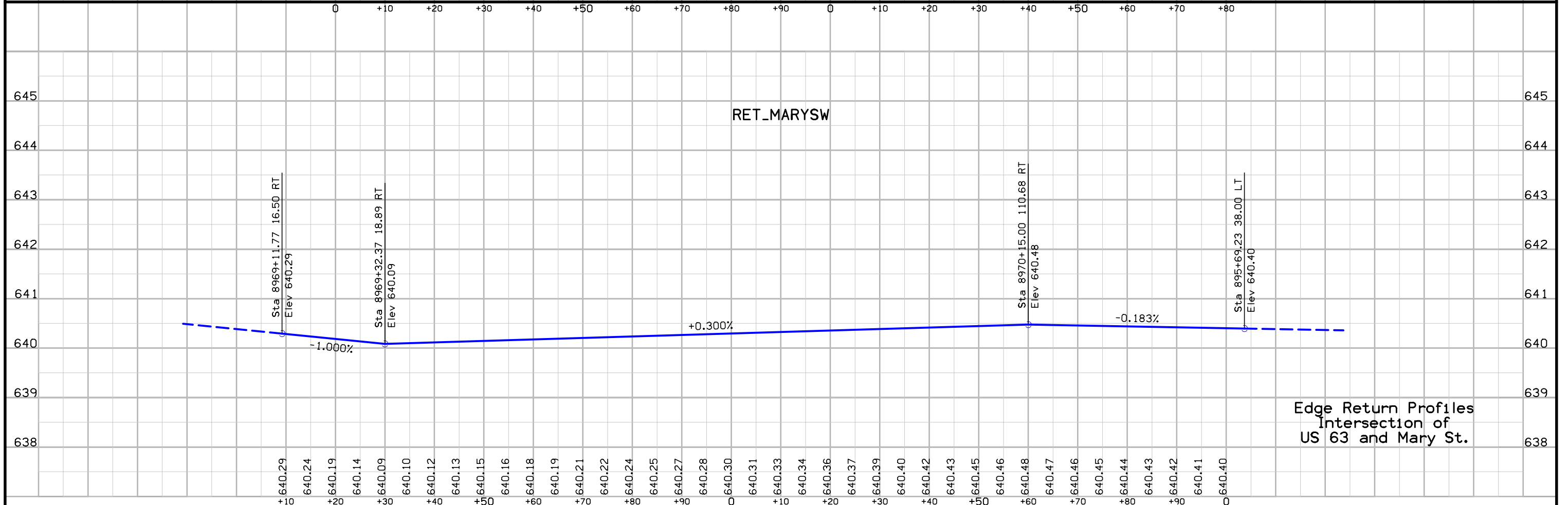
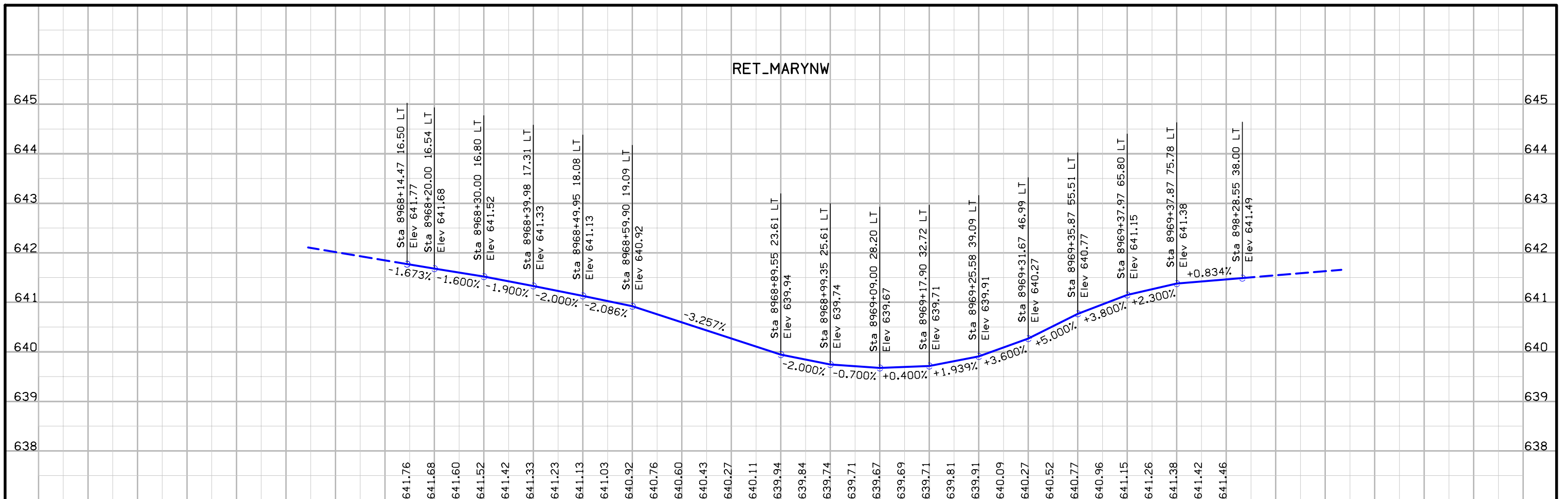


NOTE:  
 Refer to G sheets for horizontal alignment information.  
 Refer to appropriate Standard Road Plans for additional information.



Geometric Details  
 Intersection of  
 US 63 and Mary St.

FILE NO.	ENGLISH	DESIGN TEAM	Flattery \ Buttolph	WAPELLO COUNTY	PROJECT NUMBER	NHSX-063-2(155)--3H-90	SHEET NUMBER	L.3
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Edge Return Profiles  
Intersection of  
US 63 and Mary St.

### STORM SEWER

① Diameter or equivalent diameter

\* Bid Item

\*\* For SW-545

INTAKES AND UTILITY ACCESSES							PIPES														
							Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.														
No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade	Bottom Well	Extension Length**	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe Size	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines			Pipe Profile Sheet No.	Notes	
			Elev.	Elev.	FT			From	To		IN	FT	FT			Inlet Elevation	Outlet Elevation	Other Elevation			
E1	Existing Structures ( for r 914+62, 4.0' Rt.					Remove															
	Proposed Structures																				
105	858+75, 0.3' Rt.	SW-512	639.9	631.9			P-105	105	1050	2000	15	93	91.0	0.6	3	932.65	632.08			M.8	
1000	858+75, 98.0' Rt.	RF-3	632.06																		
110	885+75, 5.0' Rt.	SW-509	654.68	646.6			P-110	110	115	2000	15	296.2	292.2	1.8	3	647.1	641.84			M.8	
115	888+75, 5.0' Rt.	SW-509	649.48	641.04			P-115	115	120	2000	15	101.1	97.1	1	3	641.54	640.57			M.8	
120	889+80, 5.0' Rt.	SW-509	647.82	639.77			P-120	120	1200	2000	15	77.1	75.1	0.5	3	640.27	639.89			M.8	
1200	889+80, 80.4' Rt.	RF-3	641.14																		
135	905+30, 7.5' Lt.	SW-508	645.4	639.84			P-135	135	1350	2000	15	91.3	89.3	7.1	3	640.34	634			M.9	
1350	905+30, 85.8' Rt.	RF-3	635.25																		
140	903+00, 6.3' Lt.	SW-508	644.46	639.68			P-140	140	145	2000	15	140.3	136.3	1.35	3	640.18	638.34			M.9	
145	901+60, 5.0' Lt.	SW-508	643.7	637.54			P-145	145	147	2000	15	60	56.0	1.05	3	638.04	637.45			M.9	
147	901+00, 5.0' Lt.	SW-508	643.52	636.65			P-147	147	1470	2000	15	77.4	75.4	1	3	637.15	636.4			M.9	
1470	901+00, 74.4' Rt.	RF-3	637.65																		
150	917+20, 8.0' Lt.	SW-508	641.74	636.98			P-150	150	155	2000	15	73.7	69.7	1.8	3	637.48	636.23			M.9	
155	916+50, 23.3 Lt.	SW=508	640.74	625.43			P-155	155	160	2000	15	76.9	72.9	1.2	3	635.93	635.05			M.9	
160	915+75, 23.0' Lt.	SW-508	640.42	634.75			P-160	160	1600	2000	15	91.7	89.7	0.8	3	634.75	634.04			M.9	
1600	915+75, 66.7' Rt.	RF-3	635.29																		

### SURVEY SYMBOLS

- SI Sign
- LUM Luminaire
- MH Utility Access (Manhole)
- ROW Approx. Right of Way Rail
- PPA Power Pole Co. 1
- MM Mile Marker Post
- TDC Tree Deciduous
- SL Speed Limit Sign
- EW Edge of Water
- DIK Centerline of Dike or Dam
- D Centerline Draw or Stream (Down)
- BB Billboard
- FCL Chain Link and Security Fence
- GDL Guard Rail (Rail and Cable)
- RET Retaining Walls
- T2 TLB Underground Telephone Line Co. 2
- F0 FOA Underground Fiber Optic Co. 1
- F02 FOB Underground Fiber Optic Co. 2
- T1 TLA Underground Telephone Line Co. 1
- E1 ELA Underground Electric Line Co. 1
- G GLA Underground Gas Line Co. 1
- W WLA Underground Water Line Co. 1
- W2 WLB Underground Water Line Co. 2
- IN Storm Sewer Intake
- FW Wire Fence
- MIS Miscellaneous
- LC Approx. Lot Corner
- TPD Telephone Pedestal
- TA Tower Anchor
- EB Electrical Box
- WEL Well
- TEV Evergreen Tree
- FWD Wood Fence
- FHD Fire Hydrants
- GP Guard Post (Less Than 4 Posts)
- WHU RV Water Hook Up
- INB Storm Sewer Beehive Intake

### UTILITY LEGEND

- T1
- T2
- F0
- F02
- E1
- G
- W
- W2

### UTILITY CONTACT INFORMATION

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 lseals@ci.ottumwa.ia.us

### PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	Description
Gray, Dark	(112)	Existing Topographic Features, Utilities, and Labels
Black	(17)	Proposed Storm Sewer Details, Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	Design Color No.	Description
Gray, Light	(48)	Proposed Pavement Shading

### PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	Description
Gray, Dark	(112)	Existing Ground Line Profile and Existing Utilities Information
Black	(17)	Proposed Pipes and Intakes

### PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Plug and Abandon Existing Pipe or Structure
- Removal of Existing Pipe or Structure
- Previously Constructed Pipe or Structure
- Direction of Pipe Flow

### PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Existing Ground
- Proposed Ground
- Previously Constructed Pipe or Structure
- Proposed Pipe or Structure

Reference Point

Station

Survey Line

Section Corner

Ground Line Intercept

Saw Cut

Guardrail

Clearing & Grubbing Area

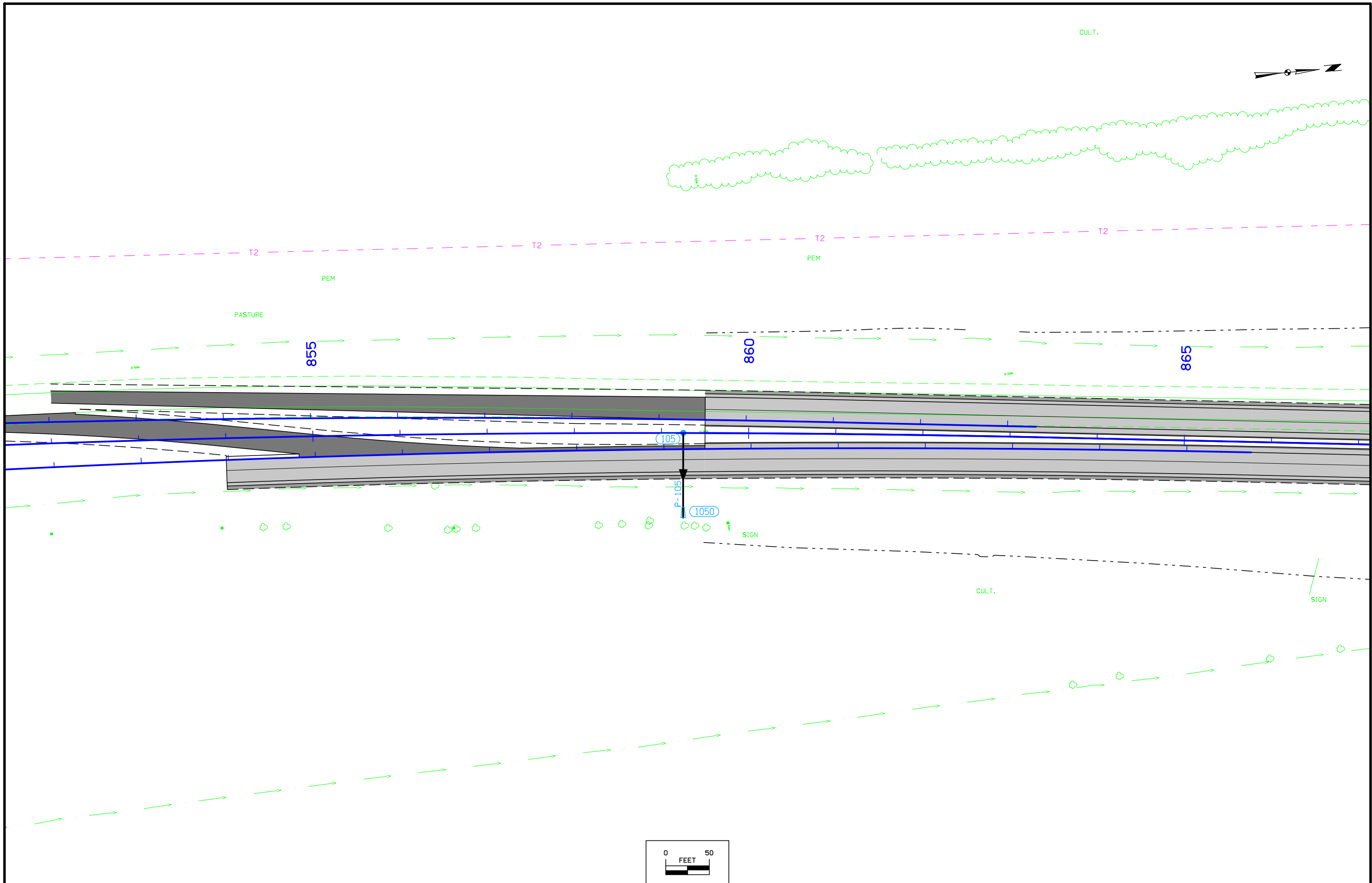
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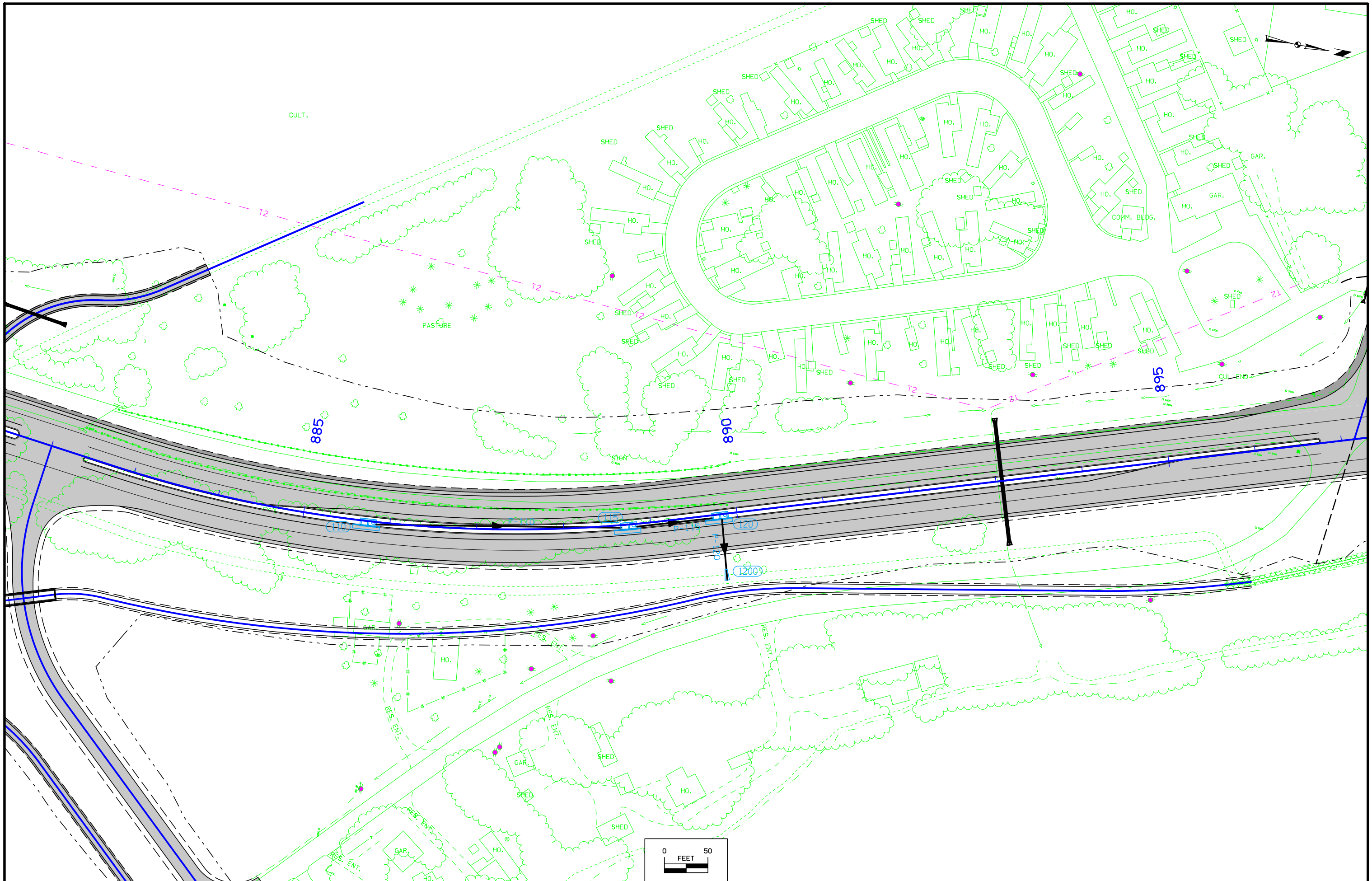
### RIGHT-OF-WAY LEGEND

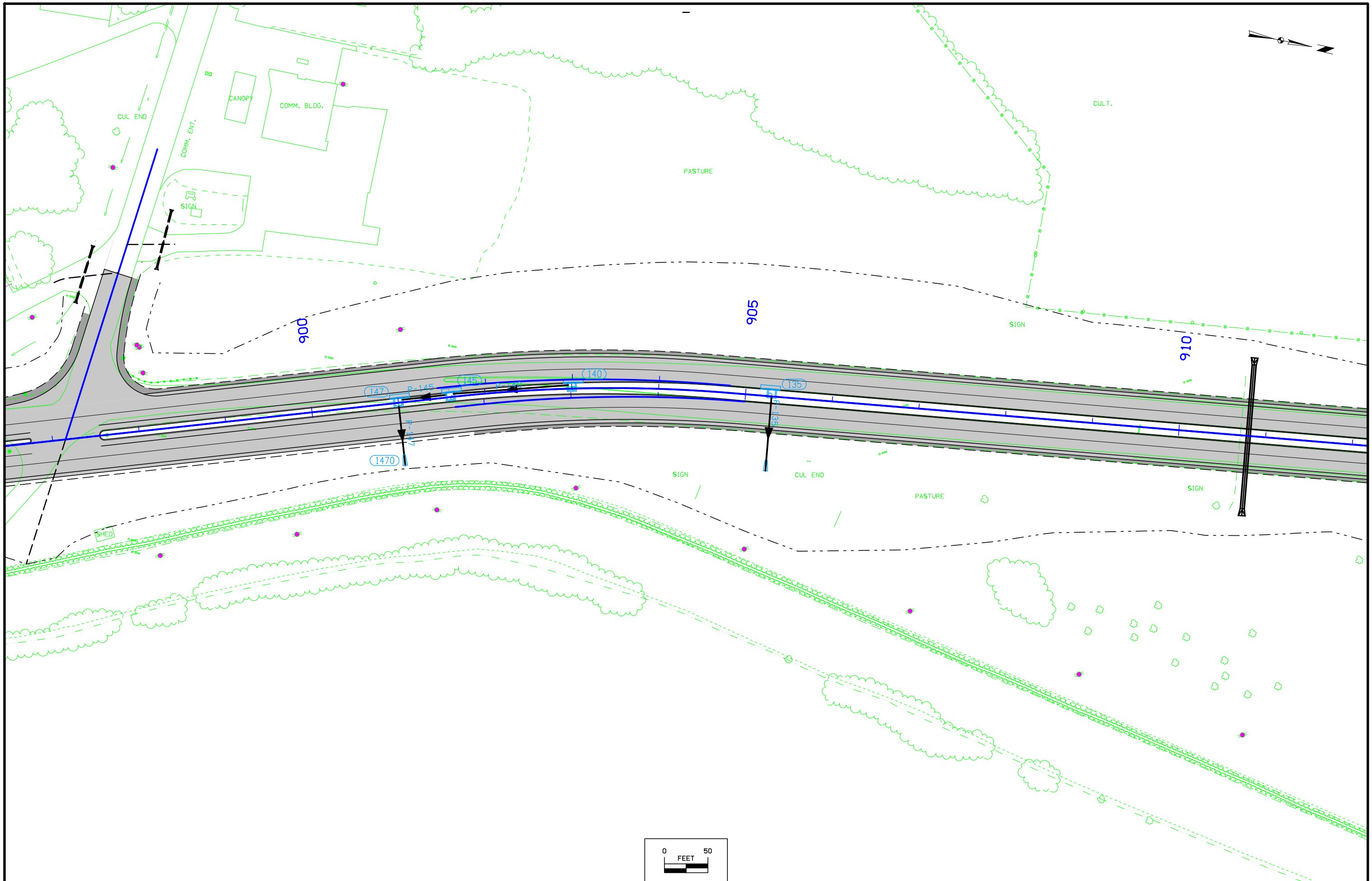
- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- Access Control

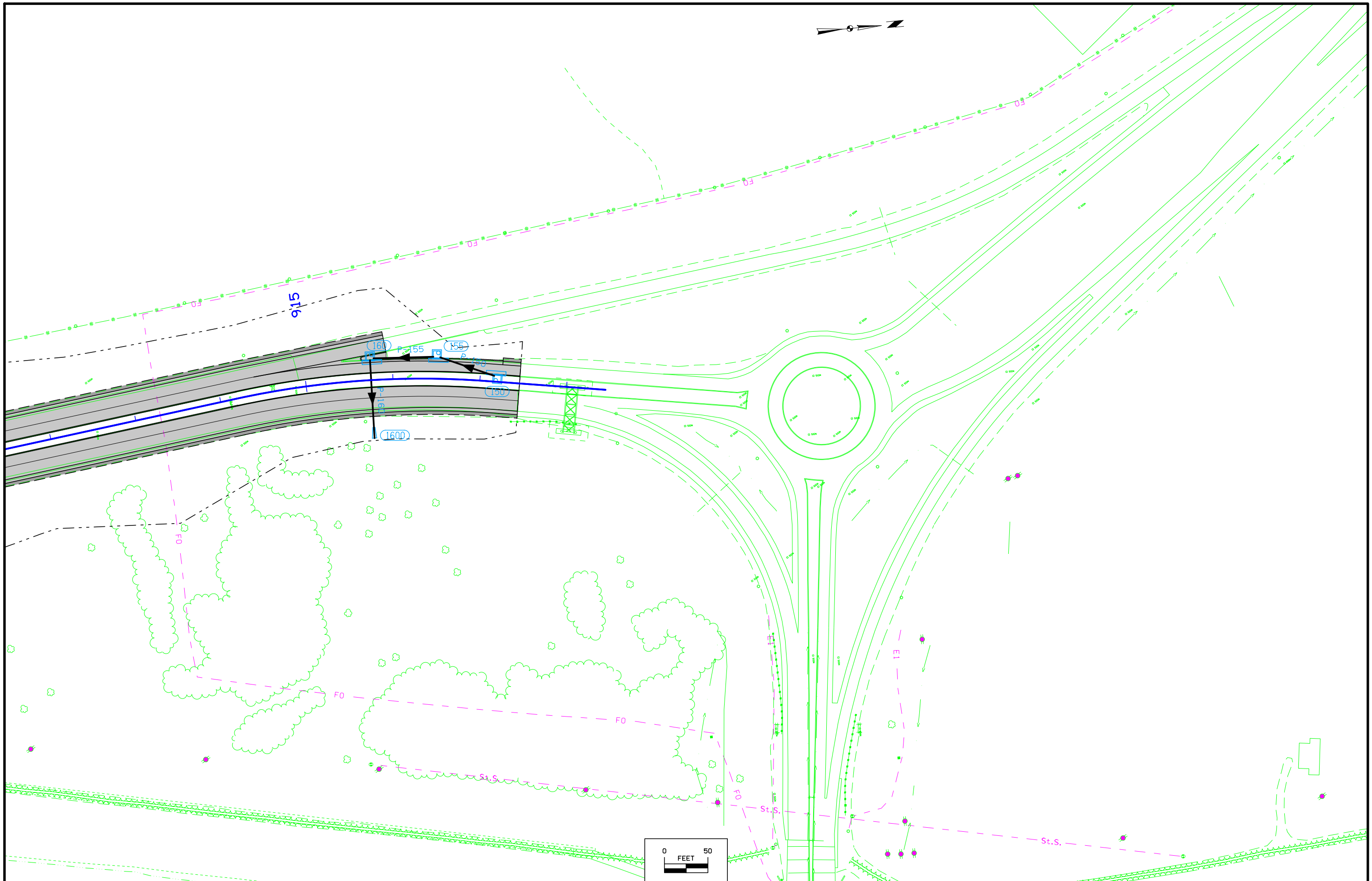
# STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES M)

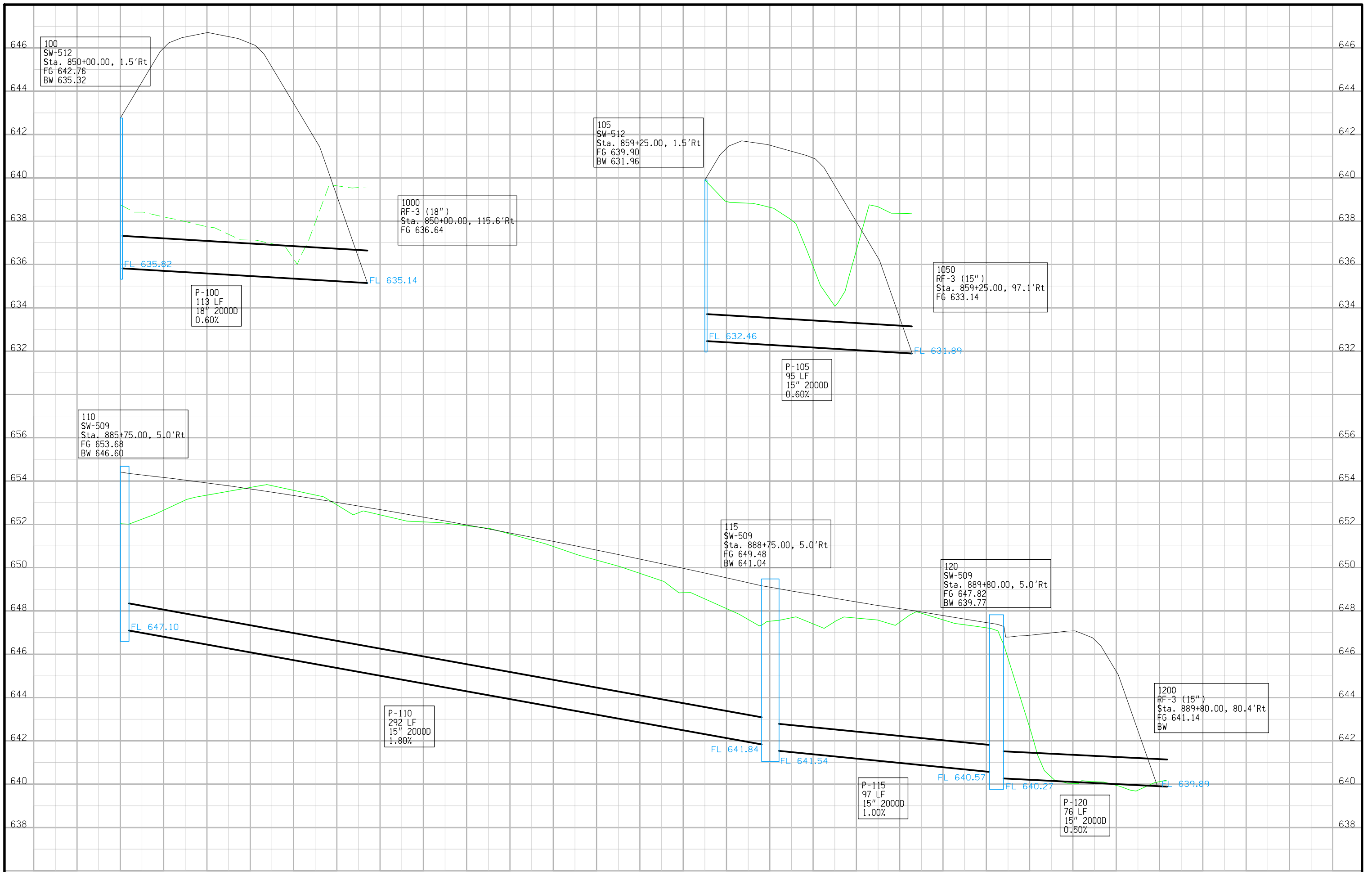


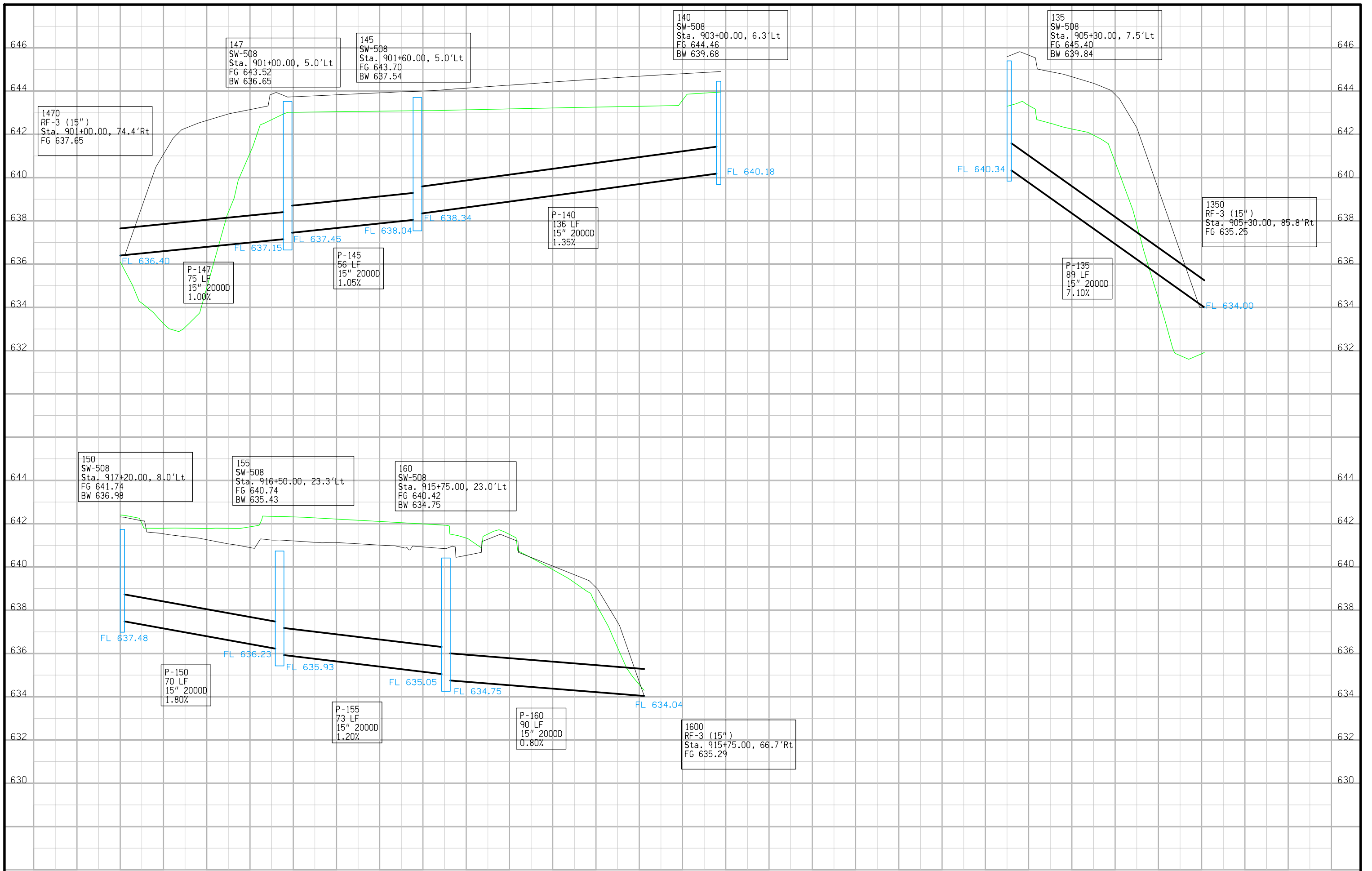


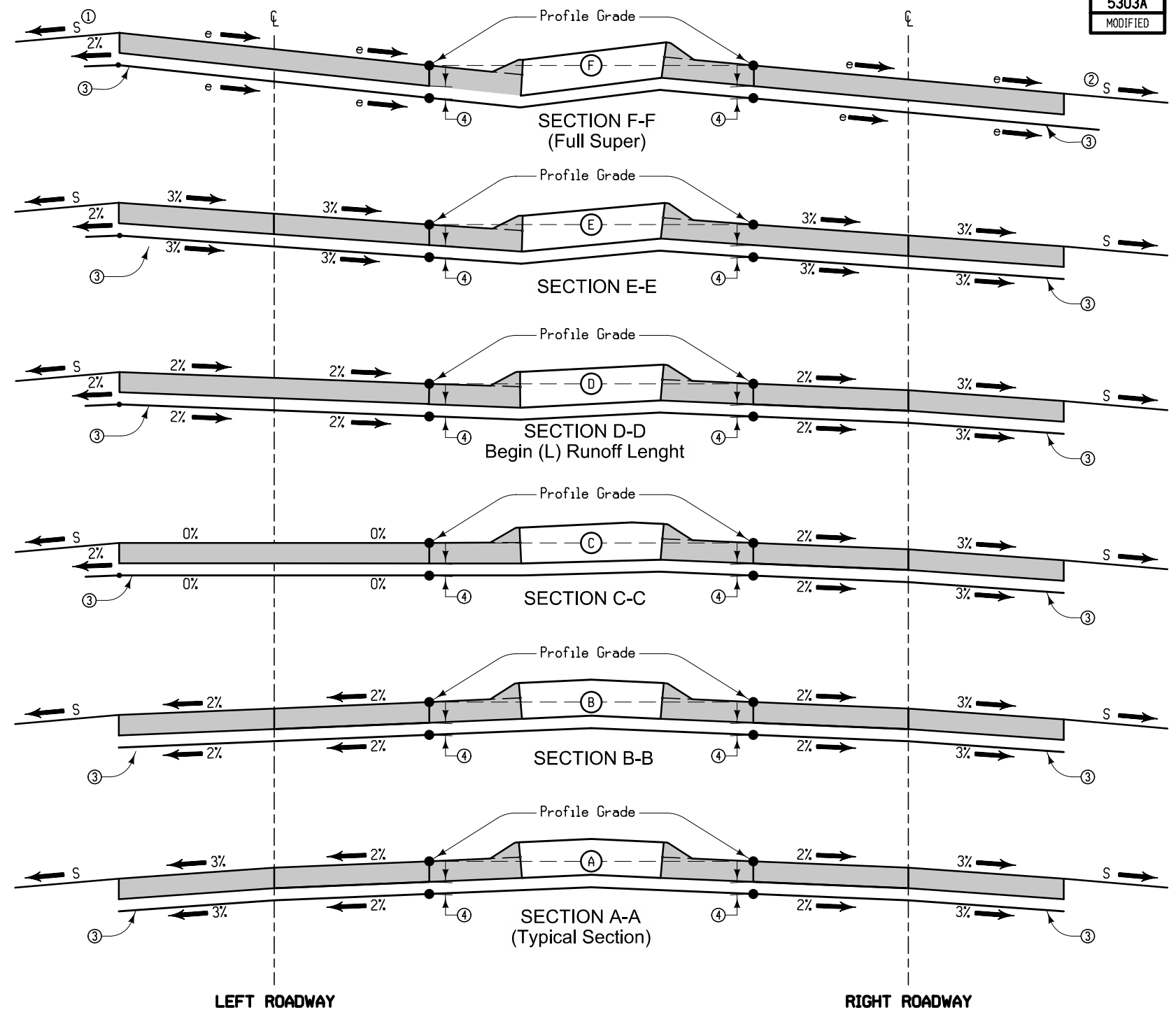
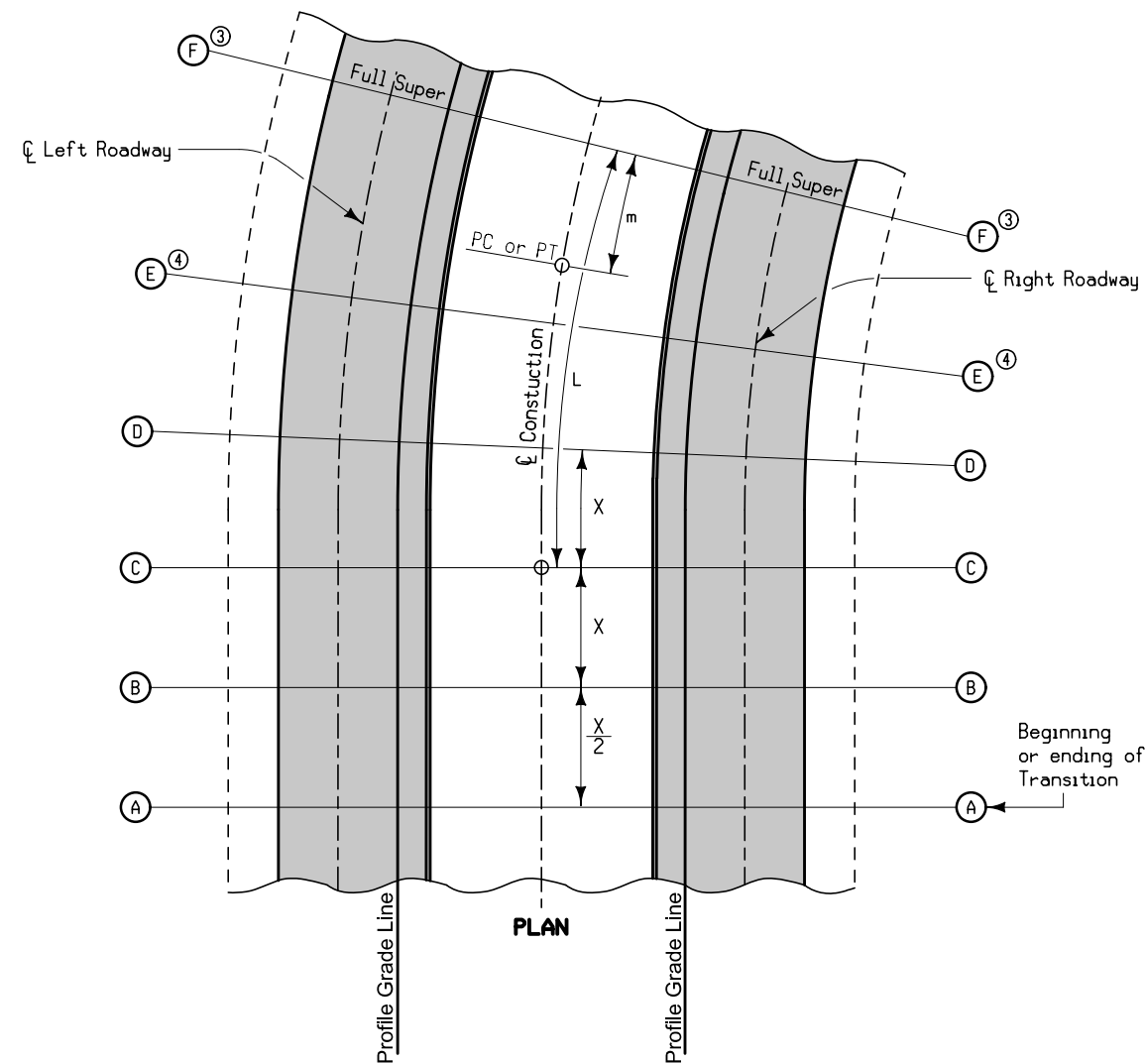












Refer to specific curve data contained in project plans for tangent runout length (x), runoff length (L) and full superelevation (e).

Section F-F Full Super = PC+(m), or PT-(m)  
Place 70% of full superelevation at the PC and PT  
Place 30% of the runoff length within the curve.

Unless otherwise specified, all lengths are measured along the centerline of construction.

Superelevations on this sheet are shown for curves to the right. Curves to the left are a mirror image of what is shown.

Axis of rotation coincides with profile grade location.

4% Super Table were W=24 was used to establish used for this 26' pavement width.

- ① High Side Shoulder: Maintain normal shoulder cross slope (s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.
- ② Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.
- ③ Subgrade Surface
- ④ Subbase Depth

- e = Superelevation Rate
- L = Runoff Length
- x = Distance to Change Cross Slope from 0% to 2%
- m = 30% of Runoff Length (L)
- S = Normal Shoulder Slope

Possible Tabulation:  
101-18

**SUPERELEVATION DETAILS  
FOUR LANE ROADWAY  
RAISED MEDIAN**

BENCH MARK NO. 87: STA. 871+90.90, 4.63' LT. CUT SQUARE  
IN SOUTHEAST CORNER OF HWY 63 BRIDGE, ELEV. 647.436.

### END OF BRIDGE WING TABLE SOUTHBOUND BRIDGE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET*	ELEV	STATION	OFFSET*	ELEV
WI	870+62.69	23.58' LT.	646.33	872+23.80	23.58' LT.	650.07

### UTILITIES LEGEND:

NO KNOWN UTILITIES

### ESTIMATED REVETMENT QUANTITIES

CLASS 'E' REVETMENT	1,020 TONS
ENGINEERING FABRIC	940 SQ. YDS.
EROSION STONE	15 TONS
CLASS 10 EXCAVATION (INCLUDES EXCAVATION FOR CLASS 'E' REVETMENT ONLY)	610 CU. YDS.

### NOTES:

- ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
- TL-4 BRIDGE RAILING PROPOSED.
- PIER TYPE - SINGLE ROW INDIVIDUALLY ENCASED PIER CAPS.
- A TWO INCH LONGITUDINAL STRIP SEAL IS LOCATED ALONG THE CENTER OF THE RAISED MEDIAN.
- NORTHBOUND US 63 BRIDGE WILL BE BUILT FIRST. ONCE TRAFFIC IS SHIFTED ONTO NEW BRIDGE, REMOVE ENTIRE EXISTING BRIDGE. SOUTHBOUND US 63 BRIDGE WILL THEN BE CONSTRUCTED. SEE SHEET V.10 FOR DETAILED S.B. BRIDGE DATA. SEE SHEETS V.11 AND V.12 FOR N.B. US 63 BRIDGE.

- \* MEASURED FROM C S.B. US 63
- \*\* MEASURED FROM C US 63

### NOTES TO DESIGNER:

- SUBSTRUCTURE AND FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN. CONSIDER DRILLED SHAFTS AT PIERS DUE TO SHALLOW BEDROCK AND POTENTIAL SCOUR. APPROXIMATE BEDROCK ELEVATION IS 610.0±. TO BE CONFIRMED WHEN BRIDGE BORINGS ARE COMPLETED.
- DEPENDING ON PIER TYPE, CONSIDER USING NON-MONOLITHIC PIER CAPS.
- DRAINAGE DITCH CHANNEL SHALL BE APPROXIMATELY CENTERED BETWEEN PIERS AT COMPLETION OF CONSTRUCTION.
- TOP OF BERM ELEVATION AT ABUTMENTS IS KEPT LEVEL BETWEEN N.B. AND S.B. BRIDGES.

### LOCATION

S.B. US 63 OVER JEFFERSON  
PARK DRAINAGE DITCH  
T-71/72 N R-13 W  
SECTION 6/31  
KEOKUK/CENTER TOWNSHIP  
WAPELLO COUNTY  
LATITUDE: 40.987722°  
LONGITUDE: 92.403238°



PRELIMINARY

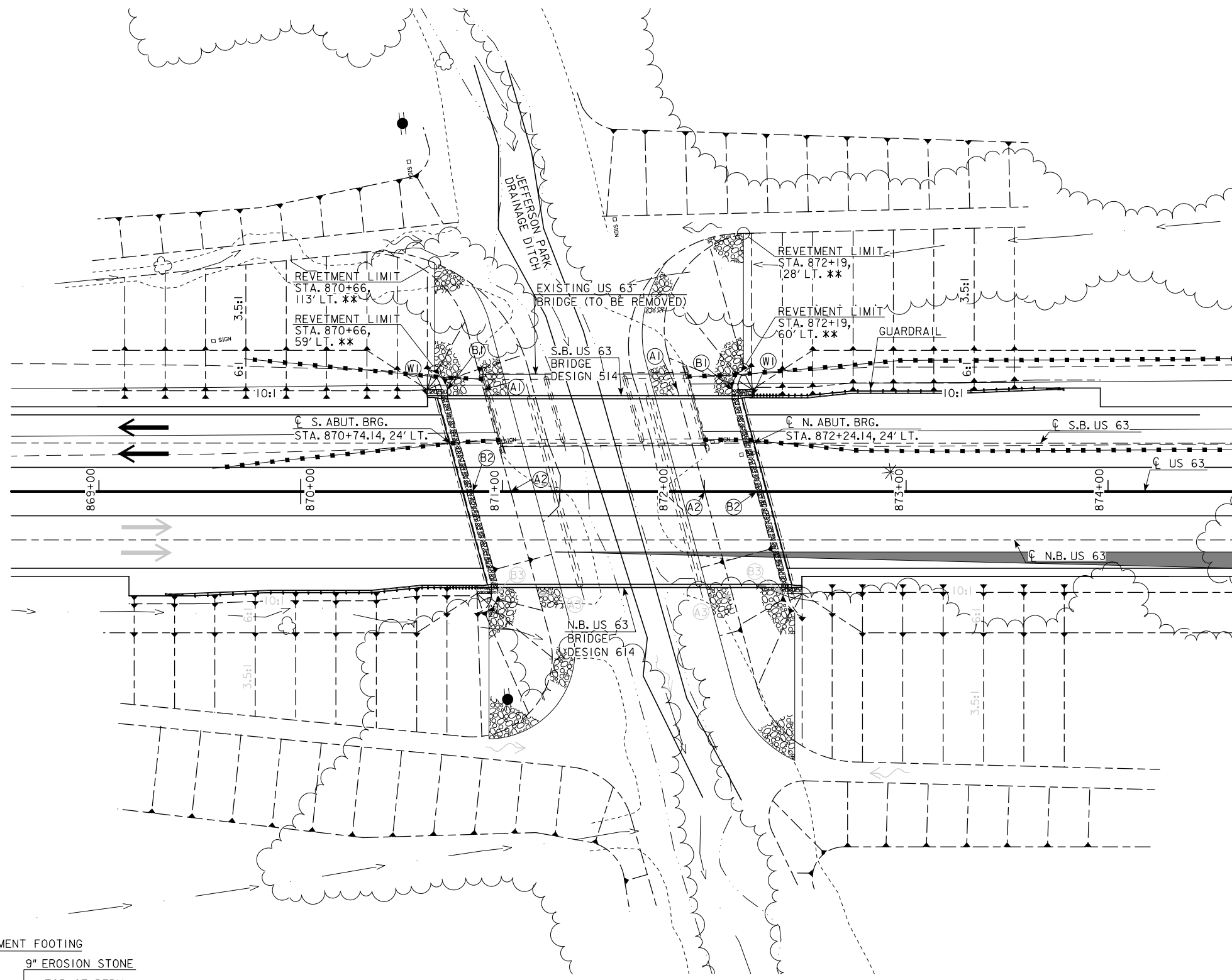
DESIGN FOR 15° SKEW (R.A.)

### 150'-0 X 47'-6 CONTINUOUS CONCRETE SLAB S.B. BRIDGE

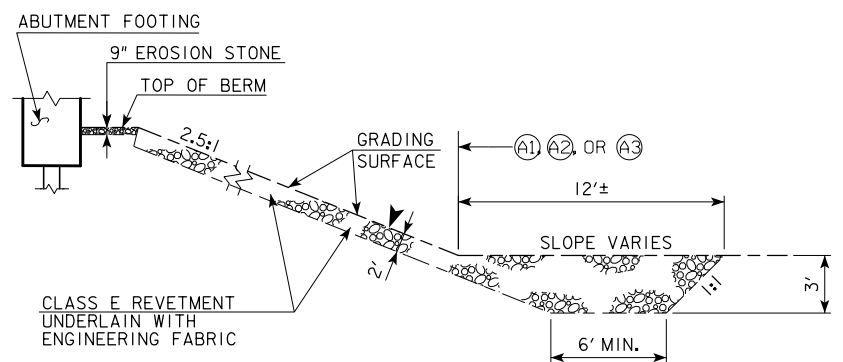
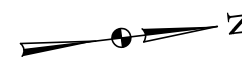
45'-6 END SPANS 59'-0 CENTER SPAN

### SITUATION PLAN

STATION 871+49.14, 24.00' LEFT JULY 2012  
WAPELLO COUNTY



### SITE PLAN



### SECTION THRU EMBEDDED REVETMENT BERM

### BERM SLOPE LOCATION TABLE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET**	ELEV	STATION	OFFSET**	ELEV
A1	870+90.51	50.58' LT.	636.0	871+86.59	50.58' LT.	637.0
A2	871+04.07	0.00	636.0	872+00.15	0.00	637.0
A3	871+17.62	50.58' RT.	636.0	872+13.71	50.58' RT.	637.0
B1	870+71.68	50.58' LT.	643.3	872+12.36	50.58' LT.	646.8
B2	870+85.23	0.00	643.3	872+25.92	0.00	646.8
B3	870+98.79	50.58' RT.	643.3	872+39.47	50.58' RT.	646.8

BENCH MARK NO. 87: STA. 871+90.90, 4.63' LT. CUT SQUARE  
IN SOUTHEAST CORNER OF HWY 63 BRIDGE, ELEV. 647.436.

### END OF BRIDGE WING TABLE NORTHBOUND BRIDGE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET $\Delta$	ELEV	STATION	OFFSET $\Delta$	ELEV
W2	870+87.35	23.58' RT.	646.90	872+48.46	23.58' RT.	650.59

### UTILITIES LEGEND:

NO KNOWN UTILITIES

### ESTIMATED REVETMENT QUANTITIES

CLASS 'E' REVETMENT	1,030 TONS
ENGINEERING FABRIC	940 SQ. YDS.
EROSION STONE	15 TONS
CLASS 10 EXCAVATION (INCLUDES EXCAVATION FOR CLASS 'E' REVETMENT ONLY)	610 CU. YDS.

### NOTES:

- ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
- TL-4 BRIDGE RAILING PROPOSED.
- PIER TYPE - SINGLE ROW INDIVIDUALLY ENCASED PIER CAPS.
- A TWO INCH LONGITUDINAL STRIP SEAL IS LOCATED ALONG THE CENTER OF THE RAISED MEDIAN.
- NORTHBOUND US 63 BRIDGE WILL BE BUILT FIRST. ONCE TRAFFIC IS SHIFTED ONTO NEW BRIDGE, REMOVE ENTIRE EXISTING BRIDGE. SOUTHBOUND US 63 BRIDGE WILL THEN BE CONSTRUCTED. SEE SHEET V.11 FOR DETAILED N.B. BRIDGE DATA. SEE SHEETS V.10 AND V.10A FOR S.B. US 63 BRIDGE.

- $\Delta$  MEASURED FROM  $\phi$  N.B. US 63.
- \*\* MEASURED FROM  $\phi$  US 63

### NOTES TO DESIGNER:

- SUBSTRUCTURE AND FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN. CONSIDER DRILLED SHAFTS AT PIERS DUE TO SHALLOW BEDROCK AND POTENTIAL SCOUR. APPROXIMATE BEDROCK ELEVATION IS 610.0±. TO BE CONFIRMED WHEN BRIDGE BORINGS ARE COMPLETED.
- DEPENDING ON PIER TYPE, CONSIDER USING NON-MONOLITHIC PIER CAPS.
- DRAINAGE DITCH CHANNEL SHALL BE APPROXIMATELY CENTERED BETWEEN PIERS AT COMPLETION OF CONSTRUCTION. TOP OF BERM ELEVATION AT ABUTMENTS IS KEPT LEVEL BETWEEN N.B. AND S.B. BRIDGES.

### LOCATION

N.B. US 63 OVER JEFFERSON  
PARK DRAINAGE DITCH  
T-71/72 N R-13 W  
SECTION 6/31  
KEOKUK/CENTER TOWNSHIP  
WAPELLO COUNTY  
LATITUDE: 40.987722°  
LONGITUDE: 92.403238°



PRELIMINARY

DESIGN FOR 15° SKEW (R.A.)

## 150'-0 X 47'-6 CONTINUOUS CONCRETE SLAB N.B. BRIDGE

45'-6 END SPANS

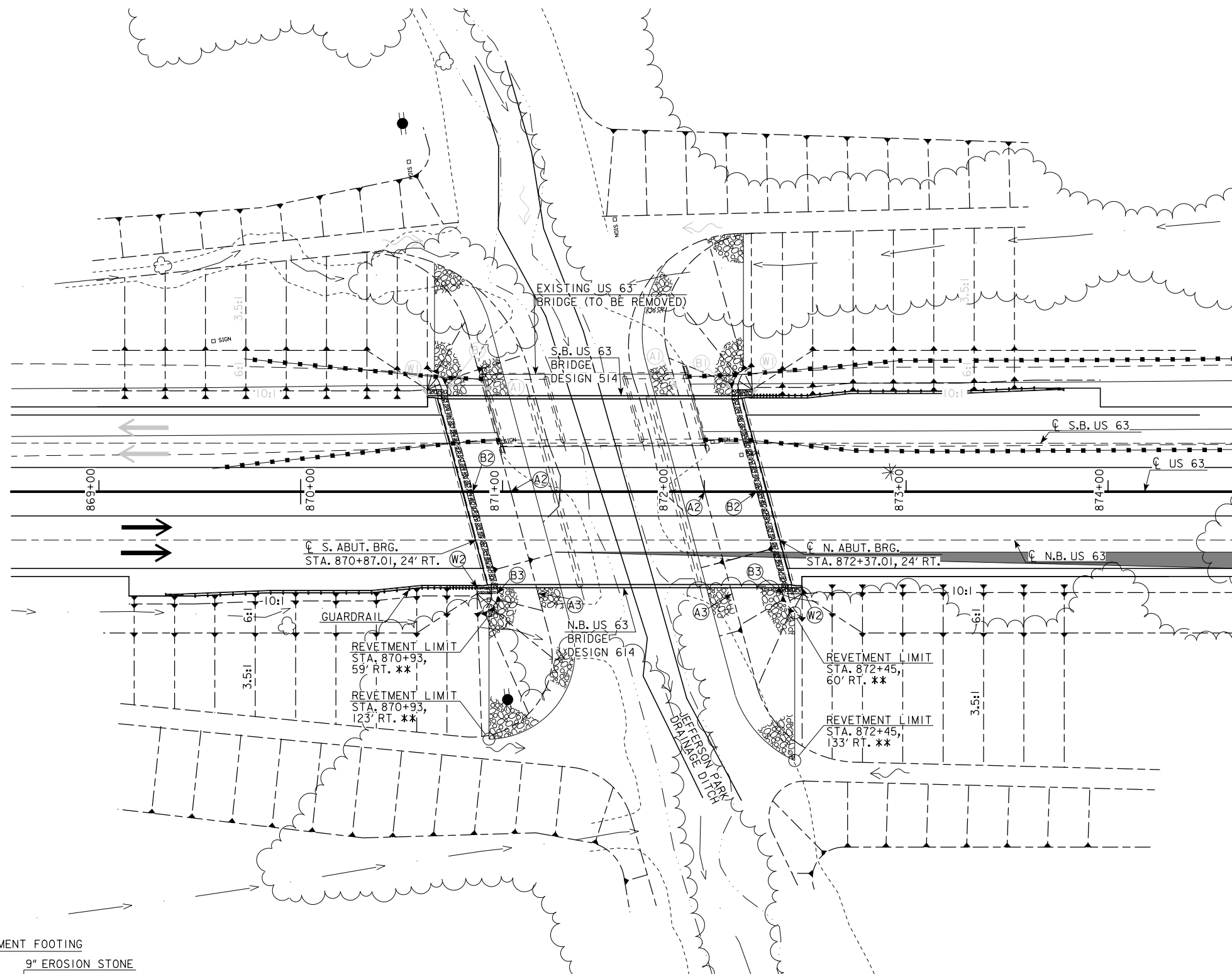
59'-0 CENTER SPAN

### SITUATION PLAN

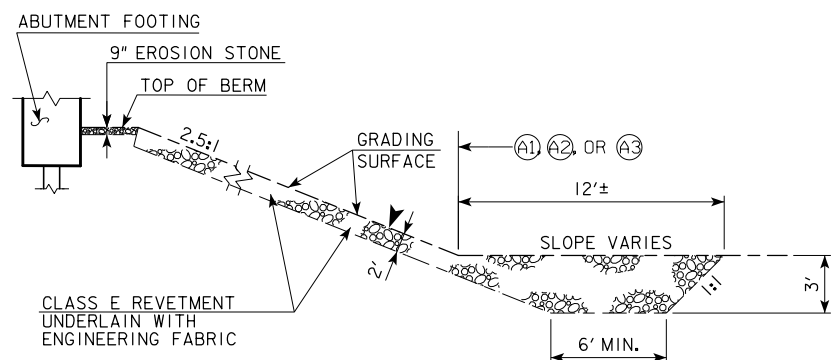
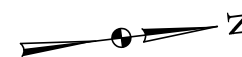
STATION 871+62.01, 24.00' RIGHT

JULY 2012

### WAPELLO COUNTY



### SITE PLAN

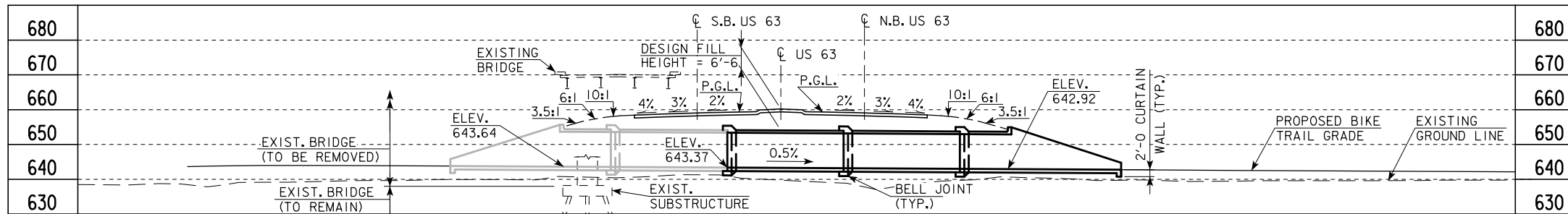


### SECTION THRU EMBEDDED REVETMENT BERM

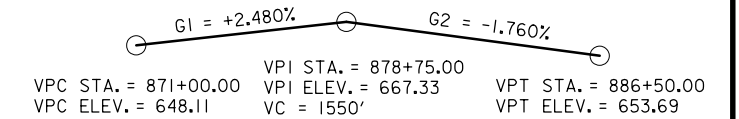
### BERM SLOPE LOCATION TABLE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET**	ELEV	STATION	OFFSET**	ELEV
A1	870+90.51	50.58' LT.	636.0	871+86.59	50.58' LT.	637.0
A2	871+04.07	0.00	636.0	872+00.15	0.00	637.0
A3	871+17.62	50.58' RT.	636.0	872+13.71	50.58' RT.	637.0
B1	870+71.68	50.58' LT.	643.3	872+12.36	50.58' LT.	646.8
B2	870+85.23	0.00	643.3	872+25.92	0.00	646.8
B3	870+98.79	50.58' RT.	643.3	872+39.47	50.58' RT.	646.8

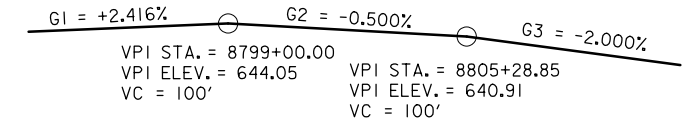
BENCH MARK NO. 88: STA. 883+51.21, 39.97' LT. BRASS PLUG @ NORTHWEST CORNER OF HWY 63 BRIDGE OVER RAILROAD TRACKS, ELEV. 669.179.



LONGITUDINAL SECTION ALONG CULVERT



US 63 PROPOSED PROFILE GRADE



BIKE TRAIL PROPOSED PROFILE GRADE

BIKE TRAIL CURVE DATA

PI STA. 8798+76.62	PI STA. 8802+65.94
$\Delta = 47^\circ 05' 20''$	$\Delta = 94^\circ 13' 02''$
$D = 38^\circ 11' 50''$	$D = 63^\circ 39' 43''$
$T = 65.36$	$T = 96.88$
$L = 123.28$	$L = 148.00$
$E = 13.62$	$E = 42.23$
$R = 150.00$	$R = 90.00$
PC STA. 8798+11.26	PC STA. 8801+69.06
PT STA. 8799+34.54	PT STA. 8803+17.05

NOTES:  
 ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 STAGE 1 CONSTRUCTION TO BE COMPLETED WITH TRAFFIC ON EXISTING BRIDGE. TRAFFIC THEN TO BE MOVED ONTO COMPLETED N.B. US 63. EXISTING BRIDGE THEN TO BE REMOVED FOLLOWED BY COMPLETION OF STAGE 2 CONSTRUCTION. SEE SHEET V.13A FOR STAGE 2 CONSTRUCTION.  
 EXISTING BRIDGE TO BE REMOVED BY OTHERS; DESIGN NO. 914.  
 INSIDE HEIGHT OF CULVERT IS A CONSTANT 10'-0" AS A FROST TROUGH IS NOT USED.

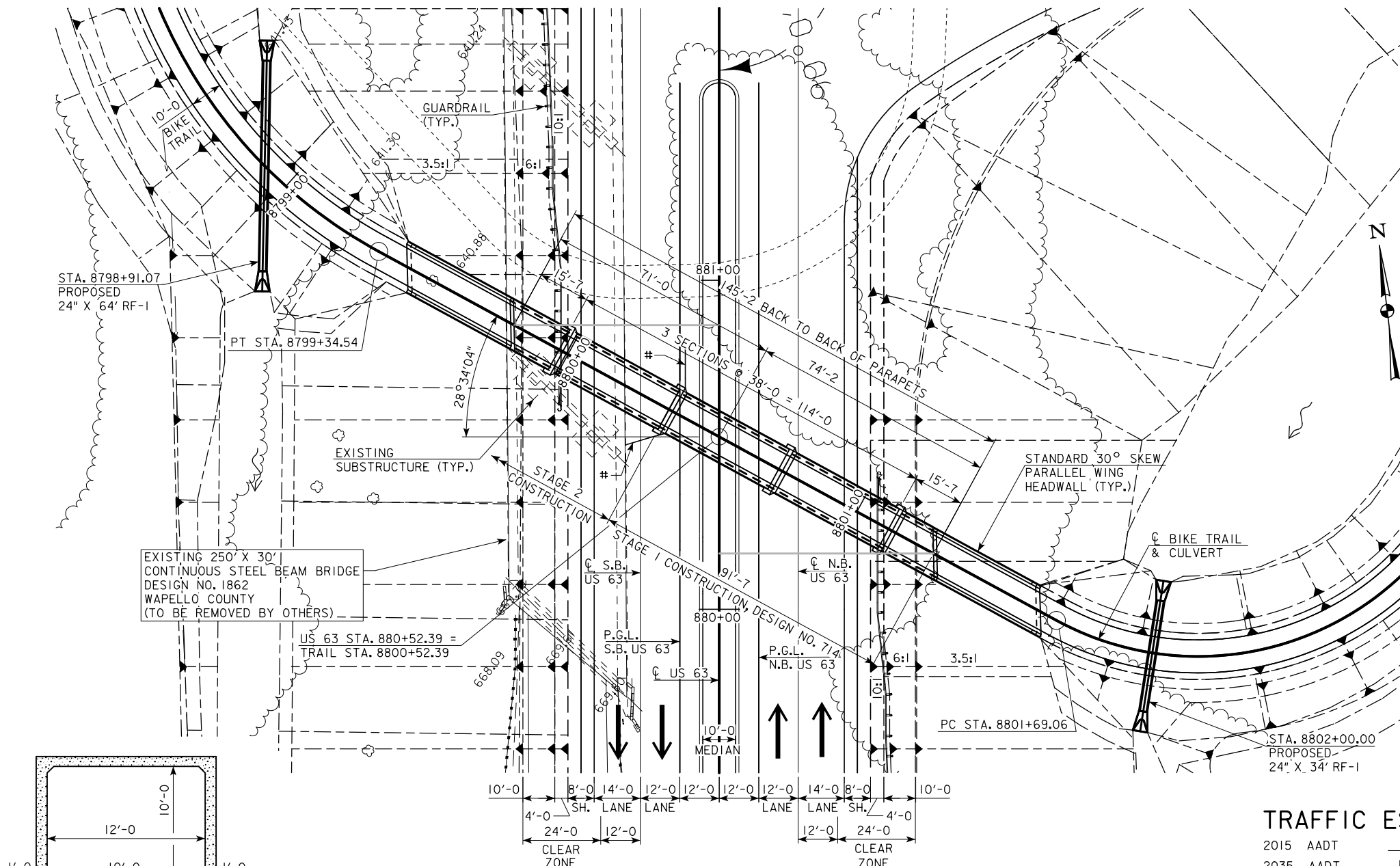
NOTES TO DESIGNER:  
 BELL JOINTS AND CAMBER ARE ANTICIPATED TO BE NEEDED DUE TO SETTLEMENTS. CAMBER ELEVATIONS AND DETAILS TO BE PROVIDED DURING FINAL DESIGN.  
 PRECAST CONCRETE RCB OPTION SHOULD BE CONSIDERED FOR USE. PIPE HANDRAIL ON HEADWALLS SHOULD BE CONSIDERED. LIGHTING FOR THE INSIDE OF THE CULVERT SHOULD BE CONSIDERED. SEALING OF THE CULVERT JOINTS SHALL BE CONSIDERED. 3.5:1 SIDE SLOPES TO BE SLIGHTLY STEEPENED AROUND HEADWALLS TO ACCOMMODATE THE USE OF STANDARD HEADWALL DETAILS.

LOCATION

BIKE TRAIL UNDER US 63  
 T-72 N R-13 W  
 SECTION 31  
 CITY OF OTTUMWA  
 CENTER TOWNSHIP  
 WAPELLO COUNTY  
 LATITUDE: 40.990183°  
 LONGITUDE: 92.402806°

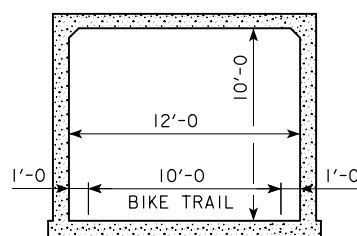


PRELIMINARY



SITUATION PLAN

# TEMPORARY SHEET PILING, IF REQUIRED.



CULVERT SECTION

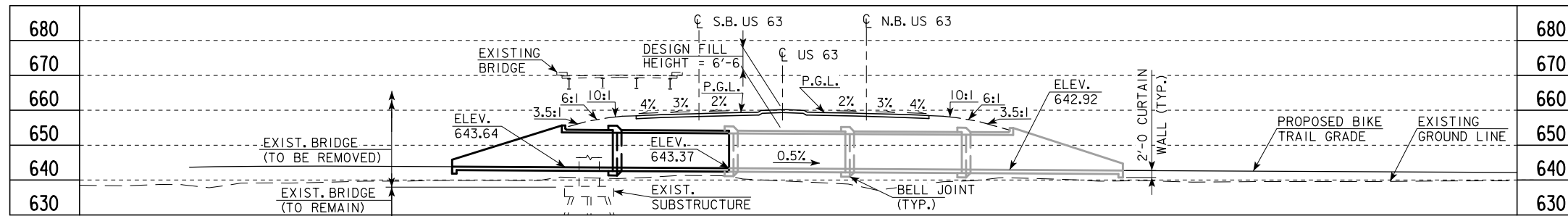
TRAFFIC ESTIMATE

2015 AADT	7870	V.P.D.
2035 AADT	10320	V.P.D.
2035 DHV	1066	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALS		

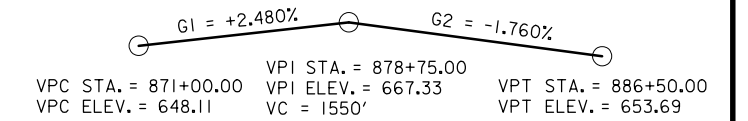
DESIGN FOR 28°34'04" SKEW (L.A.)  
**12' X 10' X 145'-2 REINFORCED CONCRETE BOX CULVERT**  
 SITUATION PLAN  
 STATION 880+52.39  
 WAPELLO COUNTY  
 JULY 2012

DESIGN SHEET NO. 1 OF 1 FILE NO. 29590 DESIGN NO. 714

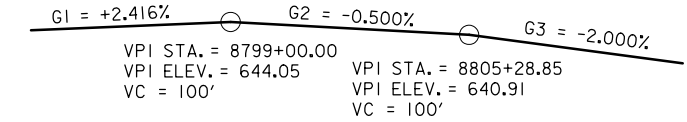
BENCH MARK NO. 88: STA. 883+51.21, 39.97' LT. BRASS PLUG @ NORTHWEST CORNER OF HWY 63 BRIDGE OVER RAILROAD TRACKS, ELEV. 669.179.



LONGITUDINAL SECTION ALONG CULVERT



US 63  
PROPOSED PROFILE GRADE



BIKE TRAIL  
PROPOSED PROFILE GRADE  
BIKE TRAIL CURVE DATA

PI STA. 8798+76.62	PI STA. 8802+65.94
$\Delta = 47^\circ 05' 20''$	$\Delta = 94^\circ 13' 02''$
$D = 38^\circ 11' 50''$	$D = 63^\circ 39' 43''$
T = 65.36	T = 96.88
L = 123.28	L = 148.00
E = 13.62	E = 42.23
R = 150.00	R = 90.00
PC STA. 8798+11.26	PC STA. 8801+69.06
PT STA. 8799+34.54	PT STA. 8803+17.05

NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
STAGE 1 CONSTRUCTION TO BE COMPLETED WITH TRAFFIC ON EXISTING BRIDGE. TRAFFIC THEN TO BE MOVED ONTO COMPLETED N.B. US 63. EXISTING BRIDGE THEN TO BE REMOVED FOLLOWED BY COMPLETION OF STAGE 2 CONSTRUCTION.  
SEE SHEET V.13 FOR STAGE 1 CONSTRUCTION.  
EXISTING BRIDGE TO BE REMOVED BY OTHERS, DESIGN NO. 914.  
INSIDE HEIGHT OF CULVERT IS A CONSTANT 10'-0" AS A FROST TROUGH IS NOT USED.

NOTES TO DESIGNER:

BELL JOINTS AND CAMBER ARE ANTICIPATED TO BE NEEDED DUE TO SETTLEMENTS. CAMBER ELEVATIONS AND DETAILS TO BE PROVIDED DURING FINAL DESIGN.  
PRECAST CONCRETE RCB OPTION SHOULD BE CONSIDERED FOR USE.  
PIPE HANDRAIL ON HEADWALLS SHOULD BE CONSIDERED.  
LIGHTING FOR THE INSIDE OF THE CULVERT SHOULD BE CONSIDERED.  
SEALING OF THE CULVERT JOINTS SHALL BE CONSIDERED.  
3.5:1 SIDE SLOPES TO BE SLIGHTLY STEEPENED AROUND HEADWALLS TO ACCOMMODATE THE USE OF STANDARD HEADWALL DETAILS.

LOCATION

BIKE TRAIL UNDER US 63  
T-72 N R-13 W  
SECTION 31  
CITY OF OTTUMWA  
CENTER TOWNSHIP  
WAPELLO COUNTY  
LATITUDE: 40.990183°  
LONGITUDE: 92.402806°



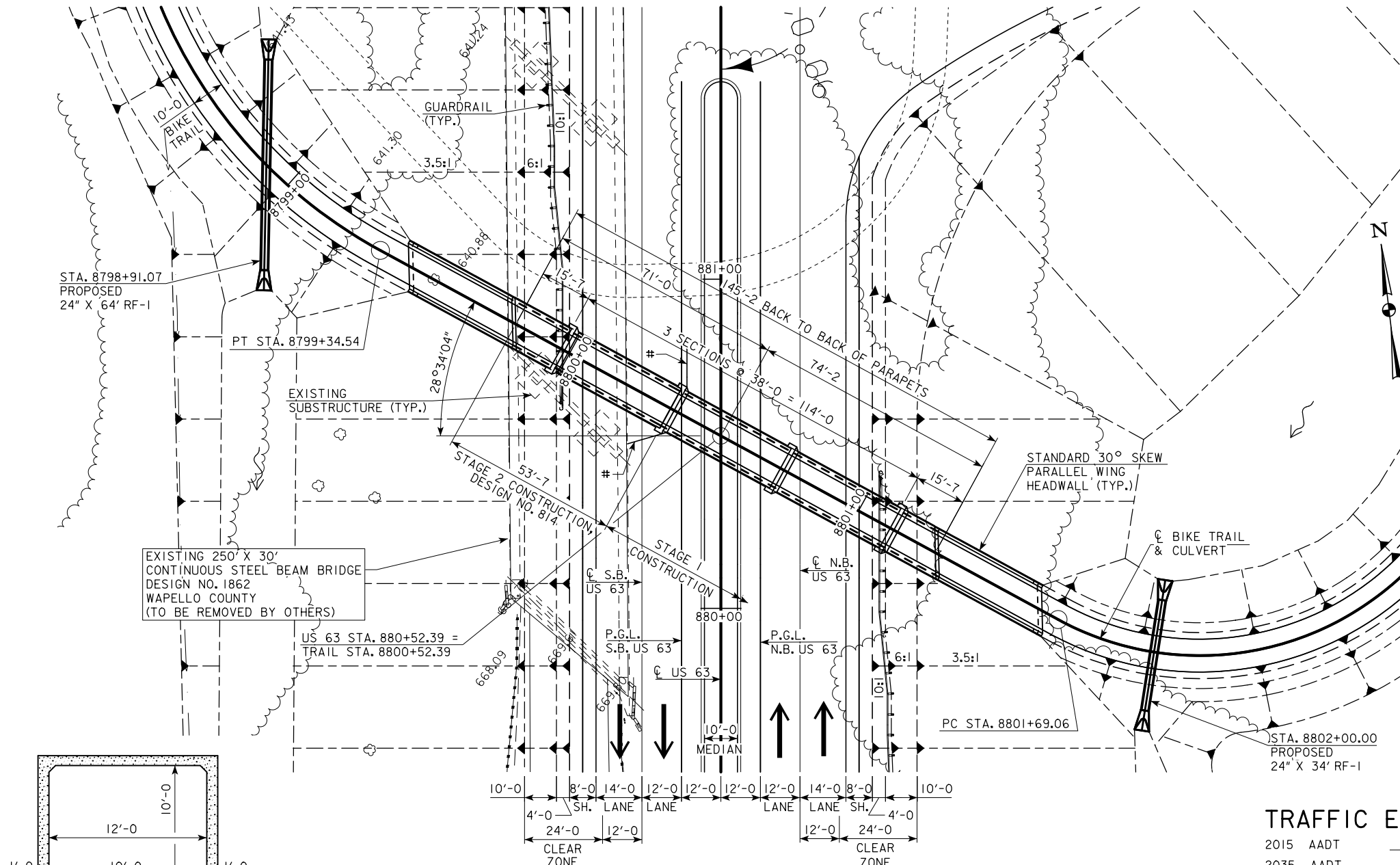
PRELIMINARY

DESIGN FOR 28°34'04" SKEW (L.A.)  
**12' X 10' X 145'-2 REINFORCED  
CONCRETE BOX CULVERT**

SITUATION PLAN  
STATION 880+52.39  
WAPELLO COUNTY  
JULY 2012

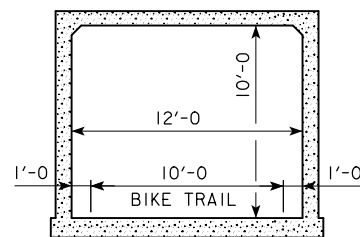
TRAFFIC ESTIMATE

2015 AADT	7870	V.P.D.
2035 AADT	10320	V.P.D.
2035 DHV	1066	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALs		



SITUATION PLAN

# TEMPORARY SHEET PILING, IF REQUIRED.



CULVERT SECTION

**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\R/CB
- Proposed Pipe\R/CB
- 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**

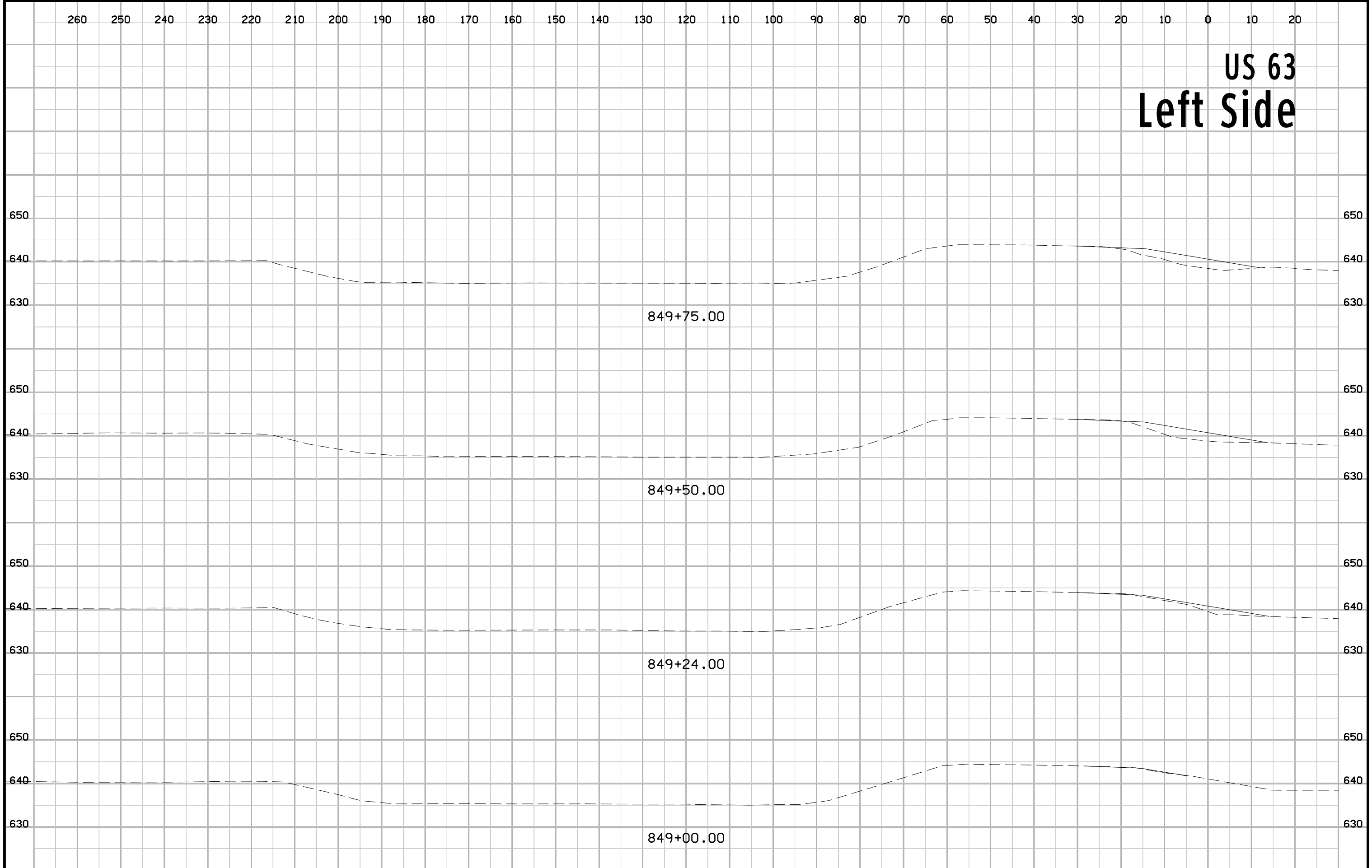
- Existing ROW  
|  
Existing Right-of-Way Limit
- Proposed ROW  
|  
Proposed Right-of-Way Limit
- Temporary ROW  
|  
Temporary Right-of-Way Limit

**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

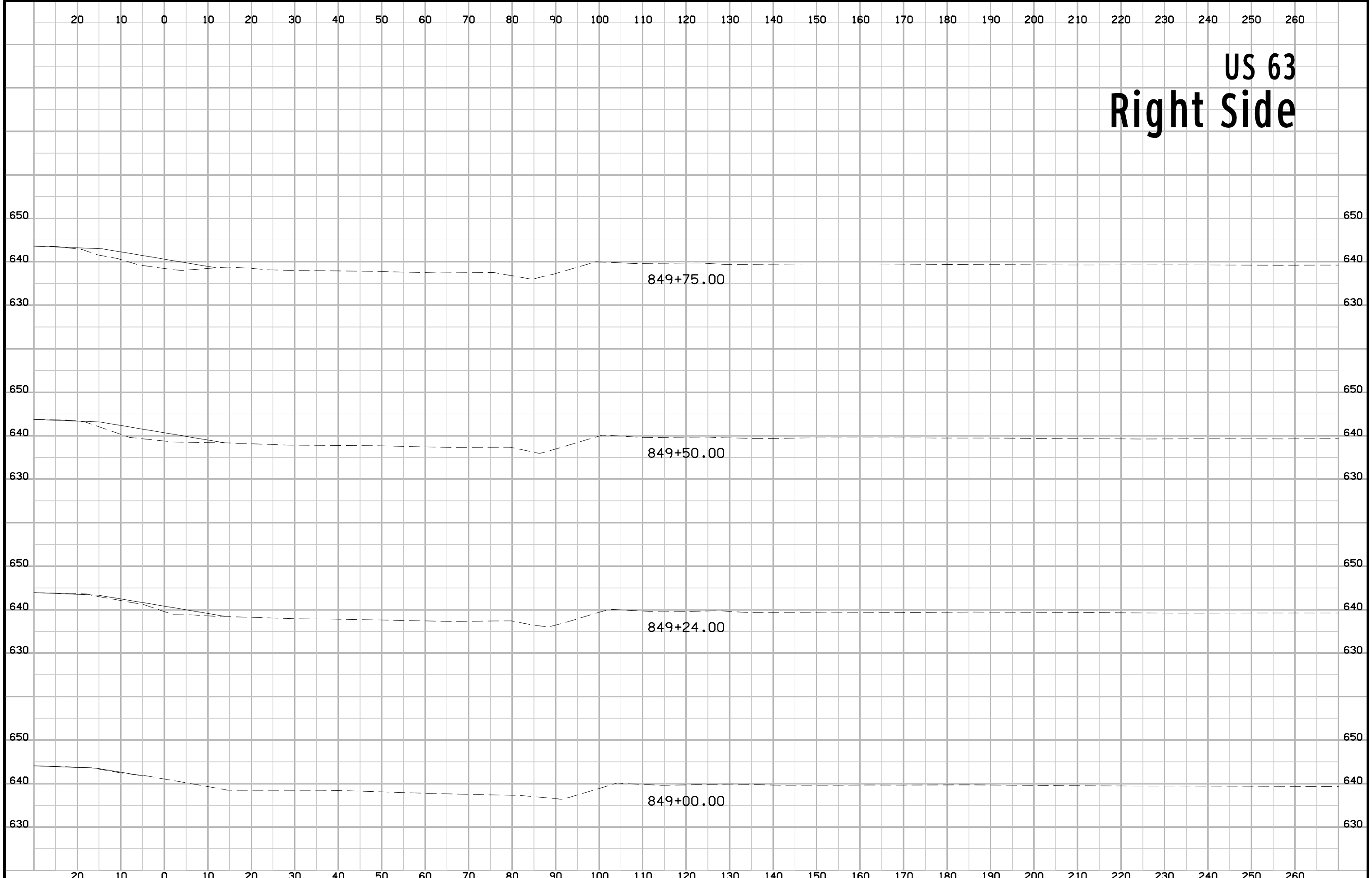
(COVERS SHEET SERIES W, X, Y, & Z)



