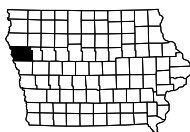


LETTING DATE  
**12/15/2015**  
**GRADE AND NEW**  
**NHSX-020-1(133)--3H-97**

**WOODBURY CO.**



INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 7	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 15	US 20
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1	Minnesota Avenue
* E.2	Mason Avenue
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 10	Reference Ties and Bench Marks
G.11 - 15	Horizontal Control Tab. For Mainline and Side Roads
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 199	US 20 Sta. 10630+75 - Sta. 10792+75 (560 Scale)
W.200 - 213	US 20 Sta. 10793+00 - Sta. 10816+50 (1400 Scale)
W.214 - 216	US 20 Sta. 10816+75 - Sta. 10821+00 (560 Scale)
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.100 - 119	Minnesota Avenue (560 Scale)
X.200 - 215	Mason Avenue (560 Scale)
	* Color Plan Sheets



## Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM WOODBURY COUNTY GRADE AND NEW

US 20 From Minnesota Ave. E. to W. of Correctionville WBL/EBL

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.



MILEAGE SUMMARY			
			105-1
			09-27-94
Div.	Location	Lin. Ft.	Miles
1	Sta. 10630+75.00 - Sta. 10821+24.60	19,049.6	3.61
Total		19,049.6	3.61

For Project Location Map  
Refer to Sheet A.2

DESIGN DATA RURAL			
2019	AADT	4,700	V.P.D.
2039	AADT	6,200	V.P.D.
2039	DHV	640	V.P.H.
	TRUCKS	22	%
Total			
Design ESALs		9,900,000	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Paul W. Flattery	Primary Signature Block

D3 Submittal 5-06-2014  
 D5 Submittal 6-30-2014  
 P9 Public Information Meeting 10-16-2014

## PRELIMINARY PLANS

Subject to change by final design.

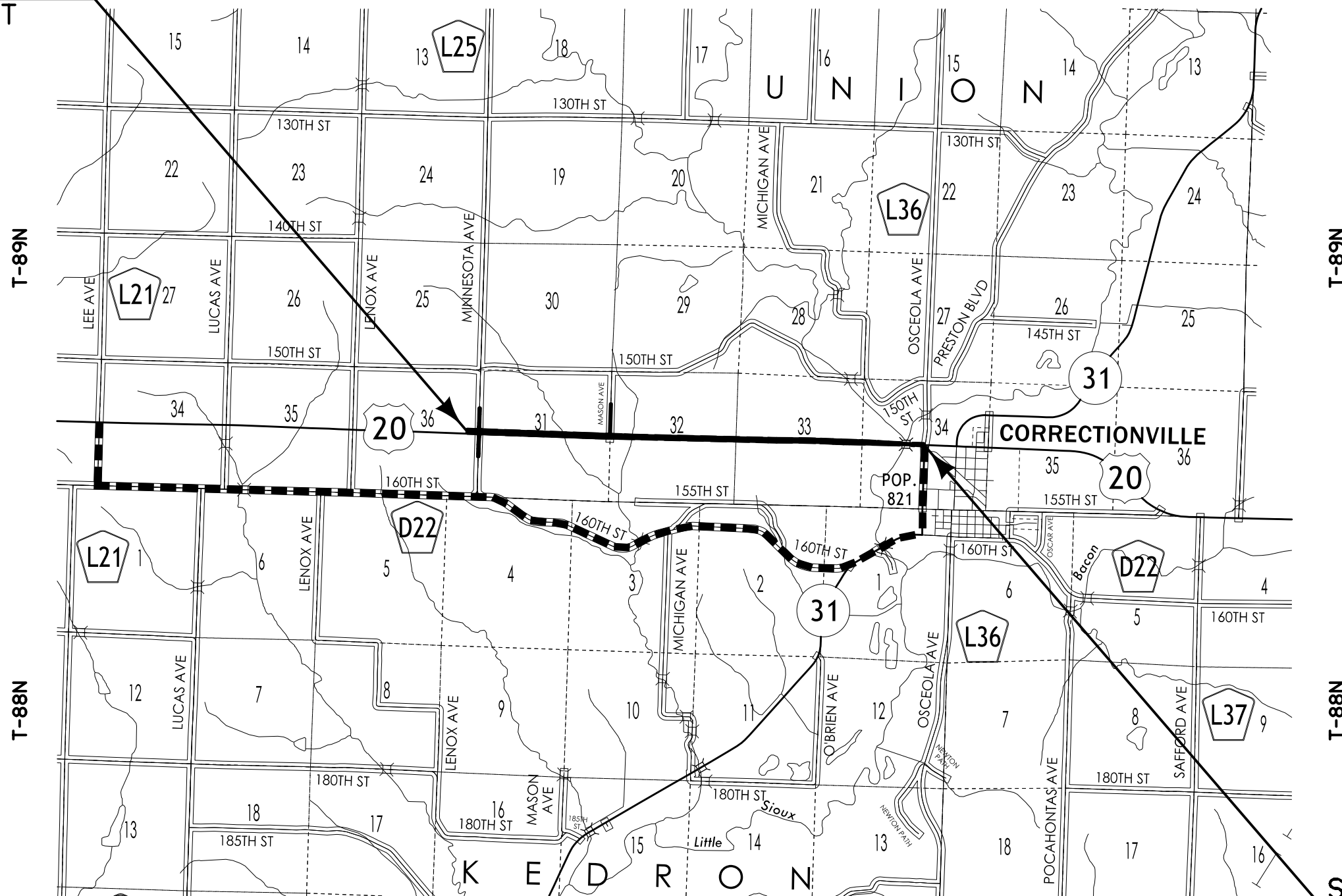
D5 PLAN - Date: 6/27/2014

REVISIONS	TOTAL
	293
PROJECT IDENTIFICATION NUMBER	
98-97-020-010-01	
PROJECT NUMBER	
NHSX-020-1(133)--3H-97	
R.O.W. PROJECT NUMBER	
NHSN-020-1(080)--2R-97	

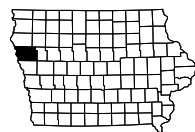
STA. 10630+75.00  
BEGIN PROJECT  
MP 29.15

R-43W

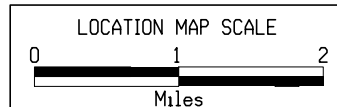
R-42W

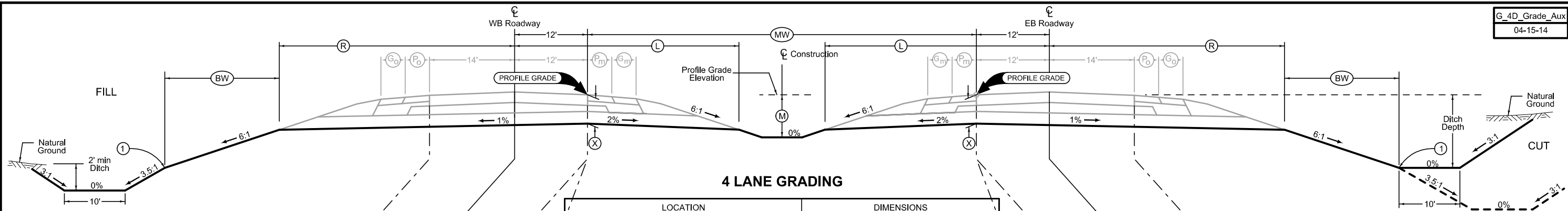


STA. 10821+24.60  
END PROJECT  
MP 32.75



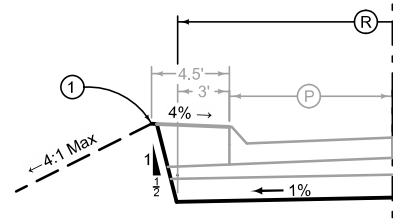
--- DETOUR





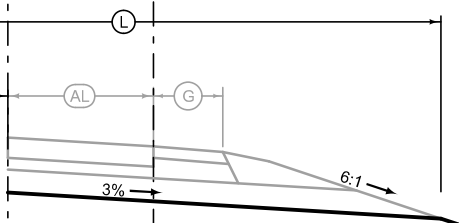
**4 LANE GRADING**

LOCATION		DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet
US 20	10630+75.00 - 10681+41.22	34.90	38.46	28.00	13.21	82	4.00
US 20	10681+41.22 - 10699+46.40	34.90	38.46	28.00	13.21	82-64	4.00
US 20	10699+46.40 - 10787+66.55	34.90	38.46	28.00	13.21	64	4.00
US 20	10787+66.55 - 10793+50.00	34.90	38.46	28.00	13.21	64-59.5	4.00
US 20	10793+50.00 - 10809+50.22	34.90	38.46	28.00	133.19	59.5-16	4.00
US 20	10809+50.22 - 10810+45.00	34.90	38.46	28.00	133.19	16	4.00
	Bridge Approach						



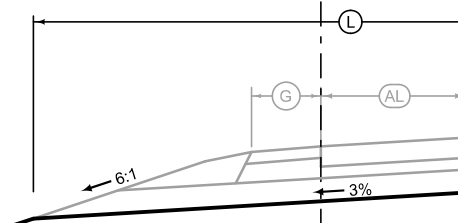
**Curbed Shoulder**

2_Curb_ 04-19-11		
STATION TO STATION	(R)	Feet
10766+00.00 - 10791+25.00		26.00



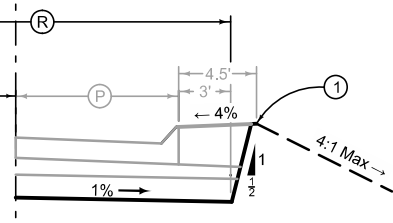
**Auxiliary Lane Grading**

LOCATION			(L)
ROAD IDENTIFICATION	STATION TO STATION		Feet
US 20	10636+60.00 - 10638+20.00		48.58
US 20	10638+20.00 - 10639+40.00		48.58-34.90
US 20	10691+05.00 - 10692+65.00		48.58
US 20	10692+65.00 - 10693+85.00		48.58-34.90



**Auxiliary Lane Grading**

LOCATION			(L)
ROAD IDENTIFICATION	STATION TO STATION		Feet
US 20	10632+00.00 - 10633+20.00		34.90-48.58
US 20	10633+20.00 - 10634+80.00		48.58
US 20	10686+70.00 - 10687+90.00		34.90-48.58
US 20	10687+90.00 - 10689+50.00		48.58

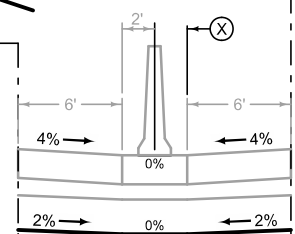
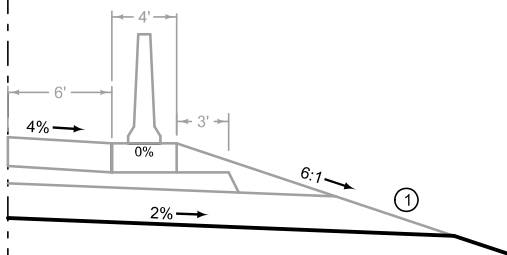


**Curbed Shoulder**

2_Curb_ 04-19-11		
STATION TO STATION	(R)	Feet
10753+00.00 - 10757+00.00		26.00
10766+00.00 - 10793+00.00		26.00

**Concrete Barrier Grading**

LOCATION		
ROAD IDENTIFICATION	STATION TO STATION	
US 20	10801+00.00 - 10806+00.00	



**Concrete Barrier Grading**

LOCATION			(X)
ROAD IDENTIFICATION	STATION TO STATION		Feet
US 20	10806+00.00 - 10809+50.00		10 - 2
US 20	10809+50.00 - 10810+45.00		2
	Bridge Approach		

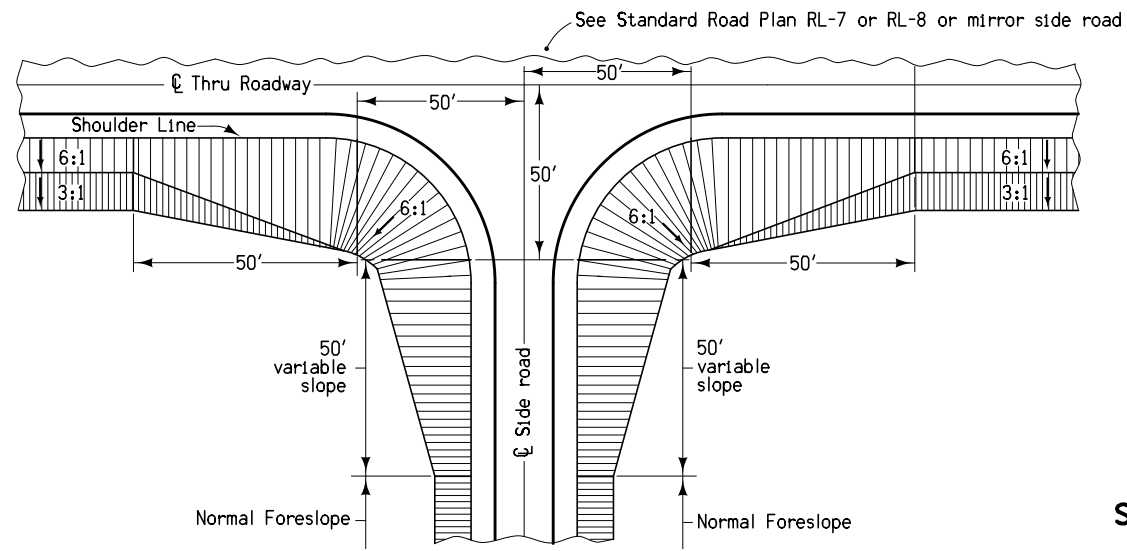
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

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

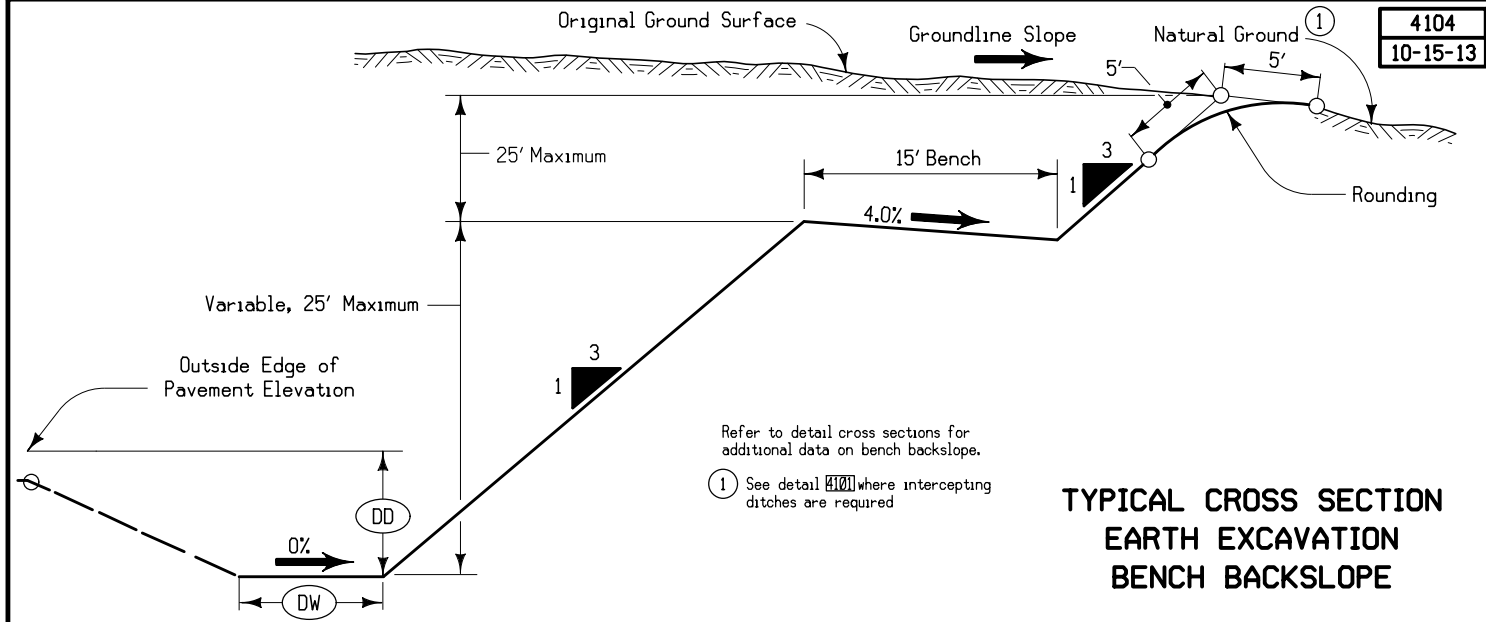


2117  
04-15-08



SIDE ROAD GRADING (BARNROOF)

4104  
10-15-13

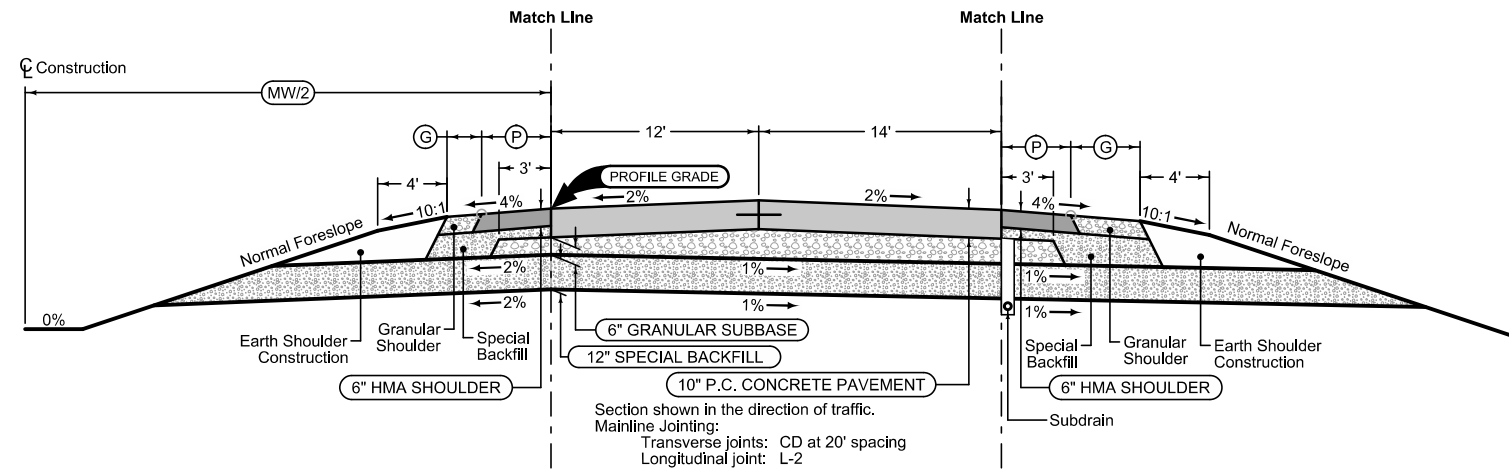


TYPICAL CROSS SECTION EARTH EXCAVATION BENCH BACKSLOPE

### Combination Shoulder

Shoulder Jointing:  
Longitudinal joint: B

4_C_10-15-13				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
EB	10630+75.00	10806+00.00	4	2



4DP_10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(MW) Feet	
EB	10630+75.00	10681+41.22	82	
EB	10681+41.22	10699+46.40	82 - 64	
EB	10699+46.40	10787+66.55	64	
EB	10787+66.55	10806+00.00	64 - 24	

### Combination Shoulder

Shoulder Jointing:  
Longitudinal joint: B

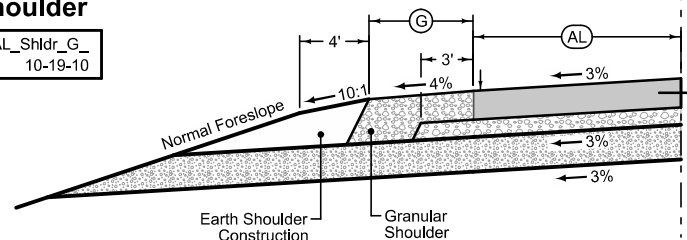
4_C_10-15-13				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
EB	10630+75.00	10753+00.00	4	4
EB	10757+00.00	10766+00.00	4	4
EB	10793+00.00	10806+00.00	4	4

### Auxiliary Lane

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

4_AuxLane_PCC_10-19-10					4_AL_Shldr_G_10-19-10	
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet		
EB	10632+00.00	10632+40.00	4	6		
EB	10632+40.00	10633+20.00	4 - 12	6		
EB	10633+20.00	10634+80.00	12	6		
EB	10686+70.00	10687+10.00	4	6		
EB	10687+10.00	10687+90.00	4 - 12	6		
EB	10687+90.00	10689+50.00	12	6		

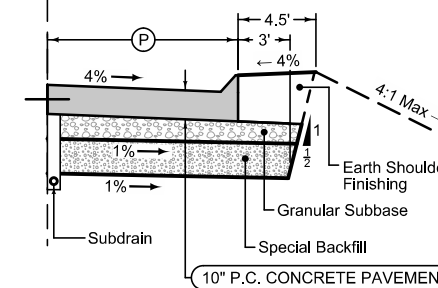
### Auxiliary Lane Granular Shoulder



### Curbed Shoulder

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

Single pour: L-2  
Staged: KT-2  
Transverse: C at 20' spacing



2_Curb_04-19-11				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
EB	10753+00.00	10757+00.00	9	6" Sloped
EB	10766+00.00	10793+00.00	9	6" Sloped

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

**US 20 EB**

### Combination Shoulder

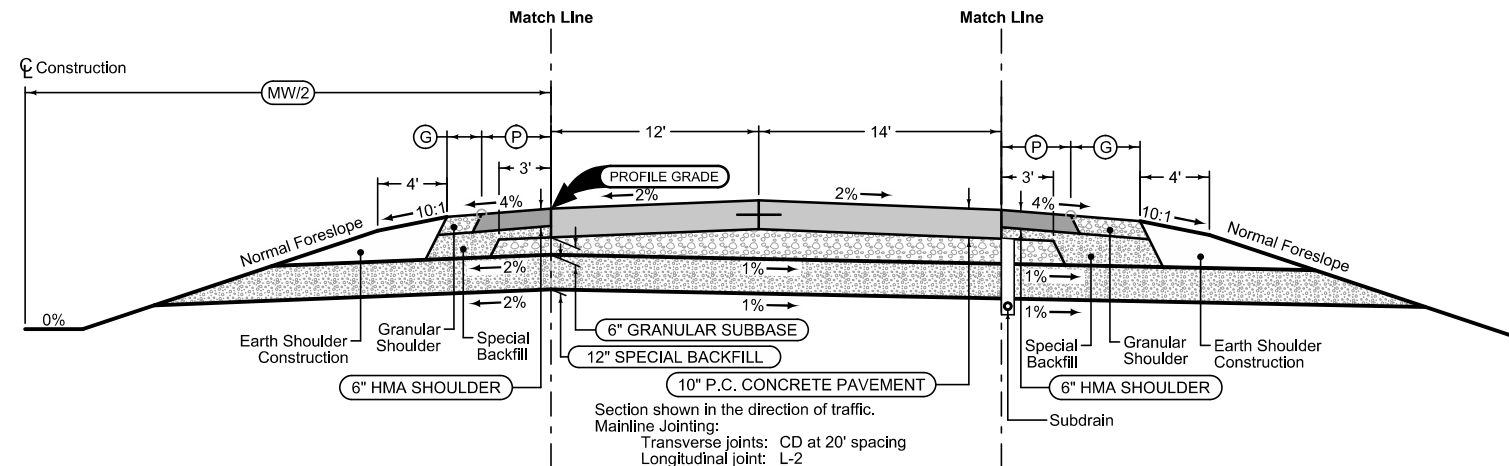
Shoulder Jointing:  
Longitudinal joint: B

4_C_ 10-15-13				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
WB	10630+75.00	10801+00.00	4	2

### Combination Shoulder

Shoulder Jointing:  
Longitudinal joint: B

4_C_ 10-15-13				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
WB	10630+75.00	10766+00.00	4	4
WB	10791+25.00	10806+00.00	4	4



Section shown in the direction of traffic.  
Mainline Jointing:  
Transverse joints: CD at 20' spacing  
Longitudinal joint: L-2

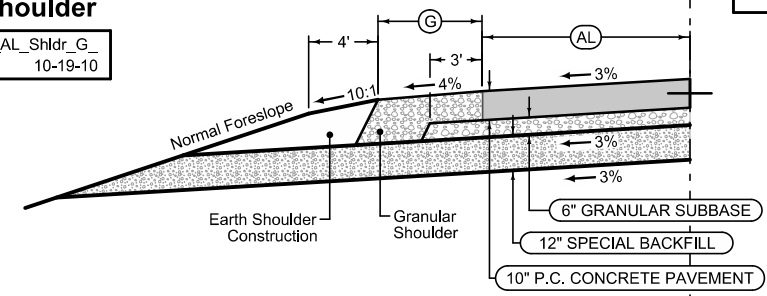
4DP_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(MW) Feet	
WB	10630+75.00	10681+41.22	82	
WB	10681+41.22	10699+46.40	82 - 64	
WB	10699+46.40	10787+66.55	64	
WB	10787+66.55	10806+00.00	64 - 24	

### Auxiliary Lane

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

4_AuxLane_PCC_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
WB	10636+60.00	10638+20.00	12	6
WB	10638+20.00	10639+00.00	12 - 4	6
WB	10639+00.00	10639+40.00	4	6
WB	10691+05.00	10692+65.00	12	6
WB	10692+65.00	10693+45.00	12 - 4	6
WB	10693+45.00	10693+85.00	4	6

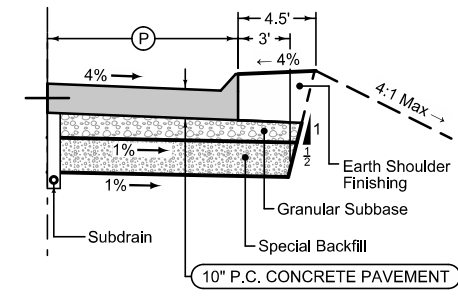
### Auxiliary Lane Granular Shoulder



### Curbed Shoulder

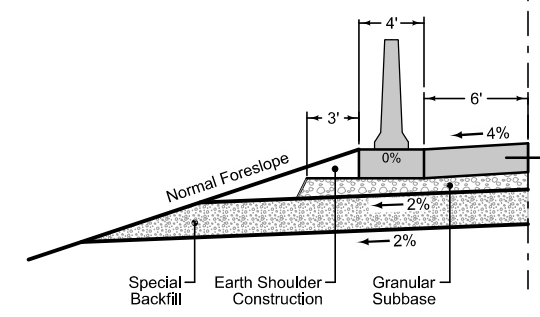
Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
Staged: KT-2  
Transverse: C at 20' spacing



2_Curb_ 04-19-11				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
WB	10766+00.00	10791+25.00	9	6" Sloped

Direction of Travel	BEGIN STATION	END STATION	Concrete Barrier
WB	10801+00.00	10806+00.00	BA-100



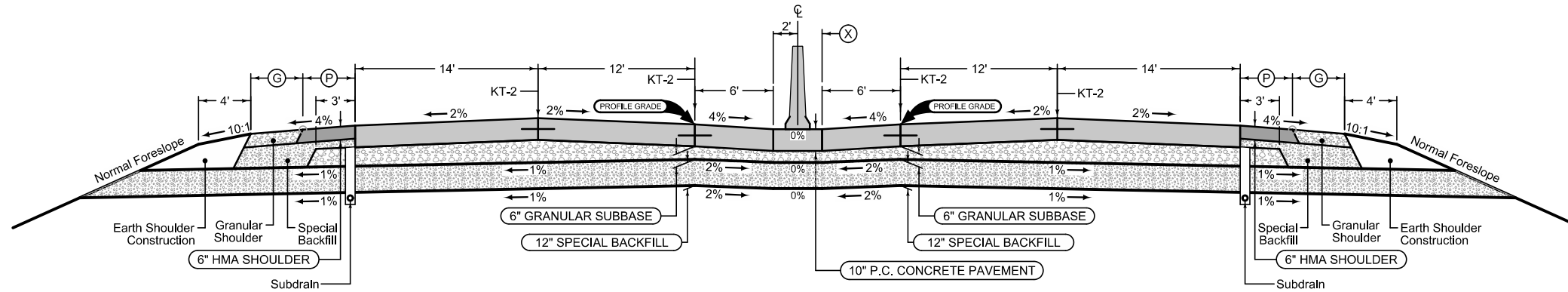
See Tab 100-24 or 100-25 for pavement quantities.  
See Tab 112-9 for shoulder quantities.

## US 20 WB

**Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: B

		4_C_10-15-13	
BEGIN STATION	END STATION	(P) Feet	(G) Feet
10806+00.00	10810+45.00	4	4
Bridge Approach			



**Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: B

		4_C_10-15-13	
BEGIN STATION	END STATION	(P) Feet	(G) Feet
10806+00.00	10810+45.00	4	4
Bridge Approach			

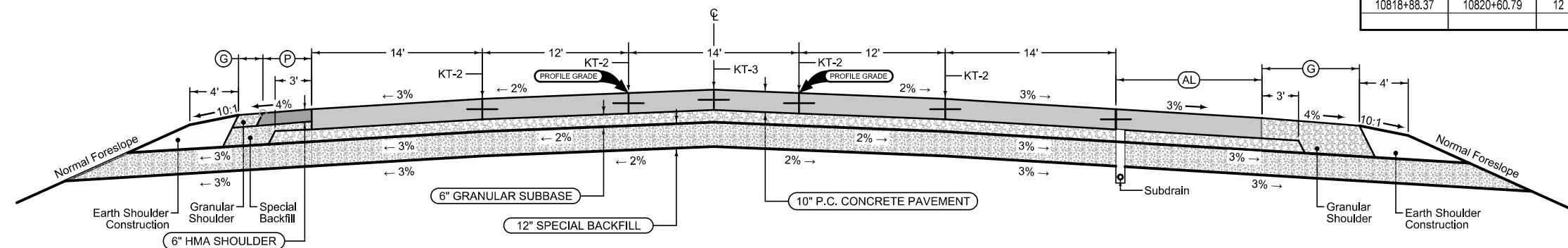
Mainline Jointing:  
Transverse joints: CD at 20' spacing

		4UP_10-16-12	
BEGIN STATION	END STATION	Concrete Barrier	(X) Feet
10806+00.00	10809+50.00	BA-100	10 - 2
10809+50.00	10810+45.00	BA-100	2
Bridge Approach			

**Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: B

		4_C_10-15-13	
BEGIN STATION	END STATION	(P) Feet	(G) Feet
10817+94.60	10821+24.60	4	4
Bridge Approach			



Mainline Jointing:  
Transverse joints: CD at 20' spacing

		4UP_10-16-12	
STATION TO STATION			
Bridge Approach			
10817+94.60	10821+24.60		

**Auxiliary Lane Granular Shoulder**

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

		4_AuxLane_PCC_10-19-10		4_AL_Shldr_G_10-19-10	
BEGIN STATION	END STATION	(AL) Feet	(G) Feet		
10817+94.60	10818+88.37	5.7 - 12	6		
10818+88.37	10820+60.79	12	6		

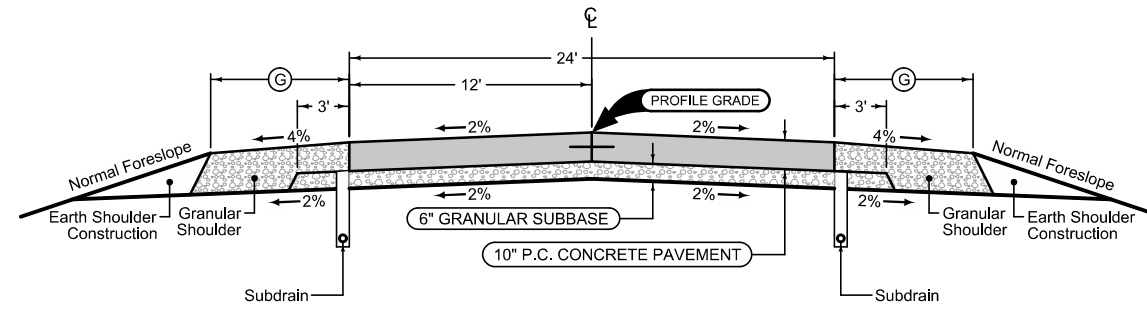
See Tab 100-24 or 100-25 for pavement quantities.  
See Tab 112-9 for shoulder quantities.

**US 20**



**Granular Shoulder**

STATION TO STATION		Ⓞ Feet
804+00.00	813+75.23	6
815+09.24	824+25.00	6



**Granular Shoulder**

STATION TO STATION		Ⓞ Feet
804+00.00	813+75.23	6
815+09.24	824+25.00	6

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

STATION TO STATION	
804+00.00	813+75.23
815+09.24	824+25.00

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

**Minnesota Avenue**

### SURVEY SYMBOLS

- x — FW Wire Fence
- TP TPD Telephone Pedestal
- UB UB Utility Box
- Tile — TIL Tile Line
- OUT Tile Outlet
- ⊙ BIN Grain Bin
- PPA Power Pole Co. 1
- GDL Guard Rail (Rail and Cable)
- MM MM Mile Marker Post
- PR Electric Riser Pole
- FWD Wood Fence
- RET Retaining Walls
- ⊕ MH Utility Access (Manhole)
- COR Round Bridge Pier Column
- COS Square Bridge Pier Column
- ⊕ INB Storm Sewer Beehive Intake
- EB EB Electrical Box
- ⊕ WEL Well
- ⊕ PPB Power Pole Co. 2
- WH WHD Water Hydrant
- ⊕ LP L.P. Tank
- ⊕ SEP Septic Tank
- ⊕ AST Above Ground Storage Tank
- SIGN SI Sign
- FLG FLG Flag Poles
- ⊕ TV Satellite TV Dish
- ⊕ CIS Cistern
- ⊕ UST Underground Tank
- GP GP Guard Post (Less Than 4 Posts)
- LUM Luminaire
- ENT Centerline BL of Entrance
- ← DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- EW Edge of Water
- BNK Stream Bank
- DIK Centerline of Dike or Dam
- ⊕ IN Storm Sewer Intake
- ▲ RIP Rip-Rap
- T3 — TLC Underground Telephone Line Co. 3
- F0 — FOA Underground Fiber Optic Co. 1
- F05 — FOE Underground Fiber Optic Co. 5
- F02 — FOB Underground Fiber Optic Co. 2
- T2 — TLB Underground Telephone Line Co. 2
- T1 — TLA Underground Telephone Line Co. 1
- E1 — ELA Underground Electric Line Co. 1
- ROW Right of Way Rail
- BB BB Billboard
- TDC Tree Deciduous
- SIGN SL Speed Limit Sign
- # — FCL Chain Link and Security Fence
- San.1 — SAA Sanitary Sewer Line Co. 1
- ✱ TEV Evergreen Tree
- FHD Fire Hydrants
- T4 — TLD Underground Telephone Line Co. 4
- F04 — FOD Underground Fiber Optic Co. 4
- F03 — FOC Underground Fiber Optic Co. 3
- E2 — ELB Underground Electric Line Co. 2
- ⊕ SHR Shrub
- ⊕ TFR Tree Fruit
- WV WV Water Valve
- W — WLA Underground Water Line Co. 1
- San.2 — SAB Sanitary Sewer Line Co. 2
- HDG Hedge Row
- ⊕ WM Wind Mill
- TLN Treeline

### UTILITY LEGEND

- PPA MidAmerican
- ⊕ PPB Private
- T1 — TLA Qwest Local Network (B)
- T2 — TLB Frontier Communications (B)
- T3 — TLC Western Iowa Telephone (B)
- T4 — TLD Schaller Telephone Company
- F0 — FOA INS (B)
- F02 — FOB Qwest Communications (B)
- F03 — FOC Comserve (B)
- F04 — FOD McLeod (B)
- F05 — FOE Knology (B)
- E1 — ELA Woodbury Rural Electric (B)
- W — WLA Iowa DOT
- San. — SAA Iowa DOT
- San.2 — SAB City of Correctionville

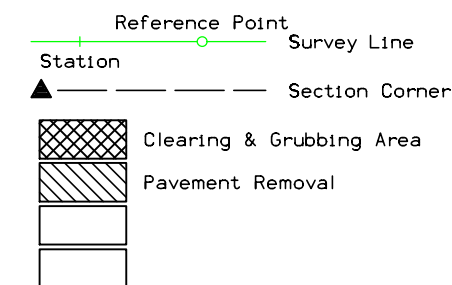
### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

- Green (2) Existing Topographic Features and Labels
- Blue (1) Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
- Purple (5) Existing Utilities
- 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
- Brown, Light (237) Grading Shading

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

- Green (2) Existing Ground Line Profile
- Blue (1) Proposed Profile and Annotation
- Purple (5) Existing Utilities
- Blue, Light (230) Proposed Ditch Grades, Left
- Black (0) Proposed Ditch Grades, Median
- Rust (14) Proposed Ditch Grades, Right

### CONVENTIONAL SIGNS

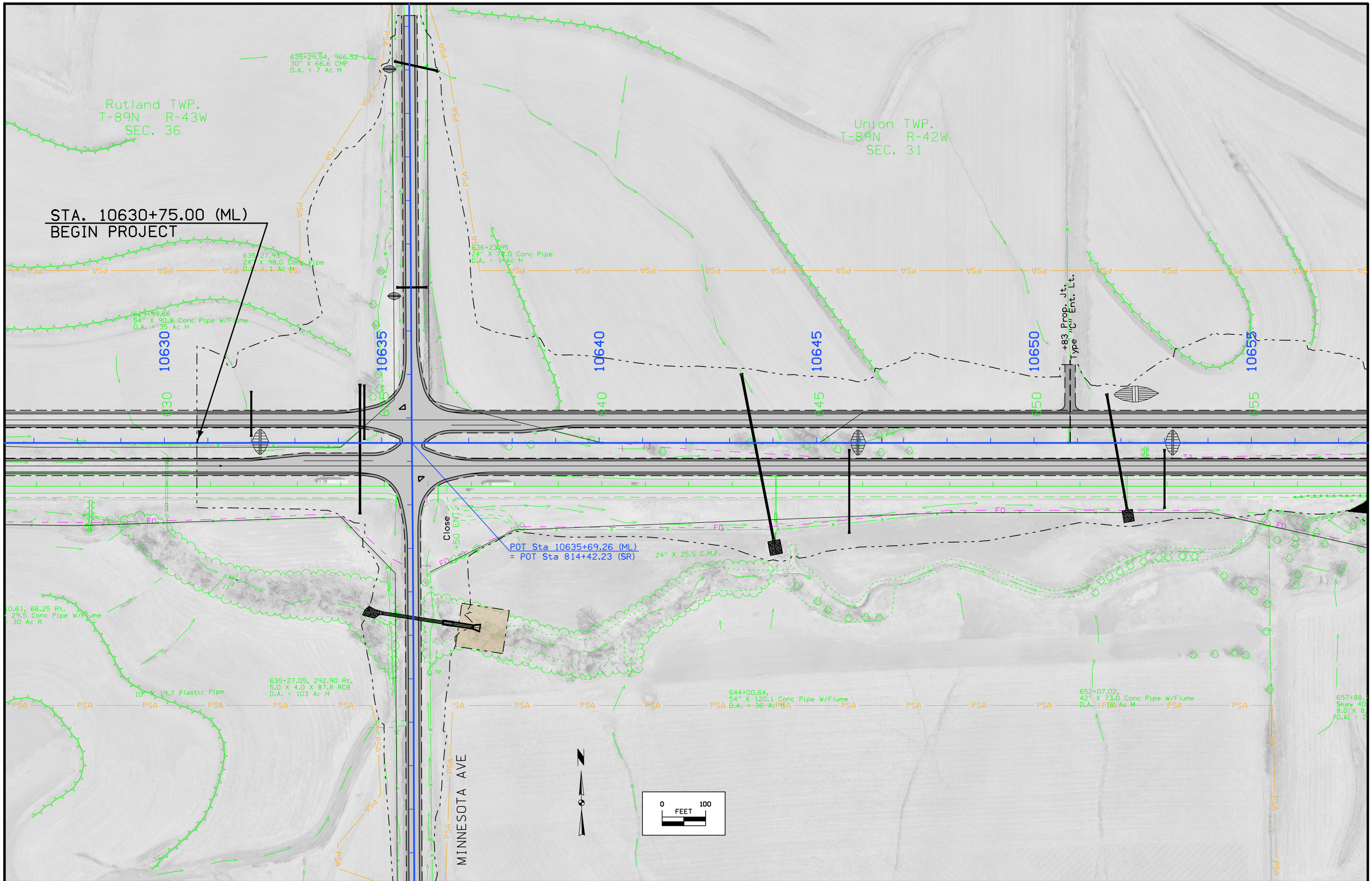


### RIGHT-OF-WAY LEGEND

- ▲ Proposed Right-of-Way
- △ Existing Right-of-Way
- ▲ Existing and Proposed Right-of-Way
- ▲ Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- ✕ Excess
- |—|— Property Line
- A/C Access Control

# PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

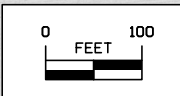


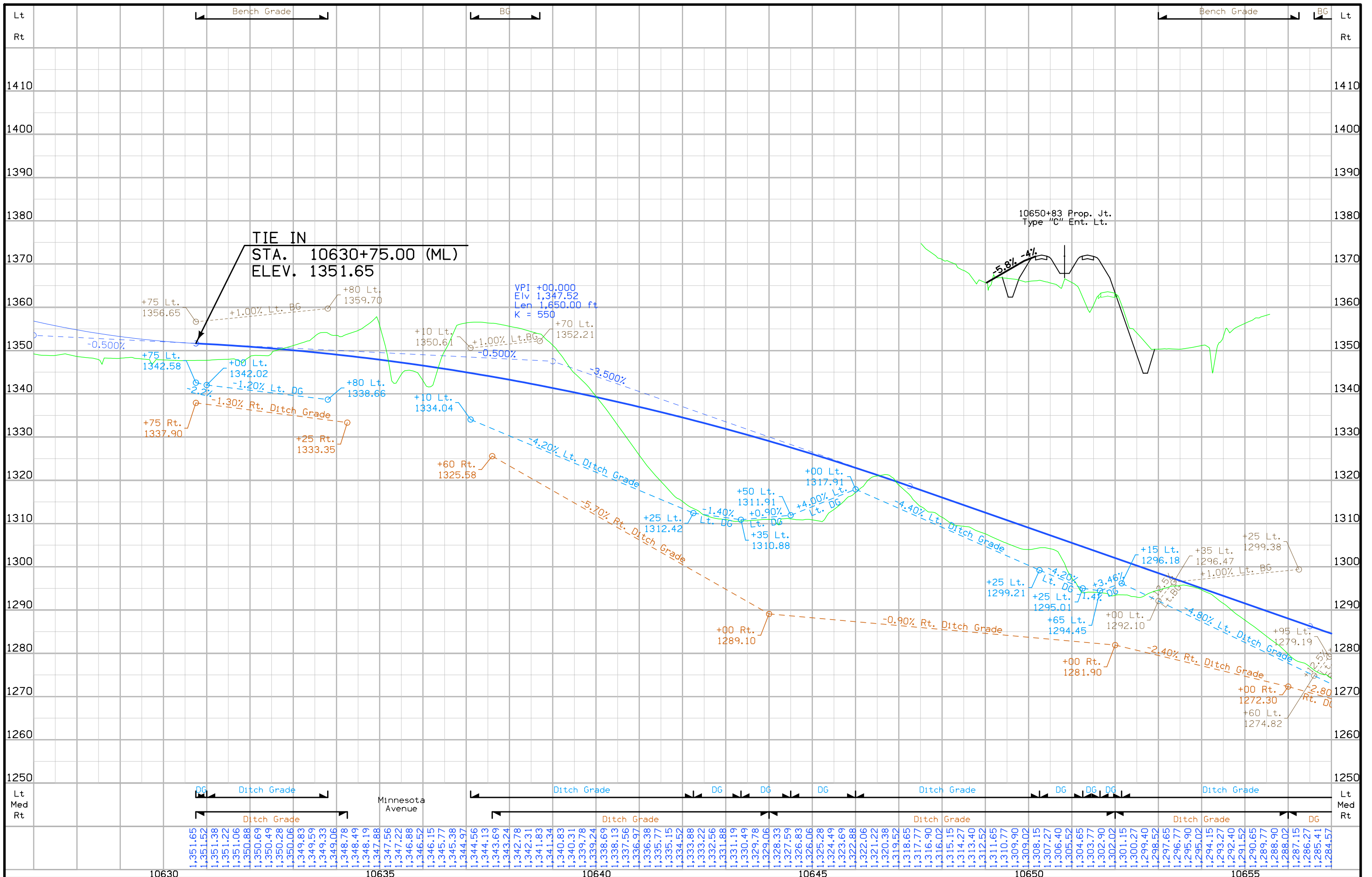
STA. 10630+75.00 (ML)  
BEGIN PROJECT

Rutland TWP.  
T-89N R-43W  
SEC. 36

Union TWP.  
T-89N R-42W  
SEC. 31

MINNESOTA AVE



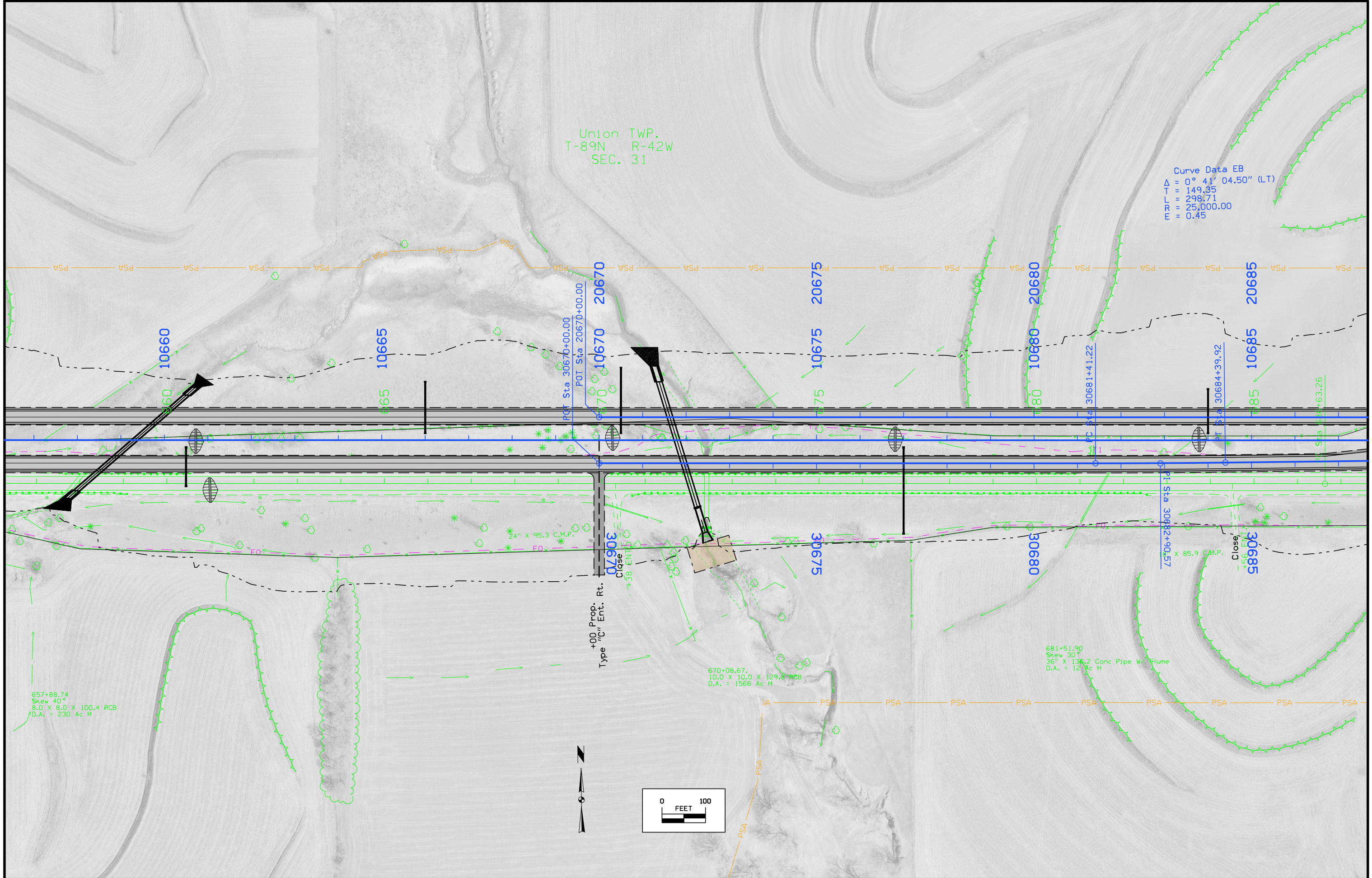


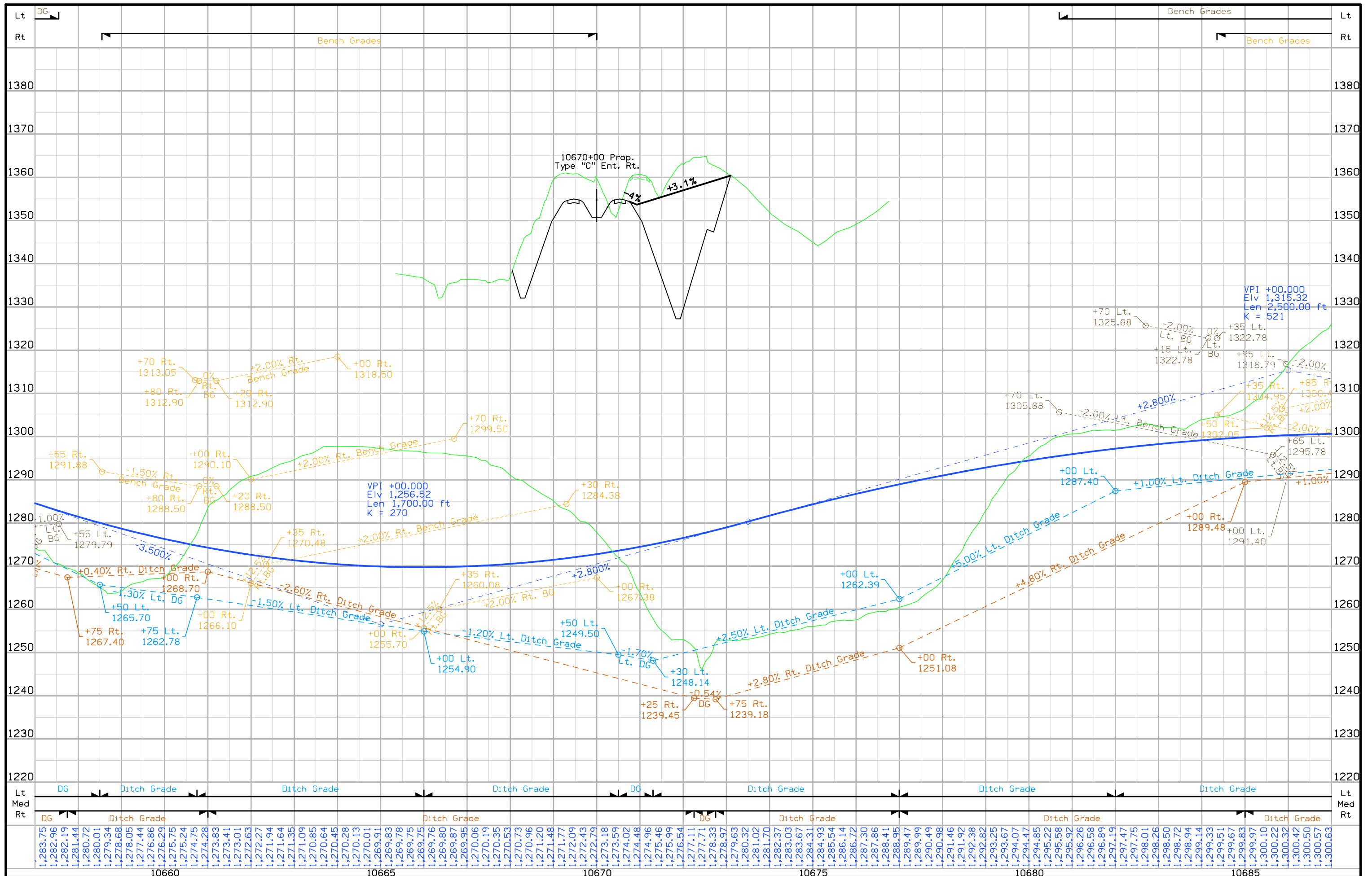
FILE NO.	ENGLISH	DESIGN TEAM	Flattery\Johnson	WOODBURY COUNTY	PROJECT NUMBER	NHSX-020-1(133)--3H-97	SHEET NUMBER	D.3
----------	---------	-------------	------------------	-----------------	----------------	------------------------	--------------	-----

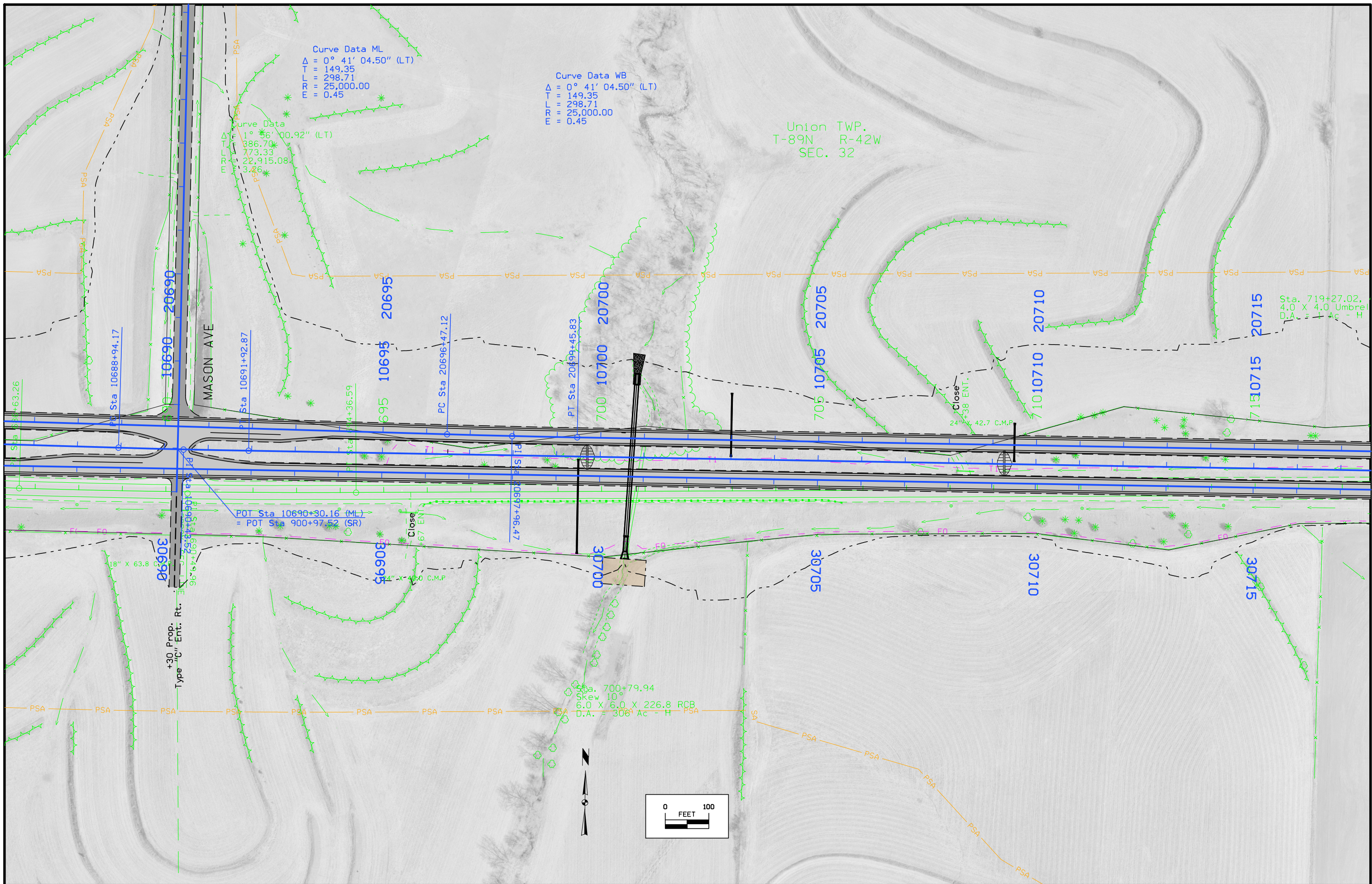
1:19:00 PM 6/27/2014 ajohns1 pw:\projectwise.dot.int.lan:PWMain\Documents\Projects\9702001098\Design\Section1\97020077D1(133).dgn

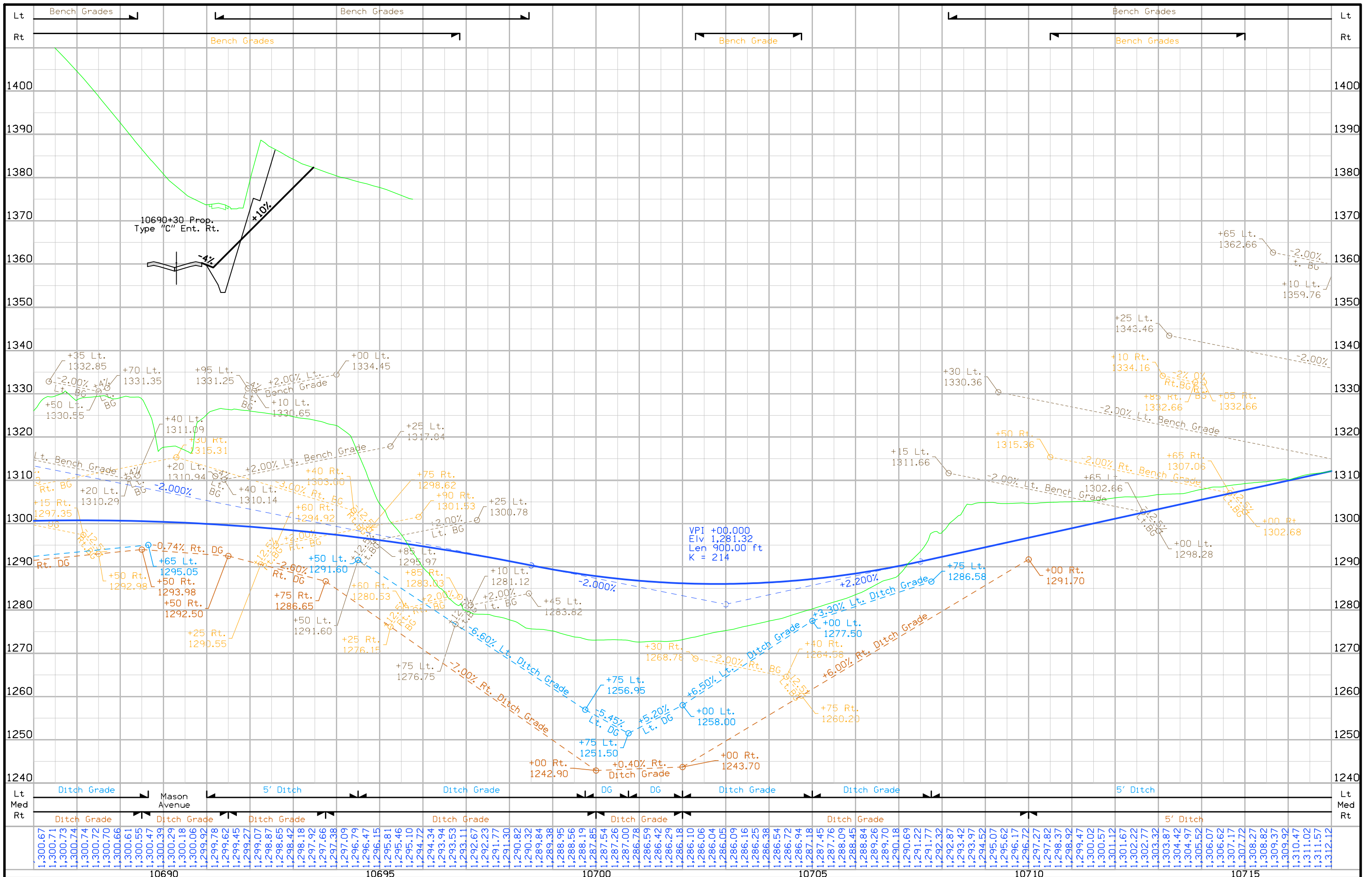
Union TWP.  
T-89N R-42W  
SEC. 31

Curve Data EB  
 $\Delta = 0^\circ 41' 04.50''$  (LT)  
T = 149.35  
L = 298.71  
R = 25,000.00  
E = 0.45











Union TWP.  
T-89N R-42W  
SEC. 32

Curve Data  
= 1° 09' 58.39" (RT)  
= 300.00  
= 599.98  
= 29,476.70  
= 1.53

Sta. 719+27.02, 40.73 Lt.  
4.0 Umbrella Intake  
D.A. = 7 Ac - H

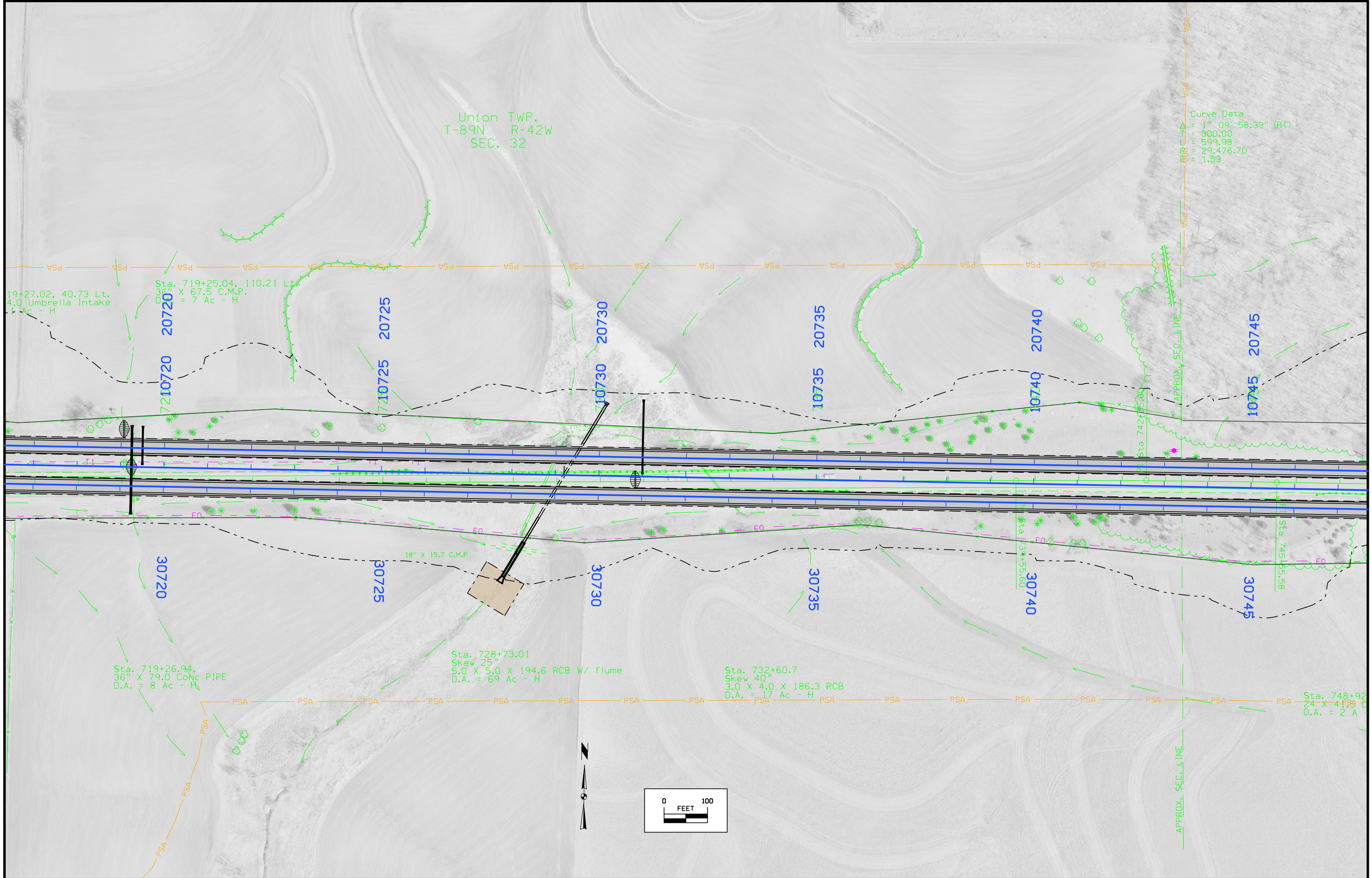
Sta. 719+25.04, 110.21 Lt.  
30" X 67.5 C.M.P.  
D.A. = 7 Ac - H

Sta. 719+26.94,  
36" X 79.0 Conc PIPE  
D.A. = 8 Ac - H

Sta. 728+73.01  
Skew 25°  
5.0 X 5.0 X 194.6 RCB W/ flume  
D.A. = 69 Ac - H

Sta. 732+60.7  
Skew 40°  
3.0 X 4.0 X 186.3 RCB  
D.A. = 17 Ac - H

Sta. 748+92  
24" X 41.5 C  
D.A. = 2 Ac - H





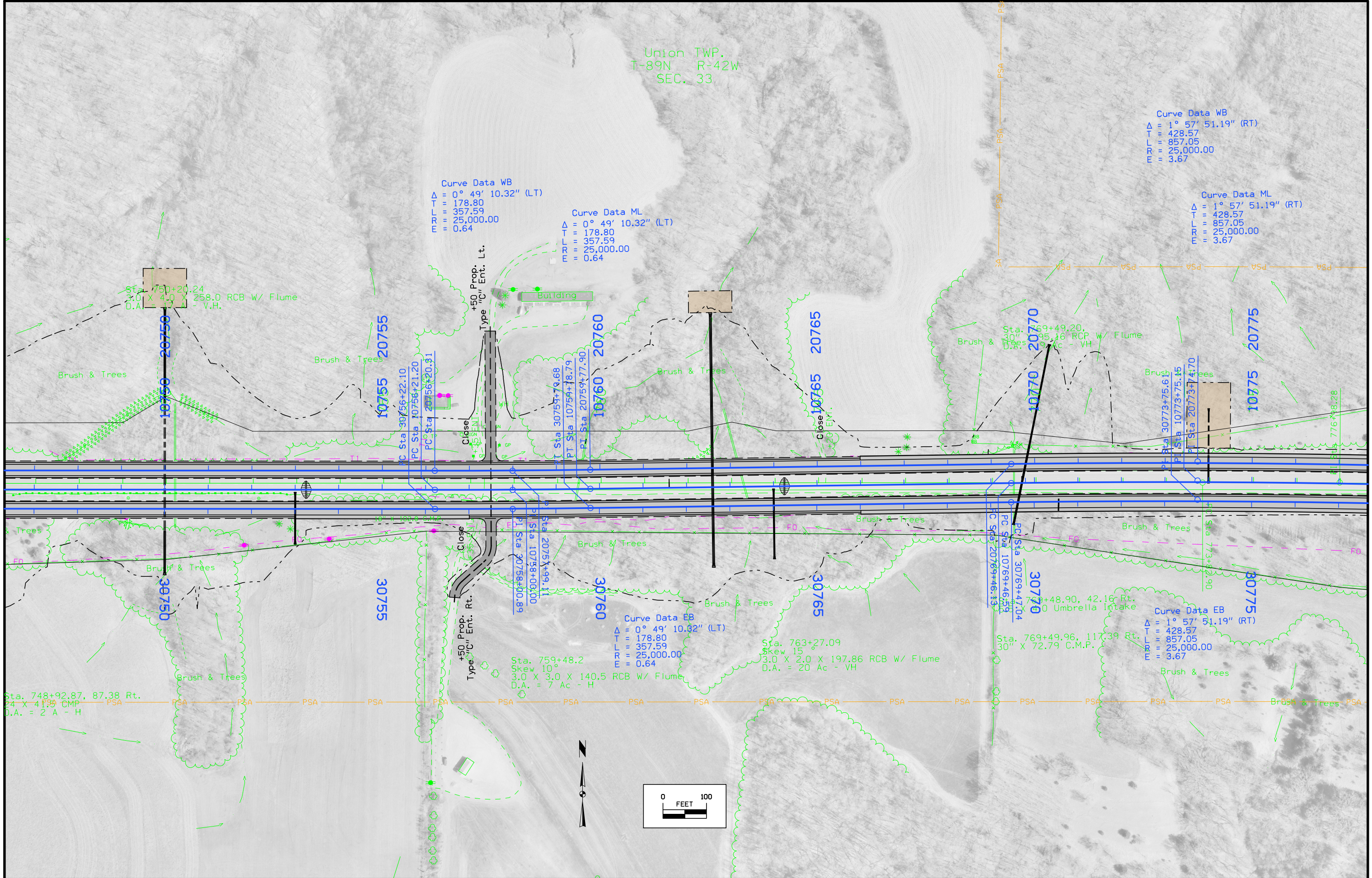
Union TWP.  
T-89N R-42W  
SEC. 33

Curve Data WB  
 $\Delta = 1^\circ 57' 51.19''$  (RT)  
T = 428.57  
L = 857.05  
R = 25,000.00  
E = 3.67

Curve Data WB  
 $\Delta = 0^\circ 49' 10.32''$  (LT)  
T = 178.80  
L = 357.59  
R = 25,000.00  
E = 0.64

Curve Data ML  
 $\Delta = 0^\circ 49' 10.32''$  (LT)  
T = 178.80  
L = 357.59  
R = 25,000.00  
E = 0.64

Curve Data ML  
 $\Delta = 1^\circ 57' 51.19''$  (RT)  
T = 428.57  
L = 857.05  
R = 25,000.00  
E = 3.67



Sta. 748+92.87, 87.38 Rt.  
24' X 41.55' CMP  
D.A. = 2' A - H

Sta. 750+20.24  
3.0' X 4.0' X 258.0 RCB W/ Flume  
D.A. = 7' A - V.H.

Sta. 759+48.2  
Skew 10  
3.0' X 3.0' X 140.5 RCB W/ Flume  
D.A. = 7' A - H

Sta. 763+27.09  
Skew 15  
3.0' X 2.0' X 197.86 RCB W/ Flume  
D.A. = 20' A - V.H.

Sta. 769+48.90, 42.16 Rt.  
30' X 72.79' C.M.P.  
Umbrella Intake

Curve Data EB  
 $\Delta = 1^\circ 57' 51.19''$  (RT)  
T = 428.57  
L = 857.05  
R = 25,000.00  
E = 3.67



Union TWP.  
T-89N R-42W  
SEC. 33

Union TWP.  
T-89N R-42W  
SEC. 34

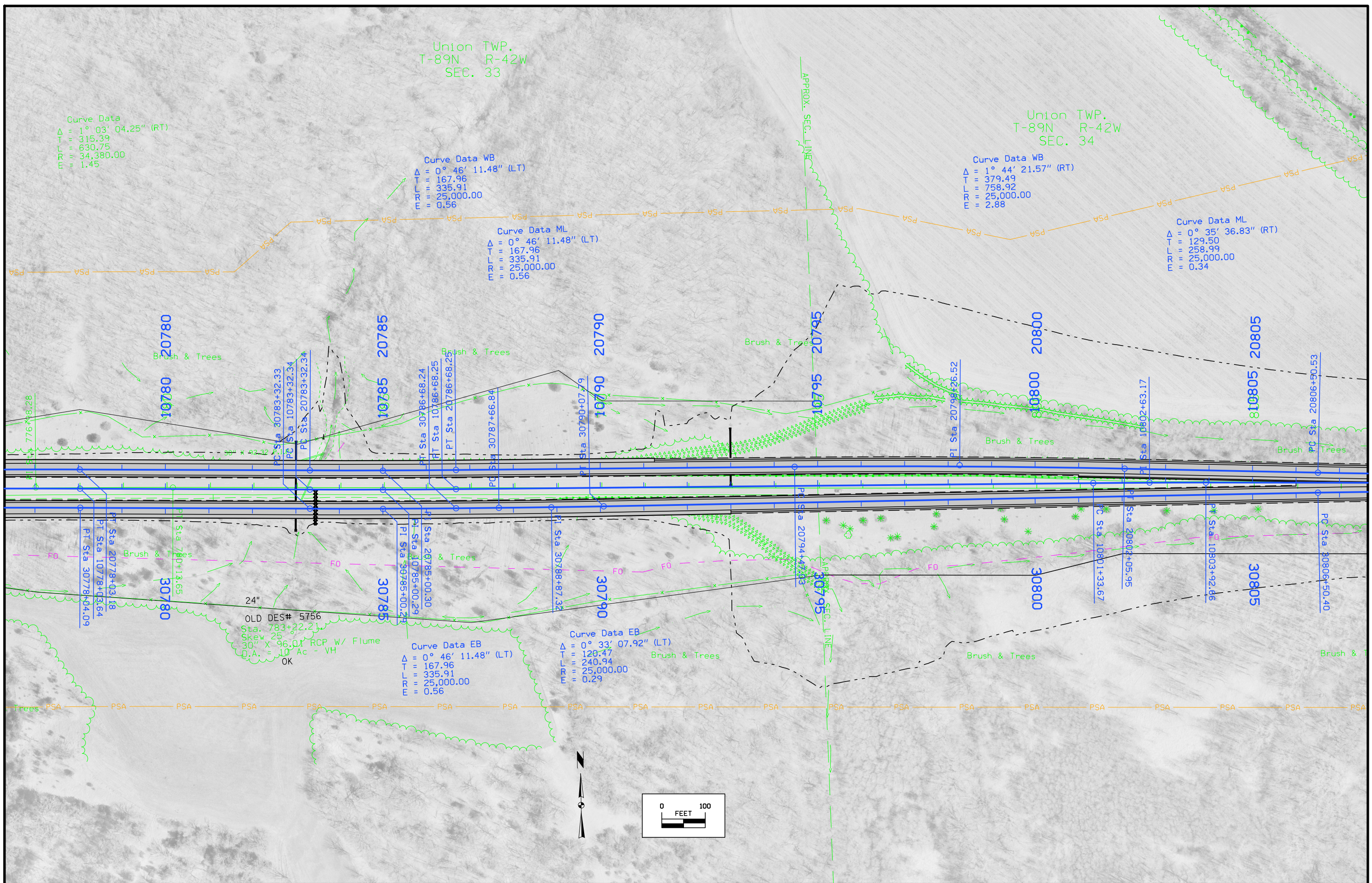
Curve Data  
Δ = 1° 03' 04.25" (RT)  
T = 315.39  
L = 630.75  
R = 34,380.00  
E = 1.45

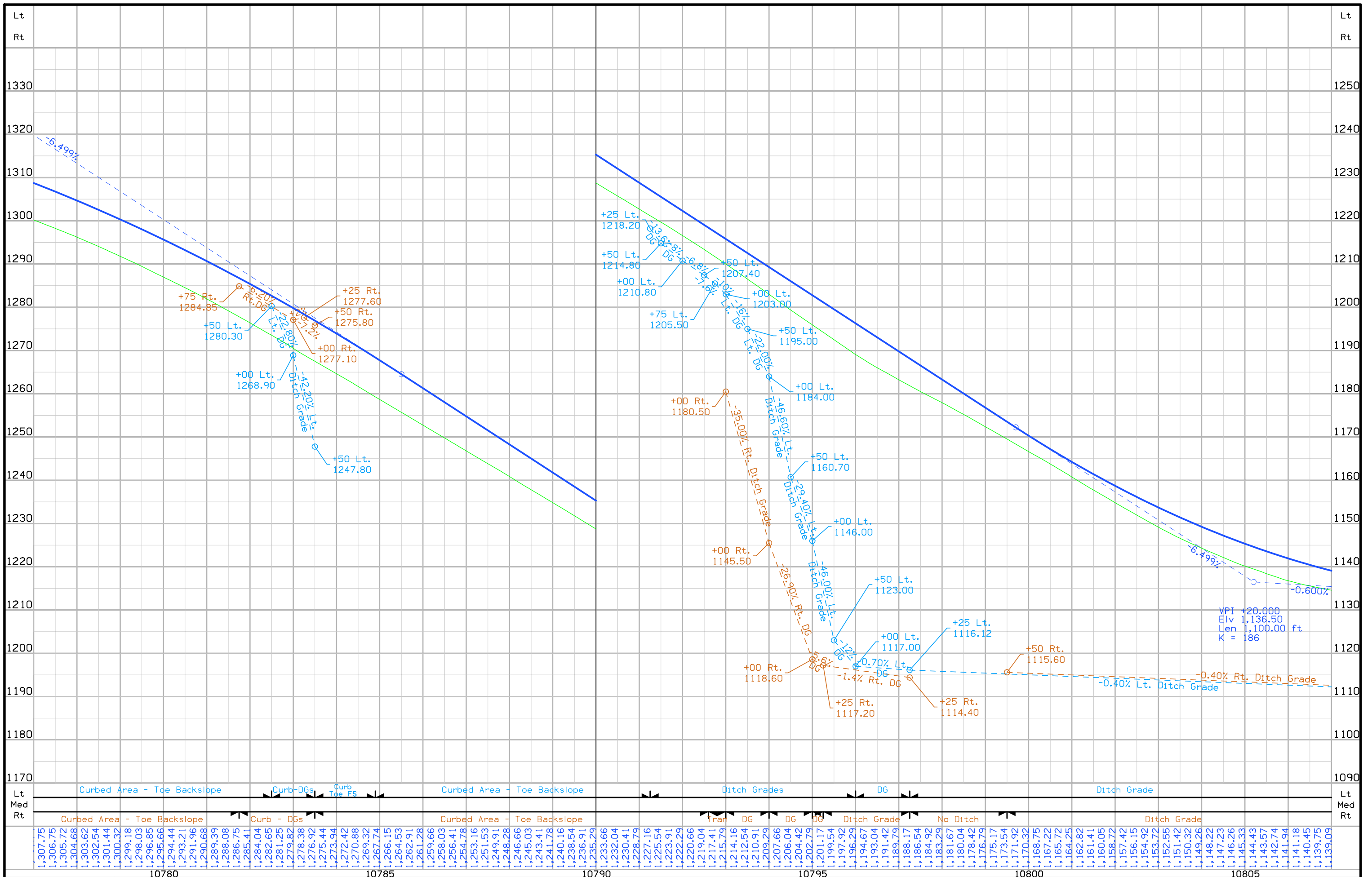
Curve Data WB  
Δ = 0° 46' 11.48" (LT)  
T = 167.96  
L = 335.91  
R = 25,000.00  
E = 0.56

Curve Data WB  
Δ = 1° 44' 21.57" (RT)  
T = 379.49  
L = 758.92  
R = 25,000.00  
E = 2.88

Curve Data ML  
Δ = 0° 46' 11.48" (LT)  
T = 167.96  
L = 335.91  
R = 25,000.00  
E = 0.56

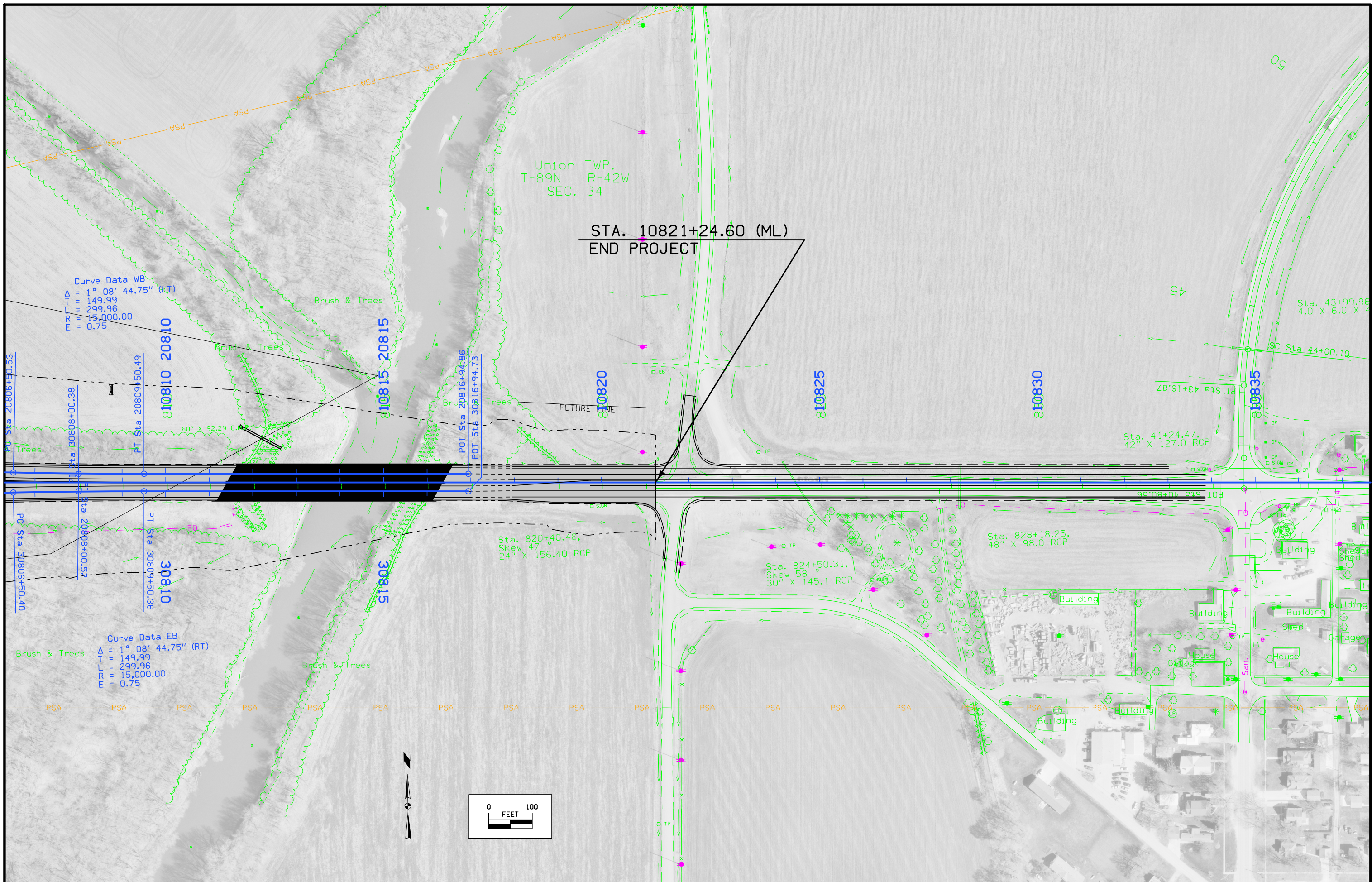
Curve Data ML  
Δ = 0° 35' 36.83" (RT)  
T = 129.50  
L = 258.99  
R = 25,000.00  
E = 0.34

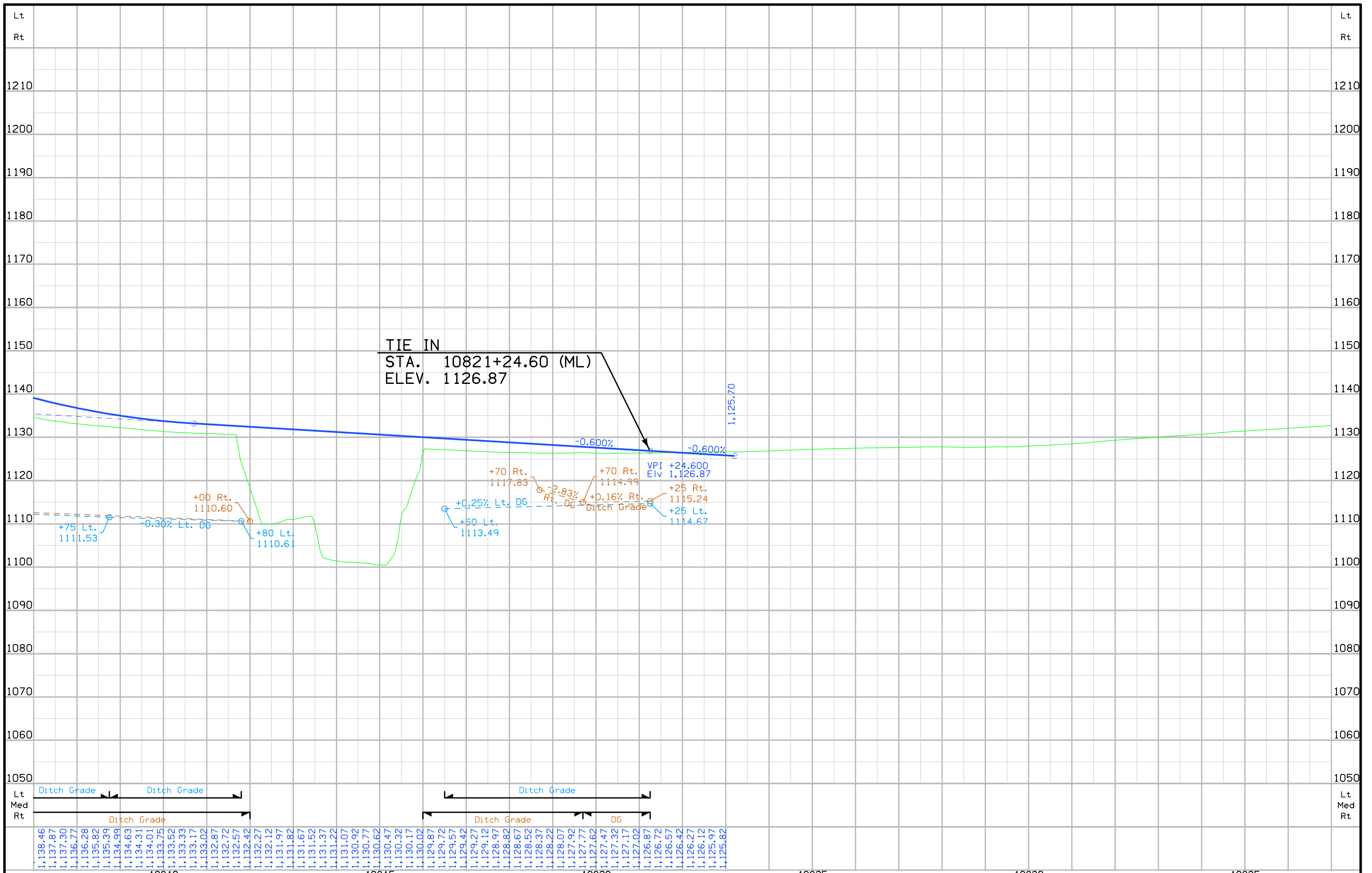




FILE NO.	ENGLISH	DESIGN TEAM	Flattery\Johnson	WOODBURY COUNTY	PROJECT NUMBER	NHSX-020-1(133)--3H-97	SHEET NUMBER	D.13
----------	---------	-------------	------------------	-----------------	----------------	------------------------	--------------	------

1:21:16 PM 6/27/2014 ajohns1 pw:\projectwise.dot.int.lan:PWMain\Documents\Projects\9702001098\Design\Section1\97020077D1(133).dgn

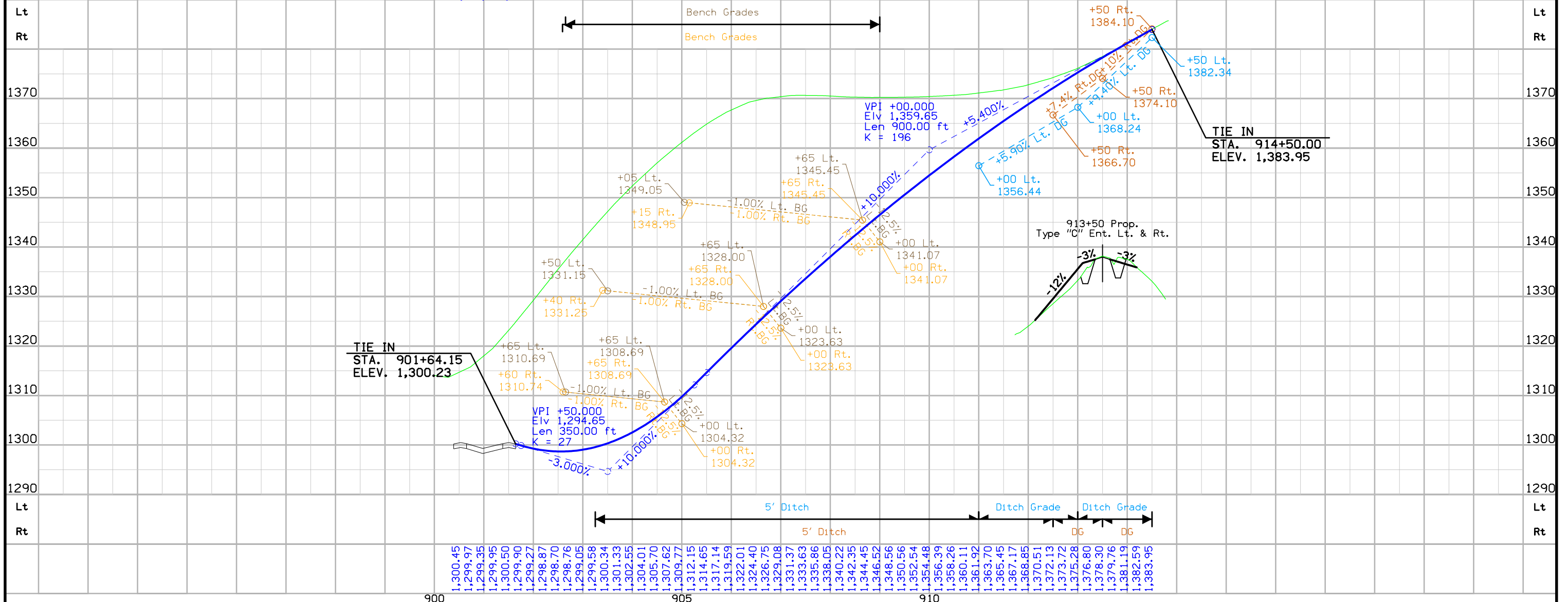
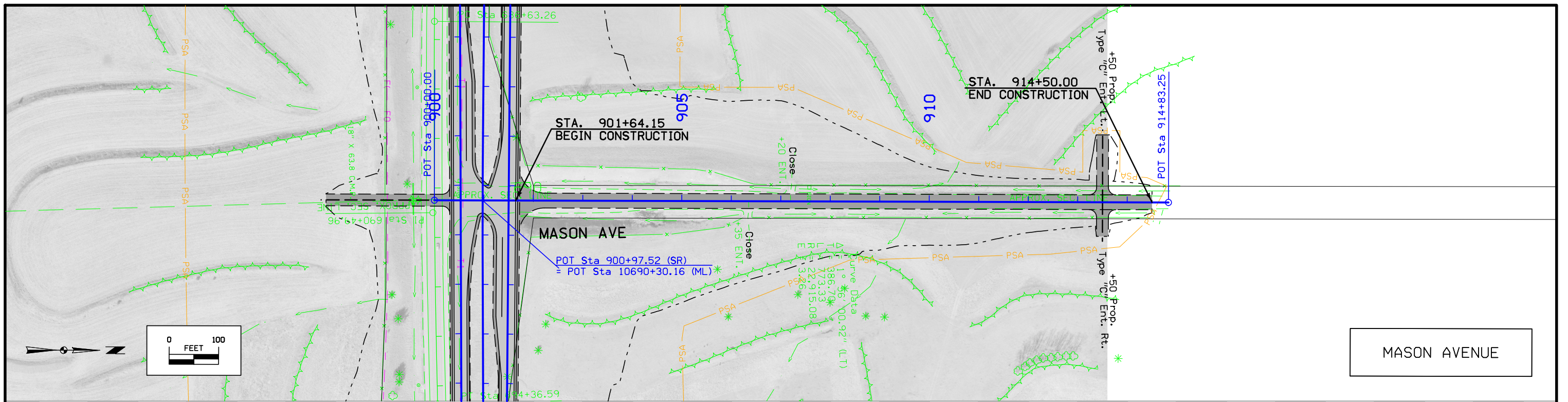




FILE NO.	ENGLISH	DESIGN TEAM	Flattery\Johnson	WOODBURY COUNTY	PROJECT NUMBER	NHSX-020-1(133)--3H-97	SHEET NUMBER	D.15
----------	---------	-------------	------------------	-----------------	----------------	------------------------	--------------	------







FILE NO.	ENGLISH	DESIGN TEAM	Flattery\Johnson	WOODBURY COUNTY	PROJECT NUMBER	NHSX-020-1(133)--3H-97	SHEET NUMBER	E.2
----------	---------	-------------	------------------	-----------------	----------------	------------------------	--------------	-----

# Survey Information

## General Information

Measurement units for this survey are US survey feet. This survey is for proposed four lane for US 20 between just east of Merville to Early. Project control information is from a 1998 planning study survey (SAP's 130-133). This field survey was to obtain roadway and drainage features and break lines. The entire digital terrain model and topography in the corridor will be completed by supplemental aerial photography.

## Vertical Control

Vertical control for this survey is relative to a 1998 digital bench level survey. The 1998 survey is reported to be relative to NAVD88 datum. A level loop was started at BM 997 (USGS BM 29RS) and headed west along US 20 then back to BM 997 (USGS BM 29RS) where adjustments were made. Another run was started at BM 508 then continued east to BM 998 (USGS BM G14) where adjustments were made. NAVD88 elevations were determined at USGS BM 29RS and USGS BM G 14 by converting published NGVD29 elevations using transformation software. The unadjusted bench level run from BM 29RS had a misclosure at BM G 14 of 0.31'. This misclosure is verified by 1998 GPS observations. Even though the misclosure between the two marks is relatively high the error was distributed proportionately along the route.

Vertical equations are as follows:

Datum Benchmark  
 BM # 997 this survey = (USGS BM 29RS)      Elevation = 1378.29 NAVD  
 1988  
 = NGVD29 Elevation 1377.761

Datum Benchmark  
 BM # 998 this survey = (USGS BM G14)      Elevation = 1143.26 NAVD  
 1988  
 = NGVD29 Elevation 1142.816

Wolf Creek Bridge West Bridge Seat this survey      Elevation = 1287.28  
 = Wolf Creek Bridge West Bridge      Elevation = 1287.30  
 Project # FN-201(58)—21-97

## Horizontal Control

Horizontal control for this survey is from 1998 GPS network survey as follows:

GENERAL INFORMATION FOR G.P.S. PROJECT :  
 SAP 130, NHS-20-1(77)--19-97

SAP 131, NHS-20-2(53)--19-47

SAP 132, NHS-20-2(54)--19-47

SAP 133, NHS-20-2(55)--19-81

STATE PLANE COORDINATE ZONE 1401 ( IOWA NORTH LAMBERT )

STATE PLANE COORDINATES HELD AT POINT G046

AVERAGE PROJECT LATITUDE = 42 28 31.38335

RESULTING RADIUS = 6364559.741

MEAN PROJECT ELEVATION = 415.000

SEA LEVEL FACTOR = 0.999934799

AVERAGE PROJECT SCALE FACTOR = 0.999950986

COMBINED FACTOR (GRID) = 0.999885789

1 / GRID = 1.000114224

VERTICAL DATUM = NAVD 88 <> HORIZONTAL DATUM = NAD 83

Local Project Plane Coordinate Conversion Equation :

- a. Local Project Coord y = [(State Plane y - hold point y) / grid factor] + hold point y
- b. Local Project Coord x = [(State Plane x - hold point x) / grid factor] + hold point x

Coordinates are metric units. Metric units were converted to US Survey feet units for project coordinates.

NOTE: GPS DERIVED HEIGHTS ARE NOT RELATIVE TO ADJUSTED PROJECT HEIGHTS.

## Survey Information

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans, Fed. Project # 2, Fed. Project # 2 (15), Fed. Project # 2(19), and Fed. Project # 2(11). Stationing was established at PI Sta. 226+64.5. Stationing was then backed westerly to the BOP and carried forward to the EOP. The followings PI's were set by the District 3 Office.

PI Sta., 226+64.5 (Fed. Project # 2 (19))  
 PI Sta. 274+54.6 (Fed. Project # 2)  
 PI Sta. 390+20.4 (Fed. Project # 2)  
 PI Sta. 422+35.2 (Fed. Project # 2)  
 PI Sta. 491+85.9 (Fed. Project # 2)  
 PI Sta. 533+02.9 (Fed. Project # 2 (15))  
 PI Sta. 580+47.1 (Fed. Project # 2 (15))  
 PI Sta. 690+48.1 (Fed. Project # 2 (15))  
 PI Sta. 742+55.0 (Fed. Project # 2 (15))  
 PI Sta. 776+98.7 (Fed. Project # 2 (15))  
 PC Sta. 882+75.6 (Fed. Project # 2 (11))  
 PT Sta. 905+83.1 (Fed. Project # 2 (11))  
 PC Sta. 916+76.4 (Fed. Project # 2 (11))  
 PT Sta. 940+20.5 (Fed. Project # 2 (11))  
 PI Sta. 966+07.1 (Fed. Project # 2 (11))  
 PI Sta. 1003+59.8 (Fed. Project # 2 (11))  
 PI Sta. 1035+20.3 (Fed. Project # 2 (11))  
 PI Sta. 1045+51.7 (Fed. Project # 2 (11))  
 PI Sta. 1057+00.1 (Fed. Project # 2 (11))  
 PI Sta. 1148+65.5 (Fed. Project # 2 (11))

Equations are as follows:

PI Sta. 226+64.5 This Survey  
 = PI Sta. 226+64.5 (Fed. Project # 2 (19))

PI Sta. 274+54.22 this survey  
 = PI Sta. 274+54.6 (Fed. Project # 2)

PI Sta. 390+21.71 this survey  
 = PI Sta. 390+20.4 (Fed. Project # 2)

PI Sta. 422+36.66 this survey  
 = PI Sta. 422+35.2 (Fed. Project # 2)

PI Sta. 491+88.23 this survey  
 = PI Sta. 491+85.9 (Fed. Project # 2)

PI Sta. 533+05.21 this survey  
 = PI Sta. 533+02.9 (Fed. Project # 2 (15))

PI Sta. 580+49.39 this survey  
 = PI Sta. 580+47.1 (Fed. Project # 2 (15))

PI Sta. 690+49.96 this survey  
 = PI Sta. 690+48.1 (Fed. Project # 2 (15))

PI Sta. 742+55.60 this survey  
 = PI Sta. 742+55.0 (Fed. Project # 2 (15))

PI Sta. 776+98.28 this survey  
 = PI Sta. 776+98.7 (Fed. Project # 2 (15))

PC Sta. 882+75.6  
 = PC Sta. 882+75.6 (Fed. Project # 2 (11))

PT Sta. 905+83.1  
 = PT Sta. 905+83.1 (Fed. Project # 2 (11))

PC Sta. 916+76.4  
 = PC Sta. 916+76.4 (Fed. Project # 2 (11))

PT Sta. 940+20.5  
 = PT Sta. 940+20.5 (Fed. Project # 2 (11))

PI Sta. 966+07.1  
 = PI Sta. 966+07.1 (Fed. Project # 2 (11))

PI Sta. 1003+59.8  
 = PI Sta. 1003+59.8 (Fed. Project # 2 (11))

PI Sta. 1035+20.3  
 = PI Sta. 1035+20.3 (Fed. Project # 2 (11))

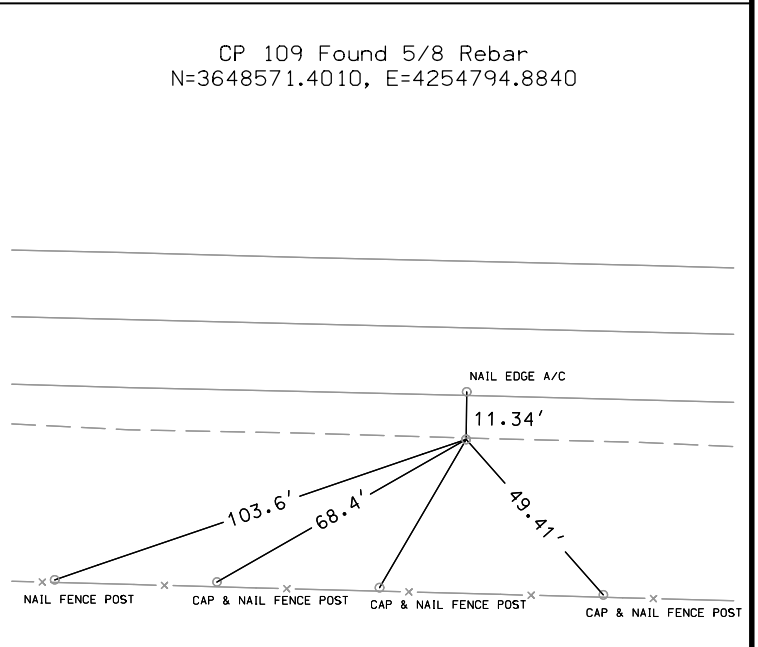
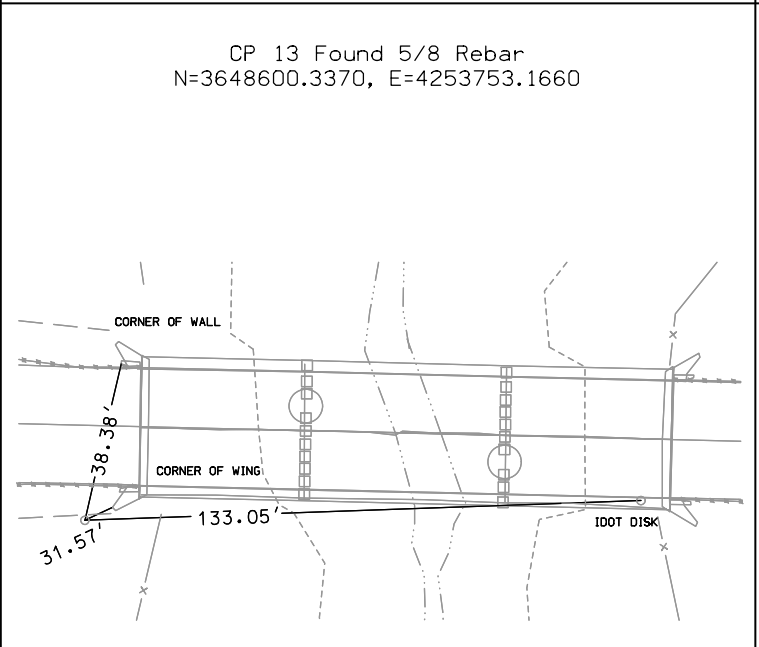
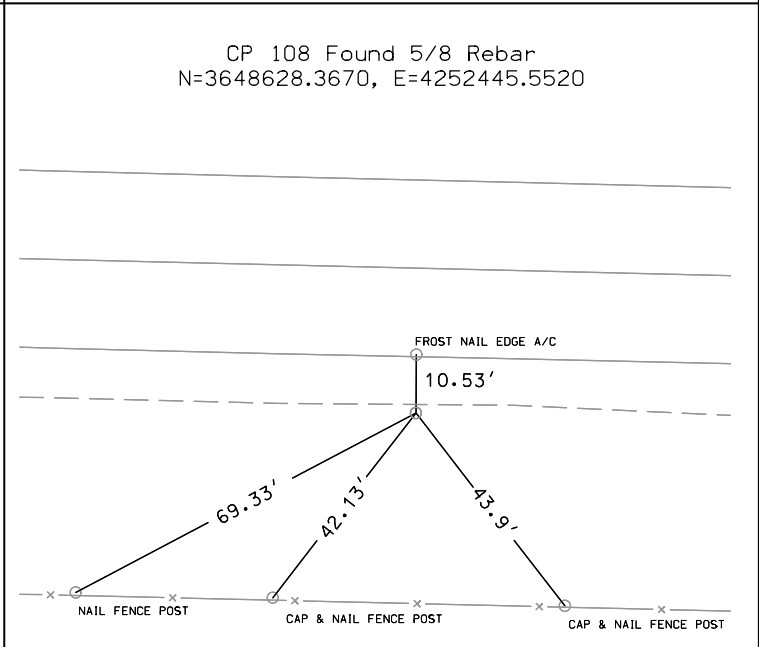
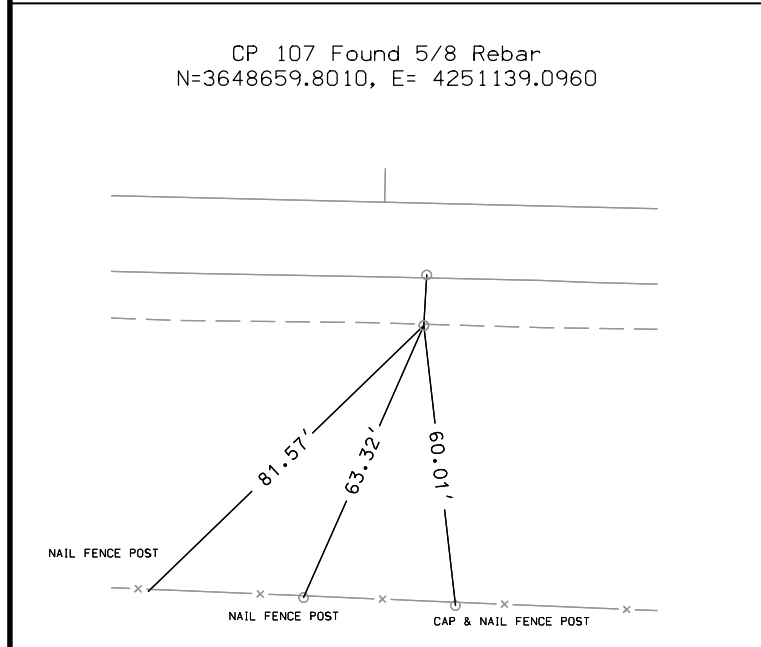
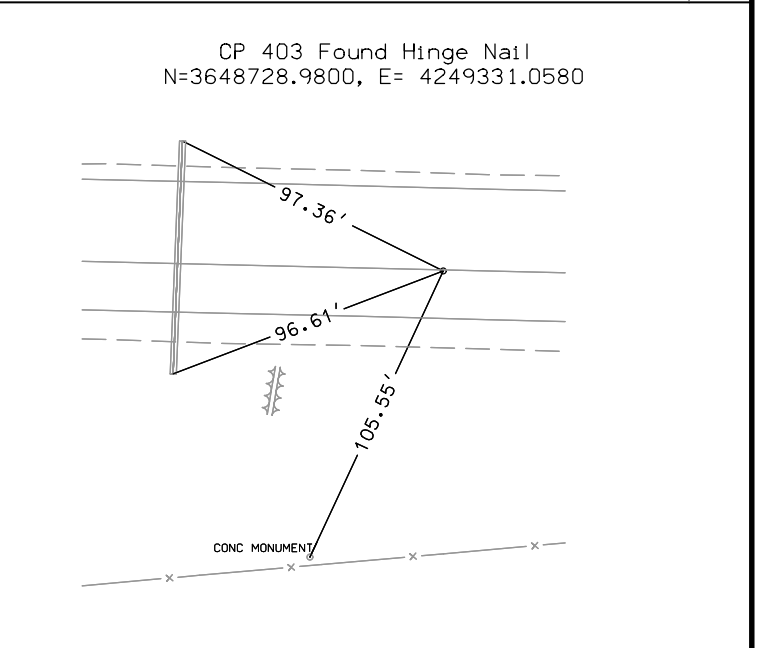
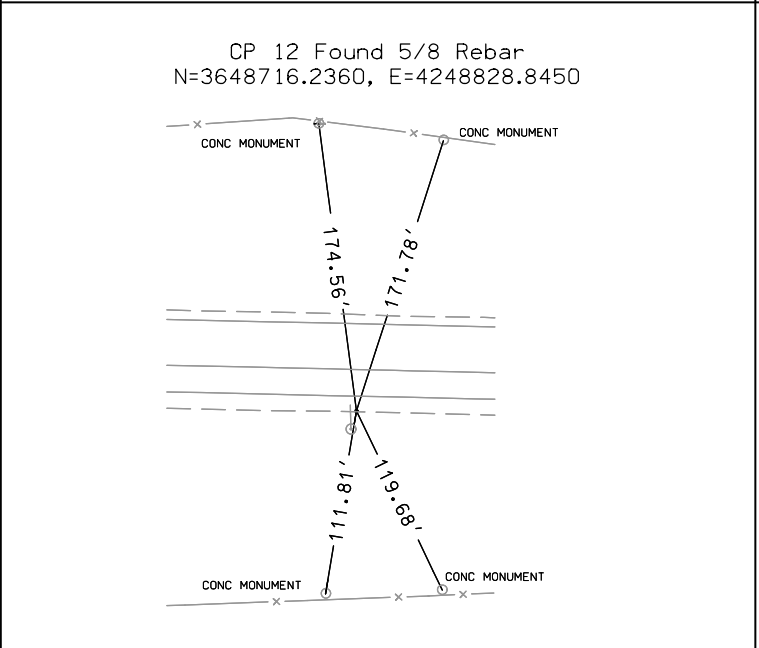
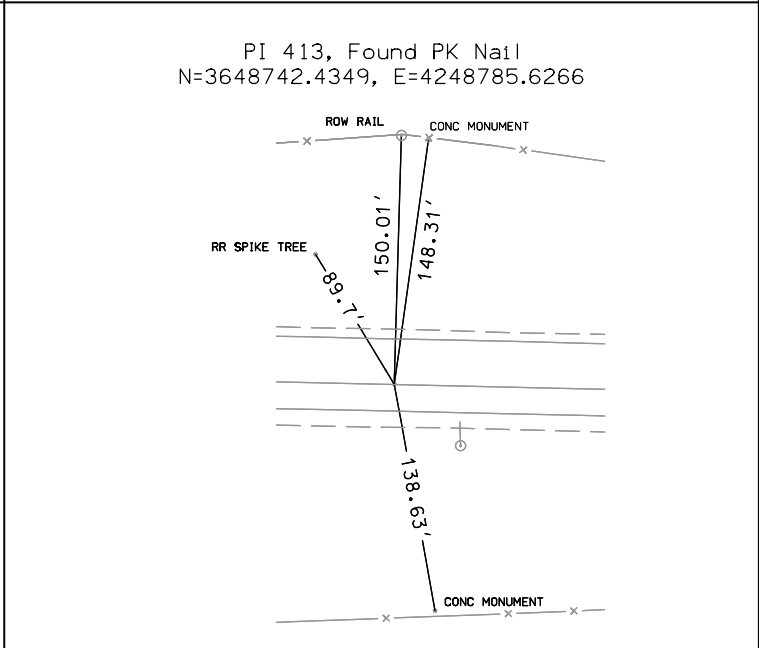
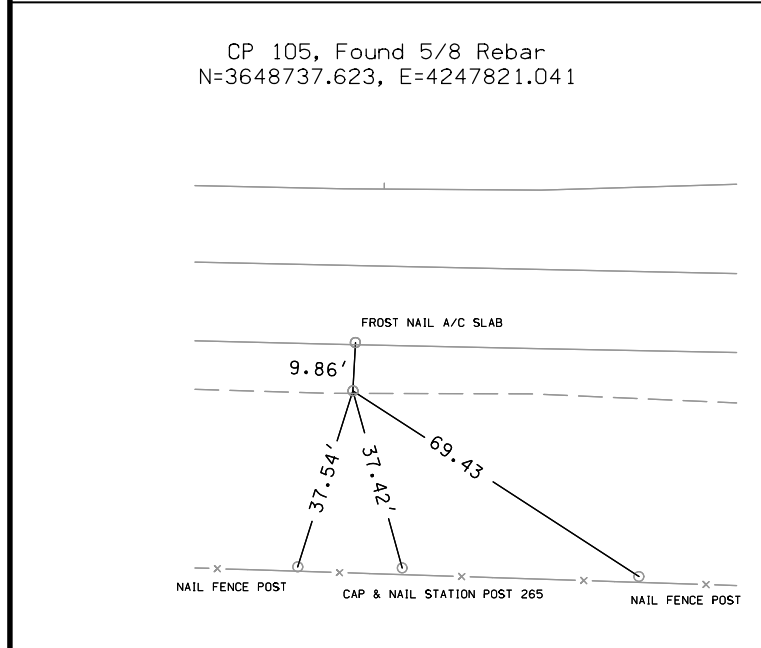
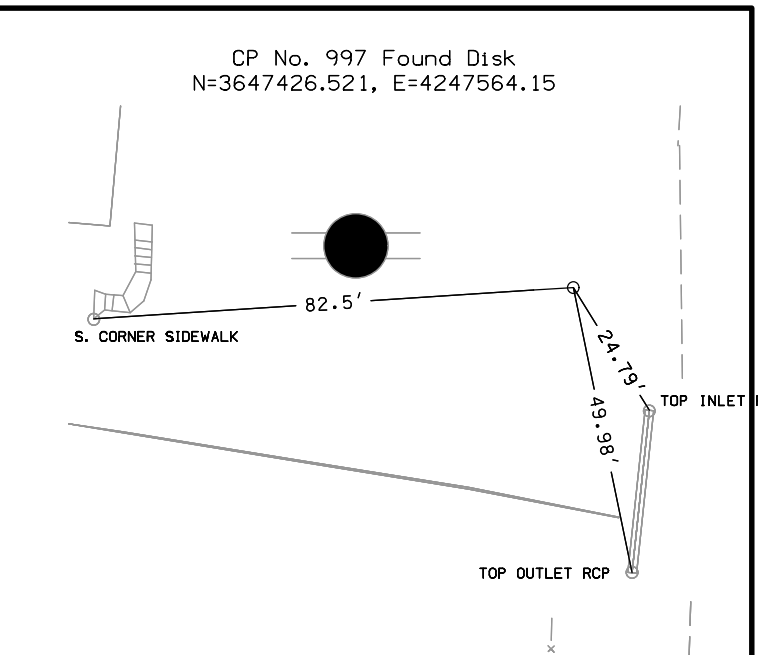
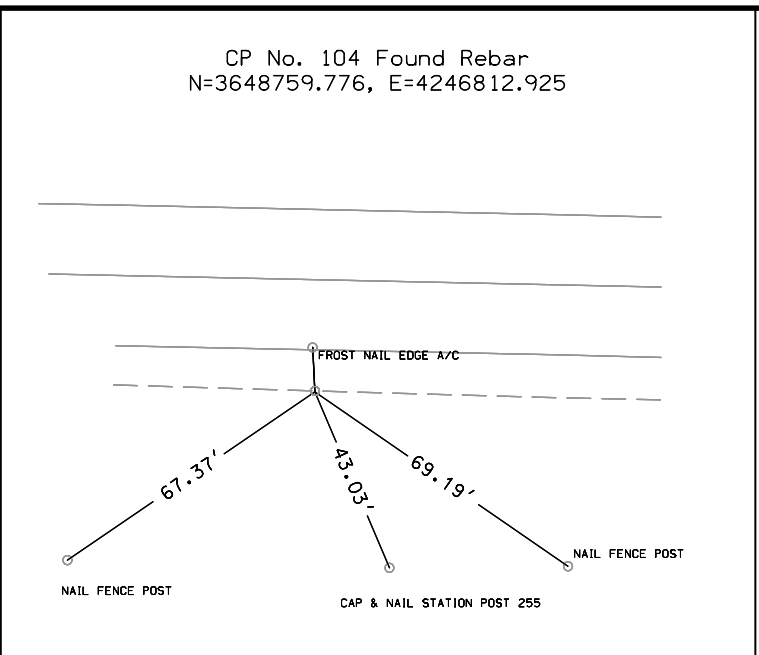
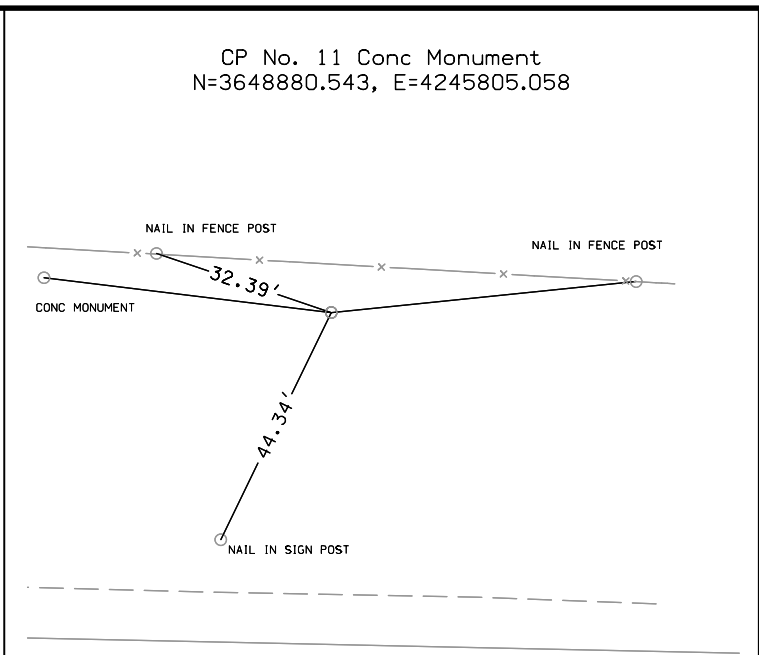
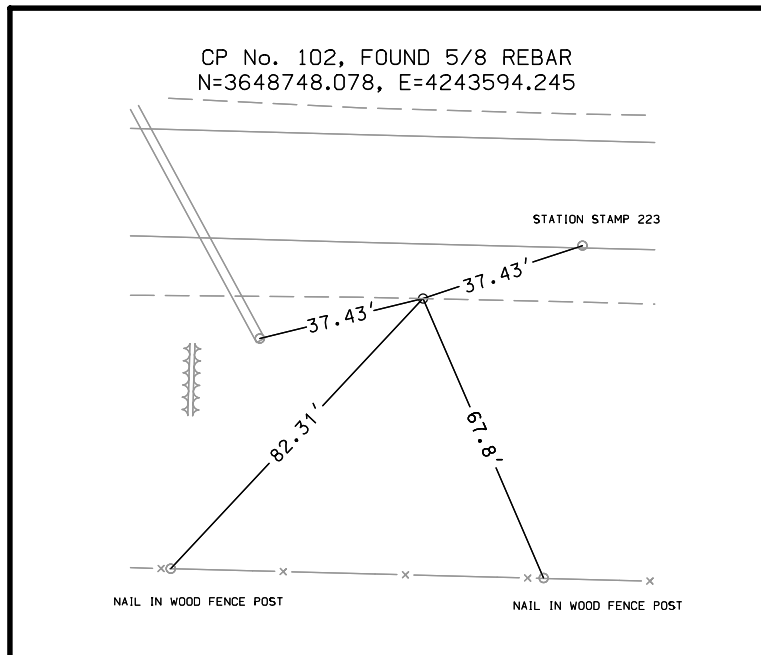
PI Sta. 1045+51.7  
 = PI Sta. 1045+51.7 (Fed. Project # 2 (11))

PI Sta. 1057+00.1  
 = PI Sta. 1057+00.1 (Fed. Project # 2 (11))

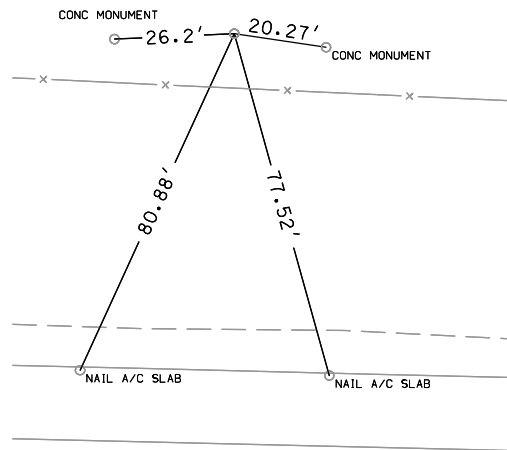
PI Sta. 1148+65.5  
 = PI Sta. 1148+65.5 (Fed. Project # 2 (11))

# VERTICAL CONTROL

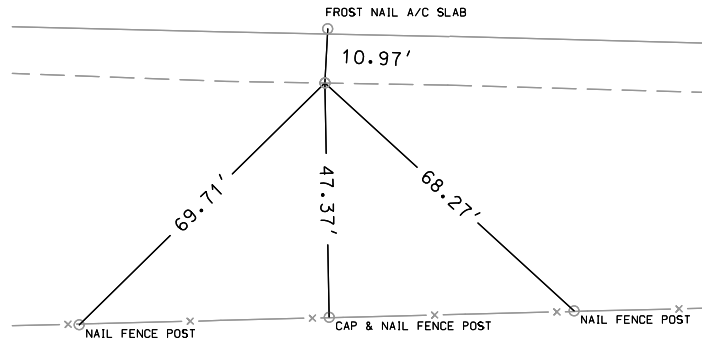
Point	North	East	Elevation	Station	Offset	Feature	Description	Point	North	East	Elevation	Station	Offset	Feature	Description
500	3649009.3000	4240254.5810	1313.8820	Off Chain	Off Chain	BM	RR SPK S.POWER POLE LT	545	3647867.4070	4280820.4180	1391.2080	595+01.88	-88.0327	BM	FOUND IDOT PLUG TOP HDWL LT
502	3648755.5510	4242322.1660	1271.2150	Off Chain	Off Chain	BM	IDOT PLUG HDWL RT	546	3647858.1930	4281262.6990	1389.6990	599+44.21	-94.6328	BM	FOUND IDOT PLUG TOP HDWL LT
501	3648789.1480	4241190.0650	1280.1090	Off Chain	Off Chain	BM	IDOT PLUG HDWL RT	547	3647710.5670	4281647.2850	1413.5960	603+33.82	39.1528	BM	FOUND X TOP HDWL RT
503	3648914.8360	4243634.3370	1332.8520	223+00.13	-59.9577	BM	ROW RAIL LT	548	3647861.9560	4282319.3190	1443.0250	610+00.02	-136.1597	BM	CONC MONUMENT LT
504	3648883.2210	4245013.3210	1373.3440	236+79.76	-59.7188	BM	ROW RAIL LT	549	3647615.3070	4284311.1180	1342.6810	629+99.36	39.1399	BM	FOUND IDOT PLUG HDWL RT
505	3648880.5430	4245805.0580	1400.2300	244+71.37	-74.0490	BM	CONC MONUMENT LT	732	3647489.0570	4285028.9320	1337.0885	637+21.23	139.6527	BM	CONC MONUMENT
506	3648731.2790	4246646.6500	1370.3710	253+15.98	57.1020	BM	FOUND X TOP RCP RT	551	3647542.5230	4285710.5800	1305.7910	644+00.53	61.8571	BM	FOUND X TOP HDWL RT
507	3648733.4210	4247128.4400	1371.4610	257+97.61	44.6109	BM	FOUND X TOP RCP RT	552	3647525.0920	4287073.4860	1281.8150	657+63.19	30.5633	BM	FOUND IDOT PLUG TOP HDWL RT
508	3648663.7420	4247678.9030	1383.2880	263+49.44	102.4491	BM	FOUND RR SPK PP S.E. QUAD US 20 & JASPER	553	3647566.3470	4288554.1920	1261.8150	672+41.47	-63.5894	BM	FOUND IDOT PLUG TOP HDWL LT
509	3648820.6030	4248737.9440	1415.3650	274+04.79	-77.2590	BM	BM RR SPK IN TREE LT.	733	3647509.6640	4289486.4470	1294.9273	681+75.16	-40.2638	BM	CUT X TOP INLET 36" RCP
510	3648638.2260	4250255.7190	1373.3170	289+26.39	68.8551	BM	CONC MONUMENT RT	555	3647342.2790	4290406.0520	1328.0260	690+98.32	98.2926	BM	CONC MONUMENT RT
511	3648654.6470	4250929.7690	1336.7590	295+99.85	36.2427	BM	FOUND X TOP RCP RT	734	3647465.5870	4290866.7390	1304.5864	695+57.32	-28.4452	BM	CUT X NORTH BOLT STEEL CABLE GUARDRAIL BRACE PLATE
512	3648737.1910	4251745.6830	1292.4380	304+13.55	-65.8824	BM	IDOT PLUG TOP HDWL LT	556	3647539.1710	4291406.1710	1260.9950	700+96.60	-103.1093	BM	FOUND IDOT PLUG TOP HDWL LT
513	3648689.7330	4252730.7820	1286.9890	313+99.50	-42.1082	BM	FOUND X TOP HDWL LT STATION	557	3647378.7120	4292288.3230	1302.8390	709+79.07	55.5827	BM	FOUND RR SPK TREE RT
724	3648605.0630	4253886.1280	1291.8446	325+56.55	14.7765	BM	FD IDOT BM EAST END OF S. HANDRAIL BRIDGE	558	3647393.0030	4293236.2150	1313.2060	719+26.93	39.3935	BM	FOUND X OUTLET HDWL RCP
515	3648524.2280	4255037.0420	1304.4070	337+09.08	67.9338	BM	R/R SPK GATE POST RT STATIO	559	3647511.4430	4294219.8770	1310.0700	729+10.36	-81.0162	BM	FOUND IDOT PLUG HDWL LT
516	3648662.5780	4255837.2690	1337.4250	345+05.75	-89.6043	BM	ROW RAIL LT STATION 345+00	560	3647358.9930	4295638.5790	1348.2130	743+30.21	66.2174	BM	FOUND RR SPK PP RT
725	3648521.3700	4256358.8970	1328.4313	350+30.62	39.0292	BM	CUT X TOP INLET 36" RCP	561	3647316.2860	4296329.4540	1308.8560	750+22.38	94.3288	BM	FOUND X TOP HDWL RT
518	3648513.2100	4257279.5820	1328.6880	359+51.23	25.0644	BM	IDOT PLUG TOP HDWL RT	562	3647342.4540	4297247.8480	1316.6020	759+39.96	47.6365	BM	FOUND IDOT PLUG HDWL RT
519	3648553.4570	4257730.4600	1334.3510	364+01.01	-26.0047	BM	IDOT PLUG TOP HDWL RT	563	3647317.5760	4297651.5360	1306.3980	763+44.10	63.4838	BM	FOUND IDOT PLUG HDWL RT
726	3648577.1540	4258616.6980	1358.6557	372+86.43	-70.9895	BM	SET RAILROAD SPIKE SOUTH SIDE OF POWER POLE	735	3647327.7700	4298256.7310	1310.9900	769+48.92	39.7632	BM	IHC BUTTON ON UMBRELLA INTA RR SPK TREE RT
727	3648507.2140	4259890.8270	1393.6735	385+61.87	-31.6847	BM	CUT X TOP INLET 24" RCP	564	3647294.2400	4298892.3400	1309.6960	775+85.46	58.4800	BM	CUT X TOP INLET 30" RCP
523	3648370.6890	4260321.6200	1411.5790	389+97.13	92.1795	BM	CONC MONUMENT RT	565	3647387.9310	4300305.1910	1238.0450	789+94.07	-89.9636	BM	FOUND RR SPK TREE LT
524	3648367.5480	4261120.4000	1393.2090	397+96.41	54.9383	BM	FOUND RR SPK PP RT	737	3647247.8740	4300912.2140	1186.8380	796+06.29	25.2762	BM	CUT X ON STEEL CABLE GUARDR
525	3648431.4120	4261561.5830	1386.8150	402+33.47	-32.7952	BM	FOUND X TOP RCP	567	3647224.5660	4302472.8730	1133.4820	811+66.60	-14.9419	BM	FOUND IDOT PLUG TOP N.W. RAIL LT
526	3648291.4180	4262723.9550	1359.6720	414+01.73	43.8557	BM	FOUND X TOP HDWL RT	739	3647254.3480	4303398.6770	1119.6170	820+90.43	-82.3723	BM	739 SET RR SPK S P.POLE
728	3648163.5100	4263631.2360	1400.7000	423+12.77	125.5175	BM	CONC MONUMENT	742	3644474.0620	4303373.8510	1117.0750	821+78.76	2696.6211	BM	742 RR SPK W P.POLE
527	3648487.3060	4263740.5120	1383.5180	424+09.87	-202.1719	BM	RR SPK PP LT	741	3645829.8300	4303432.4730	1117.5370	821+82.16	1339.5906	BM	741 RR SPIKE W SIDE PP STA
528	3648211.7220	4264854.4270	1358.8100	435+32.77	39.5503	BM	FOUND IDOT PLUG HDWL RT	569	3647021.6670	4304734.0980	1127.6590	834+34.21	95.7747	BM	NOT FOUND RR SPK PP SW QUAD
529	3648248.7770	4266324.6580	1369.4260	450+01.25	-41.2764	BM	FOUND X TOP RCP LT	570	3646995.8970	4306062.6190	1138.1930	847+62.68	67.4628	BM	FOUND RR SPK PP S.W. QUAD U
530	3648237.0710	4266883.7500	1372.9240	455+60.44	-46.2272	BM	IDOT PLUG TOP HDWL LT	998	3643801.6430	4307026.8850	1143.2560	858+56.13	3219.8329	CP	GPS CONTROL PT
531	3648073.7670	4267862.8910	1418.1730	465+44.01	87.8425	BM	G017 FOUND CONC MONUMENT RT	571	3646947.8780	4307437.8450	1131.1560	861+38.72	59.4809	BM	571 RR SPK N P.POLE
31849	3648061.2420	4269221.1900	1426.7945	479+02.08	59.9074	BM	RIGHT OF WAY RAIL RT	573	3646949.8700	4309451.7170	1199.7020	881+50.85	-24.4585	BM	573 IDOT DISC RCB LT.
533	3648061.2630	4269221.2070	1426.7920	479+02.10	59.8859	BM	RIGHT OF WAY RAIL RT	576	3645500.1330	4312041.7170	1243.6950	912+14.91	-25.9809	BM	576 IDOT DISC RCB LT
534	3648007.8620	4270392.1980	1452.0670	490+73.86	78.7428	BM	FOUND RR SPK TREE STUMP RT	577	3644694.6490	4312744.1960	1225.1030	922+78.34	46.7089	BM	577 FD D.O.T BUTTON OUTLET
535	3648143.4060	4271456.8250	1434.5310	501+35.29	-77.1074	BM	CONC MONUMENT LT	740	3644231.1450	4312846.7550	1227.4960	925+94.78	378.7473	BM	740 SET R.R. SPIKE IN NORTH
536	3647976.8420	4272328.3530	1389.6660	510+09.59	74.2412	BM	FOUND RR SPK TREE STUMP	578	3644315.7590	4313851.9420	1240.3160	934+56.82	-72.5628	BM	578 RR SPIKE S P.POLE
537	3647959.2670	4273008.0800	1359.2720	516+89.52	79.9664	BM	FOUND RIGHT OF WAY RAIL RT	579	3644237.0810	4315038.0730	1242.7730	946+62.41	-80.2605	BM	579 RR SPK S P.POLE
538	3648073.5050	4273952.2250	1334.2850	526+31.53	-50.7100	BM	FOUND IDOT PLUG HDWL LT	580	3644182.4990	4316036.8730	1200.6440	956+62.34	-53.3316	BM	580 CUT X ON RCB LT
729	3647921.0320	4274303.8370	1345.7290	529+85.75	95.6115	BM	SET RR SPK NE SIDE FENCE POST	581	3644201.4600	4317270.4840	1248.6520	968+95.56	-104.7032	BM	581 RR SPIKE PP LT
540	3648044.8550	4275253.4990	1332.9800	539+32.04	-57.5810	BM	FOUND IDOT PLUG HDWL LT	582	3644151.9410	4318545.1390	1218.3470	981+70.99	-83.1254	BM	582 RR SPIKE PP LT
730	3648070.4830	4275952.7200	1351.1465	546+29.79	-109.6778	BM	CONC MONUMENT	583	3644142.4450	4319766.8010	1232.7930	993+92.57	-100.4004	BM	583 RR SPIKE PP LT
541	3647890.7560	4276420.9830	1343.6100	551+04.52	52.1819	BM	FOUND IDOT PLUG LT	584	3644073.7260	4321069.2390	1254.4960	1006+95.22	-65.4316	BM	584 RR SPIKE PP LT
731	3647841.2870	4276963.5000	1345.6242	556+48.53	81.0643	BM	CUT X BALL OF ROW RAIL	598	3643438.8400	4336239.7740	1351.4640	1158+77.29	86.2737	BM	CONC MONUMENT
542	3647957.5900	4277579.0580	1333.8260	562+59.24	-58.4731	BM	FOUND X TOP HDWL LT								
543	3647942.0310	4278633.9140	1389.3540	573+13.92	-82.8843	BM	FOUND RR SPK TREE STUMP								
544	3647749.7800	4279936.4710	1404.1570	586+22.70	61.1136	BM	FOUND X TOP HDWL RT								



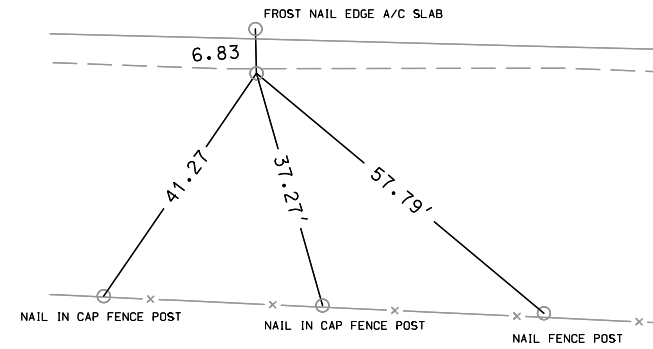
CP 14 Found Right Of Way Rail  
N=3648662.5780, E= 4255837.2690



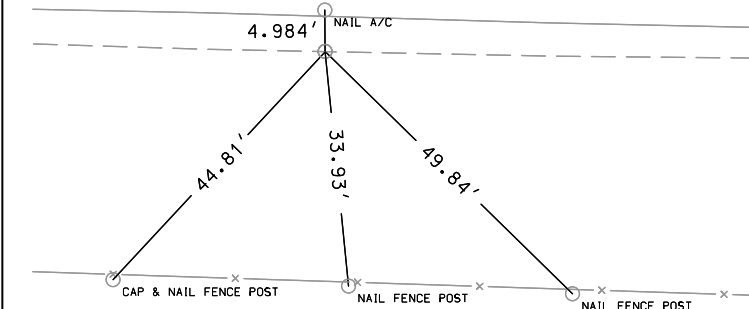
CP 110 Found 5/8 Rebar  
N=3648520.2950, E=4256961.9160



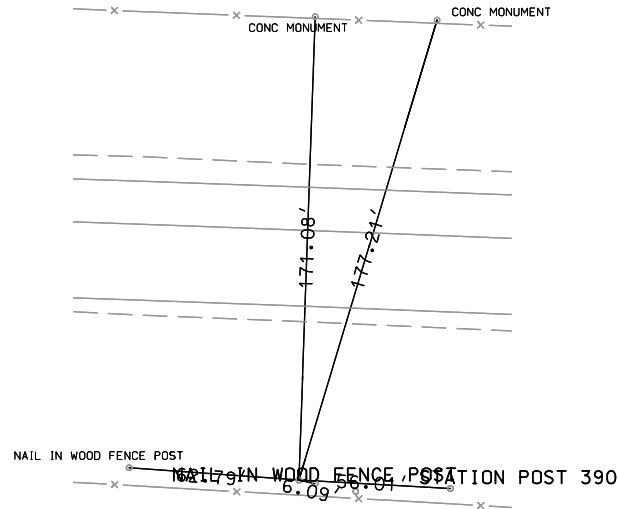
CP 111 Found 5/8 Rebar  
N=3648485.6490, E=4258084.3820



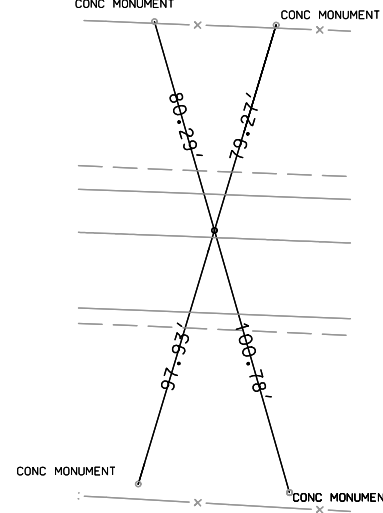
CP 112 Found 5/8 Rebar  
N=3648458.9350, E=4259206.7690



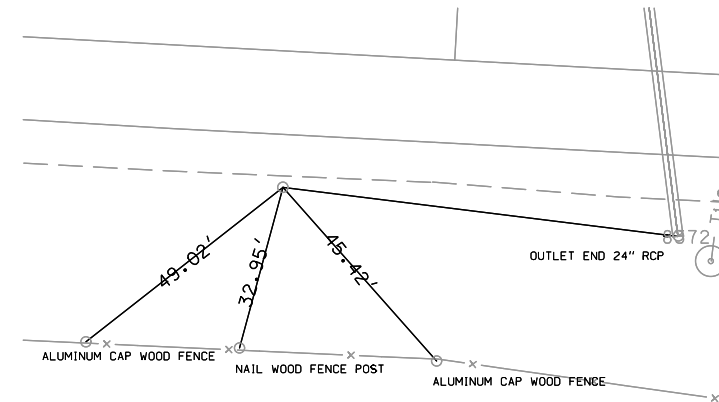
CP 15 Found 5/8 Rebar  
N=3648370.6890, E=4260321.6200



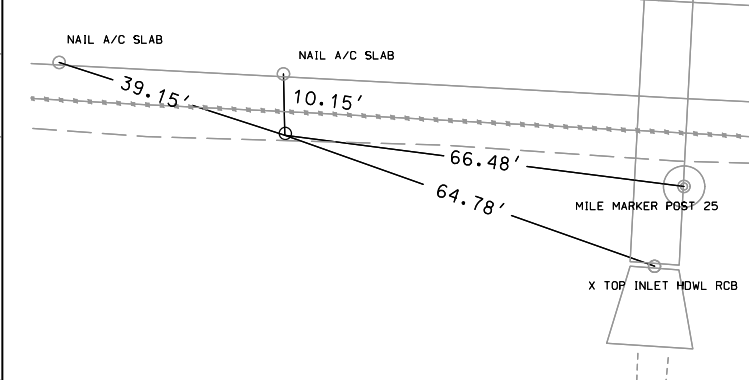
PI 404 Found PK Nail  
N=3648464.4870, E=4260349.7820



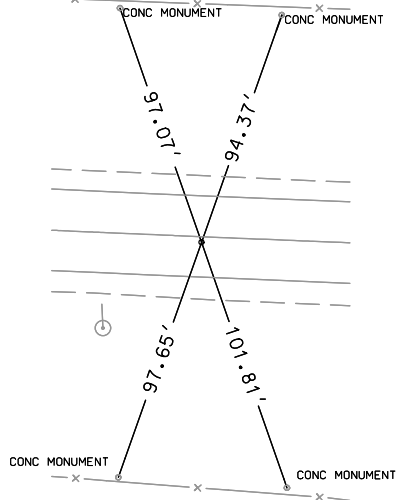
CP 414 Found 5/8 Rebar  
N=3648375.5989, E=4261492.7266



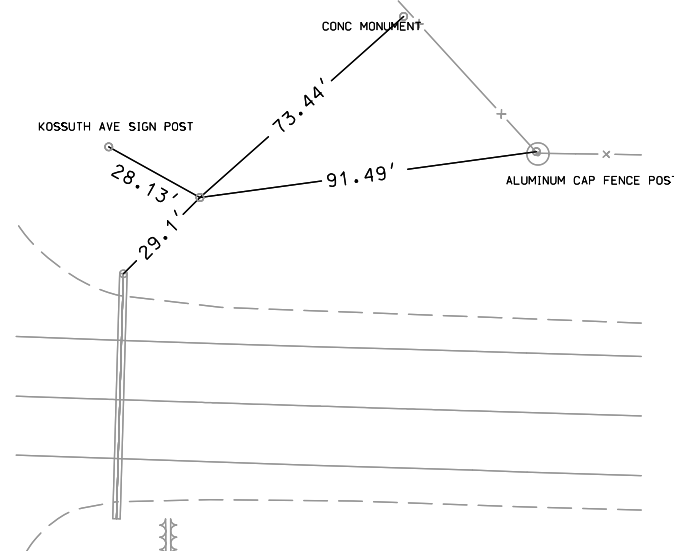
CP 415 Found 5/8 Rebar  
N=3648313.0436, E=4262662.8897



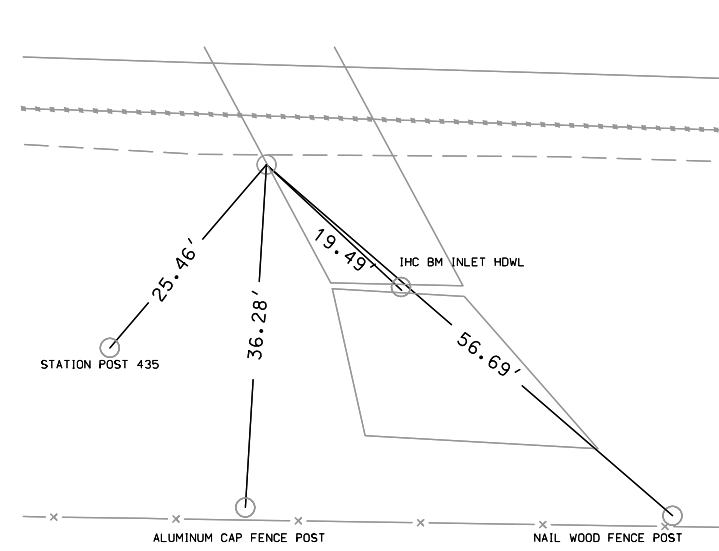
PI 405 Not Set  
N=3648289.8581, E=4263560.0330



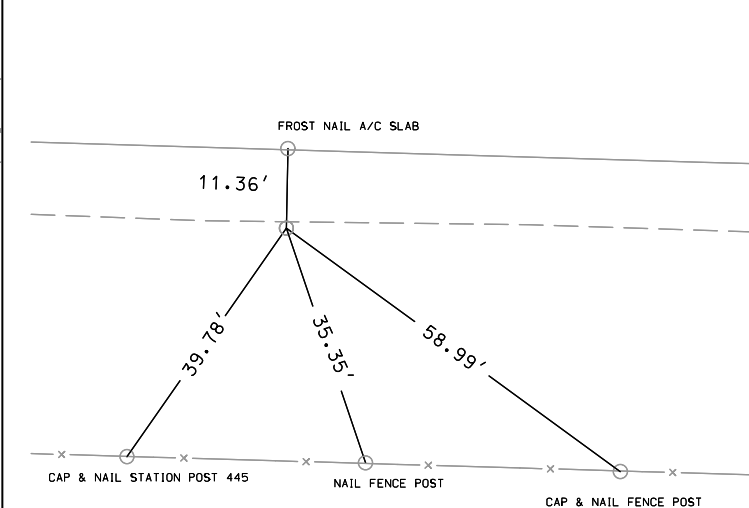
CP 16 Found 5/8 Rebar  
N=3648336.9320, E=4263835.6950



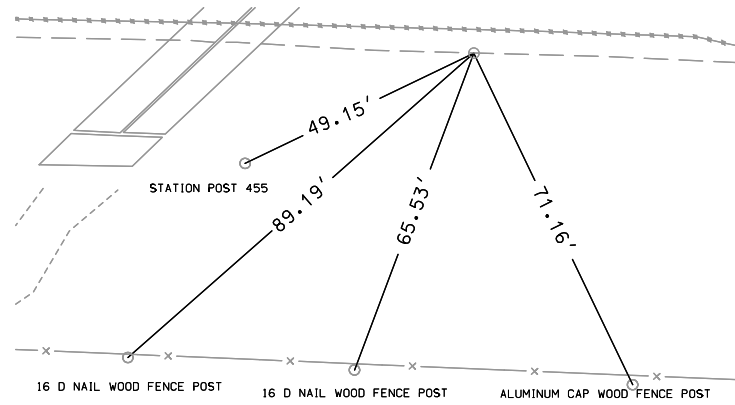
CP 417 Found 5/8 Rebar  
N=3648224.9930, E=4264840.1590



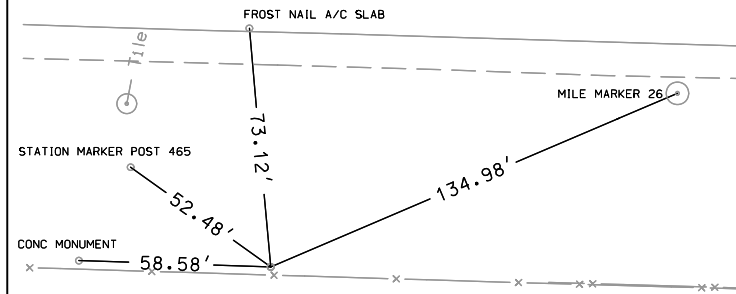
CP 418 Found 5/8 Rebar  
N=3648194.4550, E=4265845.9500



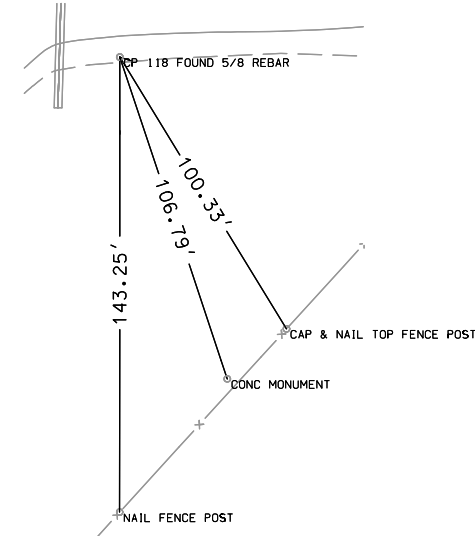
CP 419 Found 5/8 Rebar  
N=3648164.9292, E=4266859.4135



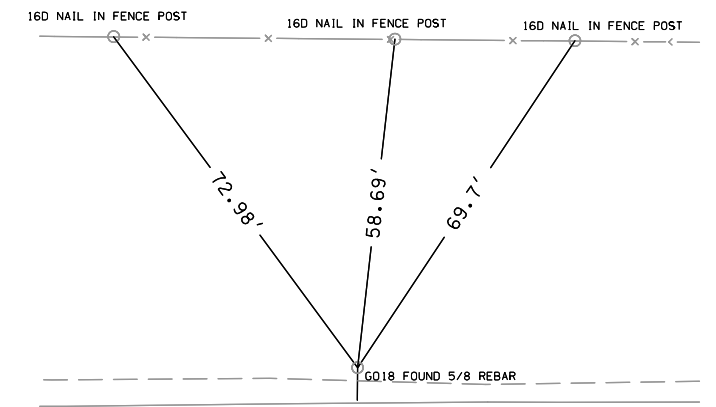
CP 17 Found Conc Monument  
N=3648073.7670, E=4267862.8910



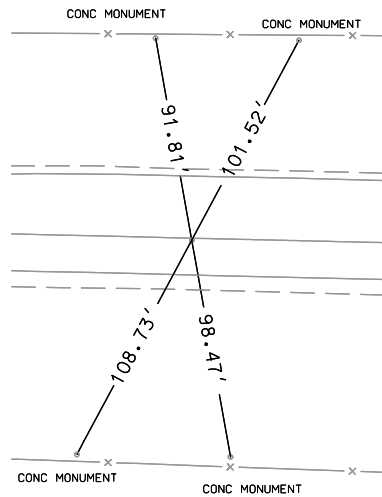
CP 118 Found 5/8 Rebar  
N=3648094.4730, E=4269121.7500



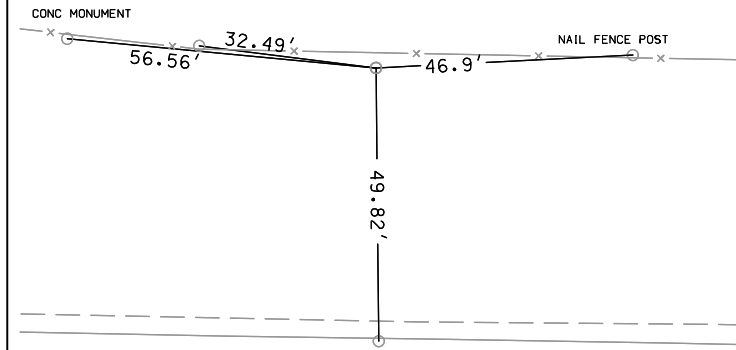
CP 18 Found 5/8 Rebar  
N=3648118.0580, E=4270320.7210



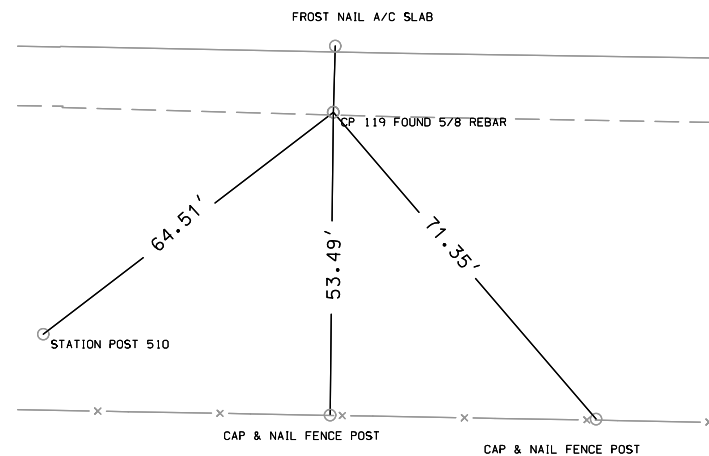
PI 406 Found PK Nail  
N=3648082.8170, E=4270508.5610



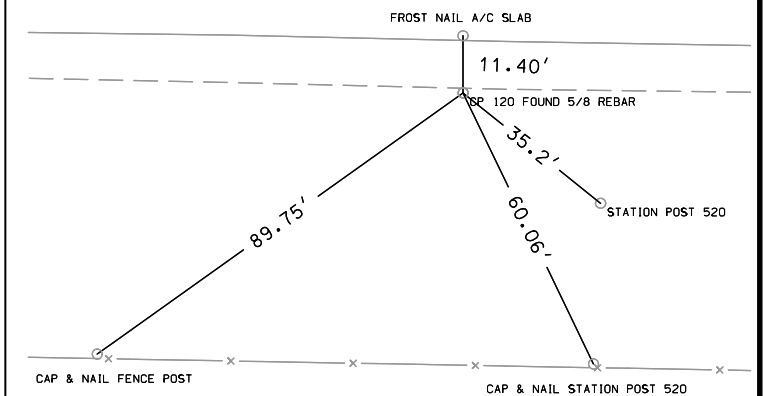
CP 19 Found Conc Monument  
N=3648143.4060, E=4271456.8250



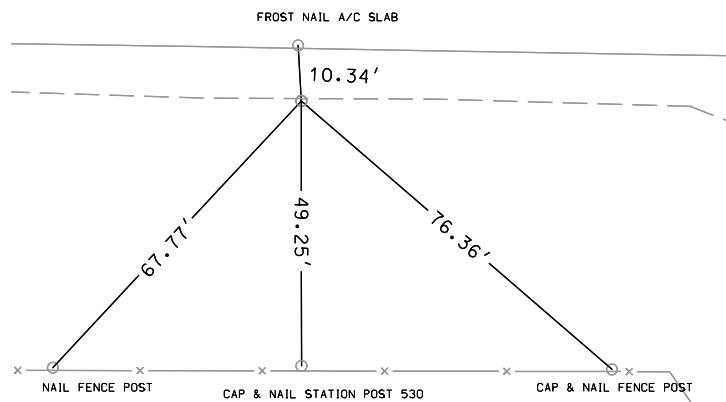
CP 119 Found 5/8 Rebar  
N=3648023.9140, E=4272373.6160



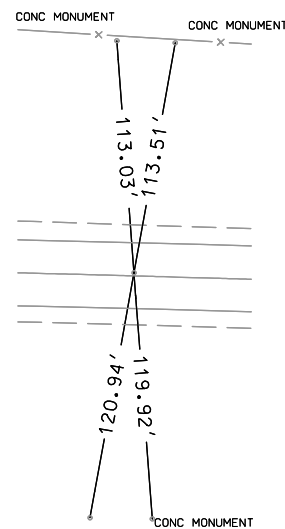
CP 120 Found 5/8 Rebar  
N=3648007.9980, E=4273297.4830



