

LETTING DATE  
10/21/2014

GRADING  
NHSX-061-3(57)--3H-58

LOUISA CO.



For Project Location Map  
Refer to Sheet A.2



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
LOUISA COUNTY  
GRADING

From Approx. 2 Miles S. Of Ia. 92 N. To Muscatine Co. Line

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

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 - 6	Typical Cross Sections and Details
<b>C Sheets</b>	<b>Quantities and General Information</b>
C.1	Project Description
C.1	Estimated Project Quantities
C.2 - 4	Estimate Reference Information
C.5	Standard Road Plans
C.5	Index of Tabulations
C.6	Pollution Prevention Plan
C.7	General Notes
C.7 - 14	Tabulations
<b>CS Sheets</b>	<b>Soil Quantities and General Information</b>
CS.1 - 2	Soil Tabulations and General Notes
CS.3	Typical Detail - Overbuild
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Color Legend for Sheets D, E, F, & K
* D.2 - 12	US 61 Mainline
* D.13 - 16	US 61 Northbound Tie
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1	145th Street
* E.2	170th Street
* E.3 - 4	175th Street
* E.5	180th Street
<b>F Sheets</b>	<b>Detour Plan and Profile Sheets</b>
* F.1 - 2	Detour 905
* F.3 - 5	Detour 985
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 9	Bench Marks and Reference Ties
G.10 - 14	Horizontal Control Tabulations
G.15	Superelevation Table
<b>H Sheets</b>	<b>Mainline Right-of-Way Sheets (Preliminary)</b>
* H.1 - 11	US 61 Mainline (For Information Only)
<b>HE Sheets</b>	<b>Side Road Right-of-Way Sheets (Preliminary)</b>
* HE.1	145th Street (For Information Only)
* HE.2	IA 92 (For Information Only)
* HE.3	170th Street (For Information Only)
* HE.4 - 5	175th Street (For Information Only)
* HE.6	180th Street (For Information Only)
* HE.7	Existing 61 (For Information Only)
* HE.8	160th Street (For Information Only)
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan and Staging Notes
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3 - 4	Staging and Traffic Control - 145th Street
* J.5 - 6	Staging and Traffic Control - 175th Street
<b>K Sheets</b>	<b>Interchange Sheets</b>
* K.1 - 2	US 61/IA 92 Interchange Layout
* K.3 - 6	IA 92 Ramps A, B, C, & D - Plan and Profile Sheets
* K.7 - 8	US 61/170th St Interchange Layout
* K.9 - 12	170th St Ramps A, B, C, & D - Plan and Profile Sheets

101-4	
04-30-02	
<b>DESIGN DATA RURAL</b>	
2016 AADT	6136 V.P.D.
2036 AADT	7703 V.P.D.
2036 DHV	796 V.P.H.
TRUCKS	18 %
Total	
Design ESALs	

MILEAGE SUMMARY			
		105-1	
		09-27-94	
Div.	Location	Lin. Ft.	Miles
1	RURAL:		
	Southbound Lanes		
	Sta. 756+39.00 to Sta. 905+50.00	14,211.00	2.69
	Sta. 915+00.00 to Sta. 985+25.00	7,025.00	1.33
	Sta. 1000+00.00 to Sta. 1017+50.00	1,750.00	0.33
	Sta. 1020+00.00 to Sta. 1036+25.00	1,625.00	0.31
	Sta. 1039+00.00 to Sta. 1053+25.00	1,425.00	0.27
	Northbound Lanes		
	Sta. 809+50.00 to Sta. 902+00.00	9,250.00	1.75
	Sta. 915+00.00 to Sta. 985+25.00	7,025.00	1.33
	TOTAL LENGTH OF SOUTHBOUND ROADWAY	26,036.00	4.93
	TOTAL LENGTH OF NORTHBOUND ROADWAY	16,275.00	3.08
TOTAL:		42,311.00	8.01

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Anne M. Murillo	Primary Signature Block
CS.1	Robert L. Stanley	Soils Signature Block
MIT.1	Chin-Ta Tsai	Wetland Signature Block



REVISIONS	TOTAL 434
PROJECT IDENTIFICATION NUMBER	09-58-061-030
PROJECT NUMBER	NHSX-061-3(57)--3H-58
R.O.W. PROJECT NUMBER	NHSN-061-3(55)--2R-58

INDEX OF SHEETS	
No.	DESCRIPTION
<b>M Sheets</b>	<b>Storm Sewer Sheets</b>
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.3 - 6	Storm Sewer Plan and Profile Sheets
<b>MIT Sheets</b>	<b>Wetland Sheets</b>
MIT.1	Stream Mitigation General Site Plan
MIT.2	Stream Mitigation Grading Plan
MIT.3 - 4	Stream Mitigation Typical Details
<b>Q Sheets</b>	<b>Soils Sheets</b>
* Q.1	Soils Legend & Symbol Information Sheet
* Q.2 - 23	Soils Sheets - US 61 Mainline
* Q.24 - 33	Soils Sheets - Side Roads
* Q.34 - 41	Soils Sheets - Ramps
* Q.42 - 45	Vertical Sand Drain Details
<b>T Sheets</b>	<b>Earthwork Quantity Sheets</b>
T.1 - 9	Earthwork Quantity Sheets
<b>U Sheets</b>	<b>Modified Standards and Detail Sheets</b>
U.1	Temporary Sediment Control Device
U.2	Field Tile Details
U.3 - 6	Clearing and Grubbing Details
U.7 - 11	Topsoil Stockpile and Haul Road Crossing Locations
<b>V Sheets</b>	<b>Bridge Situation Plans (Preliminary)</b>
V.1 - 4	IA 92 Bridge Situation Plans (For Information Only)
V.5 - 8	170th St Bridge Situation Plans (For Information Only)
V.9 - 10	DM&E RR Bridge Situation Plans (For Information Only)
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Legend & Symbol Information for Sheets W, X, & Y
W.2 - 116	US 61 Mainline
<b>X Sheets</b>	<b>Side Road and Detour Cross Sections</b>
X.1 - 13	145th Street
X.14 - 23	170th Street
X.24 - 40	175th Street
X.41	180th Street
X.201 - 203	Detour 905
X.204 - 218	Detour 985
<b>Y Sheets</b>	<b>Ramp Cross Sections</b>
Y.1 - 34	US 61/IA 92 - Ramps A, B, C, & D
Y.35 - 71	US 61/170th Street - Ramps A, B, C, & D
	* Color Plan Sheets

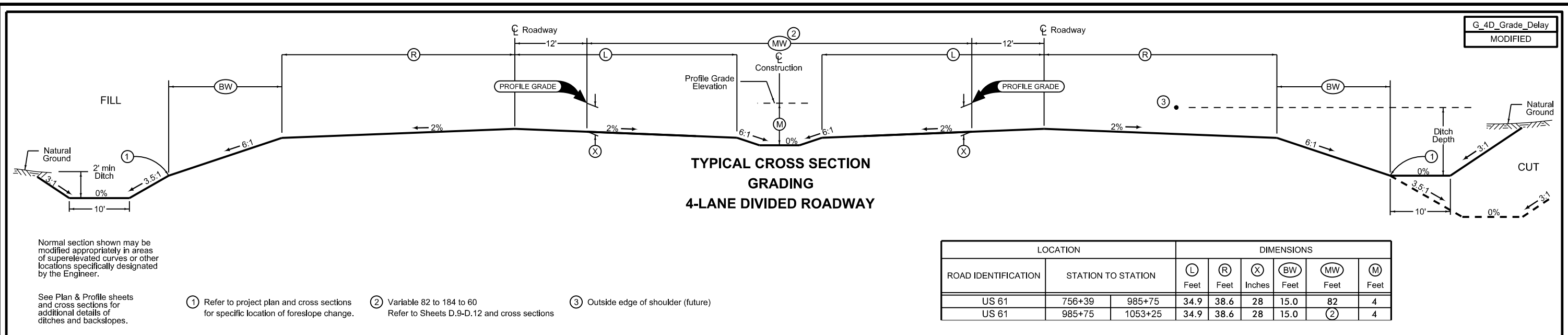
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

08/18/2014  
DATE

ANNE M. MURILLO, P.E.  
License Number: 20794  
My license renewal date is DECEMBER 31, 2014  
Pages or sheets covered by this seal:  
A.1-A.2, B.1-B.6, C.1-C.14, D.1-D.16, E.1-E.5, F.1-F.5,  
G.1-G.15, H.1-H.11, HE.1-HE.8, J.1-J.6, K.1-K.12, M.1-M.6,  
T.1-T.9, U.1-U.11, V.1-V.10, W.1-W.116, X.1-X.218, Y.1-Y.71







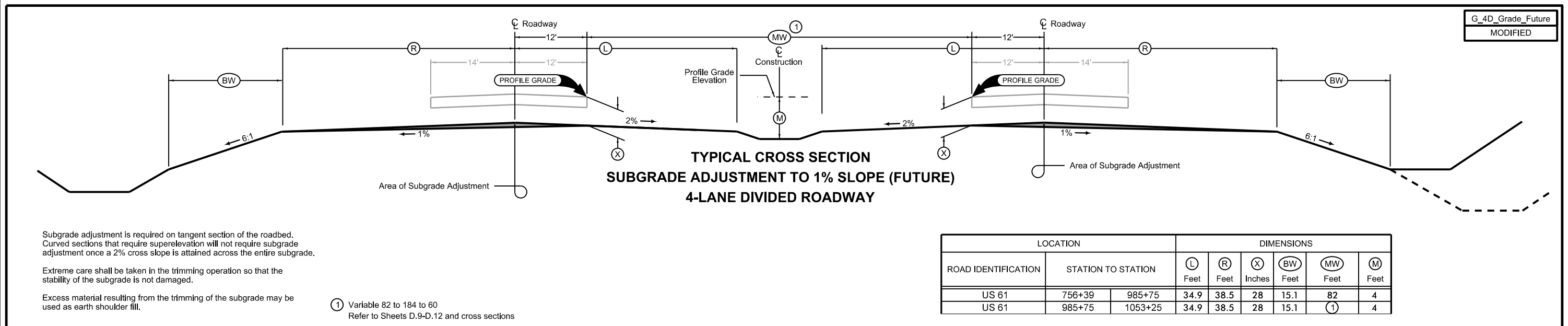
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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.
- ② Variable 82 to 184 to 60 Refer to Sheets D.9-D.12 and cross sections
- ③ Outside edge of shoulder (future)

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	
US 61	756+39 985+75	34.9	38.6	28	15.0	82	4	
US 61	985+75 1053+25	34.9	38.6	28	15.0	(2)	4	

G\_4D\_Grade\_Delay  
MODIFIED



Subgrade adjustment is required on tangent section of the roadbed. Curved sections that require superelevation will not require subgrade adjustment once a 2% cross slope is attained across the entire subgrade.

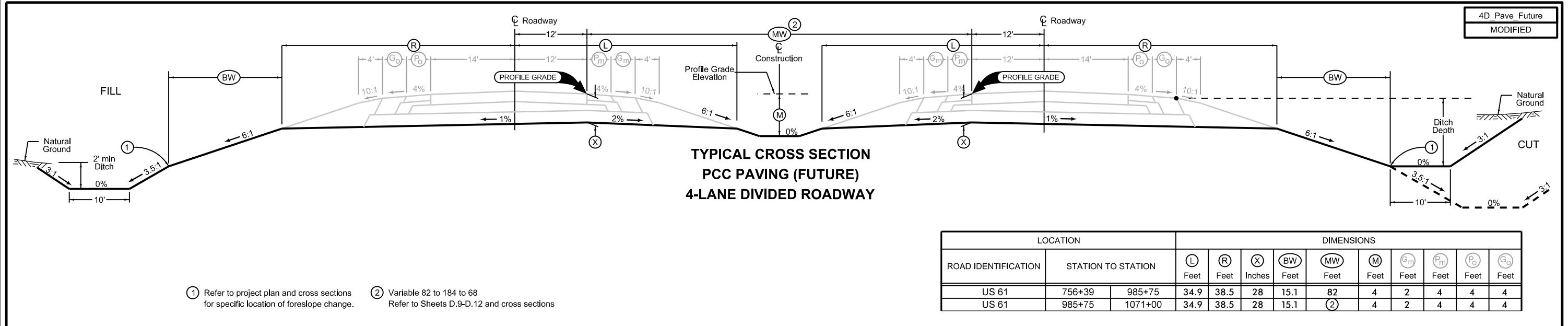
Extreme care shall be taken in the trimming operation so that the stability of the subgrade is not damaged.

Excess material resulting from the trimming of the subgrade may be used as earth shoulder fill.

- ① Variable 82 to 184 to 60 Refer to Sheets D.9-D.12 and cross sections

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	
US 61	756+39 985+75	34.9	38.5	28	15.1	82	4	
US 61	985+75 1053+25	34.9	38.5	28	15.1	(1)	4	

G\_4D\_Grade\_Future  
MODIFIED



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

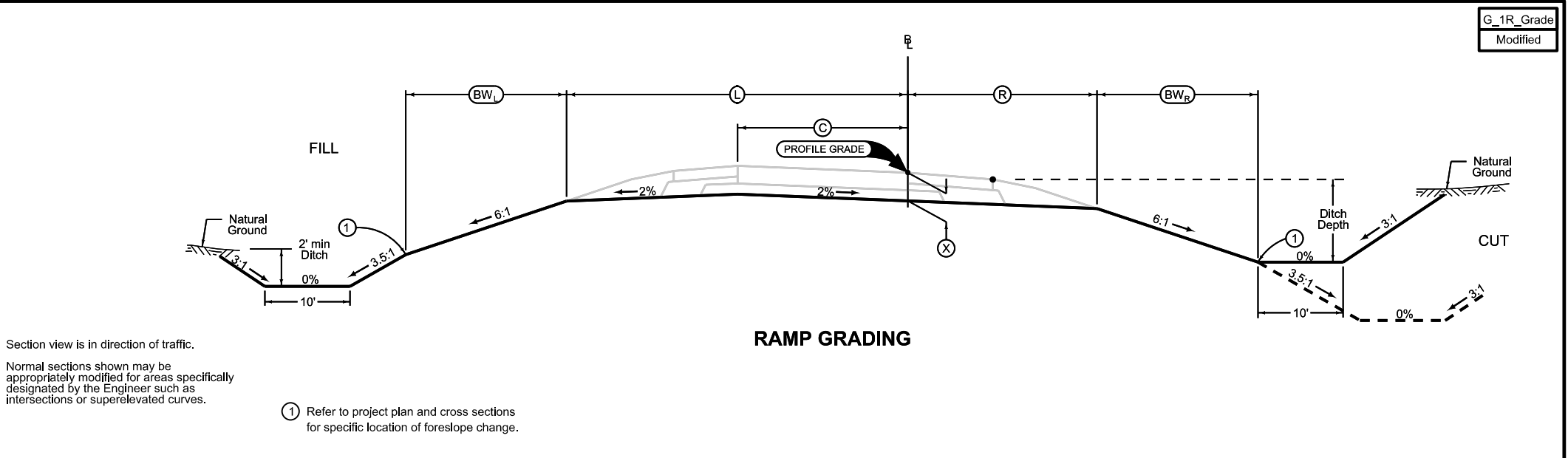
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② Variable 82 to 184 to 68 Refer to Sheets D.9-D.12 and cross sections

LOCATION		DIMENSIONS										
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	G <sub>m</sub> Feet	P <sub>m</sub> Feet	P <sub>o</sub> Feet	G <sub>o</sub> Feet	
US 61	756+39 985+75	34.9	38.5	28	15.1	82	4	2	4	4	4	
US 61	985+75 1071+00	34.9	38.5	28	15.1	(2)	4	2	4	4	4	

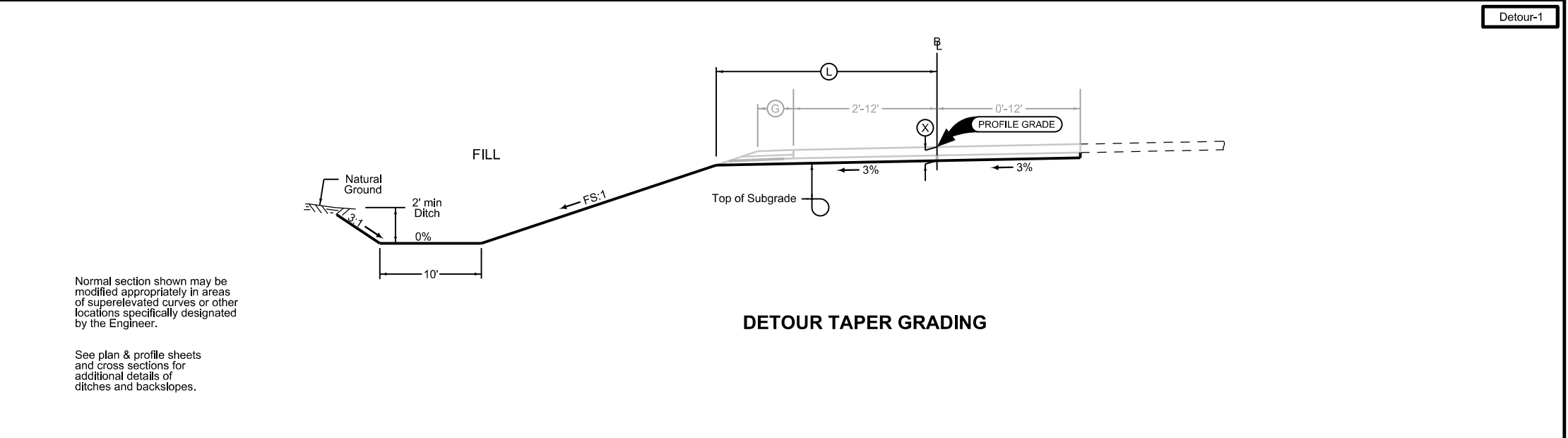
4D\_Pave\_Future  
MODIFIED

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW) <sub>L</sub> Feet	(BW) <sub>R</sub> Feet
US 61\A 92	A	1556+75	1570+50	33.8	19.5	16	22	17.8	18.1
US 61\A 92	B	2543+50	2556+25	33.8	19.5	16	22	17.8	18.1
US 61\A 92	C	3544+81	3556+00	33.8	19.5	16	22	17.8	18.1
US 61\A 92	D	4557+00	4568+21	33.8	19.5	16	22	17.8	18.1
US 61\170th	A	5565+71	5579+25	33.8	19.5	16	22	17.8	18.1
US 61\170th	B	6551+00	6564+12	33.8	19.5	16	22	17.8	18.1
US 61\170th	C	7552+79	7565+89	33.8	19.5	16	22	17.8	18.1
US 61\170th	D	8563+95	8576+71	33.8	19.5	16	22	17.8	18.1



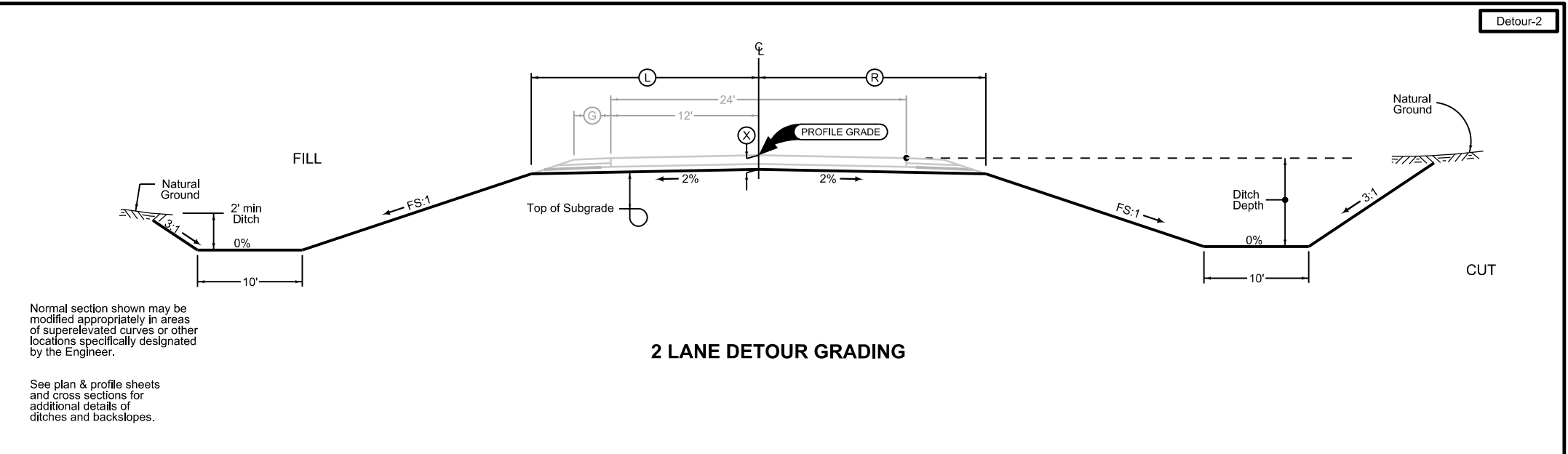
G\_1R\_Grade  
Modified

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(X) Inches		FS
				PCC	HMA	
DET61_905	301+26.75	304+55.63	32.2-20.7	20	21	3-6
DET61_985	406+25.00	406+65.05	20.7	20	21	3-6
DET61_985	433+27.32	438+24.79	20.7-31.8	20	21	3-6



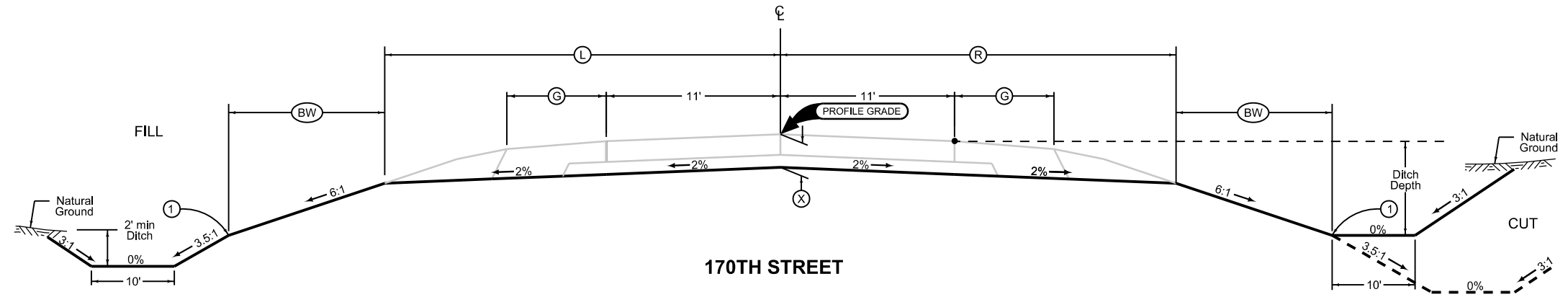
Detour-1

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches		FS
					PCC	HMA	
DET61_905	304+55.63	307+00.00	20.7-20.4	20.4	20	21	3
DET61_985	406+65.05	433+27.32	①	20.4	20	21	3



Detour-2

① Variable 20.7 to 20.4 to 20.7  
Refer to Sheets F.3-F.5 and cross sections

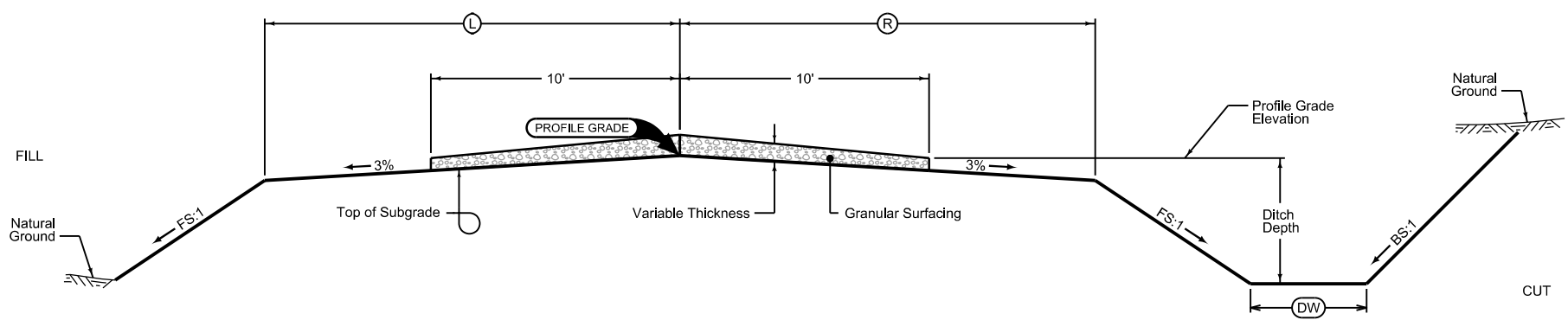


LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	G Feet
170TH STREET	8959+00    8970+20	30.5	30.5	22	18.1	6

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

Sta 3947+47.70 BK = Sta 8958+09.61 AH

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	FS Feet	BS Feet	DW Feet
145th	2803+75    2823+02	13	13	3	3	10
170th	8970+20    8971+35.03	13	13	3	3	10
175th	9971+35.03    10001+25	13	13	3	3	10

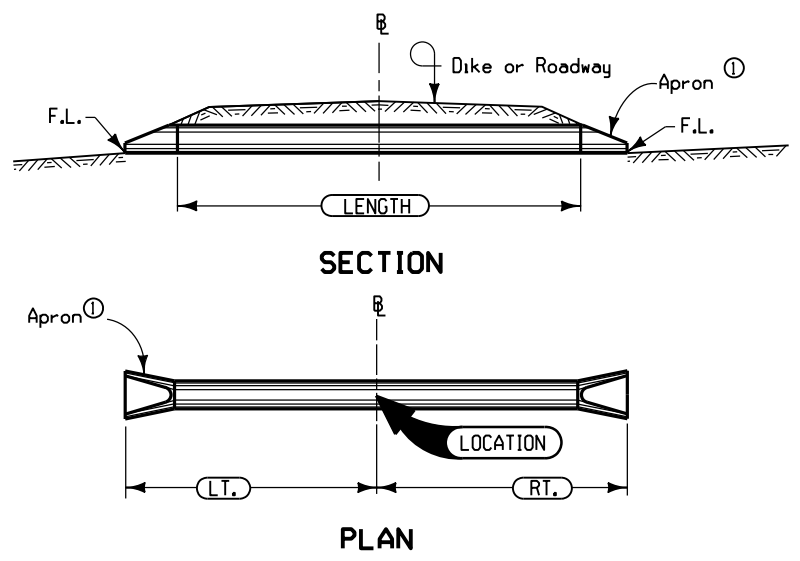


Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

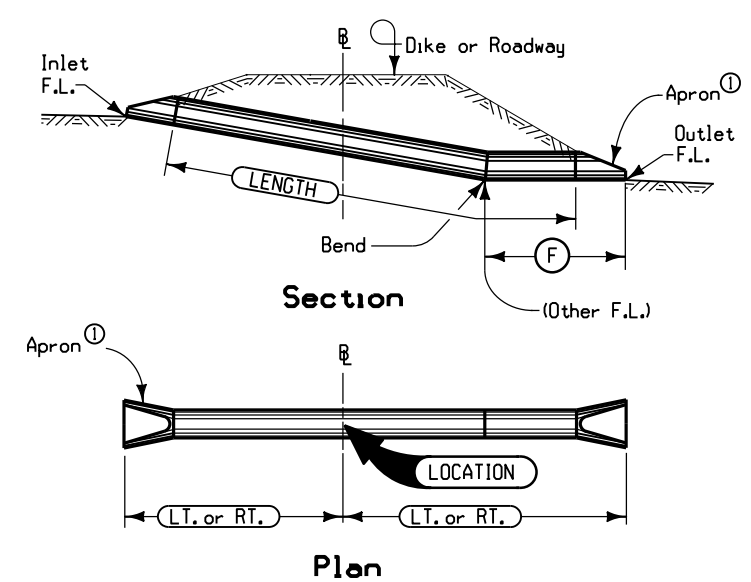
Place Granular Surfacing as follows:  
Grading design application rate is 4150 tons per mile.

1101  
04-30-02



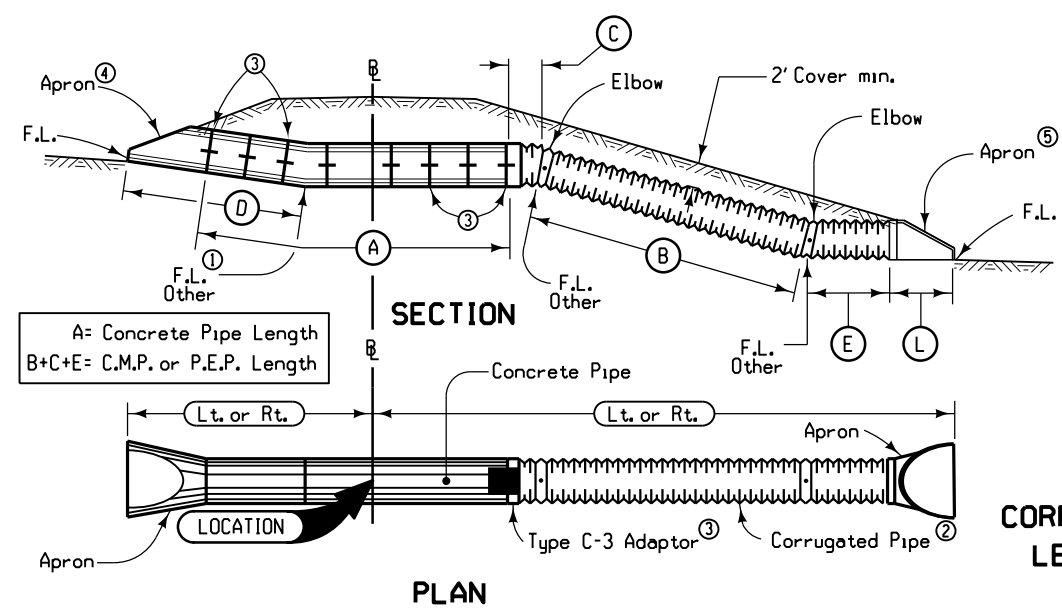
Notes:  
 ② shall be  $\bar{C}$  of roadway, dike, survey, or other; as detailed on plans.  
 Skew angle is the angle which one end of the pipe is ahead (by stationing) of line perpendicular to the  $\bar{C}$  (example skew Rt. ahead 30°).  
 Refer to tabular listing and other plans for additional information.  
 ① See Standard Road Plan RF-3 For Conc. or RF-5 for Metal.

1201  
10-16-12



② shall be  $\bar{C}$  of roadway, dike, survey, or other; as detailed on plans.  
 "Bend" may be accomplished by use of metal elbow, Pipe Adapter (RF-2), Type "D" Section or Concrete Elbow (RF-13) as specified.  
 ① See Standard Road Plan RF-3 For Conc. or RF-5 for Metal.  
 ② is from bend to end of outlet.

1501  
04-20-10

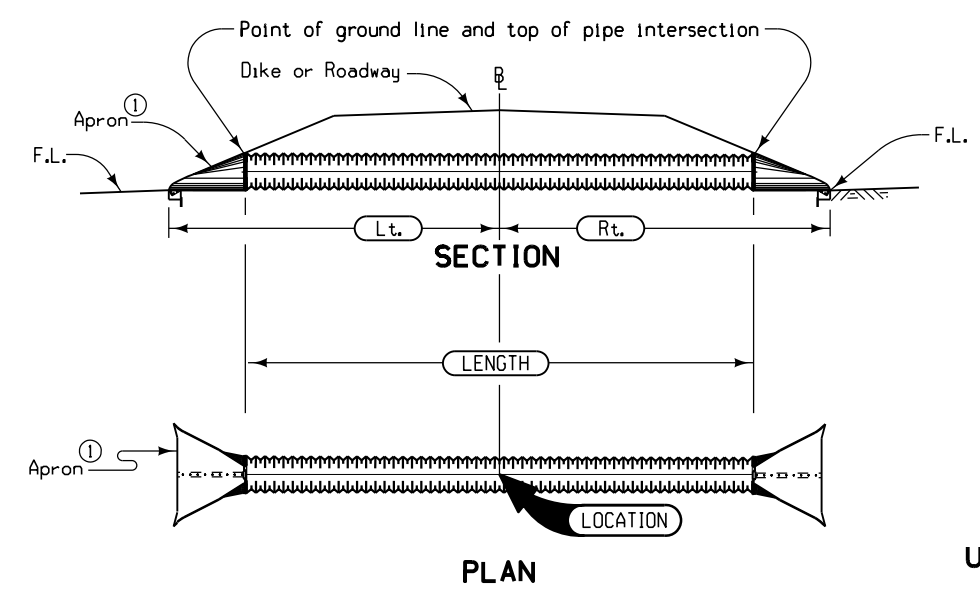


℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.  
 Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the ℄.  
 Refer to Tabulation 104-3.

① Optional D section only when specified in tabulation.  
 ② Standard type joint couplings are required. (See Materials I.M. 441)  
 ③ See RF-2 & RF-14.  
 ④ See RF-3.  
 ⑤ See RF-5 for Metal and Polyethylene.

**CORRUGATED PIPE - CONCRETE LETDOWN STRUCTURE WITH METAL APRON**

1601  
10-16-12

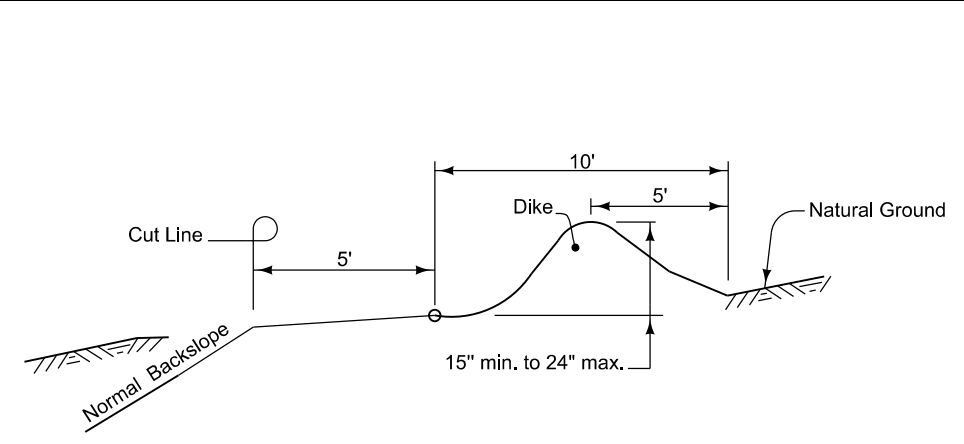


℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.  
 Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the ℄ (example skew Rt. ahead 30 degrees).

① See Standard Road Plan RF-3 for Concrete or RF-5 for Metal and Polyethylene.

**UNCLASSIFIED PIPE CULVERT**

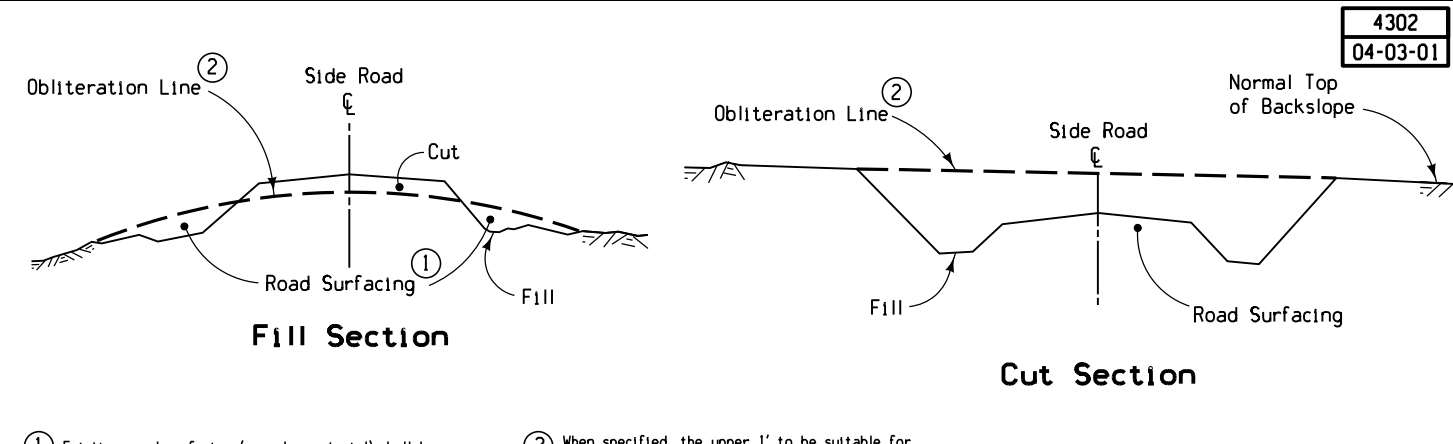
4101  
04-20-10



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

**TYPICAL CROSS SECTION INTERCEPTING DITCH**

4302  
04-03-01

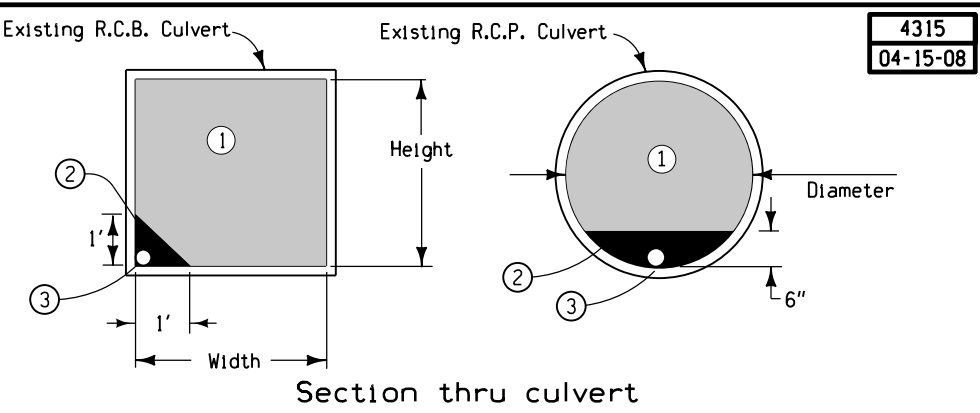
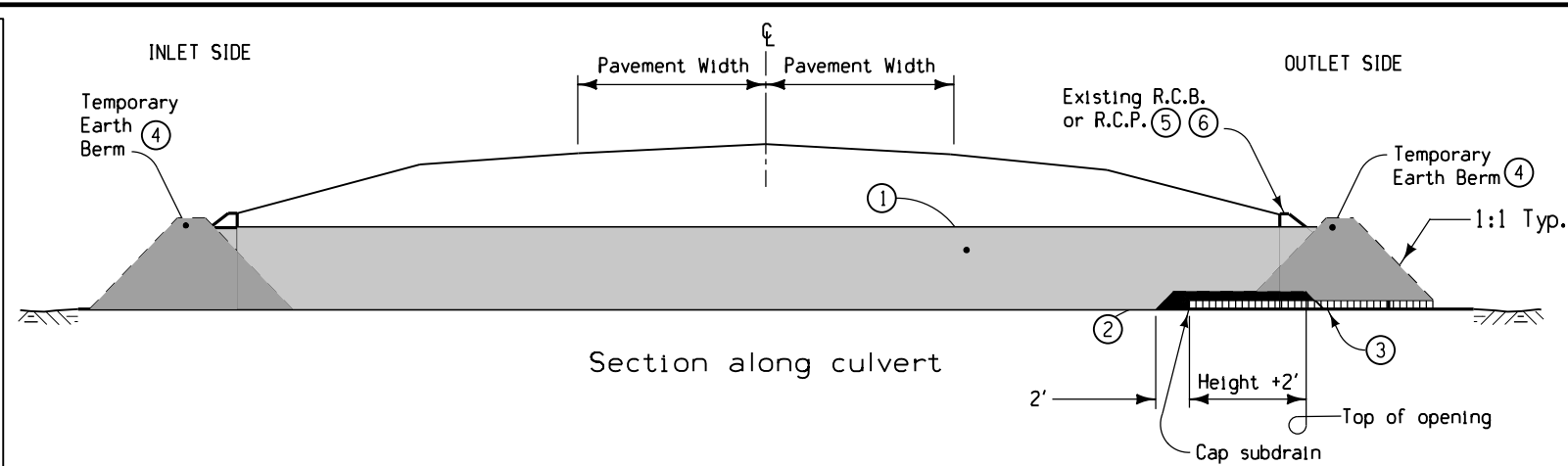
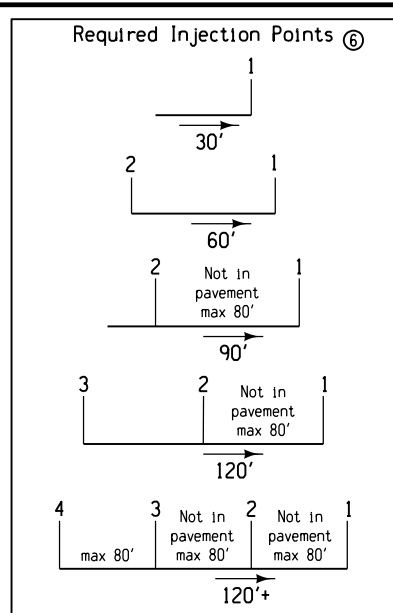


① Existing road surfacing (granular material) shall be placed as shown unless otherwise directed by the Engineer or provided for in the detail project plans.  
 ② When specified, the upper 1' to be suitable for vegetation (grass or crops).

Note:  
 The work of obliterating or reshaping old roadbeds shall be done at the direction of the Engineer.

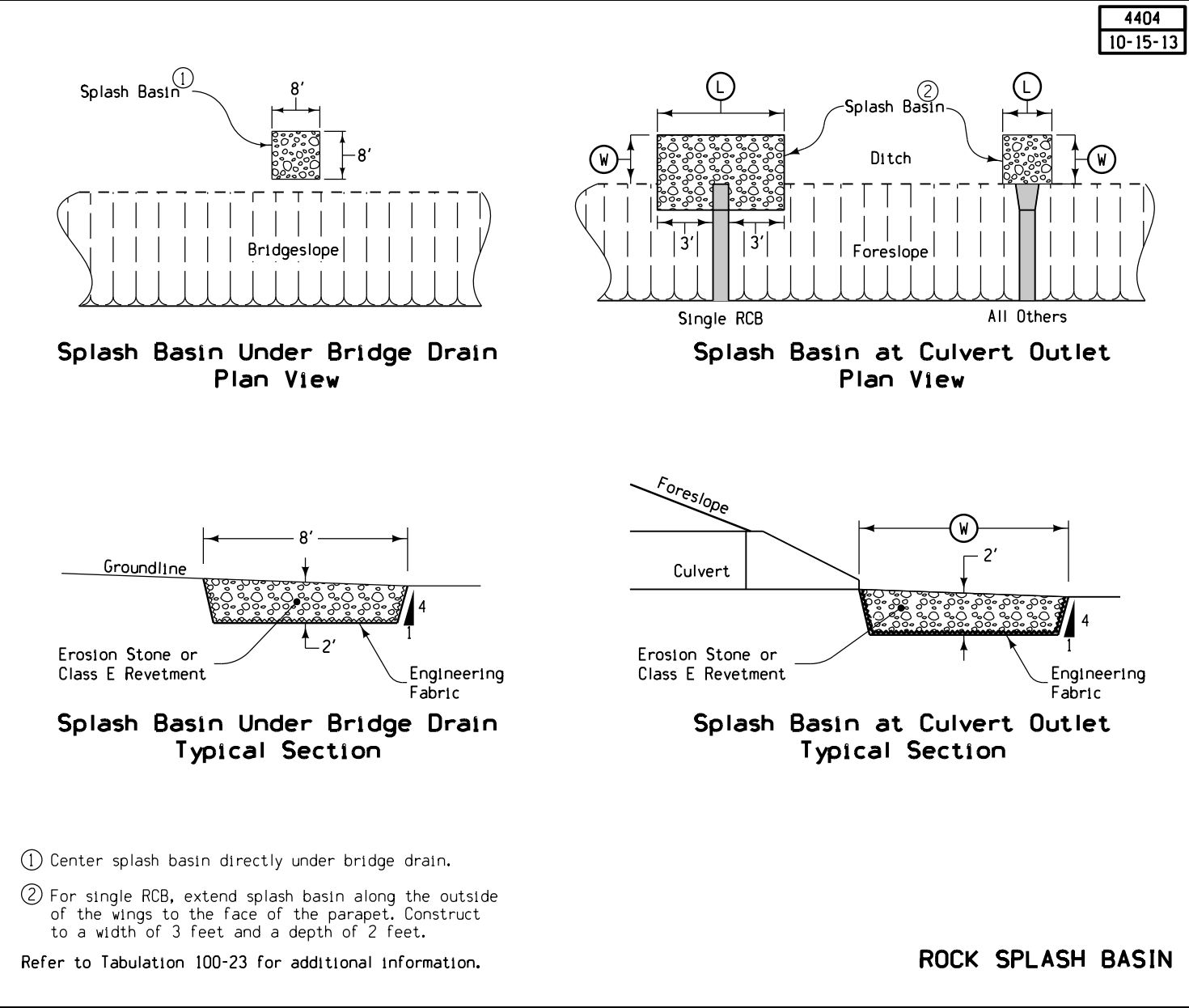
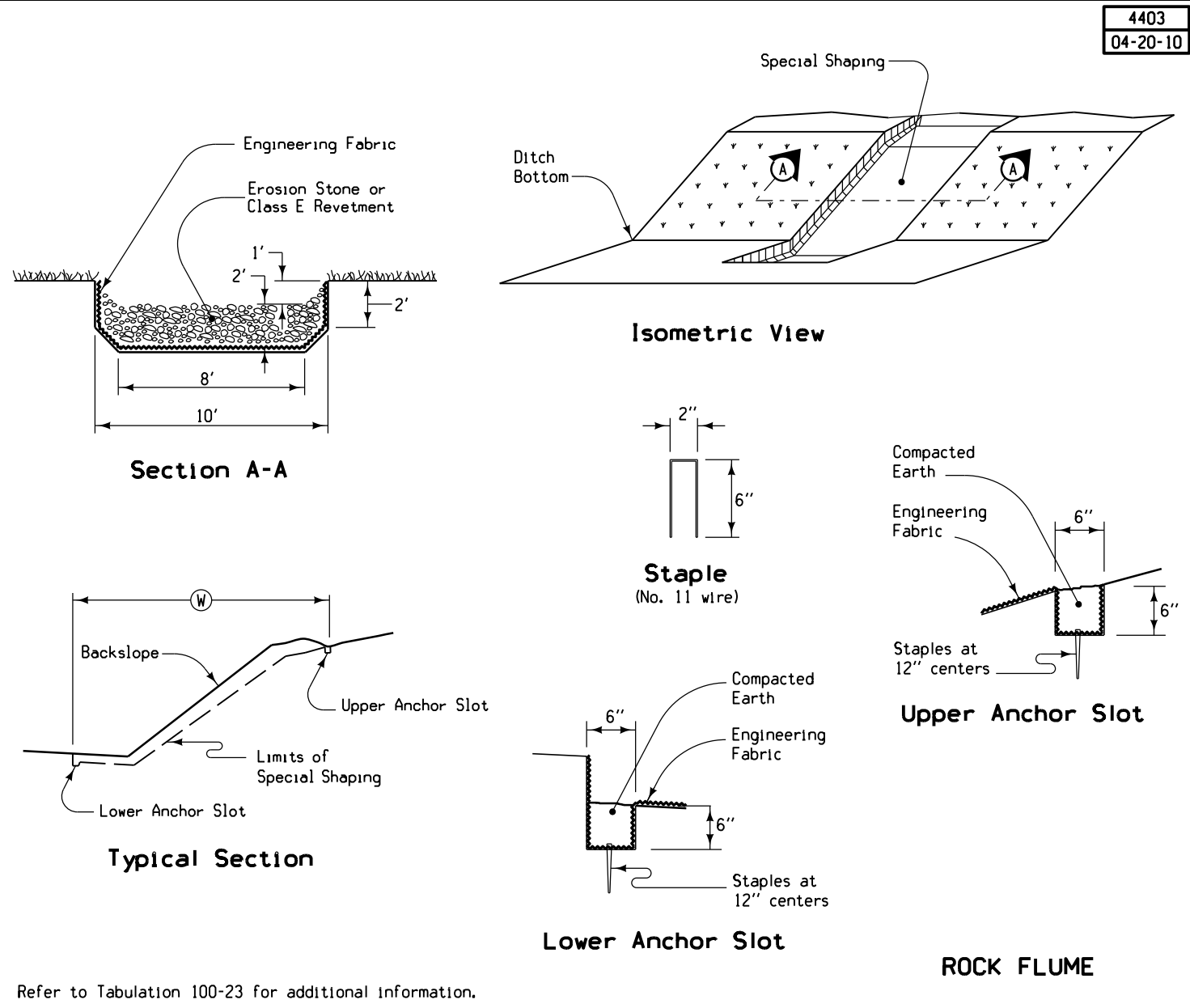
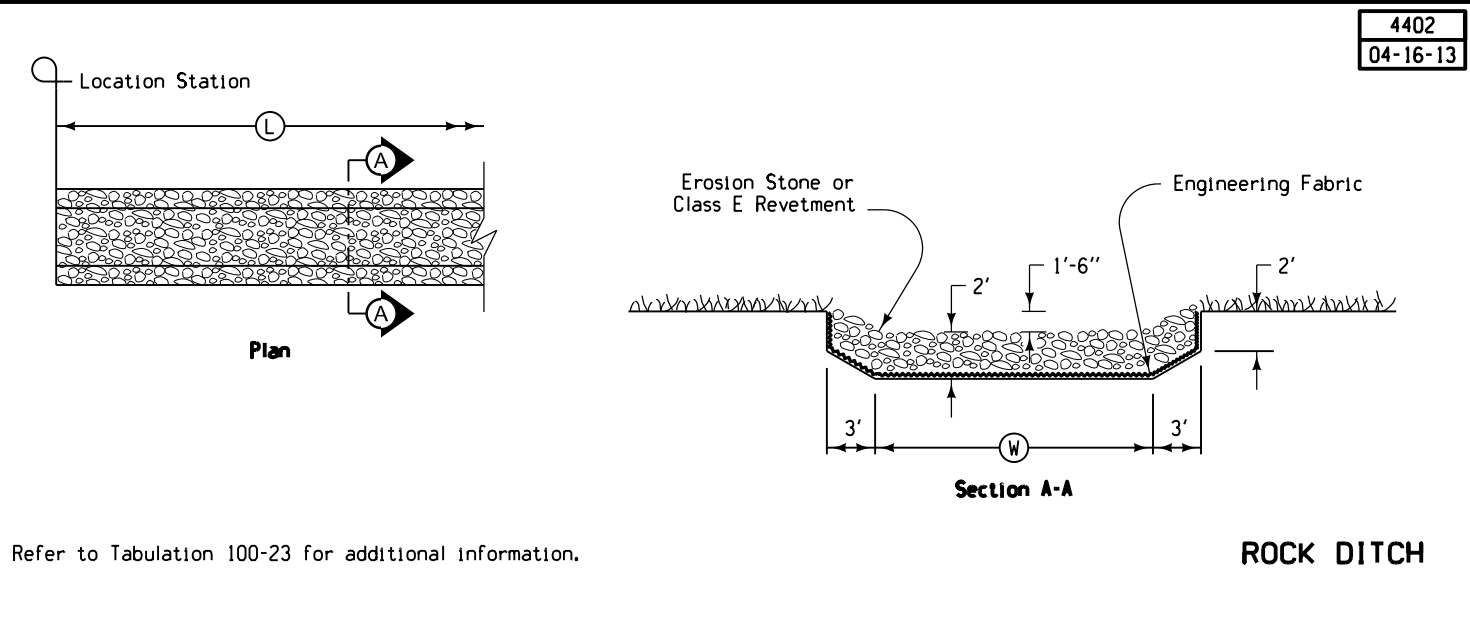
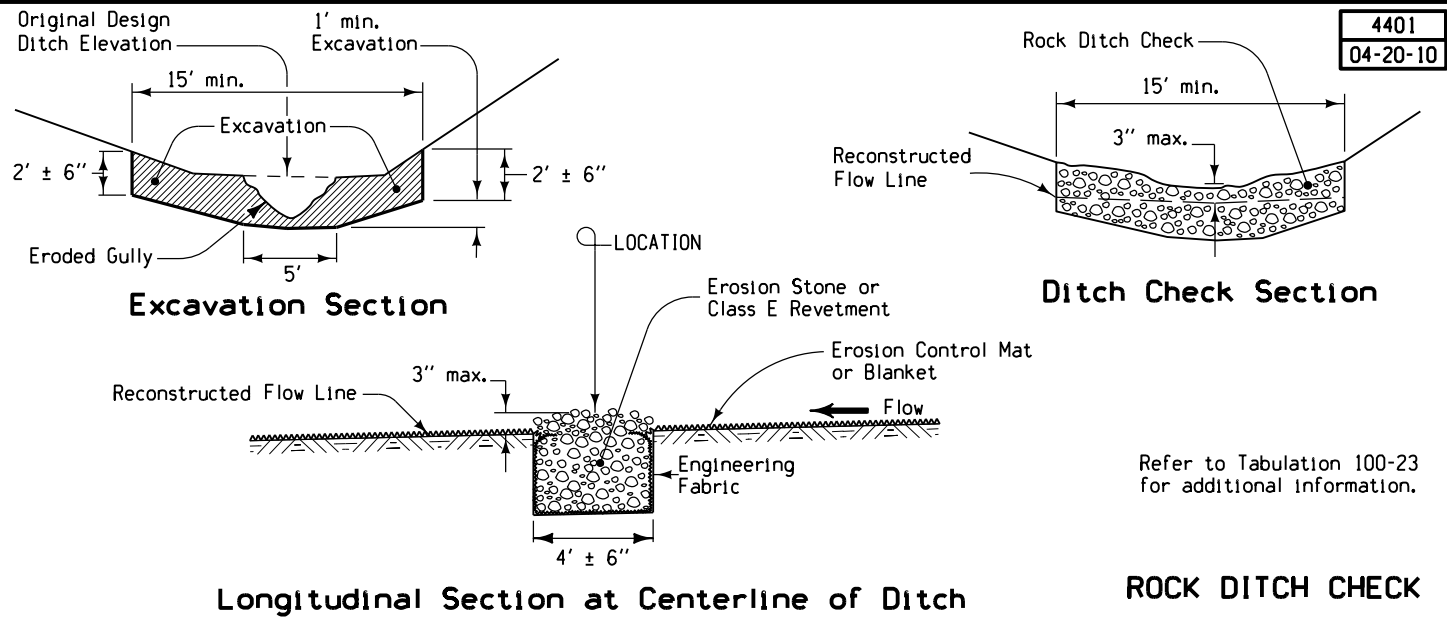
**TYPICAL DETAILS FOR OBLITERATION EXISTING ROADBED**

4315  
04-15-08

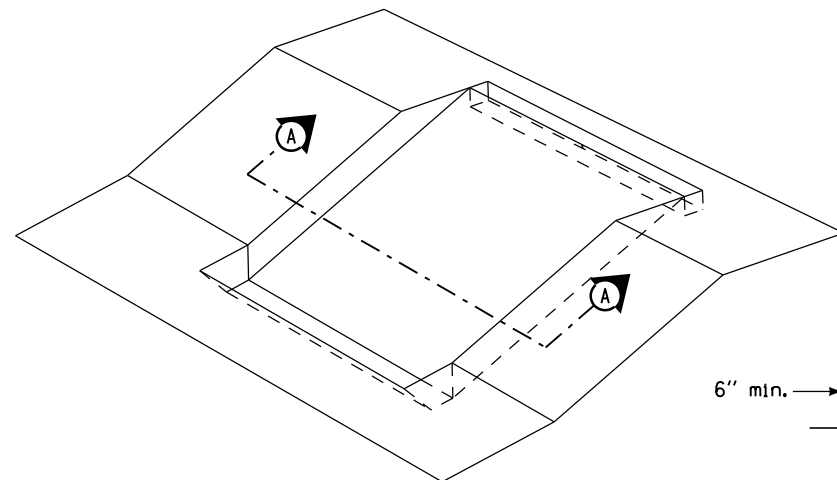
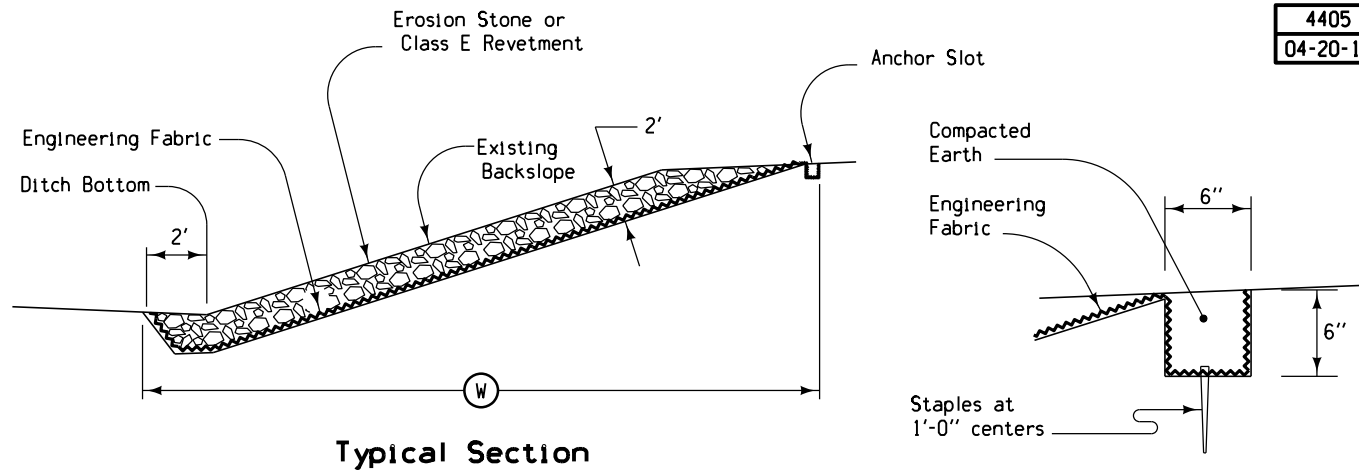


① Flowable Mortar.  
 ② Granular Backfill.  
 ③ 4" subdrain at flowline elevation of culvert shall be extended into the culvert a distance of 2' plus the height of the culvert. Granular Backfill covers subdrain and extends an additional 2'. Subdrain and granular backfill are incidental to flowable mortar.  
 ④ Ends of culvert shall be plugged sufficiently to retain flowable mortar. Temporary earth berms are incidental to flowable mortar.  
 ⑤ Removal of headwalls may be required.  
 ⑥ Outlet shall be filled first. See injection point detail for additional information.

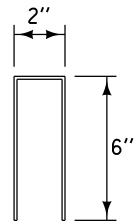
**DETAILS OF CULVERT ABANDONMENT WITH FLOWABLE MORTAR (Rectangular structures less than 8' in either height or width. Circular structures less than 10' Dia.)**



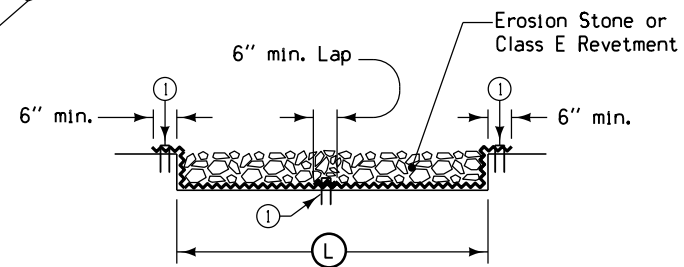
4405  
04-20-10



**Anchor Slot**



**Staple**  
(No. 11 wire)



**Section A-A**

**ROCK SLOPE PROTECTION**

① Staples at 12" centers

Refer to Tabulation 100-23 for additional information.

**PROJECT DESCRIPTION**

This project is to provide grading for the reconstruction of US 61 to a four lane divided roadway along a relocated alignment in Louisa County, Iowa. The project begins north of 130th Street, approximately two miles south of the US 61/ IA 92 intersection, and continues north approximately six miles to the existing four lane roadway at the Muscatine/Louisa County line. The future paving project will provide two 26-foot wide roadways with 6-foot wide inside shoulders and a nominal 82-foot wide depressed median. The outside shoulders from 130th Street to 145th Street will be paved 8-foot wide to accommodate bicycle traffic, and will be combination paved/granular 8-foot wide in all other locations.

This project includes grading for the future construction of two diamond interchanges: US 61/IA 92 and US 61/170th Street. There are two side roads that will be removed and relocated in this project: 145th Street will be obliterated and reconstructed on a revised horizontal alignment to intersect with proposed US 61 at a point approximately 1,060 feet south of the current alignment, and 175th Street will be constructed on a revised horizontal alignment to connect to 170th Street east of the proposed US 61/170th Street interchange. On the east side of existing US 61, 170th Street will be graded for a future paved roadway and will remain closed for the time period between the grading and paving projects.

**ESTIMATED PROJECT QUANTITIES  
(1 DIVISION PROJECT)**

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	2	
2	2102-2200000	INTERCEPTING DITCHES AND FLUMES	LF	3357.4	
3	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY	724196	
4	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	382168	
5	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	100	
6	2102-4560000	LOCATING TILE LINES	STA	630	
7	2102-5020010	OBLITERATE OLD ROADBED	STA	7.09	
8	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	186.5	
9	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	107560	
10	2105-8425020	TOPSOIL, STRIP AND STOCKPILE	CY	86662	
11	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	1088031	
12	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	10228.4	
13	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	4042	
14	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	899	
15	2402-0425040	FLOODED BACKFILL	CY	7463.5	
16	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	12187.4	
17	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	8	
18	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	37	
19	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	16	
20	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	12	
21	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.	EACH	2	
22	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EACH	2	
23	2416-0100054	APRONS, CONCRETE, 54 IN. DIA.	EACH	2	
24	2416-0100072	APRONS, CONCRETE, 72 IN. DIA.	EACH	2	
25	2416-0100078	APRONS, CONCRETE, 78 IN. DIA.	EACH	2	
26	2416-0102218	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 18 IN.	EACH	2	
27	2416-0102224	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 24 IN.	EACH	2	
28	2416-0102236	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 36 IN.	EACH	6	
29	2416-0102242	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 42 IN.	EACH	2	
30	2416-0102248	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 48 IN.	EACH	4	
31	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	1830	
32	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	624	
33	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	456	
34	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	116	
35	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	254	
36	2416-1180072	CULVERT, CONCRETE ROADWAY PIPE, 72 IN. DIA.	LF	268	
37	2416-1180078	CULVERT, CONCRETE ROADWAY PIPE, 78 IN. DIA.	LF	336	
38	2416-1200218	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 18 IN.	LF	66	
39	2416-1200224	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 24 IN.	LF	190	
40	2416-1200236	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 36 IN.	LF	154	
41	2416-1200242	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 42 IN.	LF	26	
42	2416-1200248	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 48 IN.	LF	256	
43	2416-1240024	CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	286	
44	2416-1240030	CULVERT, 3000D CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	138	
45	2416-1240036	CULVERT, 3000D CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	720	
46	2416-1240054	CULVERT, 3000D CONCRETE ROADWAY PIPE, 54 IN. DIA.	LF	330	
47	2416-1245030	CULVERT, 3750D CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	360	
48	2416-1262024	CULVERT, CONCRETE PIPE, 2000D, TRENCHLESS, 24 IN. DIA.	LF	106	
49	2416-1262036	CULVERT, CONCRETE PIPE, 2000D, TRENCHLESS, 36 IN. DIA.	LF	128	
50	2417-0225024	APRONS, METAL, 24 IN. DIA.	EACH	1	
51	2417-1060024	CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA.	LF	196	
52	2422-0360018	APRONS, UNCLASSIFIED, 18 IN. DIA.	EACH	8	
53	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.	LF	530	
54	2435-0251224	INTAKE, SW-512, 24 IN.	EACH	8	
55	2502-8212212	SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. DIA.	LF	1265	
56	2502-8212304	SUBDRAIN, STANDARD, PERFORATED, 4 IN., AS PER PLAN	LF	1623	
57	2502-8220197	SUBDRAIN OUTLET (RF-19F)	EACH	16	

**ESTIMATED PROJECT QUANTITIES  
(1 DIVISION PROJECT)**

Item No.	Item Code	Item	Unit	Total	As Built Qty.
58	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.	LF	587.1	
59	2506-4984000	FLOWABLE MORTAR	CY	374.1	
60	2507-3250005	ENGINEERING FABRIC	SY	3710.1	
61	2507-6800021	REVTMENT, CLASS B	TON	26	
62	2507-6800061	REVTMENT, CLASS E	TON	2899	
63	2518-6910000	SAFETY CLOSURE	EACH	40	
64	2520-3350010	FIELD LABORATORY	EACH	1	
65	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	2	
66	2528-8445110	TRAFFIC CONTROL	LS	1	
67	2528-8445113	FLAGGERS	EACH	See Proposal	
68	2533-4980005	MOBILIZATION	LS	1	
69	2590-0000020	PROJECT MANAGEMENT	LS	1	
70	2599-9999005	('EACH' ITEM) TEMPORARY SEDIMENT CONTROL DEVICE	EACH	5	
71	2599-9999009	('LINEAR FEET' ITEM) SAND DRAINS	LF	15449	
72	2601-2634100	MULCHING	ACRE	195	
73	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	1	
74	2601-2636015	NATIVE GRASS SEEDING	ACRE	0.1	
75	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	28.9	
76	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT	SQ	2224	
77	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	195	
78	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)	ACRE	1	
79	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	489	
80	2601-2643300	MOBILIZATION FOR WATERING	EACH	3	
81	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2	SQ	192	
82	2602-0000020	SILT FENCE	LF	1300	
83	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	37398	
84	2602-0000050	SILT BASINS	EACH	64	
85	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	12986	
86	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	2597.2	
87	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1200	
88	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	1200	
89	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	2400	
90	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
91	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	



**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
1	2101-0850001	<b>CLEARING AND GRUBBING</b> Refer to the U Sheets. Fence removal is incidental to clearing and grubbing. All trees shall be cut down before April 1, 2015. These trees may be inhabited by State and Federal listed threatened/endangered bat species.
-	-	-
2	2102-2200000	<b>INTERCEPTING DITCHES AND FLUMES</b> Refer to Tab. 100-16 in the C Sheets.
-	-	-
3	2102-2625001	<b>EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED</b> Refer to T Sheets.
-	-	-
4	2102-2710070	<b>EXCAVATION, CLASS 10, ROADWAY AND BORROW</b> Includes 368,376 cu. yds. of material to be used in the roadway fill and beam guardrail installations. Includes 13,792 cu. yds. of suitable material to be used in the bridge berm overbuild. Refer to T Sheets. Refer to Tab. 107-23 in C Sheets. Unsuuitable B or C material can be used. Overhaul will not be measured or paid for, but shall be considered incidental to roadway excavation on this project.
-	-	-
5	2102-2712015	<b>EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS</b> Refer to Tab. 103-7 in CS Sheets Dispose of excess material according to Article 1106.07 of the current specifications.
-	-	-
6	2102-4560000	<b>LOCATING TILE LINES</b> Estimated at twice the project length, plus side road lengths.
-	-	-
7	2102-5020010	<b>OBLITERATE OLD ROADBED</b> The work consists of obliterating 145th Street from mainline Sta. 829+10, 444' Rt to Sta. 829+64, 126' Rt and Sta. 830+05, 130' Lt to Sta. 830+63, 512' Lt as shown in Typical 4302 in B Sheets. Fill the adjacent ditches with Class 10 material and a minimum of 4 inches of topsoil. Furnish Class 10 material according to Section 2107 of the Standard Specifications and compact the material by driving over the material a minimum of two times. Furnish and place topsoil according to Section 2105 of the Standard Specifications. Smooth the surface of the topsoil and leave in a finished condition so it will drain properly. This will be incidental to the bid item. Method of measurement will be in stations measured along centerline of old roadbed. Basis of payment will be the contract unit price for the number of stations of old roadbed obliterated. Payment is full compensation for construction as shown on Typical 4302. Excavation and topsoil will not be paid separately.
-	-	-
8	2104-2710020	<b>EXCAVATION, CLASS 10, CHANNEL</b> Refer to MIT Sheets.
-	-	-
9	2105-8425015	<b>TOPSOIL, STRIP, SALVAGE AND SPREAD</b> Refer to Tab. 103-4 in C Sheets.
-	-	-
10	2105-8425020	<b>TOPSOIL, STRIP AND STOCKPILE</b> Refer to U Sheets for suggested topsoil stockpile areas. Actual topsoil stockpile areas shall be determined by the Contractor and shall be approved by the Engineer. Maintaining drainage through and sediment control around the perimeter of each stockpile area is incidental to Topsoil, Strip, and Stockpile.  All topsoil removed within the limits of the temporary easement of DET61_985 shall 12 inches thick and shall be segregated from all other sources of topsoil and stockpiled in a separate location. This stockpiled material shall be reserved for use in the future paving project.
-	-	-
11	2107-0875100	<b>COMPACTION WITH MOISTURE CONTROL</b> Refer to Tab. 103-6 in CS Sheets. Cubic yards shown on the contract documents as determined by the template fill volume. Shrinkage will not be included in the moisture control quantity.
-	-	-
12	2107-3825025	<b>GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN</b> Refer to Tab. WSD-1 and Tab. 104-5C in CS Sheets.
-	-	-
13	2312-8260051	<b>GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE</b> See Typical G_2_GradeGran in B Sheets for side road surfacing details.
-	-	-
14	2315-8275025	<b>SURFACING, DRIVEWAY, CLASS A CRUSHED STONE</b> Refer to Tab. 102-3 in the C Sheets. Quantity assumes 6" thickness placed.
-	-	-
15	2402-0425040	<b>FLOODED BACKFILL</b> -
-	-	-
16	2402-2720100	<b>EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT</b> Refer to Tab. 104-3 in C Sheets.
-	-	-
17	2416-0100018	<b>APRONS, CONCRETE, 18 IN. DIA.</b> Refer to Tab. 104-5B in the M Sheets.
-	-	-

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
18	2416-0100024	<b>APRONS, CONCRETE, 24 IN. DIA.</b>
19	2416-0100030	<b>APRONS, CONCRETE, 30 IN. DIA.</b>
20	2416-0100036	<b>APRONS, CONCRETE, 36 IN. DIA.</b>
21	2416-0100042	<b>APRONS, CONCRETE, 42 IN. DIA.</b>
22	2416-0100048	<b>APRONS, CONCRETE, 48 IN. DIA.</b>
23	2416-0100054	<b>APRONS, CONCRETE, 54 IN. DIA.</b>
24	2416-0100072	<b>APRONS, CONCRETE, 72 IN. DIA.</b>
25	2416-0100078	<b>APRONS, CONCRETE, 78 IN. DIA.</b>
26	2416-0102218	<b>APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 18 IN.</b>
27	2416-0102224	<b>APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 24 IN.</b>
28	2416-0102236	<b>APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 36 IN.</b>
29	2416-0102242	<b>APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 42 IN.</b>
30	2416-0102248	<b>APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 48 IN.</b>
31	2416-1180024	<b>CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.</b>
32	2416-1180030	<b>CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.</b>
33	2416-1180036	<b>CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.</b>
34	2416-1180042	<b>CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.</b>
35	2416-1180048	<b>CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.</b>
36	2416-1180072	<b>CULVERT, CONCRETE ROADWAY PIPE, 72 IN. DIA.</b>
37	2416-1180078	<b>CULVERT, CONCRETE ROADWAY PIPE, 78 IN. DIA.</b>
38	2416-1200218	<b>CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 18 IN.</b>
39	2416-1200224	<b>CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 24 IN.</b>
40	2416-1200236	<b>CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 36 IN.</b>
41	2416-1200242	<b>CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 42 IN.</b>
42	2416-1200248	<b>CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 48 IN.</b>
43	2416-1240024	<b>CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.</b>
44	2416-1240030	<b>CULVERT, 3000D CONCRETE ROADWAY PIPE, 30 IN. DIA.</b>
45	2416-1240036	<b>CULVERT, 3000D CONCRETE ROADWAY PIPE, 36 IN. DIA.</b>
46	2416-1240054	<b>CULVERT, 3000D CONCRETE ROADWAY PIPE, 54 IN. DIA.</b>
47	2416-1245030	<b>CULVERT, 3750D CONCRETE ROADWAY PIPE, 30 IN. DIA.</b>
48	2416-1262024	<b>CULVERT, CONCRETE PIPE, 2000D, TRENCHLESS, 24 IN. DIA.</b>
49	2416-1262036	<b>CULVERT, CONCRETE PIPE, 2000D, TRENCHLESS, 36 IN. DIA.</b>
50	2417-0225024	<b>APRONS, METAL, 24 IN. DIA.</b>
51	2417-1060024	<b>CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA.</b> Refer to Tab. 104-3 in C Sheets.
-	-	-
52	2422-0360018	<b>APRONS, UNCLASSIFIED, 18 IN. DIA.</b> Refer to Tab. 102-3 in C Sheets.
-	-	-
53	2422-1722018	<b>CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.</b> Refer to Tab. 102-3 and Tab. 104-3 in C Sheets.
-	-	-
54	2435-0251224	<b>INTAKE, SW-512, 24 IN.</b> Refer to Tab. 104-5B in the M Sheets.
-	-	-
55	2502-8212212	<b>SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. DIA.</b> Refer to Field Tile Details in the U Sheets.
-	-	-
56	2502-8212304	<b>SUBDRAIN, STANDARD, PERFORATED, 4 IN., AS PER PLAN</b> Refer to Tab. WSD-1 in CS Sheets.
-	-	-
57	2502-8220197	<b>SUBDRAIN OUTLET (RF-19F)</b> Refer to Tab. WSD-1 in CS Sheets.
-	-	-
58	2503-0114218	<b>STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.</b> Refer to Tab. 104-5B in the M Sheets.
-	-	-
59	2506-4984000	<b>FLOWABLE MORTAR</b> Includes 31.8 cu. yds. for fill and abandon culvert. Refer to Tab. 110-9 in C Sheets and Typical 4315 in B Sheets. Silt inside existing culverts need not be removed prior to placing flowable mortar. Includes 342.3 cu. yds. for backfill over culvert. Refer to Tab. 104-3 in the C Sheets.
-	-	-
60	2507-3250005	<b>ENGINEERING FABRIC</b> Refer to MIT Sheets and Tab. 100-23 in the C Sheets.
-	-	-
61	2507-6800021	<b>REVTMENT, CLASS B</b> Refer to MIT Sheets.
-	-	-
62	2507-6800061	<b>REVTMENT, CLASS E</b> Refer to MIT Sheets and Tab. 100-23 in the C Sheets.
-	-	-
63	2518-6910000	<b>SAFETY CLOSURE</b> Refer to Tab. 108-13A in C Sheets.
-	-	-
64	2520-3350010	<b>FIELD LABORATORY</b> -
-	-	-
65	2528-8400256	<b>TEMPORARY TRAFFIC SIGNALS</b> -
-	-	-
66	2528-8445110	<b>TRAFFIC CONTROL</b> Refer to Traffic Control Plan in J Sheets. Standard Road Plan TC-273 included for possible truck haul, locations for which must be approved by the Engineer.

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
67	2528-8445113	FLAGGERS - -
68	2533-4980005	MOBILIZATION - -
69	2590-0000020	PROJECT MANAGEMENT - -
70	2599-9999005	('EACH' ITEM) TEMPORARY SEDIMENT CONTROL DEVICE See U sheets for Method of Measurement and Basis of Payment and Tab. 100-30 in the C sheets for locations.
71	2599-9999009	('LINEAR FEET' ITEM) SAND DRAINS Refer to Tab. WSD-1 in the CS Sheets. Method of Measurement will be in linear feet measured along the sand drain. Basis of Payment: Payment will be the contract unit price for each linear foot of sand drain installed.
72	2601-2634100	MULCHING Mulching per Article 2601.03, E, 2. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes.  Included for areas requiring reshaping and seedbed preparation. Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations.  Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.
73	2601-2634105	MULCHING, BONDED FIBER MATRIX A Bonded Fibre Matrix shall be applied as the mulch for all areas designated as "Stabilizing Crop-Seeding and Fertilizing (Urban)".  The seed and fertilizer for the area to be covered shall be applied before the Bonded Fibre Matrix Hydraulic Mulch application.  Application rate shall be a minimum of 3000 lbs per acre.
74	2601-2636015	NATIVE GRASS SEEDING All areas outside eight feet adjacent to shoulder shall be seeded with "Native Grass Seeding".  All seed for "Native Grass Seeding" will be supplied and mixed by the contractor according to Article 2601.03, B, 4, c and installed according to Article 2601.03, C, 5.  All forb seed will be applied through the native grass drill wildflower or small seed box. Forb seed will not be allowed to be mixed and applied with the native grass seed.  Cover crop will be required to be applied through the cool season or cover crop seed box. The cover crop seed will not be allowed to be mixed and applied with the native grass seed.  Drill shall be calibrated prior to operation at the project site to the specified seeding rate for the project and witnessed by the contracting authority.  The Engineer will review the limits prior to seeding with the Contractor.
75	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT Refer to Tab 100-22 for locations. Refer to Standard Road Plan EC-103.  Prepare seedbed according to Article 2601.03, B, 4 prior to seeding and fertilizing under the slope protection.  Slope Protection will be required to be constructed out of wood excelsior.
76	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT Refer to Tab. 100-22 for locations. Refer to Standard Road Plan EC-101.  Prepare seedbed according to Article 2601.03, B 4 and install according to Article 2601.03, H, 2 and seed according to Table 2601.03-7.

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
77	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING Included for disturbed areas as directed by the Engineer.  Prepare seedbed according to 2601.03, B, 4, a.  Seed mixture shall be:  Oats 50 lbs. per acre Grain rye 50 lbs. per acre *Canada wildrye (Elymus canadensis) 5 lbs. PLS per acre *Big bluestem (Andropogon gerardii) 4 lbs. PLS per acre *Little bluestem (Schizachyrium scoparium) 4 lbs. PLS per acre Sideoats grama (Bouteloua curtipendula) 4 lbs. PLS per acre Switchgrass (Panicum virgatum) 1 lbs. PLS per acre Partridge Pea (Chamaecrista fasciculata) 2 lbs. PLS per acre  *Note: Canada wildrye, Big bluestem and Little bluestem shall be debarbed or equal to facilitate the application of seed.  For stabilizing crop only, seed will not be required to be certified as Source Identified Class (Yellow Tag) Source G0-Iowa.  Seed may be applied by broadcasting or with a Native Grass Drill.  Broadcasted seed will require one complete rolling of the area seeded with a cultipacker within 24 hours after seeding and prior to mulching or hydromulching.  Native Grass Drilled seed must meet Article 2601.03, A, 11 and be completed per Article 2601.03, C, 5. prior to mulching or hydromulching.  All seed shall be mixed off-site by a seed conditioner approved by the Iowa Crop Improvement Association or other state's Crop Improvement Association. Bags shall arrive onsite from seed conditioner in sealed/unopened bags.
78	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN) Included for disturbed areas as directed by the Engineer.  All urban disturbed areas shall be seeded and fertilizer per Article 2601.03, C, 2.
79	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION Estimate based on four waterings at a rate of 50 gallons per square.  The contractor shall water the required areas no later than the day following placement of the 'Special Ditch Control'. If the Contractor fails to water by the second day following placement, a price adjustment will be assessed at a rate of \$200.00 per calendar day until the watering has been completed.  Additional waterings will be required at intervals of 5 to 8 calendar days. Perform all waterings unless notified by the Engineer in writing at least 1 calendar day prior to the day the watering is to occur. If the Contractor fails to complete the watering before the 8th calendar day has elapsed a price adjustment will be assessed at a rate of \$200.00 per calendar day, beginning on the 9th day, until the watering is completed.
80	2601-2643300	MOBILIZATION FOR WATERING - -
81	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2 Refer to Tab. 100-22 for locations. Refer to Standard Road Plan EC-101.  Install according to article 2601.03, H, 3  The seed and and rate for the TRM application shall be as described in Table 2601.03-7 Ditches-Outside Shoulder Adjacent to Native Grass Seedings
82	2602-0000020	SILT FENCE Refer to Tab. 100-17 in C Sheets. The tabulation includes estimated locations for placement of Silt Fence to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
83	2602-0000030	SILT FENCE FOR DITCH CHECKS Refer to Tab. 100-18 in C Sheets. The tabulation includes estimated locations for placement of Silt Fence for Ditch Checks to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.
84	2602-0000050	SILT BASINS Refer to Tab. 100-14 in C Sheets. The tabulation includes estimated locations for placement of "Silt Basins" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 100% additional quantity for field adjustments and maintenance. - -

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
85	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.
86	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the grading project.
87	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.  Perimeter and Slope Sediment Control Devices will be required to be constructed out of wood excelsior.
88	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.  Perimeter and Slope Sediment Control Devices will be required to be constructed out of wood excelsior.
89	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE Included for removal of perimeter and sediment control devices. All material shall become the property of the contractor and removed from the project within 24 hours.
90	2602-0010010	MOBILIZATIONS, EROSION CONTROL
91	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL

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**STANDARD ROAD PLANS**

The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
EC-101	04-20-10	Wood Excelsior Mat for Ditch Protection
EC-103	04-20-10	Wood Excelsior Mat for Slope Protection
EC-201	04-20-10	Silt Fence
EC-204	10-16-12	Perimeter and Slope Sediment Control Devices
EW-101	04-19-11	Embankment and Rebuilding Embankments
EW-102	10-21-14	Allowable Placement of Unsuitable Soil in Embankments
EW-103	10-15-13	Embankment Subgrade Treatment, Moisture Density Control and Special Compaction
EW-211	10-15-13	Special Grading at Side Piers
EW-212	04-15-14	Settlement Plate
EW-301	04-19-11	Guardrail Grading
EW-403	10-15-13	Temporary Erosion Control Measures
EW-501	10-15-13	Rural Entrance
EW-503	04-15-14	Side Road Grading
MI-101	04-20-10	Fencing Layout
MI-103	10-16-12	Deer Fence and Field Fence Construction
MI-104	10-16-12	Fence Construction at Channel Crossings, Flood Plains, and Minor Ground Depressions
RF-2	04-15-14	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
RF-3	10-15-13	Concrete Aprons
RF-5	04-16-13	Metal Pipe Aprons and Beveled Ends
RF-13	10-18-11	Pipe Bends and Half Pipe
RF-14	04-16-13	Connected Pipe Joints
RF-19A	10-16-12	Subdrains for Fill or Foundation Drainage (Standard)
RF-19B	04-17-12	Subdrains Standard (Farm Tile Replacement)
RF-19F	10-16-12	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
RF-30A	04-15-14	Pipe Culvert (Bedding and Backfill)
RF-30B	10-19-10	Pipe Culvert (Cover and Camber)
RF-30C	04-16-13	Pipe Culvert (Installation Details)
RF-31	03-28-95	Depth of Cover Tables for Concrete Pipe
RF-32	10-19-10	Depth of Cover Tables for Corrugated Pipe
RF-42	04-15-14	Low Clearance Concrete Pipe Aprons
SW-512	10-21-14	Circular Area Intake
SW-604	10-20-09	Castings for Area Intakes
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	10-15-13	Shoulder Closure (One Lane)
TC-213	04-17-12	Lane Closure with Flaggers
TC-251	04-17-12	Temporary Road Closure
TC-252	04-17-12	Routes Closed to Traffic
TC-271	10-21-14	Signalized Equipment Crossing
TC-273	04-20-10	Construction Site Entrance

**POLLUTION PREVENTION PLAN**

This Base Pollution Prevention Plan (PPP) includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

**I. ROLES AND RESPONSIBILITIES****A. Designer:**

1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Signature authority on the Base PPP and NOI.

**B. Contractor/Subcontractor:**

1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Submit a detailed schedule according to Article 2602 of the Specifications and any additional plan notes.
3. Install and maintain appropriate controls.
4. Supervise and implement good housekeeping practices.
5. Conduct joint required inspections of the site with inspection staff.
6. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.

**C. RCE/Inspector:**

1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
2. Maintain an up-to-date list that identifies contractors and subcontractors as co-permittees.
3. Make these plans available to the DNR upon their request.
4. Conduct joint required inspections of the site with the contractor/subcontractor.
5. Complete an inspection report after each inspection.
6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

**II. PROJECT SITE DESCRIPTION**

- A. This Pollution Prevention Plan (PPP) is for the reconstruction (including grading, paving, drainage, and structures) of US 61 from roughly two miles south of the US 61 / IA 92 intersection north approximately six miles to near the Muscatine/Louisa county line. The reconstruction involves reconstructed intersections at 145th St. and 180th St. and new interchanges at IA 92 and 170th St.
- B. This PPP covers approximately 345 acres with an estimated 240 acres being disturbed. The portion of the PPP covered by this contract has 196 acres disturbed.
- C. The PPP is located in an area of two soil associations (Tama-Muscatine-Downs and Fayette). The estimated average SCS runoff curve number for this PPP after completion will be 66.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
  1. Drainage patterns - Plan and Profile sheets and Situation plans.
  2. Proposed Slopes - Cross Sections.
  3. Areas of Soil Disturbance - construction limits shown on Plan and Profile sheets.
  4. Location of Structural Controls - Tabulations on C sheets.
  5. Locations of Non-structural Controls - Tabulations on C sheets.
  6. Locations of Stabilization Practices - generally within construction limits shown on Plan and Profile sheets.
  7. Surface Waters (including wetlands) - Plan and Profile sheets.
  8. Locations where storm water is discharged - Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments of completed erosion control work.
- F. Runoff from this work will flow into unspecified waterways and ditches leading 1) to Indian Creek to the Iowa River, 2) to Turkey Run to the Iowa River, and 3) to Muscatine Slough to the Mississippi River.

**III. CONTROLS**

- A. The contractor's work plan and sequence of operations specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Section 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
  1. EROSION AND SEDIMENT CONTROLS
    - a. Stabilization Practices
      - 1) Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized.
      - 2) Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
      - 3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.
      - 4) Stabilization measures to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional items may be found in the Inspector's Daily Reports (IDR) or Contract Modifications.
    - b. Structural Practices
      - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site.
      - 2) Structural items to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plan or are referenced in the Standard Road Plans Tabulation.
    - c. Storm Water Management
      - 1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will

**POLLUTION PREVENTION PLAN**

occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

**2. OTHER CONTROLS**

- a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
  - 1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
  - 2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
  - 3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
  - 4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
  - 5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
  - 6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located.
  - 7) Vehicle and Equipment Cleaning - Employ washing practices that prevent contamination of surface and ground water from wash water.
  - 8) Vehicle and Equipment Fueling and Maintenance - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site.
  - 9) Litter Management - Ensure employees properly dispose of litter.

**3. APPROVED STATE OR LOCAL PLANS**

During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

**IV. MAINTENANCE PROCEDURES**

The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

**V. INSPECTION REQUIREMENTS**

- A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
  1. Date of the inspection.
  2. Summary of the scope of the inspection.
  3. Name and qualifications of the personnel making the inspection.
  4. Rainfall amount.
  5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
  6. Major observations related to the implementation of the PPP.
  7. Identify corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found and complete all actions within 3 calendar days of the inspection.

**VI. NON-STORM WATER DISCHARGES**

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials.

**VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION**

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

**VIII. DEFINITIONS**

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items and fieldbook entries made by the inspector.
- C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials.
- E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

213-3  
04-15-14

### SUBSOIL TILLAGE

All stockpile areas, haul roads, and areas used for equipment on this project require subsoil tillage to an average depth of 16 to 20 inches prior to placement of topsoil and/or stabilizing crop seeding. Complete this tillage at 3 foot maximum centers and at right angles to the finished slope.

Use tillage equipment equipped with an arrowhead type shoe that will provide lateral displacement and limit the movement of the subsoil to the surface. Obtain the Engineer's approval for the equipment. This work is incidental to other work on the project.

Following the subsoil tillage, the area is to remain in a "loosened" condition. Additional compaction or the operation of heavy equipment, other than required for topsoil placement and shaping, will not be allowed on areas which have received subsoil tillage.

232-4  
10-18-11

### EROSION CONTROL (SELECTIVE CLEARING)

Selective clearing will be required on this project.

Do not remove any trees outside of the construction limits without the Engineer's approval. This includes areas in divided medians and inside interchanges.

Clearing along the right-of-way line will be necessary to permit installation of fence. This clearing should be done as soon as possible with trees cut off at the ground line.

Do not disturb native grass areas outside the construction limits.

232-10  
Modified

### EMERALD ASH BORER

Dispose of all wood material generated as a result of clearing and/or grubbing according to the Iowa Department of Agriculture and Land Stewardship's Emerald Ash Borer (EAB) Quarantine Order. For more information refer to [http://www.iowatreepests.com/eab\\_regulations.html](http://www.iowatreepests.com/eab_regulations.html).

281-1  
10-15-13

### SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers IP-Individual, Permit No. 2013-1268. A copy of this permit is available from the Iowa DOT website (<http://envpermits.iowadot.gov/CMEPortalENV/Home.aspx>). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

262-5  
10-18-05

### UTILITIES (POINT 25 PROJECT)

This is a POINT 25 project and is subject to the provisions of IAC 761-115.25.

100-16  
10-19-10

### TABULATION OF INTERCEPTING DITCHES

Location		Side	Length LF	Remarks
Station to Station				
US 61				
868+25.00	879+00.00	Rt	1111.7	Notes 1, 5
882+50.00	886+00.00	Lt	385.2	Note 2
934+00.00	941+00.00	Lt	748.8	Notes 3, 4
IA 92 Ramp D				
4557+75.00	4568+25.00	Rt	1111.7	Notes 6, 7
Totals:			3357.4	
Notes:				
1. Length includes 36.7 ft of grass-seeded flumes				
2. Length includes 35.2 ft of grass-seeded flumes				
3. Length includes 48.8 ft of grass-seeded flumes				
4. Place intercepting ditch dike right at cut line from 936+00 to 939+50				
5. Connect with intercepting ditch for IA 92 Ramp D at 868+25				
6. Length includes 61.7 ft of grass-seeded flumes				
7. Connect with intercepting ditch for US 61 at 4568+25				

100-22  
08-01-08

### SPECIAL DITCH CONTROL AND SLOPE PROTECTION

No.	Location			L FT	W FT	No. Squares	Remarks
	Begin Station	End Station	Side				
Slope Protection	890+54		Lt.	41.0	8.0	3.3	Slope Protection 1065.5 feet from Centerline (See MIT Sheets)
	891+21		Lt.	147.5	16.0	23.6	Slope Protection 831.5 feet from Centerline (See MIT Sheets)
	891+59		Lt.	25.0	8.0	2.0	Slope Protection 626.1 feet from Centerline (See MIT Sheets)
	TOTAL					28.9	
Special Ditch Control	762+00	786+00	Rt.	2400.0	16.0	384.0	Special Ditch Control
	762+00	786+00	Lt.	2400.0	16.0	384.0	Special Ditch Control
	835+00	841+00	Rt.	600.0	16.0	96.0	Special Ditch Control
	835+00	841+00	Lt.	600.0	16.0	96.0	Special Ditch Control
	905+00	913+00	Rt.	800.0	16.0	128.0	Special Ditch Control
	906+00	914+00	Lt.	800.0	16.0	128.0	Special Ditch Control
	919+00	927+50	Rt.	850.0	16.0	136.0	Special Ditch Control
	919+00	927+50	Lt.	850.0	16.0	136.0	Special Ditch Control
	928+00	951+00	Rt.	2300.0	16.0	368.0	Special Ditch Control
	928+00	951+00	Lt.	2300.0	16.0	368.0	Special Ditch Control
	TOTAL					2224.0	
TRM Type 2	841+00	844+00	Rt.	300.0	16.0	48.0	TRM Type 2
	841+00	844+00	Lt.	300.0	16.0	48.0	TRM Type 2
	887+00	900+00	Rt.	300.0	16.0	48.0	TRM Type 2
	887+00	900+00	Lt.	300.0	16.0	48.0	TRM Type 2
	TOTAL					192.0	

\* Design shown for mandatory locations is the minimum allowed.

**ROCK DITCH CHECKS/DITCHES/FLUMES/SPLASH BASINS/SLOPE PROTECTION**

Refer to Typical 4401, 4402, 4403, 4404, and 4405

Location		Type							Material			Remarks		
Road Identification	Station	Side	Mandatory* Location (yes or no)	Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection	L	W	Erosion Stone		Class E Revetment	Eng. Fabric
		Lt./Rt.									TON		TON (Note1)	SY
US 61	795+99.18	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	807+20.00	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	828+25.00	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	832+75.00	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	841+00.00	Lt.	No		X				320.0	4.0		384.0	521.6	
US 61	841+50.00	Rt.	No		X				200.0	4.0		240.0	326.0	
US 61	844+31.00	Lt.	Yes				X		20.0	20.0		48.0	62.2	
US 61	860+40.00	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	873+70.56	Lt.	Yes				X		15.0	15.0		27.0	21.7	
US 61	886+80.00	Lt.	Yes		X				200.0	4.0		240.0	326.0	
US 61	887+10.00	Rt.	Yes		X				125.0	4.0		150.0	203.8	
US 61	888+55.00	Rt.	Yes		X				145.0	4.0		174.0	236.4	
US 61	888+86.00	Lt.	Yes				X		15.0	15.0		27.0	21.7	
US 61	889+00.00	Lt.	Yes		X				160.0	4.0		192.0	260.8	
US 61	898+00.00	Lt.	No		X				230.0	4.0		276.0	374.9	
US 61	927+34.58	Lt.	Yes				X		20.0	20.0		48.0	62.2	
US 61	927+74.28	Rt.	Yes				X		20.0	20.0		48.0	62.2	
US 61	953+80.00	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	972+98.29	Lt.	No				X		10.0	10.0		12.0	20.0	
US 61	1010+44.60	Lt.	Yes				X		30.0	30.0		108.0	126.7	
IA 92 Ramp B	2543+50.00	Rt.	No		X				10.0	4.0		12.0	16.3	
IA 92 Ramp B	2543+80.00	Rt.	No		X				90.0	4.0		108.0	146.7	
IA 92 Ramp C	3544+80.00	Lt.	No		X				430.0	4.0		516.0	700.9	
IA 92 Ramp D	4567+82.00	Rt.	No				X		10.0	10.0		12.0	20.0	
170th St. Ramp A	5578+87.00	Lt.	No				X		10.0	10.0		12.0	20.0	
170th St. Ramp B	6551+18.00	Rt.	No				X		10.0	10.0		12.0	20.0	
170th St. Ramp C	7553+05.00	Lt.	No				X		10.0	10.0		12.0	20.0	
170th St. Ramp D	8576+36.00	Rt.	No				X		10.0	10.0		12.0	20.0	
Totals:					10		18					2742.0	3710.1	
Notes:														
1. Class E Revetment tonnage calculated a														
2. For ramp gore drain outlet														



100-14 10-15-13		
SILT BASINS Refer to EW-403		
Location Station	Side	Remarks
US 61		
756+75.00	Lt.	
795+70.00	Lt.	
796+30.00	Lt.	
806+90.00	Lt.	
807+55.00	Lt.	
827+90.00	Lt.	
827+90.00	Rt.	
828+60.00	Lt.	
828+60.00	Rt.	
832+45.00	Lt.	
832+45.00	Rt.	
833+10.00	Lt.	
833+10.00	Rt.	
843+35.00	Rt.	
843+97.00	Lt.	
844+05.00	Rt.	
844+65.00	Lt.	
873+40.00	Lt.	
874+10.00	Lt.	
874+33.00	Rt.	
875+00.00	Rt.	
888+10.00	Rt.	
888+55.00	Lt.	
888+80.00	Rt.	
889+20.00	Lt.	
927+00.00	Lt.	
927+40.00	Rt.	
927+70.00	Lt.	
928+06.00	Rt.	
1010+12.00	Lt.	
1010+90.00	Lt.	
1039+45.00	Lt.	
145th St.		
2804+20.00	Lt.	
2804+20.00	Rt.	
2804+75.00	Lt.	
2804+75.00	Rt.	
2808+20.00	Lt.	
2808+20.00	Rt.	
2808+75.00	Lt.	
2808+75.00	Rt.	
170th St.		
8959+25.00	Lt.	
8959+25.00	Rt.	
175th St.		
9993+55.00	Rt.	
9993+75.00	Lt.	
9994+25.00	Rt.	
9994+45.00	Lt.	
9998+65.00	Rt.	
9998+75.00	Lt.	
9999+30.00	Rt.	
IA 92 Ramp A		
1557+10.00	Lt.	

100-14 10-15-13		
SILT BASINS Refer to EW-403		
Location Station	Side	Remarks
1557+35.00	Rt.	
1560+10.00	Rt.	
1560+20.00	Lt.	
1560+70.00	Rt.	
1560+80.00	Lt.	
1564+85.00	Lt.	
IA 92 Ramp C		
3555+65.00	Lt.	
170th Ramp A		
5572+80.00	Rt.	
5573+30.00	Lt.	
5573+45.00	Rt.	
170th Ramp B		
6553+60.00	Rt.	
6554+20.00	Rt.	
170th Ramp C		
7553+65.00	Lt.	
7554+25.00	Lt.	
Totals:	64 silt basins	

100-17 04-20-10				
TABULATION OF SILT FENCES Refer to EC-201				
Location		Side	Length LF	Remarks
Begin Station	End Station			
145th St.				
2820+87.00	2822+39.00	RT	230.0	No Ditch
170th St.				
8959+00.00	8960+88.00	LT	220.0	No Ditch
8968+82.00	8970+20.00	RT	150.0	No Ditch
IA 92 Ramp A				
1561+00.00	1565+00.00	LT	440.0	No Ditch
Totals:			1040.0	

100-18 04-20-10			
TABULATION OF SILT FENCES FOR DITCH CHECKS Refer to EC-201			
Location Station	Side	Length	Remarks
		LF	
U.S. 61			
756+39 - 841+00	LT	1568.0	Est. 28 LF every 150 LF
841+00 - 844+20	LT	224.0	Est. 28 LF every 40 LF
847+50 - 856+13	LT	168.0	Est. 28 LF every 150 LF
856+70 - 886+80	LT	560.0	Est. 28 LF every 150 LF
886+80 - 888+80	LT	224.0	Est. 28 LF every 25 LF
889+00 - 890+60	LT	168.0	Est. 28 LF every 25 LF
890+60 - 898+00	LT	140.0	Est. 28 LF every 150 LF
898+00 - 905+50	LT	532.0	Est. 28 LF every 40 LF
915+00 - 919+00	LT	168.0	Est. 28 LF every 150 LF
919+00 - 927+40	LT	616.0	Est. 28 LF every 75 LF
927+40 - 952+77	LT	952.0	Est. 28 LF every 150 LF
958+50 - 972+58	LT	252.0	Est. 28 LF every 150 LF
979+25 - 985+25	LT	112.0	Est. 28 LF every 150 LF
1000+00 - 1018+00	LT	336.0	Est. 28 LF every 150 LF
1019+25 - 1036+00	LT	308.0	Est. 28 LF every 150 LF
1039+00 - 1053+25	LT	280.0	Est. 28 LF every 150 LF
756+39 - 843+50	MD	2552.0	Est. 44 LF every 150 LF
843+50 - 856+00	MD	748.0	Est. 44 LF every 75 LF
856+00 - 905+50	MD	1452.0	Est. 44 LF every 150 LF
915+00 - 965+00	MD	1452.0	Est. 44 LF every 150 LF
965+00 - 977+50	MD	748.0	Est. 44 LF every 75 LF
977+50 - 985+25	MD	220.0	Est. 44 LF every 150 LF
1000+00 - 1017+50	MD	528.0	Est. 44 LF every 150 LF
1020+00 - 1036+60	MD	484.0	Est. 44 LF every 150 LF
1038+85 - 1053+25	MD	440.0	Est. 44 LF every 150 LF
809+50 - 841+50	RT	588.0	Est. 28 LF every 150 LF
841+50 - 843+60	RT	140.0	Est. 28 LF every 40 LF
847+50 - 856+00	RT	168.0	Est. 28 LF every 150 LF
857+40 - 886+50	RT	532.0	Est. 28 LF every 150 LF
886+50 - 890+00	RT	392.0	Est. 28 LF every 25 LF
890+00 - 896+89	RT	140.0	Est. 28 LF every 150 LF
896+89 - 898+80	RT	84.0	Est. 28 LF every 75 LF
898+80 - 902+00	RT	56.0	Est. 28 LF every 150 LF
915+00 - 919+00	RT	168.0	Est. 28 LF every 150 LF
919+00 - 927+75	RT	672.0	Est. 28 LF every 75 LF
927+75 - 935+00	RT	280.0	Est. 28 LF every 150 LF
935+00 - 937+25	RT	168.0	Est. 28 LF every 75 LF
937+25 - 951+00	RT	504.0	Est. 28 LF every 150 LF
956+80 - 969+96	RT	252.0	Est. 28 LF every 150 LF
976+71 - 985+25	RT	168.0	Est. 28 LF every 150 LF
145th St.			
2803+86 - 2818+30	LT	220.0	Est. 22 LF every 150 LF
2820+75 - 2822+63	LT	22.0	Est. 22 LF every 150 LF
2803+86 - 2818+30	RT	220.0	Est. 22 LF every 150 LF
170th St.			
8959+00 - 8960+75	LT	28.0	Est. 28 LF every 150 LF
8962+00 - 8970+20	LT	140.0	Est. 28 LF every 150 LF
8959+00 - 8961+00	RT	22.0	Est. 22 LF every 150 LF
8962+25 - 8970+20	RT	110.0	Est. 22 LF every 150 LF
175th St.			
9970+20 - 10001+25	LT	462.0	Est. 22 LF every 150 LF
9970+20 - 10001+25	RT	462.0	Est. 22 LF every 150 LF

100-18 04-20-10			
TABULATION OF SILT FENCES FOR DITCH CHECKS Refer to EC-201			
Location Station	Side	Length	Remarks
		LF	
DET61_905			
301+27 - 304+25	LT	56.0	Est. 28 LF every 150 LF
304+25 - 307+00	LT	44.0	Est. 22 LF every 150 LF
304+90 - 306+00	RT	22.0	Est. 22 LF every 150 LF
306+00 - 307+00	RT	66.0	Est. 22 LF every 40 LF
DET61_985			
406+25 - 433+25	LT	396.0	Est. 22 LF every 150 LF
407+19 - 432+76	RT	374.0	Est. 22 LF every 150 LF
US61/ IA 92 Ramp A			
1556+70 - 1570+50	LT	252.0	Est. 28 LF every 150 LF
1557+00 - 1562+30	RT	112.0	Est. 28 LF every 150 LF
US61/ IA 92 Ramp B			
2553+75 - 2556+00	LT	56.0	Est. 28 LF every 150 LF
2543+80 - 2556+30	RT	224.0	Est. 28 LF every 150 LF
US61/ IA 92 Ramp C			
3544+50 - 3549+10	LT	168.0	Est. 28 LF every 75 LF
3549+10 - 3556+00	LT	140.0	Est. 28 LF every 150 LF
3548+70 - 3555+80	RT	140.0	Est. 28 LF every 150 LF
US61/ IA 92 Ramp D			
4557+30 - 4560+40	LT	56.0	Est. 28 LF every 150 LF
4557+20 - 4568+21	RT	196.0	Est. 28 LF every 150 LF
US61/ 170th St. Ramp A			
5566+10 - 5579+25	LT	252.0	Est. 28 LF every 150 LF
5566+10 - 5573+15	RT	140.0	Est. 28 LF every 150 LF
US61/ 170th St. Ramp B			
6558+50 - 6563+90	LT	112.0	Est. 28 LF every 150 LF
6551+00 - 6563+50	RT	224.0	Est. 28 LF every 150 LF
US61/ 170th St. Ramp C			
7552+79 - 7565+80	LT	252.0	Est. 28 LF every 150 LF
7560+10 - 7565+00	RT	84.0	Est. 28 LF every 150 LF
US61/ 170th St. Ramp D			
8564+80 - 8570+40	LT	112.0	Est. 28 LF every 150 LF
8564+20 - 8576+71	RT	224.0	Est. 28 LF every 150 LF
Totals:		24932.0	

100-30 Special			
TABULATION OF TEMPORARY SEDIMENT CONTROL DEVICE			
Location Station	Side	Each	Remarks
US 61			
890+00.00	Rt.	1	
927+00.00	Rt.	1	
927+00.00	Lt.	1	
928+00.00	Lt.	1	
928+00.00	Rt.	1	
Totals:		5	

### ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of unclassified pipe calculated is based on using Corrugated Metal Pipe.

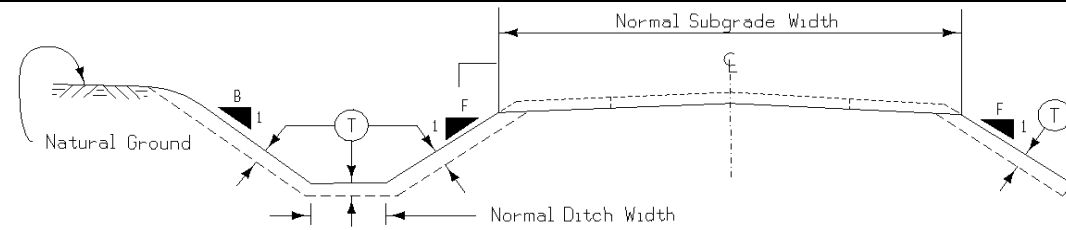
- ① Refer to MI-210
- ② Refer to EW-501.
- ③ Refer to EW-501 or EW-502.

\*Predetermined for access point not constructed with this project.

Station	Side	Type A, B, C, Safety Ramp, or Predetermined*	Length of Opening ①			W	PR ① ②	SR ②	Pipe Culvert ③					Aprons No.	Driveway Surface Area		Driveway Surfacing Material TON	Remarks
			Case 1 or 2	1 1/2" Dropped Curb LF	3" Dropped Curb LF				H	Size IN	Pipe Length LF	Lt. LF	Rt. LF		HMA SY	PCC SY		
US 61 776+49.00	LT	C				24.0	15.0	0.0	4.8	18.0	108.0	59.0	49.0	2			85.3	
776+49.00	Med.	C				24.0	41.0	0.0									119.4	
789+83.00	LT	C				24.0	0.0	0.0	5.1	18.0	112.0	54.0	58.0	2			91.5	Joint Entrance
789+83.00	Med.	C				24.0	15.0	0.0									72.3	Note 3
803+10.00	LT	C				24.0	0.0	0.0									87.2	Joint Entrance
803+10.00	Med.	C				24.0	15.0	0.0	3.2	18.0	100.0	53.0	47.0				114.0	Note 3
Note 2	LT	C				24.0	15.0	0.0	5.3	18.0	116.0	60.0	56.0	2			93.9	
Note 2	Med.	C				24.0	15.0	0.0									93.5	Note 1
170th St. 8971+35.00	RT	C				20.0	0.0	0.0									44.4	Joint Entrance
175th St. 9986+06.00	RT	C				24.0	15.0	0.0	0.6	18.0	38.0	18.0	18.0	2			28.7	
Existing 61 829+44	LT	C				24.0	15.0	0.0									68.7	Joint Entrance
<b>Totals:</b>											474.0			8			899.0	

- Notes:
- Refer to Tab. 104-3 for Pipe Culvert information
  - Sta. 2042+70 (US 61 NB TIE) = Sta. 1042+86 (US 61)
  - Temporary median access point crossing, to remain in place at end of project

### TABULATION OF SPREADING TOPSOIL



Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed herein.

Area No.	Quantity CY	Placement Description					Remarks	Topsoil Excavation Available From		Remarks
		Location Station to Station	Side L. or R.	Slope B. or F.	T IN	Amount Reserved CY		Station to Station		
US 61 SB	25769.5	756+39.00 - 905+50.00	L.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
US 61 SB	13354.9	915+00.00 - 985+25.00	L.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
US 61 SB	1512.1	1000+00.00 - 1017+50.00	L.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
US 61 SB	1965.9	1020+00.00 - 1036+25.00	L.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
US 61 SB	2462.7	1039+00.00 - 1053+25.00	L.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
US 61 NB	17584.7	809+50.00 - 902+00.00	R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
US 61 NB	14569.0	915+00.00 - 985+25.00	R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
145th St.	3330.3	2803+75.00 - 2823+02.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
170th St.	967.8	8959+00.00 - 8970+20.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
170th St.	218.7	8970+20.00 - 8971+35.03	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
175th St.	4650.7	9971+35.03 - 10001+25.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
DET61_905	255.8	301+26.75 - 304+55.63	L. & R.	B. & F.	4.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
DET61_985	20.7	406+25.00 - 406+65.05	L.	B. & F.	4.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
DET61_985	515.9	433+27.32 - 438+24.79	L. & R.	B. & F.	4.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
IA92 Ramp A	2613.9	1556+75.00 - 1570+50.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
IA92 Ramp B	1762.7	2543+50.00 - 2556+25.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
IA92 Ramp C	2320.6	3544+81.00 - 3556+00.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
IA92 Ramp D	3680.9	4557+00.00 - 4568+21.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
170th St. Ramp A	2808.0	5565+71.00 - 5579+25.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
170th St. Ramp B	2267.4	6551+00.00 - 6564+12.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
170th St. Ramp C	2943.2	7552+79.00 - 7565+89.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
170th St. Ramp D	1984.6	8563+95.00 - 8576+71.00	L. & R.	B. & F.	8.0	Quantity includes 40% shrinkage			Refer to T Sheets for available topsoil.	
<b>Totals:</b>	107560.2									





**GRADING FOR GUARDRAIL INSTALLATIONS**

① Lane(s) to which the installation is adjacent.

Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	① Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	
1	NB (Temp)	855+45.21	RT	6:1	27.5	5.0						77.7	7.2	48.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
2	NB	855+52.10	LT	6:1	27.4	5.0	114.1	13.6				169.5	15.9	80.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
3	NB	855+54.89	RT	6:1	27.4	5.0	52.1	7.5	142.2	7.5	195.3	9.5	57.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities	
4	SB	857+51.41	RT	6:1	27.3	5.0	64.2	8.7	128.0	8.7	182.8	10.8	61.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities	
5	SB	857+54.21	LT	6:1	27.3	5.0	114.1	13.6				169.4	15.9	80.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
6	NB	963+67.16	RT	6:1	27.4	5.0	52.1	7.5	139.8	7.5	195.3	9.7	57.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities	
7	NB	963+77.87	LT	6:1	27.3	5.0	114.0	13.7				169.6	15.9	80.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
8	NB (Temp)	963+96.63	RT	6:1	27.5	5.0						77.7	7.2	48.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
9	SB	966+02.57	LT	6:1	27.3	5.0	114.2	13.9				169.9	16.1	80.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
10	SB	966+13.28	RT	6:1	27.5	5.0	52.0	7.5	139.8	7.5	195.3	9.7	57.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities	
11	NB (Temp)	1036+57.40	RT	6:1	27.5	5.0						77.7	7.2	48.0		Refer to T Sheets for Guardrail Grading Earthwork Quantities
12	SB	1038+50.83	RT	6:1	27.4	5.0	126.6	15.0				183.7	14.3	83.1		Refer to T Sheets for Guardrail Grading Earthwork Quantities
13	SB	1038+61.55	LT	6:1	27.4	5.0	52.1	7.5	139.8	7.5	186.2	9.4	56.9		Refer to T Sheets for Guardrail Grading Earthwork Quantities	

**LIST OF FIELD TILE WORK**

Refer to Standard Road Plan RF-19B

\* Not a bid item

Location			Pipe			Connected Pipe Joints (RF-14)*	Trench Drain	Granular Material	Porous Backfill*	Class "A" Crushed Stone*	Remarks
No.	Station to Station	Type of Installation	Concrete C.M.P., C.M.P. Coated, or Plastic	Dia.	Length						
SD1	9986+21.00	9999+78.00	New pipe	Plastic	12.0	1265					Refer to U Sheets.
SD2	9986+21.00		Cap existing tile								Incidental
SD3	9987+47.00		Cap existing tile								Incidental
SD4	9989+47.00		Cap existing tile								Incidental
SD5	9991+52.00		Cap existing tile								Incidental
SD6	9993+38.00		Connect exist. to prop.								Incidental
SD7	9994+47.00		Cap existing tile								Incidental
SD8	9995+90.00		Cap existing tile								Incidental
SD9	9996+81.00		Cap existing tile								Incidental
SD10	9999+45.00		Cap existing tile								Incidental
SD11	9999+78.00		Connect prop. to exist.								Incidental
Totals:						1265					

**SAFETY CLOSURES**

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
US 61			
756+39.00		1	At begin grading SB lanes
776+37.24	1		At entrance
776+61.00	1		At entrance
789+71.00	1		At entrance
789+95.00	1		At entrance
802+98.00	1		At entrance
803+22.00	1		At entrance
809+50.00		1	At begin grading NB lanes
819+40.21	2		At 145th St.
819+60.21	2		At 145th St.
855+53.81		1	At S end IA 92 SB bridge
855+61.50		1	At S end IA 92 NB bridge
857+44.80		1	At N end IA 92 SB bridge
857+52.49		1	At N end IA 92 NB bridge
902+00.00		1	At stop grading NB lanes
905+50.00		1	At stop grading SB lanes
915+00.00		2	At resume grading NB/SB
963+82.62		1	At S end 170th NB bridge
964+12.10		1	At S end 170th SB bridge
965+71.45		1	At N end 170th NB bridge
966+00.93		1	At N end 170th SB bridge
985+25.00		2	At stop grading NB/SB
1000+00.00		1	At resume grading SB lanes
1017+50.00	1		At stop grading SB lanes
1020+00.00	1		At resume grading SB lanes
1036+72.86		1	At S end DM&E RR bridge
1038+46.09		1	At N end DM&E RR bridge
1042+74.00	1		At entrance
1042+98.00	1		At entrance
1053+25.00		1	At end grading SB lanes
IA 92 Ramp A			
1556+75.00	1		At ramp terminal
IA 92 Ramp B			
2556+25.00	1		At ramp terminal
IA 92 Ramp C			
3556+00.00	1		At ramp terminal
IA 92 Ramp D			
4557+00.00	1		At ramp terminal
170th St.			
8959+00.00	1		
8971+00.00	1		
Totals:	20	20	

**CULVERT ABANDONMENT**

Refer to Details 4315 and 4316

\* Not a bid item

Location Station	Description	Fill Material		4" Perforated Subdrain*	Remarks
		Flowable Mortar	Granular Backfill*		
		CY	TON	LF	
US 61					
796+53.2	36" circular X 109' with extensions of 3 X 2 X 59.3 RCB	31.8	0.4	8.0	Note 1
Totals:		31.8	0.4	8.0	
Notes:					
1. Field verify type and size of existing culvert. Quantities based on 36" circular x 125' pipe.					

**SUMMARY OF WICK DRAINS OR SAND DRAIN FIELDS**

\* Not a bid item.

Location		Sand Drains		Wick Drains		Horizontal Strip Drain		Sand Blanket Granular Material (Note 1)	Drain RF-19A Type 2 (Note 2)	Porous Backfill*	Outlets			Remarks
Station to Station	Number of Drains*	Total Length	Number of Drains*	Total Length	Longitudinal	Transverse	RF-19E				RF-19F	NO.	TYPE	
		LF		LF	LF	LF	CY	LF	CY					
854+75	855+73	70	1890				385	132			A	2	US 61 SB, see sheet Q.42, includes area with points A,B,C, and D.	
857+28	858+21	64	1344				352	135			A	2	US 61 SB, see sheet Q.42, includes area with points E,F,G, and H.	
854+82	855+80	69	1863				381	136			A	2	US 61 NB, see sheet Q.43, includes area with points I,J,K, and L.	
857+33	858+28	66	1386				362	125			A	2	US 61 NB, see sheet Q.43, includes area with points M,N,O, and P.	
961+92	964+33	80	2224				778	281			A	2	US 61 SB, see sheet Q.44, includes area with points A,B,C,D,E, and F.	
965+74	968+18	81	2259				788	267			A	2	US 61 SB, see sheet Q.44, includes area with points G,H,I,J,K, and L.	
961+62	964+04	80	2224				783	269			A	2	US 61 NB, see sheet Q.45, includes area with points M,N,O,P,Q, and R.	
965+44	967+88	81	2259				786	279			A	2	US 61 NB, see sheet Q.45, includes area with points S,T,U,V,W, and X.	
Totals		590	15449				4615	1623				16		

NOTE: Sand Blanket and Drains are listed here rather than on Tab 104-5C

Note 1: Limits of the sand blanket extend 4 feet beyond the sand drain area. See sheets Q.42-Q.45 for more details.

Note 2: Length of the sand blanket drain may vary at the time of construction, use 4" diameter pipe. See sheets Q.42-Q.45 for proposed limits and outlet locations.

**LIST OF SUBDRAIN WORK**

Refer to Standard Road Plans RF-3, RF-5, RF-14, RF-19A, RF-19B, RF-19C, RF-19E and RF-19F

\* Not a bid item

Location		Pipe			Aprons		Outlets			Connected Pipe Joints (RF-14)*	Trench Drain	Granular Material	Porous Backfill*	Class "A" Crushed Stone*	Remarks
No.	Station to Station	Type of Installation	Concrete C.M.P., C.M.P. Coated, or Plastic	Dia.	Length	RF-3	RF-5	RF-19E	RF-19F						
				IN	LF	No.	No.	No.	Type	No.	Type	LF			
1	795+51.82	796+52	Working Blanket												Working Blanket-See sheet Q.4 and Q.5
2	843+33.5	845+13.4	Working Blanket												Working Blanket-See sheet Q.8, Q.9, Q.35 and Q.36.
3	873+00	874+76.59	Working Blanket												Working Blanket-See sheet Q.10 and Q.11.
4	888+19.38	889+30.29	Working Blanket												Working Blanket-See sheet Q.10 and Q.11.
5	912+62	913+45.85	Working Blanket												Working Blanket-See sheet Q.12 and Q.13.
6	927+20	928+63.9	Working Blanket												Working Blanket-See sheet Q.12 and Q.13.
7	952+99.98	954+15.73	Working Blanket												Working Blanket-See sheet Q.14, Q.15, and Q.40.
Totals															

**GEOTECHNICAL DESIGN**



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *Robert Stanley* Date: 6-2-14

Printed or Typed Name: Robert L. Stanley

\* license renewal date is December 31, 2014

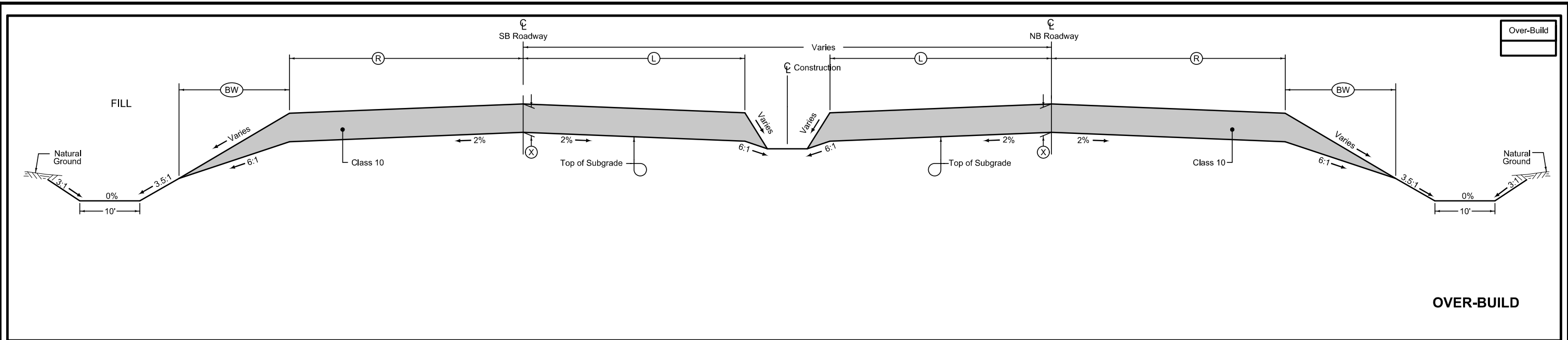
Pages or sheets covered by this seal: CS.1-CS.3, Q.1-Q.45



SETTLEMENT PLATES			103-5 10-15-13
Refer to Standard Road Plan EW-212			
No.	Location		Remarks
	Station	Offset	
1	854+25	-75.0	
2	855+22	-35.0	
3	857+76	-75.0	
4	858+71	-35.0	
5	854+32	35.0	
6	855+29	75.0	
7	857+83	35.0	
8	858+78	75.0	
9	962+35	-35.0	
10	963+35	-75.0	
11	966+73	-35.0	
12	967+73	-75.0	
13	962+06	75.0	
14	963+06	35.0	
15	966+45	75.0	
16	967+45	35.0	

EMBANKMENT WITH MOISTURE CONTROL	103-6 04-19-11
Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below.	
Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.	

SHRINKAGE DATA			103-7 08-01-08
Material	%	Remarks	
Entire Project	30%		
Topsoil	40%		
Boulder Estimate		100 Cu. Yds.	



LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	(R)	(L)	(X)	(BW)	
		Feet	Feet	Inches	Feet	
US 61 (SB)	852+25.00	852+50.00	38.5	36.6	Transition	15.0
	852+50.00	854+52.00	38.5	36.6	10	15.0
	854+52.00	854+77.00	38.5	36.6	Transition	15.0
	858+21.00	858+46.00	38.5	36.6	Transition	15.0
	858+46.00	864+00.00	38.5	36.6	10	15.0
	864+00.00	864+25.00	38.5	36.6	Transition	15.0
	956+25.00	956+50.00	38.5	36.6	Transition	15.0
	956+50.00	963+10.00	38.5	36.6	10	15.0
	963+10.00	963+35.00	38.5	36.6	Transition	15.0
	966+73.00	966+98.00	38.5	36.6	Transition	15.0
	966+98.00	973+75.00	38.5	36.6	10	15.0
	973+75.00	974+00.00	38.5	36.6	Transition	15.0

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	(R)	(L)	(X)	(BW)	
		Feet	Feet	Inches	Feet	
US 61 (NB)	852+25.00	852+50.00	38.5	36.6	Transition	15.0
	852+50.00	854+59.00	38.5	36.6	10	15.0
	854+59.00	854+84.00	38.5	36.6	Transition	15.0
	858+28.00	858+53.00	38.5	36.6	Transition	15.0
	858+53.00	864+00.00	38.5	36.6	10	15.0
	864+00.00	864+25.00	38.5	36.6	Transition	15.0
	956+25.00	956+50.00	38.5	36.6	Transition	15.0
	956+50.00	962+81.00	38.5	36.6	10	15.0
	962+81.00	963+06.00	38.5	36.6	Transition	15.0
	966+45.00	966+70.00	38.5	36.6	Transition	15.0
	966+70.00	973+75.00	38.5	36.6	10	15.0
	973+75.00	974+00.00	38.5	36.6	Transition	15.0

### SURVEY SYMBOLS

- MIS Miscellaneous
- LIN Miscellaneous Line
- PIP Pipe Culvert
- TIL Tile Line
- OUT Tile Outlet
- IN Storm Sewer Intake
- CUL Culvert
- INB Storm Sewer Beehive Intake
- MM Mile Marker Post
- RRW Railroad Switch
- RRS Railroad Signal
- RRF Railroad Frog
- EB Electrical Box
- BRG Bridge
- GDL Guard Rail Steel
- BB Billboard
- SL Speed Limit Sign
- PPA Power Pole Co. 1
- TA Tower Anchor
- PR Electric Riser Pole
- LUM Luminaire
- MH Utility Access (Manhole)
- SI Sign
- PPC Power Pole Co. 3
- LC Lot Corner
- TEV Evergreen Tree
- TDC Tree Deciduous
- HDG Hedge Row
- SHR Shrub
- HT Electrical Highline Tower
- TPD Telephone Pedestal
- TSG Traffic Signal
- GV Gas Valve
- UV Underground Utility Vault
- FW Wire Fence
- GPR Guard Post (4 or More Posts)
- BLD Building or Foundation
- FCL Chain Link and Security Fence
- BNK Stream Bank
- EP Edge of Paved Roads (ML or SR)
- SNP Unpaved Shoulder
- DIK Centerline of Dike or Dam
- SNK Sink Hole
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- EG Edge of Gravel Road
- ENU Edge Unpaved Entrance & Parking
- SH Paved Shoulder
- ENT Centerline BL of Entrance
- CON Concrete or A/C Slab
- ENP Edge Paved Entrance & Park Lot
- RR Centerline of Railroad Tracks
- EW Edge of Water
- CU Back of Curb
- GU Gutter In Front of Curb
- E1 ELA Underground Electric Line Co. 1
- E2 ELB Underground Electric Line Co. 2
- Overhead Electric Line Co. 1
- T1 TLA Underground Telephone Line Co. 1
- F04 FOD Underground Fiber Optic Co. 4
- G-HP GHA Underground High Pres Gas Co. 1
- F03 FOC Underground Fiber Optic Co. 3
- FO FOA Underground Fiber Optic Co. 1
- BL Topo Breakline
- BLD Building or Foundation
- SWP Swamp or Marsh
- SWK Sidewalk
- WM Wind Mill
- LP L.P. Tank
- TV Satellite TV Dish
- BB Billboard
- FLG Flag Poles
- RET Retaining Walls
- FCL Chain Link and Security Fence
- C Centerline BL of Road (ML or SR)
- FWD Wood Fence
- SHR Shrub
- TER Terrace

### UTILITY LEGEND

- Alliant Energy  
Ann Kreiss  
215 Oak Street  
Muscatine, IA 52761  
563-288-3322  
annkreiss@alliantenergy.com
- Alliant Energy  
Jason Hogan  
4902 N. Billmore Lane  
Madison, WI 53718-2148  
608-458-4871  
jasonhogan@alliantenergy.com
- Eastern Iowa Electric  
Tom Quiram  
PO Box 3003  
Wilton, IA 52778-3003  
563-732-2211  
tom.quiram@easterniowa.com
- Mutual Telephone Co. of Morning Sun  
Mike Pugh  
28 W. Division St  
Morning Sun, IA 52640  
563-571-7979  
mpugh@mutel.com
- MidAmerican Energy Company  
Tom Albertson  
106 East Street  
Davenport, IA 52801  
563-333-8155  
ktalbertson@midamerican.com
- Windstream  
Mike Braughton  
One Martha's Way  
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319-790-7114  
michael.braughton@windstream.com  
michael.braughton@paetec.com
- Windstream Communications of Iowa  
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Mt. Pleasant, IA 52641  
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kelly.a.eggers@windstream.com
- Windstream (Paetec)  
Terry Burke  
403 W. 4th St. N.  
Newton, IA 50208  
641-787-2259  
terry.r.burke@windstream.com

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

LINEWORK	Design Color No.	Description
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING		
Design Color No.	Description	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Future Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading

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

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

### CONVENTIONAL SIGNS

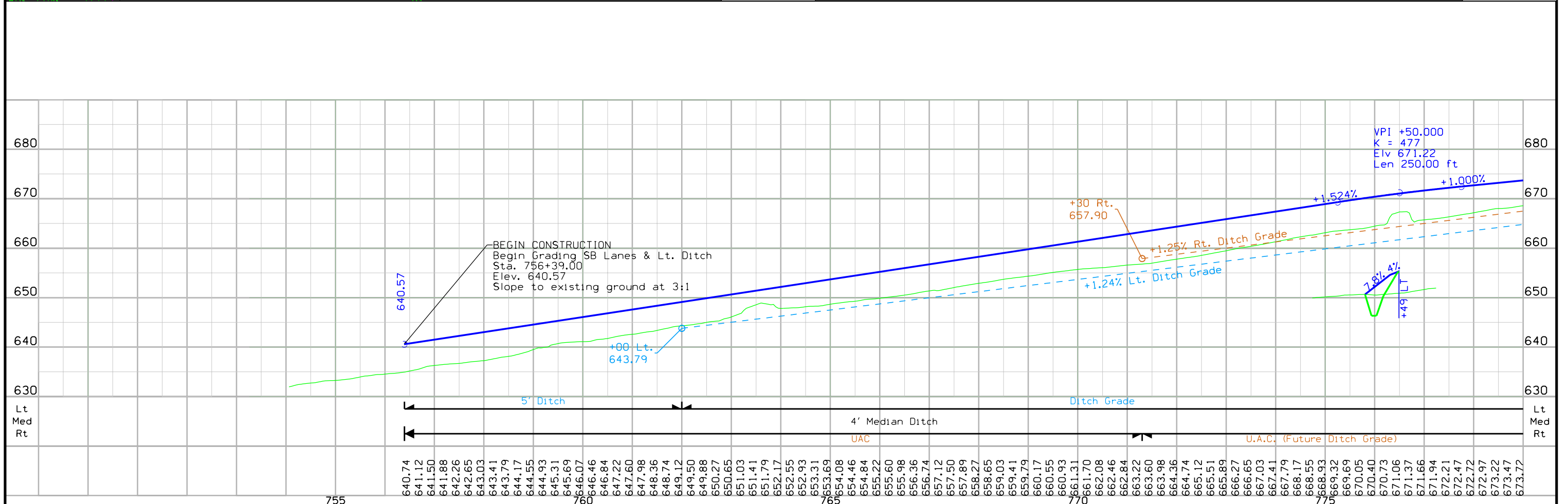
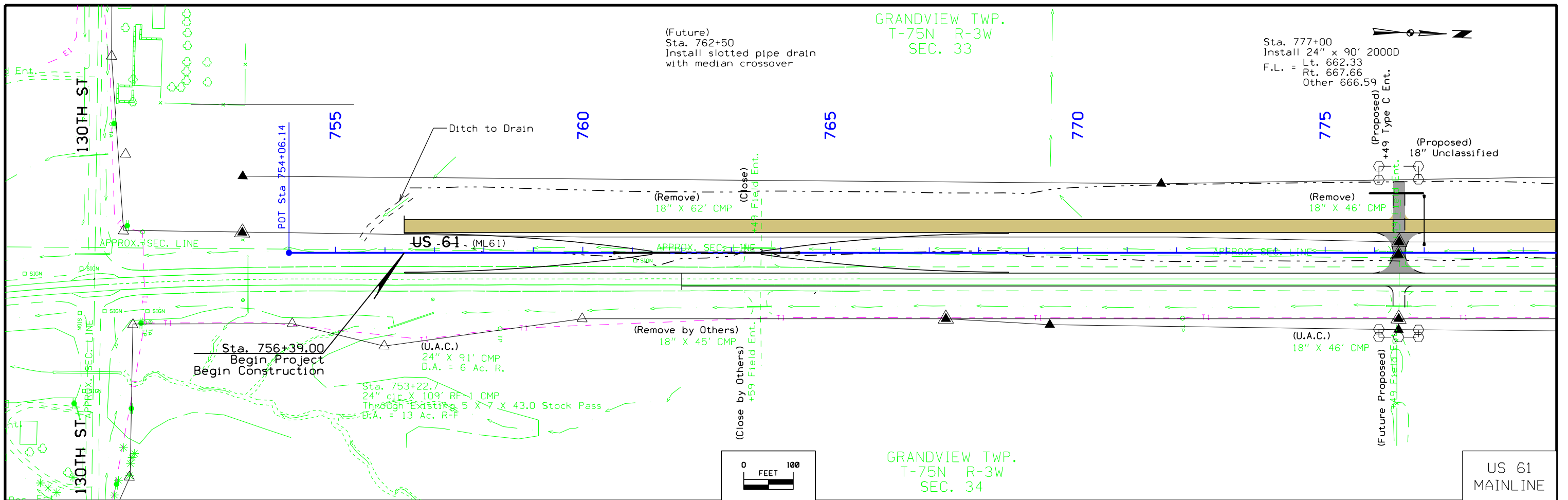
- Reference Point
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Obliterate Roadway (Granular)
- Pavement Removal & Obliterate Roadway

### RIGHT-OF-WAY LEGEND

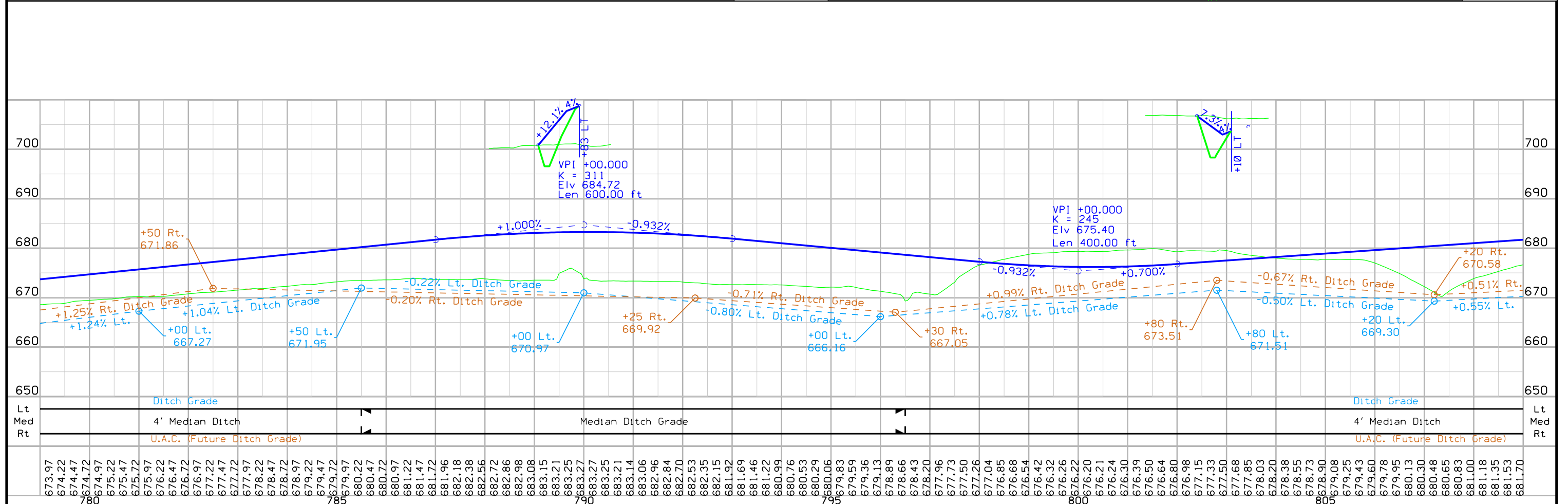
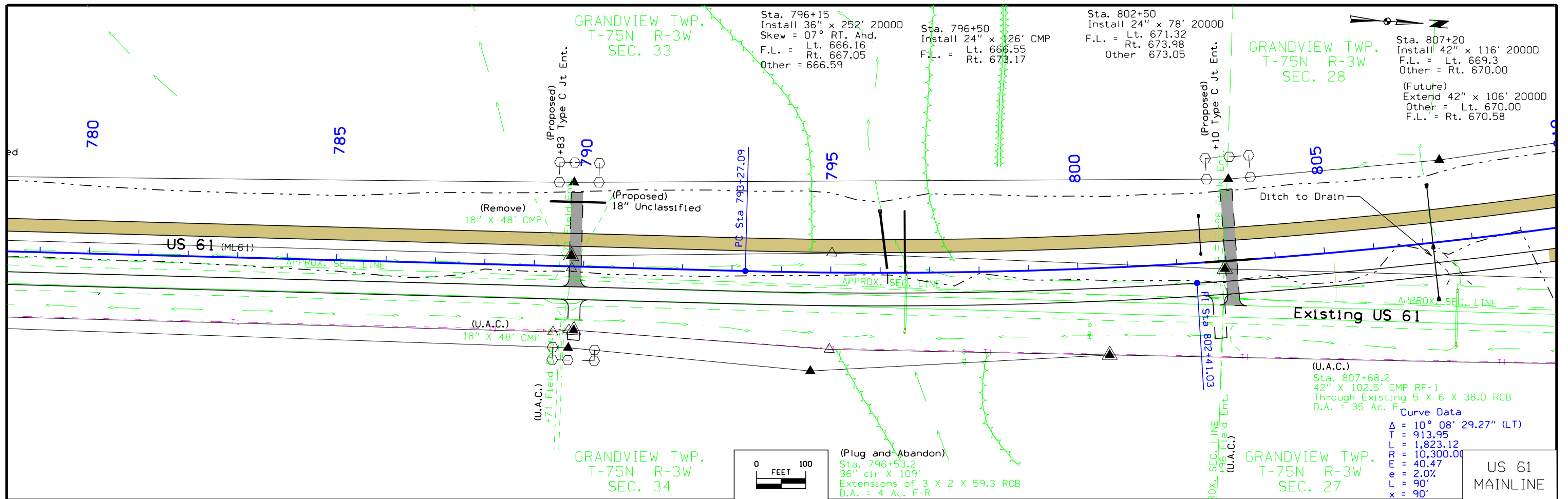
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

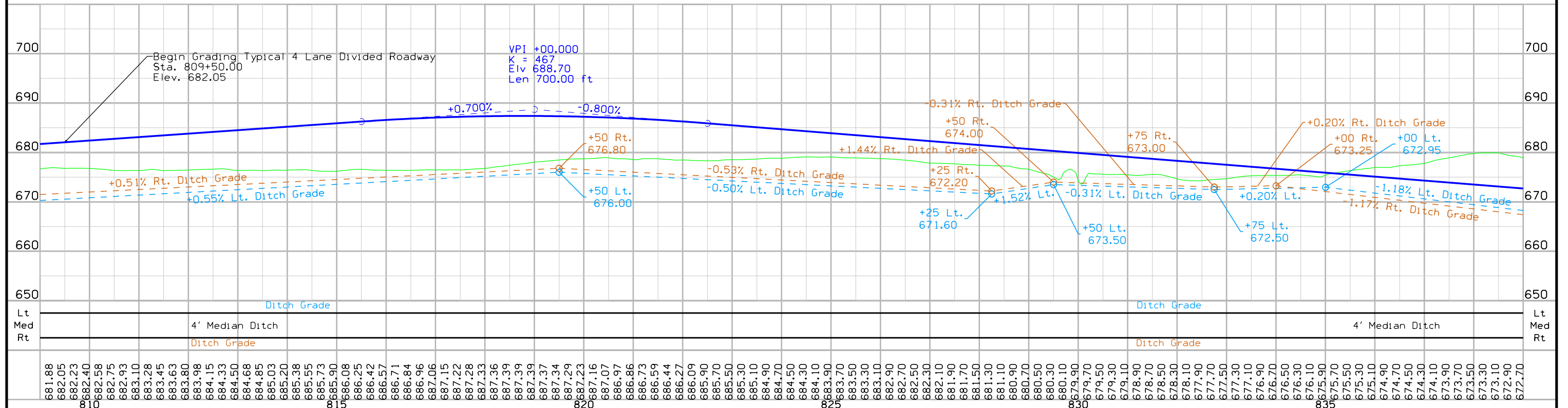
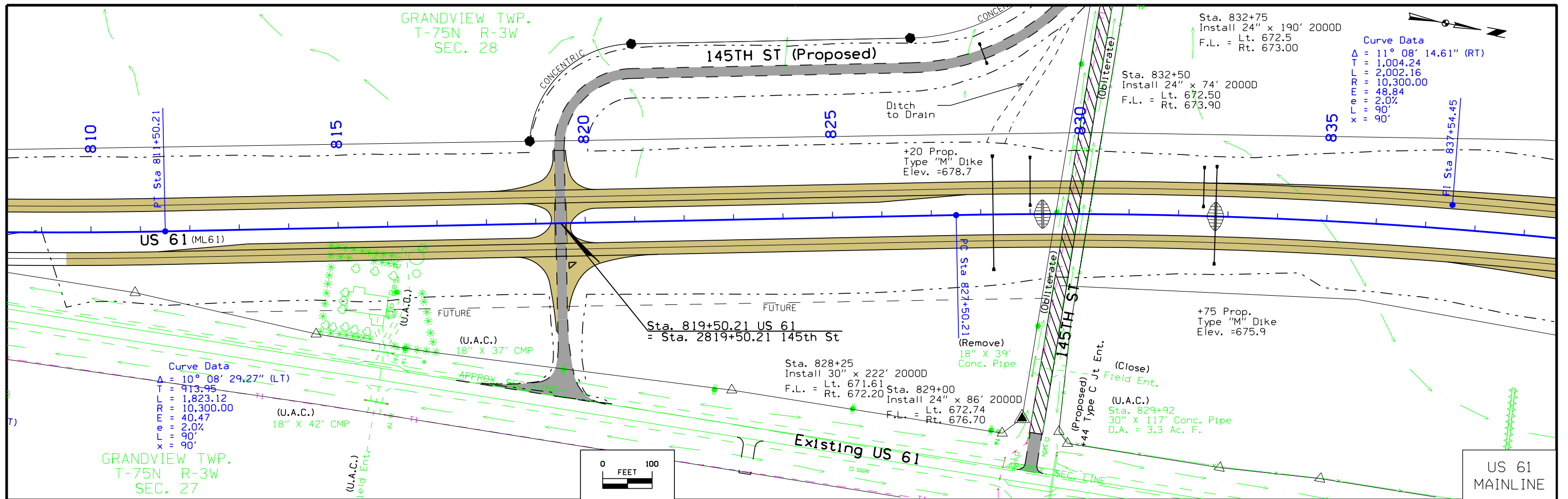
(COVERS SHEET SERIES D, E, F, & K)



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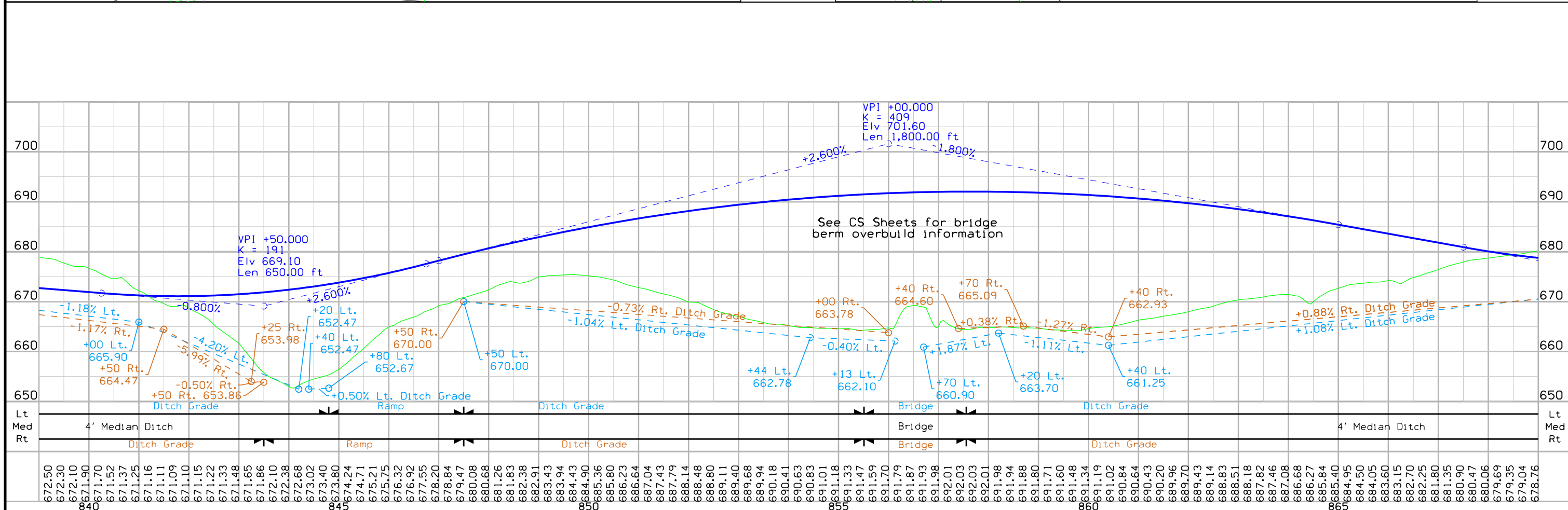
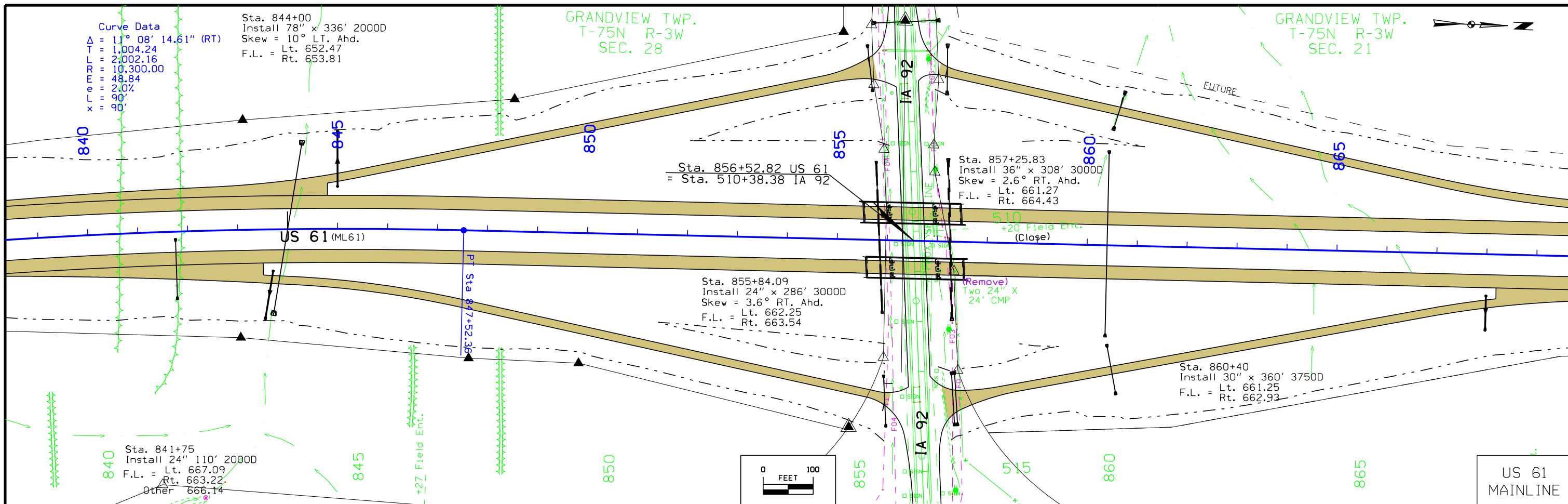


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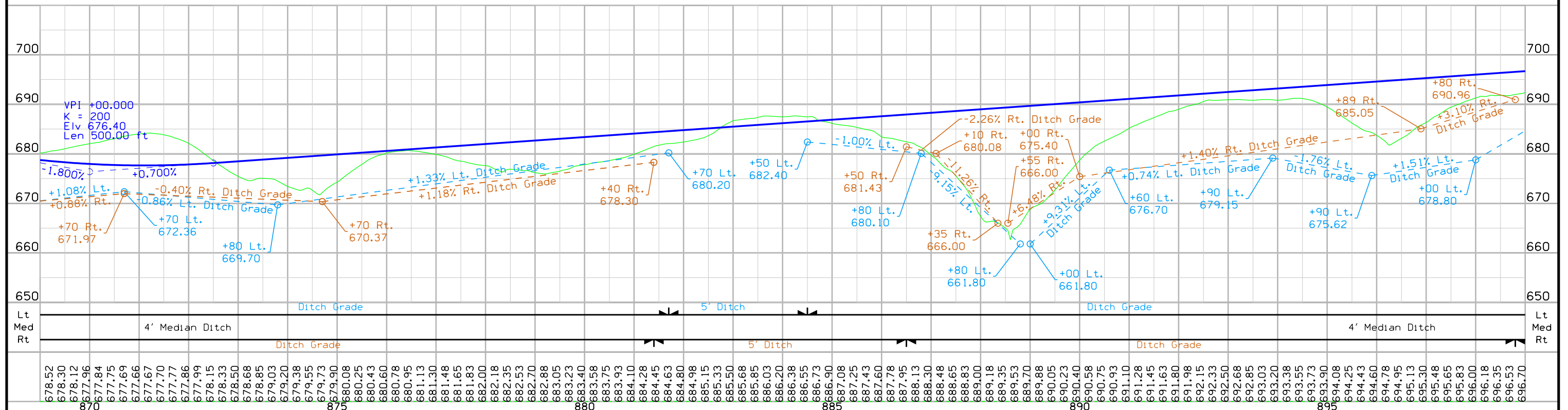
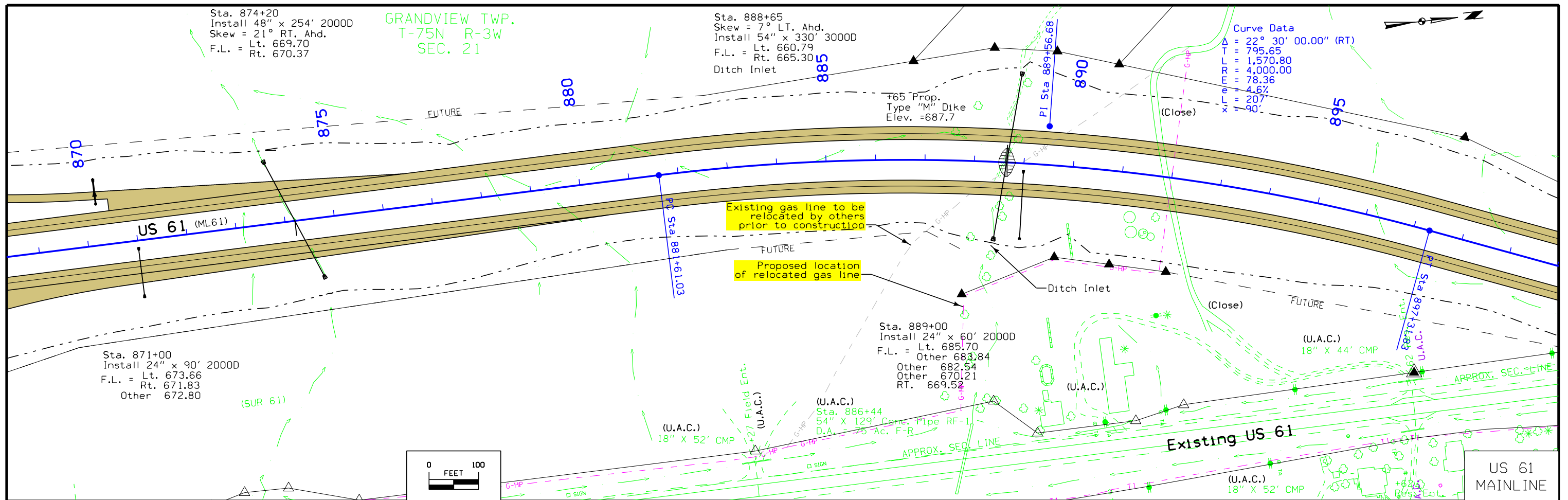


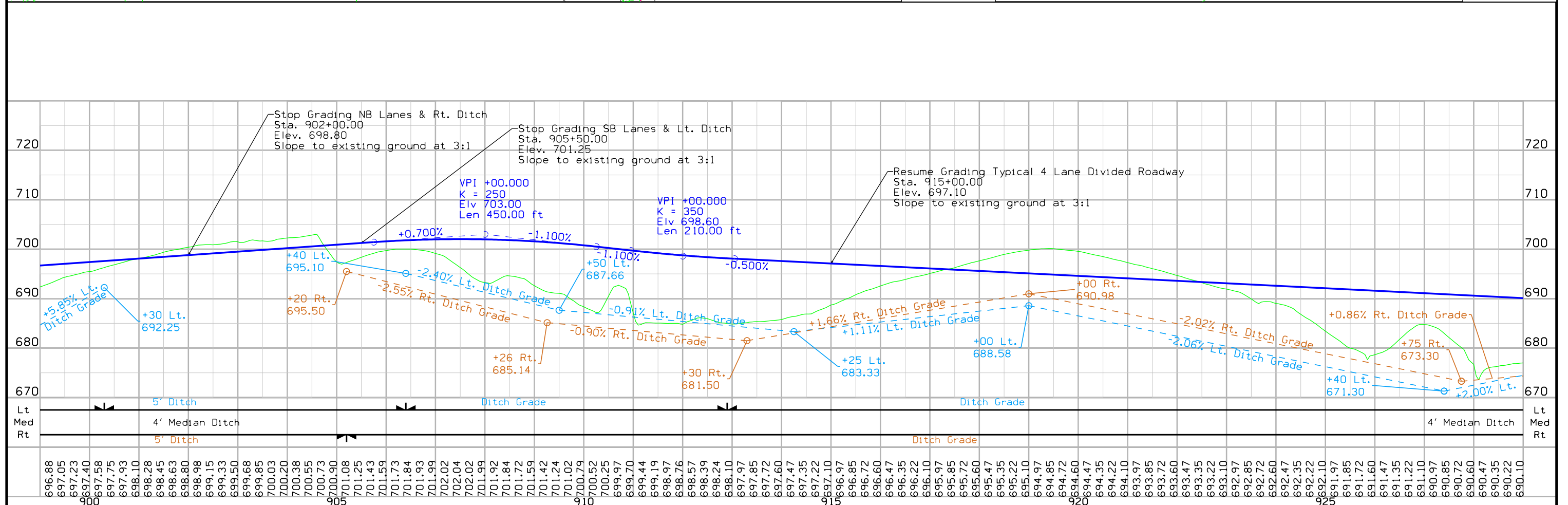
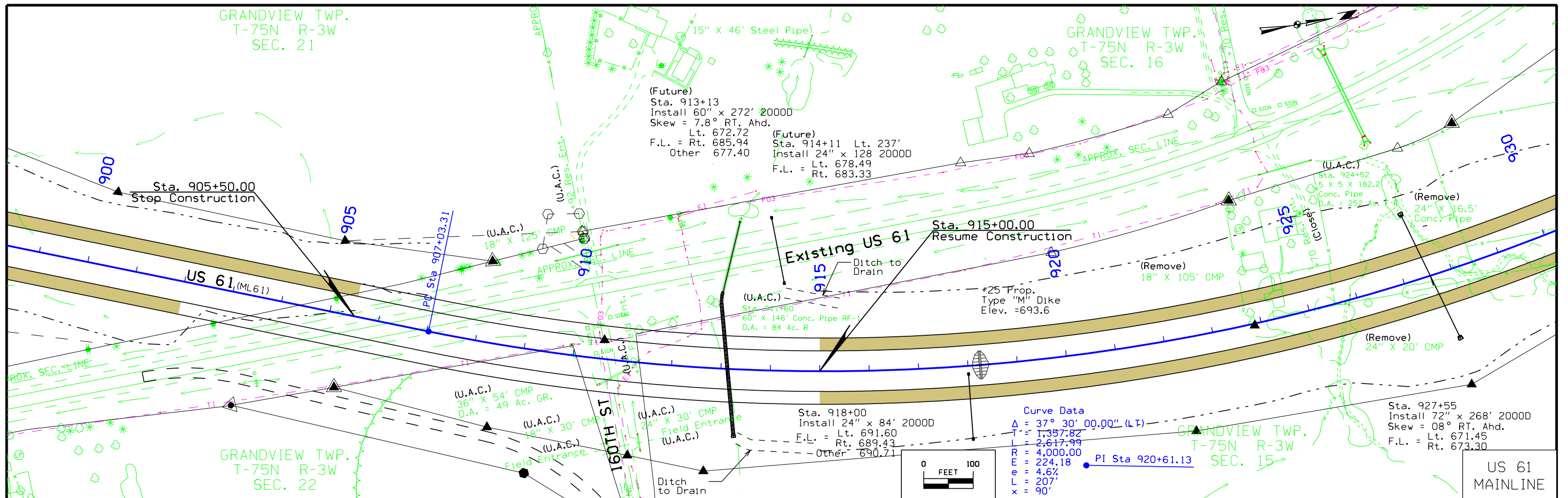
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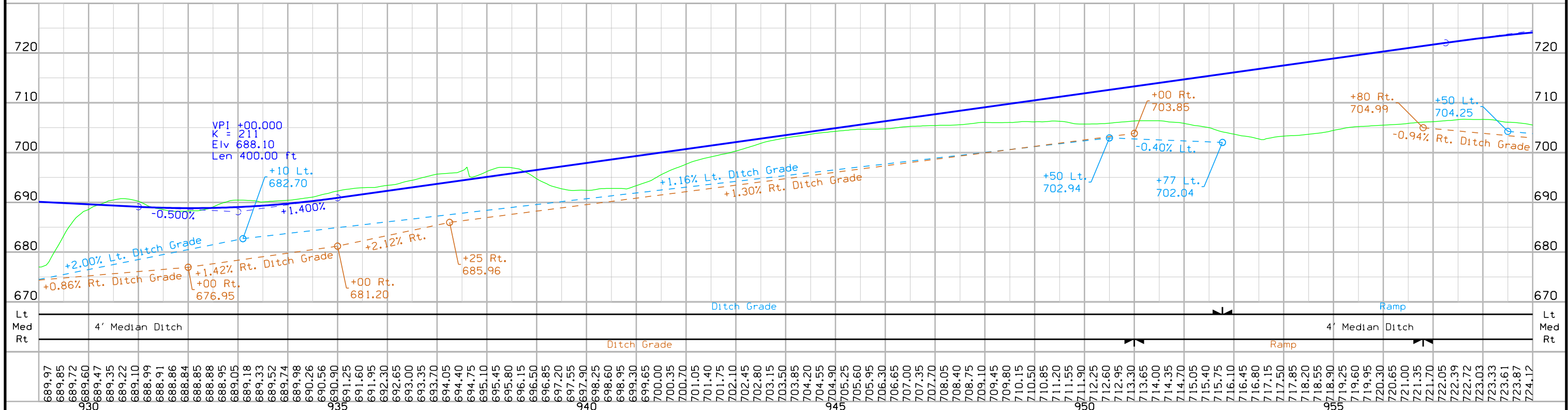
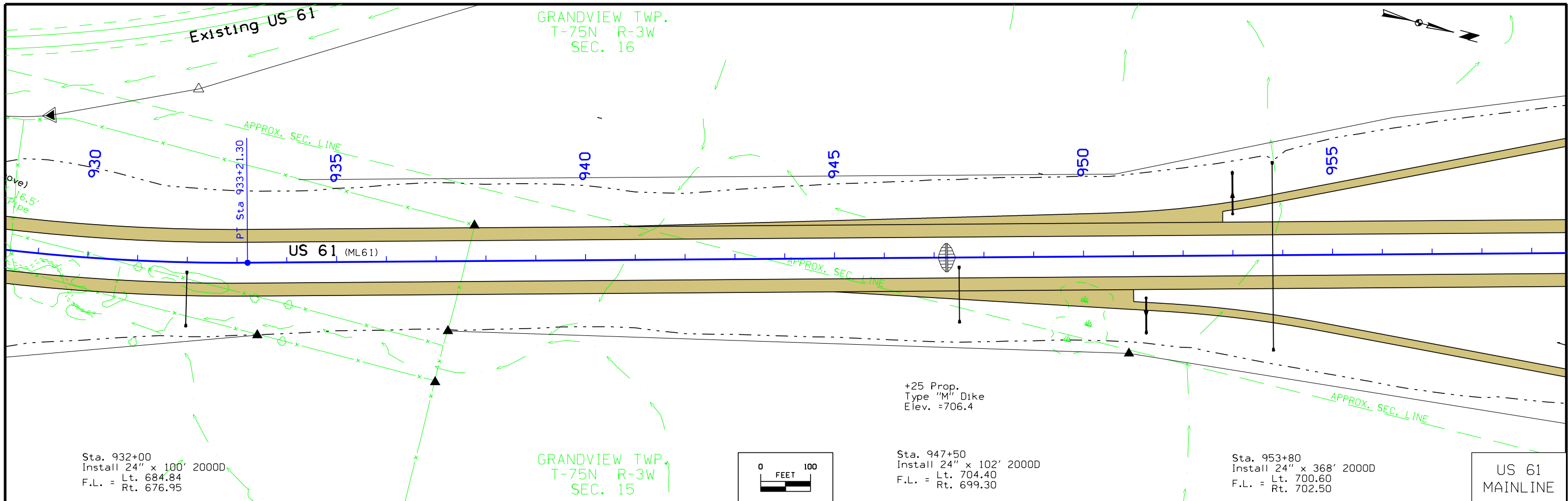




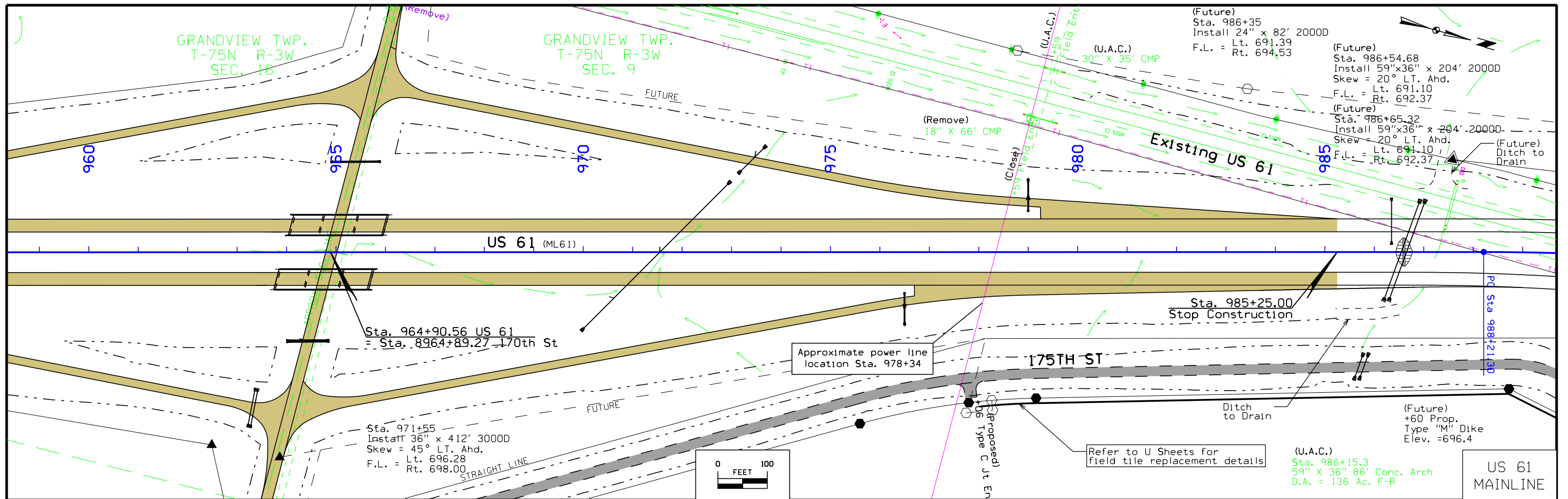




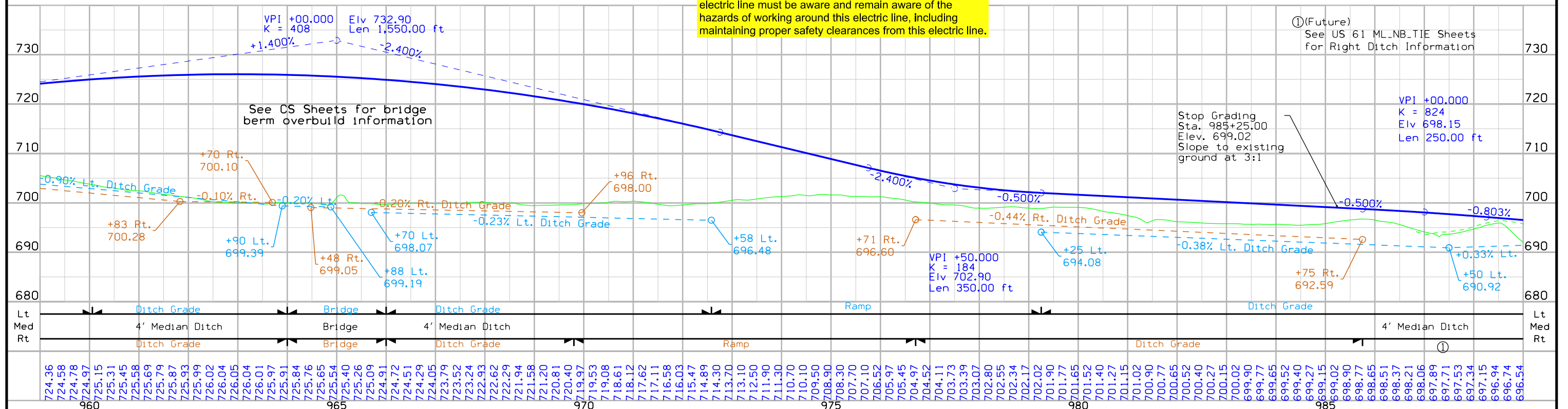
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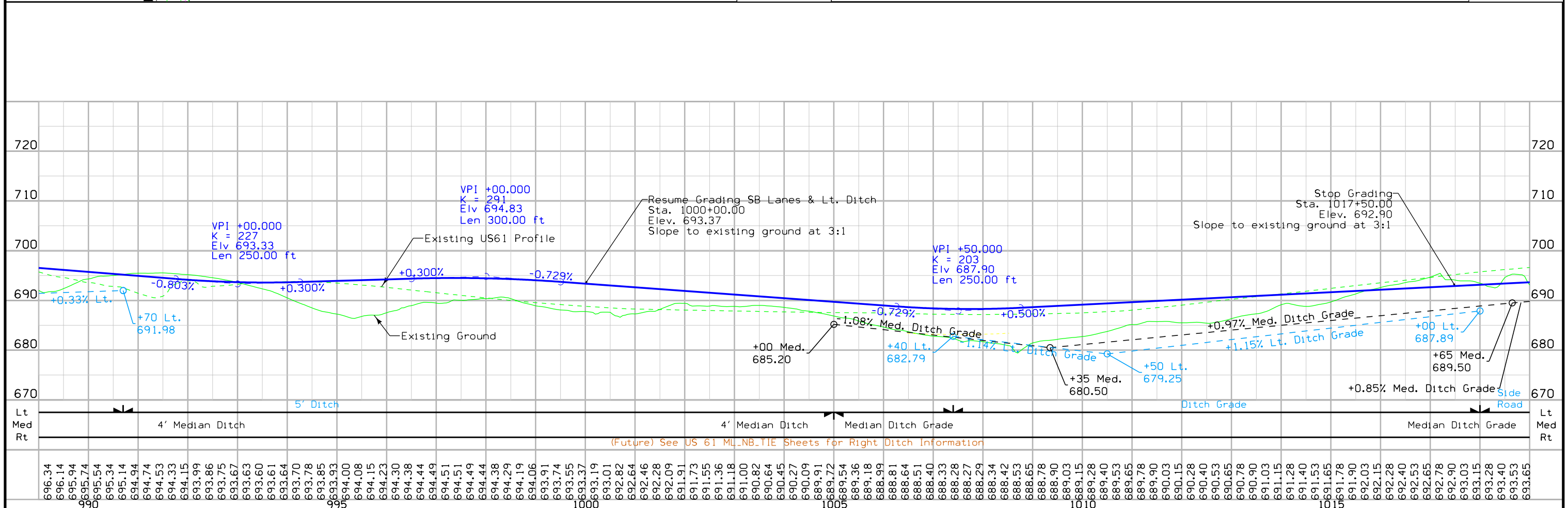
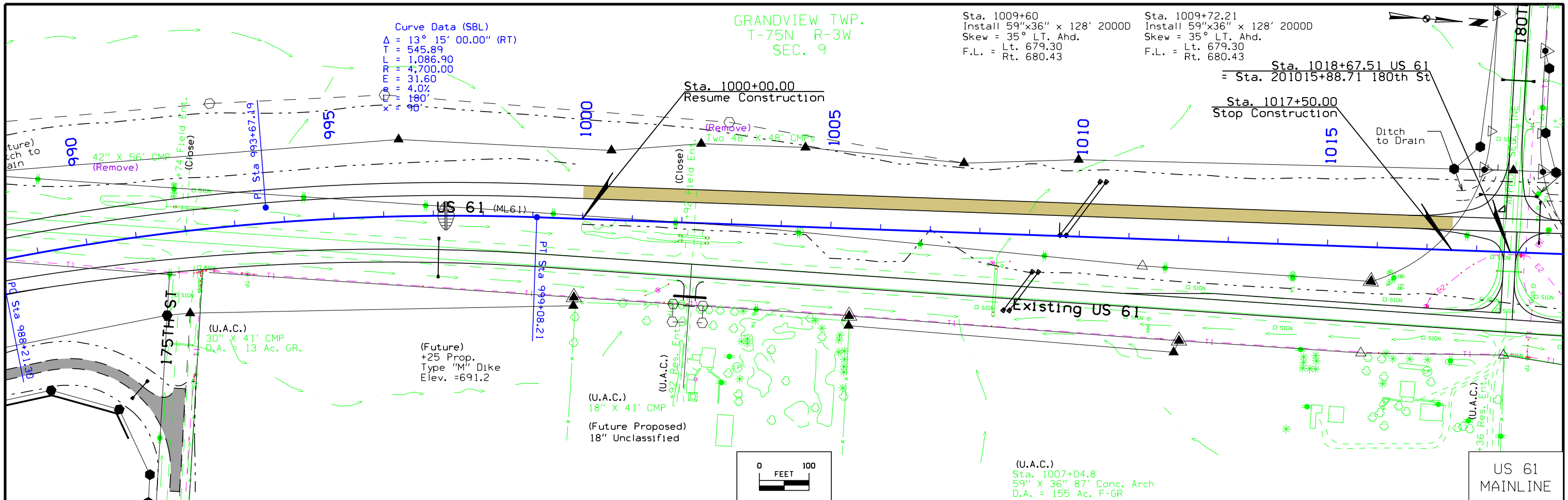
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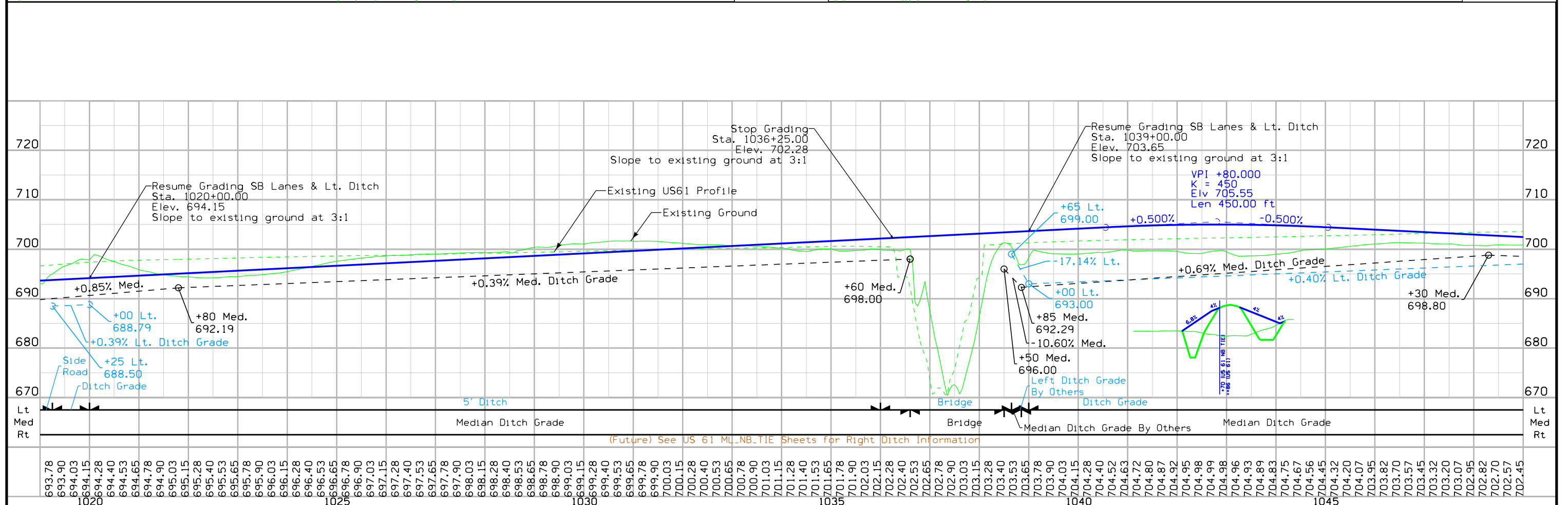
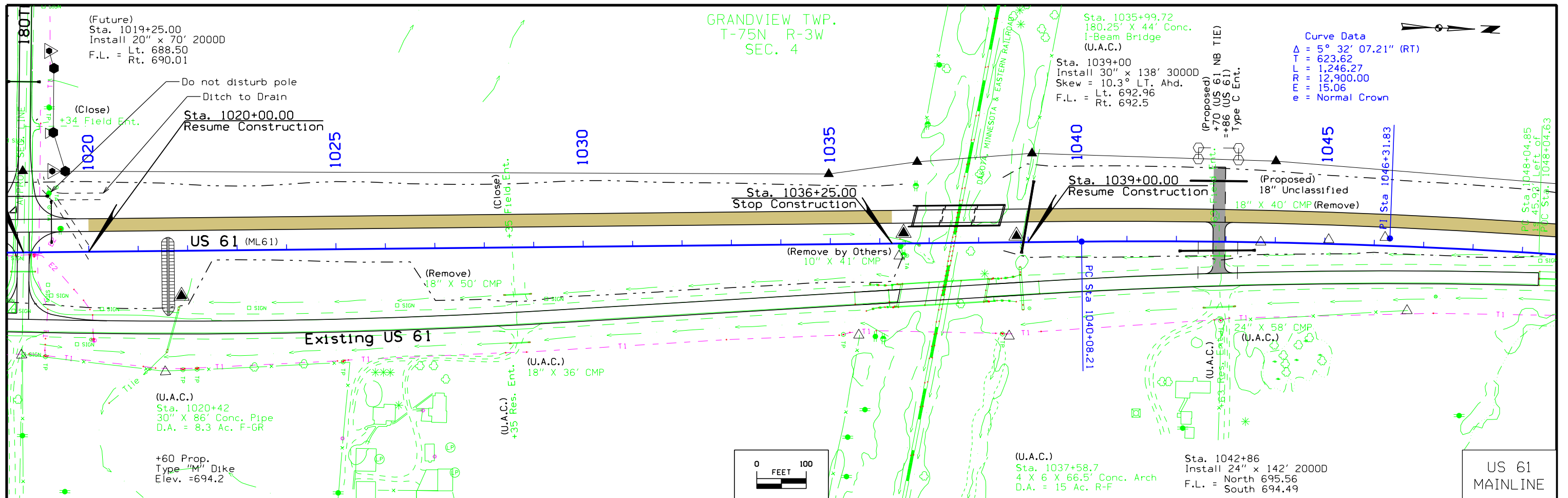


Note that the overhead 345,000-volt electric line in the project area is continuously energized. The conductors on this electric line are bare and uninsulated and contact with this electric line can cause serious injury or death. All people involved with any construction, maintenance, or similar activities within the vicinity of this electric line must be aware and remain aware of the hazards of working around this electric line, including maintaining proper safety clearances from this electric line.

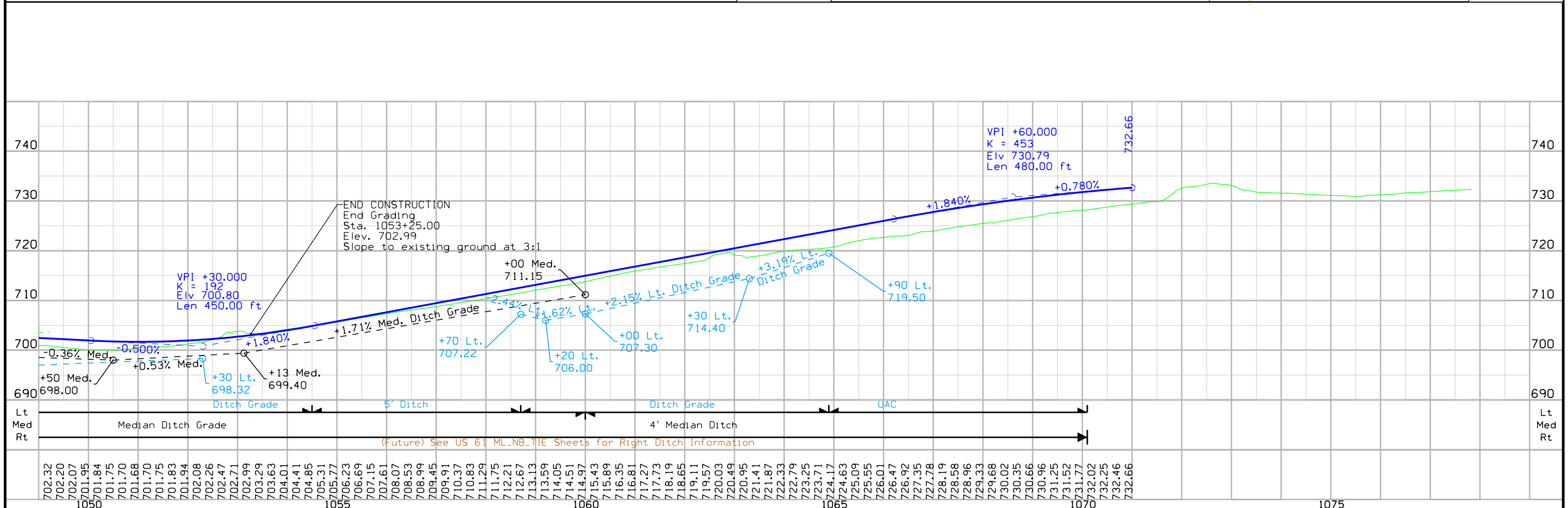
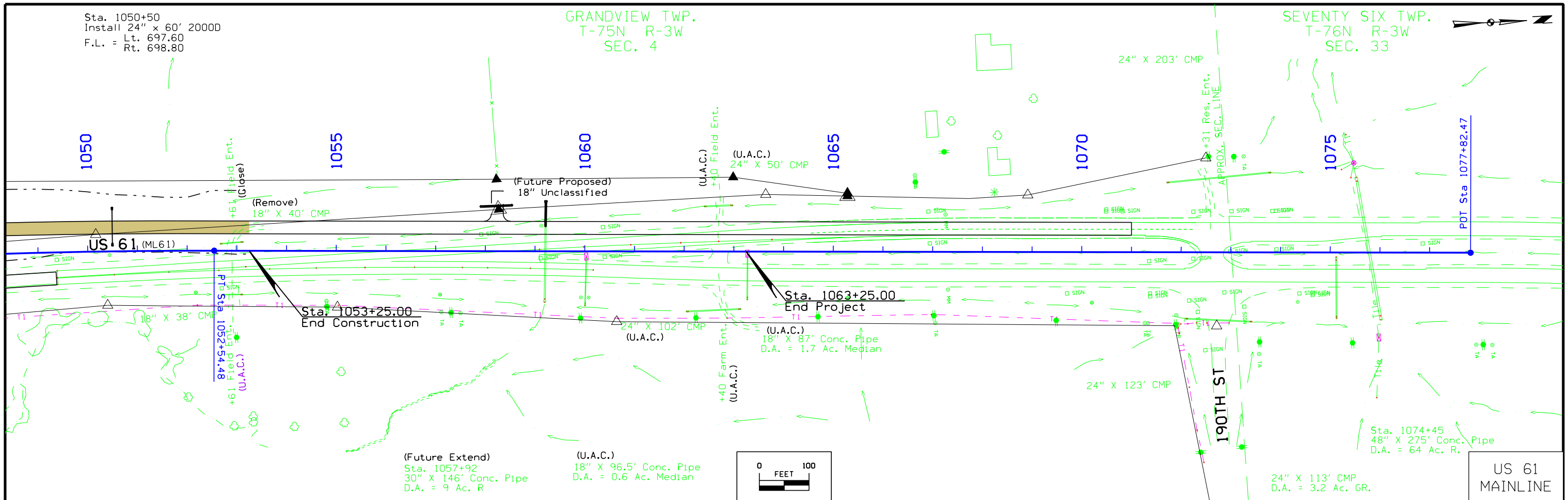


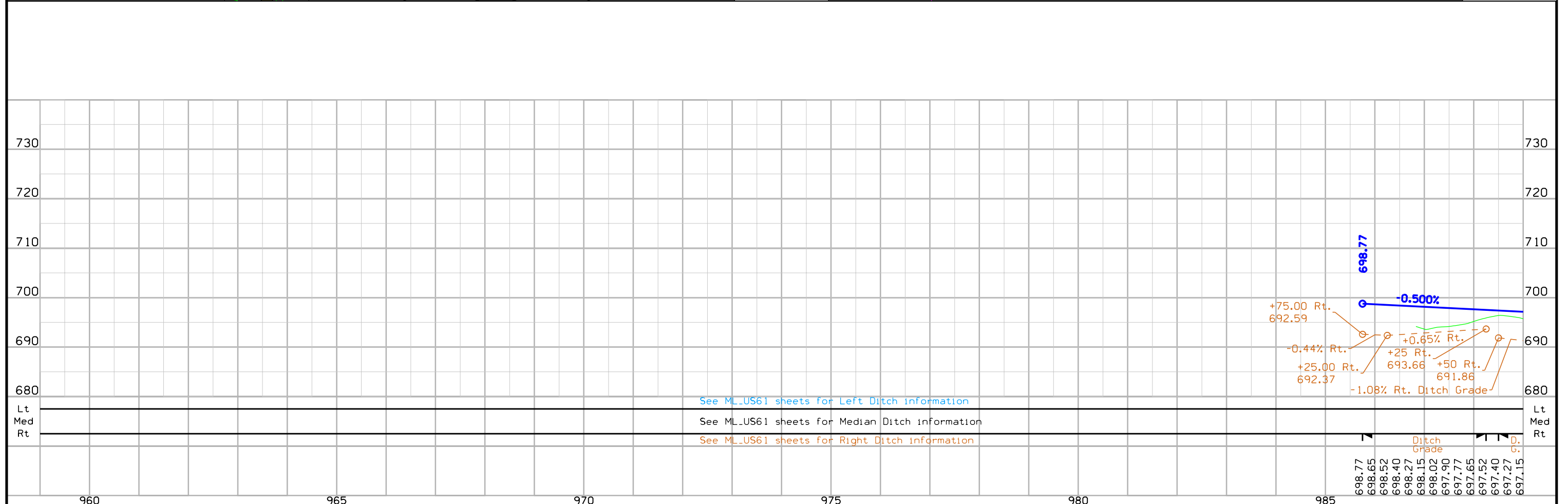
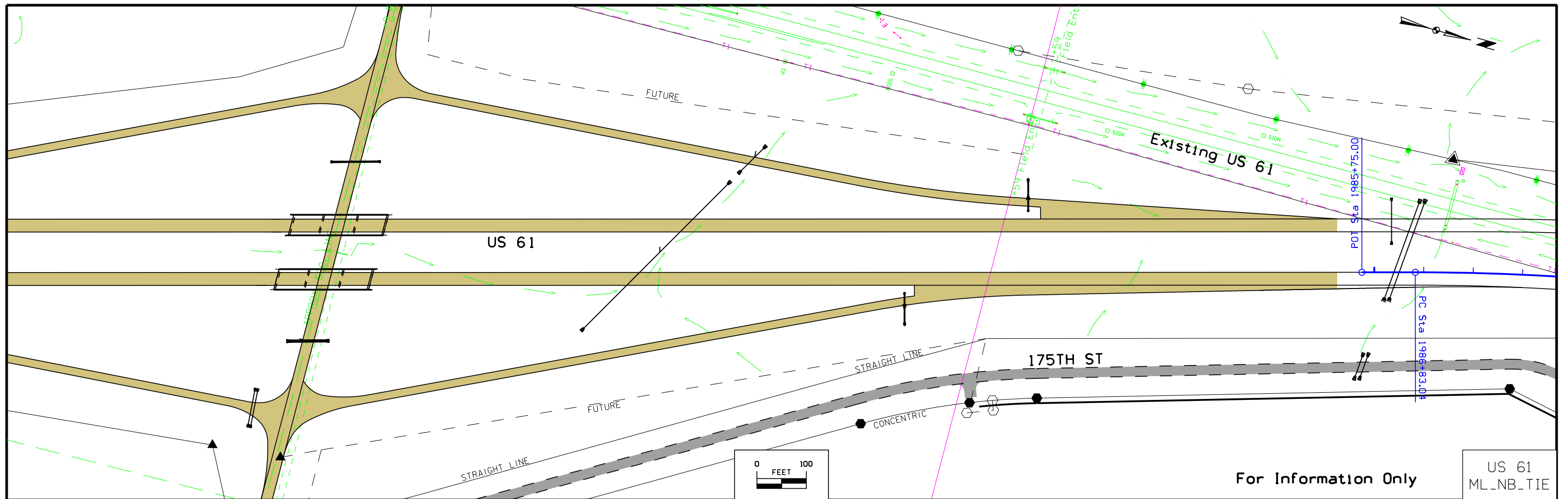






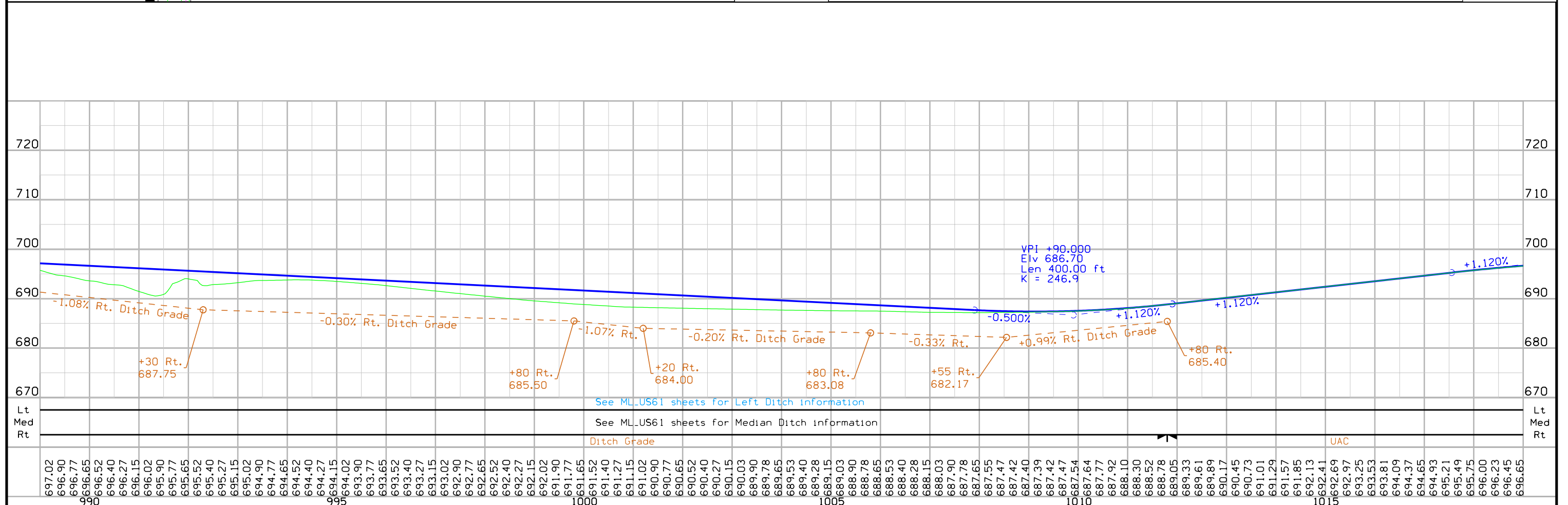
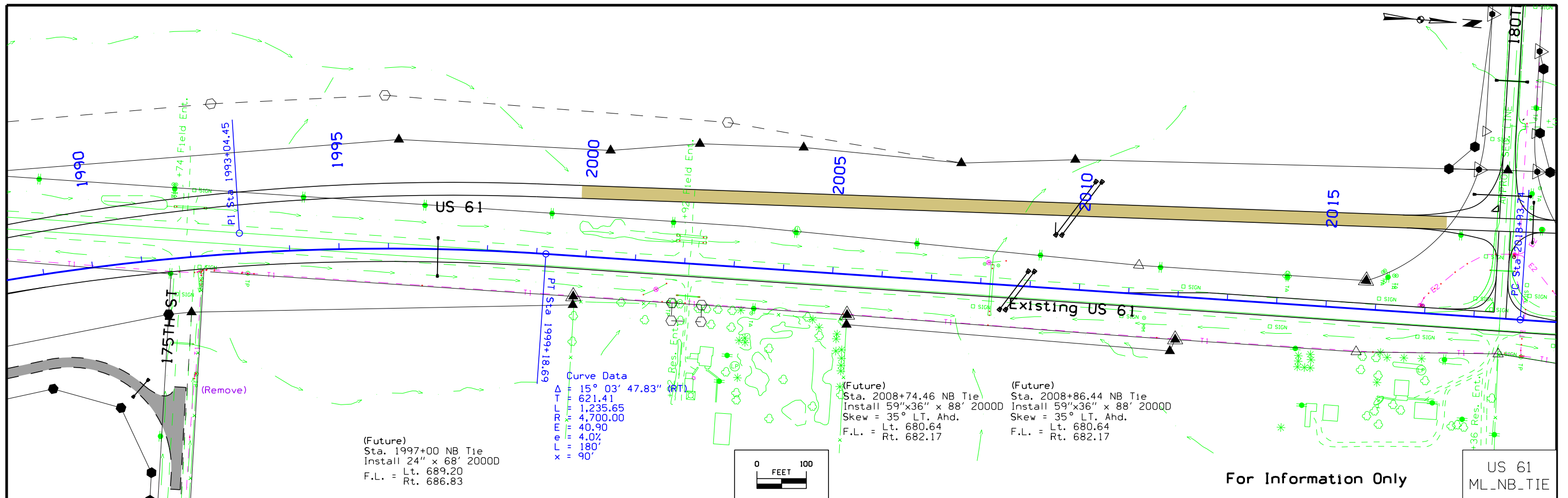
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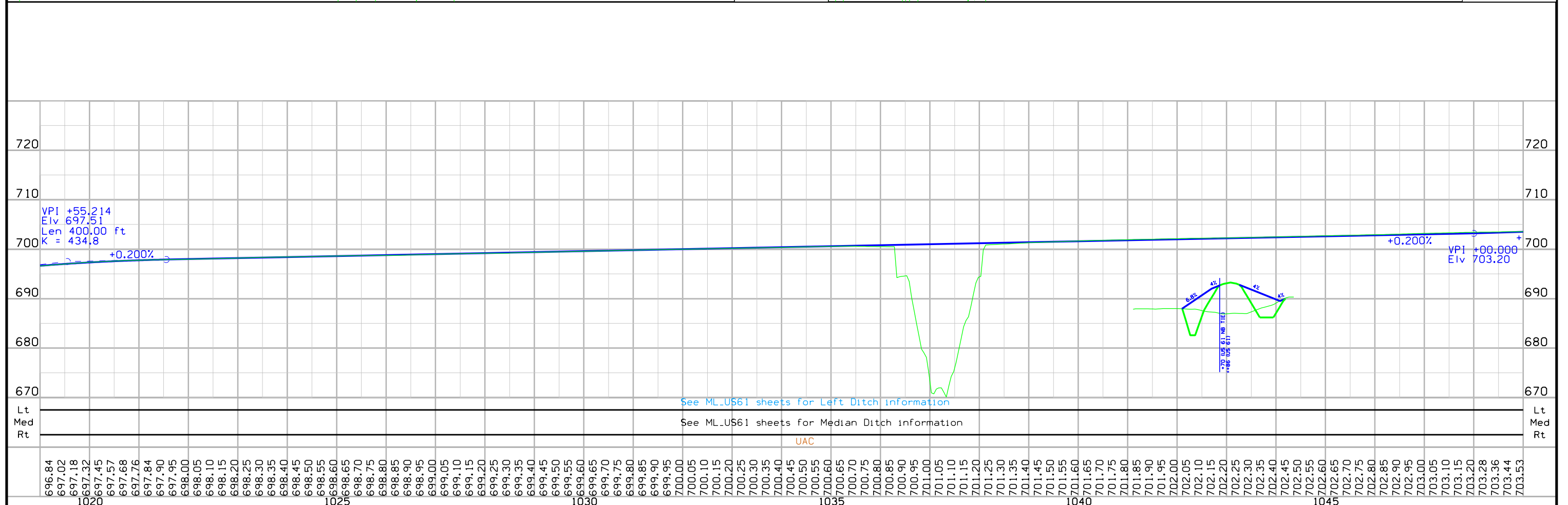
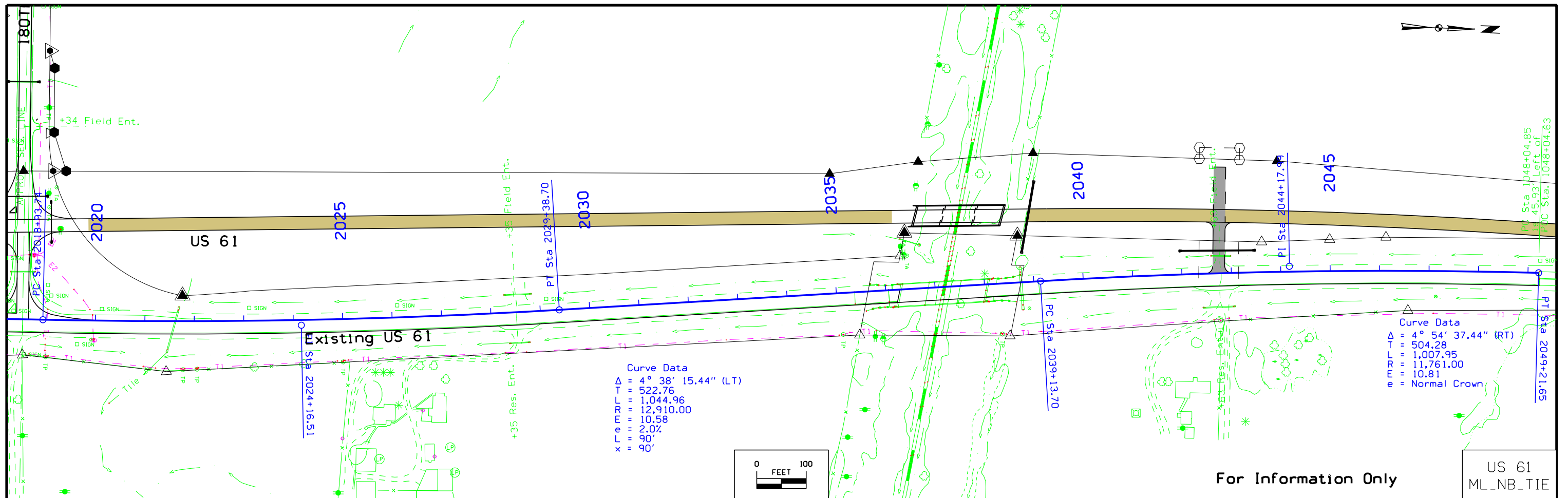


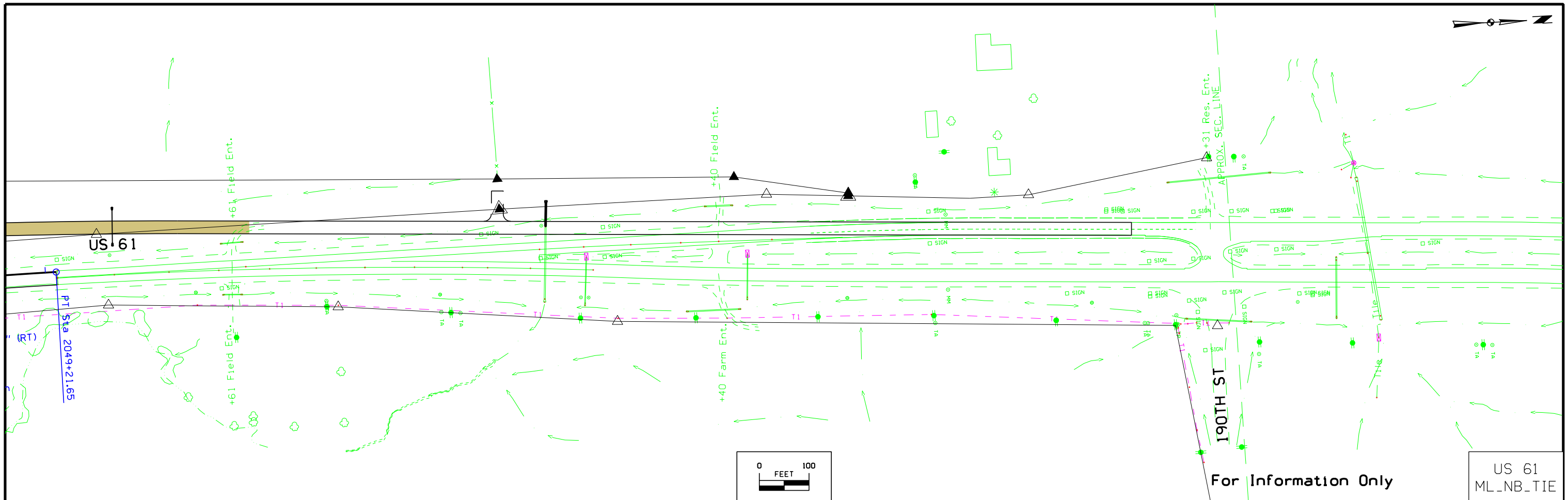
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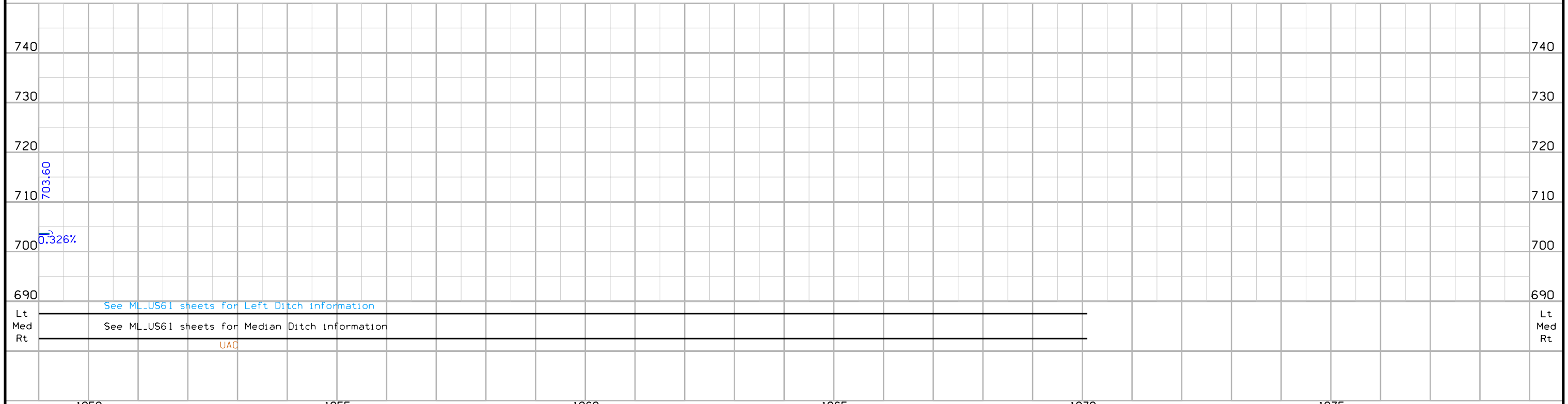
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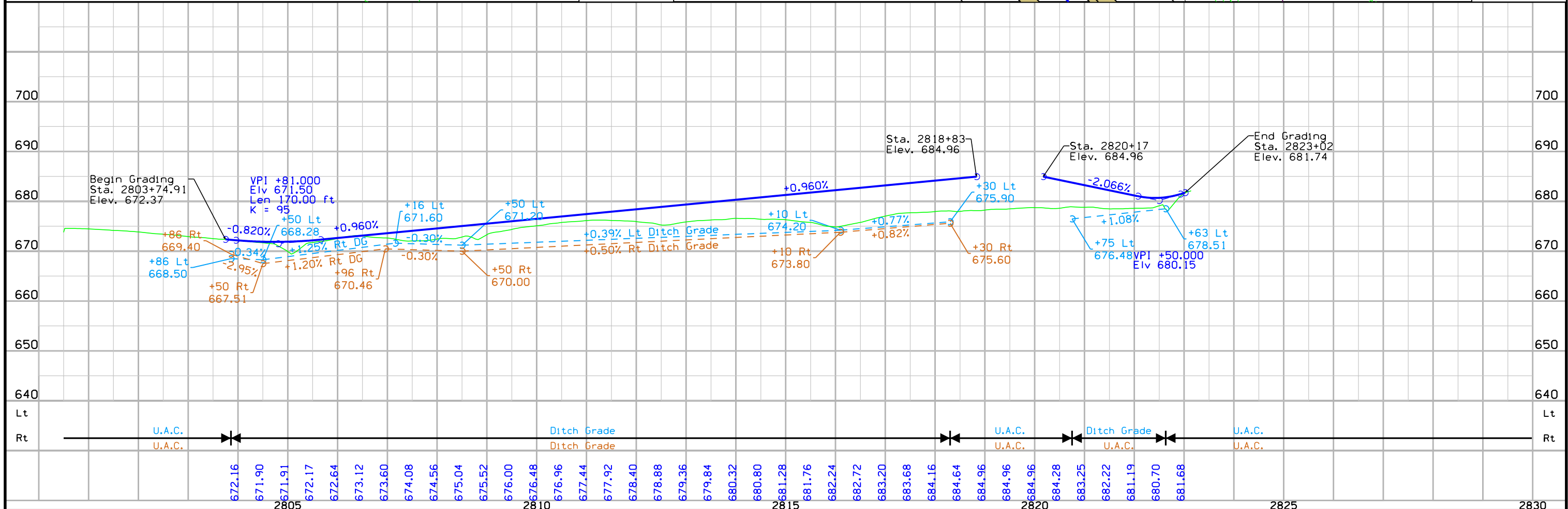
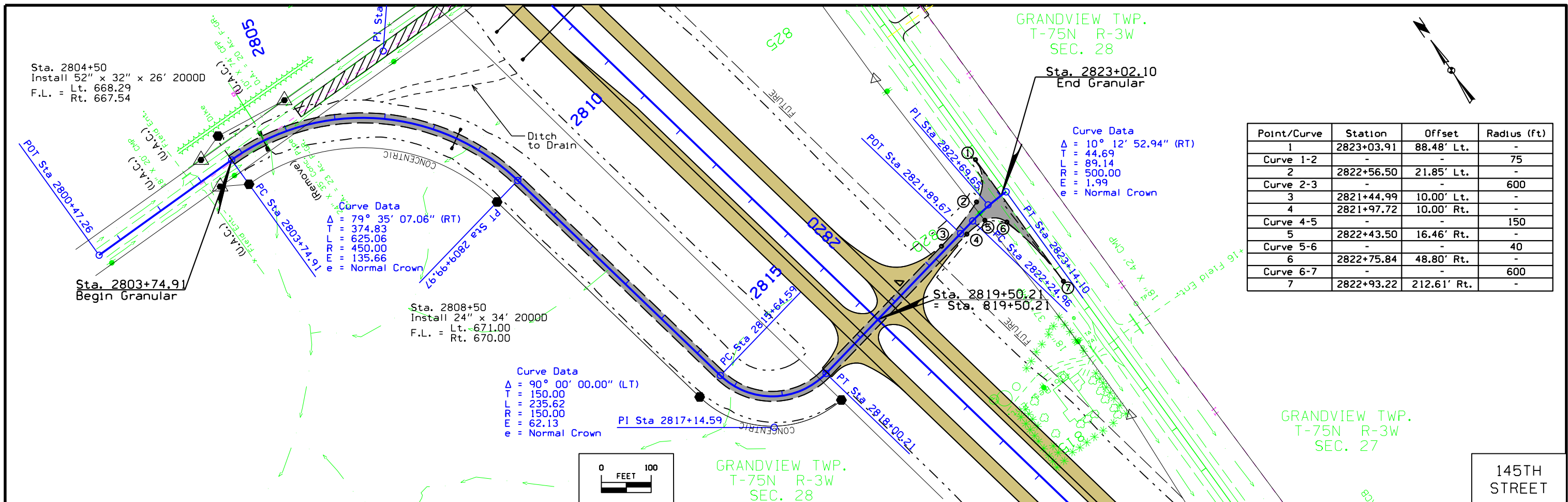


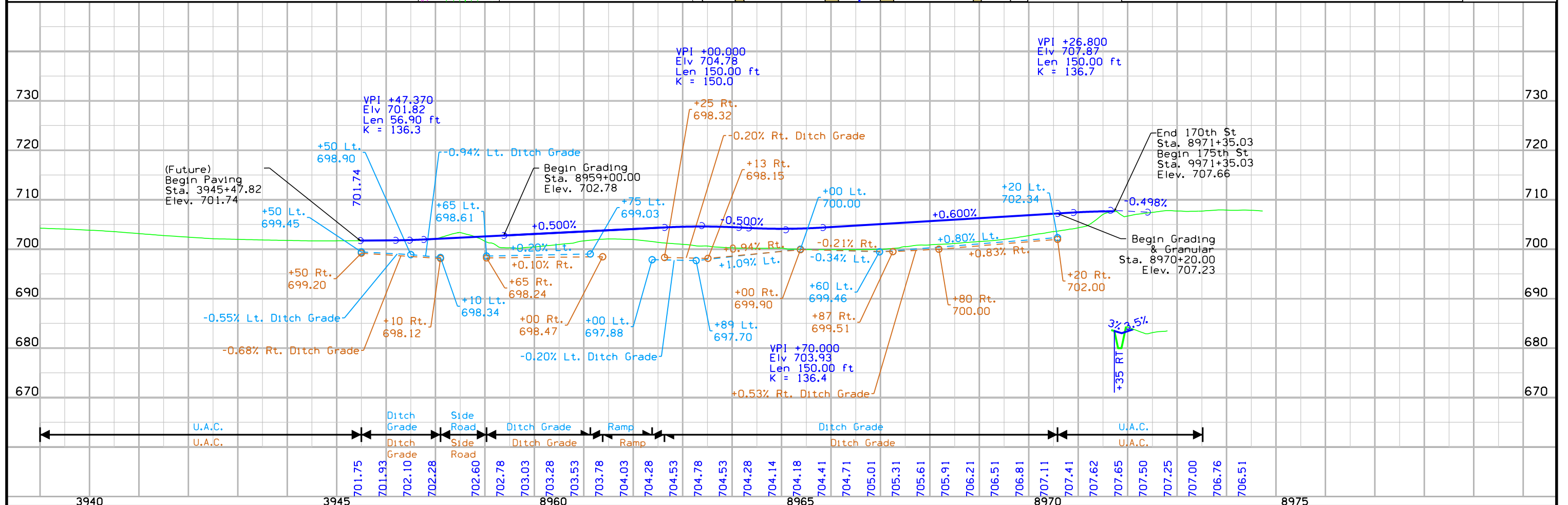
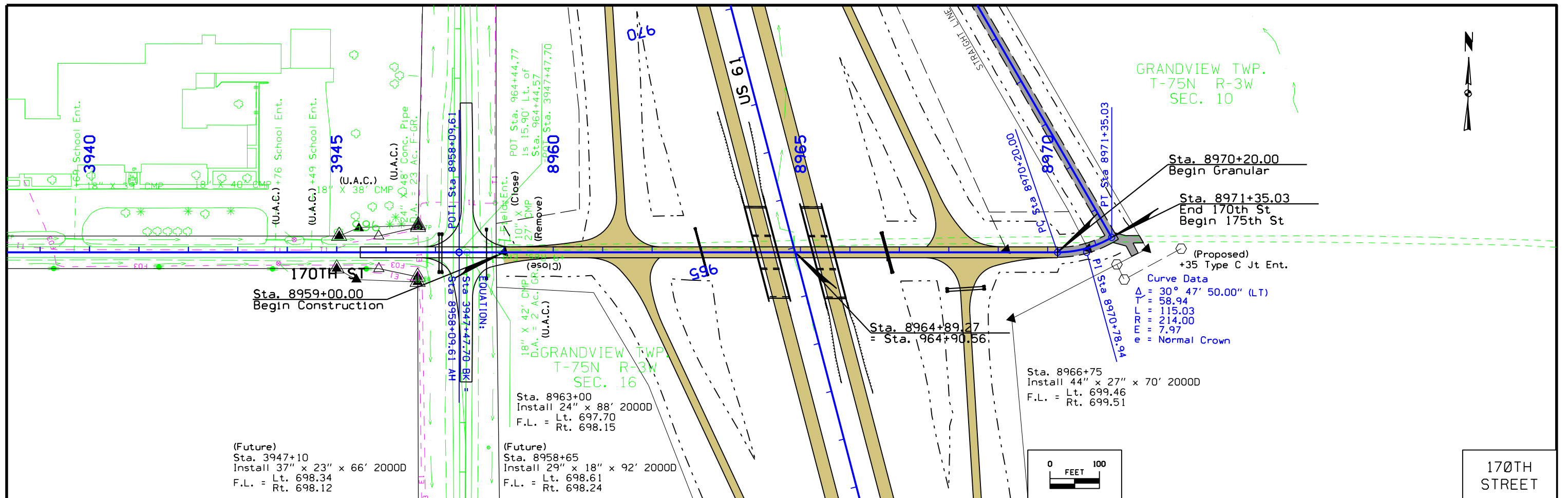