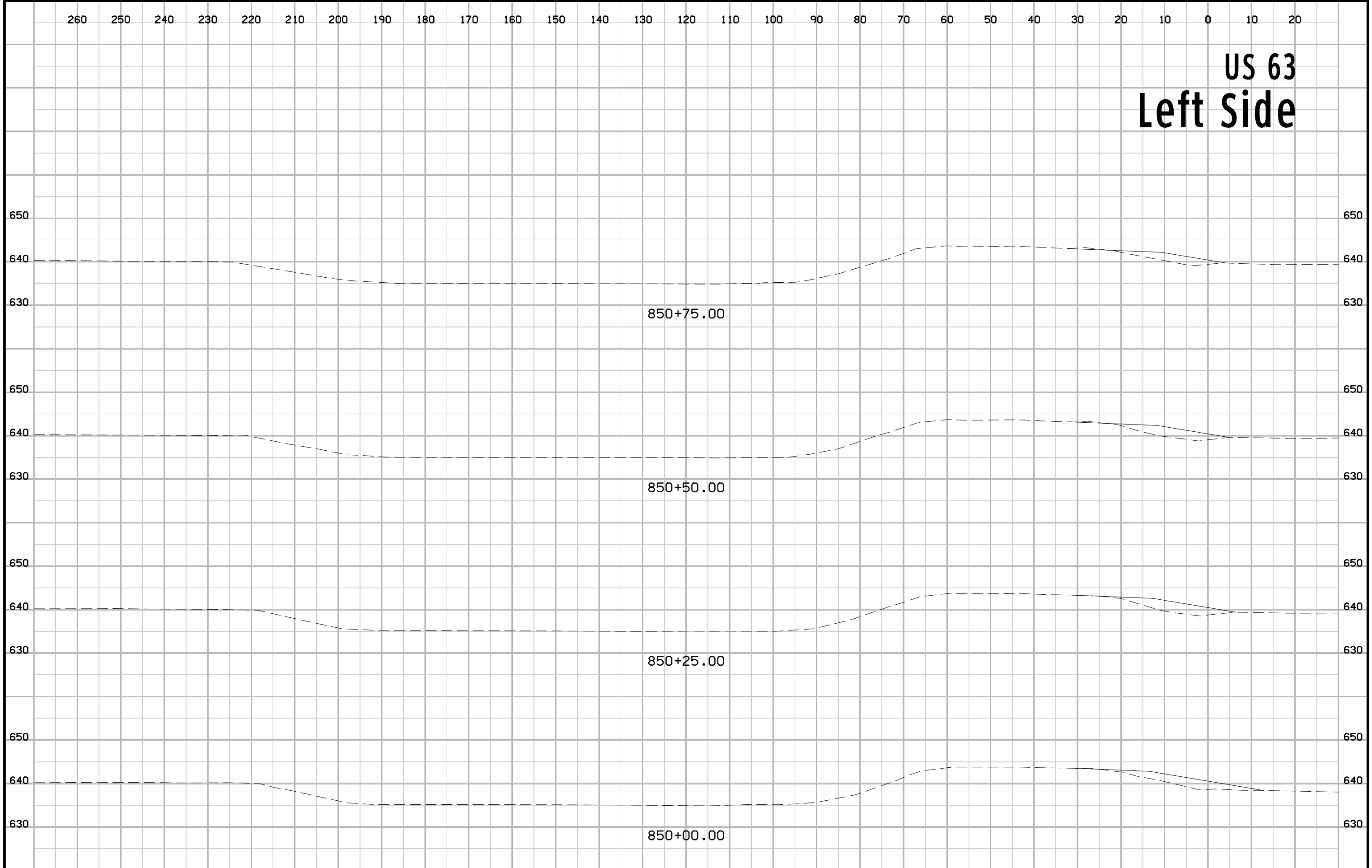
# US 63 Left Side



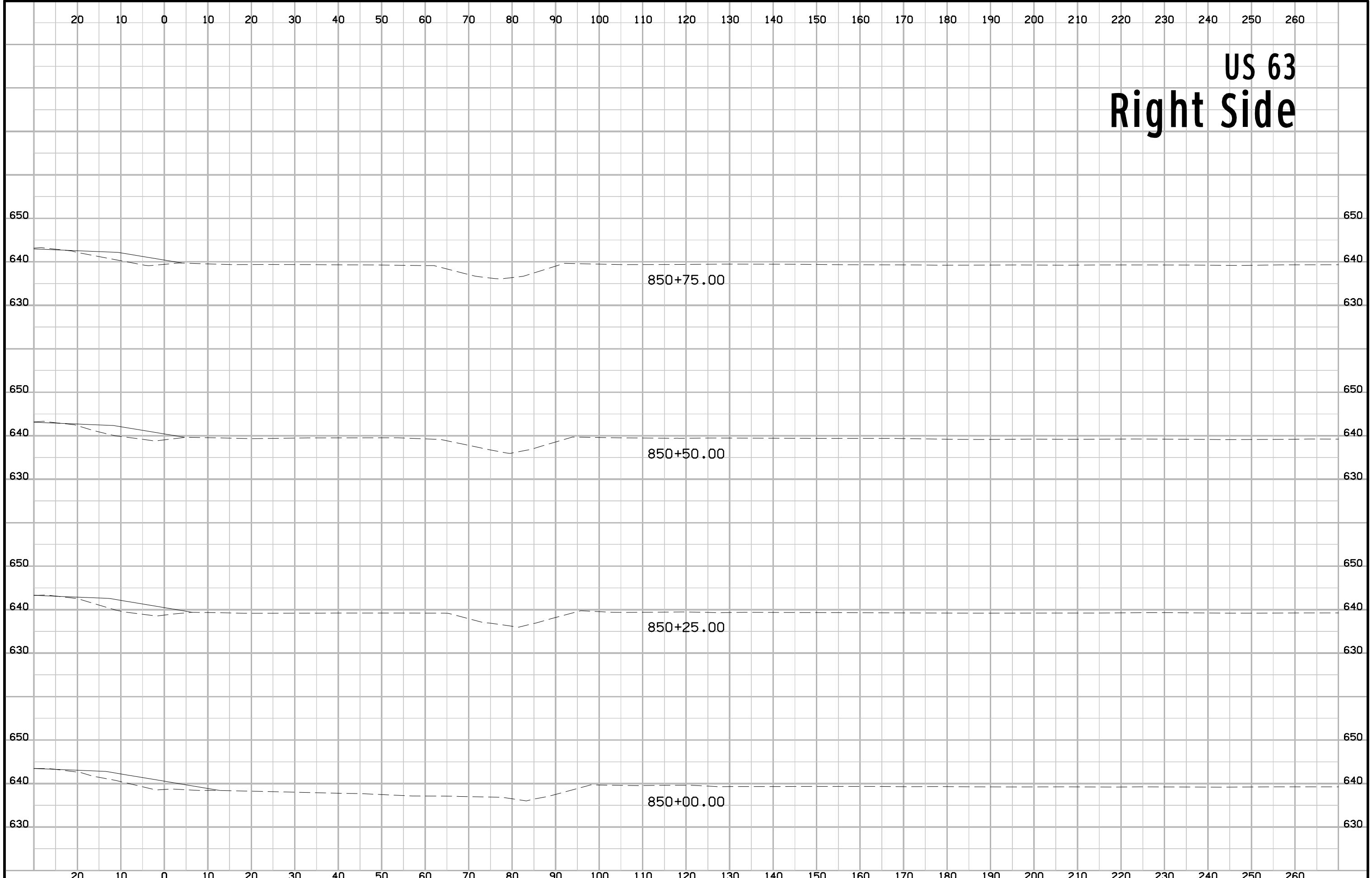
# US 63 Right Side



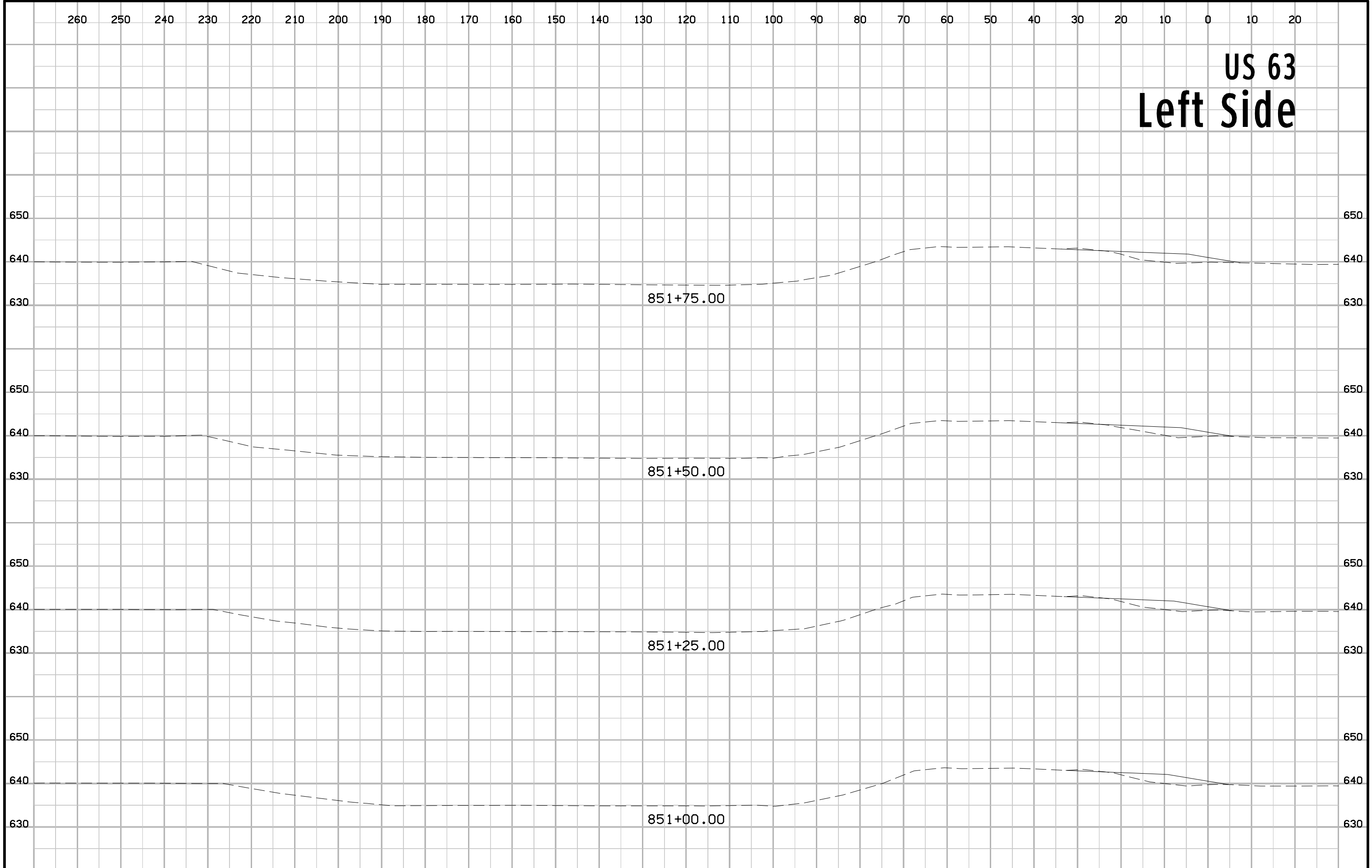
# US 63 Left Side



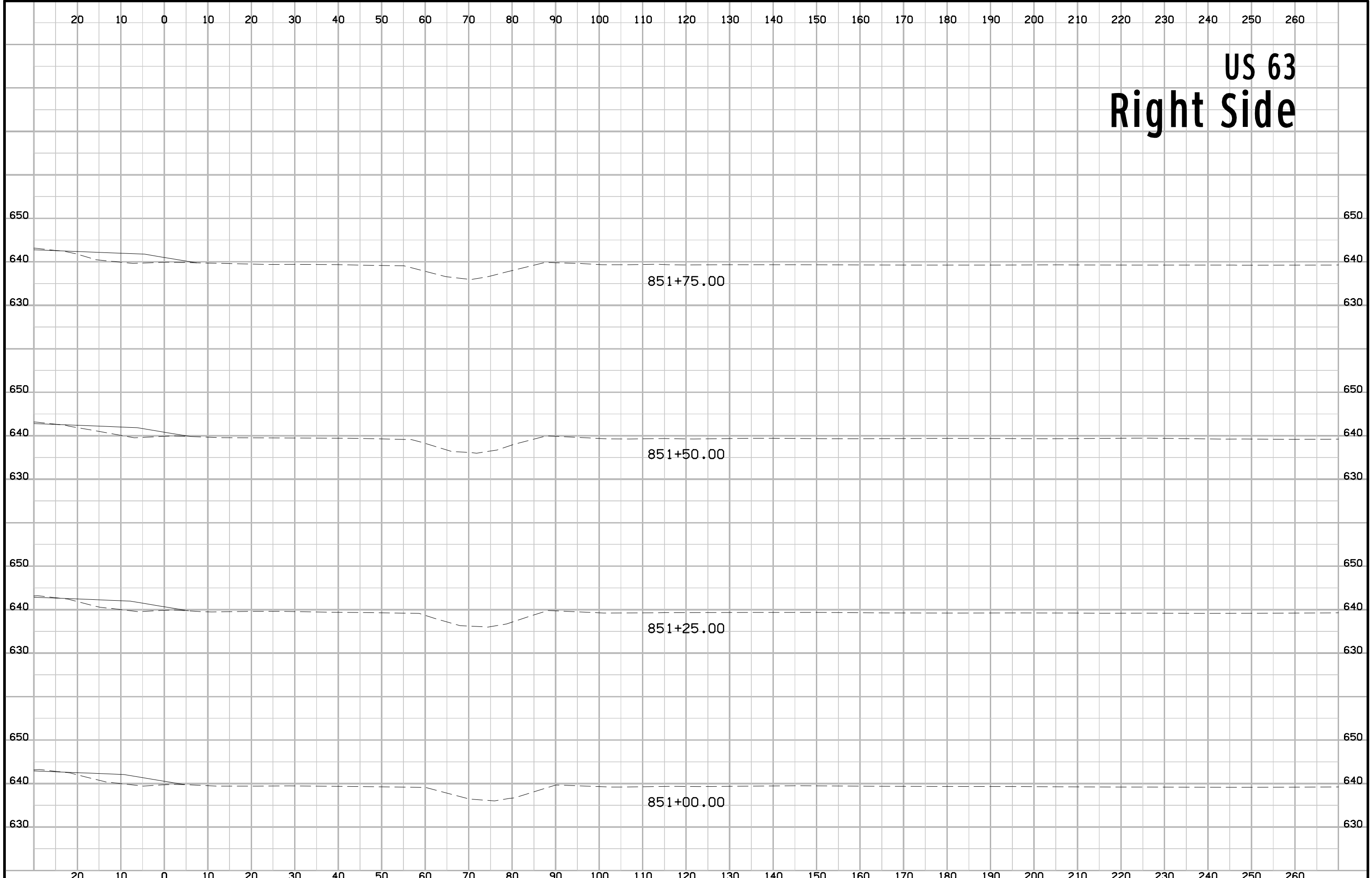
# US 63 Right Side



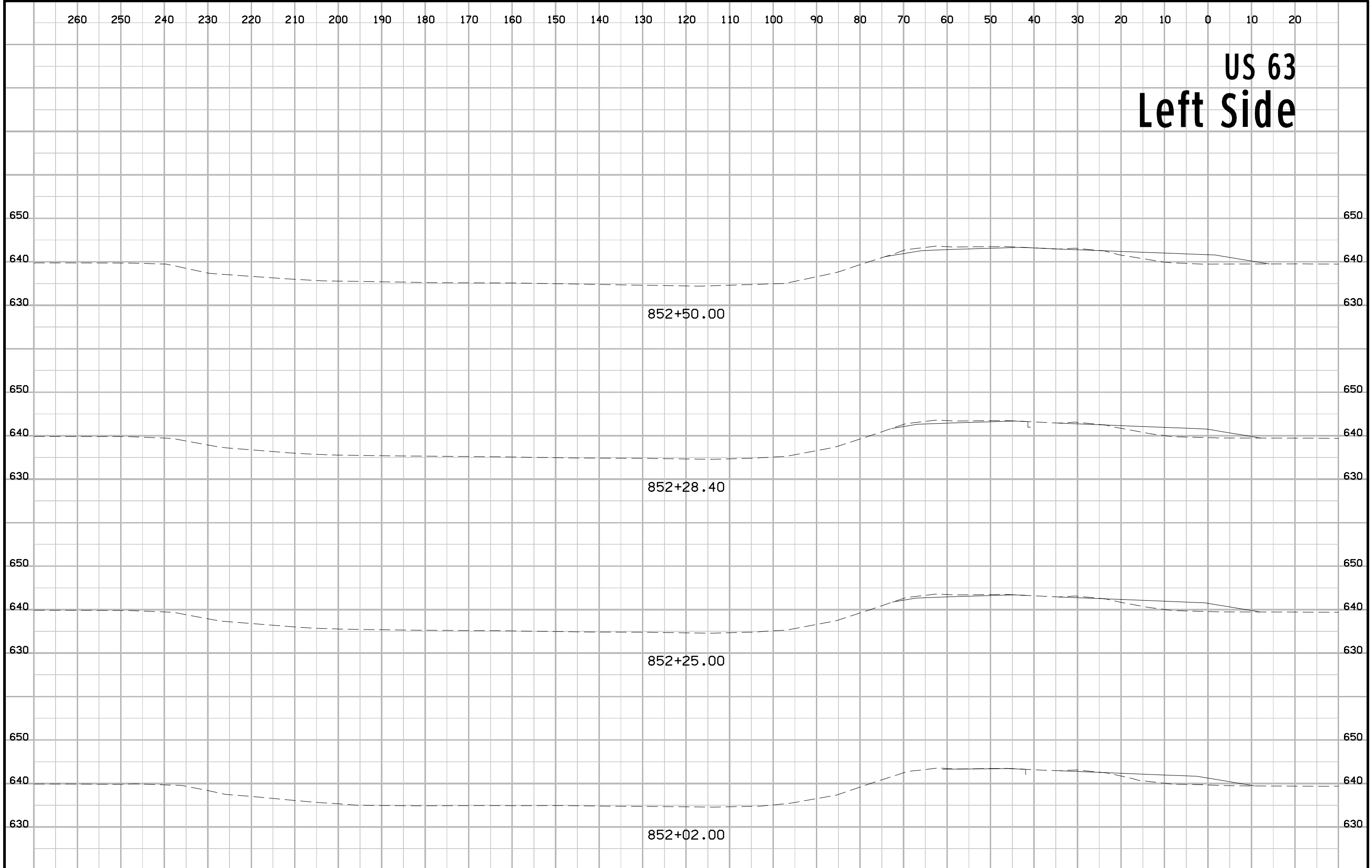
# US 63 Left Side



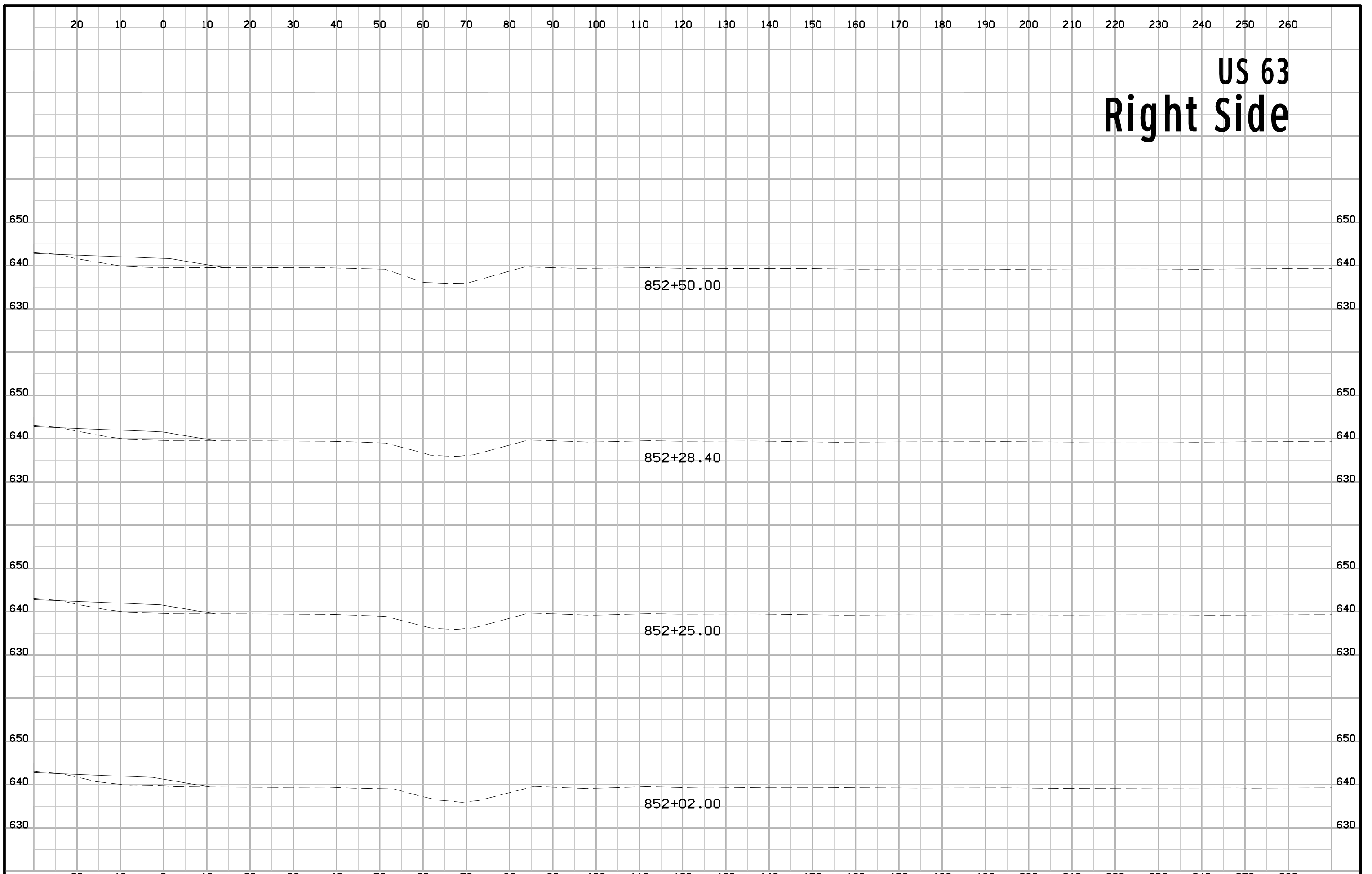
# US 63 Right Side



# US 63 Left Side

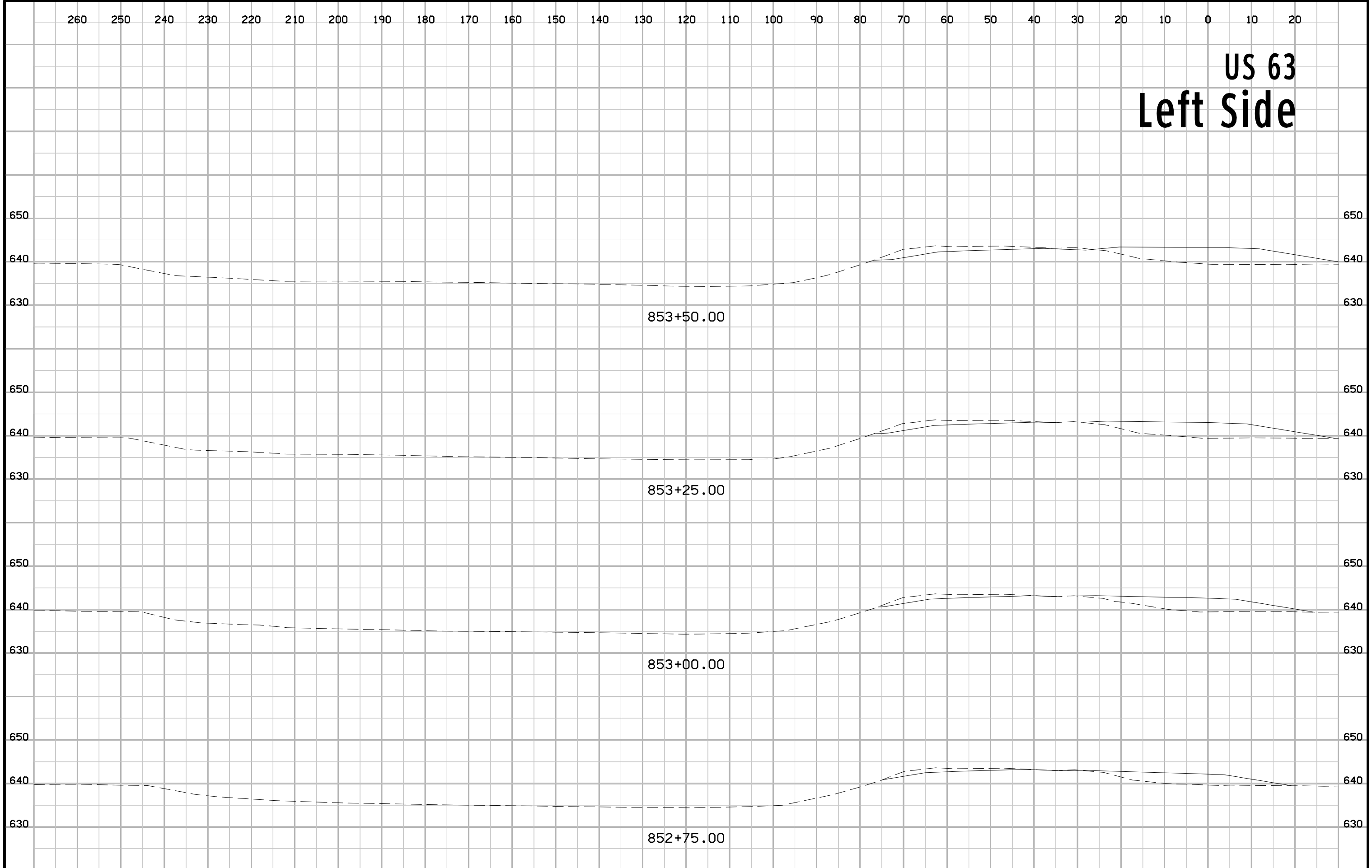


# US 63 Right Side





# US 63 Left Side



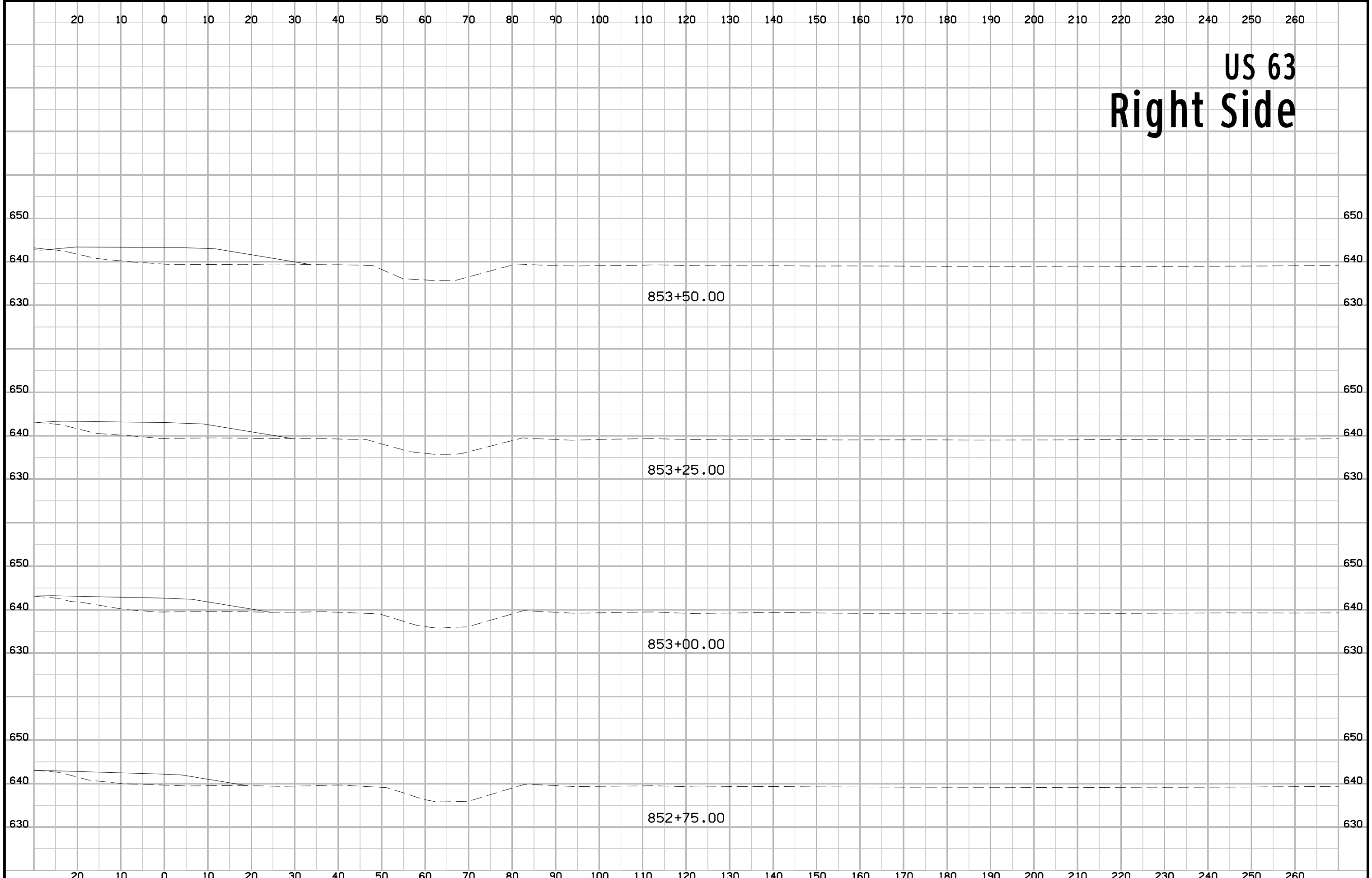
853+50.00

853+25.00

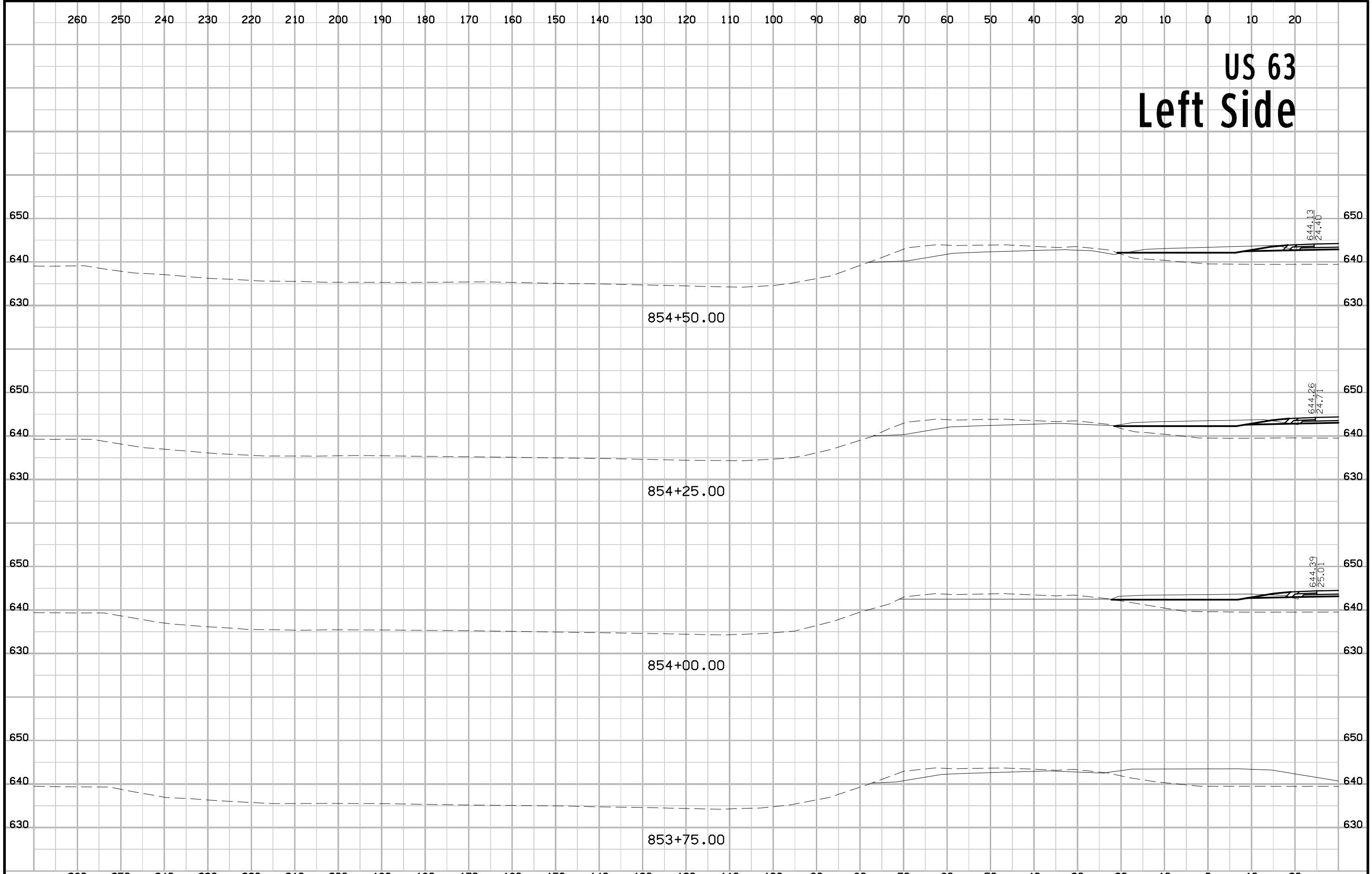
853+00.00

852+75.00

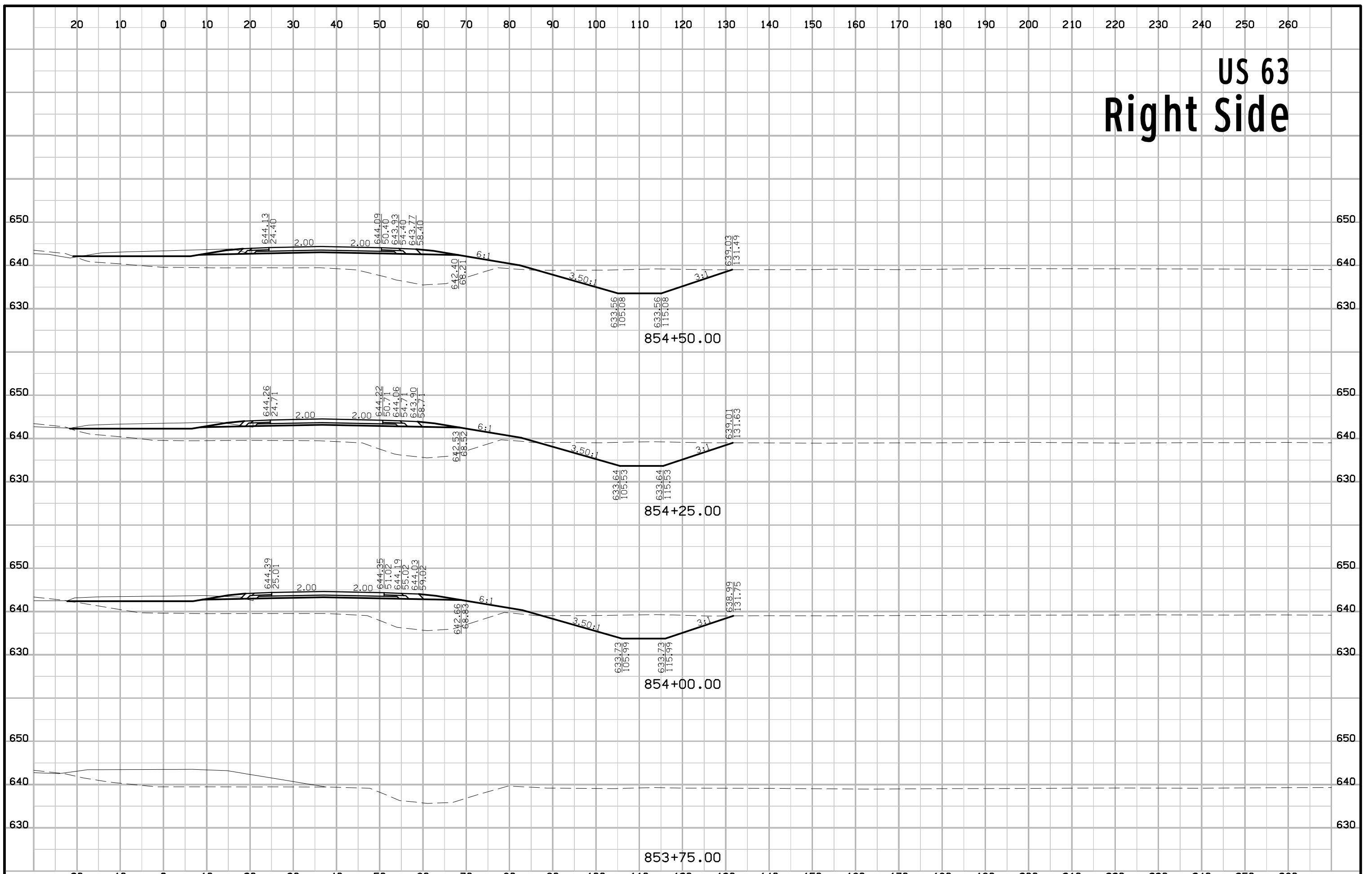
# US 63 Right Side



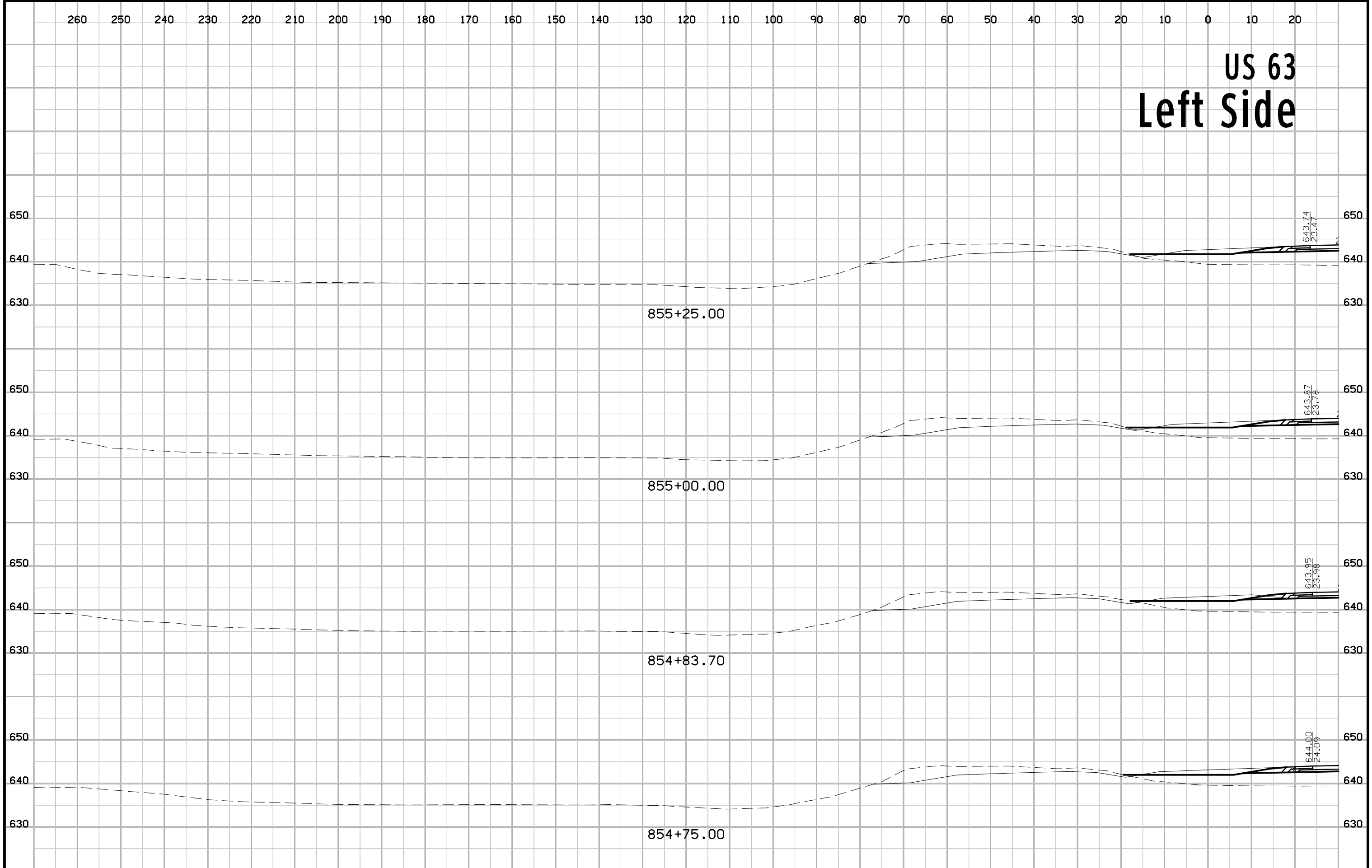
# US 63 Left Side



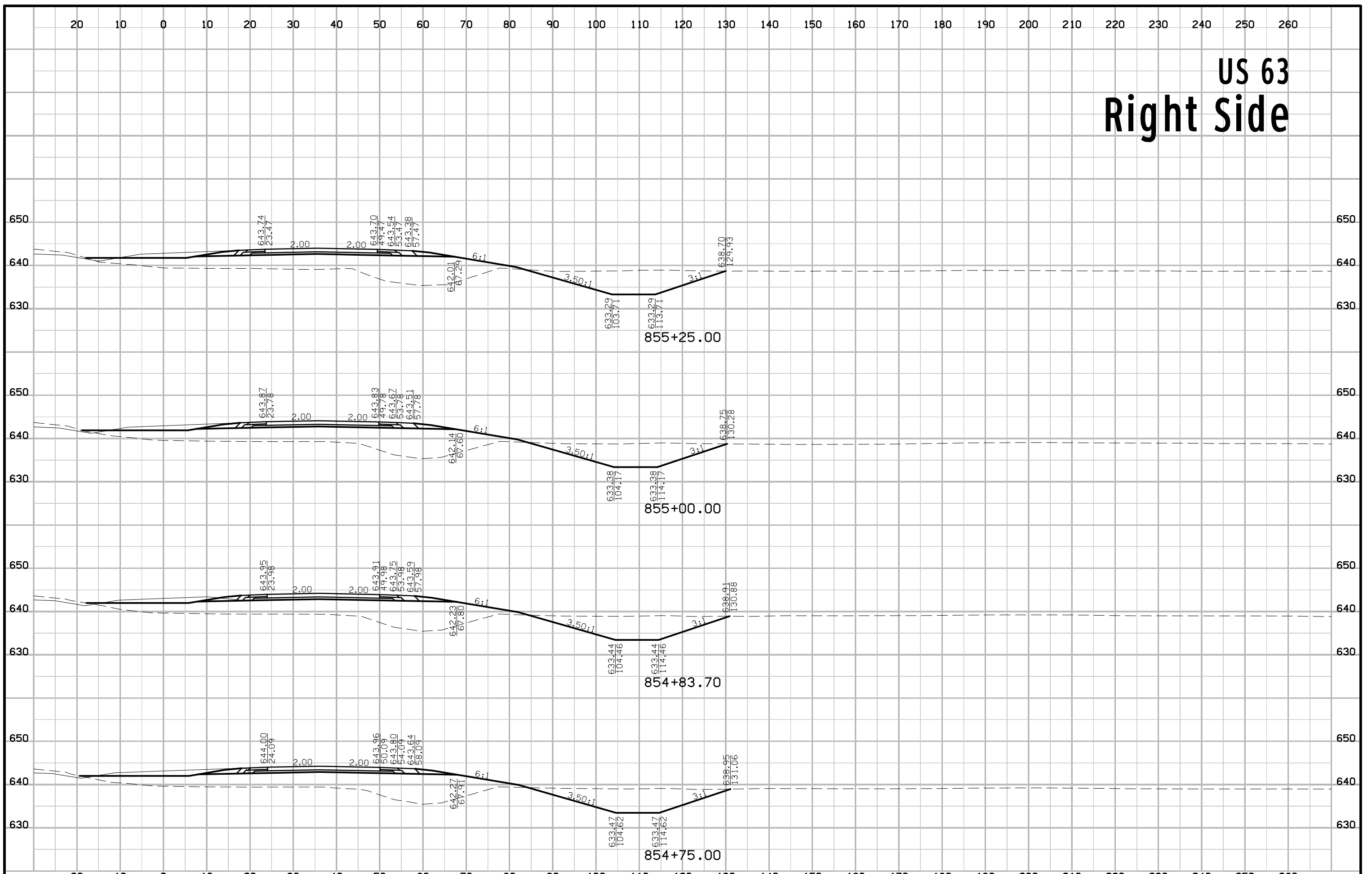
# US 63 Right Side



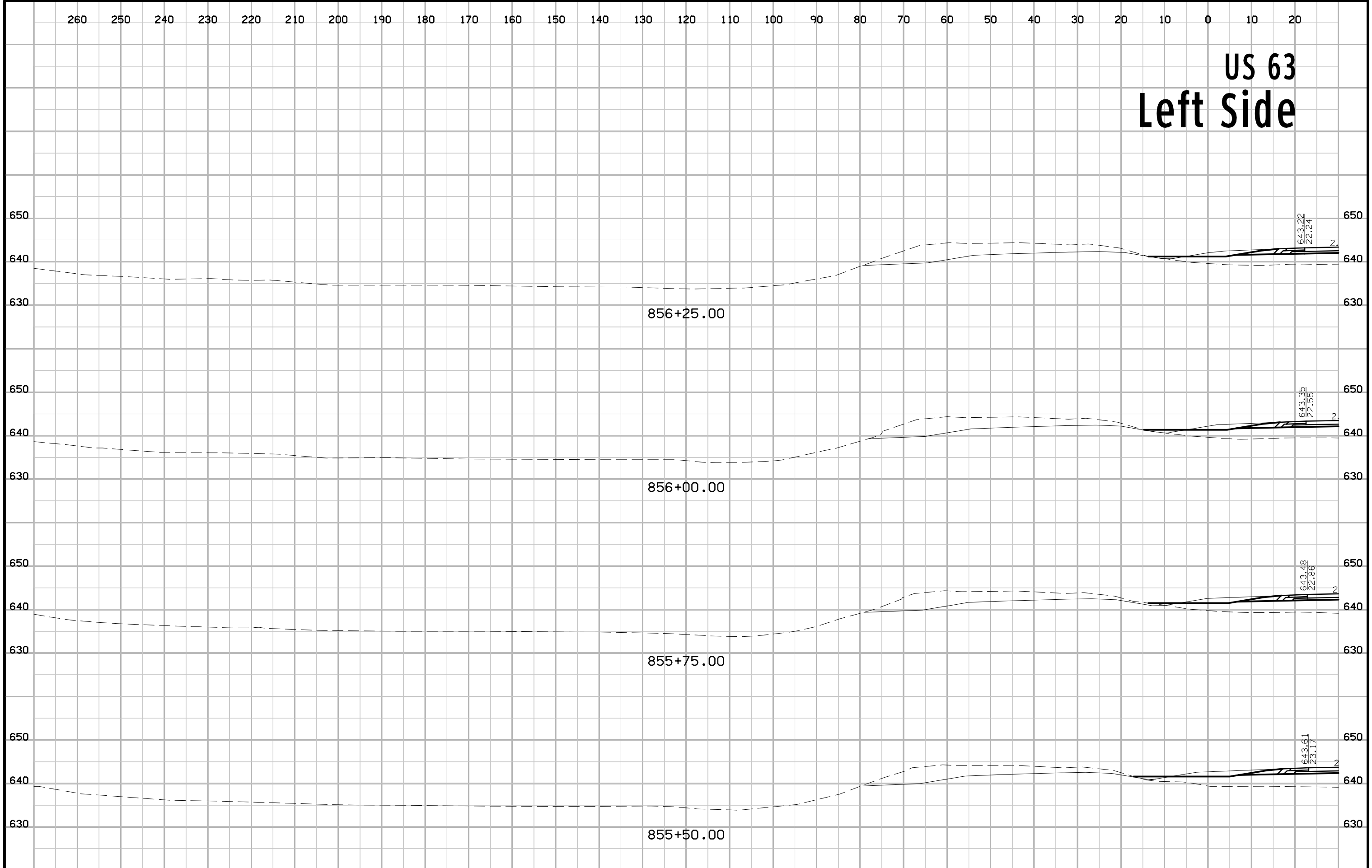
# US 63 Left Side



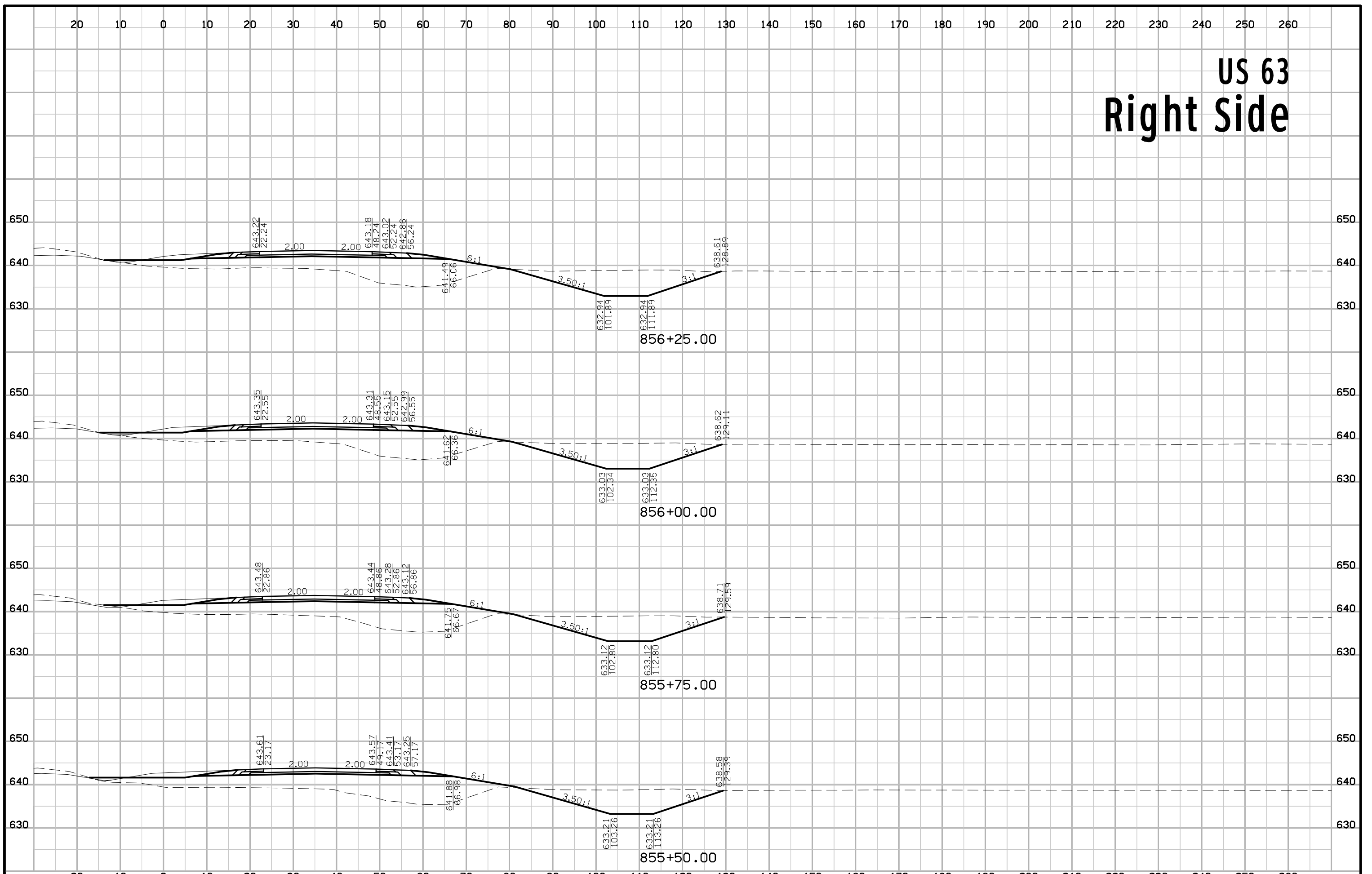
# US 63 Right Side



# US 63 Left Side

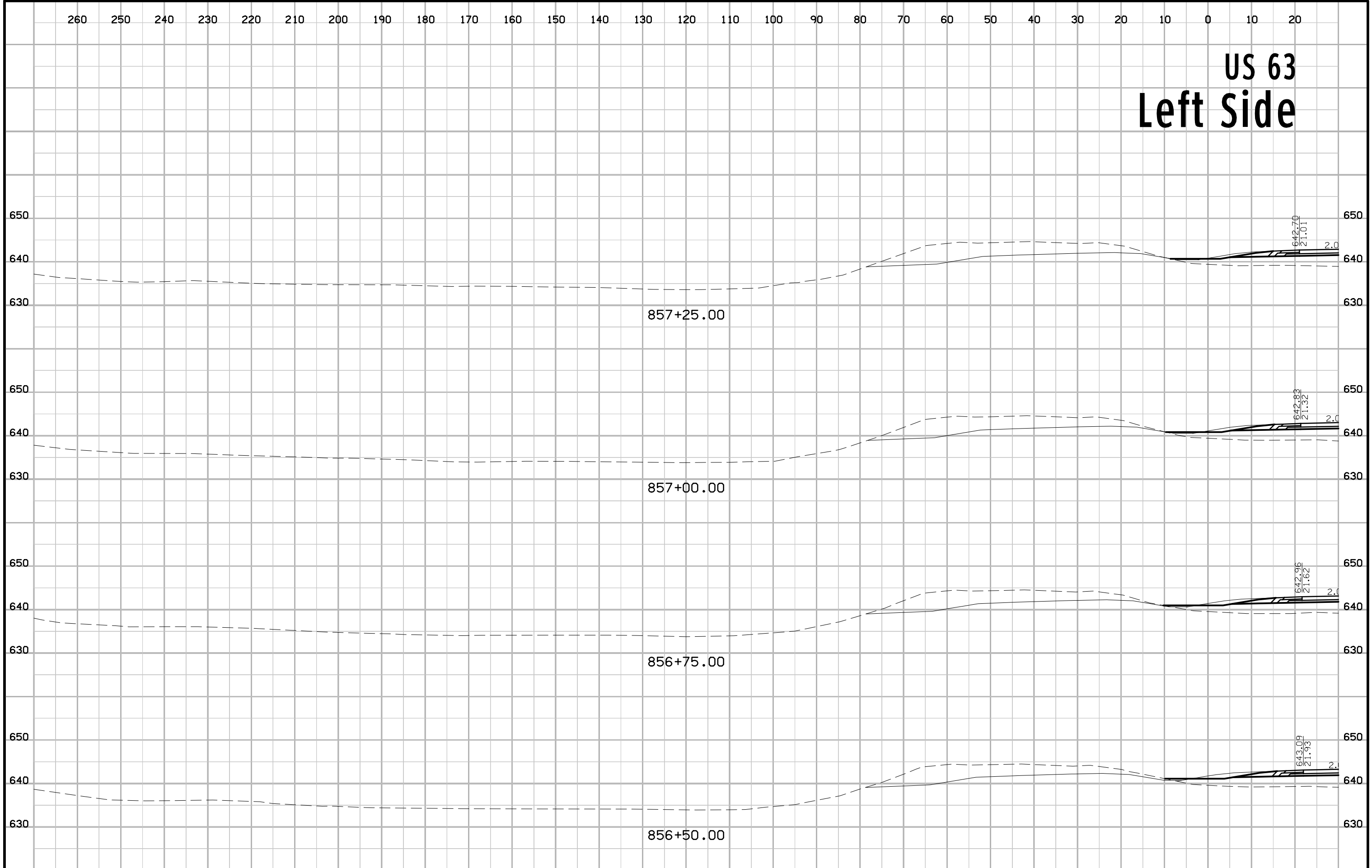


# US 63 Right Side

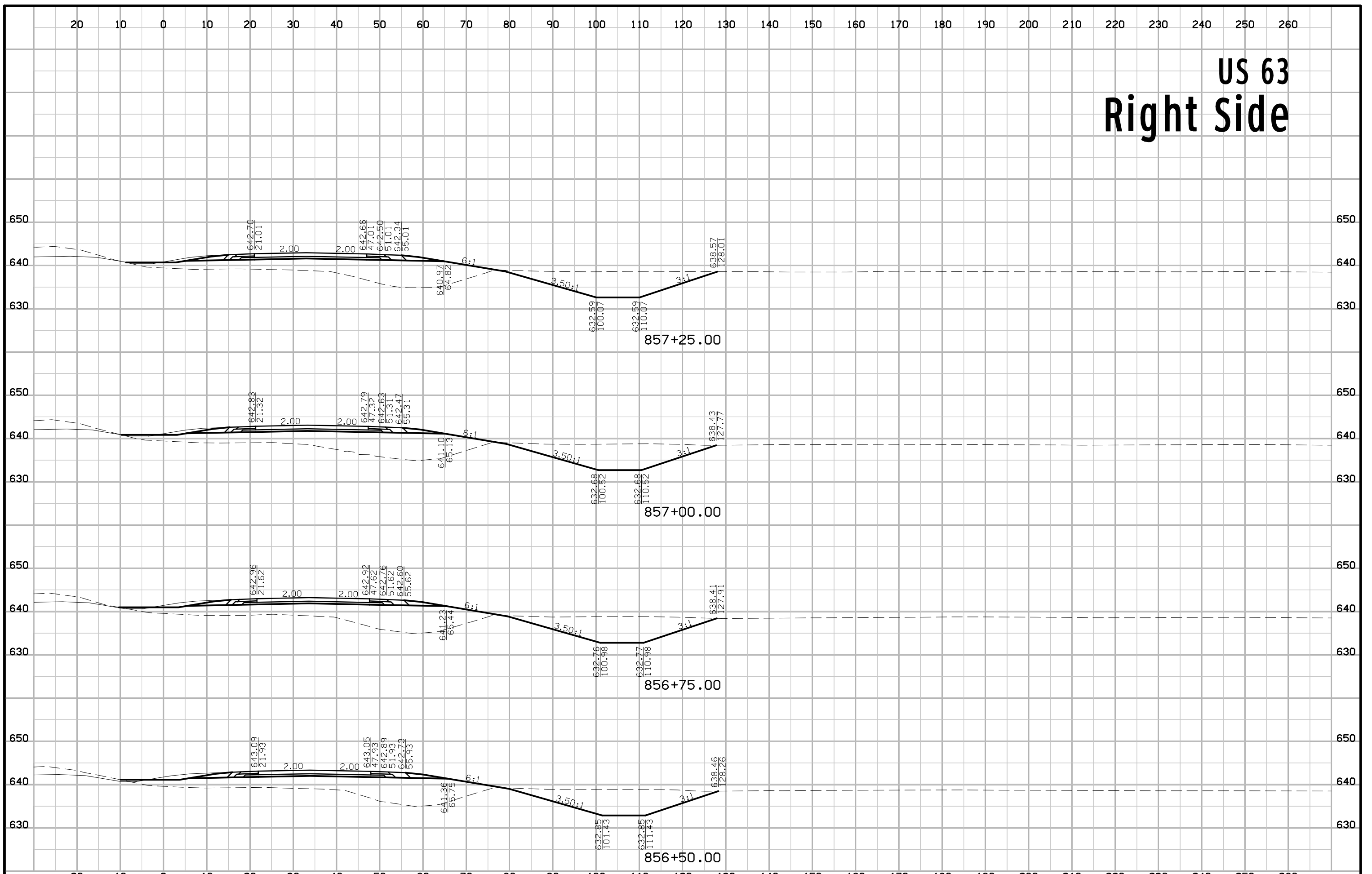




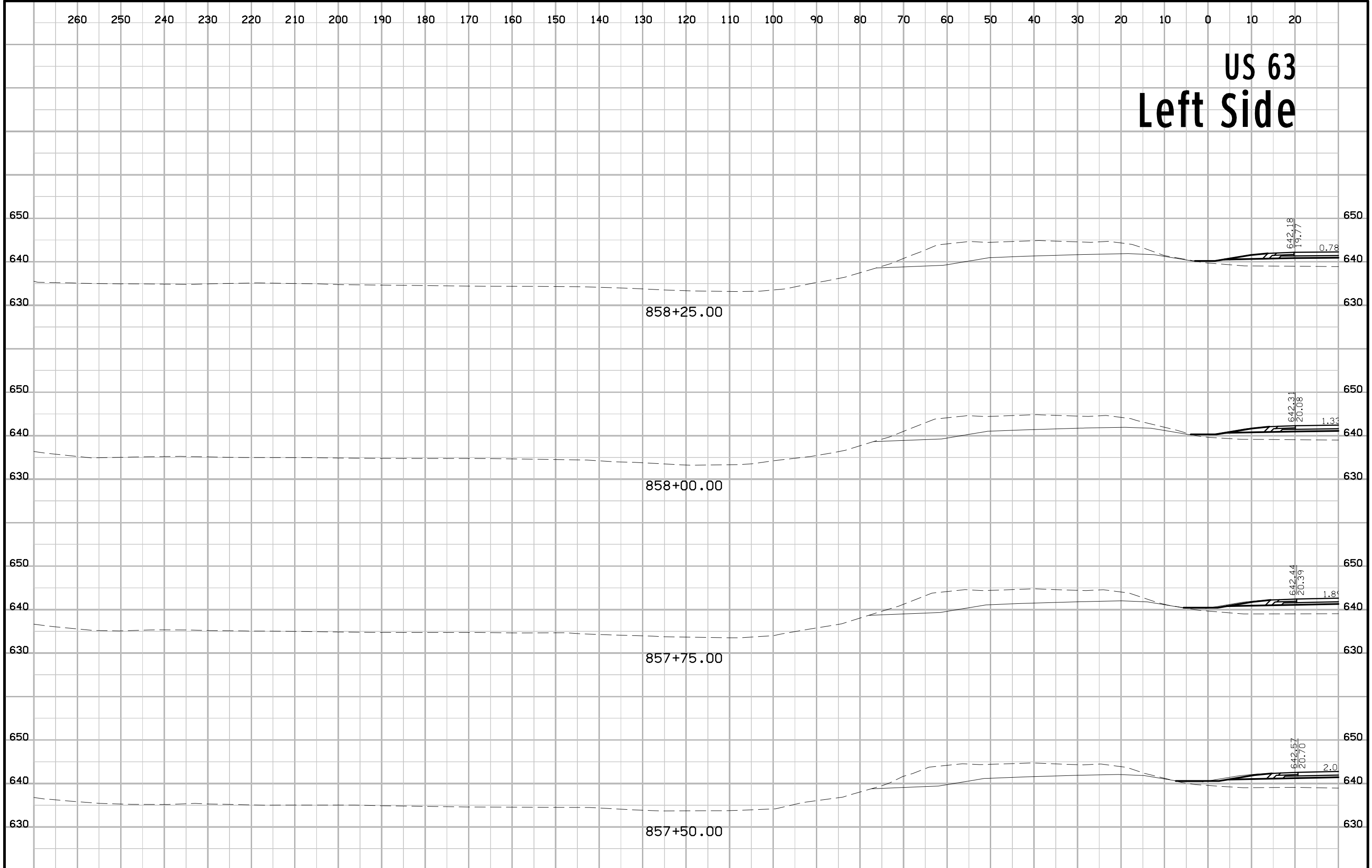
# US 63 Left Side



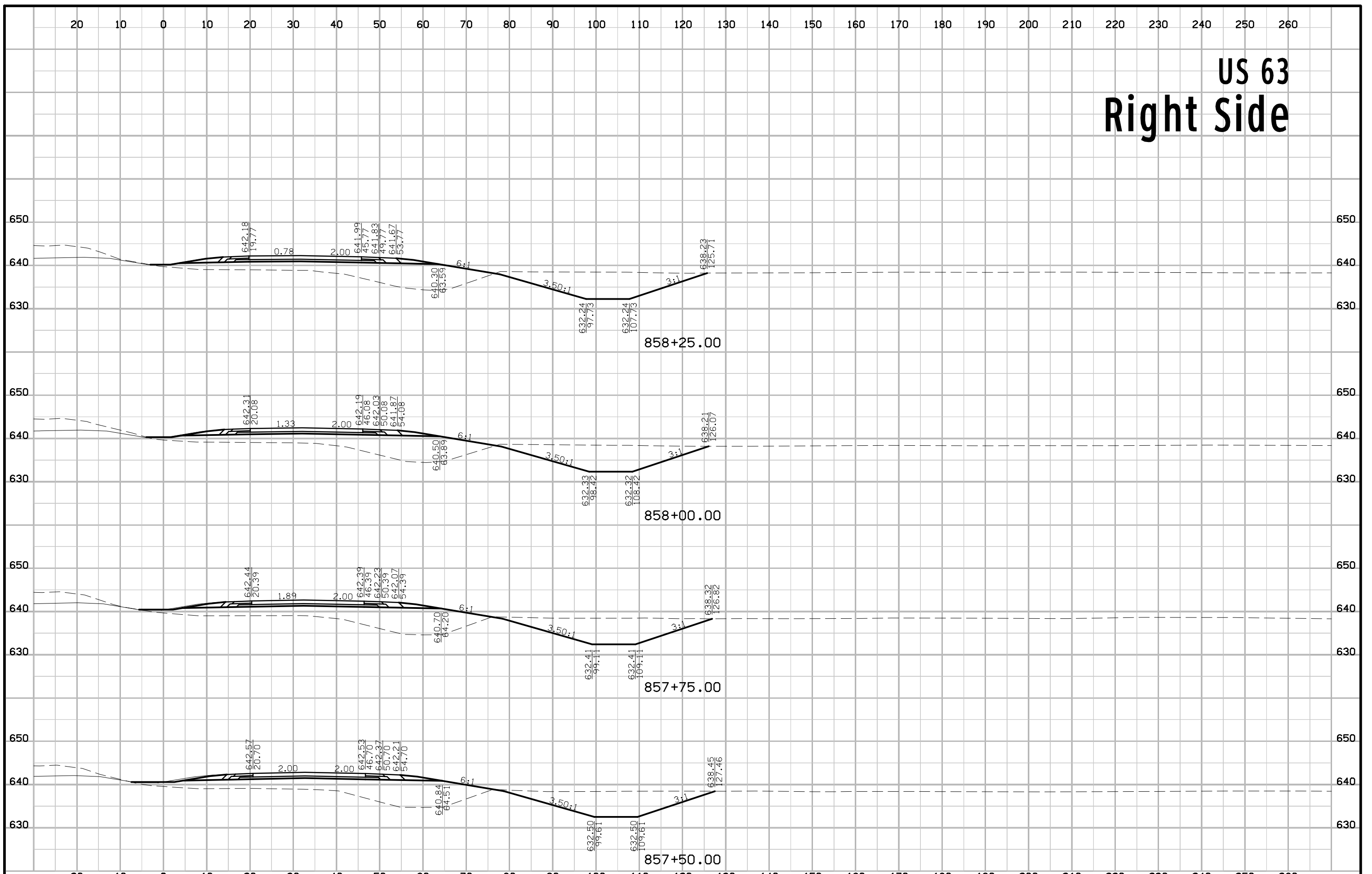
# US 63 Right Side



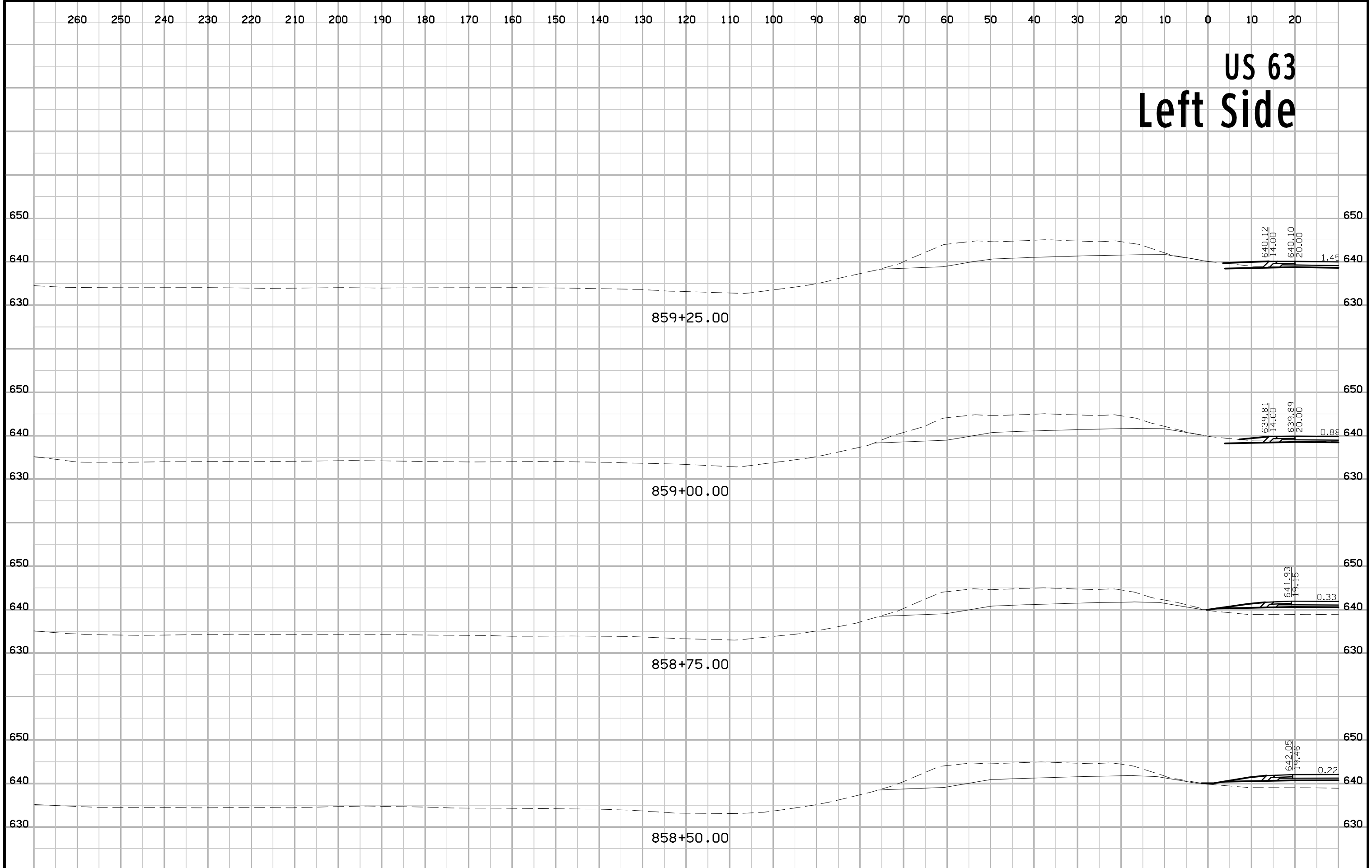
# US 63 Left Side



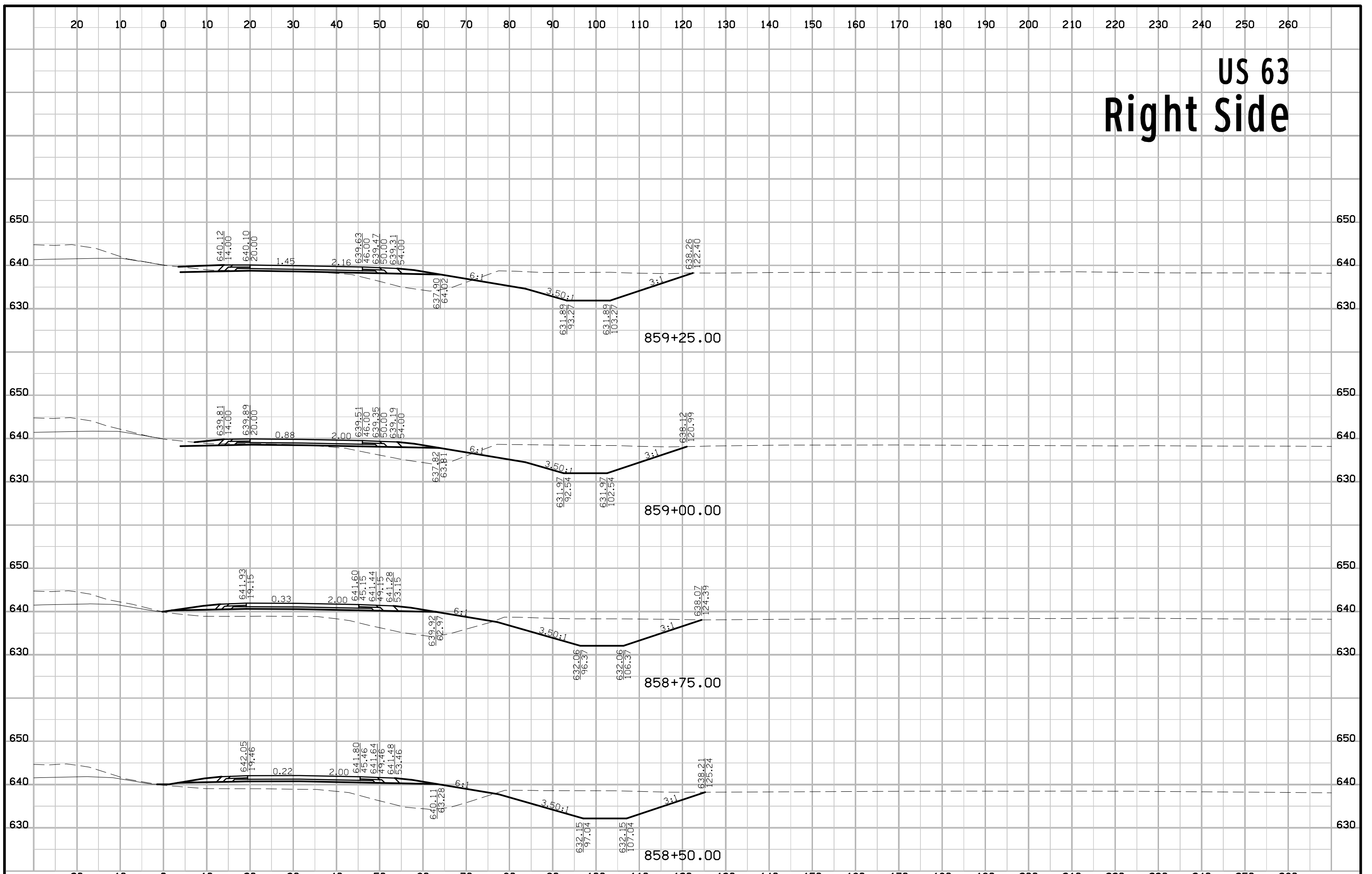
# US 63 Right Side



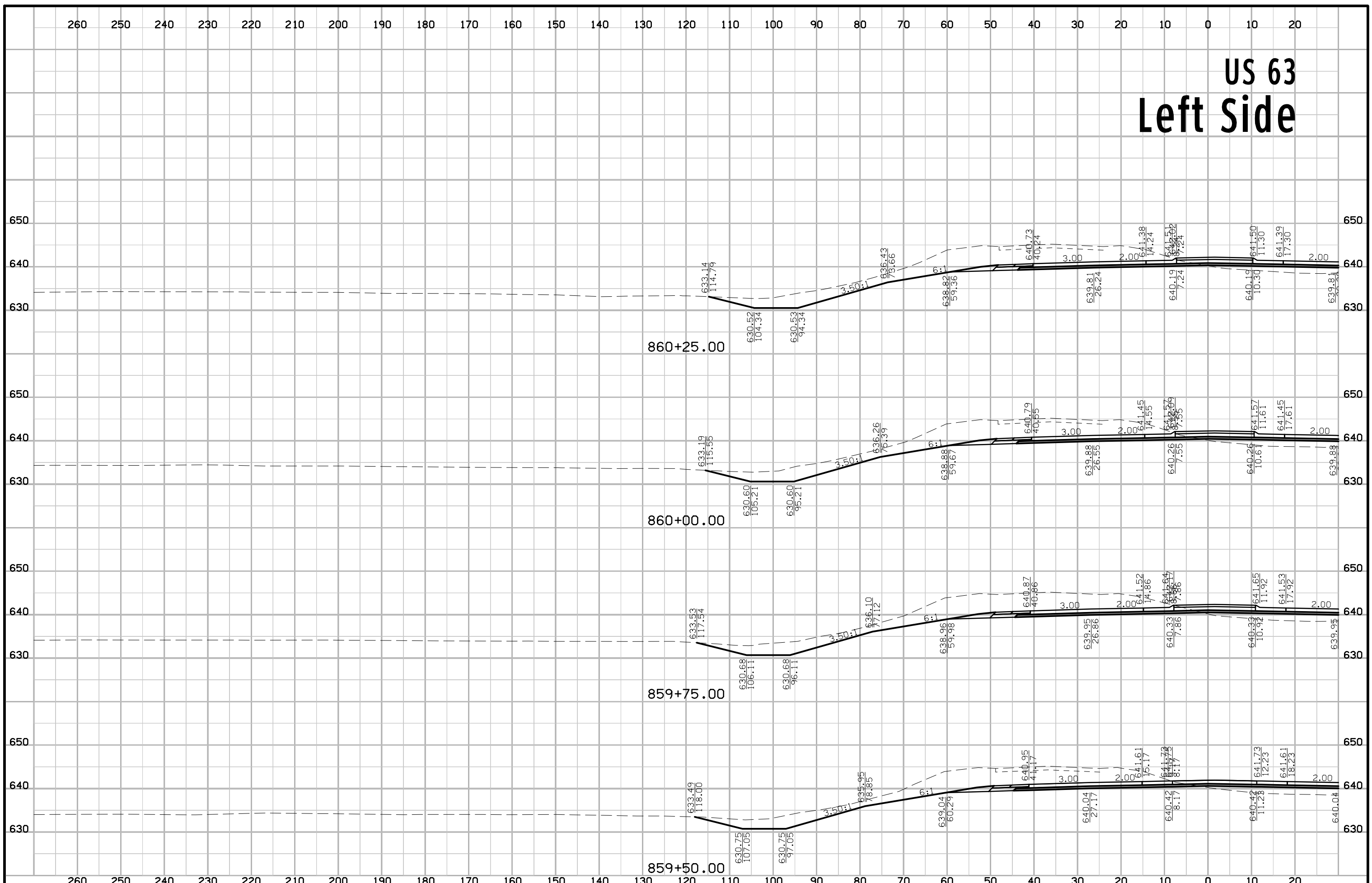
# US 63 Left Side



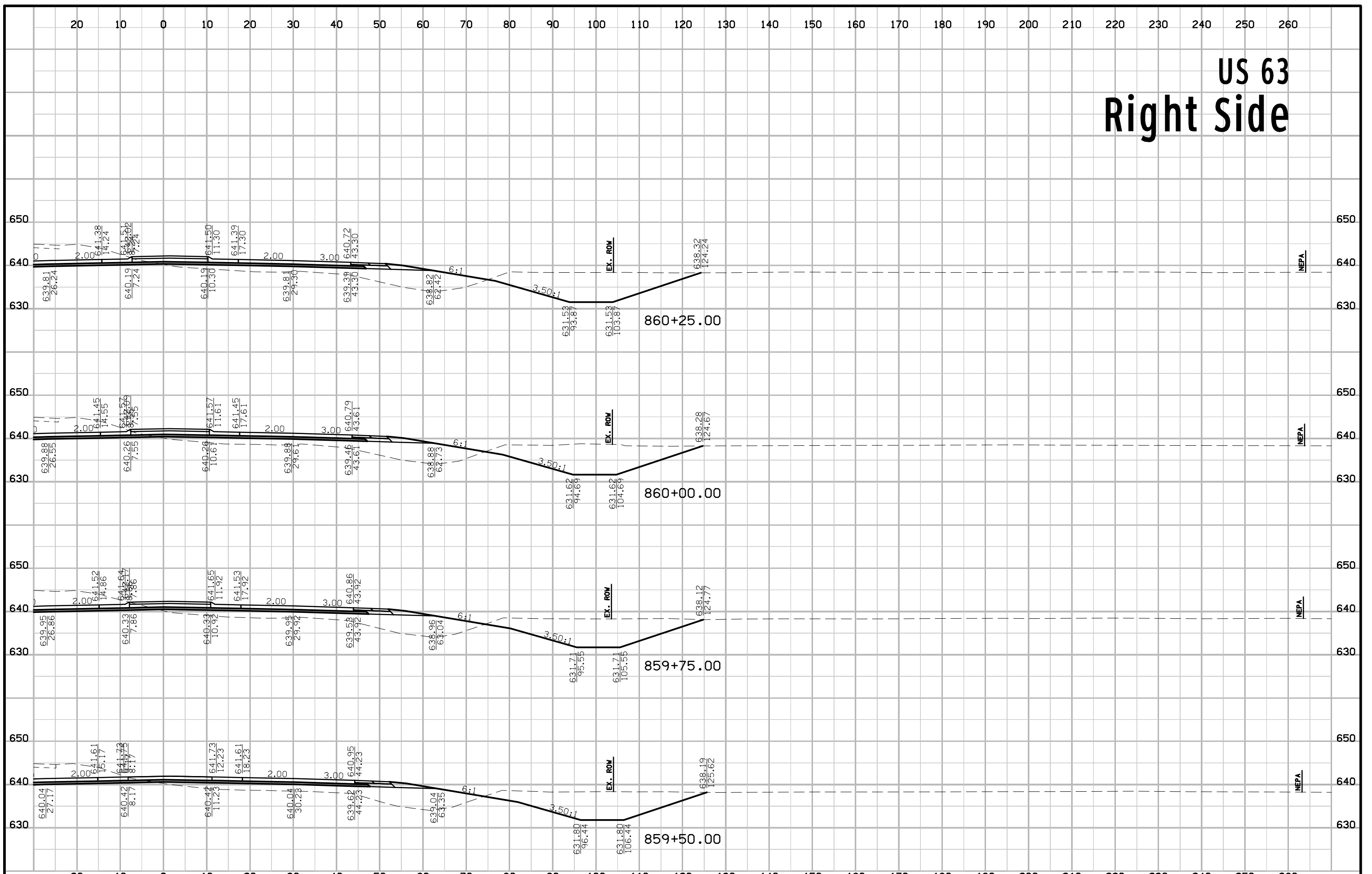