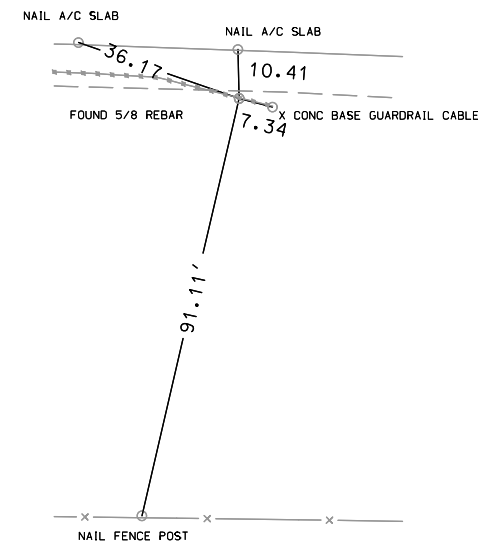
CP 20 Found 5/8 Rebar  
N=3647992.4090, E=4274220.3200



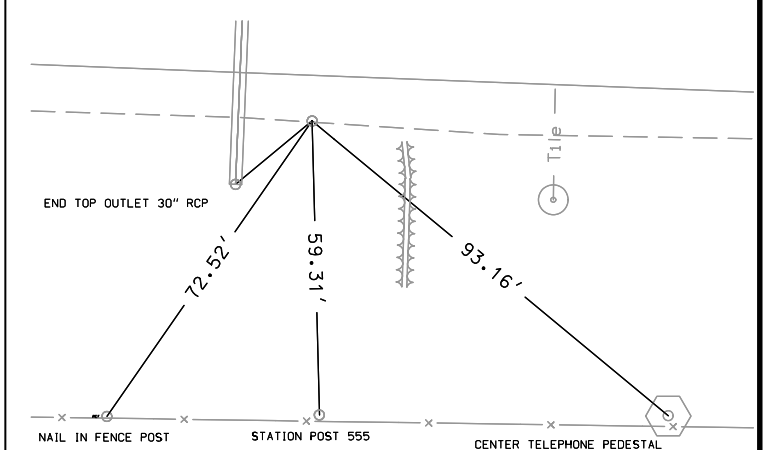
CP 407 Found PK Nail  
N=3648011.0610, E=4274624.9170



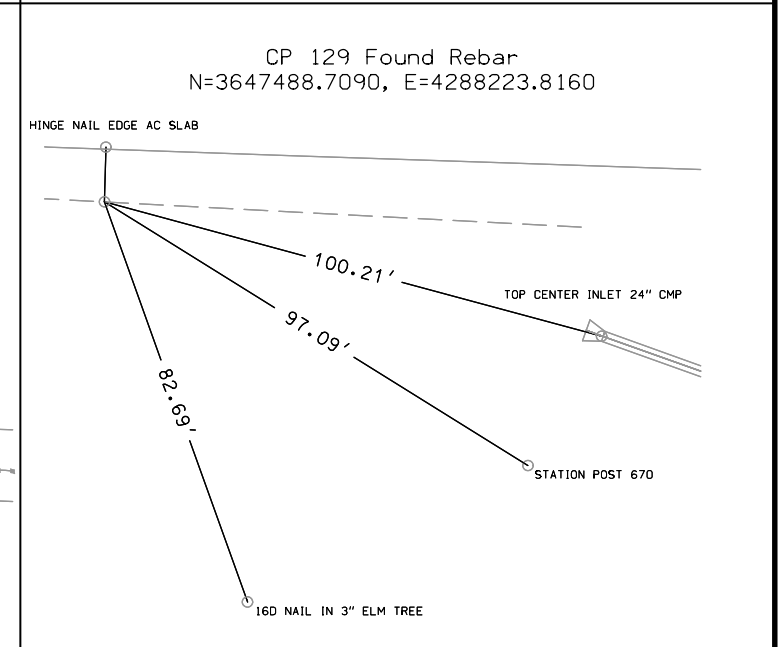
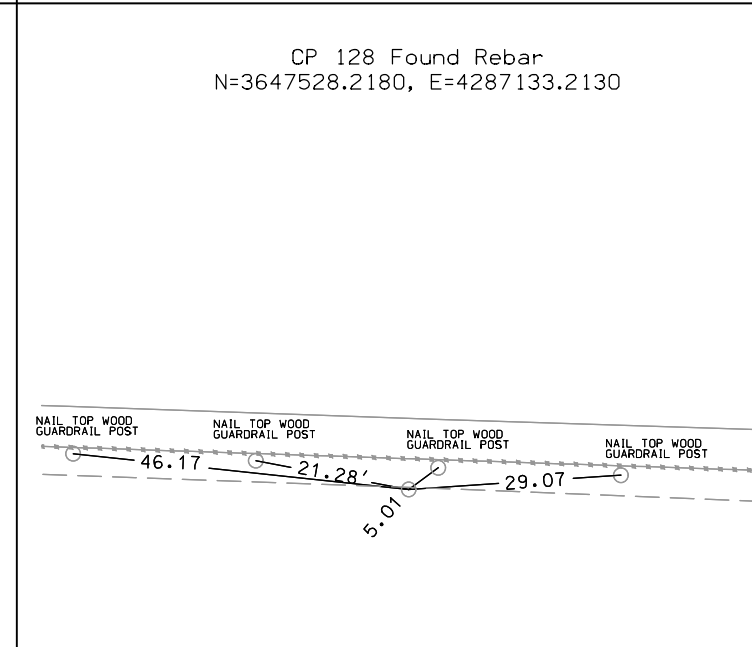
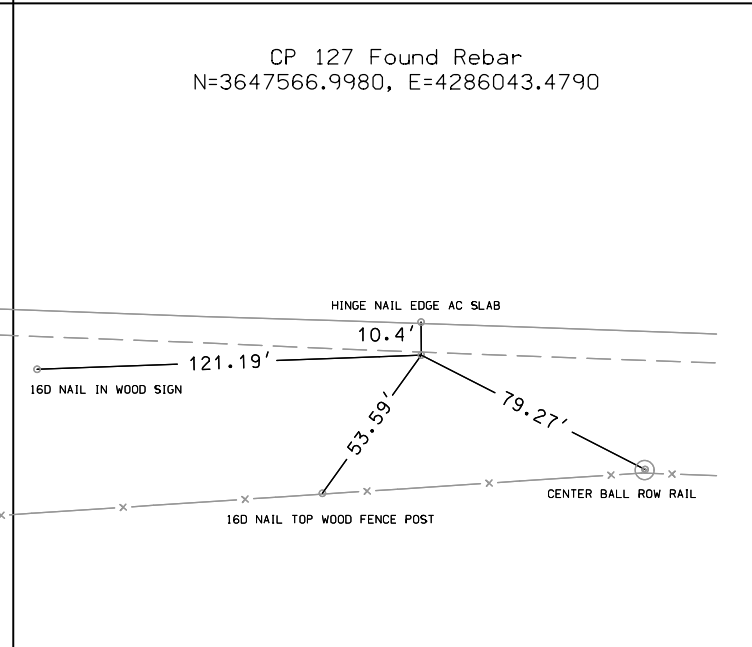
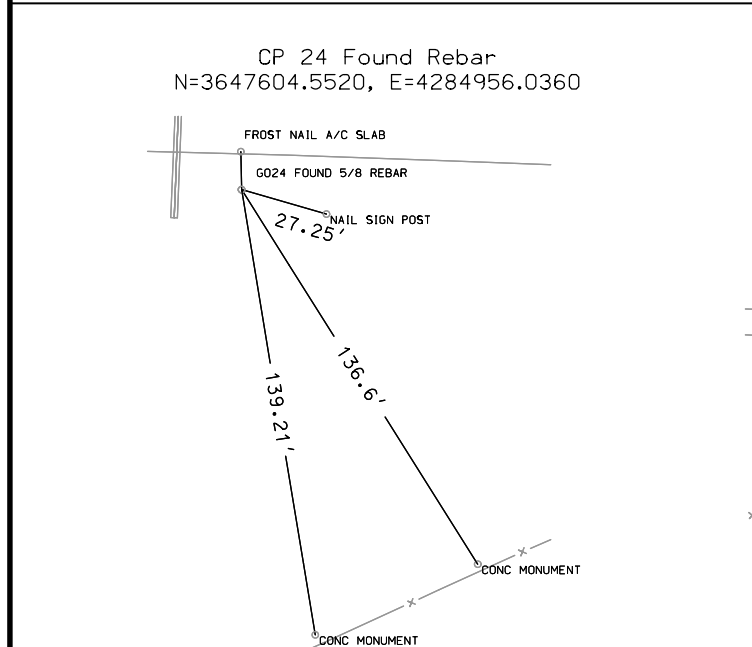
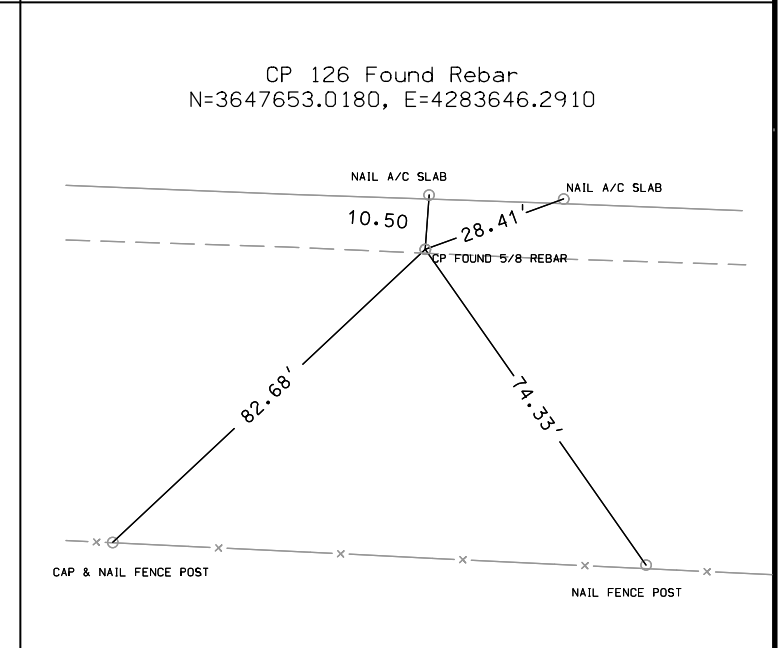
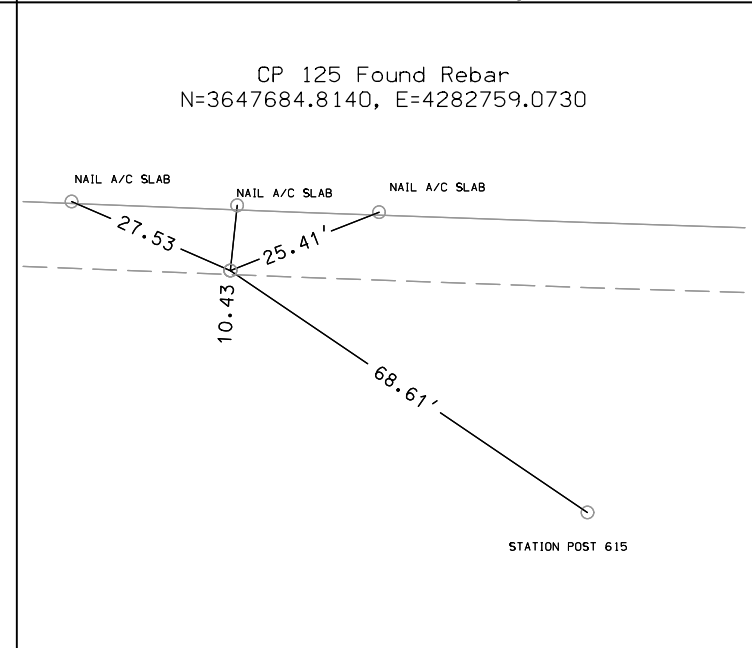
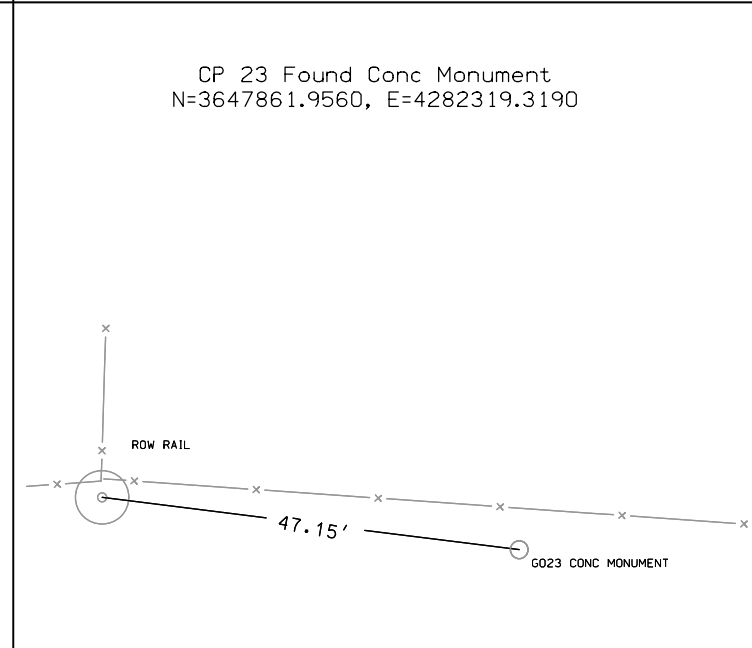
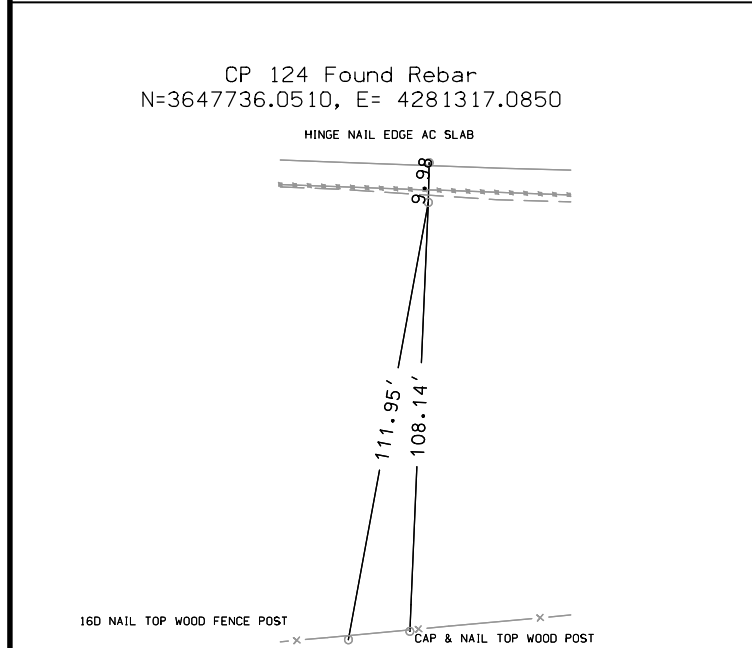
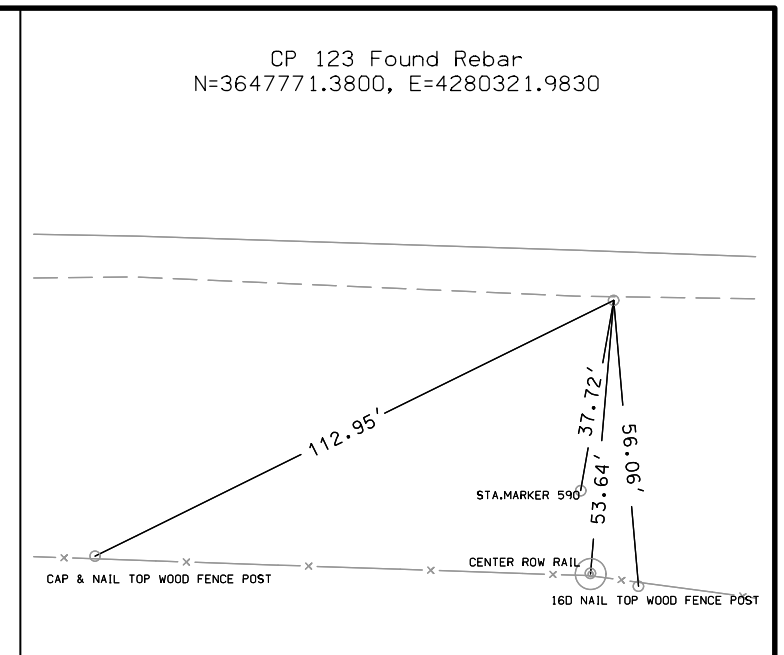
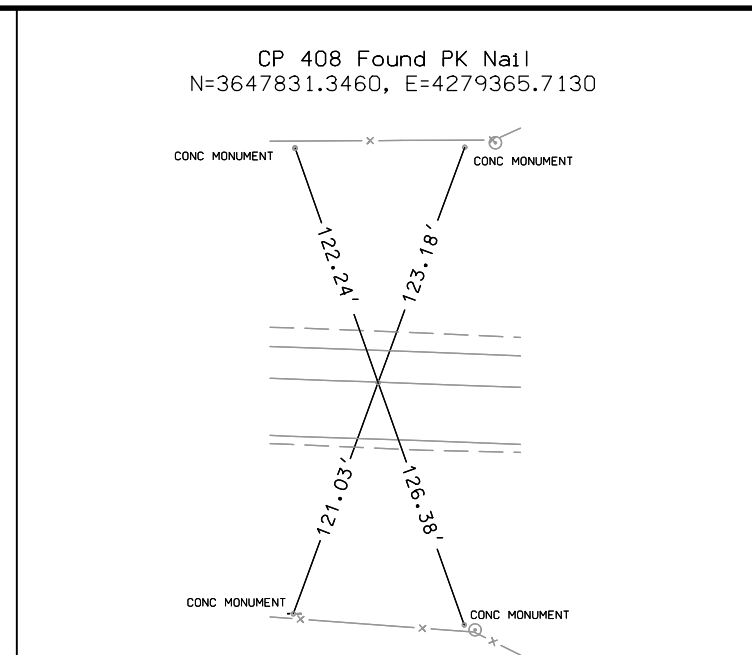
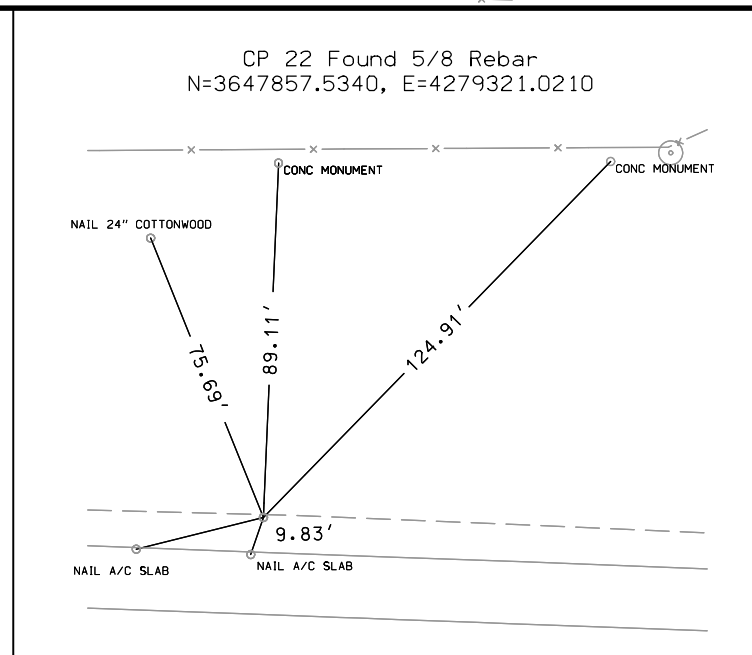
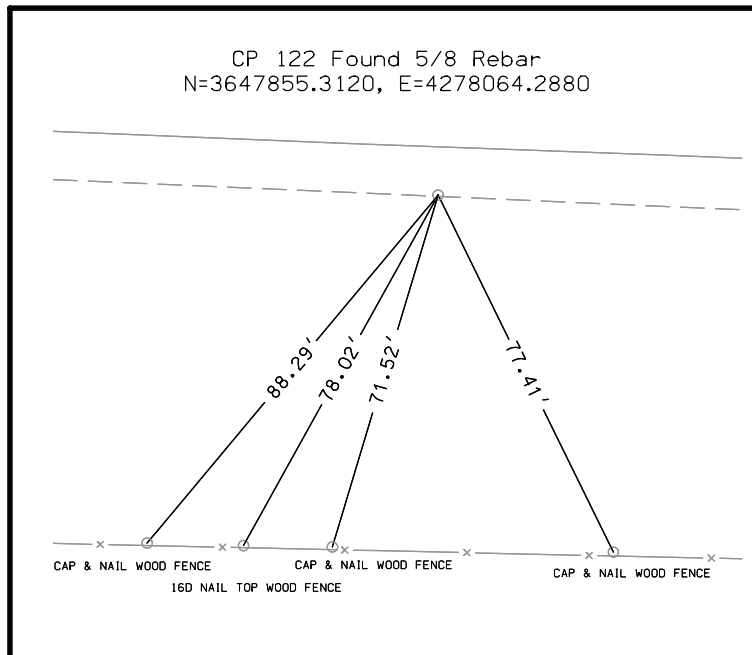
CP 121 Found 5/8 Rebar  
N=3647950.9870, E=4275524.6850

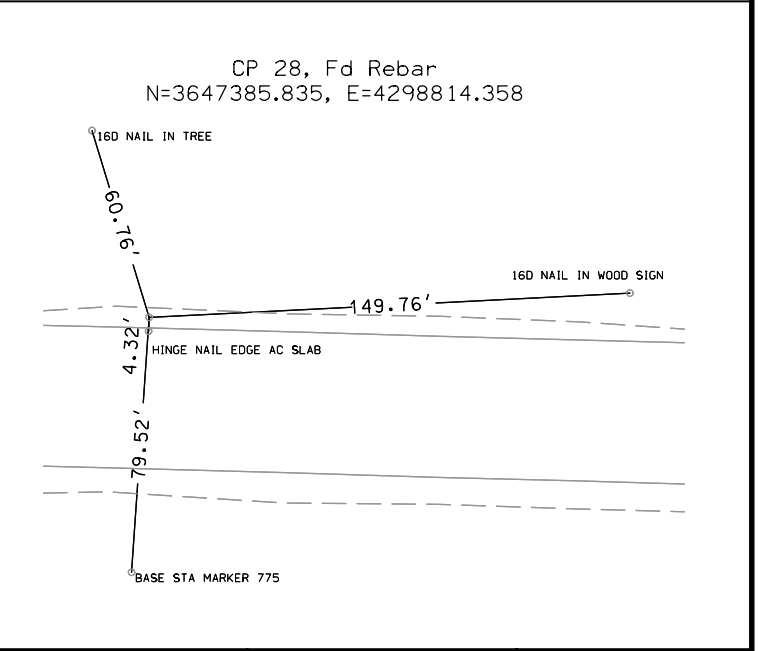
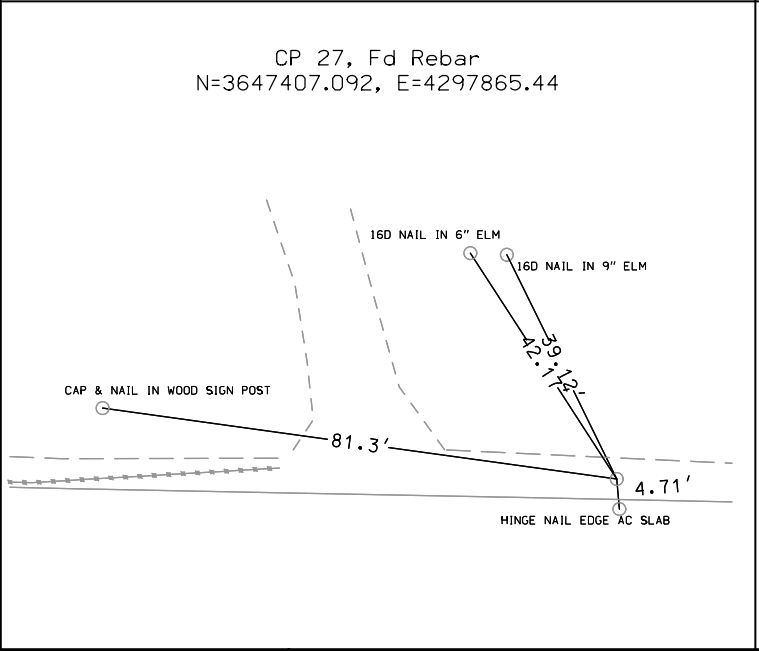
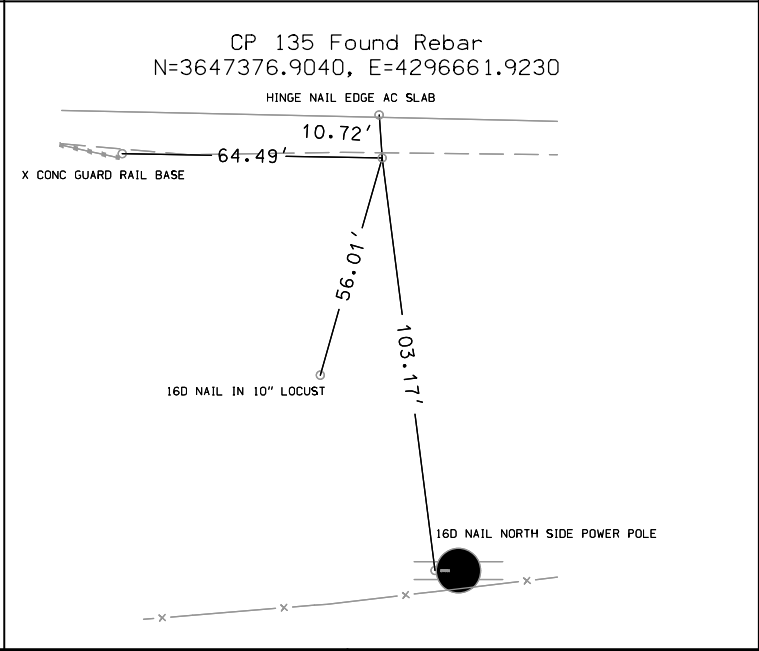
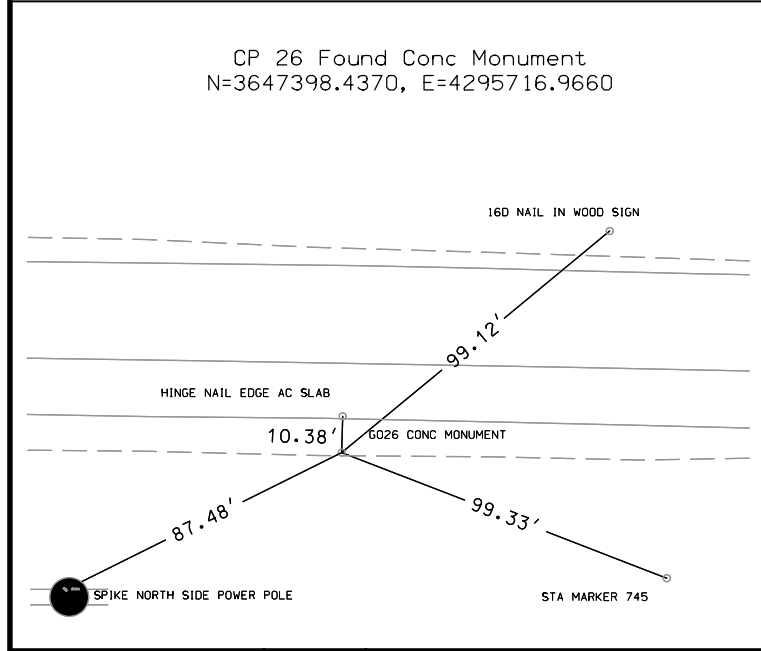
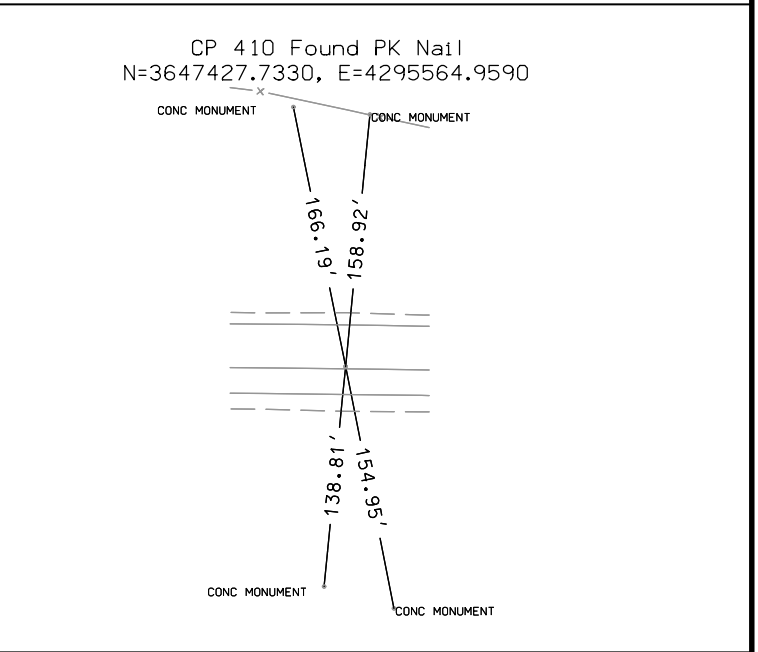
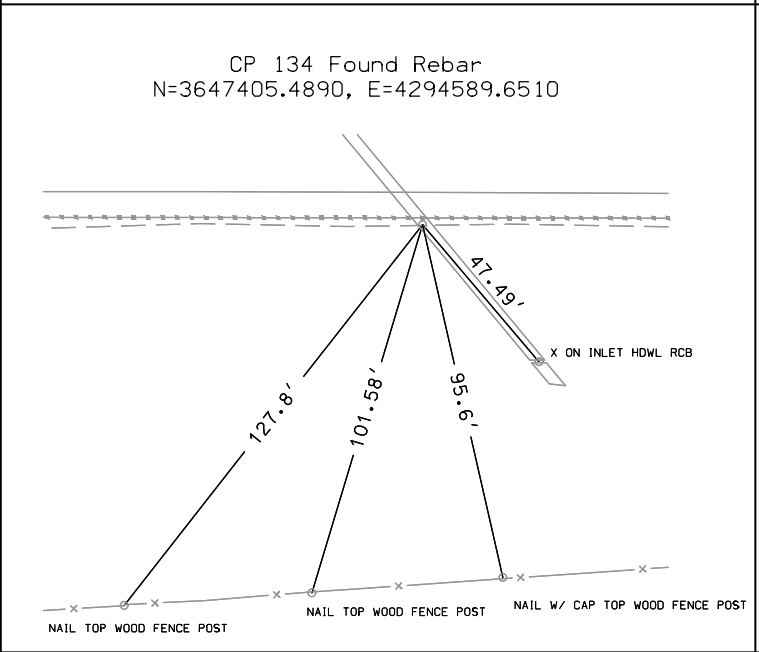
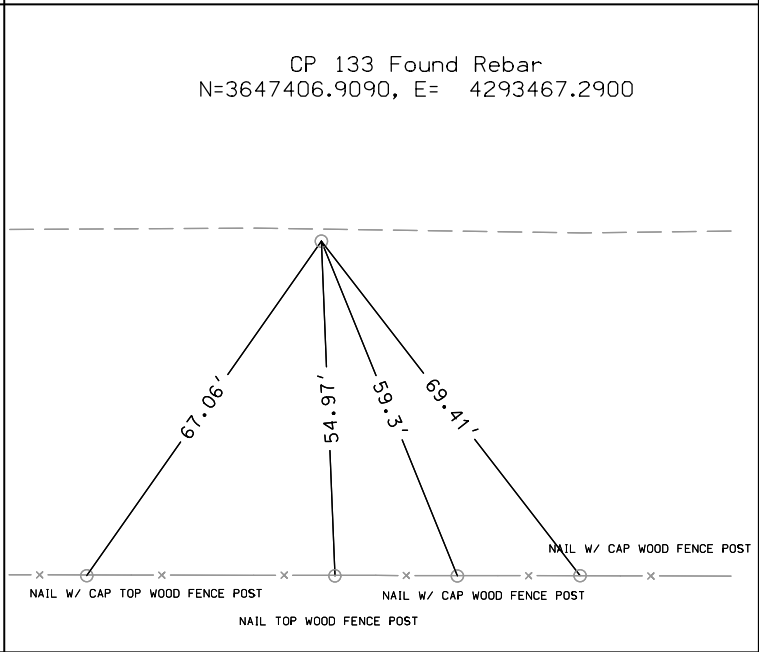
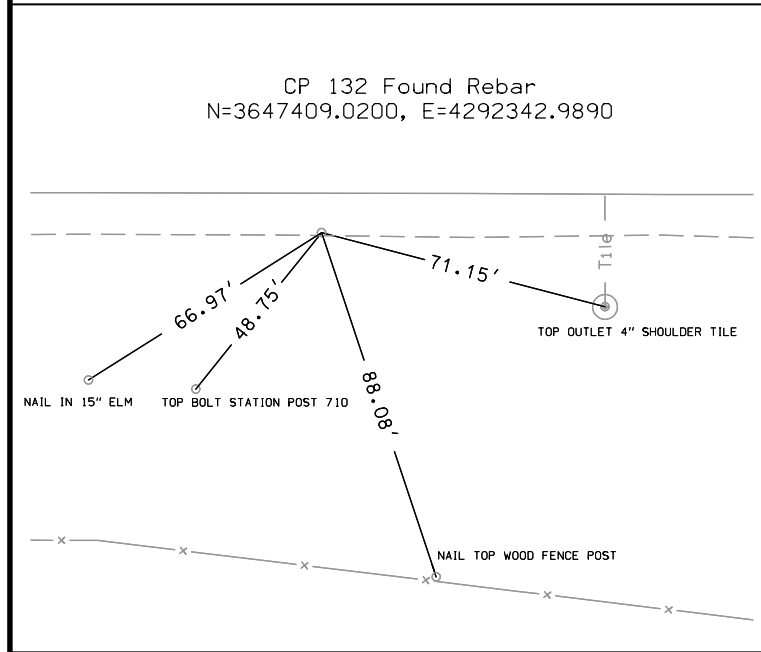
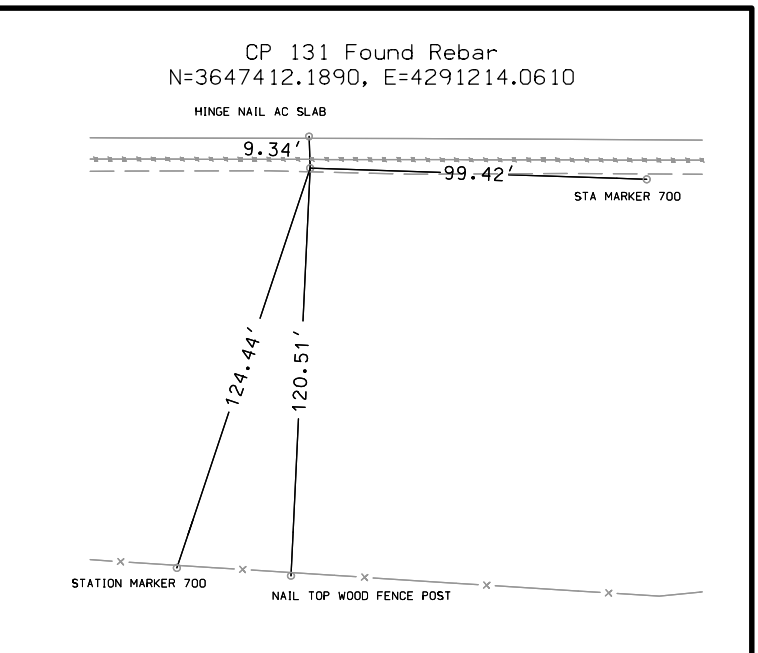
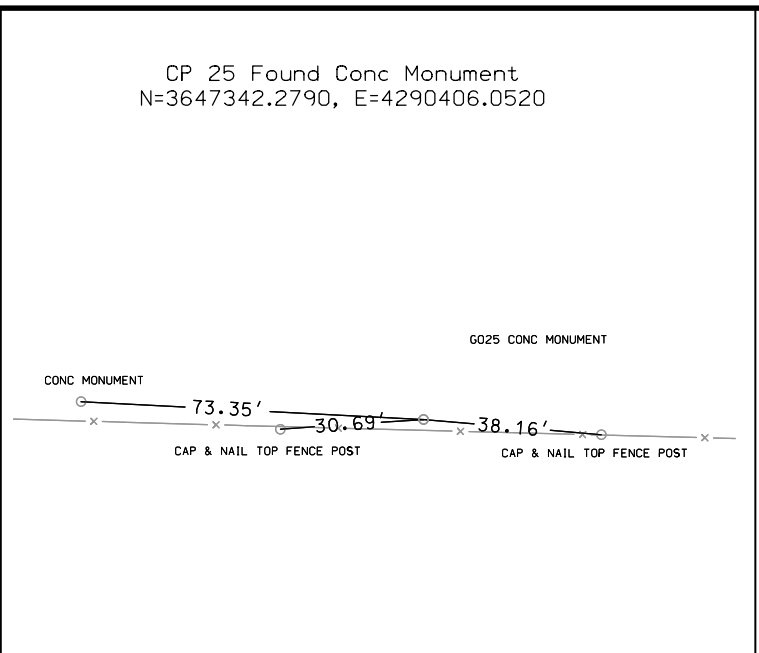
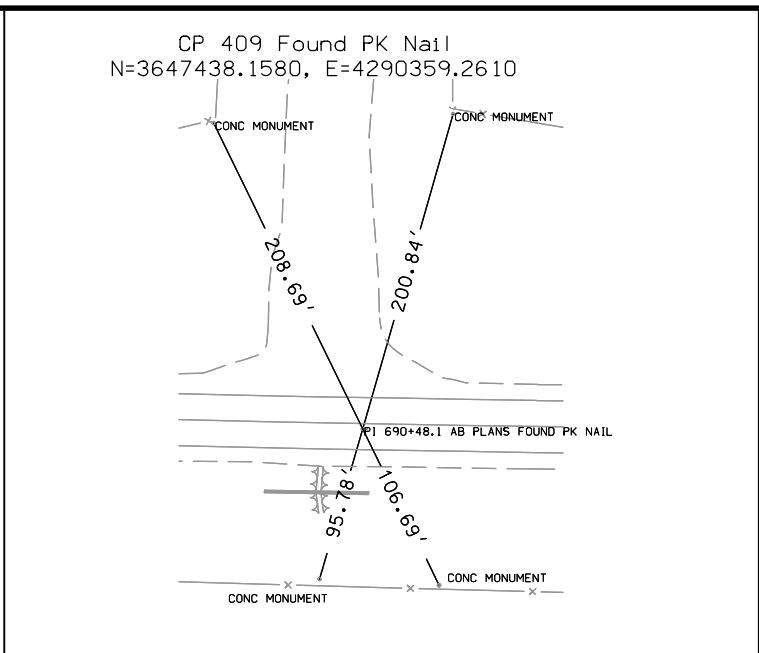
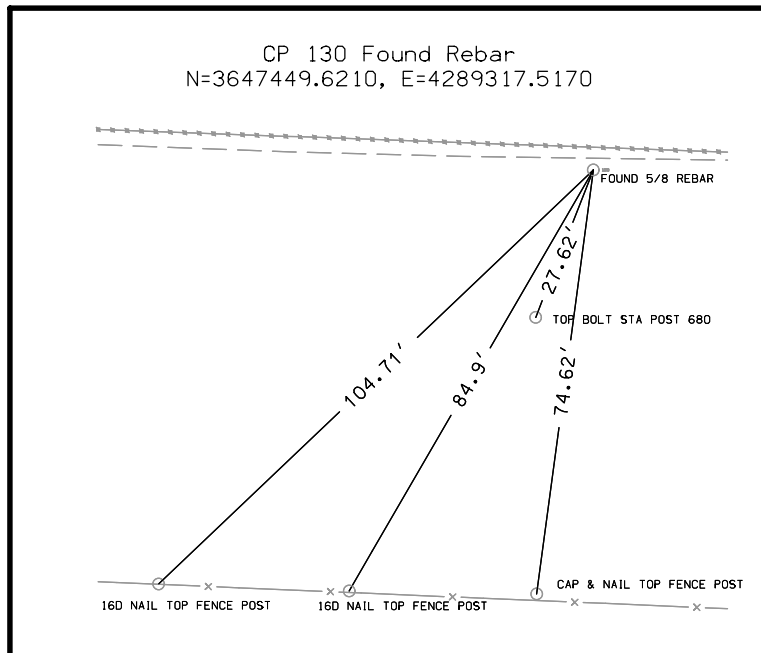


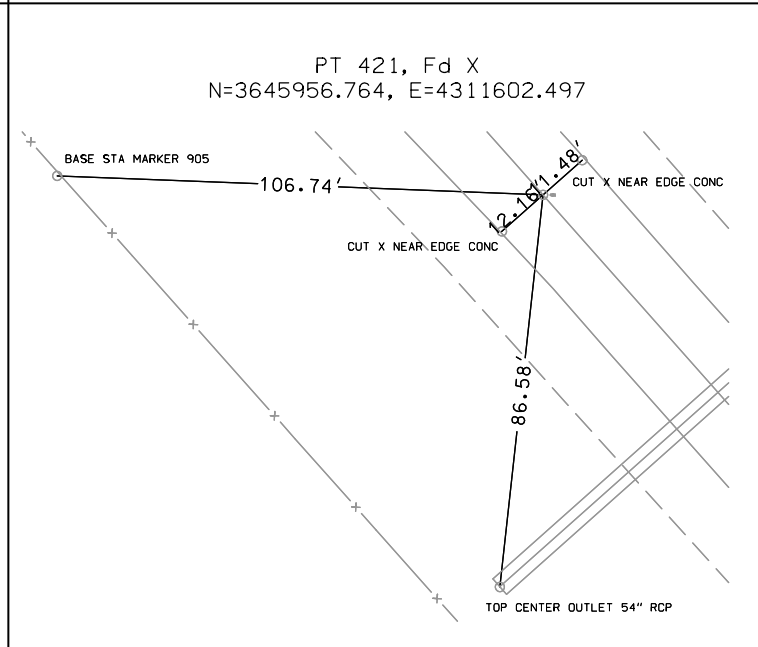
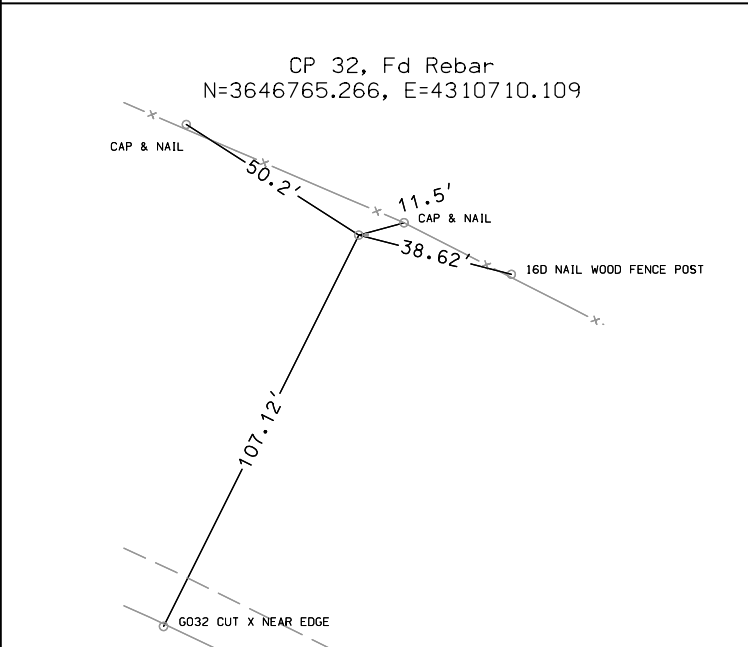
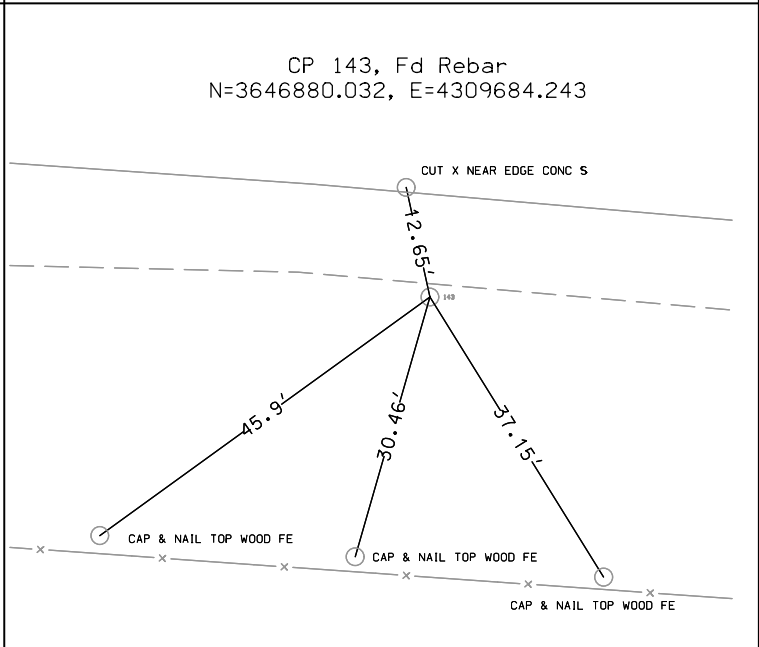
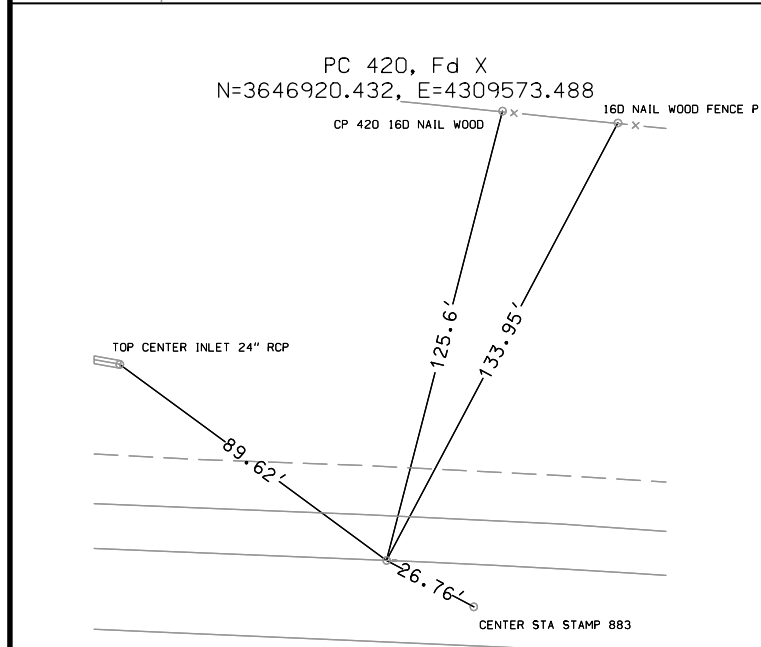
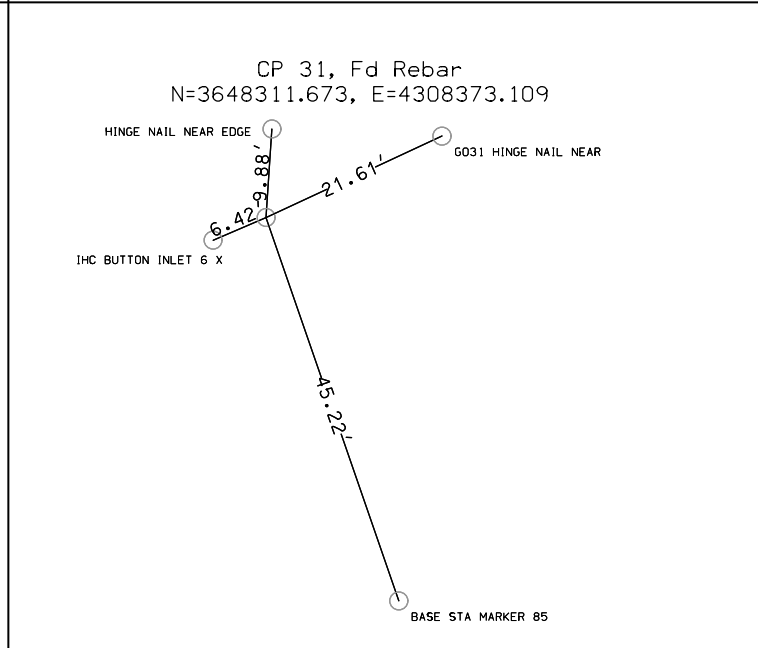
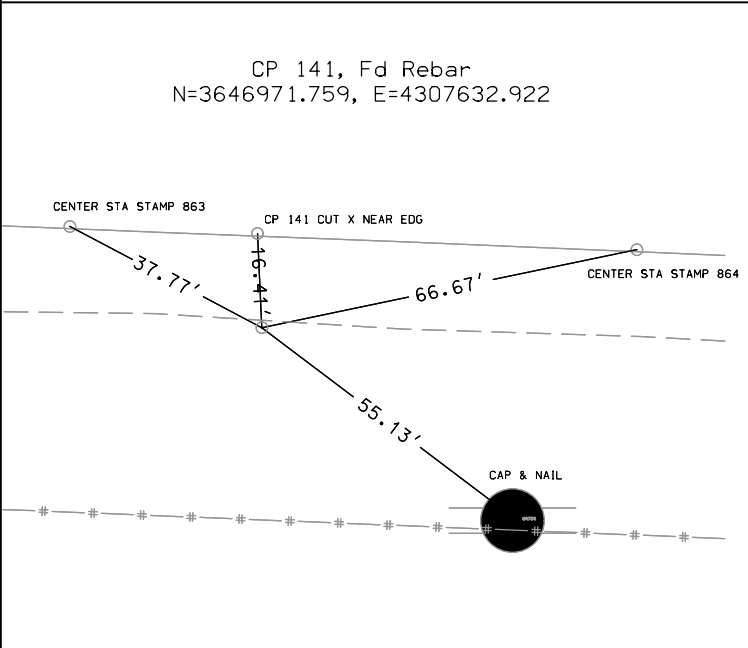
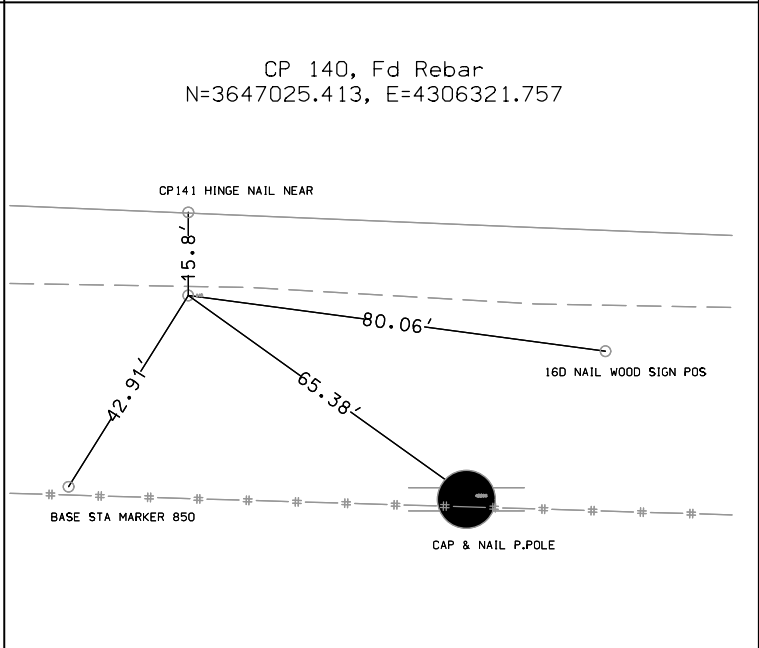
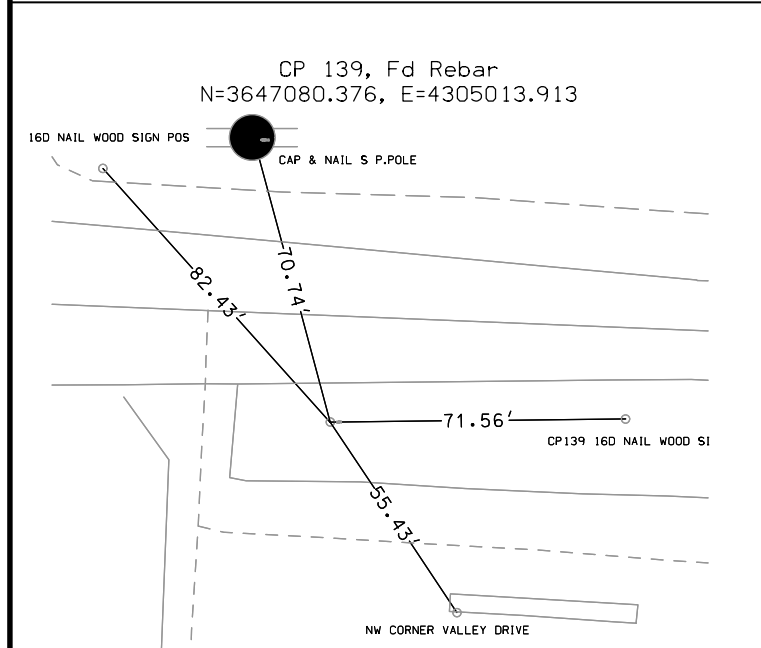
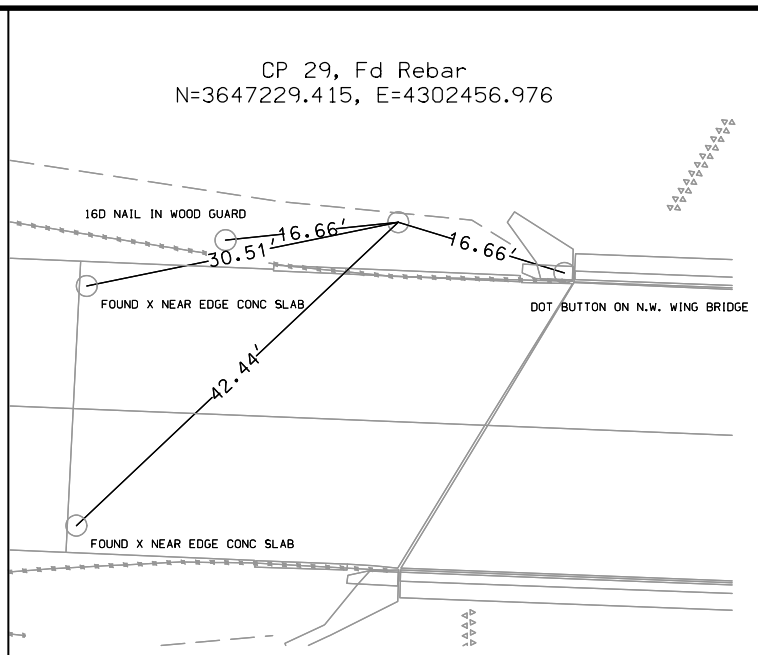
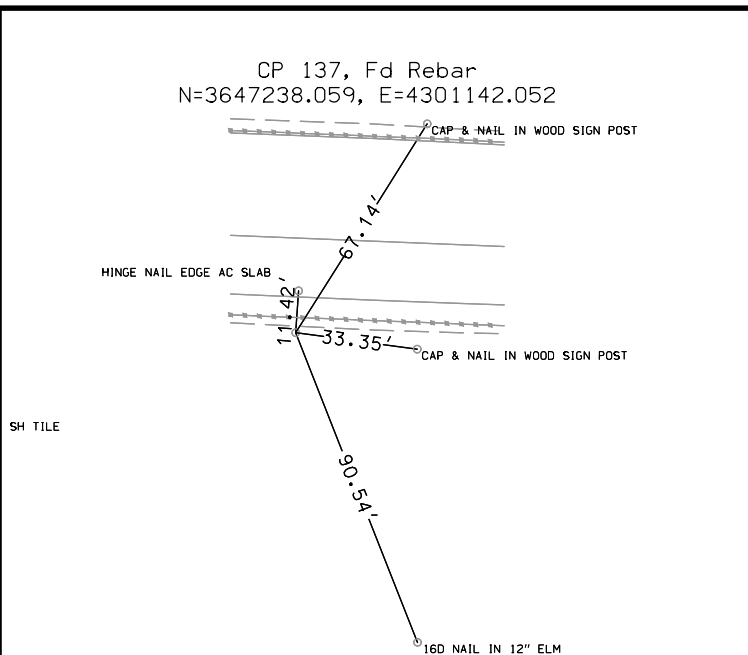
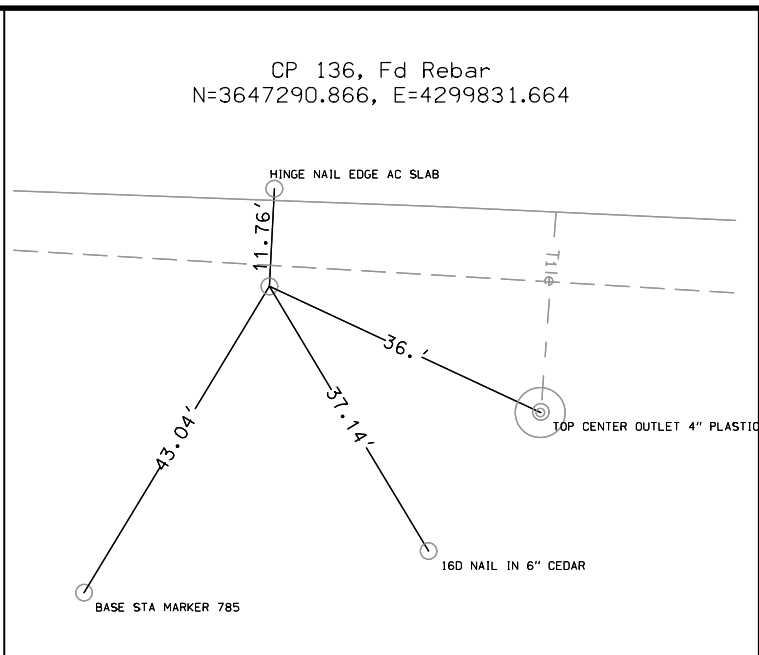
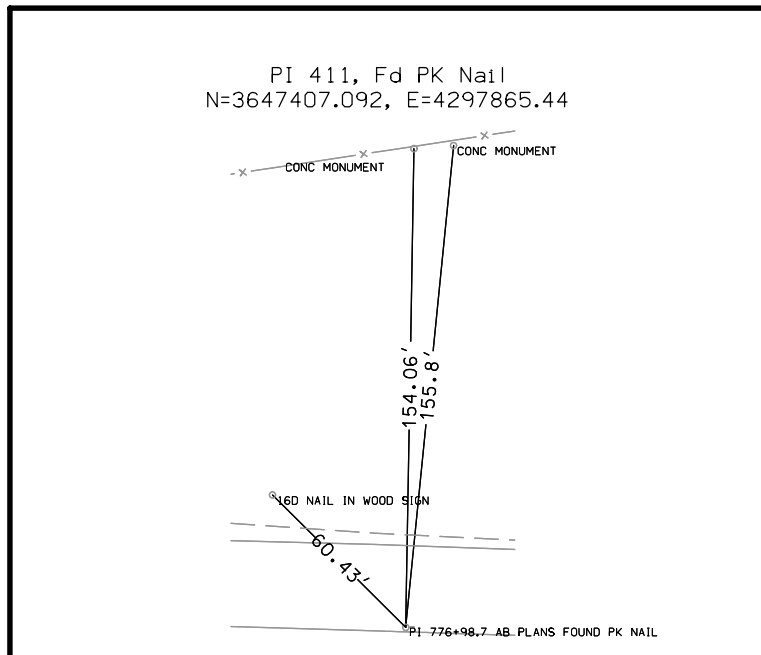
CP 21 Found 5/8 Rebar  
N=3647903.2520, E=4276810.6490

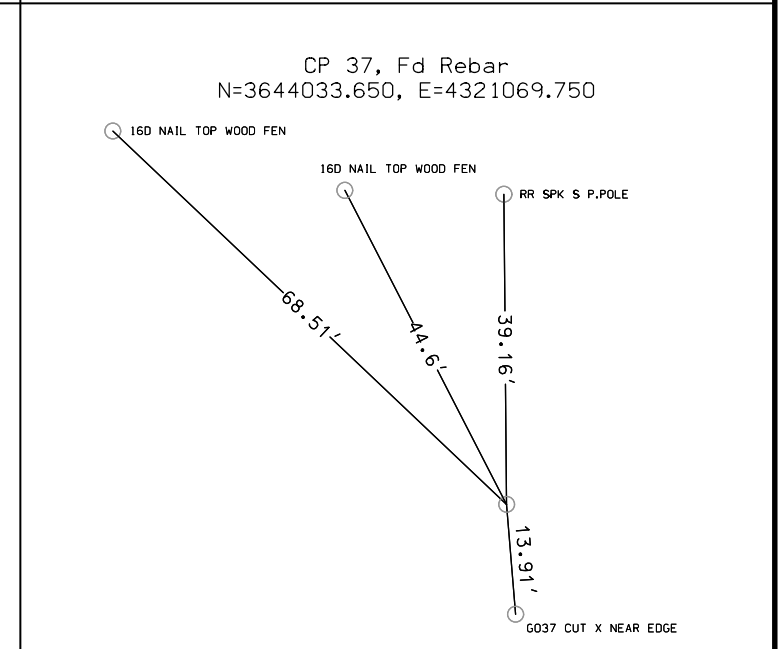
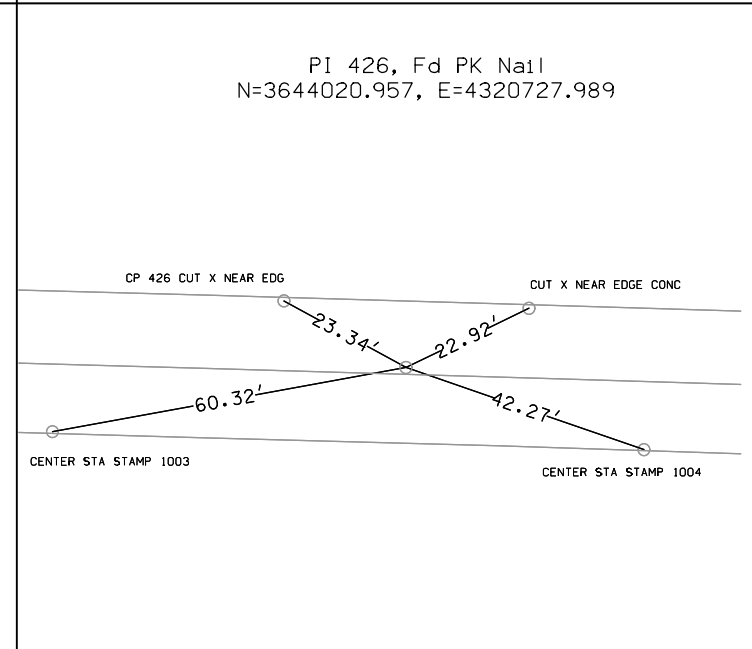
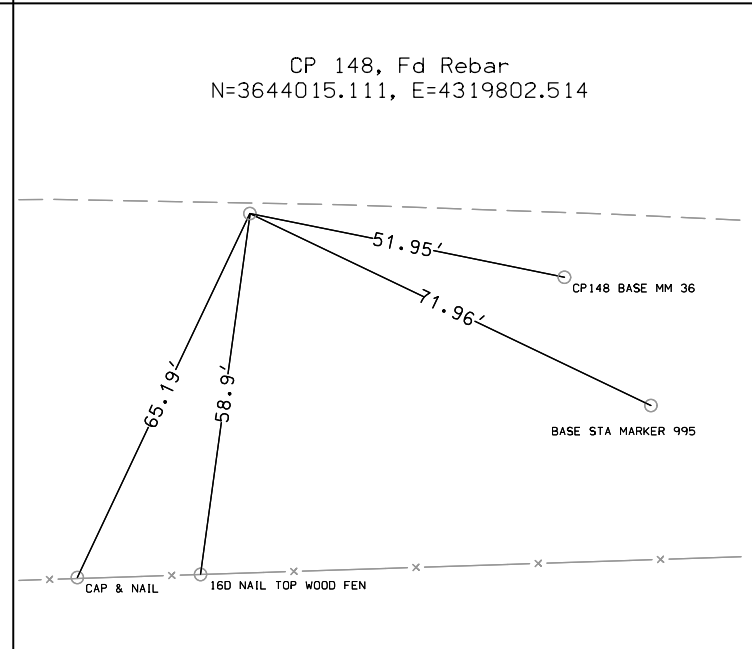
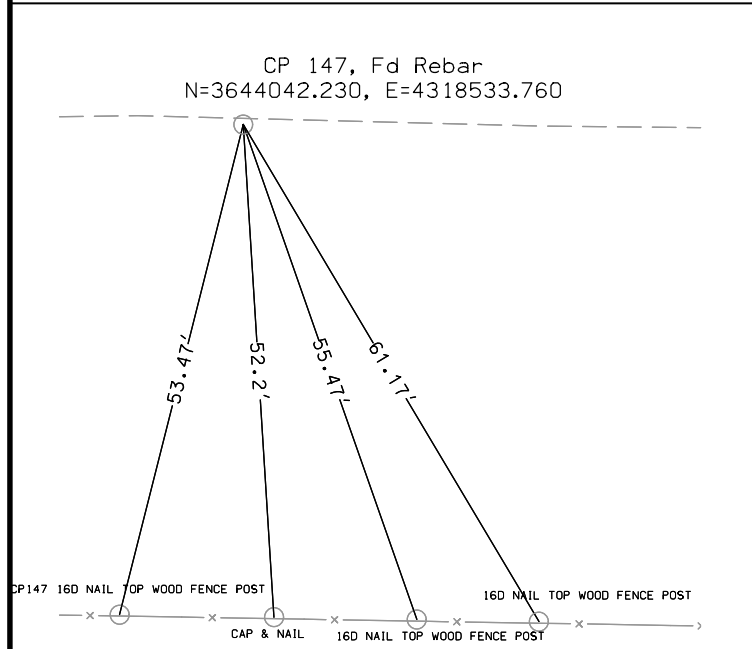
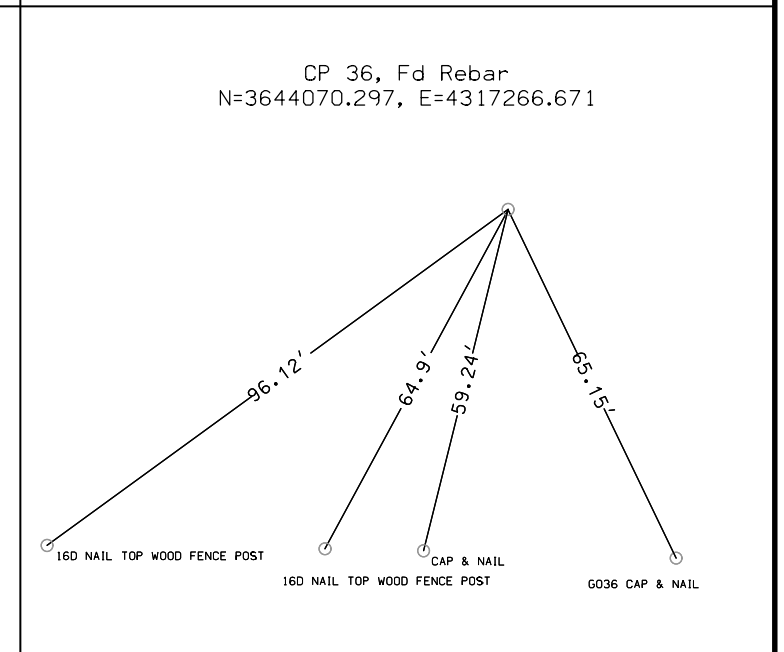
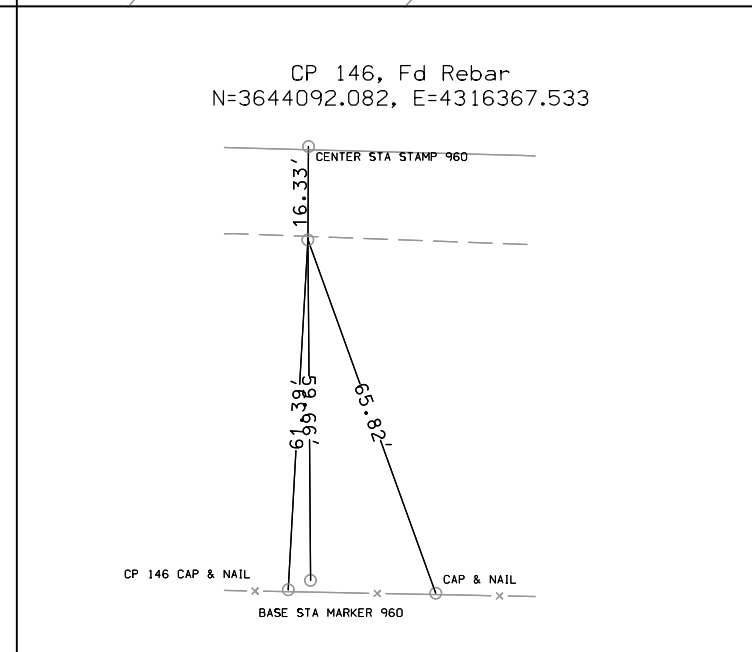
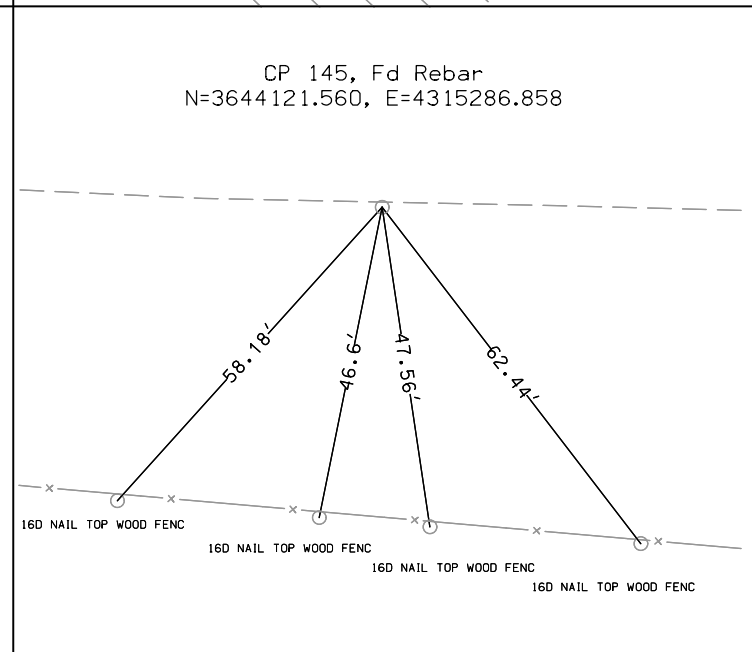
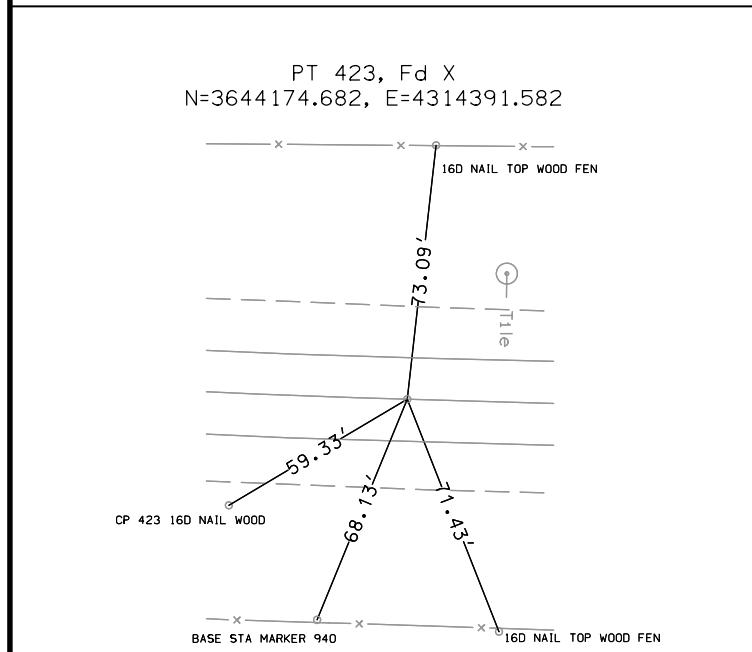
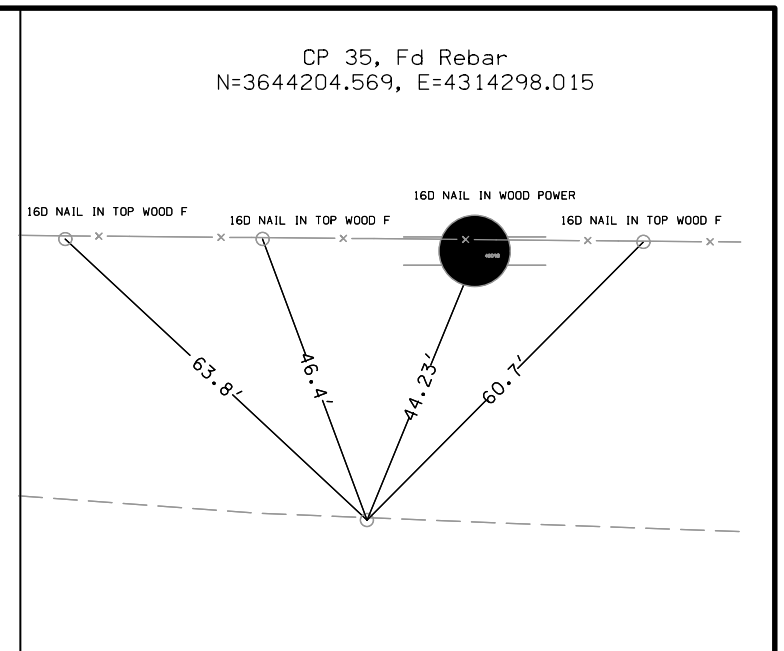
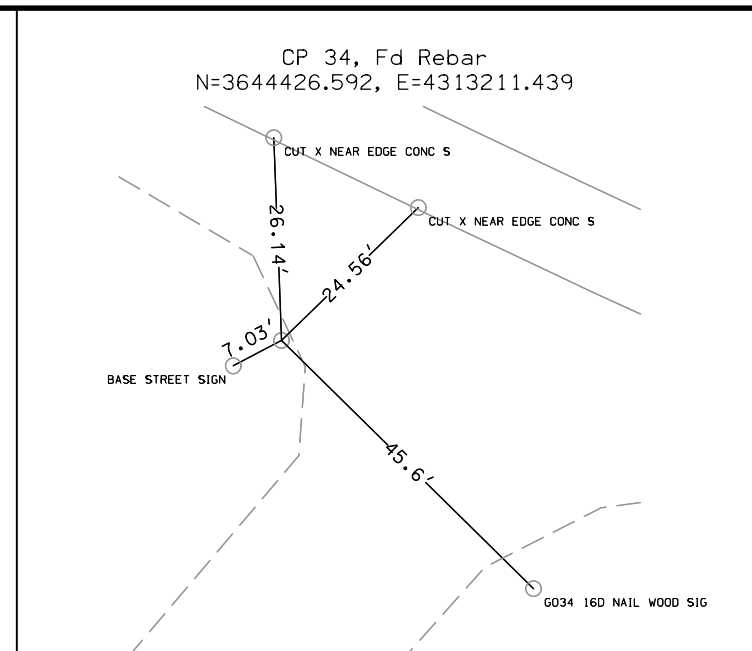
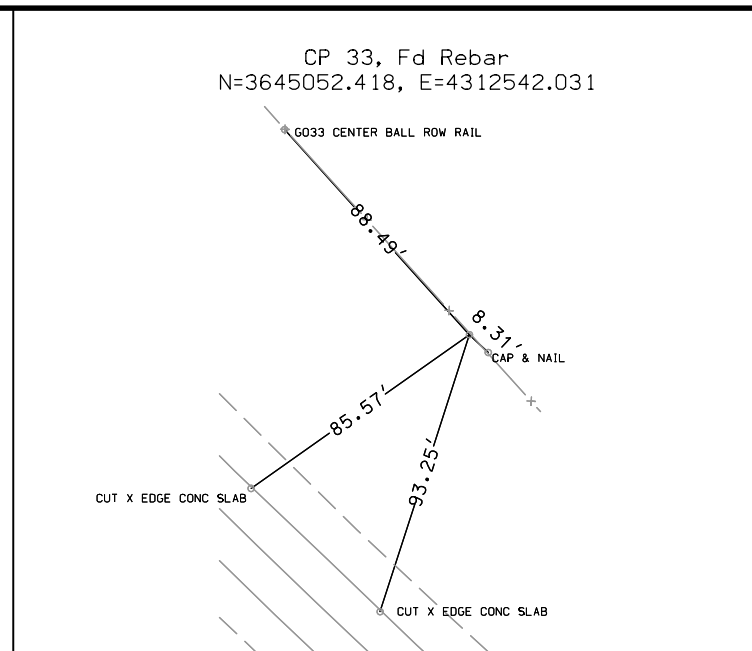
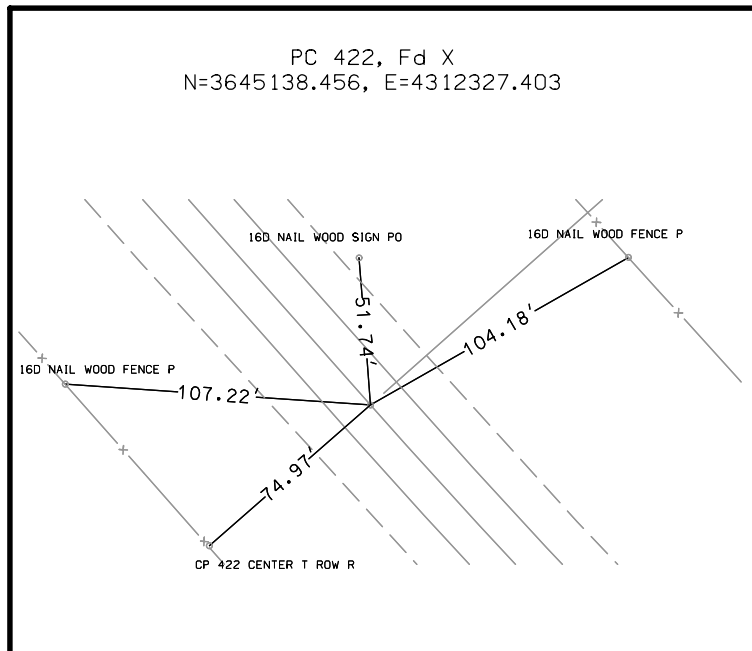












ALIGNMENT COORDINATES

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)
EXISTING US 20 400	SURVEY (SURO20)	210+57.92	3,648,887.52	4,242,390.99															
CUR11							223+64.50	3,648,853.21	4,243,697.11	226+64.50	3,648,845.33	4,243,997.01	229+64.50	3,648,838.88	4,244,296.94				
CUR23							271+54.22	3,648,748.88	4,248,485.70	274+54.22	3,648,742.43	4,248,785.63	277+54.22	3,648,735.23	4,249,085.54				
CUR13							386+73.72	3,648,472.85	4,260,001.88	390+21.72	3,648,464.49	4,260,349.78	393+69.66	3,648,445.58	4,260,697.27				
CUR14							418+82.45	3,648,309.10	4,263,206.35	422+36.66	3,648,289.86	4,263,560.03	425+90.84	3,648,279.31	4,263,914.09				
CUR15							488+88.24	3,648,091.75	4,270,208.69	491+88.24	3,648,082.82	4,270,508.56	494+88.23	3,648,077.59	4,270,808.52				
CUR16							530+09.31	3,648,016.22	4,274,329.06	533+05.21	3,648,011.06	4,274,624.92	536+01.09	3,647,999.85	4,274,920.60				
CUR17							577+49.39	3,647,842.71	4,279,065.93	580+49.39	3,647,831.35	4,279,365.71	583+49.39	3,647,820.62	4,279,665.52				
CUR18							686+63.27	3,647,451.98	4,289,972.81	690+49.97	3,647,438.16	4,290,359.26	694+36.59	3,647,437.38	4,290,745.96				
CUR19							739+55.60	3,647,428.33	4,295,264.96	742+55.60	3,647,427.73	4,295,564.96	745+55.58	3,647,421.03	4,295,864.88				
C24							773+82.90	3,647,357.82	4,298,691.49	776+98.29	3,647,350.77	4,299,006.80	780+13.65	3,647,337.94	4,299,321.93				
C25							882+74.05	3,646,920.42	4,309,573.82	894+94.05	3,646,870.77	4,310,792.81	905+80.79	3,645,957.56	4,311,601.79				
C26							916+75.07	3,645,138.46	4,312,327.40	929+16.44	3,644,209.38	4,313,150.70	940+17.89	3,644,174.68	4,314,391.58				
C27							963+01.26	3,644,111.51	4,316,674.08	966+03.61	3,644,103.15	4,316,976.31	969+05.96	3,644,096.55	4,317,278.59				
C28							1000+58.10	3,644,027.49	4,320,429.98	1003+56.18	3,644,020.96	4,320,727.99	1006+54.26	3,644,009.86	4,321,025.87				
C29							1032+12.07	3,643,914.68	4,323,581.91	1035+14.18	3,643,903.44	4,323,883.81	1038+16.28	3,643,896.61	4,324,185.84				
C30							1042+46.30	3,643,886.90	4,324,615.75	1045+45.68	3,643,880.14	4,324,915.06	1048+45.05	3,643,869.04	4,325,214.24				
C31							1053+84.02	3,643,849.05	4,325,752.83	1056+93.41	3,643,837.58	4,326,062.01	1060+02.80	3,643,827.50	4,326,371.23				
C32							1145+27.05	3,643,549.74	4,334,890.96	1148+51.70	3,643,539.16	4,335,215.44	1151+76.33	3,643,534.71	4,335,540.06				
499		0+00.00	3,643,460.16	4,340,979.49															
US 20 MAINLINE (MLO20)																			
21000		10210+57.92	3,648,845.53	4,242,389.88															
21001							10220+00.00	3,648,820.79	4,243,331.64	10227+84.79	3,648,800.19	4,244,116.15	10235+68.32	3,648,856.45	4,244,898.92				
21002							10235+68.32	3,648,856.45	4,244,898.92	10243+14.78	3,648,909.97	4,245,643.46	10250+60.17	3,648,893.94	4,246,389.76				
21003							10269+08.58	3,648,854.23	4,248,237.74	10274+58.69	3,648,842.41	4,248,787.73	10280+08.81	3,648,829.19	4,249,337.69				
21004							10384+77.71	3,648,577.65	4,259,803.56	10390+27.93	3,648,564.43	4,260,353.63	10395+78.08	3,648,534.54	4,260,903.05				
21005							10416+93.12	3,648,419.66	4,263,014.97	10422+43.20	3,648,389.78	4,263,564.24	10427+93.23	3,648,373.39	4,264,114.08				
21006							10486+42.38	3,648,199.19	4,269,960.64	10491+92.91	3,648,182.79	4,270,510.92	10497+43.43	3,648,173.20	4,271,061.37				
21007							10527+59.90	3,648,120.62	4,274,077.38	10533+10.29	3,648,111.03	4,274,627.68	10538+60.64	3,648,090.18	4,275,177.68				
21008							10575+05.29	3,647,952.12	4,278,819.72	10580+55.37	3,647,931.28	4,279,369.39	10586+05.44	3,647,911.62	4,279,919.12				
21009							10688+94.17	3,647,543.87	4,290,201.27	10690+43.52	3,647,538.53	4,290,350.53	10691+92.87	3,647,534.98	4,290,499.84				
21010							10756+21.20	3,647,381.99	4,296,926.35	10758+00.00	3,647,377.73	4,297,105.10	10759+78.79	3,647,376.03	4,297,283.89				
21011							10769+46.59	3,647,366.84	4,298,251.64	10773+75.15	3,647,362.77	4,298,680.19	10778+03.64	3,647,344.01	4,299,108.34				
21012							10783+32.34	3,647,320.88	4,299,636.54	10785+00.29	3,647,313.52	4,299,804.33	10786+68.25	3,647,308.43	4,299,972.21				
21013							10801+33.67	3,647,263.97	4,301,436.96	10802+63.17	3,647,260.04	4,301,566.40	10803+92.66	3,647,254.77	4,301,695.79				
21014		10847+60.35	3,647,077.04	4,306,059.85															
US 20 WESTBOUND LANE CL (MLO20W2)																			
35000		20670+00.00	3,647,664.54	4,288,310.21															
35001							20696+47.12	3,647,569.93	4,290,955.64	20697+96.47	3,647,564.59	4,291,104.90	20699+45.83	3,647,561.03	4,291,254.21				
35002							20756+20.31	3,647,425.98	4,296,927.08	20757+99.11	3,647,421.73	4,297,105.83	20759+77.90	3,647,420.03	4,297,284.62				
35003							20769+46.13	3,647,410.83	4,298,252.81	20773+74.70	3,647,406.76	4,298,681.36	20778+03.18	3,647,388.01	4,299,109.52				
35004							20783+32.34	3,647,364.85	4,299,638.17	20785+00.30	3,647,357.50	4,299,805.96	20786+68.25	3,647,352.40	4,299,973.85				
35005							20794+47.03	3,647,328.77	4,300,752.26	20798+26.52	3,647,317.26	4,301,131.58	20802+05.95	3,647,294.24	4,301,510.37				
35006							20806+50.53	3,647,267.27	4,301,954.13	20808+00.52	3,647,258.17	4,302,103.84	20809+50.49	3,647,252.07	4,302,253.70				
35007		20816+94.86	3,647,221.78	4,302,997.46															
US 20 EASTBOUND LANE CL (MLO20E2)																			
45000		30670+00.00	3,647,558.61	4,288,306.42															
45001							30681+41.22	3,647,517.82	4,289,446.91	30682+90.57	3,647,512.48	4,289,596.17	30684+39.92	3,647,508.93	4,289,745.48				
45002							30756+22.10	3,647,337.99	4,296,925.62	30758+00.89	3,647,333.74	4,297,104.36	30759+79.68	3,647,332.04	4,297,283.15				
45003							30769+47.04	3,647,322.85	4,298,250.47	30773+75.61	3,647,318.78	4,298,679.01	30778+04.09	3,647,300.02	4,299,107.17				
45004							30783+32.33	3,647,276.90	4,299,634.90	30785+00.29	3,647,269.55	4,299,802.70	30786+68.24	3,647,264.46	4,299,970.58				
45005							30787+66.84	3,647,261.47	4,300,069.14	30788+87.32	3,647,257.81	4,300,189.56	30790+07.79	3,647,255.32	4,300,310.00				
45006							30806+50.40	3,647,221.31	4,301,952.26	30808+00.38	3,647,218.20	4,302,102.21	30809+50.36	3,647,212.10	4,302,252.07				
45007		30816+94.73	3,647,181.81	4,302,995.83															

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)
MINNESOTA AVENUE (SR_MINN)																			
22800		800+00.00	3,646,292.62	4,284,836.37															
22801		805+25.58	3,646,817.97	4,284,851.99															
22802		807+29.98	3,647,022.26	4,284,858.72															
22803		809+01.02	3,647,193.20	4,284,864.44															
22804		812+24.09	3,647,516.13	4,284,873.97															
22805		813+42.38	3,647,634.38	4,284,877.09															
22806		814+57.47	3,647,749.43	4,284,880.17															
22807		818+10.30	3,648,102.10	4,284,890.95															
22808		821+64.84	3,648,456.48	4,284,901.33															
22809		830+79.62	3,649,370.88	4,284,927.78															
MINNESOTA AVENUE RETURN 1 (SR_MINN_RET_1)																			
22812								10+00.00	3,647,796.12	4,285,022.81	10+27.64	3,647,797.11	4,284,995.19	10+55.13	3,647,803.13	4,284,968.21			
22813								10+55.13	3,647,803.13	4,284,968.21	11+00.76	3,647,813.07	4,284,923.67	11+37.12	3,647,857.19	4,284,912.02			
22814								11+37.12	3,647,857.19	4,284,912.02	11+95.24	3,647,913.39	4,284,897.19	12+52.56	3,647,971.49	4,284,898.97			
MINNESOTA AVENUE RETURN 2 (SR_MINN_RET_2)																			
22822								20+00.00	3,647,937.24	4,284,873.91	20+24.25	3,647,913.00	4,284,873.17	20+48.40	3,647,889.19	4,284,868.54			
22823								20+48.40	3,647,889.19	4,284,868.54	21+06.19	3,647,832.46	4,284,857.52	21+51.15	3,647,818.87	4,284,801.35			
22824								21+51.15	3,647,818.87	4,284,801.35	22+06.10	3,647,805.96	4,284,747.94	22+60.37	3,647,807.92	4,284,693.02			
MINNESOTA AVENUE RETURN 3 (SR_MINN_RET_3)																			
22832								30+00.00	3,647,708.41	4,284,789.53	30+38.64	3,647,707.03	4,284,828.14	30+73.00	3,647,734.08	4,284,855.74			
22833								30+73.00	3,647,734.08	4,284,855.74	30+87.15	3,647,743.98	4,284,865.85	30+92.12	3,647,750.20	4,284,853.13			
22834								30+92.12	3,647,750.20	4,284,853.13	31+55.91	3,647,778.23	4,284,795.82	32+17.84	3,647,780.51	4,284,732.07			
MINNESOTA AVENUE RETURN 4 (SR_MINN_RET_4)																			
22842								40+00.00	3,647,672.40	4,284,733.20	40+30.57	3,647,671.30	4,284,763.75	40+60.93	3,647,664.07	4,284,793.45			
22843								40+60.93	3,647,664.07	4,284,793.45	41+05.52	3,647,653.52	4,284,836.78	41+41.39	3,647,610.41	4,284,848.21			
22844								41+41.39	3,647,610.41	4,284,848.21	41+98.87	3,647,554.86	4,284,862.93	42+55.56	3,647,497.40	4,284,861.42			
MINNESOTA AVENUE RETURN 5 (SR_MINN_RET_5)																			
22852								50+00.00	3,647,531.72	4,284,886.39	50+23.32	3,647,555.04	4,284,887.00	50+46.56	3,647,577.98	4,284,891.22			
22853								50+46.56	3,647,577.98	4,284,891.22	51+04.78	3,647,635.24	4,284,901.73	51+49.91	3,647,649.13	4,284,958.27			
22854								51+49.91	3,647,649.13	4,284,958.27	52+05.59	3,647,662.41	4,285,012.34	52+60.56	3,647,660.42	4,285,067.99			
MINNESOTA AVENUE RETURN 6 (SR_MINN_RET_6)																			
22862								60+00.00	3,647,759.94	4,284,971.48	60+38.64	3,647,761.32	4,284,932.87	60+73.00	3,647,734.27	4,284,905.27			
22863								60+73.00	3,647,734.27	4,284,905.27	60+87.15	3,647,724.36	4,284,895.16	60+92.12	3,647,718.14	4,284,907.88			
22864								60+92.12	3,647,718.14	4,284,907.88	61+55.91	3,647,690.12	4,284,965.19	62+17.84	3,647,687.84	4,285,028.94			
MASON AVENUE (SR_MASON)																			
22900		900+00.00	3,647,441.91	4,290,334.23															
22901		914+83.25	3,648,924.48	4,290,379.18															
MASON AVENUE RETURN 3 (SR_MASON_RET_3)																			
22932								30+00.00	3,647,520.77	4,290,256.36	30+35.58	3,647,519.92	4,290,291.93	30+65.10	3,647,549.42	4,290,311.81			
22933								30+65.10	3,647,549.42	4,290,311.81	30+71.27	3,647,554.54	4,290,315.25	30+74.00	3,647,556.85	4,290,309.54			
22934								30+74.00	3,647,556.85	4,290,309.54	31+44.58	3,647,583.37	4,290,244.13	32+13.72	3,647,585.89	4,290,173.59			
MASON AVENUE RETURN 6 (SR_MASON_RET_6)																			
22962								60+00.00	3,647,565.33	4,290,412.77	60+28.98	3,647,566.36	4,290,383.81	60+53.99	3,647,544.33	4,290,364.99			
22963								60+53.99	3,647,544.33	4,290,364.99	60+69.88	3,647,532.24	4,290,354.67	60+74.17	3,647,528.17	4,290,370.03			
22964								60+74.17	3,647,528.17	4,290,370.03	61+68.85	3,647,503.88	4,290,461.54	62+62.65	3,647,501.63	4,290,556.19			

**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	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
US 20 ENTRANCE	LEFT STA. 10650+83 (ENT_10650L)															
9010		0+00.00	3,647,680.09	4,286,392.54												
9011		1+95.31	3,647,875.28	4,286,399.52												
US 20 ENTRANCE	RIGHT STA. 10670+00 (ENT_10670R)															
9080		0+00.00	3,647,611.57	4,288,308.31												
9081		5+00.00	3,647,111.89	4,288,290.44												
US 20 ENTRANCE	RIGHT STA. 10690+30 (ENT_10690R)															
9060		0+00.00	3,647,539.39	4,290,337.03												
9061		5+00.00	3,647,039.62	4,290,321.87												
US 20 ENTRANCE	LEFT STA. 10757+50 (ENT_10757L)															
9014		0+00.00	3,647,379.25	4,297,055.12												
9015		5+00.00	3,647,879.17	4,297,064.44												
US 20 ENTRANCE	RIGHT STA. 10757+50 (ENT_10757R)															
9019		0+00.00	3,647,379.25	4,297,055.12												
9020						1+28.22	3,647,251.06	4,297,052.73	1+50.77	3,647,228.51	4,297,052.31	1+70.59	3,647,213.90	4,297,035.13		
9021						2+37.99	3,647,170.24	4,296,983.78	2+58.45	3,647,156.99	4,296,968.19	2+76.83	3,647,136.61	4,296,966.37		
9022		3+08.64	3,647,104.93	4,296,963.53												
MASON AVE ENTRANCE	LEFT STA. 913+50 (ENT_913L)															
9910		0+00.00	3,648,791.29	4,290,375.15												
9911		3+00.00	3,648,800.38	4,290,075.28												
MASON AVE ENTRANCE	RIGHT STA. 913+50 (ENT_913R)															
9900		0+00.00	3,648,791.29	4,290,375.15												
9901		3+00.00	3,648,782.20	4,290,675.01												

**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	
EXISTING US 20 SURVEY (SURO20)																	
CUR11												0° 16' 21.82" LT	300.00'	600.00'	126,050.48'	0.36'	
CUR23												0° 08' 45.22" RT	300.00'	600.00'	235,632.77'	0.19'	
CUR13												1° 44' 11.32" RT	348.00'	695.95'	22,963.06'	2.64'	
CUR14												1° 24' 25.06" LT	354.21'	708.38'	28,847.58'	2.17'	
CUR15												0° 42' 28.90" LT	300.00'	599.99'	48,553.16'	0.93'	
CUR16												1° 10' 20.16" RT	295.90'	591.78'	28,923.88'	1.51'	
CUR17												0° 07' 21.40" LT	300.00'	600.00'	280,380.97'	0.16'	
CUR18												1° 56' 00.92" LT	386.70'	773.33'	22,915.08'	3.26'	
CUR19												1° 09' 58.39" RT	300.00'	599.98'	29,476.70'	1.53'	
C24												1° 03' 04.25" RT	315.39'	630.75'	34,380.00'	1.45'	
C25												46° 07' 53.13" RT	1,220.00'	2,306.74'	2,865.00'	248.94'	
C26												46° 51' 10.87" LT	1,241.37'	2,342.82'	2,865.00'	257.37'	
C27												0° 20' 09.33" LT	302.35'	604.70'	103,139.20'	0.44'	
C28												0° 52' 39.61" RT	298.08'	596.16'	38,918.10'	1.14'	
C29												0° 50' 18.92" LT	302.11'	604.21'	41,282.00'	1.11'	
C30												0° 49' 51.66" RT	299.38'	598.75'	41,282.00'	1.09'	
C31												0° 15' 28.15" LT	309.39'	618.78'	137,512.60'	0.35'	
C32												1° 04' 55.42" LT	324.65'	649.28'	34,380.00'	1.53'	
US 20 MAINLINE (MLO20)																	
21001												5° 36' 58.02" LT	784.79'	1,568.32'	16,000.00'	19.23'	
21002												5° 20' 32.31" RT	746.47'	1,491.85'	16,000.00'	17.40'	
21003												0° 08' 45.44" RT	550.11'	1,100.23'	431,900.00'	0.35'	
21004												1° 44' 12.55" RT	550.23'	1,100.37'	36,300.00'	4.17'	
21005												1° 24' 25.06" LT	550.08'	1,100.11'	44,800.00'	3.38'	
21006												0° 42' 28.90" LT	550.53'	1,101.05'	89,100.00'	1.70'	
21007												1° 10' 20.16" RT	550.39'	1,100.74'	53,800.00'	2.82'	
21008												0° 07' 21.40" LT	550.07'	1,100.15'	514,100.00'	0.29'	
21009												0° 41' 04.50" LT	149.35'	298.71'	25,000.00'	0.45'	
21010												0° 49' 10.32" LT	178.80'	357.59'	25,000.00'	0.64'	
21011												1° 57' 51.19" RT	428.57'	857.05'	25,000.00'	3.67'	
21012												0° 46' 11.48" LT	167.96'	335.91'	25,000.00'	0.56'	
21013												0° 35' 36.83" RT	129.50'	258.99'	25,000.00'	0.34'	
US 20 WESTBOUND LANE CL (MLO20W2)																	
35001												0° 41' 04.50" LT	149.35'	298.71'	25,000.00'	0.45'	
35002												0° 49' 10.32" LT	178.80'	357.59'	25,000.00'	0.64'	
35003												1° 57' 51.19" RT	428.57'	857.05'	25,000.00'	3.67'	
35004												0° 46' 11.48" LT	167.96'	335.91'	25,000.00'	0.56'	
35005												1° 44' 21.57" RT	379.49'	758.92'	25,000.00'	2.88'	
35006												1° 08' 44.75" LT	149.99'	299.96'	15,000.00'	0.75'	
US 20 EASTBOUND LANE CL (MLO20E2)																	
45001												0° 41' 04.50" LT	149.35'	298.71'	25,000.00'	0.45'	
45002												0° 49' 10.32" LT	178.80'	357.59'	25,000.00'	0.64'	
45003												1° 57' 51.19" RT	428.57'	857.05'	25,000.00'	3.67'	
45004												0° 46' 11.48" LT	167.96'	335.91'	25,000.00'	0.56'	
45005												0° 33' 07.92" LT	120.47'	240.94'	25,000.00'	0.29'	
45006												1° 08' 44.75" RT	149.99'	299.96'	15,000.00'	0.75'	



**SPIRAL OR CIRCULAR CURVE DATA**

101-17  
04-19-11

Name	Location	Δ <sub>scs</sub>	Horizontal Alignment Data												Remarks
			Spiral Data						Curve Data						
			θ <sub>s</sub>	L <sub>s</sub>	T <sub>s</sub>	E <sub>s</sub>	X <sub>c</sub>	Y <sub>c</sub>	L.T.	S.T.	Δ <sub>c</sub>	T	L	R	E
MINNESOTA AVENUE RETURN 1 (SR_MINN_RET_1)															
22812											10° 31' 41.58" RT	27.64'	55.13'	300.00'	1.27'
22813											62° 38' 17.66" RT	45.64'	81.99'	75.00'	12.79'
22814											16° 32' 08.01" RT	58.12'	115.44'	400.00'	4.20'
MINNESOTA AVENUE RETURN 2 (SR_MINN_RET_2)															
22822											9° 14' 37.99" RT	24.25'	48.40'	300.00'	0.98'
22823											65° 24' 33.10" RT	57.79'	102.74'	90.00'	16.96'
22824											15° 38' 41.67" RT	54.95'	109.22'	400.00'	3.76'
MINNESOTA AVENUE RETURN 3 (SR_MINN_RET_3)															
22832											46° 28' 26.44" LT	38.64'	73.00'	90.00'	7.95'
22833											109° 30' 53.58" LT	14.15'	19.11'	10.00'	7.33'
22834											24° 00' 39.97" LT	63.80'	125.72'	300.00'	6.71'
MINNESOTA AVENUE RETURN 4 (SR_MINN_RET_4)															
22842											11° 38' 10.99" RT	30.57'	60.93'	300.00'	1.55'
22843											61° 28' 18.70" RT	44.60'	80.47'	75.00'	12.26'
22844											16° 21' 12.03" RT	57.47'	114.17'	400.00'	4.11'
MINNESOTA AVENUE RETURN 5 (SR_MINN_RET_5)															
22852											8° 53' 29.03" RT	23.32'	46.56'	300.00'	0.91'
22853											65° 47' 48.60" RT	58.22'	103.35'	90.00'	17.19'
22854											15° 51' 00.65" RT	55.68'	110.66'	400.00'	3.86'
MINNESOTA AVENUE RETURN 6 (SR_MINN_RET_6)															
22862											46° 28' 26.44" LT	38.64'	73.00'	90.00'	7.95'
22863											109° 30' 53.58" LT	14.15'	19.11'	10.00'	7.33'
22864											24° 00' 39.97" LT	63.80'	125.72'	300.00'	6.71'
MASON AVENUE RETURN 3 (SR_MASON_RET_3)															
22932											57° 23' 08.09" LT	35.58'	65.10'	65.00'	9.10'
22933											101° 54' 54.91" LT	6.17'	8.89'	5.00'	2.94'
22934											20° 00' 52.50" LT	70.58'	139.73'	400.00'	6.18'
MASON AVENUE RETURN 6 (SR_MASON_RET_6)															
22962											51° 33' 22.06" LT	28.98'	53.99'	60.00'	6.63'
22963											115° 37' 47.09" LT	15.89'	20.18'	10.00'	8.77'
22964											13° 29' 55.35" LT	94.68'	188.48'	800.00'	5.58'
US 20 ENTRANCE RIGHT STA. 10757+50 (ENT_10757R)															
9020											48° 33' 22.01" RT	22.55'	42.37'	50.00'	4.85'
9021											44° 30' 23.49" LT	20.46'	38.84'	50.00'	4.02'

Woodbury	ROW: NHSN-020-1(80)--2R-97					PIN	98-97-020-010											
	E of Merville to US 71 N of Early																	
		STATE		COUNTY		CITY		BORROW										
PARCEL NO.	OWNER NAME	FEE	EASE	FEE	EASE	FEE	EASE	EXCESS	FEE	T.E.	MITIGATION	OTHER	HOUSE	BUILDING(S)	A/C ONLY	TOTAL ACQ.		
55S	Loren D. Gordon - Fee	.18 AC																
58S	Darwin D. Shever - Fee																	
64S	Clark Byers - Fee Karen Iverson - Fee Craig Byers - Fee Kevin Byers - Fee	1.34 AC																
66S	Michael J. McDermott - Fee	1.32 AC																
68S	Bruce A. Duncan - Fee	4.43 AC																
70S	Iowa's Rooster Ridge, LLC. - Fee	1.99 AC																
72	Janene M Bray - Fee William L Frost - Fee	1.22 AC																
72B	State Of Iowa (State Conserv. Committee) - Fee	5.54 AC																
8 Parcels	"TOTALS	16.02 AC		0 AC		0 AC	0 AC		0 AC	0 AC								
			0 SF	0 SF		0 SF	0 SF		0 SF	0 SF								

**ACCESS CONTROL MINUTES AND SYMBOLS**

**IOWA DEPARTMENT OF TRANSPORTATION**  
Office of Traffic & Safety  
Final

**To:** David Widick  
Office of Right of Way Design

**Date:** April 4, 2012  
05/01/12 (revised)  
05/17/12 (revised)  
06/20/12 (revised)  
09/10/12 (final revision)

**District:** Tony Lazarowicz  
Shane Tymkowicz

**Design:** Paul Flattery  
Angela Johnson

**From:** Eric Wright  
Office of Traffic & Safety

**SUBJECT:** Access Review

**Project Details:**  
PIN: 98-97-020-010-01  
Project #: NHSX-020-1(116)—3H-97  
ROW #: NHSN-020-1(80)—2R-97

WOODBURY - US20 (Menville to Correctionville)

**ACCESS REVIEW INFORMATION (continued):**

Location	North Side (left)	South Side (right)	Comments
10455+00	Single, Type C connection	n/a	RIRO field entrance
10455+23	CLOSE	n/a	relocated to 10455+00
10477+48	Type "B" connection	Type "B" connection	Lee Avenue
10530+27	Type "B" connection	Type "B" connection	Lucas Avenue
10556+58	n/a	Joint, Type C connection	RIRO field entrance
10557+59	n/a	CLOSE	relocated to 10556+58
10583+09	Type "B" connection	Type "B" connection	Lenox Avenue
10635+69	Type "B" connection	Type "B" connection	Minnesota Avenue
10636+50	n/a	CLOSE	access via Minnesota Ave
10650+83	Joint, Type C connection	n/a	RIRO field entrance
10670+00	n/a	Single, Type C connection	per district/owner request
10670+38	n/a	CLOSE	relocated to 10677+15
10684+56	n/a	CLOSE	relocated to 10677+15
10690+28	Type "B" connection	Single, Type C connection	Mason Ave -North
10695+65	n/a	CLOSE	access via 10677+15
10708+36	CLOSE	n/a	access via Mason Ave
10756+00	Single, Type C connection	n/a	RIRO field entrance
10757+25	CLOSE	Single, Type C connection	RIRO field entrance
10757+36	CLOSE	CLOSE	relocated to 10756-00 (left) relocated to 10757-25 (right)
10765+21	CLOSE	n/a	access via 10756+00
10797+50+/-	"Remove Reservation"	n/a	reserved by conveyance

**PROJECT LOCATION AND DESCRIPTION:**

This project is the reconstruction of US 20 from Menville to Correctionville in Woodbury County. Access rights shall be acquired for this entire project.

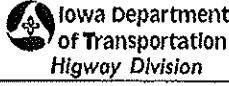
**ACCESS PRIORITY CLASSIFICATION:** Priority III Facility

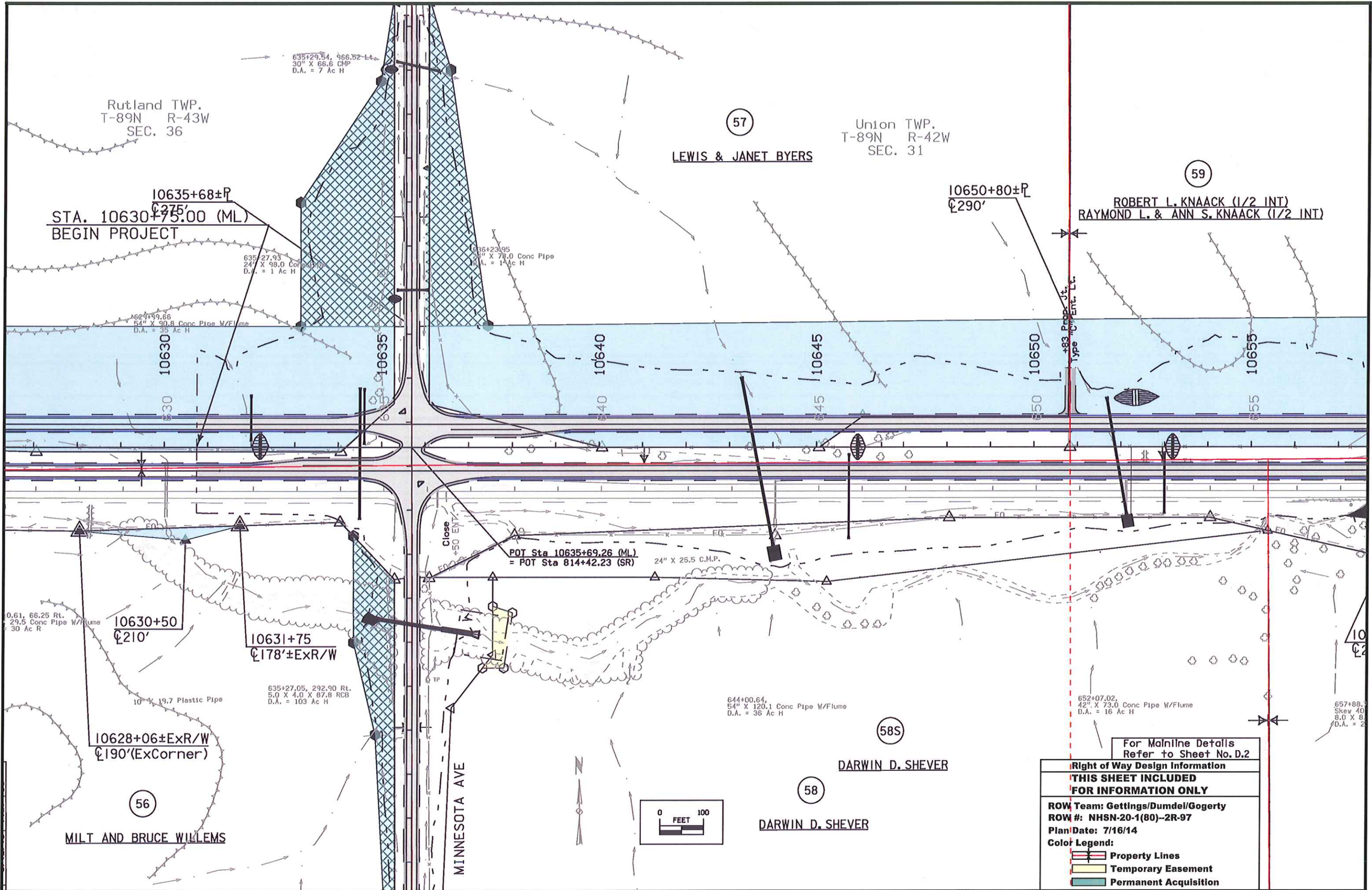
The access classification for this section of this project is Priority III which requires access spacing to maintained at 1320 feet preferred, 1000 feet minimum. Moreover, median opening should be placed at public road connections with general spacing desired at half mile increments.

In addition to the spacing requirements, access control shall be acquired along public road connections for a distance of 150 feet as measured from the near edge of the primary highway traveled way. Any existing accesses within this area shall be closed and access be established beyond the control limits.

**ACCESS REVIEW INFORMATION:**

Location	North Side (left)	South Side (right)	Comments
10210+90	Type "B" connection	Type "B" connection	Ida Avenue
10263+06	Type "B" connection	Type "B" connection	Jasper Avenue
10315+89	Type "B" connection	Type "B" connection	Jewell Avenue
10336+98	CLOSE	CLOSE	relocated to 10345+13
10337+18	n/a	Single, Type C connection	RIRO field entrance
10345+13	Joint, Type C connection	Joint, Type C connection	RIRO field entrance
10353+01	n/a	Joint, Type C connection	RIRO field entrance
10353+08	CLOSE	n/a	relocated to 10345+13
10371+54	Type "B" connection	Type "B" connection	Knox Avenue
10424+49	Type "B" connection	Type "B" connection	Kossuth Avenue

RIGHT-OF-WAY PLANS			LEGEND	
	DATES	SETS		
PROJECT PLANNING			▲	PROPOSED FEE SIMPLE TITLE
RECEIVED			△	EXISTING RIGHT OF WAY
ADVERTISING CONTROL			▲△	EXISTING AND PROPOSED FEE SIMPLE TITLE RIGHT OF WAY
APPRAISAL			◆	PROPOSED PERMANENT EASEMENT RIGHT OF WAY
DISTRICT			▲△◆	EXISTING AND PROPOSED PERMANENT EASEMENT RIGHT OF WAY
DISTRICT L.S.			◇	EASEMENT (TEMPORARY)
CONDEMNATION			■	BORROW
DOCUMENTS			X	EXCESS LAND
PROPERTY MGT.			→←	PROPERTY LINE
RELOC. ASST.			C/A	ACCESS CONTROL
F.H.W.A.			 Iowa Department of Transportation Highway Division OFFICE OF RIGHT OF WAY	
DESIGN				
ACQUISITION				



Rutland TWP.  
T-89N R-43W  
SEC. 36

Union TWP.  
T-89N R-42W  
SEC. 31

ROBERT L. KNAACK (1/2 INT)  
RAYMOND L. & ANN S. KNAACK (1/2 INT)

57  
LEWIS & JANET BYERS

10635+68±P  
STA. 10630+75.00 (ML)  
BEGIN PROJECT

10650+80±P  
±290'

0.61, 66.25 Rt.  
29.5 Conc Pipe W/Flume  
30 Ac R

10630+50  
±210'

10631+75  
±178'±ExR/W

POT Sta 10635+69.26 (ML)  
= POT Sta 814+42.23 (SR)  
24" X 25.5 C.M.P.

644+00.64,  
54" X 120.1 Conc Pipe W/Flume  
D.A. = 36 Ac H

652+07.02,  
42" X 73.0 Conc Pipe W/Flume  
D.A. = 16 Ac H

657+88.7  
Skew 40°  
8.0 X 8  
D.A. = 2

10628+06±ExR/W  
±190'(ExCorner)

58S  
DARWIN D. SHEVER

58  
DARWIN D. SHEVER

MILT AND BRUCE WILLEMS

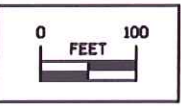
MINNESOTA AVE

For Mainline Details  
Refer to Sheet No. D.2

Right of Way Design Information  
THIS SHEET INCLUDED  
FOR INFORMATION ONLY

ROW Team: Gettings/Dumdei/Gogerty  
ROW #: NHSN-20-1(80)-2R-97  
Plan/Date: 7/16/14

Color Legend:  
 Property Lines  
 Temporary Easement  
 Permanent Acquisition



REVISED 4/19/13 PAR 59

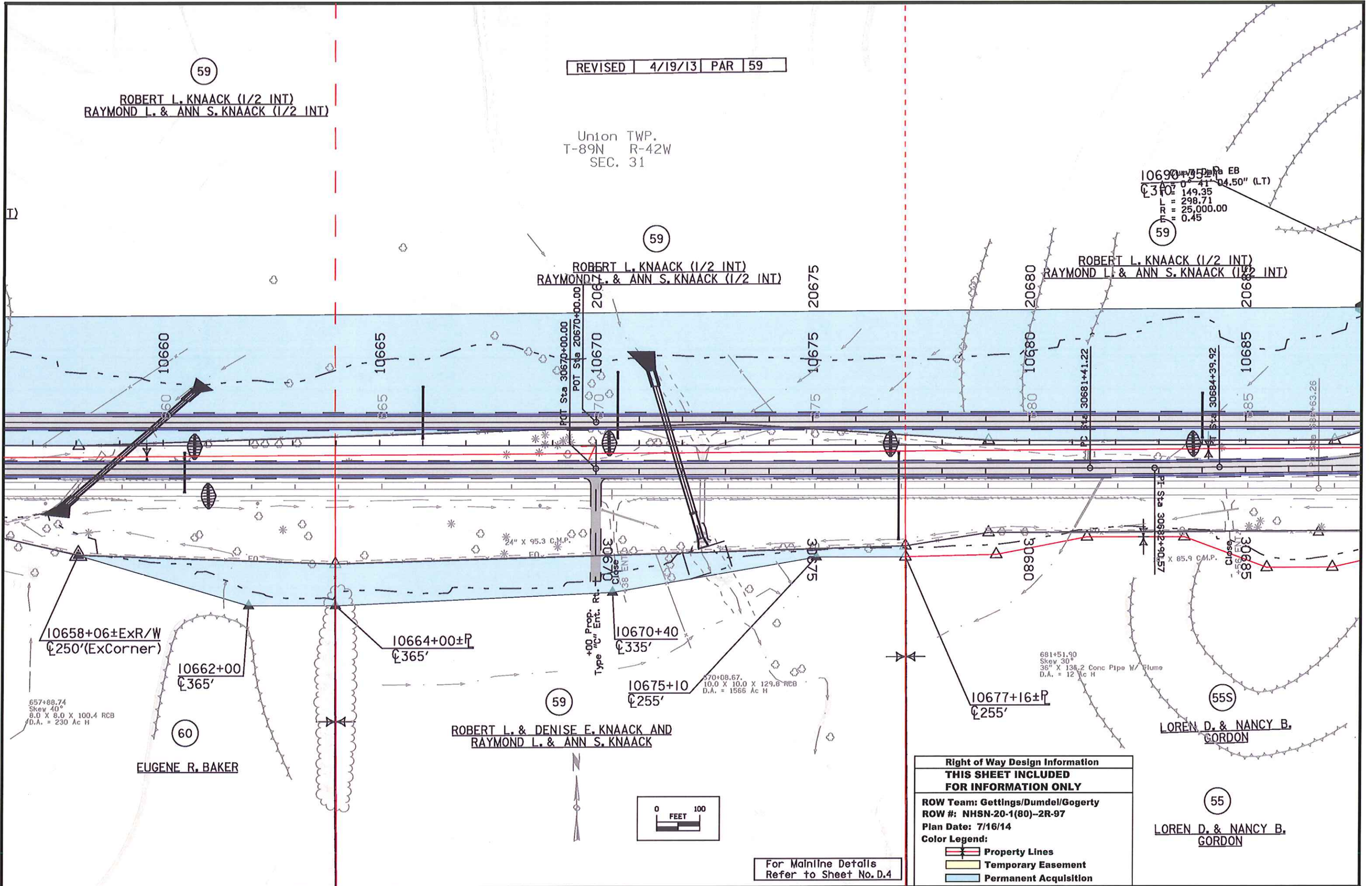
ROBERT L. KNAACK (1/2 INT)  
RAYMOND L. & ANN S. KNAACK (1/2 INT)

Union TWP.  
T-89N R-42W  
SEC. 31

10690+75.21 Pa EB  
C340  
L = 149.35  
R = 298.71  
E = 25,000.00  
F = 0.45

ROBERT L. KNAACK (1/2 INT)  
RAYMOND L. & ANN S. KNAACK (1/2 INT)

ROBERT L. KNAACK (1/2 INT)  
RAYMOND L. & ANN S. KNAACK (1/2 INT)



10658+06±ExR/W  
C250'(ExCorner)

10662+00  
C365'

10664+00±P  
C365'

10670+40  
C335'

10675+10  
C255'

10677+16±P  
C255'

LOREN D. & NANCY B. GORDON

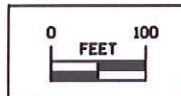
LOREN D. & NANCY B. GORDON

657+88.74  
Skev 40°  
8.0 X 8.0 X 100.4 RCB  
D.A. = 230 Ac H

681+51.90  
Skev 30°  
36" X 136.2 Conc Pipe W/ Flume  
D.A. = 12 Ac H

370+08.67  
10.0 X 10.0 X 129.8 RCB  
D.A. = 1566 Ac H

+00 Prop. Ent. R.  
Type 'C' Ent.



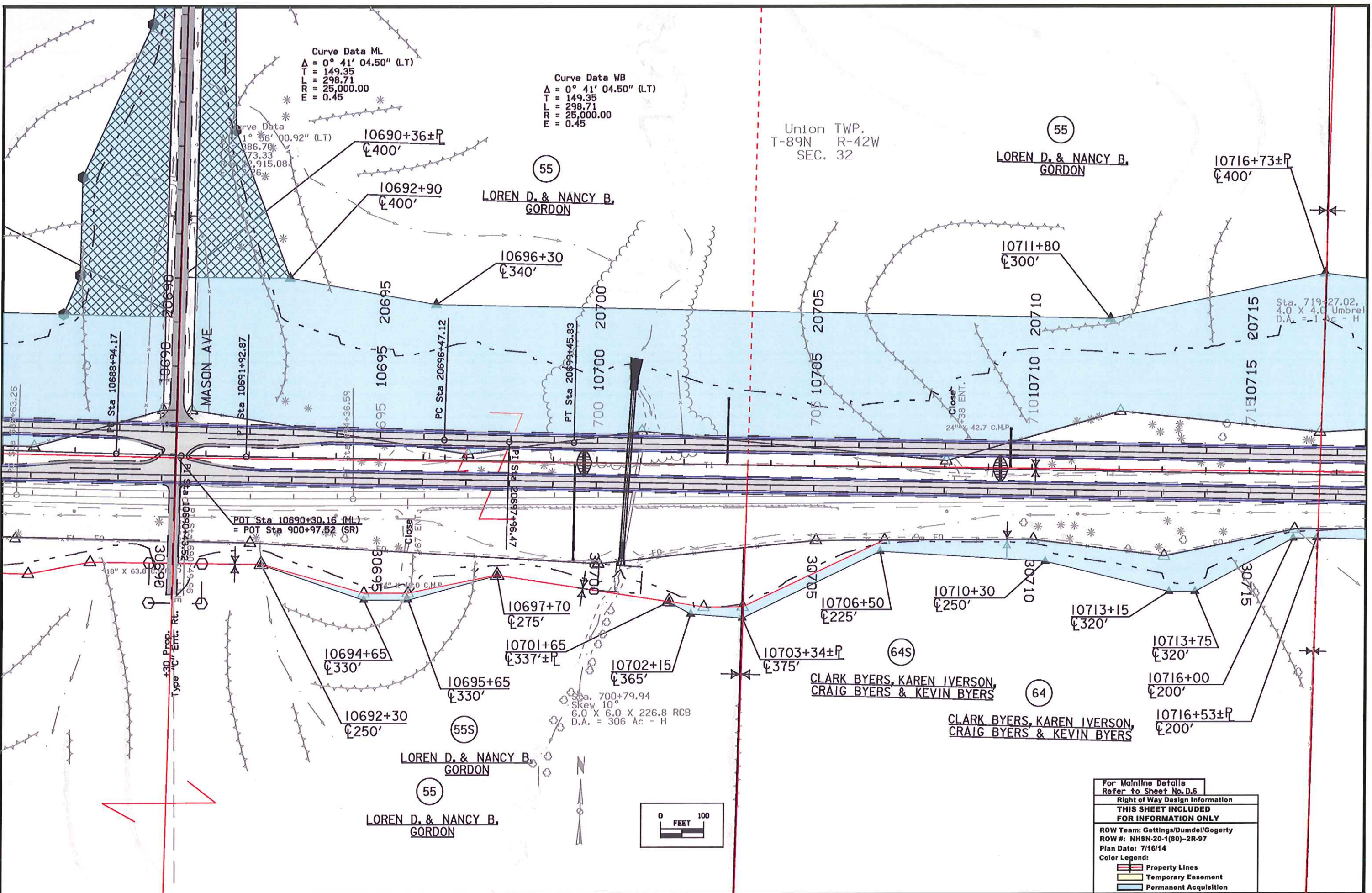
For Mainline Details  
Refer to Sheet No. D.4

<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED</b>
<b>FOR INFORMATION ONLY</b>
ROW Team: Gettings/Dumdel/Gogerty
ROW #: NHSN-20-1(80)-2R-97
Plan Date: 7/16/14
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

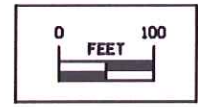
Curve Data ML  
 $\Delta = 0^\circ 41' 04.50''$  (LT)  
 $T = 149.35$   
 $L = 298.71$   
 $R = 25,000.00$   
 $E = 0.45$

Curve Data WB  
 $\Delta = 0^\circ 41' 04.50''$  (LT)  
 $T = 149.35$   
 $L = 298.71$   
 $R = 25,000.00$   
 $E = 0.45$

Union TWP.  
 T-89N R-42W  
 SEC. 32



For Mainline Details  
 Refer to Sheet No. D.6  
 Right of Way Design Information  
**THIS SHEET INCLUDED  
 FOR INFORMATION ONLY**  
 ROW Team: Gettings/Dumdel/Gogerty  
 ROW #: NHSN-20-1(80)-2R-97  
 Plan Date: 7/16/14  
 Color Legend:  
 - Property Lines  
 - Temporary Easement  
 - Permanent Acquisition



REVISED 9/26/12 PAR 67

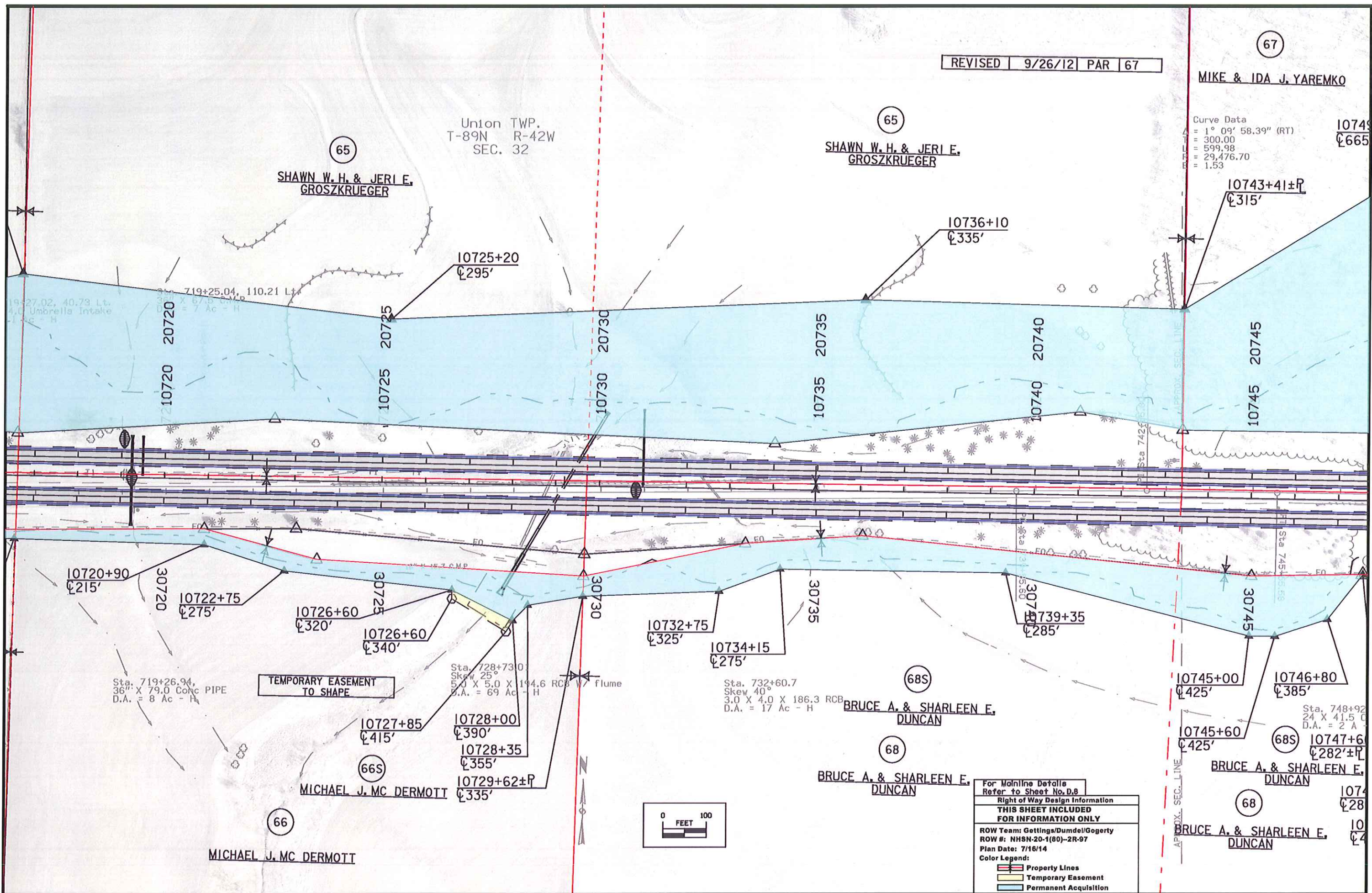
67  
MIKE & IDA J. YAREMKO

Union TWP.  
T-89N R-42W  
SEC. 32

65  
SHAWN W. H. & JERI E.  
GROSZKRUEGER

65  
SHAWN W. H. & JERI E.  
GROSZKRUEGER

Curve Data  
A = 1° 09' 58.39" (RT)  
T = 300.00  
L = 599.98  
R = 29,476.70  
E = 1.53



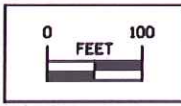
Sta. 719+26.94,  
36" X 79.0 Conc PIPE  
D.A. = 8 Ac - H

TEMPORARY EASEMENT  
TO SHAPE

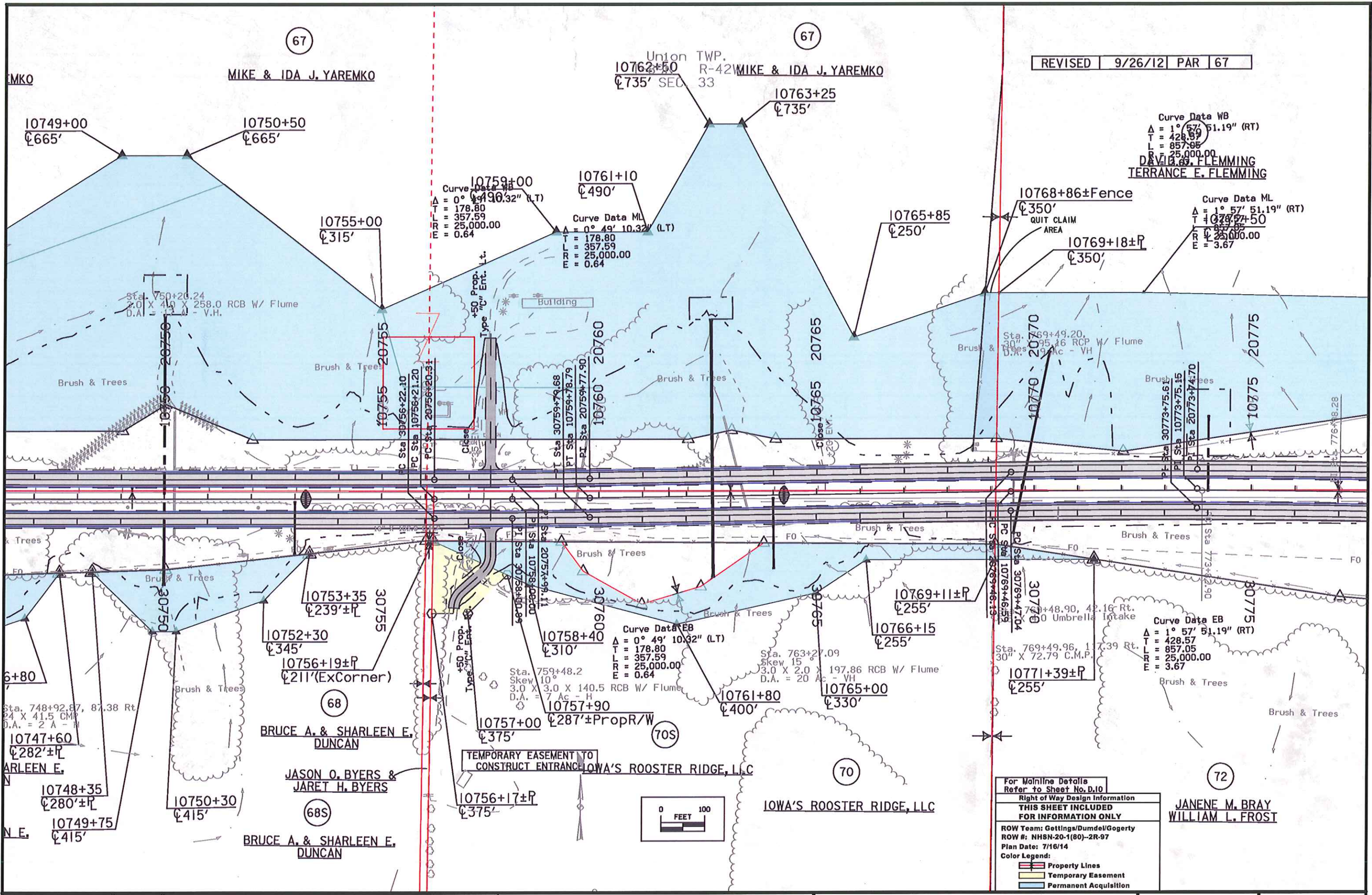
Sta. 728+73.0  
Skew 25°  
5.0 X 5.0 X 144.6 RCB W/ Flume  
D.A. = 69 Ac - H

Sta. 732+60.7  
Skew 40°  
3.0 X 4.0 X 186.3 RCB  
D.A. = 17 Ac - H

Sta. 748+92  
24 X 41.5 C  
D.A. = 2 A



For Mainline Details  
Refer to Sheet No. D.8  
Right of Way Design Information  
**THIS SHEET INCLUDED  
FOR INFORMATION ONLY**  
ROW Team: Gettings/Dumdel/Gogerty  
ROW #: NHSN-20-1(80)-2R-97  
Plan Date: 7/16/14  
Color Legend:  
- Property Lines  
- Temporary Easement  
- Permanent Acquisition



REVISED 9/26/12 PAR 67

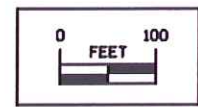
Curve Data WB  
 $\Delta = 1^\circ 57' 51.19''$  (RT)  
 $T = 428.57$   
 $L = 857.05$   
 $R = 25,000.00$   
 $E = 3.67$   
**DAVID B. FLEMMING**  
**TERRANCE E. FLEMMING**

Curve Data ML  
 $\Delta = 1^\circ 57' 51.19''$  (RT)  
 $T = 428.57$   
 $L = 857.05$   
 $R = 25,000.00$   
 $E = 3.67$

Curve Data EB  
 $\Delta = 1^\circ 57' 51.19''$  (RT)  
 $T = 428.57$   
 $L = 857.05$   
 $R = 25,000.00$   
 $E = 3.67$

For Mainline Details  
Refer to Sheet No. D.10  
Right of Way Design Information  
**THIS SHEET INCLUDED  
FOR INFORMATION ONLY**  
ROW Team: Gettings/Dumdel/Gogerty  
ROW #: NHSN-20-1(80)-2R-97  
Plan Date: 7/16/14  
Color Legend:  
- Property Lines  
- Temporary Easement  
- Permanent Acquisition

**JANENE M. BRAY**  
**WILLIAM L. FROST**





Union TWP.  
T-89N R-42W  
SEC. 33

REVISED 10/29/13 PAR 72

Union TWP.  
T-89N R-42W  
SEC. 34

Curve Data  
Δ = 1° 03' 04.25" (RT)  
T = 315.39  
L = 630.75  
R = 34,380.00  
E = 1.45

DAVID G. FLEMMING  
TERRANCE E. FLEMMING

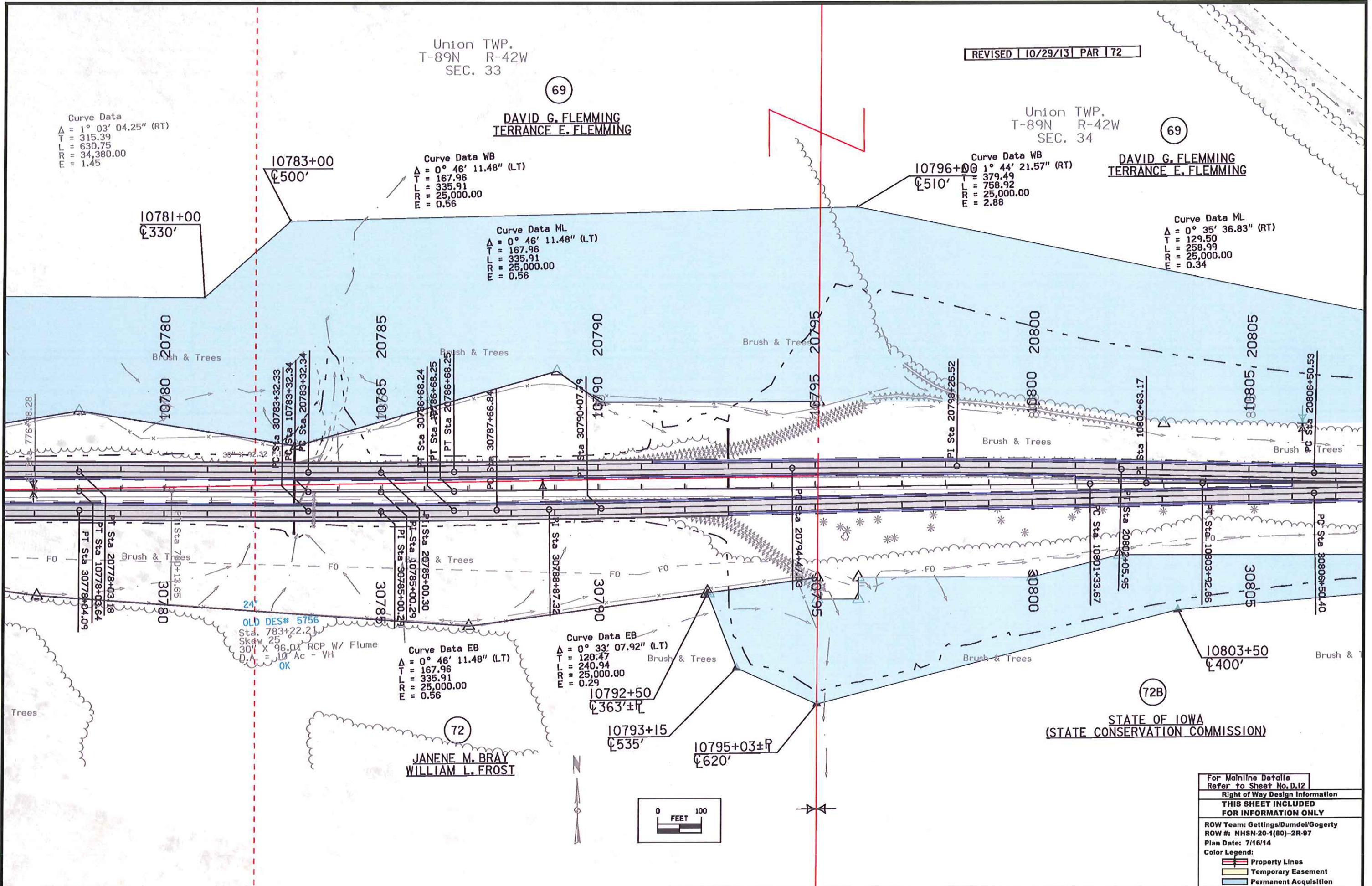
DAVID G. FLEMMING  
TERRANCE E. FLEMMING

Curve Data WB  
Δ = 0° 46' 11.48" (LT)  
T = 167.96  
L = 335.91  
R = 25,000.00  
E = 0.56

Curve Data WB  
Δ = 1° 44' 21.57" (RT)  
T = 379.49  
L = 758.92  
R = 25,000.00  
E = 2.88

Curve Data ML  
Δ = 0° 46' 11.48" (LT)  
T = 167.96  
L = 335.91  
R = 25,000.00  
E = 0.56

Curve Data ML  
Δ = 0° 35' 36.83" (RT)  
T = 129.50  
L = 258.99  
R = 25,000.00  
E = 0.34



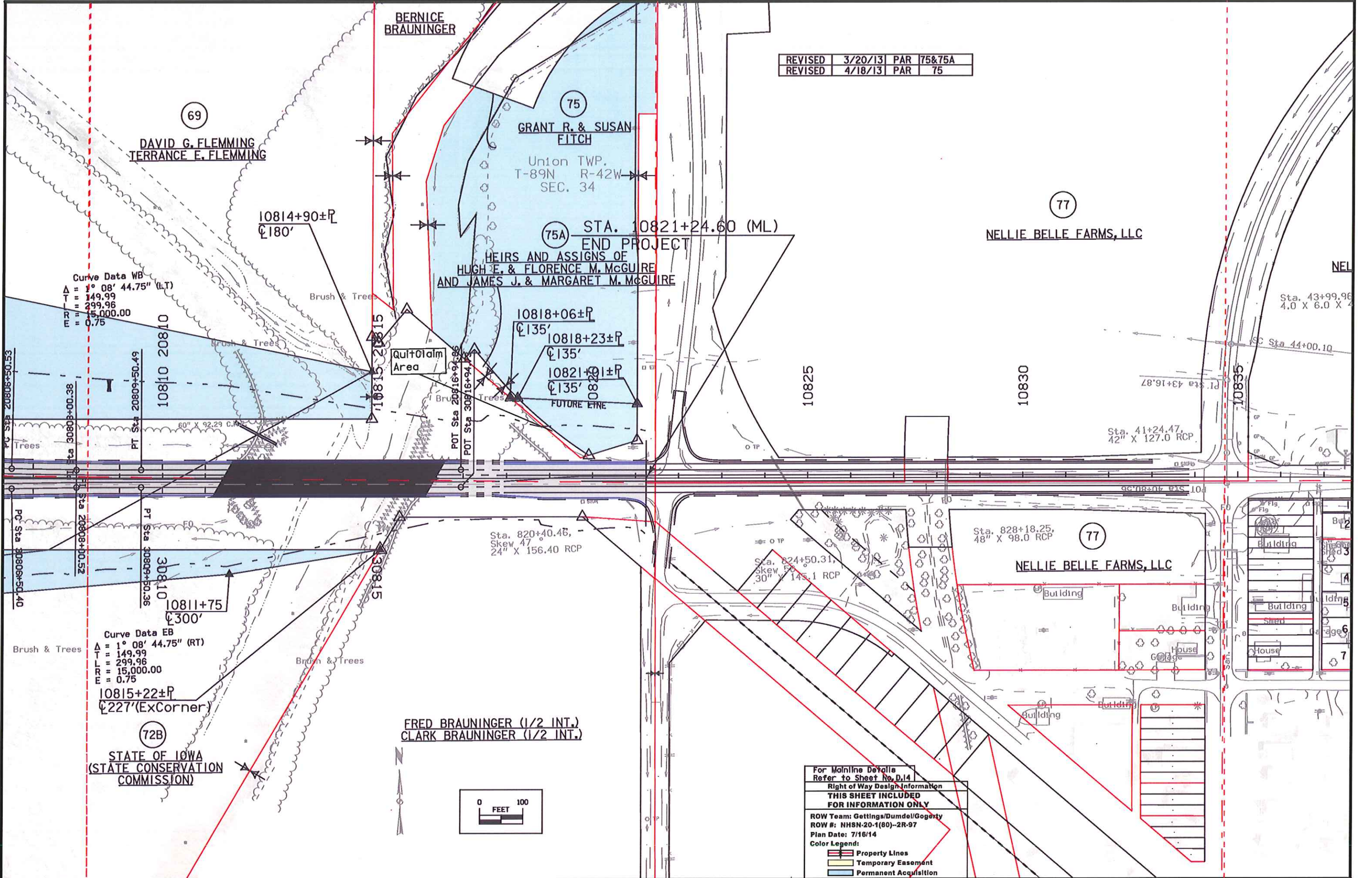
OLD DES# 5756  
Sta. 783+22.2  
Skew 25  
30" X 96.00" RCP W/ Flume  
D.A. = 10' Ac - VH  
OK

JANENE M. BRAY  
WILLIAM L. FROST

STATE OF IOWA  
(STATE CONSERVATION COMMISSION)

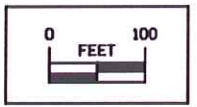
For Mainline Details Refer to Sheet No. D.12
Right of Way Design Information
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
ROW Team: Gettings/Dumdel/Gogerty
ROW #: NNSH-20-1(80)-2R-97
Plan Date: 7/16/14
Color Legend:
<span style="color:red">---</span> Property Lines
<span style="color:yellow">---</span> Temporary Easement
<span style="color:blue">---</span> Permanent Acquisition

REVISED	3/20/13	PAR	75&75A
REVISED	4/18/13	PAR	75

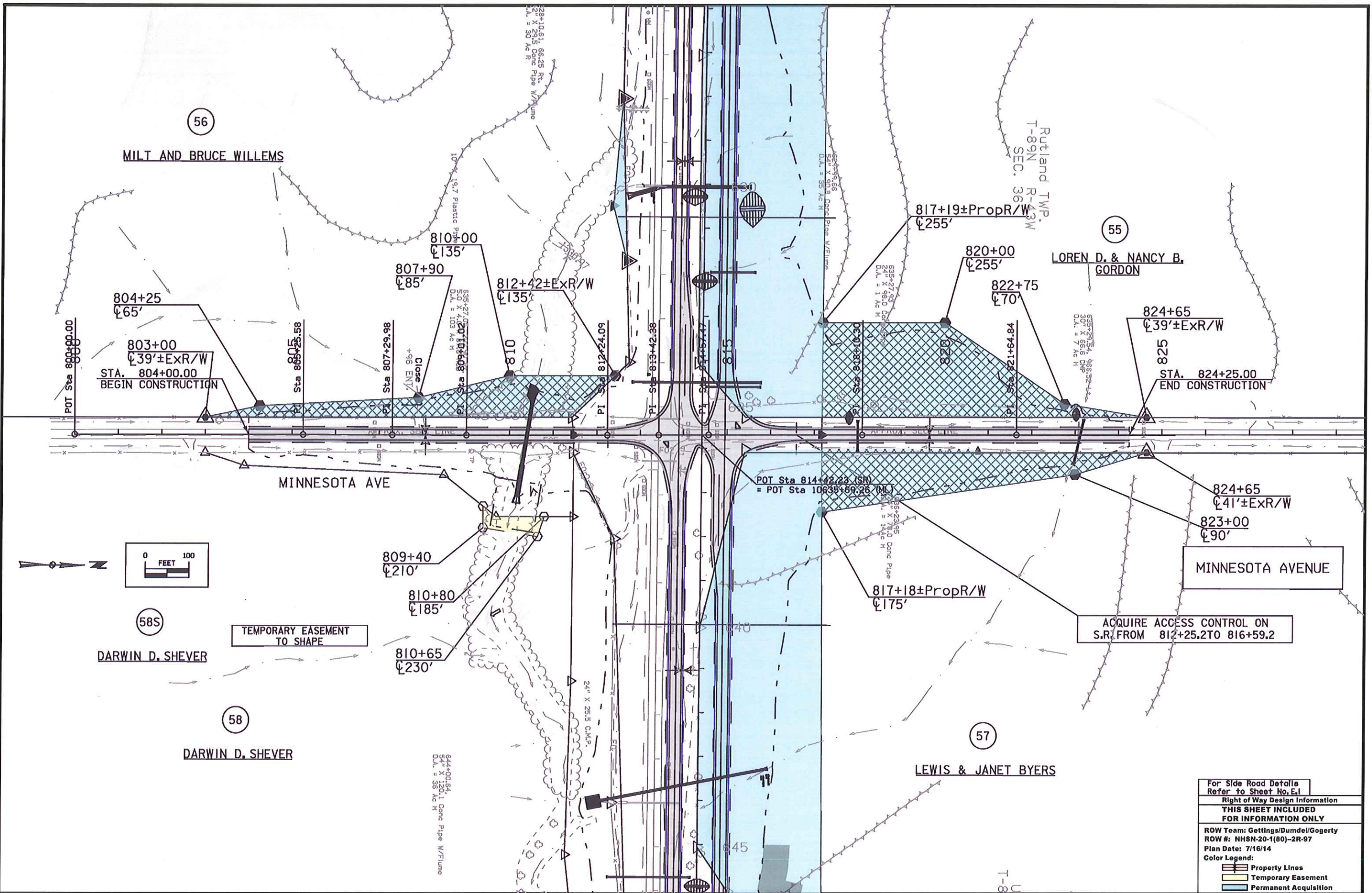


Curve Data WB  
 $\Delta = 1^\circ 08' 44.75''$  (LT)  
 $T = 149.99$   
 $L = 299.96$   
 $R = 15,000.00$   
 $E = 0.75$

Curve Data EB  
 $\Delta = 1^\circ 08' 44.75''$  (RT)  
 $T = 149.99$   
 $L = 299.96$   
 $R = 15,000.00$   
 $E = 0.75$



For Mainline Details  
Refer to Sheet No. D.14  
Right of Way Design Information  
**THIS SHEET INCLUDED  
FOR INFORMATION ONLY**  
ROW Team: Gettings/Dumdel/Gogerty  
ROW #: NHSN-20-1(80)-2R-97  
Plan Date: 7/16/14  
Color Legend:  
- Property Lines  
- Temporary Easement  
- Permanent Acquisition



MILT AND BRUCE WILLEMS

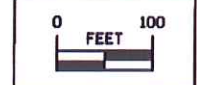
LOREN D. & NANCY B. GORDON

DARWIN D. SHEVER

LEWIS & JANET BYERS

MINNESOTA AVE

MINNESOTA AVENUE



TEMPORARY EASEMENT TO SHAPE

ACQUIRE ACCESS CONTROL ON S.R. FROM 812+25.2 TO 816+59.2

For Side Road Details Refer to Sheet No. E.1
Right of Way Design Information
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
ROW Team: Gettings/Dumdel/Gogerty
ROW #: NHSN-20-1(80)-2R-97
Plan Date: 7/16/14
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

**LEGEND OF CROSS SECTION SHEETS (ROAD)**

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

**LEGEND OF CROSS SECTION SHEETS (SOILS)**

- TS----- Topsoil (Class 10)
- TS A----- Topsoil (Type A Disposal)
- TS B----- Topsoil (Type B Disposal)
- TS C----- Topsoil (Type C Disposal)
- CL 10----- Class 10 Materials
- SEL LO----- 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

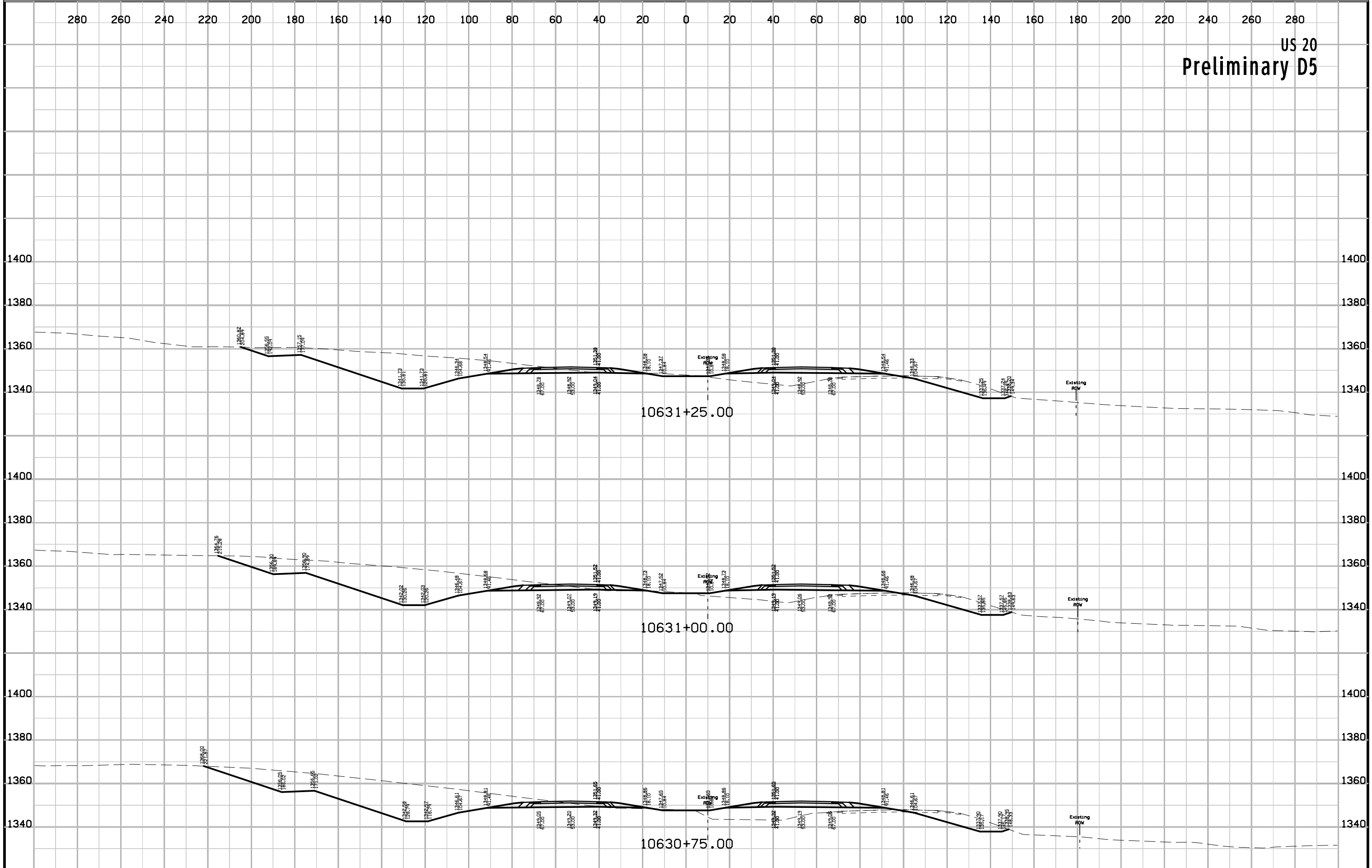
Note: All layer lines and descriptions identify layers above the line.