For Information Only

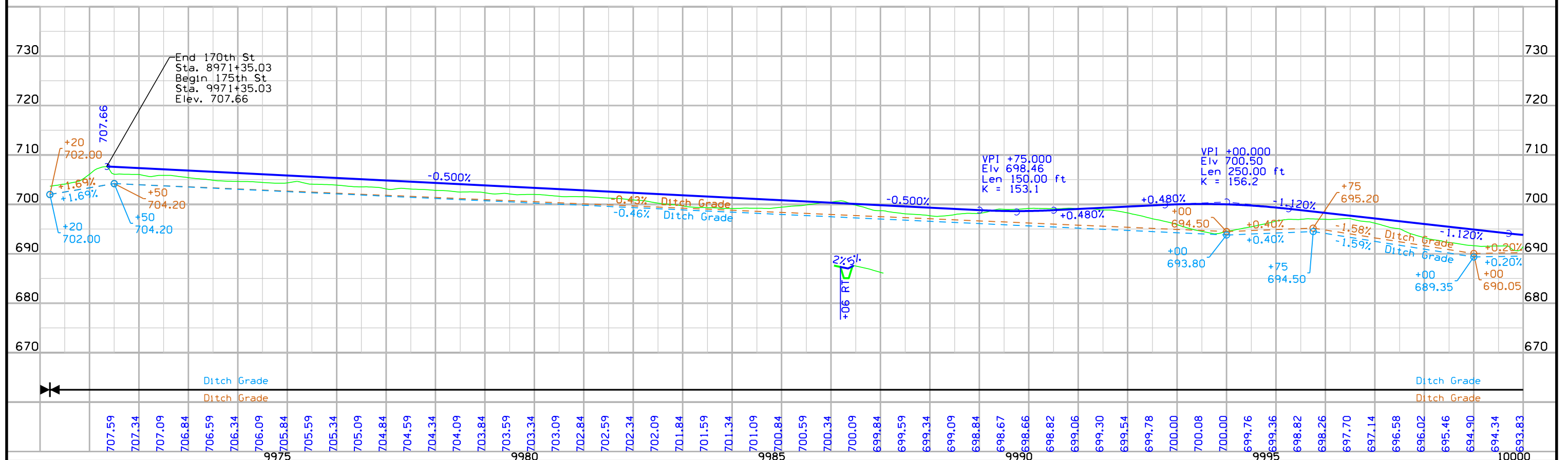
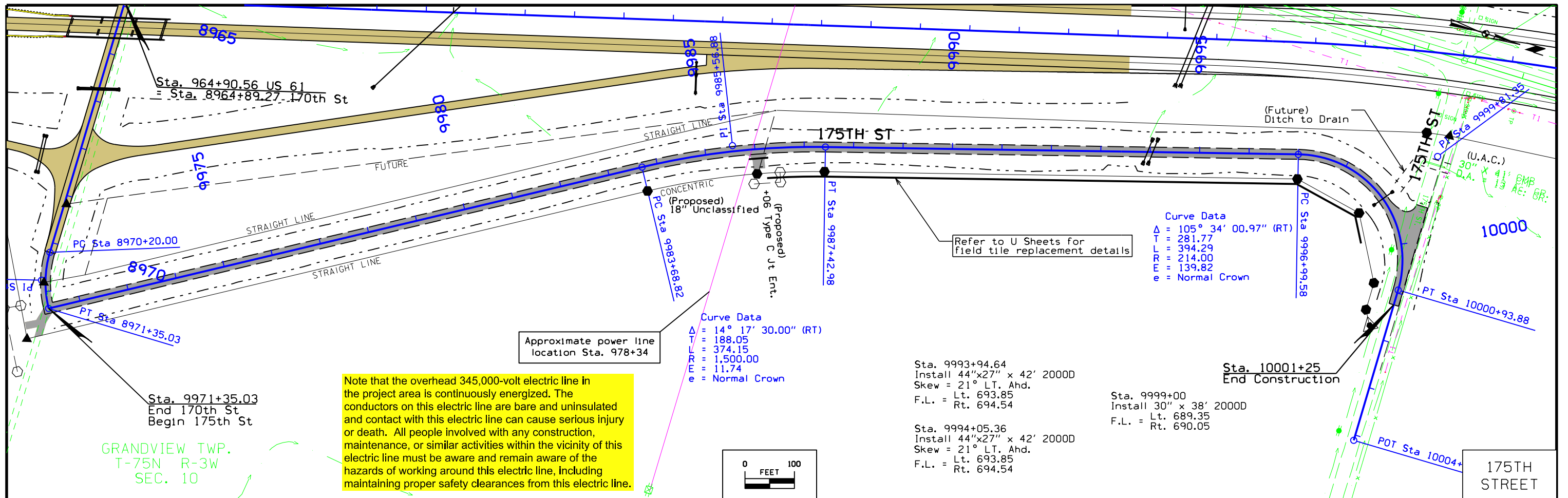
US 61  
ML\_NB\_TIE





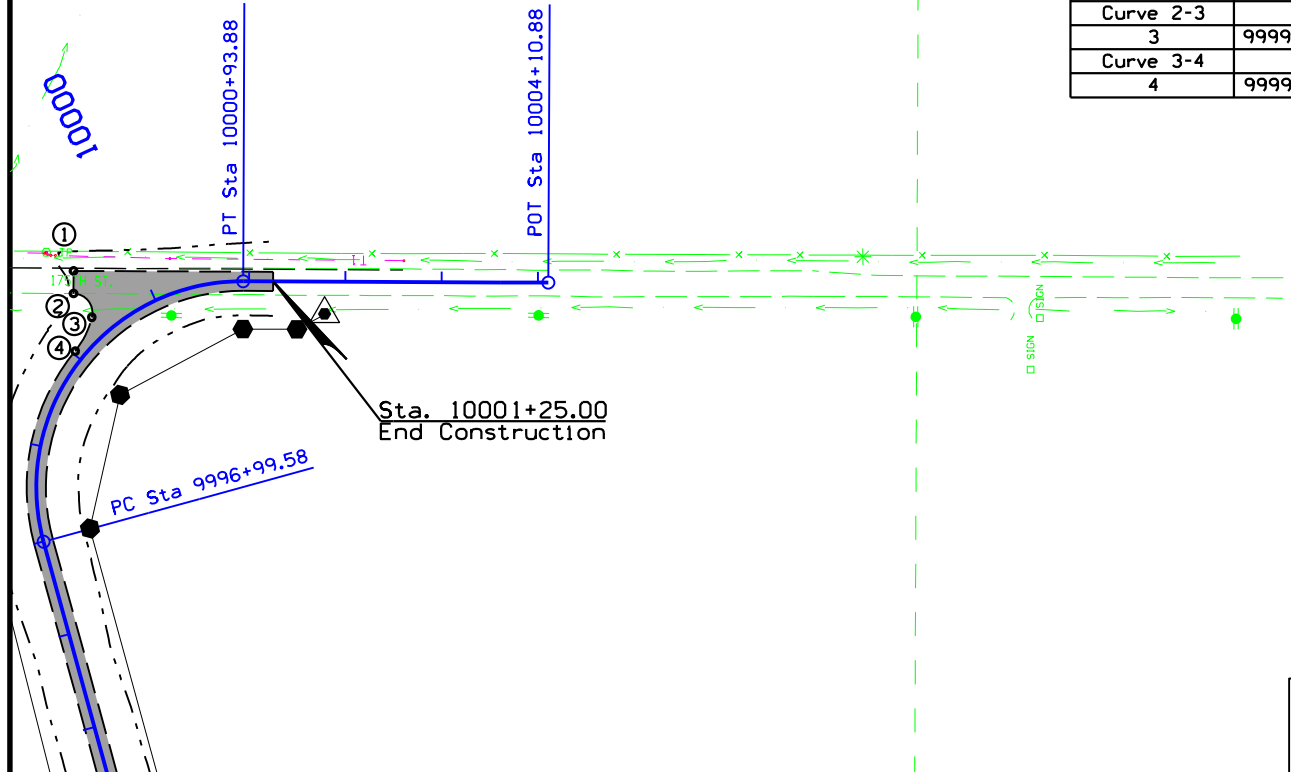




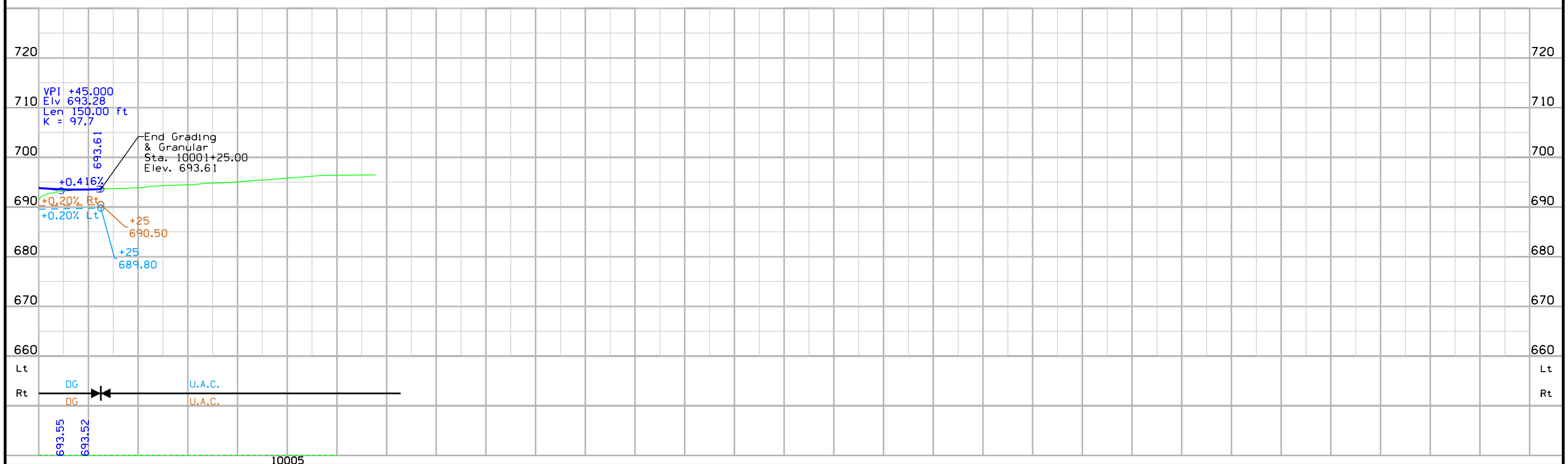


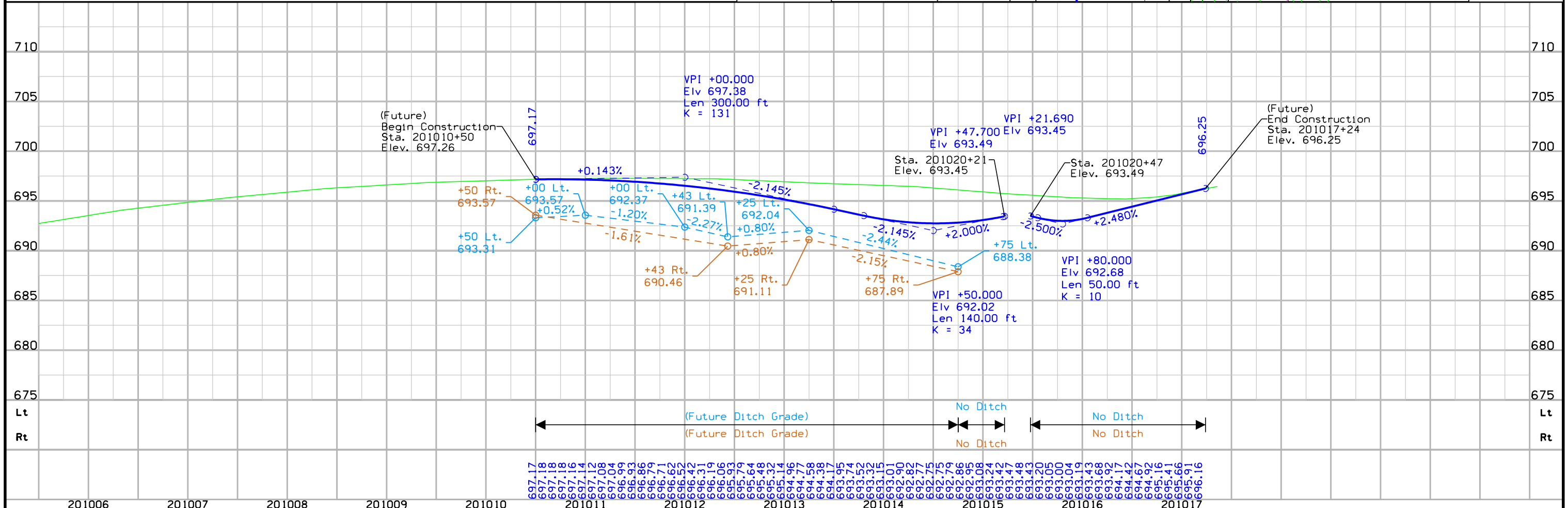
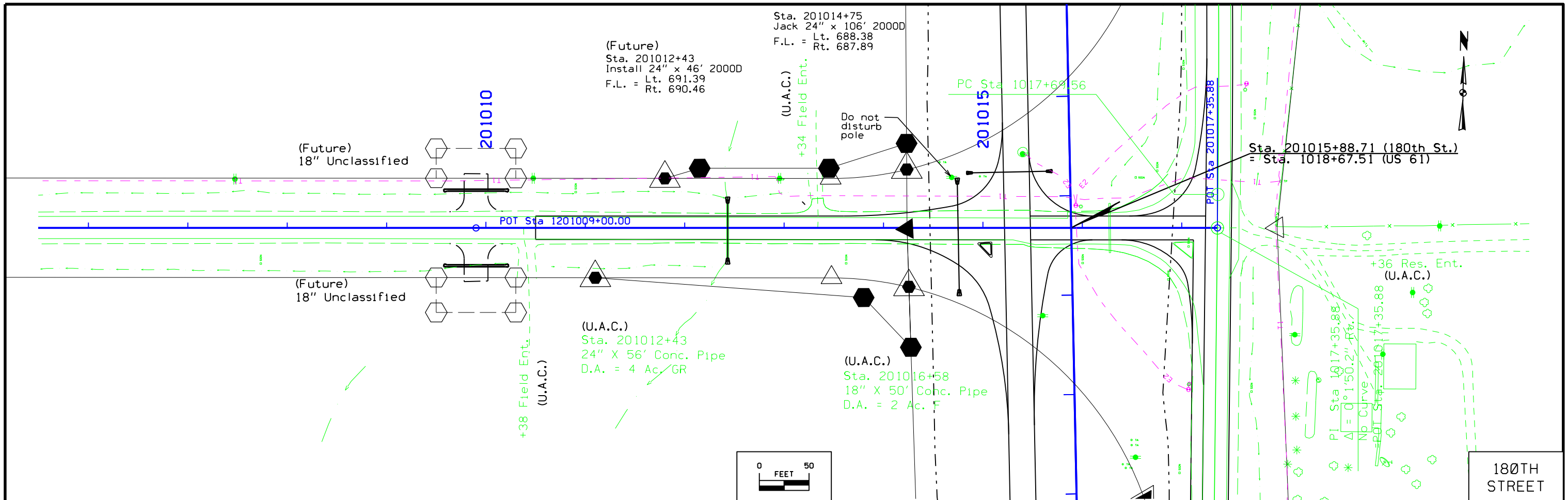
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 10

Point/Curve	Station	Offset	Radius (ft)
1	9999+51.21	71.03' Lt.	-
2	9999+39.48	52.97' Lt.	-
Curve 2-3	-	-	20
3	9999+37.81	21.57' Rt.	-
Curve 3-4	-	-	90
4	9999+03.13	10.00' Rt.	-

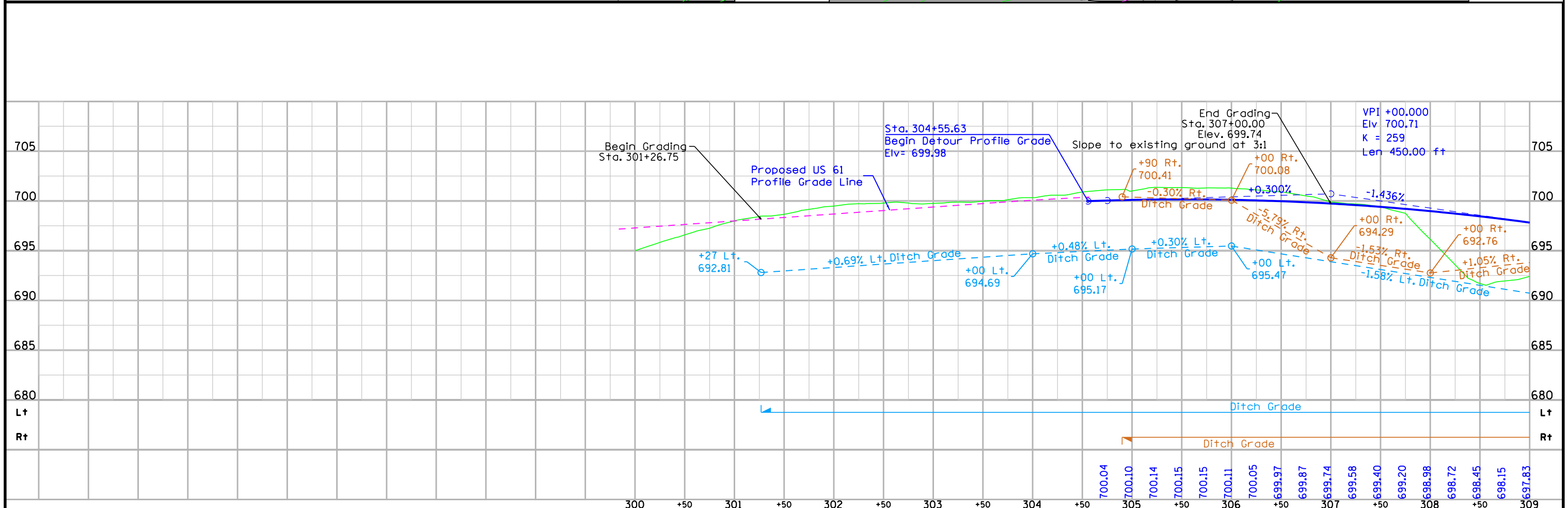
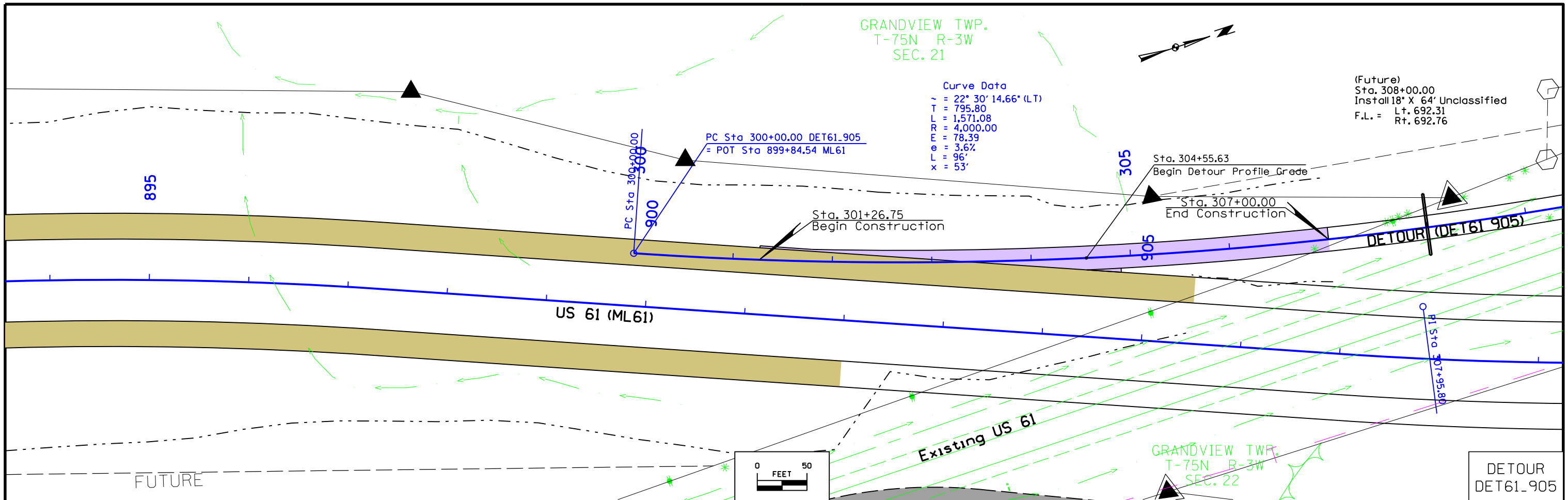


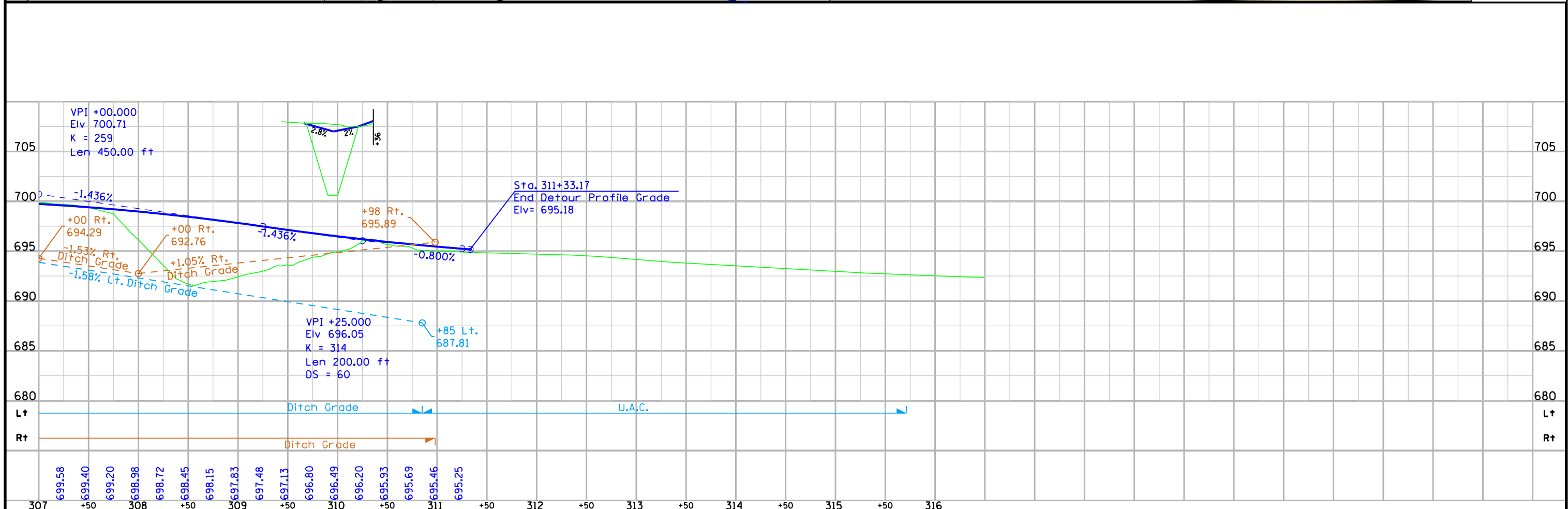
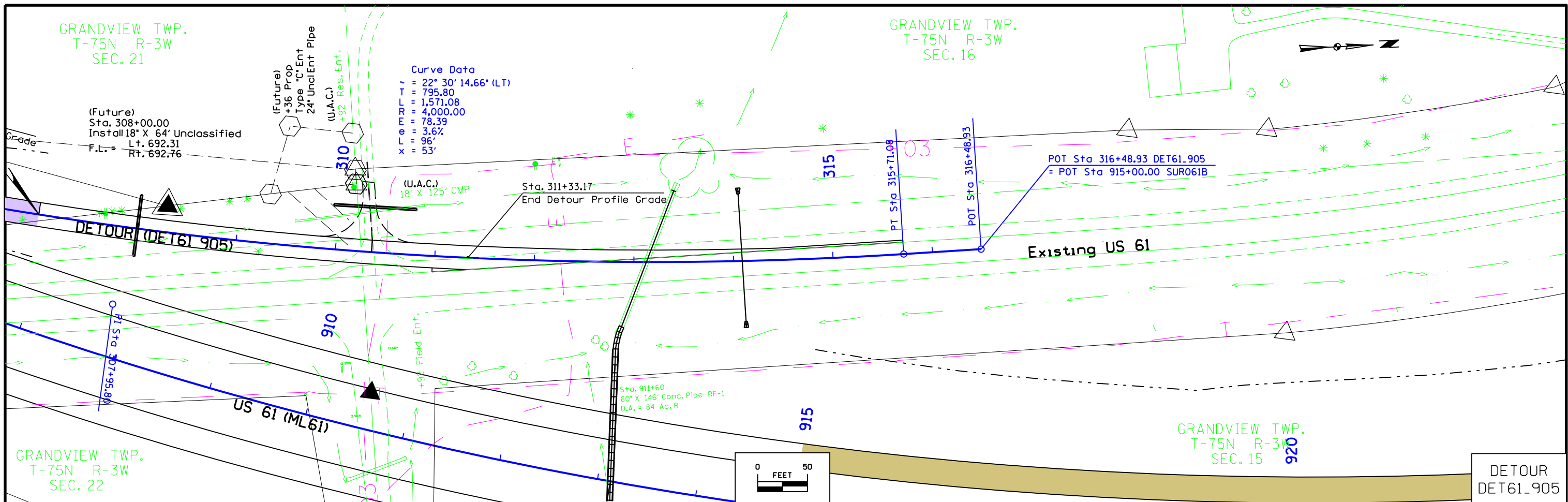
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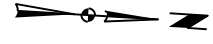




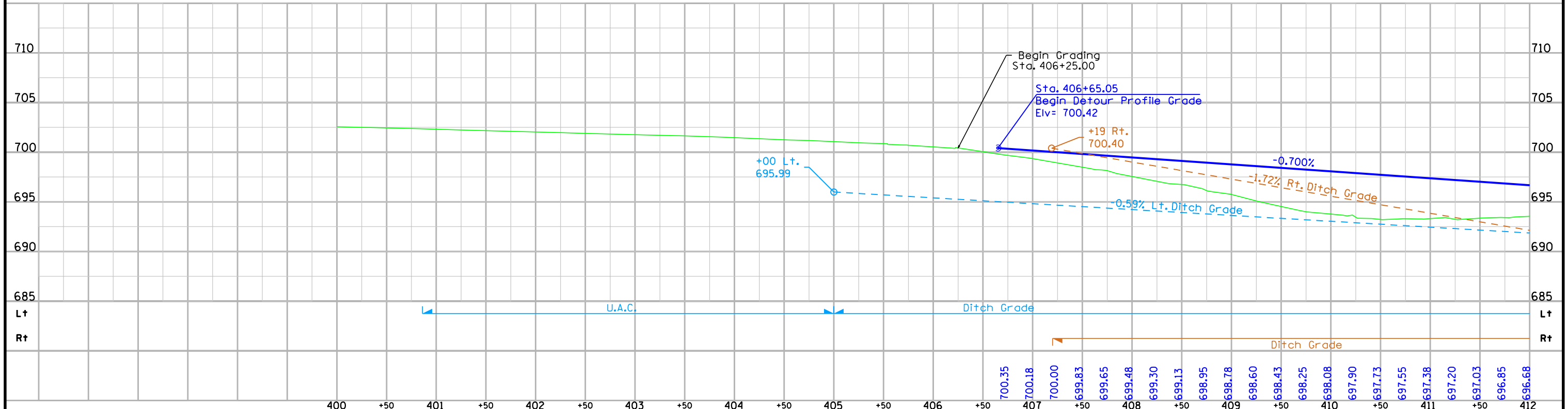
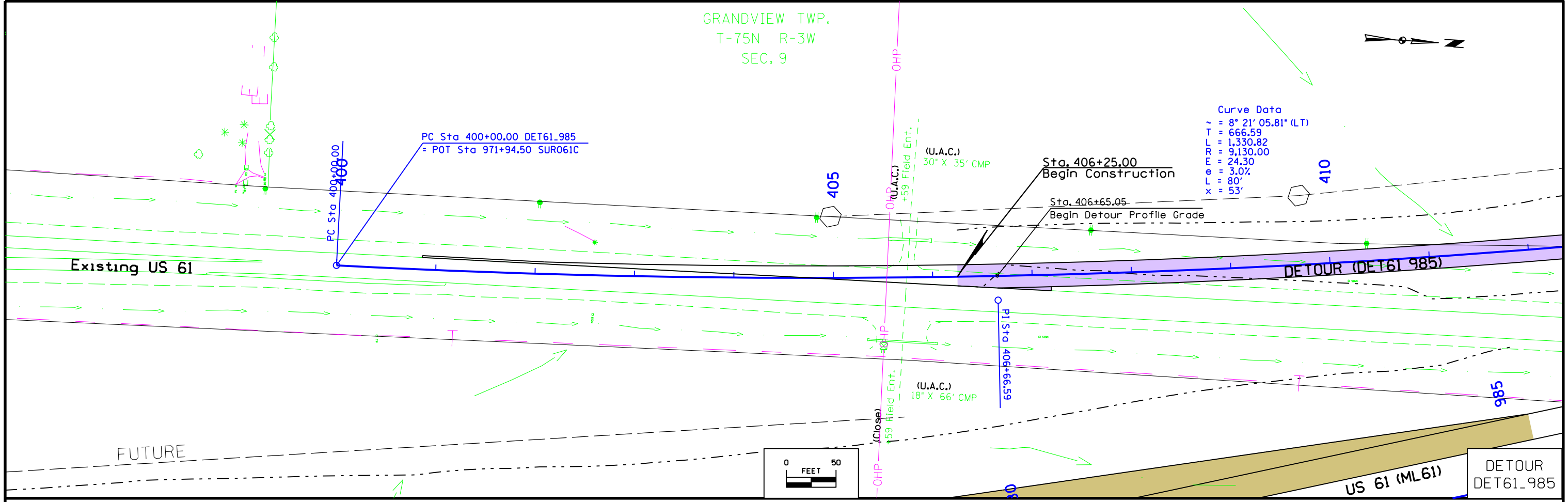


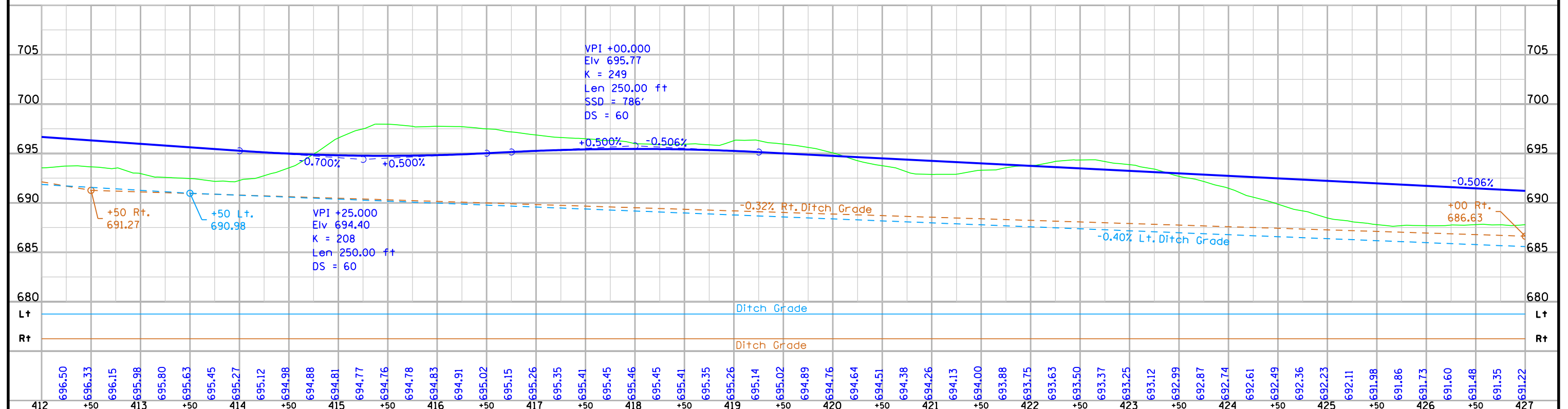
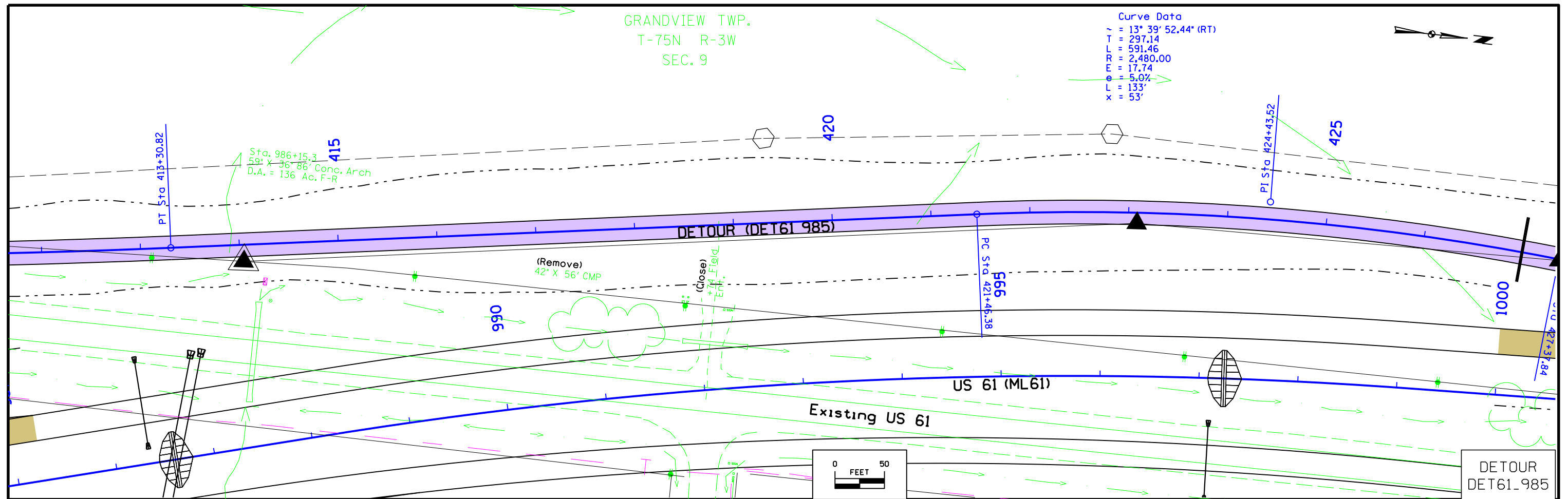


GRANDVIEW TWP.  
T-75N R-3W  
SEC. 9



Curve Data  
 $\Delta = 8^\circ 21' 05.81''$  (LT)  
 $T = 666.59$   
 $L = 1,330.82$   
 $RE = 9,130.00$   
 $E = 24.30$   
 $FL = 3.0\%$   
 $LR = 80'$   
 $X = 53'$



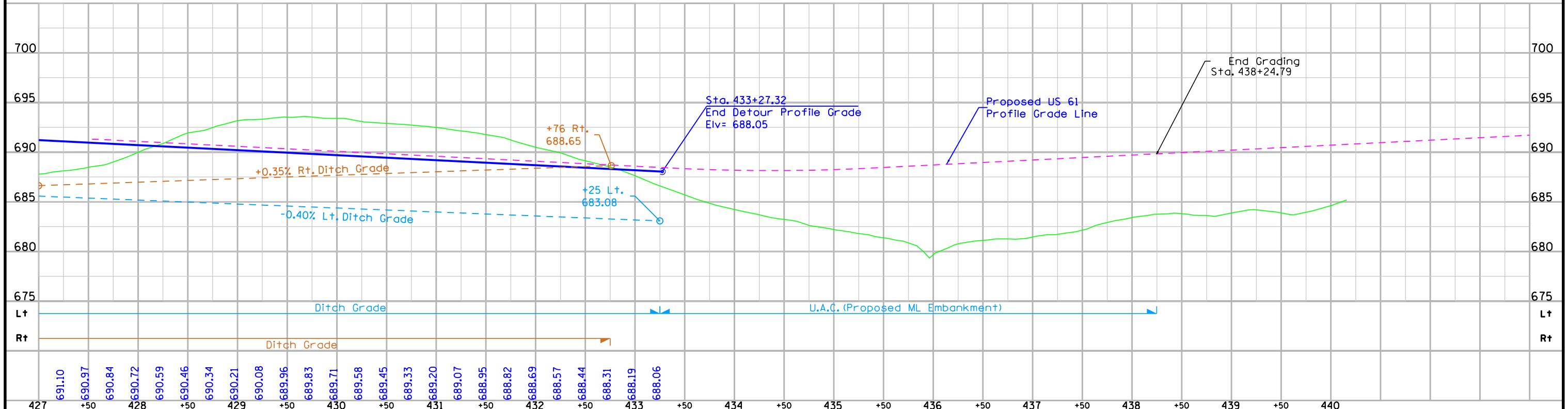
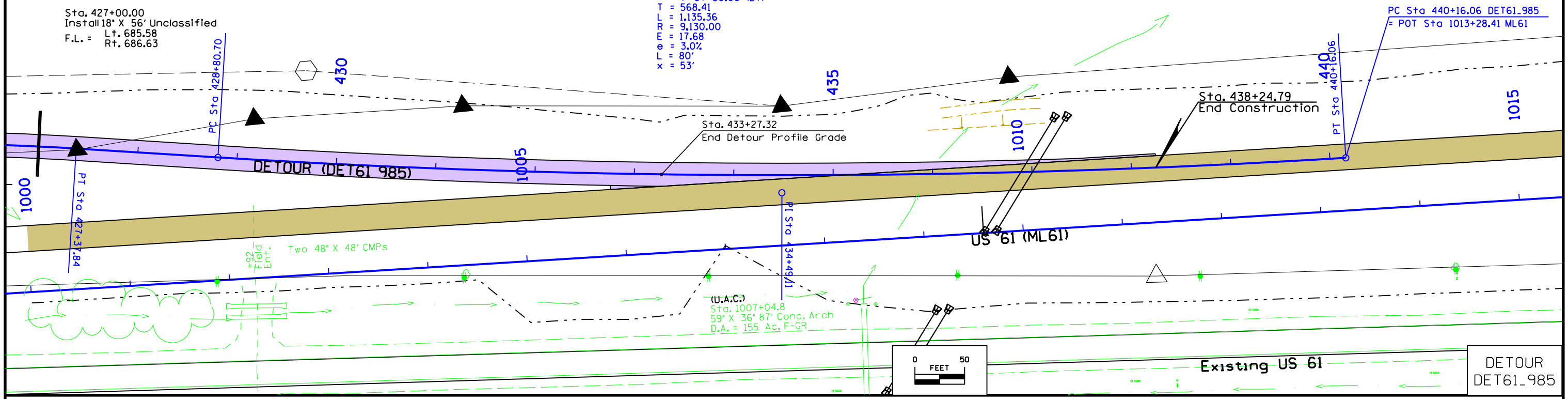


GRANDVIEW TWP.  
T-75N R-3W  
SEC. 9



Curve Data  
 Δ = 7° 07' 30.06" (LT)  
 T = 568.41  
 L = 1,135.36  
 ELEV = 9,130.00  
 R = 17.68  
 G = 3.0%  
 X = 80'  
 Y = 53'

Sta. 427+00.00  
 Install 18" X 56' Unclassified  
 F.L. = Lt. 685.58  
 Rt. 686.63



# SURVEY INFORMATION

## General Information

The coordinates used on this project are the same as IDOT GPS Network survey. IDOT GPS Control network monuments & benchmarks found in the area were held fixed in the Horizontal Calibration of this project.

State Plane Coordinate values of all Horizontal control in the area were converted to the IDOT network adjustment values then held fixed in the calibration.

12-2006 ASI Points (4,5,6,7,8,15,16,17,19,20,506,507) were held fixed in Horizontal and Vertical RTK Calibration of this project 1-2006 ASI Point (506) "A CBN Point Ardon Az Mk Reset" was held fixed in Horizontal RTK Calibration of this project 4-2000 ASI Points [143,144,147,505] were held in the Horizontal and Vertical RTK Calibration of this project 14 -2001 IDOT Points (38-50,52) Horizontal Calibration of this project

## Vertical Datum

This survey is relative to NAVD 88 vertical datum. NGS datasheets show a vertical difference of 0.20' (88 Lower than 29) between NAVD88 to NGVD29.

A Bench level run was made between two 2006 ASI monument points, holding the published elevations of 2006ASI16 & 2006ASI4 fixed in the adjustment.

## Vertical Equations:

All ASI Marks found near this project were held fixed vertically in the calibration

BM # 505 this survey	Elev. = 720.91 (NAVD 88 datum)
=USGS 1 DRL 1964	Elev. = 720.91 (NAVD 88 datum)
=USGS 1 DRL 1964	Elev. = 721.105 (NAVD 29 datum)

BM # 507 this survey	Elev. = 696.820 (NAVD 88 datum)
=USGS 4 DRL 1964	Elev. = 696.820 (NAVD 88 datum)
=USGS 4 DRL 1964	Elev. = 697.020 (NAVD 29 datum)

ASI Marks 16,7 and 4 were held fixed in the digital level run. The ASI published elevations on BM 516 (6), BM 607 (7) & BM 504 (4) were held fixed in a digital level run. A bench level run directly between BM 516 & BM 504 was observed. The total length of the run was 8.1 miles with a missed closure of 0.055 feet. The least squared adjustment values of the marks along the level run were held fixed on this survey.

BM # 516 this survey	Elev. = 634.565 (NAVD 88 datum)
CP#16 (2006ASI survey)	Elev. = 634.565 (NAVD 88 datum)

BM #607 this survey	Elev. = 690.485 (NAVD 88 datum)
CP#7 (2006ASI survey)	Elev. = 690.485 (NAVD 88 datum)

BM # 504 this survey	Elev. = 733.210 (NAVD 88 datum)
CP# 4 (2006ASI survey)	Elev. = 733.210 (NAVD 88 datum)

## Alignments

The mainline alignment is a retrace of the alignments found on the Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan. Four alignments were created because of the horizontal offsets found along this project. Four Mainline alignments are as follows

ML1 alignment from Sta 720+69.185 to Sta 856+37.808 then 24' Offset Left to Ali ML2  
 ML2 alignment from Sta 856+37.17 to Sta 964+44.766 then 15.9' Offset left to ML3  
 ML3 alignment from Sta 964+44.766 to Sta 1048+04.672 then 45.93' Offset left to ML4  
 ML4 alignment from Sta 1048+04.85 to Sta 1031+79.792

## Alignment Equations

Begin Alignment ML1

POT Sta 720+69.185 This Survey (Fd IDOT Hinge Nail)  
 = POT Sta 720+70.66 AB Stationing Ahead Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan  
 = POT Sta 720+71.51 AB Stationing Back Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan  
 = Equation found on AB Plan

PI Sta 741+45.164 This Survey (Fd Rusted Nail)  
 = PI Sta 741+46.49 AB Stationing Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan

PI Sta 750+13.793 This Survey (Fd IDOT Hinge Nail)  
 = PI Sta 750+15.08 AB Stationing Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan

PT Sta 754+06.141 This Survey (Fd IDOT Hinge Nail)  
 = PT Sta 754+07.50 AB Stationing Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan

ML1 Stationing held fixed here backed up and carried forward from AB POT Equation Point where

POT Sta 754+14.22 This Survey (Computed point using plan distance of 7.98 ahead of AB PT Sta 754+07.50)  
 = POT Sta 754+14.22 AB Stationing Ahead (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)  
 = POT Sta 754+15.48 AB Stationing Back (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 783+28.707 This Survey (Fd IDOT Hinge Nail)  
 =PI Sta 783+29.09 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 802+97.698 This Survey (Fd IDOT Hinge Nail)  
 =PI Sta 802+98.09 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 829+43.759 This Survey (Fd IDOT Hinge Nail)  
 =PI Sta 829+44.20 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 850+40.91 This Survey (Reset from Ref Ties)  
 =PI Sta 850+40.70 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 856+37.808 This Survey = End of ML1(Reset on Ia 92 East West Alignment A1)  
 =PI Sta 516+97.353 This Survey Ia 92 Alignment  
 =PI Sta 516+97.35 Ia 92 AB Stationing (Louisa Co. Plan Page 7 F-61-3(2)—20-58 1972 AB Plan)

## SURVEY INFORMATION

### Begin Alignment ML2

PI Sta 856+37.17 This Survey = Begin End of ML2(Reset on Ia 92 East West Alignment A1)  
 =PI Sta 516+73.30 This Survey Ia 92 Alignment  
 =24.00 Lt of Plan Sta 856+37.10 AB Stationing (Louisa Co. Plan Page 7 F-61-3(2)—20-58 1972 AB Plan)

ML2 Stationing held fixed backed up and carried forward here

PI Sta 866+44.03 This Survey  
 =PI Sta 866+44.03 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 872+86.412 This Survey  
 =PI Sta 872+86.41 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 872+86.412 This Survey  
 =PI Sta 872+86.41 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

TS Sta 916+22.363 This Survey (Fd IDOT Hinge Nail)  
 =TS Sta 916+22.62 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 925+37.882 This Survey  
 =PI Sta 925+37.14 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 949+27.699 This Survey (Fd Rebar)  
 =PI Sta 949+28.05 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 964+44.766 This Survey = End of ML2(Fd Bent Nail Reset Mag Nail)  
 =PI Sta 964+45.00 Ia 92 AB Stationing (Louisa Co. Plan Page 7 F-61-3(2)—20-58 1972 AB Plan)

### Begin Alignment ML3

=PI Sta 964+47.70 This Survey (Fd IDOT Hinge Nail)  
 =16.00 Lt of Sta 965+45.0 AB O.R. Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)  
 =15.90 Lt of ML2 Alignment Sta 964+44.568 This Survey  
 =PI Sta 3947+47.70 170th St. Alignment This Survey

ML3 Stationing held fixed here backed up and carried forward from AB Equation Point where

Sta 967+45.0 (OR Back)  
 =Sta967+47.7 (OR Ahead)  
 =Sta 967+47.70 This Survey

PI Sta 990+77.64 This Survey (Fd IDOT Hinge Nail)  
 =PI Sta 990+77.67 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

POT Sta 1017+35.88 This Survey (Fd IDOT Hinge Nail)  
 =POT Sta 1017+36.06 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)  
 =PI Sta 201017+35.88 Hwy 305 Stationing This Survey

PI Sta 1022+96.34 This Survey (Fd IDOT Hinge Nail)  
 =PI Sta 1022+96.58 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)

PI Sta 1043+01.51 This Survey (Computed)  
 =PI Sta 1043+01.66 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)  
 =PI Sta 13+11.145 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

PT Sta 1048+04.67 This Survey End ML3(Computed)  
 =PT Sta 1048+04.85 AB Stationing (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)  
 =PT Sta 14+64.518 Metric Back (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)  
 = 14.00 Meters East and Rt of PC Sta 14+63.946 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

### Begin Alignment ML4

PC Sta 1048+04.85 This Survey Begin ML4  
 =PC Sta 14+63.946 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)  
 = 14.00 Meters West and Lt of AB PT Sta 1048+04.85 (Louisa Co. Plan NHS-61-3(28)—19-58 Paving Plan)  
 = 14.00 Meters West and Lt of PC Sta 14+64.518 Metric Survey Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

PI Sta 1053+73.80 This Survey  
 =PI Sta 16+37.362 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

PRC Sta 1059+41.89 This Survey  
 =PRC Sta 18+10.520 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

PT Sta 1063+40.52 This Survey (Fd rebar 12" Deep)  
 =PT Sta 19+32.022 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

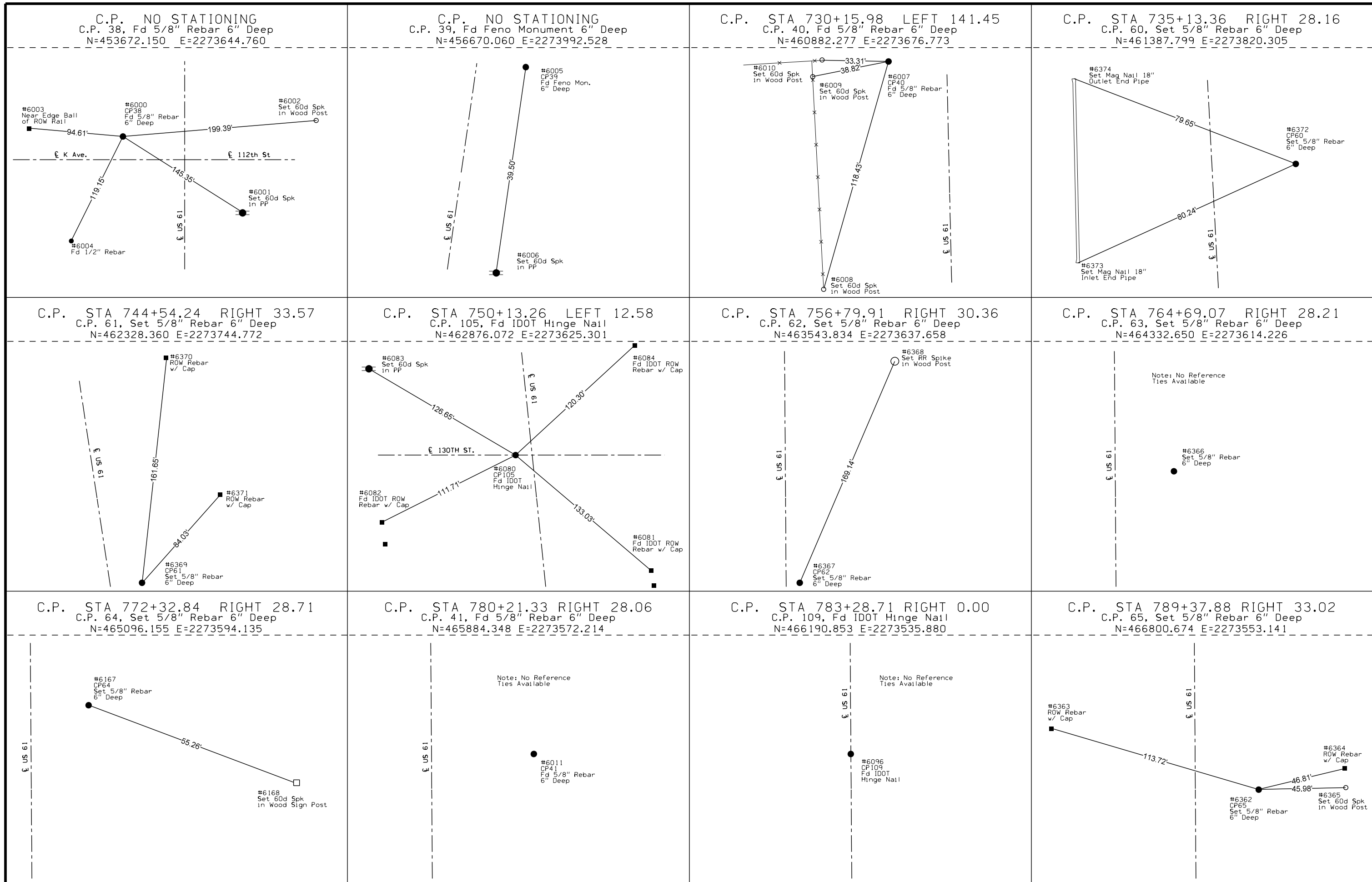
PI Sta 1085+07.72 This Survey  
 =PI Sta 25+92.602 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)



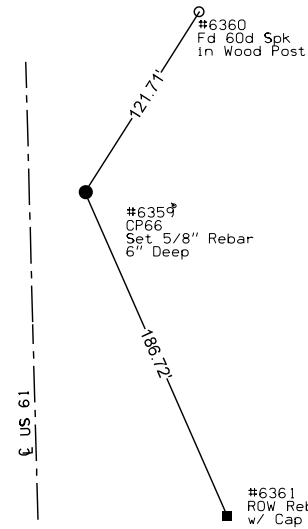
## SURVEY INFORMATION

500	462467.616	2273734.222	620.860	745+93.43	44.622	BM CUT "X" ON INLET END 24" RCP APRON
501	462920.412	2274164.798	625.316	750+07.98	528.711	BM SET RR SPK N SIDE PP
502	463699.336	2273704.220	642.039	758+33.56	101.091	BM SET RR SPK W. SIDE POST
503	465076.810	2273645.842	661.157	772+12.10	79.880	BM SET 60D SPK N. SIDE POST
504	494637.280	2272212.175	733.210	1071+16.15	423.003	BM LOUISA CO MONU ASI4 BERNTSEN ROD_CAP W/5" LID =2006ASI4 COUNTY MONU EL=733.210
505	502407.282	2260995.217	720.910	1085+84.77	-12729.140	BM USGSMONU 1DRL1964(88_3RD) =2000ASI505
506	466801.640	2273599.106	675.929	789+37.66	78.995	BM SET 60D SPK N. SIDE POST
507	472331.305	2283889.326	696.820	842+01.12	10508.096	BM USGSMONU 4DRL1964(88_3RD) =2006ASI507
508	467637.700	2273595.354	676.356	797+73.53	96.858	BM FD 60D SPK S. SIDE POST =BM80A 1994 AB PLAN NHS-61-3(28)--19-58 EL=676.62
509	468630.801	2273523.754	674.477	807+68.16	50.878	BM SET MAG NAIL ON INLET 42" CMP
510	469513.418	2273530.603	679.603	816+50.31	80.398	BM SET 60D SPK N. SIDE POST
511	469840.387	2273375.350	679.255	819+81.16	-66.404	BM FD RR SPK E SIDE PP
512	470774.475	2273536.391	678.926	829+10.80	118.580	BM FD RR SPK W SIDE PP =BM2 1969 AB PLAN F-61-3(2)--20-58 EL=686.16
513	470771.510	2273301.301	679.740	829+13.88	-116.509	BM FD RR SPK NE SIDE PP =BM83 1994 AB PLAN NHS-61-3(28)--19-58 EL=680.05
514	471982.739	2273429.060	665.057	841+21.43	42.328	BM FD IHC BM ON IN HDWL 5X5 RCB =BM84 1994 AB PLAN NHS-61-3(28)--19-58 EL=665.40 =BM3 1969 AB PLAN CM:F-61-3(2)--20-58 CM:EL=672.50
515	472411.996	2273423.842	664.847	845+50.67	48.140	BM FD IHC BM ON IN HDWL 4X3 RCB =BM4 1969 AB PLAN F-61-3(2)--20-58 EL=672.12
517	473550.471	2273195.308	673.245	856+93.06	-137.92	BM FD RR SPK S SIDE PP =BM5 1969 AB PLAN F-61-3(2)--20-58 EL=680.47 =BM85 1994 AB PLAN NHS-61-3(28)--19-58 EL=673.60
518	474692.835	2273459.063	694.834	868+36.69	129.762	BM FD 60D SPK IN W. SIDE RR TIE =BM86 1994 AB PLAN NHS-61-3(28)--19-58 EL=695.10
519	475084.620	2273392.134	688.245	872+26.64	54.455	BM CUT "X" ON INLET 42" RCP
520	476366.386	2273454.289	688.468	885+06.57	124.662	BM SET RR SPK W SIDE PP
521	476797.336	2273275.148	687.524	889+39.22	-50.339	BM FD RR SPK E SIDE PP =BM88A 1994 AB PLAN NHS-61-3(28)--19-58 EL=687.85
522	477967.691	2273235.837	703.155	901+09.90	-78.428	BM FD RR SPK E SIDE PP =BM89A 1994 AB PLAN NHS-61-3(28)--19-58 EL=703.62
523	478916.656	2273191.488	692.868	910+59.24	-113.676	BM FD RR SPK E SIDE PP =BM90A 1994 AB PLAN NHS-61-3(28)--19-58 EL=693.27
524	480060.092	2273122.020	690.880	922+29.00	-126.922	BM SET RR SPK S SIDE PP
525	480325.153	2273284.743	677.247	924+51.49	92.007	BM FD REBAR ON INLET HDWL 5 X 5 RCB
526	481229.595	2272687.139	697.155	935+21.26	-56.645	BM 60D SPK IN W. SIDE POST
527	482230.921	2272231.860	692.565	946+22.62	55.159	BM CUT "X" INLET HDWL 5 X 7 CONC ARCH
528	482988.829	2272044.941	697.068	954+21.97	61.168	BM SET RR SPK S SIDE PP
529	483951.658	2271859.135	701.099	963+93.03	-101.68	BM RR SPK N. SIDE LUM
530	485229.521	2271861.004	699.139	976+73.97	-73.14	BM SET RR SPK E SIDE PP
531	486172.066	2271971.039	693.852	986+15.51	44.84	BM CUT "X" INLET APRON 36" RCP
532	486598.656	2271830.504	696.123	990+43.31	-92.10	BM FD RR SPK E SIDE PP =BM96A 1994 AB PLAN NHS-61-3(28)--19-58 EL=696.57
533	487610.255	2271821.126	689.807	1000+54.95	-92.96	BM SET RR SPK S SIDE PP
534	488105.163	2271826.674	683.398	1005+49.80	-83.25	BM FD RR SPK E SIDE PP =BM97A 1994 AB PLAN NHS-61-3(28)--19-58 EL=683.83
535	489059.761	2271822.201	693.297	1015+04.40	-79.70	BM FD RR SPK E SIDE PP =BM97B 1994 AB PLAN NHS-61-3(28)--19-58 EL=693.83
536	489586.168	2271942.103	694.470	1020+28.87	47.084	BM CUT "X" IN INLET 30" RCP
537	491058.445	2271764.244	703.240	1035+08.76	-23.140	BM CUT "X" SW WING OF BRIDGE
538	491313.326	2271801.104	698.631	1037+59.33	36.317	BM CUT "X" ON INLET END 4 X 6 CONC ARCH CULV
539	492709.803	2271853.611	701.907	1051+65.53	181.358	BM SET RR SPK W SIDE PP
540	493880.012	2271876.516	722.422	1063+41.12	130.682	BM SET RR SPK W SIDE PP
541	495009.556	2271938.946	719.518	1074+72.39	129.170	BM CUT "X" ON INLET 48" RCP
542	495825.173	2272052.885	746.493	1083+38.46	120.163	BM SET RR SPK E SIDE PP
600	473414.390	2270752.840	666.488	855+77.79	-2605.582	BM SET RR SPK S SIDE PP
602	473635.646	2274960.208	699.131	857+60.16	1627.76	BM SET RR SPK S SIDE PP
607	478771.186	2274038.620	690.485	909+05.66	732.022	BM LOUISA CO MONU ASI7 BERNTSEN ROD_CAP W/5" LID =2006ASI7 COUNTY MONU EL=690.485
Along Ia 92						
601	473382.163	2272321.826	664.184	506+55.77	41.073	BM CUT "X" INLET APRON 30" R

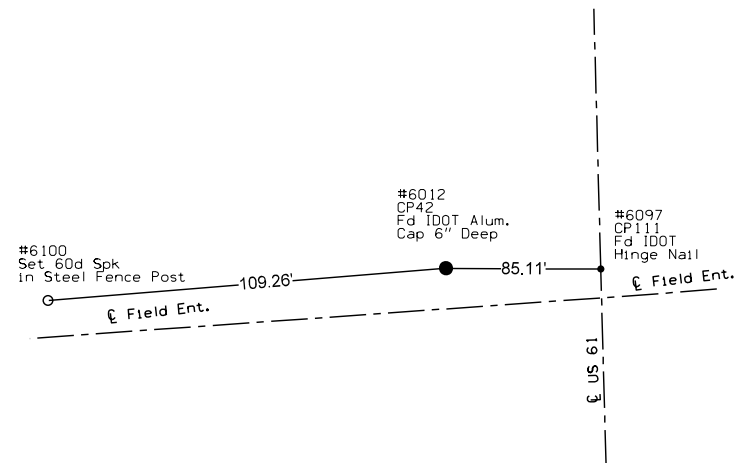




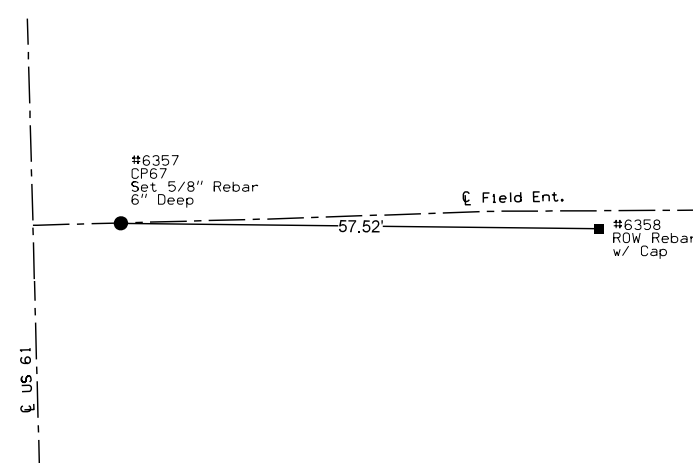
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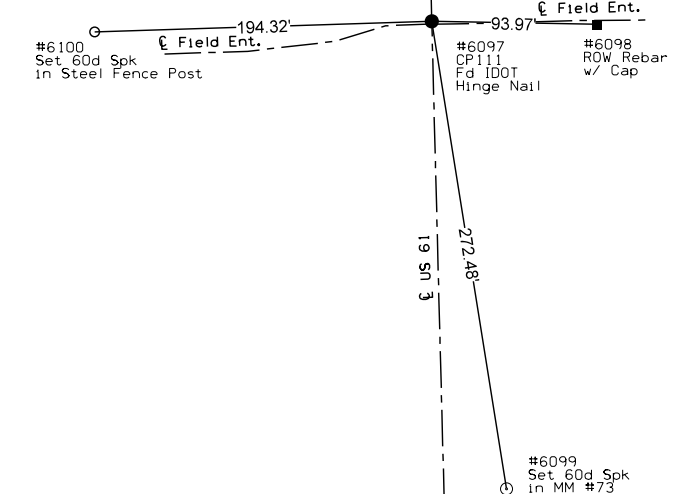
C.P. STA 802+95.23 LEFT 85.07  
 C.P. 42, Fd IDOT Alum. Cap 6" Deep  
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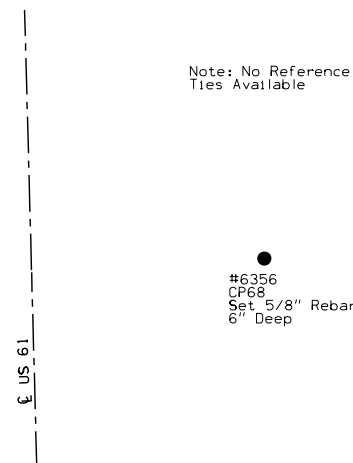
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 C.P. 67, Set 5/8" Rebar 6" Deep  
 N=468158.085 E=2273521.362



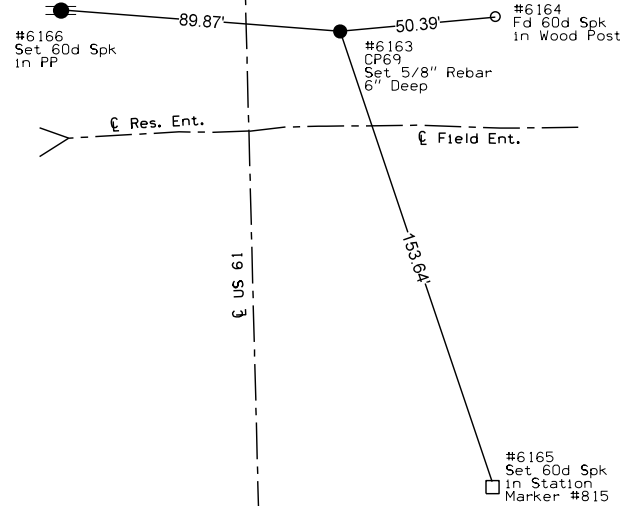
C.P. STA 802+97.70 RIGHT 0.00  
 C.P. 111, Fd IDOT Hinge Nail  
 N=468159.186 E=2273484.978



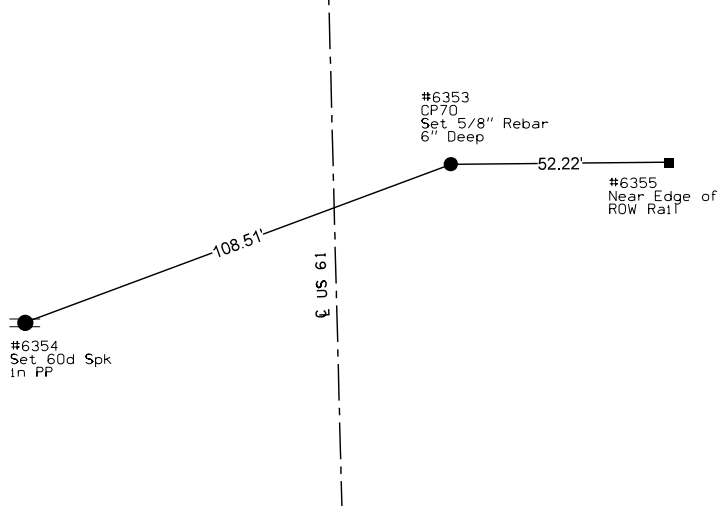
C.P. STA 809+01.74 RIGHT 28.99  
 C.P. 68, Set 5/8" Rebar 6" Deep  
 N=468763.772 E=2273498.442



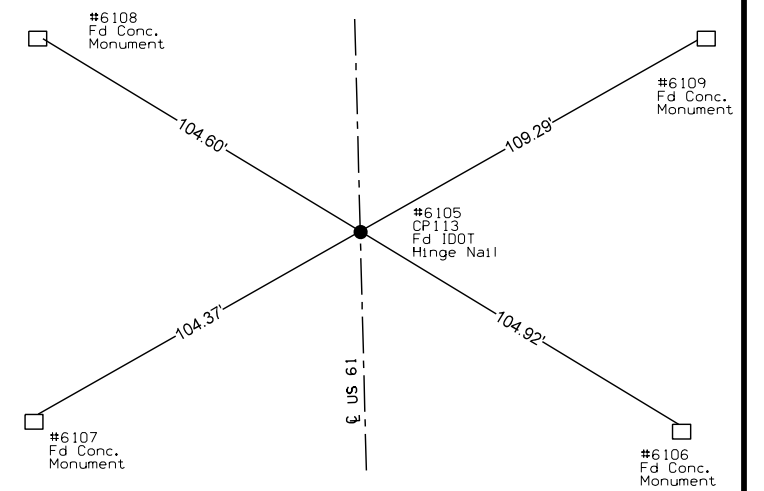
C.P. STA 816+47.02 RIGHT 30.28  
 C.P. 69, Set 5/8" Rebar 6" Deep  
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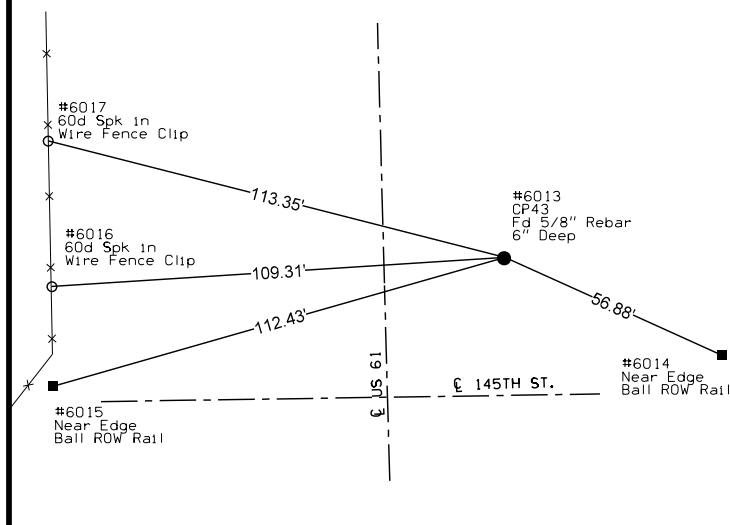
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 C.P. 70, Set 5/8" Rebar 6" Deep  
 N=470184.980 E=2273460.949



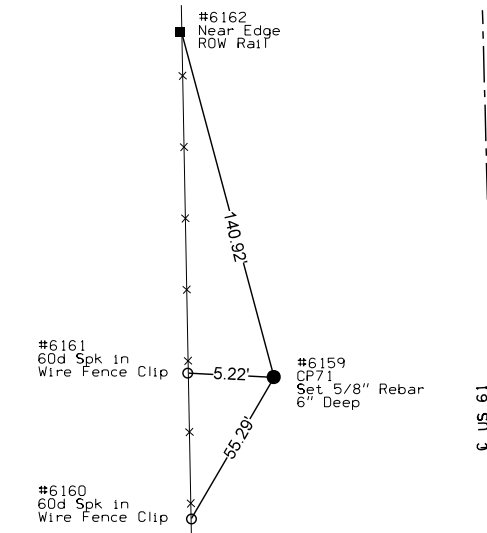
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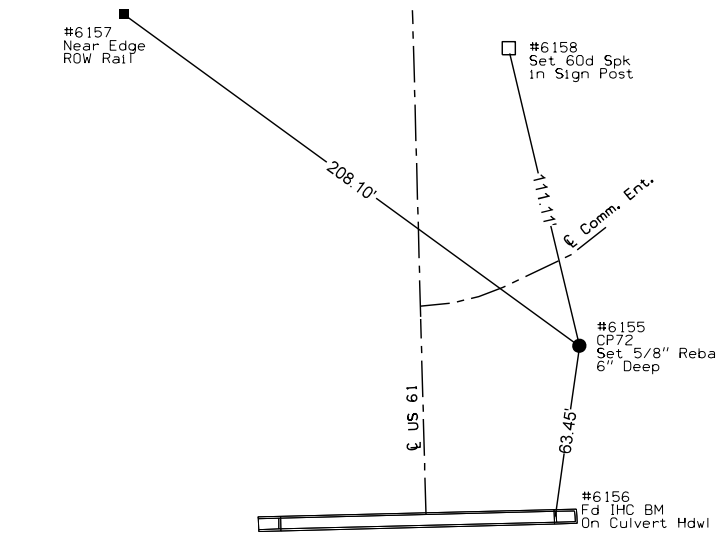
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 C.P. 43, Fd 5/8" Rebar 6" Deep  
 N=470902.650 E=2273443.314



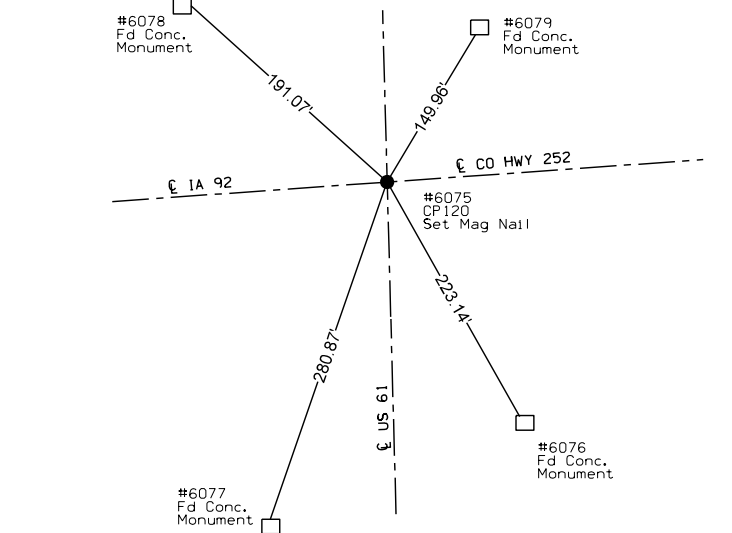
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 C.P. 71, Set 5/8" Rebar 6" Deep  
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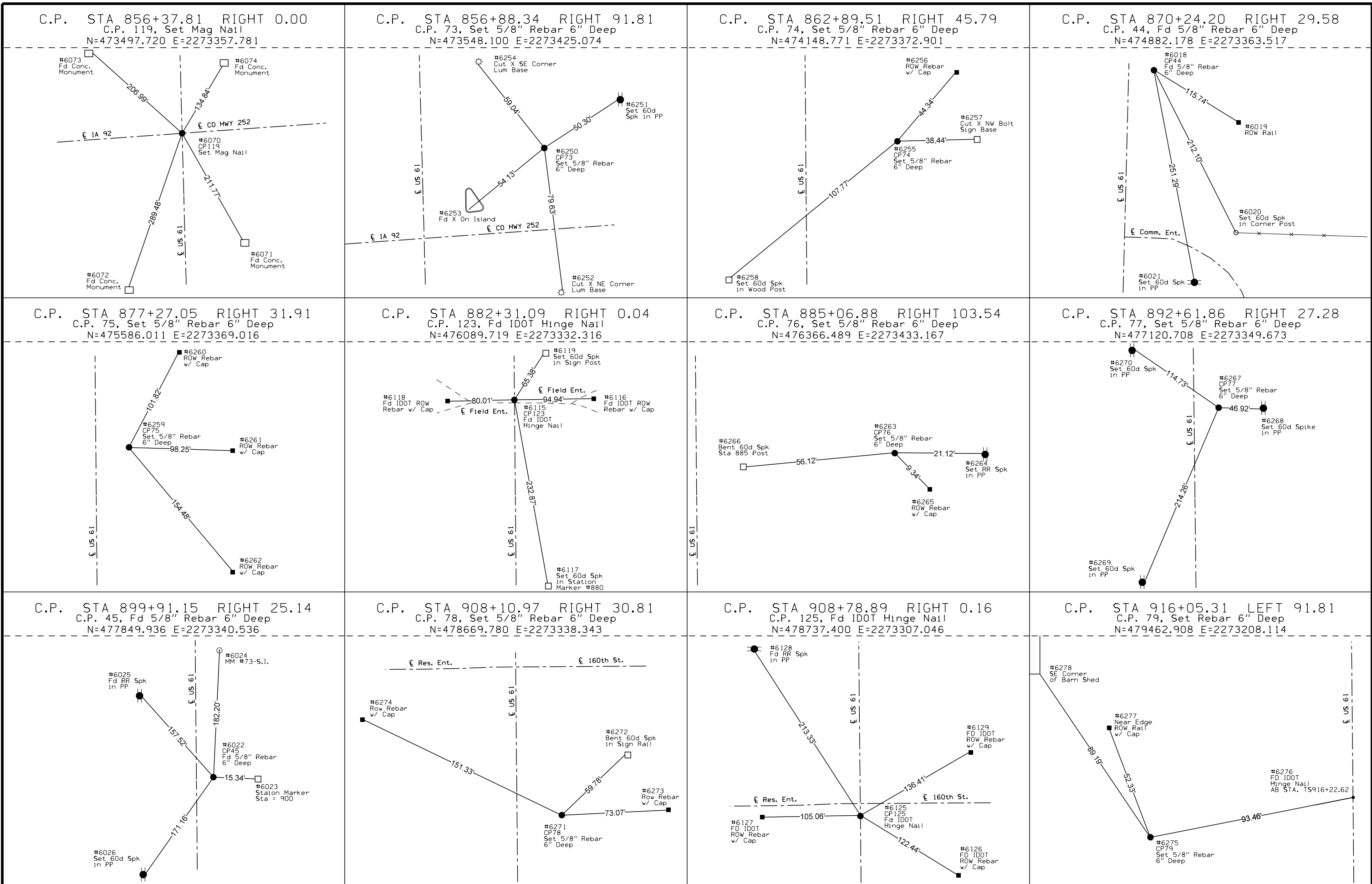


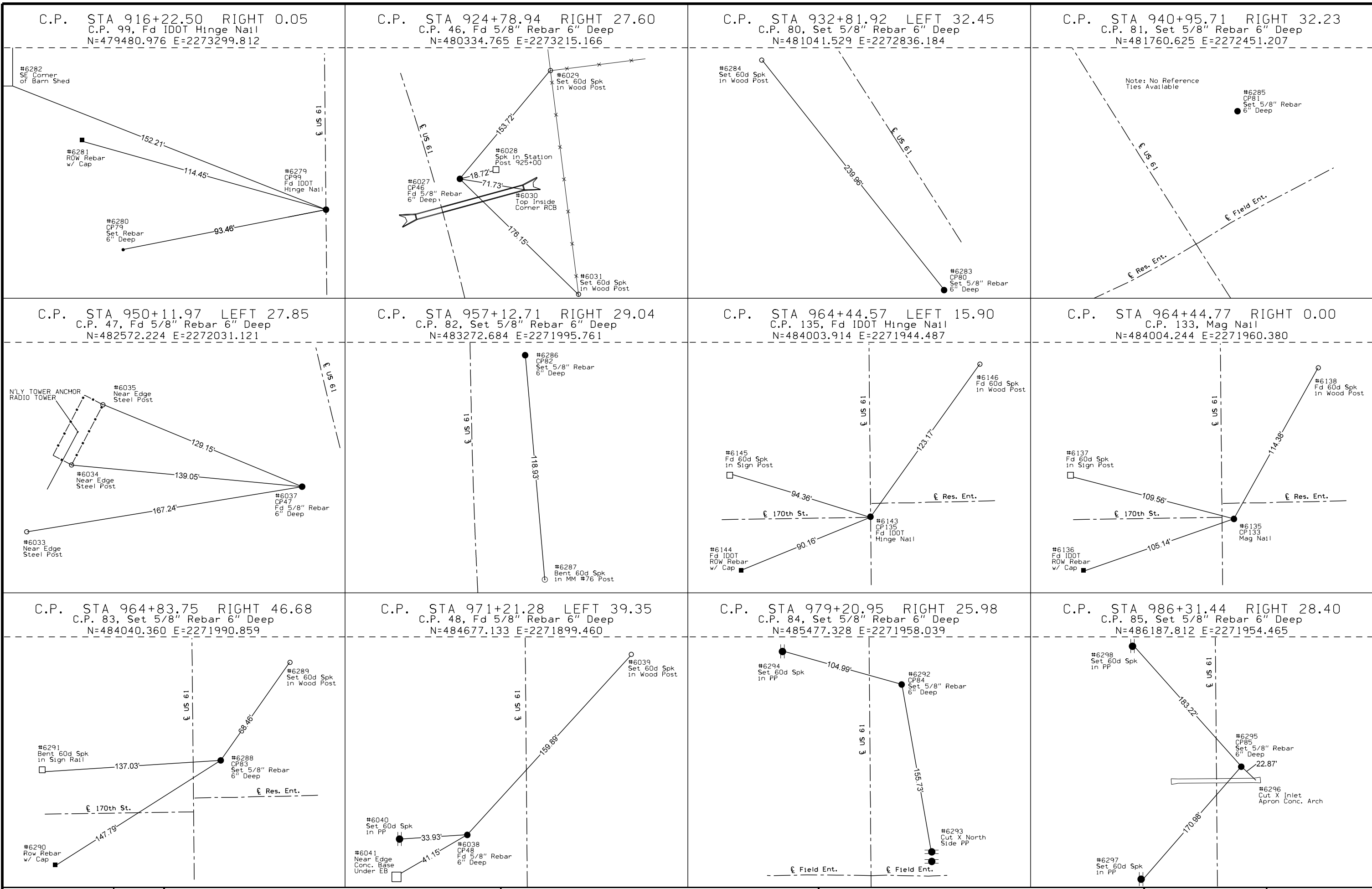
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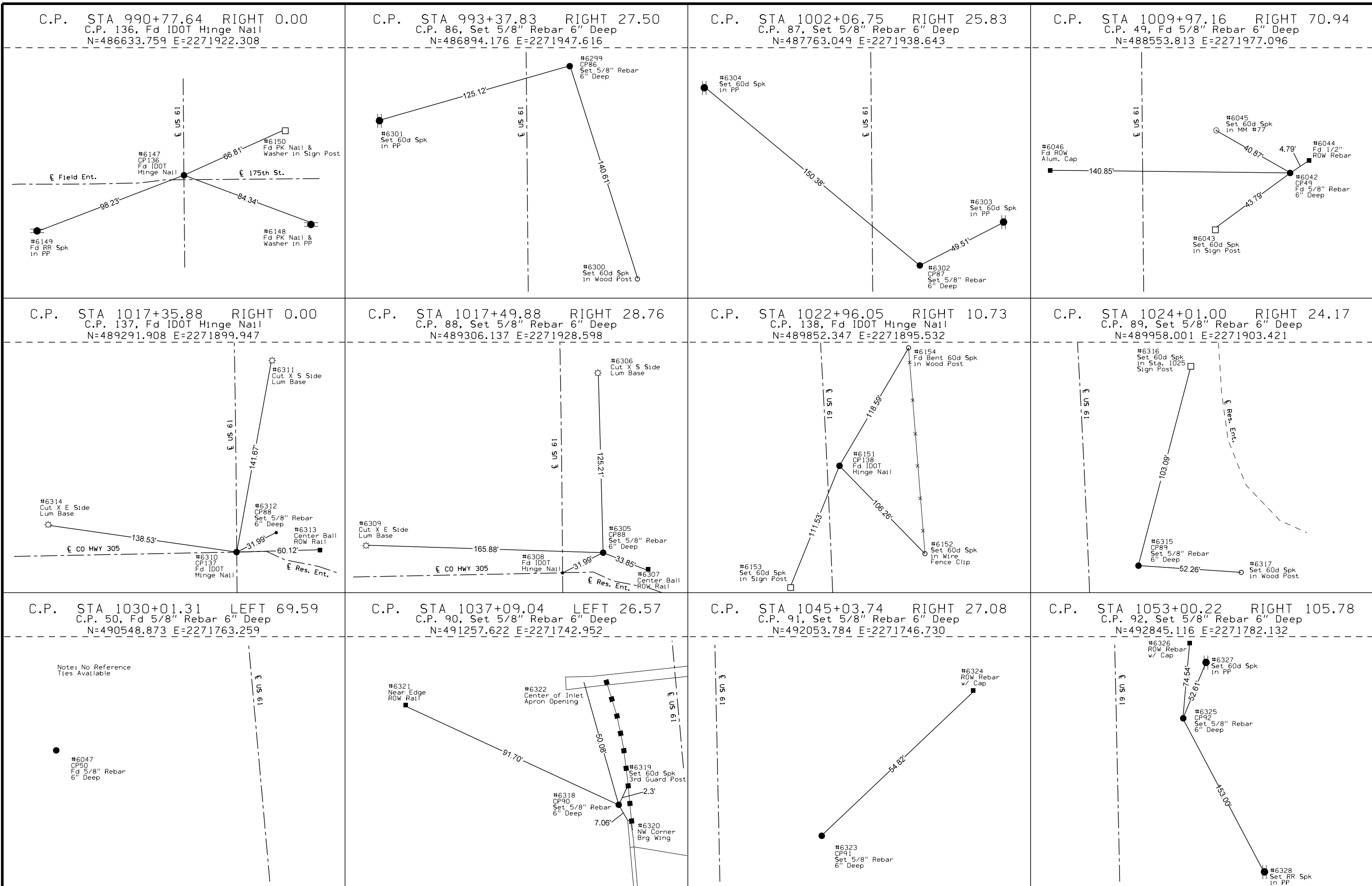


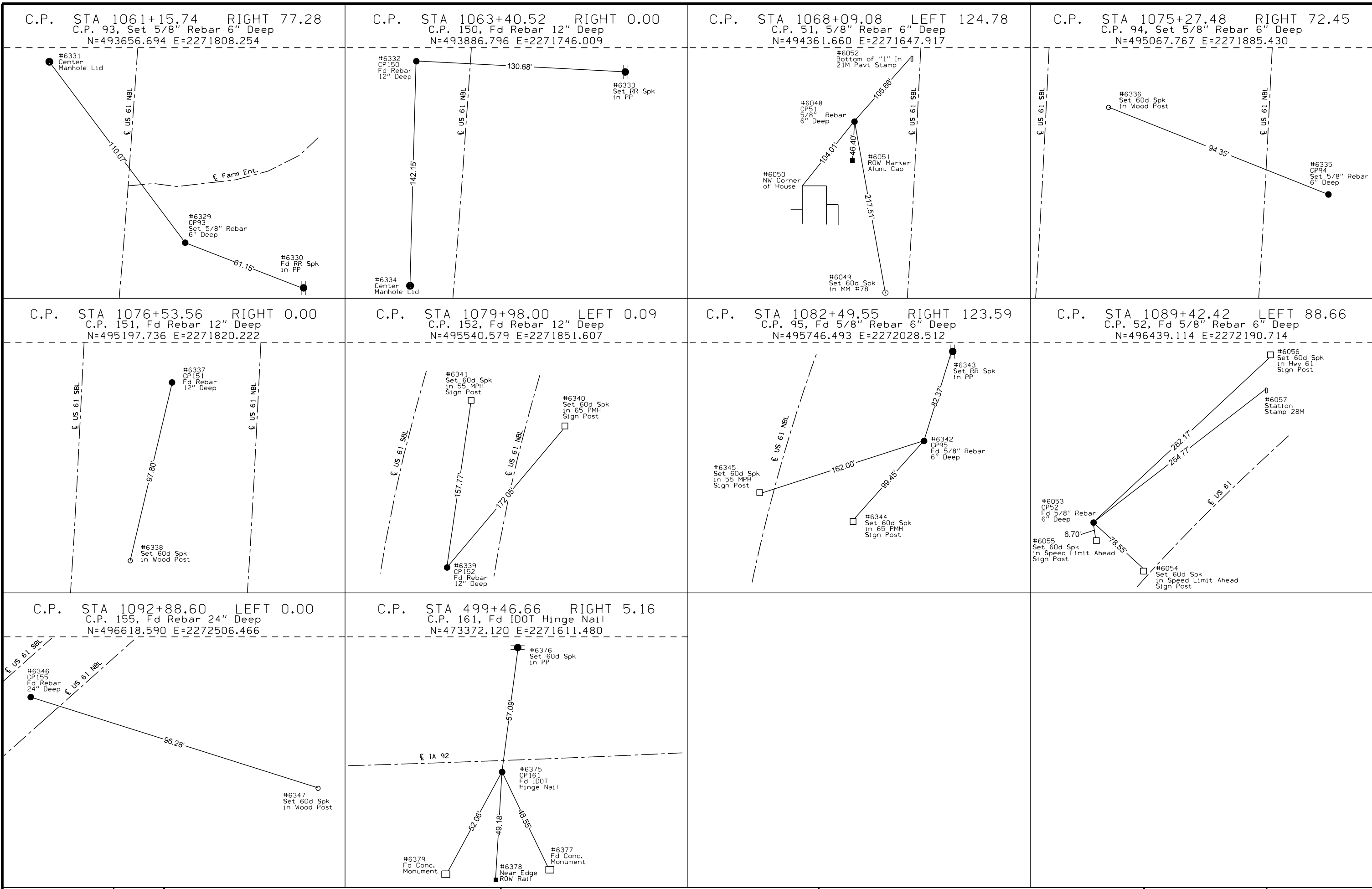
C.P. STA 856+36.30 LEFT 24.00  
 C.P. 120, Set Mag Nail  
 N=473495.996 E=2273333.793











ALIGNMENT COORDINATES

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI (M) 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)
Survey 61/ Existing 61																			
100		720+69.18	459,944.11	2,273,867.23															
C12								738+29.35	461,701.90	2,273,775.77	741+45.16	462,017.29	2,273,759.36	744+60.42	462,329.32	2,273,710.65			
C13								746+20.37	462,487.36	2,273,685.98	750+13.79	462,876.07	2,273,625.30	754+06.14	463,269.35	2,273,614.69			
103		783+28.71	466,190.85	2,273,535.88															
104		802+97.70	468,159.19	2,273,484.98															
105		829+43.76	470,804.37	2,273,417.00															
C14								847+40.91	472,600.93	2,273,370.83	850+40.91	472,900.83	2,273,363.12	853+40.90	473,200.82	2,273,360.44			
107		856+37.81	473,497.72	2,273,357.78															
178		856+37.17	473,496.00	2,273,333.79															
C15								863+22.80	474,181.59	2,273,326.77	866+44.03	474,502.80	2,273,323.48	869+65.18	474,823.91	2,273,332.41			
C16								869+65.19	474,823.91	2,273,332.41	872+86.41	475,145.01	2,273,341.33	876+07.56	475,466.22	2,273,338.25			
S4					916+22.36	479,480.84	2,273,299.76	917+97.36	479,655.80	2,273,296.30	925+37.88	480,396.32	2,273,290.98	932+34.27	481,018.00	2,272,888.62	934+09.27	481,166.10	2,272,795.39
S5					940+10.37	481,671.51	2,272,470.00	941+85.37	481,819.60	2,272,376.77	949+27.70	482,442.81	2,271,973.43	956+25.61	483,185.14	2,271,969.01	958+00.61	483,360.11	2,271,965.76
183		964+44.77	484,004.24	2,271,960.38															
186		964+47.70	484,003.91	2,271,944.49															
187		0+00.00	486,633.76	2,271,922.31															
188		26+58.24	489,291.91	2,271,899.95															
C17								1017+69.56	489,325.59	2,271,899.68	1022+96.34	489,852.35	2,271,895.53	1028+22.53	490,377.02	2,271,848.53			
C18								1037+97.73	491,348.33	2,271,761.51	1043+01.51	491,850.10	2,271,716.55	1048+04.67	492,353.88	2,271,714.71			
191		1048+04.67	492,353.88	2,271,714.71															
194		1048+04.85	492,353.67	2,271,668.78															
C19								1048+04.85	492,353.67	2,271,668.78	1053+73.80	492,922.61	2,271,665.75	1059+41.89	493,489.26	2,271,716.84			
C20								1059+41.89	493,489.26	2,271,716.84	1061+41.22	493,687.78	2,271,734.74	1063+40.52	493,886.80	2,271,746.01			
S6					1076+53.50	495,197.68	2,271,820.22	1079+97.99	495,540.56	2,271,851.70	1085+07.72	496,050.53	2,271,868.50	1089+44.10	496,380.76	2,272,257.48	1092+88.59	496,618.59	2,272,506.46
198		1131+79.79	499,206.24	2,275,412.58															
Survey 145th St.																			
999991		0+00.00	470,771.65	2,272,114.29															
999992		13+03.13	470,804.37	2,273,417.00															
Survey IA 92																			
238		491+18.80	473,369.19	2,270,783.51															
C11								496+44.99	473,371.05	2,271,309.69	499+46.78	473,372.12	2,271,611.48	502+48.33	473,393.83	2,271,912.49			
240		509+79.76	473,446.43	2,272,642.02															
241		511+58.65	473,459.75	2,272,820.42															
242		514+69.37	473,481.57	2,273,130.37															
243		516+97.35	473,497.72	2,273,357.78															
244		518+49.60	473,508.17	2,273,509.67															
245		524+65.67	473,554.07	2,274,124.03															
246		529+94.75	473,589.13	2,274,651.94															
Survey 170th St.																			
249		3934+48.01	483,983.80	2,270,644.95															
250		3947+47.70	484,003.91	2,271,944.49															
Survey 180th St./ 180th St.																			
253		201000+33.65	489,258.44	2,270,198.05															
254		201017+35.88	489,291.91	2,271,899.95															
Survey 160th St.																			
999995		0+00.00	478,737.35	2,273,306.89															
999996		9+28.06	478,744.69	2,274,234.92															
US 61																			
20100		754+06.14	463,267.92	2,273,561.71															
20202								793+27.09	467,187.44	2,273,455.98	802+41.03	468,101.05	2,273,431.33	811+50.21	468,996.06	2,273,246.20			
20302								827+50.21	470,562.89	2,272,922.10	837+54.45	471,546.31	2,272,718.68	847+52.36	472,550.51	2,272,709.06			
20502								881+61.03	475,959.02	2,272,676.55	889+56.68	476,754.64	2,272,668.98	897+31.83	477,492.59	2,272,966.45			
20702								907+03.31	478,393.62	2,273,329.67	920+61.13	479,652.96	2,273,837.32	933+21.30	480,961.11	2,273,473.42			
20802								988+21.30	486,259.91	2,271,999.43	993+67.19	486,785.83	2,271,853.13	999+08.21	487,331.28	2,271,831.27			
20902								1040+08.21	491,427.99	2,271,667.07	1046+31.83	492,051.11	2,271,642.09	1052+54.48	492,673.73	2,271,677.34			
20999		1077+82.47	495,197.68	2,271,820.22															
US 61 NB Tie																			
22119											1985+75.00	486,033.61	2,272,104.94						
22116								1986+83.04	486,137.70	2,272,075.98	1993+04.45	486,736.37	2,271,909.44	1999+18.69	487,357.76	2,271,904.22			
22117								2018+93.74	489,332.75	2,271,887.60	2024+16.51	489,855.49	2,271,883.21	2029+38.70	490,376.17	2,271,836.56			
22118								2039+13.70	491,347.28	2,271,749.55	2044+17.99	491,849.55	2,271,704.55	2049+21.65	492,353.83	2,271,702.71			

ALIGNMENT COORDINATES

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI (M) 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)
145th St. (Ult.)																			
50110		2800+47.26	470,769.97	2,271,867.39															
50122								2803+74.91	470,777.24	2,272,194.96	2807+49.74	470,785.56	2,272,569.69	2809+99.97	470,418.50	2,272,645.62			
50132								2815+64.59	469,865.59	2,272,759.99	2817+14.59	469,718.70	2,272,790.37	2818+00.21	469,749.09	2,272,937.26			
50172								2821+89.67	469,827.98	2,273,318.65	2823+15.06	469,853.38	2,273,441.44	2823+98.55	469,978.72	2,273,438.22			
50106		2832+24.48	470,804.37	2,273,417.00															
145th St. (Grad.)																			
50100		2800+47.26	470,769.97	2,271,867.39															
SR145_GRADING-1								2803+74.91	470,777.24	2,272,194.96	2807+49.74	470,785.56	2,272,569.69	2809+99.97	470,418.50	2,272,645.62			
SR145_GRADING-2								2815+64.59	469,865.59	2,272,759.99	2817+14.59	469,718.70	2,272,790.37	2818+00.21	469,749.09	2,272,937.26			
50101		2821+89.67	469,827.98	2,273,318.65															
SR145_GRADING-3								2822+24.96	469,835.13	2,273,353.21	2822+69.65	469,844.18	2,273,396.98	2823+14.10	469,845.33	2,273,441.65			
IA 92																			
55500		495+00.00	473,370.54	2,271,164.71															
55501								496+44.99	473,371.05	2,271,309.69	499+46.78	473,372.12	2,271,611.48	502+48.33	473,393.83	2,271,912.49			
55501		502+49.00	473,393.87	2,271,913.16															
55502		524+65.67	473,554.07	2,274,124.03															
170th St.																			
249		3934+48.01	483,983.80	2,270,644.95															
30000		8958+09.61	484,003.91	2,271,944.48															
30150								8970+20.00	484,022.64	2,273,154.73	8970+78.94	484,023.56	2,273,213.66	8971+35.03	484,054.51	2,273,263.82			
30200		8974+35.03	484,212.08	2,273,519.11															
175th St.																			
90100		9968+00.16	483,767.33	2,273,436.04															
90250								9983+68.82	485,112.59	2,272,629.21	9985+56.88	485,273.86	2,272,532.49	9987+42.98	485,454.02	2,272,478.56			
90350								9996+99.58	486,370.45	2,272,204.27	9999+81.35	486,640.39	2,272,123.48	10000+93.88	486,645.78	2,272,405.20			
90400		10004+10.88	486,651.84	2,272,722.14															
ENTL 497																			
9250		2497+70.00	473,372.38	2,271,434.70															
C9270								2498+45.10	473,447.46	2,271,433.37	2498+50.00	473,452.37	2,271,433.28	2498+52.85	473,452.55	2,271,438.18			
9275		2501+88.81	473,465.06	2,271,773.90															
ENTR 497																			
9250		2497+70.00	473,372.38	2,271,434.70															
9255								1498+20.00	473,322.39	2,271,435.58	1499+23.55	473,218.85	2,271,437.42	1499+80.57	473,224.30	2,271,540.83			
9260								1504+03.30	473,246.54	2,271,962.97	1505+06.49	473,251.97	2,272,066.02	1505+63.51	473,148.80	2,272,068.21			
9260		1508+08.24	472,904.13	2,272,073.42															
ENT 910																			
10303		1907+80.47	478,647.73	2,273,225.74															
10305		1911+38.00	478,996.50	2,273,304.40															
160th St.																			
90700		7898+58.87	477,717.43	2,273,316.67															
160.1								7899+50.58	477,809.13	2,273,315.79	7900+50.00	477,908.55	2,273,314.84	7901+46.48	477,999.66	2,273,354.62			
160.2								7906+53.99	478,464.77	2,273,557.71	7909+54.62	478,740.28	2,273,678.02	7911+87.74	478,743.66	2,273,978.64			
90730		7912+21.95	478,744.04	2,274,012.84															
90740		7917+21.95	478,749.66	2,274,512.81															
DET61.905																			
10110								300+00.00	477,746.79	2,273,011.78	307+95.80	478,484.88	2,273,309.31	315+71.08	479,280.64	2,273,301.68			
10125		316+48.93	479,358.48	2,273,300.93															
DET61.985																			
10011								400+00.00	484,750.69	2,271,938.19	406+66.59	485,417.25	2,271,932.57	413+30.82	486,075.94	2,271,830.19			
10021								421+46.38	486,881.82	2,271,704.93	424+43.52	487,175.44	2,271,659.29	427+37.84	487,471.52	2,271,684.31			
10031								428+80.70	487,613.87	2,271,696.34	434+49.11	488,180.27	2,271,744.20	440+16.06	488,748.22	2,271,721.43			
DET.E61																			
10201		1854+81.50	473,594.48	2,273,681.28															
C10205								1856+61.22	473,585.09	2,273,501.81	1857+65.56	473,579.64	2,273,397.61	1858+22.55	473,683.98	2,273,396.59			
10203		1862+05.04	474,066.46	2,273,392.86															
10204		1866+92.21	474,550.64	2,273,339.03															
IA 92 Ramp A																			
44000		1556+06.08	473,424.66	2,272,338.04															
44001								1566+89.74	474,489.32	2,272,540.13	1568+40.09	474,637.02	2,272,568.16	1569+90.00	474,787.12	2,272,576.73			
44002		1570+50.00	474,847.02	2,272,580.15															



**ALIGNMENT COORDINATES**

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI (M) 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)
IA 92 Ramp B																			
45000		2543+50.00	472,153.55	2,272,827.64															
45001								2544+10.00	472,213.54	2,272,828.72	2545+77.17	472,380.68	2,272,831.71	2547+43.57	472,545.01	2,272,862.42			
45002		2556+89.90	473,475.25	2,273,036.21															
IA 92 Ramp C																			
46000		3542+50.00	472,043.41	2,272,639.27															
46001								3542+50.00	472,043.41	2,272,639.27	3544+03.16	472,196.10	2,272,627.28	3545+55.71	472,345.18	2,272,592.18			
46003		3556+64.71	473,424.66	2,272,338.04															
IA 92 Ramp D																			
47000		4556+49.96	473,475.25	2,273,036.21															
47001								4566+84.34	474,486.39	2,272,818.20	4568+67.68	474,665.61	2,272,779.56	4570+50.00	474,848.87	2,272,774.14			
47003		4570+50.00	474,848.87	2,272,774.14															
170th Ramp A																			
64000		5565+58.64	484,008.95	2,272,269.84															
64001								5575+46.52	484,993.87	2,272,193.49	5577+05.97	485,152.85	2,272,181.17	5578+65.00	485,308.97	2,272,148.75			
64002		5579+25.00	485,367.72	2,272,136.55															
170th Ramp B																			
65000		6551+00.00	482,703.41	2,273,099.82															
65001								6551+60.00	482,762.16	2,273,087.62	6553+19.36	482,918.19	2,273,055.22	6554+78.29	483,077.08	2,273,042.89			
65002		6564+23.83	484,019.78	2,272,969.75															
170th Ramp C																			
66000		7550+50.00	482,603.25	2,272,926.32															
66001								7550+50.00	482,603.25	2,272,926.32	7552+12.97	482,759.35	2,272,879.51	7553+75.21	482,905.81	2,272,808.05			
66003		7566+02.64	484,008.95	2,272,269.84															
170th Ramp D																			
67000		8563+81.59	484,019.78	2,272,969.75															
67002								8575+78.28	485,096.20	2,272,446.89	8577+39.49	485,241.21	2,272,376.45	8579+00.00	485,395.63	2,272,330.15			
67003		8579+00.00	485,395.63	2,272,330.15															

**SPIRAL OR CIRCULAR CURVE DATA**

101-17  
04-19-11

Name	Location	Δ <sub>scc</sub>	Horizontal Alignment Data												Remarks		
			Spiral Data								Curve Data						
			θ <sub>s</sub>	L <sub>s</sub>	T <sub>s</sub>	Es	Xc	Yc	L.T.	S.T.	Δ <sub>c</sub>	T	L	R		E	
Survey 61/ Existing 61																	
C12												5° 53' 36.03" LT	315.81'	631.07'	6,135.32'	8.12'	
C13												7° 19' 36.64" RT	393.42'	785.77'	6,144.70'	12.58'	
C14												0° 57' 34.51" RT	300.00'	599.99'	35,824.44'	1.26'	
C15												2° 10' 42.82" RT	321.23'	642.38'	16,894.55'	3.05'	
C16												2° 08' 28.50" LT	321.22'	642.38'	17,188.74'	3.00'	
S4		32° 13' 28.31"	1° 44' 57.34"	175.00'	915.52'	117.64'	174.98'	1.78'	116.67'	58.34'		32° 13' 28.31" LT	733.89'	1,436.91'	2,866.00'	92.47'	
S5		32° 17' 42.45"	1° 44' 58.13"	175.00'	917.33'	118.16'	174.98'	1.78'	116.67'	58.34'		32° 17' 42.45" RT	735.67'	1,440.24'	2,865.64'	92.92'	
C17												4° 40' 05.44" LT	526.78'	1,052.97'	12,923.86'	10.73'	
C18												4° 54' 37.19" RT	503.78'	1,006.94'	11,749.44'	10.80'	
C19												5° 27' 24.49" RT	568.95'	1,137.04'	11,938.76'	13.55'	
C20												1° 54' 42.80" LT	199.33'	398.63'	11,946.18'	1.66'	
S6		45° 04' 39.16"	6° 00' 57.80"	344.49'	854.21'	138.92'	344.11'	12.05'	229.79'	114.95'		45° 04' 39.16" RT	486.62'	946.11'	1,640.42'	70.66'	
Survey IA 92																	
C11												3° 55' 17.09" LT	301.79'	603.34'	8,815.40'	5.16'	
US 61																	
20202												10° 08' 29.27" LT	913.95'	1,823.12'	10,300.00'	40.47'	
20302												11° 08' 14.61" RT	1,004.24'	2,002.16'	10,300.00'	48.84'	
20502												22° 30' 00.00" RT	795.65'	1,570.80'	4,000.00'	78.36'	
20702												37° 30' 00.00" LT	1,357.82'	2,617.99'	4,000.00'	224.18'	
20802												13° 15' 00.00" RT	545.89'	1,086.90'	4,700.00'	31.60'	
20902												5° 32' 07.21" RT	623.62'	1,246.27'	12,900.00'	15.06'	
US 61 NB Tie																	
22116												15° 03' 47.83" RT	621.41'	1,235.65'	4,700.00'	40.90'	
22117												4° 38' 15.44" LT	522.76'	1,044.96'	12,910.00'	10.58'	
22118												4° 54' 37.44" RT	504.28'	1,007.95'	11,761.00'	10.81'	
145th St. (Ult.)																	
50122												79° 35' 07.06" RT	374.83'	625.06'	450.00'	135.66'	
50132												90° 00' 00.00" LT	150.00'	235.62'	150.00'	62.13'	
50172												79° 47' 07.06" LT	125.39'	208.88'	150.00'	45.50'	
145th St. (Grad.)																	
SR145_GRADING-1												79° 35' 07.06" RT	374.83'	625.06'	450.00'	135.66'	
SR145_GRADING-2												90° 00' 00.00" LT	150.00'	235.62'	150.00'	62.13'	
SR145_GRADING-3												10° 12' 52.94" RT	44.69'	89.14'	500.00'	1.99'	
IA 92																	
55501												3° 55' 17.09" LT	301.79'	603.34'	8,815.40'	5.16'	
170th St.																	
30150												30° 47' 50.00" LT	58.94'	115.03'	214.00'	7.97'	
175th St.																	
90250												14° 17' 30.00" RT	188.05'	374.15'	1,500.00'	11.74'	
90350												105° 34' 00.97" RT	281.77'	394.29'	214.00'	139.82'	
ENTL 497																	
C9270												88° 52' 55.50" RT	4.90'	7.76'	5.00'	2.00'	
ENTR 497																	
9255												92° 00' 00.00" LT	103.55'	160.57'	100.00'	43.96'	
9260												91° 47' 49.01" RT	103.19'	160.22'	100.00'	43.69'	
160th St.																	
160.1												24° 08' 17.33" RT	99.42'	195.90'	465.00'	10.51'	
160.2												65° 46' 03.62" RT	300.64'	533.76'	465.00'	88.72'	
DET61.905																	
10110												22° 30' 14.66" LT	795.80'	1,571.08'	4,000.00'	78.39'	
DET61.985																	
10011												8° 21' 05.81" LT	666.59'	1,330.82'	9,130.00'	24.30'	
10021												13° 39' 52.44" RT	297.14'	591.46'	2,480.00'	17.74'	
10031												7° 07' 30.06" LT	568.41'	1,135.36'	9,130.00'	17.68'	
DET.E61																	
C10205												92° 26' 04.25" RT	104.34'	161.33'	100.00'	44.52'	

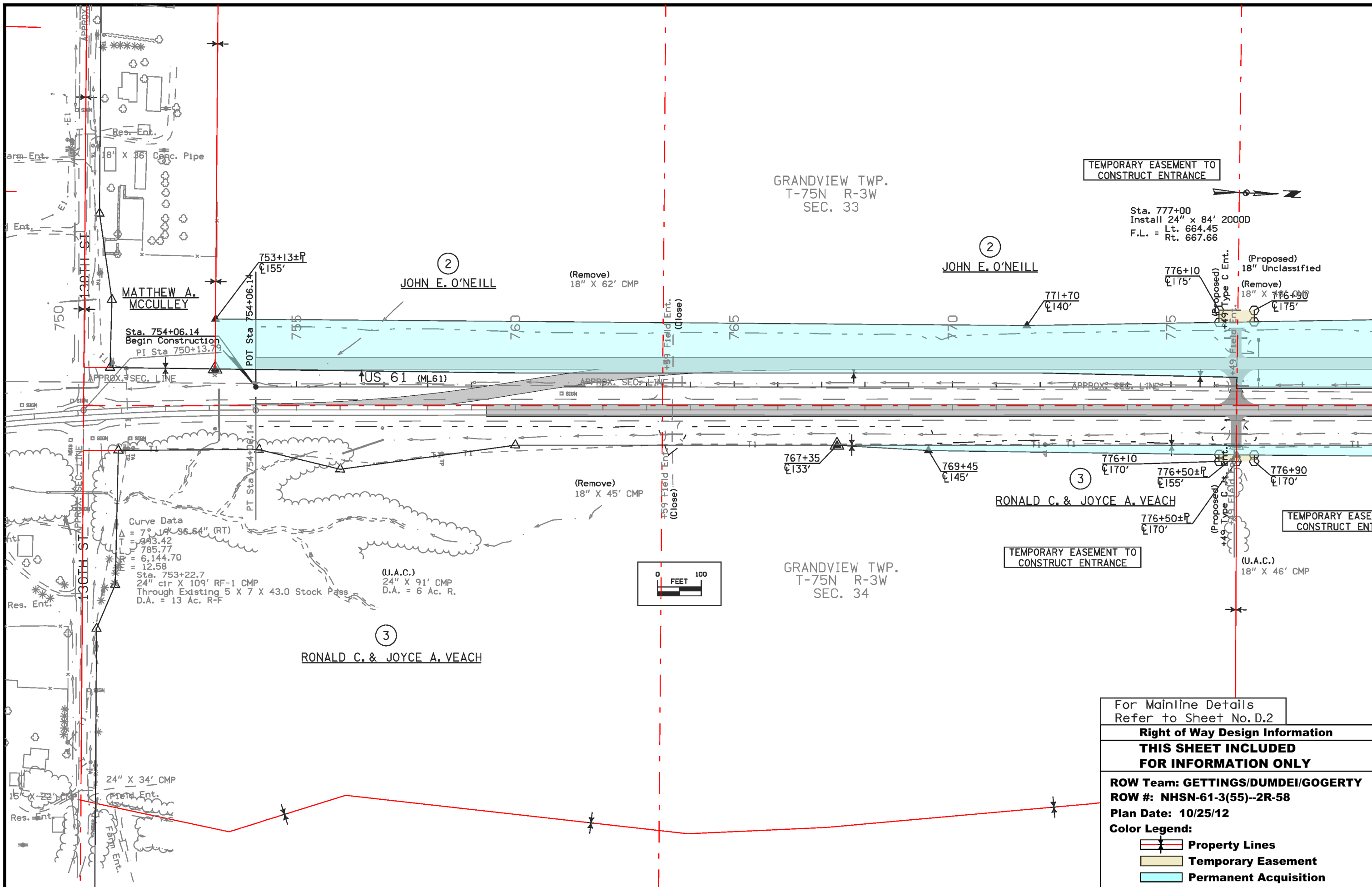


**SUPERELEVATION DATA**

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks	
			e	L	x															
			FT	FT	FT															
US 61	20202	10300	2.0	90	90	PV-302	791+74.09	792+64.09	793+54.09	793+54.09										
							813+03.21	812+13.21	811+23.21	811+23.21										
		20302	10300	2.0	90	PV-302	825+97.21	826+87.21	827+77.21	827+77.21										
							849+05.36	848+15.36	847+25.36	847+25.36										
		20502	4000	4.6	207	PV-302	879+26.13	880+16.13	881+06.13	882+23.13			881+61.03			881+96.13	881+96.13			
							899+66.73	898+76.73	897+86.73	896+69.73			897+31.83			896+96.73	896+96.73			
		20702	4000	4.6	207	PV-302	904+68.41	905+58.41	906+48.41	907+65.41			907+03.31			907+38.41	907+38.41			
20802		4700	4.0	180	90	PV-302	935+56.20	934+66.20	933+76.20	932+59.20			933+21.30			932+86.20	932+86.20			
							986+05.30	986+95.30	987+85.30	988+75.30			988+21.30			988+75.30	988+75.30			
							1001+24.21	1000+34.21	999+44.21	998+54.21			999+08.21			998+54.21	998+54.21			
		20902	12900																NORMAL CROWN	
US 61 NB TIE	22116	4700	4.0	180	90	PV-302	984+67.04	985+57.04	1986+47.04	1987+37.04			1986+83.04			1987+37.04	1987+37.04		NOTE 1	
							2001+34.69	2000+44.69	1999+54.69	1998+64.69			1999+18.69			1998+64.69	1998+64.69			
	22117	12910	2.0	90	90	PV-302	2017+40.74	2018+30.74	2019+20.74	2019+20.74				2018+93.74					NOTE 2	
	22118	11761					2030+91.70	2030+01.70	2029+11.70	2029+11.70				2029+38.70					NORMAL CROWN, NOTE 2	
DET 61_905	10110	4000	3.6	96	53	PV-301				304+71.63									NOTE 3	
										311+17.17										NOTE 4
DET 61_985	10011	9130	3.0	80	53	PV-301														
							407+98.38	407+45.05	406+91.72	406+65.05			406+89.05							NOTE 5
	10021	2480	5.0	133	53	PV-301	420+00.28	420+53.28	421+06.28	421+86.28			421+46.38		421+59.68	421+59.68				
							428+83.94	428+30.94	427+77.94	426+97.94			427+37.84		427+24.54	427+24.54				
	10031	9130	3.0	80	53	PV-301	431+93.99	432+47.32	433+00.65	433+27.32			433+03.32							NOTE 6
IA 92 RAMP A	44001	2300	5.2	162	62	PV-303	1566+38.34		1566+89.74	1567+38.34					1567+00.96	1567+00.96				
							1570+41.40		1569+90.00	1569+41.40					1569+78.78	1569+78.78				
IA 92 RAMP B	45001	2000	5.4	168	62	PV-303	2543+54.40		2544+10.00	2544+60.40					2544+16.84	2544+16.84				
							2547+99.17		2547+43.57	2546+93.17					2547+36.73	2547+36.73				
IA 92 RAMP C	46001	2000	5.4	168	62	PV-303	3541+94.40		3542+50.00	3543+00.40					3542+56.84	3542+56.84				
							3546+11.31		3545+55.71	3545+05.31					3545+48.87	3545+48.87				
IA 92 RAMP D	47001	2000	5.4	168	62	PV-303	4566+28.74		4566+84.34	4567+34.74					4566+91.18	4566+91.18				
							4571+05.60		4570+50.00	4569+99.60					4570+43.16	4570+43.16				
170TH ST RAMP A	64001	2500	5.0	155	62	PV-303	5575+00.02		5575+46.52	5575+93.02					5575+62.02	5575+62.02				
							5579+11.50		5578+65.00	5578+18.50					5578+49.50	5578+49.50				
170TH ST RAMP B	65001	2500	5.0	155	62	PV-303	6551+13.50		6551+60.00	6552+06.50					6551+75.50	6551+75.50				
							6555+24.79		6554+78.29	6554+31.79					6554+62.79	6554+62.79				
170TH ST RAMP C	66001	2000	5.4	168	62	PV-303	7549+94.40		7550+50.00	7551+00.40					7550+56.84	7550+56.84				
							7554+30.81		7553+75.21	7553+24.81					7553+68.37	7553+68.37				
170TH ST RAMP D	67002	2000	5.4	168	62	PV-303	8575+22.68		8575+78.28	8576+28.68					8575+85.12	8575+85.12				
							8579+55.60		8579+00.00	8578+49.60					8578+93.16	8578+93.16				

NOTES:  
 1. Sections A-A and B-B based on US 61 stationing  
 2. Based on existing curve  
 3. Nominal e = 3.6%, e = 3.0% at tie-in with US 61  
 4. Nominal e = 3.6%, e = 3.0% at tie-in with Existing 61  
 5. Nominal e = Normal Crown, e = 3.0% at tie-in with Existing 61  
 6. Nominal e = Normal Crown, e = 3.0% at tie-in with US 61



TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

Sta. 777+00  
Install 24" x 84' 2000D  
F.L. = Lt. 664.45  
Rt. 667.66

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 33

②  
JOHN E. O'NEILL

MATTHEW A. MCCULLEY

②  
JOHN E. O'NEILL

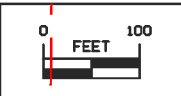
③  
RONALD C. & JOYCE A. VEACH

③  
RONALD C. & JOYCE A. VEACH

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 34

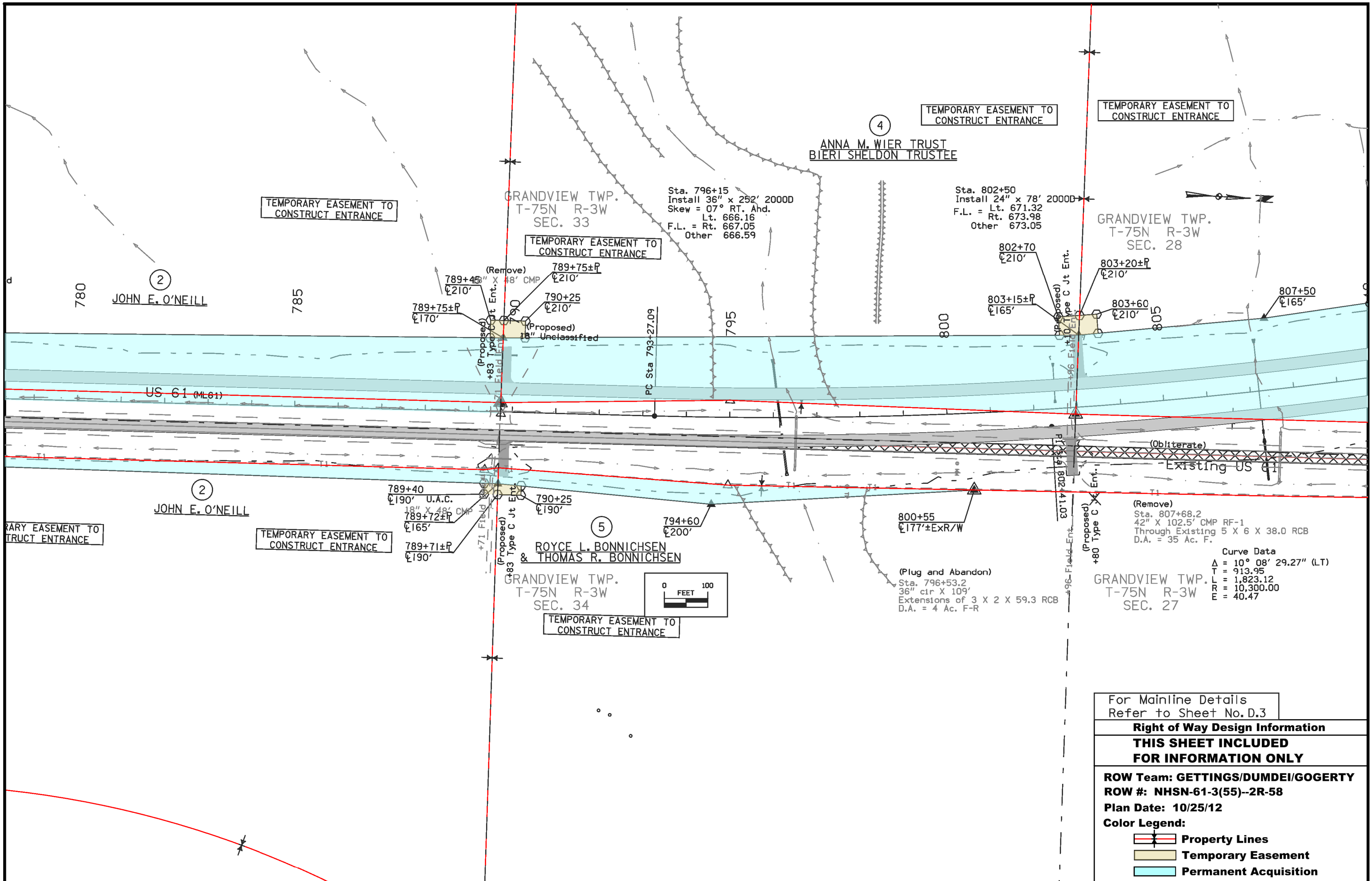
Curve Data  
= 7° 19' 36.64" (RT)  
= 43.42  
= 785.77  
= 6,144.70  
= 12.58  
Sta. 753+22.7  
24" cir X 109' RF-1 CMP  
Through Existing 5 X 7 X 43.0 Stock Pass  
D.A. = 13 Ac. R-F

(U.A.C.)  
24" X 91' CMP  
D.A. = 6 Ac. R.

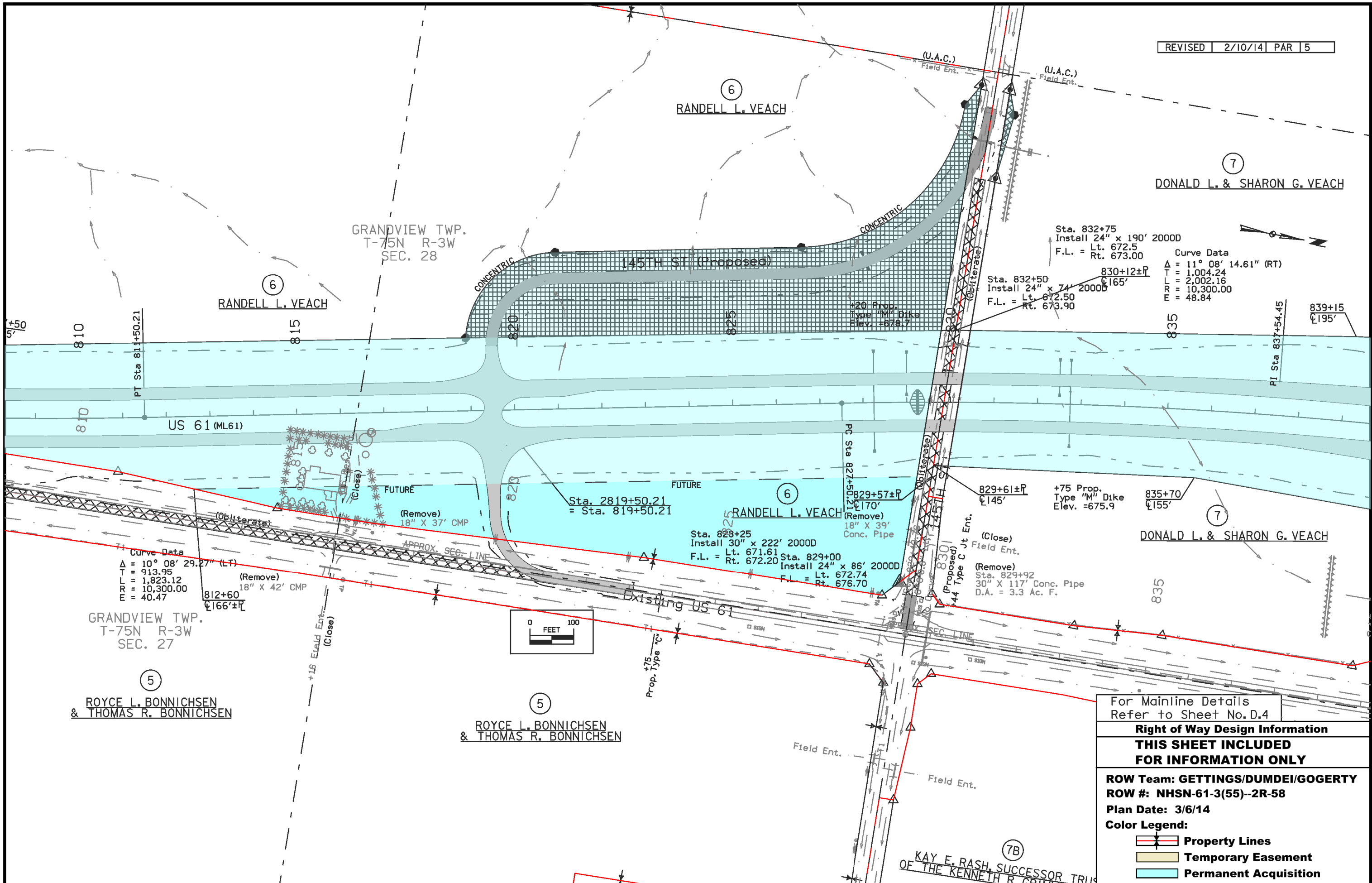


For Mainline Details  
Refer to Sheet No. D.2

<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 10/25/12</b>
<b>Color Legend:</b>
<b>Property Lines</b>
<b>Temporary Easement</b>
<b>Permanent Acquisition</b>



For Mainline Details Refer to Sheet No. D.3
<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 10/25/12</b>
<b>Color Legend:</b>
<b>Property Lines</b>
<b>Temporary Easement</b>
<b>Permanent Acquisition</b>



For Mainline Details Refer to Sheet No. D.4	
<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>	
<b>ROW #: NHSN-61-3(55)--2R-58</b>	
<b>Plan Date: 3/6/14</b>	
<b>Color Legend:</b>	
	Property Lines
	Temporary Easement
	Permanent Acquisition



REVISED	8/21/13	PAR	8A,8B,8E
REVISED	11/19/13	PAR	7C

7A  
ANNA J. DAWSON

7  
DONALD L. & SHARON G. VEACH  
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 28

8  
INVESTMENT REAL ESTATE LLC  
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

8  
INVESTMENT REAL ESTATE LLC

8  
INVESTMENT REAL ESTATE LLC

8E  
KAREN J. SCHANTZ

Curve Data  
Δ = 11° 08' 14.51" (RT)  
T = 1,004.24  
L = 2,002.16  
R = 10,300.00  
E = 48.84

Sta. 844+00  
Install 78" x 336' 20000  
Skew = 10° LT. Ahd.  
F.L. = Lt. 652.47  
Rt. 653.81

843+16±SecLine  
±220'

855+05  
±415'

506+15±

Sta. 1556+90 Ramp A  
Install 36" x 86' 20000  
Skew = 12° RT. Ahd.  
F.L. = Lt. 659.00  
Rt. 660.00

Sta. 1560+50 Ramp A  
Install 36" x 66' 20000  
Skew = 05° LT. Ahd.  
F.L. = Lt. 660.10  
Rt. 660.50

848+50  
±265'

Sta. 3555+90 Ramp C  
Install 30" x 64' 20000  
Skew = 05° LT. Ahd.  
F.L. = Lt. 661.24  
Rt. 661.58

Sta. 857+25.83  
Install 36" x 300' 30000  
Skew = 2.6° RT. Ahd.  
F.L. = Lt. 661.27  
Rt. 664.43

867+25  
±215'

Sta. 855+84.09  
Install 24" x 286' 30000  
Skew = 3.6° RT. Ahd.  
F.L. = Lt. 662.25  
Rt. 663.54

(Remove)  
Two 24" X  
24' CMP

Sta. 510+38.38  
= Sta. 856+52.82

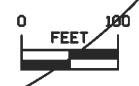
Sta. 860+40  
Install 30" x 360' 37500  
F.L. = Lt. 661.25  
Rt. 662.93

Sta. 841+75  
Install 24" x 110' 20000  
F.L. = Lt. 667.09  
Rt. 663.22  
Other 666.14

Sta. 2556+17 Ramp B  
Install 24" x 88' 20000  
Skew = 15° RT. Ahd.  
F.L. = Lt. 664.54  
Rt. 664.98

Sta. 4557+30 Ramp D  
Install 52" x 32" x 92' 20000  
Skew = 07° LT. Ahd.  
F.L. = Lt. 664.90  
Rt. 666.00

Sta. 4560+40 Ramp D  
Install 30" x 90' 20000  
F.L. = Lt. 663.73  
Rt. 664.73



For Detour Details  
Refer to Sheet No. F.6  
For Mainline Details  
Refer to Sheet No. D.5  
For Interchange Details  
Refer to Sheet No. KI-K6

**Right of Way Design Information**

**THIS SHEET INCLUDED  
FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY  
ROW #: NHSN-61-3(55)--2R-58**

**Plan Date: 11/19/13**

**Color Legend:**

- Property Lines**
- Temporary Easement**
- Permanent Acquisition**

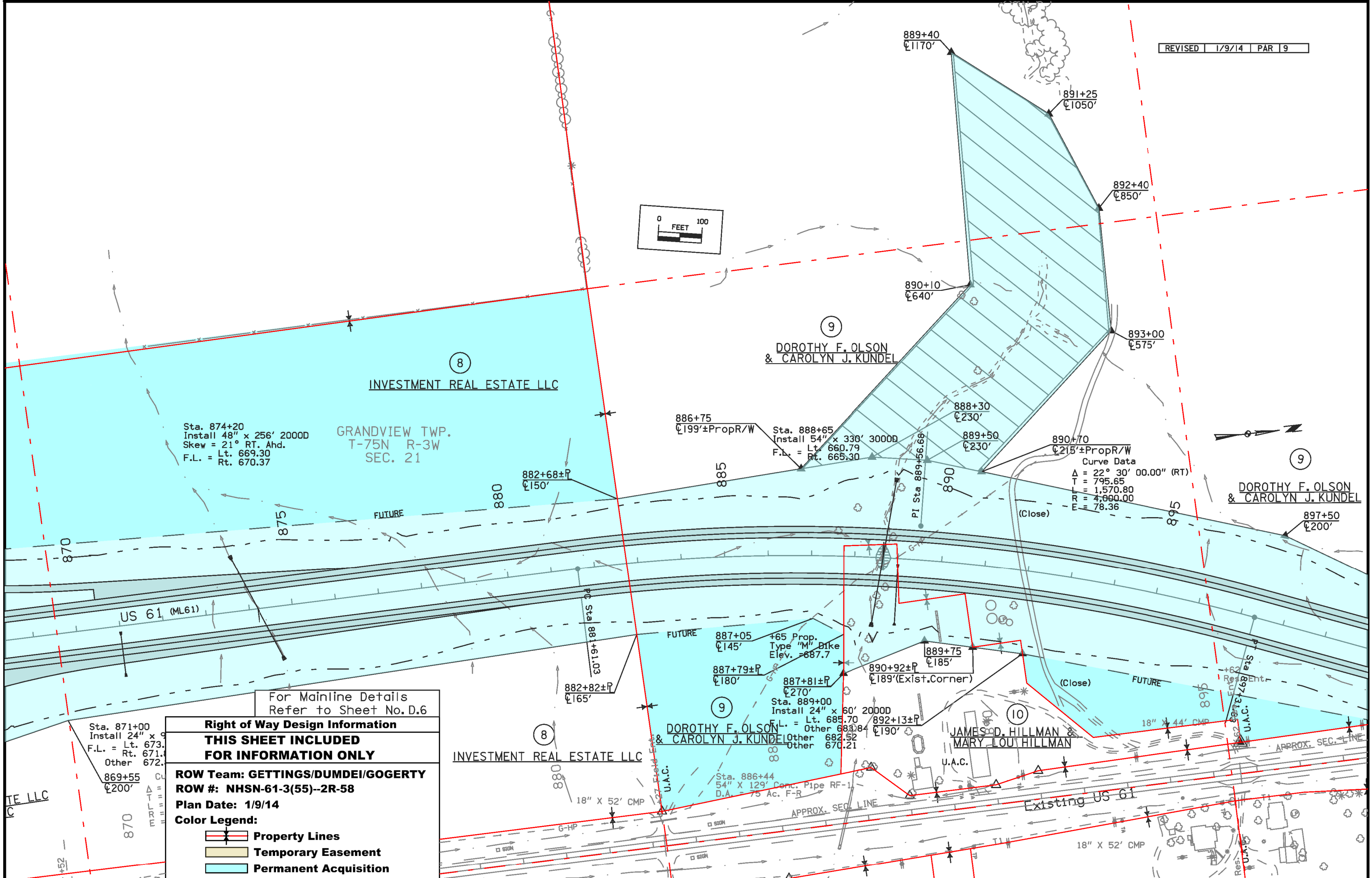
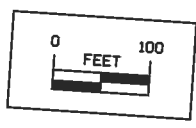
Curve Data  
Δ = 0° 57' 34.51" (RT)  
T = 300.00  
L = 599.99  
R = 35,824.44  
E = 1.26

Curve Data  
Δ = 2° 10' 42.82" (RT)  
T = 321.23  
L = 642.38  
R = 16,894.55  
E = 3.05

KAY E. RASH, SUCCESSOR TRUSTEE  
OF THE KENNETH R. GRIMM REV. TRUST

CARNER, INC.

LOUISA COUNTY AREA  
VIETNAM VETERANS



Sta. 874+20  
Install 48" x 256' 2000D  
Skew = 21° RT. Ahd.  
F.L. = Lt. 669.30  
Rt. 670.37

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

DOROTHY F. OLSON  
& CAROLYN J. KUNDEL

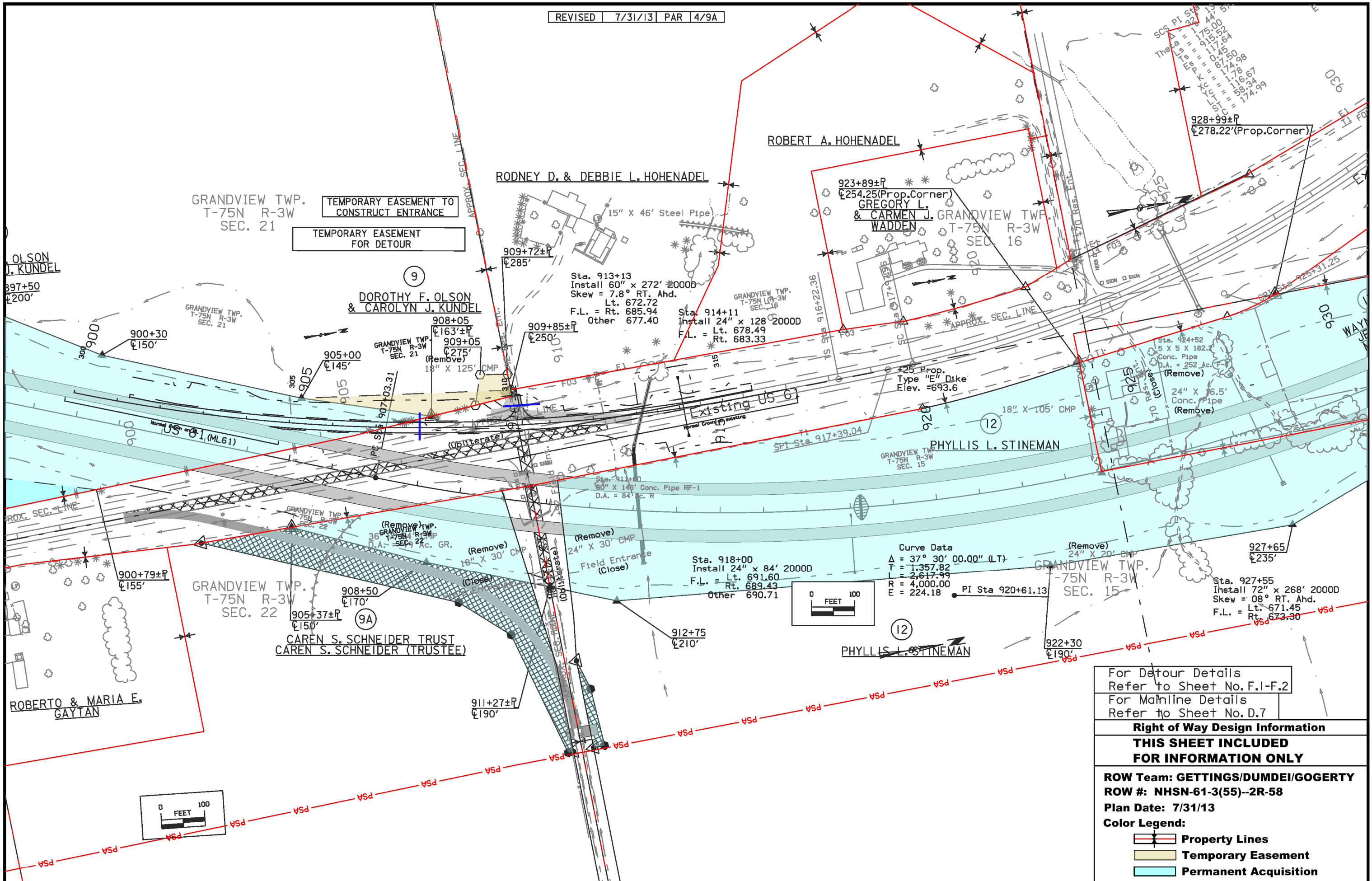
DOROTHY F. OLSON  
& CAROLYN J. KUNDEL

Curve Data  
Δ = 22° 30' 00.00" (RT)  
T = 795.65  
L = 1,570.80  
R = 4,000.00  
E = 78.36

For Mainline Details Refer to Sheet No. D.6

<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 1/9/14</b>
<b>Color Legend:</b>
<b>Property Lines</b>
<b>Temporary Easement</b>
<b>Permanent Acquisition</b>





TEMPORARY EASEMENT TO  
CONSTRUCT ENTRANCE

TEMPORARY EASEMENT  
FOR DETOUR

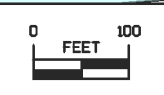
9

DOROTHY F. OLSON  
& CAROLYN J. KUNDEL

Sta. 913+13  
Install 60" x 272' 2000D  
Skew = 7.8° RT. Ahd.  
Lt. 672.72  
F.L. = Rt. 685.94  
Other 677.40

Sta. 914+11  
Install 24" x 128' 2000D  
F.L. = Lt. 678.49  
Rt. 683.33

Curve Data  
 $\Delta = 37^\circ 30' 00.00''$  (LT)  
 $T = 1,357.82$   
 $L = 2,617.99$   
 $R = 4,000.00$   
 $E = 224.18$   
 PI Sta 920+61.13



For Detour Details  
Refer to Sheet No. F.1-F.2

For Mainline Details  
Refer to Sheet No. D.7

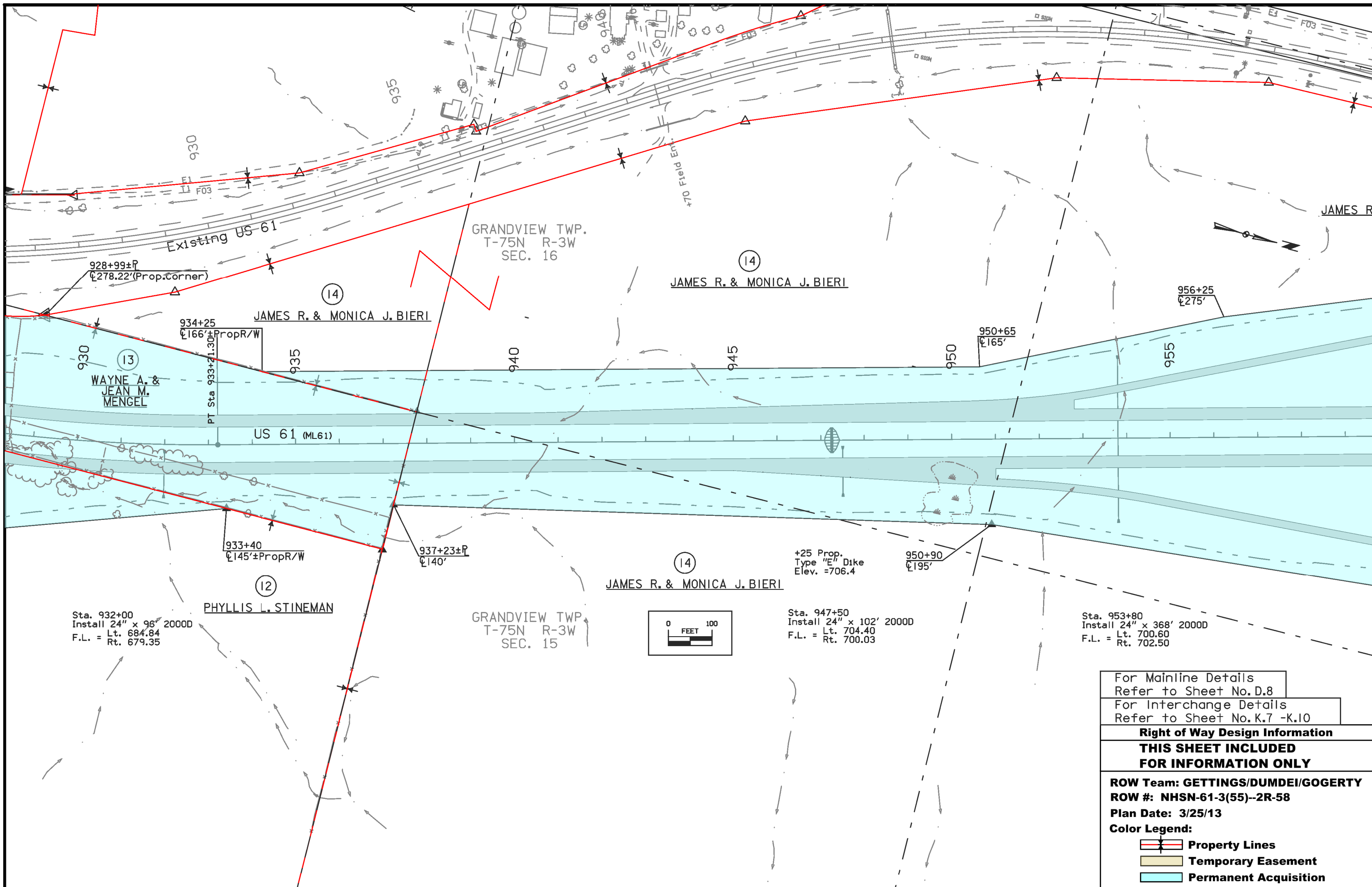
**Right of Way Design Information**

**THIS SHEET INCLUDED FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**  
**Plan Date: 7/31/13**

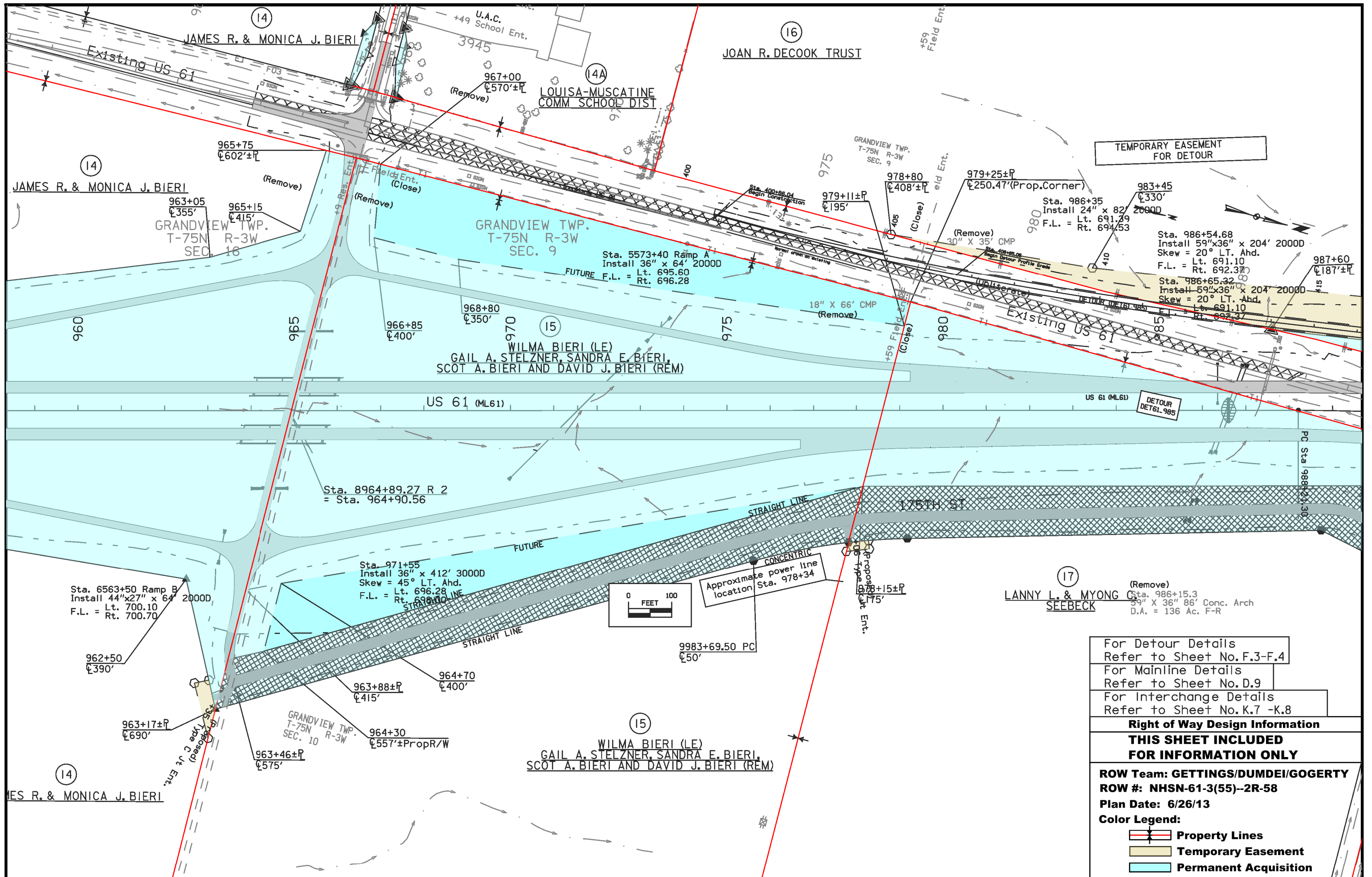
**Color Legend:**

- Property Lines
- Temporary Easement
- Permanent Acquisition

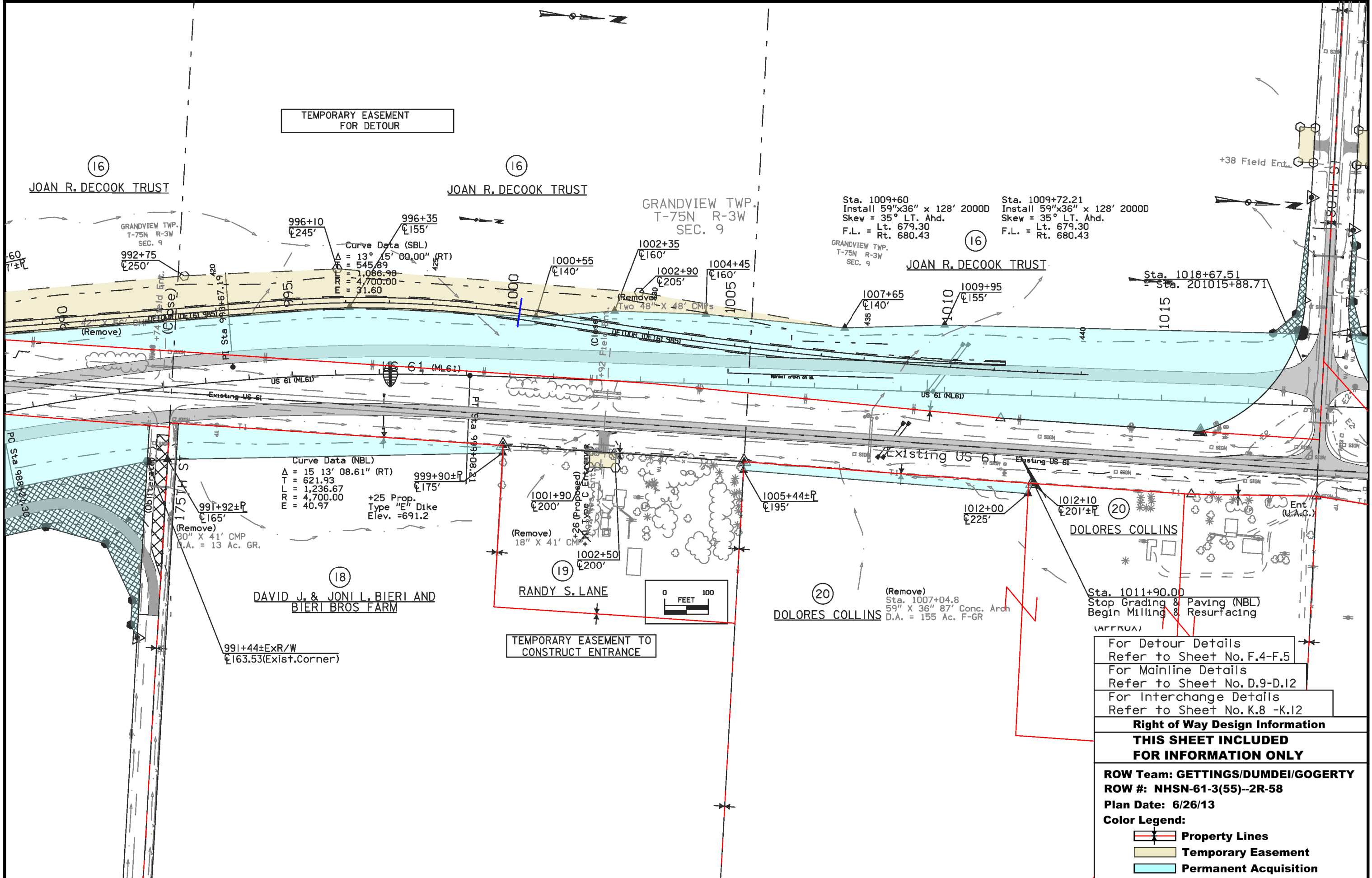


For Mainline Details Refer to Sheet No. D.8
For Interchange Details Refer to Sheet No. K.7 -K.10
<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 3/25/13</b>
<b>Color Legend:</b>
<b>Property Lines</b>
<b>Temporary Easement</b>
<b>Permanent Acquisition</b>





For Detour Details Refer to Sheet No. F.3-F.4
For Mainline Details Refer to Sheet No. D.9
For Interchange Details Refer to Sheet No. K.7 -K.8
<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 6/26/13</b>
<b>Color Legend:</b>
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<span style="background-color: yellow; display: inline-block; width: 10px; height: 10px;"></span> <b>Temporary Easement</b>
<span style="background-color: cyan; display: inline-block; width: 10px; height: 10px;"></span> <b>Permanent Acquisition</b>



TEMPORARY EASEMENT FOR DETOUR

16  
JOAN R. DECOOK TRUST

16  
JOAN R. DECOOK TRUST

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 9

Sta. 1009+60  
Install 59"x36" x 128' 2000D  
Skew = 35° LT. Ahd.  
F.L. = Lt. 679.30  
Rt. 680.43

Sta. 1009+72.21  
Install 59"x36" x 128' 2000D  
Skew = 35° LT. Ahd.  
F.L. = Lt. 679.30  
Rt. 680.43

16  
JOAN R. DECOOK TRUST

Sta. 1018+67.51  
Sta. 201015+88.71

Curve Data (NBL)  
Δ = 15° 13' 08.61" (RT)  
T = 621.93  
L = 1,236.67  
R = 4,700.00  
E = 40.97  
+25 Prop. Type "E" Dike Elev. = 691.2

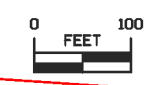
18  
DAVID J. & JONI L. BIERI AND BIERI BROS FARM

19  
RANDY S. LANE

20  
DOLORES COLLINS  
(Remove)  
Sta. 1007+04.8  
59" X 36" 87' Conc. Arch  
D.A. = 155 Ac. F-GR

20  
DOLORES COLLINS

Sta. 1011+90.00  
Stop Grading & Paving (NBL)  
Begin Milling & Resurfacing



TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

For Detour Details  
Refer to Sheet No. F.4-F.5  
For Mainline Details  
Refer to Sheet No. D.9-D.12  
For Interchange Details  
Refer to Sheet No. K.8 -K.12

**Right of Way Design Information**  
**THIS SHEET INCLUDED FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**  
**Plan Date: 6/26/13**

**Color Legend:**  
 Property Lines  
 Temporary Easement  
 Permanent Acquisition

T-75N R-3W  
SEC. 4

REVISED 1/13/14 PAR 21, 23R

TEMPORARY EASEMENT TO  
CONSTRUCT ENTRANCE

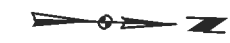
(23)  
MARK A. STOUT

Sta. 1020+42  
30" X 86' Conc. Pipe  
D.A. = 8.3 Ac. F-GR  
(U.A.C.)

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 4

Sta. 1035+99.72  
180.25' X 44' Conc.  
I-Beam Bridge  
(U.A.C.)

Curve Data  
Δ = 5° 32' 07.21" (RT)  
T = 623.62  
L = 1,246.27  
R = 12,900.00  
E = 15.06



(21)  
JAMES R. & MONICA J. BIERI

(23R)  
DAKOTA, MINNESOTA  
& EASTERN RR

Sta. 1039+00  
Install 30" x 138' 3000D  
Skew = 10.3° LT. Ahd.  
F.L. = Lt. 692.96  
Rt. 692.5  
1039+12±P  
±180'

Sta. 1039+37.62  
Stop 82' Median (Typ.)  
Begin Median Transition

1042+45  
±190'

1043+25  
±190'

1044+00  
±165'

18" Proposed  
+70 Typ. Ent.

18" Unclassified

1045  
±190'

1046+31.83  
PI Sta

Sta. 1049+35.53  
End Milling  
& Resurfacing

(U.A.C.)  
18" X 36' CMP

DONALD D. STURMS AND  
TODD J. & SHELLY S. STURMS

(U.A.C.)  
Sta. 1037+58.7  
4 X 6 X 66.5' Conc. Arch  
D.A. = 15 Ac. R-F

(U.A.C.)  
24" X 58' CMP  
\*(U.A.C.)

BRUCE & VICKIE COLBURN, LLC

For Mainline Details  
Refer to Sheet No. D.13&D.14

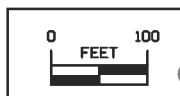
**Right of Way Design Information**  
**THIS SHEET INCLUDED**  
**FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**

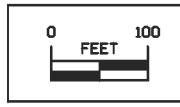
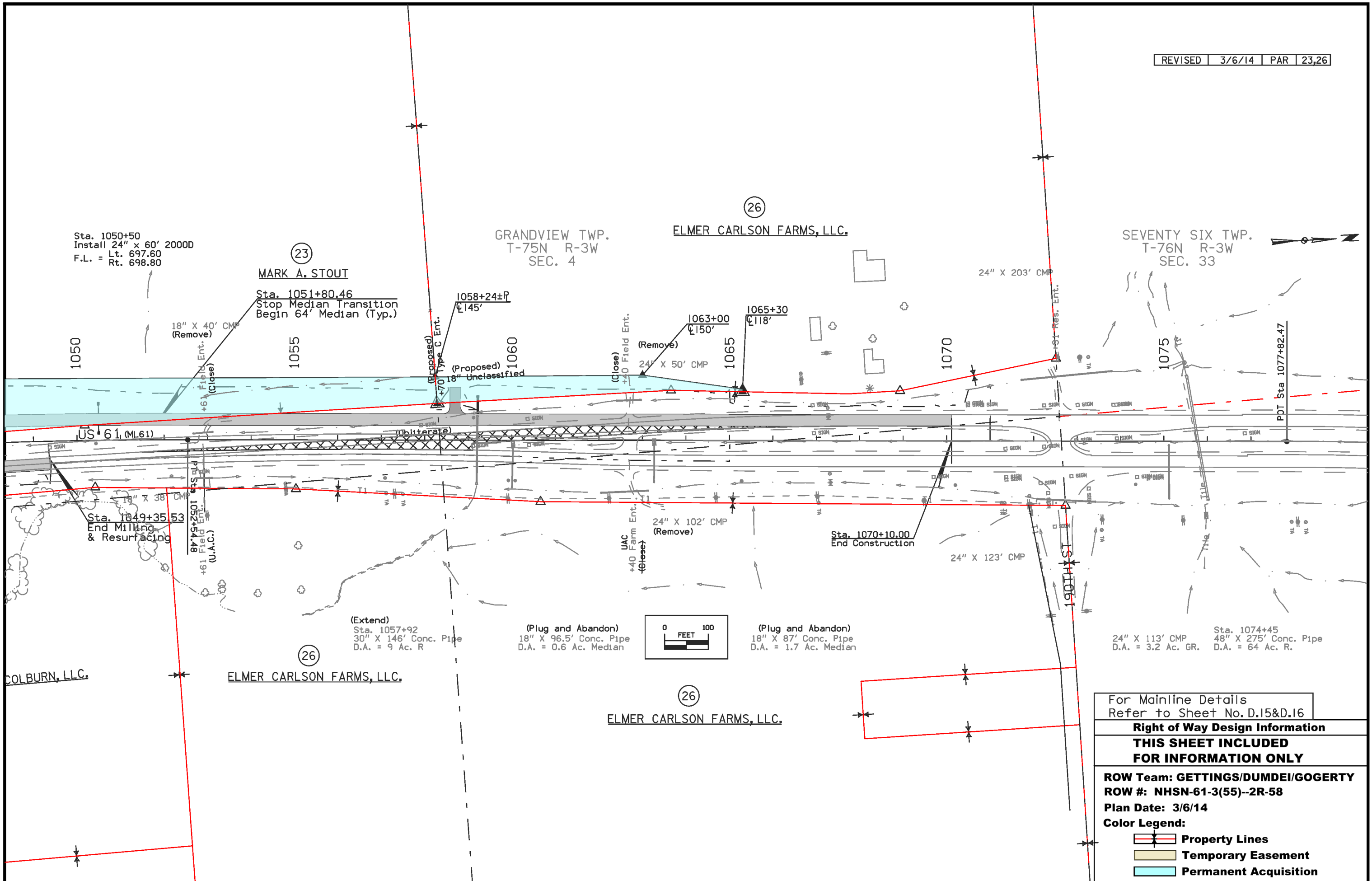
**Plan Date: 3/5/14**

**Color Legend:**

-  **Property Lines**
-  **Temporary Easement**
-  **Permanent Acquisition**







For Mainline Details Refer to Sheet No. D.15&D.16
<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 3/6/14</b>
<b>Color Legend:</b>
<b>Property Lines</b>
<b>Temporary Easement</b>
<b>Permanent Acquisition</b>

7 DONALD L. & SHARON G. VEACH

5 ROYCE L. BONNICHSEN & THOMAS R. BONNICHSEN

6 RANDELL L. VEACH

5 ROYCE L. BONNICHSEN & THOMAS R. BONNICHSEN

Sta. 2804+50  
Install 30" x 30' 2000D  
Lt. 668.29  
F.L. = Rt. 667.54

2803+25  
±36'±ExR/W

2803+80  
±55'

2805+15±ExR/W  
±60'

2803+74.91 PC  
±60'

Sta. 2803+74.91  
Begin Granular

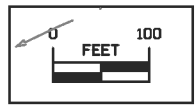
2803+25  
±30'±ExR/W

Curve Data  
Δ = 79° 35' 07.06" (RT)  
T = 374.83  
L = 625.06  
R = 450.00  
E = 135.66

Sta. 2808+50  
Install 44" x 27" x 30' 2000D  
Lt. 671.00  
F.L. = Rt. 670.00

2815+64.59 PC  
±60'

Curve Data  
Δ = 90° 00' 00.00" (LT)  
T = 150.00  
L = 235.62  
R = 150.00  
E = 62.13



Sta. 2818+73.21  
End Granular  
Begin Paving

2817+14.59 PI  
±60'

ACQUIRE ACCESS CONTROL ON  
S.R. FROM 2819+50.21 TO 2817+31

ACQUIRE ACCESS CONTROL ON  
S.R. FROM 2819+50.21 TO 2821+67

Curve Data  
Δ = 79° 47' 07.06" (LT)  
T = 125.39  
L = 208.88  
R = 150.00  
E = 45.50

Sta. 2819+50.21  
= Sta. 2819+50.21

2817+88±PropR/W  
±60'

145th Street

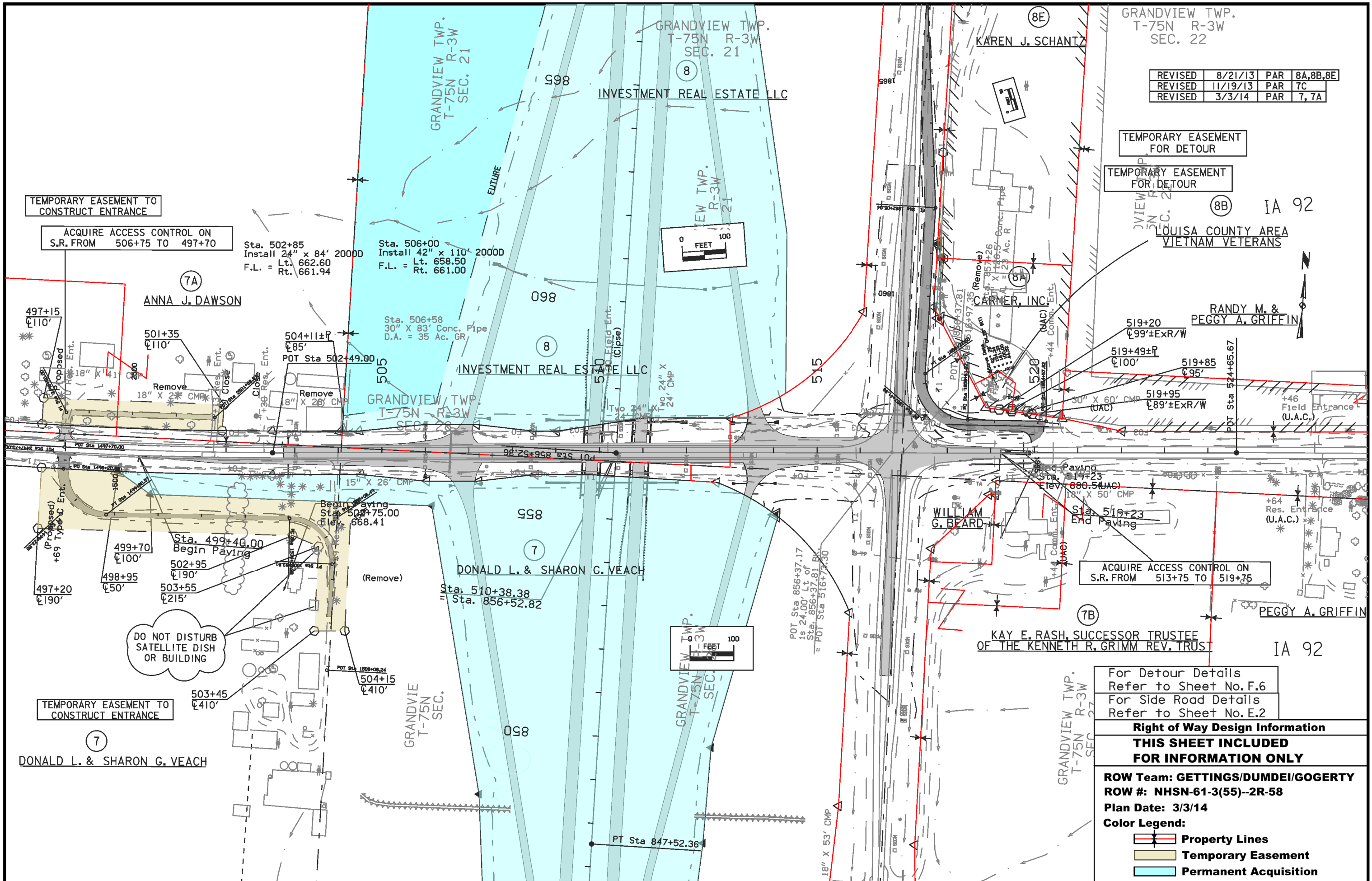
For Side Road Details  
Refer to Sheet No. E.1

**Right of Way Design Information**  
**THIS SHEET INCLUDED**  
**FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**  
**Plan Date: 3/6/14**

**Color Legend:**

- Property Lines
- Temporary Easement
- Permanent Acquisition



REVISED	8/21/13	PAR	8A,8B,8E
REVISED	11/19/13	PAR	7C
REVISED	3/3/14	PAR	7, 7A

TEMPORARY EASEMENT FOR DETOUR  
 TEMPORARY EASEMENT FOR DETOUR

LOUISA COUNTY AREA VIETNAM VETERANS

RANDY M. & PEGGY A. GRIFFIN

ACQUIRE ACCESS CONTROL ON S.R. FROM 513+75 TO 519+75

KAY E. RASH, SUCCESSOR TRUSTEE OF THE KENNETH R. GRIMM REV. TRUST

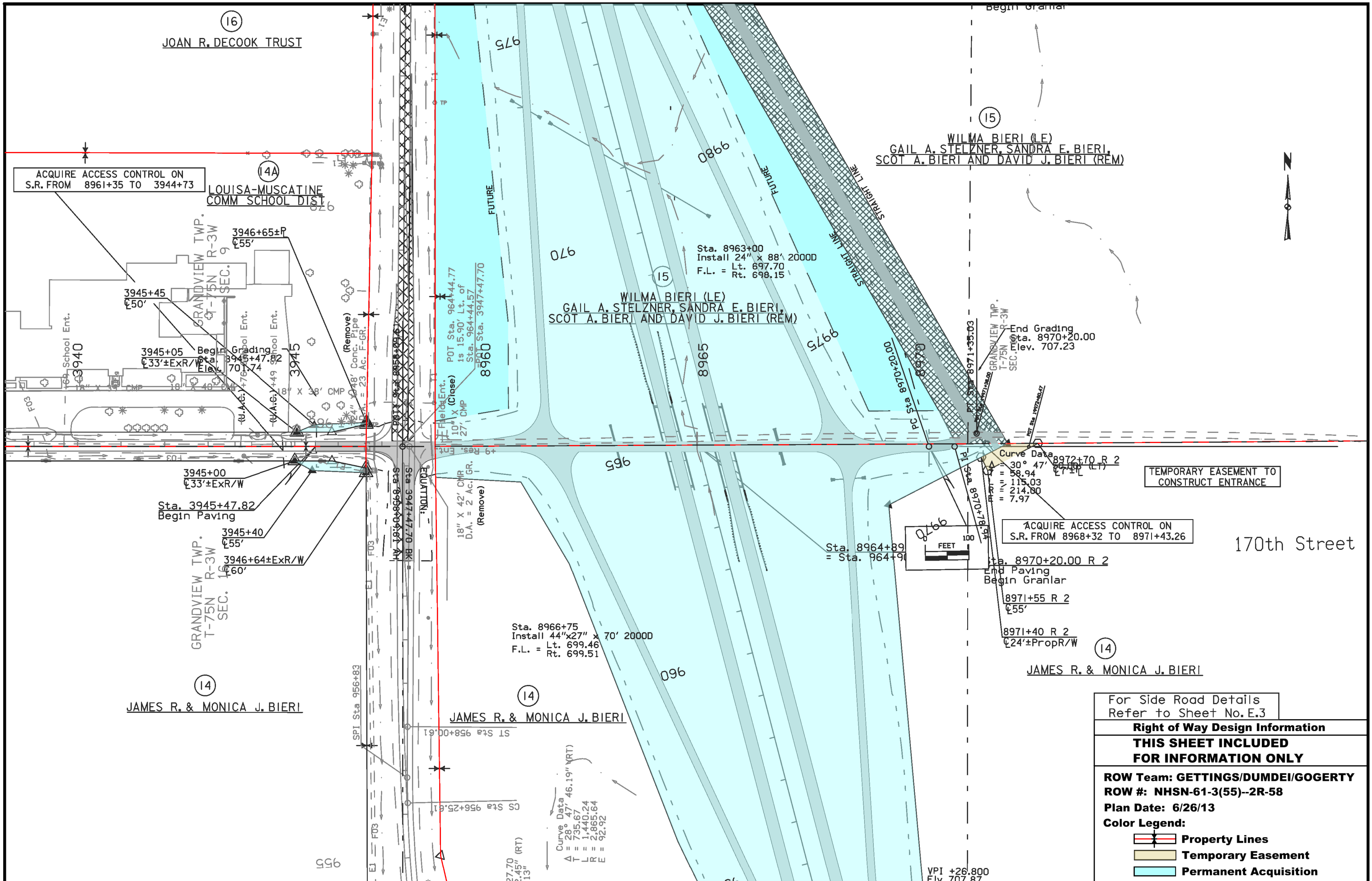
For Detour Details Refer to Sheet No. F.6  
 For Side Road Details Refer to Sheet No. E.2

**Right of Way Design Information**  
**THIS SHEET INCLUDED FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**  
**Plan Date: 3/3/14**  
**Color Legend:**

- Property Lines
- Temporary Easement
- Permanent Acquisition



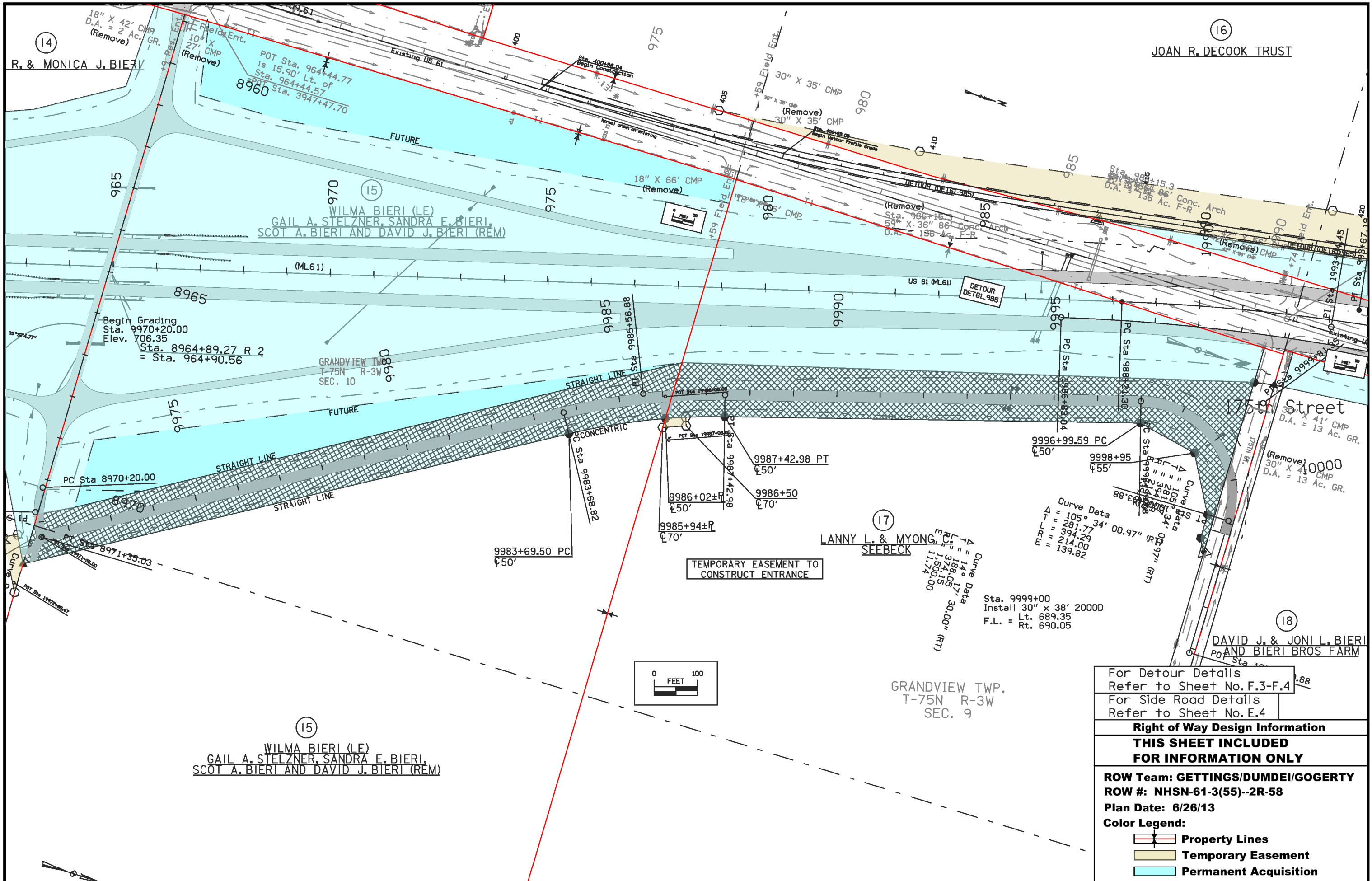


TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

ACQUIRE ACCESS CONTROL ON S.R. FROM 8968+32 TO 8971+43.26

170th Street

For Side Road Details Refer to Sheet No. E.3	
<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>	
<b>ROW #: NHSN-61-3(55)--2R-58</b>	
<b>Plan Date: 6/26/13</b>	
<b>Color Legend:</b>	
	Property Lines
	Temporary Easement
	Permanent Acquisition



For Detour Details Refer to Sheet No. F.3-F.4
For Side Road Details Refer to Sheet No. E.4
<b>Right of Way Design Information</b>
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>
<b>ROW Team: GETTINGS/DUMDEI/GOGERTY</b>
<b>ROW #: NHSN-61-3(55)--2R-58</b>
<b>Plan Date: 6/26/13</b>
<b>Color Legend:</b>
<b>Property Lines</b>
<b>Temporary Easement</b>
<b>Permanent Acquisition</b>

Sta. 1997+00 NB Tie  
 Install 24" x 68' 2000D  
 Lt. 689.20  
 F.L. = Rt. 686.83

(18)  
 DAVID J. & JONI L. BIERI AND  
 BIERI BROS FARM

Begin Grading  
 Sta. 10001+25.00  
 Elev. 693.61

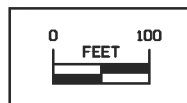
POT Sta. 10004+10.88

10001+80  
 ±34'±ExR/W  
 Sta. 10001+25.00  
 End Granular  
 10001+50  
 ±50'  
 10000+93.87 PT  
 ±50'

(17)  
 LANNY L. & MYONG C.  
 SEEBECK

GRANDVIEW TWP.  
 R-3M  
 T-75N  
 SEC. 9

Curve Data  
 $\Delta = 14^\circ 17' 30.00''$  (RT)  
 T = 188.05  
 L = 374.15  
 R = 1,500.00  
 E = 11.74



175th Street

For Side Road Details  
 Refer to Sheet No. E.5

**Right of Way Design Information**  
**THIS SHEET INCLUDED**  
**FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**  
**Plan Date: 10/24/12**

**Color Legend:**  
**Property Lines**  
**Temporary Easement**  
**Permanent Acquisition**

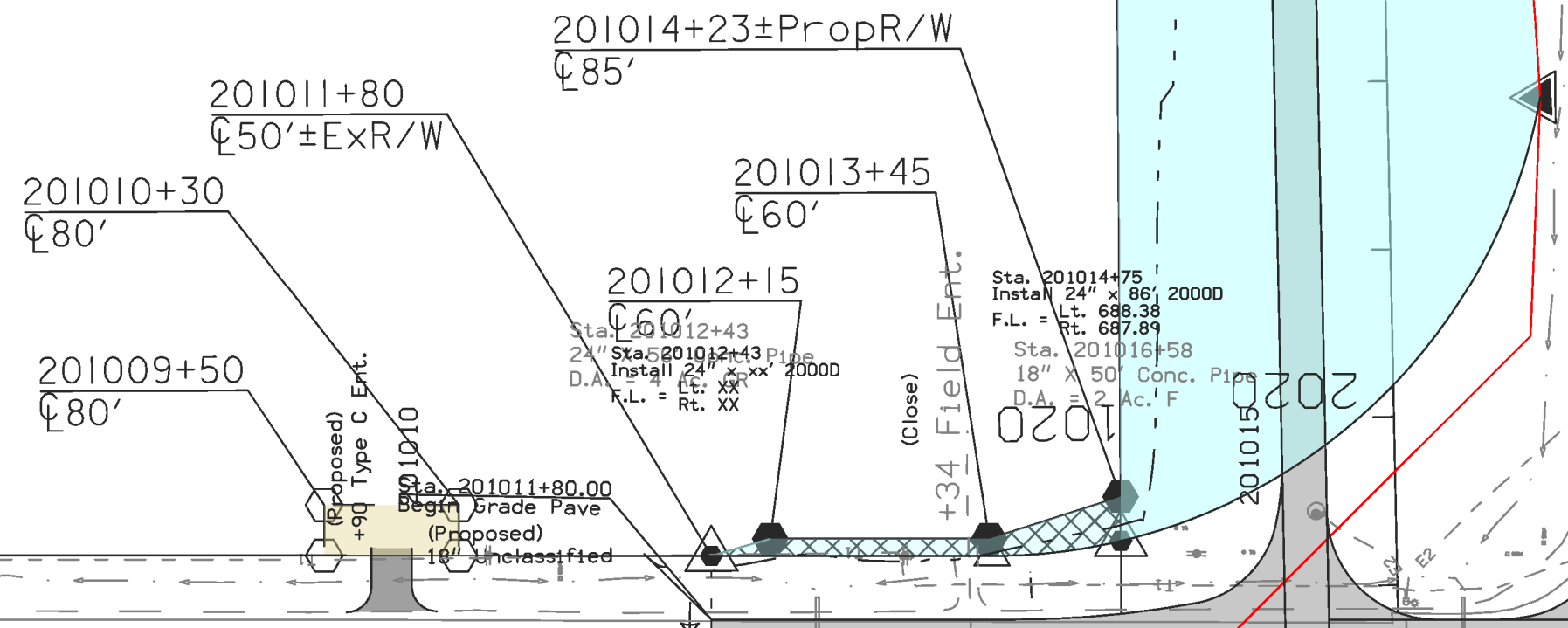


GRANDVIEW TWP  
T-75N R-3W  
SEC. 4

TEMPORARY EASEMENT TO  
CONSTRUCT ENTRANCE

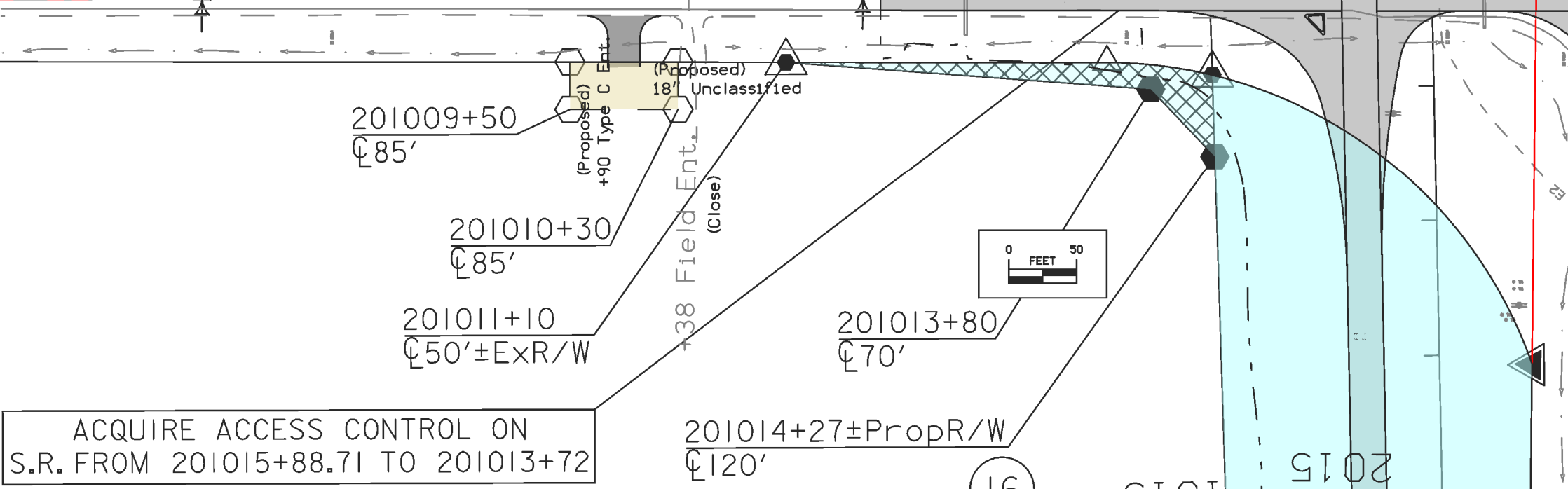
JAMES R. & MONICA J. BIERI

(21)



DOT Sta 201017+35.88  
DOT Sta 201017+35.88  
DOT Sta 201017+35.88

DONALD D. STU  
TODD (U.C.) & SHELLY



ACQUIRE ACCESS CONTROL ON  
S.R. FROM 201015+88.71 TO 201013+72

TEMPORARY EASEMENT TO  
CONSTRUCT ENTRANCE

JOAN R. DECOOK TRUST

(16)

(20)

DOLORES COLLI

180th St

For Side Road Details  
Refer to Sheet No. E.6

**Right of Way Design Information**

**THIS SHEET INCLUDED  
FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**

**ROW #: NHSN-61-3(55)--2R-58**

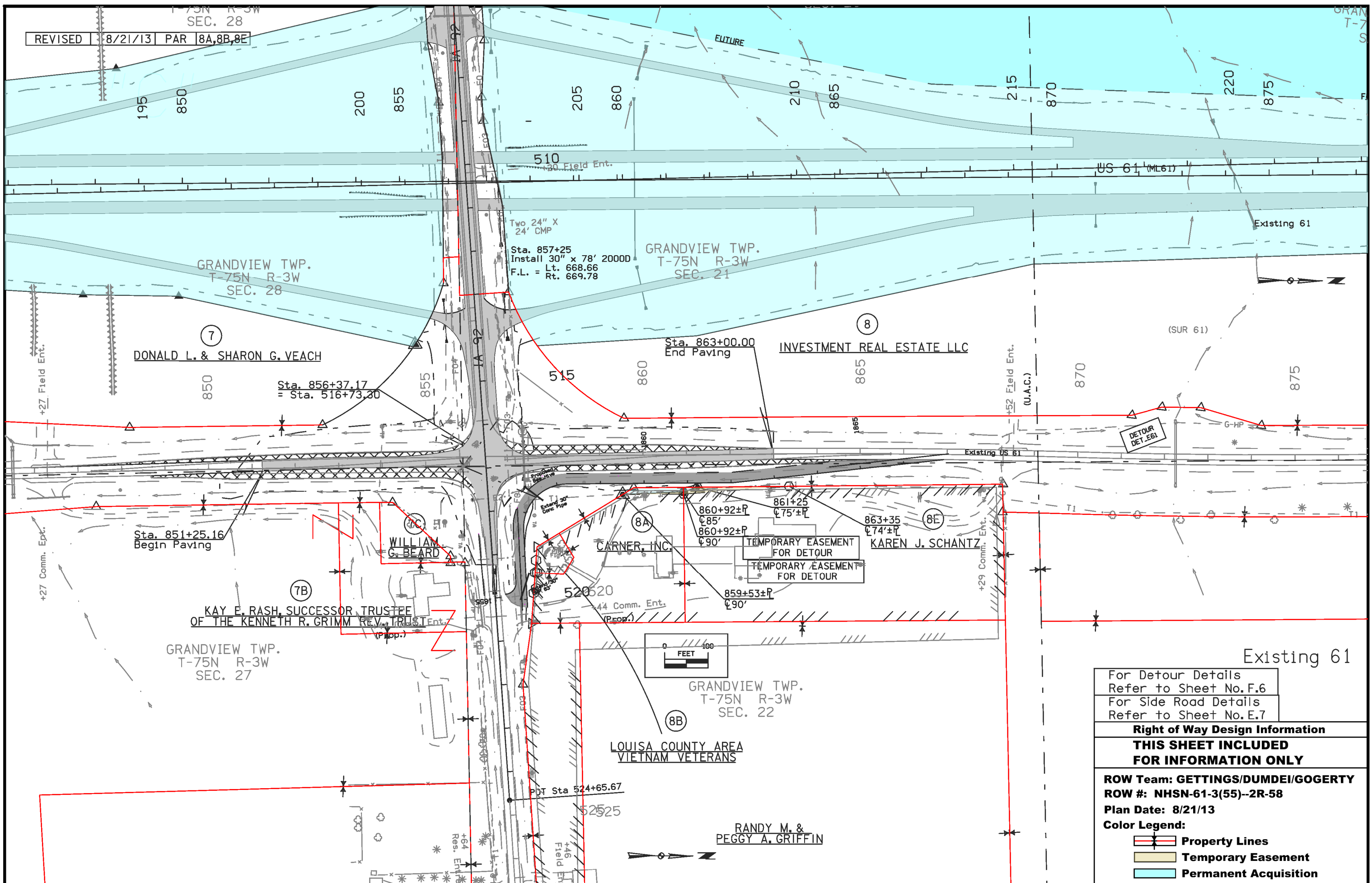
**Plan Date: 3/5/14**

**Color Legend:**

-  **Property Lines**
-  **Temporary Easement**
-  **Permanent Acquisition**



REVISED 8/21/13 PAR 8A,8B,8E



7 DONALD L. & SHARON G. VEACH

Sta. 856+37.17 = Sta. 516+73.30

Sta. 851+25.16 Begin Paving

7B KAY E. RASH, SUCCESSOR TRUSTEE OF THE KENNETH R. GRIMM REV. TRUST

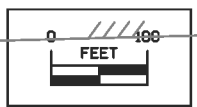
WILLIAM G. BEARD

8A CARNER, INC.

8E KAREN J. SCHANTZ

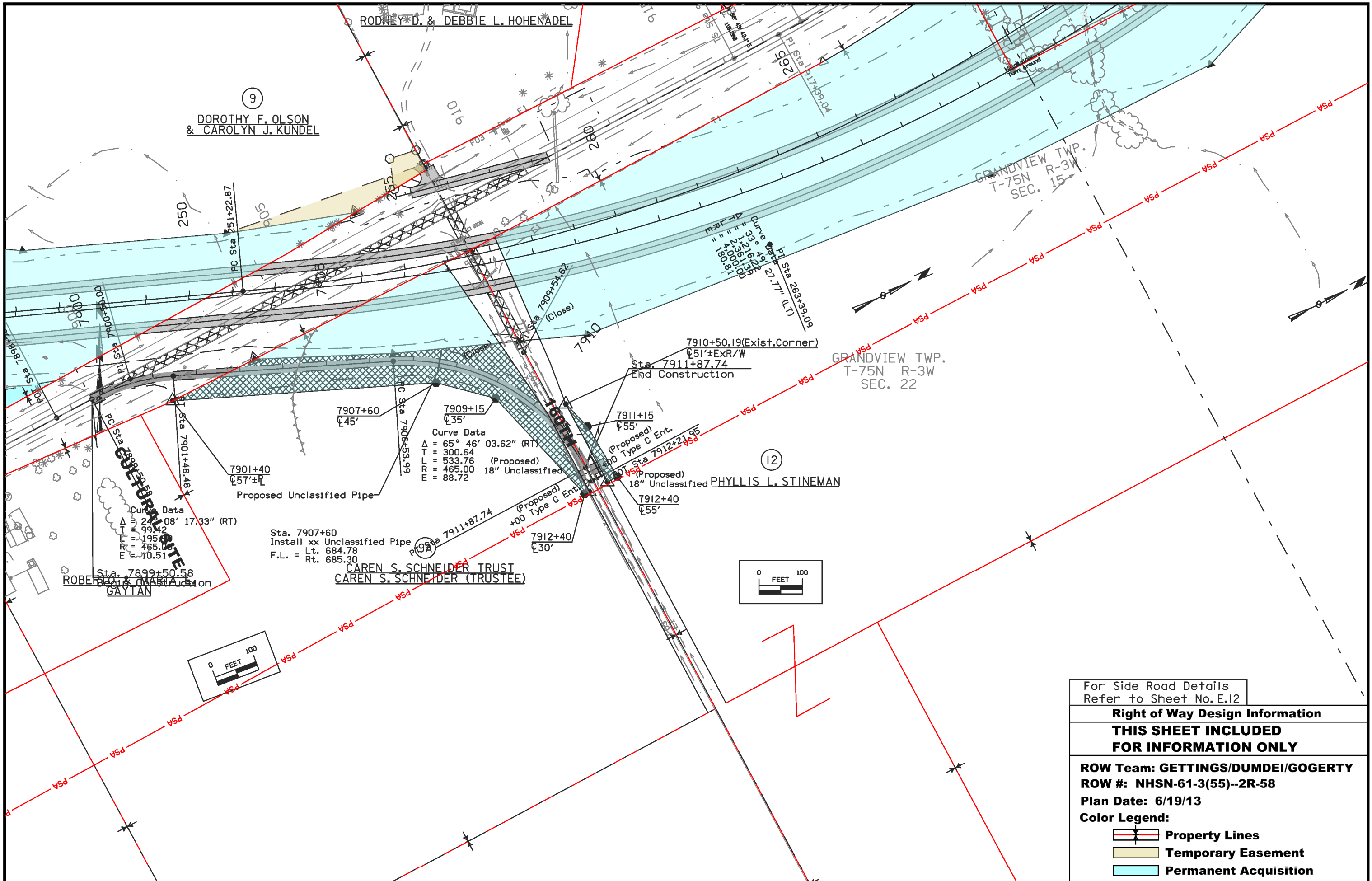
8B LOUISA COUNTY AREA VIETNAM VETERANS

RANDY M. & PEGGY A. GRIFFIN



For Detour Details Refer to Sheet No. F.6  
For Side Road Details Refer to Sheet No. E.7

<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
ROW Team: GETTINGS/DUMDEI/GOGERTY	
ROW #: NHSN-61-3(55)--2R-58	
Plan Date: 8/21/13	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



For Side Road Details  
Refer to Sheet No. E.12

**Right of Way Design Information**  
**THIS SHEET INCLUDED**  
**FOR INFORMATION ONLY**

**ROW Team: GETTINGS/DUMDEI/GOGERTY**  
**ROW #: NHSN-61-3(55)--2R-58**  
**Plan Date: 6/19/13**  
**Color Legend:**

- Property Lines
- Temporary Easement
- Permanent Acquisition

**TRAFFIC CONTROL PLAN**

Existing US-61:  
- Maintain traffic in the existing lanes at all times.

Sideroads: 130th St., 145th St. IA-92, 160th St., 170th St., 175th St., 180th St., 190th St.  
- Maintain traffic in each direction except as noted below.

145th St:  
- Stage 1, Short term closure with flaggers is allowed.

175th St:  
- Stage 1, Short term closure with flaggers is allowed. Coordinate with property owners.

**COORDINATED OPERATIONS**

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
NHSN-061-3(74)--2R-58	SALVAGE AND REMOVAL
NHSN-061-3(77)--2R-58	SALVAGE AND REMOVAL
NHSX-061-3(59)--3H-58	UNKNOWN PAVEMENT-GRADE AND NEW
NHSX-061-3(70)--3H-58	BRIDGE NEW - PPCB
NHSX-061-3(71)--3H-58	BRIDGE NEW - PPCB
NHSX-061-3(72)--3H-58	BRIDGE NEW - PPCB
NHSX-061-3(69)--3H-58	LIGHTING
NHSX-061-3(68)--3H-58	SIGNING

**STAGING NOTES**

**STAGE 1A TRAFFIC:**  
1. Maintain traffic in the existing lanes at all times for the following roadways:  
US 61, 130th St., 145th St., IA 92, 160th St., 180th St., and 190th St.  
2. Close 170th St. east of US 61 as needed to construct proposed tie to 175th St.  
3. Close 175th St. east of US 61 as needed to construct proposed tie to existing.

**STAGE 1A CONSTRUCTION:**  
1. Grade and granular surface 170th St from Sta. 8970+20 to Sta. 8971+35.03.  
2. Grade and granular surface 175th St from Sta. 9971+35.03 to Sta. 10001+25, maintain existing intersection to US 61.  
3. Construct berms for bridges at IA 92.  
4. Construct berms for bridges at 170th St.

**STAGE 1B TRAFFIC:**  
1. Maintain traffic in the existing lanes at all times for the following roadways:  
US 61, 130th St., IA 92, 160th St., 175th St., 180th St., and 190th St.  
2. Open new 175th St.  
3. Close 145th St. west of US 61 as needed to construct proposed tie to existing.  
4. Close 170th St. between existing US 61 and 175th St.

**STAGE 1B CONSTRUCTION:**  
1. Grade US 61:  
SB lanes from Sta. 756+39.42 to Sta. 809+50.  
NB and SB lanes from Sta. 809+50 to Sta. 829+25.  
NB and SB lanes from Sta. 830+50 to Sta. 902+00.  
SB lanes from Sta. 902+00 to Sta. 905+50.  
NB and SB lanes from Sta. 915+00 to Sta. 964+25.  
NB and SB lanes from Sta. 965+50 to Sta. 985+25.  
SB lanes from Sta. 1037+85.51 to Sta. 1053+25.  
2. Grade and granular surface relocated 145th St.  
3. Grade detour DET61 905 from Sta. 301+26.75 to Sta. 307+00.  
4. Grade detour DET61 985 from Sta. 406+25 to Sta. 438+24.79.  
5. Grade all ramps at IA 92 interchange and 170th St interchange.  
6. Construct all proposed pipes and culverts within the grading limits of Stage 1A.  
7. Construct proposed culvert at 180th St Sta. 201014+75 by jacking under existing pavement.

**STAGE 1C TRAFFIC:**  
1. Open new 145th St.

**STAGE 1C CONSTRUCTION:**  
1. Grade US 61:  
NB and SB lanes from Sta. 829+25 to Sta. 830+50.  
NB and SB lanes from Sta. 964+25 to Sta. 965+50.  
SB lanes from Sta. 1000+00 to Sta. 1017+50.  
SB lanes from Sta. 1020+00 to Sta. 1037+32.37.  
2. Obliterate existing 145th St from existing US 61 west to the relocated 145th St alignment.  
3. Grade 170th St. from Sta. 8959+00 to Sta. 8970+20.  
4. Construct all proposed pipes and culverts within the grading limits of Stage 1B.  
5. Construct erosion control.










**511 TRAVEL RESTRICTIONS**

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
145th St.	EB	LOUISA	0.1 miles W of Existing 61		Temporary Signal		Vertical		15'-0"	14'-0"		
145th St.	WB	LOUISA	0.1 miles W of Existing 61		Temporary Signal		Vertical		15'-0"	14'-0"		
IA 92	EB	LOUISA	0.2 miles W of Existing 61		Temporary Signal		Vertical		15'-0"	14'-0"		
IA 92	WB	LOUISA	0.2 miles W of Existing 61		Temporary Signal		Vertical		15'-0"	14'-0"		
US 61	NB	LOUISA	0.3 miles N of 170th St.		Temporary Signal		Vertical		15'-0"	14'-0"		
US 61	SB	LOUISA	0.3 miles N of 170th St.		Temporary Signal		Vertical		15'-0"	14'-0"		
180th St.	EB	LOUISA	0.1 miles W of Existing 61		Temporary Signal		Vertical		15'-0"	14'-0"		
180th St.	WB	LOUISA	0.1 miles W of Existing 61		Temporary Signal		Vertical		15'-0"	14'-0"		

**CROSS SECTION VIEW COLOR LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**




















	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

**PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS**

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Future Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading

**PLAN VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

	Channelizing Device		Crash Cushion
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Obliterate Roadway (Granular)		Safety Closure
	Pavement Removal & Obliterate Roadway		

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

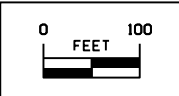
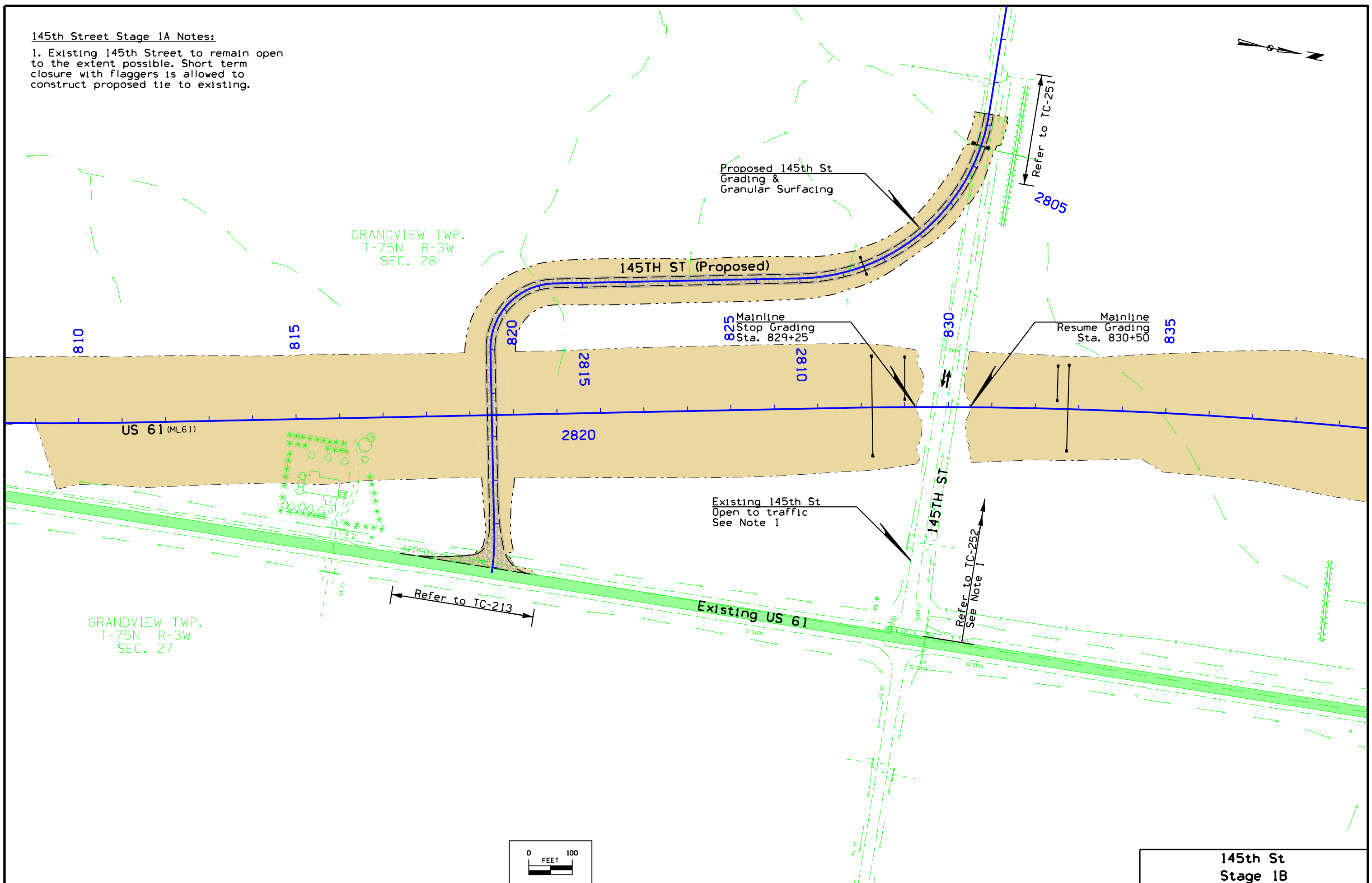
**TRAFFIC CONTROL  
AND  
STAGING  
LEGEND AND SYMBOL  
INFORMATION SHEET**

(COVERS SHEET SERIES J)



**145th Street Stage 1A Notes:**

1. Existing 145th Street to remain open to the extent possible. Short term closure with flaggers is allowed to construct proposed tie to existing.



<b>145th St Stage 1B</b>	
SHEET NUMBER	<b>J.3</b>



GRANDVIEW TWP.  
T-75N R-3W  
SEC. 28

Mainline Gap Grading  
Sta. 829+25 to Sta. 830+50

Proposed 145th St  
Open to traffic

145TH ST (Proposed)

Obliterate  
Existing 145th St

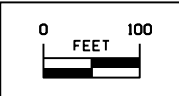
Entrance Drive  
Grading &  
Granular Surfacing

US 61 (ML61)

Existing US 61

Refer to TC-213

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 27



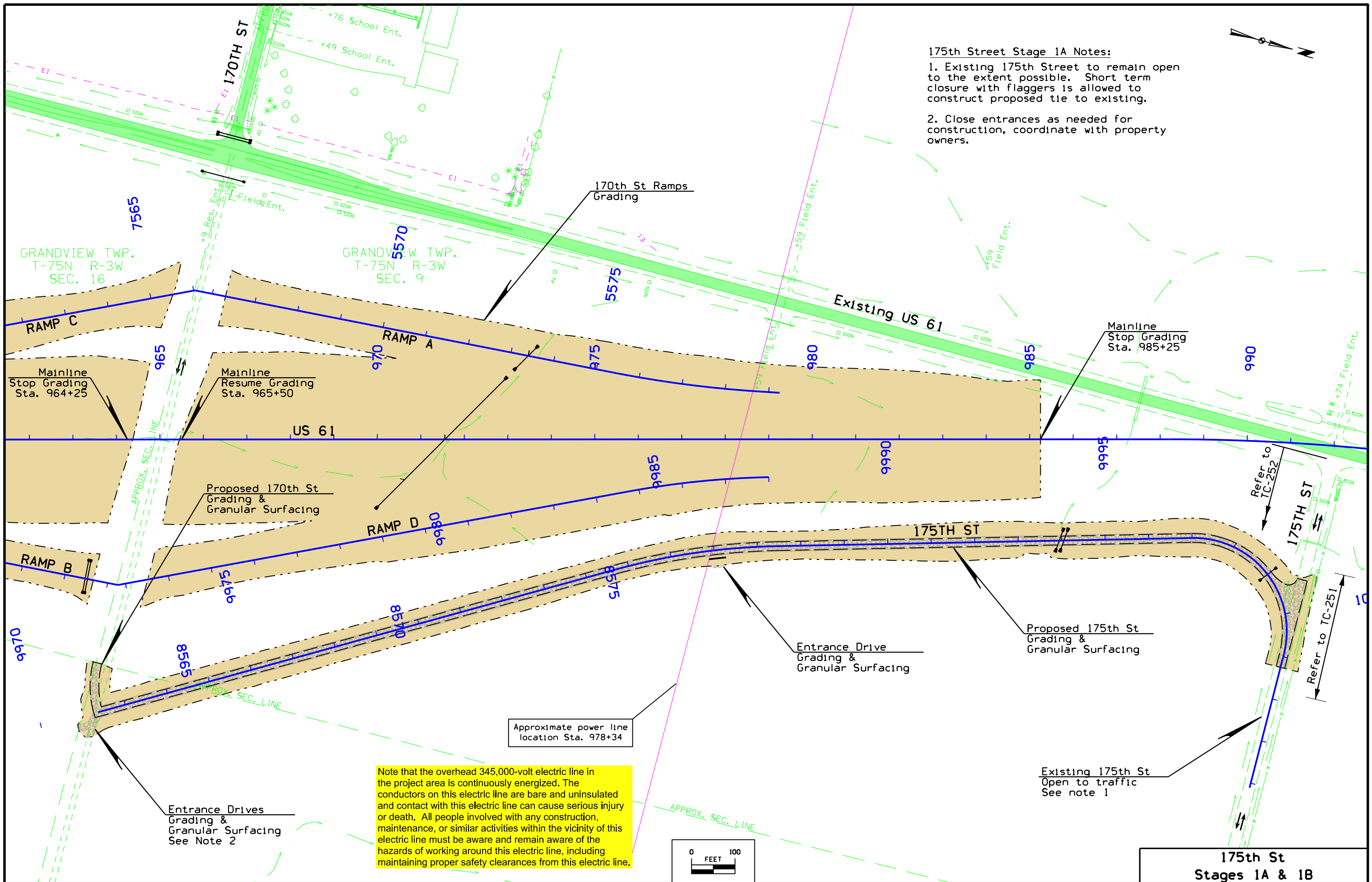
145th St  
Stage 1C

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ HR Green, Inc.	LOUISA COUNTY	PROJECT NUMBER NHSX-061-3(57)--3H-58	SHEET NUMBER J.4
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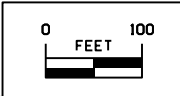


**175th Street Stage 1A Notes:**

- Existing 175th Street to remain open to the extent possible. Short term closure with flaggers is allowed to construct proposed tie to existing.
- Close entrances as needed for construction, coordinate with property owners.



Note that the overhead 345,000-volt electric line in the project area is continuously energized. The conductors on this electric line are bare and uninsulated and contact with this electric line can cause serious injury or death. All people involved with any construction, maintenance, or similar activities within the vicinity of this electric line must be aware and remain aware of the hazards of working around this electric line, including maintaining proper safety clearances from this electric line.

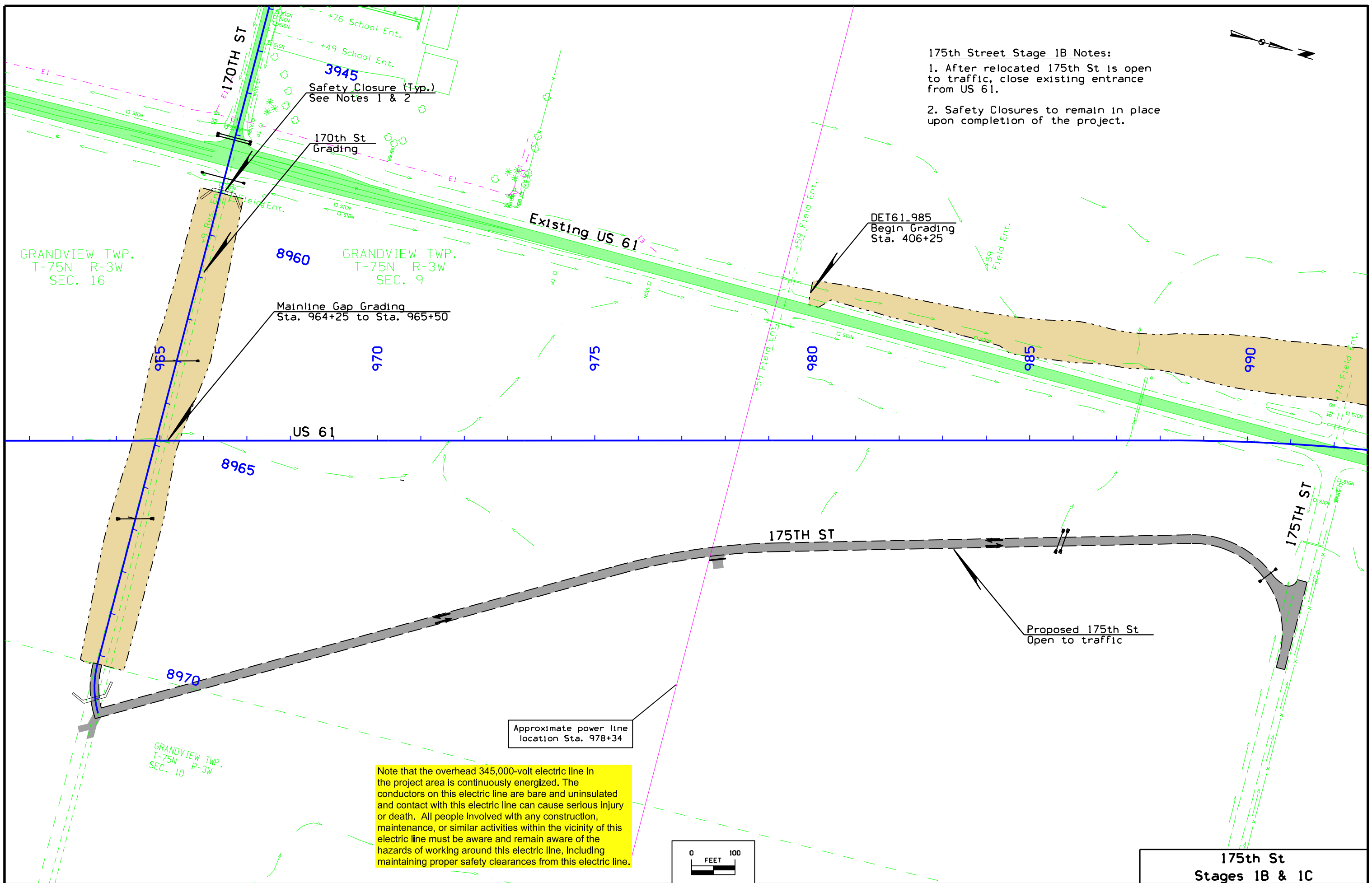


<b>175th St Stages 1A &amp; 1B</b>	
SHEET NUMBER	J.5

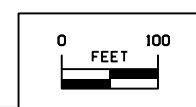




- 175th Street Stage 1B Notes:
1. After relocated 175th St is open to traffic, close existing entrance from US 61.
  2. Safety Closures to remain in place upon completion of the project.



Note that the overhead 345,000-volt electric line in the project area is continuously energized. The conductors on this electric line are bare and uninsulated and contact with this electric line can cause serious injury or death. All people involved with any construction, maintenance, or similar activities within the vicinity of this electric line must be aware and remain aware of the hazards of working around this electric line, including maintaining proper safety clearances from this electric line.