# US 63 Right Side



# US 63 Left Side

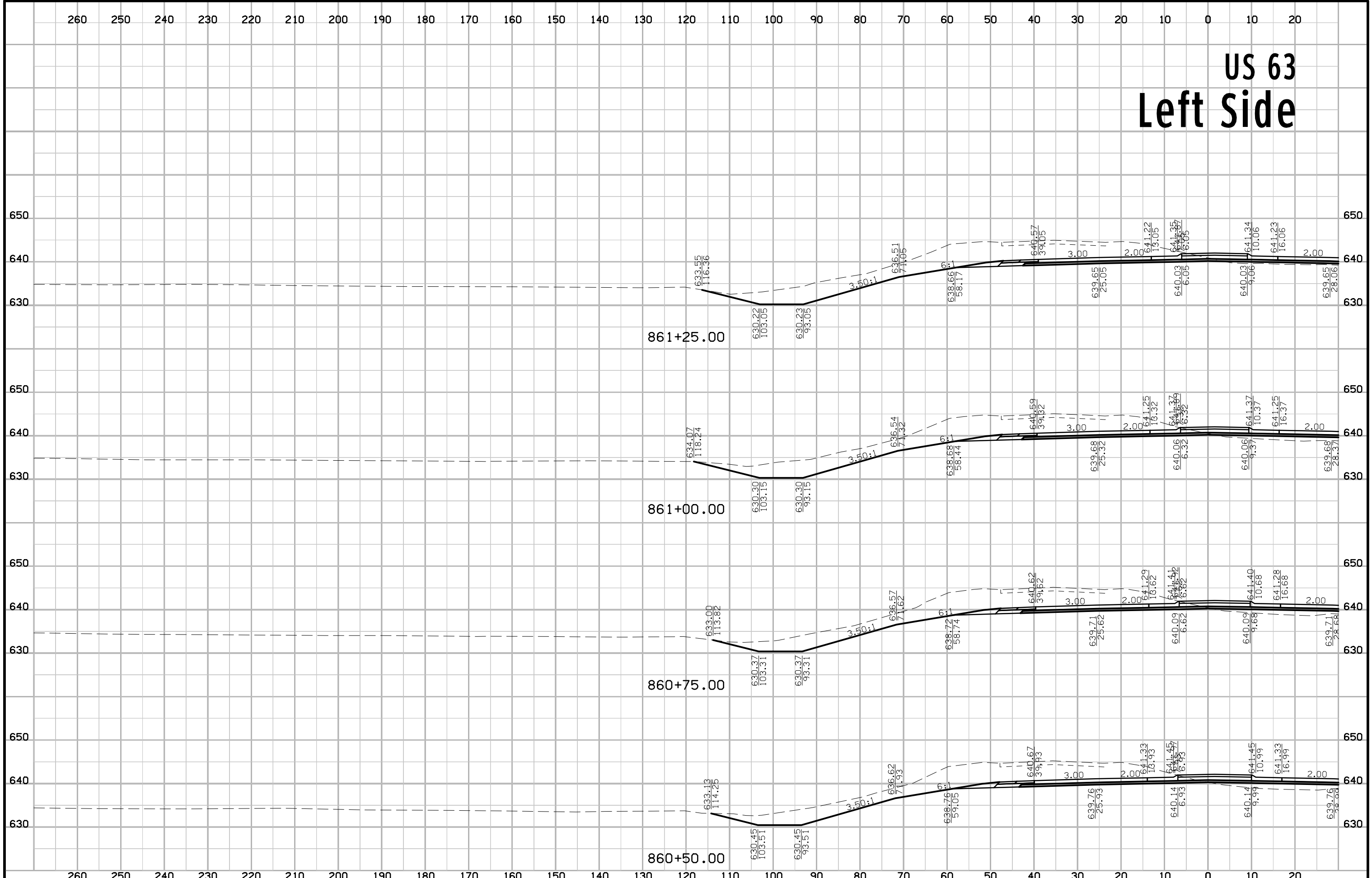


# US 63 Right Side

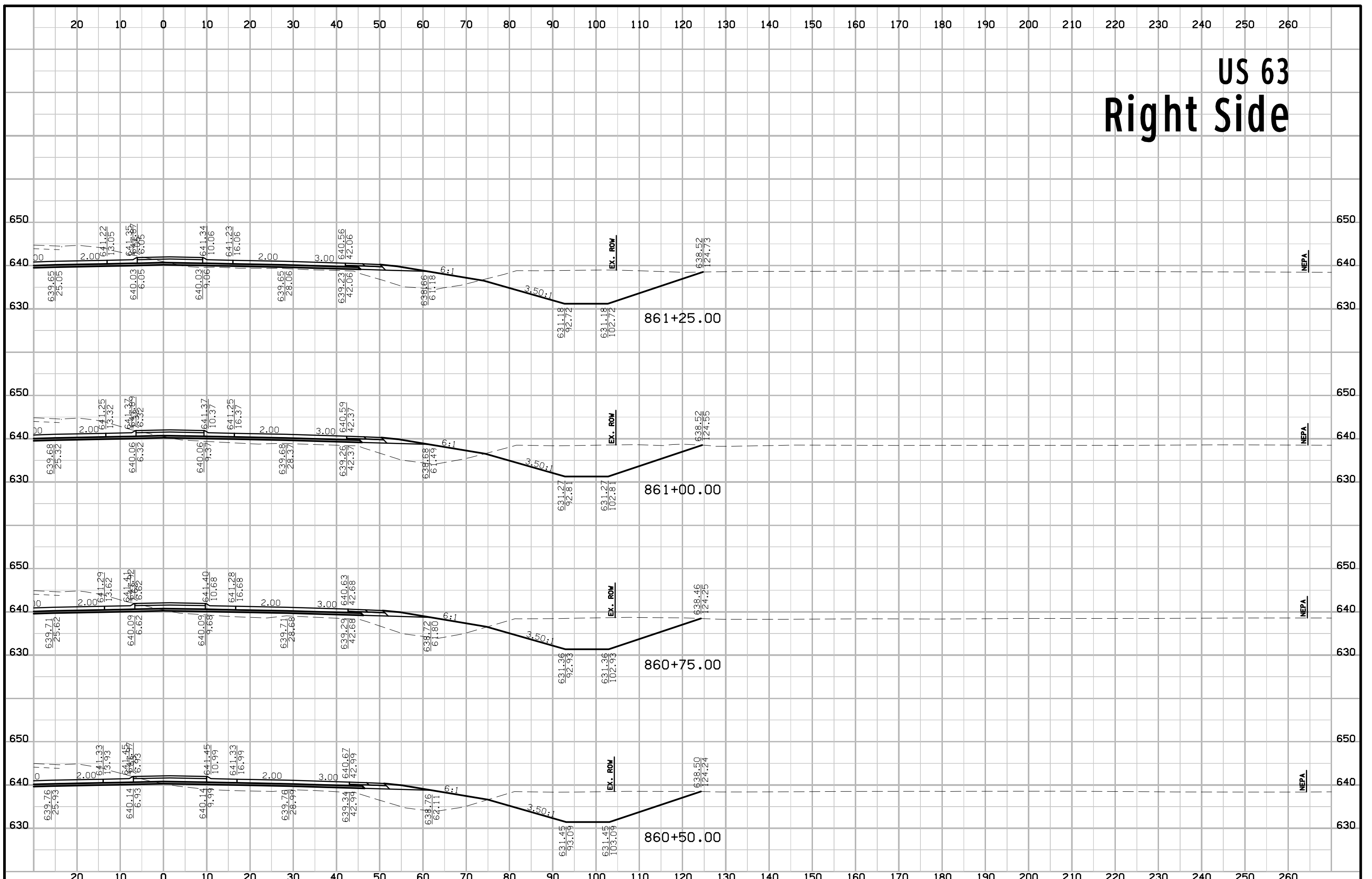




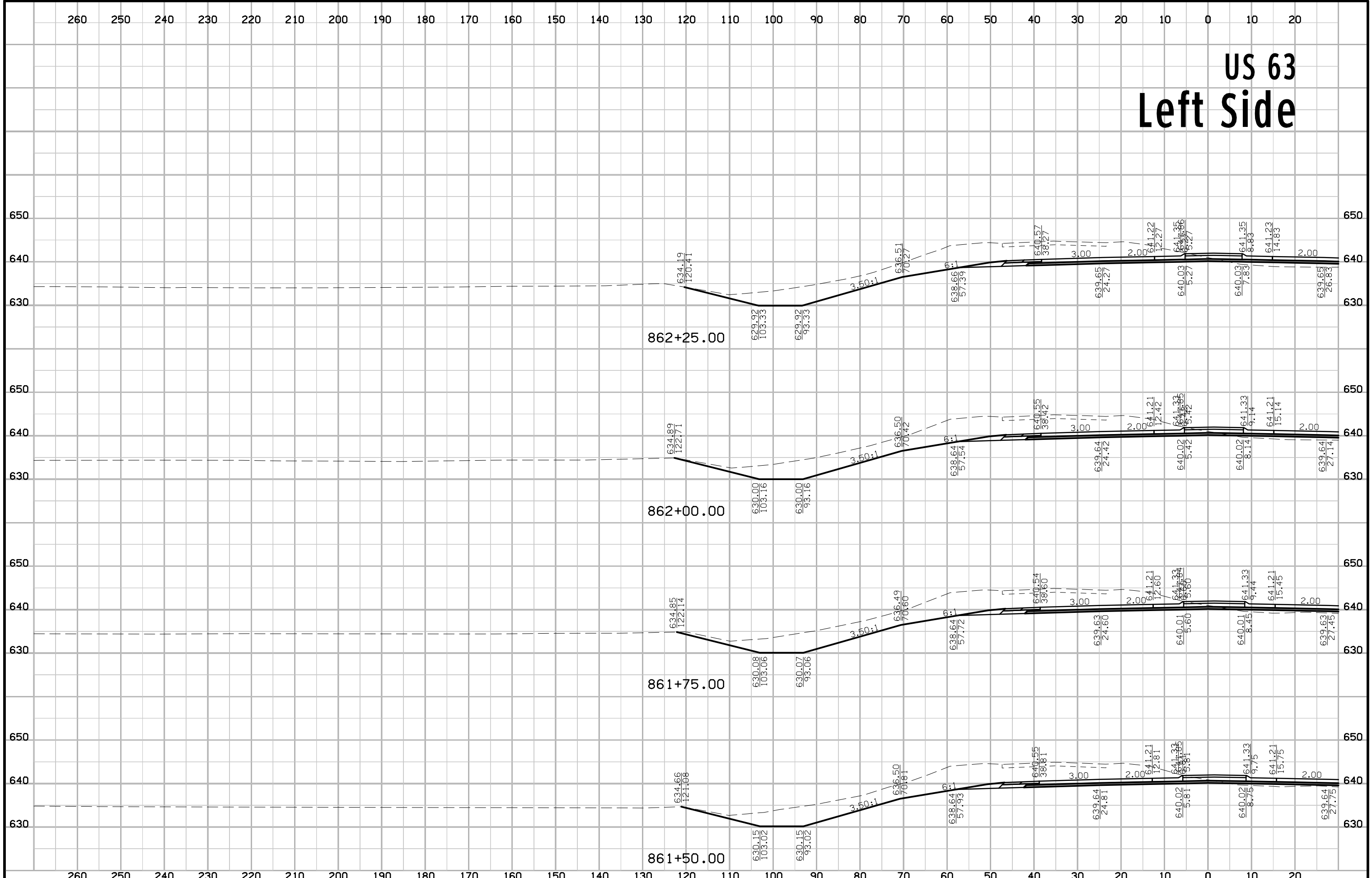
# US 63 Left Side



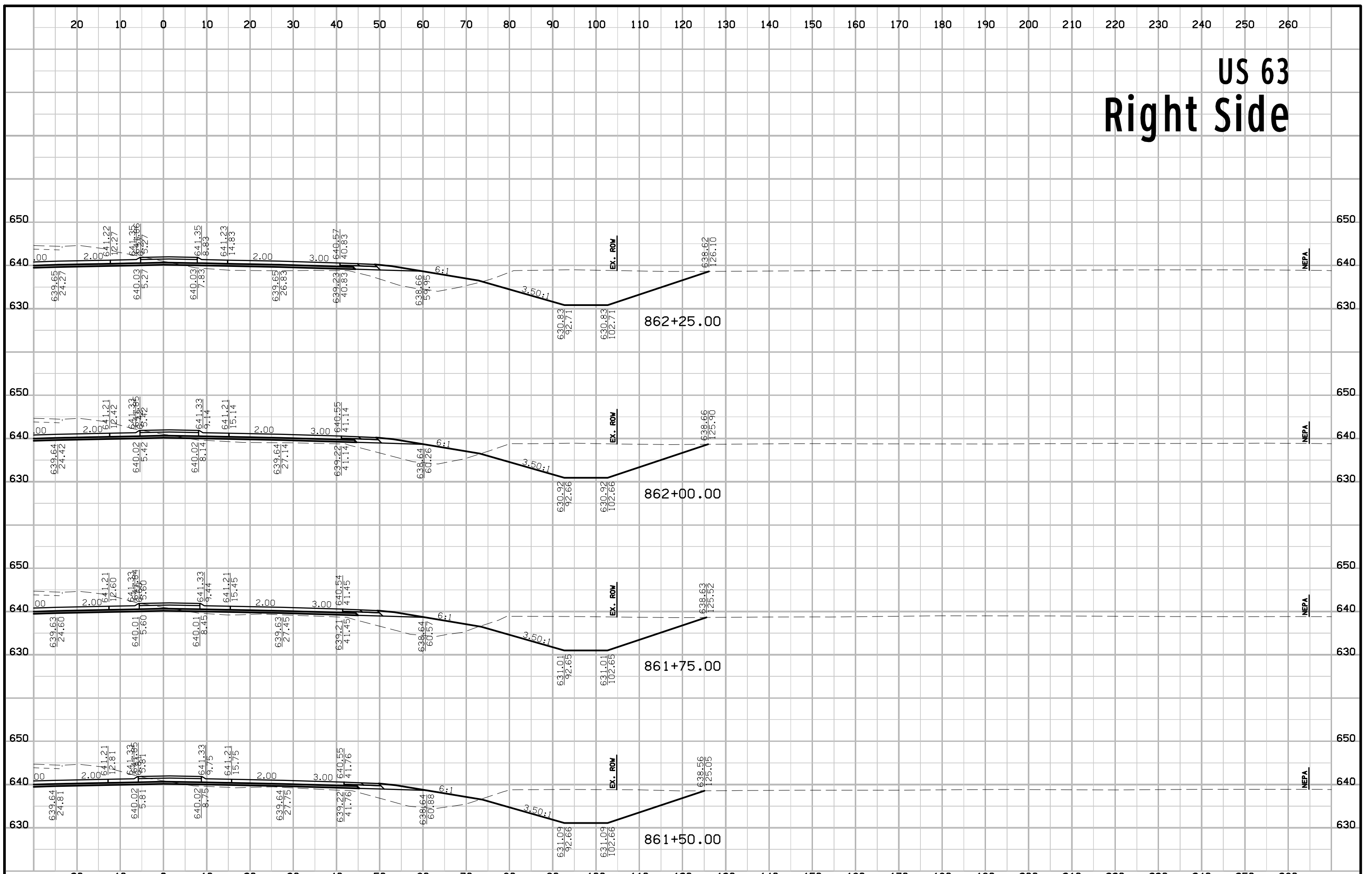
# US 63 Right Side



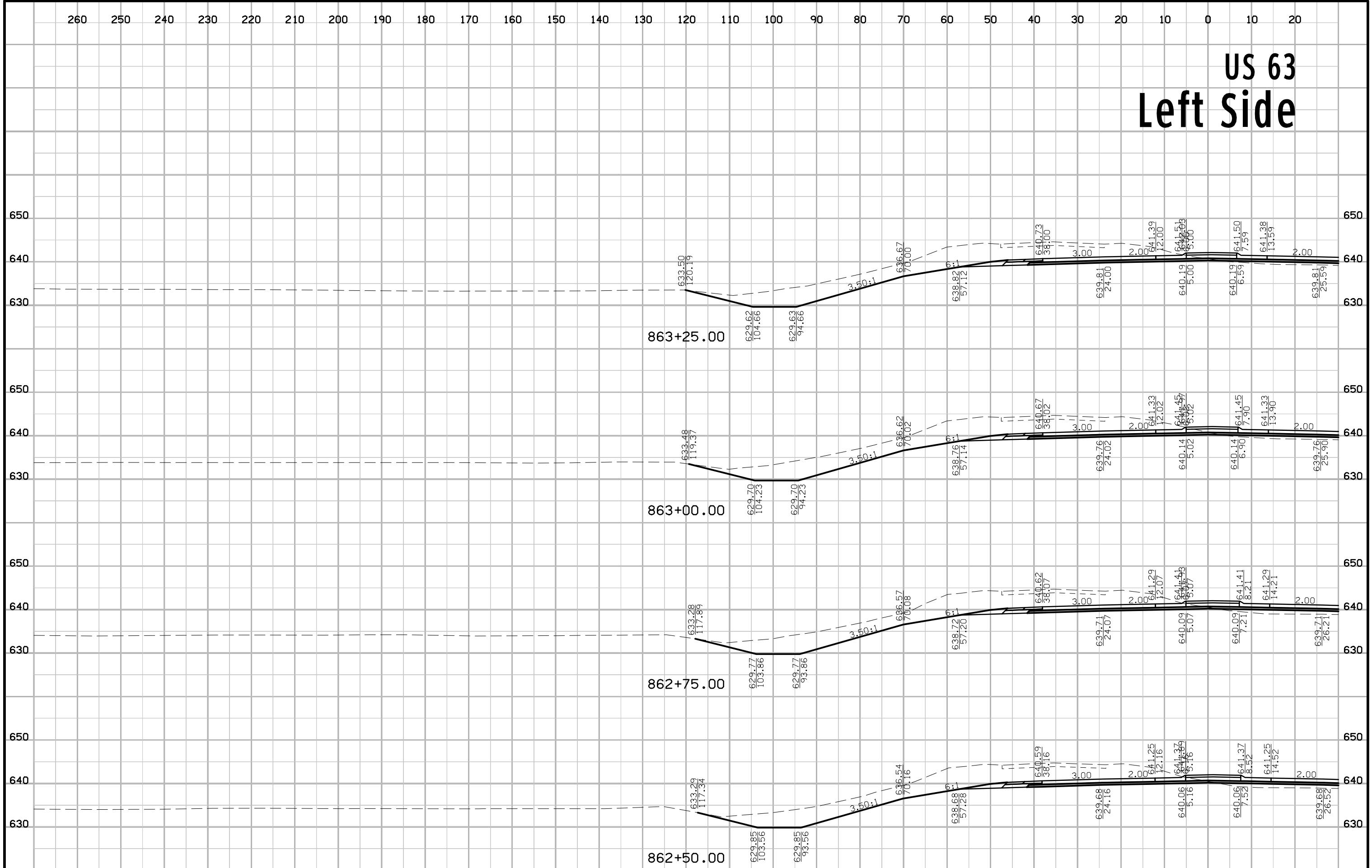
# US 63 Left Side



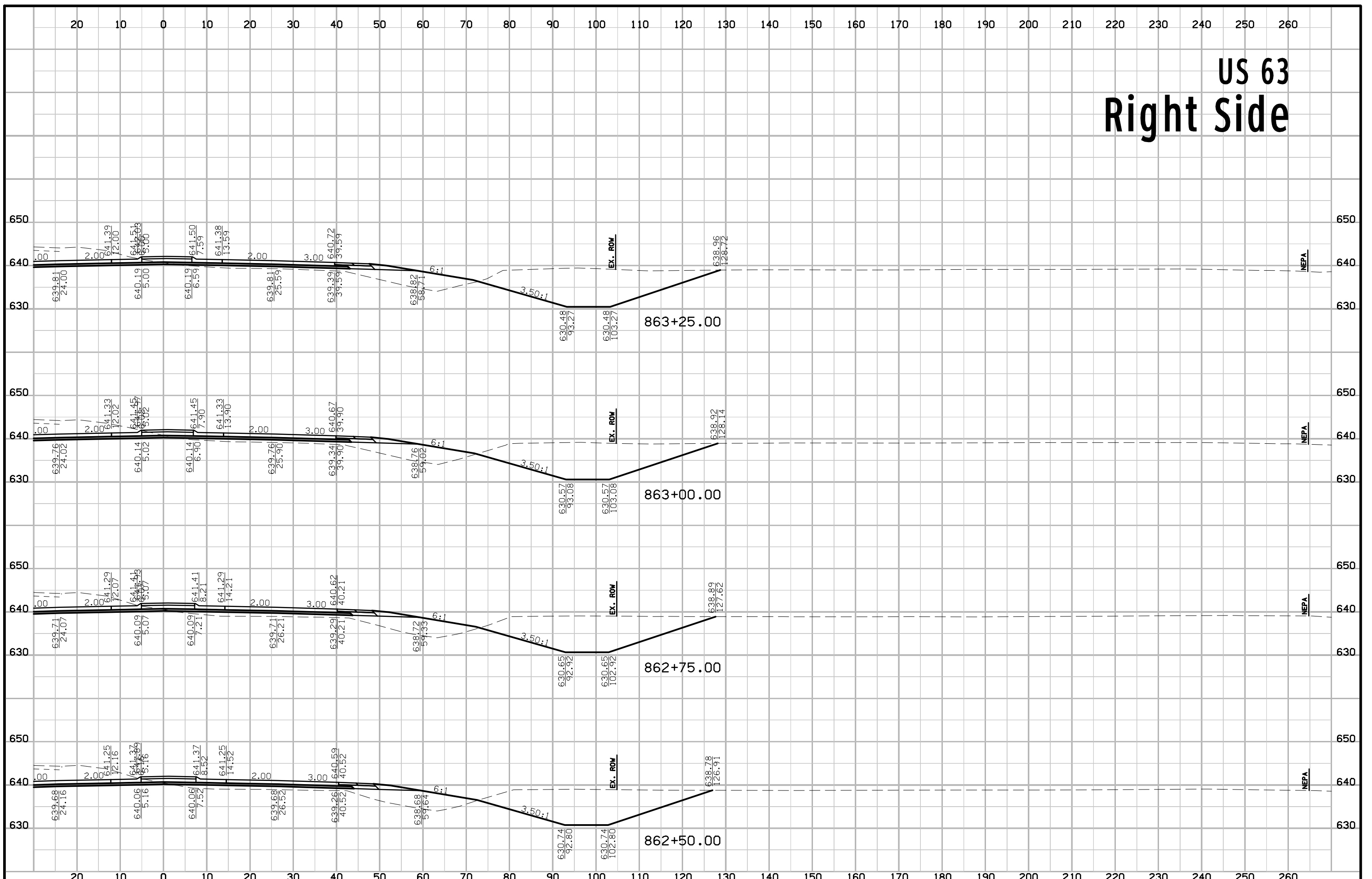
# US 63 Right Side



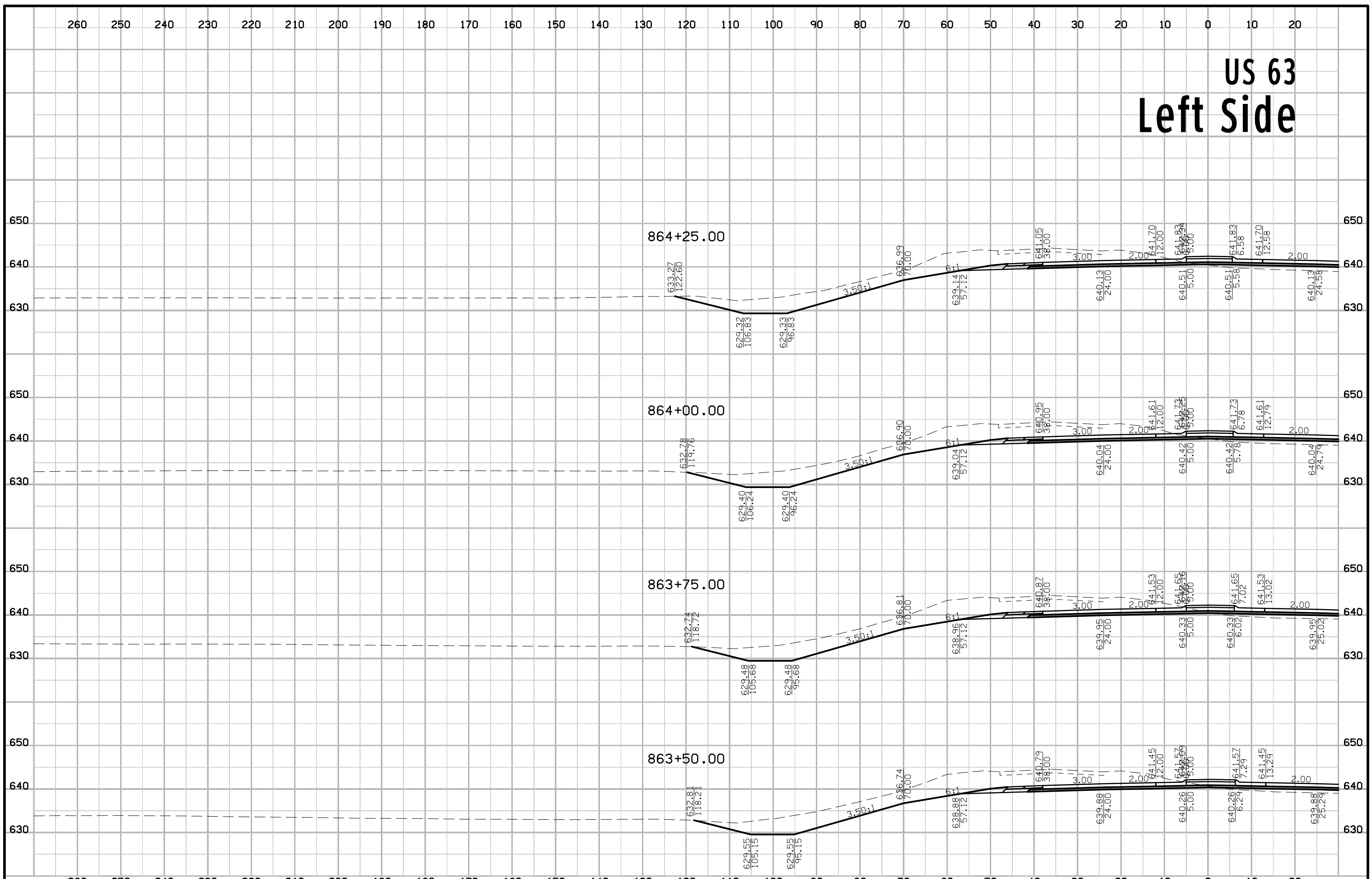
# US 63 Left Side



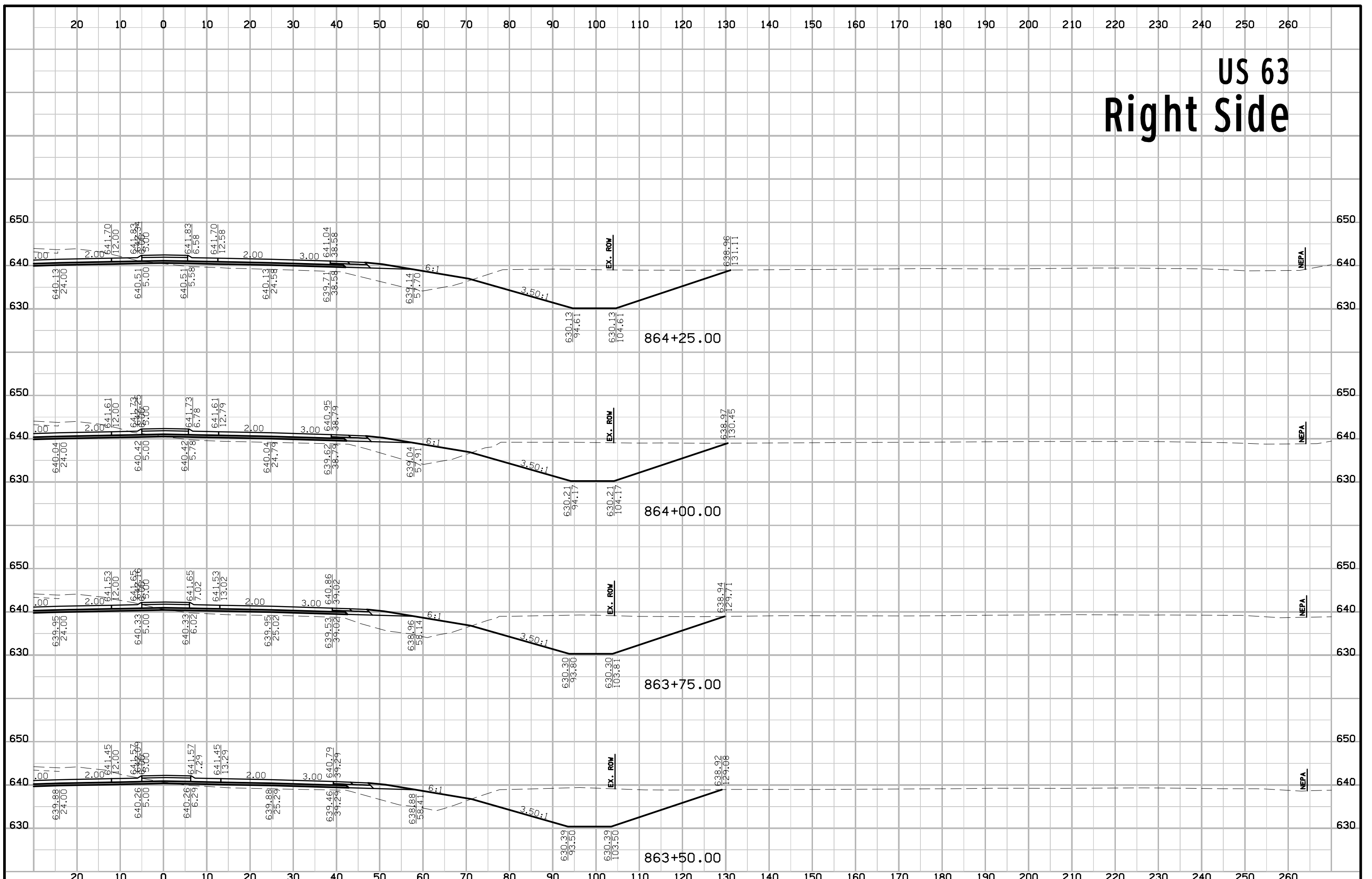
# US 63 Right Side



# US 63 Left Side



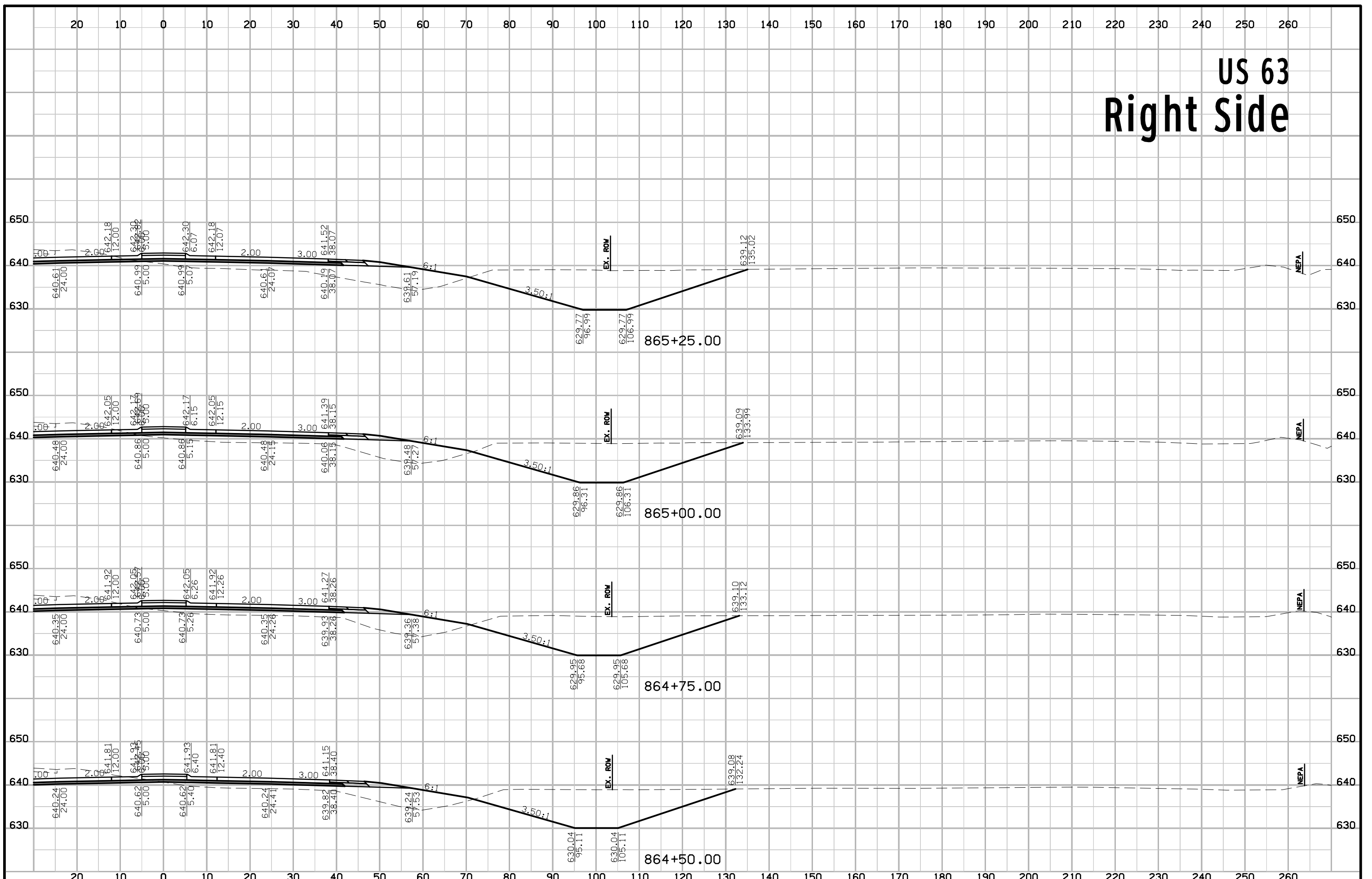
# US 63 Right Side



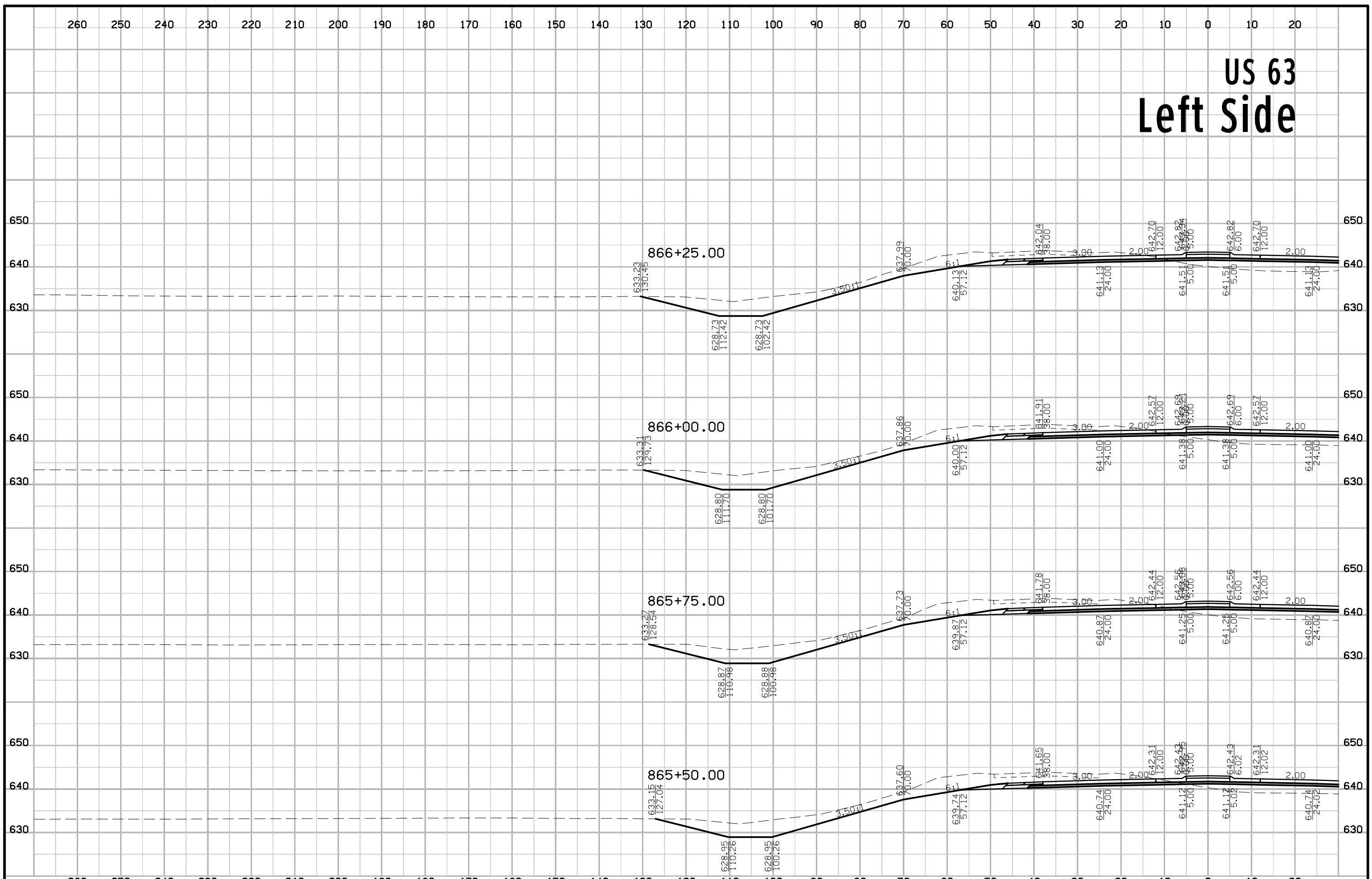




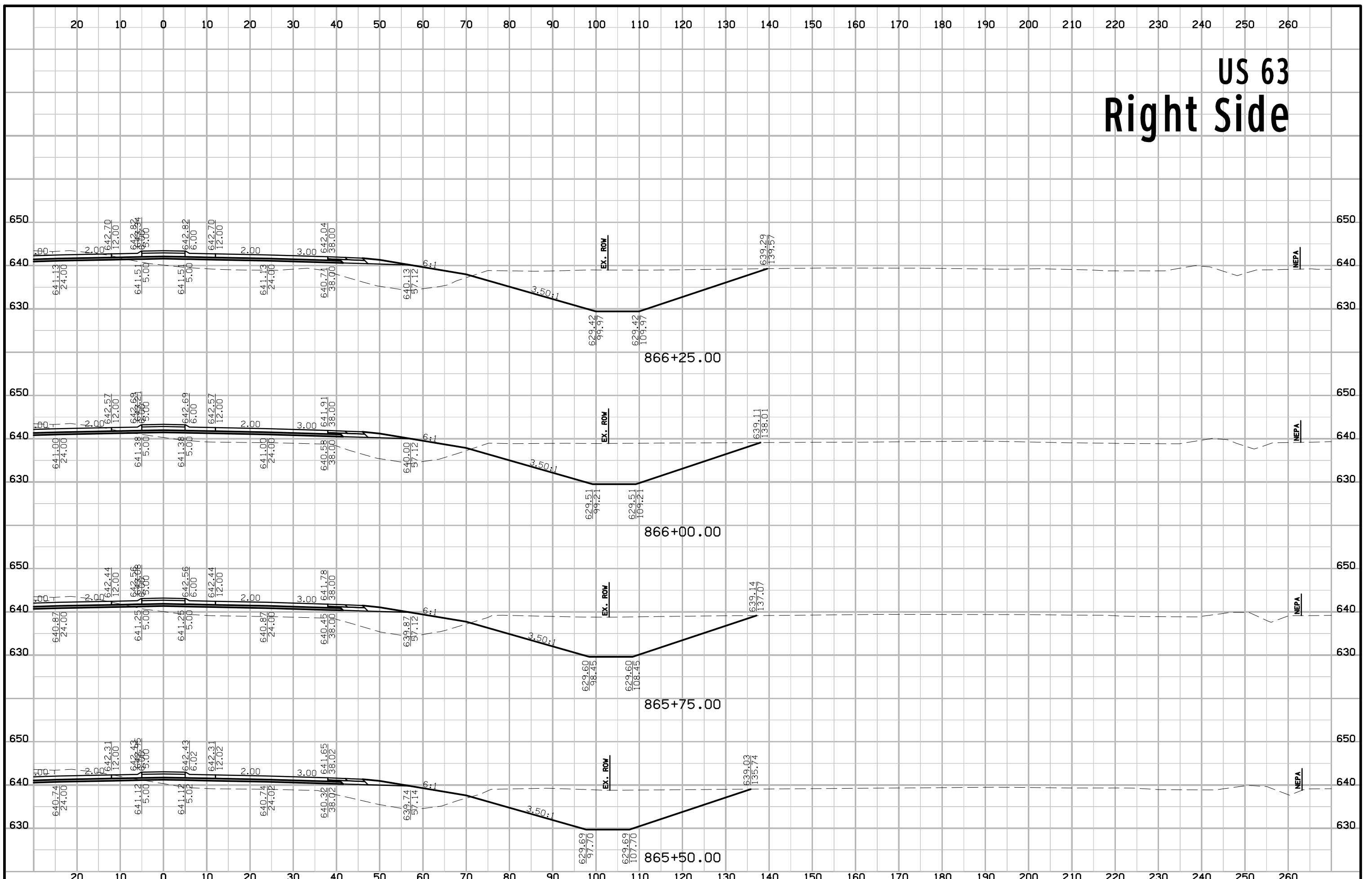
# US 63 Right Side



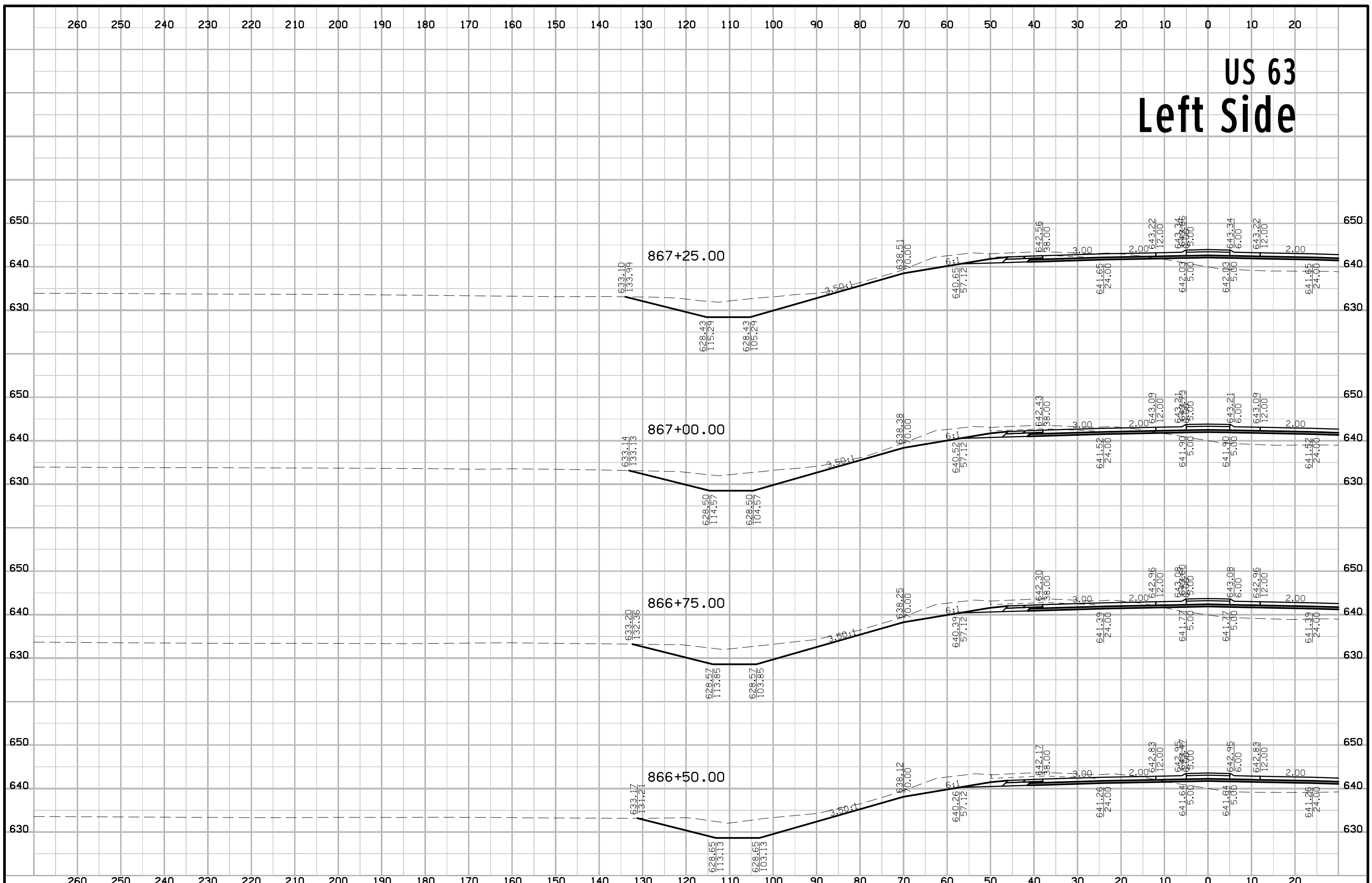
# US 63 Left Side



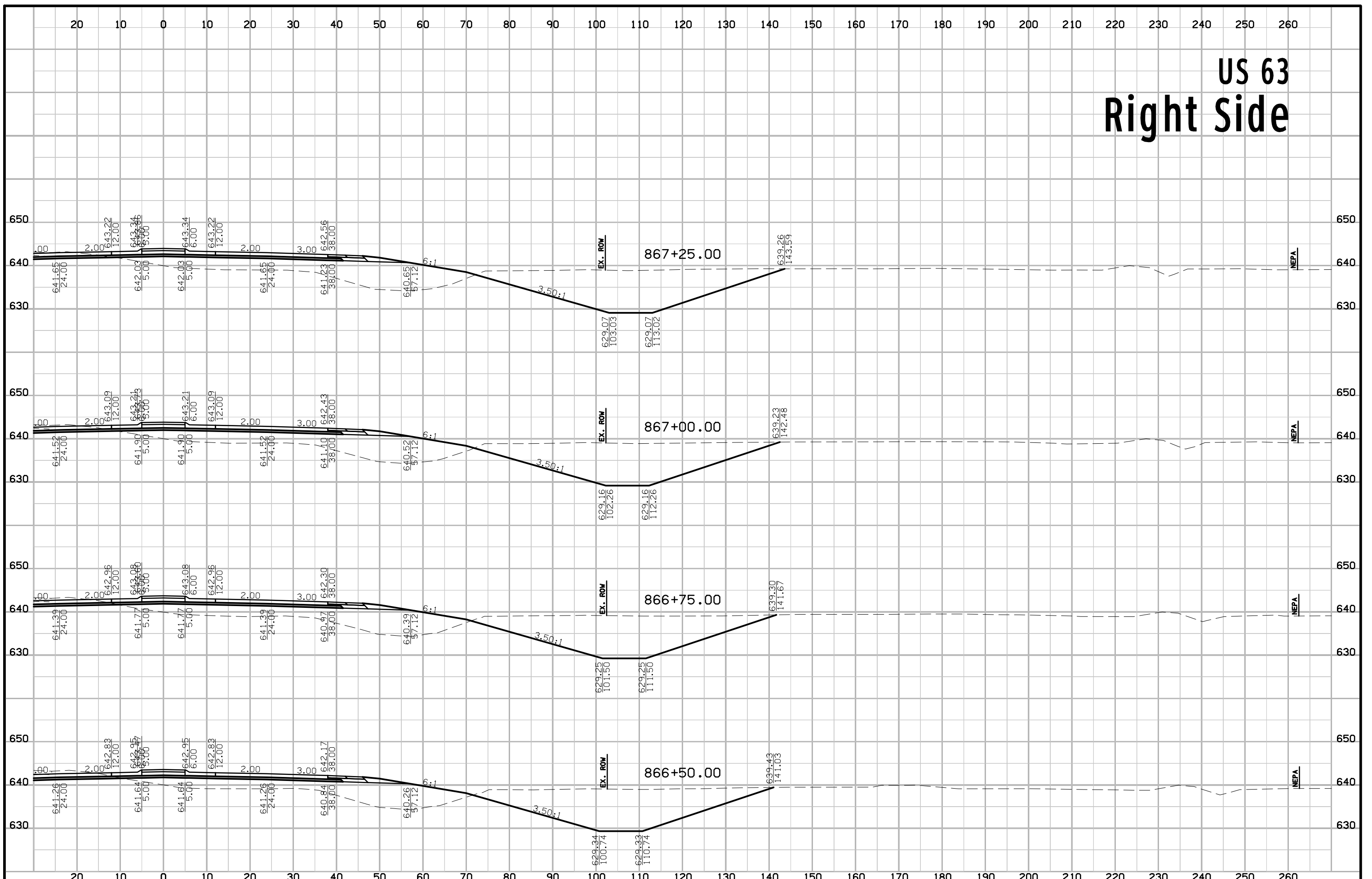
# US 63 Right Side



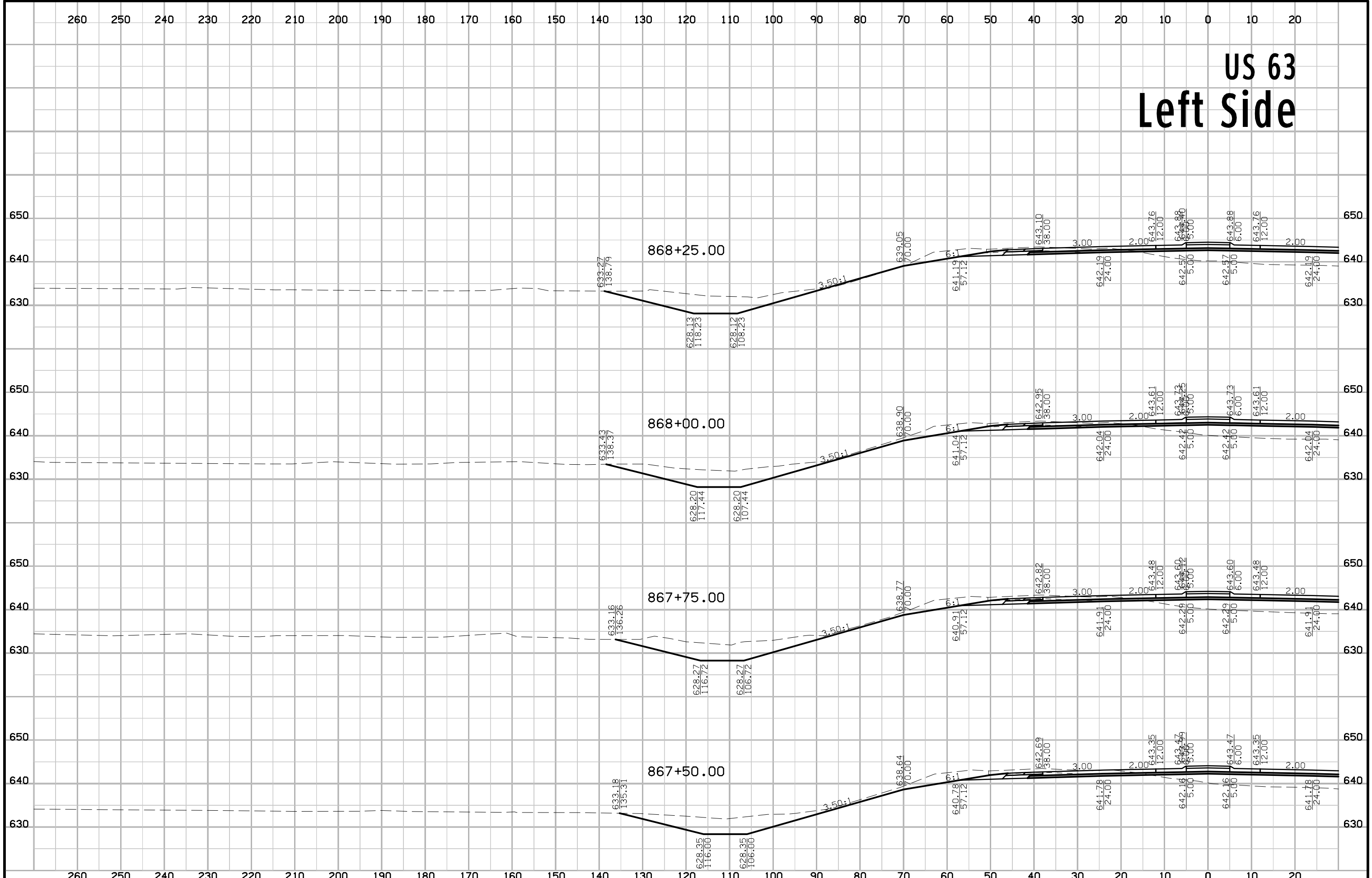
# US 63 Left Side



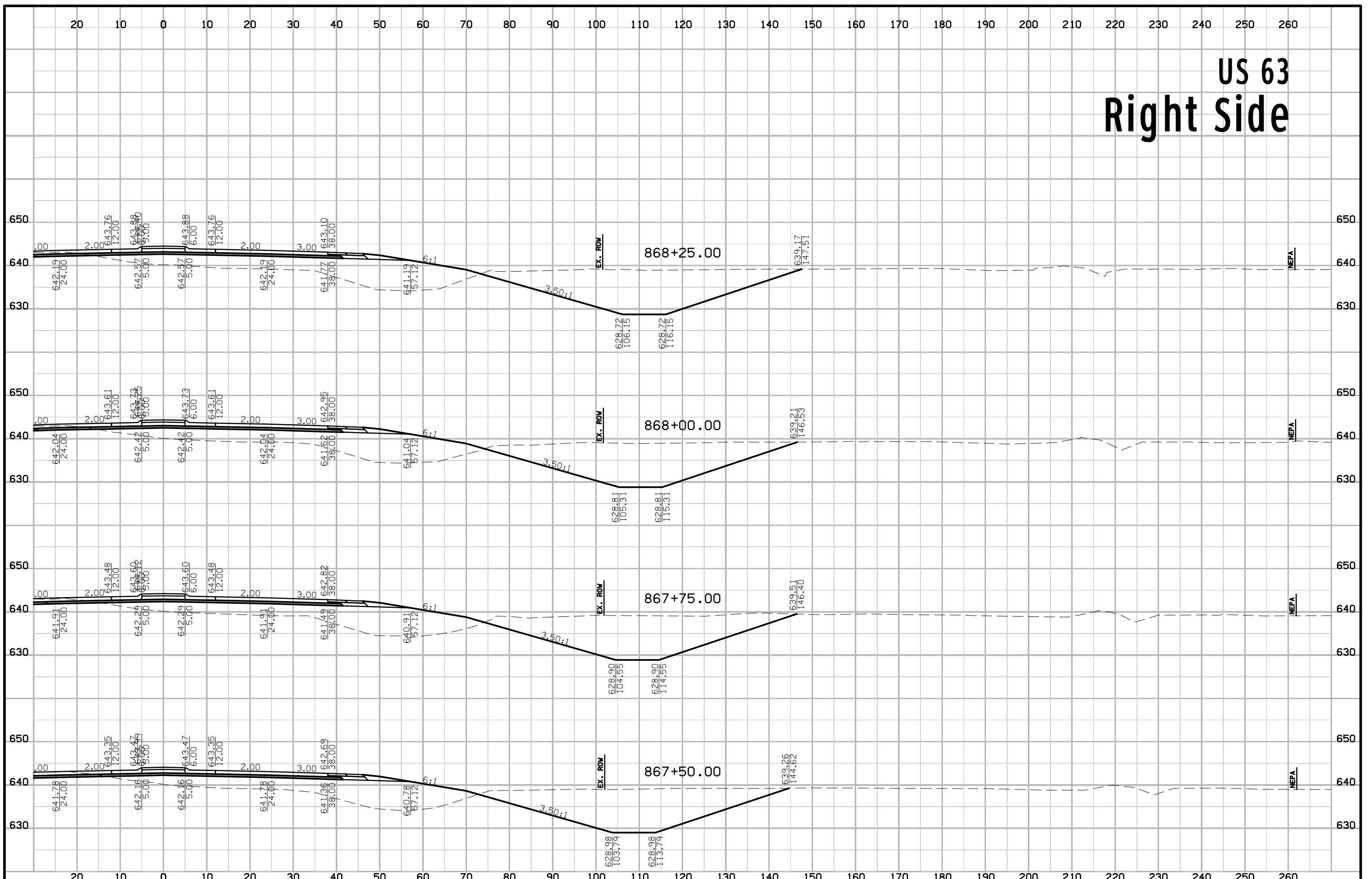
# US 63 Right Side



# US 63 Left Side

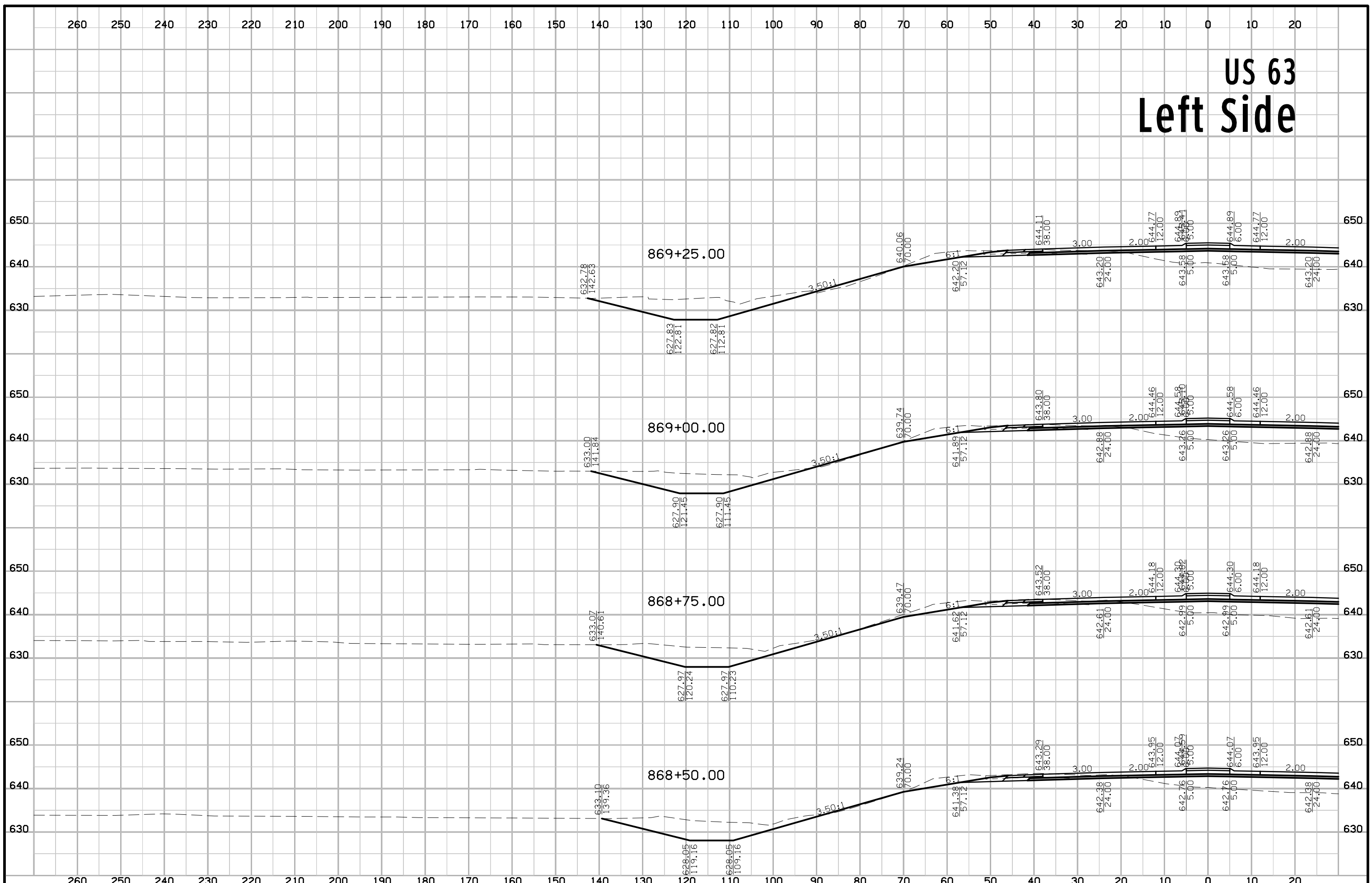


# US 63 Right Side

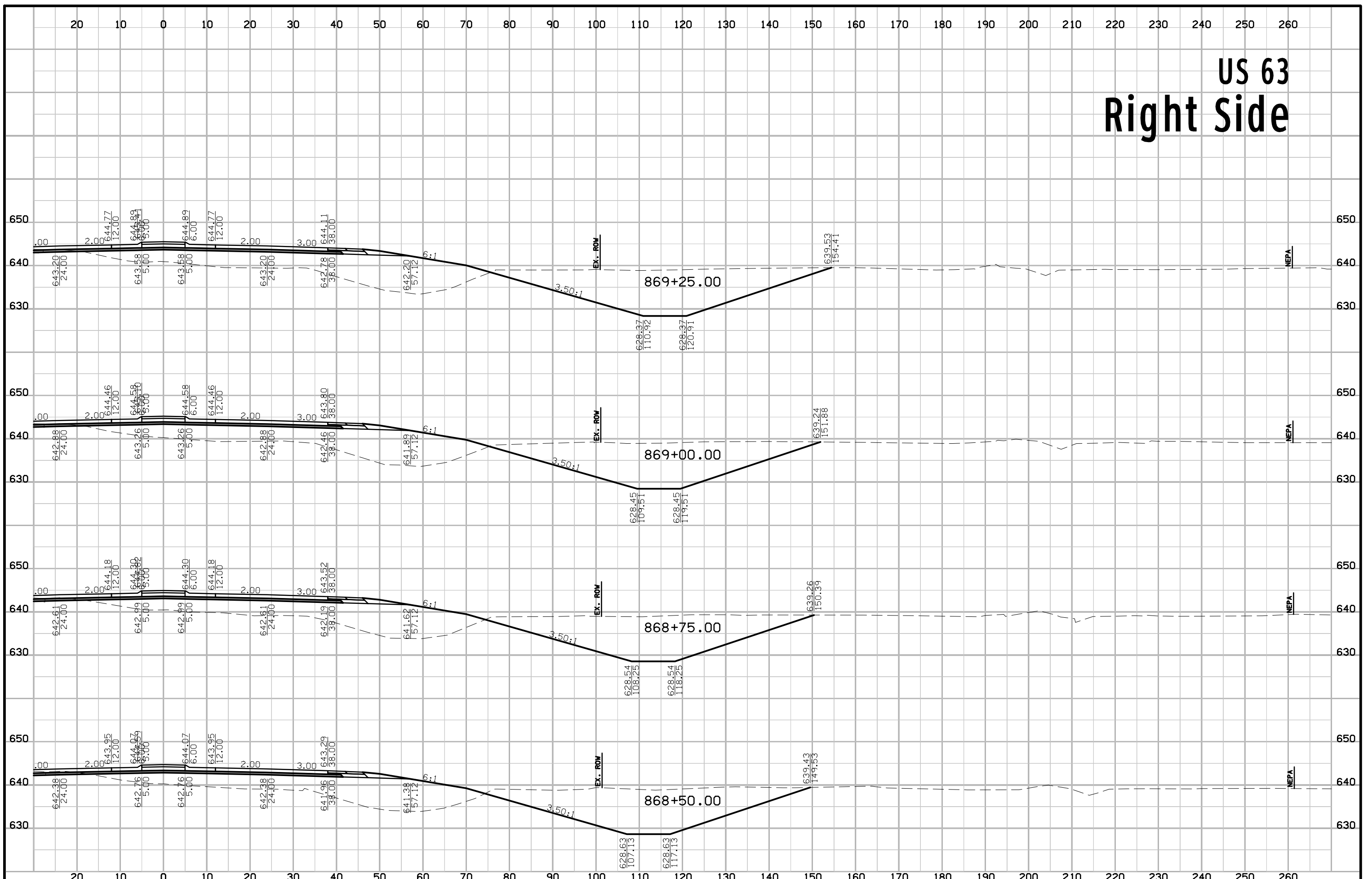




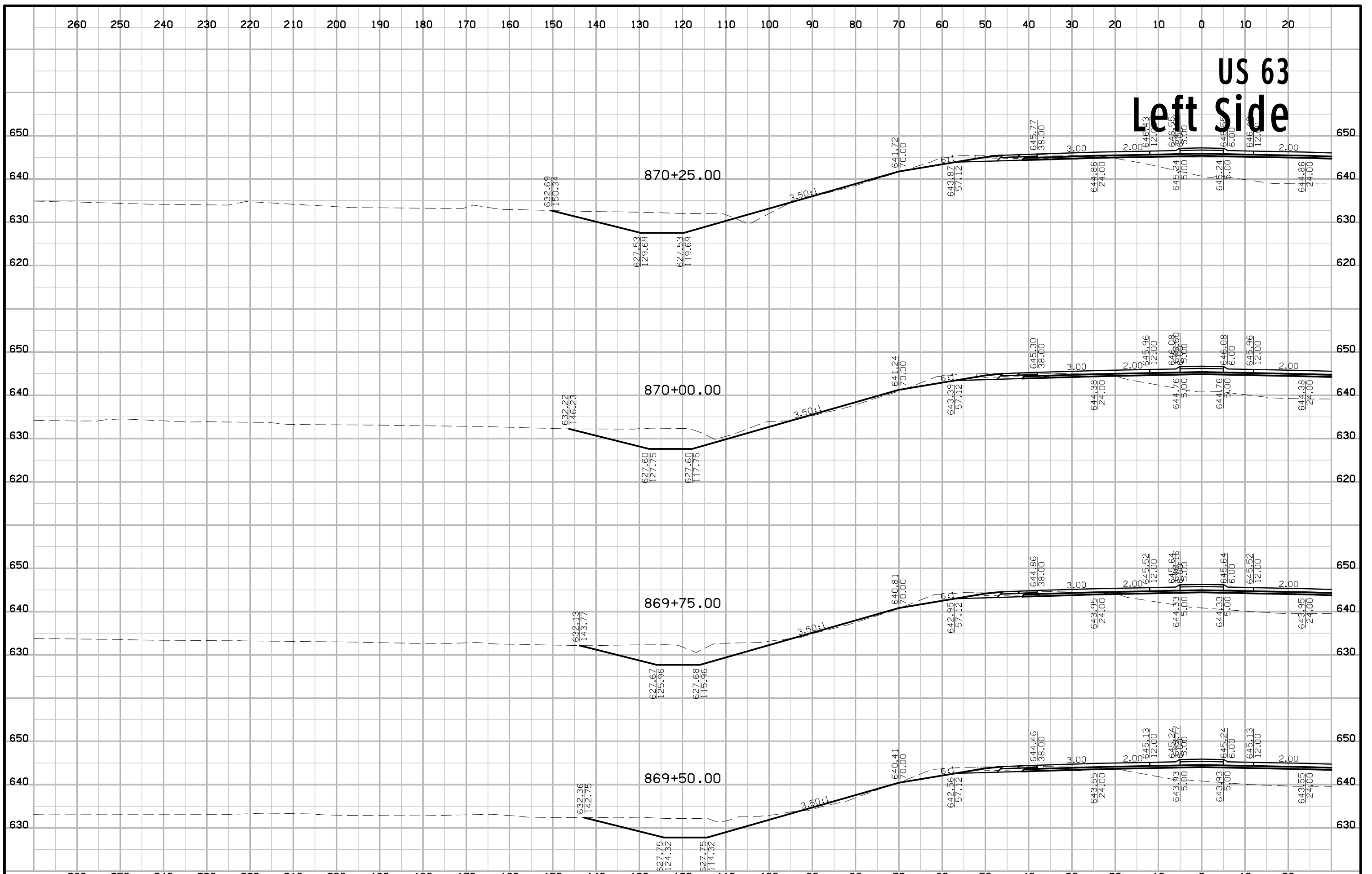
# US 63 Left Side



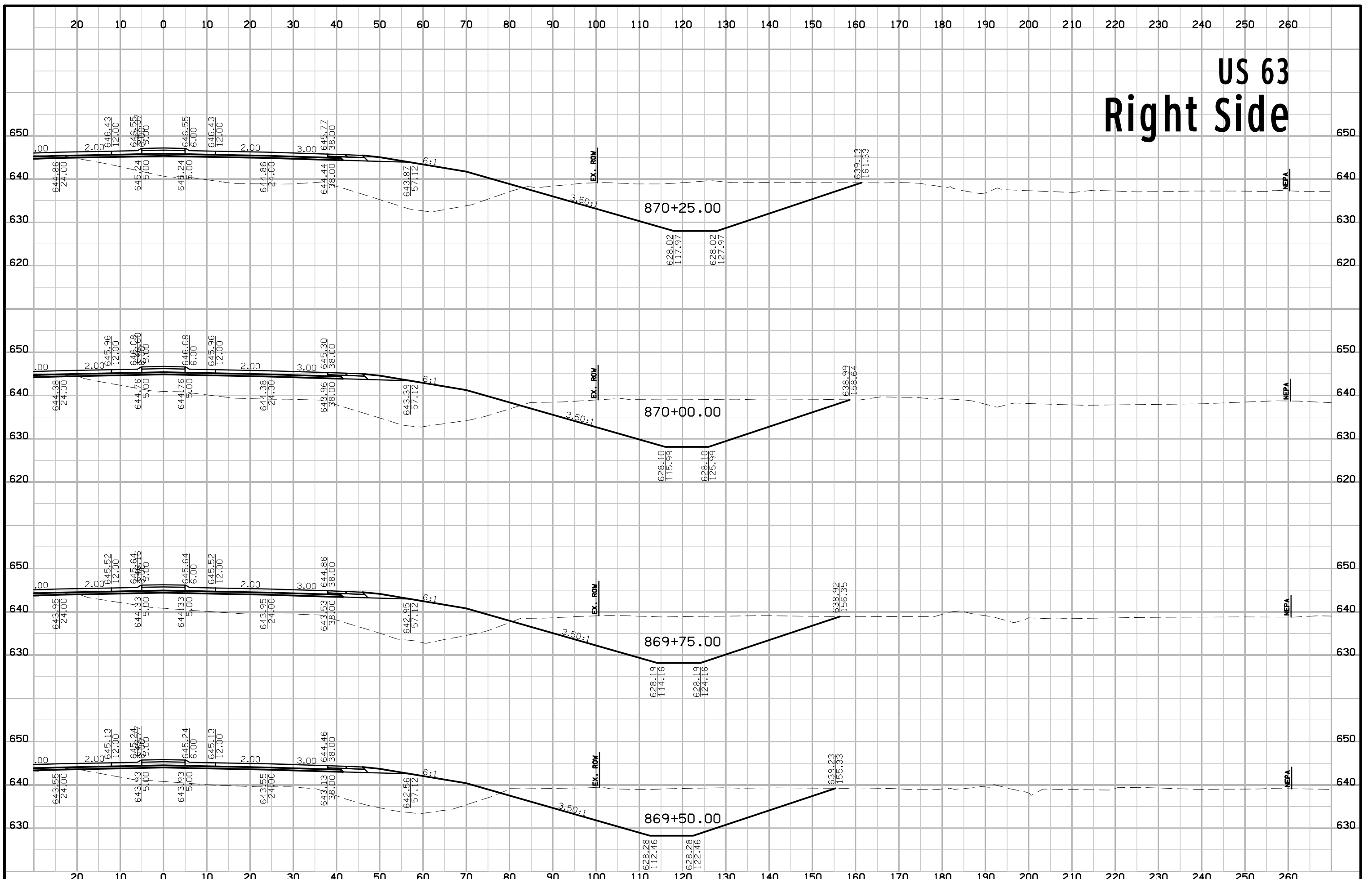
# US 63 Right Side



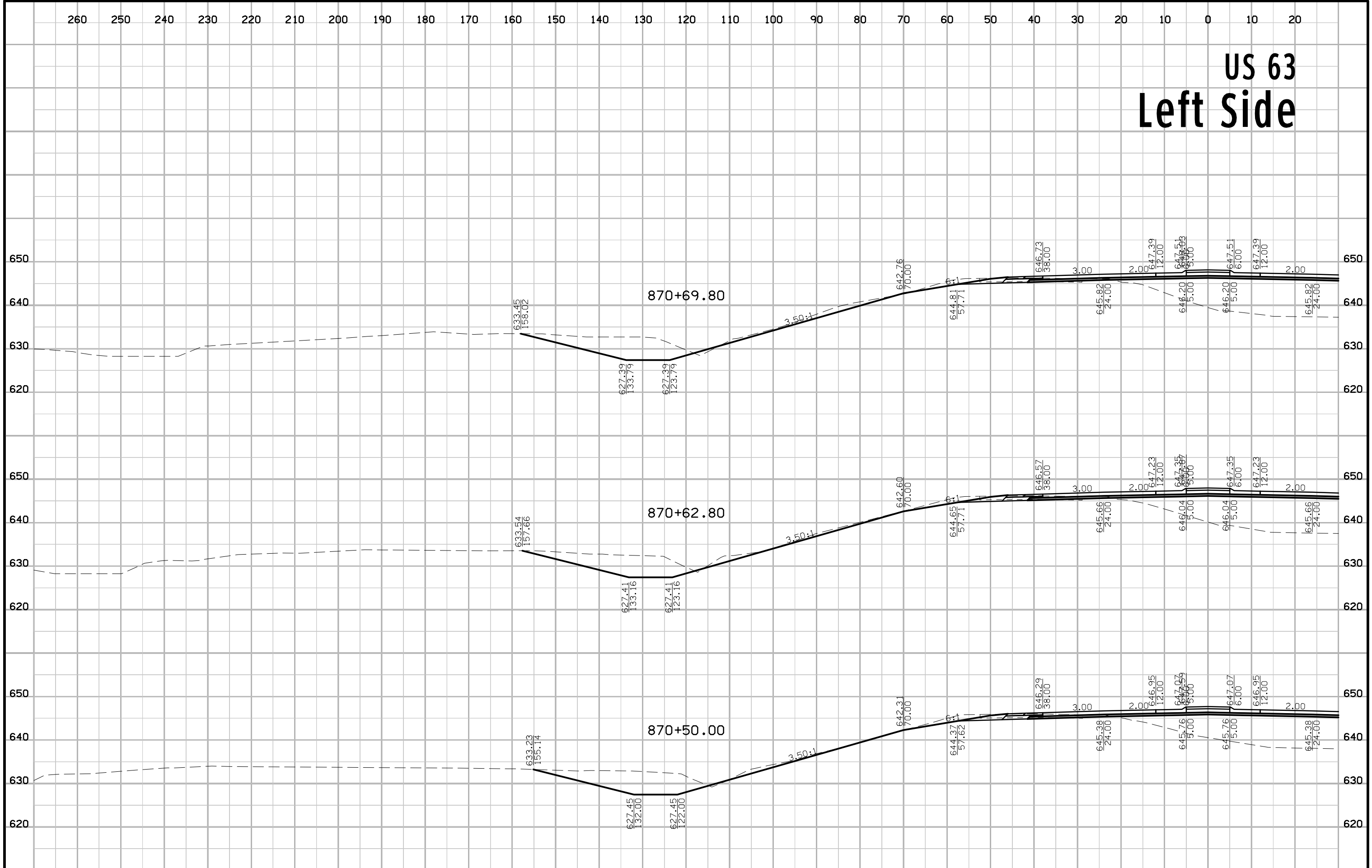
# US 63 Left Side



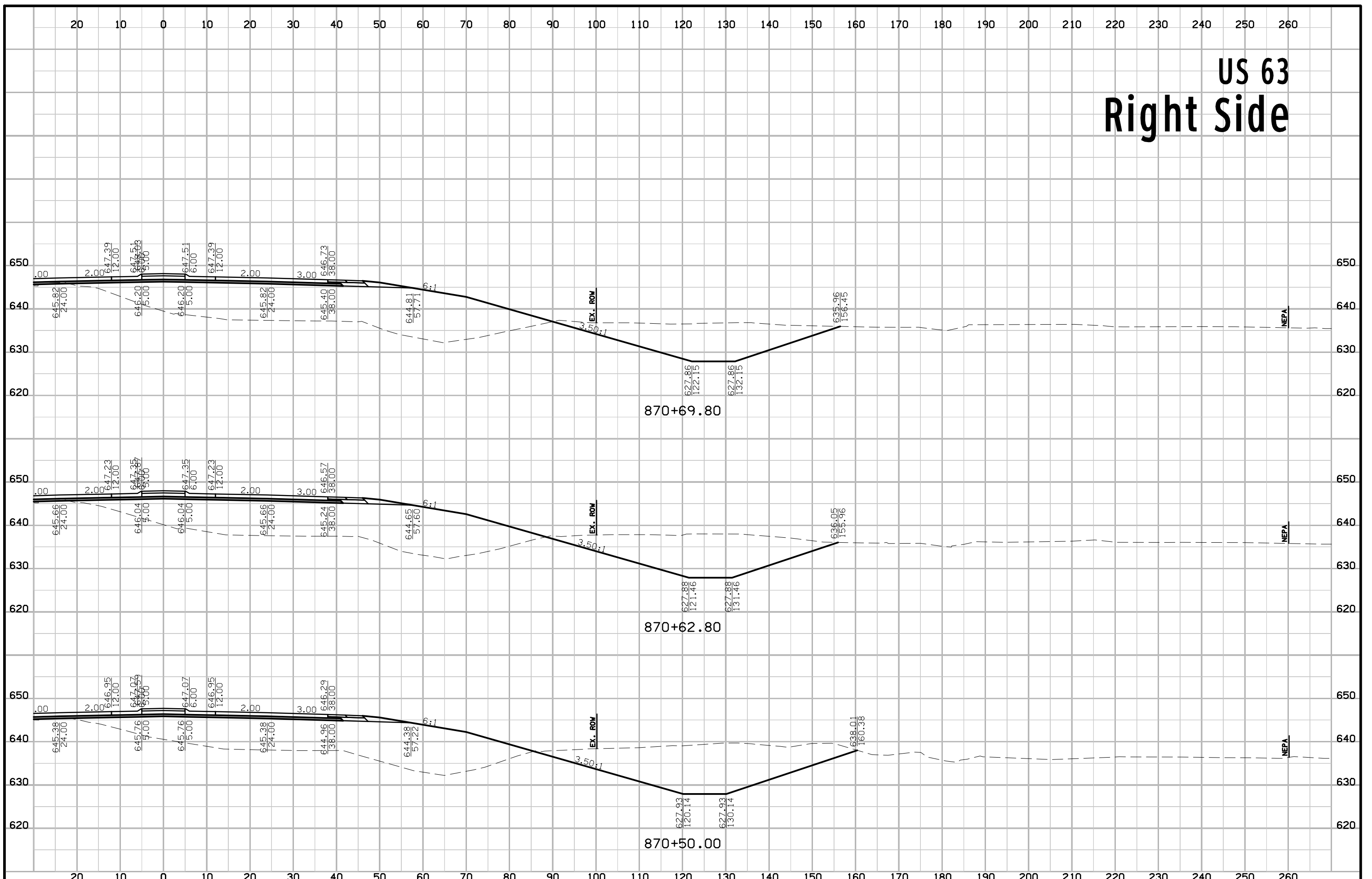