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.

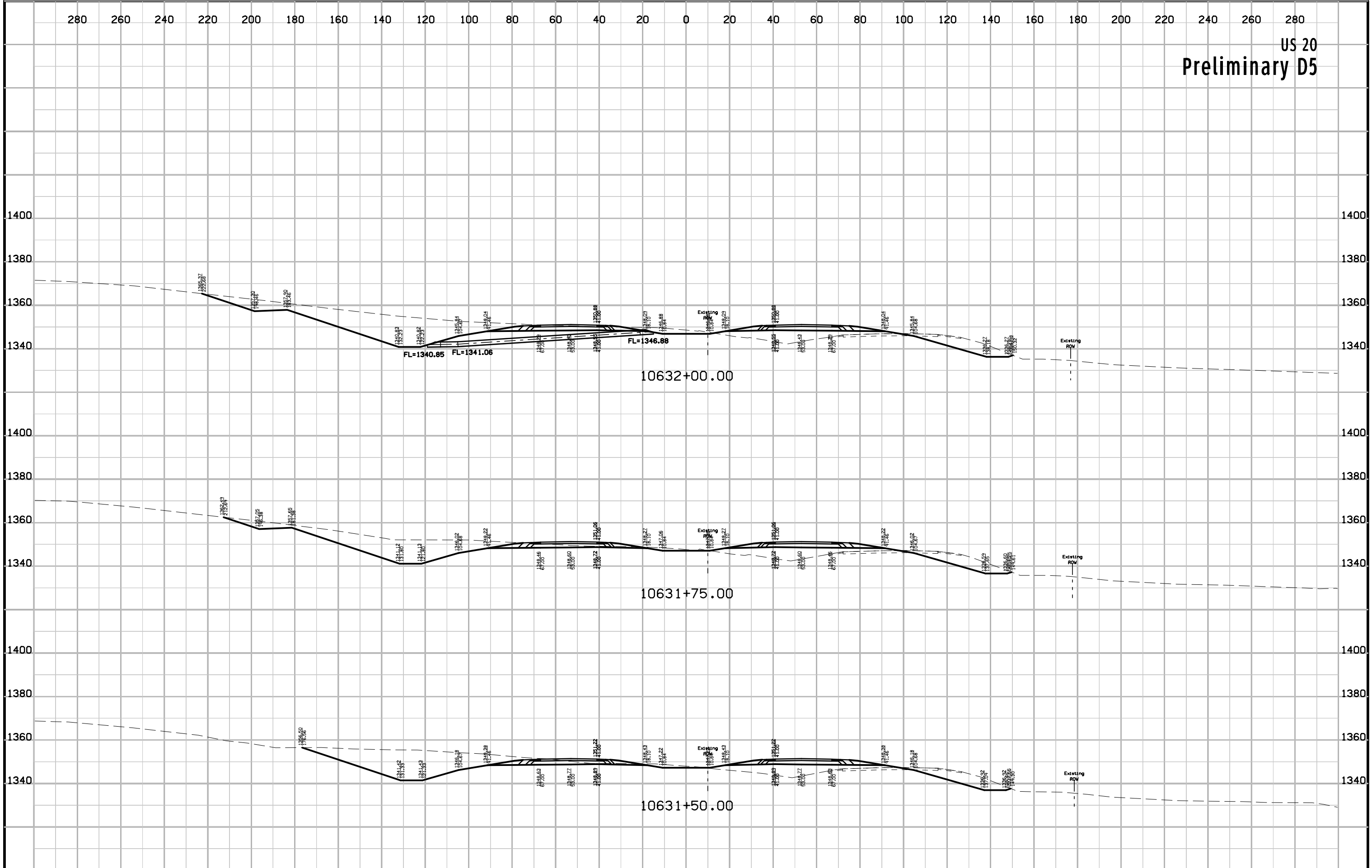
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