175th St  
Stages 1B & 1C  
SHEET NUMBER J.6

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 28



Curve Data  
 Δ = 8° 45' 28.96" (LT)  
 T = 153.16  
 L = 305.71  
 R = 2,000.00  
 e = 5.86  
 f = 5.4%  
 L = 168'  
 x = 62'

POT Sta 506+75.00 (SR92) =  
 PI Sta 1556+06.08 (SR92A) =  
 PI Sta 3556+64.71 (SR92C) =

POC Sta 842+50.00, 87.00' LT =  
 POT Sta 3542+50.00

POC Sta 838+40.59

POC Sta 840+77.99

POC Sta 843+50.00, 107.00' RT =  
 POT Sta 2543+50.00

Curve Data  
 Δ = 9° 33' 22.01" (RT)  
 T = 167.17  
 L = 333.57  
 R = 2,000.00  
 e = 6.97  
 f = 5.4%  
 L = 168'  
 x = 62'

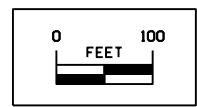
POT Sta 513+75.00 (SR92) =  
 PI Sta 2556+89.90 (SR92B) =  
 PI Sta 4556+49.96 (SR92D) =

1000' Taper 50:1 Ratio

600' Taper 15:1 Ratio

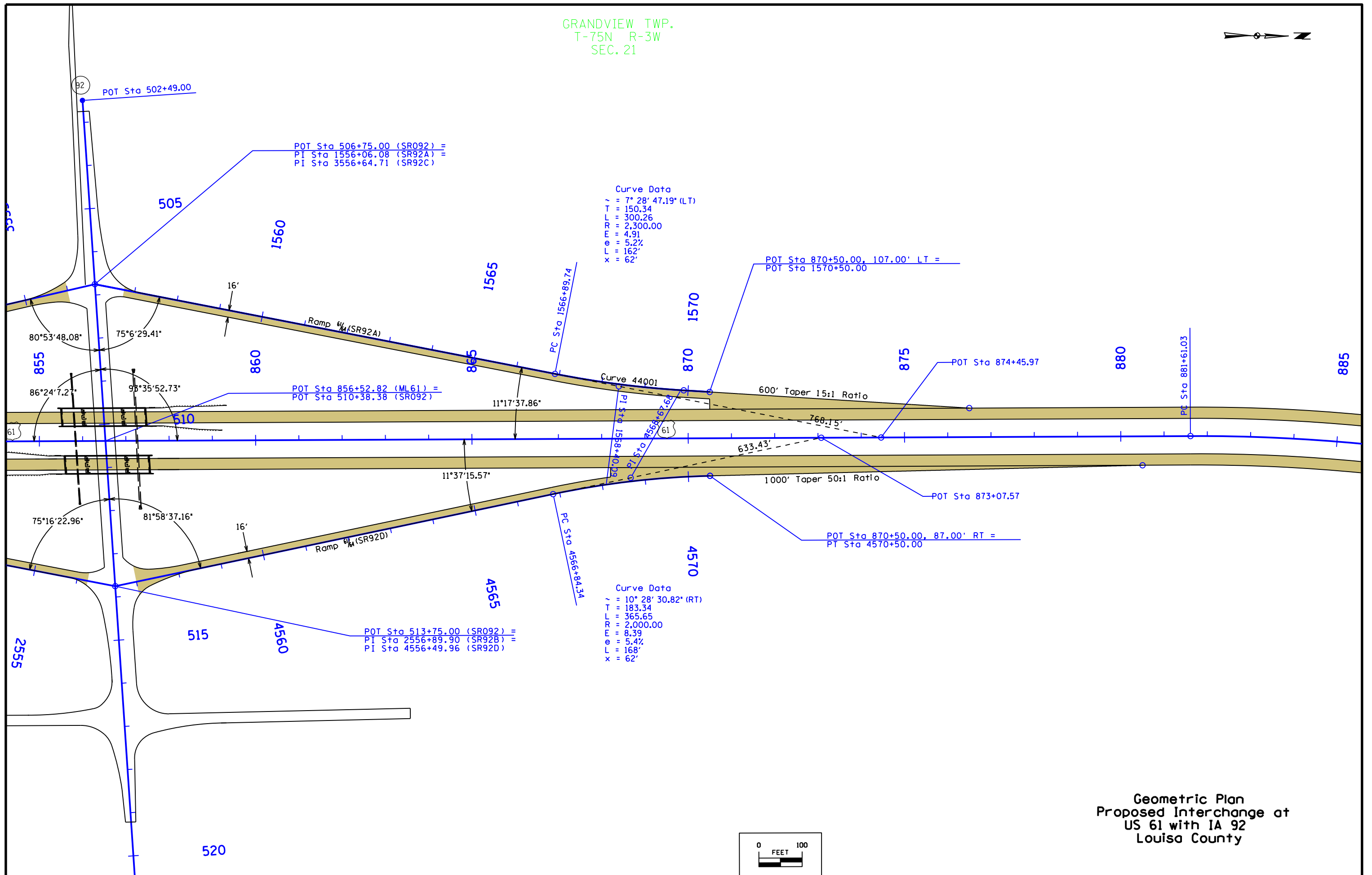
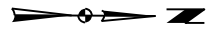
Ramp 1/4% (SR92C)

Ramp 1/4% (SR92B)



Geometric Plan  
 Proposed Interchange at  
 US 61 with IA 92  
 Louisa County

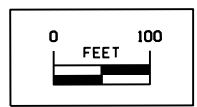
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

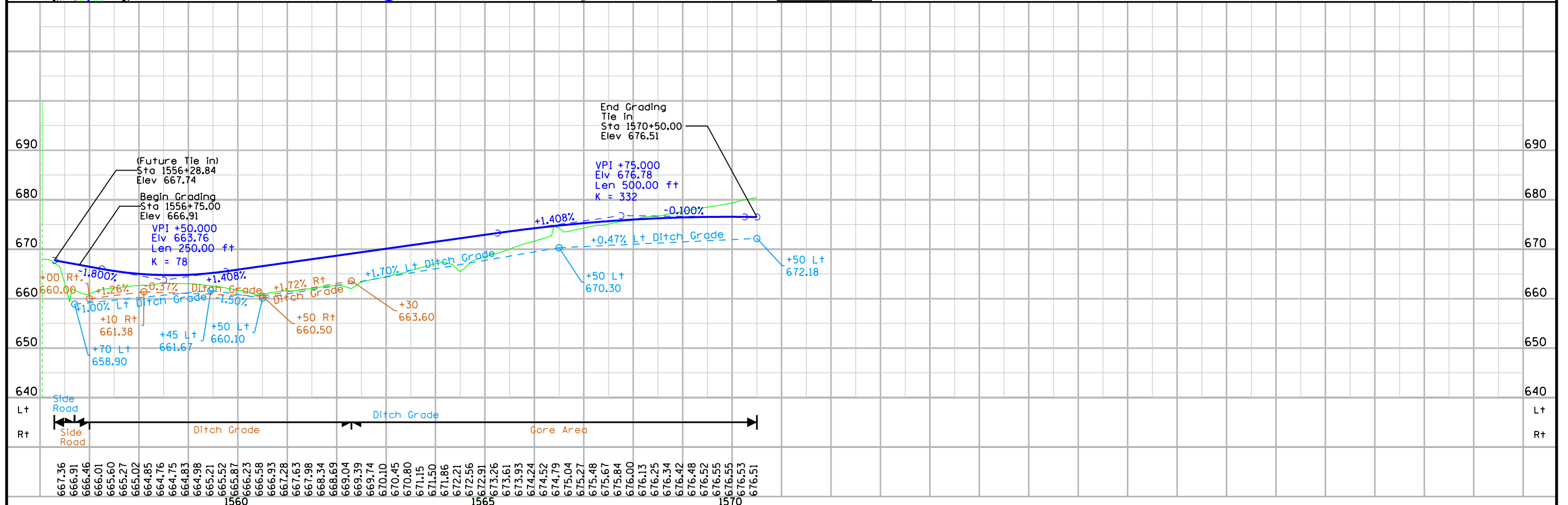
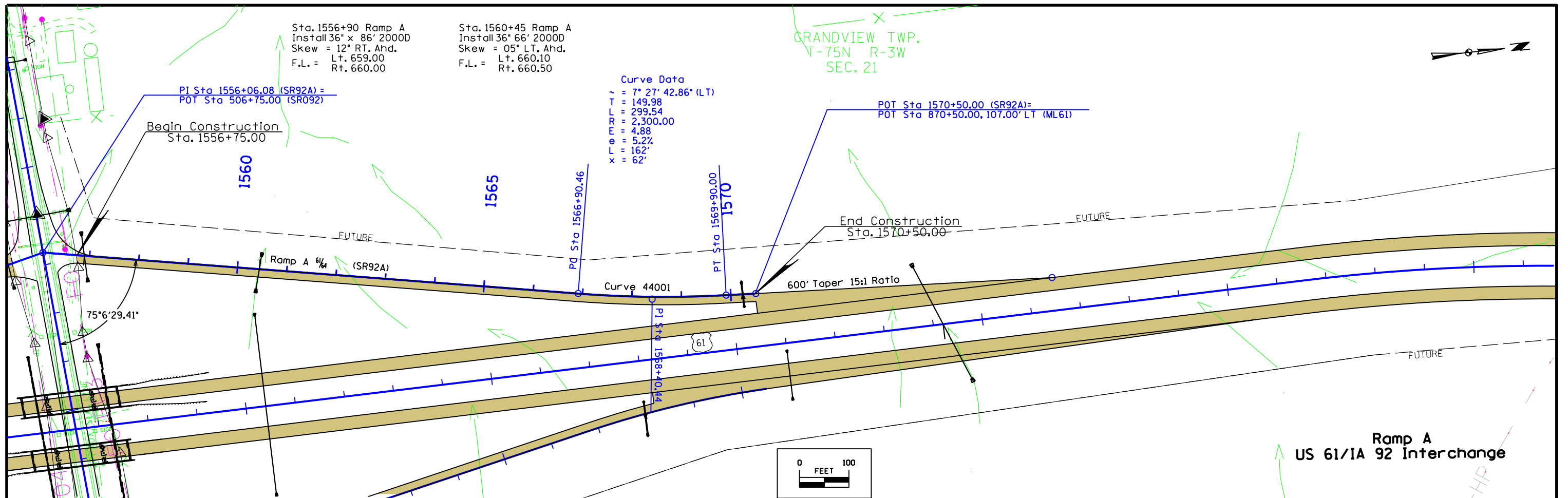


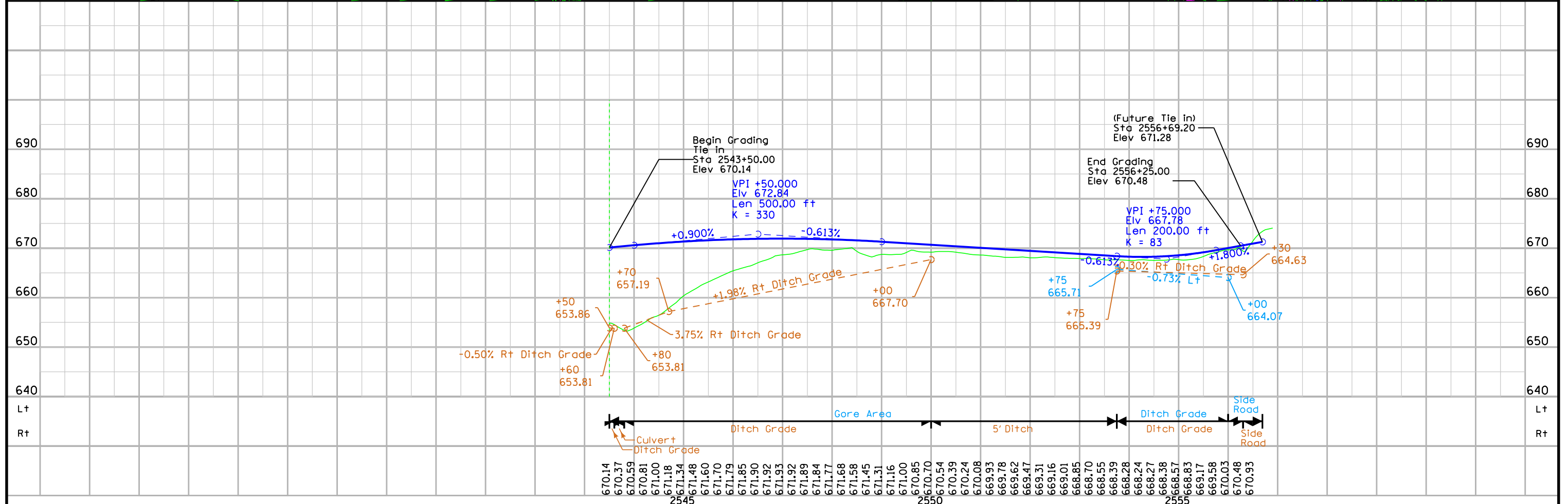
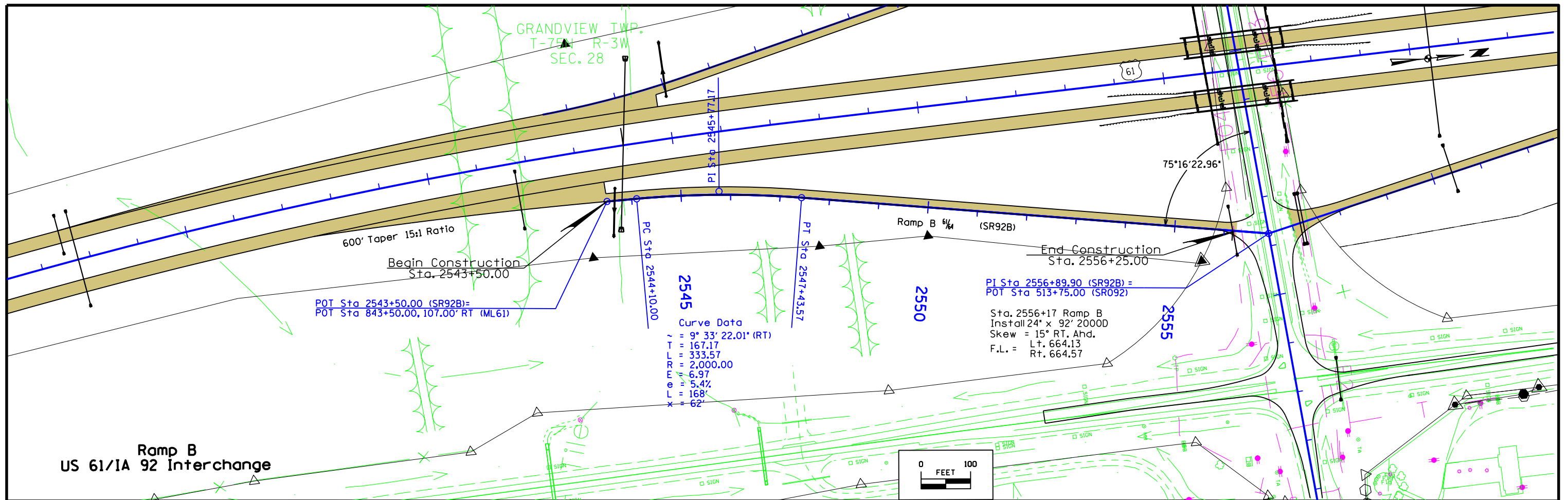
Curve Data  
 Δ = 7° 28' 47.19" (LT)  
 T = 150.34  
 L = 300.26  
 R = 2,300.00  
 E = 4.91  
 e = 5.2%  
 L = 162'  
 x = 62'

Curve Data  
 Δ = 10° 28' 30.82" (RT)  
 T = 183.34  
 L = 365.65  
 R = 2,000.00  
 E = 8.39  
 e = 5.4%  
 L = 168'  
 x = 62'

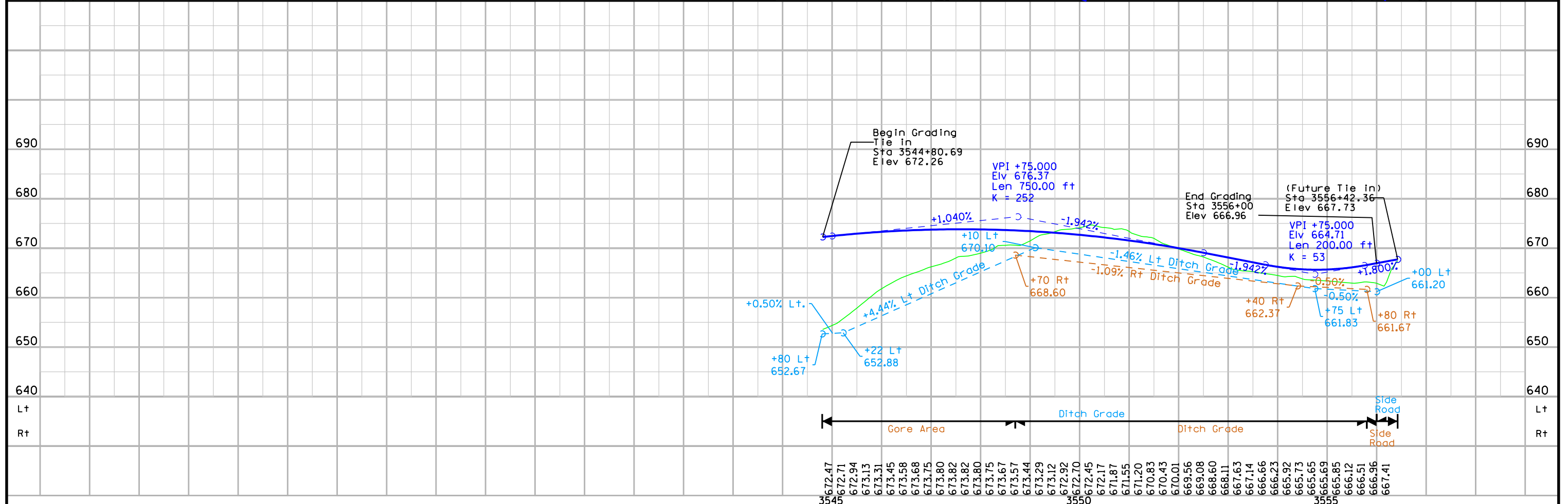
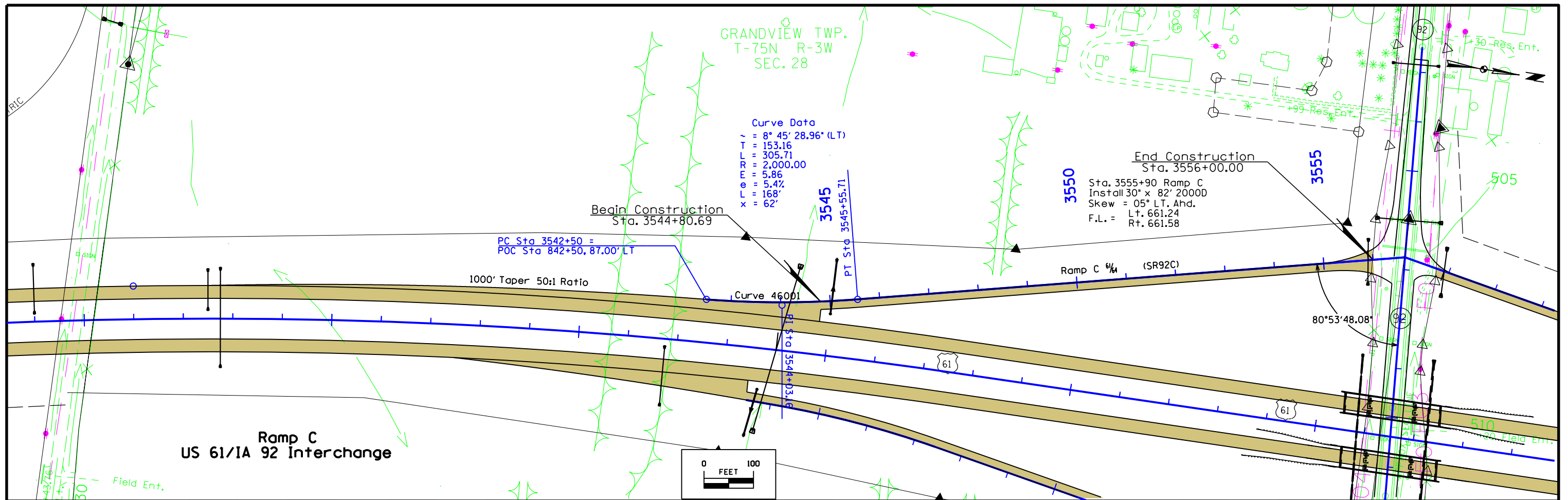
Geometric Plan  
 Proposed Interchange at  
 US 61 with IA 92  
 Louisa County

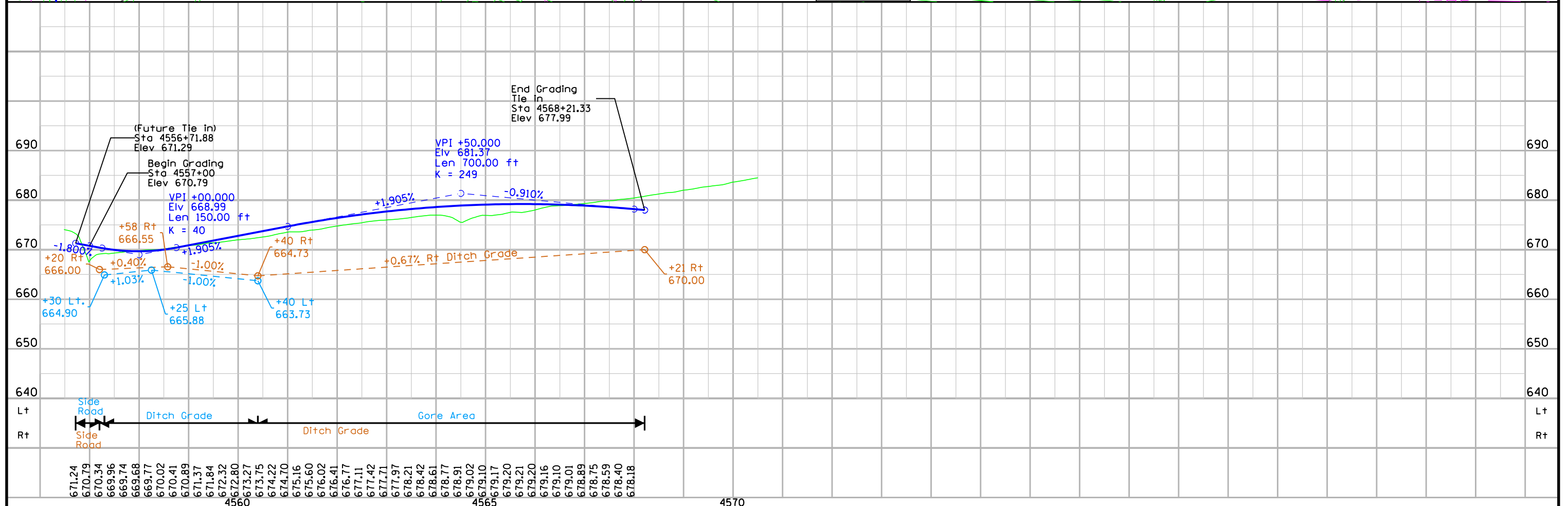
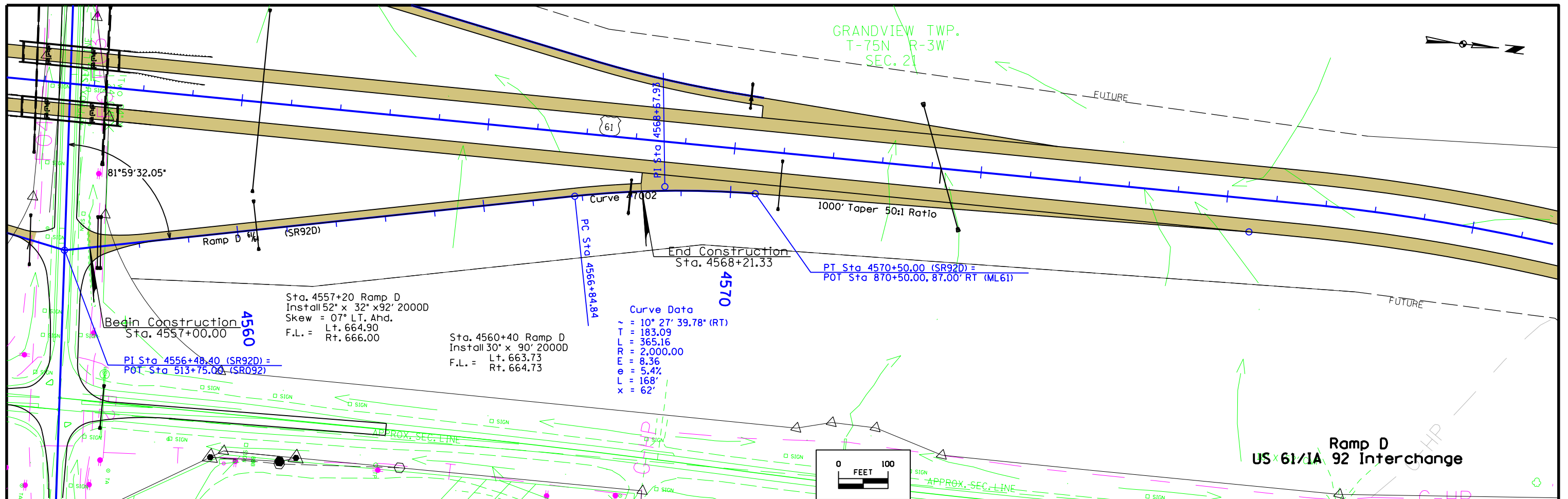






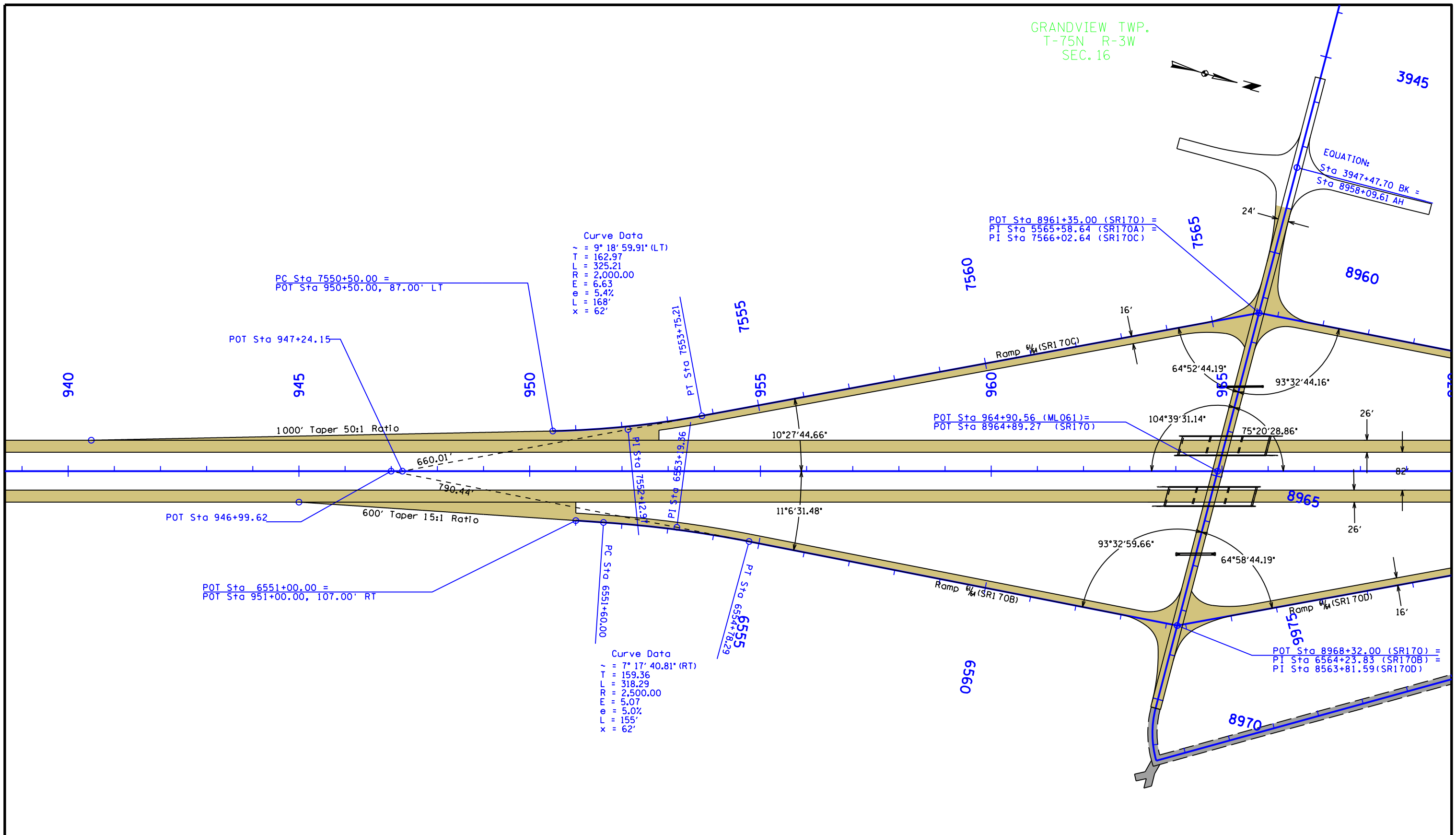




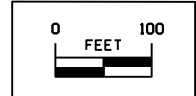




GRANDVIEW TWP.  
T-75N R-3W  
SEC. 16

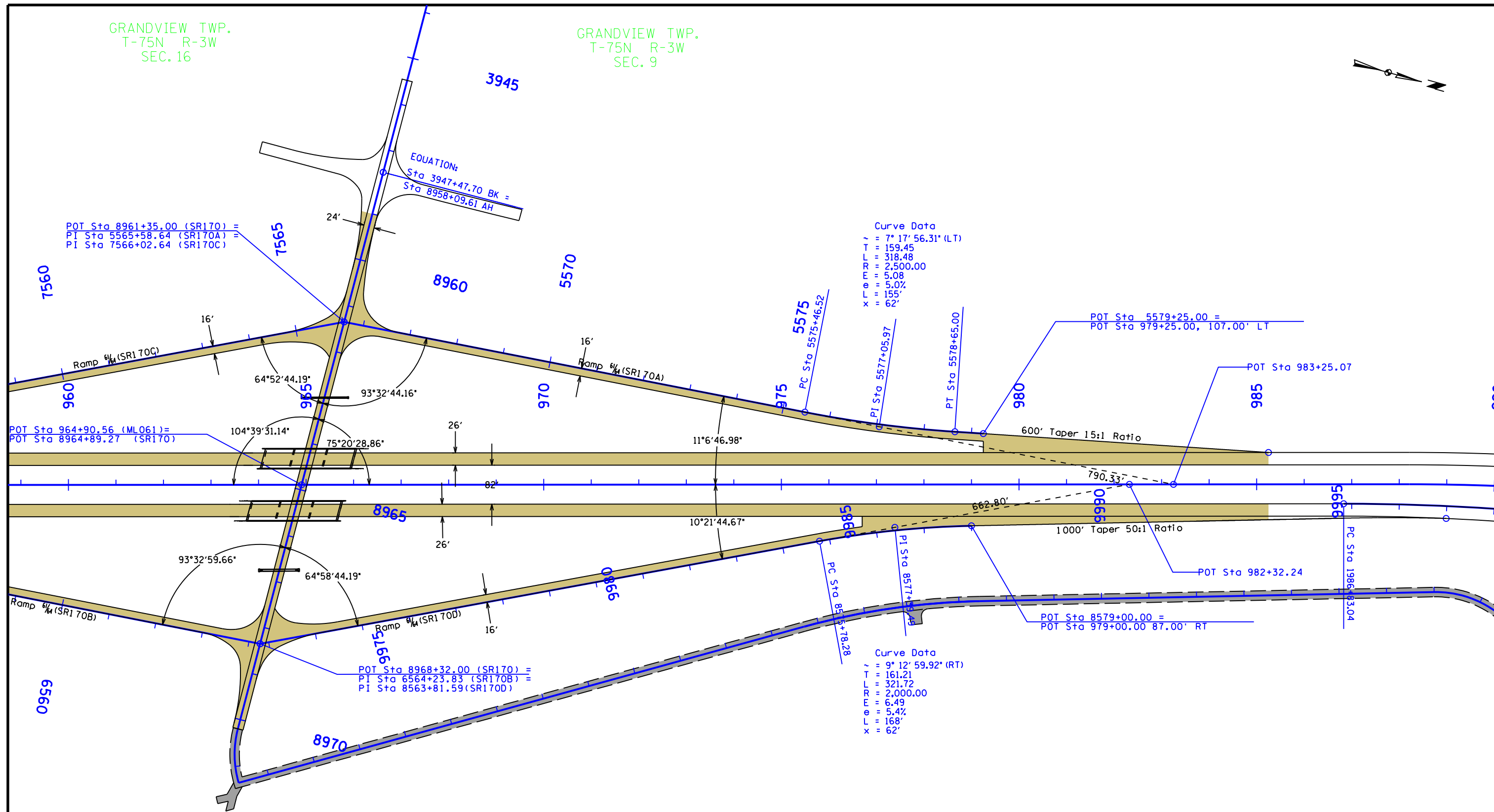


Geometric Plan  
Proposed Interchange of  
US 61 with 170th Street  
Louisa County

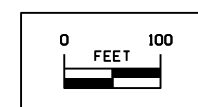


GRANDVIEW TWP.  
T-75N R-3W  
SEC. 16

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 9

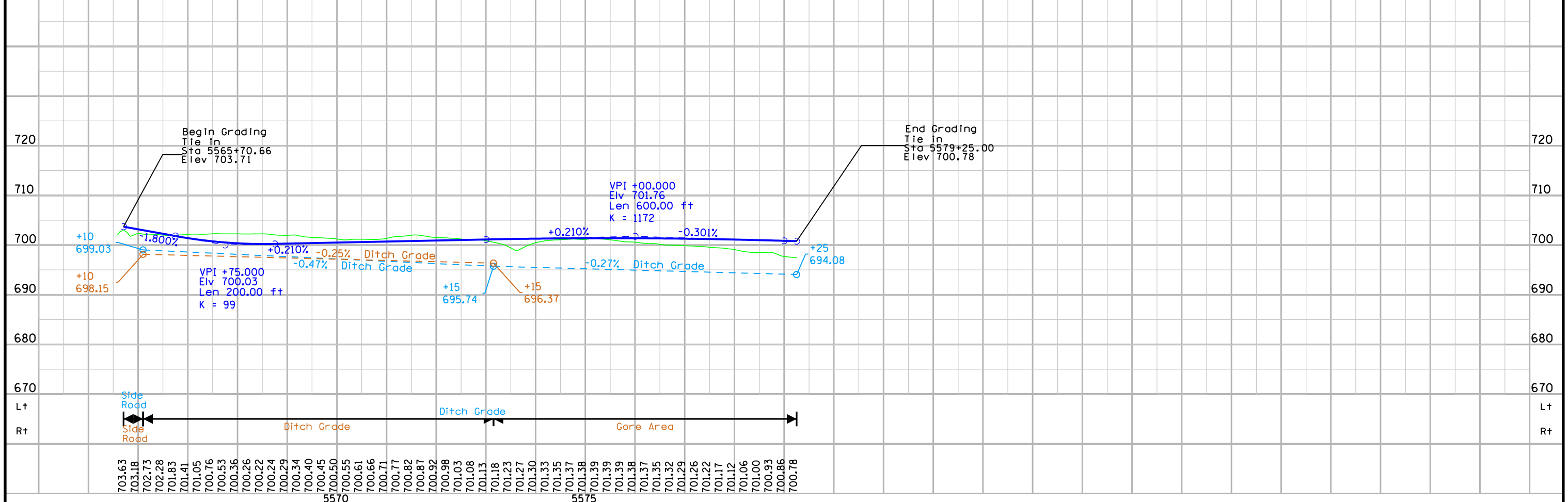
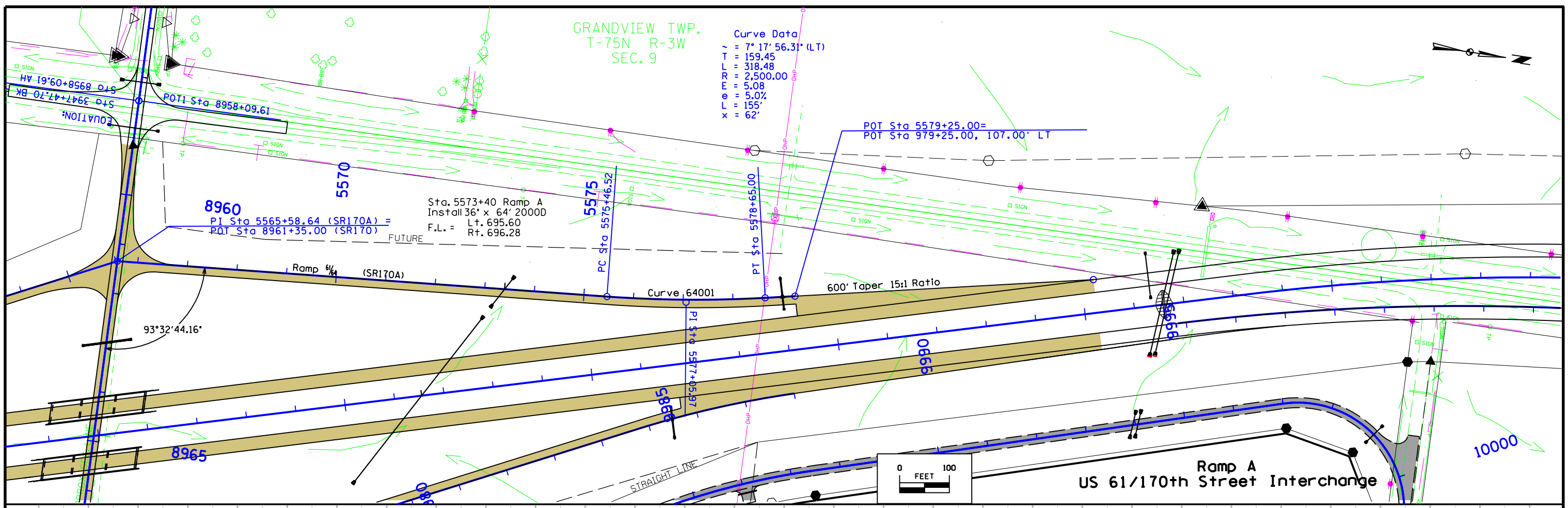


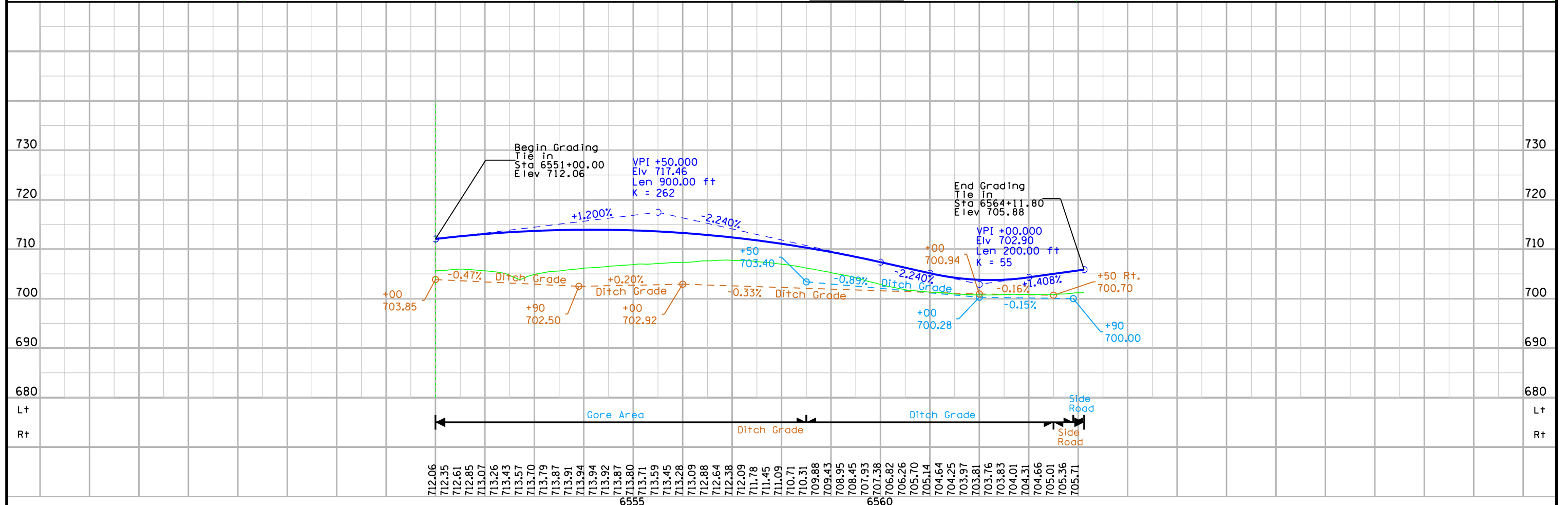
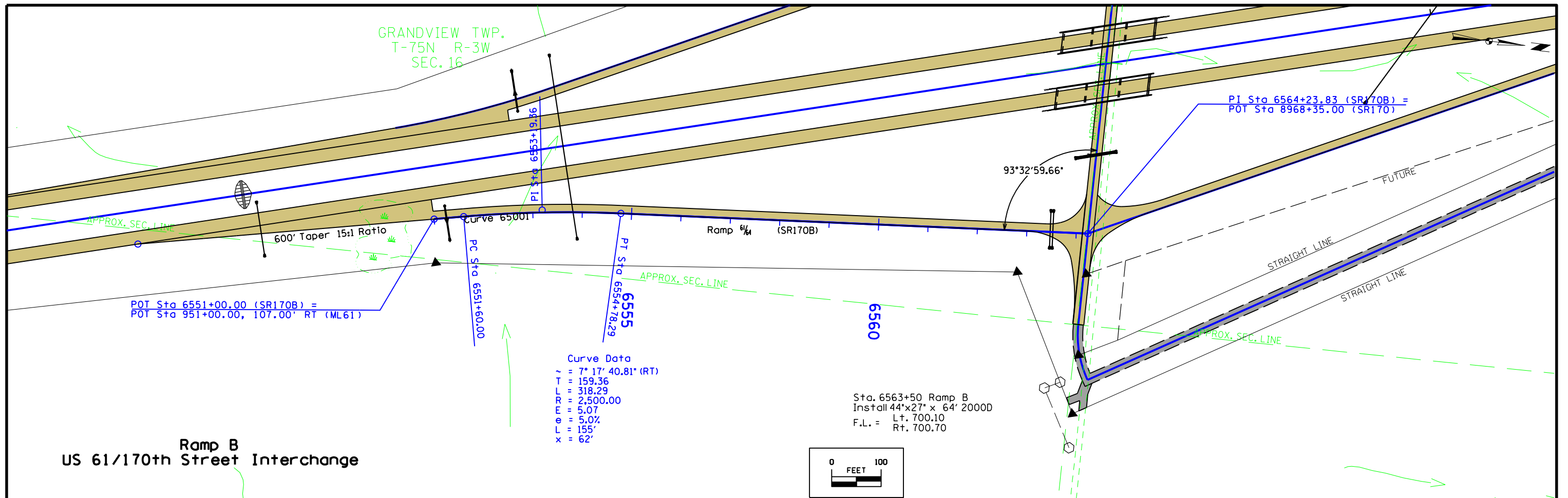
Geometric Plan  
Proposed Interchange of  
US 61 with 170th Street  
Louisa County

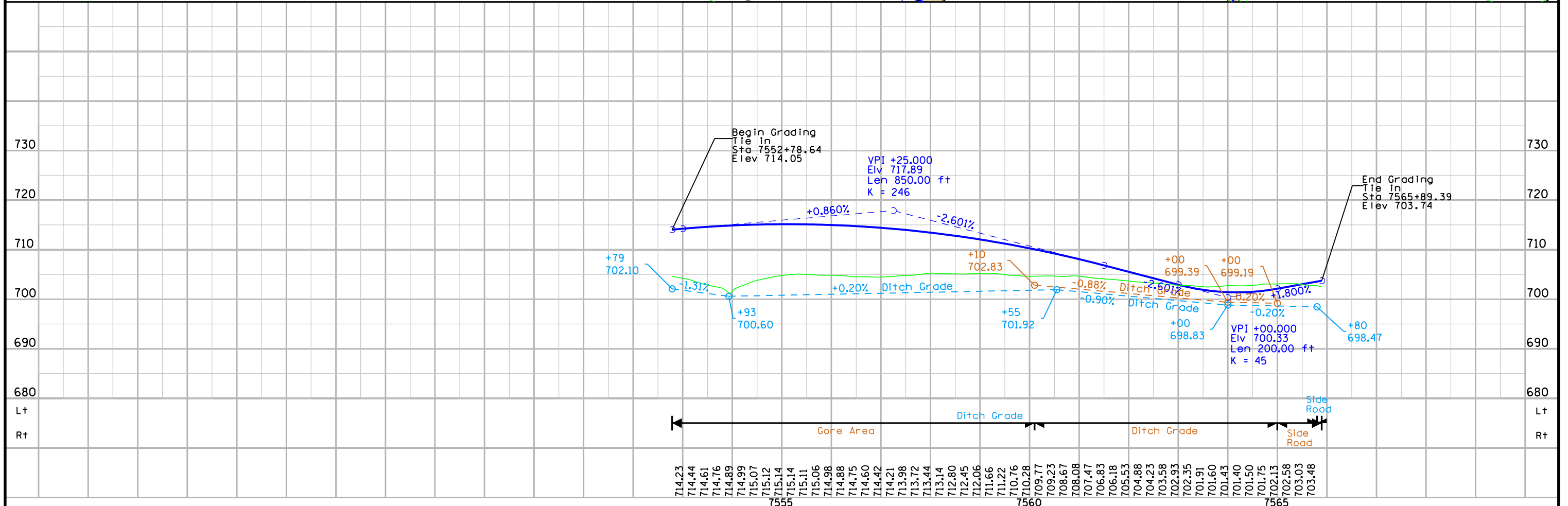
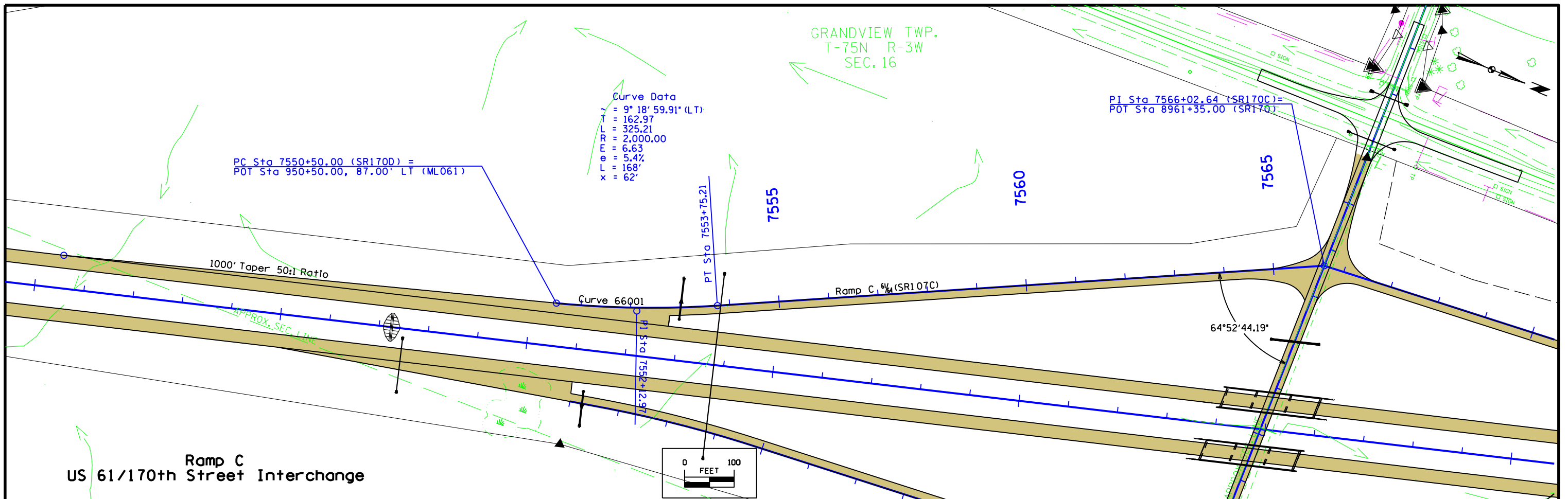


GRANDVIEW TWP.  
T-75N R-3W  
SEC. 9

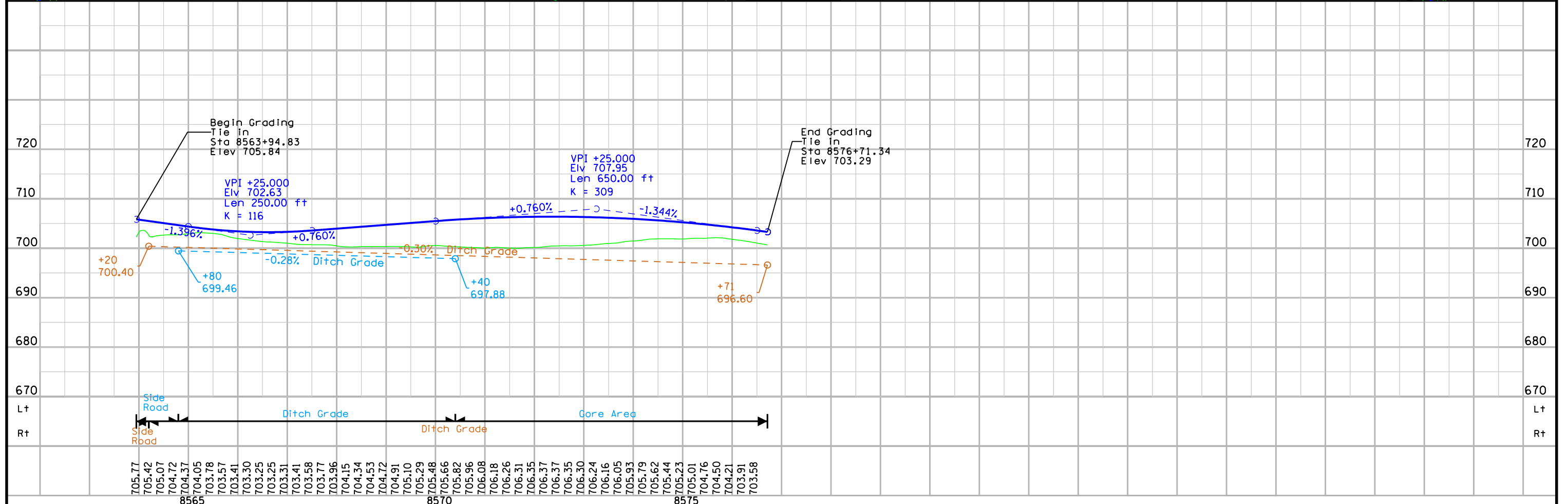
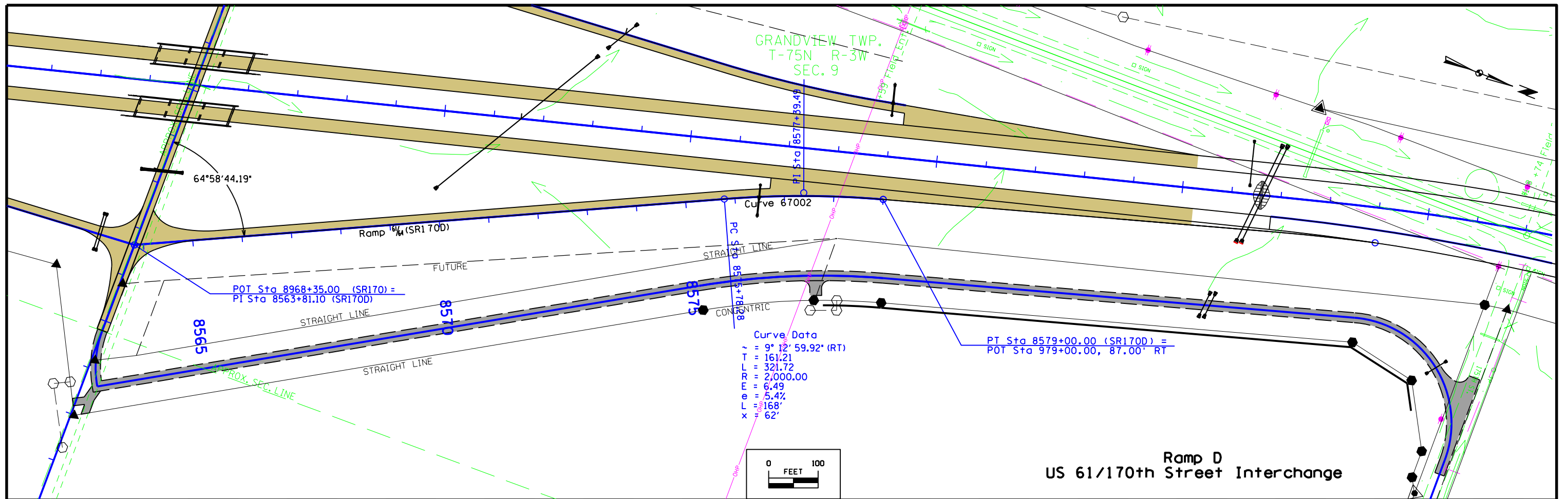
Curve Data  
 $\Delta = 7^\circ 17' 56.31''$  (LT)  
 T = 159.45  
 L = 318.48  
 RR = 2,500.00  
 E = 5.08  
 e = 5.0%  
 L = 155'  
 x = 62'













**STORM SEWER**

① Diameter or equivalent diameter  
\* Bid Item  
\*\* For SW-545

INTAKES AND UTILITY ACCESSES							PIPES															
							Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 3 ft length is added to each side of the Design Length to account for estimated length to center of structures.															
No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade	Bottom Well	Extension Length**	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe Size	Bid* Length	Design Length	Slope %	Flow Lines			Pipe Profile Sheet No.	Notes			
			Elev.	Elev.	FT			From	To		IN				FT	FT	Inlet Elevation			Outlet Elevation	Other Elevation	
10	US 61 at IA 92 Ramp A 870+25.00, 83.78' LT	SW-512 (Case 1)	676.28	672.28		Note 1	P-10	10	11	2000	18	46.9	43.9	1.89	673	672.17		M.3				
11	870+25.00, 134.80' LT	RF-3				18" dia., F.L. = 672.05																
20	US 61 at IA 92 Ramp B 843+70.00, 83.37' RT	SW-512 (Case 1)	670.06	666.06		Note 1	P-20	20	21	2000	18	95.2	92.2	13.39	667	654.65		M.3	Note 2			
21	843+52.30, 180.32' RT	RF-3				18" dia., F.L. = 653.83																
30	US 61 at IA 92 Ramp C 845+00.00, 85.06' LT	SW-512 (Case 1)	672.59	668.59		Note 1	P-30	30	31	2000	18	109.1	106.1	14.83	669.5	653.77		M.3				
31	845+00.00, 197.077' LT	RF-3				18" dia., F.L. = 652.87																
40	US 61 at IA 92 Ramp D 868+00.00, 83.61' RT	SW-512 (Case 1)	678.53	674.53		Note 1	P-40	40	41	2000	18	65.8	62.8	7.91	675.25	670.28		M.4				
41	868+00.00, 153.27' RT	RF-3				18" dia., F.L. = 669.80																
50	US 61 at 170th Ramp A 979+00.00, 83.88' LT	SW-512 (Case 1)	700.59	696.59		Note 1	P-50	50	51	2000	18	60.4	57.4	4.88	697.25	694.45		M.5				
51	979+00.00, 148.30' LT	RF-3				18" dia., F.L. = 694.16																
60	US 61 at 170th Ramp B 951+25.00, 83.91' RT	SW-512 (Case 1)	712.07	708.07		Note 1	P-60	60	61	2000	18	68	65.0	7.08	708.75	704.15		M.5				
61	951+25.00, 155.83' RT	RF-3				18" dia., F.L. = 703.72																
70	US 61 at 170th Ramp C 953+00.00, 83.56' LT	SW-512 (Case 1)	714.58	710.58		Note 1	P-70	70	71	2000	18	81.3	78.3	11.34	711.25	702.37		M.6				
71	953+00.00, 168.47' LT	RF-3				18" dia., F.L. = 701.68																
80	US 61 at 170th Ramp D 976+50.00, 83.62' RT	SW-512 (Case 1)	703.92	699.92		Note 1	P-80	80	81	2000	18	60.4	57.4	6.01	700.5	697.05		M.6				
81	976+50.00, 148.03' RT	RF-3				18" dia., F.L. = 696.69																
							Totals:				587.1											
Notes: 1. 24" dia. riser with SW-604 Type 4B casting 2. Skew = 6.5° left ahead where crosses IA 92 Ramp B baseline																						

### SURVEY SYMBOLS

○ MIS Miscellaneous	--- ENT Centerline BL of Entrance
— LIN Miscellaneous Line	— CON Concrete or A/C Slab
— PIP Pipe Culvert	— ENP Edge Paved Entrance & Park Lot
— TIL Tile Line	RR Centerline of Railroad Tracks
○ OUT Tile Outlet	— EW Edge of Water
⊠ IN Storm Sewer Intake	— CU Back of Curb
— CUL Culvert	— GU Gutter In Front of Curb
⊗ INB Storm Sewer Beehive Intake	— ELA Underground Electric Line Co.1
○ MM Mile Marker Post	— ELB Underground Electric Line Co.2
RRW Railroad Switch	—OHP— Overhead Electric Line Co.1
RRS Railroad Signal	— TLA Underground Telephone Line Co.1
RRF Railroad Frog	— FOD Underground Fiber Optic Co.4
□ EB Electrical Box	— GHA Underground High Pres Gas Co.1
— BRG Bridge	— FOC Underground Fiber Optic Co.3
■ GDL Guard Rail Steel	— FOA Underground Fiber Optic Co.1
BB Billboard	----- BL Topo Breakline
□ SIGN SL Speed Limit Sign	— BLD Building or Foundation
● PPA Power Pole Co.1	SWP Swamp or Marsh
○ TA Tower Anchor	— SWK Sidewalk
● PR Electric Riser Pole	⊠ WM Wind Mill
○ LUM Luminaire	⊕ LP L.P. Tank
⊙ MH Utility Access (Manhole)	⊙ TV Satellite TV Dish
□ SIGN SI Sign	BB Billboard
● PPC Power Pole Co.3	⊙ Flg FLG Flag Poles
LC Lot Corner	▢ RET Retaining Walls
* TEV Evergreen Tree	— FCL Chain Link and Security Fence
⊙ TDC Tree Deciduous	----- C Centerline BL of Road (ML or SR)
⊙ SHR Shrub	— FWD Wood Fence
⊠ HT Electrical Highline Tower	⊙ SHR Shrub
○ TP TPD Telephone Pedestal	— TER Terrace
* TSG Traffic Signal	
○ GV Gas Valve	
— UV Underground Utility Vault	
— FW Wire Fence	
■ GPR Guard Post (4 or More Posts)	
— BLD Building or Foundation	
— FCL Chain Link and Security Fence	
----- BNK Stream Bank	
— EP Edge of Paved Roads (ML or SR)	
— SNP Unpaved Shoulder	
— DIK Centerline of Dike or Dam	
⊙ SNK Sink Hole	
— D Centerline Draw or Stream (Down)	
— DU Centerline Draw or Stream (Up)	
--- EG Edge of Gravel Road	
--- ENU Edge Unpaved Entrance & Parking	
— SH Paved Shoulder	

### UTILITY LEGEND

—	Alliant Energy Ann Kreiss 215 Oak Street Muscatine, IA 52761 563-288-3322 annkreiss@alliantenergy.com
—	Alliant Energy Jason Hogan 4902 N. Billmore Lane Madison, WI 53718-2148 608-458-4871 jasonhogan@alliantenergy.com
—	Eastern Iowa Electric Tom Quiram PO Box 3003 Wilton, IA 52778-3003 563-732-2211 tom.quiram@easterniowa.com
—	Mutual Telephone Co. of Morning Sun Mike Pugh 28 W. Division St Morning Sun, IA 52640 563-571-7979 mpugh@mutel.com
—OHP—	MidAmerican Energy Company Tom Albertson 106 East Street Davenport, IA 52801 563-333-8155 ktalbertson@midamerican.com
—	Windstream Mike Braughton One Martha's Way Hawatha, IA 52233 319-790-7114 michael.braughton@windstream.com michael.braughton@paetec.com
—	Windstream Communications of Iowa Kelly Eggers 101 West Madison Mt. Pleasant, IA 52641 319-385-5004 kelly.eggers@iowatelecom.com kelly.e.eggers@windstream.com
—	Windstream (Paetec) Terry Burke 403 W. 4th St. N. Newton, IA 50208 641-787-2259 terry.r.burke@windstream.com

### PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

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

### PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

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

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

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

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

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

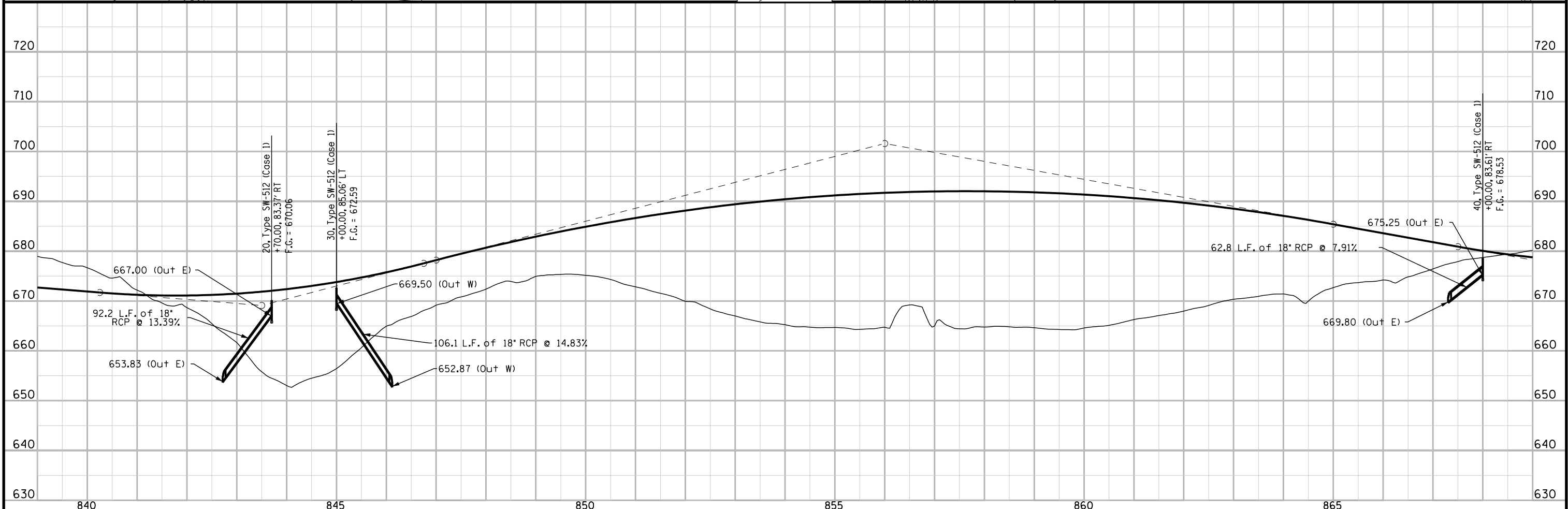
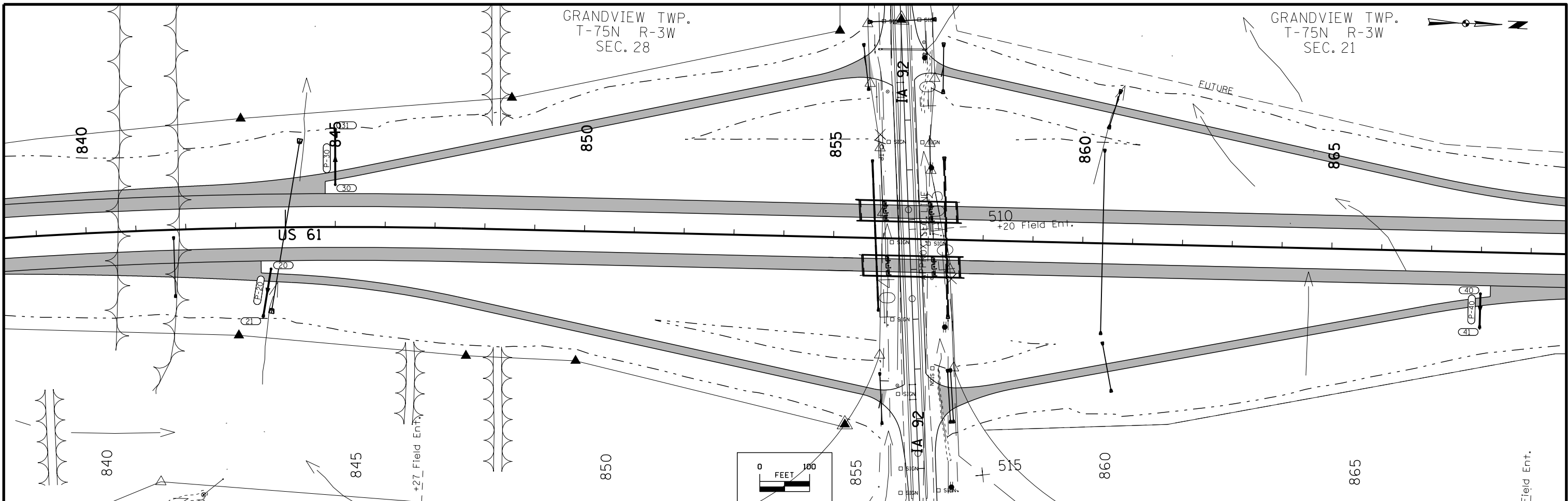
RIGHT-OF-WAY LEGEND	
▲	Proposed Right-of-Way
▲	Existing and Proposed Right-of-Way
▲	Easement and Existing Right-of-Way
■	Borrow
○	Easement (Temporary)
⊙	Easement
X	Excess
A/C	Access Control

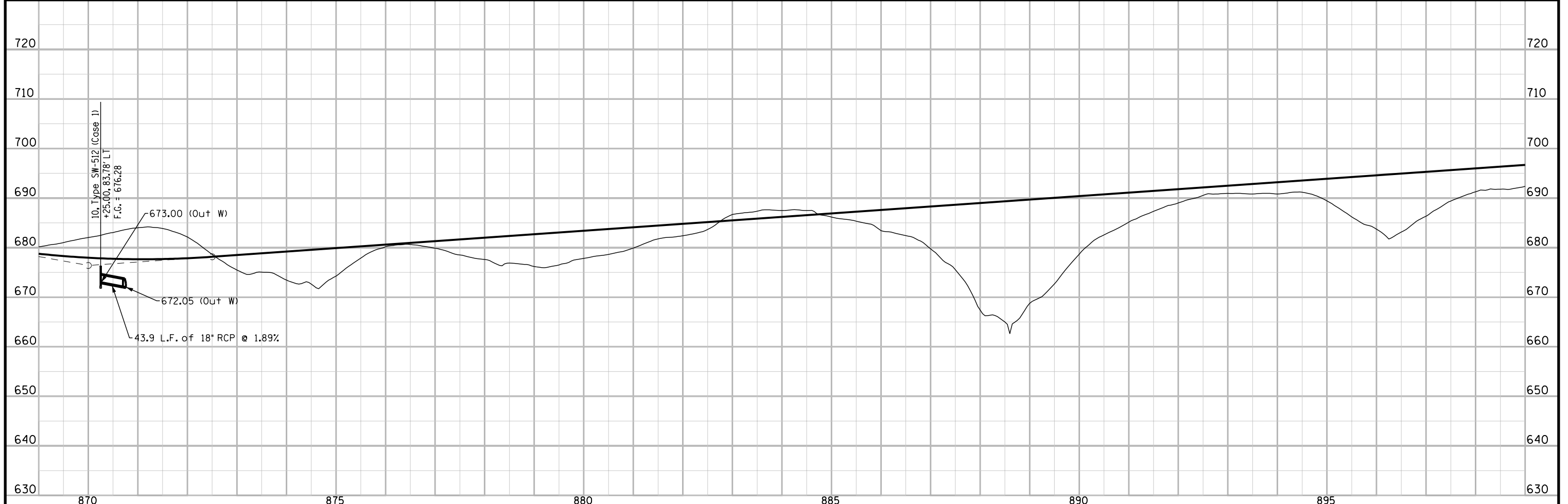
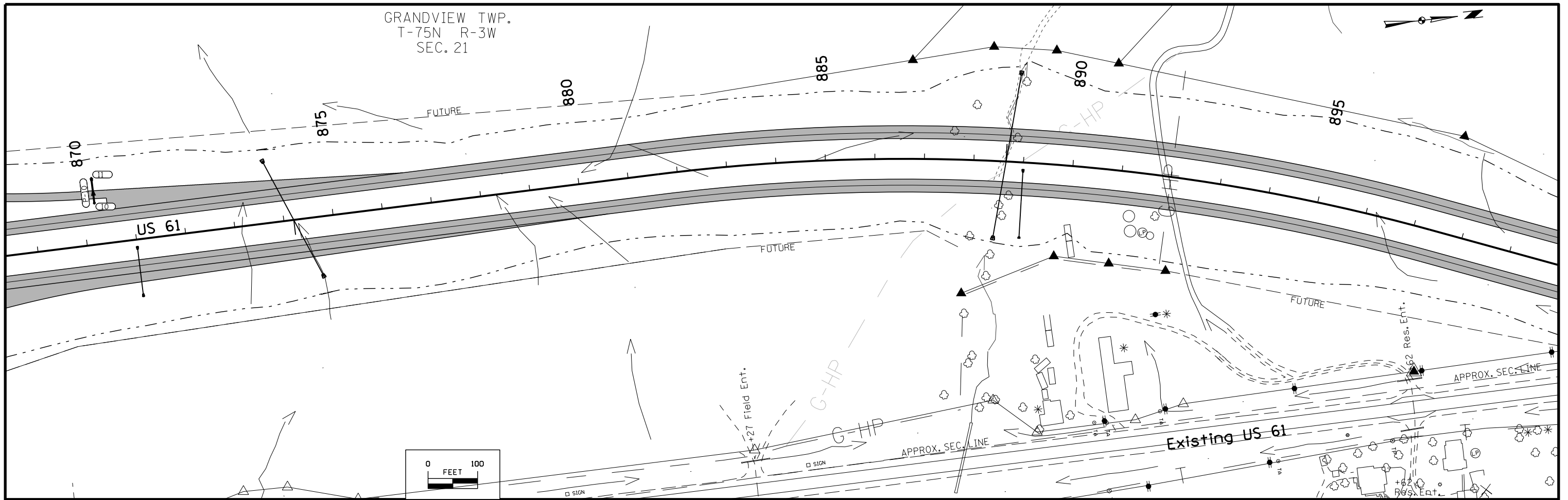
—	Reference Point
○	Station
—	Survey Line
▲	Section Corner
---	Ground Line Intercept
////	Saw Cut
—	Guardrail
▨	Clearing & Grubbing Area
▩	Pavement Removal

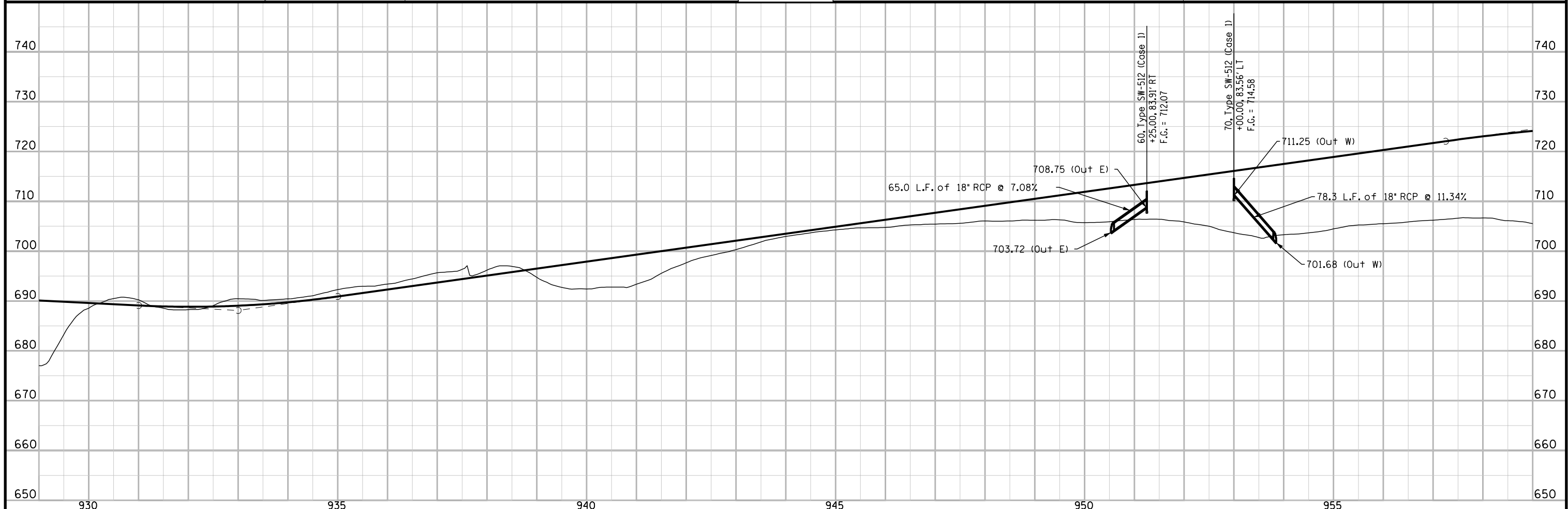
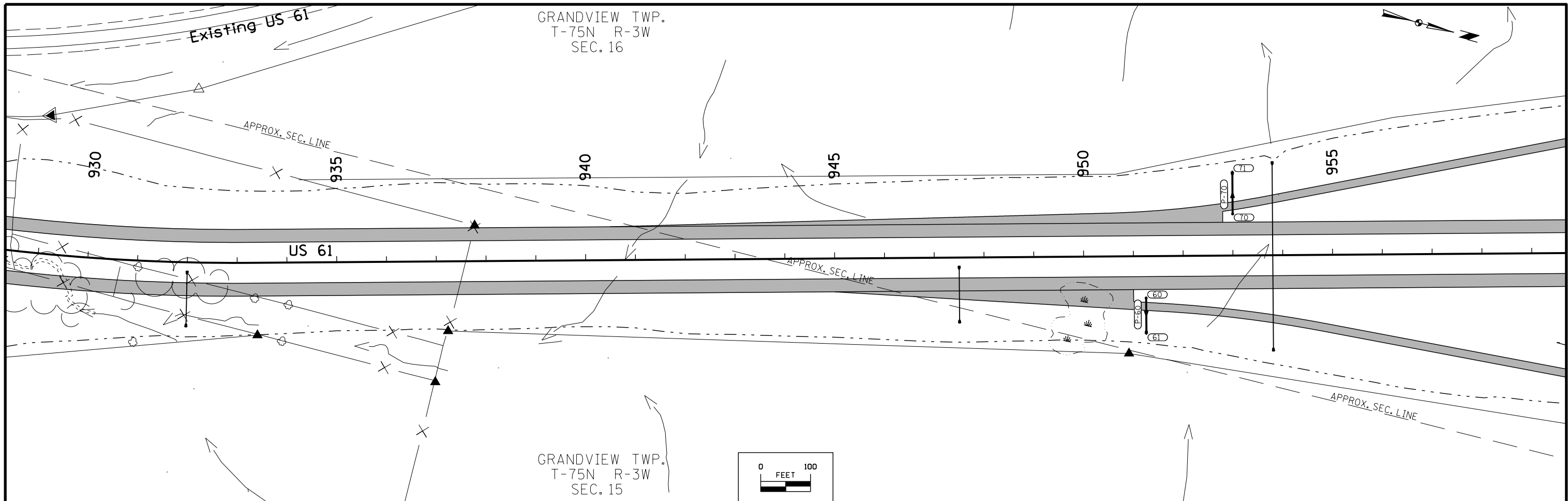
# STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

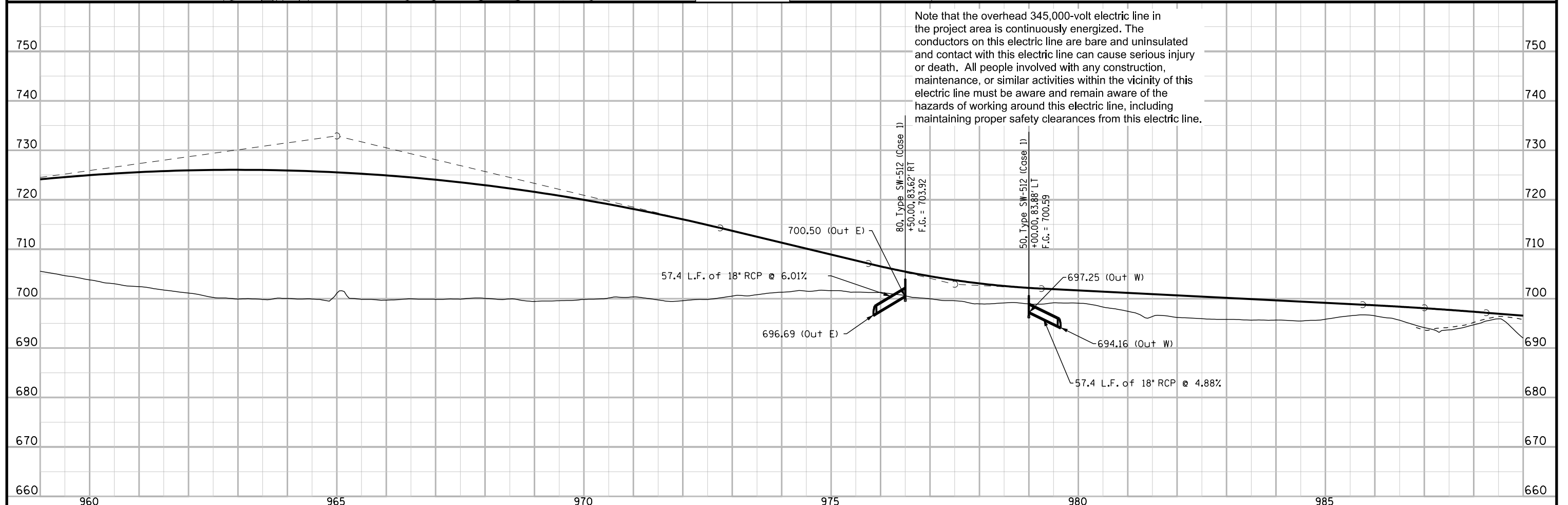
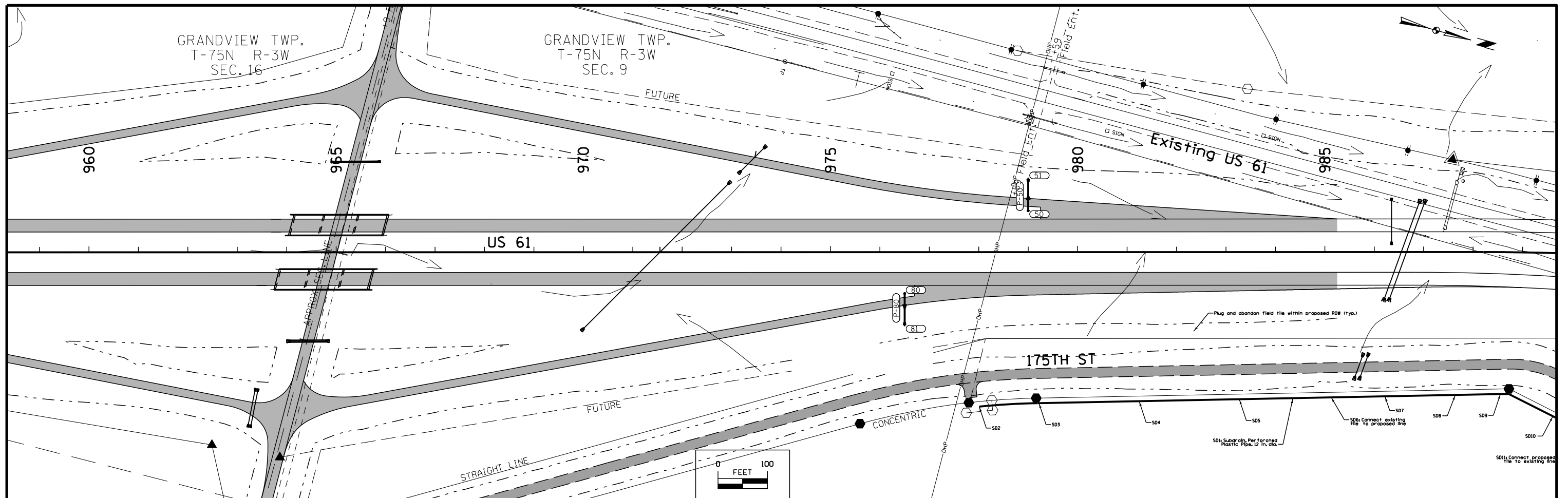
(COVERS SHEET SERIES M)



GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

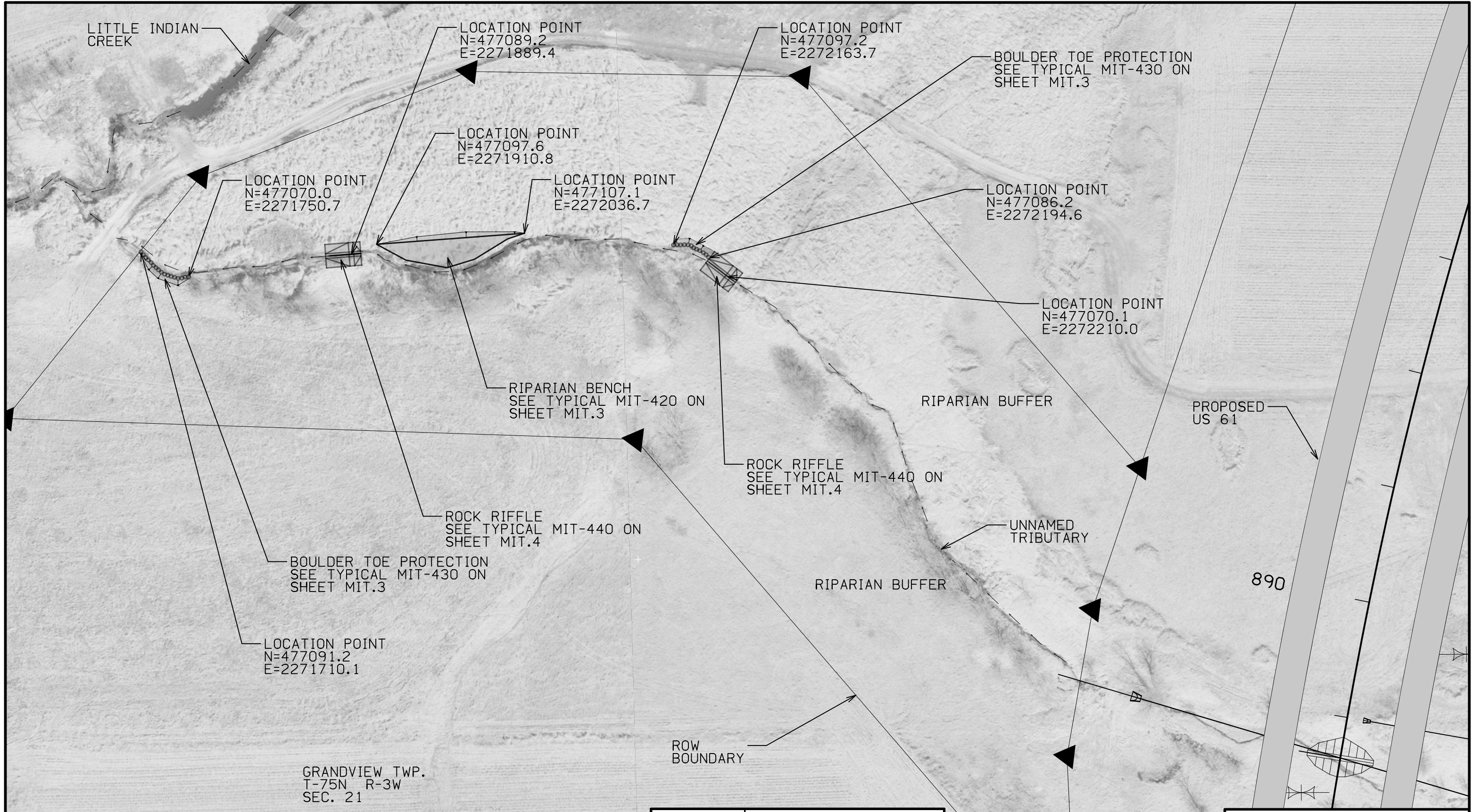






Note that the overhead 345,000-volt electric line in the project area is continuously energized. The conductors on this electric line are bare and uninsulated and contact with this electric line can cause serious injury or death. All people involved with any construction, maintenance, or similar activities within the vicinity of this electric line must be aware and remain aware of the hazards of working around this electric line, including maintaining proper safety clearances from this electric line.





GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

**ESTIMATED QUANTITIES**

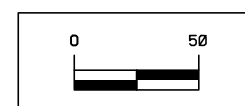
ITEM	UNIT	BOULDER TOE PROTECTION (x2)	ROCK RIFFLE (x2)	RIPARIAN BENCH	TOTAL
ENGINEERING FABRIC	SY	-	160.0	-	160.0
REVTMENT, CLASS B	TON	26.0	-	-	26.0
REVTMENT, CLASS E	TON	-	157.0	-	157.0
CLASS 10 CHANNEL EXCAVATION	CY	17.0	90.0	79.5	186.5
NATIVE GRASS SEEDING	ACRE	0.01	-	0.05	0.06
SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	5.3	-	23.6	28.9



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *Chin-Ta Tsai* Date: 01/20/2014  
 Printed or Typed Name: CHIN-TA TSAI  
 My license renewal date is December 31, 2015.

Pages or sheets covered by this seal: ALL MIT SHEETS



**STREAM MITIGATION  
GENERAL SITE PLAN**

GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

RIPARIAN BUFFER

RIPARIAN BENCH  
SEE TYPICAL MIT-420 ON  
SHEET MIT.3

BOULDER TOE PROTECTION  
SEE TYPICAL MIT-430 ON  
SHEET MIT.3

UNNAMED  
TRIBUTARY

ROCK RIFFLE  
SEE TYPICAL MIT-440 ON  
SHEET MIT.4

ROCK RIFFLE  
SEE TYPICAL MIT-440 ON  
SHEET MIT.4

BOULDER TOE PROTECTION  
SEE TYPICAL MIT-430 ON  
SHEET MIT.3

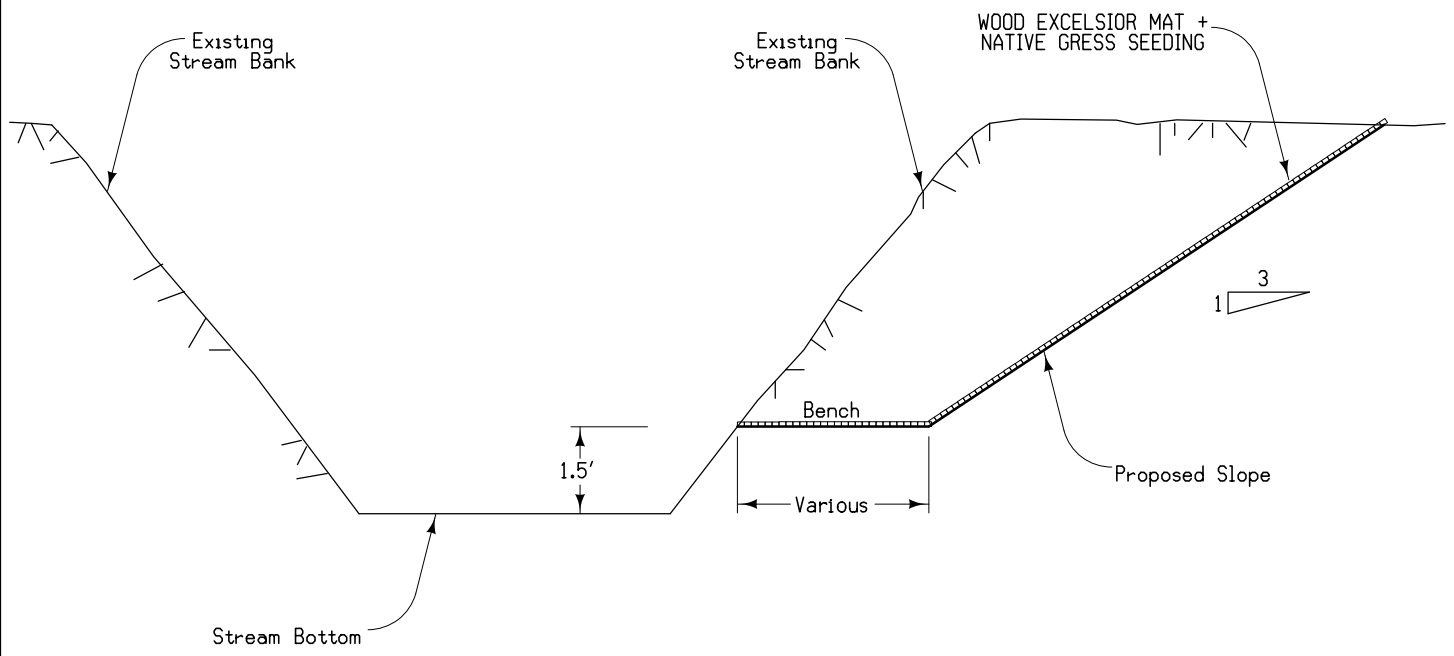
RIPARIAN BUFFER

ROW  
BOUNDARY



STREAM MITIGATION  
GRADING PLAN

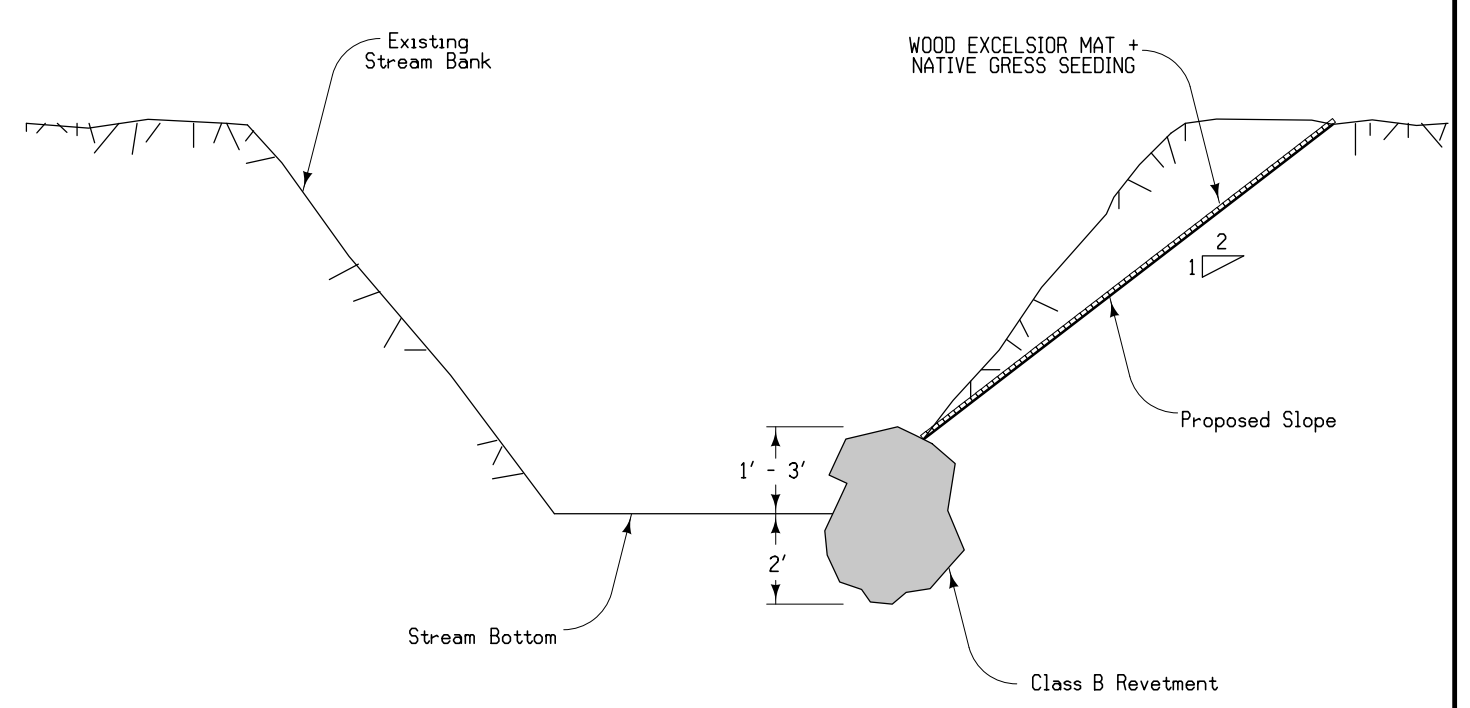
MIT-420  
4-4-2013



NOTE: SEEDING NEEDS TO BE PLACED BEFORE WOOD EXCELSIOR MAT.

**TYPICAL RIPARIAN BENCH**

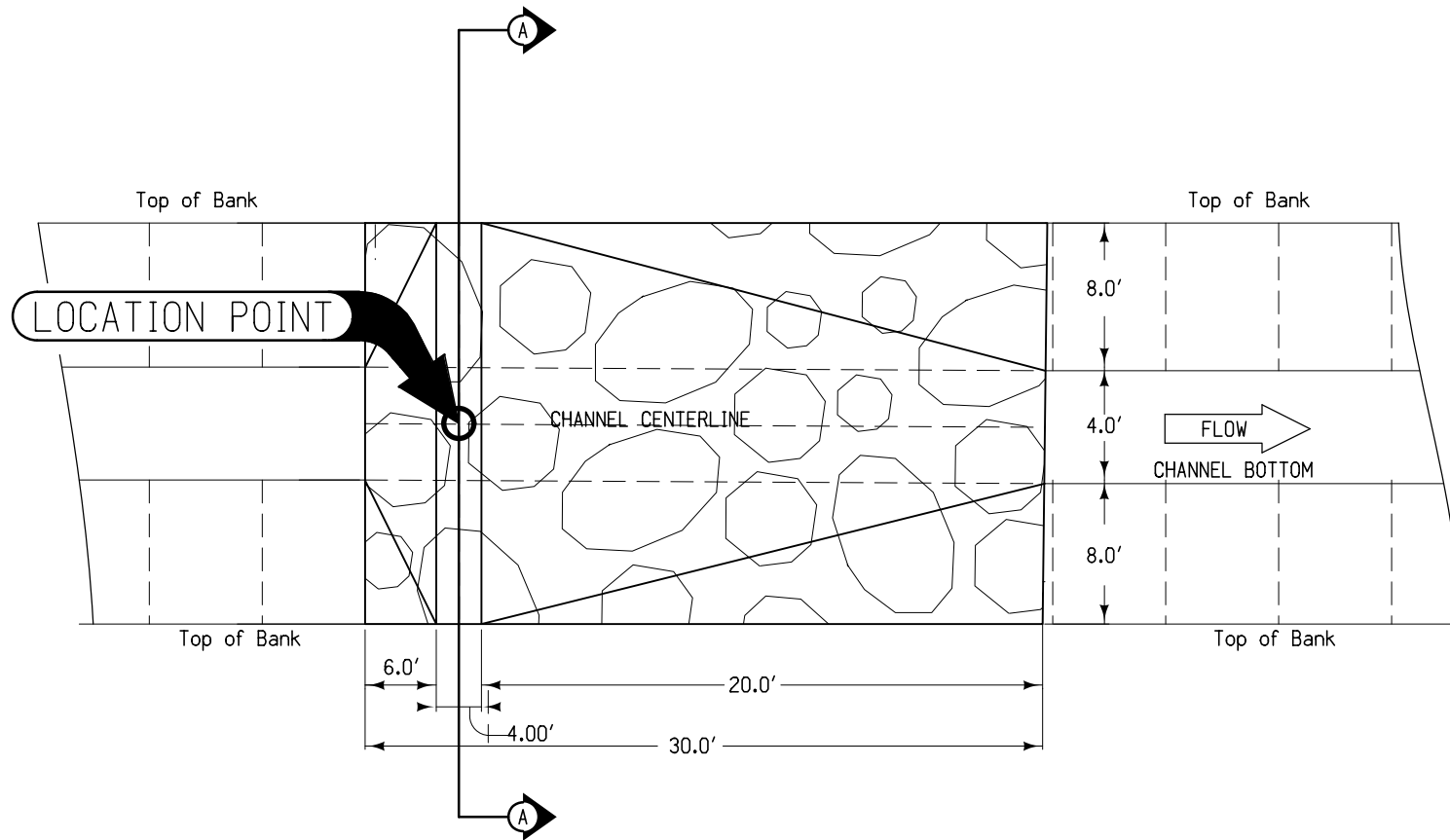
MIT-430  
4-4-2013



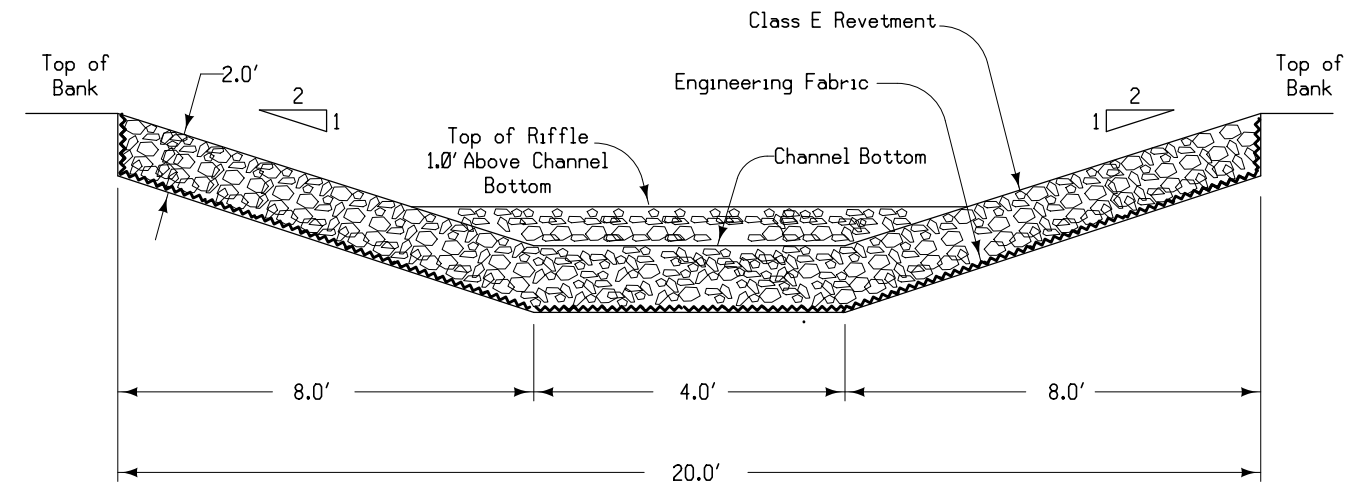
NOTE: SEEDING NEEDS TO BE PLACED BEFORE WOOD EXCELSIOR MAT.

**TYPICAL BOULDER TOE PROTECTION**

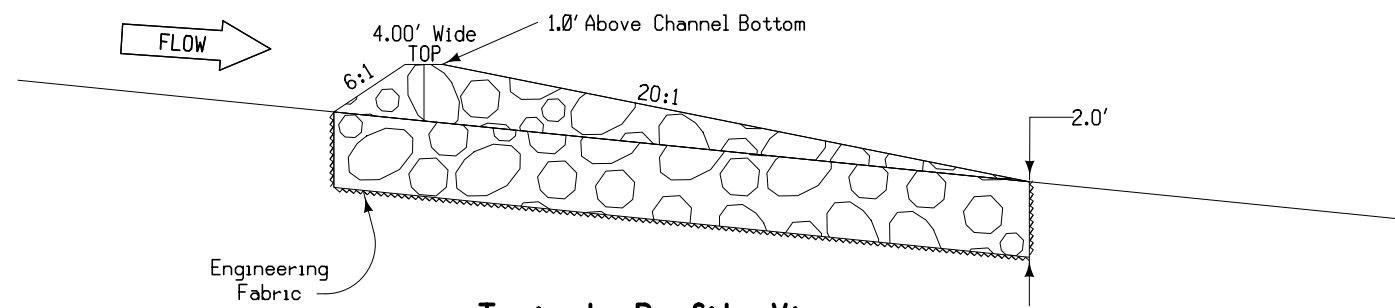
### STREAM MITIGATION TYPICAL RIPARIAN BENCH AND BOULDER TOE PROTECTION



PLAN VIEW



Typical Cross Section A-A



Typical Profile View

TYPICAL ROCK RIFFLE STRUCTURE

STREAM MITIGATION TYPICAL ROCK RIFFLE STRUCTURE

**SURVEY SYMBOLS**

**UTILITY LEGEND**

**PLAN VIEW COLOR LEGEND OF SOILS SHEETS**

LINEWORK	Design Color No.	Description
Green	(2)	Existing Topographic Features and Labels
Purple (Halo)	(15)	Backslope Drains
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation

SHADING	Design Color No.	Description
Brown, Light	(236)	Core Out

**PROFILE VIEW COLOR LEGEND OF SOILS SHEETS**

LINEWORK	Design Color No.	Description
Blue	(1)	Proposed Alignment, Stationing, and Alignment Annotation
Green	(2)	Existing Ground Line Profile
Green, Med	(227)	Class 10 Topsoil
Green, M.Light	(226)	Unsuitable A Topsoil
Green, Light	(225)	Unsuitable B Topsoil
Green, V.Light	(224)	Unsuitable C Topsoil
Orange	(6)	Loam
Brown, Dark	(238)	Class 10
Brown, Med	(237)	Sand
Red	(3)	Unsuitable A
Pink, Dark	(13)	Unsuitable B
Pink	(11)	Unsuitable C
Red	(3)	Shale
Red	(3)	Waste
Gray, Light	(48)	Broken and Weathered Rock
Gray, Med	(80)	Rock
Gray, V.Dark	(128)	Boulders

**PATTERN AND SYMBOL LEGEND OF SOILS SHEETS**

Soils Book No. J, K, L  
 Date(s) Drilled 2012, 2013, 2014

Water	Treatment	Unsuitable A Topsoil
Dry	Sand Blanket	Unsuitable B Topsoil
Sample	Soil Remediation Area	Unsuitable C Topsoil
Plugged	Select Soil	Unsuitable A
Moisture	Select Sand	Unsuitable B
Shelby	Shale	Unsuitable C
Blow Count	Broken and Weathered Rock	Sandy Soil
Dens. Core	Rock	Boulders
	Sandstone	

Reference Point	Survey Line
Station	Section Corner
Ground Line Intercept	Saw Cut
Guardrail	Clearing & Grubbing Area
Pavement Removal	

**RIGHT-OF-WAY LEGEND**

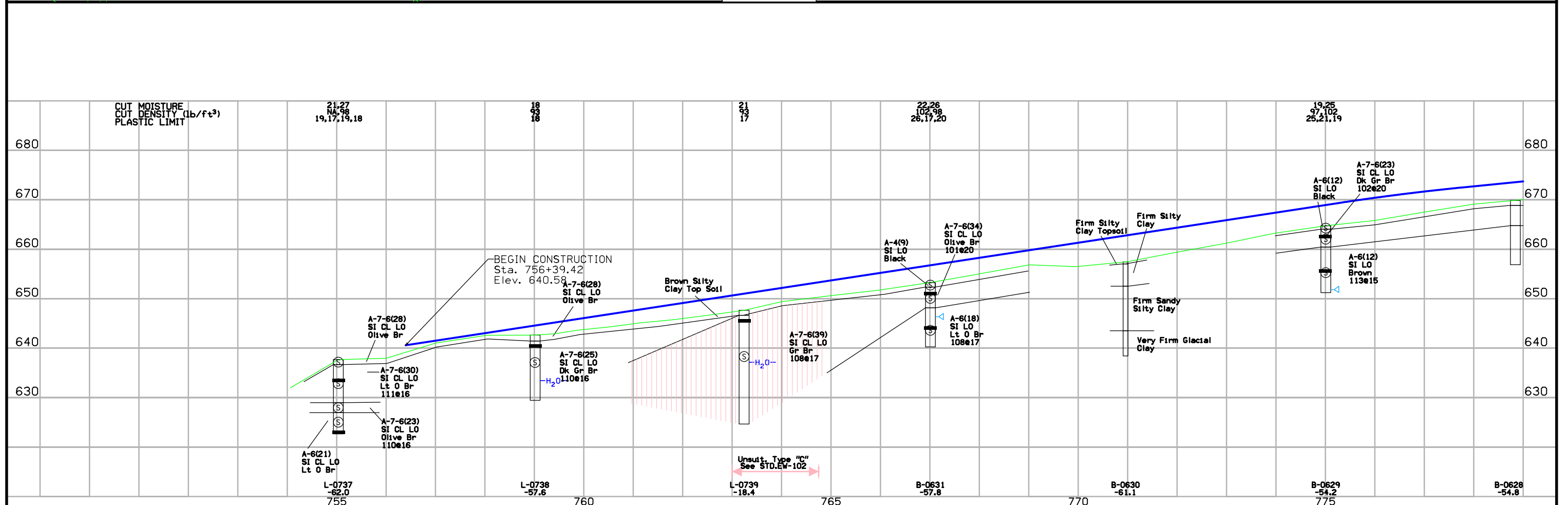
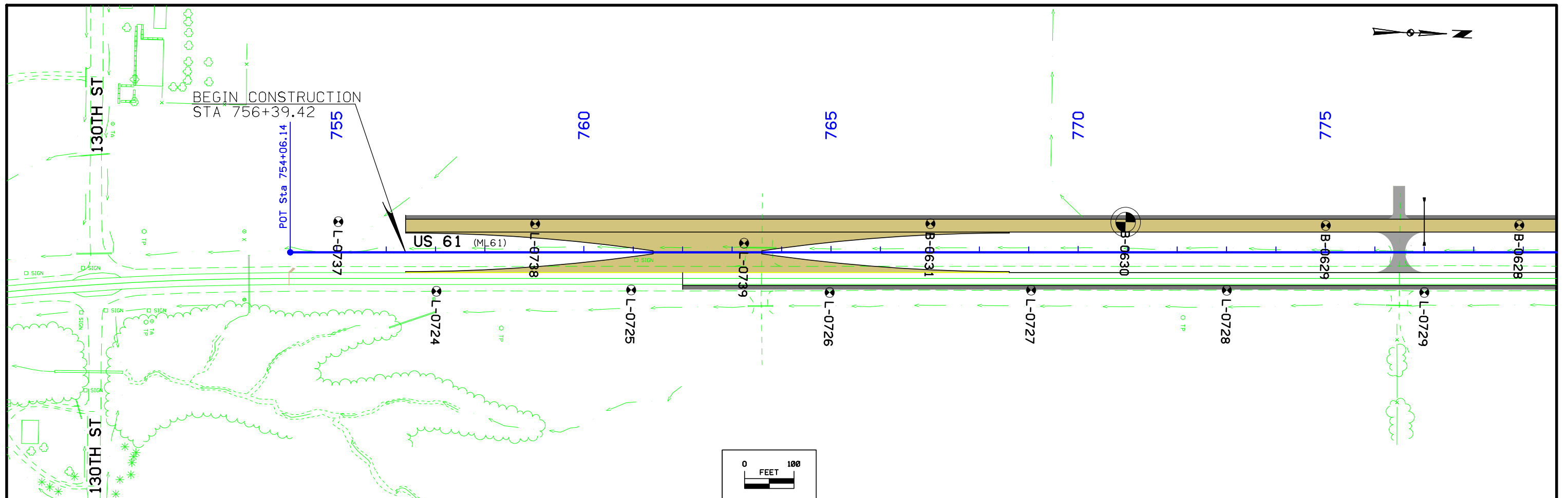
	Proposed Right-of-Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Borrow
	Easement (Temporary)
	Easement
	Excess
	A/C Access Control

NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and structure construction.

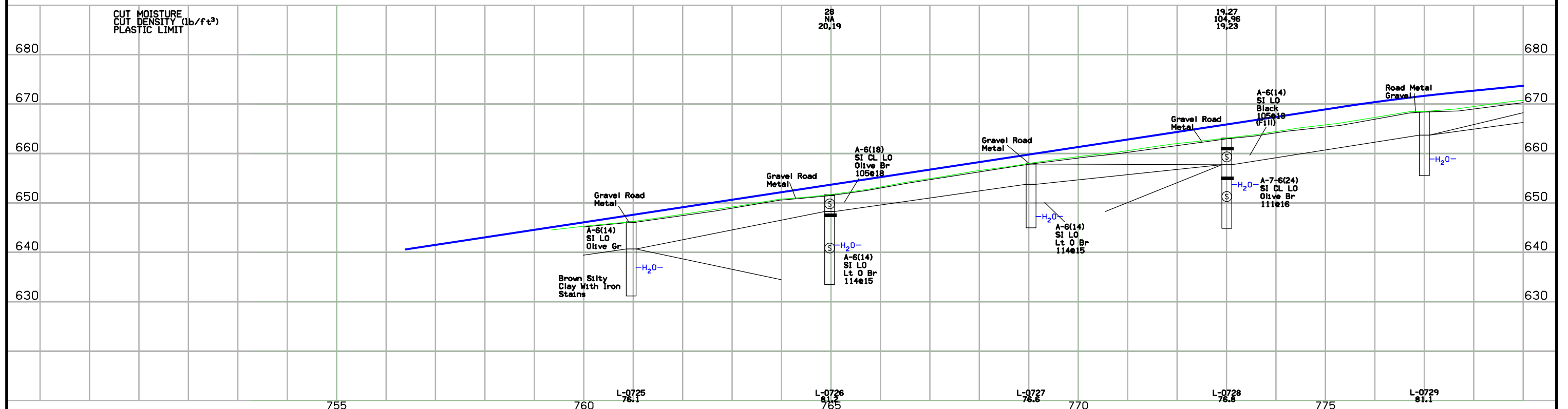
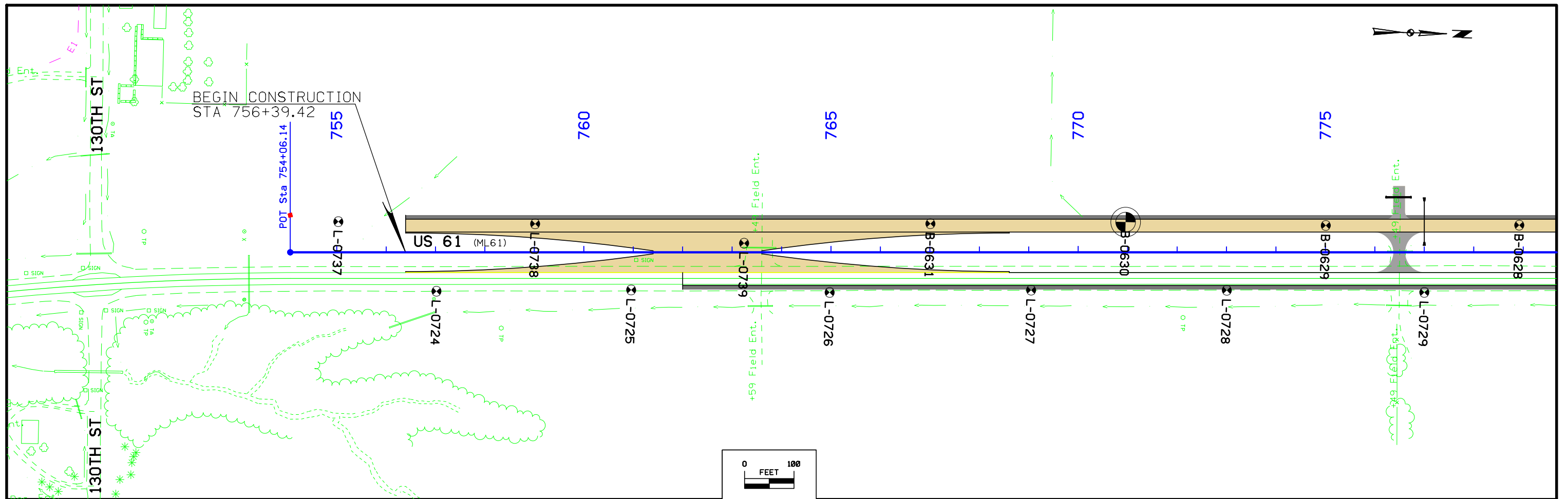
**SOILS LEGEND AND SYMBOL INFORMATION SHEET**

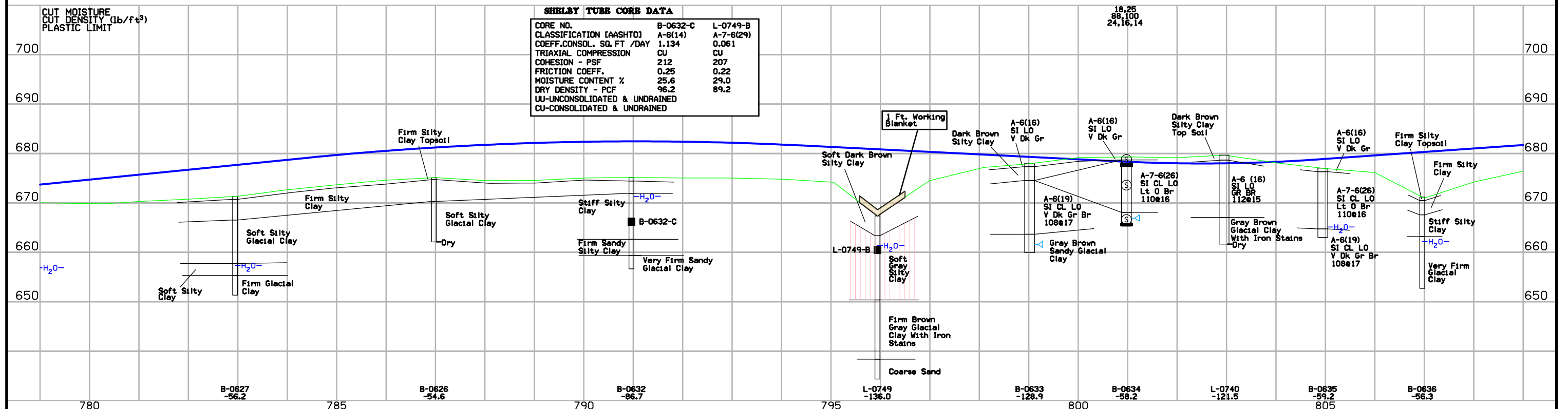
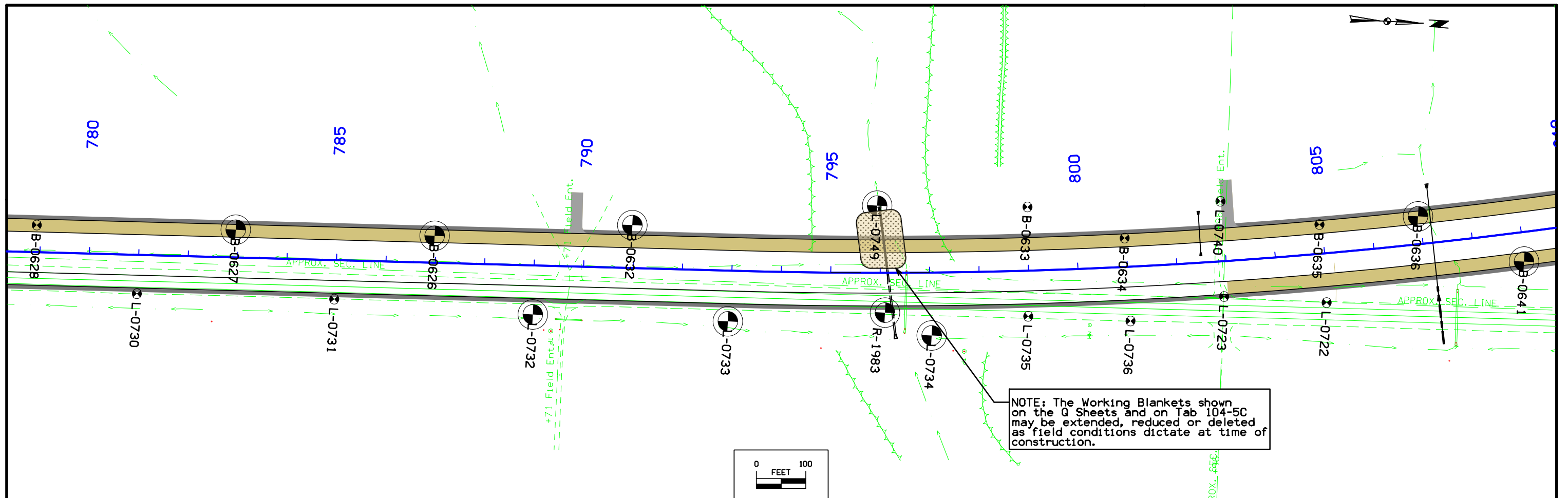
(COVERS SHEET SERIES Q & R)

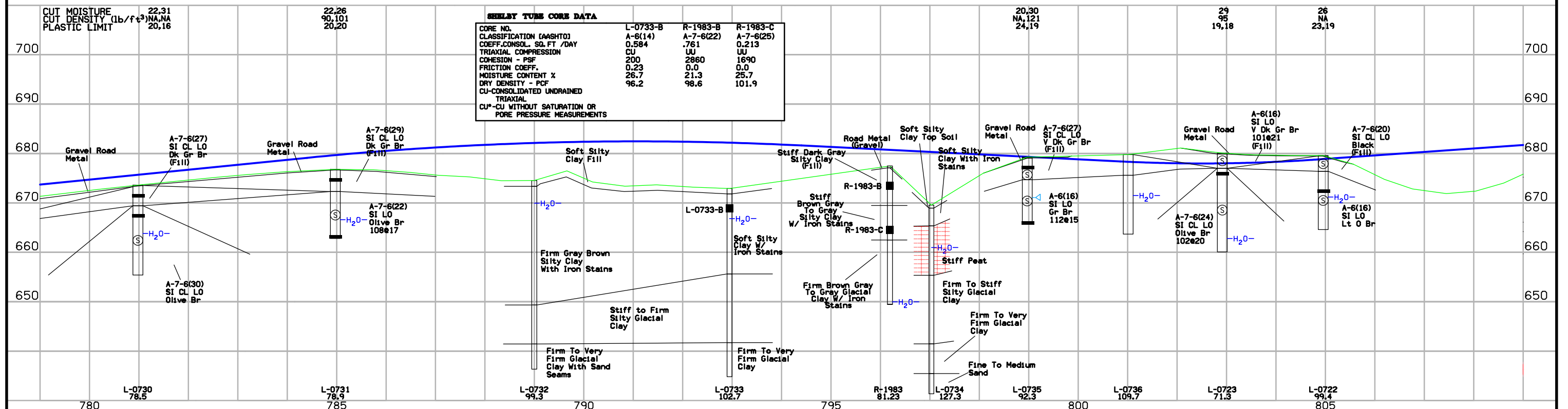
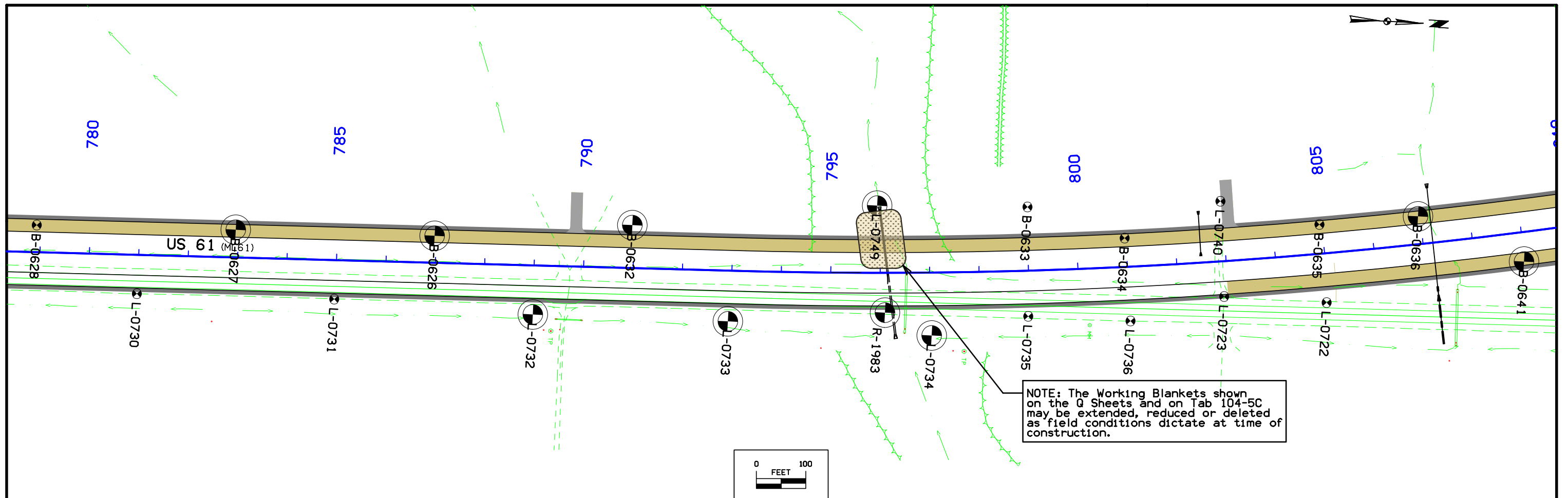




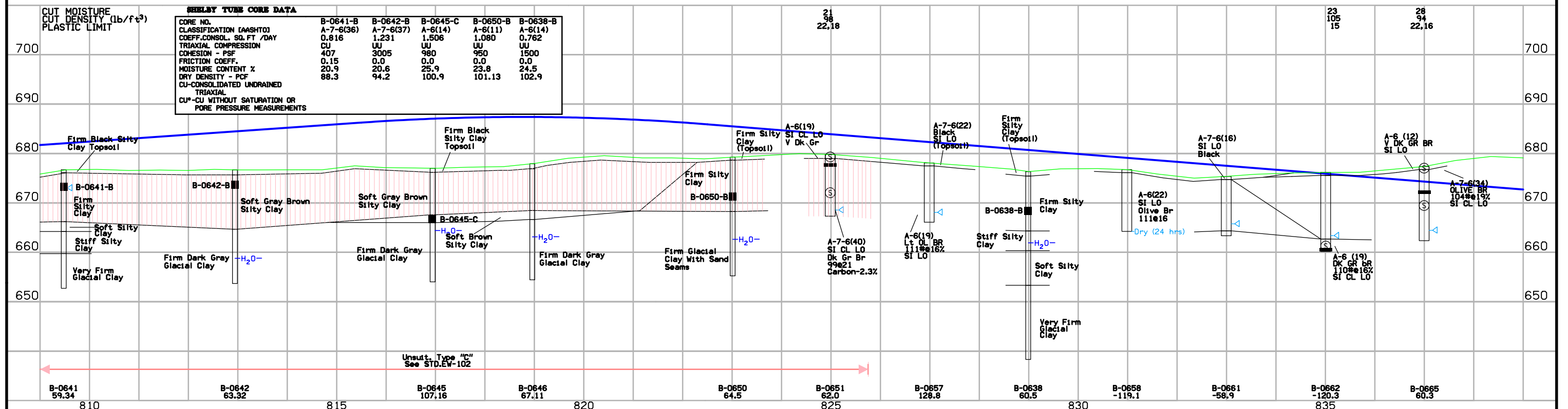
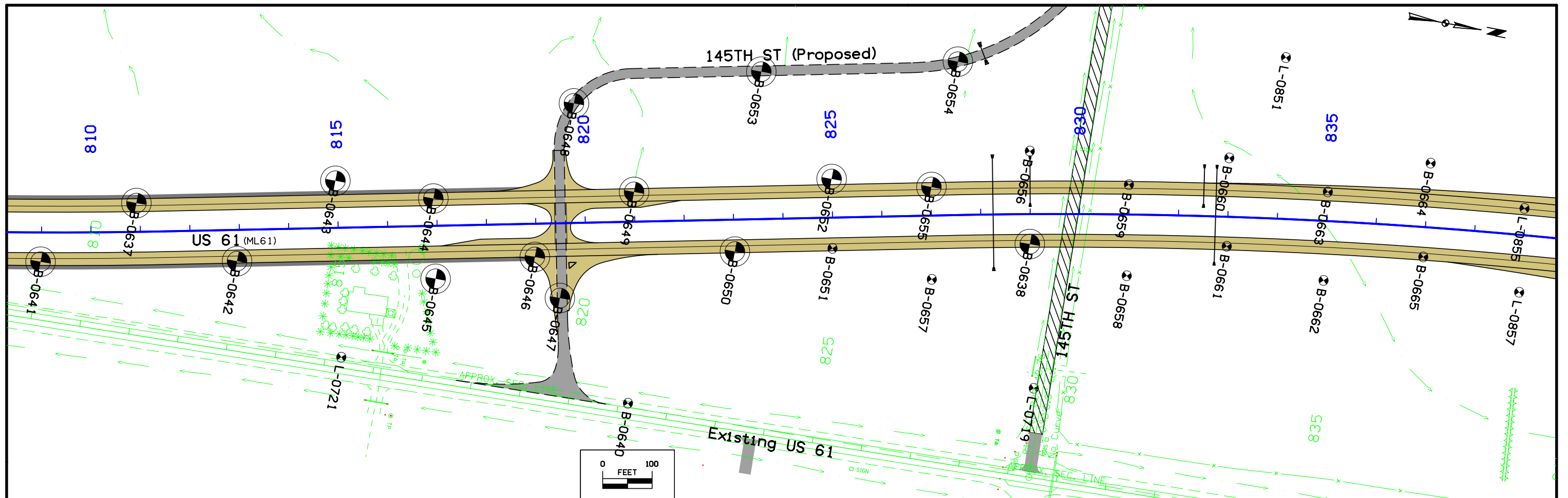




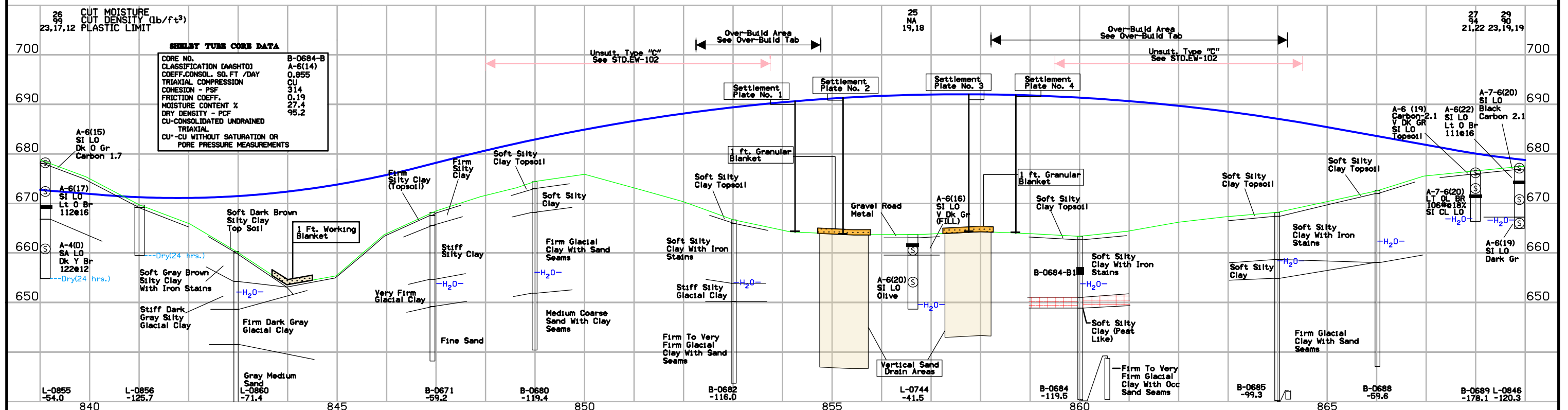
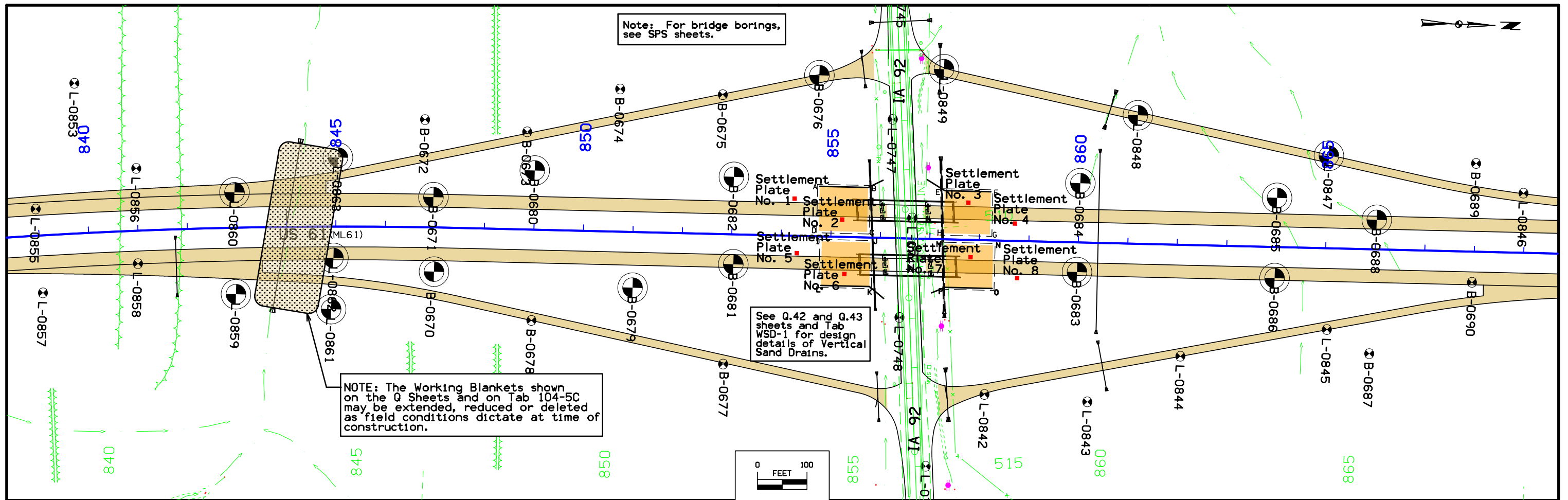






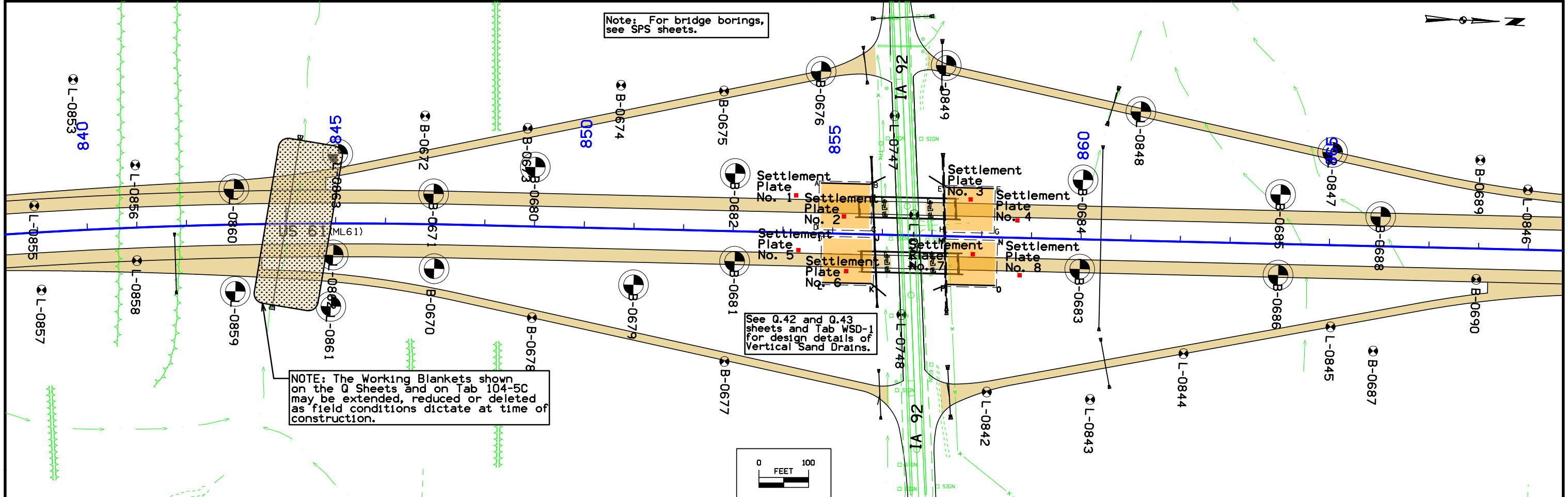




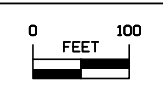




Note: For bridge borings, see SPS sheets.

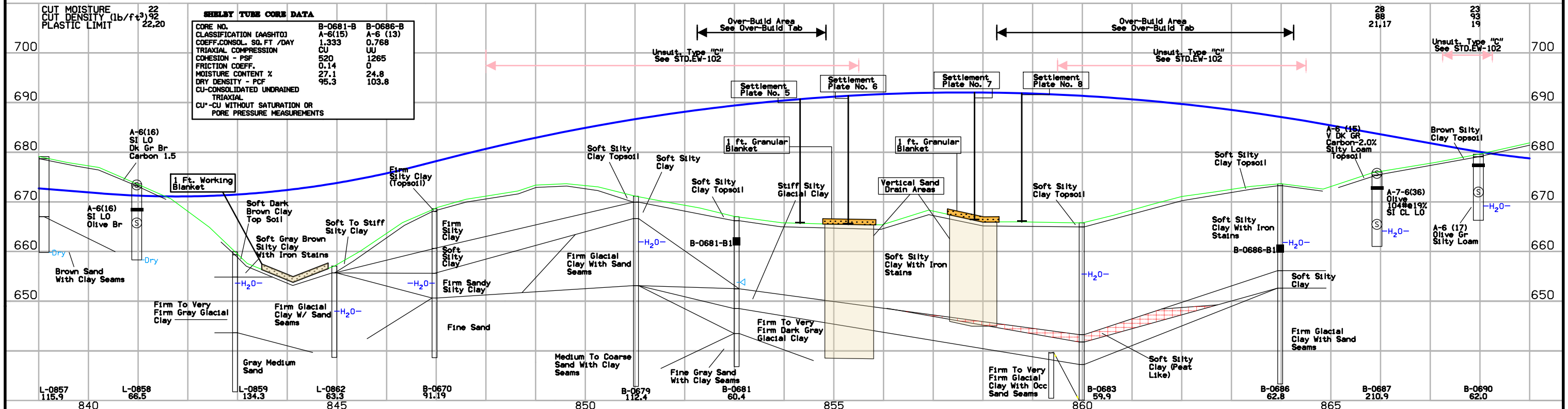


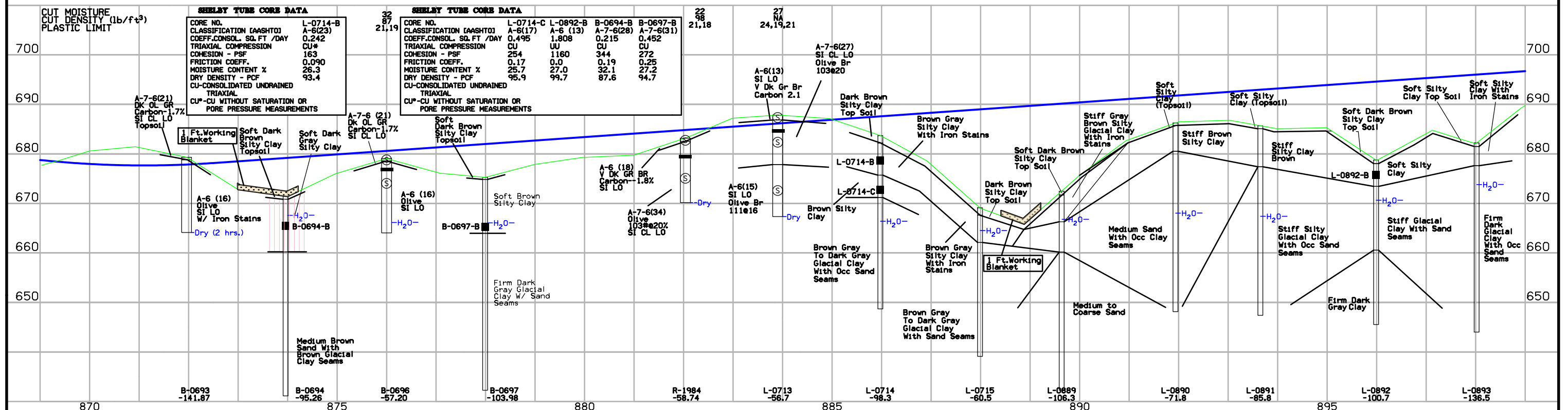
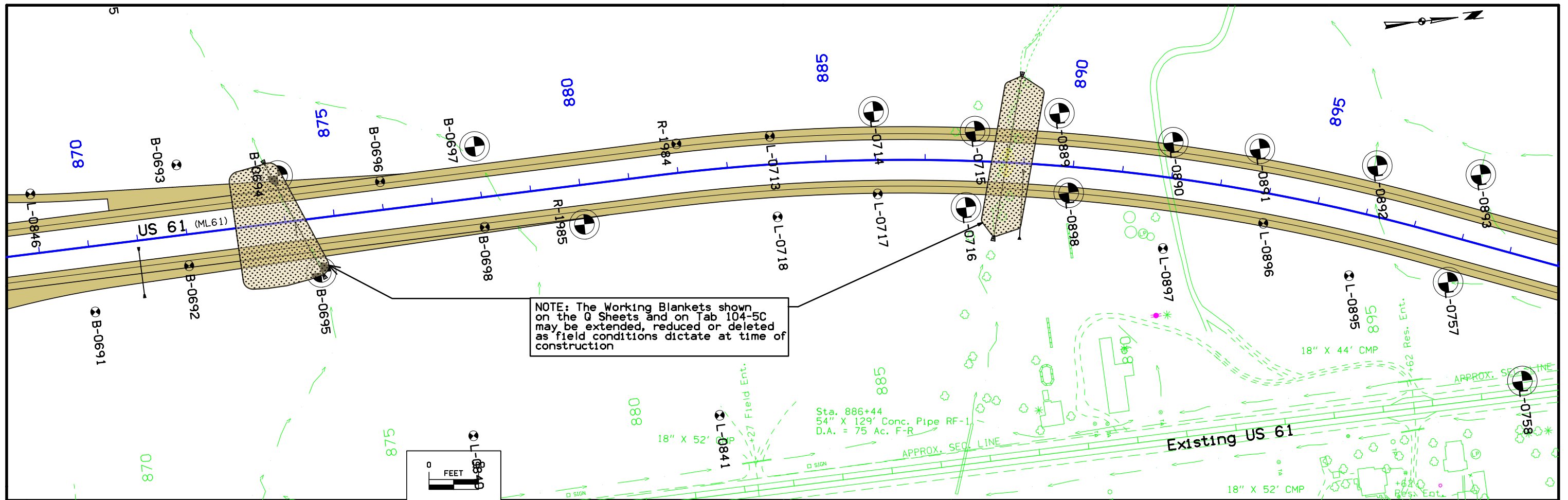
NOTE: The Working Blankets shown on the Q Sheets and on Tab 104-5C may be extended, reduced or deleted as field conditions dictate at time of construction.

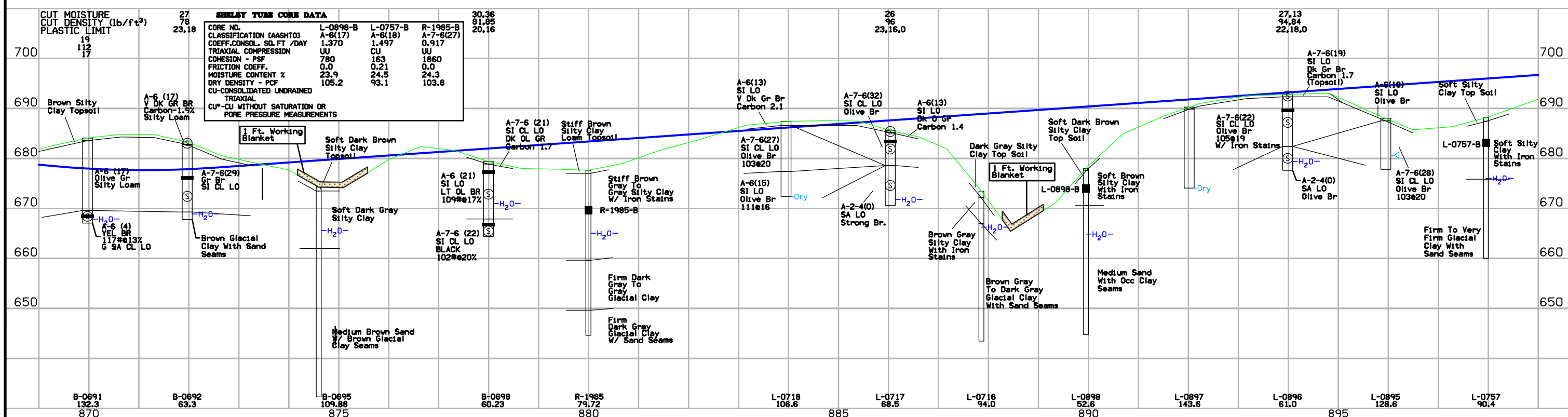
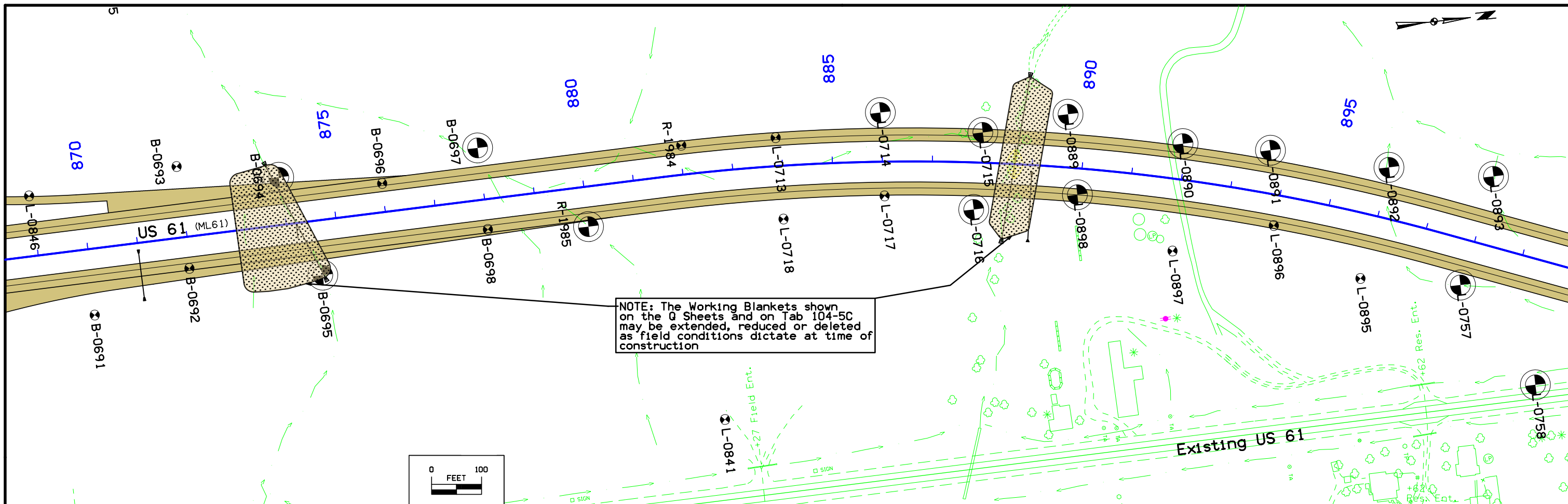


CUT MOISTURE 22  
CUT DENSITY (lb/ft<sup>3</sup>) 92  
PLASTIC LIMIT 22,20

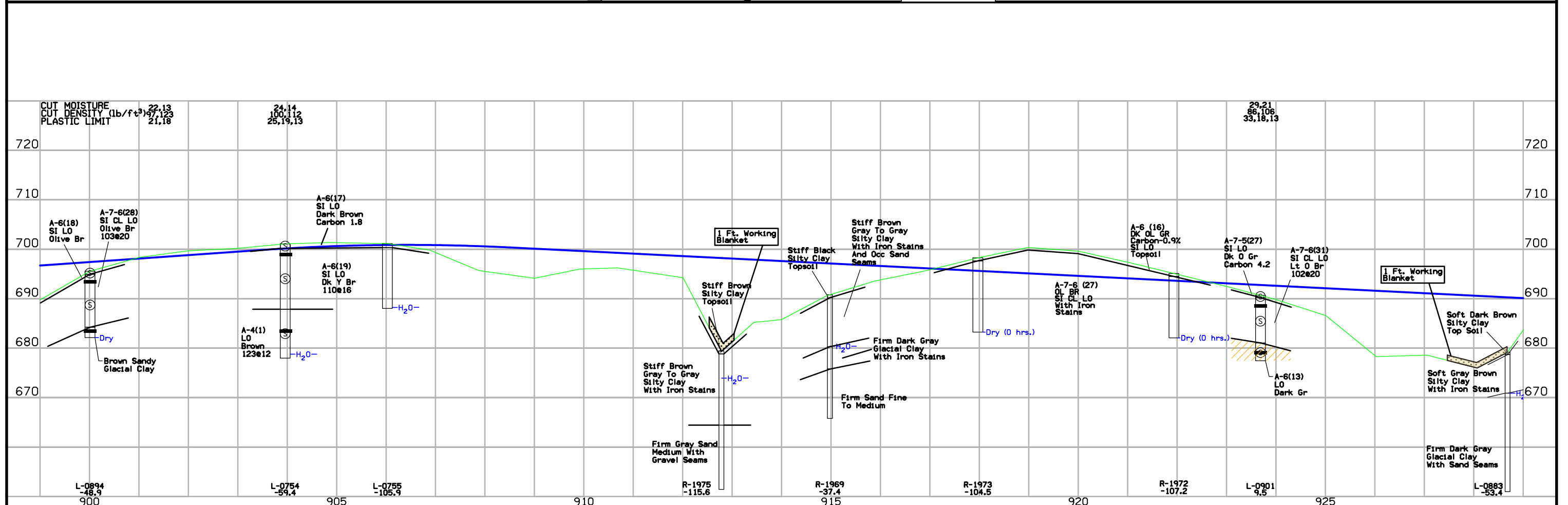
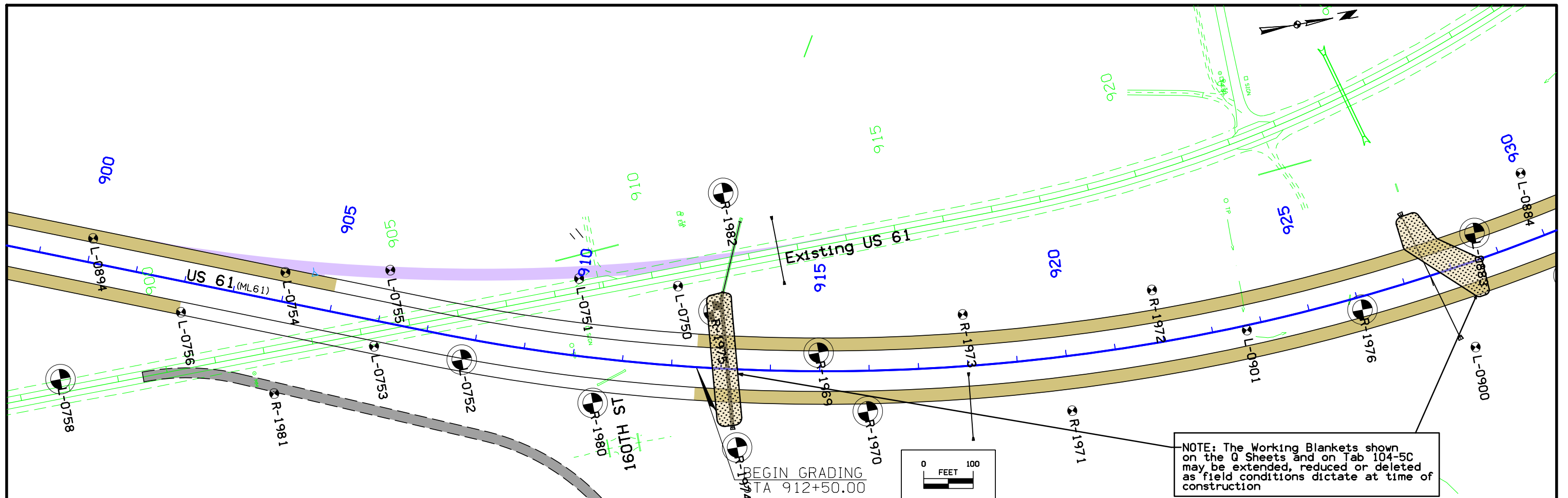
SEELY TUBE CORE DATA		
CORE NO.	B-0681-B	B-0686-B
CLASSIFICATION (AASHTO)	A-6(15)	A-6(13)
COEFF. CONSOL. SQ. FT / DAY	1,333	0,768
TRIAxIAL COMPRESSION	CU	UU
COHESION - PSF	520	1265
FRICTION COEFF.	0.14	0
MOISTURE CONTENT %	27.1	24.8
DRY DENSITY - PCF	95.3	103.8
CU-CONSOLIDATED UNDRAINED TRIAXIAL		
CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS		

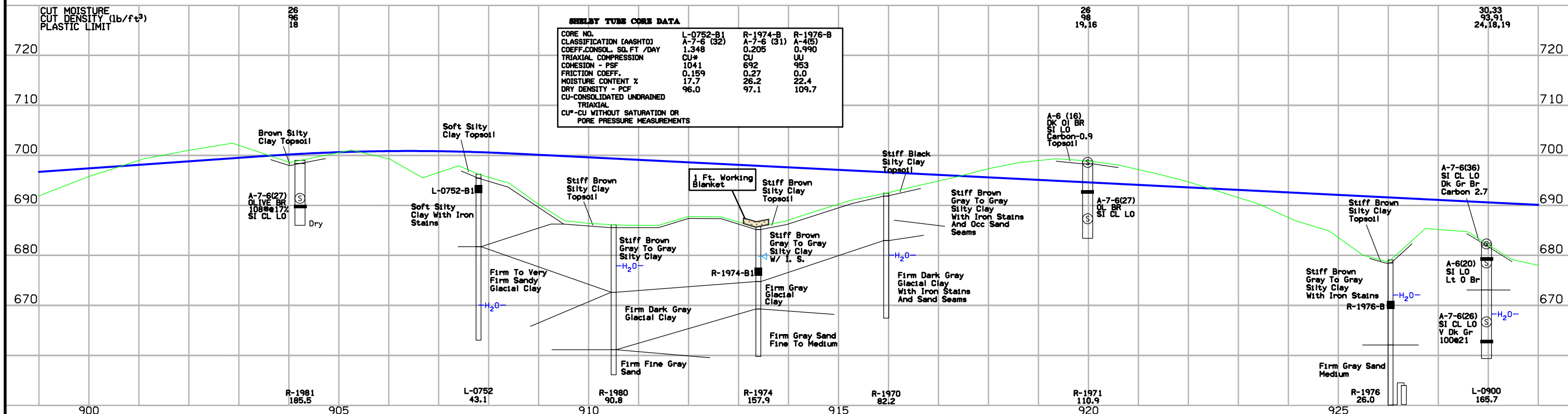
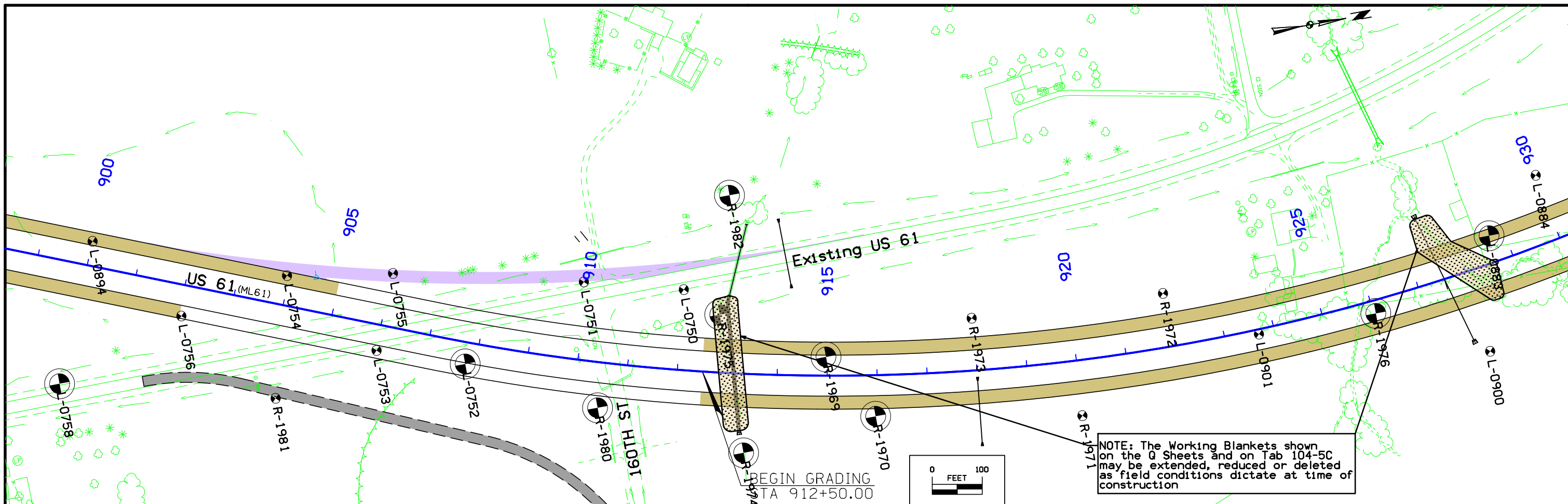


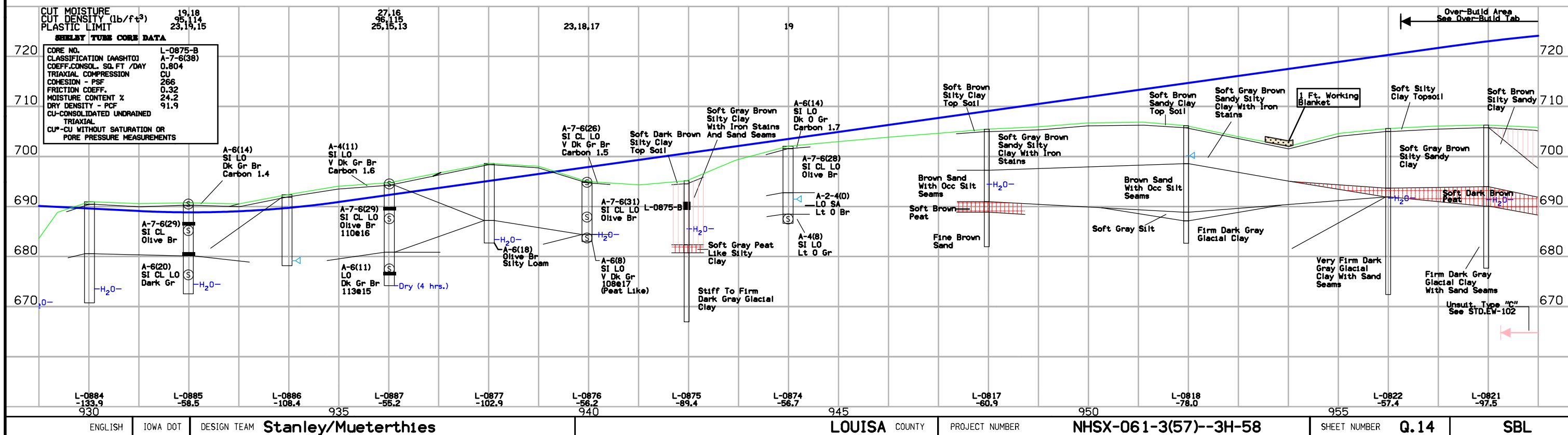
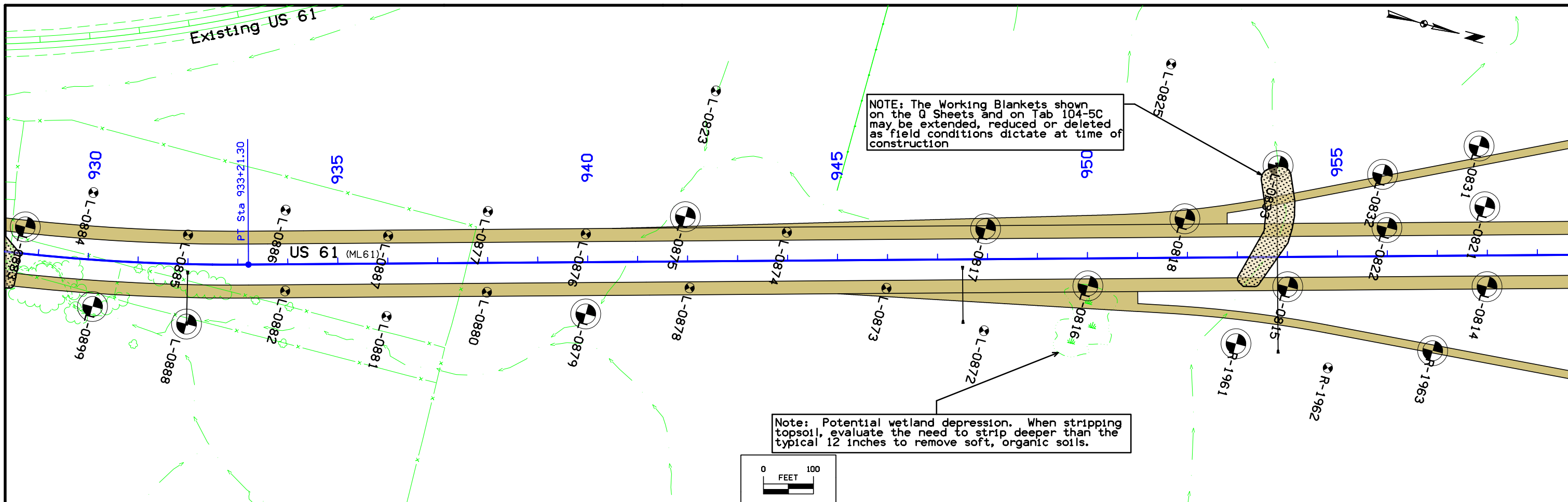




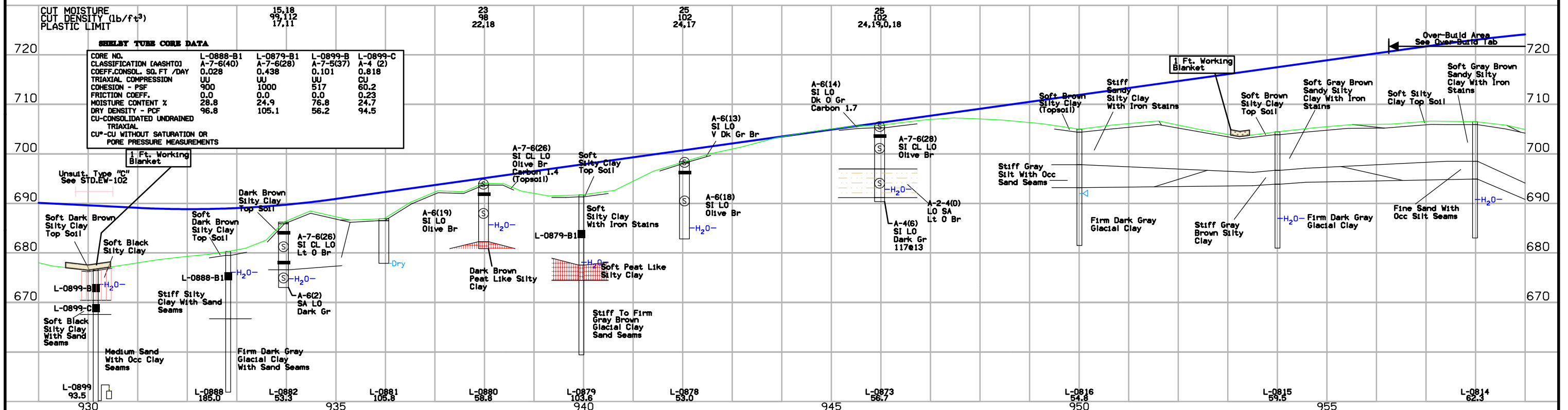
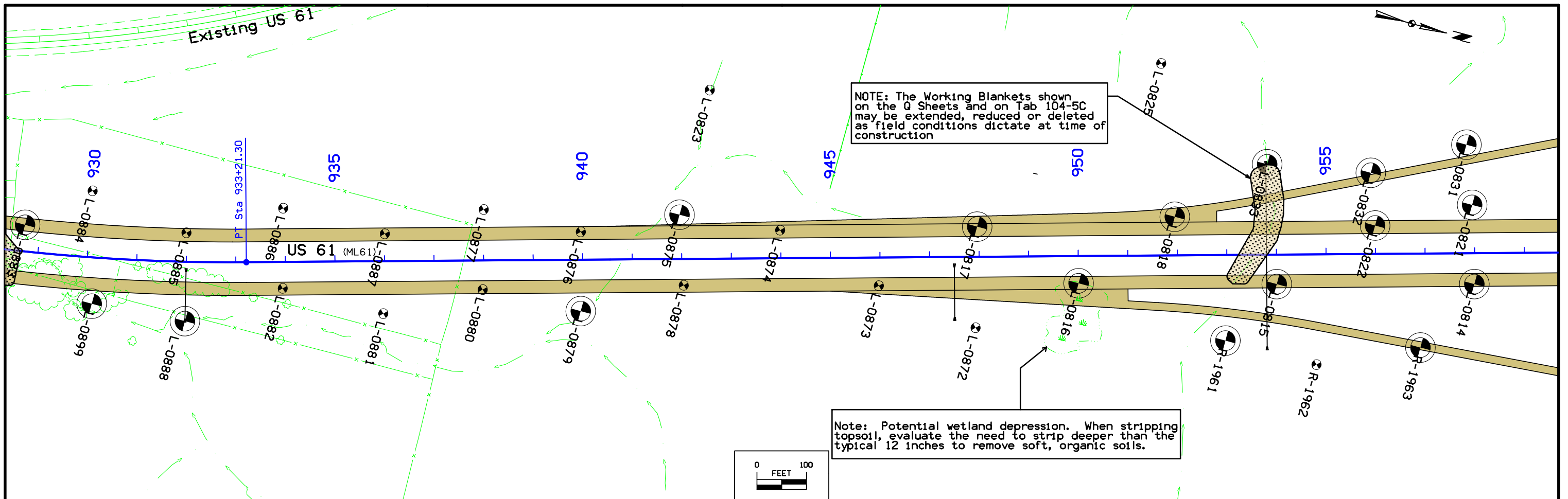




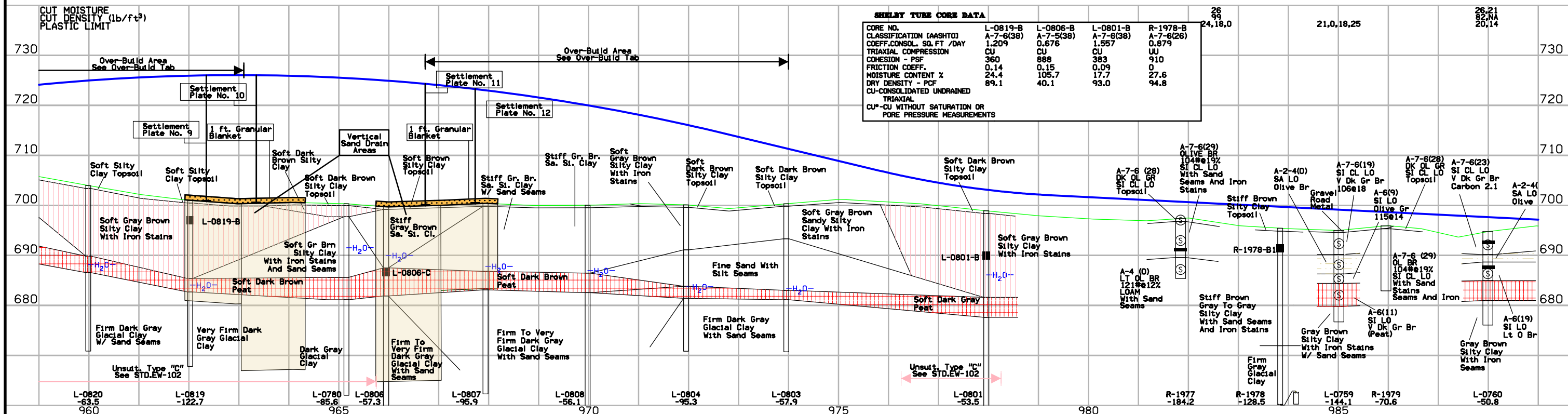
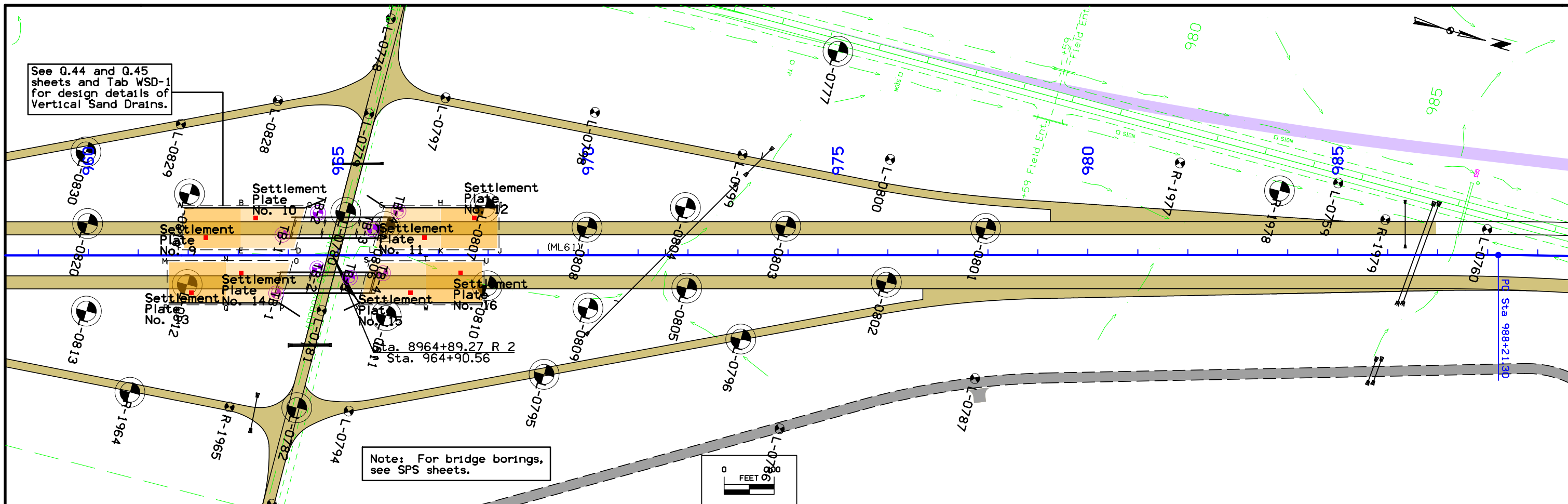


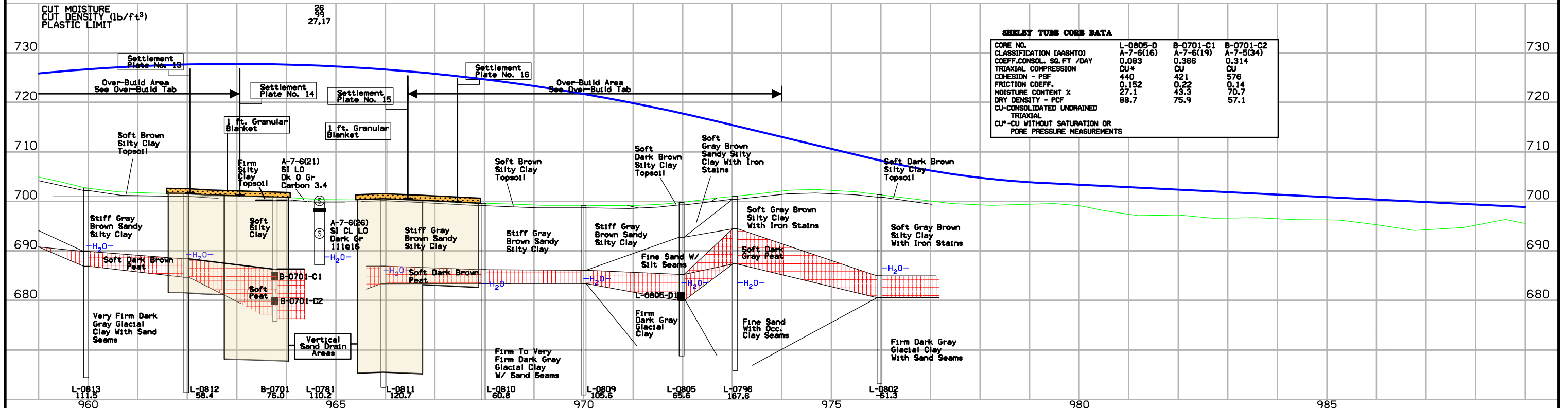
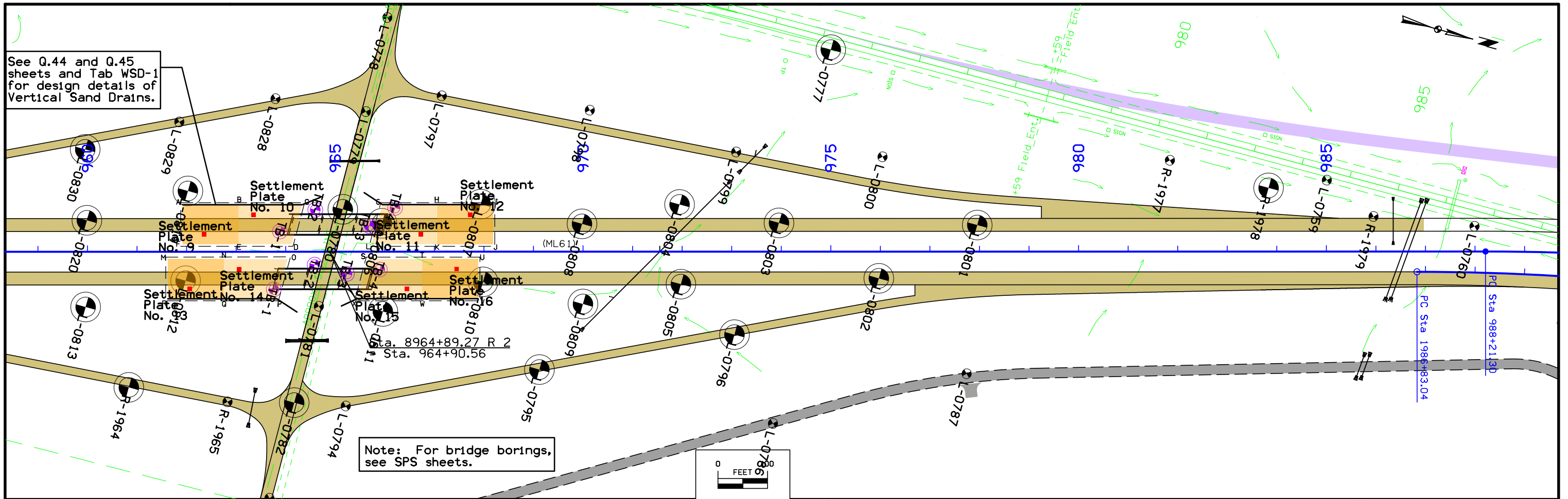


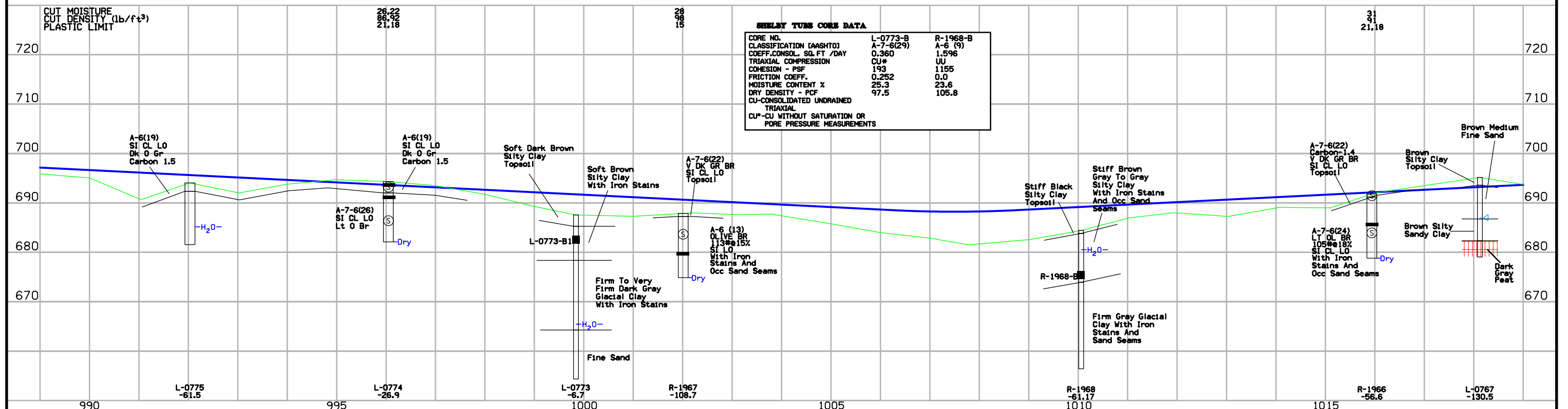
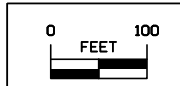
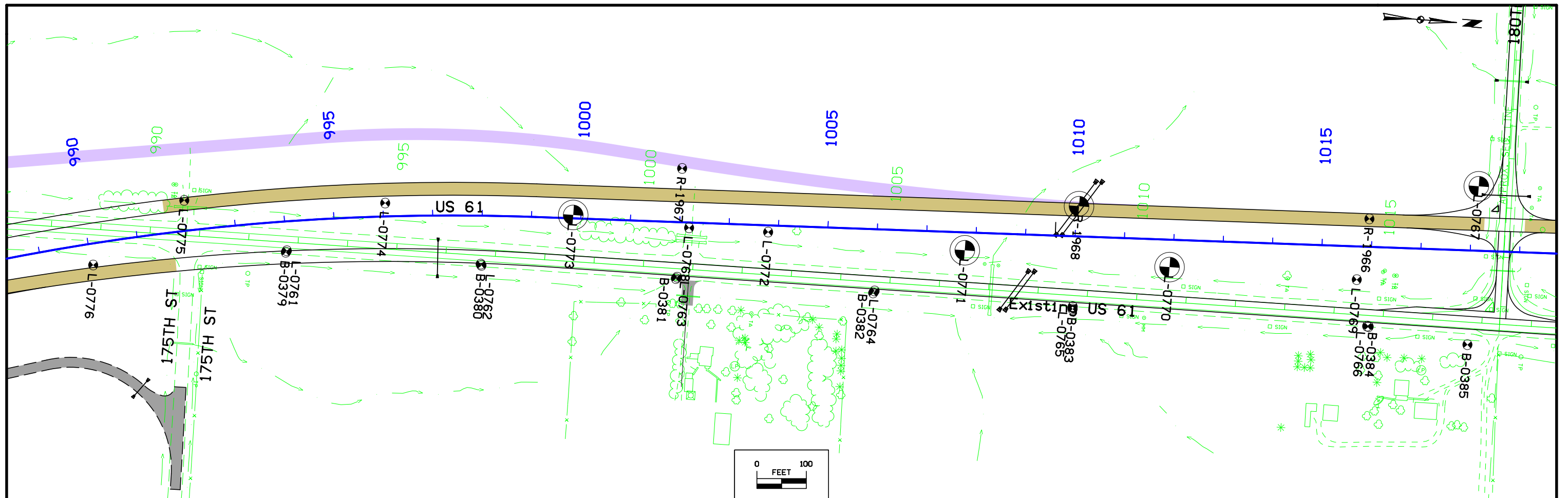




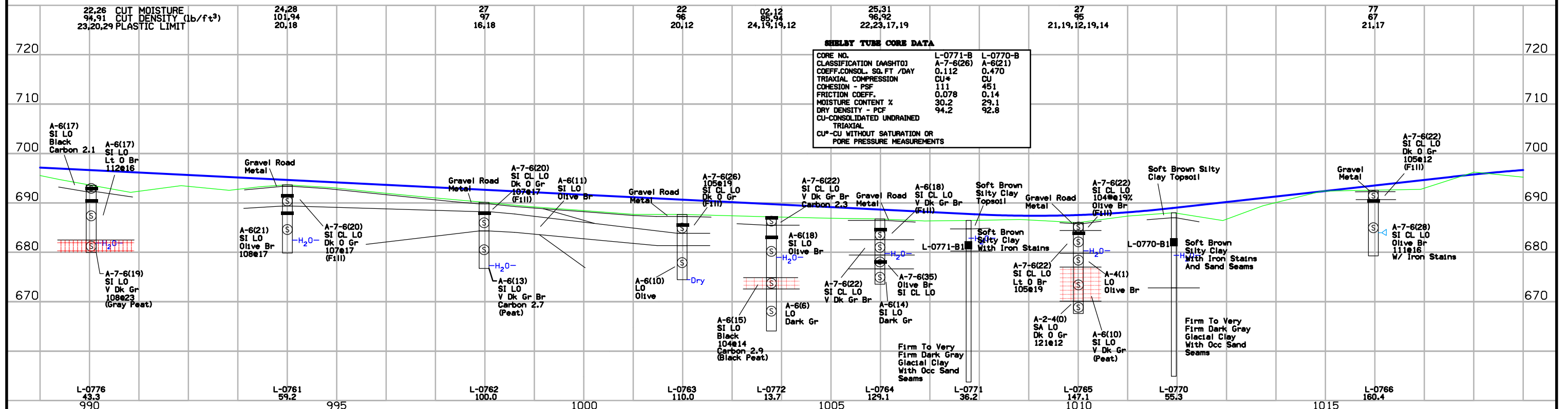
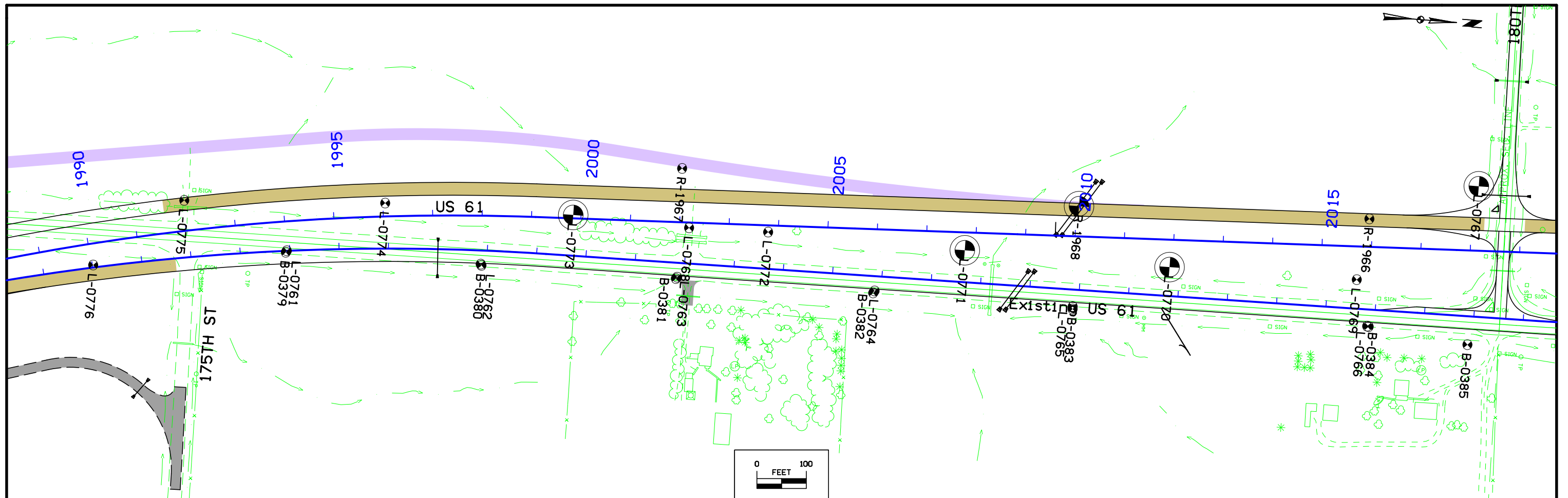
SEEBLY TUBE CORE DATA				
CORE NO.	L-0888-B1	L-0879-B1	L-0899-B	L-0899-C
CLASSIFICATION (AASHTO)	A-7-6(40)	A-7-6(26)	A-4-4(37)	A-4 (2)
COEFF. CONSOL. SQ. FT / DAY	0.028	0.438	0.101	0.818
TRIAxIAL COMPRESSION	UU	UU	UU	CU
COHESION - PSF	900	1000	517	60.2
FRICTION COEFF.	0.0	0.0	0.0	0.23
MOISTURE CONTENT %	28.8	24.9	76.8	24.7
DRY DENSITY - PCF	96.8	105.1	56.2	94.5
CU-CONSOLIDATED UNDRAINED TRIAXIAL				
CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS				

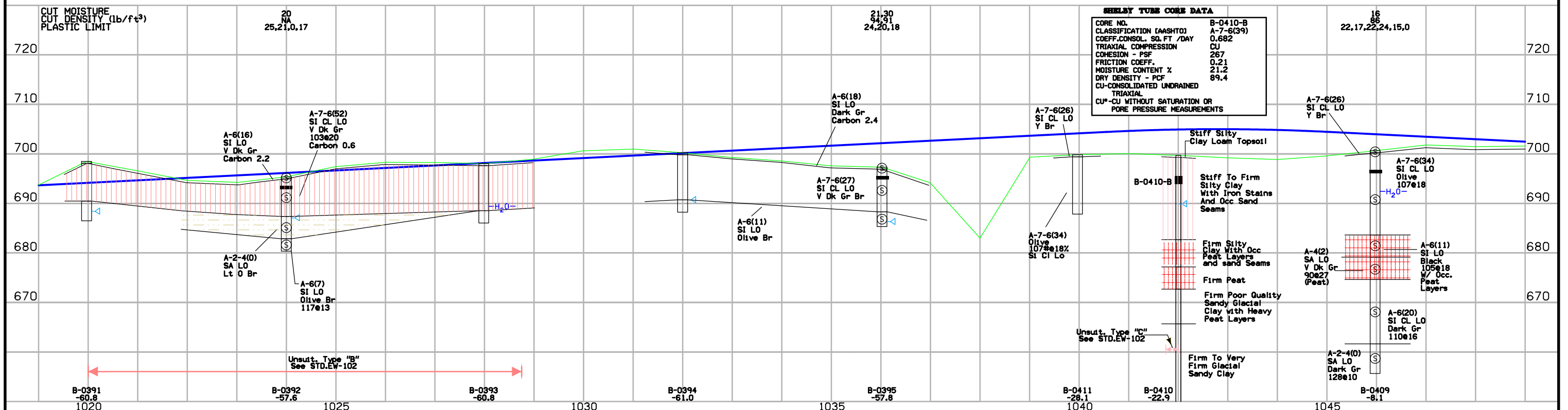
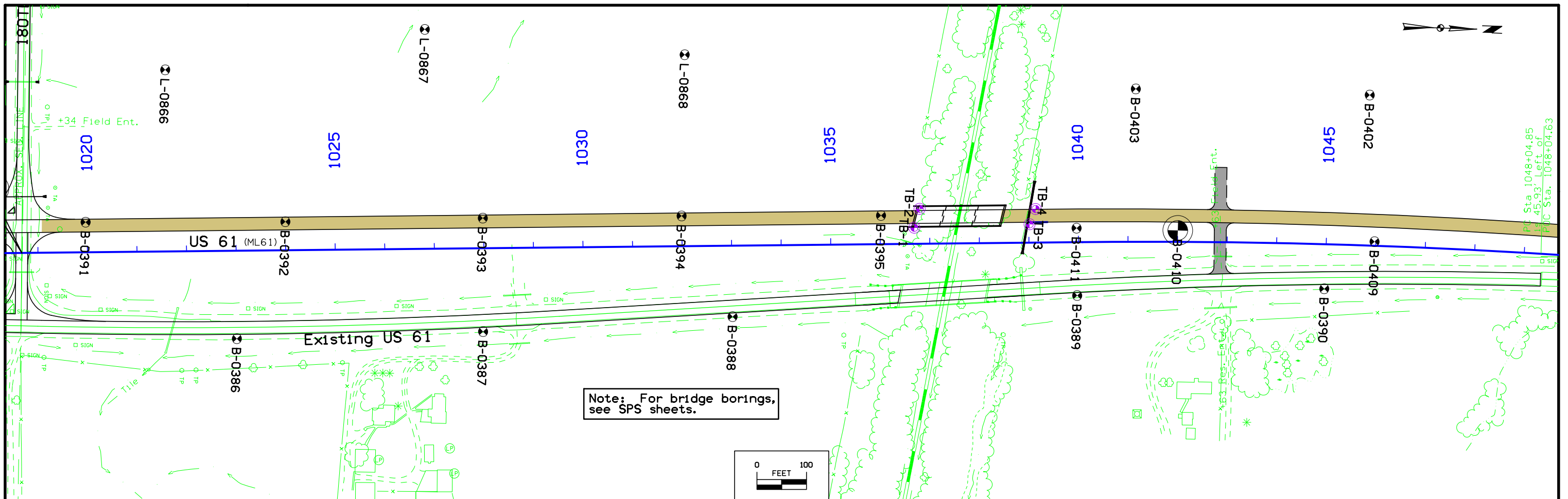




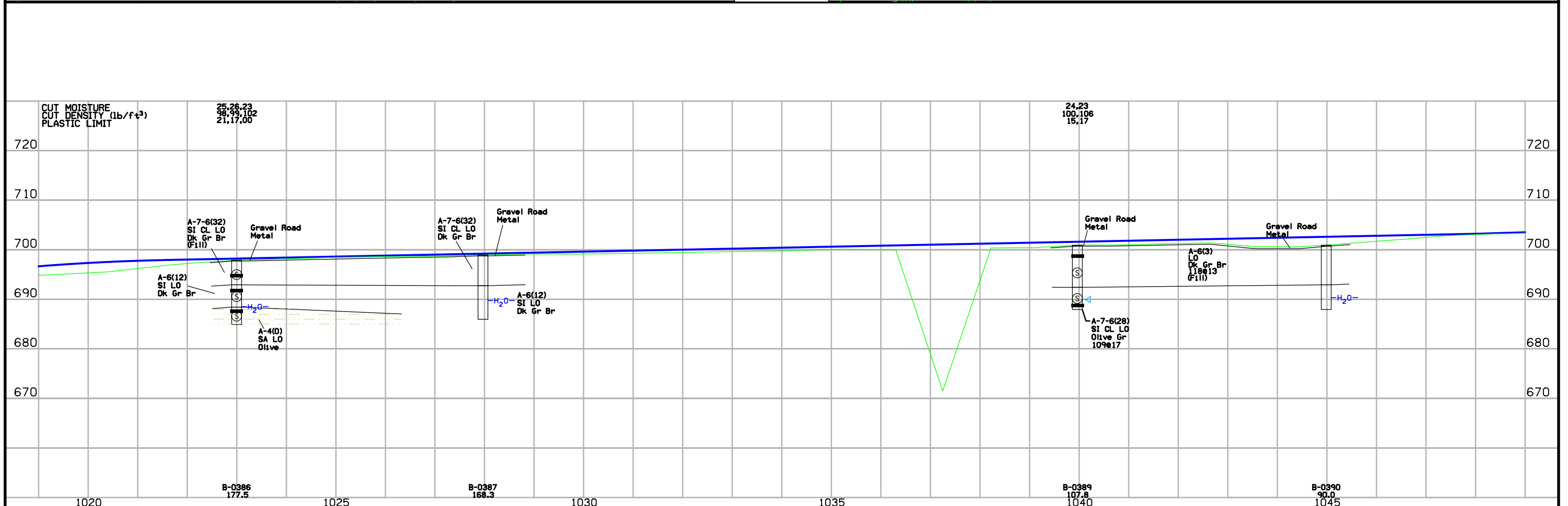
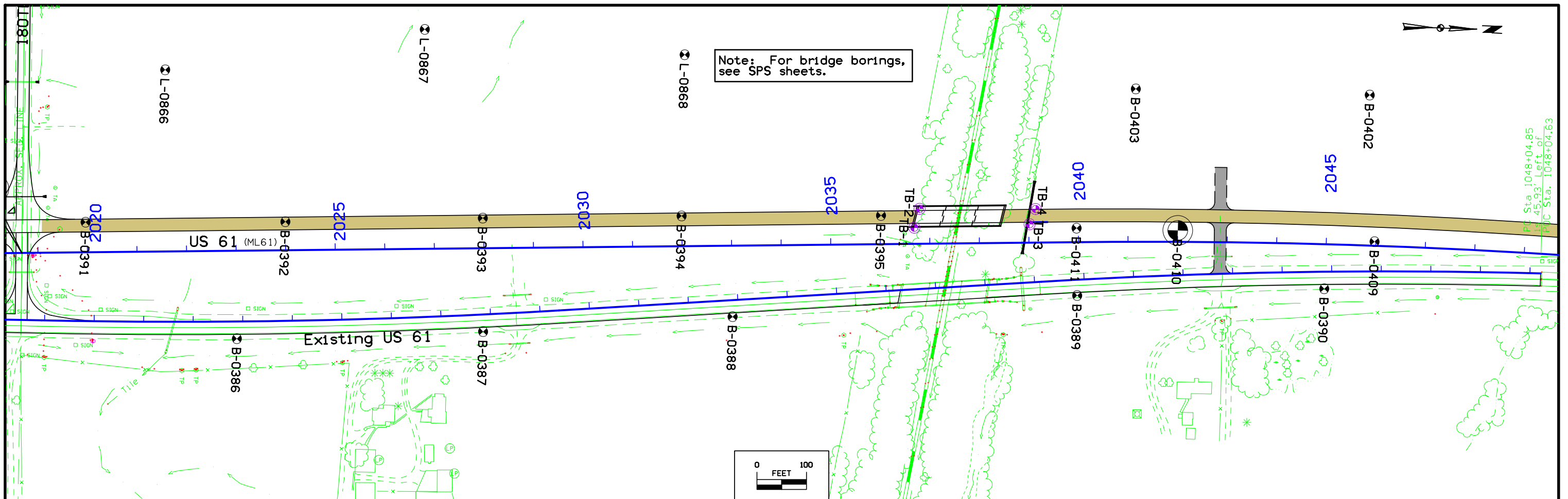


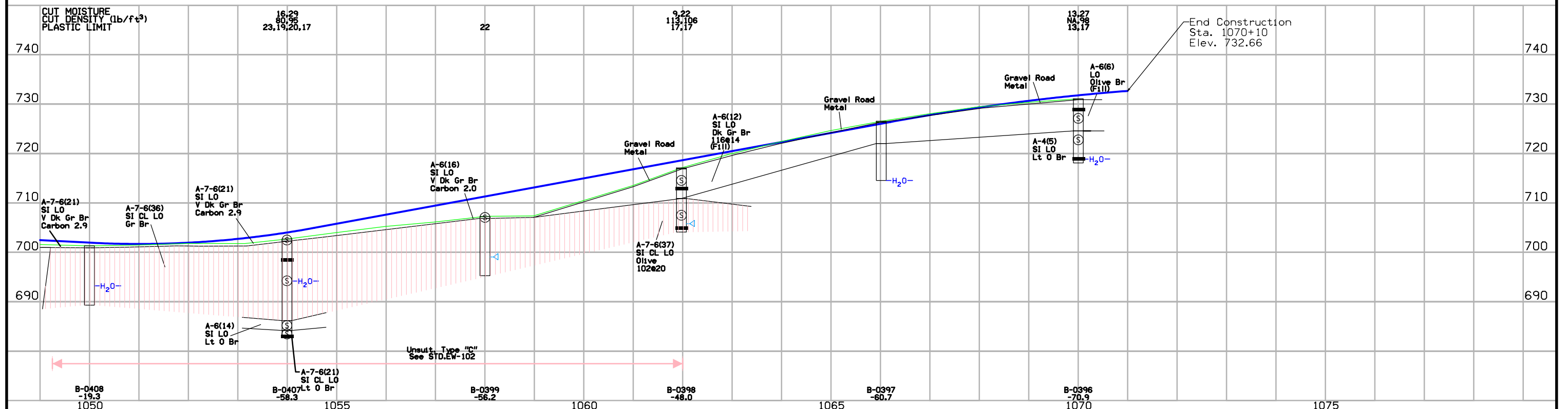
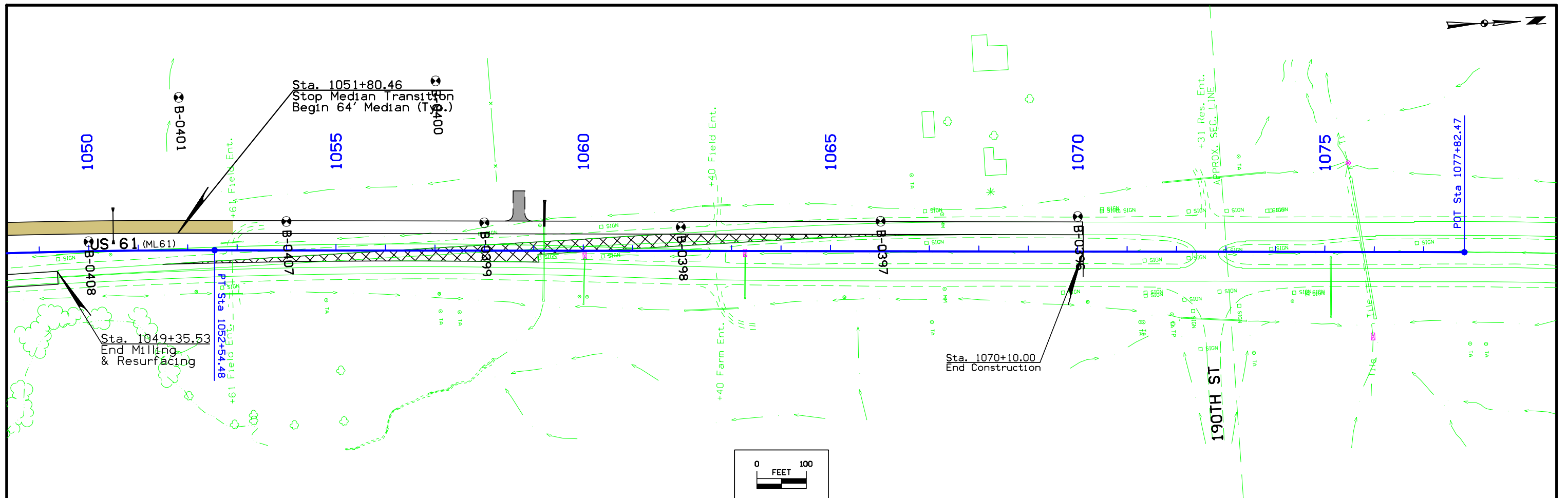


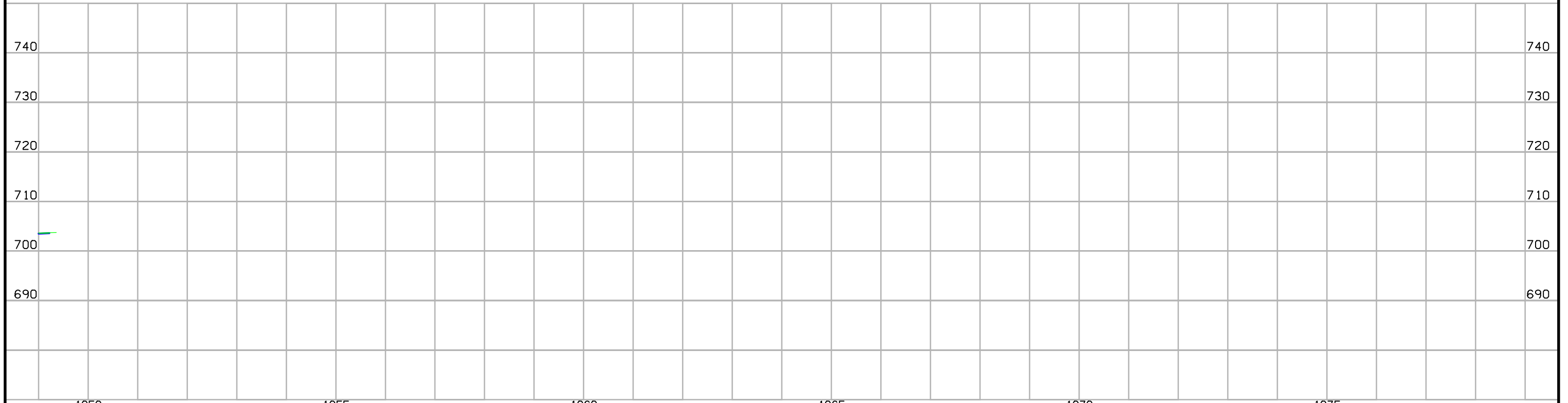
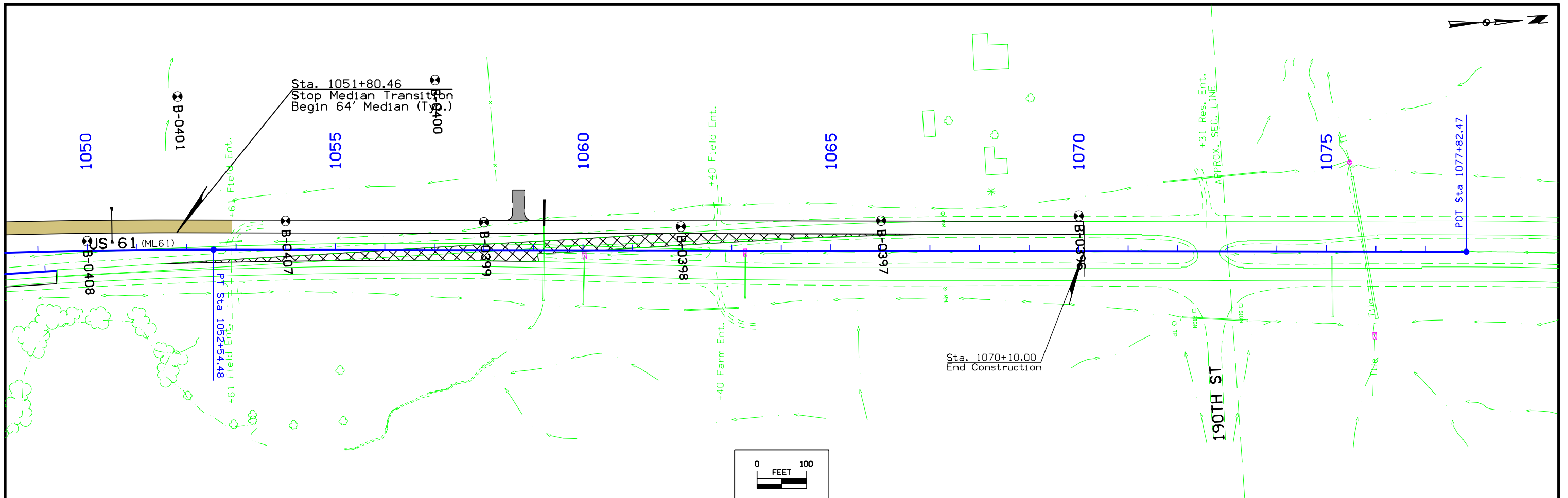


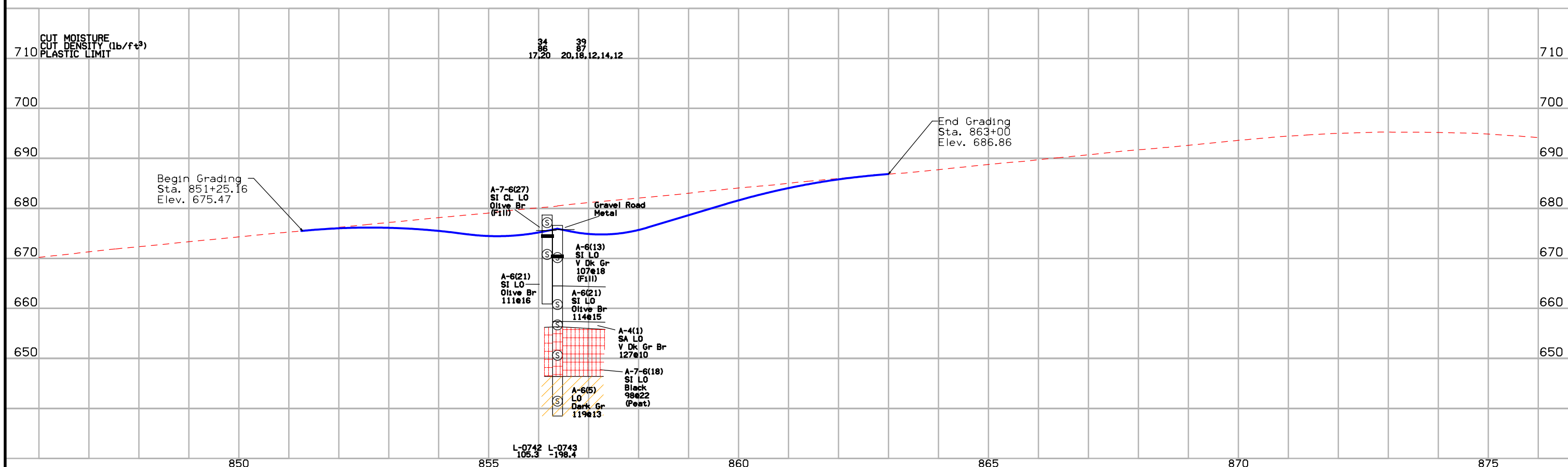
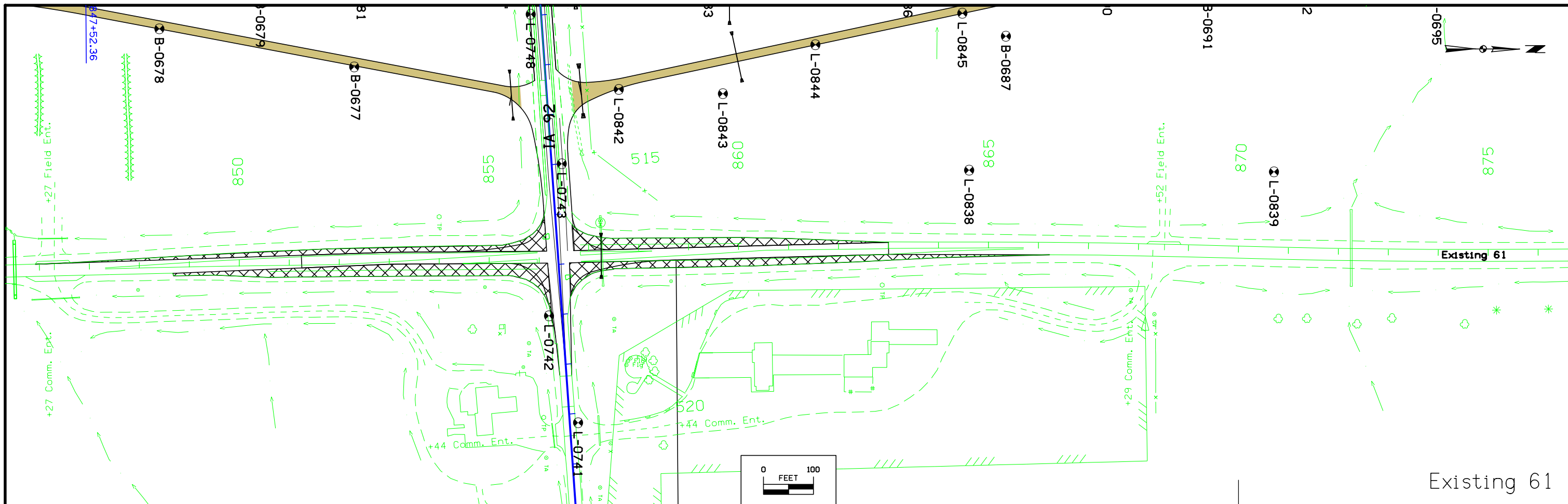


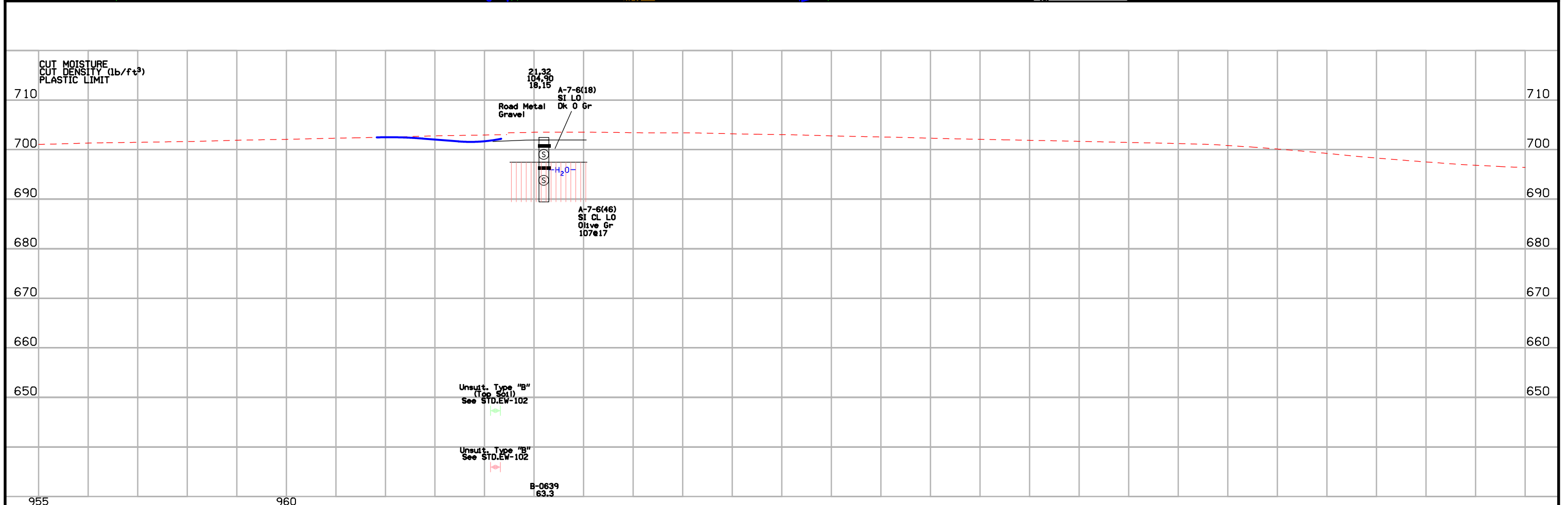
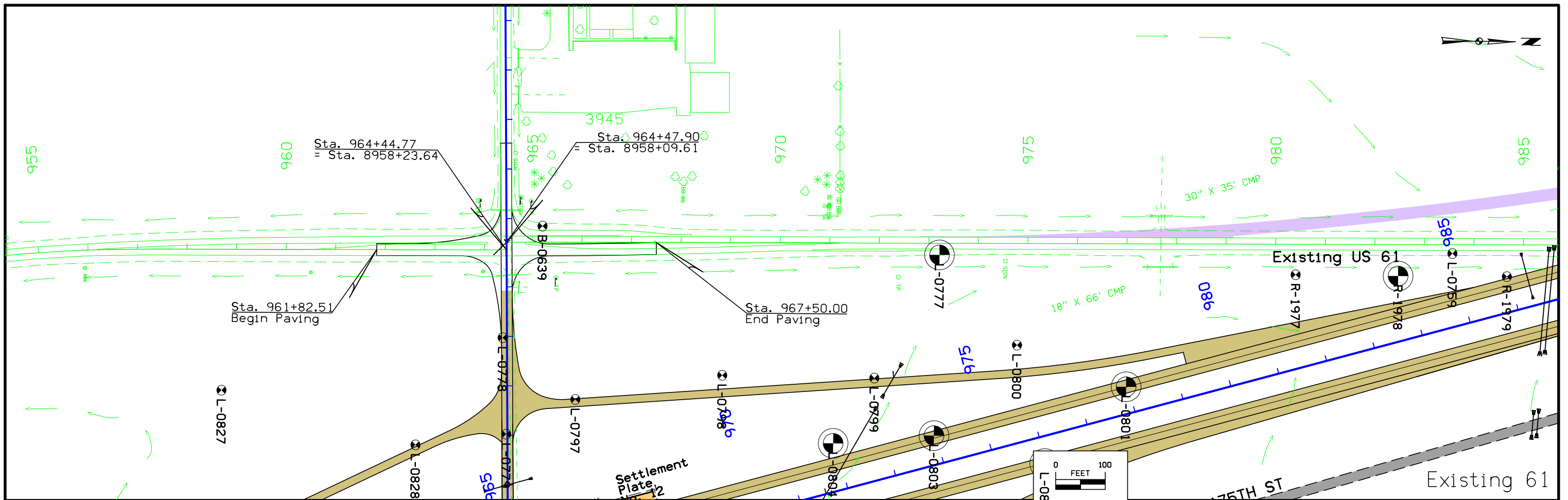




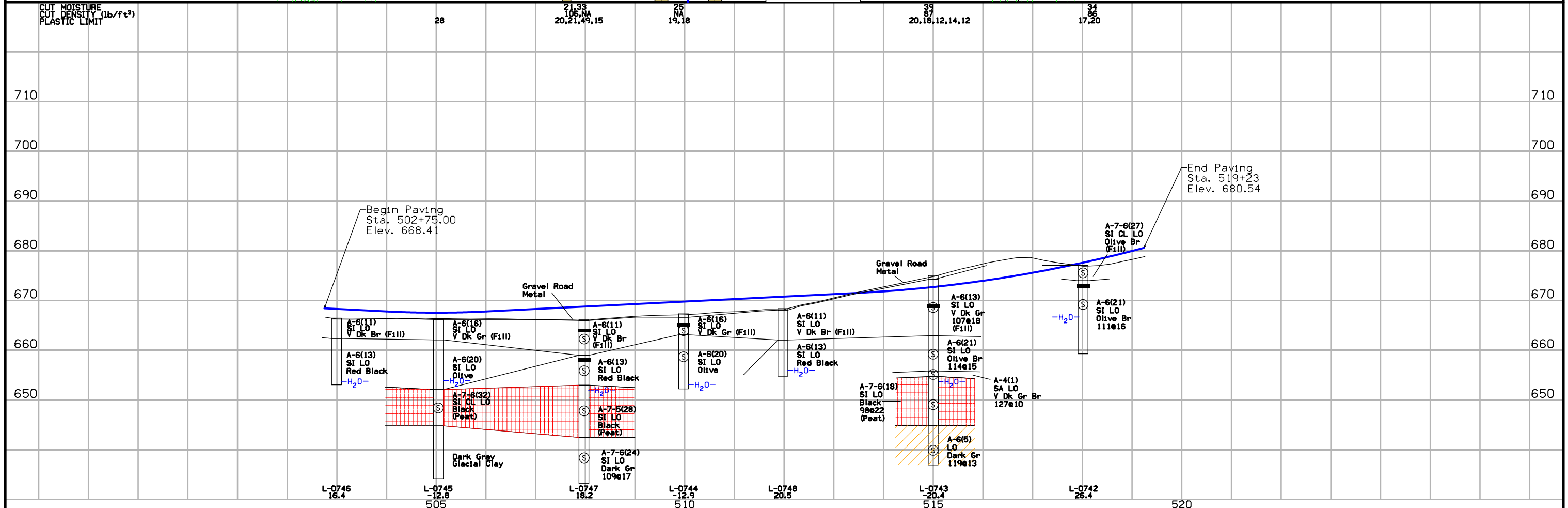
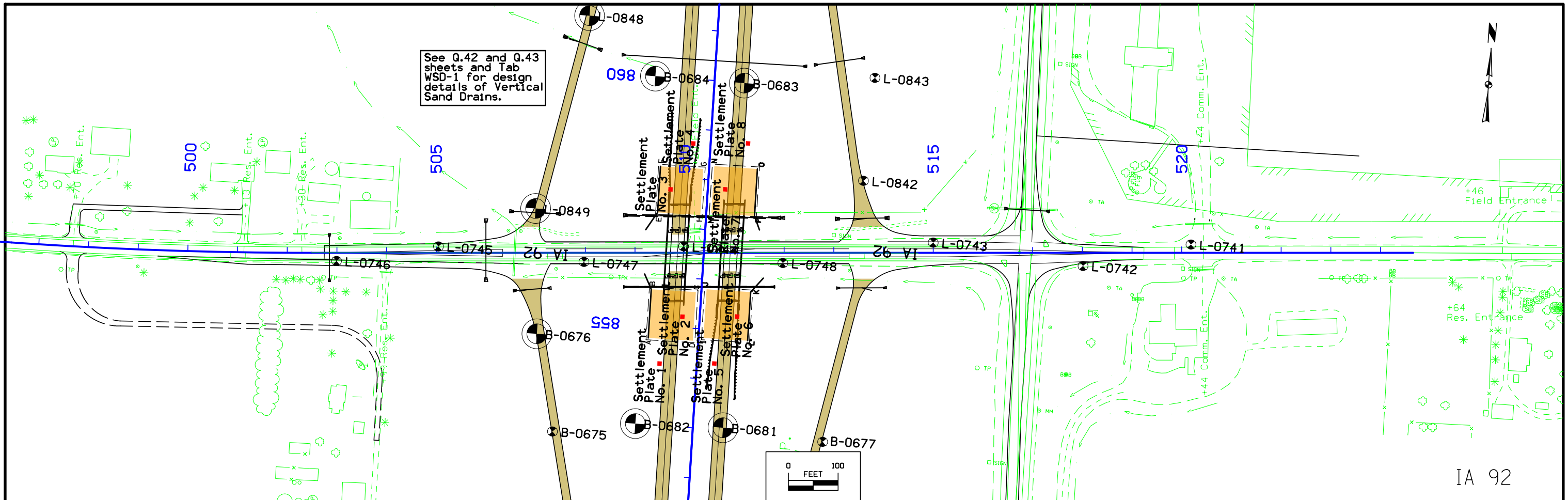