# US 63 Right Side



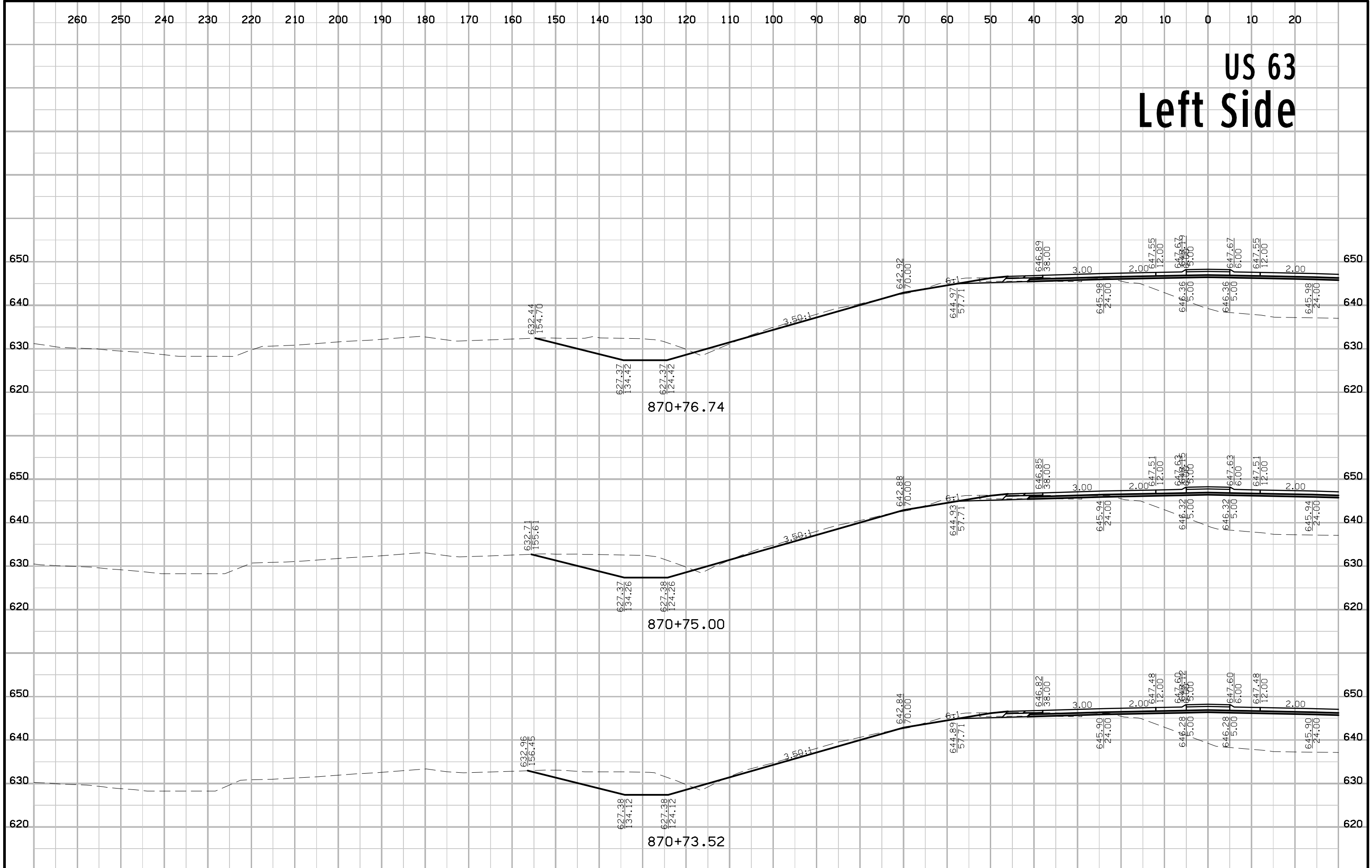
# US 63 Left Side



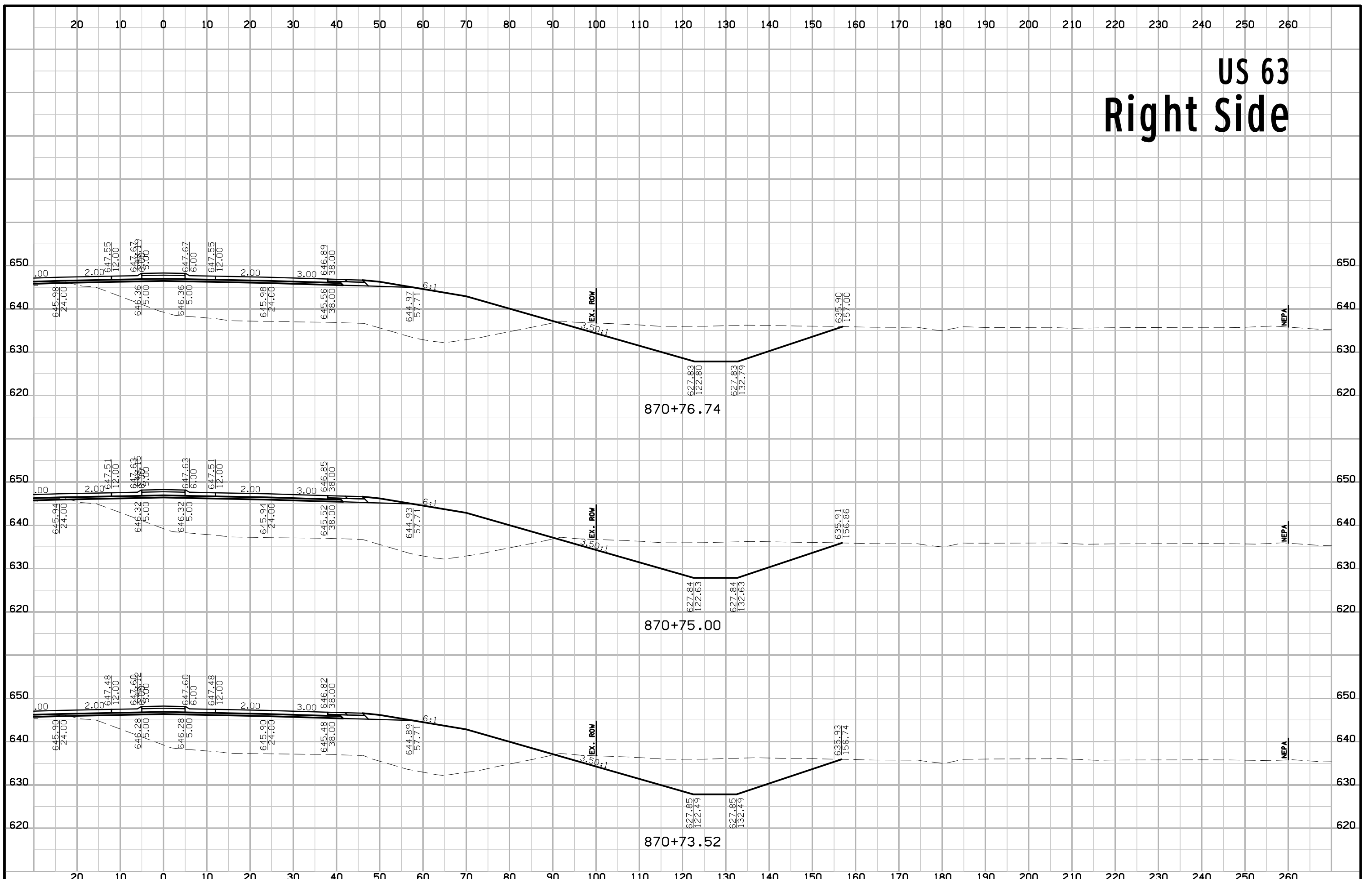
# US 63 Right Side



# US 63 Left Side

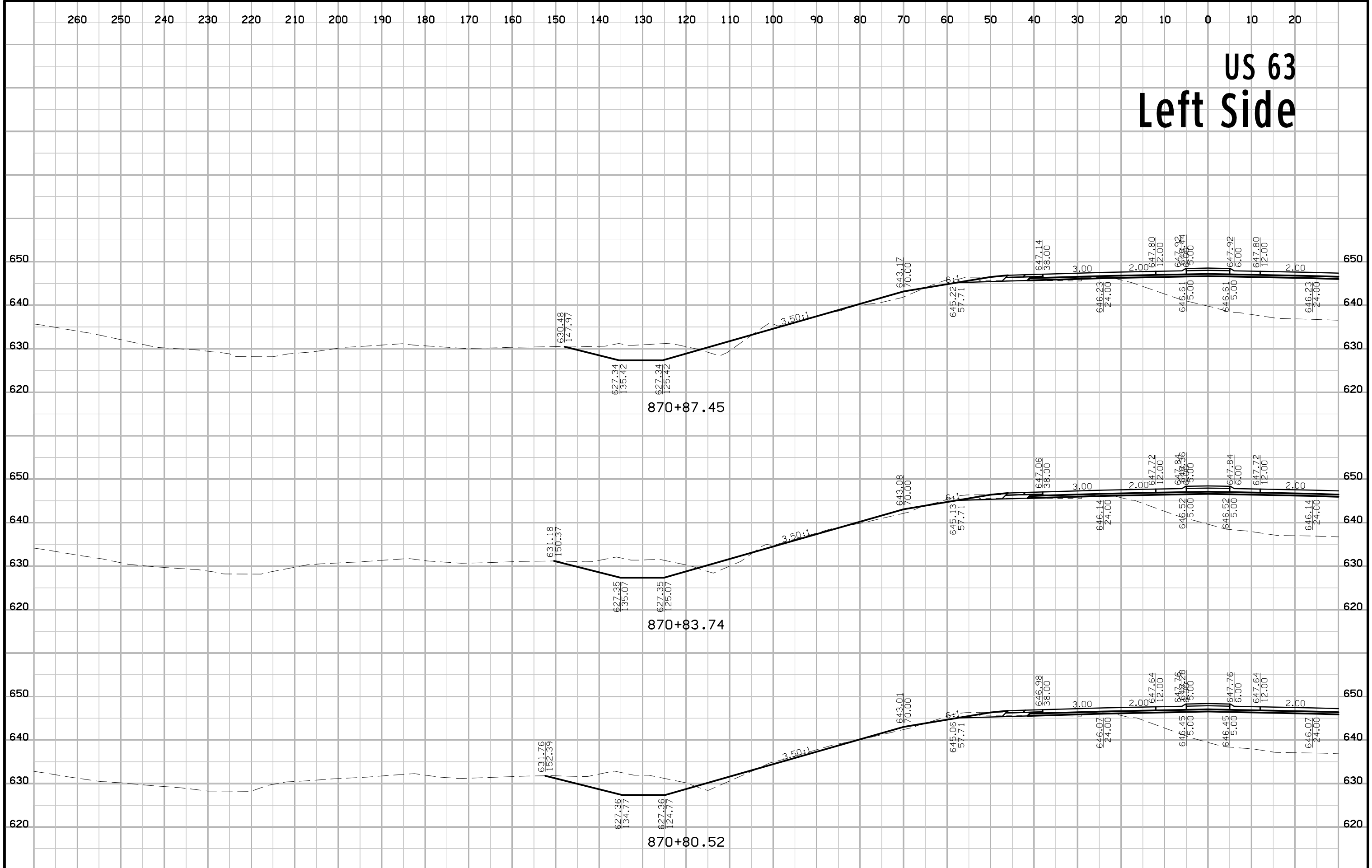


# US 63 Right Side

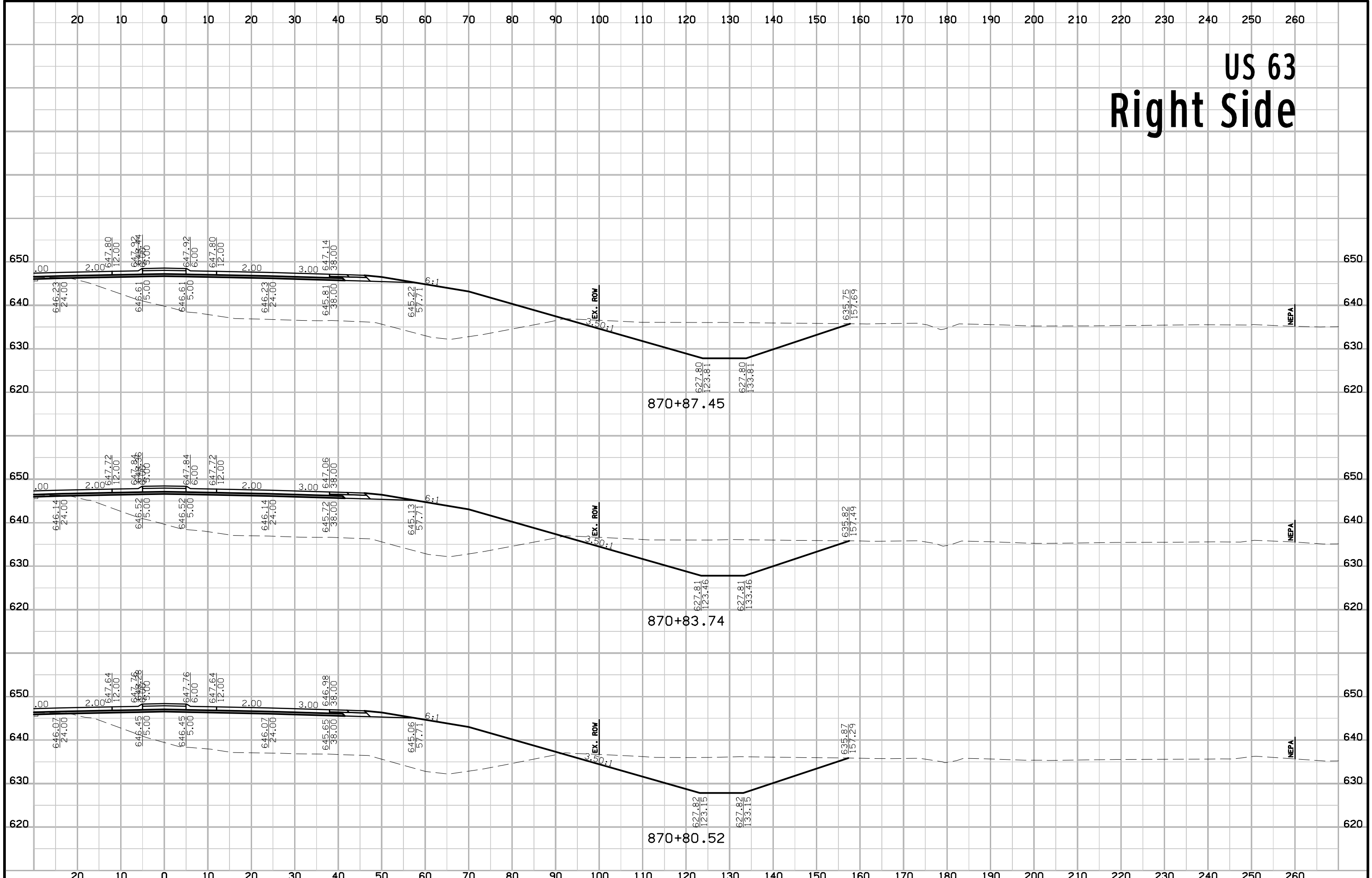




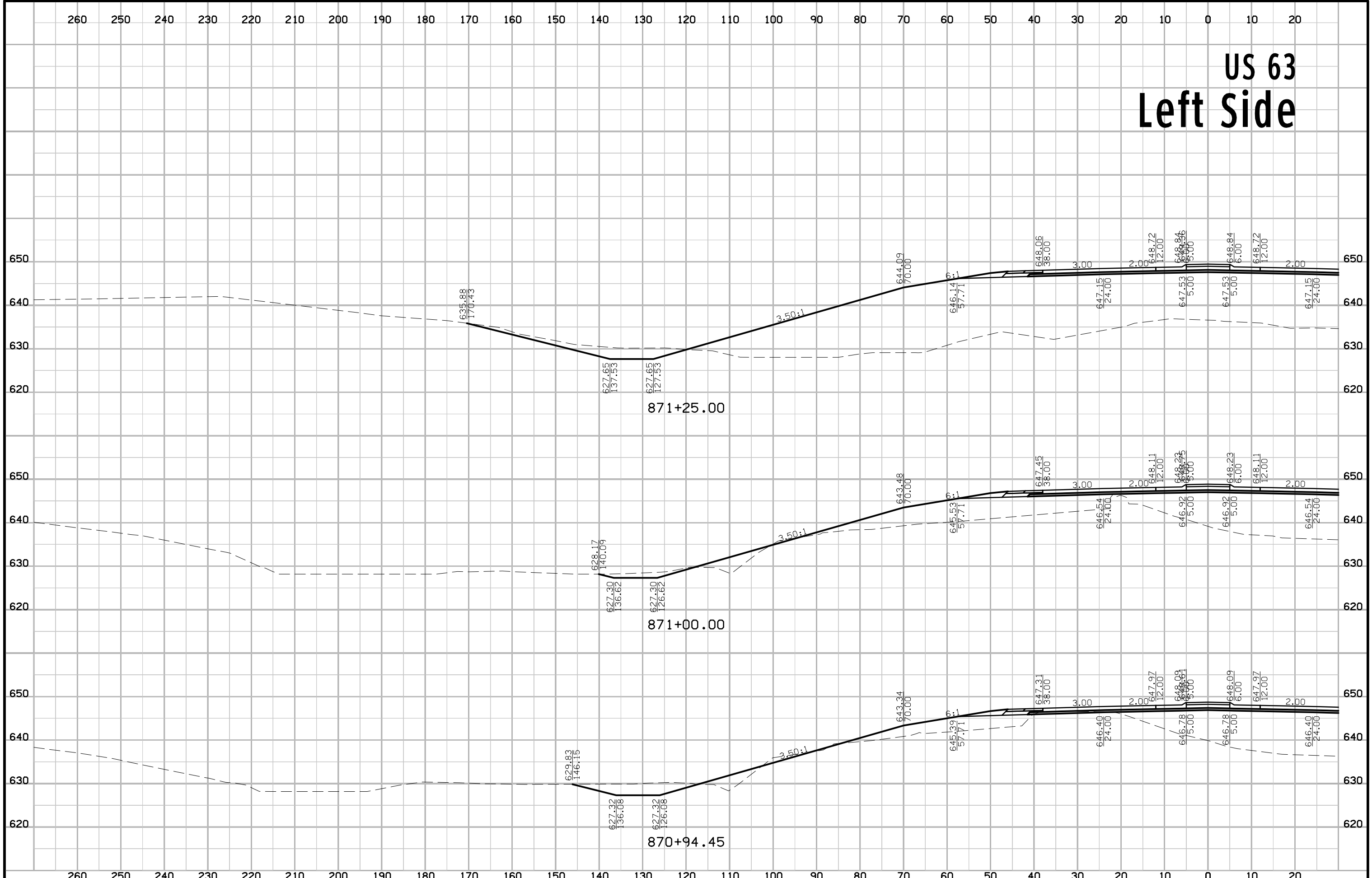
# US 63 Left Side



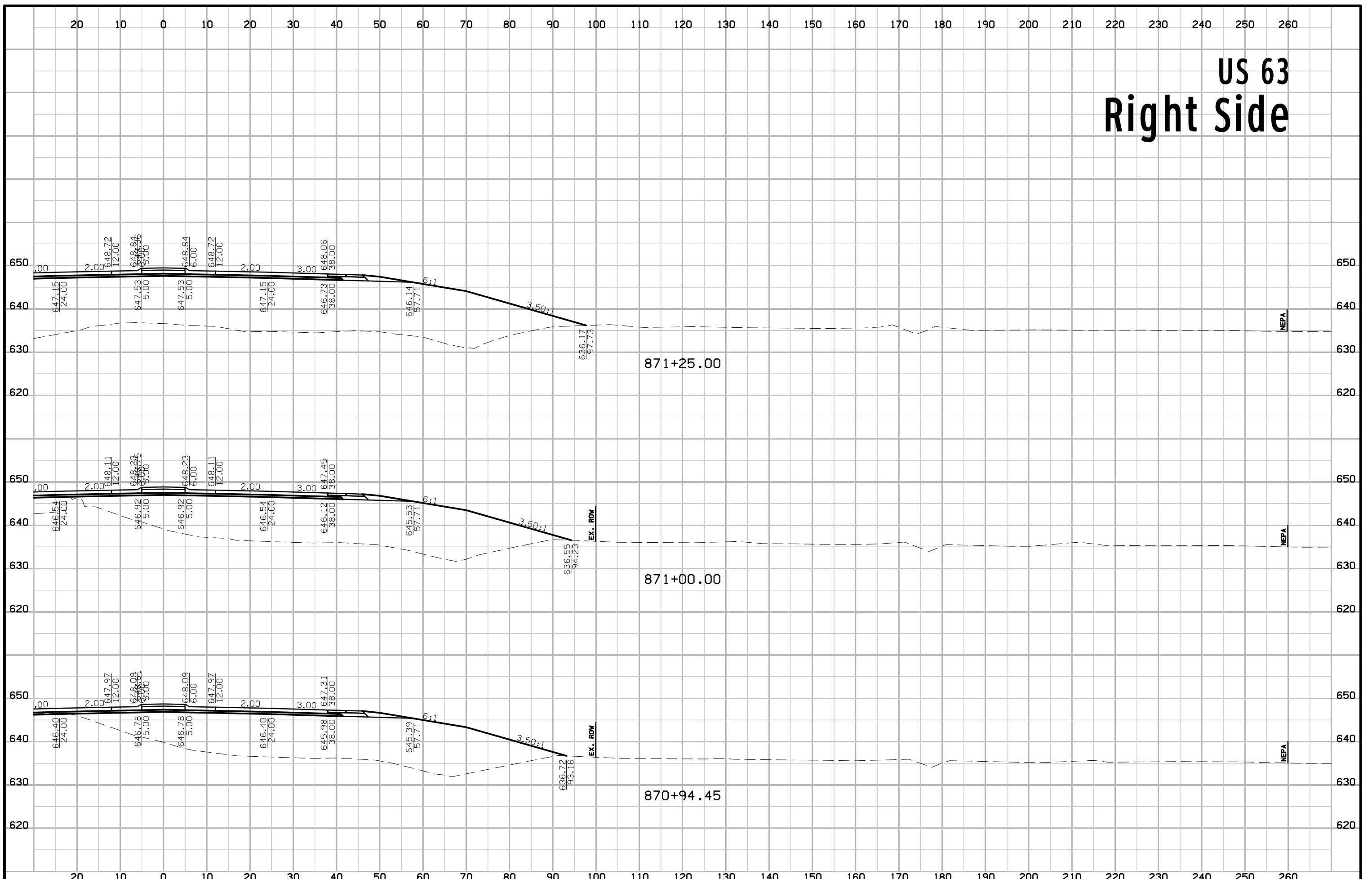
# US 63 Right Side



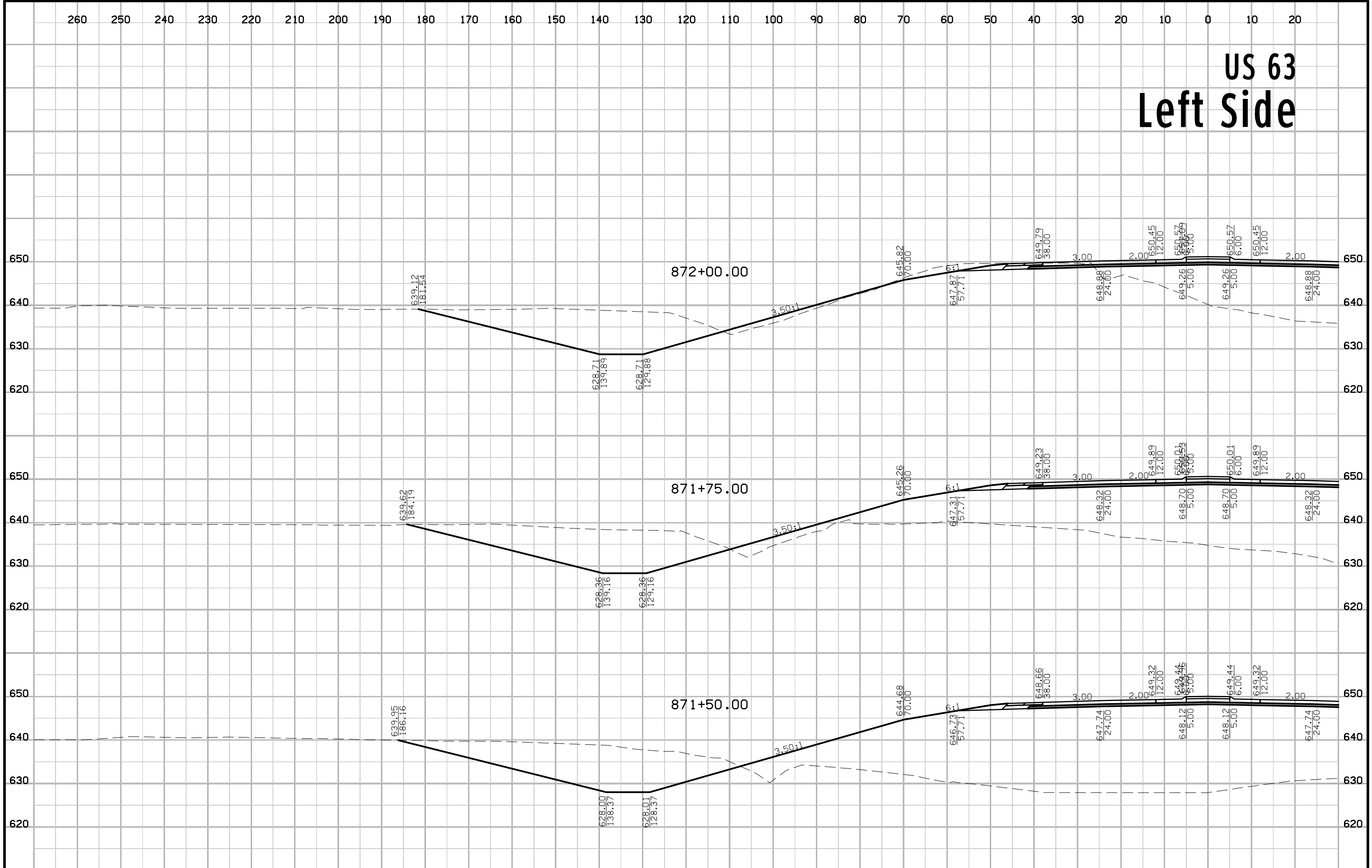
# US 63 Left Side



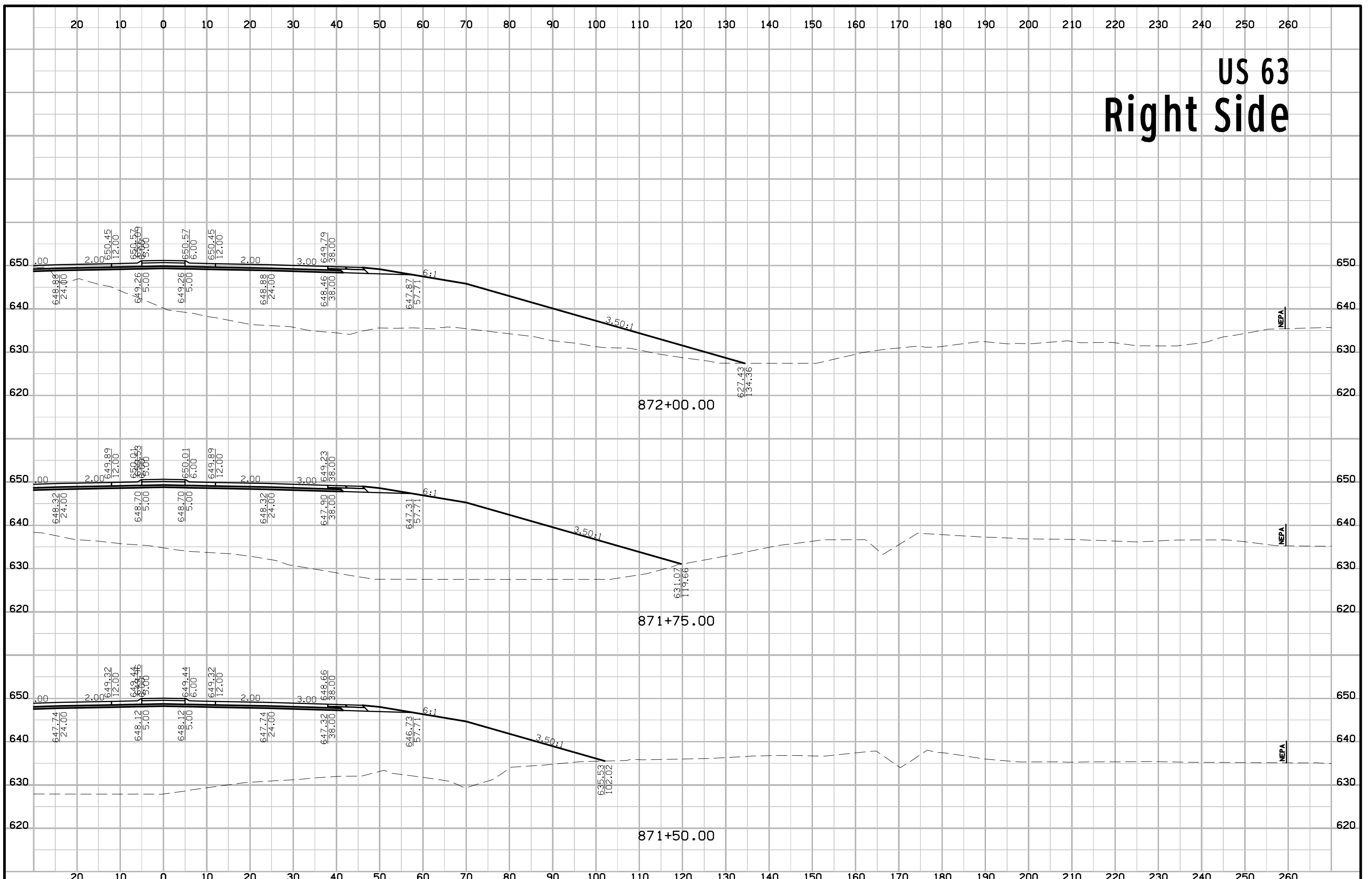
# US 63 Right Side



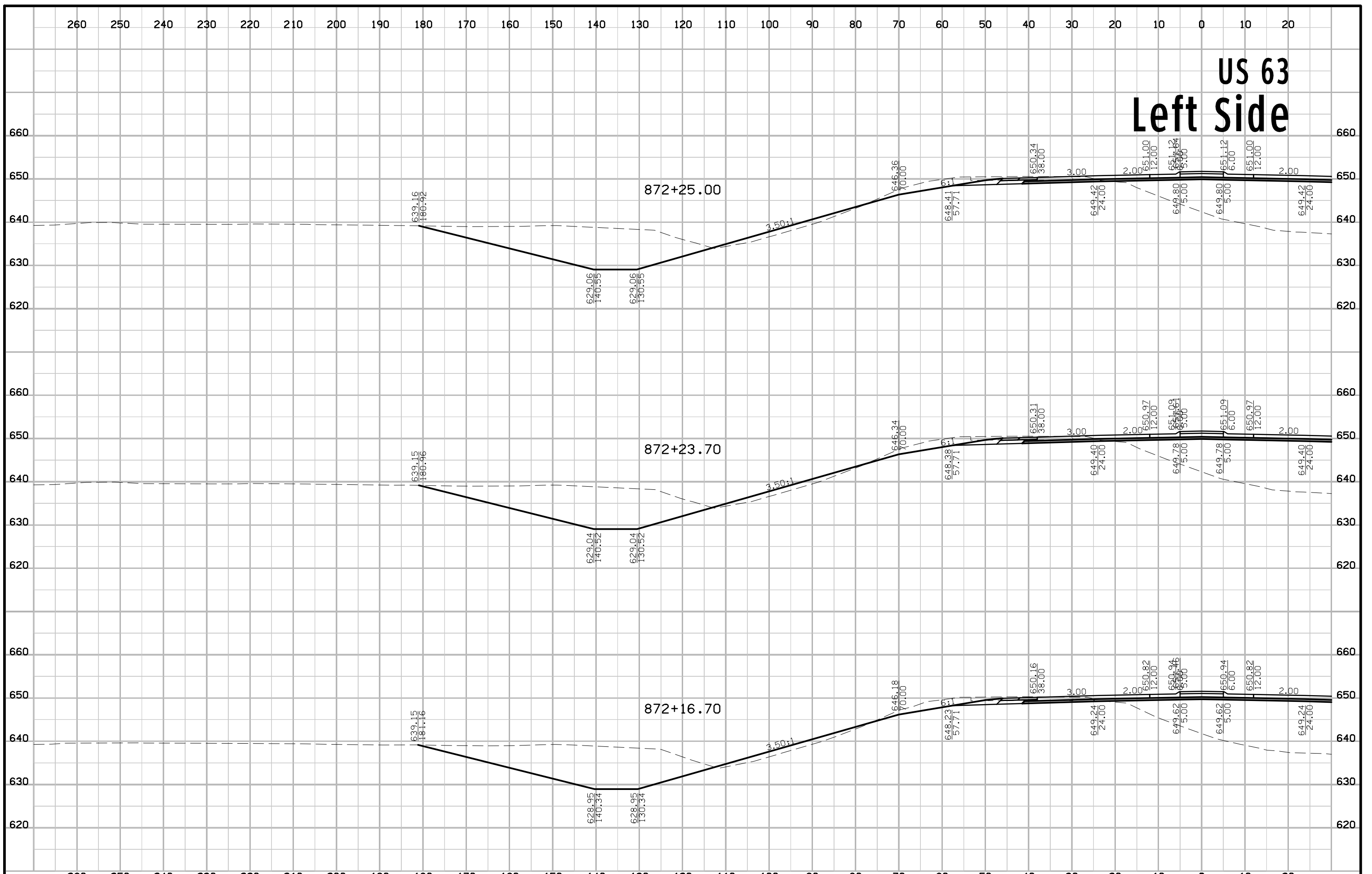
# US 63 Left Side



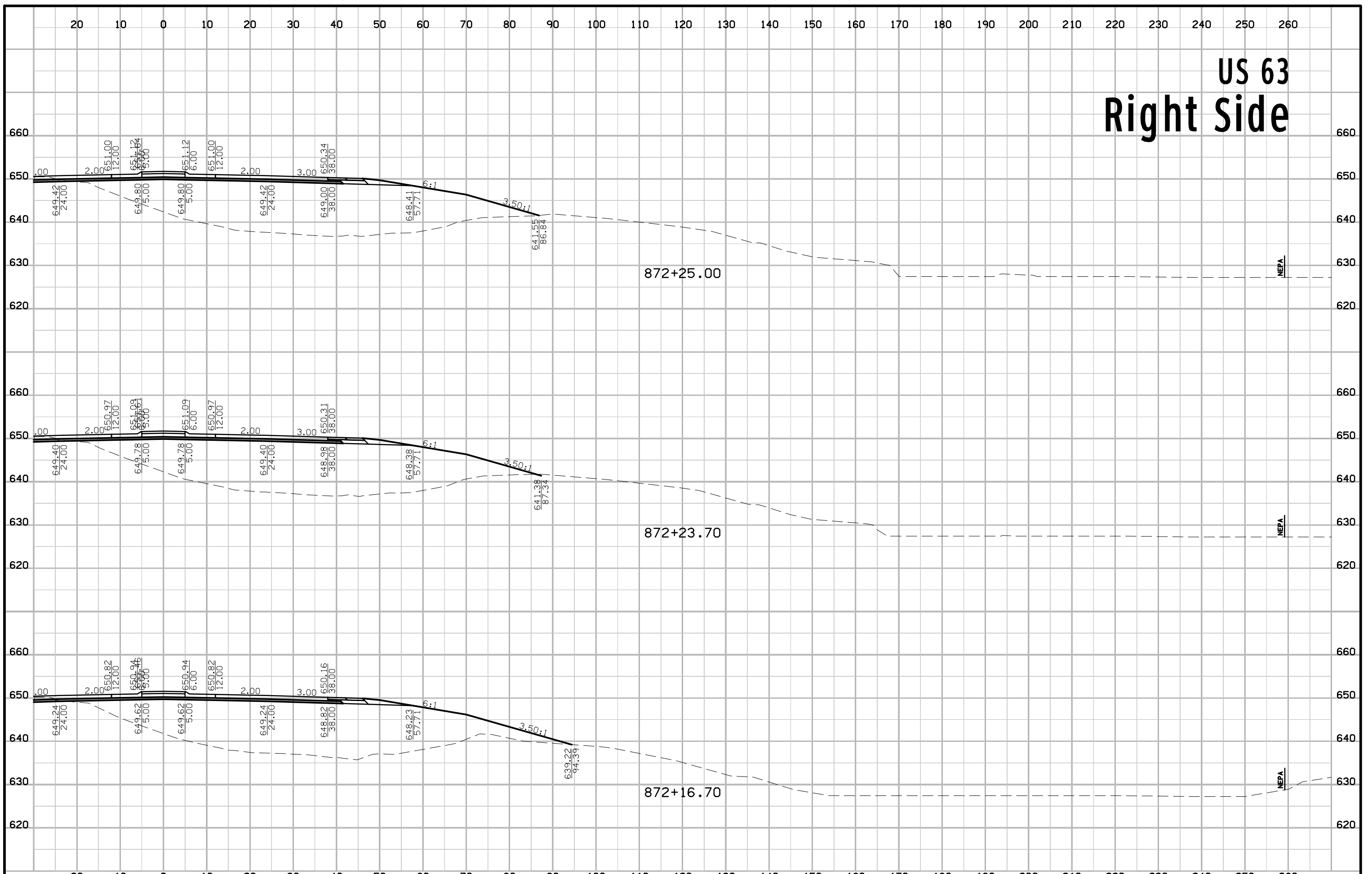
# US 63 Right Side



# US 63 Left Side

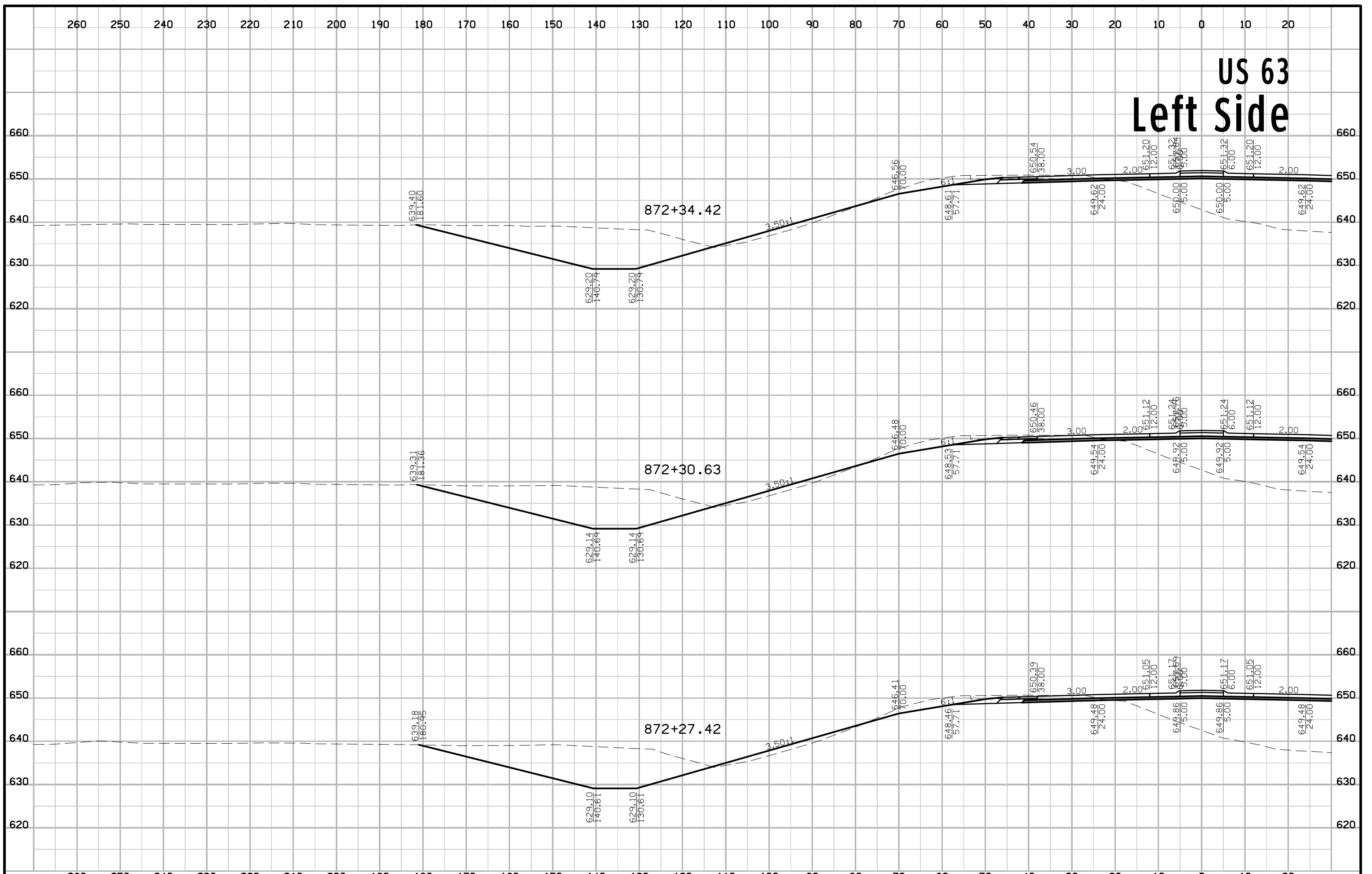


# US 63 Right Side

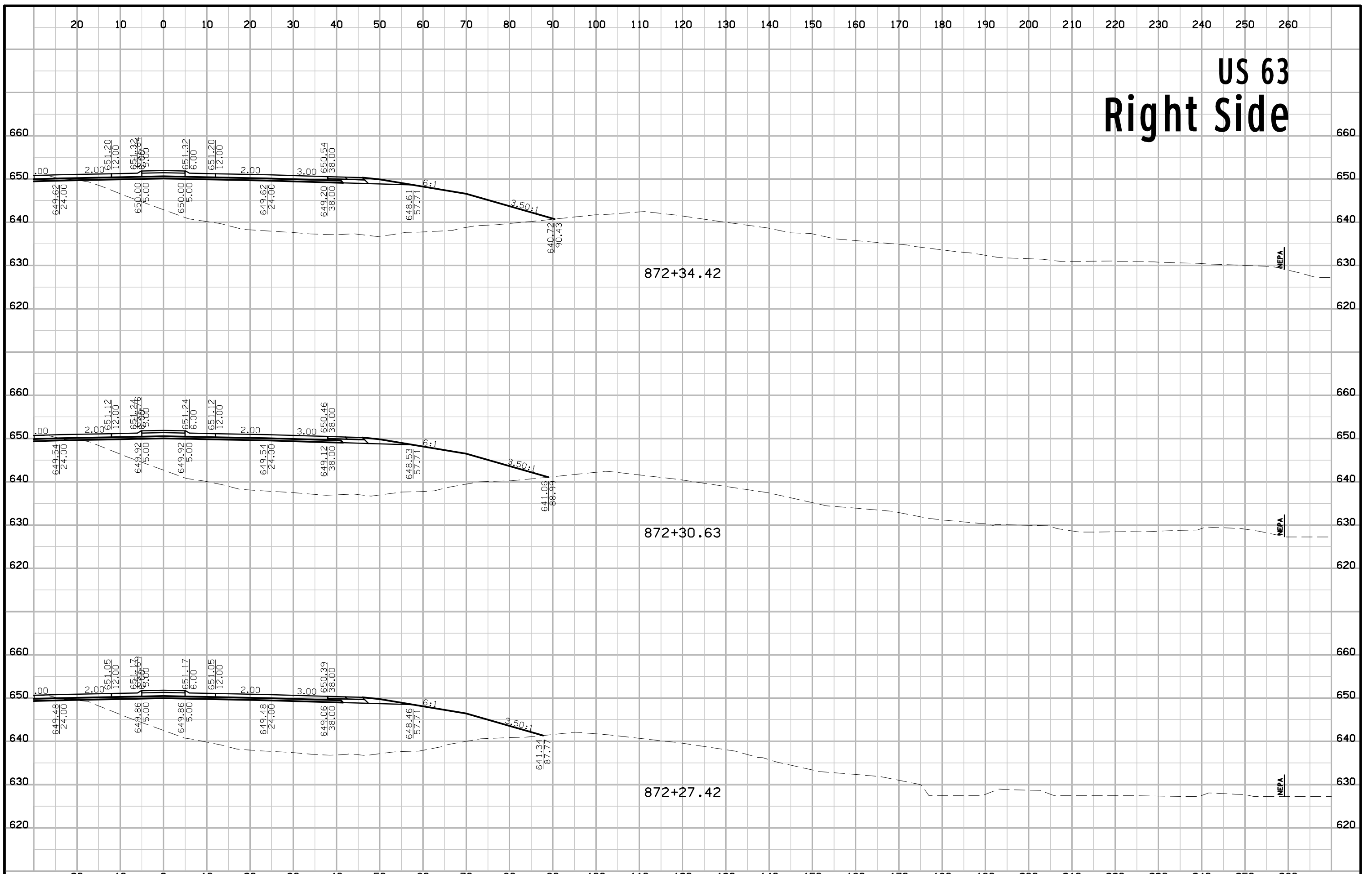




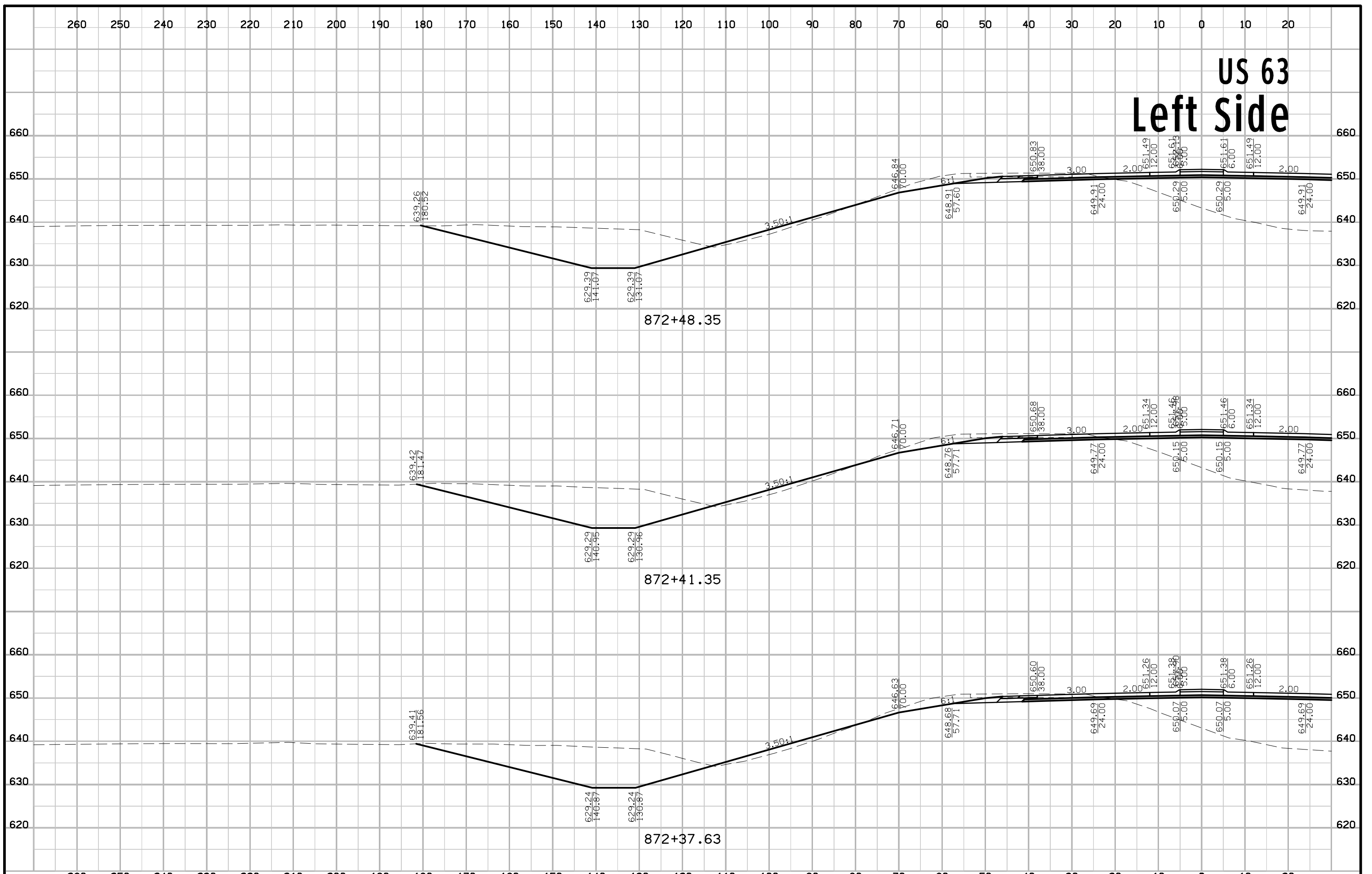
# US 63 Left Side



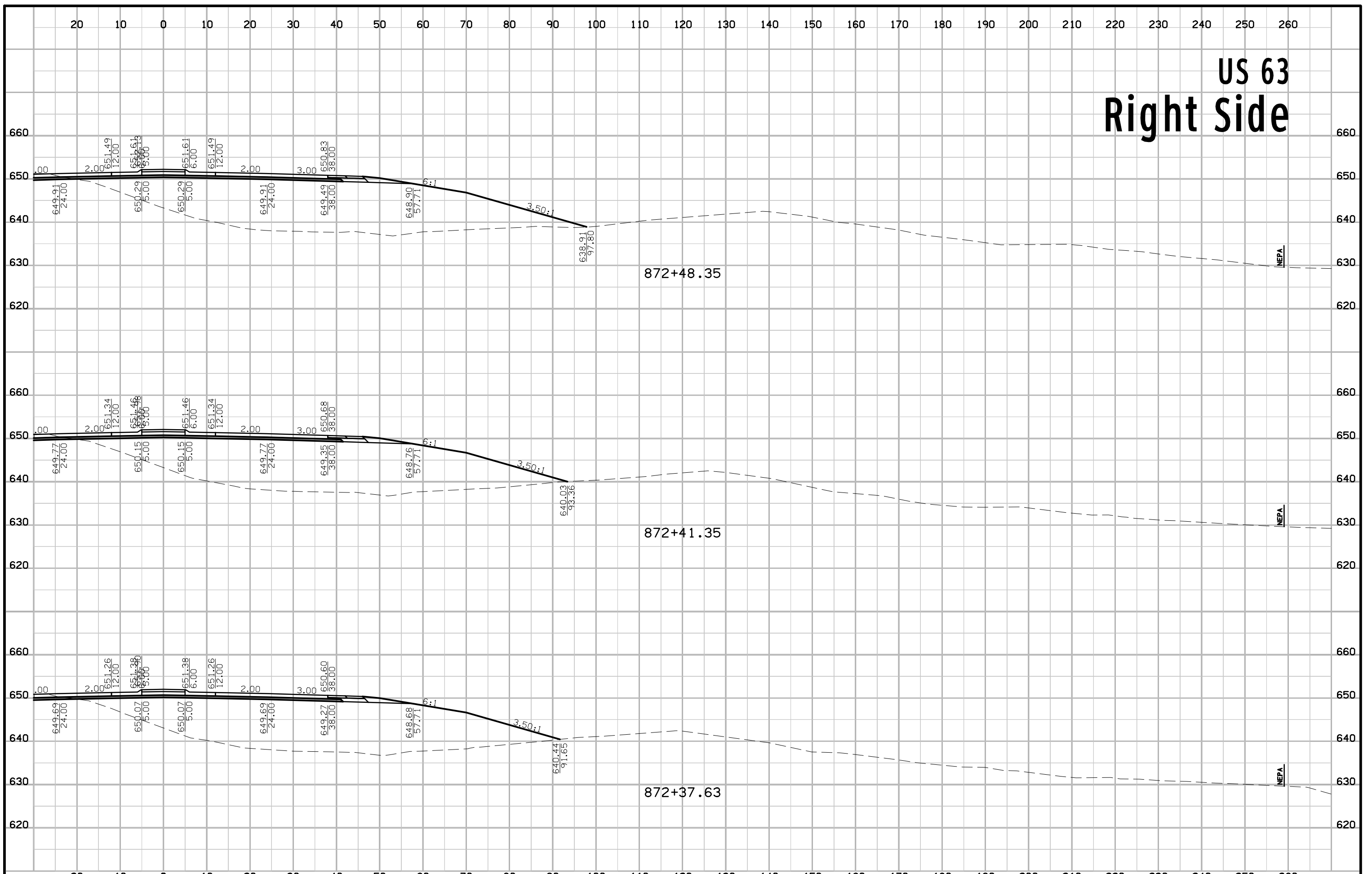
# US 63 Right Side



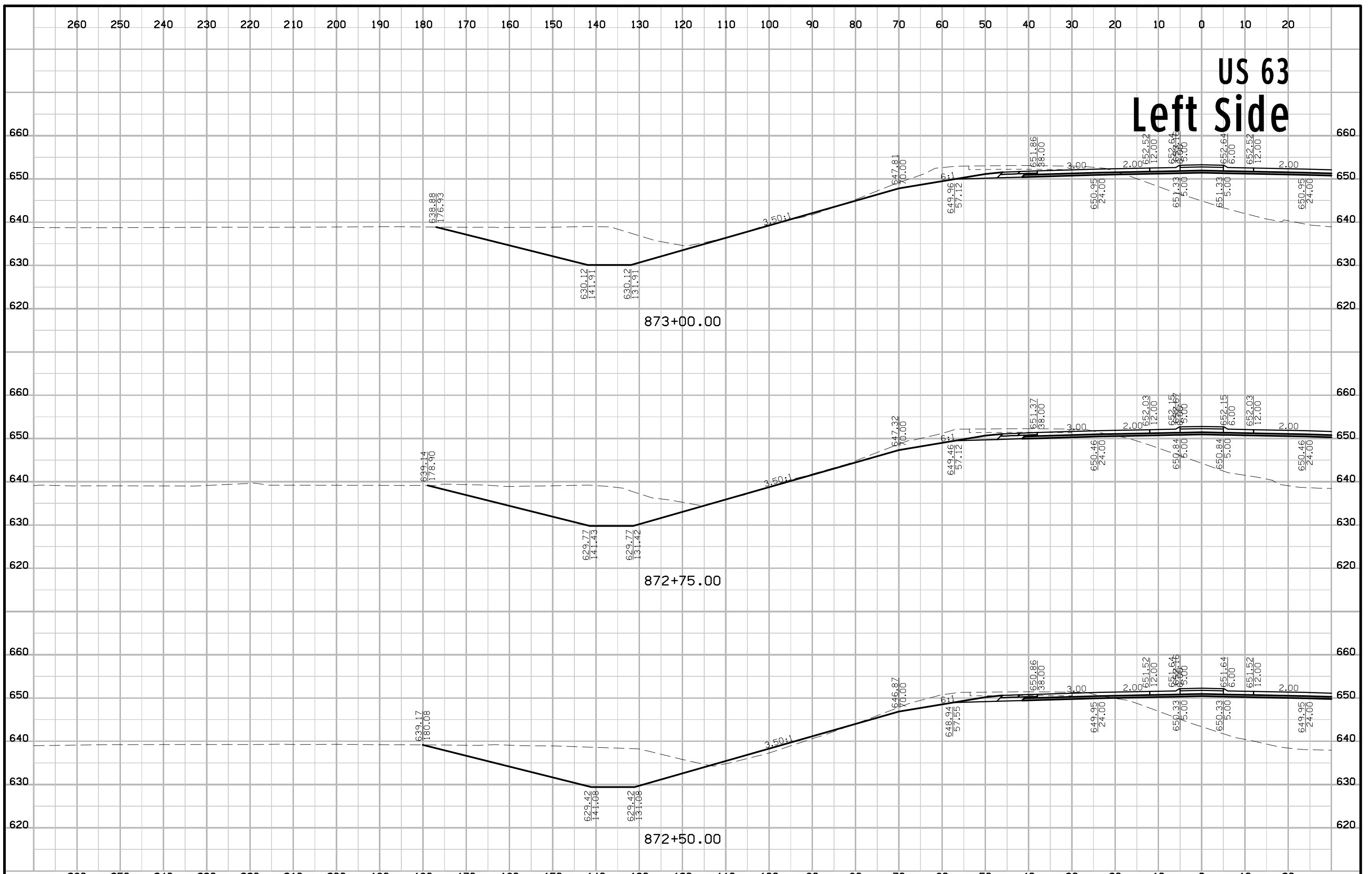
# US 63 Left Side



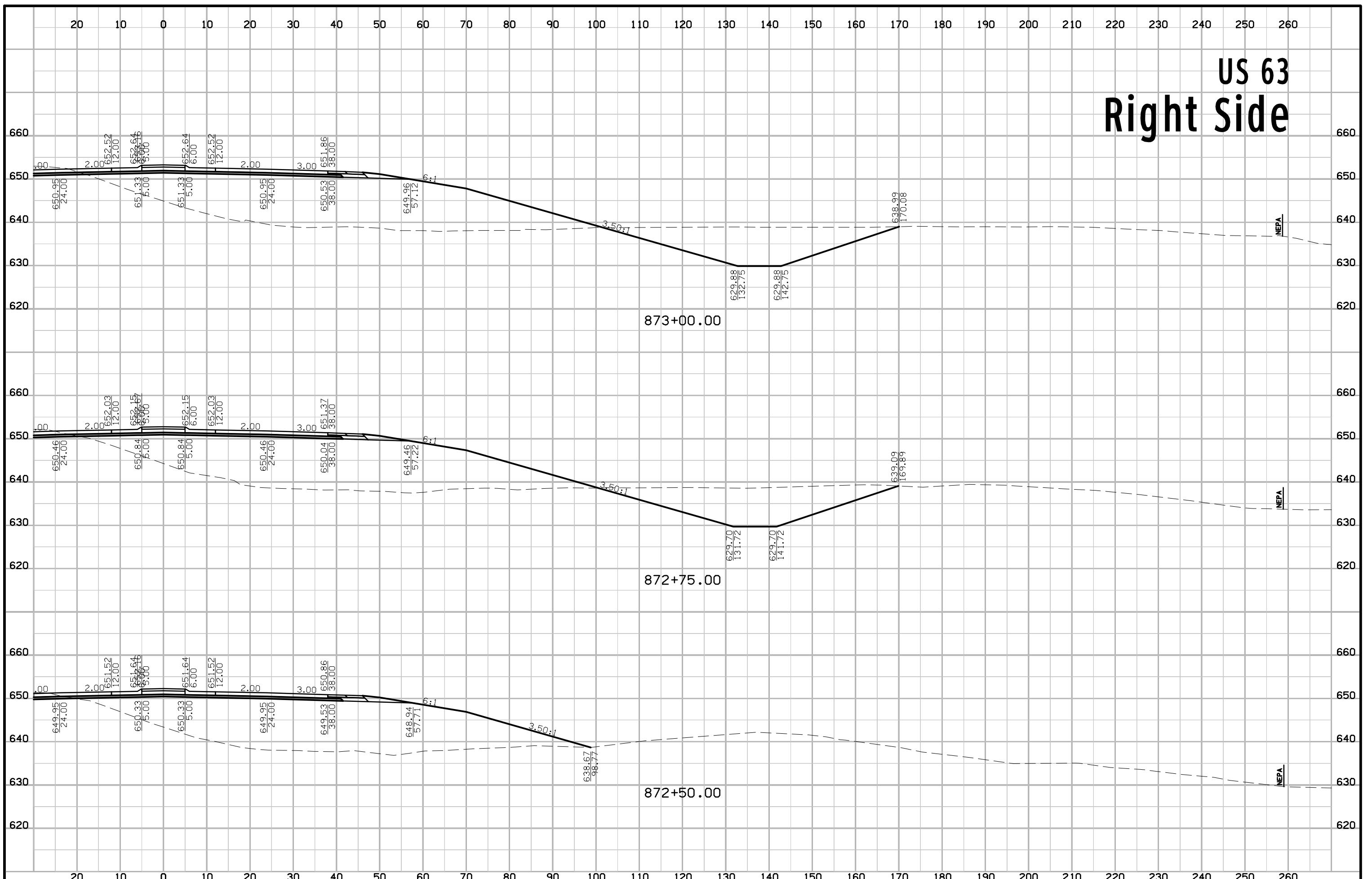
# US 63 Right Side



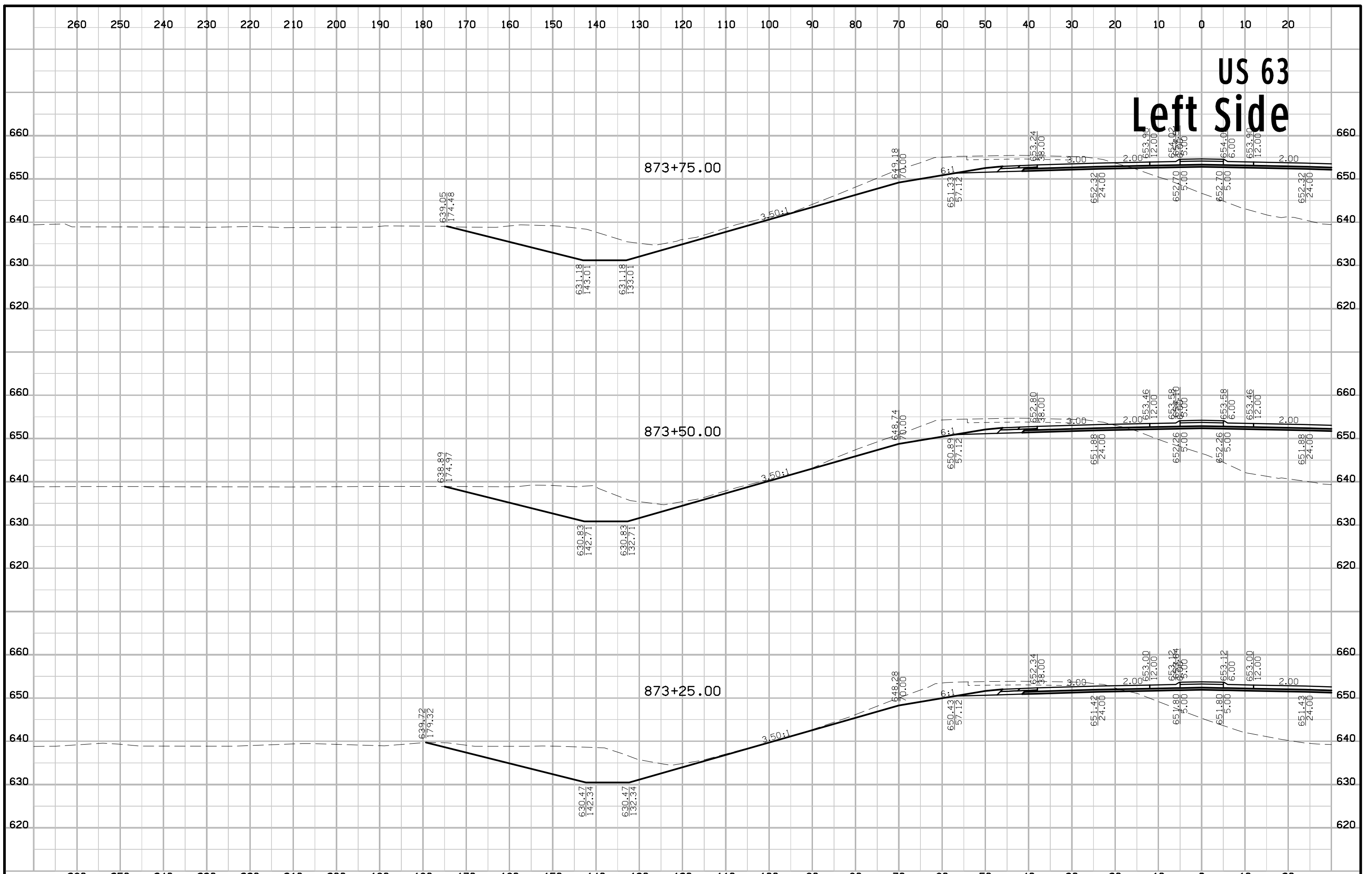
# US 63 Left Side



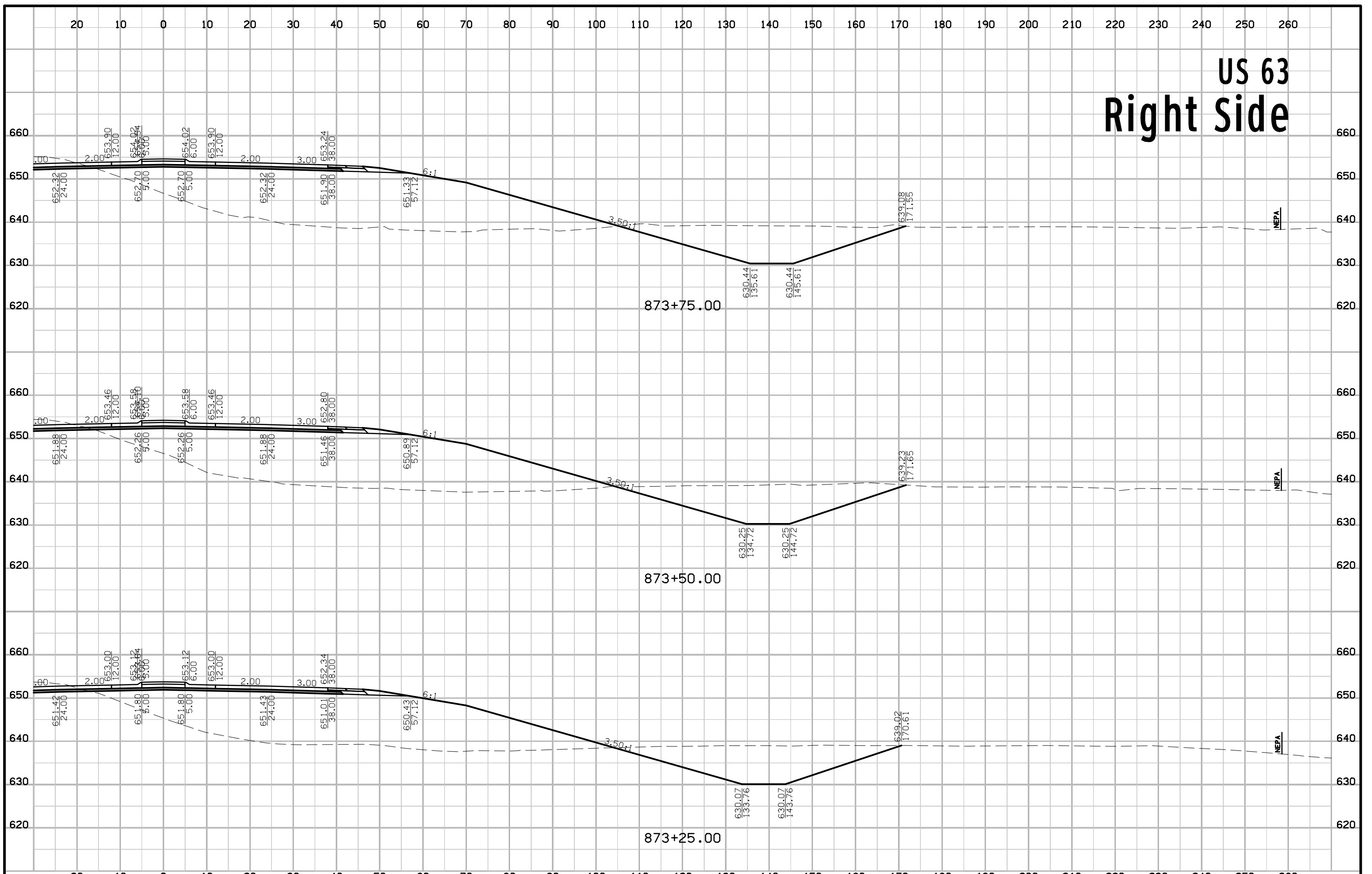
# US 63 Right Side



# US 63 Left Side

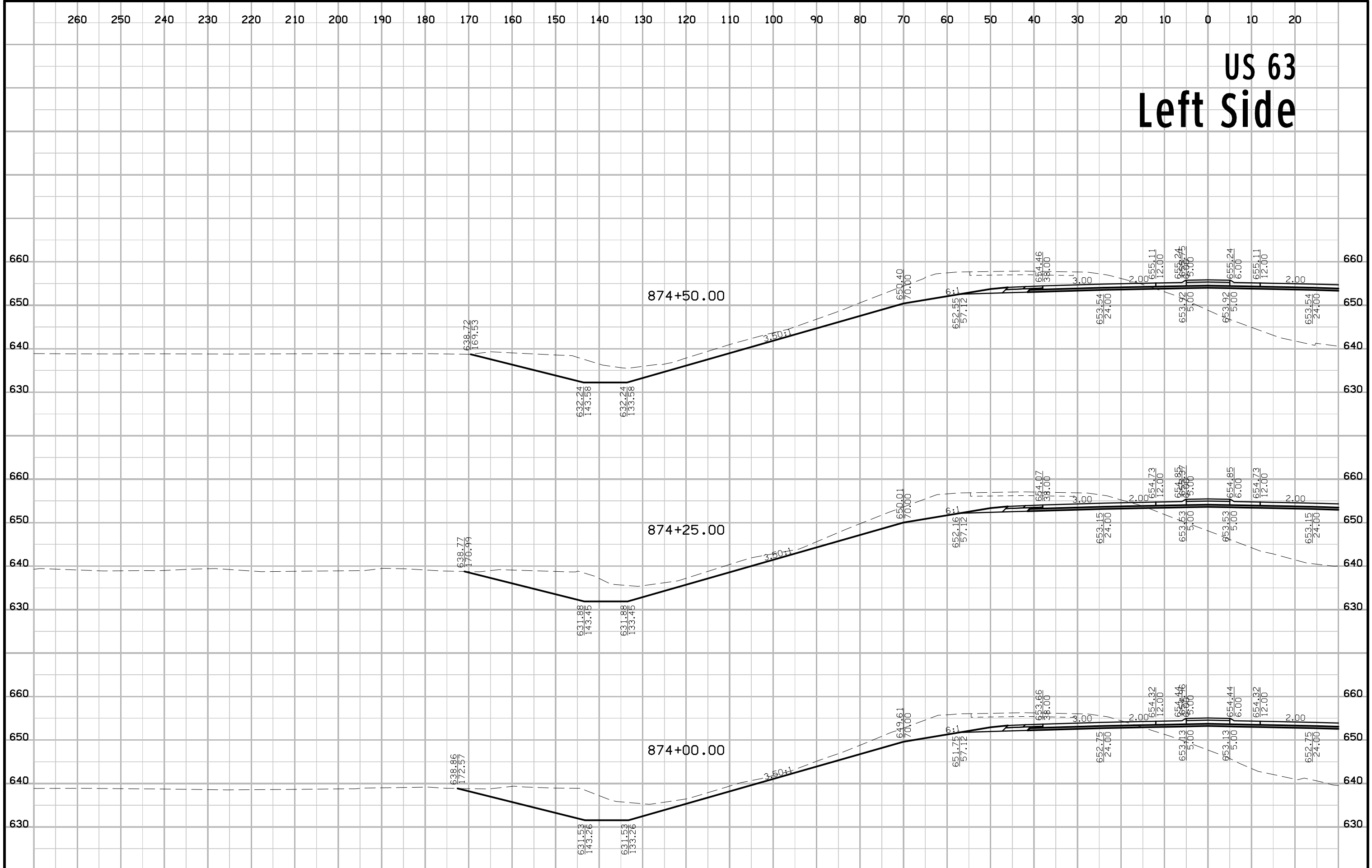


# US 63 Right Side

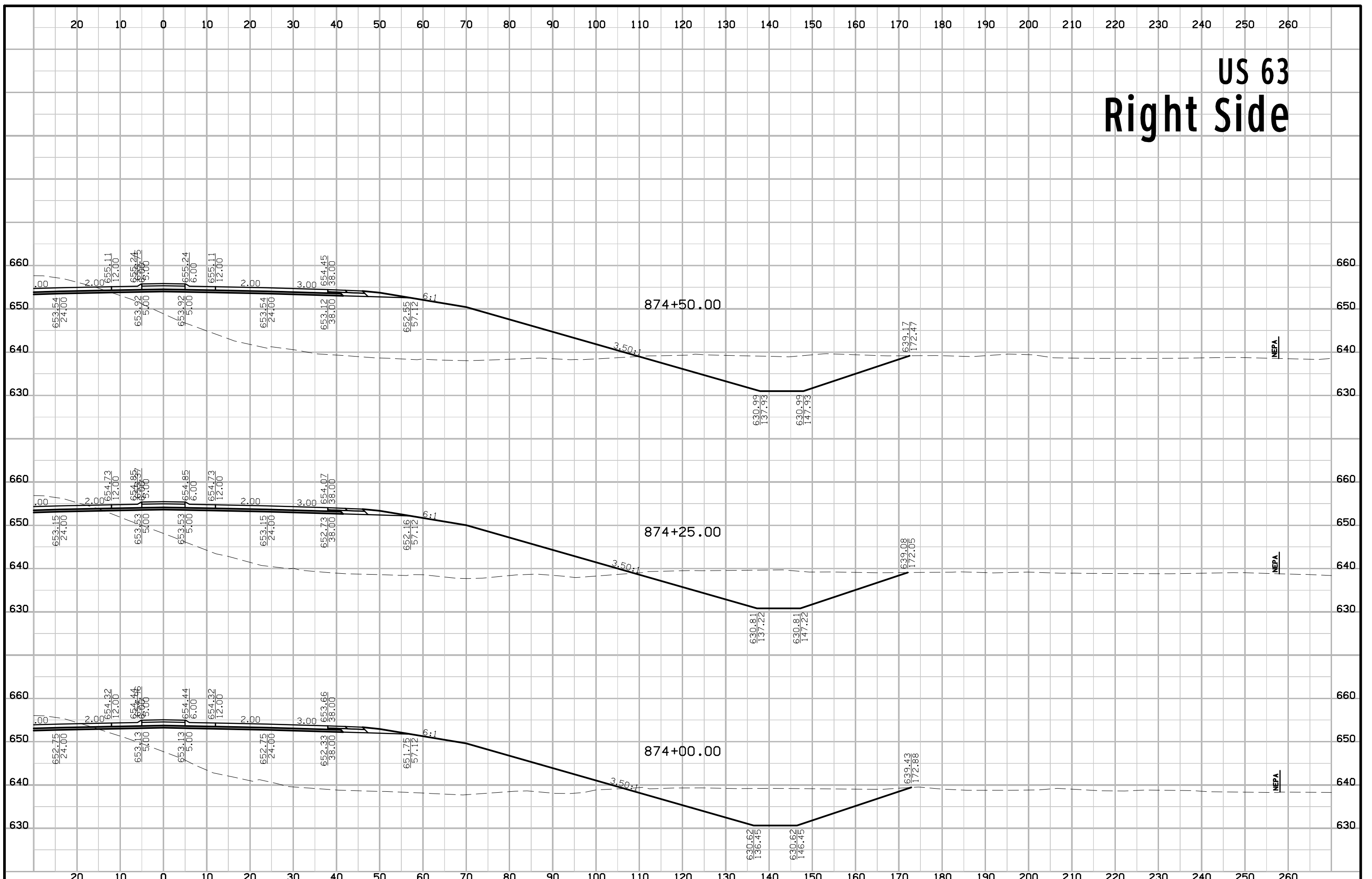




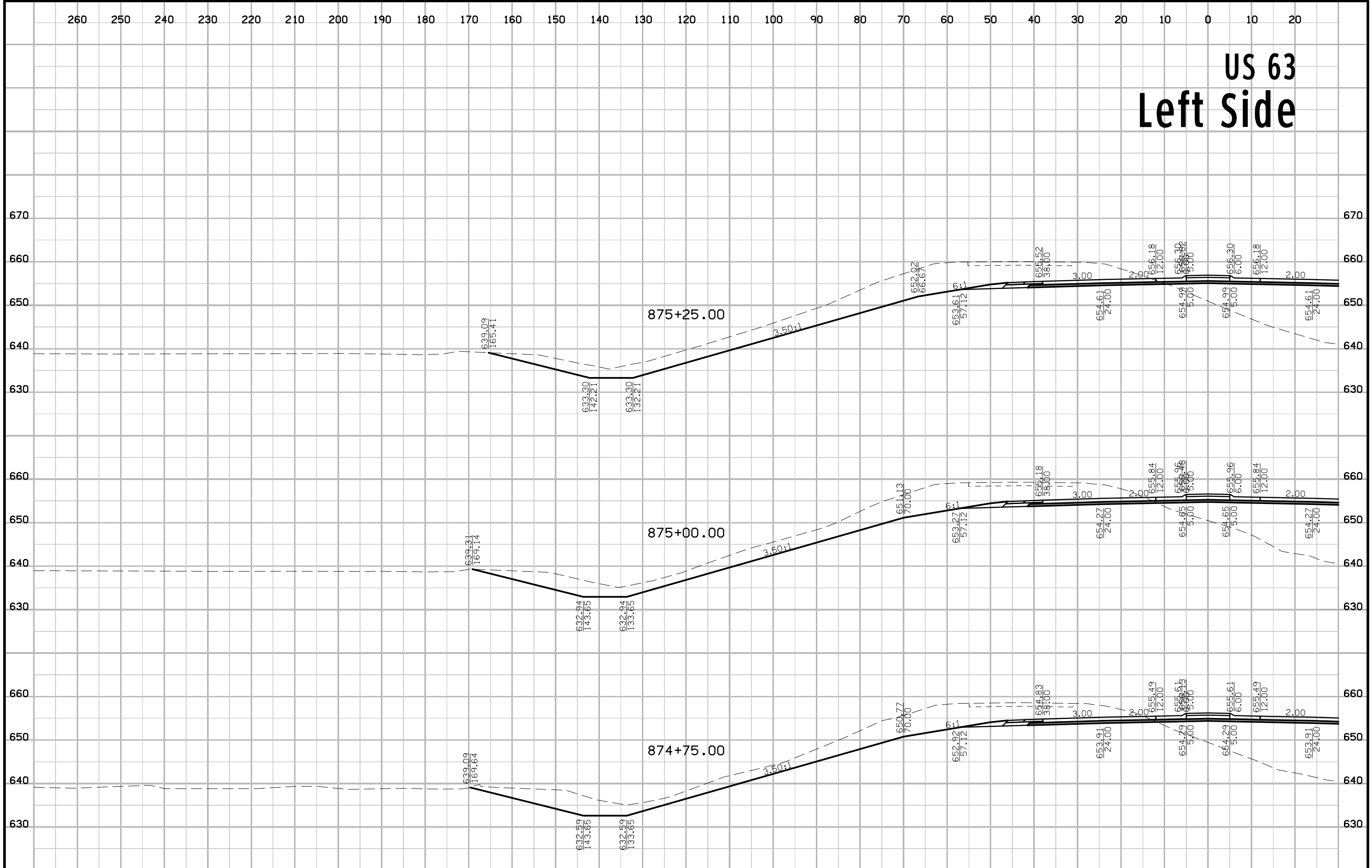
# US 63 Left Side



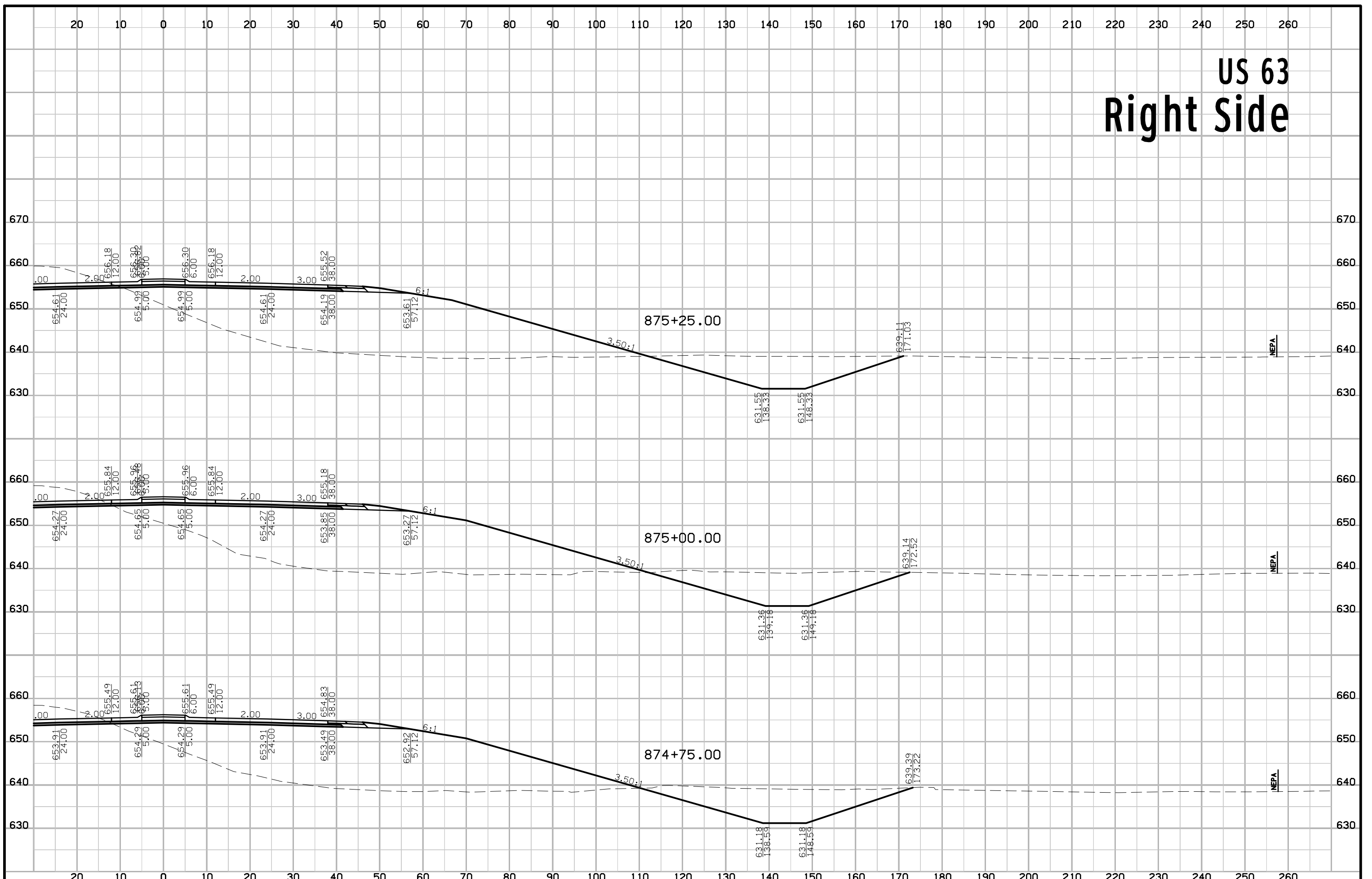