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

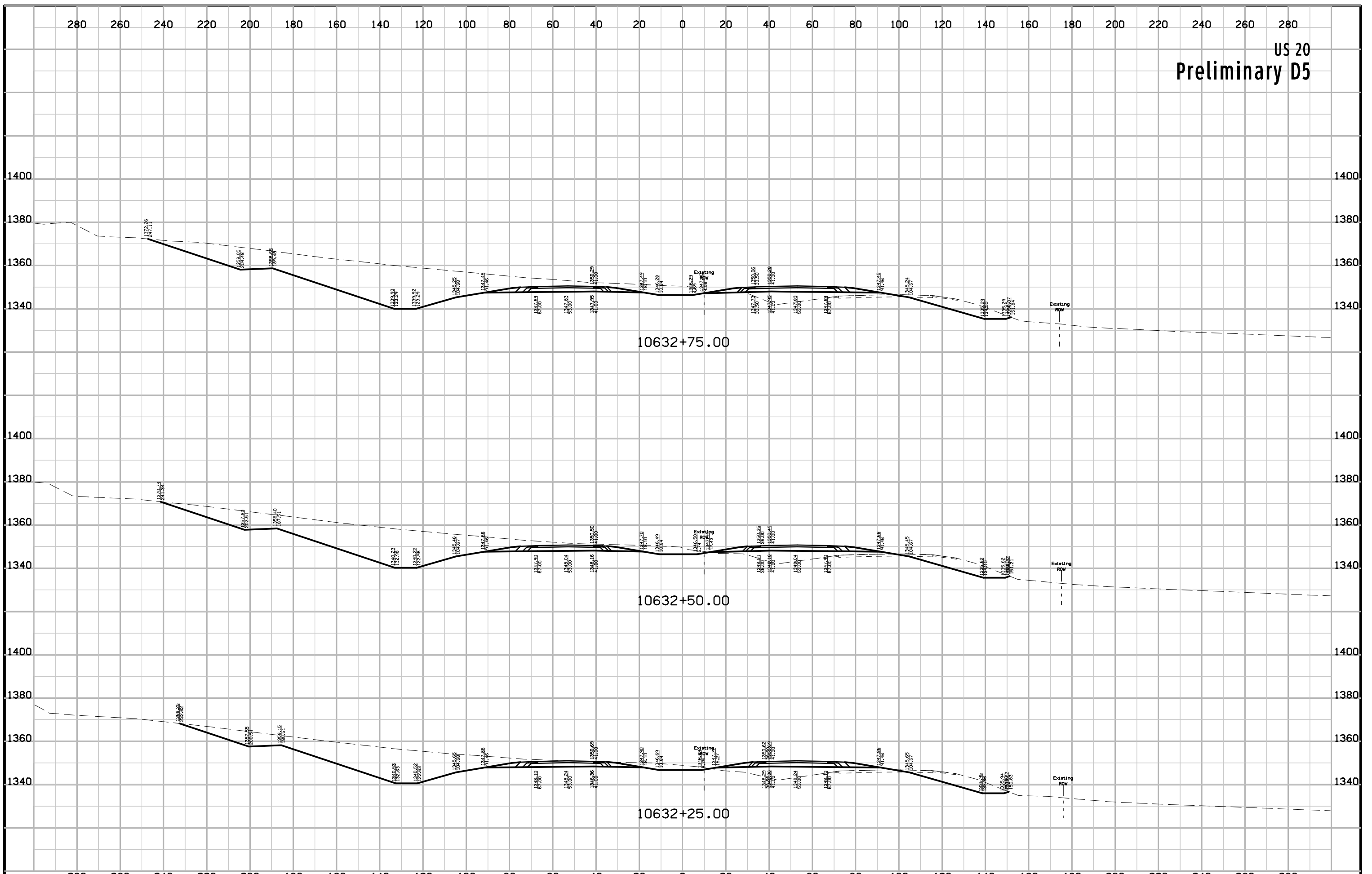
US 20  
Preliminary D5



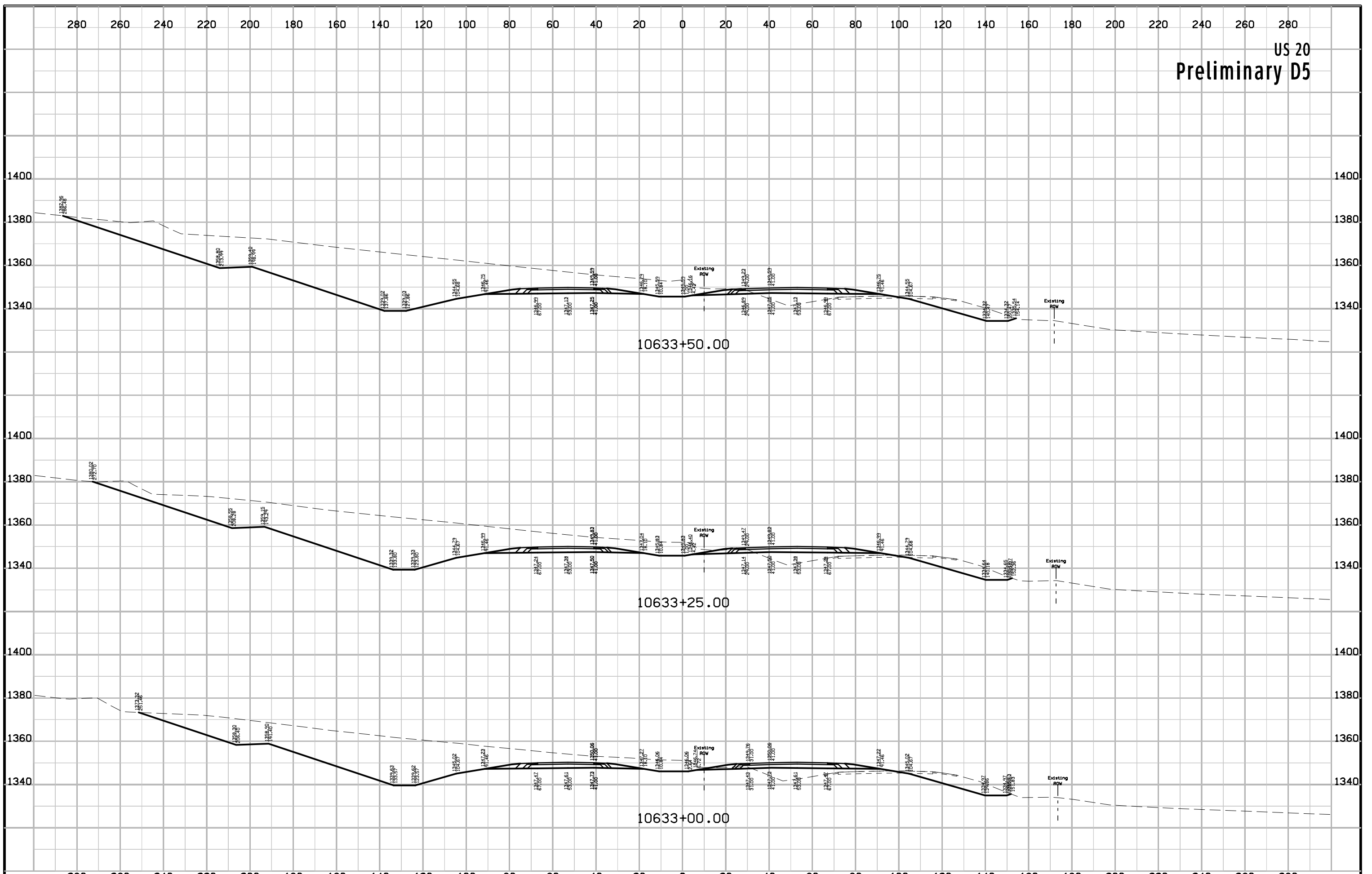
US 20  
Preliminary D5



US 20  
Preliminary D5



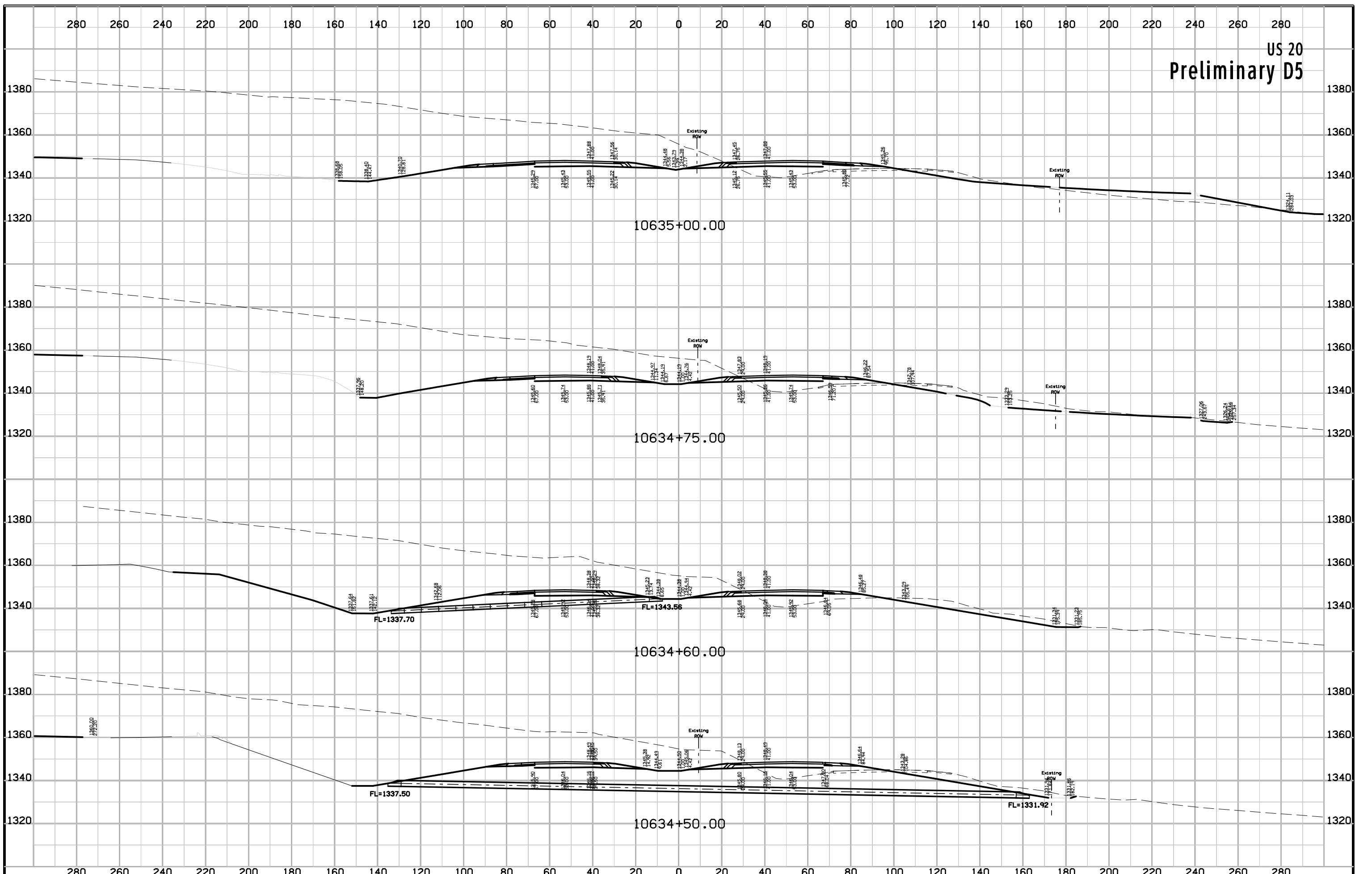
US 20  
Preliminary D5



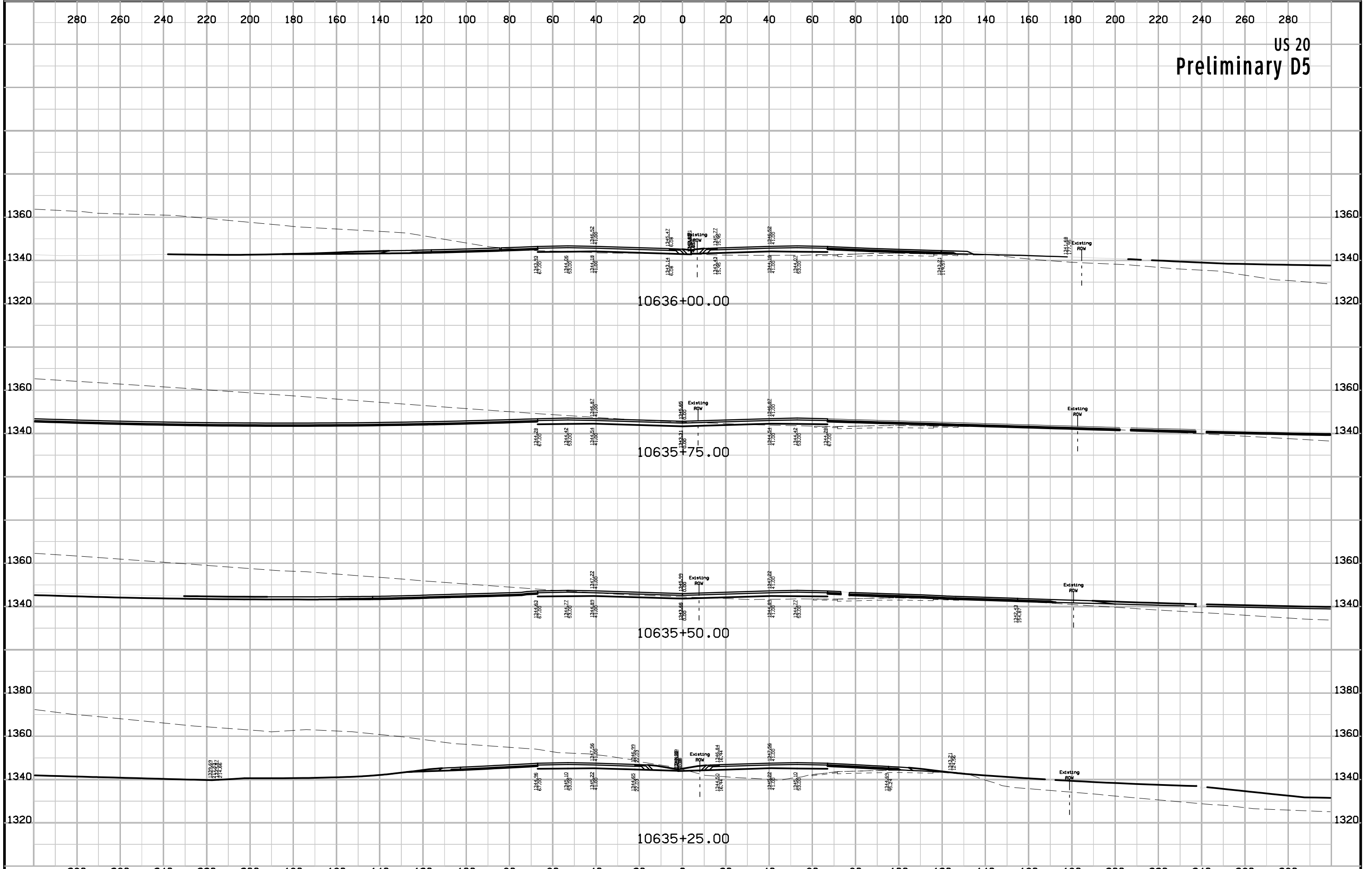




US 20  
Preliminary D5

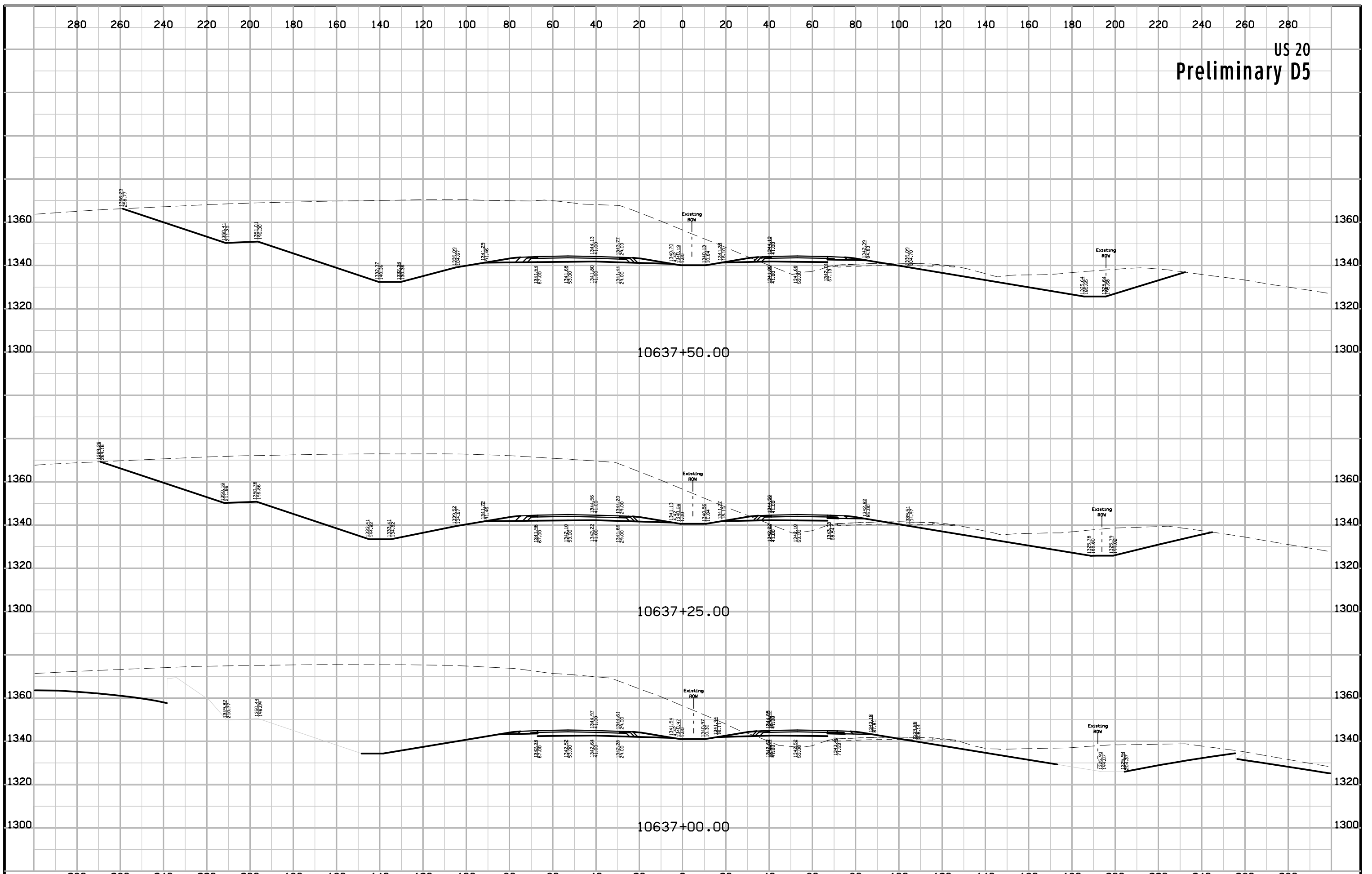


US 20  
Preliminary D5

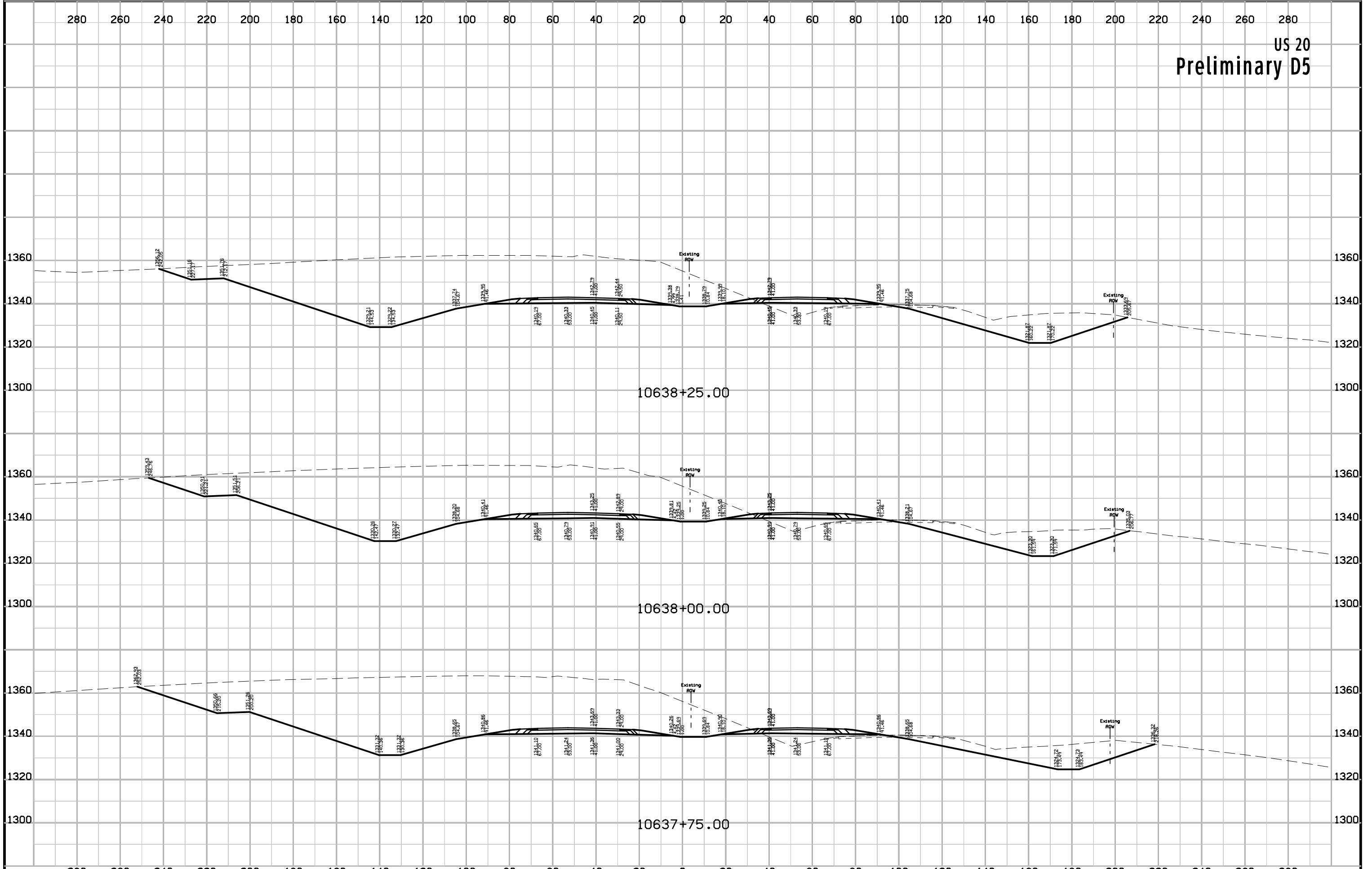




US 20  
Preliminary D5

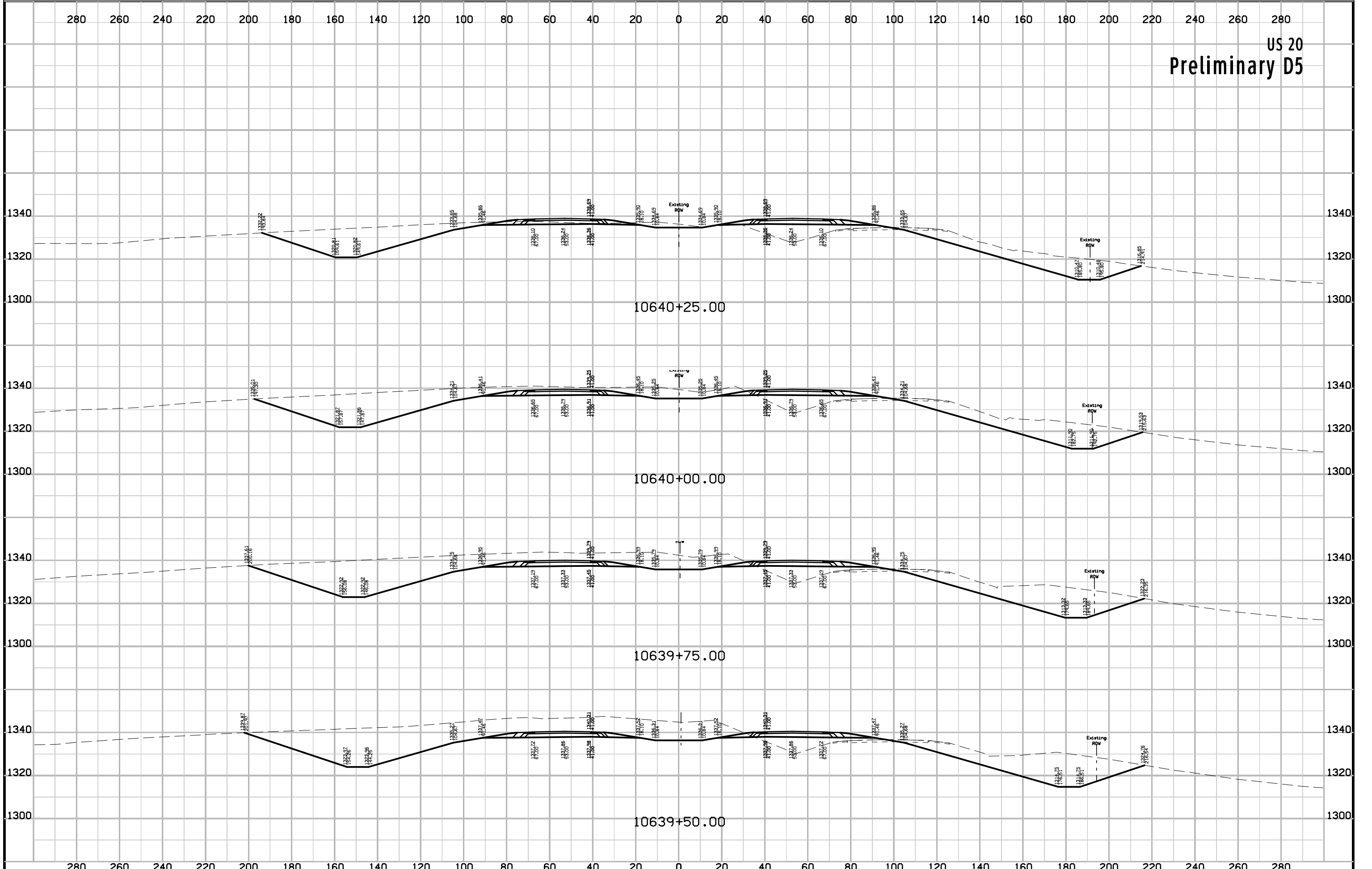


US 20  
Preliminary D5



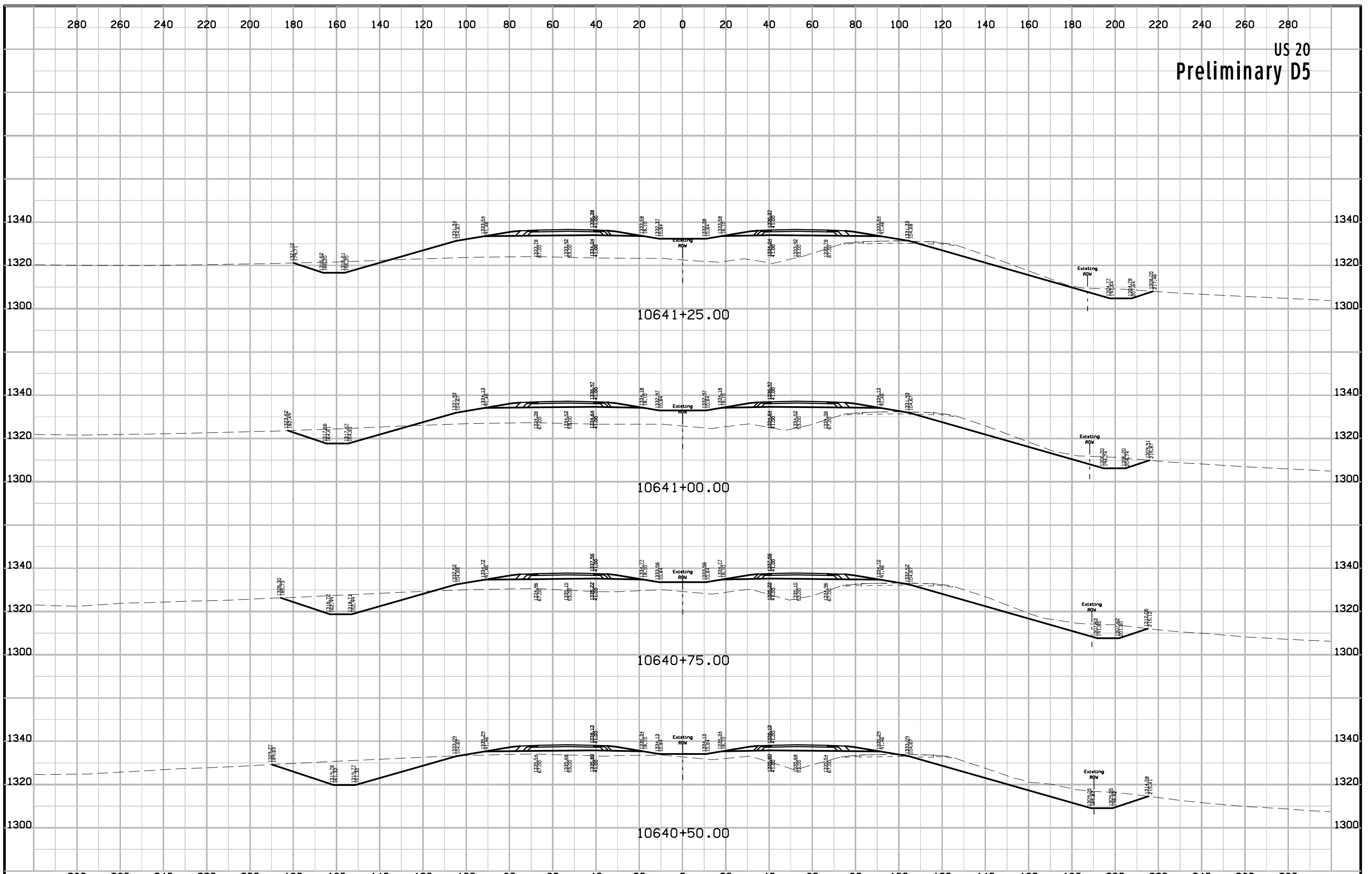


US 20  
Preliminary D5

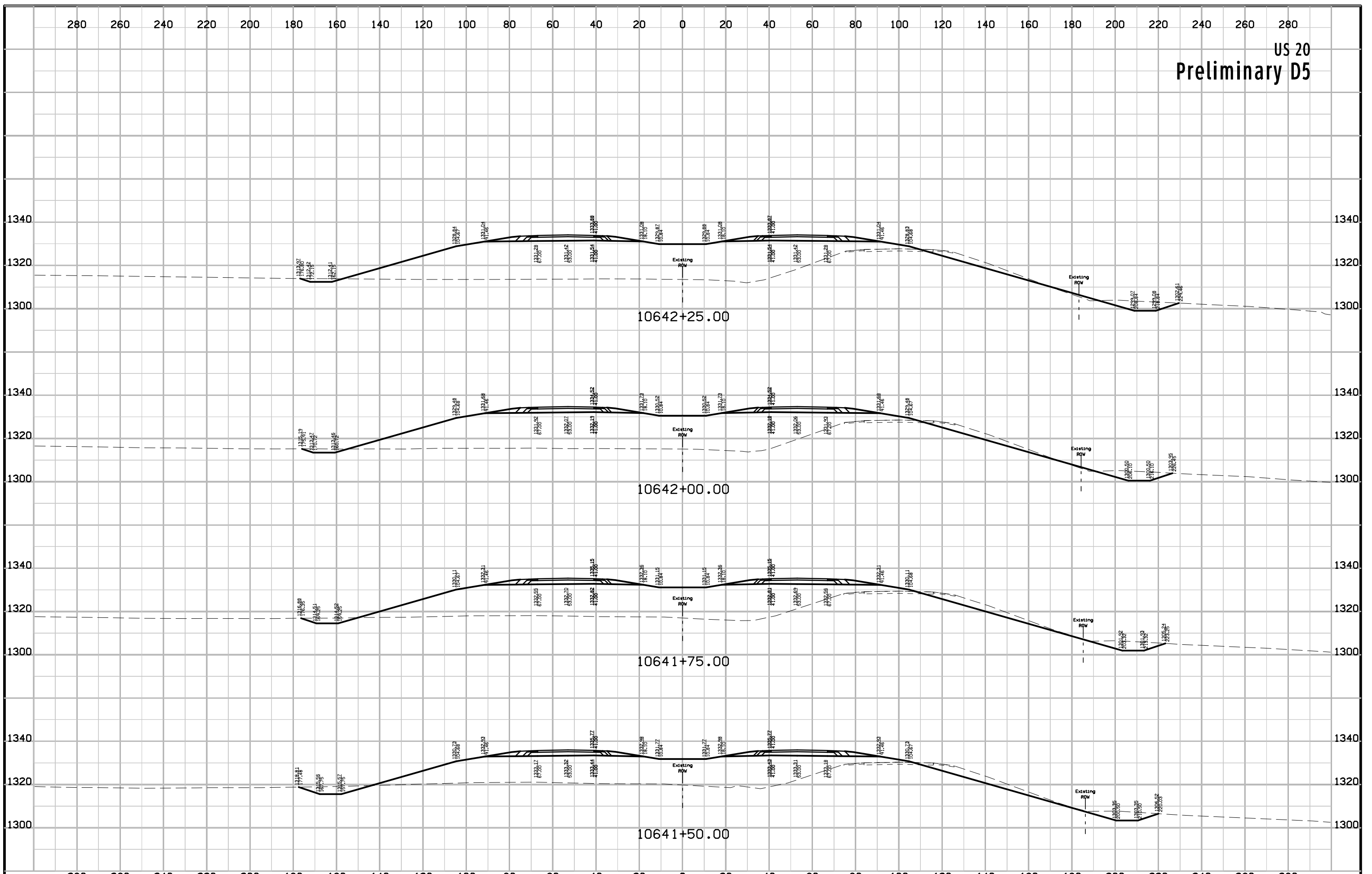




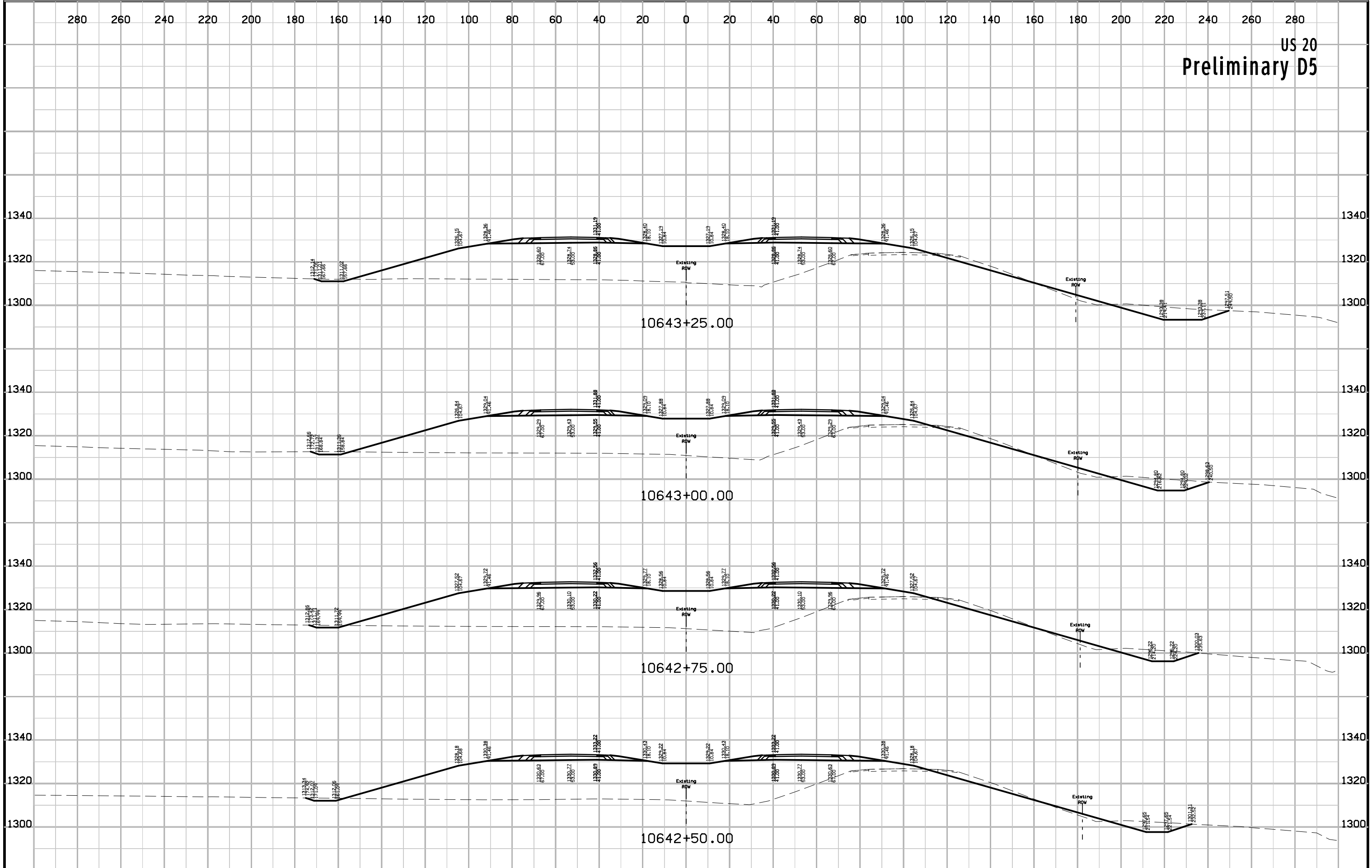
US 20  
Preliminary D5

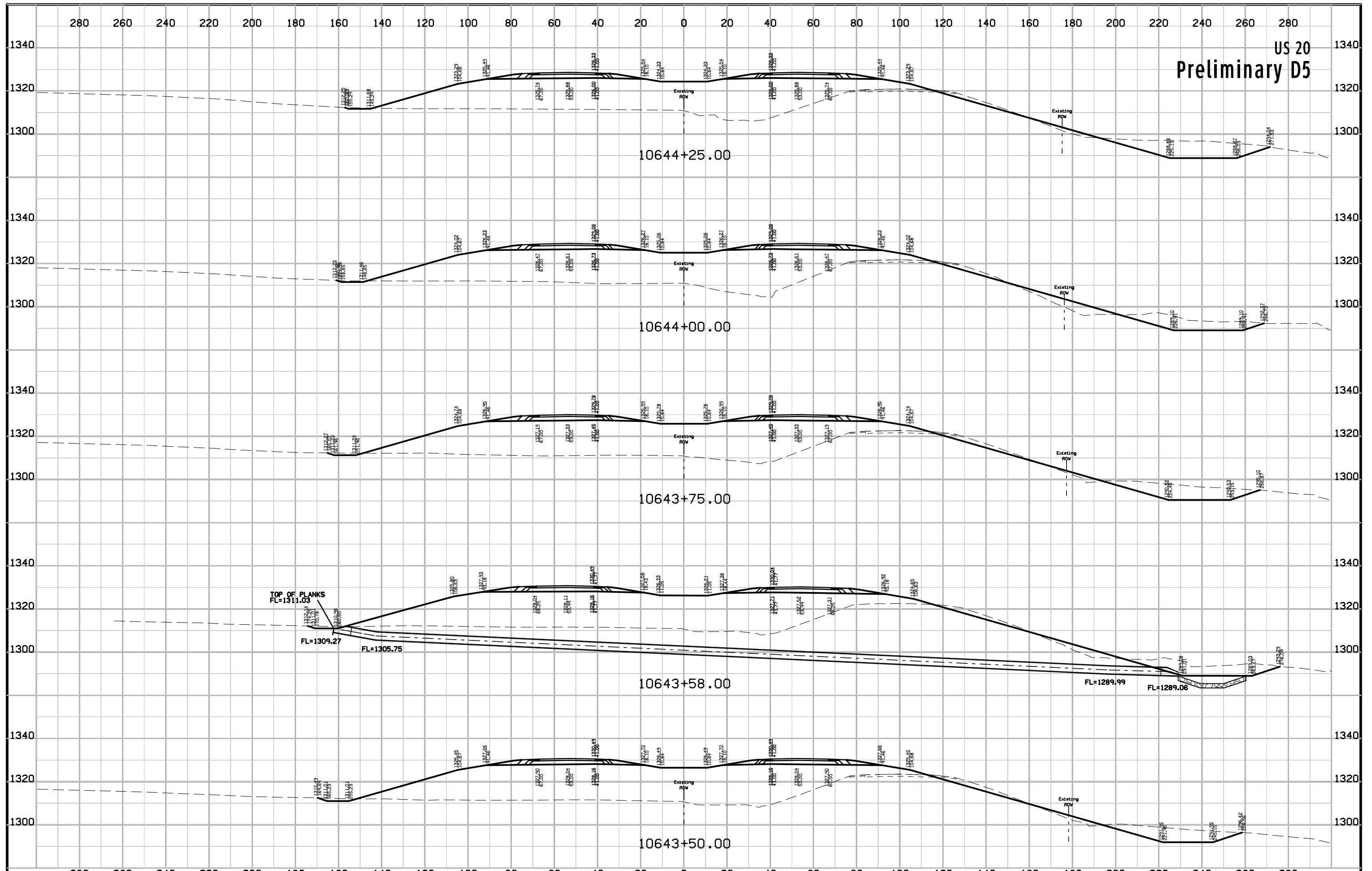


US 20  
Preliminary D5

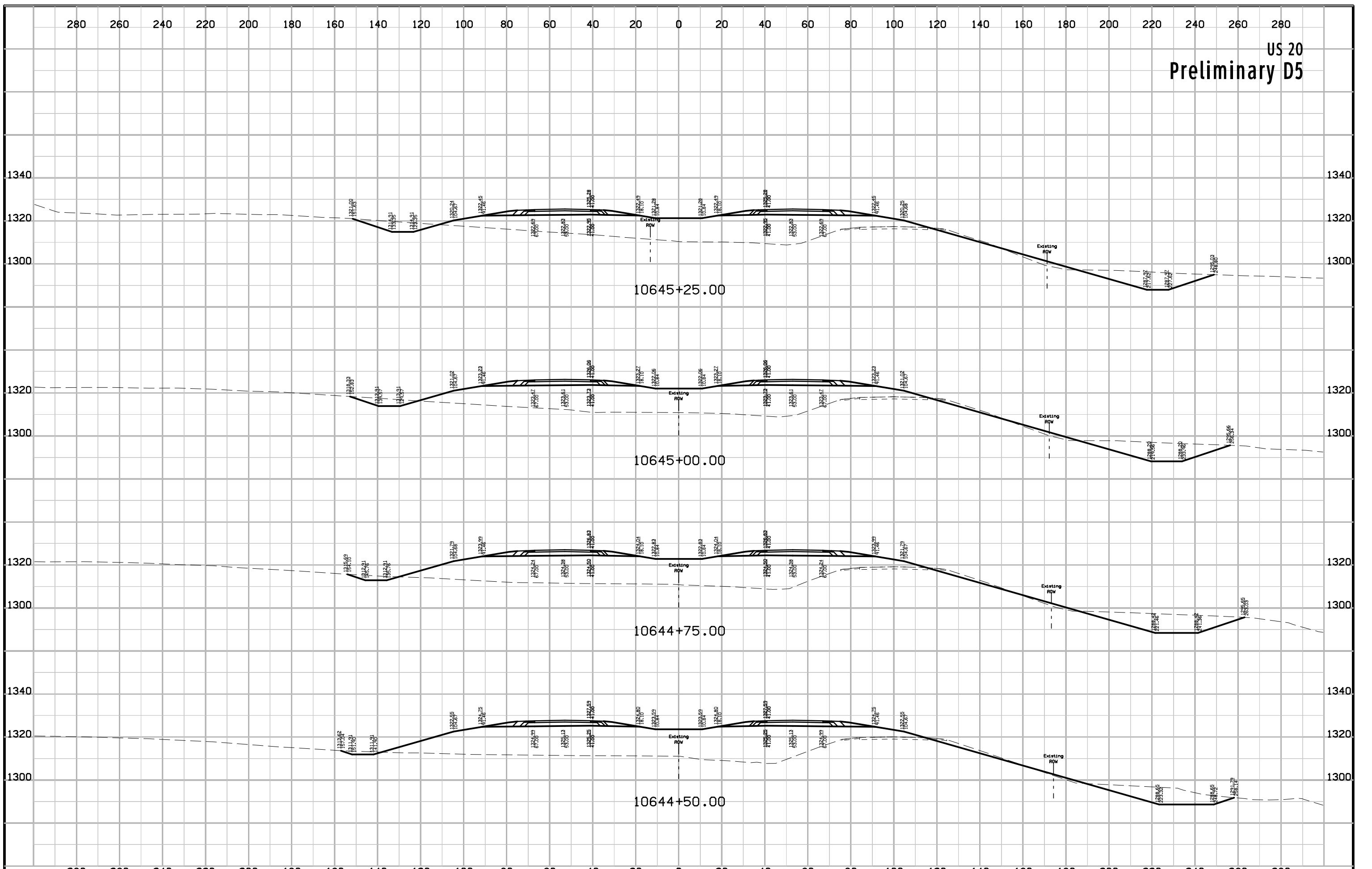


US 20  
Preliminary D5

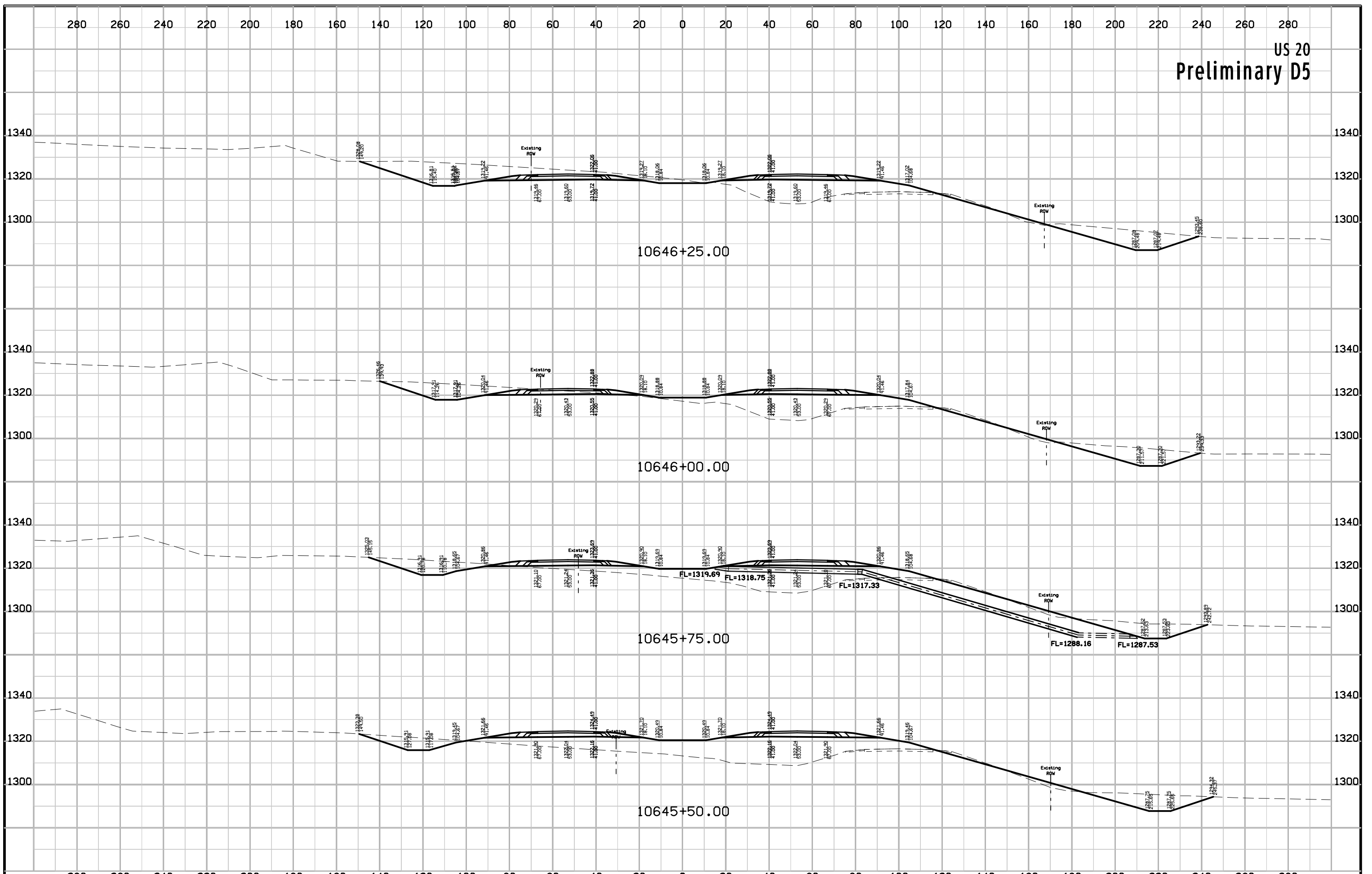




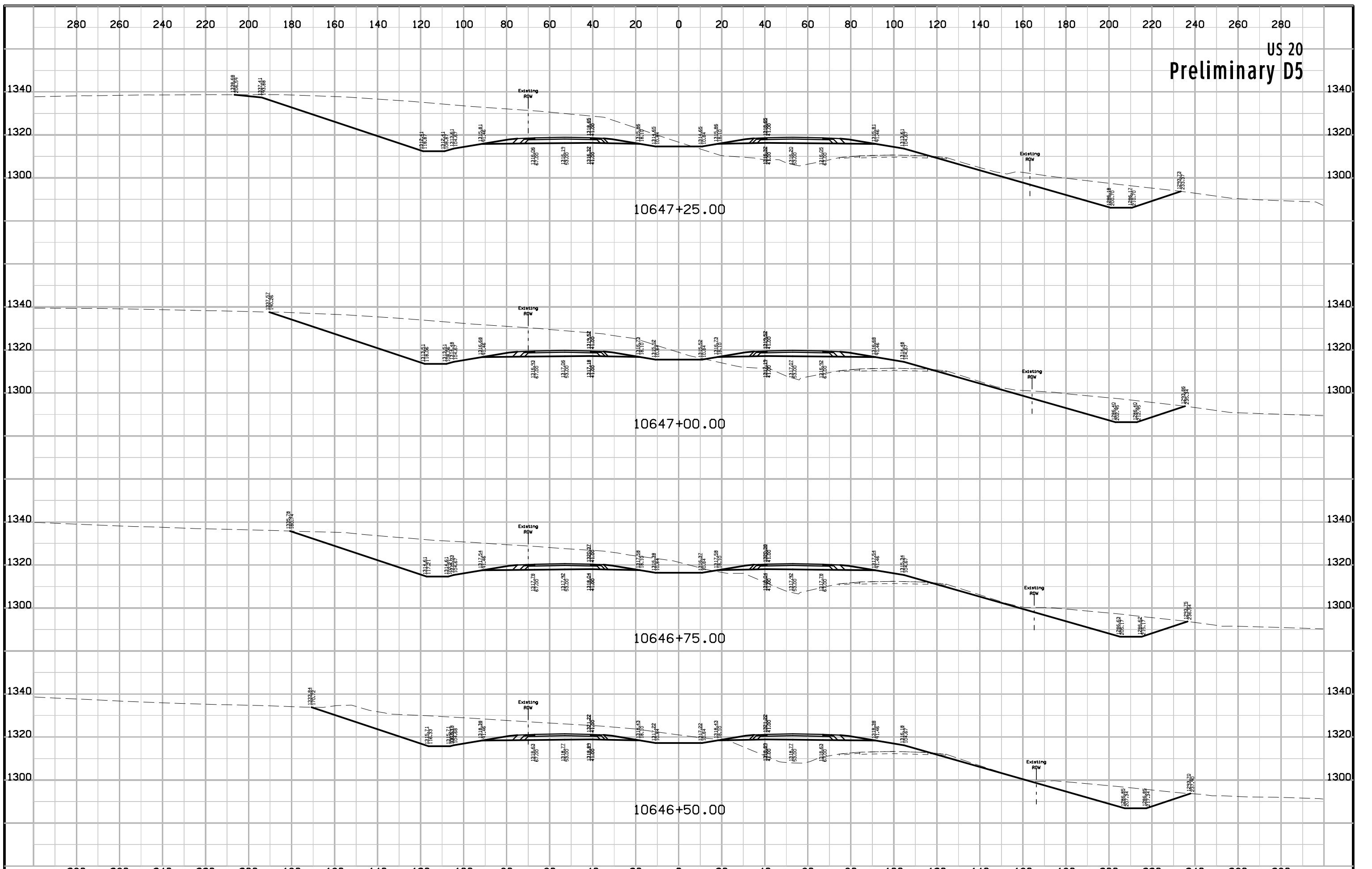
US 20  
Preliminary D5



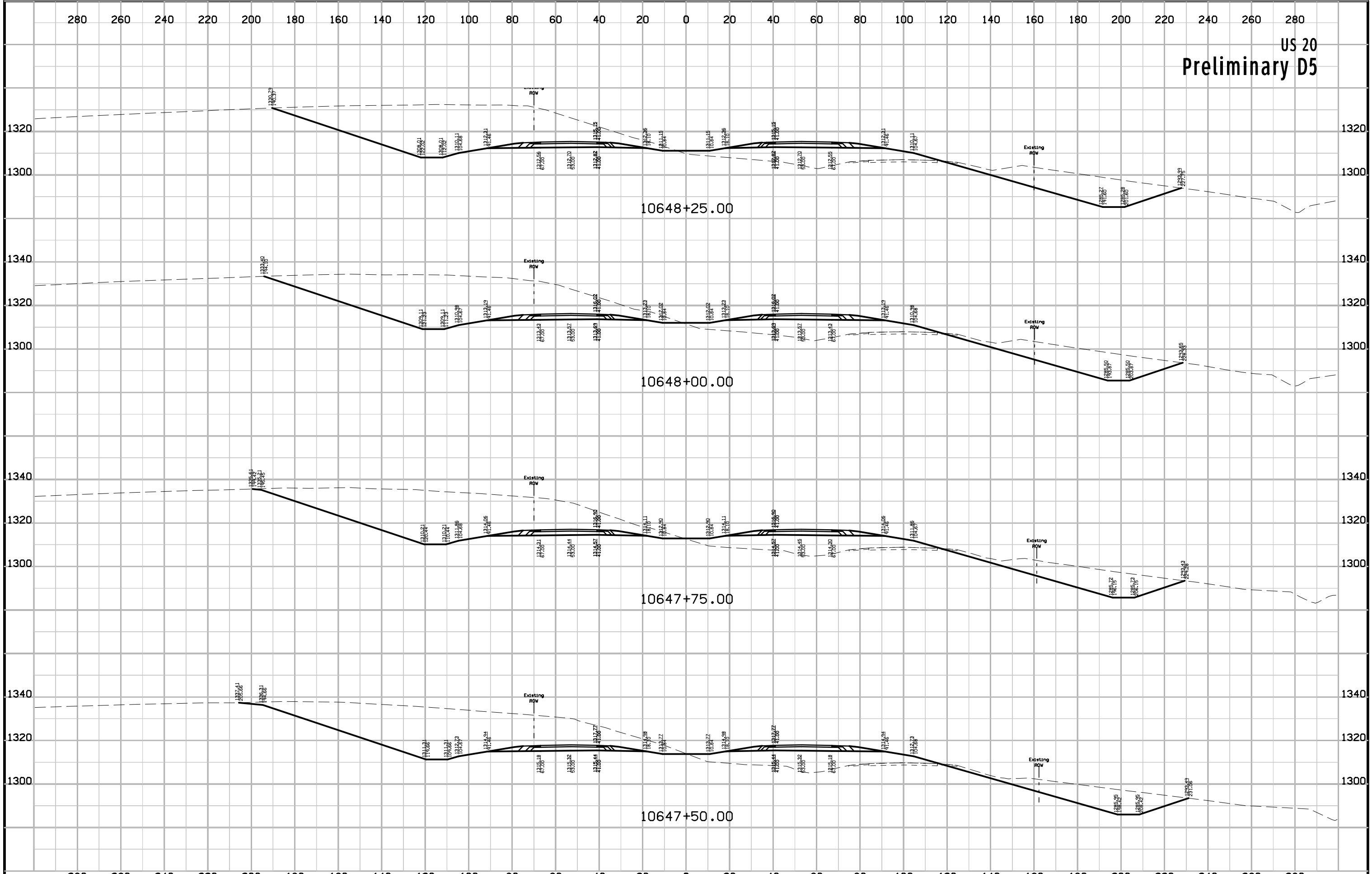
US 20  
Preliminary D5



US 20  
Preliminary D5

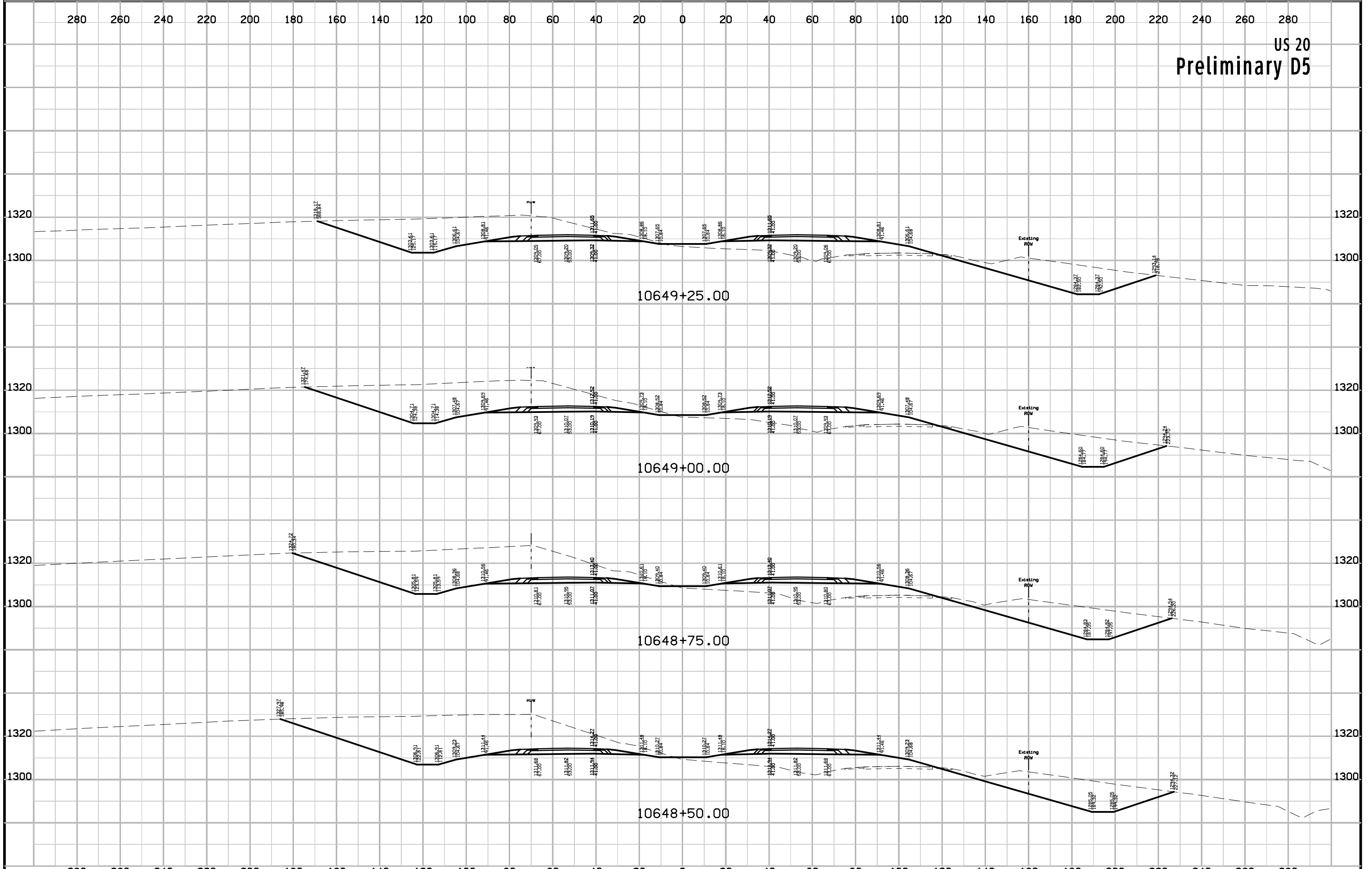


# US 20 Preliminary D5

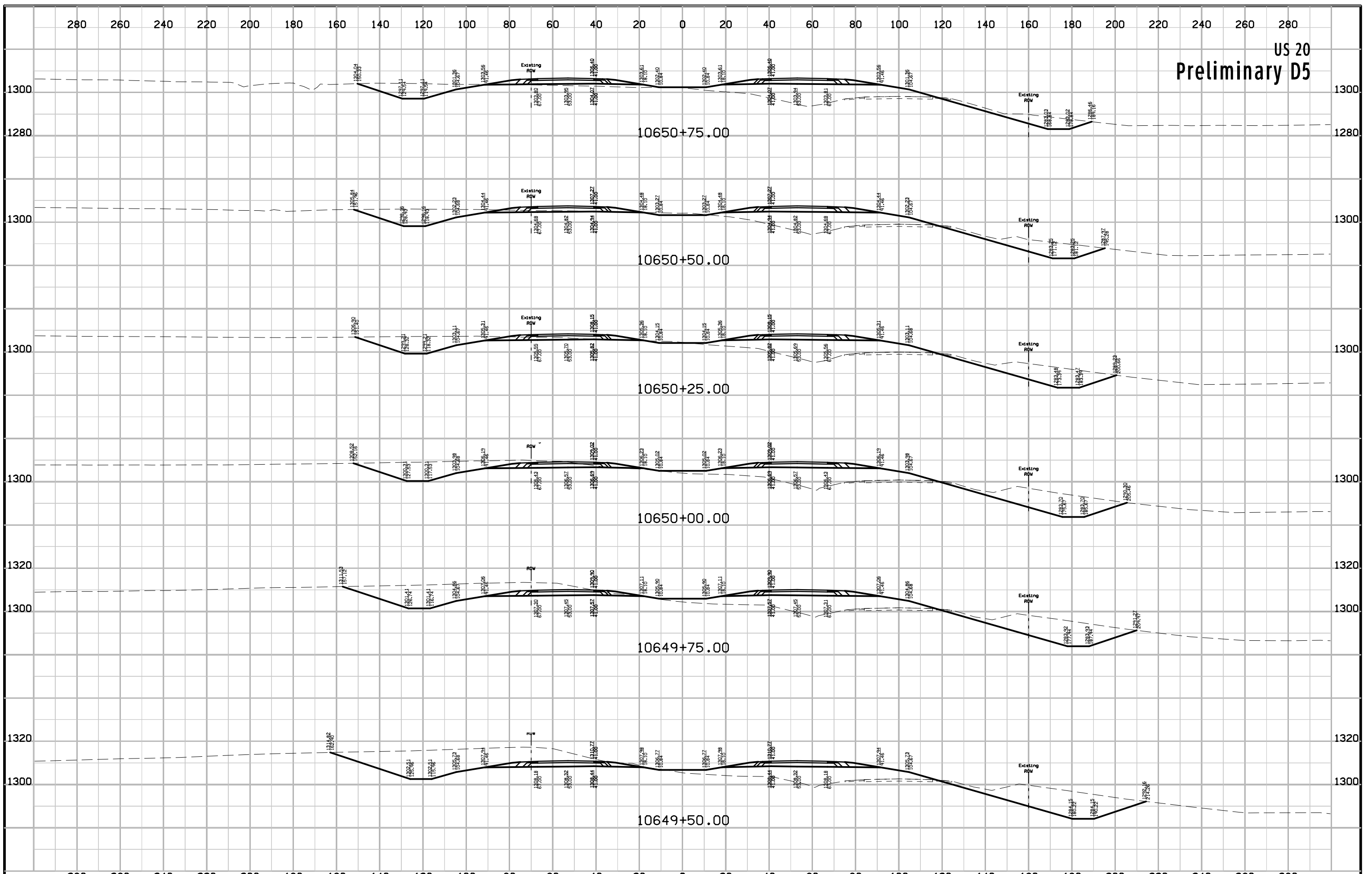




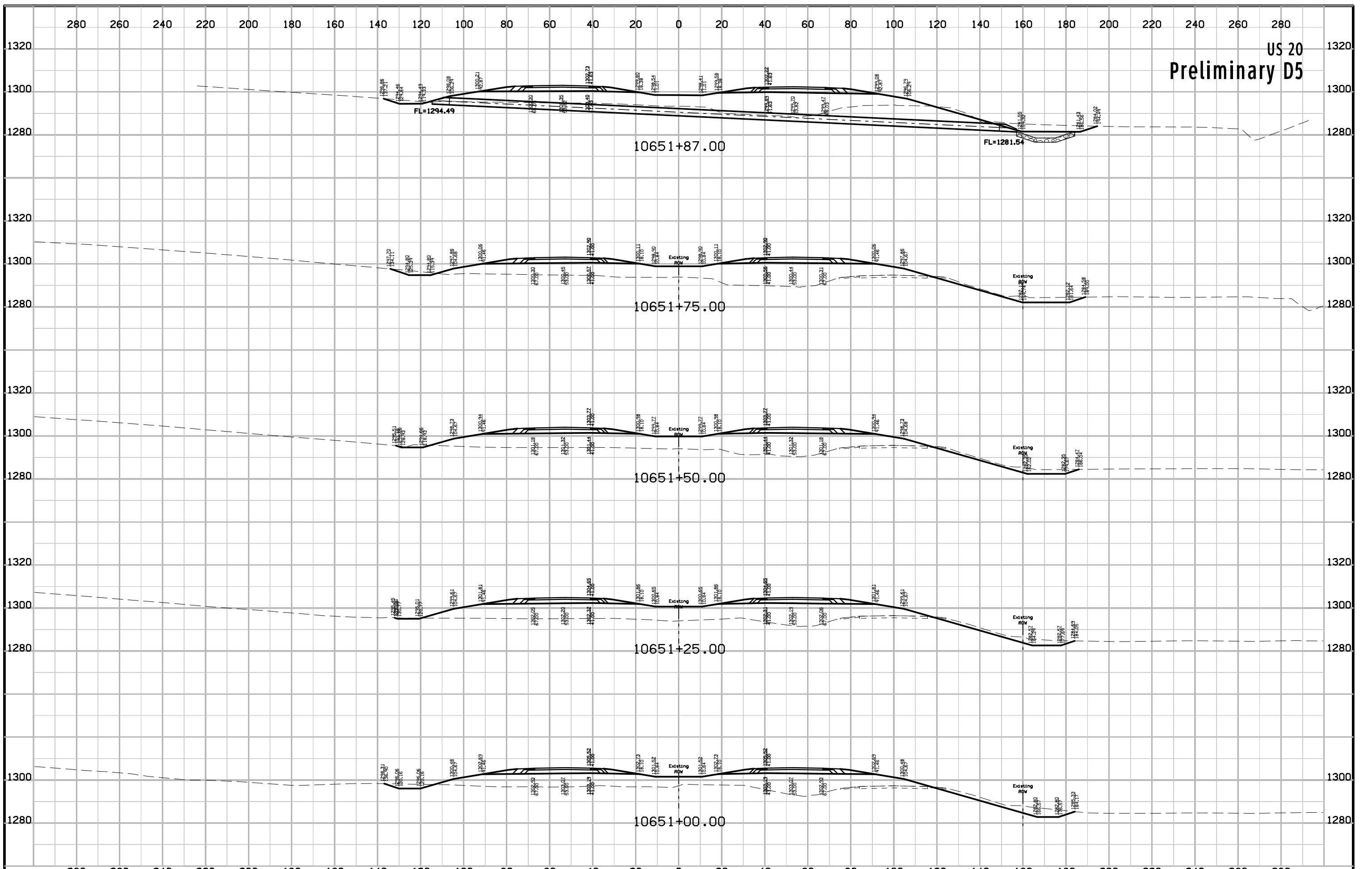
US 20  
Preliminary D5



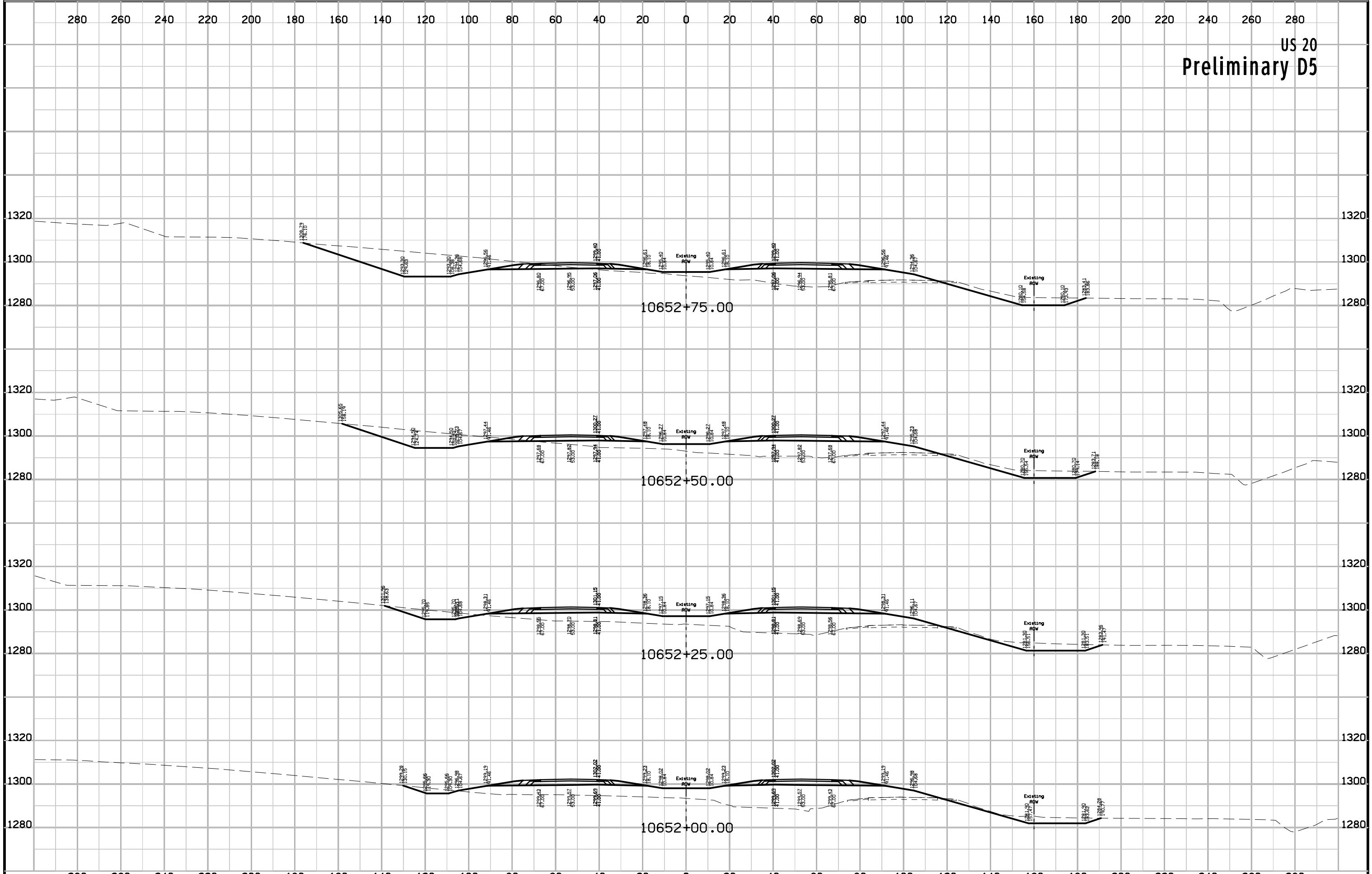
US 20  
Preliminary D5



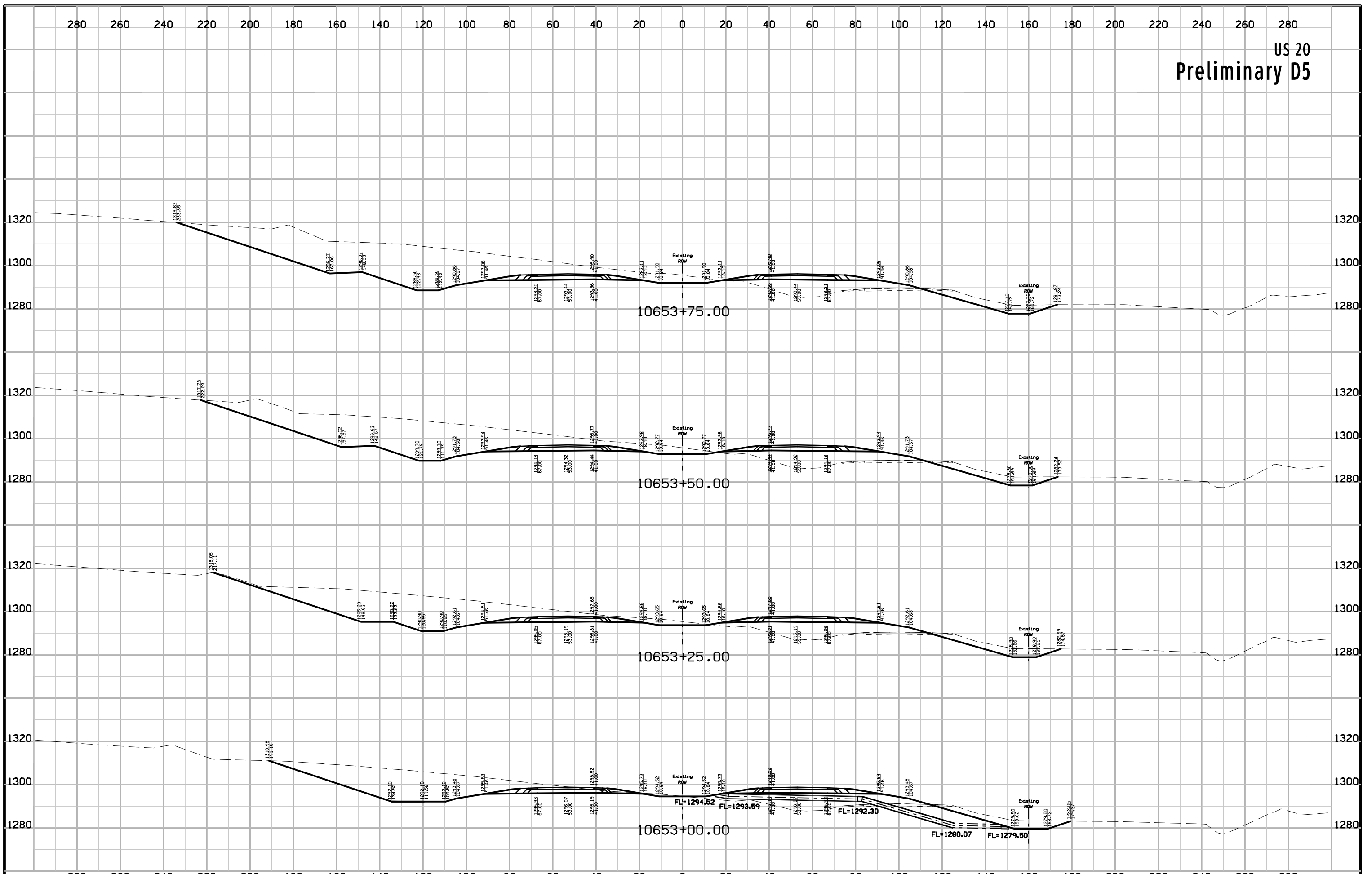
US 20  
Preliminary D5



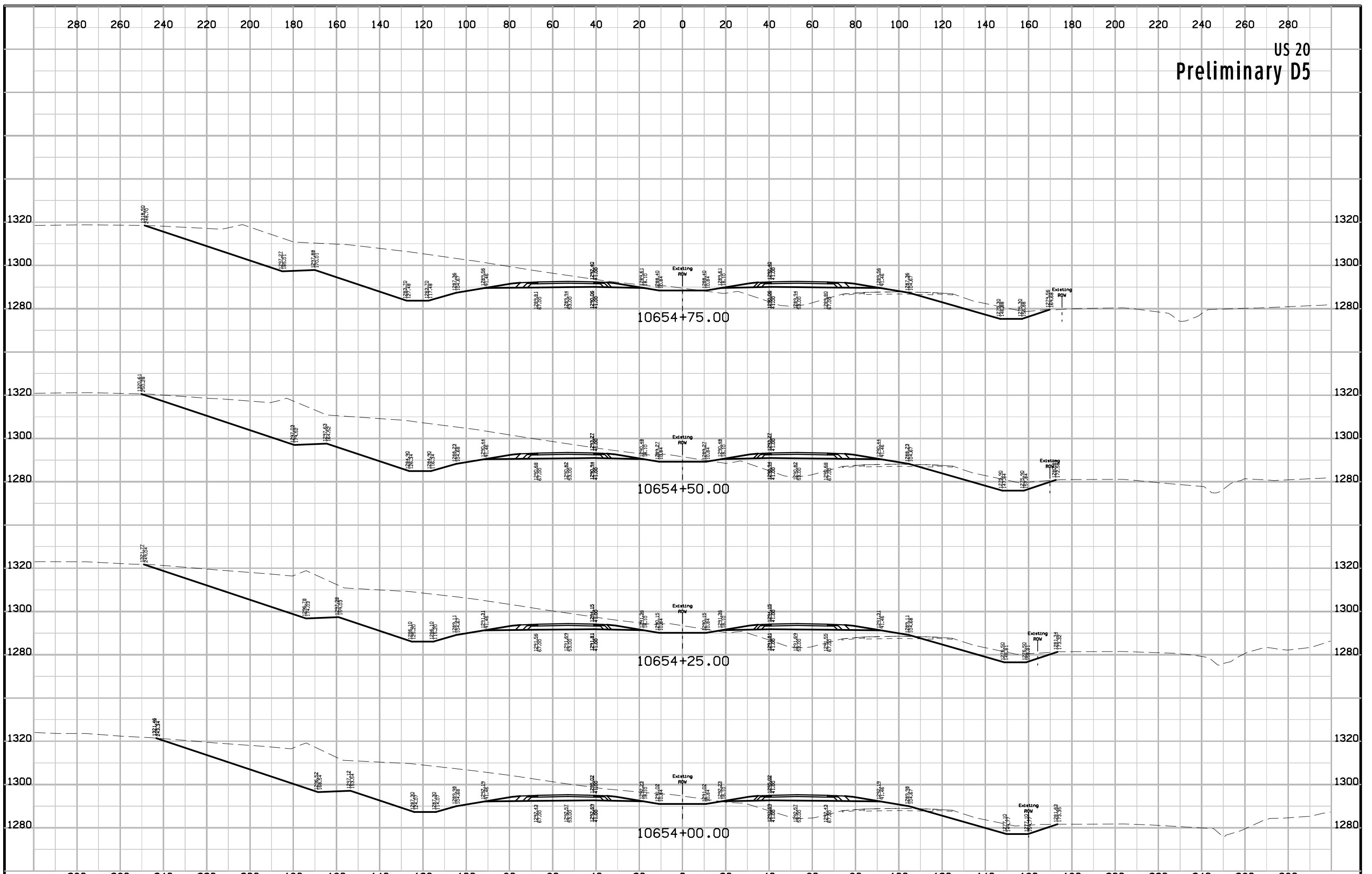
US 20  
Preliminary D5



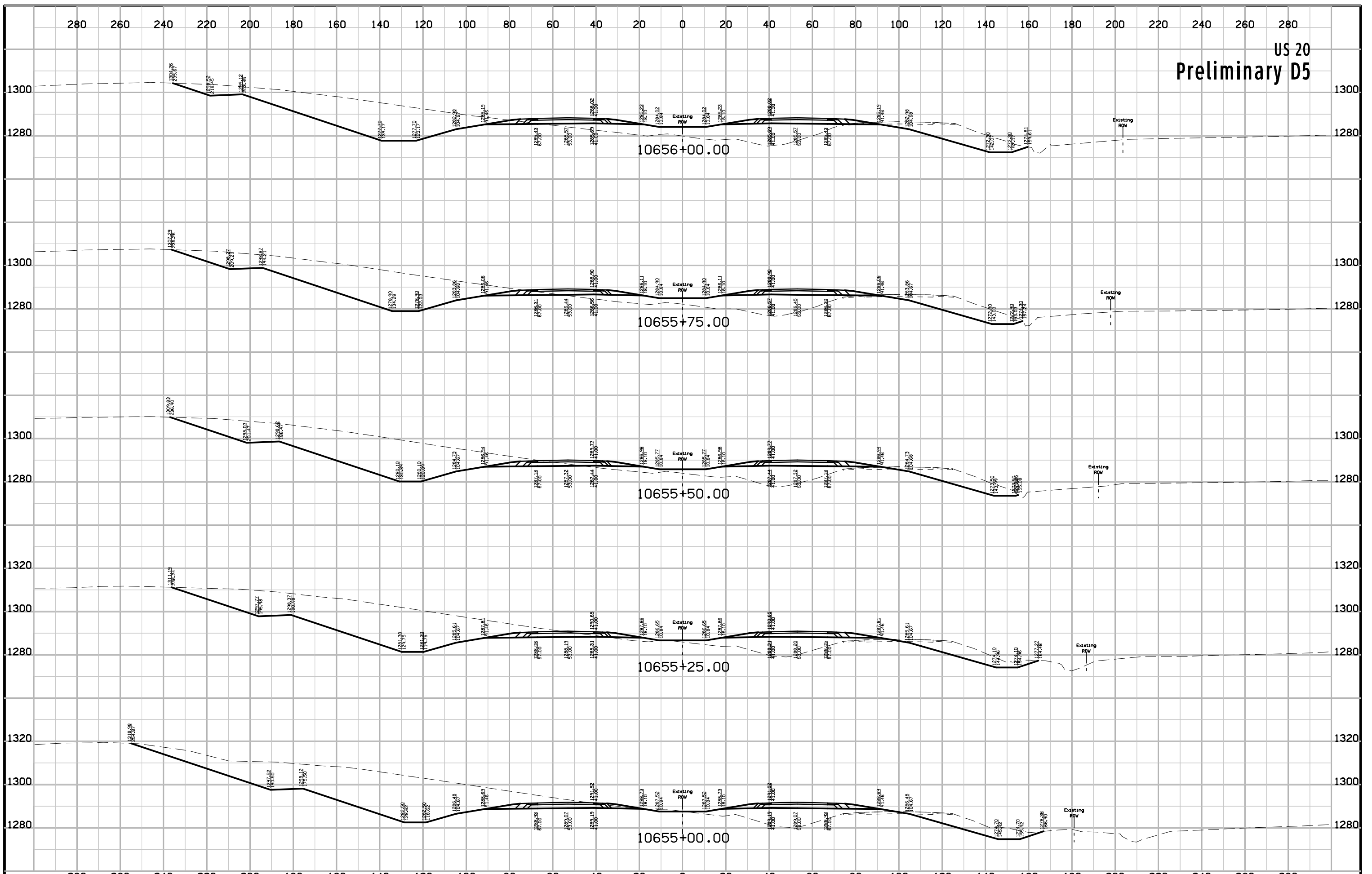
US 20  
Preliminary D5



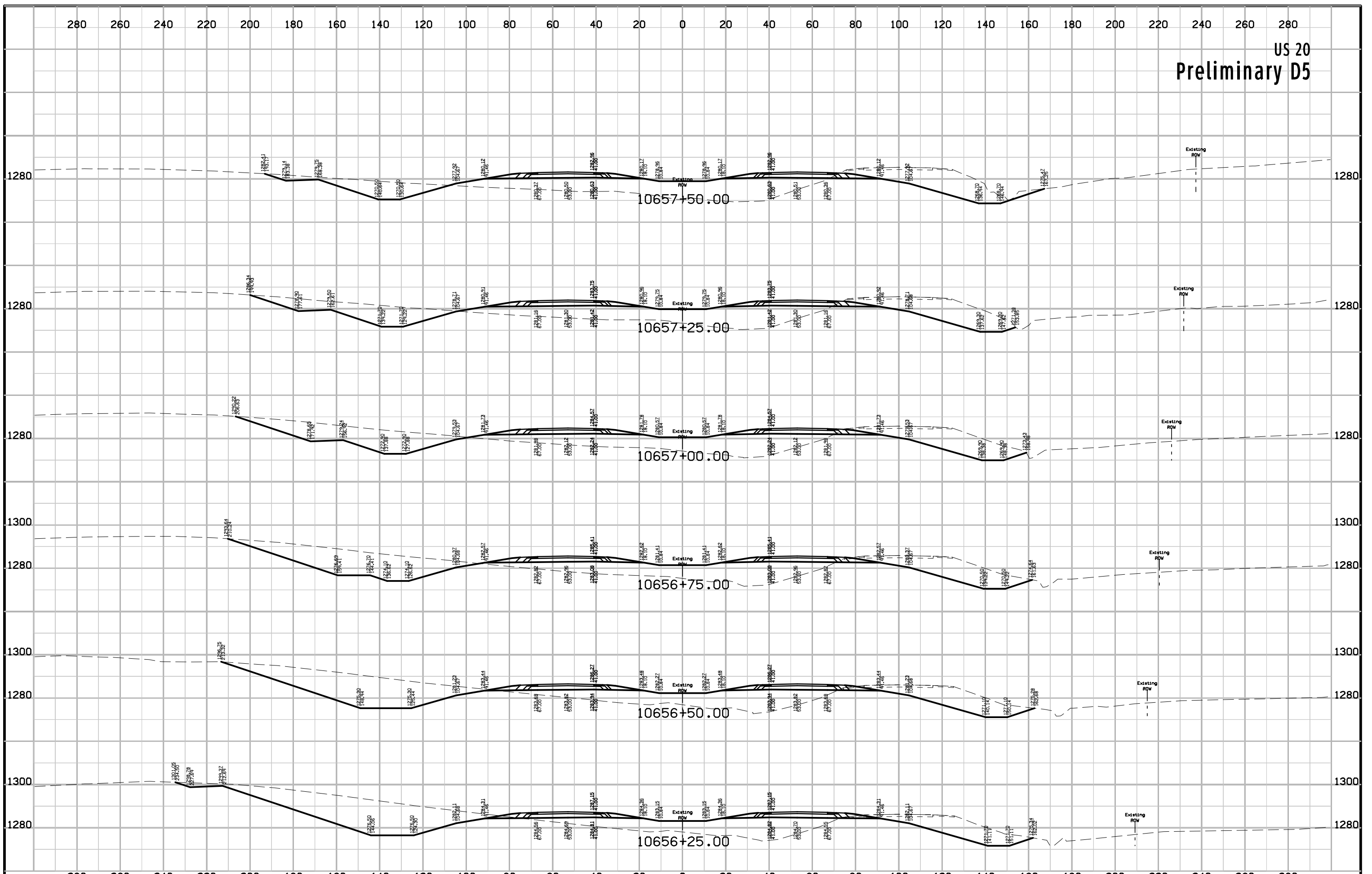
US 20  
Preliminary D5



US 20  
Preliminary D5

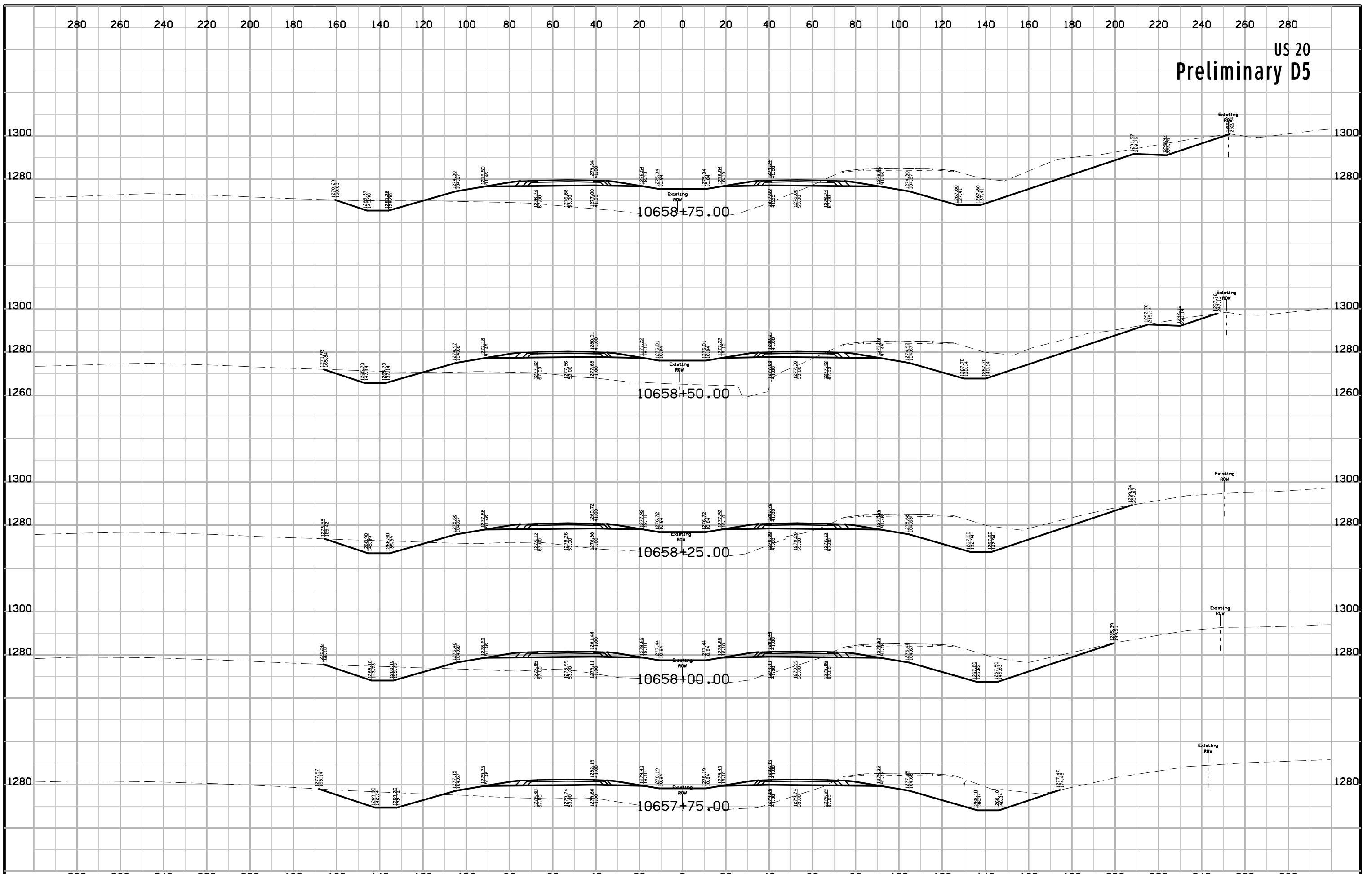


US 20  
Preliminary D5

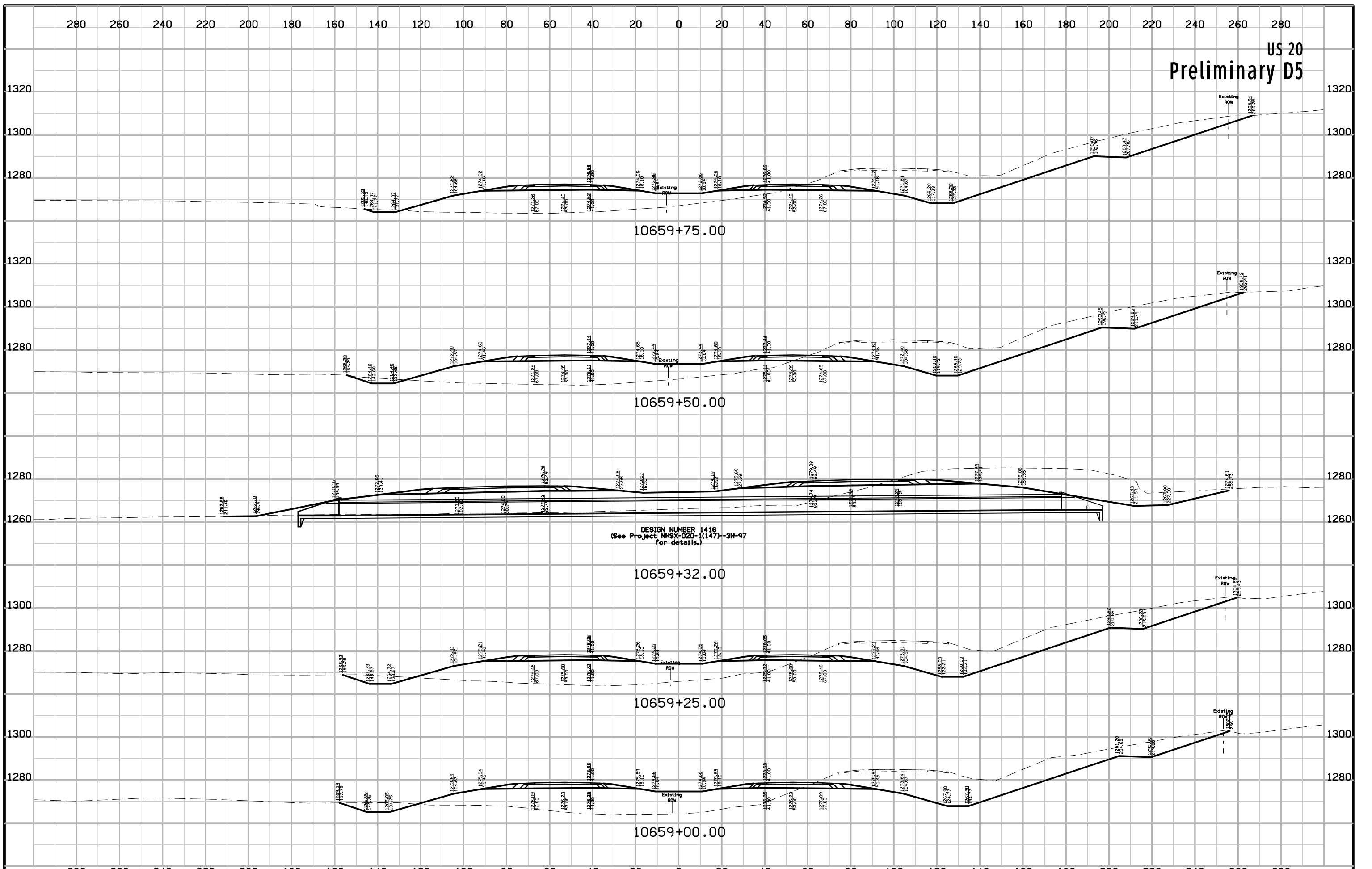




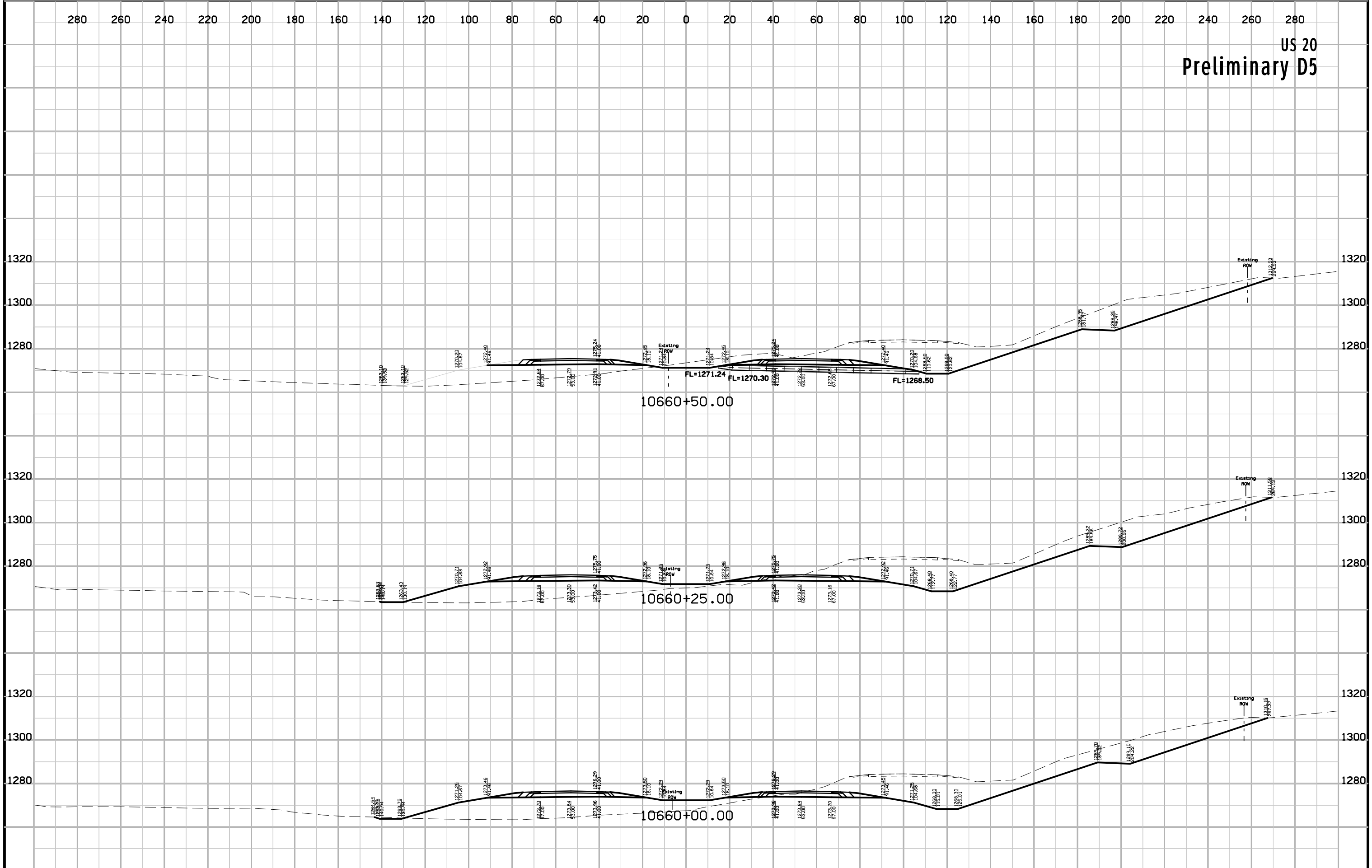
# US 20 Preliminary D5



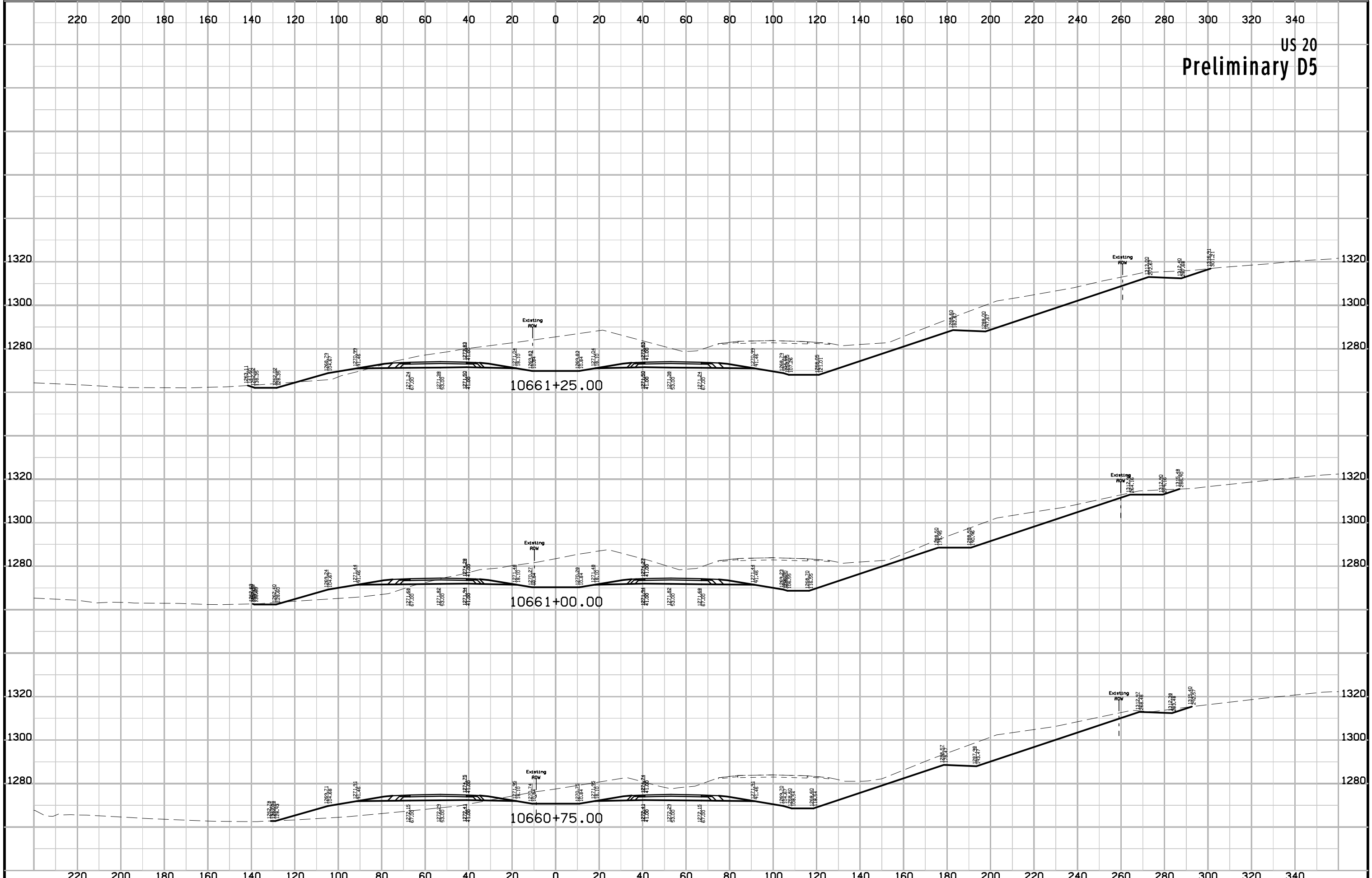
US 20  
Preliminary D5



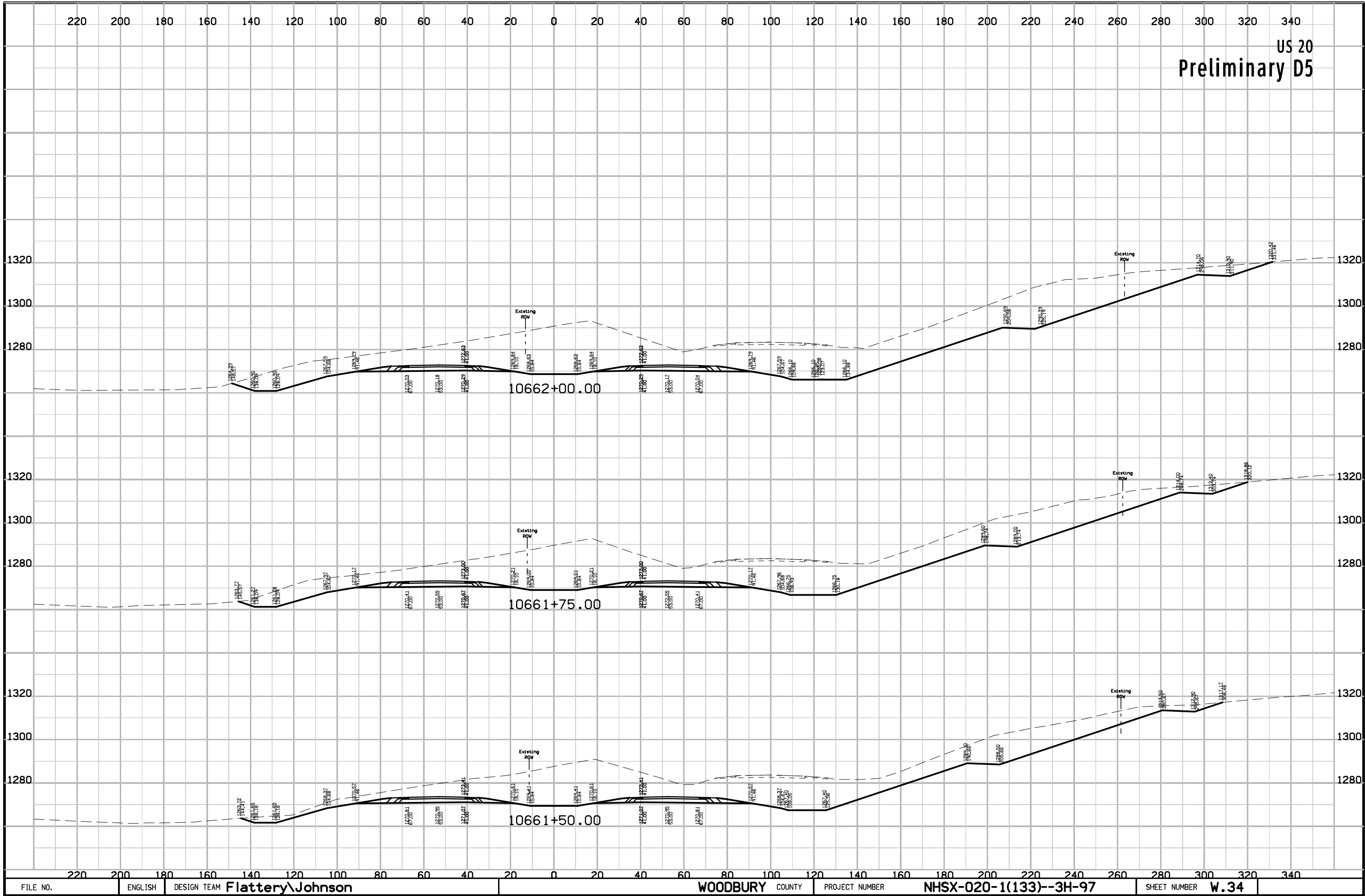
US 20  
Preliminary D5



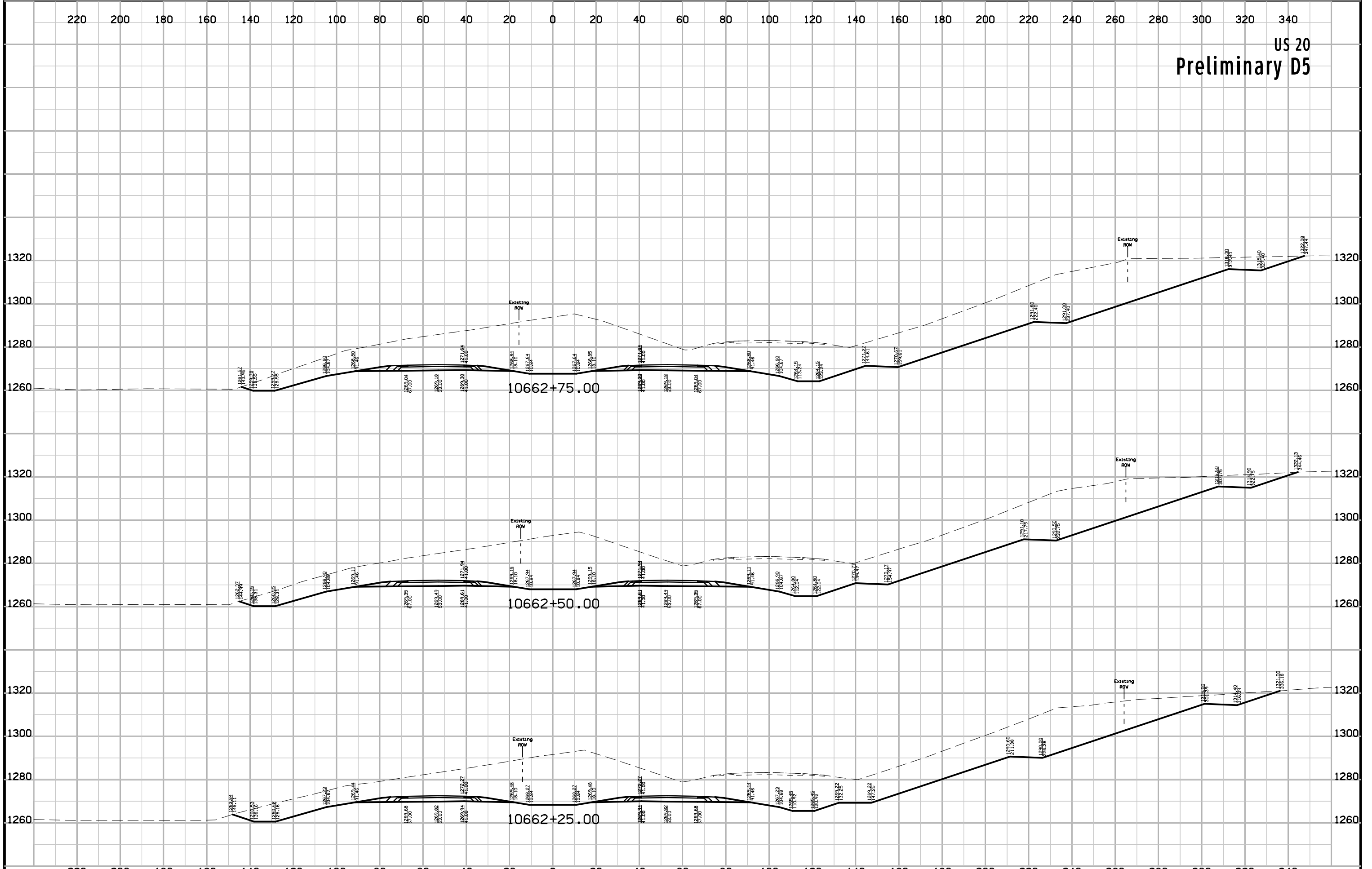
US 20  
Preliminary D5



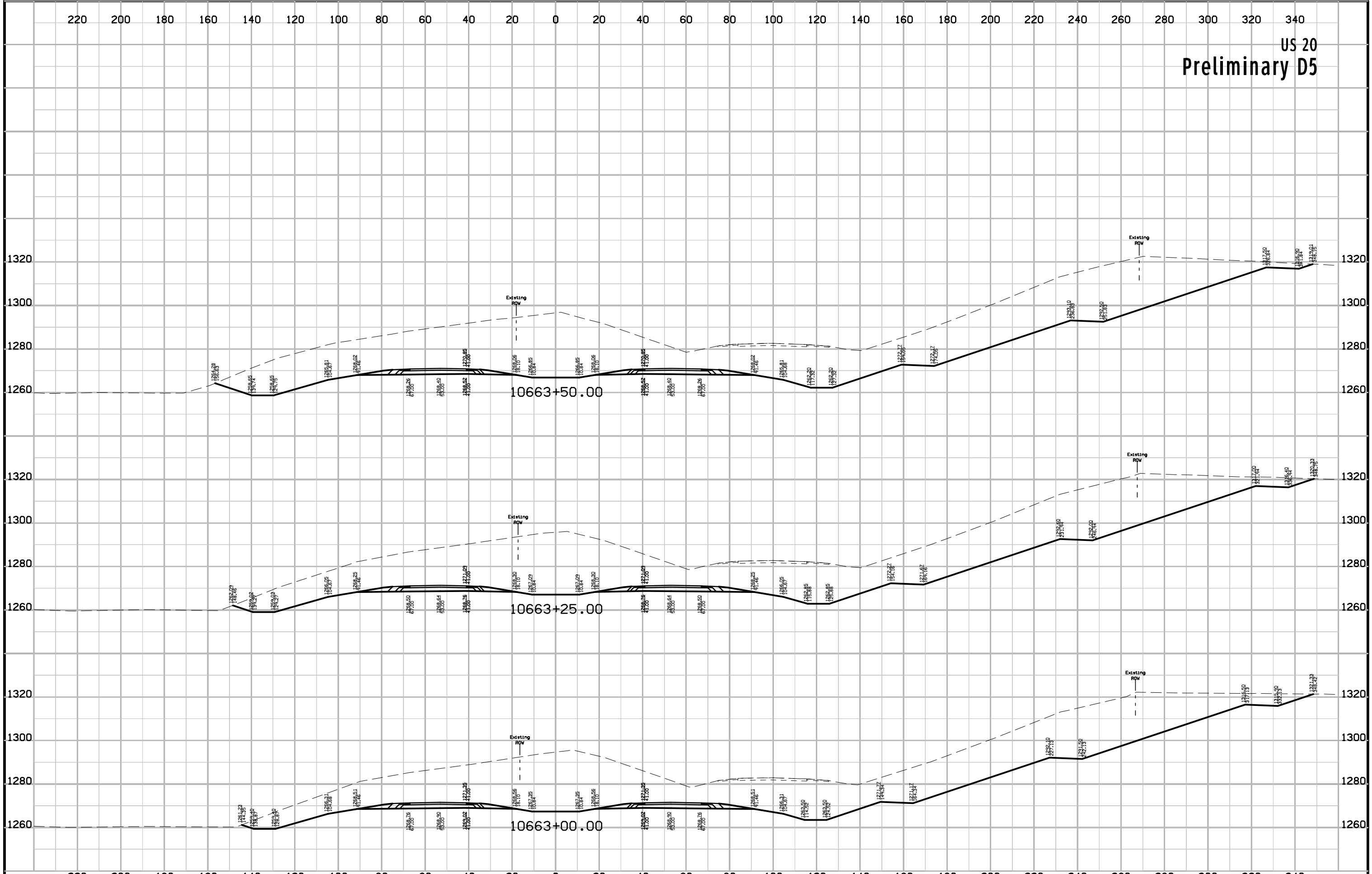
# US 20 Preliminary D5



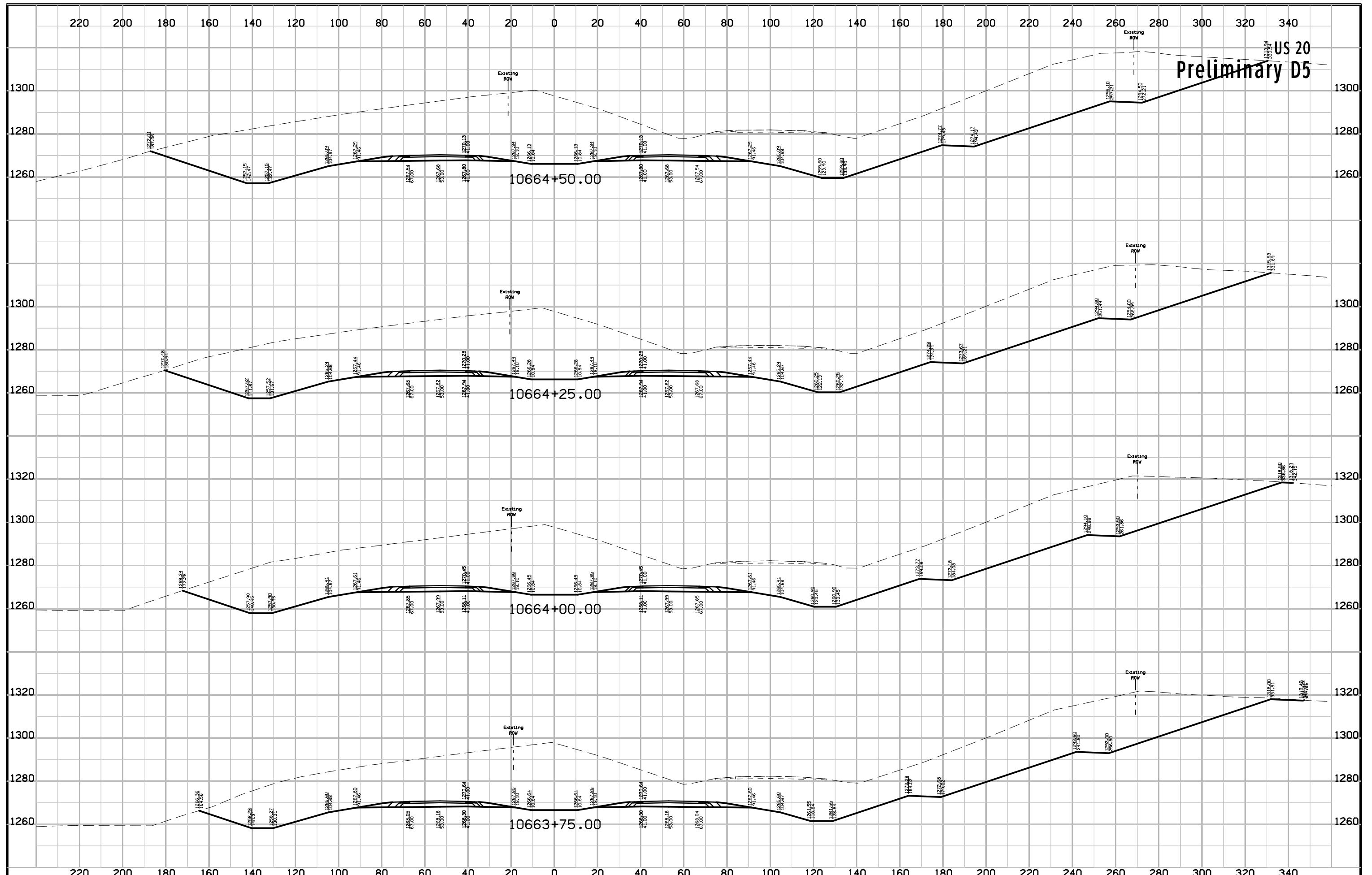
US 20  
Preliminary D5



US 20  
Preliminary D5

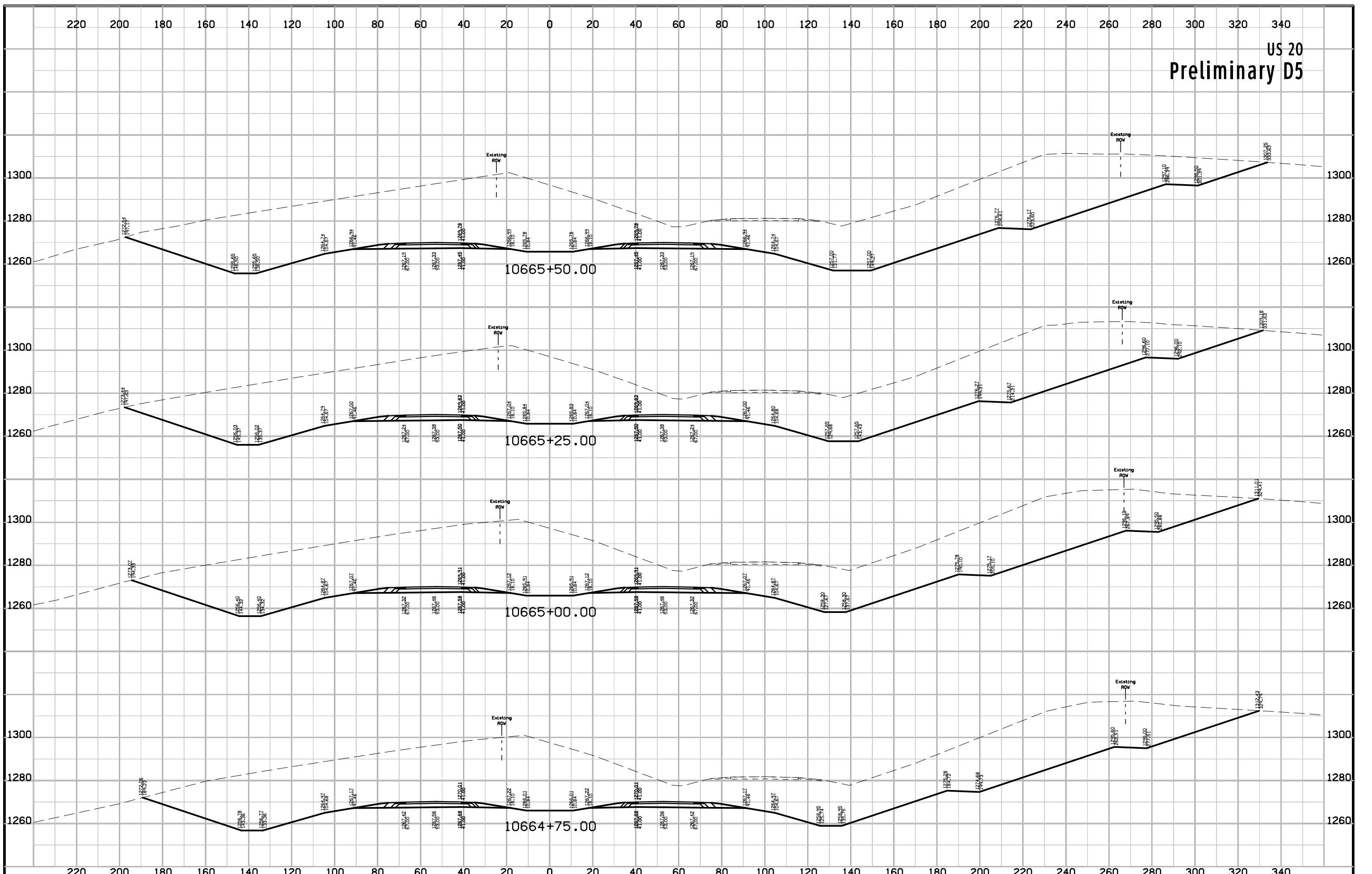


FILE NO.	ENGLISH	DESIGN TEAM	WOODBURY COUNTY	PROJECT NUMBER	SHEET NUMBER
		Flattery\Johnson		NHSX-020-1(133)--3H-97	W.36

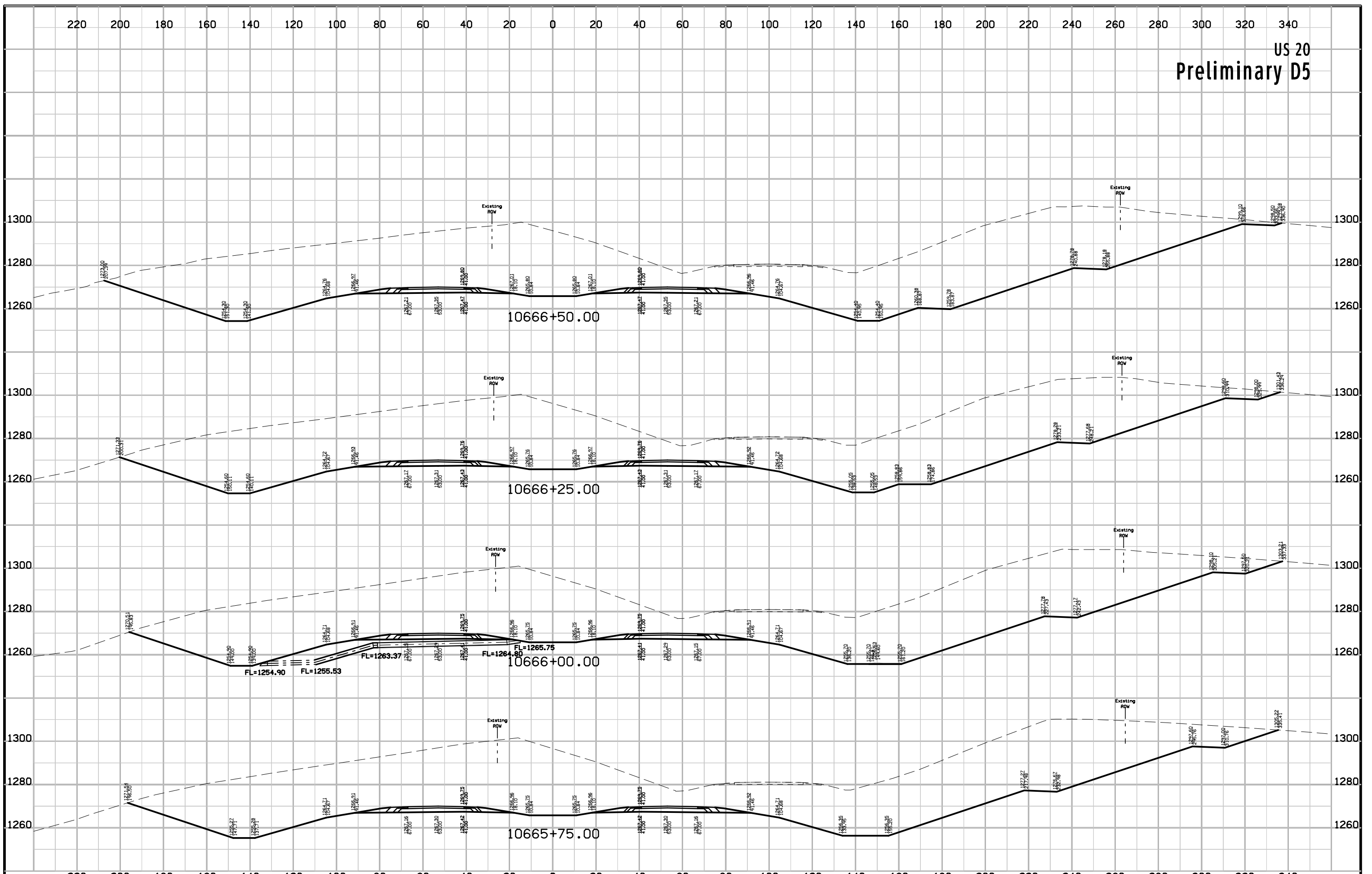




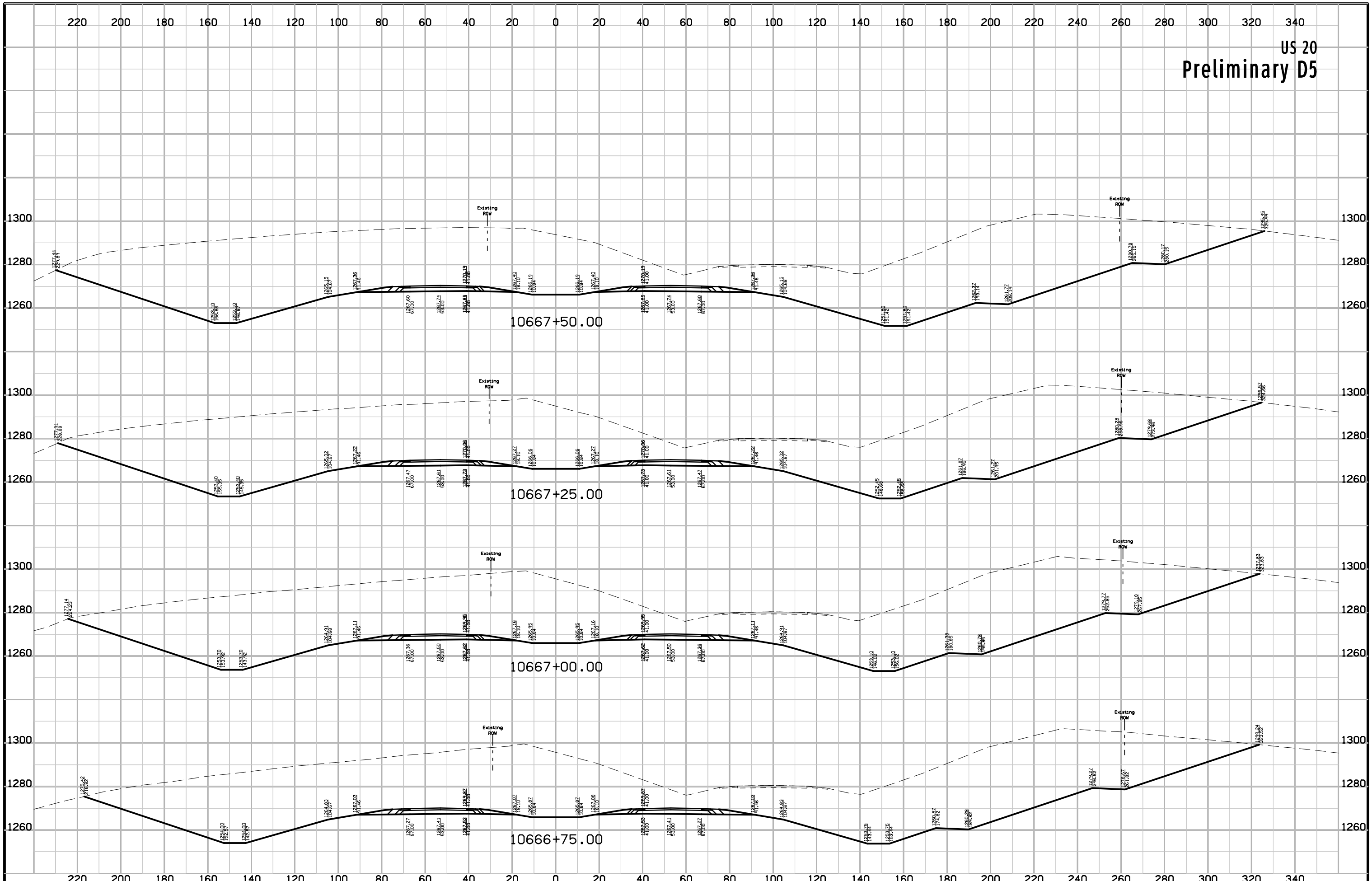
# US 20 Preliminary D5

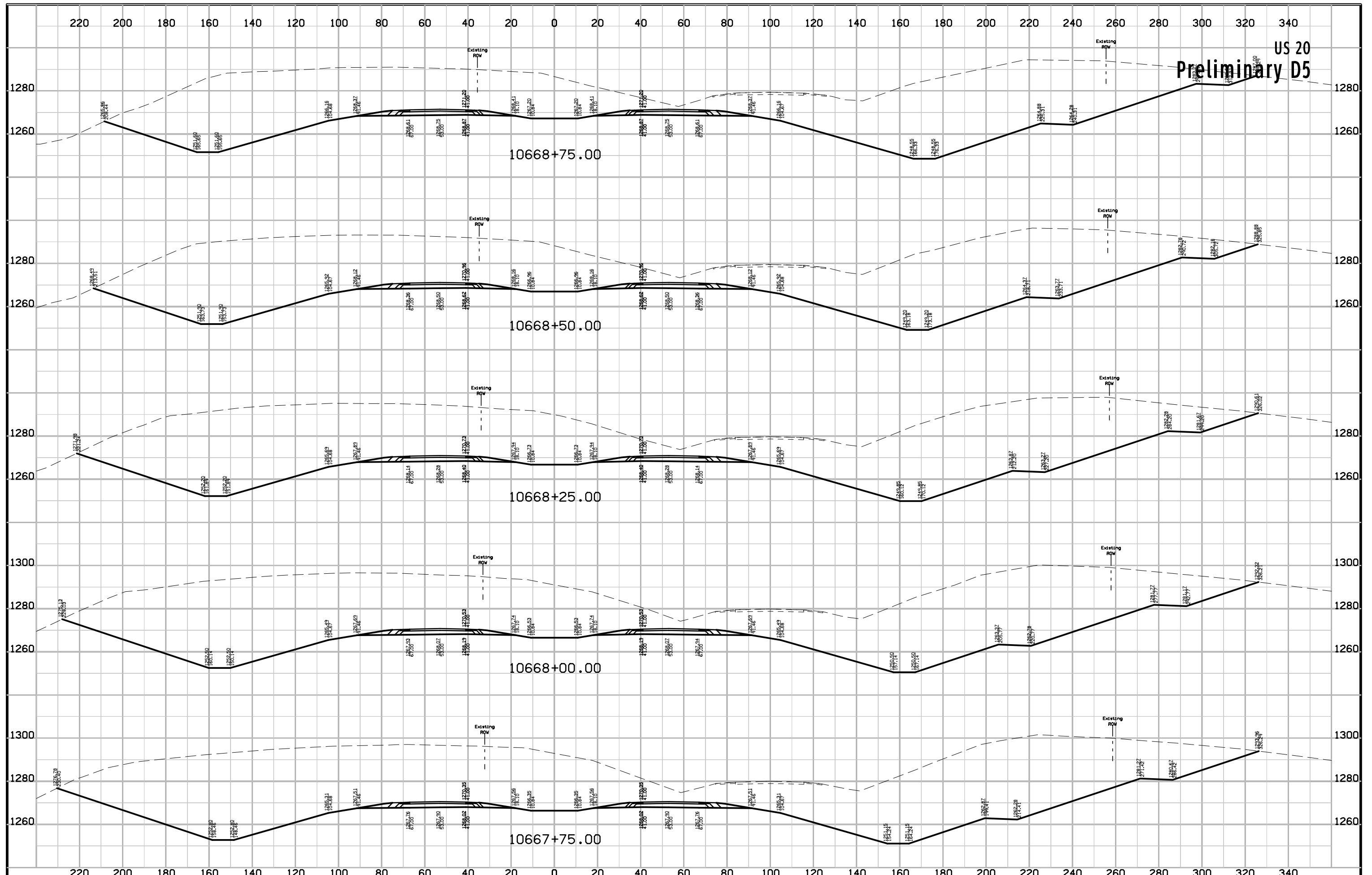


# US 20 Preliminary D5



US 20  
Preliminary D5





US 20  
Preliminary D5

10668+75.00

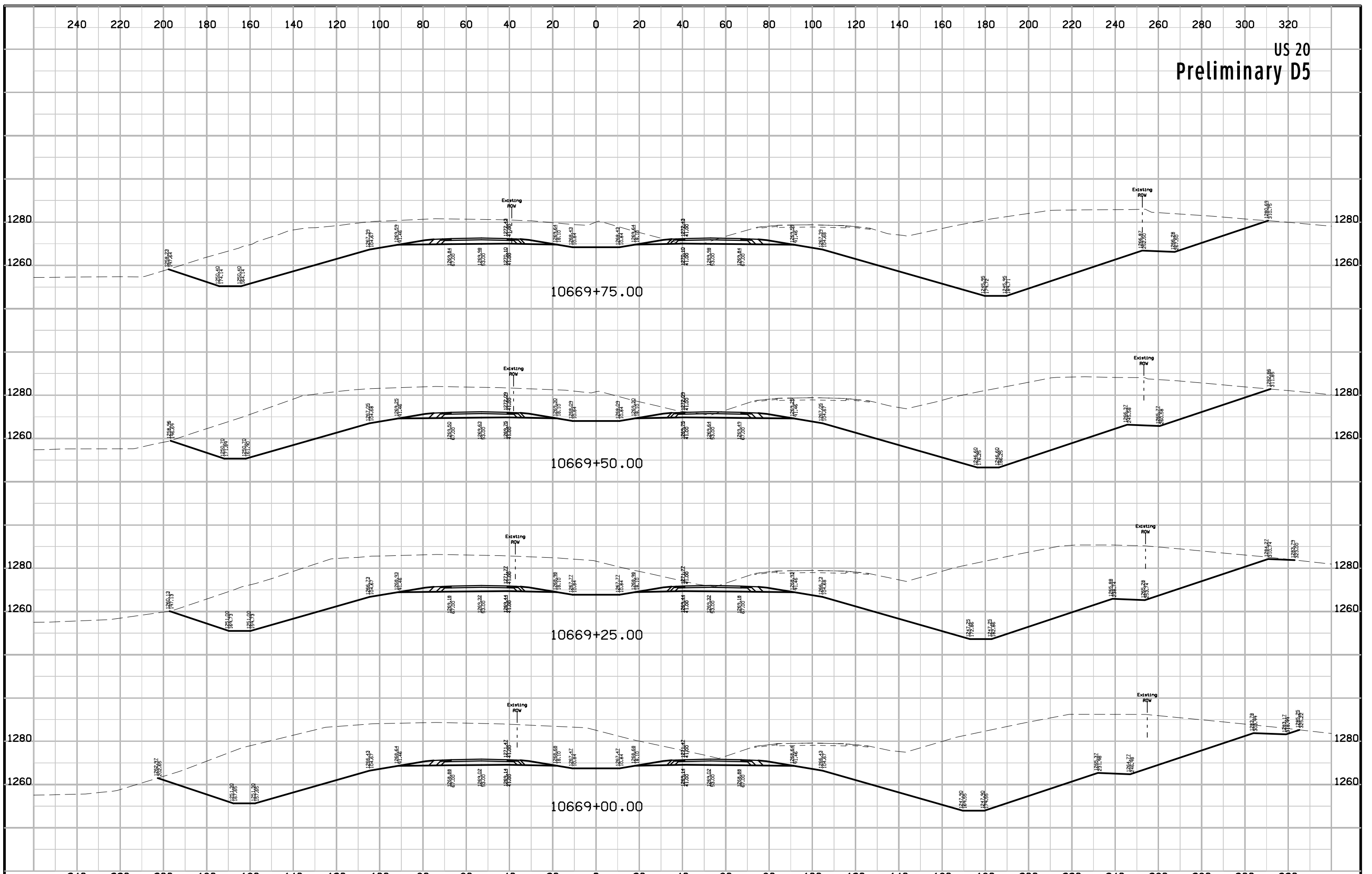
10668+50.00

10668+25.00

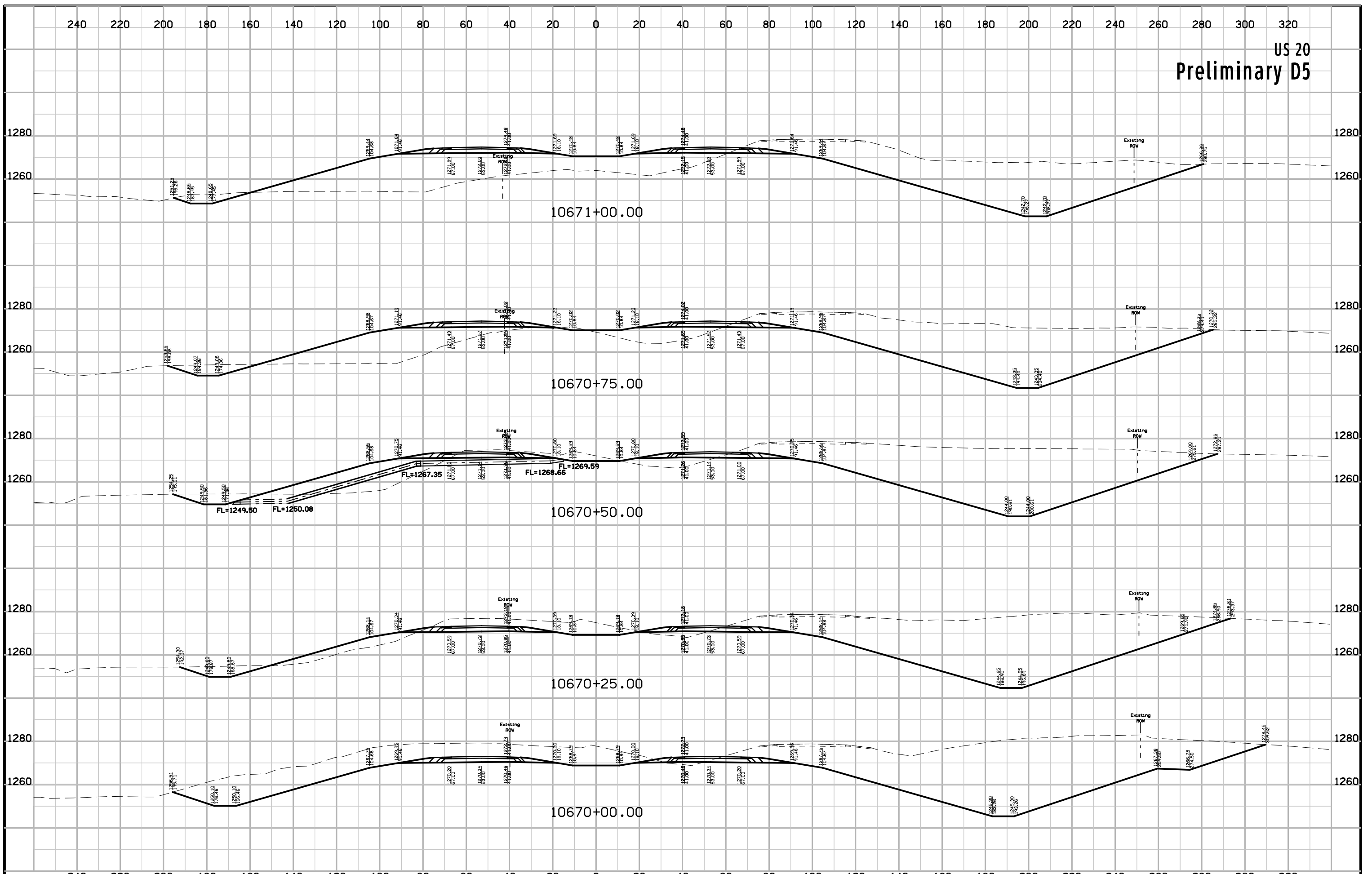
10668+00.00

10667+75.00

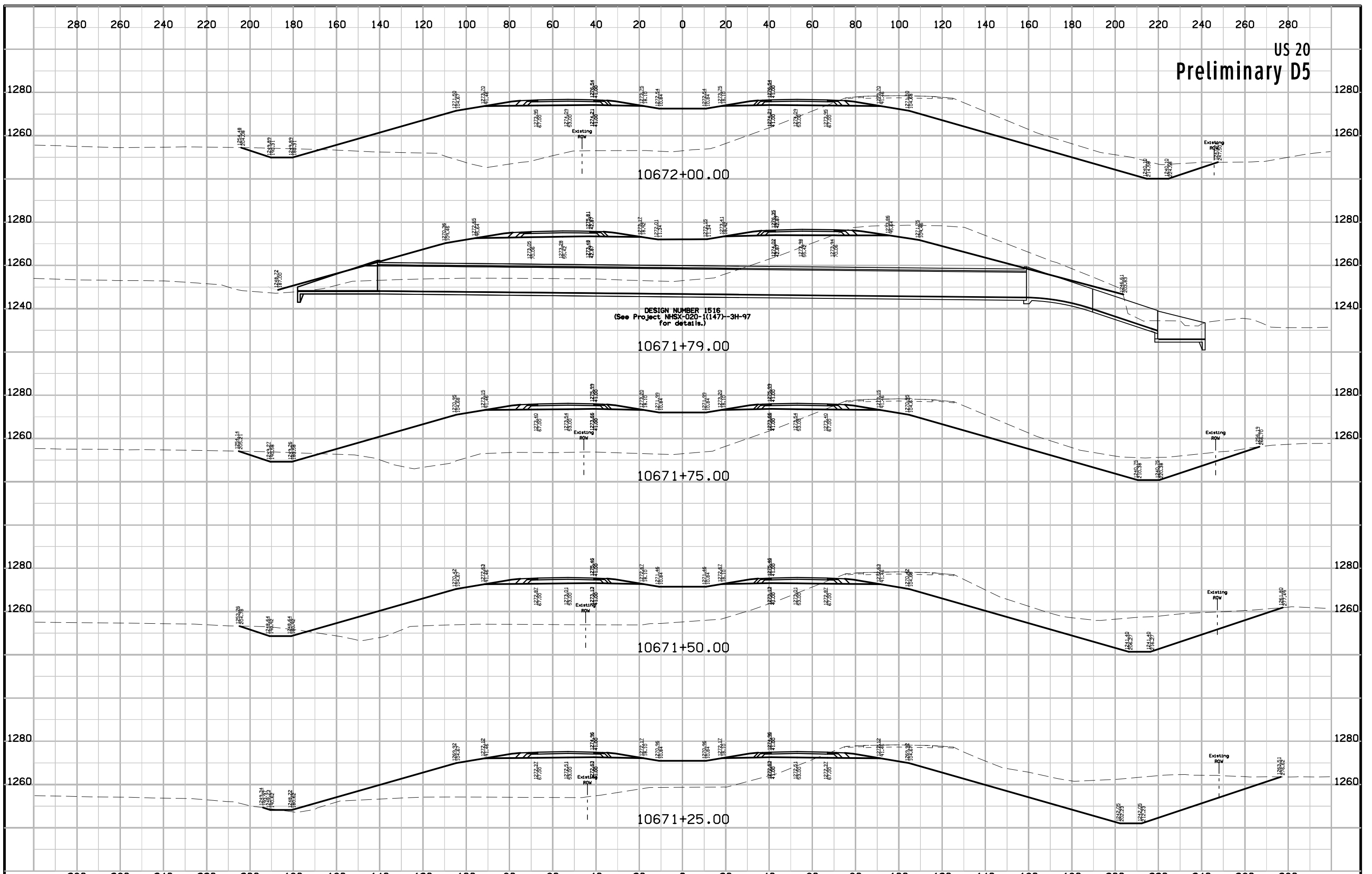
US 20  
Preliminary D5



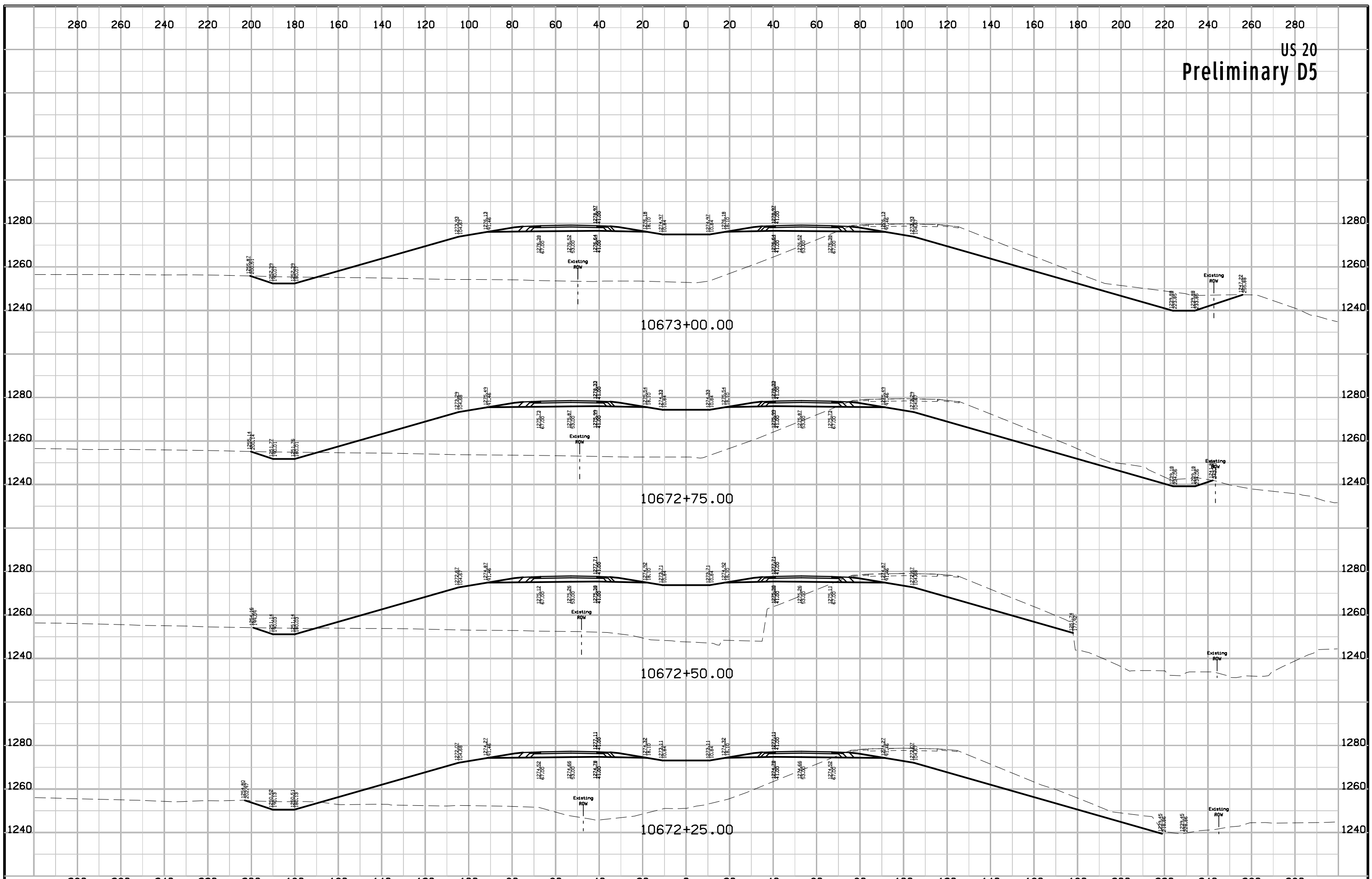
US 20  
Preliminary D5



US 20  
Preliminary D5

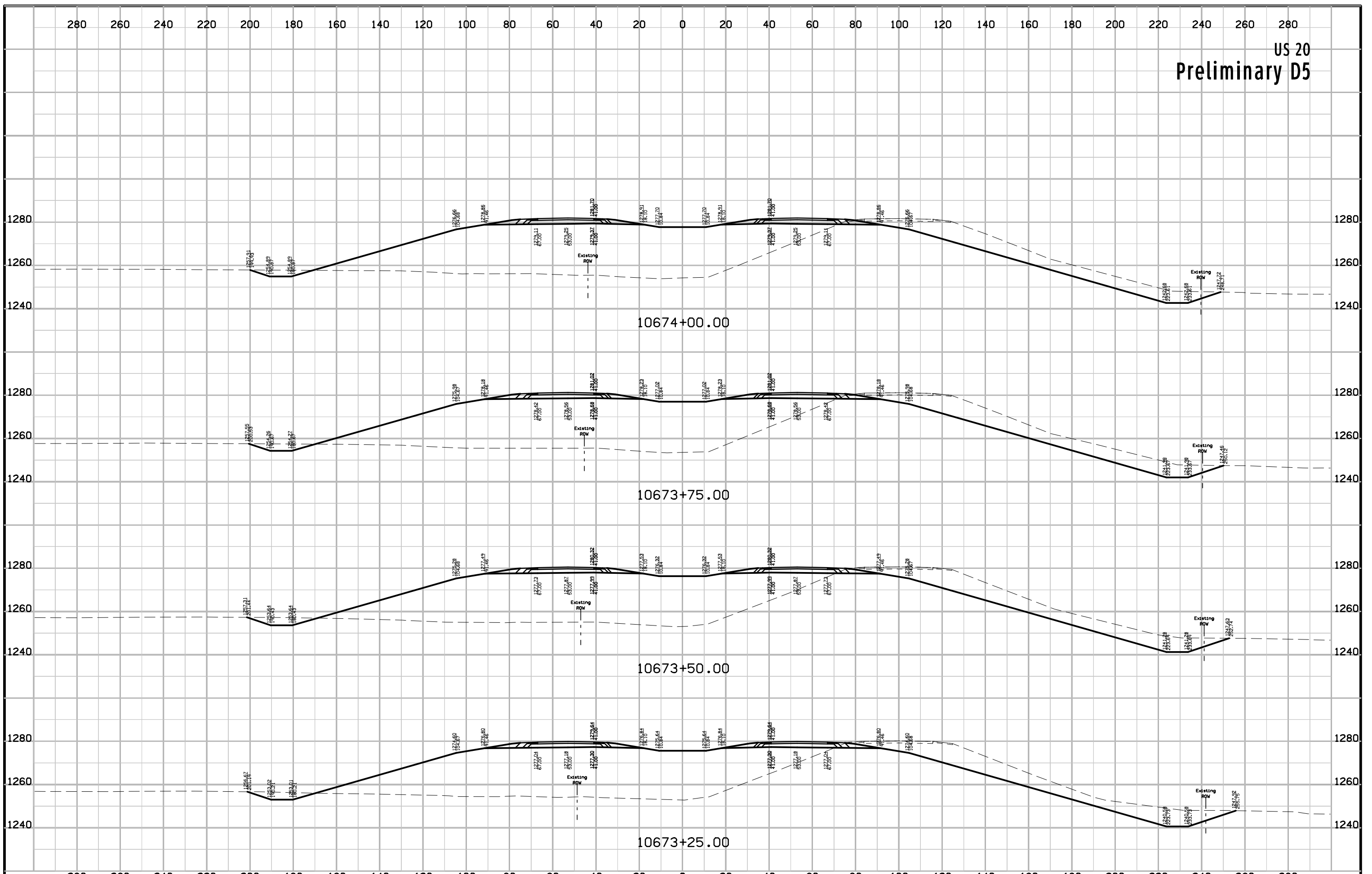


US 20  
Preliminary D5

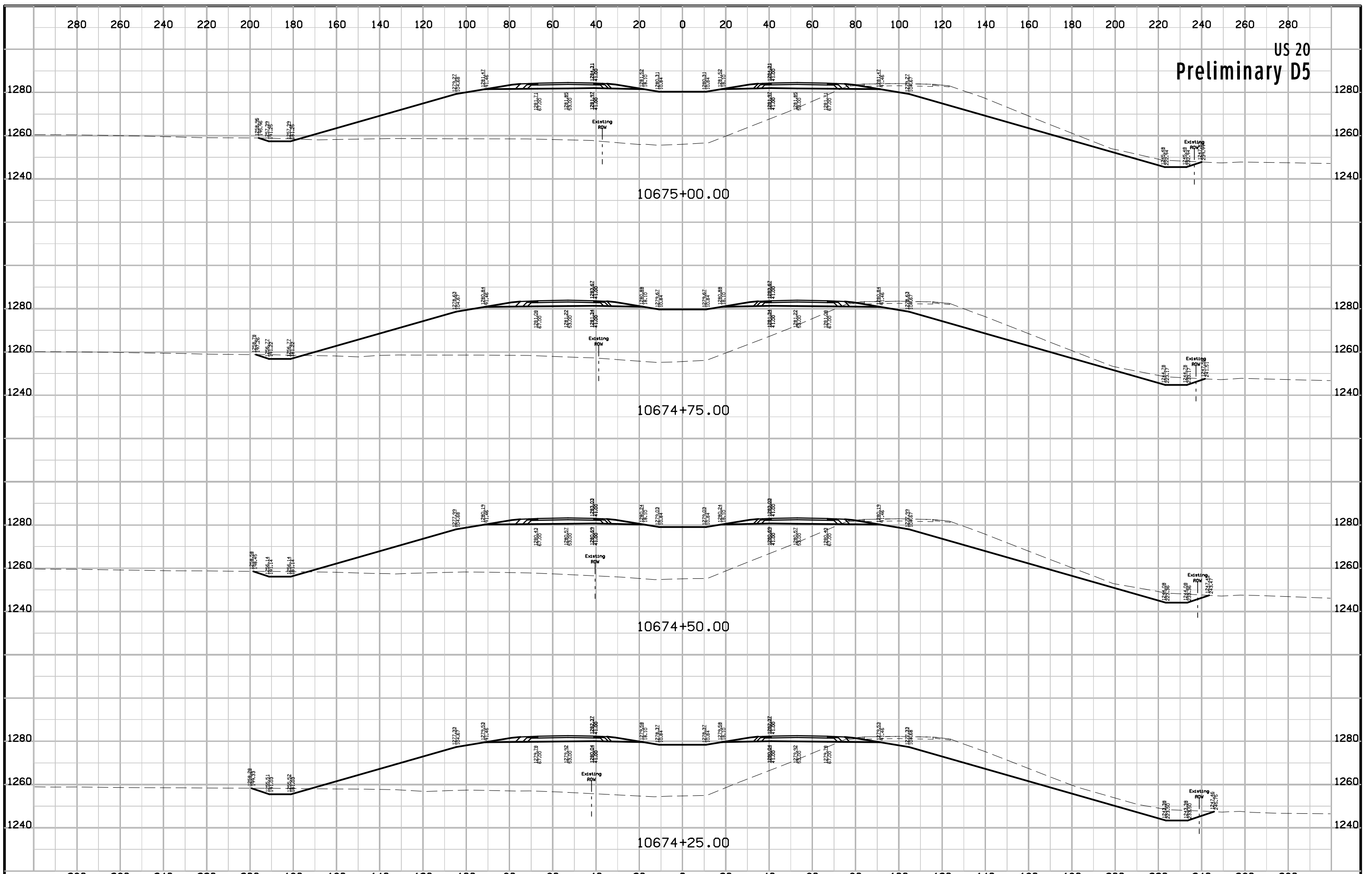




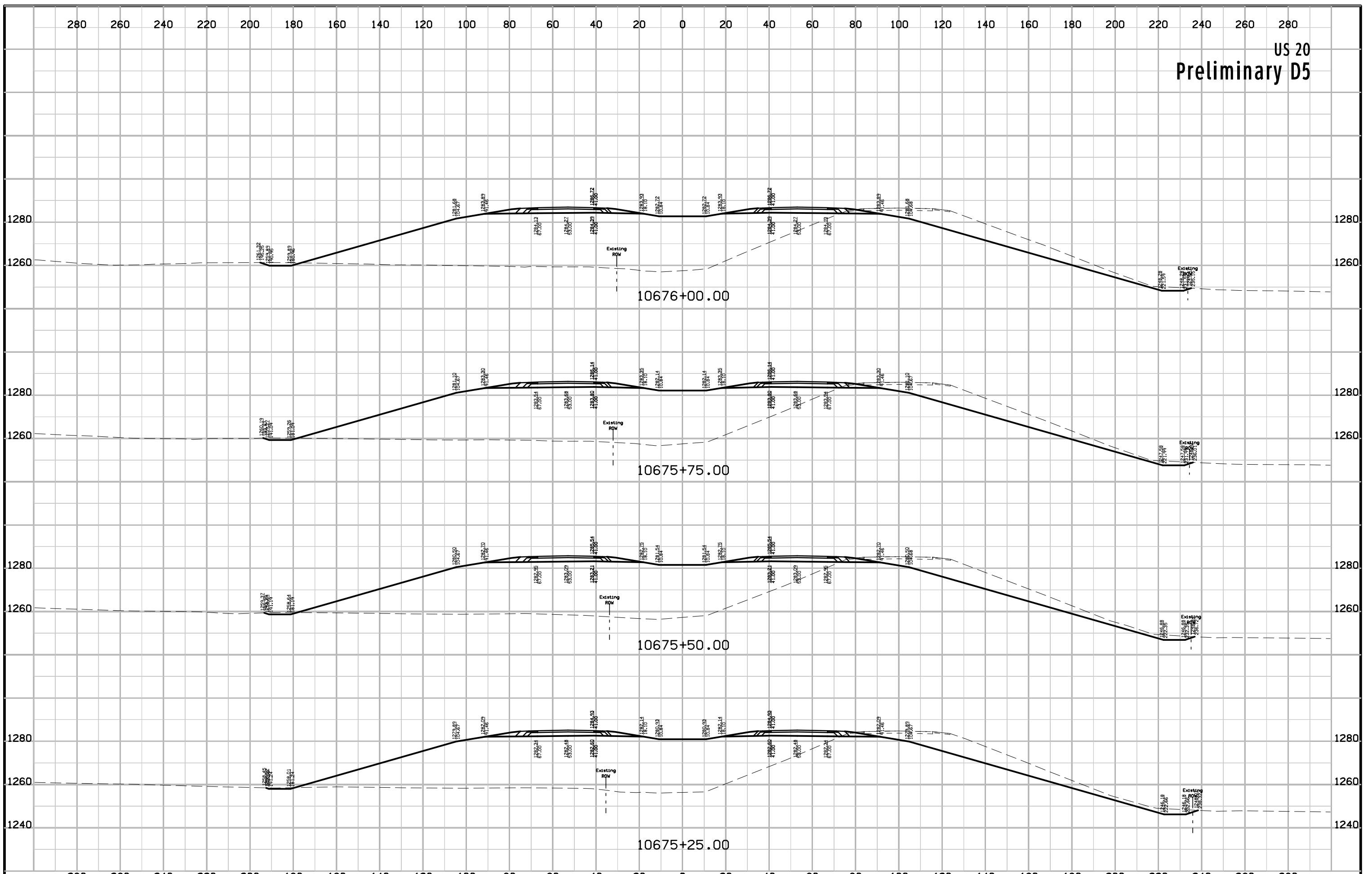
US 20  
Preliminary D5



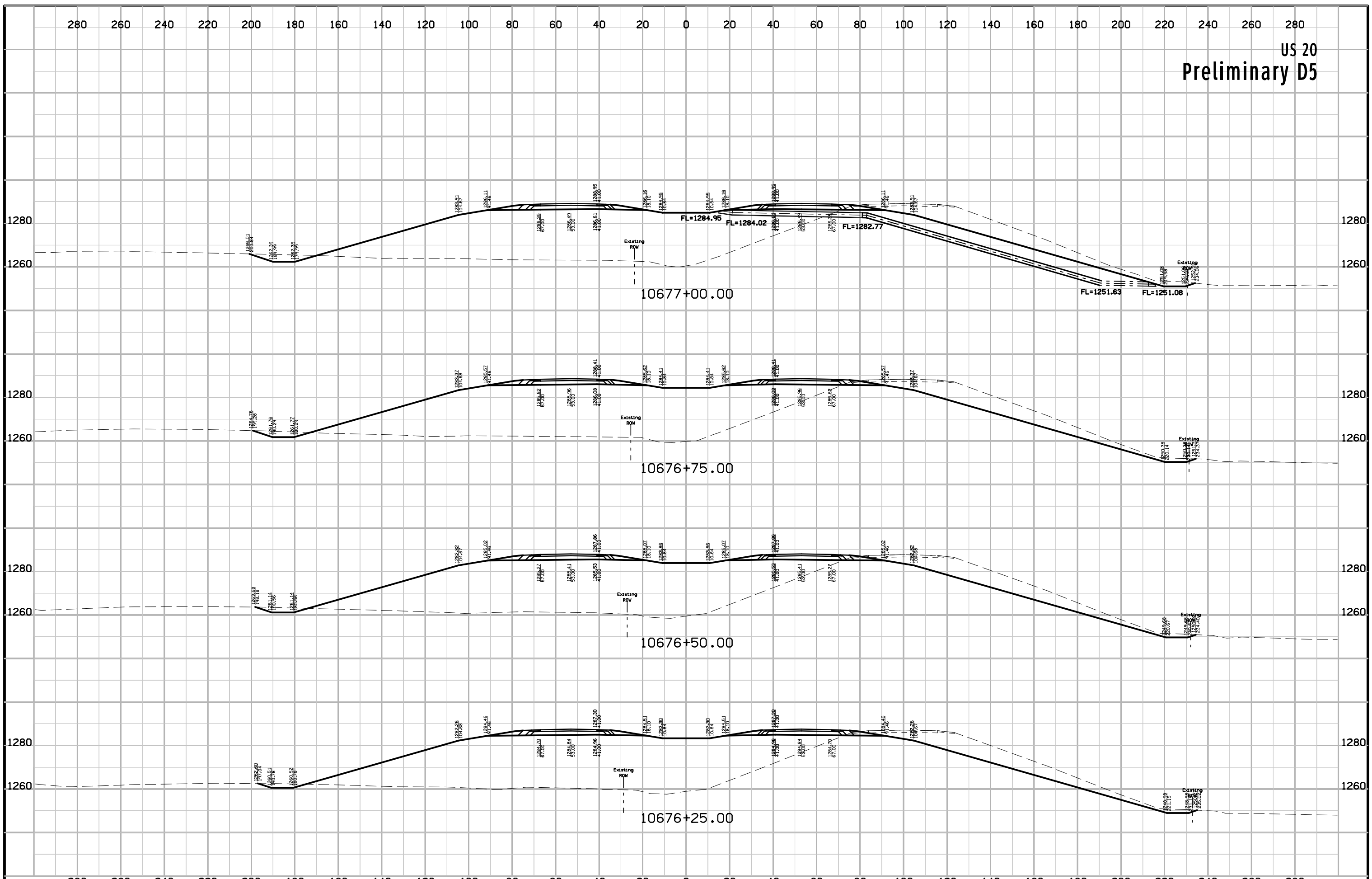
US 20  
Preliminary D5



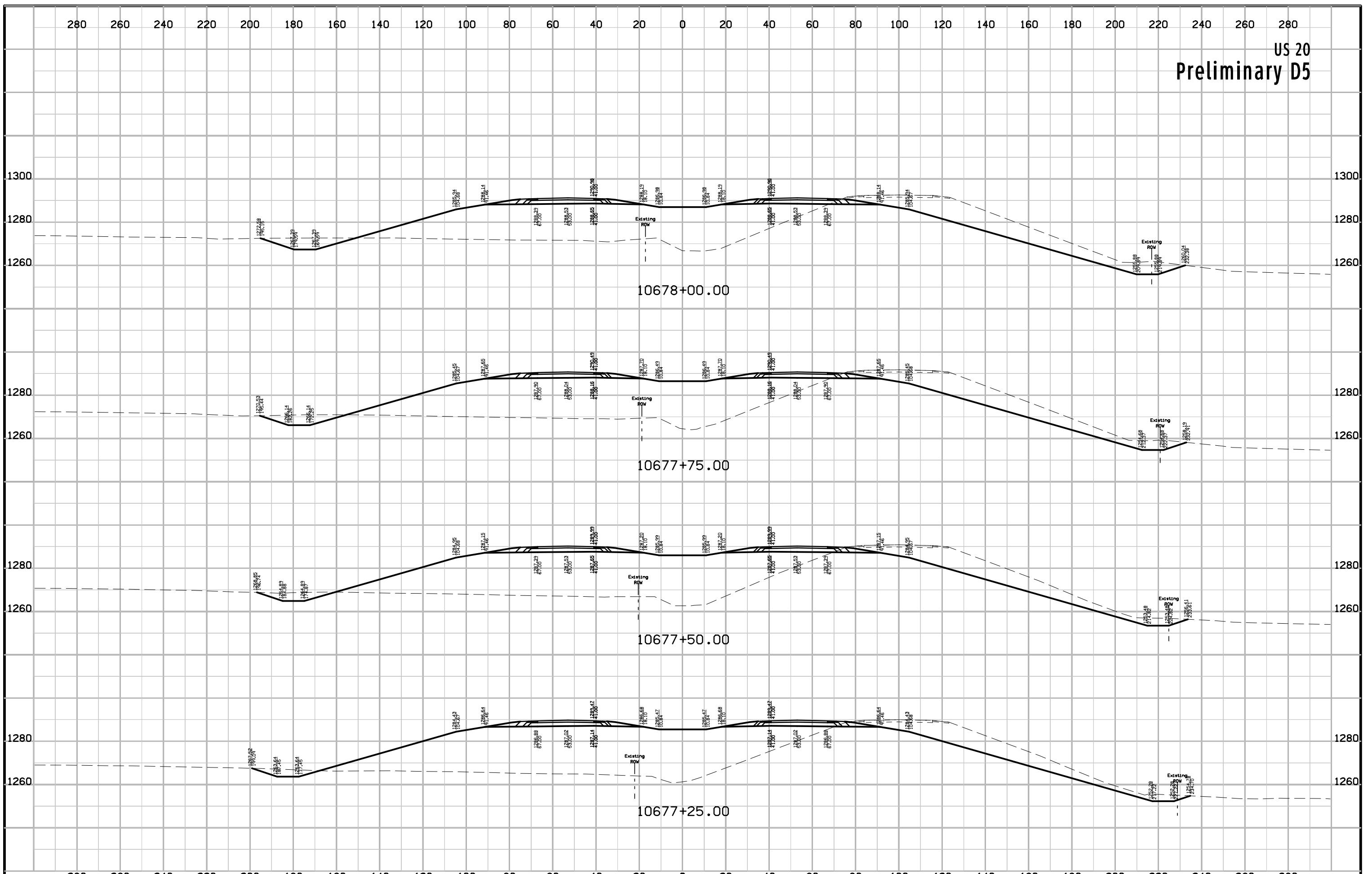
US 20  
Preliminary D5



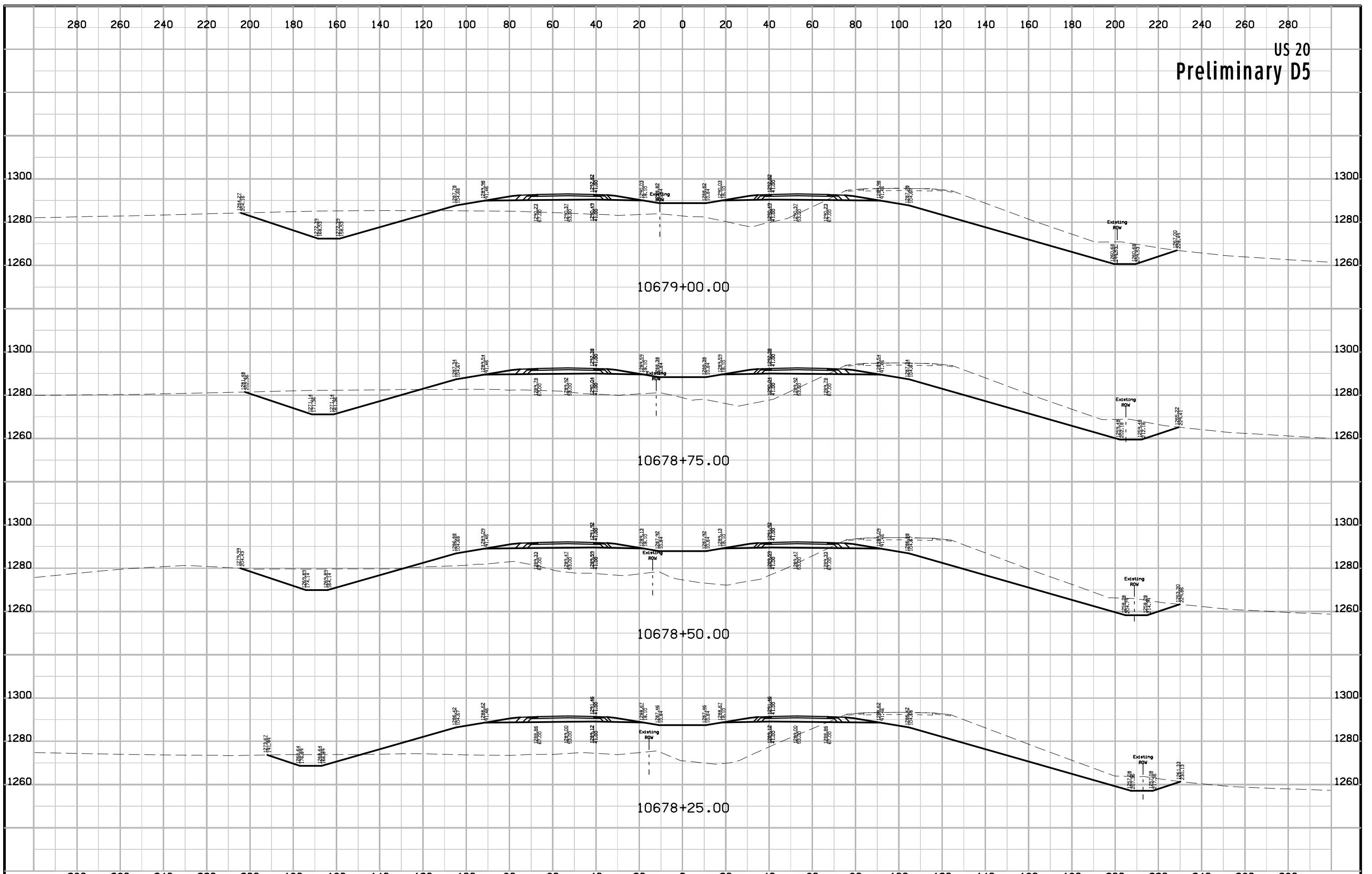
US 20  
Preliminary D5



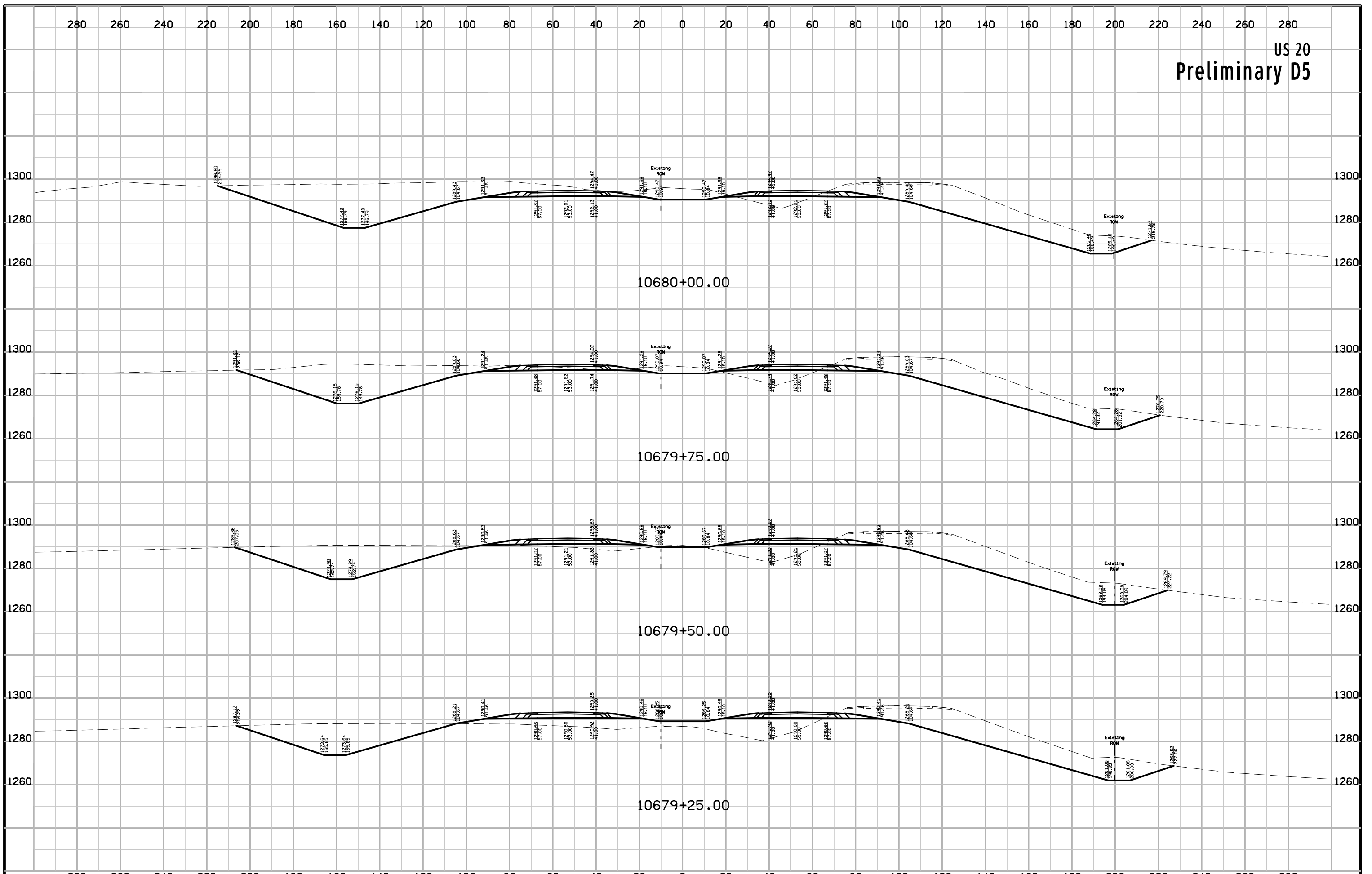
US 20  
Preliminary D5



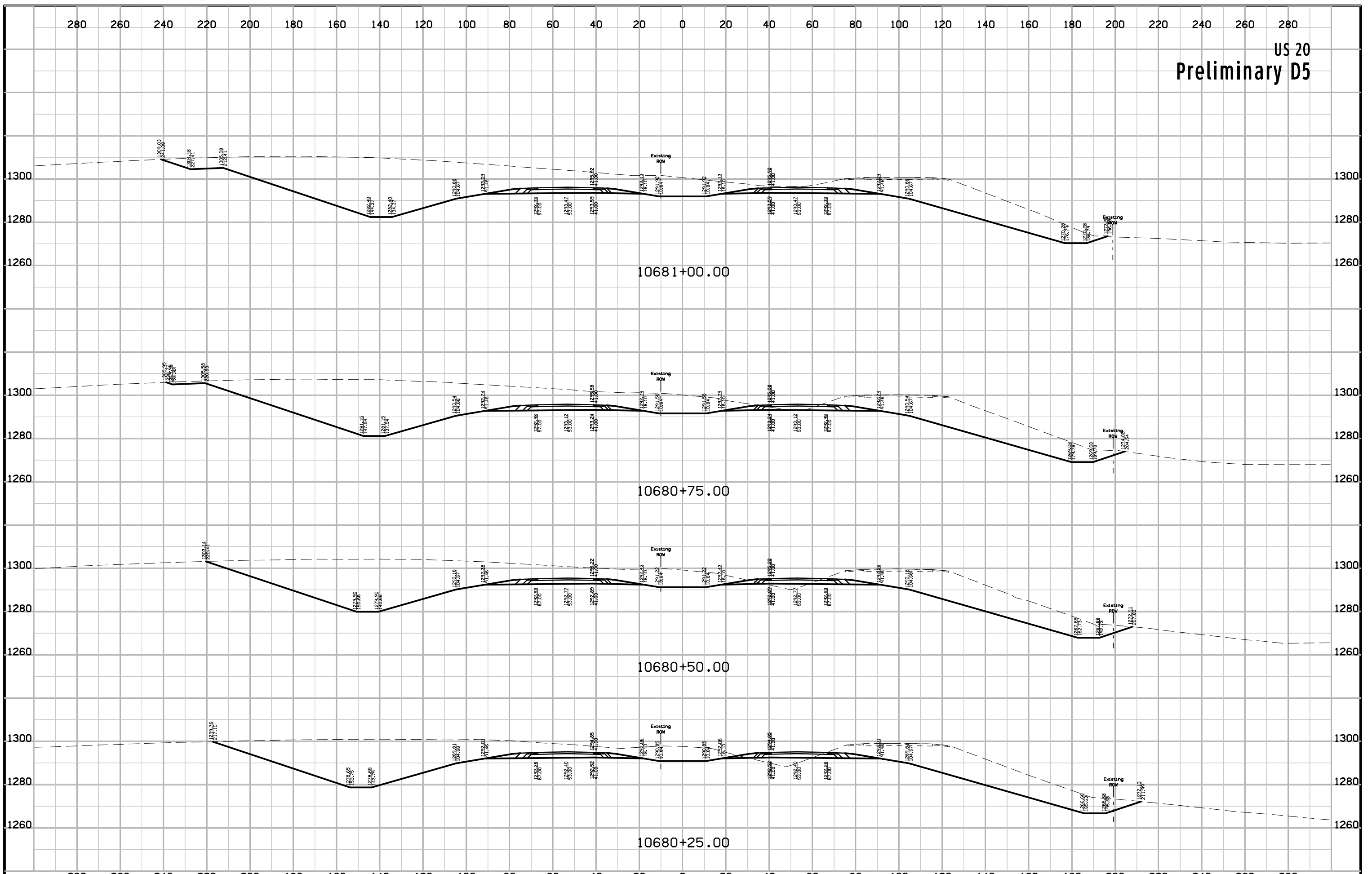
US 20  
Preliminary D5



US 20  
Preliminary D5

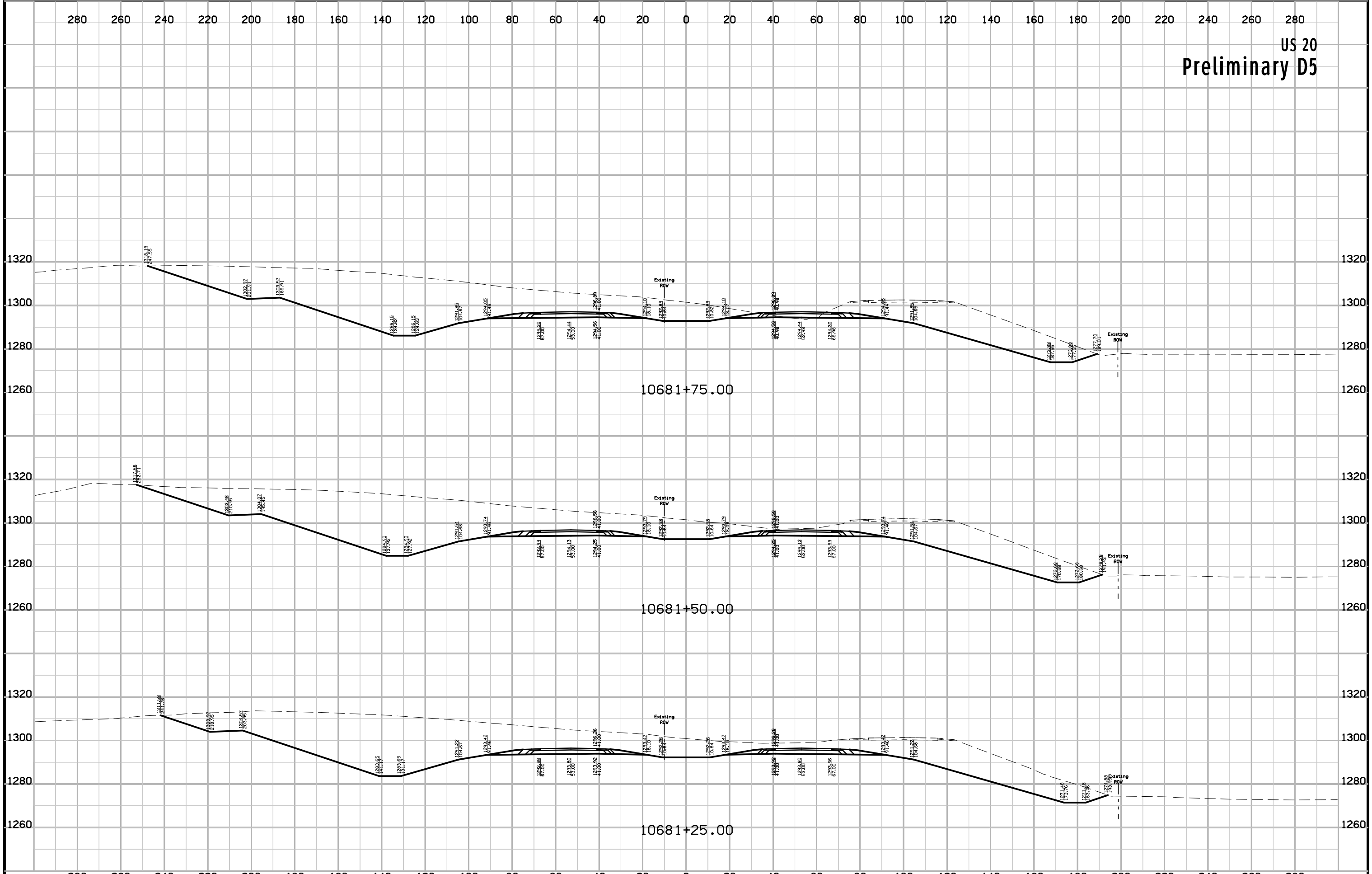


US 20  
Preliminary D5

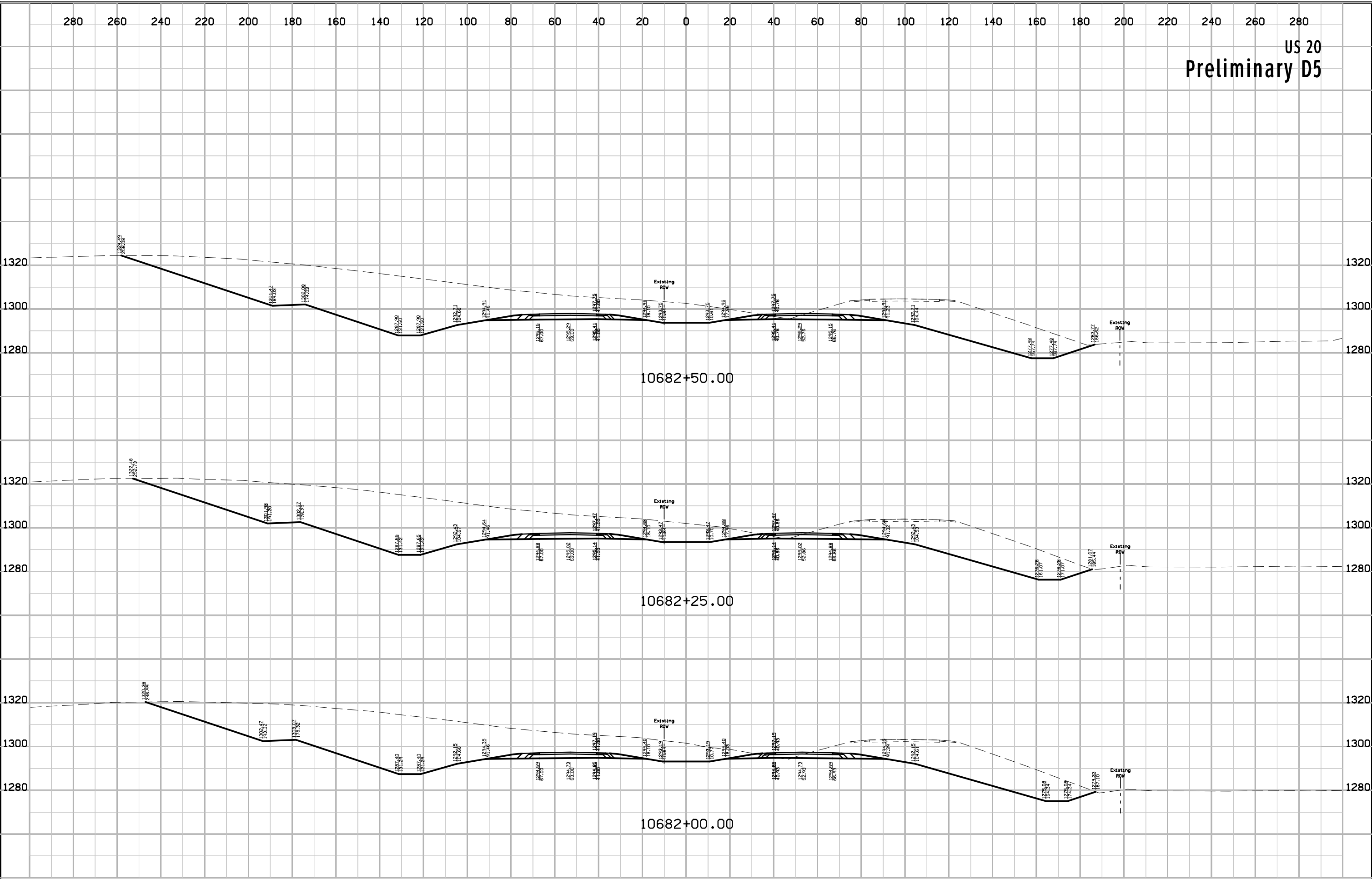




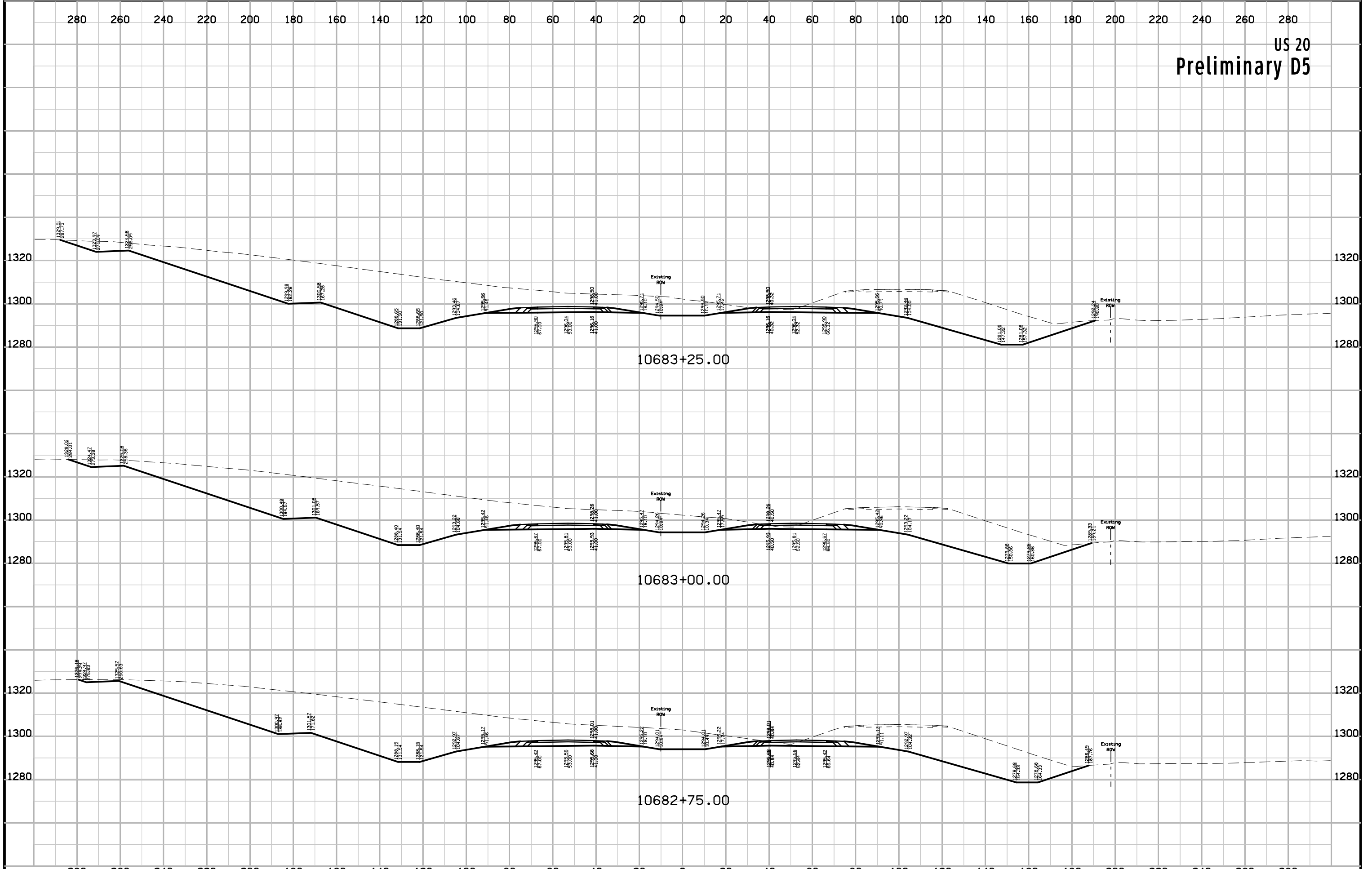
US 20  
Preliminary D5



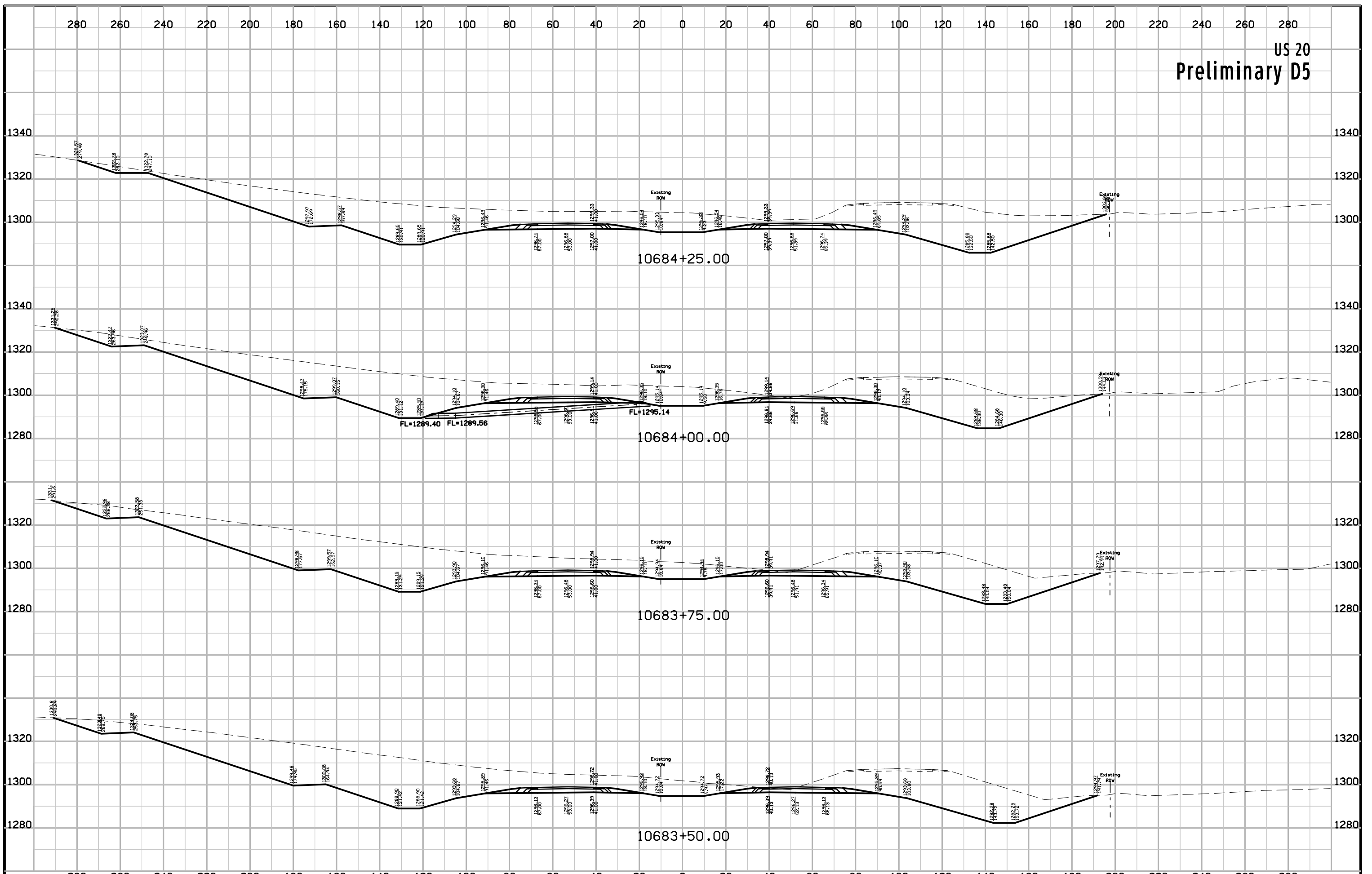
US 20  
Preliminary D5



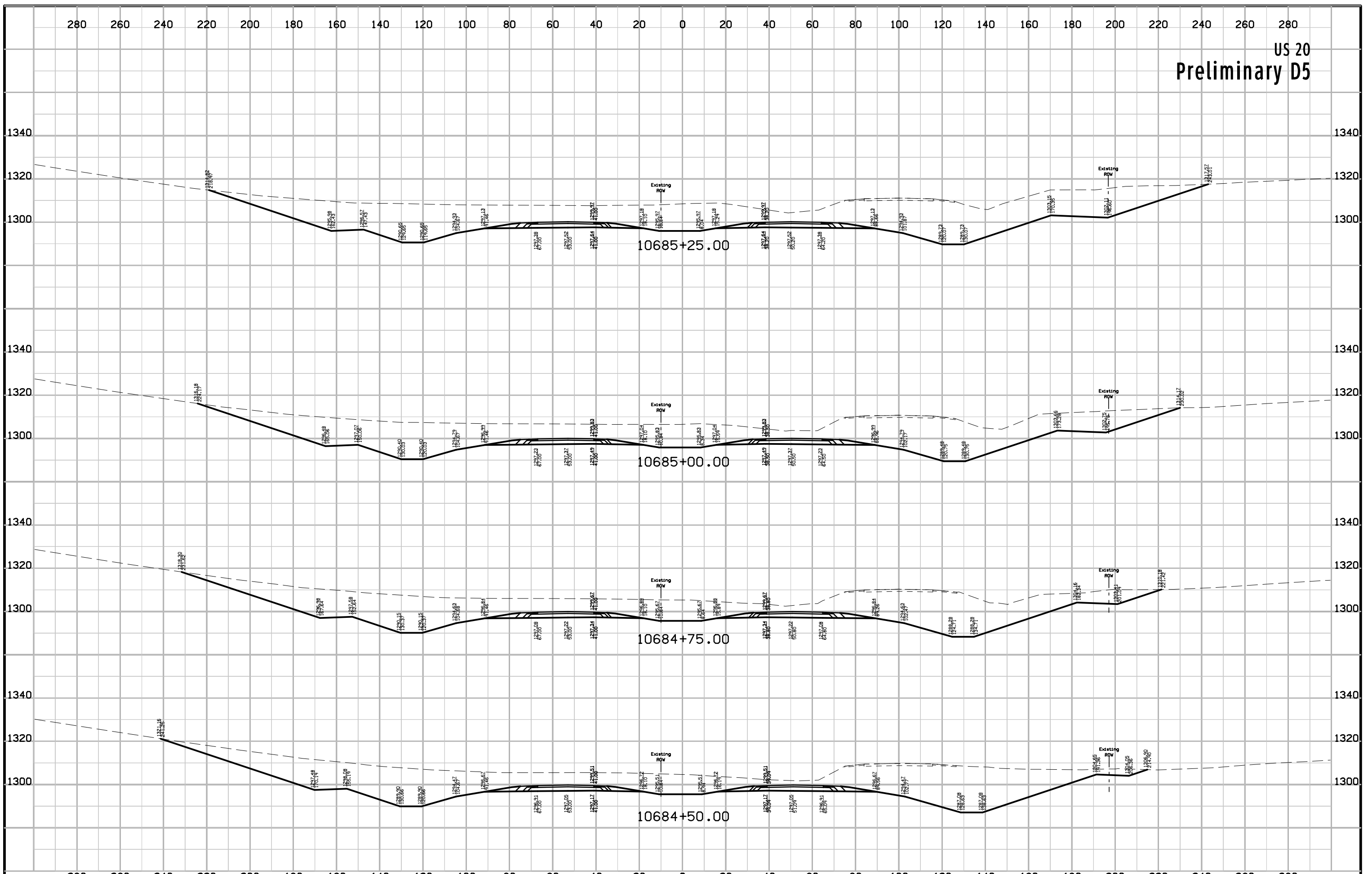
US 20  
Preliminary D5



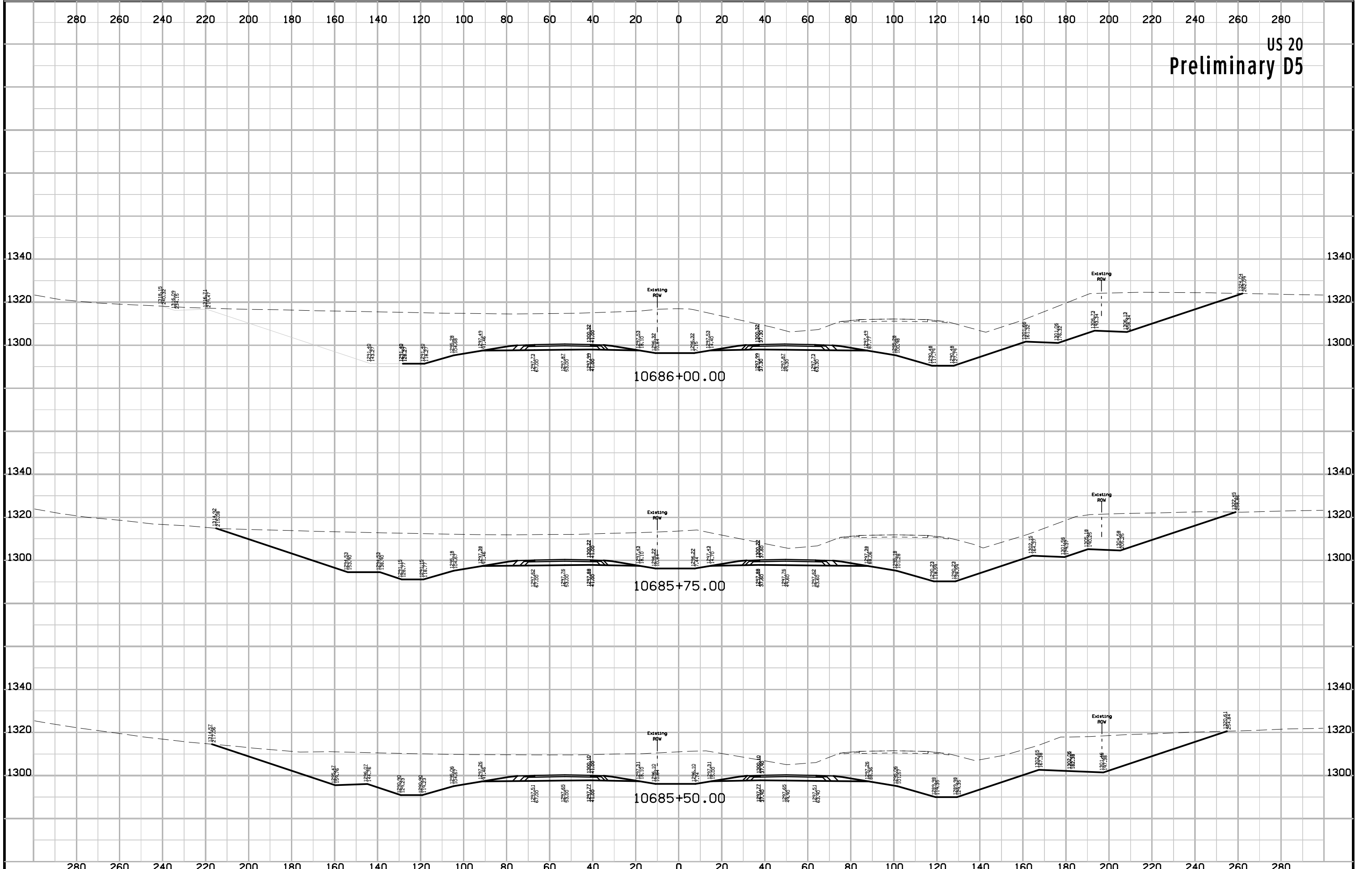
US 20  
Preliminary D5



US 20  
Preliminary D5

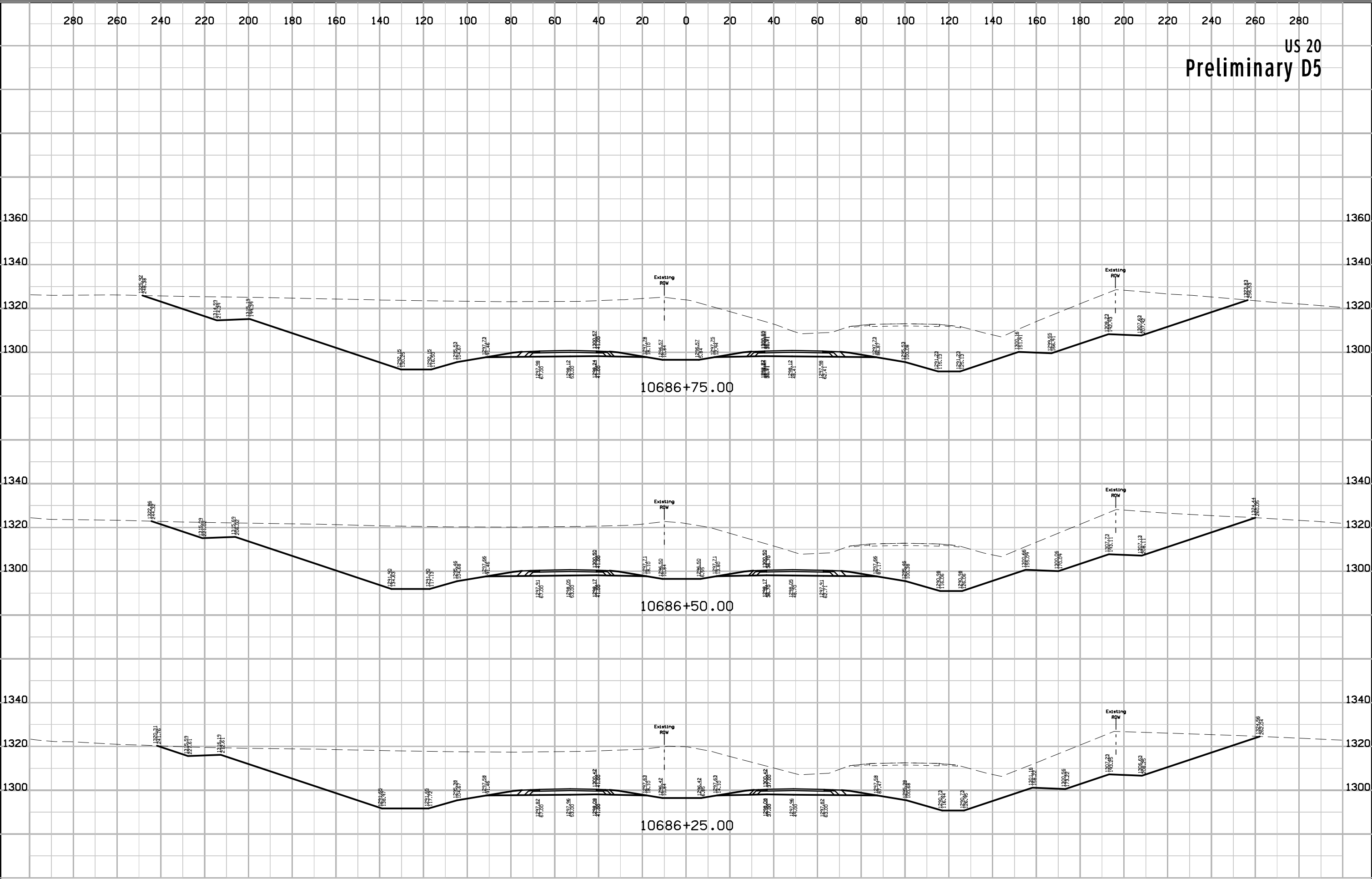


US 20  
Preliminary D5

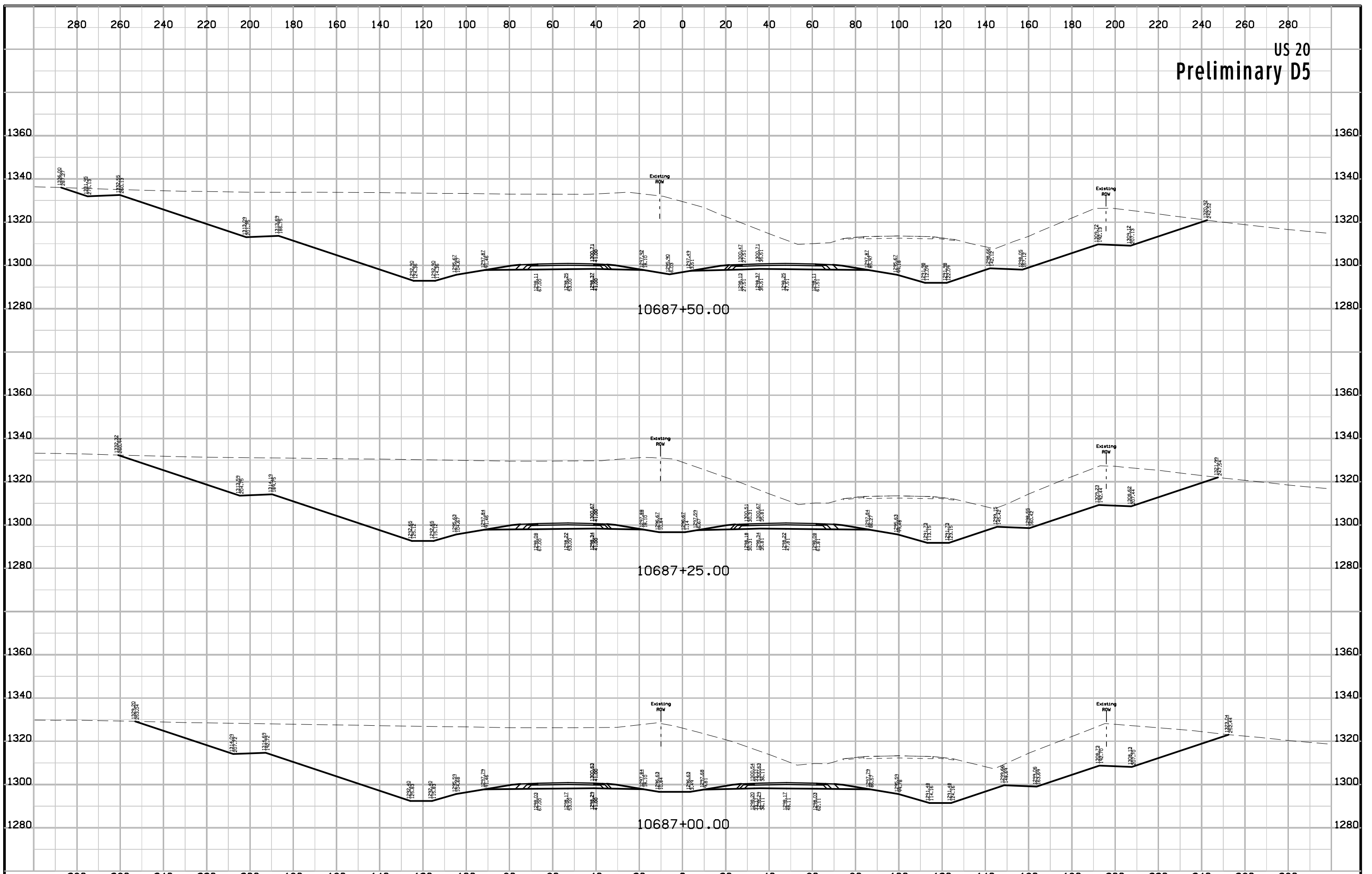


FILE NO.	ENGLISH	DESIGN TEAM	WOODBURY COUNTY	PROJECT NUMBER	SHEET NUMBER
		Flattery\Johnson		NHSX-020-1(133)-3H-97	W.59

US 20  
Preliminary D5

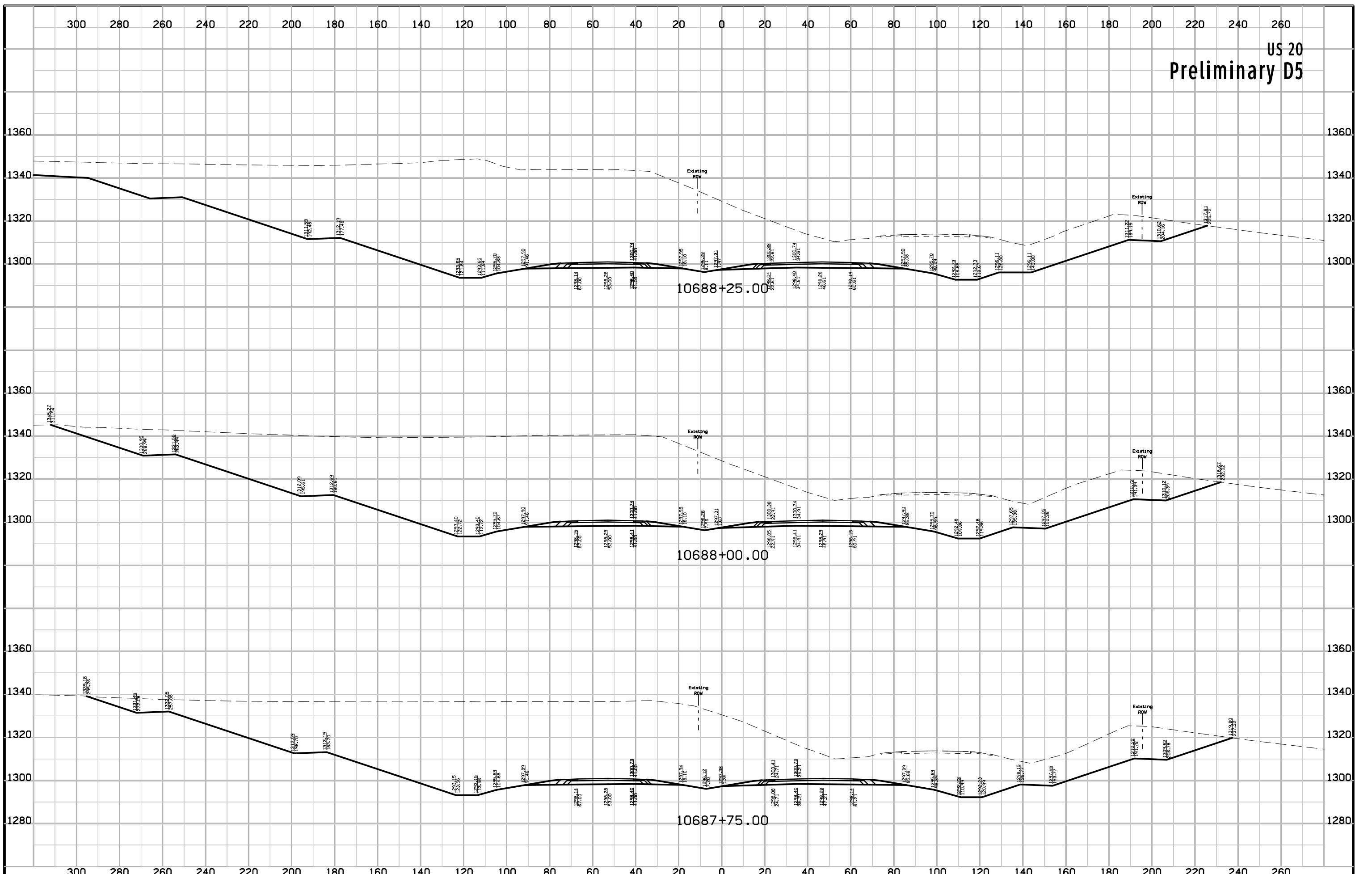


US 20  
Preliminary D5

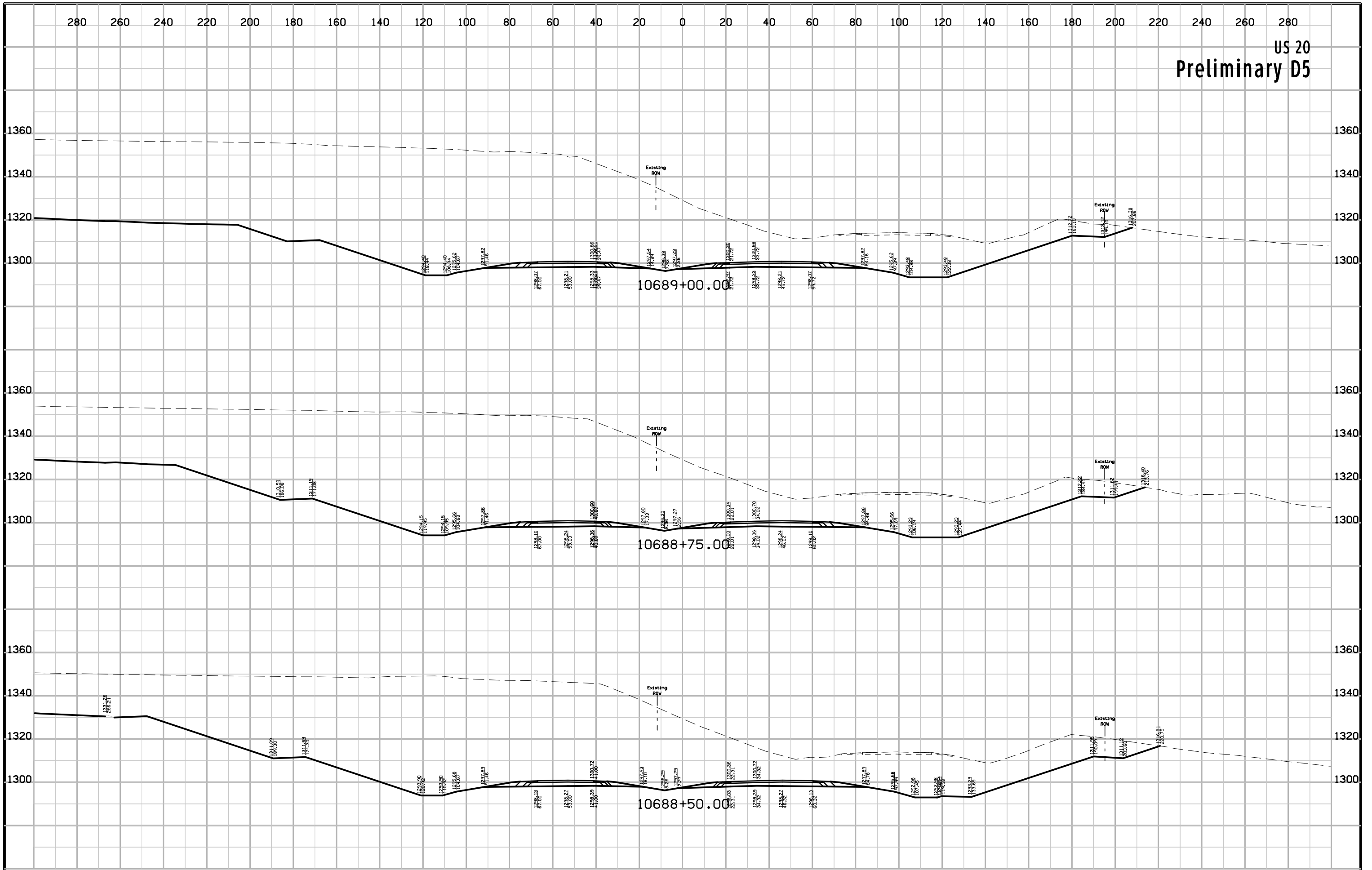




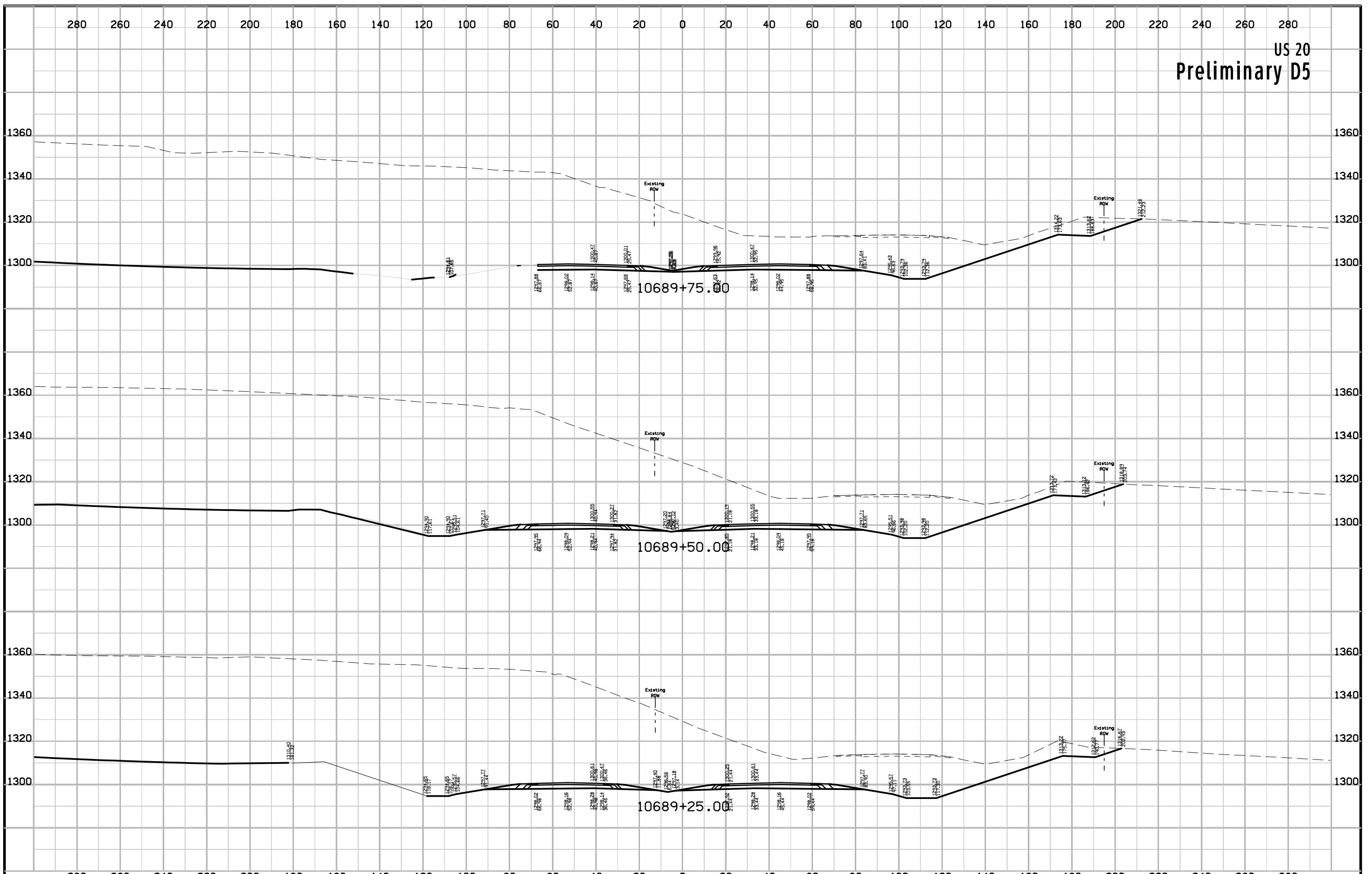
US 20  
Preliminary D5



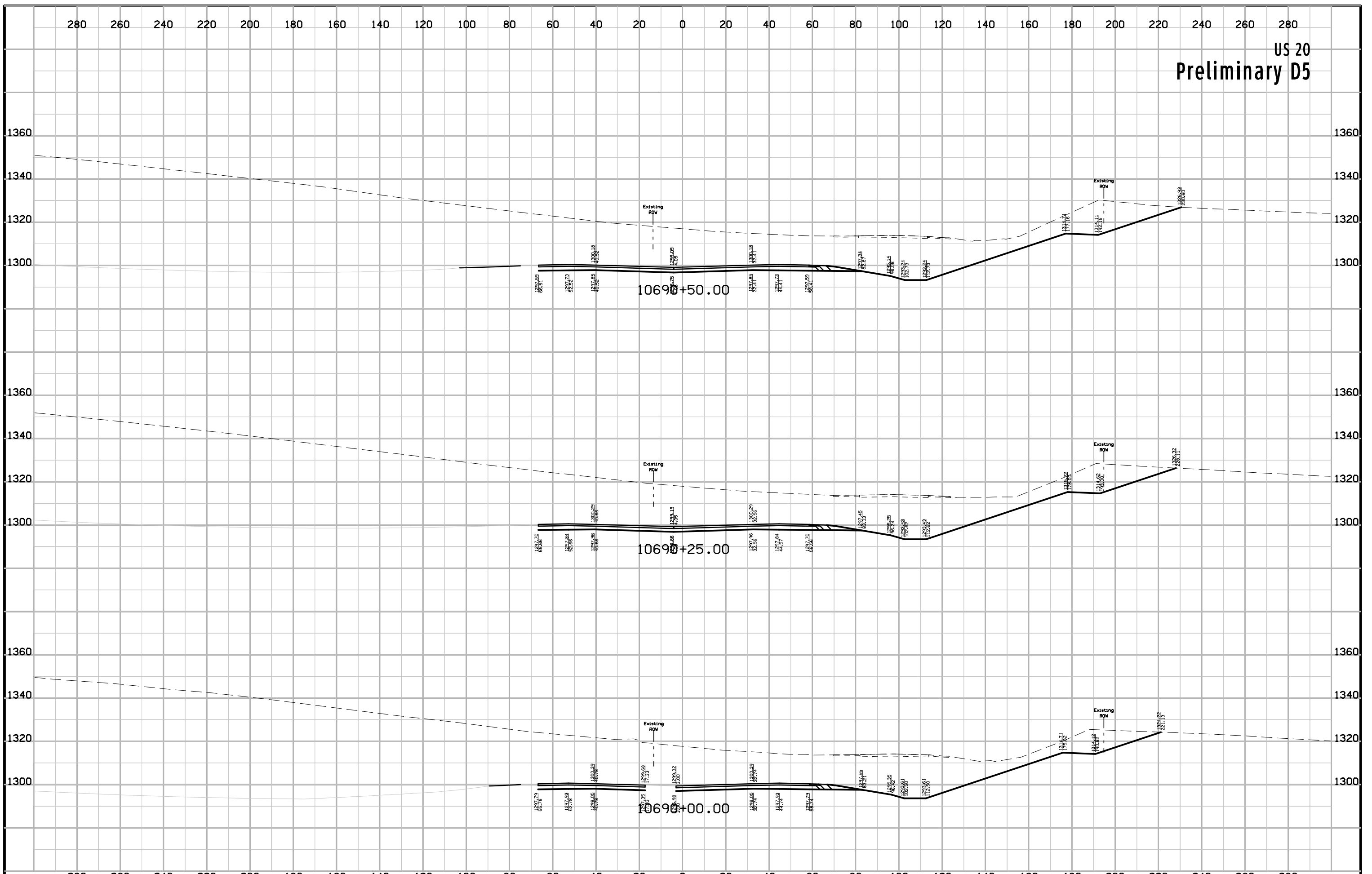
US 20  
Preliminary D5



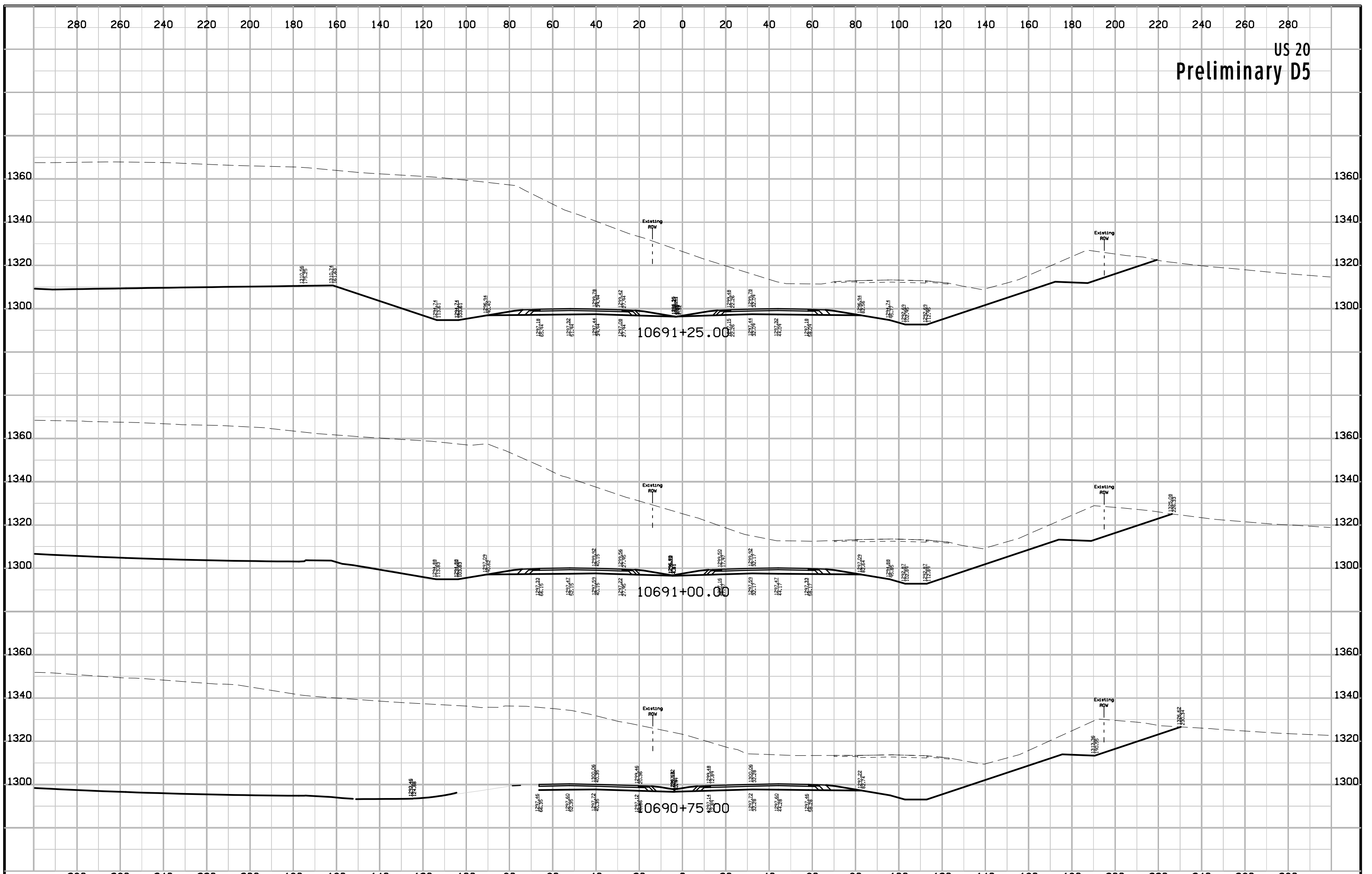
# US 20 Preliminary D5



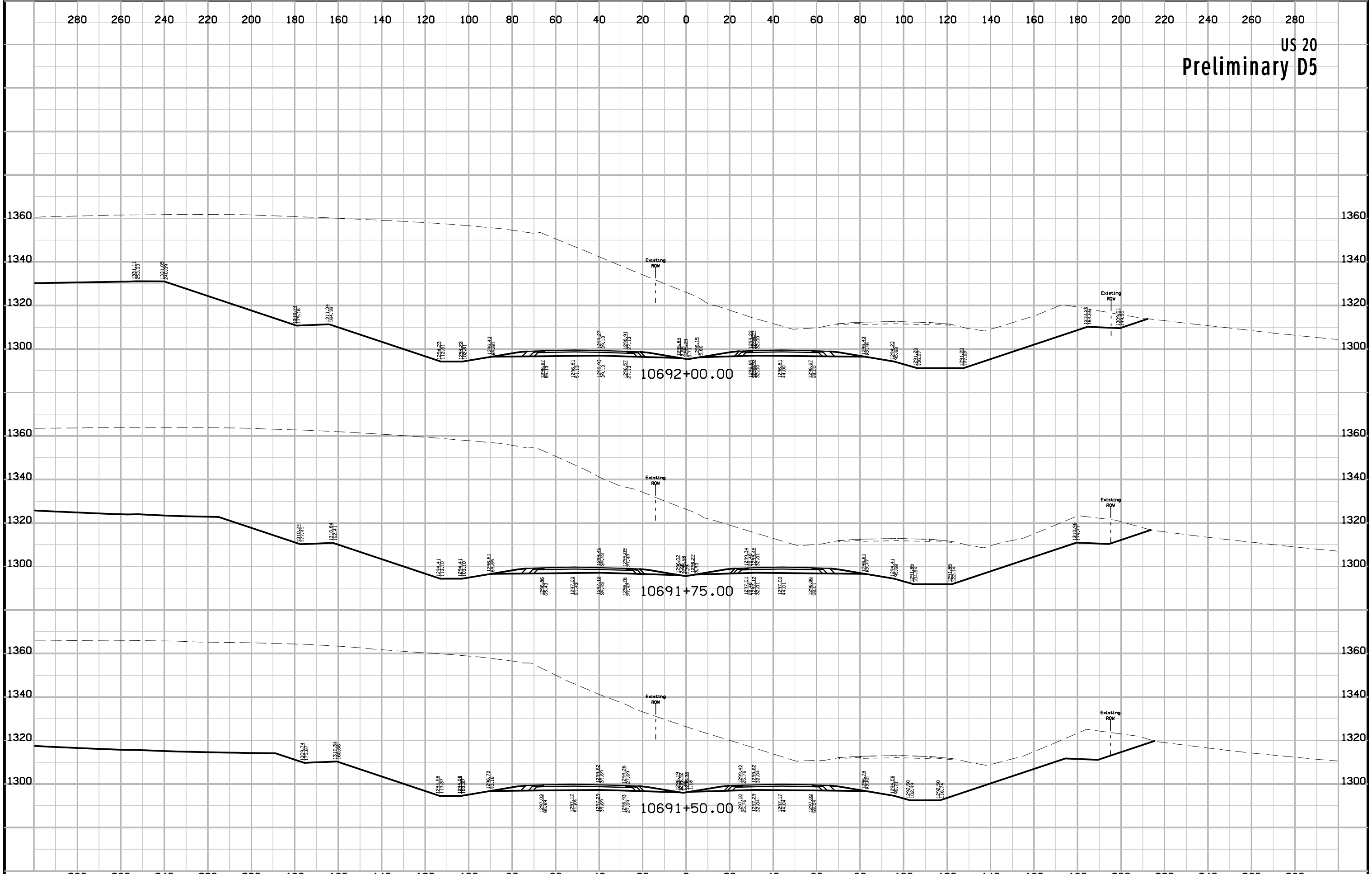
US 20  
Preliminary D5



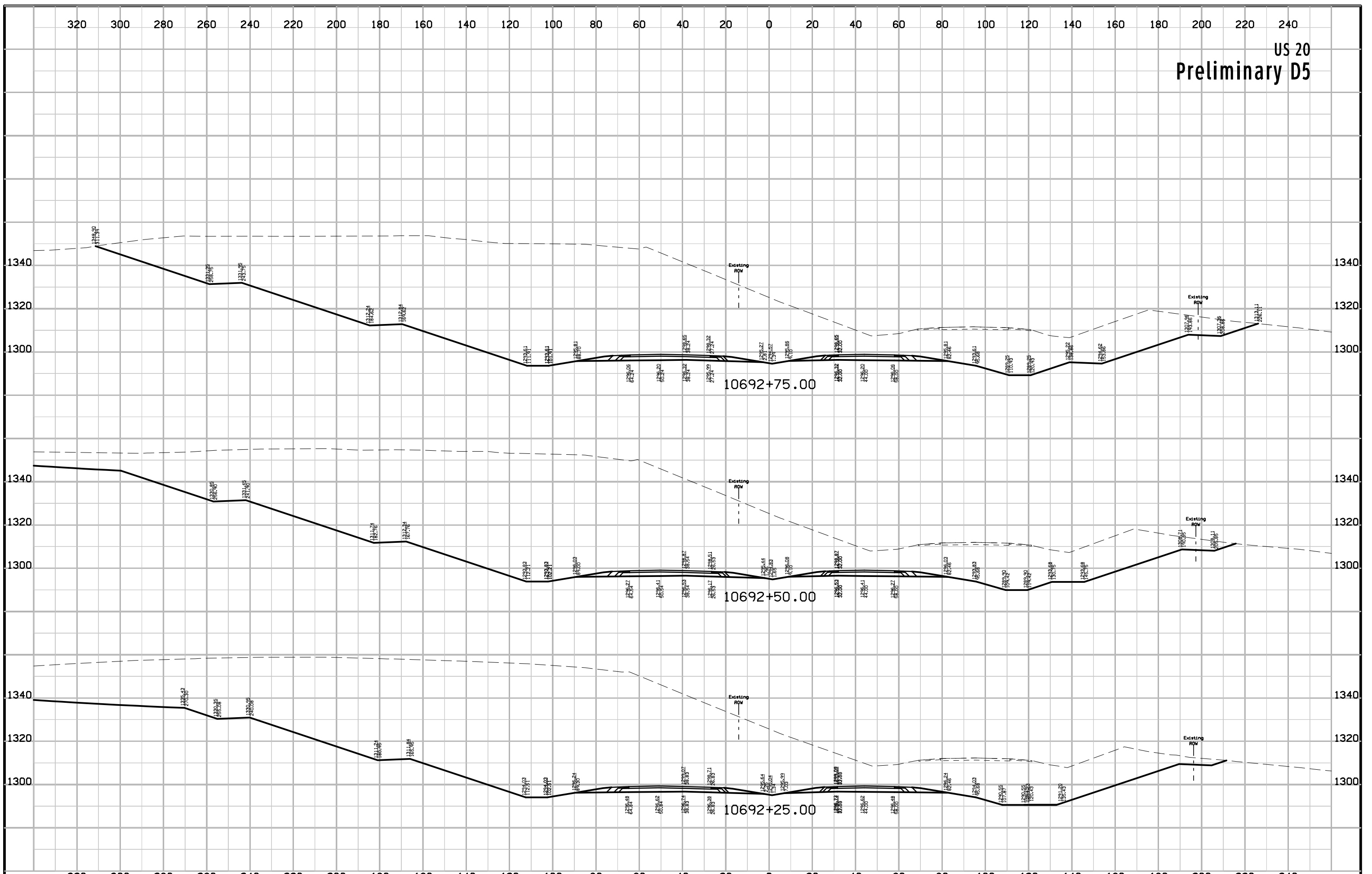
US 20  
Preliminary D5



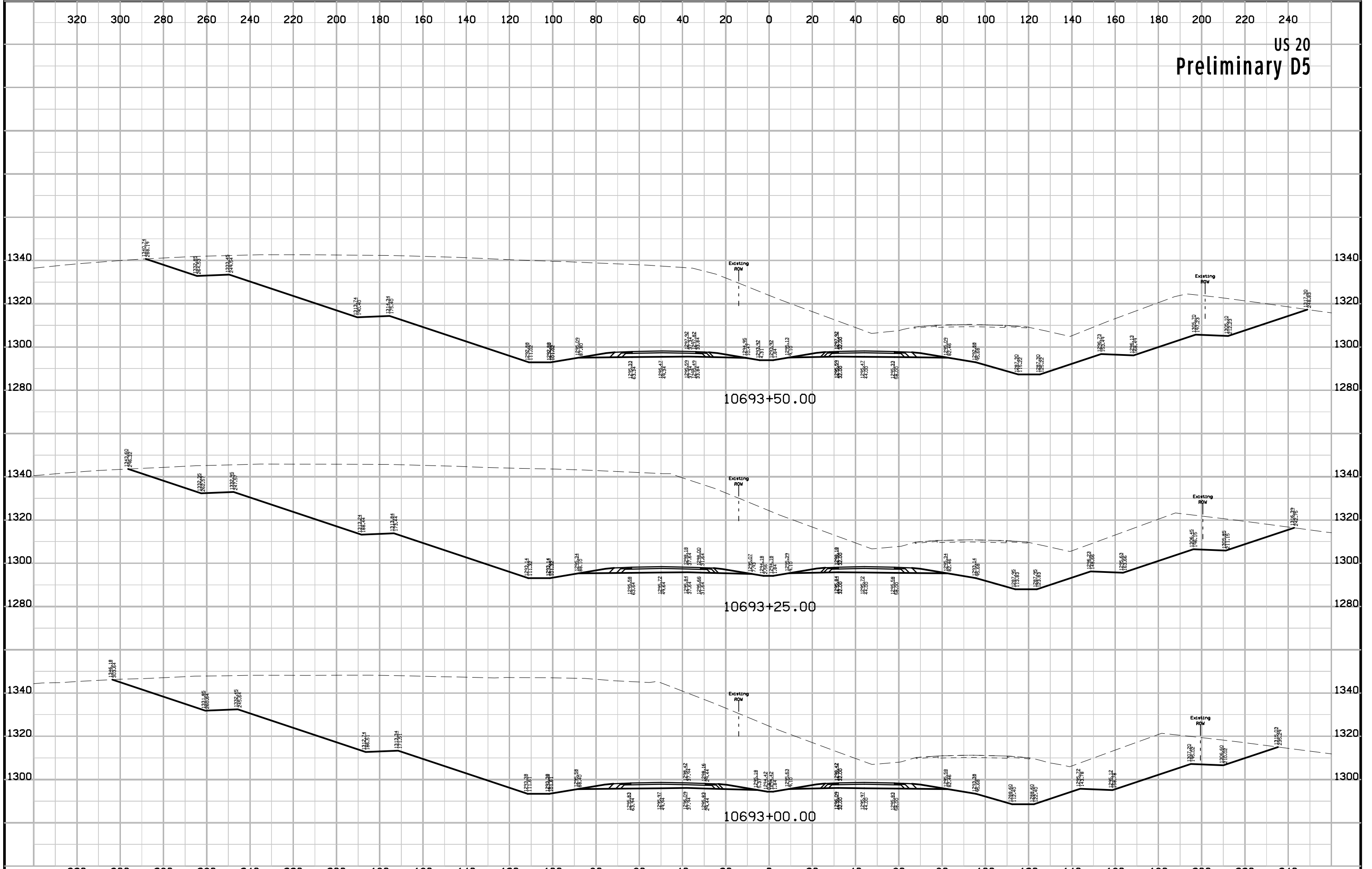
US 20  
Preliminary D5



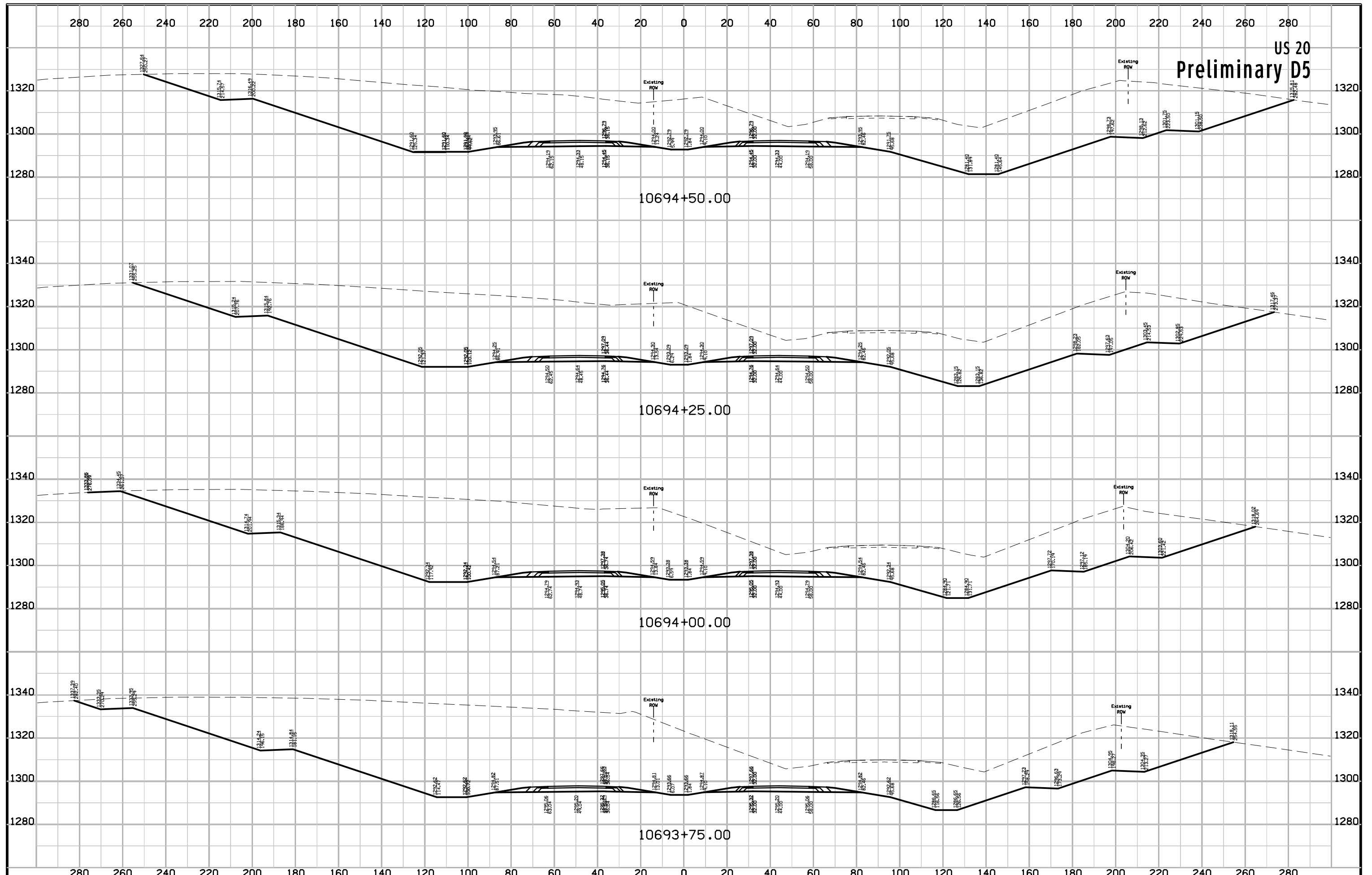
US 20  
Preliminary D5



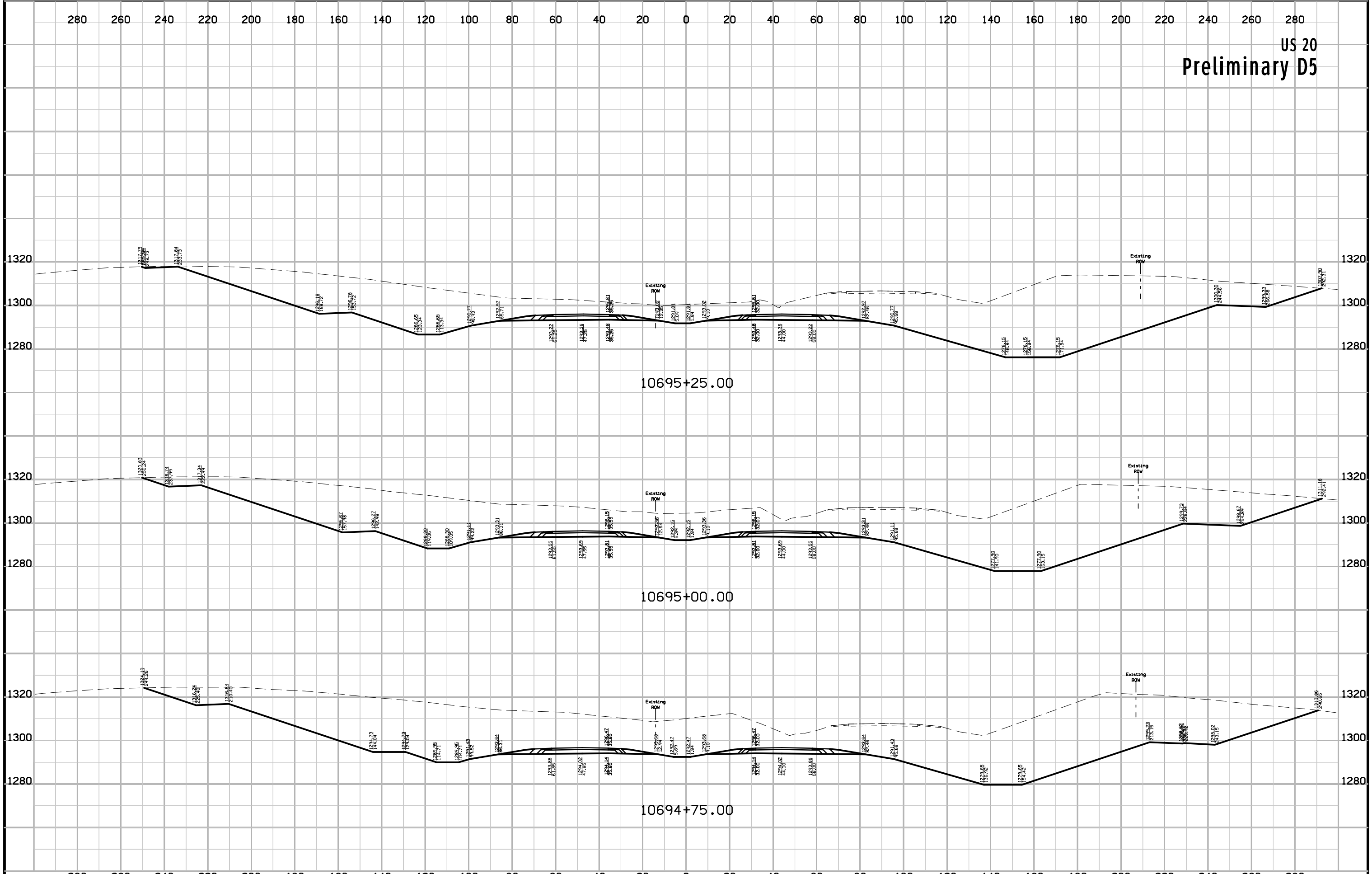
US 20  
Preliminary D5

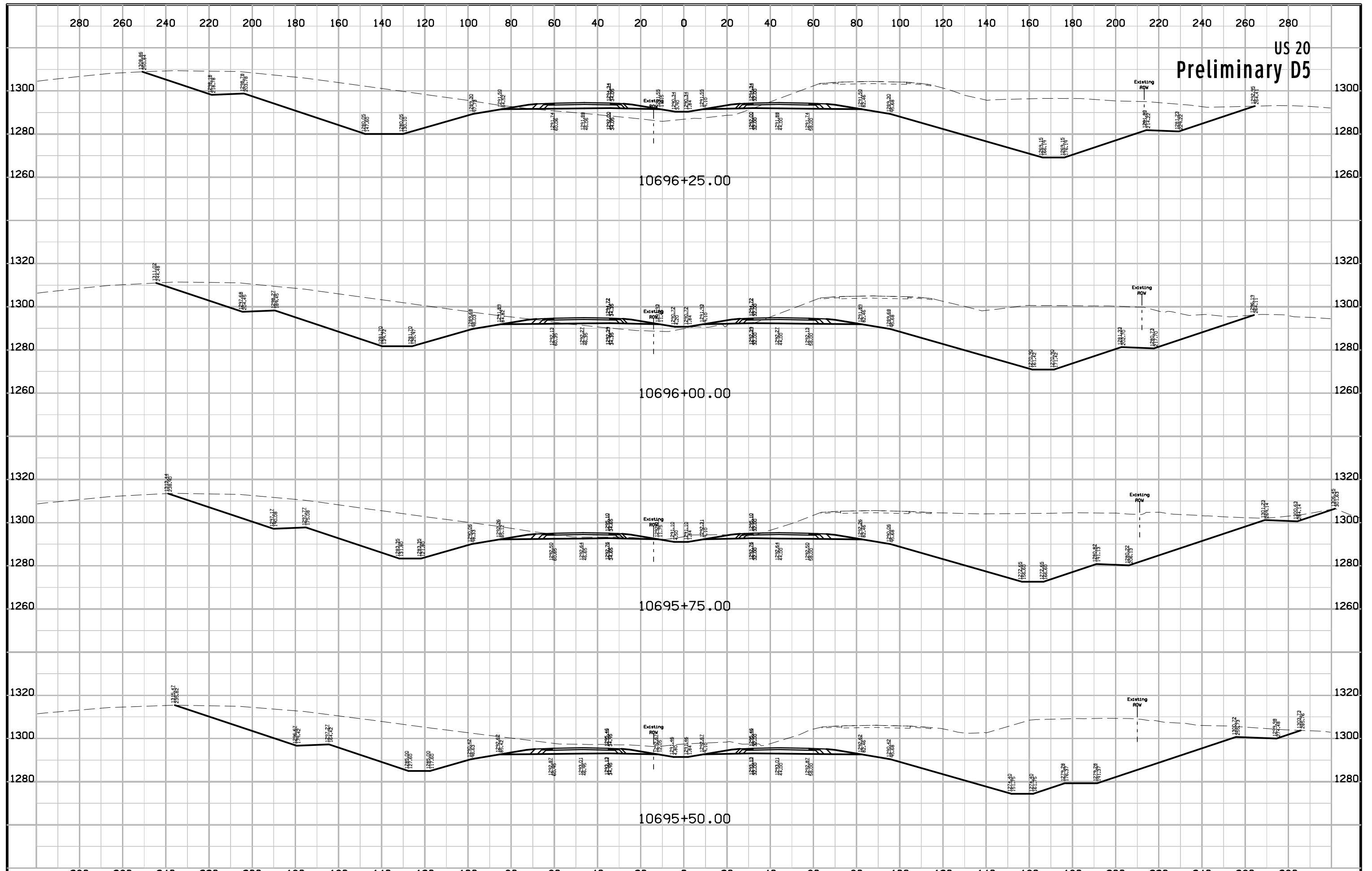




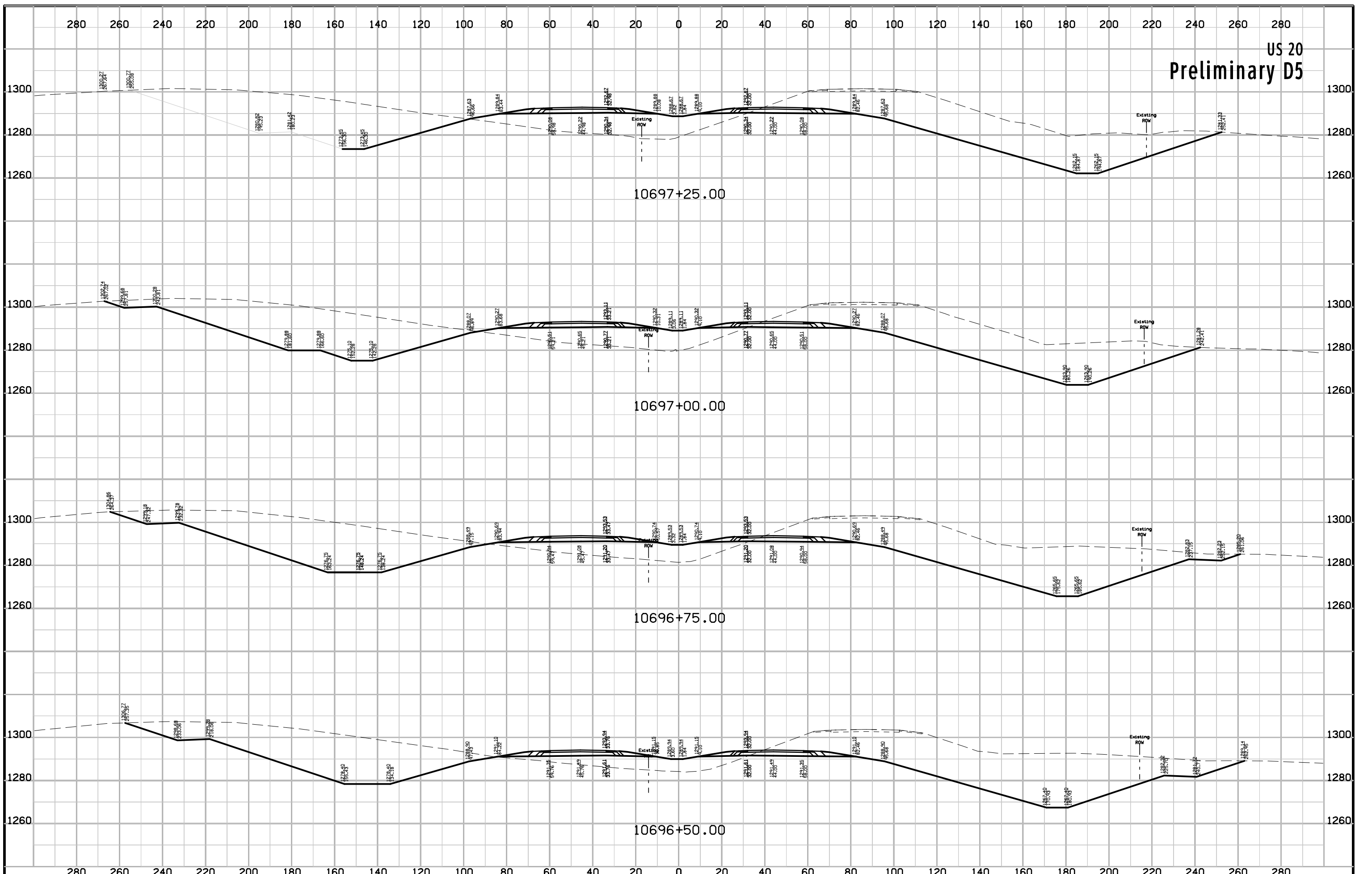


US 20  
Preliminary D5

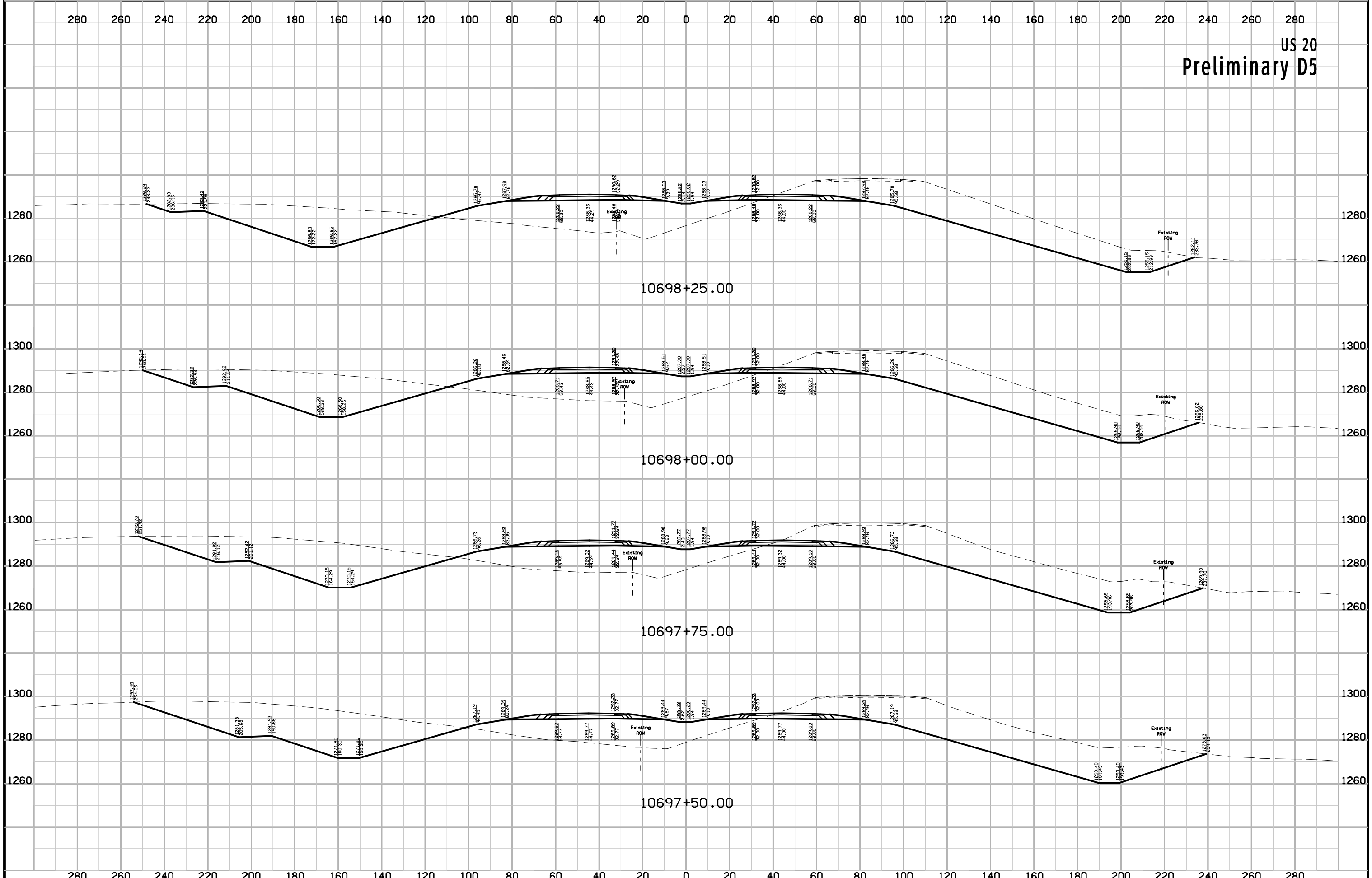




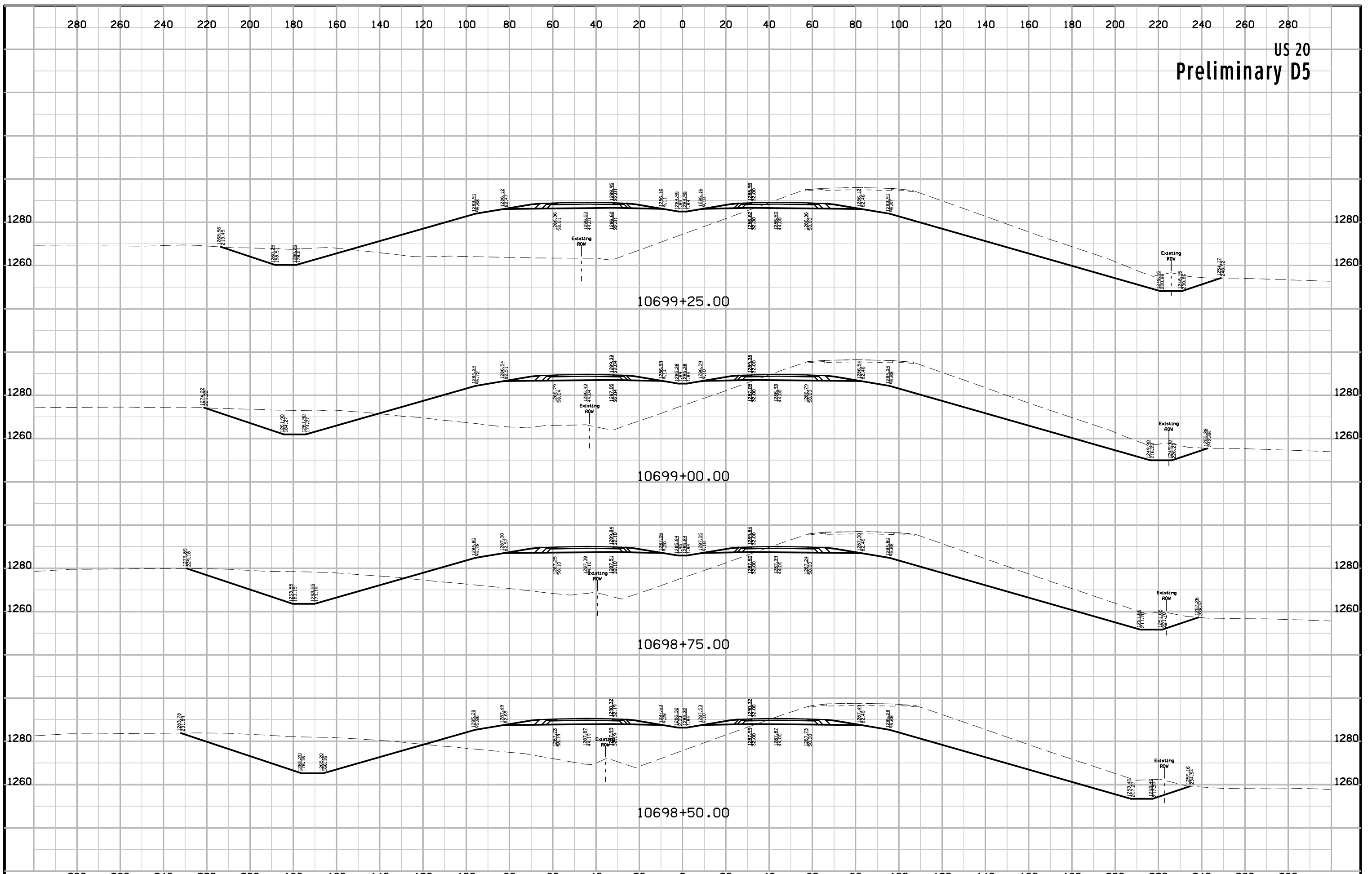
US 20  
Preliminary D5



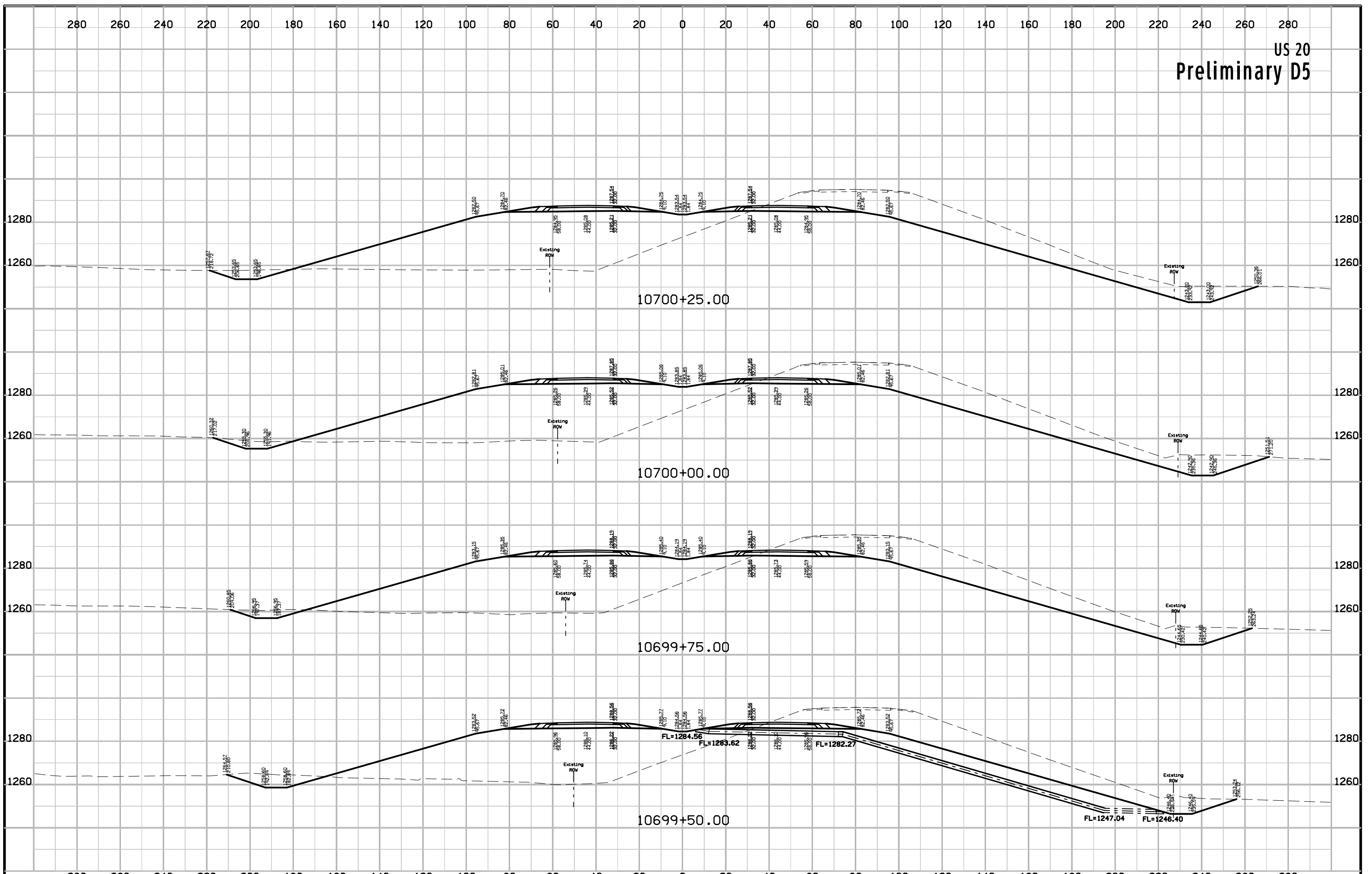
US 20  
Preliminary D5



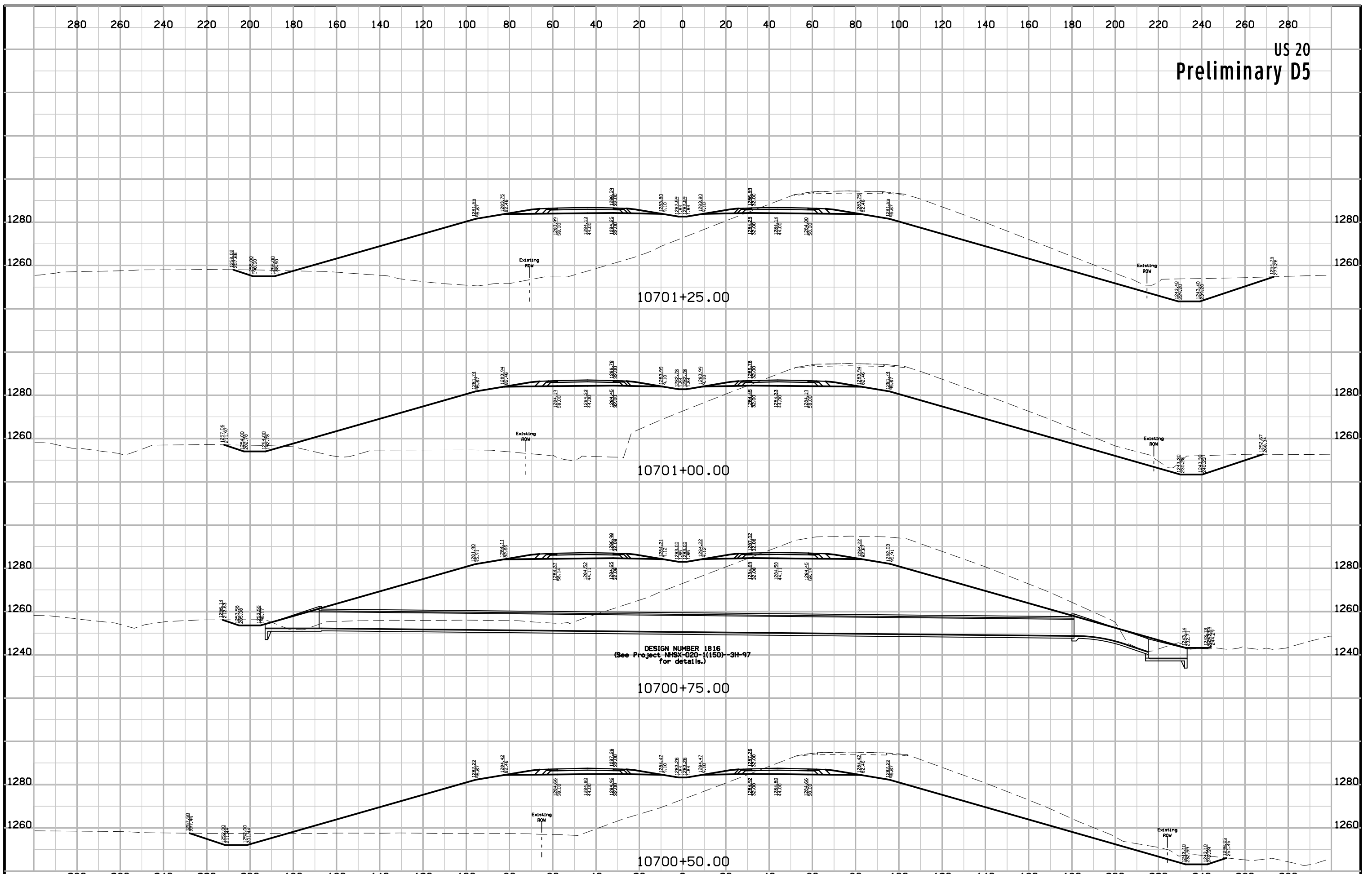
US 20  
Preliminary D5



US 20  
Preliminary D5



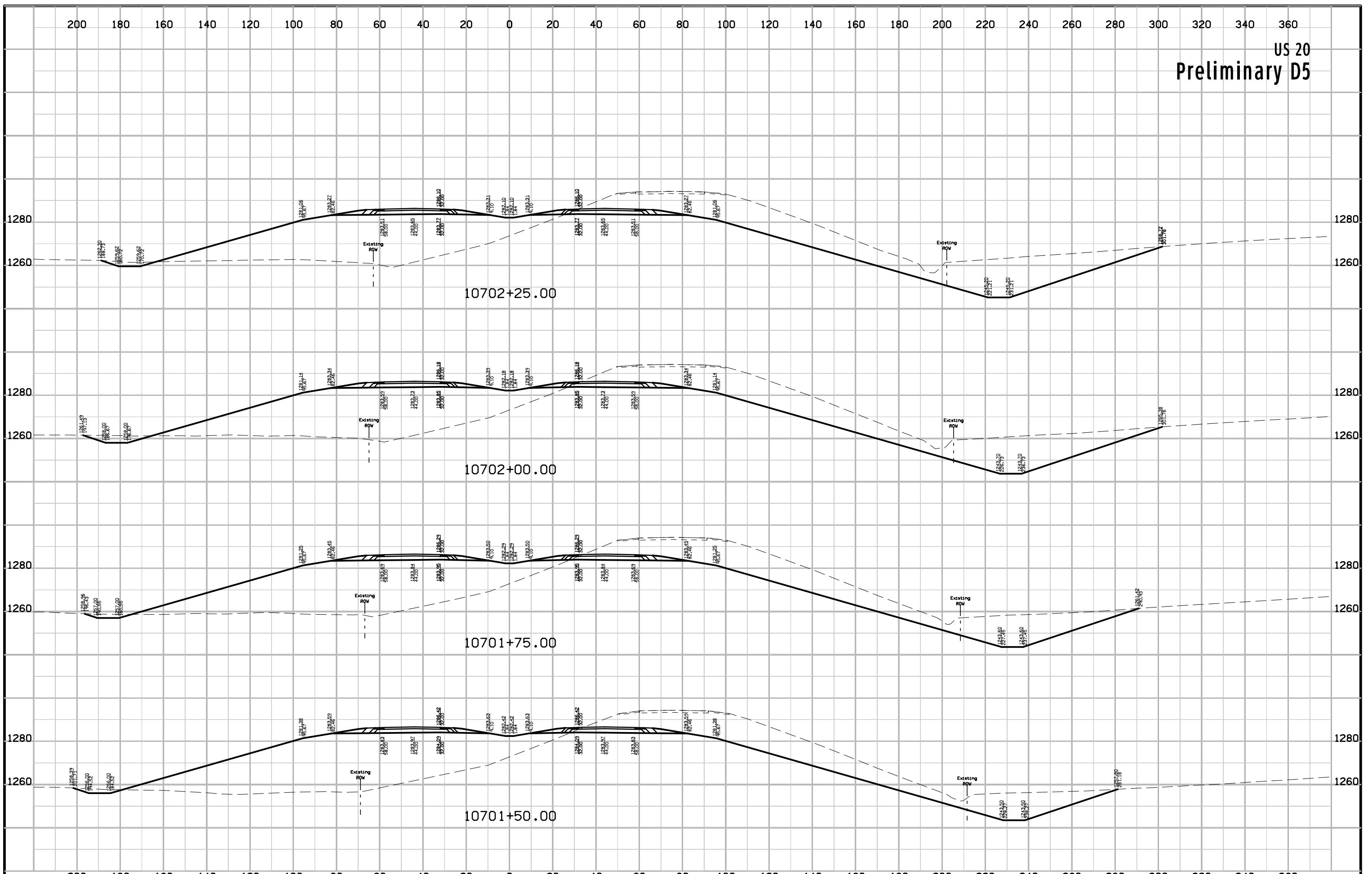
US 20  
Preliminary D5



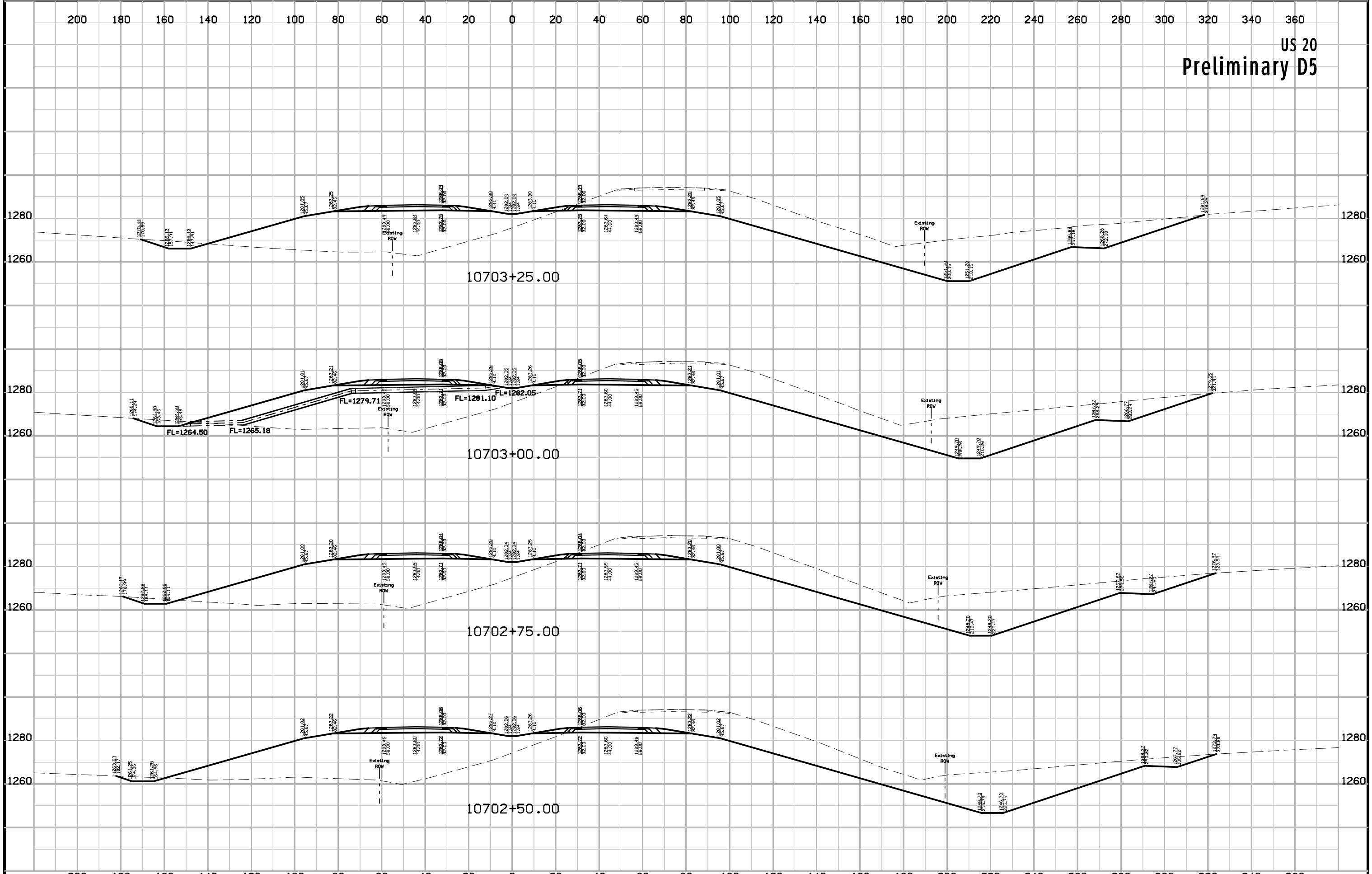
DESIGN NUMBER 1816  
(See Project NHSX-020-1(150)-3H-97  
for details.)