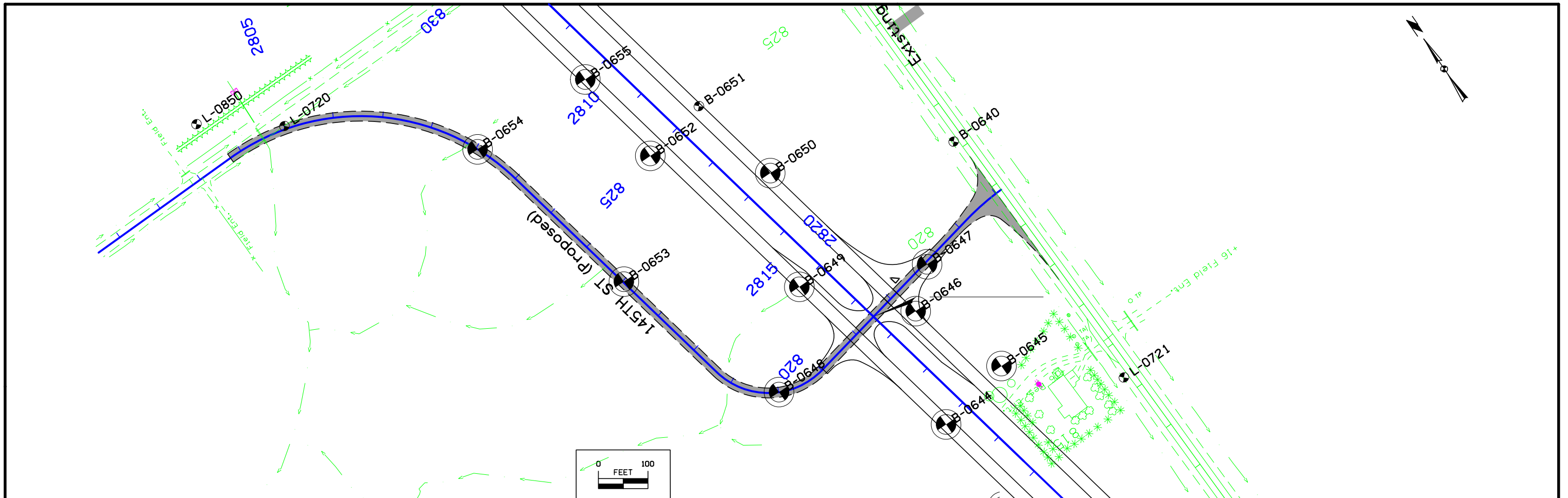












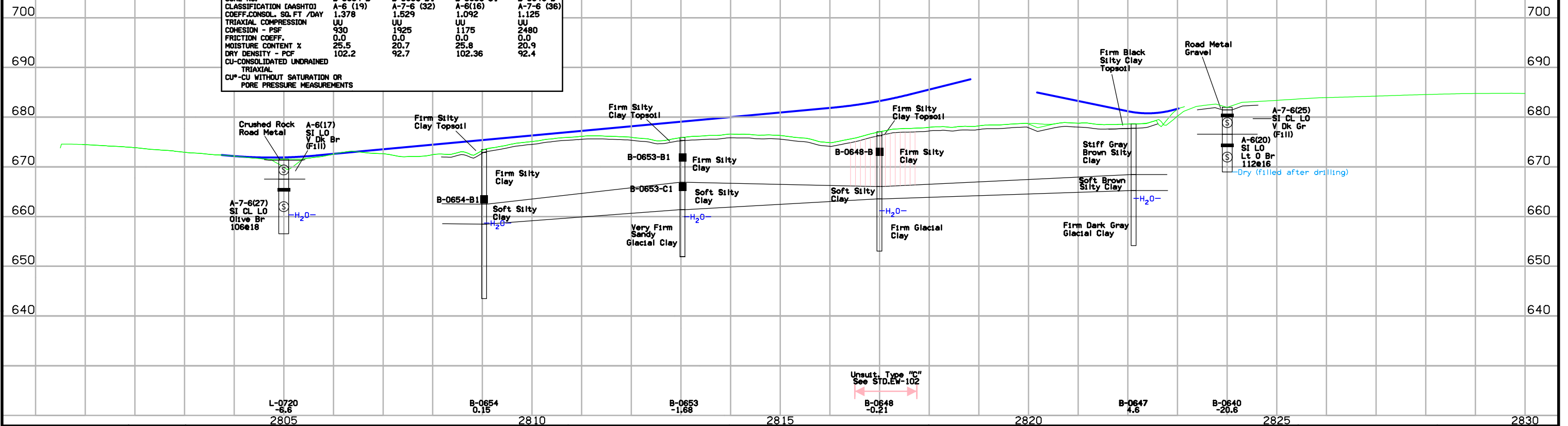
CUT MOISTURE  
CUT DENSITY (lb/ft<sup>3</sup>)  
PLASTIC LIMIT

28  
NA  
18,19

28,25  
NA,101  
19,19

**SHELBY TUBE CORE DATA**

CORE NO.	B-0654-B	B-0653-B1	B-0653-C1	B-0648-B
CLASSIFICATION (AASHTO)	A-6 (19)	A-7-6 (32)	A-6(16)	A-7-6 (36)
COEFF. CONSOL. SQ. FT / DAY	1,378	1,529	1,092	1,125
TRIAxIAL COMPRESSION	UU	UU	UU	UU
COHESION - PSF	930	1925	1175	2480
FRICTION COEFF.	0.0	0.0	0.0	0.0
MOISTURE CONTENT %	25.5	20.7	25.8	20.9
DRY DENSITY - PCF	102.2	92.7	102.36	92.4
CU-CONSOLIDATED UNDRAINED TRIAXIAL				
CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS				



L-0720  
-6.6  
2805

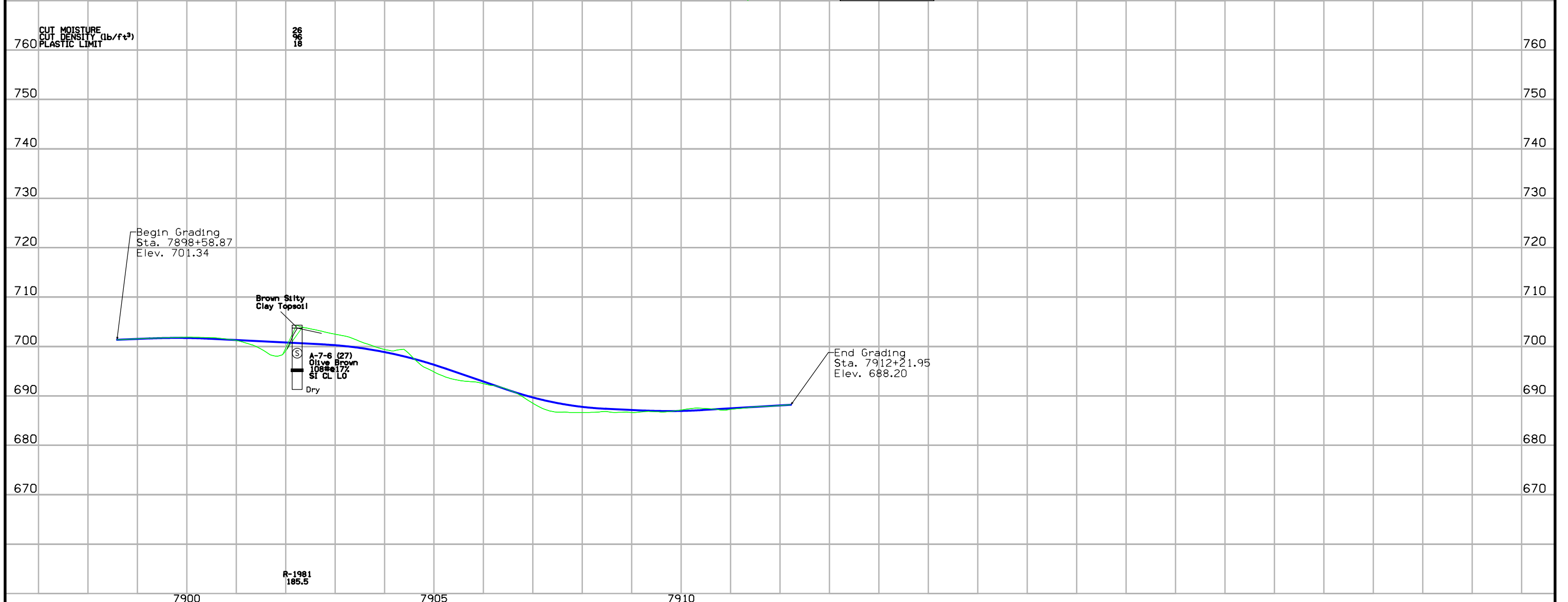
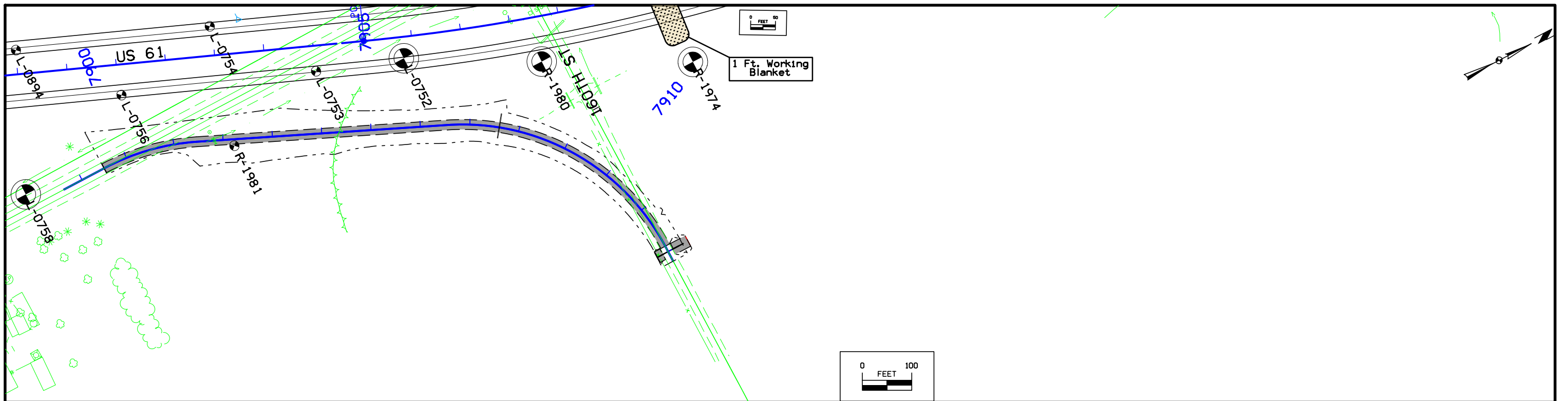
B-0654  
0.15  
2810

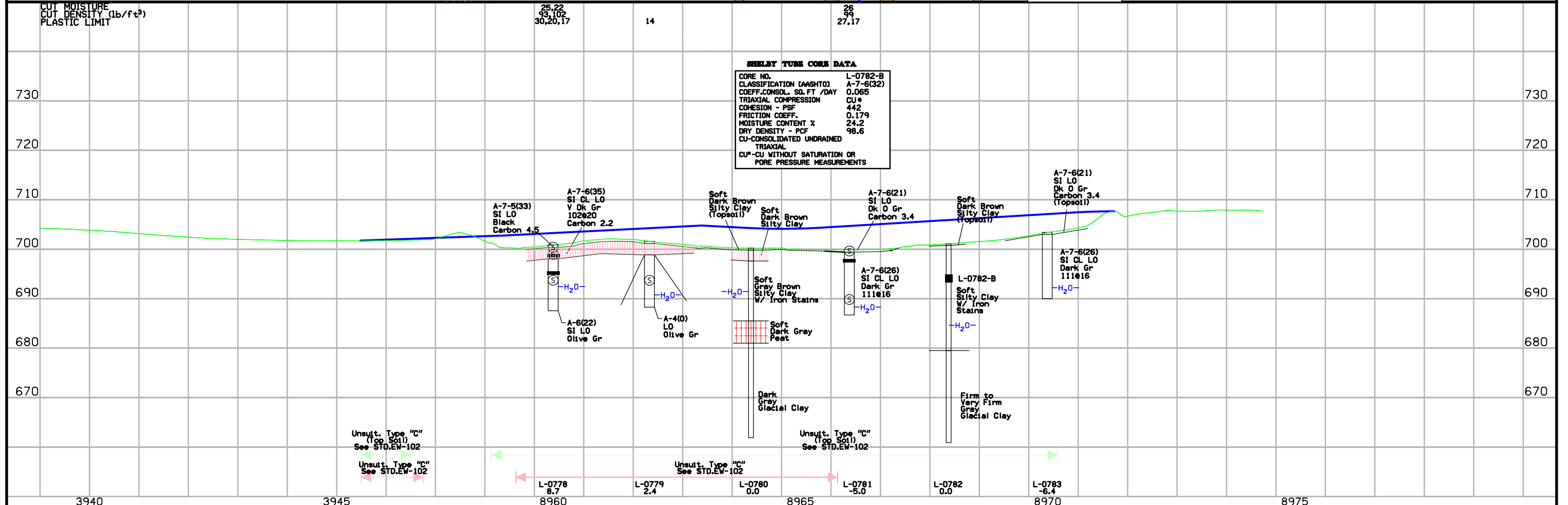
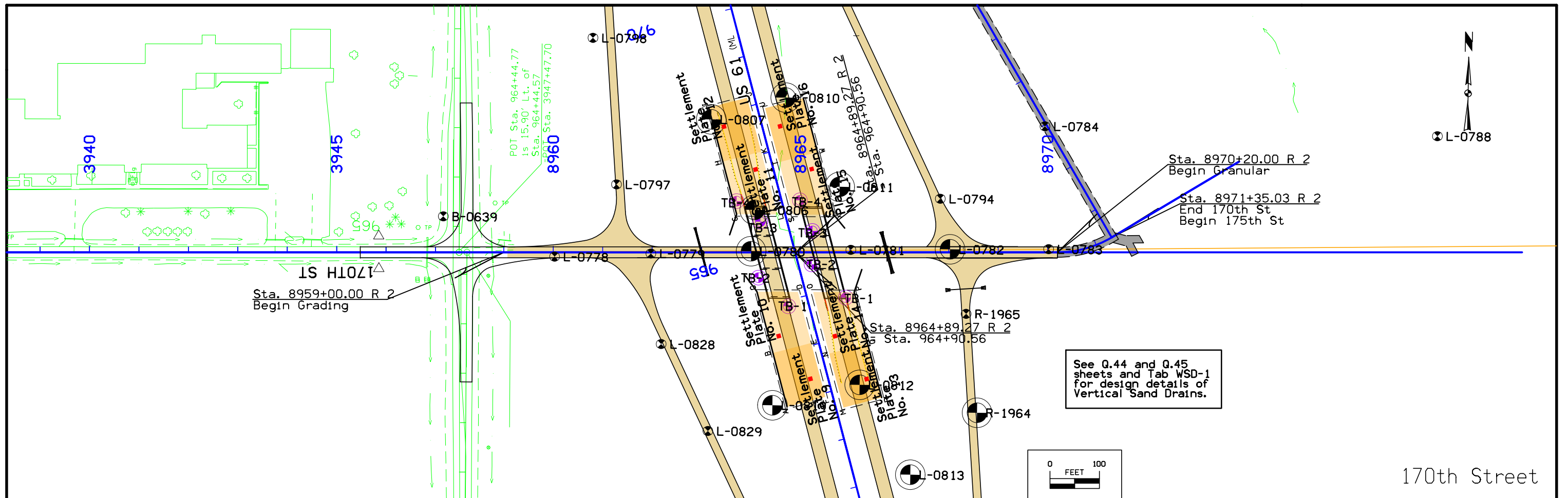
B-0653  
-1.68  
2815

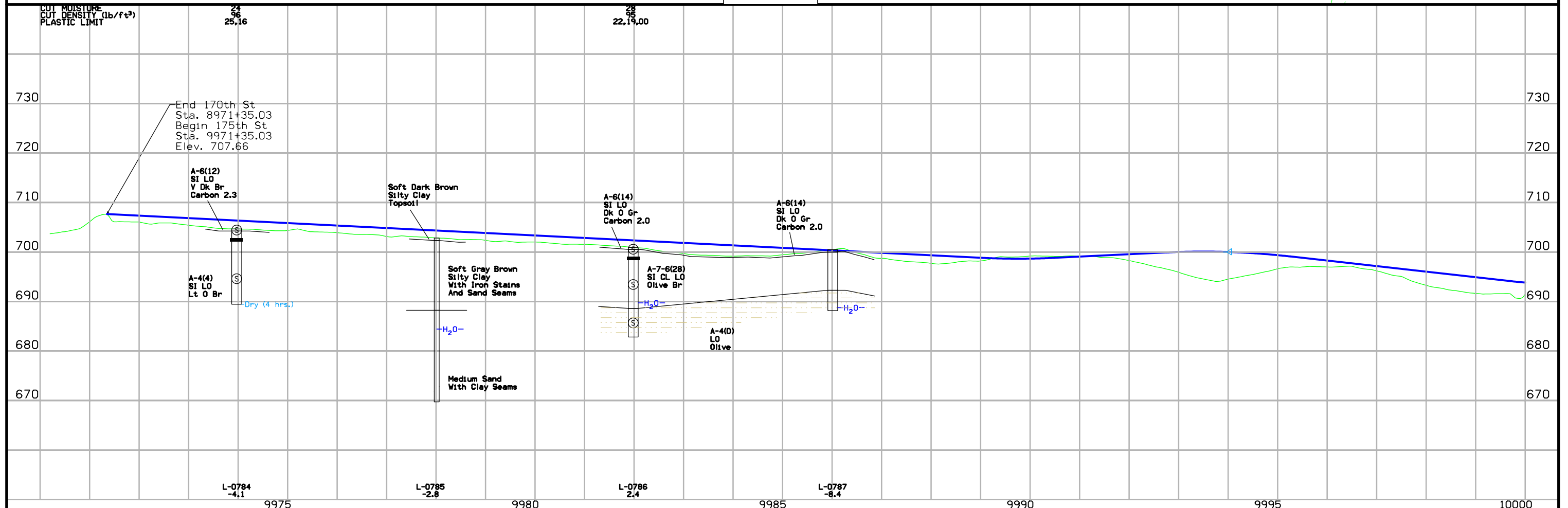
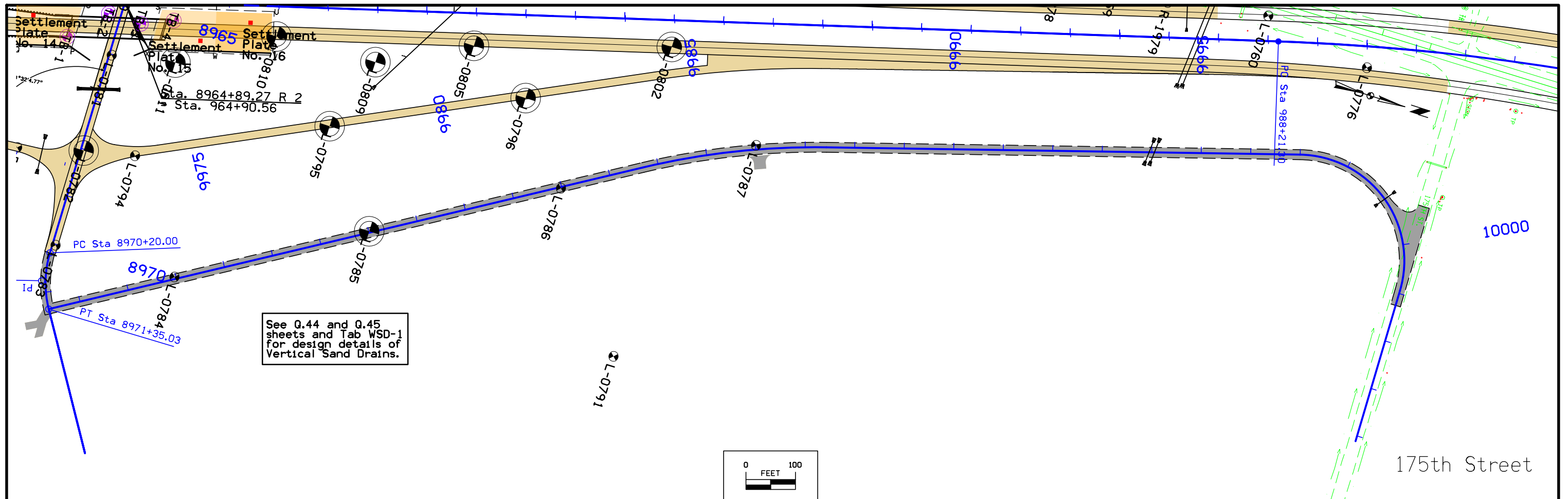
Unsat. Type "C"  
See STD.EW-102  
B-0648  
-0.21  
2820

B-0647  
4.6  
2825

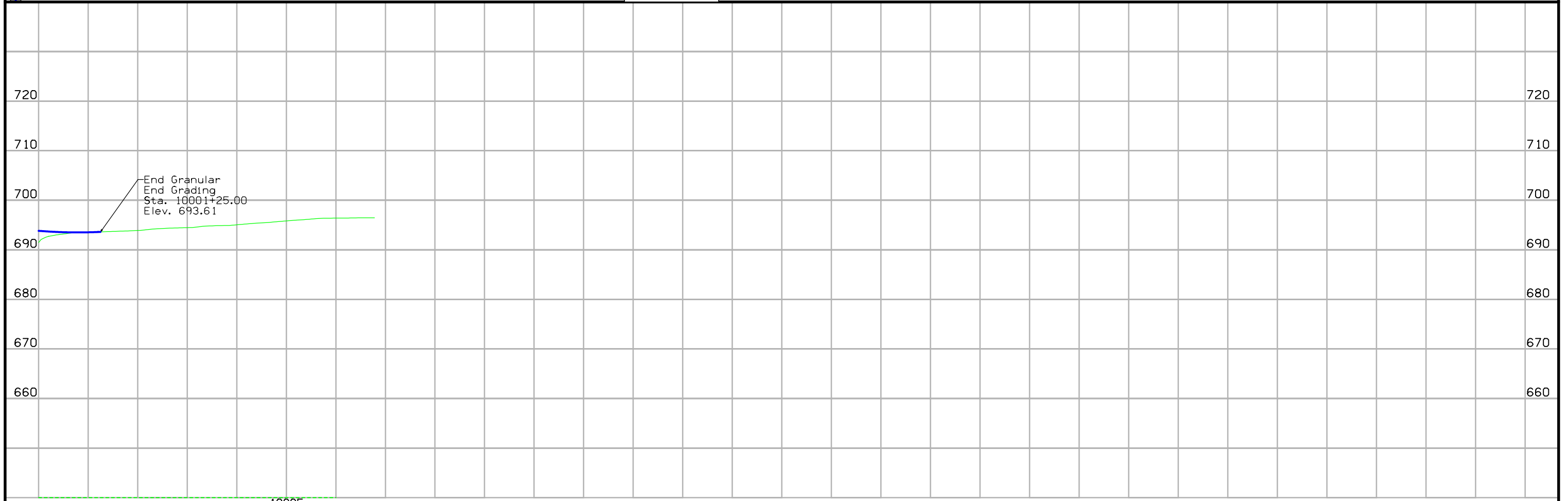
B-0640  
-20.6  
2830

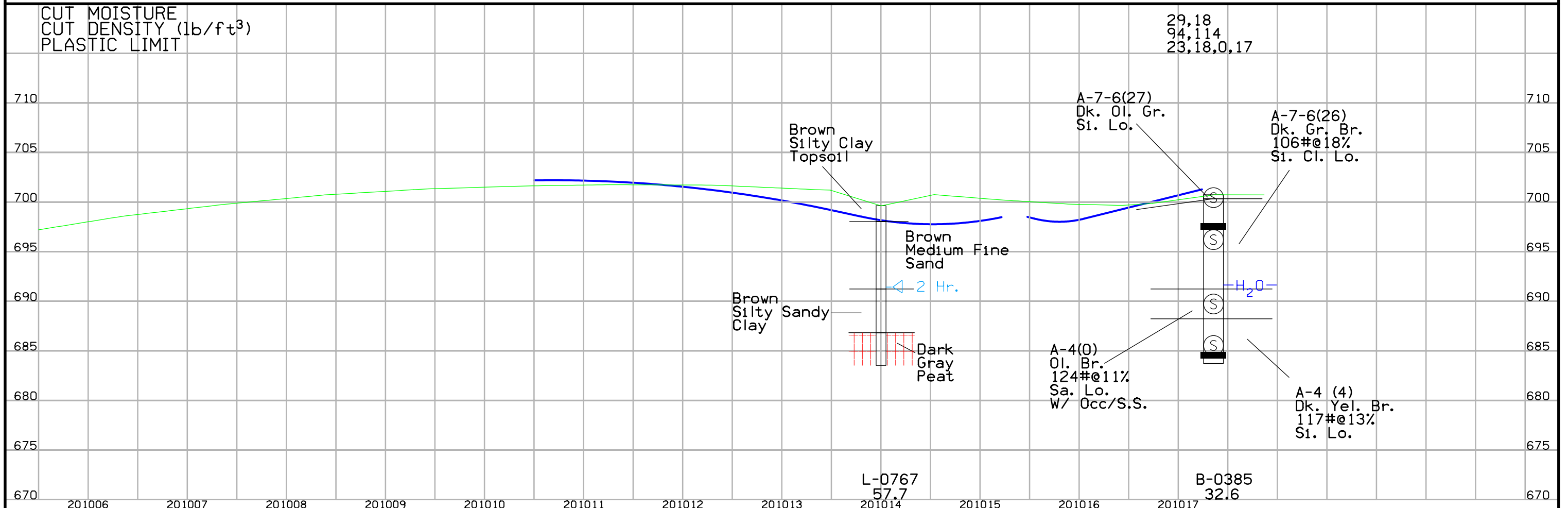
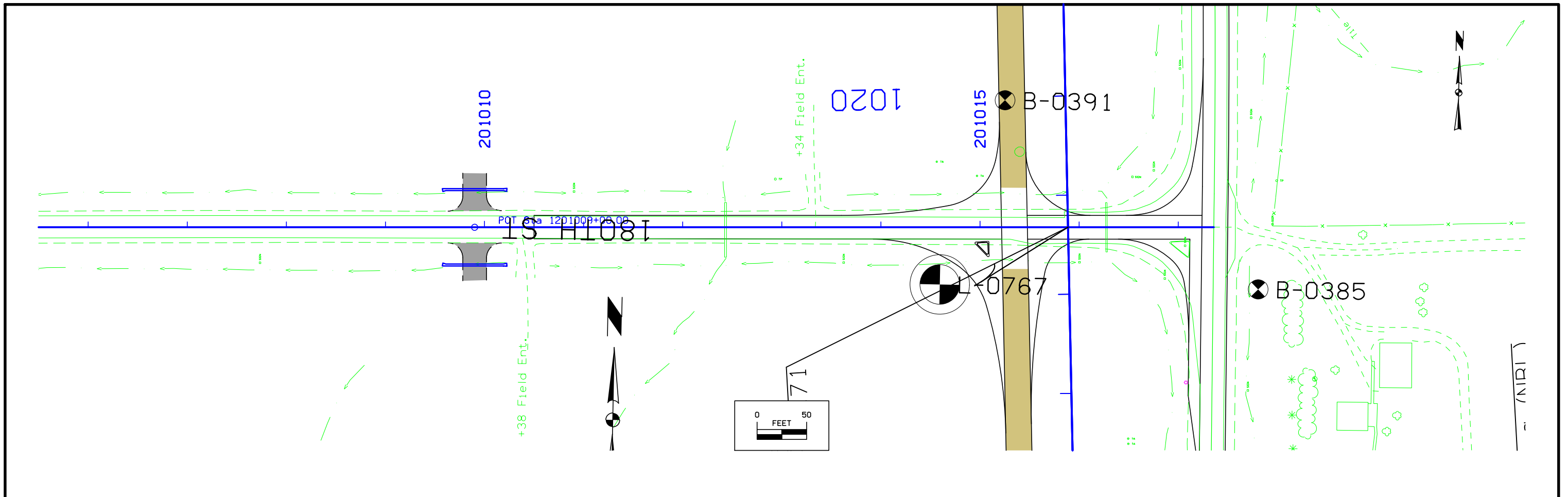


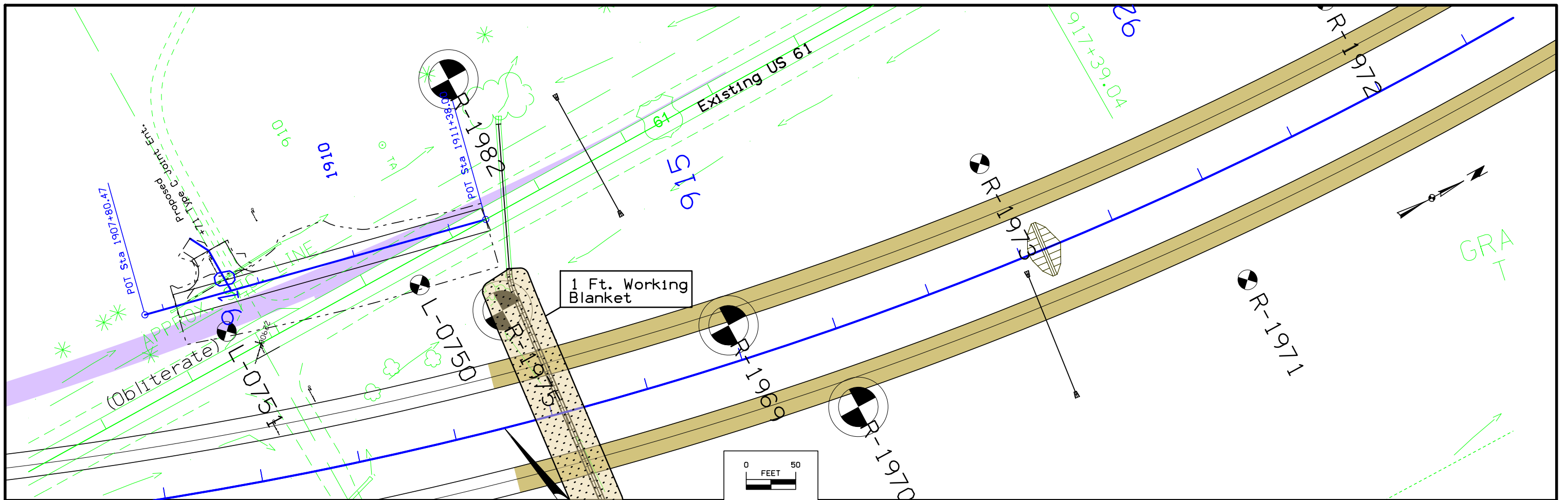




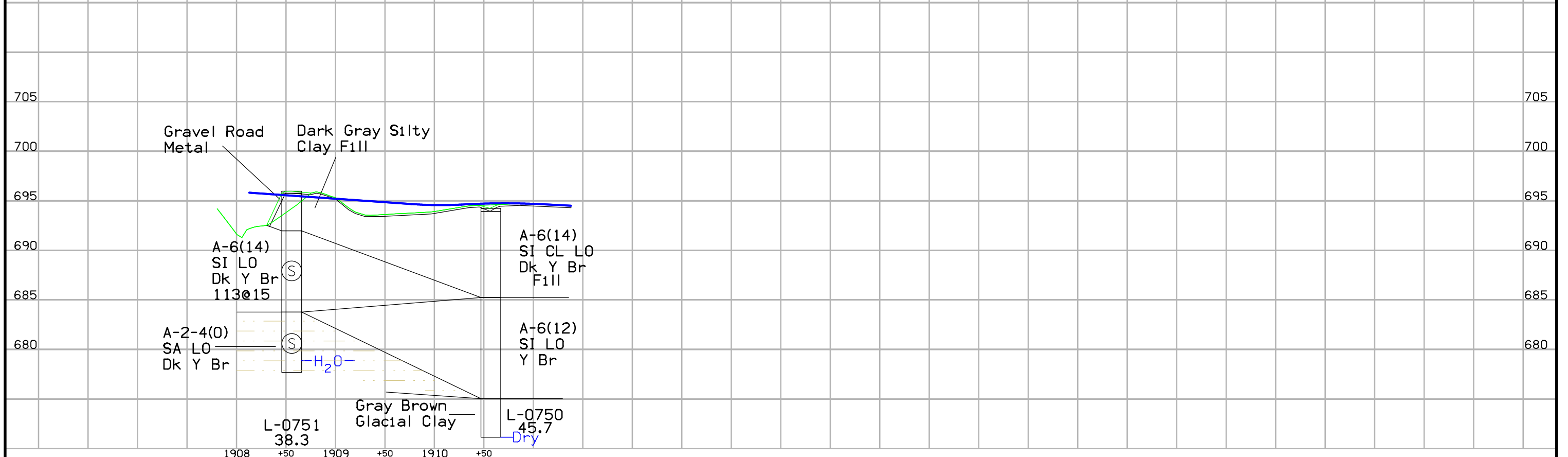


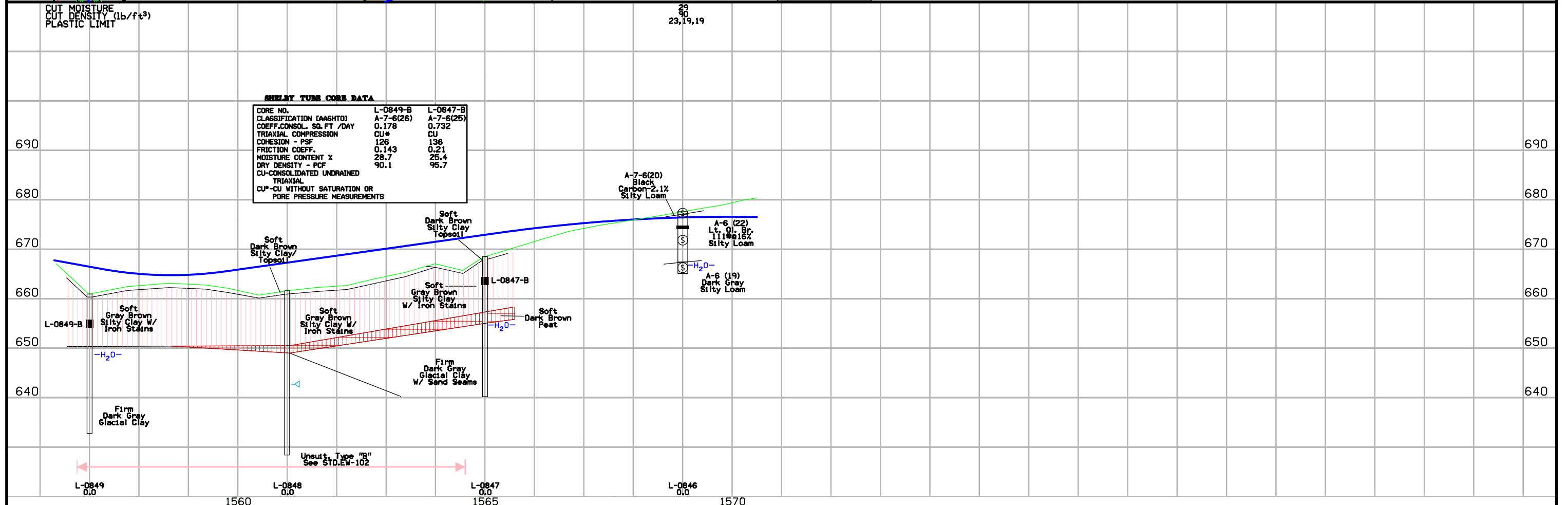
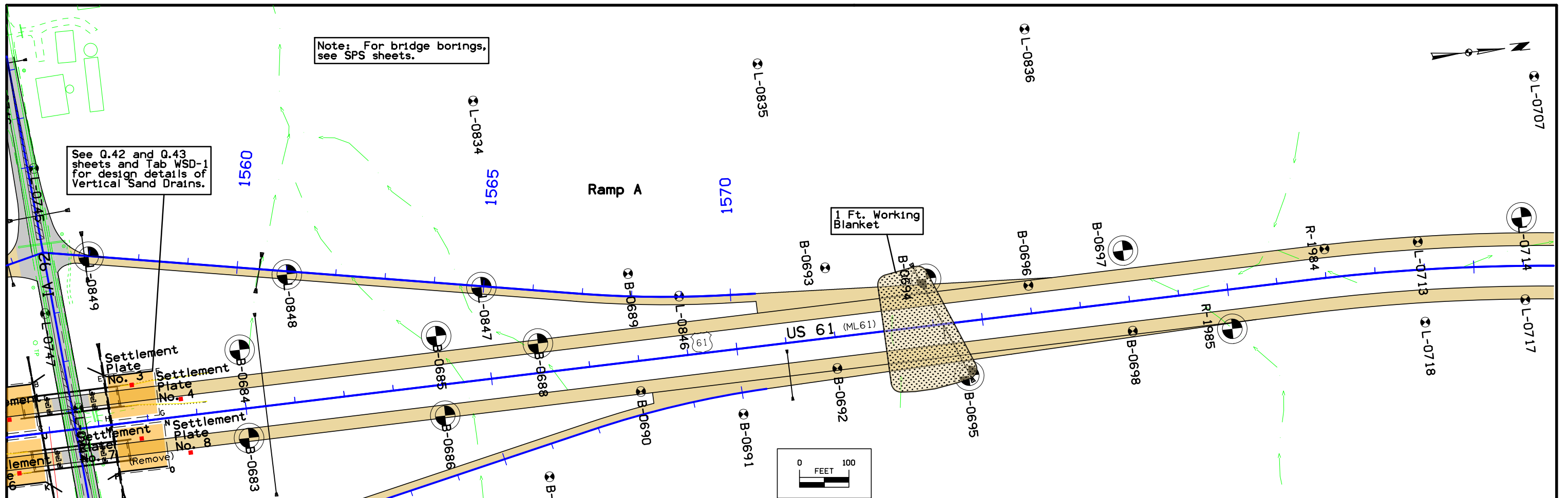


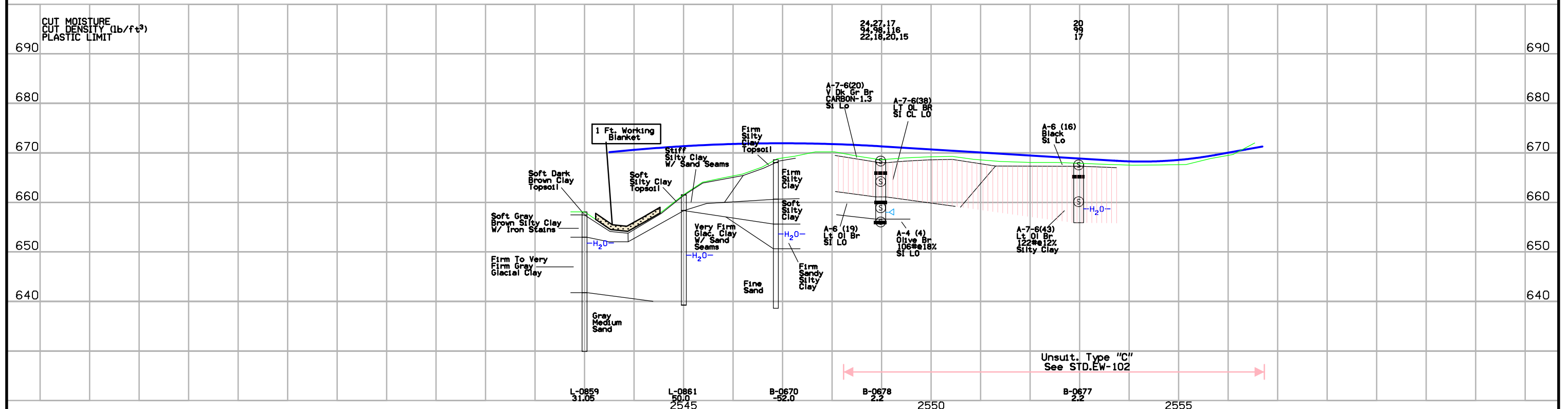
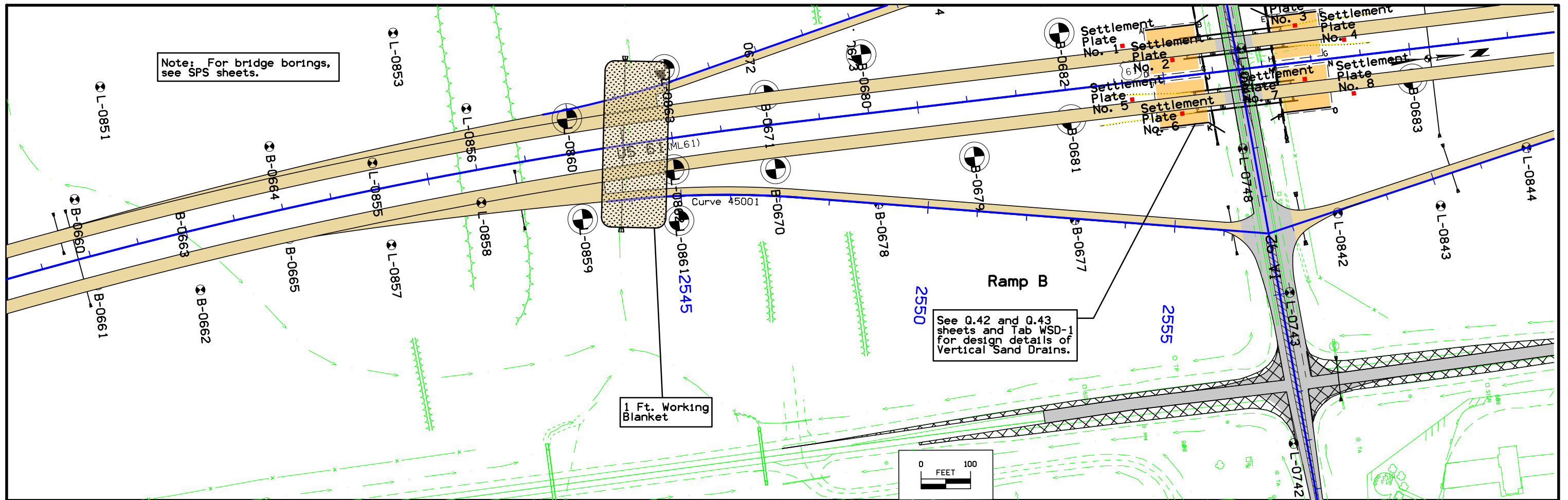




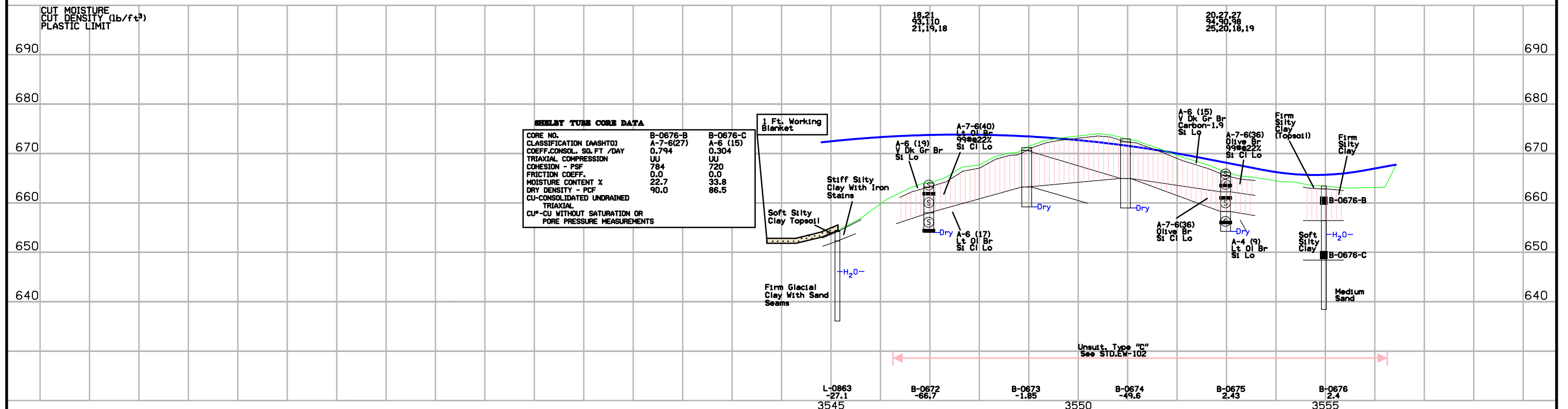
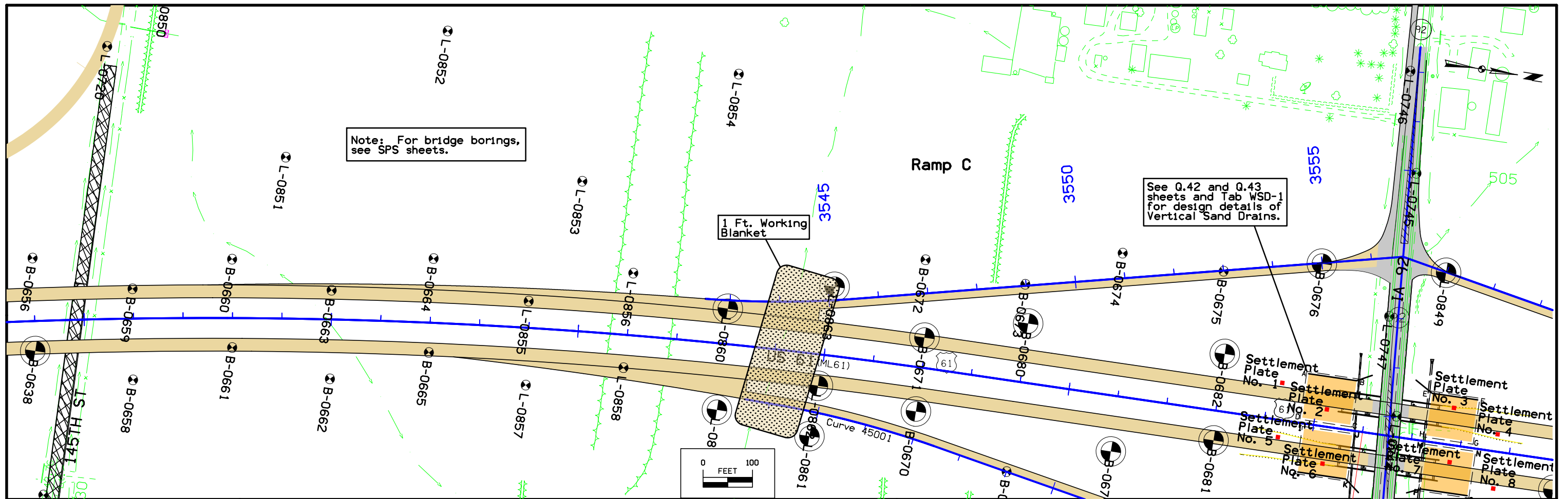
CUT MOISTURE  
 CUT DENSITY (lb/ft<sup>3</sup>) 19,00  
 PLASTIC LIMIT

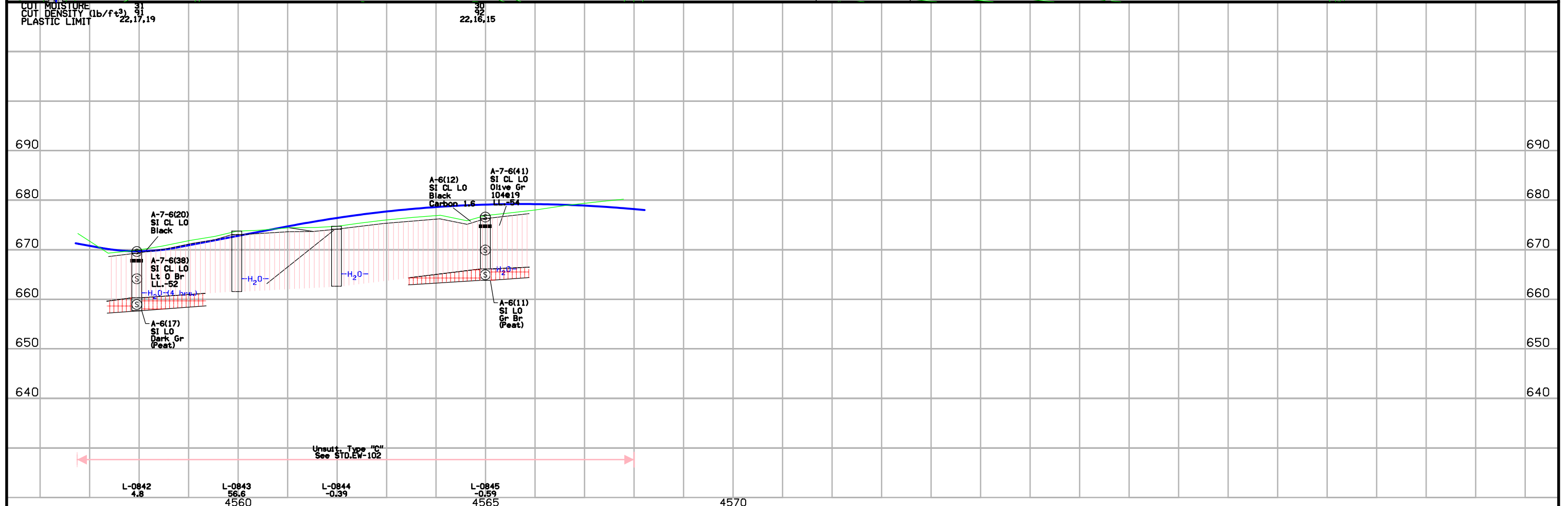
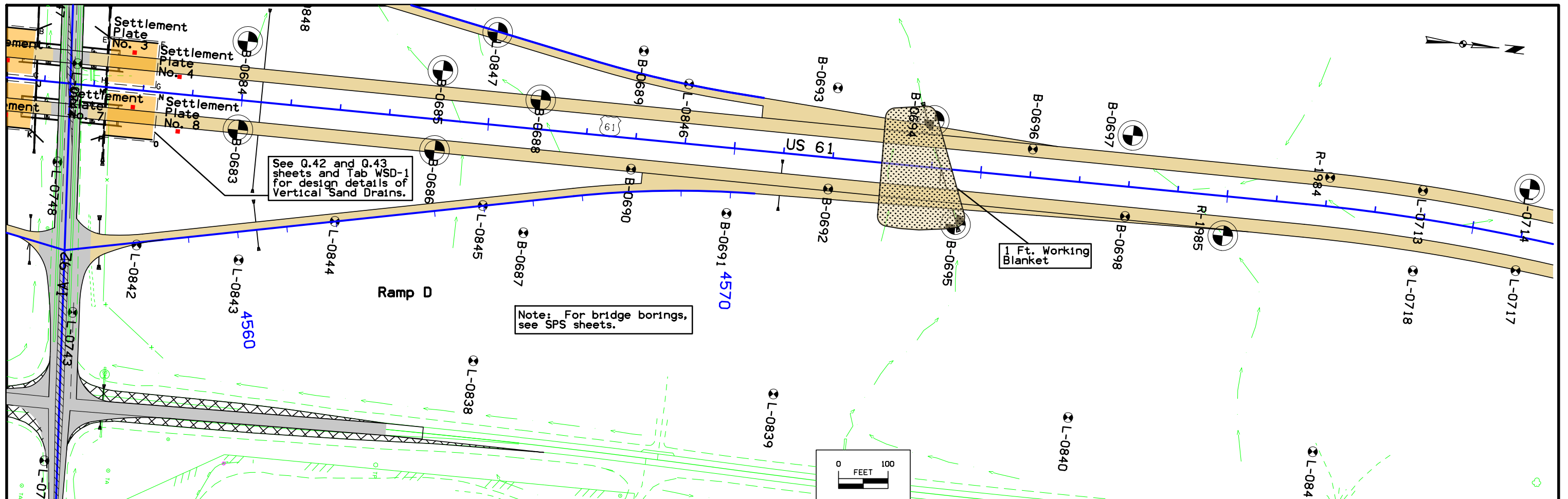




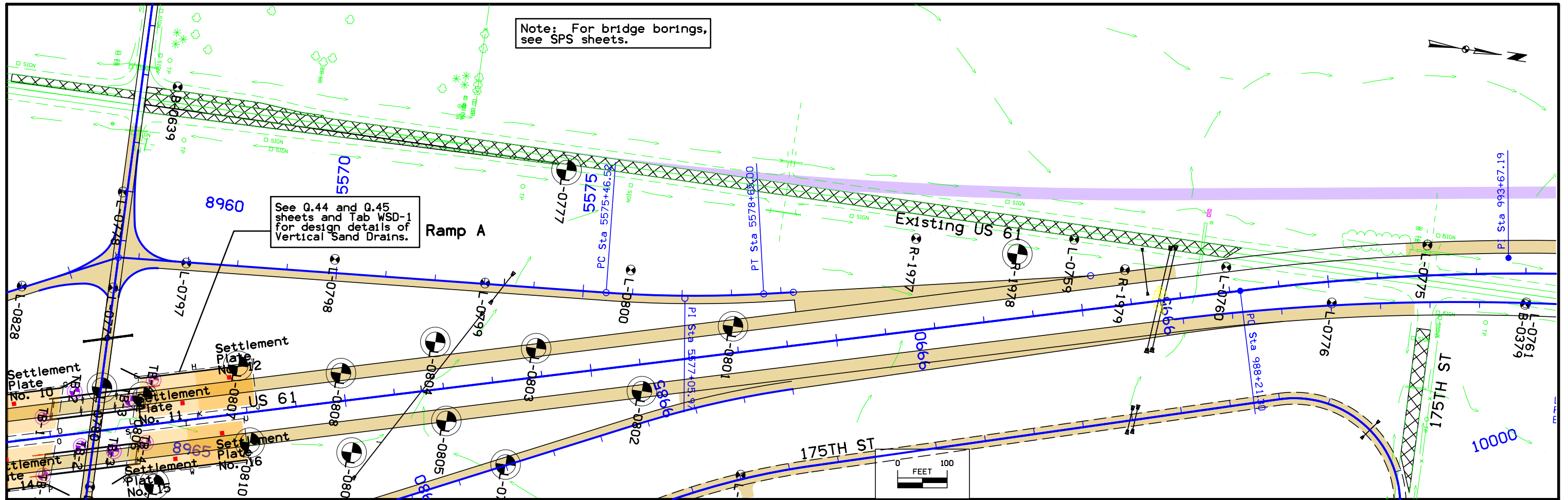






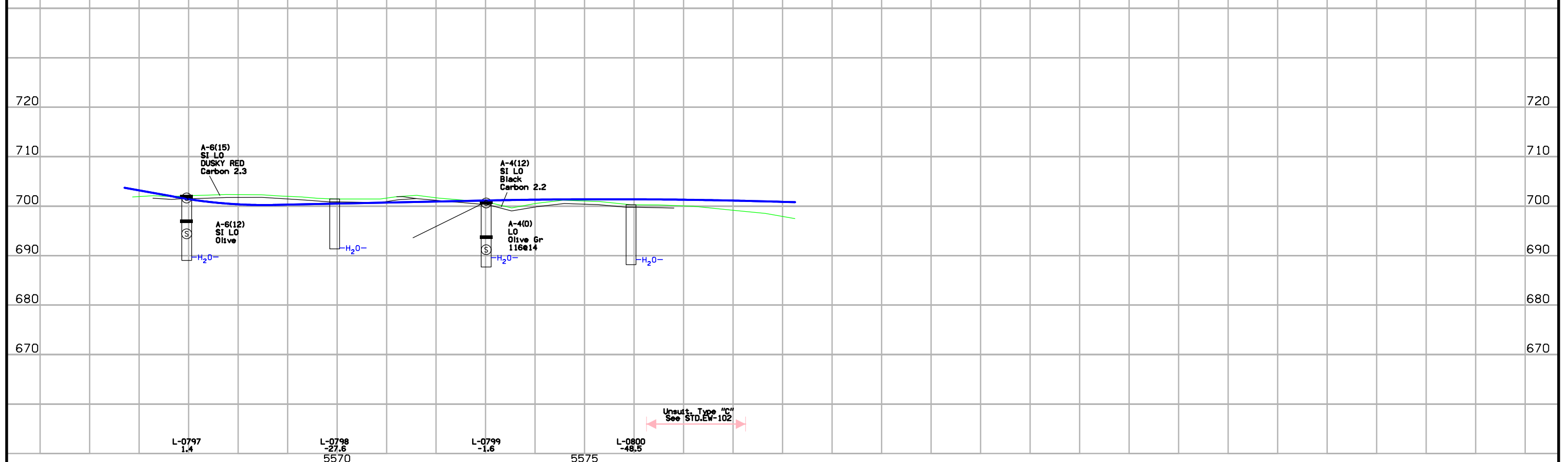


Note: For bridge borings, see SPS sheets.

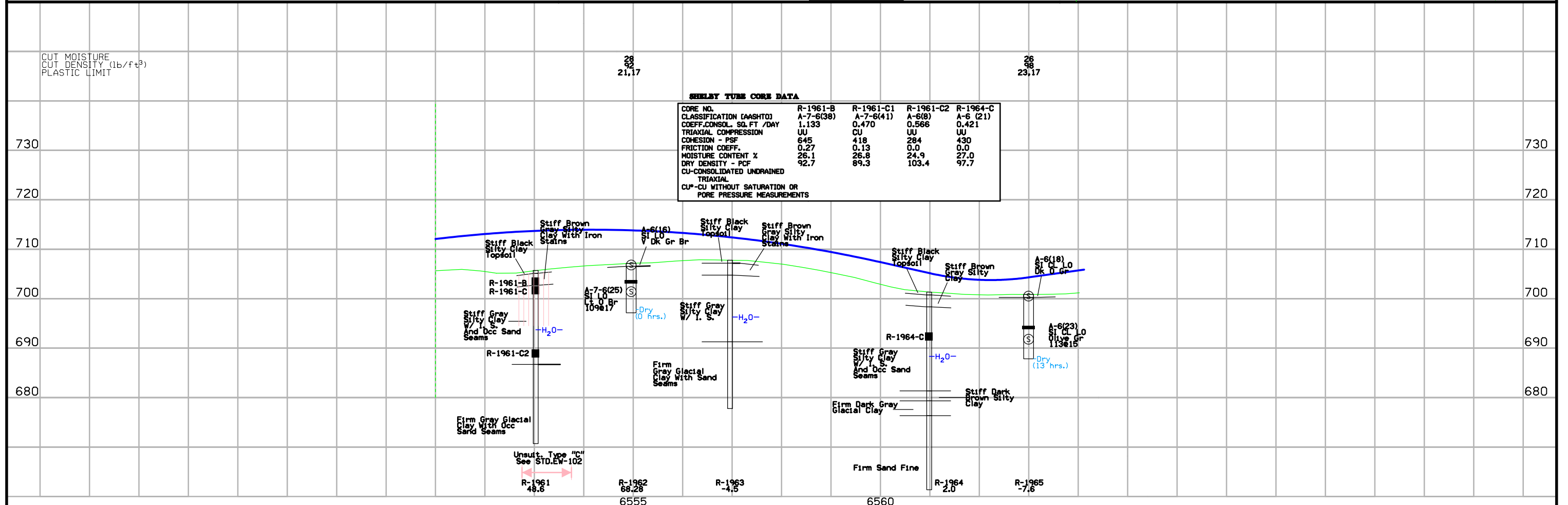
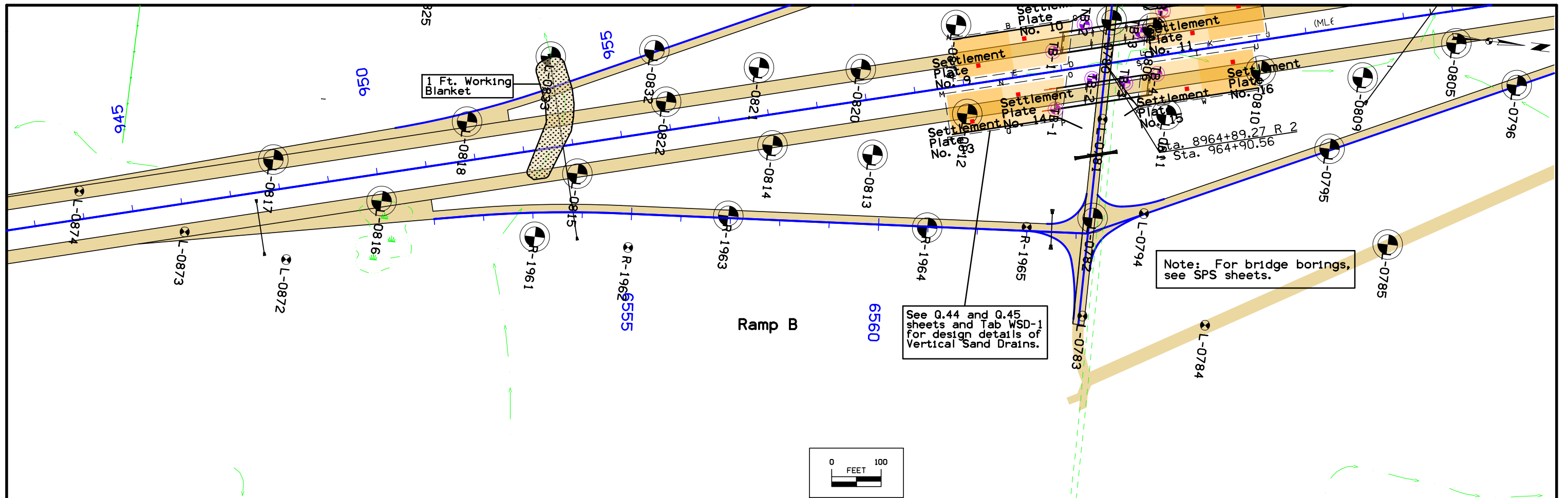


CUT MOISTURE 25.18  
 CUT DENSITY (lb/ft³) 23.15  
 PLASTIC LIMIT 26.00

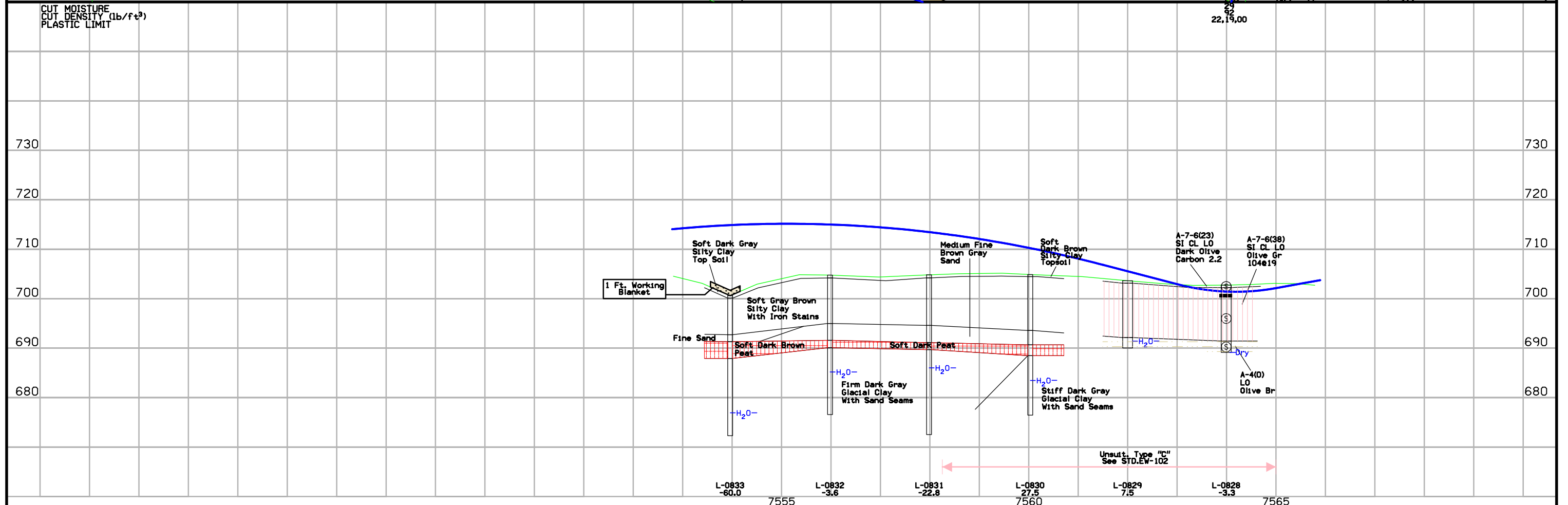
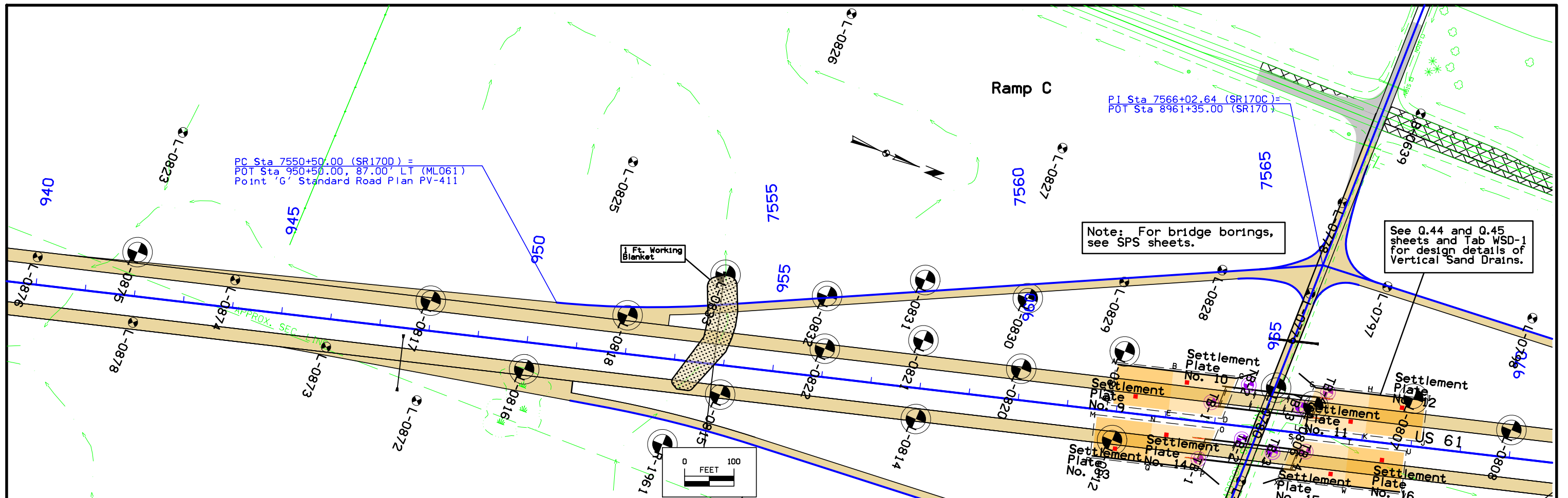
26.24  
 23.100  
 26.00



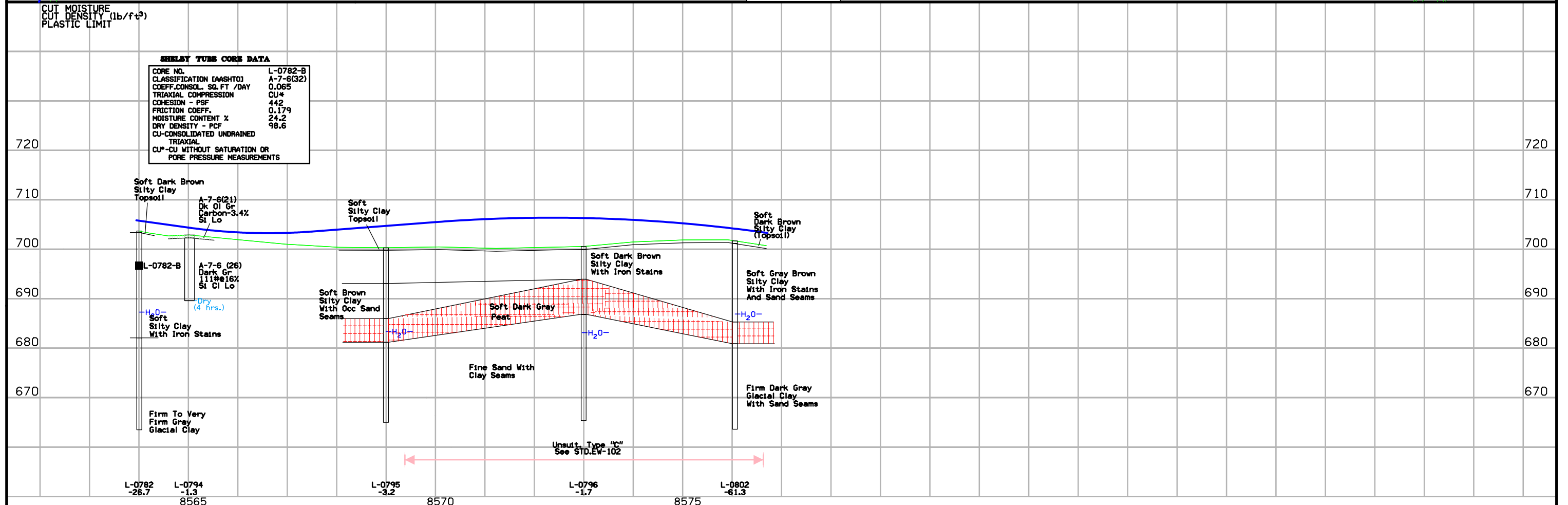
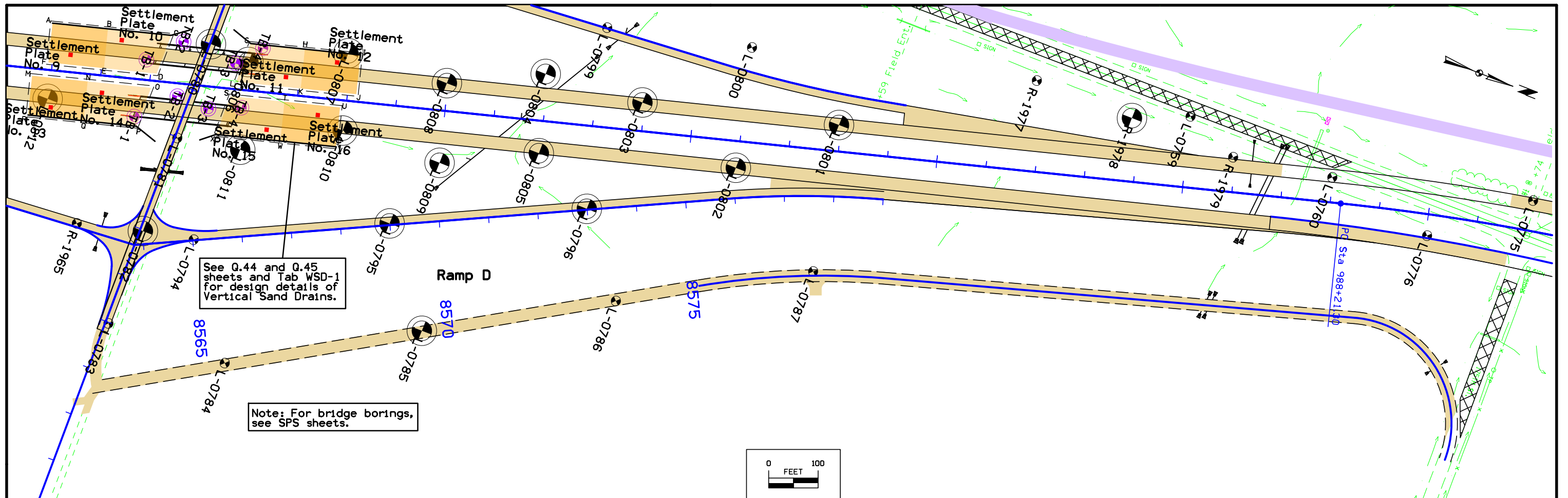
L-0797 1.4  
 L-0798 -27.6  
 5570  
 L-0799 -1.6  
 5575  
 L-0800 -48.5











The intention of the vertical sand drain design and the layout limits is that the US 61 paving will not occur until at least 365 calendar days after completion of embankment construction.

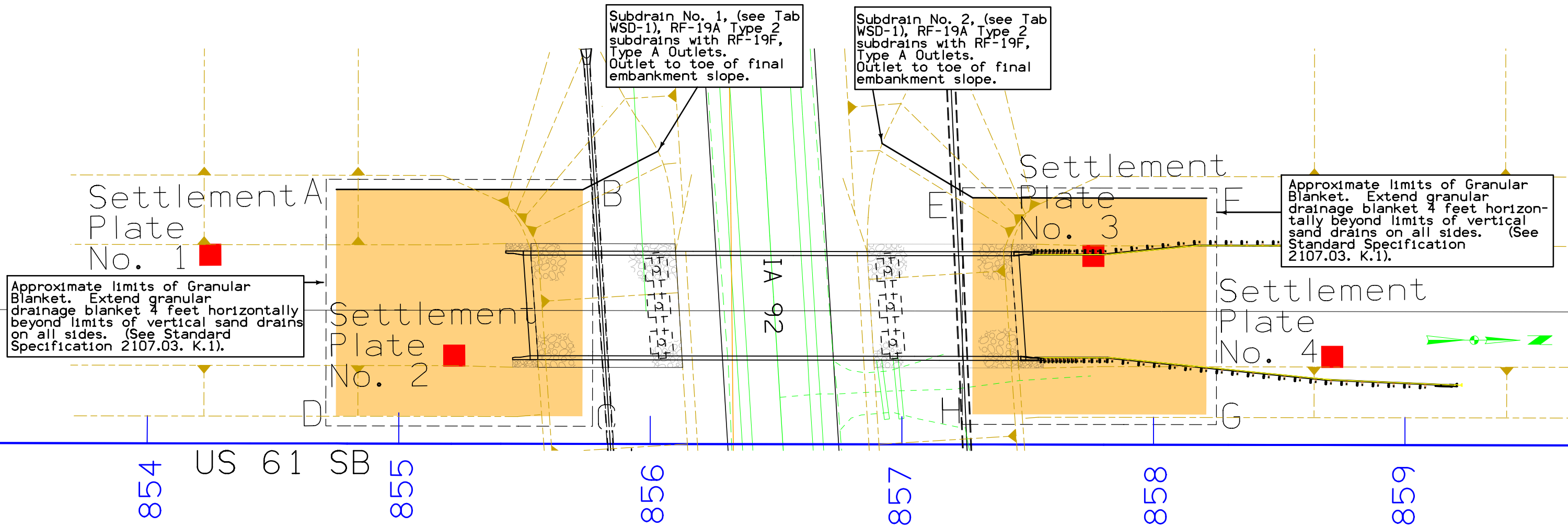
Sand drain auger holes shall be clean and free of auger cuttings and extend through the near surficial silty clay into the underlying medium sand and glacial clay soils. Approximate depths are shown in the design requirements table for each boundary area. Auger cuttings shall be removed from around the holes to prevent their re-entry into the holes during Granular Backfill (sand) placement. Granular Backfill for the drains shall meet IDOT Specification 4133, and may be loose dumped into the holes without compaction. Completed and cleaned auger holes shall be left open the shortest time possible when caving conditions exist. Holes that experience caving before being fully backfilled shall be re-augered to the elevation where the caved material has contaminated the vertical sand drain.

**Granular Blanket Note**  
Install 1-foot thick Granular Blanket with horizontal subdrains. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. This grading shall be incidental to vertical sand drain installation. Blankets will be drained by RF-19A Type 2 subdrains, and RF-19F Type A (or similar) outlets.

Note:  
Sand Blankets, Vertical Sand Drains and Settlement Plates are not shown on cross sections.

Vertical Sand Drain Design Requirements				
Layout Boundary	Boundary Area (sq ft)	Center-to-Center Spacing (ft)	Approx. Depth (ft)*	Approx. Number of Vertical Sand Drains
A-B-C-D	8820	12	27'	70
E-F-G-H	7998	12	21'	64

\* Depth of sand drains will likely vary based on the design intent.  
Granular Backfill quantity estimated for the Southbound bridge to be 261 cubic yards (441 Tons) for 134 Vertical Sand Drains. Quantity is calculated based on 20-inch diameter hole, plus an additional 10 percent to account for over-sized holes and spillage. (See Q.43 for northbound bridge vertical sand drain quantities).



Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K.1).

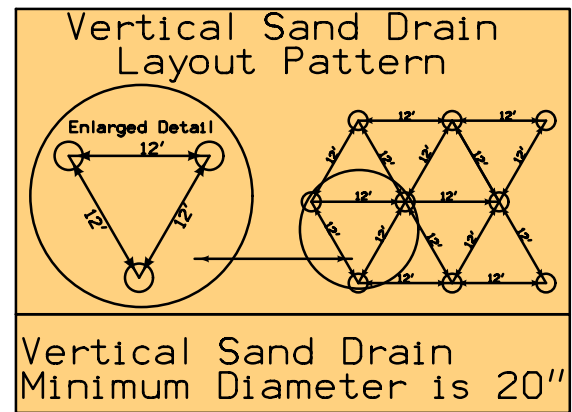
Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K.1).

Sand Drain Corner Points			
Roadway	Corner	Station	Offset
SB	A	854+75	Lt. 101
	B	855+73	Lt. 101
	C	855+73	Lt. 11
	D	854+75	Lt. 11
	E	857+28	Lt. 98
	F	858+21	Lt. 98
	G	858+21	Lt. 12
	H	857+28	Lt. 12

Settlement Plates			
Roadway	Number	Station	Offset
SB	1	854+25	Lt. 75
	2	855+22	Lt. 35
	3	857+76	Lt. 75
	4	858+71	Lt. 35

Not To Scale

See Tab WSD-1 for all quantities associated with Vertical Sand Drains and Sand Blankets.



The intention of the vertical sand drain design and the layout limits is that the US 61 paving will not occur until at least 365 calendar days after completion of embankment construction.

Sand drain auger holes shall be clean and free of auger cuttings and extend through the near surficial silty clay into the underlying medium sand and glacial clay soils. Approximate depths are shown in the design requirements table for each boundary area. Auger cuttings shall be removed from around the holes to prevent their re-entry into the holes during Granular Backfill (sand) placement. Granular Backfill for the drains shall meet IDOT Specification 4133, and may be loose dumped into the holes without compaction. Completed and cleaned auger holes shall be left open the shortest time possible when caving conditions exist. Holes that experience caving before being fully backfilled shall be re-augered to the elevation where the caved material has contaminated the vertical sand drain.

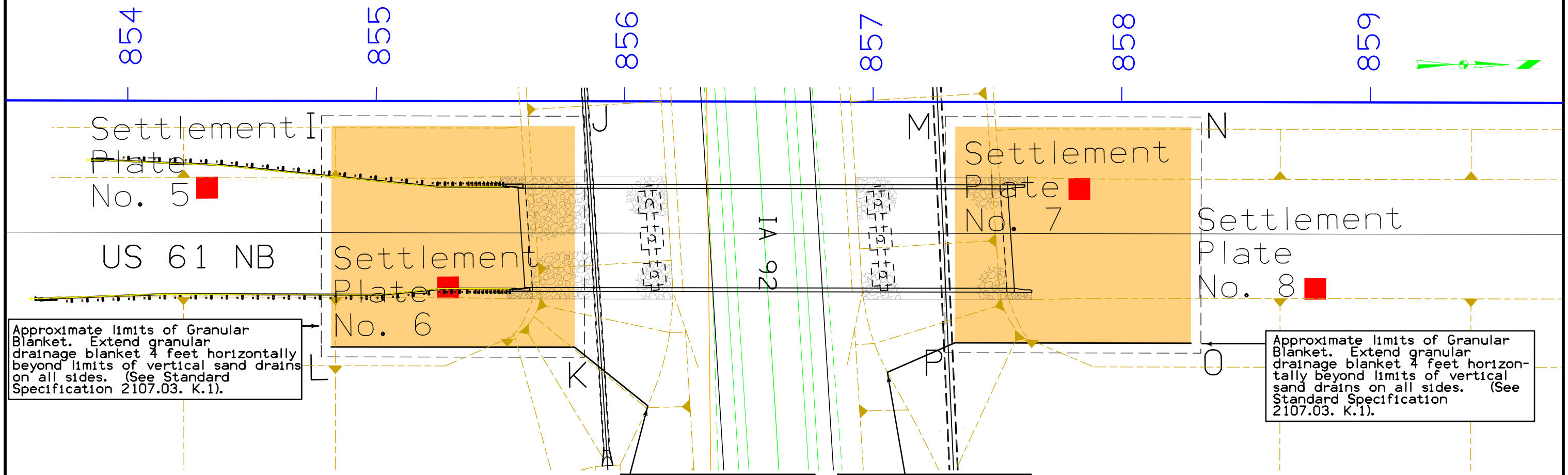
**Granular Blanket Note**  
 Install 1-foot thick Granular Blanket with horizontal subdrains. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. This grading shall be incidental to vertical sand drain installation. Blankets will be drained by RF-19A Type 2 subdrains, and RF-19F Type A (or similar) outlets.

Vertical Sand Drain Design Requirements				
Layout Boundary	Boundary Area (sq ft)	Center-to-Center Spacing (ft)	Approx. Depth (ft)*	Approx. Number of Vertical Sand Drains
I-J-K-L	8722	12	27'	69
M-N-O-P	8265	12	21'	66

\* Depth of sand drains will likely vary based on the design intent.  
 Granular Backfill quantity estimated to be 262 cubic yards (443 Tons) for 135 Vertical Sand Drains. Quantity is calculated based on 20-inch diameter hole, plus an additional 10 percent to account for over-sized holes and spillage. (See Q.42 for southbound vertical sand drain quantities).

Note:  
 Sand Blankets, Vertical Sand Drains and Settlement Plates are not shown on cross sections.

Not To Scale



Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K.1).

Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K.1).

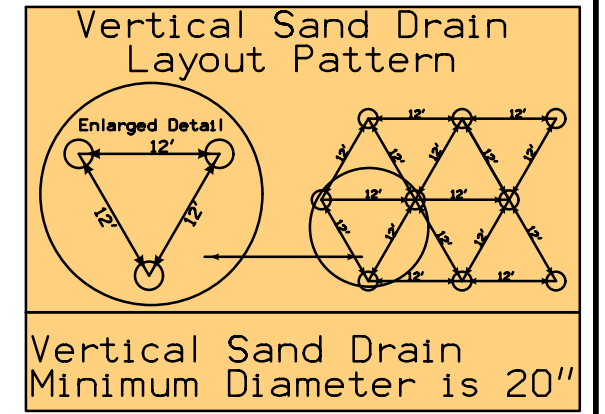
Subdrain No. 3, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

Subdrain No. 4, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

See Tab WSD-1 for all quantities associated with Vertical Sand Drains and Sand Blankets.

Sand Drain Corner Points			
Roadway	Corner	Station	Offset
NB	I	854+82	Rt. 10
	J	855+80	Rt. 10
	K	855+80	Rt. 99
	L	854+82	Rt. 99
	M	857+33	Rt. 10
	N	858+28	Rt. 10
	O	858+28	Rt. 97
	P	857+33	Rt. 97

Settlement Plates			
Roadway	Number	Station	Offset
NB	5	854+32	Rt. 35
	6	855+29	Rt. 75
	7	857+83	Rt. 35
	8	858+78	Rt. 75





The intention of the vertical sand drain design and the layout limits is that the US 61 paving will not occur until at least 365 calendar days after completion of embankment construction.

Sand drain auger holes shall be clean and free of auger cuttings and extend through the near surficial silty clay and peat into the underlying medium sand and glacial clay soils. Approximate depths are shown in the design requirements table for each boundary area. Auger cuttings shall be removed from around the holes to prevent their re-entry into the holes during Granular Backfill (sand) placement. Granular Backfill for the drains shall meet IDOT Specification 4133, and may be loose dumped into the holes without compaction. Completed and cleaned auger holes shall be left open the shortest time possible when caving conditions exist. Holes that experience caving before being fully backfilled shall be re-augered to the elevation where the caved material has contaminated the vertical sand drain.

**Granular Blanket Note**  
 Install 1-foot thick Granular Blanket with horizontal subdrains. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. This grading shall be incidental to vertical sand drain installation. Blankets will be drained by RF-19A Type 2 subdrains, and RF-19F Type A (or similar) outlets.

Note:  
 Sand Blankets, Vertical Sand Drains and Settlement Plates are not shown on cross sections.

Vertical Sand Drain Design Requirements				
Layout Boundary	Boundary Area (sq ft)	Center-to-Center Spacing (ft)	Approx. Depth (ft)*	Approx. Number of Vertical Sand Drains
A-B-E-F	9040	18	20'	32
B-C-D-E	9400	15	33'	48
G-H-K-L	9640	15	35'	49
H-I-J-K	9040	18	17'	32

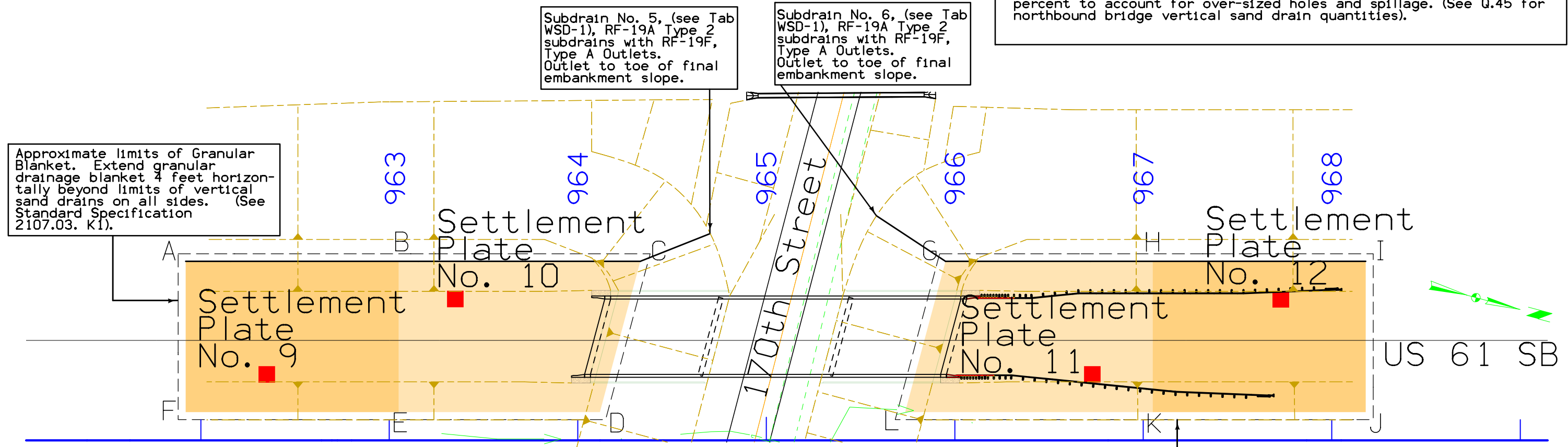
\* Depth of sand drains will likely vary based on the design intent.  
 Granular Backfill quantity estimated for the Southbound bridge to be 398 cubic yards (672 Tons) for 161 Vertical Sand Drains. Quantity is calculated based on 20-inch diameter hole, plus an additional 10 percent to account for over-sized holes and spillage. (See Q.45 for northbound bridge vertical sand drain quantities).

Subdrain No. 5, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

Subdrain No. 6, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K1).

Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K1).

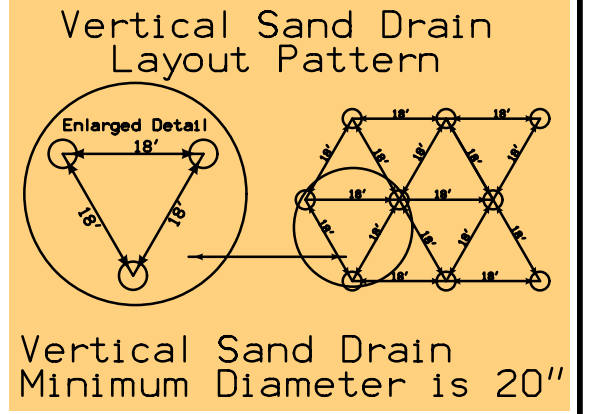
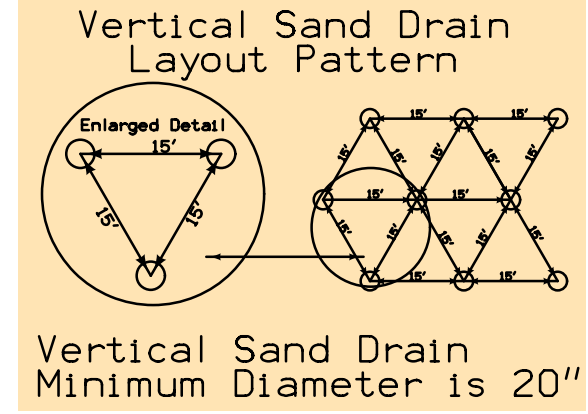


Sand Drain Corner Points			
Roadway	Corner	Station	Offset
SB	A	961+92	Lt. 95
	B	963+05	Lt. 95
	C	964+33	Lt. 95
	D	964+12	Lt. 15
	E	963+05	Lt. 15
	F	961+92	Lt. 15
	G	965+95	Lt. 95
	H	967+05	Lt. 95
	I	968+18	Lt. 95
	J	968+18	Lt. 15
	K	967+05	Lt. 15
	L	965+74	Lt. 15

Settlement Plates			
Roadway	Number	Station	Offset
SB	9	962+35	Lt. 35
	10	963+35	Lt. 75
	11	966+73	Lt. 35
	12	967+73	Lt. 75

Not To Scale

See Tab WSD-1 for all quantities associated with Vertical Sand Drains and Sand Blankets.



The intention of the vertical sand drain design and the layout limits is that the US 61 paving will not occur until at least 365 calendar days after completion of embankment construction.

Sand drain auger holes shall be clean and free of auger cuttings and extend through the near surficial silty clay and peat into the underlying medium sand and glacial clay soils. Approximate depths are shown in the design requirements table for each boundary area. Auger cuttings shall be removed from around the holes to prevent their re-entry into the holes during Granular Backfill (sand) placement. Granular Backfill for the drains shall meet IDOT Specification 4133, and may be loose dumped into the holes without compaction. Completed and cleaned auger holes shall be left open the shortest time possible when caving conditions exist. Holes that experience caving before being fully backfilled shall be re-augered to the elevation where the caved material has contaminated the vertical sand drain.

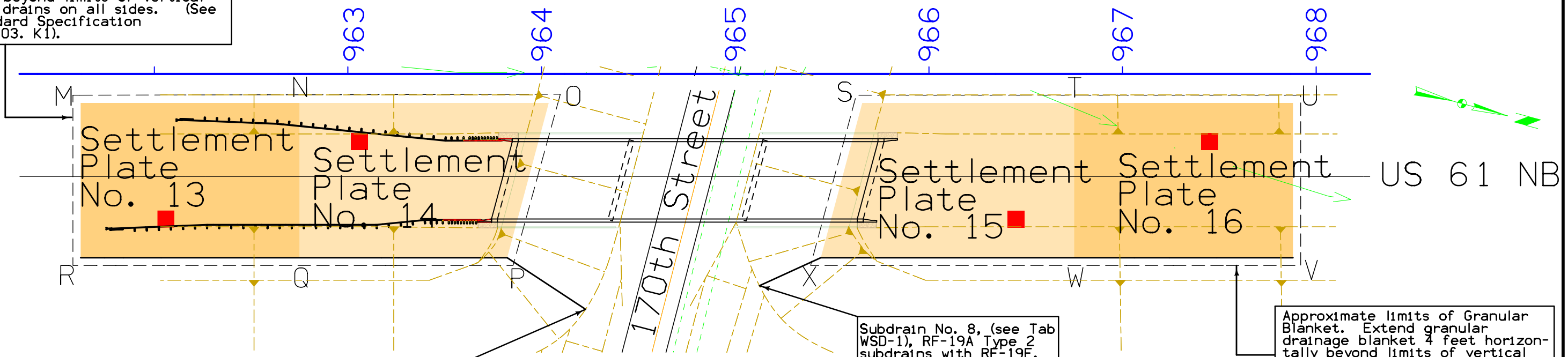
**Granular Blanket Note**  
 Install 1-foot thick Granular Blanket with horizontal subdrains. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. This grading shall be incidental to vertical sand drain installation. Blankets will be drained by RF-19A Type 2 subdrains, and RF-19F Type A (or similar) outlets.

Note:  
 Sand Blankets, Vertical Sand Drains and Settlement Plates are not shown on cross sections.

Vertical Sand Drain Design Requirements				
Layout Boundary	Boundary Area (sq ft)	Center-to-Center Spacing (ft)	Approx. Depth (ft)*	Approx. Number of Vertical Sand Drains
M-N-Q-R	9040	18	20'	32
N-O-P-Q	9440	15	33'	48
S-T-W-X	9600	15	35'	49
T-U-V-W	9040	18	17'	32

\* Depth of sand drains will likely vary based on the design intent.  
 Granular Backfill quantity estimated for the Northbound bridge to be 398 cubic yards (672 Tons) for 161 Vertical Sand Drains. Quantity is calculated based on 20-inch diameter hole, plus an additional 10 percent to account for over-sized holes and spillage. (See Q.44 for southbound bridge vertical sand drain quantities).

Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K1).



Subdrain No. 7, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

Subdrain No. 8, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

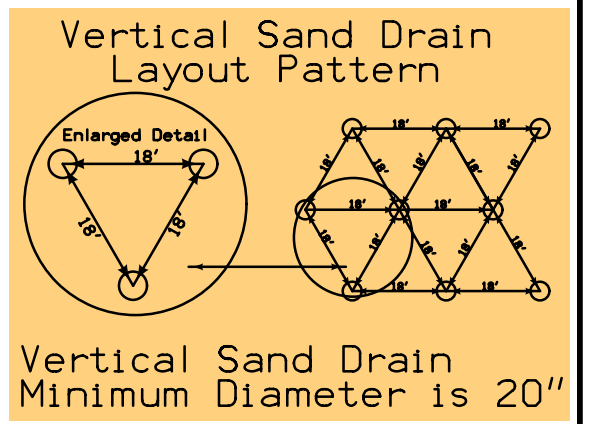
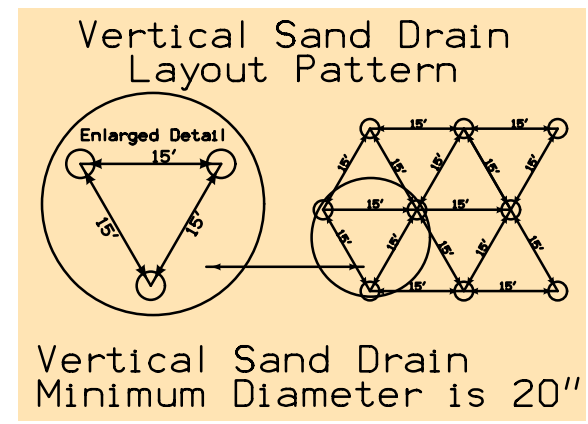
Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K1).

Sand Drain Corner Points			
Roadway	Corner	Station	Offset
NB	M	961+62	Rt. 15
	N	962+75	Rt. 15
	O	964+04	Rt. 15
	P	963+82	Rt. 95
	Q	962+75	Rt. 95
	R	961+62	Rt. 95
	S	965+66	Rt. 15
	T	966+75	Rt. 15
	U	967+88	Rt. 15
	V	967+88	Rt. 95
	W	966+75	Rt. 95
	X	965+44	Rt. 95

Settlement Plates			
Roadway	Number	Station	Offset
NB	13	962+06	Rt. 75
	14	963+06	Rt. 35
	15	966+45	Rt. 75
	16	967+45	Rt. 35

Not To Scale

See Tab WSD-1 for all quantities associated with Vertical Sand Drains and Sand Blankets.





### TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK
756													788+50.00	271	176				0	0	95	73	73	1259	1186
756+50.00	502	210				0	0	292	225	225	6	-219	789+50.00	291	178				0	0	113	87	87	1274	1187
757+50.00	604	212				0	0	392	302	302	6	-296	790+50.00	344	195				0	0	149	115	115	1268	1153
757+50.00	632	229				0	0	403	310	310	47	-263	791+50.00	382	216				0	0	166	128	128	1295	1167
758+50.00	569	245				0	0	324	249	249	103	-146	792+50.00	424	222				0	0	202	155	155	1265	1110
758+50.00	480	265				0	0	215	165	165	164	-1	793+50.00	468	224				0	0	244	188	188	1197	1009
759+50.00	427	262				0	0	165	127	127	208	81	794+50.00	491	225				0	0	266	205	205	1162	957
759+50.00	389	241				0	0	148	114	114	226	112	795+50.00	537	227				0	0	310	238	238	1091	853
760+50.00	367	245				0	0	122	94	94	276	182	796+50.00	574	226				0	0	348	268	268	1011	743
760+50.00	343	248				0	0	95	73	73	318	245	797+50.00	586	224				0	0	362	278	278	957	679
761+50.00	363	293				0	0	70	54	54	379	325	798+50.00	617	222				0	0	395	304	304	882	578
761+50.00	354	293				0	0	61	47	47	415	368	799+50.00	679	223				0	0	456	351	351	794	443
762+50.00	313	250				0	0	63	48	48	403	355	800+50.00	679	221				0	0	458	352	352	755	403
762+50.00	334	272				0	0	62	48	48	406	358	801+50.00	465	209				0	0	256	197	197	954	757
763+50.00	340	275				35	27	30	23	50	313	263	802+50.00	244	196				0	0	48	37	37	1397	1360
763+50.00	332	250				82	63	0	0	63	250	187	803+50.00	228	195				0	0	33	25	25	1623	1598
764+50.00	353	247				106	82	0	0	82	297	215	804+50.00	462	191				0	0	271	208	208	1246	1038
764+50.00	370	248				59	45	63	48	93	326	233	805+50.00	720	176				0	0	544	418	418	465	47
765+50.00	362	246				0	0	116	89	89	355	266	806+50.00	1421	209				0	0	1212	932	932	21	-911
765+50.00	357	241				0	0	116	89	89	374	285	807+50.00	2331	254				0	0	2077	1598	1598	1	-1597
766+50.00	359	239				0	0	120	92	92	368	276	808+50.00	2224	237				0	0	1987	1528	1528	1	-1527
766+50.00	339	227				0	0	112	86	86	347	261	809+50.00	1920	219				0	0	1701	1308	1308	1	-1307
767+50.00	317	214				0	0	103	79	79	335	256	810+50.00	2036	221				0	0	1815	1396	1396	0	-1396
767+50.00	317	210				0	0	107	82	82	314	232	811+50.00	2052	222				0	0	1830	1408	1408	1	-1407
768+50.00	330	210				0	0	120	92	92	251	159	812+50.00	2024	221				0	0	1803	1387	1387	3	-1384
768+50.00	286	156				0	0	130	100	100	218	118	813+50.00	2027	219				0	0	1808	1391	1391	5	-1386
769+50.00	203	94				0	0	109	84	84	299	215	814+50.00	1922	209				0	0	1713	1318	1318	3	-1315
769+50.00	187	94				0	0	93	72	72	444	372	815+50.00	1774	217				0	0	1557	1198	1198	2	-1196
770+50.00	211	101				0	0	110	85	85	548	463	816+50.00	1757	292				0	0	1465	1127	1127	4	-1123
770+50.00	234	103				0	0	131	101	101	584	483	817+50.00	1599	344				0	0	1255	965	965	6	-959
771+50.00	259	105				0	0	154	118	118	588	470	818+50.00	1286	334				0	0	952	732	732	6	-726
771+50.00	287	108				0	0	179	138	138	571	433	819+50.00	1145	354				0	0	791	608	608	7	-601
772+50.00	296	110				0	0	186	143	143	547	404	820+50.00	972	320				0	0	652	502	502	4	-498
772+50.00	296	109				0	0	187	144	144	523	379	821+50.00	737	261				0	0	476	366	366	36	-330
773+50.00	309	112				0	0	197	152	152	480	328	822+50.00	563	251				0	0	312	240	240	141	-99
773+50.00	318	113				0	0	205	158	158	423	265	823+50.00	372	209				0	0	163	125	125	425	300
774+50.00	324	111				0	0	213	164	164	389	225	824+50.00	235	184				0	0	51	39	39	1011	972
774+50.00	362	154				0	0	208	160	160	416	256	825+50.00	222	190				0	0	32	25	25	1388	1363
775+50.00	398	200				0	0	198	152	152	467	315	826+50.00	308	181				0	0	127	98	98	1109	1011
775+50.00	394	201				0	0	193	148	148	498	350	827+50.00	401	172				0	0	229	176	176	724	548
776+50.00	391	198				0	0	193	148	148	473	325	828+50.00	448	167				150	115	131	101	216	558	342
776+50.00	399	198				0	0	201	155	155	443	288	829+50.00	592	250				340	262	2	2	264	820	556
777+50.00	439	216				0	0	223	172	172	430	258	830+50.00	709	330				375	288	4	3	291	1194	903
777+50.00	469	231				0	0	238	183	183	386	203	831+50.00	718	324				391	301	3	2	303	1373	1070
778+50.00	485	254				0	0	231	178	178	369	191	832+50.00	733	327				406	312	0	0	312	1582	1270
778+50.00	490	277				0	0	213	164	164	381	217	833+50.00	739	332				407	313	0	0	313	1727	1414
779+50.00	449	276				0	0	173	133	133	437	304	834+50.00	717	334				384	295	-1	-1	294	1860	1566
779+50.00	399	274				0	0	125	96	96	537	441	835+50.00	667	332				335	258	0	0	258	1985	1727
780+50.00	359	270				0	0	89	68	68	630	562	836+50.00	711	439				272	209	0	0	209	2254	2045
780+50.00	334	268				0	0	66	51	51	692	641	837+50.00	661	438				223	172	0	0	172	2475	2303
781+50.00	317	261				0	0	56	43	43	754	711	838+50.00	523	326				197	152	0	0	152	2556	2404
781+50.00	305	258				0	0	47	36	36	815	779	839+50.00	489	324				165	127	0	0	127	2718	2591
782+50.00	254	206				0	0	48	37	37	794	757	840+50.00	586	434				152	117	0	0	117	2957	2840
782+50.00	200	152				0	0	48	37	37	781	744	841+50.00	736	547				189	145	0	0	145	3095	2950
783+50.00	200	159				0	0	41	32	32	805	773	842+50.00	736	549				187	144	0	0	144	3191	3047
783+50.00	207	161				0	0	46	35	35	795	760	843+50.00	650	544				106	82	0	0	82	3395	3313
784+50.00	209	160				0	0	49	38	38	784	746	844+50.00	599	534				65	50	0	0	50	3527	3477
784+50.00	213	165				0	0	48	37	37	793	756	845+50.00	591	530				61	47	0	0	47	3573	3526
785+50.00	227	162				0	0	65	50	50	800	750	846+50.00	590	532				59	45	-1	-1	44	3550	3506
785+50.00	257	165				0	0	92	71	71	824	753	847+50.00	505	459				47	36	-1	-1	35	3082	3047
786+50.00	285	176				0	0	109	84	84	888	804	848+50.00	334	317				17	13	0	0	13	2268	2255
786+50.00	282	151				0	0	131	101	101	925	824	849+50.00	236	236				0	0	0</				

### TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK
821+00.00	434	281				153	118	0	0	118	2157	2039	853+00.00	716	637				79	61	0	0	61	10550	10489
821+50.00	593	327				266	205	0	0	205	2196	1991	853+50.00	784	725				59	45	0	0	45	11619	11574
822+00.00	642	329				313	241	0	0	241	2057	1816	854+00.00	791	734				57	44	0	0	44	12279	12235
822+50.00	706	331				375	288	0	0	288	1851	1563	854+50.00	802	745				57	44	0	0	44	12745	12701
823+00.00	774	333				441	339	0	0	339	1596	1257	855+00.00	814	716				31	24	67	52	76	13038	12962
823+50.00	842	334				508	391	0	0	391	1365	974	855+50.00	14	10				0	0	4	3	3	360	357
824+00.00	904	335				569	438	0	0	438	1153	715	855+51.40	21	0				0	0	0	21	16	1872	1856
824+50.00	986	392				595	458	-1	-1	457	1024	567	855+59.09	285	236				0	0	49	38	38	5894	5856
825+00.00	1057	448				609	468	0	0	468	963	495	856+00.00	47	47				0	0	0	0	0	212	212
825+50.00	1068	447				311	239	310	238	477	884	407	856+08.06												
826+00.00	1044	445				112	86	487	375	461	837	376	SUBTOTAL	163999	56889	0	0	0	16564	12743	90546	69648	82391	314810	232419
826+50.00	959	387				225	173	347	267	440	811	371	857												
827+00.00	878	328				113	87	437	336	423	776	353	856+98.40	1	0				0	0	1	1	1	5829	5828
827+50.00	843	326				0	0	517	398	398	742	344	857+47.21	18	18				0	0	0	0	0	701	701
828+00.00	786	320				0	0	466	358	358	705	347	857+50.00	32	32				0	0	0	0	0	1265	1265
828+50.00	665	313				0	0	352	271	271	721	450	857+54.89	307	307				0	0	0	0	0	11741	11741
829+00.00	496	296				0	0	200	154	154	914	760	858+00.00	679	679				0	0	0	0	0	13323	13323
829+50.00	468	285				0	0	183	141	141	1011	870	858+50.00	780	719				0	0	61	47	47	13310	13263
830+00.00	509	284				0	0	225	173	173	762	589	859+00.00	919	762				96	74	61	47	121	13357	13236
830+50.00	522	323				0	0	199	153	153	549	396	859+50.00	880	678				203	156	-1	-1	155	12988	12833
831+00.00	544	364				0	0	180	138	138	496	358	860+00.00	882	663				219	168	0	0	168	12376	12208
831+50.00	499	361				0	0	138	106	106	520	414	860+50.00	916	722				194	149	0	0	149	11738	11589
832+00.00	450	356				0	0	94	72	72	554	482	861+00.00	836	695				140	108	1	1	109	10911	10802
832+50.00	467	309				0	0	158	122	122	418	296	861+50.00	663	551				113	87	-1	-1	86	9976	9890
833+00.00	553	261				0	0	292	225	225	207	-18	862+00.00	496	400				96	74	0	0	74	8959	8885
833+50.00	668	258				0	0	410	315	315	99	-216	862+50.00	445	371				74	57	0	0	57	8040	7983
834+00.00	792	255				0	0	537	413	413	48	-365	863+00.00	406	353				53	41	0	0	41	7227	7186
834+50.00	1155	269				0	0	886	682	682	7	-675	863+50.00	418	384				34	26	0	0	26	6509	6483
835+00.00	1705	289				0	0	1416	1089	1089	0	-1089	864+00.00	431	419				13	10	-1	-1	9	6012	6003
835+50.00	2245	299				0	0	1946	1497	1497	0	-1497	864+50.00	328	328				0	0	0	0	0	5234	5234
836+00.00	2737	308				0	0	2429	1868	1868	0	-1868	865+00.00	309	309				0	0	0	0	0	4159	4159
836+50.00	3212	318				0	0	2894	2226	2226	0	-2226	865+50.00	322	322				0	0	0	0	0	3254	3254
837+00.00	3903	329				0	0	3574	2749	2749	0	-2749	866+00.00	243	240				1	1	2	2	3	2332	2329
837+50.00	4695	339				0	0	4356	3351	3351	0	-3351	866+50.00	214	205				4	3	5	4	7	1447	1440
838+00.00	5258	352				0	0	4906	3774	3774	0	-3774	867+00.00	249	195				35	27	19	15	42	672	630
838+50.00	5392	298				0	0	5094	3918	3918	0	-3918	867+50.00	453	223				43	33	187	144	177	217	40
839+00.00	5110	240				0	0	4870	3746	3746	0	-3746	868+00.00	1570	265				11	8	1294	995	1003	52	-951
839+50.00	4669	240				0	0	4429	3407	3407	0	-3407	868+50.00	2762	270				0	0	2492	1917	1917	0	-1917
840+00.00	4171	240				0	0	3931	3024	3024	0	-3024	869+00.00	3220	260				0	0	2960	2277	2277	0	-2277
840+50.00	3269	240				0	0	3029	2330	2330	0	-2330	869+50.00	3604	251				0	0	3353	2579	2579	0	-2579
841+00.00	2078	237				0	0	1841	1416	1416	126	-1290	870+00.00	4483	286				0	0	4197	3228	3228	0	-3228
841+50.00	1294	242				0	0	1052	809	809	336	-473	870+50.00	5385	323				0	0	5062	3894	3894	0	-3894
842+00.00	761	251				0	0	510	392	392	1337	945	871+00.00	5466	319				0	0	5147	3959	3959	0	-3959
842+50.00	356	228				0	0	128	98	98	3413	3315	871+50.00	4950	315				0	0	4635	3565	3565	0	-3565
843+00.00	353	309				0	0	44	34	34	6087	6053	872+00.00	3654	309				0	0	3345	2573	2573	0	-2573
843+50.00	377	363				0	0	14	11	11	7460	7449	872+50.00	2049	300				0	0	1749	1345	1345	221	-1124
844+00.00	316	312				0	0	4	3	3	7450	7447	873+00.00	1278	295				0	0	983	756	756	590	-166
844+50.00	94	94				0	0	0	0	0	4489	4489	873+50.00	1020	319				0	0	701	539	539	1072	533
844+80.00	21	21				0	0	0	0	0	2492	2492	874+00.00	811	400				0	0	411	316	316	1646	1330
845+00.00	232	232				0	0	0	0	0	4772	4772	874+50.00	744	367				0	0	377	290	290	1508	1218
845+50.00	370	370				0	0	0	0	0	4029	4029	875+00.00	791	277				0	0	514	395	395	693	298
846+00.00	390	390				0	0	0	0	0	3436	3436	875+50.00	1155	276				0	0	879	676	676	147	-529
846+50.00	326	326				0	0	0	0	0	3060	3060	876+00.00	1608	275				0	0	1333	1025	1025	85	-940
847+00.00	259	259				0	0	0	0	0	2778	2778	876+50.00	1741	272				0	0	1469	1130	1130	213	-917
847+50.00	371	369				1	1	1	1	2	2759	2757	877+00.00	1408	262				0	0	1146	882	882	382	-500
848+00.00	437	389				48	37	0	0	37	2655	2618	877+50.00	1035	329				0	0	706	543	543	695	152
848+50.00	499	337				162	125	0	0	125	2527	2402	878+00.00	780	327				0	0	453	348	348	1008	660
849+00.00	666	354				312	240	0	0	240	2635	2395	878+50.00	569	249				0	0	320	246	246	1103	857
849+50.00	733	342				391	301	0	0	301	2954	2653	879+00.00	477	244				0	0	233	179	179	1133	954
850+00.00	2840	354				2486	1912	0	0	1912	5623	3711	879+50.00	408	238				0	0	170	131	131	1118	987
850+50.00	3027	560				2465	1896	2	2	1898	6735	4837	880+00.00	348	231				0	0	117	90	90	1011	921
851+00.00	1038	709																							

## TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK
882+50.00	1854	326			0	0	1528	1175	1175	0	-1175		923+00.00	2363	187				189	145	1987	1528	1673	200	-1473
883+00.00	2412	408			0	0	2004	1542	1542	0	-1542		923+50.00	2109	0				381	293	1728	1329	1622	519	-1103
883+50.00	2442	415			0	0	2027	1559	1559	0	-1559		924+00.00	1993	192				192	148	1609	1238	1386	958	-428
884+00.00	2348	466			0	0	1882	1448	1448	0	-1448		924+50.00	1869	388				0	0	1481	1139	1139	1654	515
884+50.00	2082	514			0	0	1568	1206	1206	3	-1203		925+00.00	1733	393				0	0	1340	1031	1031	2797	1766
885+00.00	1698	515			0	0	1183	910	910	100	-810		925+50.00	1689	403				0	0	1286	989	989	3579	2590
885+50.00	1164	401			0	0	763	587	587	405	-182		926+00.00	2123	732				0	0	1391	1070	1070	3531	2461
886+00.00	724	384			0	0	340	262	262	997	735		926+50.00	2669	1058				0	0	1611	1239	1239	2979	1740
886+50.00	595	487			0	0	108	83	83	2089	2006		927+00.00	2896	1069				0	0	1827	1405	1405	3013	1608
887+00.00	613	534			0	0	79	61	61	3898	3837		927+50.00	2589	679				0	0	1910	1469	1469	3664	2195
887+50.00	837	758			0	0	79	61	61	6659	6598		928+00.00	2075	319				0	0	1756	1351	1351	3849	2498
888+00.00	831	799			0	0	32	25	25	9722	9697		928+50.00	1954	349				0	0	1605	1235	1235	3520	2285
888+50.00	729	677			0	0	52	40	40	10195	10155		929+00.00	2086	340				0	0	1746	1343	1343	2827	1484
889+00.00	645	543			0	0	102	78	78	8366	8288		929+50.00	2349	325				0	0	2024	1557	1557	2105	548
889+50.00	403	305			0	0	98	75	75	5894	5819		930+00.00	2502	279				0	0	2223	1710	1710	1473	-237
890+00.00	578	231			0	0	347	267	267	3461	3194		930+50.00	2399	268				0	0	2131	1639	1639	1157	-482
890+50.00	913	242			0	0	671	516	516	2068	1552		931+00.00	2089	282				0	0	1807	1390	1390	1188	-202
891+00.00	1136	242			0	0	894	688	688	1255	567		931+50.00	1837	263				0	0	1574	1211	1211	1139	-72
891+50.00	1503	278			0	0	1225	942	942	843	-99		932+00.00	1812	261				0	0	1551	1193	1193	903	-290
892+00.00	1876	313			0	0	1563	1202	1202	638	-564		932+50.00	1861	263				0	0	1598	1229	1229	605	-624
892+50.00	2103	310			0	0	1793	1379	1379	569	-810		933+00.00	1812	262				0	0	1550	1192	1192	445	-747
893+00.00	2102	307			0	0	1795	1381	1381	629	-752		933+50.00	1754	210				0	0	1544	1188	1188	365	-823
893+50.00	1963	304			0	0	1659	1276	1276	734	-542		934+00.00	1875	201				0	0	1674	1288	1288	167	-1121
894+00.00	1883	305			0	0	1578	1214	1214	786	-428		934+50.00	2071	251				0	0	1820	1400	1400	47	-1353
894+50.00	1741	311			0	0	1430	1100	1100	930	-170		935+00.00	2118	257				0	0	1861	1432	1432	105	-1327
895+00.00	1300	309			0	0	991	762	762	1764	1002		935+50.00	2099	253				0	0	1846	1420	1420	111	-1309
895+50.00	822	356			0	0	466	358	358	3234	2876		936+00.00	2250	259				0	0	1991	1532	1532	32	-1500
896+00.00	609	377			0	0	232	178	178	3804	3626		936+50.00	2486	265				0	0	2221	1708	1708	1	-1707
896+50.00	538	343			0	0	195	150	150	3044	2894		937+00.00	2571	264				0	0	2307	1775	1775	2	-1773
897+00.00	495	335			0	0	160	123	123	2216	2093		937+50.00	2440	229				0	0	2211	1701	1701	5	-1696
897+50.00	497	358			0	0	139	107	107	1956	1849		938+00.00	2307	200				0	0	2107	1621	1621	21	-1600
898+00.00	494	373			0	0	121	93	93	1882	1789		938+50.00	1934	206				0	0	1728	1329	1329	159	-1170
898+50.00	462	354			0	0	108	83	83	1405	1322		939+00.00	1336	202				0	0	1134	872	872	434	-438
899+00.00	534	367			0	0	167	128	128	732	604		939+50.00	979	194				0	0	785	604	604	715	111
899+50.00	745	381			0	0	364	280	280	251	-29		940+00.00	774	234				0	0	540	415	415	1005	590
900+00.00	1127	382			0	0	745	573	573	28	-545		940+50.00	606	281				0	0	325	250	250	1180	930
900+50.00	1633	395			0	0	1238	952	952	0	-952		941+00.00	609	293				0	0	316	243	243	1030	787
901+00.00	2080	401			0	0	1679	1292	1292	0	-1292		941+50.00	770	305				27	21	438	337	358	665	307
901+50.00	2279	395			0	0	1884	1449	1449	1	-1448		942+00.00	939	284				27	21	628	483	504	335	-169
902+00.00	1820	343			0	0	1477	1136	1136	1	-1135		942+50.00	1108	262				0	0	846	651	651	131	-520
902+50.00	1335	299			0	0	1036	797	797	0	-797		943+00.00	1312	268				0	0	1044	803	803	37	-766
903+00.00	1307	298			0	0	1009	776	776	0	-776		943+50.00	1581	271				0	0	1310	1008	1008	7	-1001
903+50.00	1267	282			0	0	985	758	758	0	-758		944+00.00	1787	276				0	0	1511	1162	1162	0	-1162
904+00.00	1177	257			0	0	920	708	708	0	-708		944+50.00	1835	281				0	0	1554	1195	1195	7	-1188
904+50.00	1000	233			0	0	767	590	590	2	-588		945+00.00	1801	282				0	0	1519	1168	1168	30	-1138
905+00.00	806	202			0	0	604	465	465	26	-439		945+50.00	1718	280				0	0	1438	1106	1106	50	-1056
905+50.00													946+00.00	1608	285				0	0	1323	1018	1018	67	-951
SUBTOTAL 912A	122649	35182	0	0	0	1329	1022	86138	66257	67279	266359	199080	946+50.00	1507	297				0	0	1210	931	931	110	-821
915+00.00	1154	360			0	0	794	611	611	1538	927		947+00.00	1379	300				0	0	1079	830	830	172	-658
915+50.00	1273	354			0	0	919	707	707	855	148		947+50.00	1208	302				0	0	906	697	697	262	-435
916+00.00	1460	351			0	0	1109	853	853	387	-466		948+00.00	1026	301				0	0	725	558	558	421	-137
916+50.00	1770	346			0	0	1424	1095	1095	136	-959		948+50.00	857	298				0	0	559	430	430	649	219
917+00.00	2239	341			0	0	1898	1460	1460	26	-1434		949+00.00	708	298				0	0	410	315	315	1000	685
917+50.00	2817	337			0	0	2480	1908	1908	0	-1908		949+50.00	637	324				0	0	313	241	241	1448	1207
918+00.00	3384	333			0	0	3051	2347	2347	0	-2347		950+00.00	611	354				0	0	257	198	198	1808	1610
918+50.00	3837	327			0	0	3510	2700	2700	0	-2700		950+50.00	596	368				0	0	228	175	175	2021	1846
919+00.00	4297	332			0	0	3965	3050	3050	0	-3050		951+00.00	541	329				0	0	212	163	163	2029	1866
919+50.00	4612	344			0	0	4268	3283	3283	0	-3283		951+50.00	428	241				0	0	187	144	144	2201	2057
920+00.00	4556	352			0	0	4204	3234	3234	0	-3234		952+00.00	391	227				0	0	164	126	126</		

## TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUITS TYPE B CUT	UNSUITS TYPE B CUT - 30%	UNSUITS TYPE C CUT	UNSUITS TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUITS TYPE B CUT	UNSUITS TYPE B CUT - 30%	UNSUITS TYPE C CUT	UNSUITS TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	
955+00.00	254	254			0	0	0	0	0	0	4748	4748	984+50.00	506	251			0	0	255	196	196	465	269		
955+50.00	264	264			0	0	0	0	0	0	4964	4964	985+00.00	255	124			0	0	131	101	101	192	91		
956+00.00	276	276			0	0	0	0	0	0	5272	5272	985+25.00													
956+50.00	293	293			0	0	0	0	0	0	5569	5569	SUBTOTAL	17859	10626	0	0	0	54	42	7179	5522	5564	156985	151421	
957+00.00	317	308			0	0	9	7	7	7	5838	5831	1006A													
957+50.00	334	300			0	0	34	26	26	26	6134	6108	1000+00.00	158	158					0	0	0	781	781		
958+00.00	340	287			0	0	53	41	41	41	6571	6530	1000+50.00	188	164					24	18	18	631	613		
958+50.00	355	297			2	2	56	43	45	45	7195	7150	1001+00.00	296	169					127	98	98	325	227		
959+00.00	369	311			11	8	47	36	44	44	7972	7928	1001+50.00	569	167					402	309	309	66	-243		
959+50.00	369	323			22	17	24	18	35	35	8786	8751	1002+00.00	853	224					629	484	484	5	-479		
960+00.00	369	330			30	23	9	7	30	30	9518	9488	1002+50.00	995	286					709	545	545	6	-539		
960+50.00	372	337			32	25	3	2	27	27	10124	10097	1003+00.00	1090	292					798	614	614	7	-607		
961+00.00	375	346			24	18	5	4	22	22	10757	10735	1003+50.00	1139	300					839	645	645	8	-637		
961+50.00	411	388			15	12	8	6	18	18	11359	11341	1004+00.00	1108	304					804	618	618	10	-608		
962+00.00	413	391			5	4	17	13	17	17	11703	11686	1004+50.00	1037	344					693	533	533	120	-413		
962+50.00	387	357			10	8	20	15	23	23	11889	11866	1005+00.00	902	380					522	402	402	219	-183		
963+00.00	396	358			25	19	13	10	29	29	11883	11854	1005+50.00	731	372					359	276	276	255	-21		
963+50.00	356	306			43	33	7	5	38	38	10461	10423	1006+00.00	578	361					217	167	167	365	198		
964+00.00	14	9			2	2	3	2	4	4	643	639	1006+50.00	450	351					99	76	76	524	448		
964+03.63	111	76			0	0	35	27	27	27	4904	4877	1007+00.00	354	314					40	31	31	650	619		
964+50.00													1007+50.00	333	310					23	18	18	804	786		
SUBTOTAL	153822	30922	0	0	0	1037	799	121863	93739	94538	243710	149172	1008+00.00	366	343					23	18	18	1039	1021		
912B													1008+50.00	340	288					52	40	40	1125	1085		
965+50.00	126	49			54	42	23	18	60	60	3803	3743	1009+00.00	391	226					165	127	127	1089	962		
965+76.81	96	61			0	0	35	27	27	27	4441	4414	1009+50.00	466	220					246	189	189	1051	862		
966+00.00	33	16			0	0	17	13	13	13	1325	1312	1010+00.00	518	227					291	224	224	986	762		
966+06.28	303	160			0	0	143	110	110	110	9615	9505	1010+50.00	642	237					405	312	312	860	548		
966+50.00	509	368			0	0	141	108	108	108	11033	10925	1011+00.00	781	318					463	356	356	784	428		
967+00.00	523	366			0	0	157	121	121	121	10783	10662	1011+50.00	832	400					432	332	332	831	499		
967+50.00	578	399			0	0	179	138	138	138	10446	10308	1012+00.00	806	402					404	311	311	831	520		
968+00.00	614	396			0	0	218	168	168	168	9996	9828	1012+50.00	803	401					402	309	309	818	509		
968+50.00	583	353			0	0	230	177	177	177	9556	9379	1013+00.00	831	402					429	330	330	717	387		
969+00.00	546	345			0	0	201	155	155	155	9168	9013	1013+50.00	941	405					536	412	412	476	64		
969+50.00	493	334			0	0	159	122	122	122	8678	8556	1014+00.00	1068	412					656	505	505	269	-236		
970+00.00	457	321			0	0	136	105	105	105	8109	8004	1014+50.00	1210	417					793	610	610	192	-418		
970+50.00	454	310			0	0	144	111	111	111	7515	7404	1015+00.00	1446	420					1026	789	789	120	-669		
971+00.00	449	297			0	0	152	117	117	117	6977	6860	1015+50.00	1799	343					1456	1120	1120	19	-1101		
971+50.00	47	36			0	0	11	8	8	8	823	815	1016+00.00	2098	218					1880	1446	1446	1	-1445		
971+55.00	405	317			0	0	88	68	68	68	7129	7061	1016+50.00	2231	172					2059	1584	1584	0	-1584		
972+00.00	396	277			0	0	119	92	92	92	5808	5716	1017+00.00	2382	172					2210	1700	1700	0	-1700		
972+50.00	340	264			0	0	76	58	58	58	5074	5016	SUBTOTAL	30732	10519	0	0	0	0	20213	15548	15548	15984	436		
973+00.00	283	250			0	0	33	25	25	25	4272	4247	1006B													
973+50.00	264	238			0	0	26	20	20	20	3481	3461	1020+00.00	2574	190					2384	1834	1834	1	-1833		
974+00.00	249	227			0	0	22	17	17	17	2742	2725	1020+50.00	2214	189					2025	1558	1558	1	-1557		
974+50.00	235	217			0	0	18	14	14	14	2121	2107	1021+00.00	1749	188					-717	-552	1200	1	-1199		
975+00.00	218	206			0	0	12	9	9	9	1638	1629	1021+50.00	1309	184					834	-642	865	2	-863		
975+50.00	202	198			0	0	4	3	3	3	1257	1254	1022+00.00	872	146					-792	-609	559	1	-558		
976+00.00	191	190			0	0	1	1	1	1	986	985	1022+50.00	607	110					-168	-129	383	1	-382		
976+50.00	88	37			0	0	51	39	39	39	340	301	1023+00.00	593	110					199	153	371	1	-370		
976+70.00	217	79			0	0	138	106	106	106	512	406	1023+50.00	686	112					80	62	442	0	-442		
977+00.00	435	252			0	0	183	141	141	141	810	669	1024+00.00	877	115					281	216	586	1	-585		
977+50.00	392	233			0	0	159	122	122	122	659	537	1024+50.00	1098	116					412	317	755	1	-754		
978+00.00	388	221			0	0	167	128	128	128	488	360	1025+00.00	1239	118					363	279	862	0	-862		
978+50.00	392	215			0	0	177	136	136	136	368	232	1025+50.00	1263	119					163	125	880	0	-880		
979+00.00	501	253			0	0	248	191	191	191	397	206	1026+00.00	1202	117					-36	-28	834	1	-833		
979+50.00	611	291			0	0	320	246	246	246	408	162	1026+50.00	1454	145					166	128	1007	0	-1007		
980+00.00	579	287			0	0	292	225	225	225	458	233	1027+00.00	1700	174					443	341	1174	1	-1173		
980+50.00	565	285			0	0	280	215	215	215	616	401	1027+50.00	1606	173					125	96	1102	1	-1101		
981+00.00	620	283			0	0	337	259	259	259	703	444	1028+00.00	1601	175					-98	-75	1097	1	-1096		
981+50.00	669	282			0	0	387	298	298	298	694	396	1028+50.00	1671	177					65	50	1149	1	-1148		
982+00.00	656	279			0	0	377	290	290	290	692	402	1029+00.00	1779	175					189	145	1233	1	-1232		
982+50.00	632	273			0	0	359	276	276	276	680	404	1029+50.00	1895	173					722	555	1000	769	1324	1	-1323
983+00.00	623	269			0	0	354	272	272	272	627	355	1030+00.00	1927	172					1755	1350	1350	1	-1349		
983+50.00	595	263																								

### TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE B CUT	UNSUIT TYPE B CUT - 30%	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	
1031+00.00	1674	167		0	0			1507	1159	1159	1	-1158														
1031+50.00	1456	164		0	0			1292	994	994	1	-993														
1032+00.00	1243	161		0	0			1082	832	832	2	-830														
1032+50.00	1051	158		0	0			893	687	687	4	-683														
1033+00.00	882	156		0	0			726	558	558	6	-552														
1033+50.00	731	154		0	0			577	444	444	26	-418														
1034+00.00	588	150		0	0			438	337	337	95	-242														
1034+50.00	489	147		0	0			342	263	263	212	-51														
1035+00.00	433	145		0	0			288	222	222	341	119														
1035+50.00	414	145		0	0			269	207	207	428	221														
1036+00.00	206	36		0	0			170	131	131	202	71														
1036+25.00																										
SUBTOTAL 1037	40932	4931	0	19733	15177	0	0	16268	12514	27691	1337	-26354														
1039+00.00	702	140				0	0	562	432	432	333	-99														
1039+50.00	614	136				0	0	478	368	368	335	-33														
1040+00.00	625	136				0	0	489	376	376	361	-15														
1040+50.00	648	137				0	0	511	393	393	370	-23														
1041+00.00	636	137				0	0	499	384	384	413	29														
1041+50.00	604	136				228	175	240	185	360	468	108														
1042+00.00	566	134				228	175	204	157	332	518	186														
1042+50.00	556	126				0	0	430	331	331	552	221														
1043+00.00	497	123				0	0	374	288	288	604	316														
1043+50.00	413	126				0	0	287	221	221	619	398														
1044+00.00	392	123				0	0	269	207	207	543	336														
1044+50.00	381	120				0	0	261	201	201	441	240														
1045+00.00	385	117				0	0	268	206	206	330	124														
1045+50.00	381	113				0	0	268	206	206	233	27														
1046+00.00	383	111				0	0	272	209	209	158	-51														
1046+50.00	424	110				0	0	314	242	242	85	-157														
1047+00.00	497	109				0	0	388	298	298	25	-273														
1047+50.00	571	108				0	0	463	356	356	1	-355														
1048+00.00	622	107				0	0	515	396	396	1	-395														
1048+50.00	677	104				0	0	573	441	441	0	-441														
1049+00.00	686	98				284	218	304	234	452	0	-452														
1049+50.00	629	93				536	412	0	0	412	0	-412														
1050+00.00	557	88				469	361	0	0	361	0	-361														
1050+50.00	511	85				426	328	0	0	328	1	-327														
1051+00.00	461	83				379	292	-1	-1	291	1	-290														
1051+50.00	401	84				318	245	-1	-1	244	1	-243														
1052+00.00	458	90				368	283	0	0	283	1	-282														
1052+50.00	563	92				424	326	47	36	362	1	-361														
1053+00.00	259	46				188	145	25	19	164	0	-164														
1053+25.00																										
SUBTOTAL GRAND	15099	3212	0	0	0	3848	2960	8039	6184	9144	6395	-2749														
	545092	152281	0	19733	15177	22832	17566	350246	269412	302155	1005580	703425														



# TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK				STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK			
92A														3547+00.00	266	147		104	80	15	12	92	722	630			
1556+75.00	77	62		15	12	0	0	12	270	258				3547+50.00	208	126		82	63	0	0	63	500	437			
1557+00.00	224	120		104	80	0	0	80	377	297				3548+00.00	212	121		91	70	0	0	70	294	224			
1557+50.00	266	109		157	121	0	0	121	156	35				3548+50.00	190	105		85	65	0	0	65	115	50			
1558+00.00	255	100		155	119	0	0	119	65	-54				3549+00.00	337	99		238	183	0	0	183	31	-152			
1558+50.00	243	97		146	112	0	0	112	40	-72				3549+50.00	774	118		656	505	0	0	505		-505			
1559+00.00	208	96		112	86	0	0	86	94	8				3550+00.00	1088	133		955	735	0	0	735		-735			
1559+50.00	178	97		69	53	12	9	62	230	168				3550+50.00	1127	139		988	760	0	0	760		-760			
1560+00.00	165	104		46	35	15	12	47	438	391				3551+00.00	1019	141		877	675	1	1	676		-676			
1560+50.00	143	109		31	24	3	2	26	575	549				3551+50.00	818	141		677	521	0	0	521		-521			
1561+00.00	121	104		18	14	-1	-1	13	596	583				3552+00.00	578	137		441	339	0	0	339		-339			
1561+50.00	107	99		8	6	0	0	6	620	614				3552+50.00	389	138		251	193	0	0	193	34	-159			
1562+00.00	98	93		3	2	2	2	4	645	641				3553+00.00	282	129		153	118	0	0	118	66	-52			
1562+50.00	92	90		0	0	2	2	2	610	608				3553+50.00	236	113		123	95	0	0	95	58	-37			
1563+00.00	90	89		1	1	0	0	1	526	525				3554+00.00	225	111		114	88	0	0	88	61	-27			
1563+50.00	88	84		2	2	2	2	4	419	415				3554+50.00	217	113		104	80	0	0	80	93	13			
1564+00.00	84	79		1	1	4	3	4	470	466				3555+00.00	212	124		81	62	7	5	67	170	103			
1564+50.00	77	75		1	1	1	1	2	467	465				3555+50.00	246	142		69	53	35	27	80	312	232			
1565+00.00	91	78		13	10	0	0	10	296	286				3556+00.00													
1565+50.00	123	82		12	9	29	22	31	181	150				92D	9087	2583	0	6237	4798	267	205	5003	8340	3337			
1566+00.00	192	69				123	95	95	67	-28				4557+00.00													
1566+50.00	246	68				178	137	137	6	-131				4557+50.00	370	154		216	166	0	0	166	141	-25			
1567+00.00	285	79				206	158	158		-158				4558+00.00	512	133		378	291	1	1	292	2	-290			
1567+50.00	366	78				288	222	222		-222				4558+50.00	560	127		433	333	0	0	333		-333			
1568+00.00	447	77				370	285	285		-285				4559+00.00	643	134		509	392	0	0	392		-392			
1568+50.00	531	77				454	349	349		-349				4559+50.00	757	143		614	472	0	0	472		-472			
1569+00.00	647	80				567	436	436		-436				4560+00.00	899	166		733	564	0	0	564	16	-548			
1569+50.00	781	84				697	536	536		-536				4560+50.00	1071	170		809	622	92	71	693	41	-652			
1570+00.00	917	84				833	641	641		-641				4561+00.00	1185	170		923	710	92	71	781	51	-730			
1570+50.00														4561+50.00	1219	168		982	755	69	53	808	66	-742			
SUBTOTAL	7142	2463	0	894	688	3785	2913	3601	7148	3547				4562+00.00	1244	161		971	747	112	86	833	83	-750			
92B														4562+50.00	1296	165		1047	805	84	65	870	82	-788			
2543+50.00	93	81				12	9	9	1768	1759				4563+00.00	1322	158		1085	835	79	61	896	75	-821			
2544+00.00	117	84				33	25	25	1857	1832				4563+50.00	1317	169		1111	855	37	28	883	75	-808			
2544+50.00	217	91				126	97	97	1373	1276				4564+00.00	1287	179		1108	852	0	0	852	73	-779			
2545+00.00	429	164				265	204	204	942	738				4564+50.00	1140	165		974	749	1	1	750	157	-593			
2545+50.00	593	217				376	289	289	671	382				4565+00.00	1075	162		913	702	0	0	702	196	-506			
2546+00.00	653	218				435	335	335	329	-6				4565+50.00	1138	166		972	748	0	0	748	114	-634			
2546+50.00	638	175				463	356	356	156	-200				4566+00.00	1154	158		996	766	0	0	766	57	-709			
2547+00.00	576	130				446	343	343	151	-192				4566+50.00	1219	151		1063	818	5	4	822	15	-807			
2547+50.00	462	123				339	261	261	90	-171				4567+00.00	1298	143		1151	885	4	3	888		-888			
2548+00.00	337	113		87	67	137	105	172	83	-89				4567+50.00	1361	137		1225	942	-1	-1	941		-941			
2548+50.00	212	103		110	85	-1	-1	84	97	13				4568+00.00	1428	131		1298	998	-1	-1	997		-997			
2549+00.00	184	100		84	65	0	0	65	79	14				4568+21.33	643	27		284	218	332	255	473		-473			
2549+50.00	226	99		127	98	0	0	98	32	-66				SUBTOTAL	24138	3437	0	19795	15227	906	697	15924	1244	-14680			
2550+00.00	243	98		145	112	0	0	112	9	-103				170A													
2550+50.00	243	102		142	109	-1	-1	108	8	-100				5566+41.10	90	11				79	61	61		-61			
2551+00.00	217	105		112	86	0	0	86	23	-63				5566+50.00	539	125				414	318	318		-318			
2551+50.00	210	106		104	80	0	0	80	24	-56				5567+00.00	618	118				500	385	385		-385			
2552+00.00	240	107		133	102	0	0	102	9	-93				5567+50.00	684	115				569	438	438		-438			
2552+50.00	267	108		158	122	1	1	123	1	-122				5568+00.00	738	116				622	478	478		-478			
2553+00.00	273	108		164	126	1	1	127		-127				5568+50.00	754	119				635	488	488		-488			
2553+50.00	292	108		184	142	0	0	142		-142				5569+00.00	715	121				594							

### TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK		
5575+00.00	524	110				414	318	318		-318	7565+45.16												
5575+50.00	480	101				379	292	292	1	-291	SUBTOTAL 170D	7574	2775	0	3450	2654	1349	1038	3692	17372	13680		
5576+00.00	441	99		165	127	177	136	263	12	-251	8564+41.41	39	0	12			27	21	21	24	3		
5576+50.00	425	98		327	252	0	0	252	18	-234	8564+50.00	313	0	134			179	138	138	117	-21		
5577+00.00	422	95		326	251	1	1	252	24	-228	8565+00.00	378	0	126			252	194	194	34	-160		
5577+50.00	400	93		307	236	0	0	236	50	-186	8565+50.00	348	60	62			226	174	174	29	-145		
5578+00.00	340	94		143	110	103	79	189	90	-99	8566+00.00	278	117				161	124	124	62	-62		
5578+50.00	283	100				183	141	141	138	-3	8566+50.00	236	115				121	93	93	97	4		
5579+00.00											8567+00.00	221	116				105	81	81	148	67		
SUBTOTAL 170B	14109	2792	0	1268	975	10049	7730	8705	401	-8304	8567+50.00	214	119				95	73	73	214	141		
6551+00.00	180	112				68	52	52	624	572	8568+00.00	214	123				91	70	70	285	215		
6551+50.00	193	115				78	60	60	710	650	8568+50.00	219	115				104	80	80	338	258		
6552+00.00	200	120				80	62	62	872	810	8569+00.00	230	117				113	87	87	394	307		
6552+50.00	222	123		58	45	41	32	77	970	893	8569+50.00	252	128				124	95	95	445	350		
6553+00.00	262	127		135	104	0	0	104	941	837	8570+00.00	229	123				106	82	82	514	432		
6553+50.00	302	131		77	59	94	72	131	881	750	8570+50.00	200	122				78	60	60	607	547		
6554+00.00	327	134				193	148	148	834	686	8571+00.00	203	121				82	63	63	660	597		
6554+50.00	342	139				203	156	156	797	641	8571+50.00	203	107				96	74	74	656	582		
6555+00.00	359	143				216	166	166	745	579	8572+00.00	171	64				107	82	82	578	496		
6555+50.00	379	144				235	181	181	674	493	8572+50.00	180	74				106	82	82	538	456		
6556+00.00	410	147				263	202	202	580	378	8573+00.00	229	114				115	88	88	510	422		
6556+50.00	432	151				281	216	216	476	260	8573+50.00	244	113				131	101	101	409	308		
6557+00.00	433	153				280	215	215	393	178	8574+00.00	259	111				148	114	114	304	190		
6557+50.00	422	154				268	206	206	352	146	8574+50.00	272	108				164	126	126	224	98		
6558+00.00	411	150				261	201	201	339	138	8575+00.00	289	104				185	142	142	160	18		
6558+50.00	374	141				233	179	179	332	153	8575+50.00	302	93				209	161	161	106	-55		
6559+00.00	311	136				175	135	135	335	200	8576+00.00	311	87				224	172	172	83	-89		
6559+50.00	242	129				113	87	87	355	268	8576+50.00												
6560+00.00	173	118				55	42	42	360	318	SUBTOTAL GRAND	6034	2351	334	0	0	3349	2577	2577	7536	4959		
6560+50.00	126	104				22	17	17	318	301		83459	22675	334	34885	26835	25565	19665	46500	62842	16342		
6561+00.00	106	97				9	7	7	257	250													
6561+50.00	106	98				8	6	6	213	207													
6562+00.00	111	99				12	9	9	194	185													
6562+50.00	118	102				16	12	12	222	210													
6563+00.00	138	113				25	19	19	311	292													
6563+50.00																							
SUBTOTAL 170C	6679	3180	0	270	208	3229	2482	2690	13085	10395													
7552+78.66	77	19				58	45	45	355	310													
7553+00.00	175	92				83	64	64	996	932													
7553+50.00	118	91				27	21	21	1373	1352													
7554+00.00	127	97				30	23	23	1458	1435													
7554+50.00	202	110				92	71	71	1282	1211													
7555+00.00	246	116				130	100	100	1235	1135													
7555+50.00	249	120				129	99	99	1272	1173													
7556+00.00	241	121				120	92	92	1314	1222													
7556+50.00	237	123				114	88	88	1313	1225													
7557+00.00	235	124				111	85	85	1247	1162													
7557+50.00	242	138				104	80	80	1134	1054													
7558+00.00	237	148		39	30	50	38	68	1001	933													
7558+50.00	221	141		76	58	4	3	61	867	806													
7559+00.00	225	140		78	60	7	5	65	750	685													
7559+50.00	204	115		87	67	2	2	69	612	543													
7560+00.00	217	103		114	88	0	0	88	463	375													
7560+50.00	266	119		147	113	0	0	113	329	216													
7561+00.00	277	116		161	124	0	0	124	213	89													
7561+50.00	299	116		182	140	1	1	141	118	-23													
7562+00.00	327	109		218	168	0	0	168	38	-130													
7562+50.00	363	96		267	205	0	0	205	2	-203													
7563+00.00	418	89		329	253	0	0	253		-253													
7563+50.00	500	88		412	317	0	0	317		-317													
7564+00.00	590	92		499	384	-1	-1	383		-383													
7564+50.00	676	102		569	438	5	4	442		-442													
7565+00.00	605	50		272	209	283	218	427		-427													
7565+45.16																							

## TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

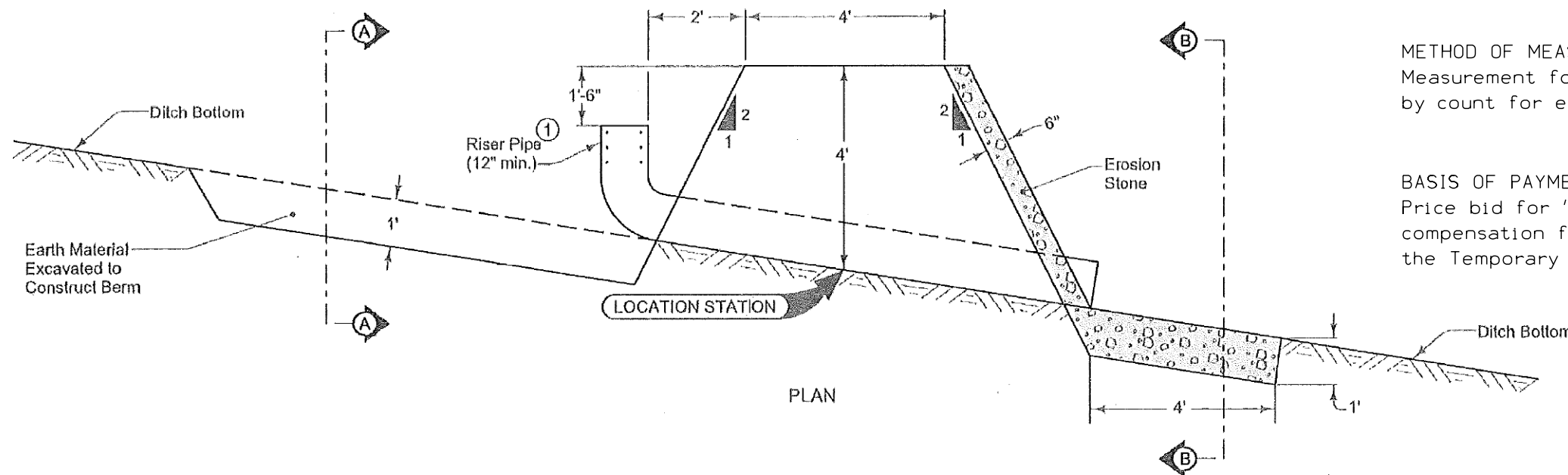
Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK	
145A											8970+50.00	97	0				97	75	75	117	42	
2803+74.91	56	15				41	32	32	8	-24	8971+00.00	90	0				90	69	69	31	-38	
2804+00.00	101	50				51	39	39	55	16	8971+35.03											
2804+50.00	147	46				101	78	78	89	11	SUBTOTAL	3943	0		2383	1834	1560	1201	3035	5231	2196	
2805+00.00	228	62				166	128	128	68	-60	175TH											
2805+50.00	272	78				194	149	149	34	-115	9971+35.03	69	0				69	53	53	9	-44	
2806+00.00	284	85				199	153	153	20	-133	9971+50.00	219	35				184	142	142	70	-72	
2806+50.00	224	81				143	110	110	42	-68	9972+00.00	208	70				138	106	106	78	-28	
2807+00.00	157	77				80	62	62	95	33	9972+50.00	207	70				137	105	105	81	-24	
2807+50.00	156	80				76	58	58	129	71	9973+00.00	185	69				116	89	89	95	6	
2808+00.00	199	87				112	86	86	131	45	9973+50.00	164	61				103	79	79	101	22	
2808+50.00	241	93				148	114	114	132	18	9974+00.00	161	61				100	77	77	100	23	
2809+00.00	305	99				206	158	158	115	-43	9974+50.00	172	68				104	80	80	96	16	
2809+50.00	396	106				290	223	223	88	-135	9975+00.00	178	68				110	85	85	92	7	
2810+00.00	453	110				343	264	264	74	-190	9975+50.00	175	67				108	83	83	90	7	
2810+50.00	476	112				364	280	280	73	-207	9976+00.00	173	67				106	82	82	89	7	
2811+00.00	469	114				355	273	273	89	-184	9976+50.00	164	66				98	75	75	97	22	
2811+50.00	422	113				309	238	238	125	-113	9977+00.00	160	66				94	72	72	97	25	
2812+00.00	356	111				245	188	188	186	-2	9977+50.00	161	65				96	74	74	90	16	
2812+50.00	348	112				236	182	182	218	36	9978+00.00	155	65				90	69	69	94	25	
2813+00.00	377	115				262	202	202	217	15	9978+50.00	153	65				88	68	68	94	26	
2813+50.00	387	117				270	208	208	228	20	9979+00.00	154	65				89	68	68	91	23	
2814+00.00	376	118				258	198	198	258	60	9979+50.00	160	65				95	73	73	87	14	
2814+50.00	333	117				216	166	166	313	147	9980+00.00	162	65				97	75	75	85	10	
2815+00.00	271	115				156	120	120	396	276	9980+50.00	163	66				97	75	75	84	9	
2815+50.00	205	111				94	72	72	512	440	9981+00.00	166	66				100	77	77	80	3	
2816+00.00	189	111		46	35	32	25	60	560	500	9981+50.00	157	60				97	75	75	82	7	
2816+50.00	238	137		101	78	0	0	78	538	460	9982+00.00	134	58				76	58	58	97	39	
2817+00.00	284	164		121	93	-1	-1	92	553	461	9982+50.00	108	61				47	36	36	123	87	
2817+50.00	296	169		65	50	62	48	98	639	541	9983+00.00	93	59				34	26	26	137	111	
2818+00.00	205	144		0	0	61	47	47	785	738	9983+50.00	93	57				36	28	28	137	109	
2818+50.00											9984+00.00	105	58				47	36	36	125	89	
SUBTOTAL 145A	8451	3049	0	333	256	5069	3900	4156	6770	2614	9984+50.00	127	61				66	51	51	102	51	
145B											9985+00.00	169	64				105	81	81	69	-12	
2820+50.00	74	28				46	35	35	337	302	9985+50.00	217	66				151	116	116	30	-86	
2821+00.00	130	67				63	48	48	287	239	9986+00.00	231	67				164	126	126	19	-107	
2821+50.00	113	81				32	25	25	228	203	9986+50.00	192	65				127	98	98	48	-50	
2822+00.00	110	83				27	21	21	183	162	9987+00.00	140	62				78	60	60	80	20	
2822+50.00											9987+50.00	117	60				57	44	44	96	52	
SUBTOTAL 170TH	427	259	0	0	0	168	129	129	1035	906	9988+00.00	131	61				70	54	54	85	31	
8959+00.00	168	0		92	71	76	58	129	171	42	9988+50.00	168	65				103	79	79	58	-21	
8959+50.00	98	0		79	61	19	15	76	112	36	9989+00.00	230	68				162	125	125	24	-101	
8960+00.00	131	0		121	93	10	8	101	82	-19	9989+50.00	299	71				228	175	175	1	-174	
8960+50.00	89	0		77	59	12	9	68	44	-24	9990+00.00	332	74				258	198	198	1	-197	
8961+00.00	21	0		15	12	6	5	17	22	5	9990+50.00	354	78				276	212	212	7	-205	
8961+50.00	15	0		13	10	2	2	12	30	18	9991+00.00	371	81				290	223	223	23	-200	
8962+00.00	203	0		147	113	56	43	156	115	-41	9991+50.00	341	80				261	201	201	59	-142	
8962+50.00	484	0		348	268	136	105	373	343	-30	9992+00.00	270	79				191	147	147	128	-19	
8963+00.00	503	0		357	275	146	112	387	474	87	9992+50.00	196	79				117	90	90	231	141	
8963+50.00	331	0		221	170	110	85	255	390	135	9993+00.00	128	73				55	42	42	357	315	
8964+00.00	208	0		127	98	81	62	160	330	170	9993+50.00	101	72				29	22	22	418	396	
8964+50.00	163	0		95	73	68	52	125	334	209	9994+00.00	130	77				53	41	41	351	310	
8965+00.00	147	0		93	72	54	42	114	334	220	9994+50.00	182	78				104	80	80	230	150	
8965+50.00	144	0		98	75	46	35	110	328	218	9995+00.00	214	76				138	106	106	142	36	
8966+00.00	150	0		96	74	54	42	116	330	214	9995+50.00	235	74				161	124	124	96	-28	
8966+50.00	169	0		101	78	68	52	130	341	211	9996+00.00	299	77				222	171	171	62	-109	
8967+00.00	176	0		102	78	74	57	135	339	204	9996+50.00	345	82				263	202	202	53	-149	
8967+50.00	95	0		57	44	38	29	73	237	164	9997+00.00	327	82				245	188	188	77	-111	
8968+00.00	15	0		15	12	0	0	12	142	130	9997+50.00	264	80				184	142	142	133	-9	
8968+50.00	16	0		16	12	0	0	12	141	129	9998+00.00	217	79				138	106	106	188	82	
8969+00.00	87	0		31	24	56	43	67	140	73	9998+50.00	221	81				140	108	108	207	99	
8969+50.00	168	0		46	35	122	94	129	127	-2	9999+00.00	193	79				114	88	88	267	179	
8970+00.00	81	0		20	15	61	47	62	65	3	10000+00.00	135	62				73	56	56	237	181	
8970+20.00	94	0		16	12	78	60	72	112	40	10000+50.00	96	46				50	38	38	102	64	
8970+50.00											10001+00.00	99	45				54	42	42	39	-3	

# TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Road Plans EW-101 and EW-102.

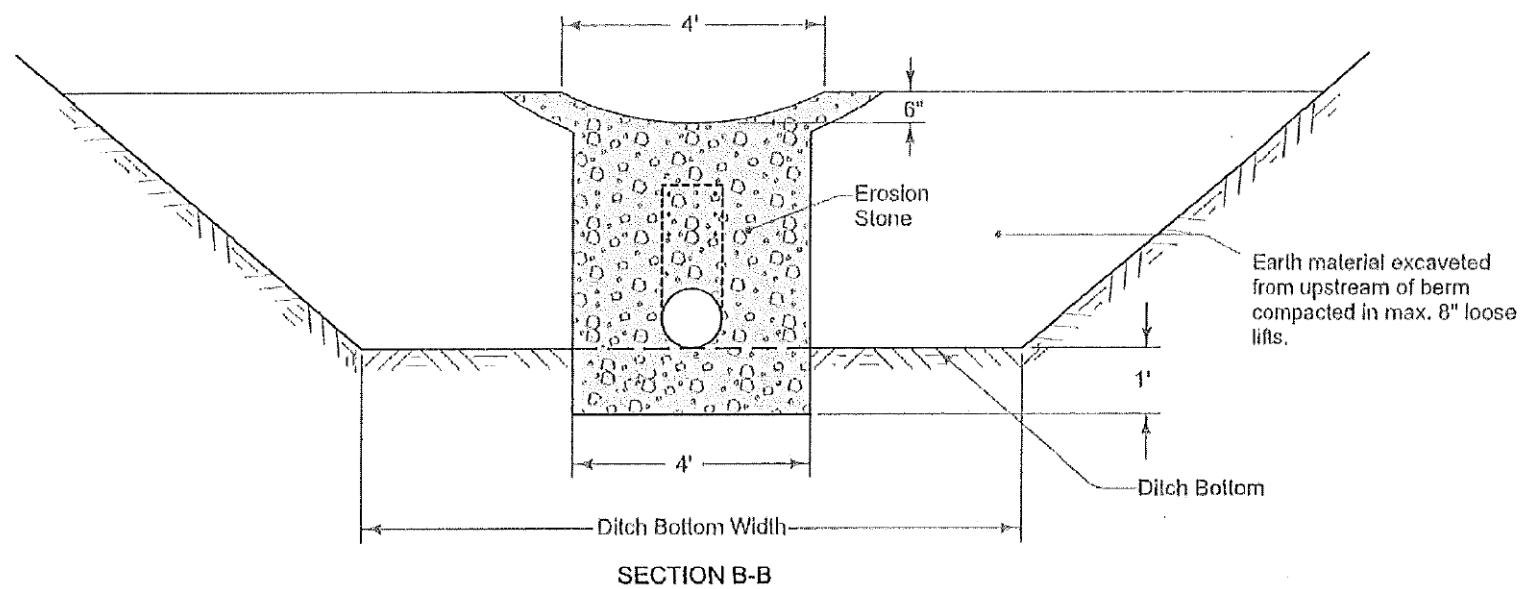
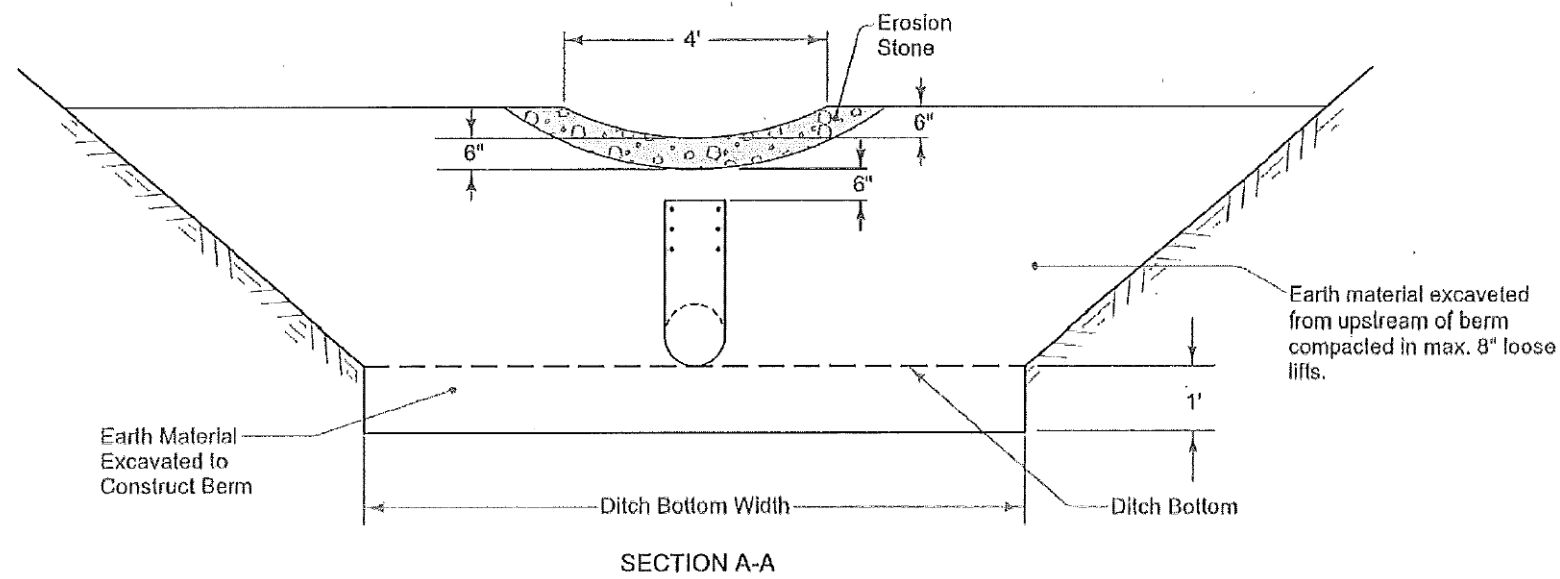
STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK				STATION	TOTAL CUT	TOPSOIL CUT	TOPSOIL TYPE C CUT	UNSUIT TYPE C CUT	UNSUIT TYPE C CUT - 30%	CLASS 10 SUITABLE CUT	CLASS10 SUITABLE (CUT - 30%)	CLASS 10 AVAILABLE WITH SHRINK	TOTAL FILL	TOTAL FILL MINUS CUT W/ SHRINK				
10001+00.00														430+00.00	999	166					833	641	641	2	-639			
SUBTOTAL DET905	11270	3987	0	0	0	7283	5602	5602	6521	919				430+50.00	964	164					800	615	615	2	-613			
301+26.75	181	48				133	102	102	1	-101				431+00.00	903	162					741	570	570	2	-568			
301+50.00	441	115				326	251	251	2	-249				431+50.00	778	156					622	478	478	2	-476			
302+00.00	447	117				330	254	254	2	-252				432+00.00	618	150					468	360	360	2	-358			
302+50.00	408	119				289	222	222	2	-220				432+50.00	449	140					309	238	238	5	-233			
303+00.00	360	121				239	184	184	2	-182				433+00.00	359	111					248	191	191	5	-186			
303+50.00	336	125				211	162	162	2	-160				433+50.00	347	88					259	199	199	2	-197			
304+00.00	337	120				217	167	167	2	-165				434+00.00	337	88					249	192	192	2	-190			
304+50.00	325	124				201	155	155	2	-153				434+50.00	345	90					255	196	196	2	-194			
305+00.00	342	142				200	154	154	3	-151				435+00.00	397	99					298	229	229	2	-227			
305+50.00	414	156				258	198	198	3	-195				435+50.00	506	118					388	298	298	2	-296			
306+00.00	532	175				357	275	275	2	-273				436+00.00	429	119					310	238	238	2	-236			
306+50.00	608	196				412	317	317	6	-311				436+50.00	299	107					192	148	148	2	-146			
307+00.00														437+00.00	302	106					196	151	151	2	-149			
SUBTOTAL DET985	4731	1558	0	0	0	3173	2441	2441	29	-2412				437+50.00	262	106					156	120	120	3	-117			
406+50.00	113	72				41	32	32	40	8				438+00.00														
407+00.00	152	84				68	52	52	68	16				SUBTOTAL GRAND	34009	10413	0	0	0	23596	18150	18150	4564	-13586				
407+50.00	183	92				91	70	70	91	21				62831	19266	0	2716	2090	40849	31423	33513	24150	-9363					
408+00.00	191	97				94	72	72	104	32																		
408+50.00	183	101				82	63	63	120	57																		
409+00.00	166	107				59	45	45	145	100																		
409+50.00	142	112				30	23	23	175	152																		
410+00.00	142	129				13	10	10	231	221																		
410+50.00	164	147				17	13	13	270	257																		
411+00.00	186	158				28	22	22	262	240																		
411+50.00	216	167				49	38	38	226	188																		
412+00.00	259	174				85	65	65	180	115																		
412+50.00	247	169				78	60	60	168	108																		
413+00.00	188	157				31	24	24	196	172																		
413+50.00	165	152				13	10	10	208	198																		
414+00.00	205	153				52	40	40	117	77																		
414+50.00	492	167				325	250	250	20	-230																		
415+00.00	944	190				754	580	580	2	-578																		
415+50.00	1184	211				973	748	748	2	-746																		
416+00.00	1206	225				981	755	755	3	-752																		
416+50.00	1152	231				921	708	708	3	-705																		
417+00.00	1069	233				836	643	643	3	-640																		
417+50.00	989	232				757	582	582	3	-579																		
418+00.00	967	232				735	565	565	3	-562																		
418+50.00	1034	235				799	615	615	3	-612																		
419+00.00	1081	237				844	649	649	3	-646																		
419+50.00	992	232				760	585	585	3	-582																		
420+00.00	784	223				561	432	432	6	-426																		
420+50.00	618	216				402	309	309	32	-277																		
421+00.00	586	213				373	287	287	48	-239																		
421+50.00	647	214				433	333	333	27	-306																		
422+00.00	766	217				549	422	422	9	-413																		
422+50.00	815	218				597	459	459	3	-456																		
423+00.00	709	213				496	382	382	12	-370																		
423+50.00	540	202				338	260	260	43	-217																		
424+00.00	392	191				201	155	155	113	-42																		
424+50.00	284	180				104	80	80	213	133																		
425+00.00	218	171				47	36	36	288	252																		
425+50.00	199	167				32	25	25	302	277																		
426+00.00	208	167				41	32	32	275	243																		
426+50.00	233	170				63	48	48	242	194																		
427+00.00	295	177				118	91	91	182	91																		
427+50.00	420	187				233	179	179	70	-109																		
428+00.00	687	200				487	375	375	3	-372																		
428+50.00	1005	212				793	610	610	3	-607																		
429+00.00	1179	217				962	740	740	3	-737																		
429+50.00	1118	192				926	712	712	2	-710																		



METHOD OF MEASUREMENT:  
Measurement for "Temporary Sediment Control Device" will be by count for each Temporary Sediment Control Device.

BASIS OF PAYMENT:  
Price bid for "Temporary Sediment Control Device" is full compensation for furnishing, installing, and constructing the Temporary Sediment Control Device as shown.

① Ensure Riser Pipe remains vertical.



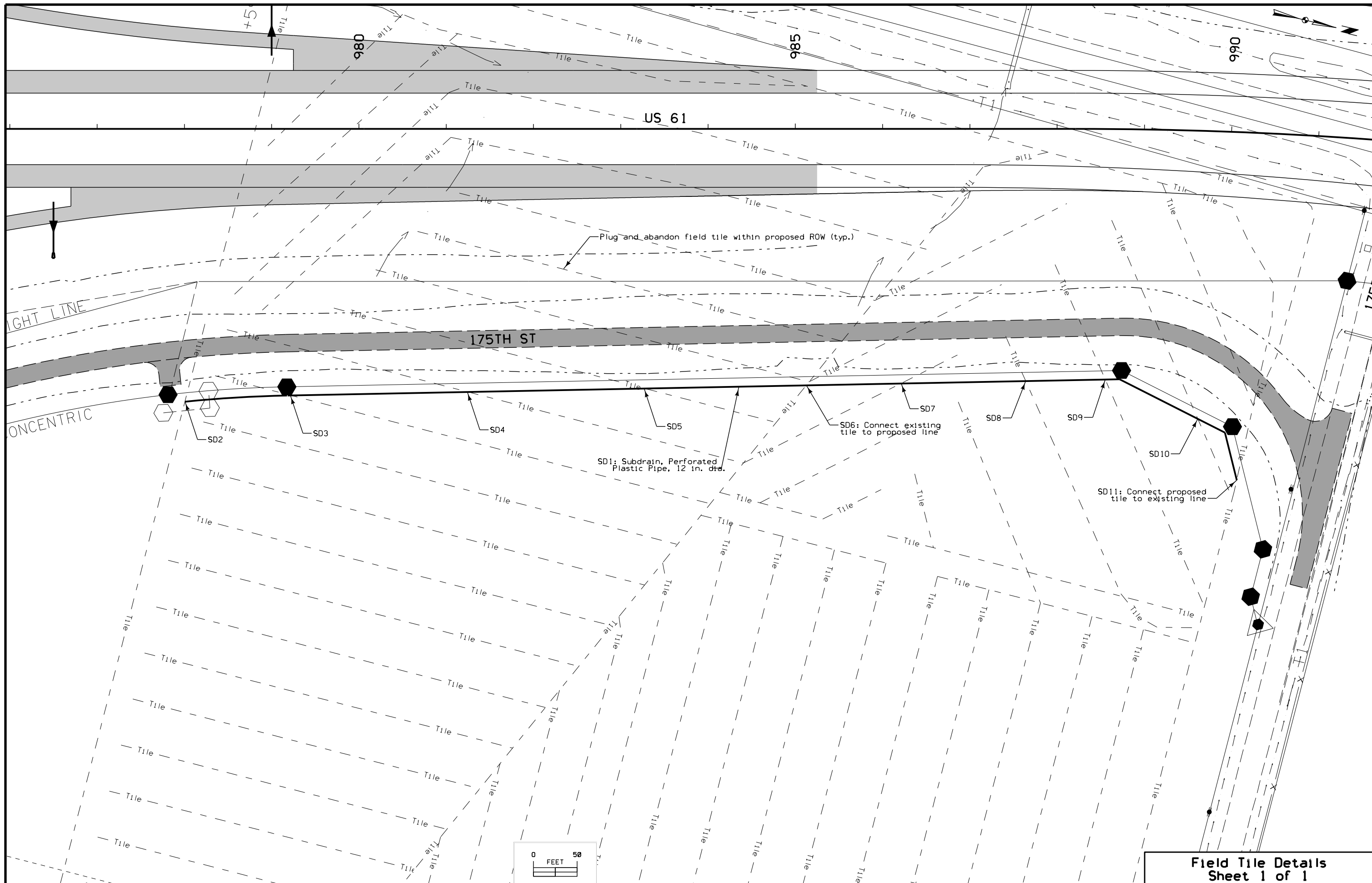
Possible Contract Items:  
Temporary Sediment Control Device

Incidental to Temporary Sediment Control Device:  
Erosion Stone  
Pipe  
Excavated Earth Material

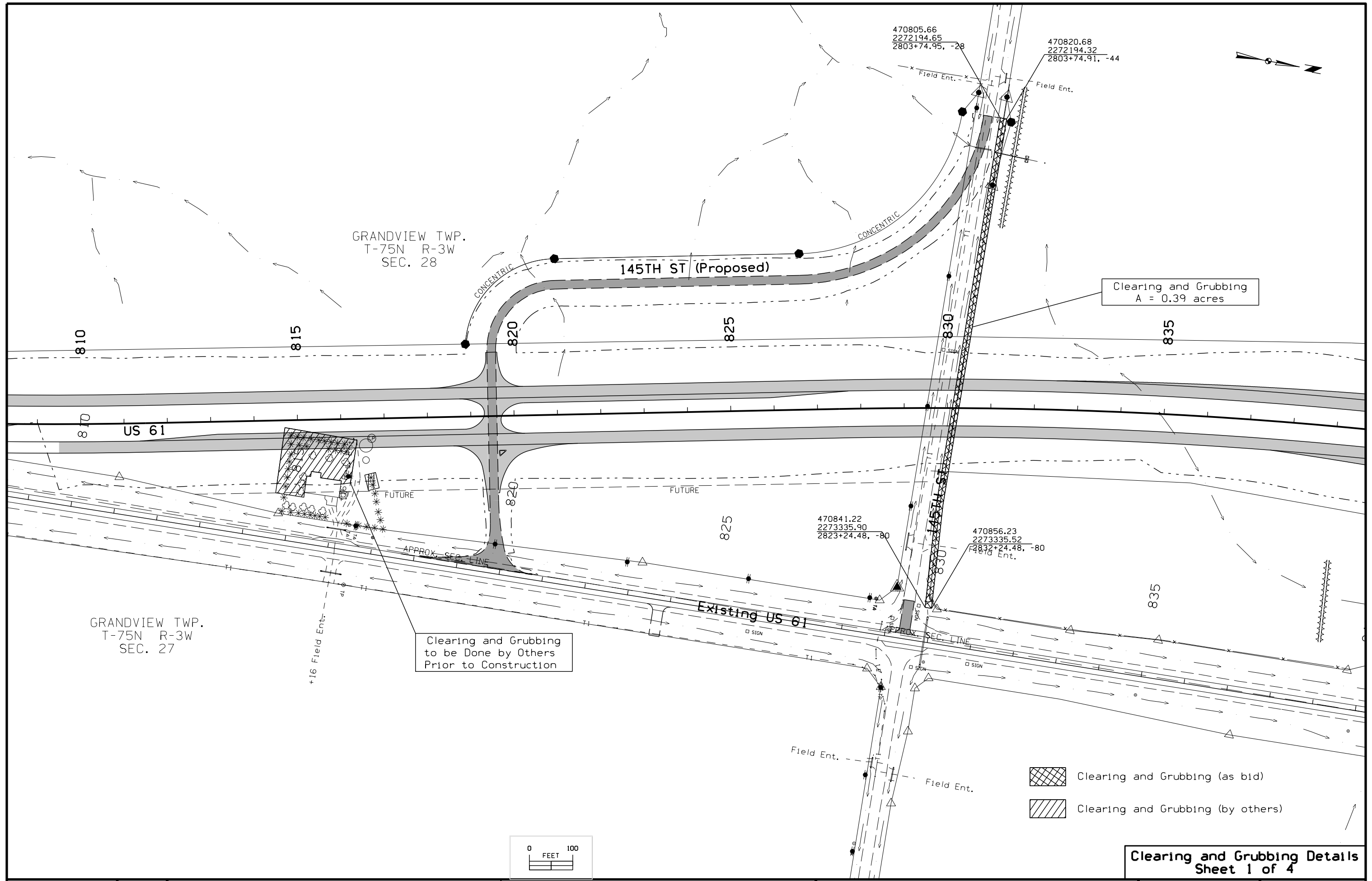
Possible Tabulation  
100-30

**TEMPORARY SEDIMENT CONTROL DEVICE**





**Field Tile Details**  
Sheet 1 of 1





GRANDVIEW TWP.  
T-75N R-3W  
SEC. 28

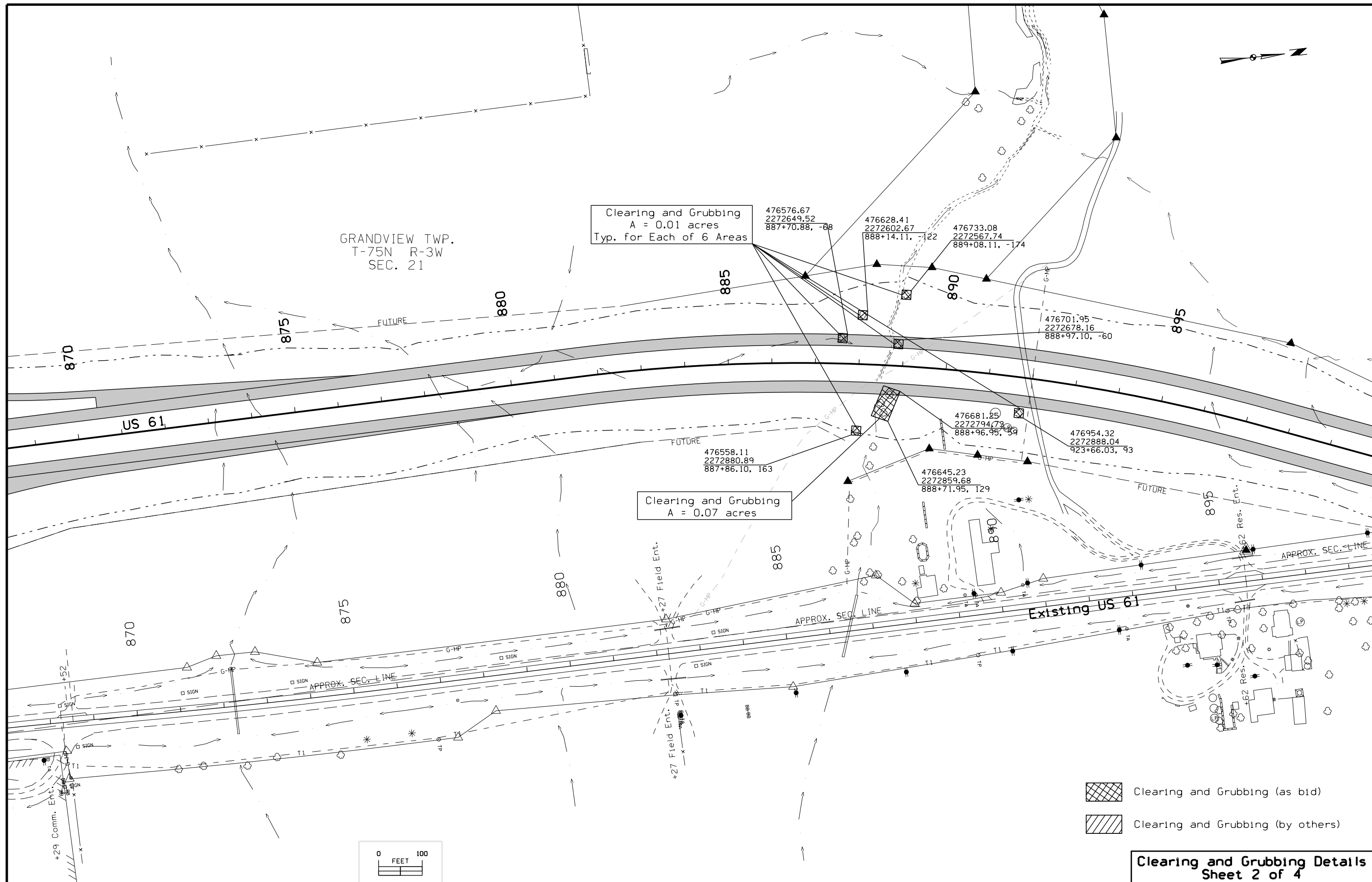
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 27

Clearing and Grubbing  
A = 0.39 acres

Clearing and Grubbing  
to be Done by Others  
Prior to Construction

-  Clearing and Grubbing (as bid)
-  Clearing and Grubbing (by others)



Clearing and Grubbing Details  
Sheet 1 of 4



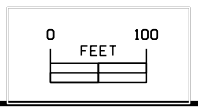
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 21

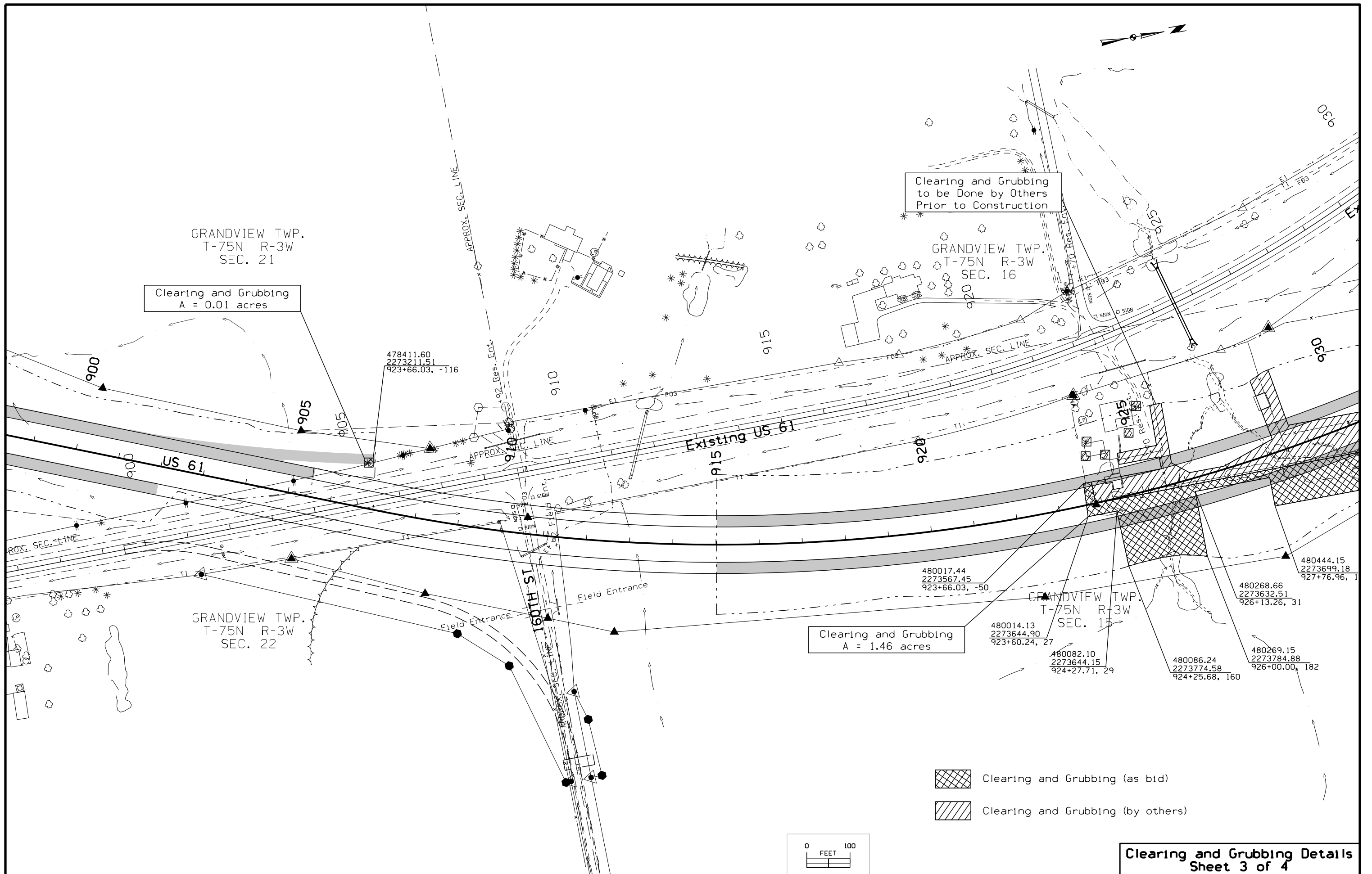
Clearing and Grubbing  
A = 0.01 acres  
Typ. for Each of 6 Areas

Clearing and Grubbing  
A = 0.07 acres

-  Clearing and Grubbing (as bid)
-  Clearing and Grubbing (by others)

Clearing and Grubbing Details  
Sheet 2 of 4





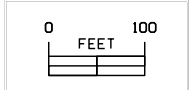


Clearing and Grubbing  
A = 0.01 acres

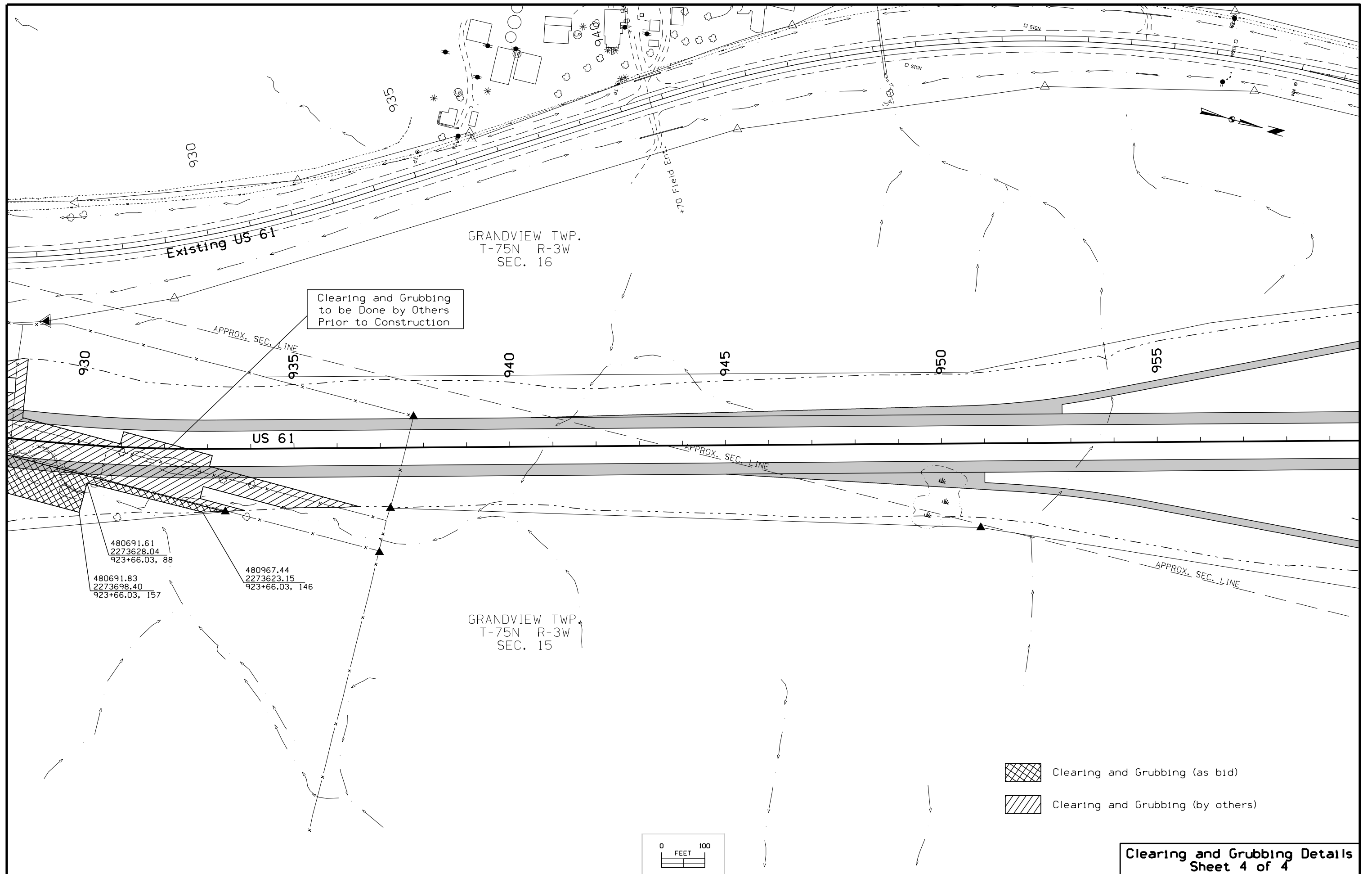
Clearing and Grubbing  
to be Done by Others  
Prior to Construction

Clearing and Grubbing  
A = 1.46 acres



-  Clearing and Grubbing (as bid)
-  Clearing and Grubbing (by others)

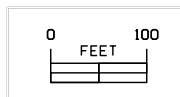


Clearing and Grubbing Details  
Sheet 3 of 4



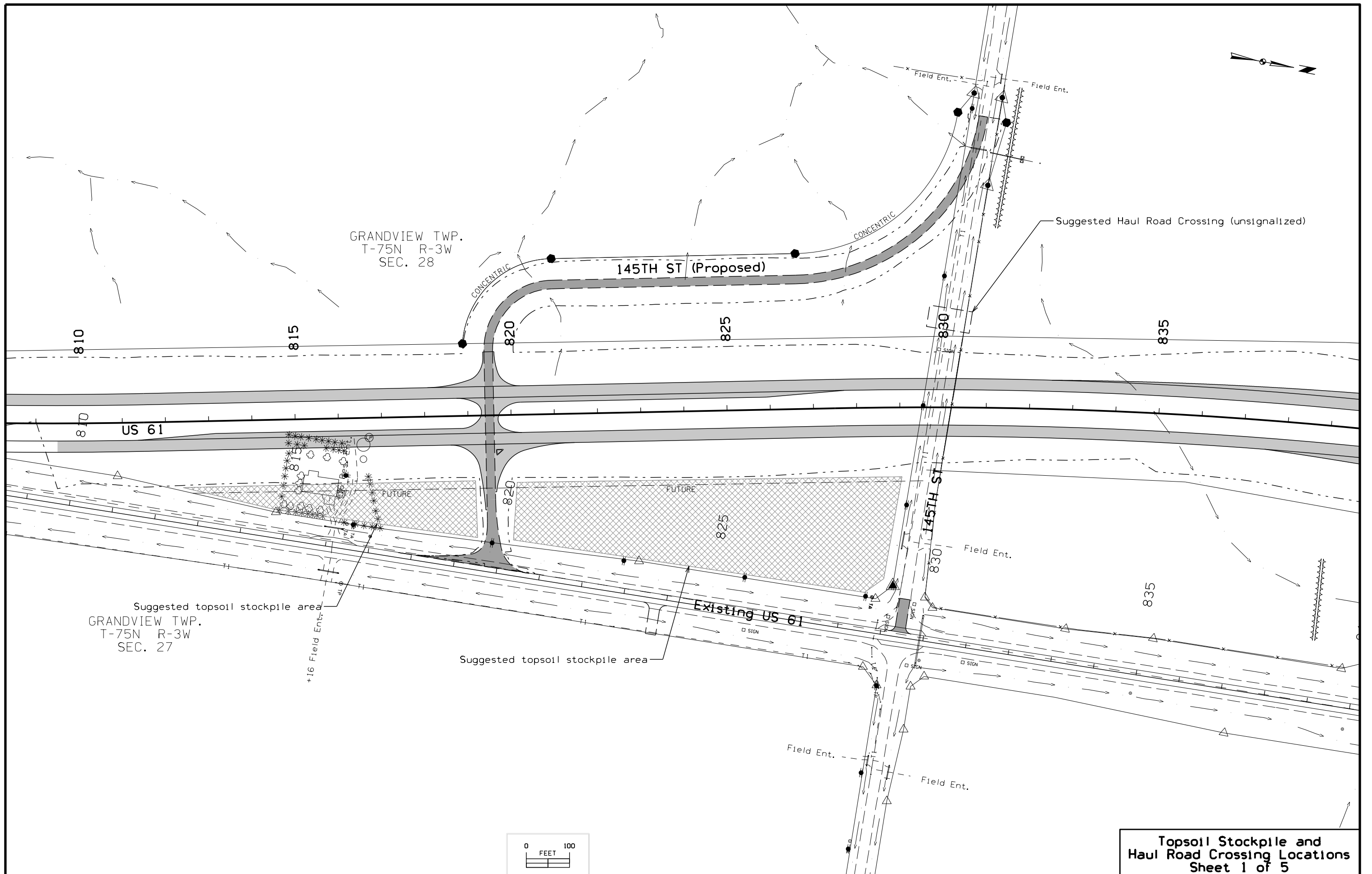
Clearing and Grubbing  
to be Done by Others  
Prior to Construction

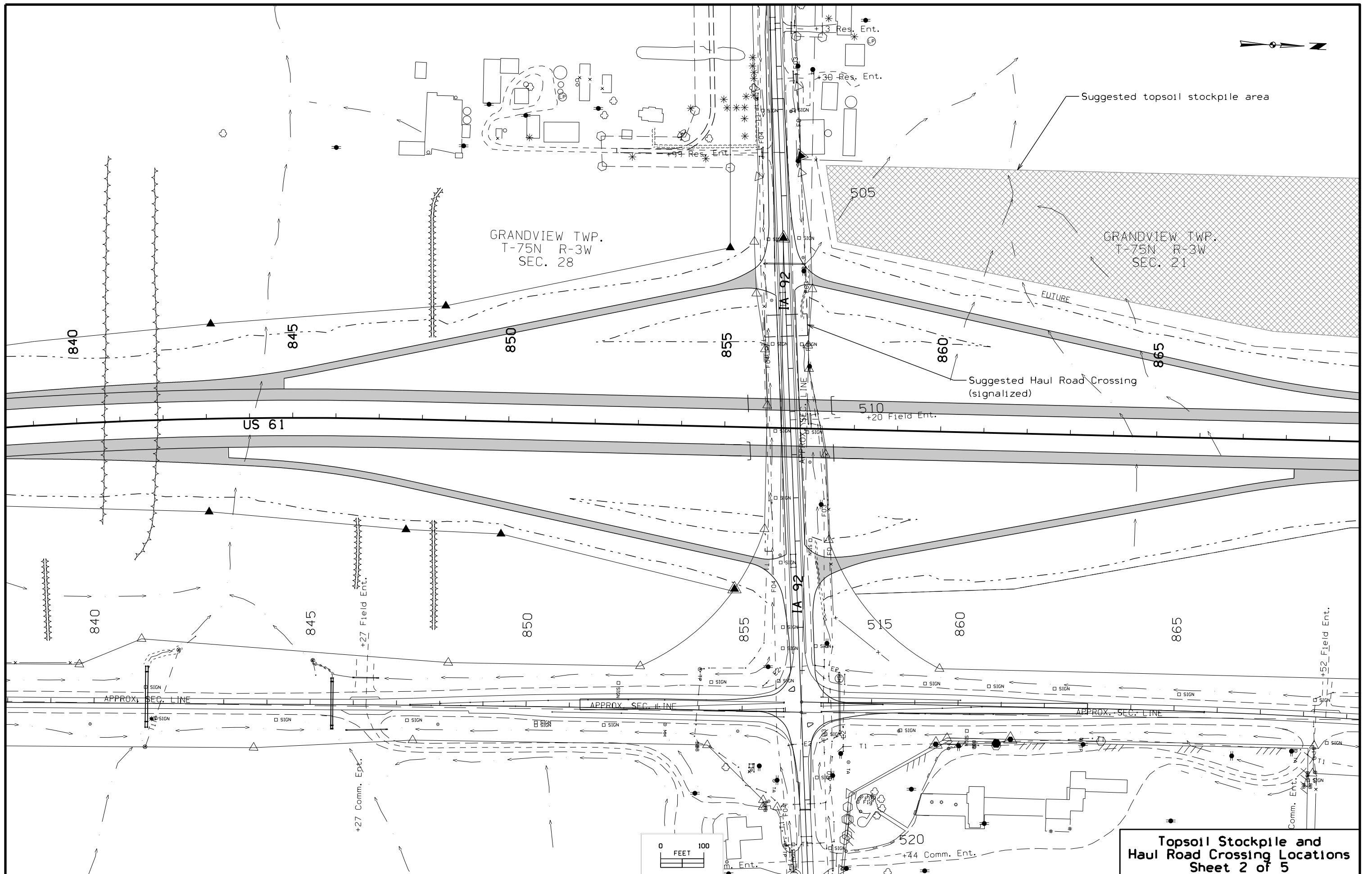
-  Clearing and Grubbing (as bid)
-  Clearing and Grubbing (by others)



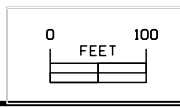
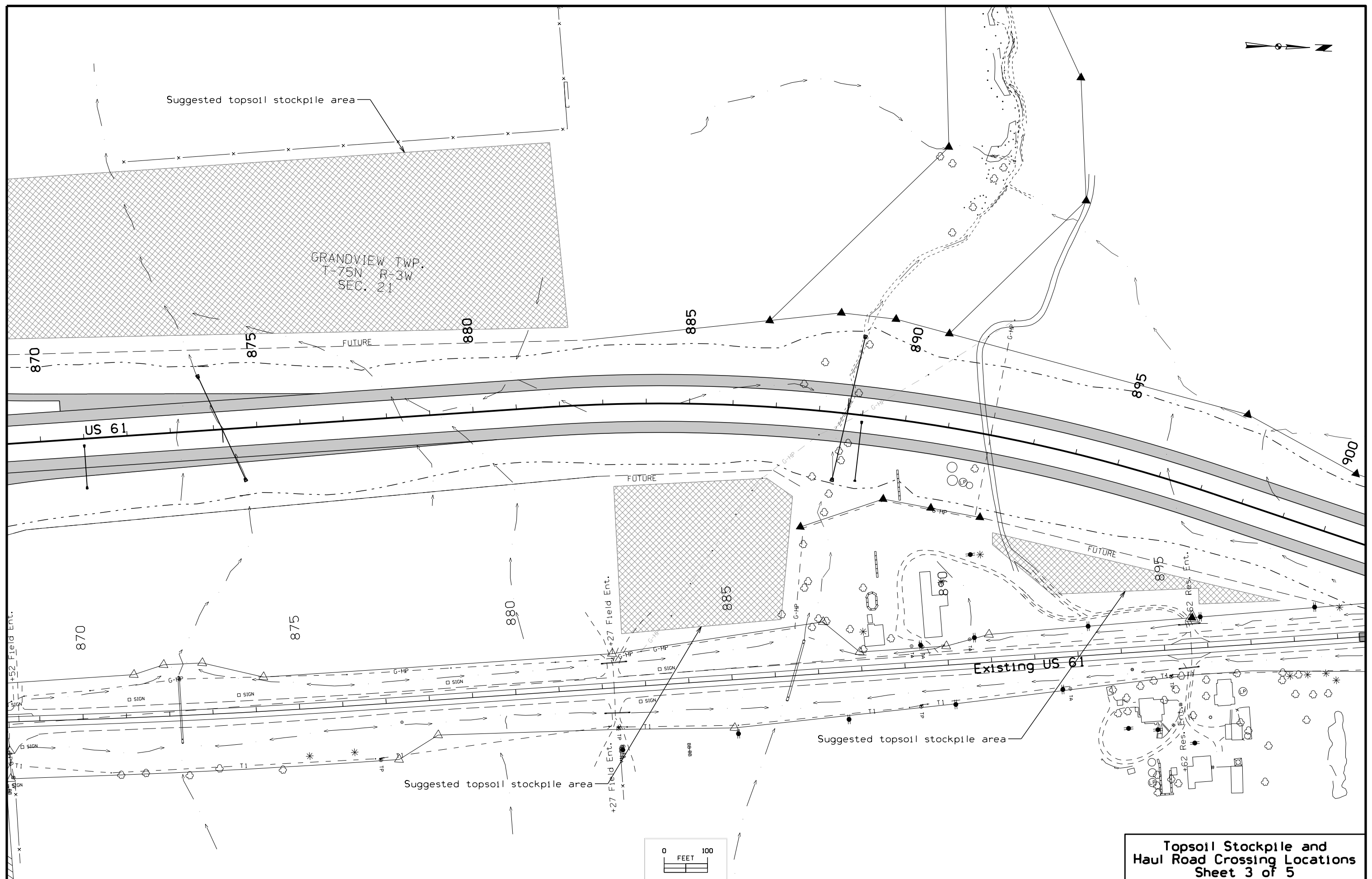
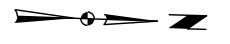
**Clearing and Grubbing Details**  
Sheet 4 of 4





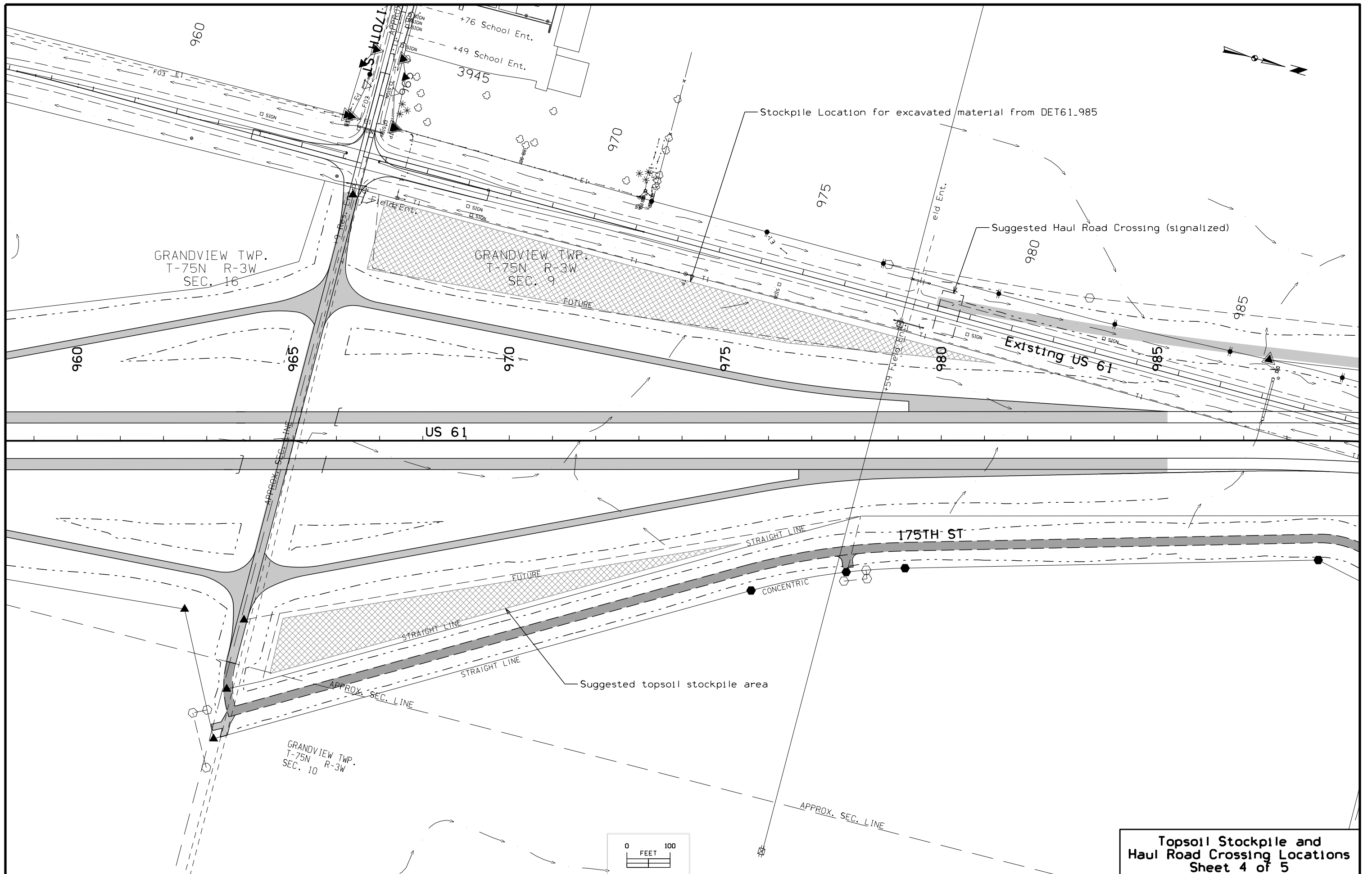


**Topsoil Stockpile and  
Haul Road Crossing Locations  
Sheet 2 of 5**

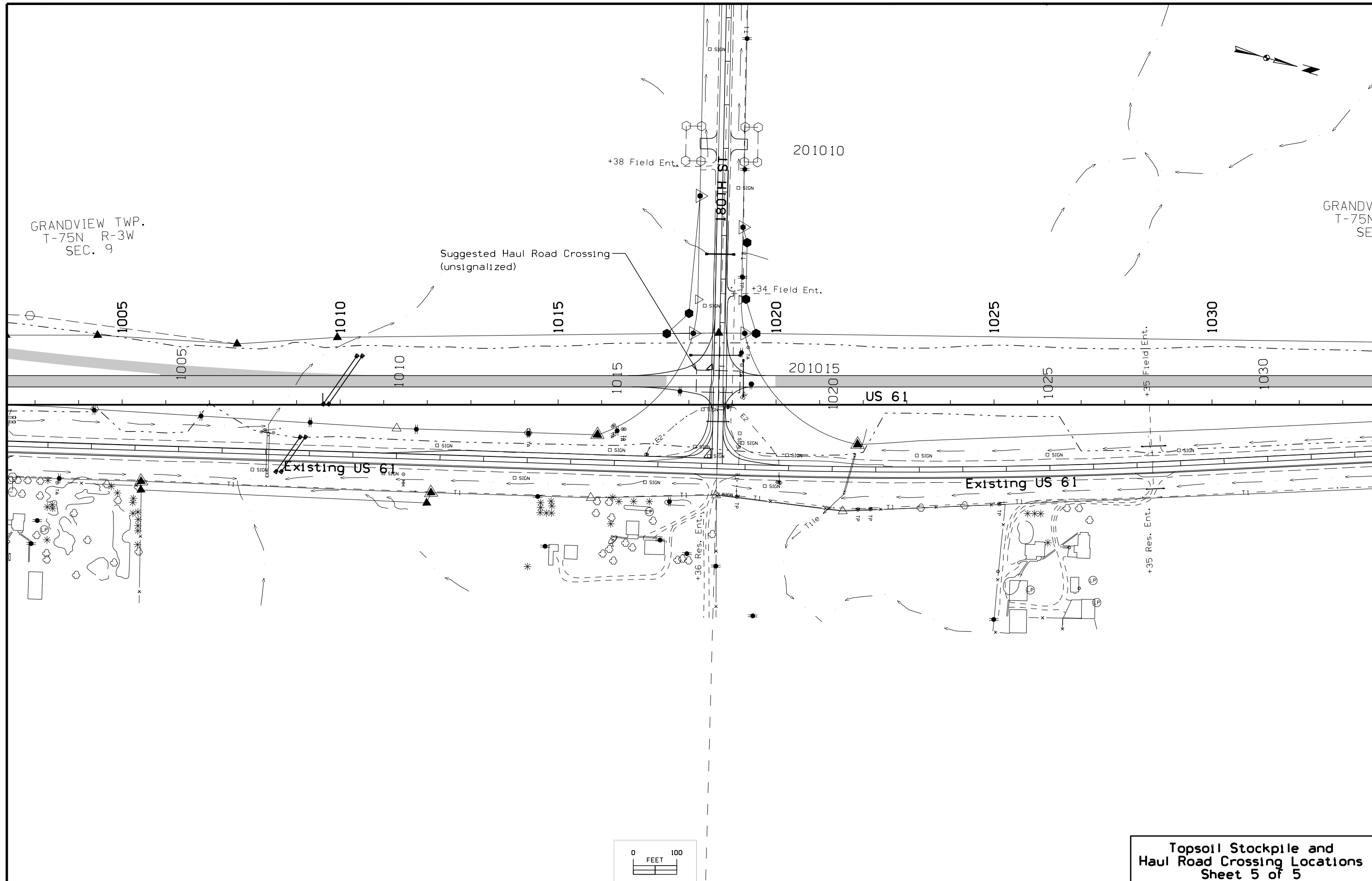


**Topsoil Stockpile and  
Haul Road Crossing Locations  
Sheet 3 of 5**

FILE NO.	ENGLISH	DESIGN TEAM Van Dyke \ HR Green, Inc.	LOUISA COUNTY	PROJECT NUMBER NHSX-061-3(57)--3H-58	SHEET NUMBER U.9
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Topsoil Stockpile and  
Haul Road Crossing Locations  
Sheet 4 of 5



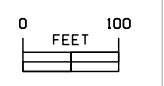
GRANDVIEW TWP.  
T-75N R-3W  
SEC. 9

GRANDVIEW TWP.  
T-75N  
SEC. 9

Suggested Haul Road Crossing  
(unsignalized)

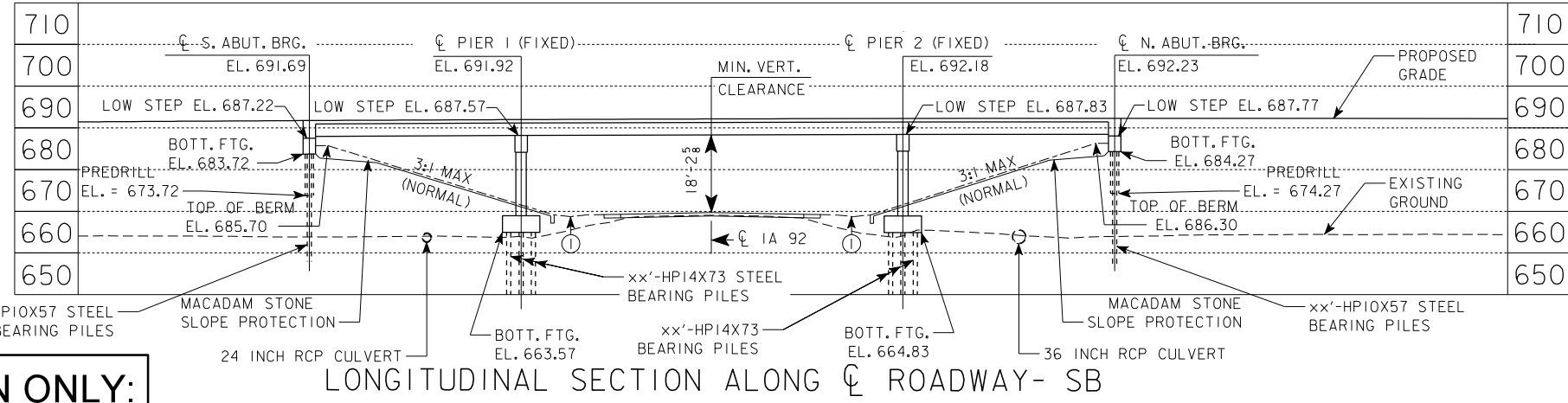
Existing US 61

Existing US 61

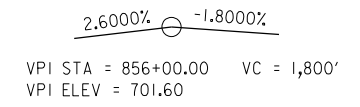


Topsoil Stockpile and  
Haul Road Crossing Locations  
Sheet 5 of 5

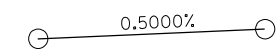
NOTE: TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.



- ① EW-211 GRADING
- ② MEASURE FROM EDGE OF DRIVING LANE TO FACE OF PIER COLUMN.