# US 63 Right Side



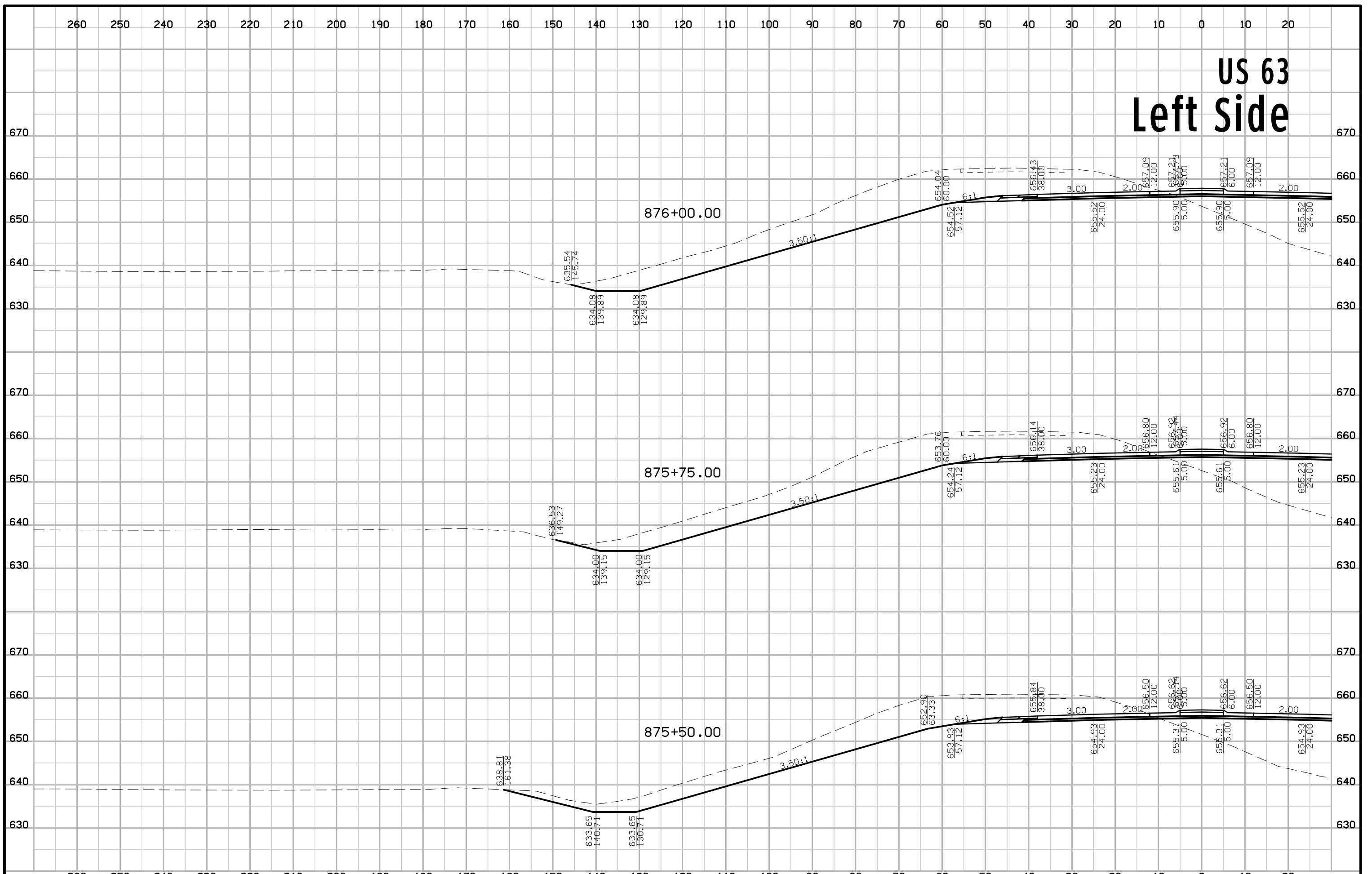
# US 63 Left Side



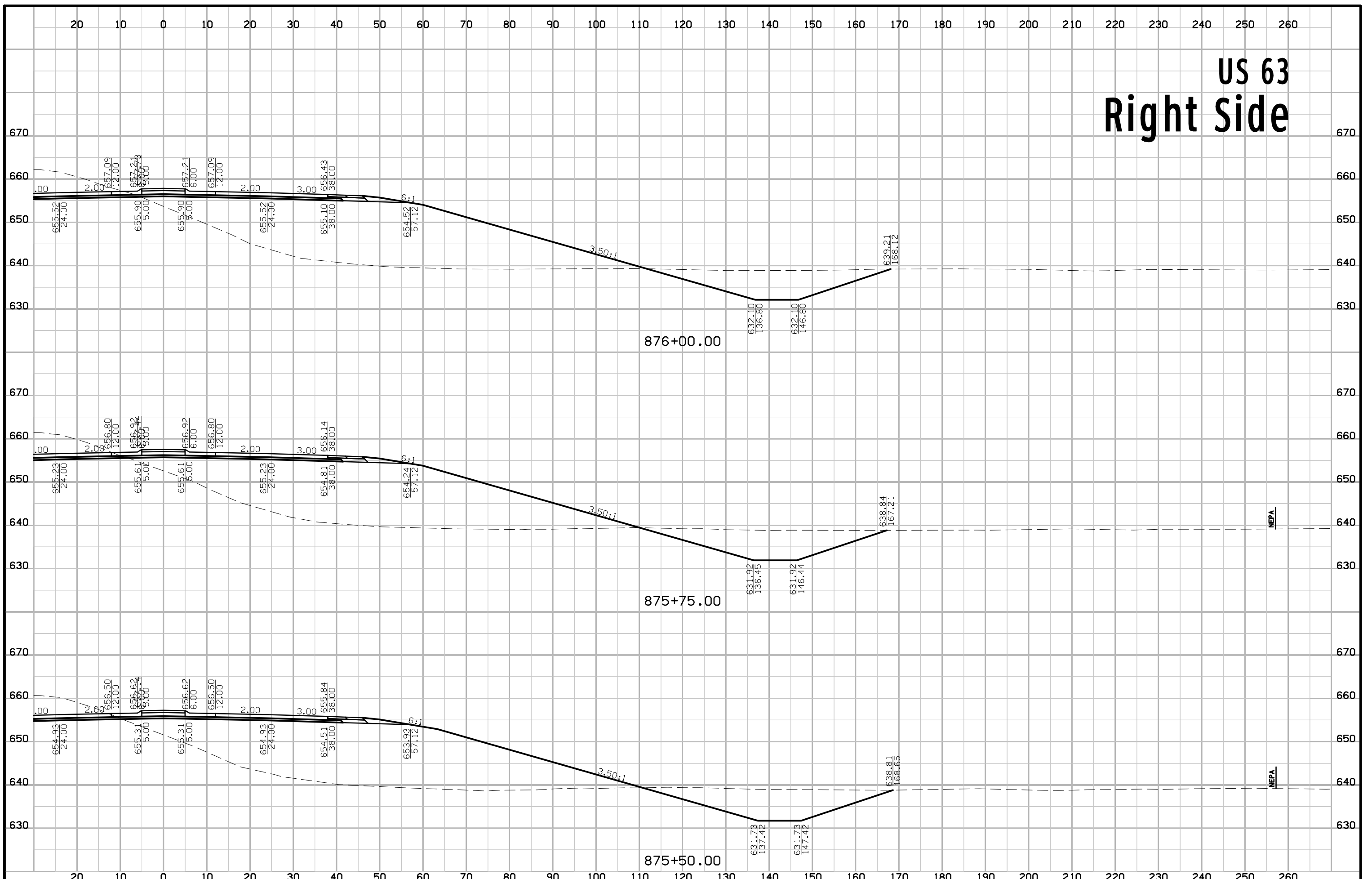
# US 63 Right Side



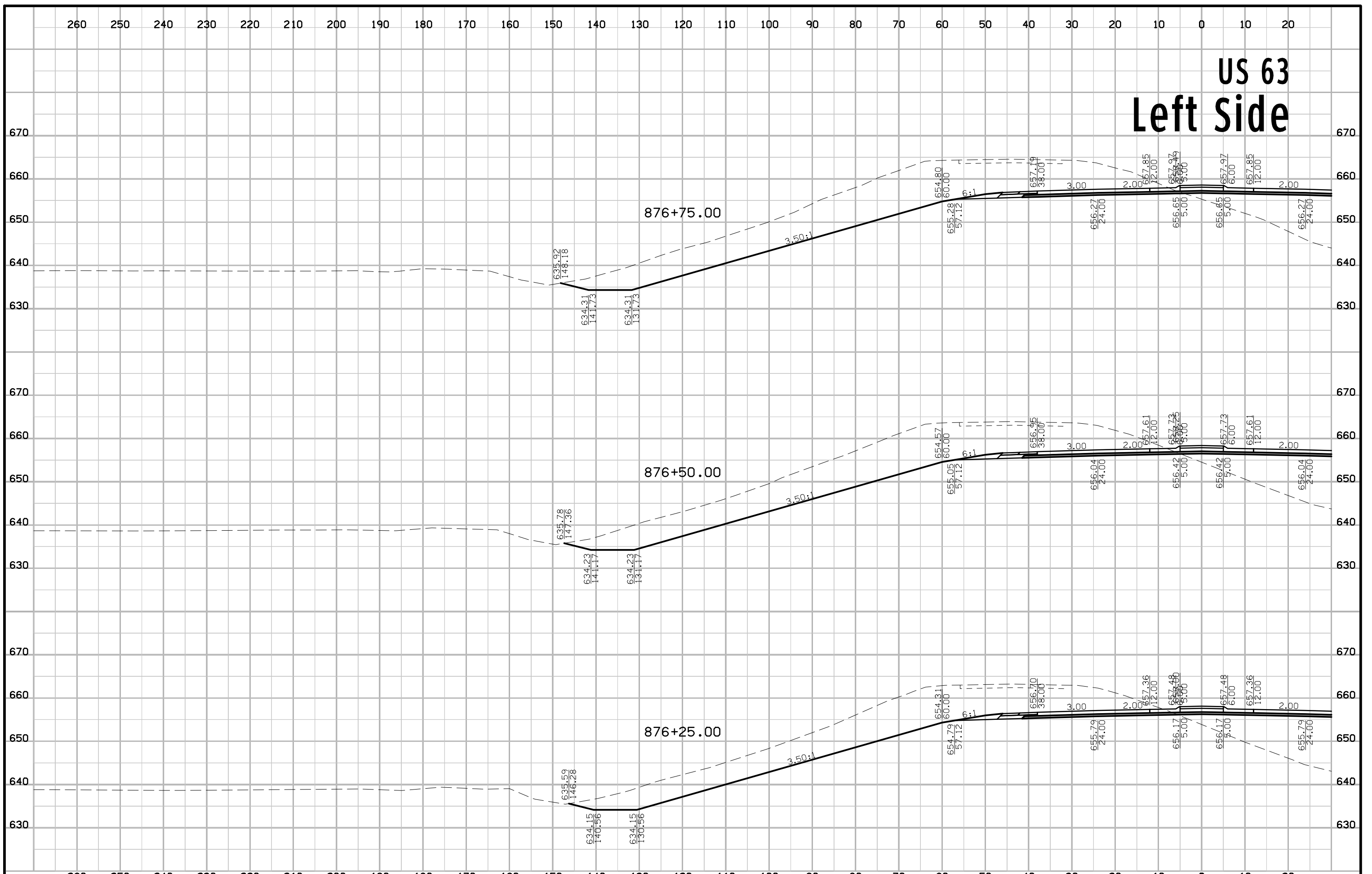
# US 63 Left Side



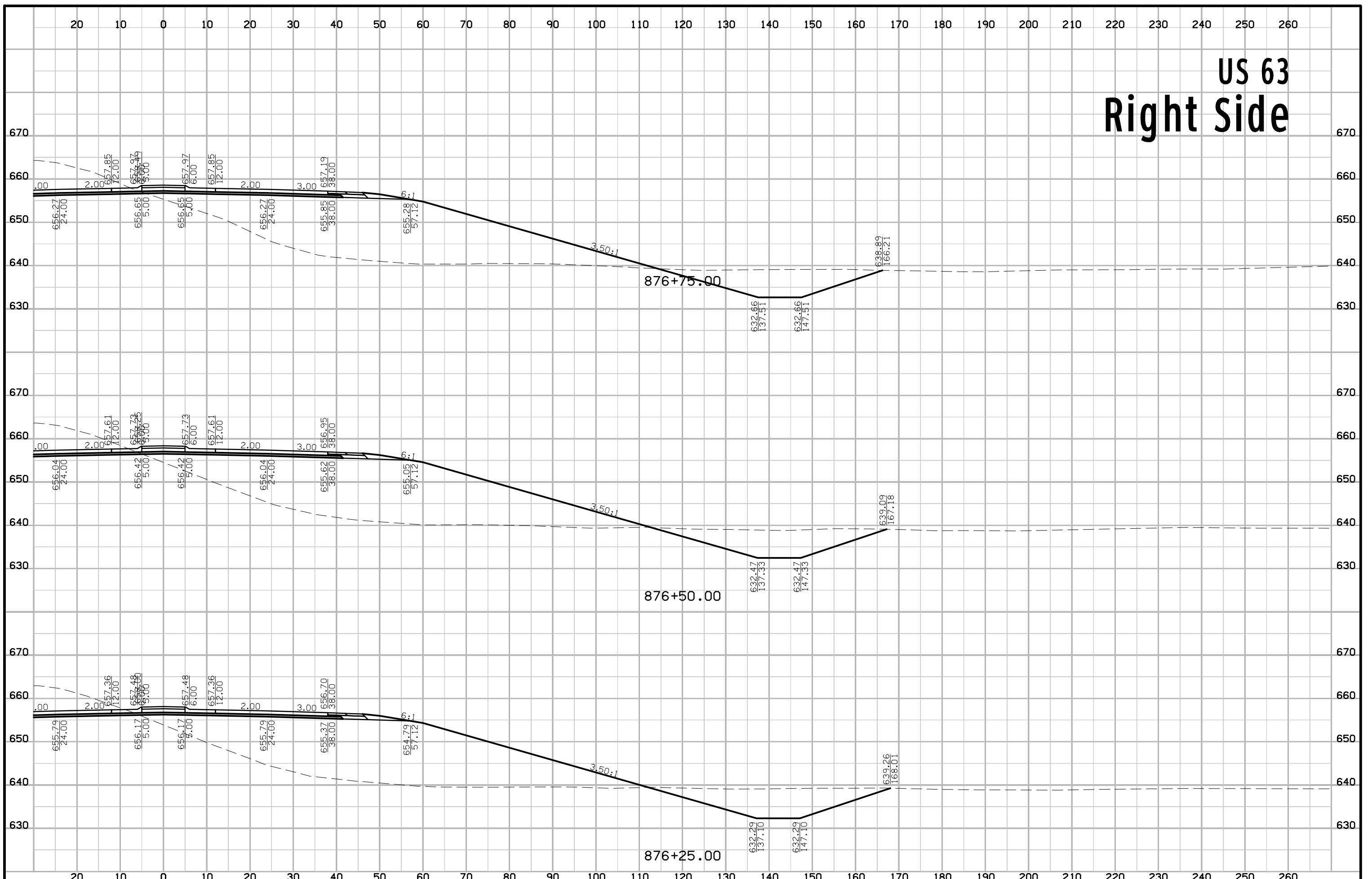
# US 63 Right Side



# US 63 Left Side

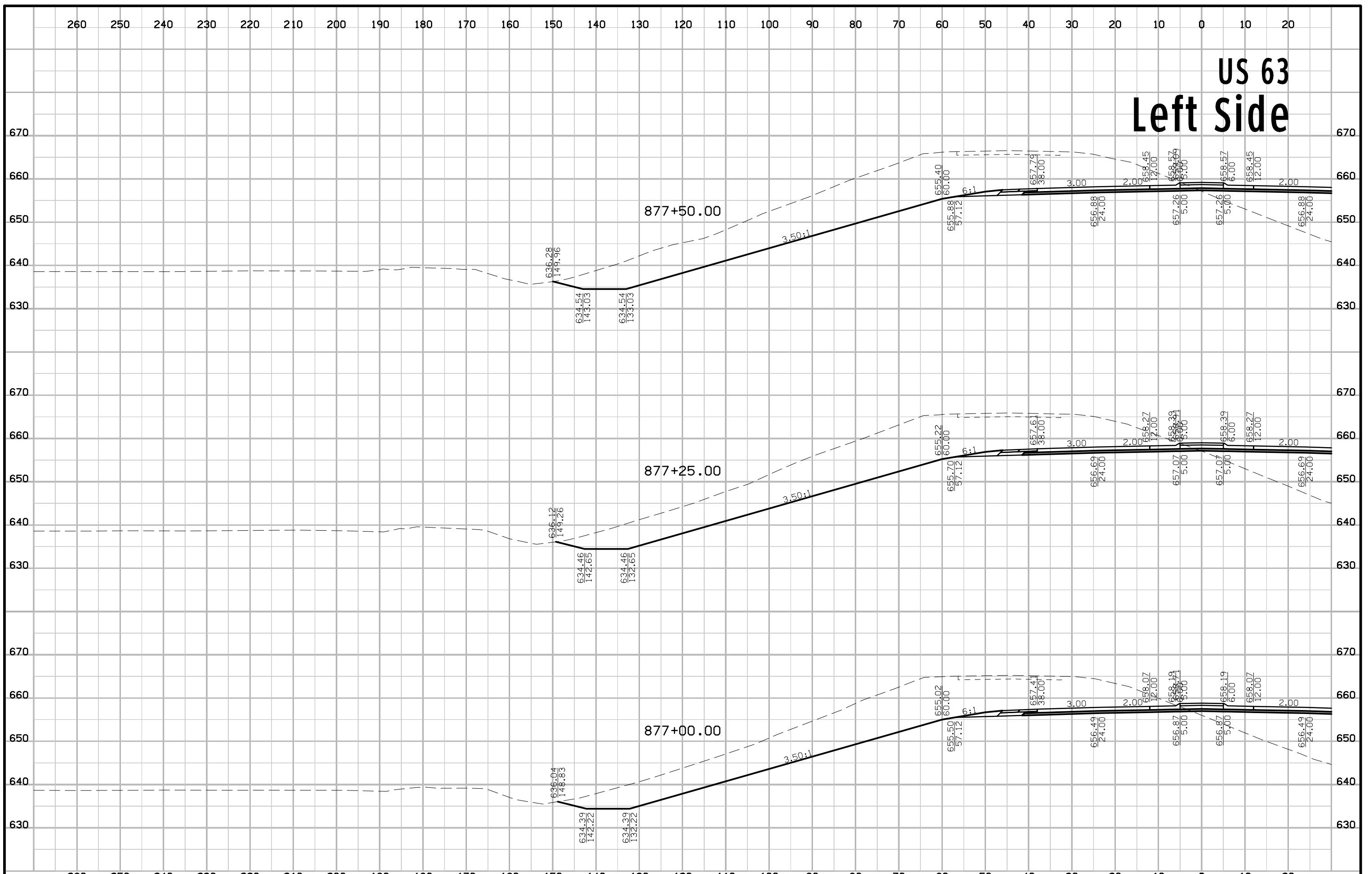


# US 63 Right Side

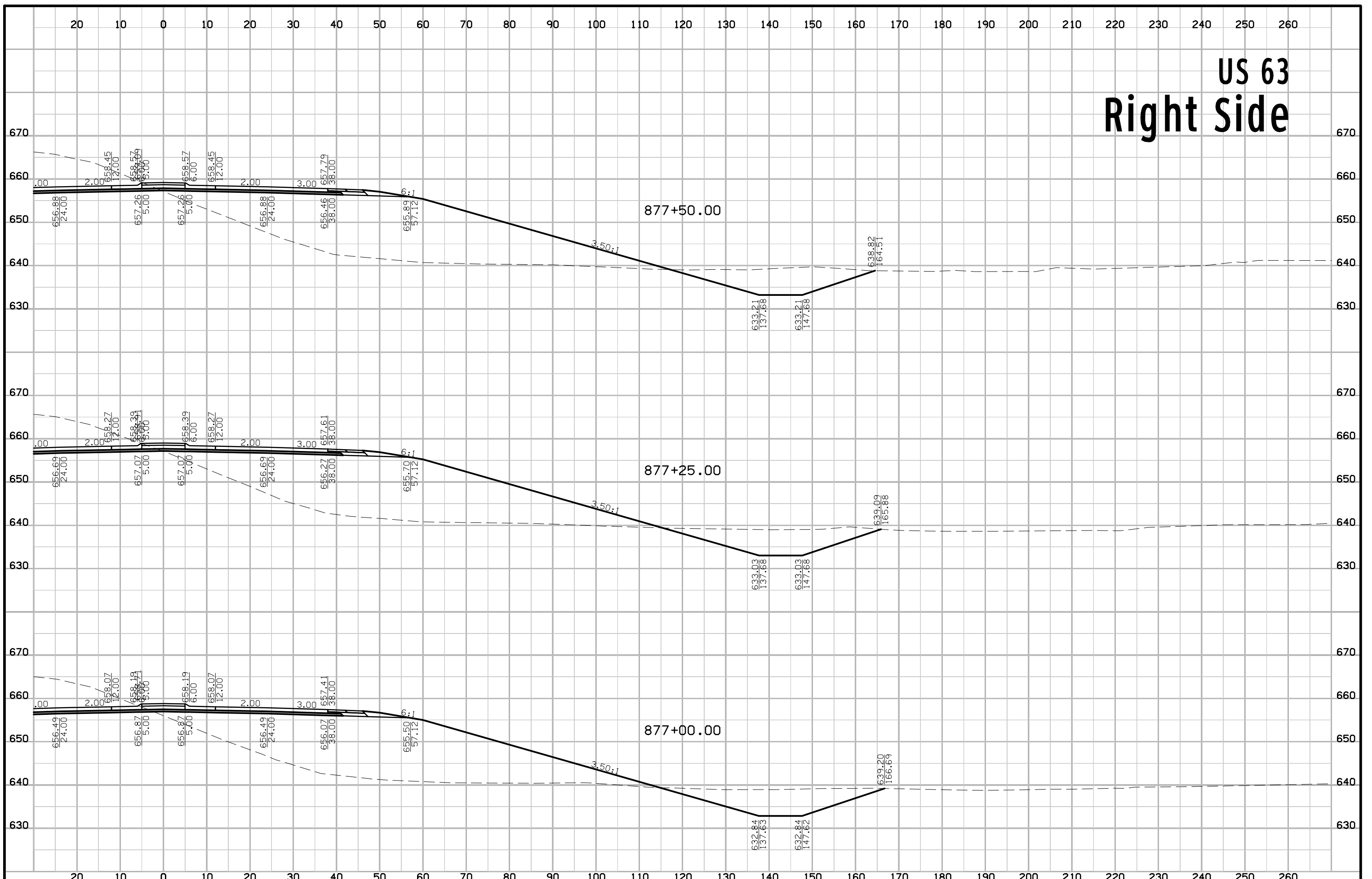




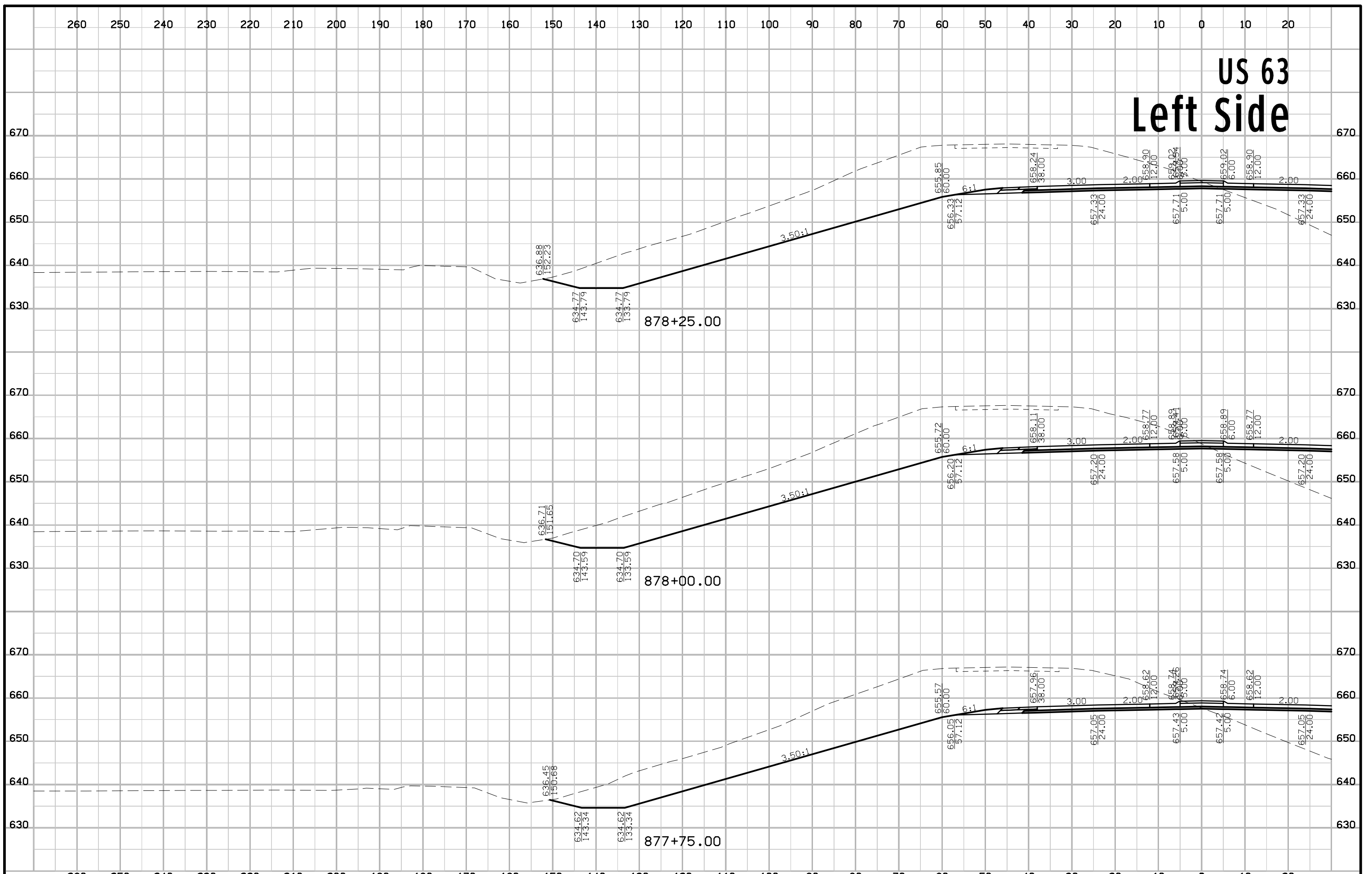
# US 63 Left Side



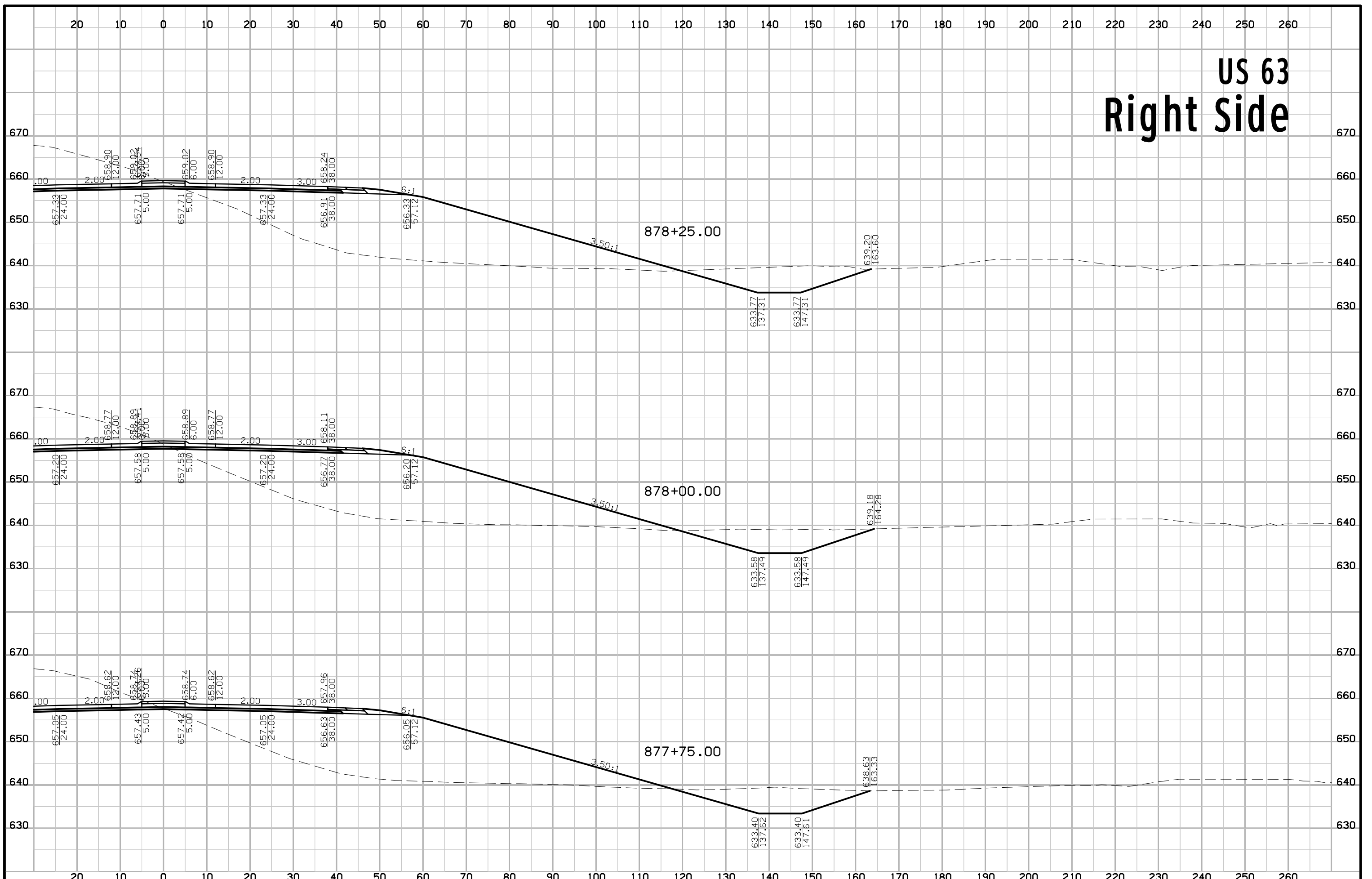
# US 63 Right Side



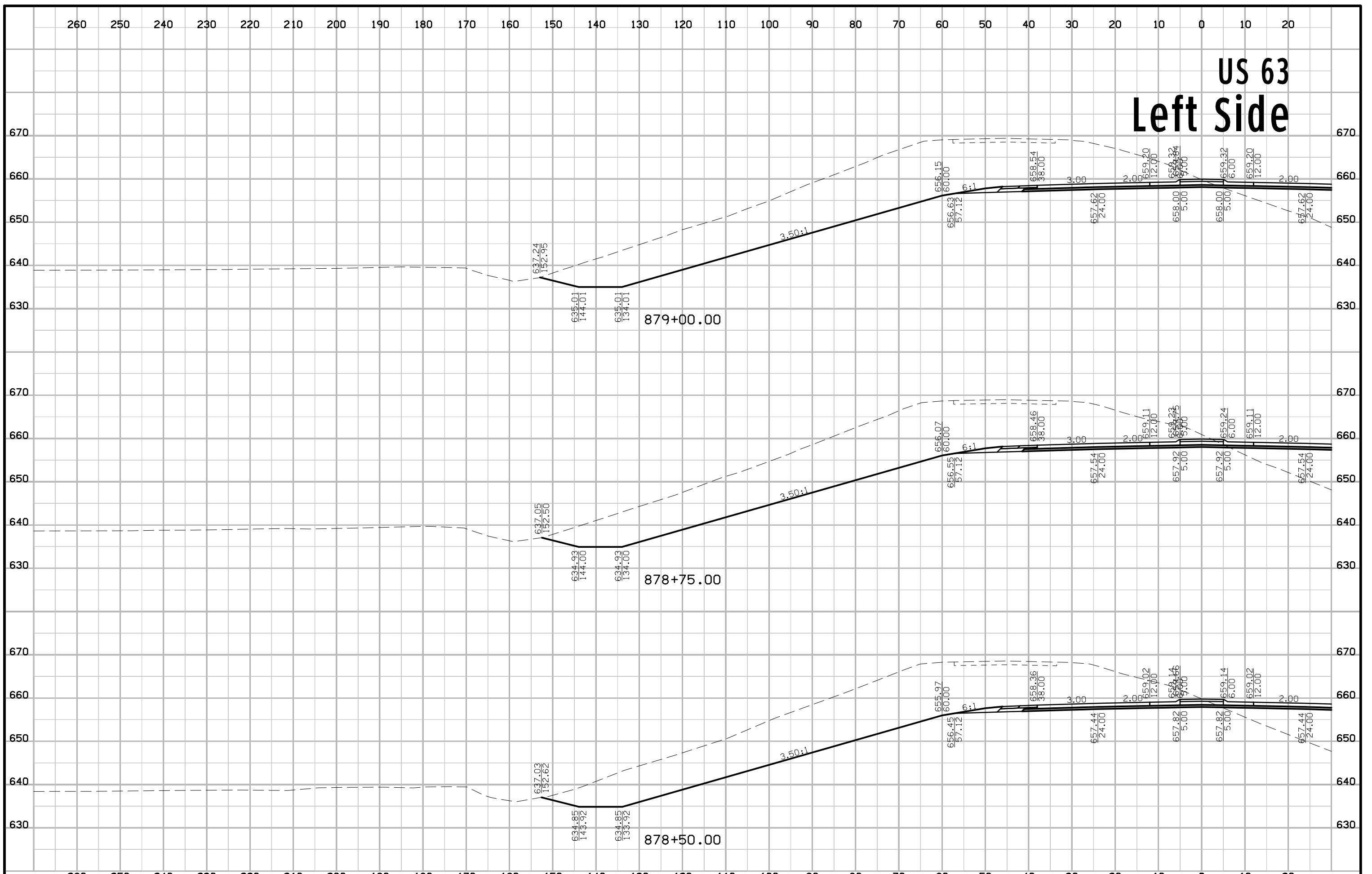
# US 63 Left Side



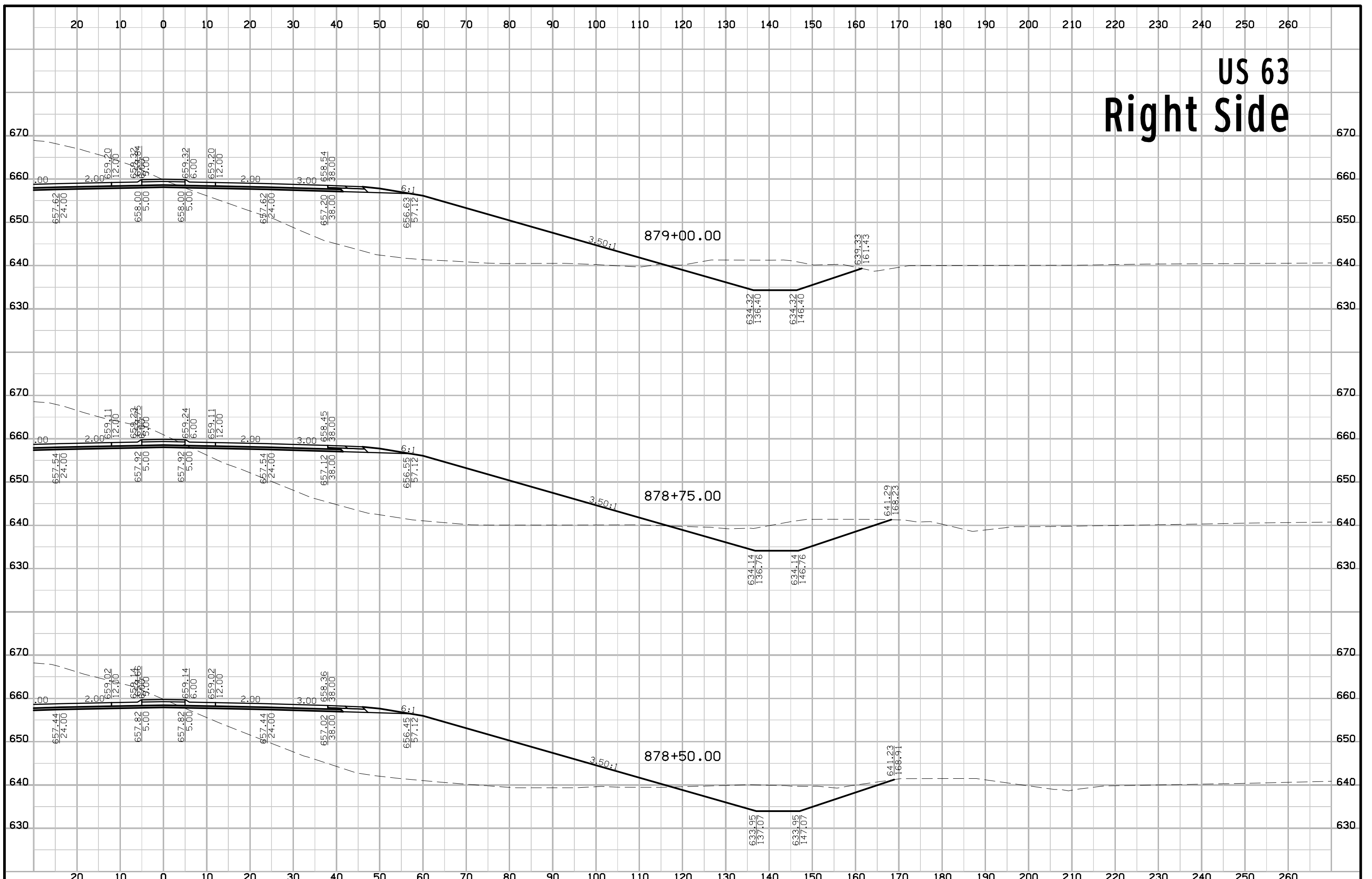
# US 63 Right Side



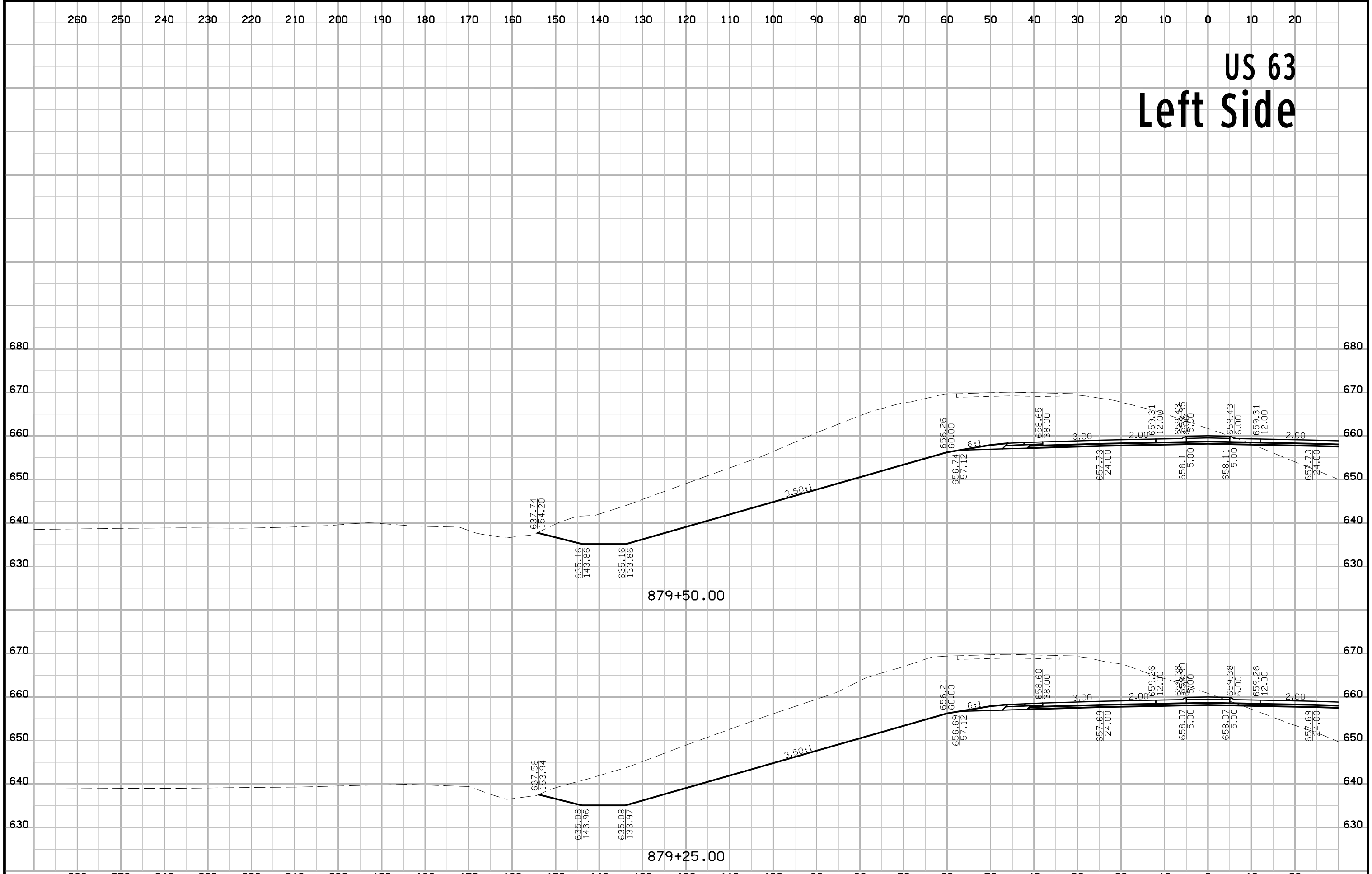
# US 63 Left Side



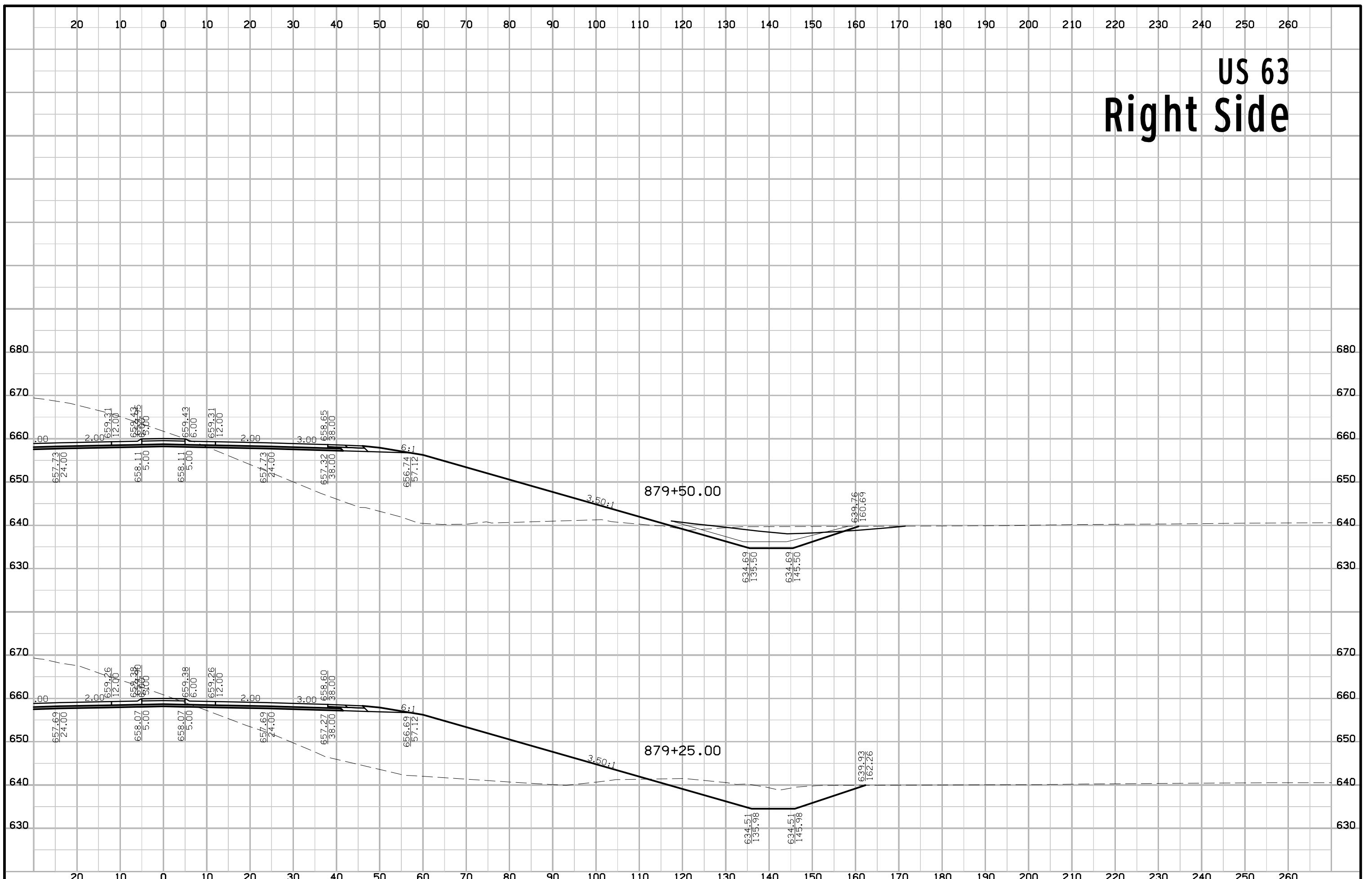
# US 63 Right Side



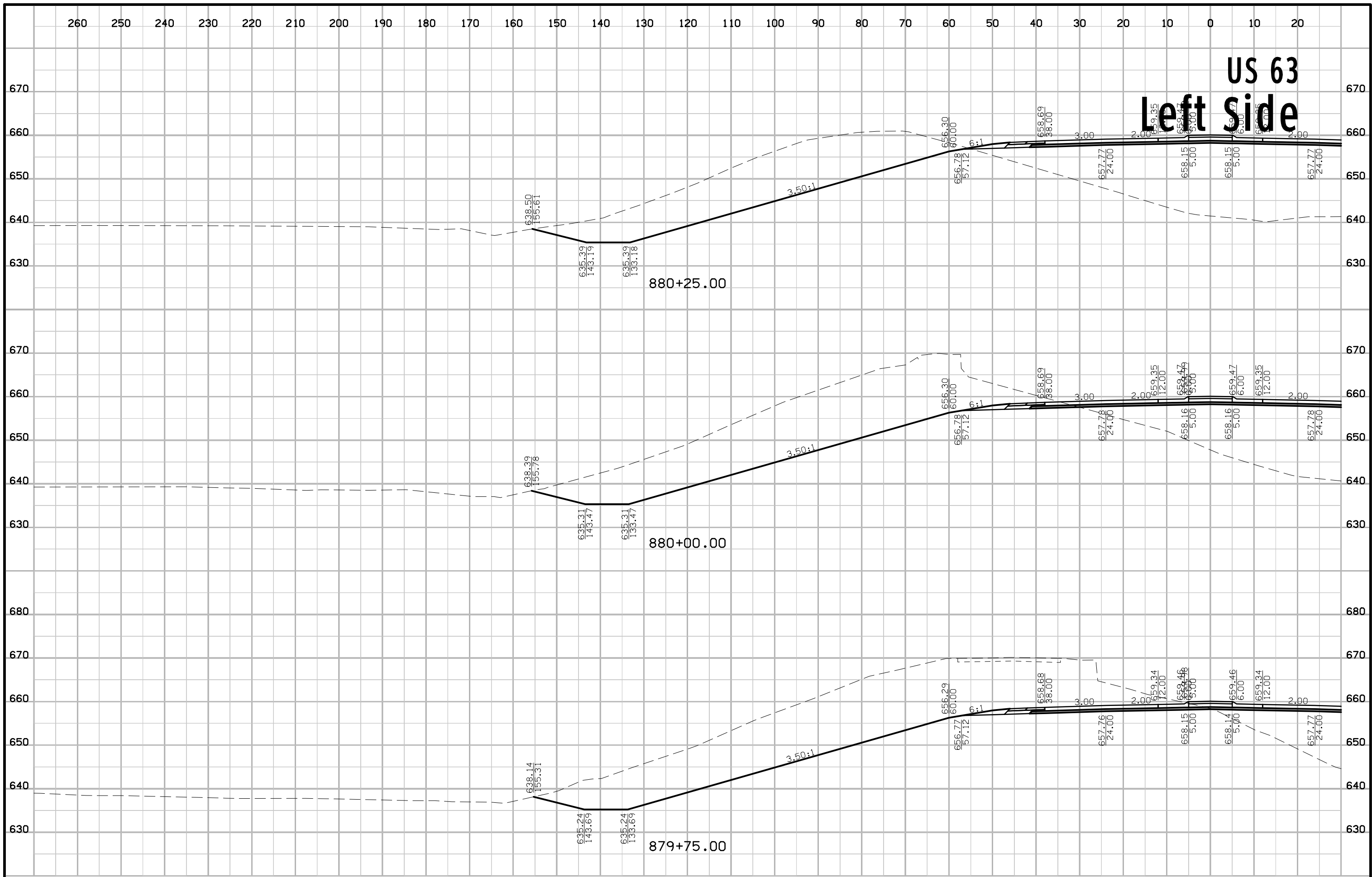
# US 63 Left Side



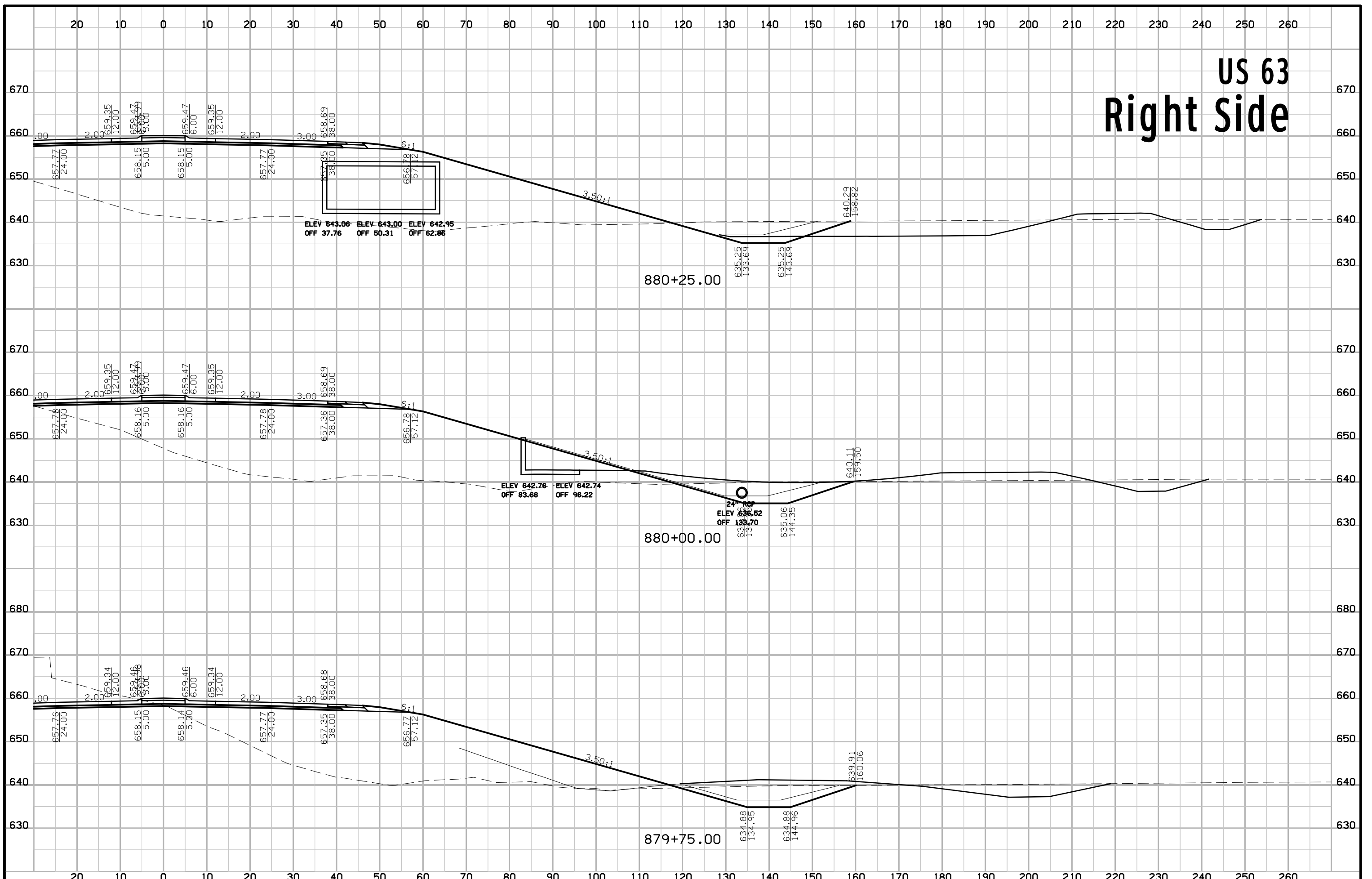
# US 63 Right Side

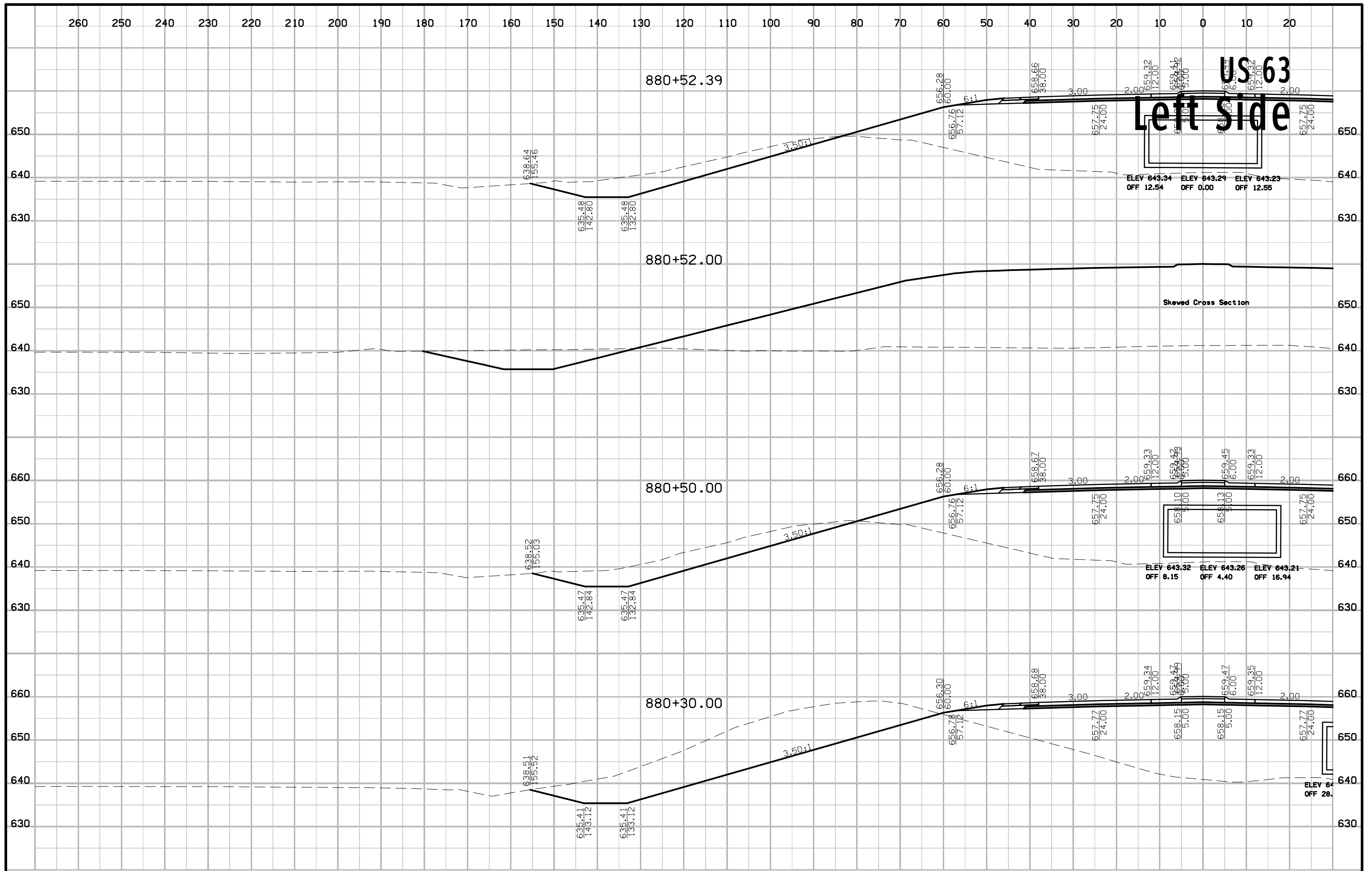






# US 63 Right Side

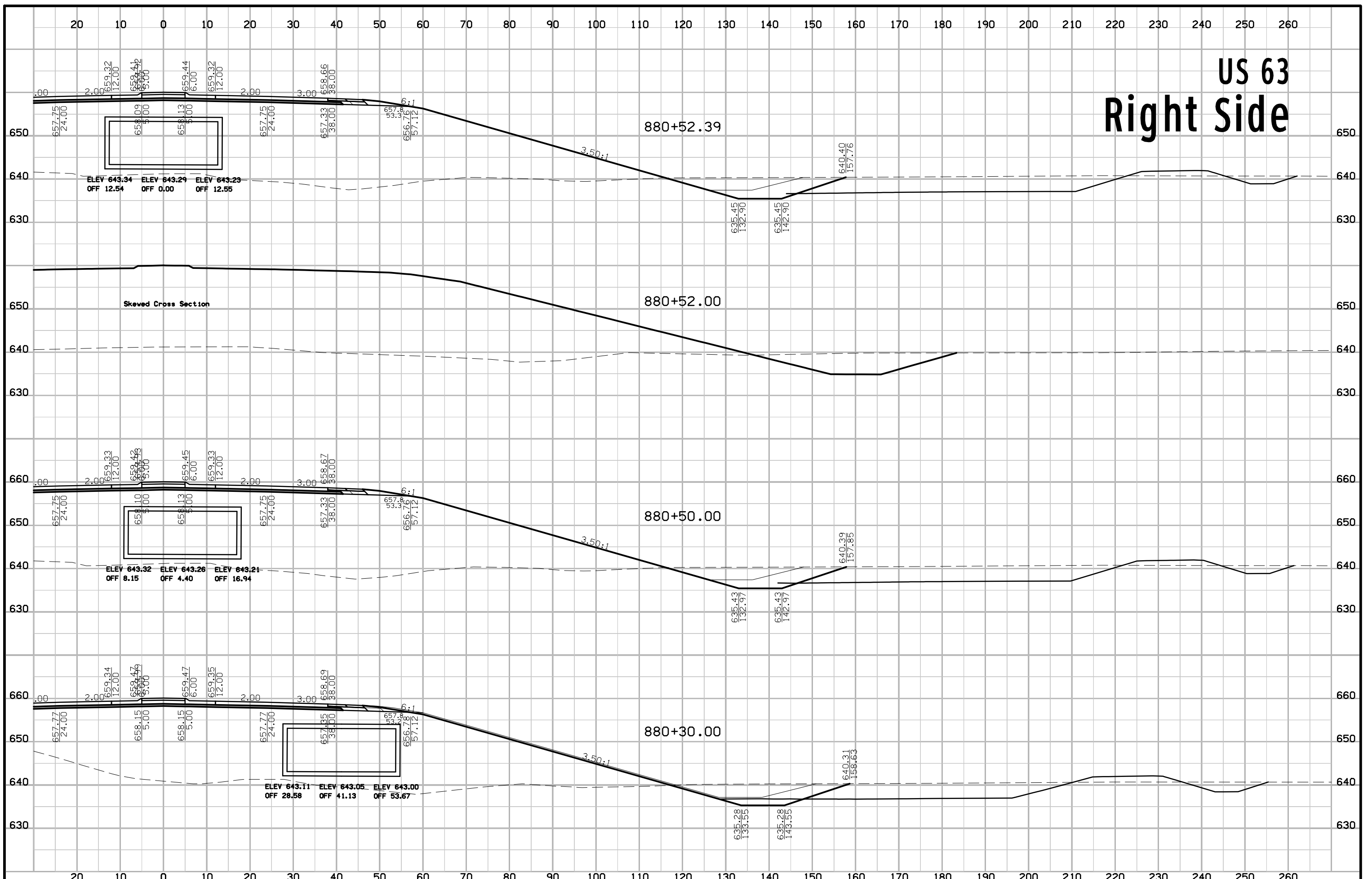




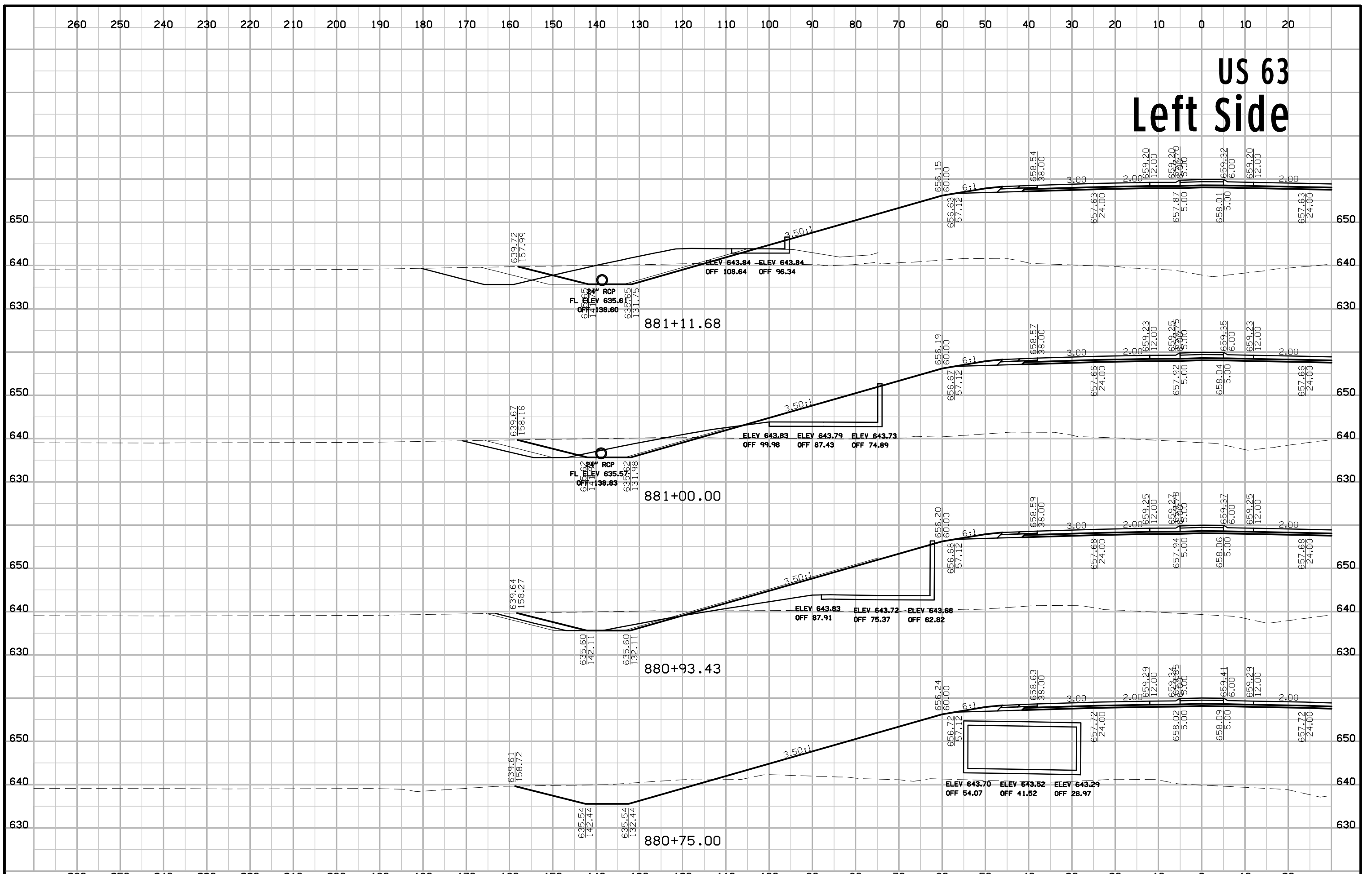
**US 63**  
**Left Side**

Skewed Cross Section

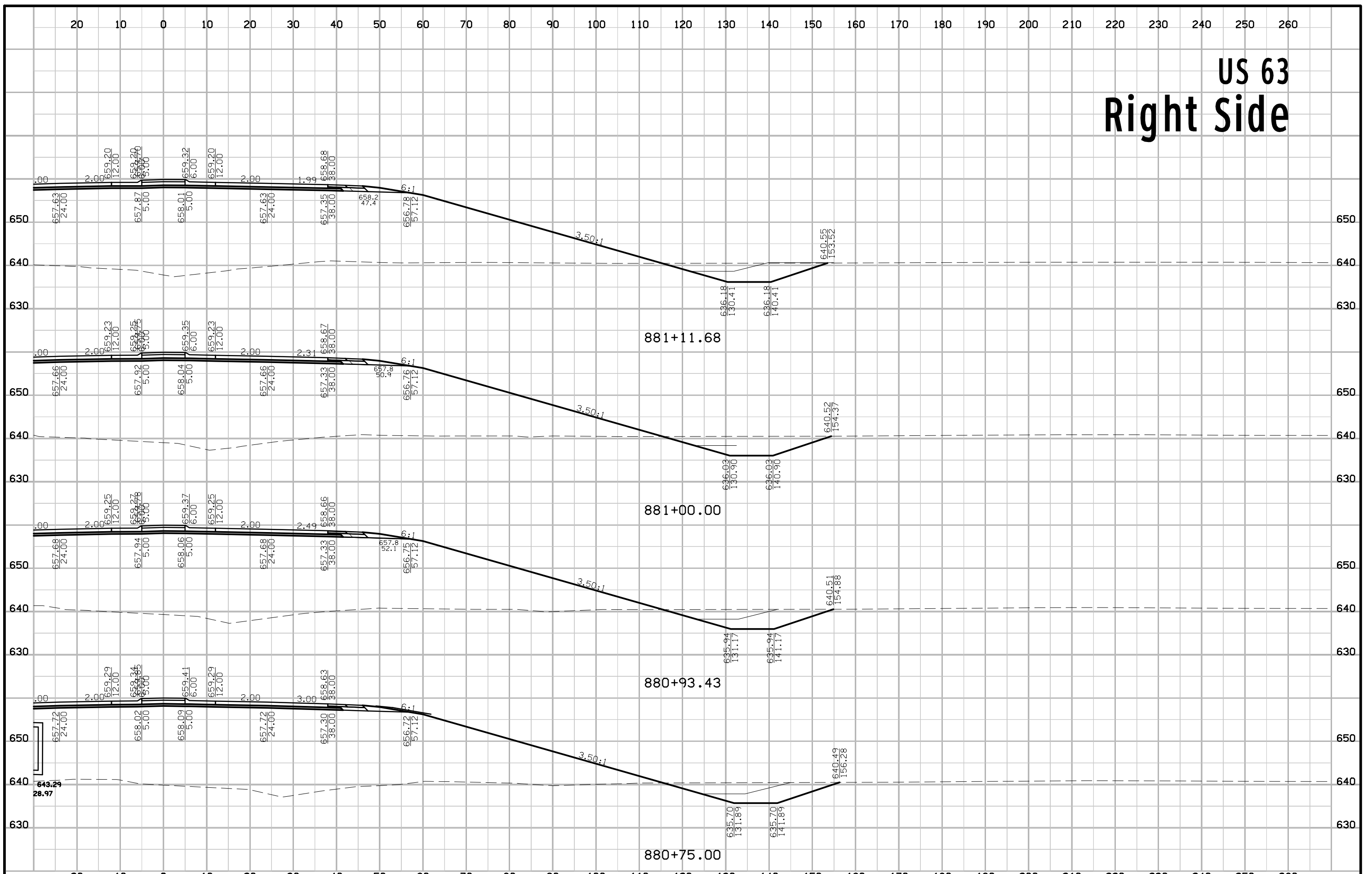
# US 63 Right Side



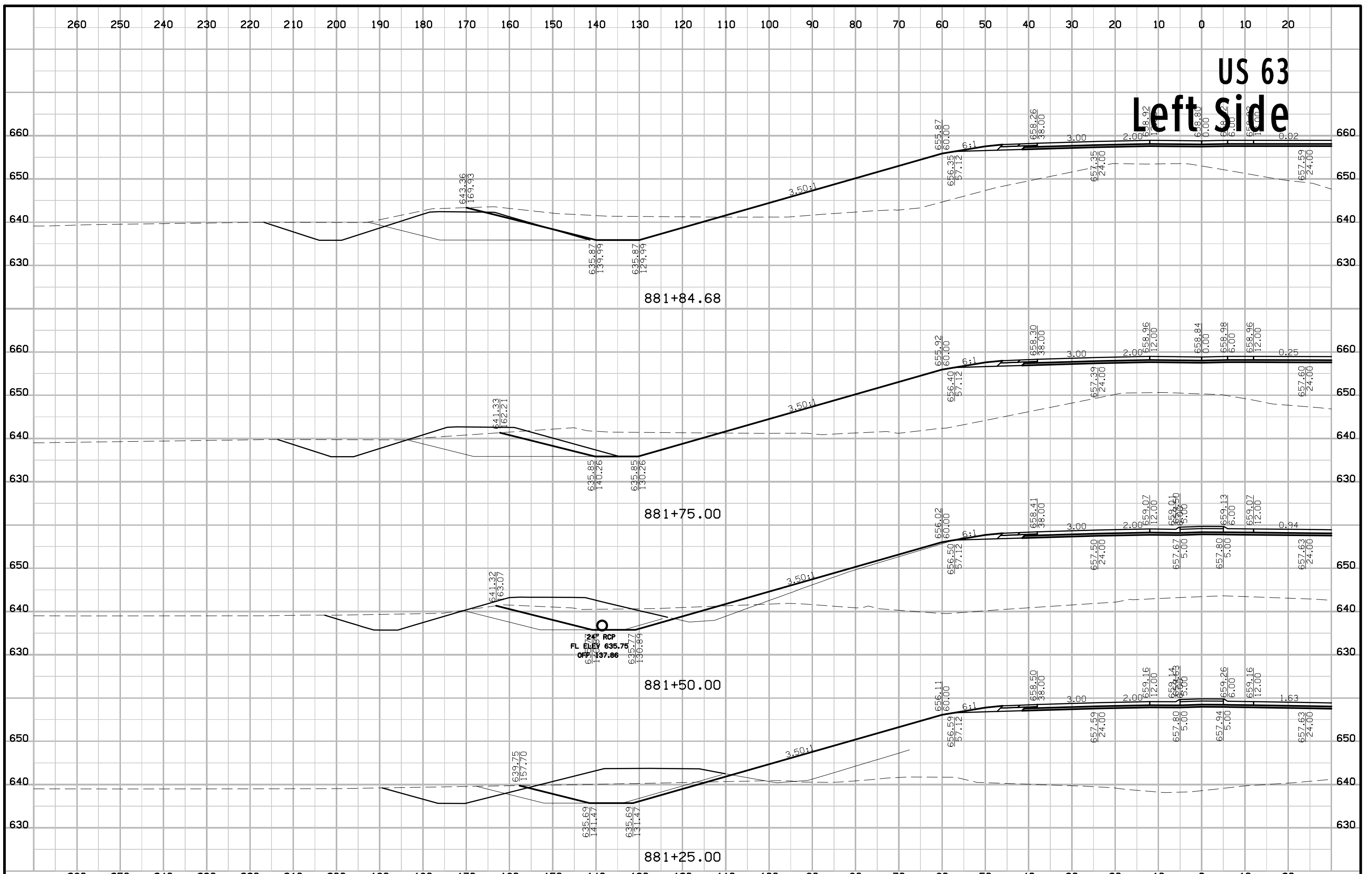
# US 63 Left Side



# US 63 Right Side

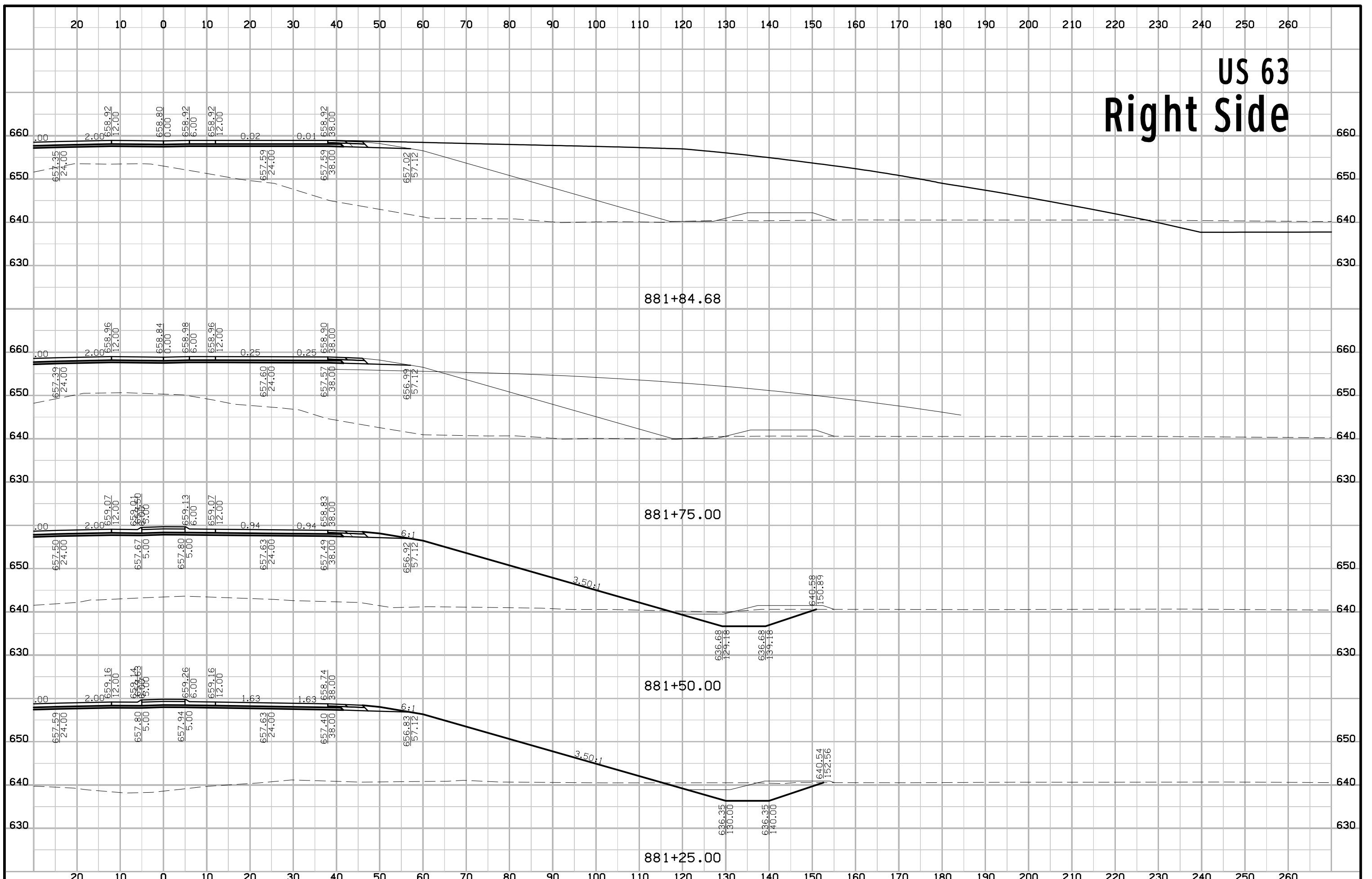


# US 63 Left Side



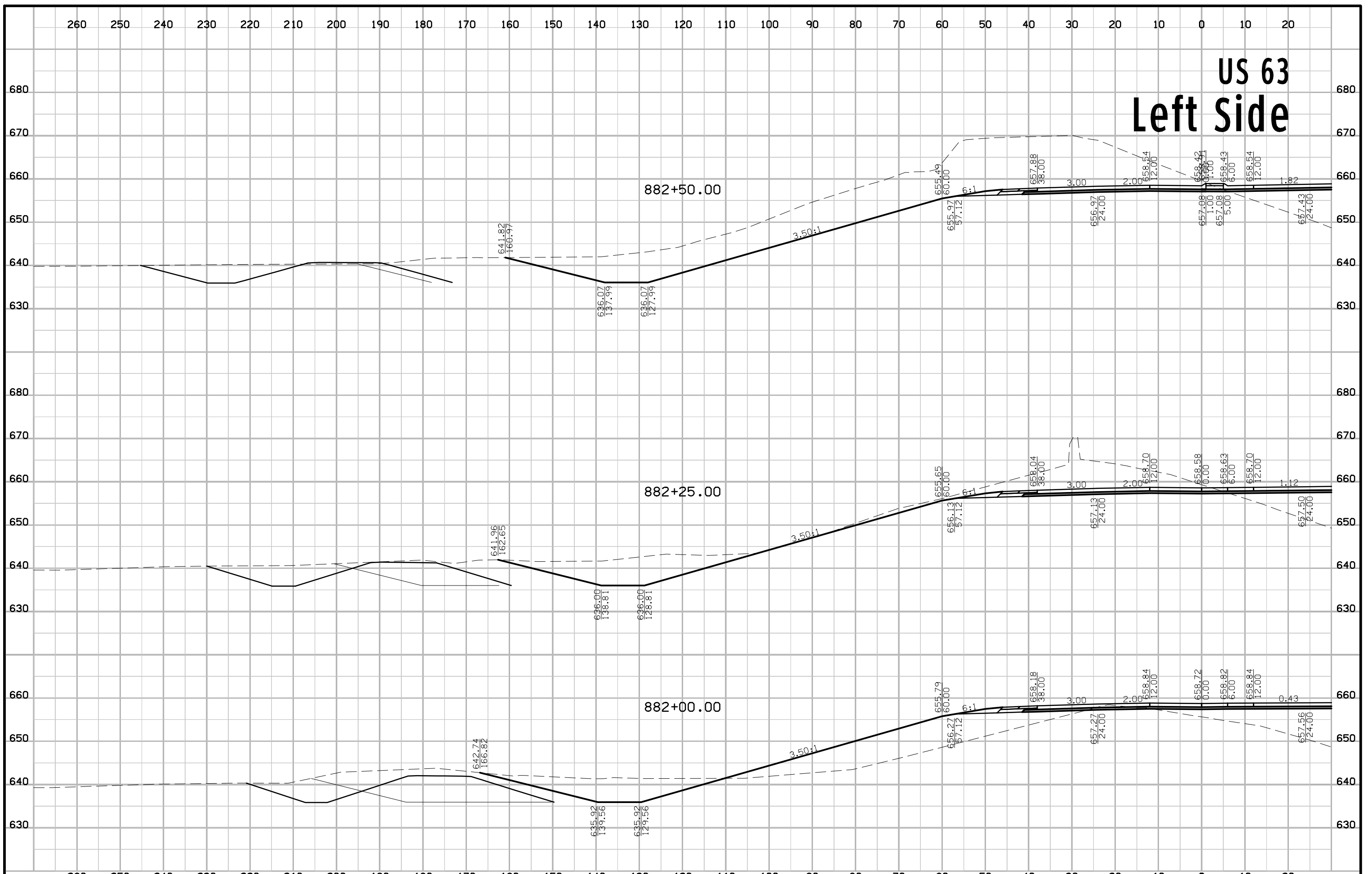
FL ELEV 635.75  
OFF 137.86  
RCP  
124.74