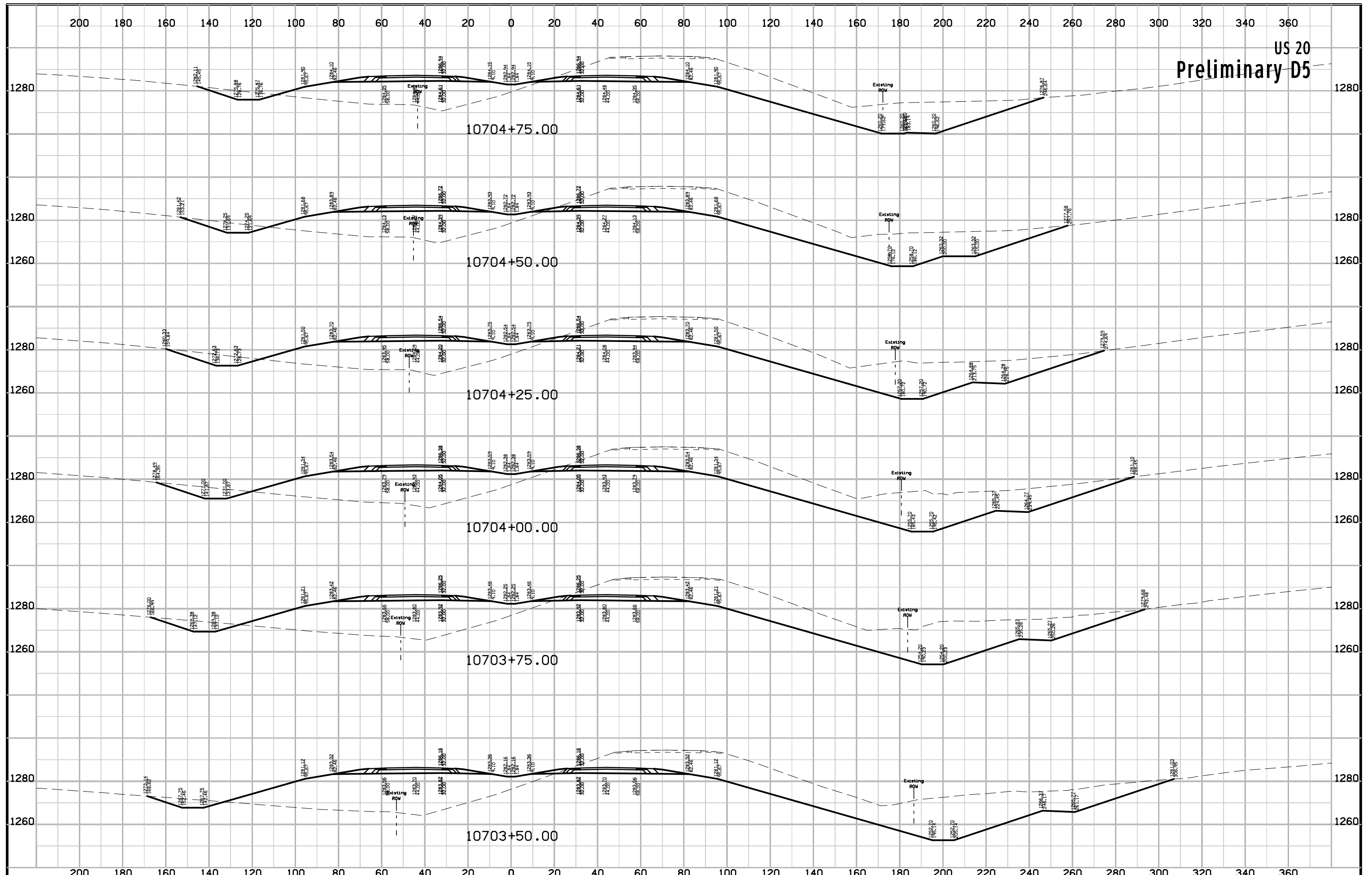


US 20  
Preliminary D5



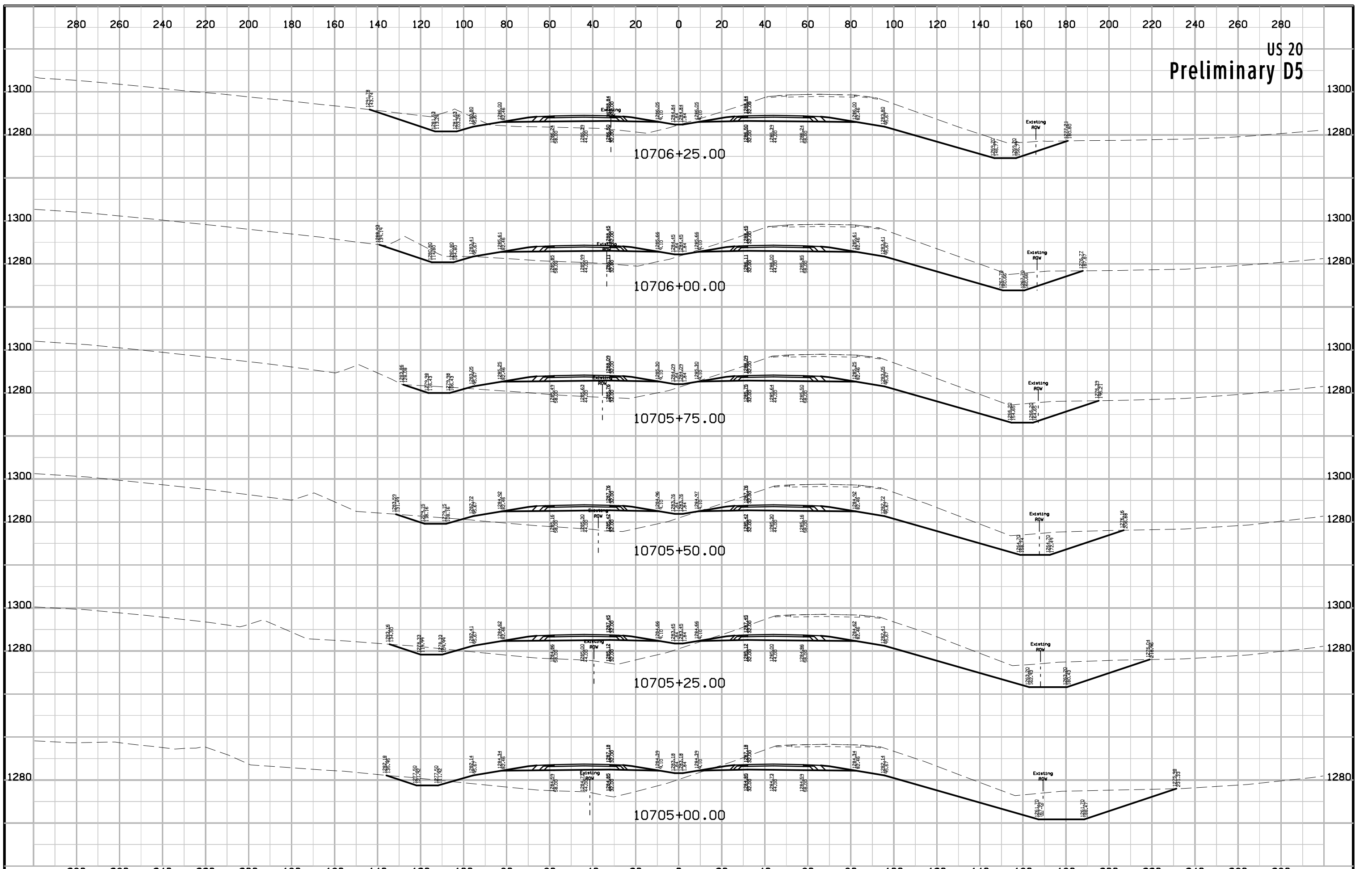
US 20  
Preliminary D5



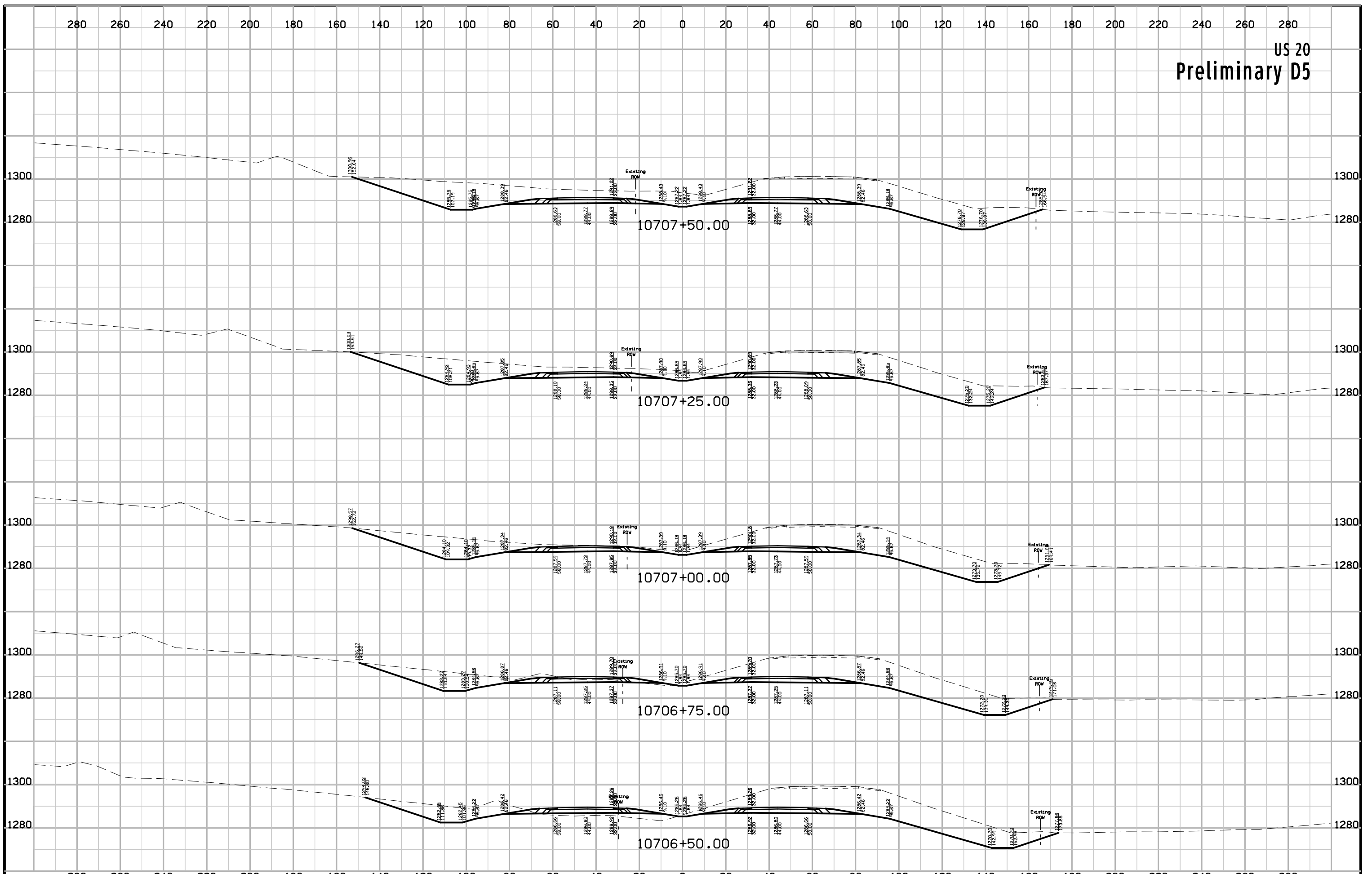


US 20  
Preliminary D5

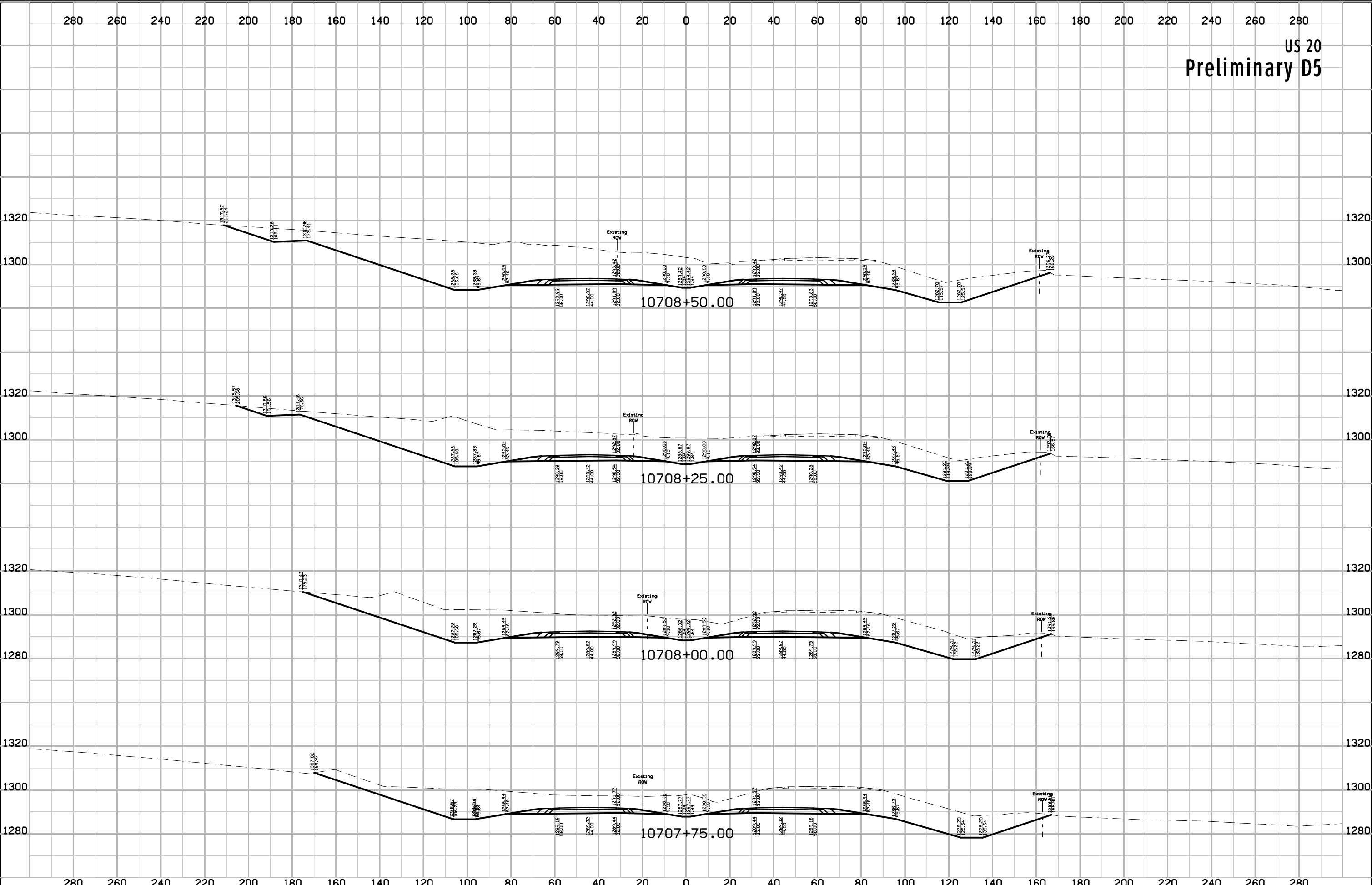
US 20  
Preliminary D5



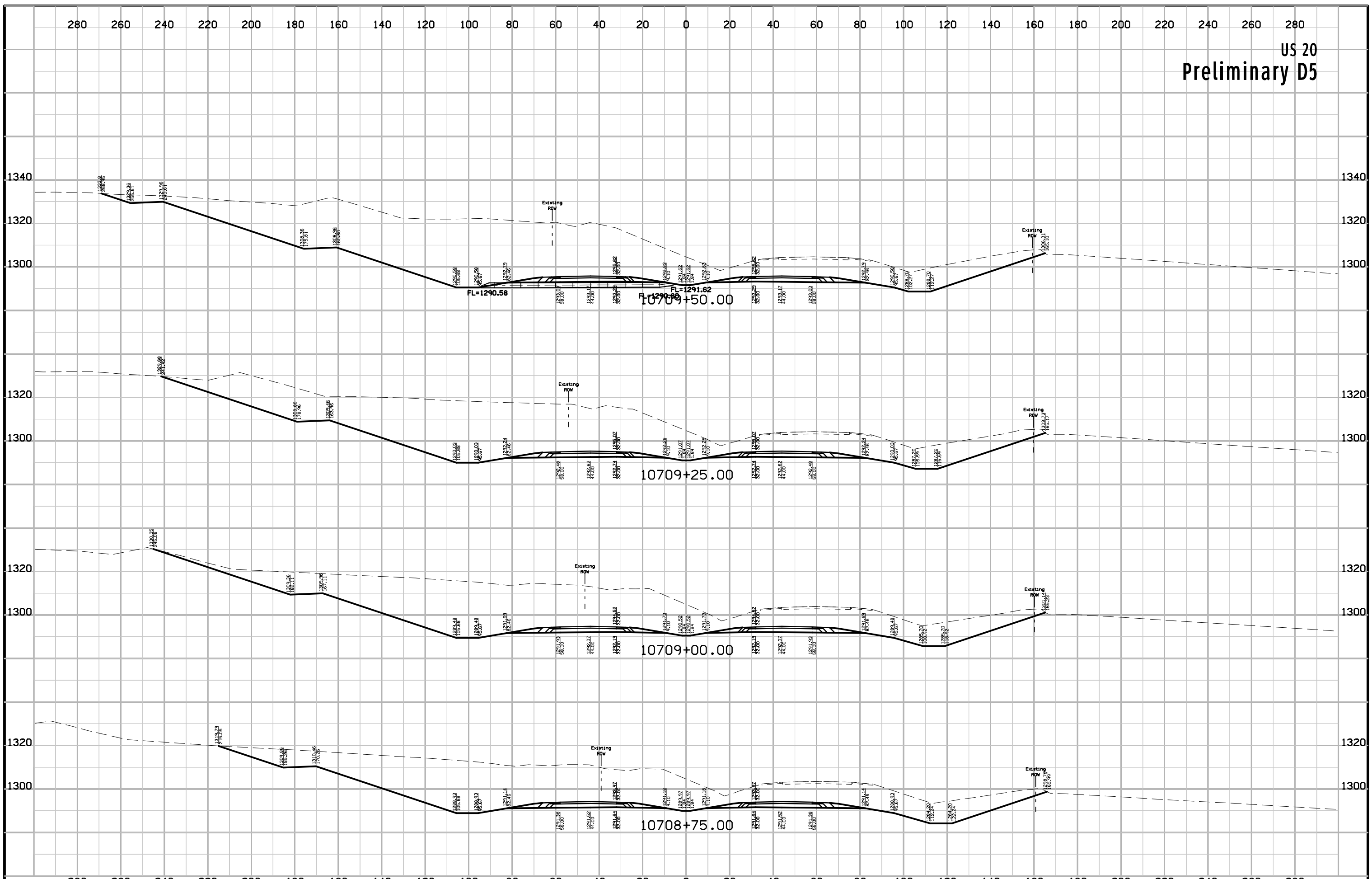
US 20  
Preliminary D5



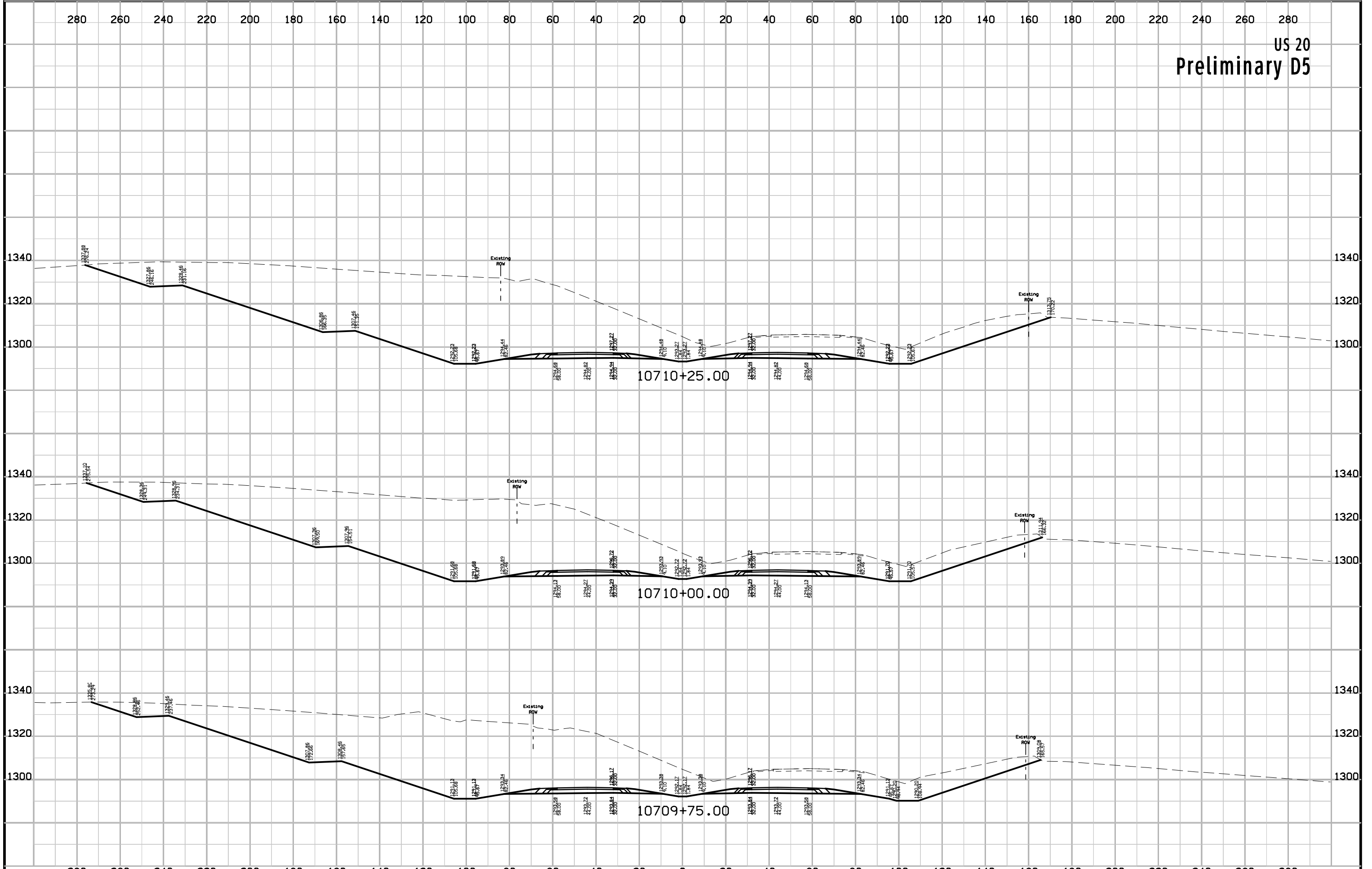
US 20  
Preliminary D5



US 20  
Preliminary D5

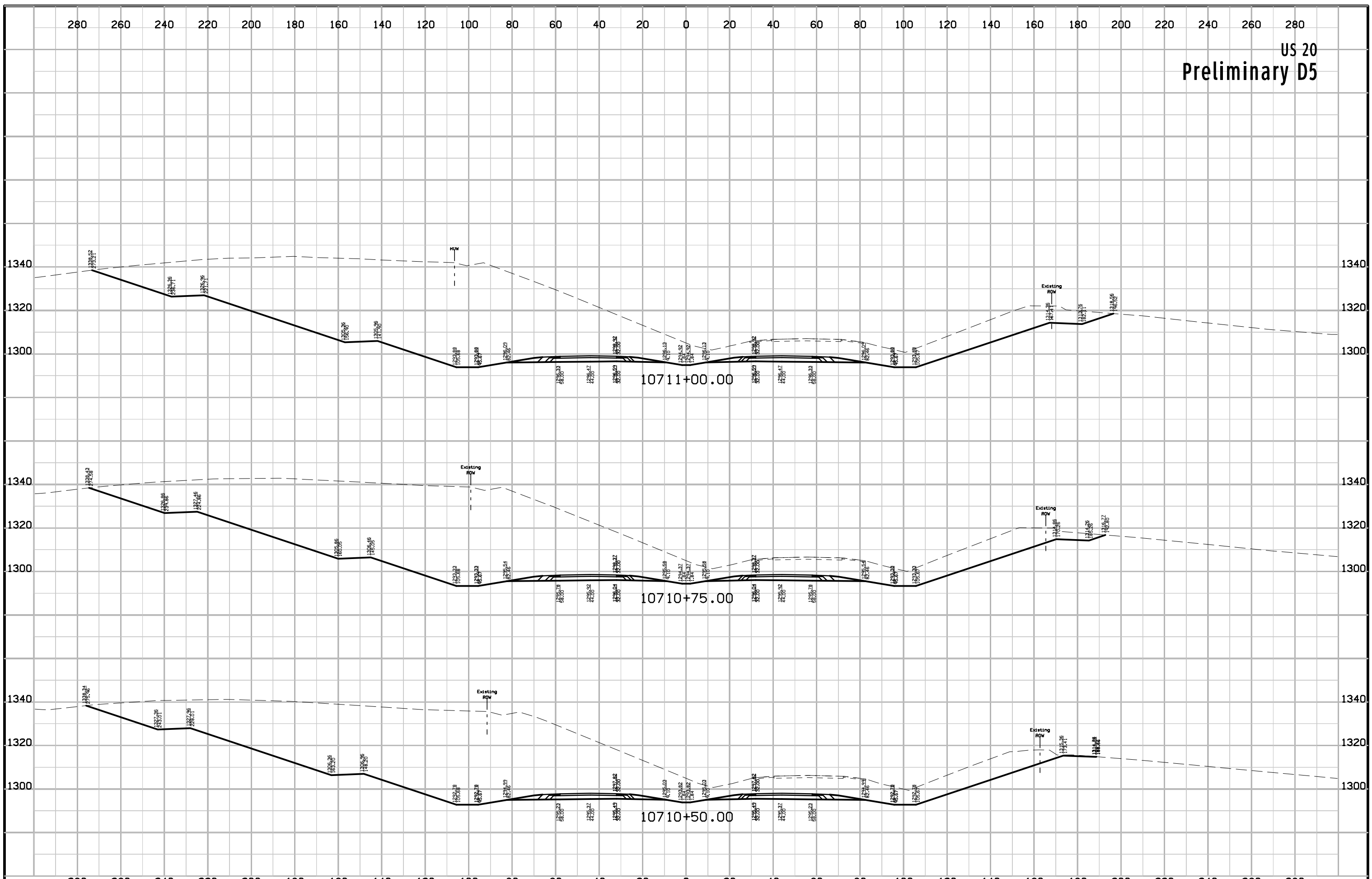


US 20  
Preliminary D5

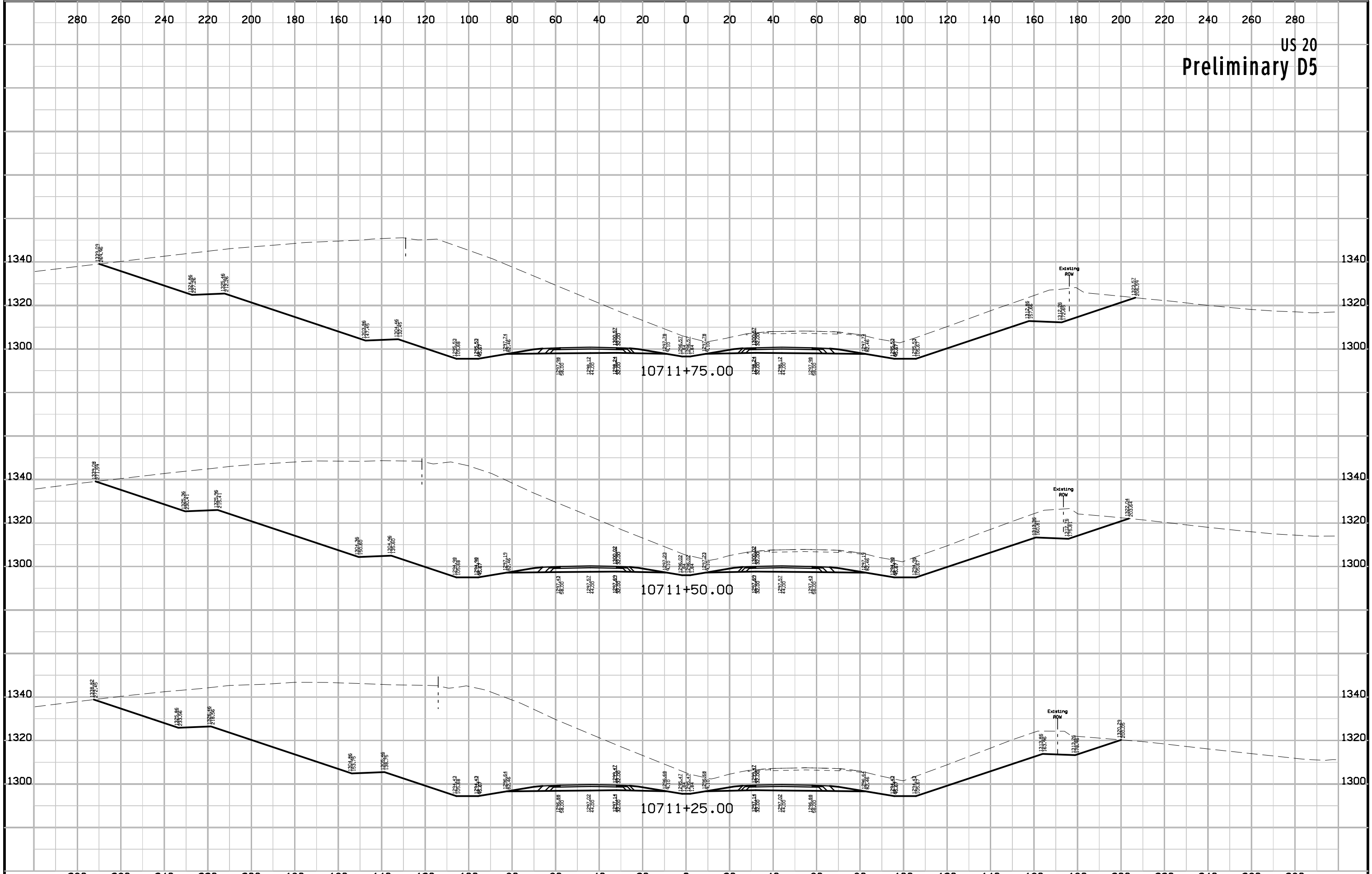




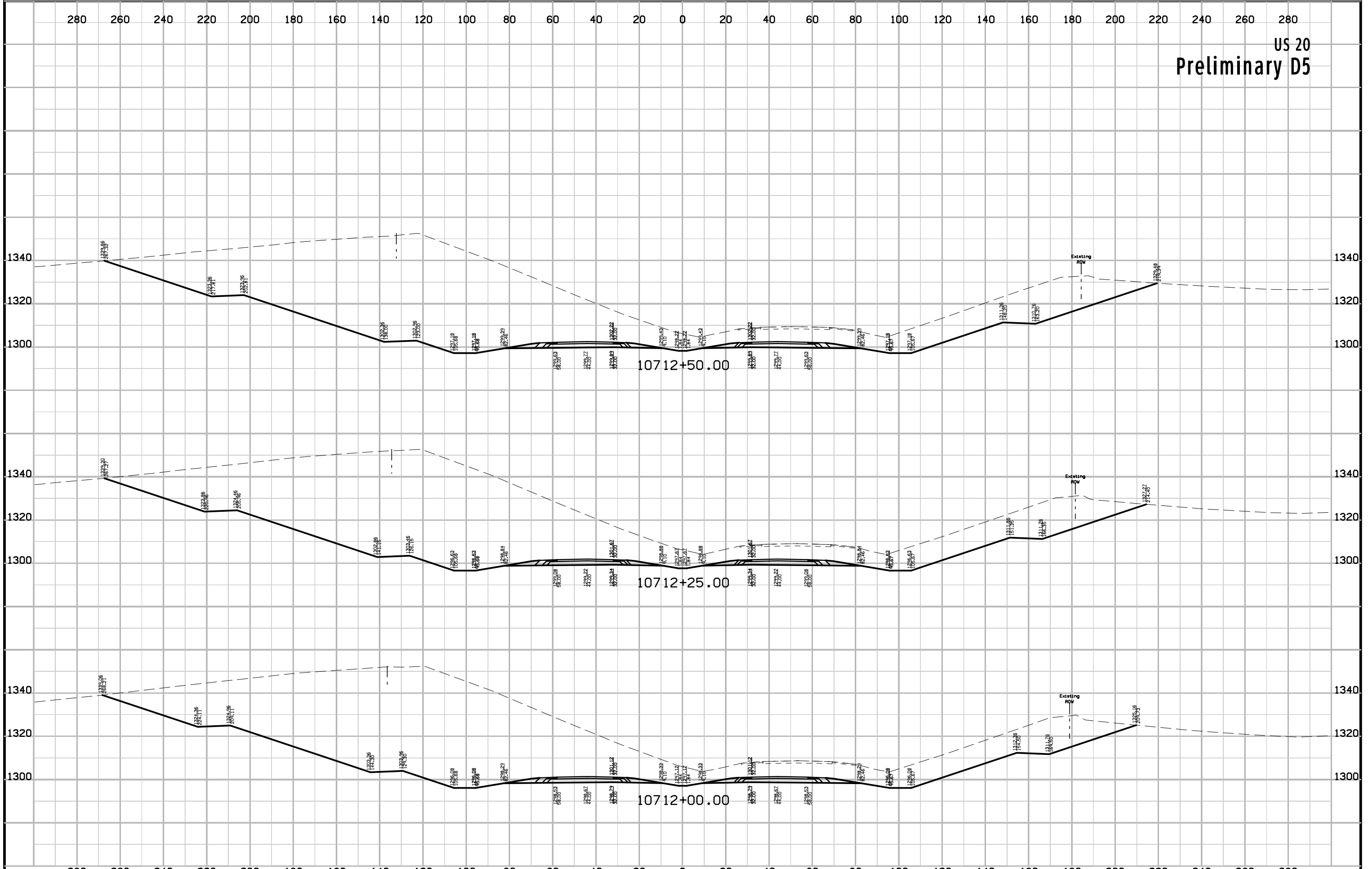
US 20  
Preliminary D5

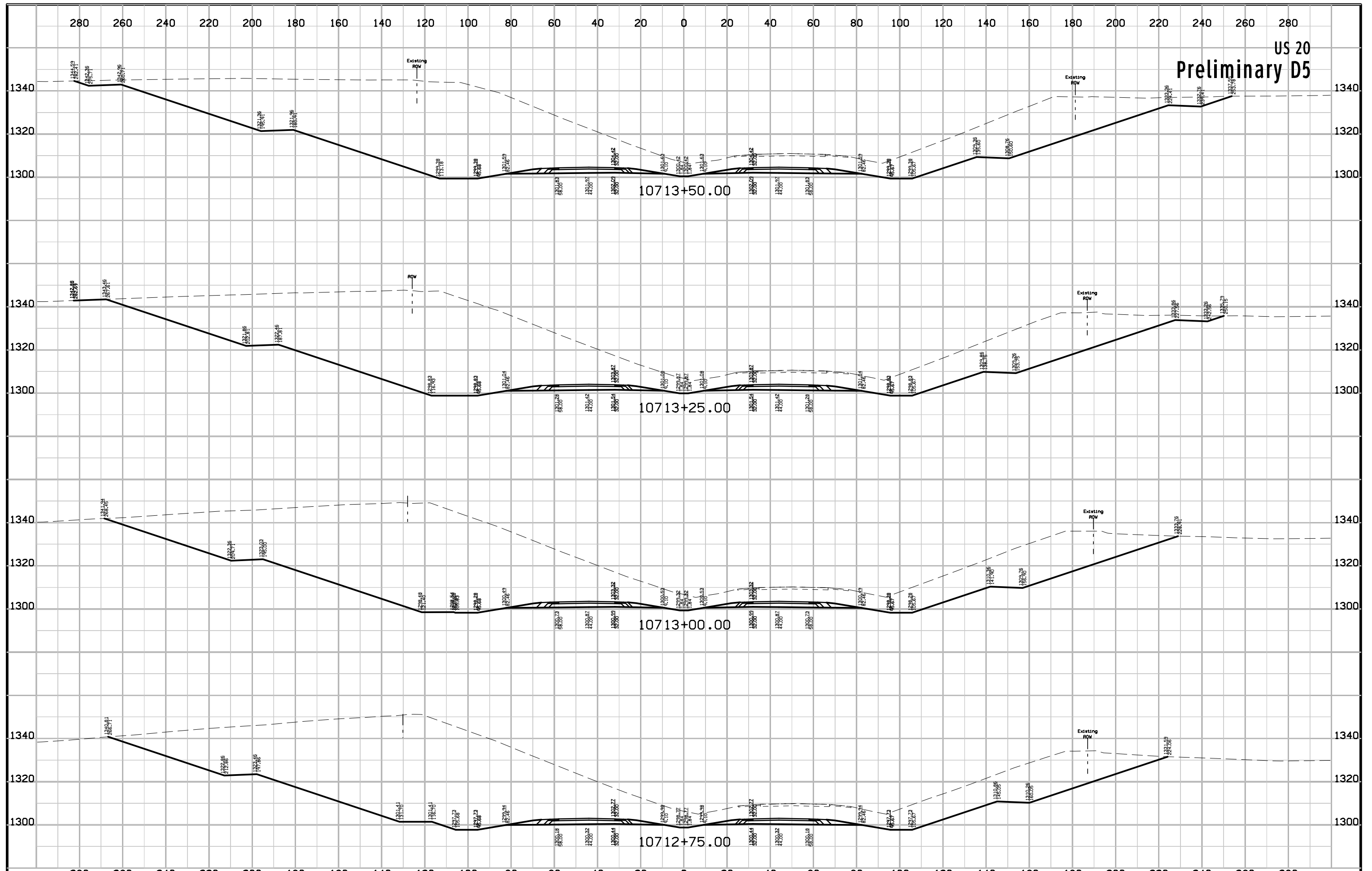


US 20  
Preliminary D5



US 20  
Preliminary D5

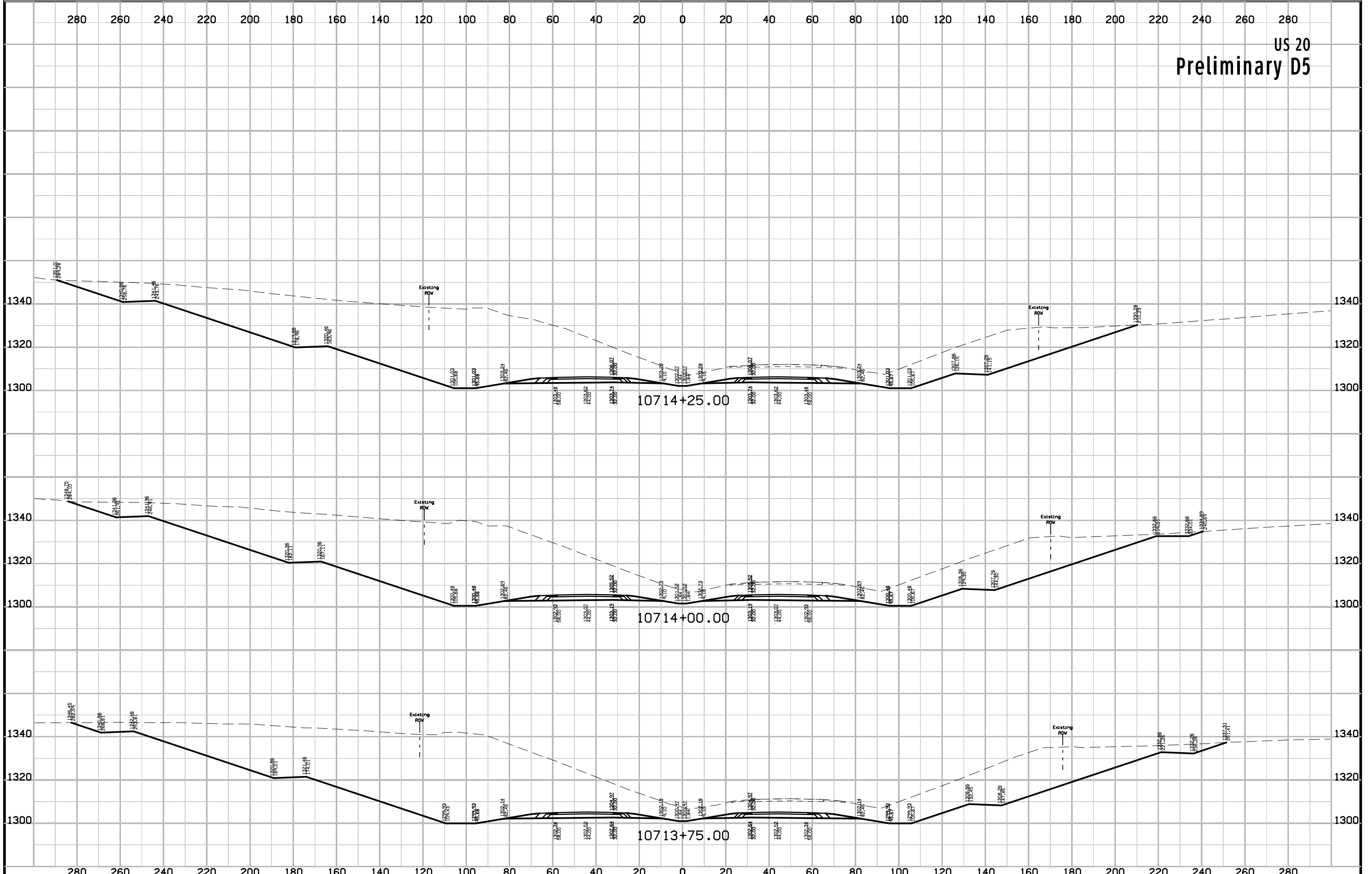




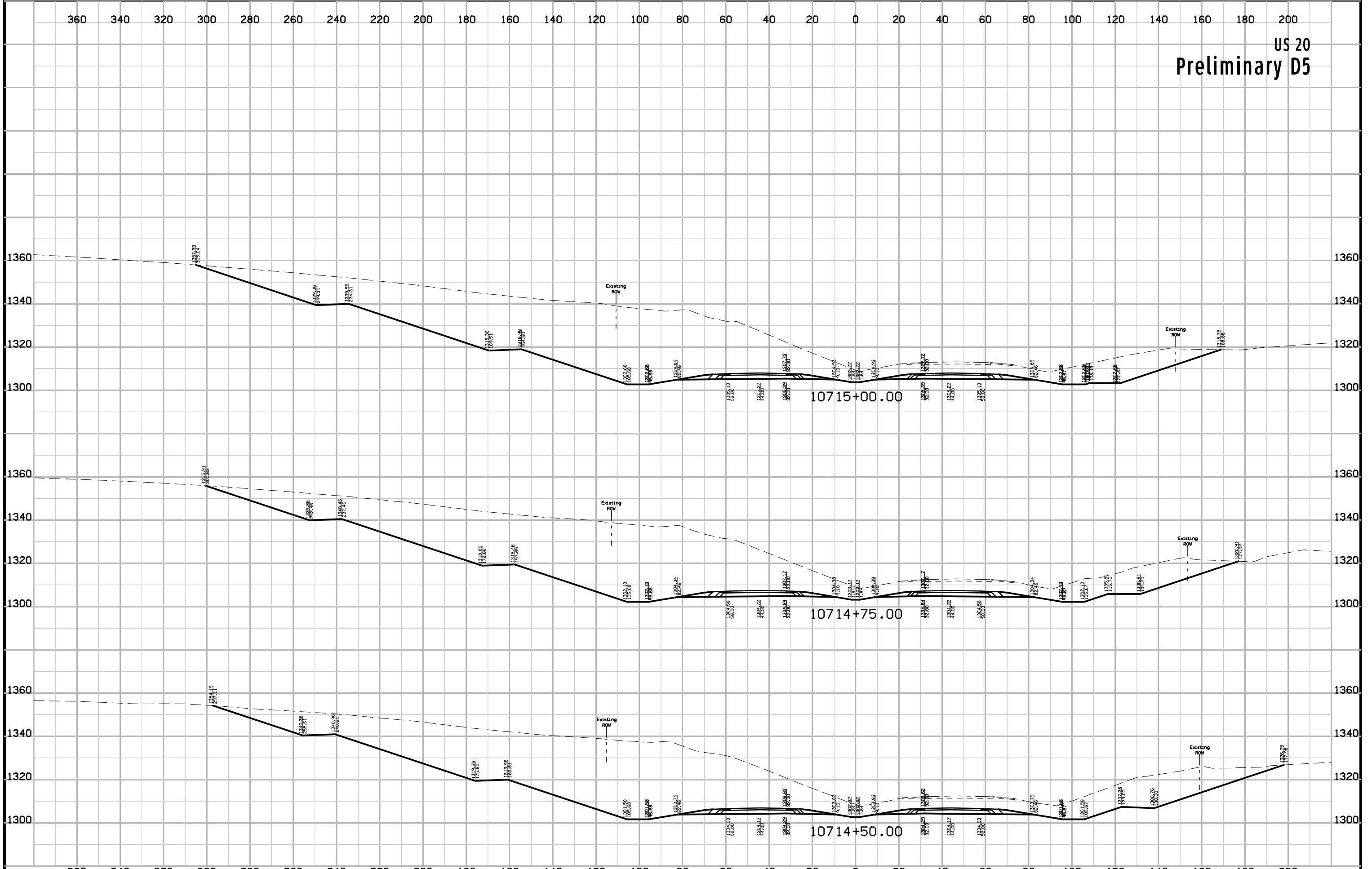
US 20  
Preliminary D5

FILE NO.	ENGLISH	DESIGN TEAM	WOODBURY COUNTY	PROJECT NUMBER	SHEET NUMBER
		Flattery\Johnson		NHSX-020-1(133)--3H-97	W.89

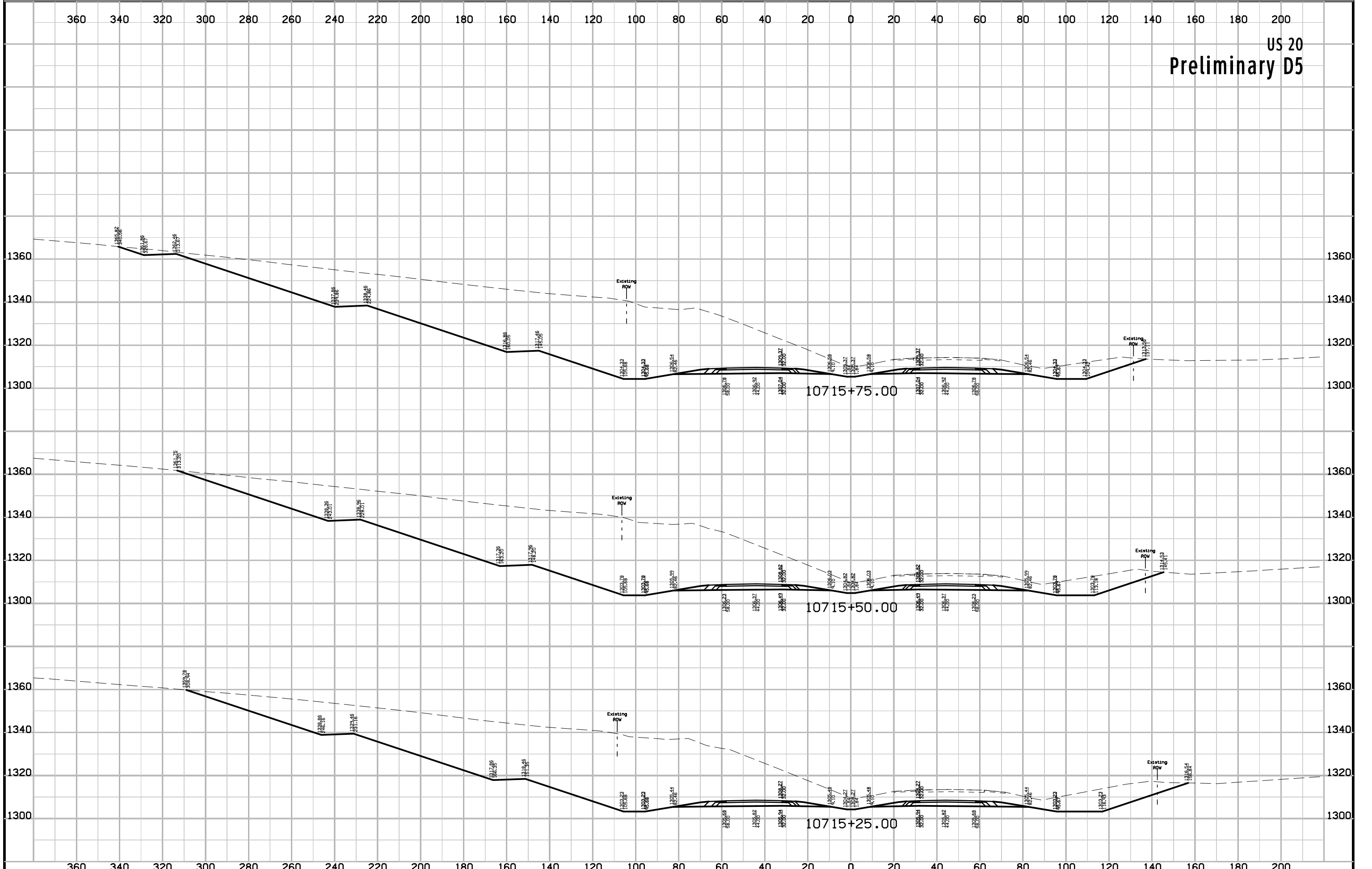
US 20  
Preliminary D5



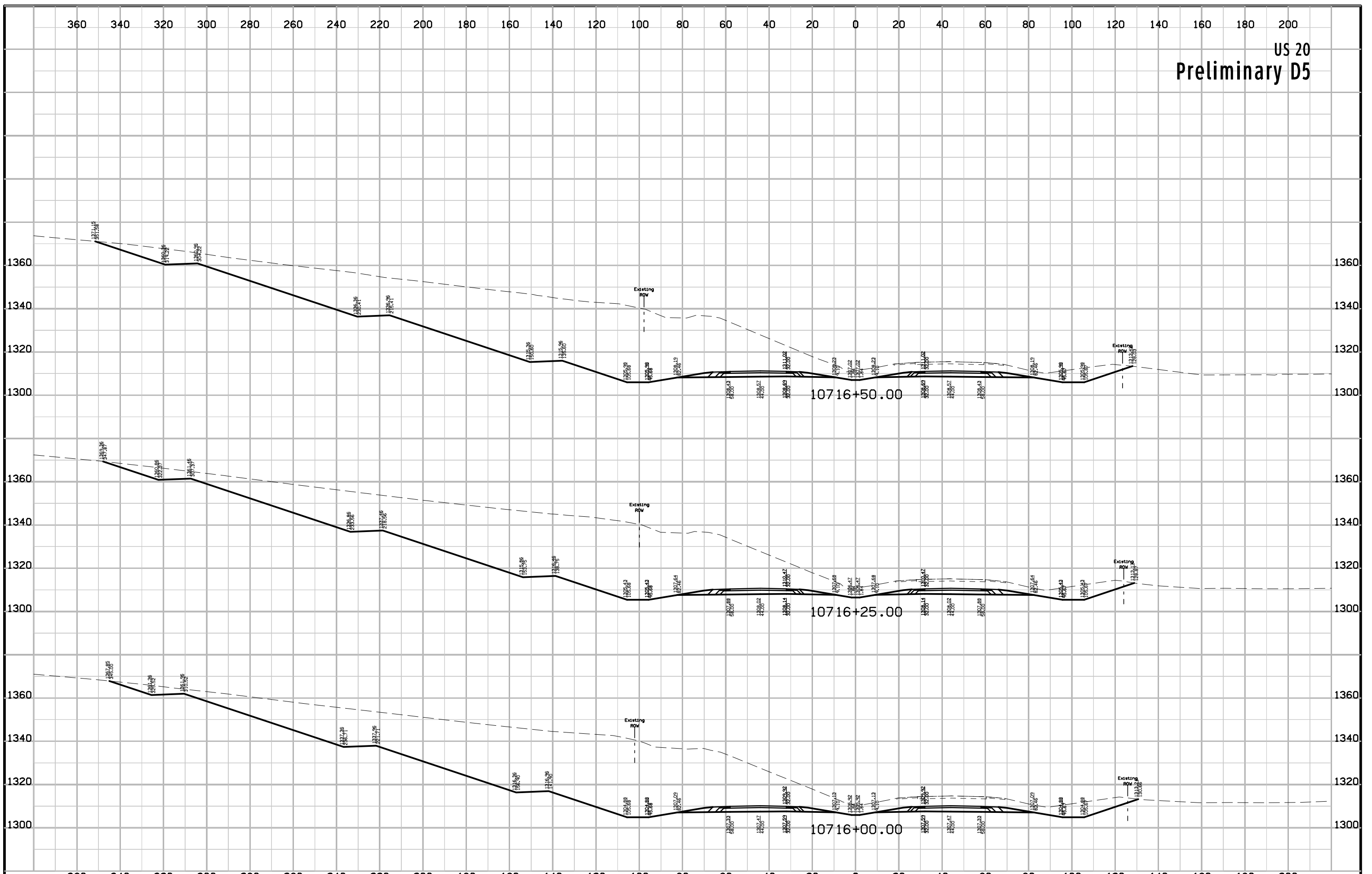
US 20  
Preliminary D5



US 20  
Preliminary D5

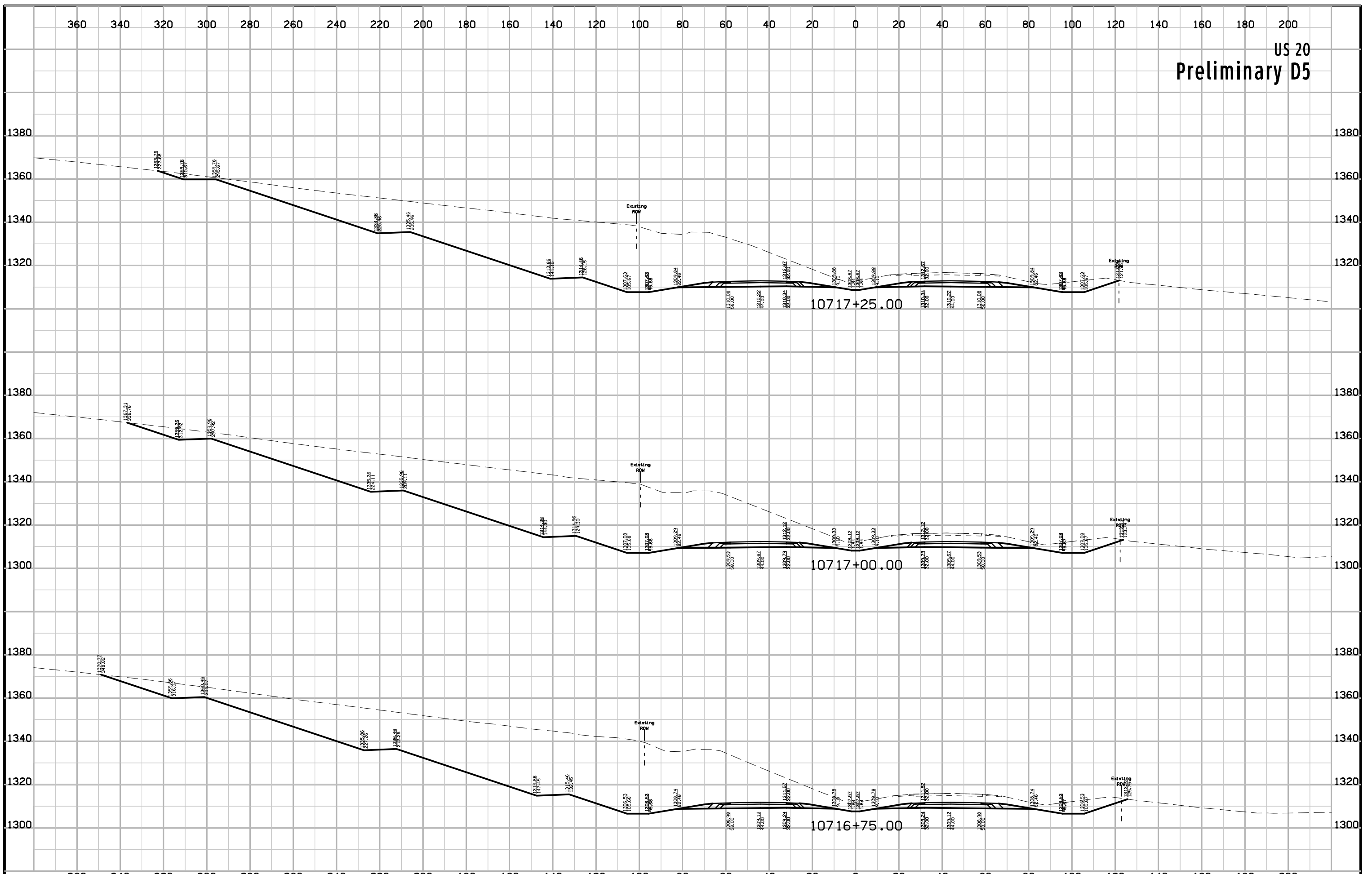


US 20  
Preliminary D5

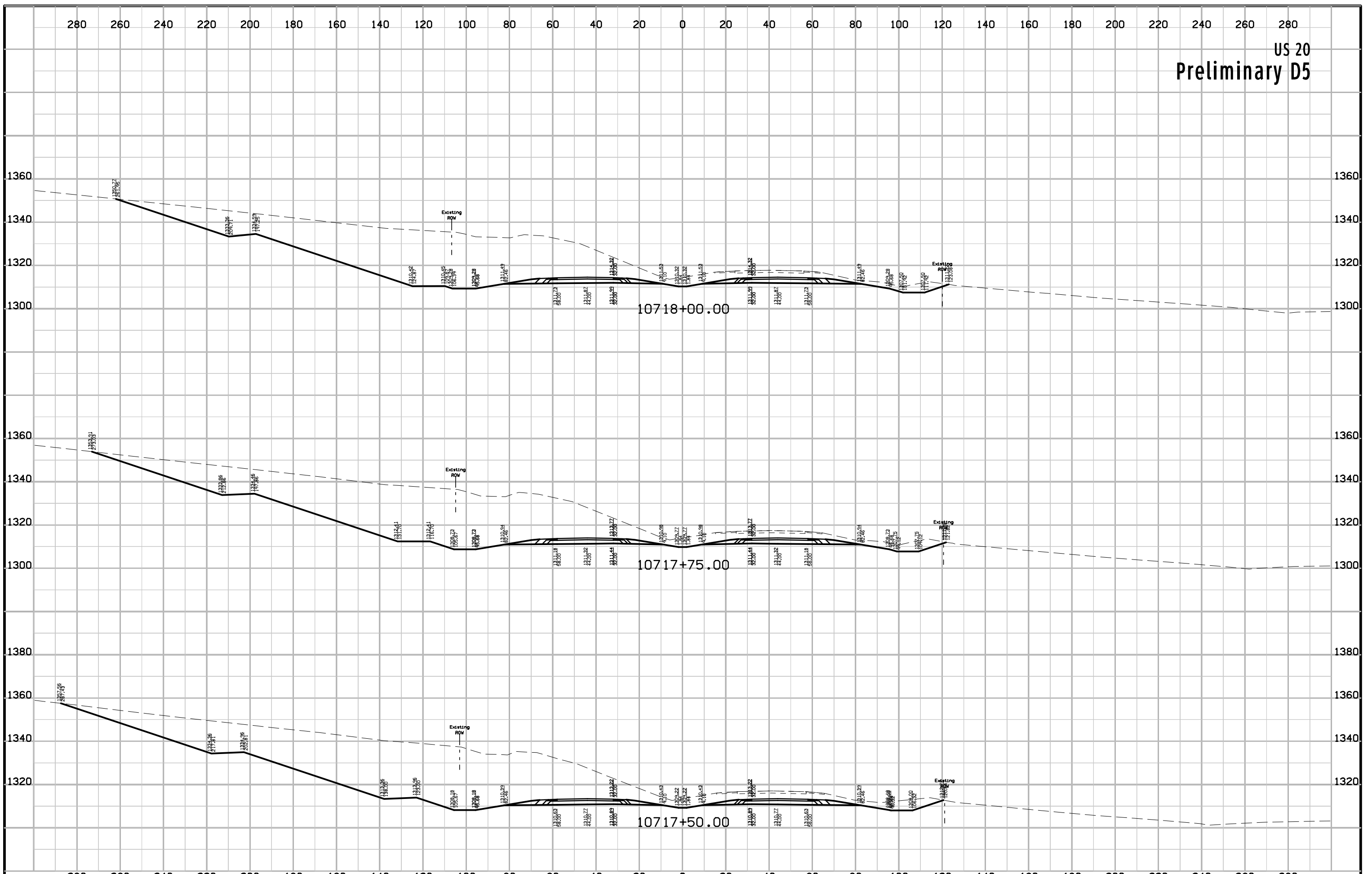




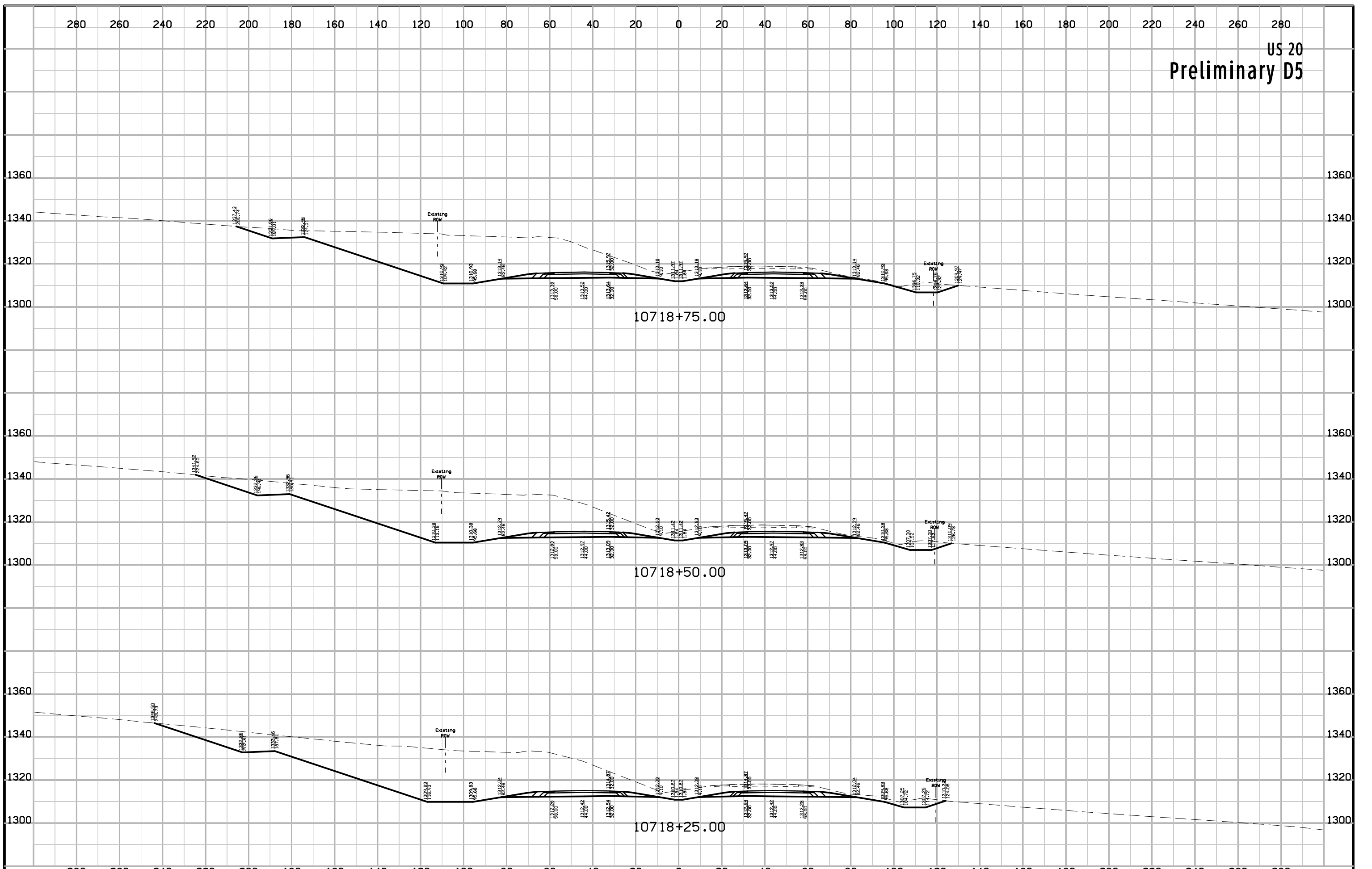
US 20  
Preliminary D5



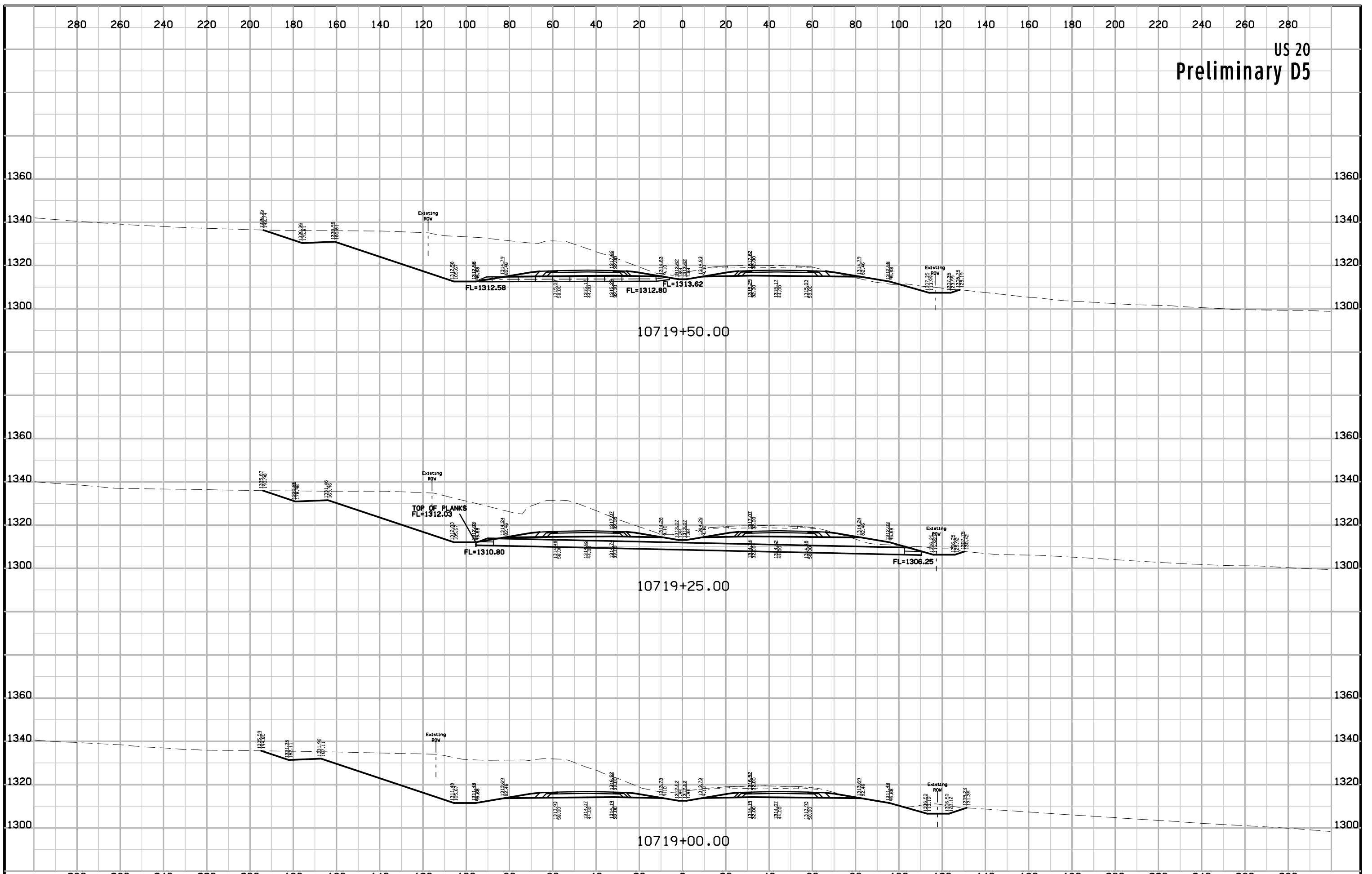
US 20  
Preliminary D5



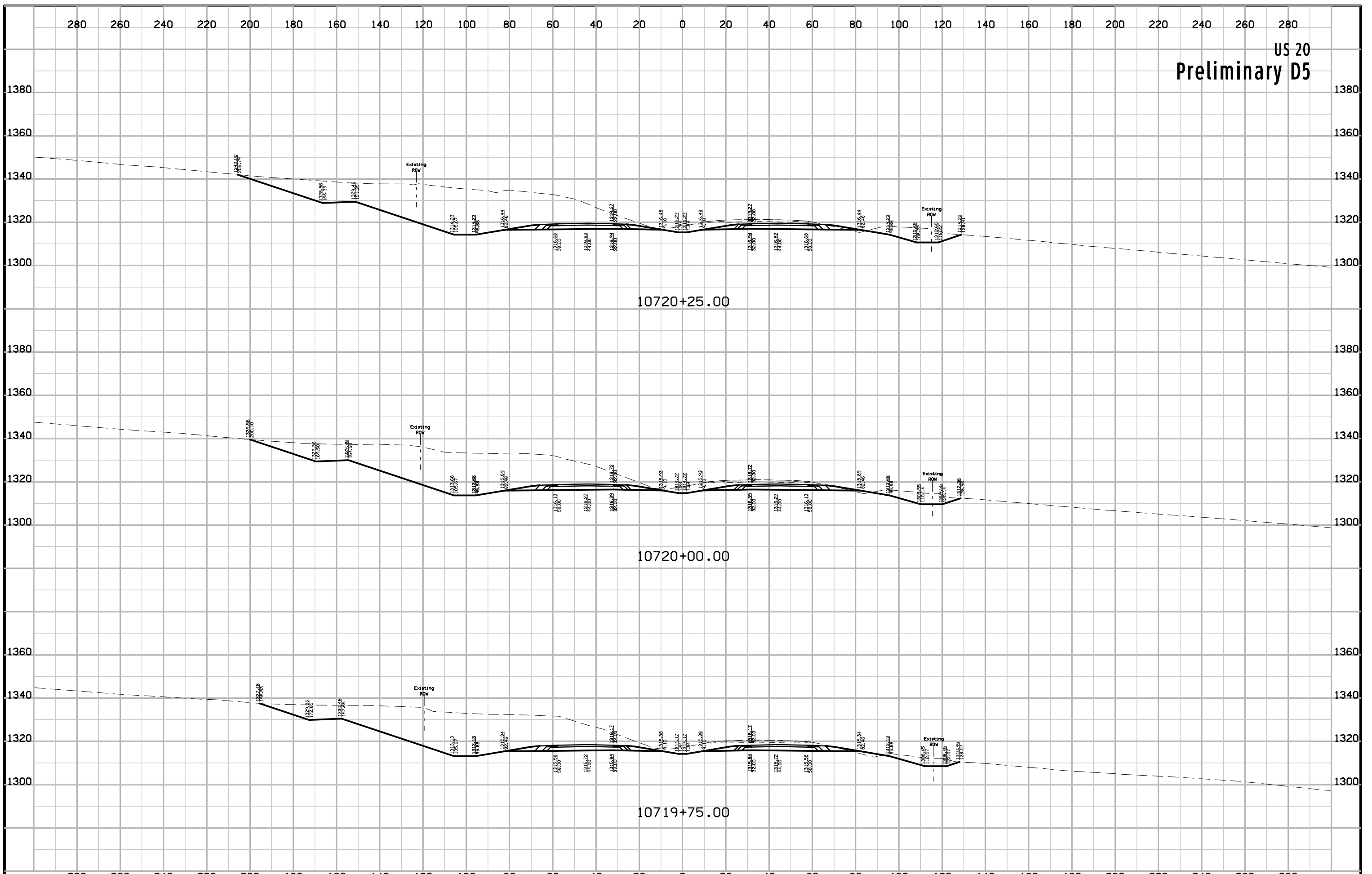
US 20  
Preliminary D5



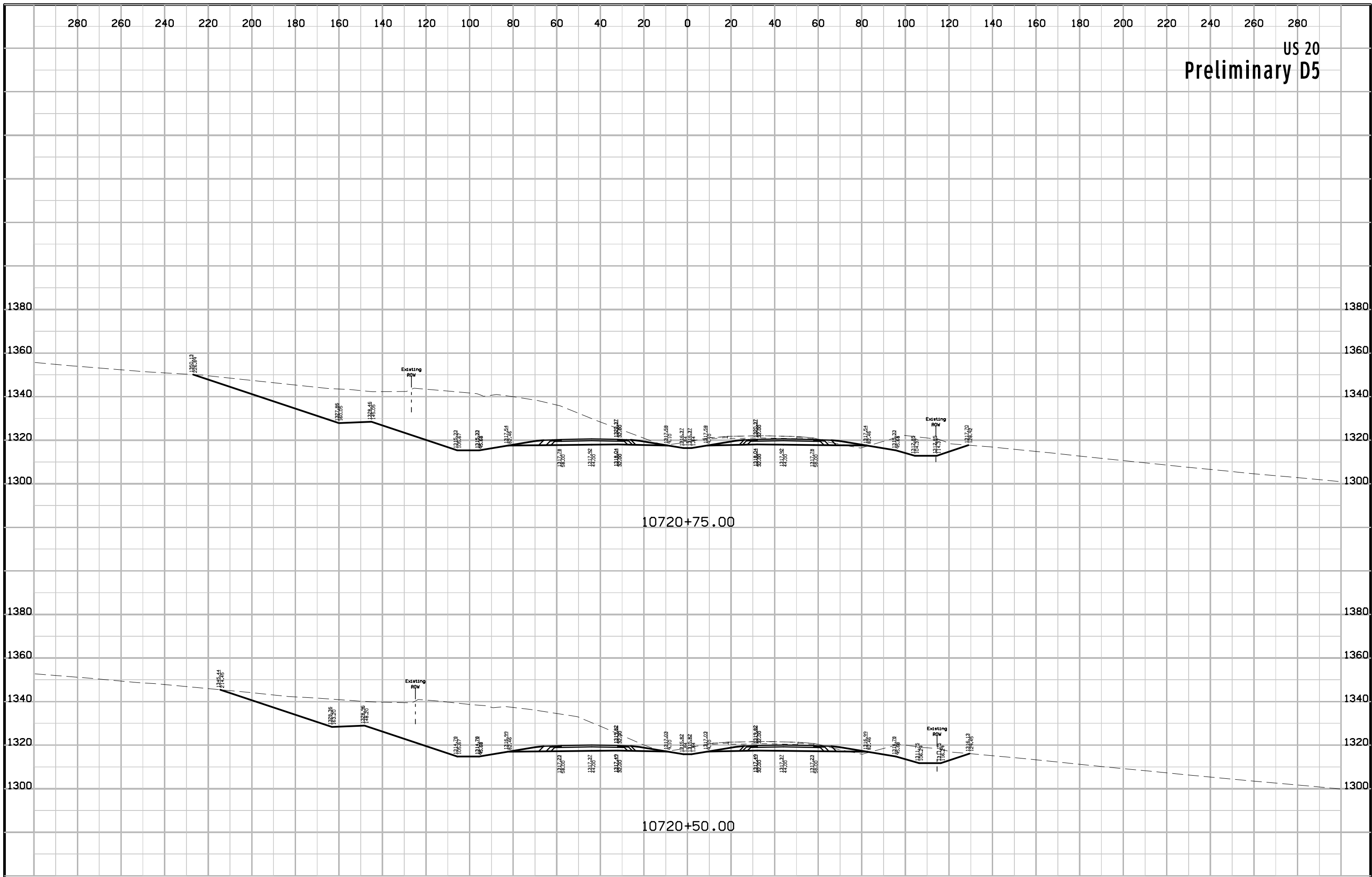
US 20  
Preliminary D5



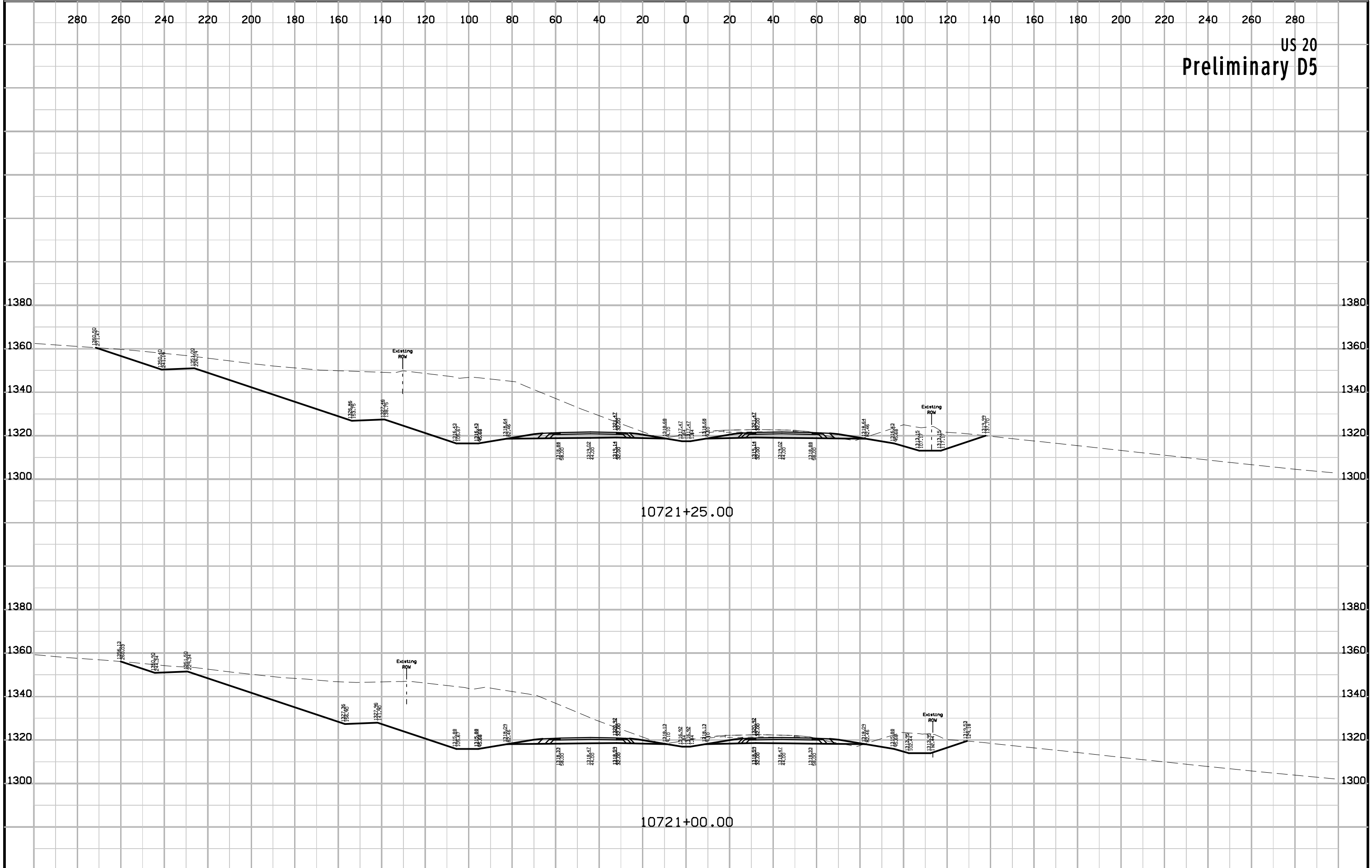
US 20  
Preliminary D5



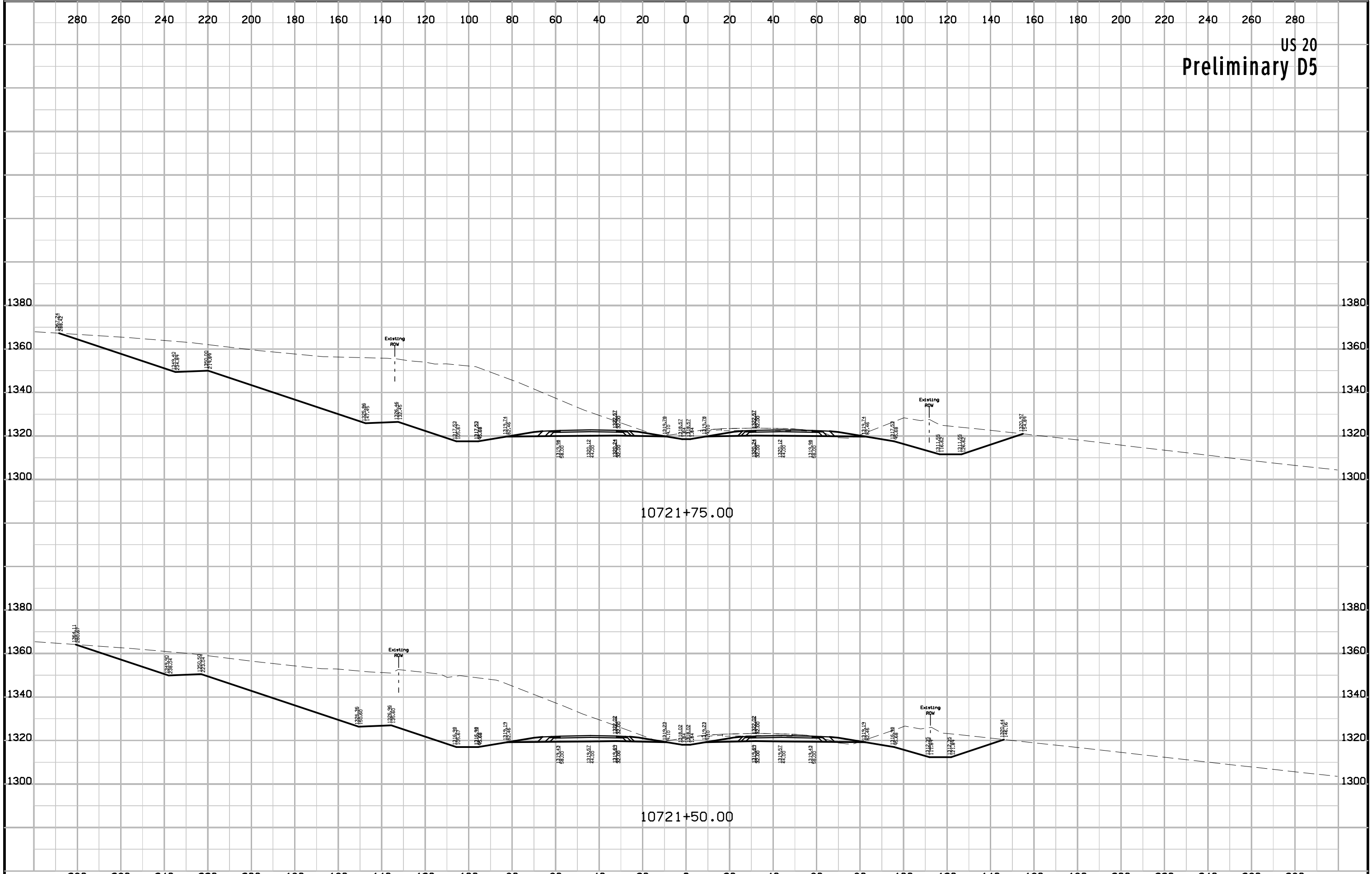
US 20  
Preliminary D5



US 20  
Preliminary D5

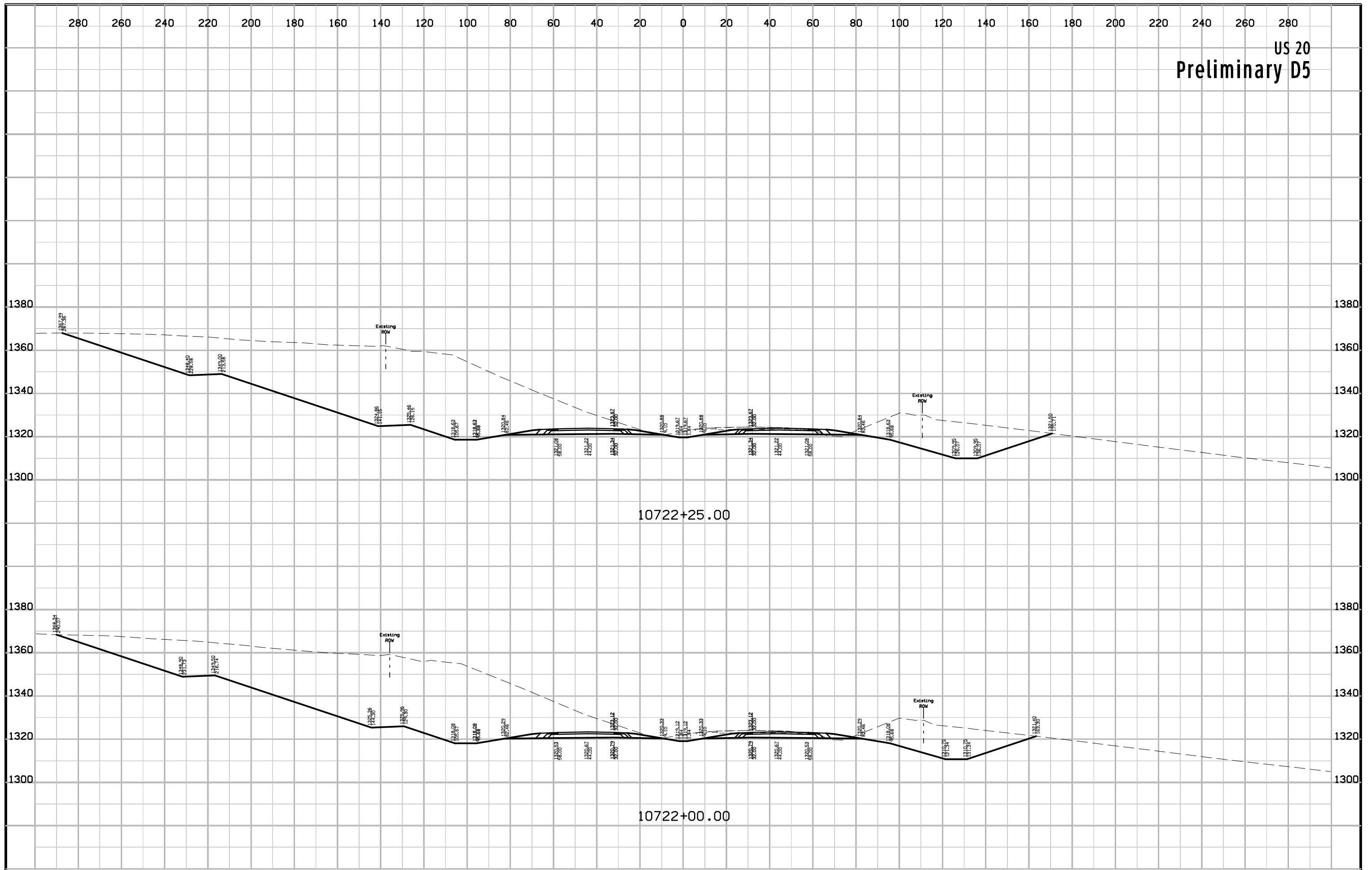


US 20  
Preliminary D5

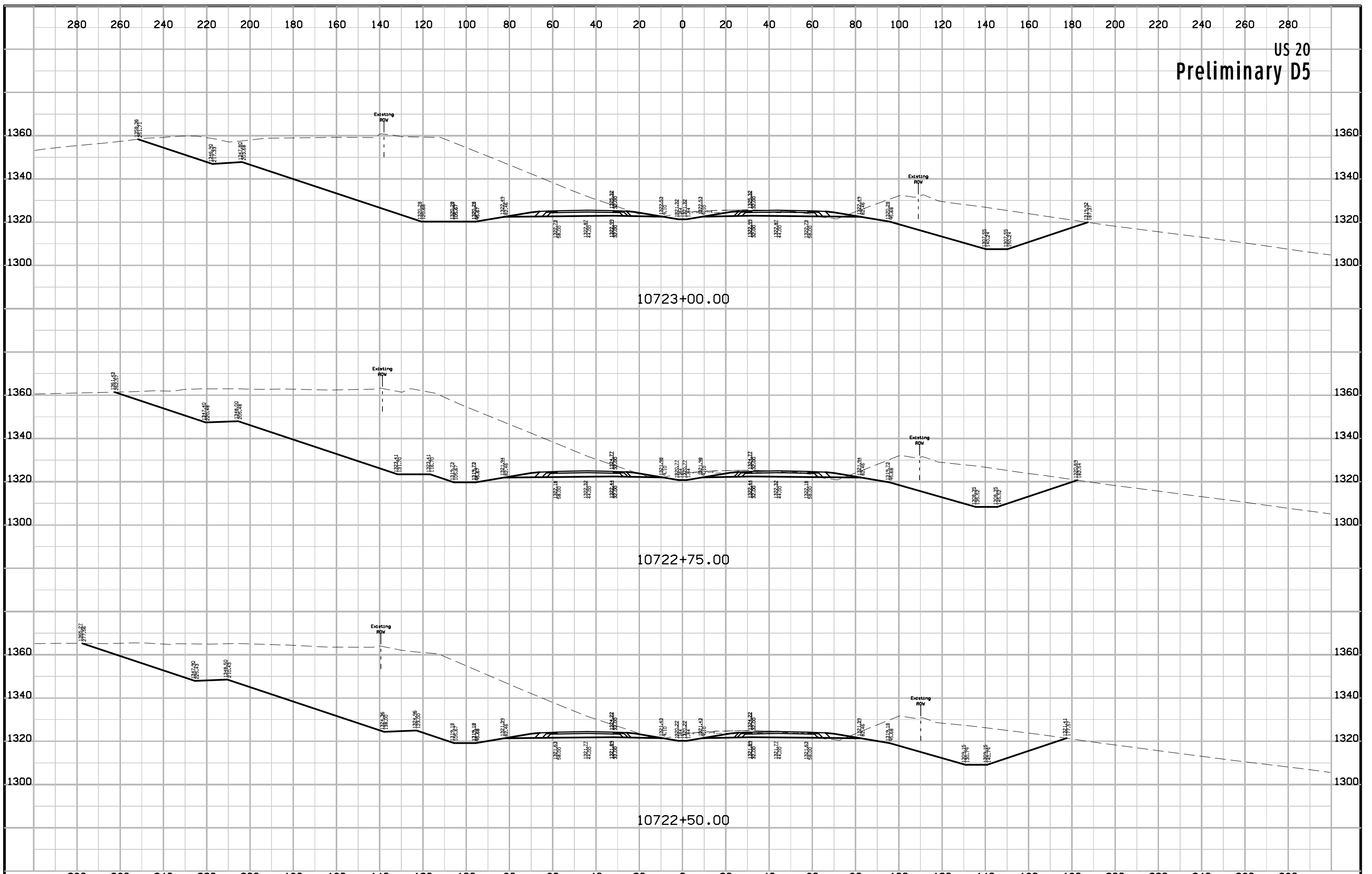




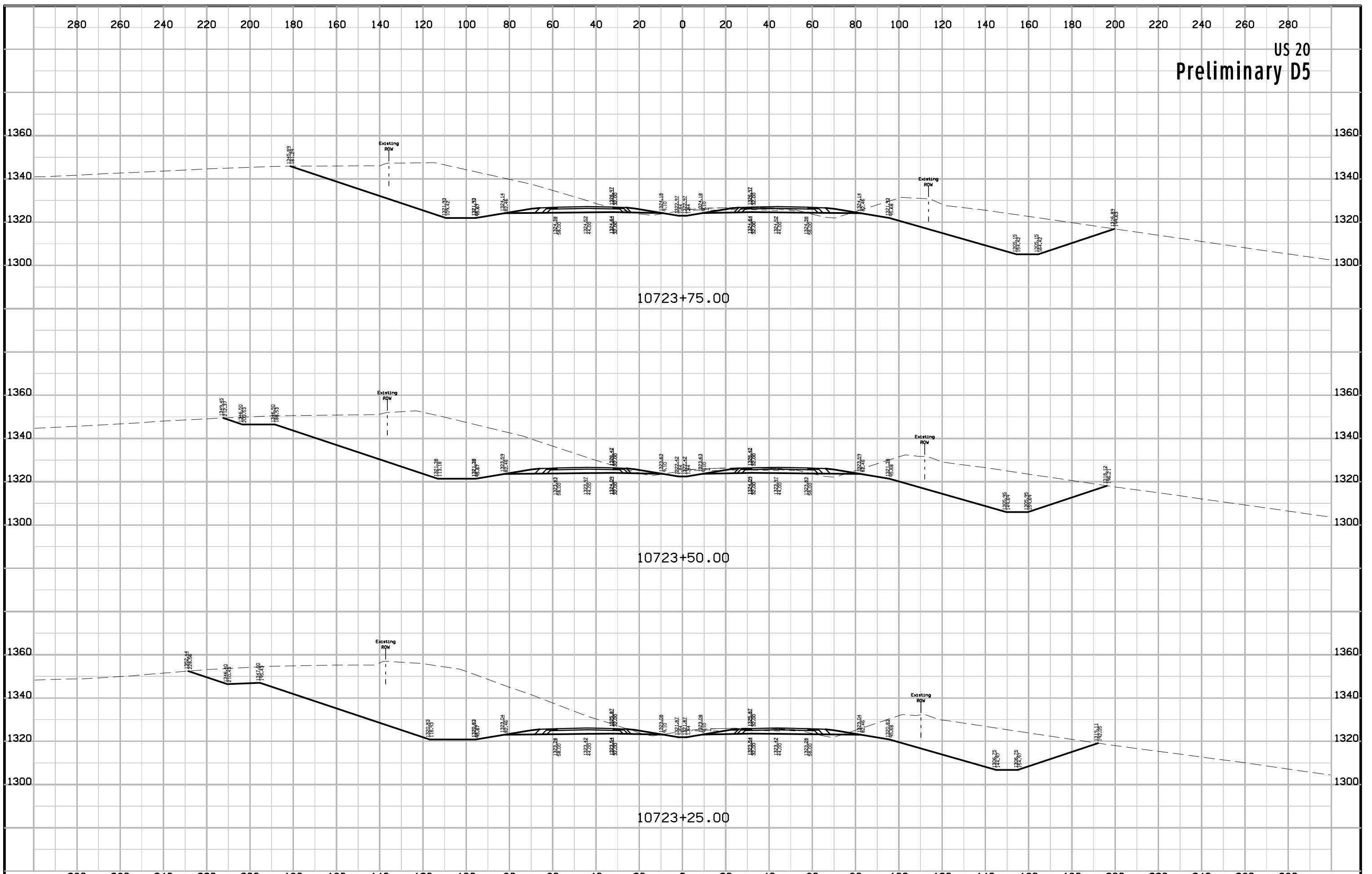
US 20  
Preliminary D5



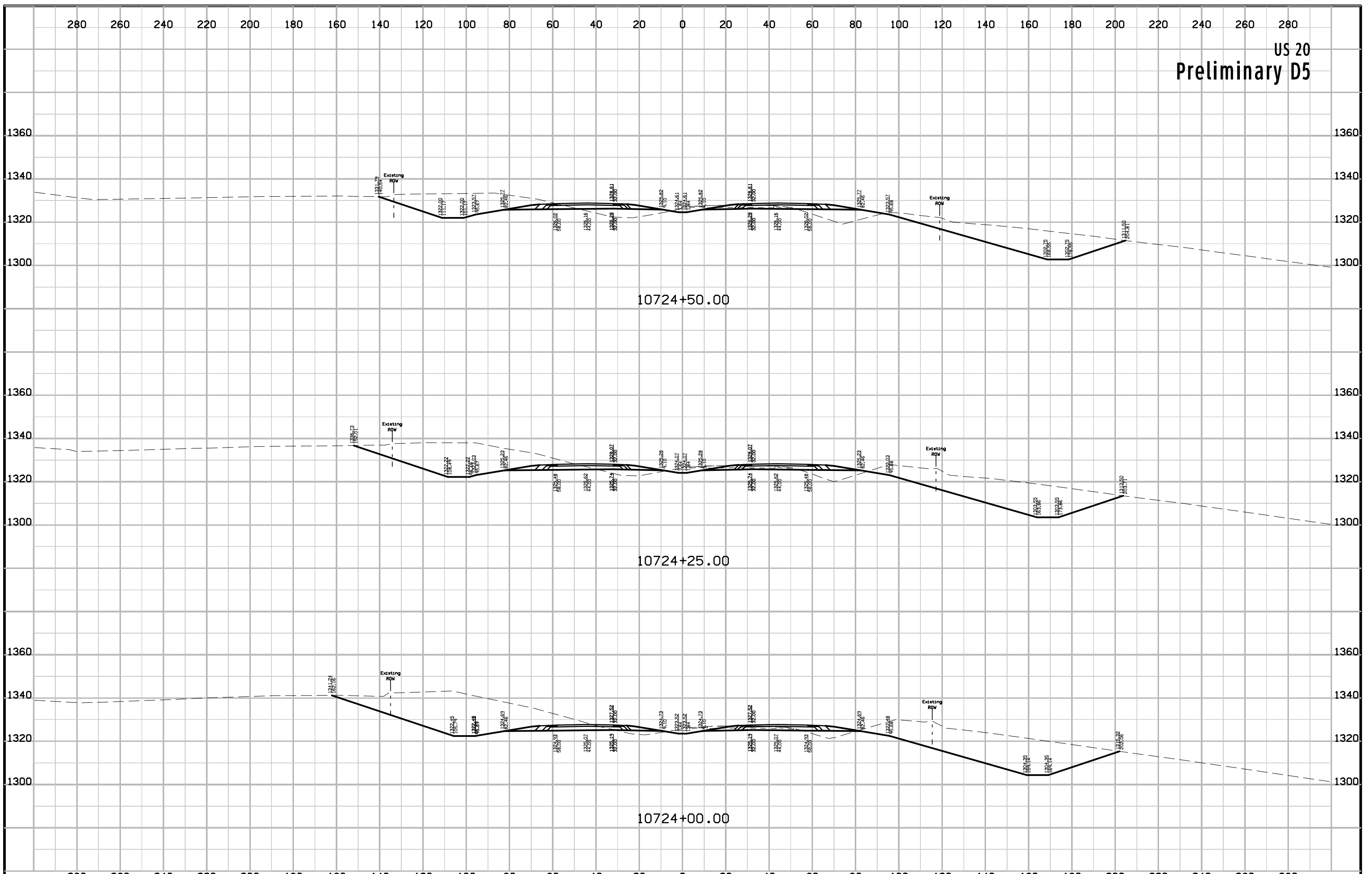
US 20  
Preliminary D5



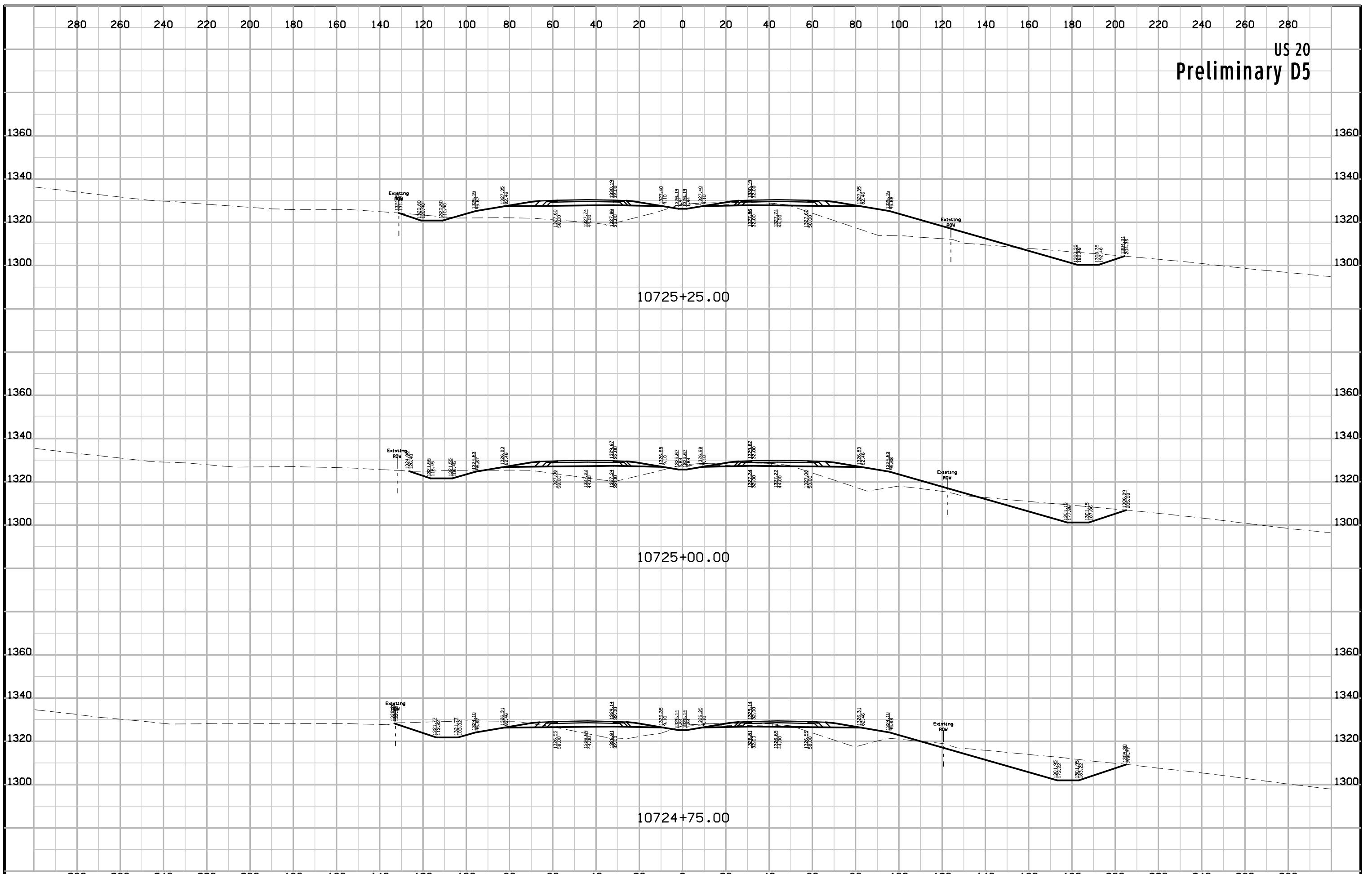
US 20  
Preliminary D5



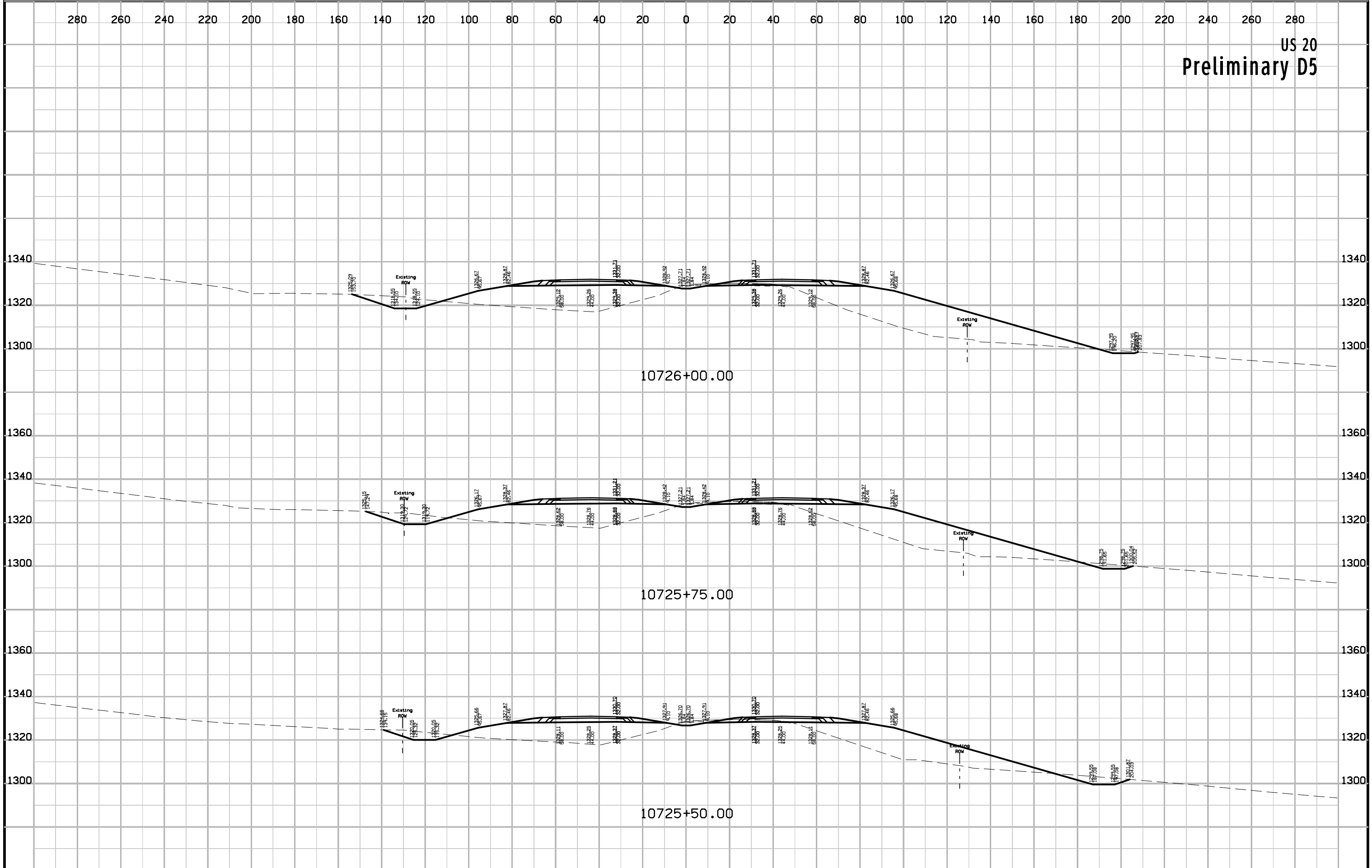
US 20  
Preliminary D5



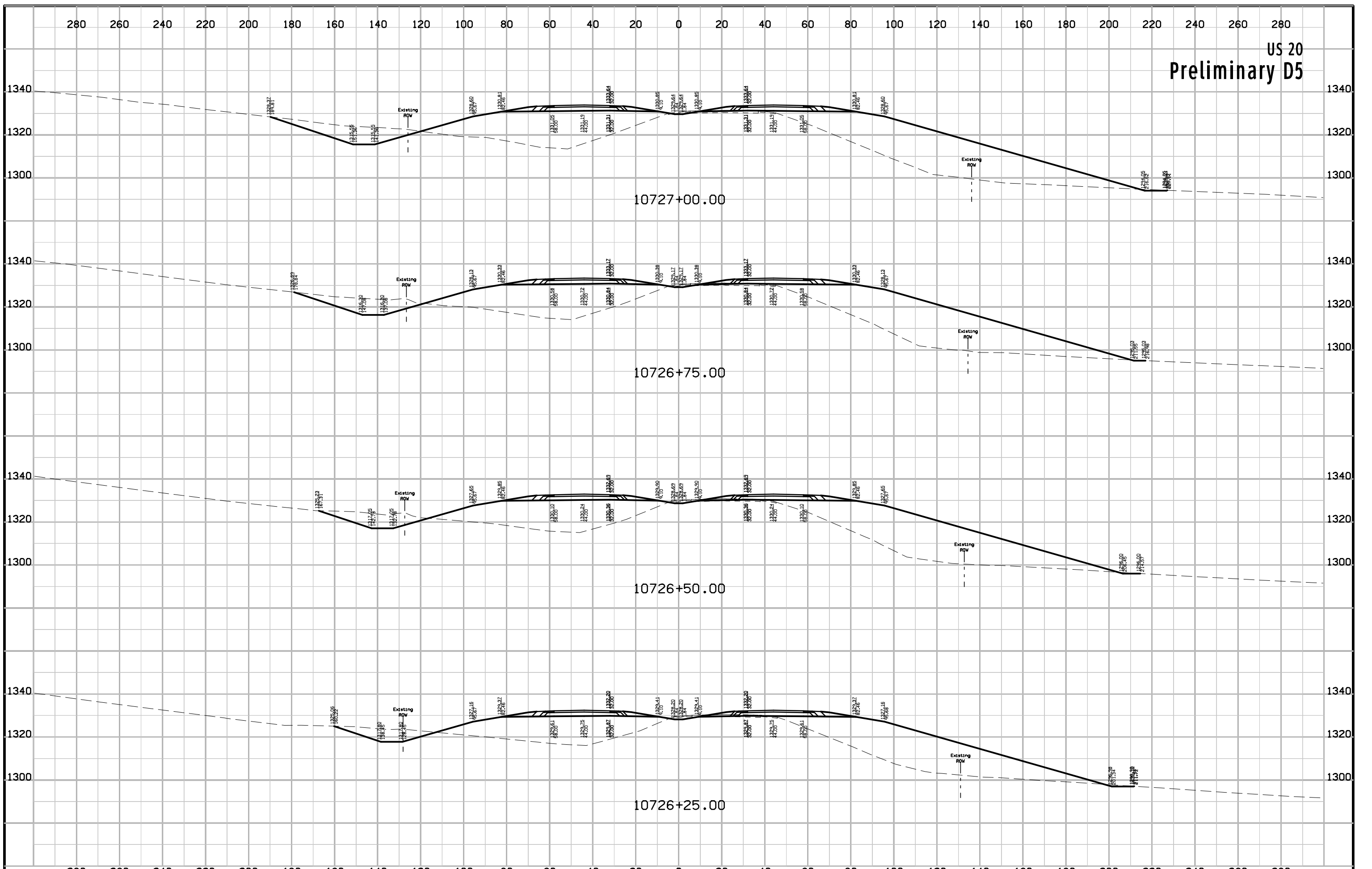
US 20  
Preliminary D5



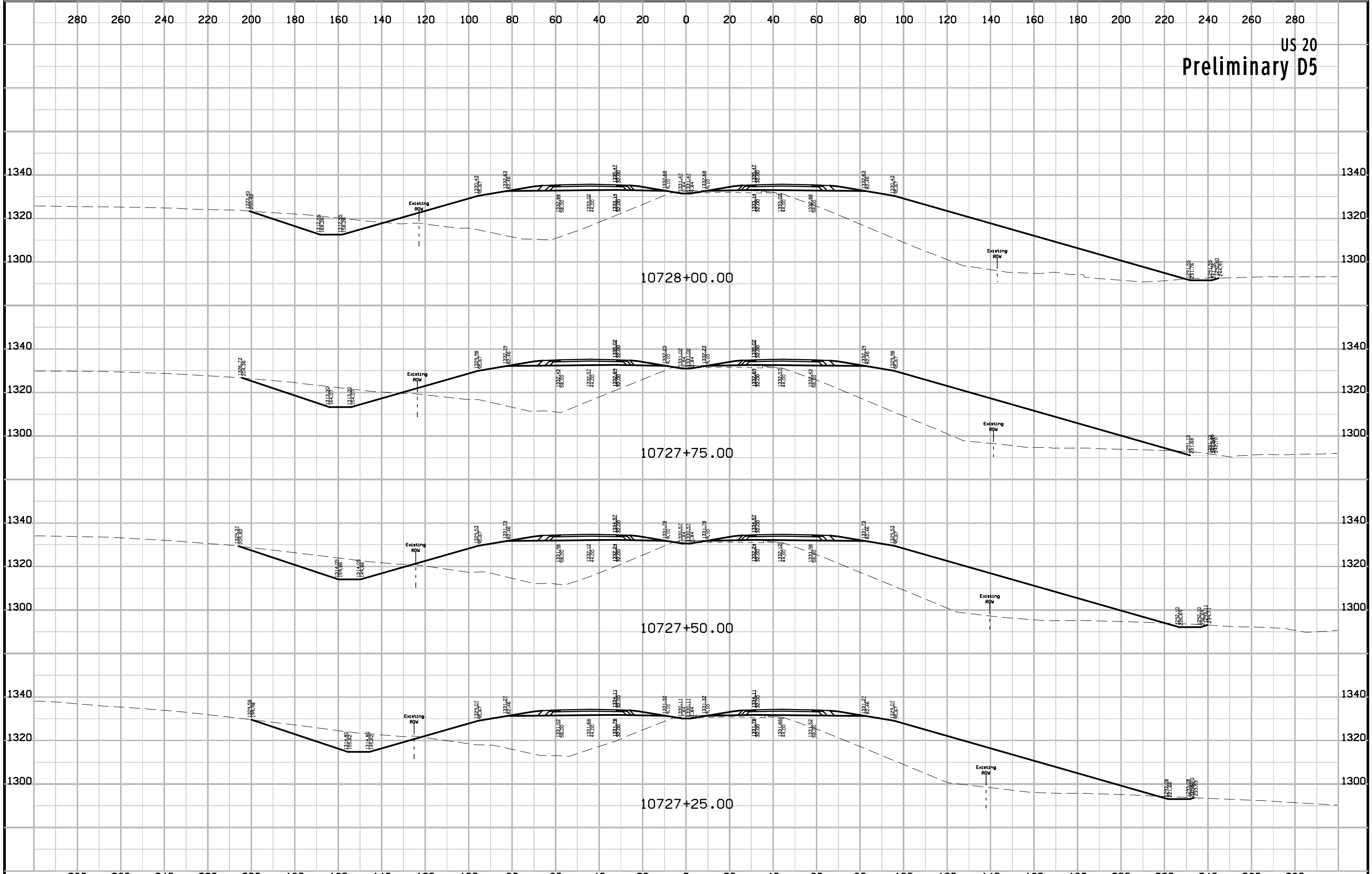
US 20  
Preliminary D5



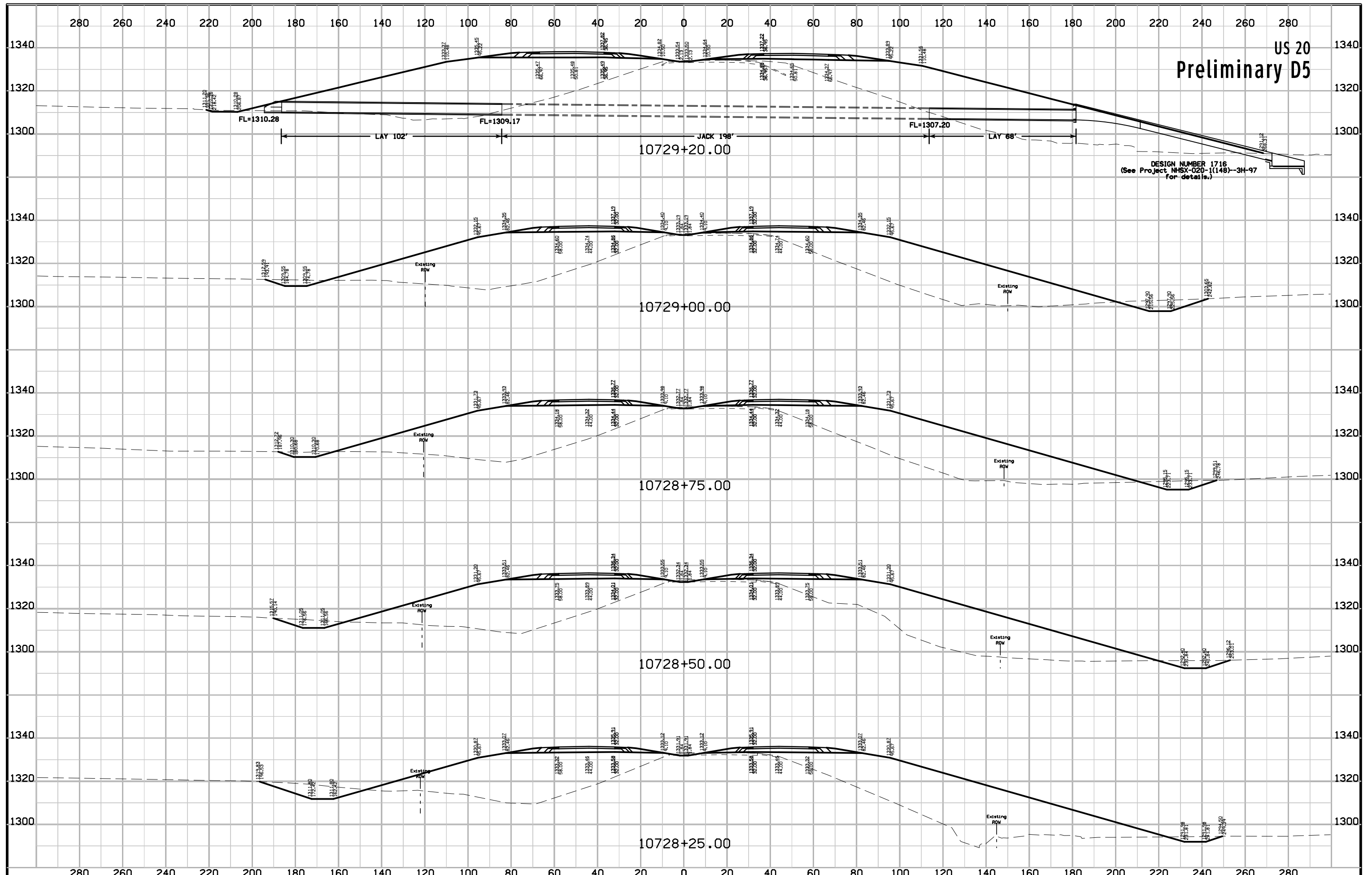
US 20  
Preliminary D5



US 20  
Preliminary D5



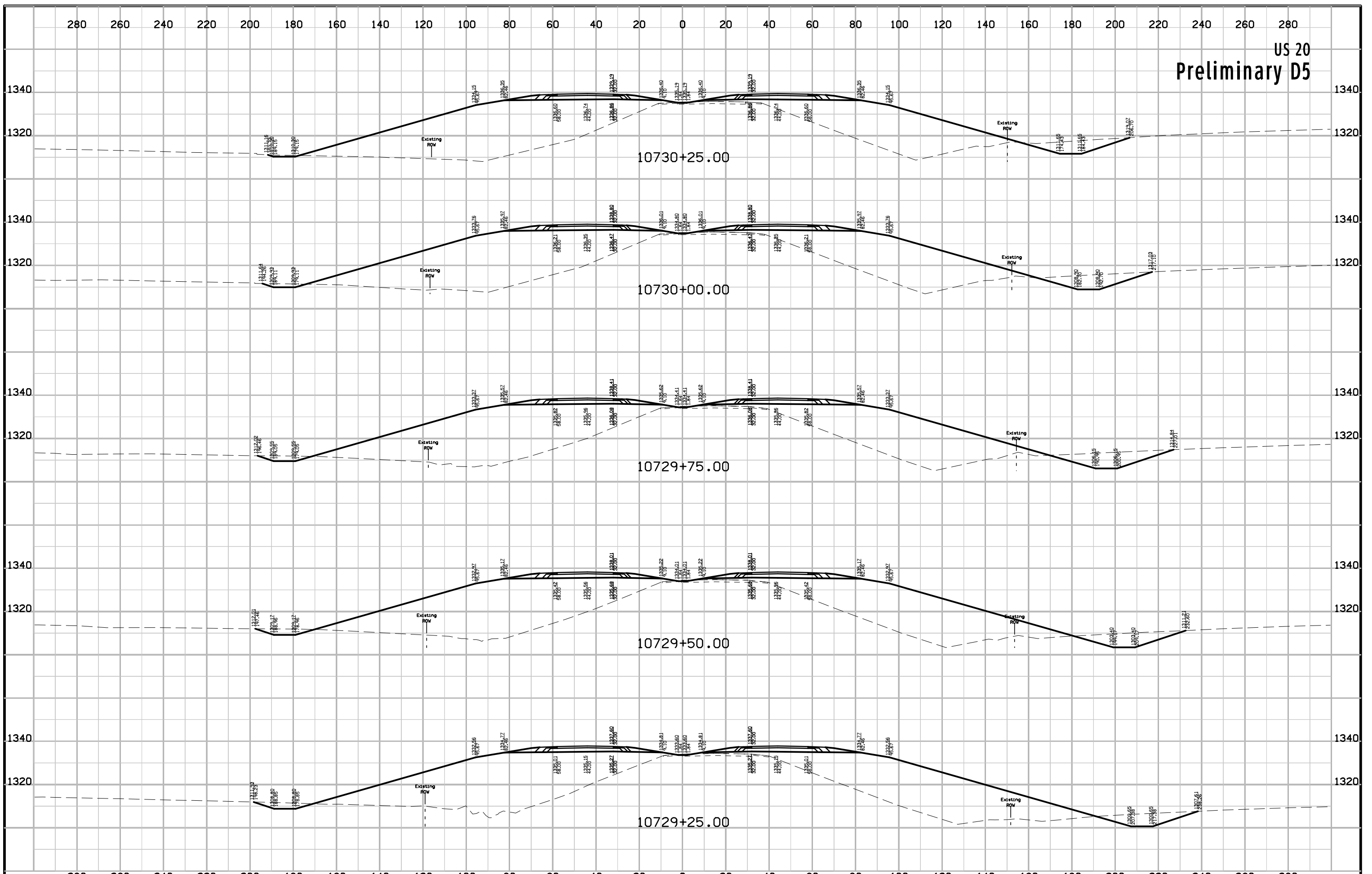




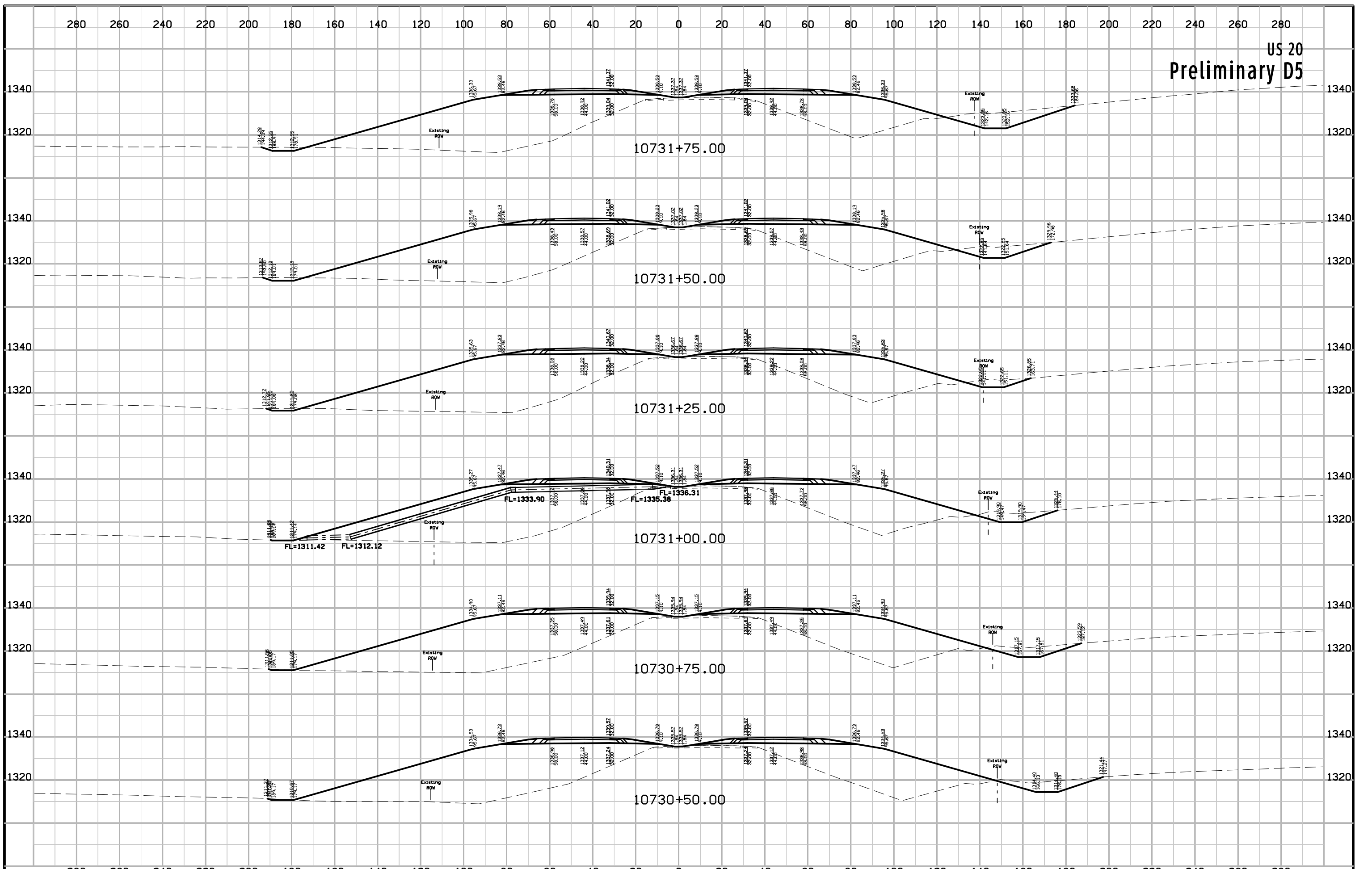
US 20  
Preliminary D5

DESIGN NUMBER 1716  
(See Project NHSX-020-1(148)-3H-97  
for details.)