PROPOSED PROFILE GRADE US 61



PROPOSED PROFILE GRADE IA 92

MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 856+50.49, 36.92' LT  
 OVERHEAD ELEVATION = 691.84  
 DEPTH OF SUPERSTRUCTURE = 3.83'  
 IA 92 STATION = 510+01.39  
 IA 92 ELEVATION = 669.79  
 MINIMUM VERTICAL CLEARANCE = 18.22'

TRAFFIC ESTIMATE

2016 AADT	5,629	V.P.D.
2036 AADT	7,677	V.P.D.
202.0HV		V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALS		

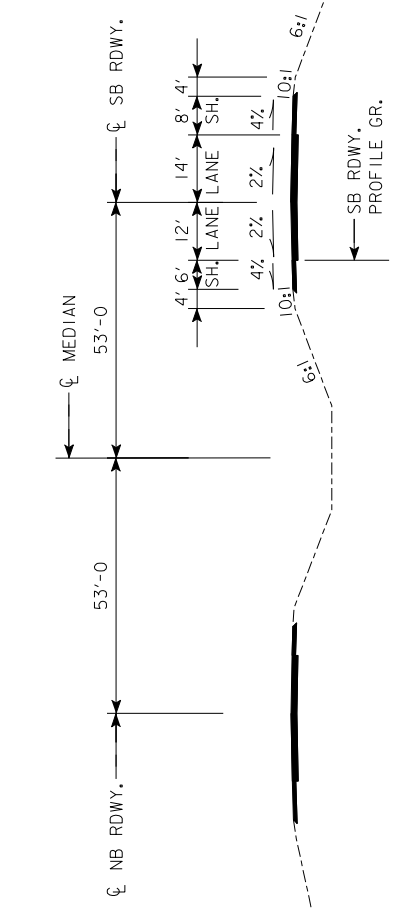
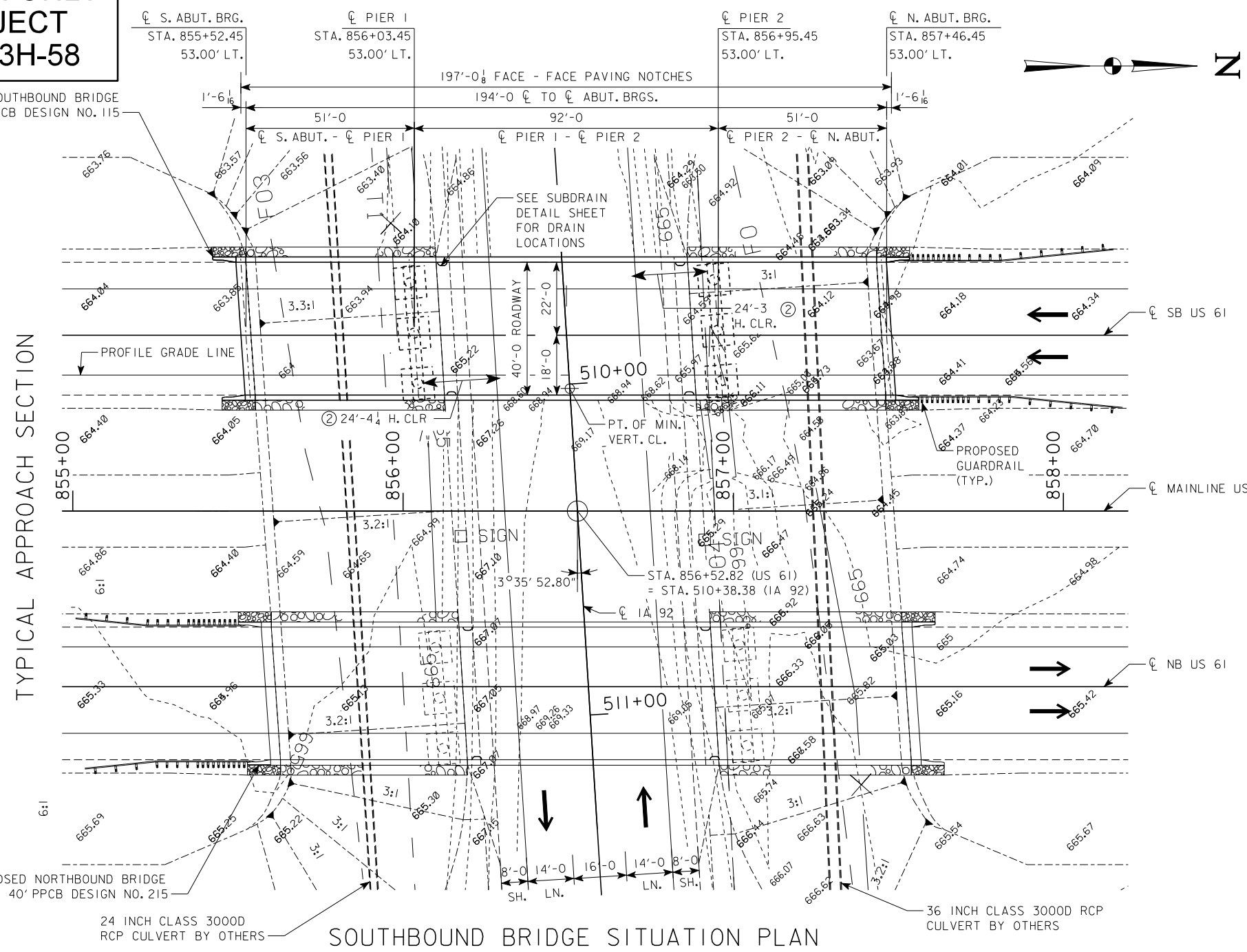
LOCATION

SOUTHBOUND U.S. 61 OVER IA 92  
 T-75 N R-3 W  
 SECTION 28  
 GRANDVIEW TOWNSHIP  
 LOUISA COUNTY  
 FHWA# 700245  
 LATITUDE 41.276543°  
 LONGITUDE -91.199562°

PRELIMINARY

DESIGN FOR 4° SKEW (R.A.)  
**194'-0" x 40' PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE**  
 51'-0" END SPANS 92'-0" INTERIOR SPAN  
**SOUTHBOUND SITUATION PLAN**  
 STA. 856+49.45, 53.00' LT AUGUST, 2014  
 LOUISA COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 3 OF 28 FILE NO. 30755 DESIGN NO. 115

**FOR INFORMATION ONLY:  
 REFER TO PROJECT  
 NHSX-061-3(70)--3H-58**



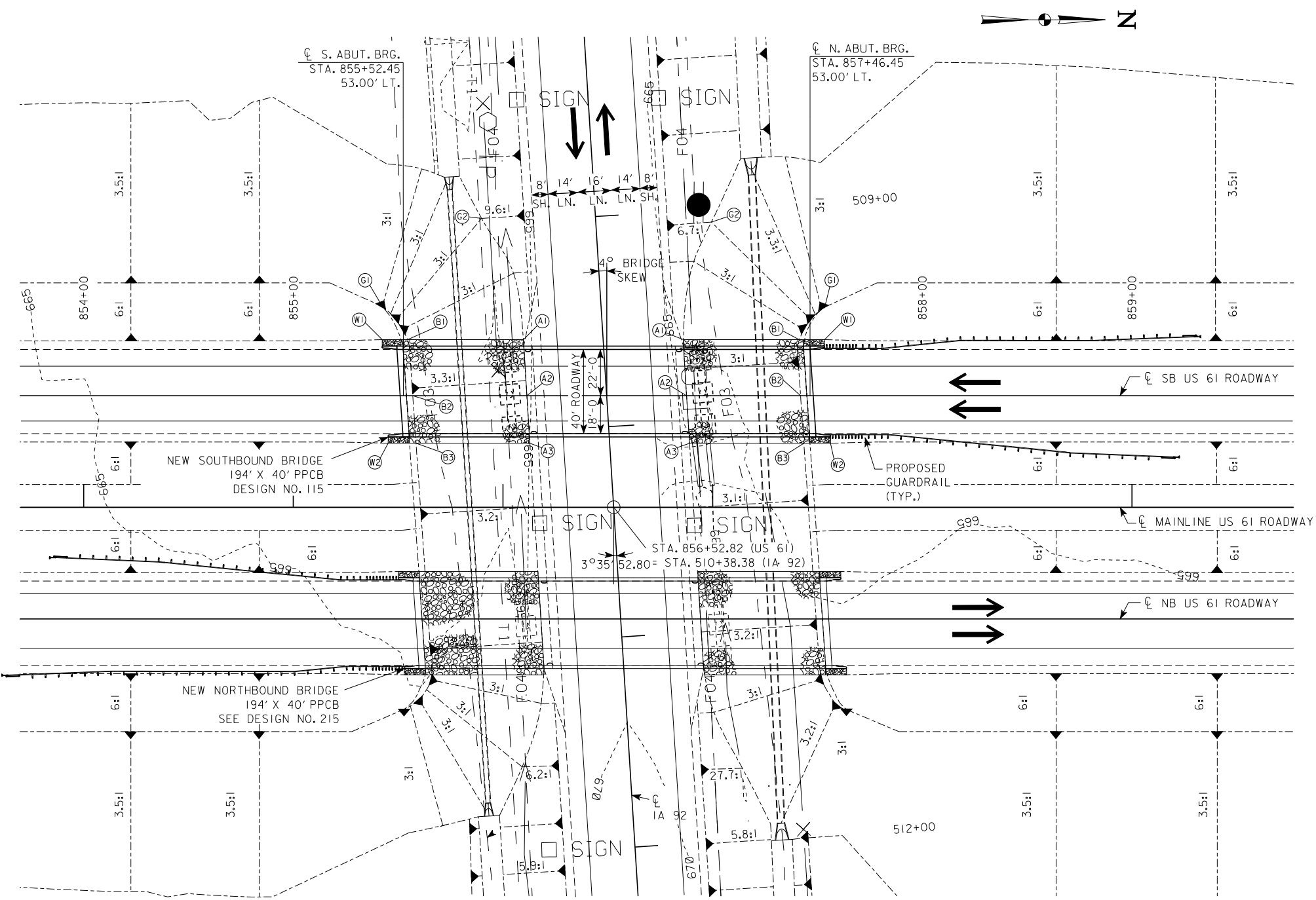
SOUTHBOUND BRIDGE SITUATION PLAN



BERM SLOPE LOCATION TABLE SOUTHBOUND BRIDGE						
SOUTH ABUTMENT			NORTH ABUTMENT			
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	856+09.73	79.58' LT	668.88	856+86.09	79.58' LT	668.90
A2	856+11.42	53.00' LT	669.01	856+87.54	53.00' LT	669.03
A3	856+12.83	30.42' LT	669.12	856+88.98	30.42' LT	669.15
B1	855+54.47	79.58' LT	685.70	857+41.31	79.58' LT	686.30
B2	855+56.96	53.00' LT	685.70	857+41.94	53.00' LT	686.30
B3	855+58.54	30.42' LT	685.70	857+43.52	30.42' LT	686.30
G1	855+42.40	95.38' LT	685.70	857+53.41	94.99' LT	686.30
G2	855+88.76	137.09' LT	665.79	856+99.42	135.45' LT	664.96
W1	855+42.40	79.58' LT	690.95	857+53.41	79.58' LT	691.55
W2	855+45.20	30.42' LT	691.08	857+56.21	30.42' LT	691.67

W - END WING / EROSION STONE  
BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE

**UTILITIES LEGEND:**  
 FO - FIBER OPTIC - WINDSTREAM  
 FO3 - FIBER OPTIC - PAETEC  
 FO4 - FIBER OPTIC - MUTUAL TEL. CO. OF MORNING SUN, IA  
 T1 - TELEPHONE - WINDSTREAM  
 ● - POWER POLE - EASTERN IOWA LIGHT AND POWER

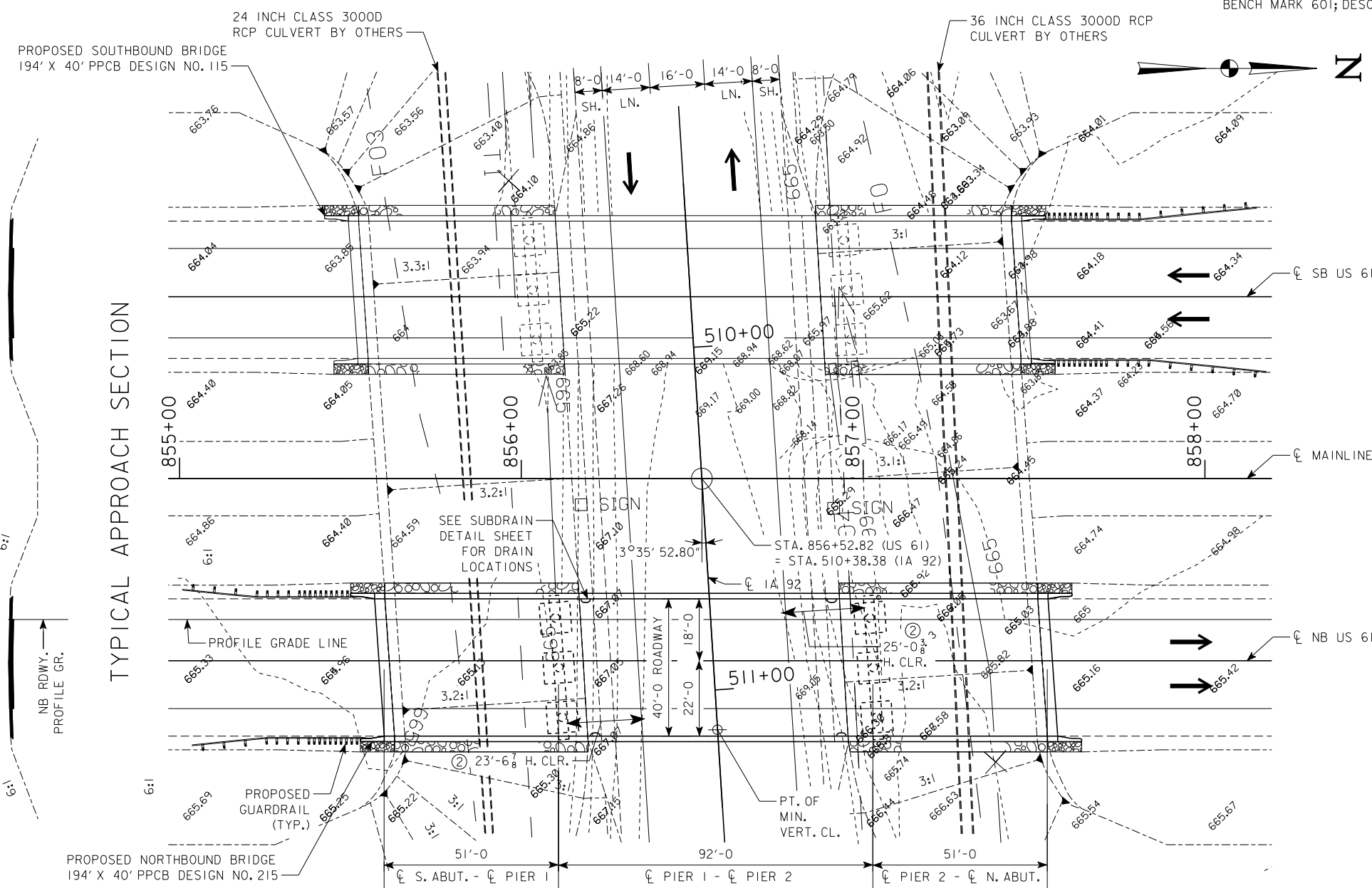


**FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(70)--3H-58**

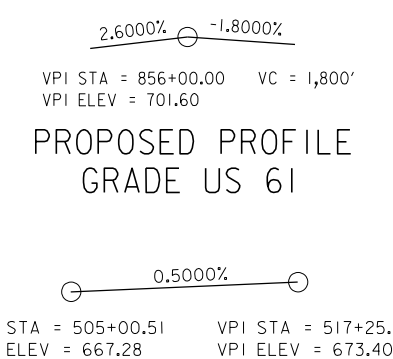
**PRELIMINARY**

DESIGN FOR 4° SKEW (R.A.)  
 194'-0" x 40' PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE  
 51'-0" END SPANS 92'-0" INTERIOR SPAN  
 SOUTHBOUND SITE PLAN  
 STA. 856+49.45, 53.00' LT AUGUST, 2014  
 LOUISA COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 4 OF 28 FILE NO. 30755 DESIGN NO. 115

SITE PLAN



- ① EW-211 GRADING
- ② MEASURE FROM EDGE OF DRIVING LANE TO FACE OF PIER COLUMN.



**MINIMUM VERTICAL CLEARANCE**  
 OVERHEAD STATION = 856+57.41, 73.09' RT  
 OVERHEAD ELEVATION = 691.77  
 DEPTH OF SUPERSTRUCTURE = 3.83'  
 IA 92 STATION = 511+11.61  
 IA 92 ELEVATION = 670.33  
 MINIMUM VERTICAL CLEARANCE = 17.61'

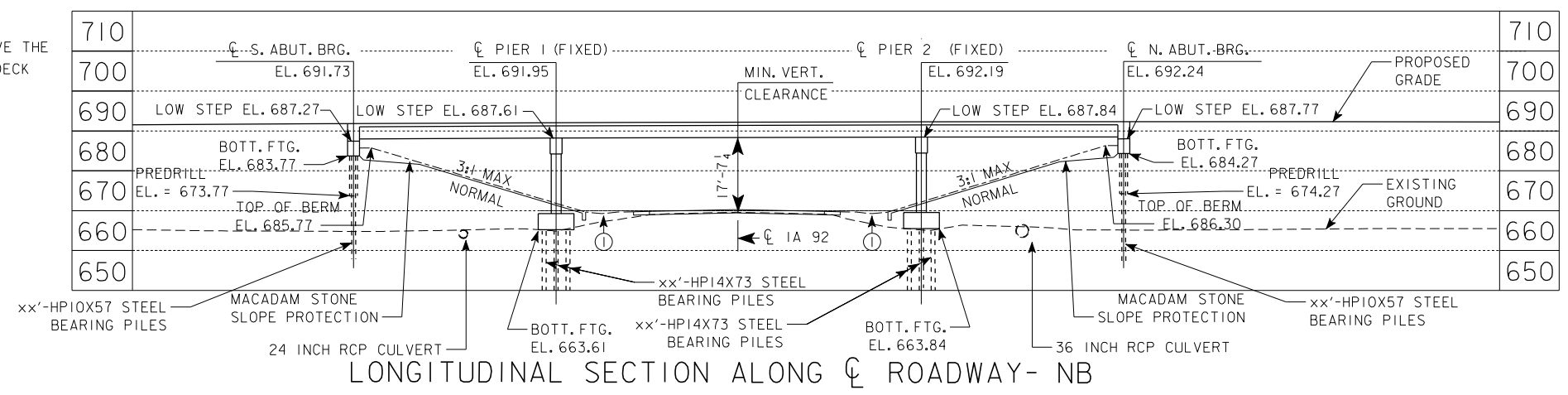
**TRAFFIC ESTIMATE**

2016 AADT	5,629	V.P.D.
2036 AADT	7,677	V.P.D.
202. DHV		V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALS		

**LOCATION**  
 NORTHBOUND U.S. 61 OVER IA 92  
 T-75 N R-3 W  
 SECTION 28  
 GRANDVIEW TOWNSHIP  
 LOUISA COUNTY  
 FHWA# 700240  
 LATITUDE 41.276559°  
 LONGITUDE -91.199175°

**FOR INFORMATION ONLY:  
 REFER TO PROJECT  
 NHSX-061-3(70)--3H-58**

NOTE: TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

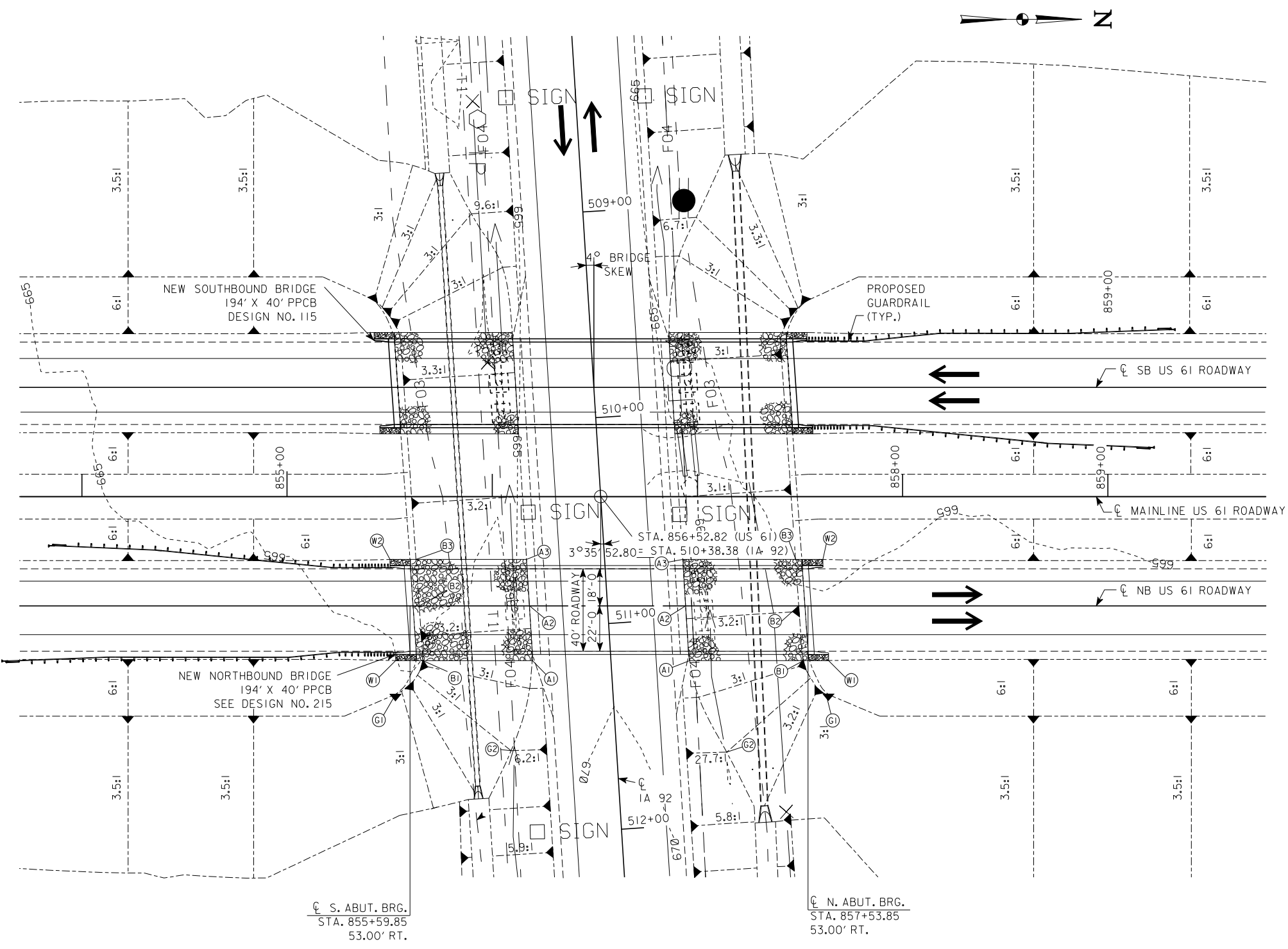


**PRELIMINARY**  
 DESIGN FOR 4° SKEW (R.A.)  
**194'-0" x 40' PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE**  
 51'-0" END SPANS 92'-0" INTERIOR SPAN  
**NORTHBOUND SITUATION PLAN**  
 STA. 856+56.86, 53.00' RT AUGUST, 2014  
 LOUISA COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 3 OF 29 FILE NO. 30755 DESIGN NO. 215

BERM SLOPE LOCATION TABLE NORTHBOUND BRIDGE						
SOUTH ABUTMENT			NORTH ABUTMENT			
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	856+16.65	30.42' RT	669.43	856+92.90	30.42' RT	669.45
A2	856+18.06	53.00' RT	669.54	856+94.22	53.00' RT	669.56
A3	856+19.39	79.58' RT	669.67	856+96.21	79.58' RT	669.70
B1	855+62.78	30.42' RT	685.70	857+47.76	30.42' RT	686.30
B2	855+64.36	53.00' RT	685.70	857+49.33	53.00' RT	686.30
B3	855+66.12	79.58' RT	685.70	857+51.63	79.58' RT	686.30
G1	855+52.87	95.58' RT	685.70	857+63.88	96.05' RT	686.30
G2	856+09.15	123.31' RT	666.74	857+14.24	124.00' RT	668.84
W1	855+50.09	30.42' RT	691.11	857+61.09	30.42' RT	691.67
W2	855+52.88	79.58' RT	691.00	857+63.89	79.58' RT	691.55

W - END WING / EROSION STONE  
BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE

**UTILITIES LEGEND:**  
 FO - FIBER OPTIC - WINDSTREAM  
 FO3 - FIBER OPTIC - PAETEC  
 FO4 - FIBER OPTIC - MUTUAL TEL. CO. OF MORNING SUN, IA  
 T1 - TELEPHONE - WINDSTREAM  
 ● - POWER POLE - EASTERN IOWA LIGHT AND POWER



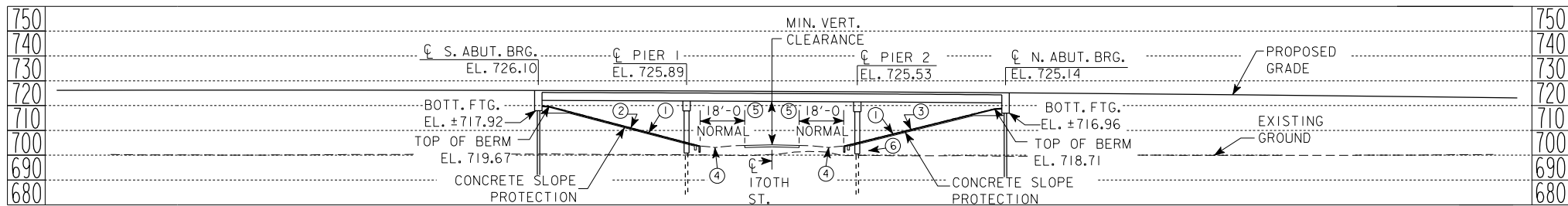
**FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(70)--3H-58**

**PRELIMINARY**  
 DESIGN FOR 4° SKEW (R.A.)  
 194'-0 x 40' PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE  
 51'-0 END SPANS 92'-0 INTERIOR SPAN  
 NORTHBOUND SITE PLAN  
 STA. 856+56.86, 53.00' RT AUGUST, 2014  
 LOUISA COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 4 OF 29 FILE NO. 30755 DESIGN NO. 215

SITE PLAN

BENCH MARK NO. 529 STA. 963+93.03 101.68' LT EL. 701.099 RR SPIKE IN NORTH SIDE OF LUMINAIRE (STATIONING ALONG EXISTING US 61 CL ALIGNMENT; SEE D SHEETS FOR DETAILS)

- ① GRADING SURFACE ② 3.6:1 NORMAL BERM SLOPE ③ 3.9:1 NORMAL BERM SLOPE ④ RL-13 GRADING ⑤ MEASURED FROM EDGE OF DRIVING LANE TO TOE OF BERM



NOTE: TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

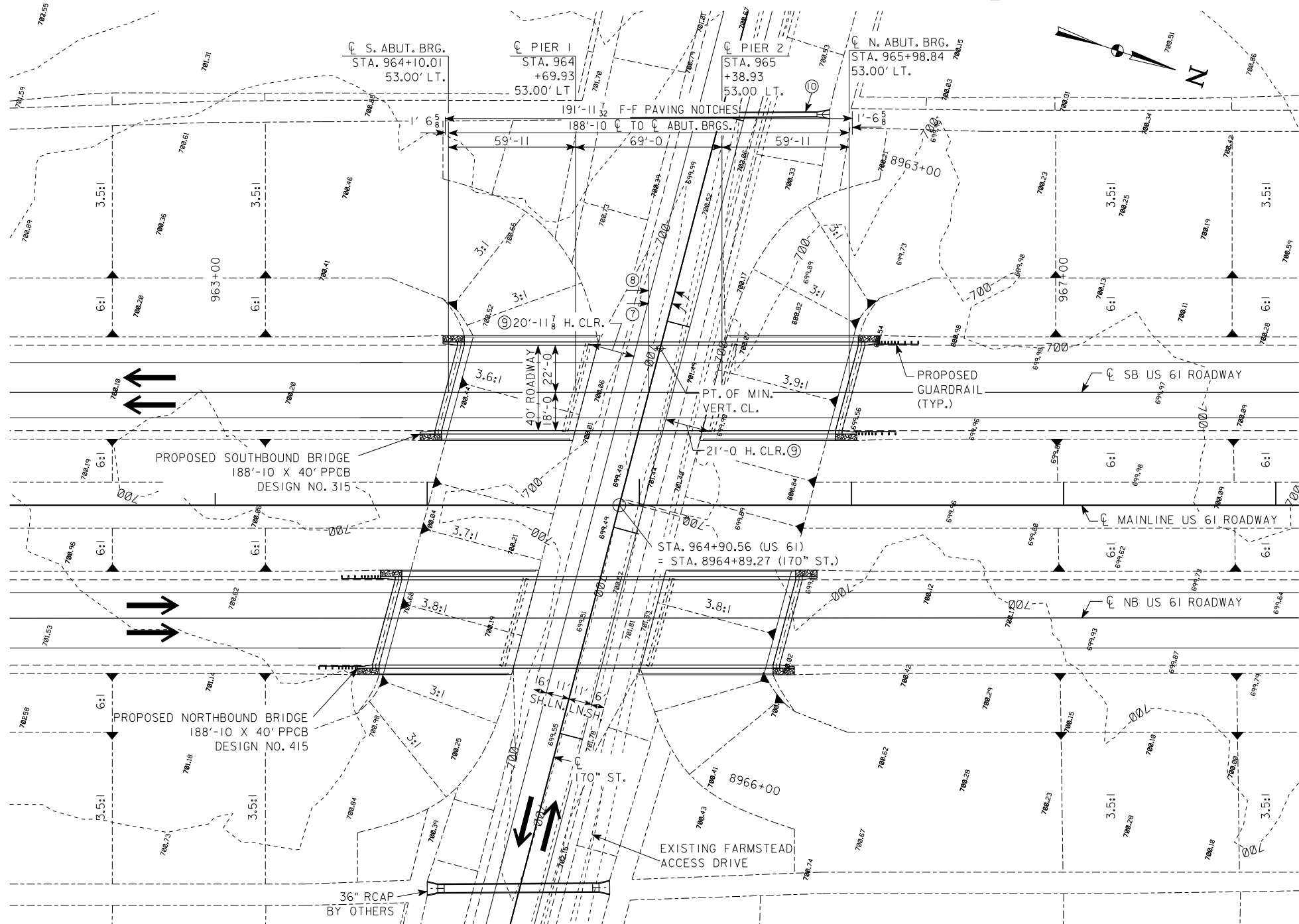
- ⑦ BRIDGE SKEW 15°
- ⑧ ROADWAY SKEW 14° 39' 31.32". ROADWAY SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO PROPOSED ROADWAY CL OF 170<sup>TH</sup> STREET. ROADWAY CL OF US 61 ALONG CL OF SOUTHBOUND LANES.
- ⑨ MEASURED FROM EDGE OF DRIVING LANE TO FACE OF PIER WALL
- ⑩ 24" RCP BY OTHERS

**UTILITIES LEGEND:**

- E1 - ELECTRIC - EASTERN IOWA LIGHT AND POWER
- F03 - FIBER OPTIC - PAETEC
- T1 - TELEPHONE - WINDSTREAM COMMUNICATIONS

NOTE: UTILITY MAIN LINES ALONG EXISTING US 61 ALIGNMENT; SERVICE LINES FROM MAINS MAY BE PRESENT ALONG EXISTING FARMSTEAD ACCESS DRIVE

**SOUTHBOUND BRIDGE LONGITUDINAL SECTION ALONG CL ROADWAY**



1.4000% -2.4000%

VPI STA = 965+00.00 VC = 1,550'  
VPI ELEV = 732.90

**PROPOSED PROFILE GRADE US 61**

-0.5000% 0.6000%

VPI STA = 8964+70.00 VC = 150'  
VPI ELEV = 703.93

**PROPOSED PROFILE GRADE 170<sup>TH</sup> STREET**

**MINIMUM VERTICAL CLEARANCE**

OVERHEAD STATION = 965+09.79, 73.50' LT  
OVERHEAD ELEVATION = 725.35  
DEPTH OF SUPERSTRUCTURE = 4.08'  
170<sup>TH</sup> ST. STATION = 8964+13.30  
170<sup>TH</sup> ST. ELEVATION = 704.22  
MINIMUM VERTICAL CLEARANCE = 17.05'

**FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(71)--3H-58**

**LOCATION**

SOUTHBOUND U.S. 61 OVER 170<sup>TH</sup> STREET  
T-75 N R-3 W  
SECTION 16  
GRANDVIEW TOWNSHIP  
LOUISA COUNTY  
FHWA NO. 700255  
BRIDGE MAINT. NO.  
LATITUDE 41.305540°  
LONGITUDE -91.198829°

**PRELIMINARY**

DESIGN FOR 15° SKEW (L.A.)  
**188'-10 x 40' PRETENSIONED  
PRESTRESSED CONCRETE BEAM BRIDGE**  
59'-11 END SPANS 69'-0 INTERIOR SPAN

**SITUATION PLAN**

STA. 965+04.43, 53.00' LT MAY, 2014

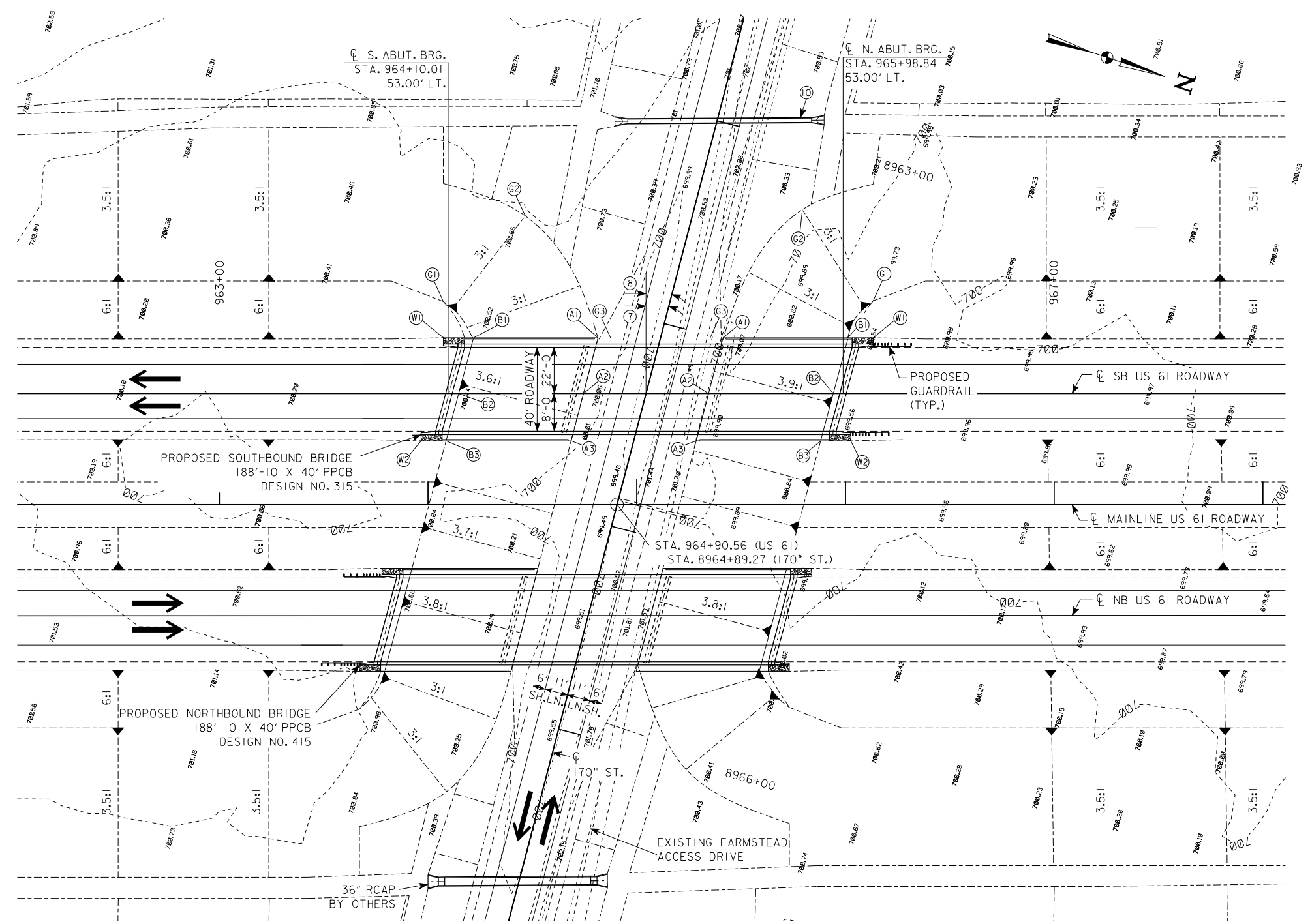
**LOUISA COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 315

BERM SLOPE LOCATION TABLE SOUTHBOUND BRIDGE						
	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	964+81.40	79.58' LT	703.76	965+41.37	79.58' LT	703.81
A2	964+74.45	53.00' LT	703.69	965+34.39	53.00' LT	703.72
A3	964+68.54	30.42' LT	703.67	965+28.52	30.42' LT	703.68
B1	964+21.79	79.58' LT	719.67	966+01.10	79.58' LT	718.71
B2	964+14.67	53.00' LT	719.67	965+94.18	53.00' LT	718.71
B3	964+08.62	30.42' LT	719.67	965+88.13	30.42' LT	718.71
G1	964+07.35	96.83' LT	719.67	966+13.28	97.14' LT	718.71
G2	964+46.56	137.67' LT	700.95	965+79.32	140.65' LT	700.20
G3	964+87.42	79.58' LT	702.79	965+35.15	79.58' LT	702.79
W1	964+07.35	79.58' LT	725.42	966+13.28	79.58' LT	724.33
W2	963+96.63	30.42' LT	725.56	966+02.57	30.42' LT	724.54

W - END WING / EROSION STONE  
 BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE  
 NOTE: ADJUST STANDARD ROAD PLAN RL-13 GRADING AS NECESSARY TO ACHIEVE ELEVATIONS SHOWN AT G3 POINTS.

- ⑦ BRIDGE SKEW 15°
- ⑧ ROADWAY SKEW 14° 39' 31.32". ROADWAY SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO PROPOSED ROADWAY CL OF 170" STREET. ROADWAY CL OF US 61 ALONG CL OF SOUTHBOUND LANES.
- ⑩ 24" RCP BY OTHERS

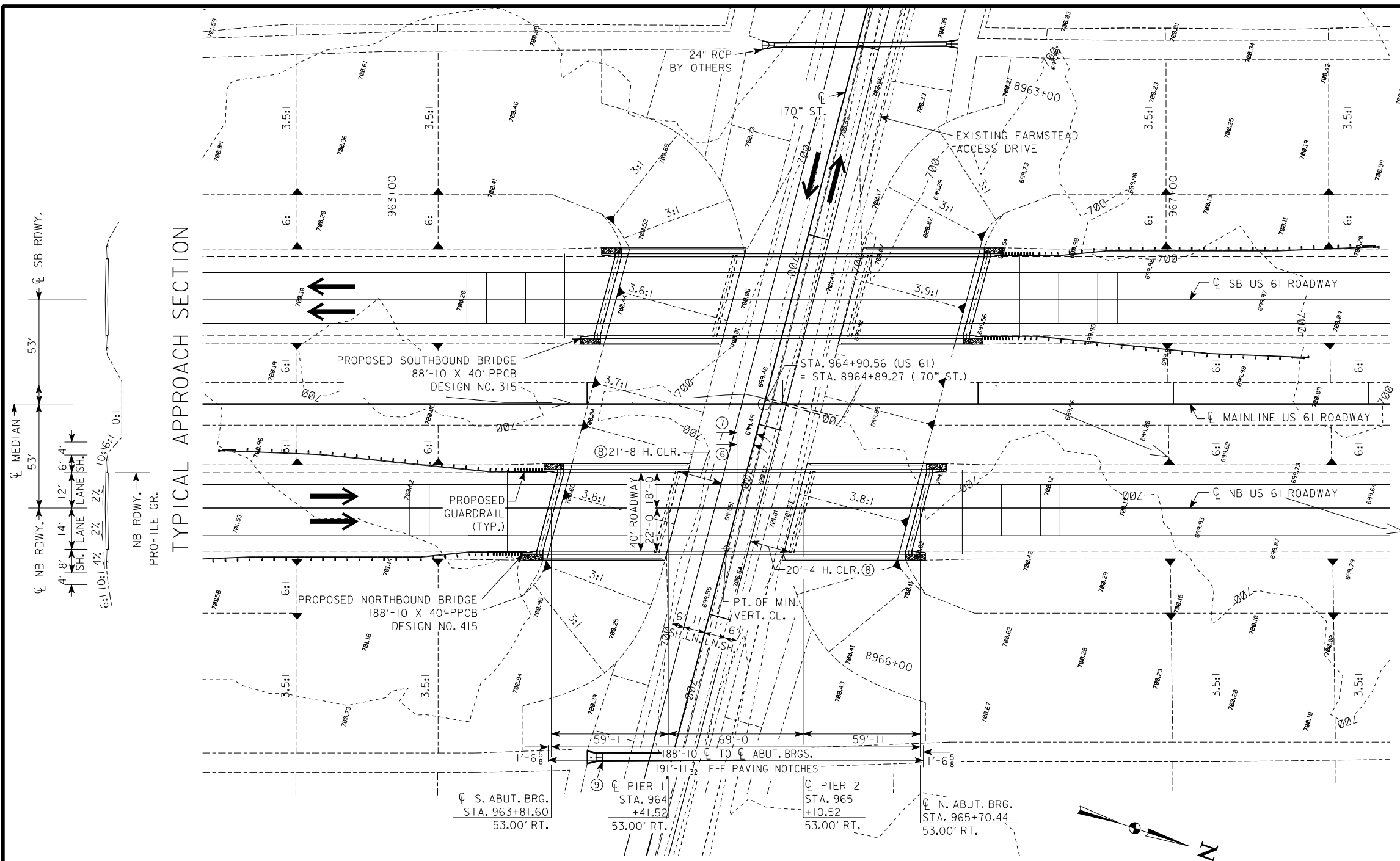


SOUTHBOUND BRIDGE SITE PLAN

FOR INFORMATION ONLY:  
 REFER TO PROJECT  
 NHSX-061-3(70)--3H-58

# PRELIMINARY

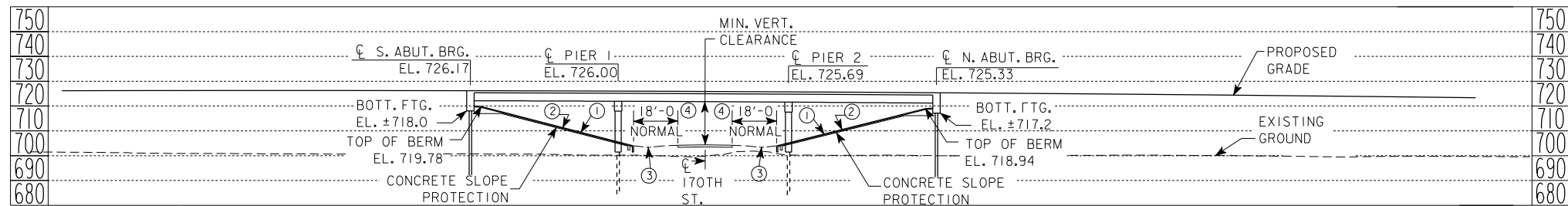
DESIGN FOR 15° SKEW (L.A.)  
 188'-10" x 40' PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE  
 59'-11" END SPANS 69'-0" INTERIOR SPAN  
 SITE PLAN  
 STA. 965+.04.43, 53.00' LT MAY, 2014  
 LOUISA COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 315



**NORTHBOUND BRIDGE SITUATION PLAN**

BENCH MARK NO. 529 STA. 963+93.03 101.68' LT EL. 701.099 RR SPIKE IN NORTH SIDE OF LUMINAIRE (STATIONING ALONG EXISTING US 61 CL ALIGNMENT; SEE D SHEETS FOR DETAILS)

- ① GRADING SURFACE
- ② 3.8:1 NORMAL BERM SLOPE
- ③ RL-13 GRADING
- ④ MEASURED FROM EDGE OF DRIVING LANE TO TOE OF BERM



NOTE: TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

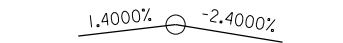
**NORTHBOUND BRIDGE LONGITUDINAL SECTION ALONG CL ROADWAY**

- ⑥ BRIDGE SKEW 15°
- ⑦ ROADWAY SKEW 14° 39' 31.32". ROADWAY SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO PROPOSED ROADWAY CL OF 170<sup>TH</sup> STREET. ROADWAY CL OF US 61 ALONG CL OF NORTHBOUND LANES.
- ⑧ MEASURED FROM EDGE OF DRIVING LANE TO FACE OF PIER WALL
- ⑨ 36" RCAP BY OTHERS

**UTILITIES LEGEND:**

- E1 - ELECTRIC - EASTERN IOWA LIGHT AND POWER
- F03 - FIBER OPTIC - PAETEC
- T1 - TELEPHONE - WINDSTREAM COMMUNICATIONS

NOTE: UTILITY MAIN LINES ALONG EXISTING US 61 ALIGNMENT; SERVICE LINES FROM MAINS MAY BE PRESENT ALONG EXISTING FARMSTEAD ACCESS DRIVE



VPI STA = 965+00.00 VC = 1,550'  
VPI ELEV = 732.90

**PROPOSED PROFILE GRADE US 61**



VPI STA = 8964+70.00 VC = 150'  
VPI ELEV = 703.93

**PROPOSED PROFILE GRADE 170<sup>TH</sup> STREET**

**MINIMUM VERTICAL CLEARANCE**

OVERHEAD STATION = 964+71.34, 73.50' RT  
OVERHEAD ELEVATION = 725.53  
DEPTH OF SUPERSTRUCTURE = 4.08'  
170<sup>TH</sup> ST. STATION = 8965+65.24  
170<sup>TH</sup> ST. ELEVATION = 704.50  
MINIMUM VERTICAL CLEARANCE = 16.95'

**FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(71)--3H-58**

**LOCATION**

NORTHBOUND U.S. 61 OVER 170<sup>TH</sup> STREET  
T-75 N R-3 W  
SECTION 16  
GRANDVIEW TOWNSHIP  
LOUISA COUNTY  
FHWA NO. 700260  
BRIDGE MAINT. NO.  
LATITUDE 41.305537°  
LONGITUDE -91.198430°

**PRELIMINARY**

DESIGN FOR 15° SKEW (L.A.)  
**188'-10 x 40' PRETENSIONED  
PRESTRESSED CONCRETE BEAM BRIDGE**  
59'-11 END SPANS 69'-0 INTERIOR SPAN

**SITUATION PLAN**

STA. 964+76.70, 53.00' RT MAY, 2014

**LOUISA COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 415

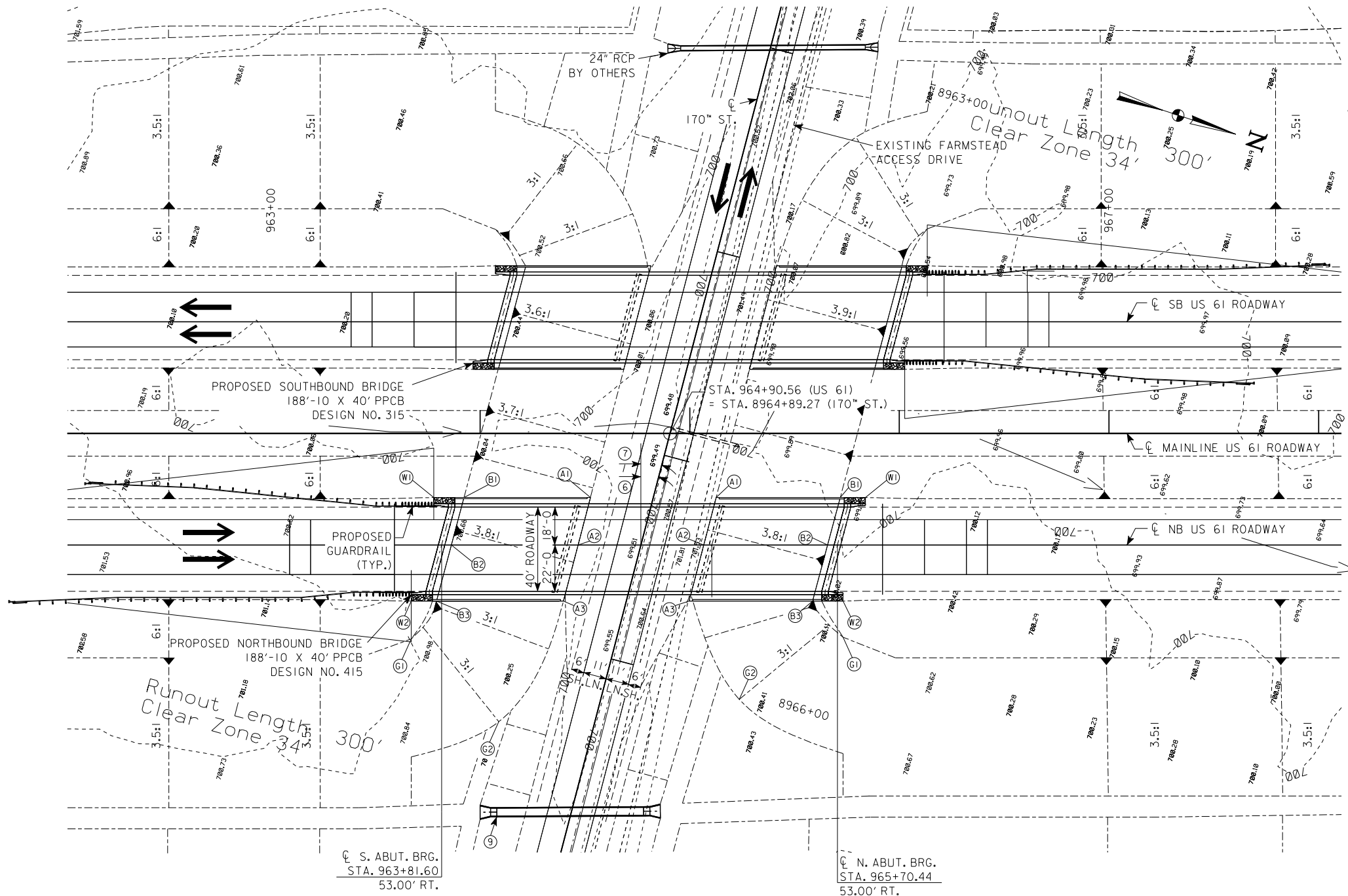


BERM SLOPE LOCATION TABLE  
NORTHBOUND BRIDGE

	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	964+52.63	30.42' RT	703.83	965+12.58	30.42' RT	703.76
A2	964+46.72	53.00' RT	703.96	965+06.67	53.00' RT	703.87
A3	964+39.76	79.58' RT	704.12	965+00.28	79.58' RT	704.03
B1	963+92.31	30.42' RT	719.78	965+71.83	30.42' RT	718.94
B2	963+86.29	53.00' RT	719.78	965+65.78	53.00' RT	718.94
B3	963+79.21	79.58' RT	719.78	965+58.65	79.58' RT	718.94
G1	963+67.16	97.61' RT	719.78	965+73.09	96.77' RT	718.94
G2	964+08.93	136.90' RT	700.31	965+23.62	126.33' RT	700.38
W1	963+77.87	30.42' RT	725.61	965+83.81	30.42' RT	724.67
W2	963+67.16	79.58' RT	725.51	965+73.09	79.58' RT	724.63

W - END WING / EROSION STONE  
BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE

- ⑥ BRIDGE SKEW 15°
- ⑦ ROADWAY SKEW 14° 39' 31.32". ROADWAY SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO PROPOSED ROADWAY CL OF 170" STREET. ROADWAY CL OF US 61 ALONG CL OF NORTHBOUND LANES.
- ⑨ 36" RCAP BY OTHERS



NORTHBOUND BRIDGE SITE PLAN

FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(70)--3H-58

PRELIMINARY

DESIGN FOR 15° SKEW (L.A.)  
188'-10 x 40' PRETENSIONED  
PRESTRESSED CONCRETE BEAM BRIDGE  
59'-11 END SPANS 69'-0 INTERIOR SPAN

SITE PLAN

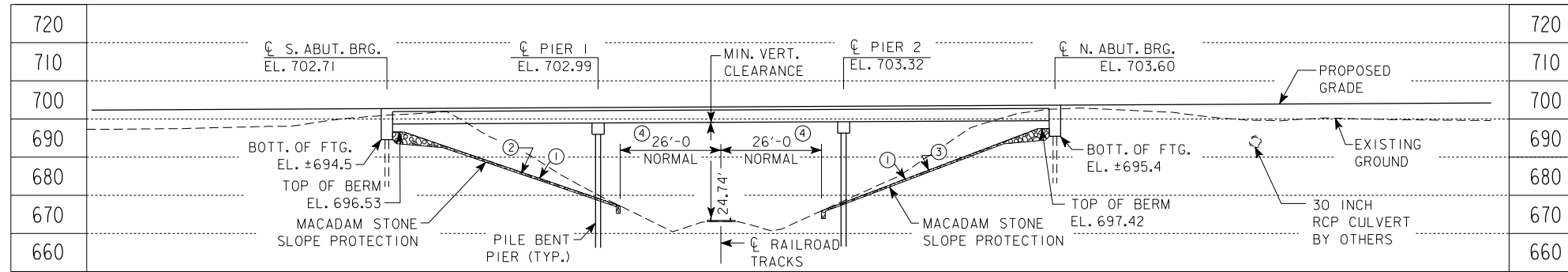
STA. 964+76.70, 53.00' RT MAY, 2014

LOUISA COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 415

BENCH MARK NO. 538 STA. 1037+59.33 36.32' RT EL. 698.631 CUT X ON OUTLET END OF 4X6 CONC. CATTLE PASS (STATIONING ALONG EXISTING US 61  $\phi$  ALIGNMENT; SEE D SHEETS FOR DETAILS)

① GRADING SURFACE ② 2.9:1 NORMAL BERM SLOPE ③ 2.6:1 NORMAL BERM SLOPE ④ MEASURED FROM  $\phi$  OF RAILROAD TRACKS TO TOE OF BERM



NOTE: TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

SOUTHBOUND BRIDGE LONGITUDINAL SECTION ALONG  $\phi$  ROADWAY

- ⑤ BRIDGE SKEW 15°
- ⑥ RAILROAD SKEW 11° 53' 28.32". RAILROAD SKEW ANGLE IS MEASURED FROM LINE NORMAL TO  $\phi$  OF US 61 TO CENTERLINE OF EXISTING RAILROAD TRACKS. ROADWAY  $\phi$  OF US 61 ALONG  $\phi$  OF SOUTHBOUND LANES.
- ⑦ MEASURED FROM CENTERLINE OF RAILROAD TRACKS TO FACE OF PIER COLUMN

UTILITIES LEGEND:

- TI - TELEPHONE - WINDSTREAM COMMUNICATIONS
- - EASTERN IOWA LIGHT AND POWER UTILITY POLE
- ⊕ - DAKOTA, MINNESOTA AND EASTERN RAILROAD UTILITY POLE

0.5000%

VPI STA = 1007+50.00 VPI STA = 1042+80.00  
VPI ELEV = 687.90 VPI ELEV = 705.55

PROPOSED PROFILE  
GRADE US 61

MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 1037+60.40, 73.50' LT  
OVERHEAD ELEVATION = 702.81  
DEPTH OF SUPERSTRUCTURE = 4.08'  
TOP OF RAIL ELEVATION = 673.99  
MINIMUM VERTICAL CLEARANCE = 24.74'

TRAFFIC ESTIMATE

2016 AADT	6,298	V.P.D.
2036 AADT	8,589	V.P.D.
TRUCKS	18 %	

LOCATION

SOUTHBOUND U.S. 61 OVER  
DAKOTA, MINNESOTA AND EASTERN RAILROAD  
T-75 N R-3 W  
SECTION 4  
GRANDVIEW TOWNSHIP  
LOUISA COUNTY  
FHWA NO. 700265  
BRIDGE MAINT. NO. 5877.4L061  
LATITUDE 41.325262°  
LONGITUDE -91.201579°

FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(72)-3H-58

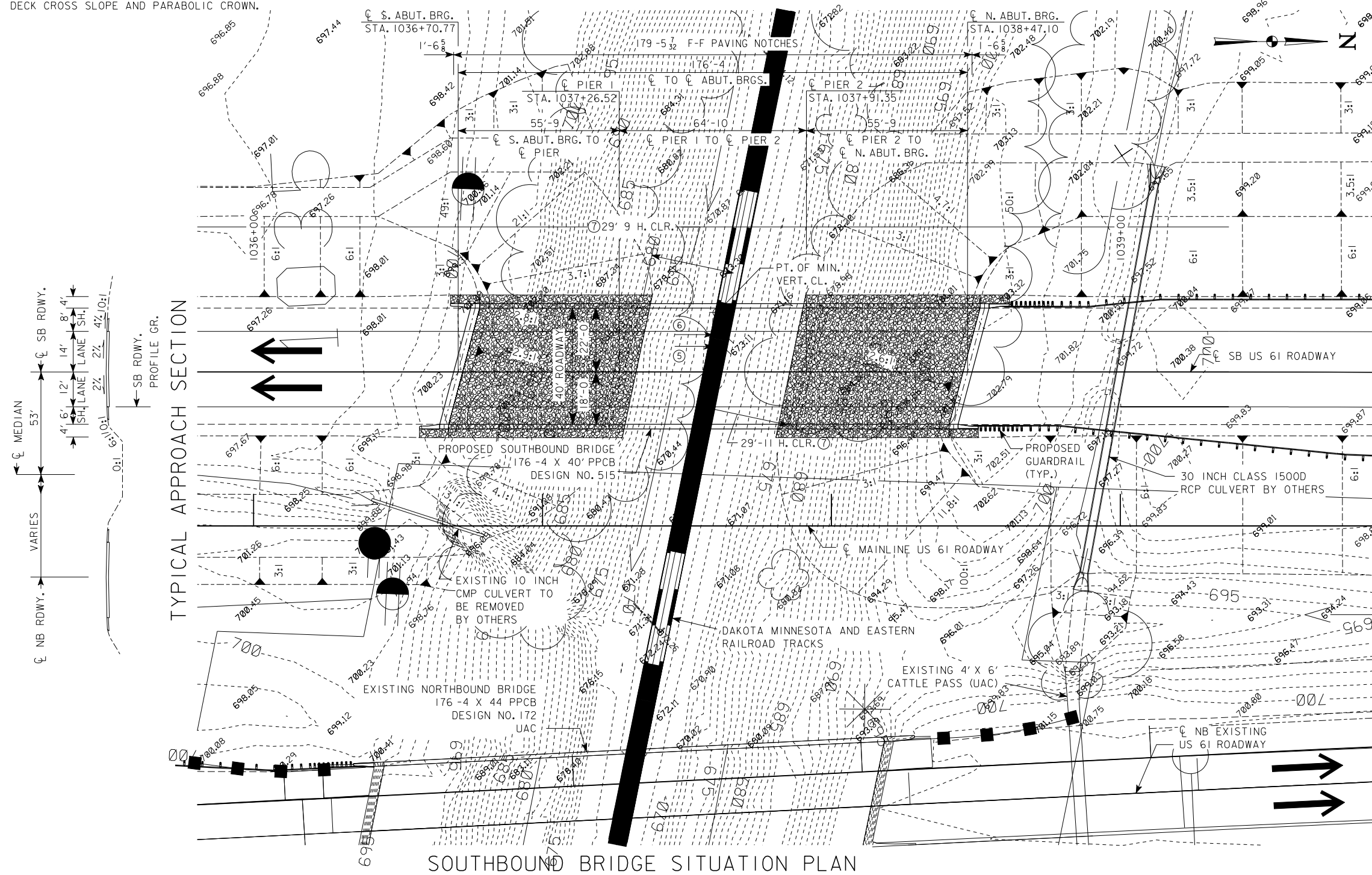
PRELIMINARY

DESIGN FOR 15° SKEW (L.A.)  
176'-4 x 40' PRETENSIONED  
PRESTRESSED CONCRETE BEAM BRIDGE  
55'-9 END SPANS 64'-10 INTERIOR SPAN

SITUATION PLAN

STA. 1037+58.94, 53.00' LT MAY, 2014  
LOUISA COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 515

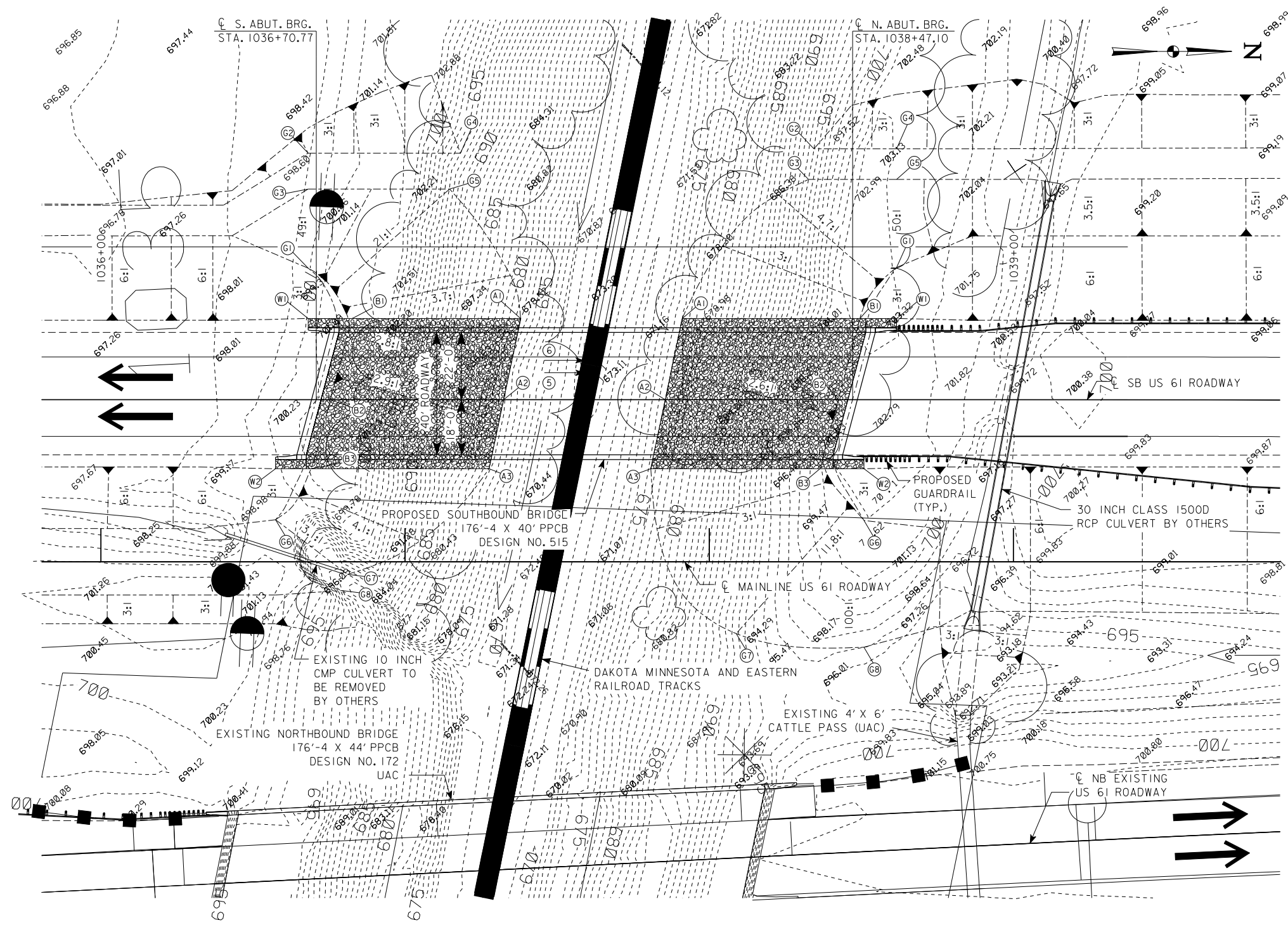


SOUTHBOUND BRIDGE SITUATION PLAN

ENGLISH IOWA DOT DESIGN TEAM Van Dyke \ HR Green, Inc.

LOUISA COUNTY PROJECT NUMBER NHSX-061-3(57)-3H-58

SHEET NUMBER V.9



SOUTHBOUND BRIDGE SITE PLAN

BERM SLOPE LOCATION TABLE SOUTHBOUND BRIDGE						
	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	1037+37.96	79.58' LT	678.00	1037+91.10	79.58' LT	676.00
A2	1037+32.37	53.00' LT	677.20	1037+85.51	53.00' LT	675.80
A3	1037+27.61	30.42' LT	677.20	1037+80.75	30.42' LT	675.20
B1	1036+82.55	79.58' LT	696.53	1038+49.50	79.58' LT	697.42
B2	1036+75.43	53.00' LT	696.53	1038+42.44	53.00' LT	697.42
B3	1036+69.01	30.42' LT	696.53	1038+36.39	30.42' LT	697.42
G1	1036+68.11	96.01' LT	696.53	1038+61.55	96.26' LT	697.42
G2	1036+68.11	133.66' LT	696.00	1038+34.41	135.06' LT	694.00
G3	1036+68.11	121.93' LT	696.00	1038+32.62	125.06' LT	694.00
G4	1037+18.18	133.66' LT	694.00	1038+61.55	135.06' LT	696.85
G5	1037+14.63	121.93' LT	694.00	1038+61.55	125.06' LT	696.85
G6	1036+57.40	13.77' LT	696.53	1038+50.83	13.52' LT	697.42
G7	1036+81.10	4.16' LT	687.00	1038+08.84	23.48' LT	692.66
G8	1036+79.37	9.41' LT	687.00	1038+50.83	27.98' LT	697.01
W1	1038+68.11	79.58' LT	702.01	1038+61.55	79.58' LT	702.98
W2	1038+57.40	30.42' LT	702.08	1038+50.83	30.42' LT	703.04

W - END WING / EROSION STONE  
BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE

- ⑤ BRIDGE SKEW 15°
- ⑥ RAILROAD SKEW 11° 53' 28.32". RAILROAD SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO CENTERLINE OF EXISTING RAILROAD TRACKS. ROADWAY CL OF US 61 ALONG CL OF SOUTHBOUND LANES.

FOR INFORMATION ONLY:  
REFER TO PROJECT  
NHSX-061-3(70)--3H-58

**PRELIMINARY**

DESIGN FOR 15° SKEW (L.A.)  
176'-4 x 40' PRETENSIONED  
PRESTRESSED CONCRETE BEAM BRIDGE  
55'-9 END SPANS 64'-10 INTERIOR SPAN  
SITE PLAN  
STA. 1037+58.94, 53.00' LT MAY, 2014  
LOUISA COUNTY  
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 515

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

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

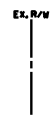
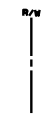

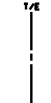
**LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)**

- TS --- Topsoil (Class 10)
- 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.

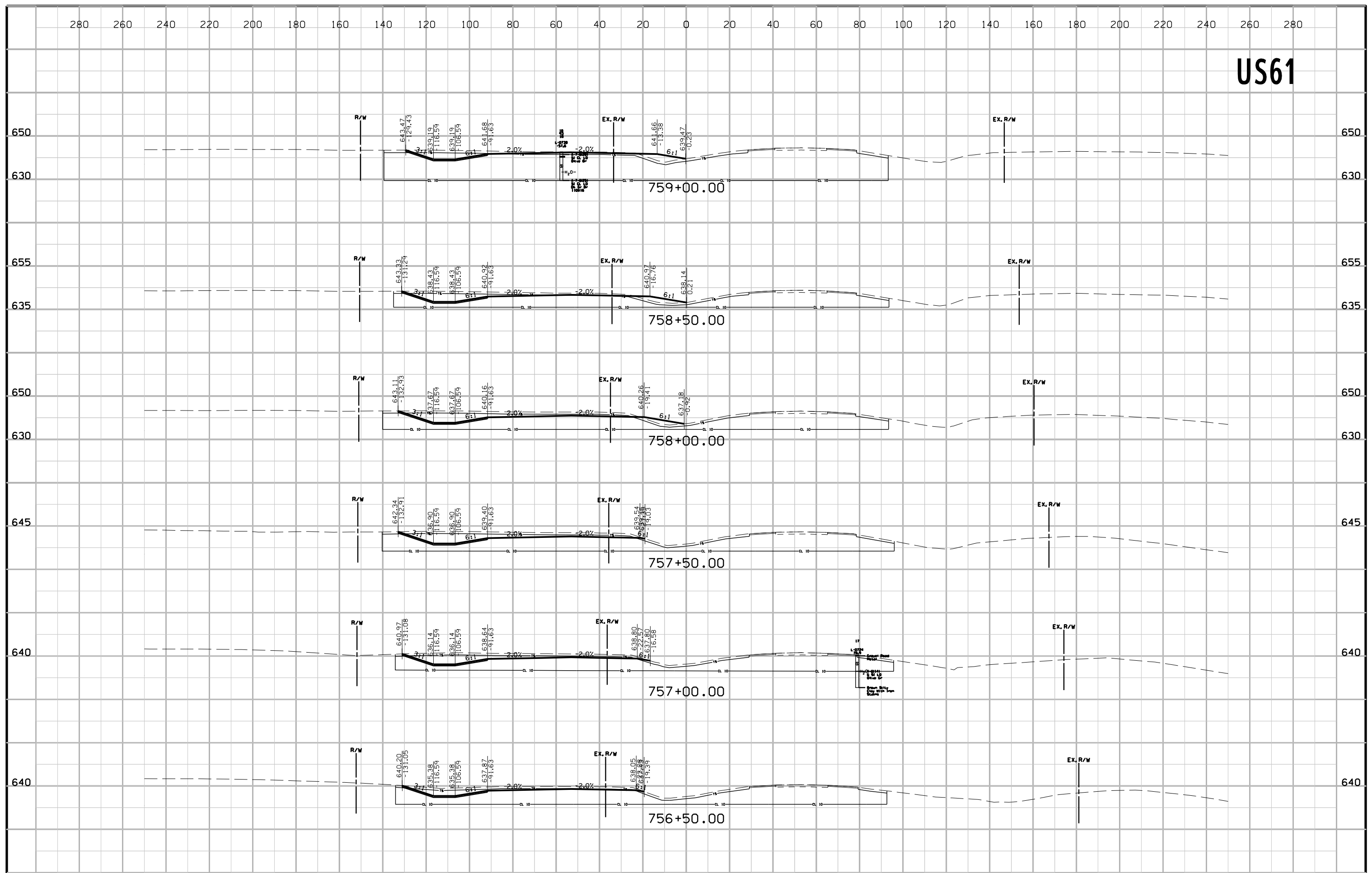
**SYMBOL LEGEND OF CROSS SECTION SHEETS**

-  Existing Right-of-Way Limit
-  Proposed Right-of-Way Limit
-  Future Right-of-Way Limit
-  Temporary Right-of-Way Limit

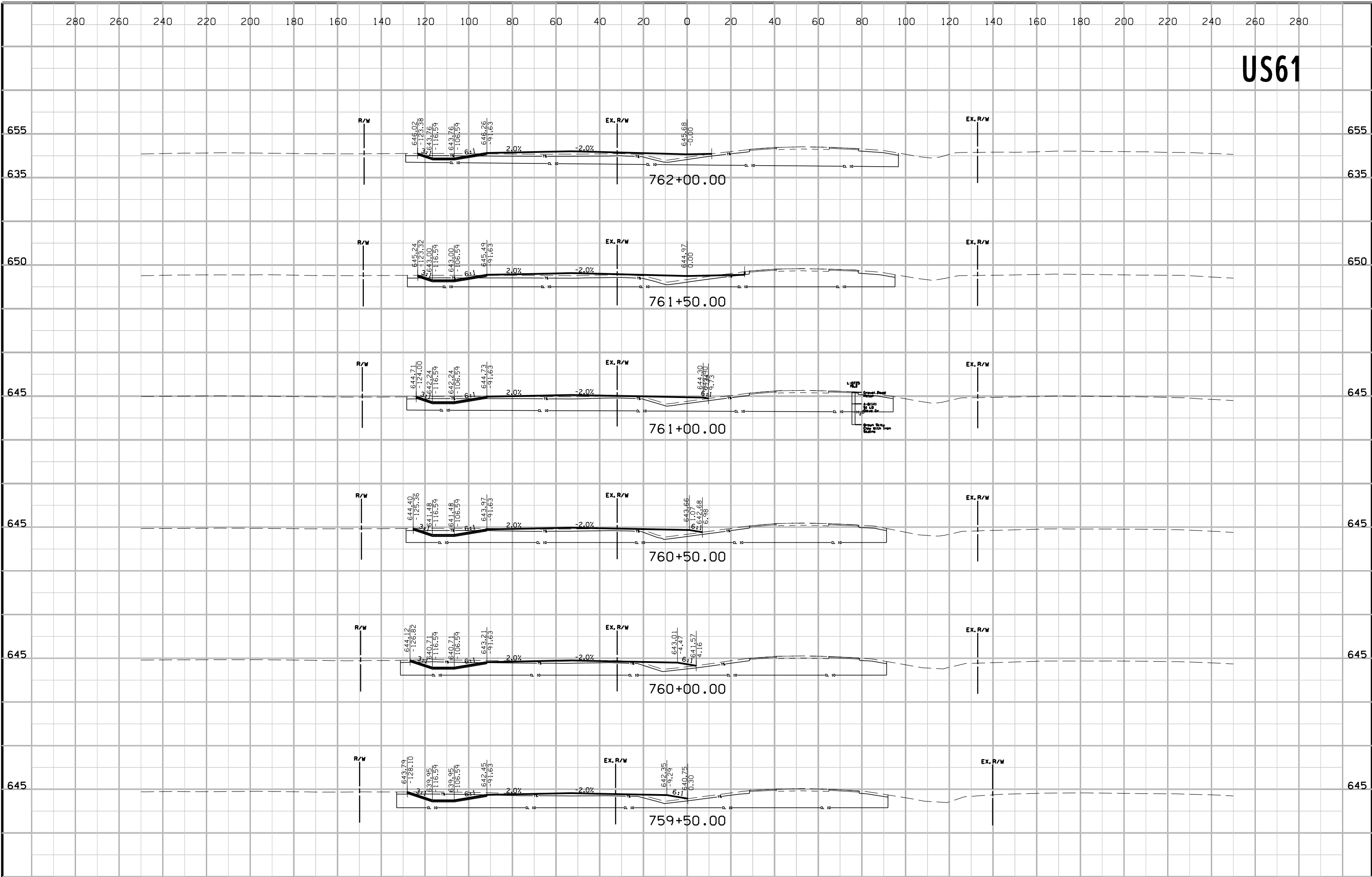
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

(COVERS SHEET SERIES W, X, & Y)

# US61

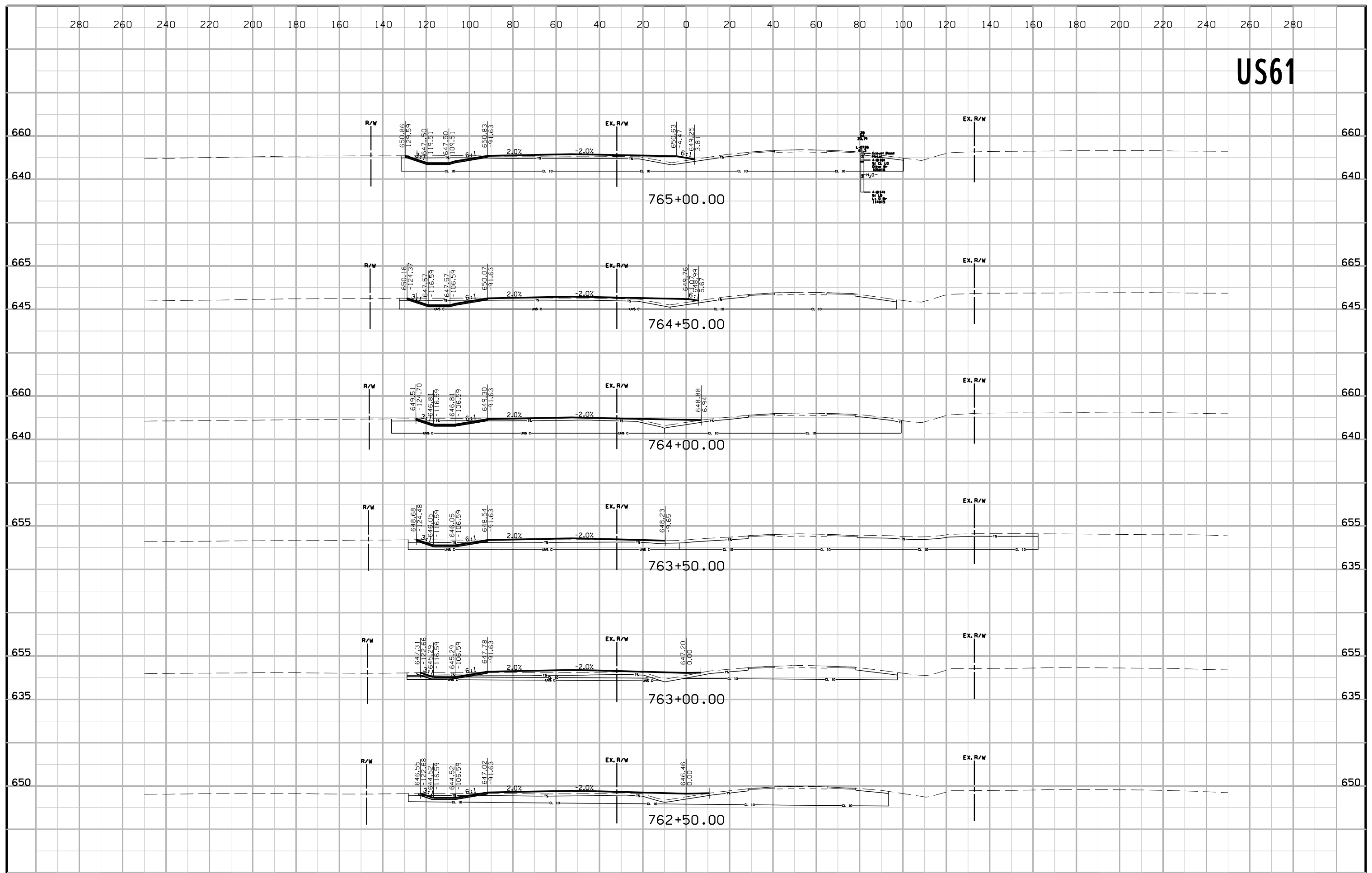


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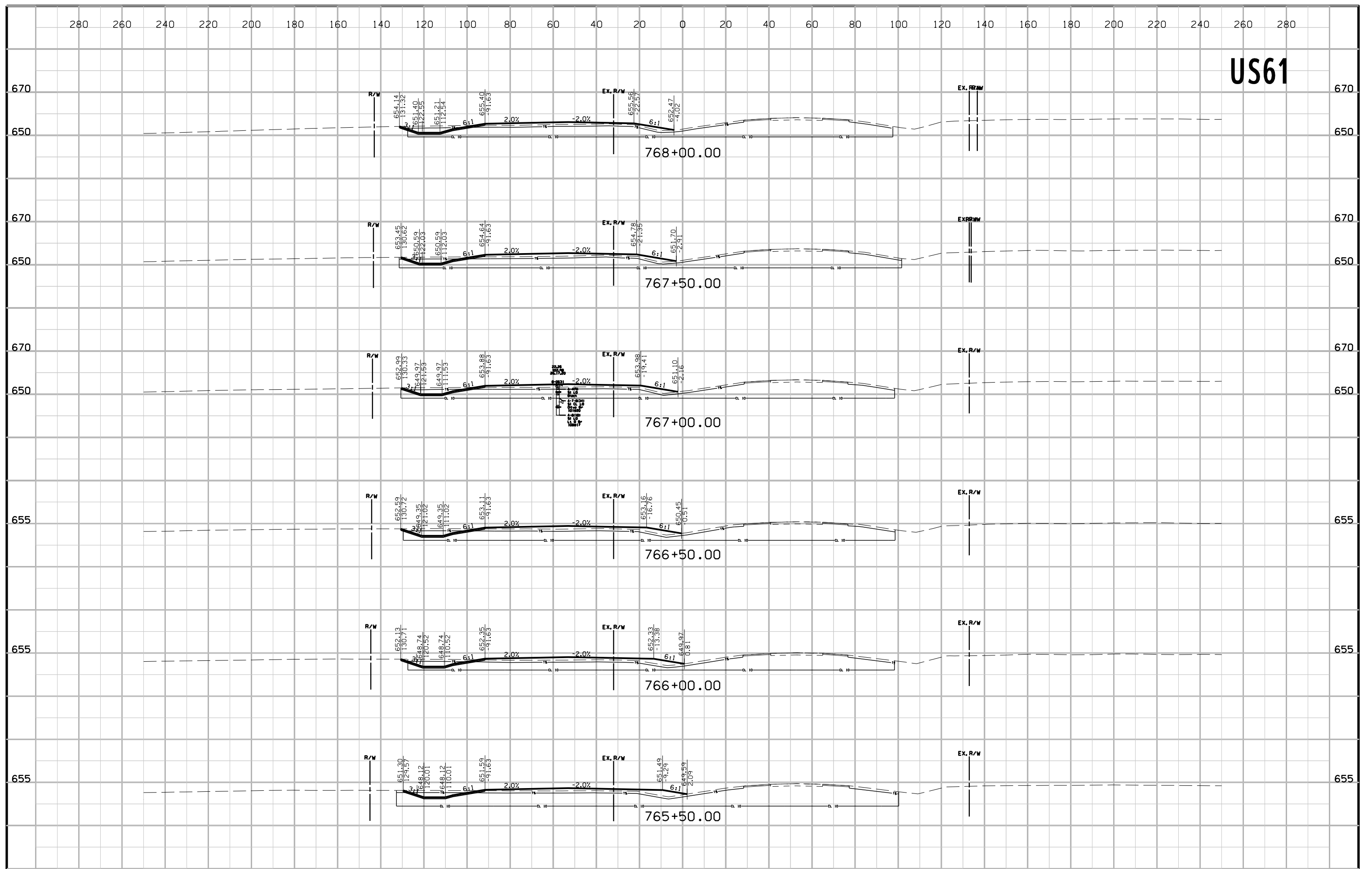




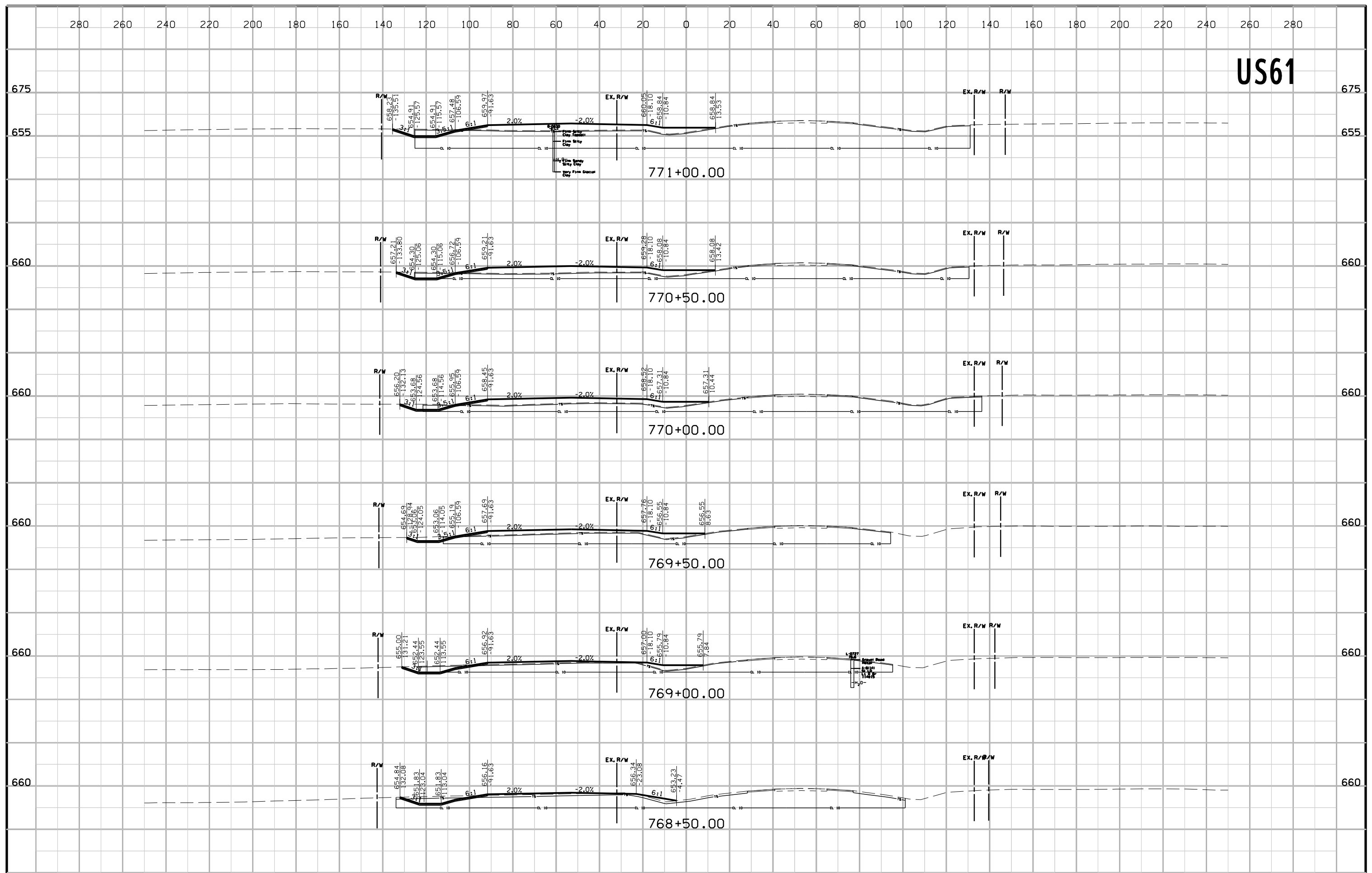
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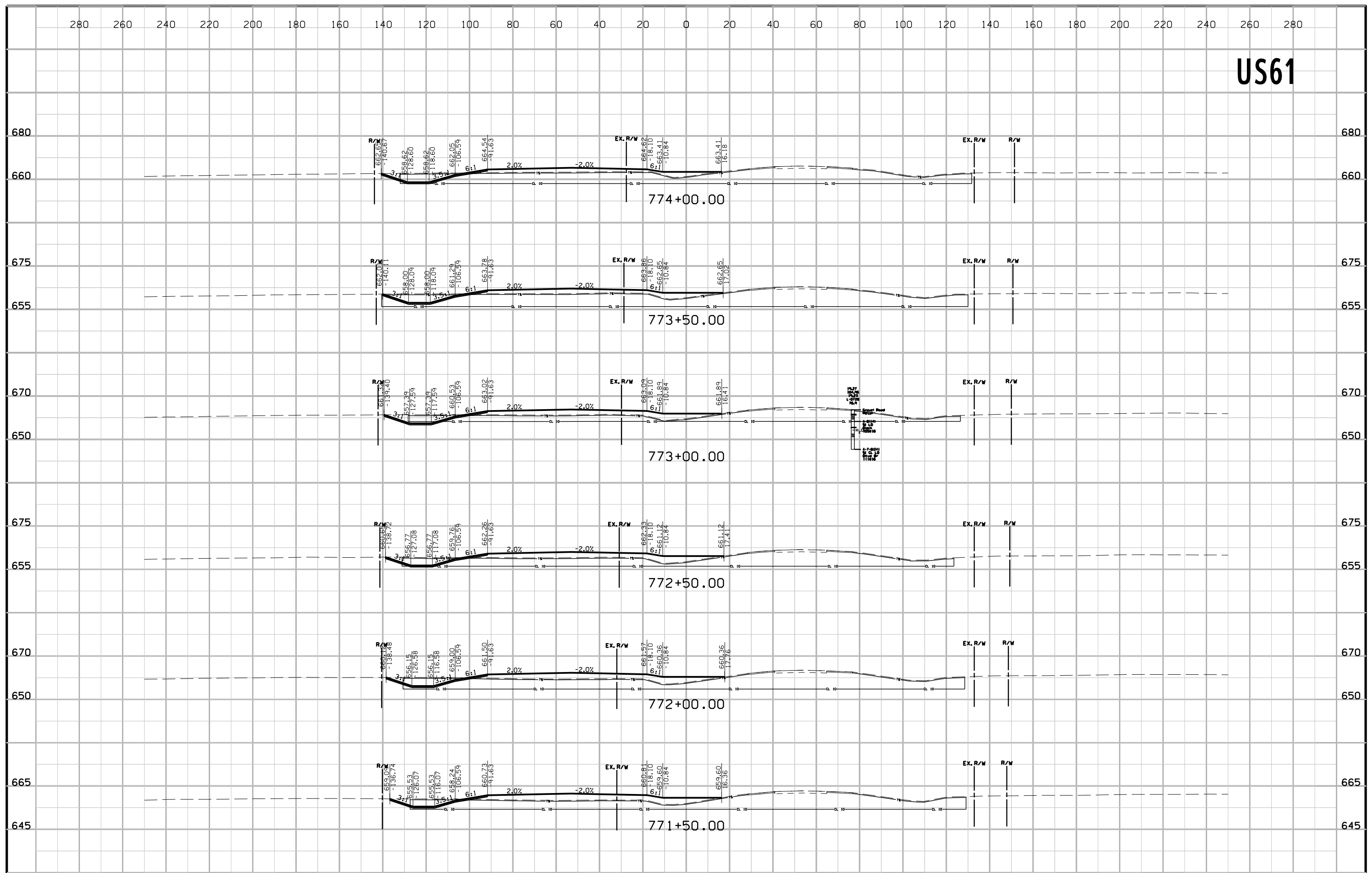
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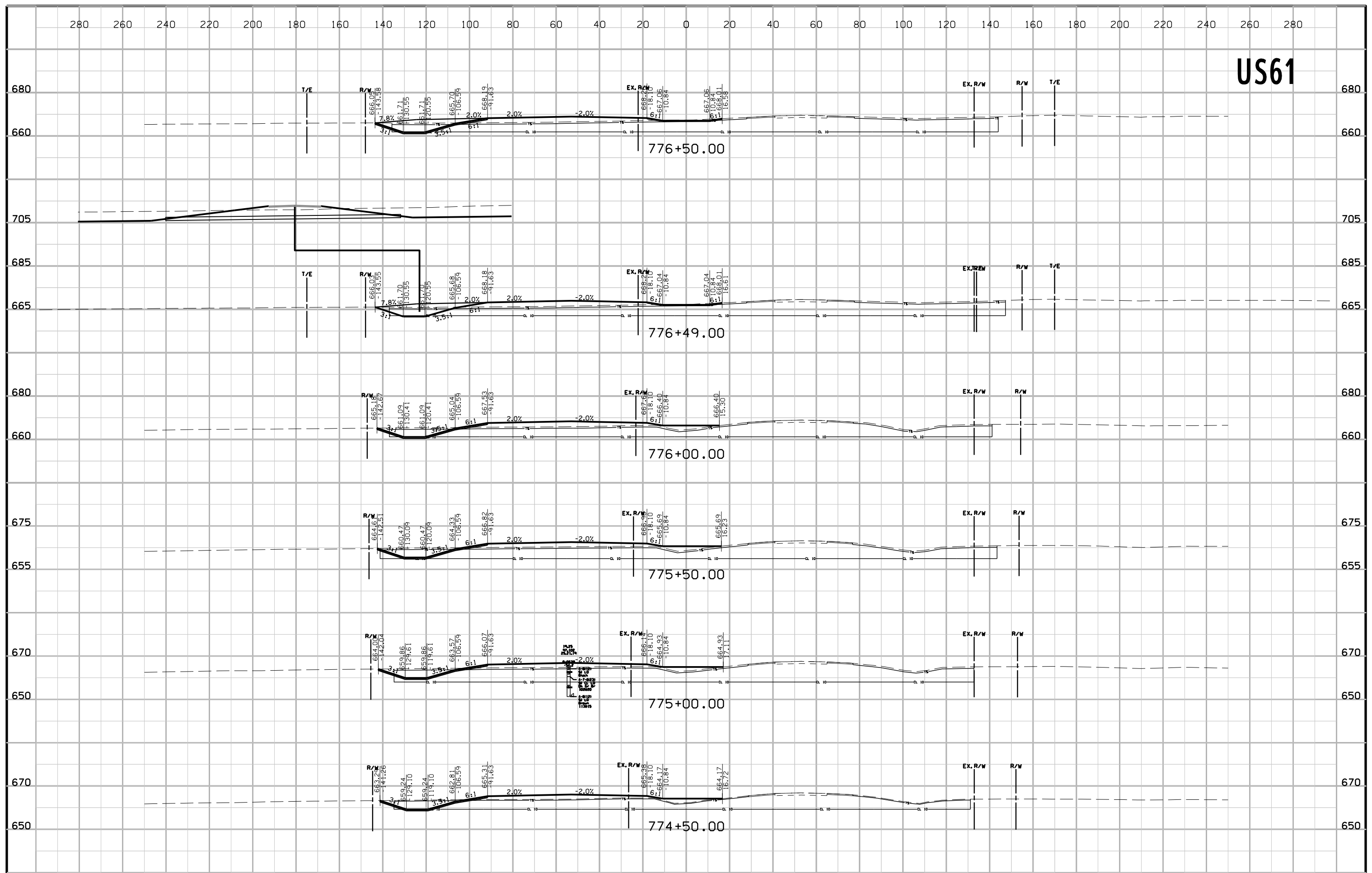
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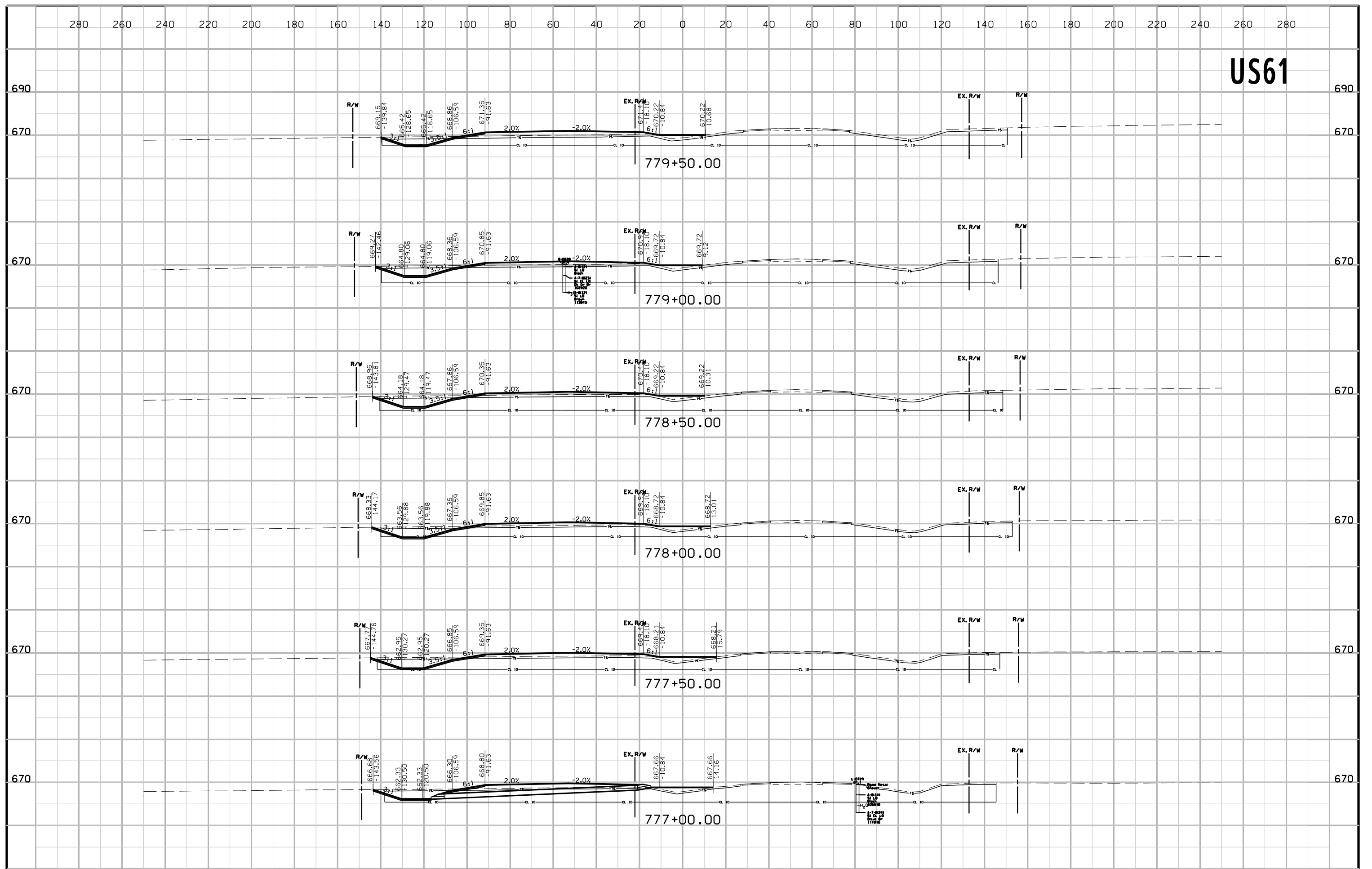
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# US61



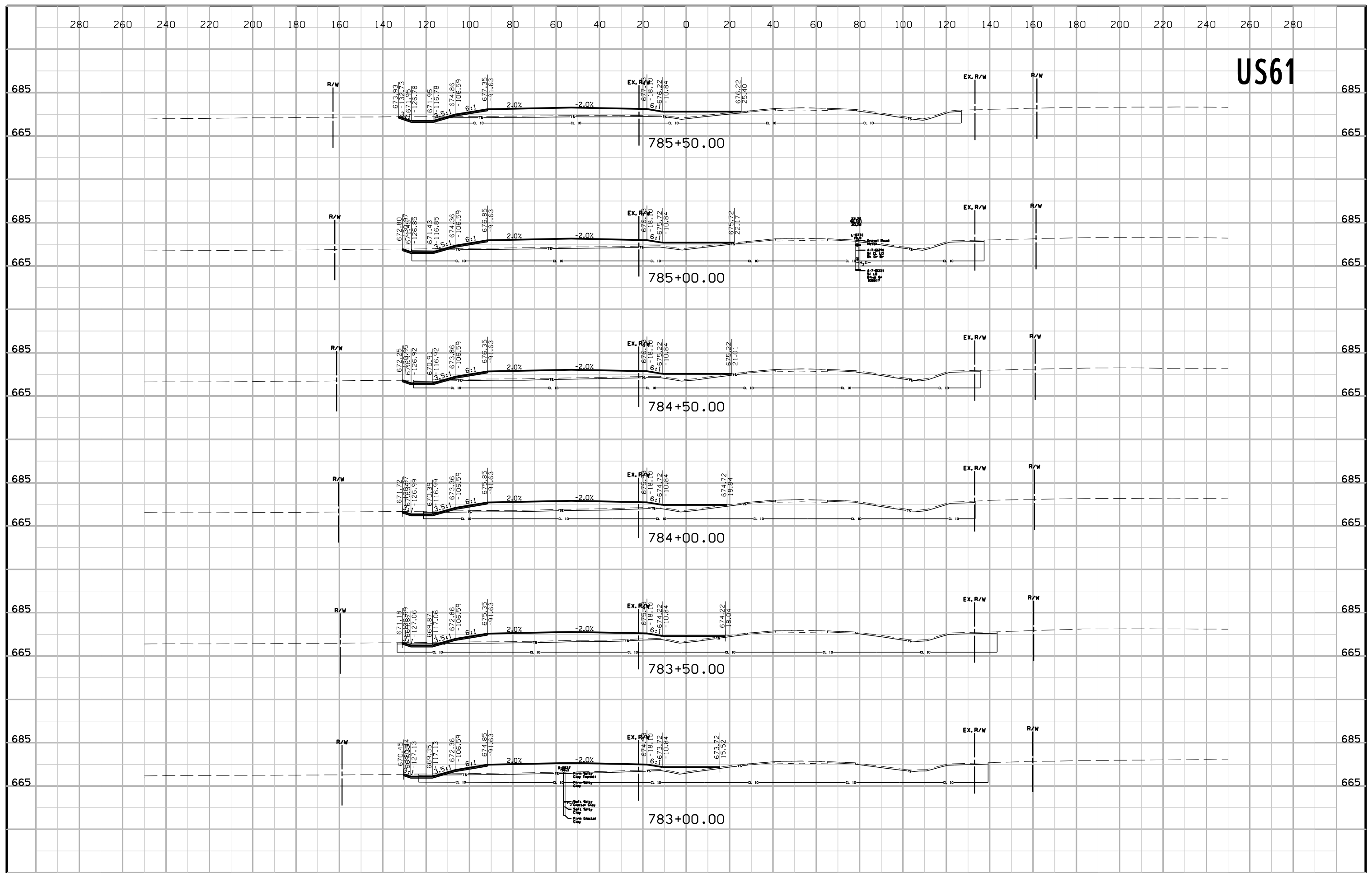
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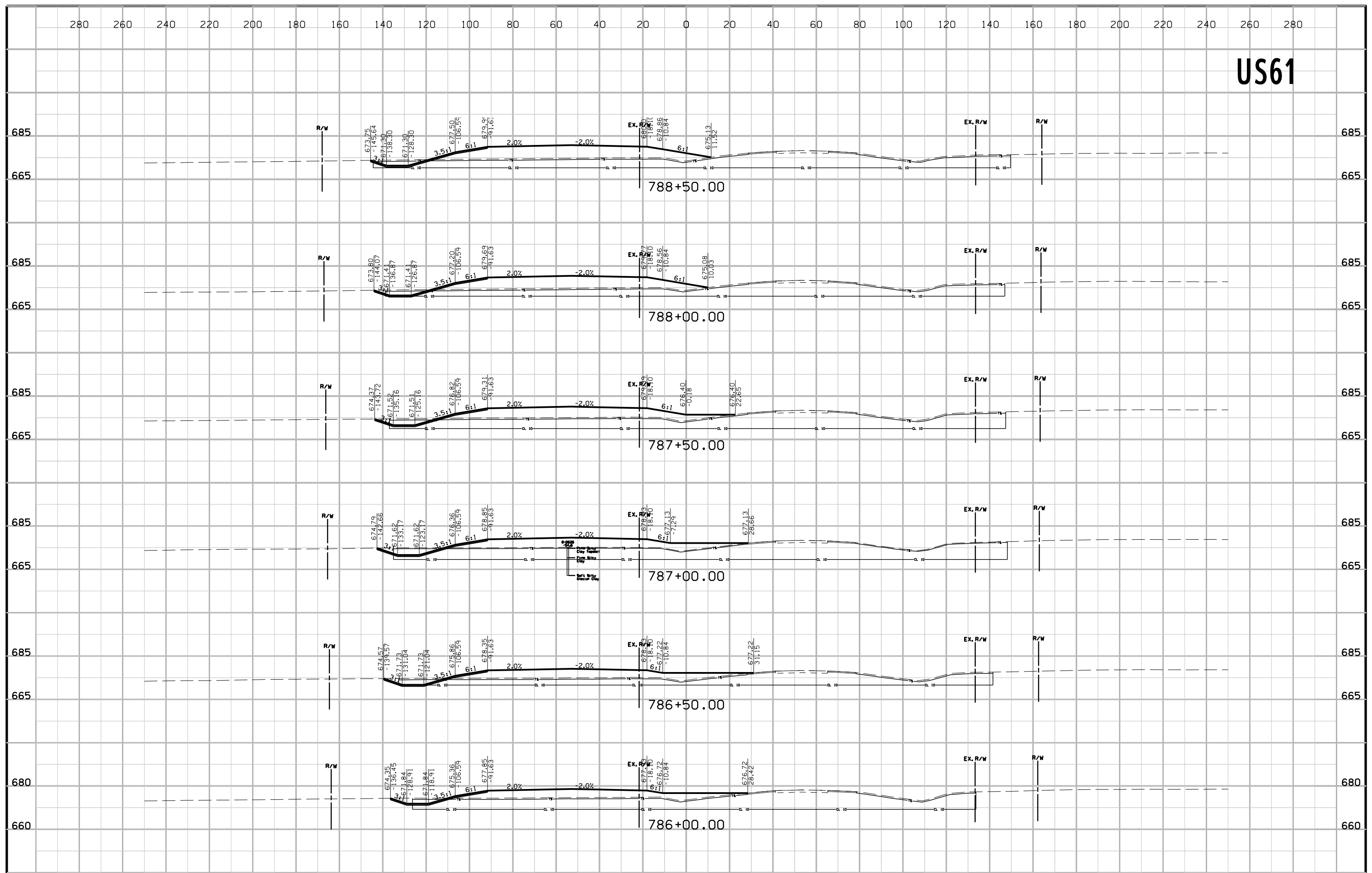




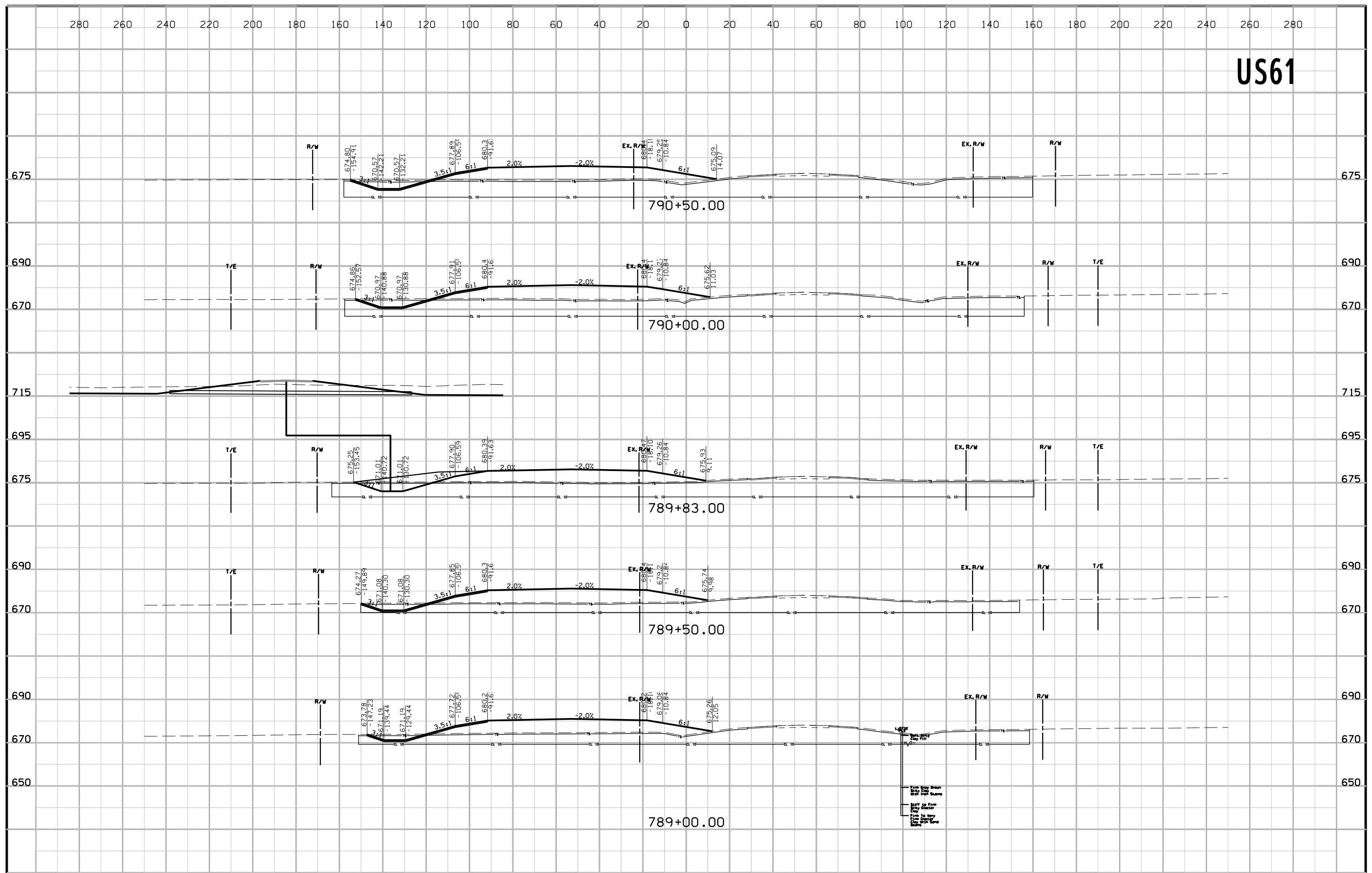
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# US61

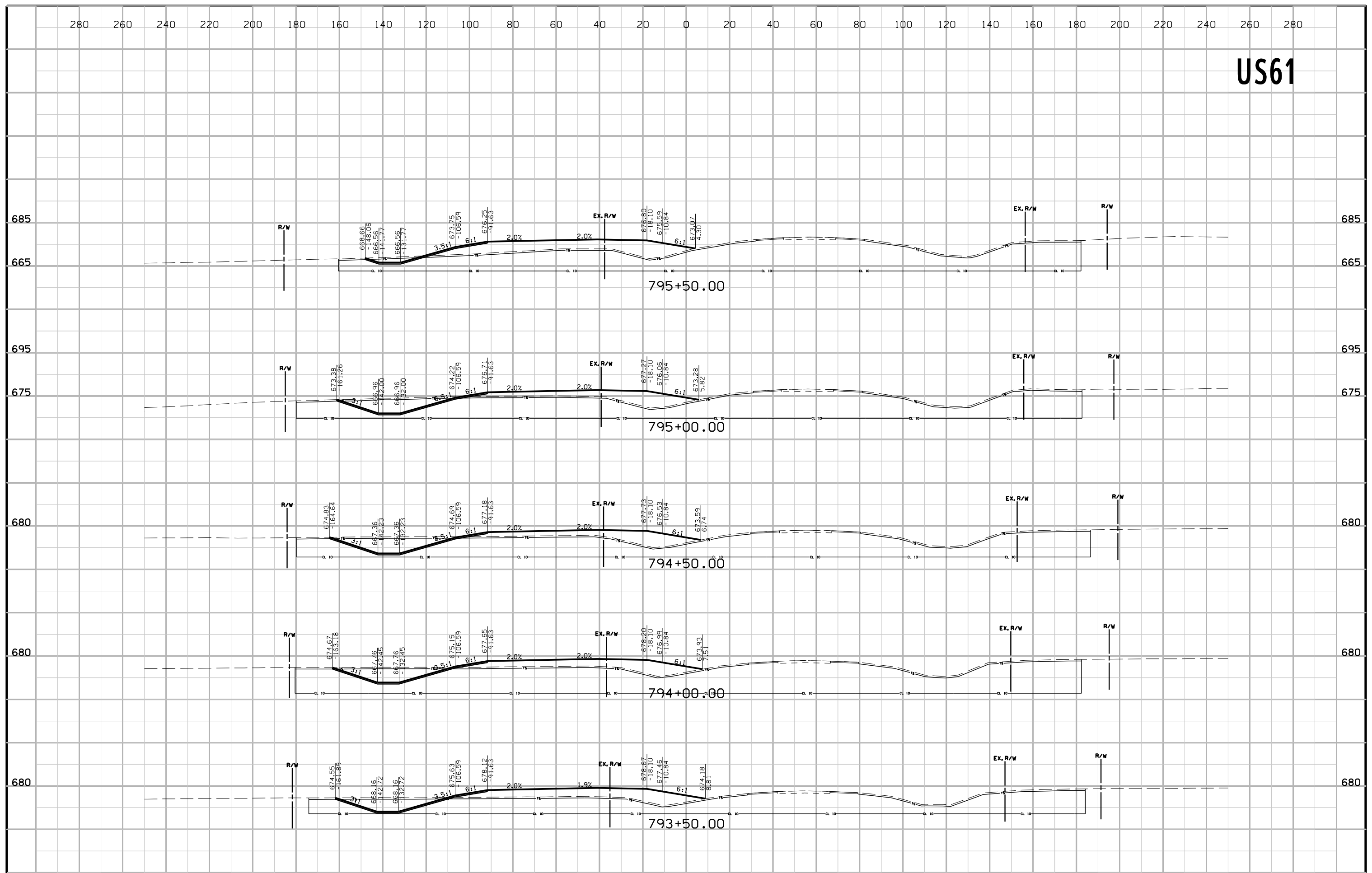


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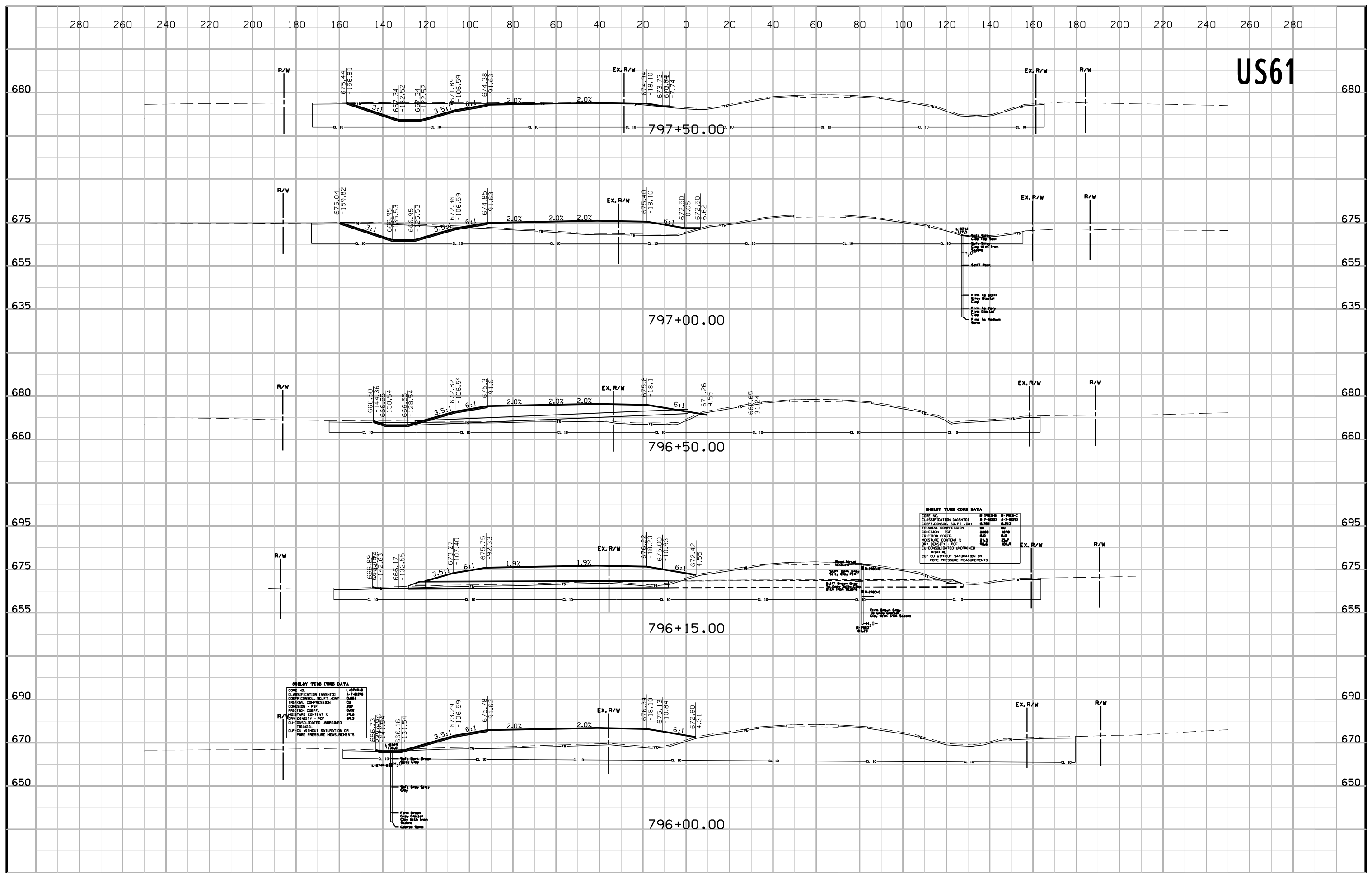


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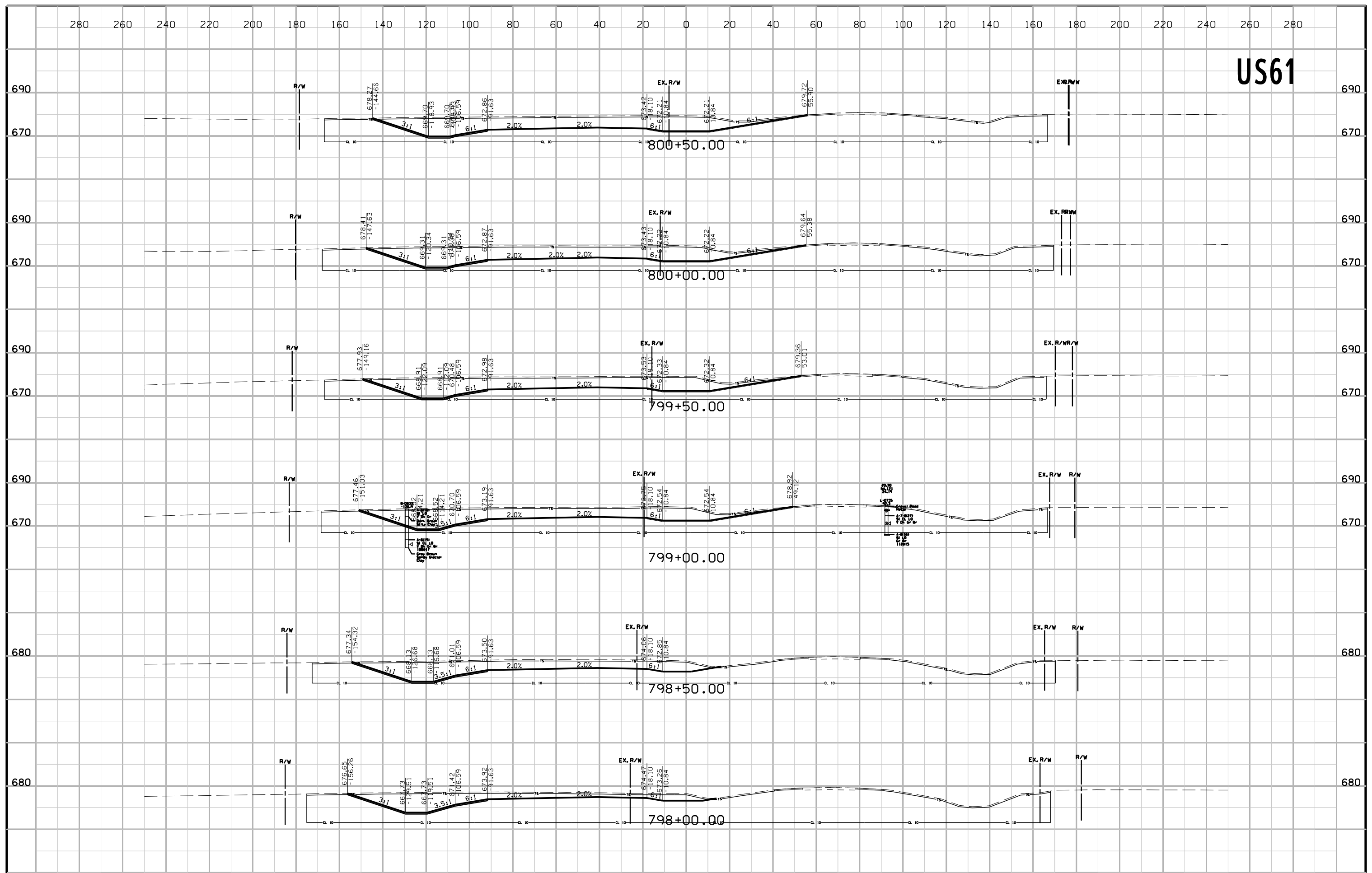




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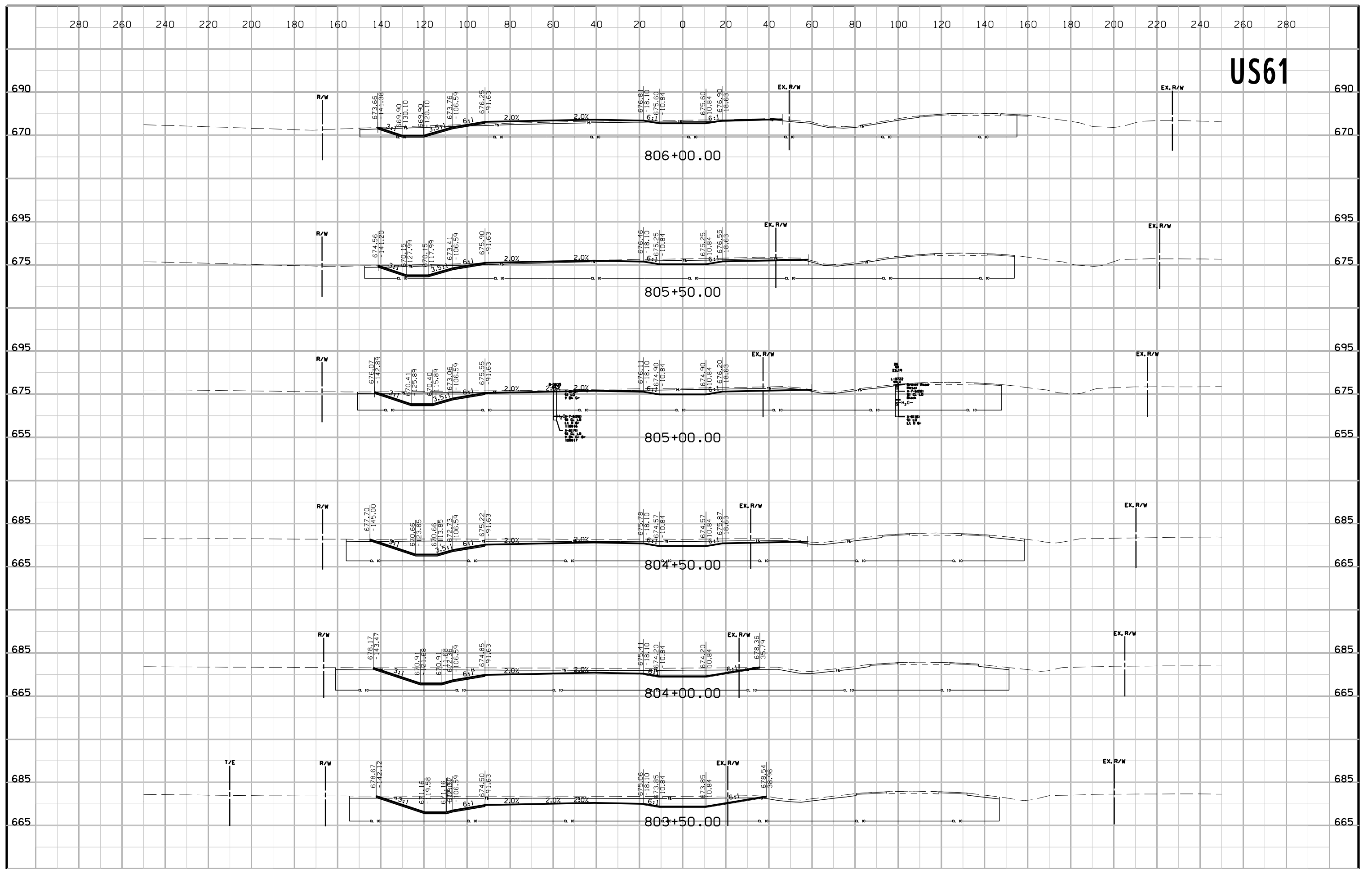


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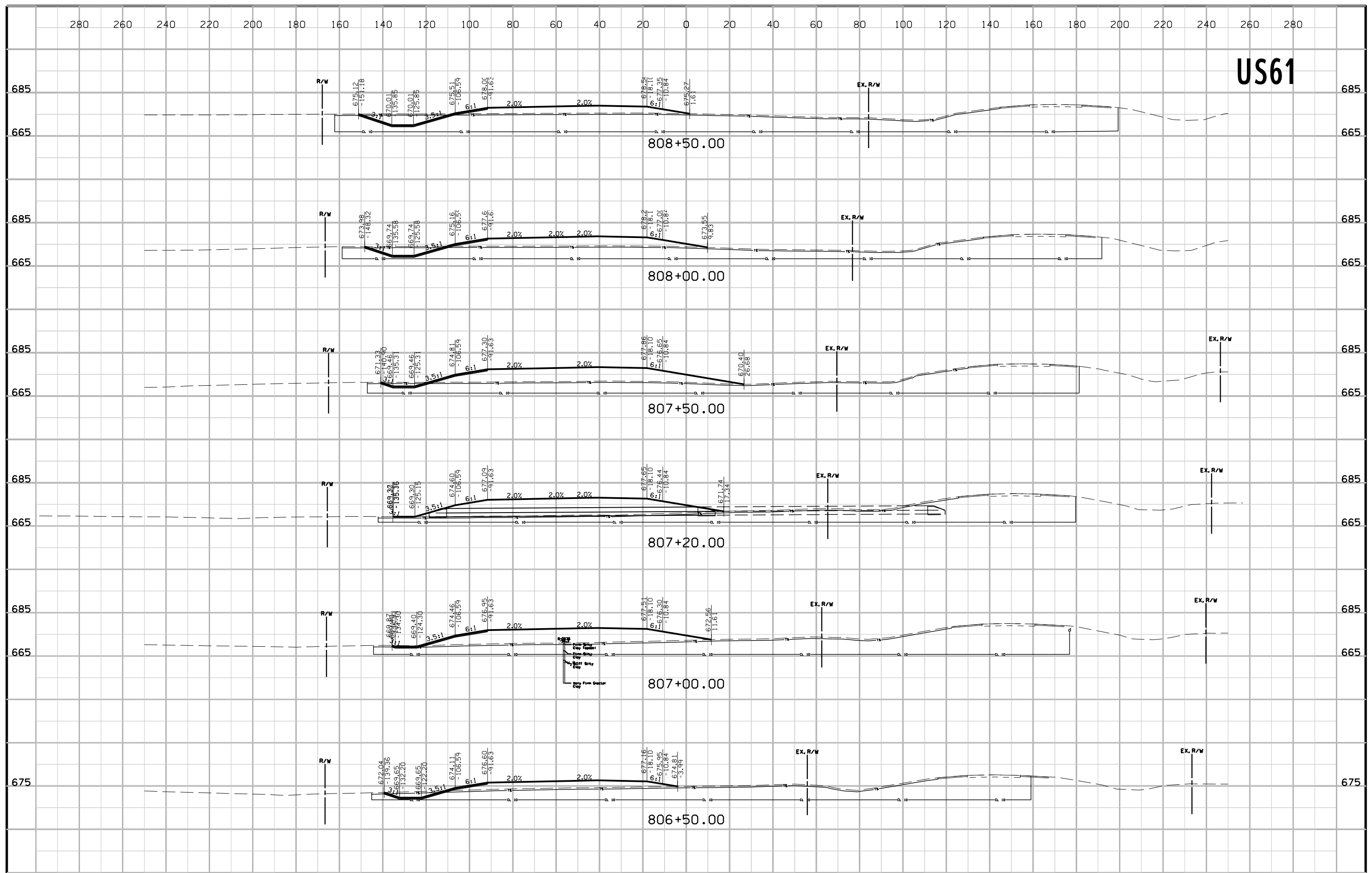




# US61



# US61



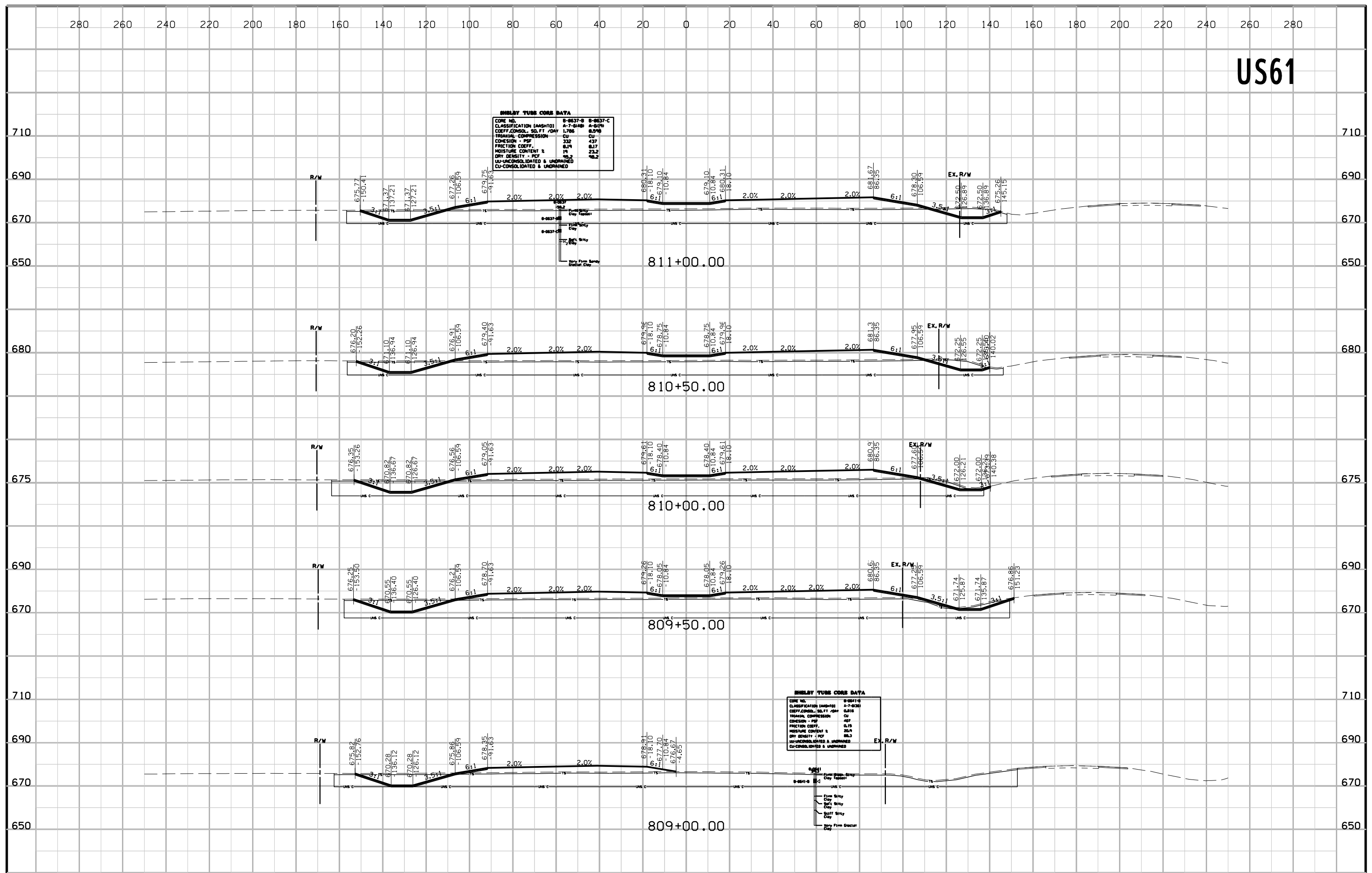
# US61

**SHIELBY TUBE CORE DATA**

CORE NO.	0-8637-B	0-8637-C
CLASSIFICATION (ASHSTG)	A-7-6(4)B	A-6(1)
COEFF. CONSOL. SO. FT. / DAY	1.765	0.576
TRIAL COMPRESSION	Cu	Cu
COHESION - PSF	332	437
FRICITION COEFF.	0.19	0.17
MOISTURE CONTENT %	19	23.2
DRY DENSITY - PCF	88.2	88.2
UNCONSOLIDATED & UNDRAINED		
CU-CONSOLIDATED & UNDRAINED		

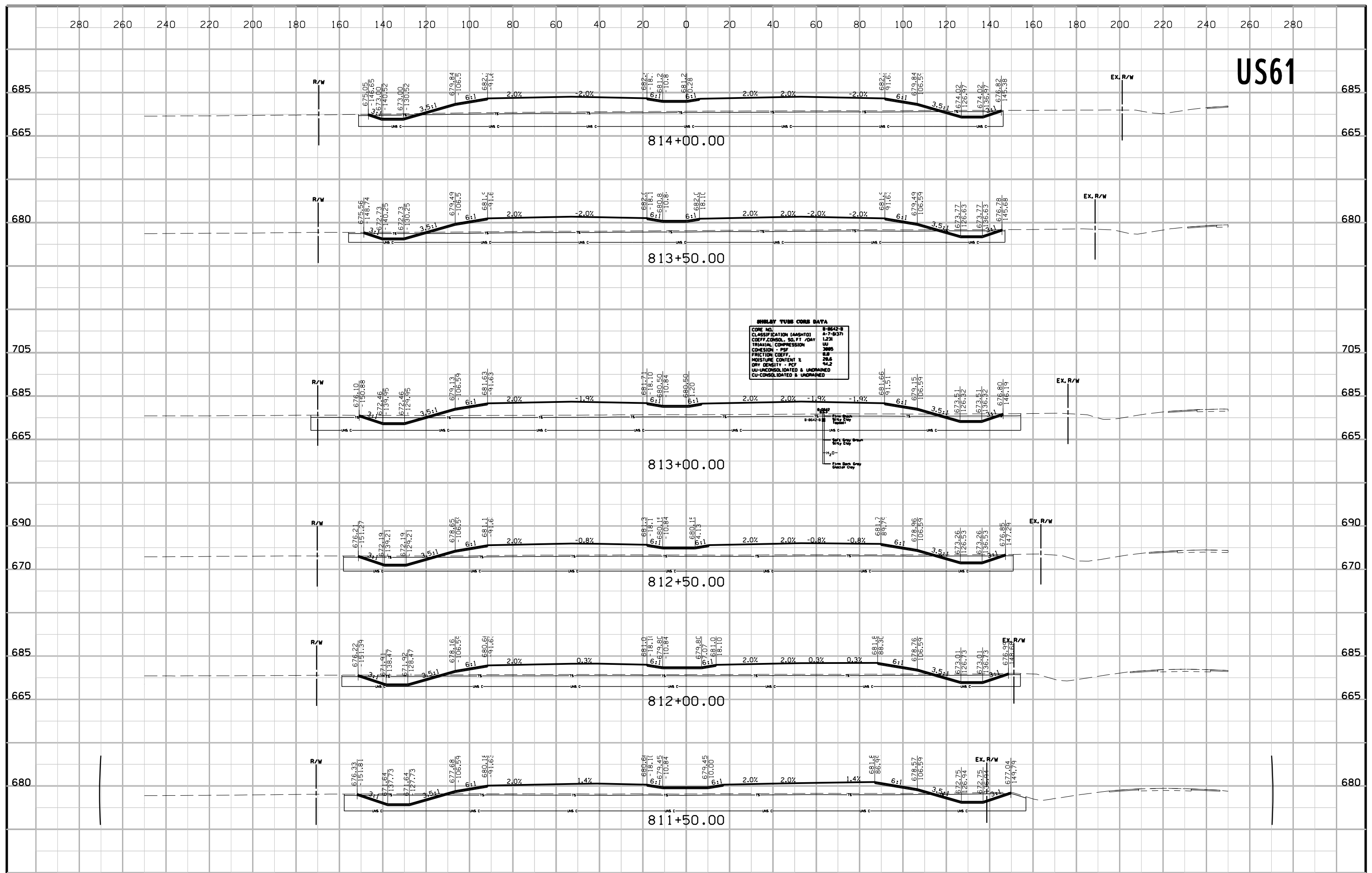
**SHIELBY TUBE CORE DATA**

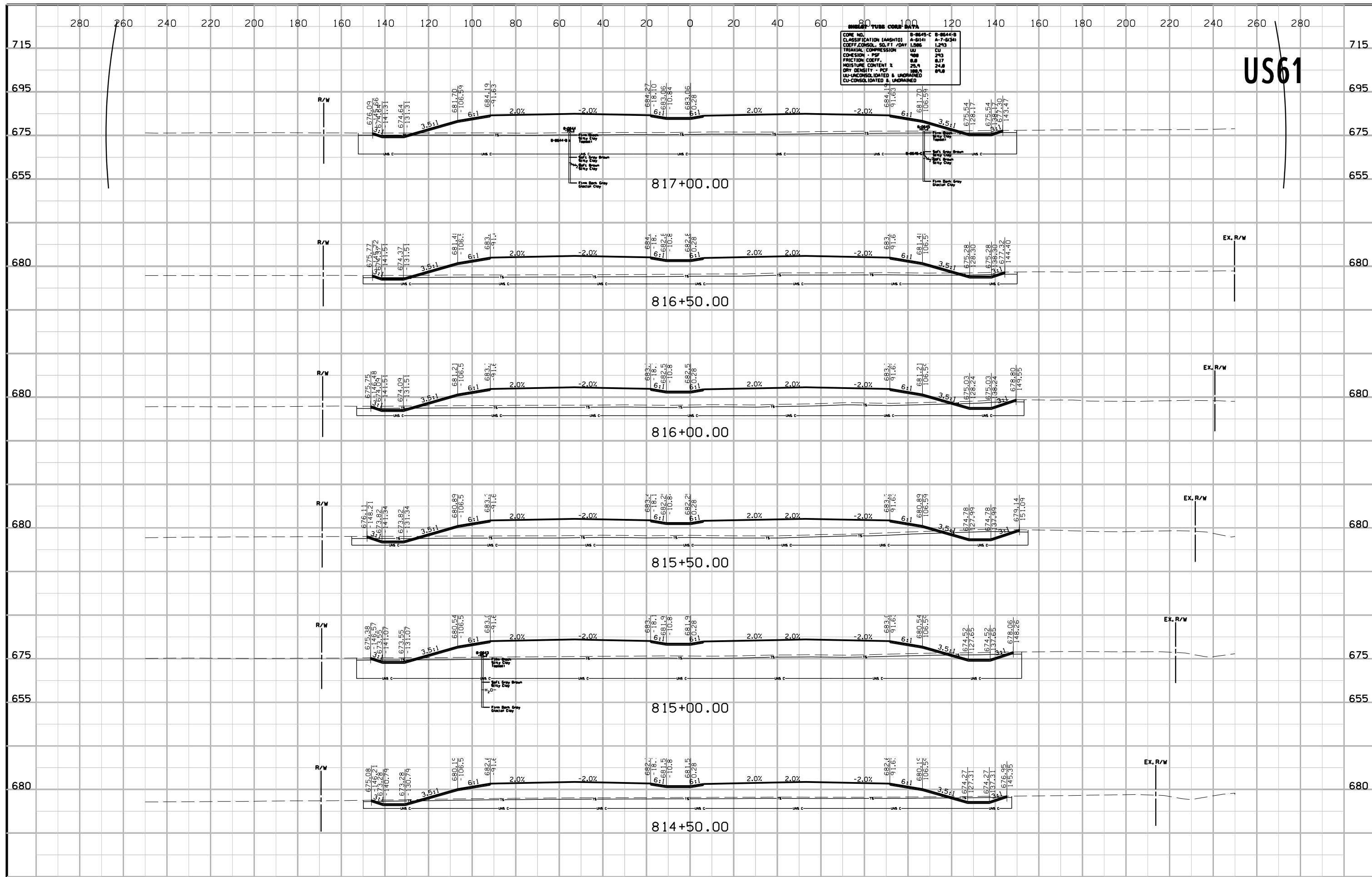
CORE NO.	0-8641-B
CLASSIFICATION (ASHSTG)	A-7-6(2)B
COEFF. CONSOL. SO. FT. / DAY	0.816
TRIAL COMPRESSION	Cu
COHESION - PSF	407
FRICITION COEFF.	0.19
MOISTURE CONTENT %	20.9
DRY DENSITY - PCF	88.3
UNCONSOLIDATED & UNDRAINED	
CU-CONSOLIDATED & UNDRAINED	





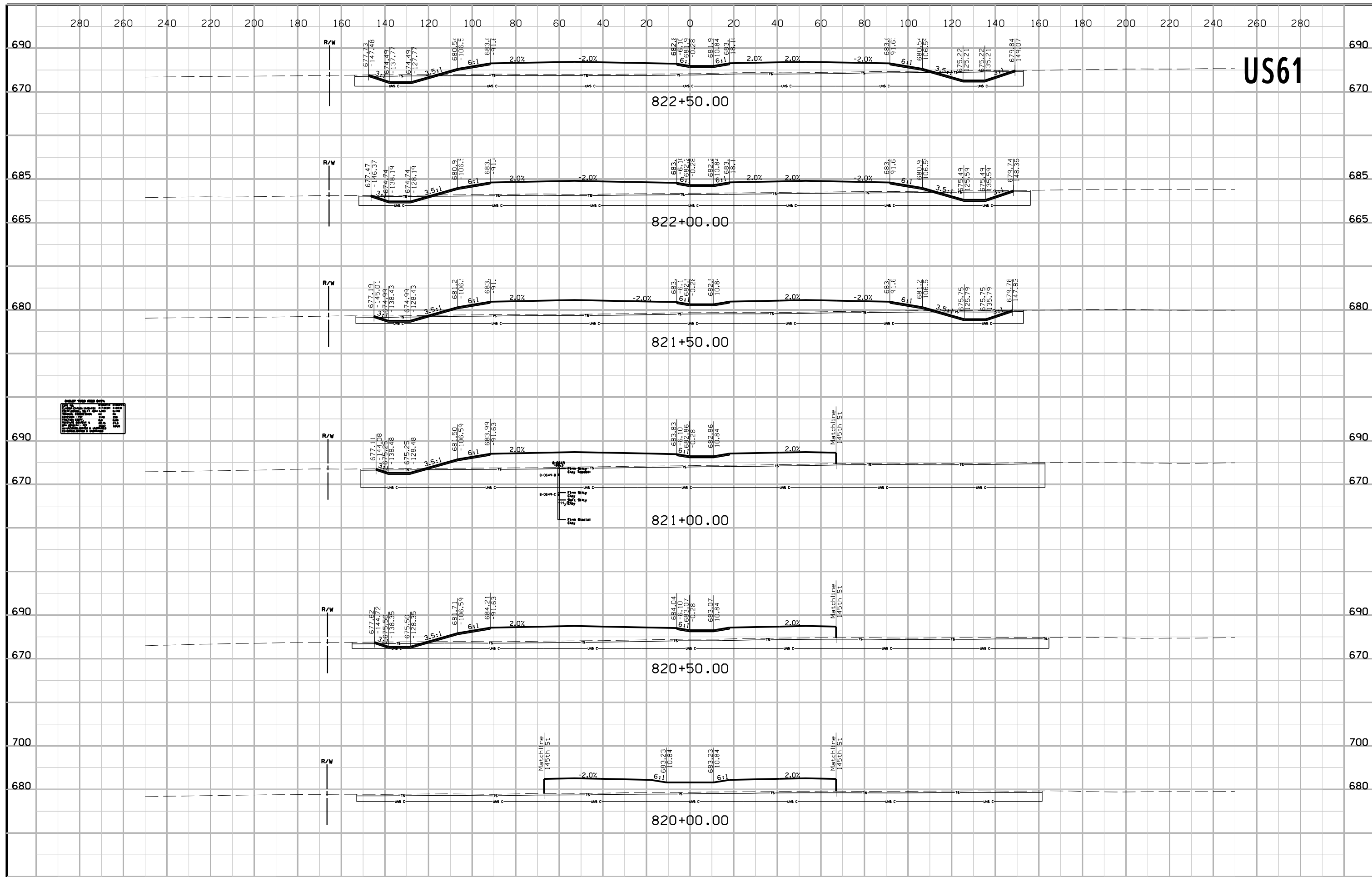
# US61





US61





US61

822+50.00

822+00.00

821+50.00

821+00.00

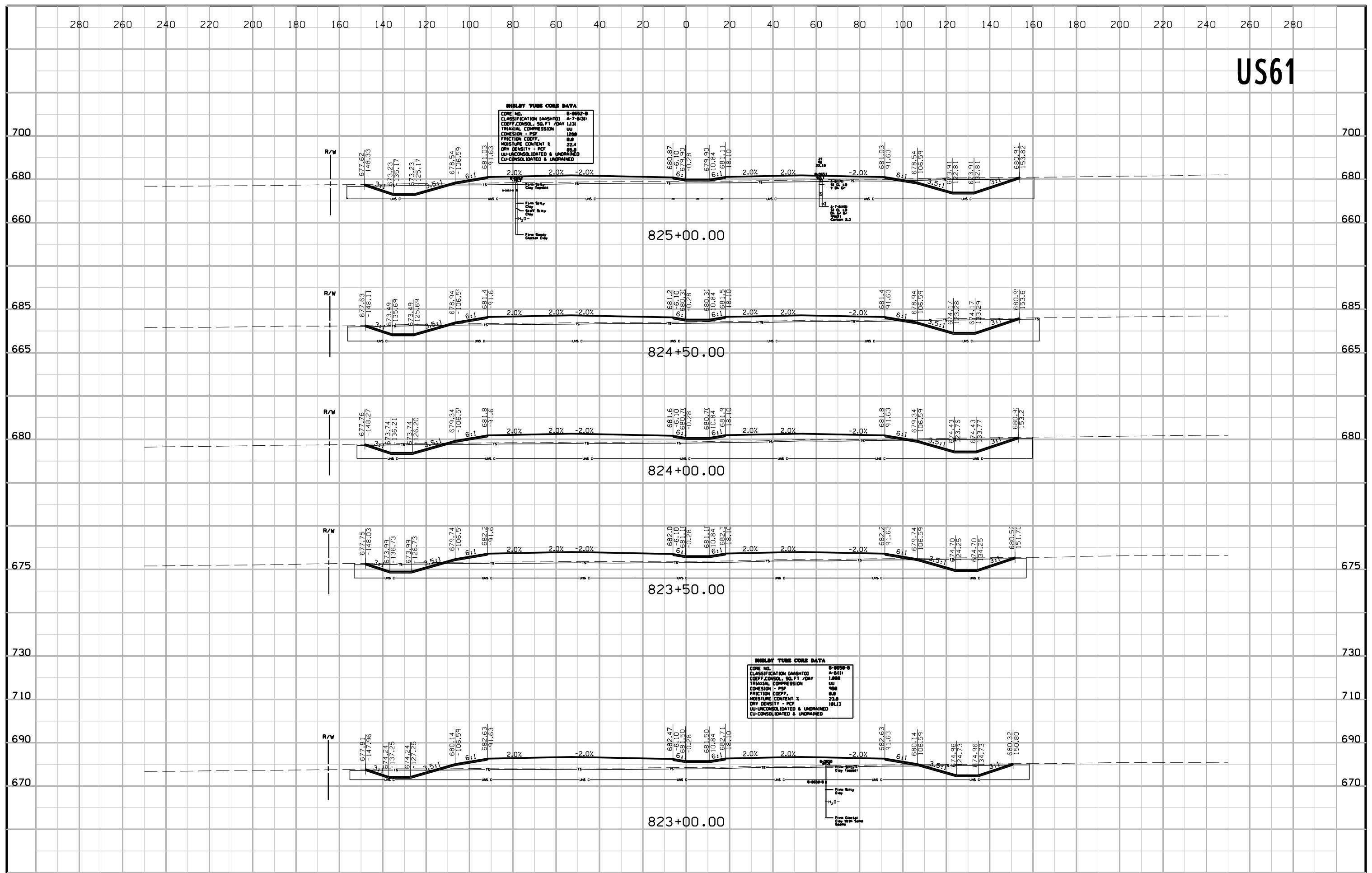
820+50.00

820+00.00

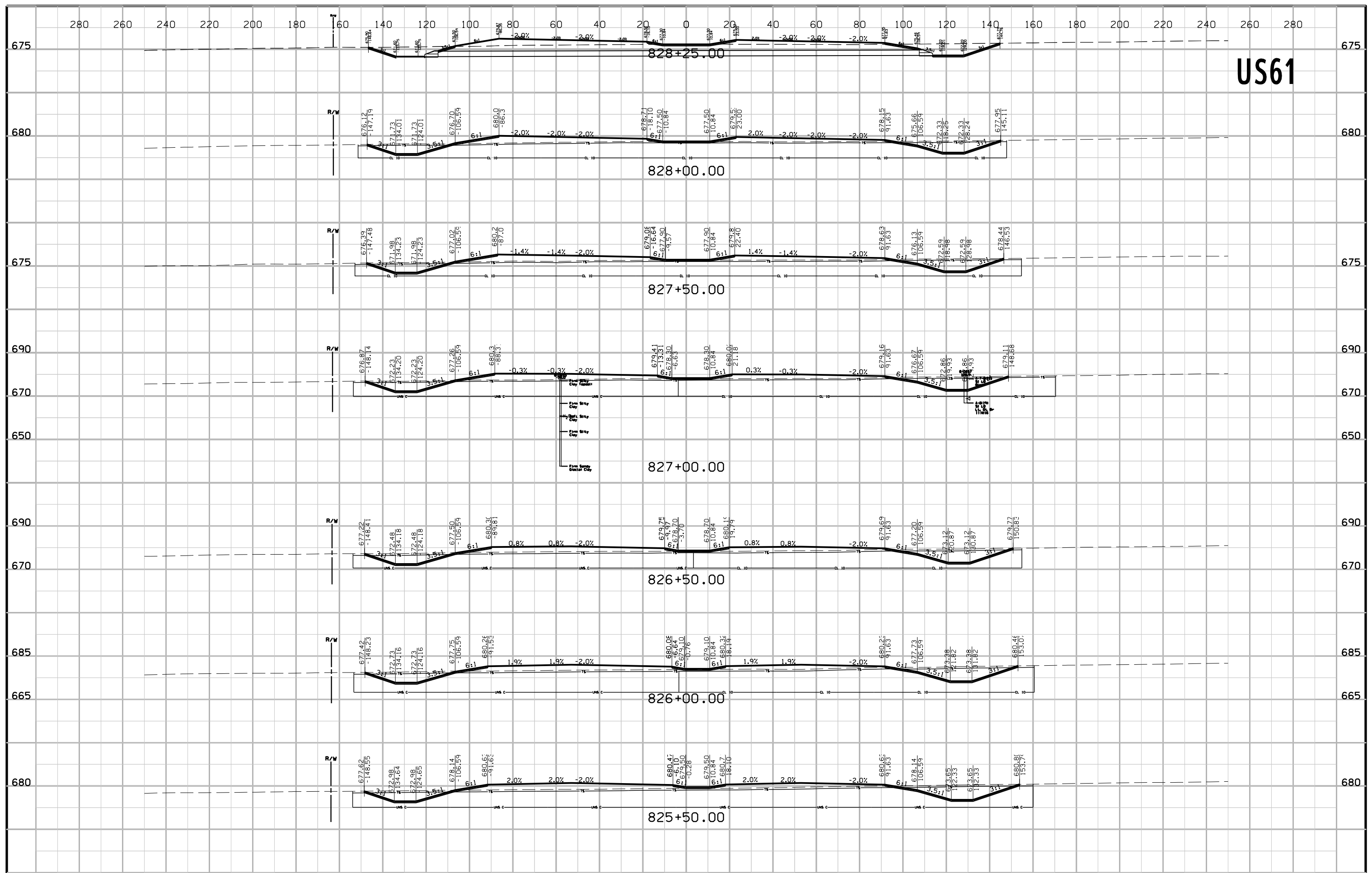
# US61

**SHIELT TUBE CORE DATA**  
 CORE NO. 8-9552-B  
 CLASSIFICATION (ASTM) A-7-92(1)  
 COEFF. CONSOL. SO. FT. / DAY 1.13  
 TRIAXIAL COMPRESSION UU  
 COHESION - PSF 1288  
 FRICTION COEFF. 0.8  
 MOISTURE CONTENT % 22.4  
 DRY DENSITY - PCF 95.8  
 UN-CONSOLIDATED & UNDRAINED  
 CU-CONSOLIDATED & UNDRAINED

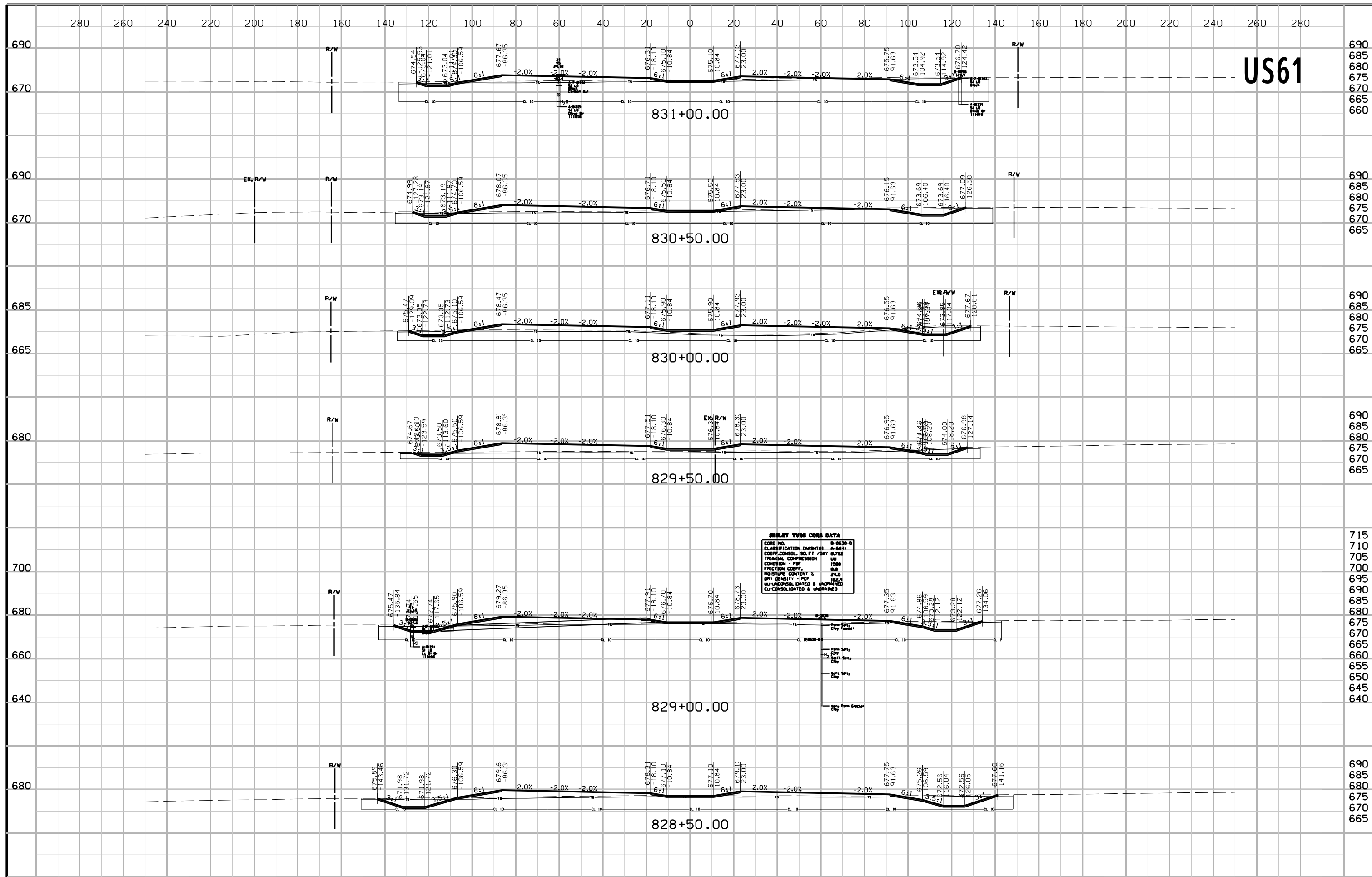
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 CORE NO. 8-9556-B  
 CLASSIFICATION (ASTM) A-6(1)  
 COEFF. CONSOL. SO. FT. / DAY 1.009  
 TRIAXIAL COMPRESSION UU  
 COHESION - PSF 958  
 FRICTION COEFF. 0.8  
 MOISTURE CONTENT % 23.8  
 DRY DENSITY - PCF 101.13  
 UN-CONSOLIDATED & UNDRAINED  
 CU-CONSOLIDATED & UNDRAINED

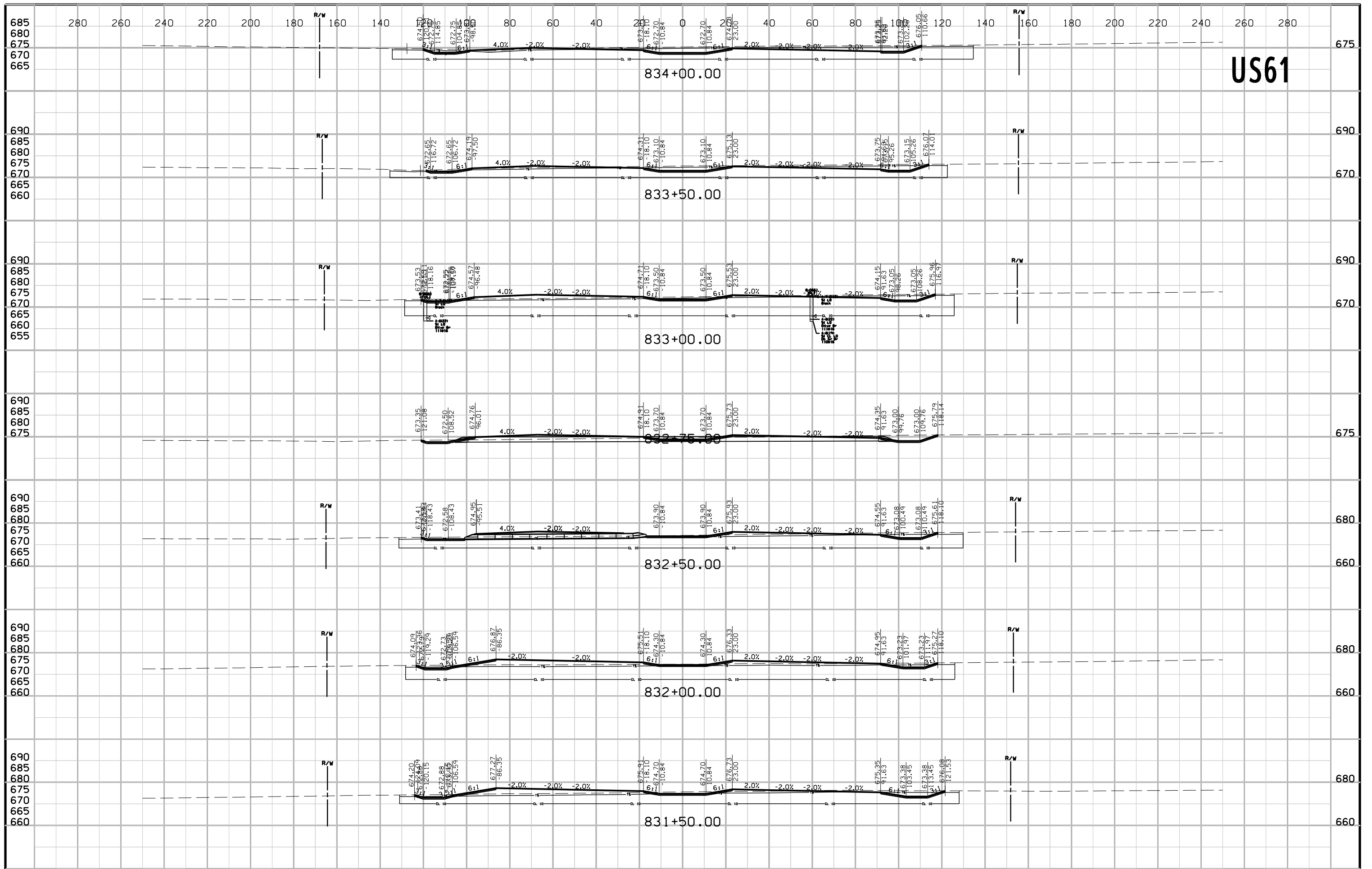


# US61



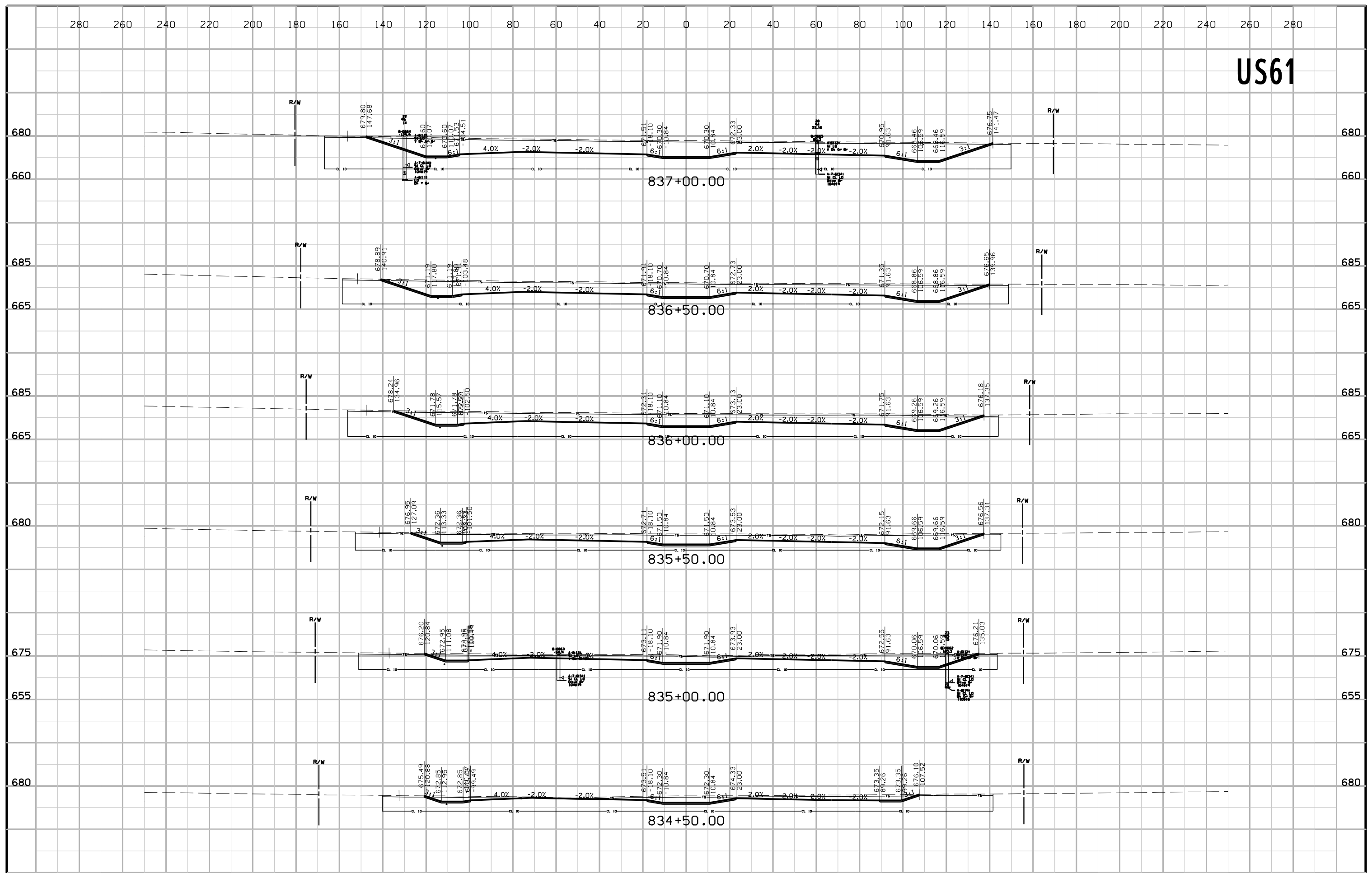




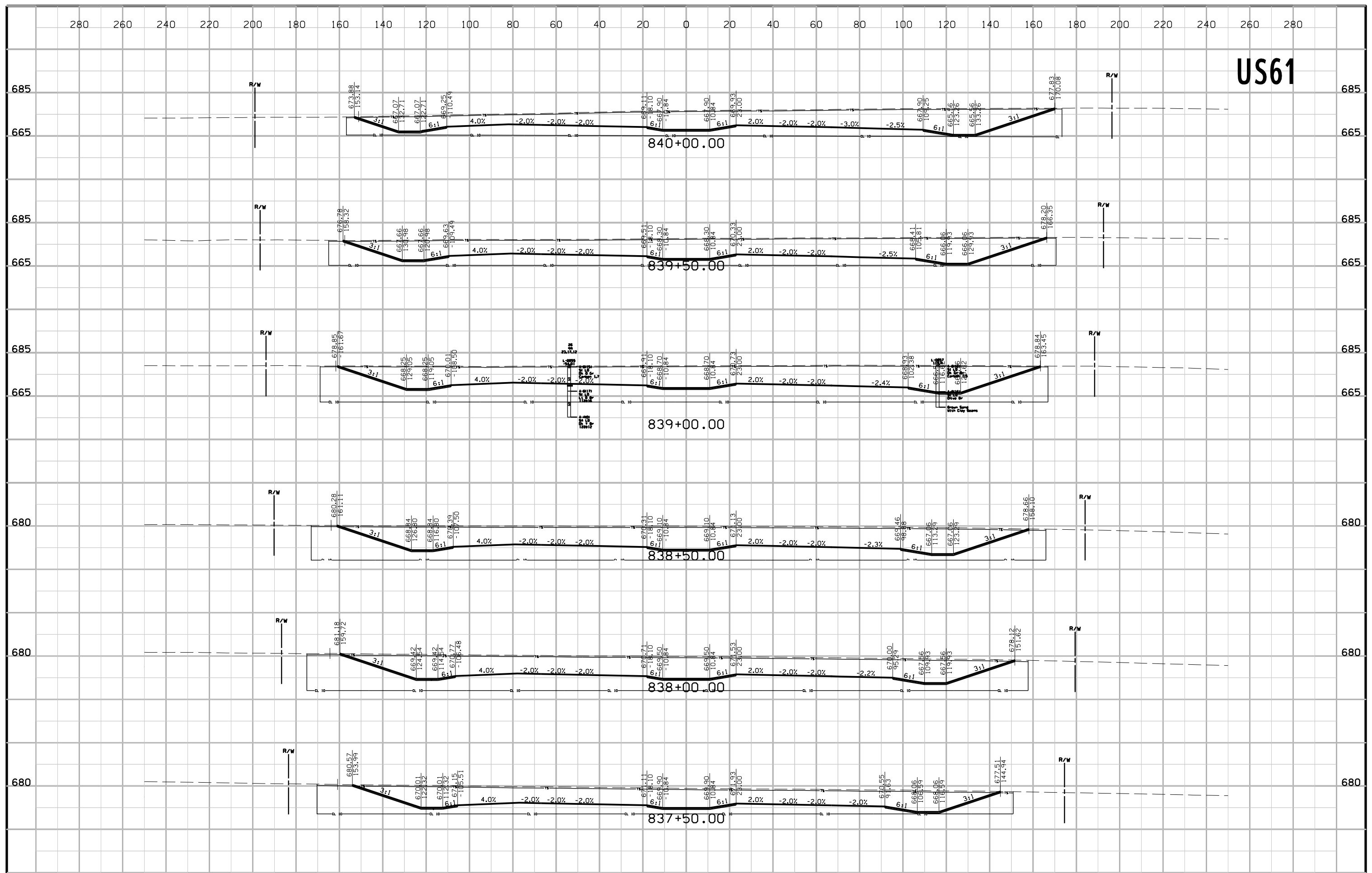


US61

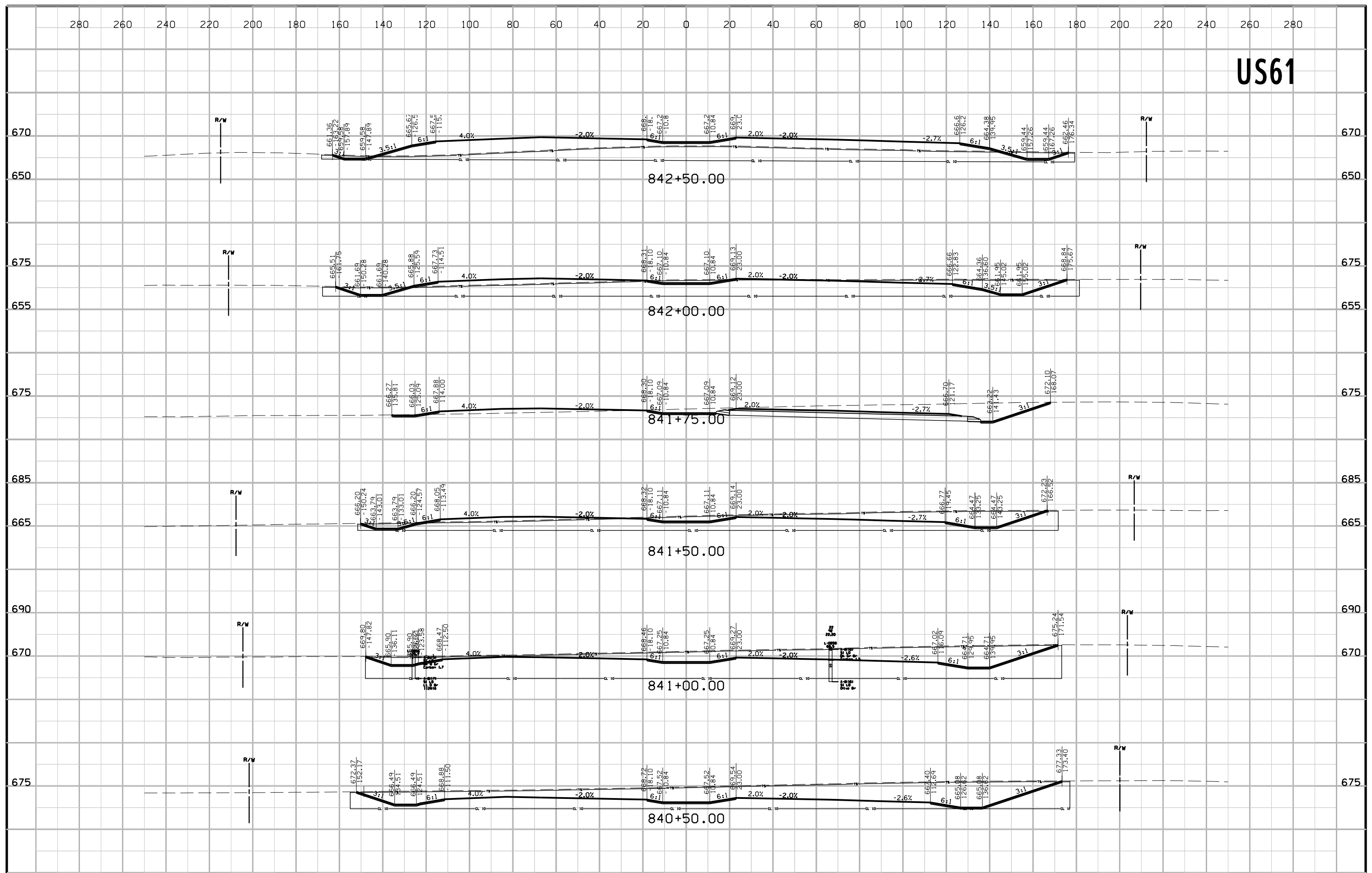
# US61



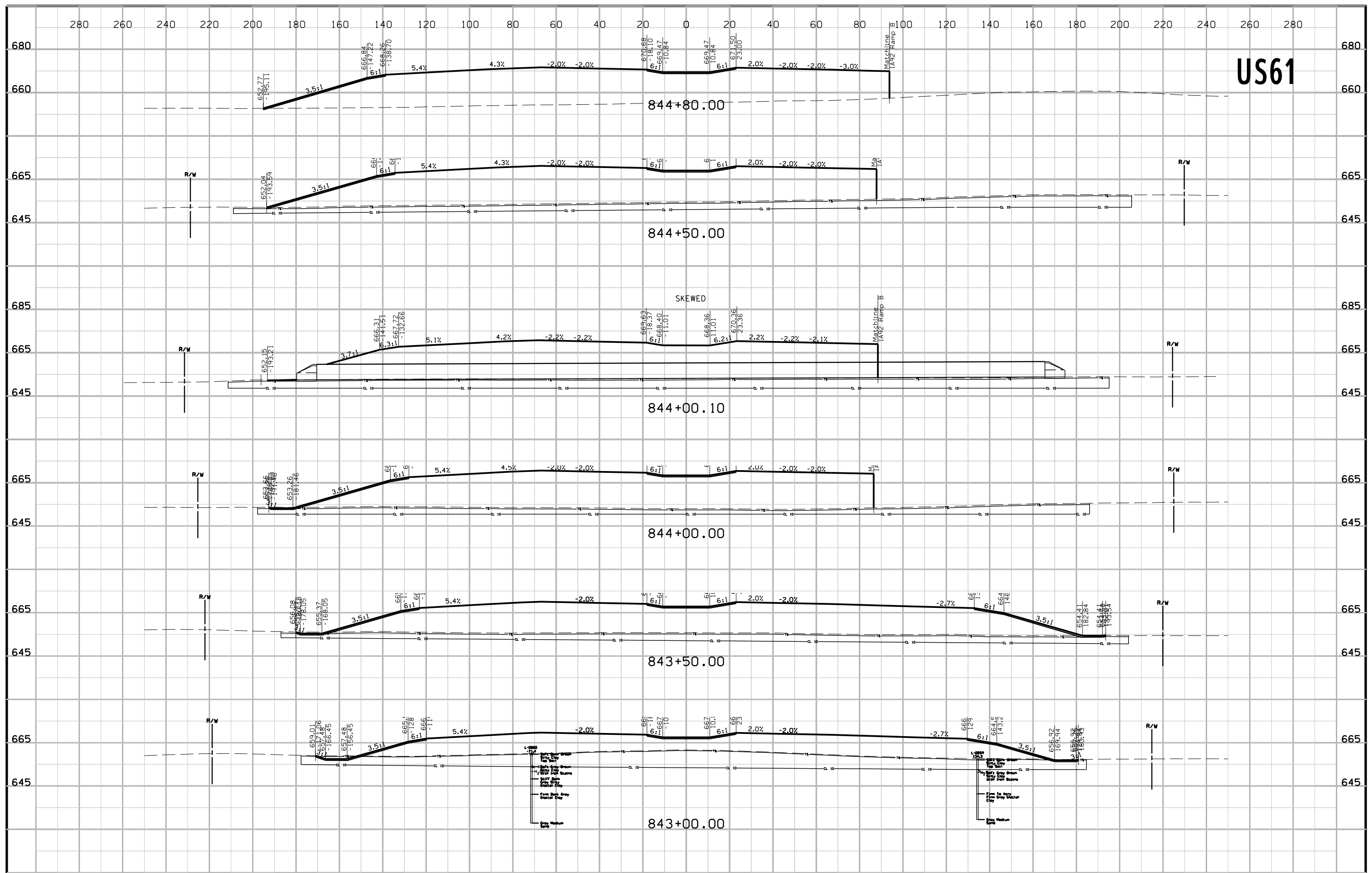
# US61



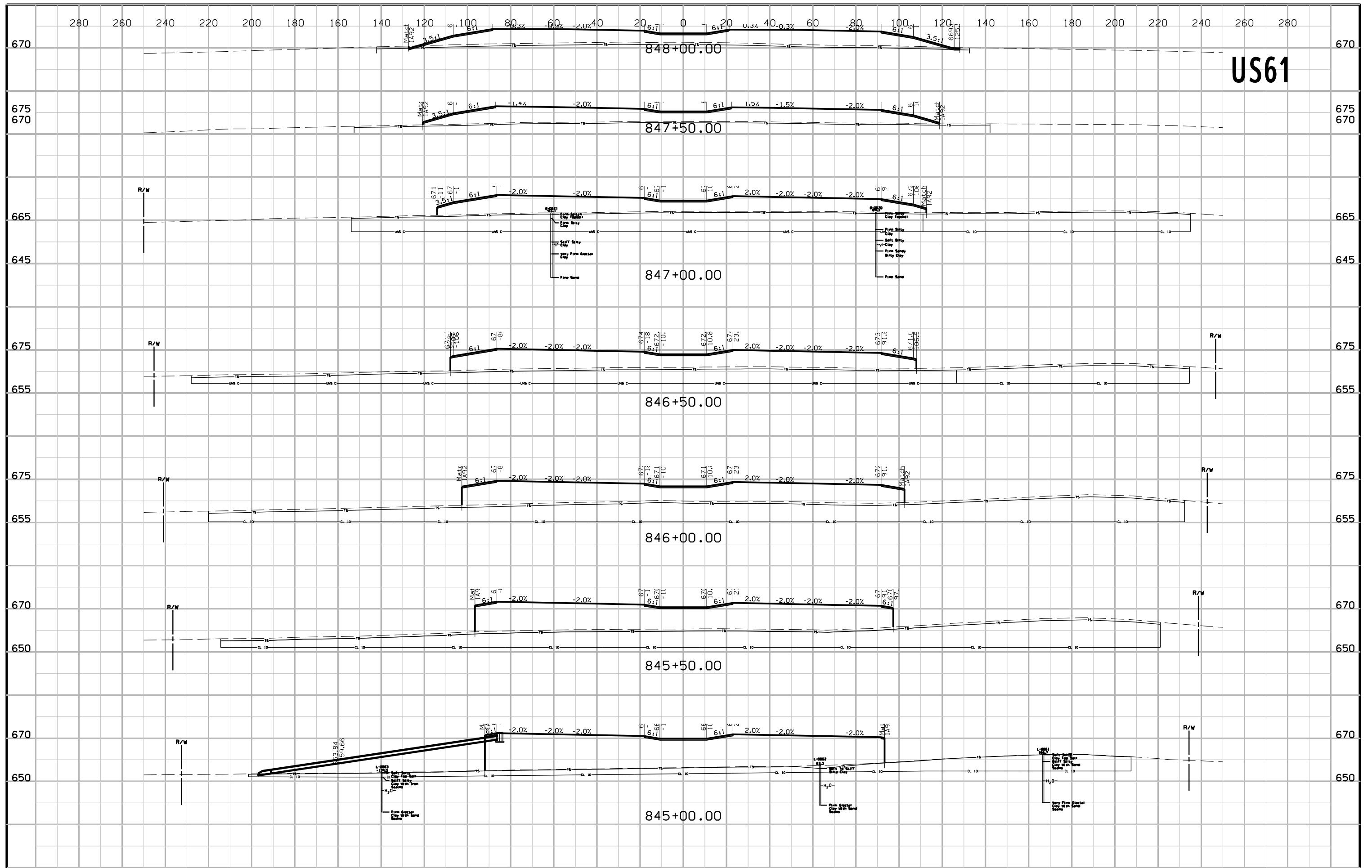
# US61



US61

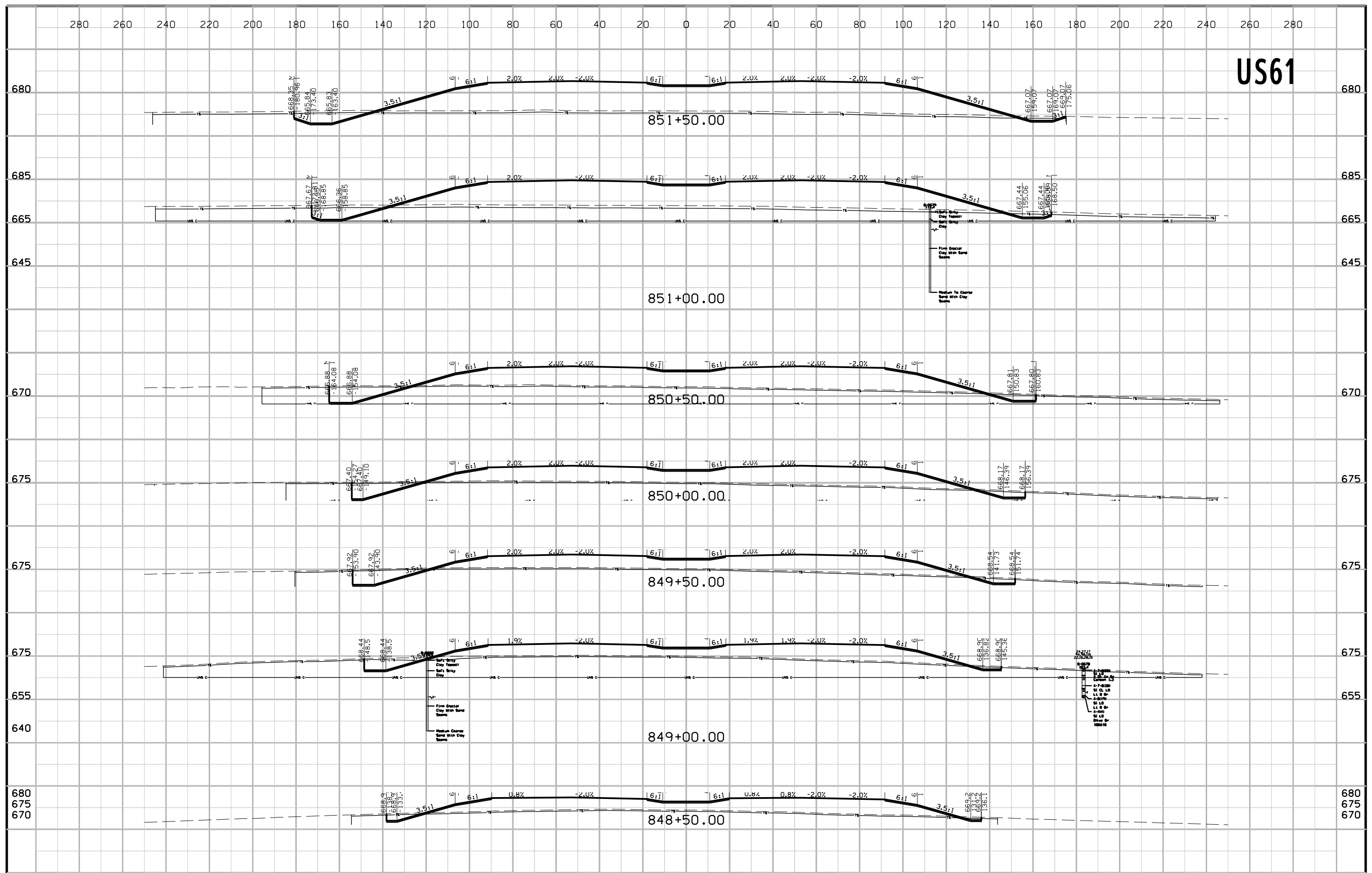




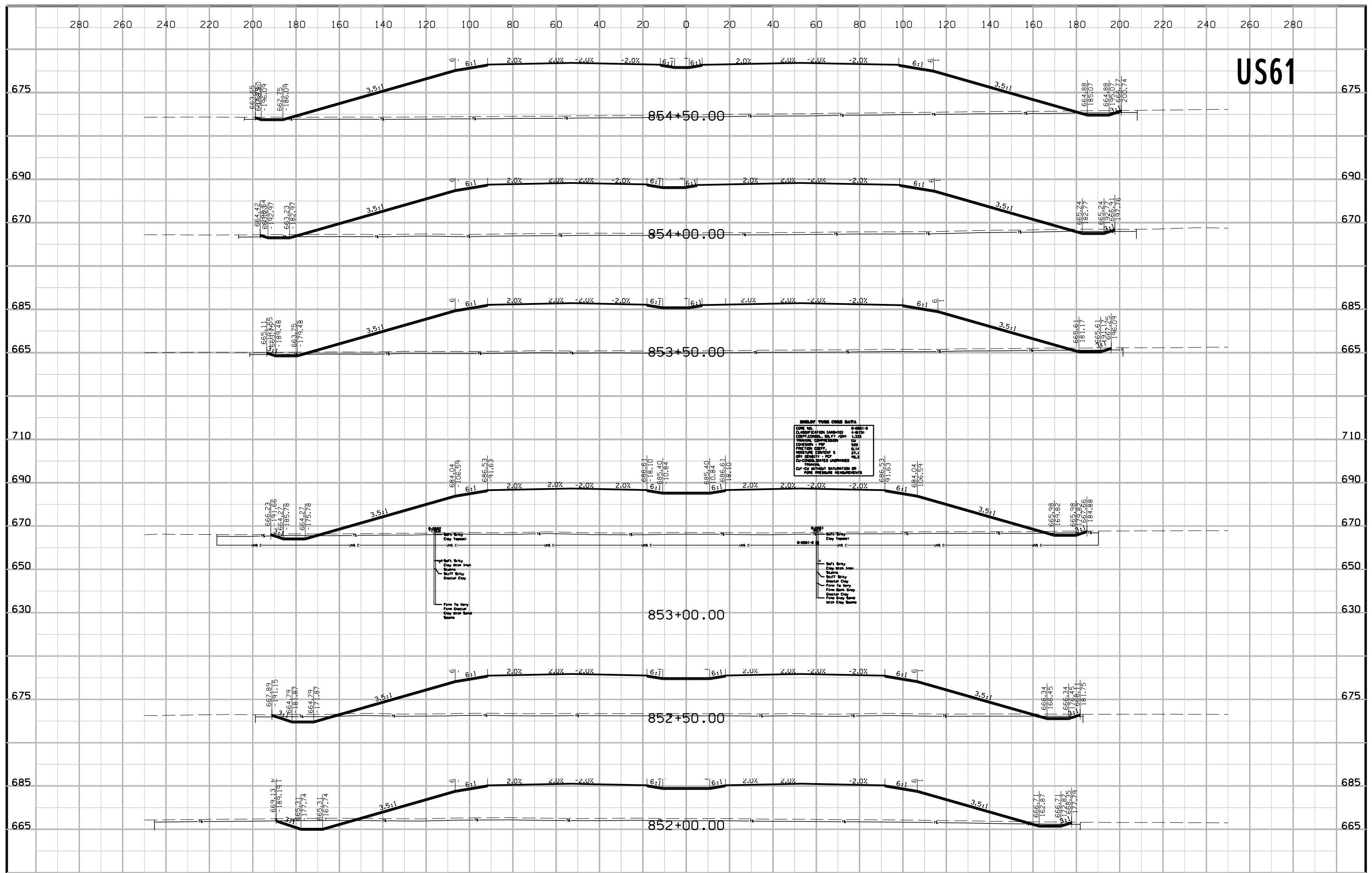


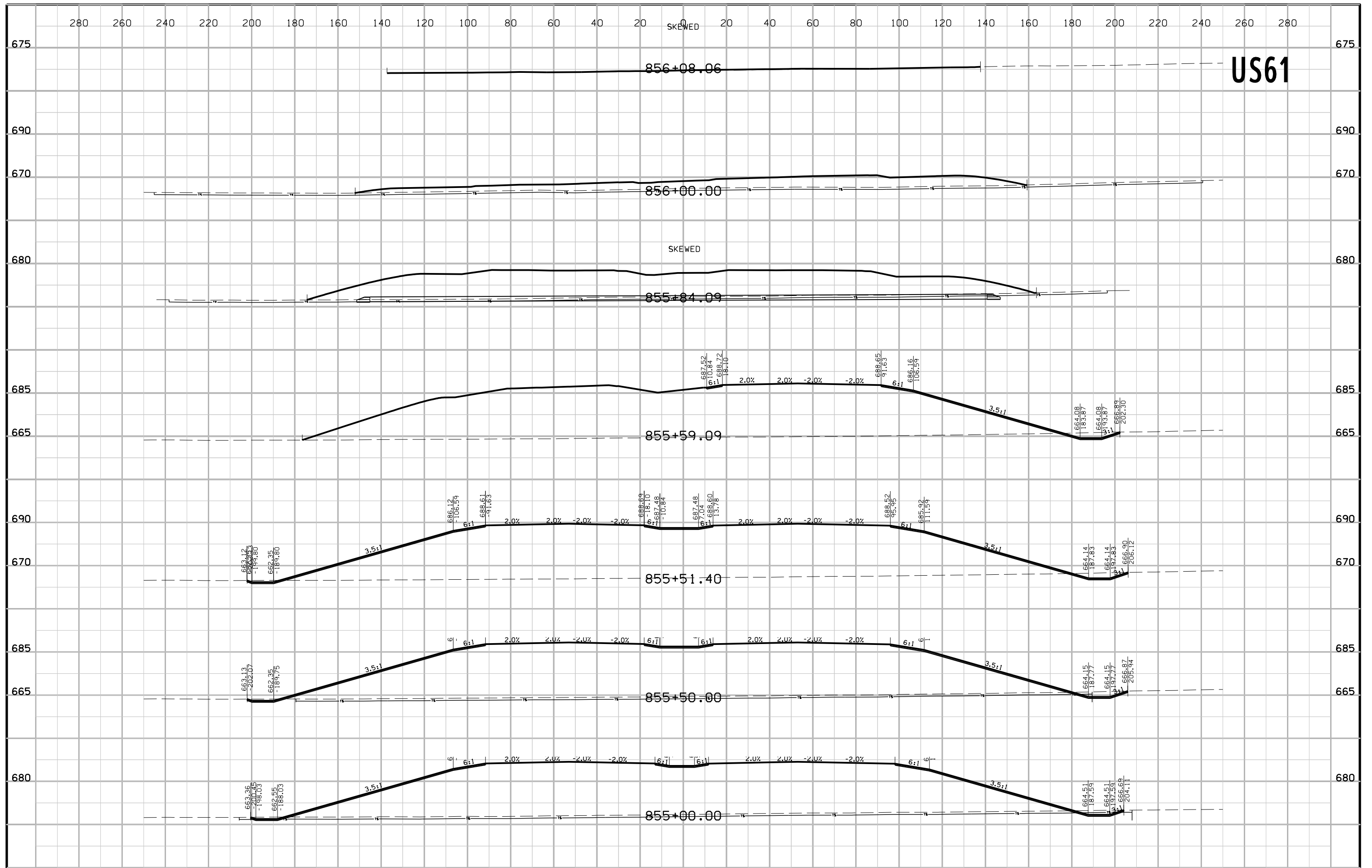
**US61**

# US61

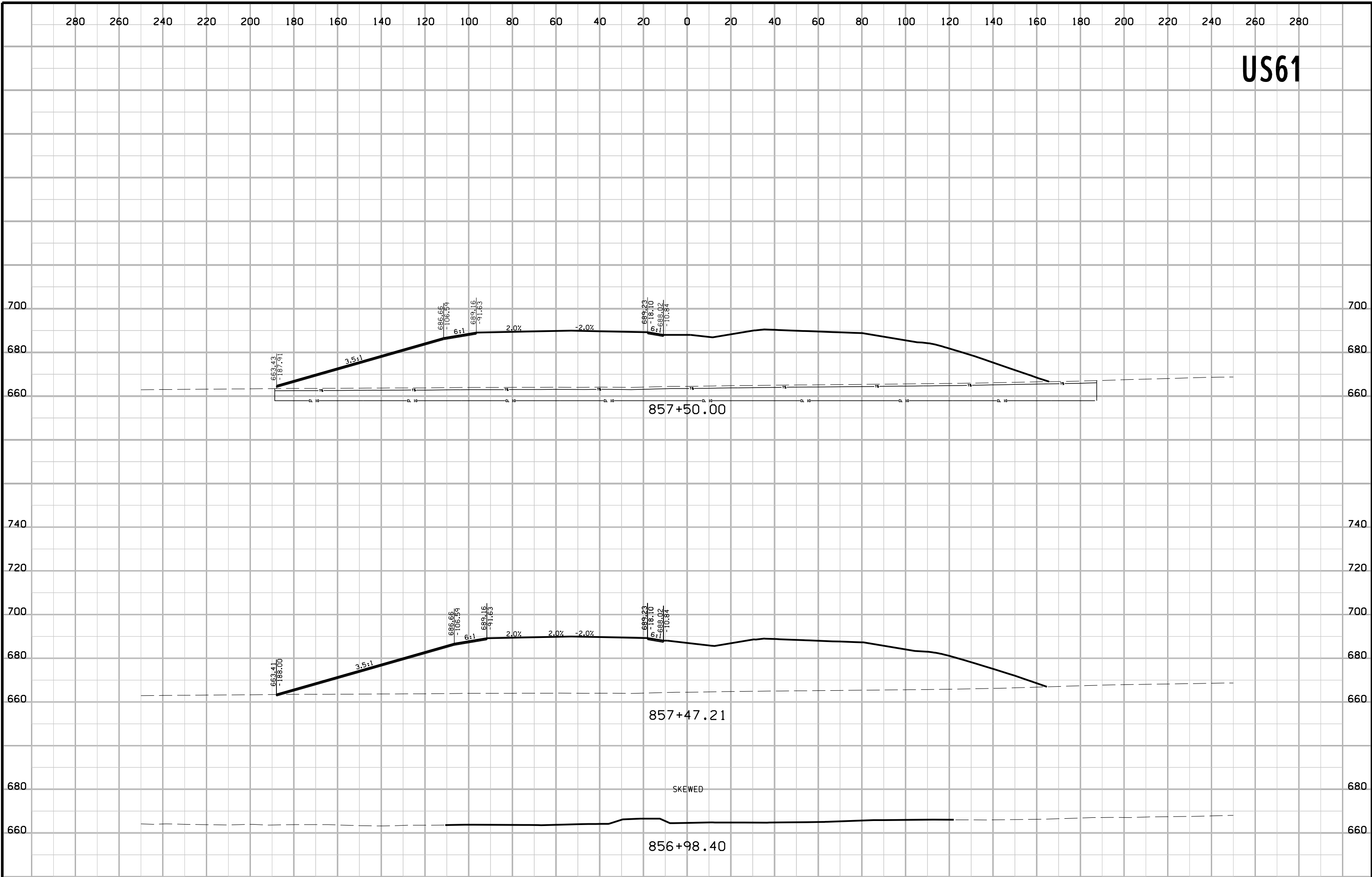


# US61

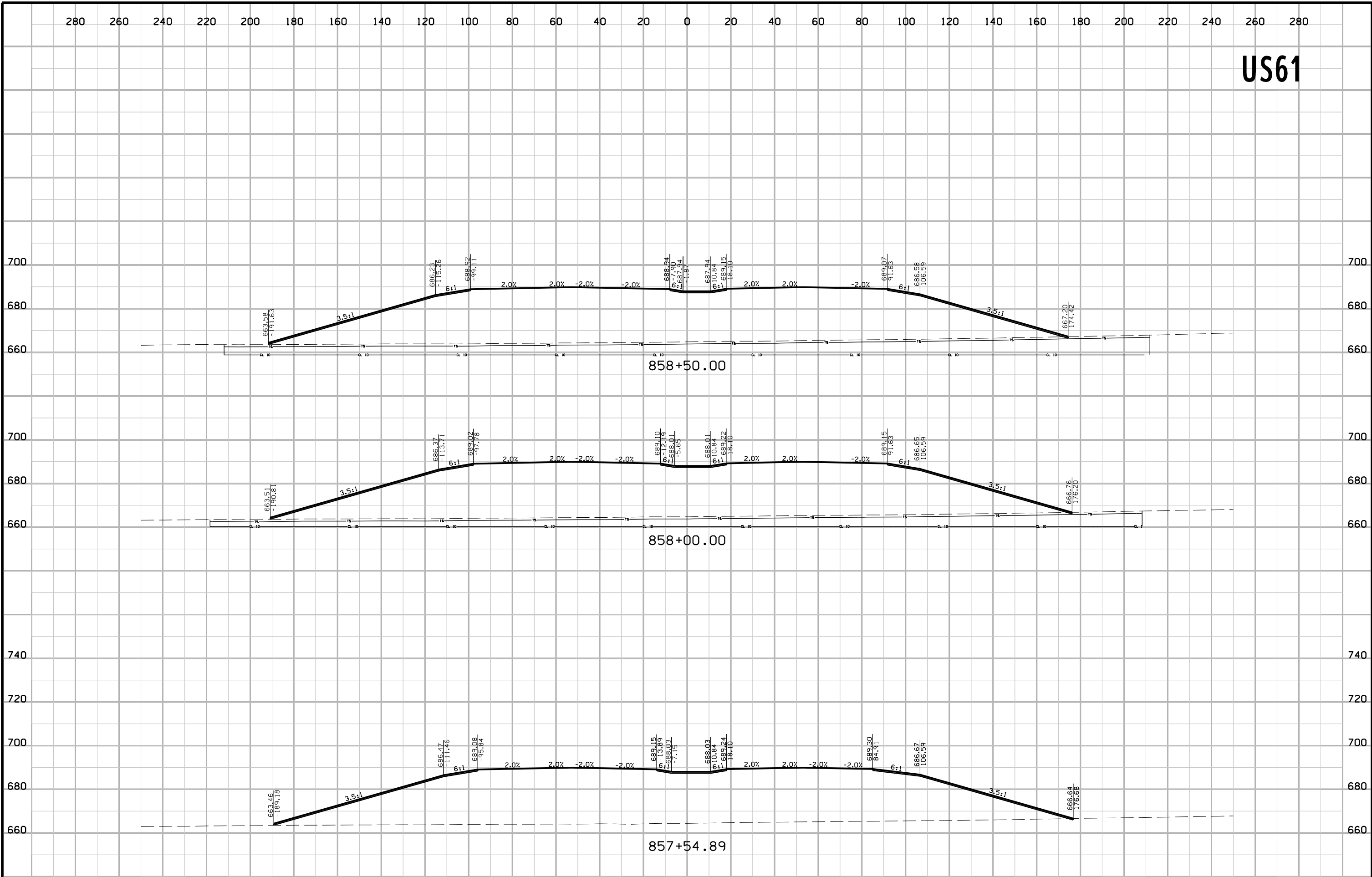




# US61

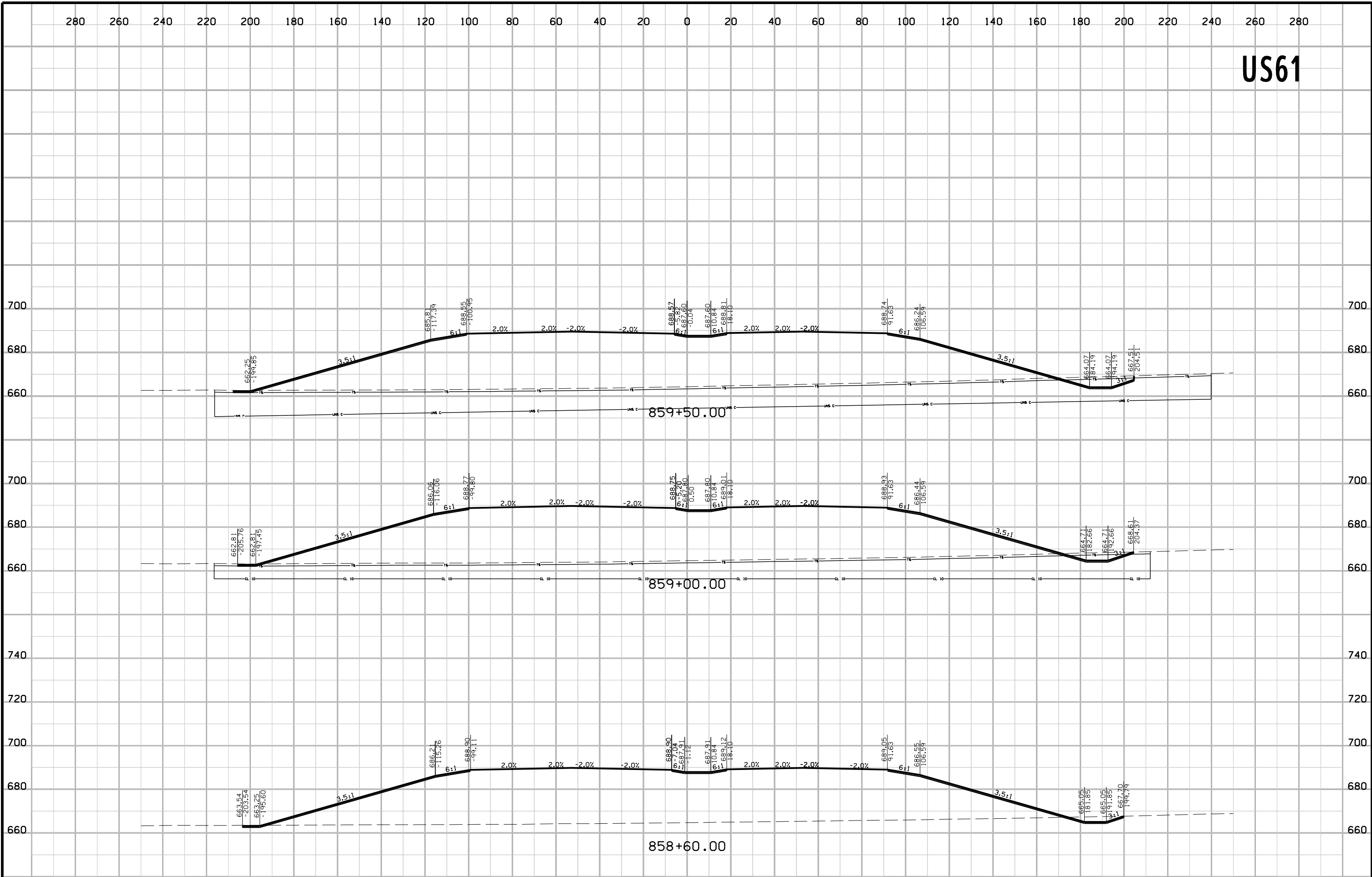


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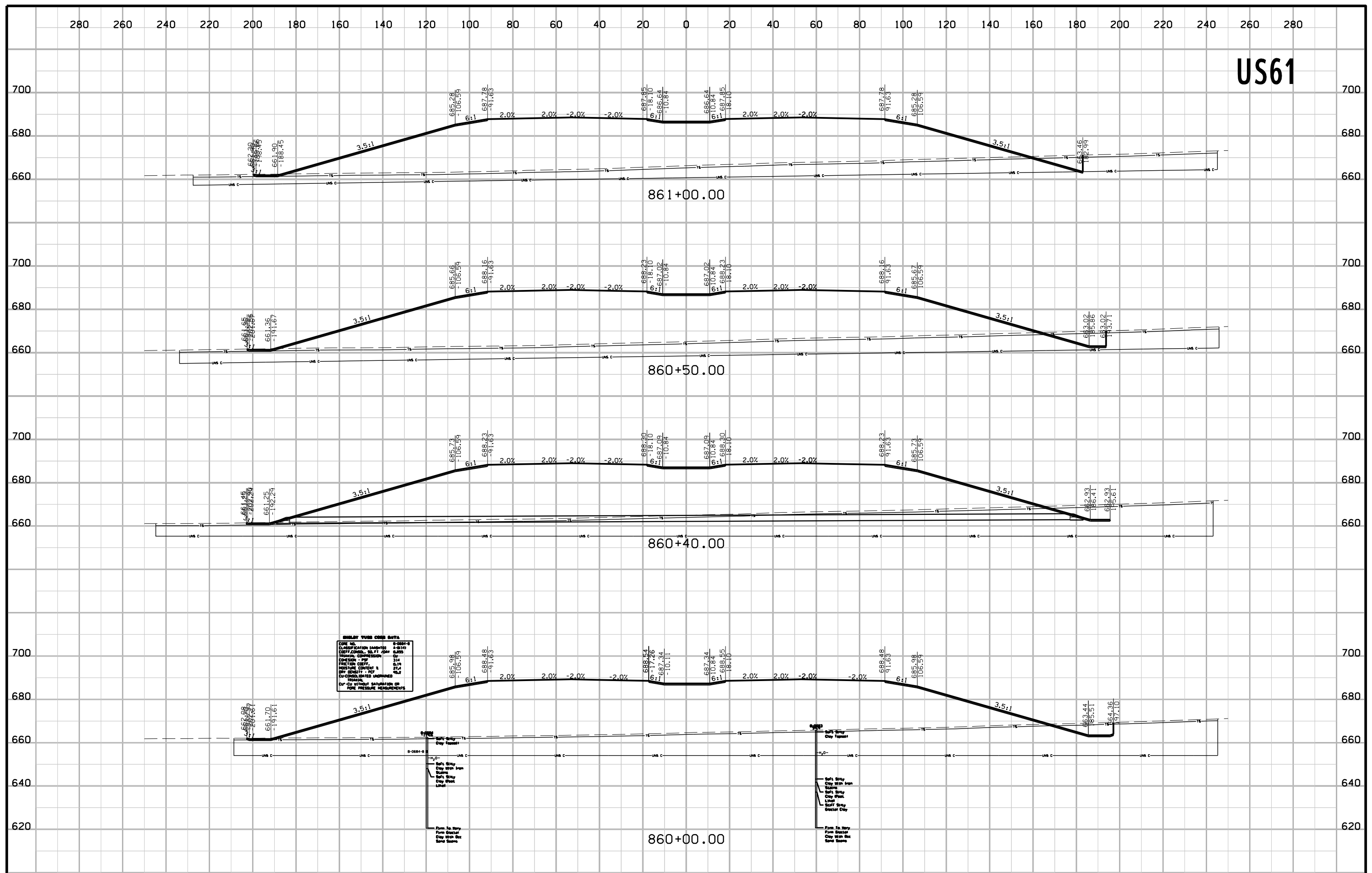




# US61

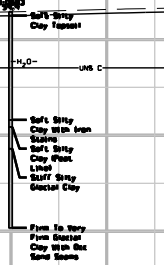
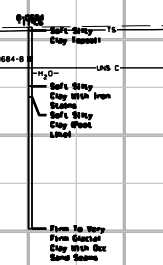


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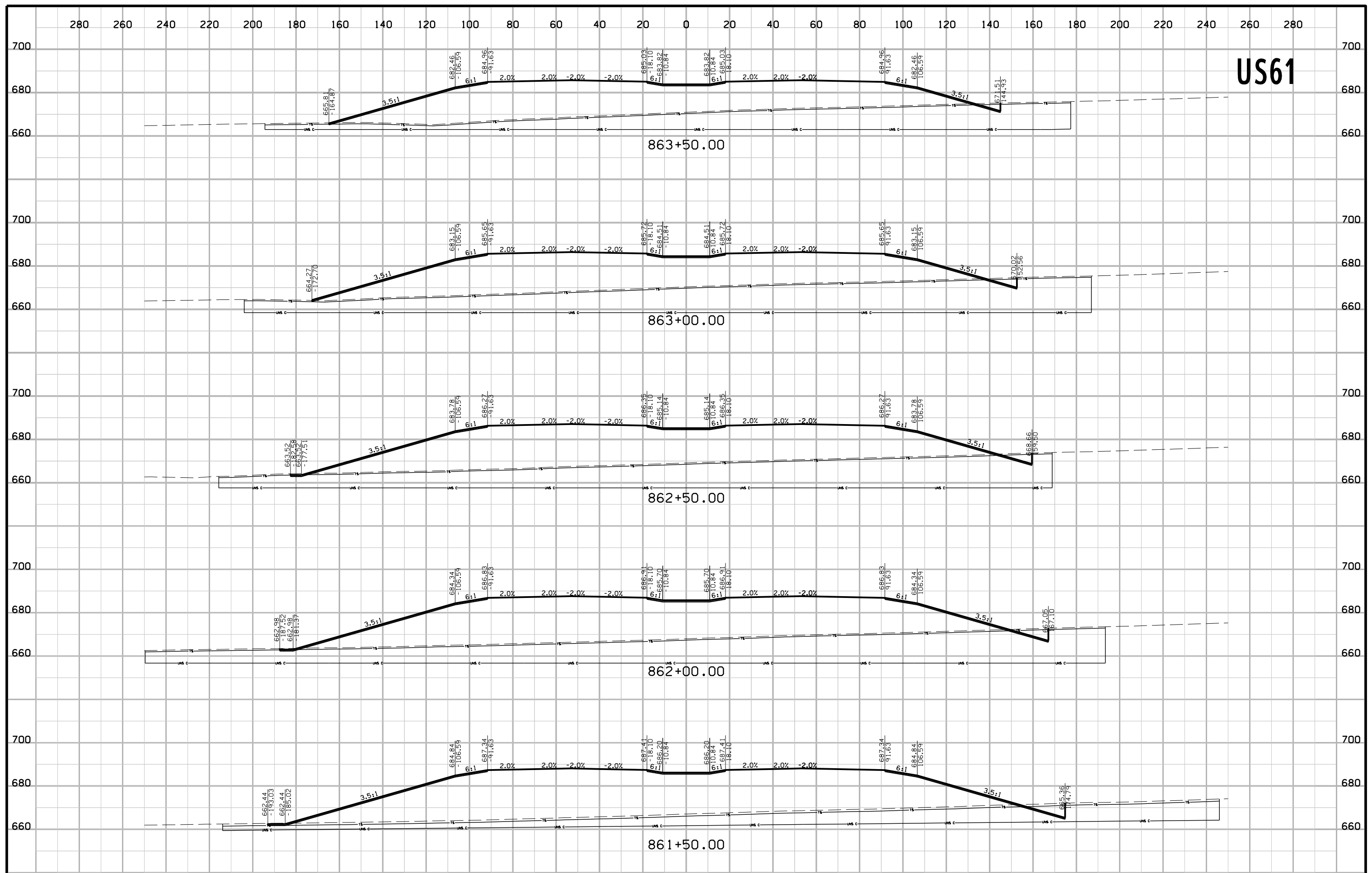


**EMULSION TUBE CORE DATA**

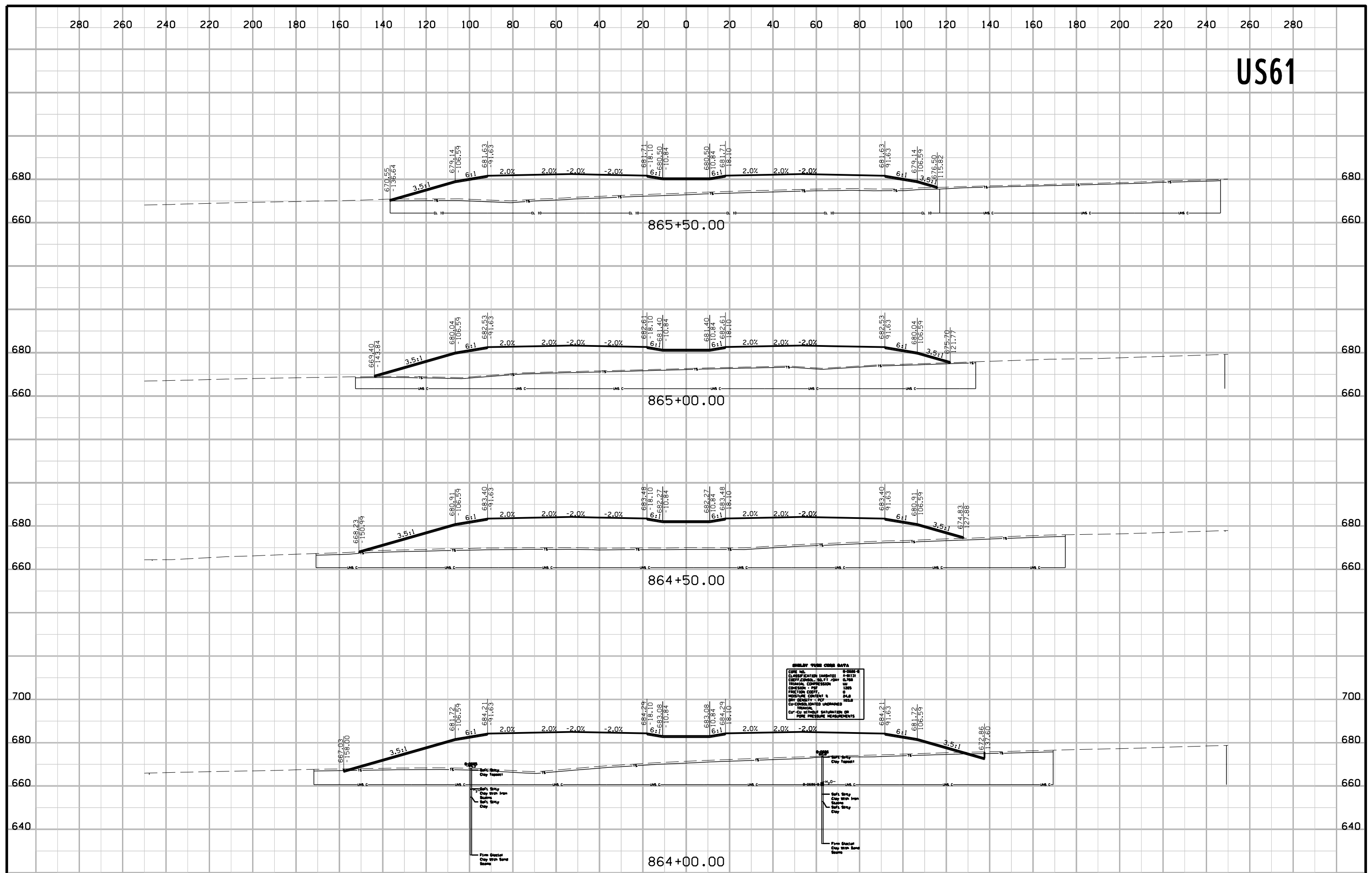
CORE NO.	B-0684-B
DATE	4-21-10
DEPTH (FEET)	0-10
COEFF. CORREL. (R)	0.995
PERMEABILITY (cm/s)	0.0001
COEFF. OF VARIATION	0.00
UNIT WEIGHT (pcf)	125
FRICTION COEFF.	0.34
MOISTURE CONTENT (%)	21.4
DRY DENSITY (pcf)	102.2
COEFF. OF VARIATION	0.00
REMARKS	CONCRETE EMULSION SANDWICH
DEPTH (FEET)	0-10
COEFF. CORREL. (R)	0.995
PERMEABILITY (cm/s)	0.0001
COEFF. OF VARIATION	0.00
UNIT WEIGHT (pcf)	125
FRICTION COEFF.	0.34
MOISTURE CONTENT (%)	21.4
DRY DENSITY (pcf)	102.2
COEFF. OF VARIATION	0.00
REMARKS	CONCRETE EMULSION SANDWICH