# US 63 Right Side

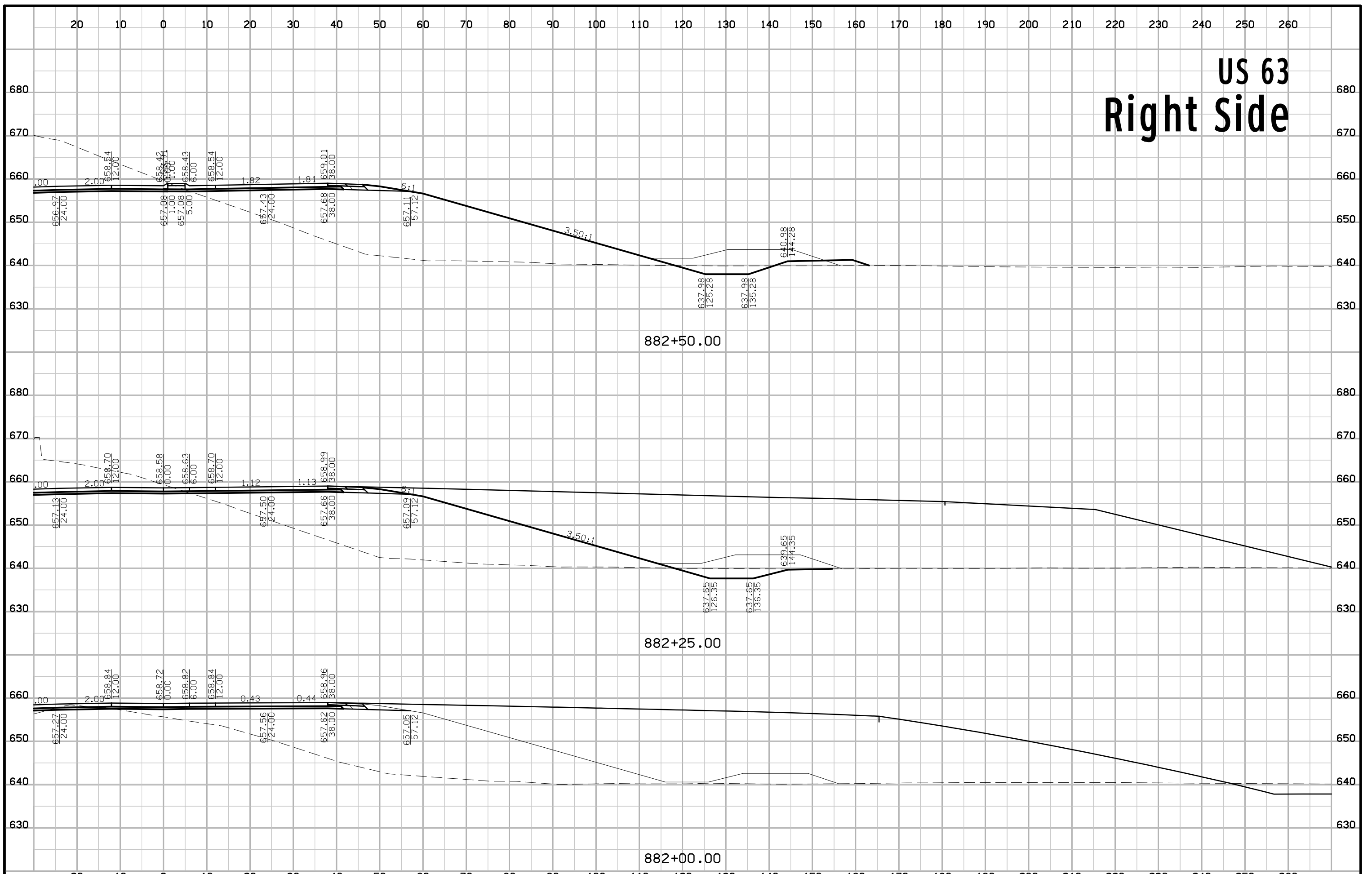




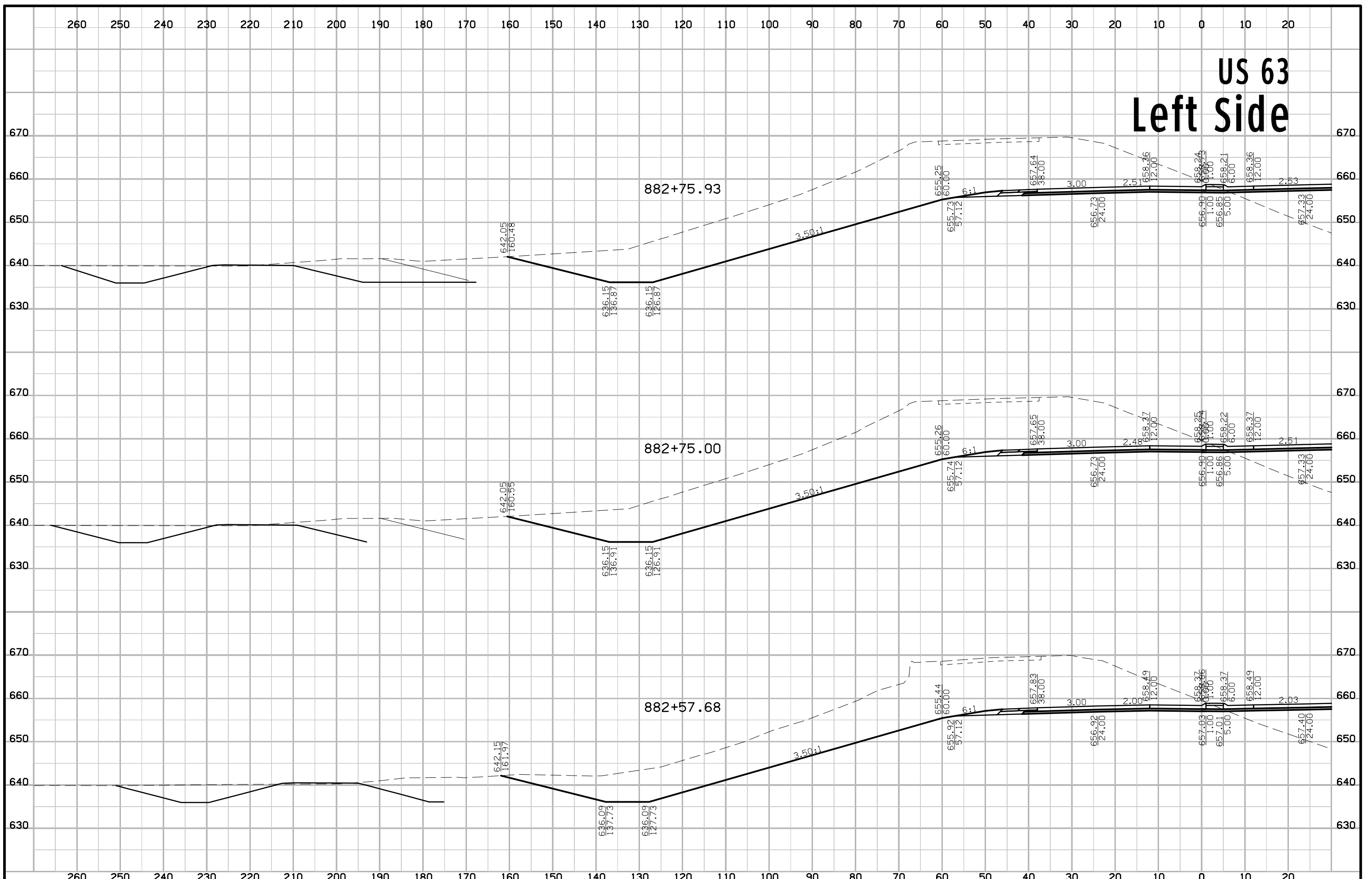
# US 63 Left Side



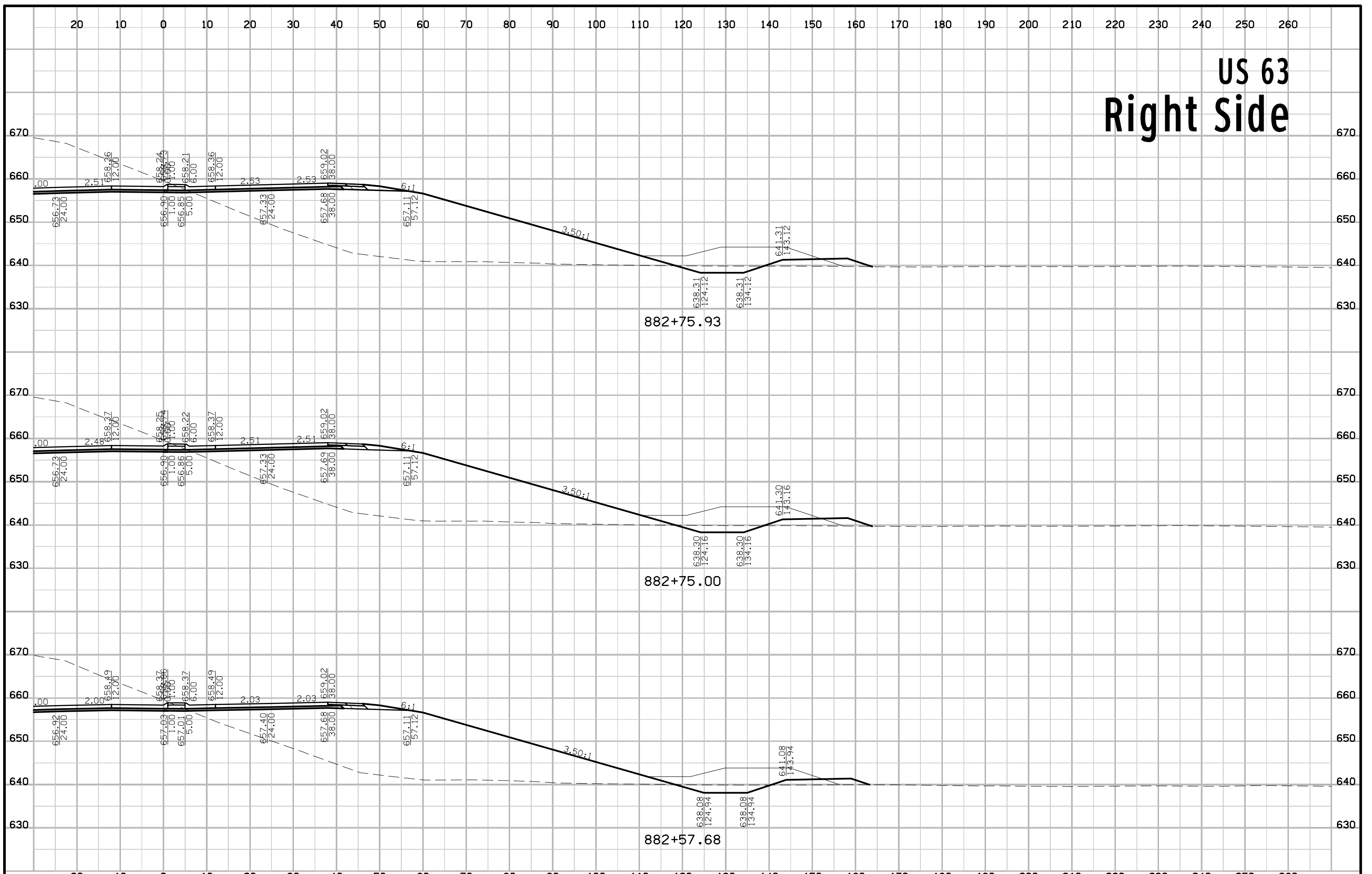
# US 63 Right Side



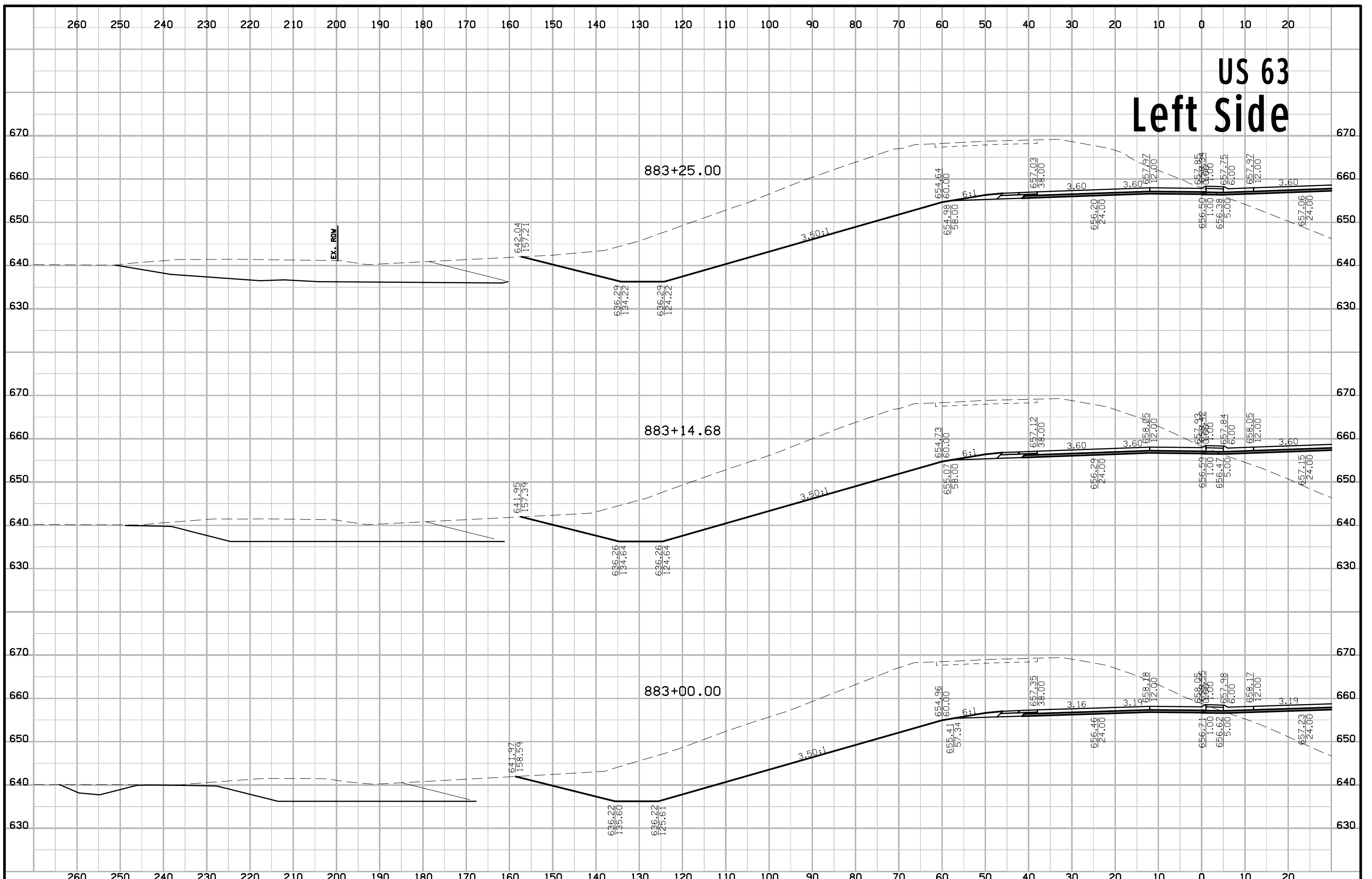
# US 63 Left Side



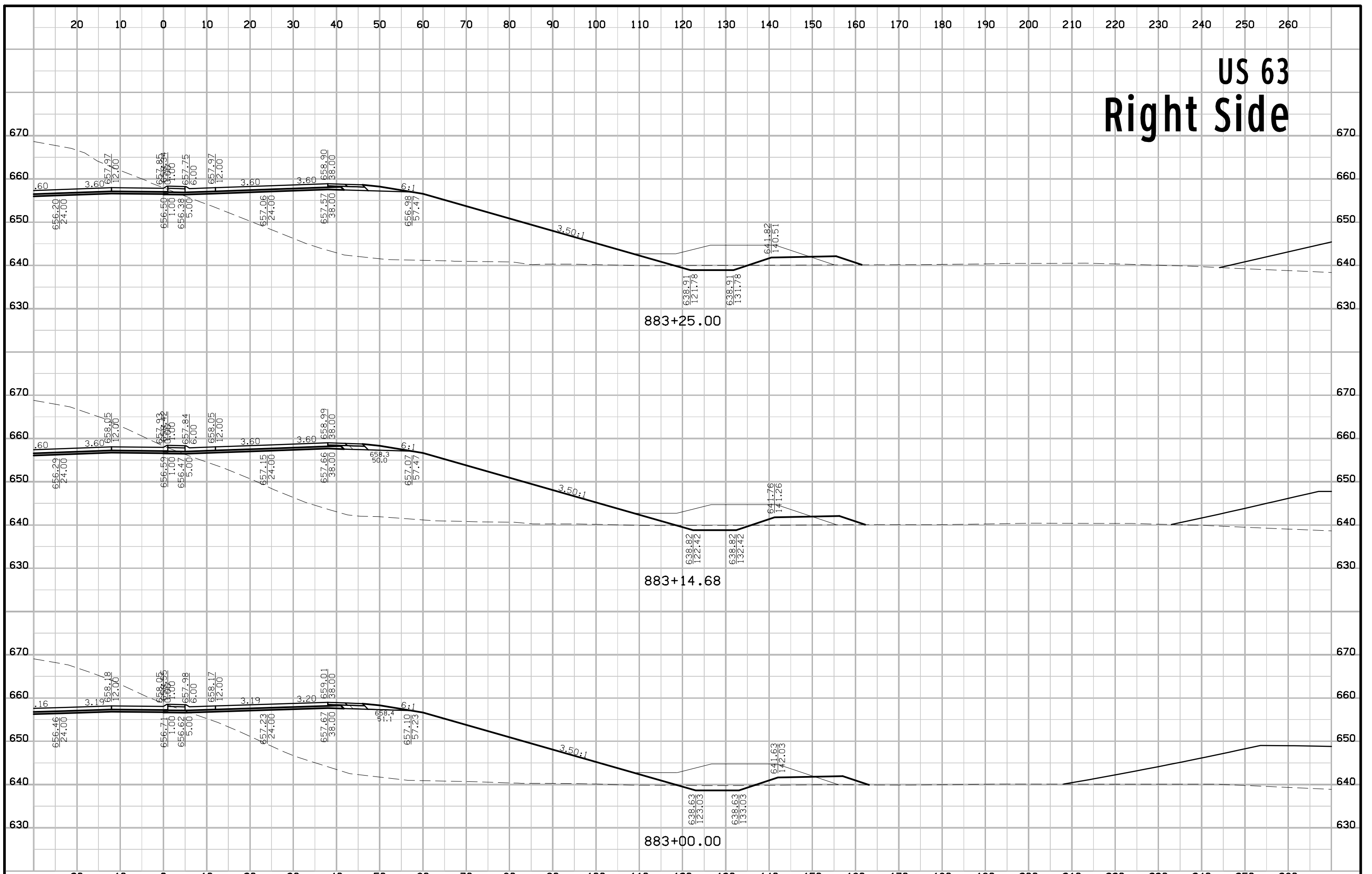
# US 63 Right Side



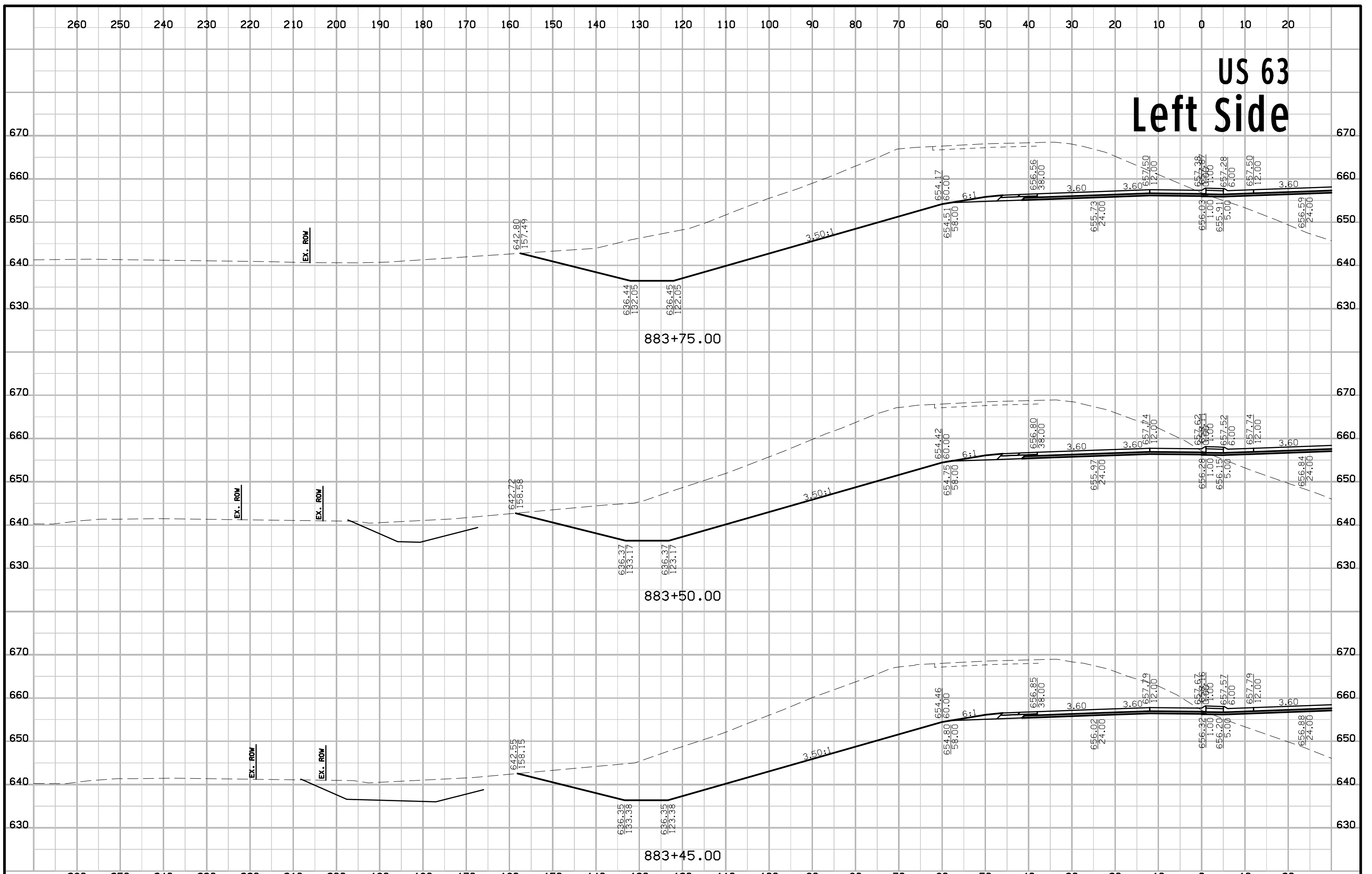
# US 63 Left Side



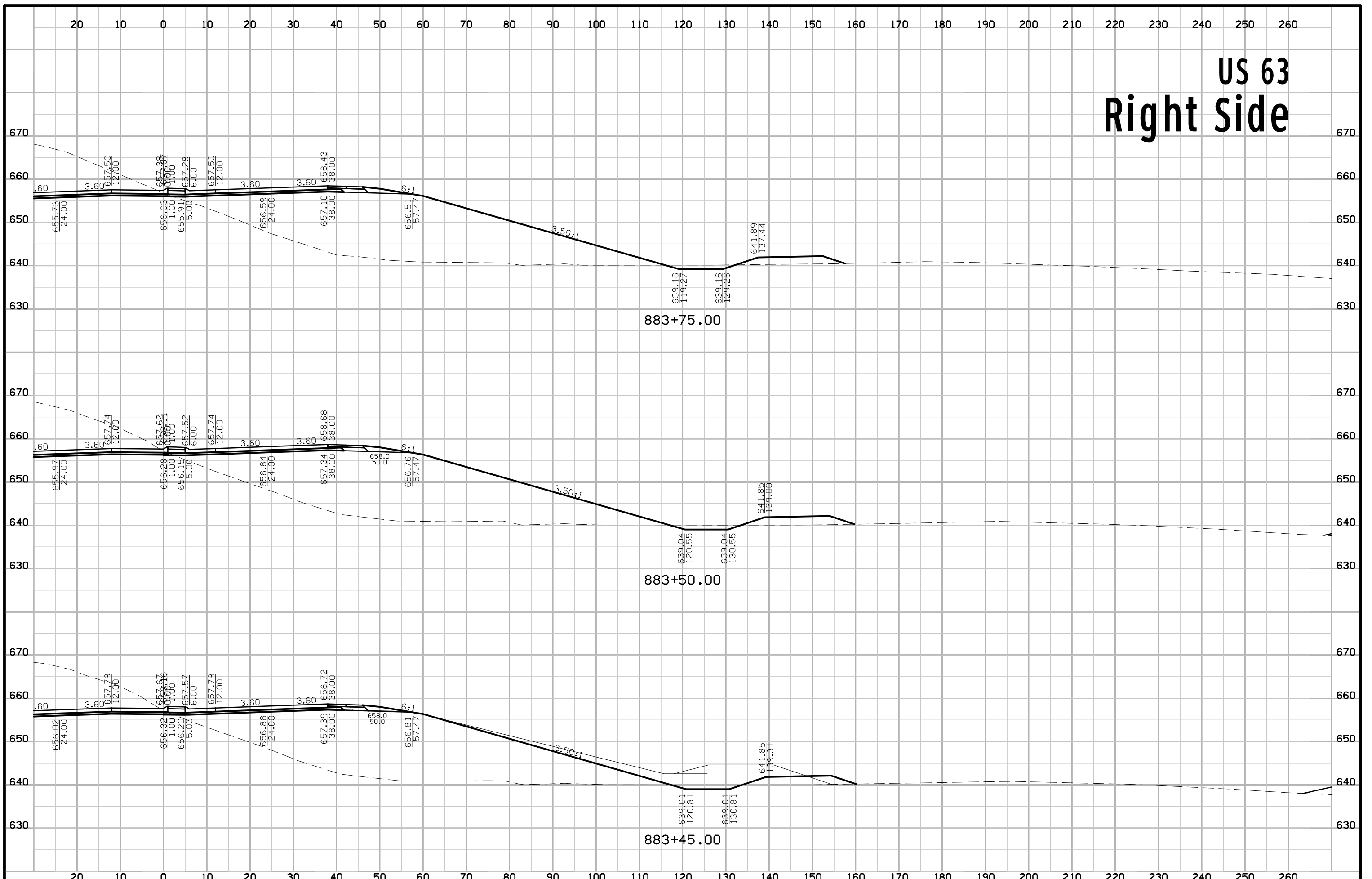
# US 63 Right Side



# US 63 Left Side

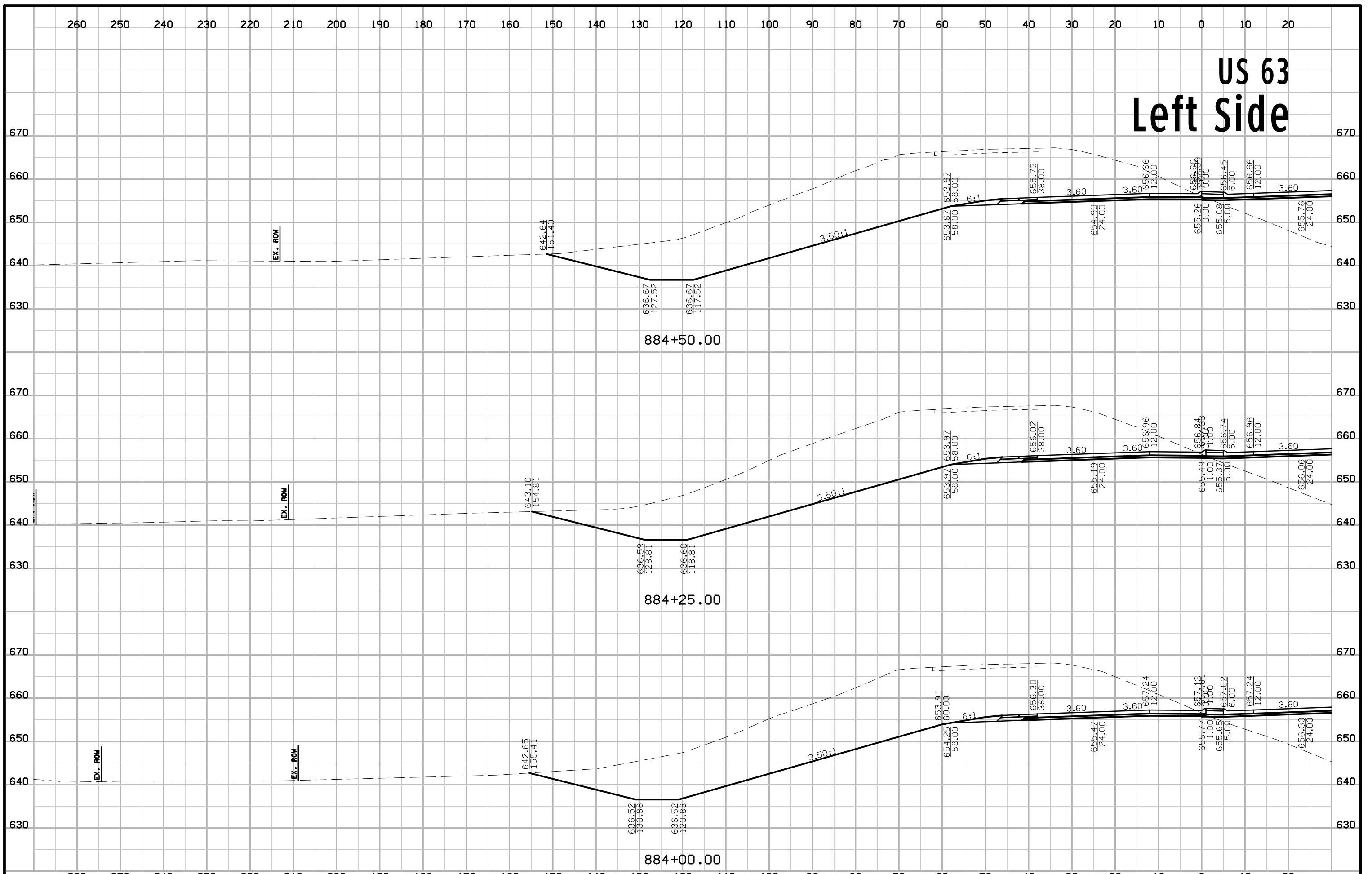


# US 63 Right Side

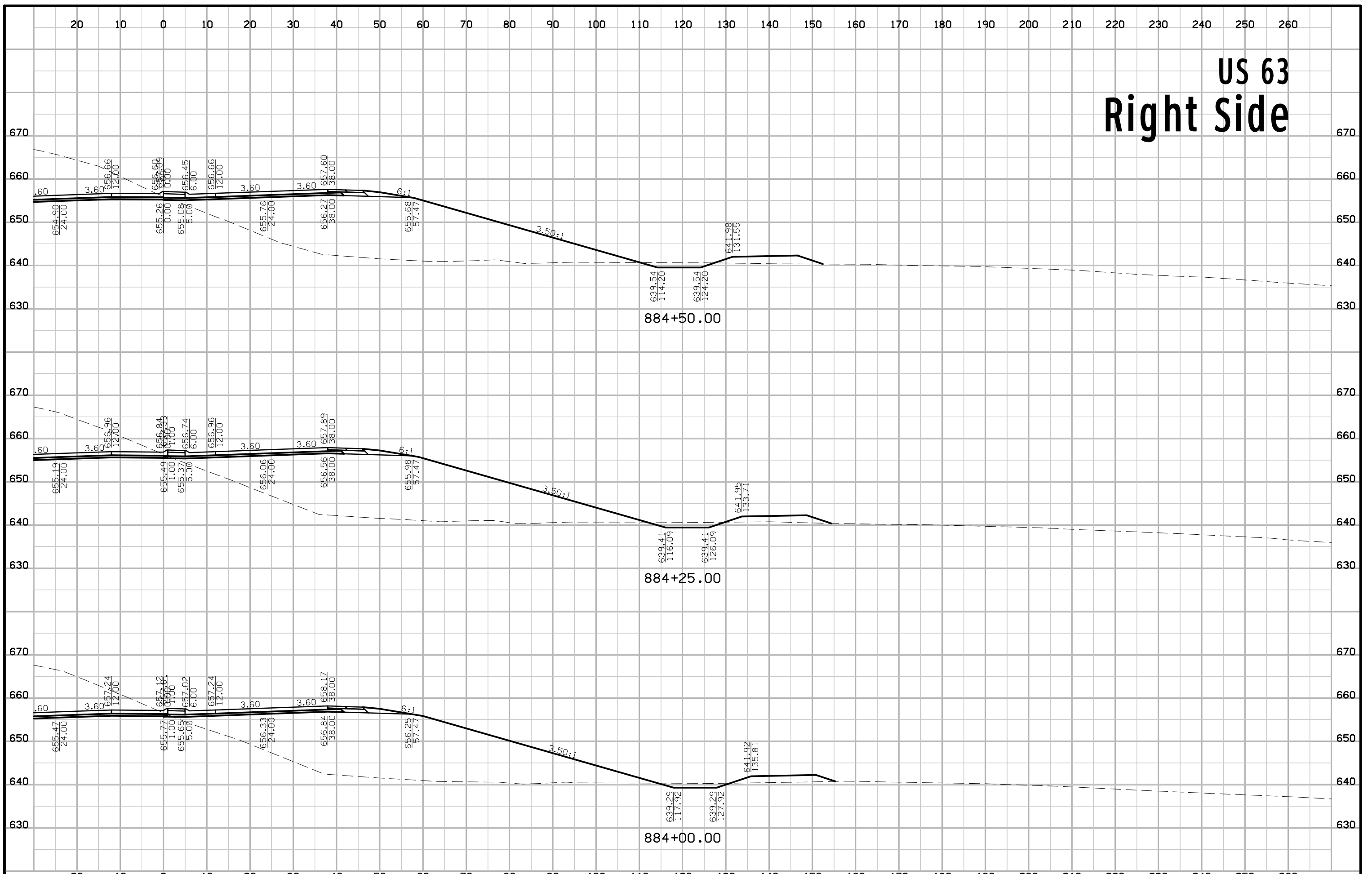




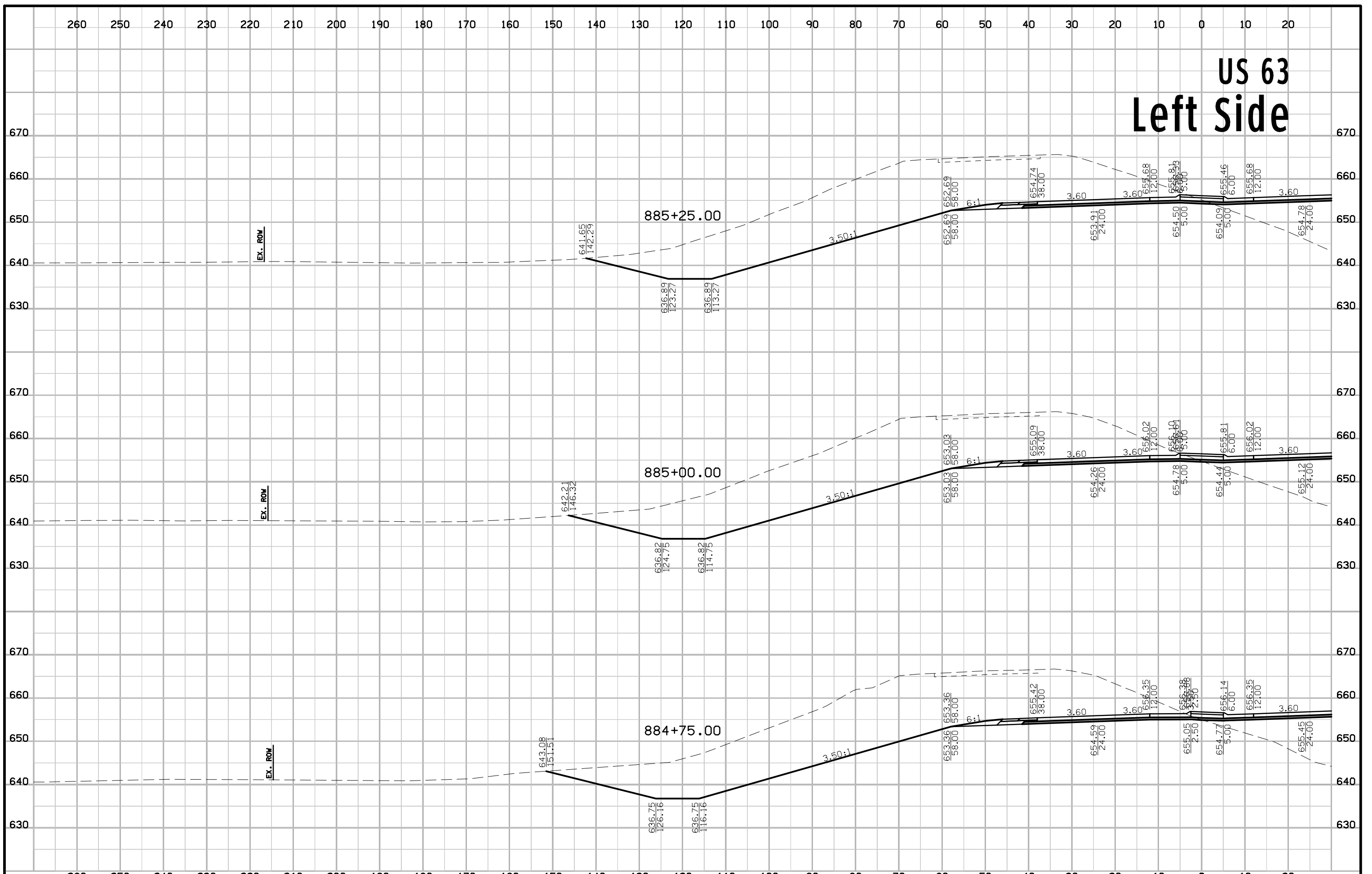
# US 63 Left Side



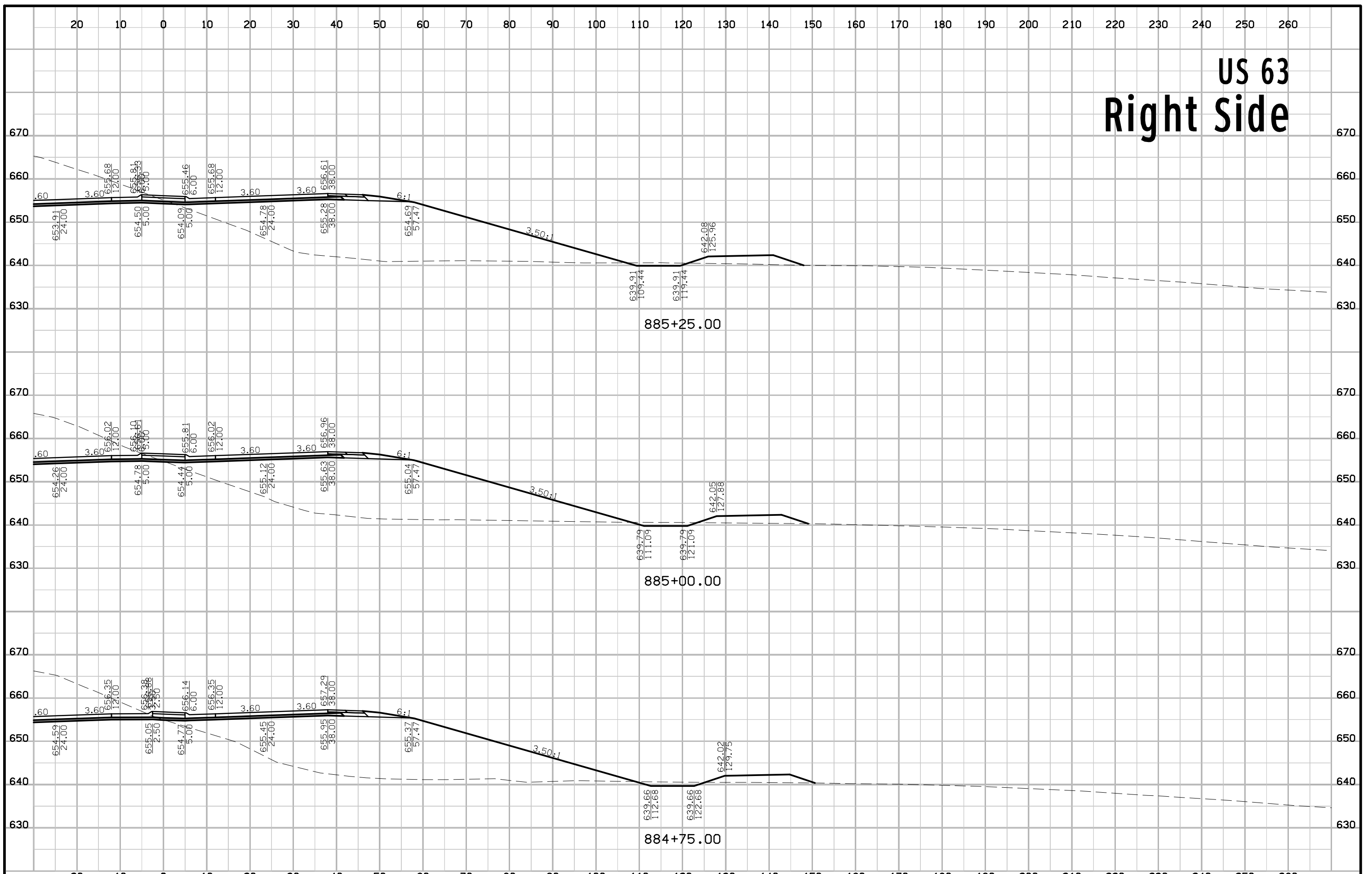
# US 63 Right Side



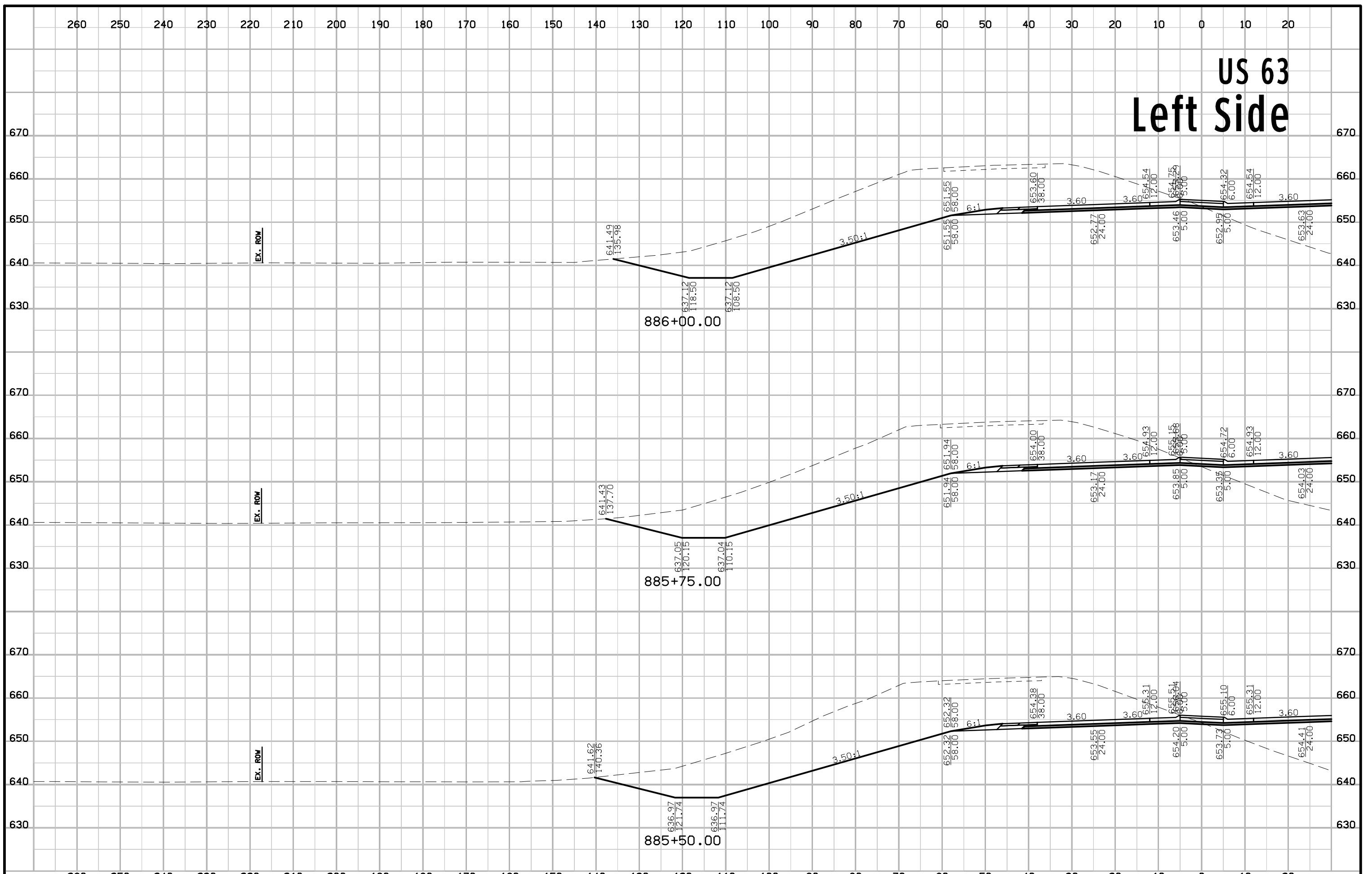
# US 63 Left Side



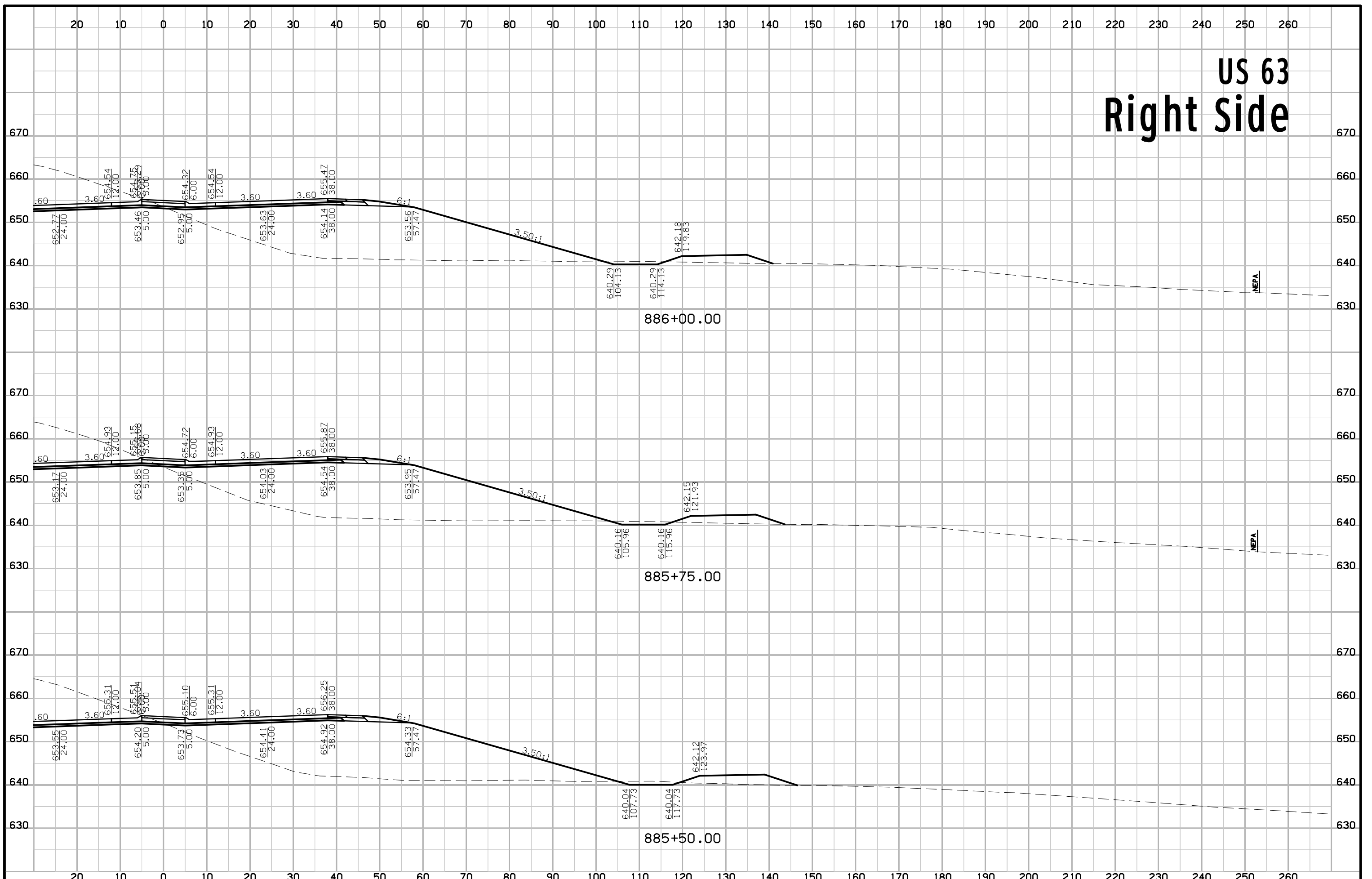
# US 63 Right Side



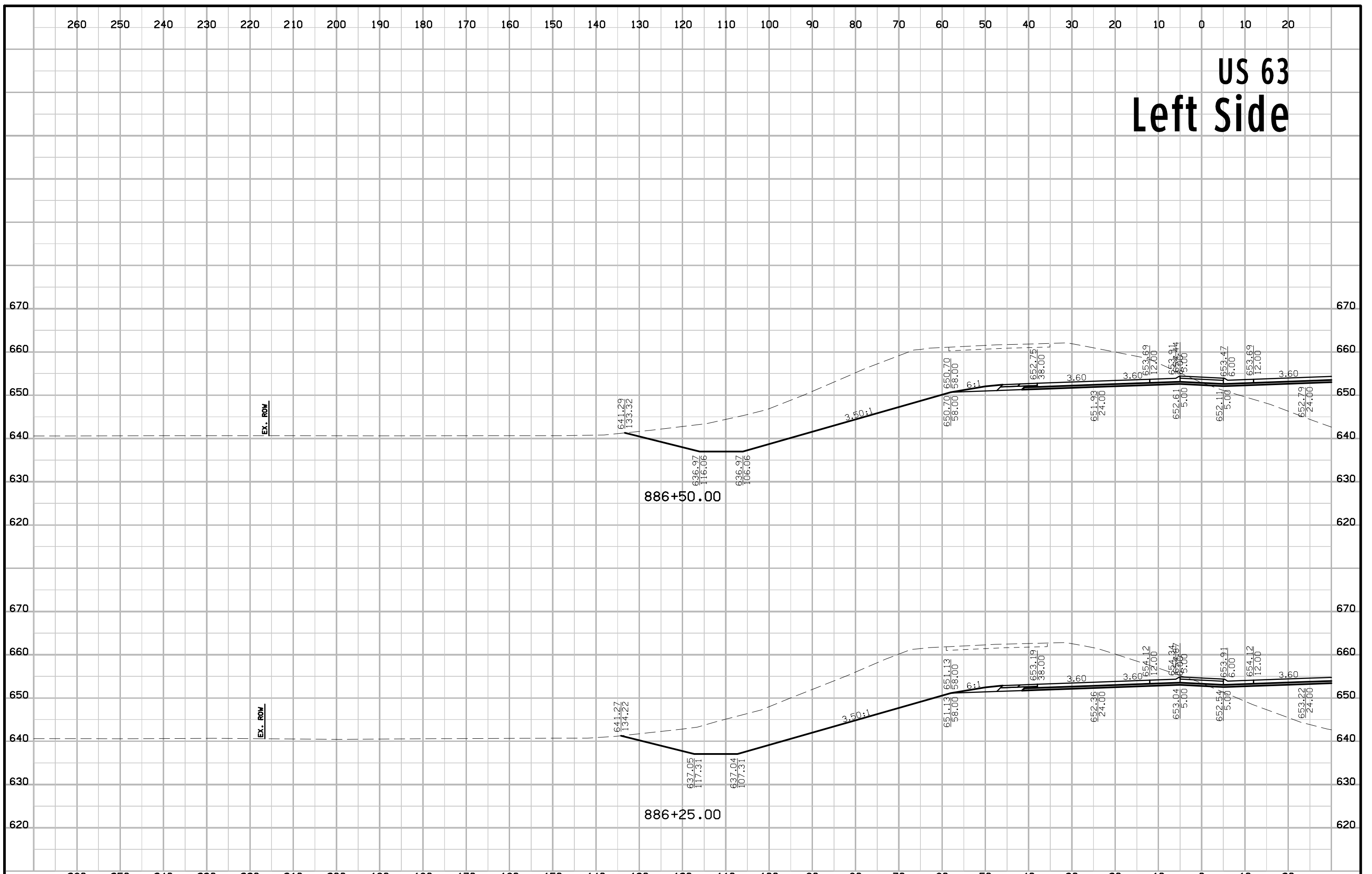
# US 63 Left Side



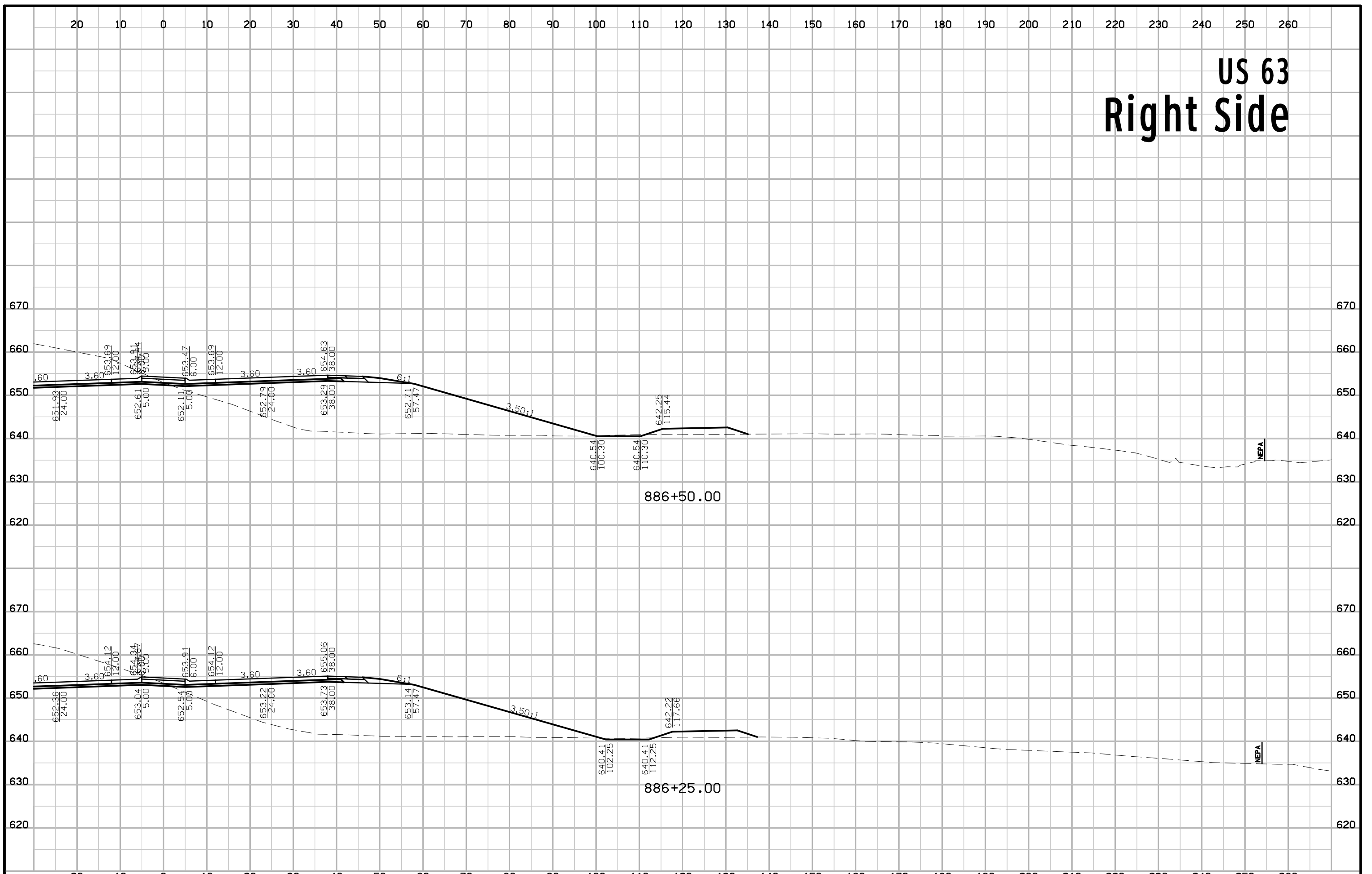
# US 63 Right Side



# US 63 Left Side

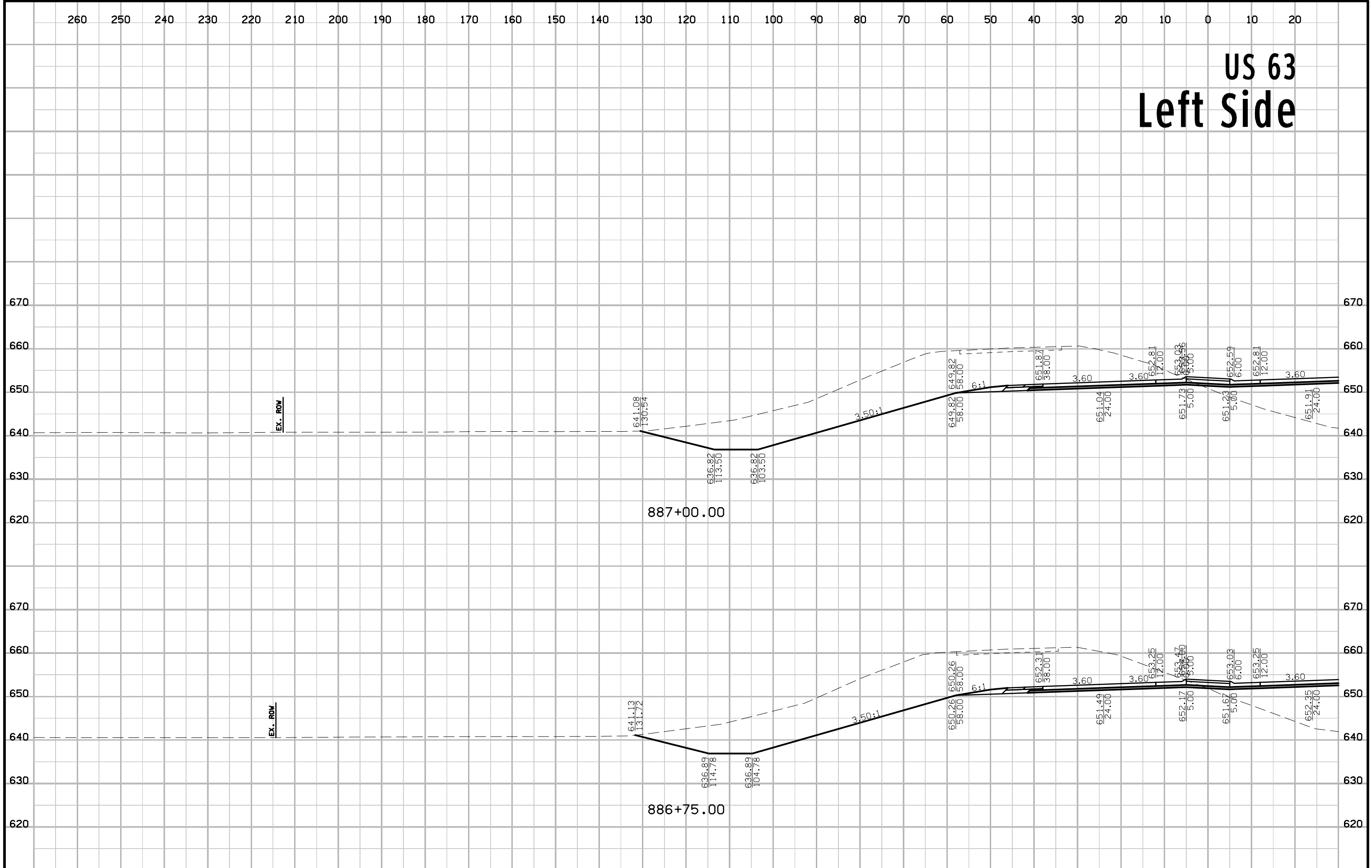


# US 63 Right Side

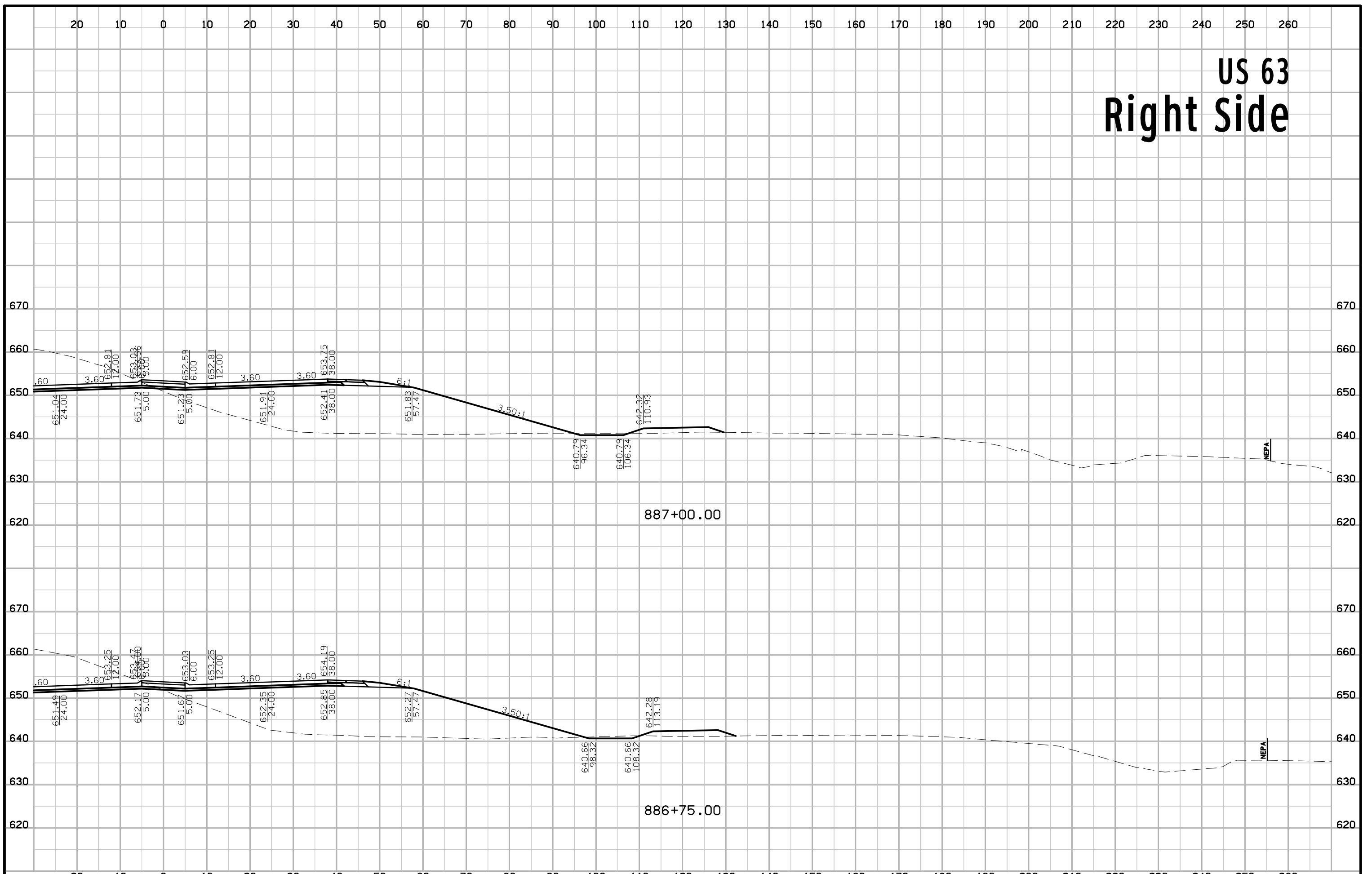




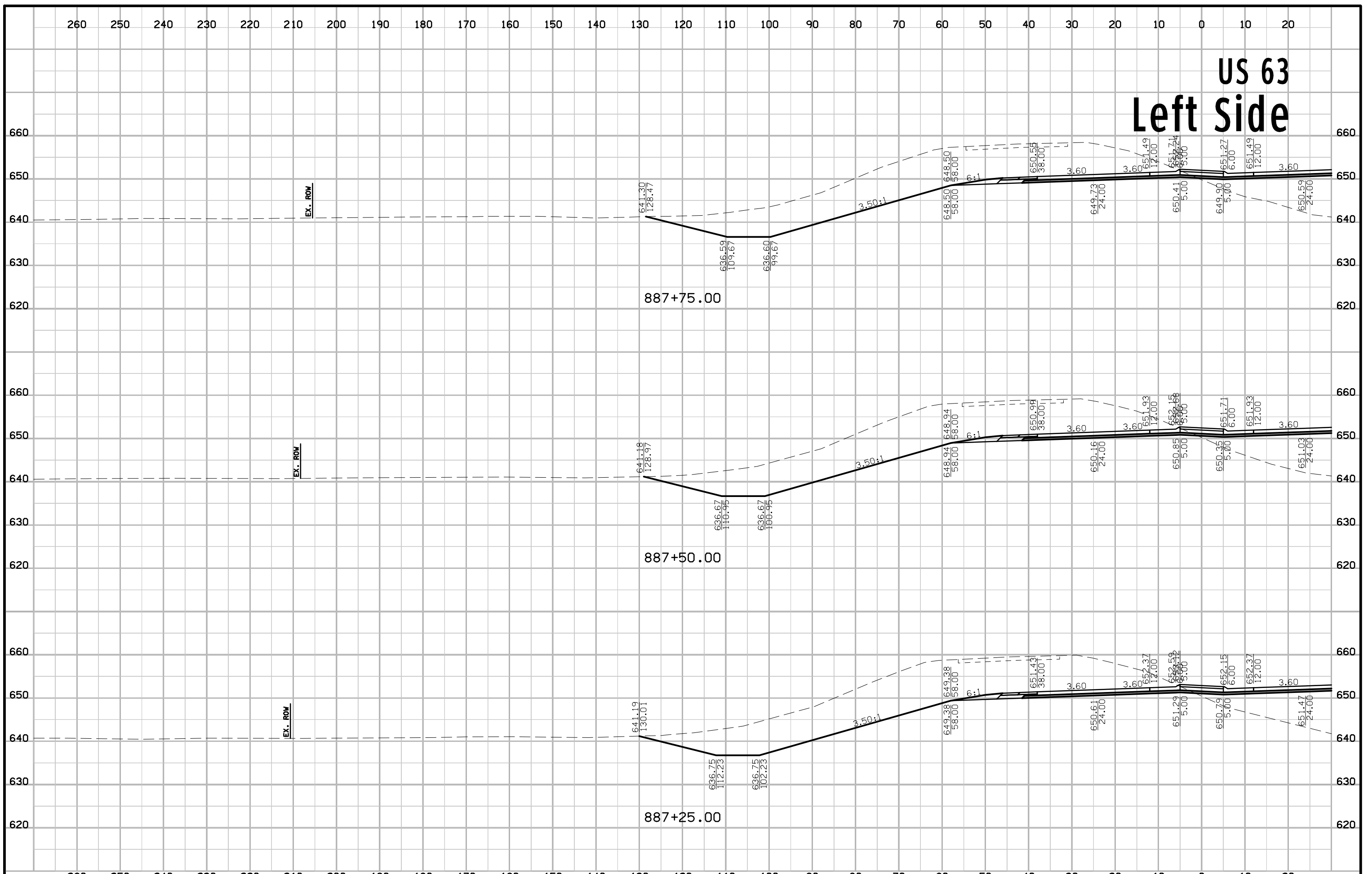
# US 63 Left Side



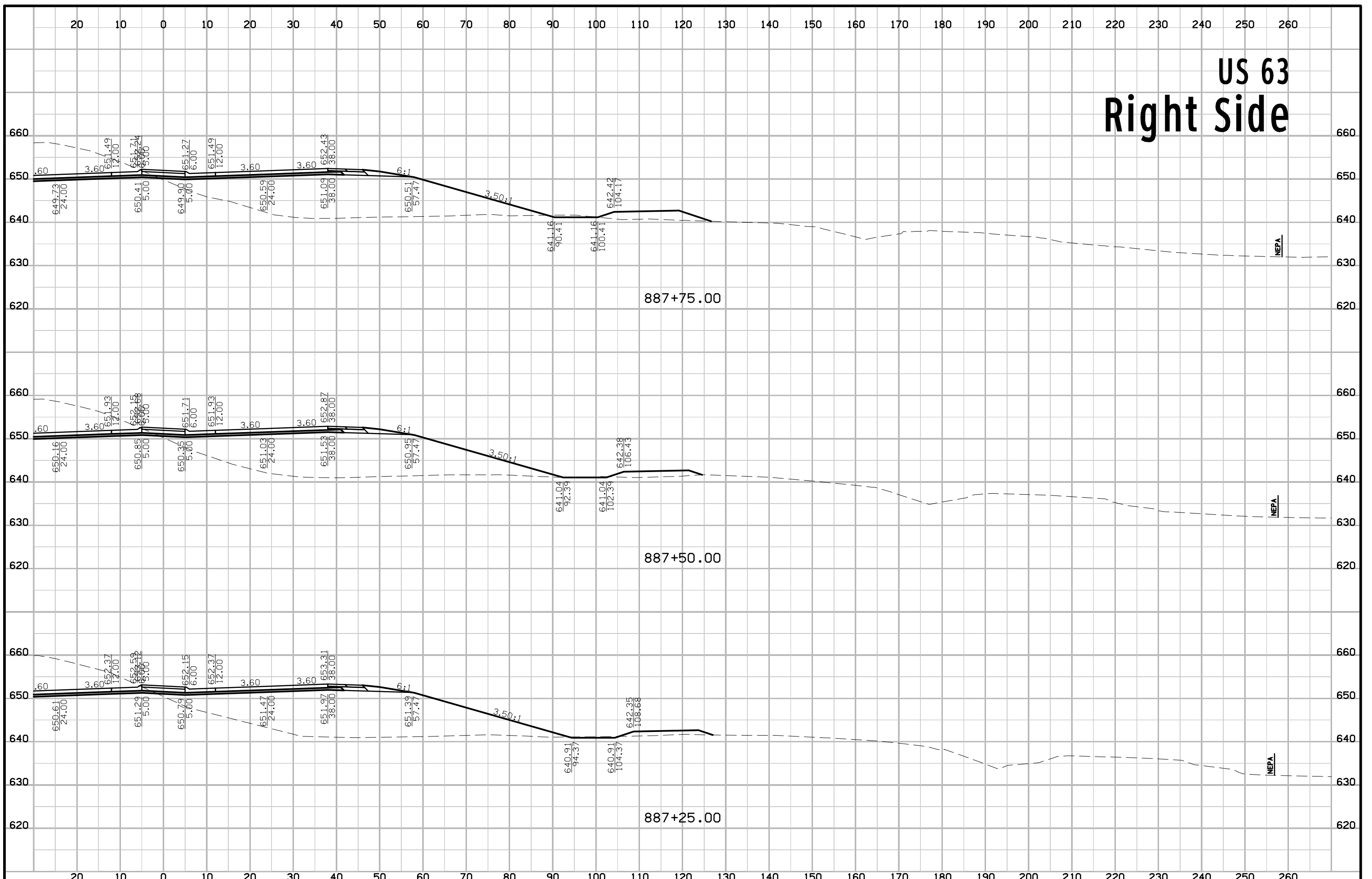
# US 63 Right Side



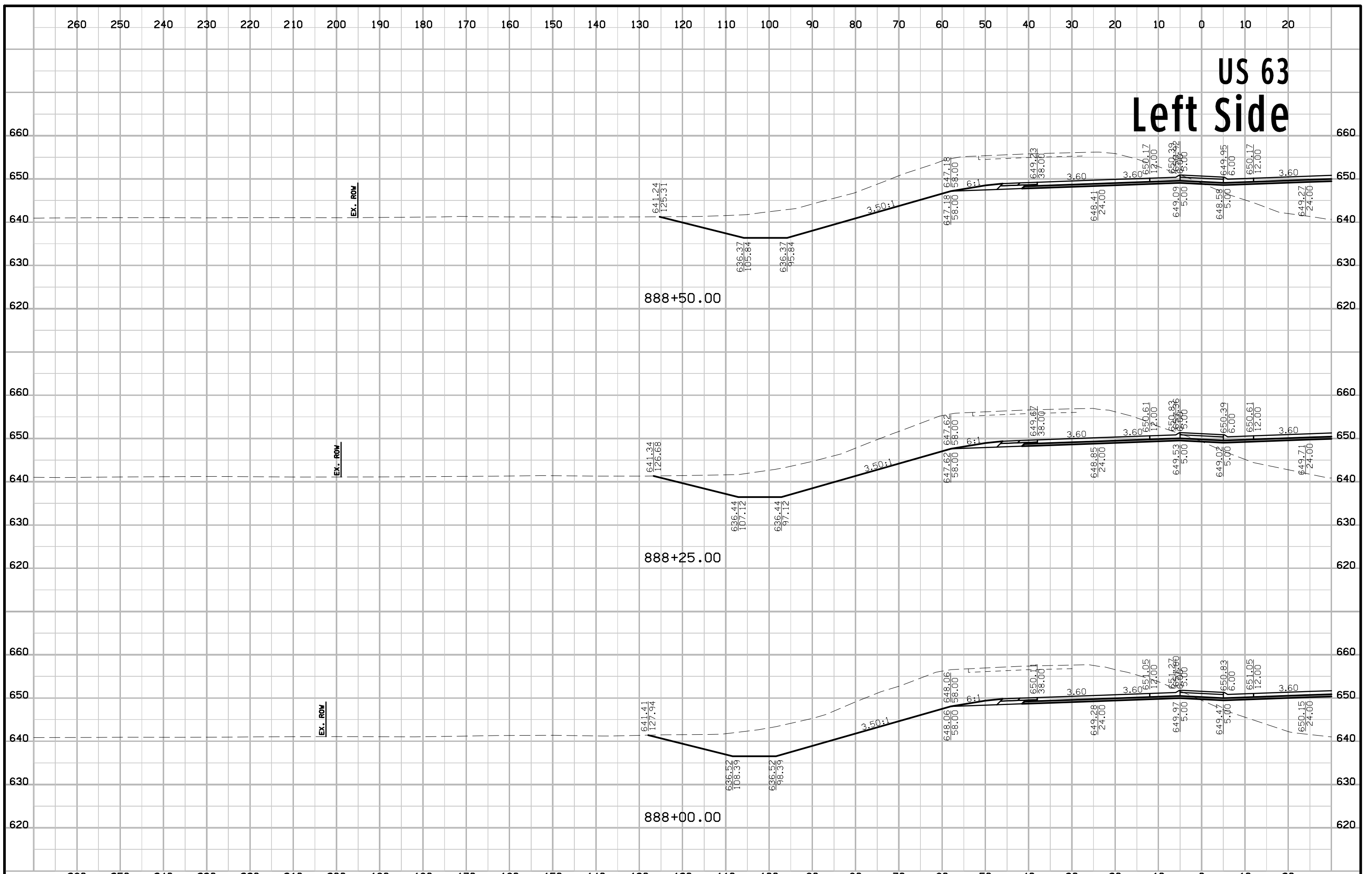
# US 63 Left Side



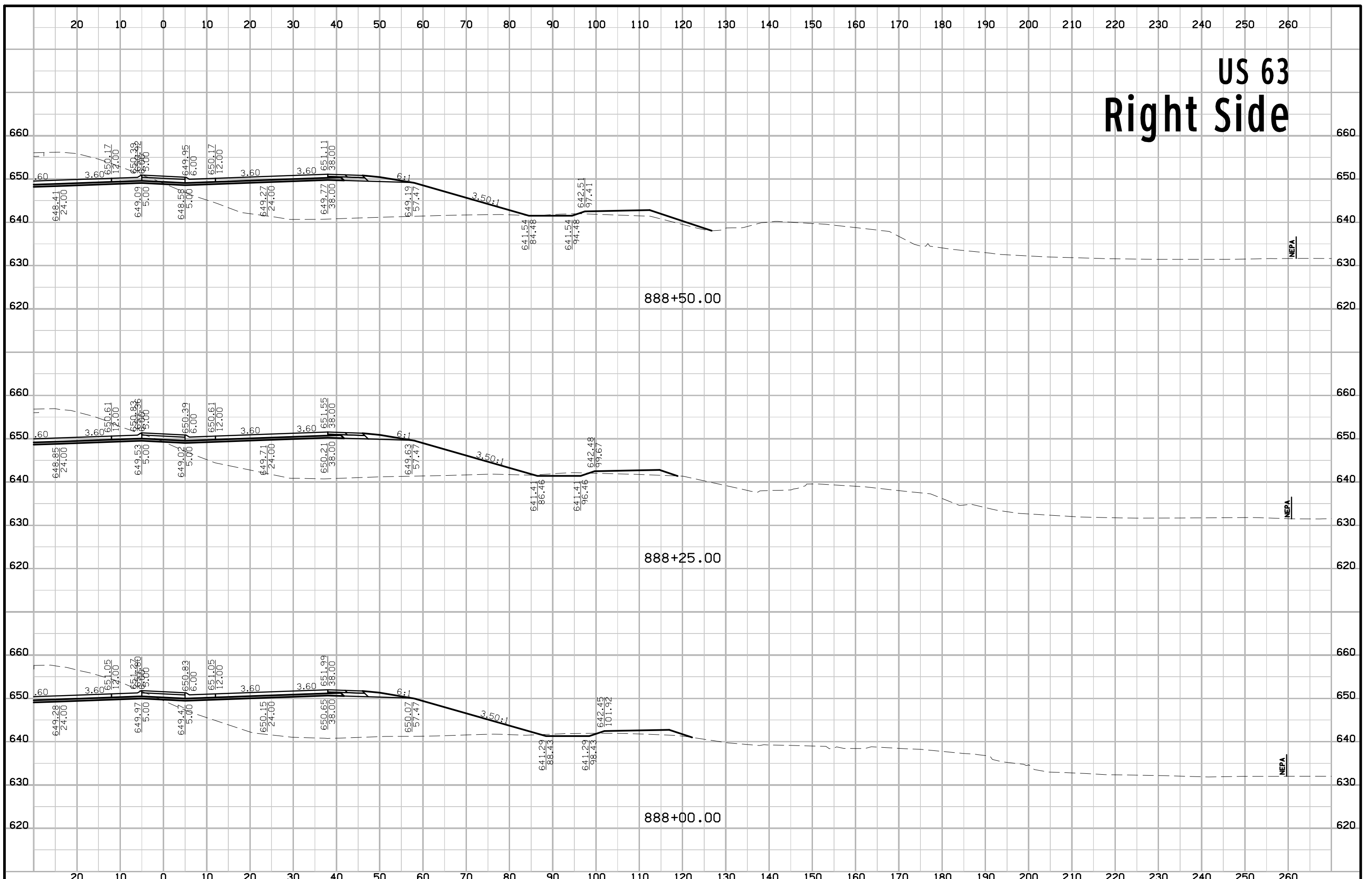
# US 63 Right Side



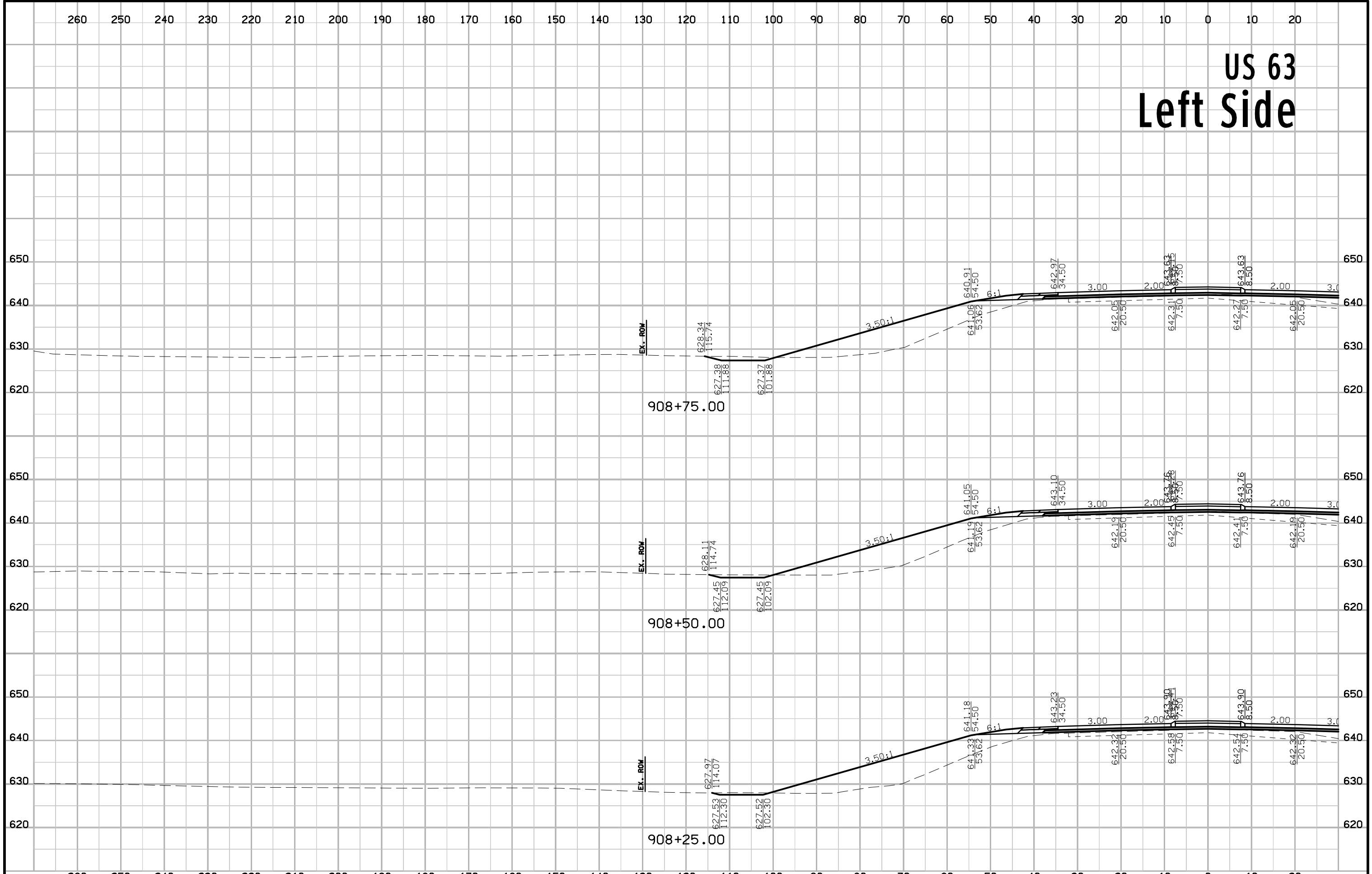
# US 63 Left Side



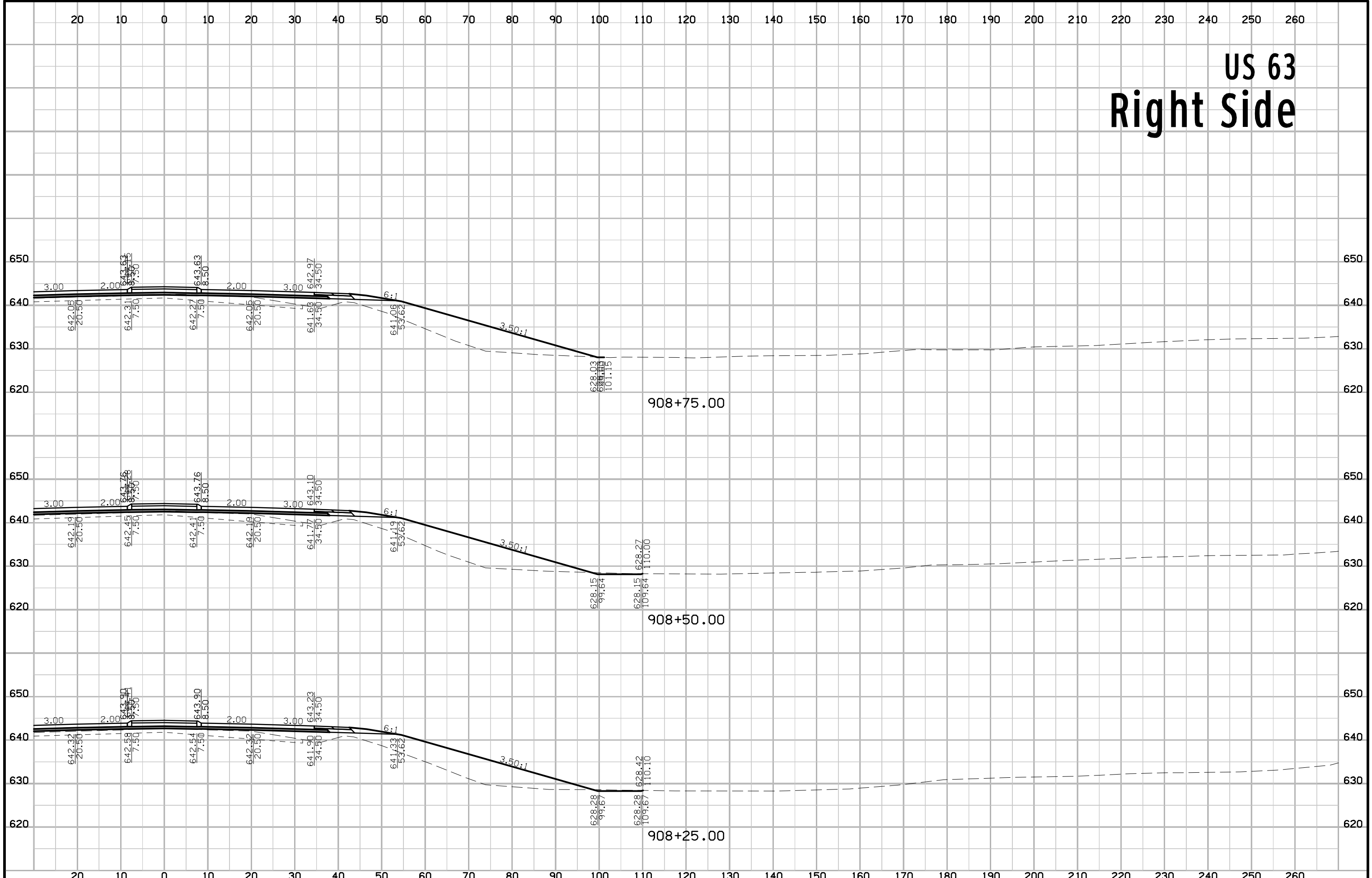
# US 63 Right Side



# US 63 Left Side

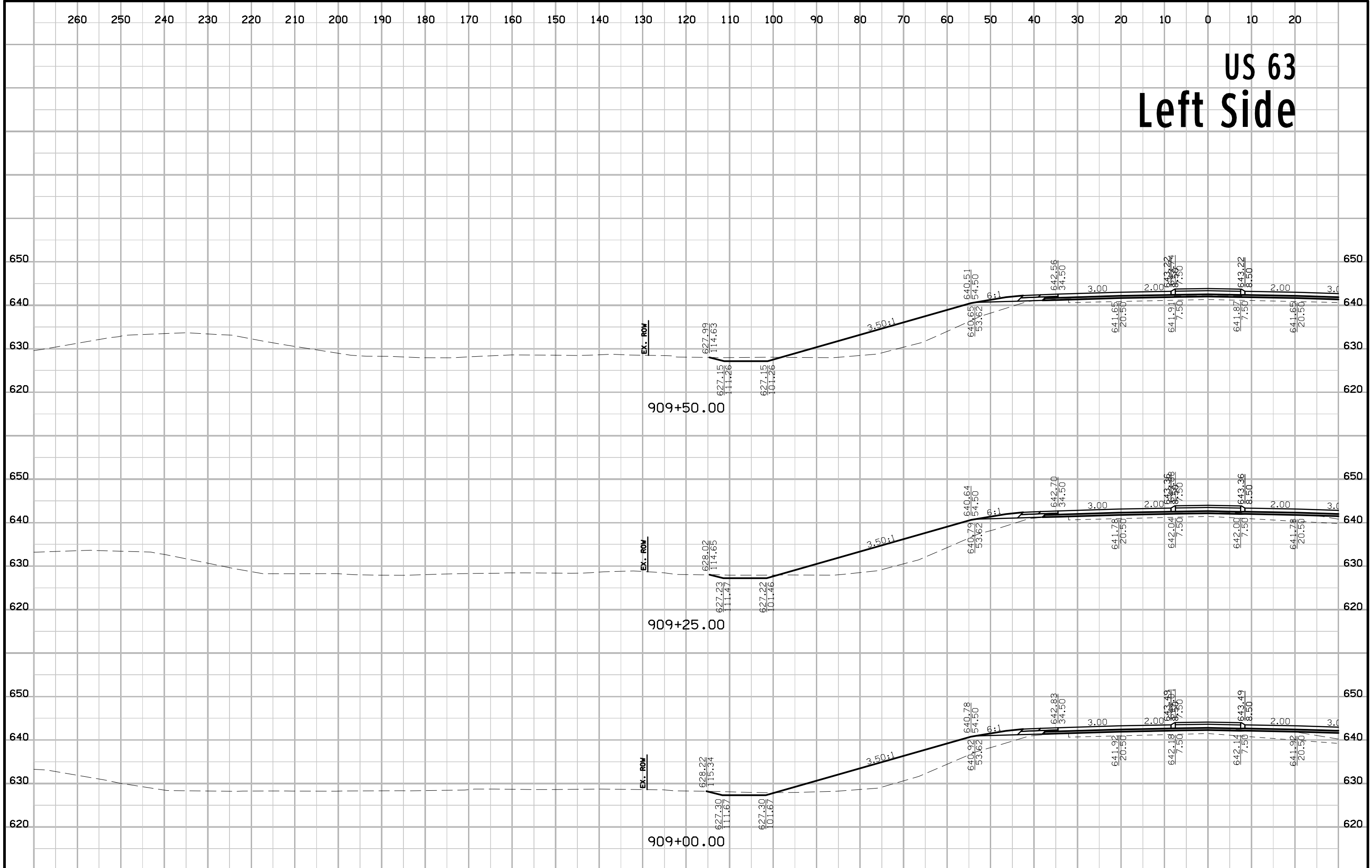