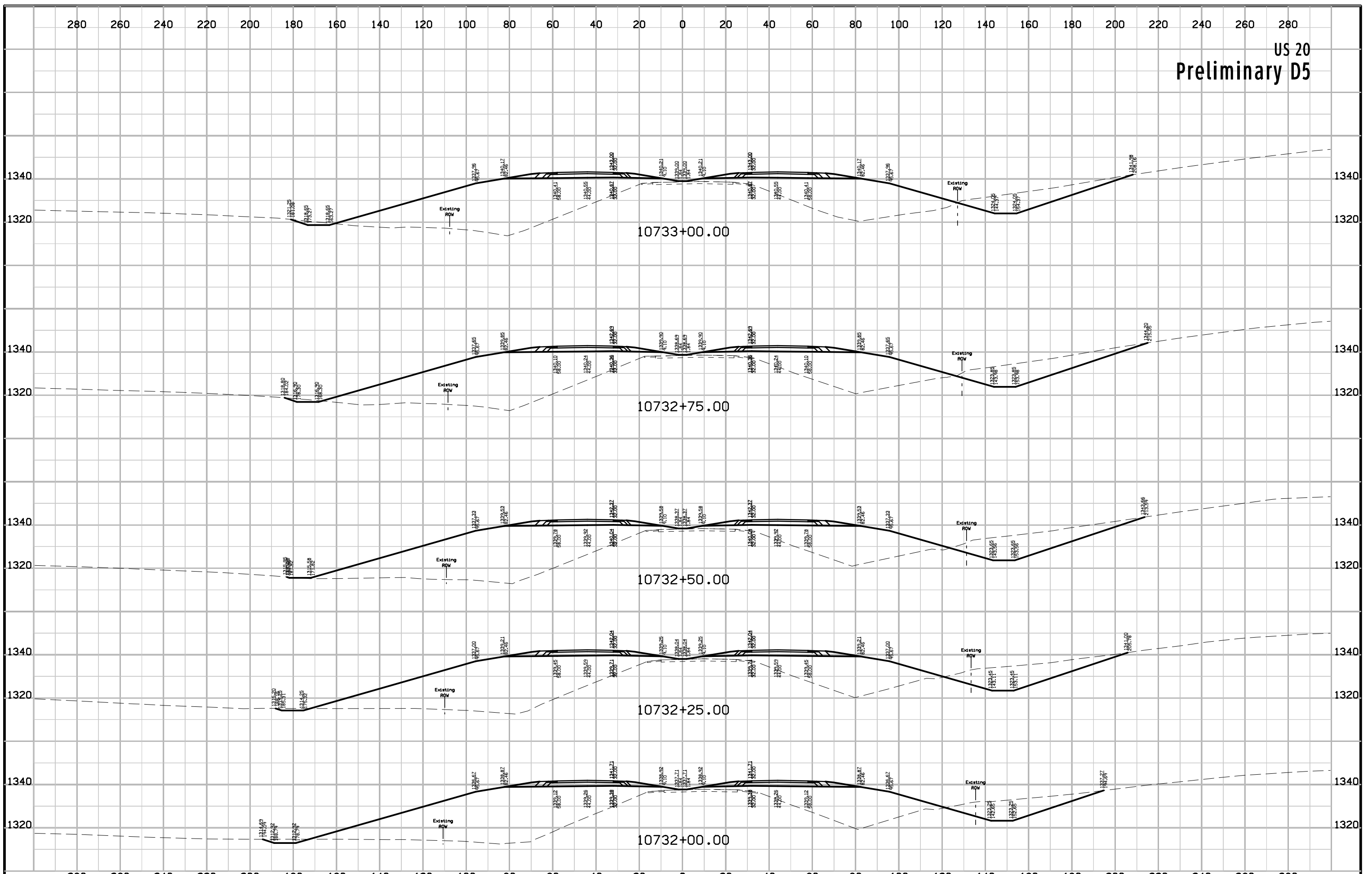
US 20  
Preliminary D5



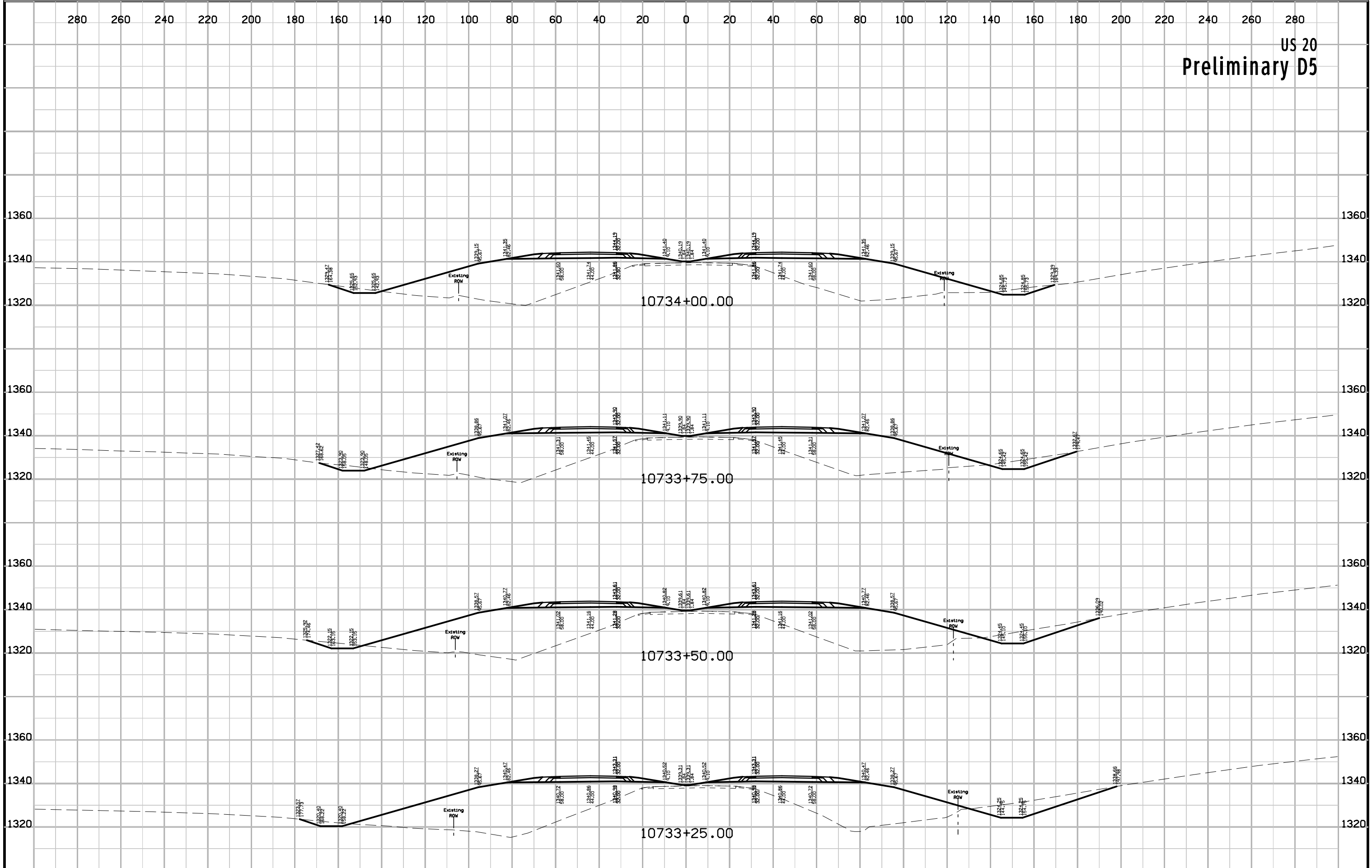
US 20  
Preliminary D5



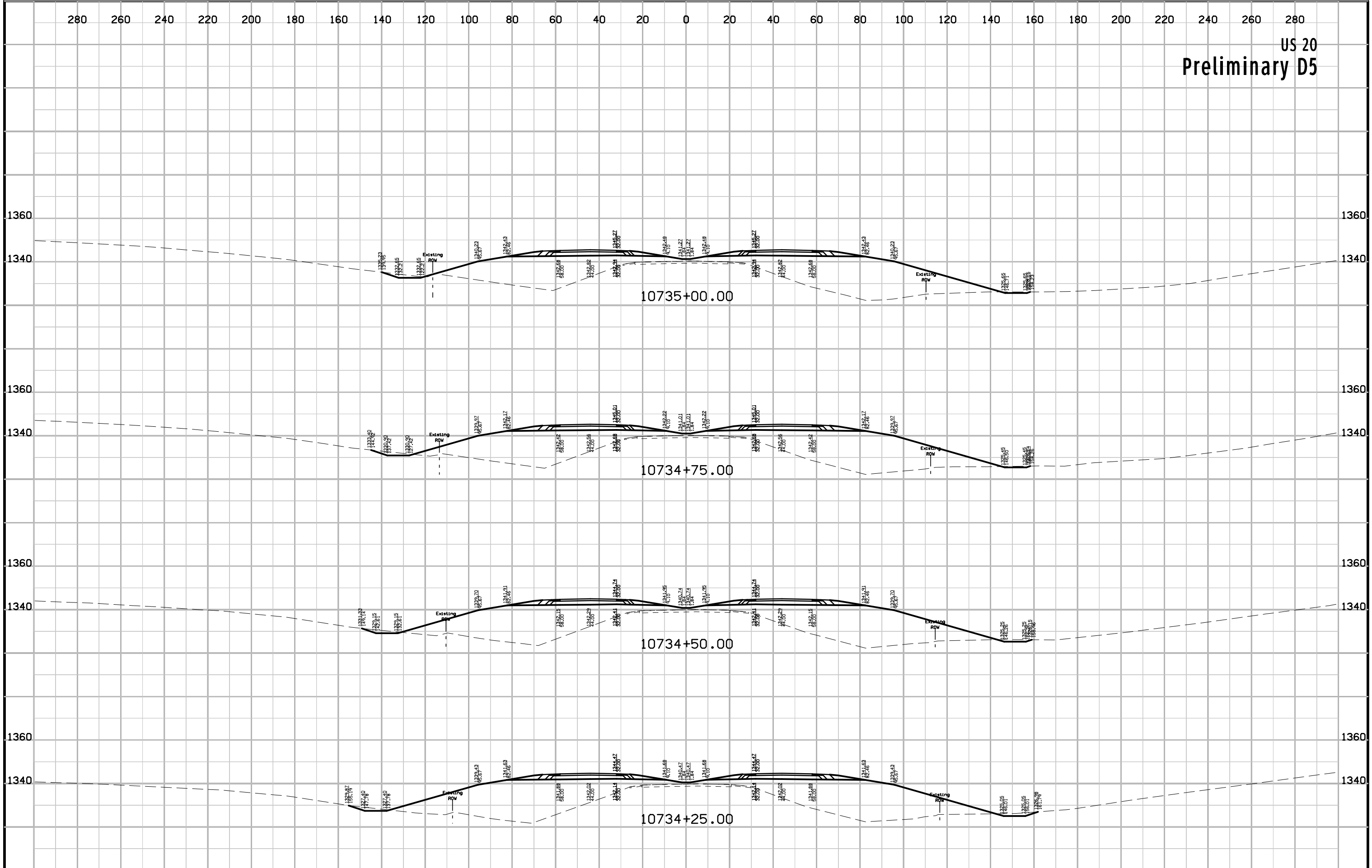
US 20  
Preliminary D5



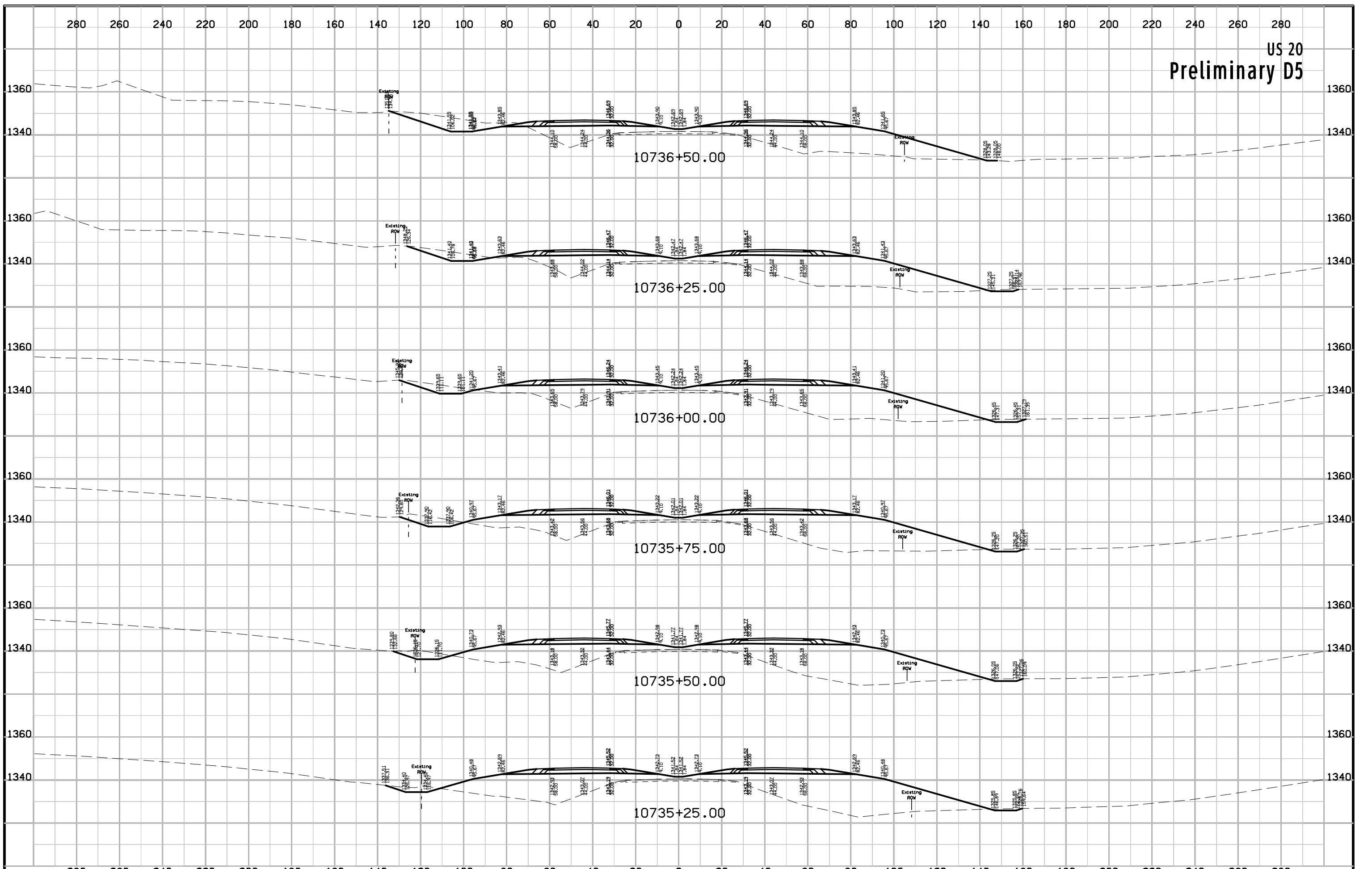
US 20  
Preliminary D5



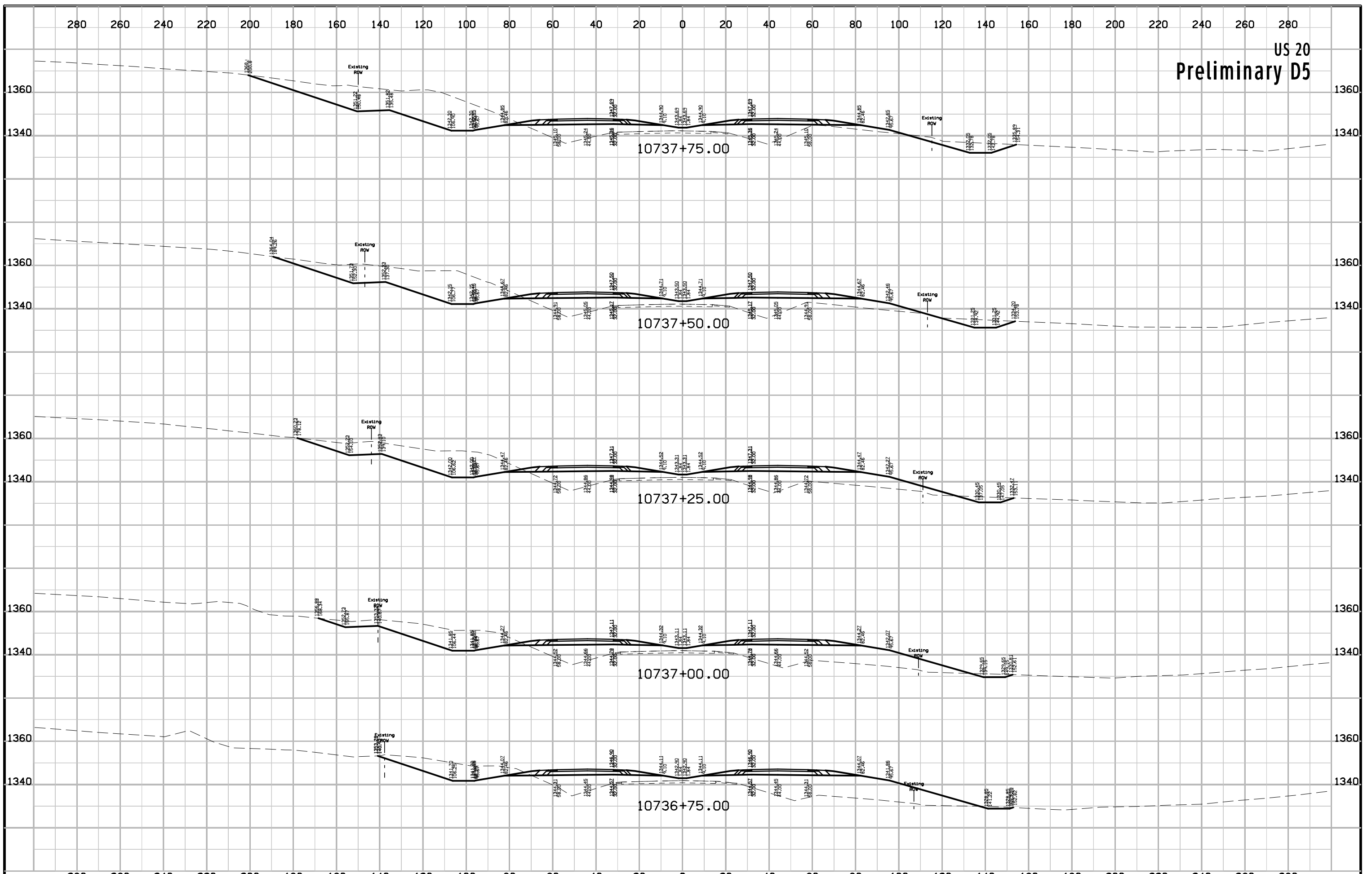
US 20  
Preliminary D5



US 20  
Preliminary D5

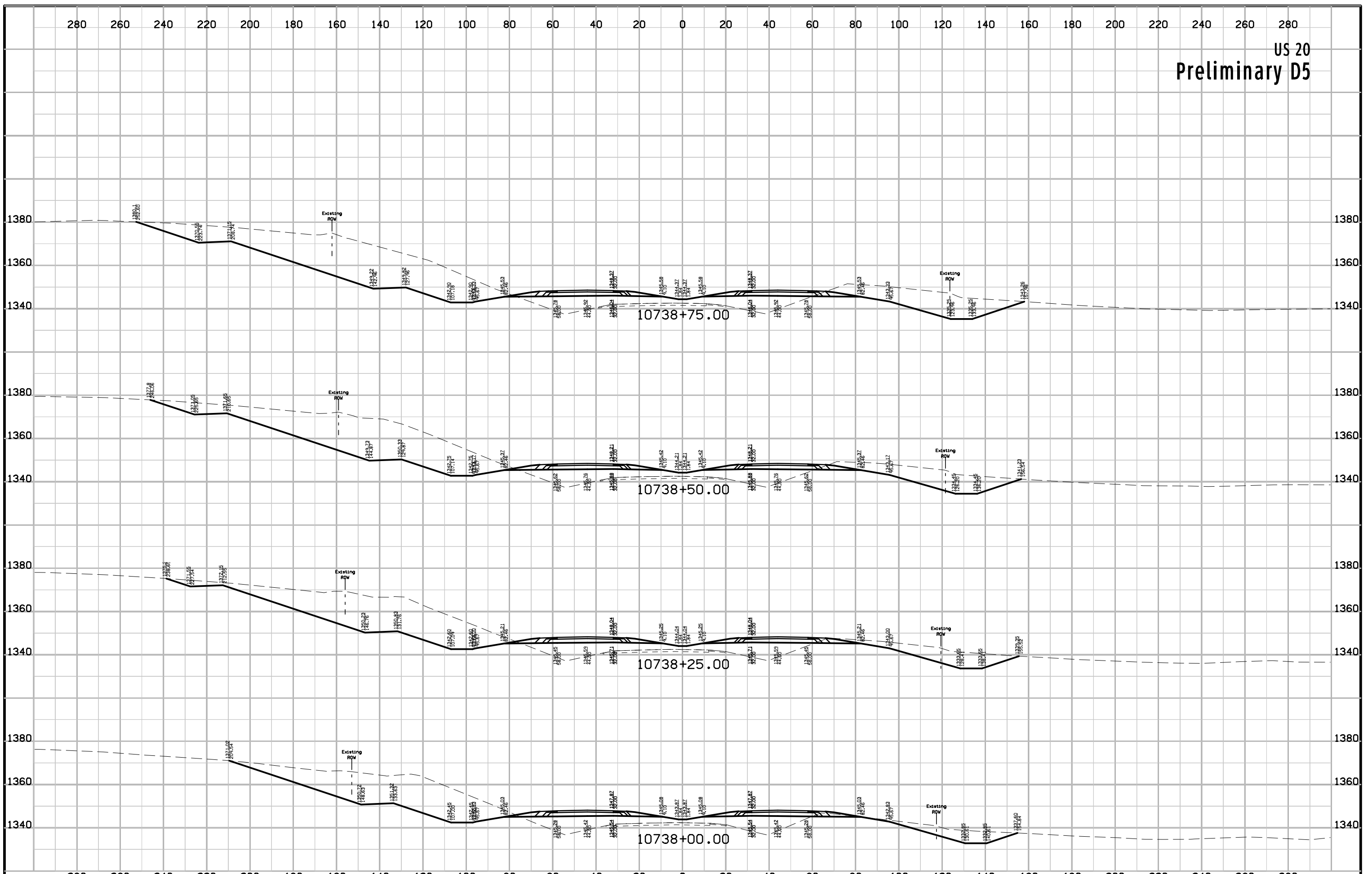


US 20  
Preliminary D5

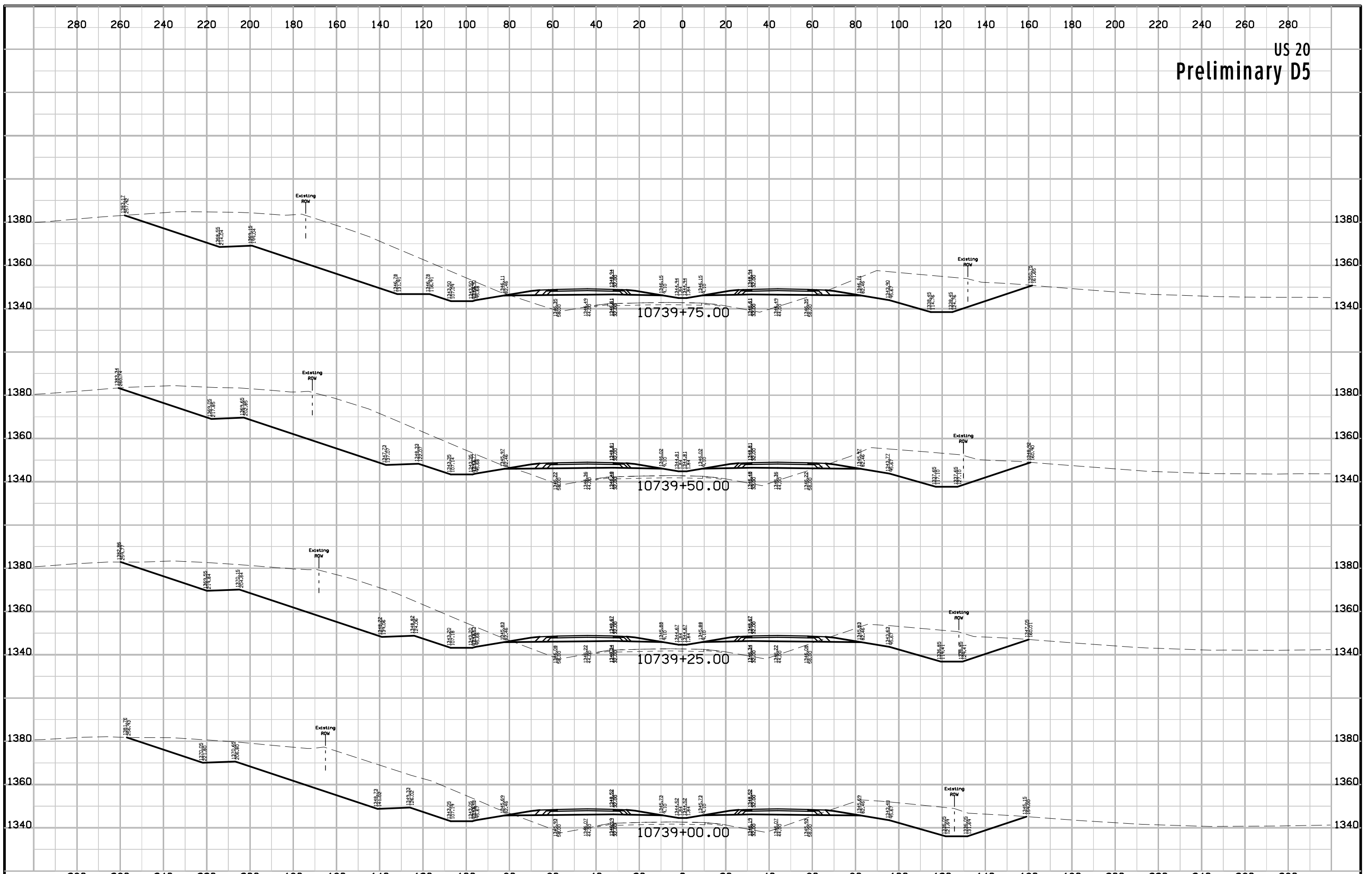




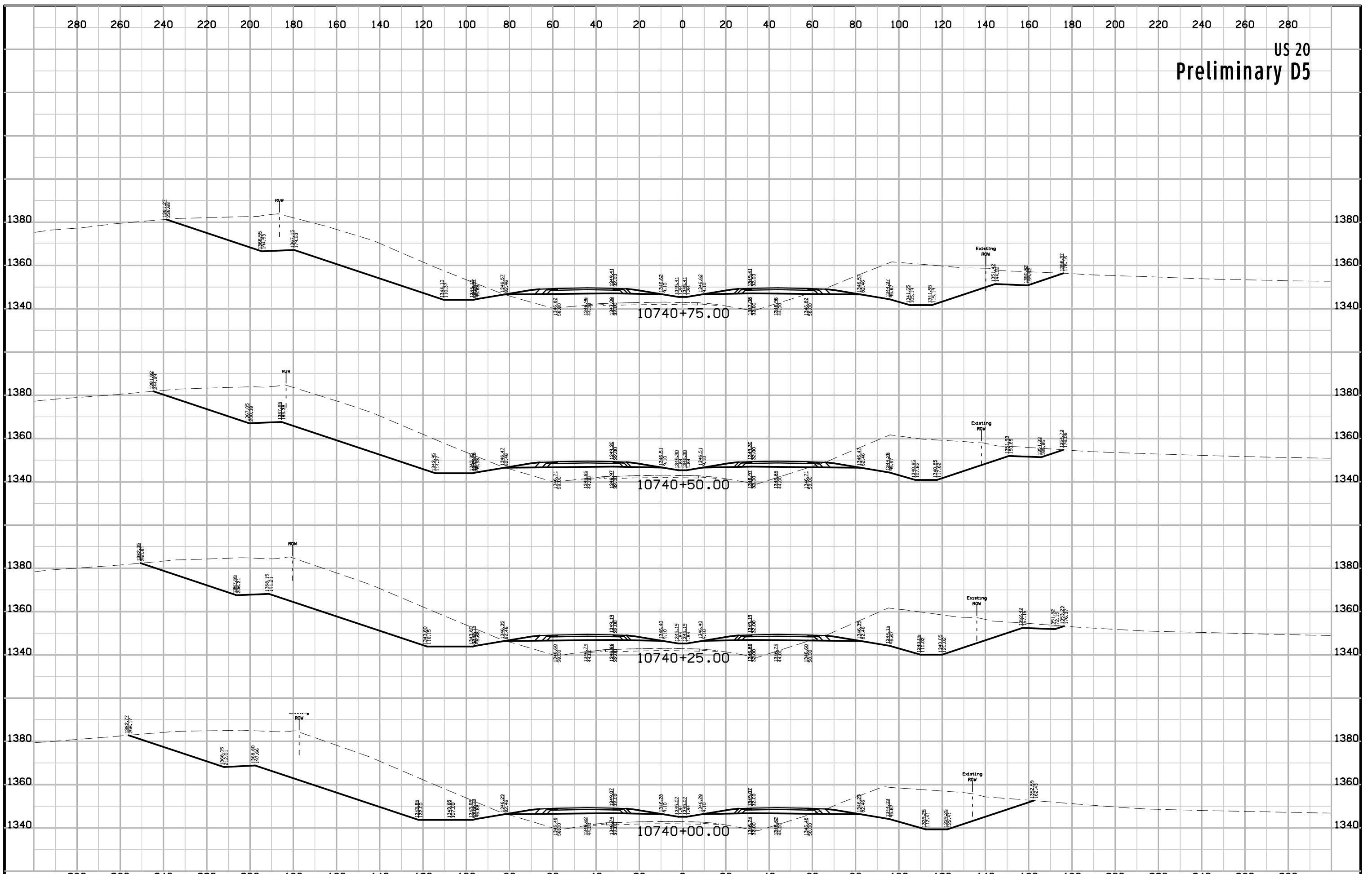
US 20  
Preliminary D5



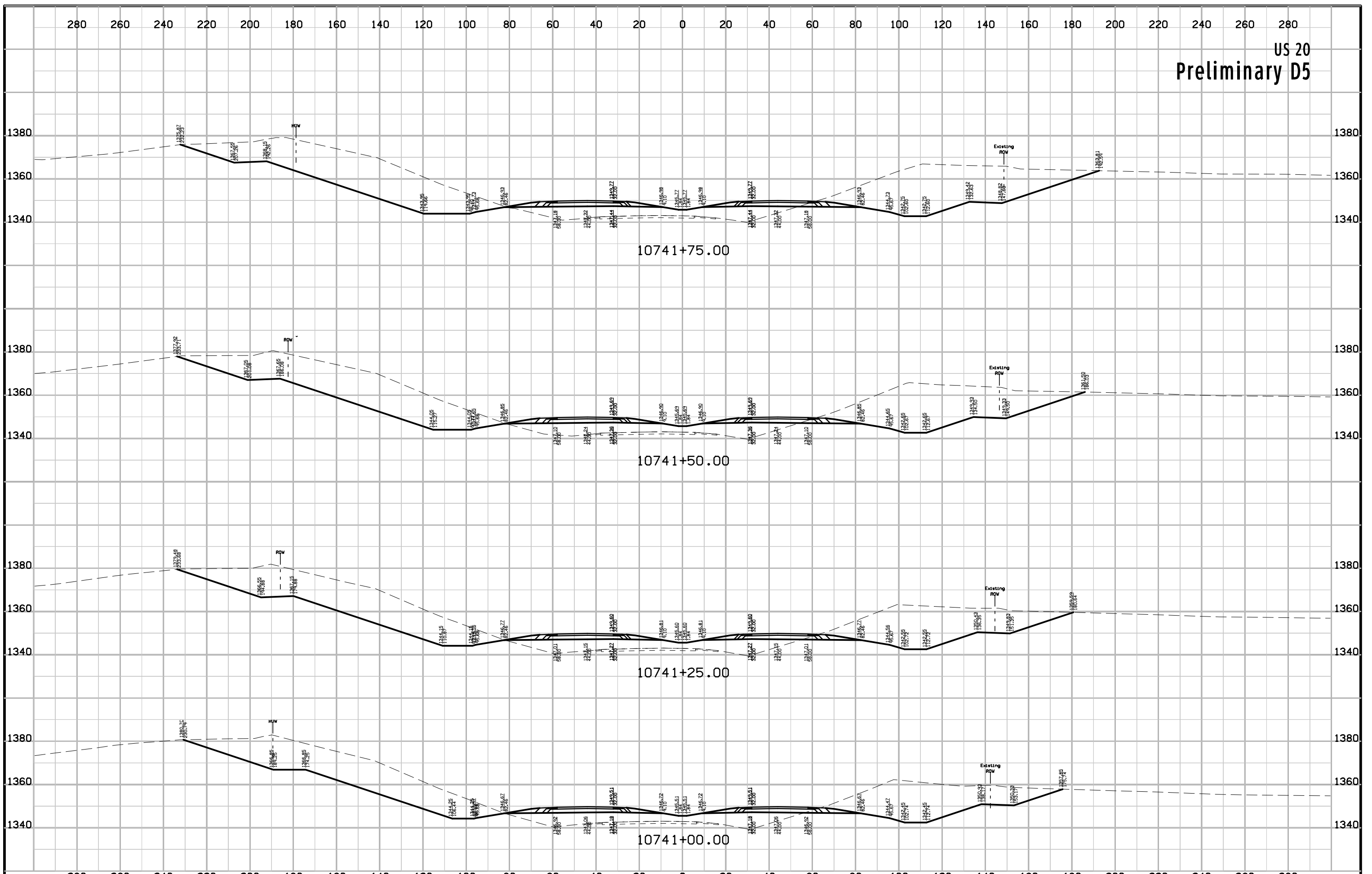
US 20  
Preliminary D5



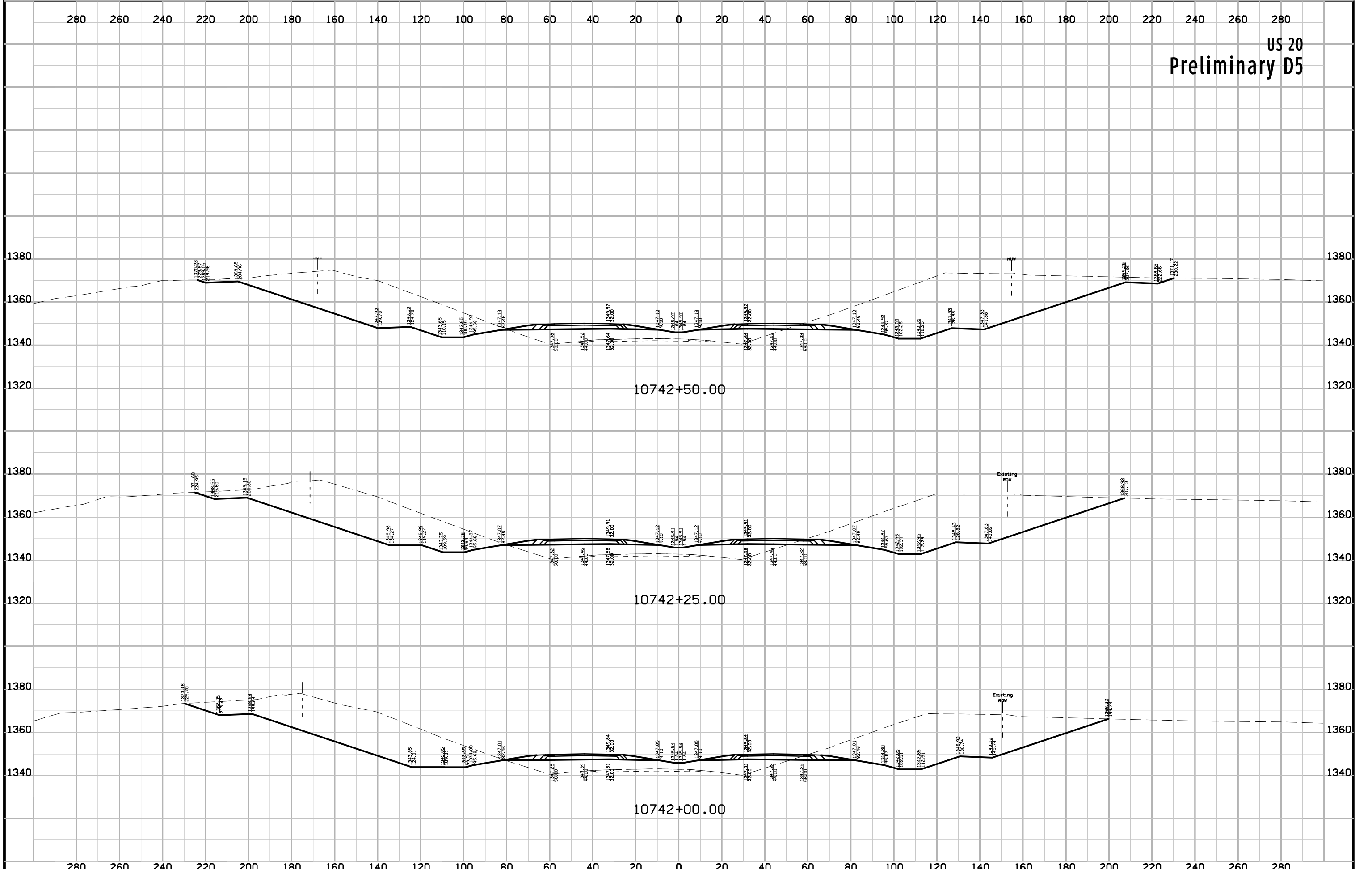
US 20  
Preliminary D5



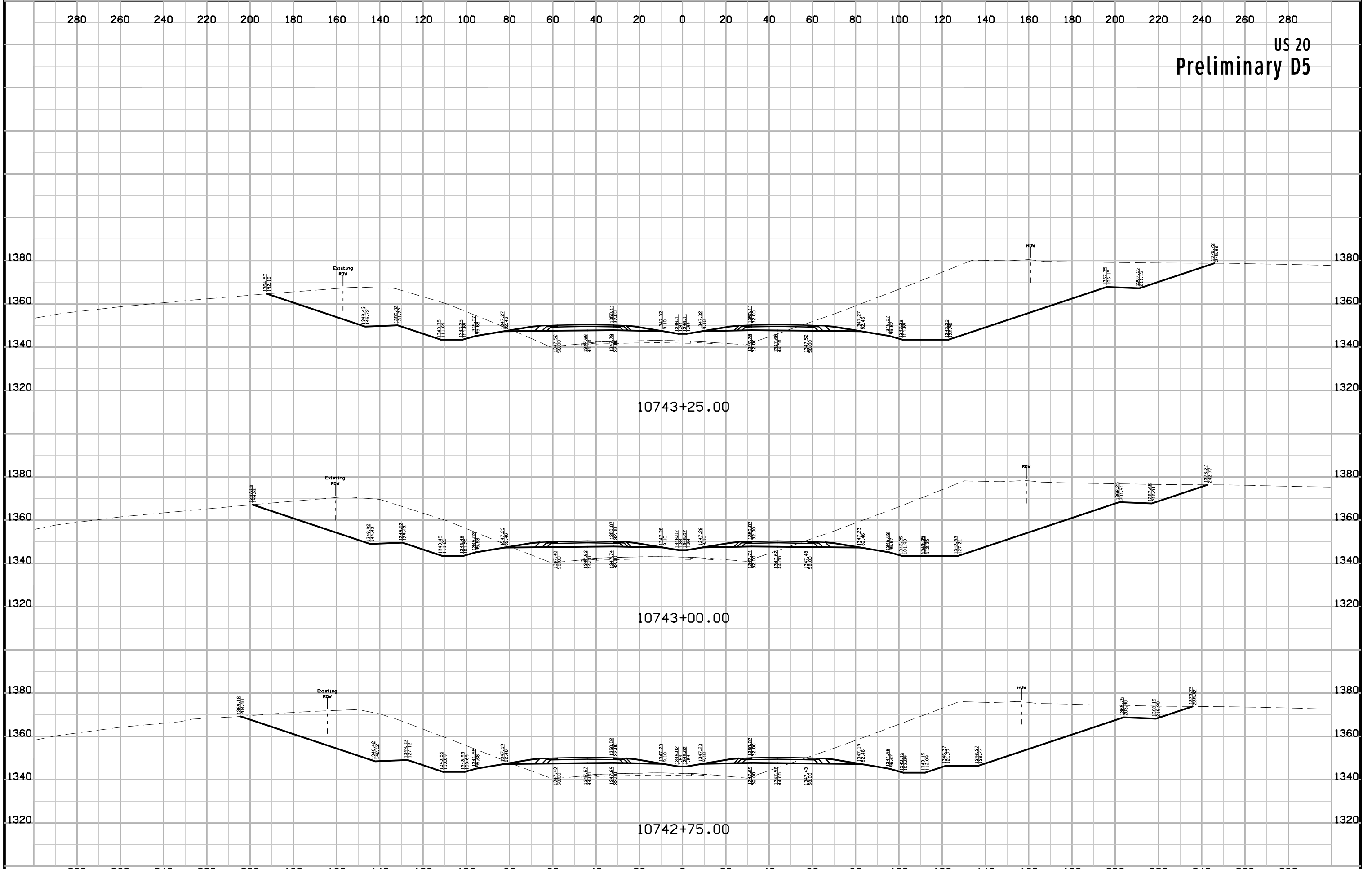
US 20  
Preliminary D5



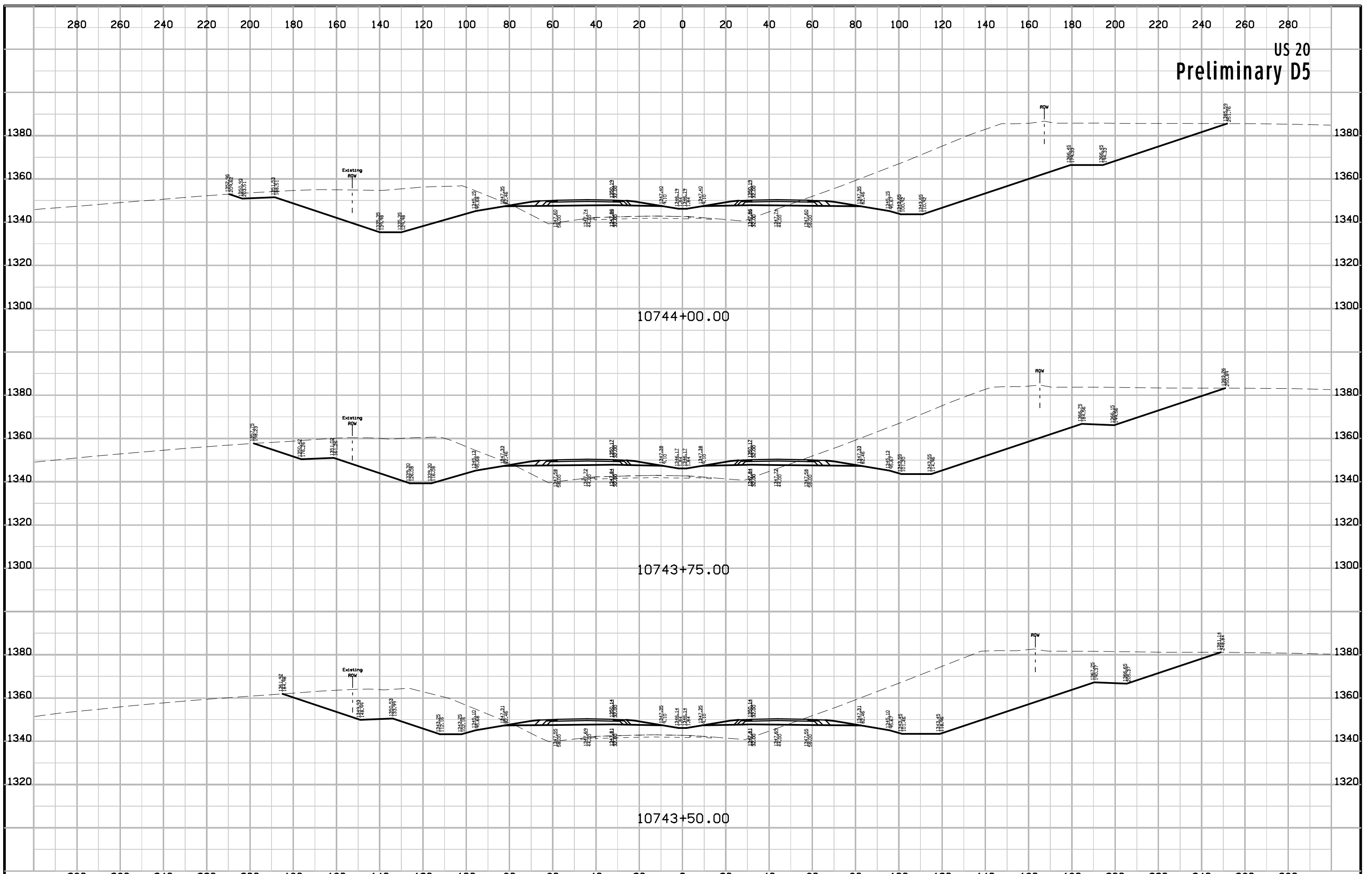
US 20  
Preliminary D5



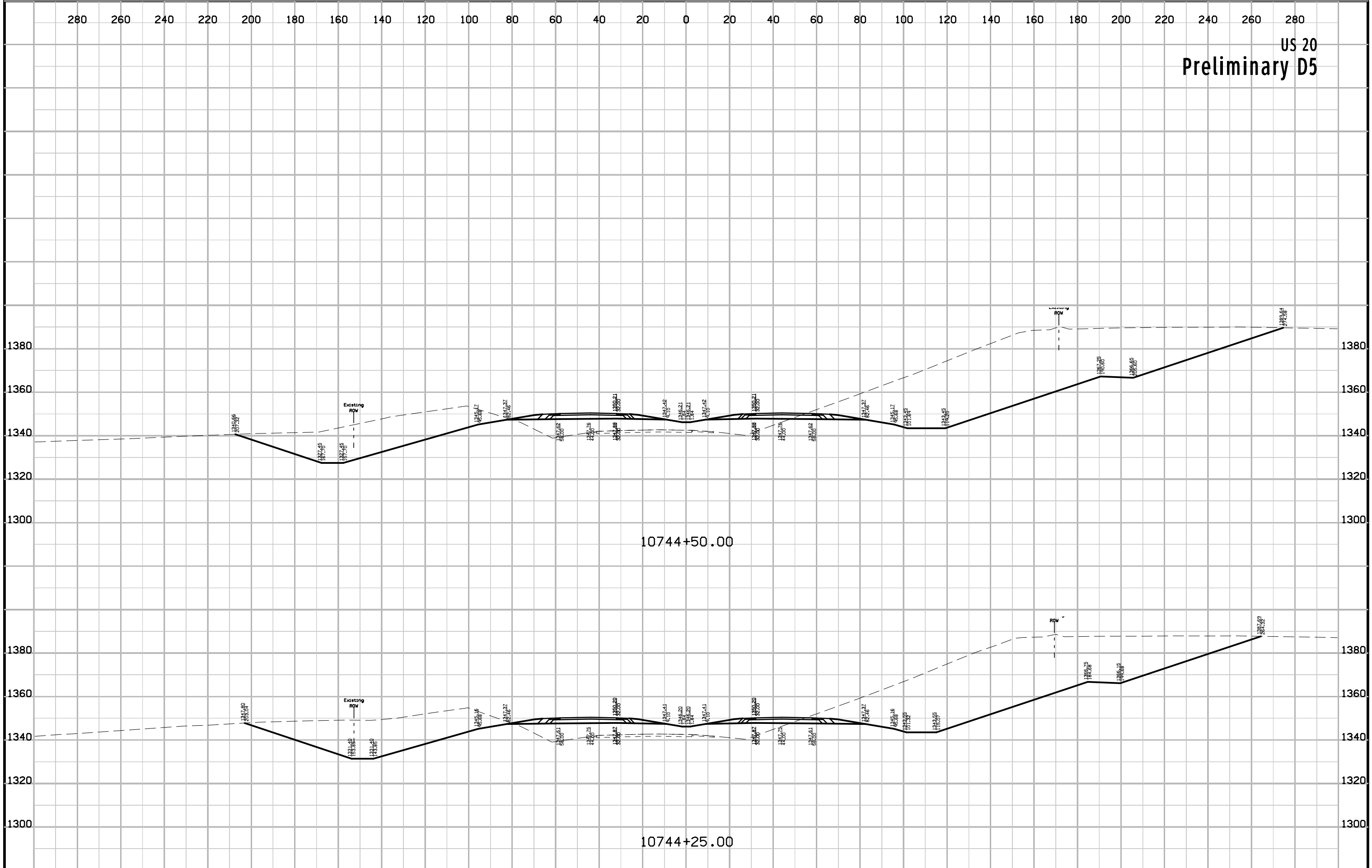
US 20  
Preliminary D5



US 20  
Preliminary D5

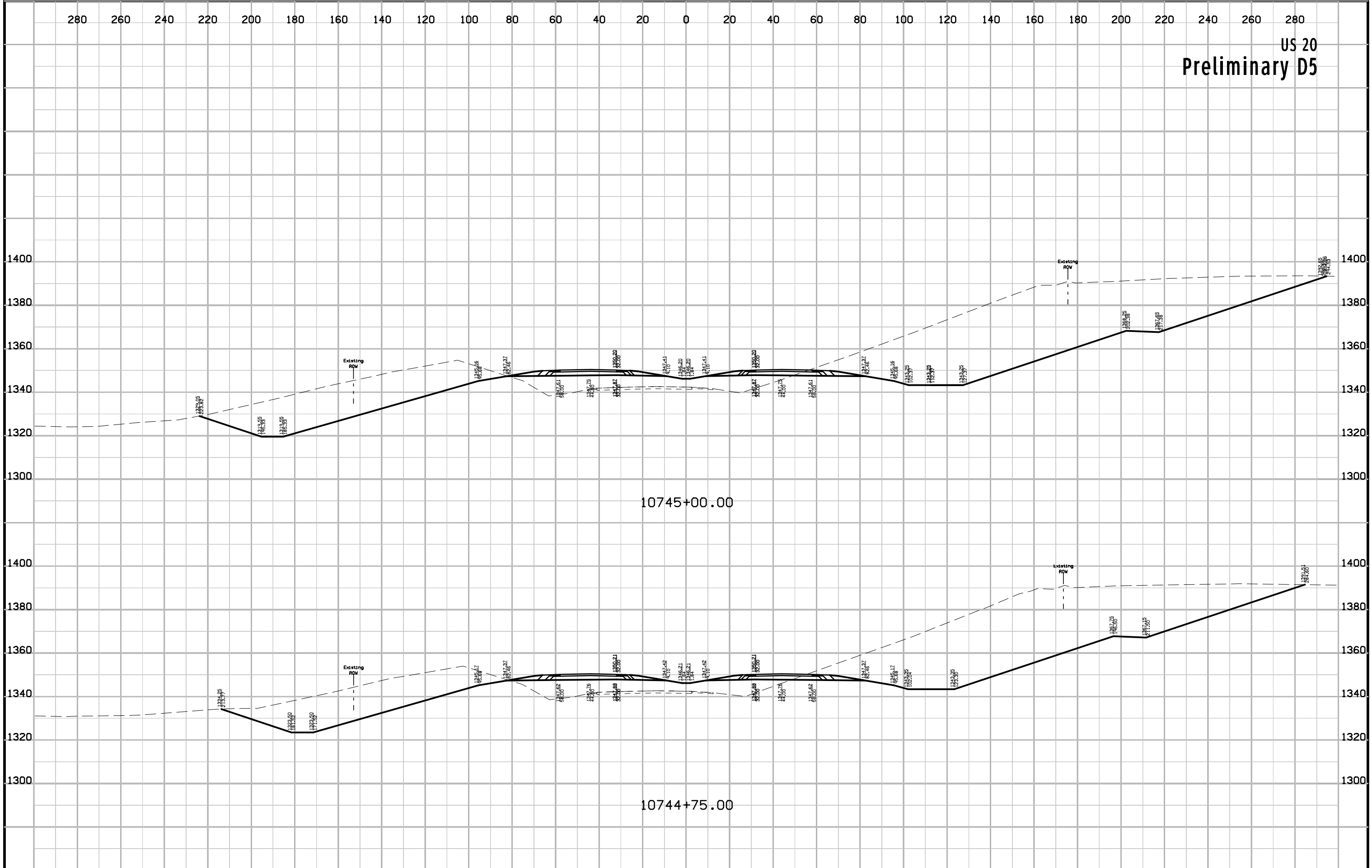


US 20  
Preliminary D5





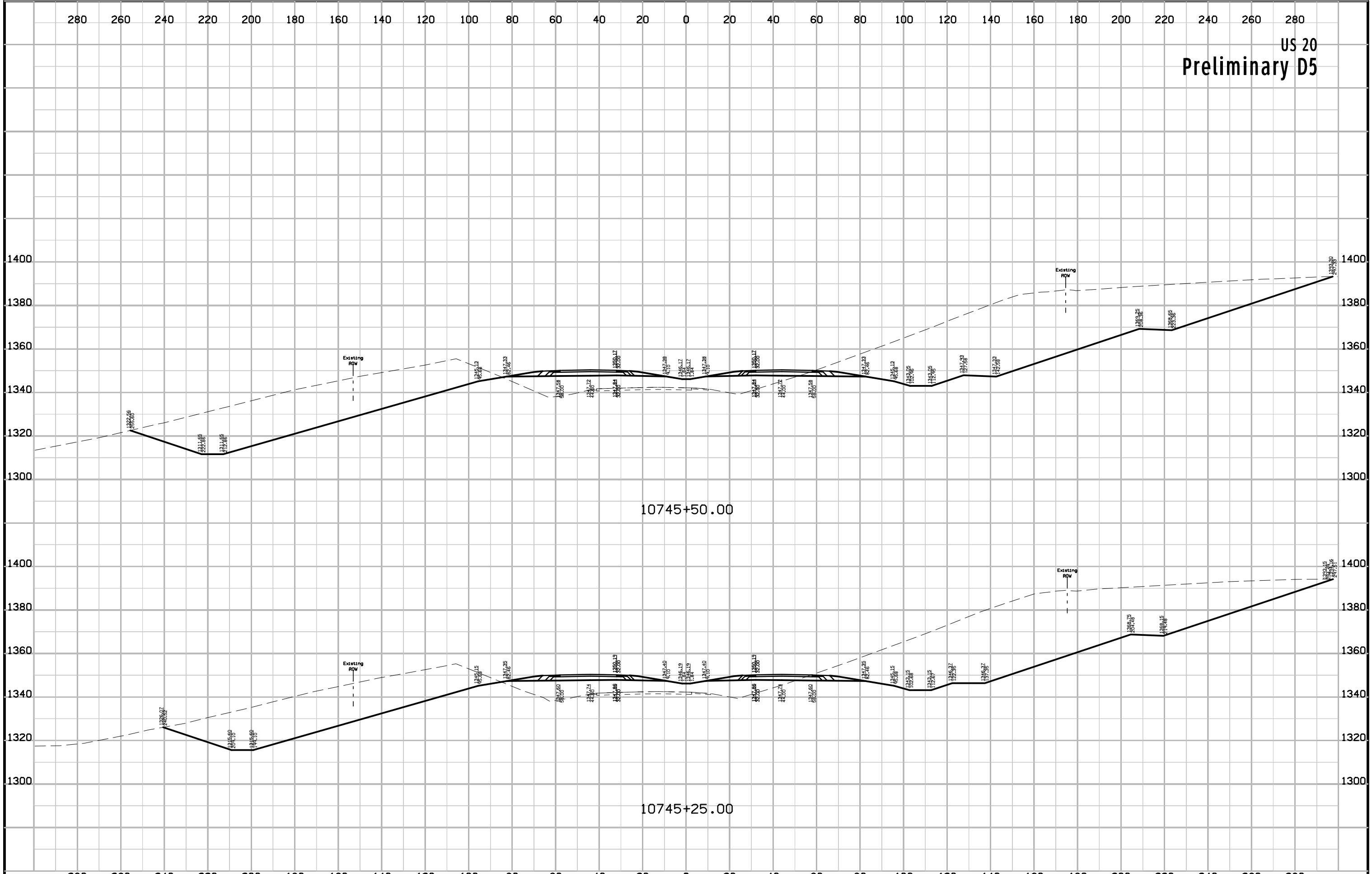
US 20  
Preliminary D5



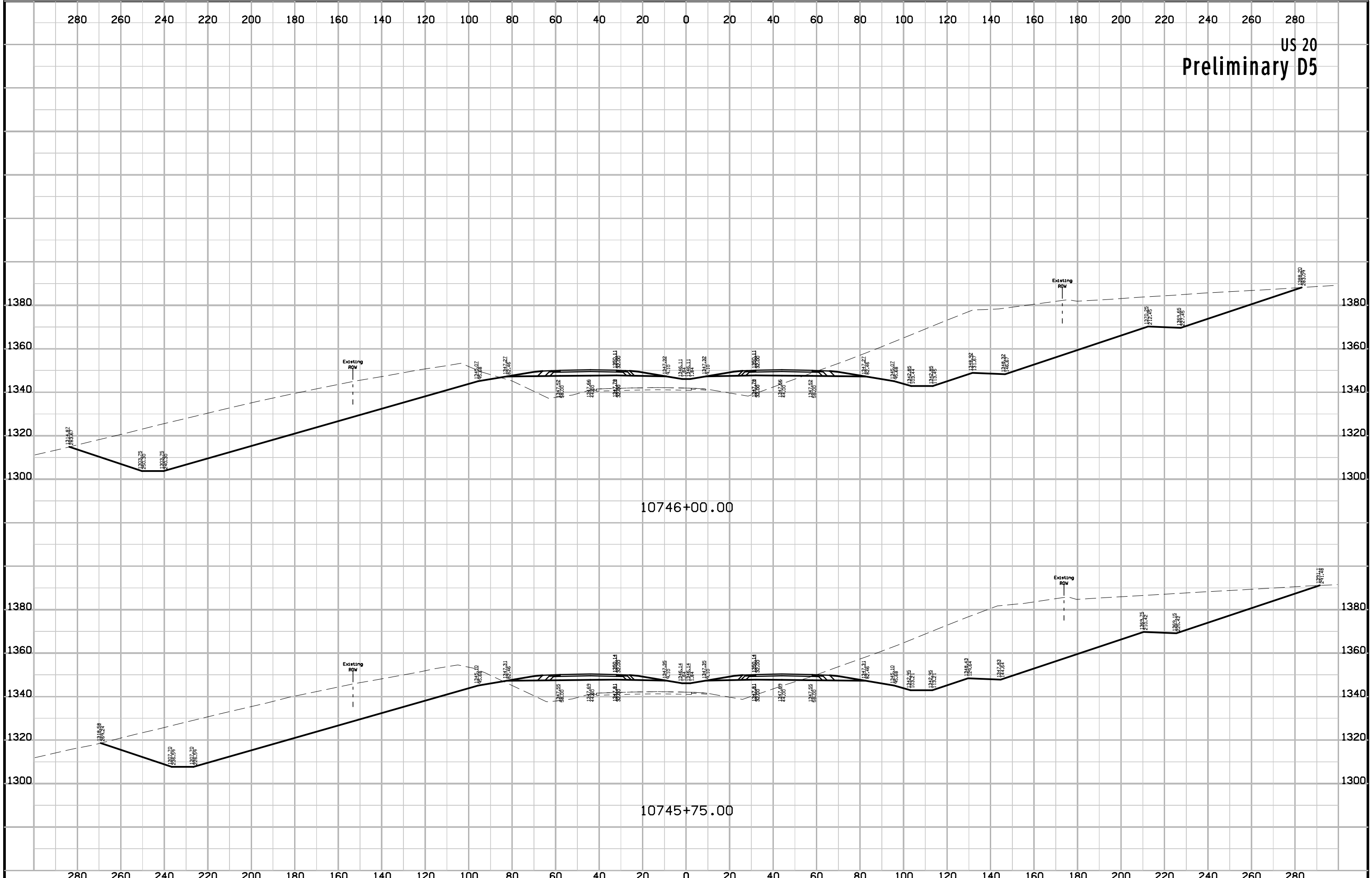
10745+00.00

10744+75.00

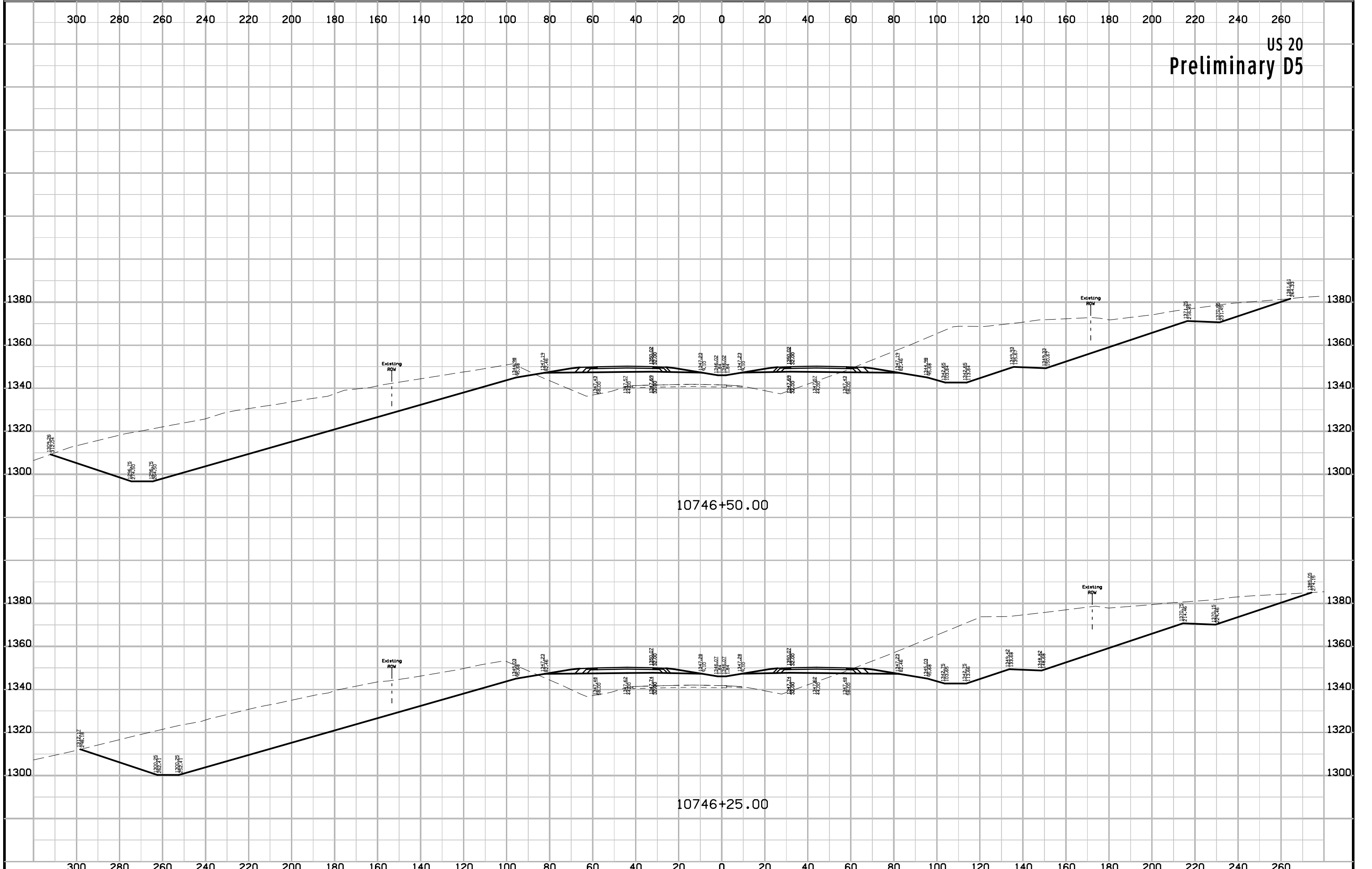
US 20  
Preliminary D5



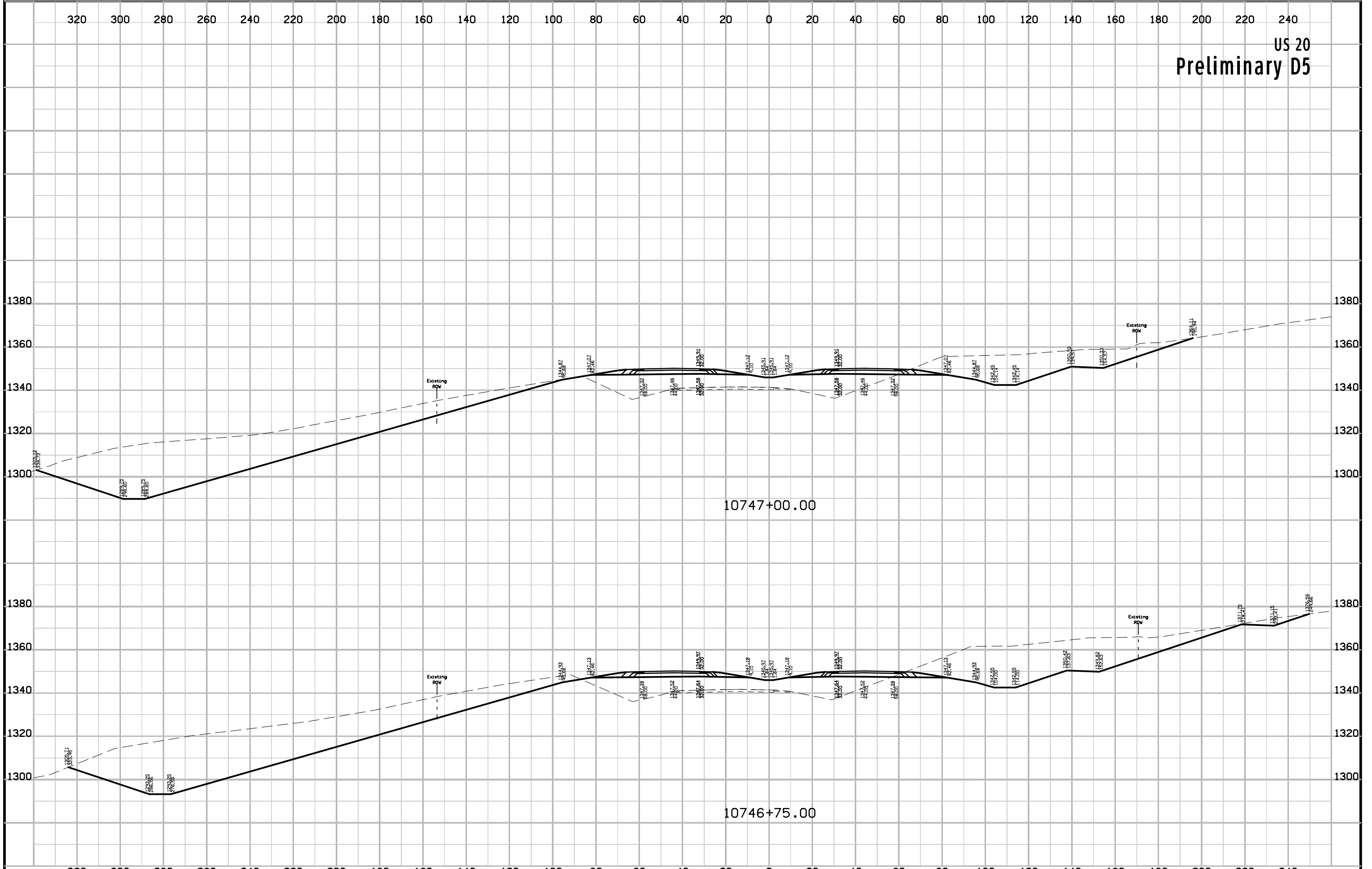
US 20  
Preliminary D5



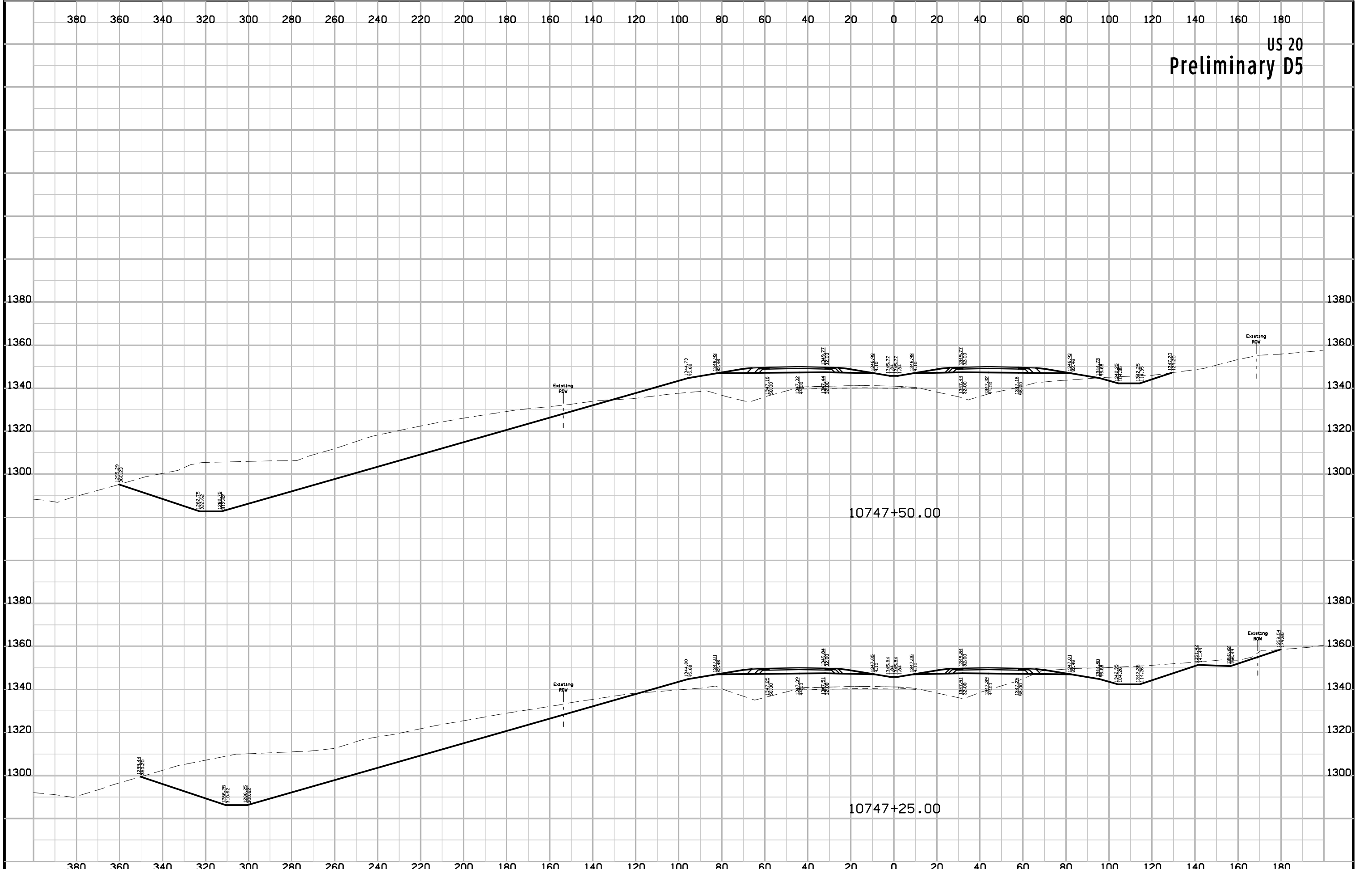
US 20  
Preliminary D5



US 20  
Preliminary D5



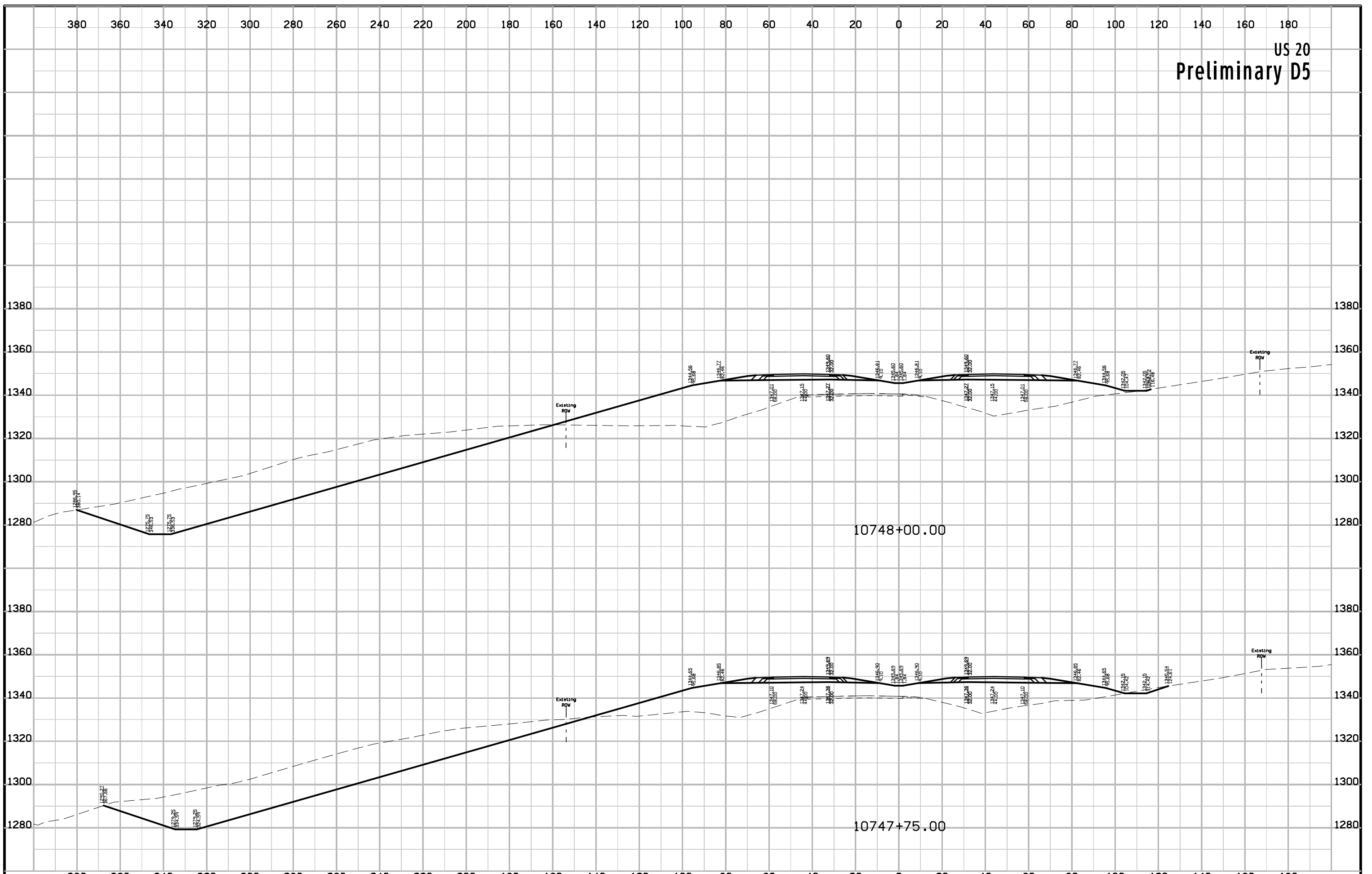
US 20  
Preliminary D5



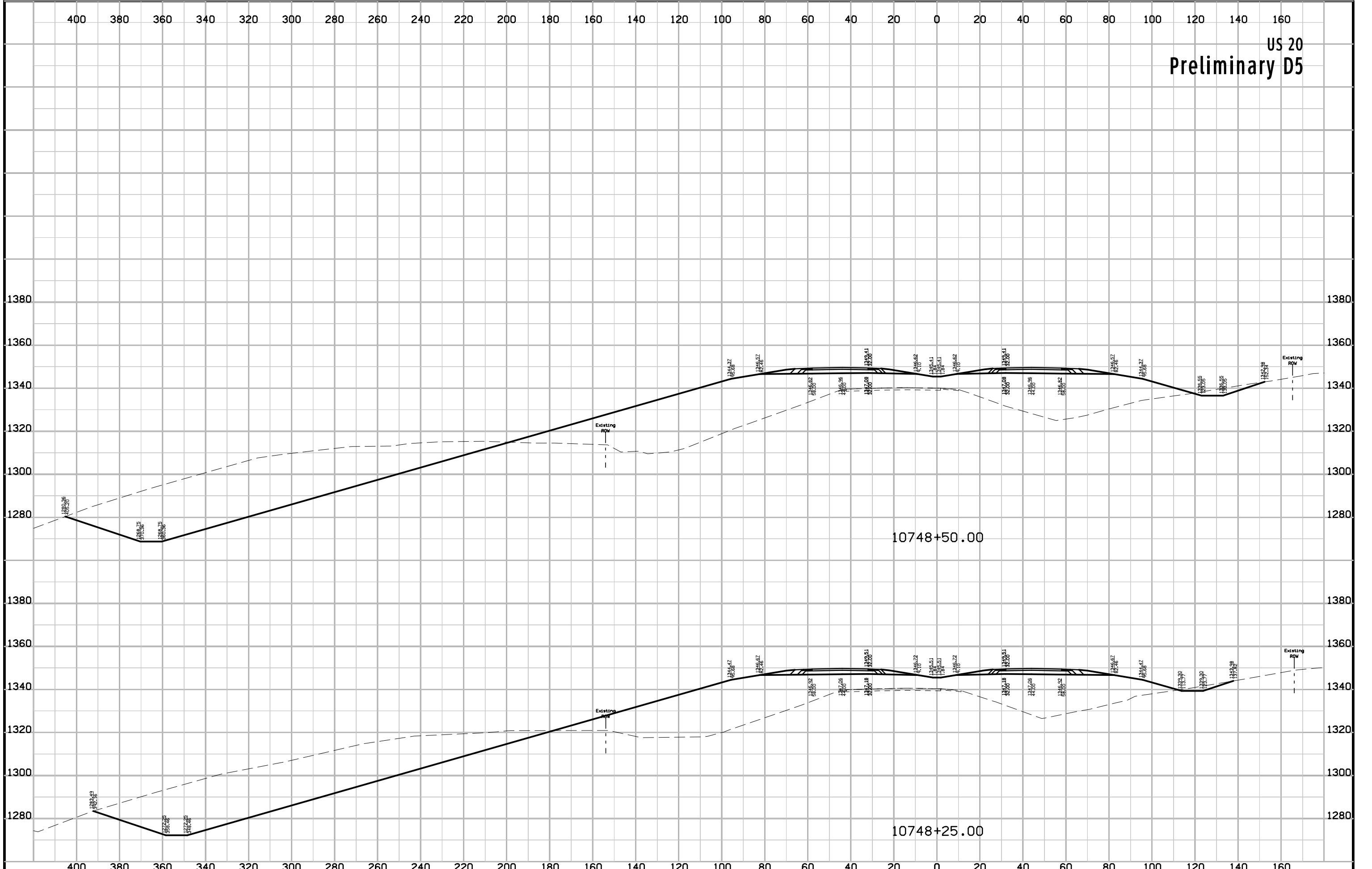
10747+50.00

10747+25.00

US 20  
Preliminary D5

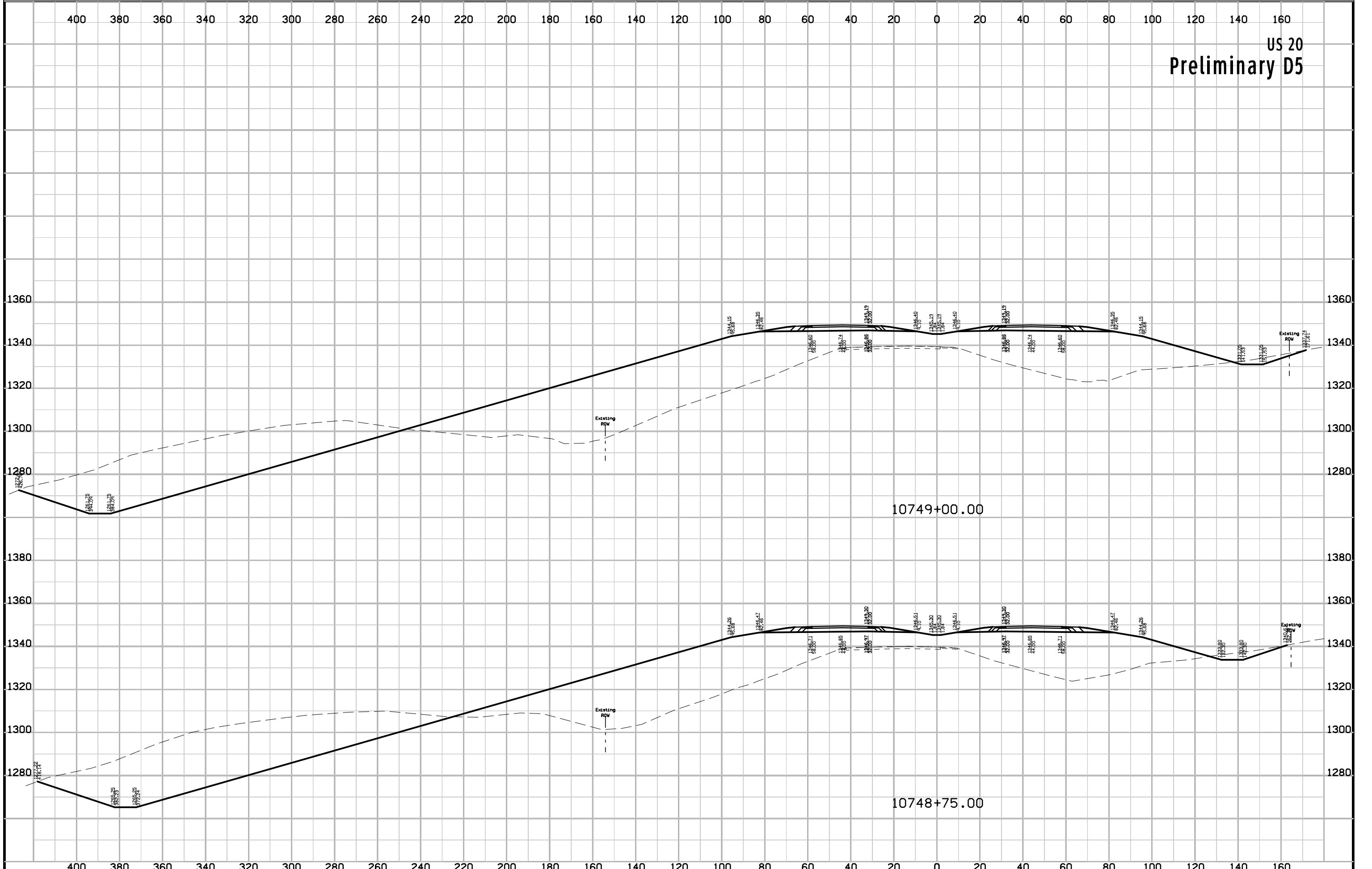


US 20  
Preliminary D5

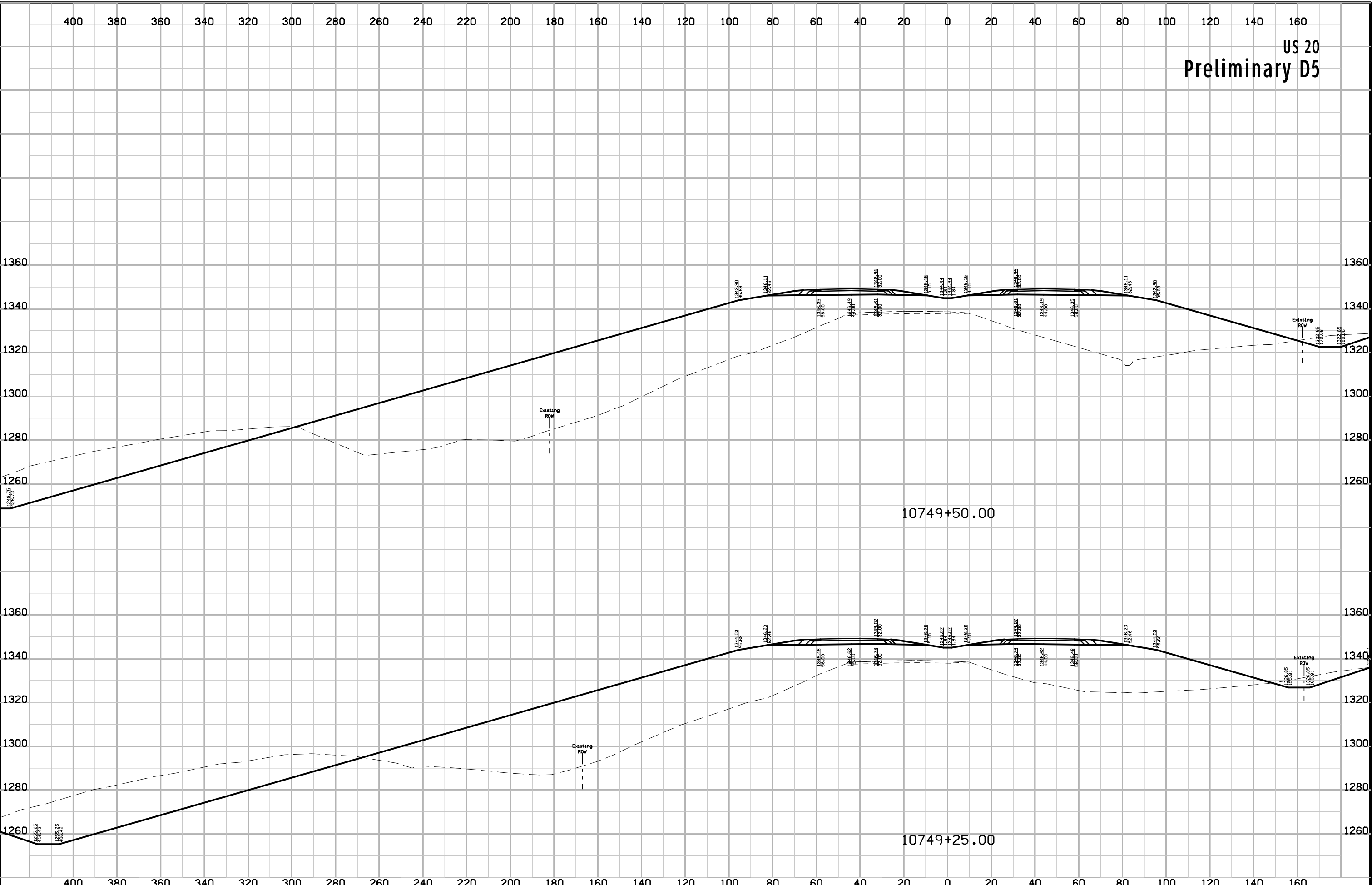




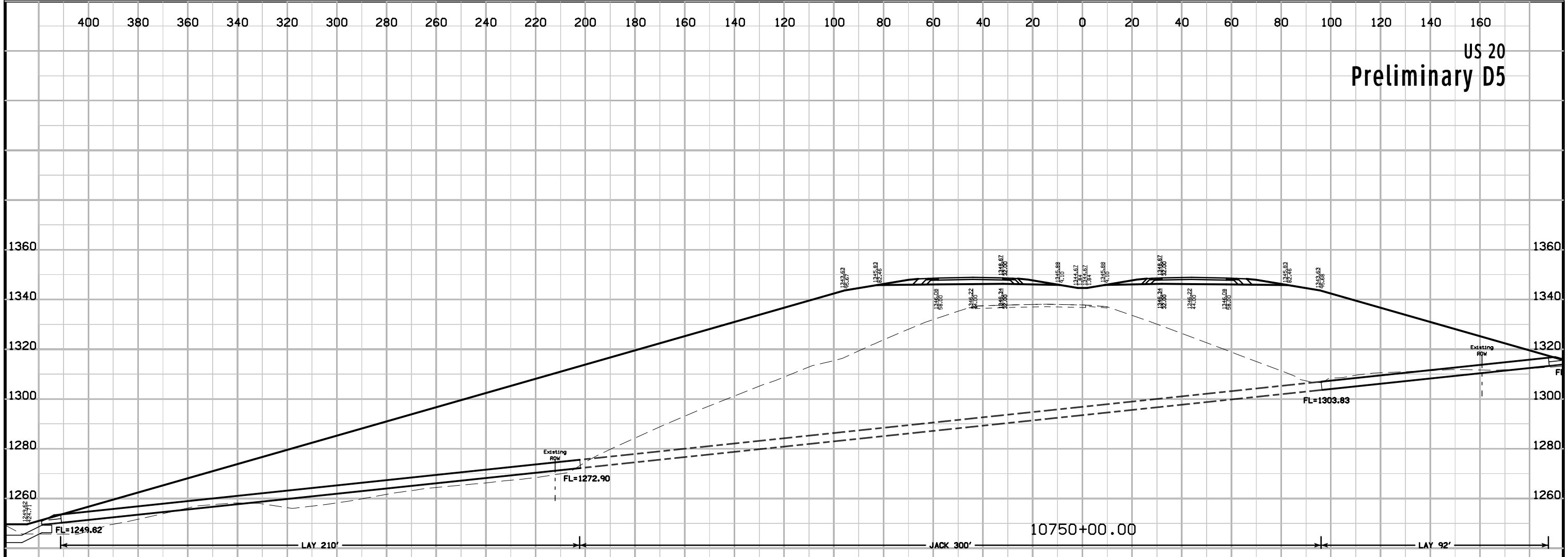
US 20  
Preliminary D5



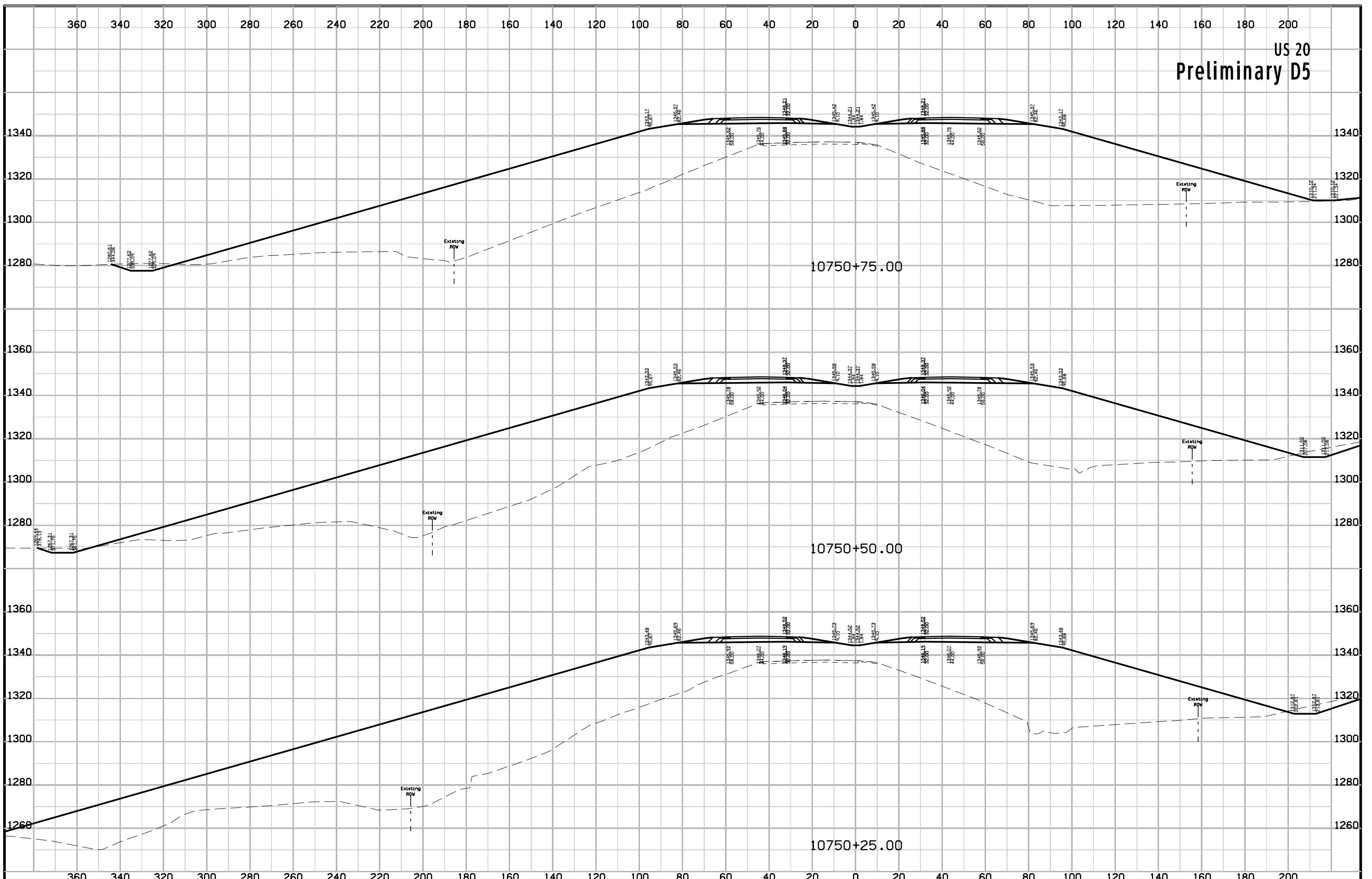
US 20  
Preliminary D5



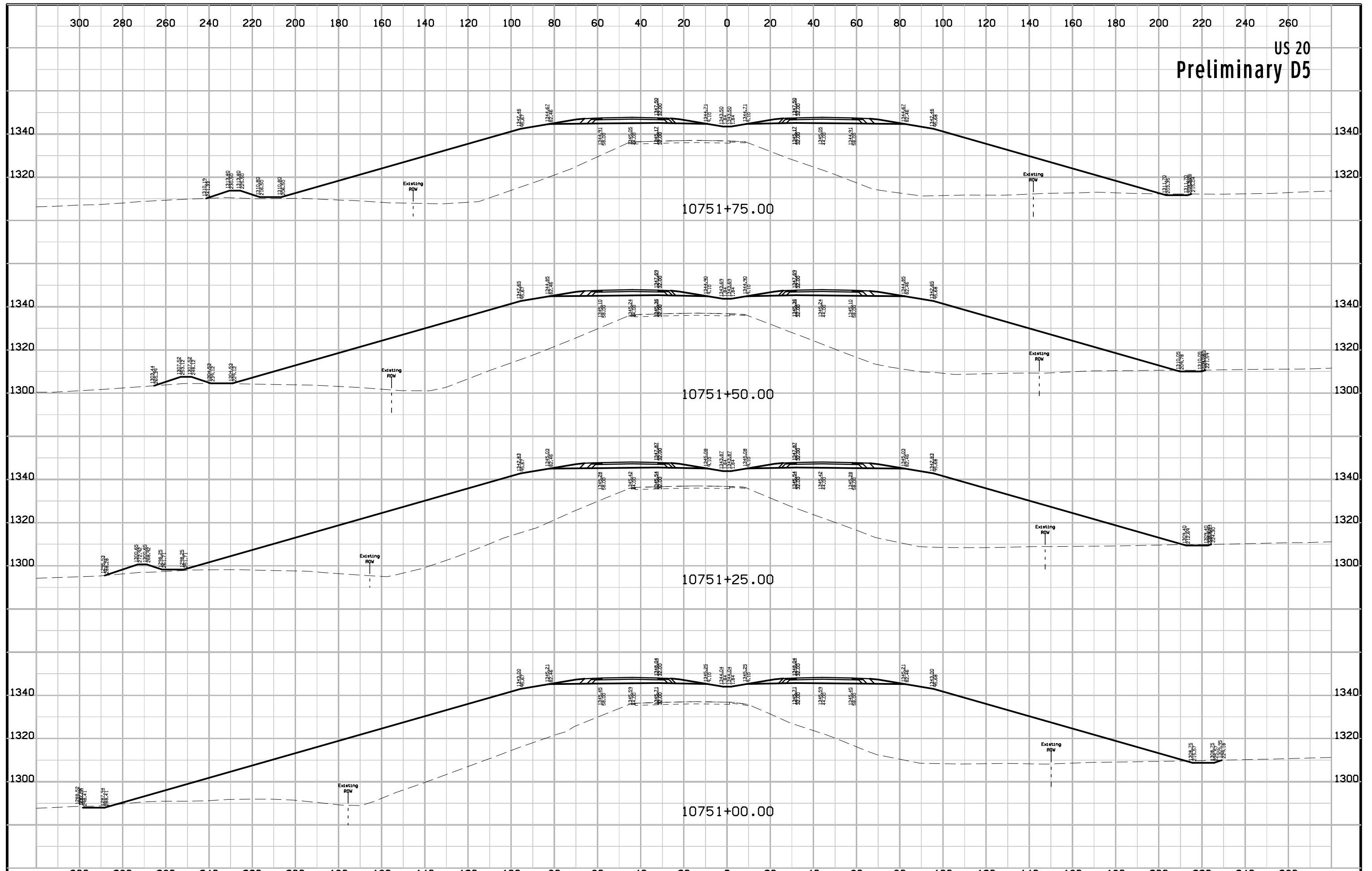
US 20  
Preliminary D5



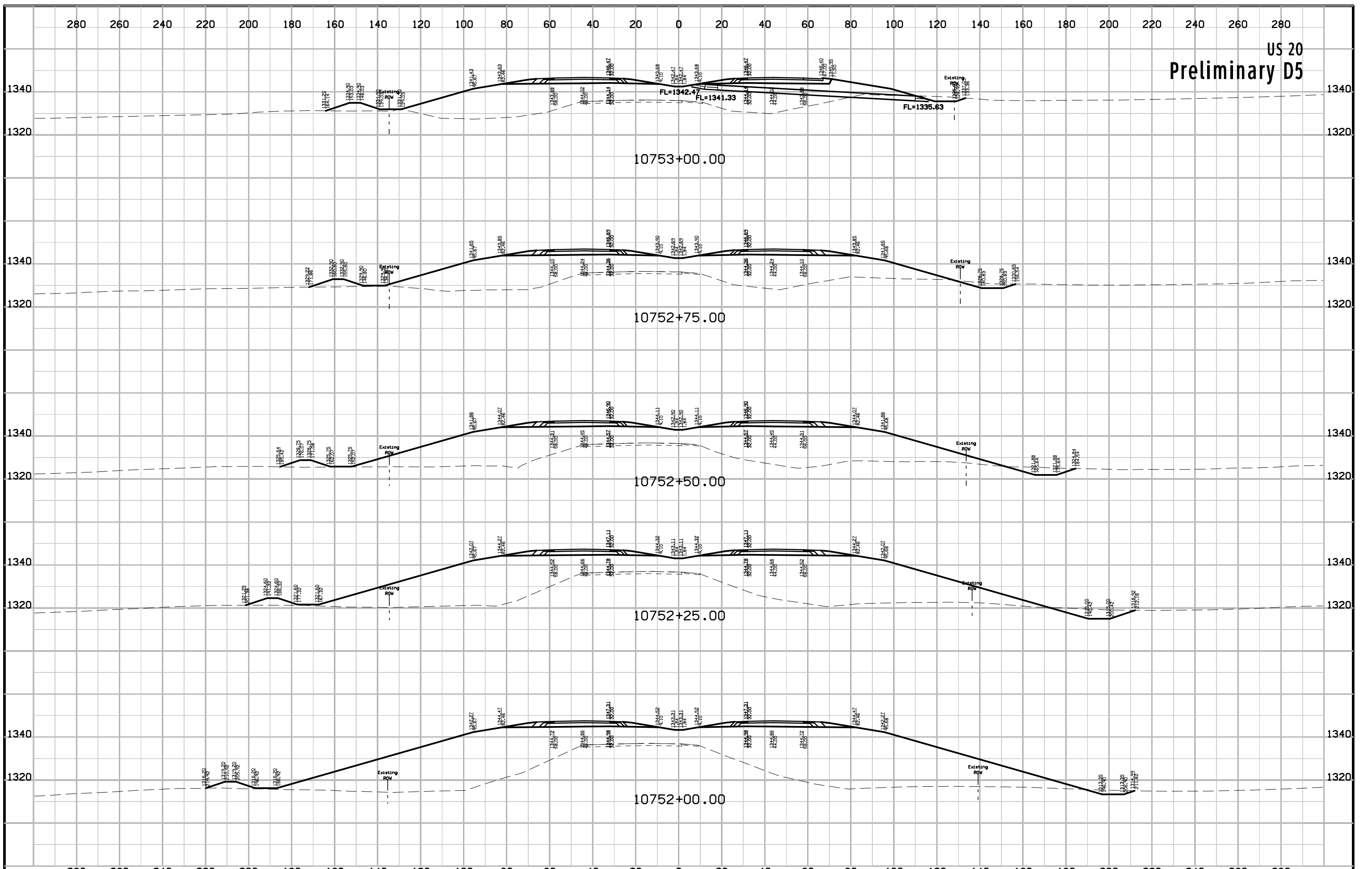
US 20  
Preliminary D5



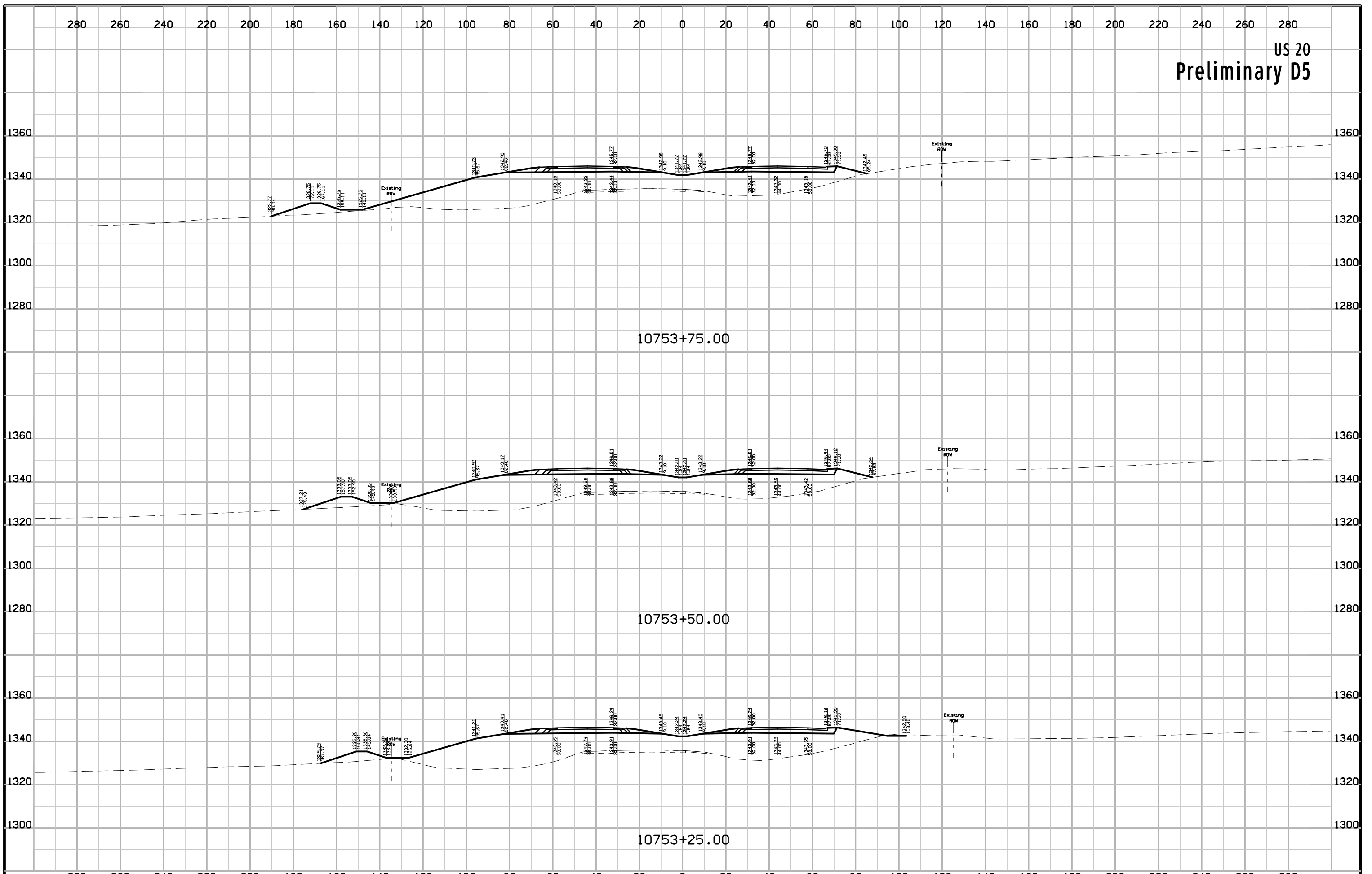
US 20  
Preliminary D5



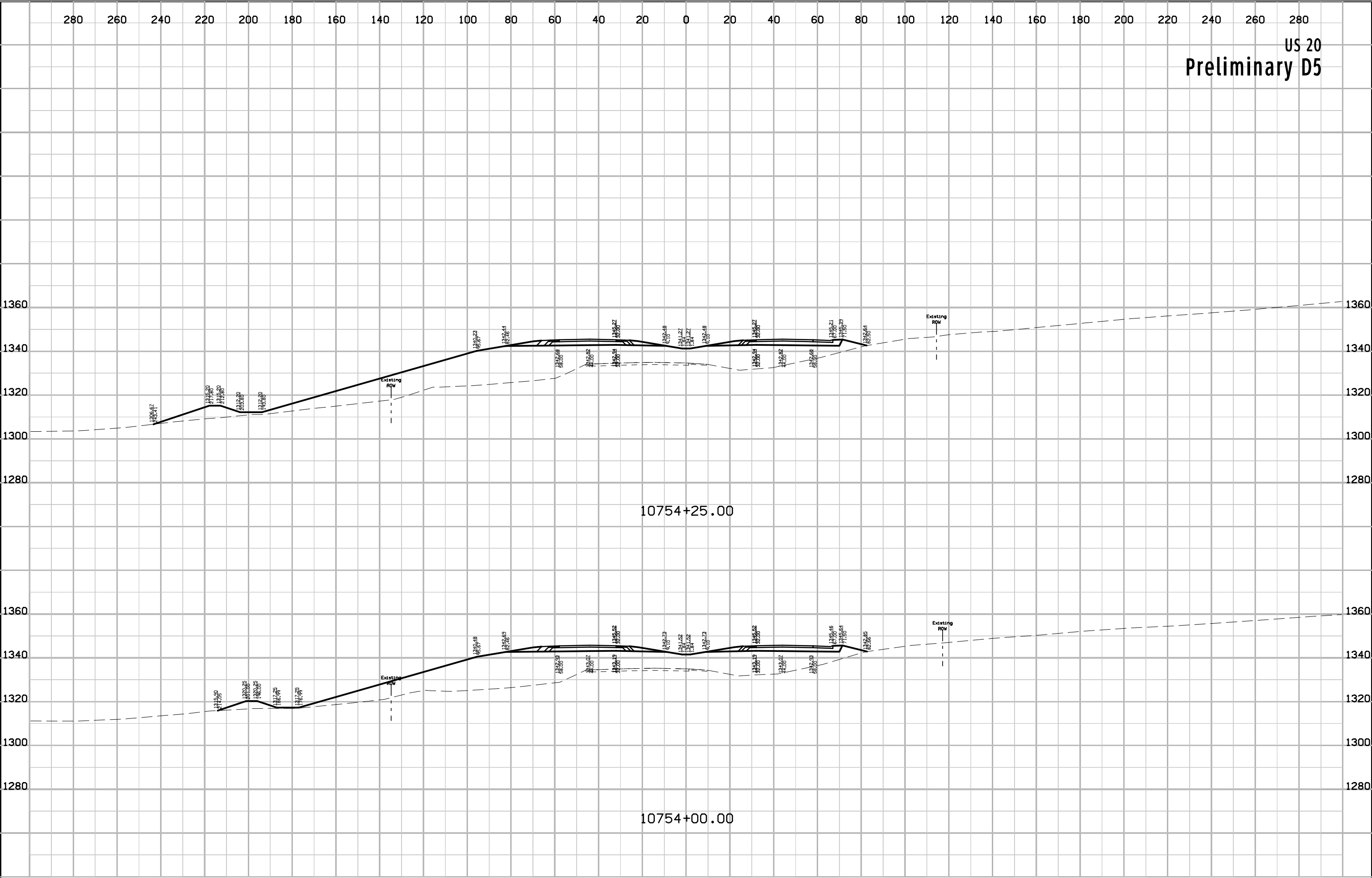
US 20  
Preliminary D5



US 20  
Preliminary D5

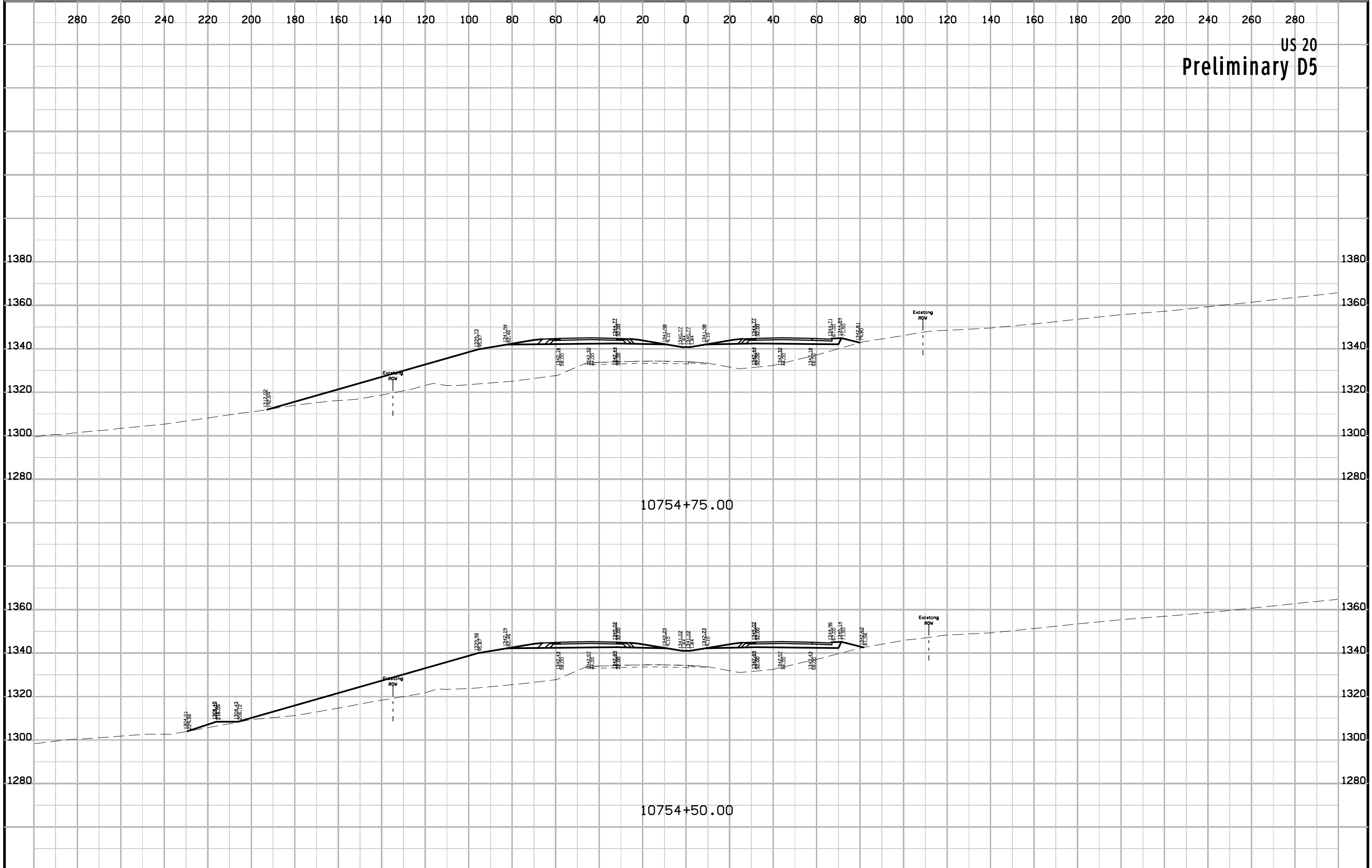


US 20  
Preliminary D5

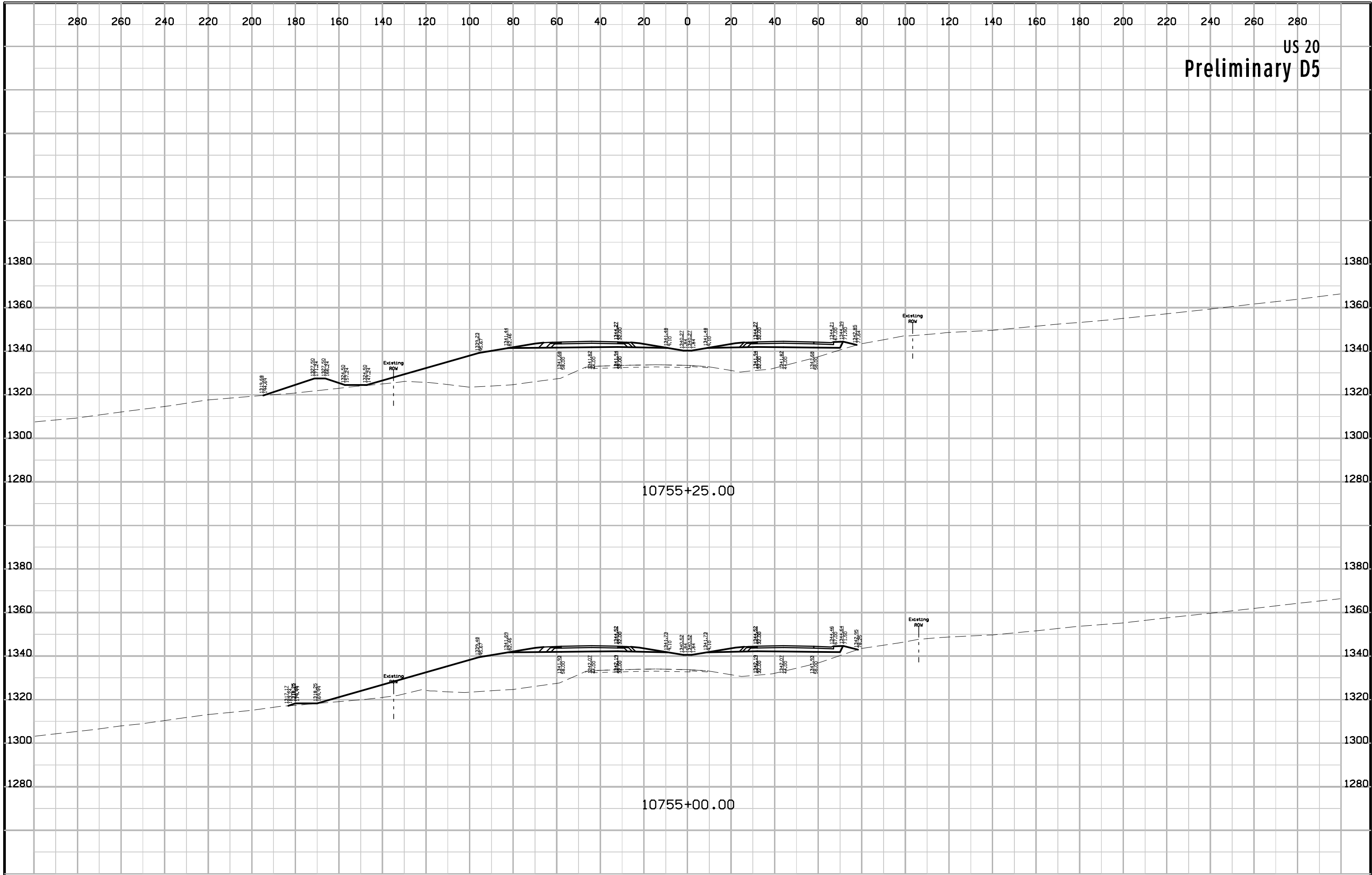




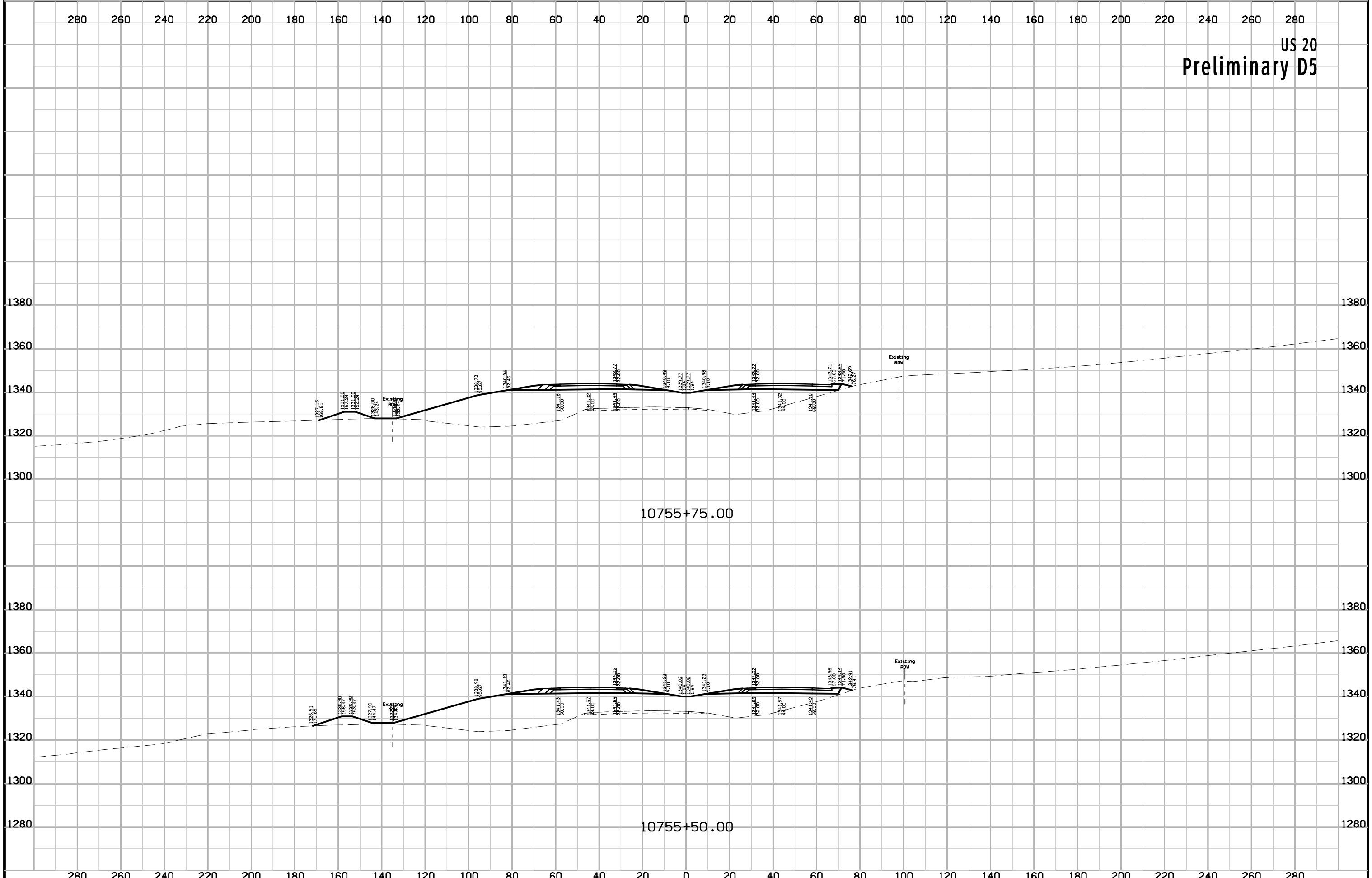
US 20  
Preliminary D5



US 20  
Preliminary D5



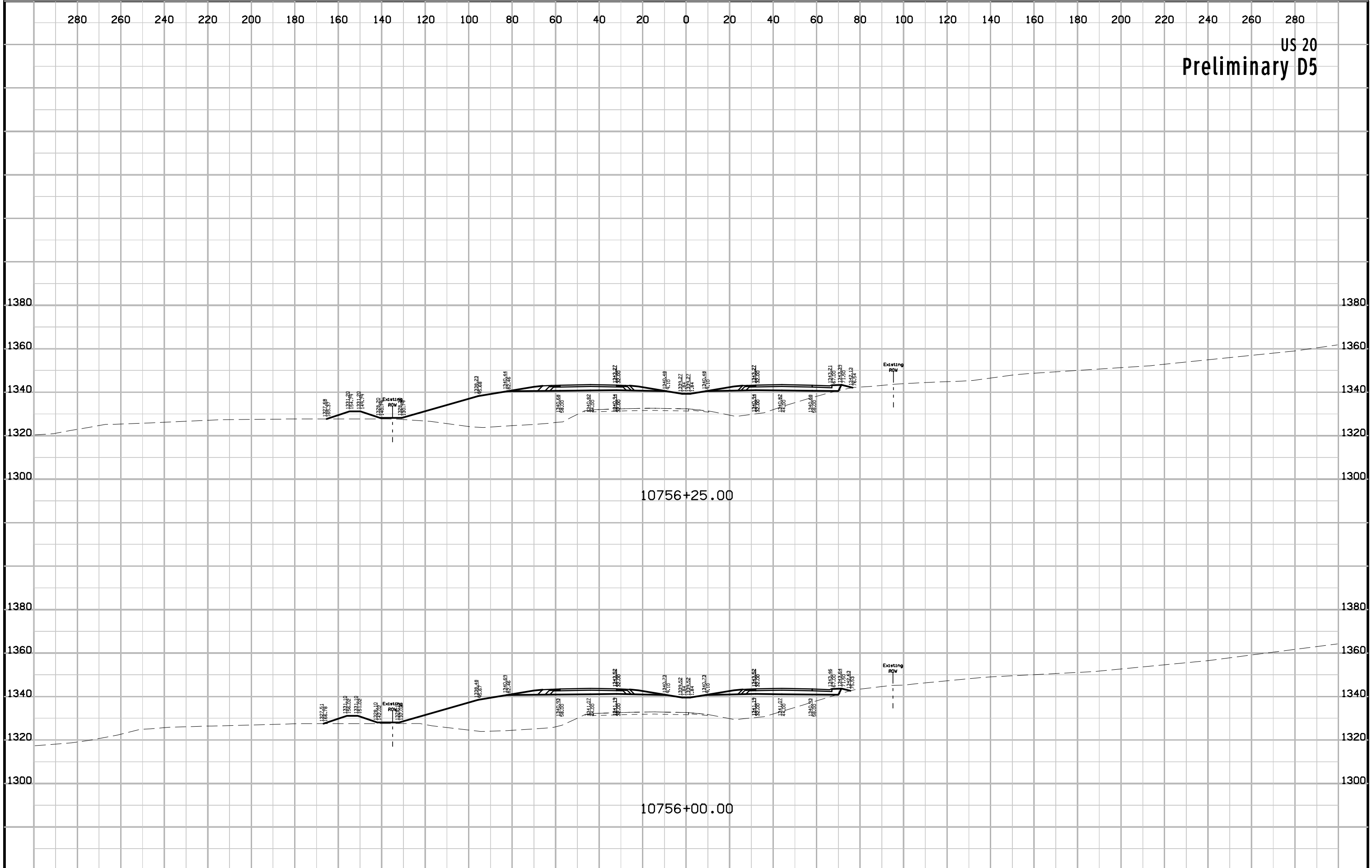
US 20  
Preliminary D5



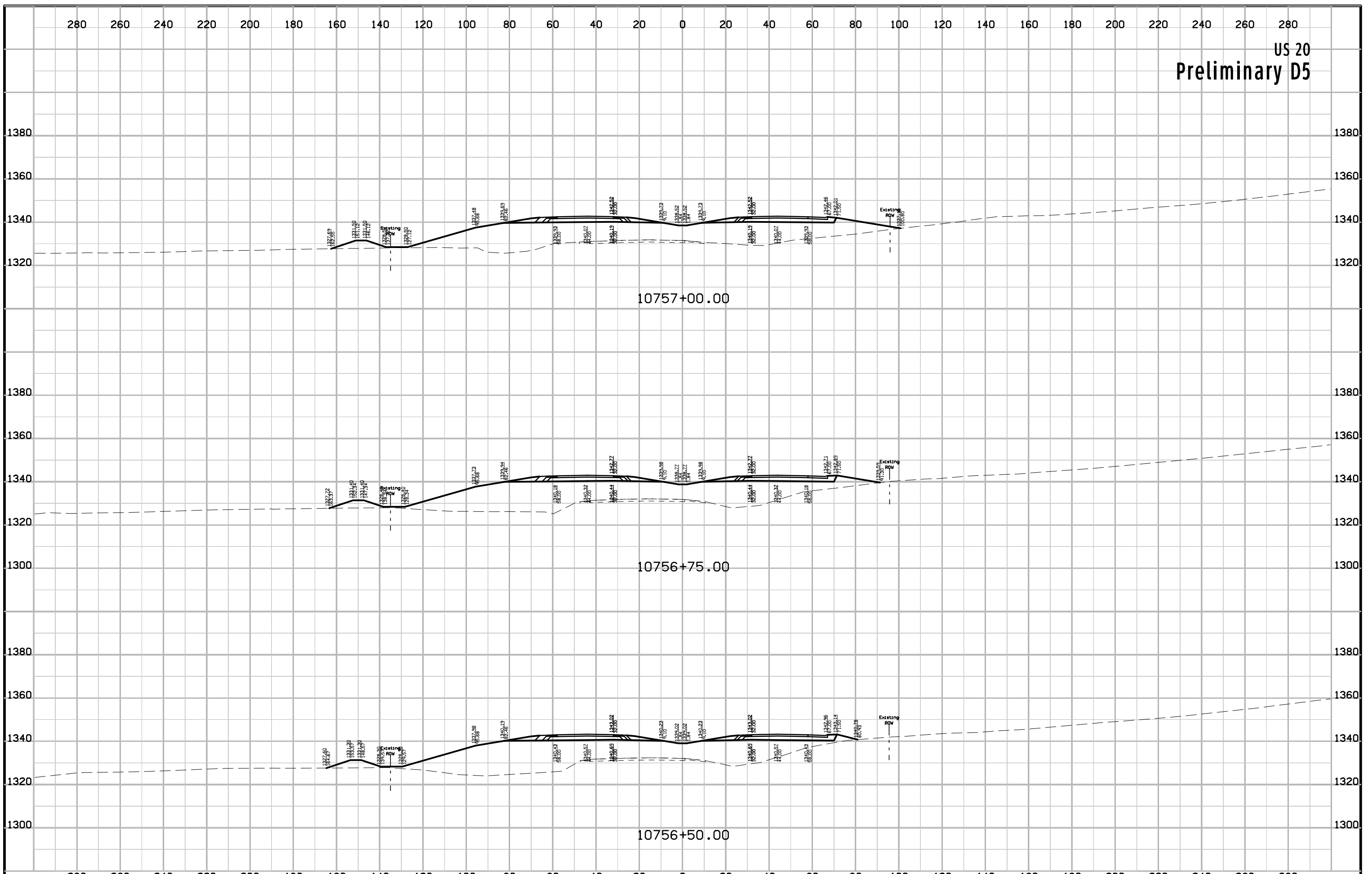
10755+75.00

10755+50.00

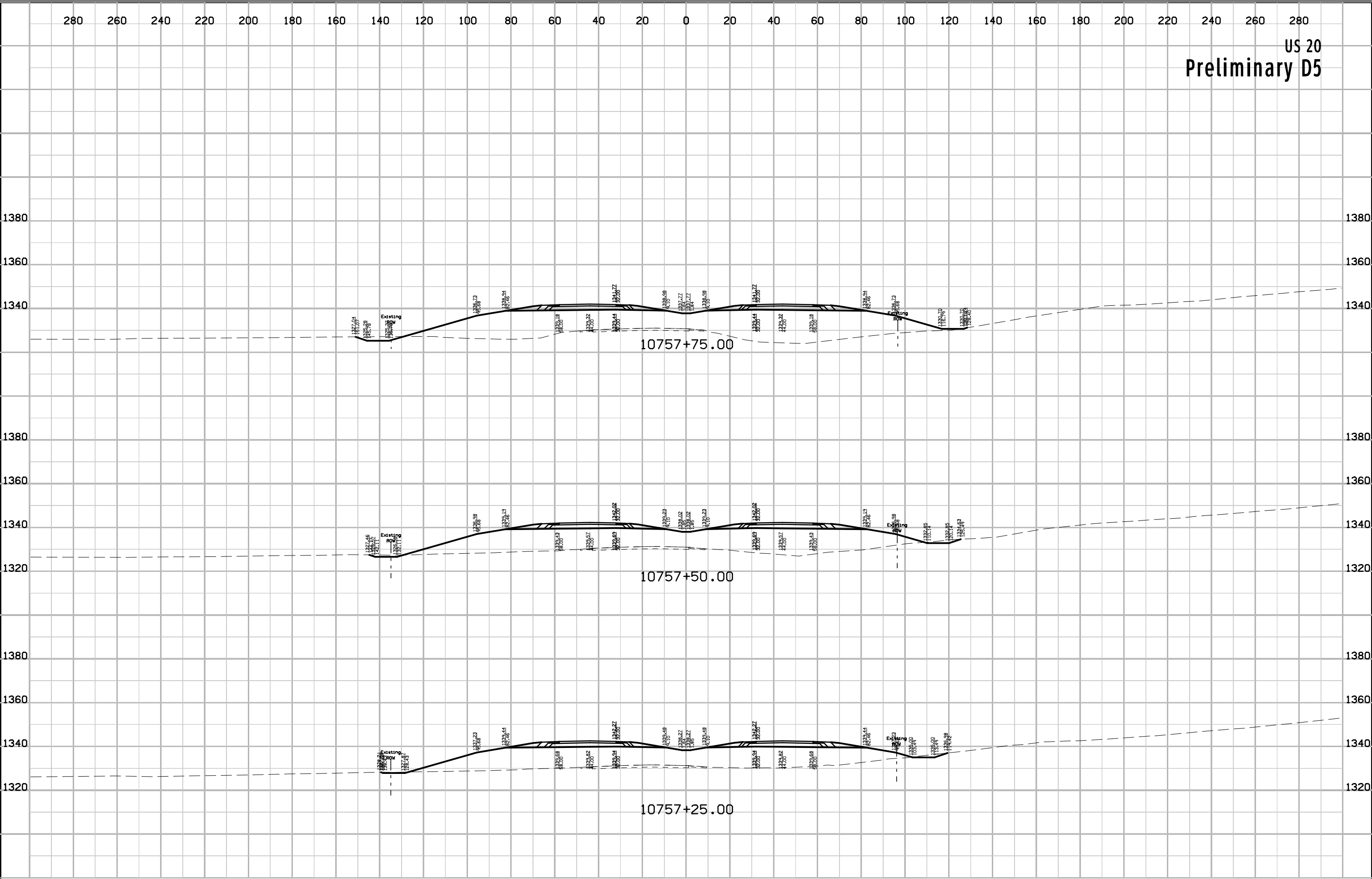
US 20  
Preliminary D5



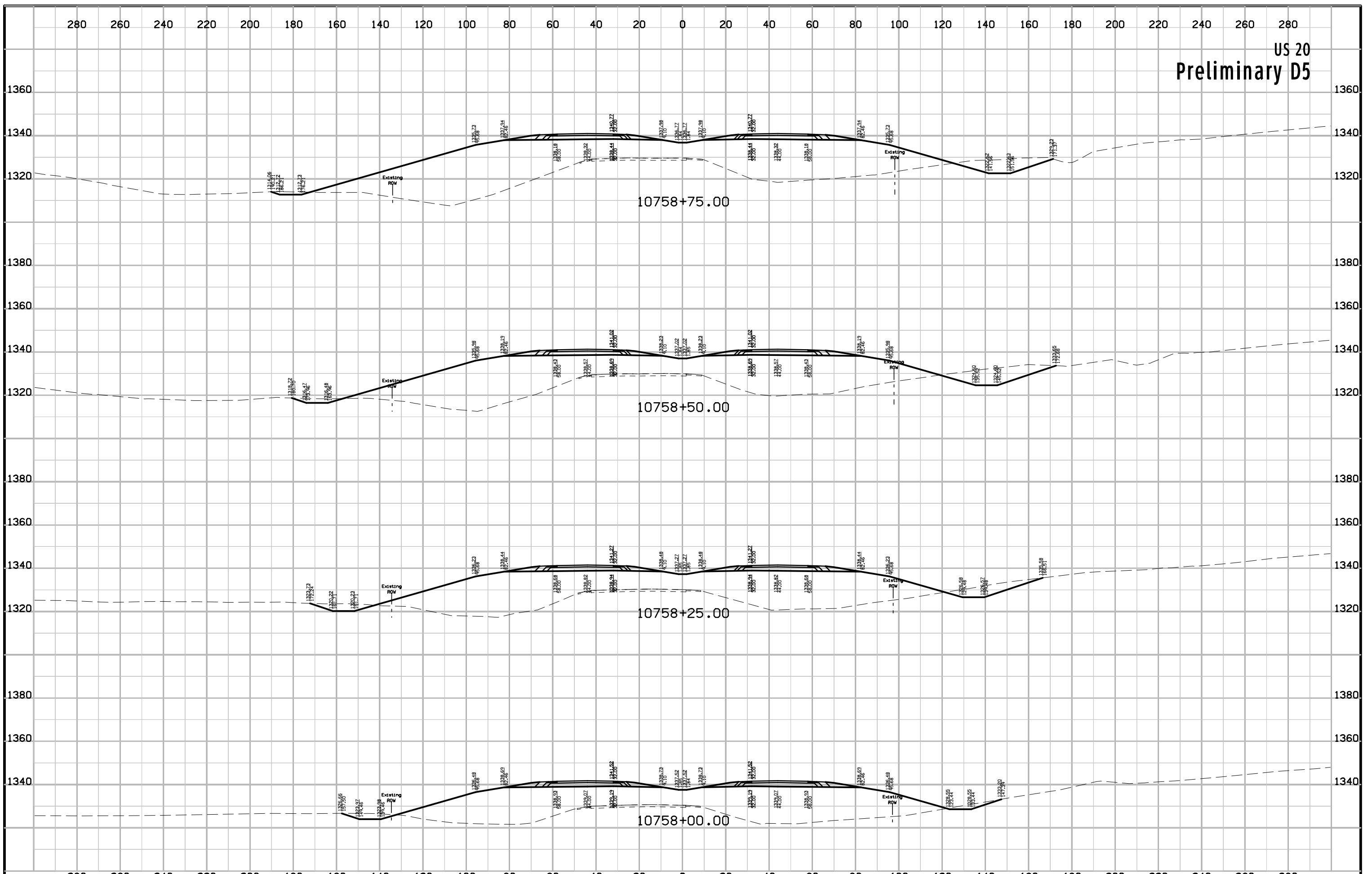
US 20  
Preliminary D5



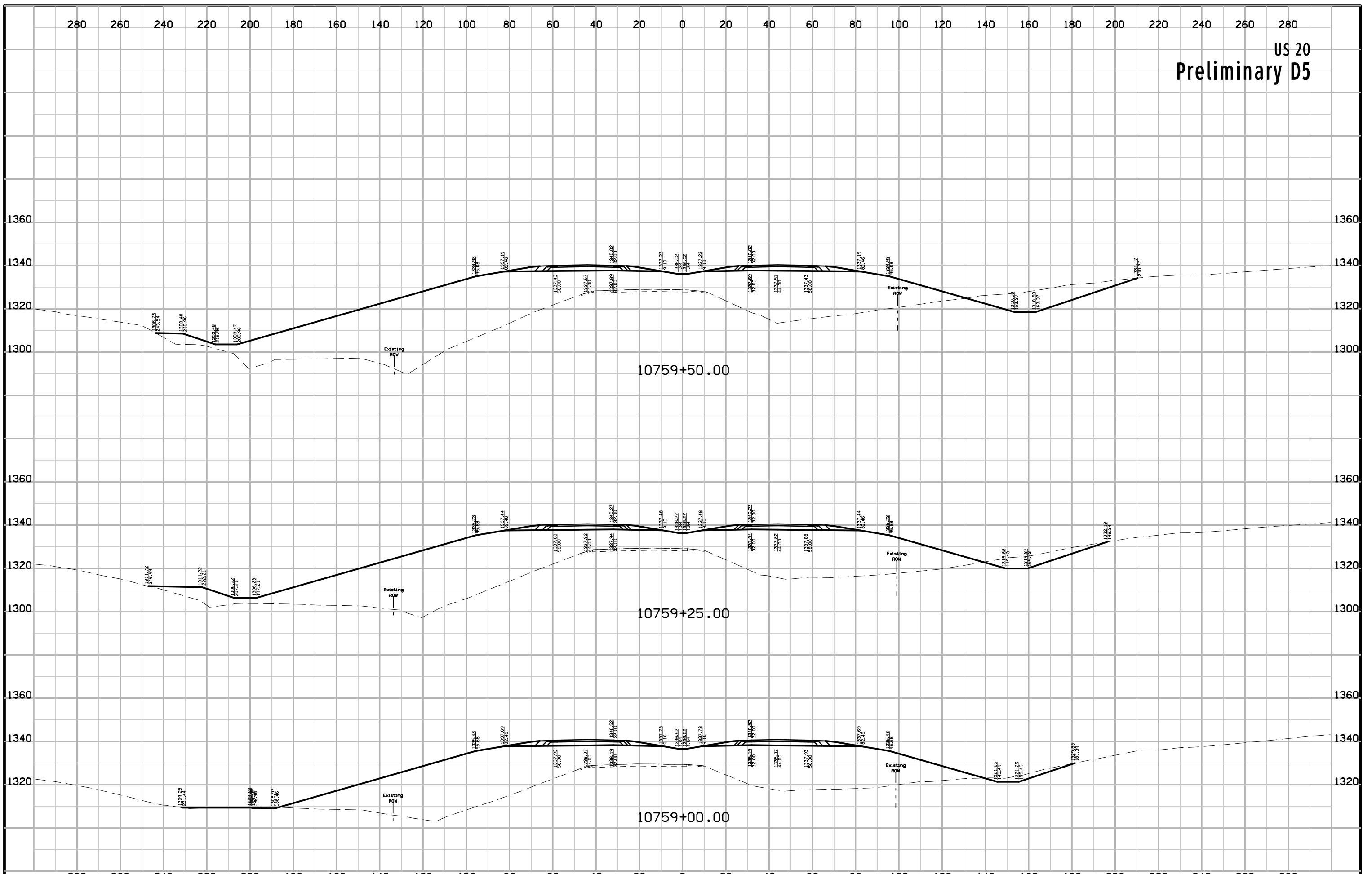
US 20  
Preliminary D5



US 20  
Preliminary D5

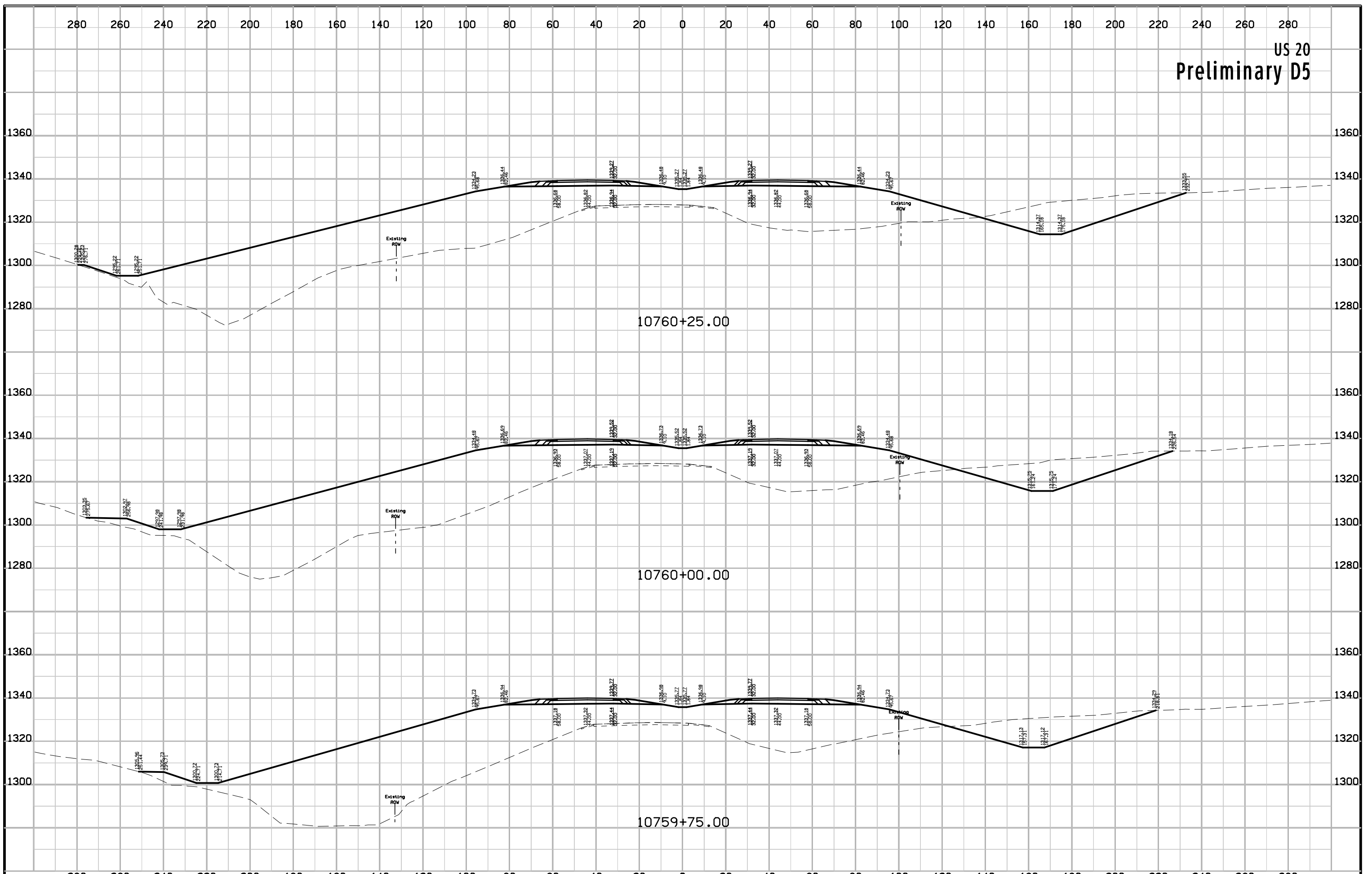


US 20  
Preliminary D5

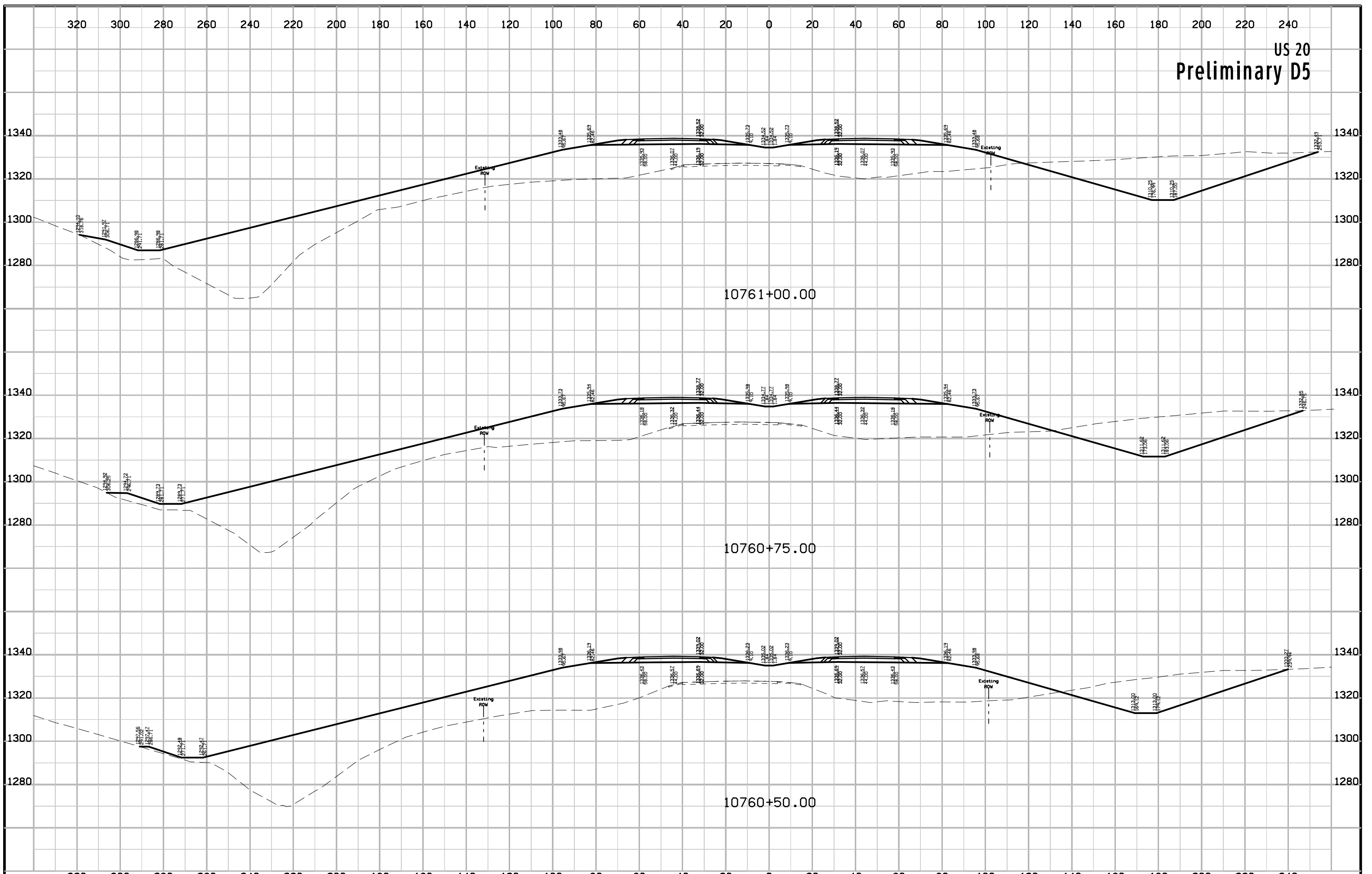




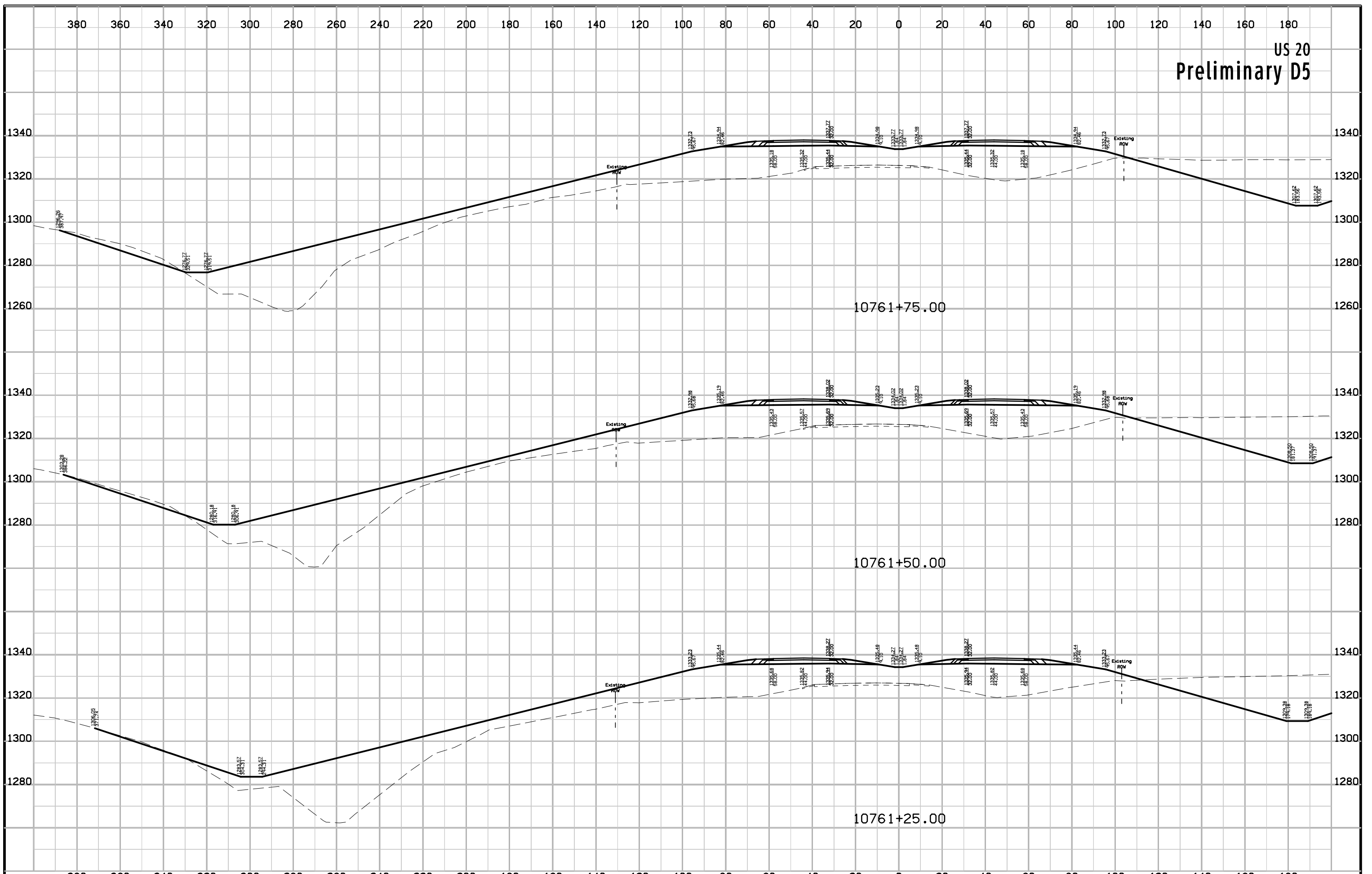
US 20  
Preliminary D5



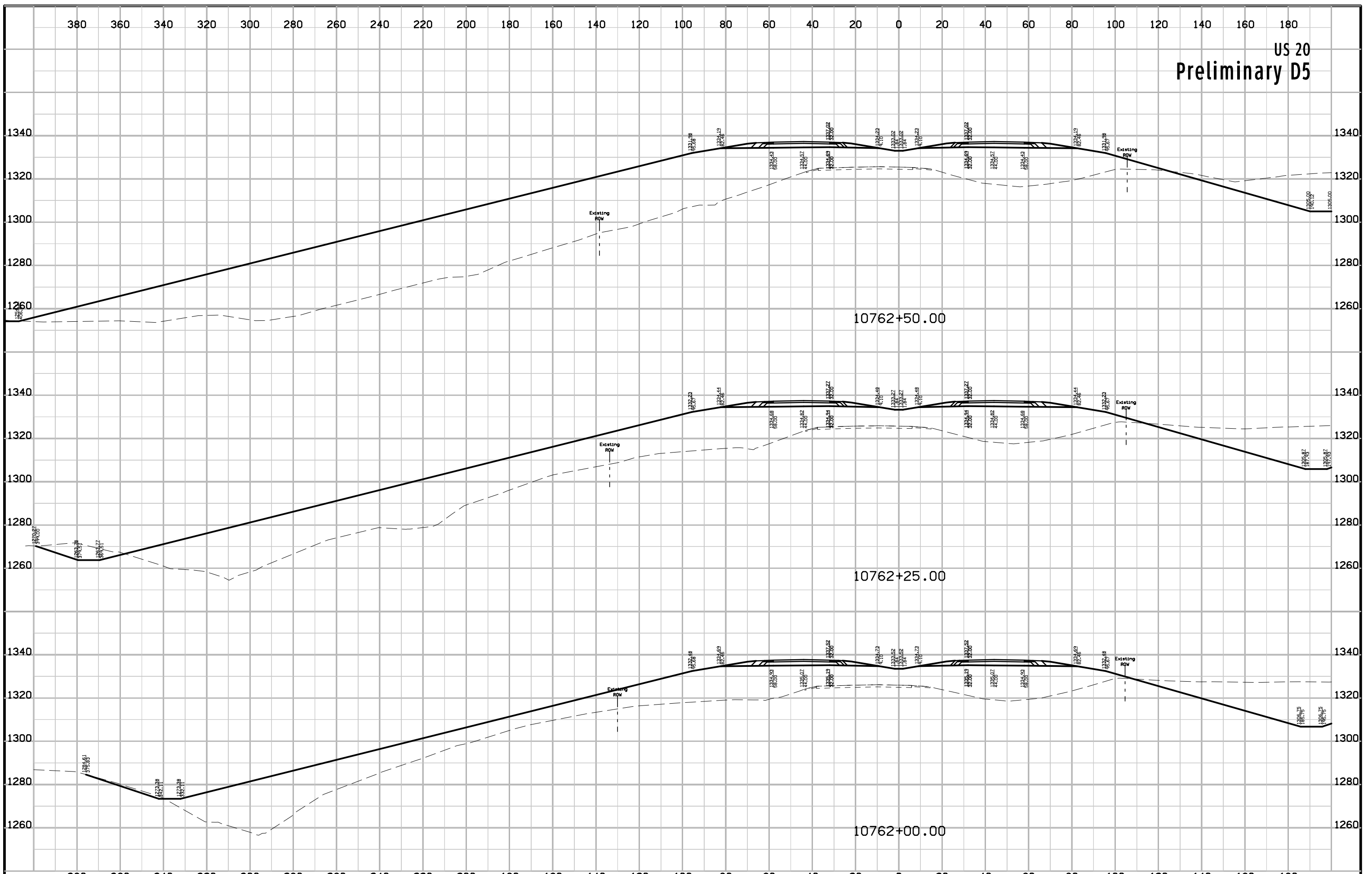
US 20  
Preliminary D5



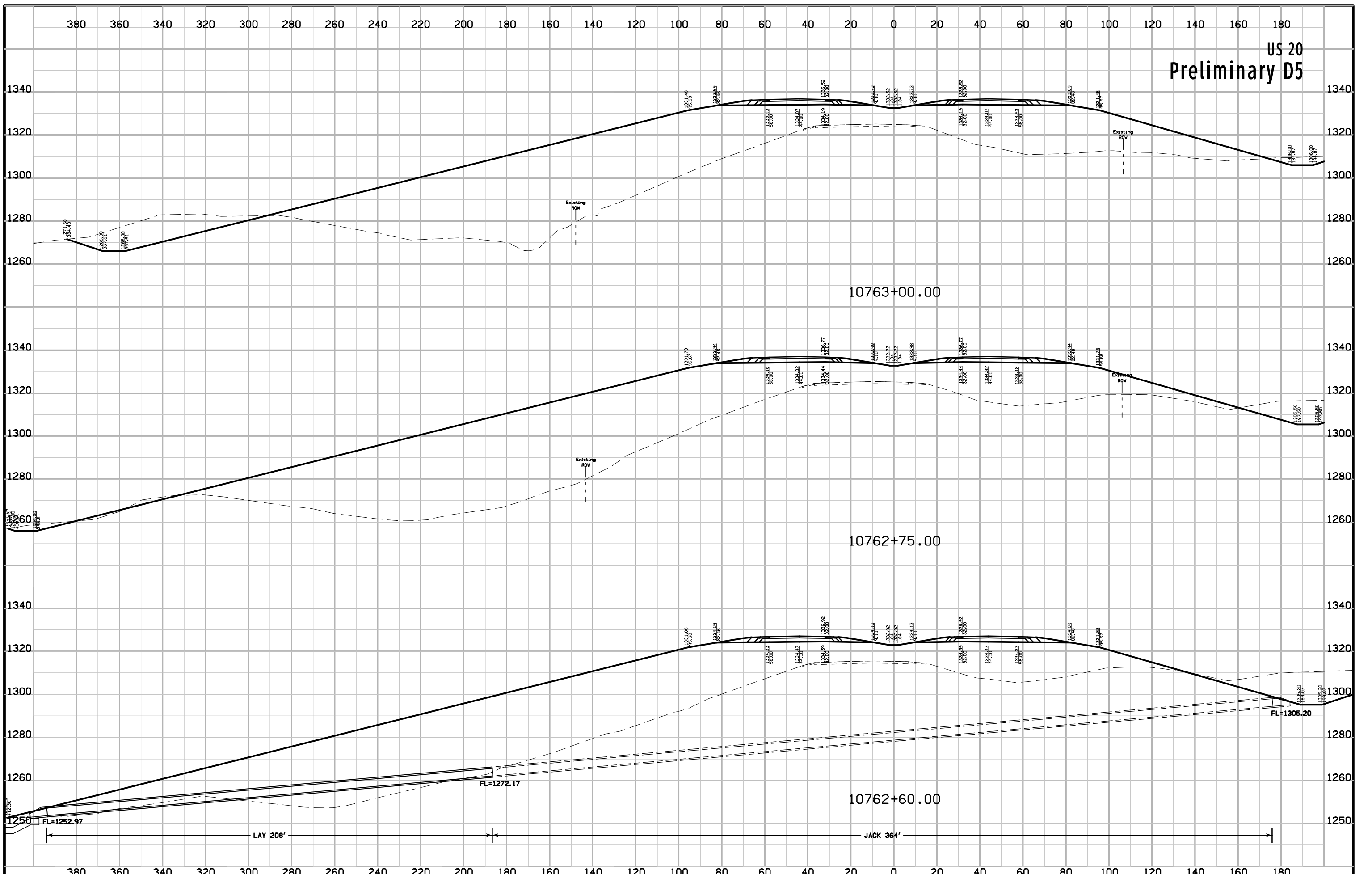
US 20  
Preliminary D5



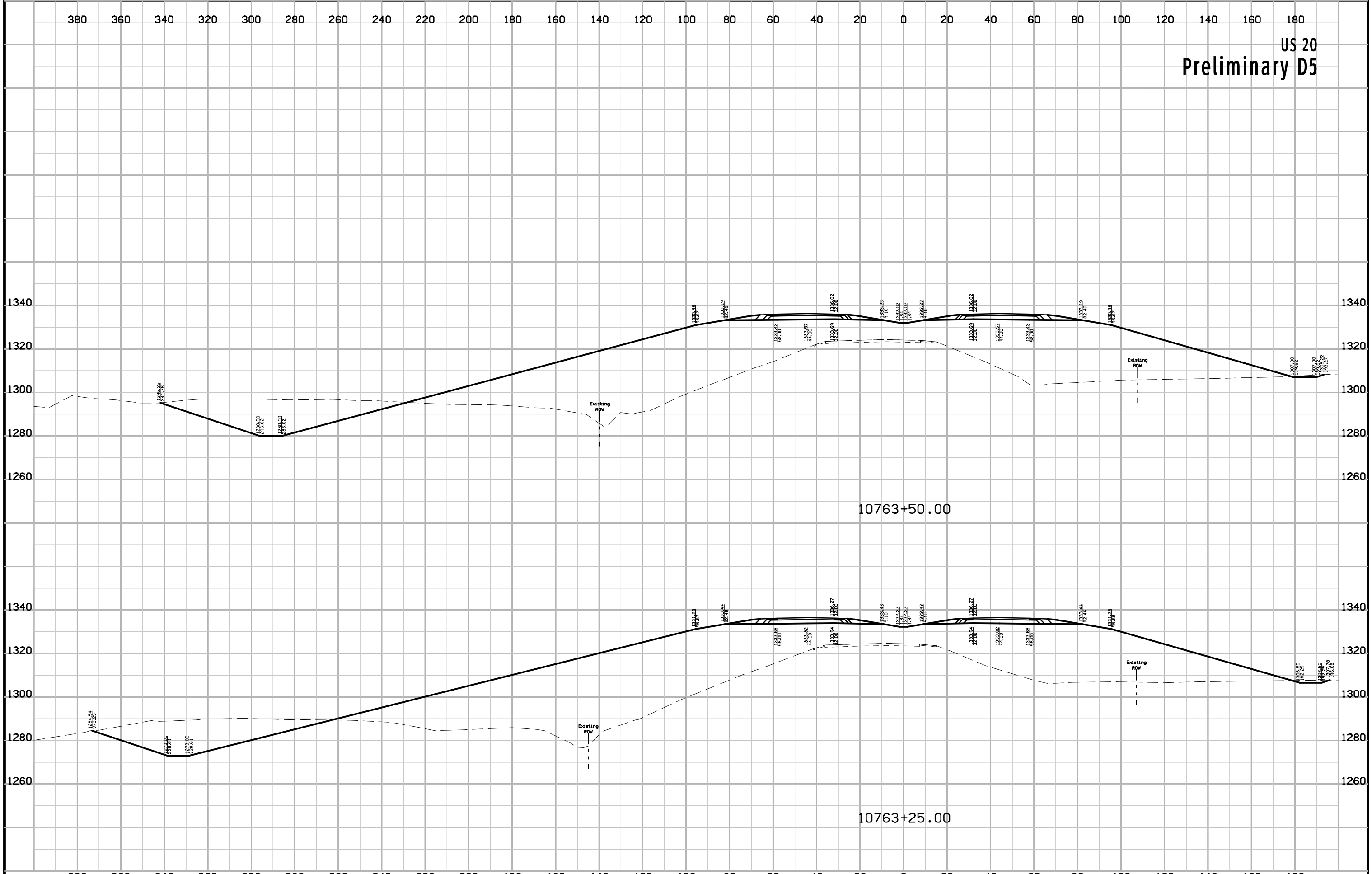
US 20  
Preliminary D5



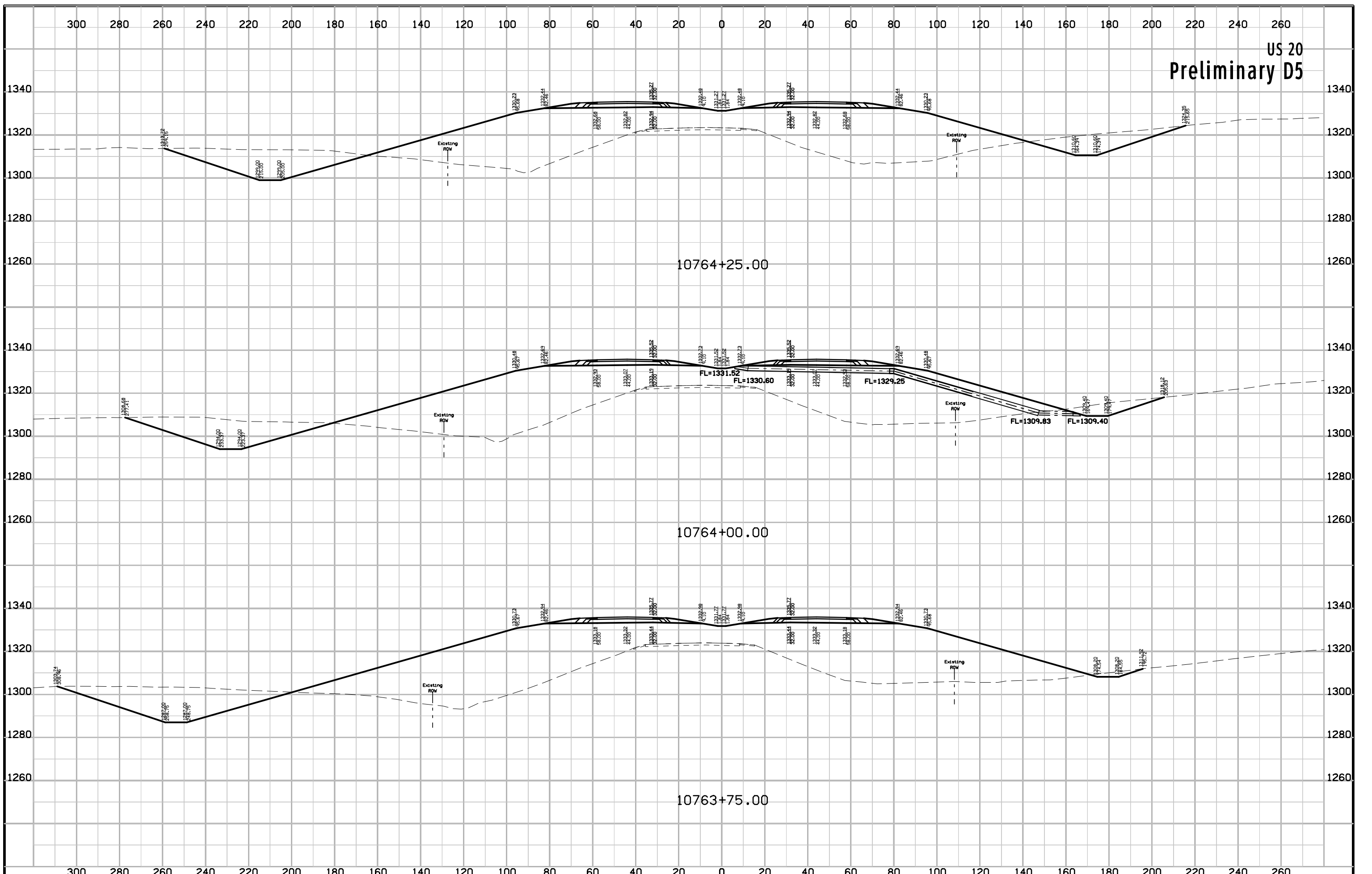
US 20  
Preliminary D5



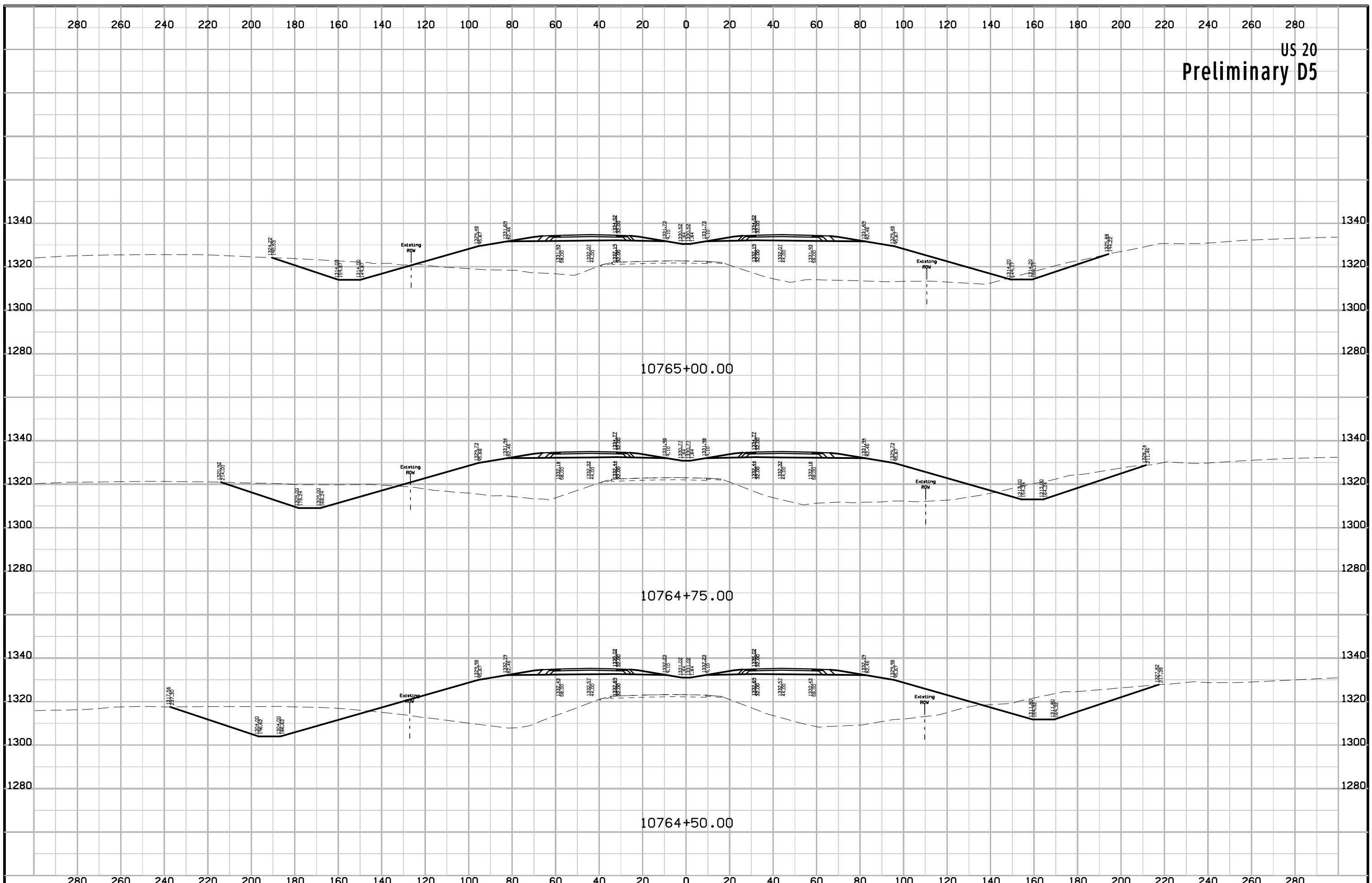
US 20  
Preliminary D5



US 20  
Preliminary D5



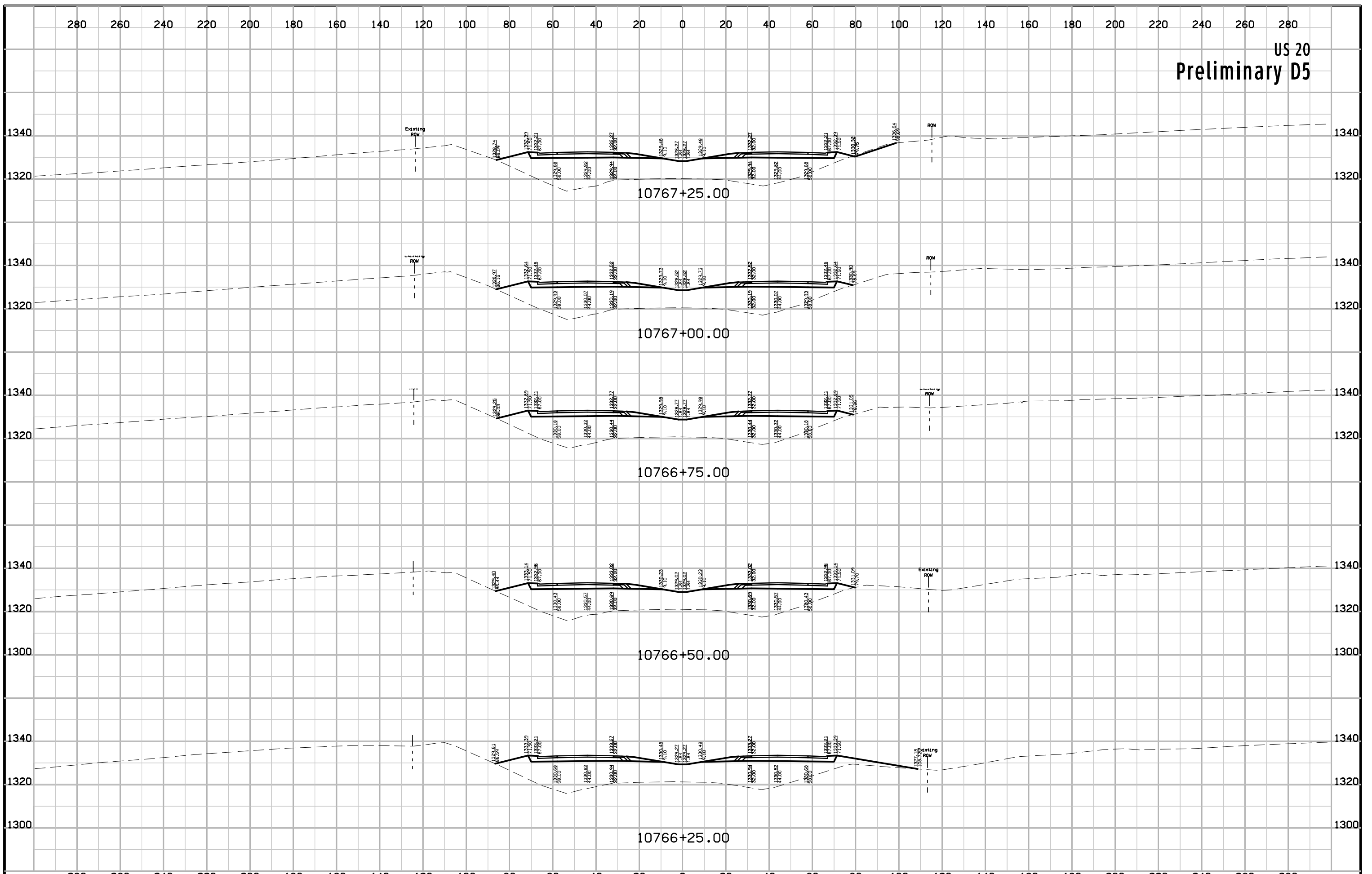
# US 20 Preliminary D5



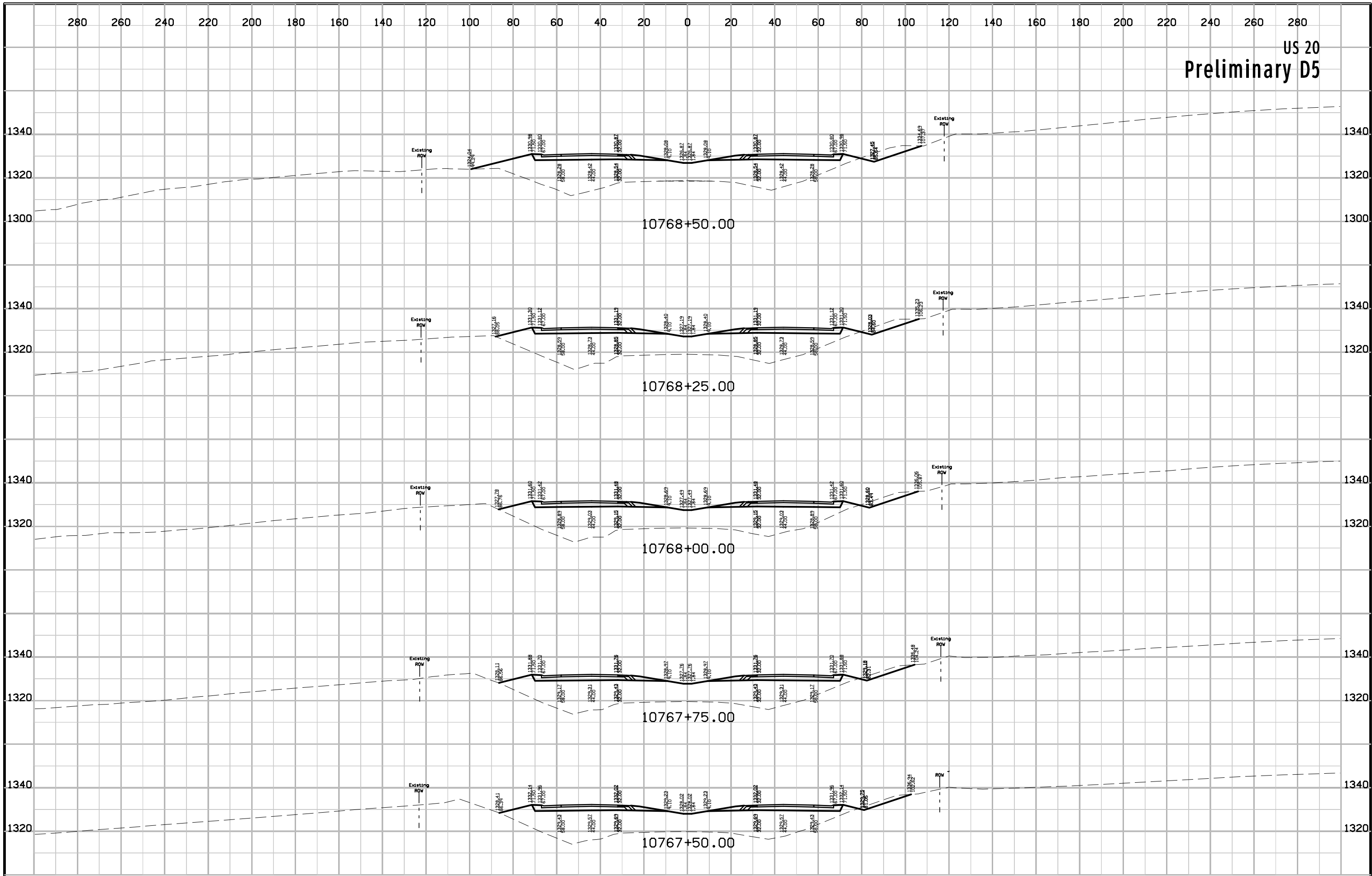


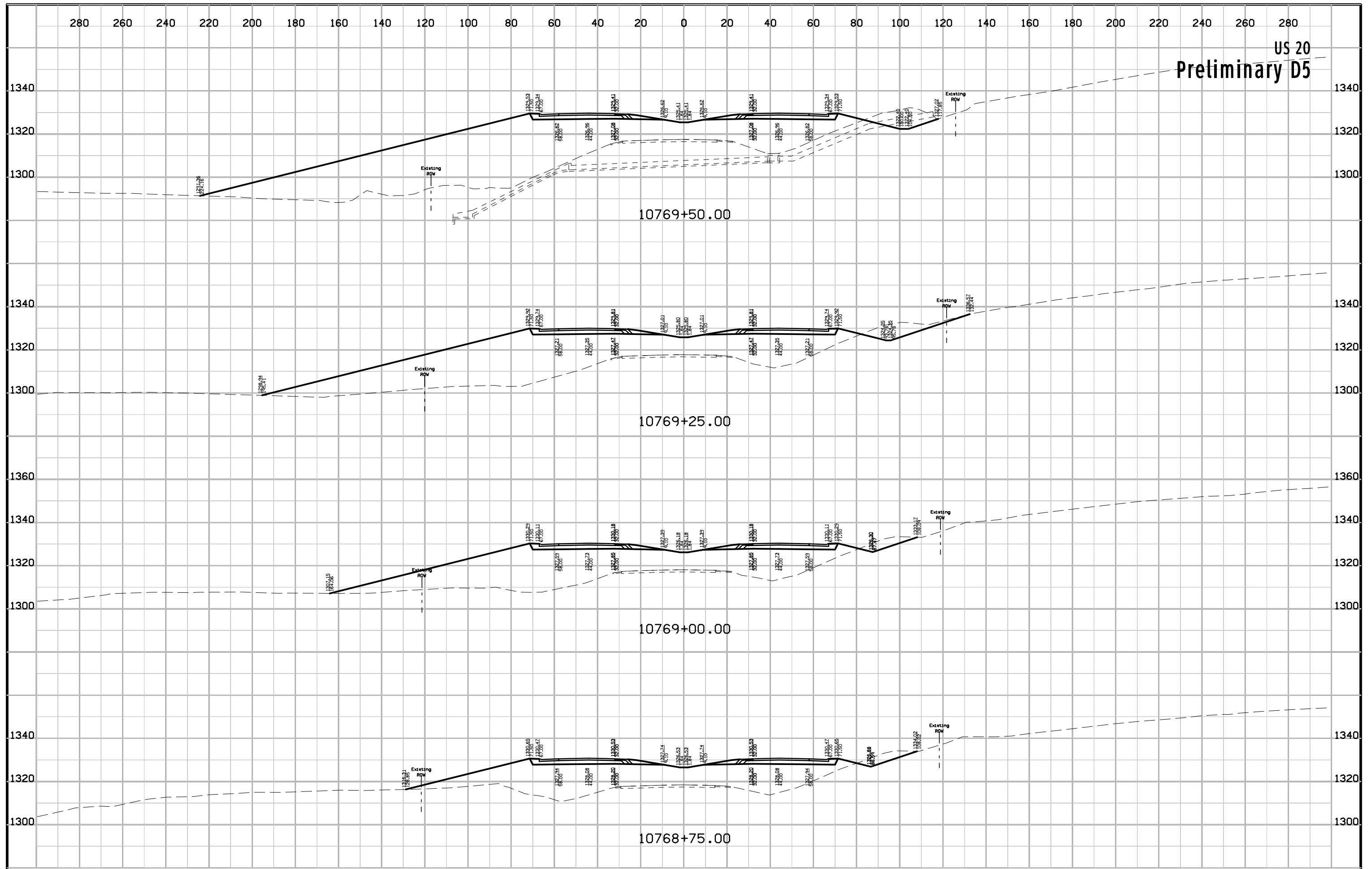


US 20  
Preliminary D5

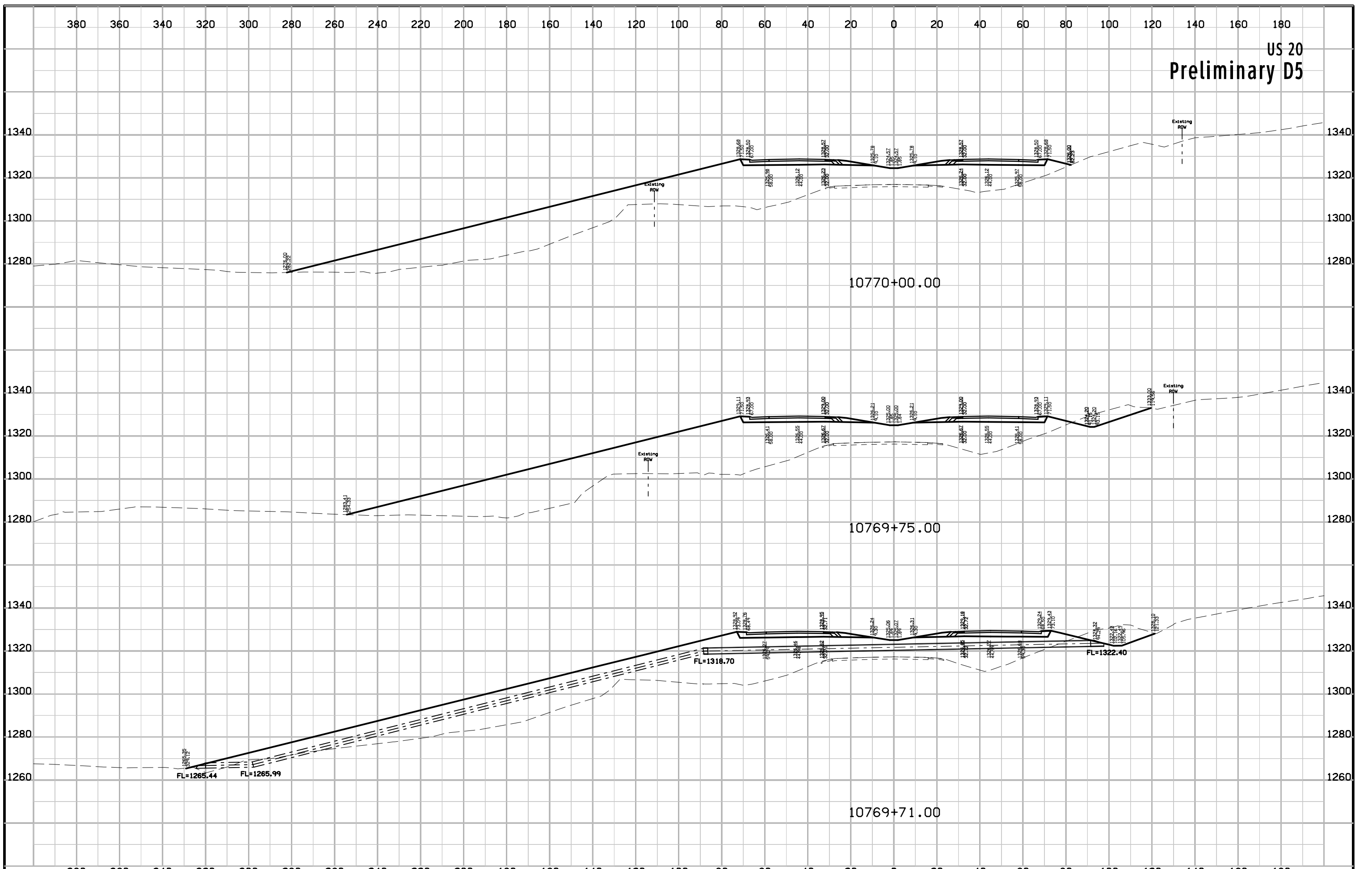


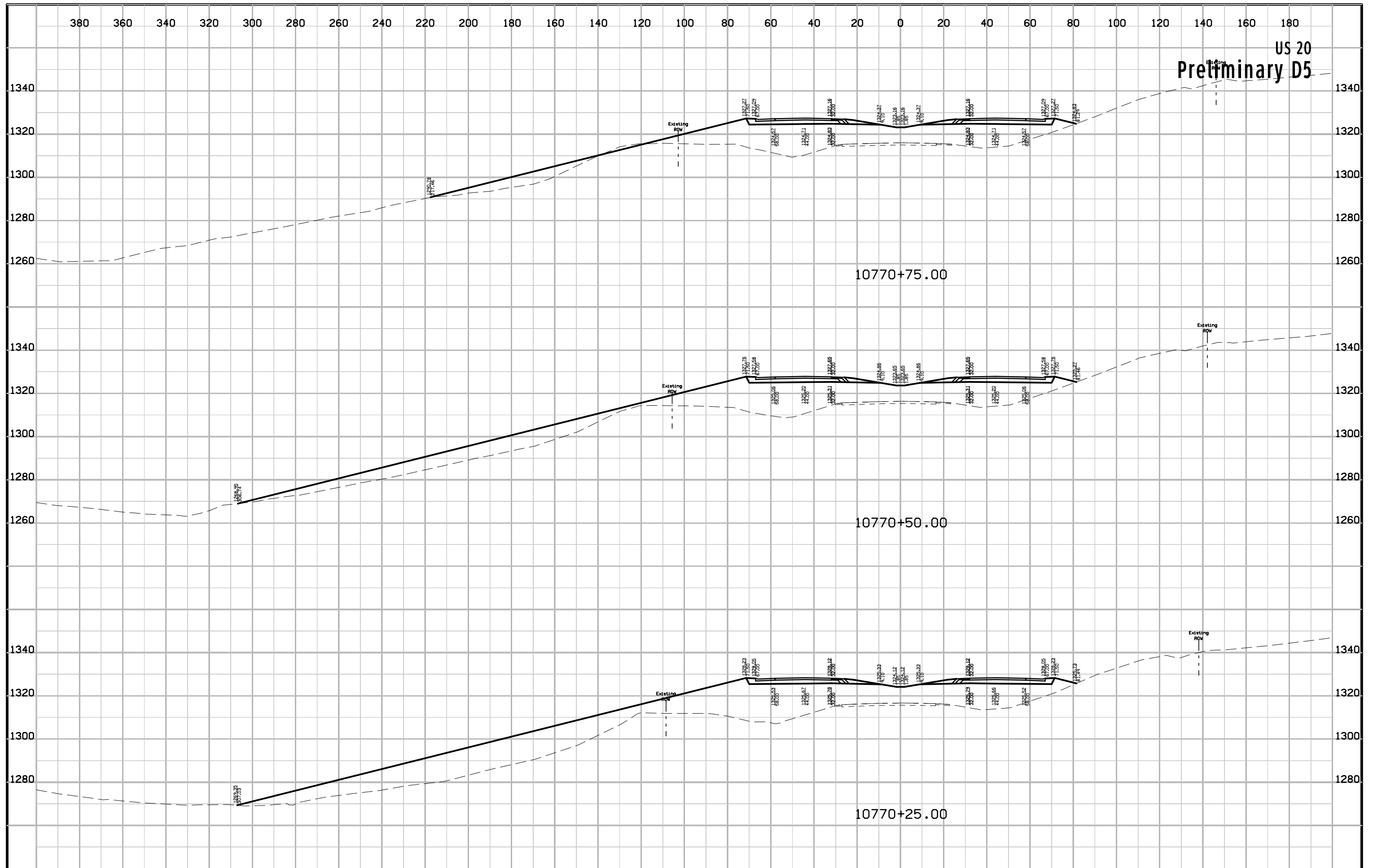