# US61



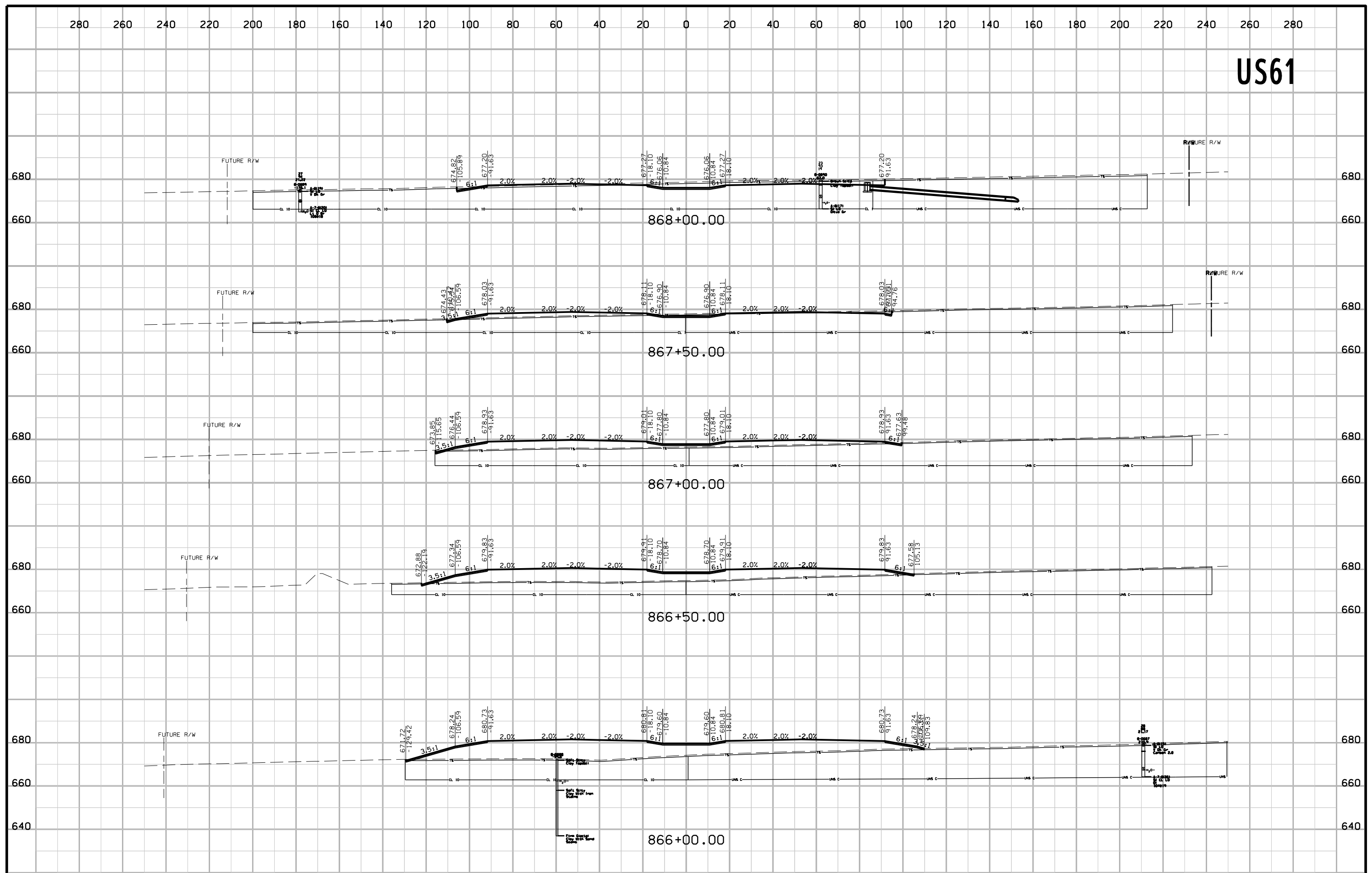
# US61



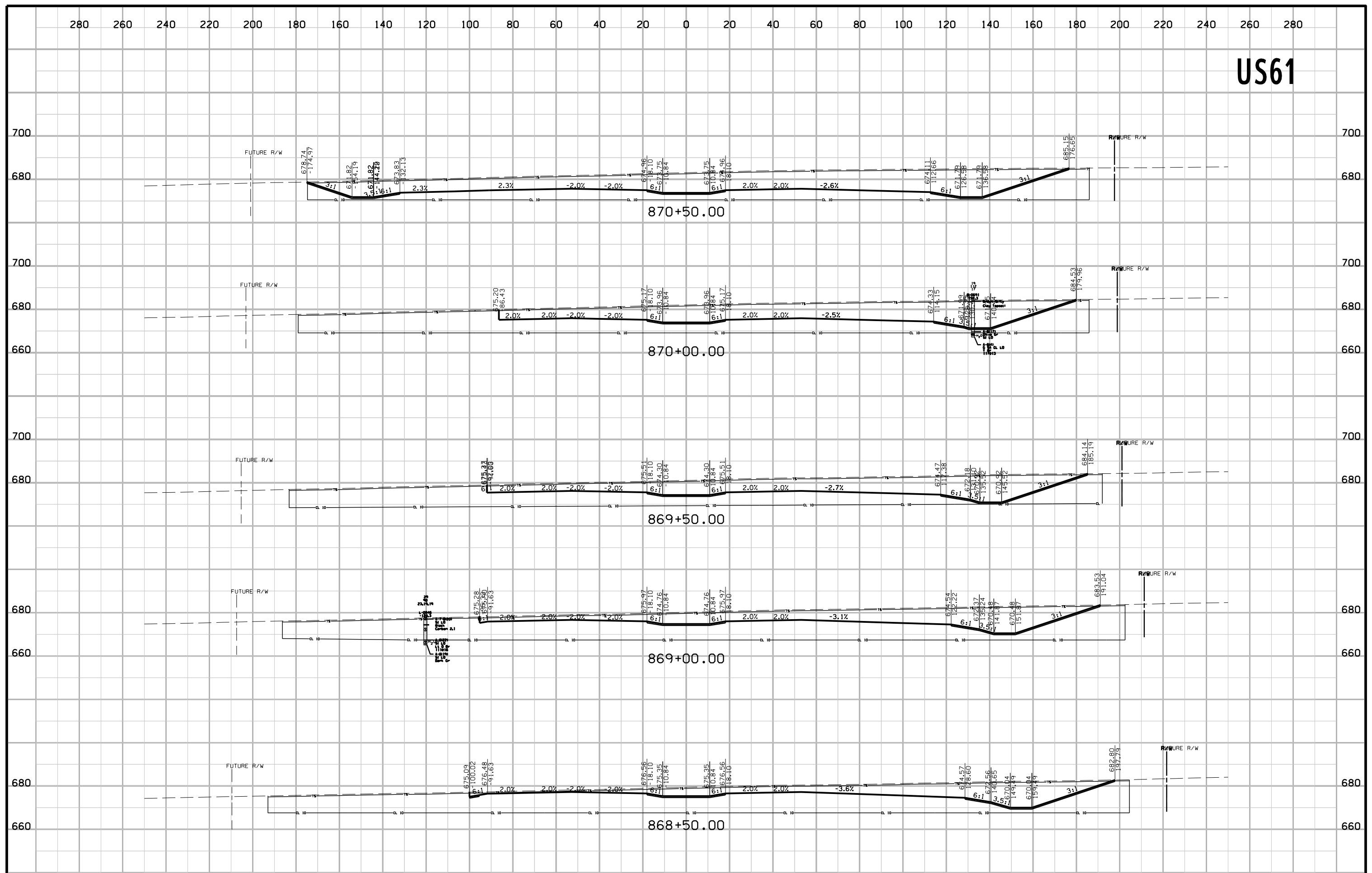
**EMLEY TUBE CORP DATA**

CORE NO.	8-0326-6
CLASSIFICATION (ASTM)	4-813
COEFF. OF UNIFORMITY (U <sub>60</sub> )	0.98
UNIFORMITY COEFFICIENT (U <sub>200</sub> )	1.05
LIQUID LIMIT (LL)	128
PLASTICITY INDEX (PI)	0
MOISTURE CONTENT (%)	24.8
SHRINKAGE (%)	10.8
CU-CUR WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS	

# US61

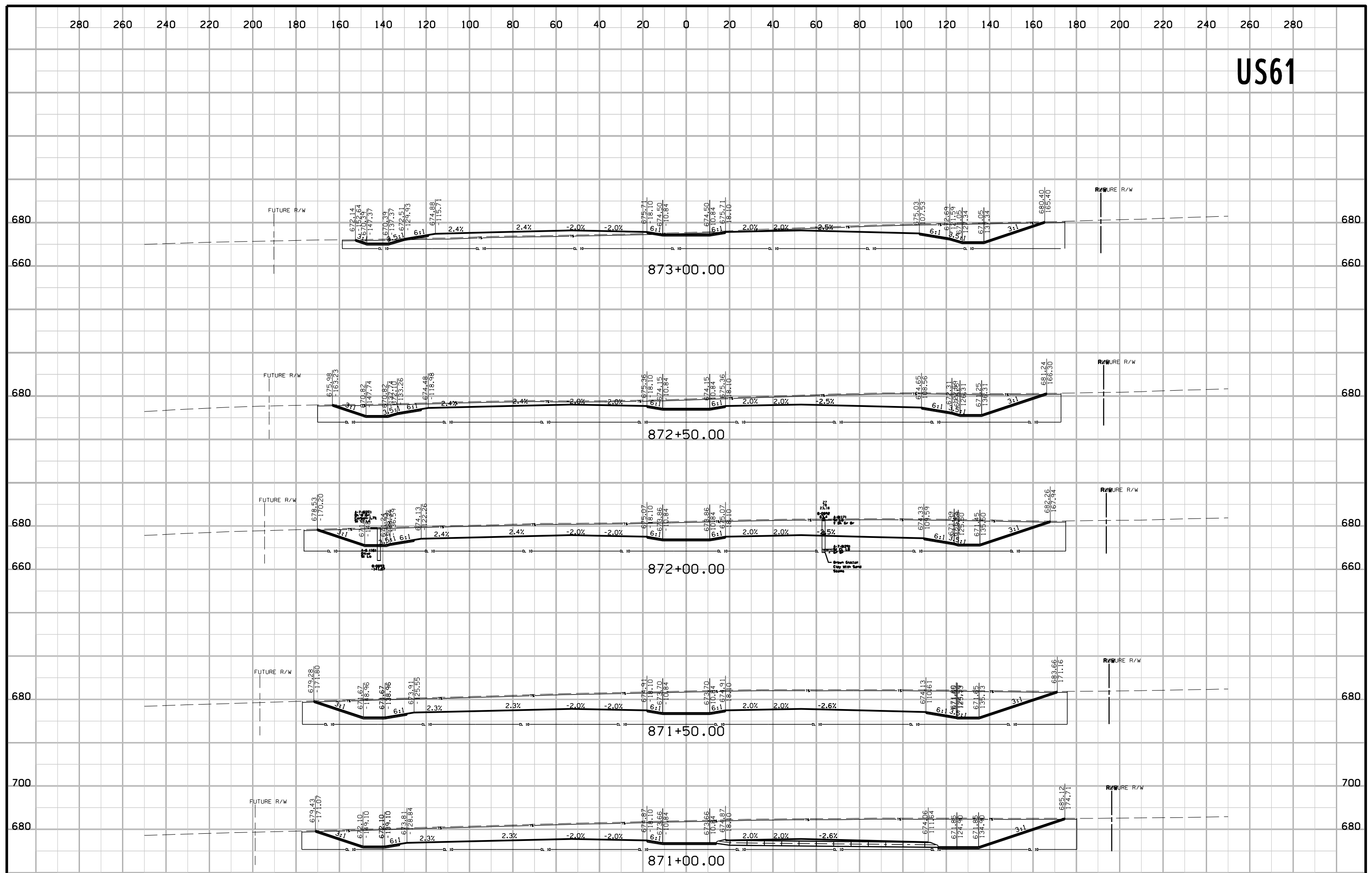


# US61

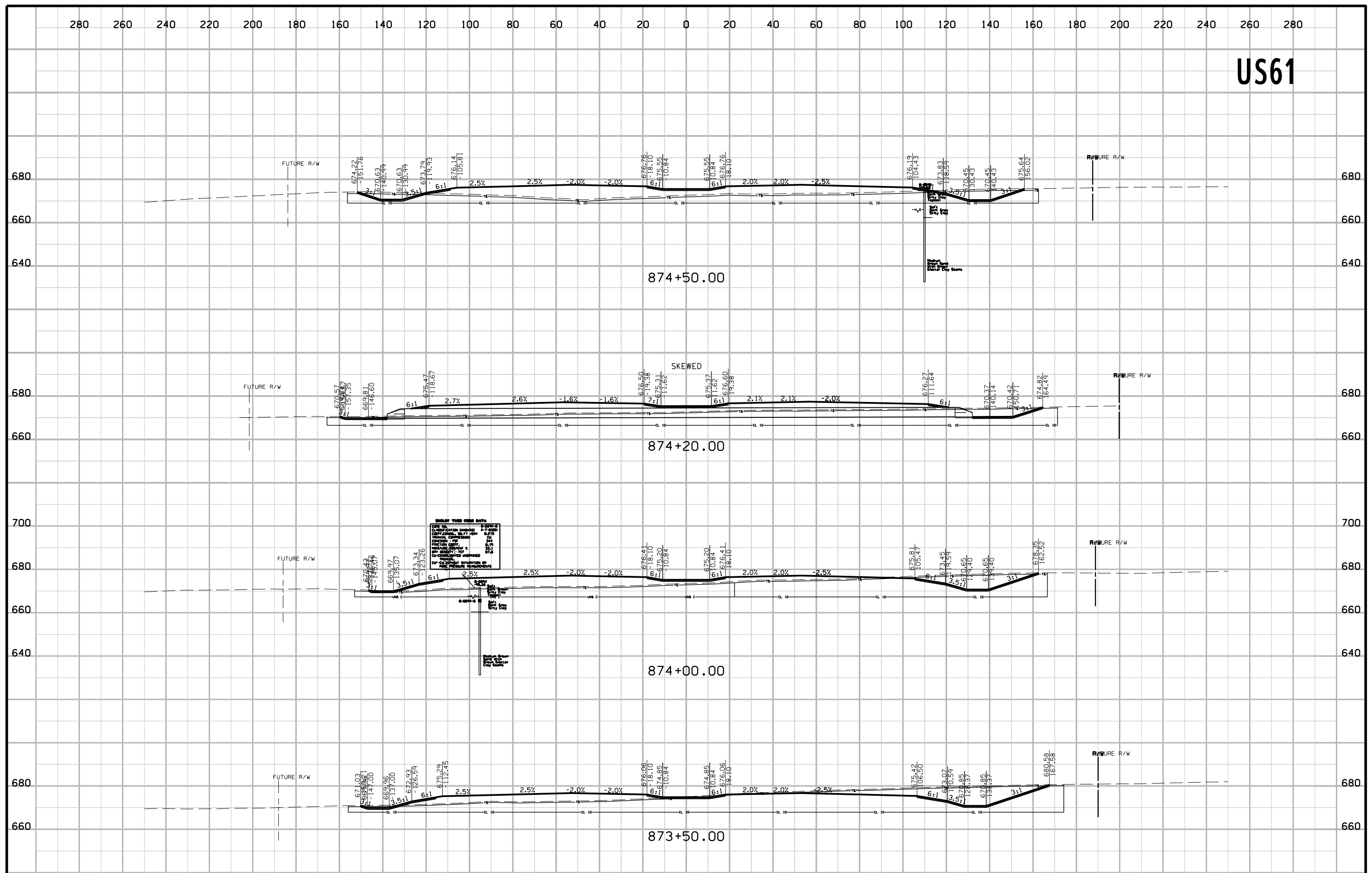




# US61

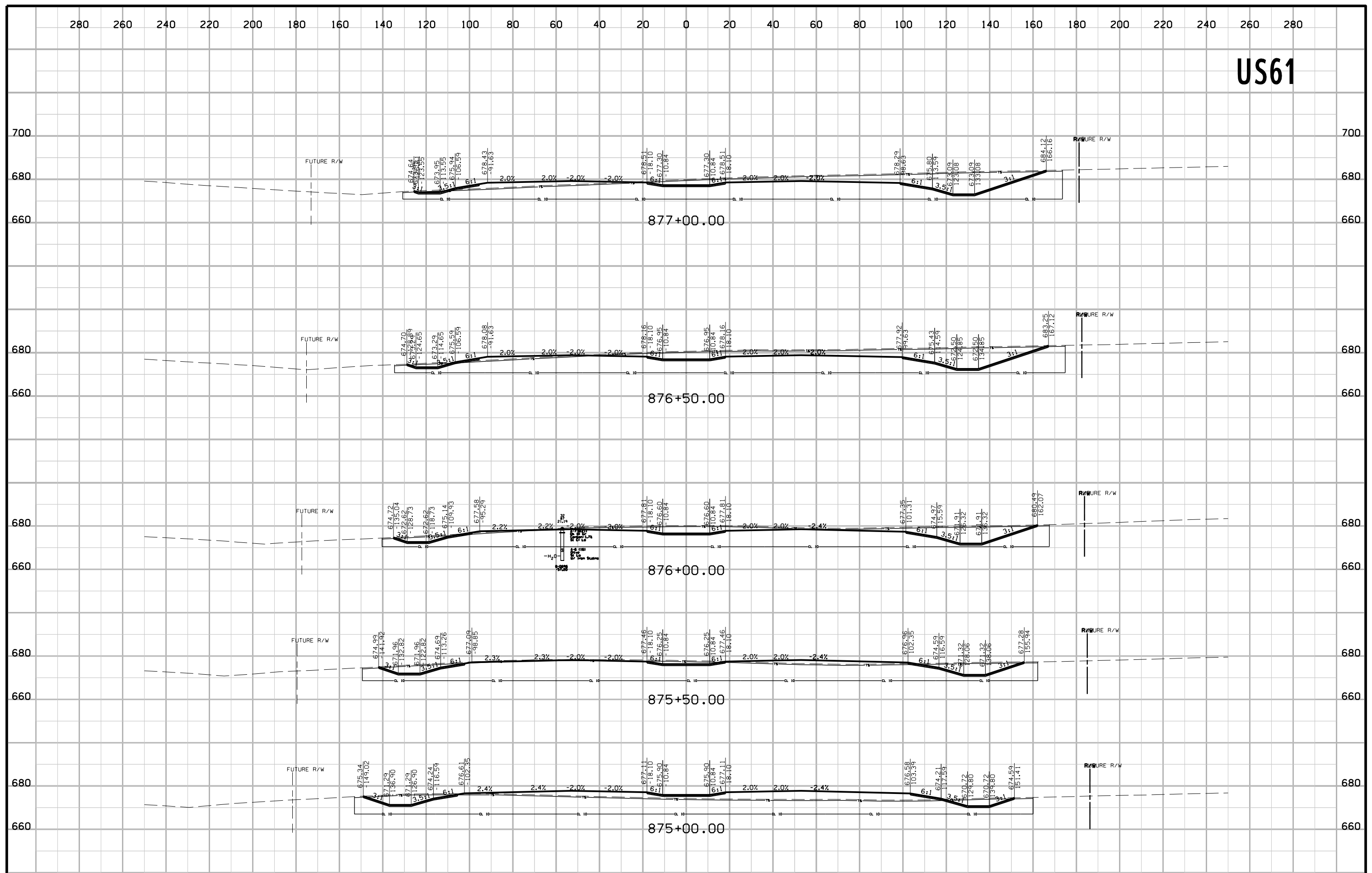


# US61

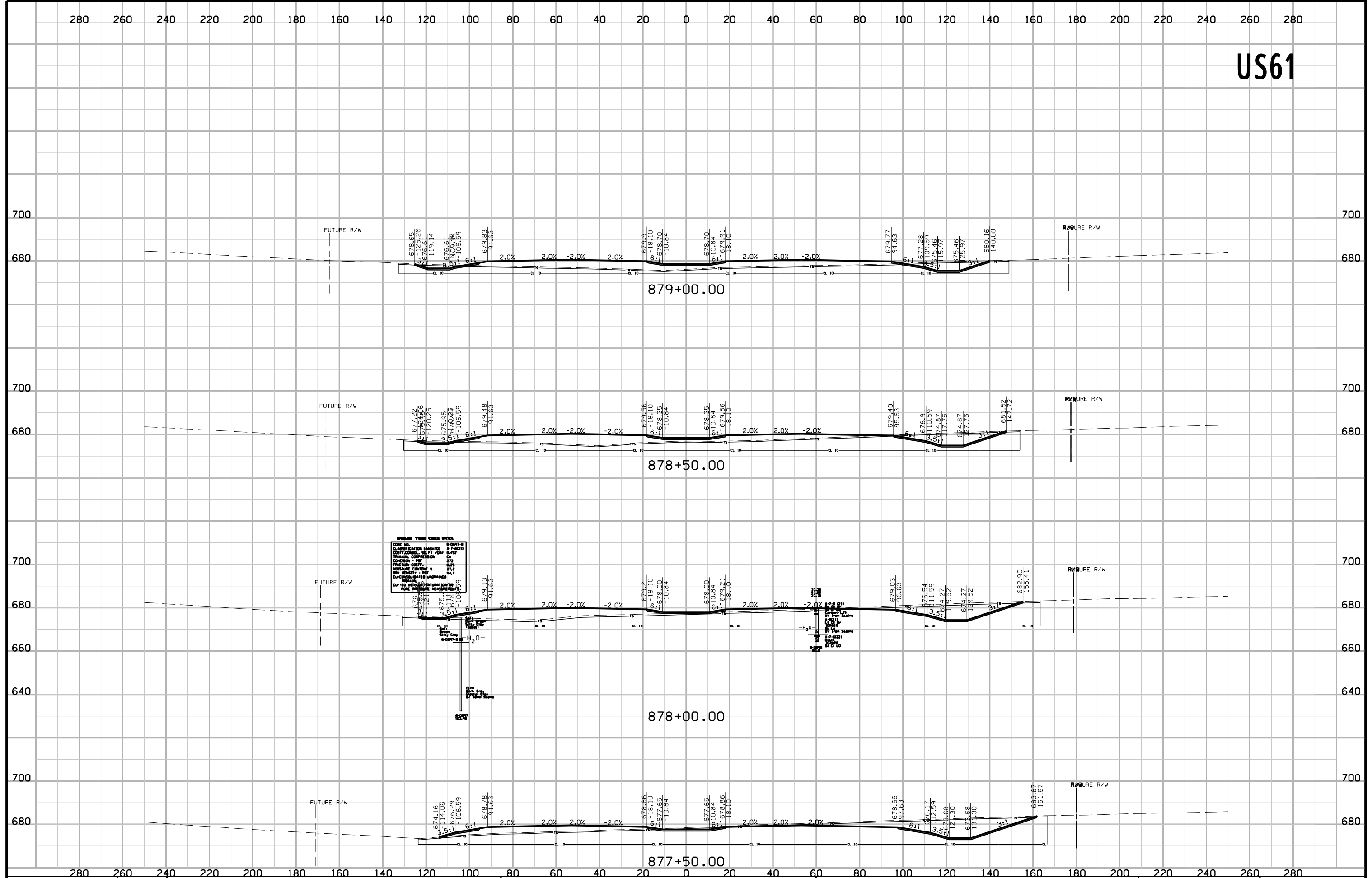


SUMMARY THIS CROSS SECTION  
 CLASSIFICATION: UNCLASSIFIED  
 DATE: 06/27/14  
 DRAWN BY: J. GREEN  
 CHECKED BY: J. GREEN  
 PROJECT: NHSX-061-3(57)--3H-58  
 SHEET: W.47

# US61

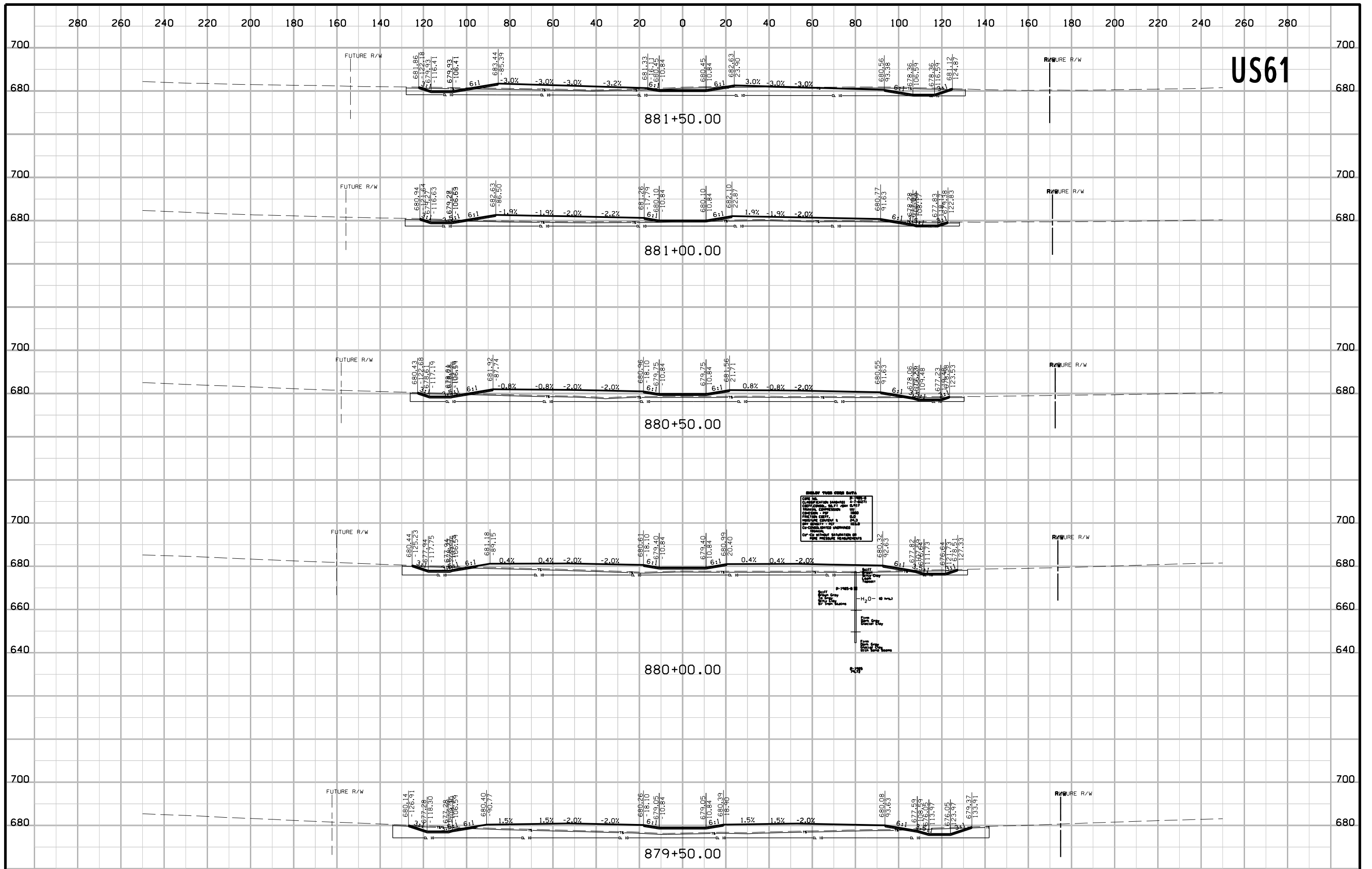


# US61



**SHOULDER TYPE CORE DATA**

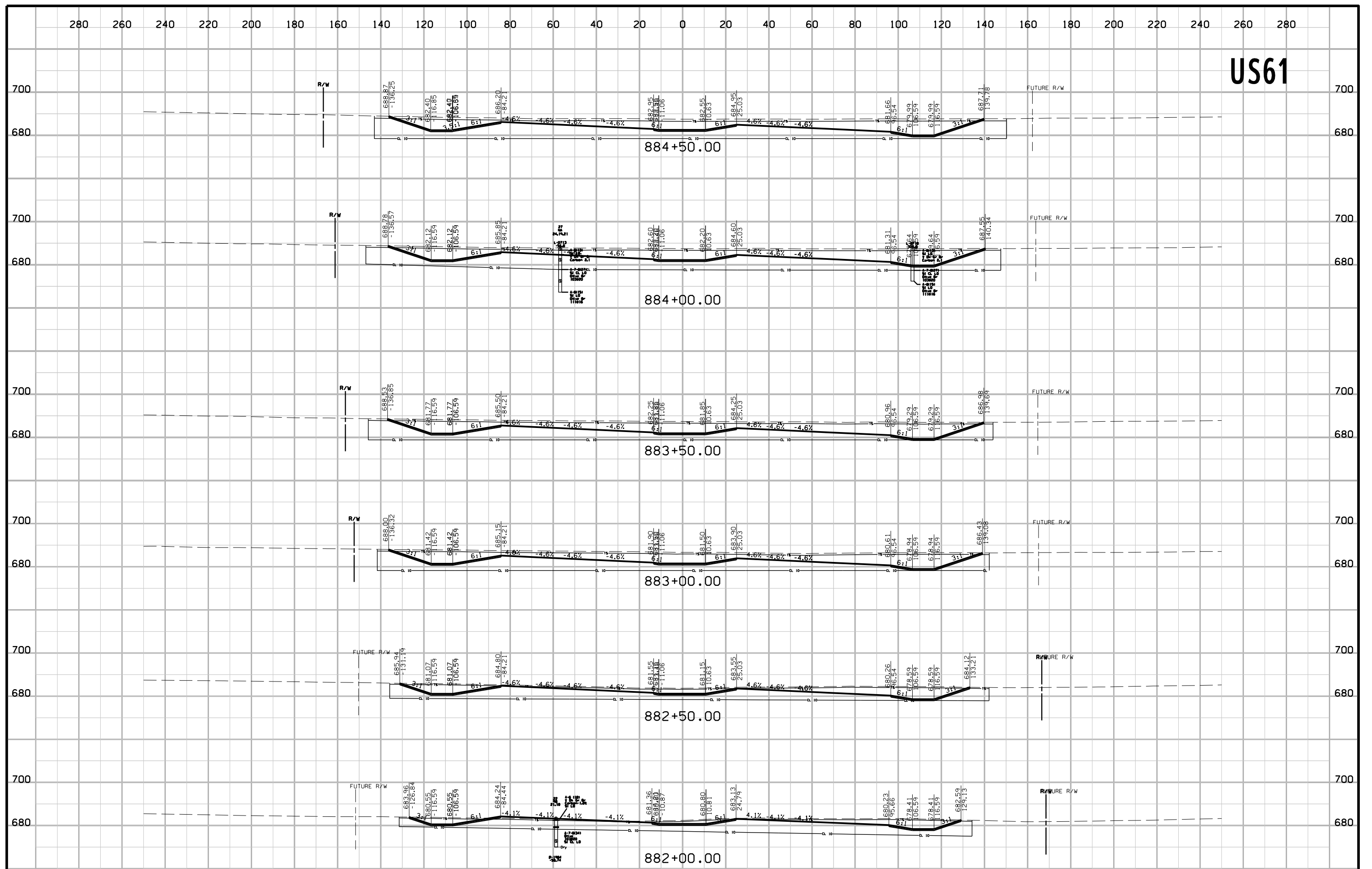
CORE NO.	4-2-2014
CLASSIFICATION (ASPH/10)	4-7-2011
CORRECTION (ASPH/10)	0.52
TEMPERATURE, COMPRESSION	15
COMPRESSION (PSI)	275
FRACTION CORP.	1.0
MOISTURE CONTENT (%)	21.2
WET WEIGHT (LBS)	4.1
CU-CORRECTED VOLUMES	
TEMP.	
WET WEIGHT (LBS)	



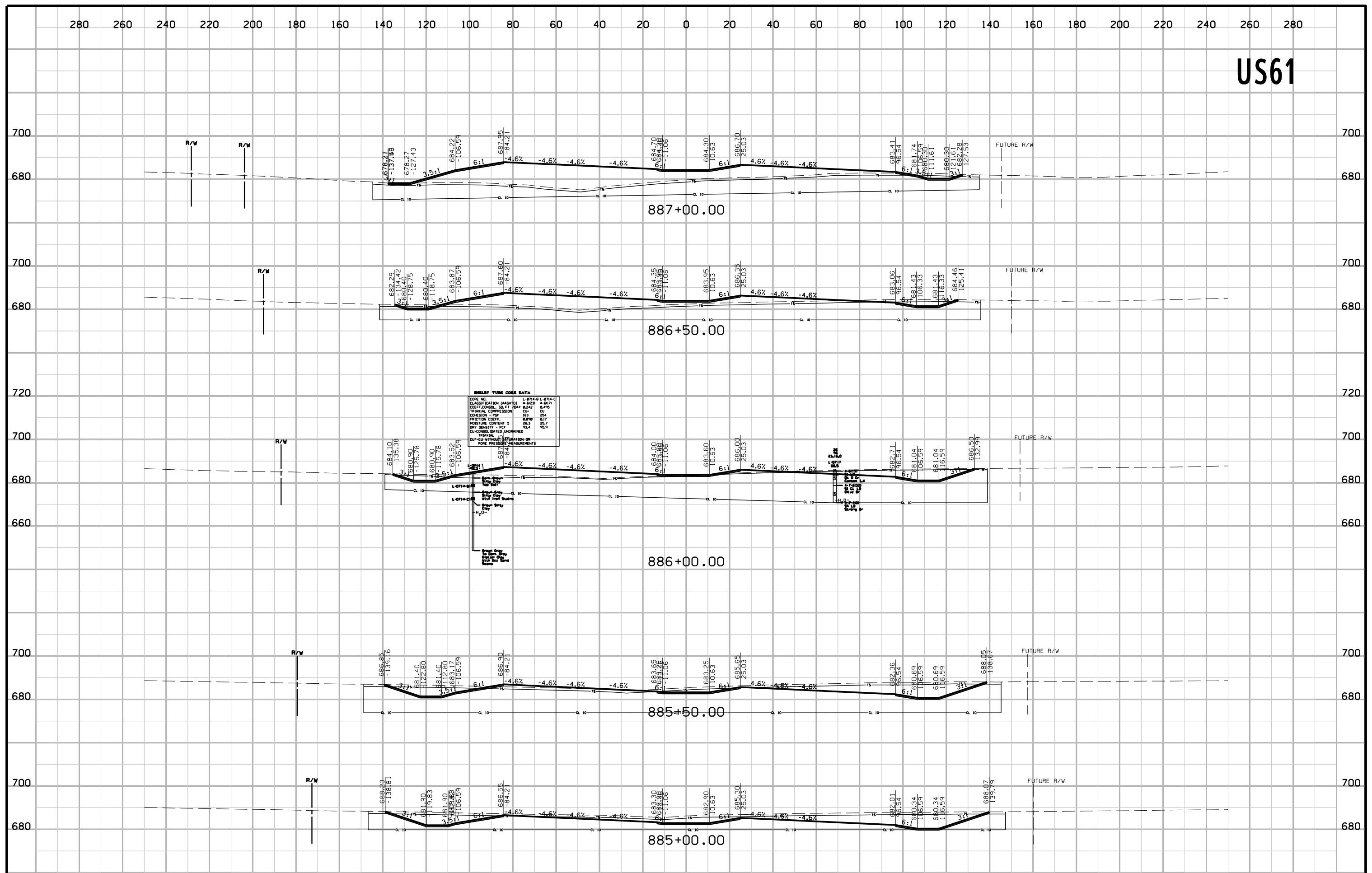
**BELOW THIS CROSS DATA**

DATE	6/2/2014
DESIGNER	Van Dyke \ HR Green, Inc.
CHECKER	HR Green, Inc.
PROJECT	NHSX-061-3(57)--3H-58
SCALE	AS SHOWN
PROJECT NUMBER	NHSX-061-3(57)--3H-58
SHEET NUMBER	W.50

# US61

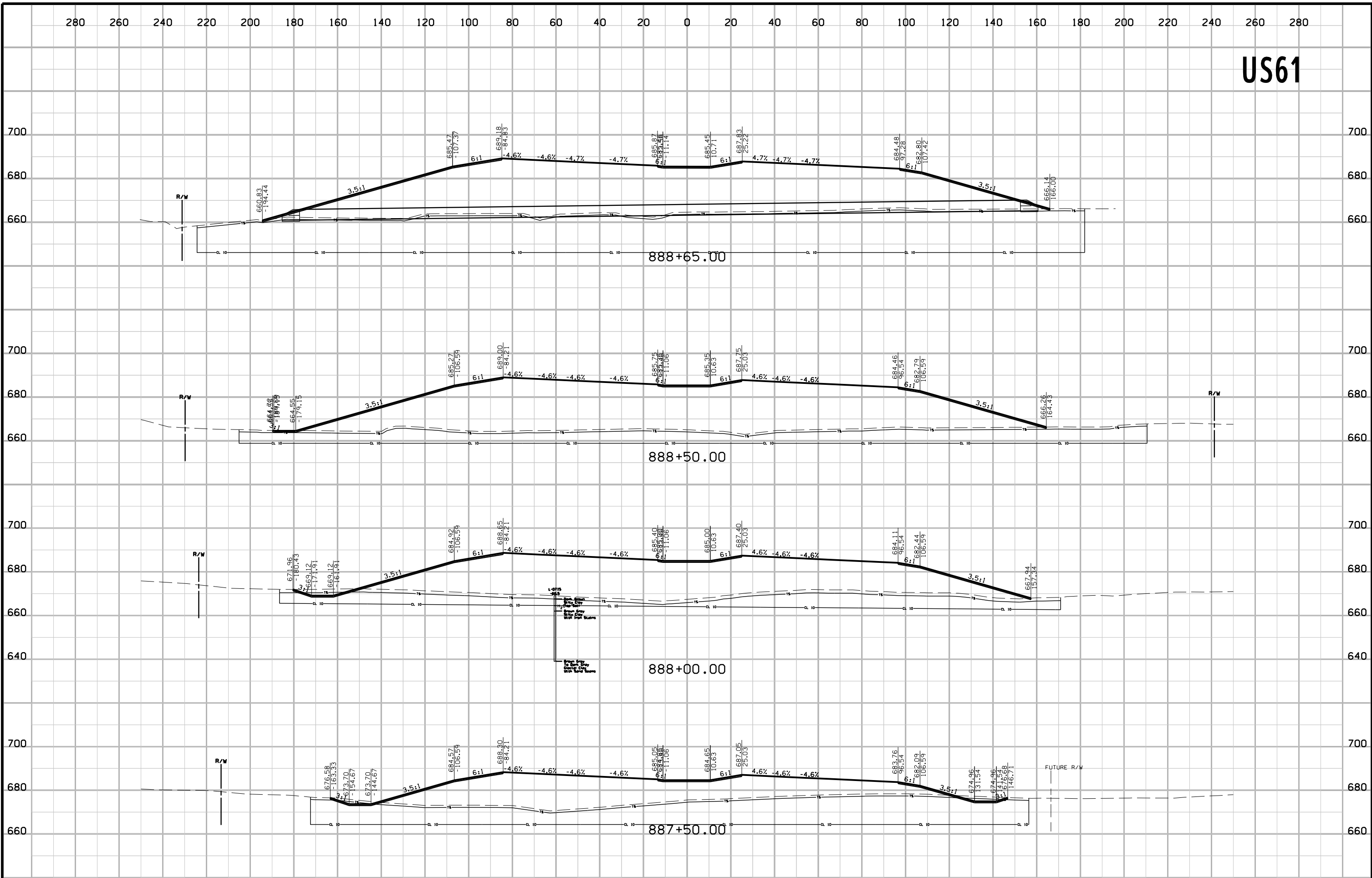


# US61

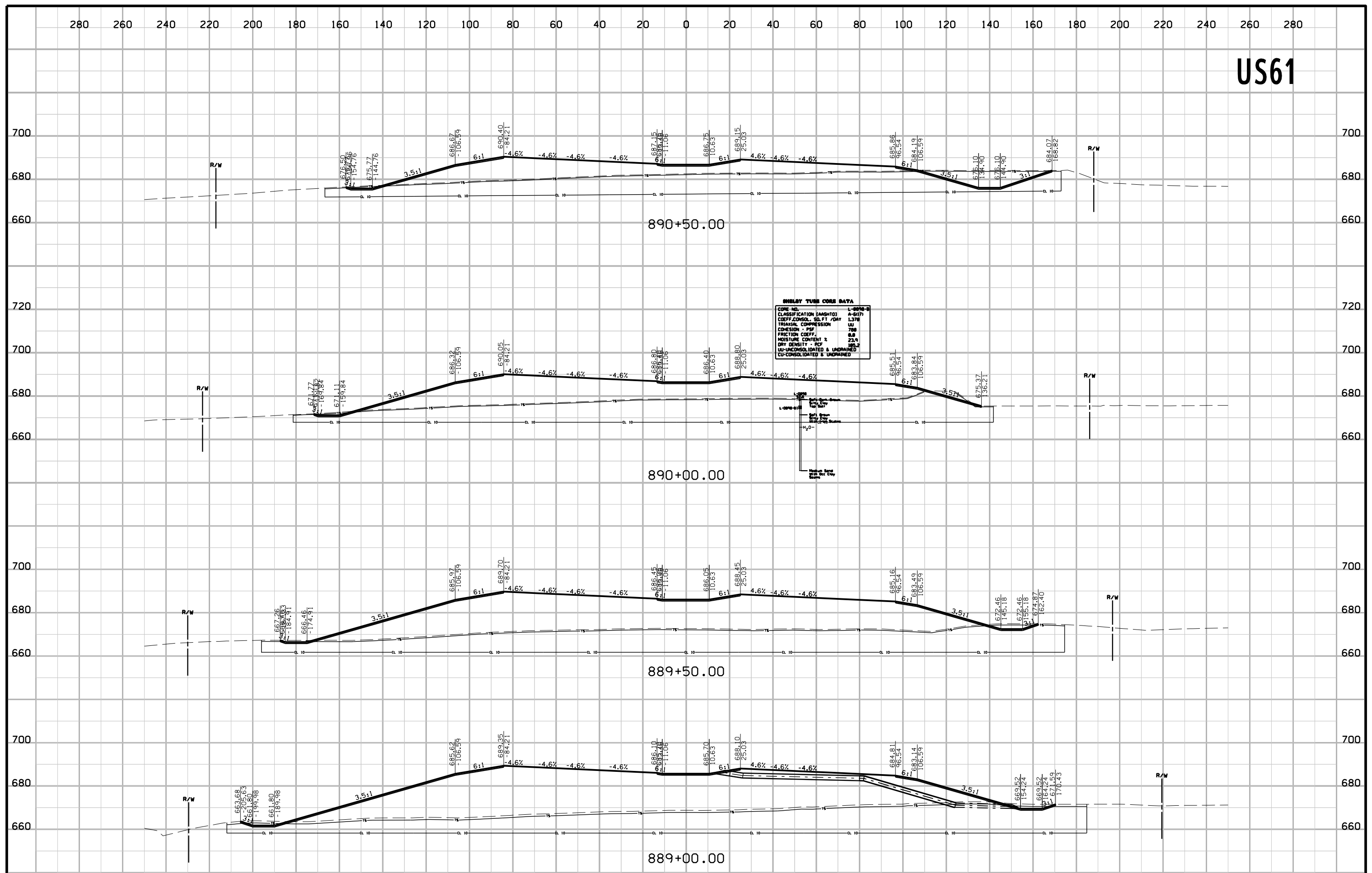


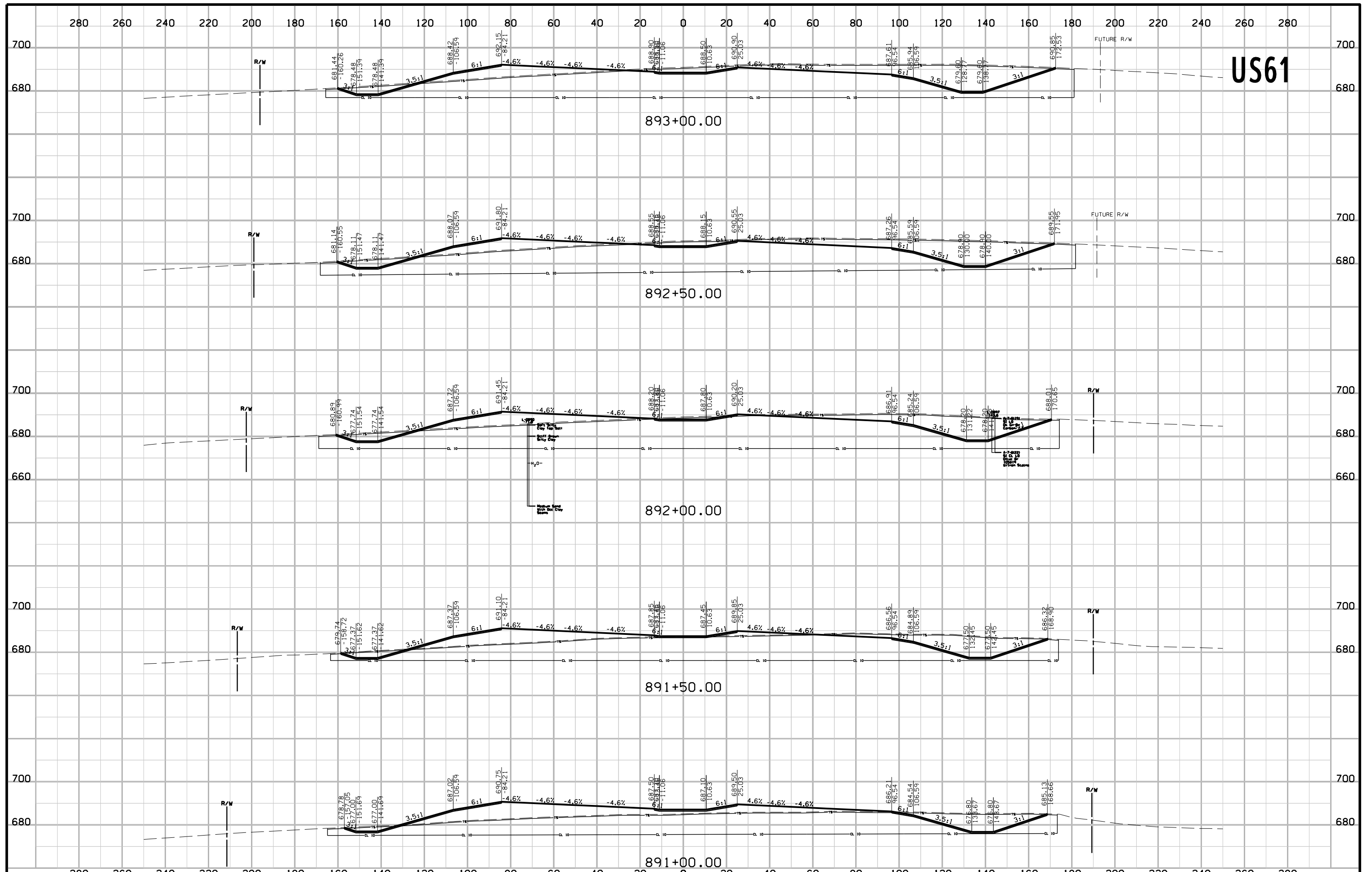


# US61



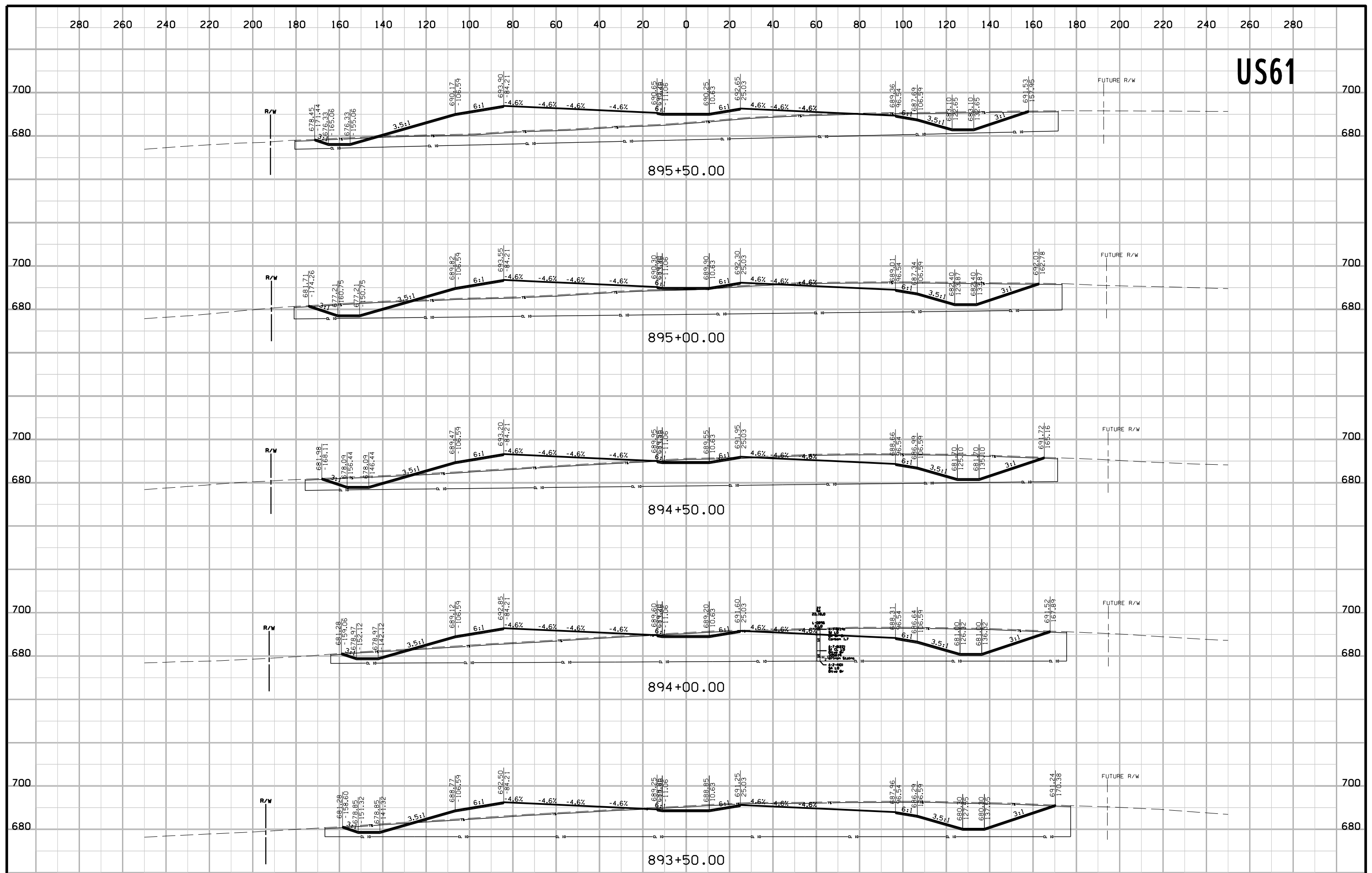
# US61



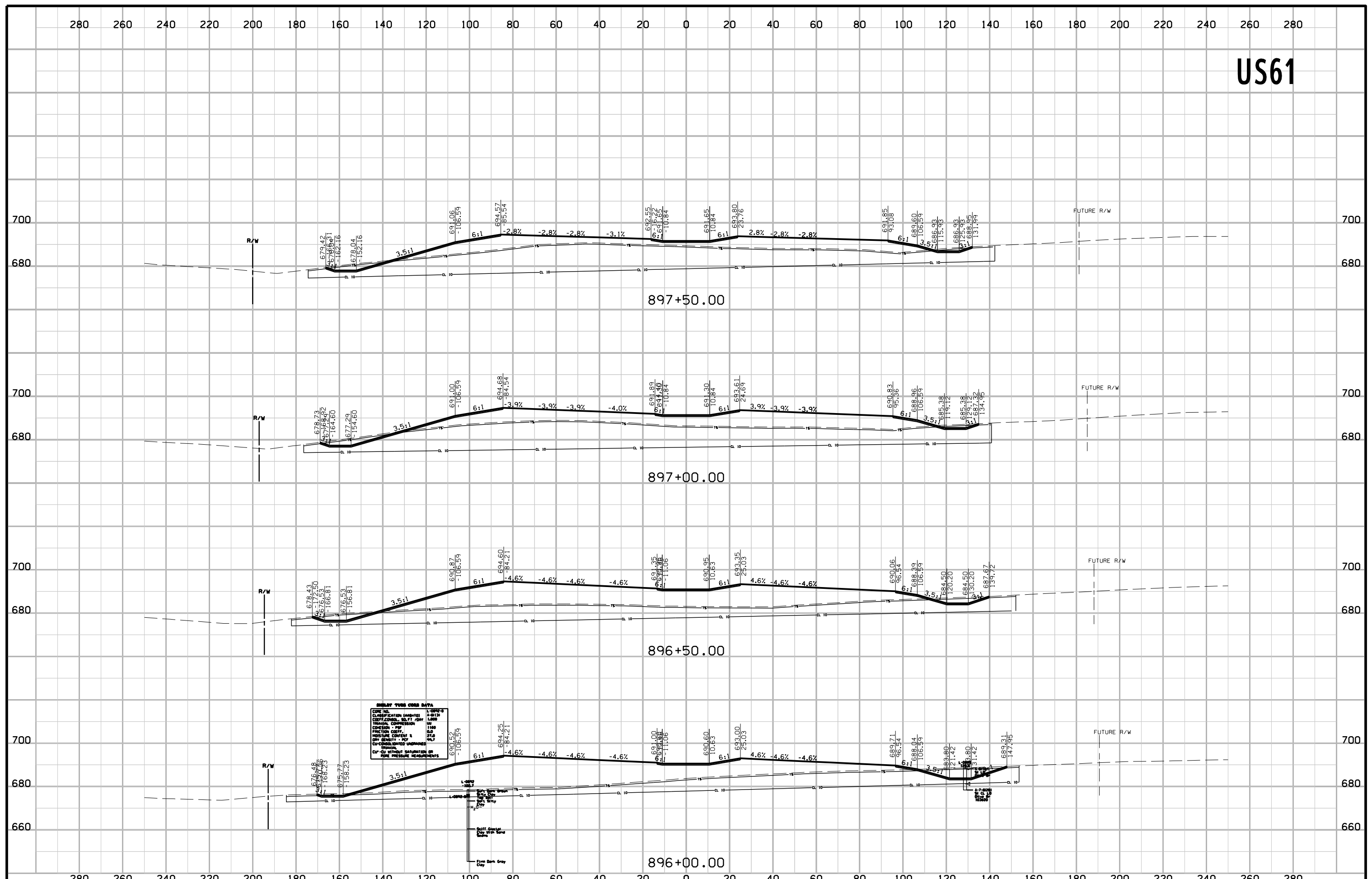


US61

# US61



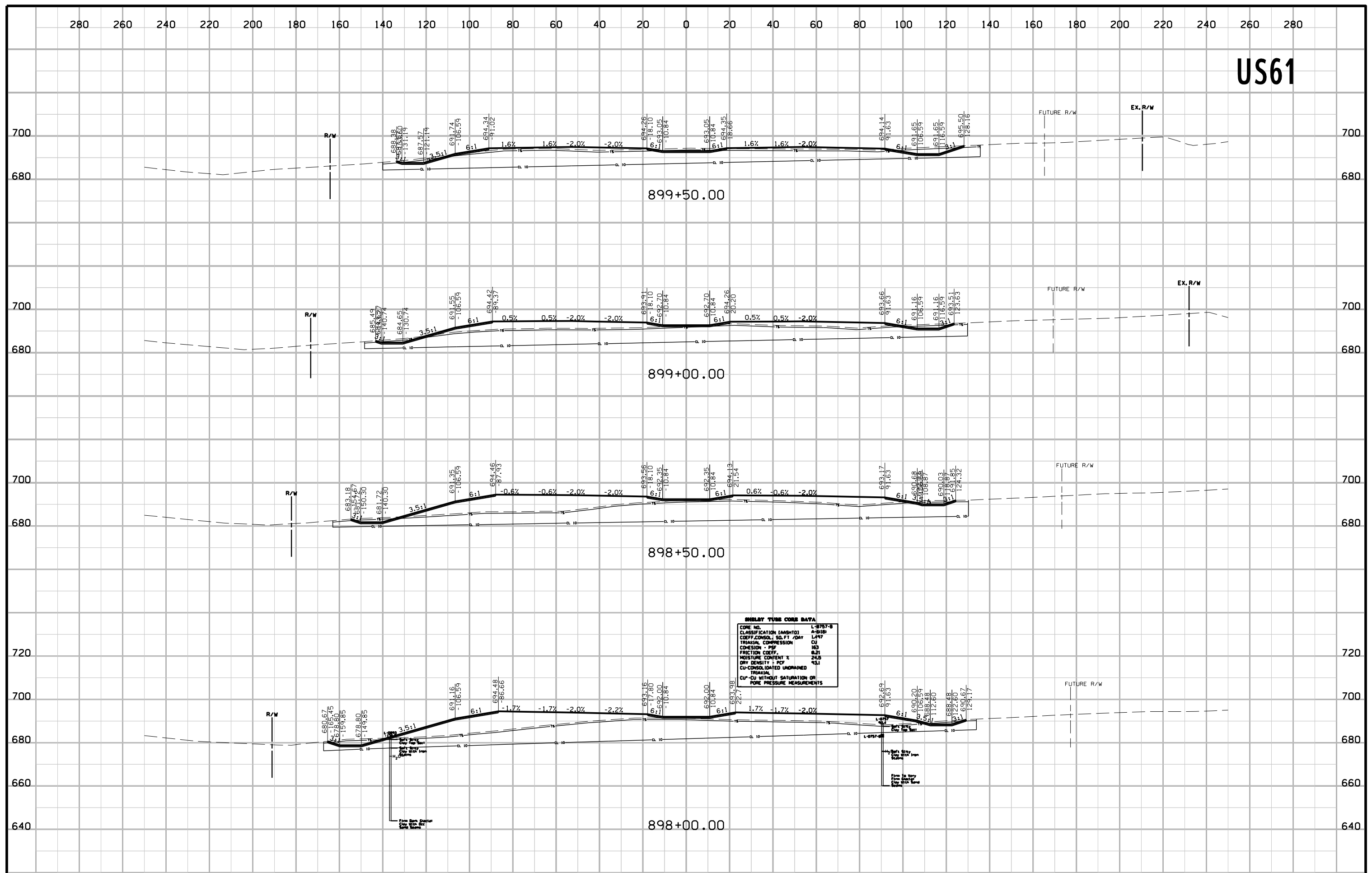
# US61



**EMULSION CORE DATA**

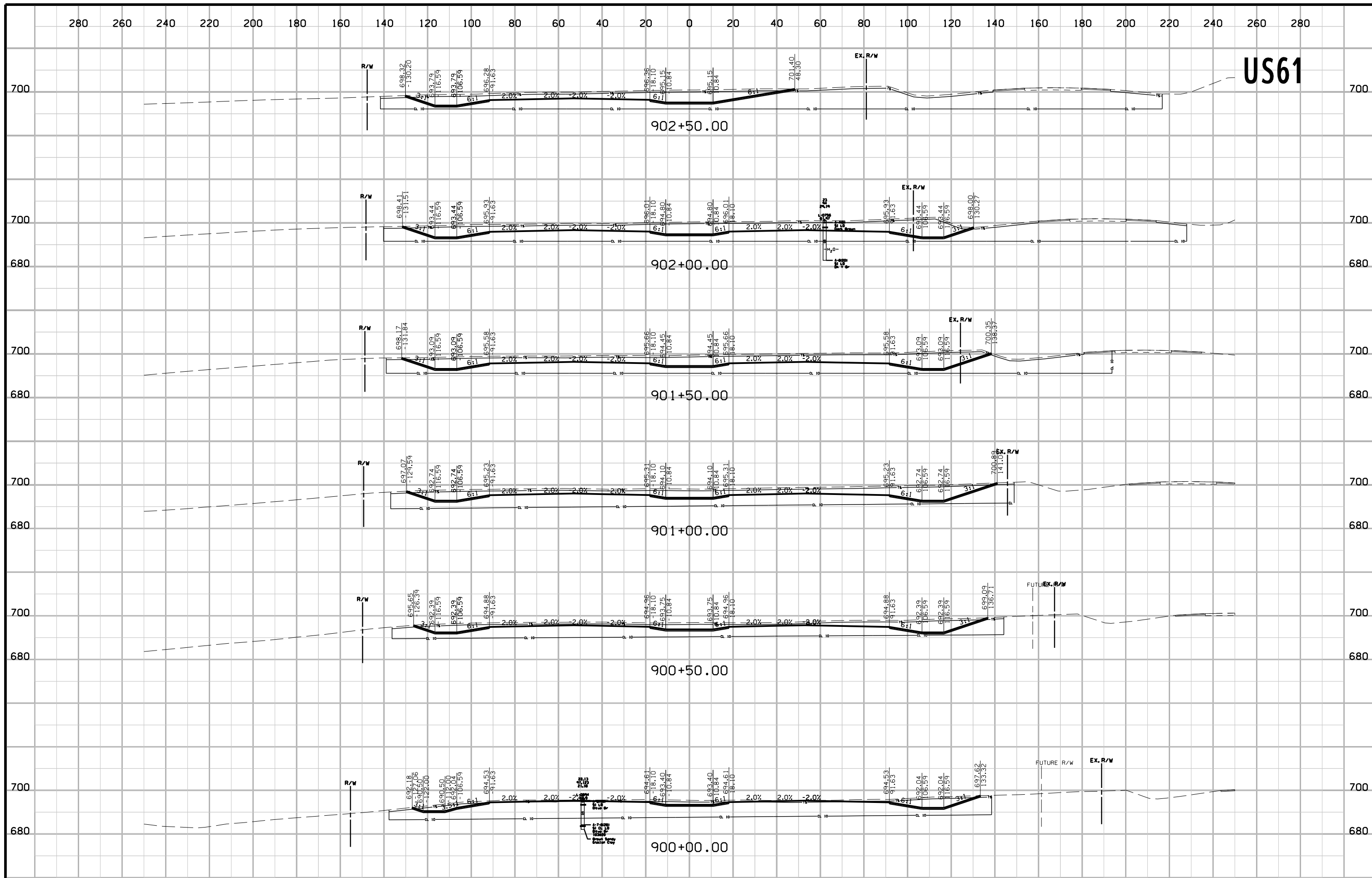
CORE NO.	L-092-4
CLASSIFICATION (AASHTO)	1-1.5
COEFF. OF UNIFORMITY (U)	1.80
FINISHING COMPOSITION	10
COMESION - P/P	180
FRICTION COEFF.	10
MOISTURE CONTENT %	27.0
WATER BOUNDING	10
CU - 10 WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS	10

# US61



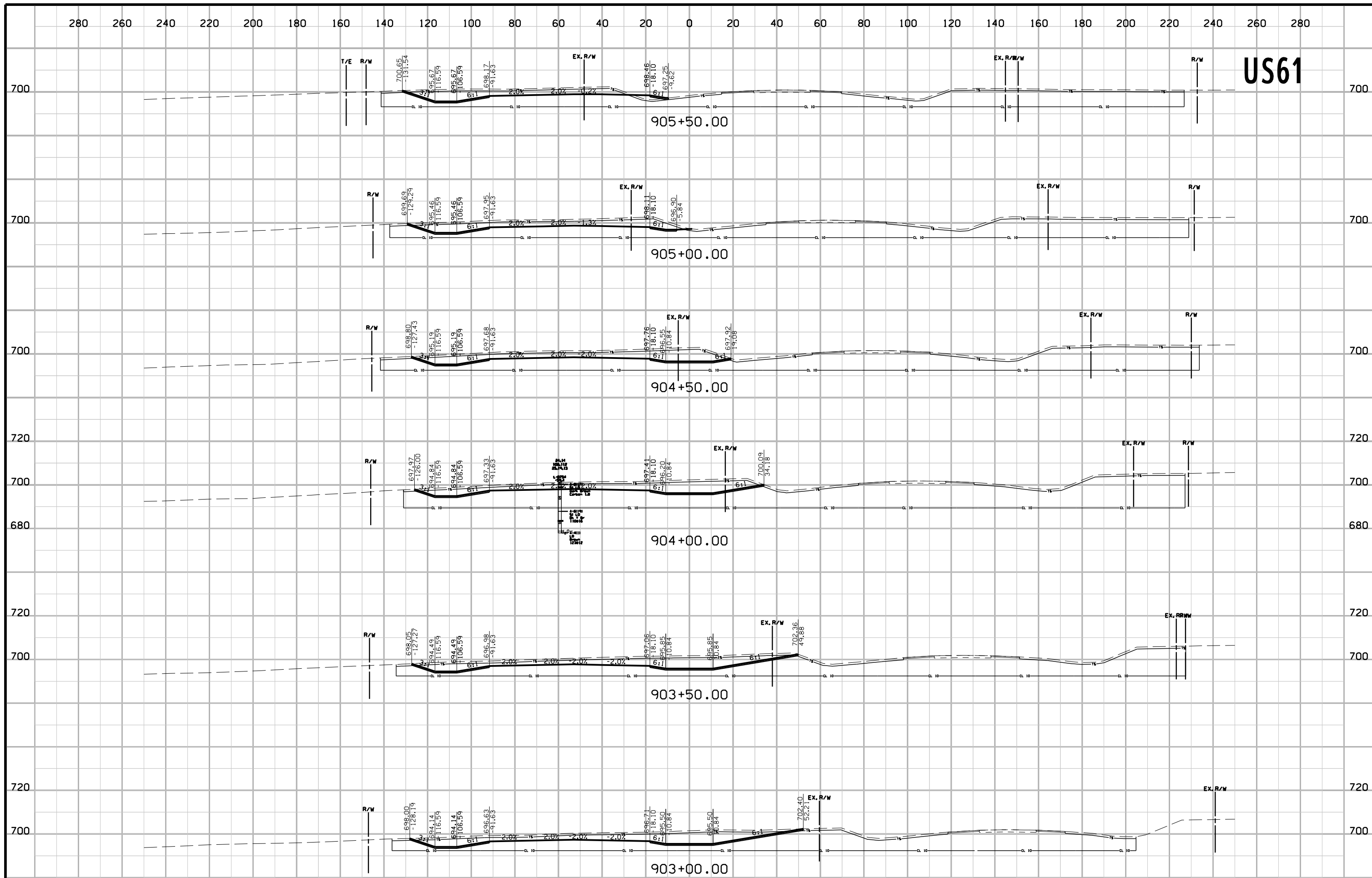
**SHREVE TUBE CORE DATA**

CORE NO.	L-9757-B
CLASSIFICATION (ASHD)	A-5(1)
COEFF. CONSOL. SO. FT / DAY	1.497
TRIAxIAL COMPRESSION	CU
COHESION - PSF	183
FRICTION COEFF.	0.21
MOISTURE CONTENT %	24.5
DRY DENSITY - PCF	93.1
CU-CONSOLIDATED UNDRAINED TRIAXIAL	
CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS	



US61





US61

905+50.00

905+00.00

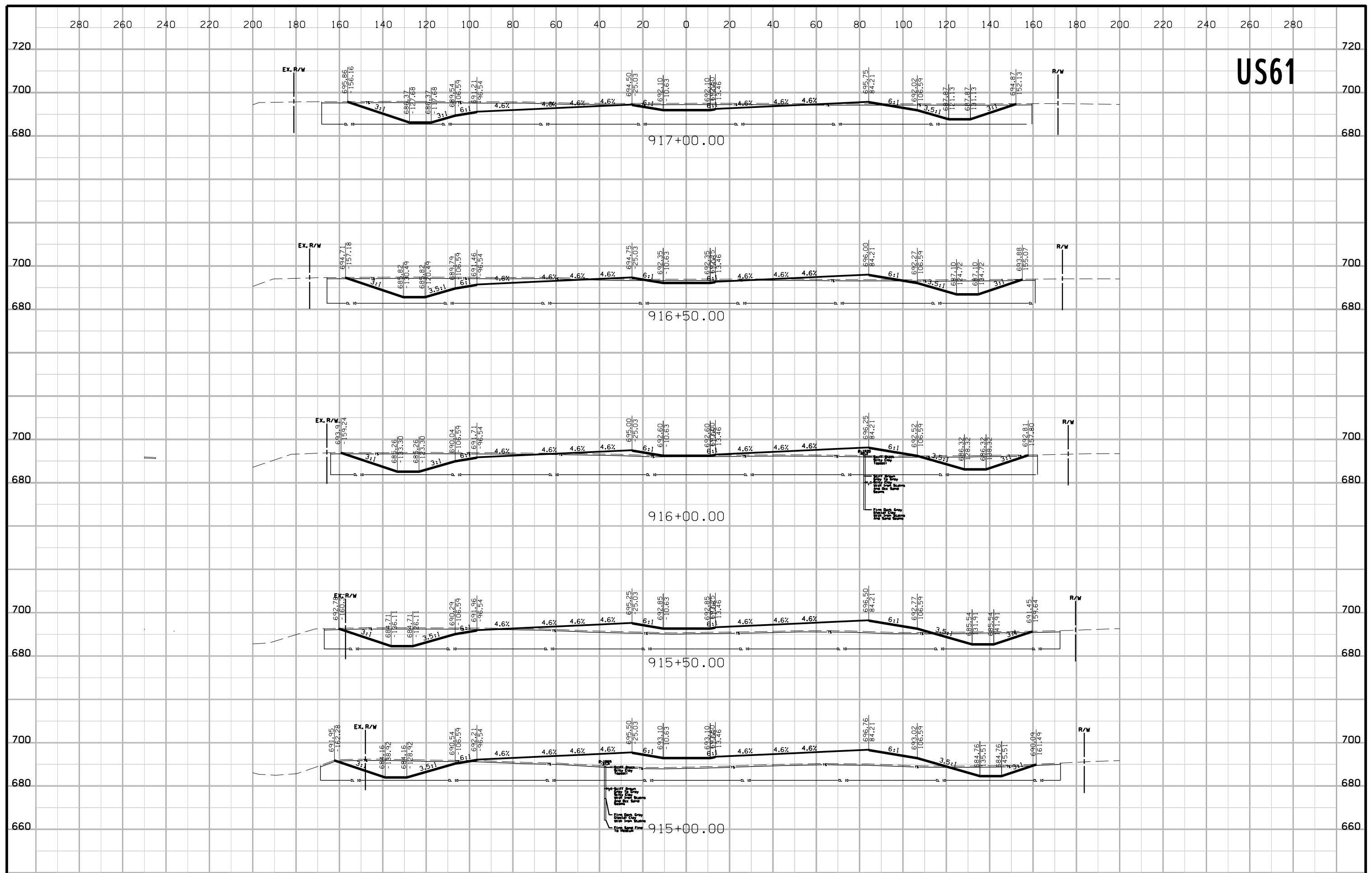
904+50.00

904+00.00

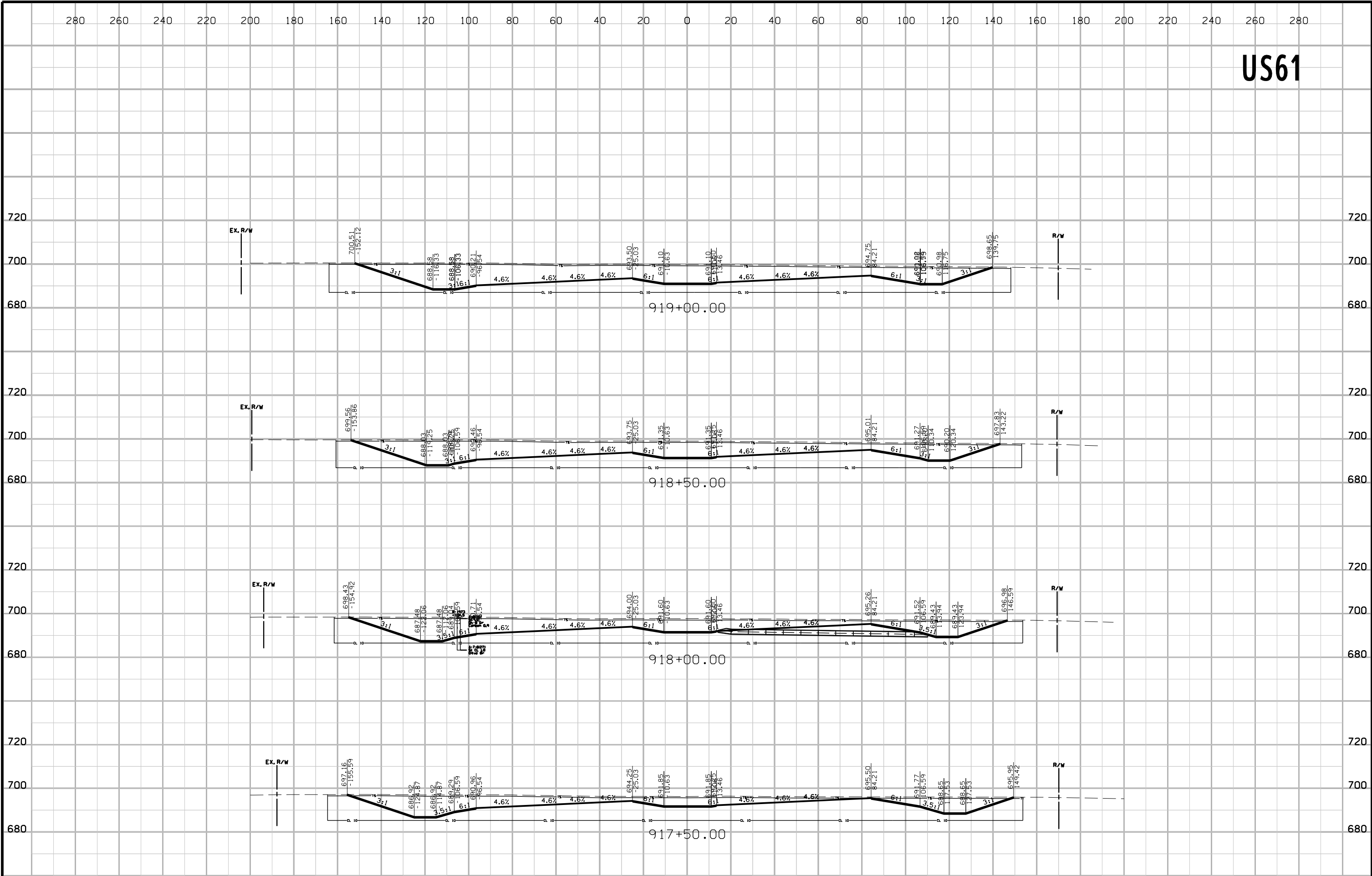
903+50.00

903+00.00

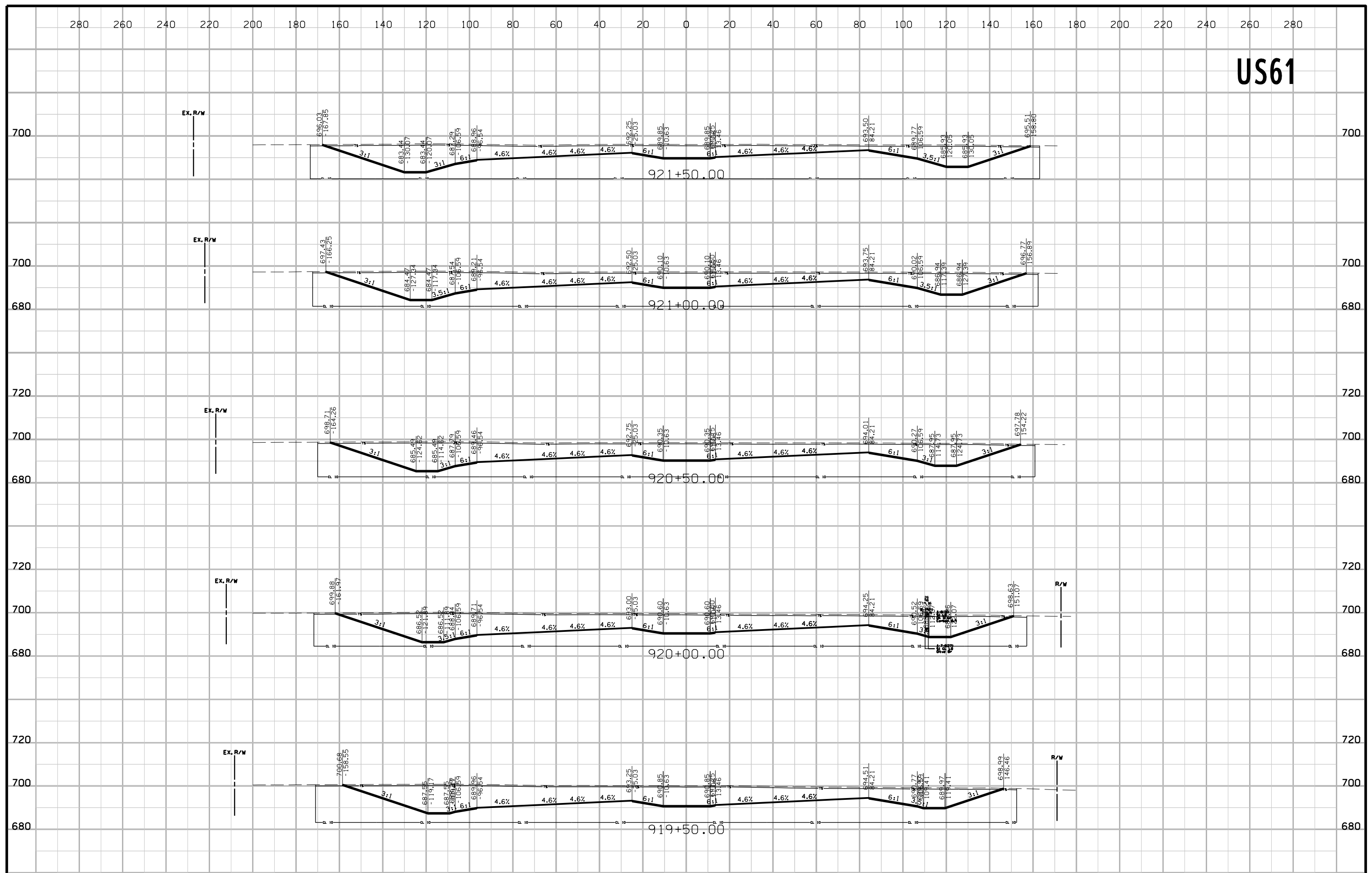
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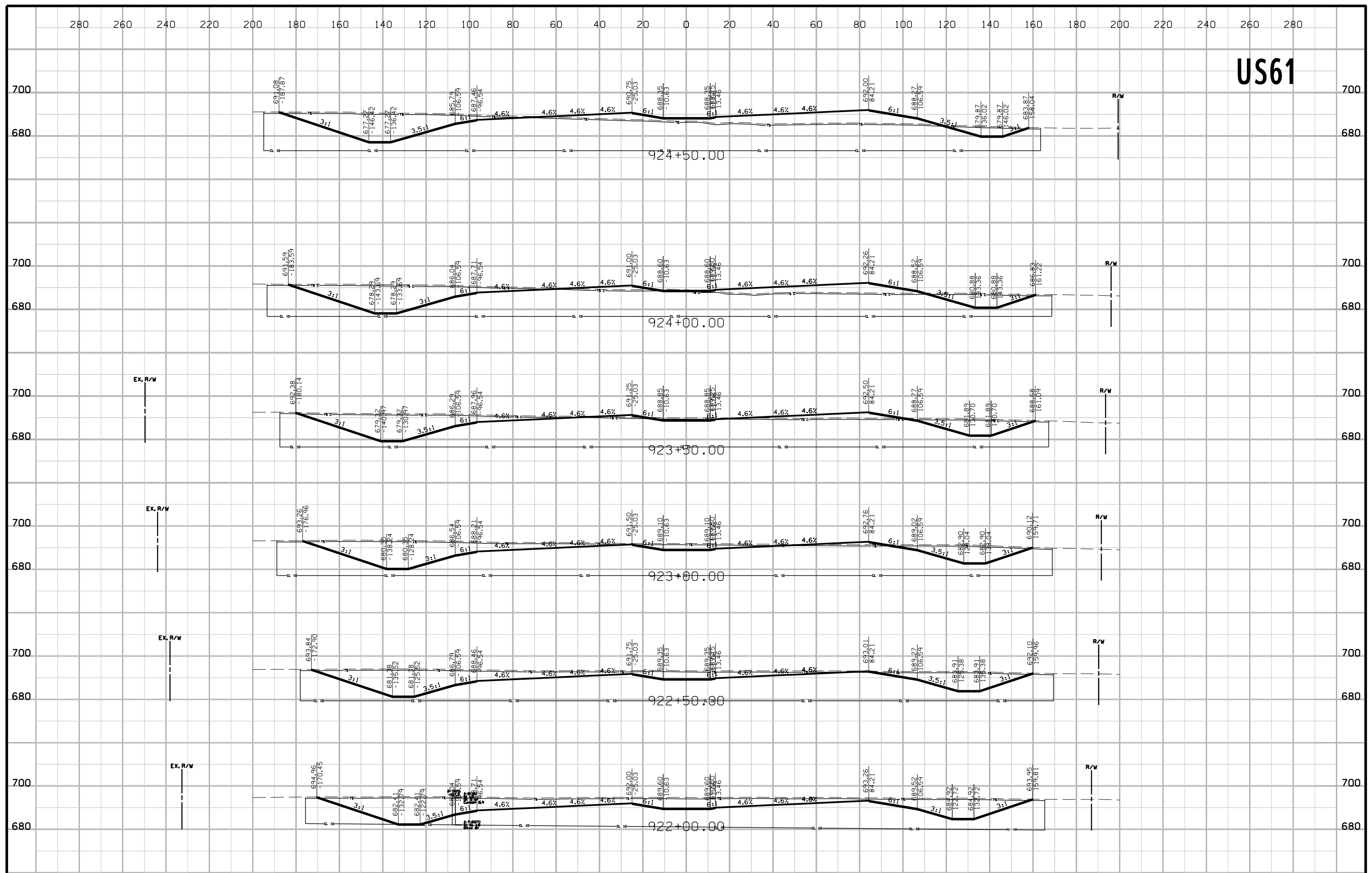
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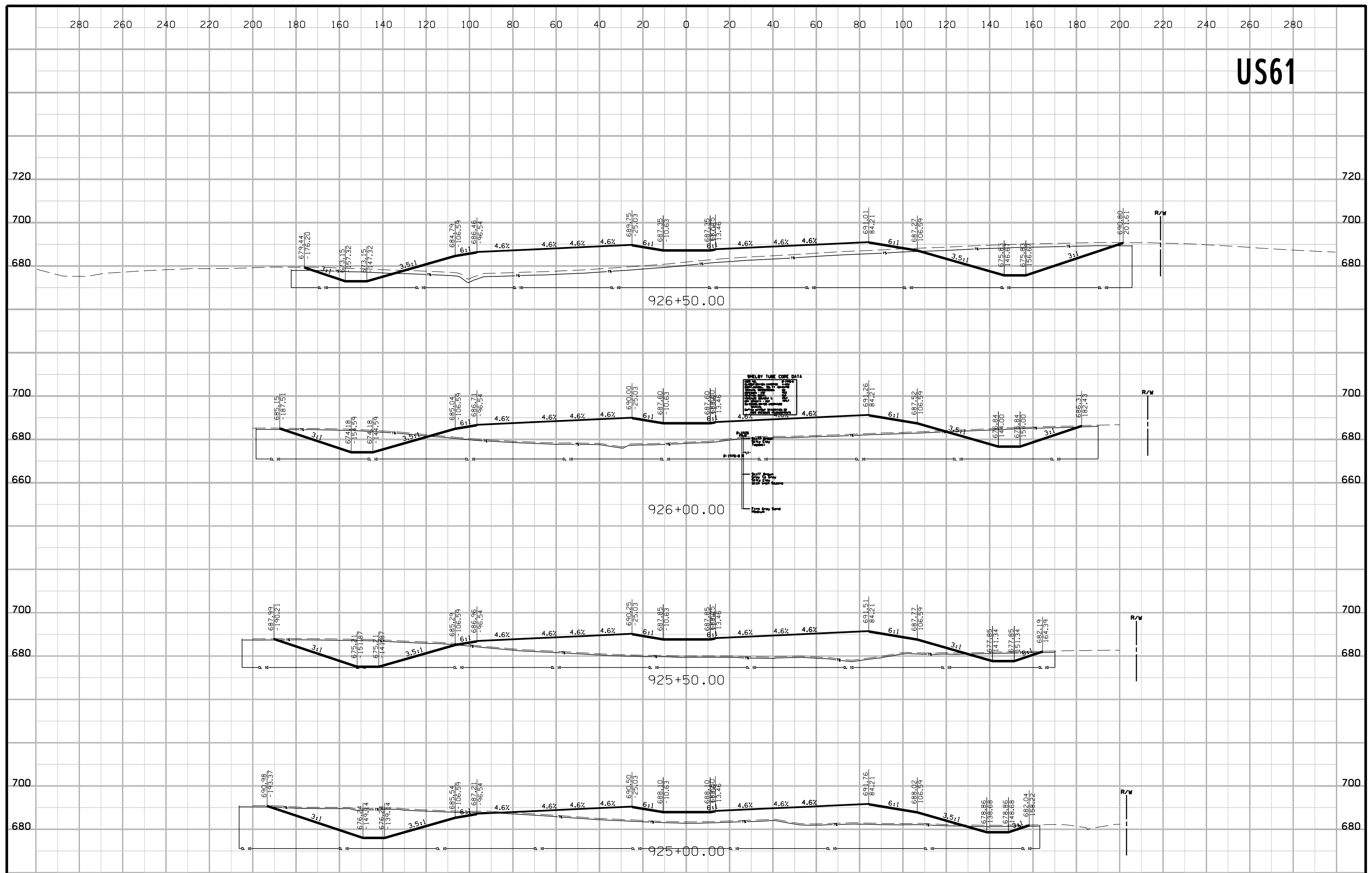
# US61



# US61



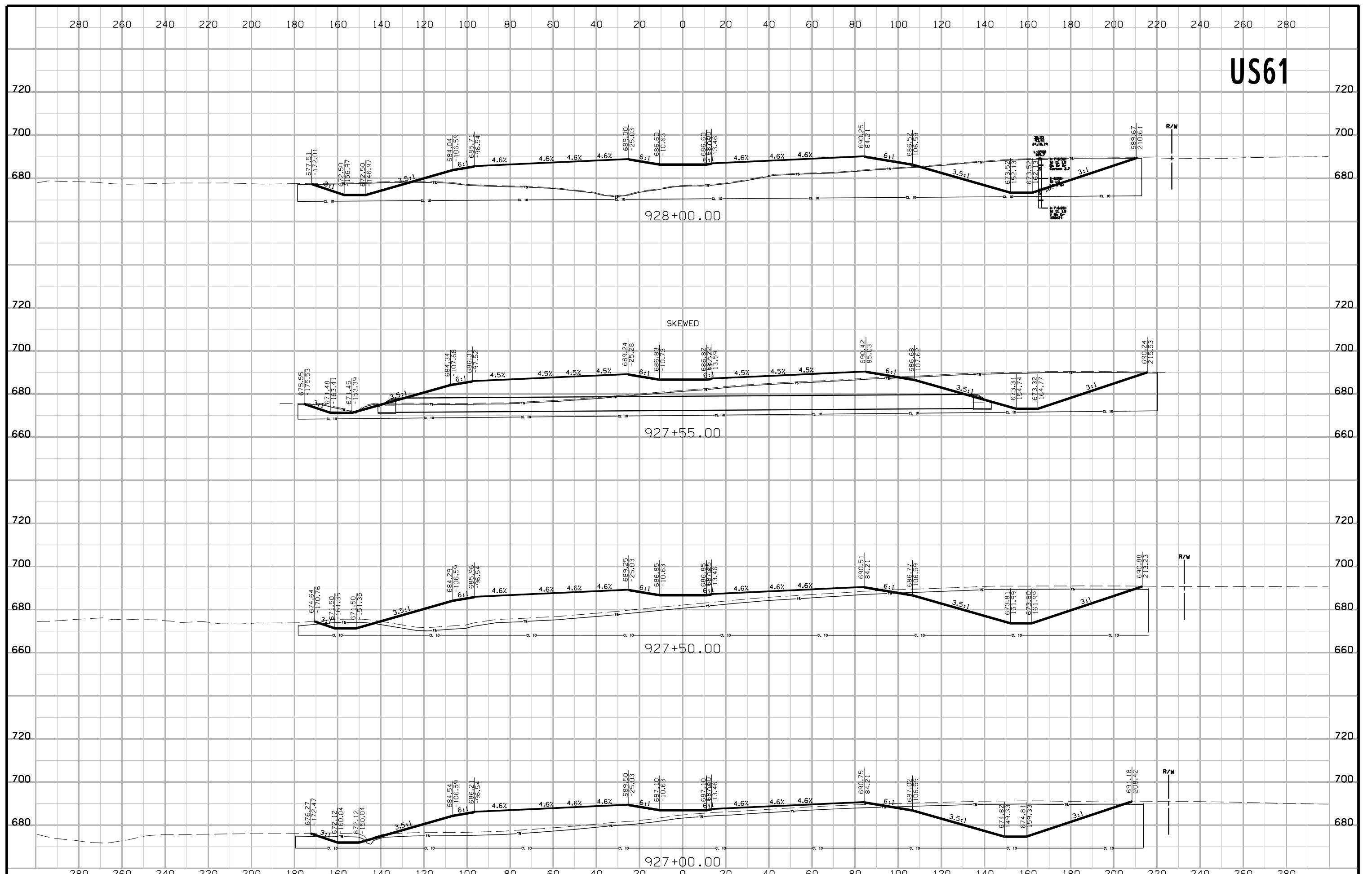
# US61



**SHELBY TUBE CORE DATA**

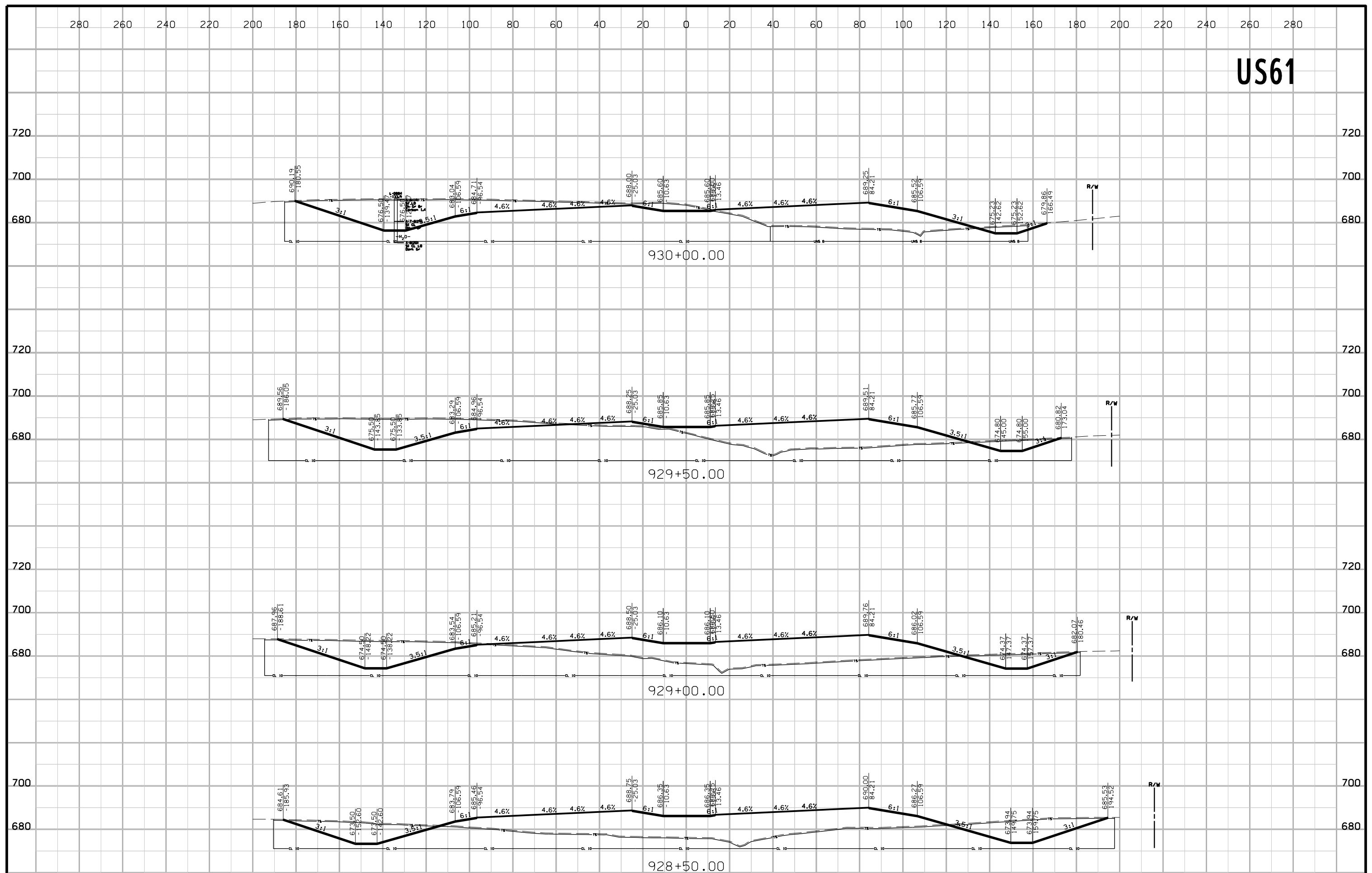
Station	Depth (ft)	Soil Description	Moisture (%)	Specific Gravity	Unit Weight (pcf)
926+00.00	0.00 - 1.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	1.00 - 2.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	2.00 - 3.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	3.00 - 4.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	4.00 - 5.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	5.00 - 6.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	6.00 - 7.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	7.00 - 8.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	8.00 - 9.00	Light Gray Sand	18.5	2.65	118.5
926+00.00	9.00 - 10.00	Light Gray Sand	18.5	2.65	118.5

# US61

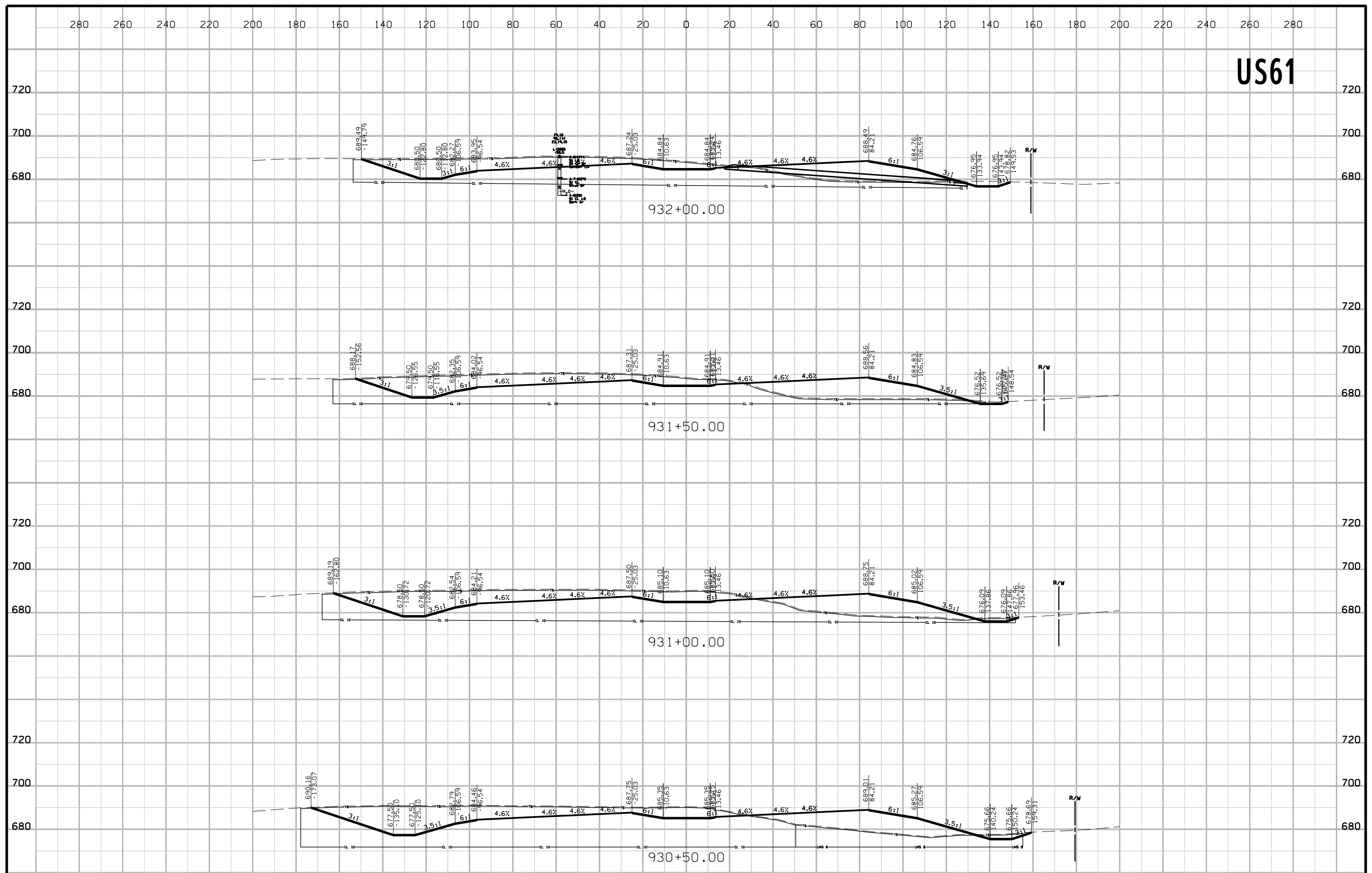




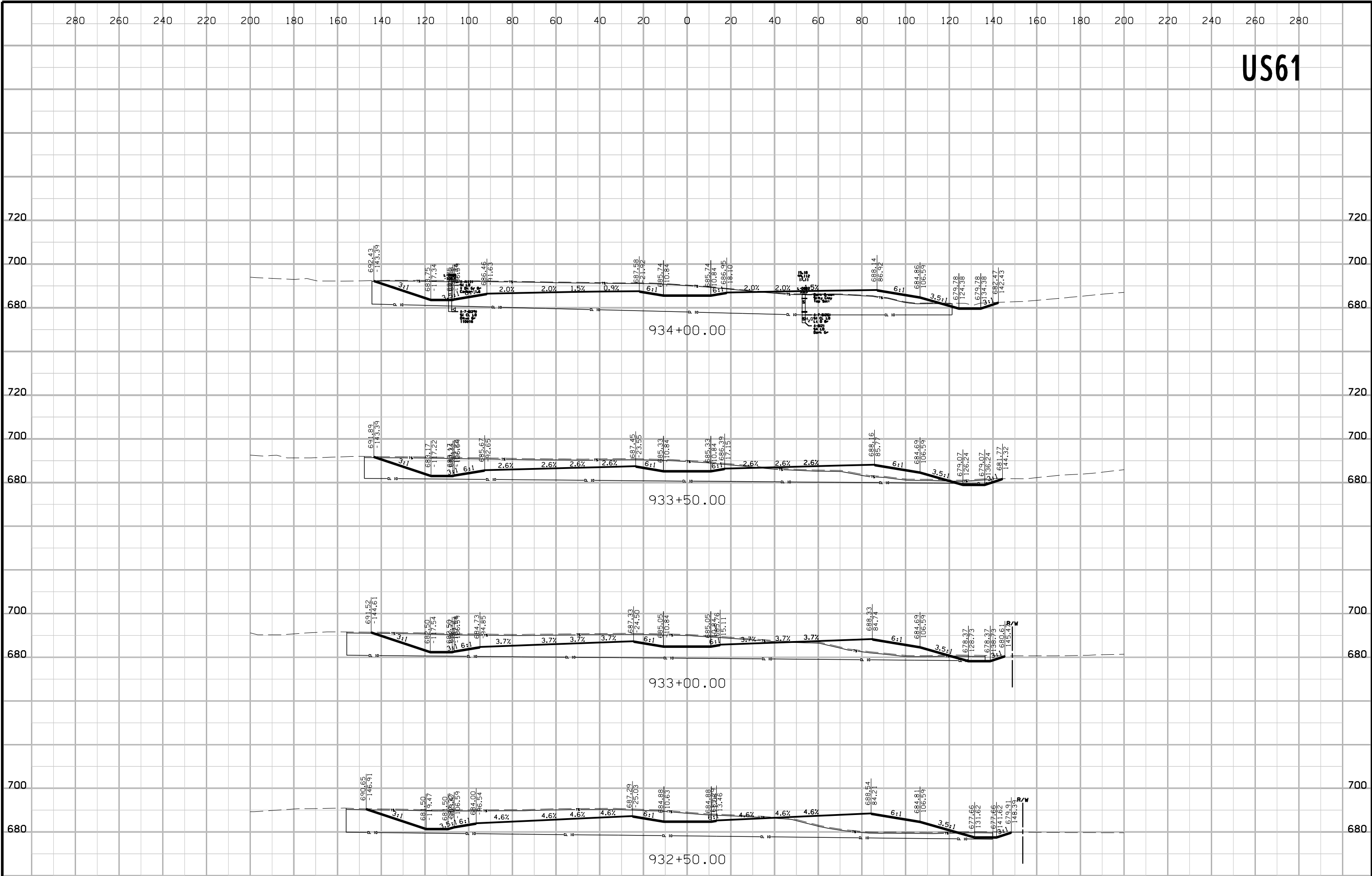
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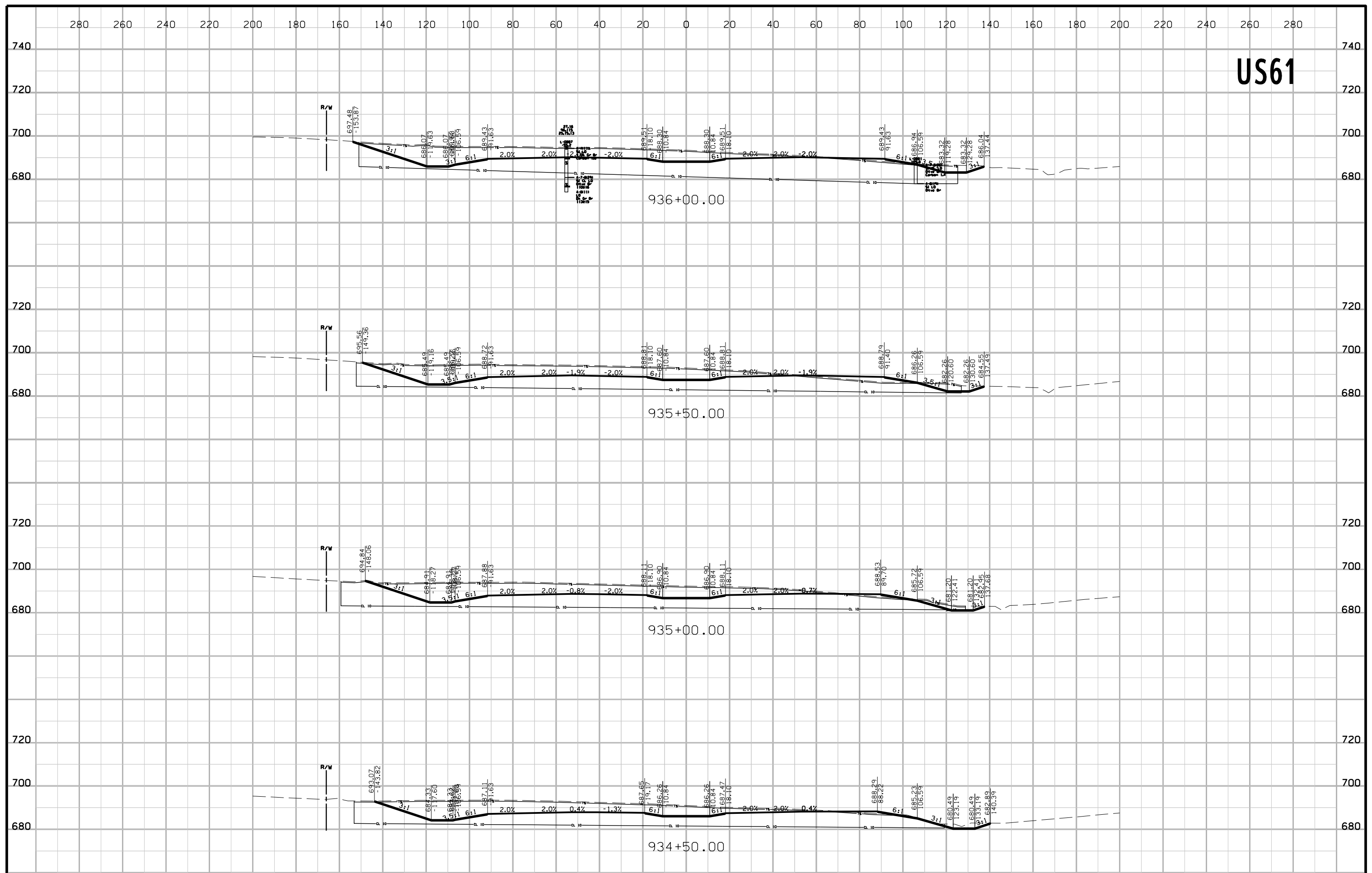
# US61



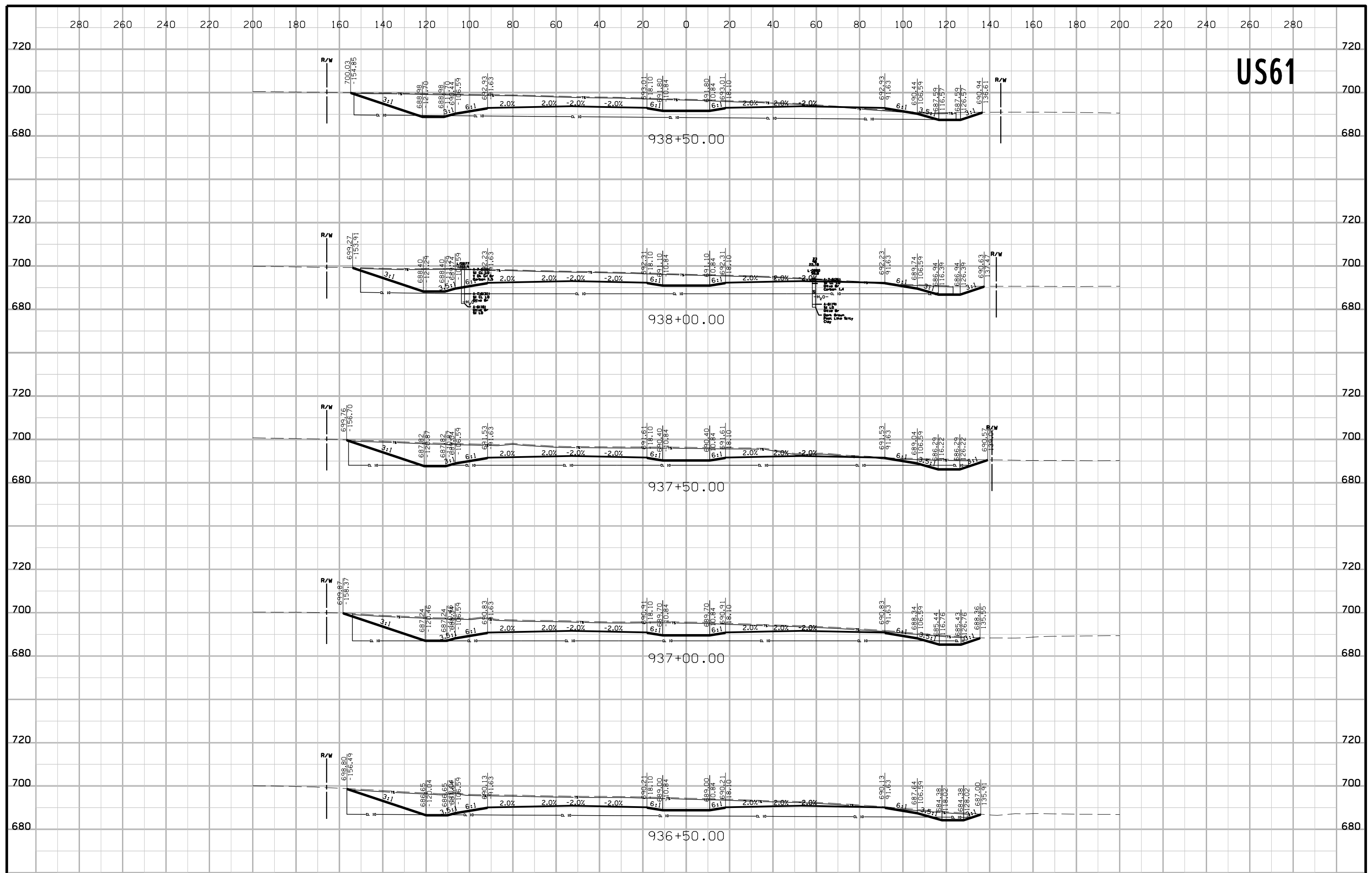
# US61



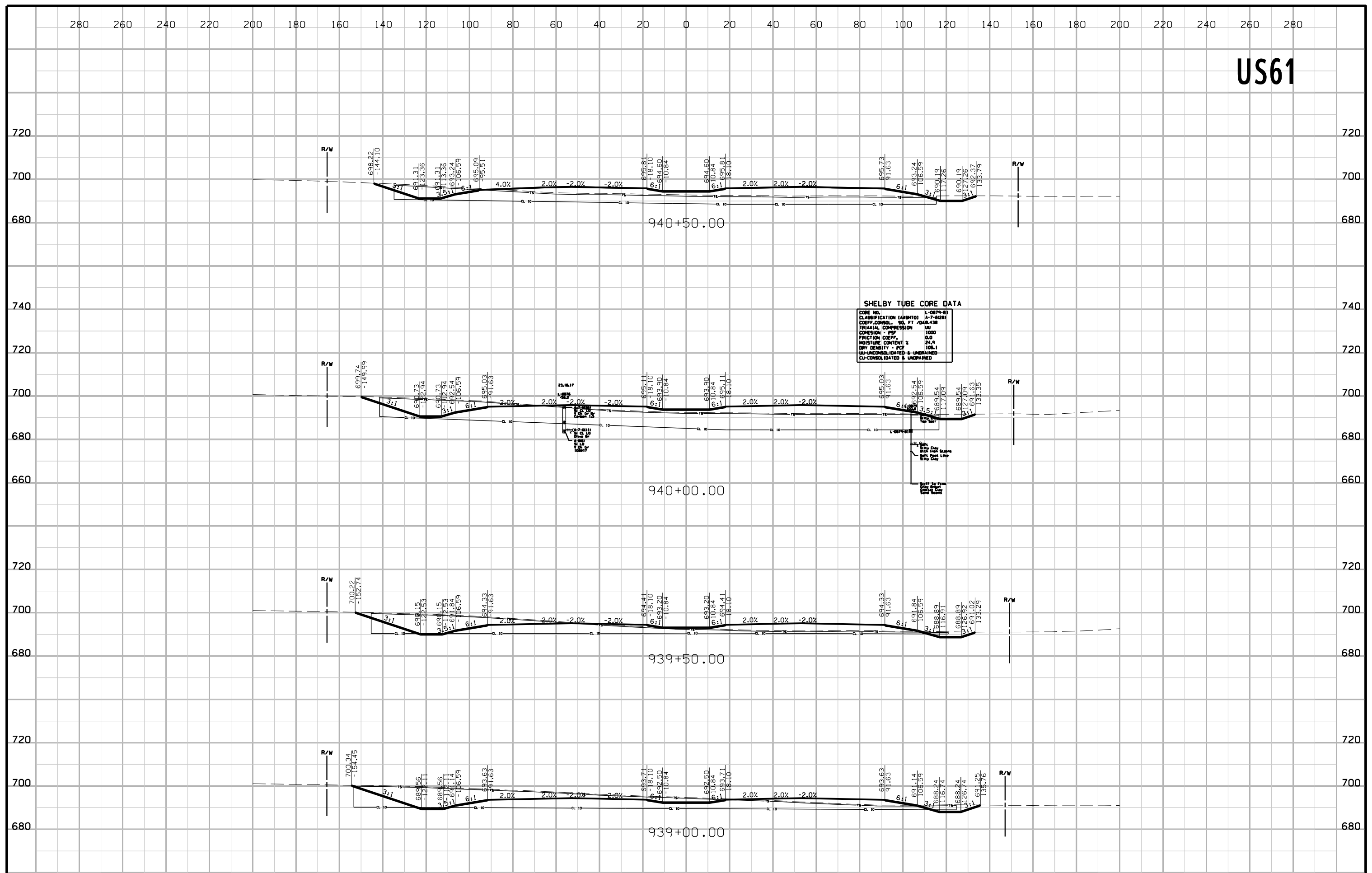
# US61



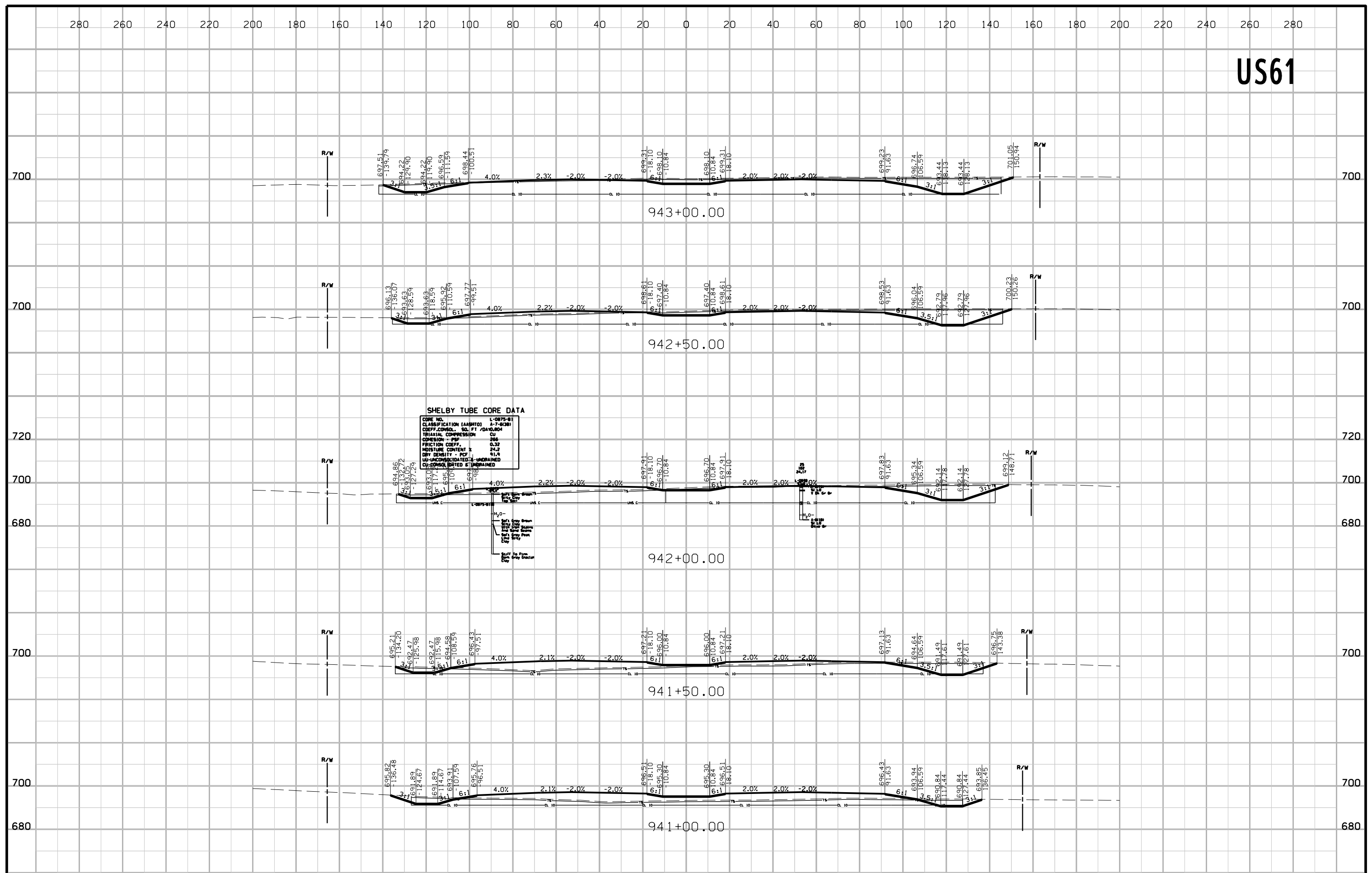
# US61



# US61



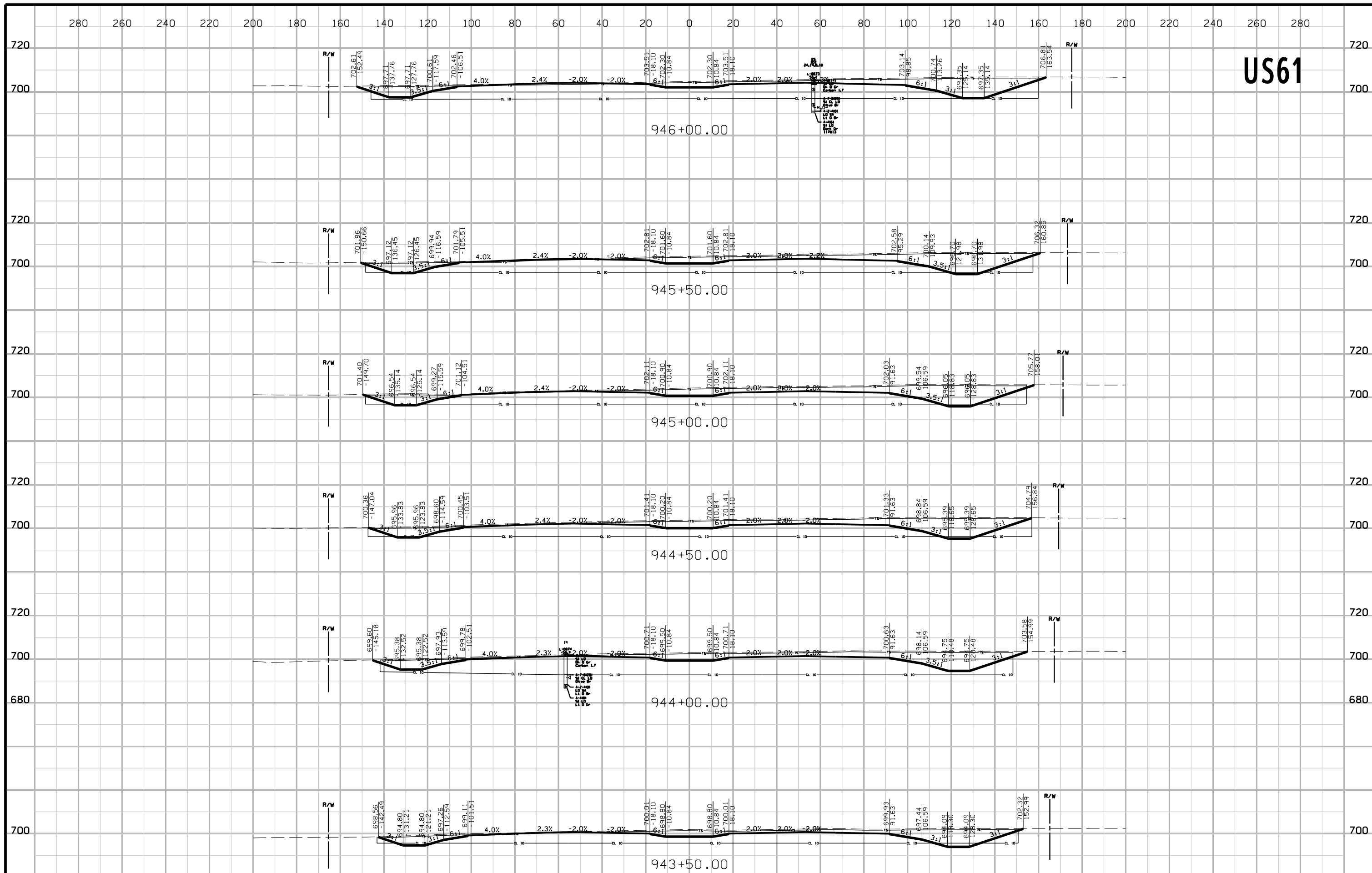
# US61



**SHELBY TUBE CORE DATA**

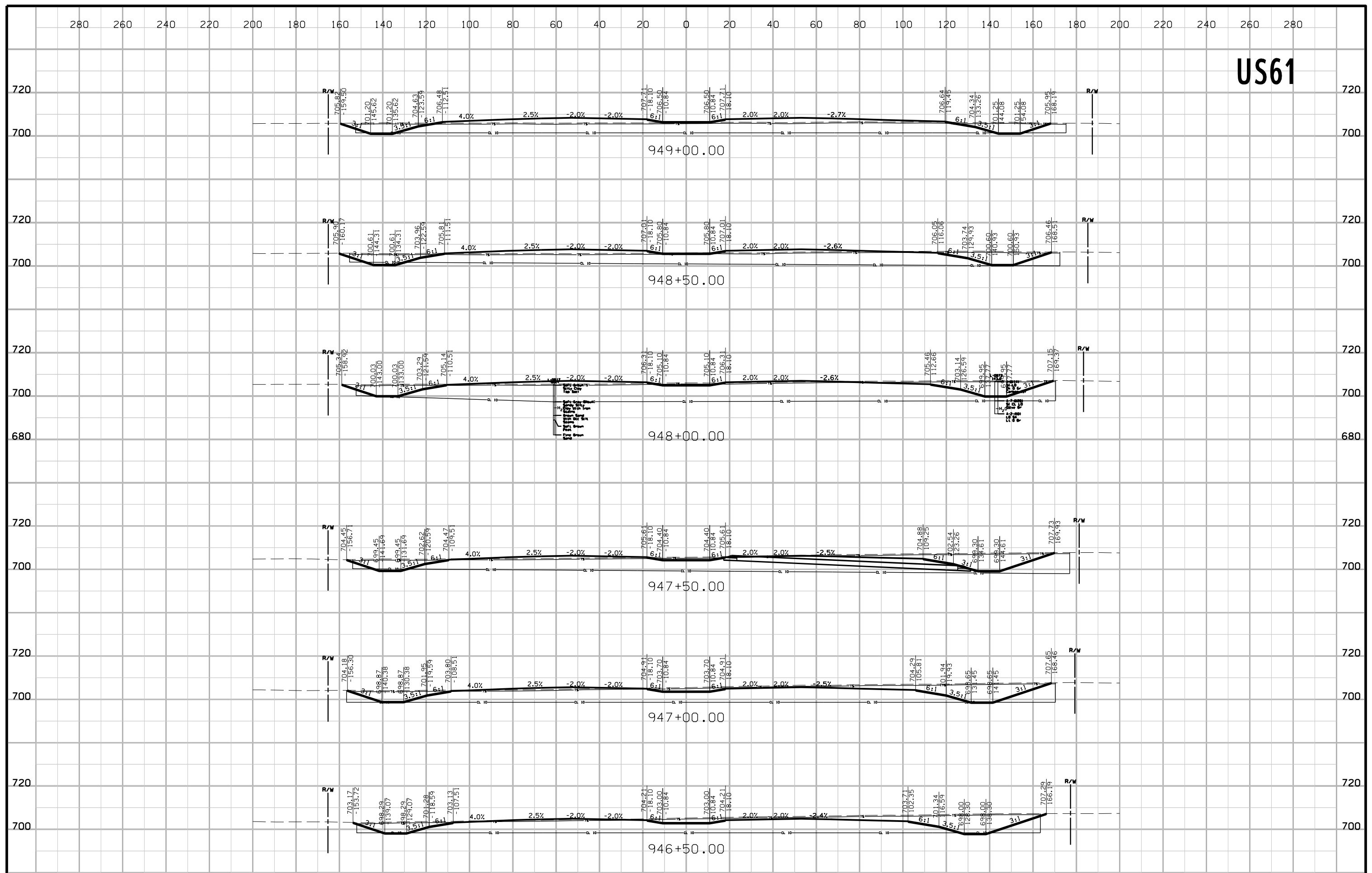
CORE NO.	L-0875-01
CLASSIFICATION (AASHTO)	A-7-6(3)81
COEFF. CONSO. SO. FT /DAYS	0.04
TRIAL COMP. C	5
COMESION - PSP	266
FRICION COEFF.	0.32
MOISTURE CONTENT %	24.2
DRY DENSITY - PCF	91.9
UN-UNCONSOLIDATED & UNGRAINED	
CLASSIFIED	UNGRAINED



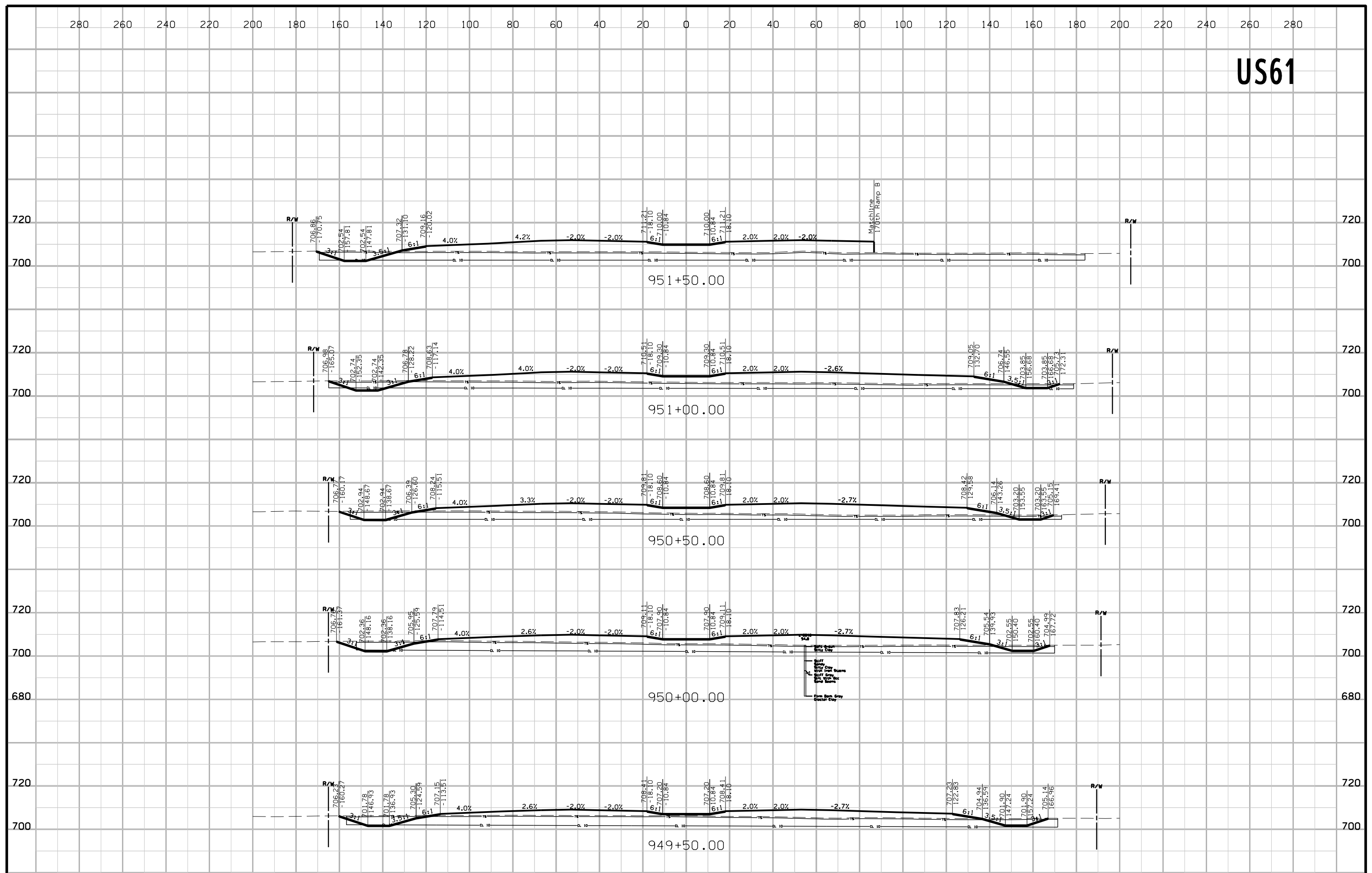


**US61**

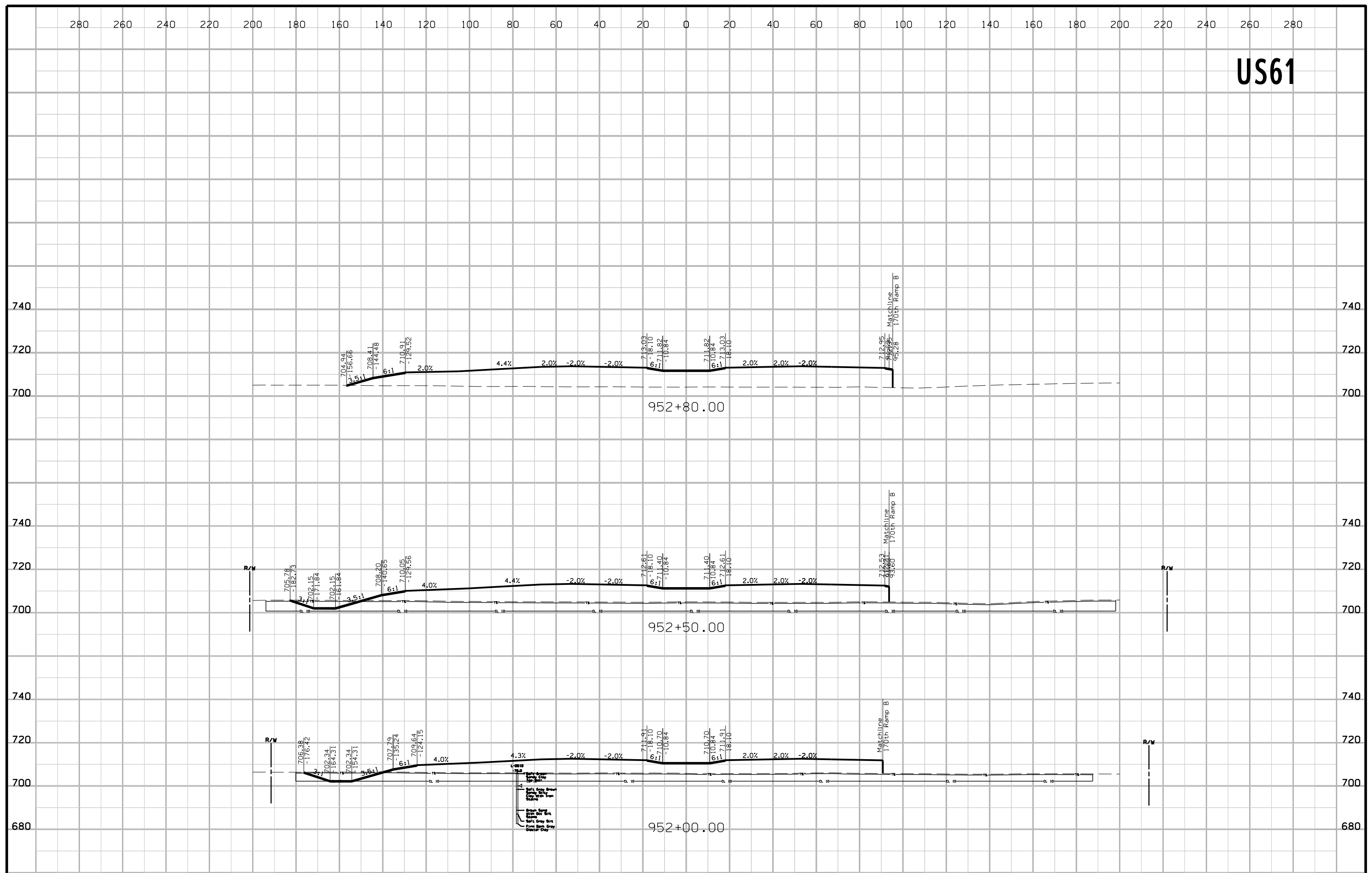
# US61



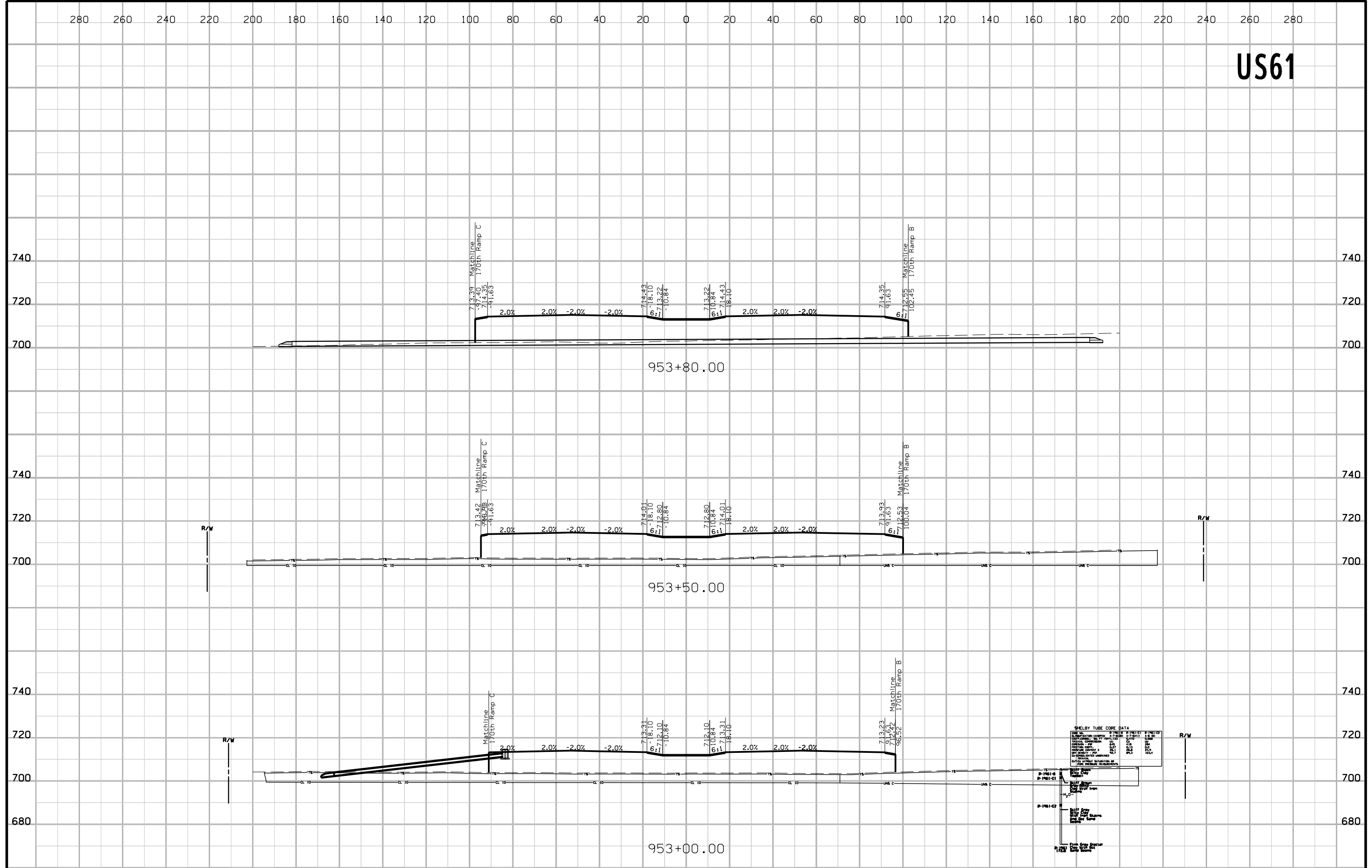
# US61



# US61



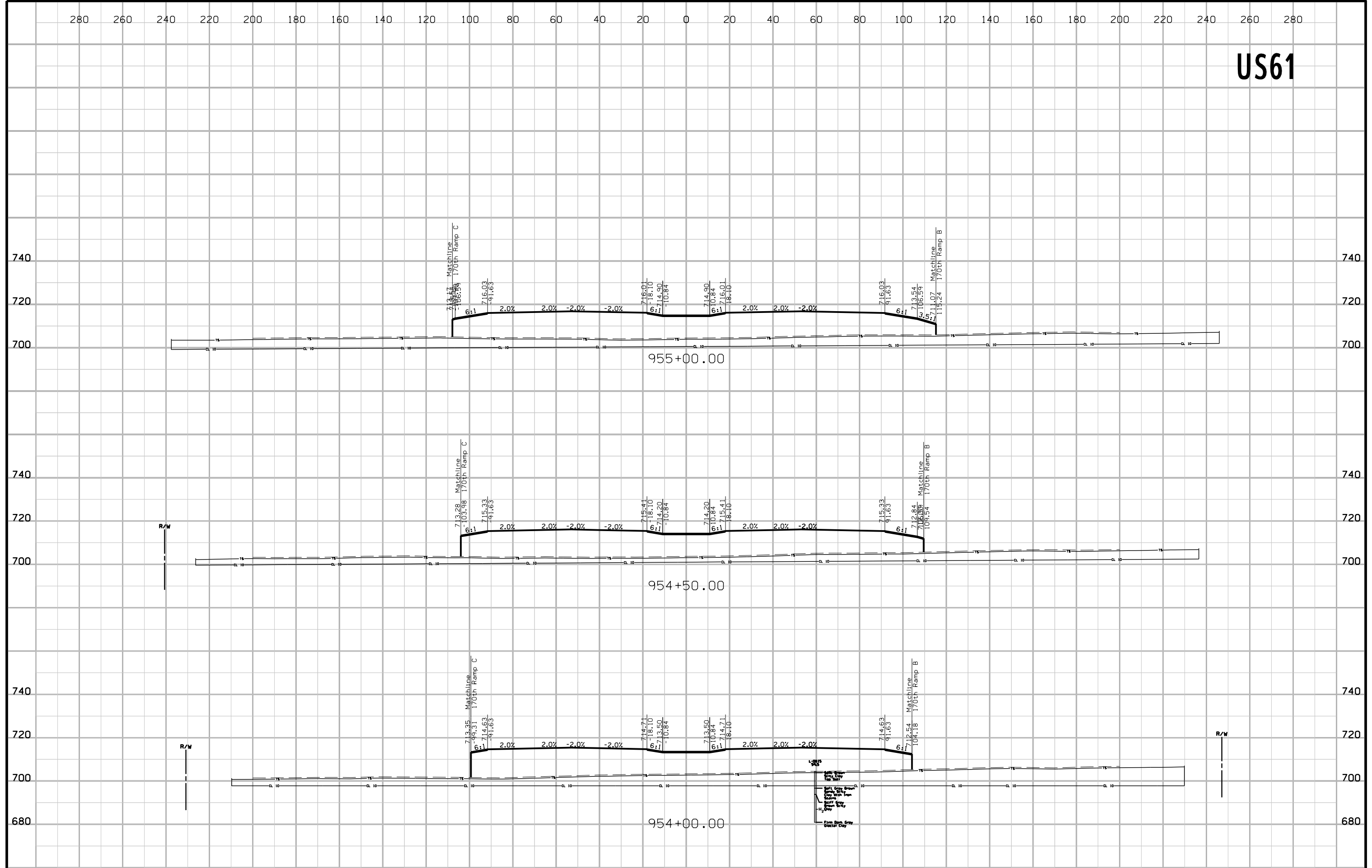
# US61



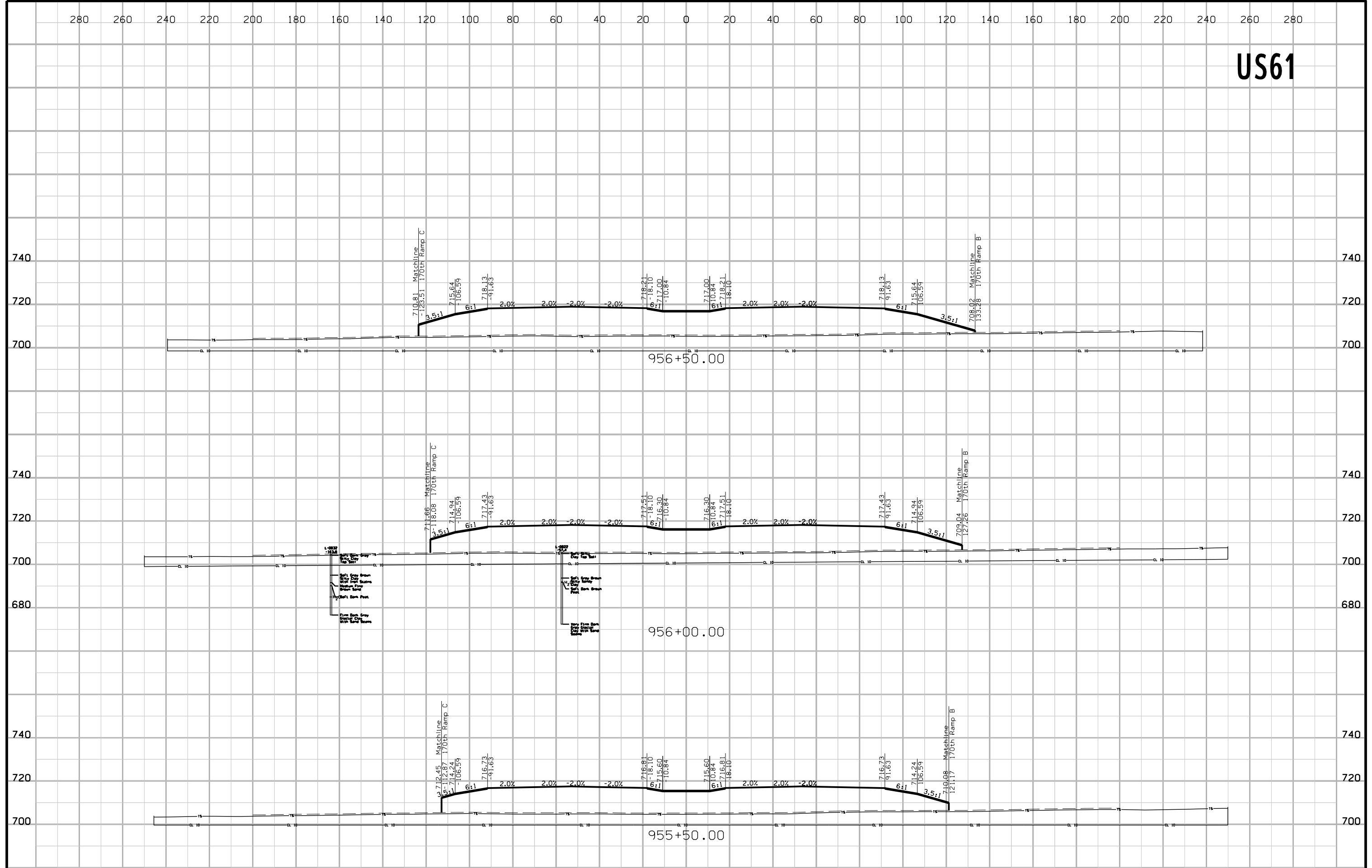
**SHELBY TUBE CORE DATA**

Core No.	Location	Depth (ft)	Soil Type	Moisture (%)	Specific Gravity	Unit Weight (pcf)	Compaction
1	Station 953+00.00	0-12	CL	18.5	2.65	115	95%
2	Station 953+00.00	12-24	CL	18.5	2.65	115	95%
3	Station 953+00.00	24-36	CL	18.5	2.65	115	95%
4	Station 953+00.00	36-48	CL	18.5	2.65	115	95%
5	Station 953+00.00	48-60	CL	18.5	2.65	115	95%
6	Station 953+00.00	60-72	CL	18.5	2.65	115	95%
7	Station 953+00.00	72-84	CL	18.5	2.65	115	95%
8	Station 953+00.00	84-96	CL	18.5	2.65	115	95%
9	Station 953+00.00	96-108	CL	18.5	2.65	115	95%
10	Station 953+00.00	108-120	CL	18.5	2.65	115	95%

# US61

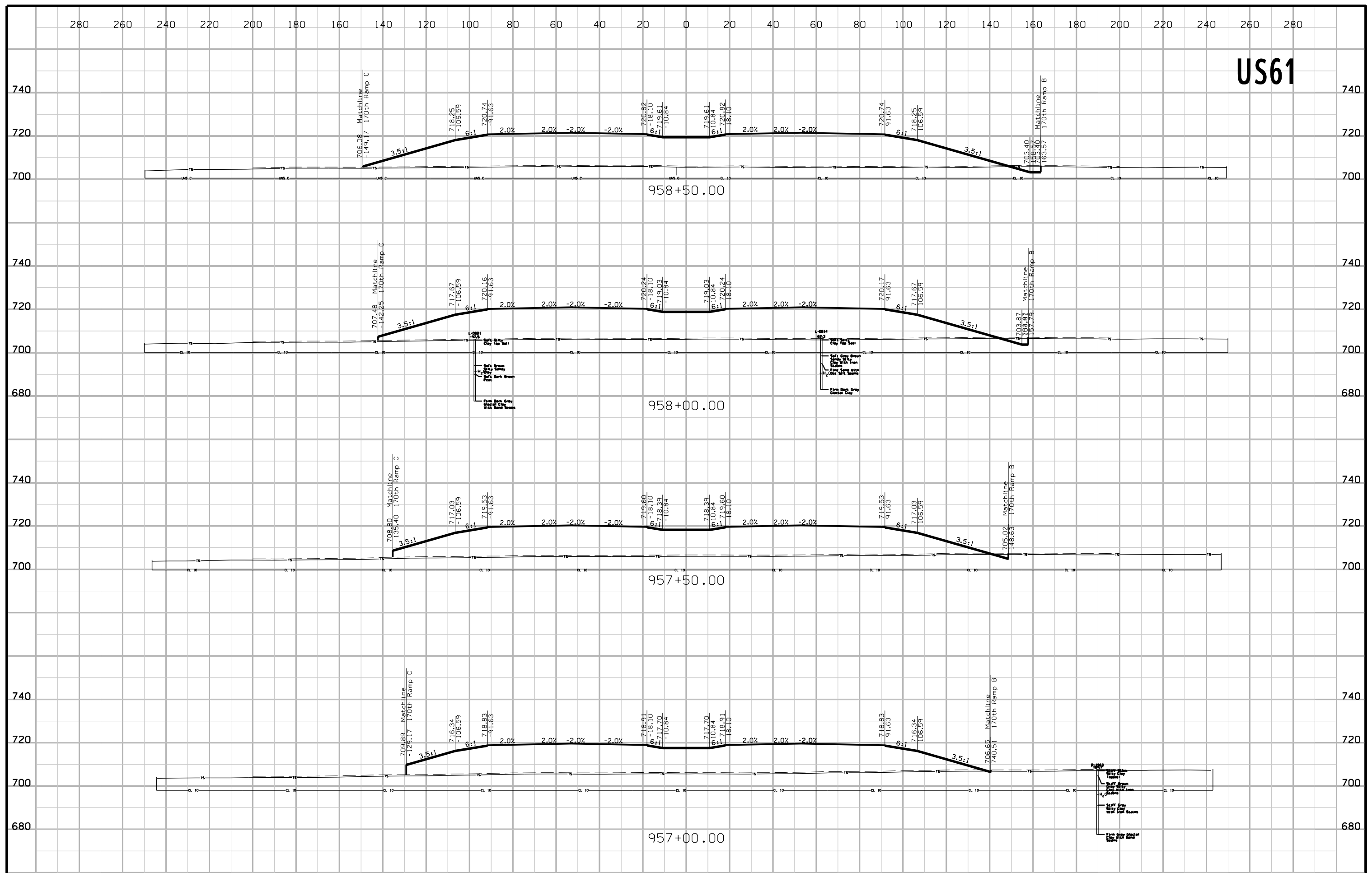


# US61

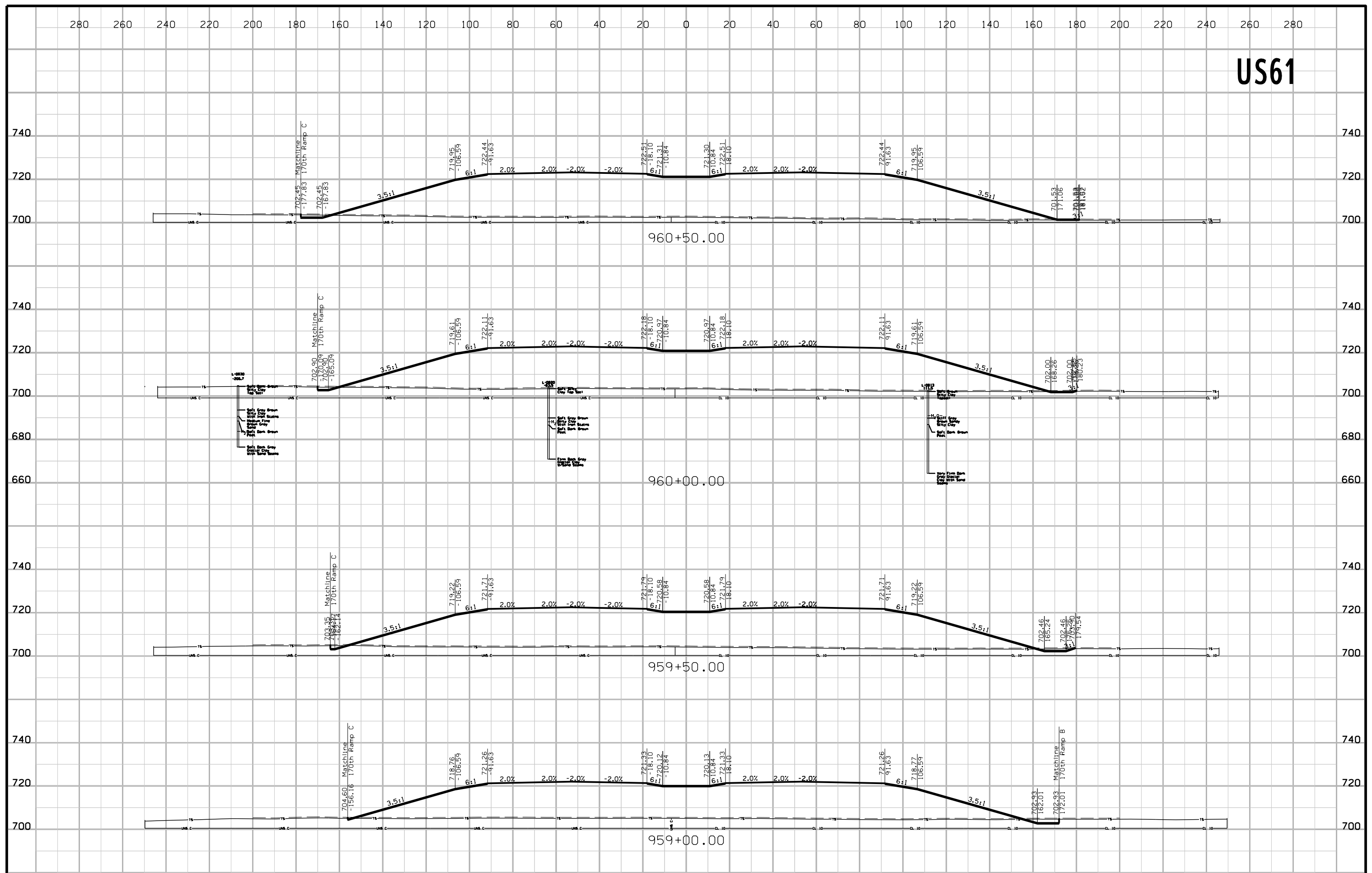




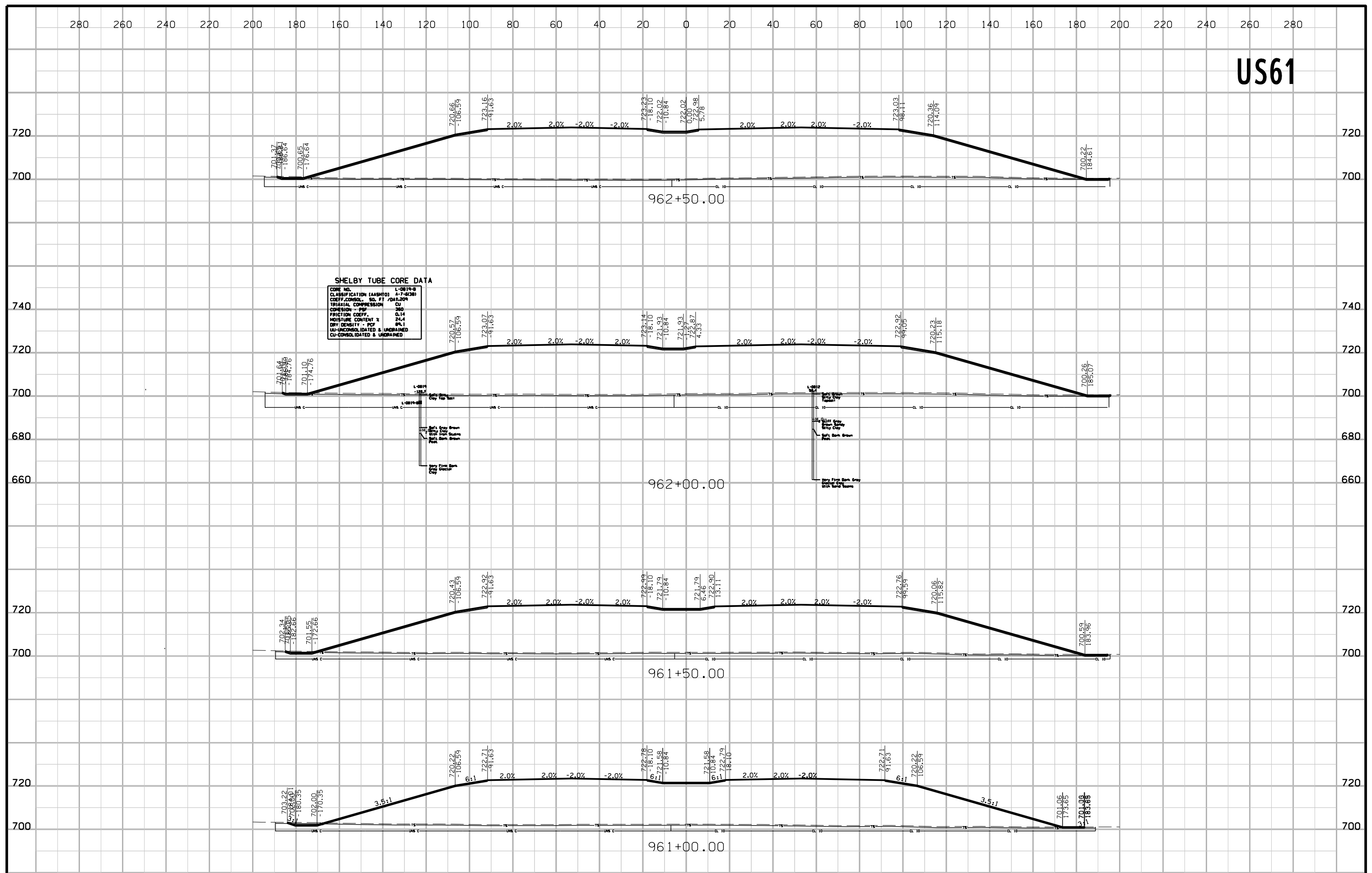
# US61



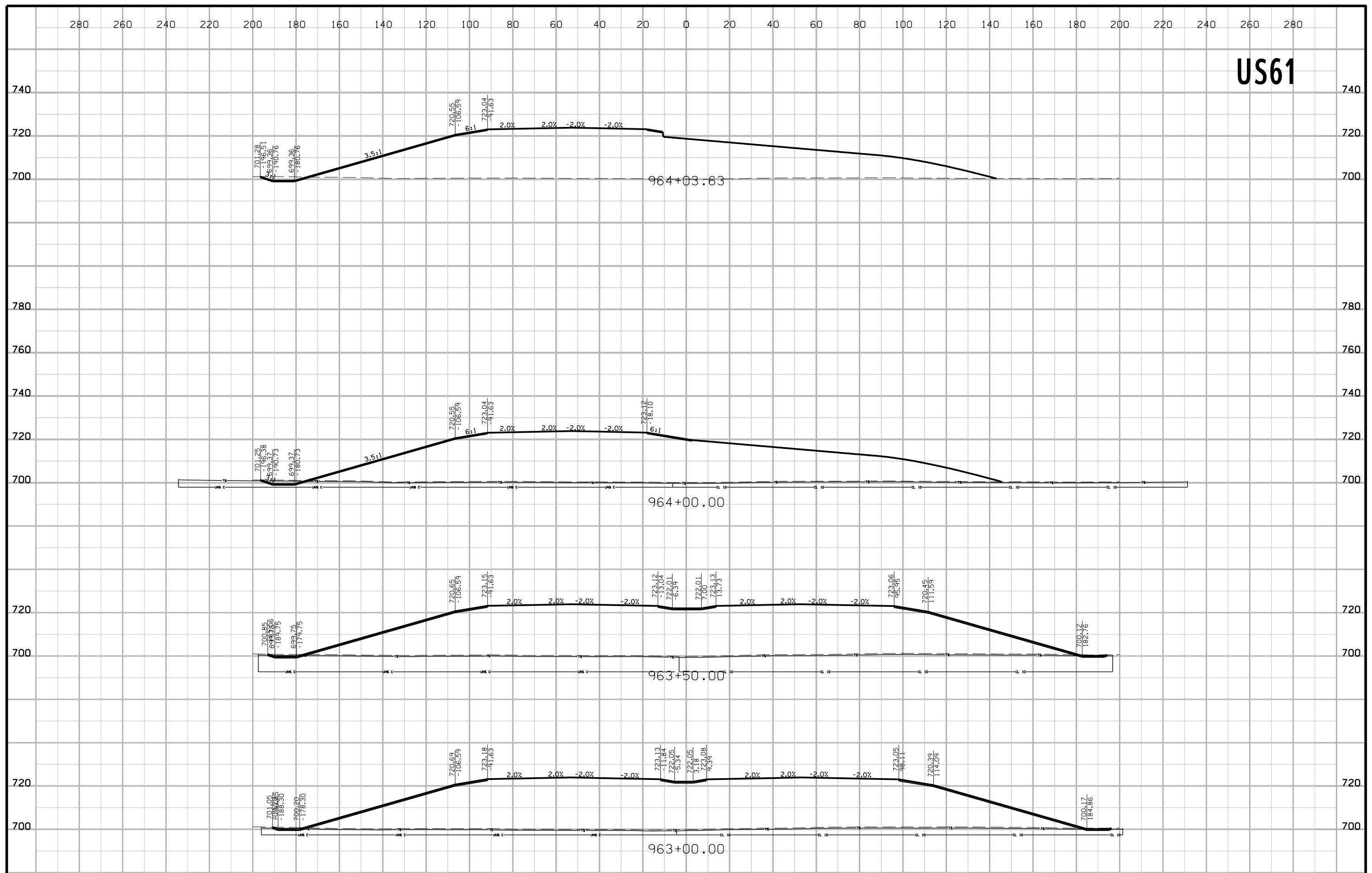
# US61



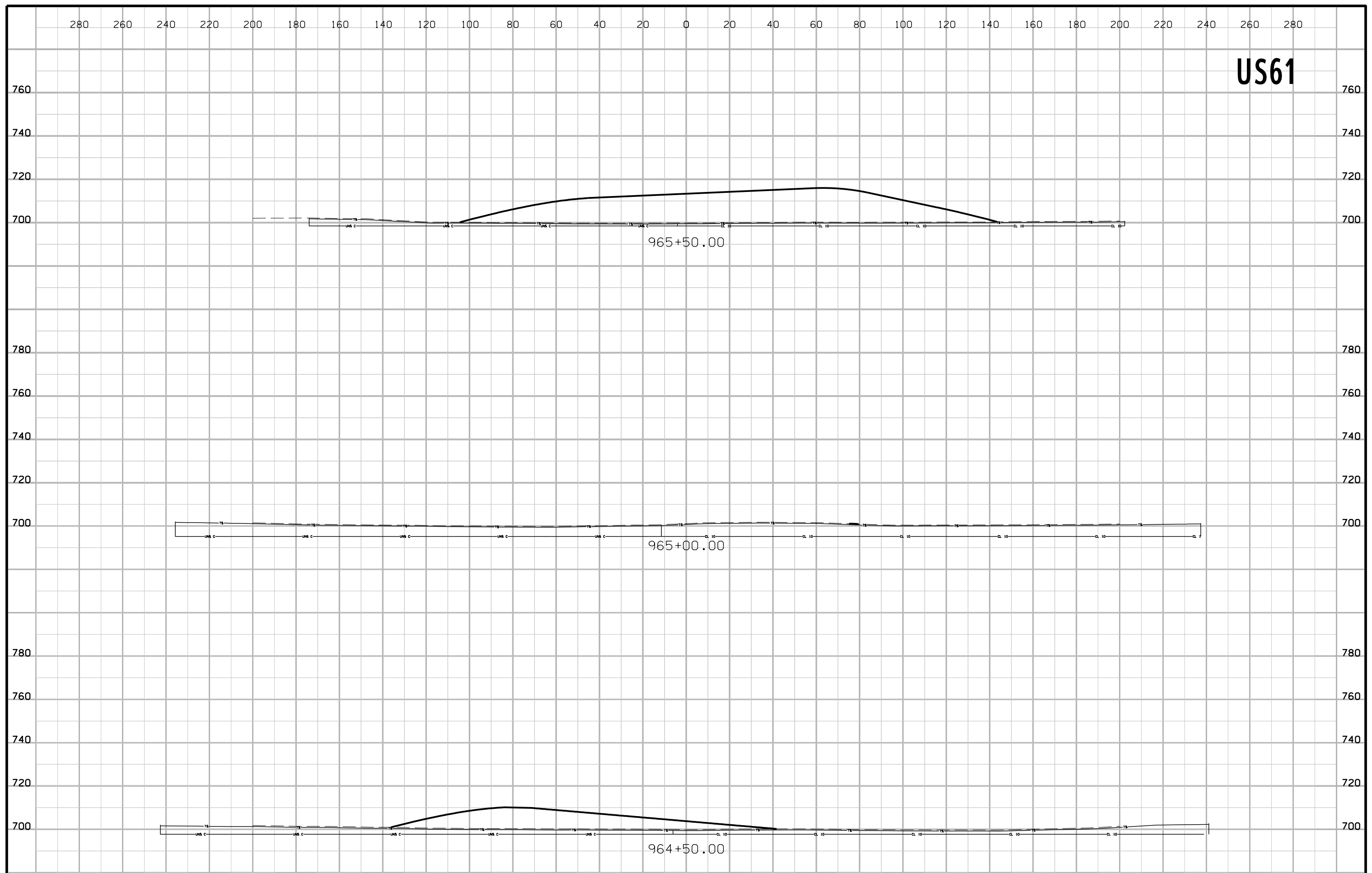
# US61



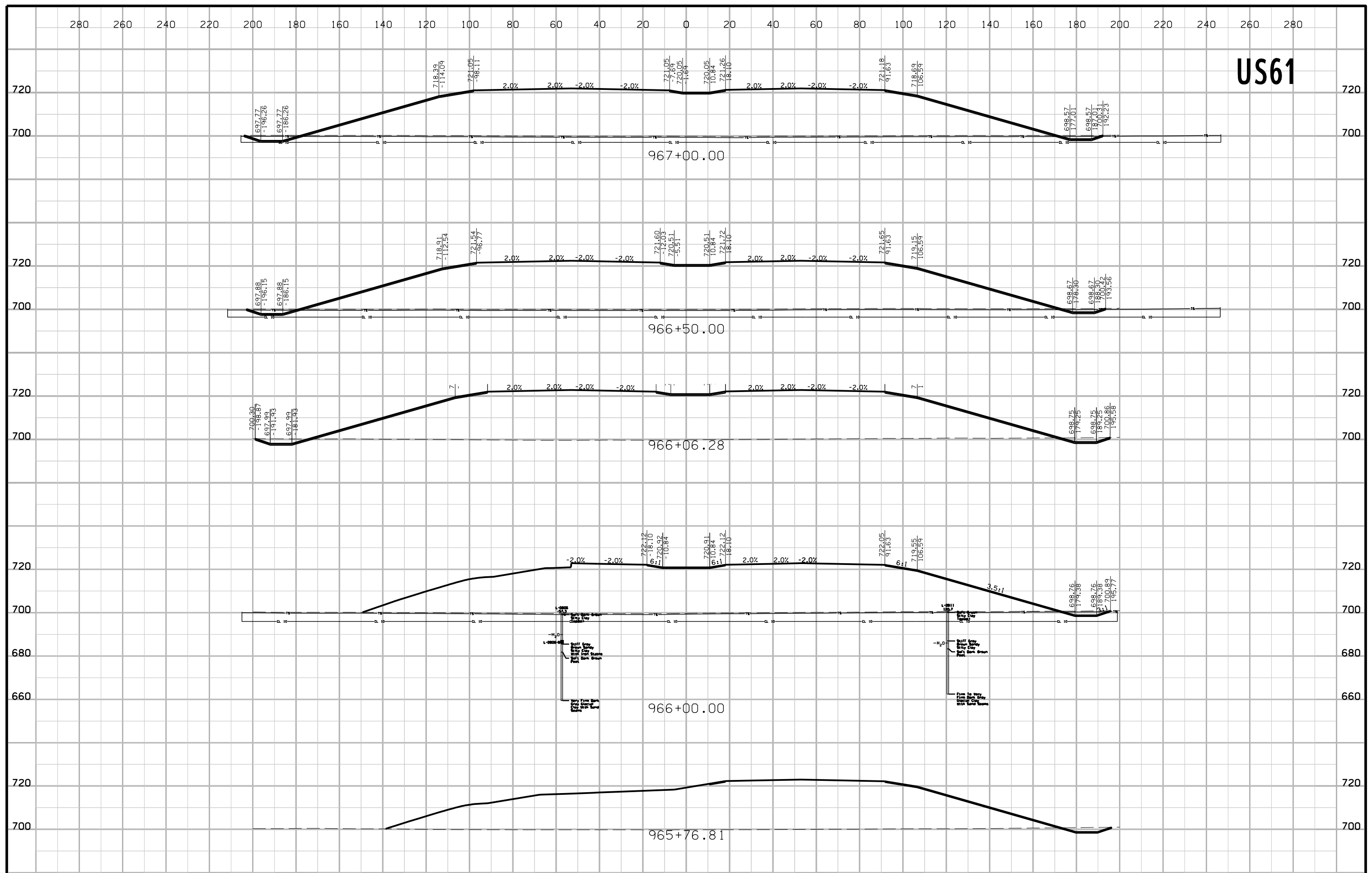
# US61



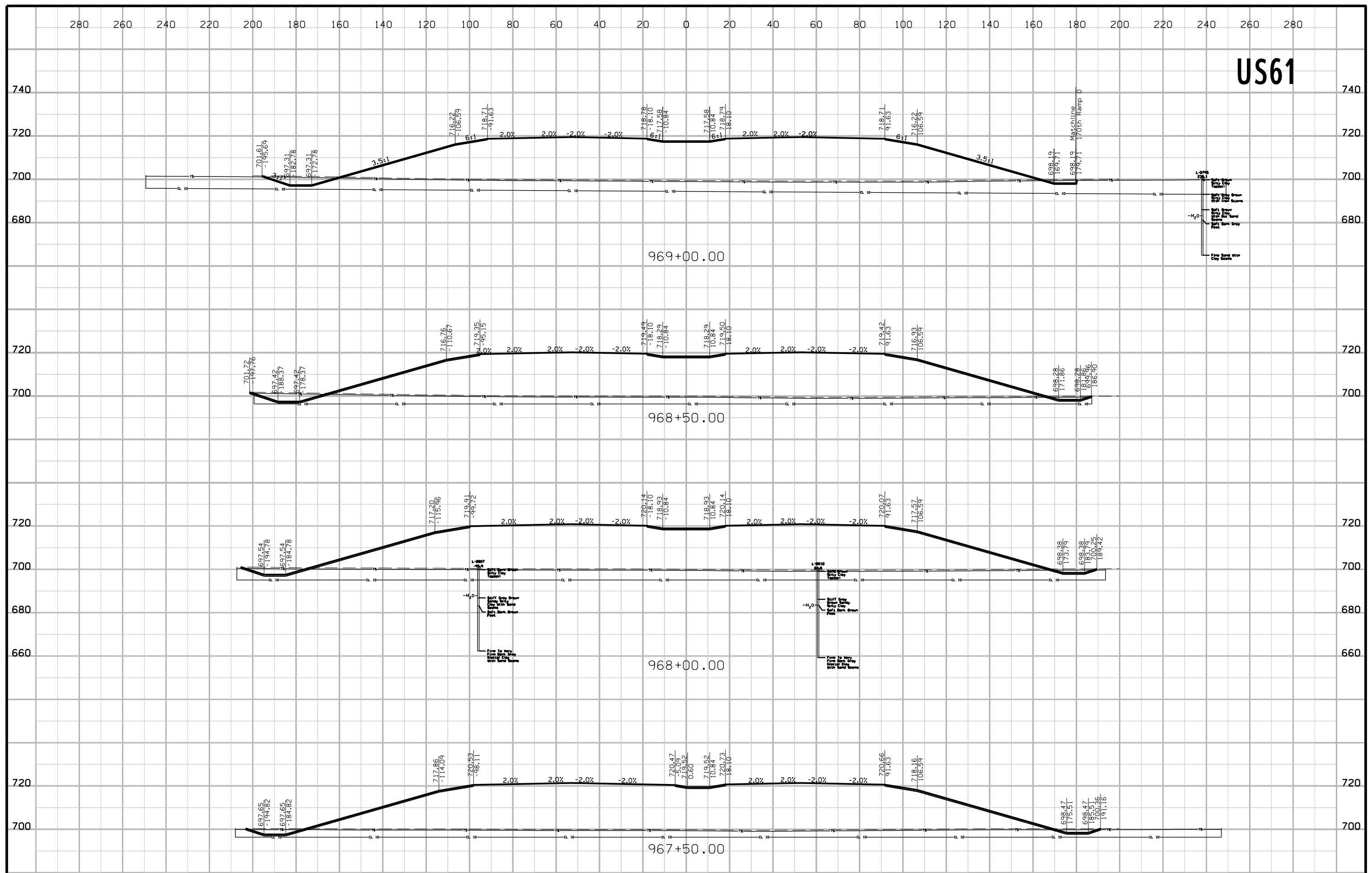
# US61



# US61

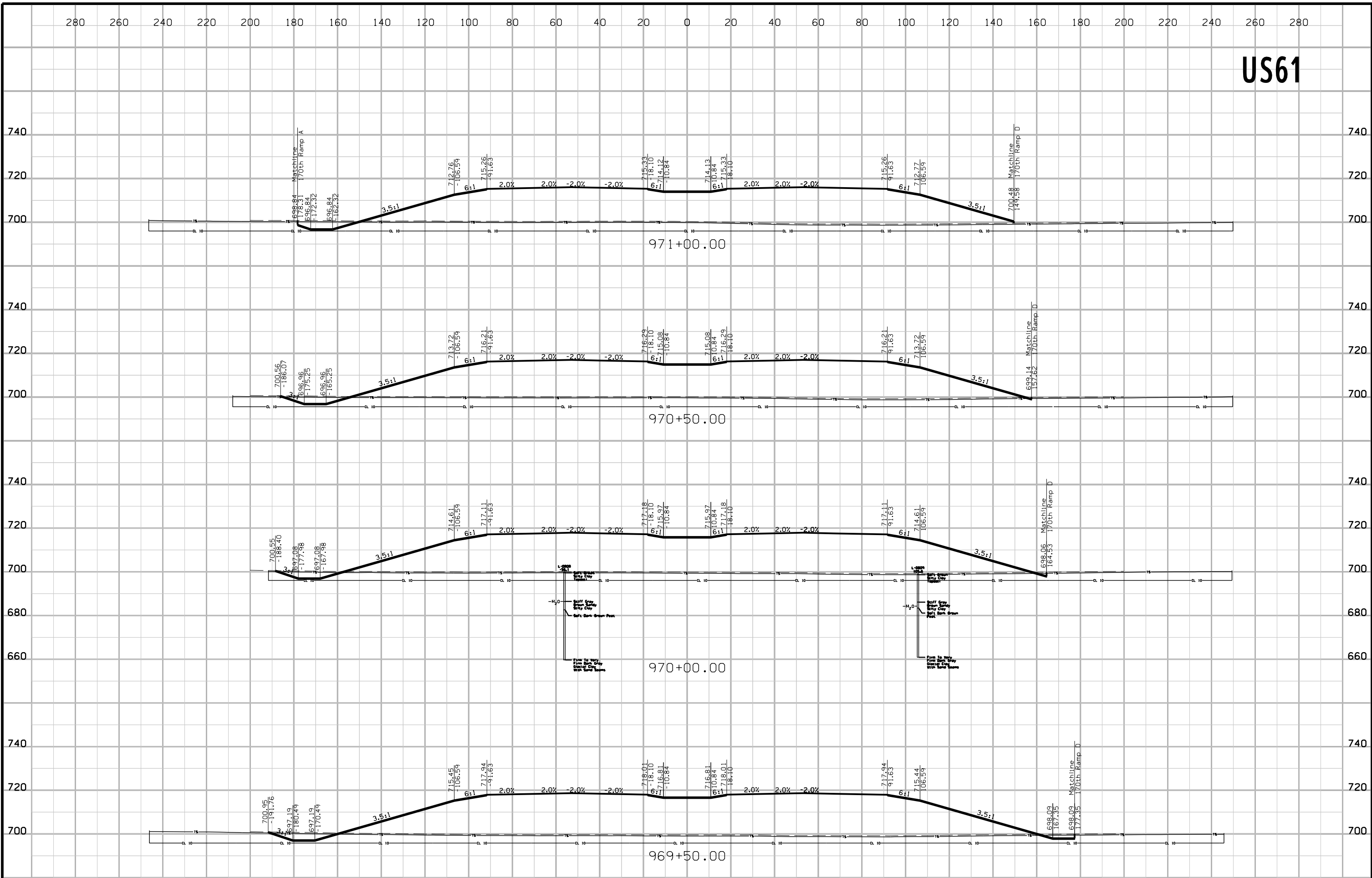


# US61

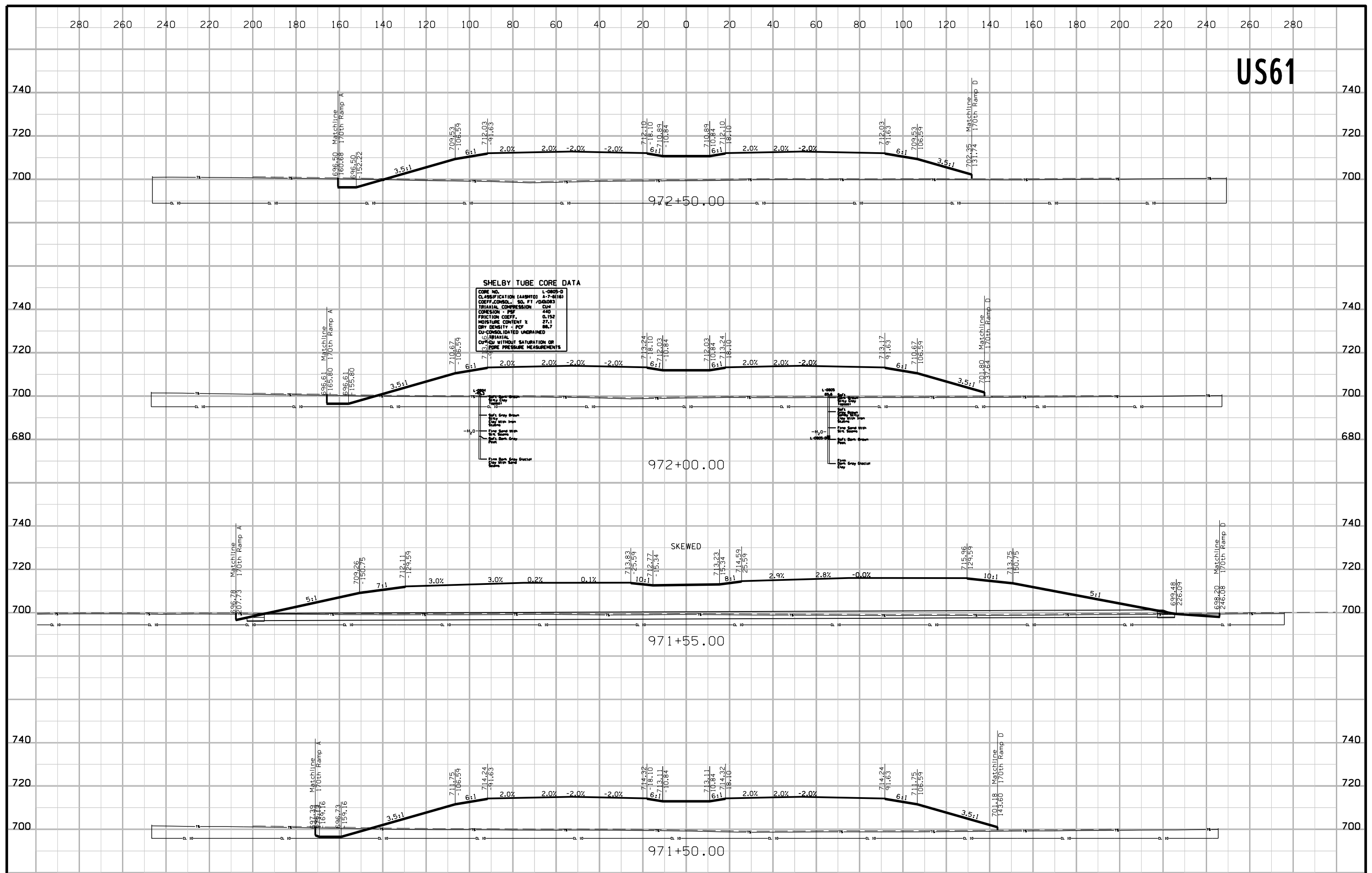




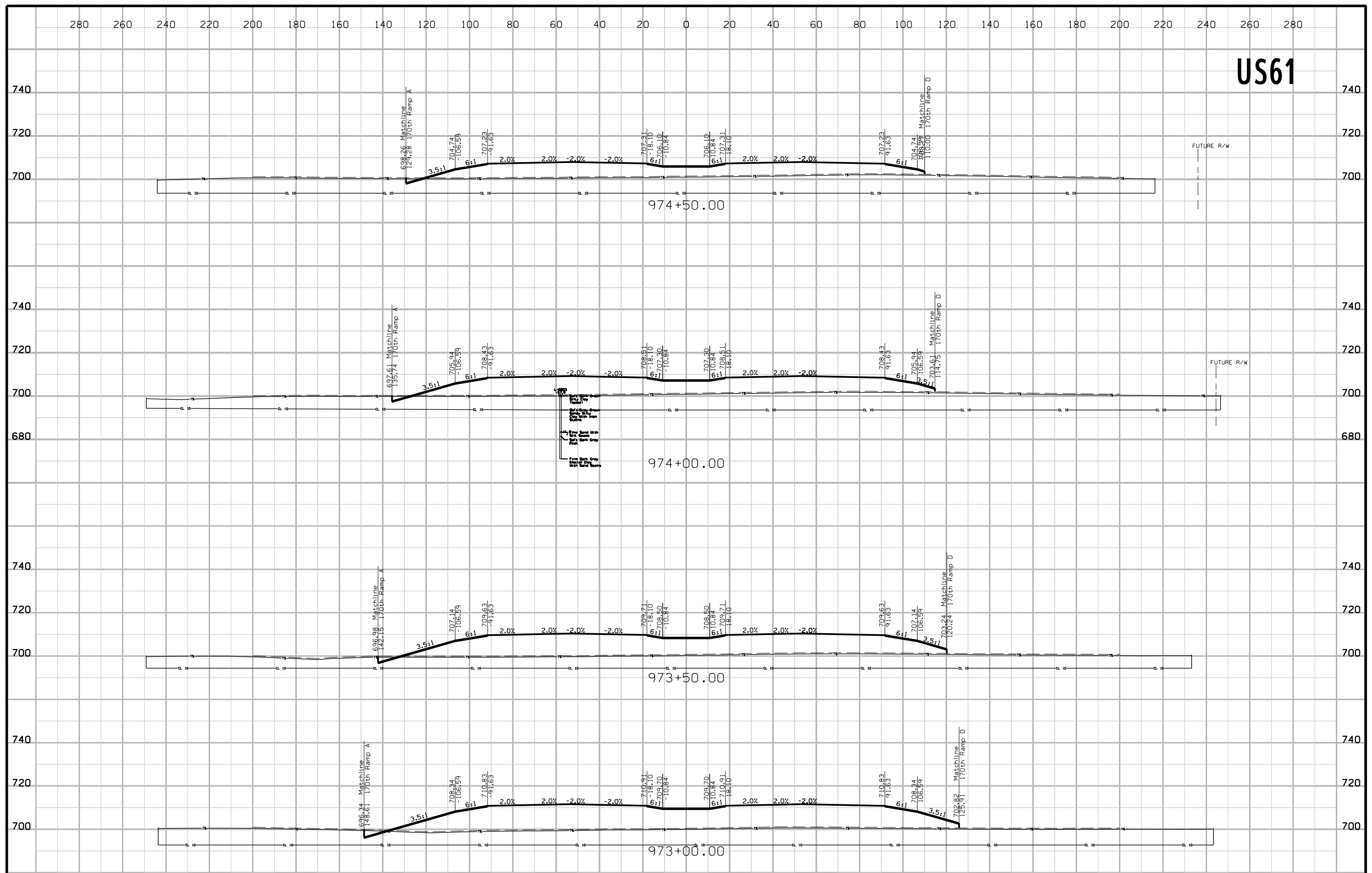
# US61



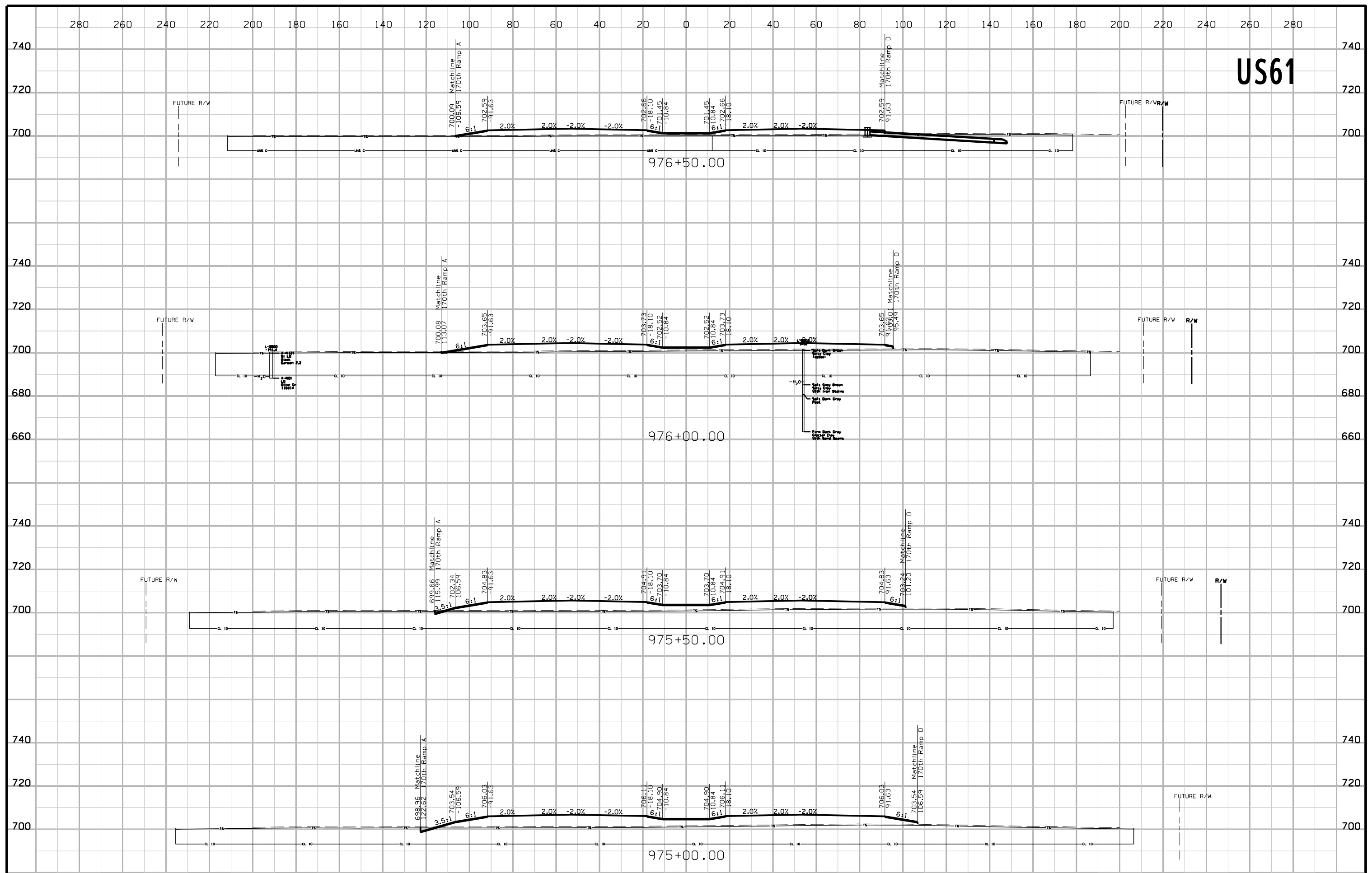
# US61



# US61



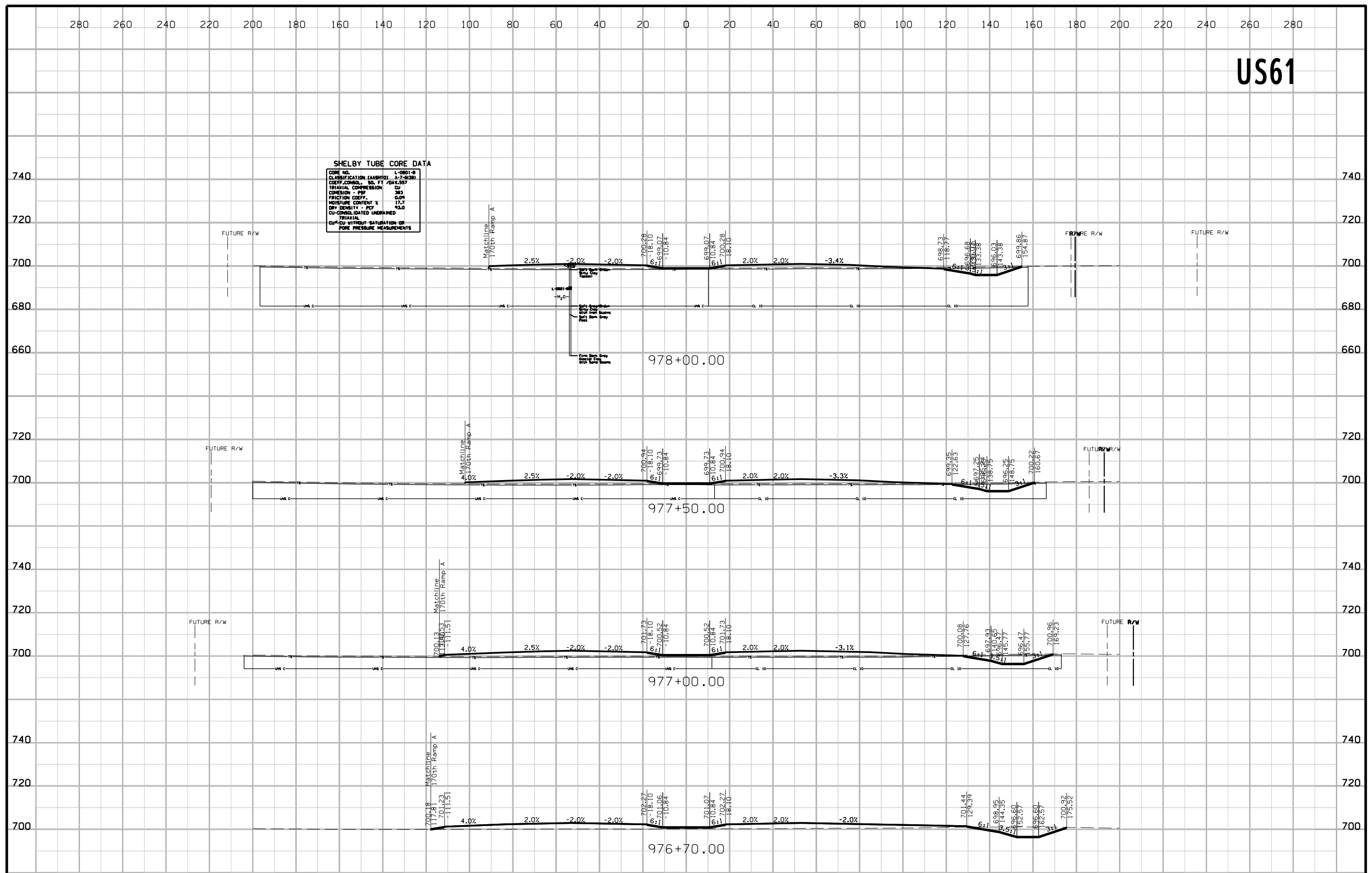
# US61



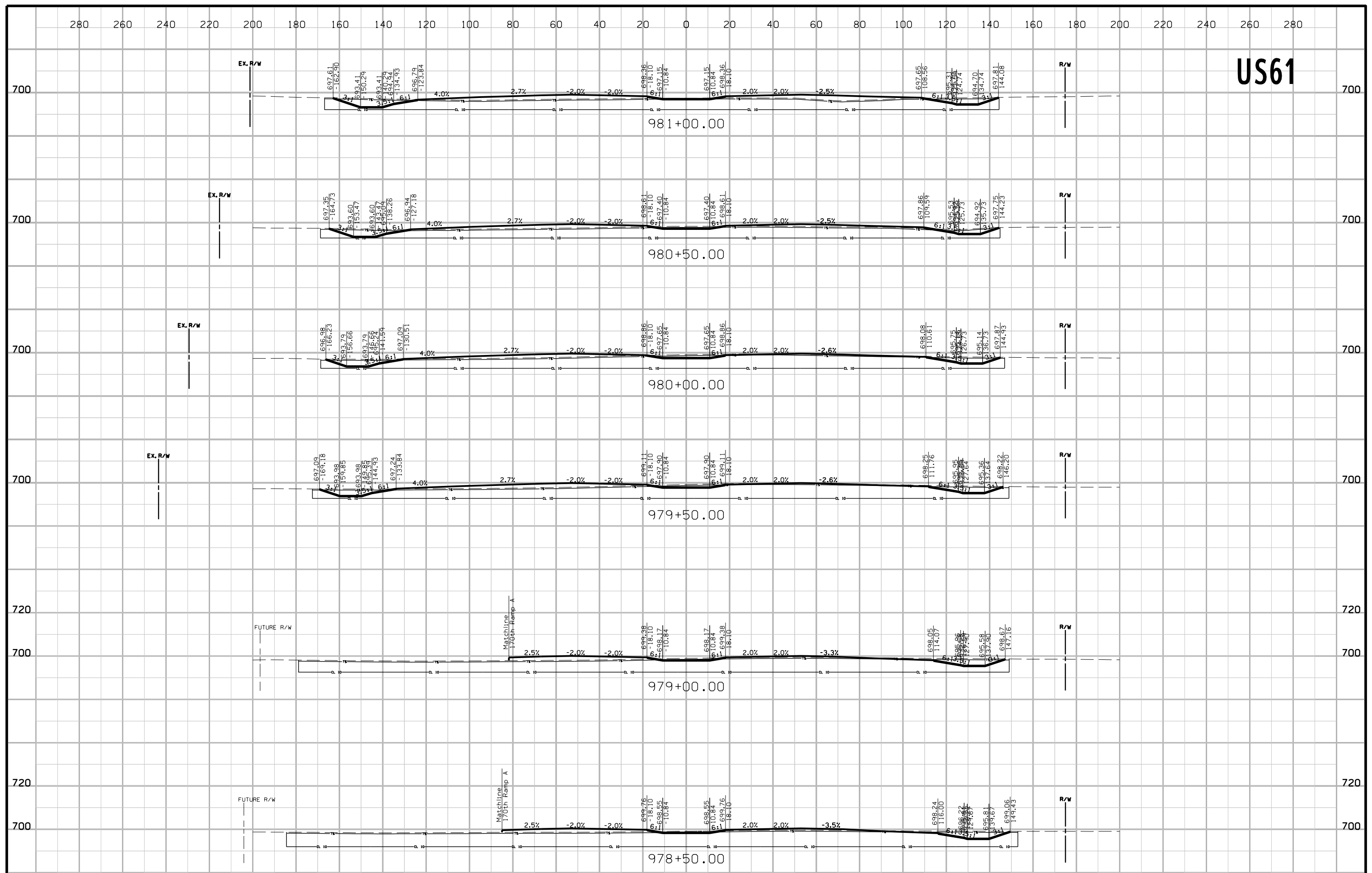
# US61

**SHELBY TUBE CORE DATA**

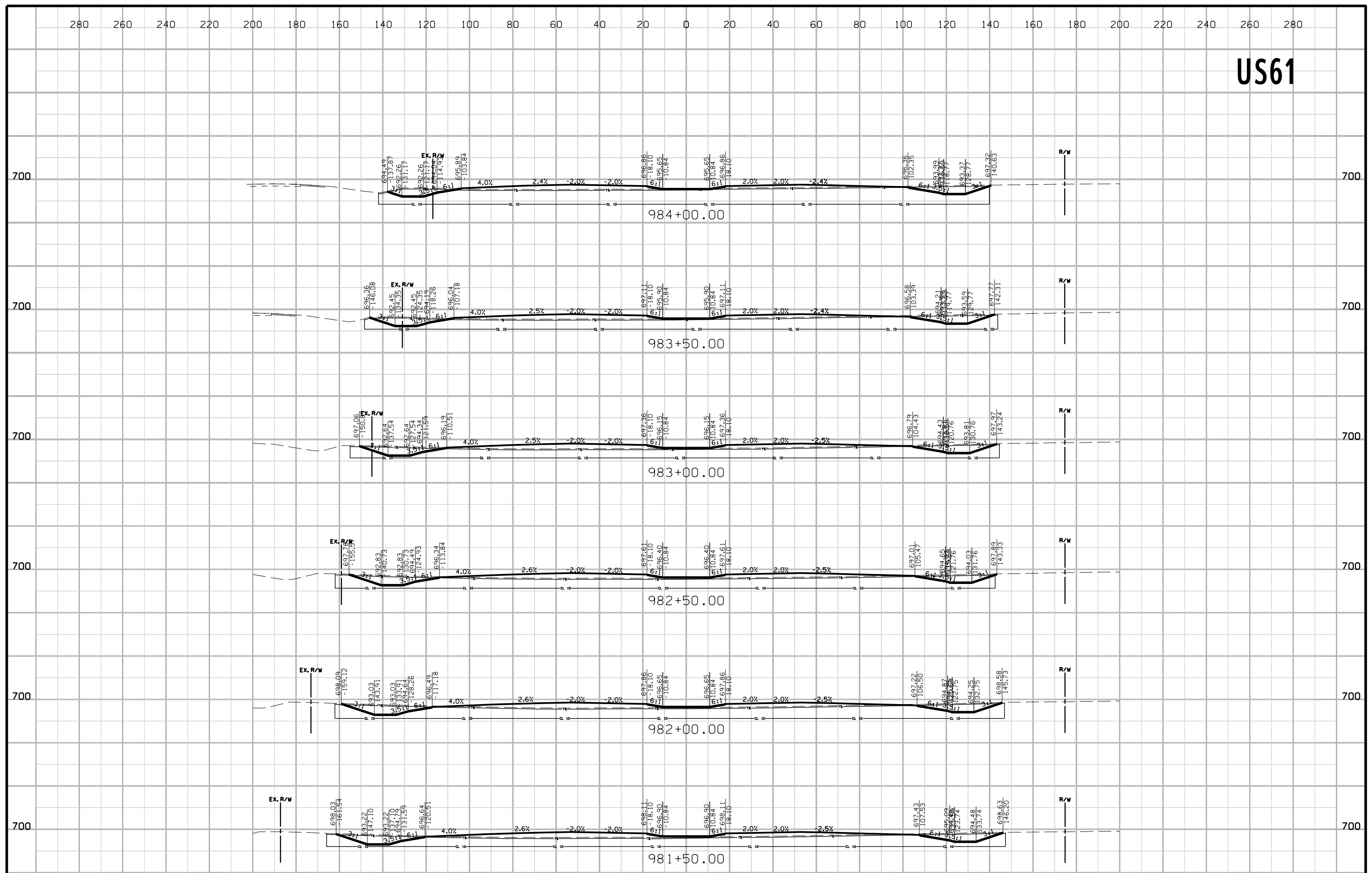
CORE NO.	L-0801-B
CLASSIFICATION (AASHTO)	A-7-6.5(M)
COEFF. CONSOL. SO. FT / DAY	0.57
TRIAxIAL COMPRESSION	CU
COHESION - PSF	303
FRICITION COEFF.	0.09
MOISTURE CONTENT %	17.7
DRY DENSITY - PCF	93.0
CU-CONSOLIDATED UNDRAINED TRIAXIAL	
CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS	