# US 63 Right Side

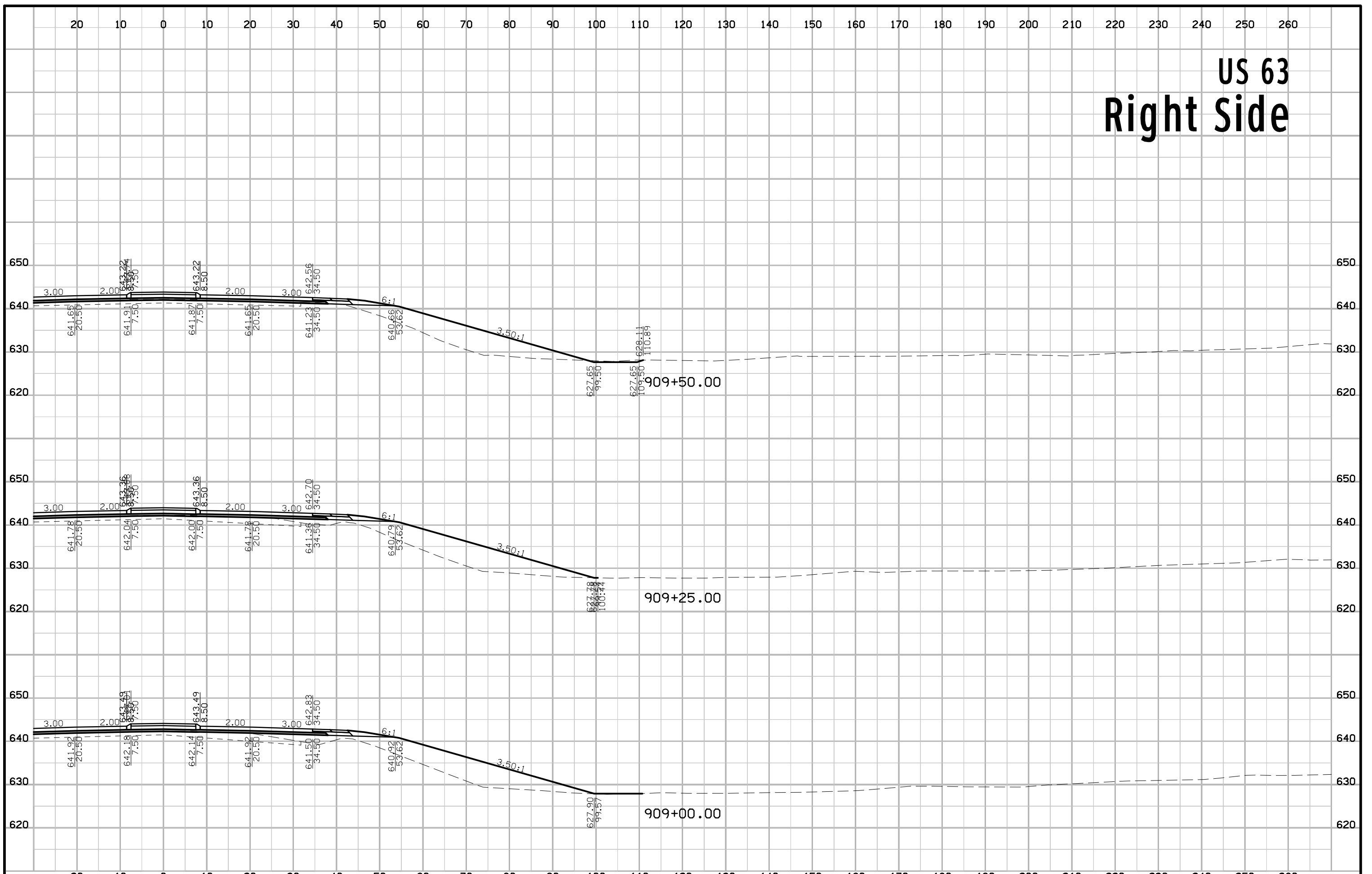




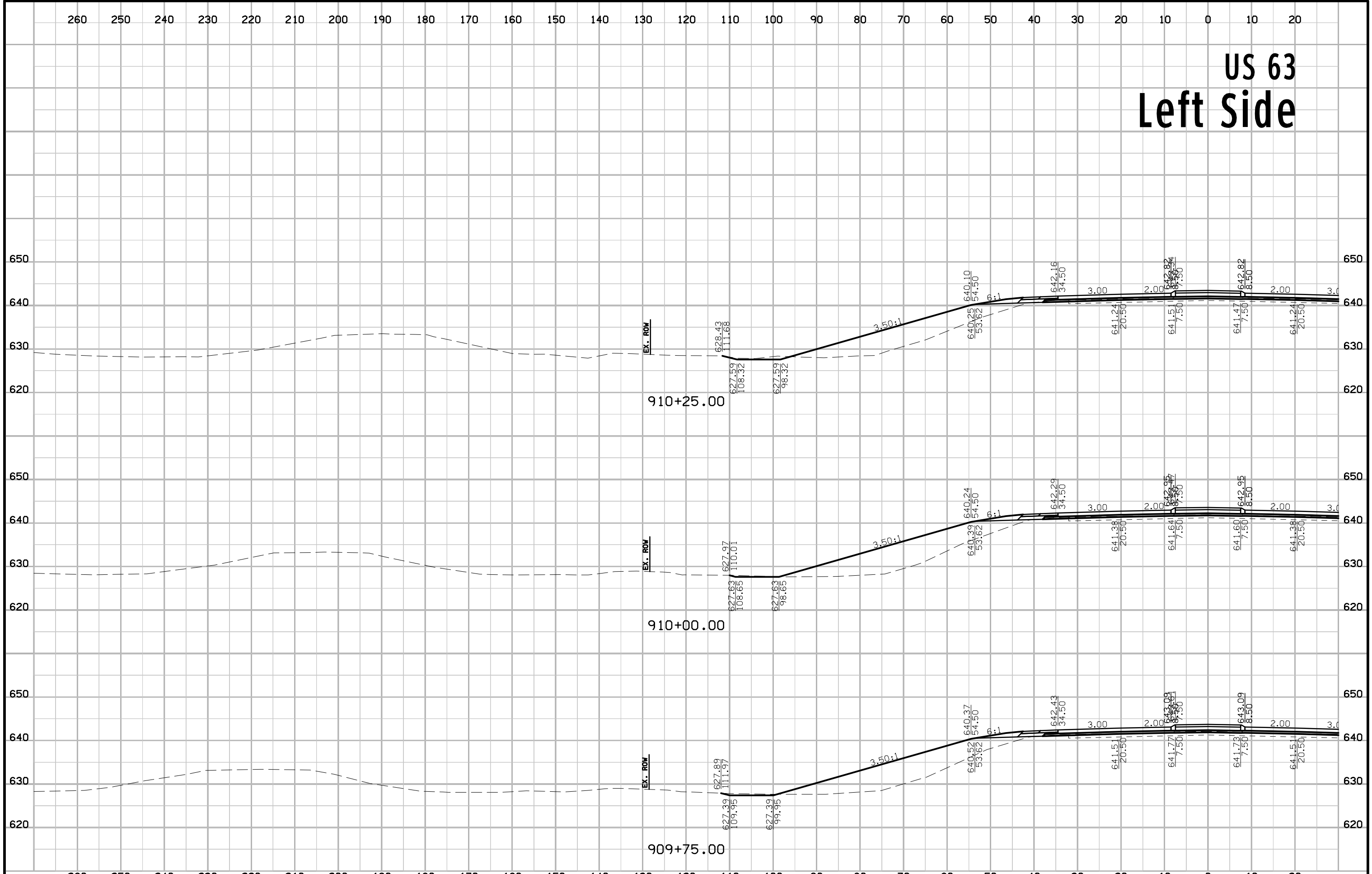
# US 63 Left Side



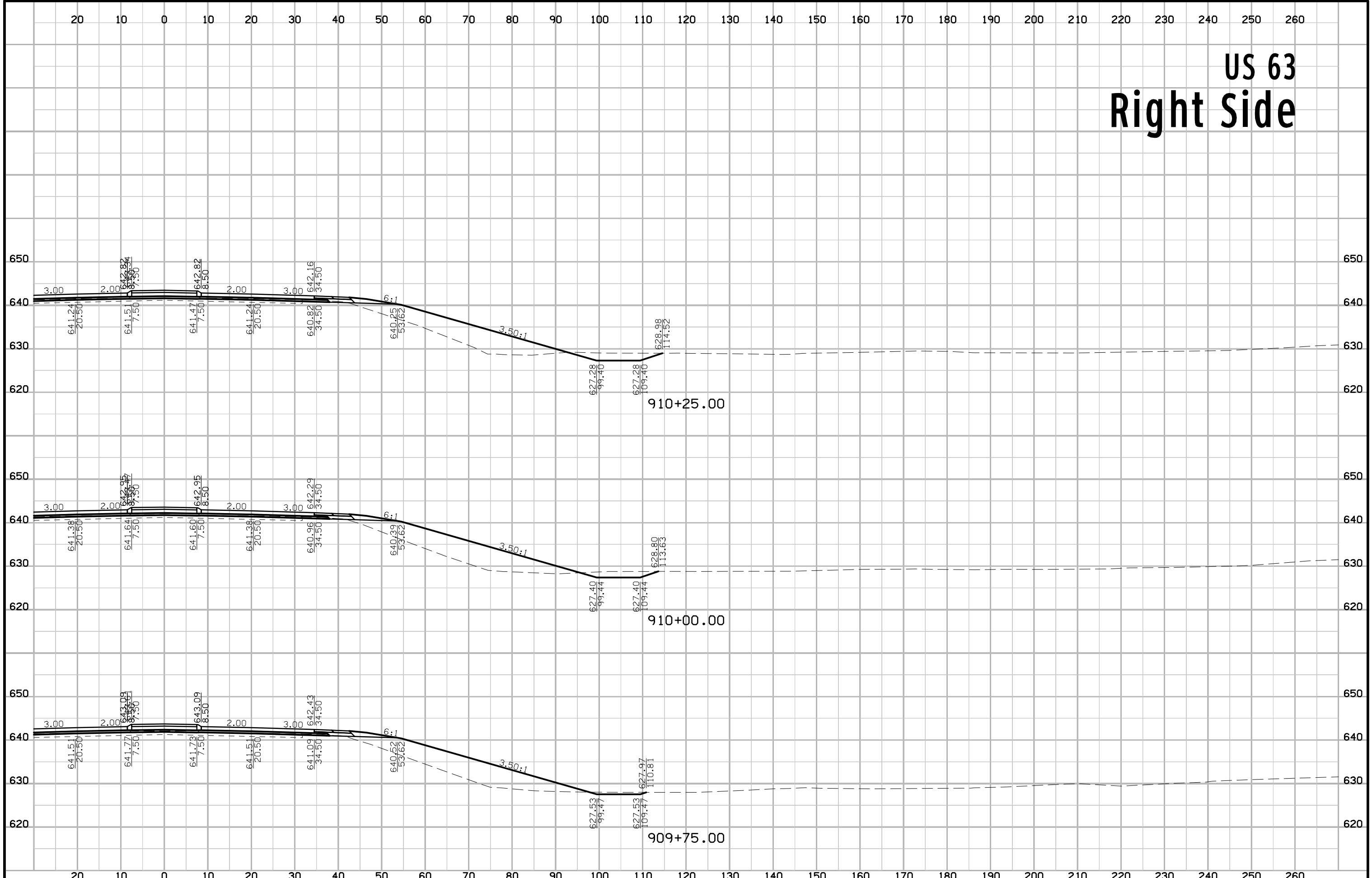
# US 63 Right Side



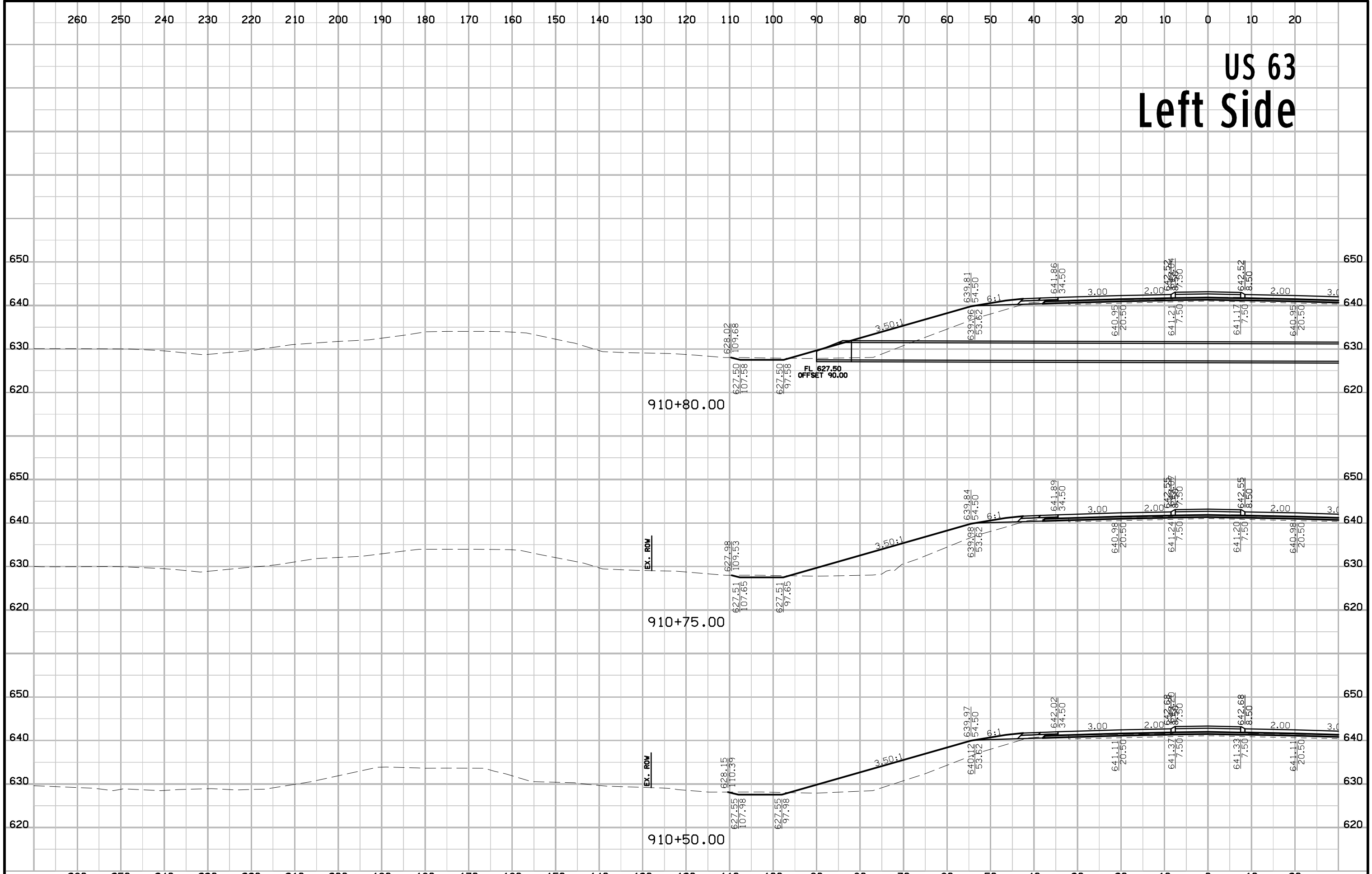
# US 63 Left Side



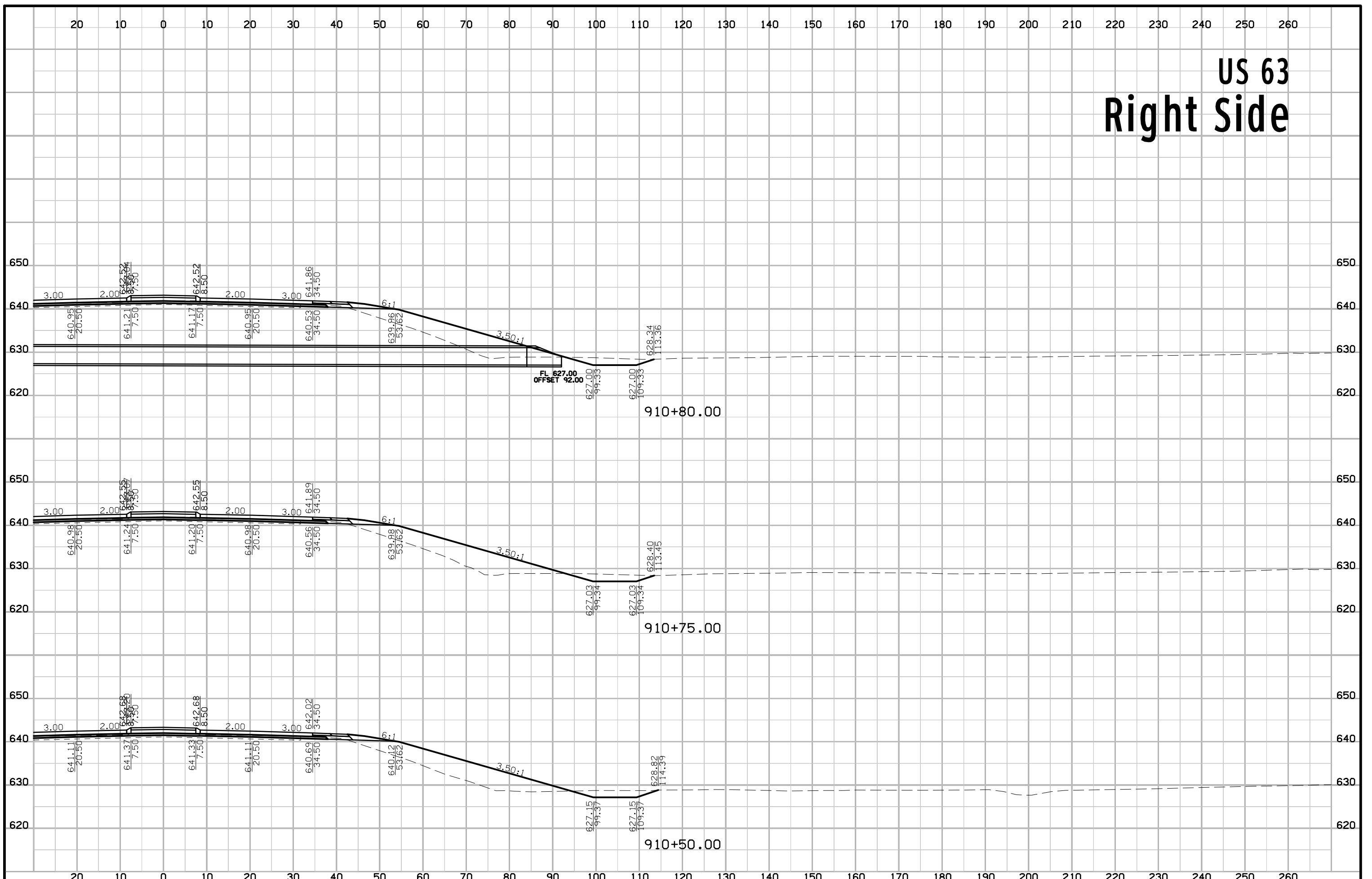
# US 63 Right Side



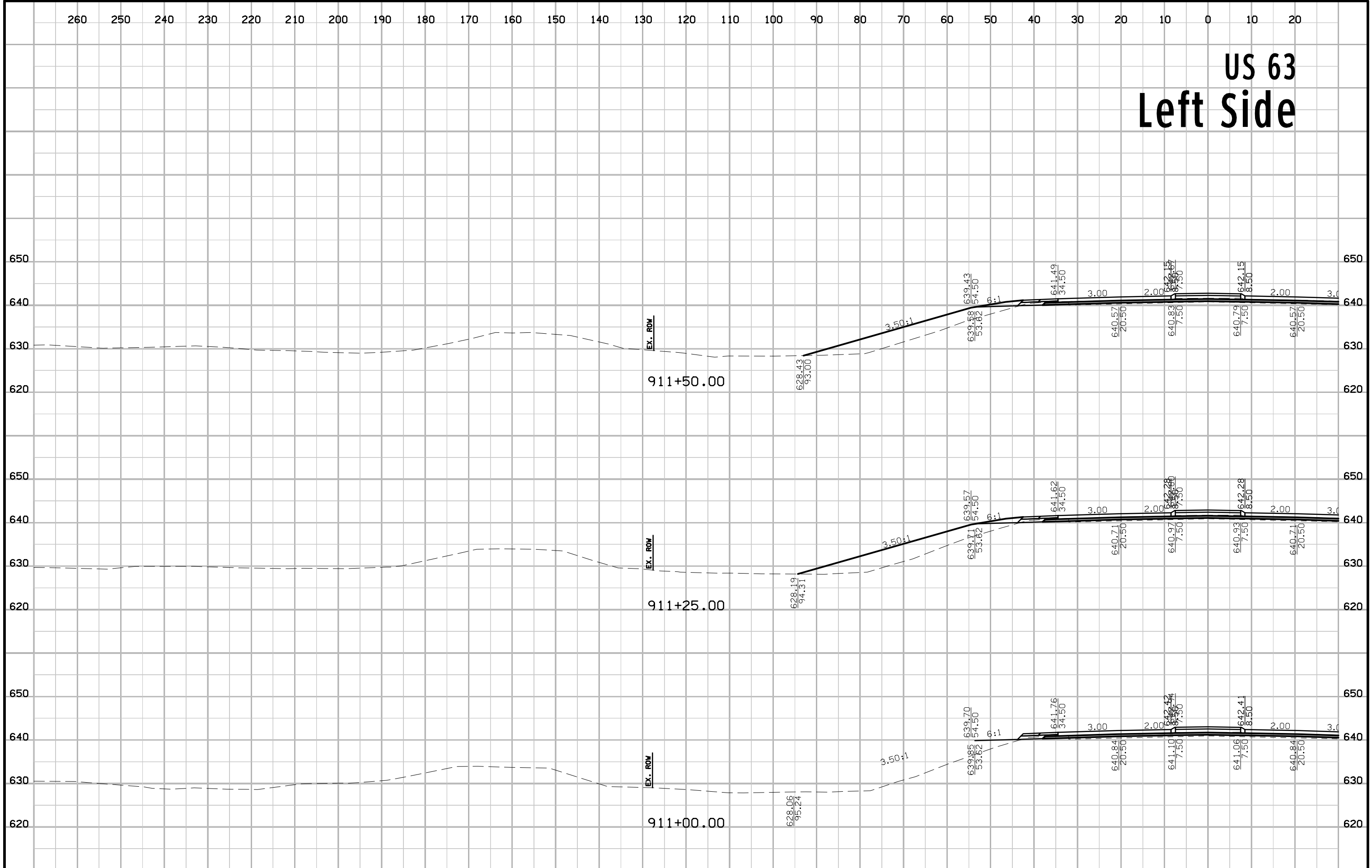
# US 63 Left Side



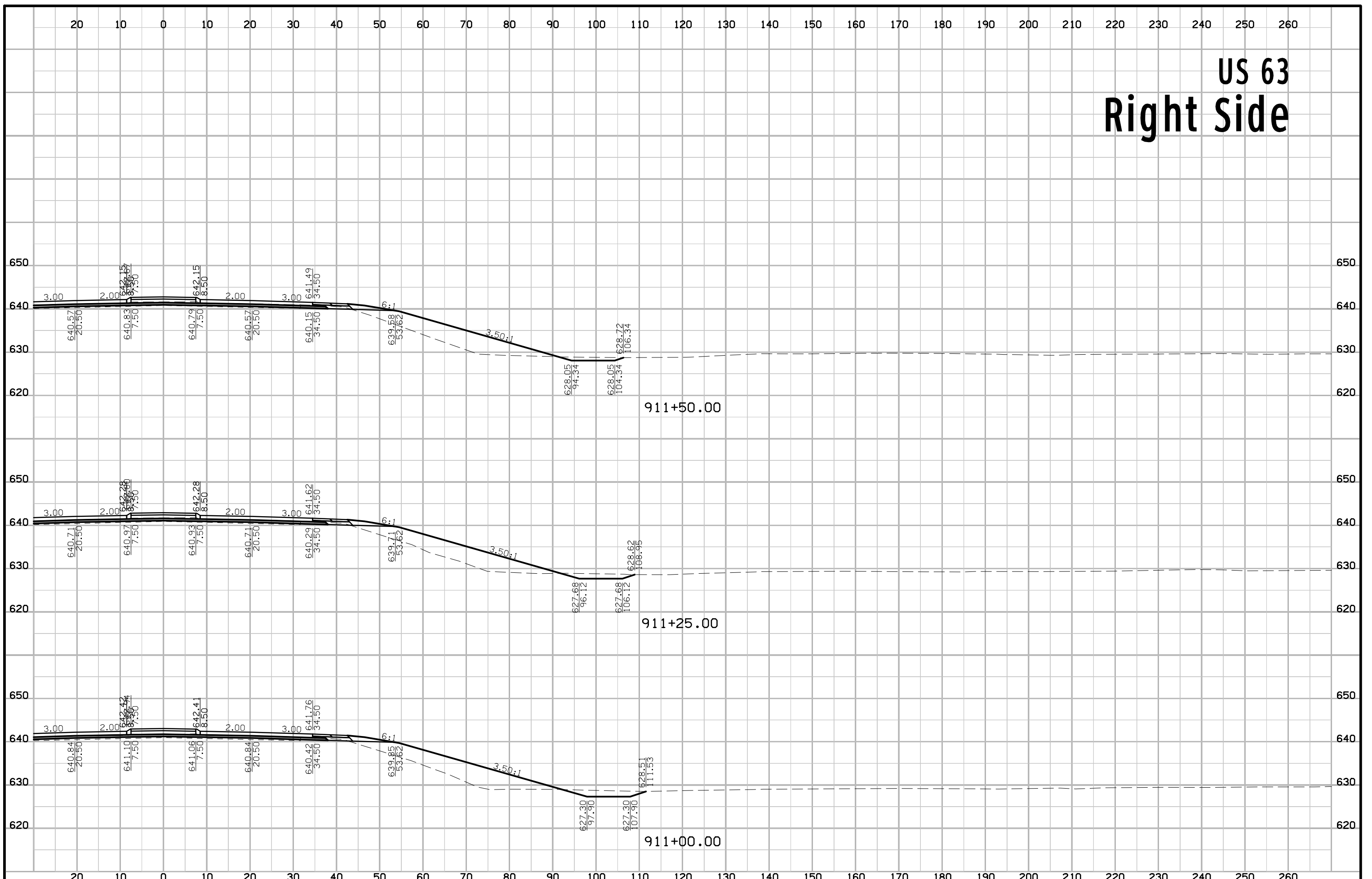
# US 63 Right Side



# US 63 Left Side

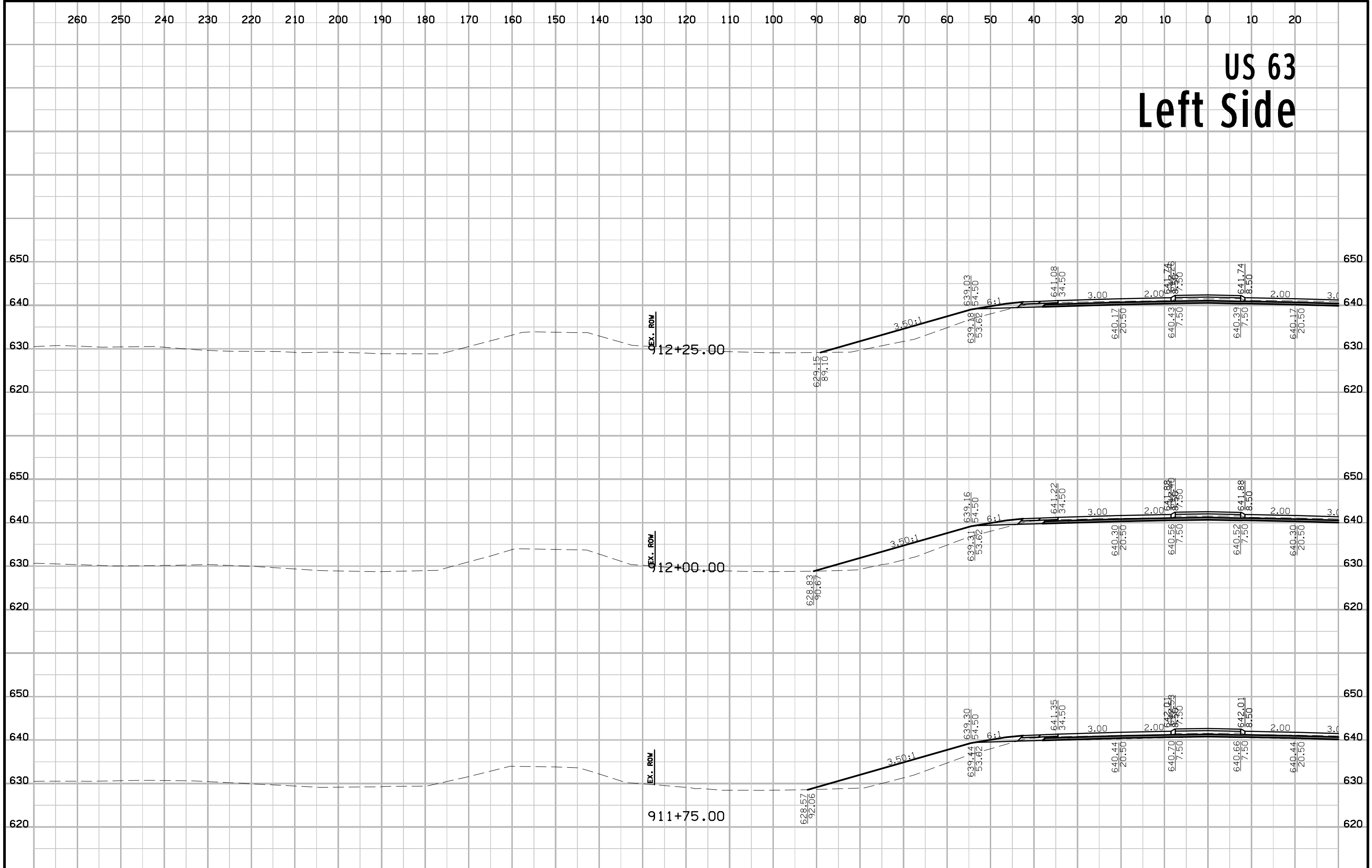


# US 63 Right Side

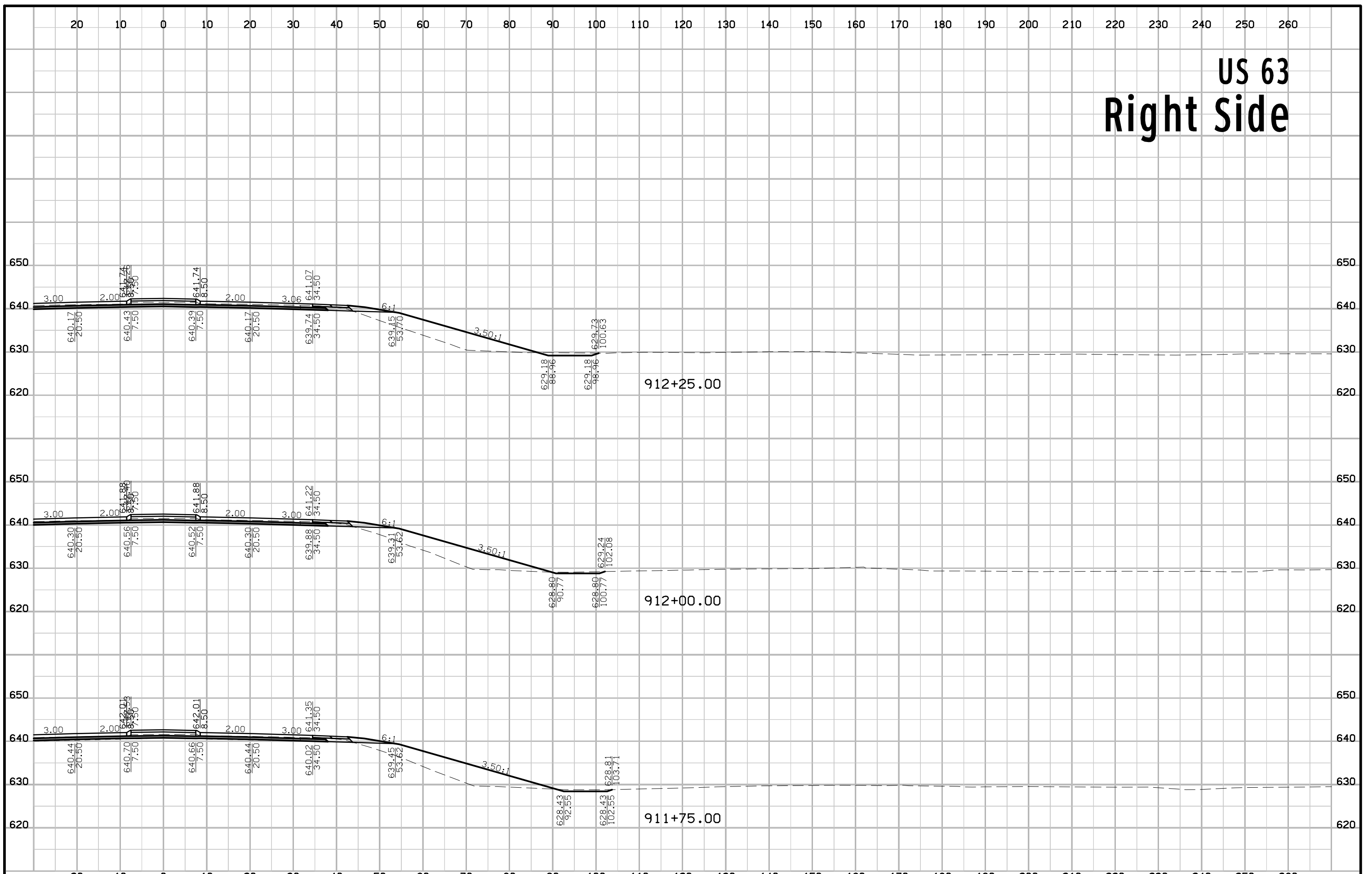




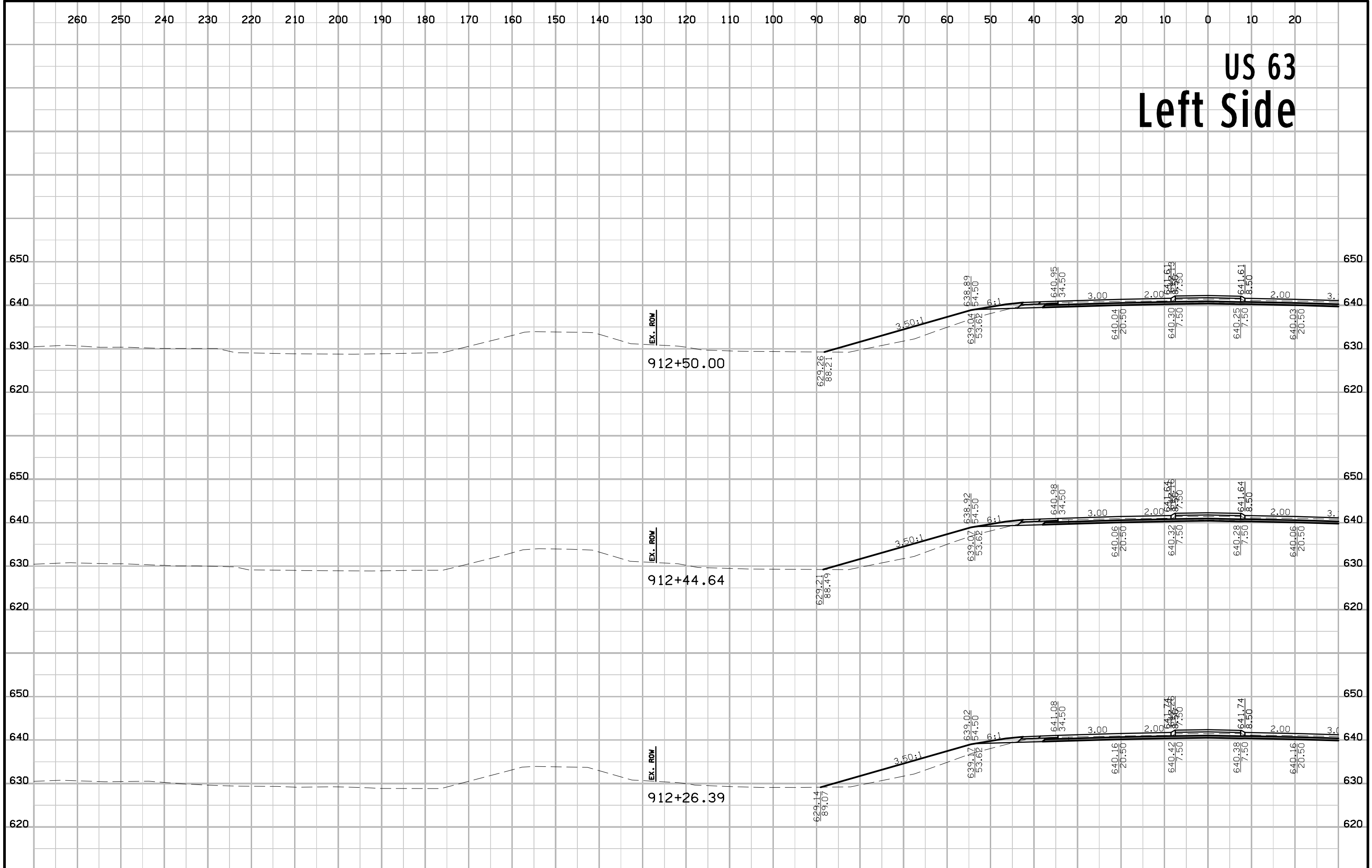
# US 63 Left Side



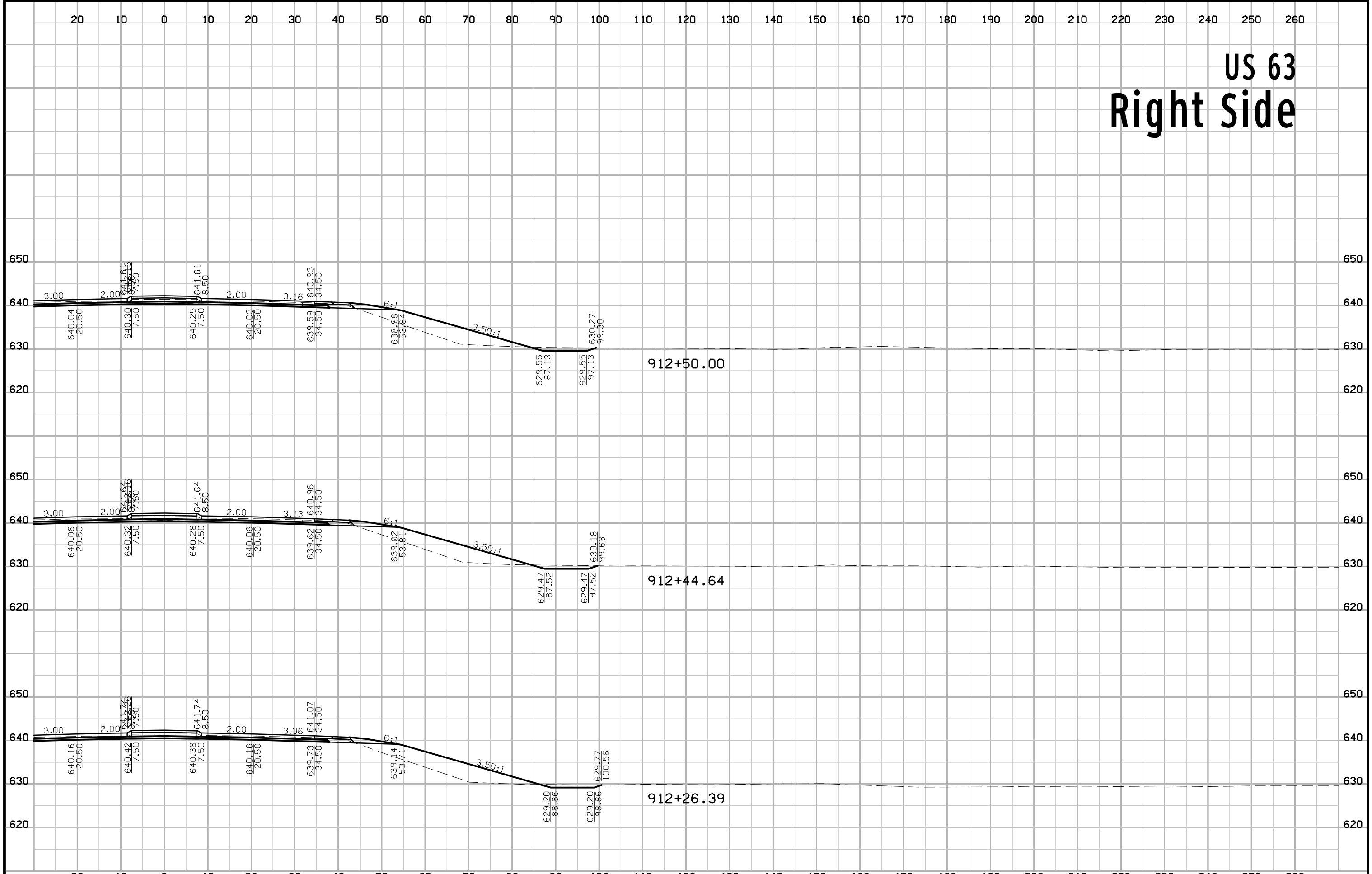
# US 63 Right Side



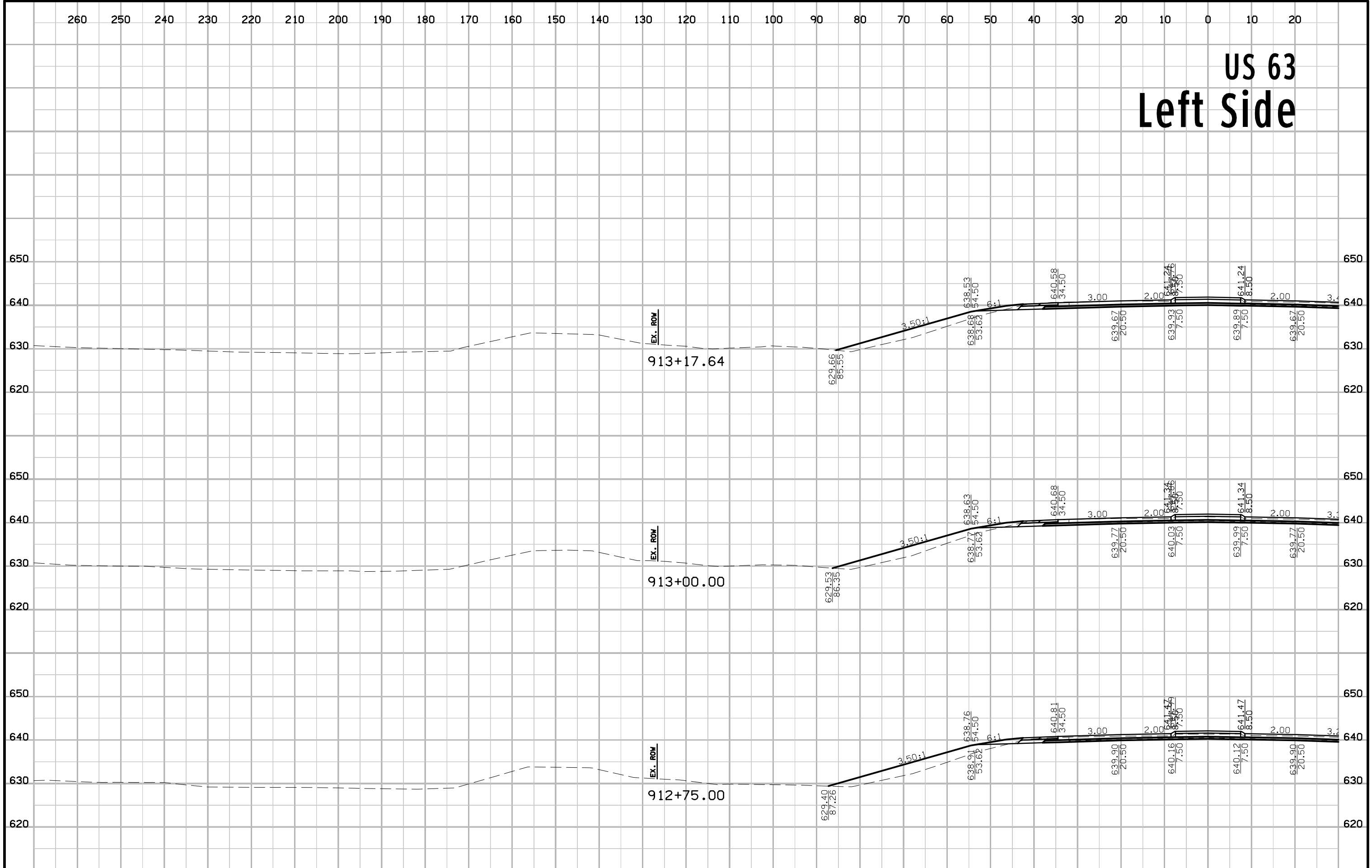
# US 63 Left Side



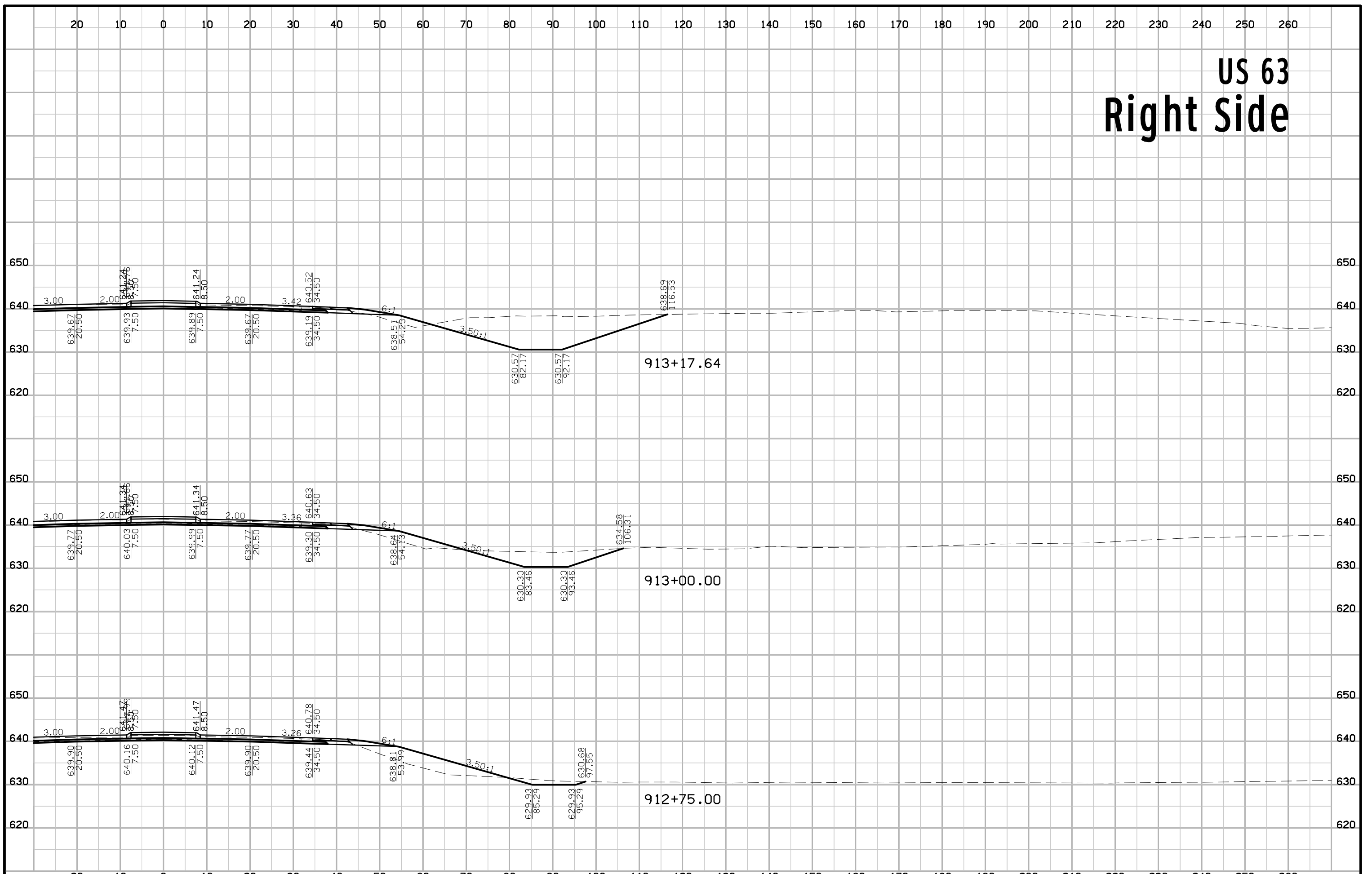
# US 63 Right Side



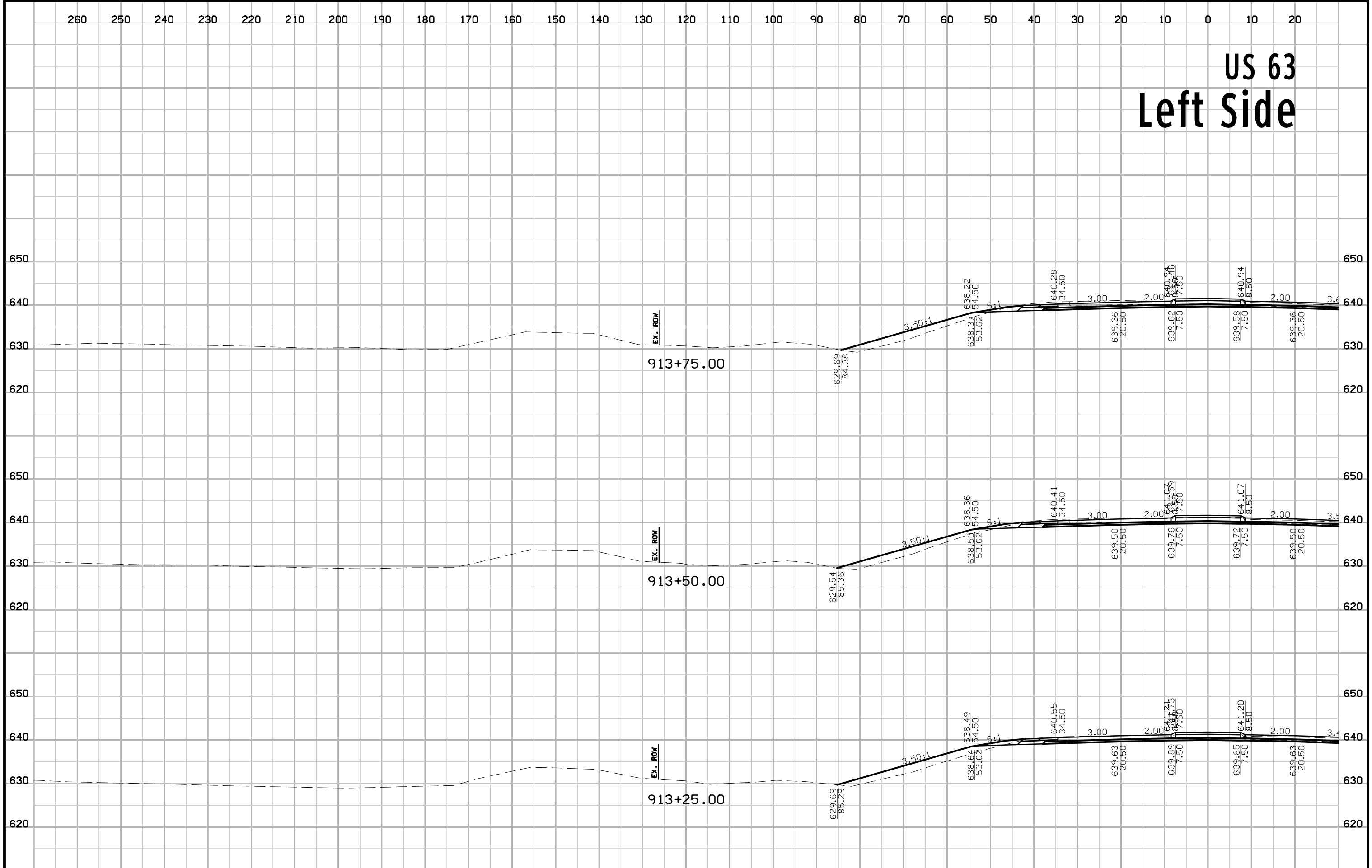
# US 63 Left Side



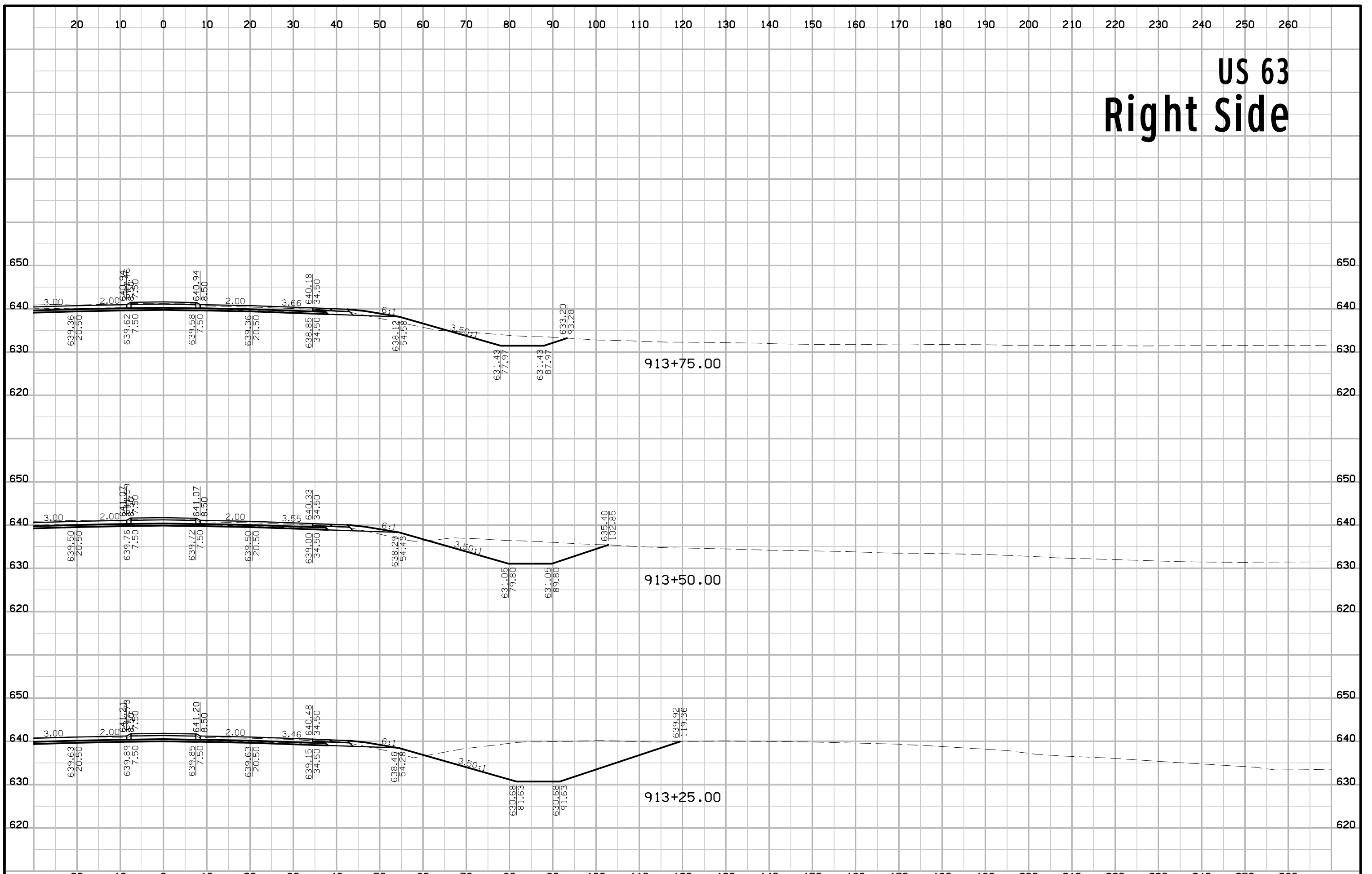
# US 63 Right Side



# US 63 Left Side

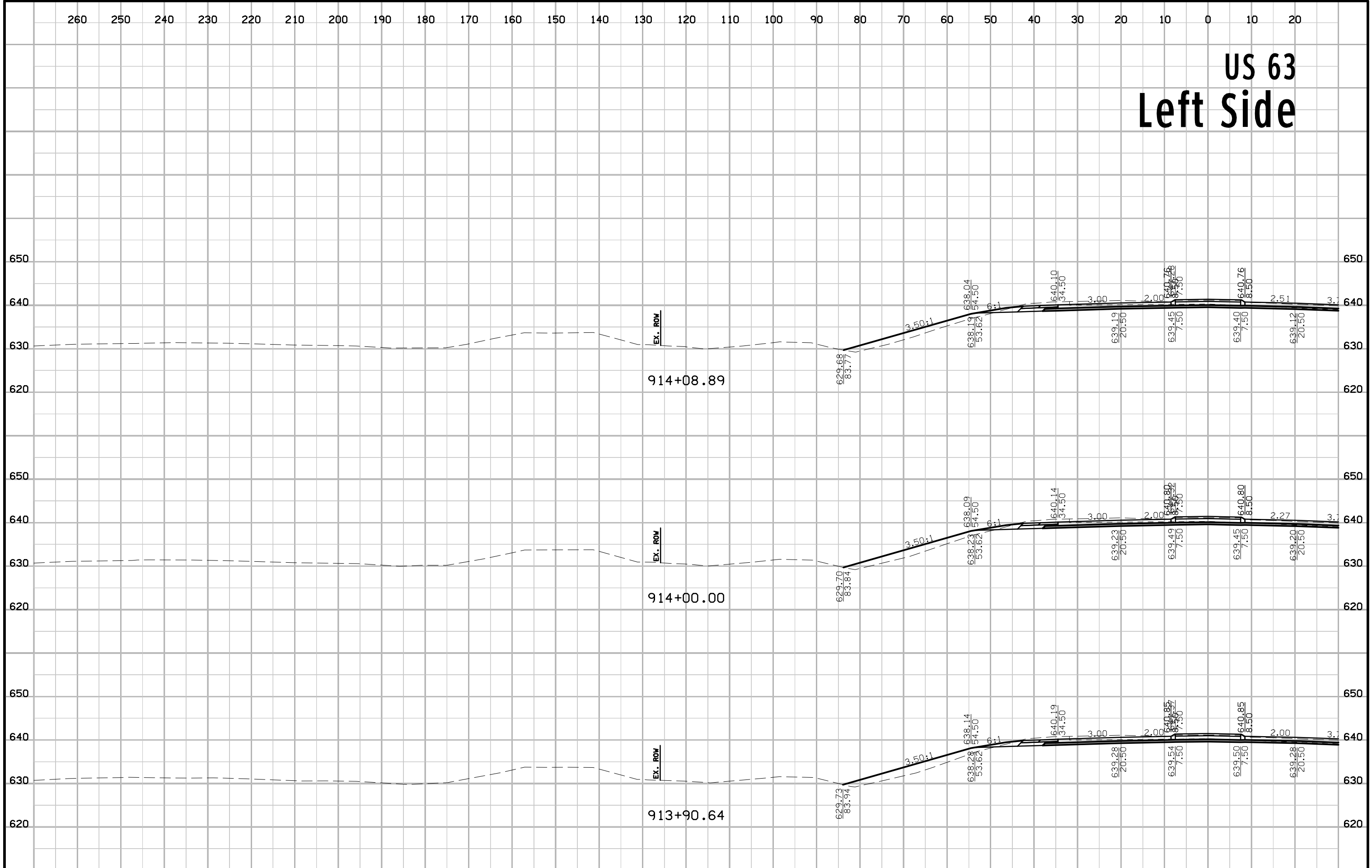


# US 63 Right Side

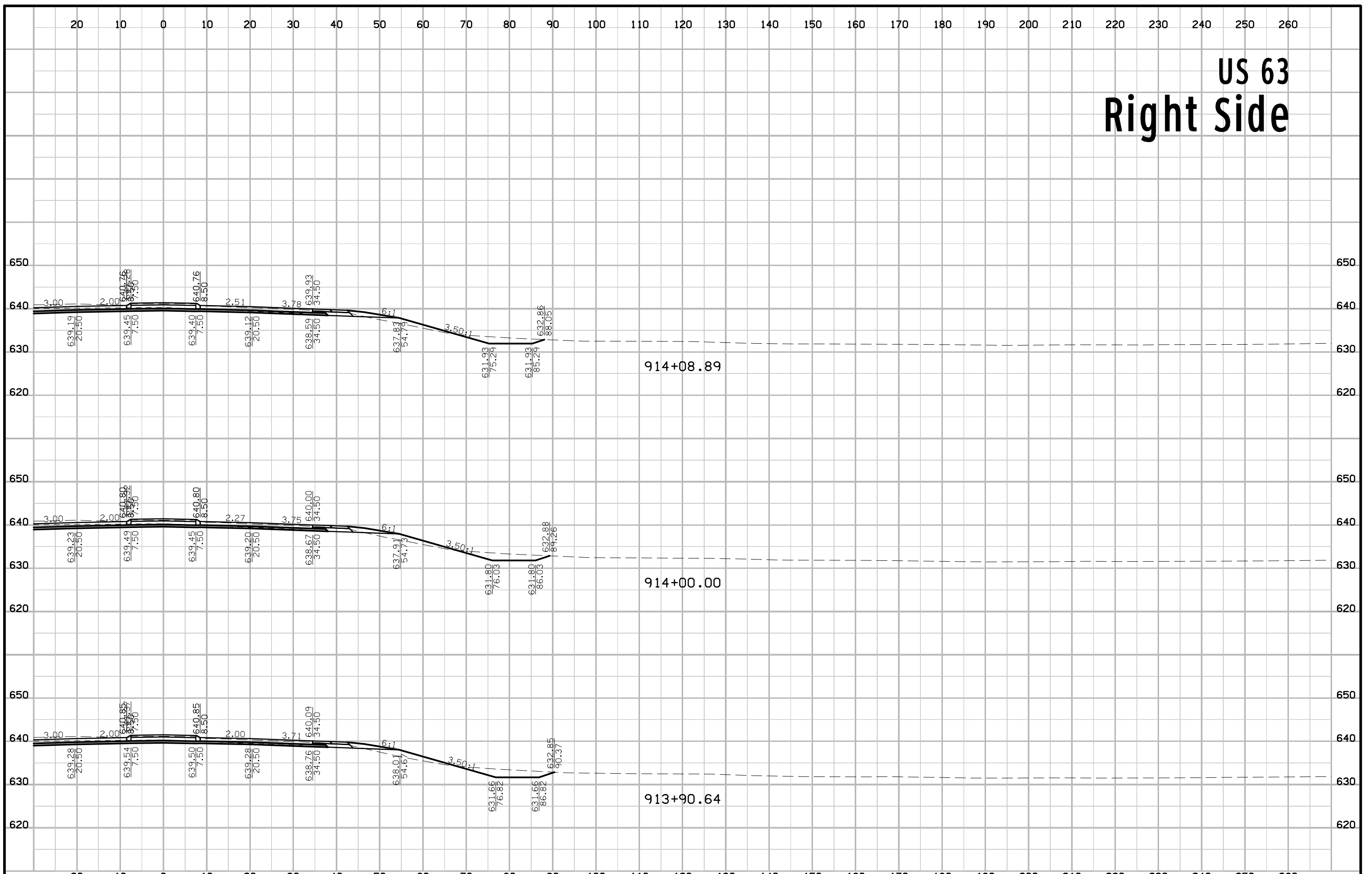




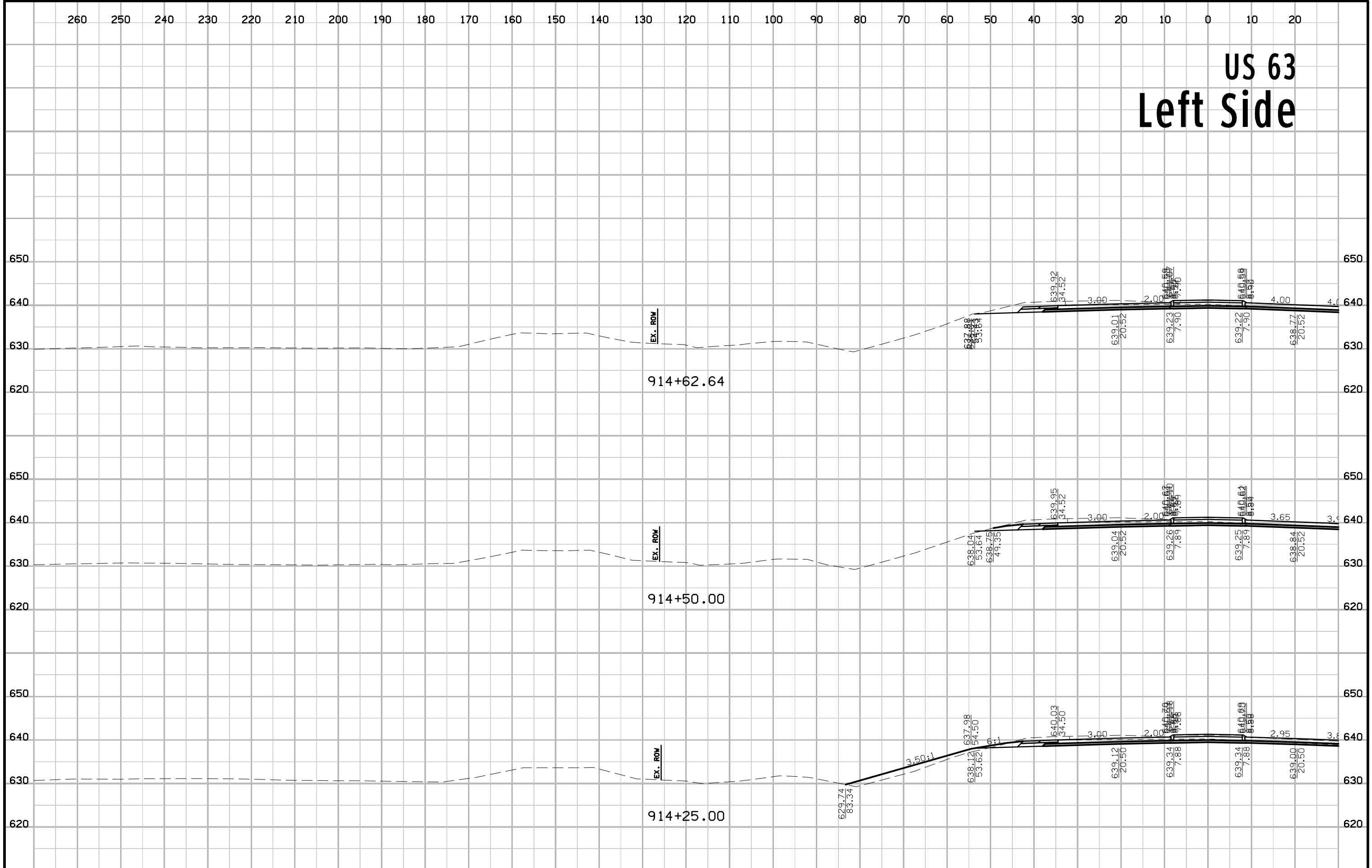
# US 63 Left Side



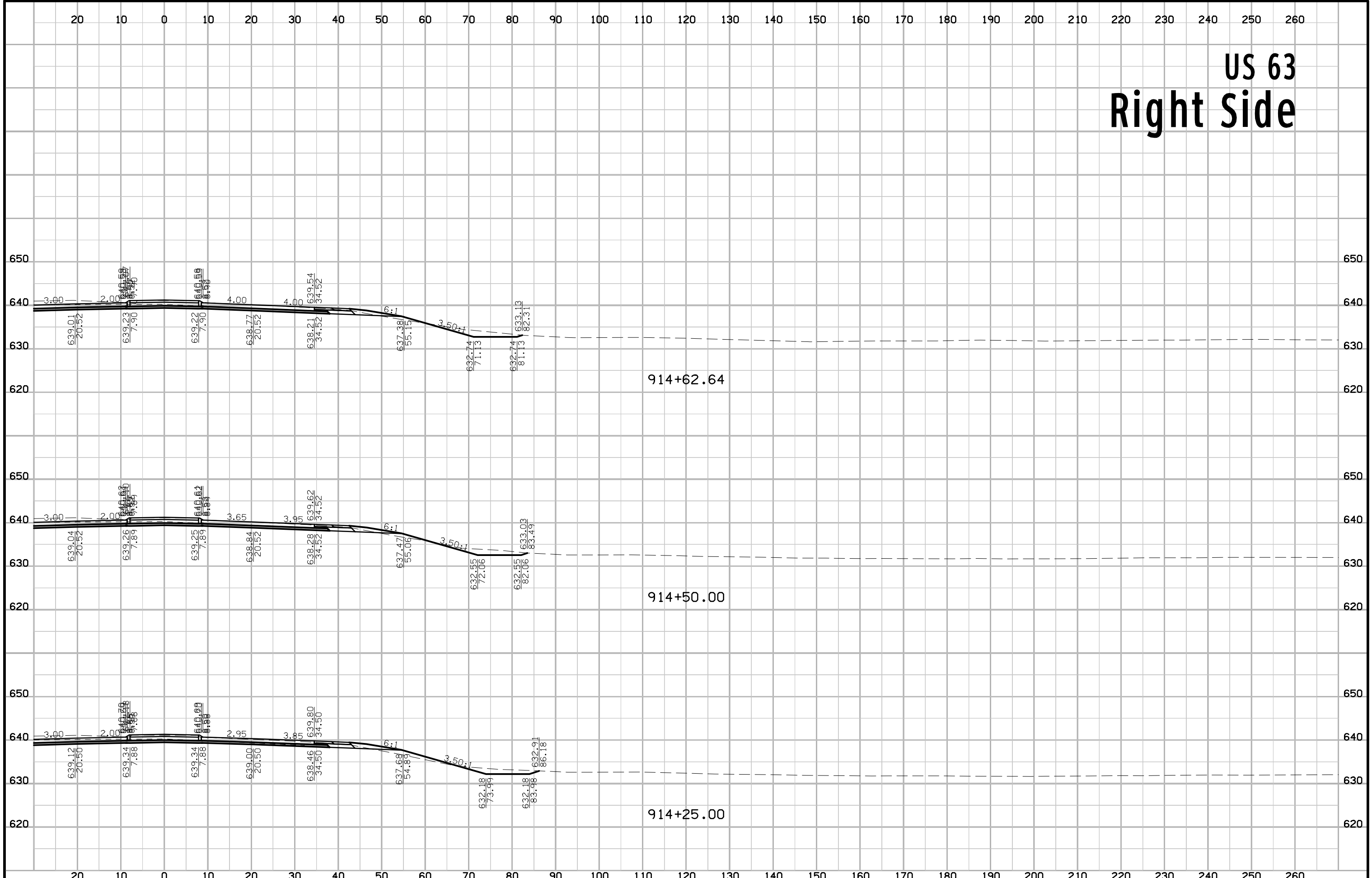
# US 63 Right Side



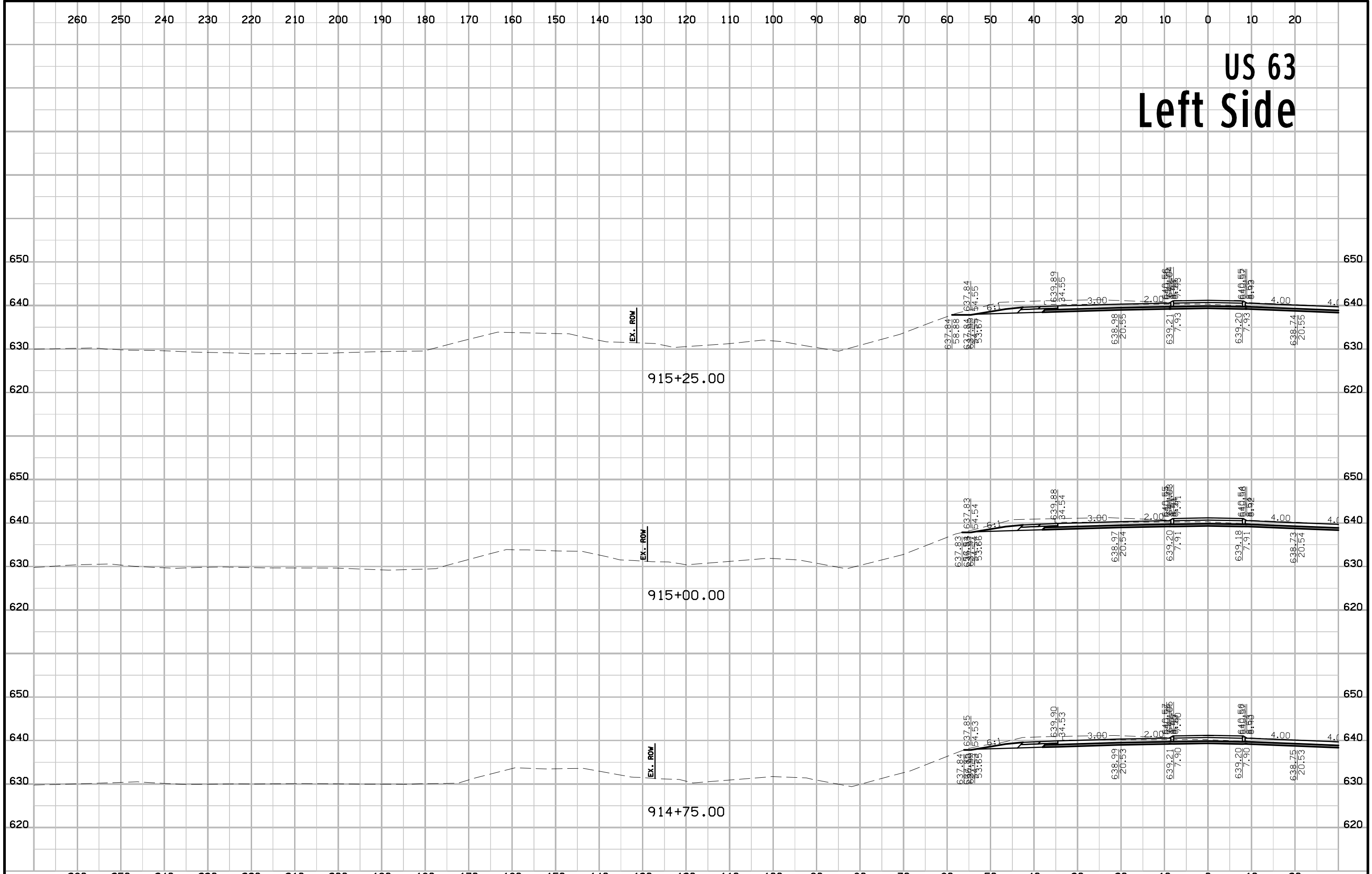
# US 63 Left Side



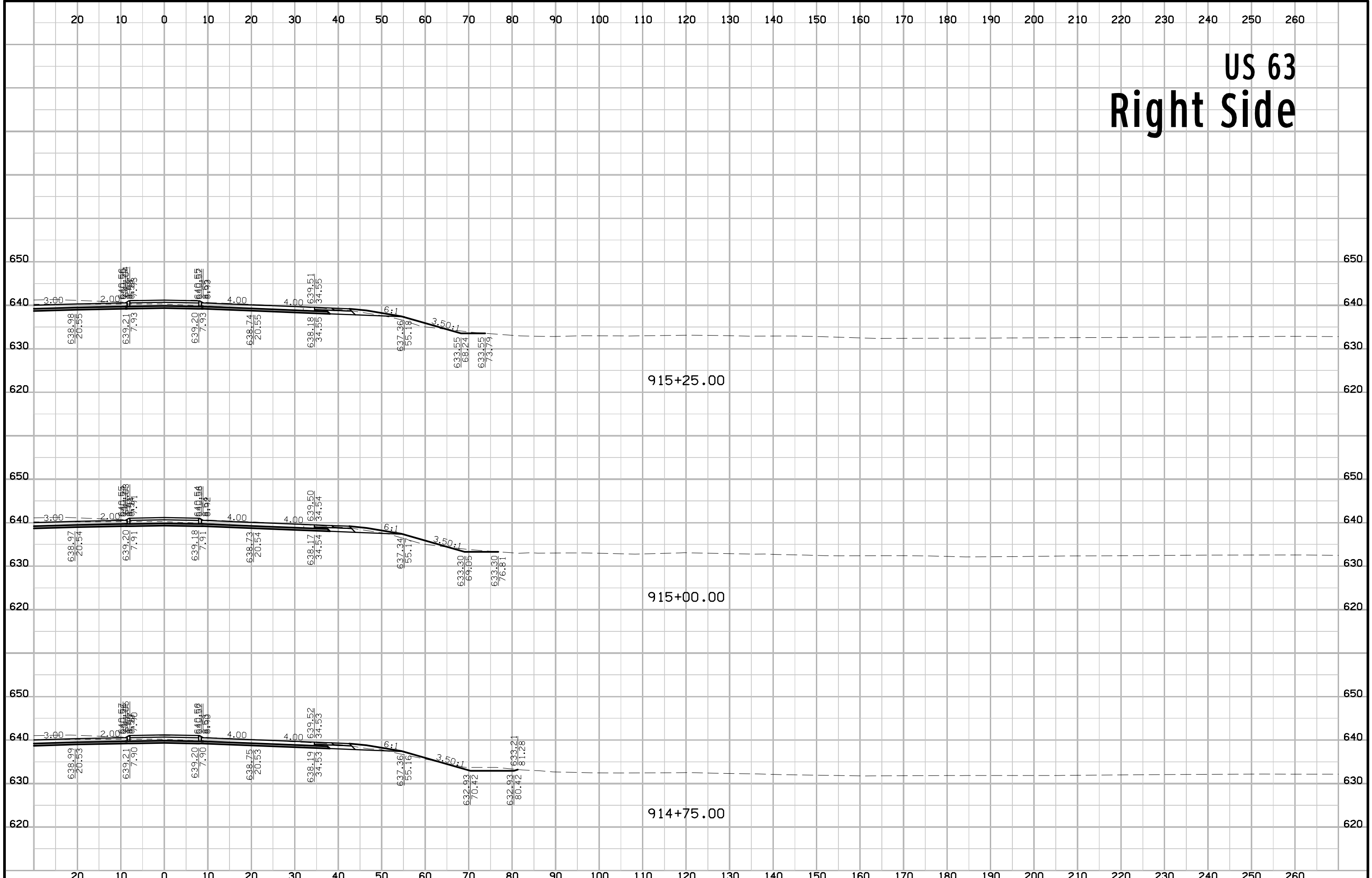
# US 63 Right Side



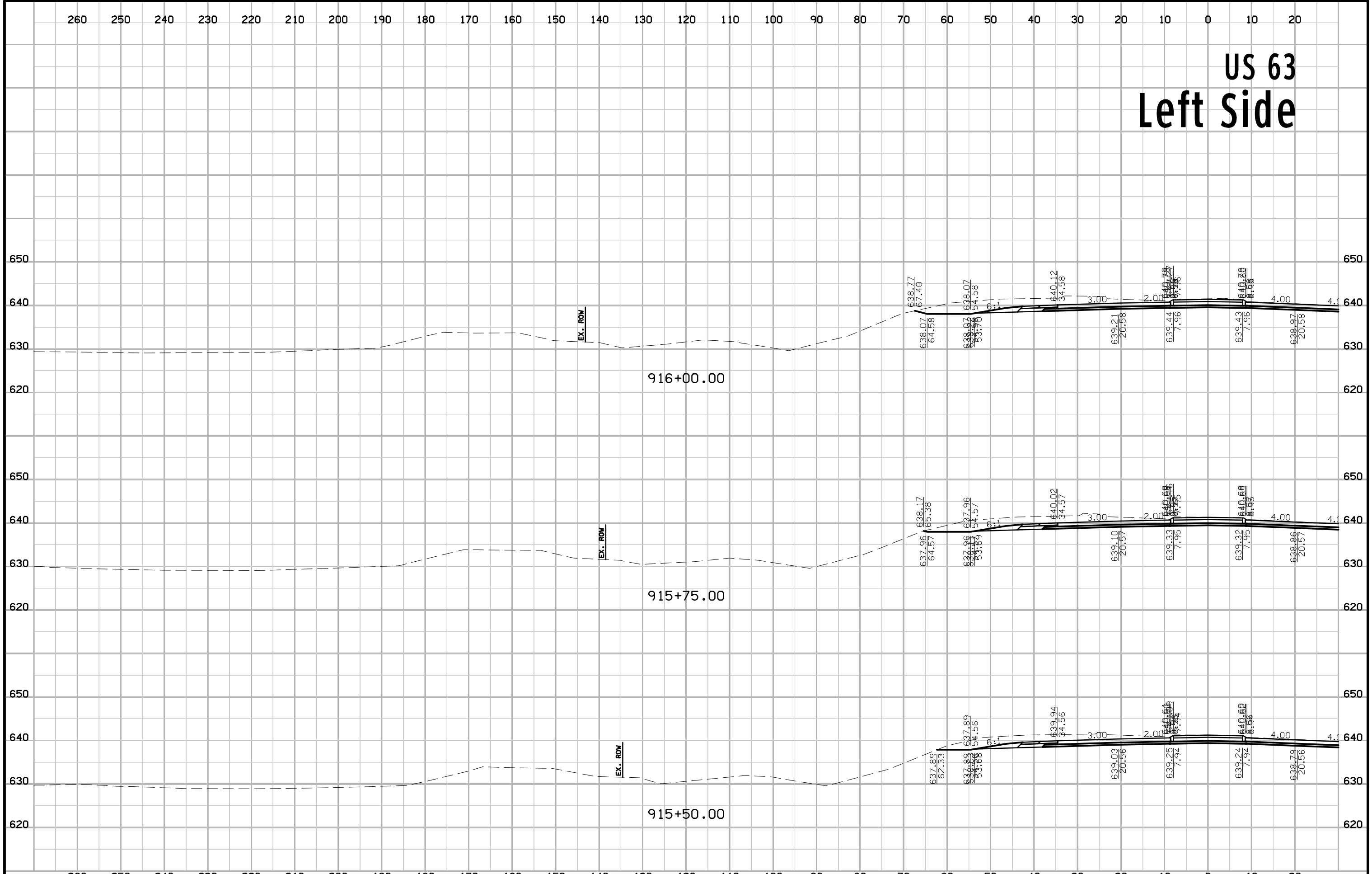
# US 63 Left Side



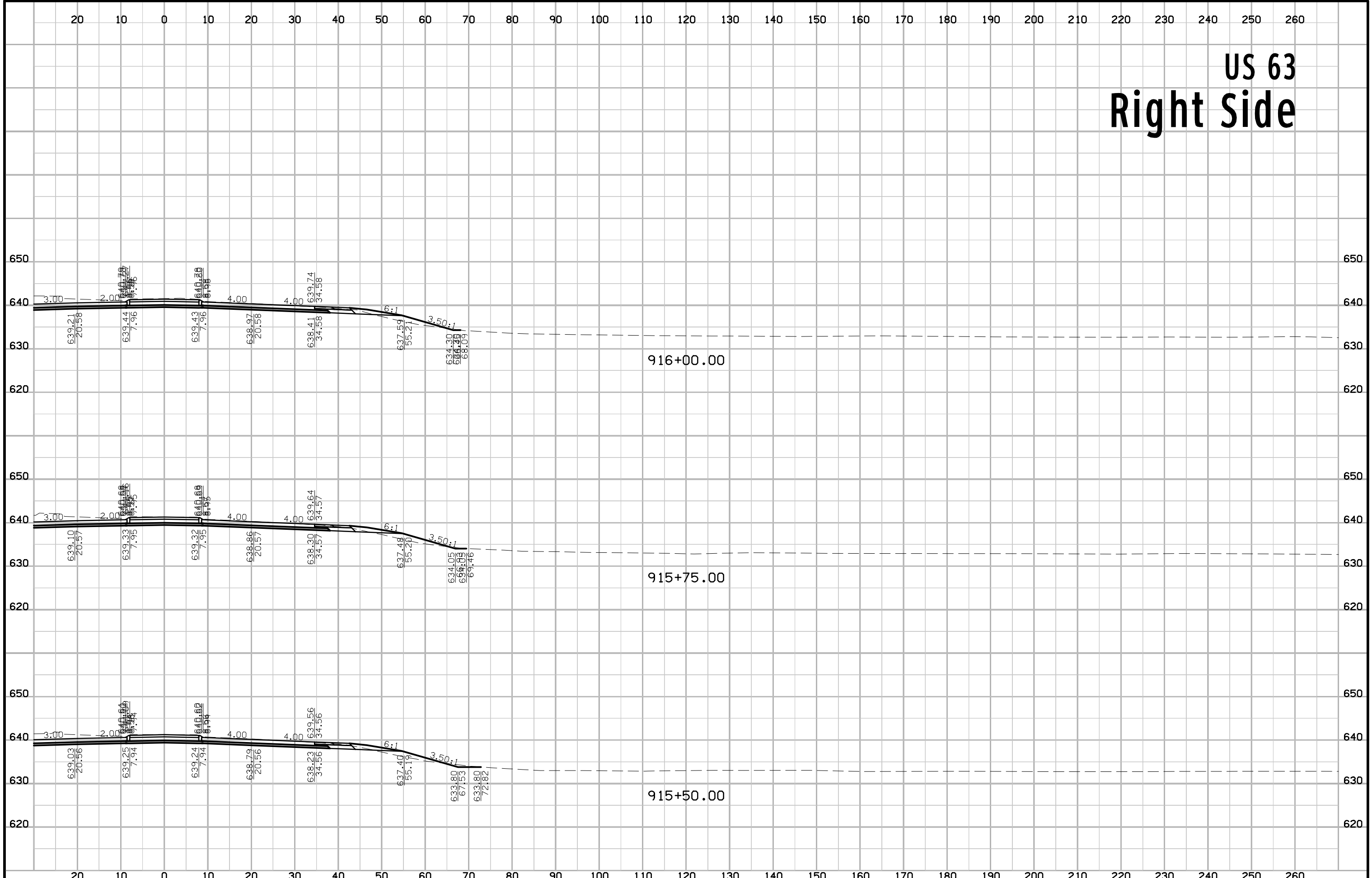
# US 63 Right Side



# US 63 Left Side

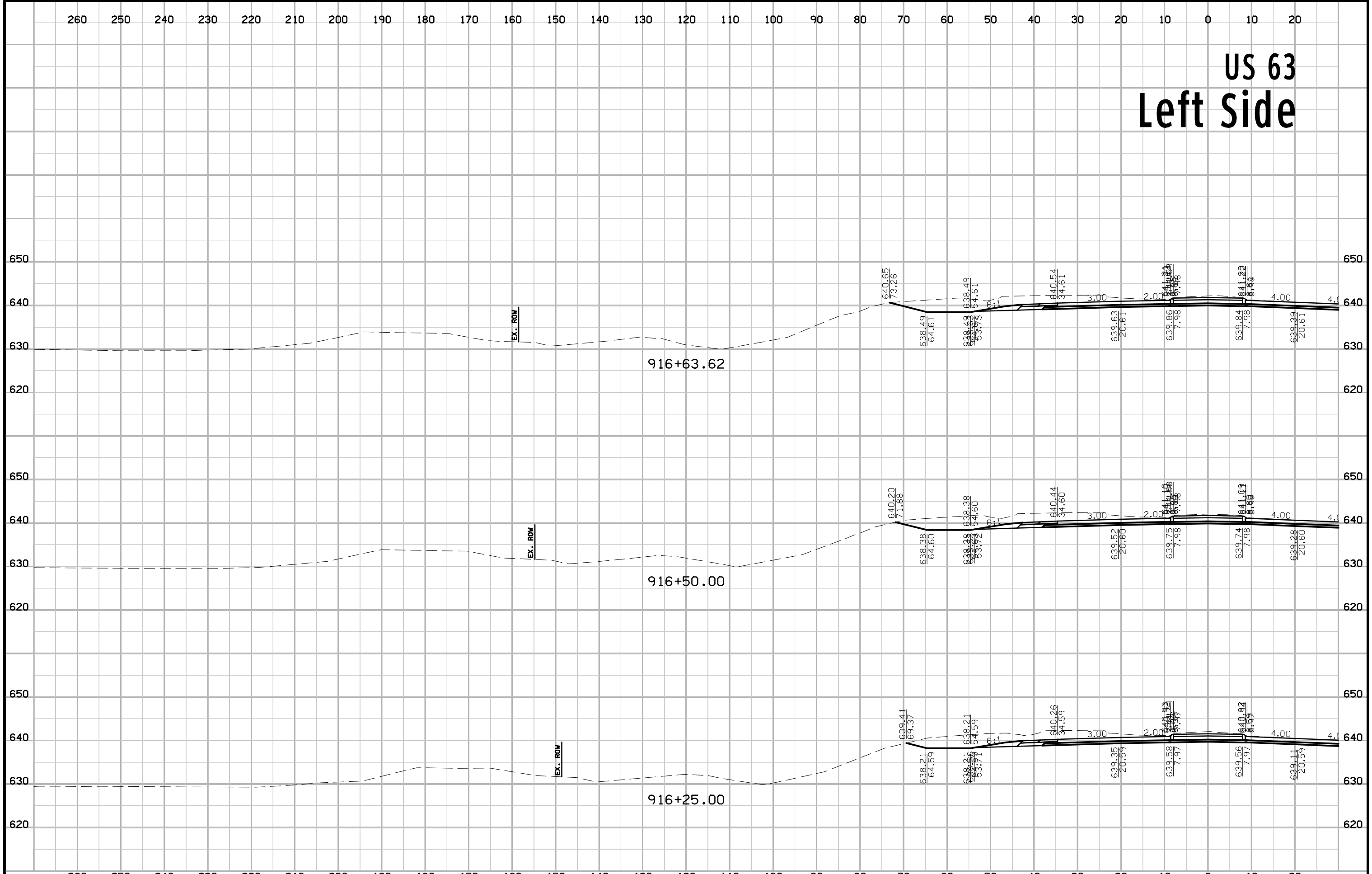


# US 63 Right Side

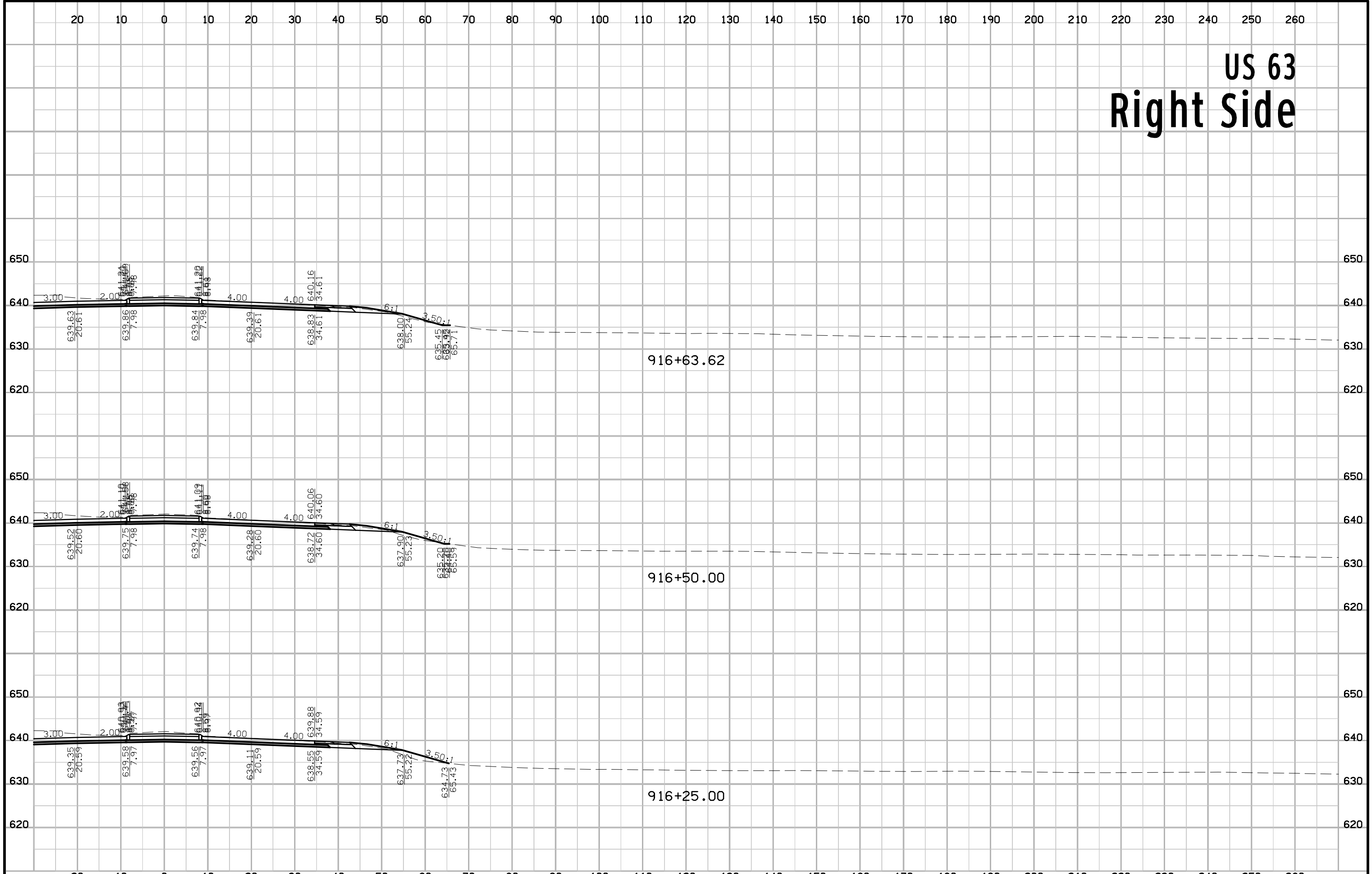