US 20  
Preliminary D5



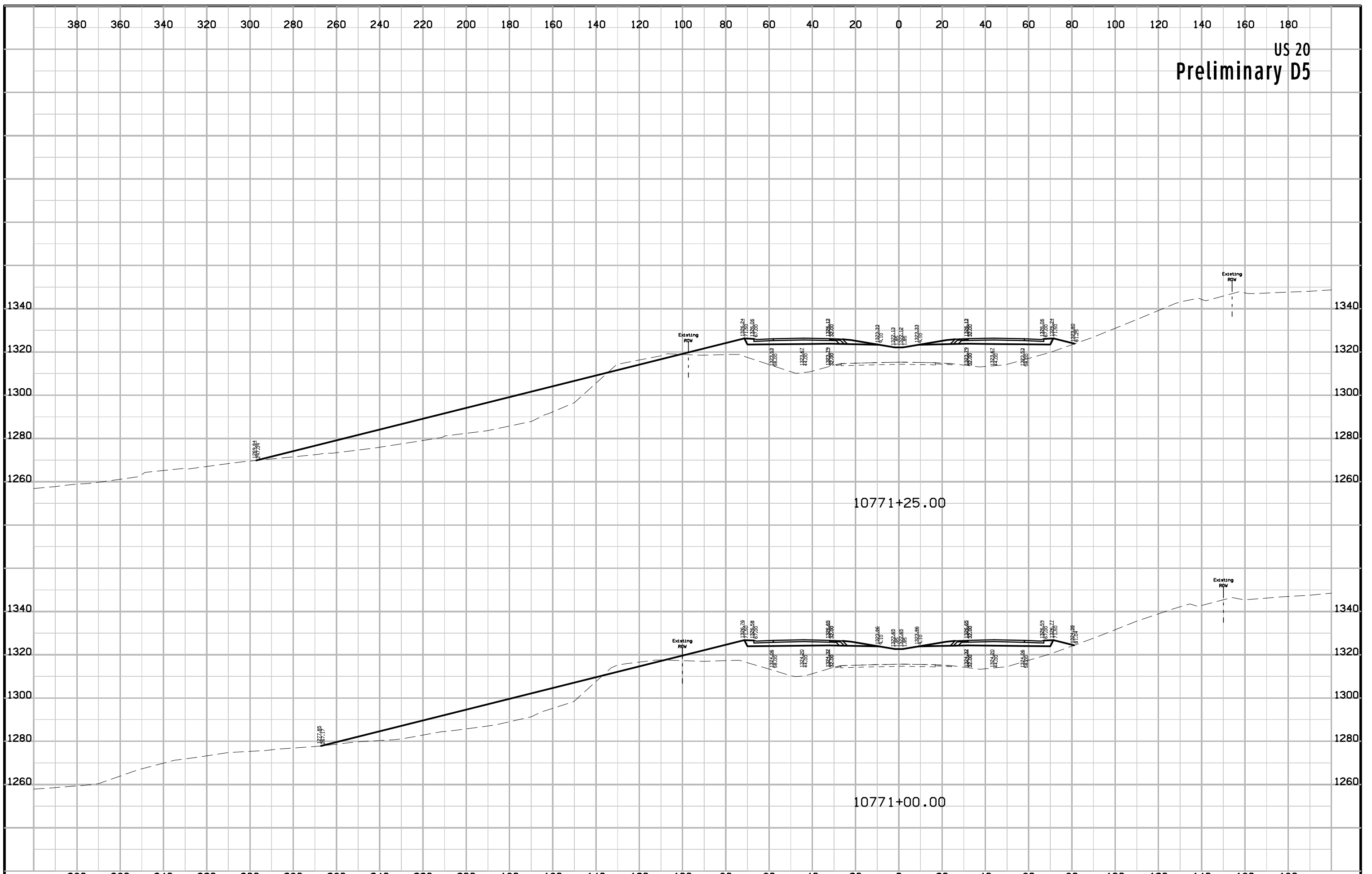


US 20  
Preliminary D5

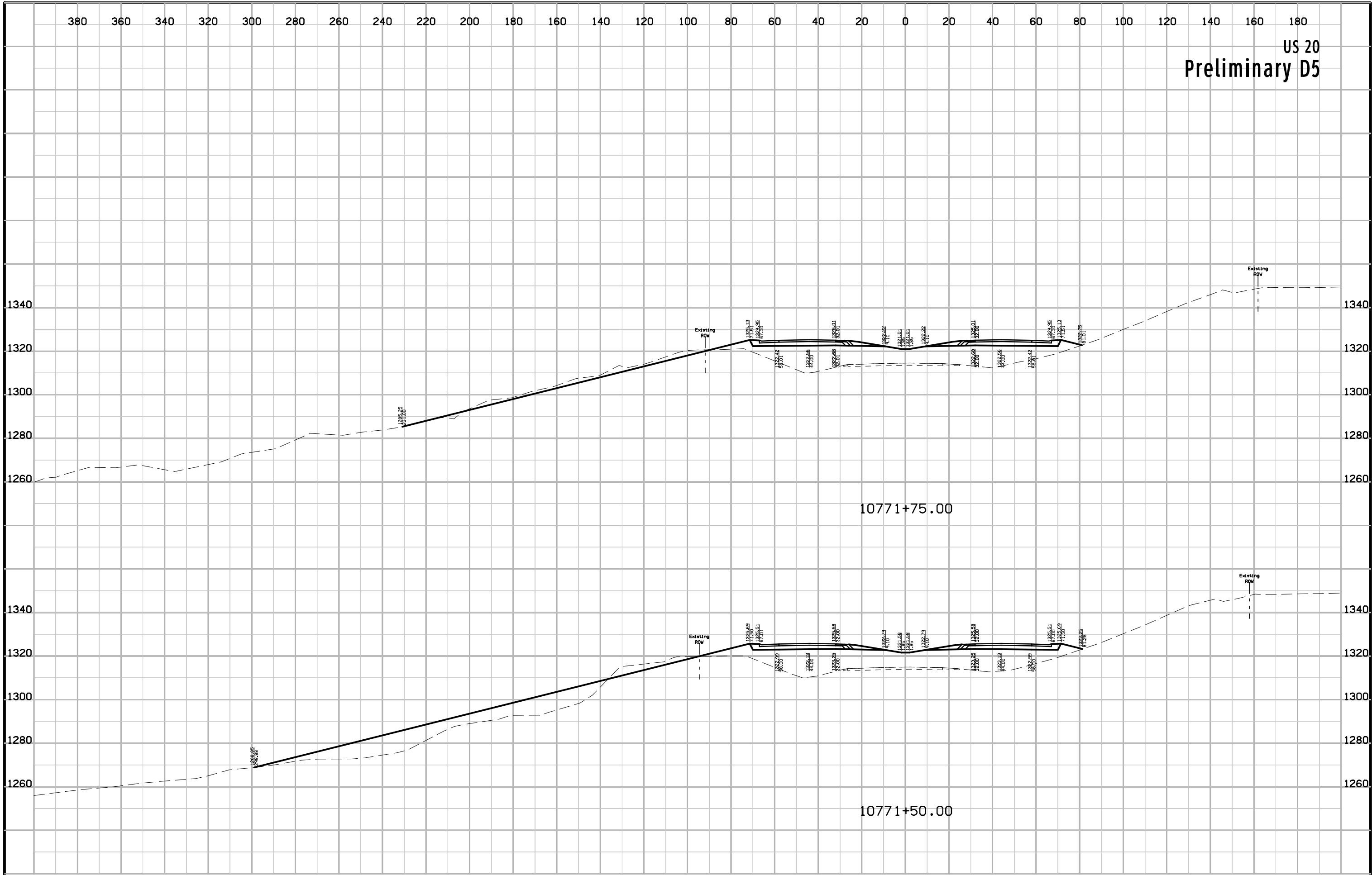




US 20  
Preliminary D5

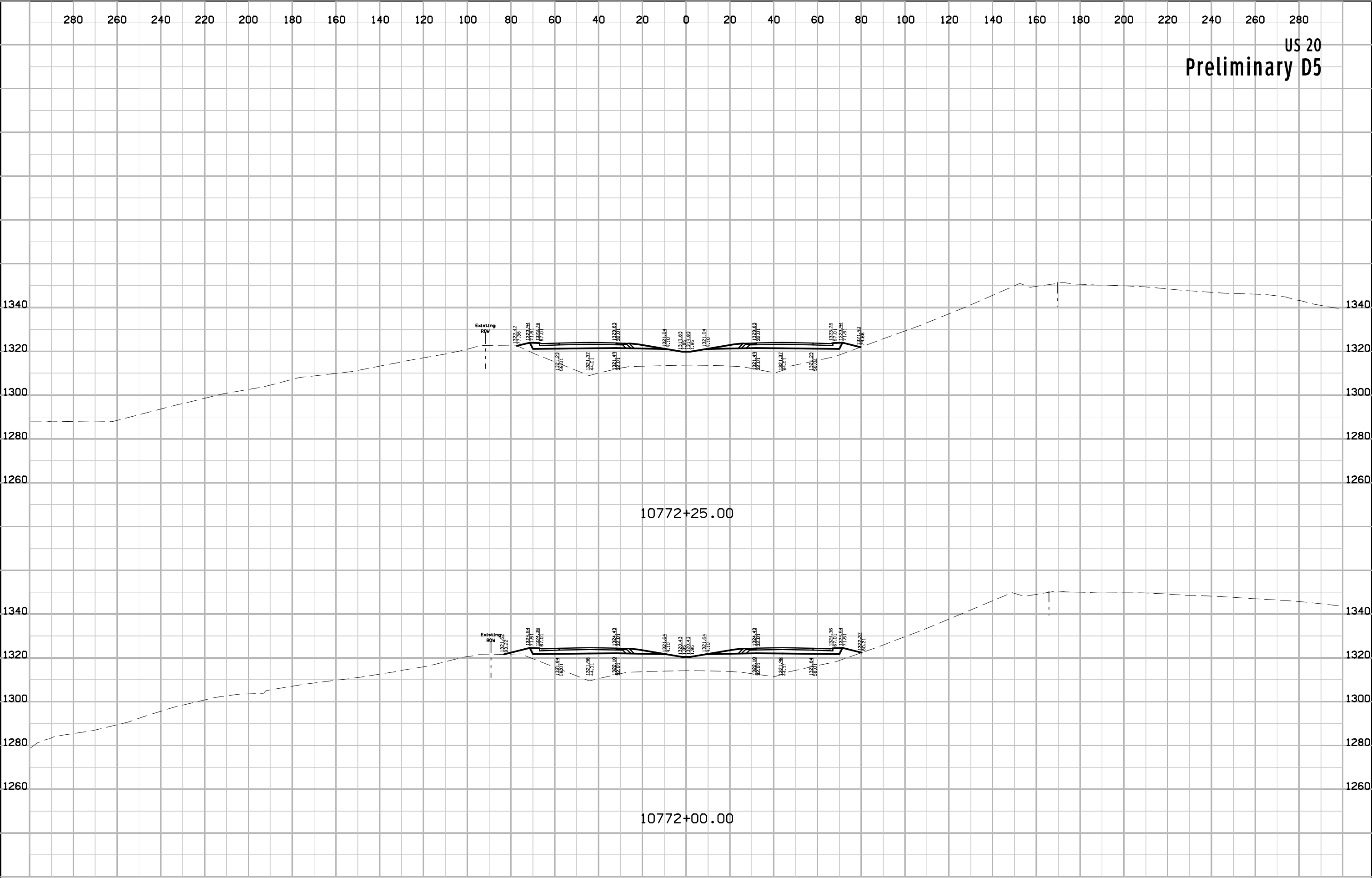


US 20  
Preliminary D5

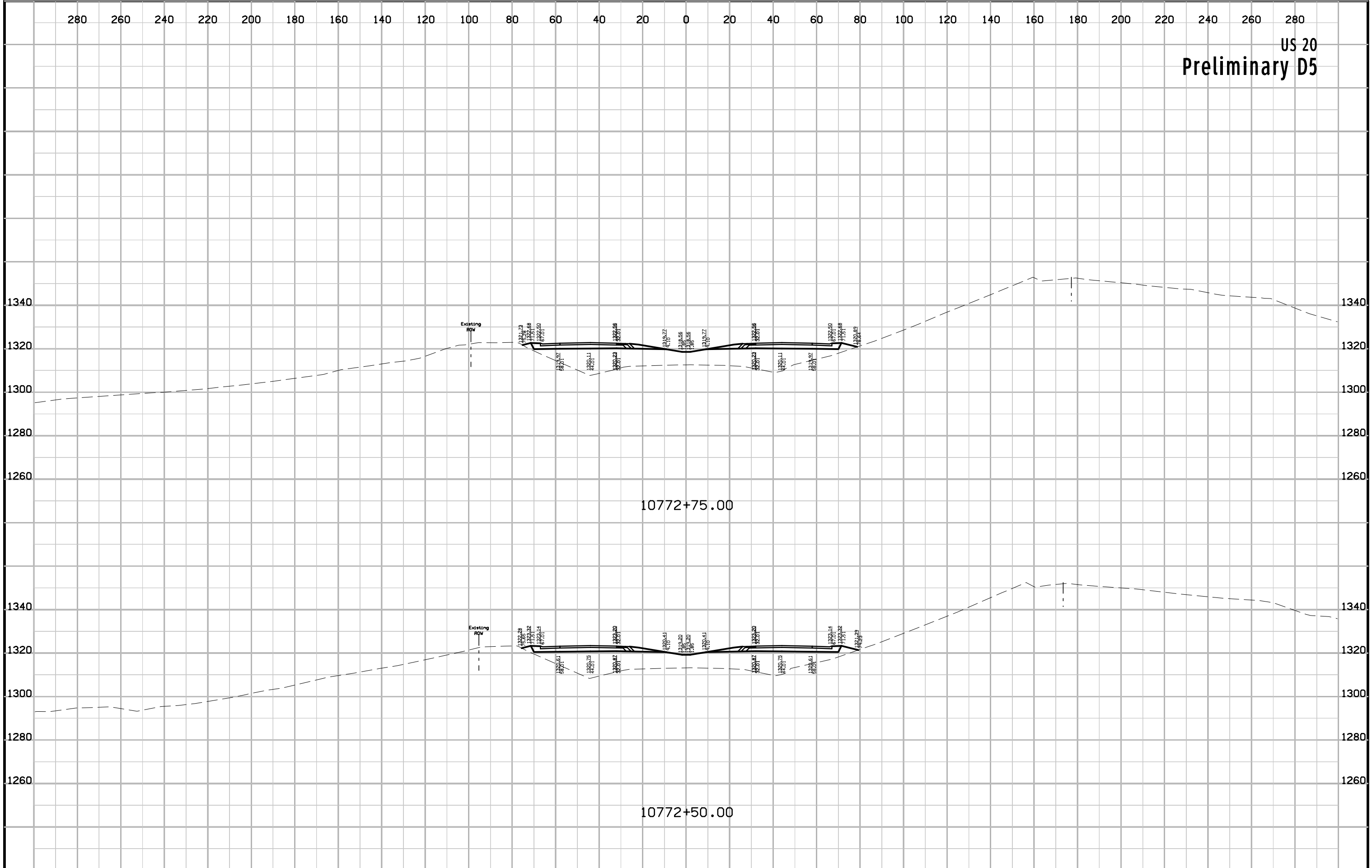




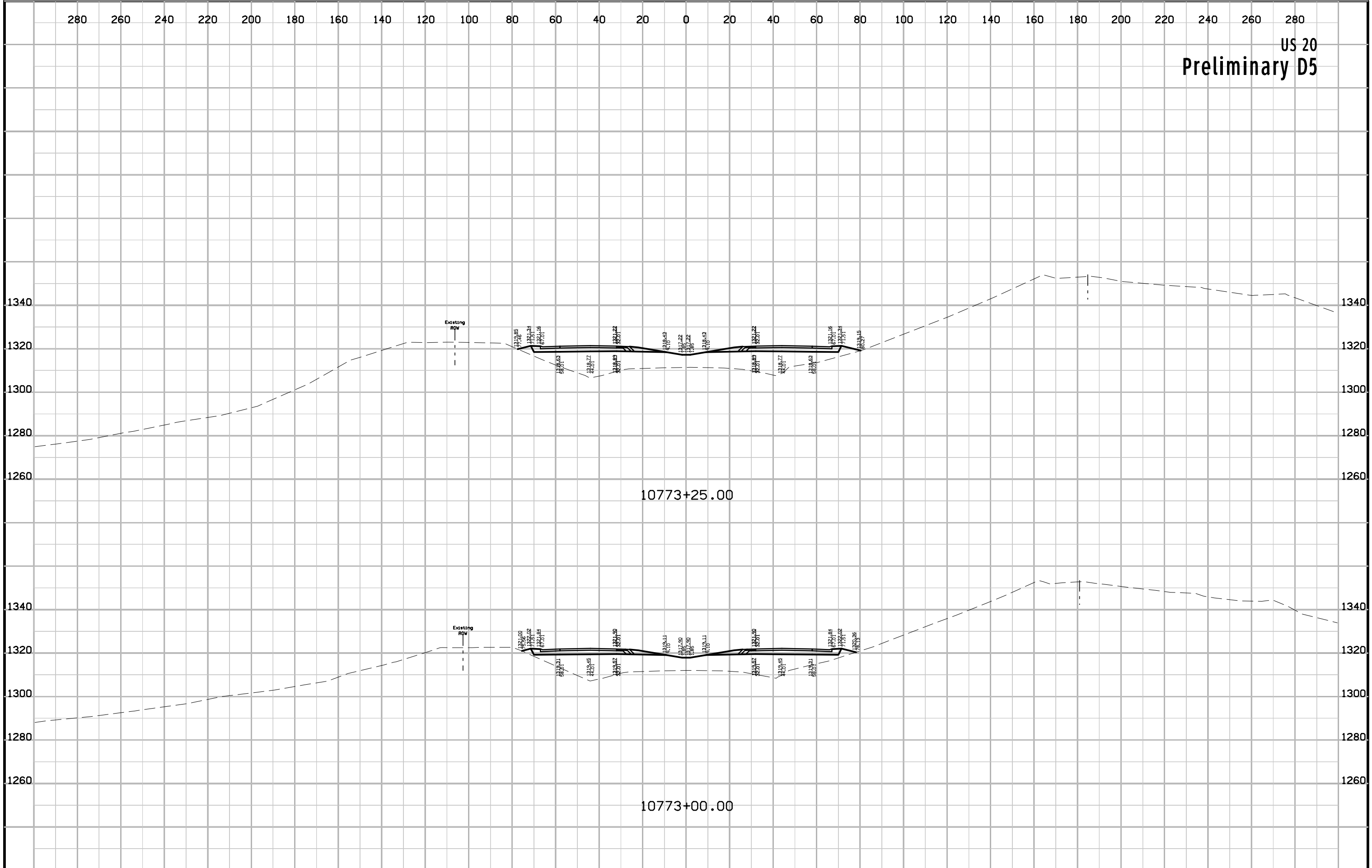
US 20  
Preliminary D5



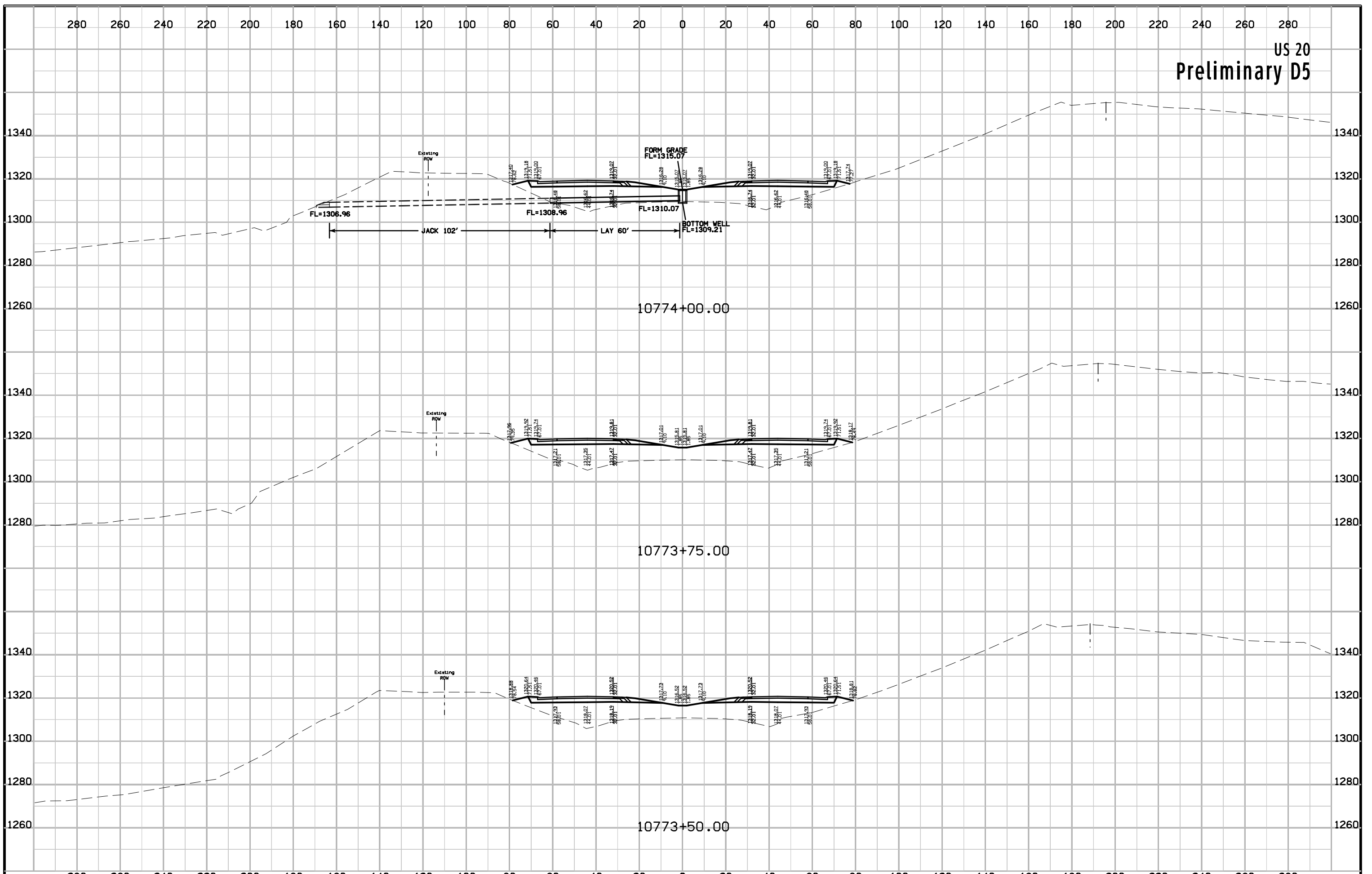
US 20  
Preliminary D5



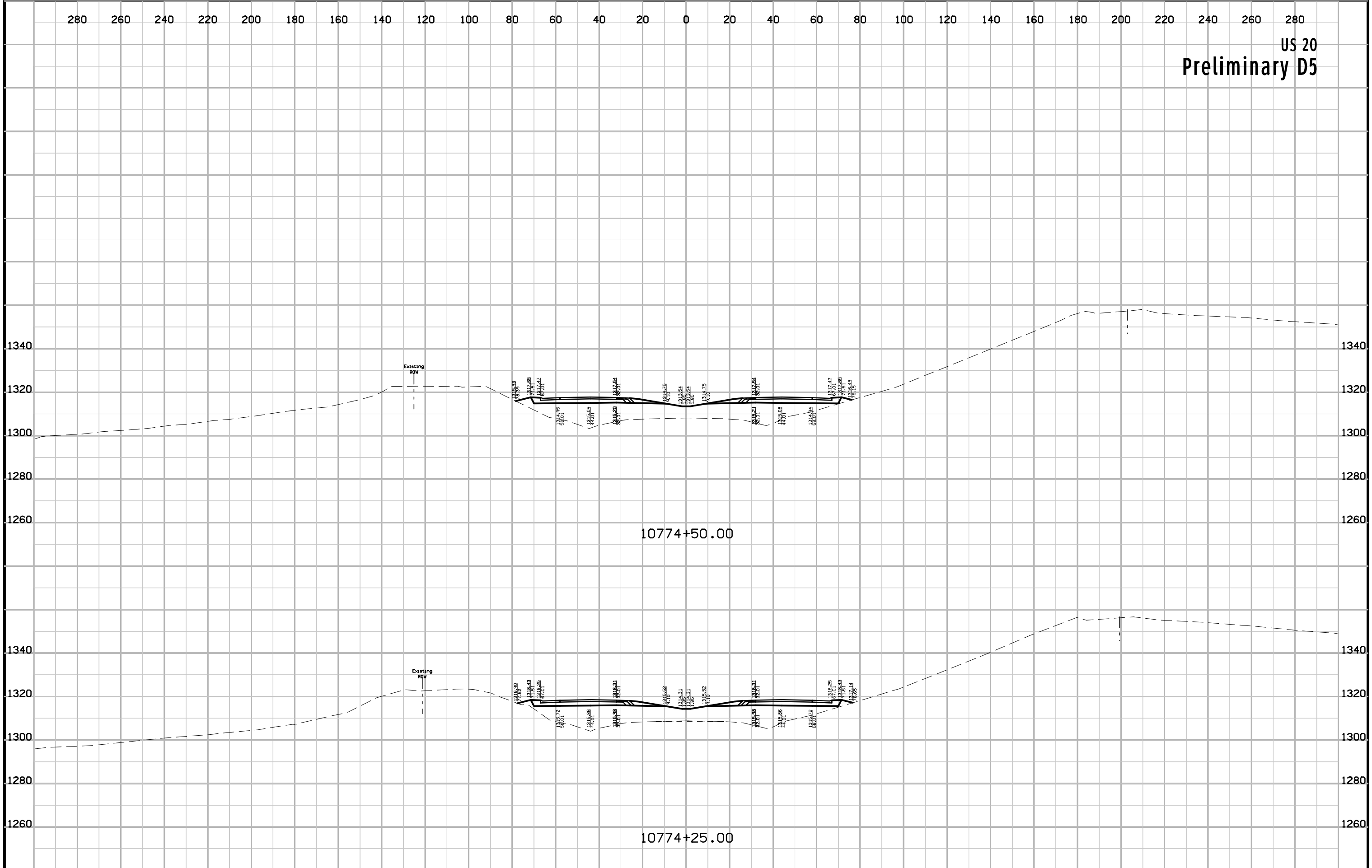
US 20  
Preliminary D5

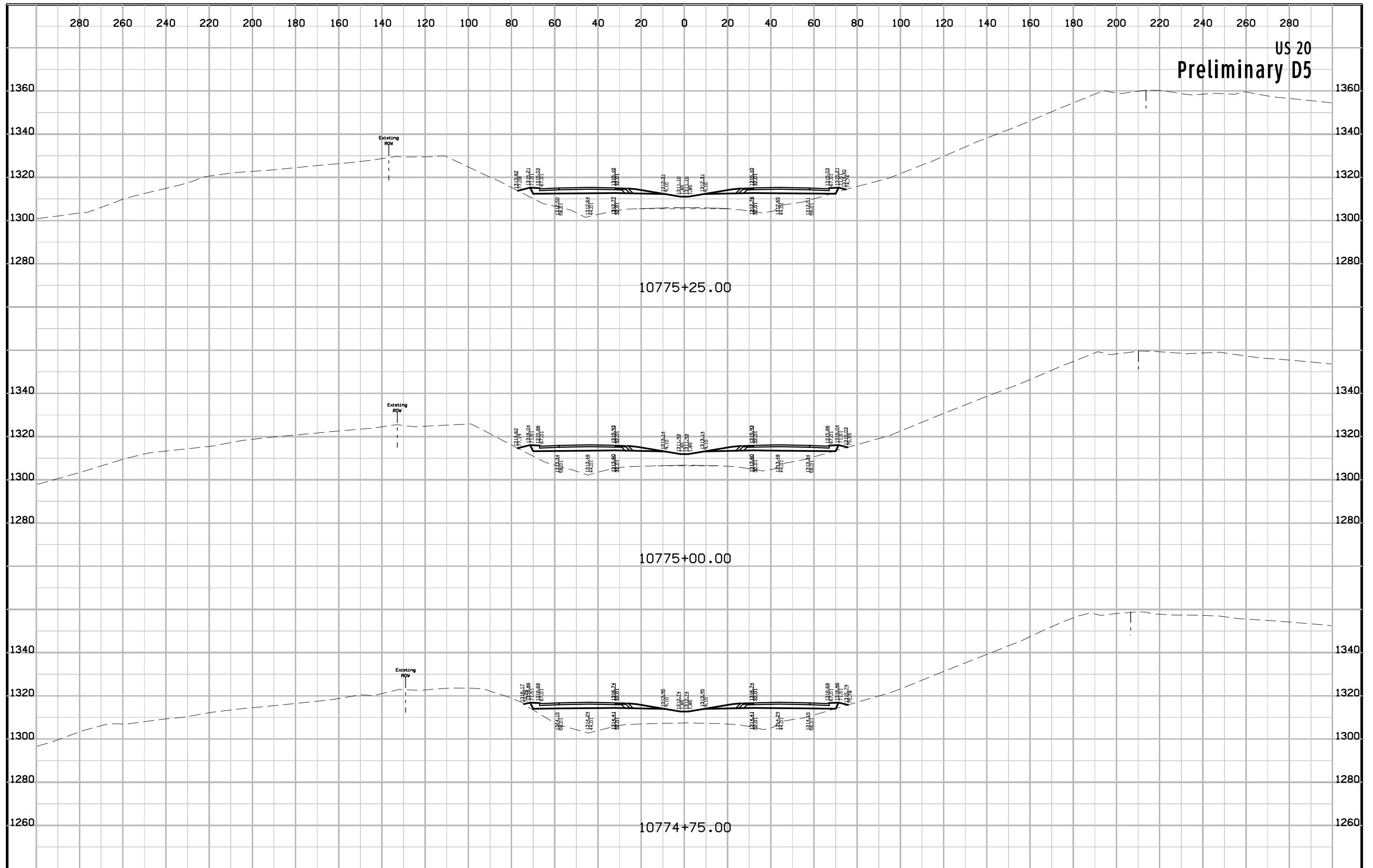


US 20  
Preliminary D5



US 20  
Preliminary D5





US 20  
Preliminary D5

10775+25.00

10775+00.00

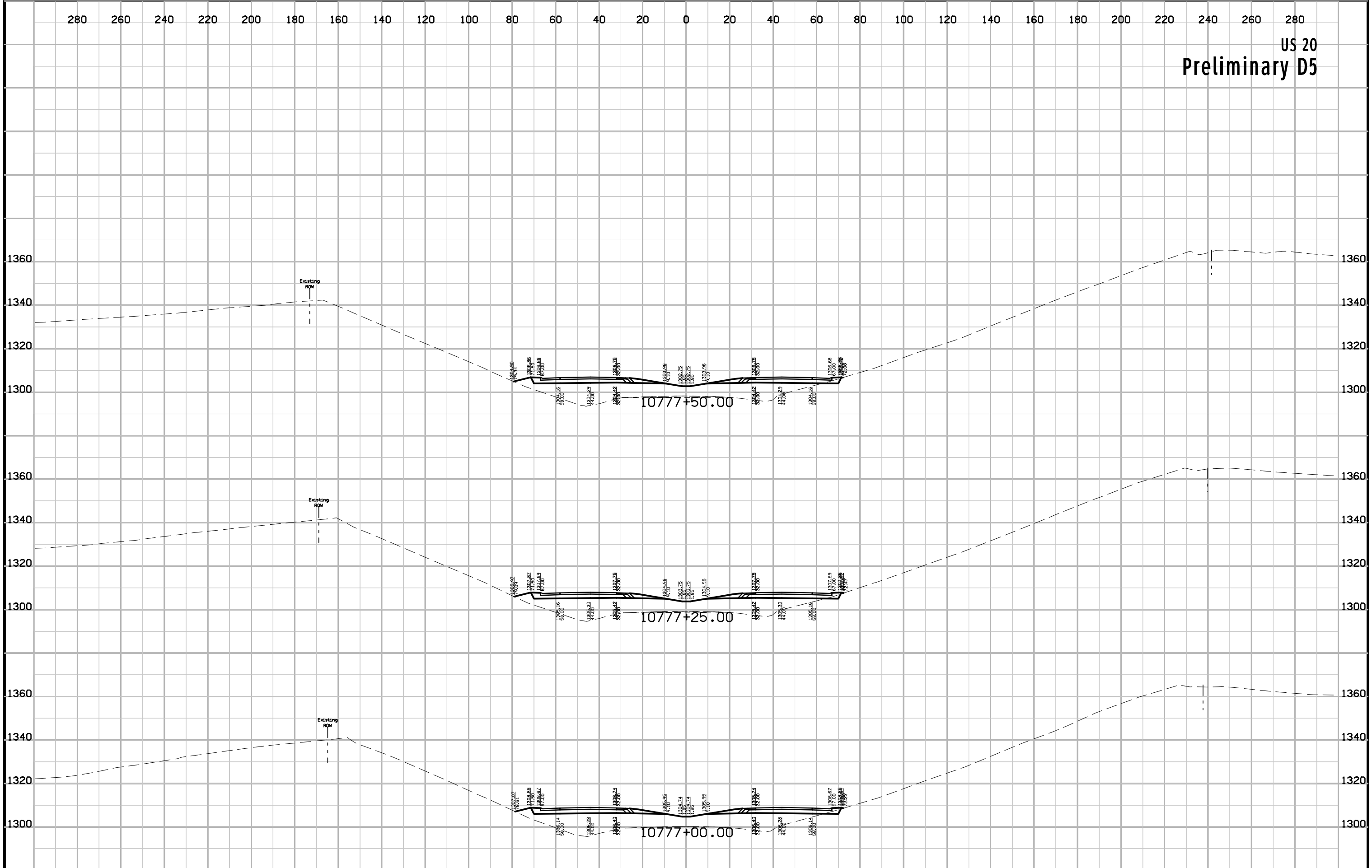
10774+75.00





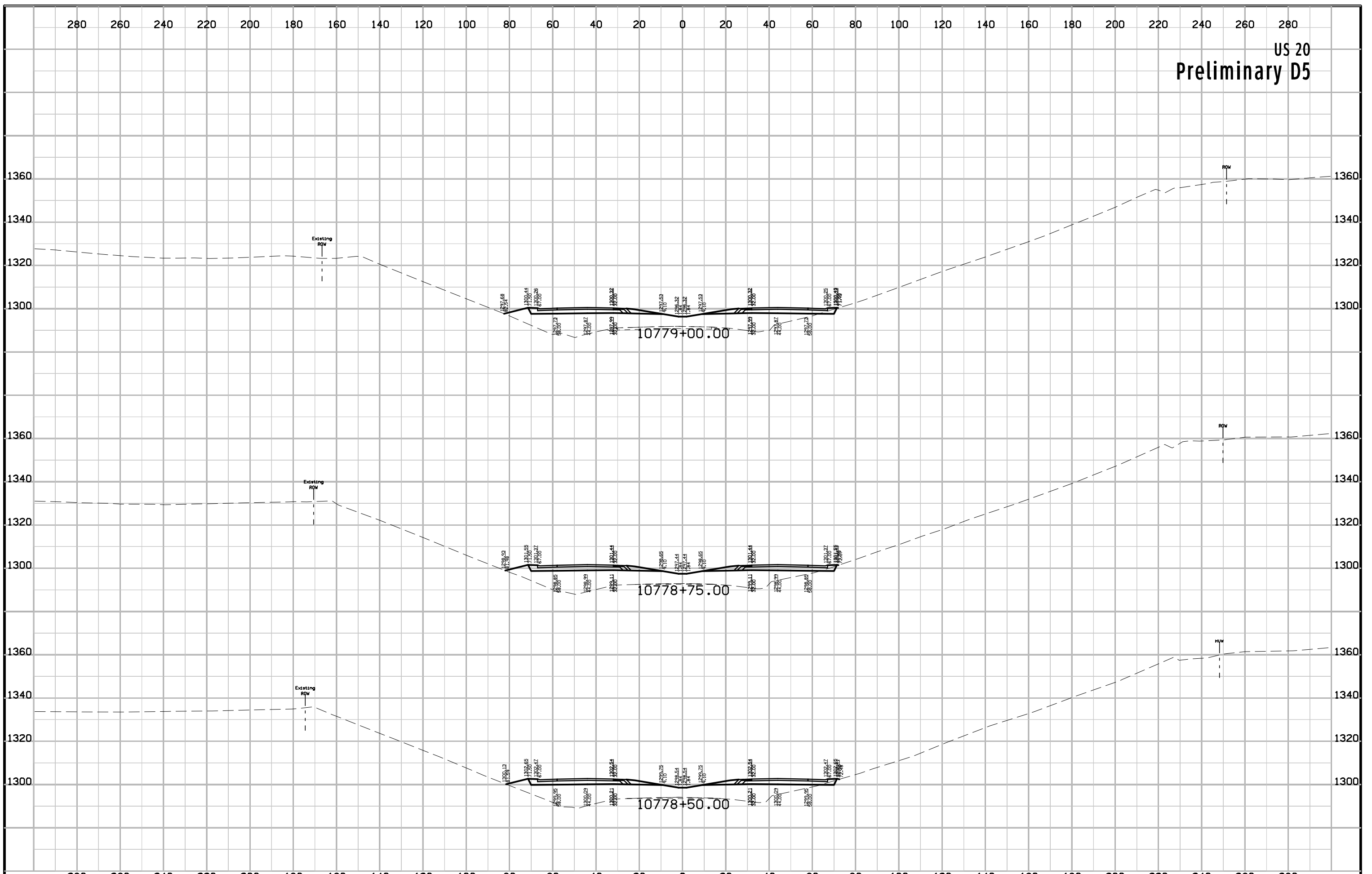


US 20  
Preliminary D5

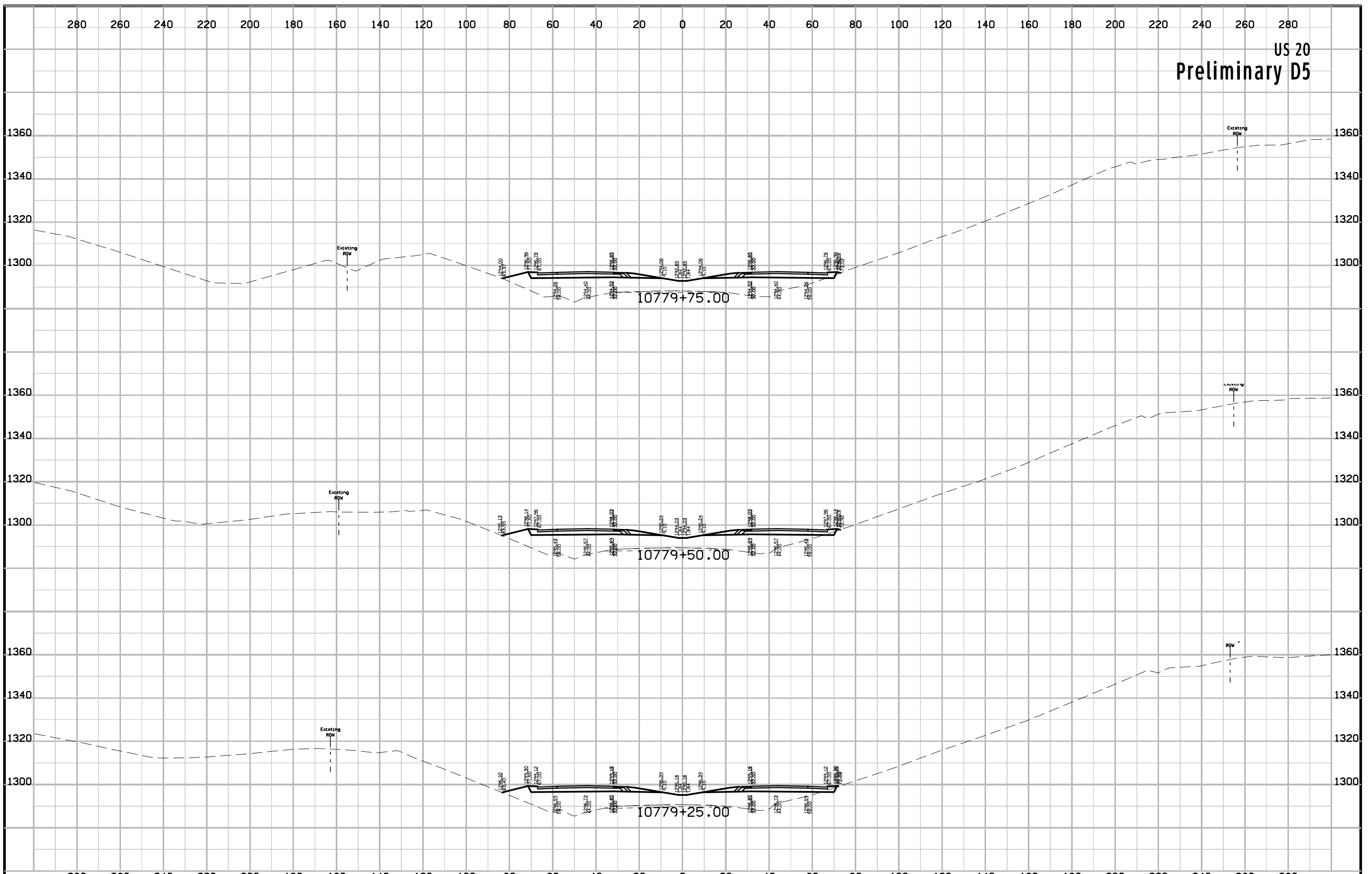




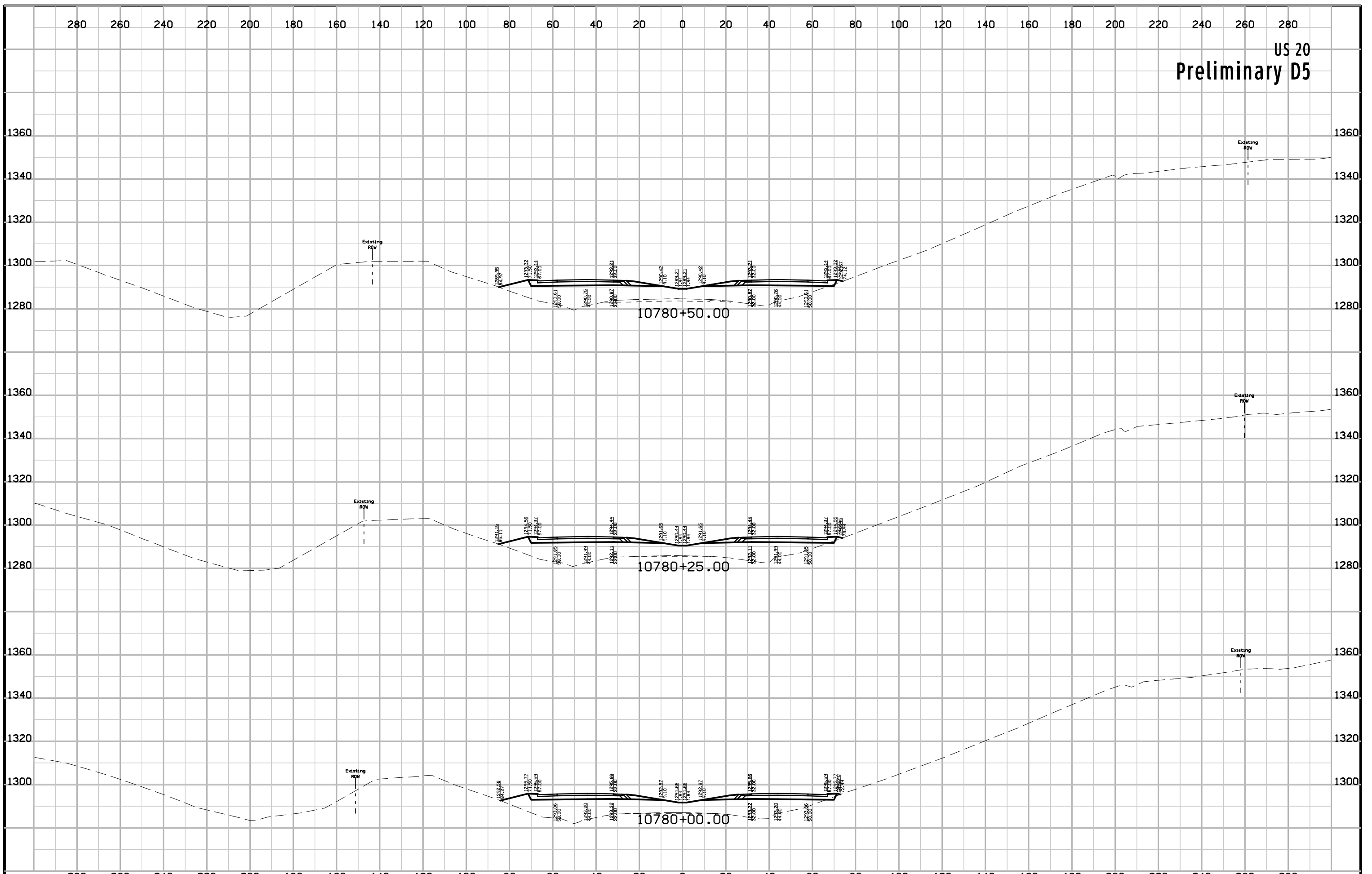
US 20  
Preliminary D5



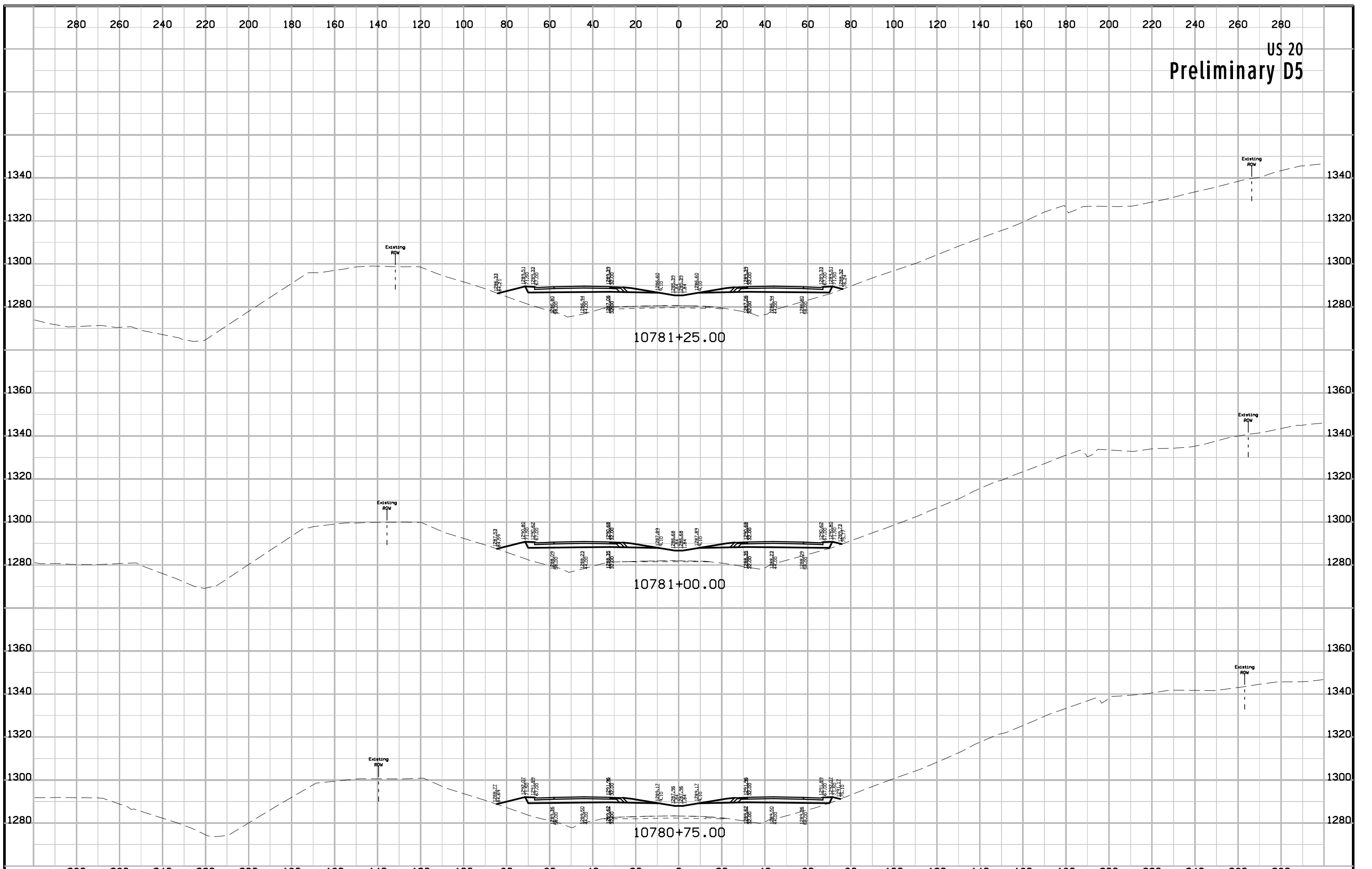
US 20  
Preliminary D5



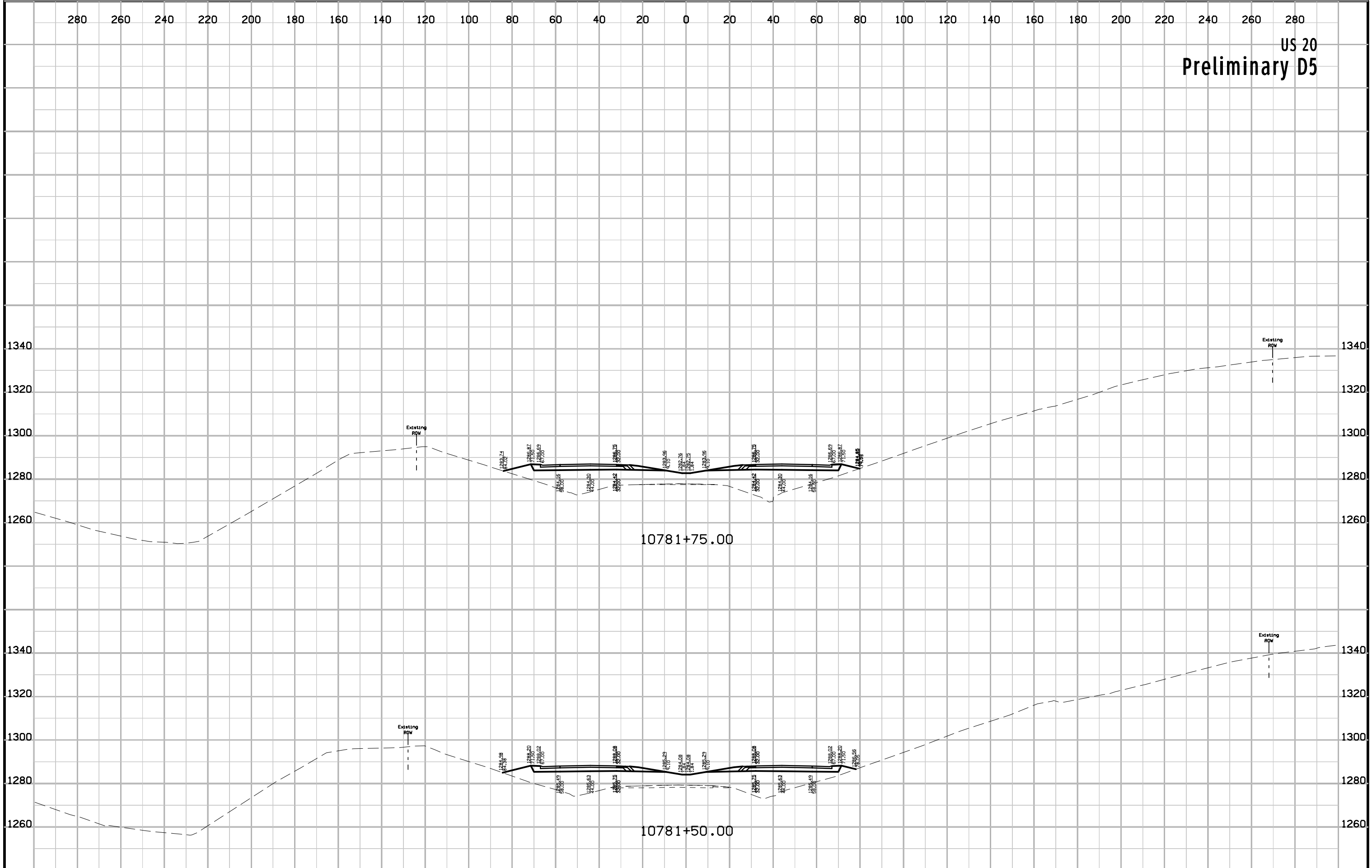
US 20  
Preliminary D5



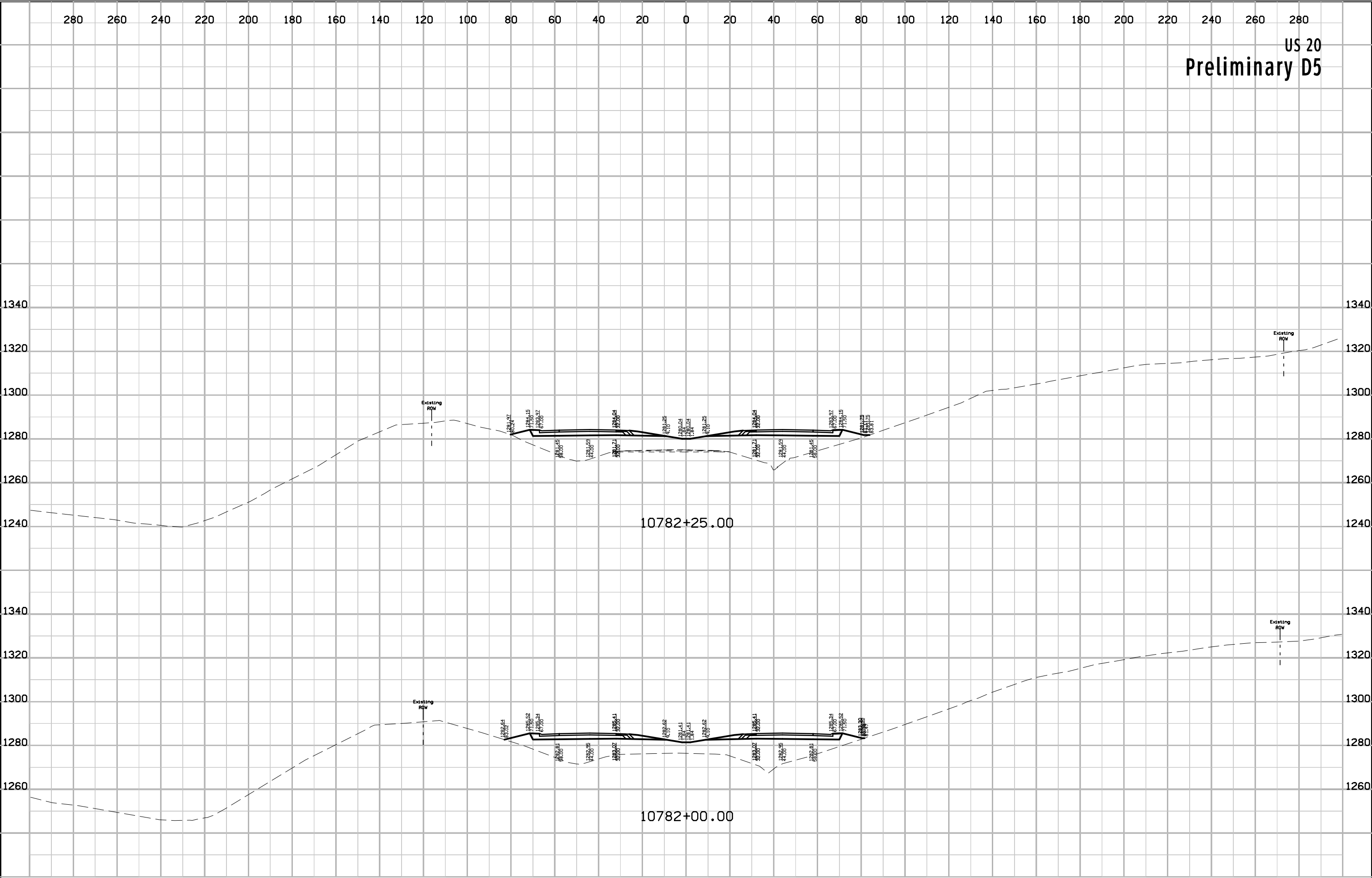
US 20  
Preliminary D5



US 20  
Preliminary D5

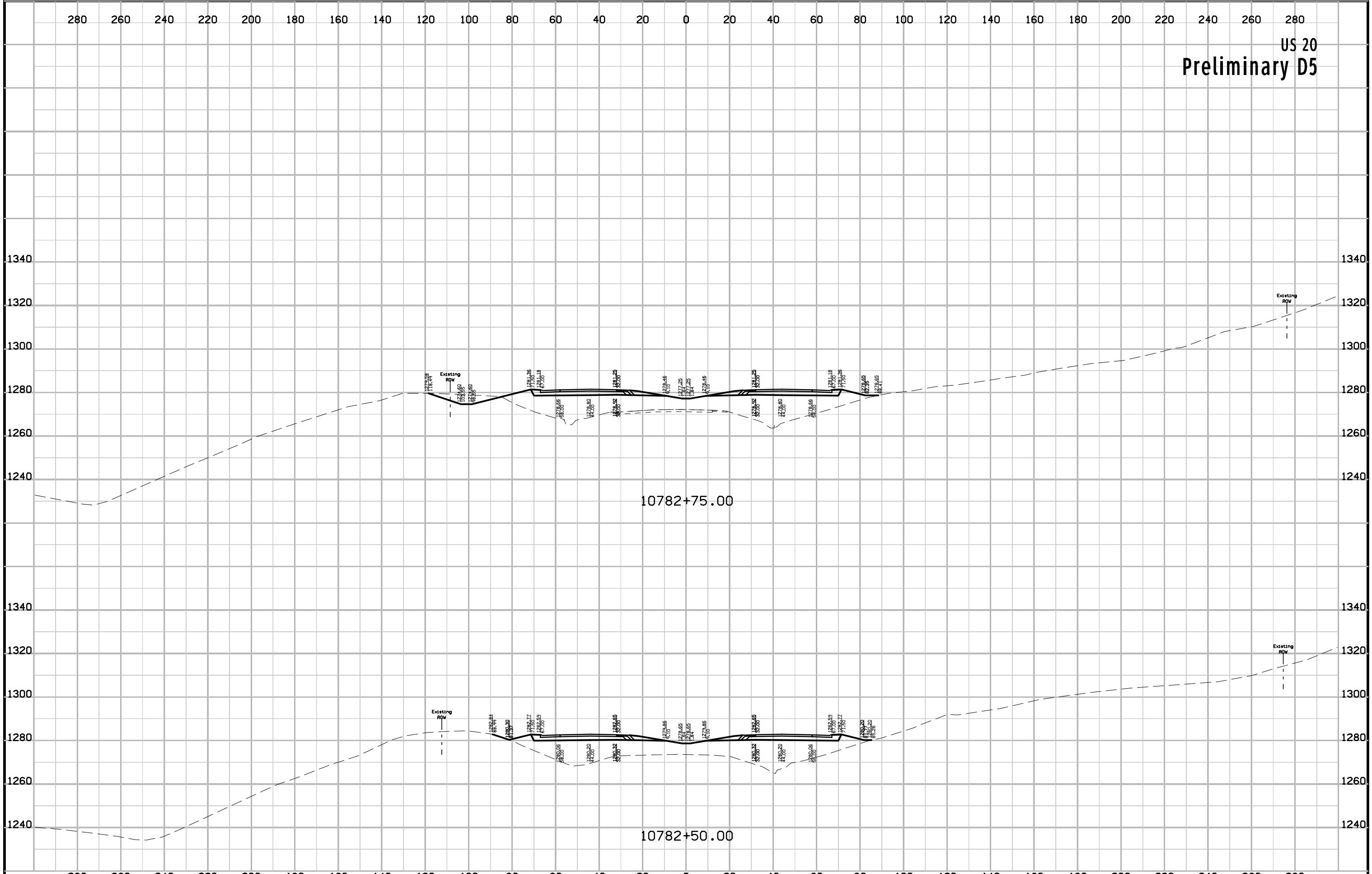


US 20  
Preliminary D5

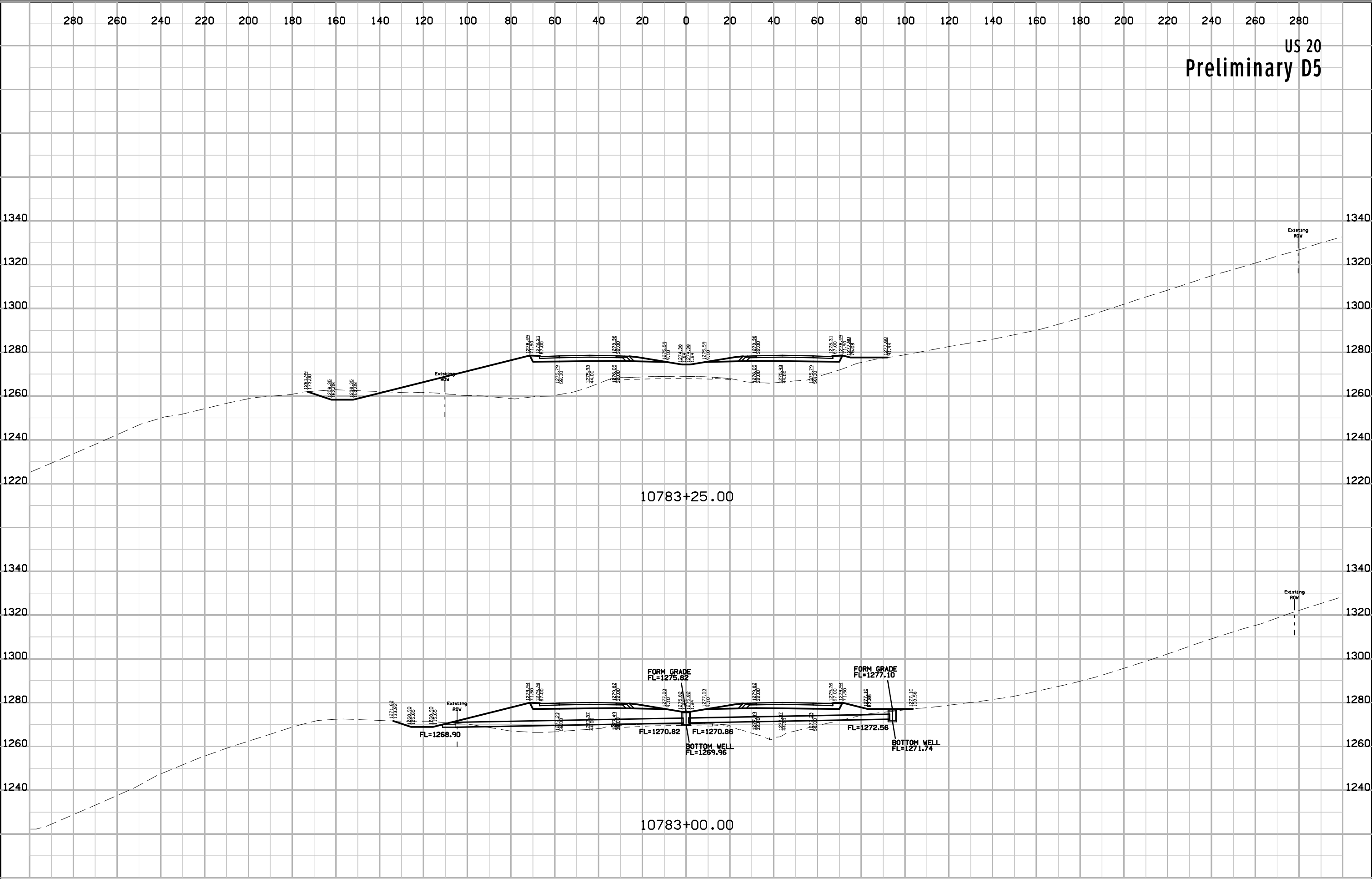




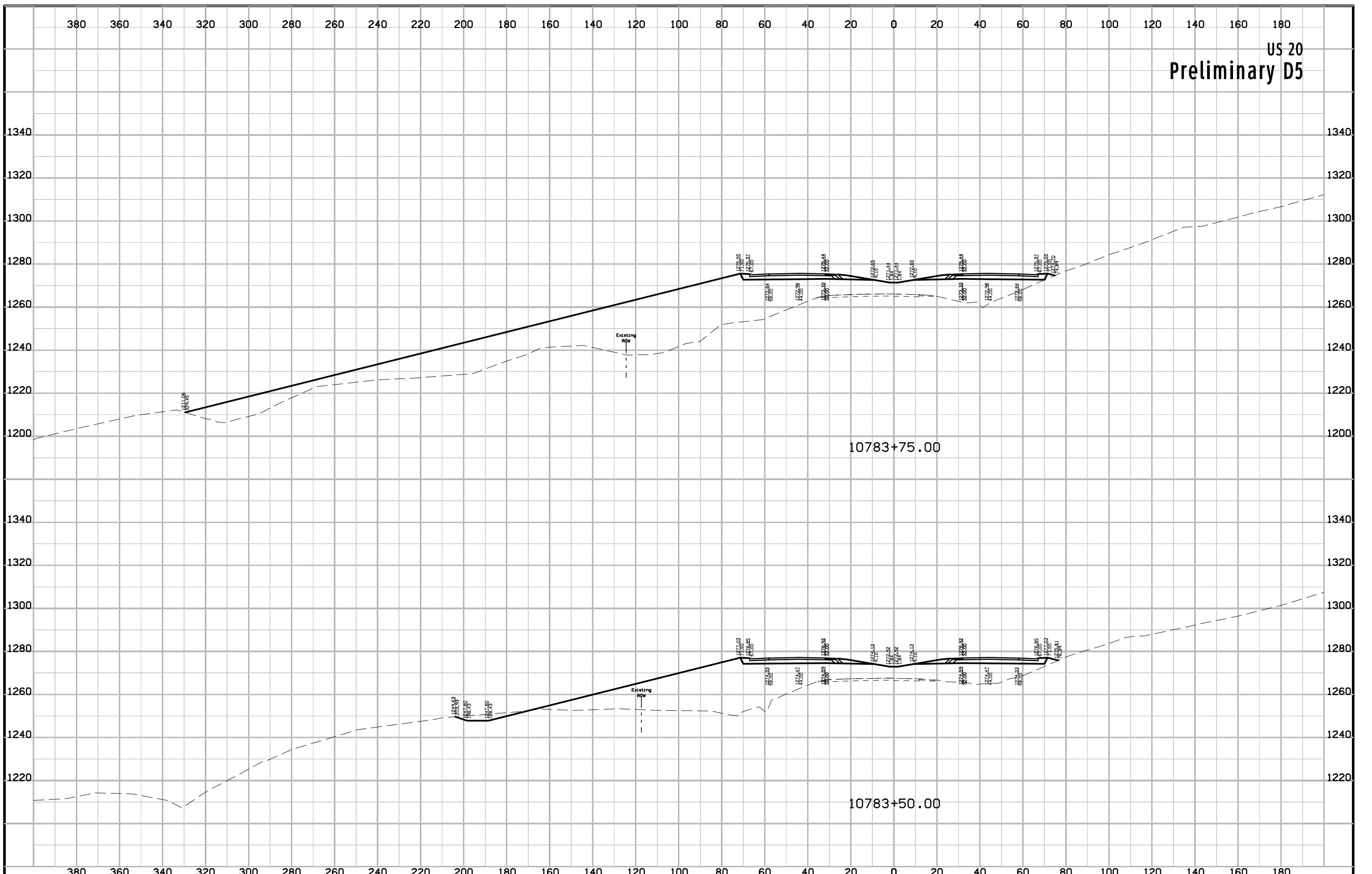
# US 20 Preliminary D5



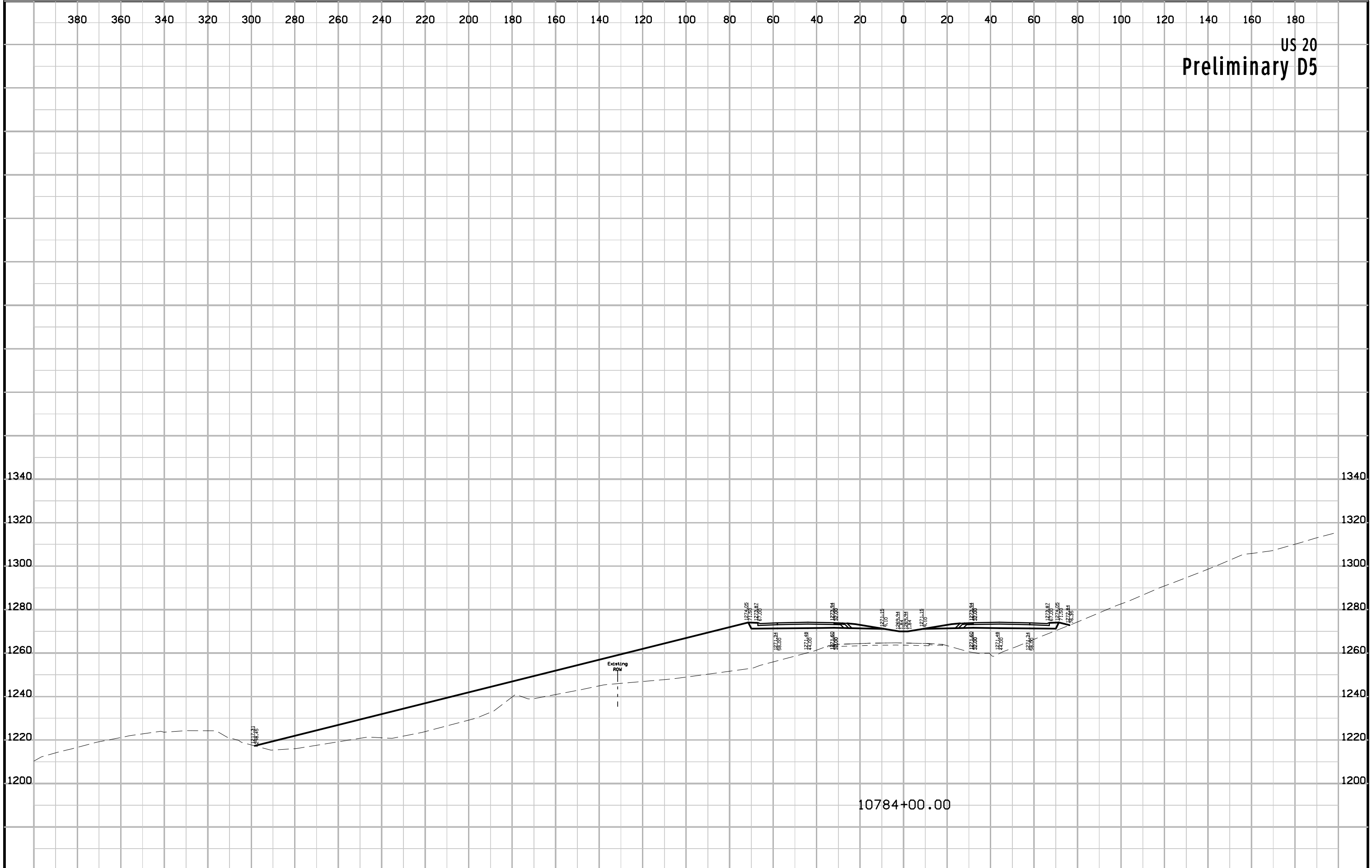
US 20  
Preliminary D5



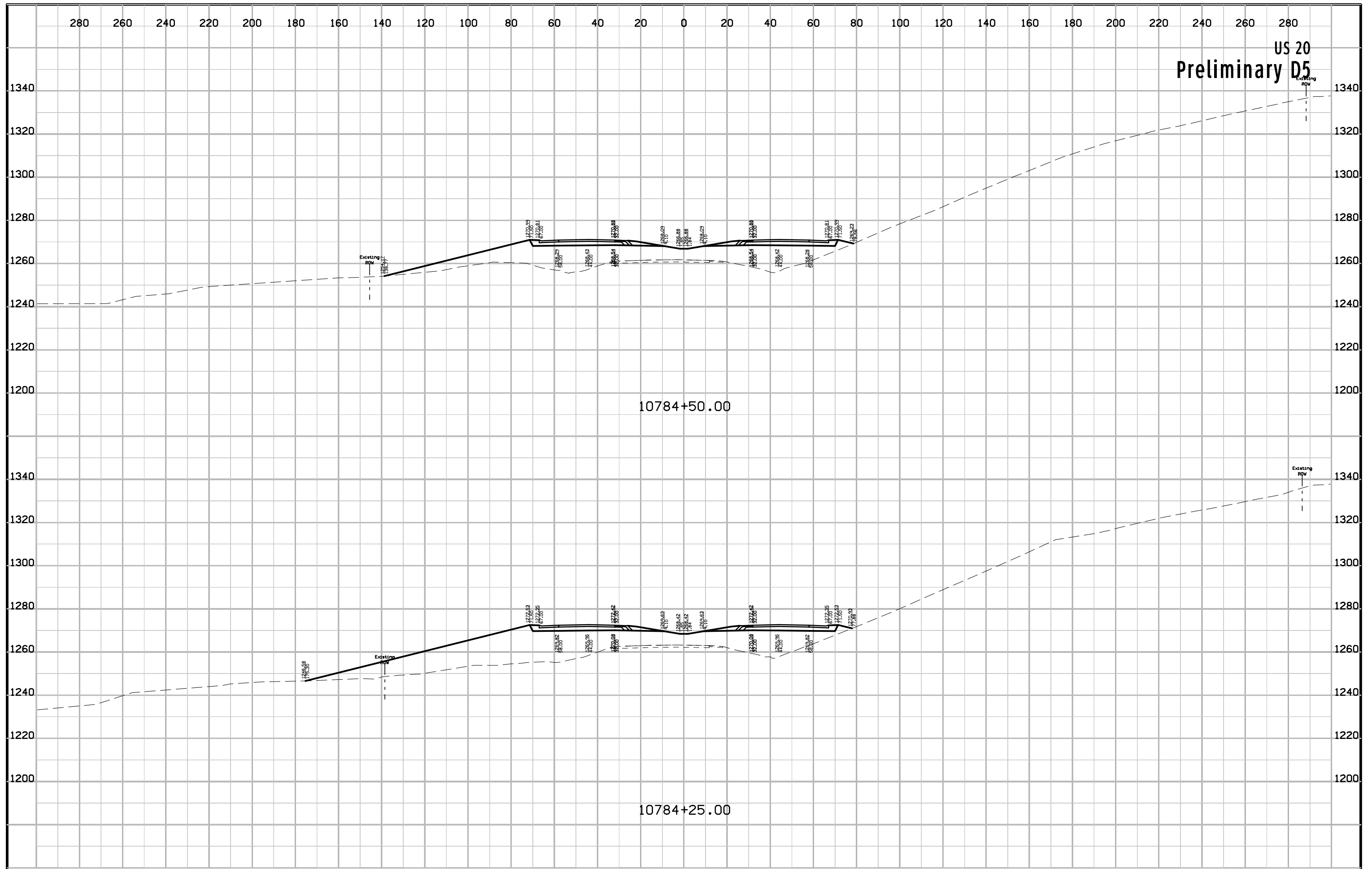
US 20  
Preliminary D5



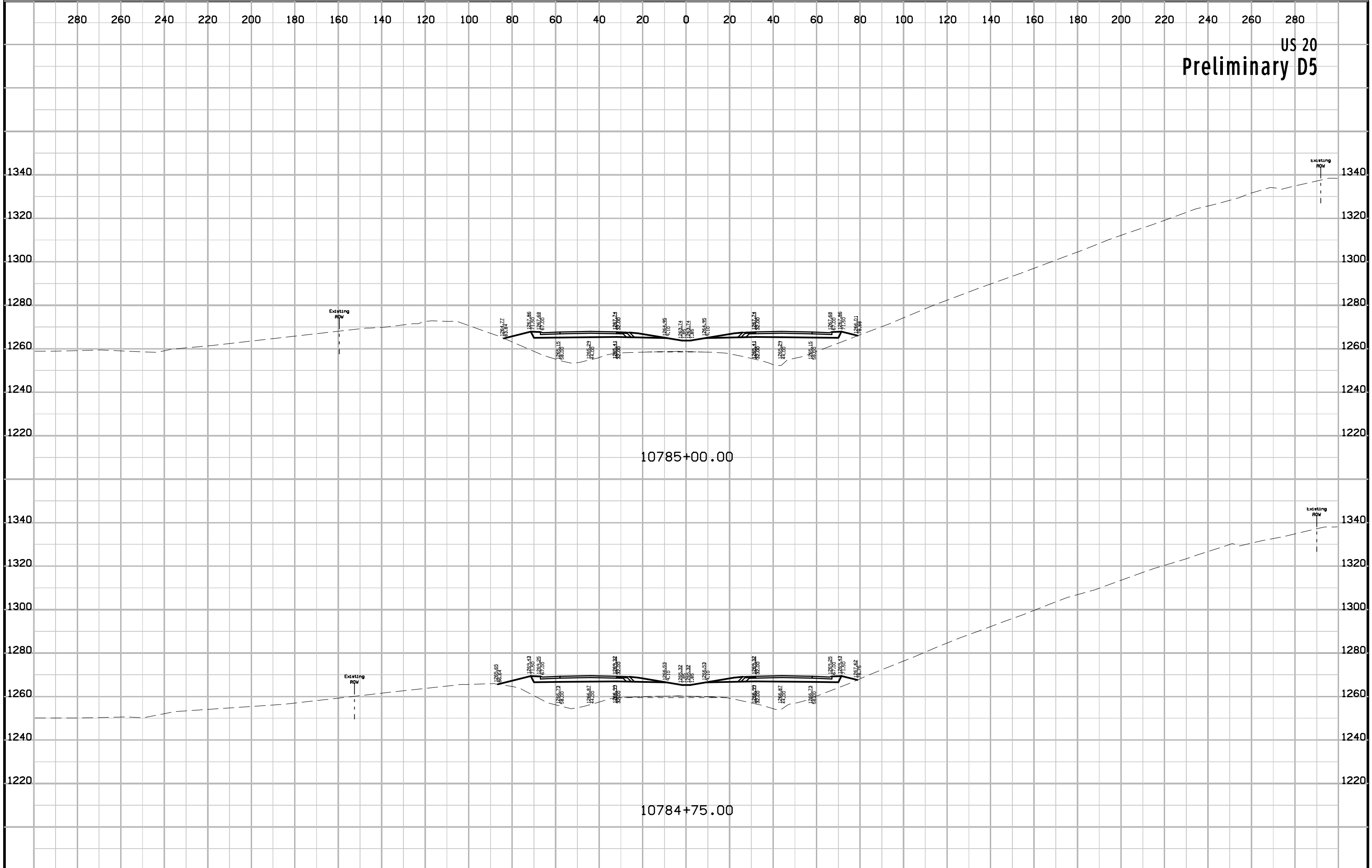
US 20  
Preliminary D5



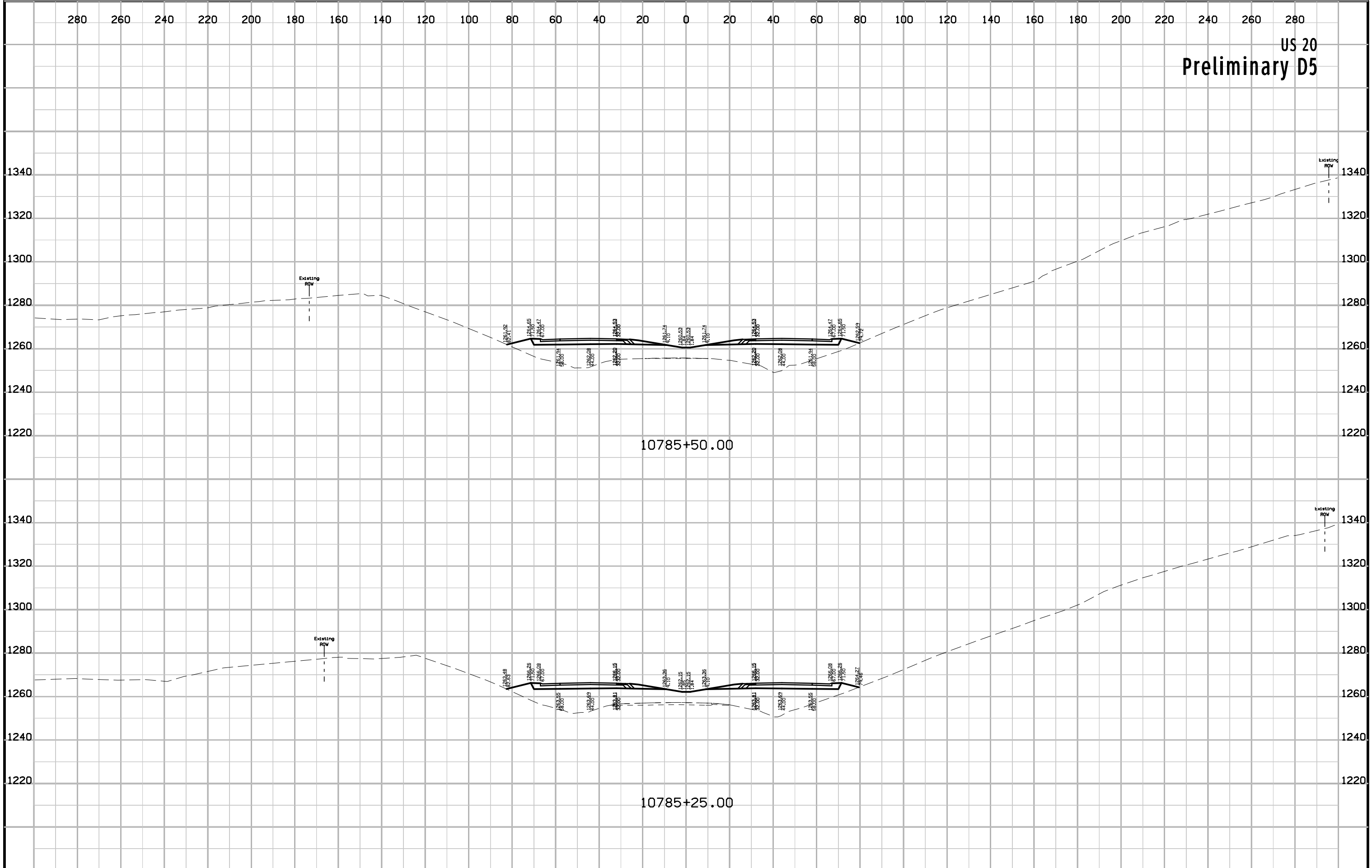
10784+00.00



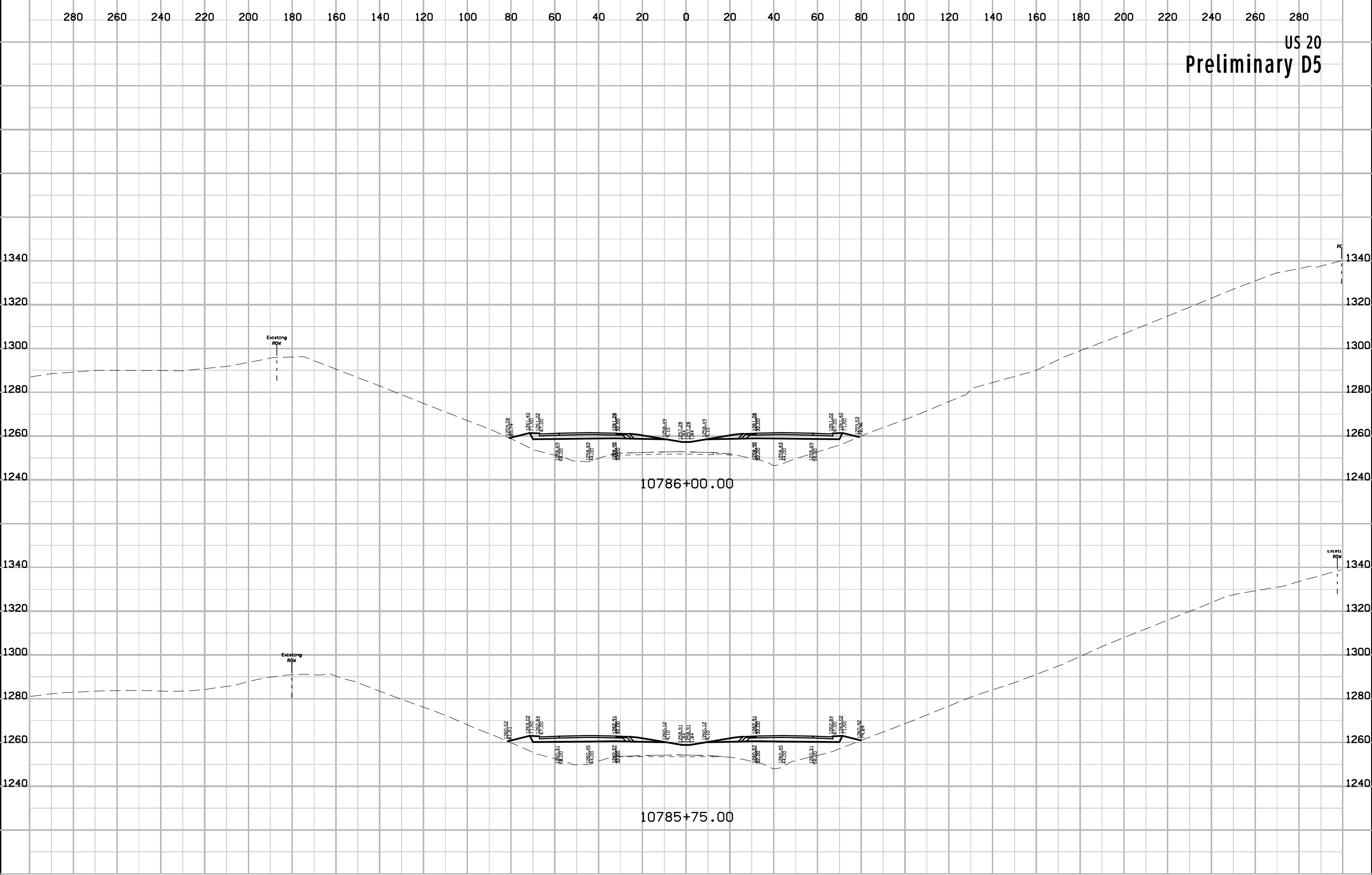
US 20  
Preliminary D5



US 20  
Preliminary D5

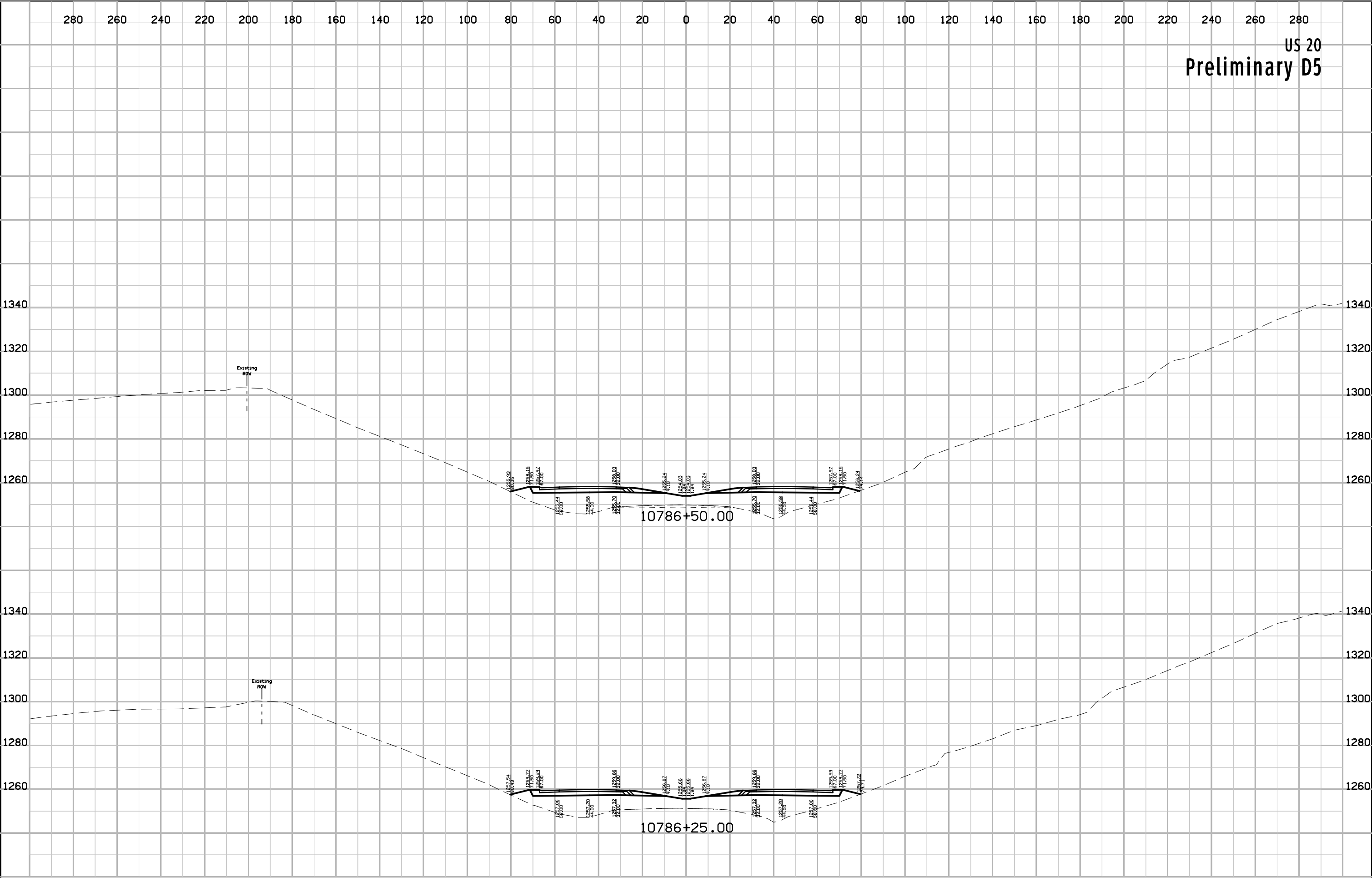


US 20  
Preliminary D5

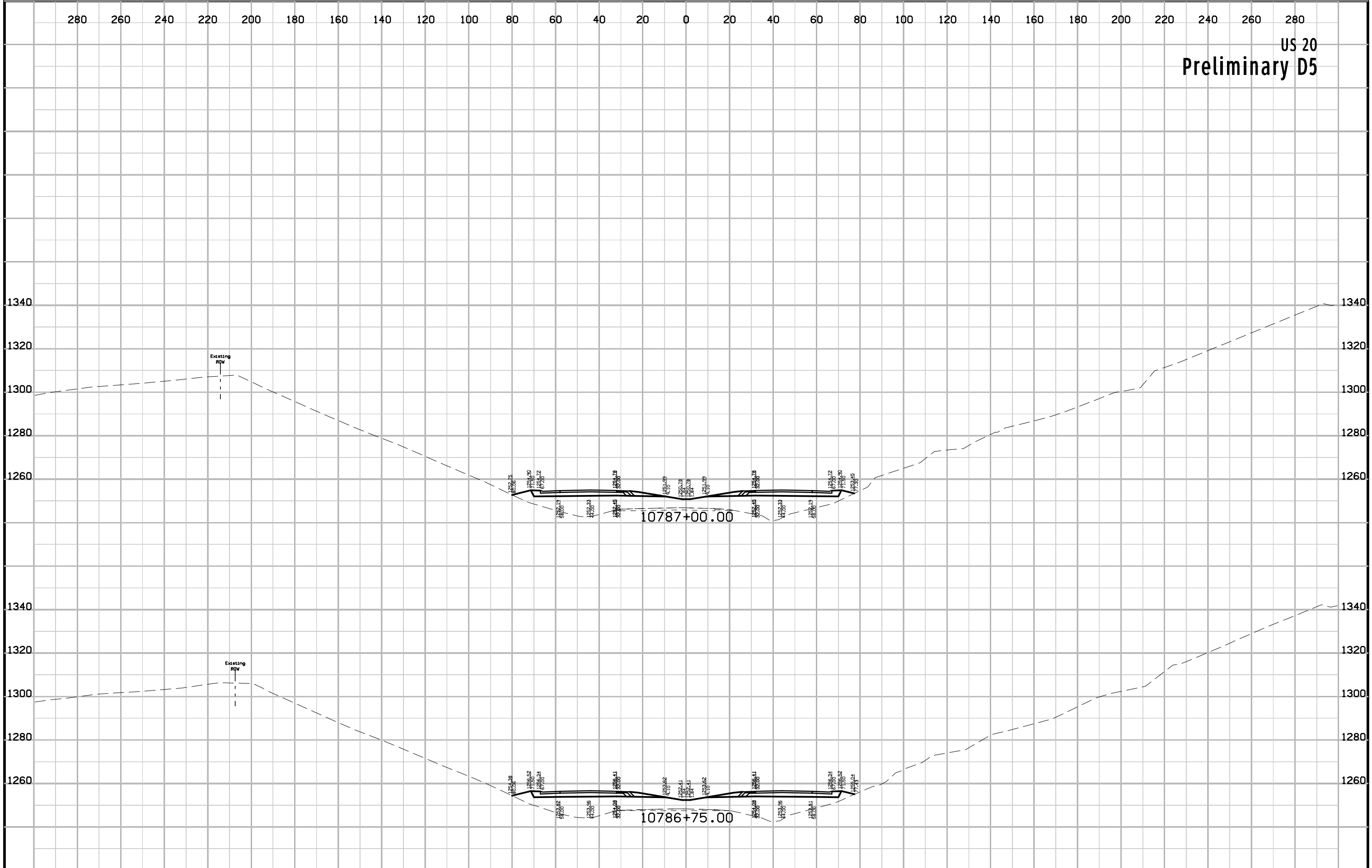




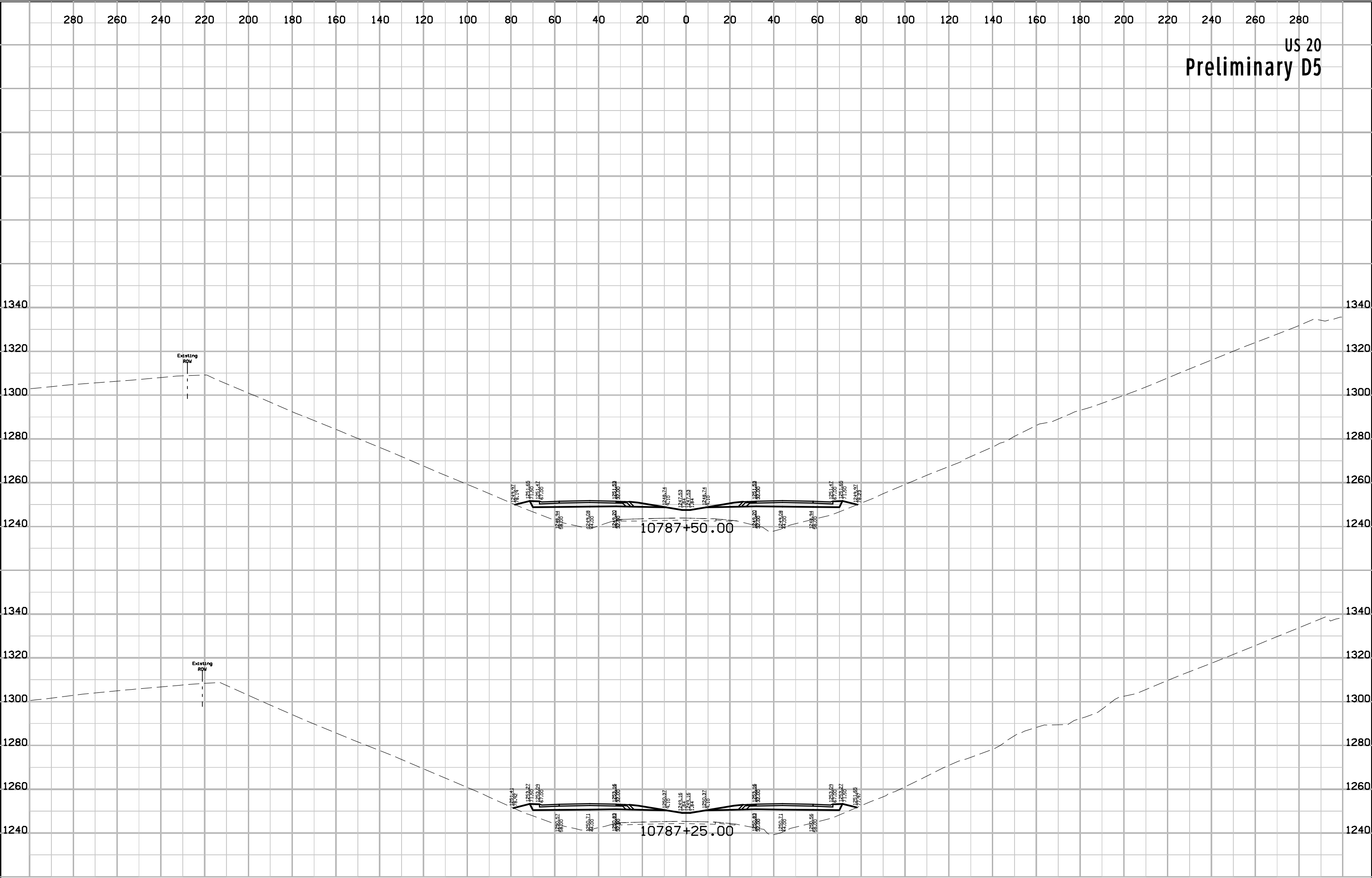
US 20  
Preliminary D5



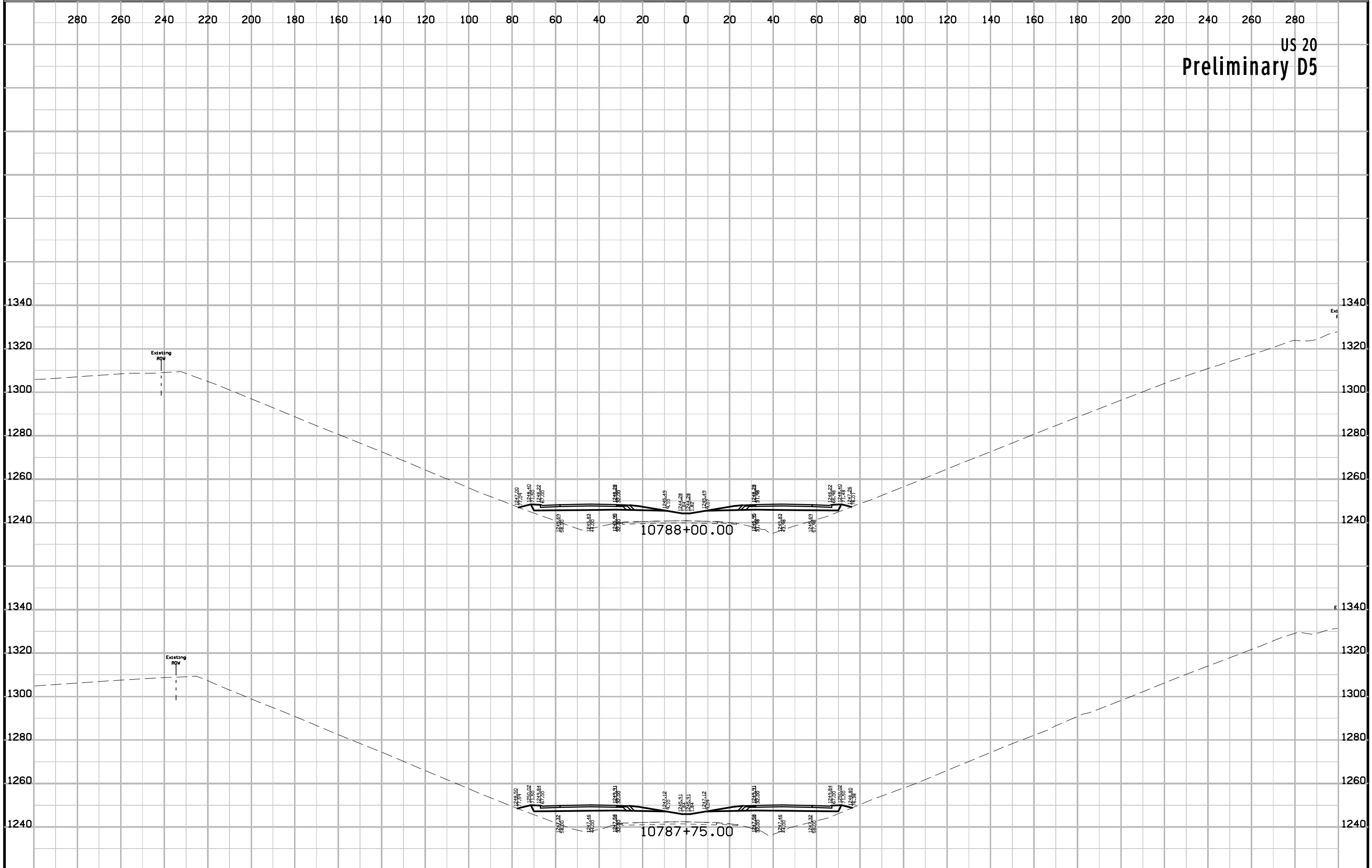
US 20  
Preliminary D5



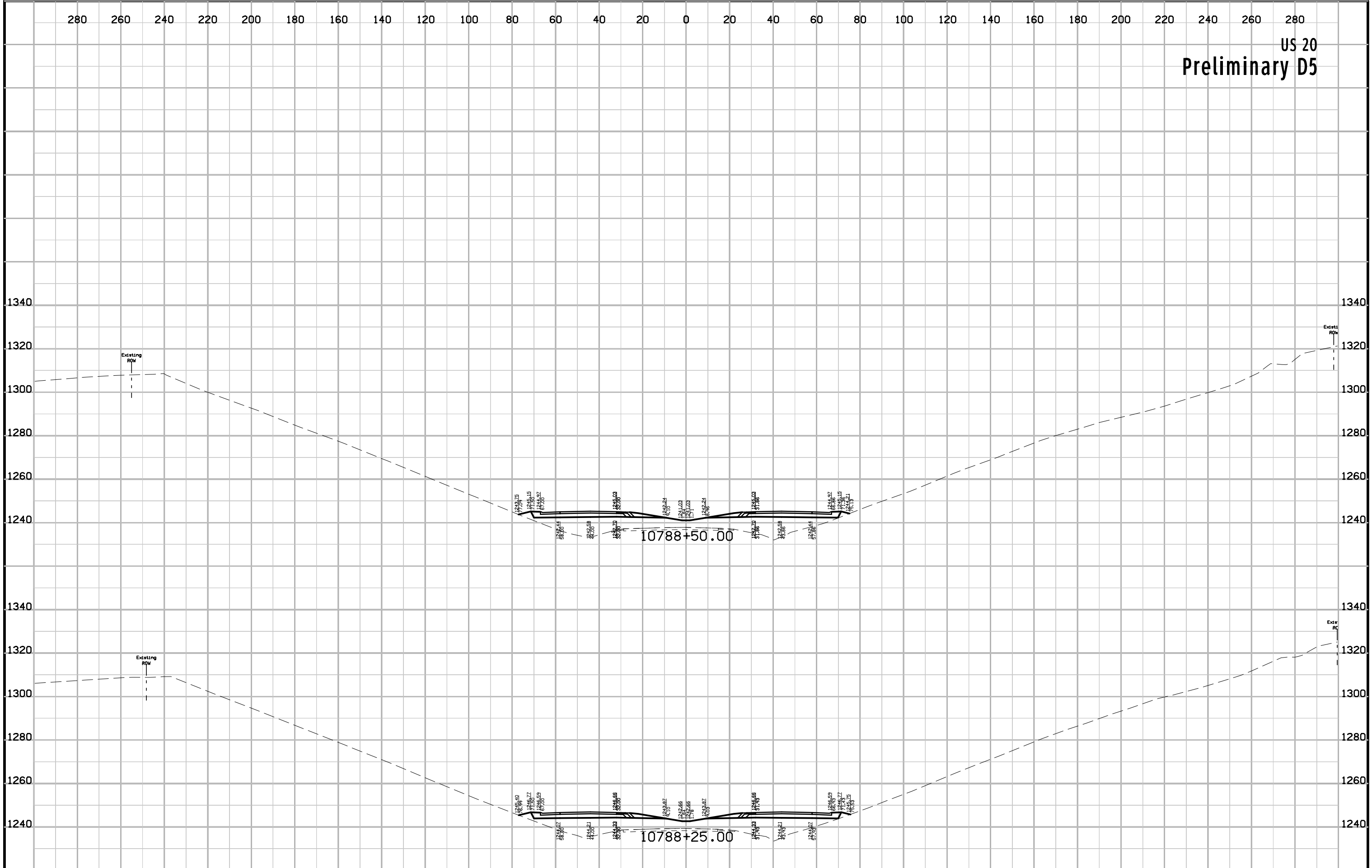
US 20  
Preliminary D5



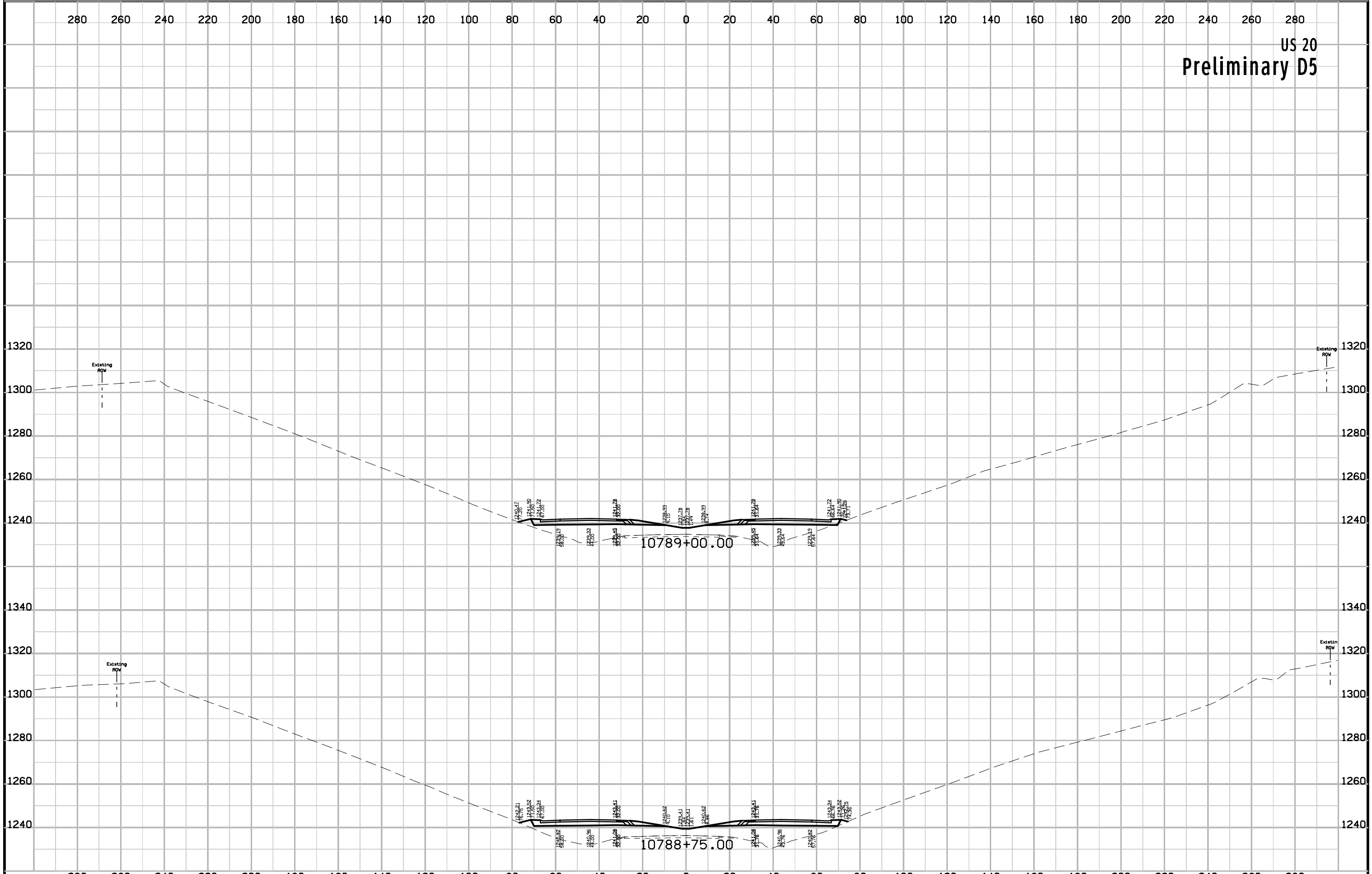
US 20  
Preliminary D5



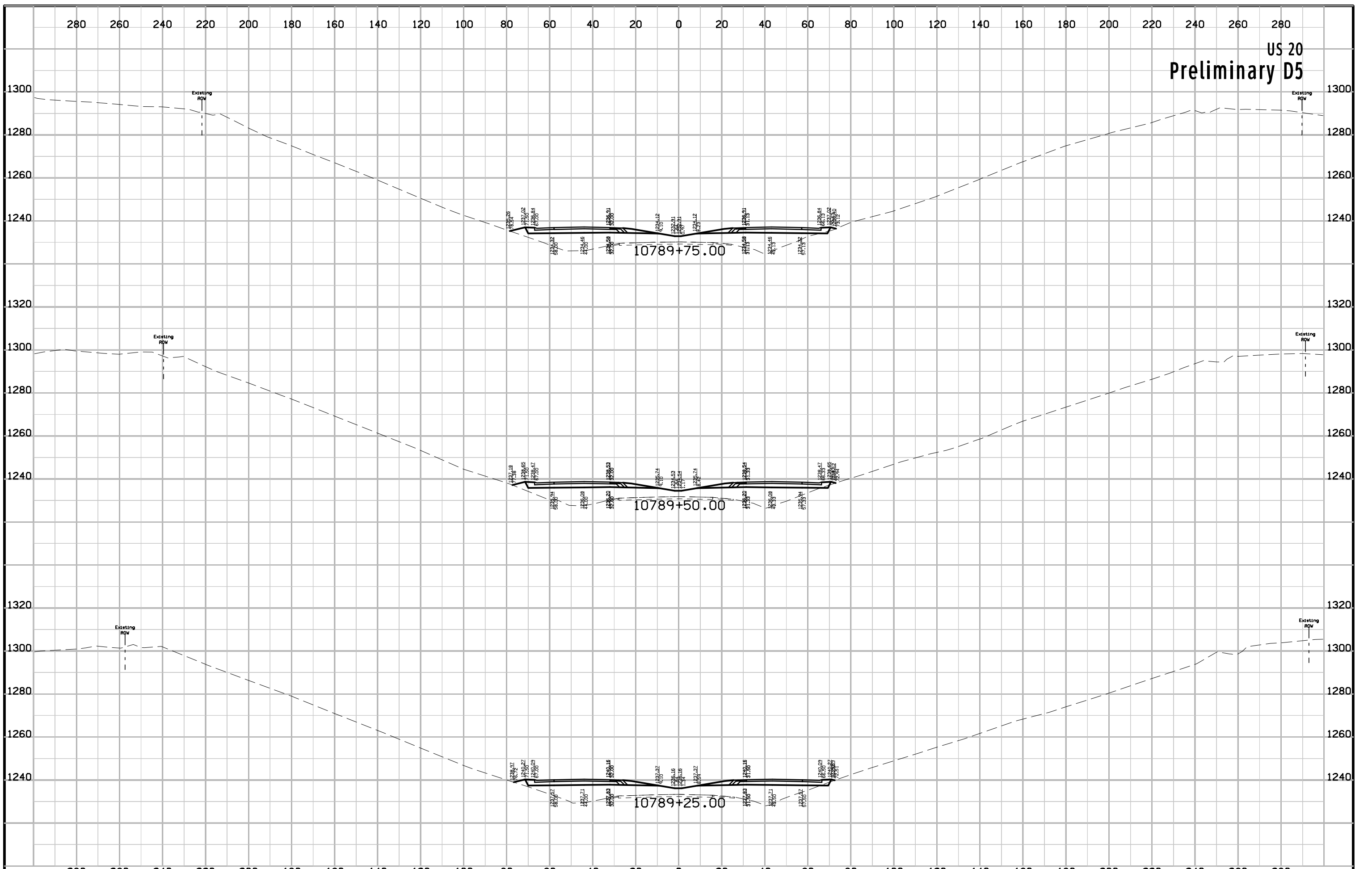
US 20  
Preliminary D5



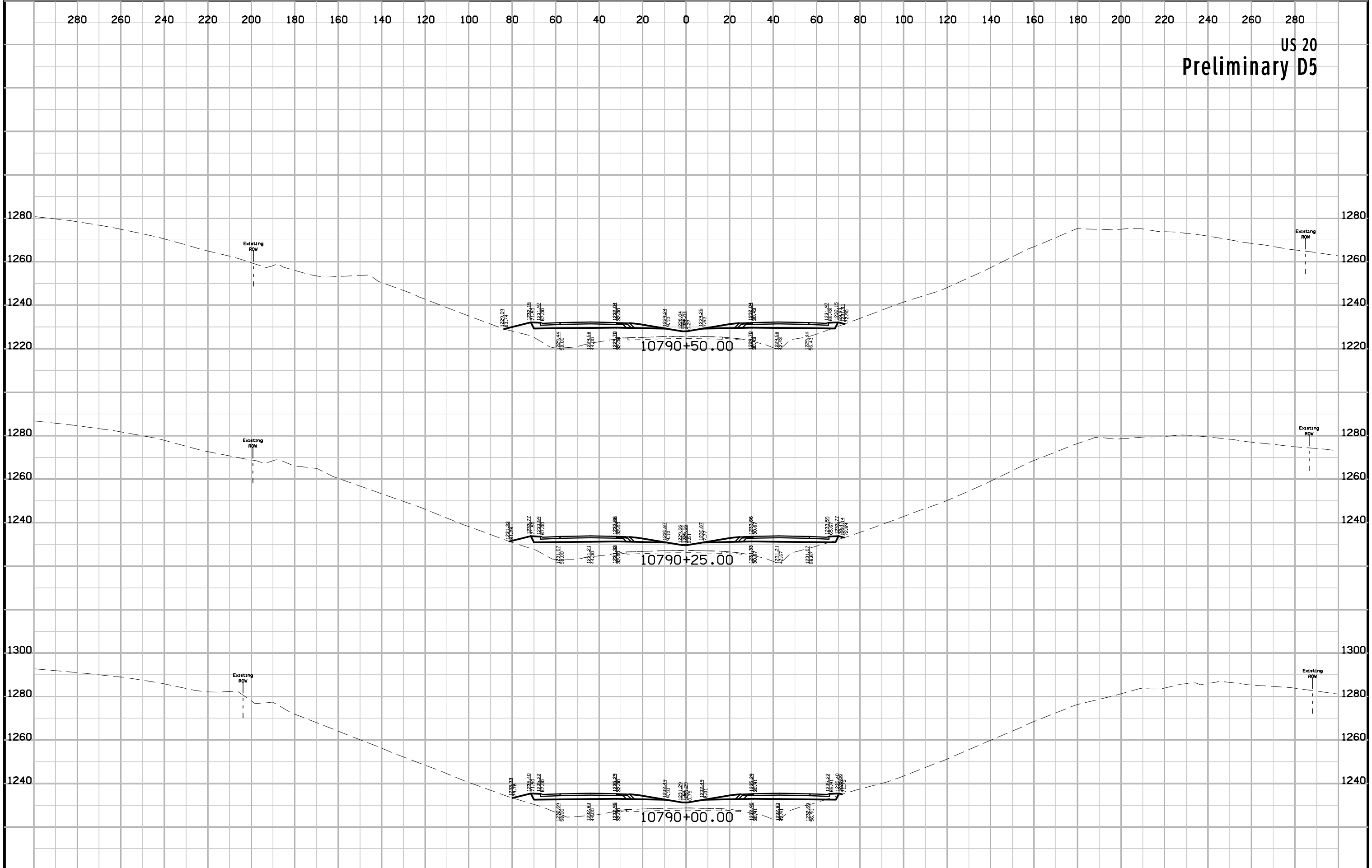
US 20  
Preliminary D5



US 20  
Preliminary D5

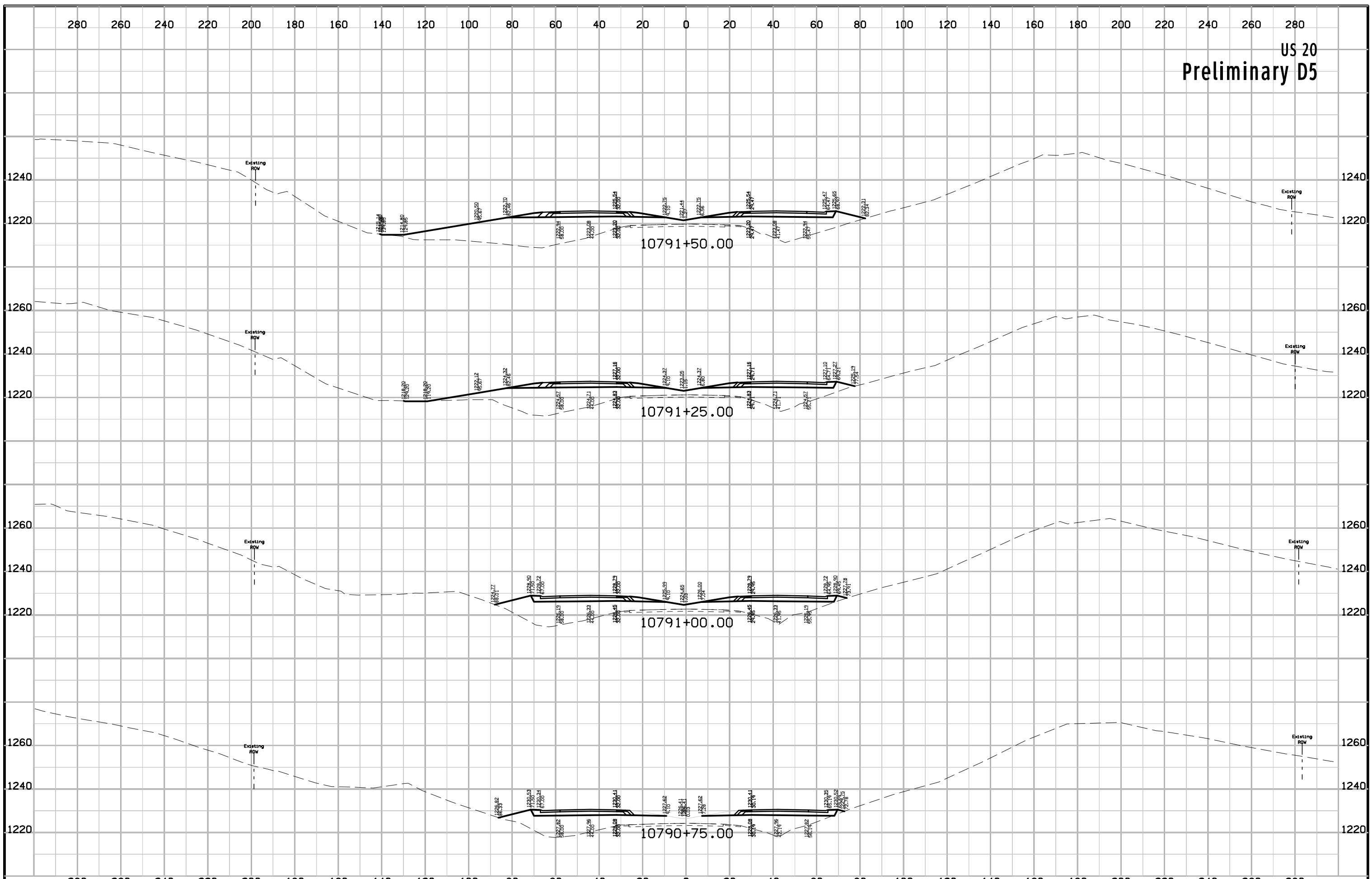


US 20  
Preliminary D5

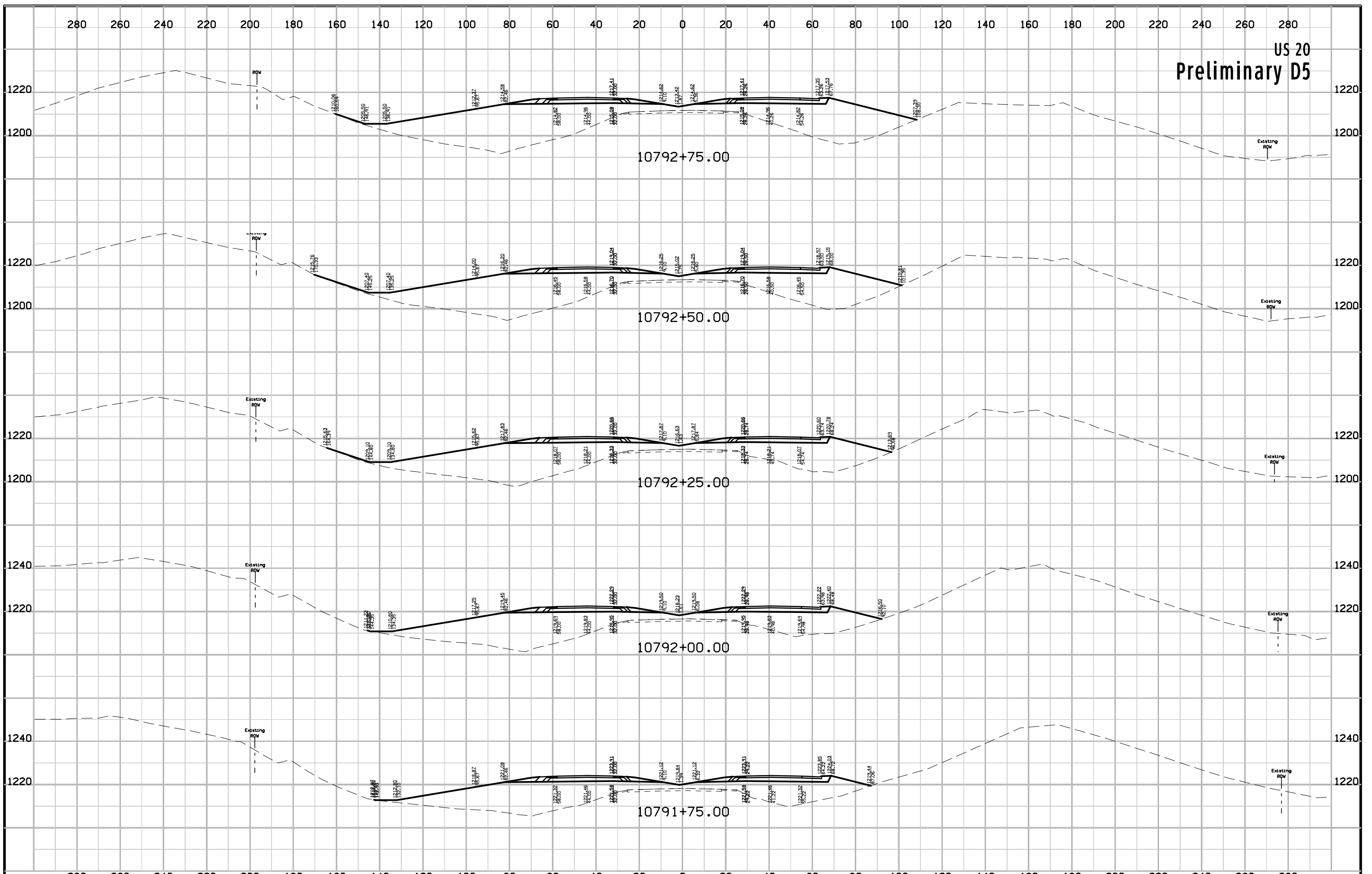




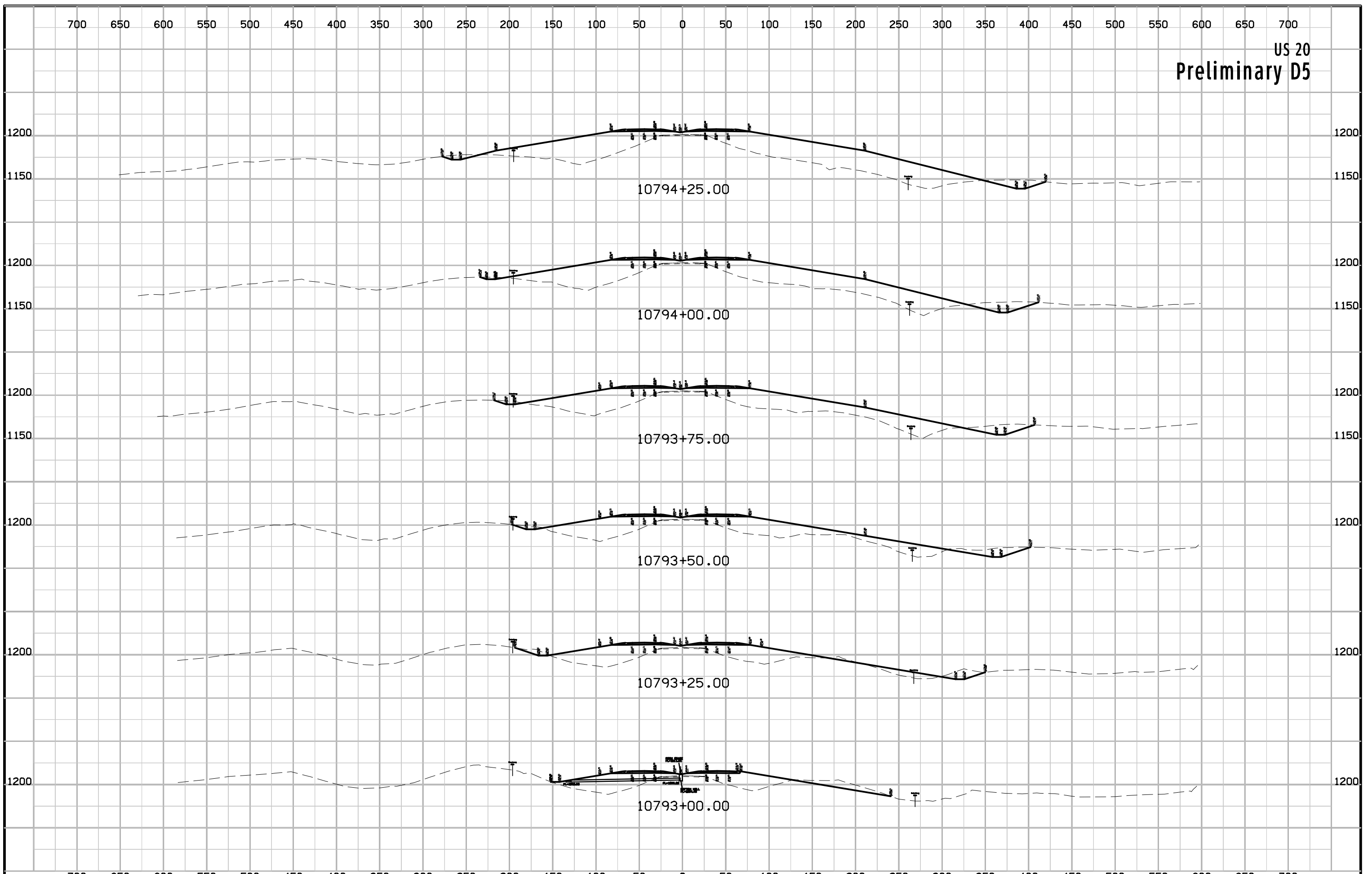
US 20  
Preliminary D5



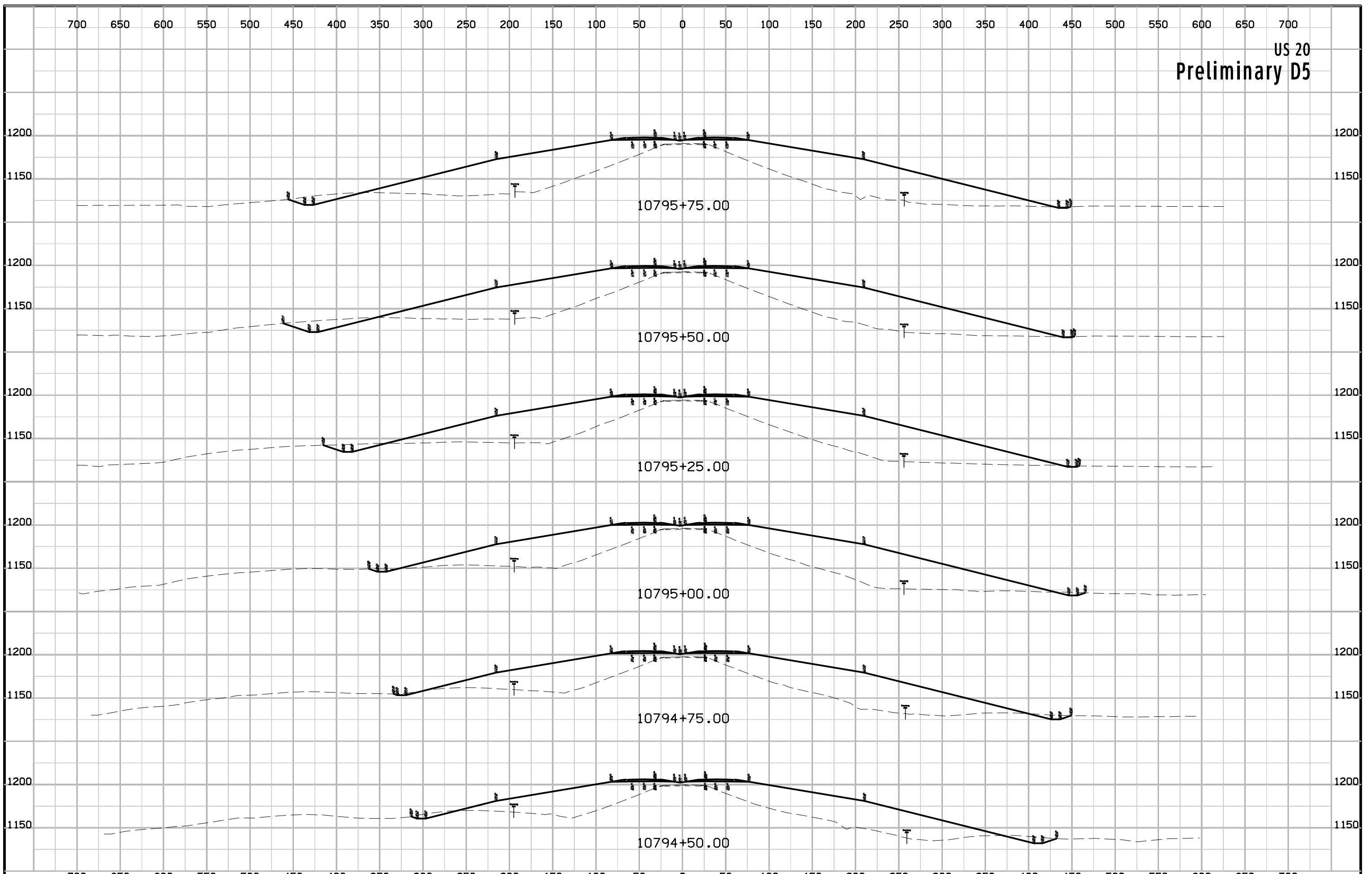
US 20  
Preliminary D5



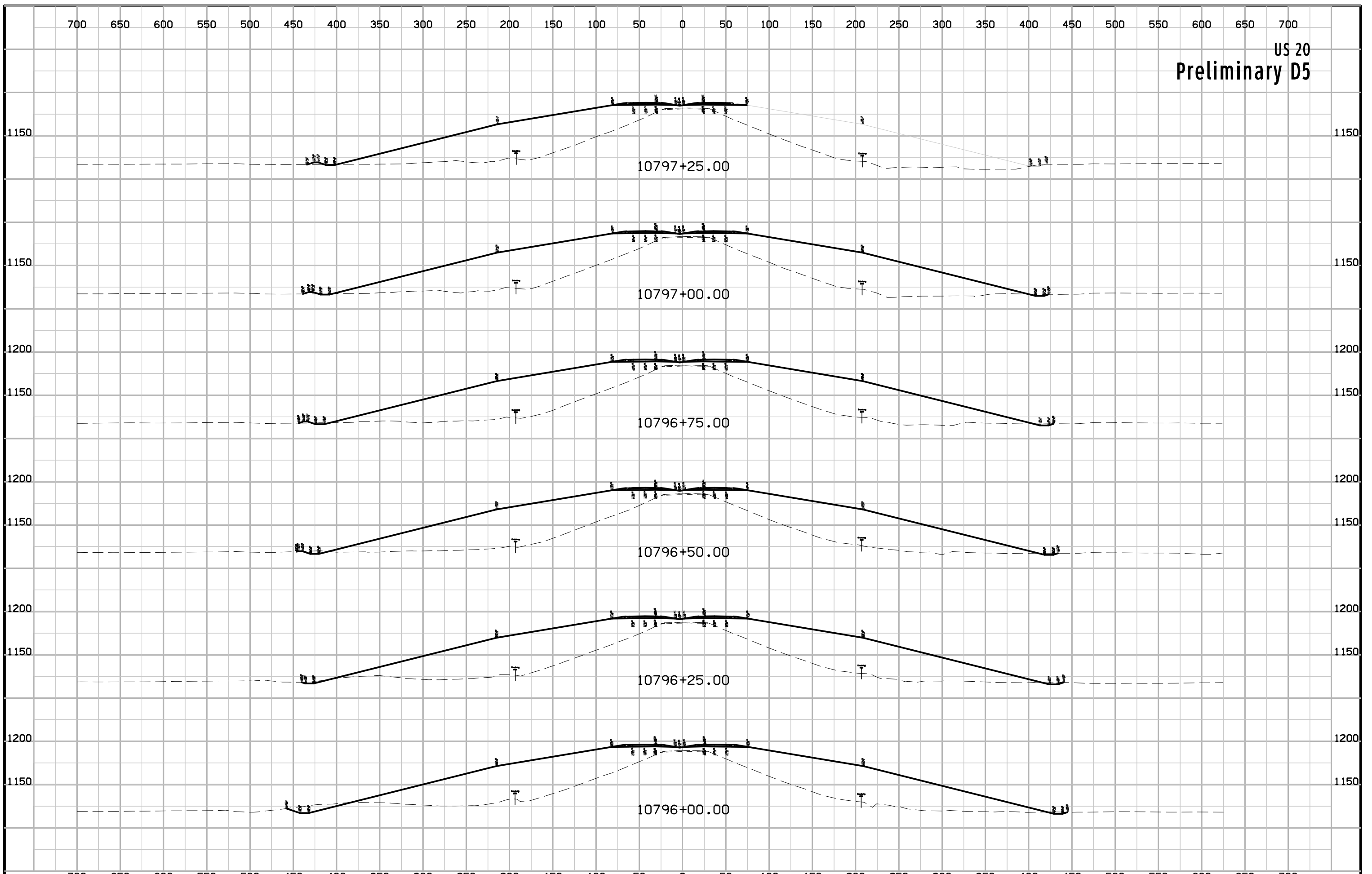
US 20  
Preliminary D5



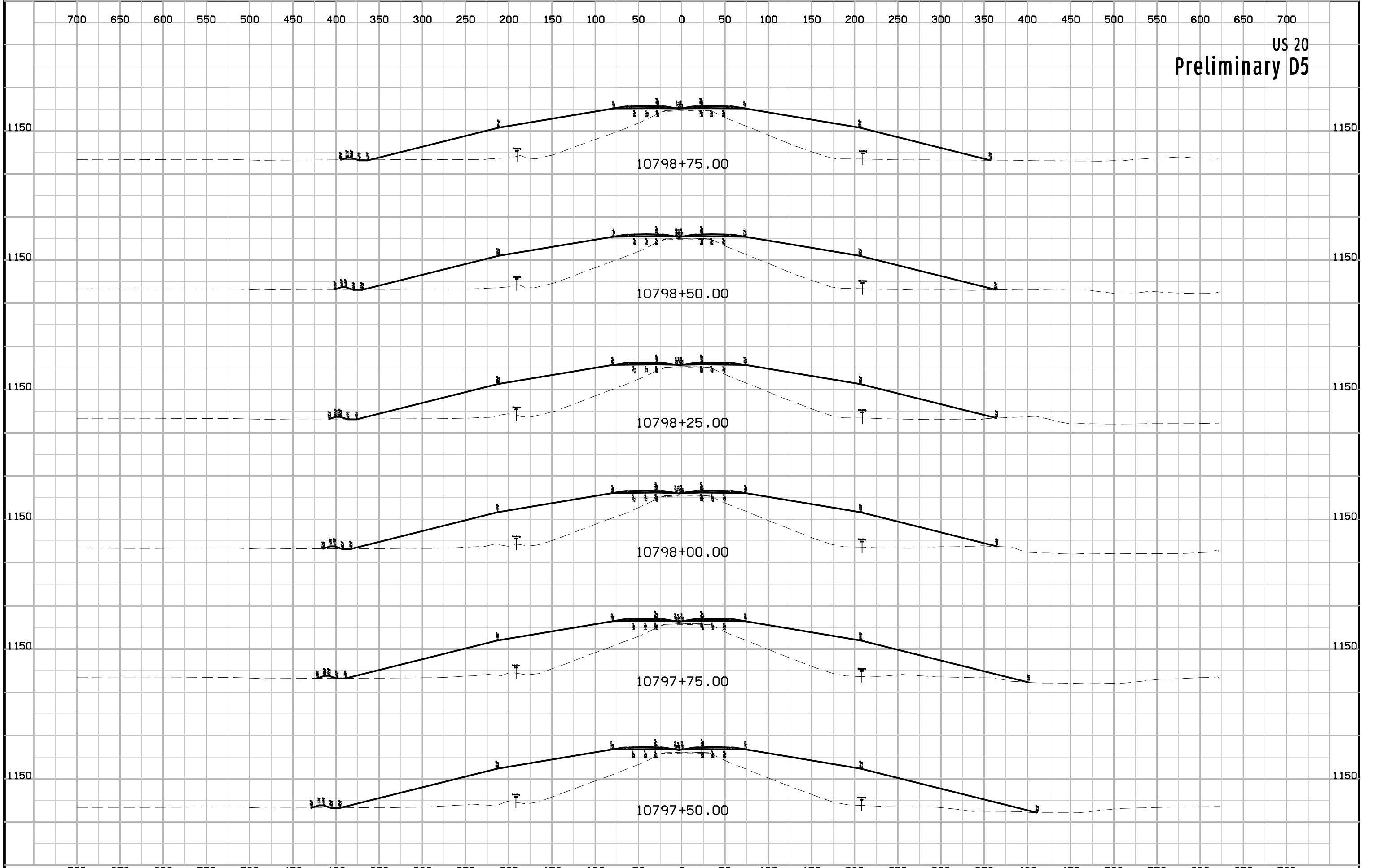
US 20  
Preliminary D5



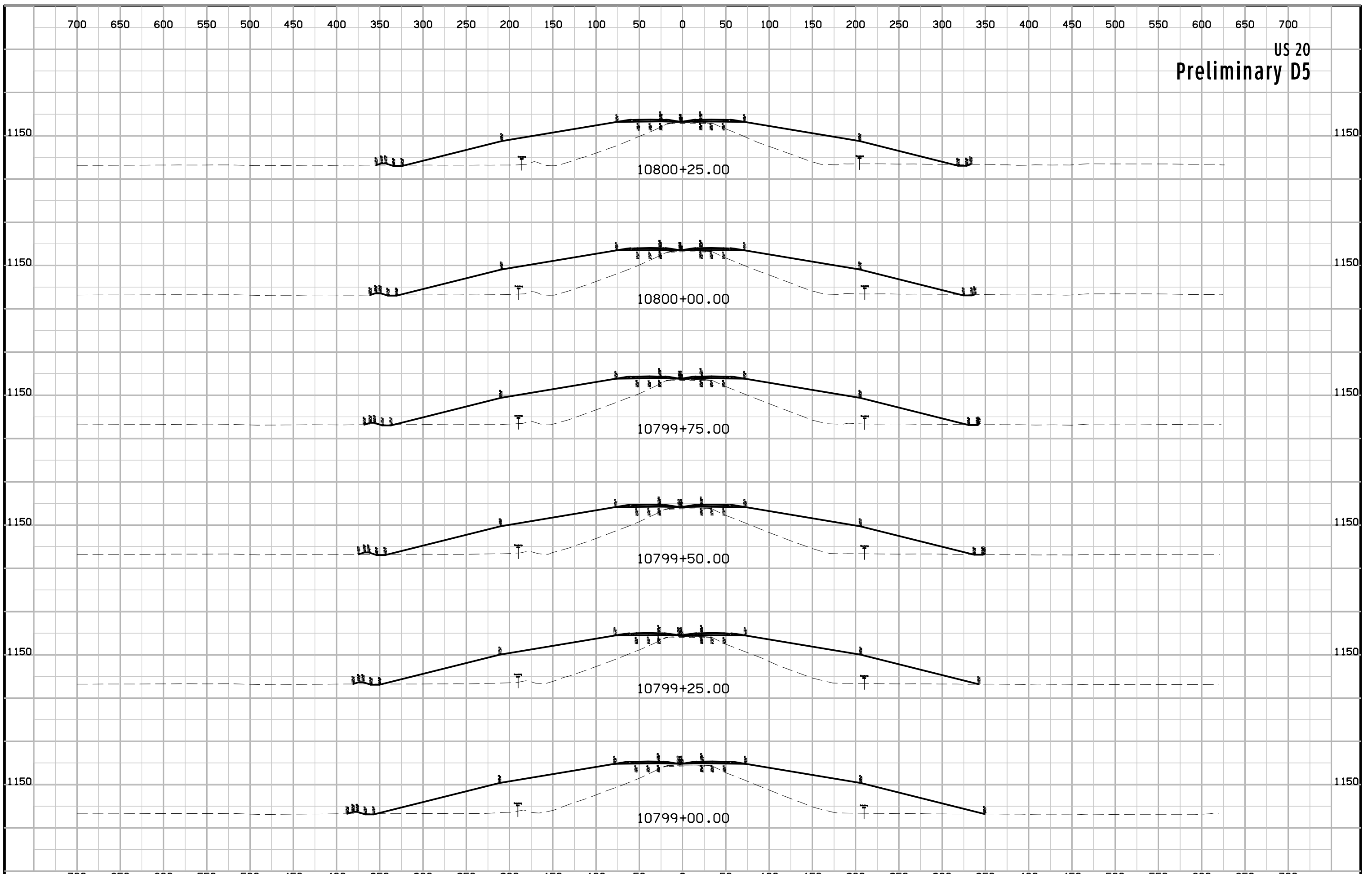
US 20  
Preliminary D5



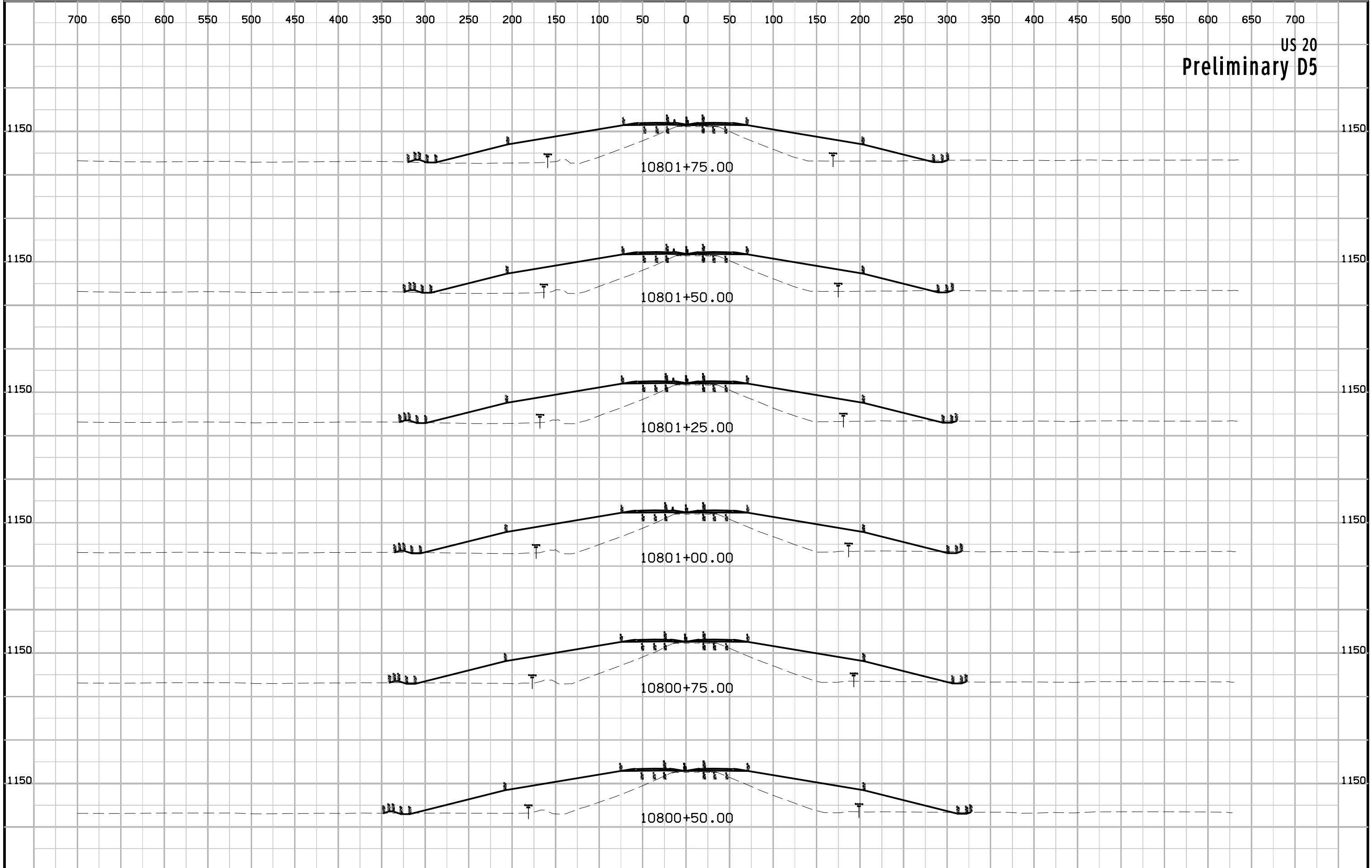
US 20  
Preliminary D5



US 20  
Preliminary D5

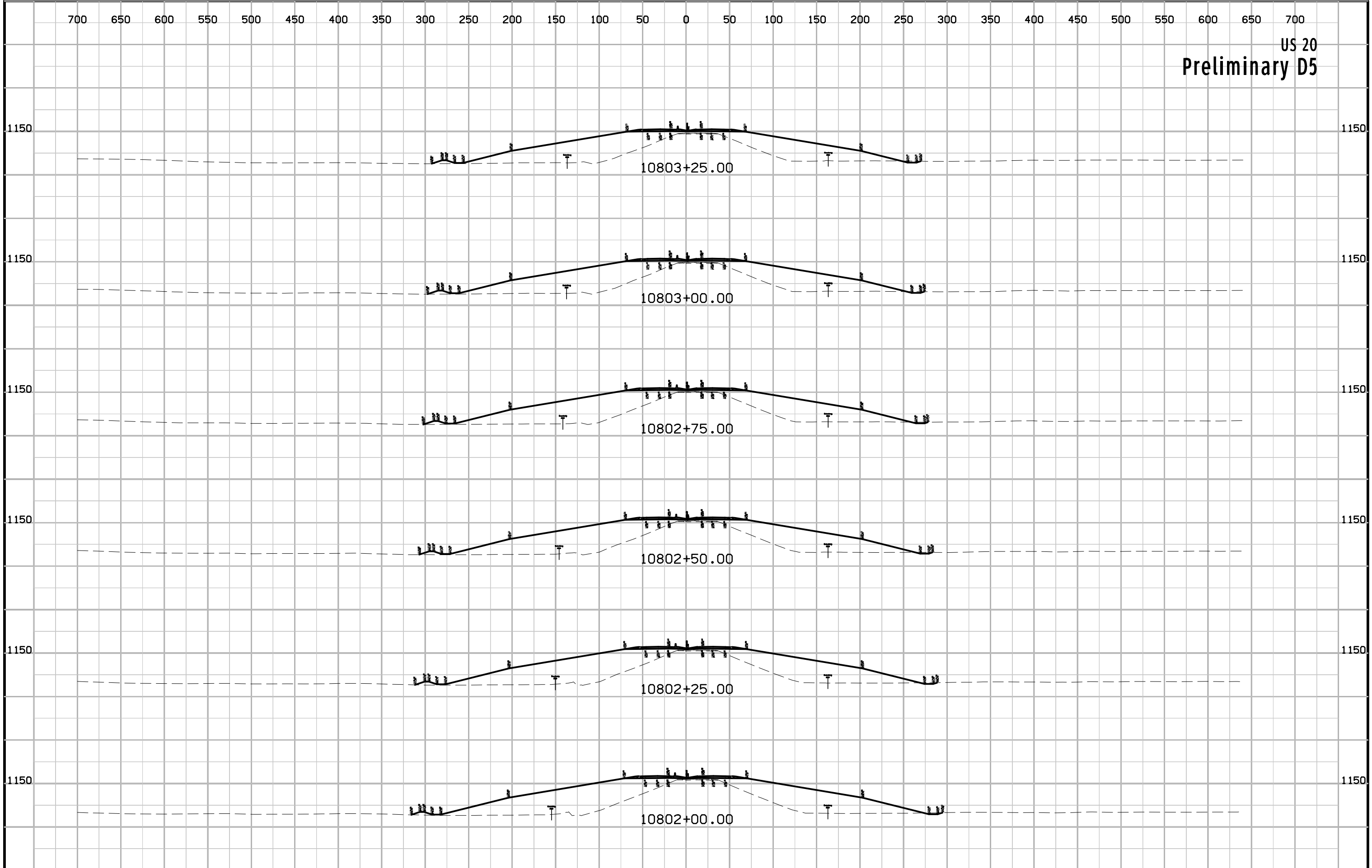


US 20  
Preliminary D5

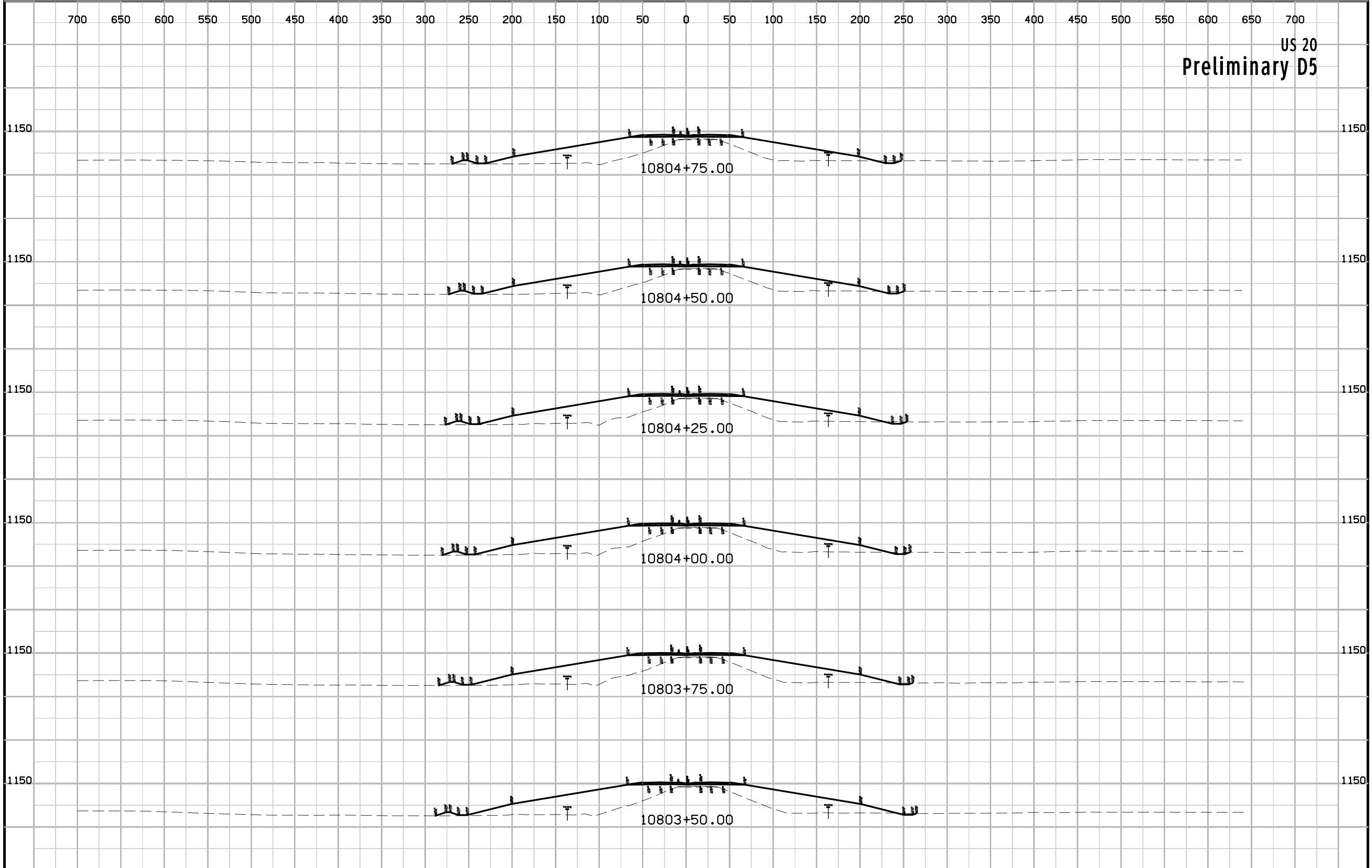


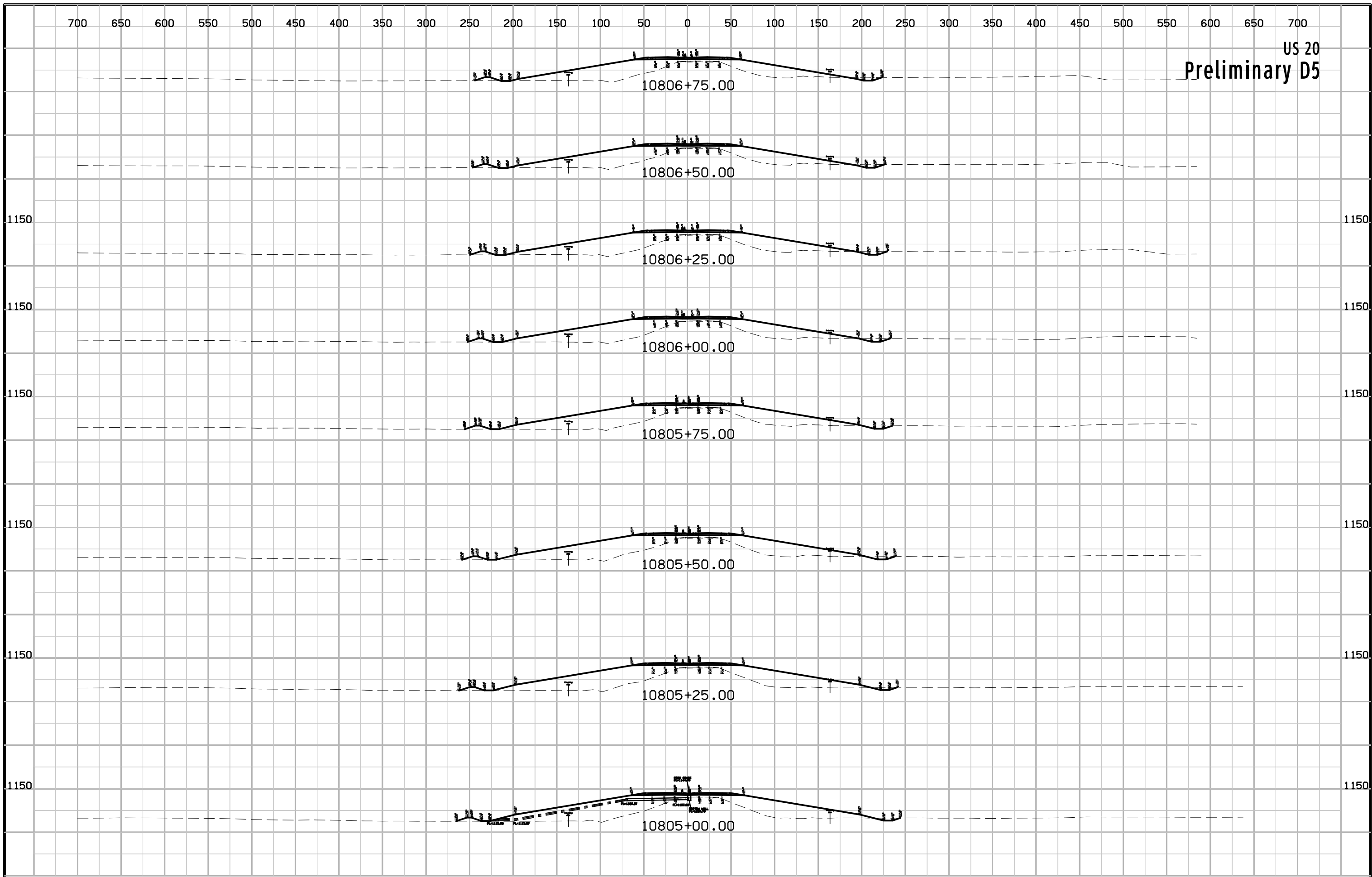


US 20  
Preliminary D5

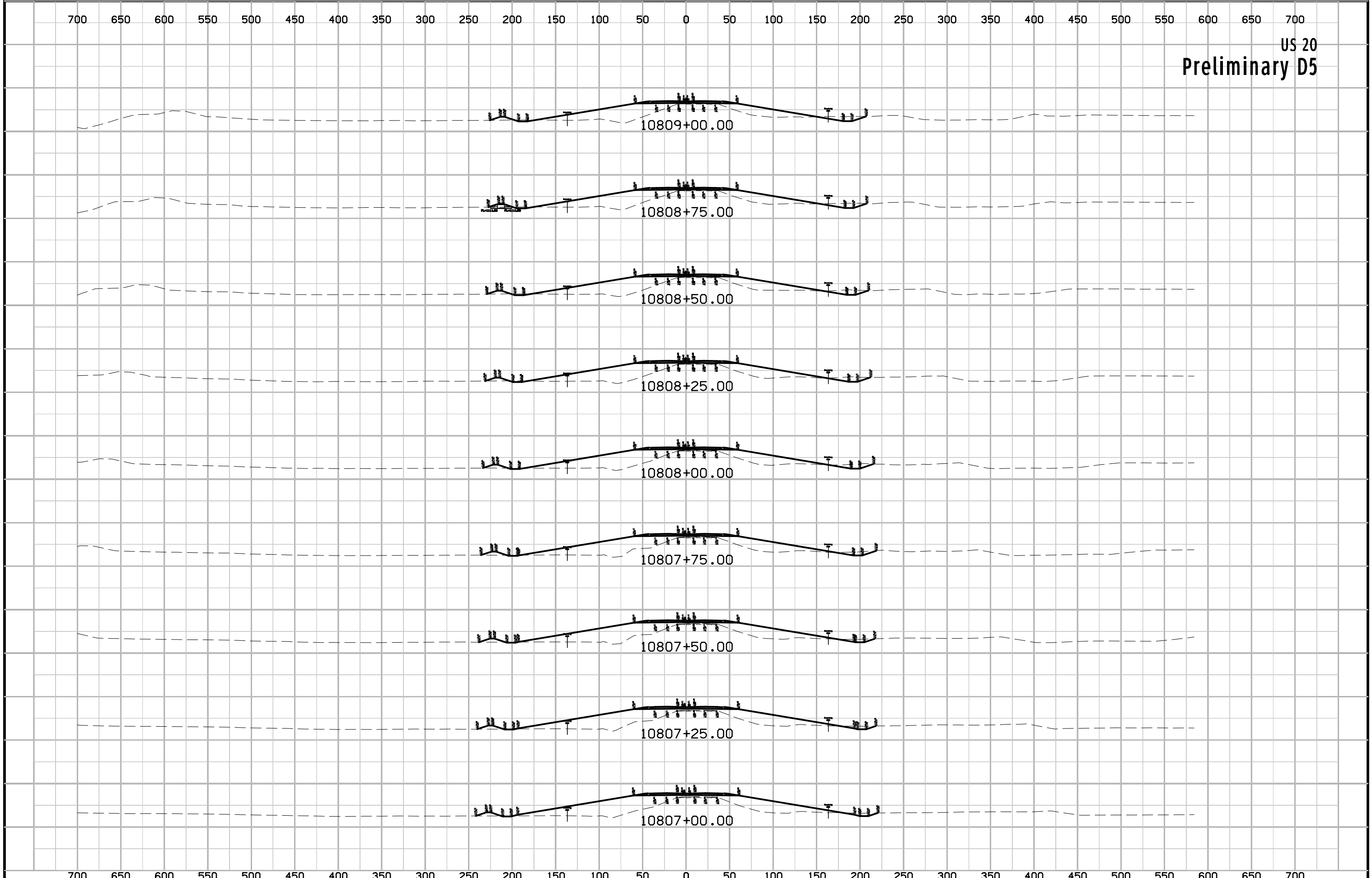


US 20  
Preliminary D5

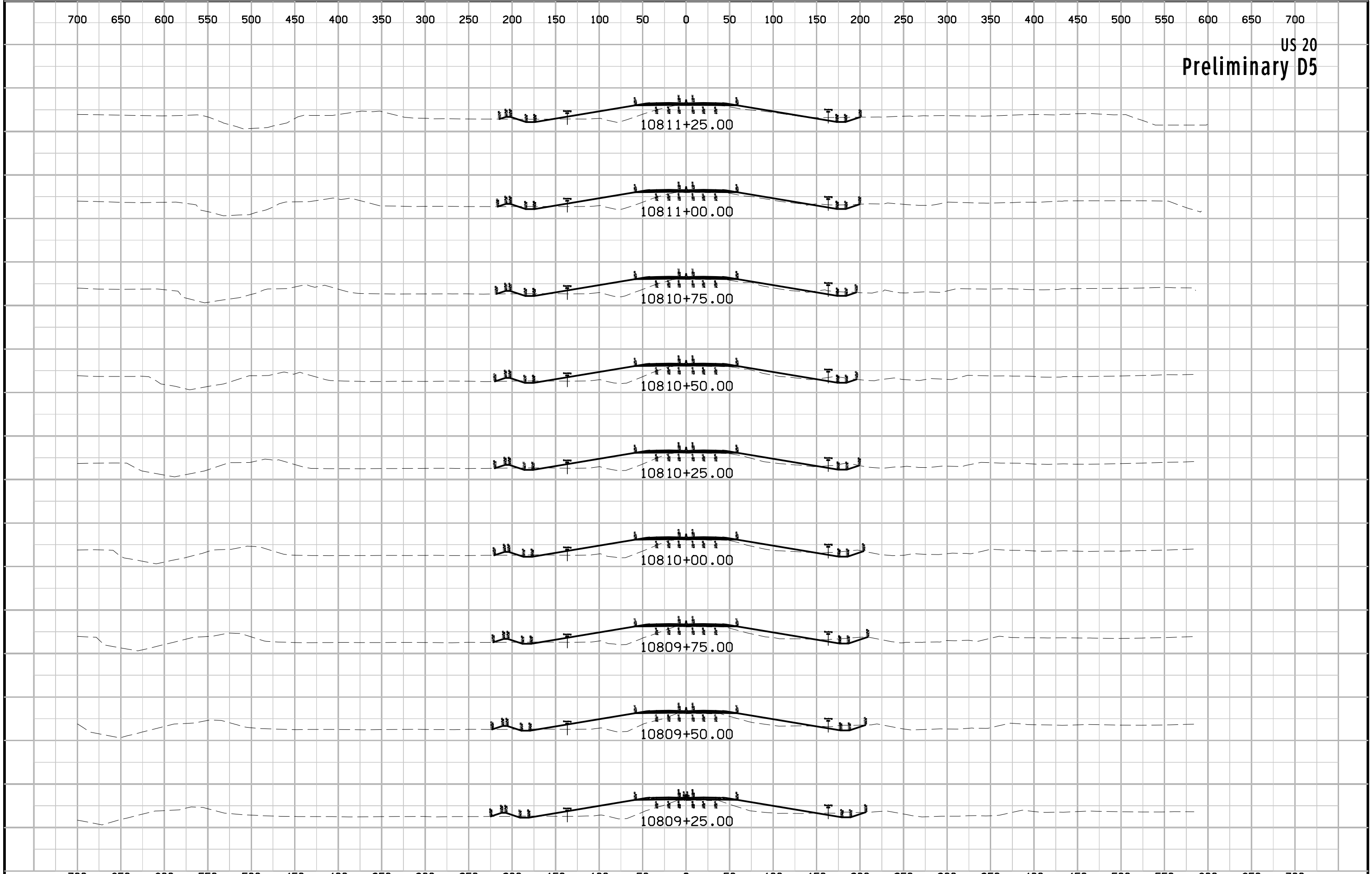




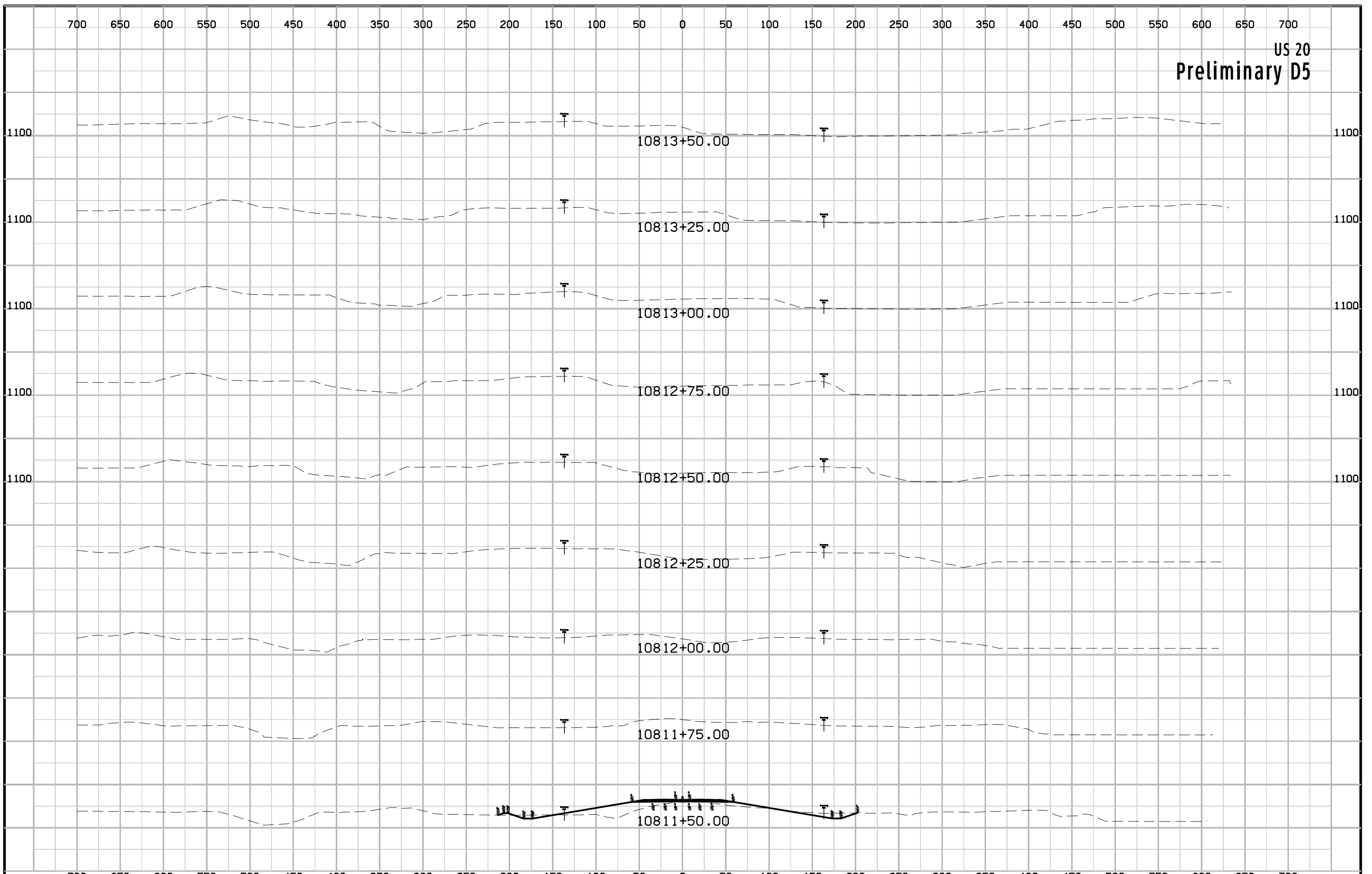
US 20  
Preliminary D5



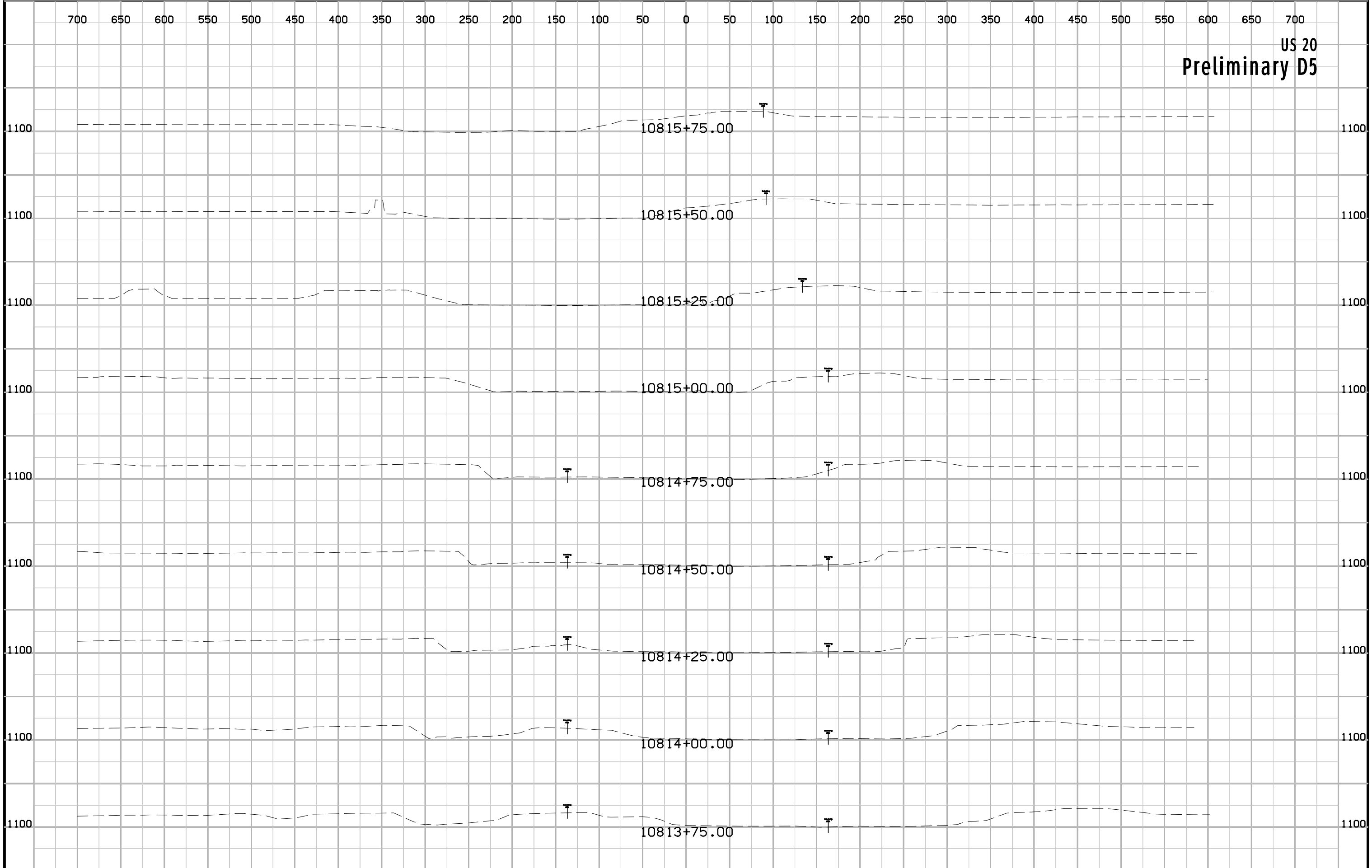
US 20  
Preliminary D5



US 20  
Preliminary D5

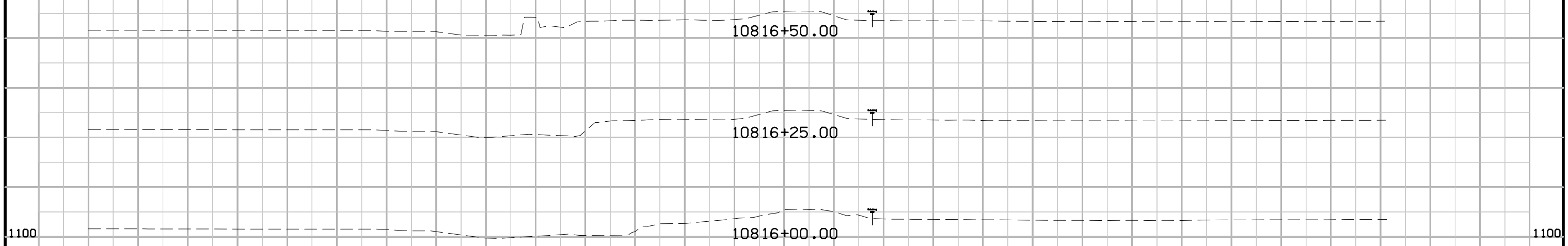


US 20  
Preliminary D5



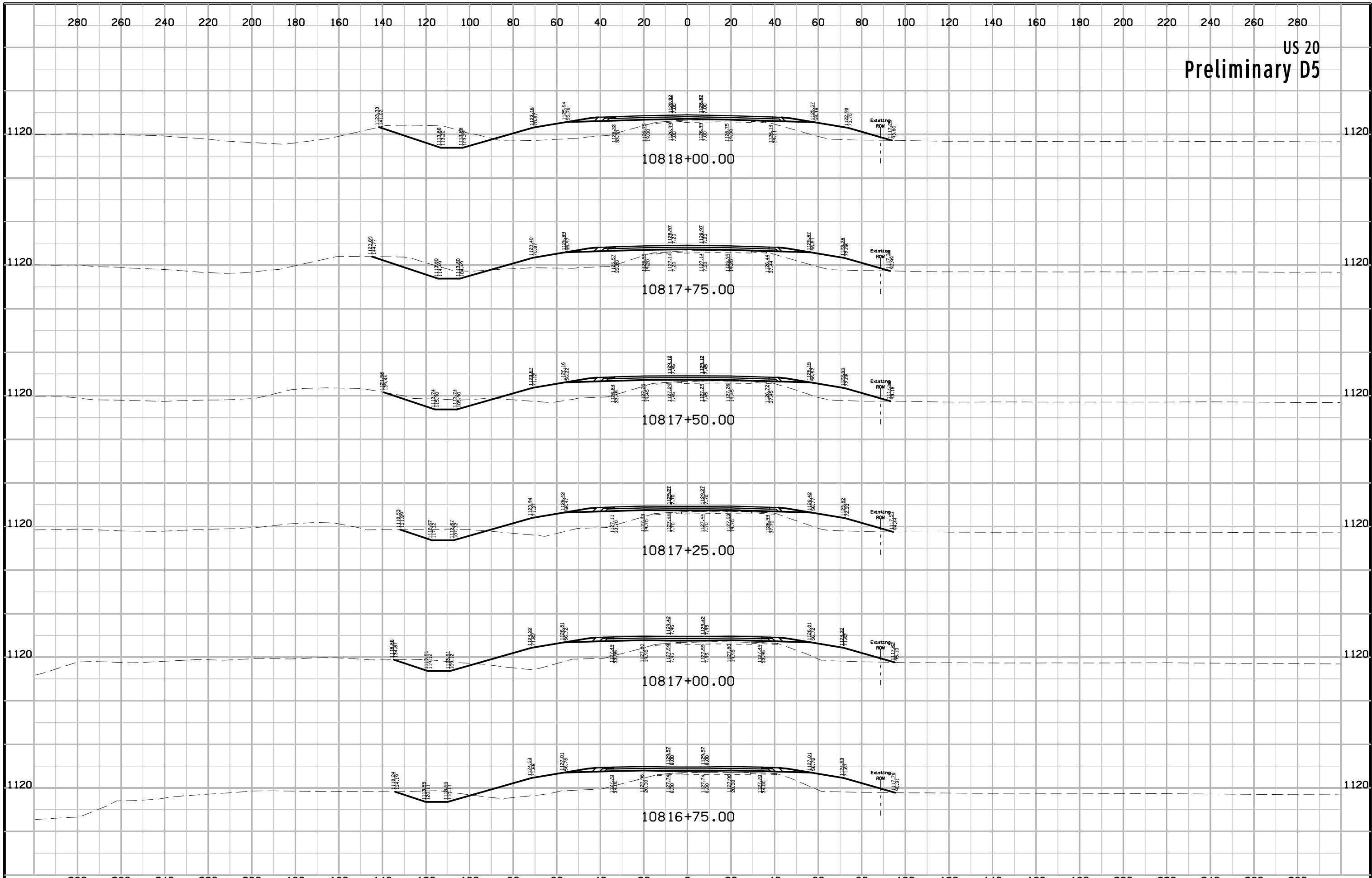
700 650 600 550 500 450 400 350 300 250 200 150 100 50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700