# US61

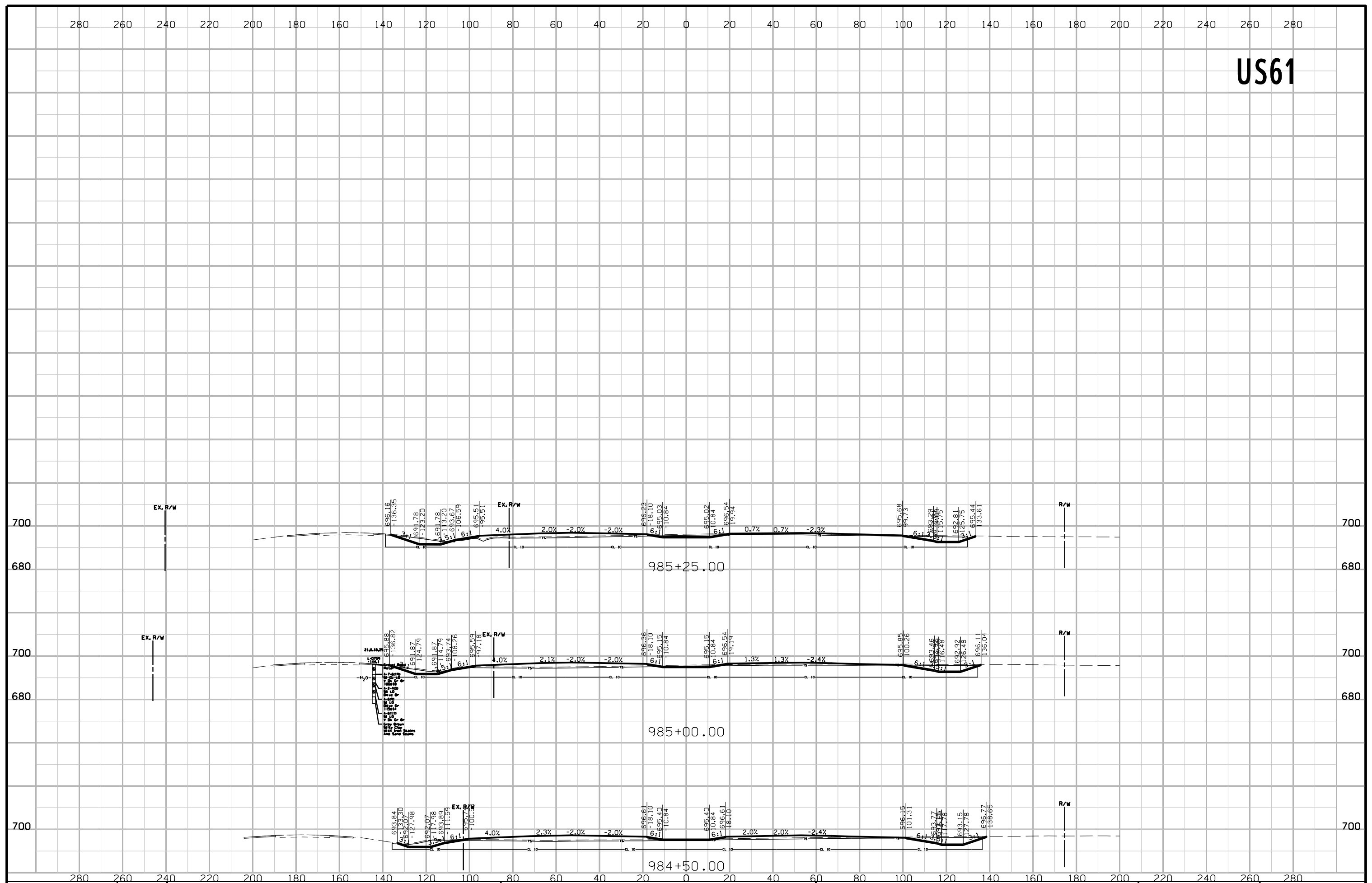


# US61

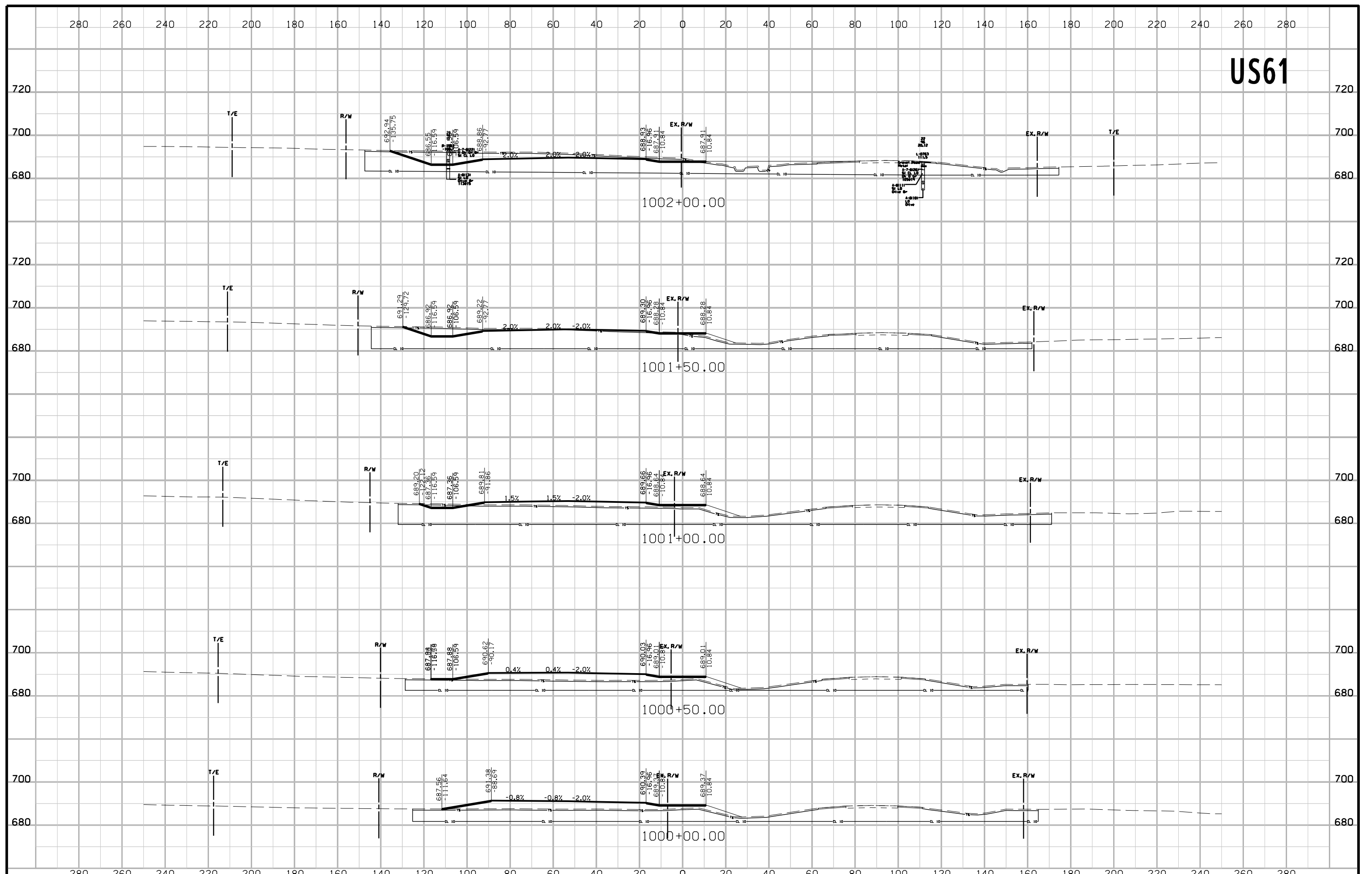




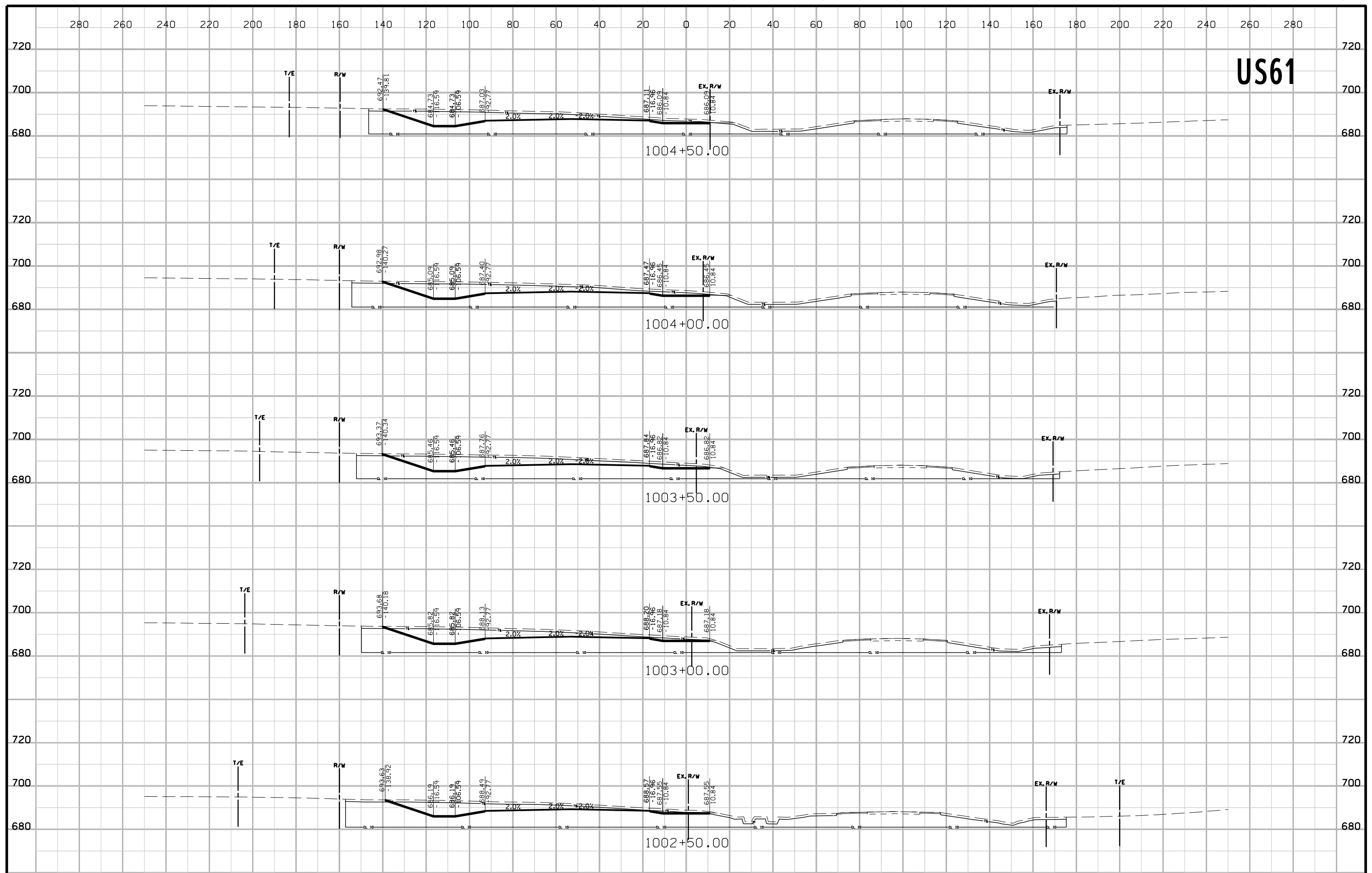
# US61



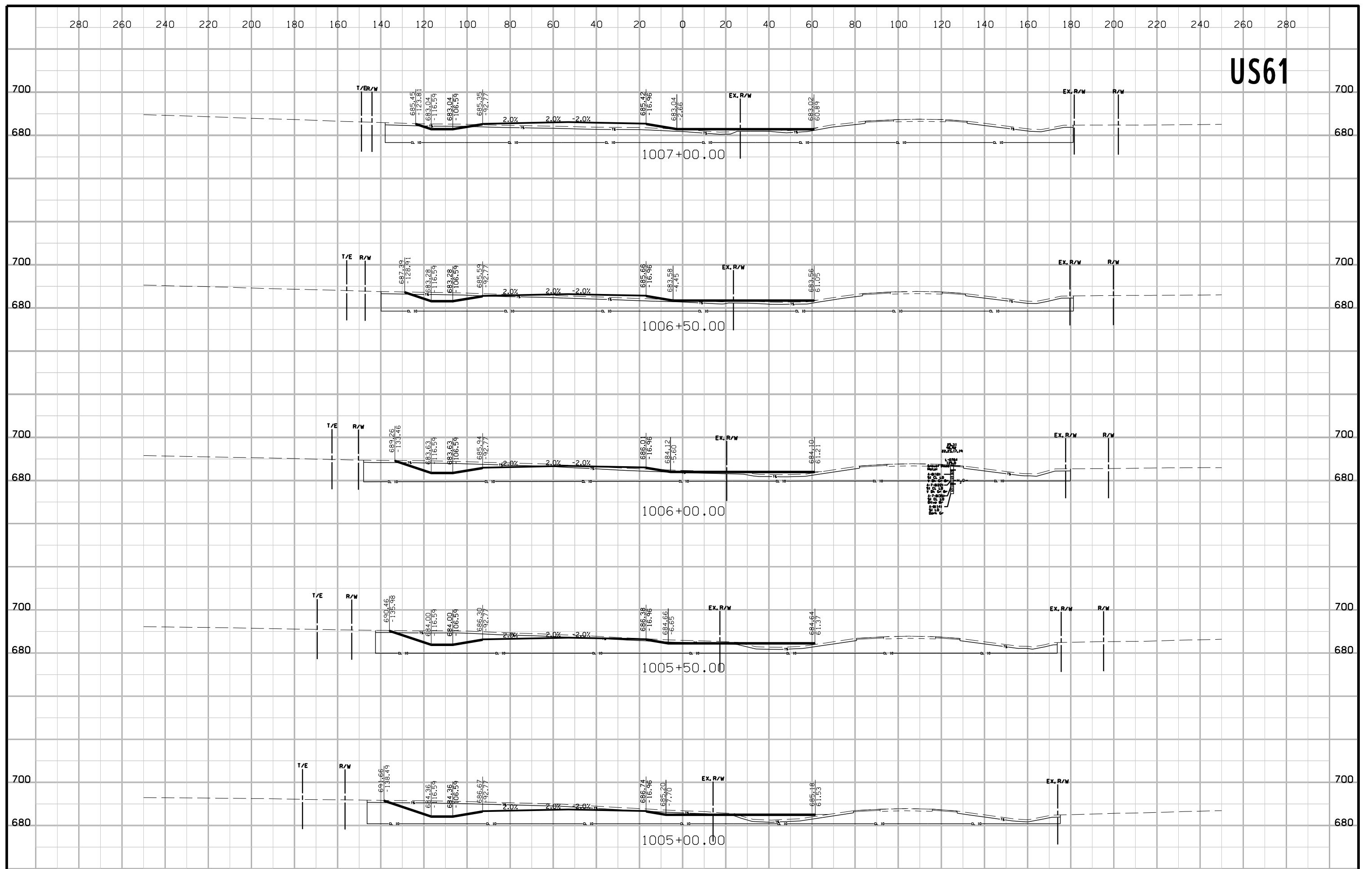
# US61



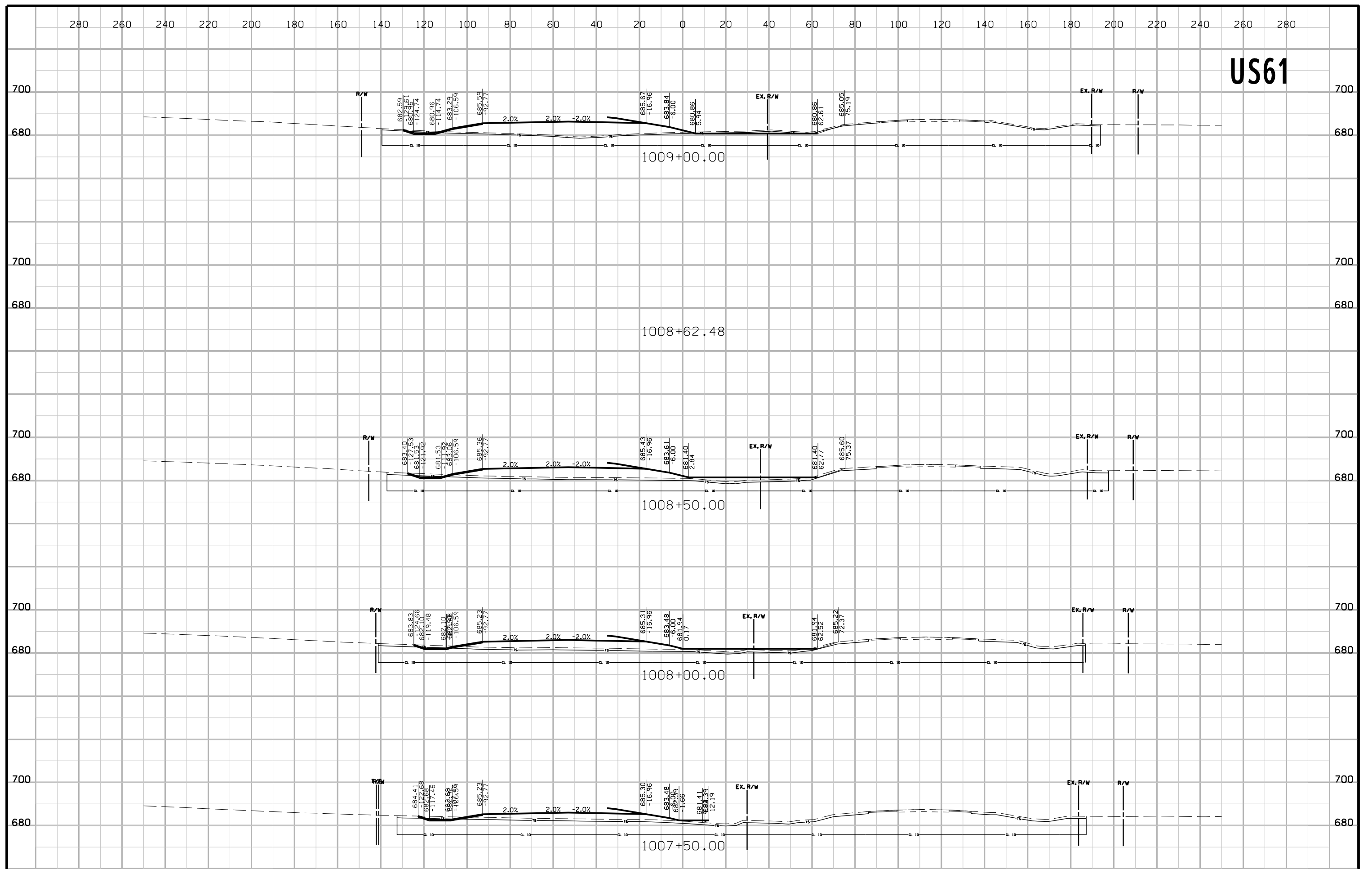
# US61



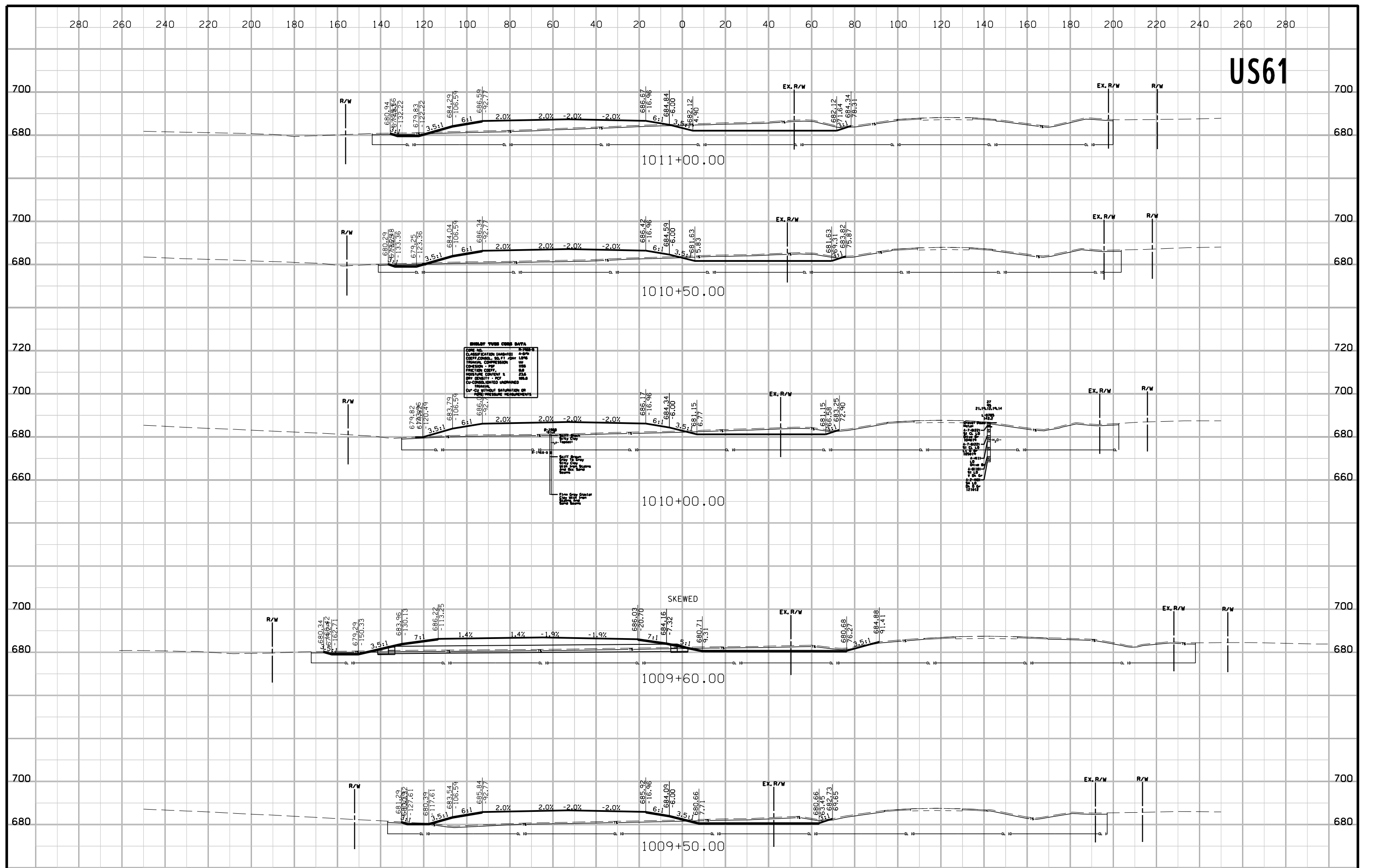
# US61



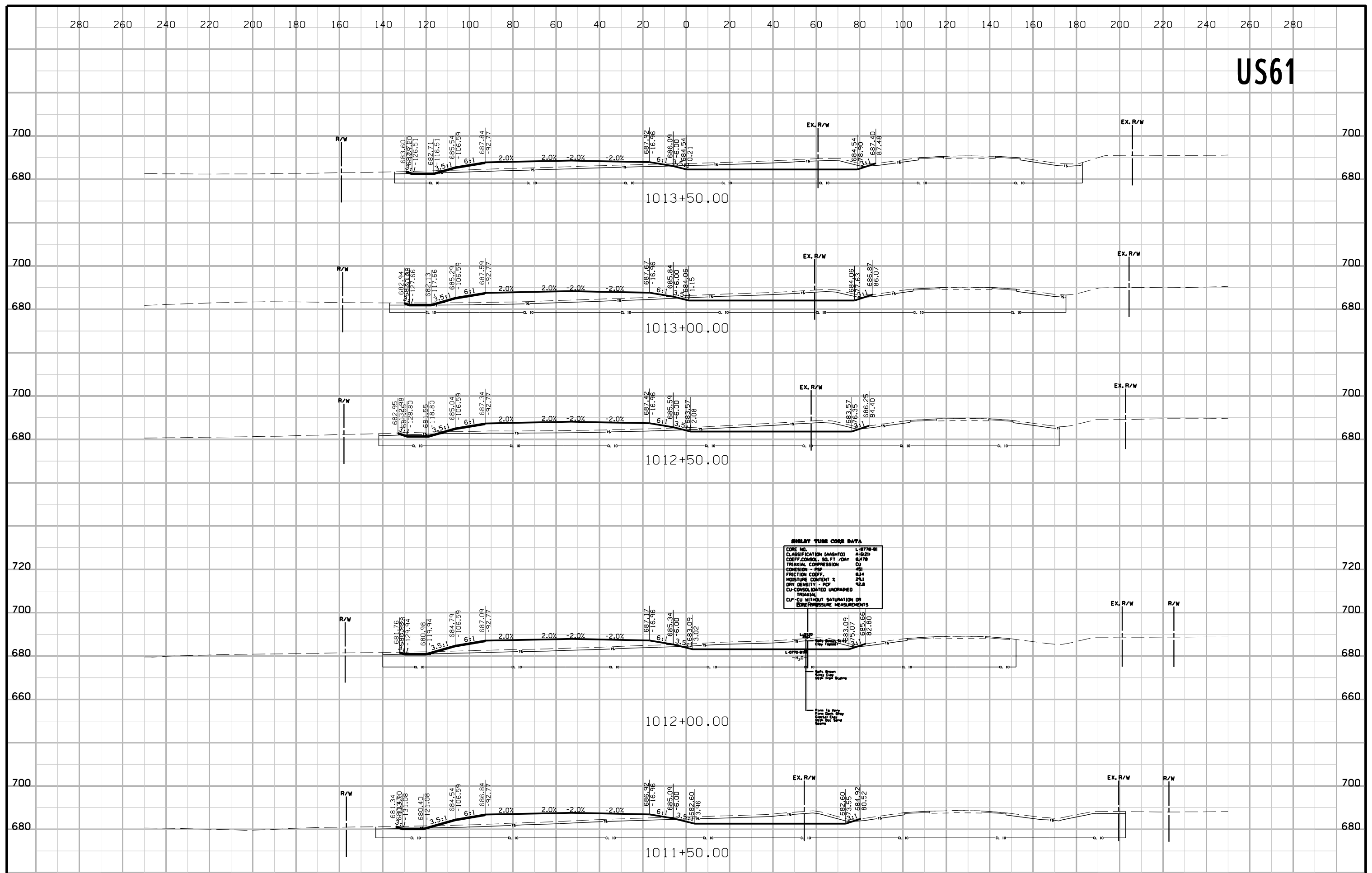
# US61



# US61



# US61

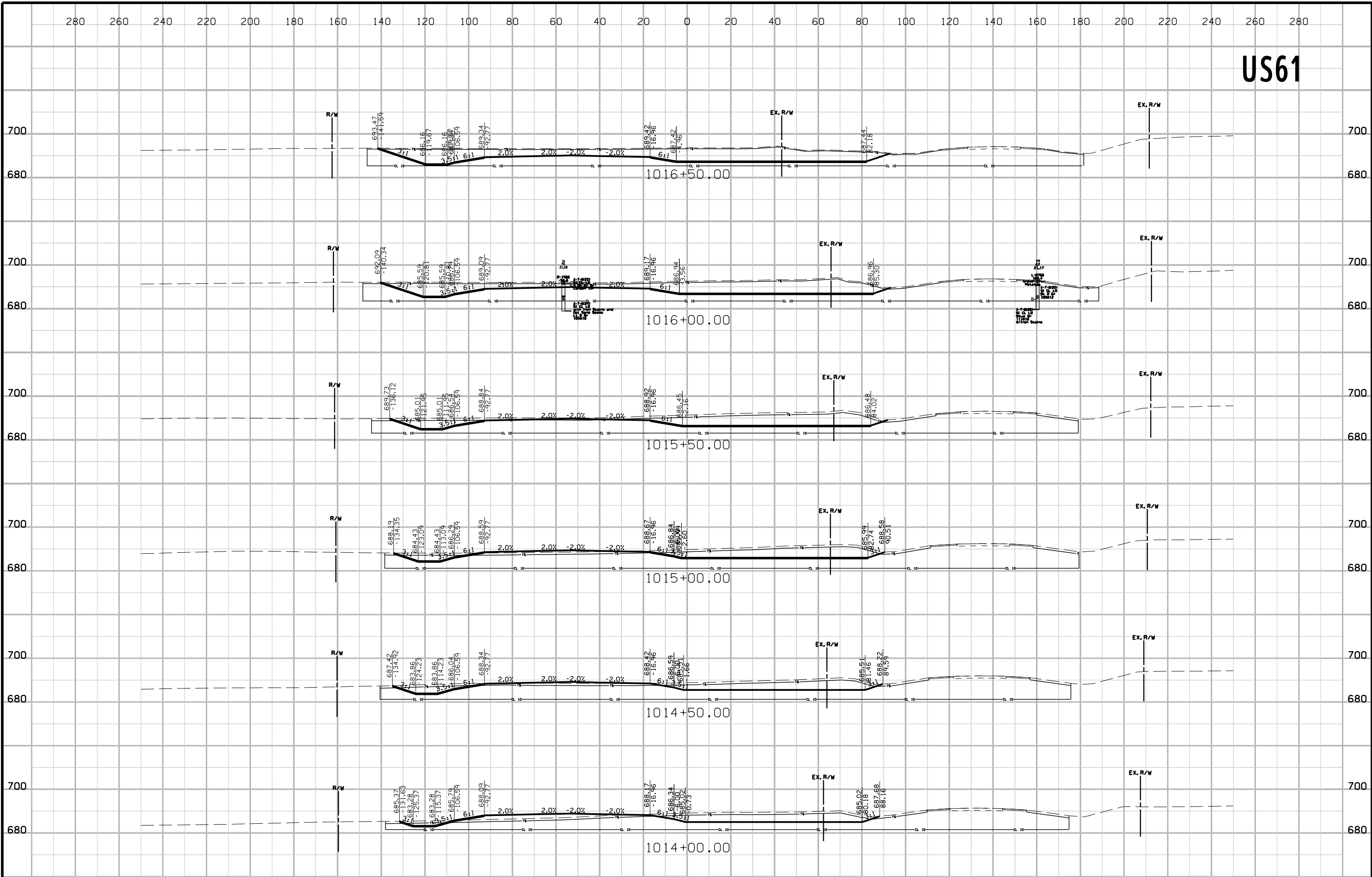


**SHILLY TUBE CORB DATA**

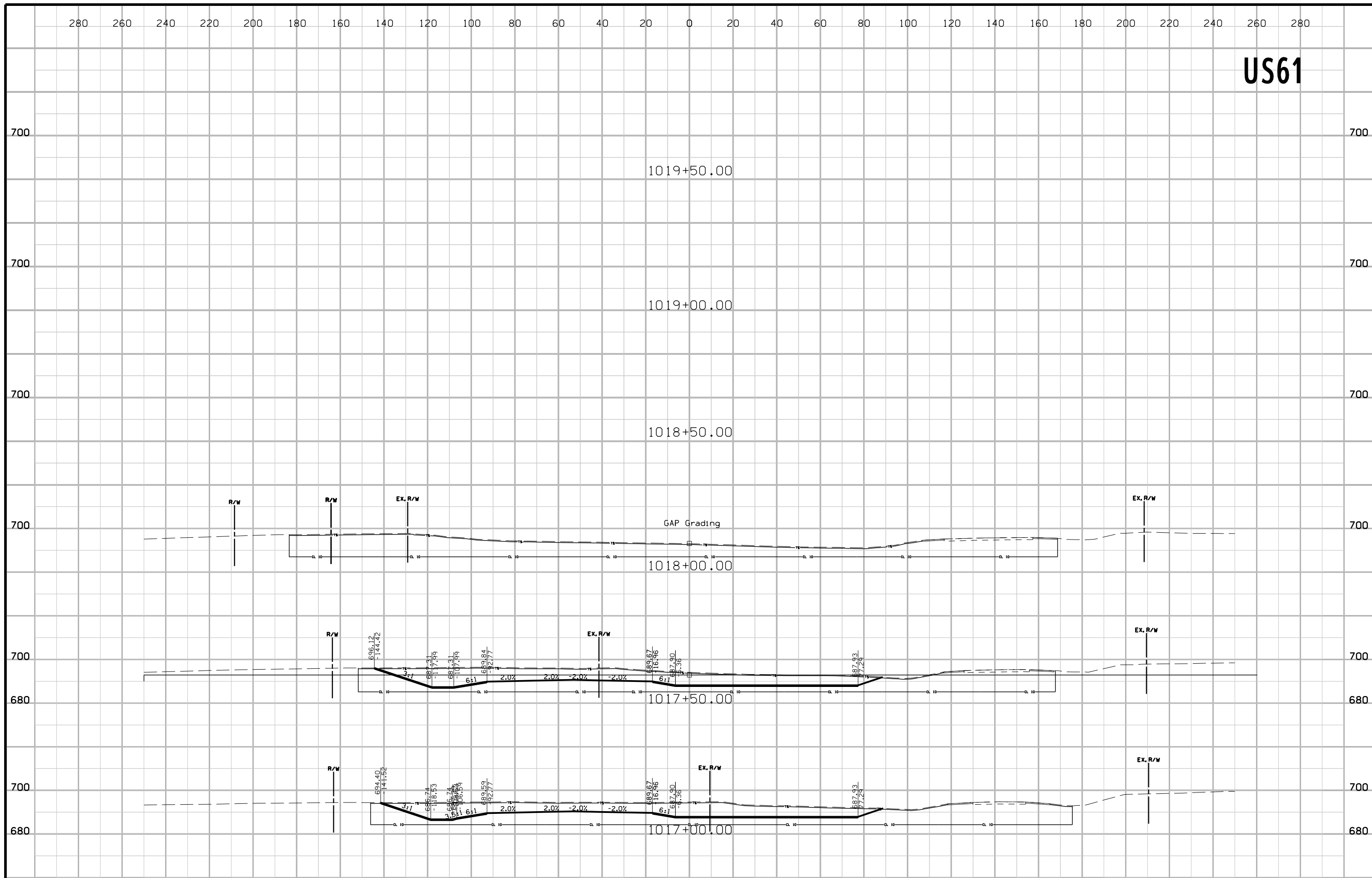
CORE NO.	L-6778-01
CLASSIFICATION (AASHTO)	A-621
COEFF. CONSOL. SO. FT / DAY	0.478
TRIAL COMPRESSION	CU
COHESION - PSF	451
FRICTION COEFF.	0.24
MOISTURE CONTENT %	21.1
DRY DENSITY - PCF	92.8
CU-CONSOLIDATED UNDRAINED TRIAXIAL	
CU-CU WITHOUT SATURATION OR BOREPRESSURE MEASUREMENTS	



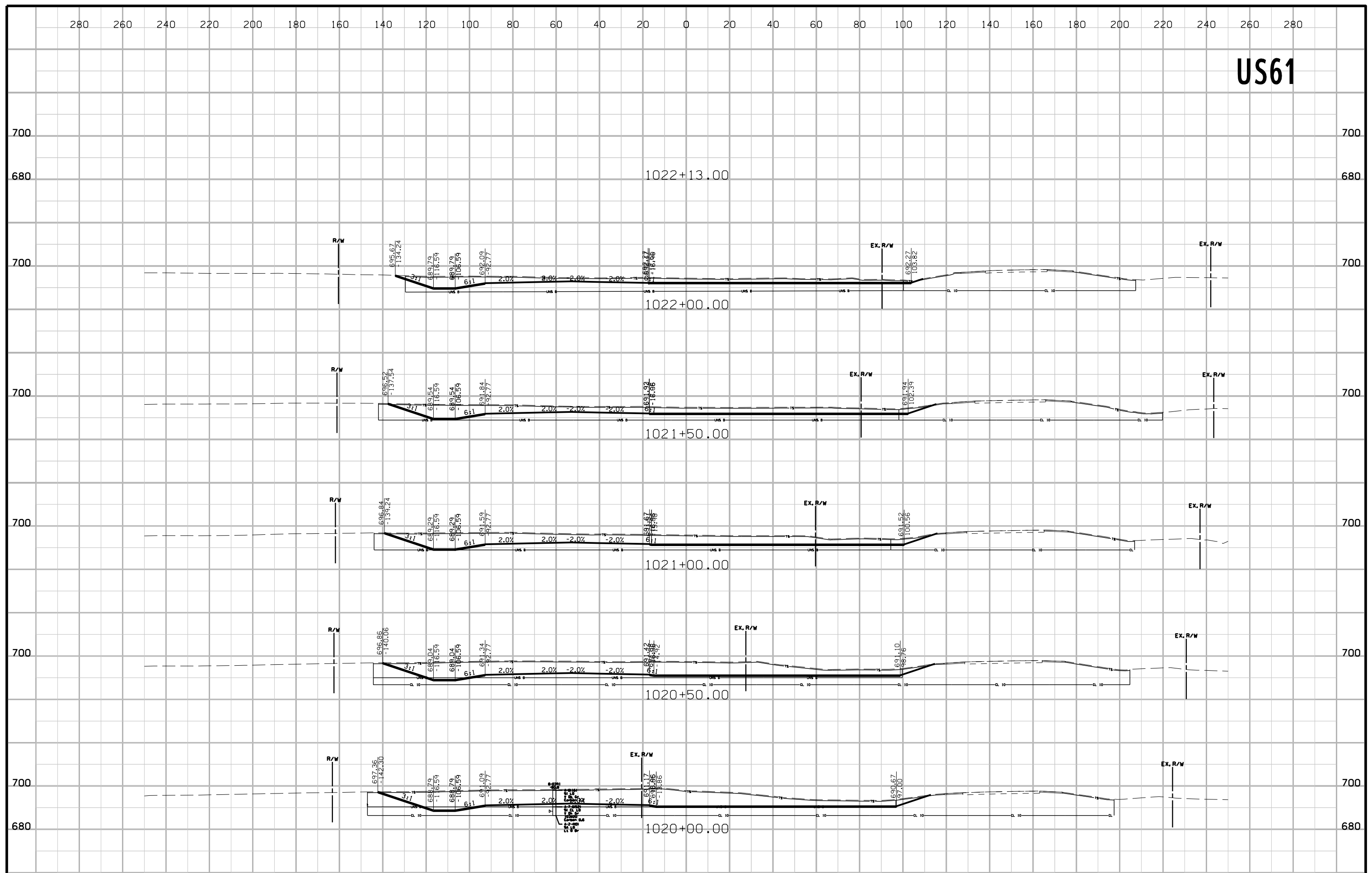
# US61



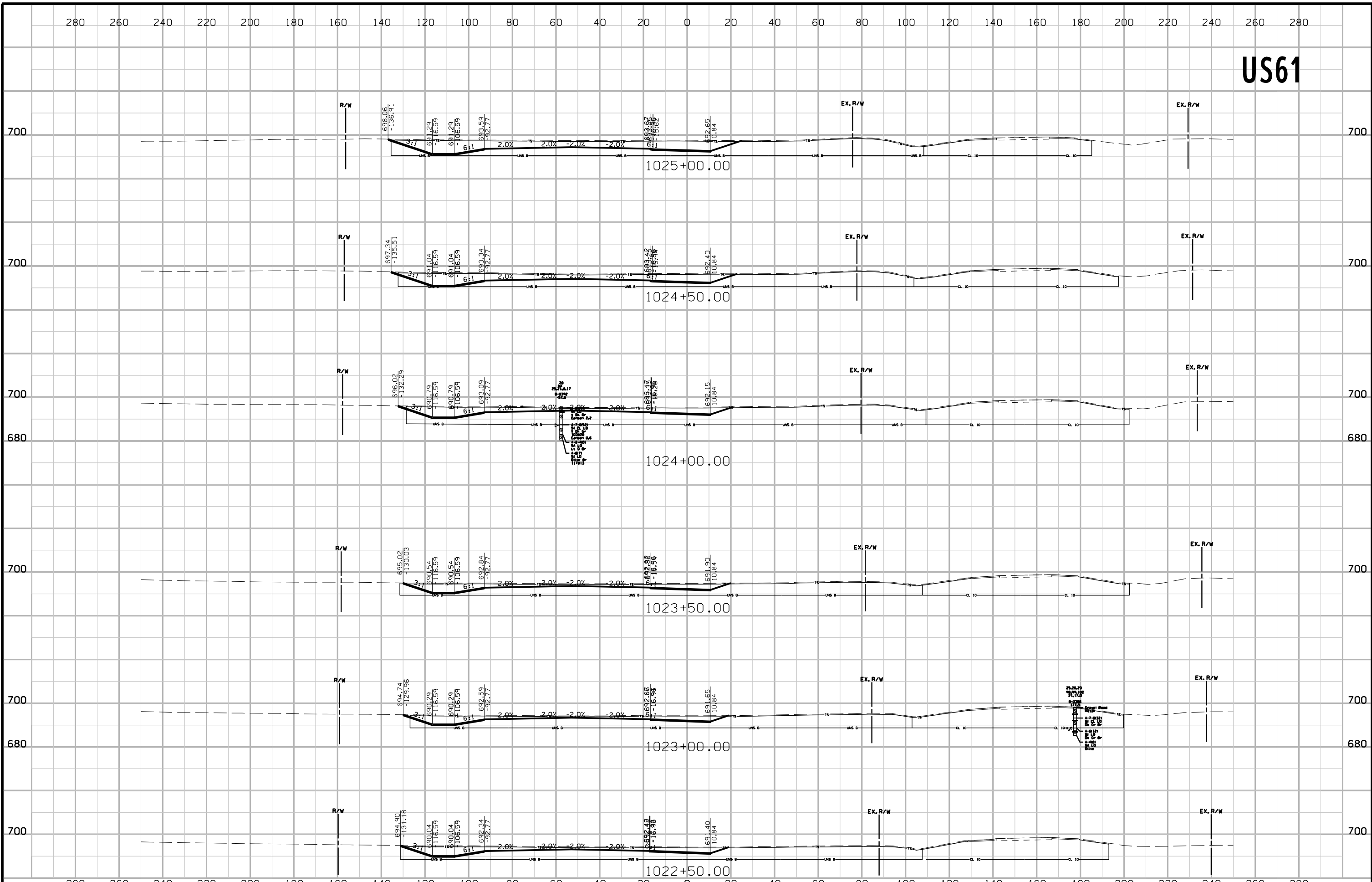
# US61



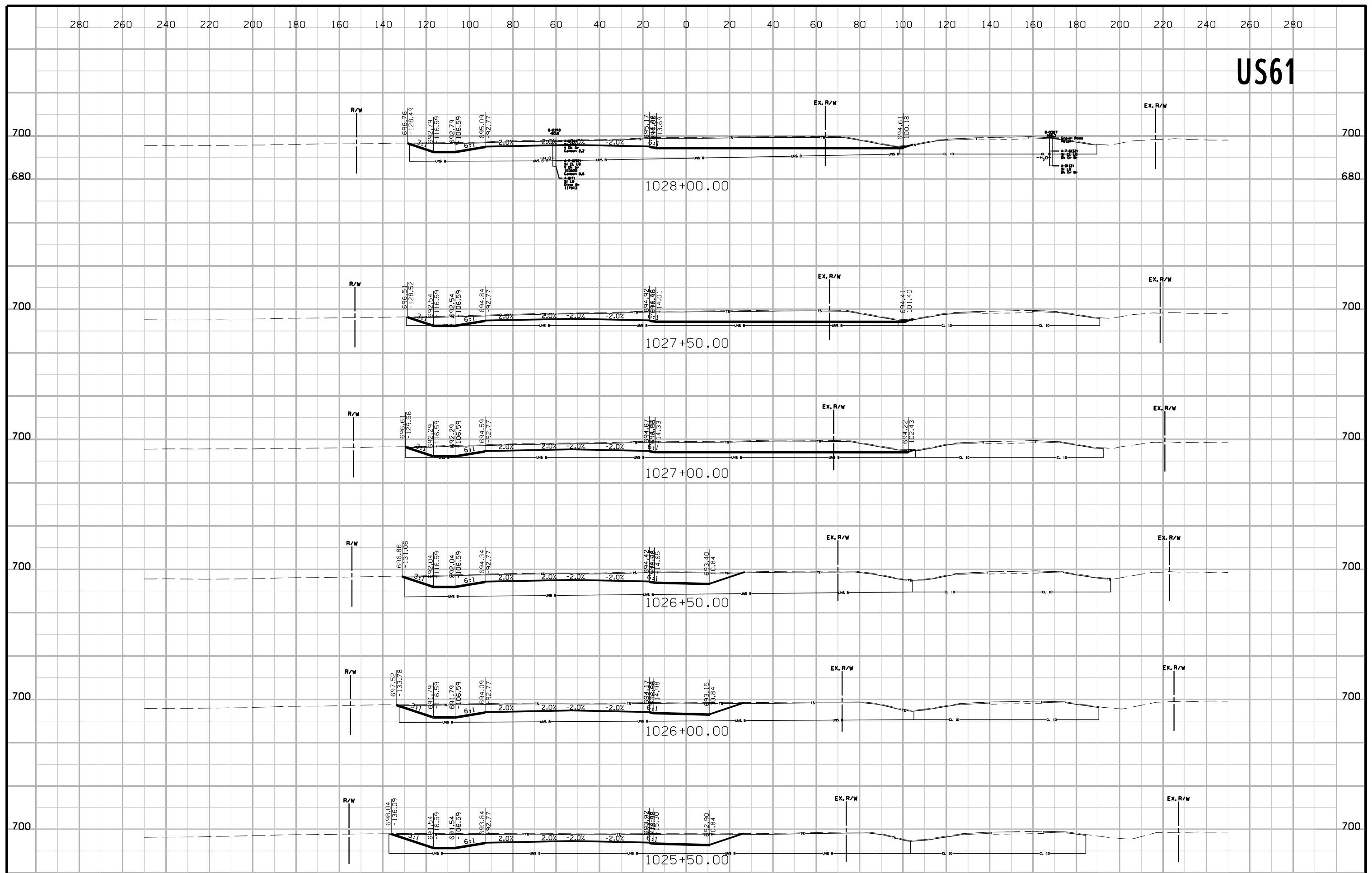
# US61



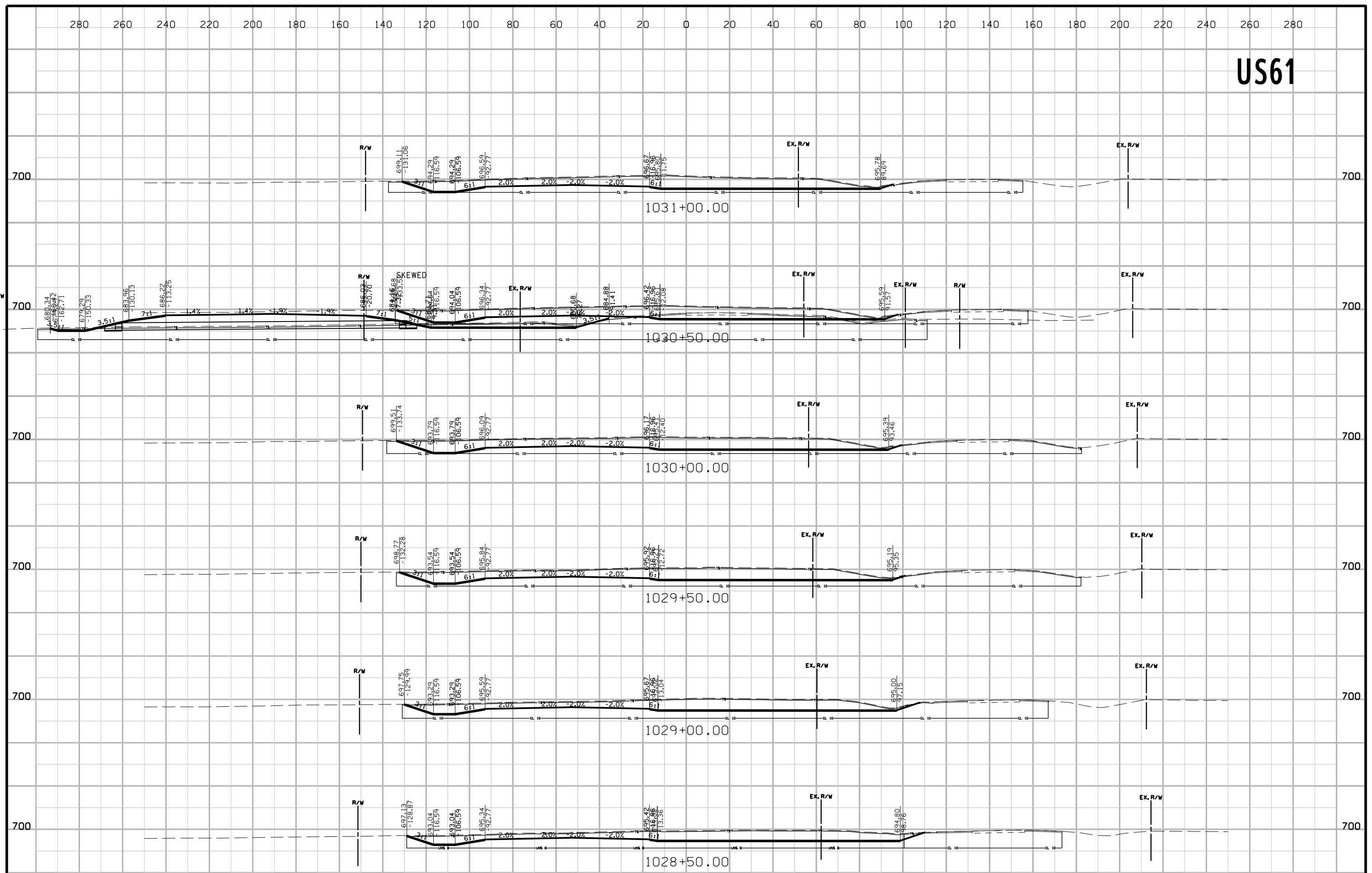
# US61



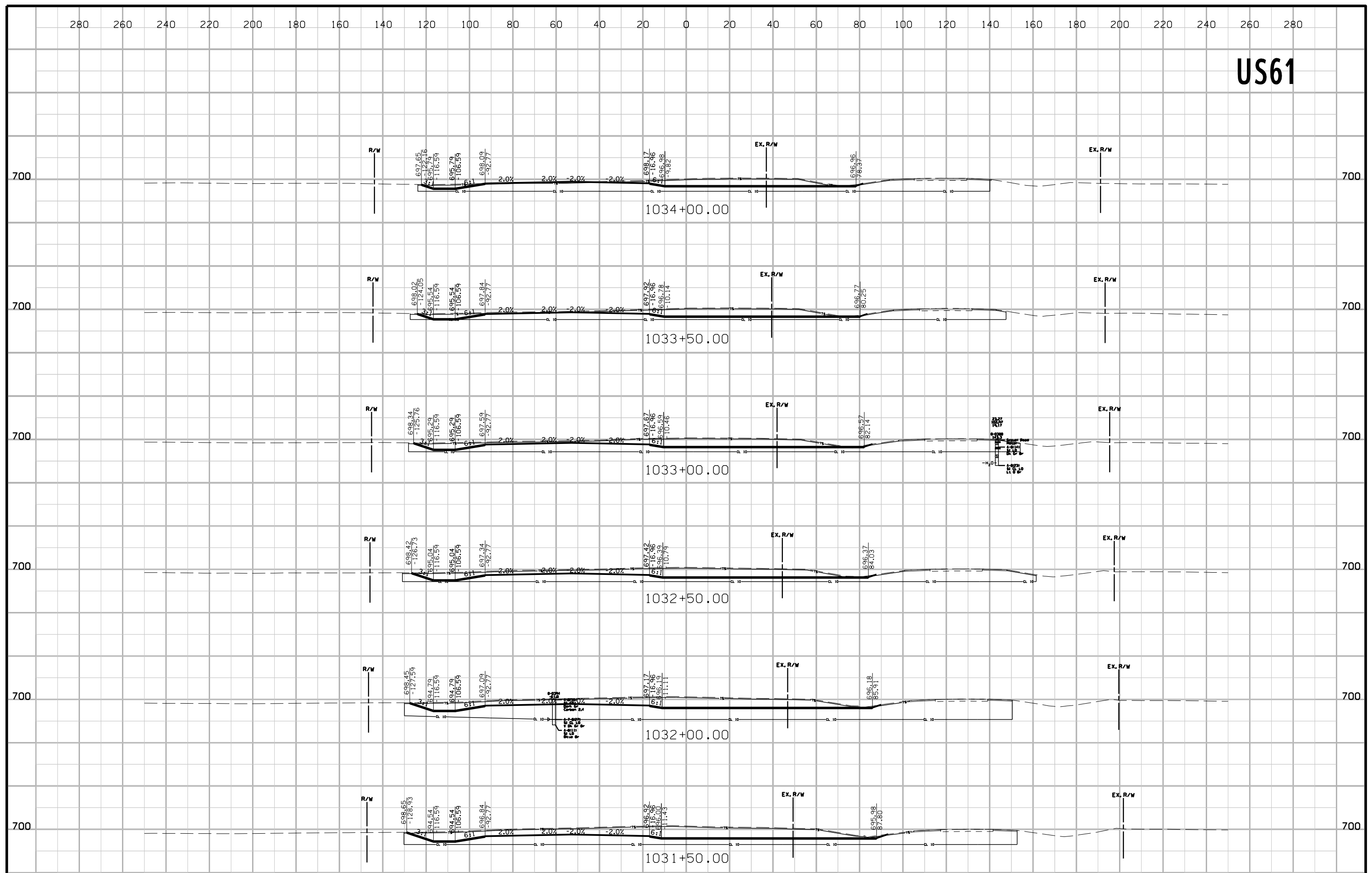
# US61



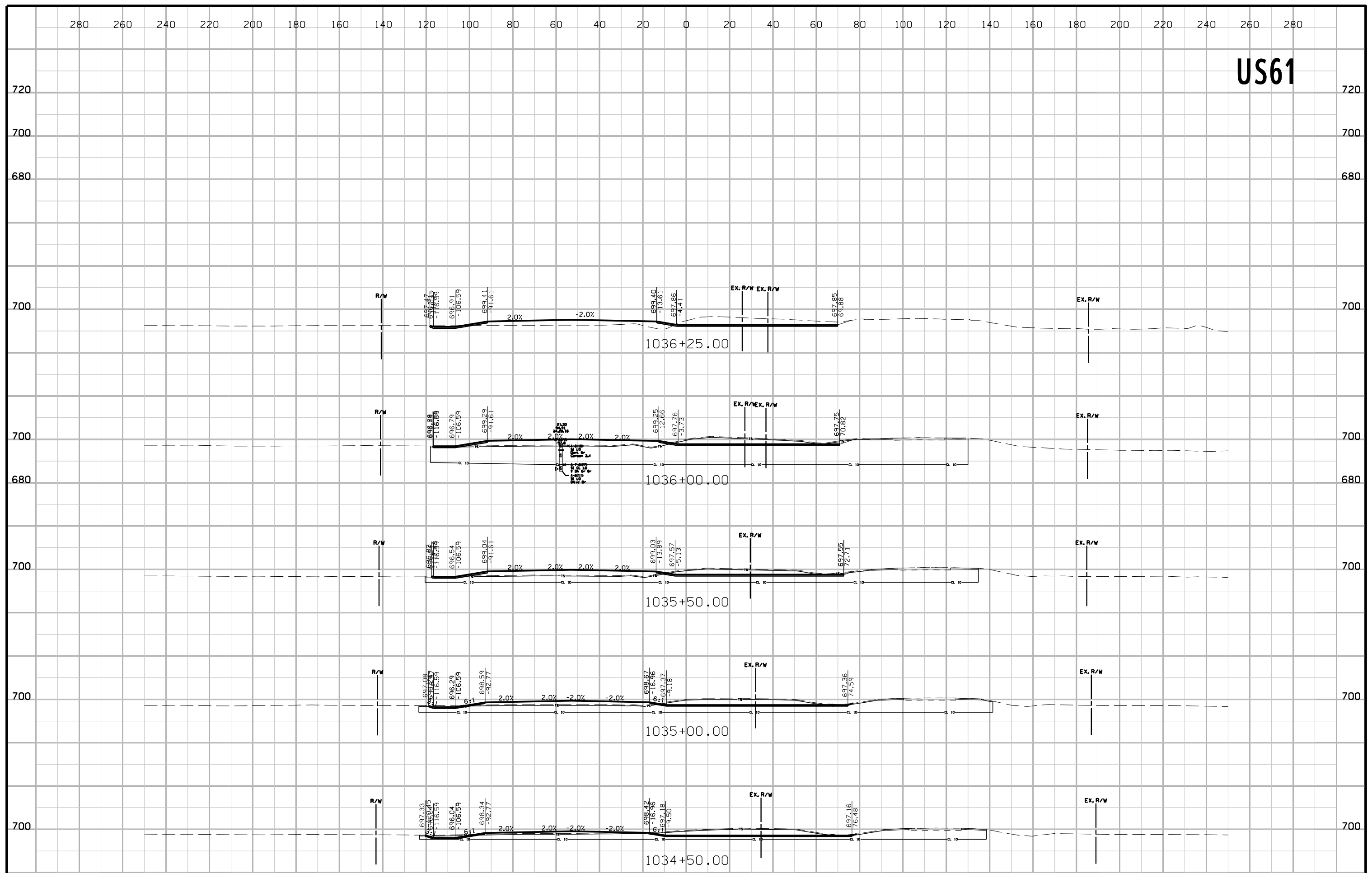
# US61



# US61

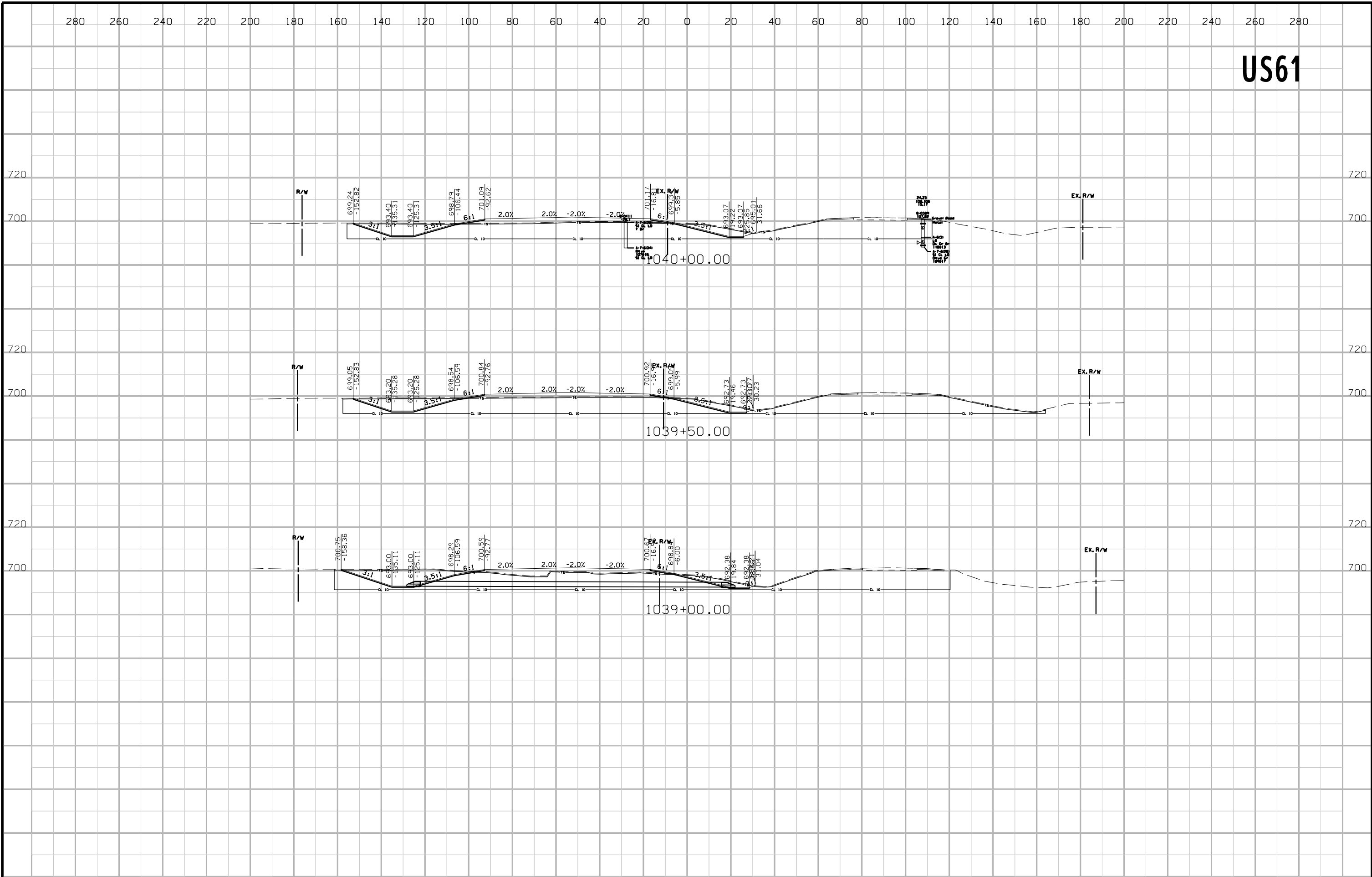


# US61

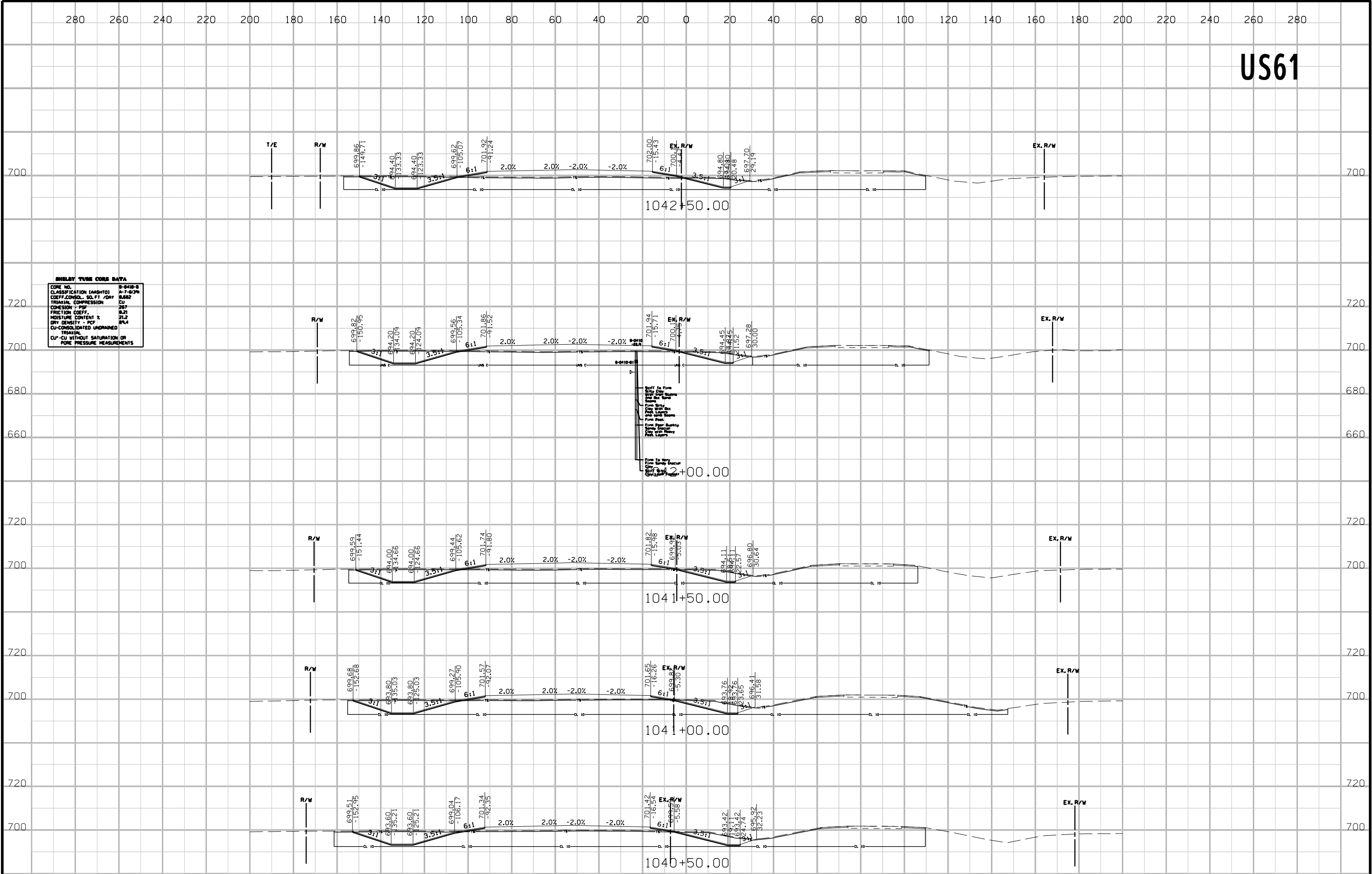




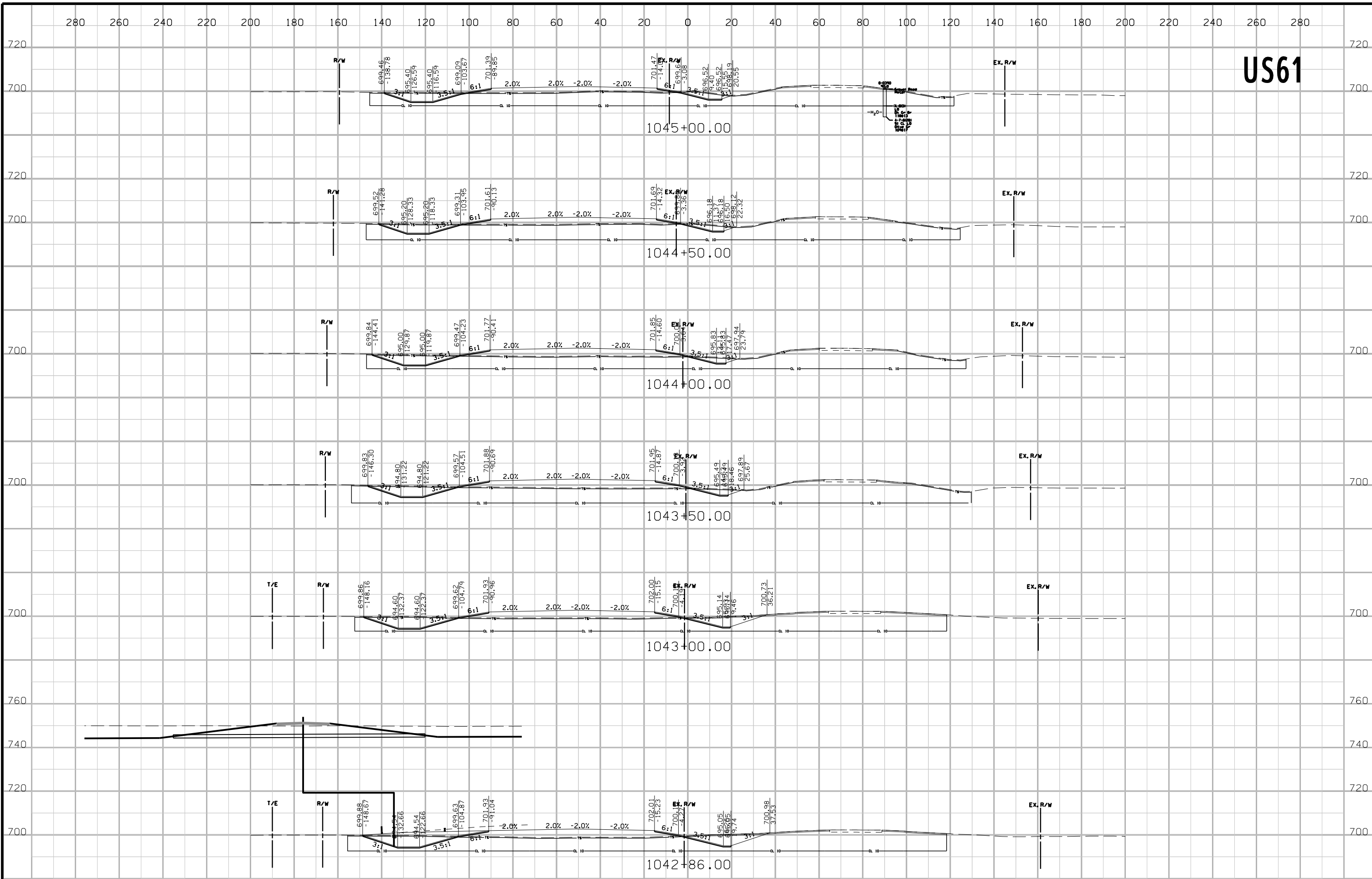
# US61



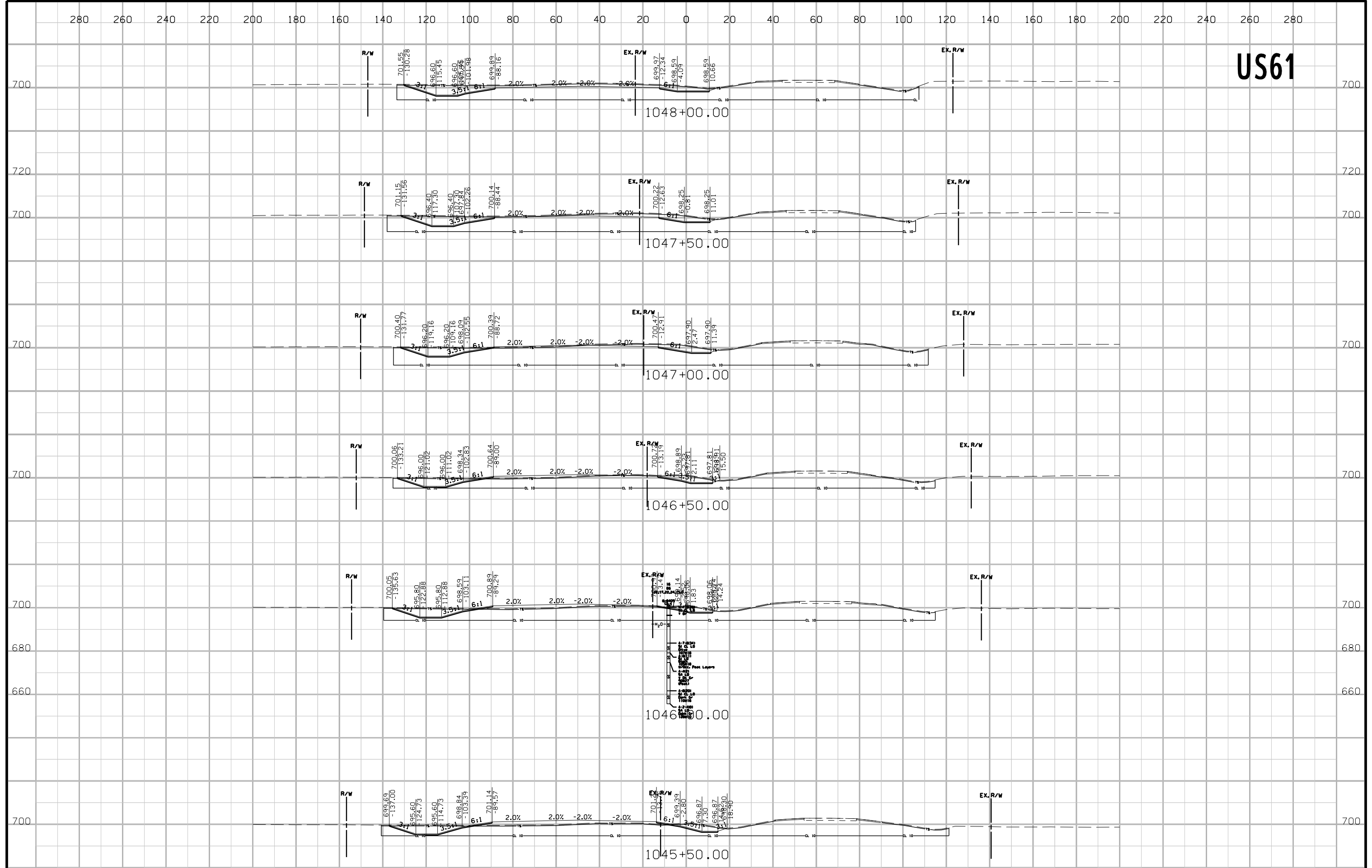
# US61



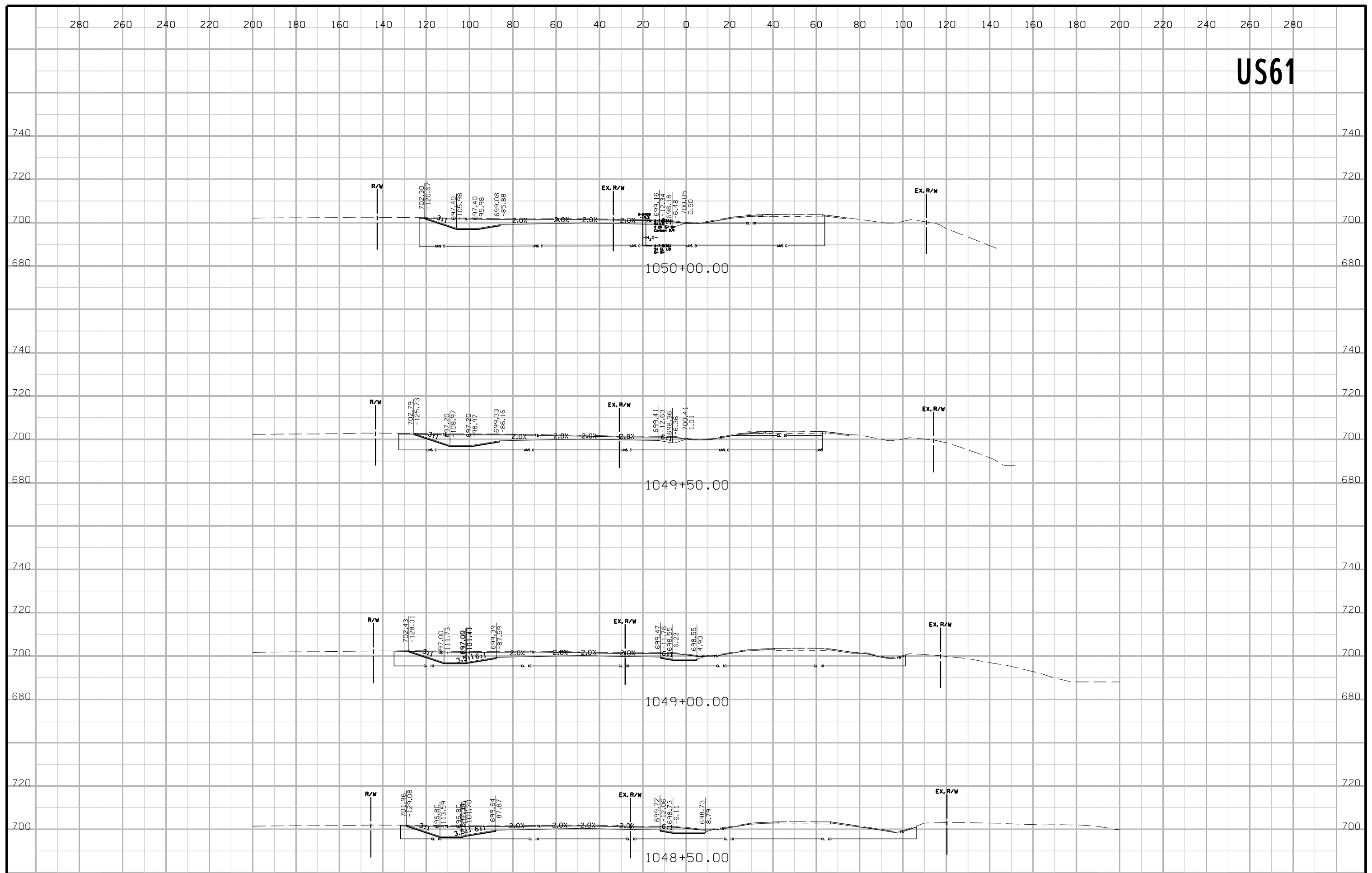
# US61



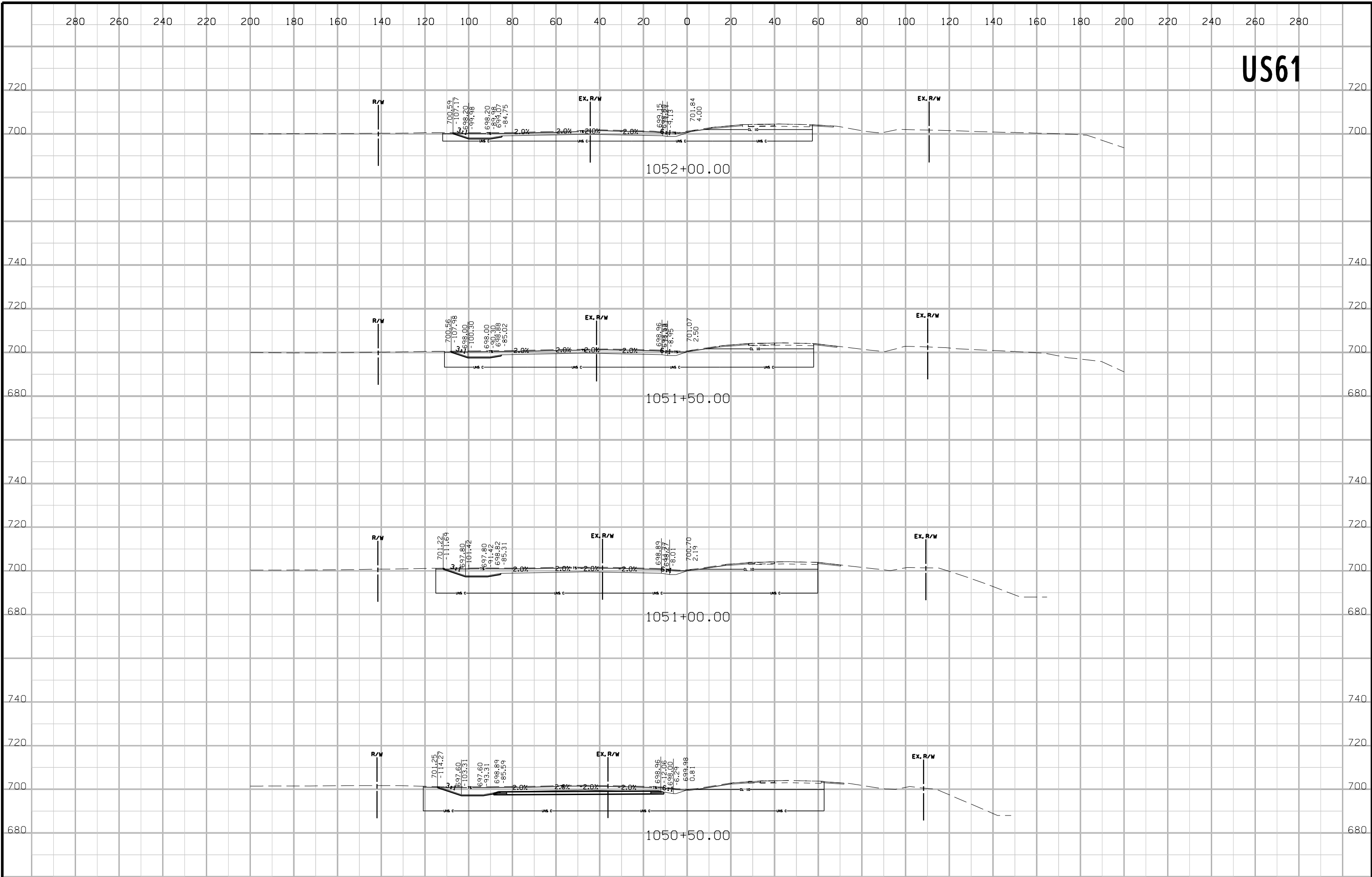
US61



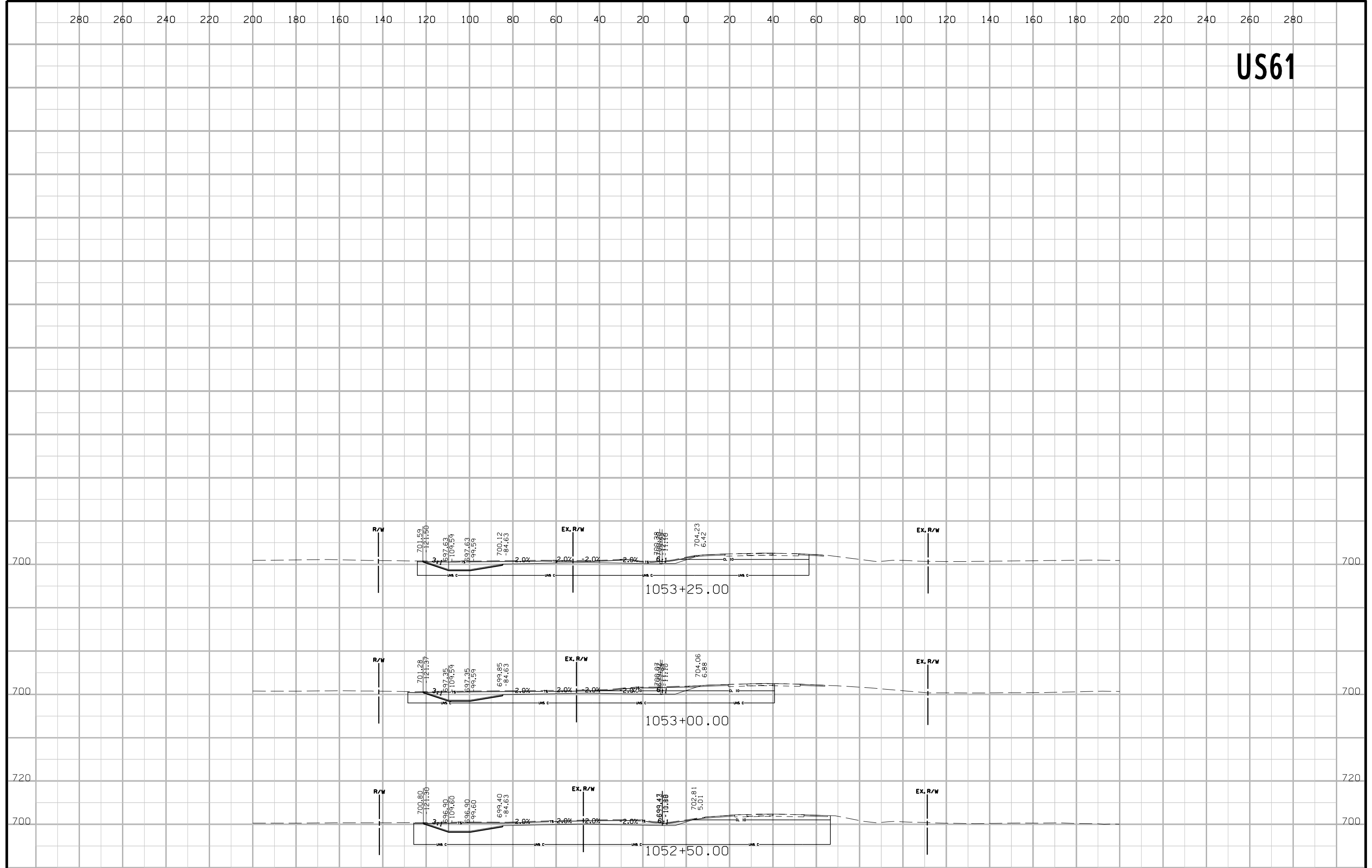
# US61



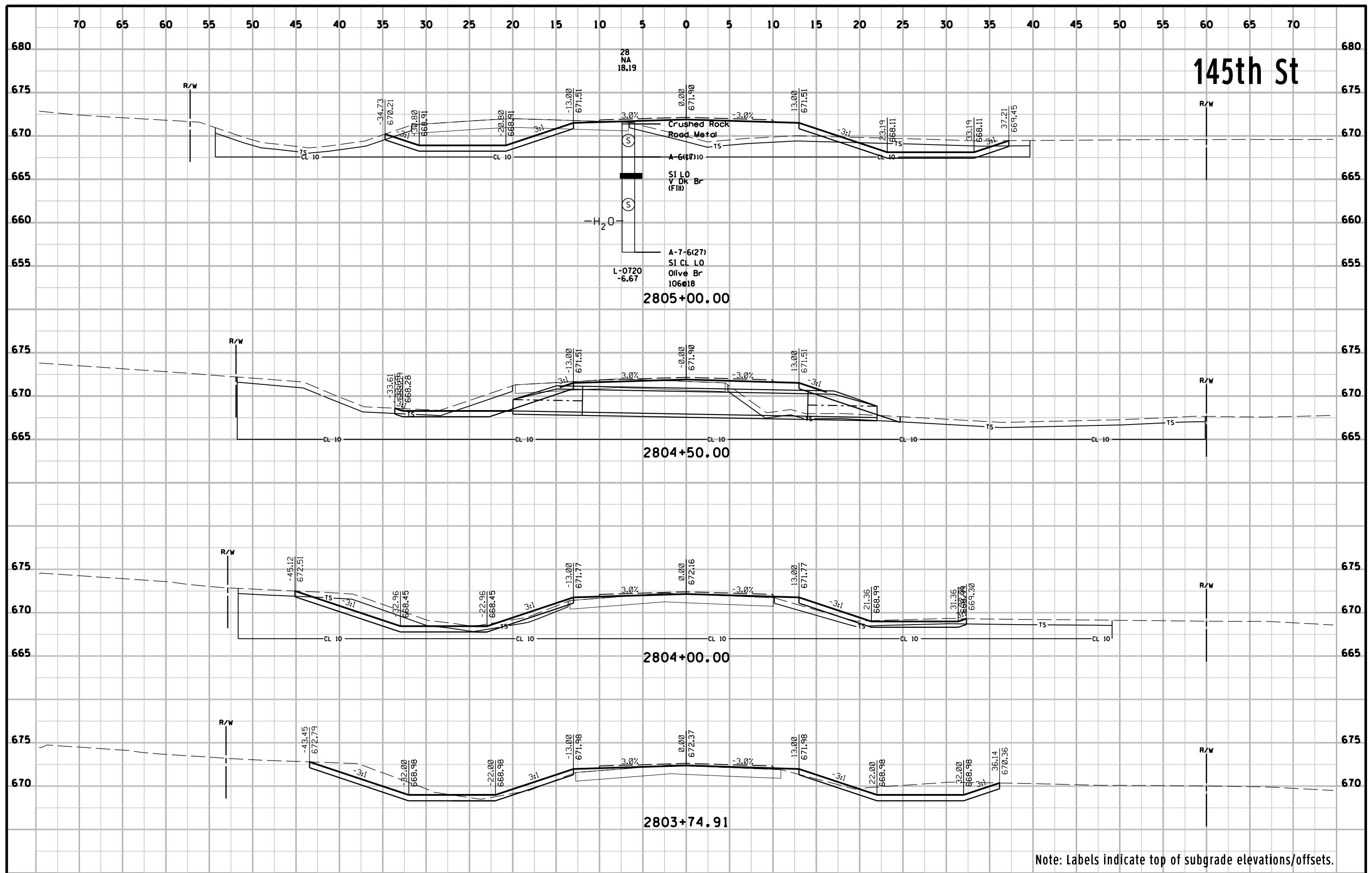
# US61



# US61



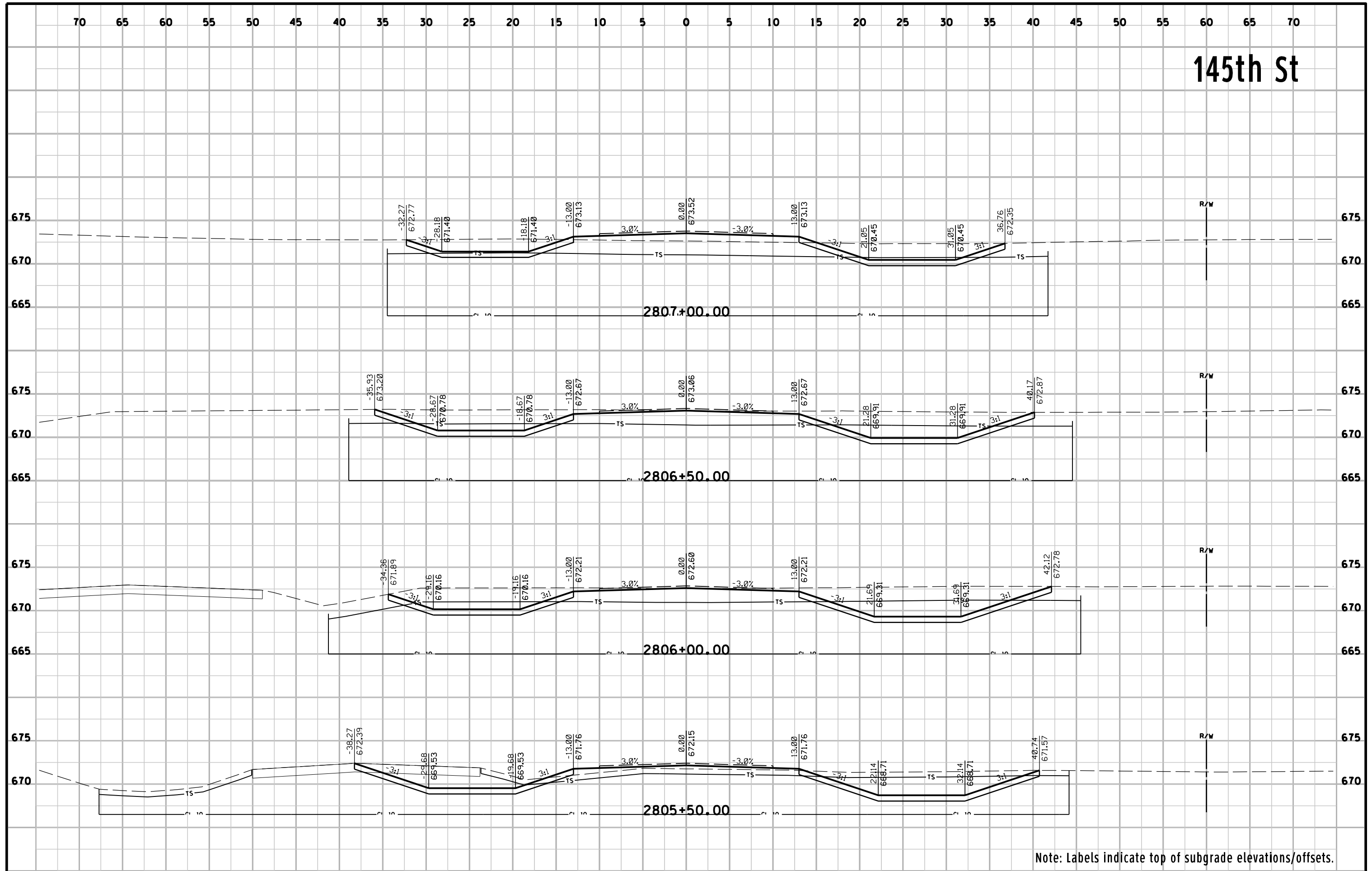
# 145th St



Note: Labels indicate top of subgrade elevations/offsets.

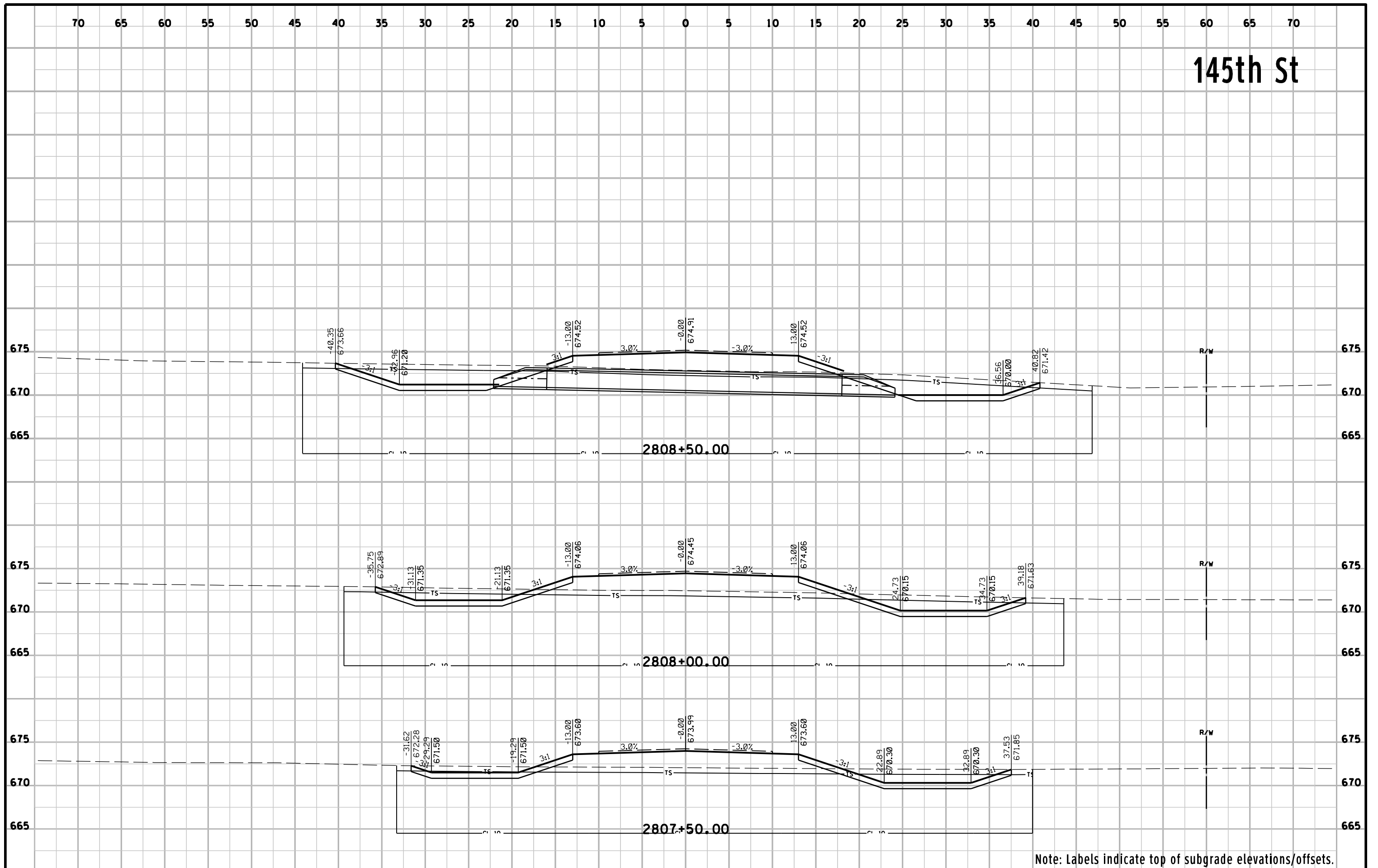


# 145th St

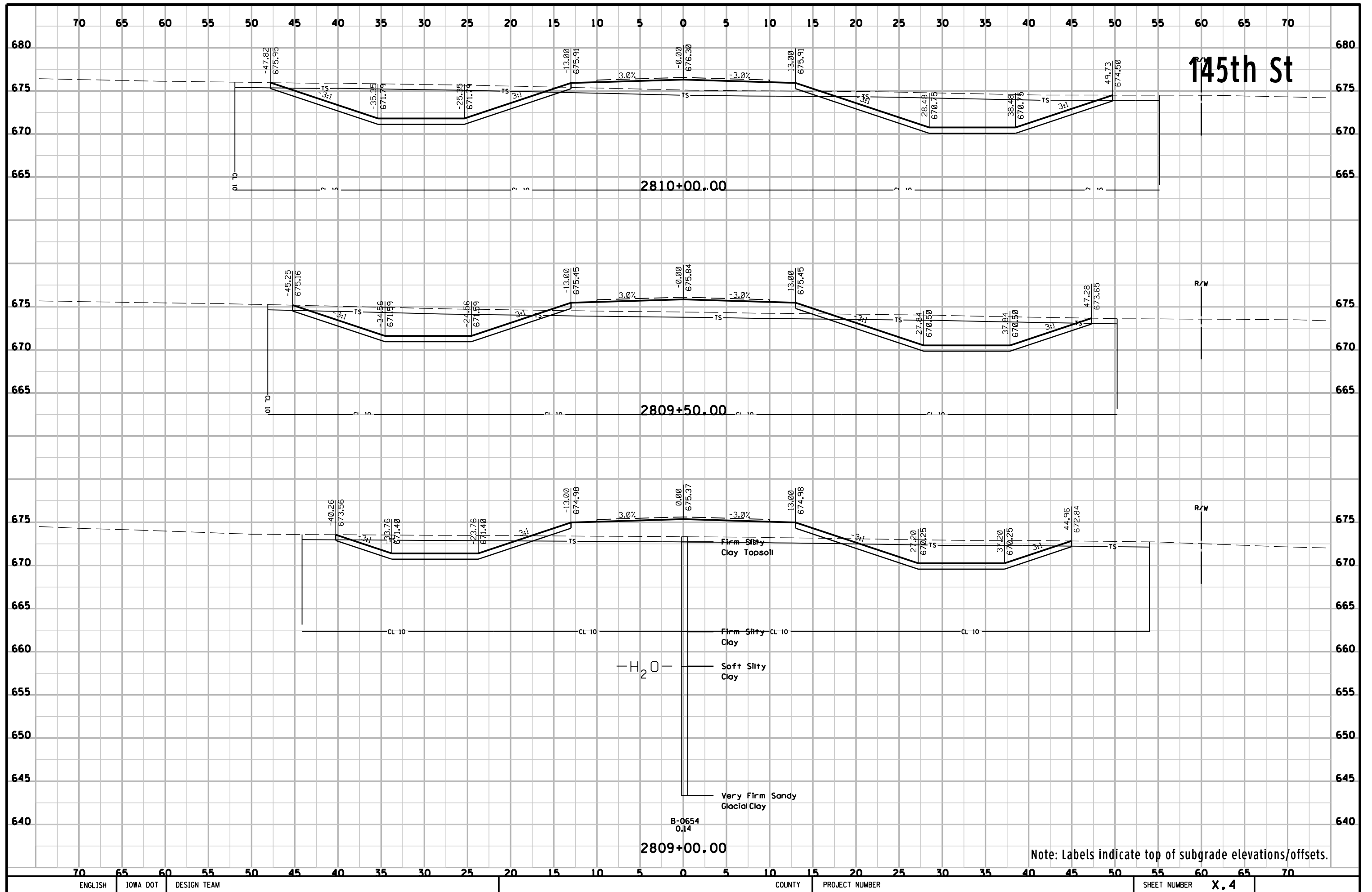


Note: Labels indicate top of subgrade elevations/offsets.

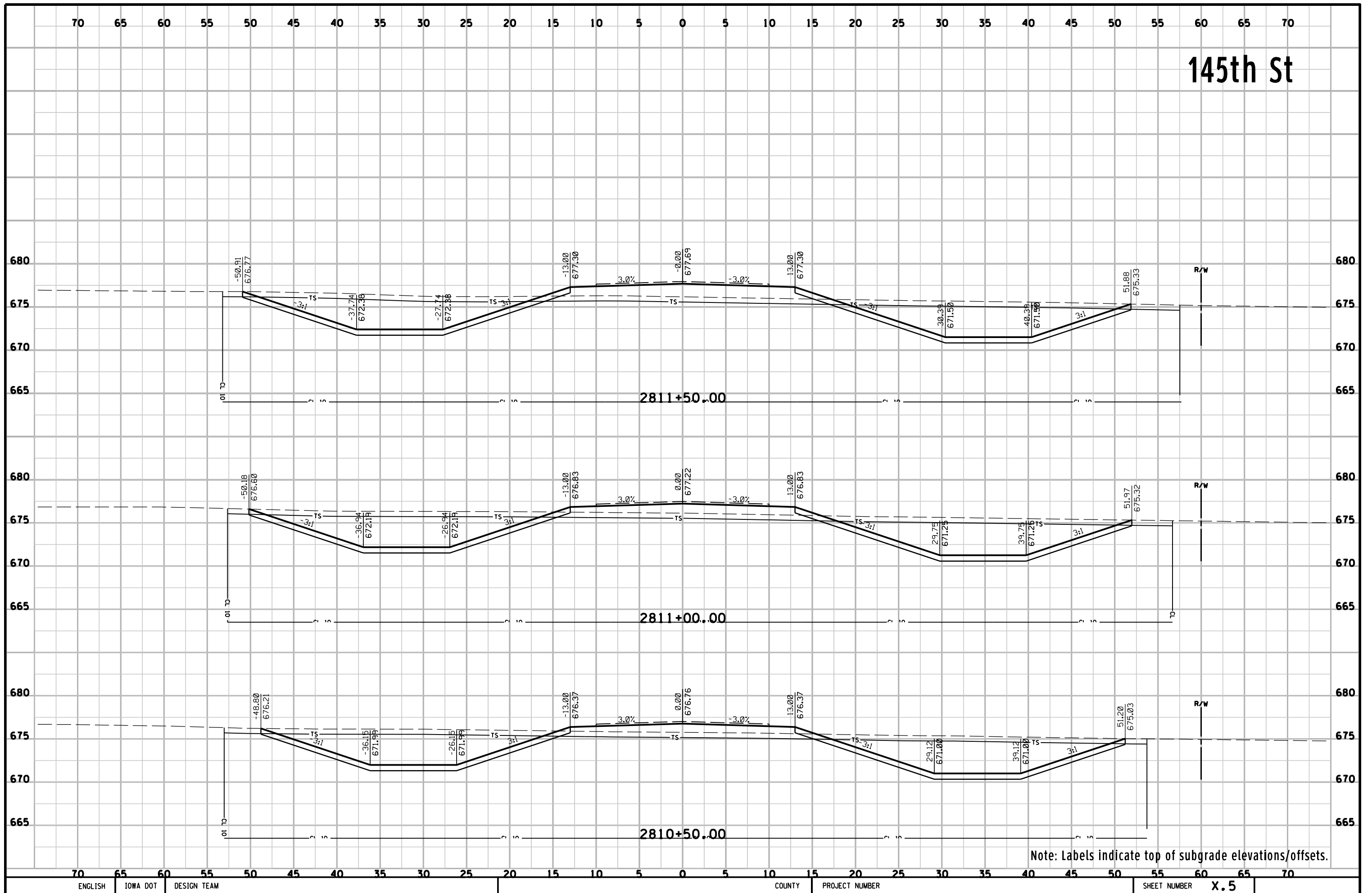
# 145th St



Note: Labels indicate top of subgrade elevations/offsets.

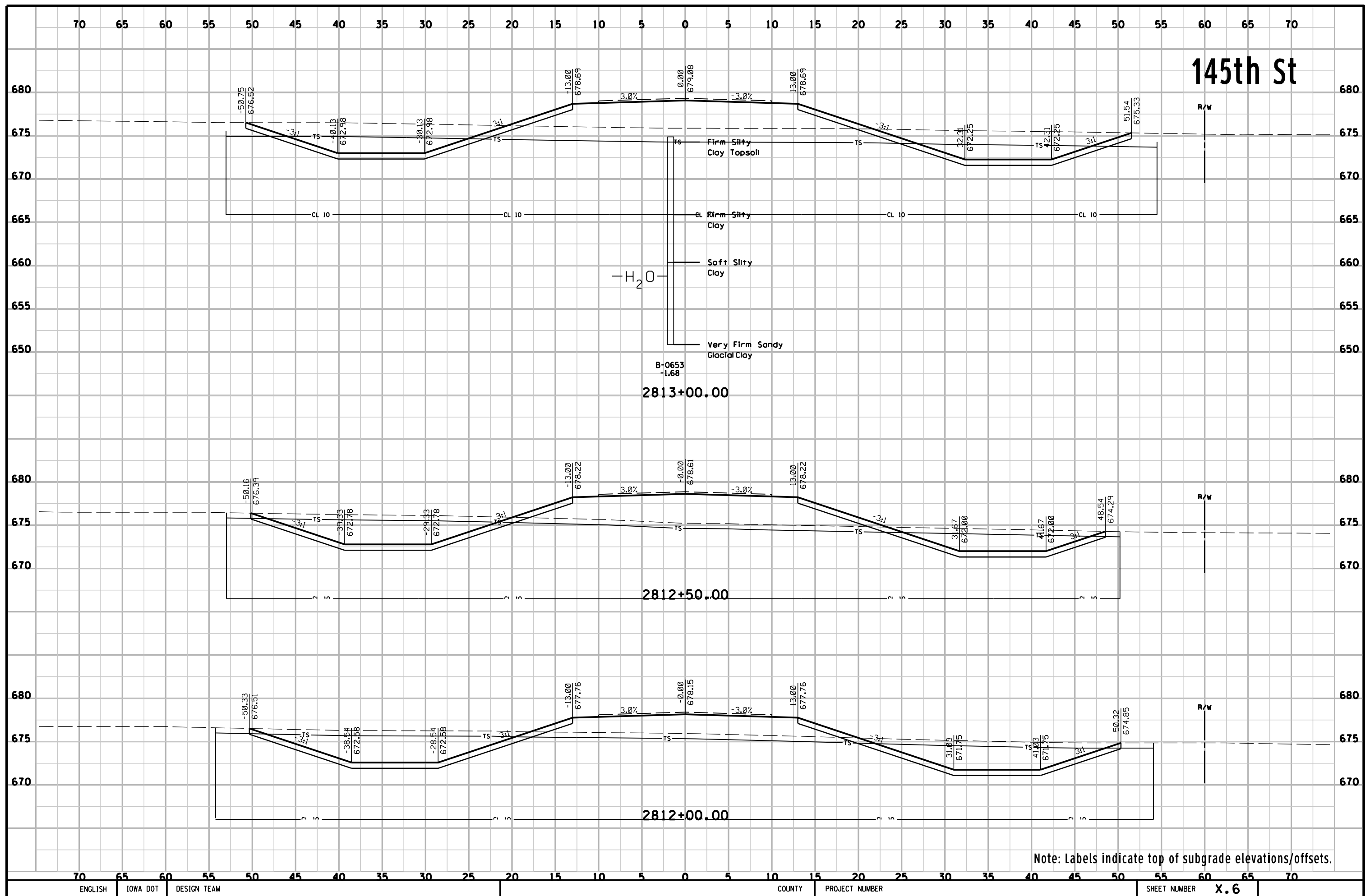


# 145th St



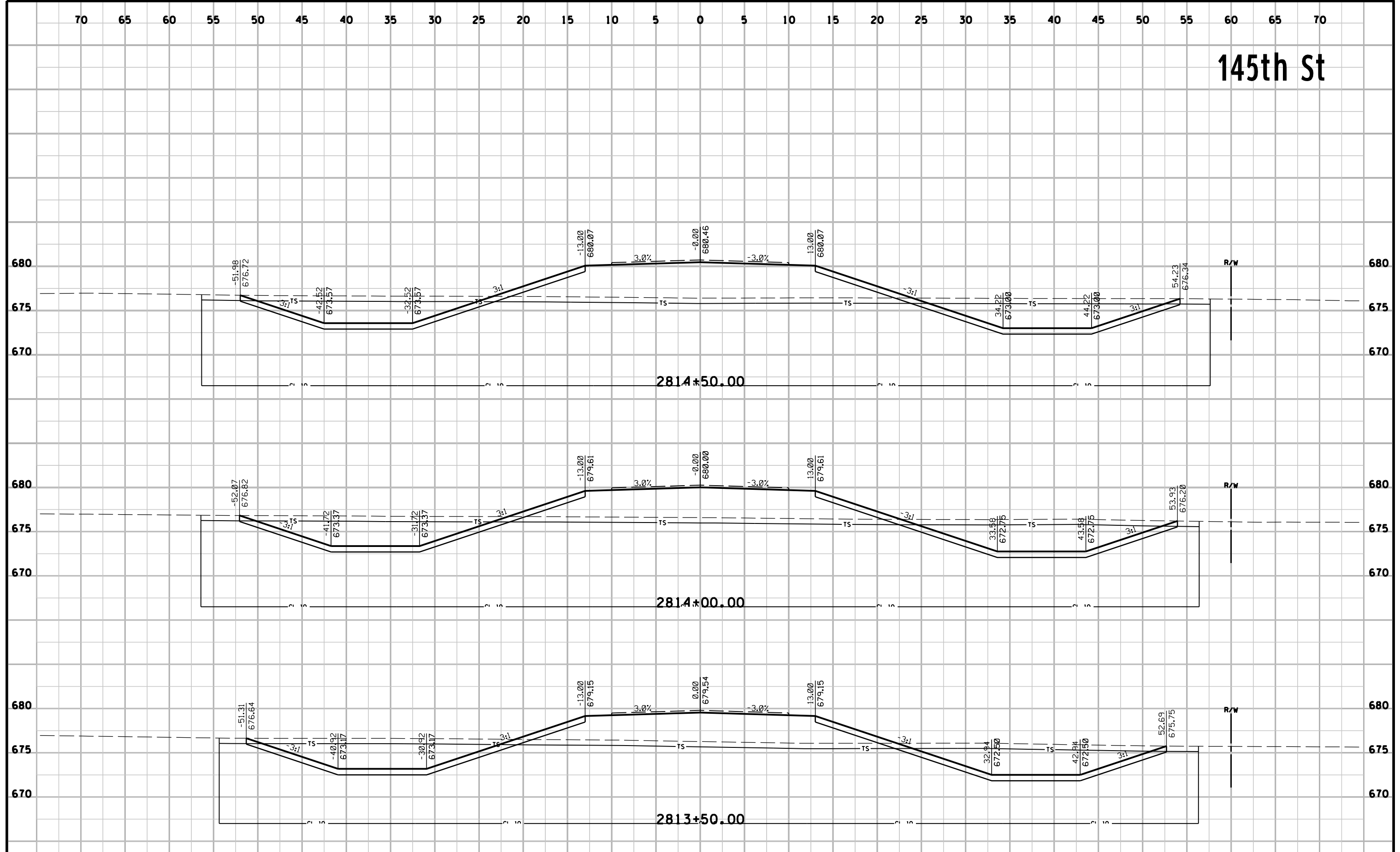
Note: Labels indicate top of subgrade elevations/offsets.

# 145th St



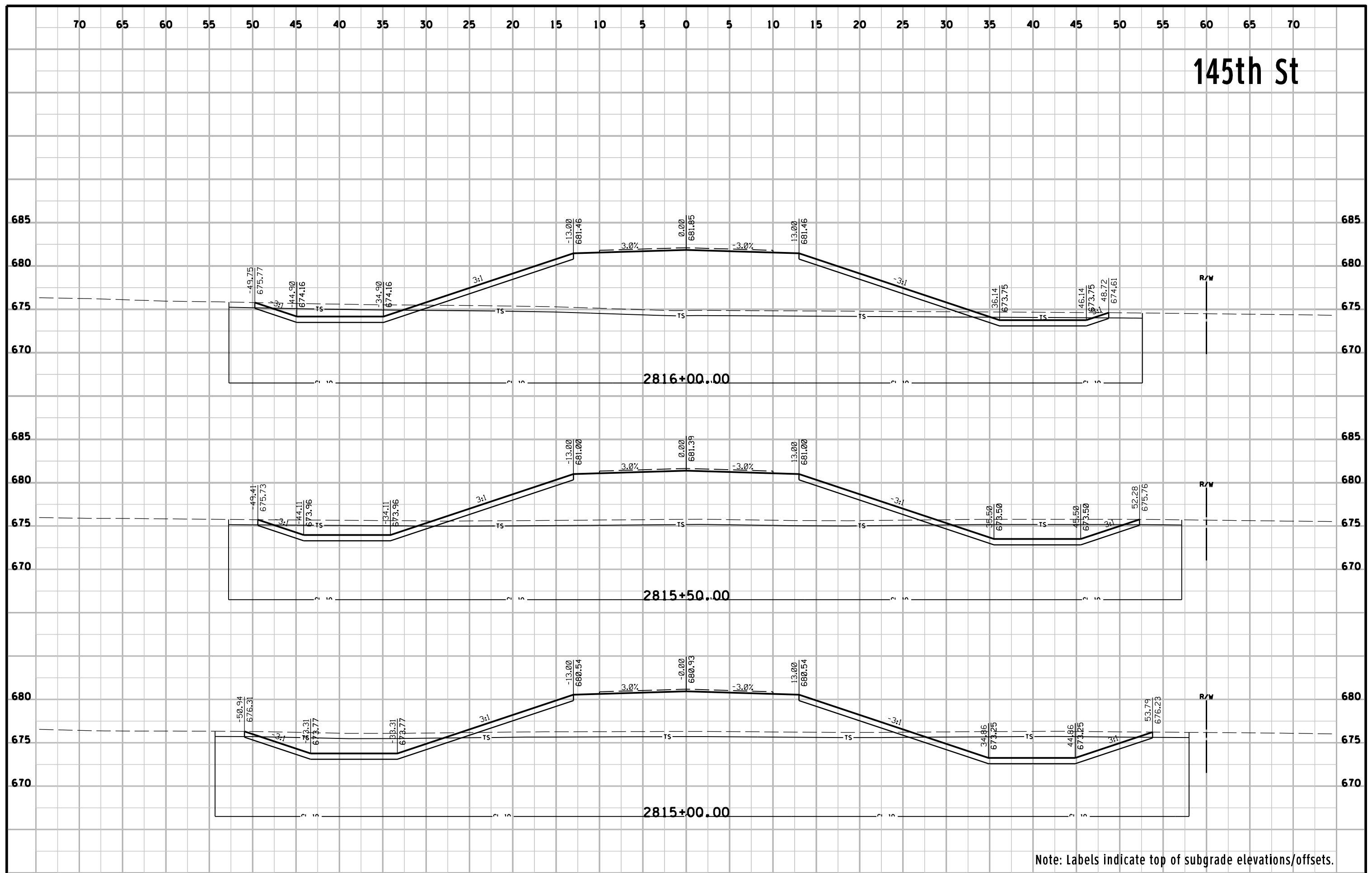
Note: Labels indicate top of subgrade elevations/offsets.

# 145th St



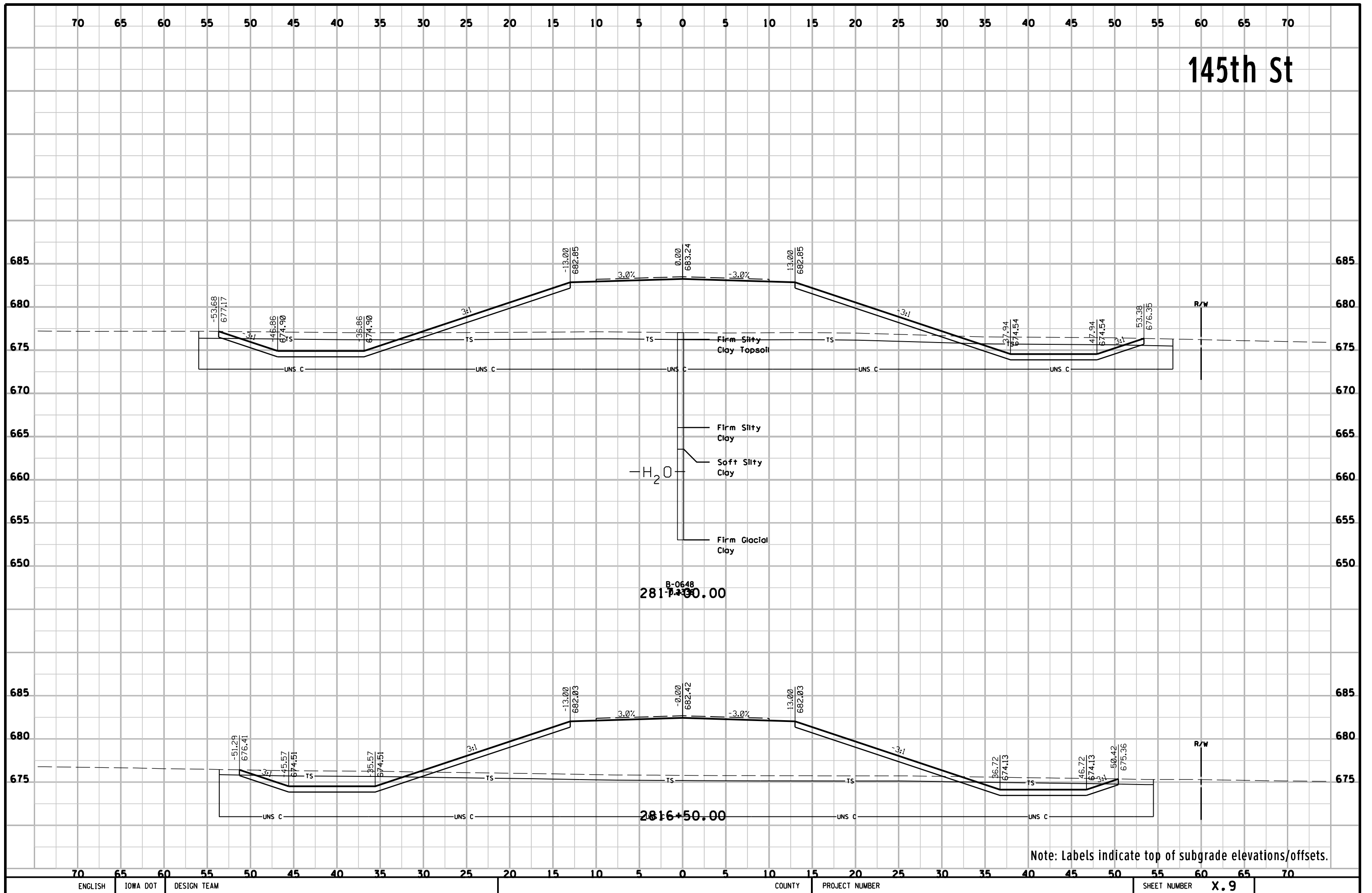
Note: Labels indicate top of subgrade elevations/offsets.

# 145th St



Note: Labels indicate top of subgrade elevations/offsets.

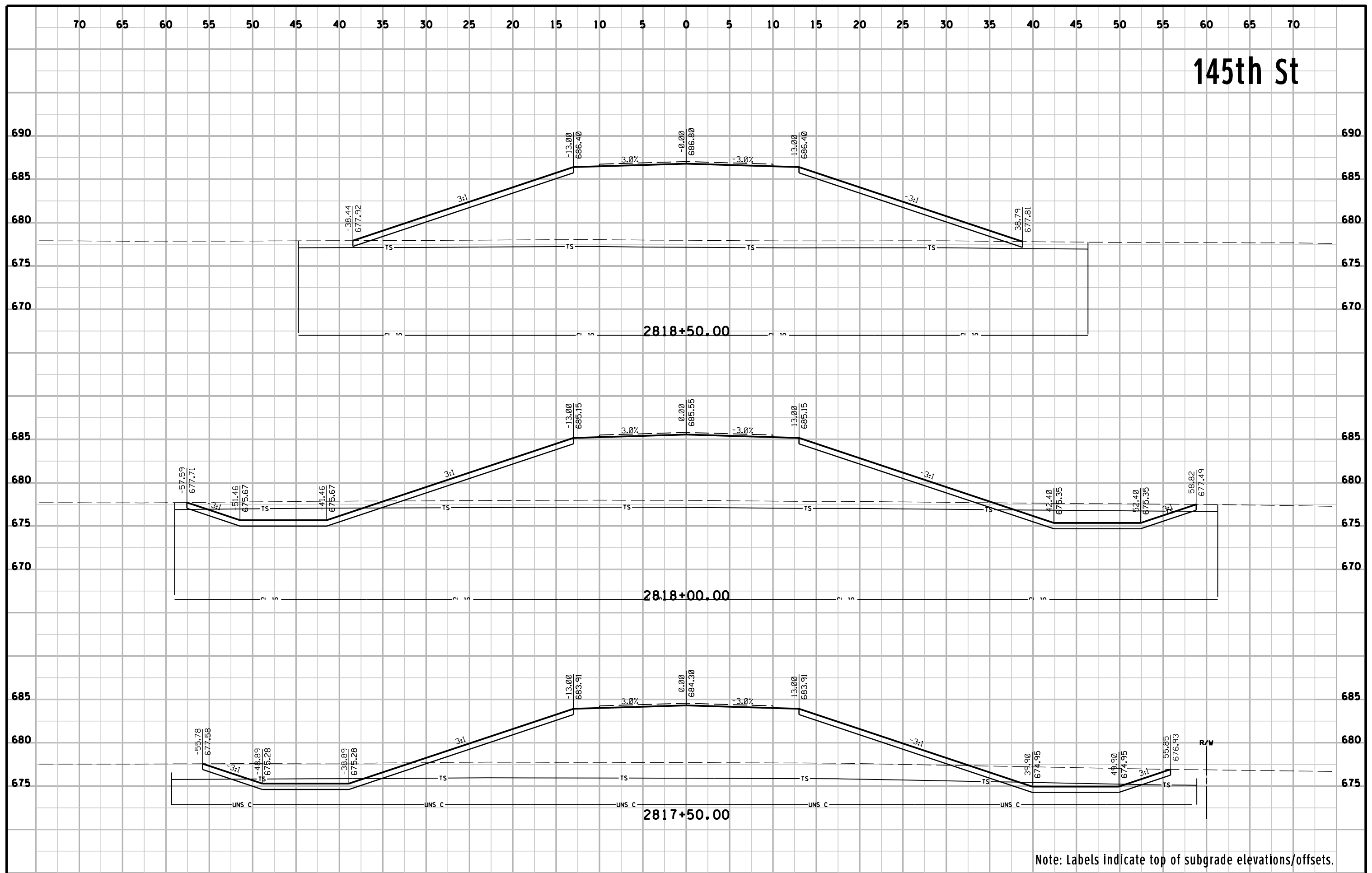
# 145th St



Note: Labels indicate top of subgrade elevations/offsets.

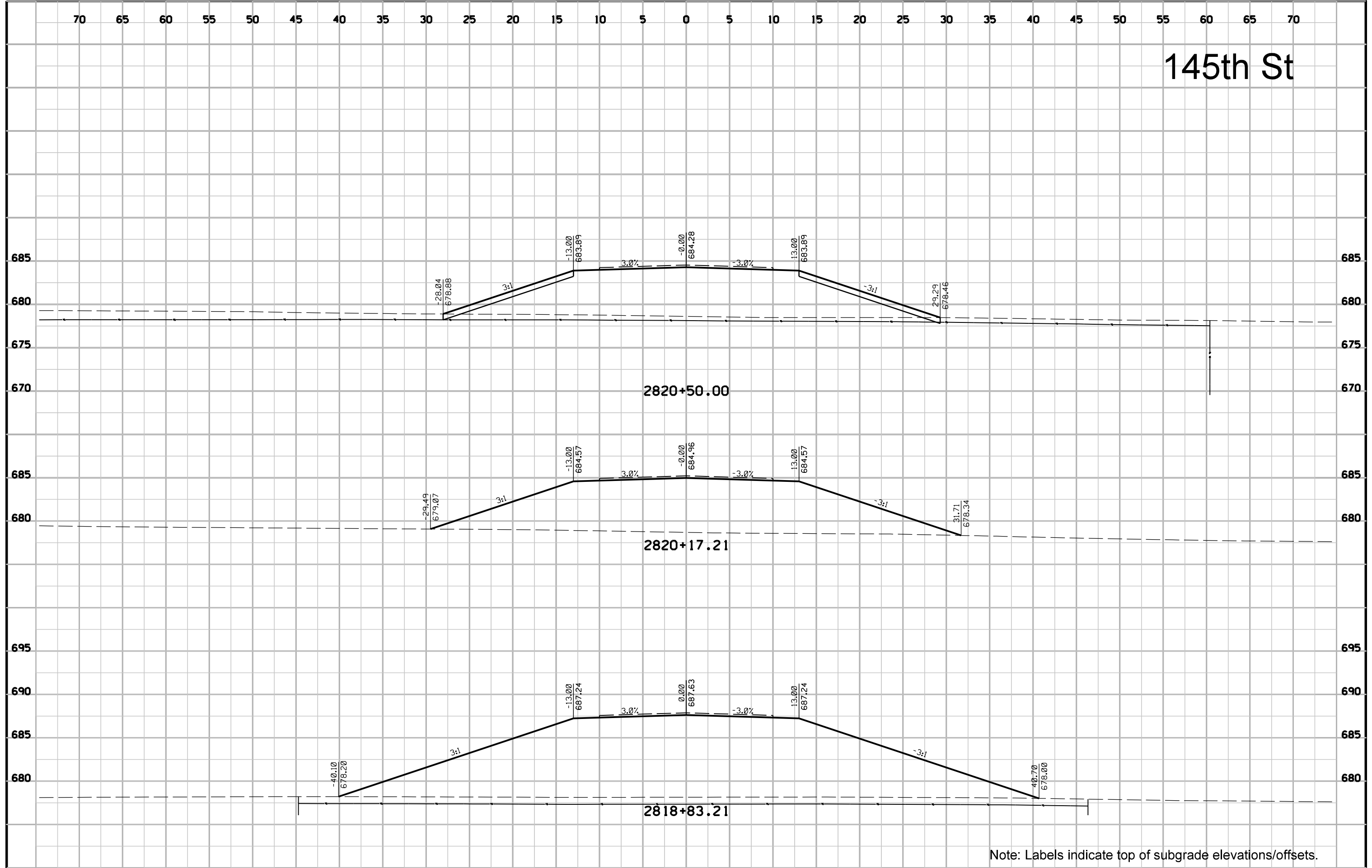


# 145th St



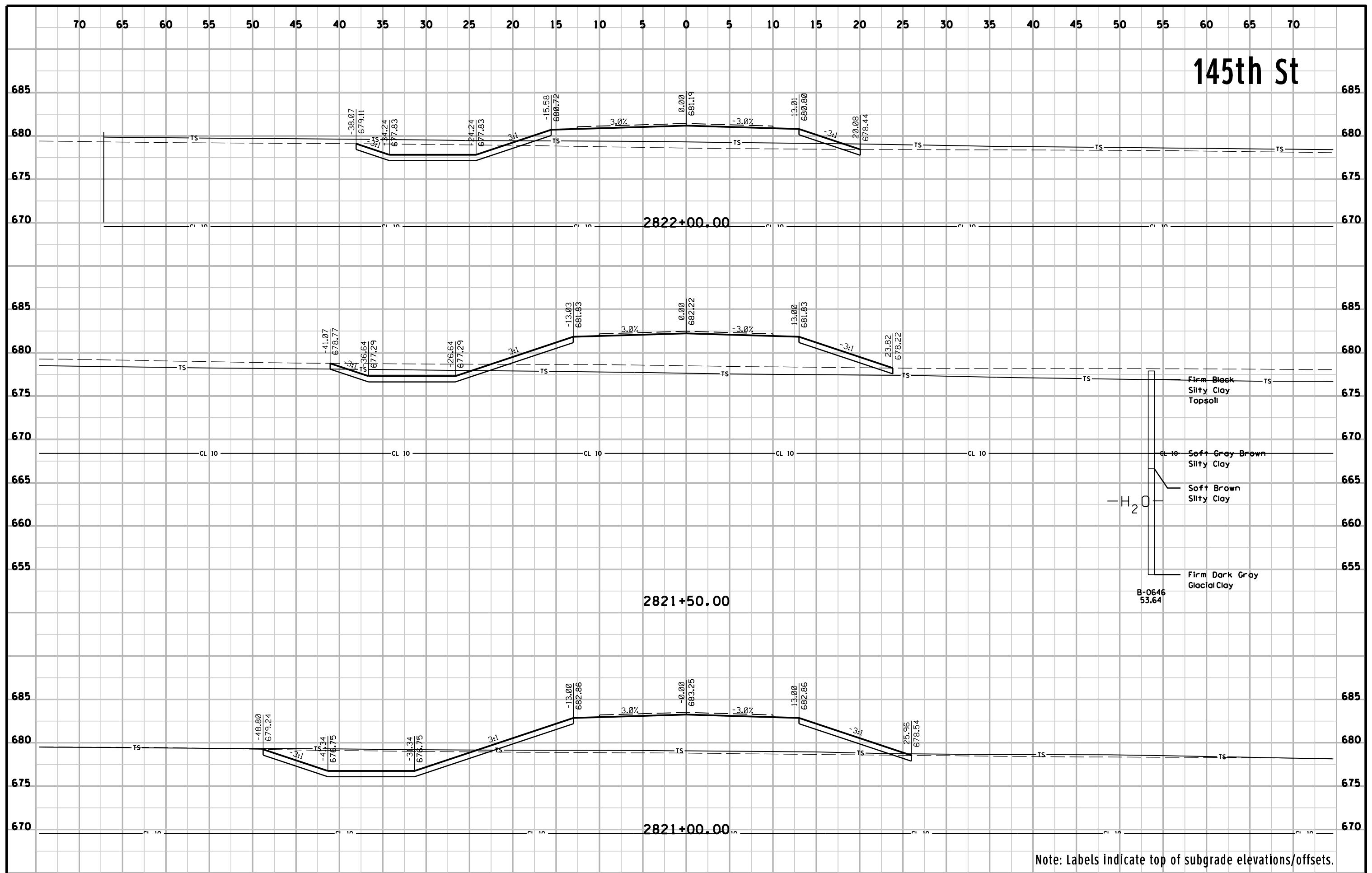
Note: Labels indicate top of subgrade elevations/offsets.

# 145th St



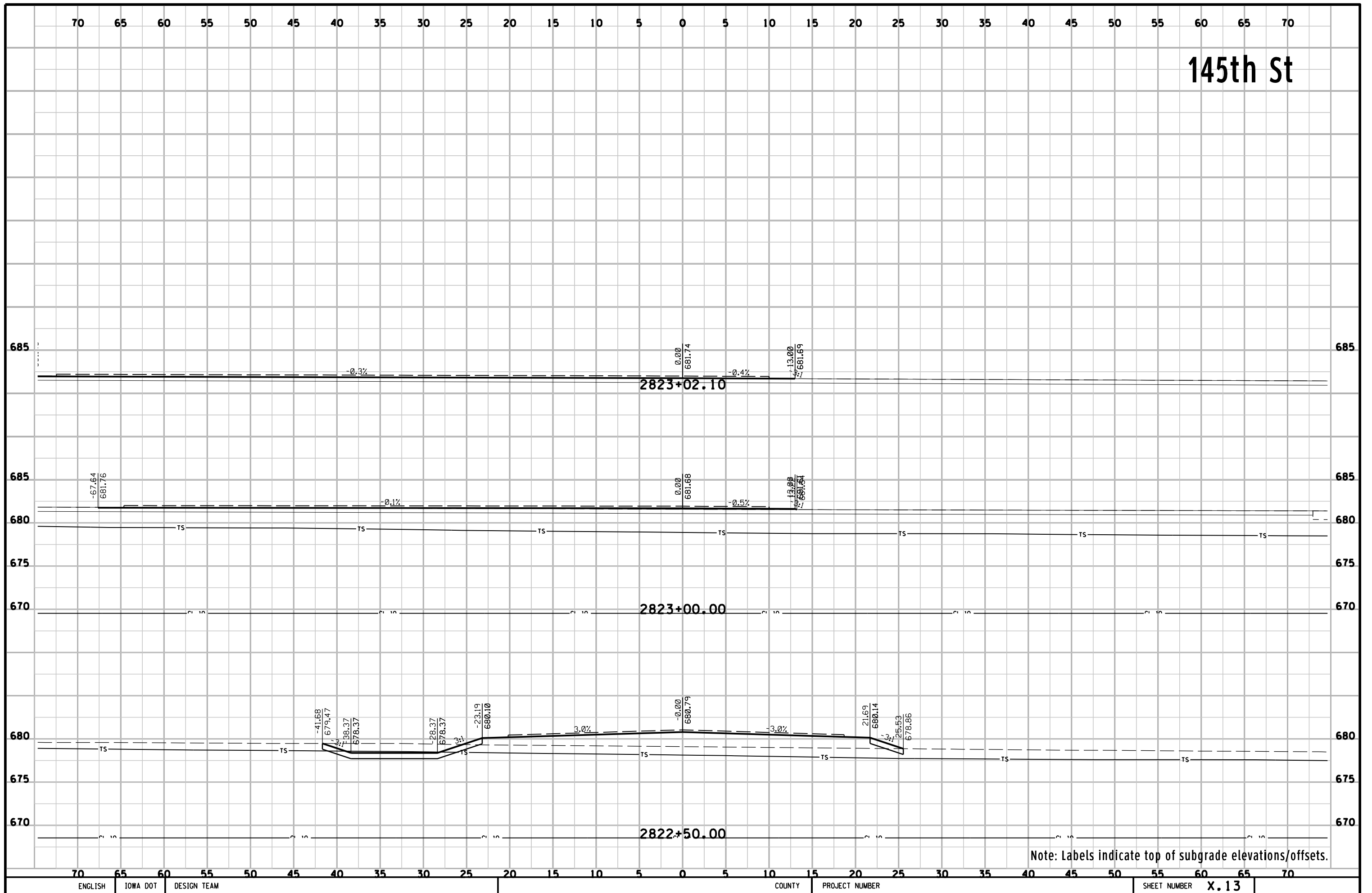
Note: Labels indicate top of subgrade elevations/offsets.

# 145th St

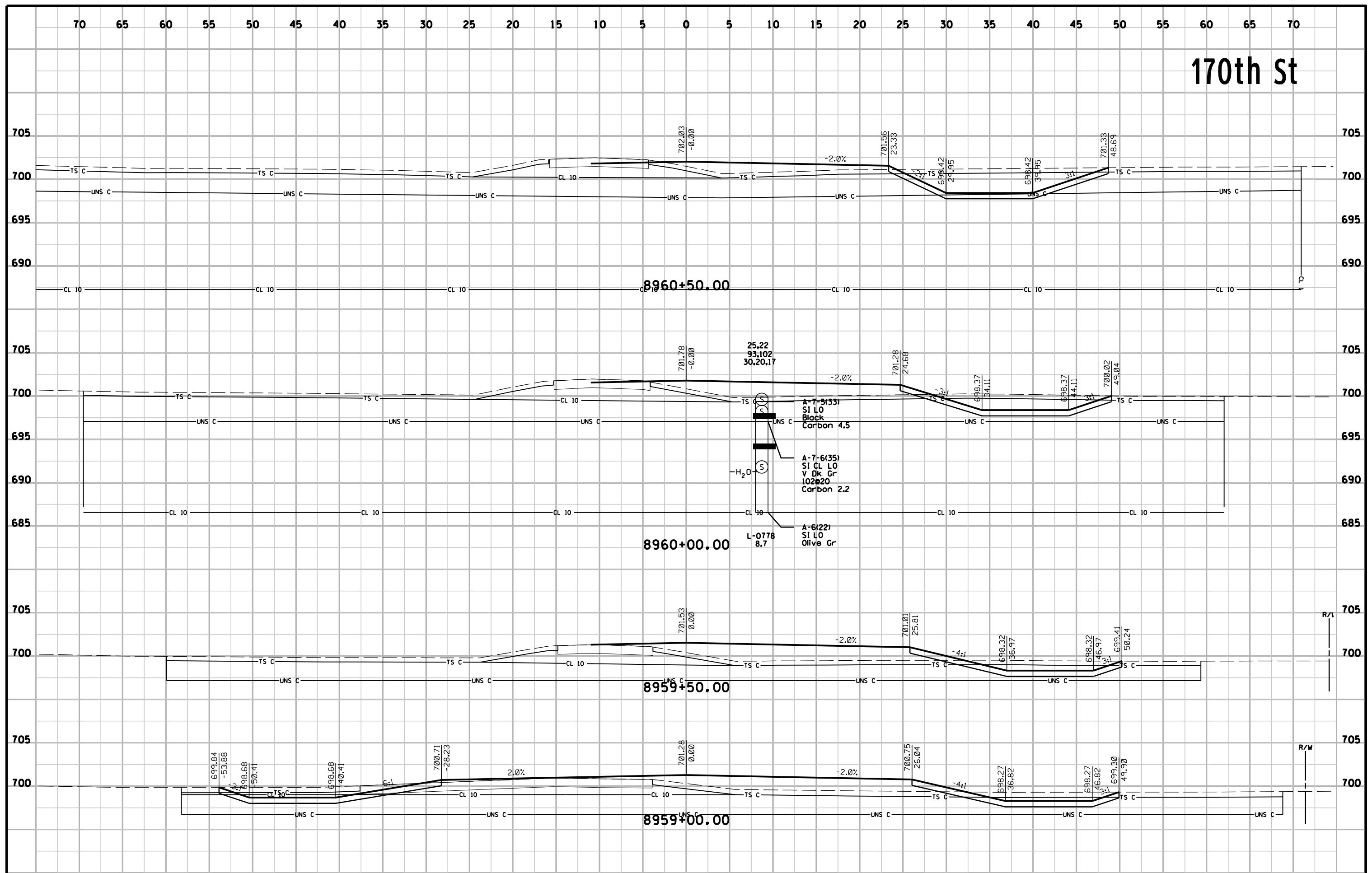


Note: Labels indicate top of subgrade elevations/offsets.

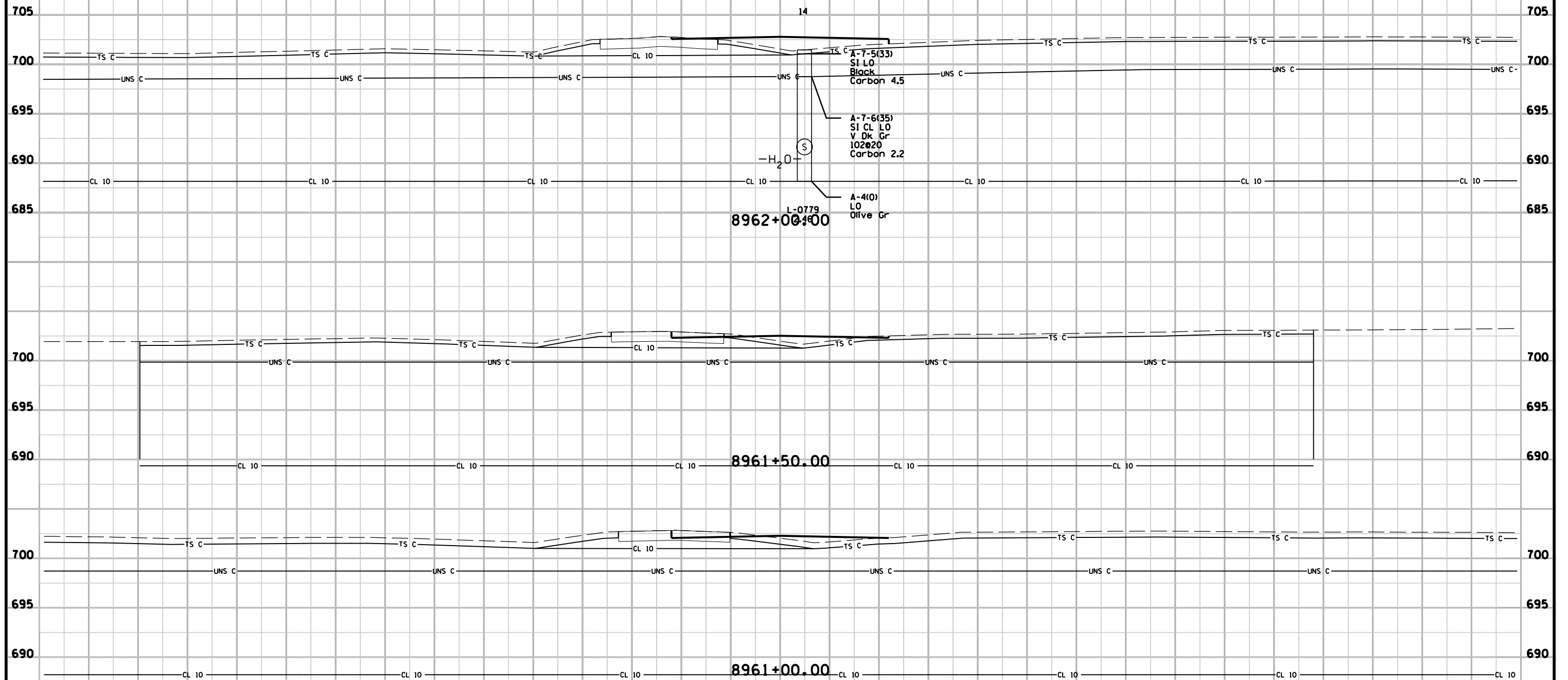
# 145th St



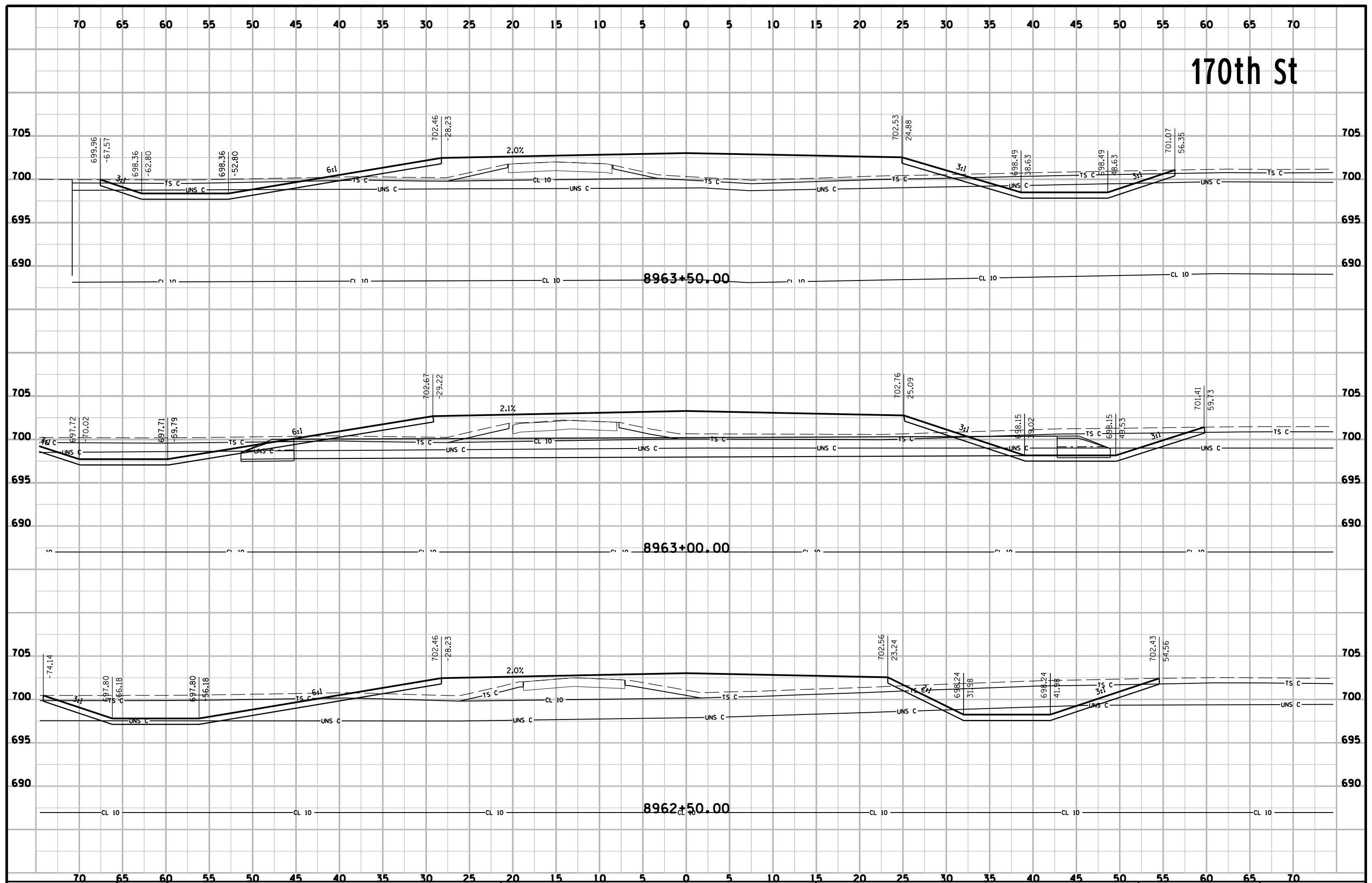
# 170th St



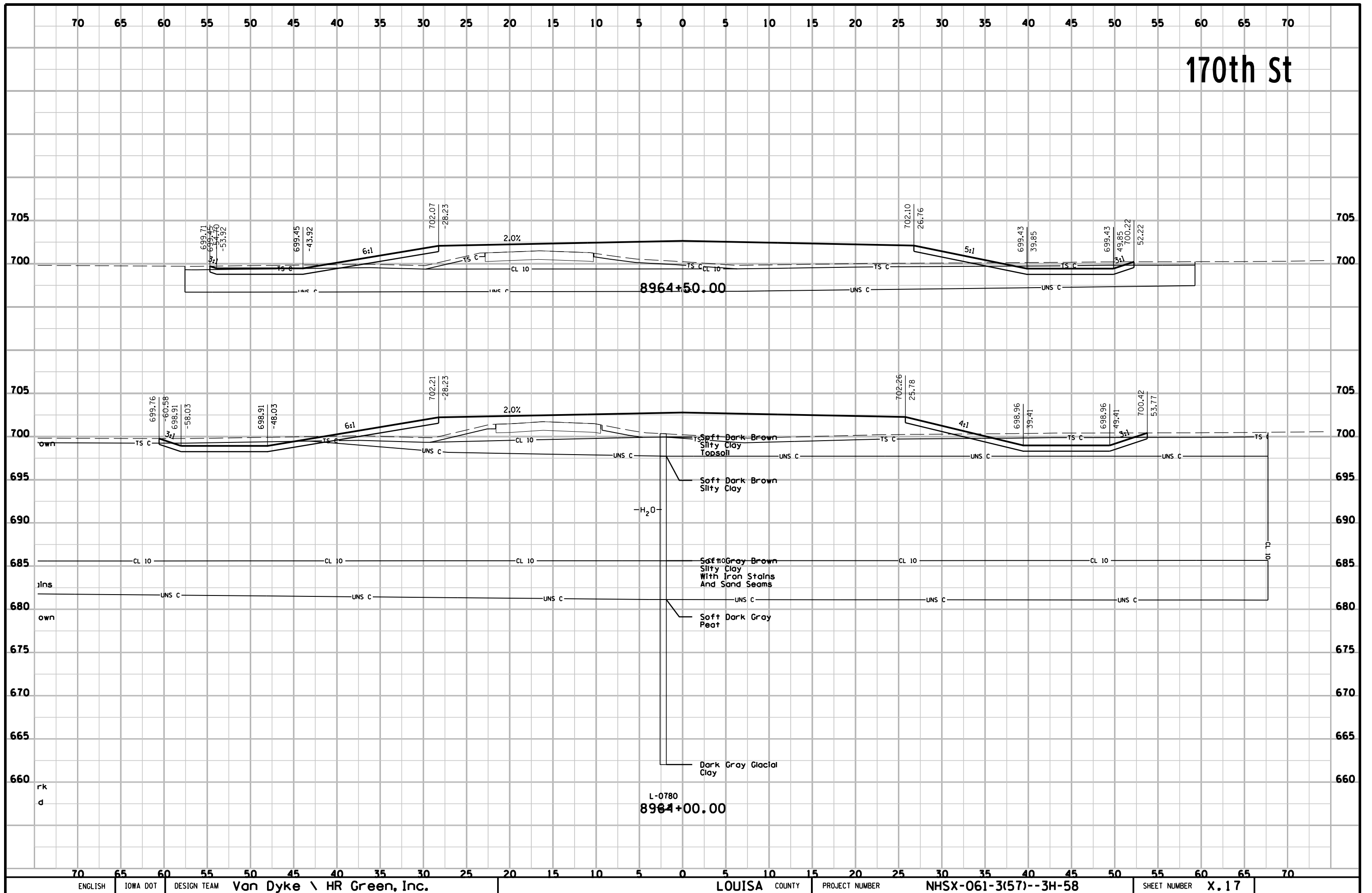
# 170th St



# 170th St

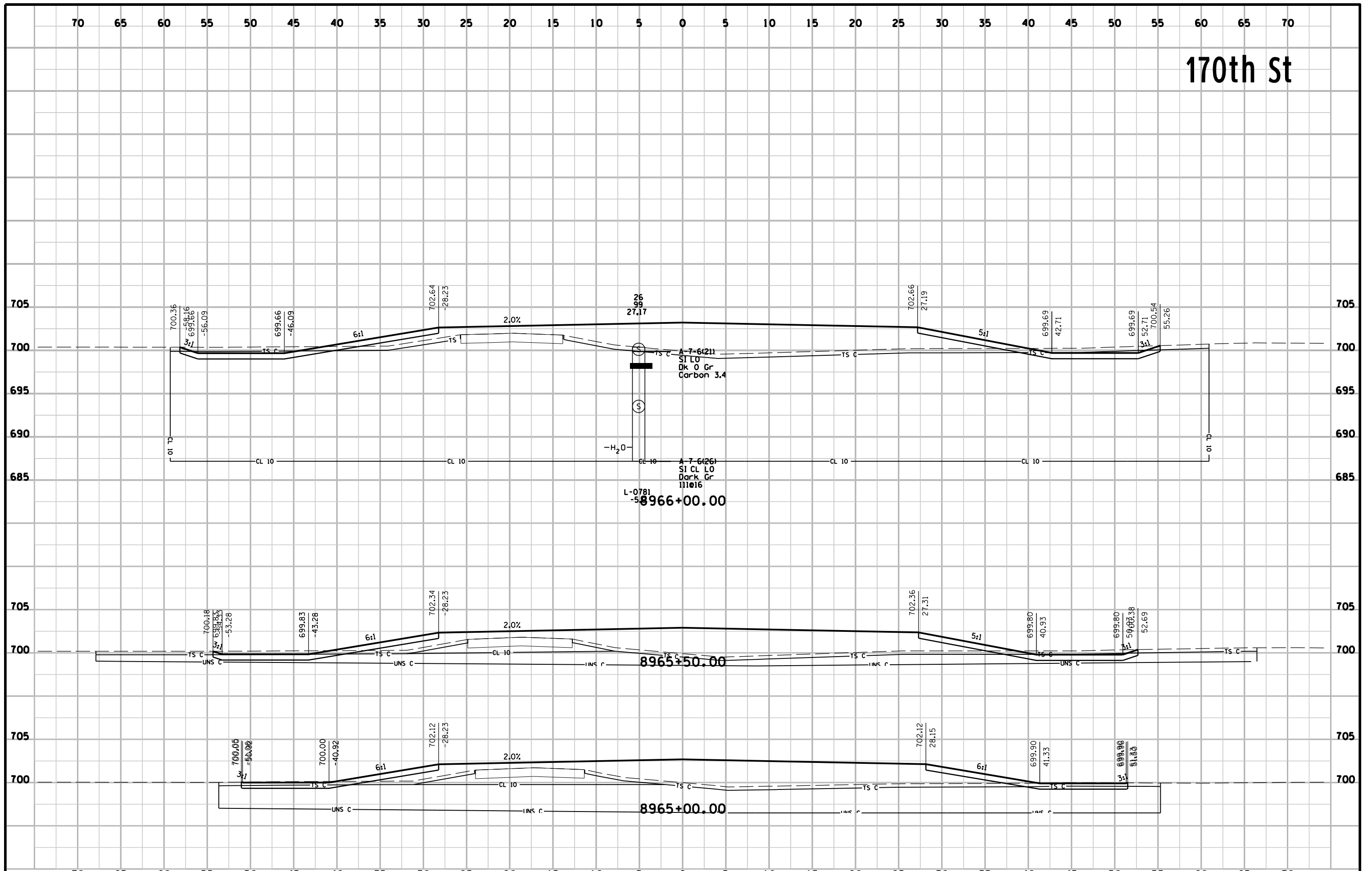


# 170th St

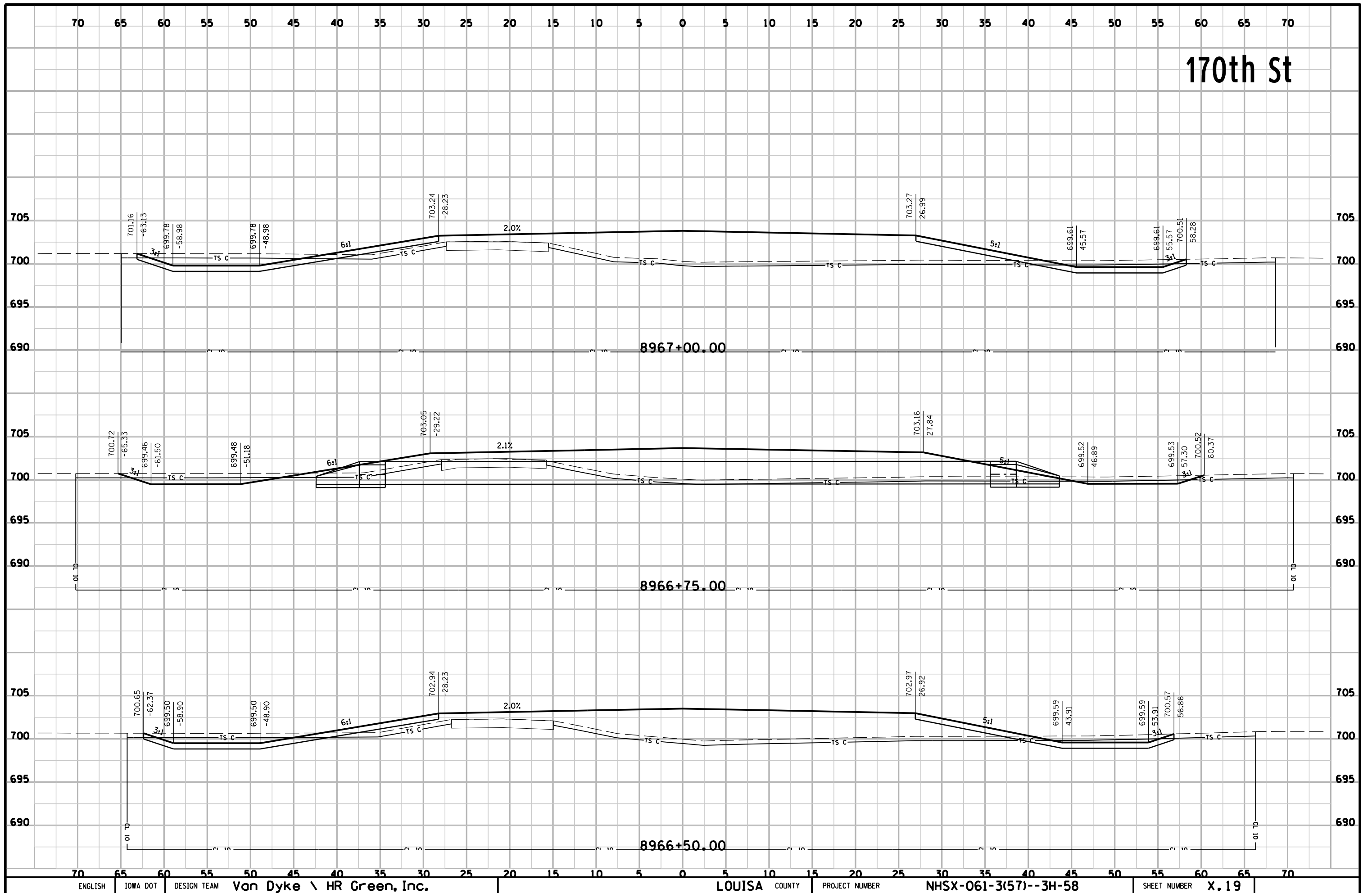




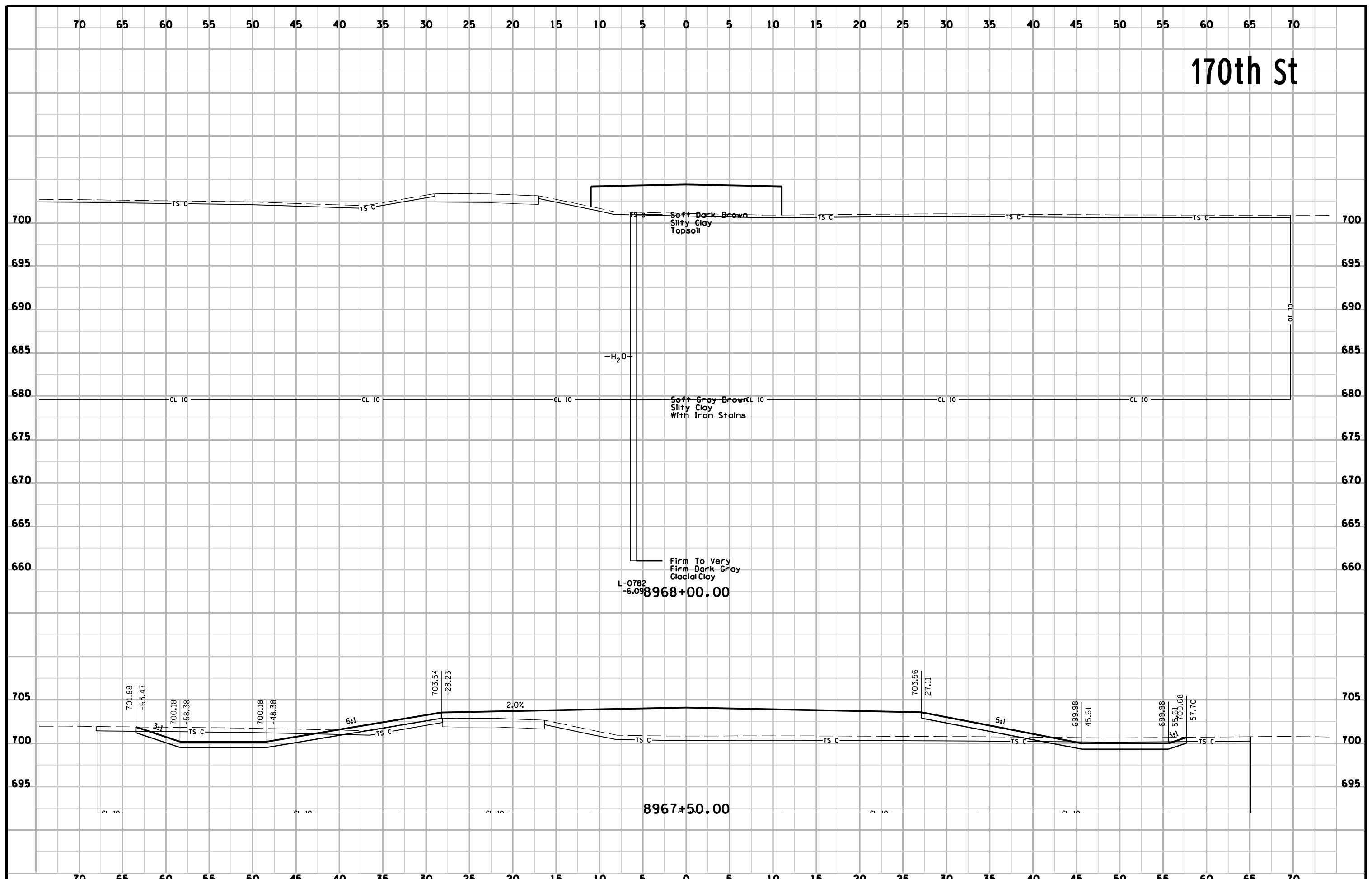
# 170th St



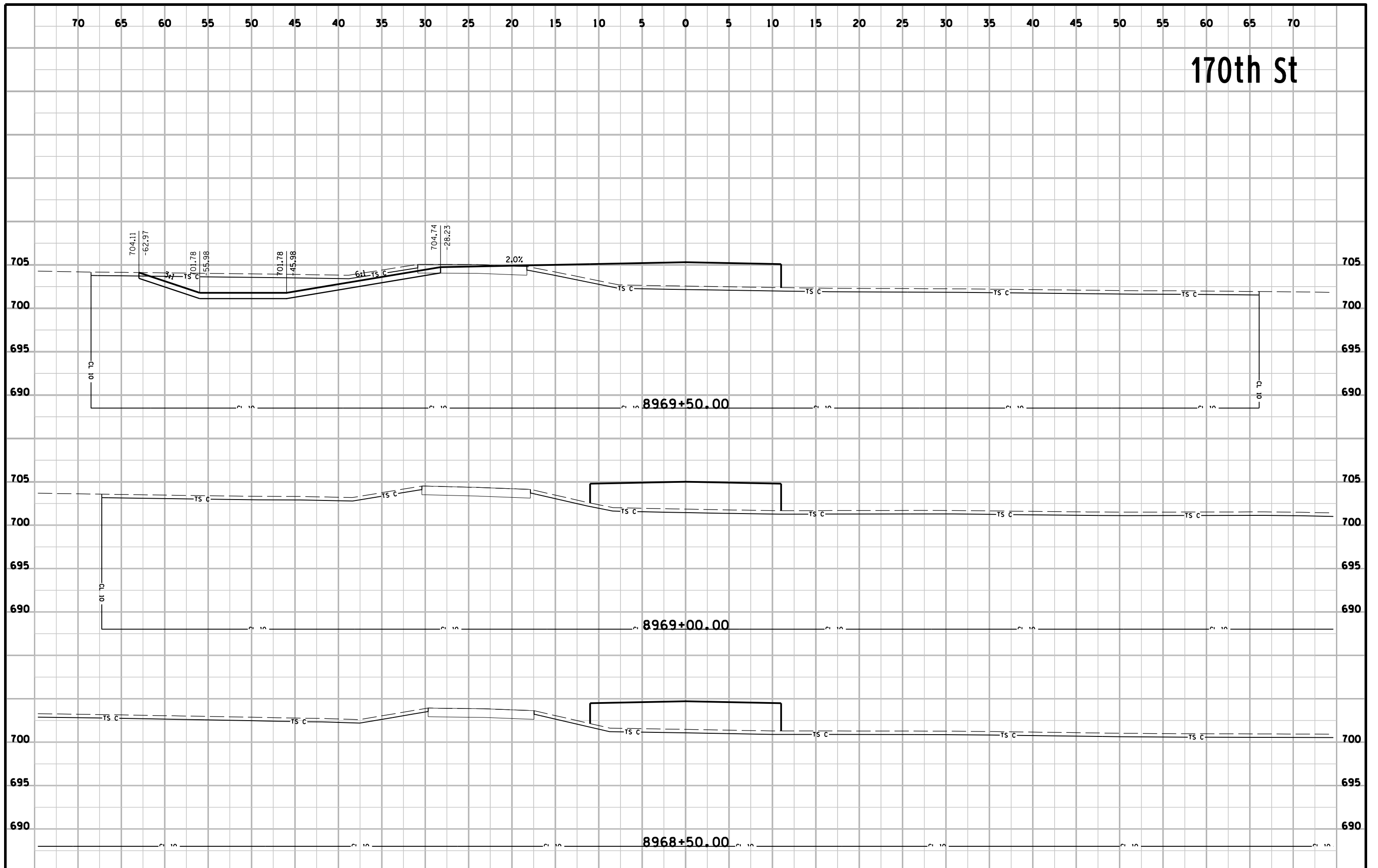
# 170th St

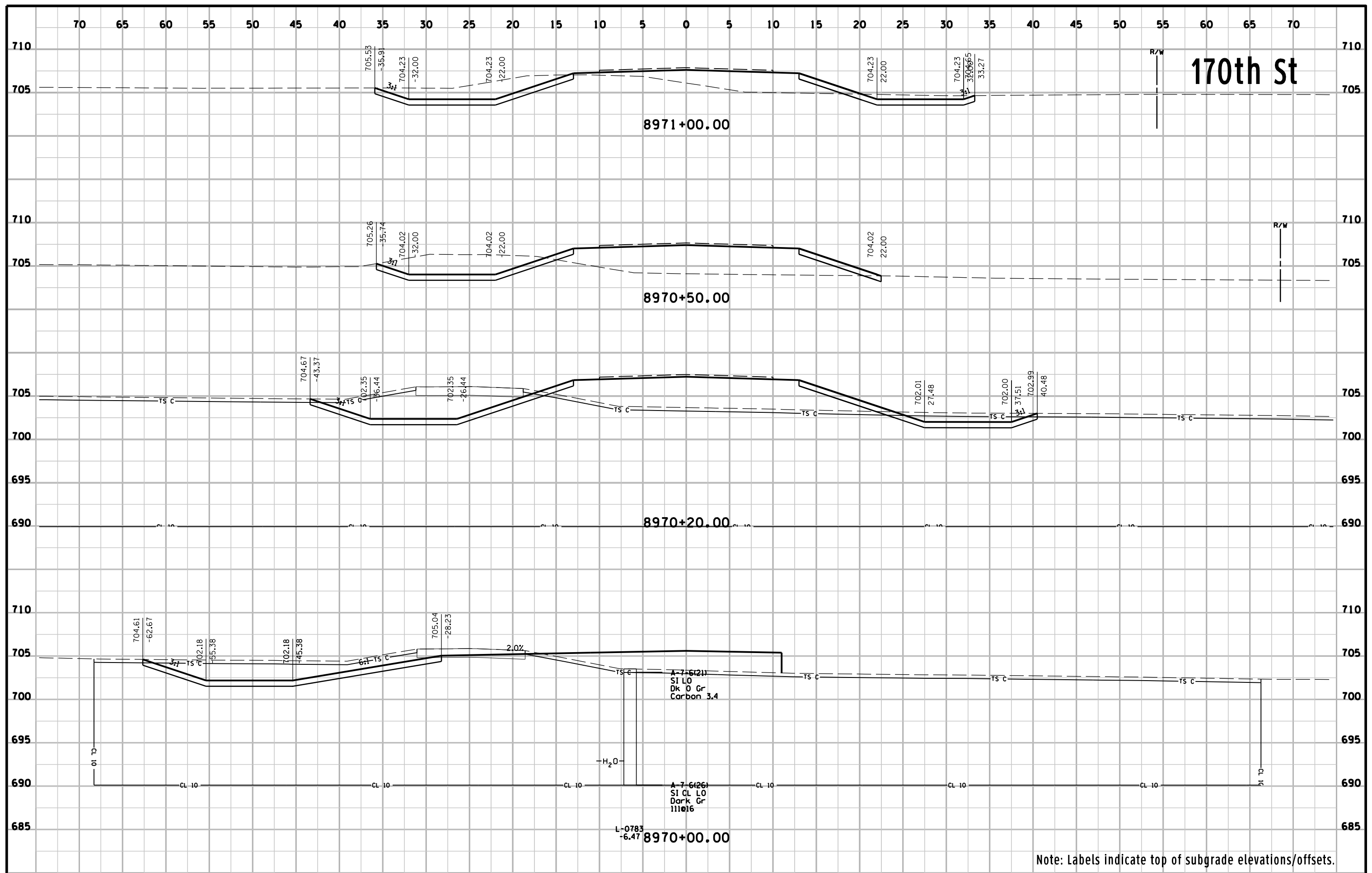


# 170th St



# 170th St





170th St

8971+00.00

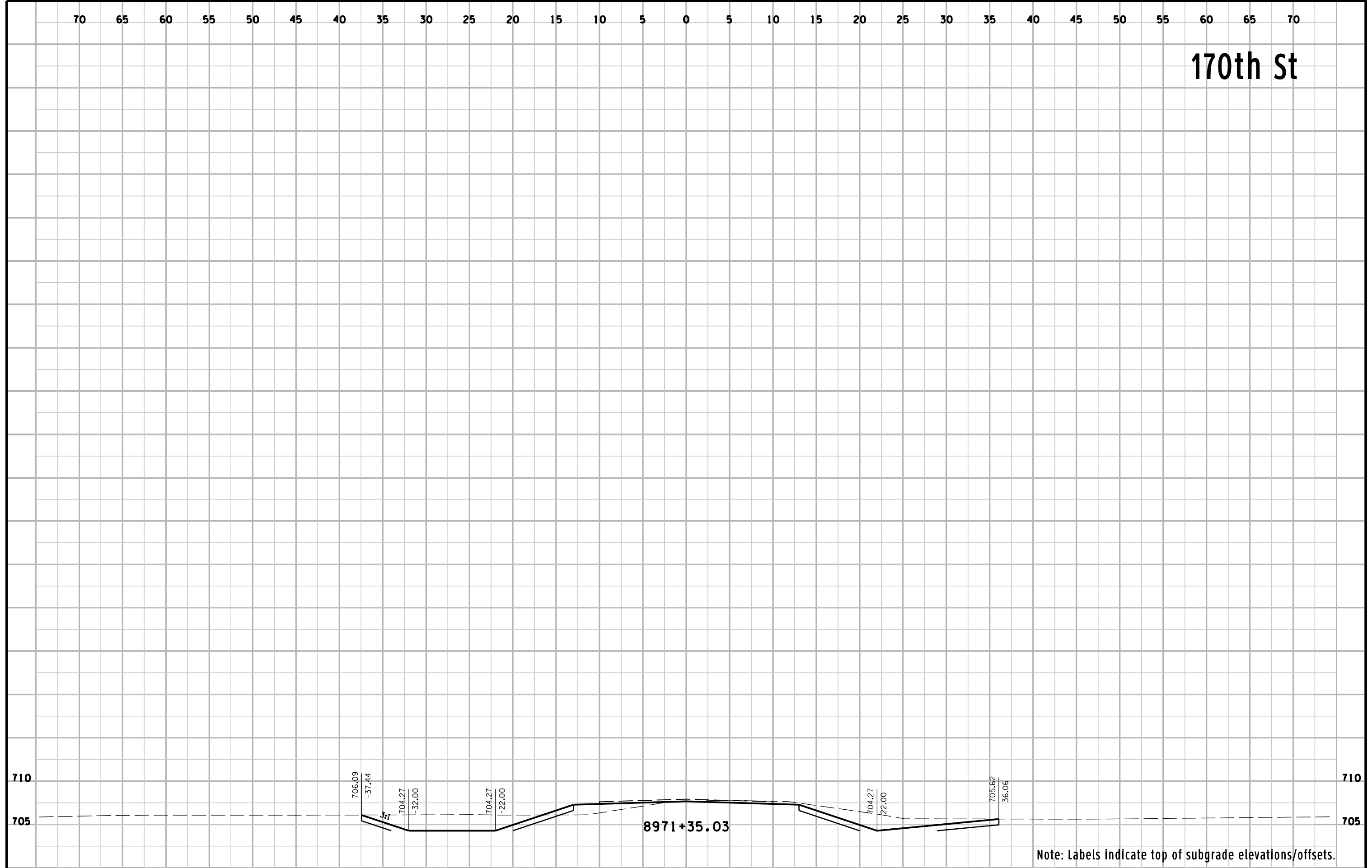
8970+50.00

8970+20.00

8970+00.00

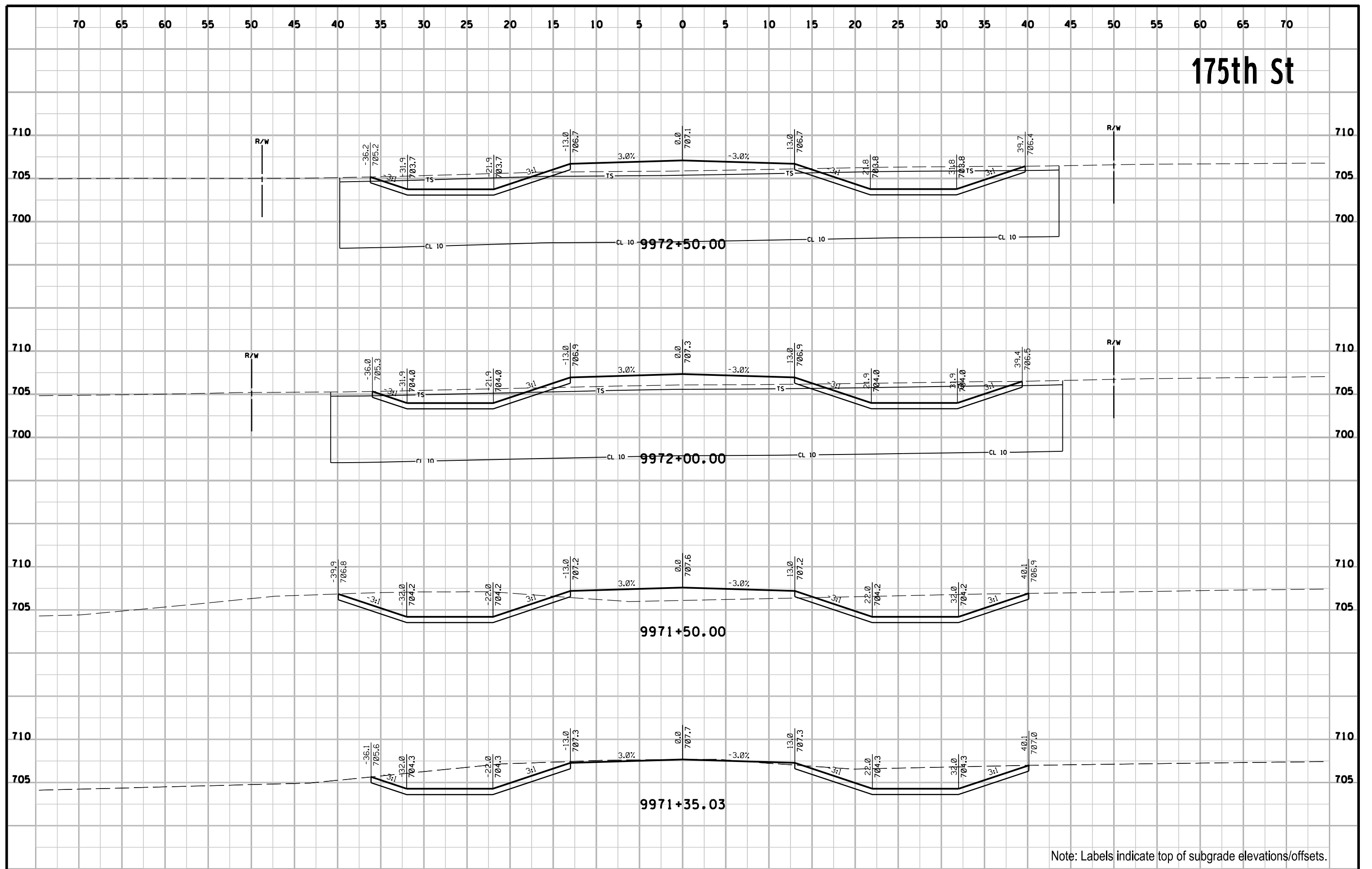
Note: Labels indicate top of subgrade elevations/offsets.

# 170th St



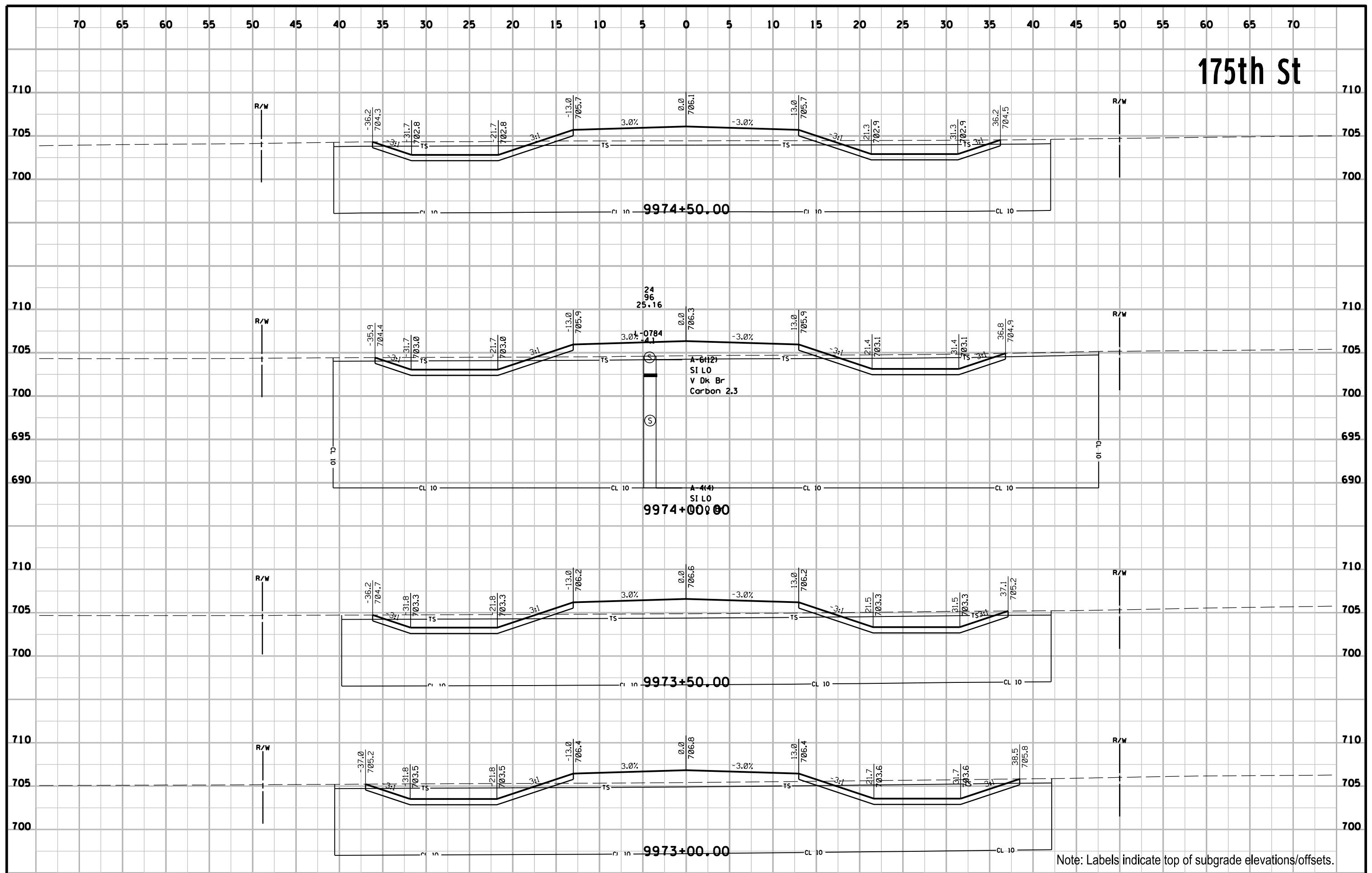
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



Note: Labels indicate top of subgrade elevations/offsets.

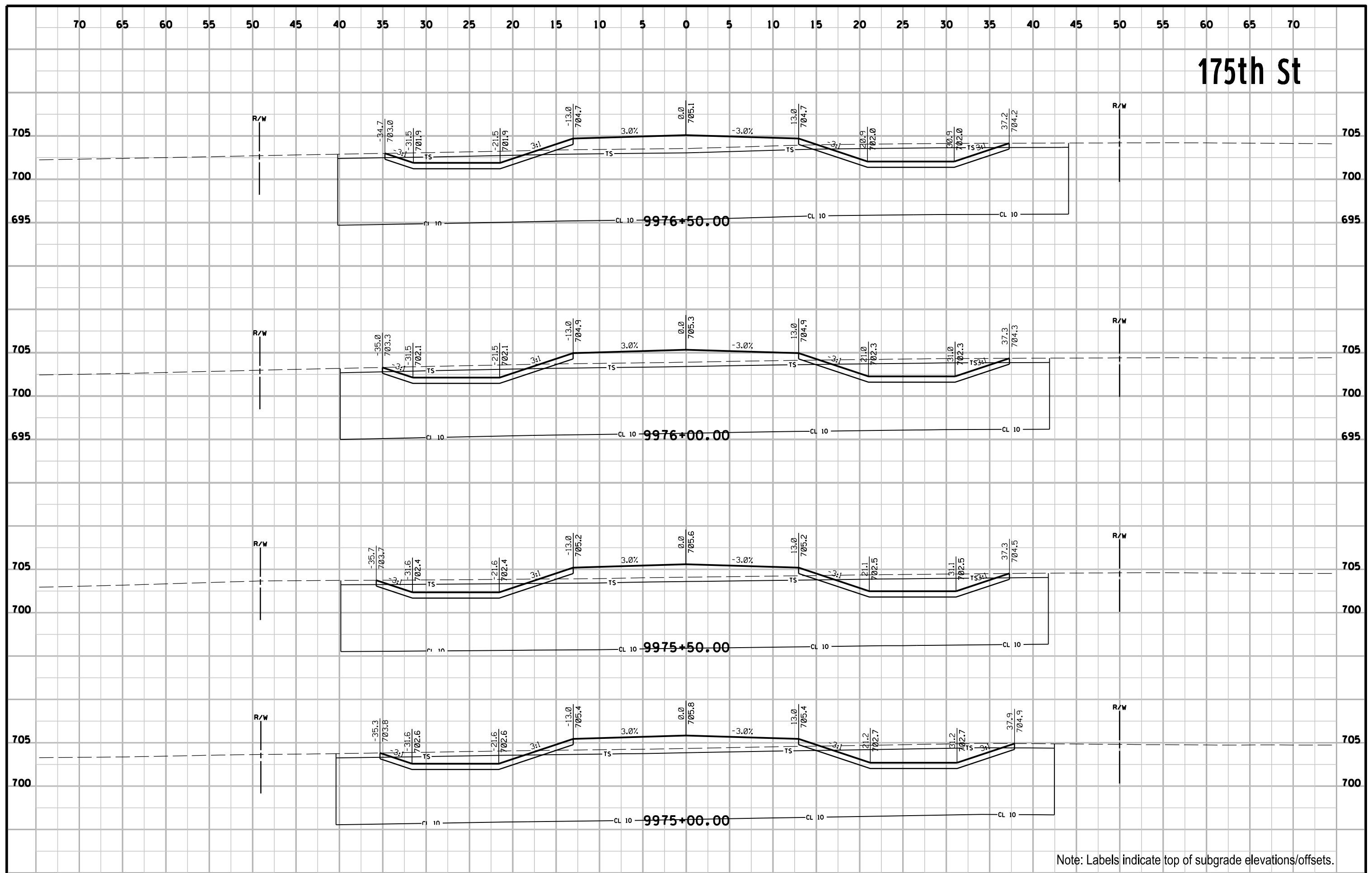
# 175th St



Note: Labels indicate top of subgrade elevations/offsets.

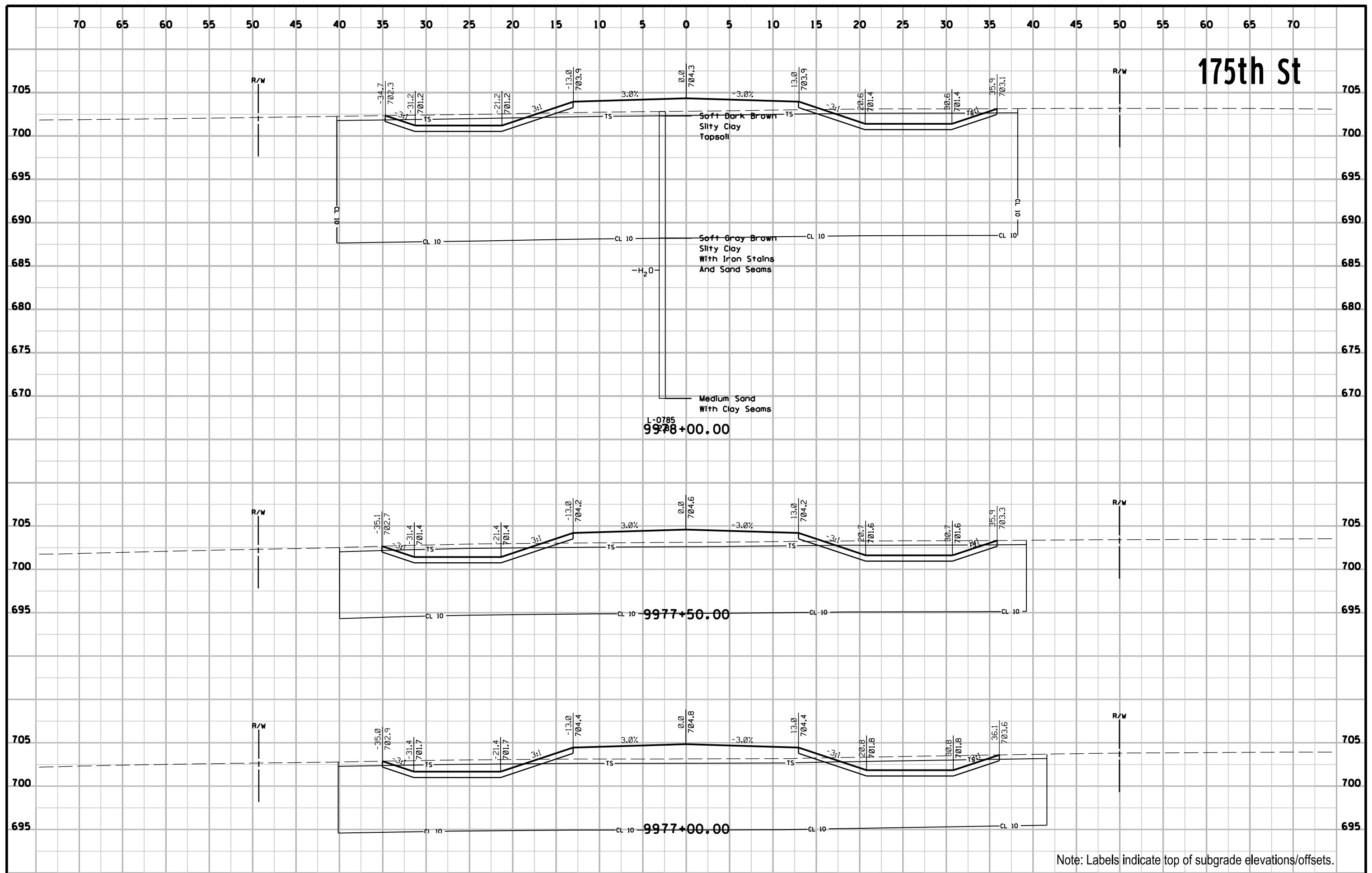


# 175th St



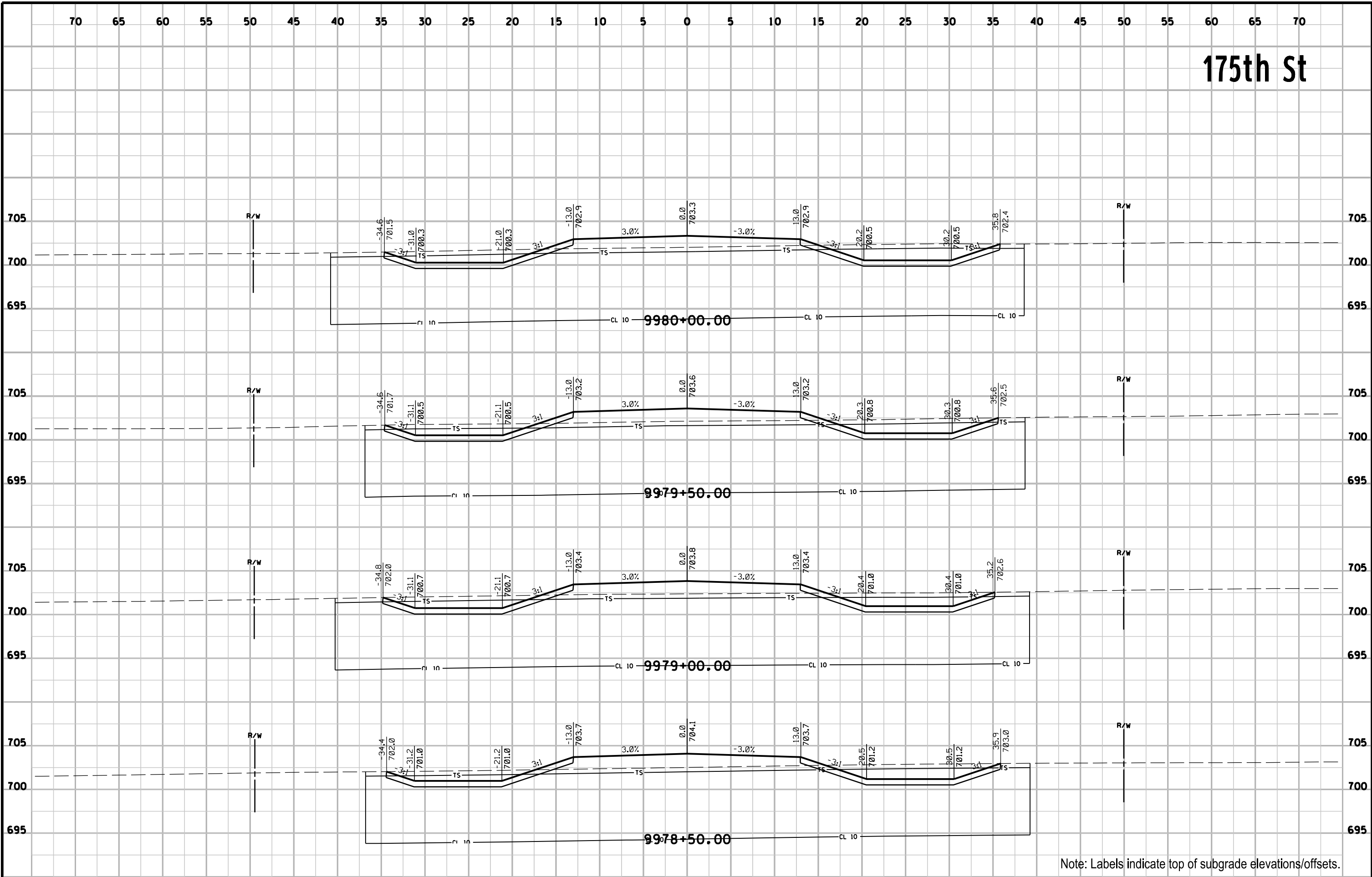
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



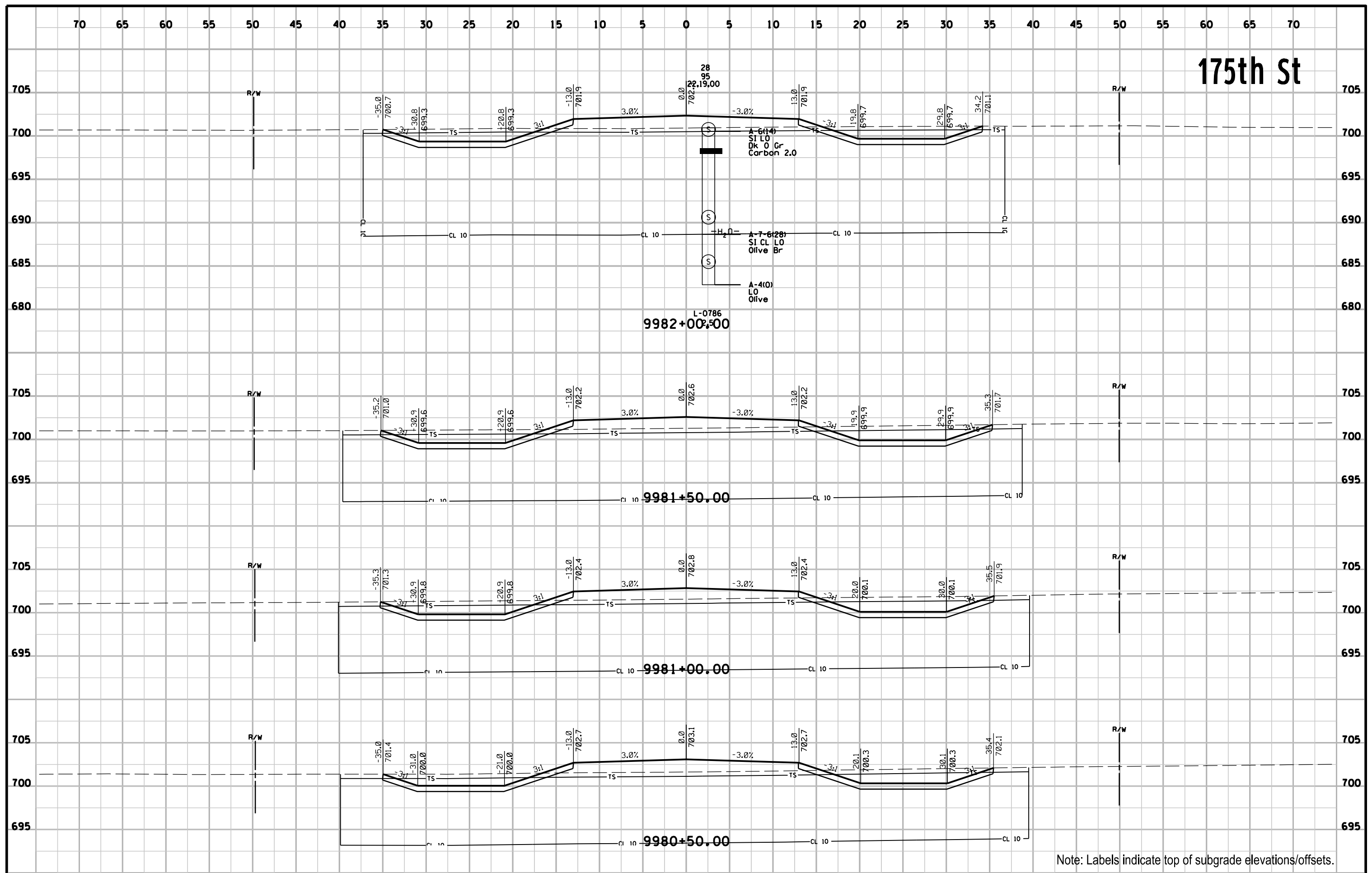
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



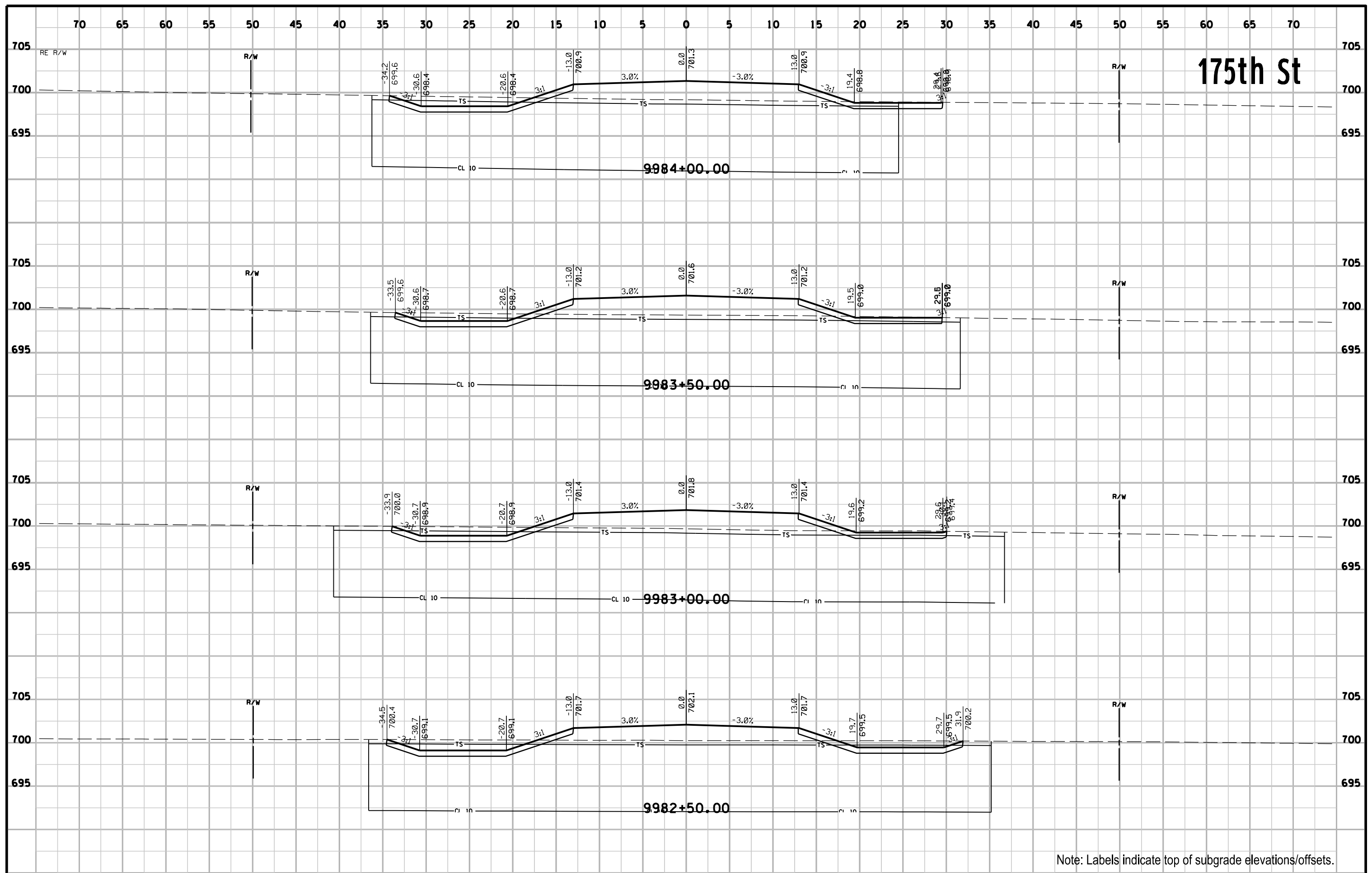
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



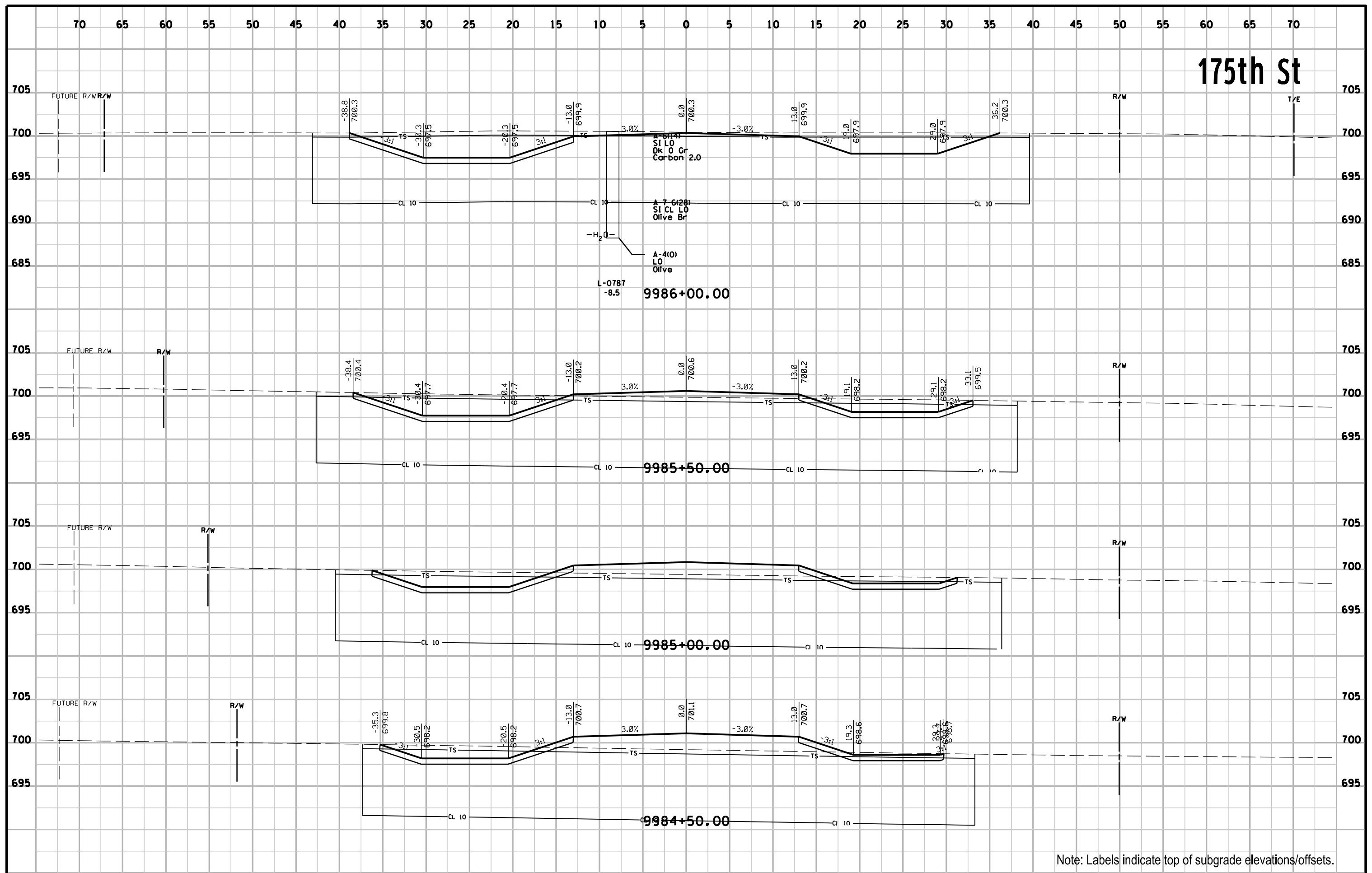
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



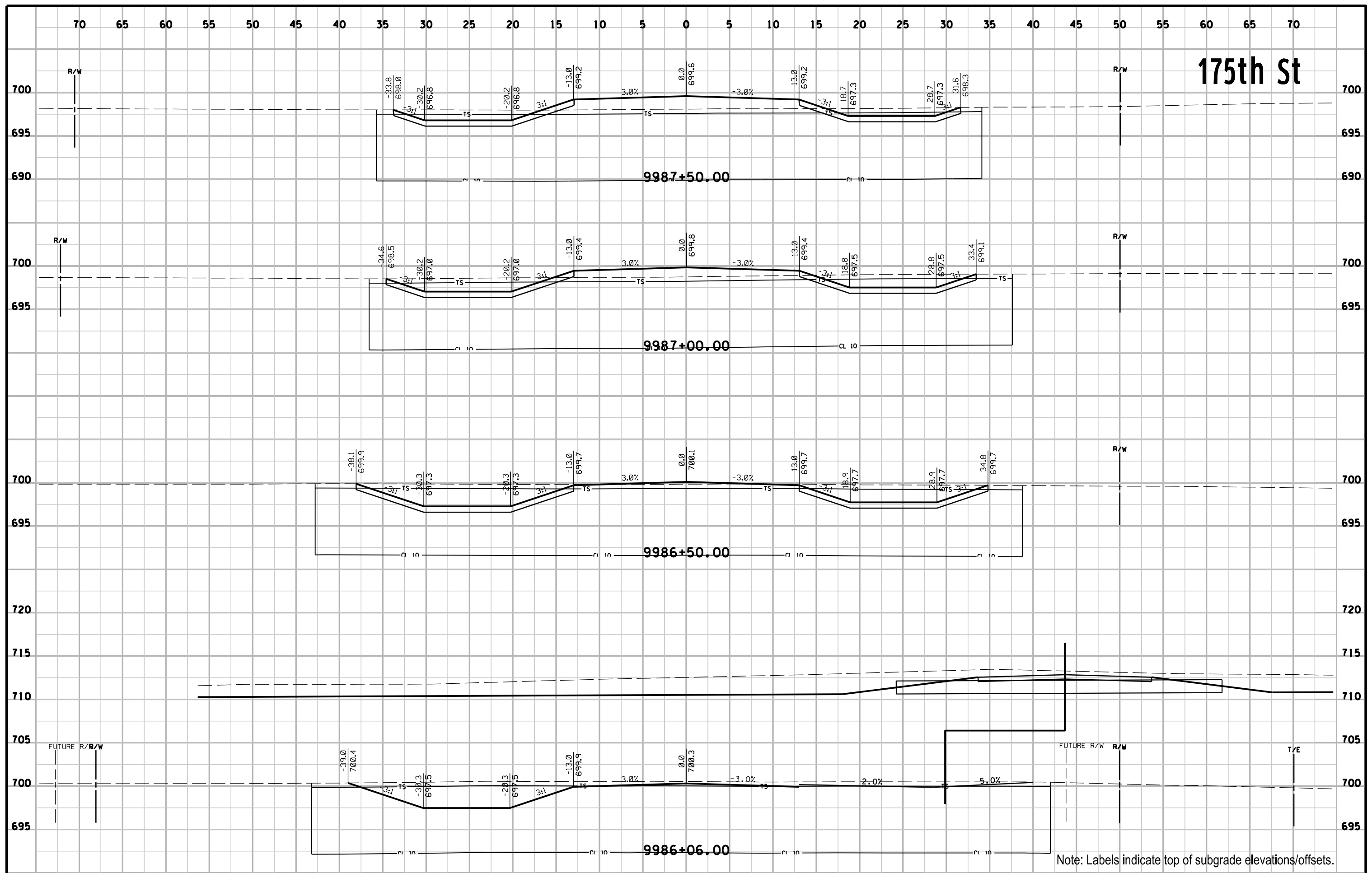
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



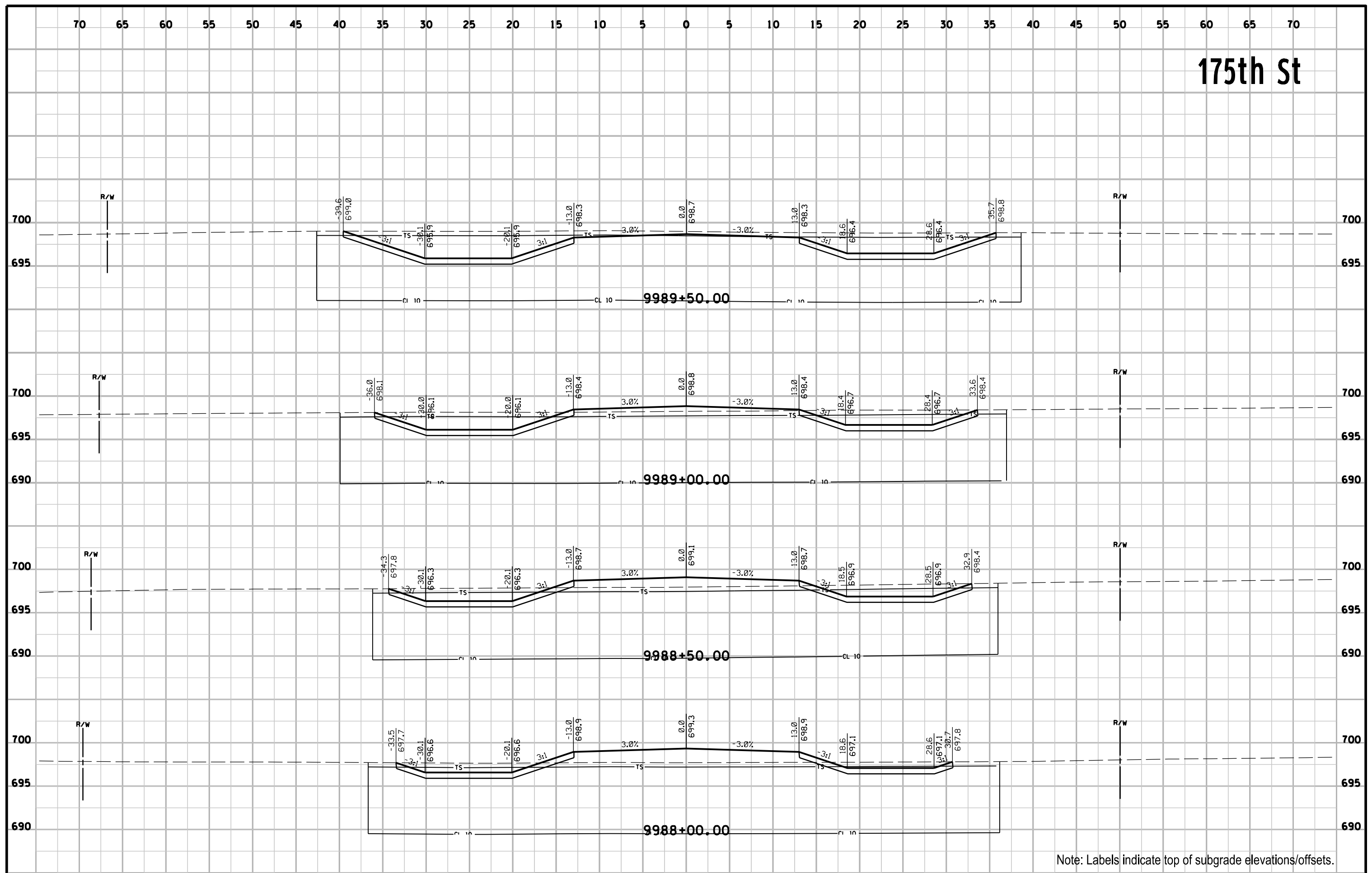
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



Note: Labels indicate top of subgrade elevations/offsets.

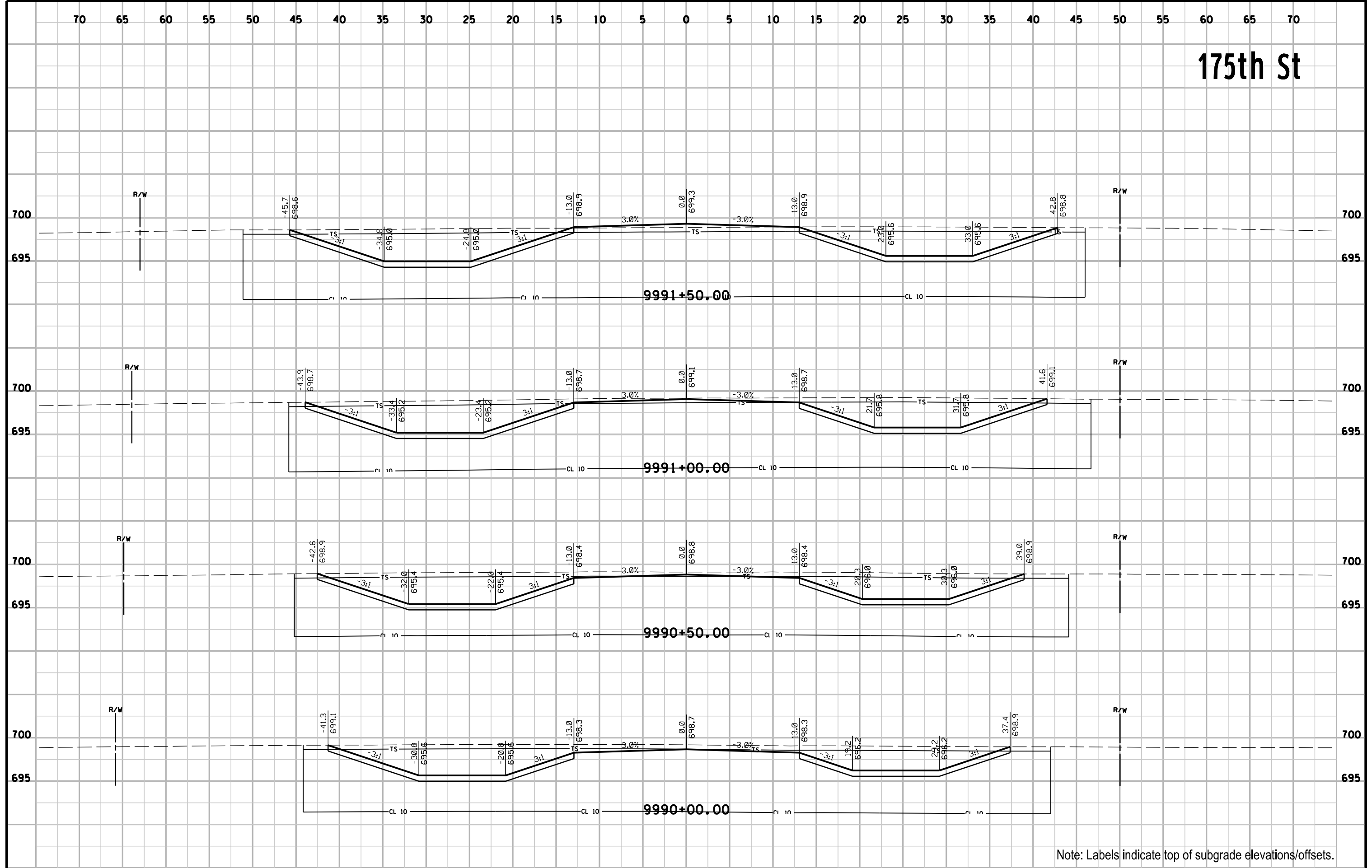
# 175th St



Note: Labels indicate top of subgrade elevations/offsets.