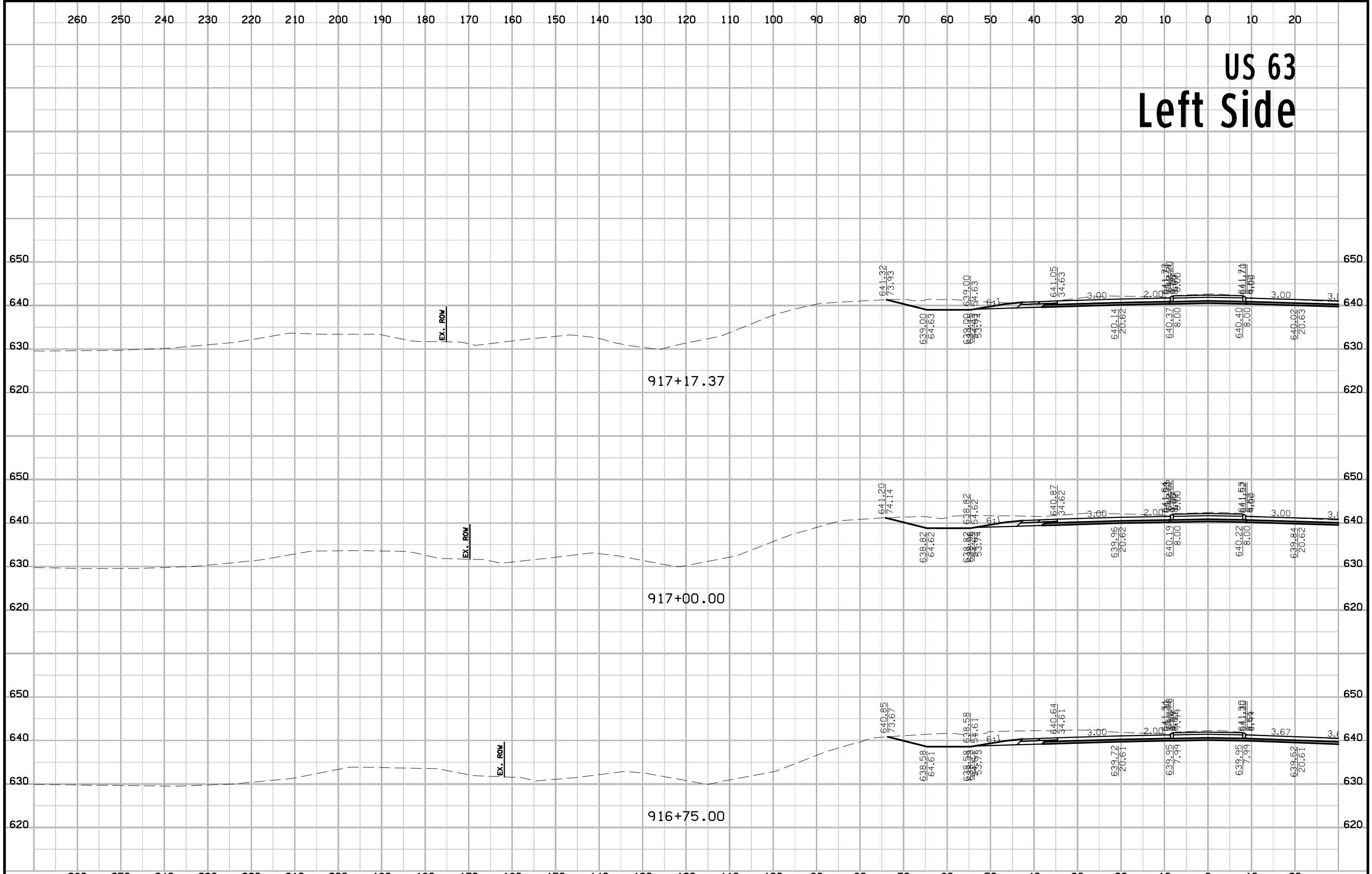
# US 63 Left Side



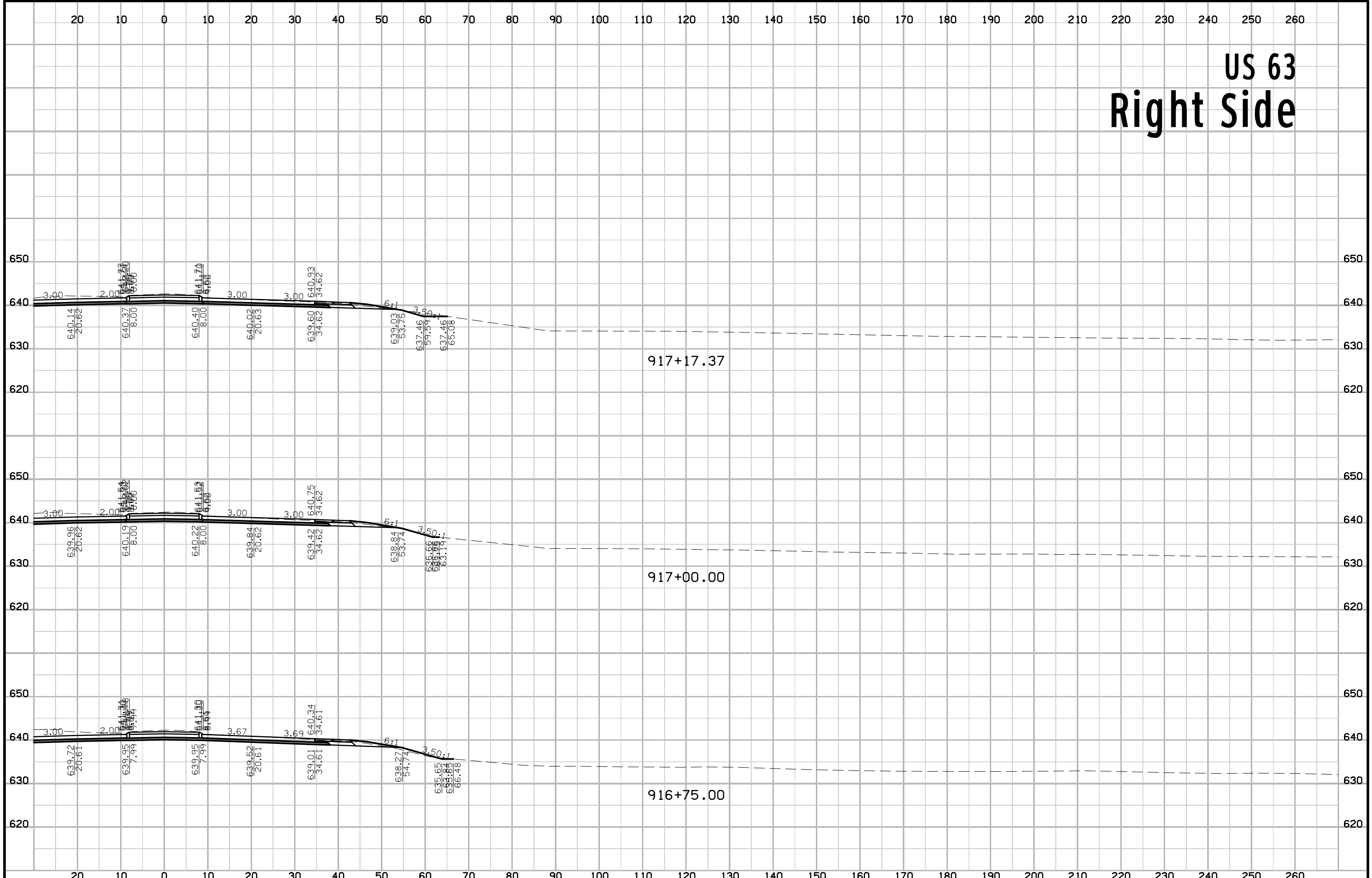
# US 63 Right Side



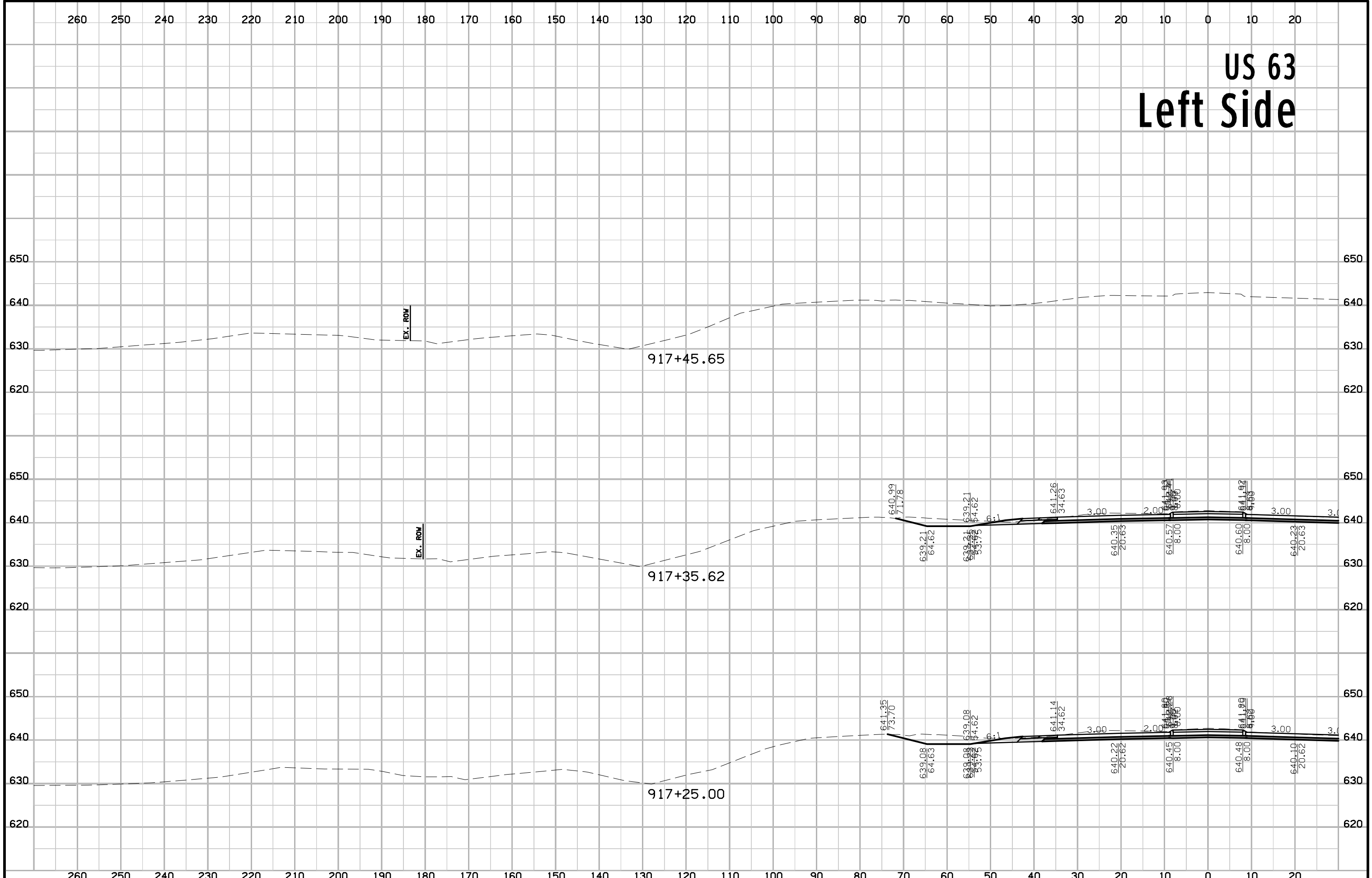
# US 63 Left Side



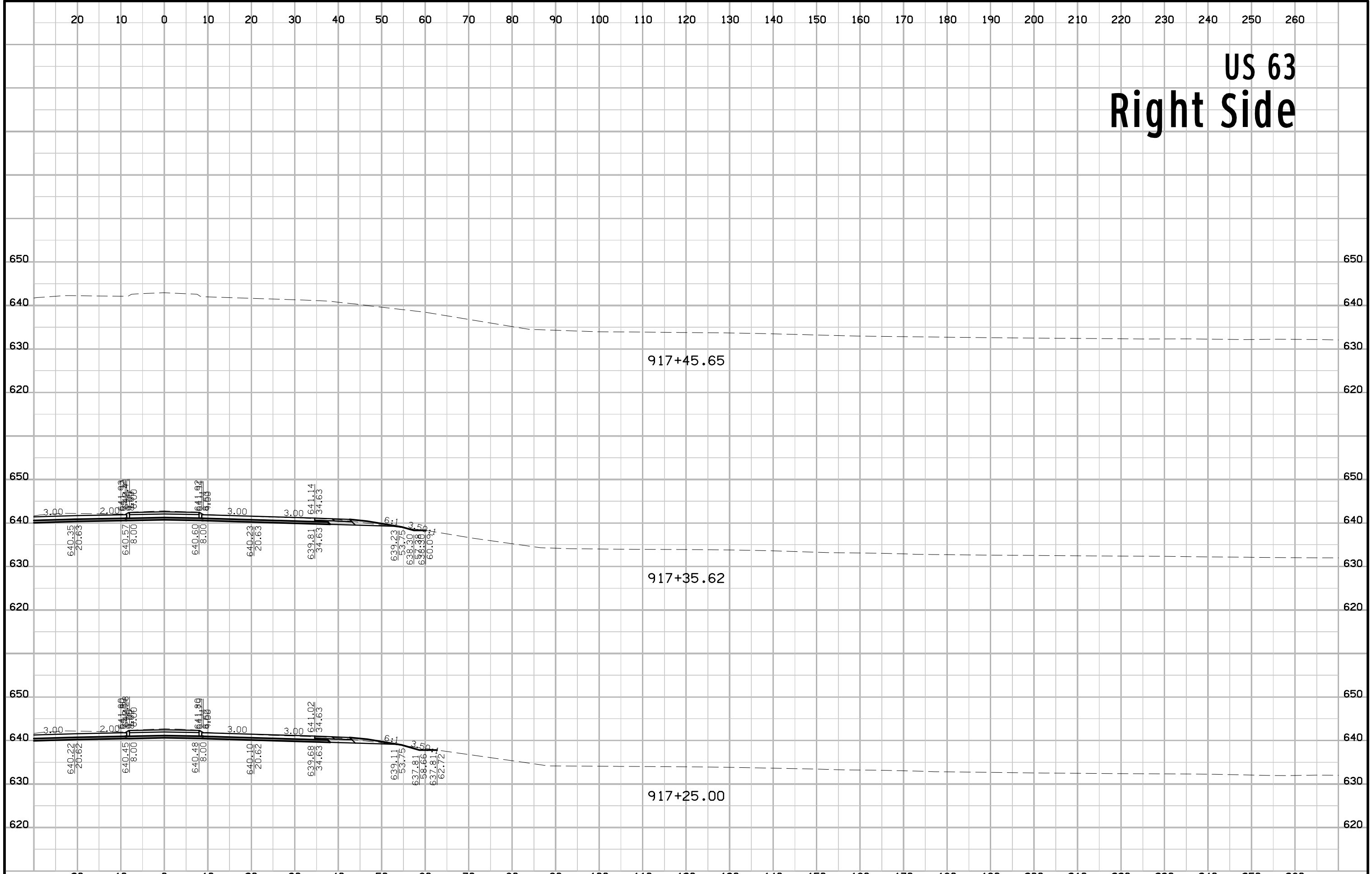
# US 63 Right Side



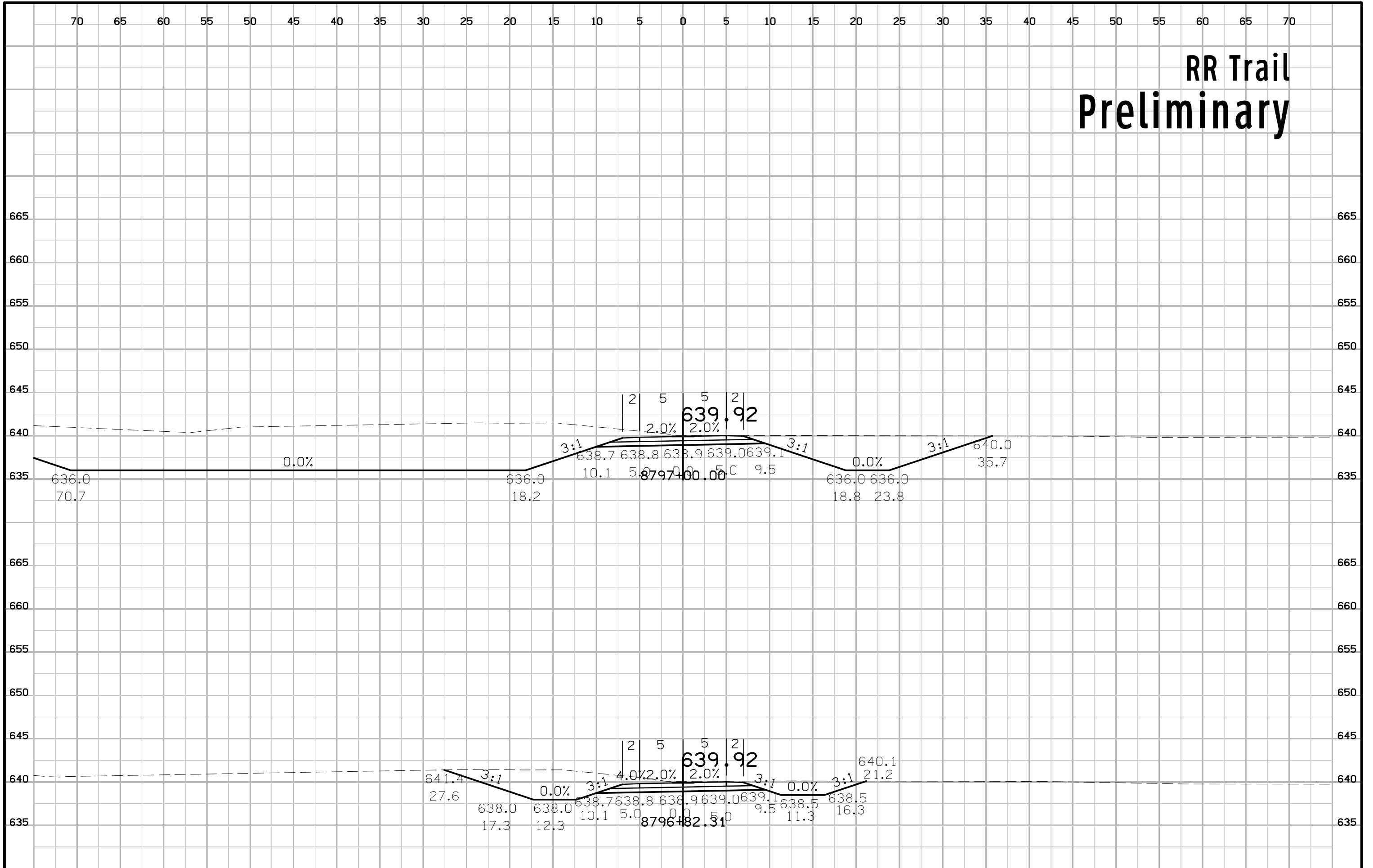
# US 63 Left Side



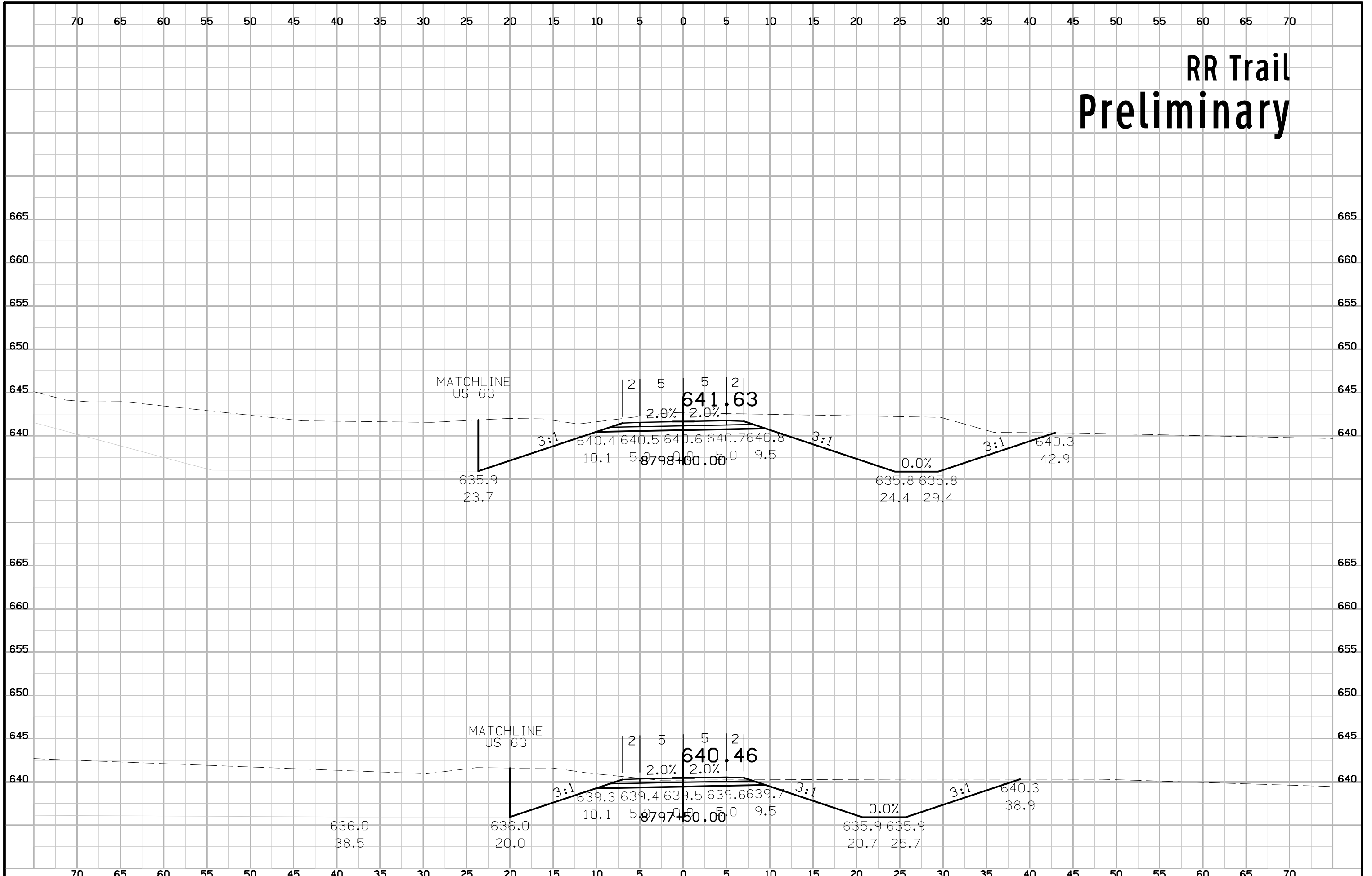
# US 63 Right Side



# RR Trail Preliminary

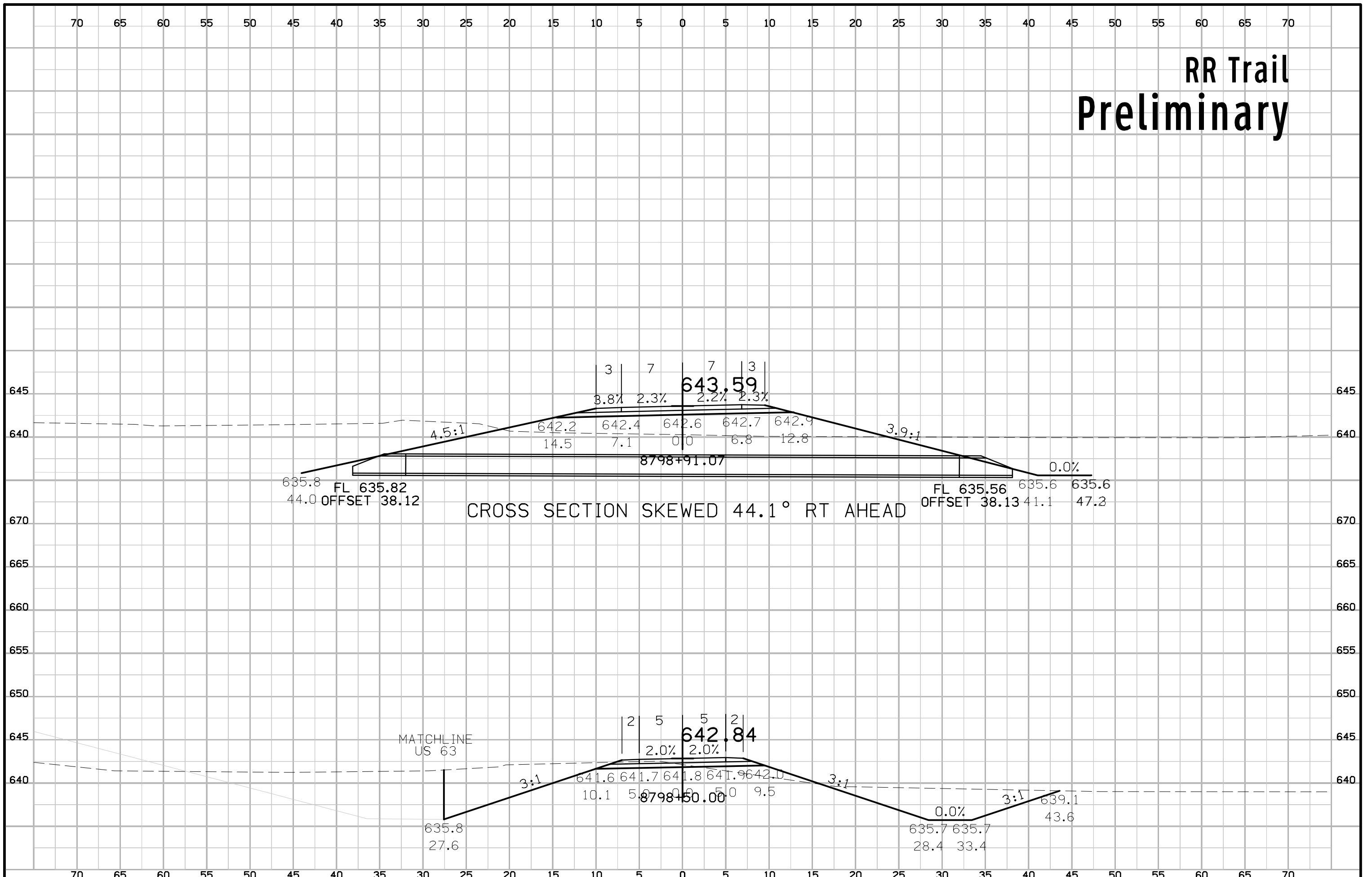


# RR Trail Preliminary

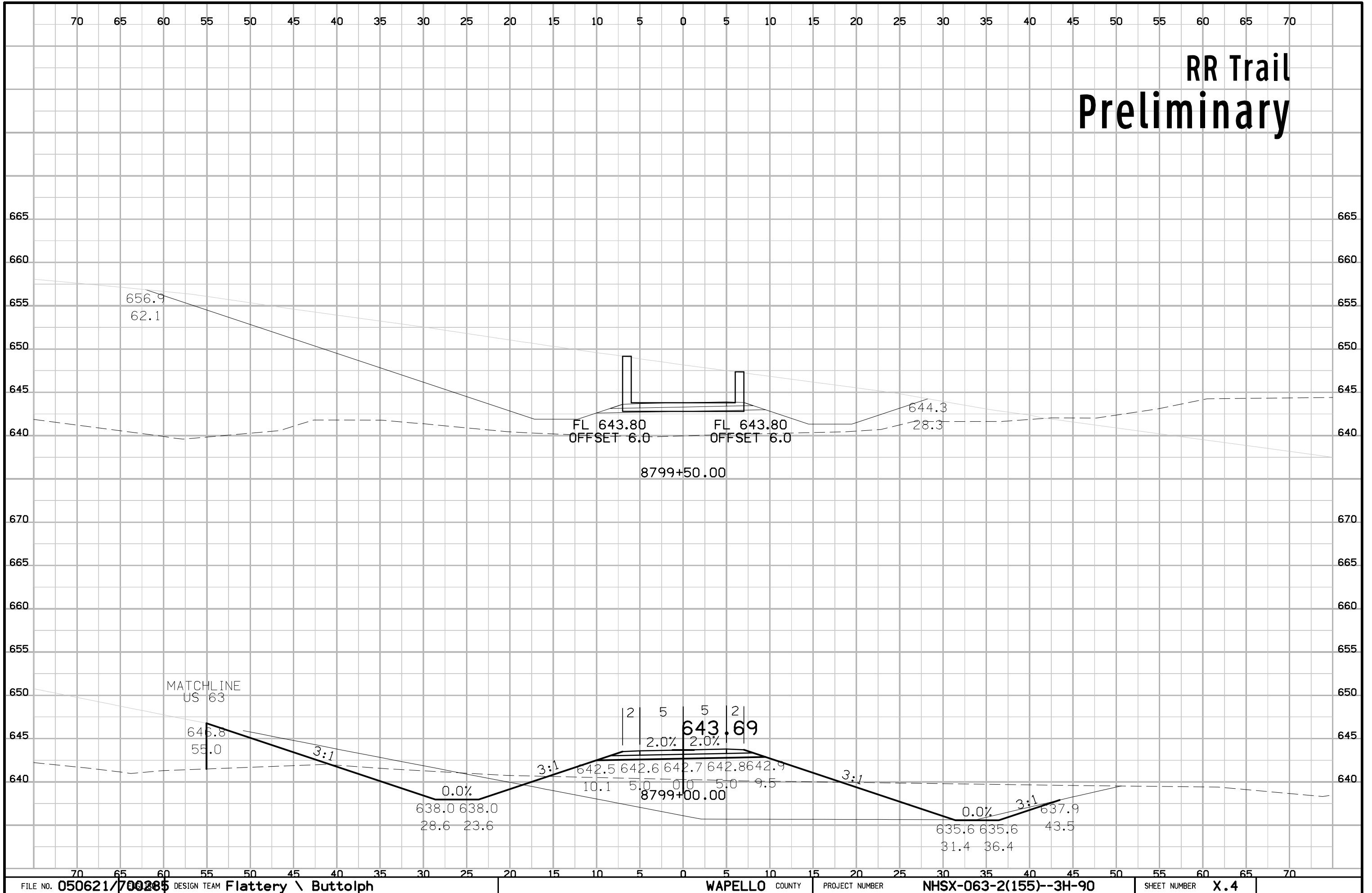




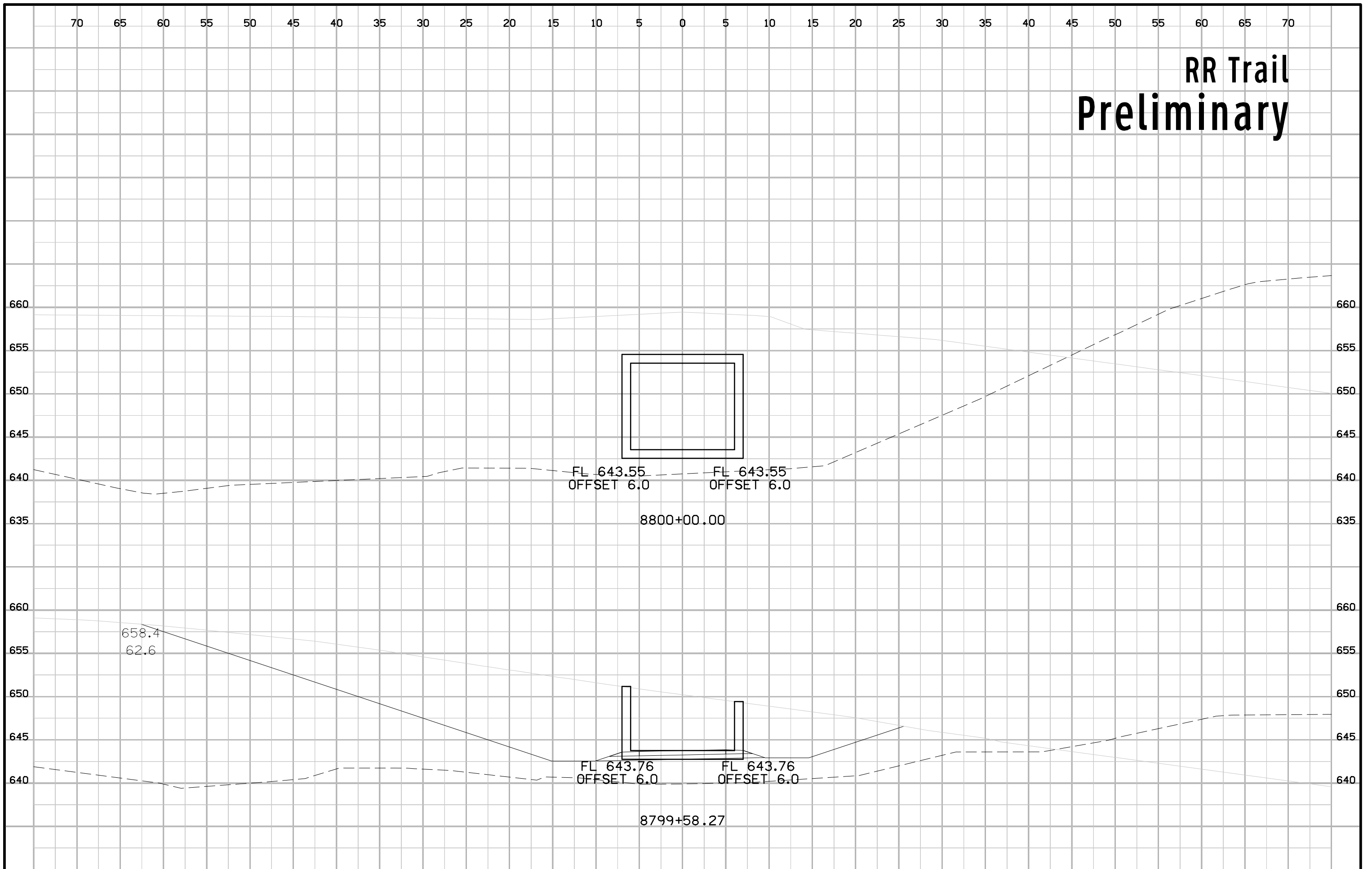
# RR Trail Preliminary



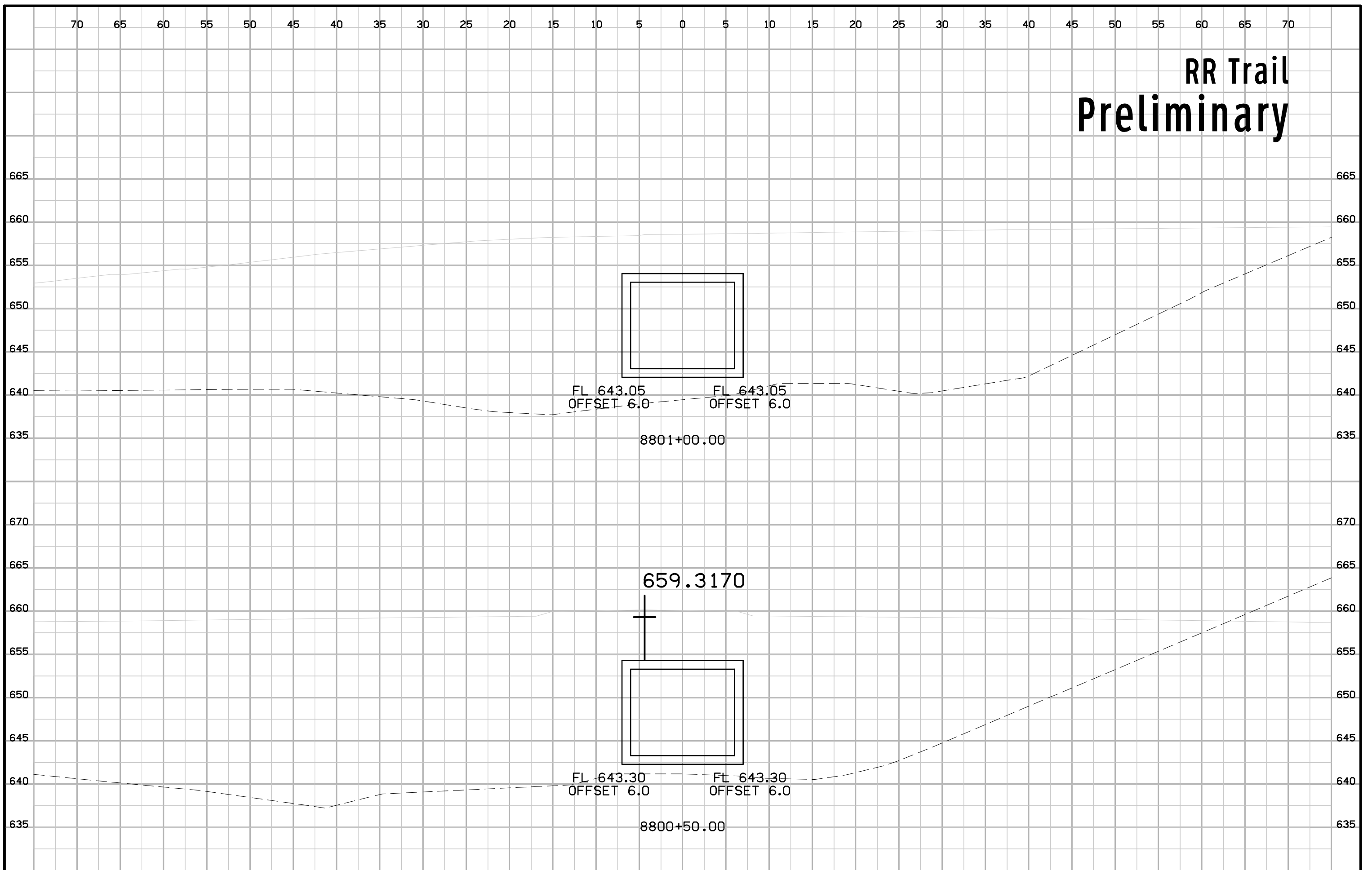
# RR Trail Preliminary



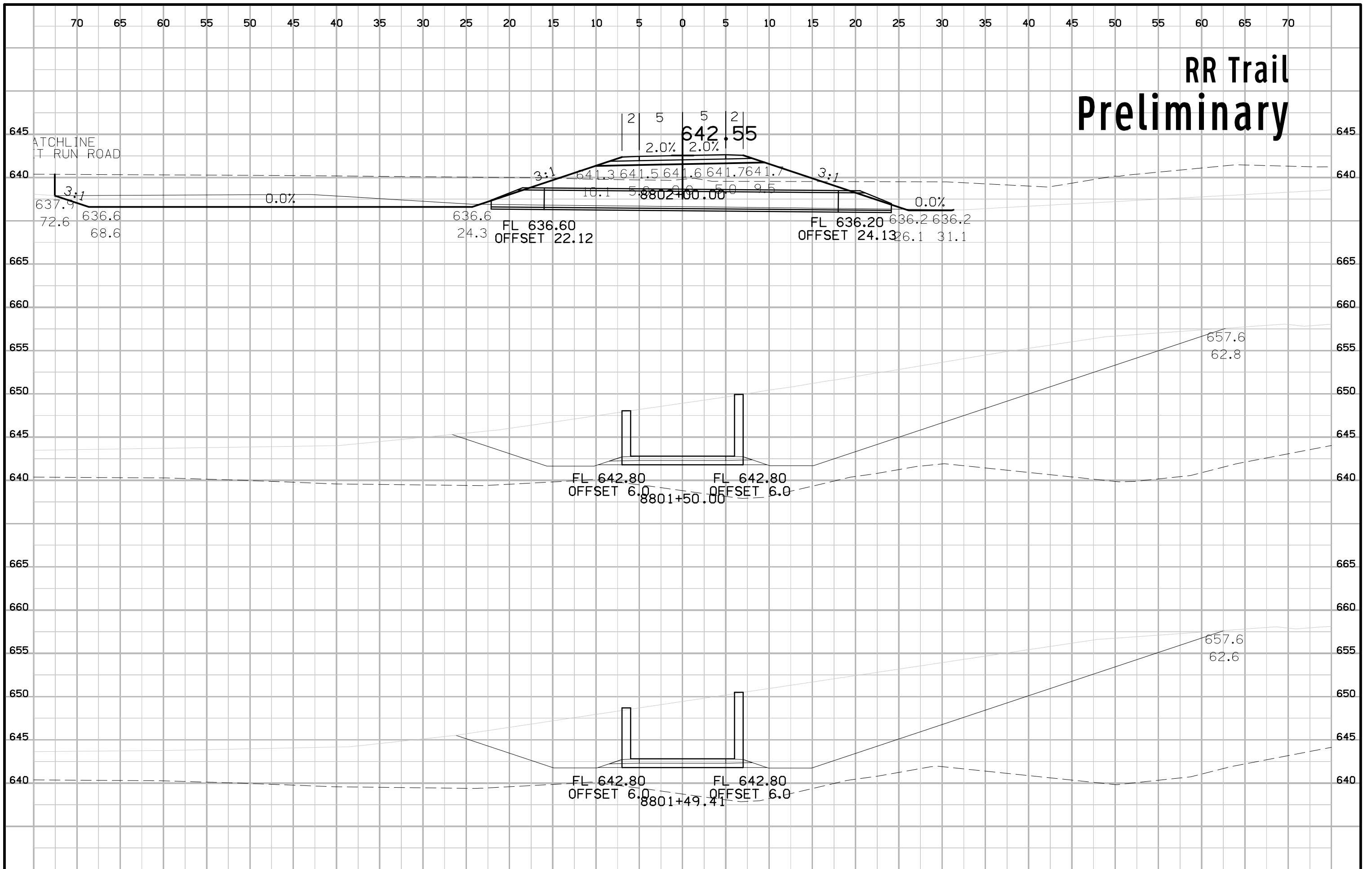
# RR Trail Preliminary



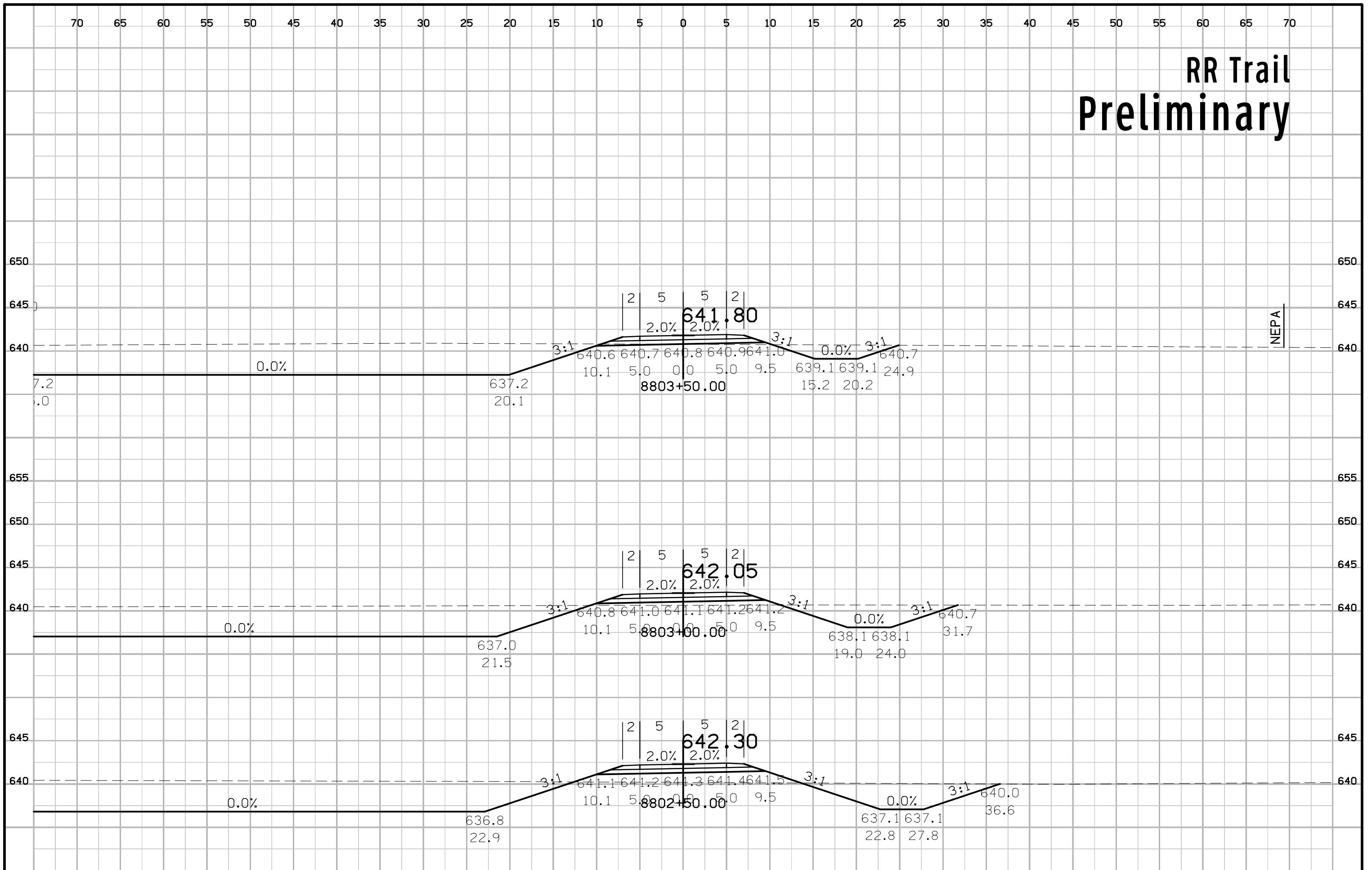
# RR Trail Preliminary



# RR Trail Preliminary

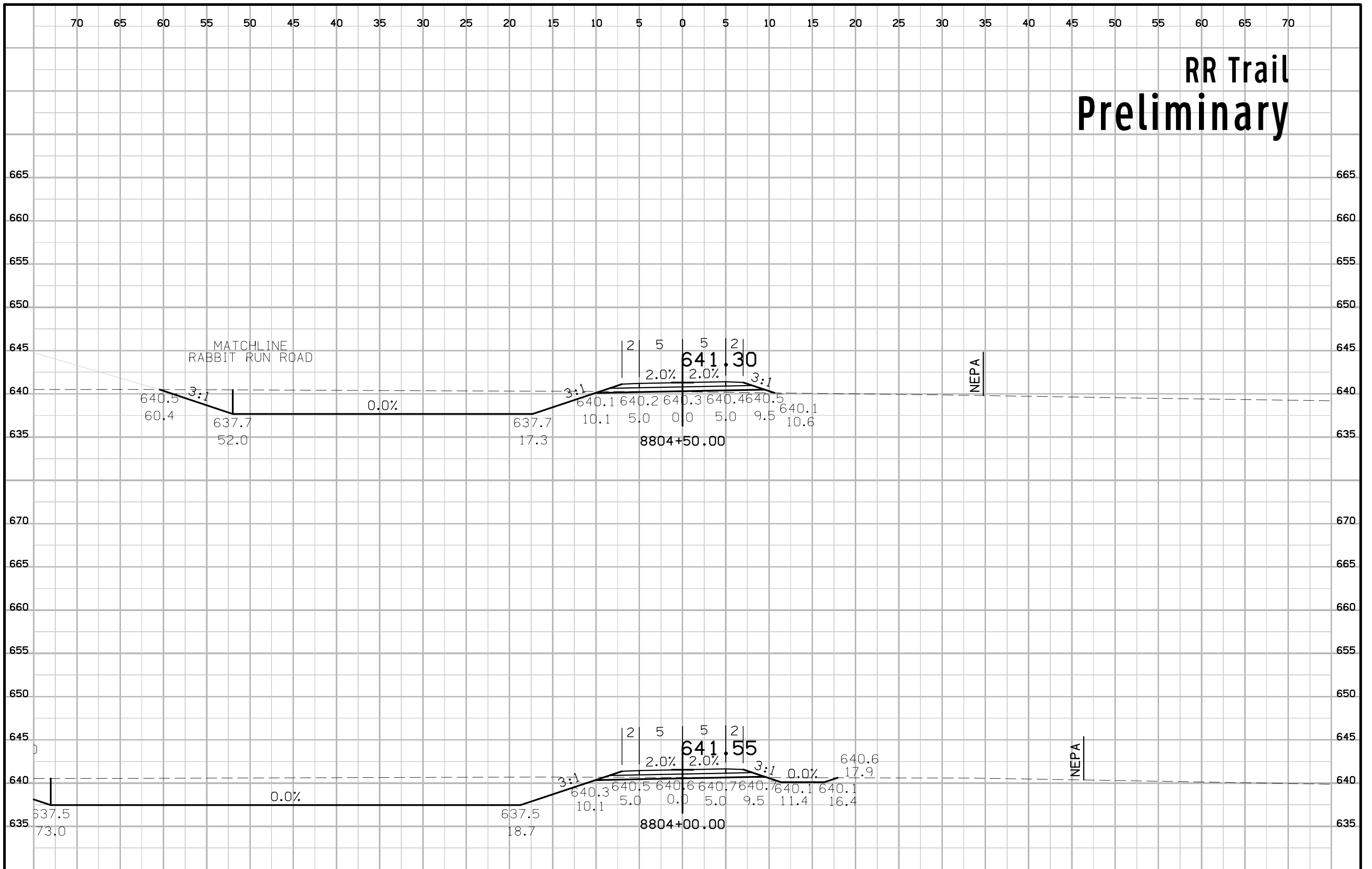


# RR Trail Preliminary

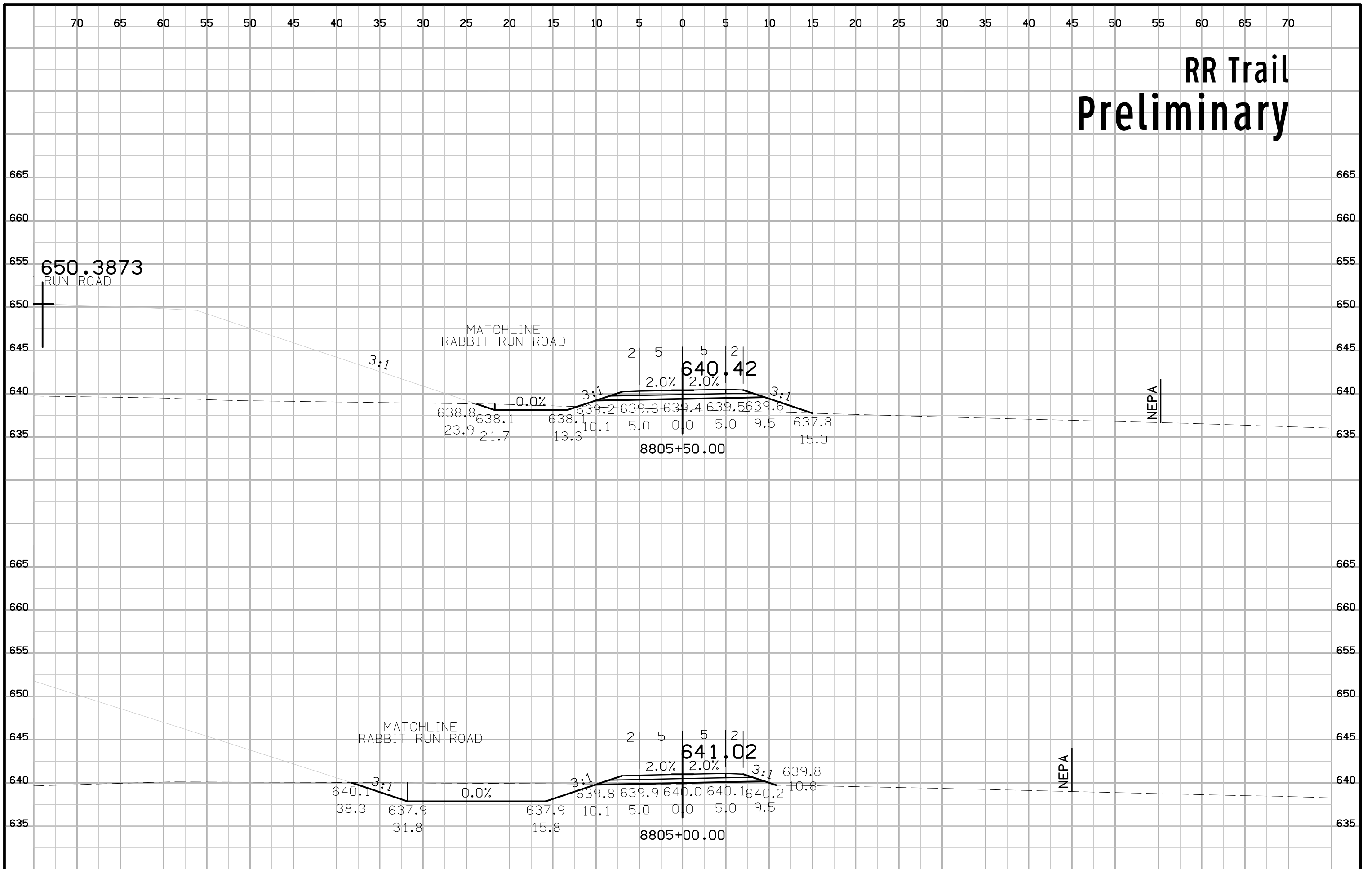


NEPA

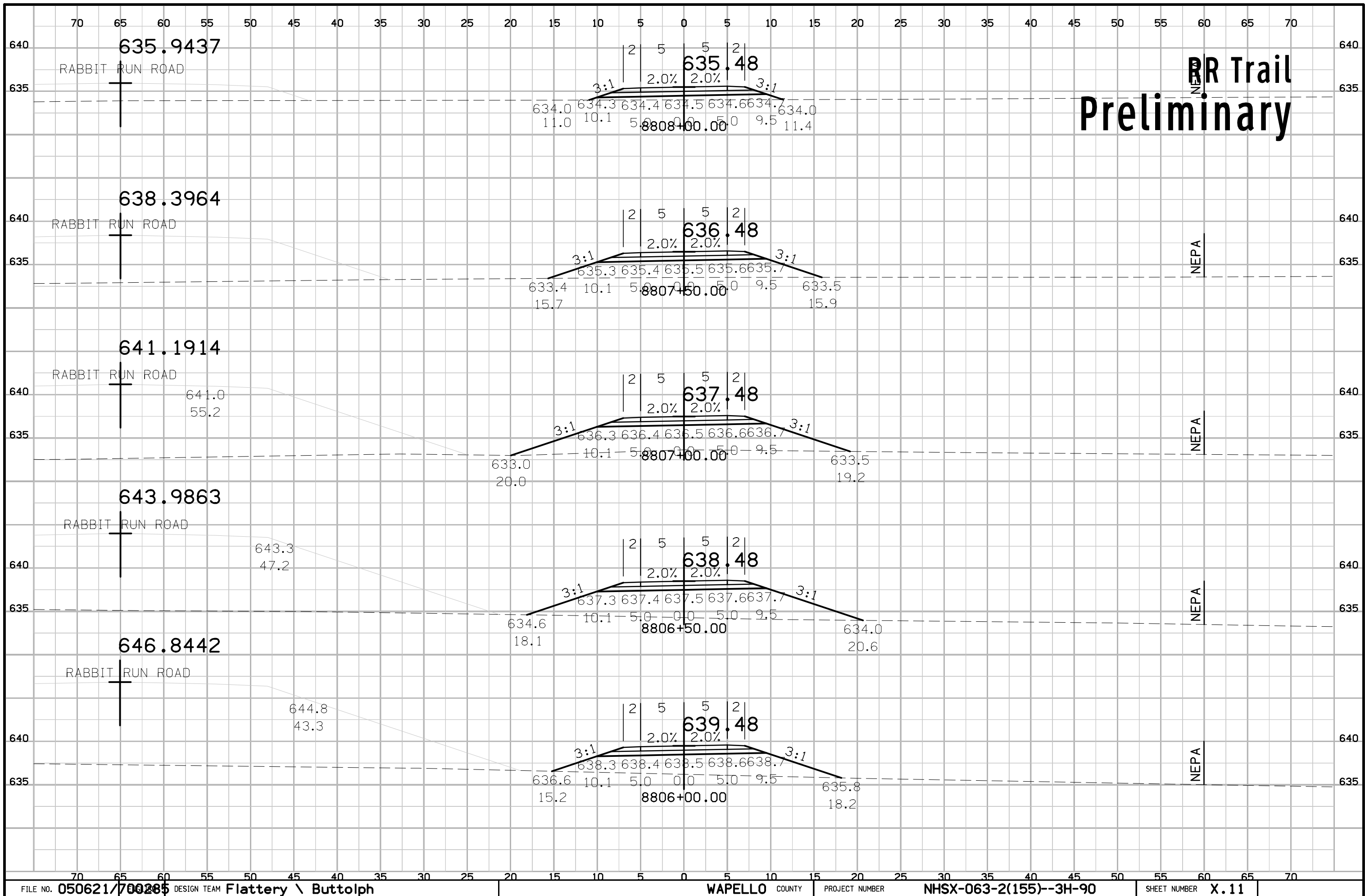
# RR Trail Preliminary



# RR Trail Preliminary

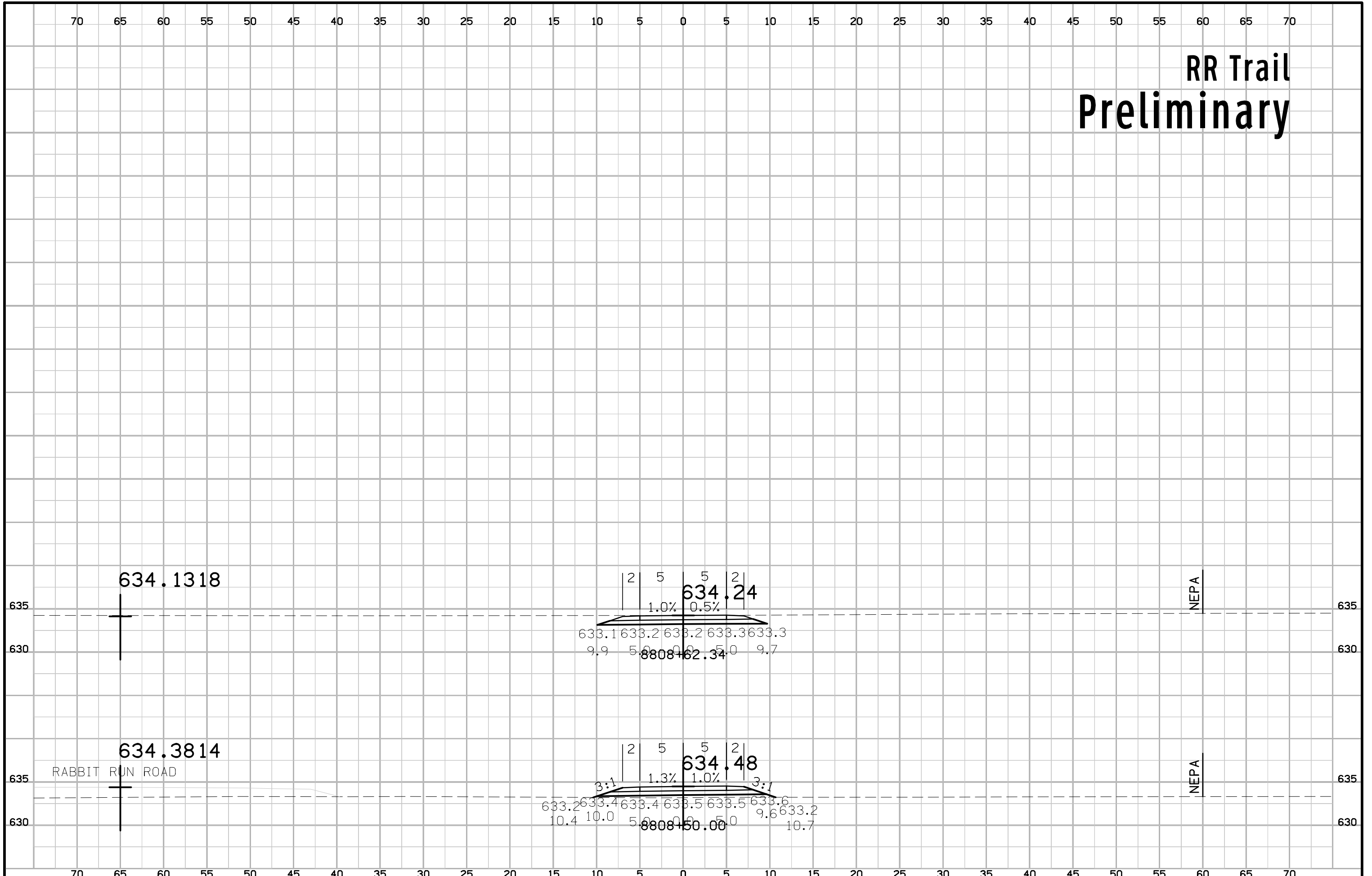


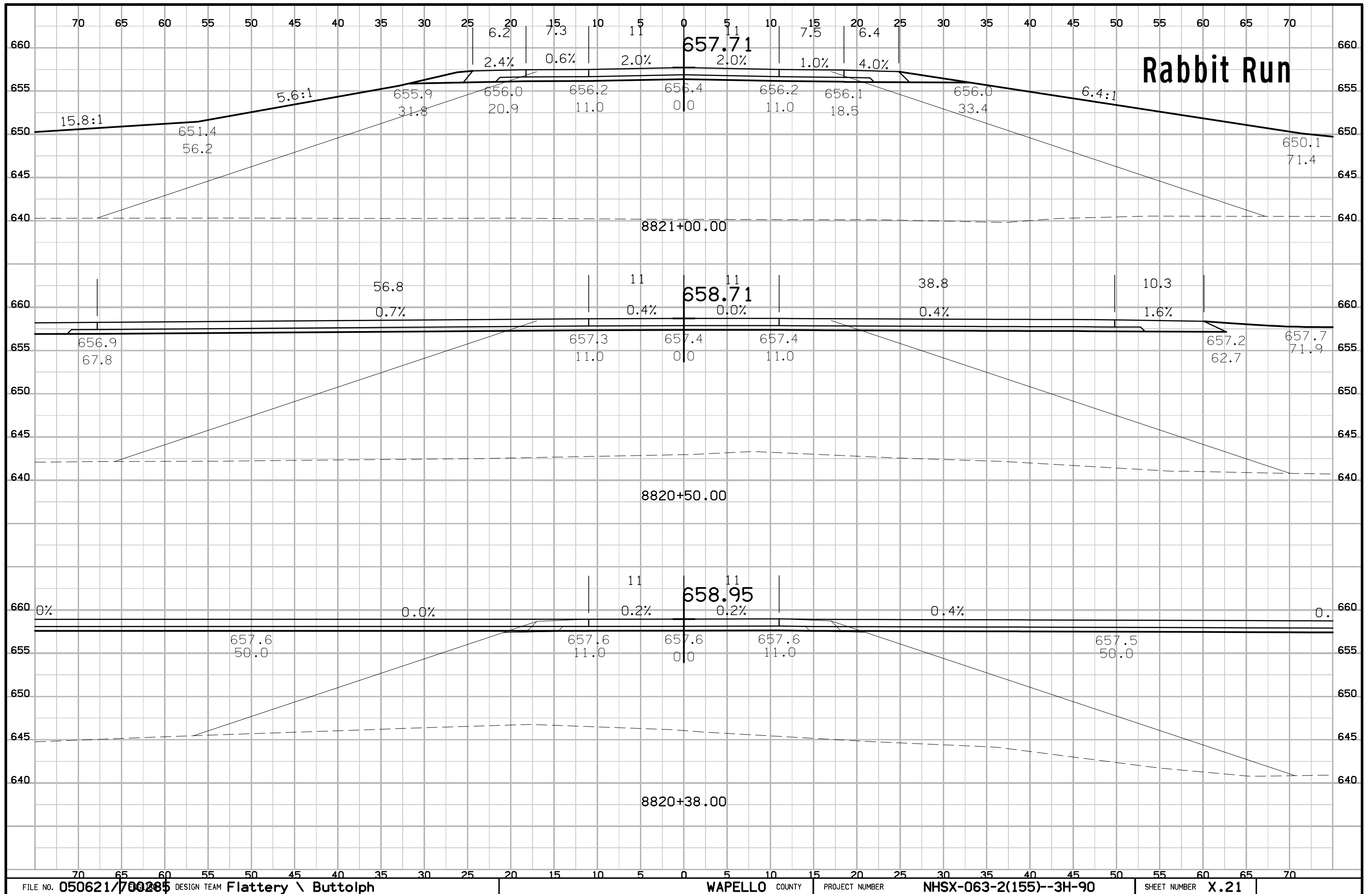




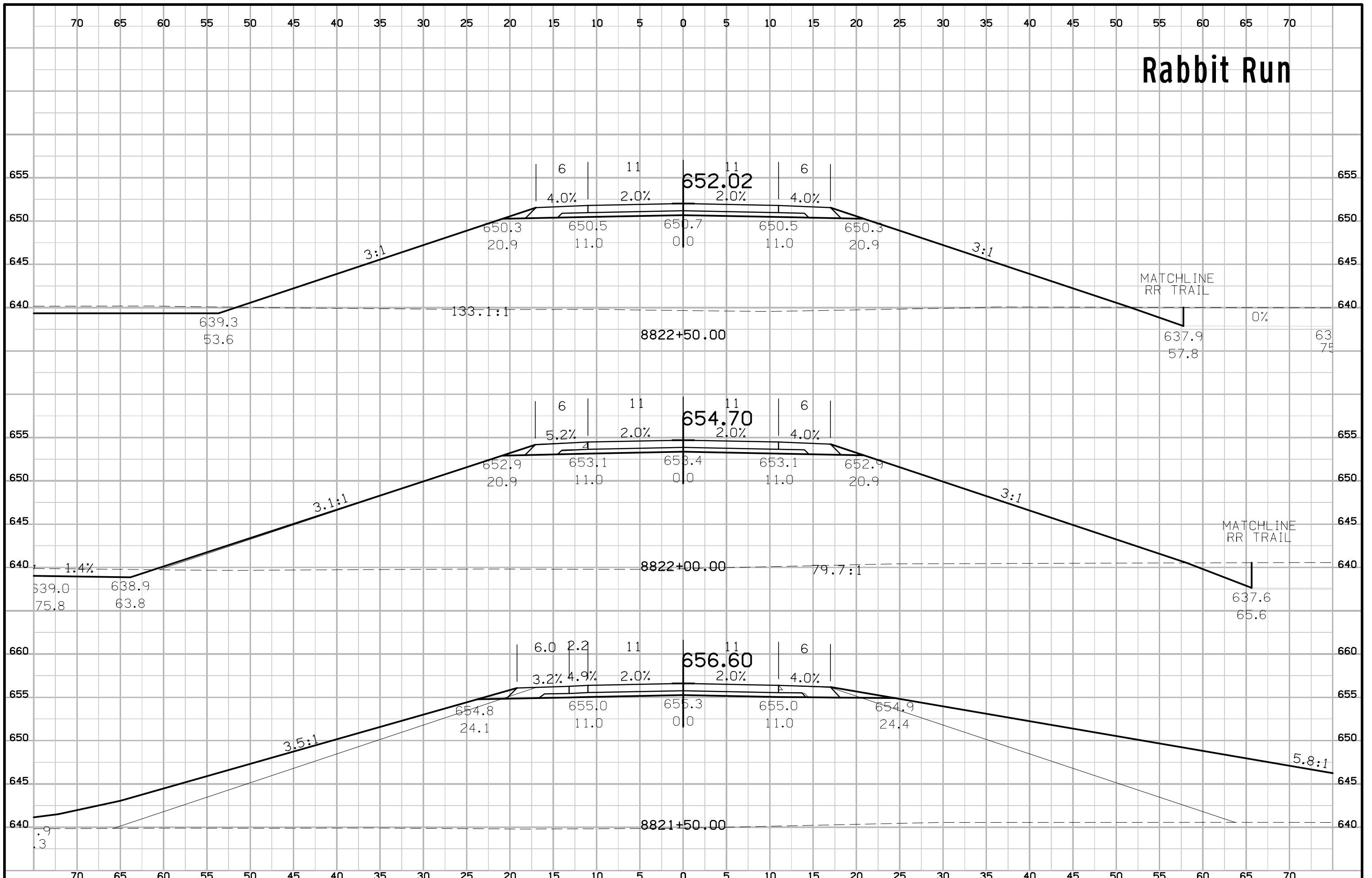
RR Trail  
Preliminary

# RR Trail Preliminary

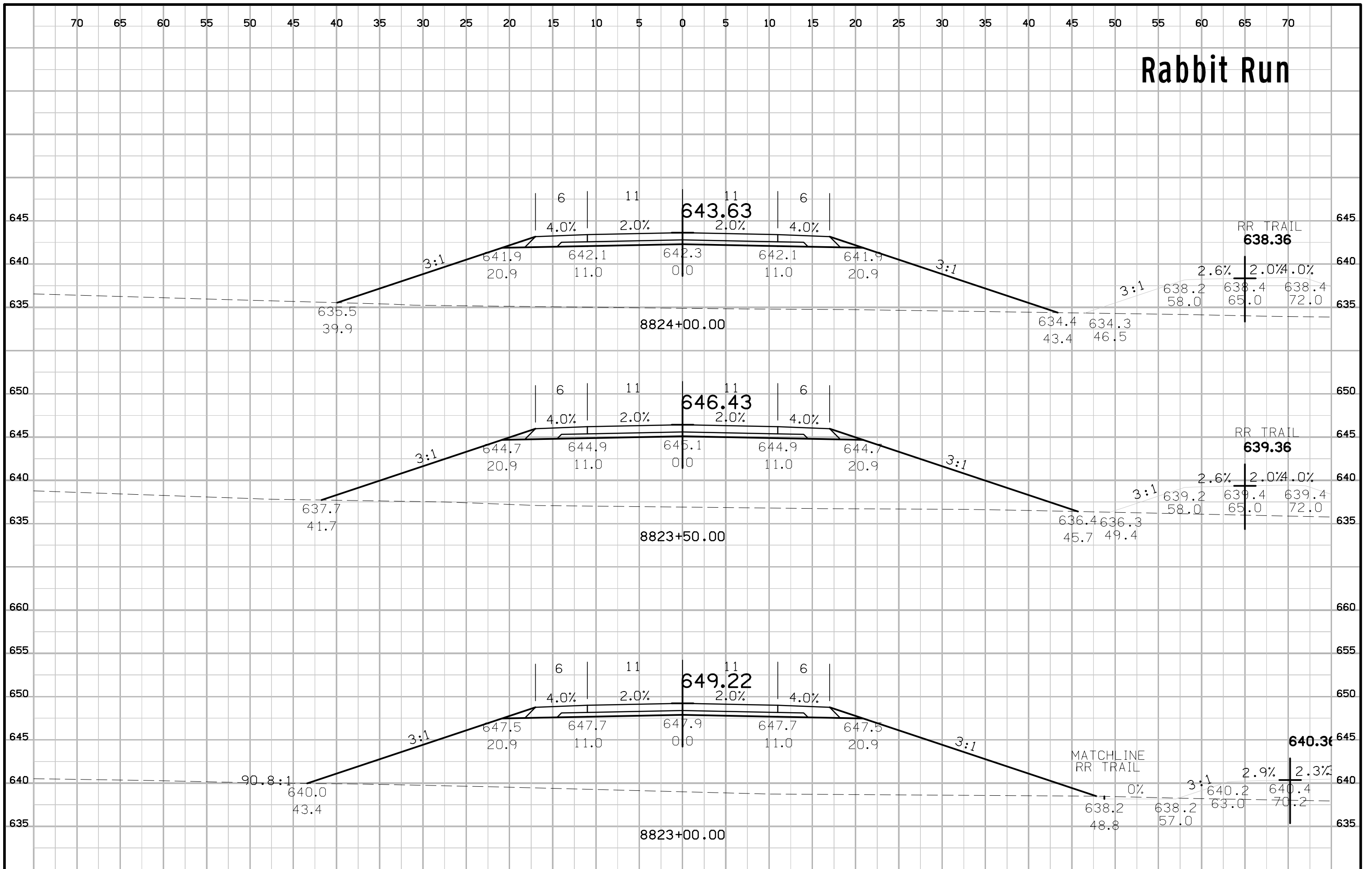


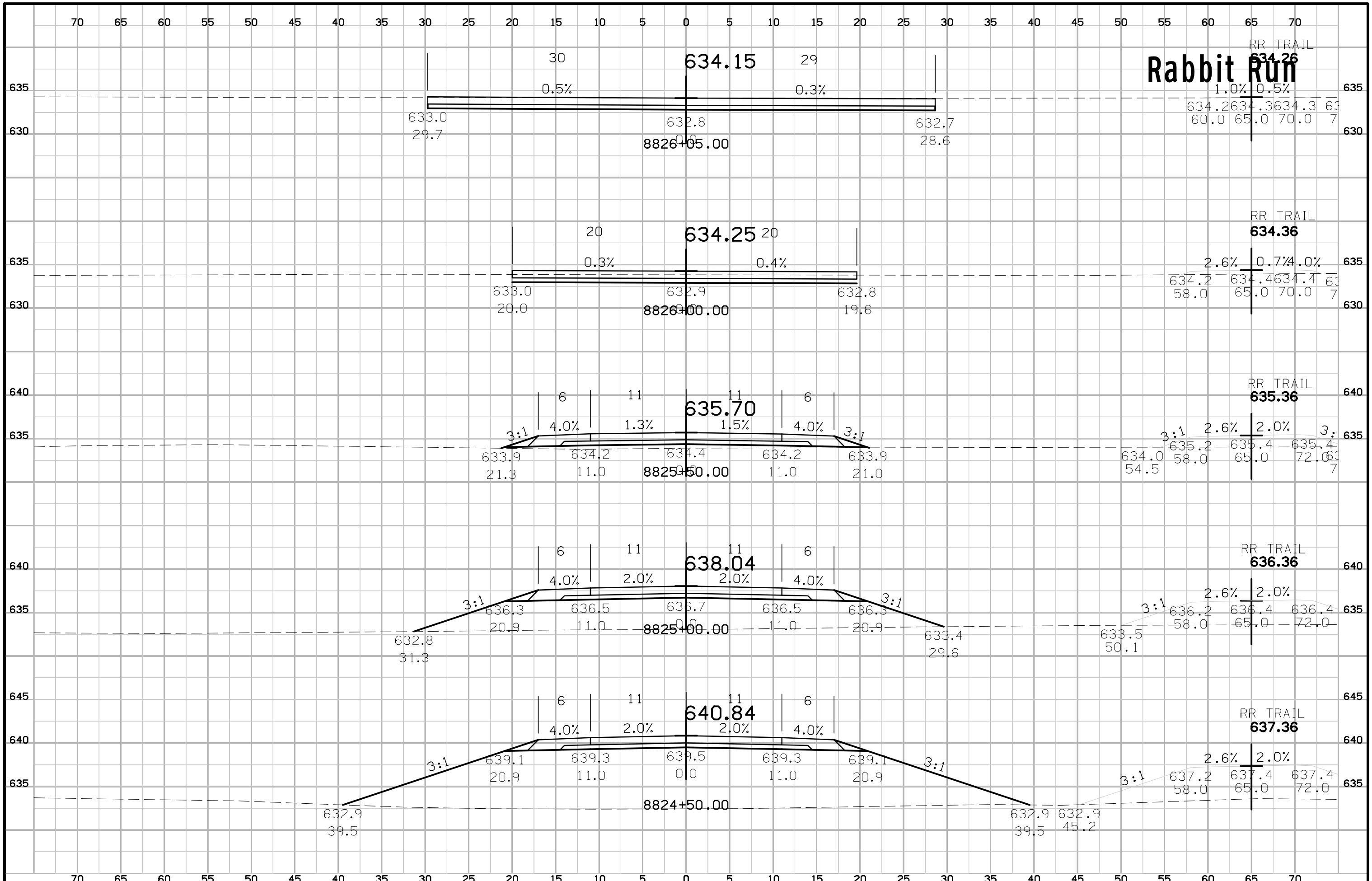


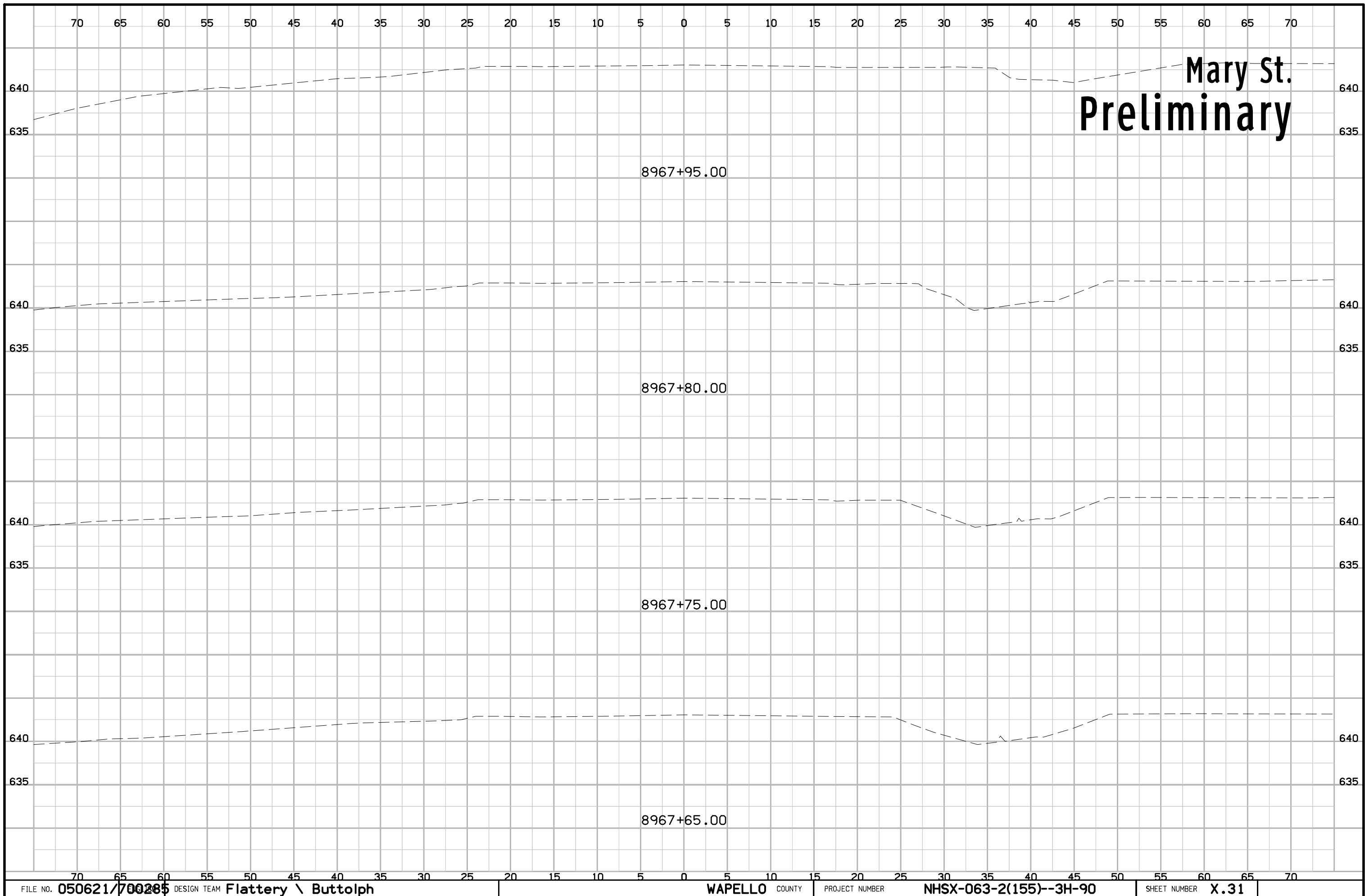
# Rabbit Run



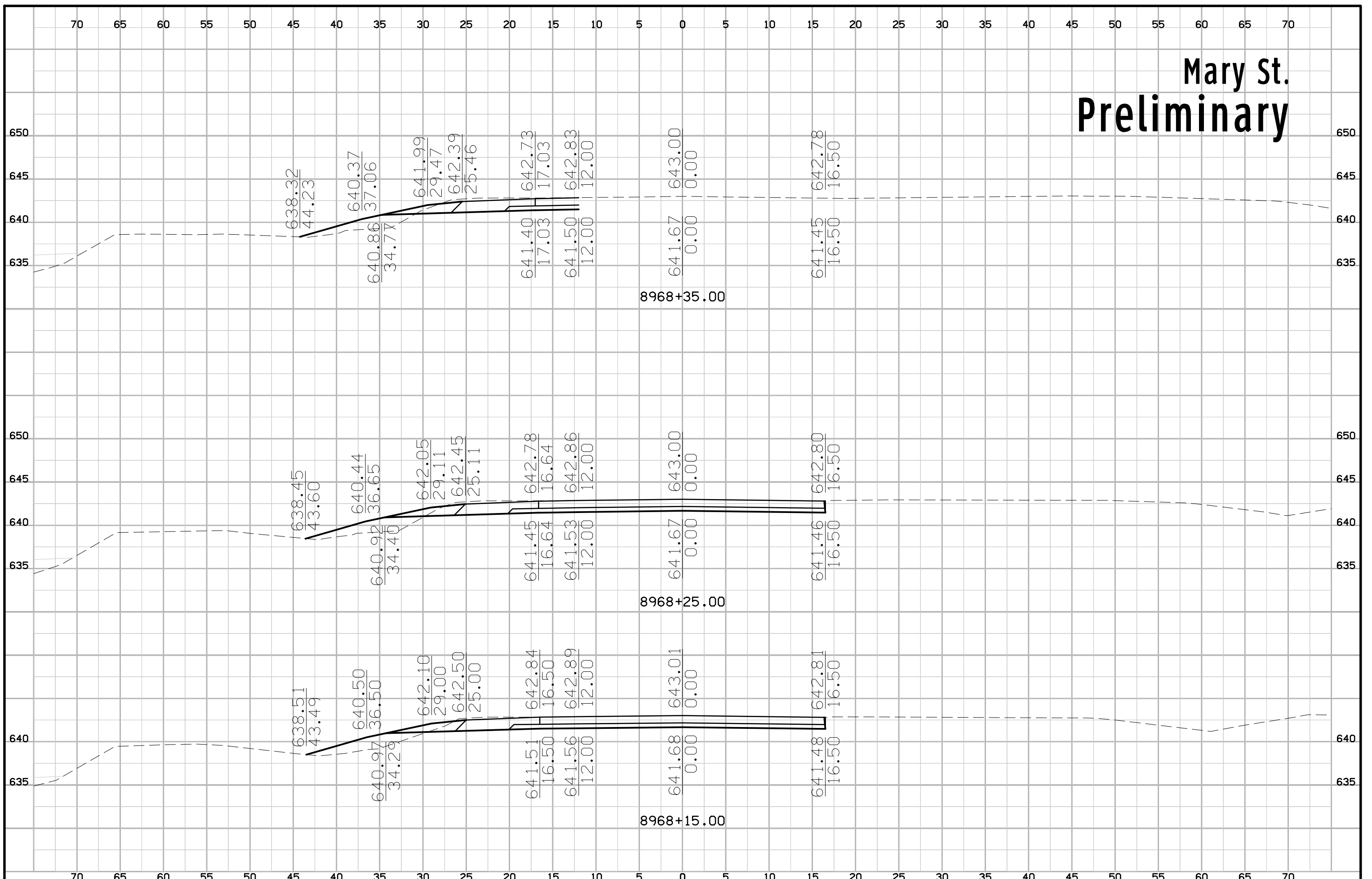
# Rabbit Run





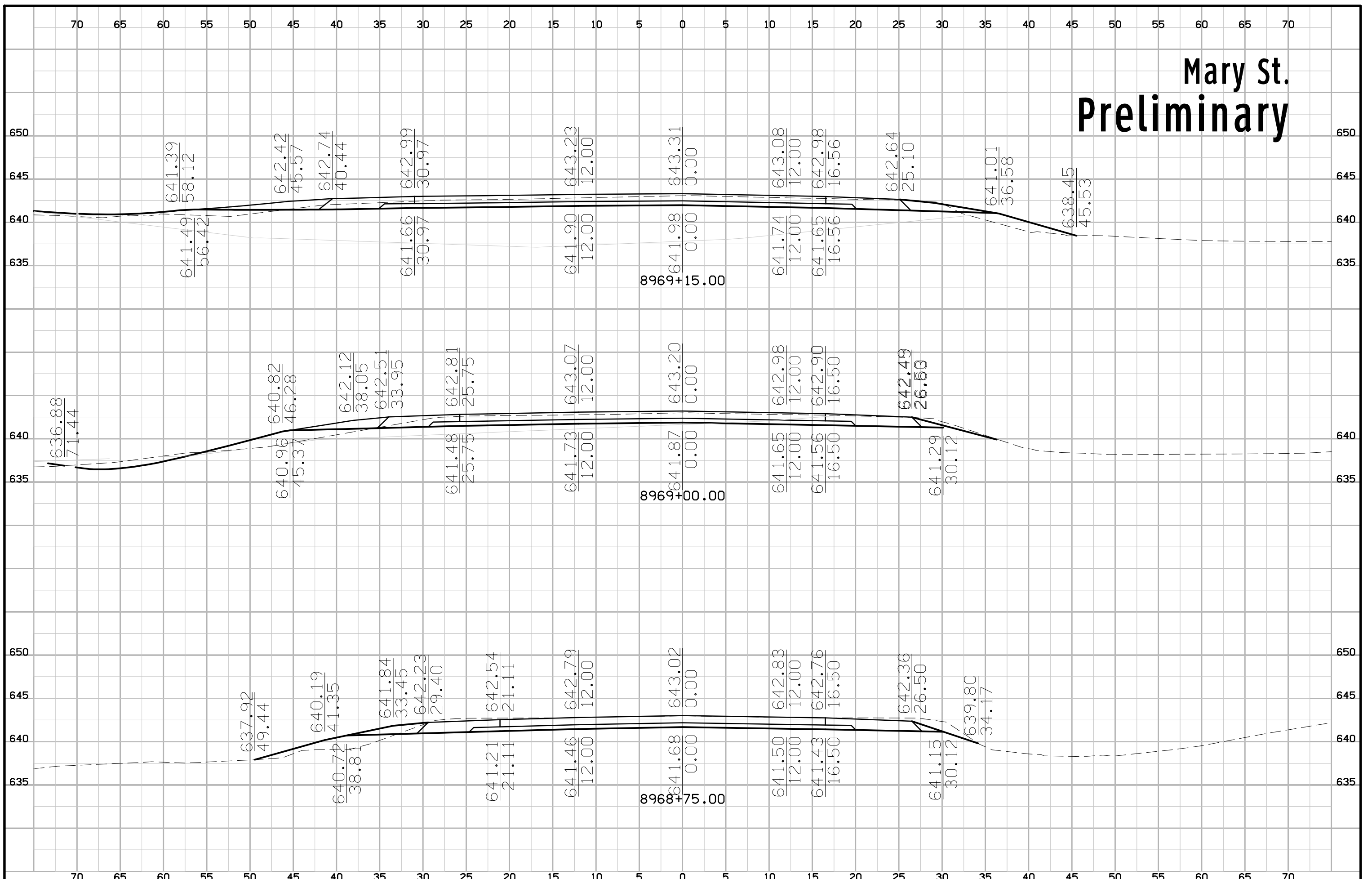


# Mary St. Preliminary





# Mary St. Preliminary



# Mary St. Preliminary