US 20  
Preliminary D5

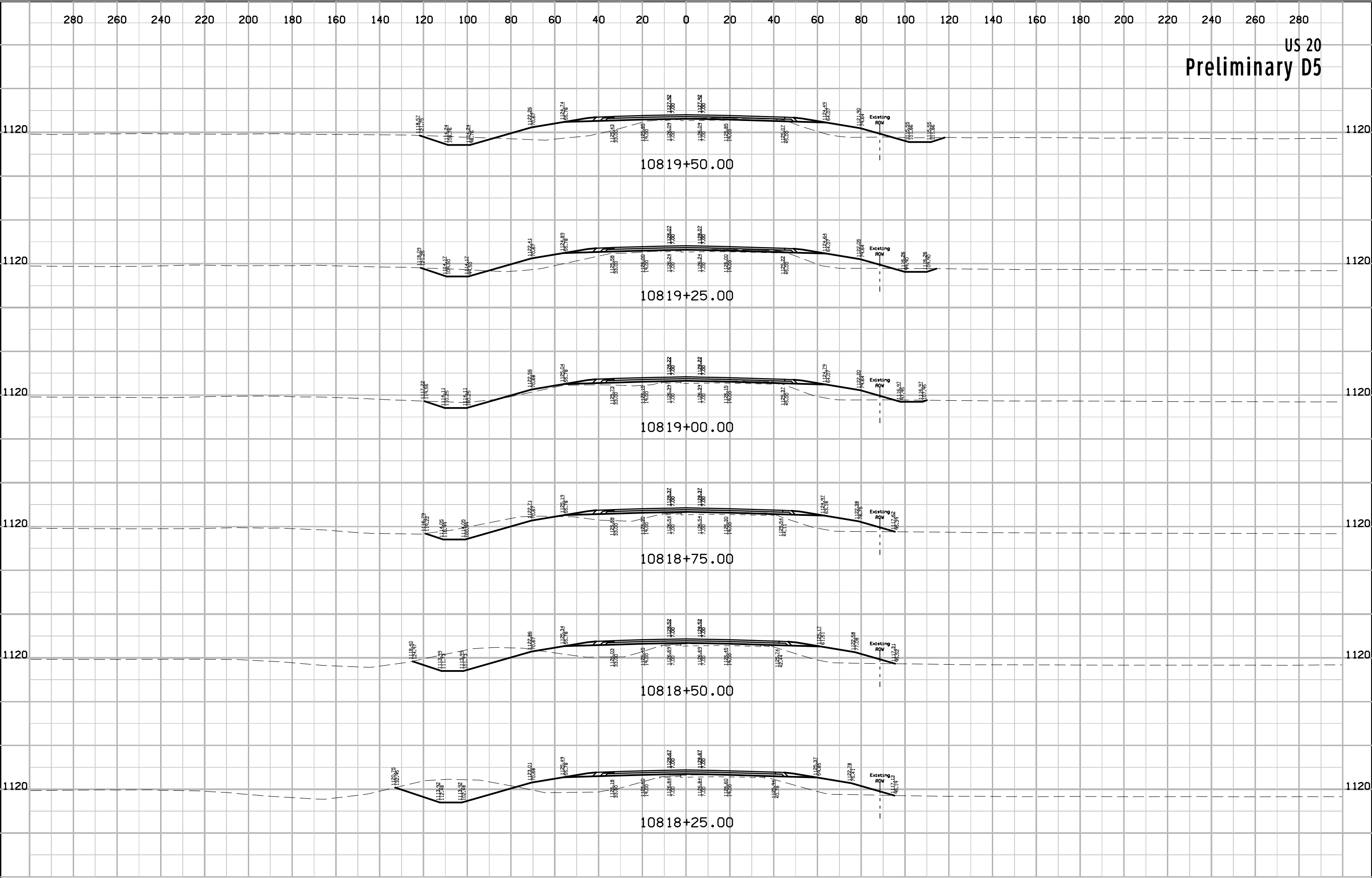




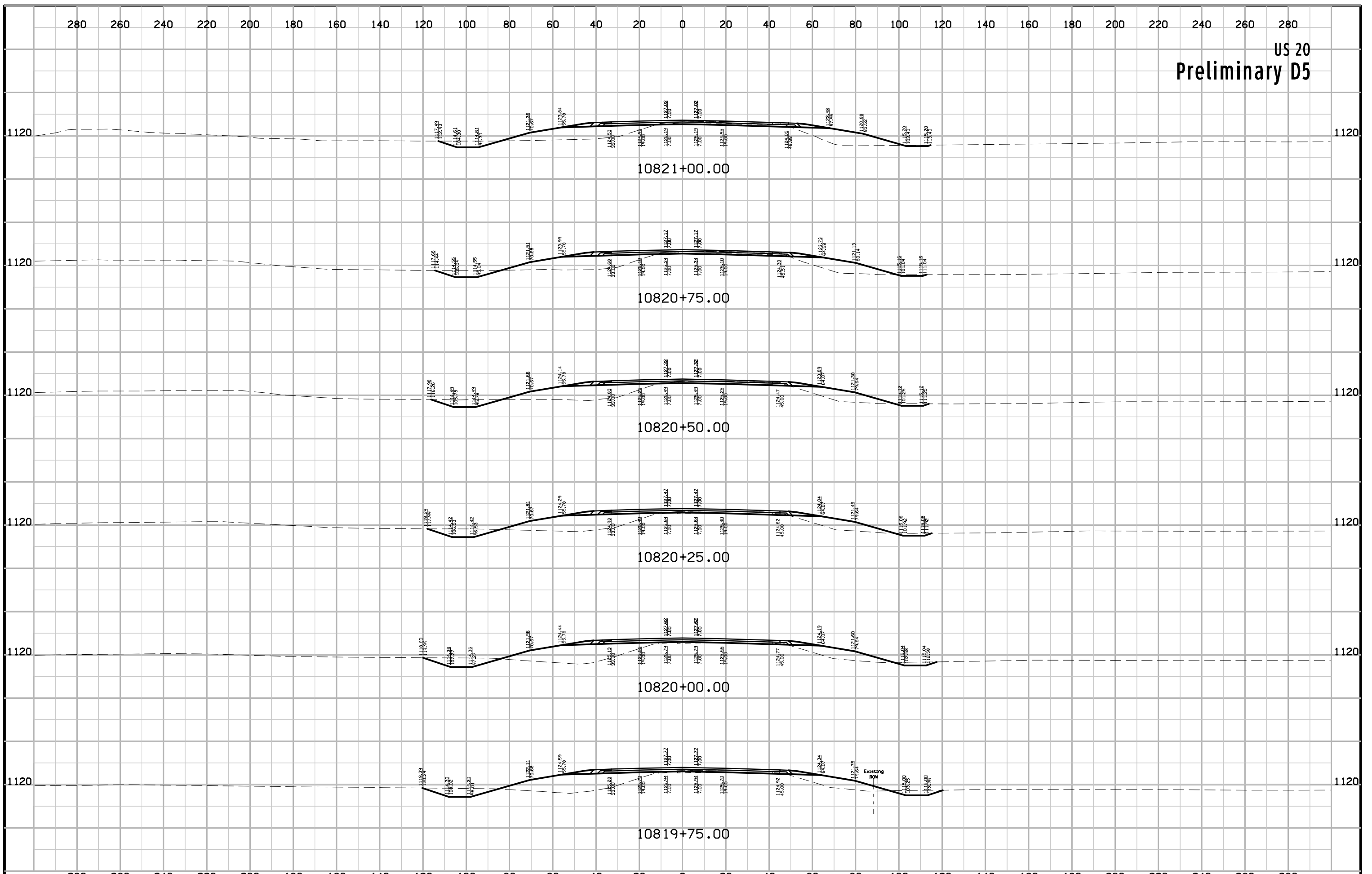
US 20  
Preliminary D5



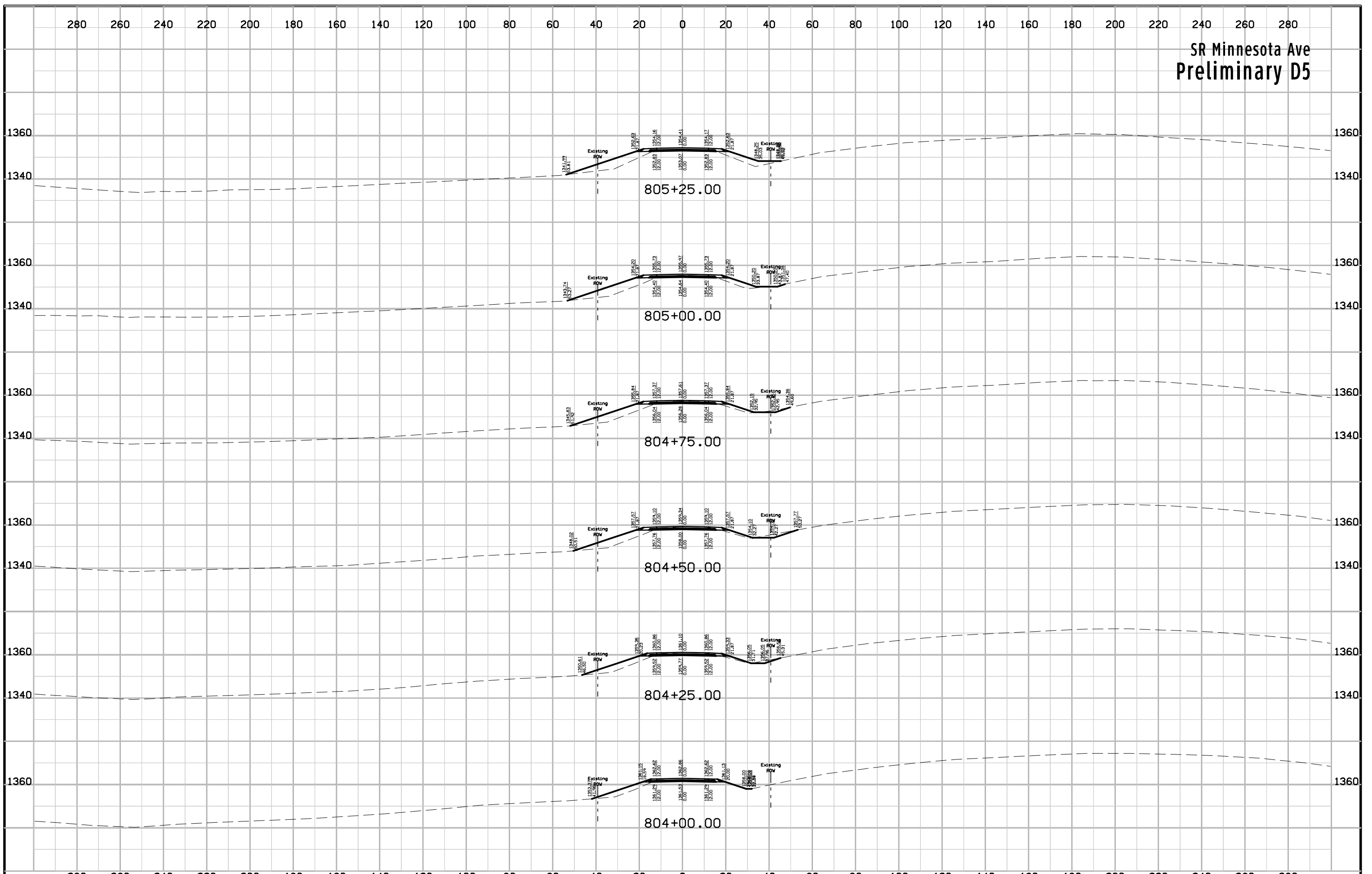
US 20  
Preliminary D5



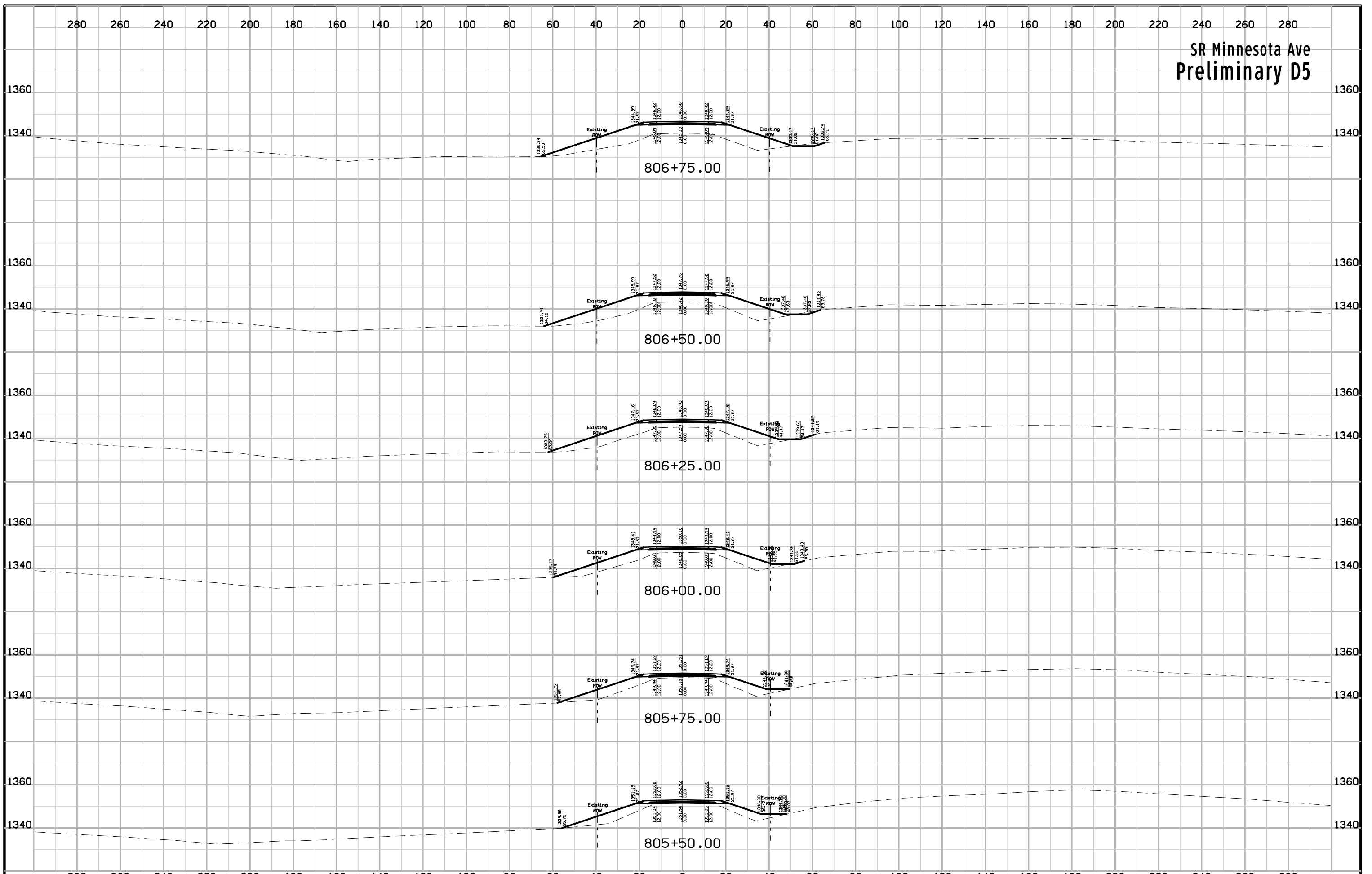
US 20  
Preliminary D5



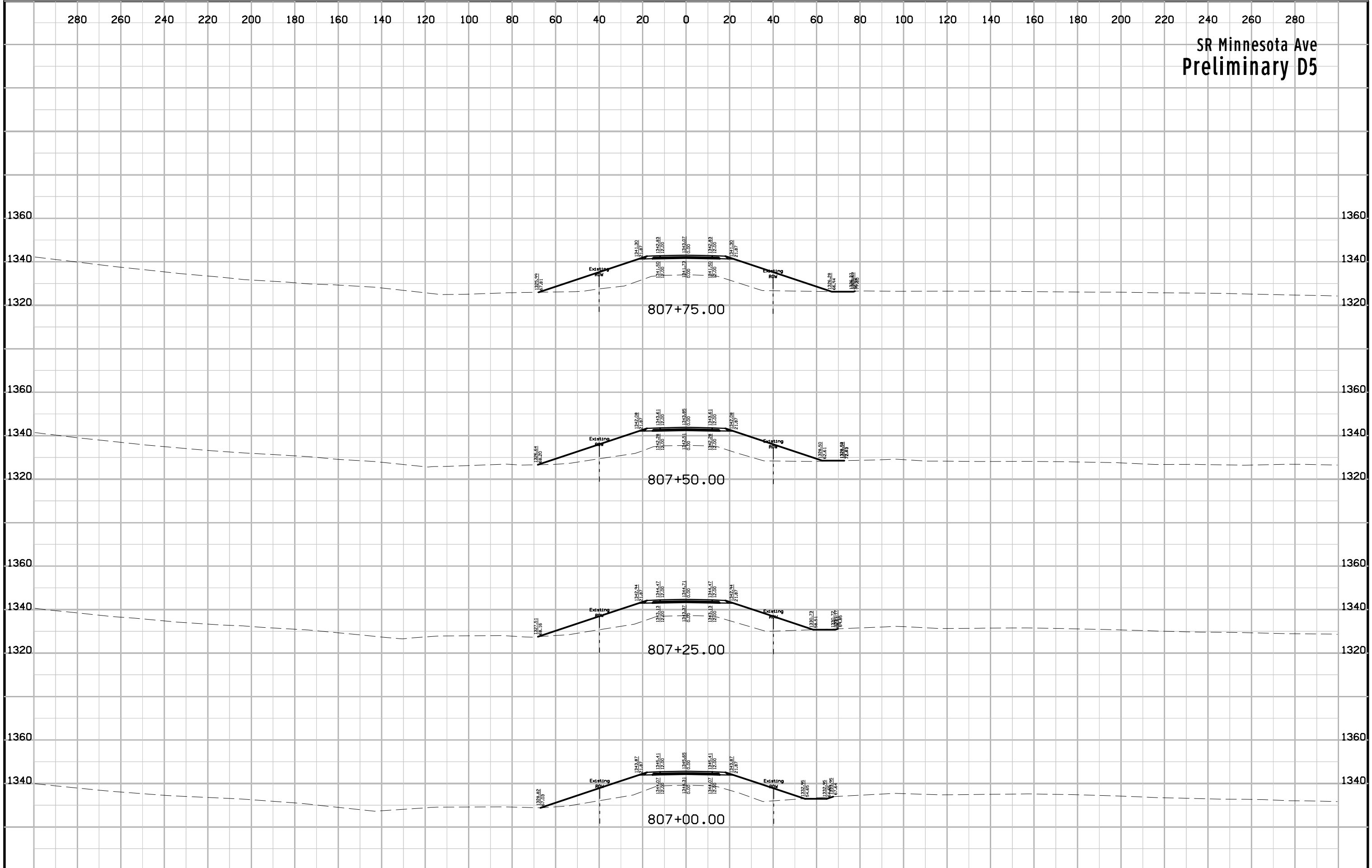
SR Minnesota Ave  
Preliminary D5



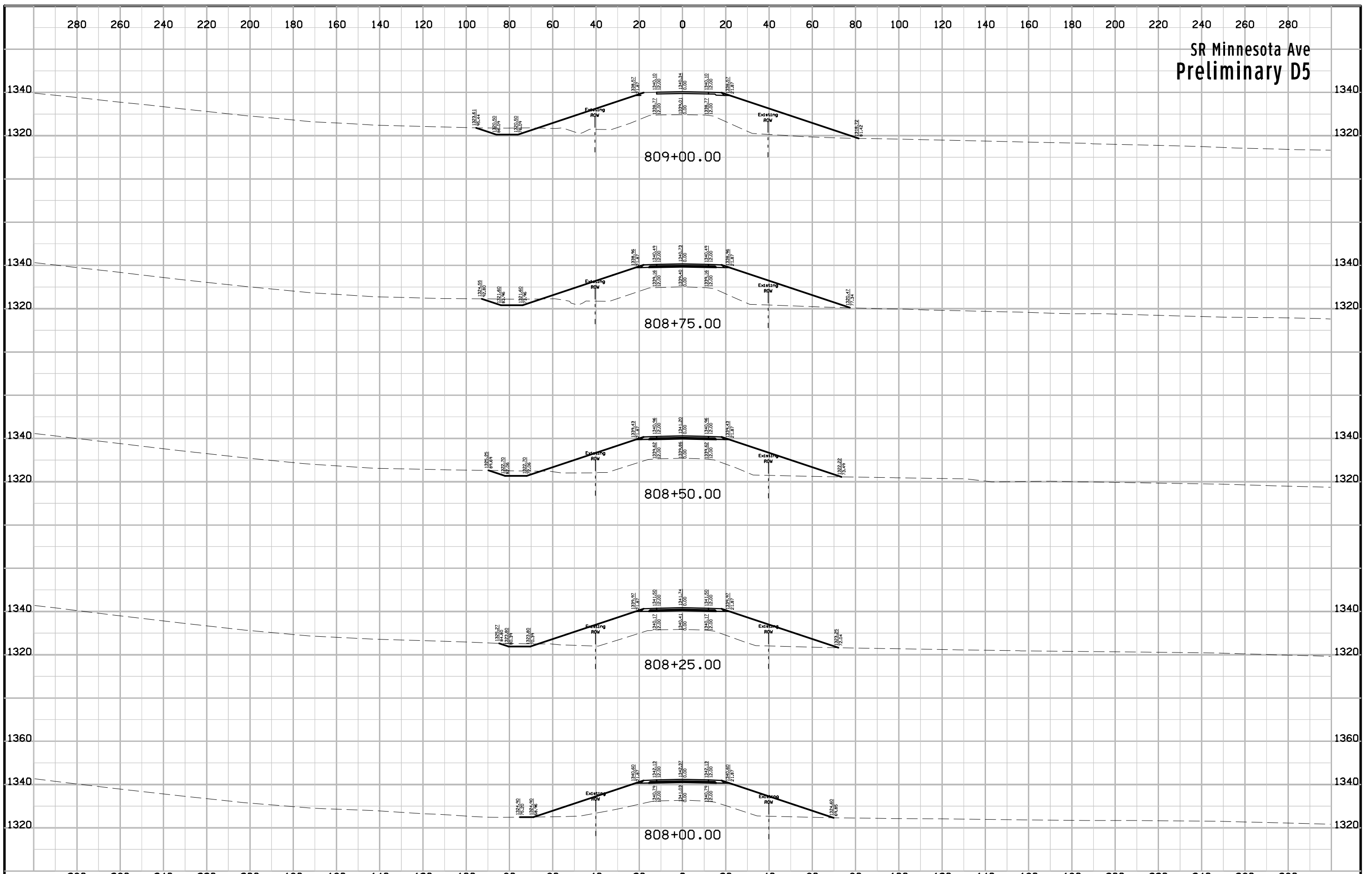
SR Minnesota Ave  
Preliminary D5



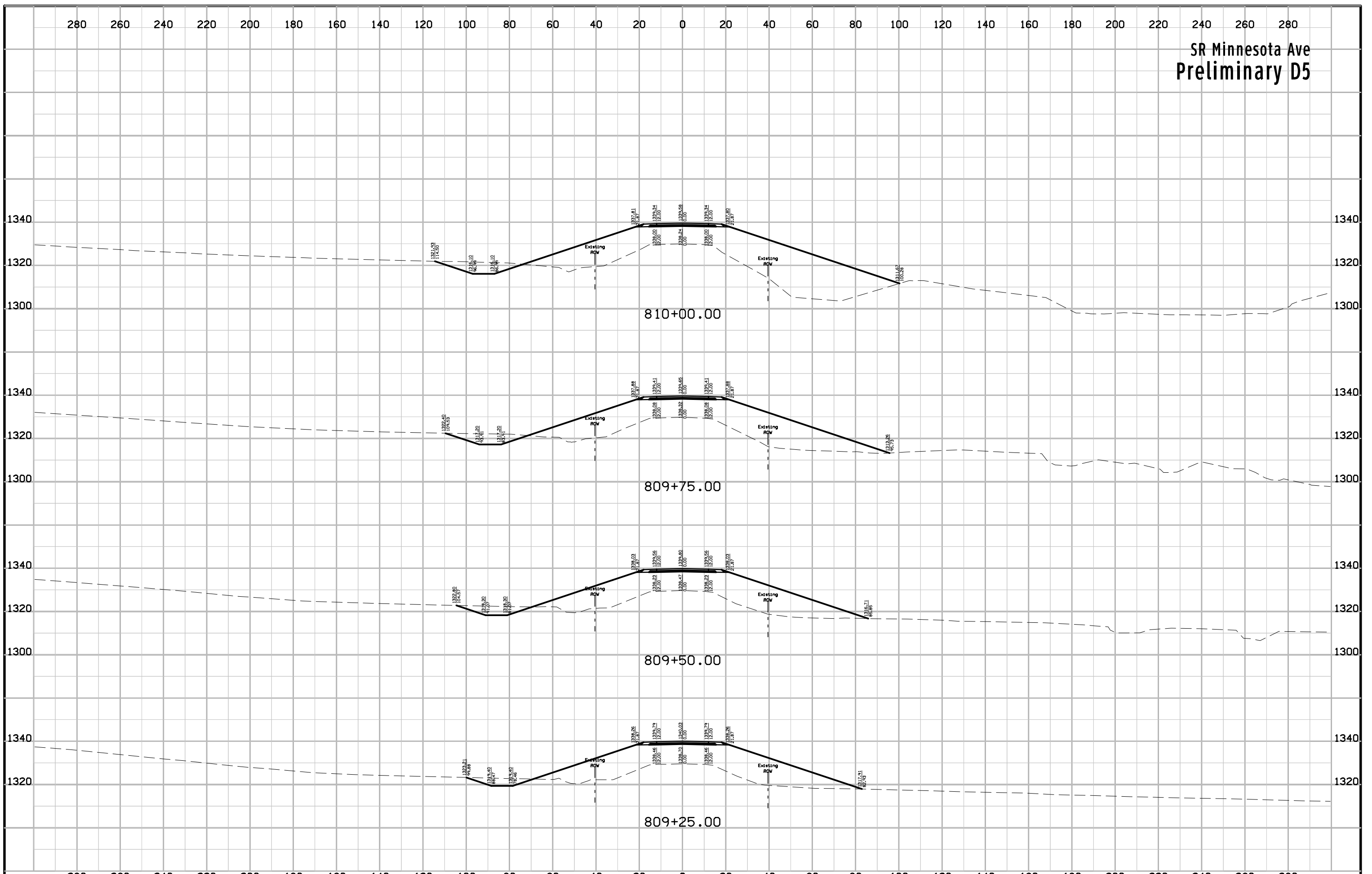
SR Minnesota Ave  
Preliminary D5



SR Minnesota Ave  
Preliminary D5

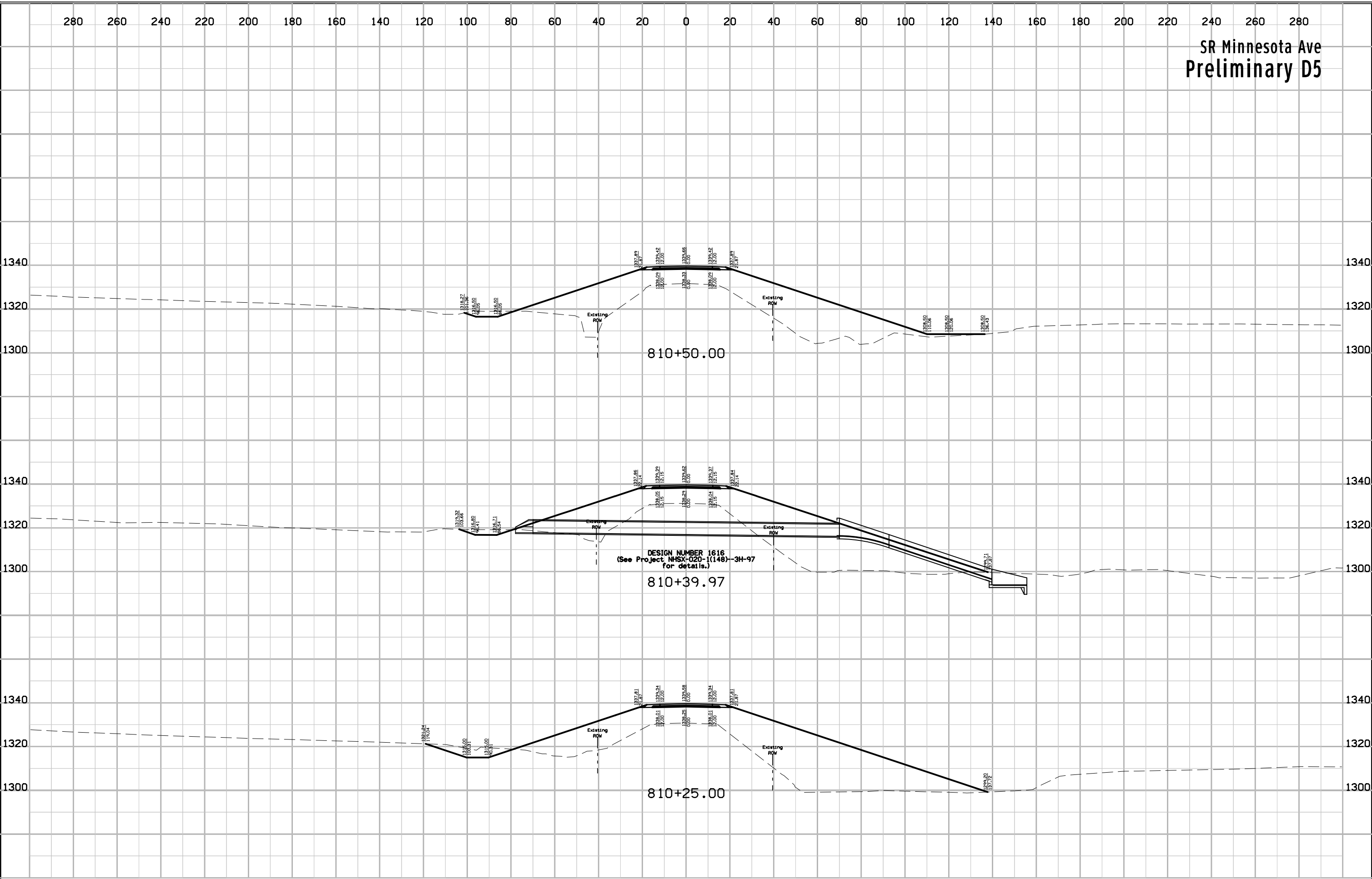


SR Minnesota Ave  
Preliminary D5

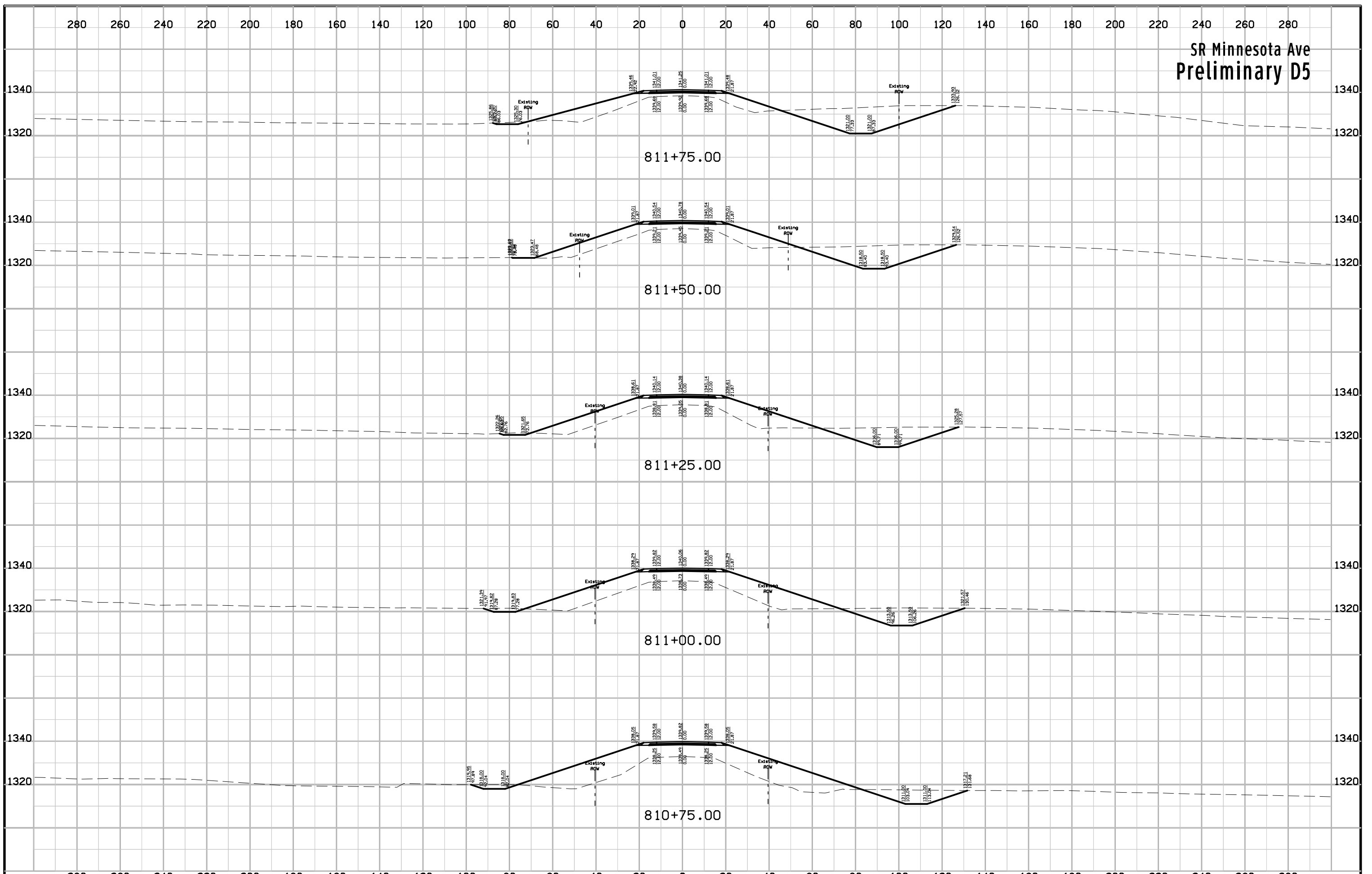




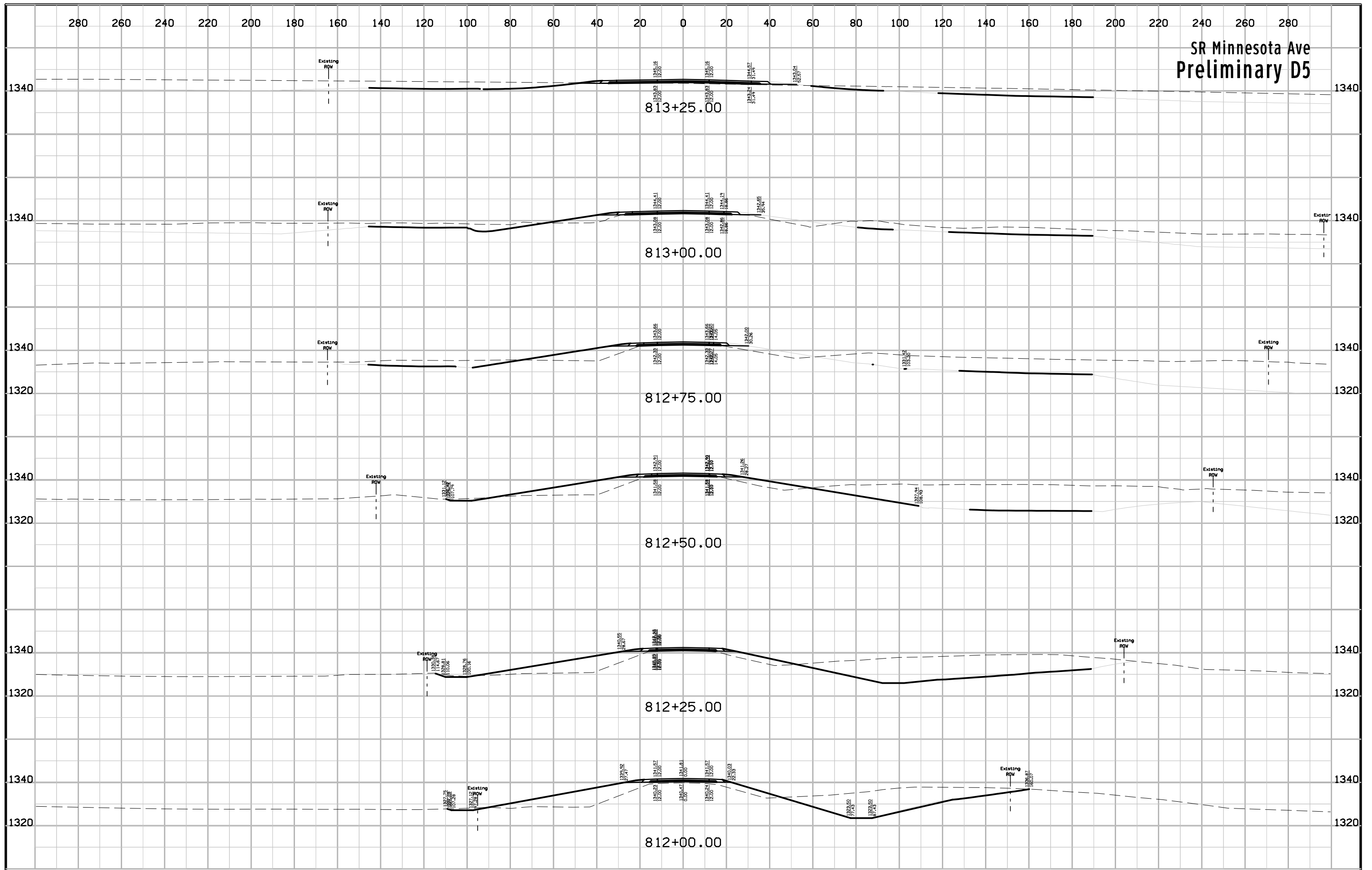
SR Minnesota Ave  
Preliminary D5



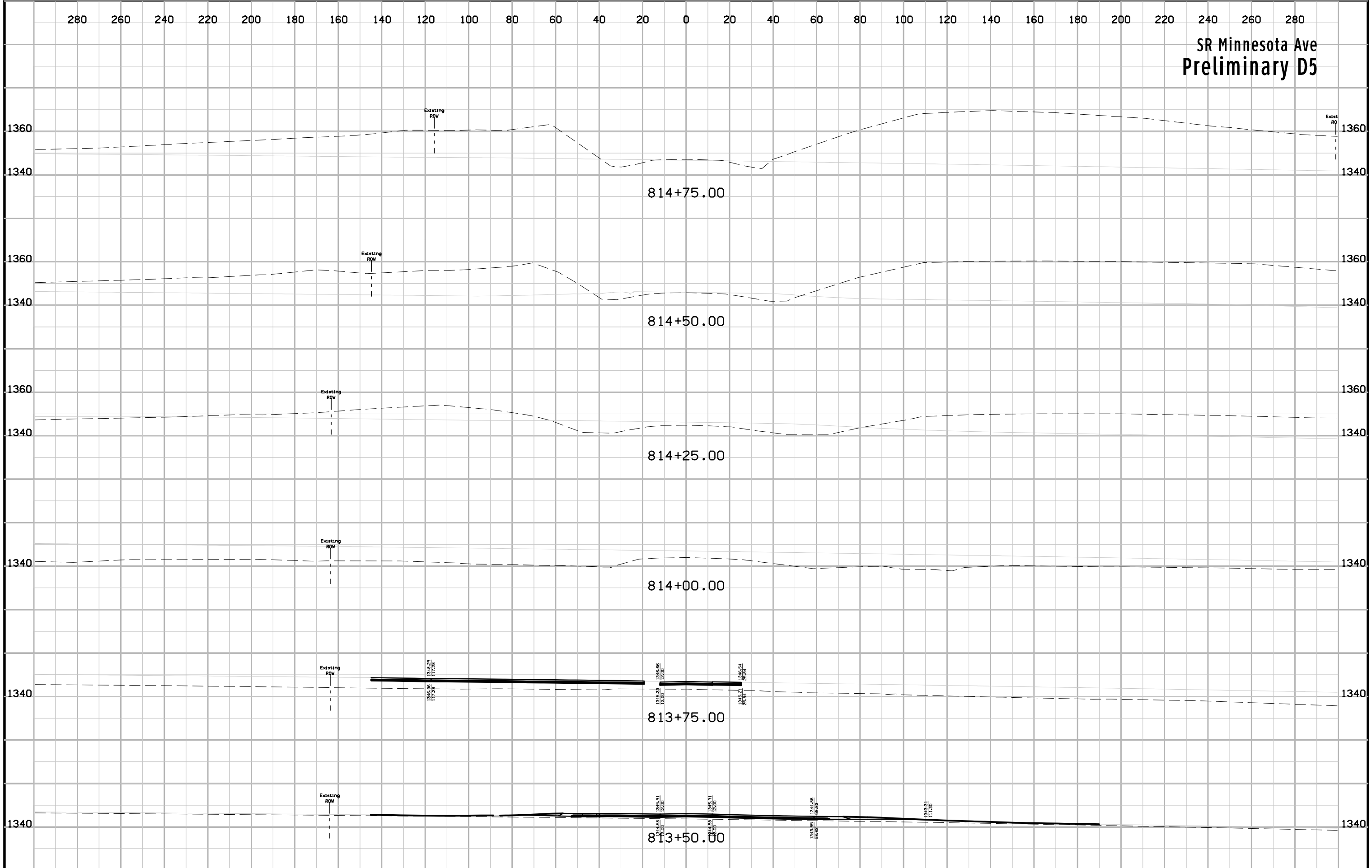
SR Minnesota Ave  
Preliminary D5



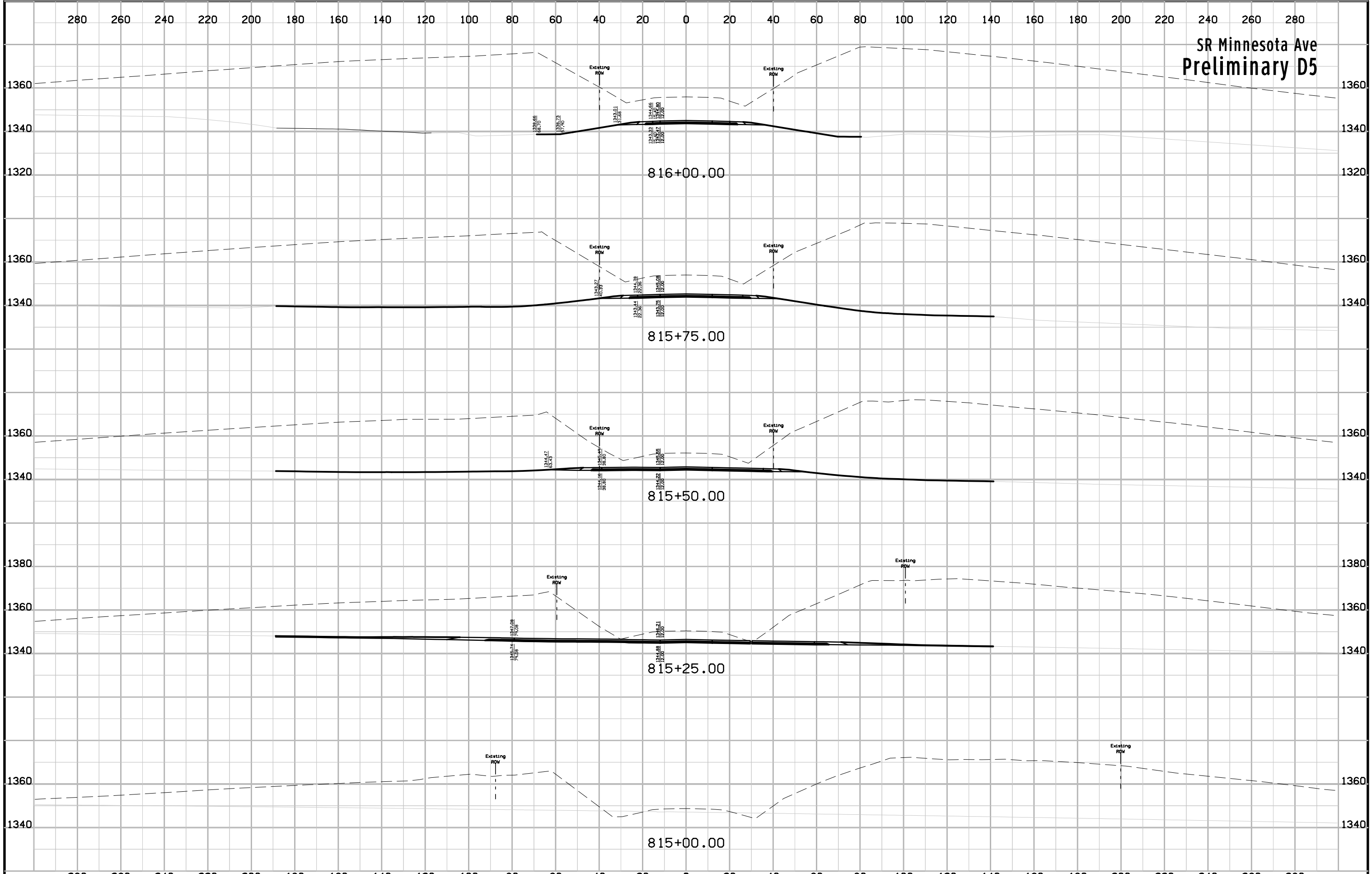
# SR Minnesota Ave Preliminary D5



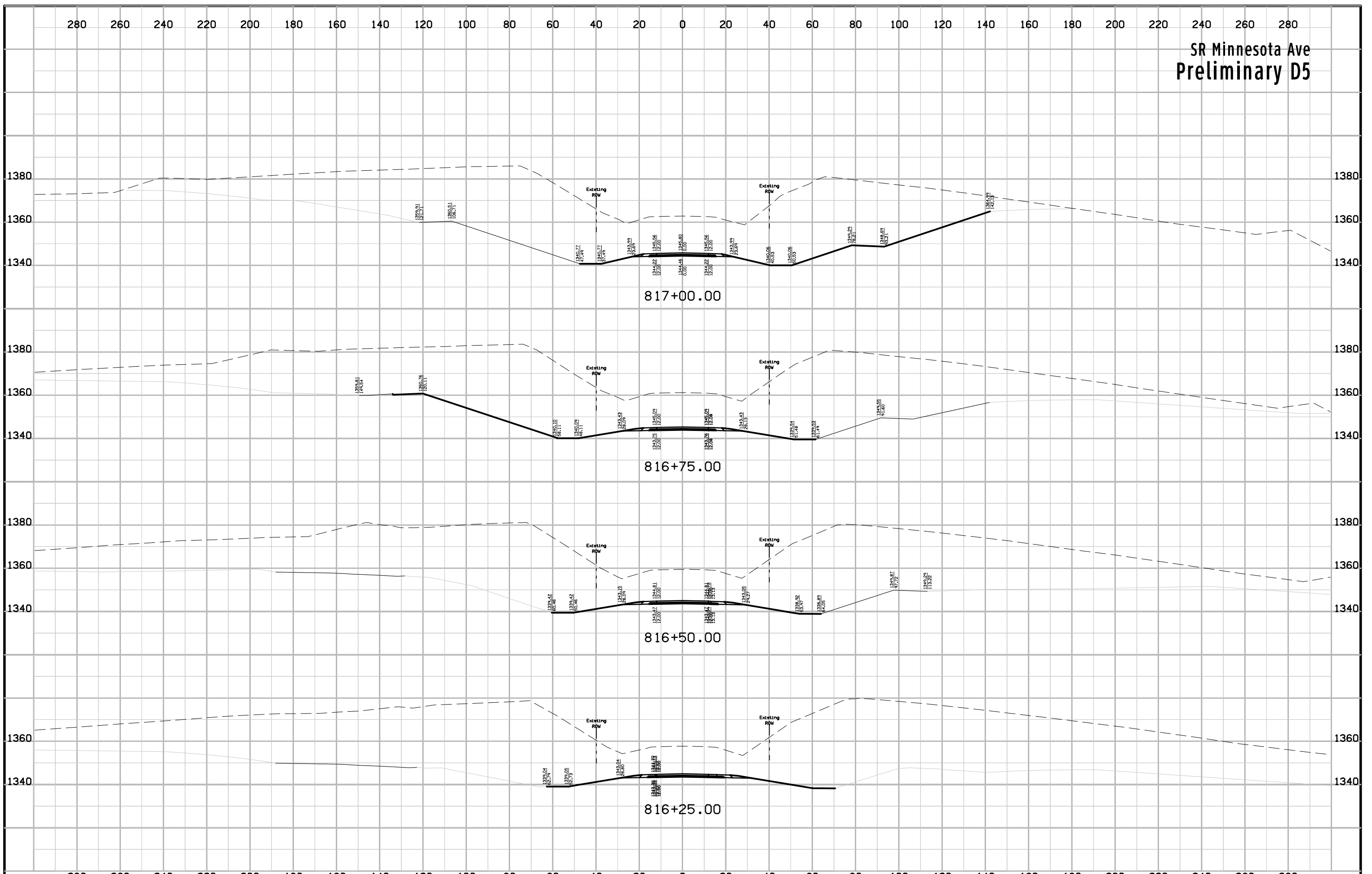
SR Minnesota Ave  
Preliminary D5



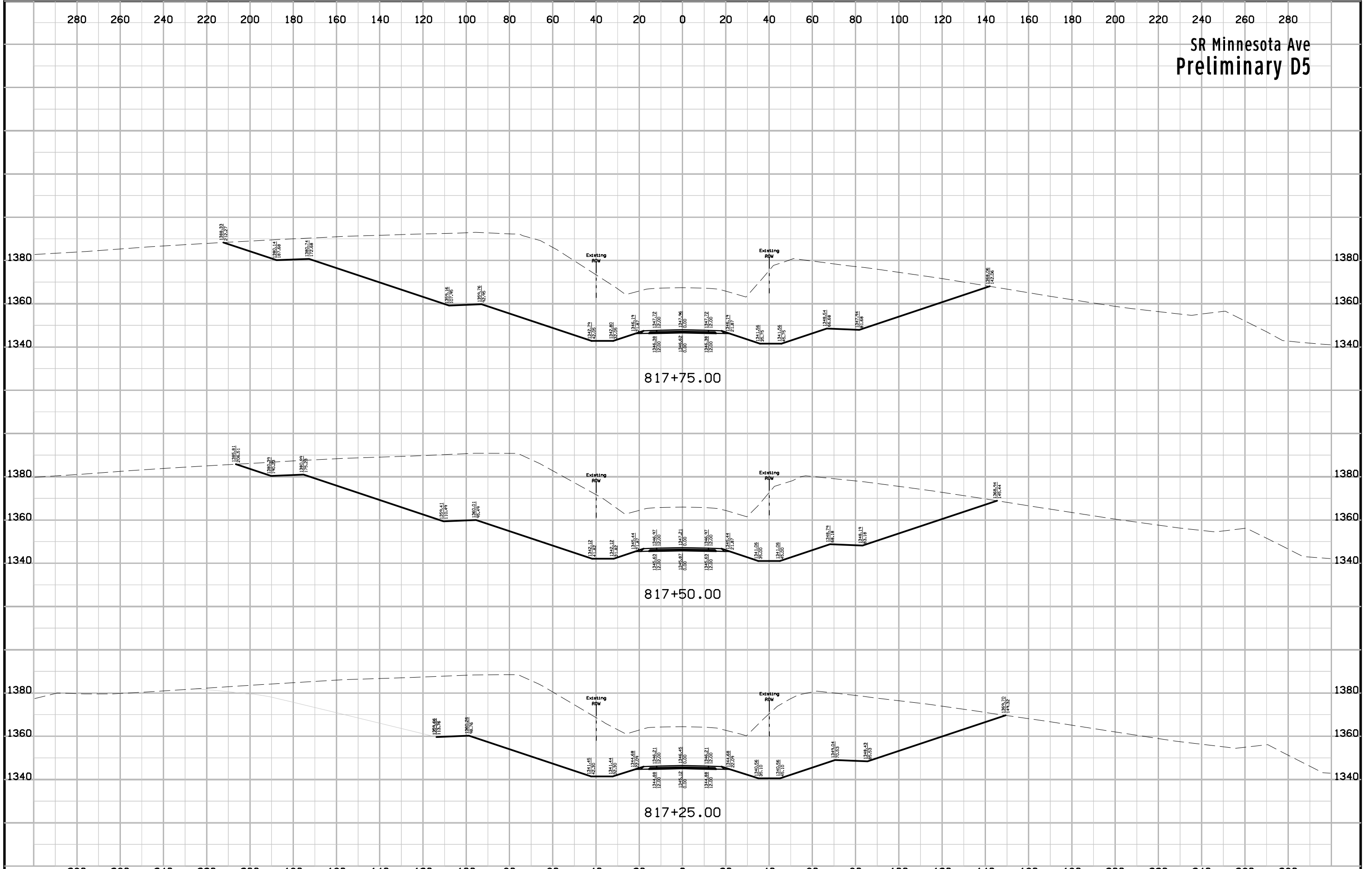
SR Minnesota Ave  
Preliminary D5



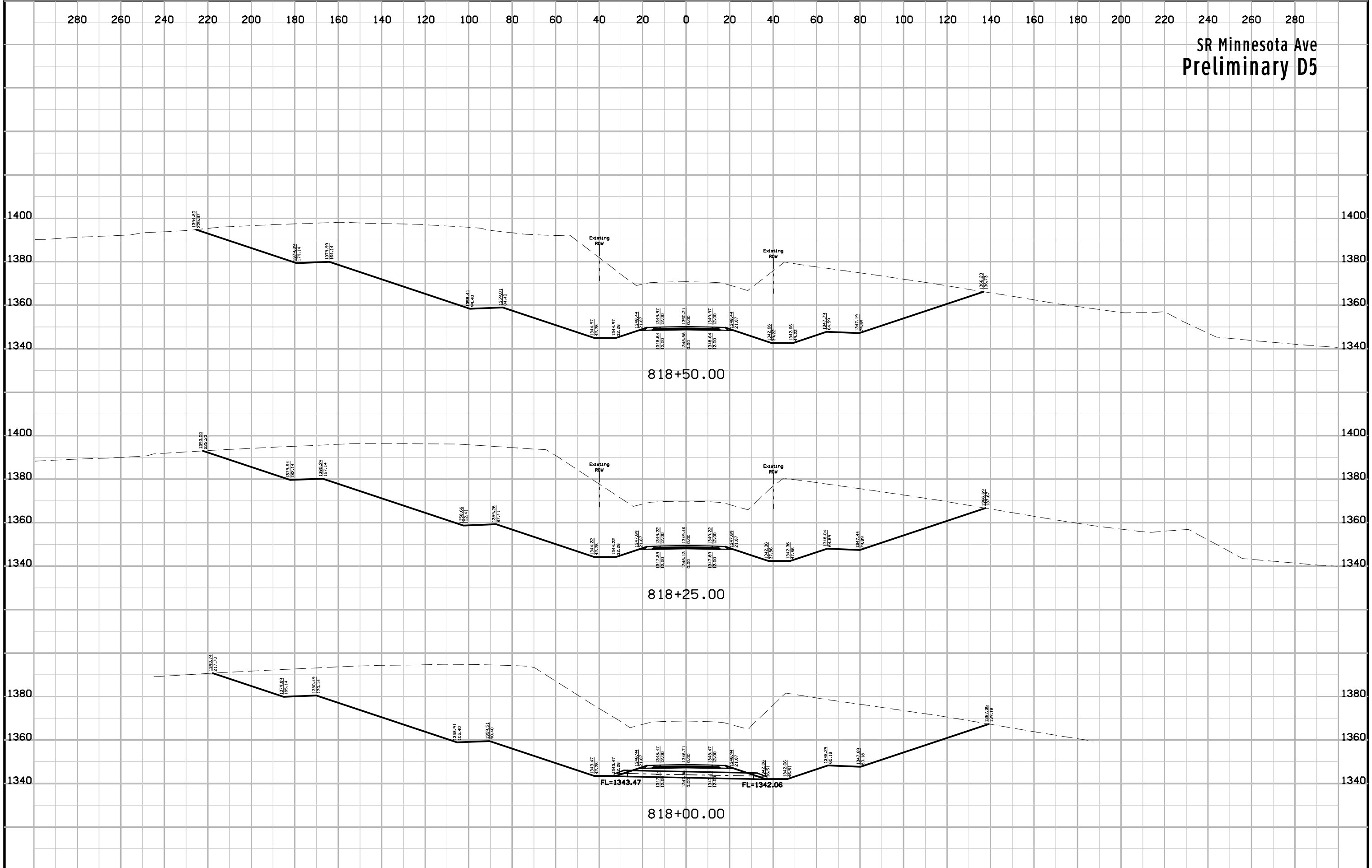
SR Minnesota Ave  
Preliminary D5



SR Minnesota Ave  
Preliminary D5

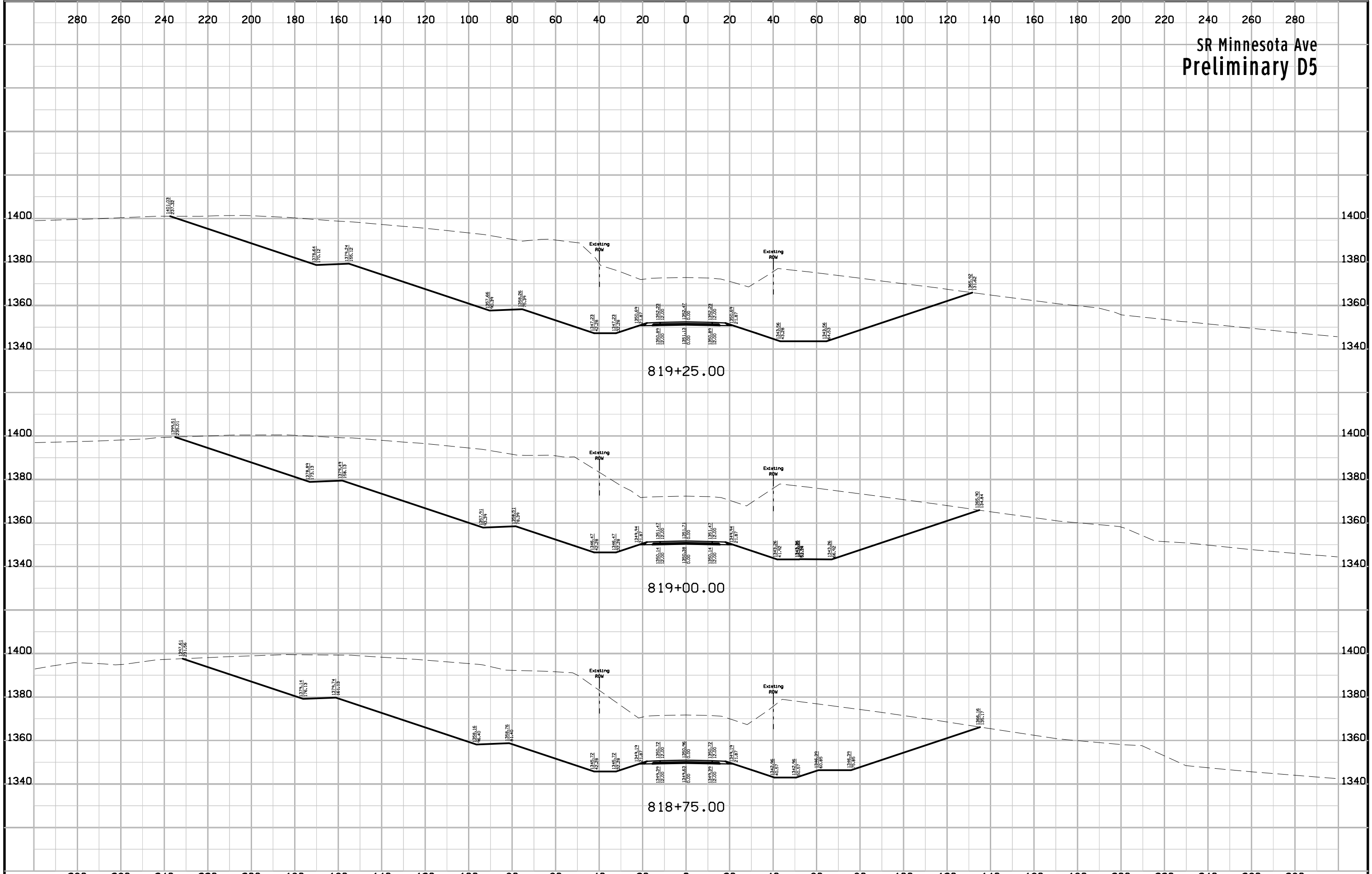


SR Minnesota Ave  
Preliminary D5

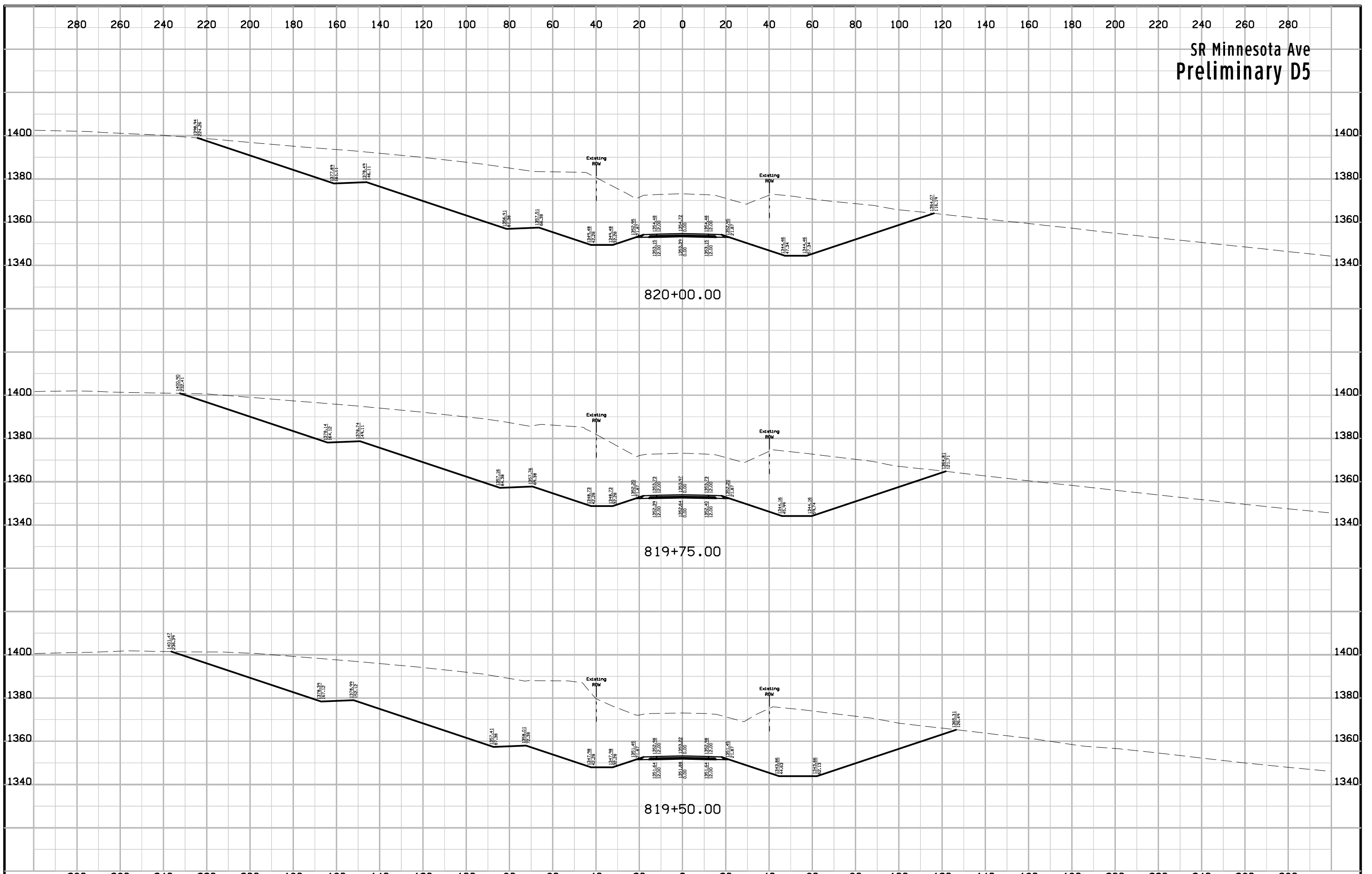




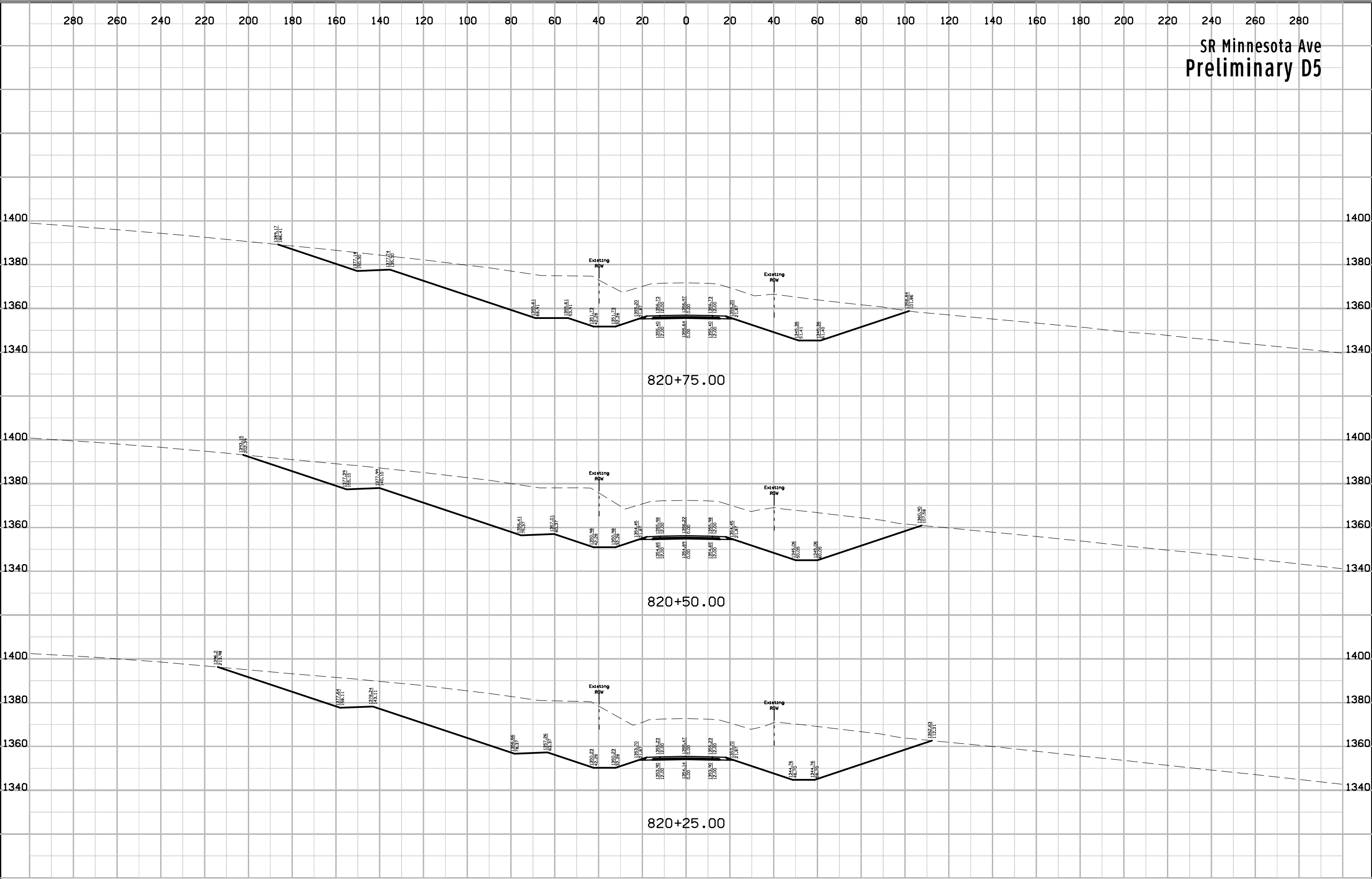
SR Minnesota Ave  
Preliminary D5



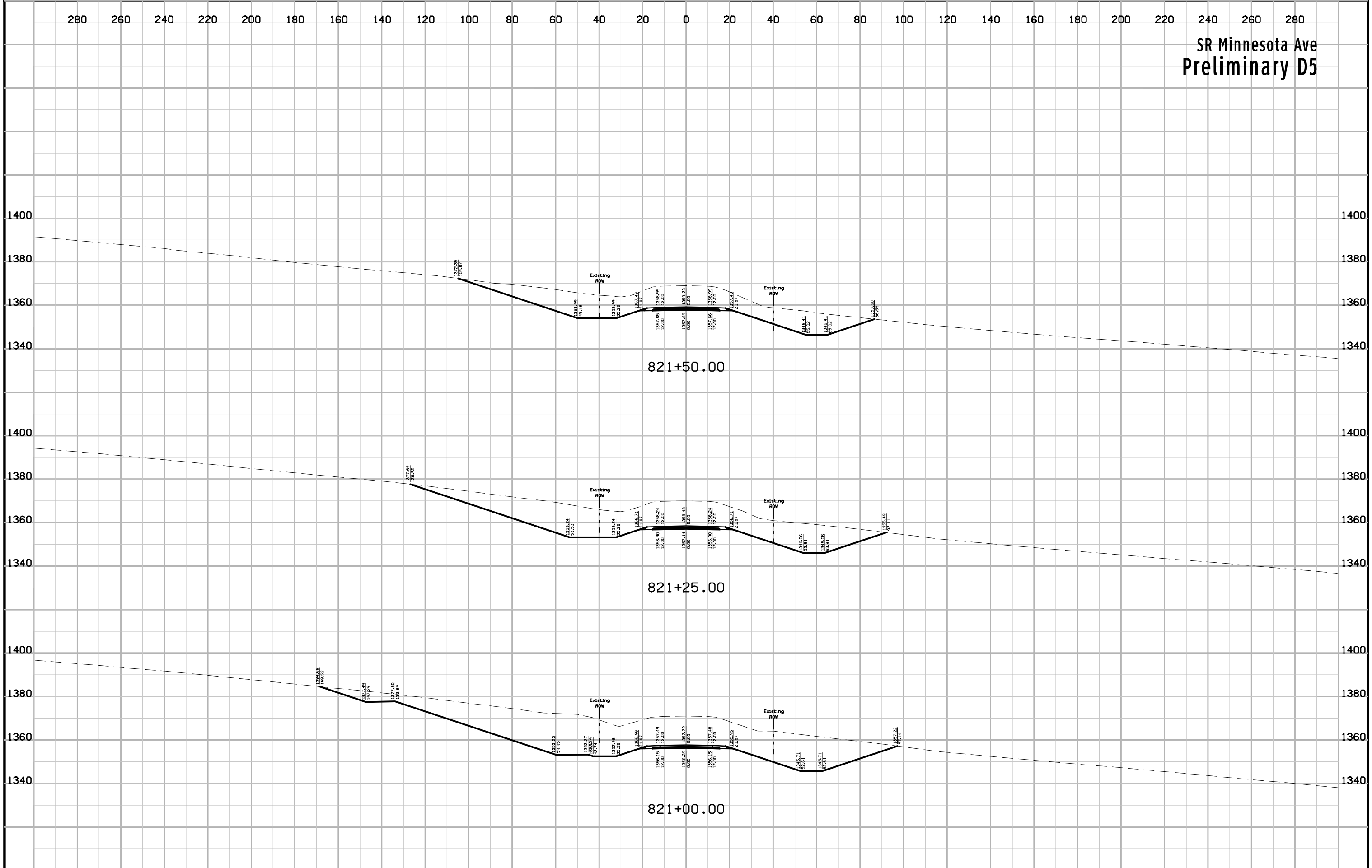
SR Minnesota Ave  
Preliminary D5



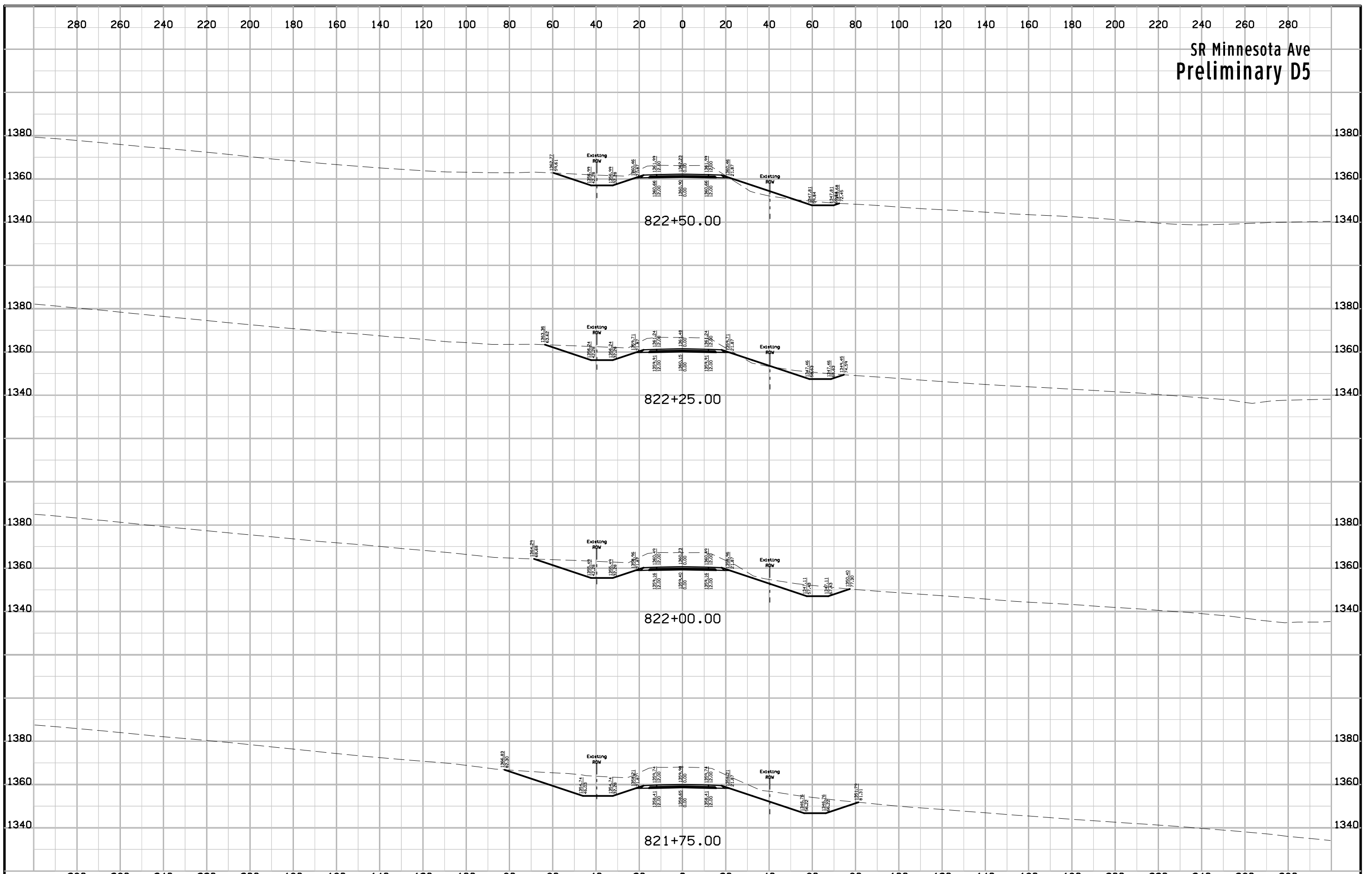
SR Minnesota Ave  
Preliminary D5



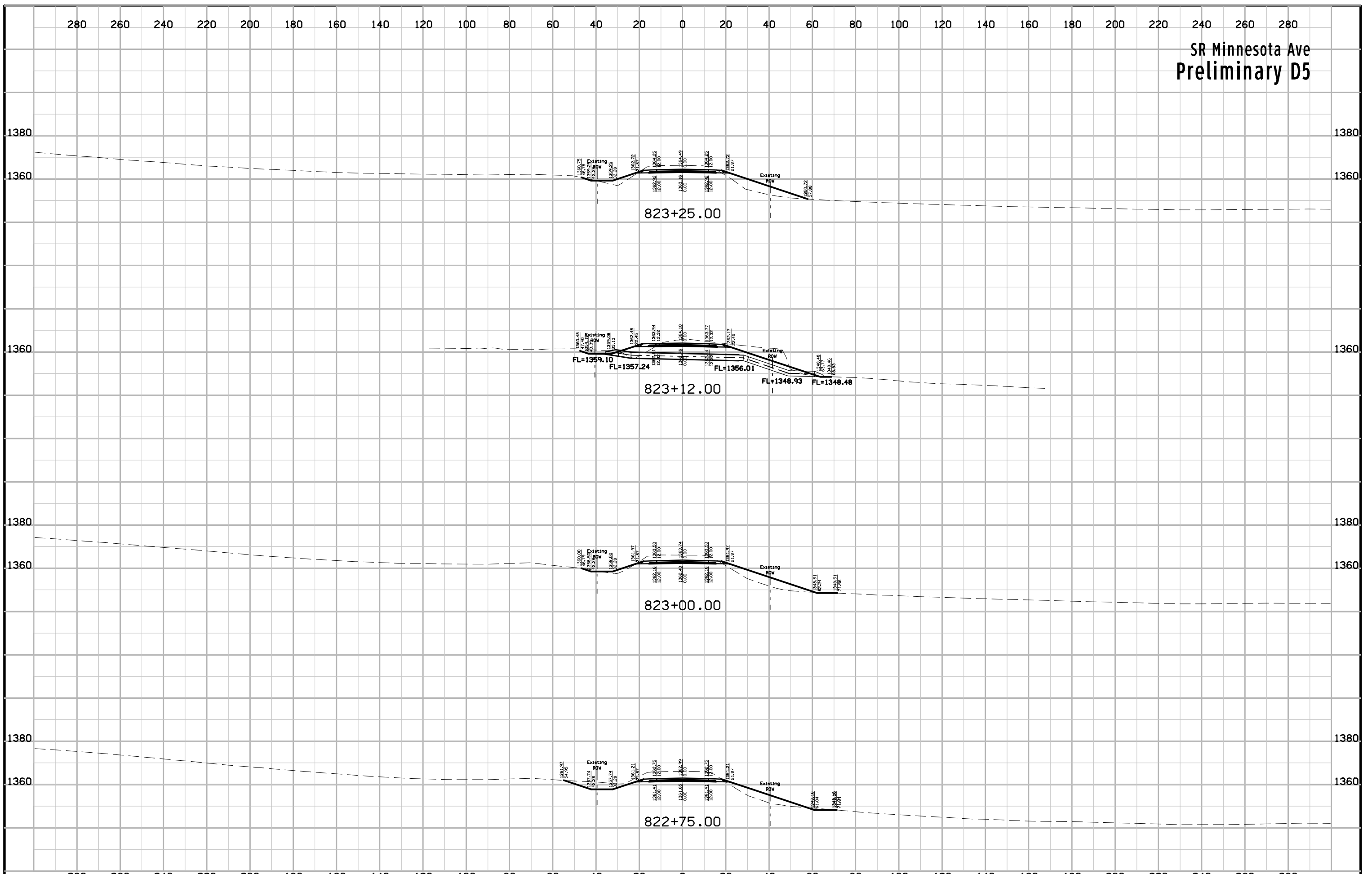
SR Minnesota Ave  
Preliminary D5



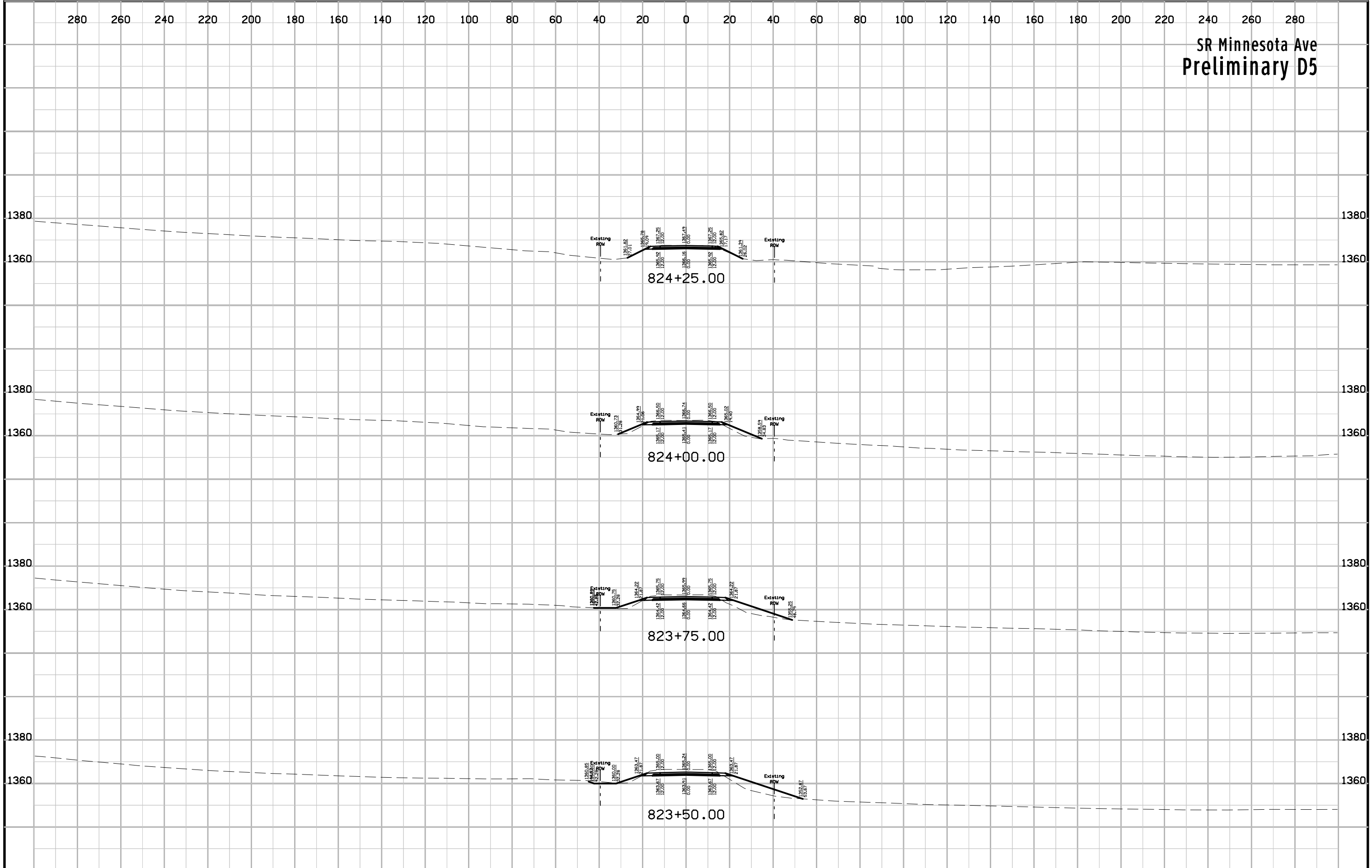
SR Minnesota Ave  
Preliminary D5



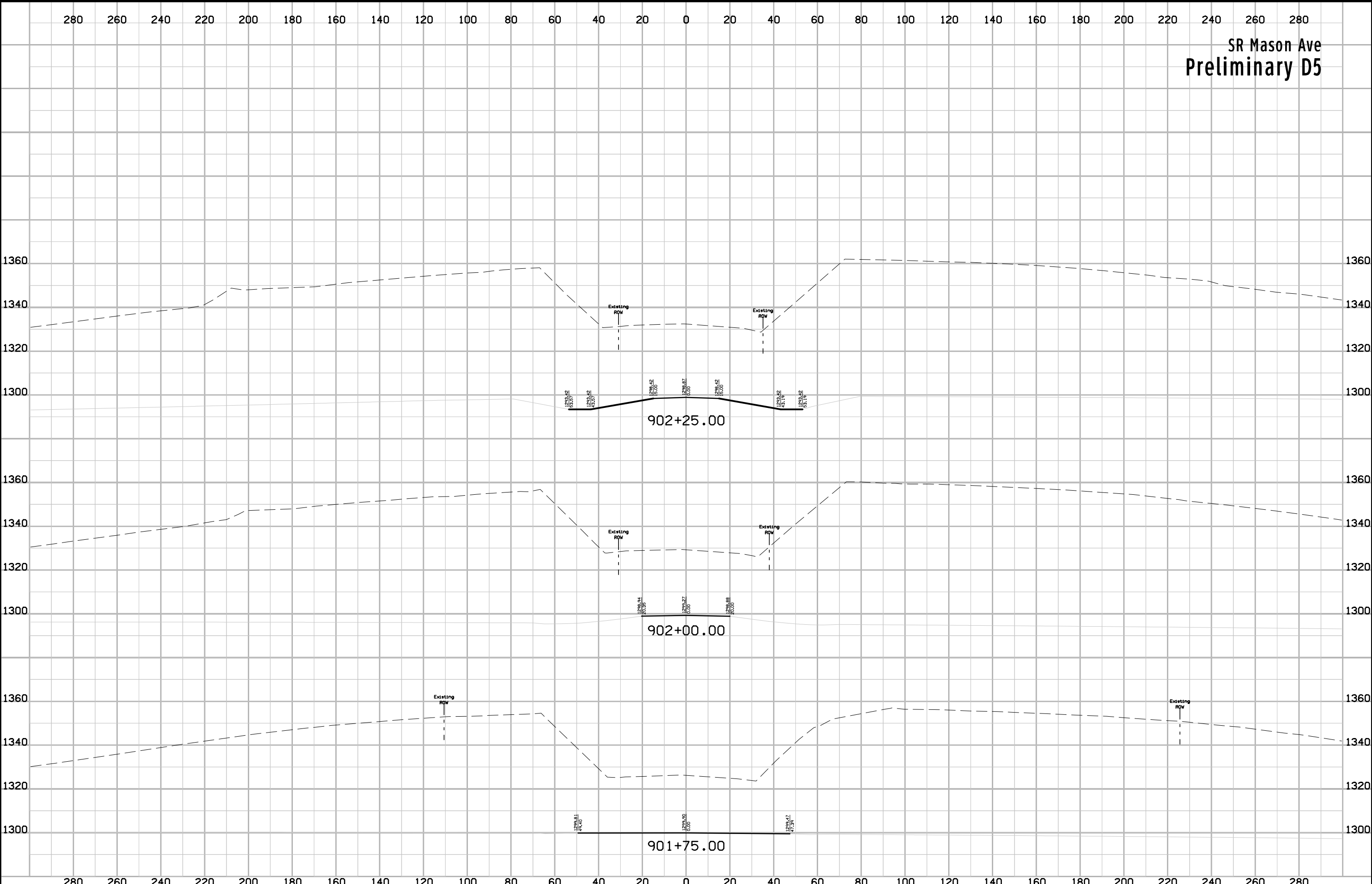
SR Minnesota Ave  
Preliminary D5



SR Minnesota Ave  
Preliminary D5

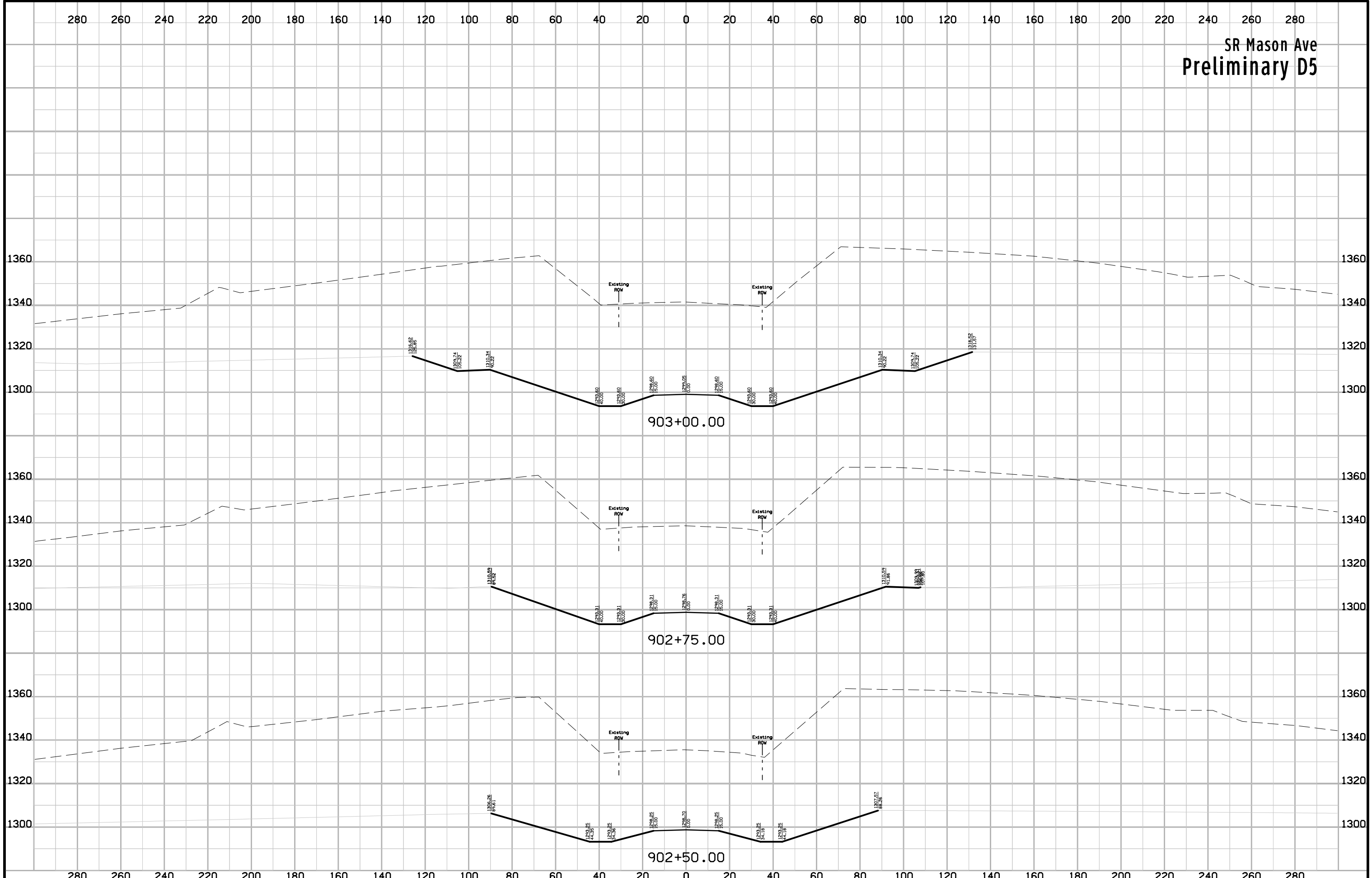


SR Mason Ave  
Preliminary D5

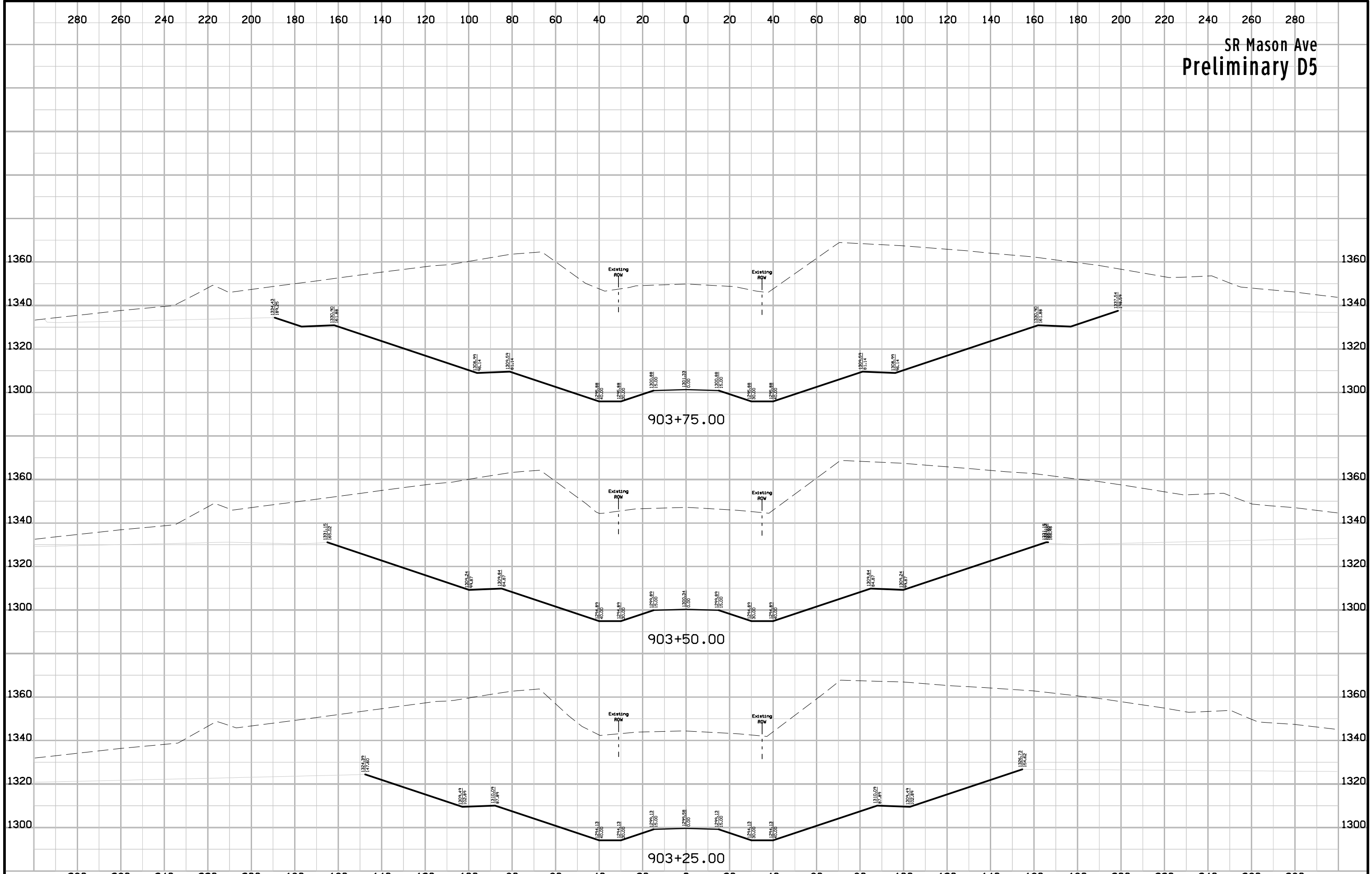




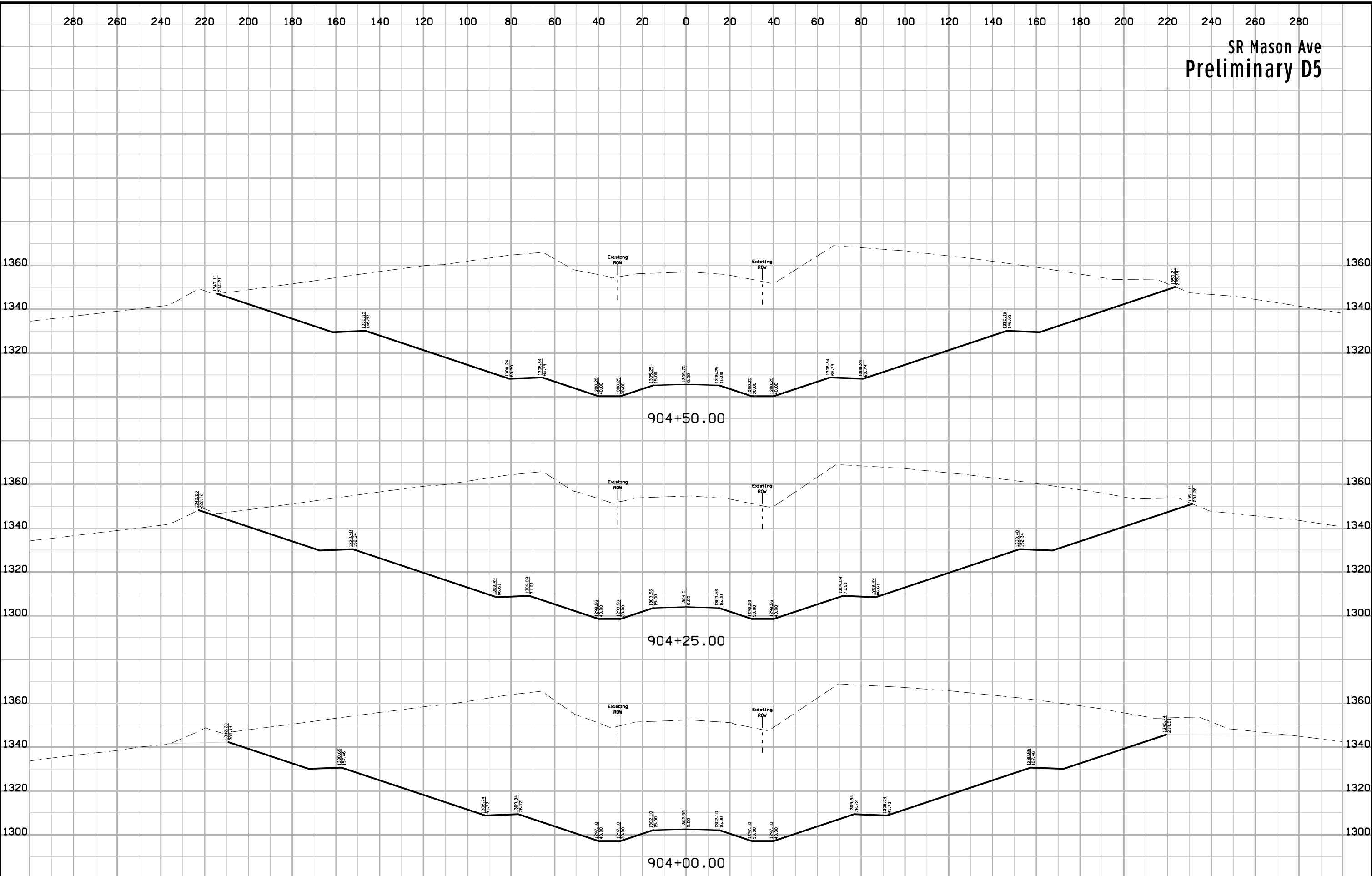
SR Mason Ave  
Preliminary D5



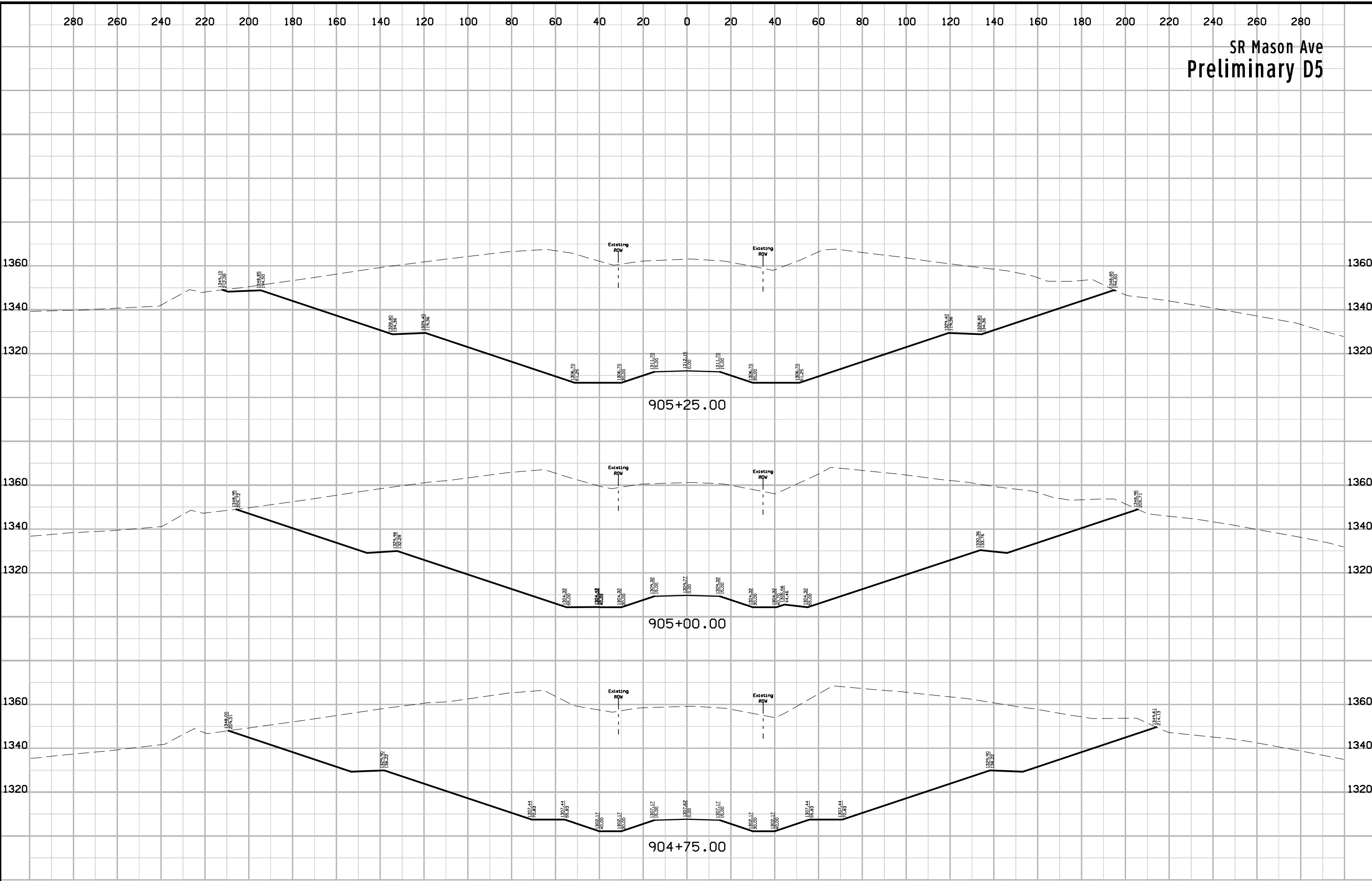
# SR Mason Ave Preliminary D5



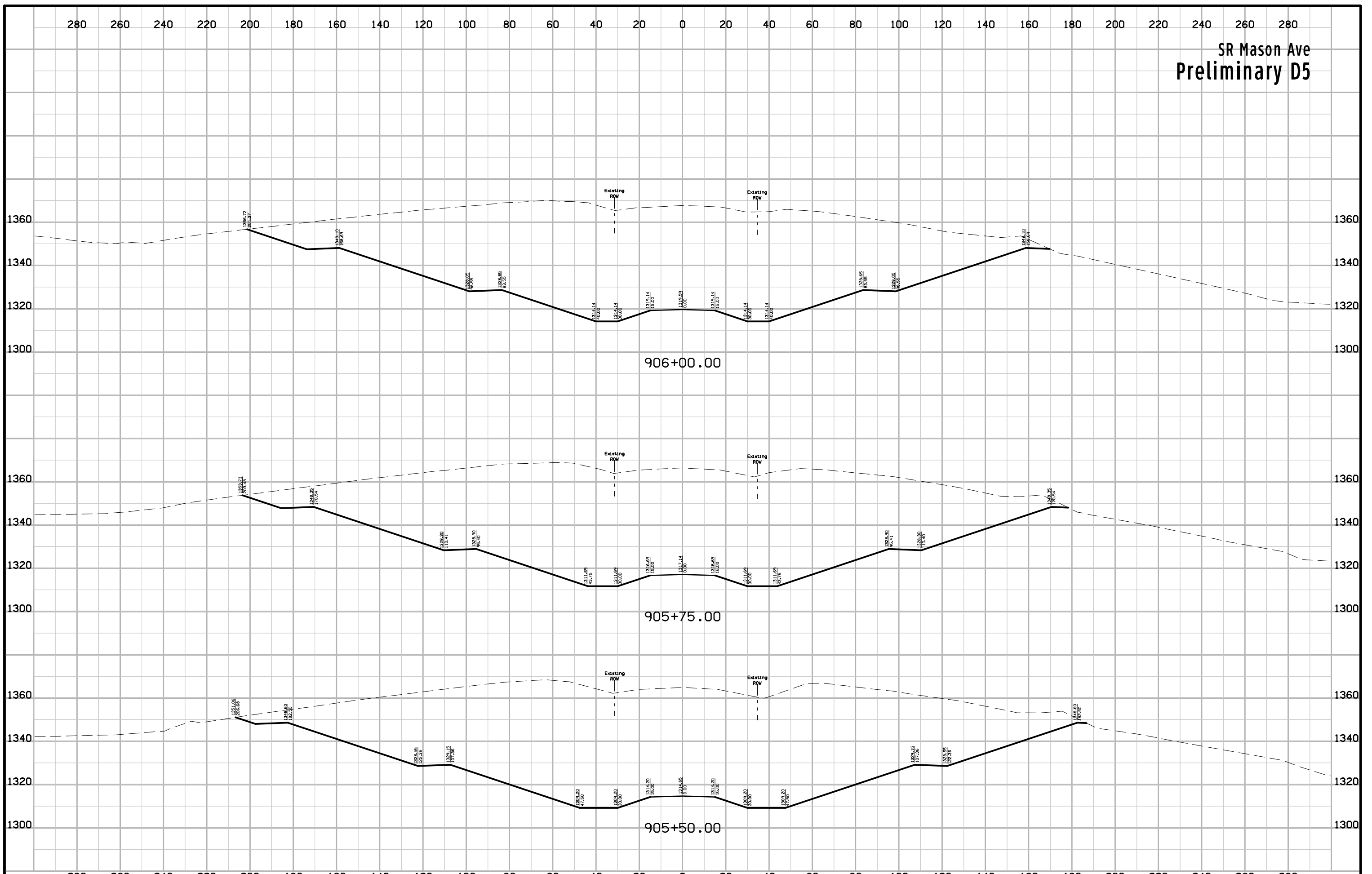
SR Mason Ave  
Preliminary D5



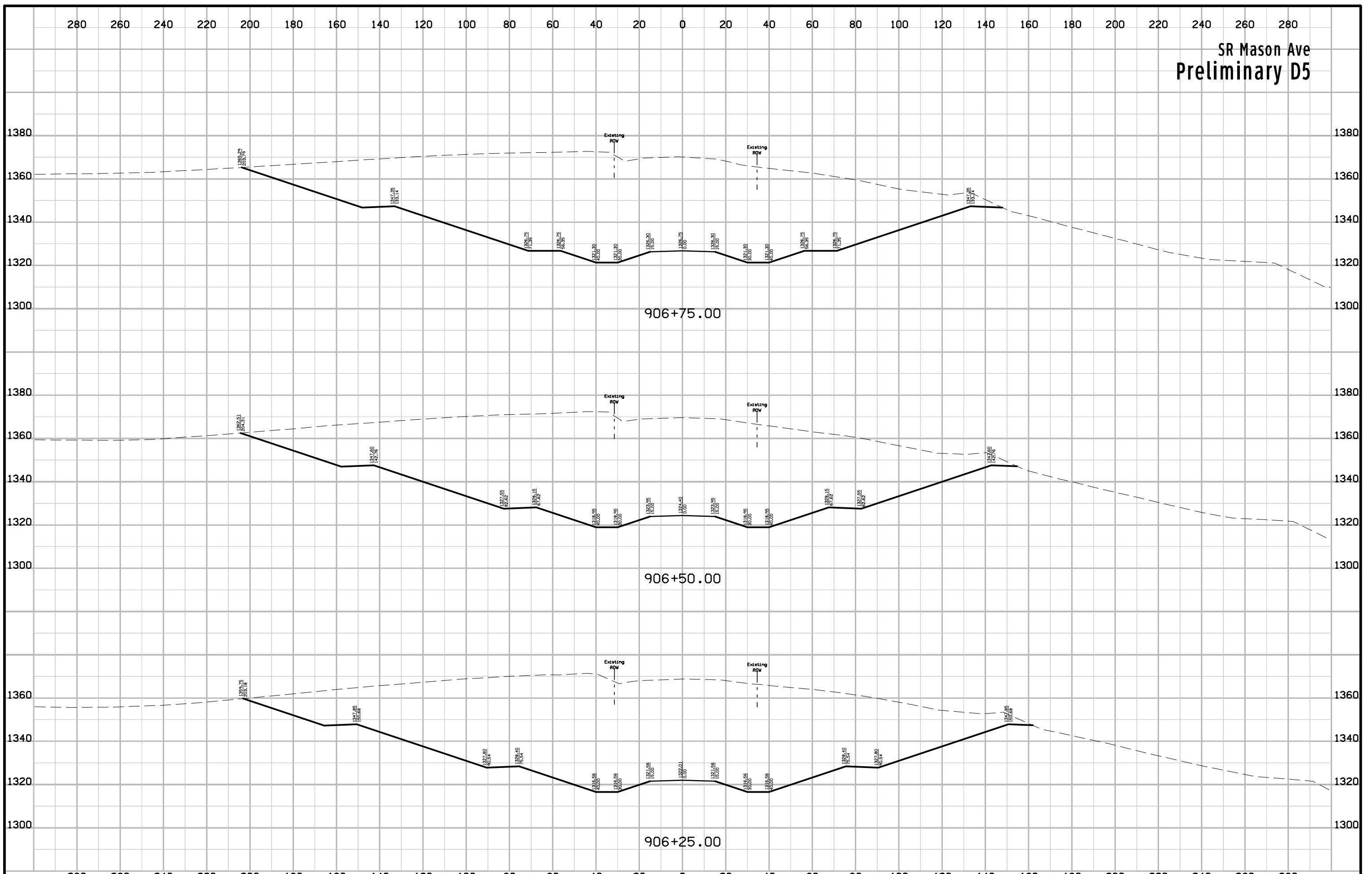
SR Mason Ave  
Preliminary D5



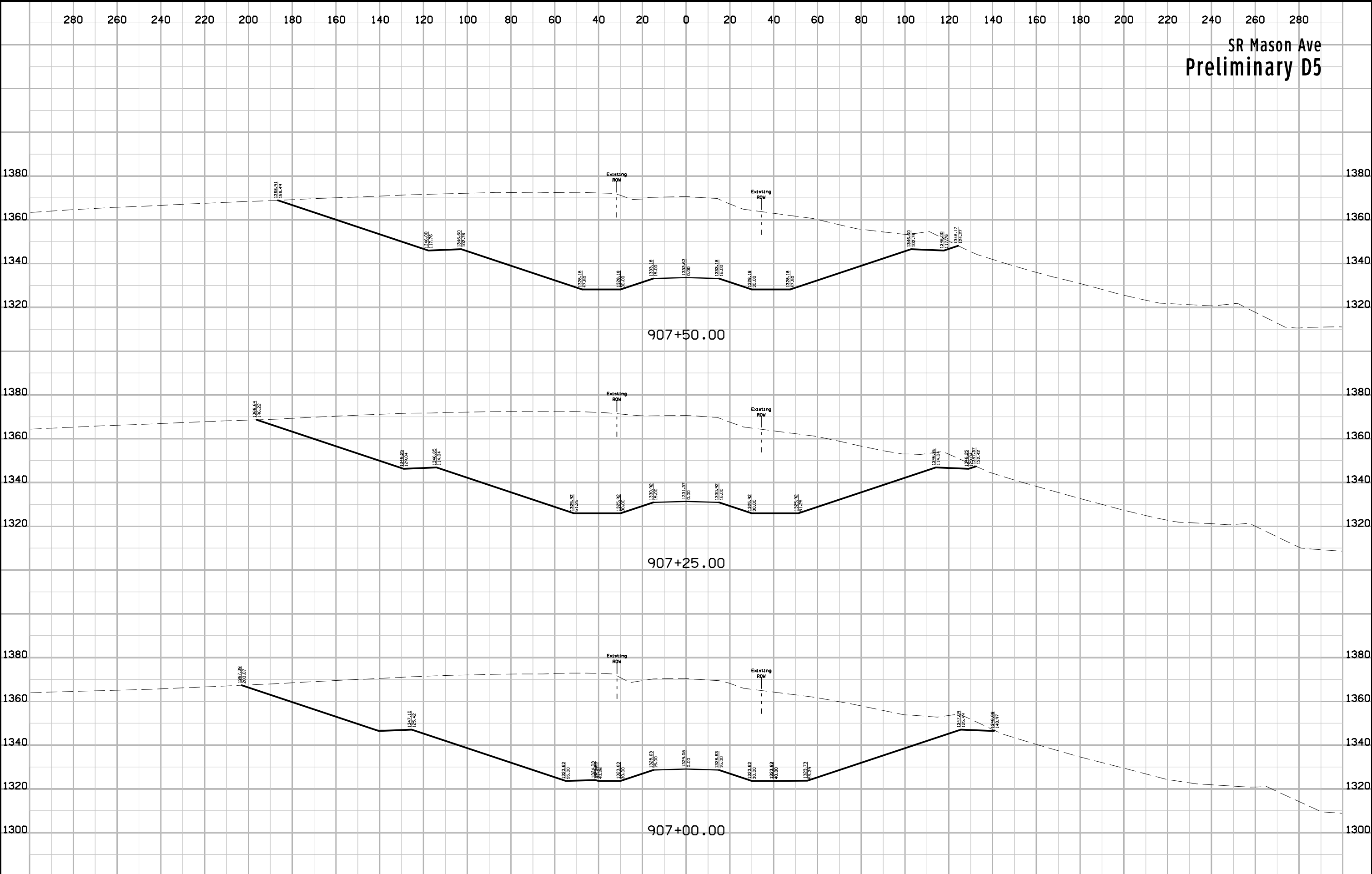
SR Mason Ave  
Preliminary D5



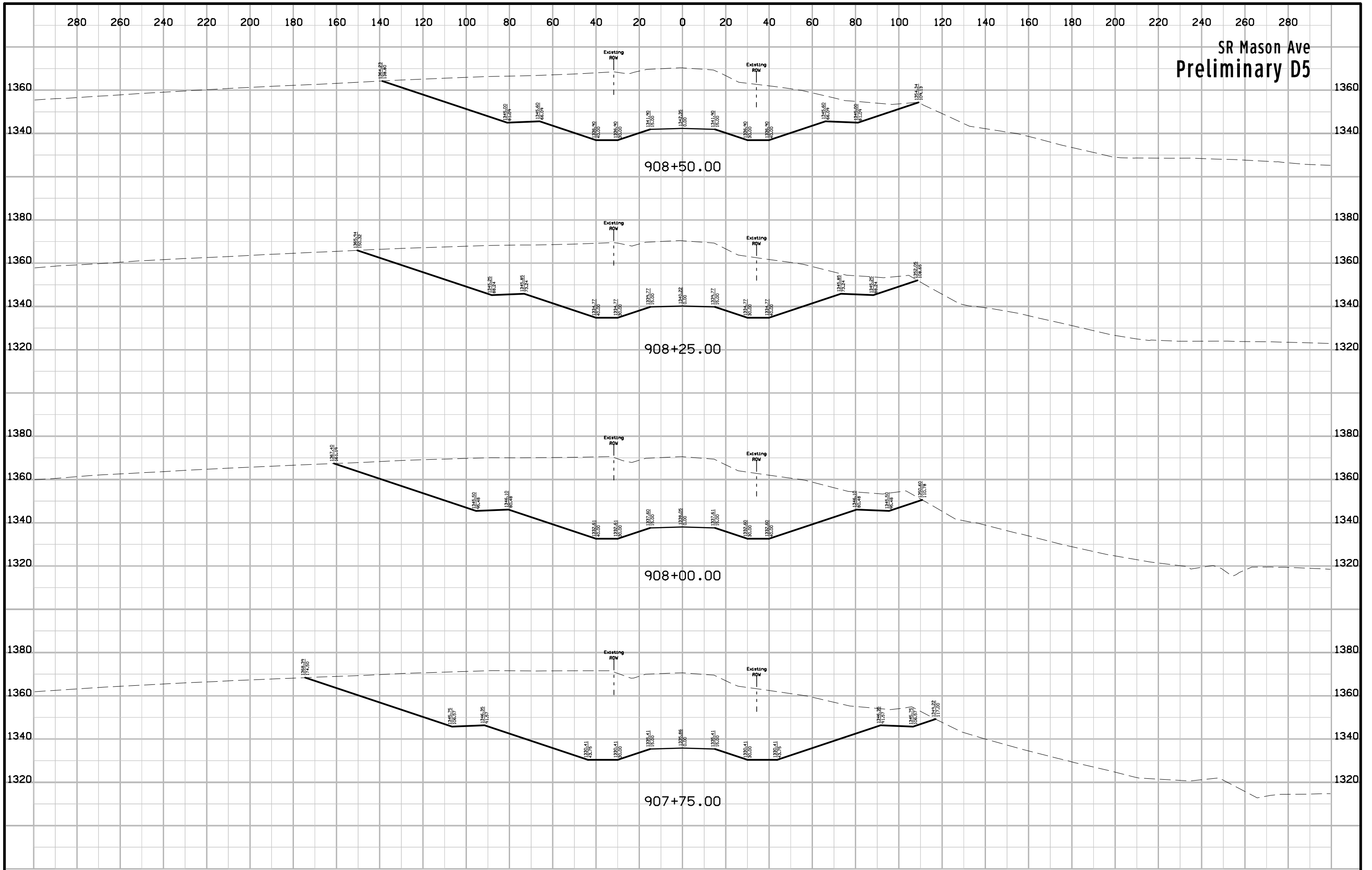
SR Mason Ave  
Preliminary D5



SR Mason Ave  
Preliminary D5

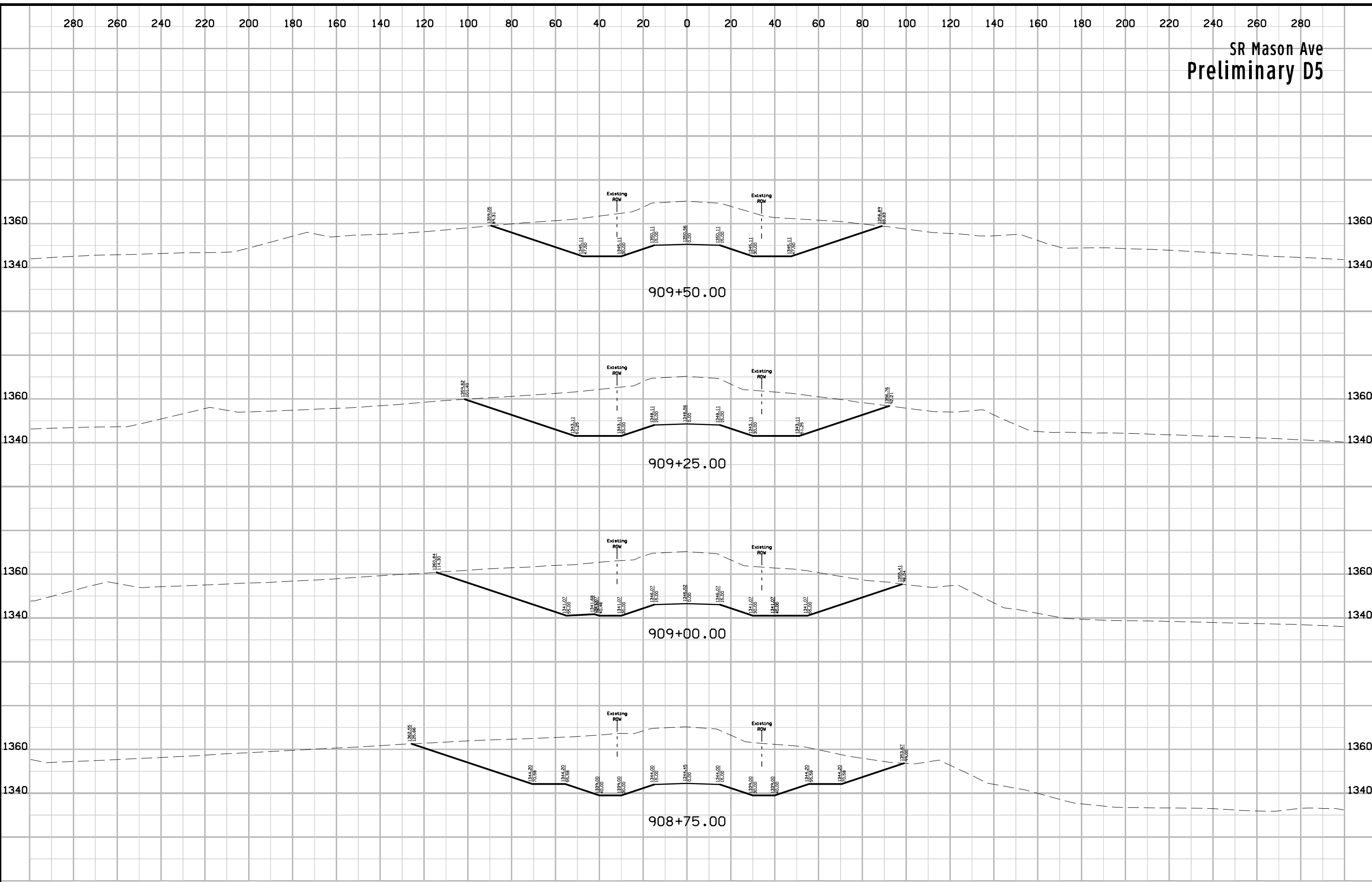


SR Mason Ave  
Preliminary D5

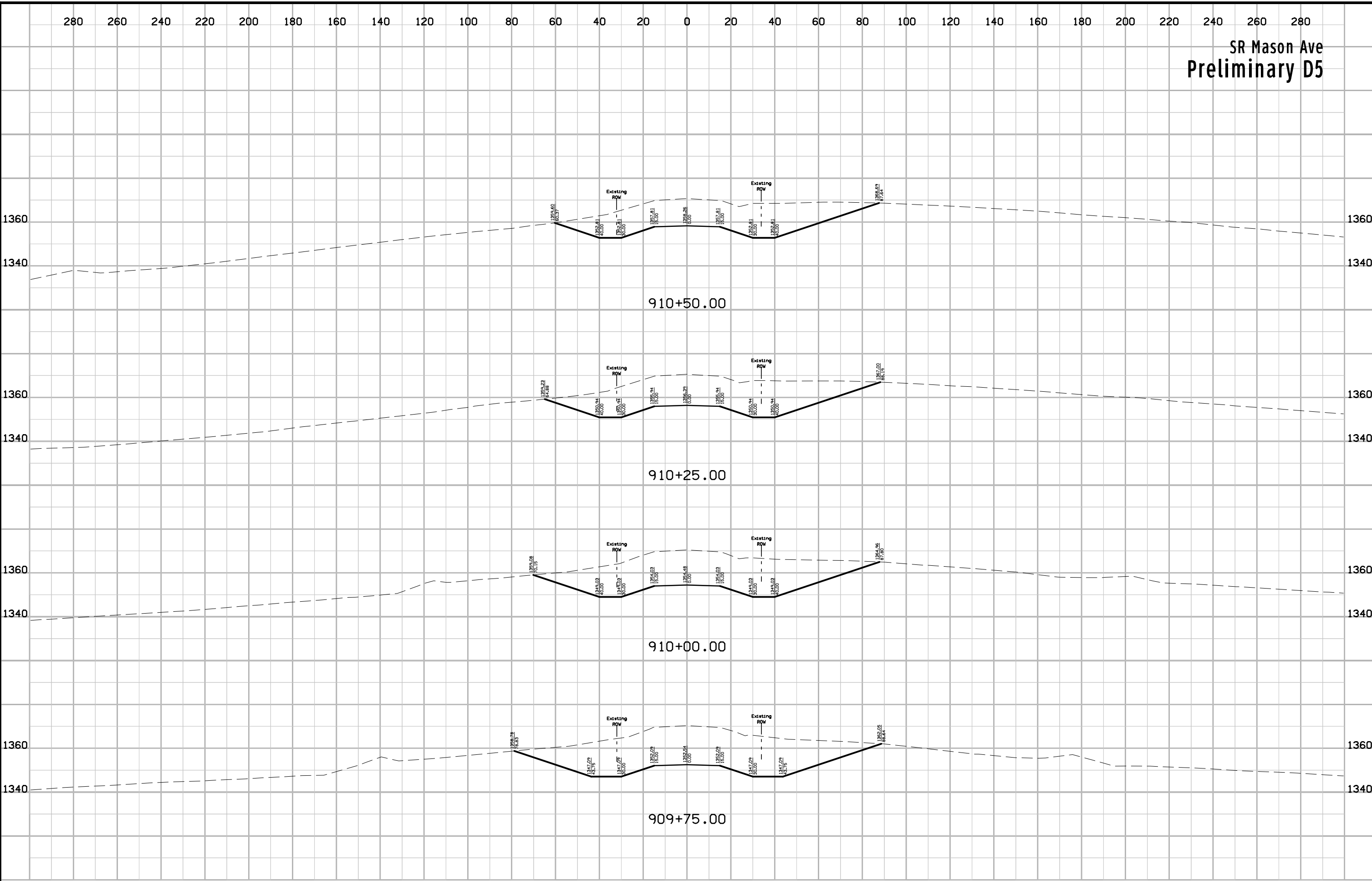




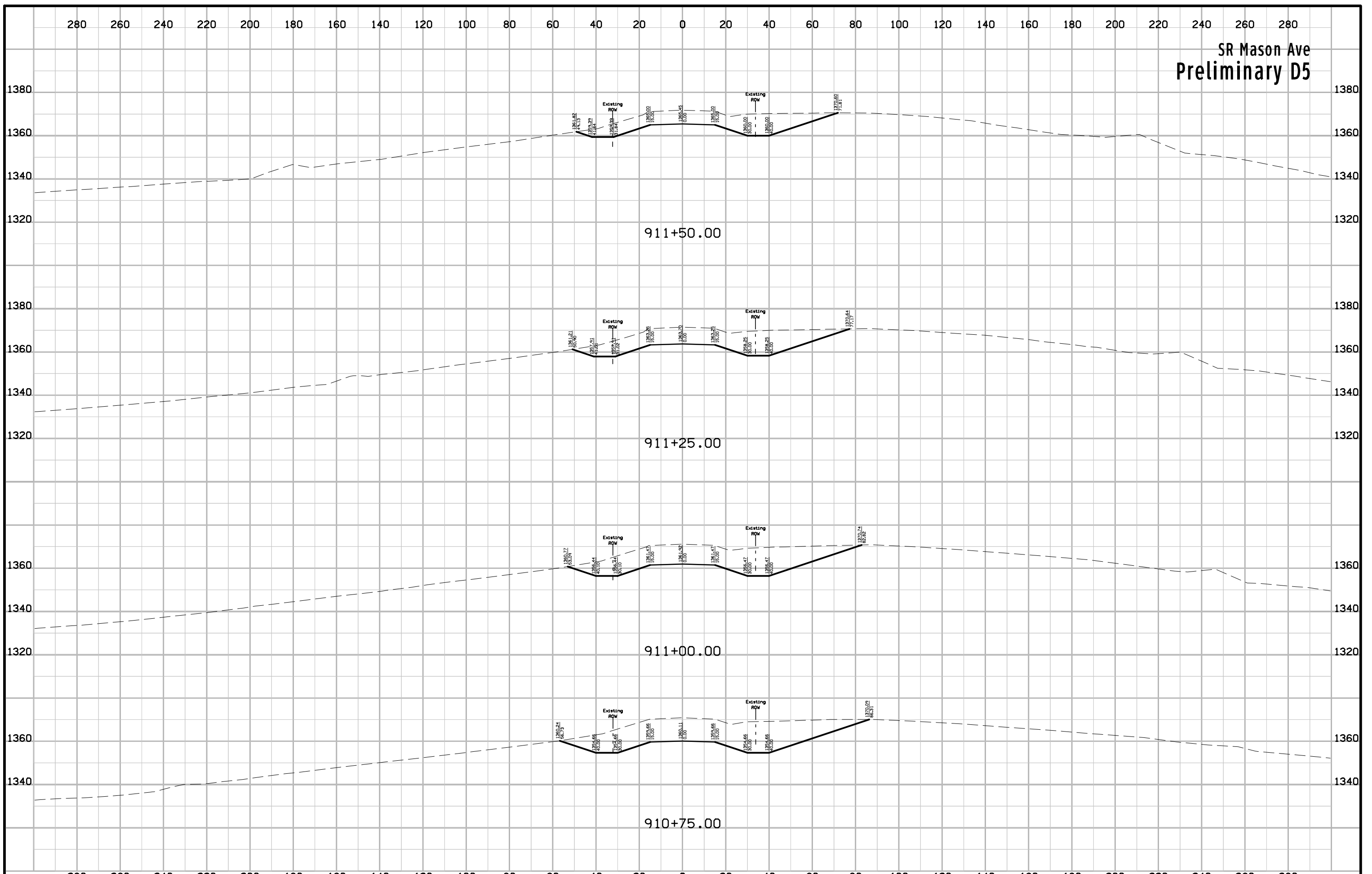
SR Mason Ave  
Preliminary D5



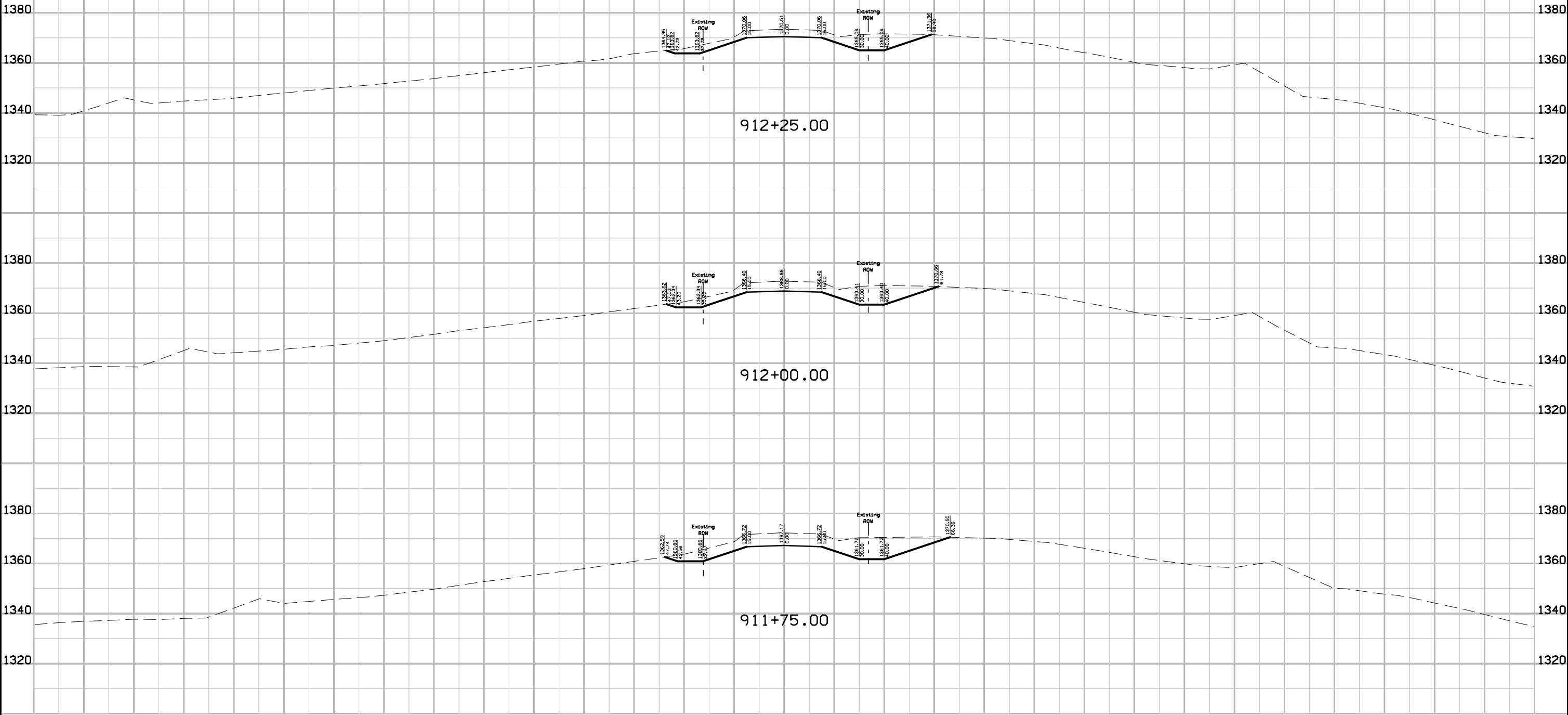
SR Mason Ave  
Preliminary D5



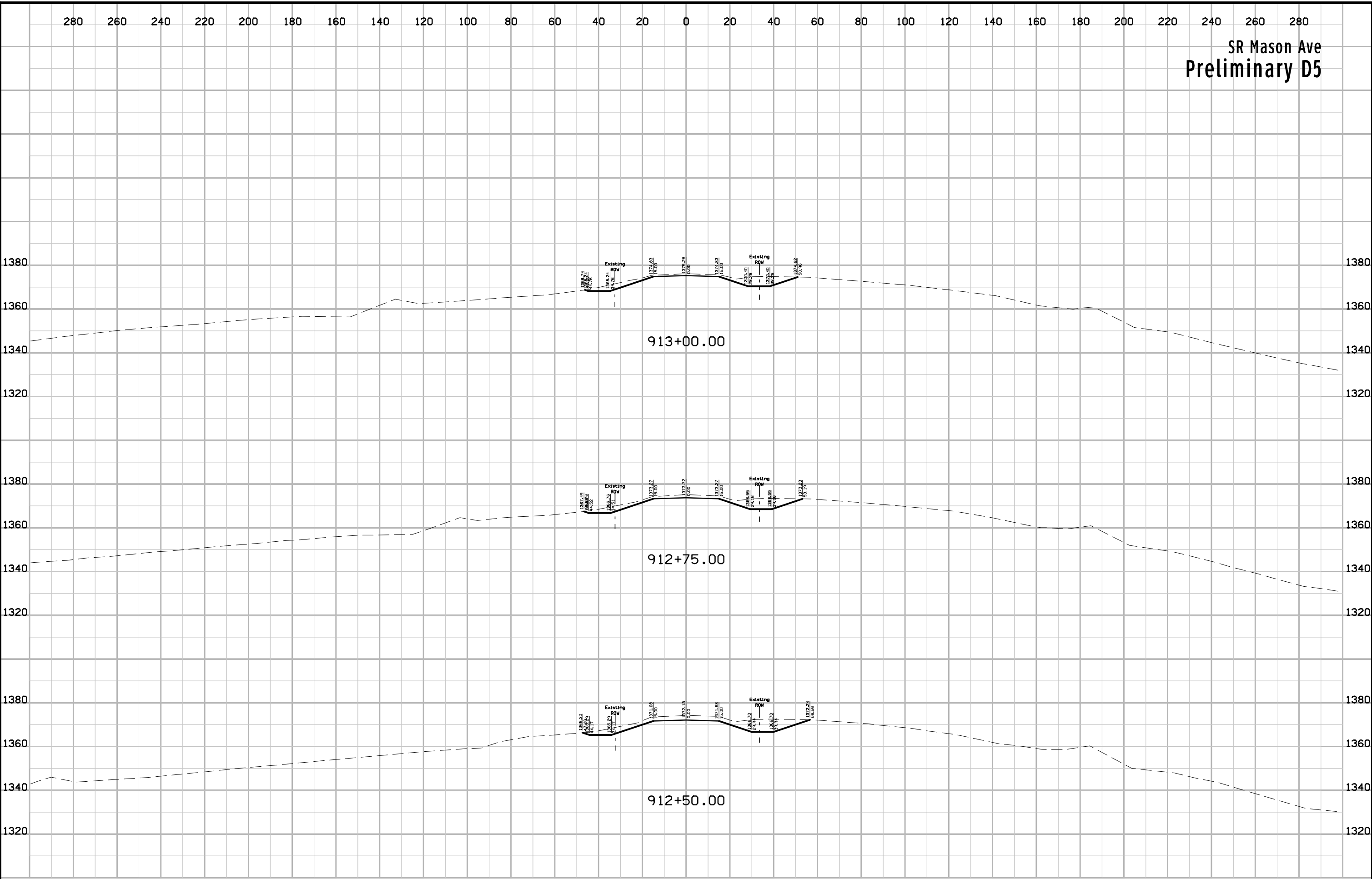
SR Mason Ave  
Preliminary D5



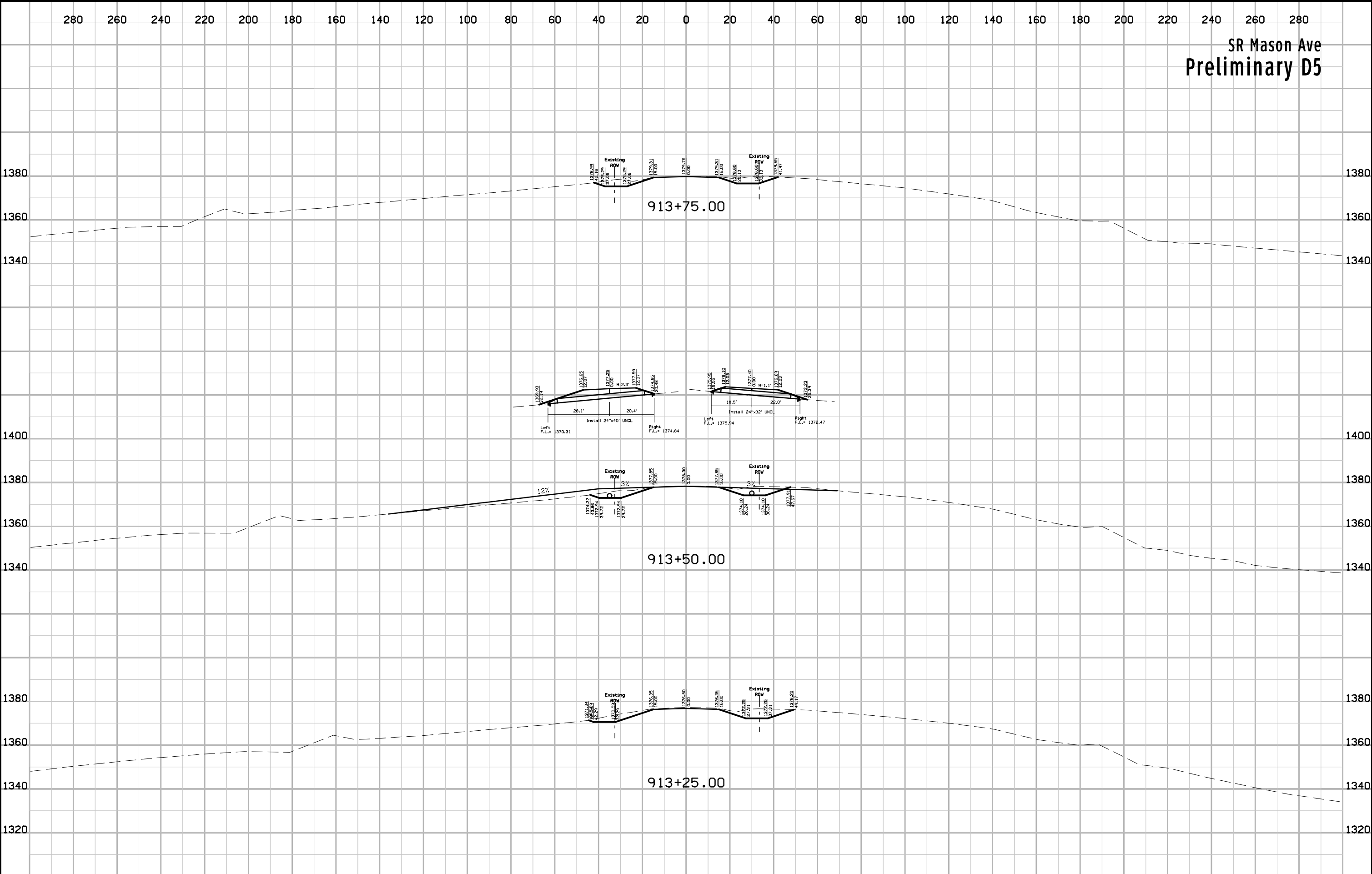
SR Mason Ave  
Preliminary D5



SR Mason Ave  
Preliminary D5



SR Mason Ave  
Preliminary D5



SR Mason Ave  
Preliminary D5