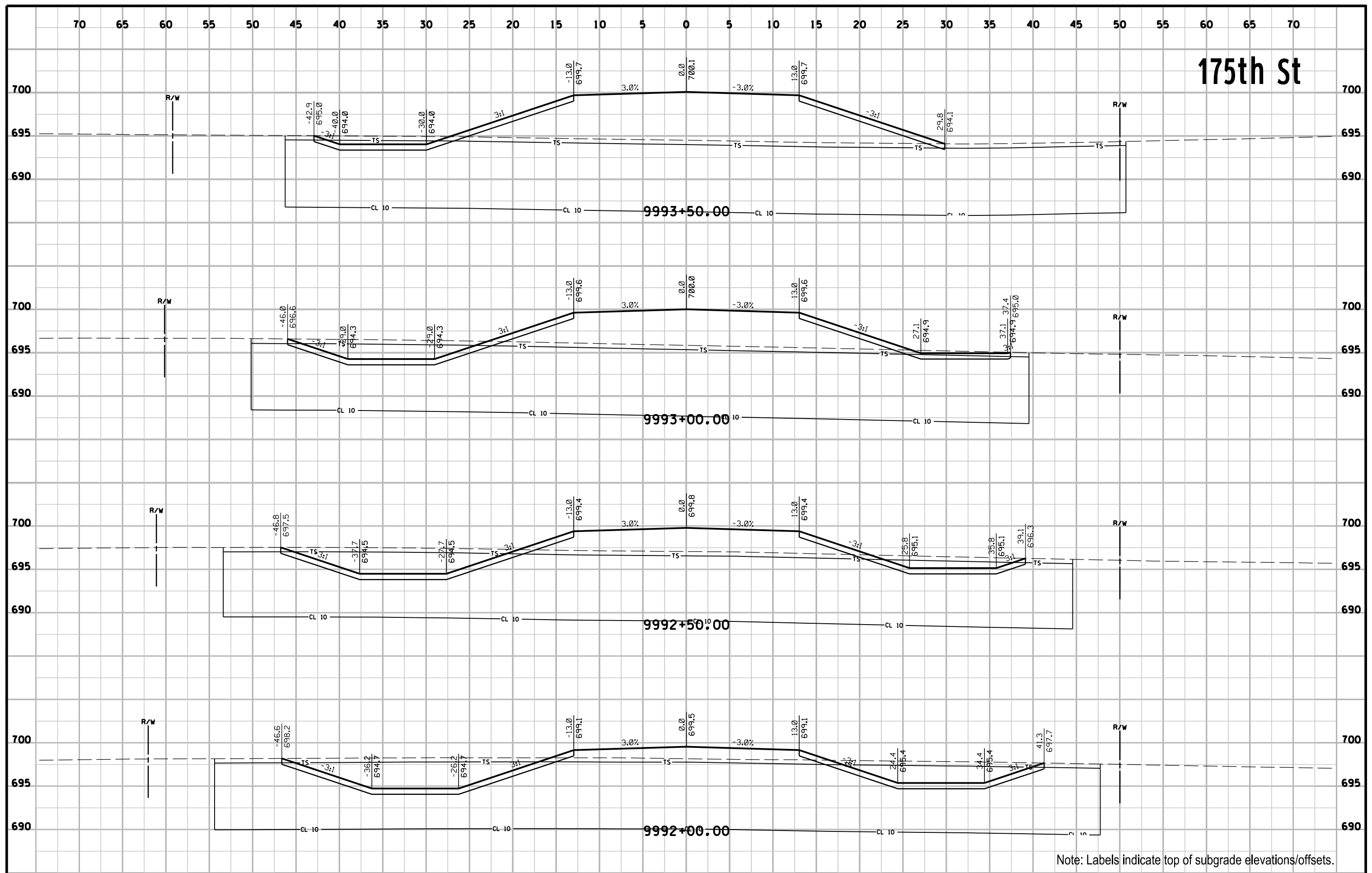


# 175th St



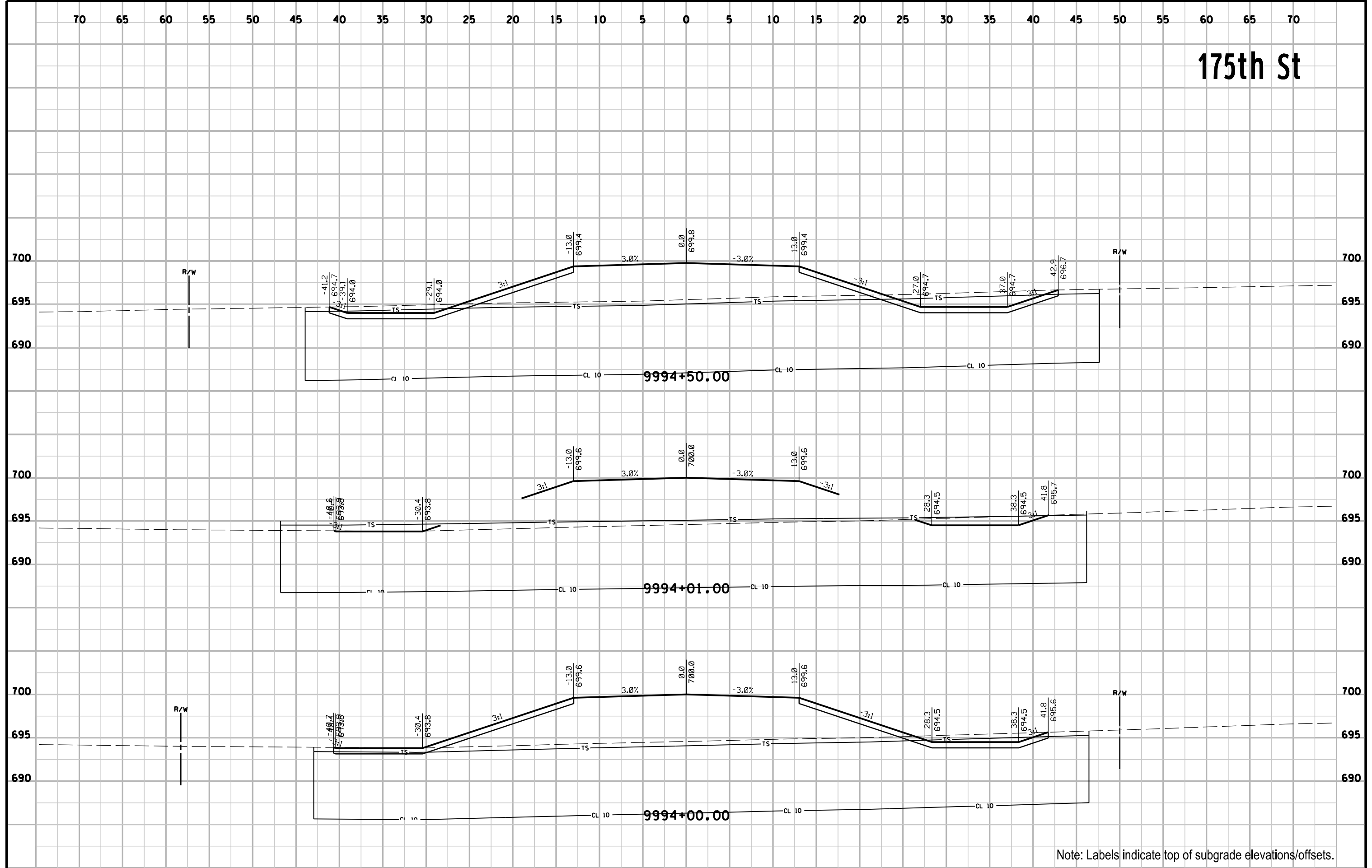
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



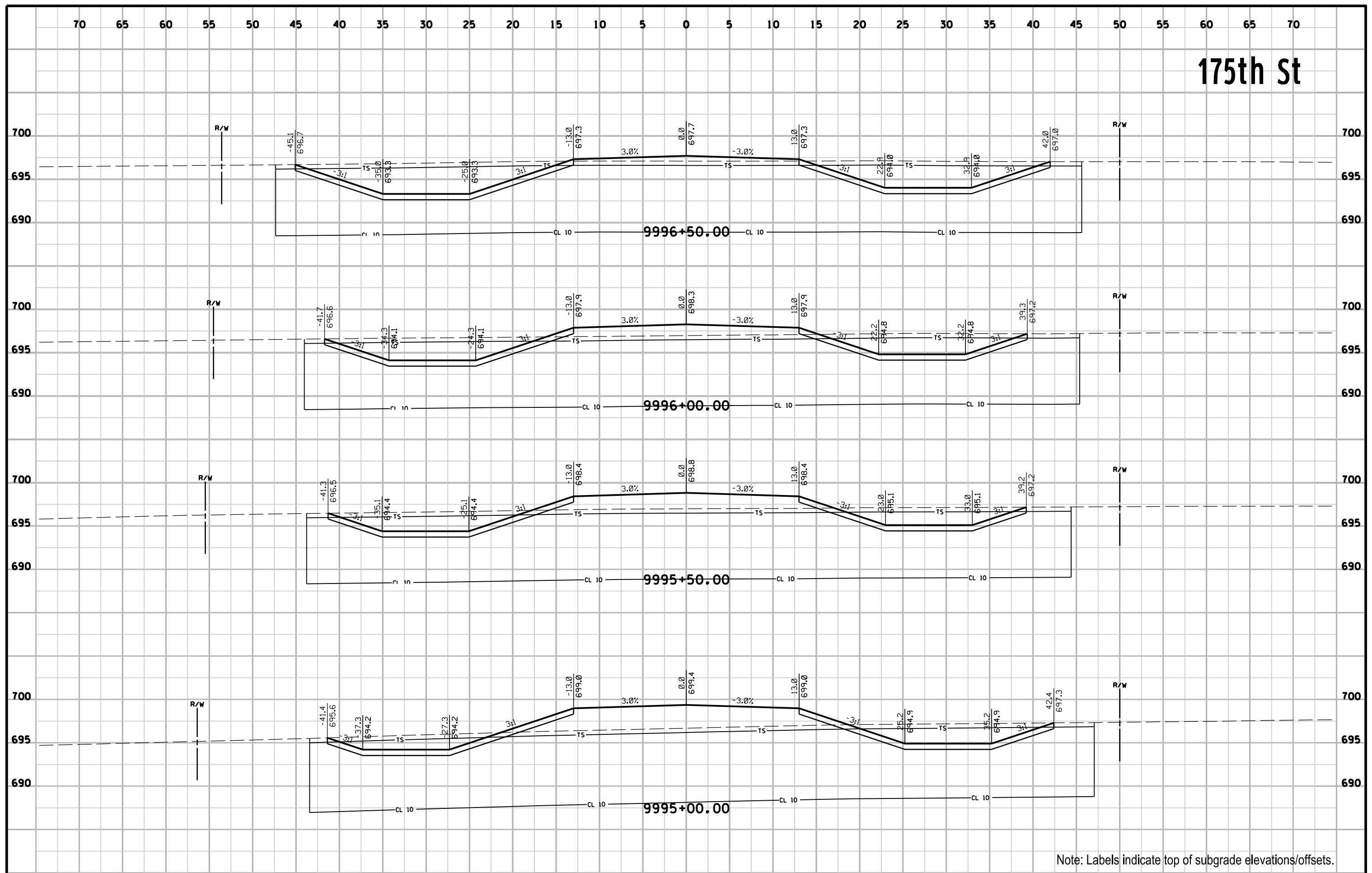
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



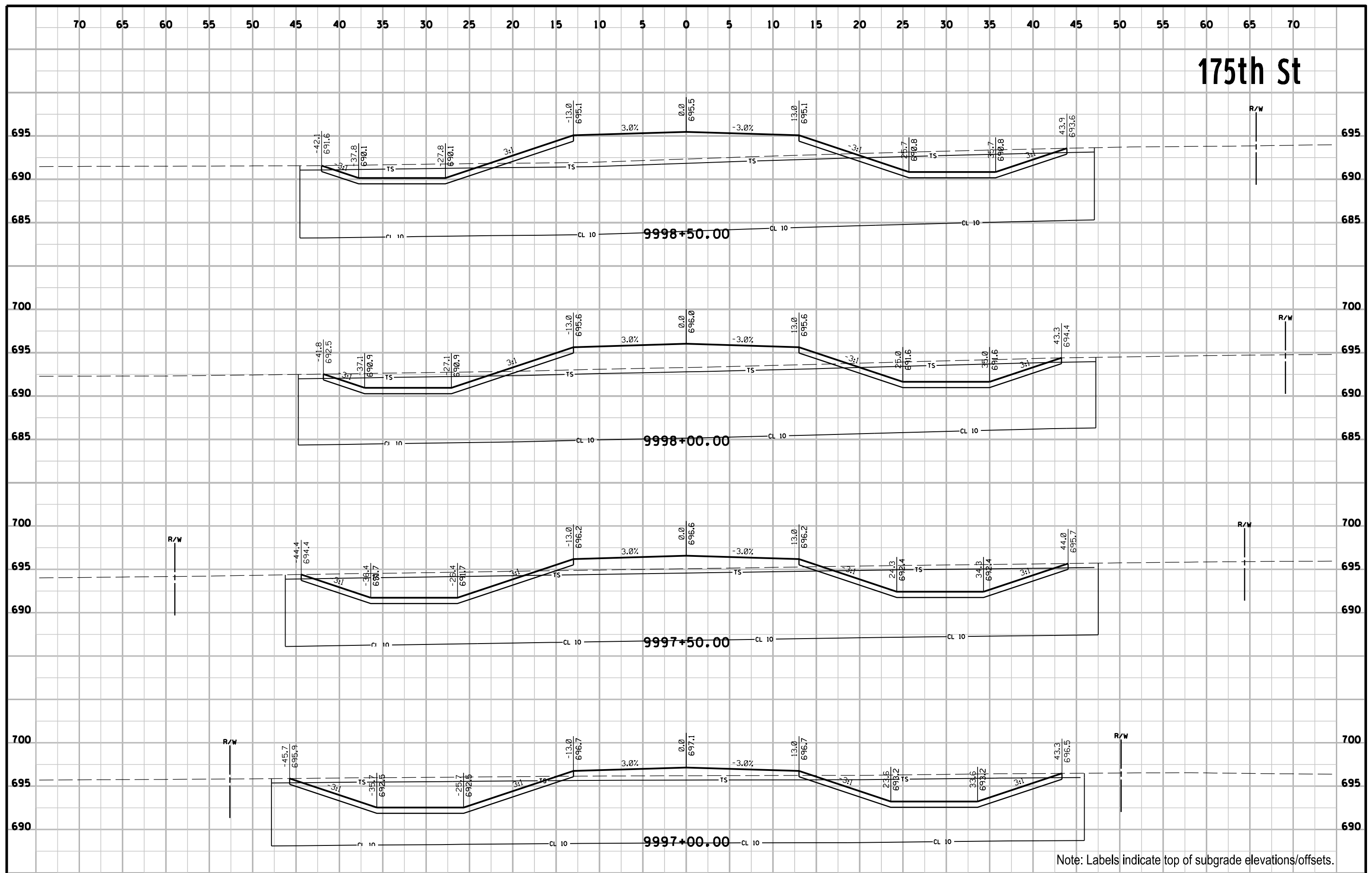
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



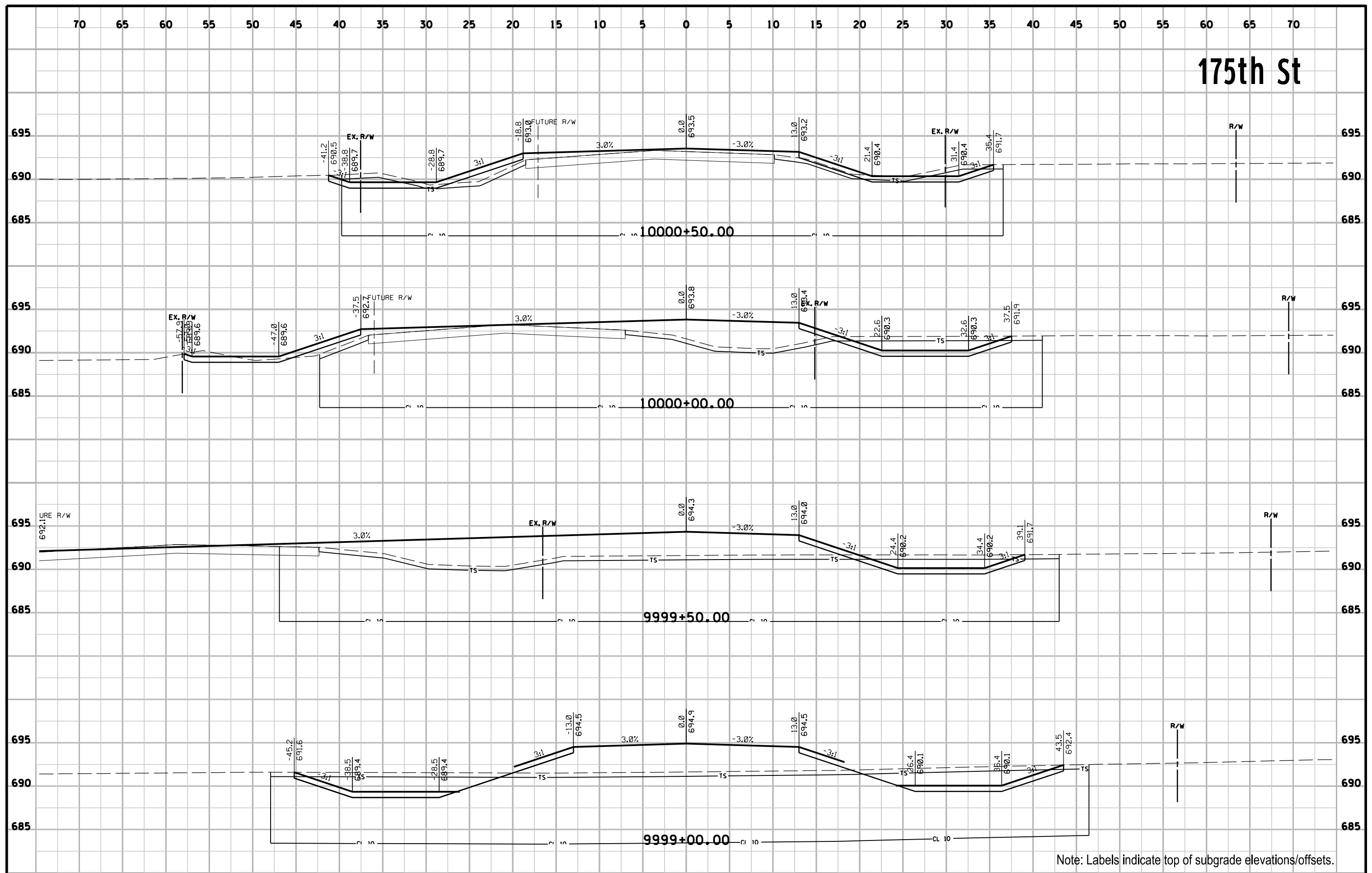
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



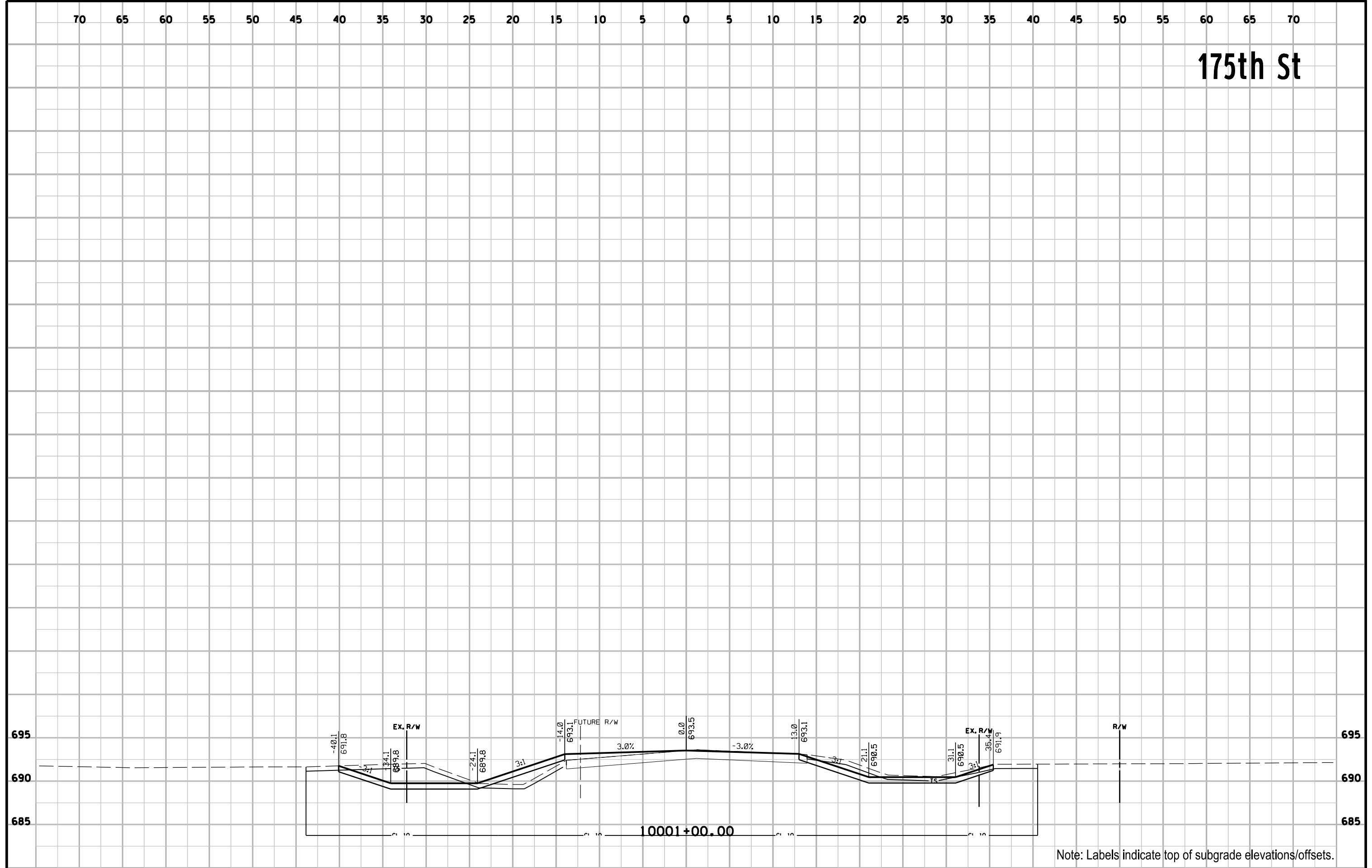
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



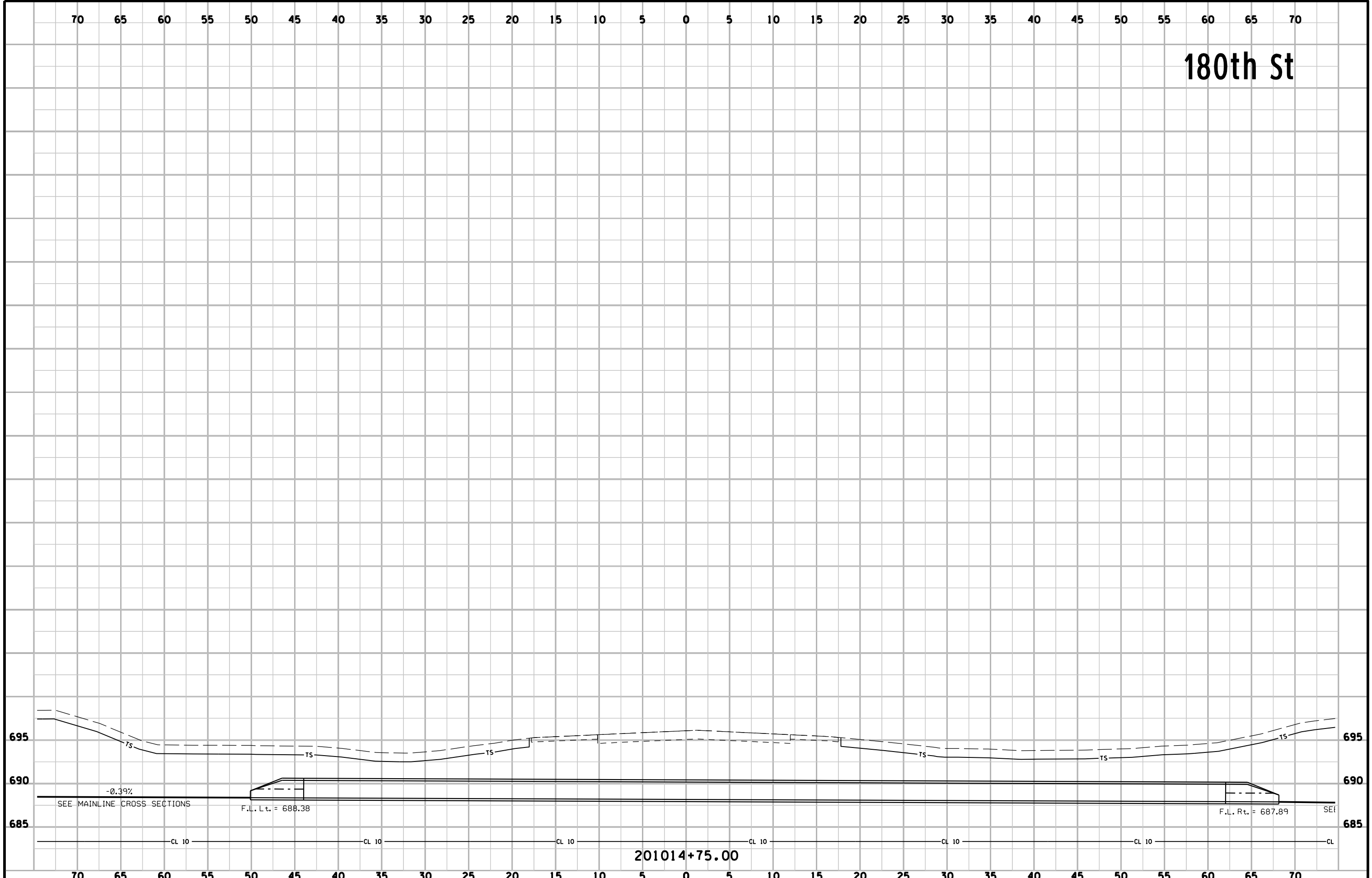
Note: Labels indicate top of subgrade elevations/offsets.

# 175th St



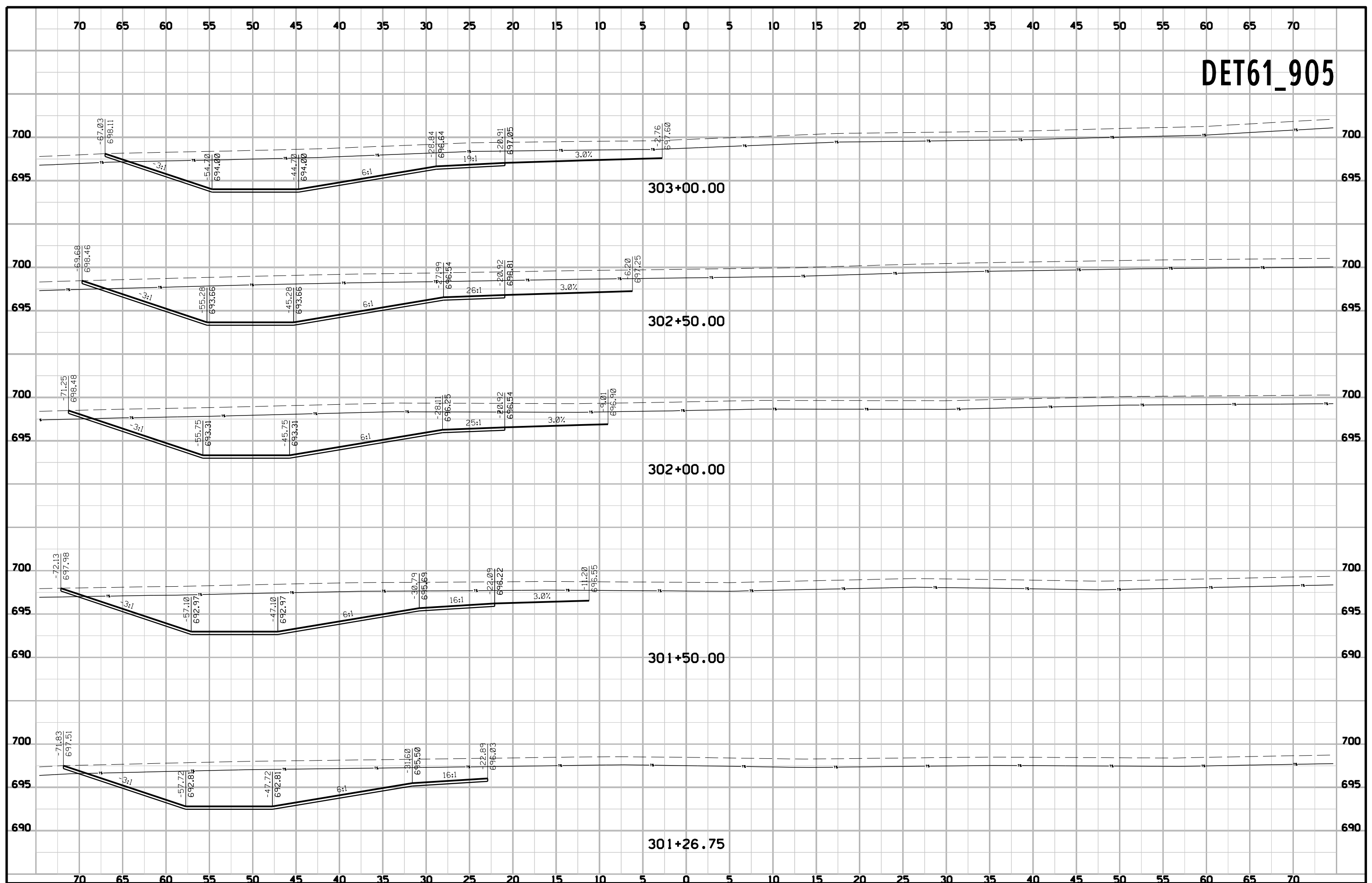
Note: Labels indicate top of subgrade elevations/offsets.

# 180th St

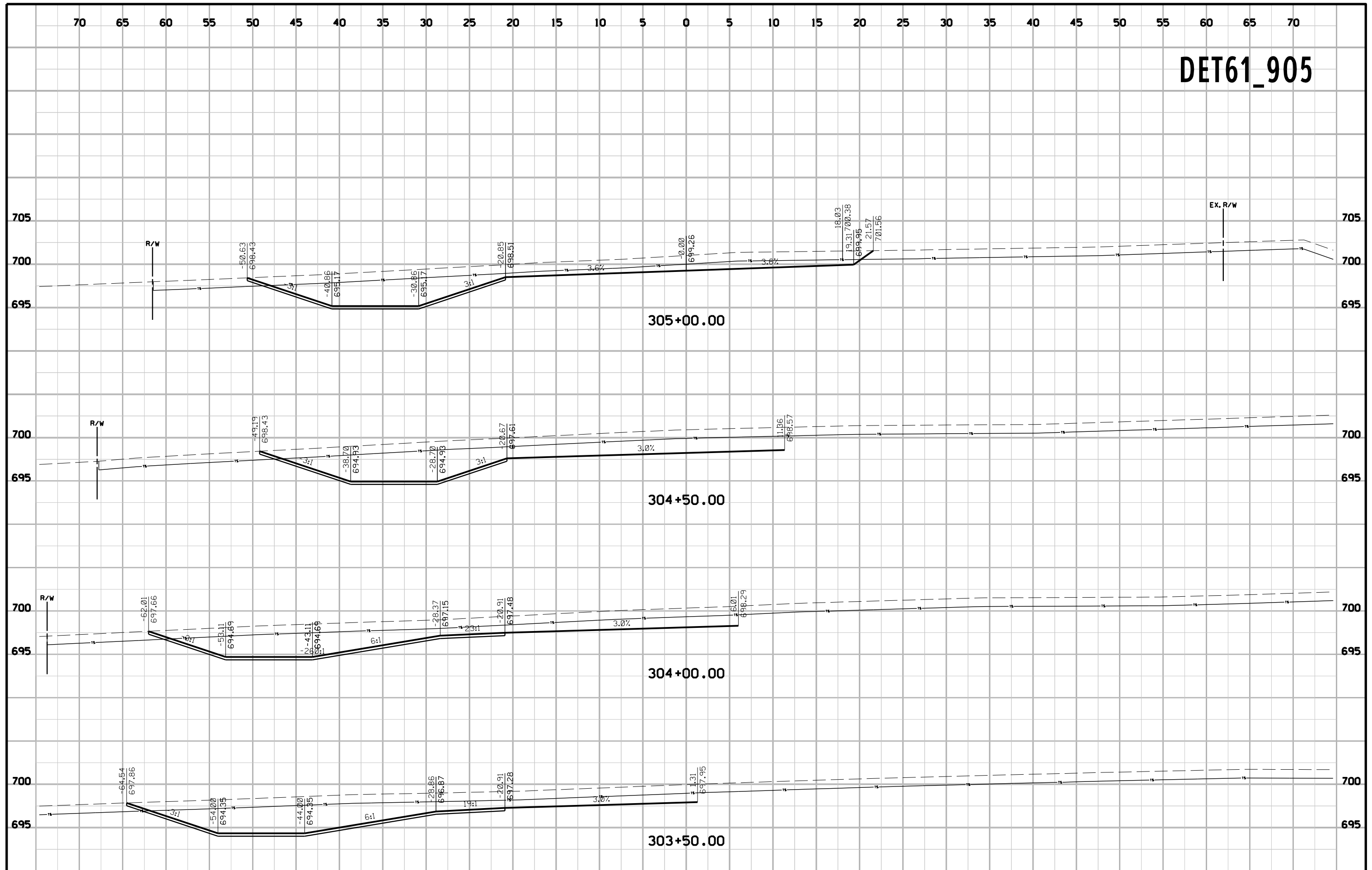




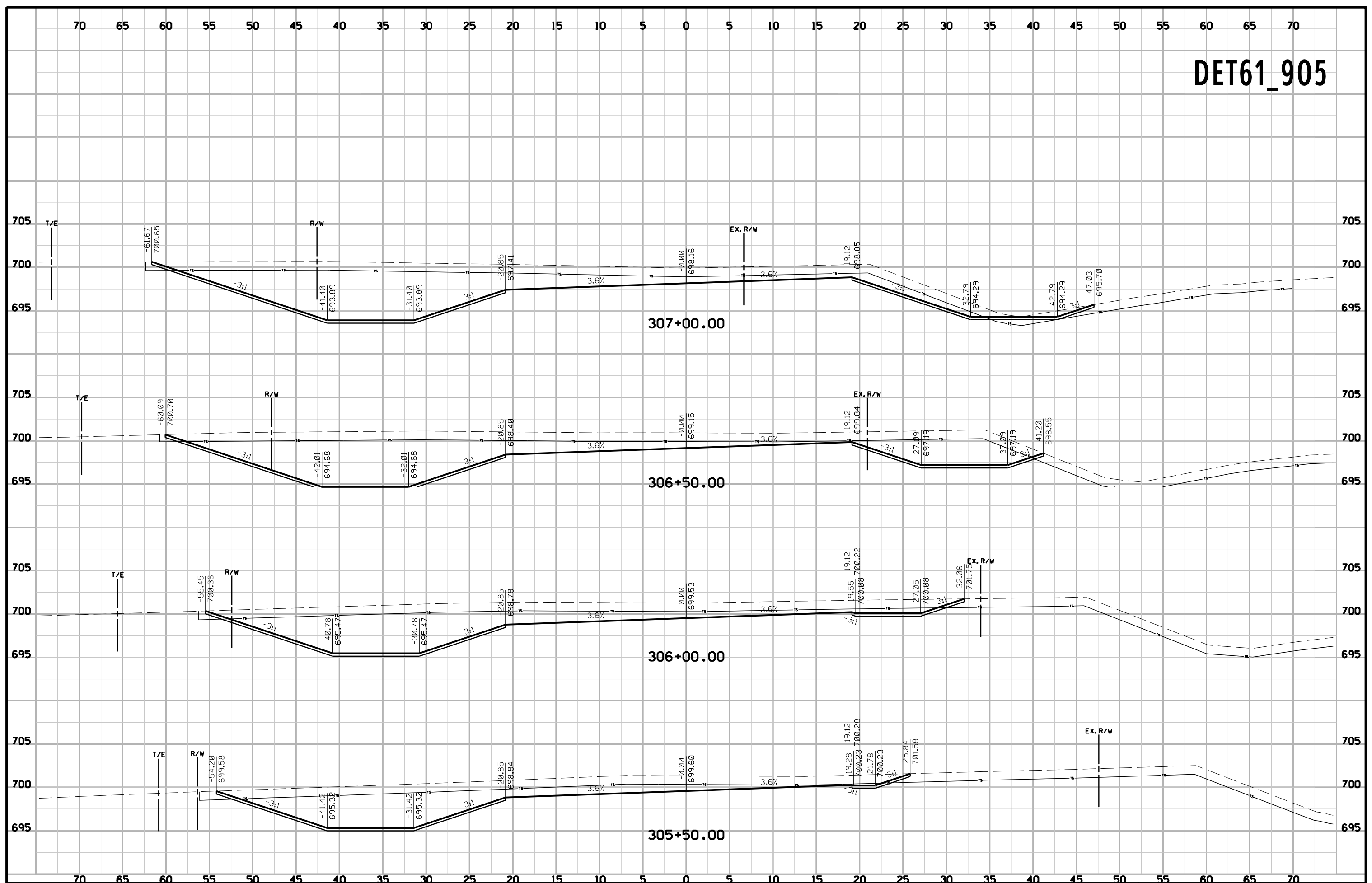
# DET61\_905



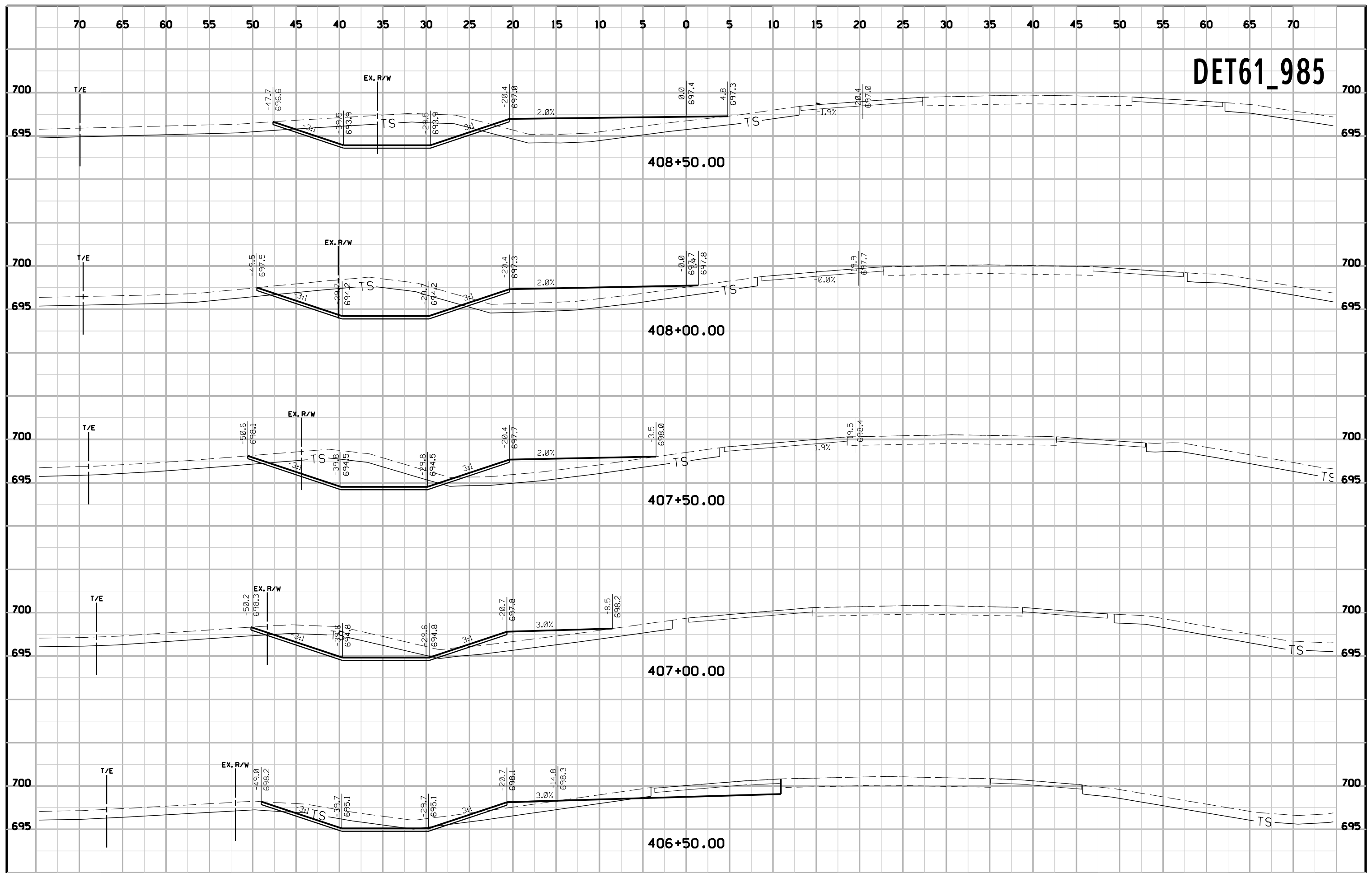
# DET61\_905



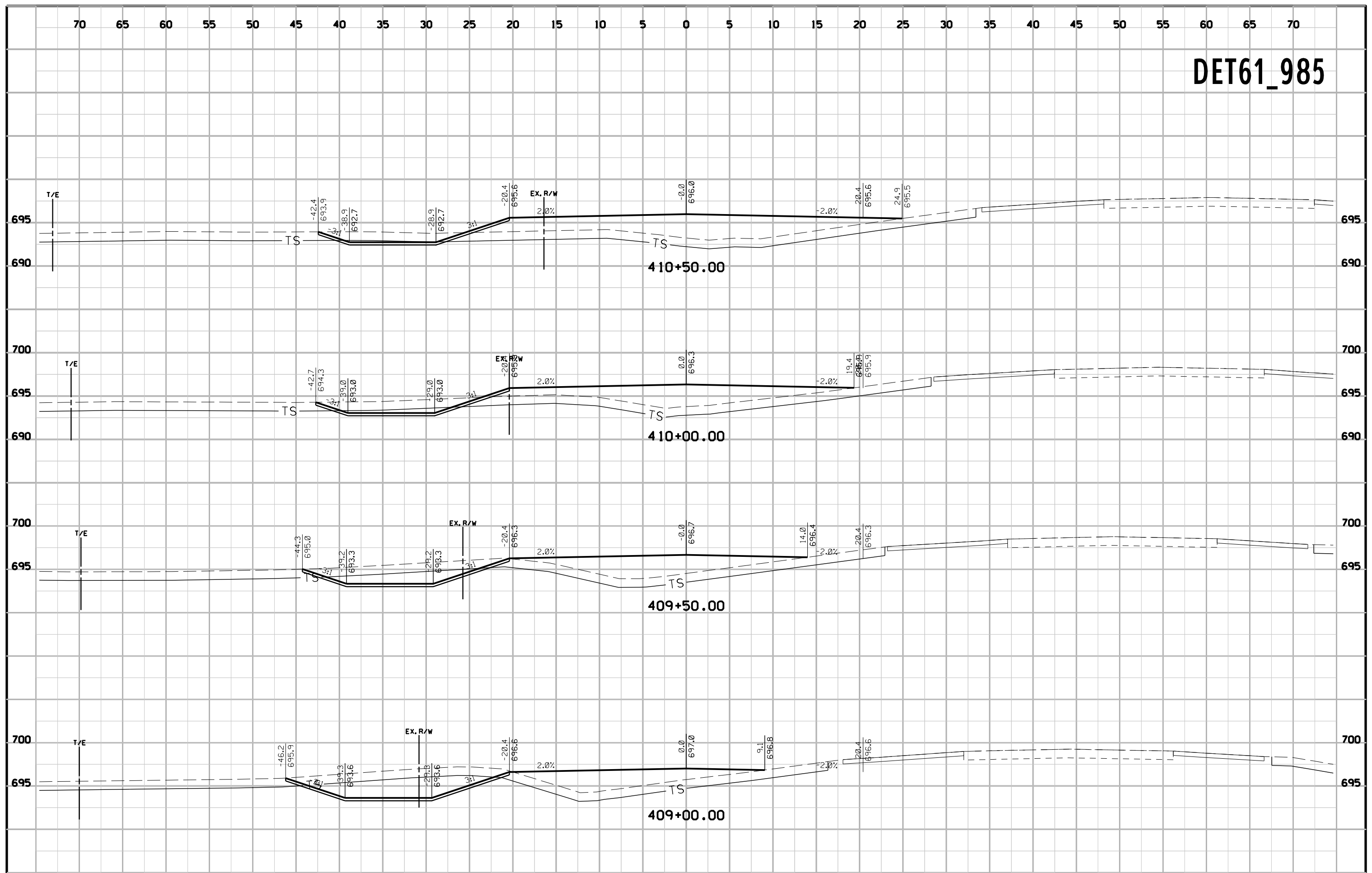
# DET61\_905



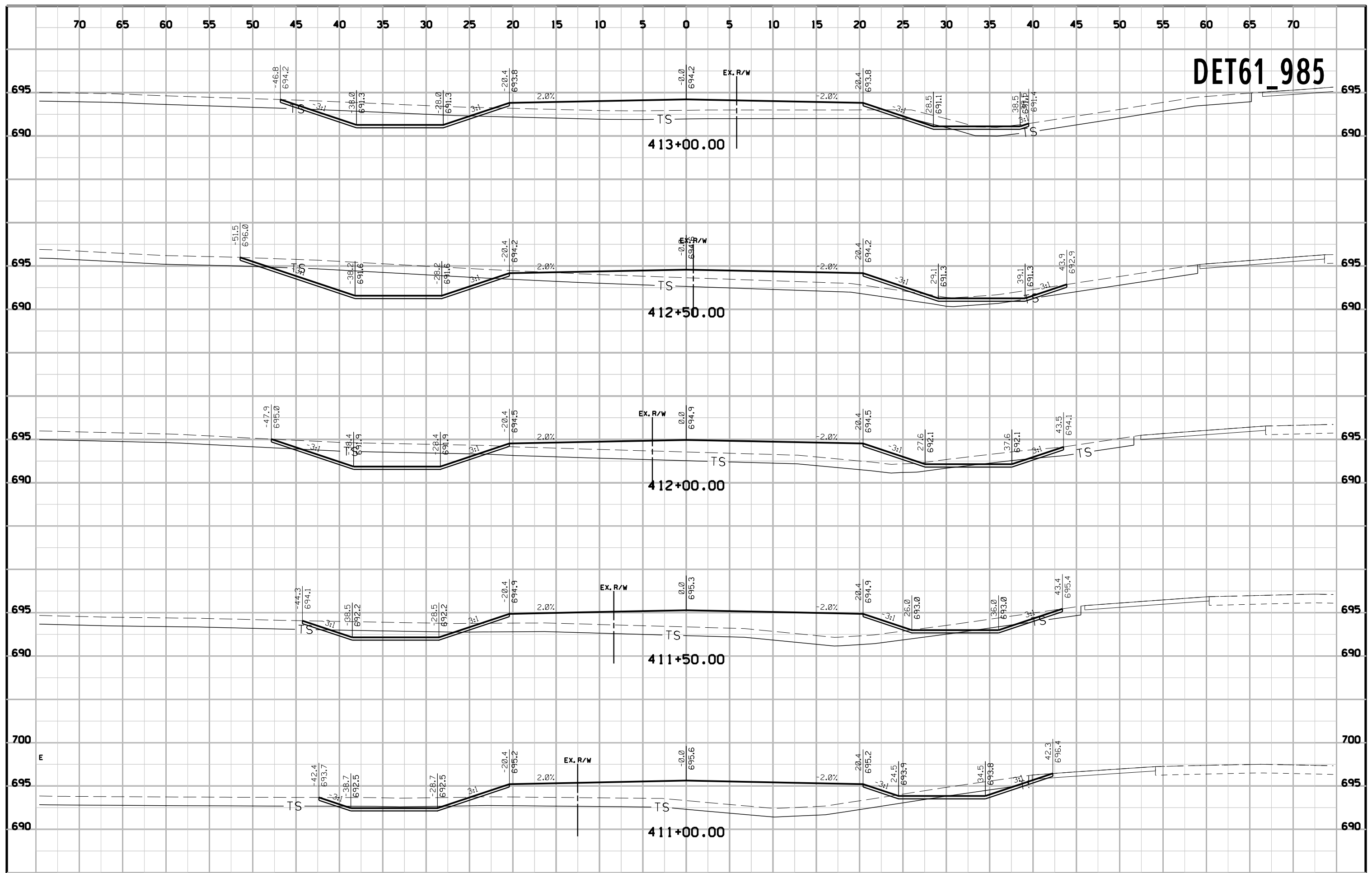
# DET61\_985



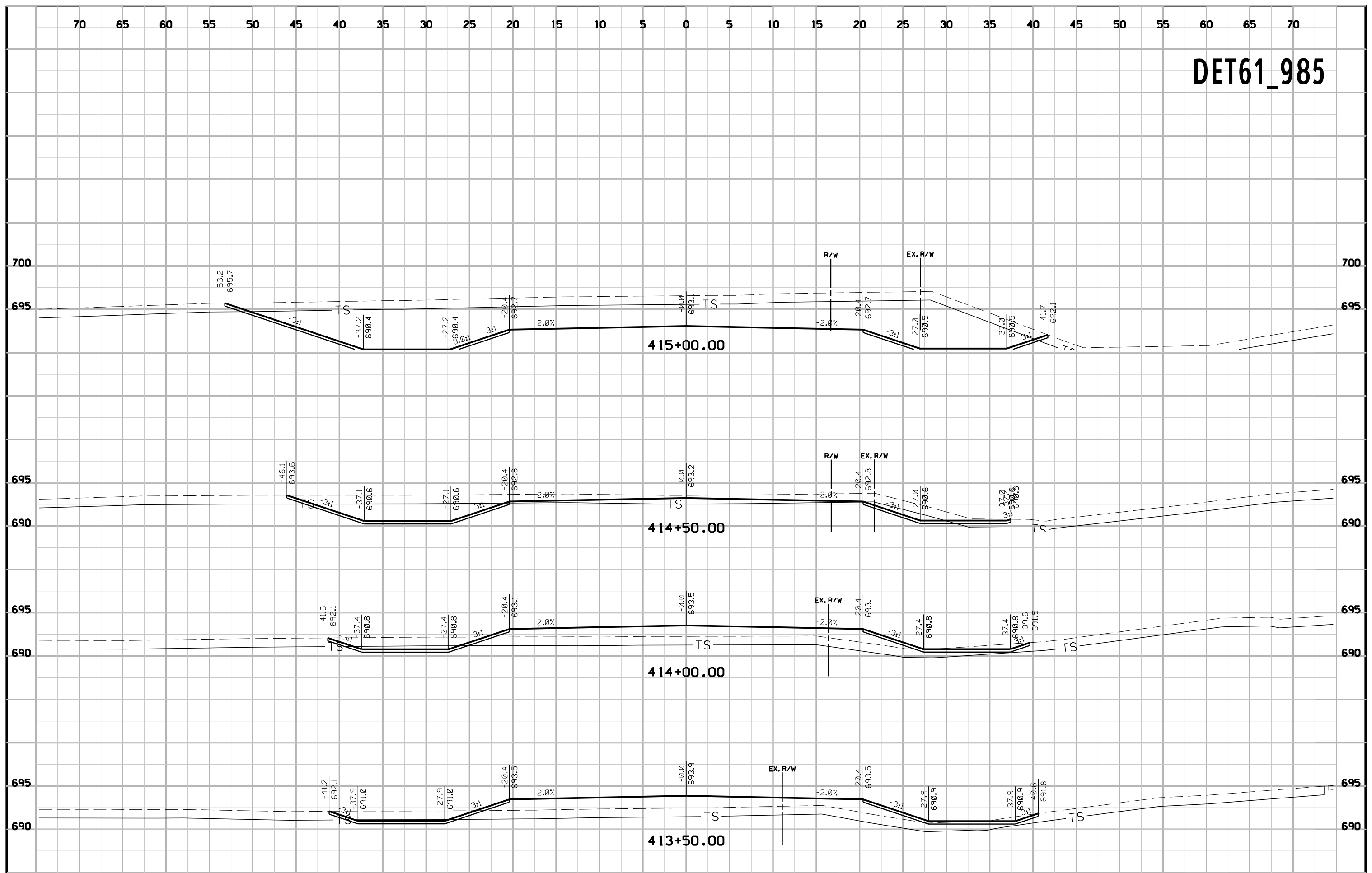
# DET61\_985

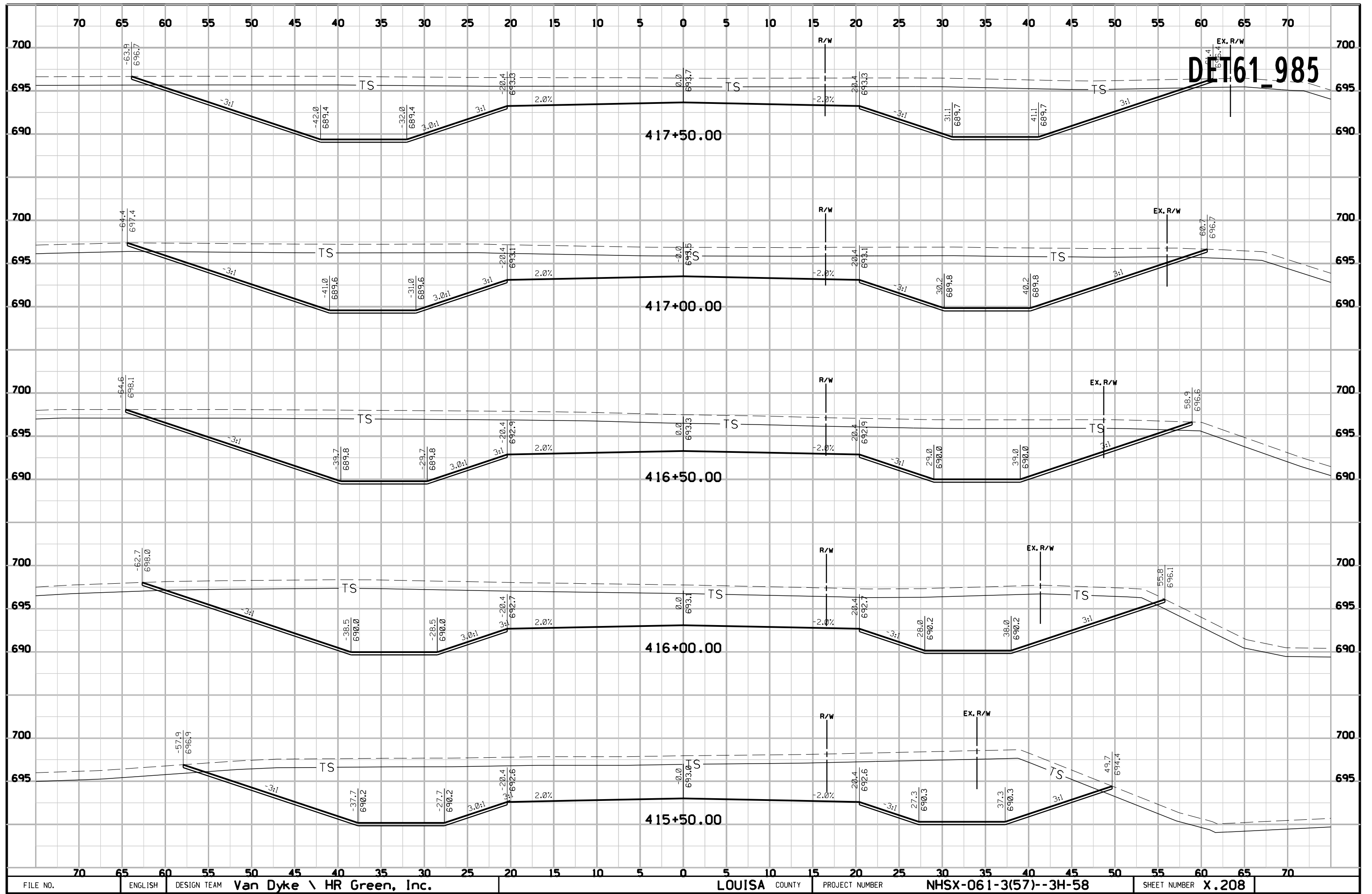


# DET61\_985



# DET61\_985

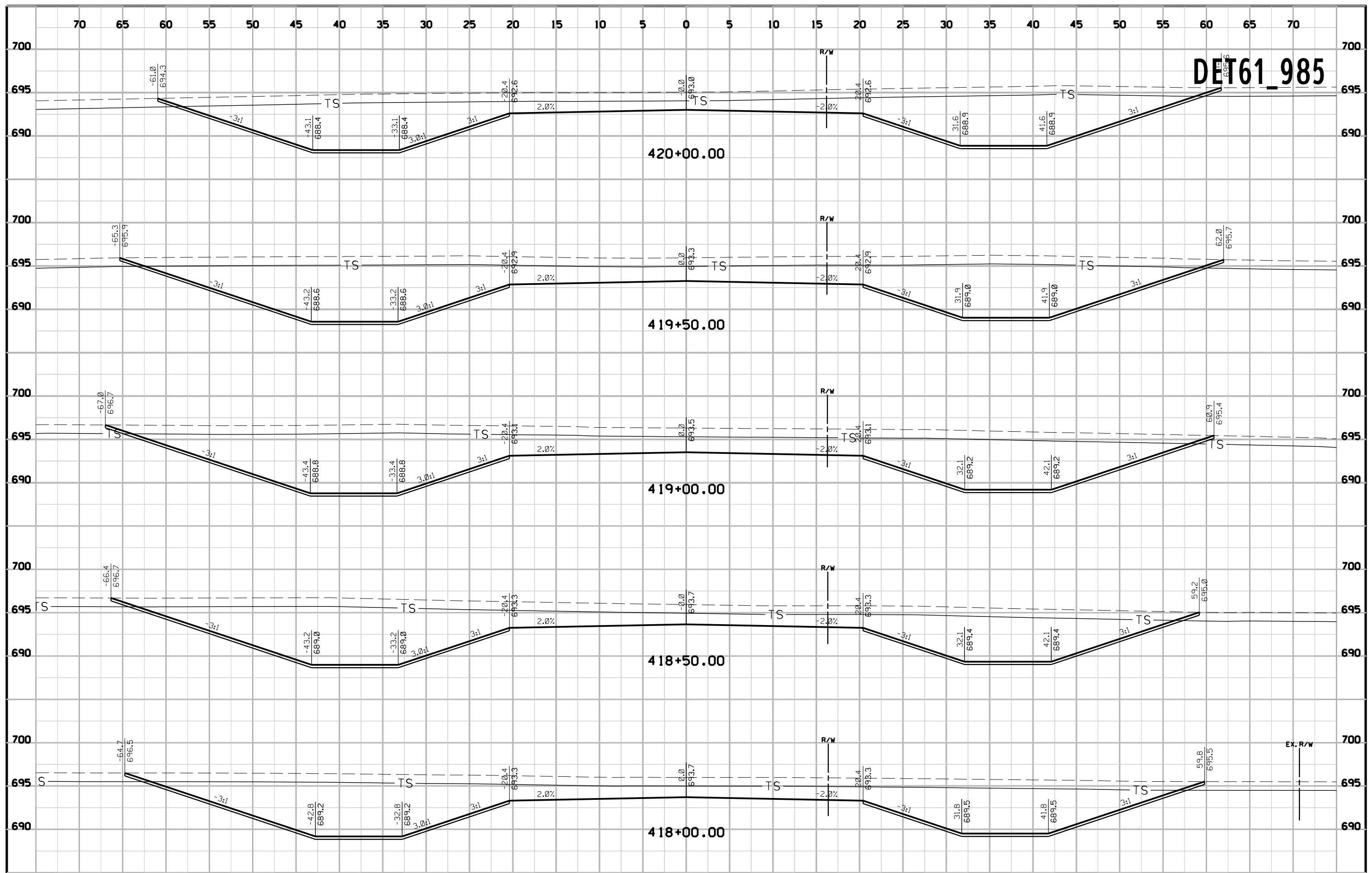




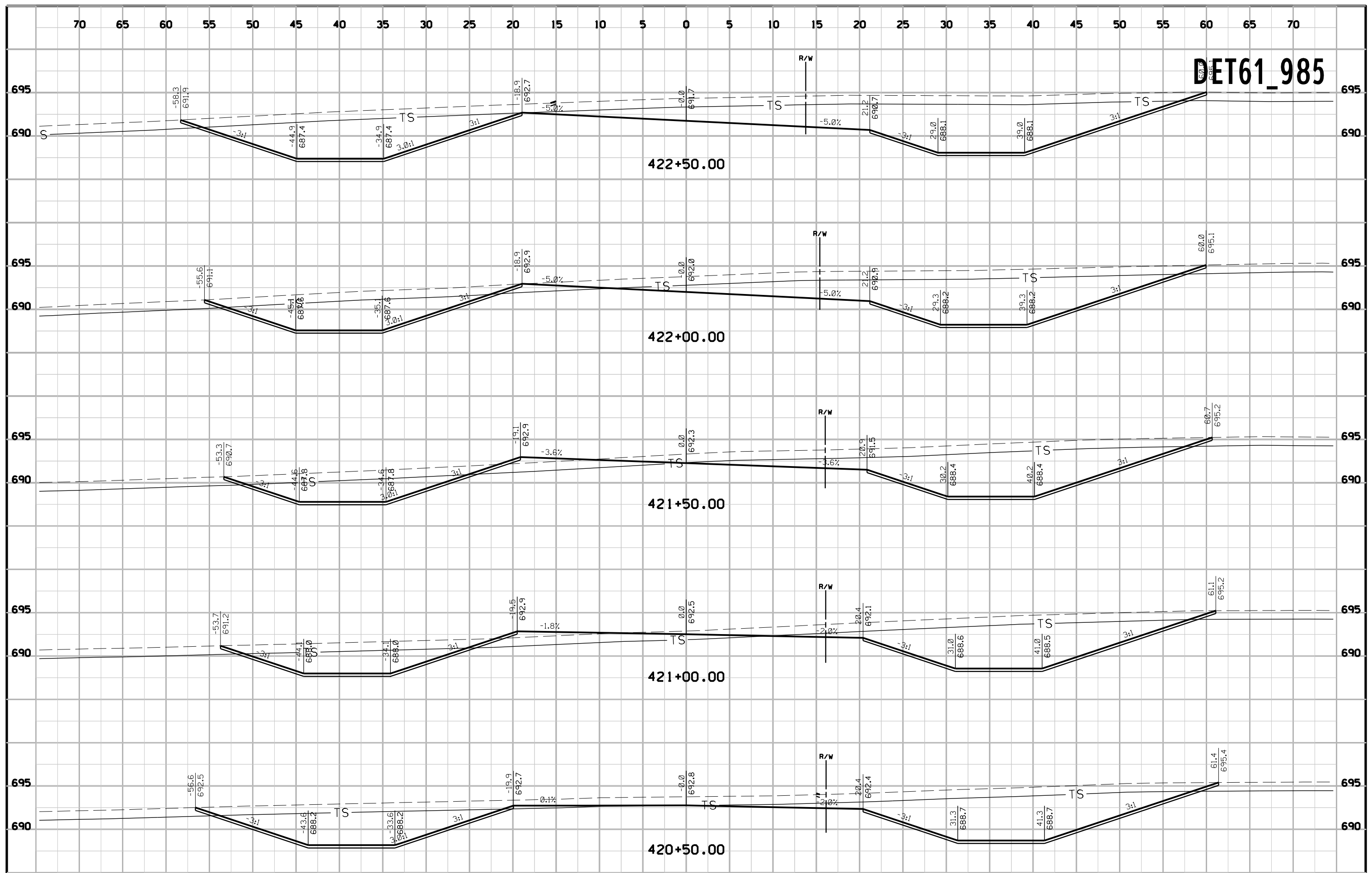
DET61\_985



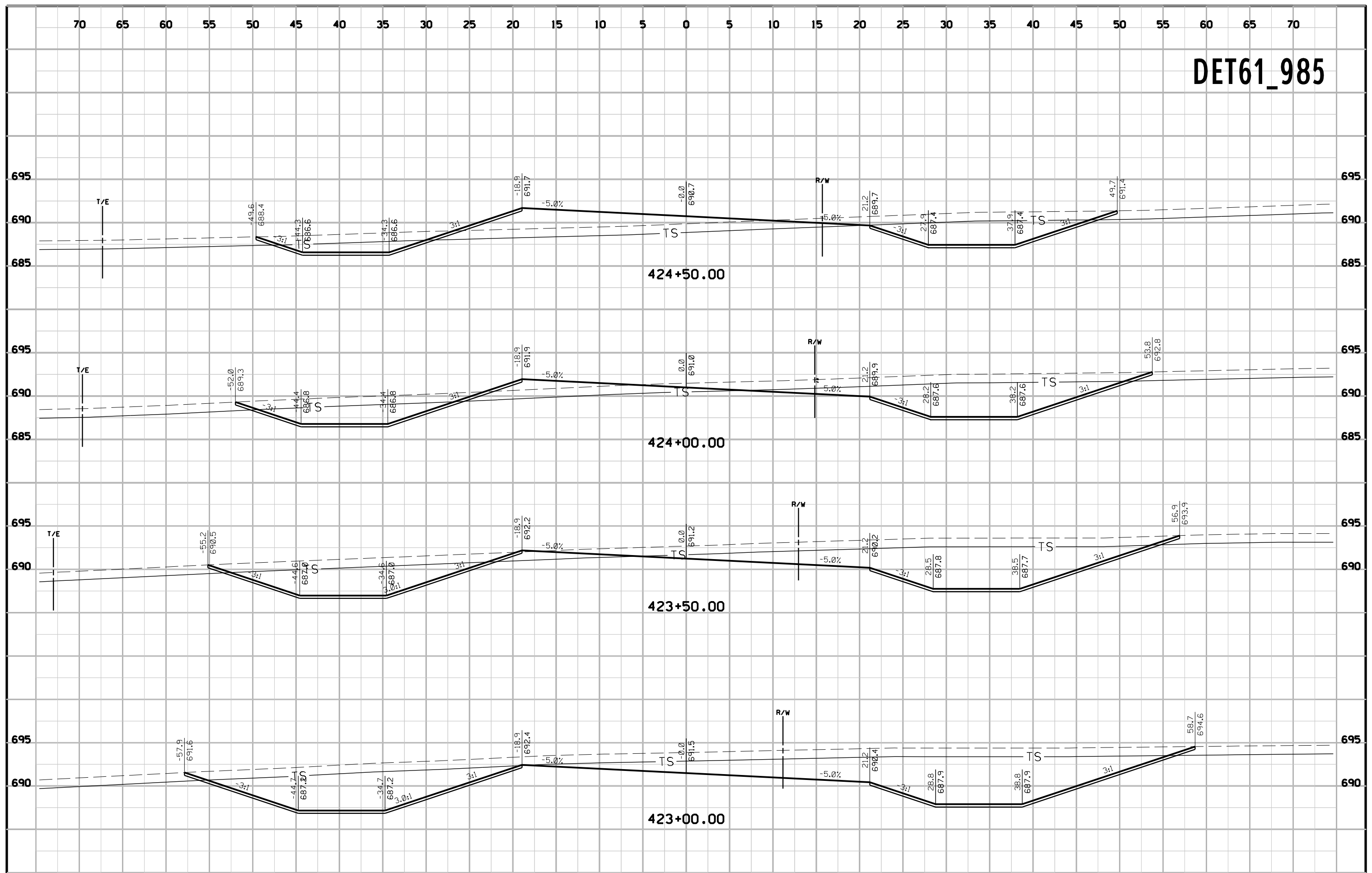
DET61\_985



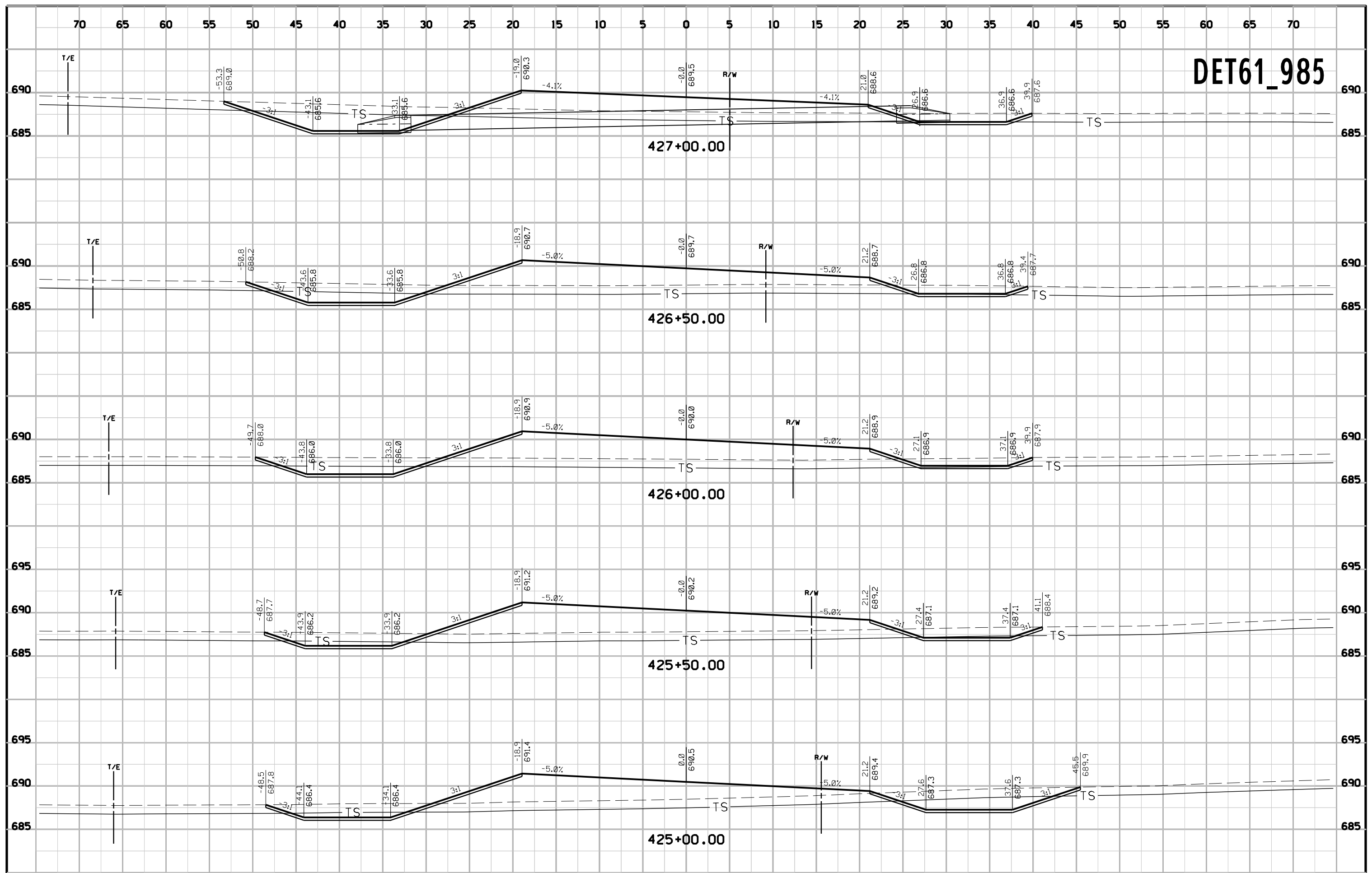
# DET61\_985



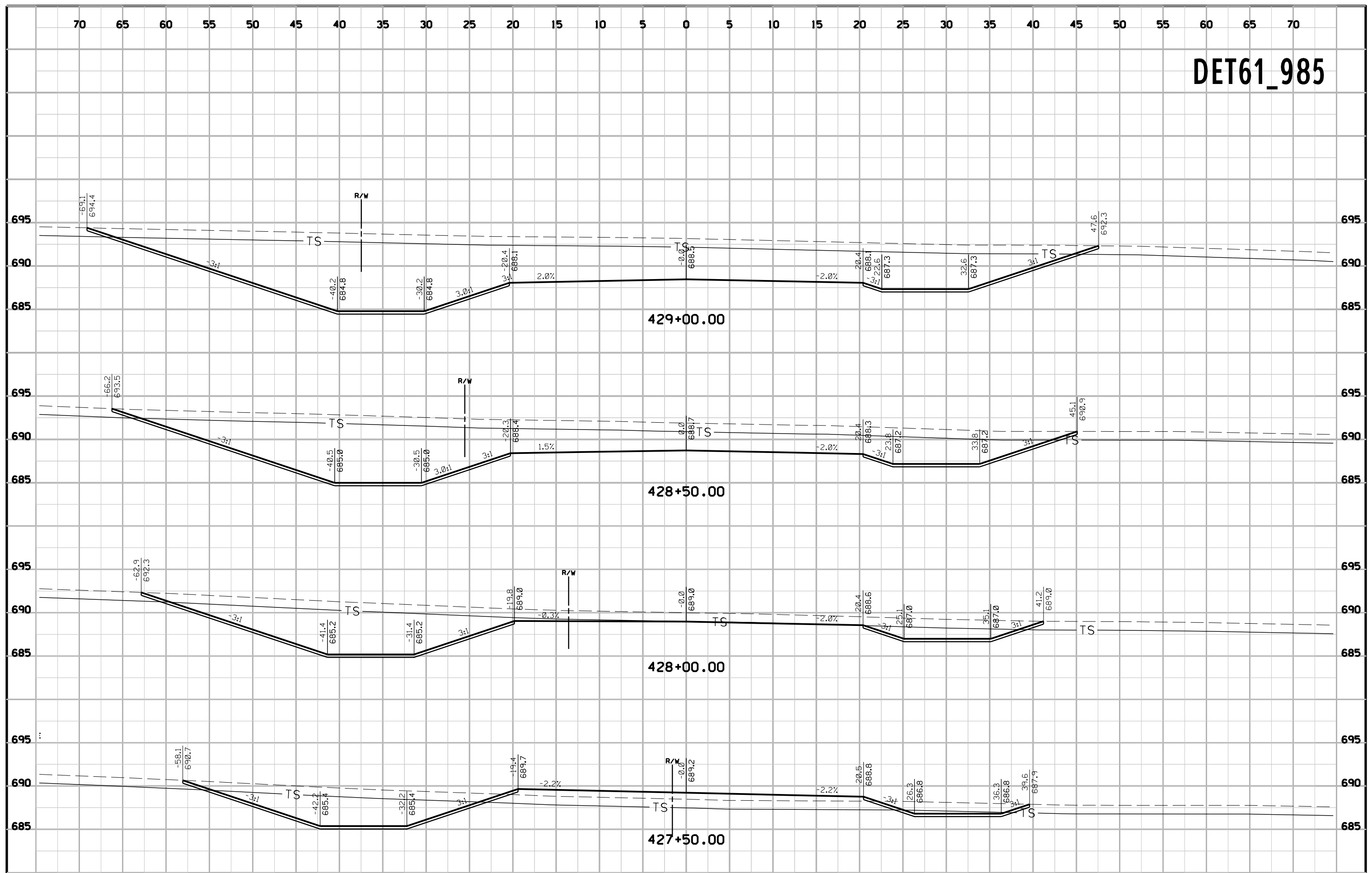
# DET61\_985



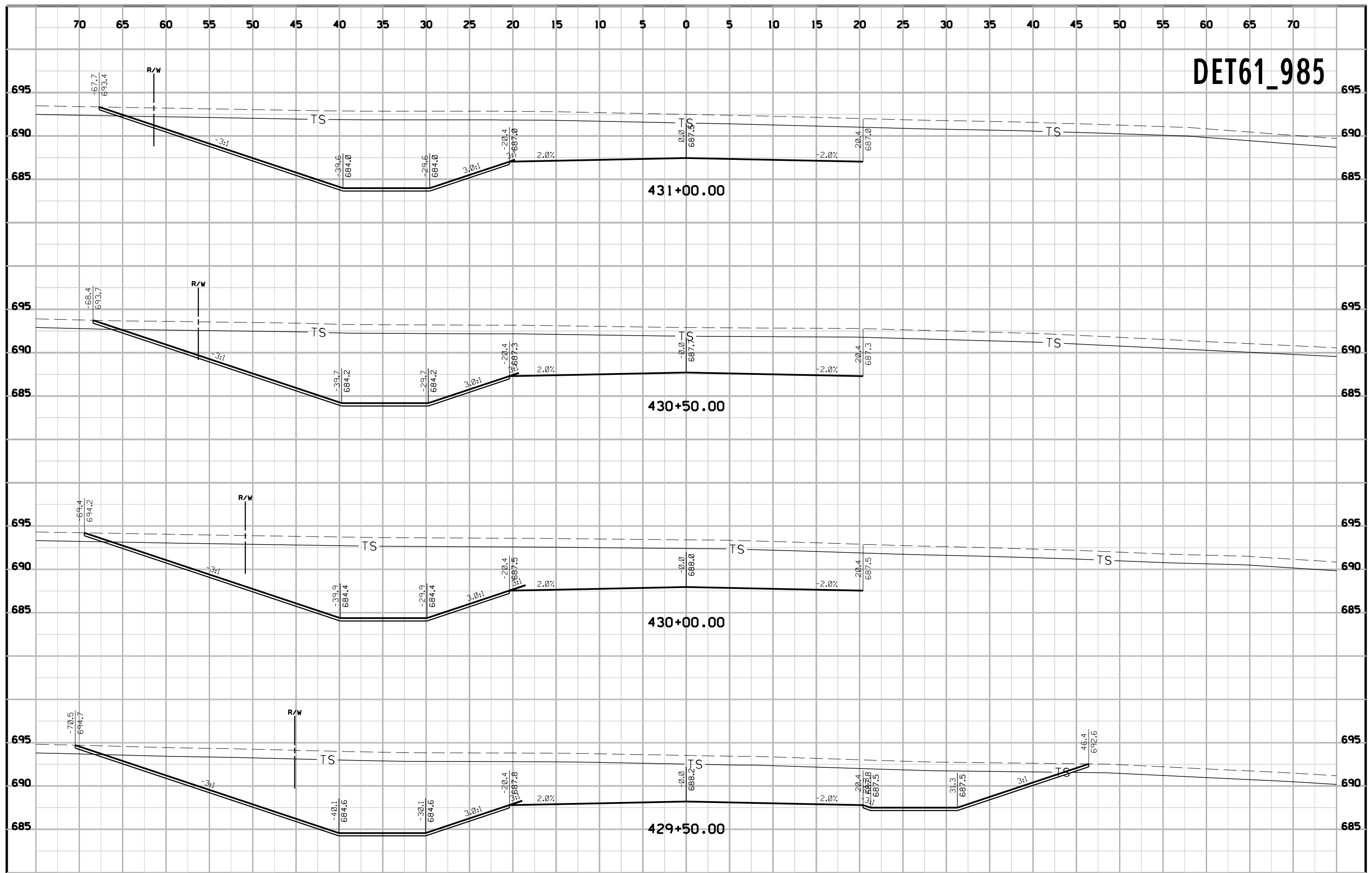
# DET61\_985



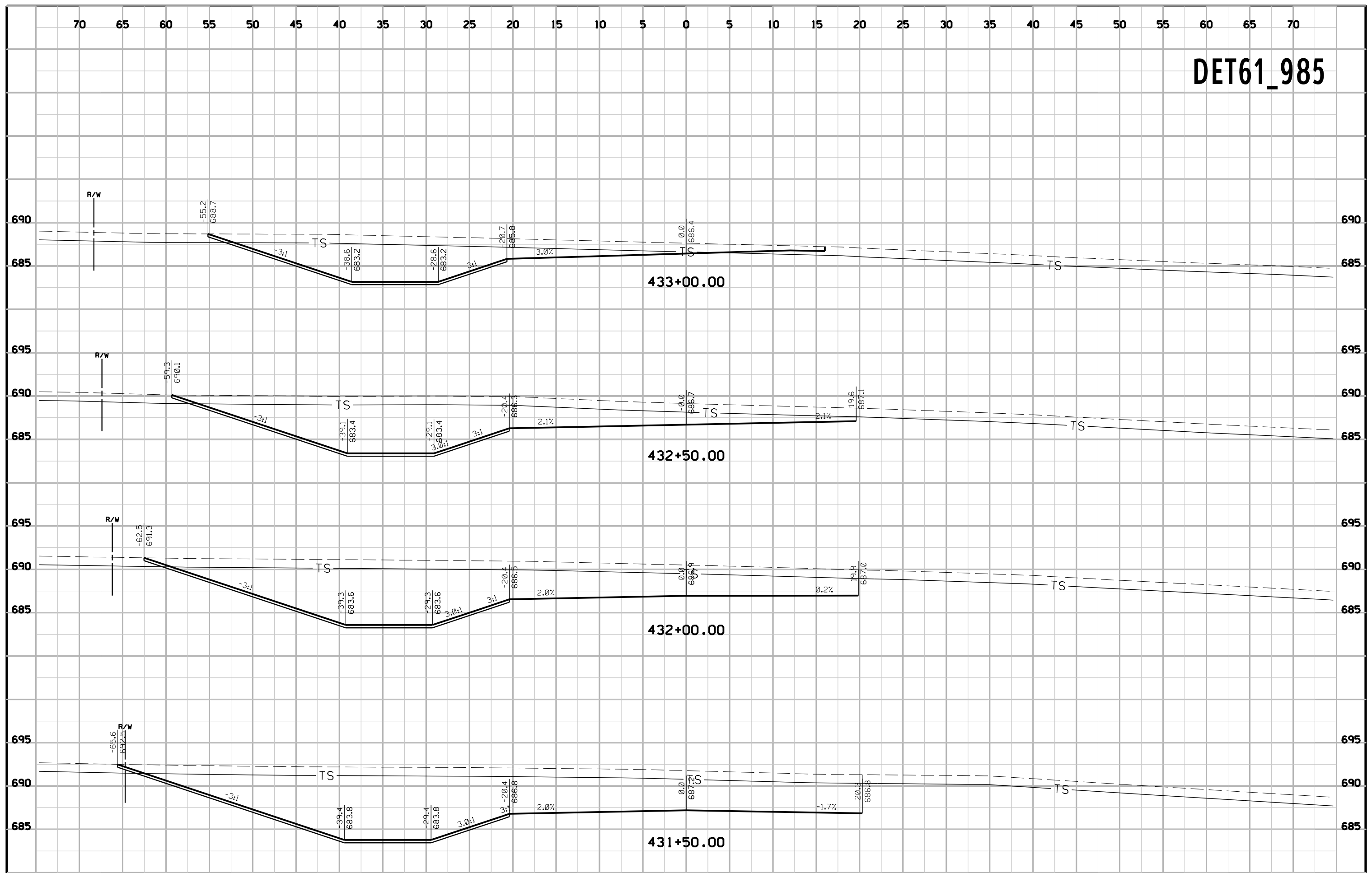
# DET61\_985



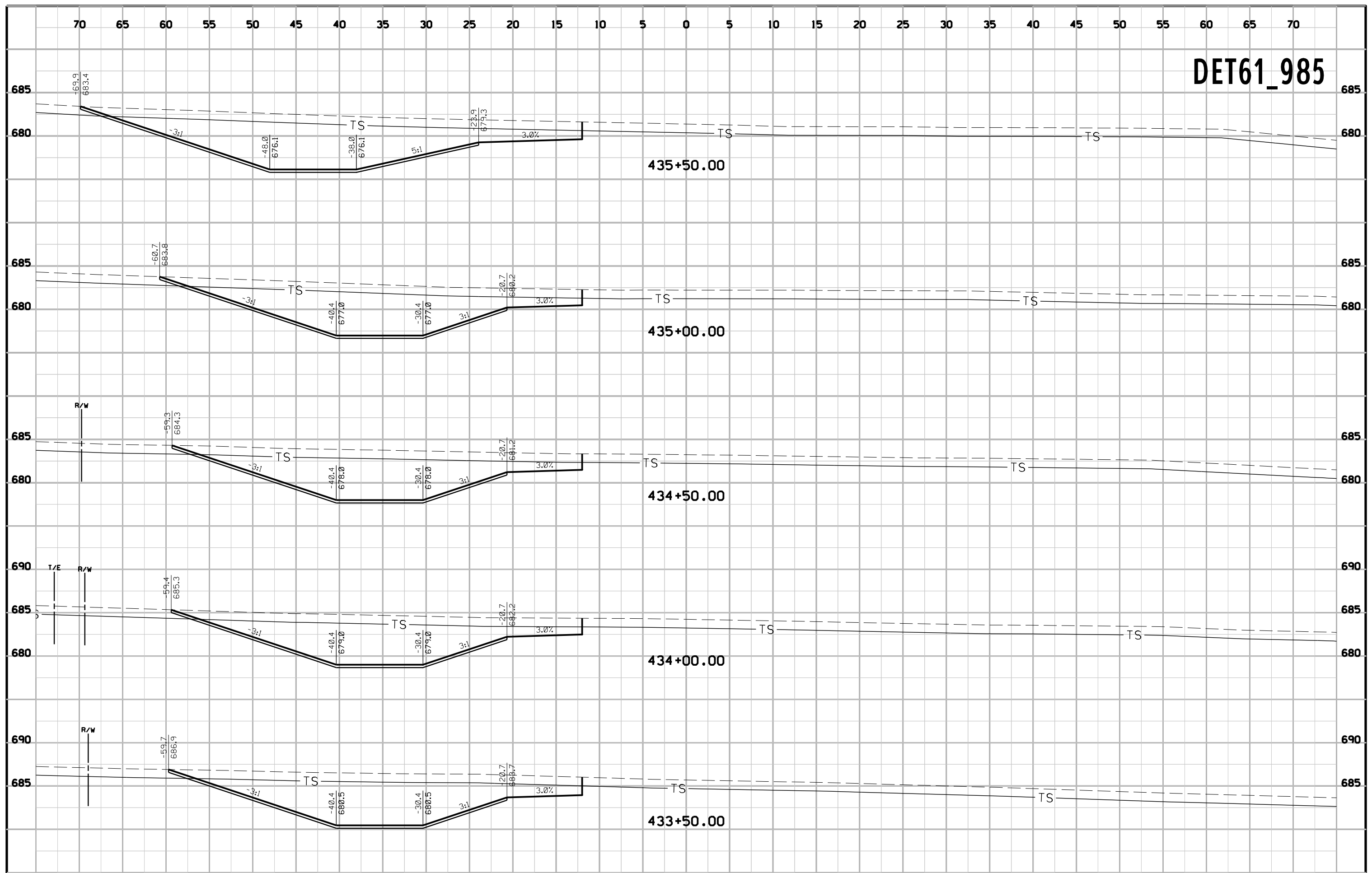
# DET61\_985



# DET61\_985

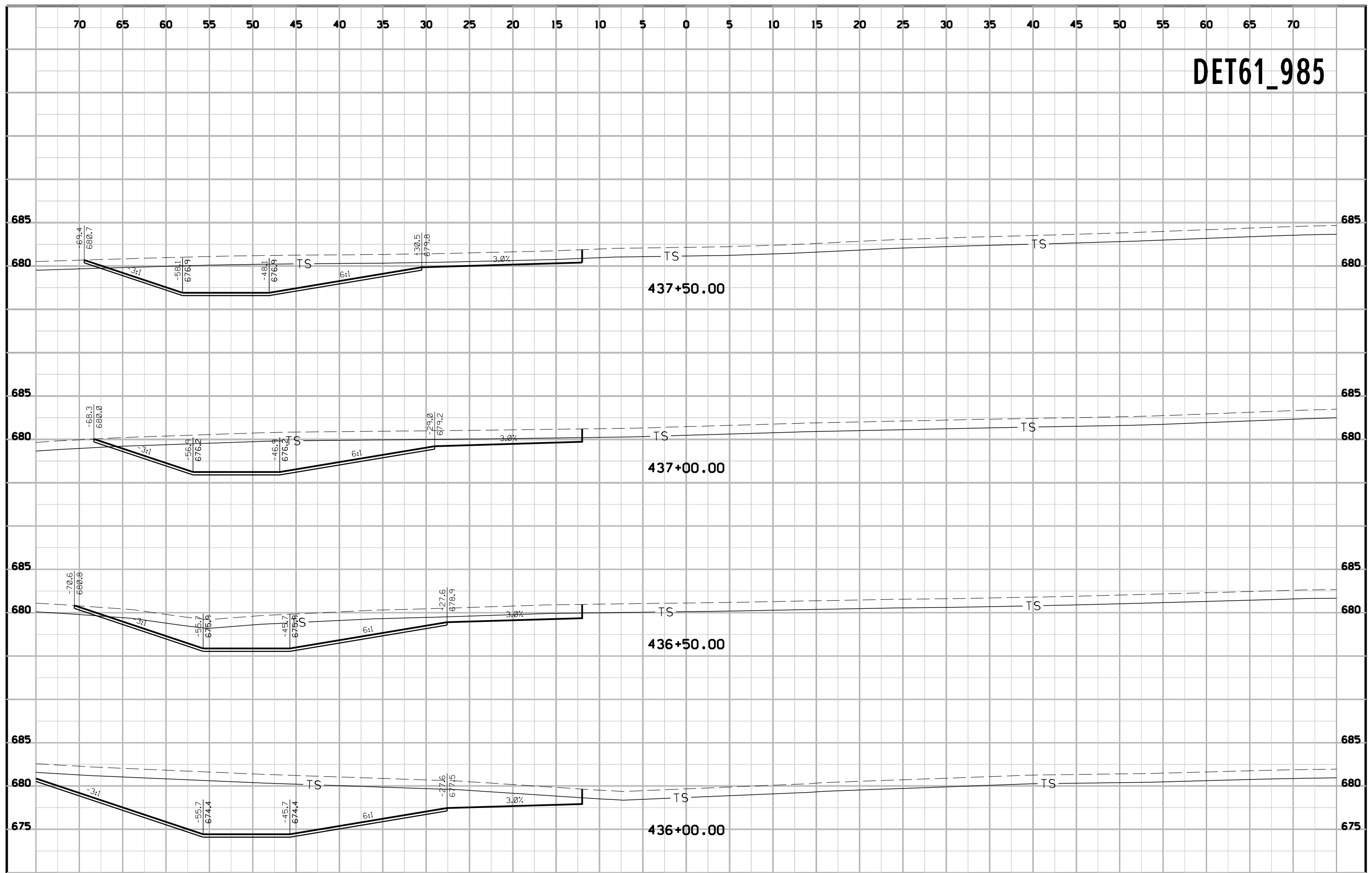


# DET61\_985

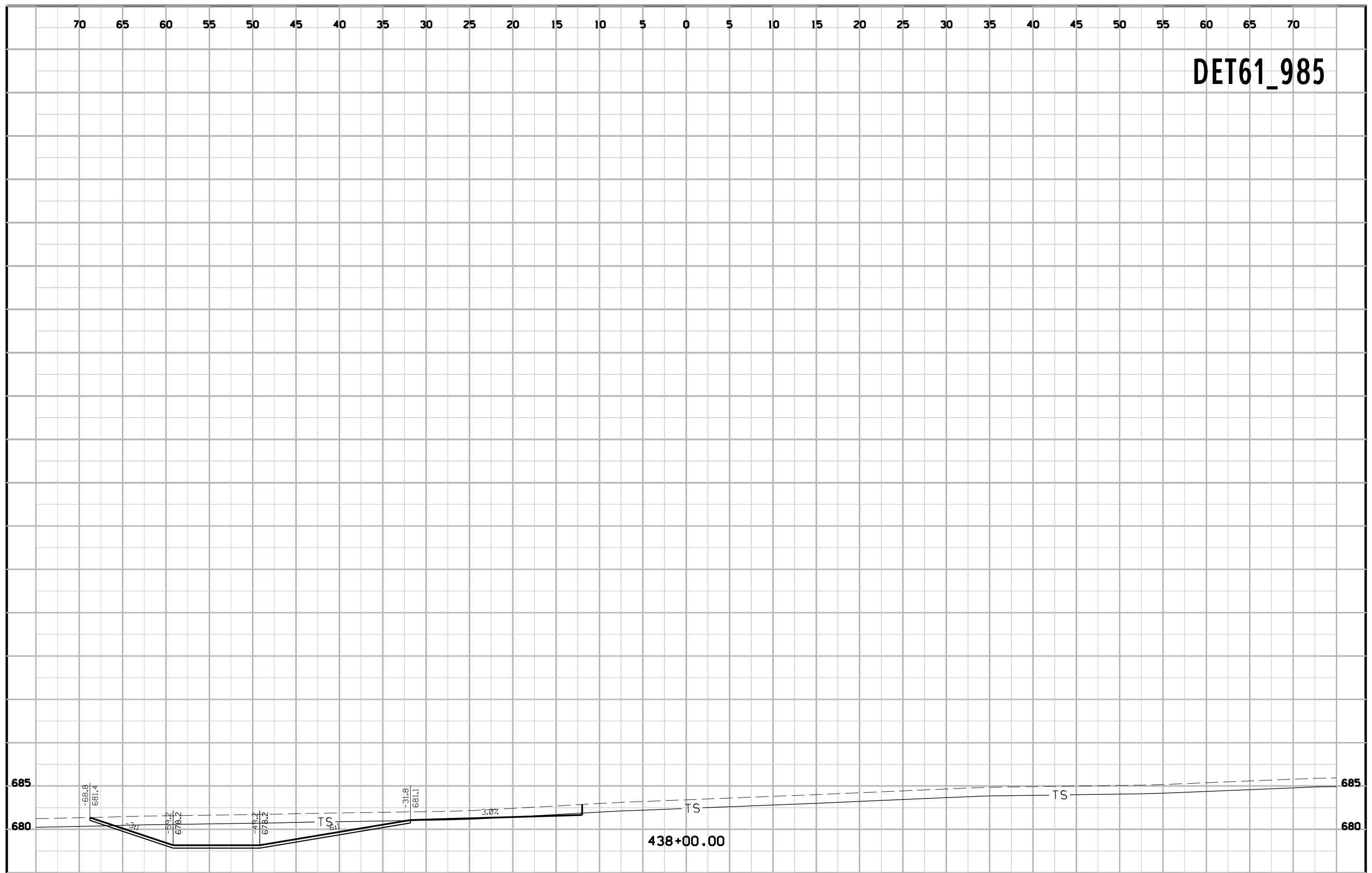




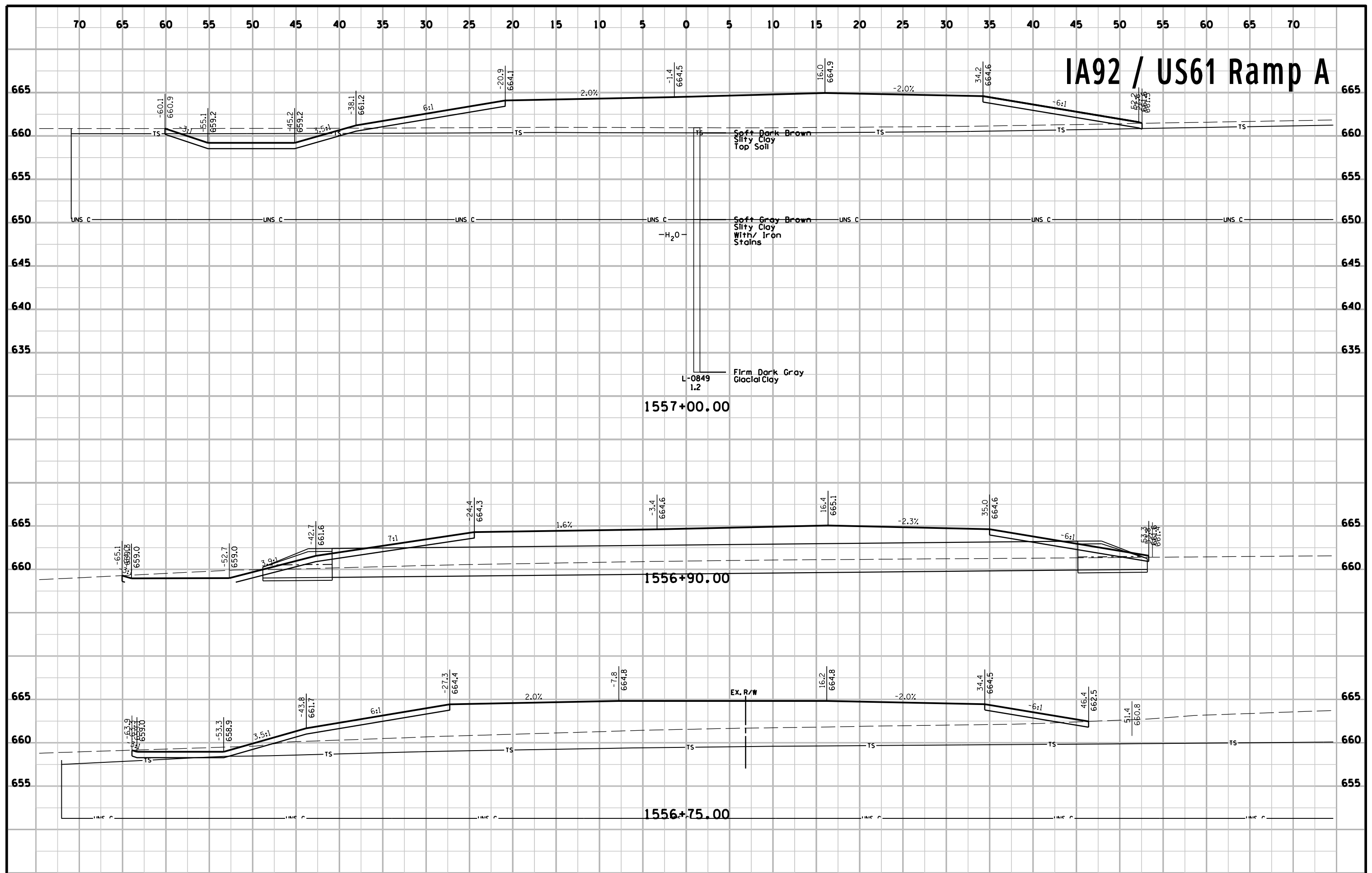
# DET61\_985



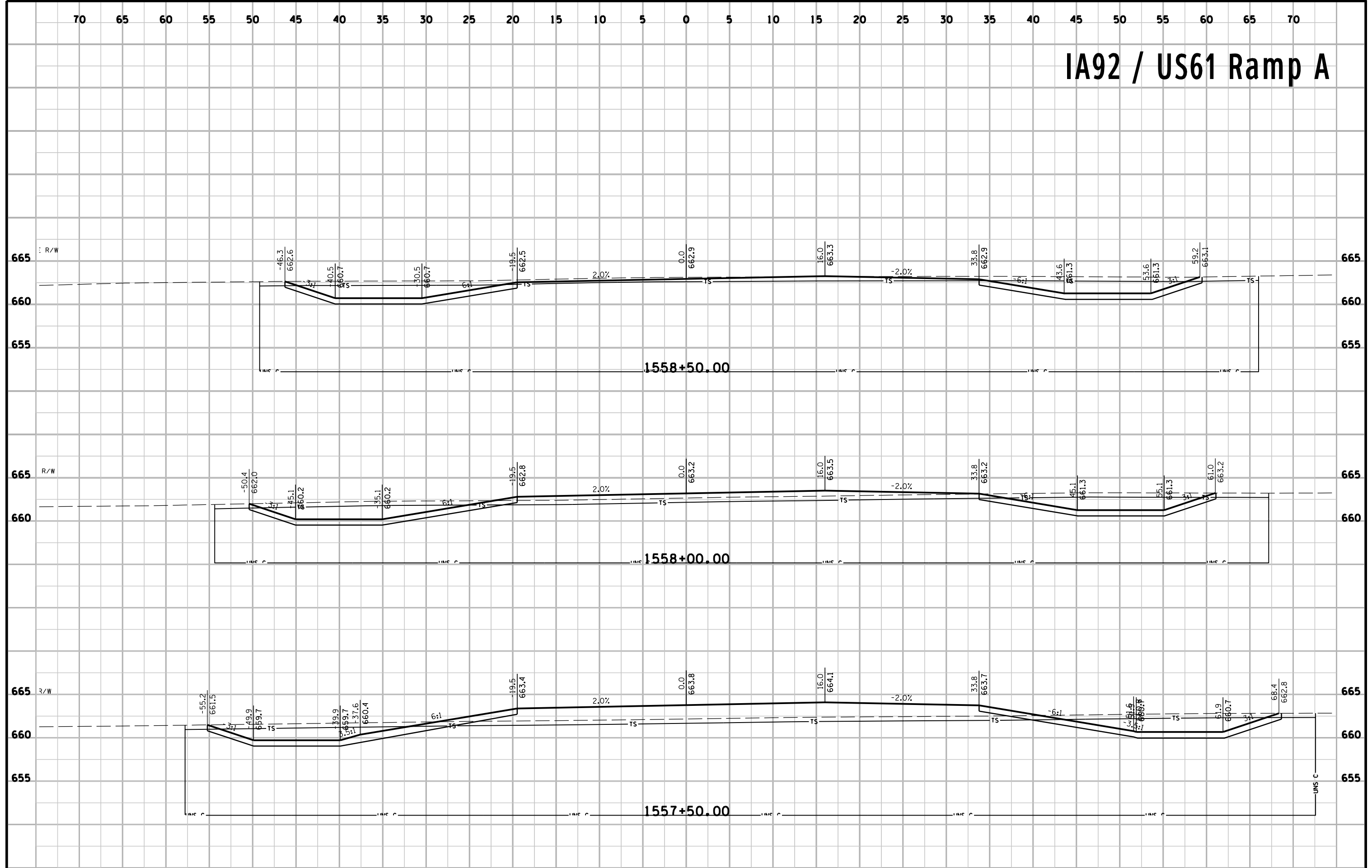
DET61\_985



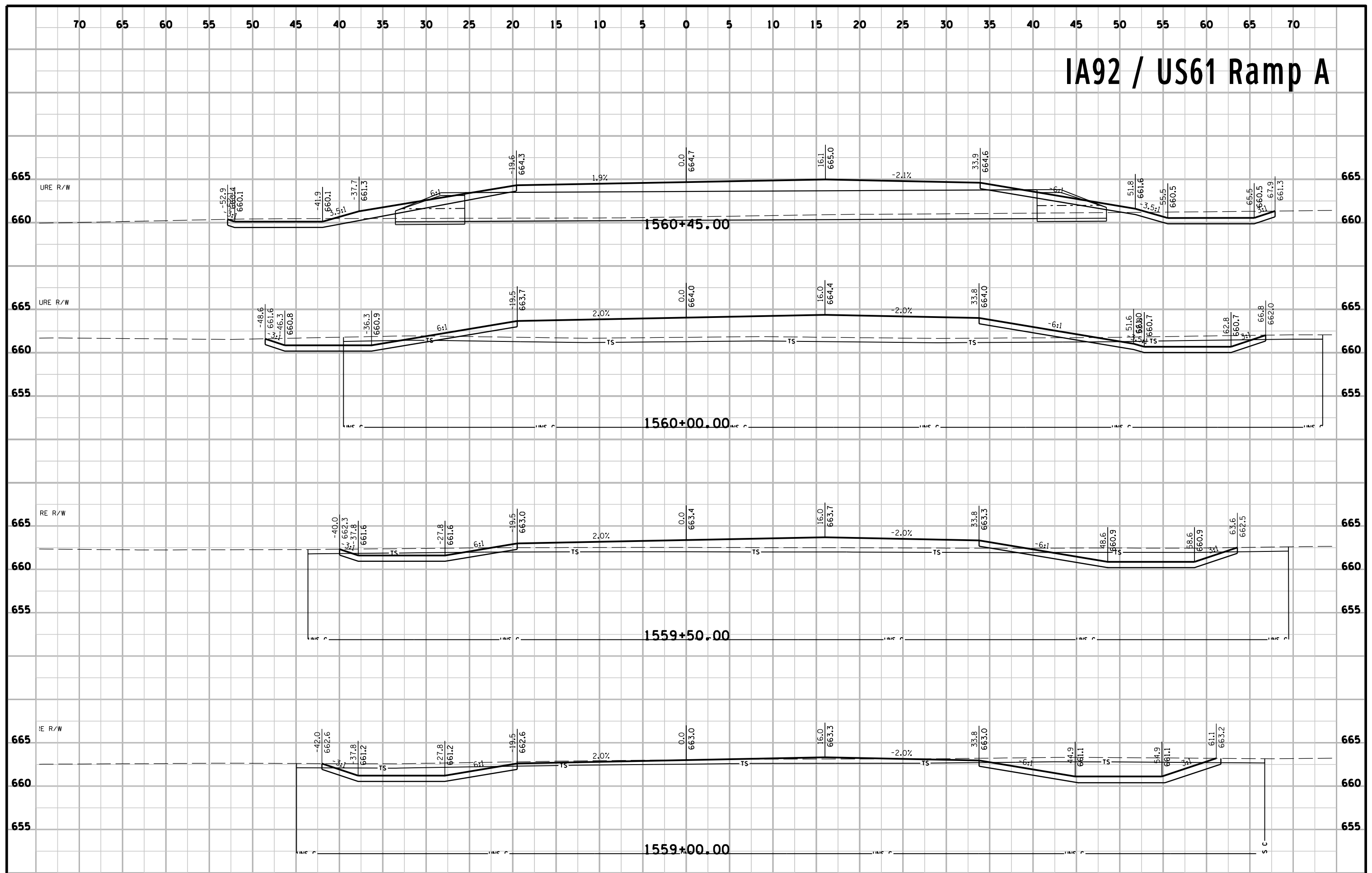
# IA92 / US61 Ramp A



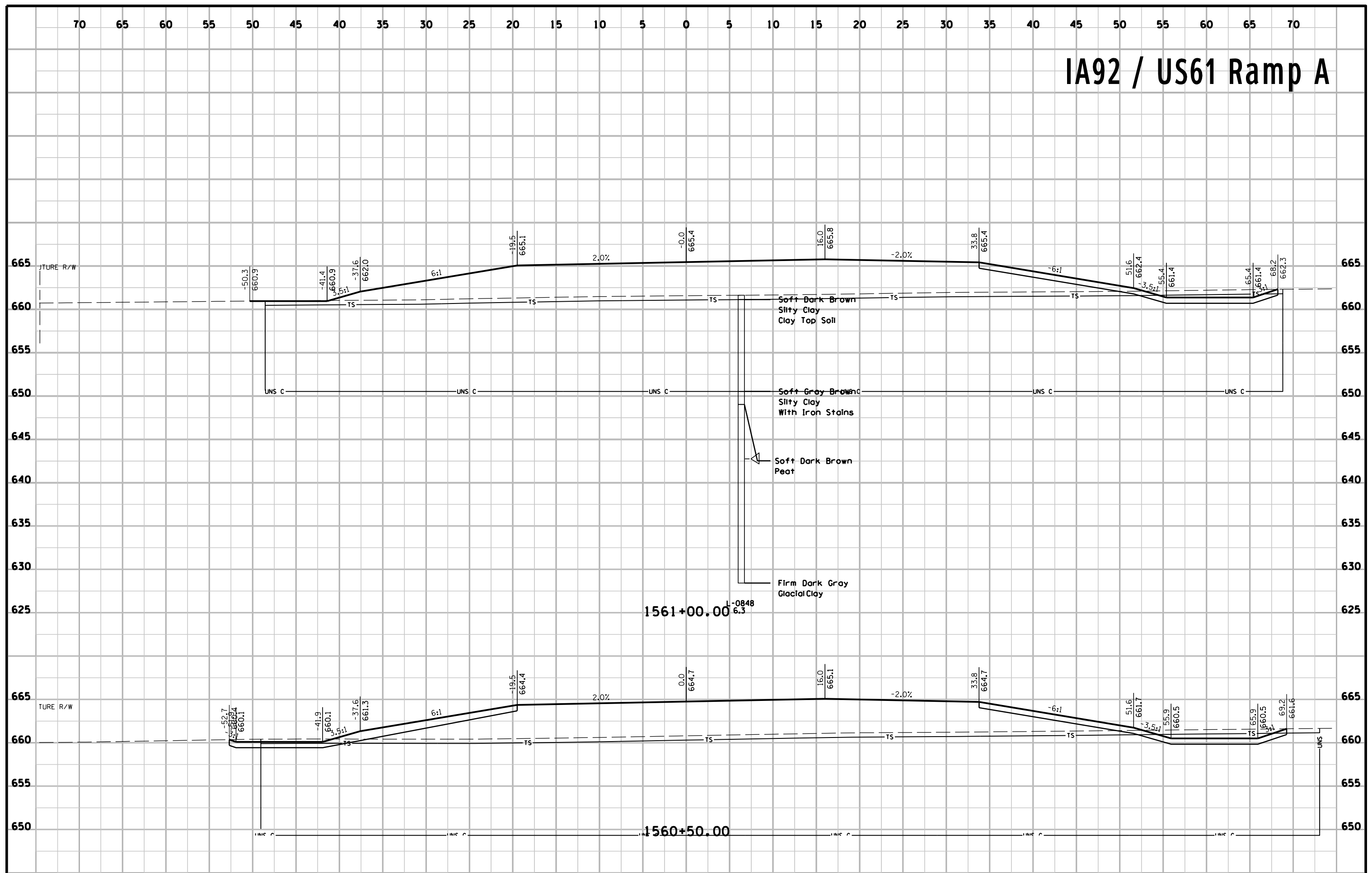
# IA92 / US61 Ramp A



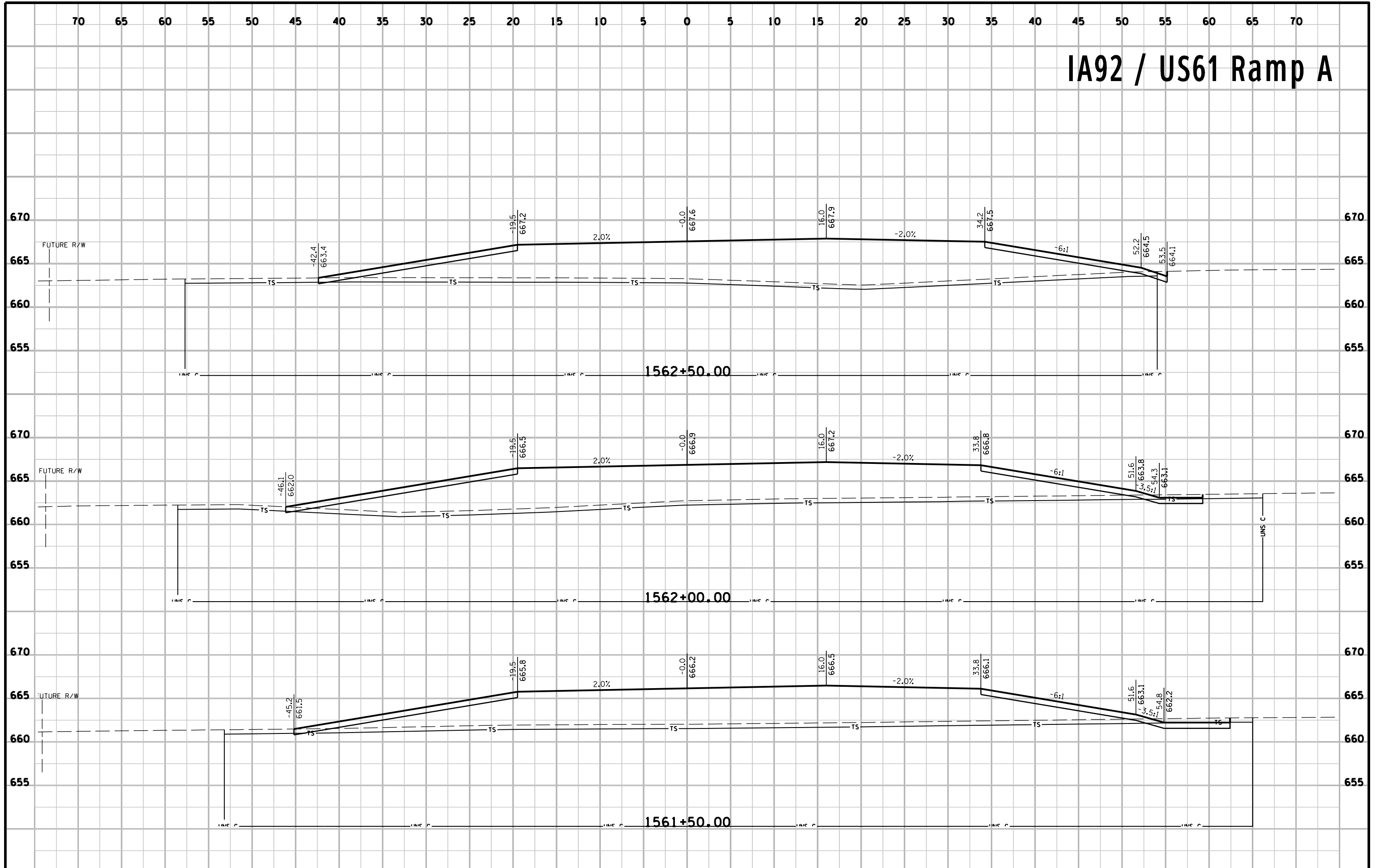
# IA92 / US61 Ramp A



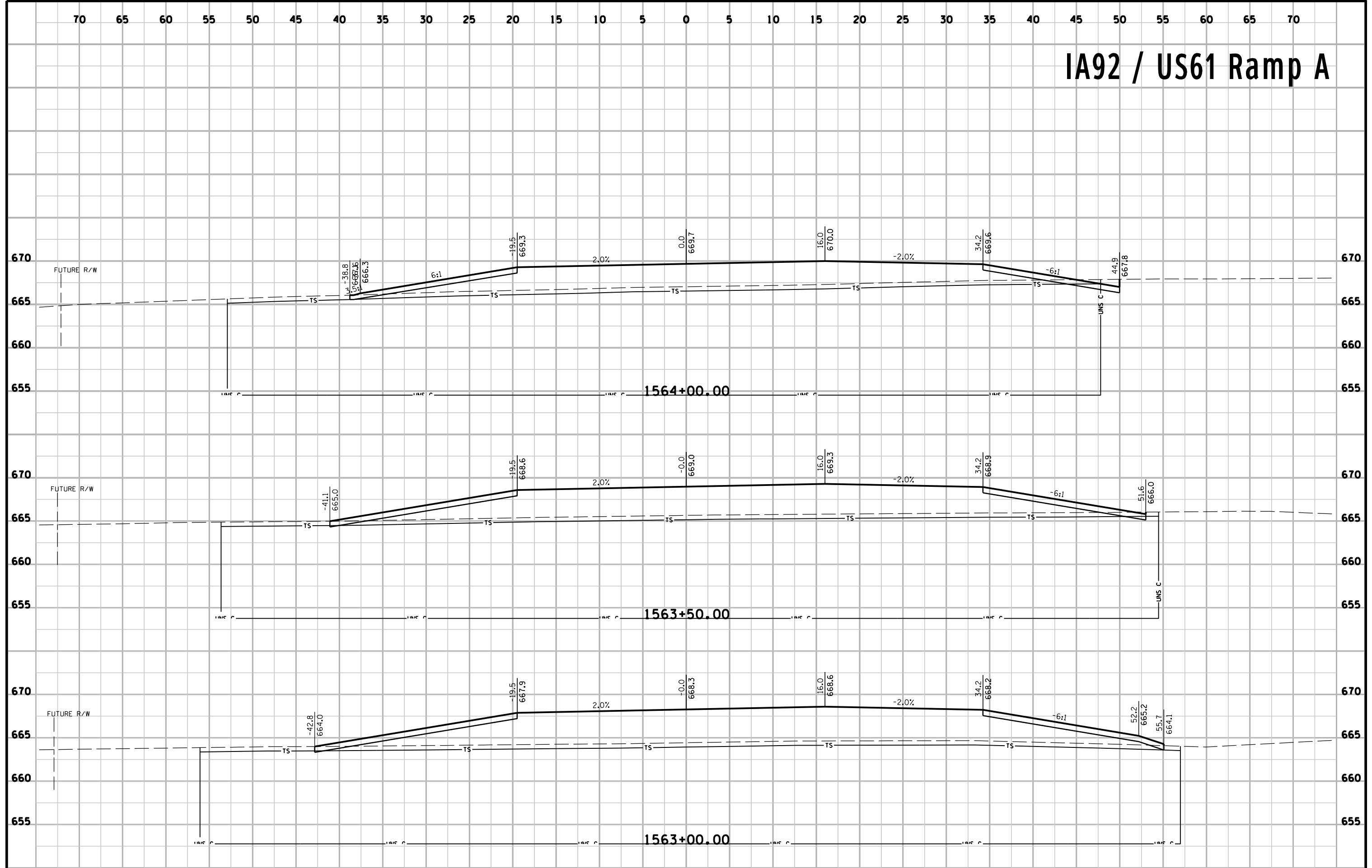
# IA92 / US61 Ramp A



# IA92 / US61 Ramp A

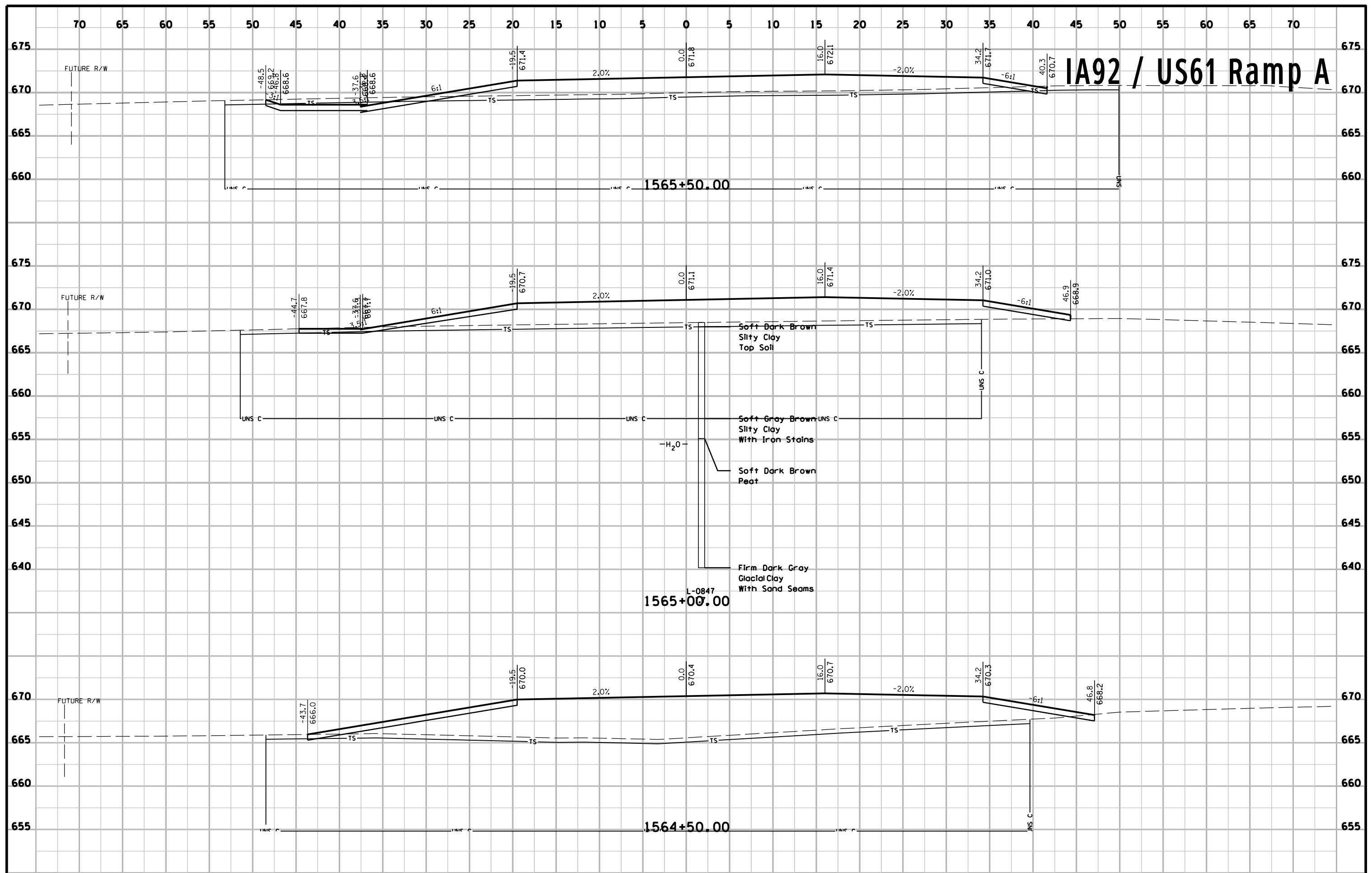


# IA92 / US61 Ramp A

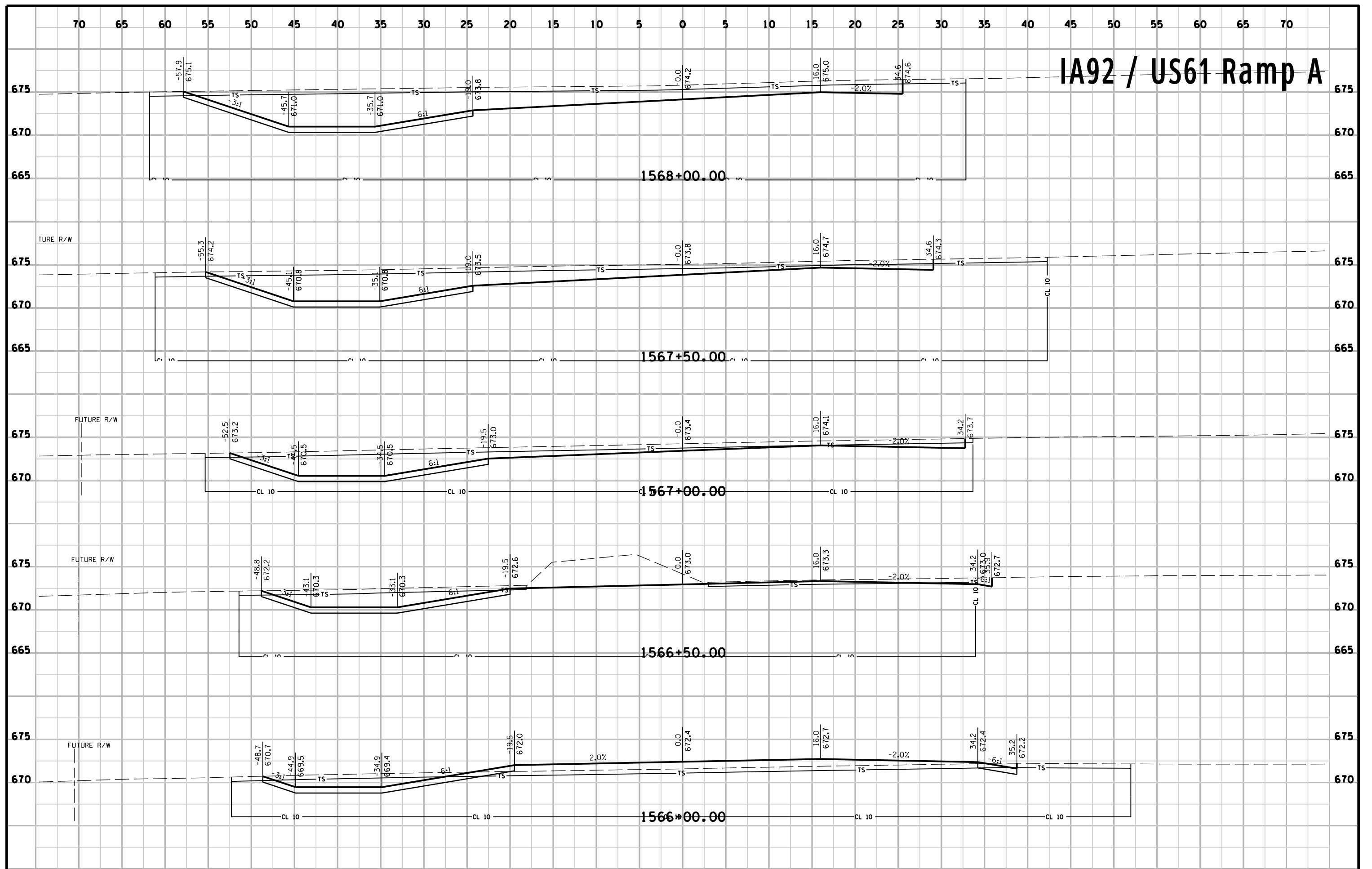




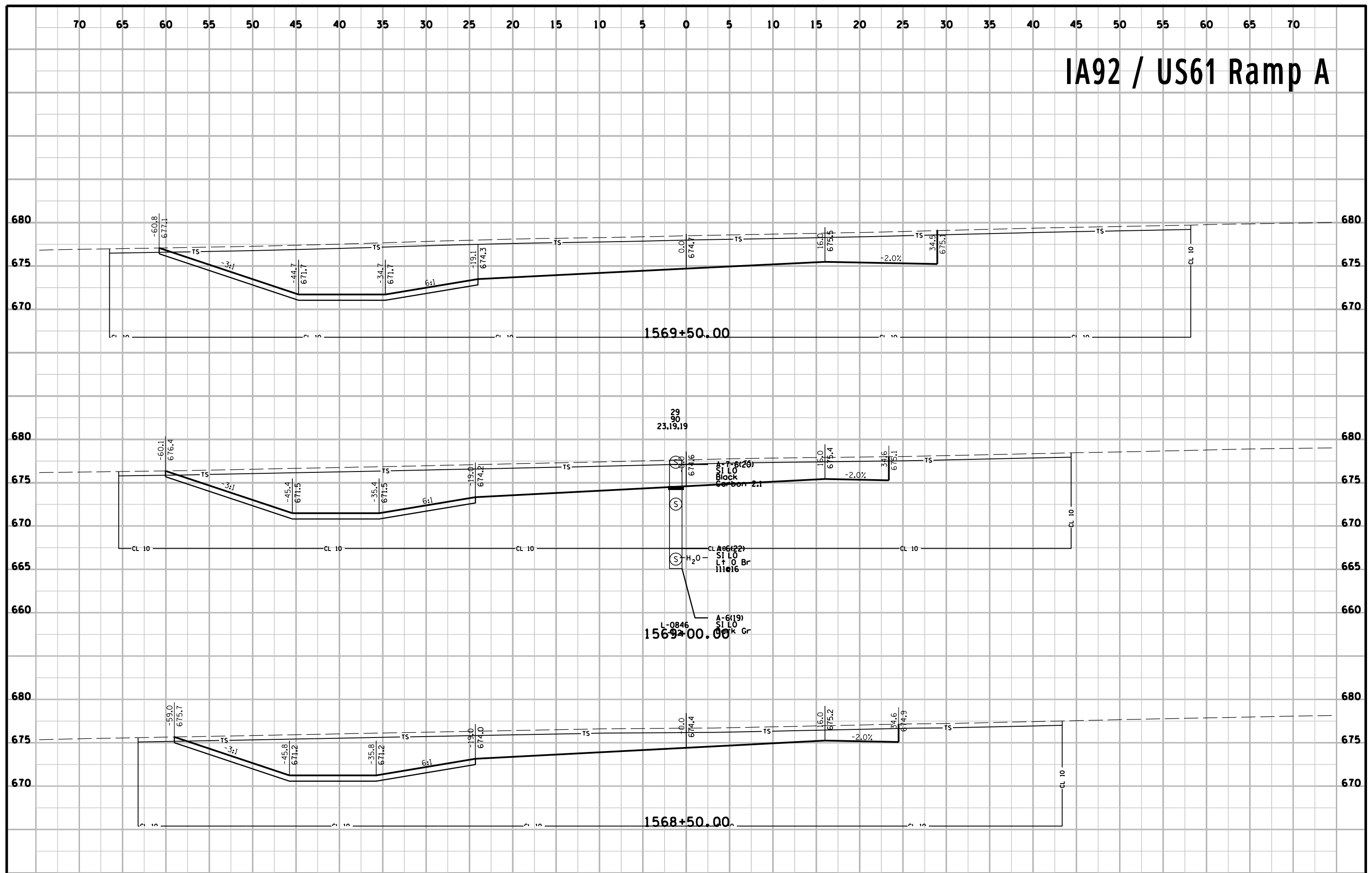
# IA92 / US61 Ramp A



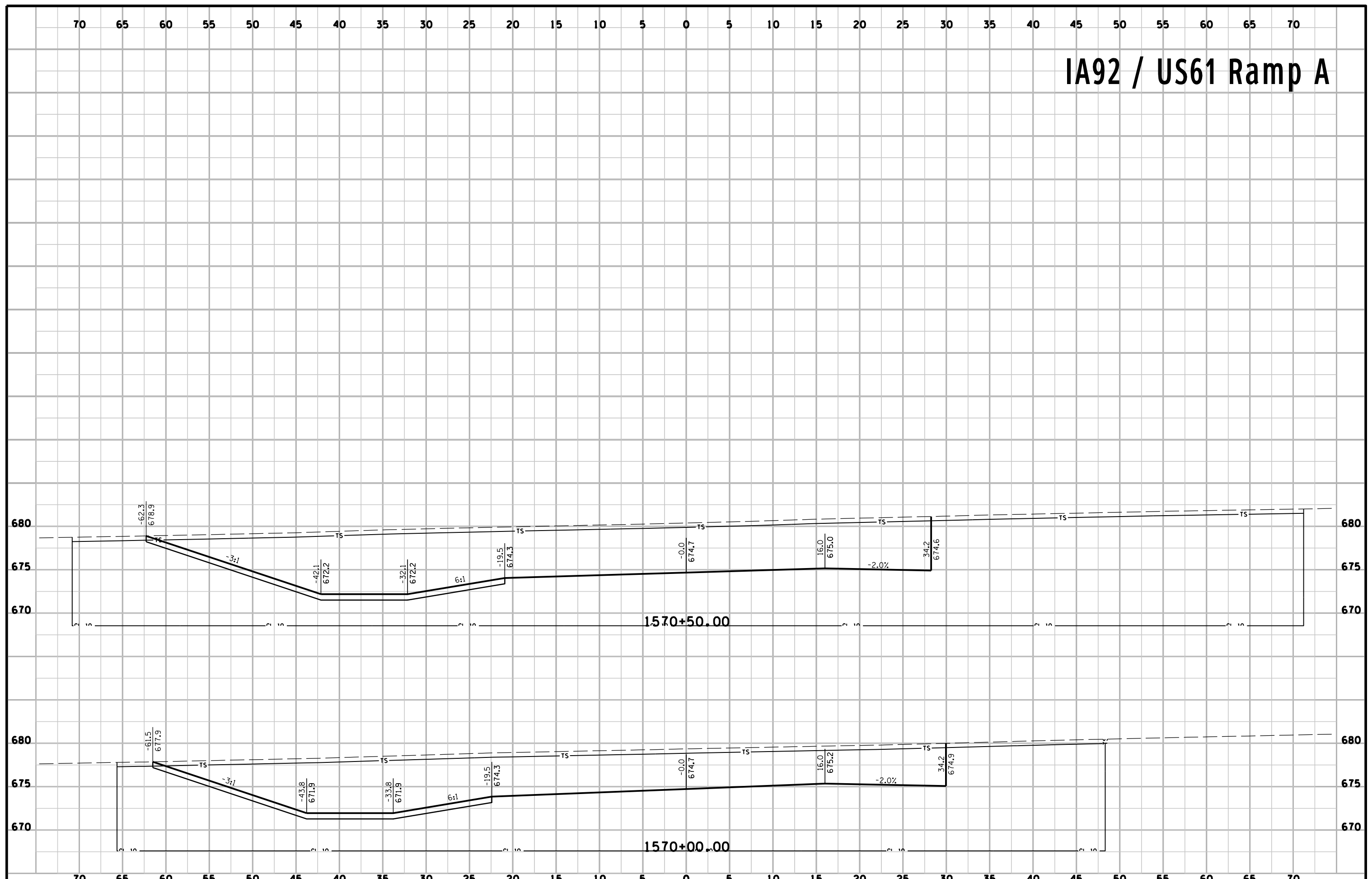
# IA92 / US61 Ramp A



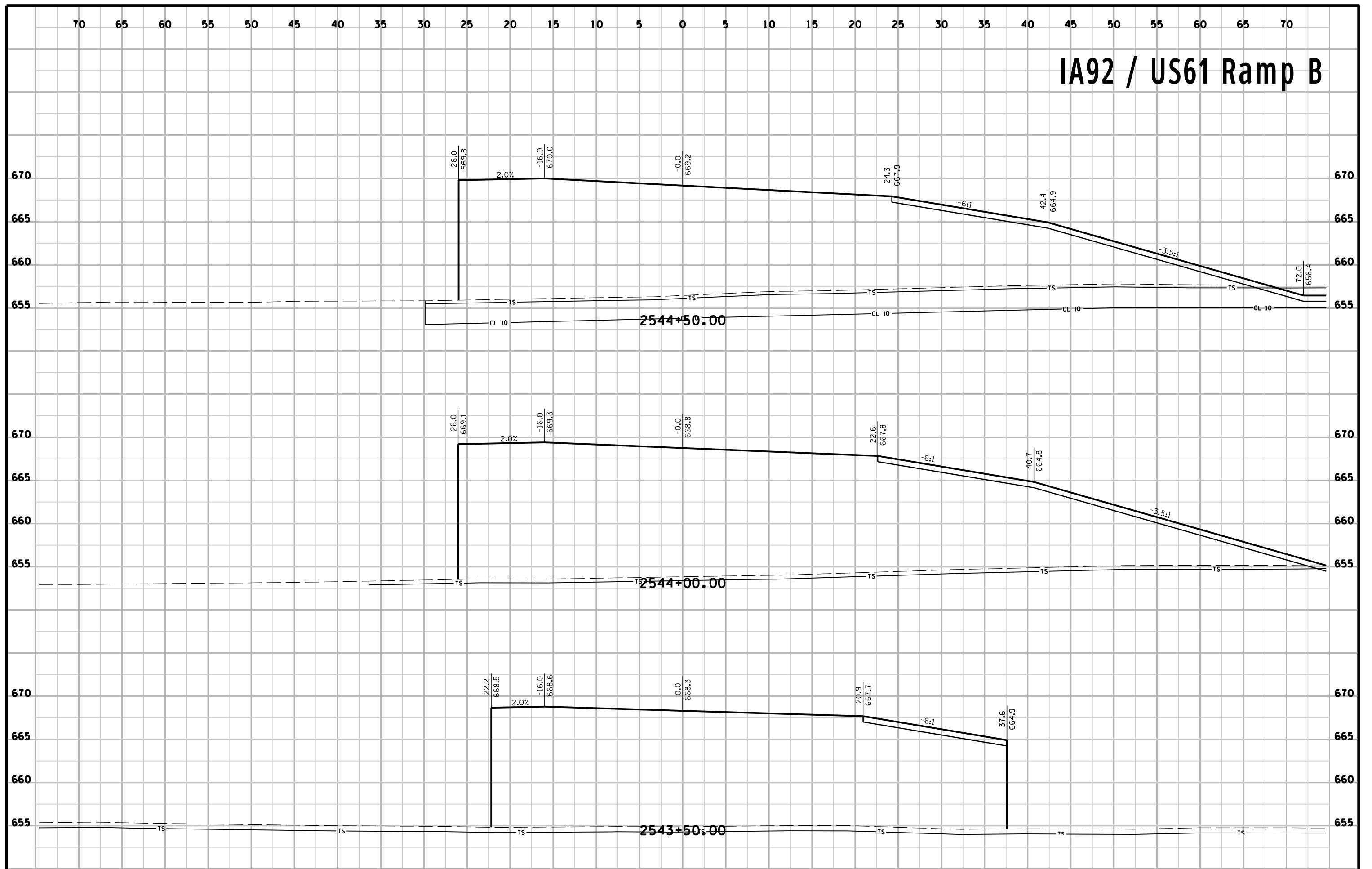
# IA92 / US61 Ramp A



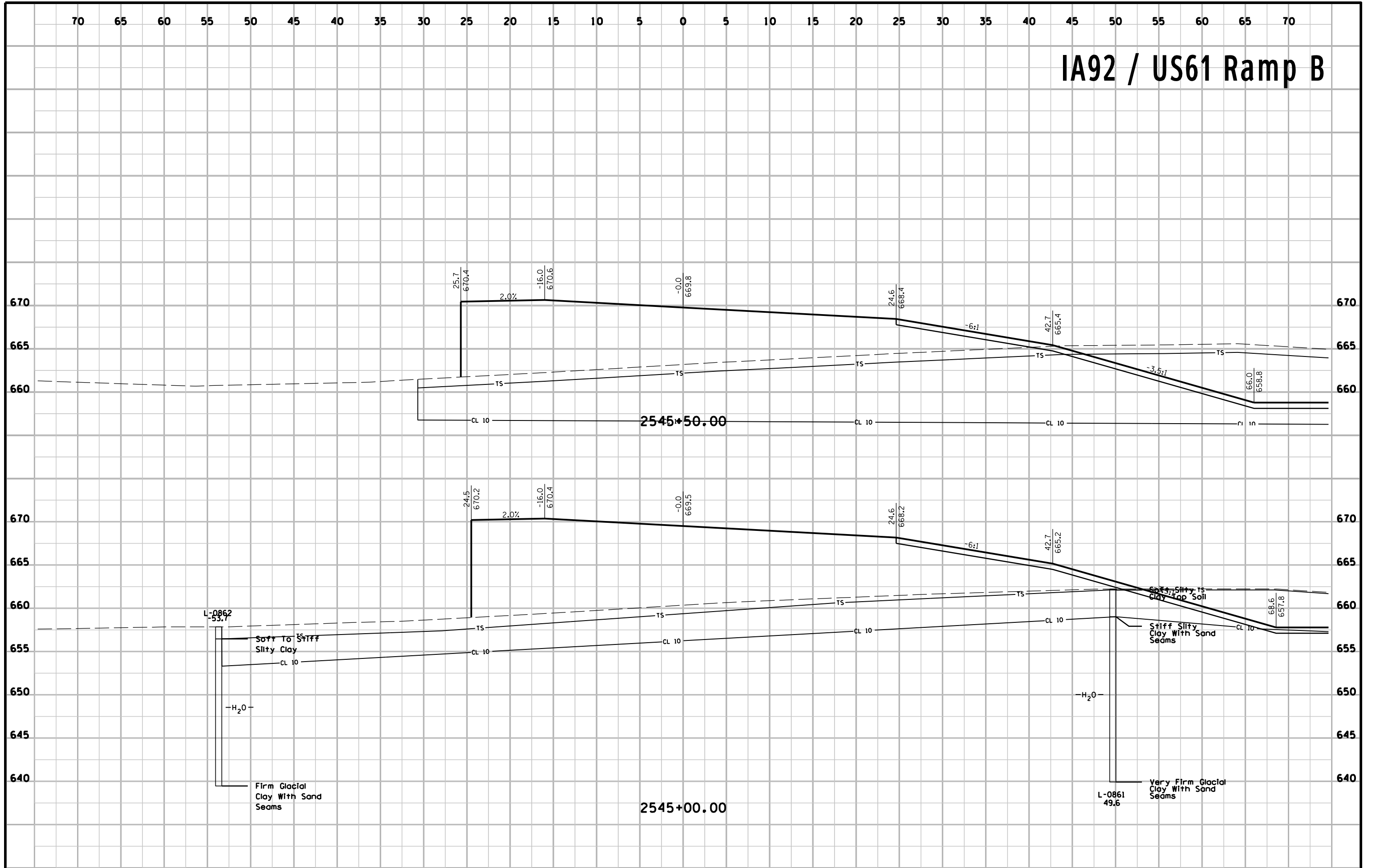
# IA92 / US61 Ramp A



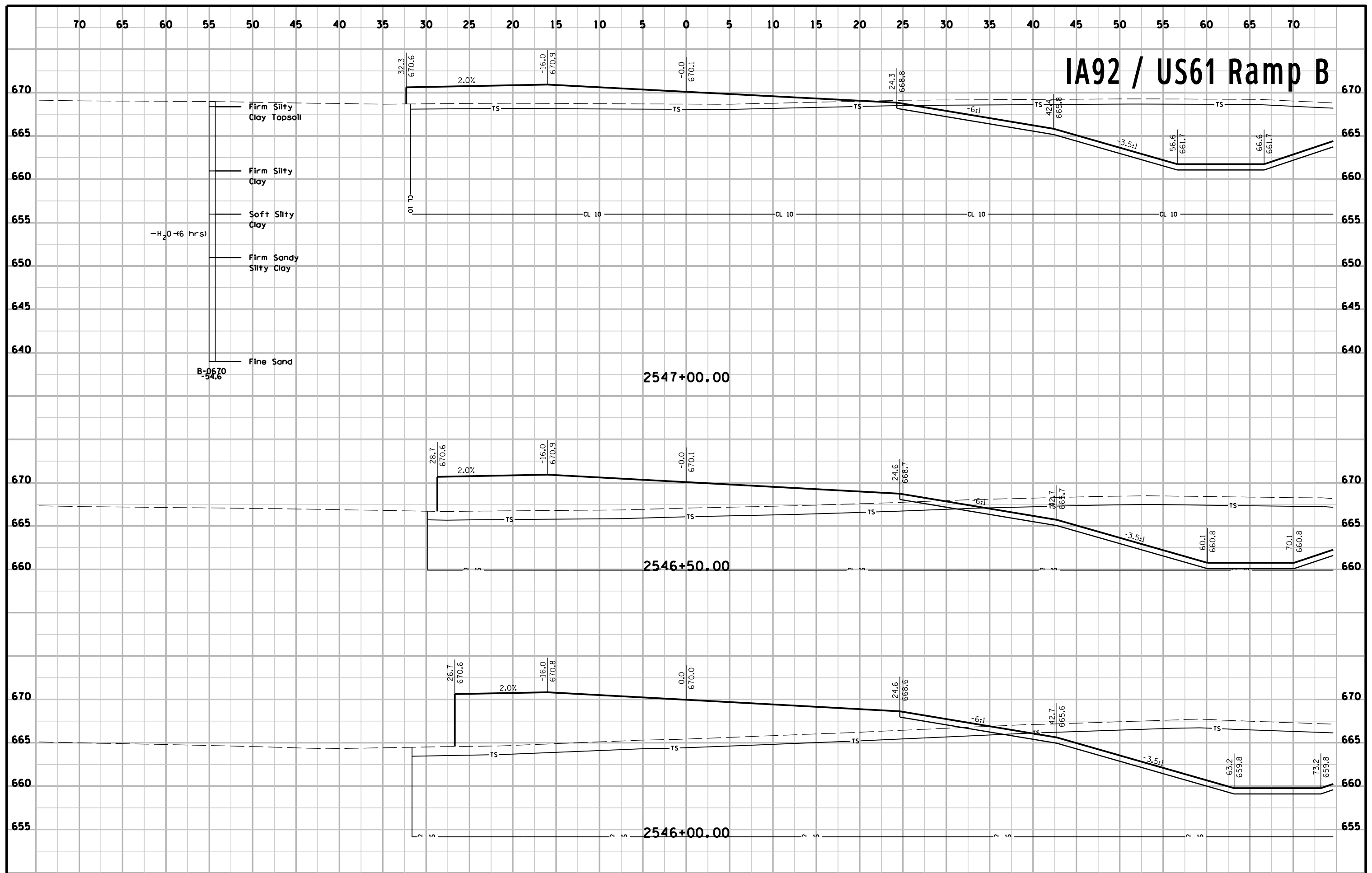
# IA92 / US61 Ramp B



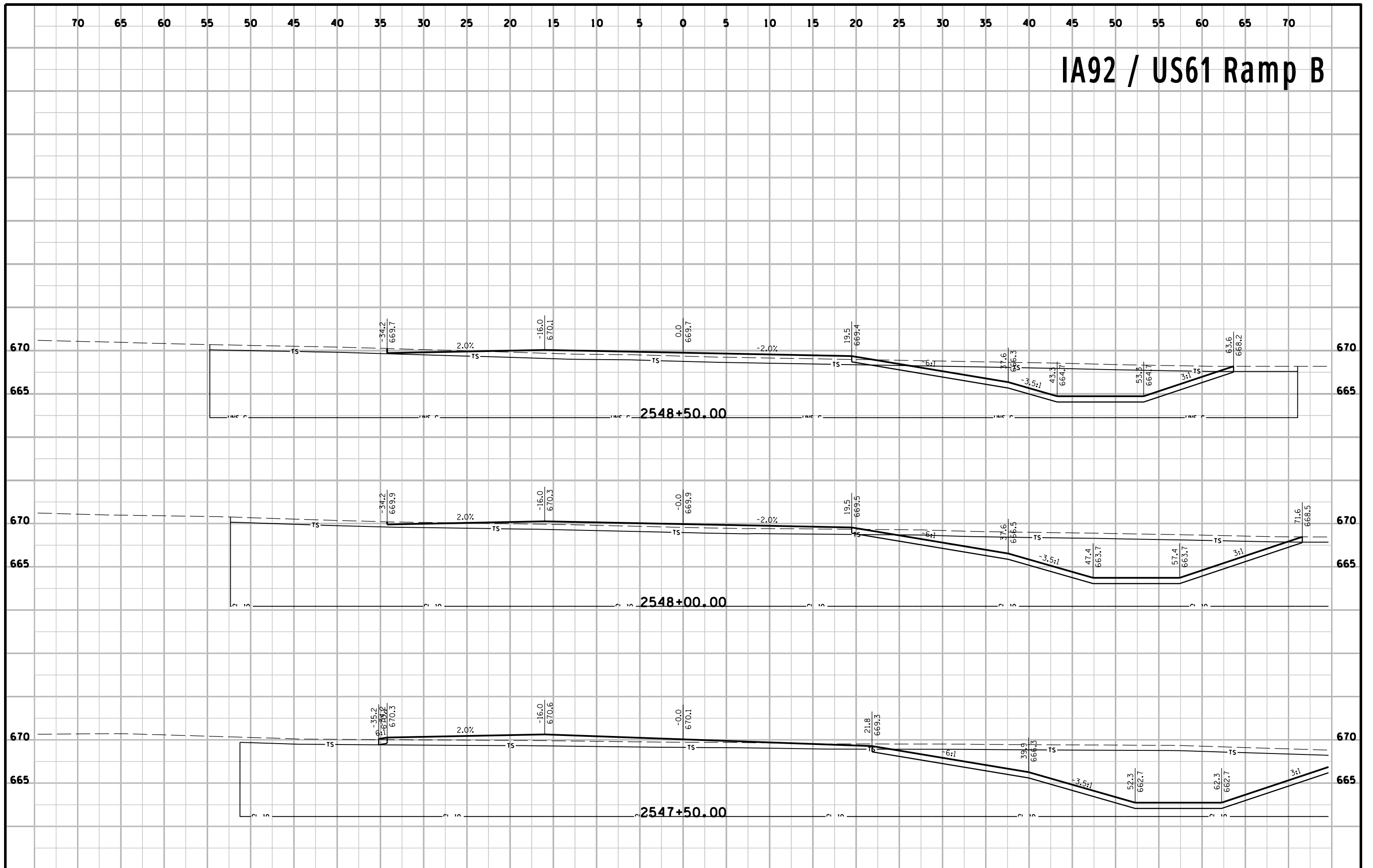
# IA92 / US61 Ramp B



# IA92 / US61 Ramp B

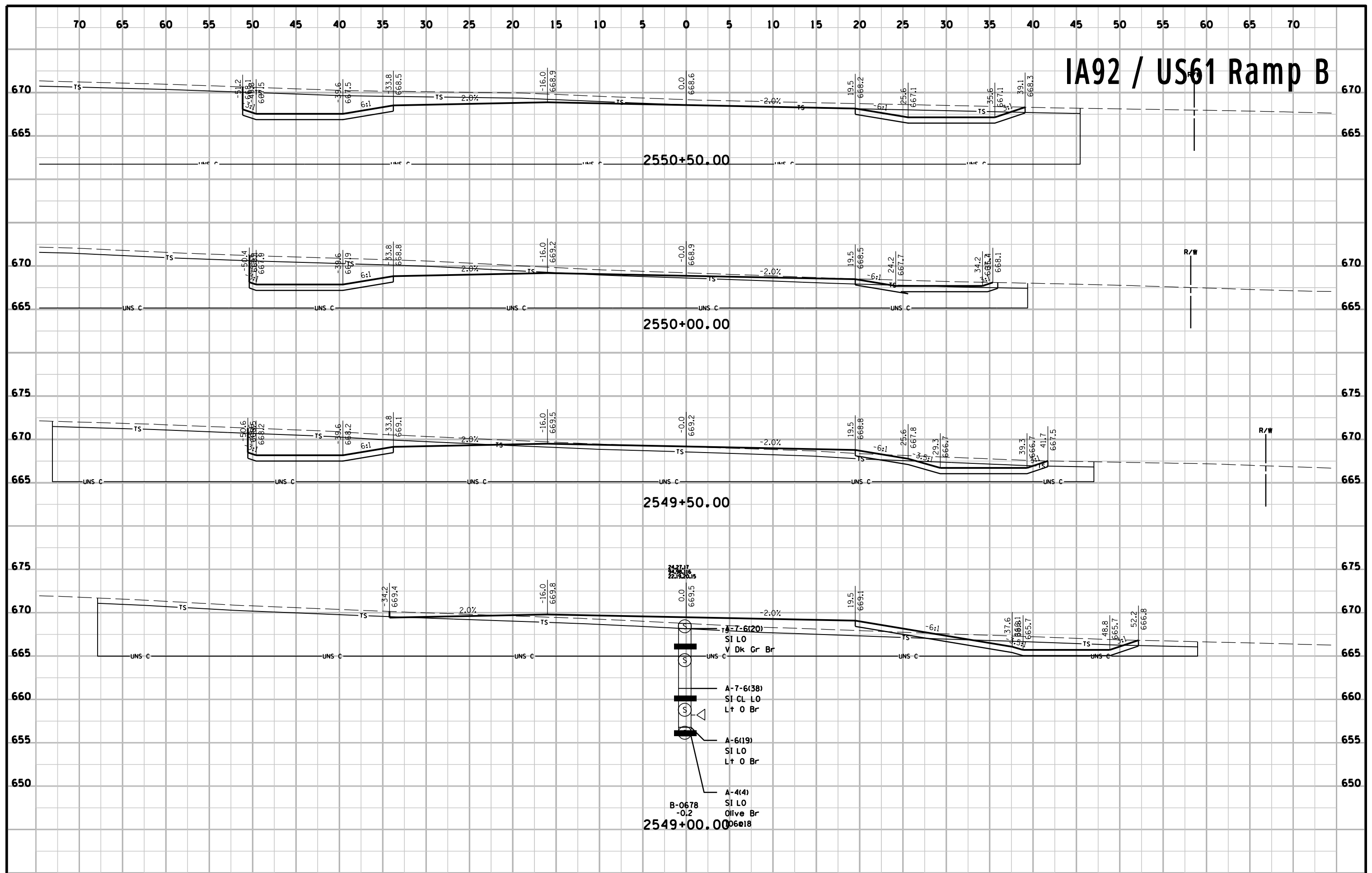


# IA92 / US61 Ramp B



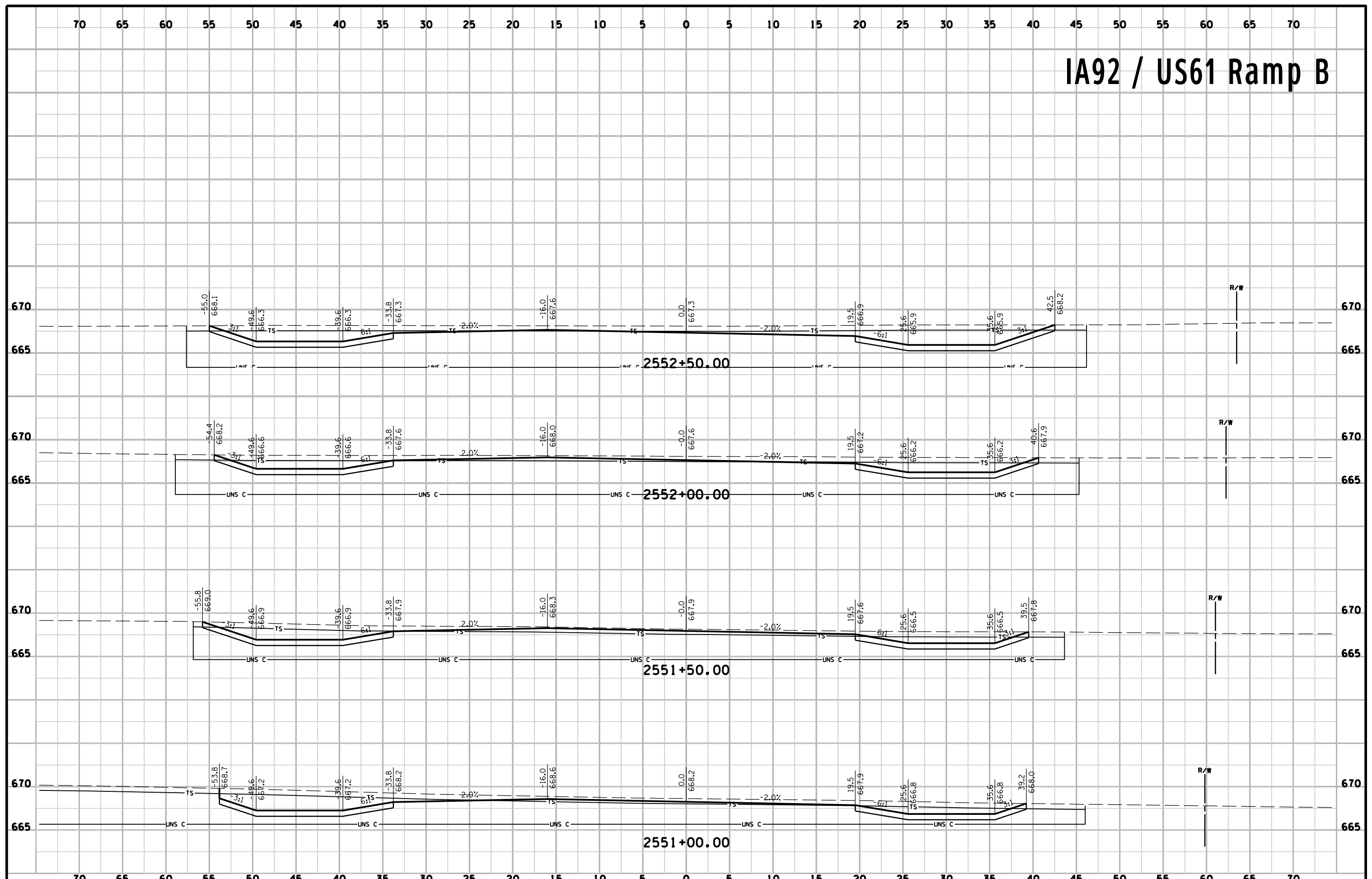


# IA92 / US61 Ramp B

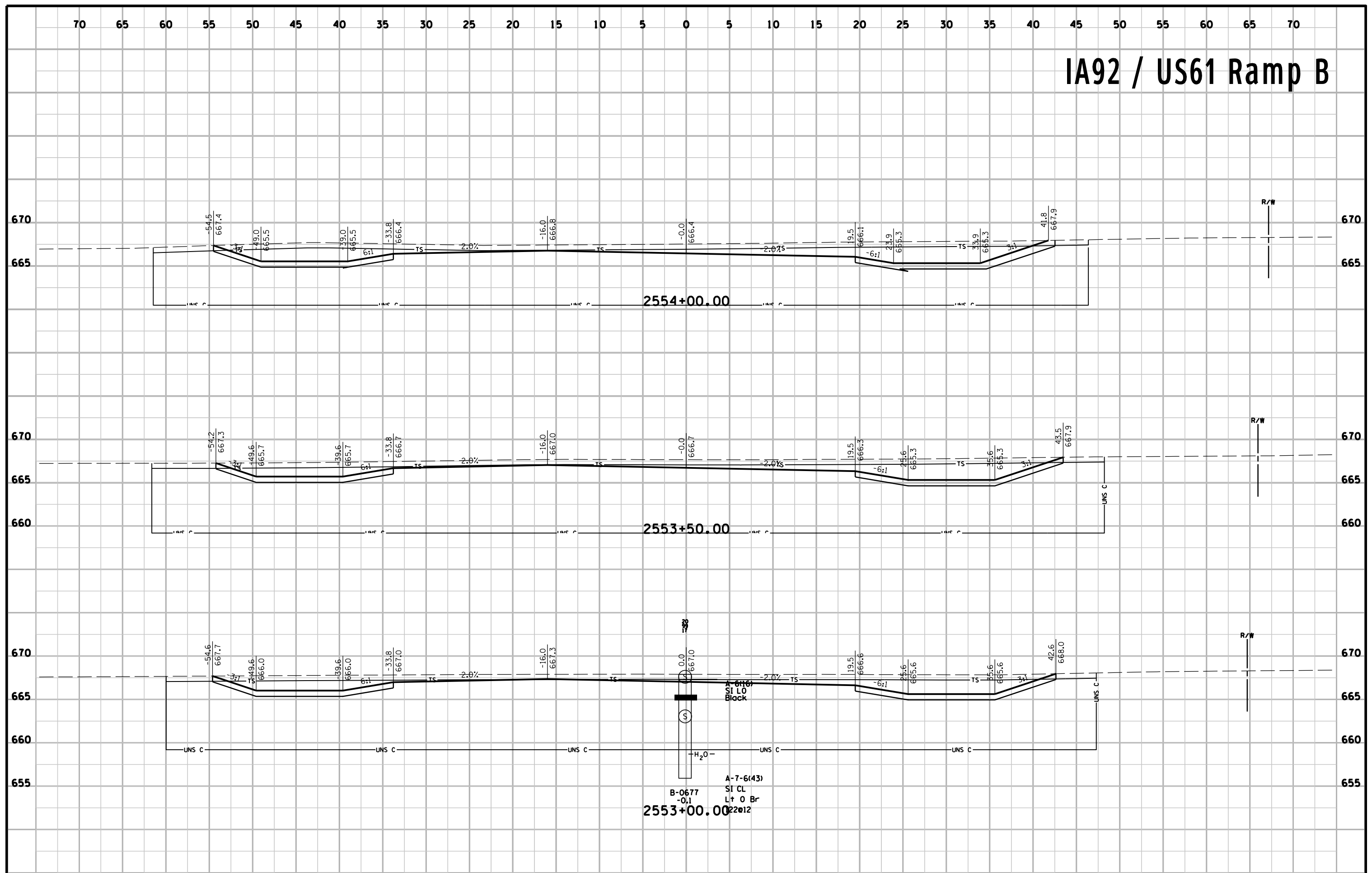


- A-7-6(20)  
SI LO  
V Dk Gr Br
- A-7-6(38)  
SI CL LO  
L+ O Br
- A-6(19)  
SI LO  
L+ O Br
- A-4(4)  
SI LO  
Olive Br
- B-0678  
-0.2

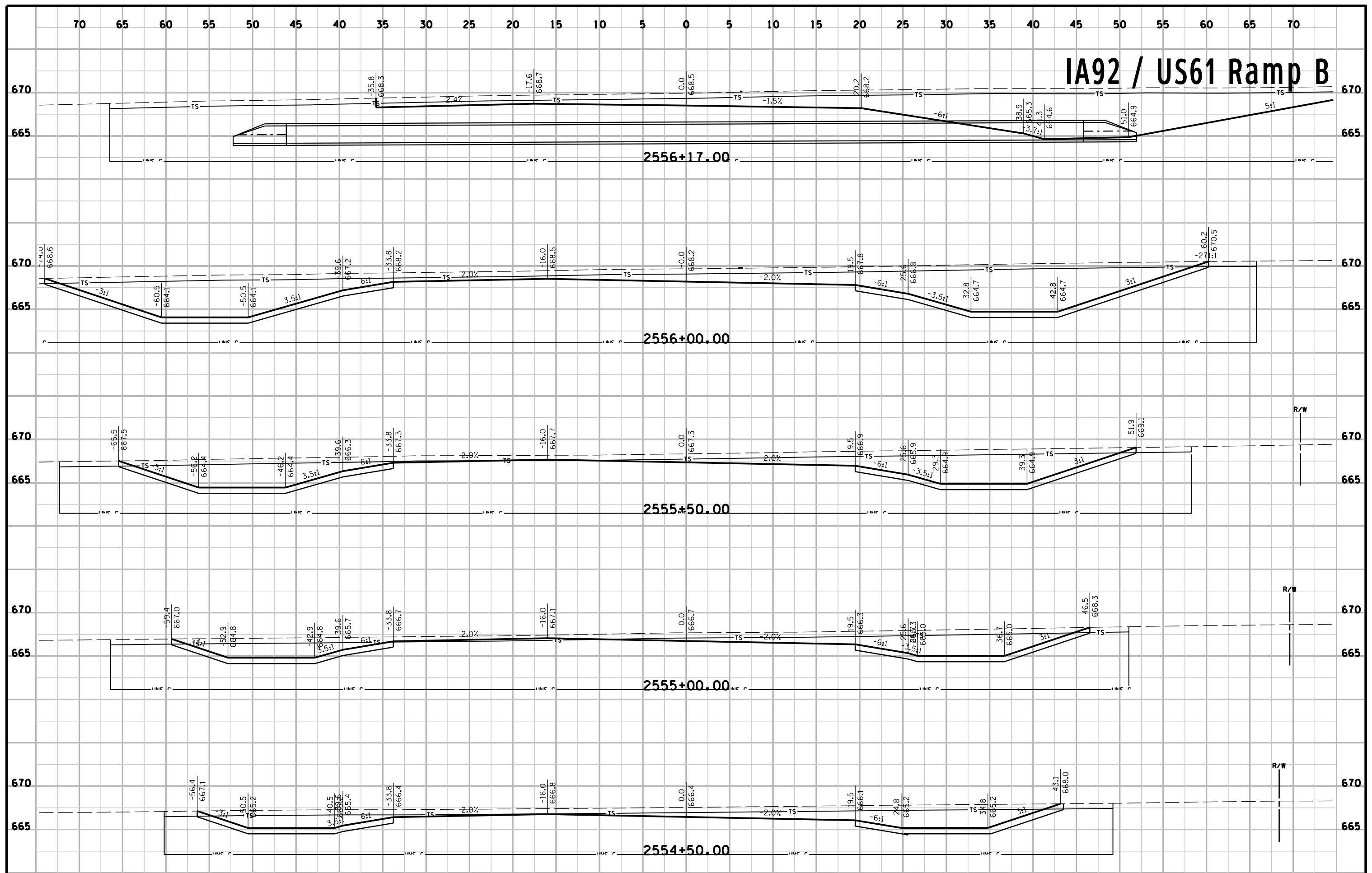
# IA92 / US61 Ramp B



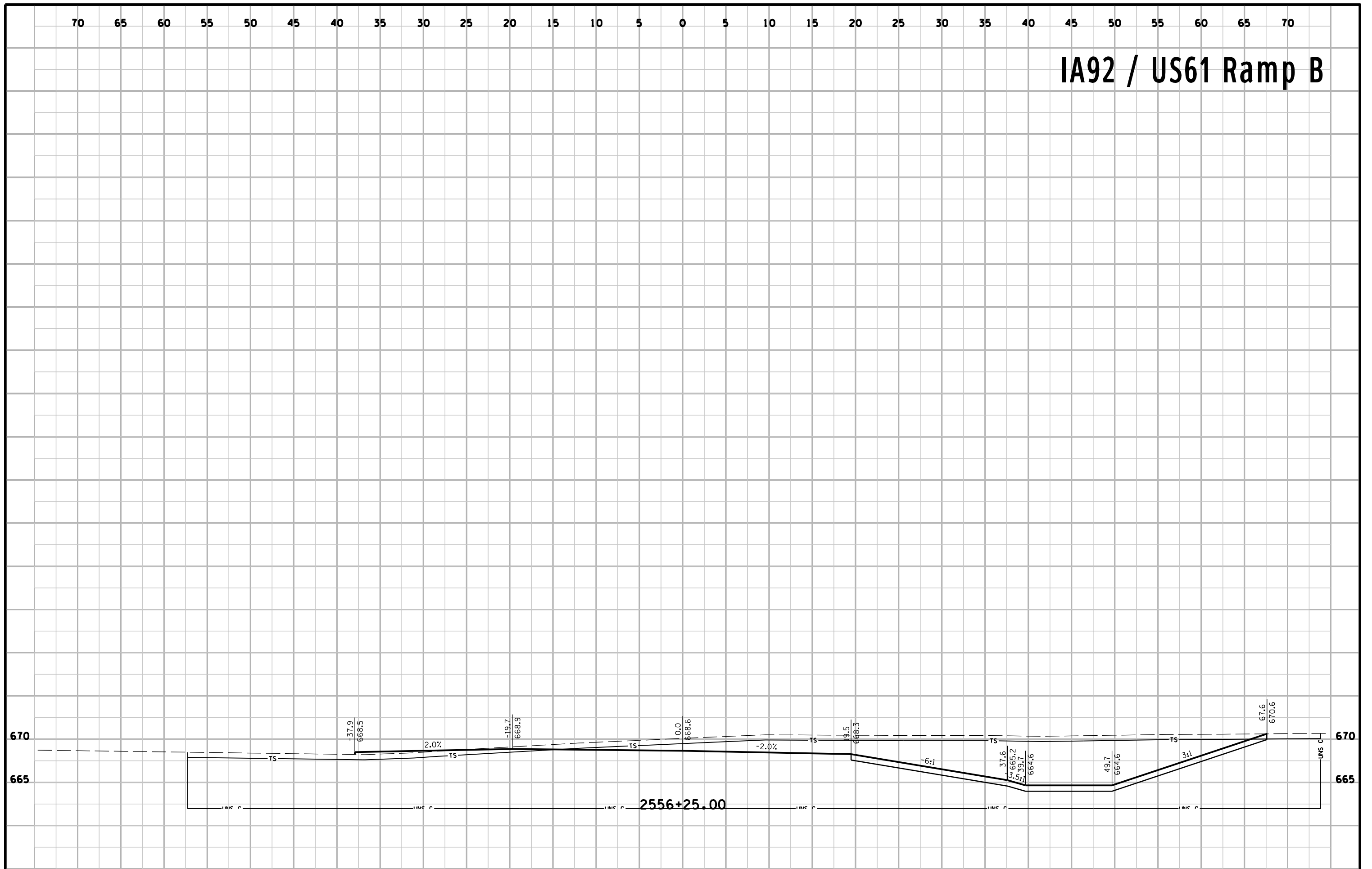
# IA92 / US61 Ramp B



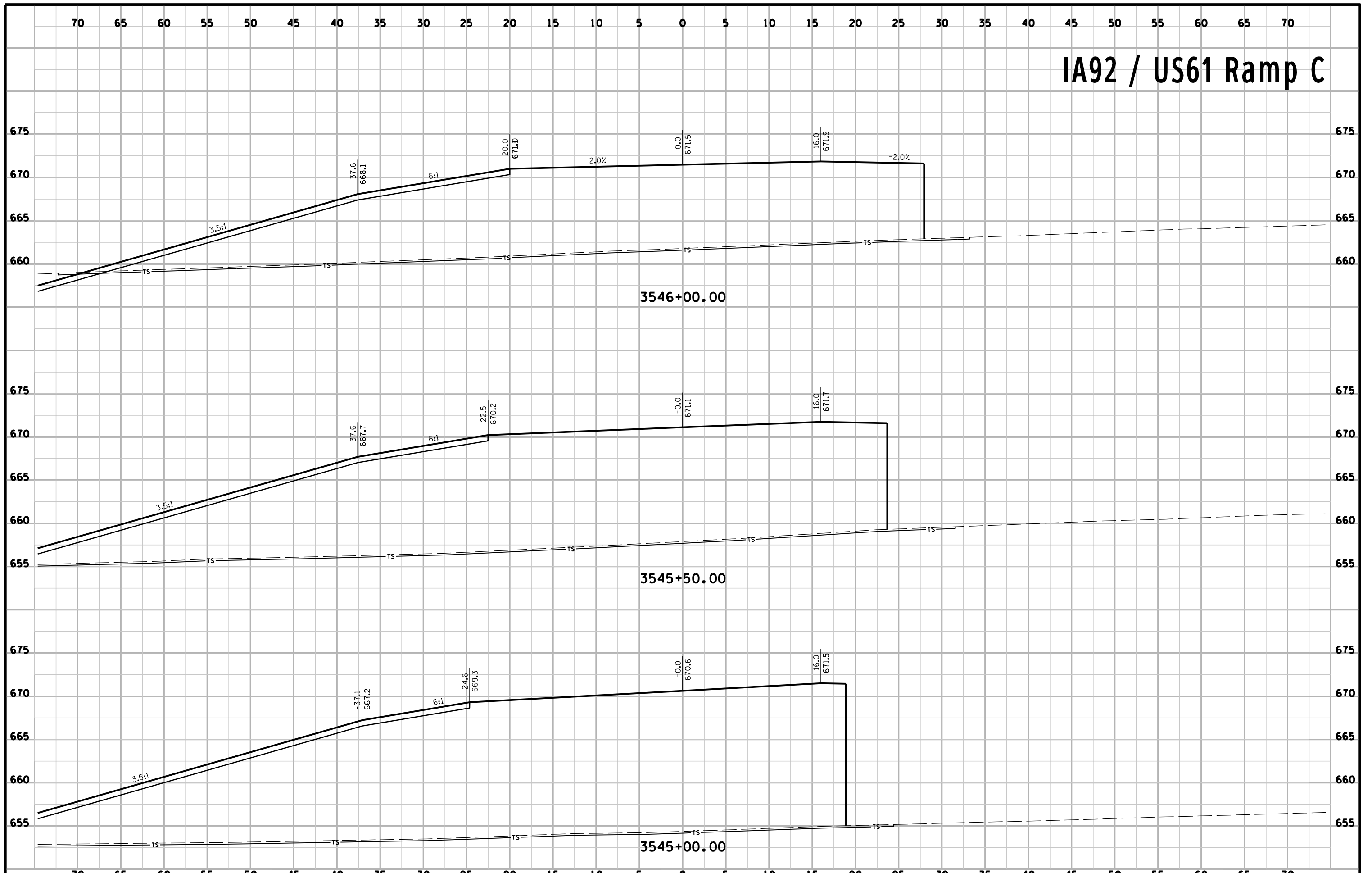
# IA92 / US61 Ramp B



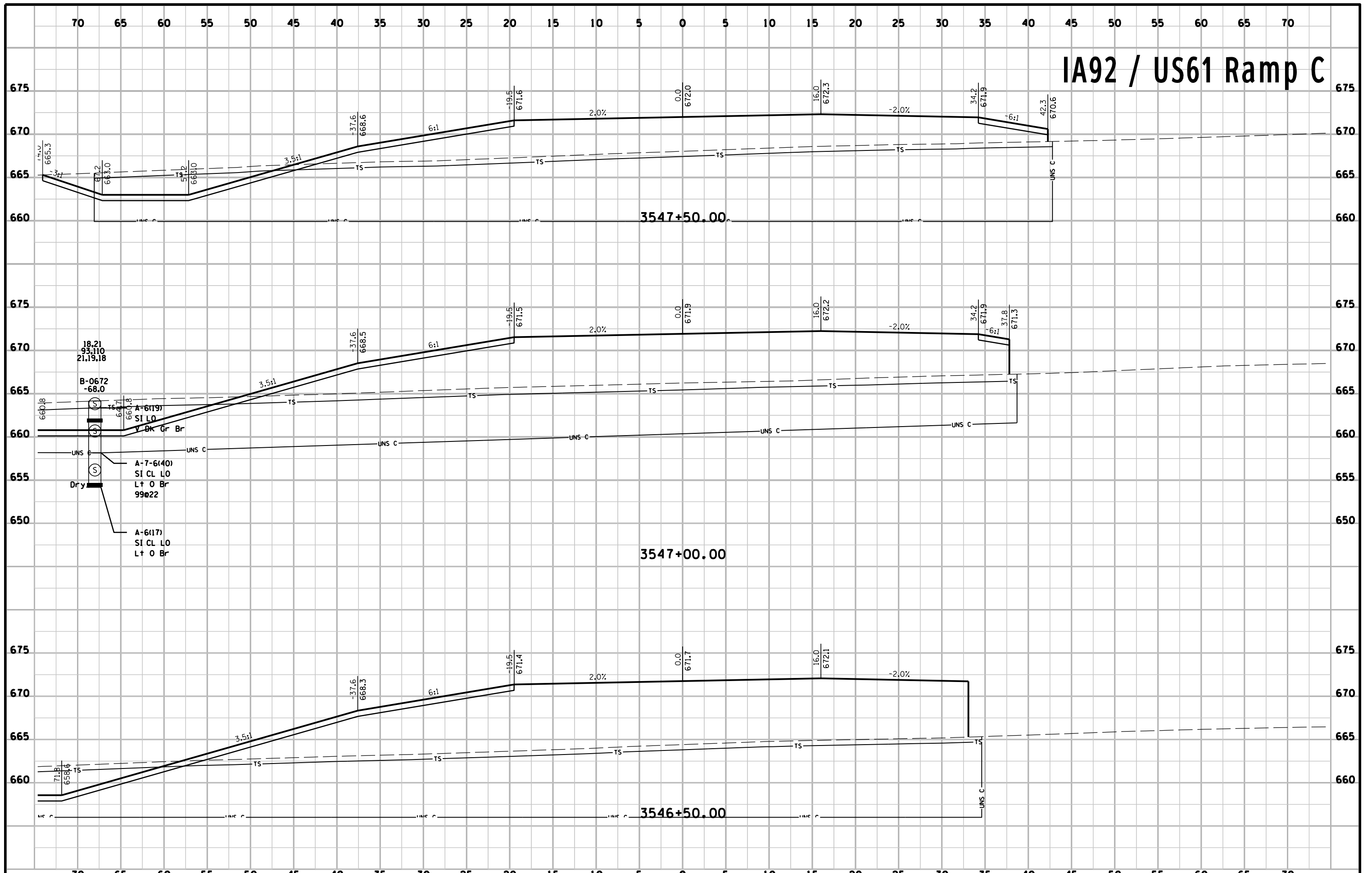
# IA92 / US61 Ramp B



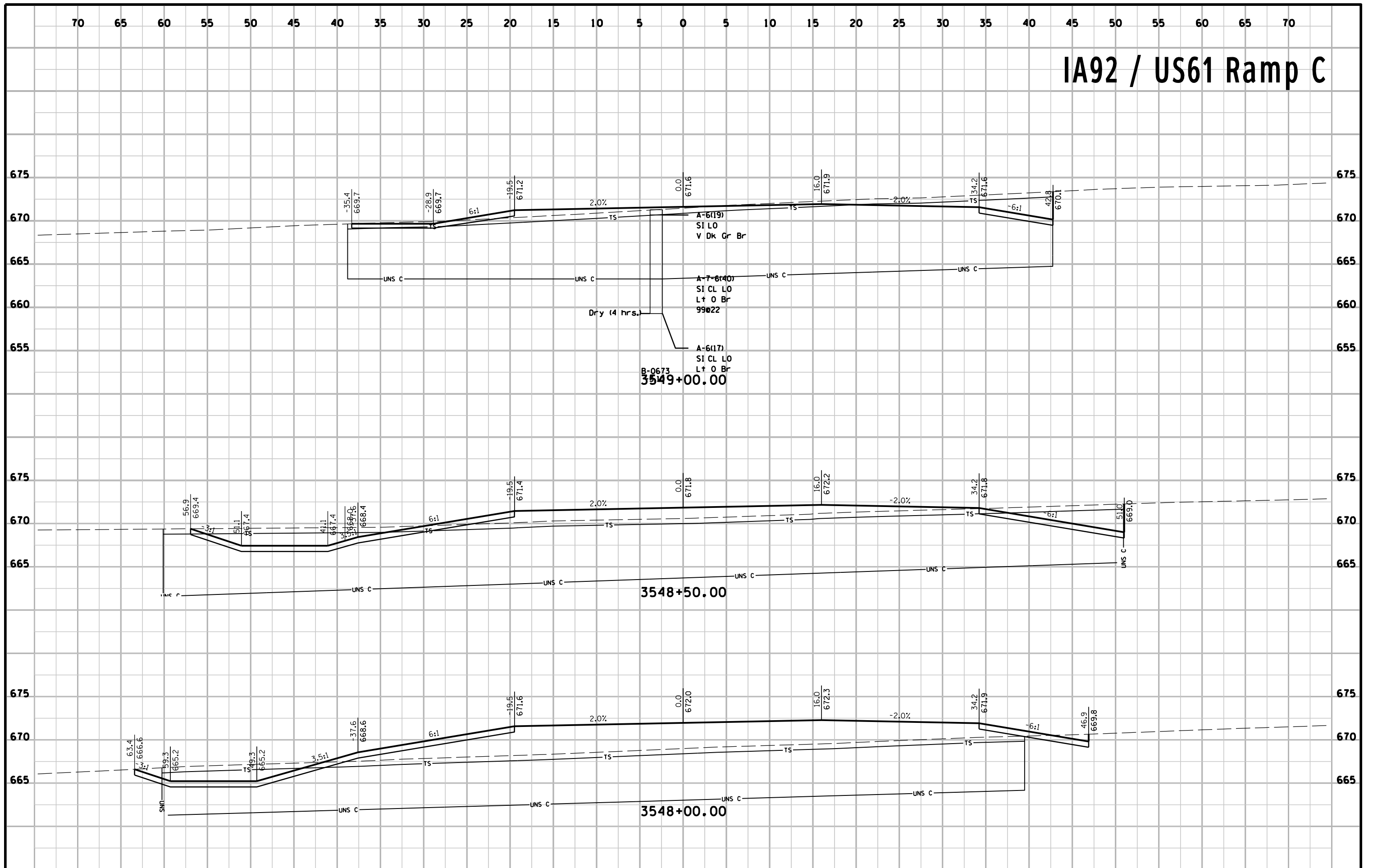
# IA92 / US61 Ramp C



# IA92 / US61 Ramp C



# IA92 / US61 Ramp C



A-6(19)  
SI LO  
V Dk Gr Br

A-7-6(40)  
SI CL LO  
L† O Br  
99022

Dry (4 hrs.)

A-6(17)  
SI CL LO  
L† O Br

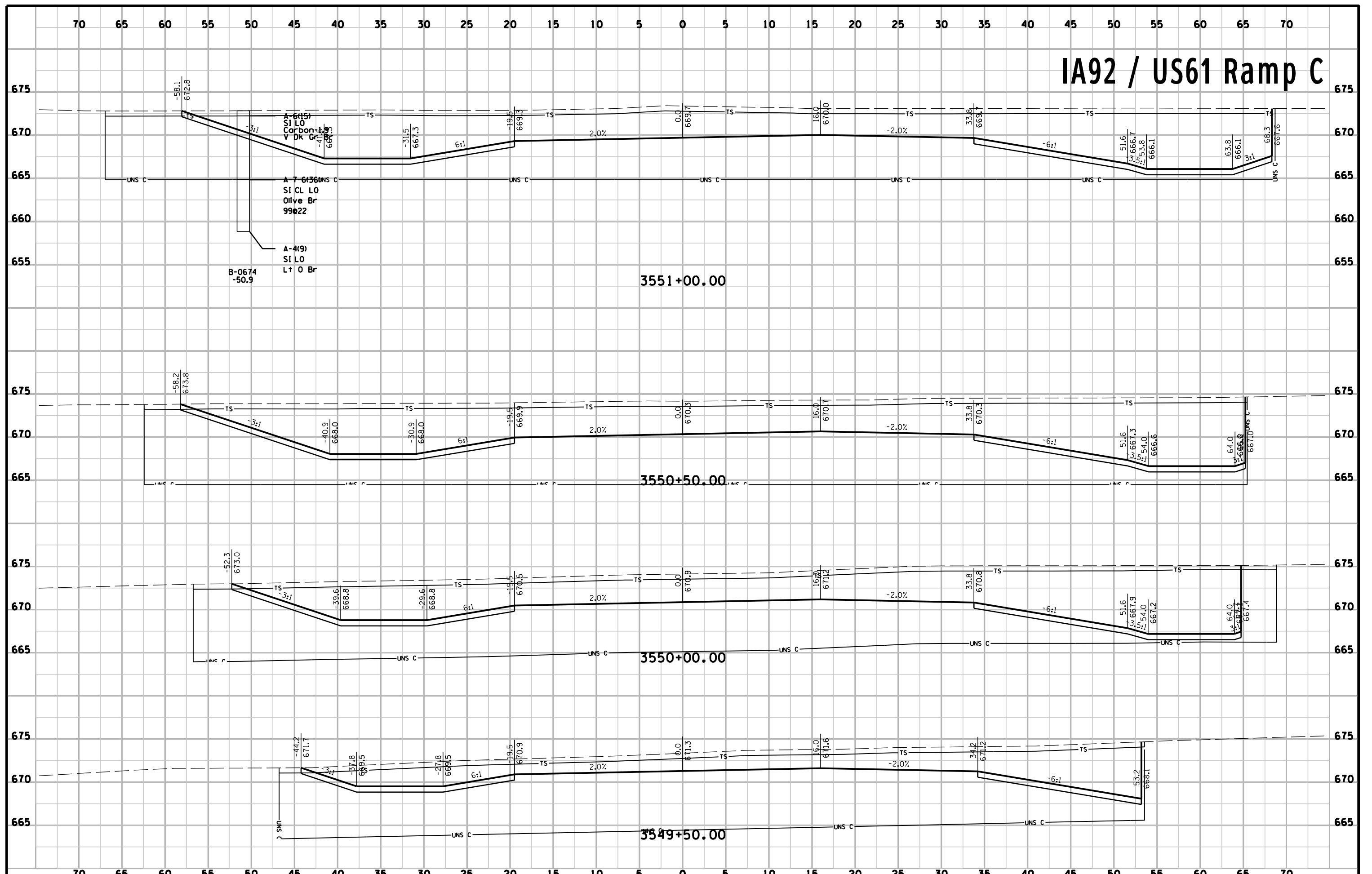
B-0673  
3549+00.00

3548+50.00

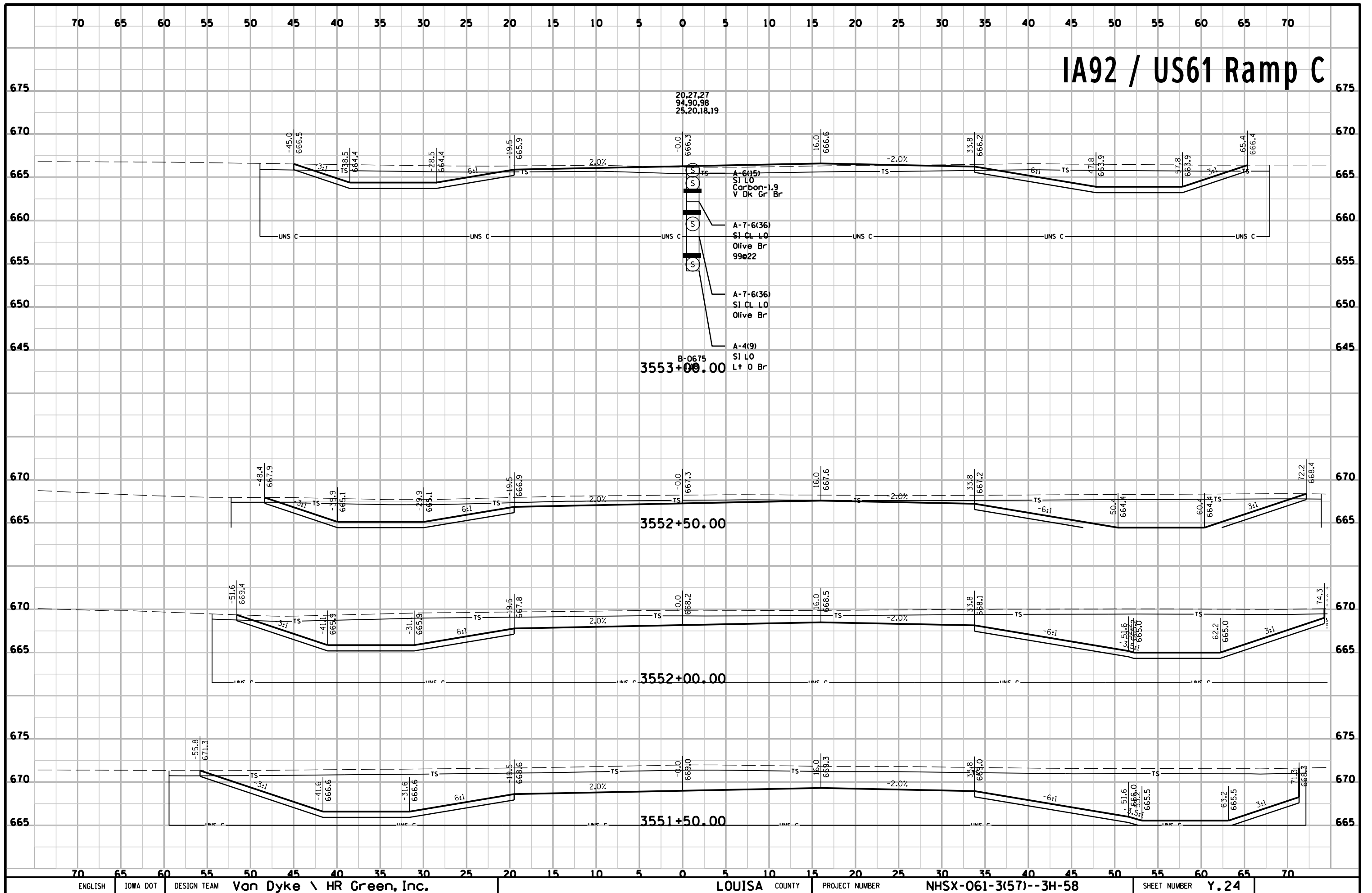
3548+00.00



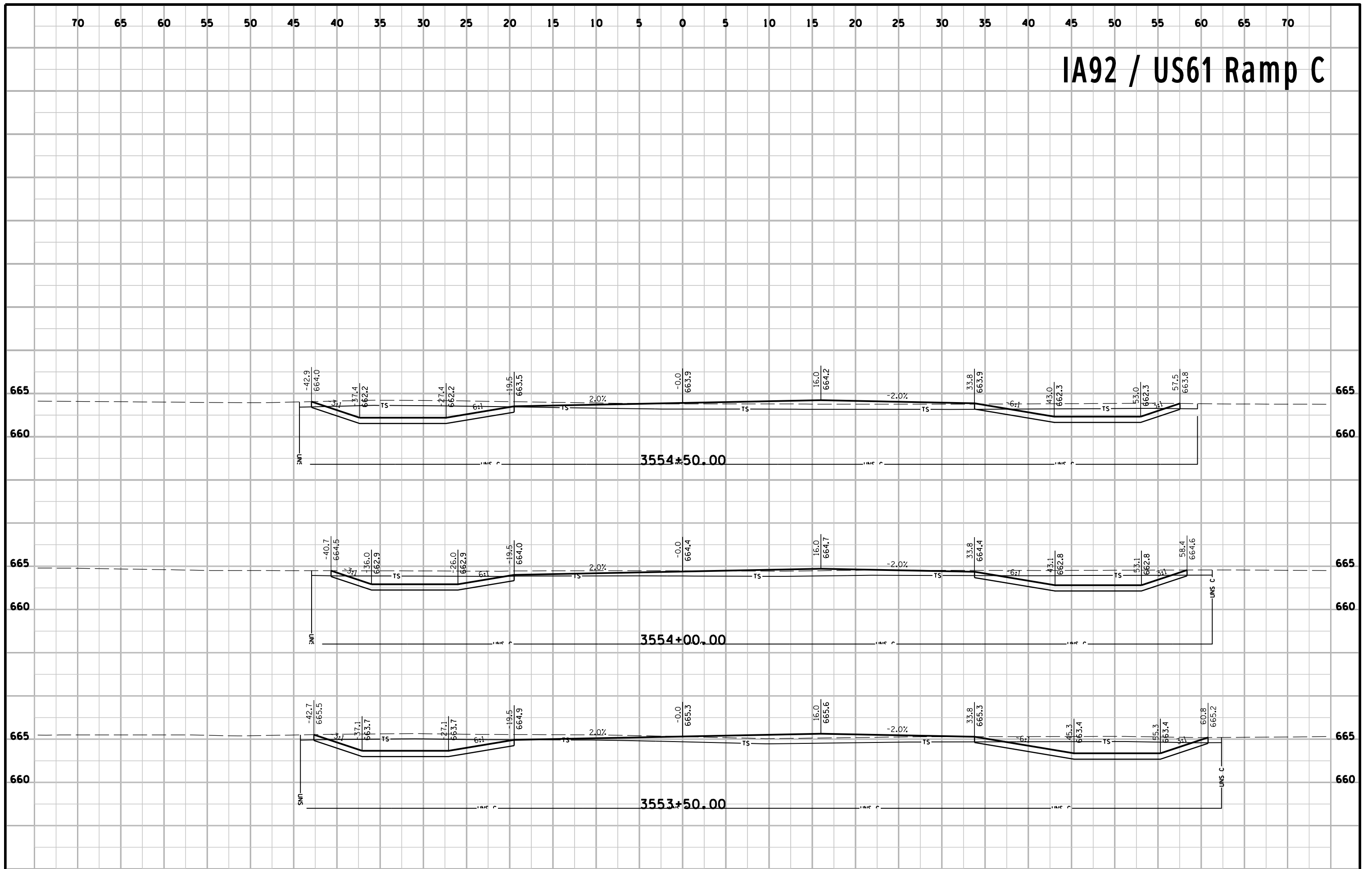
# IA92 / US61 Ramp C



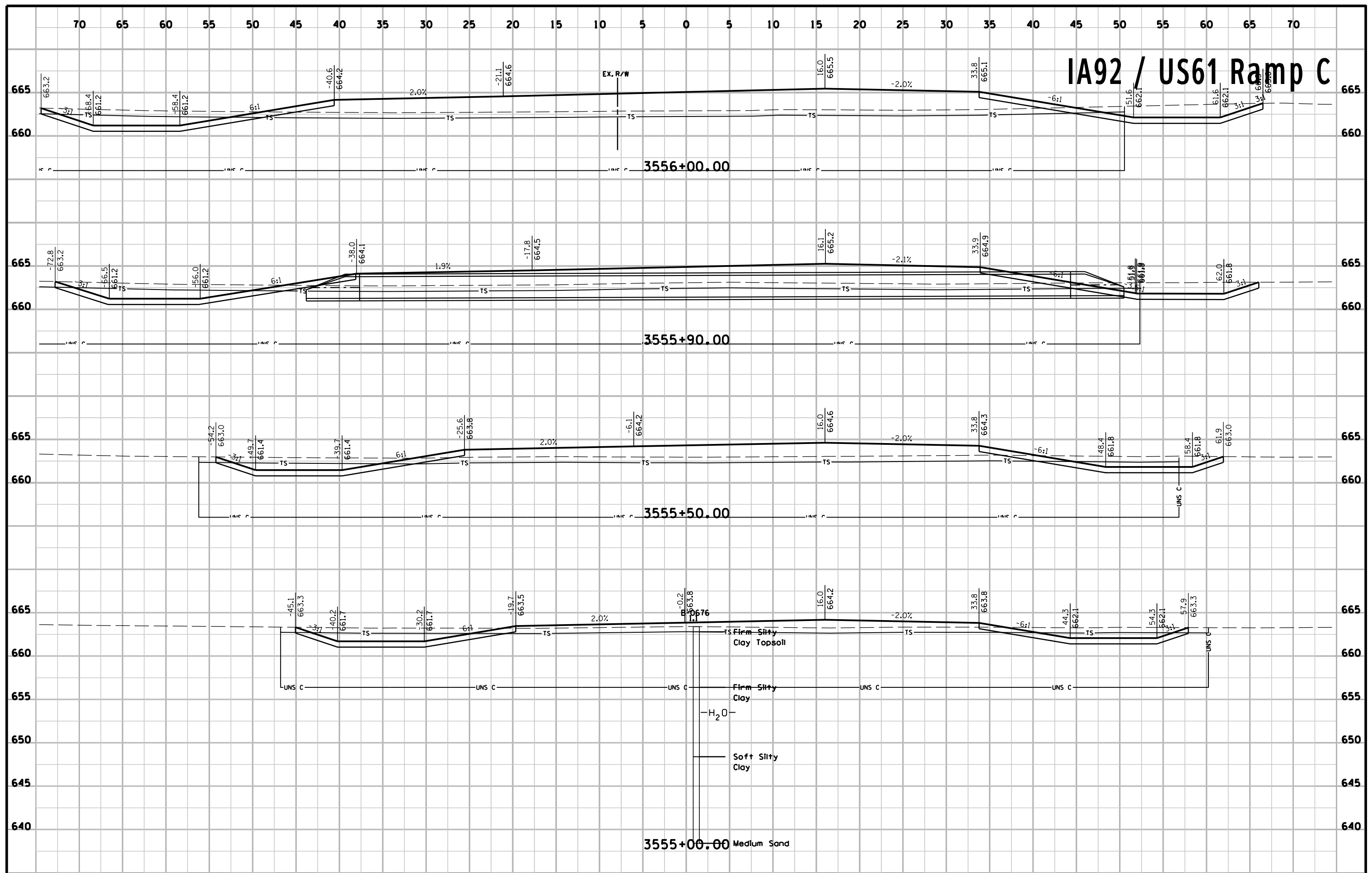
# IA92 / US61 Ramp C



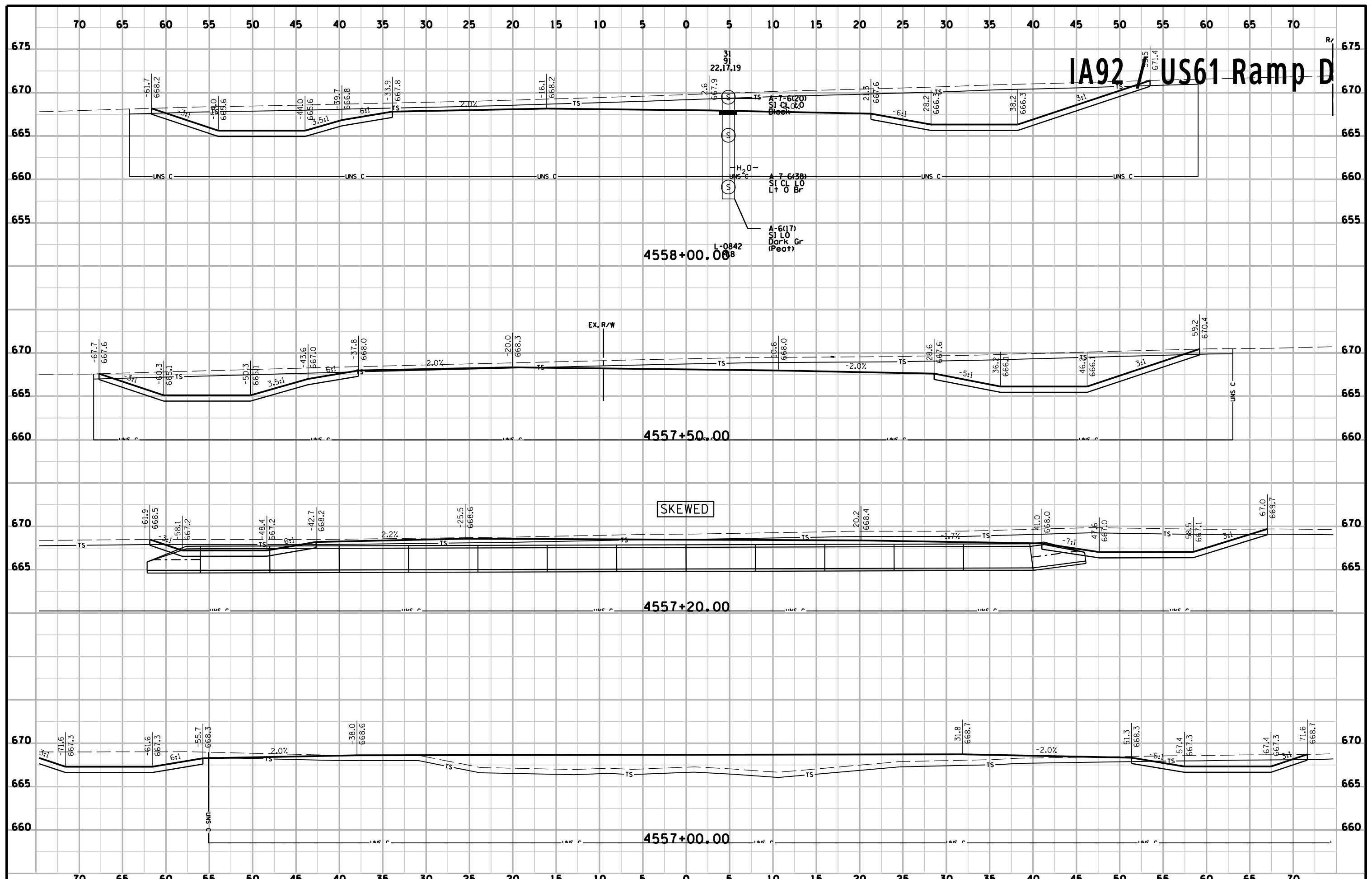
# IA92 / US61 Ramp C



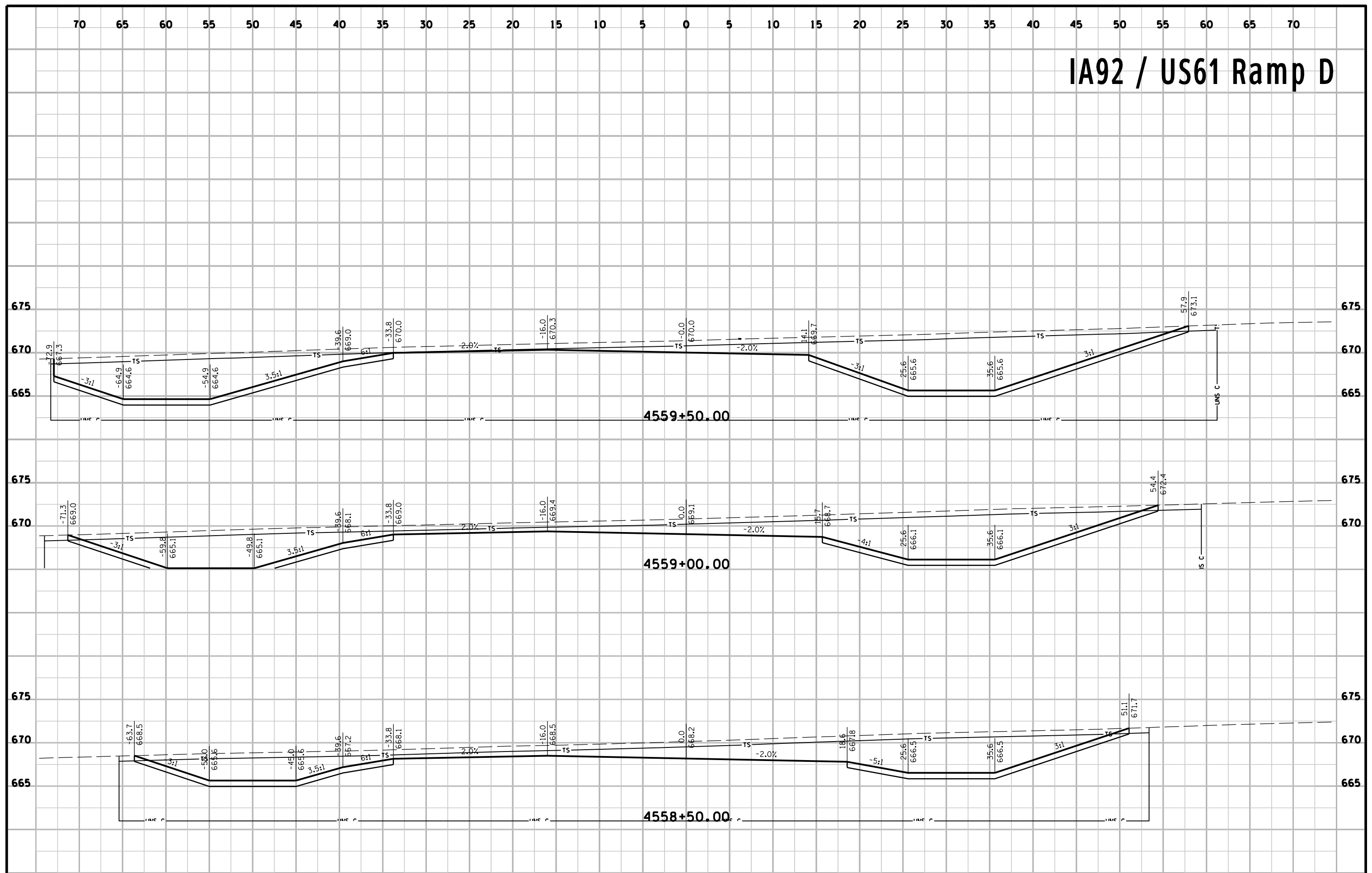
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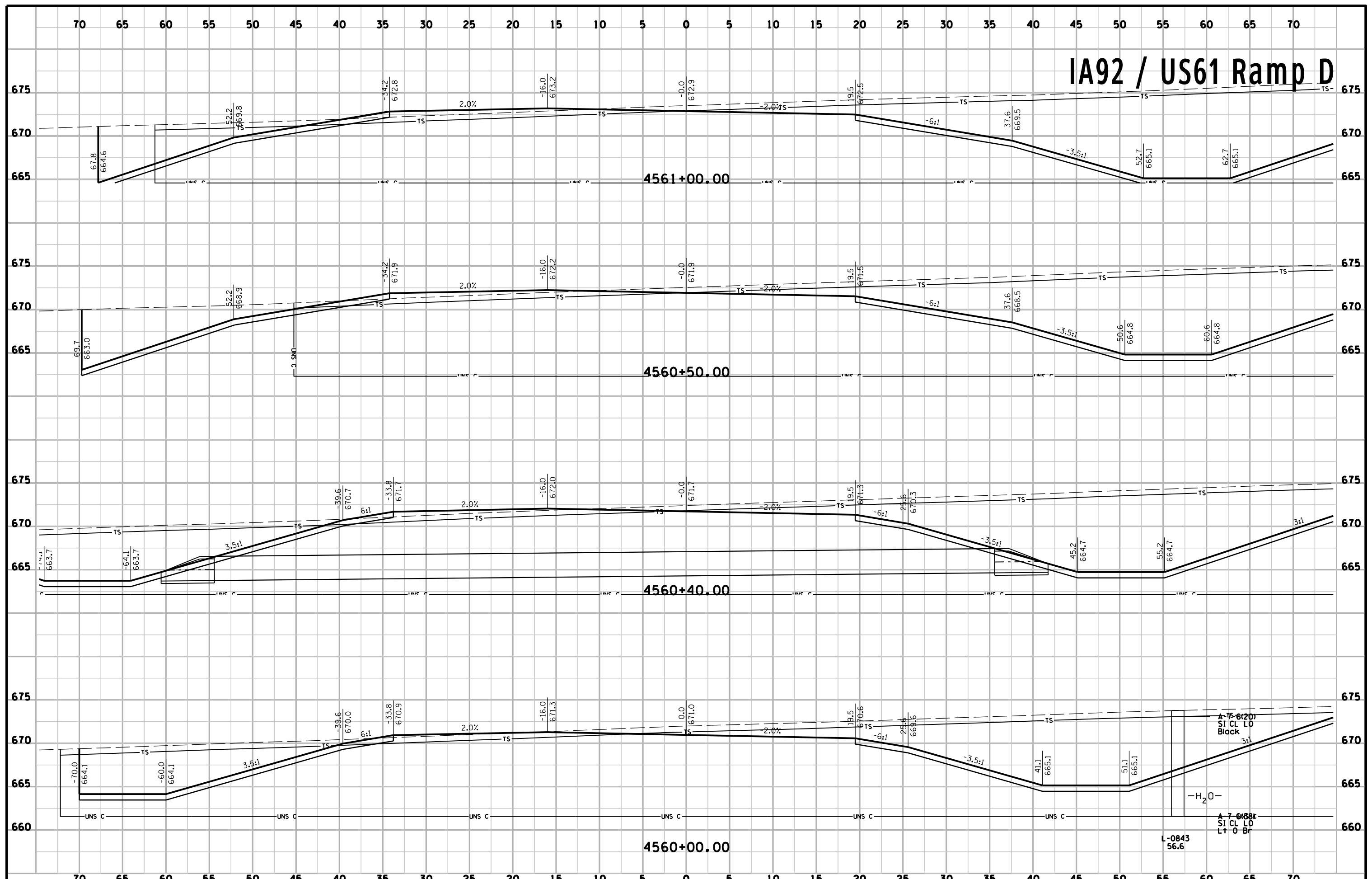
# IA92 / US61 Ramp D



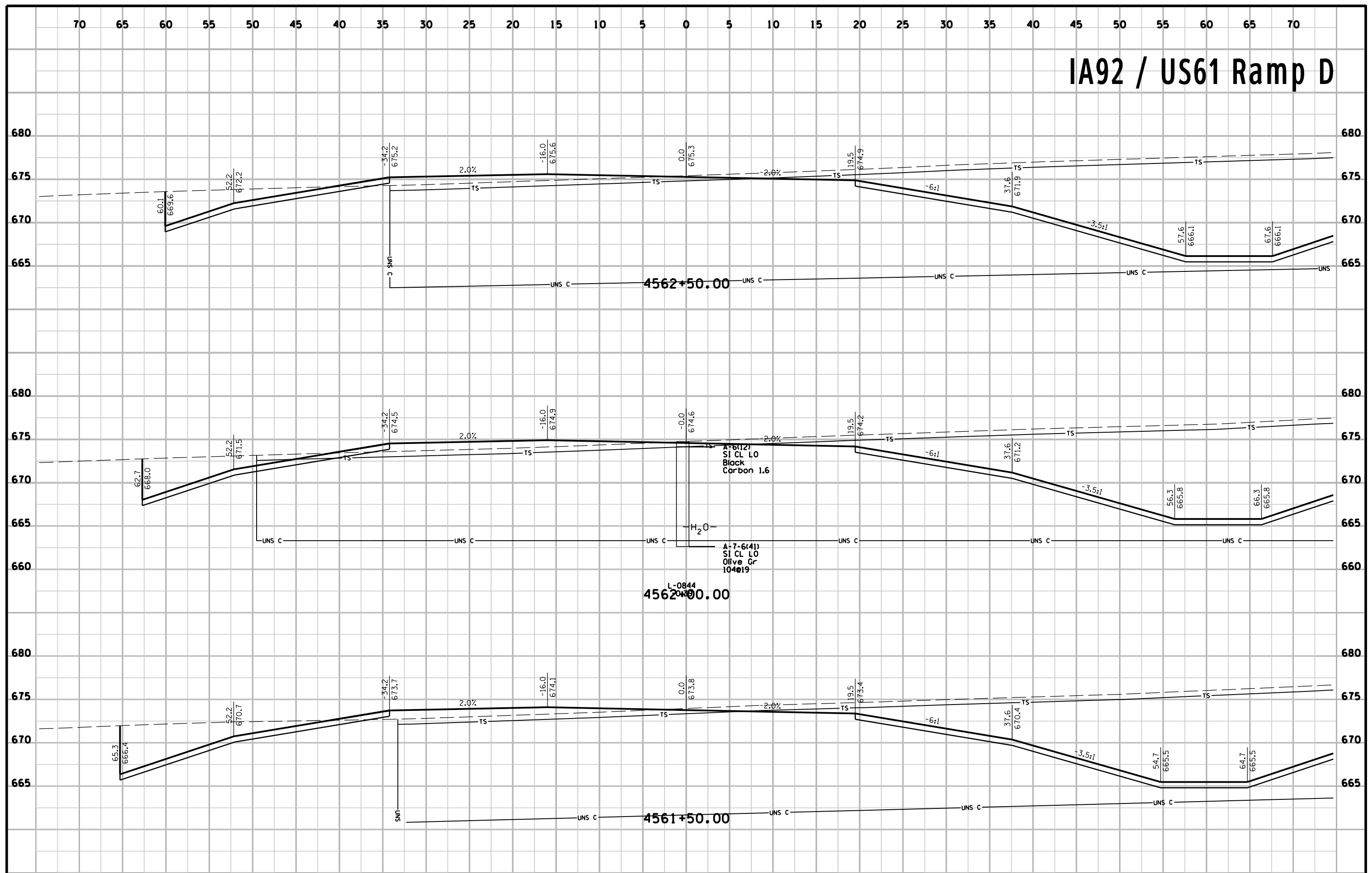
# IA92 / US61 Ramp D



# IA92 / US61 Ramp D

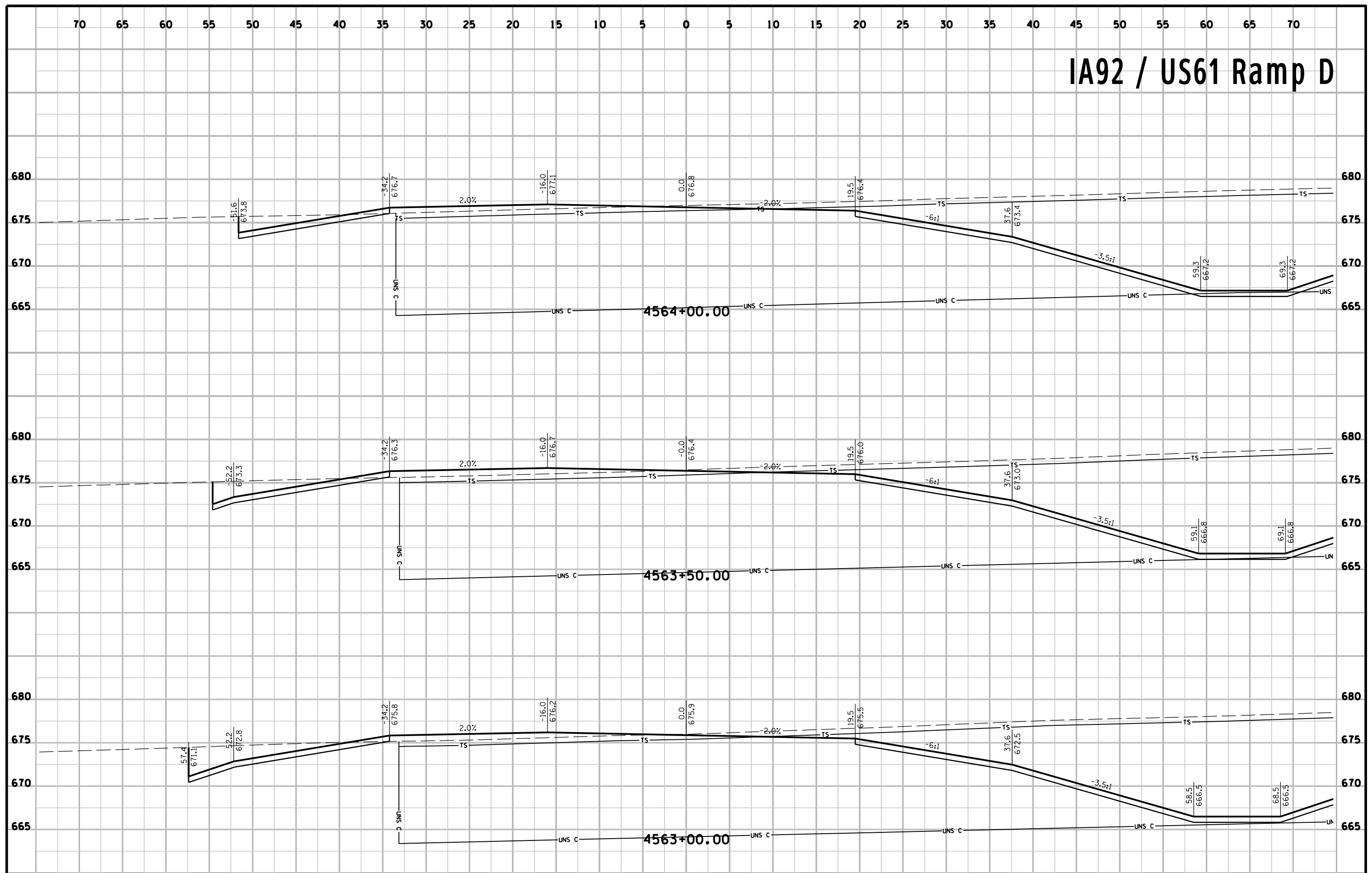


# IA92 / US61 Ramp D

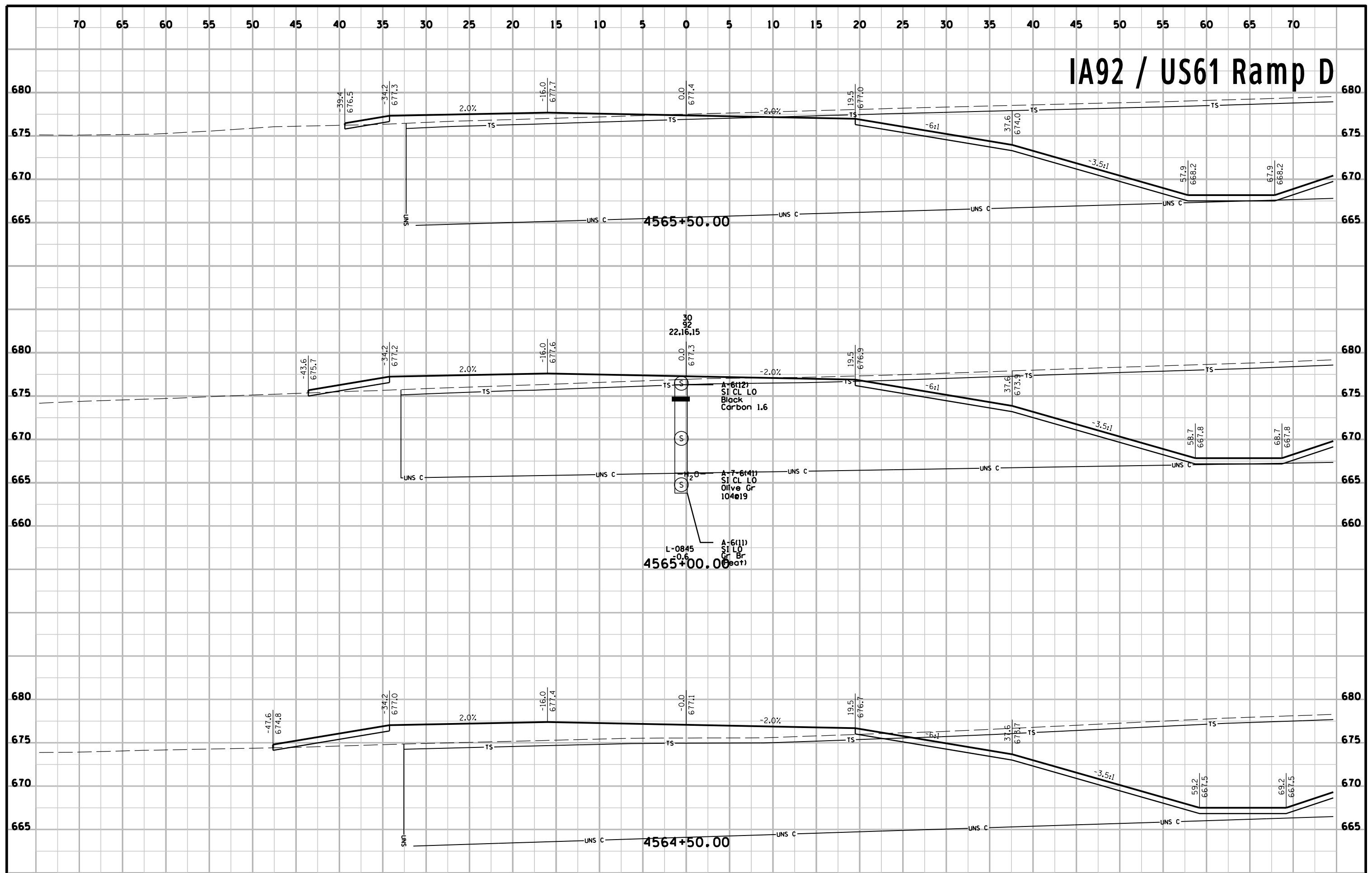




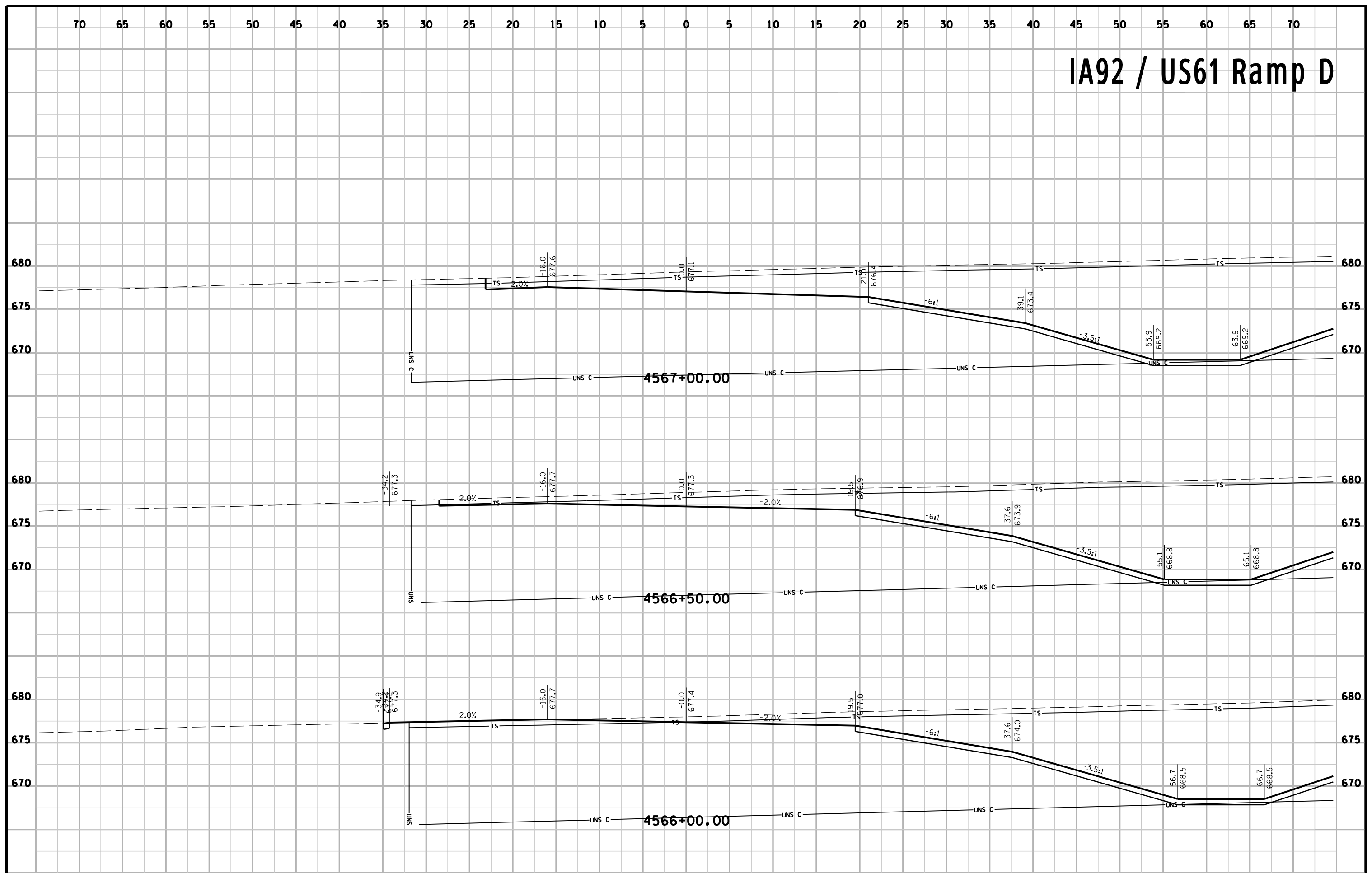
# IA92 / US61 Ramp D



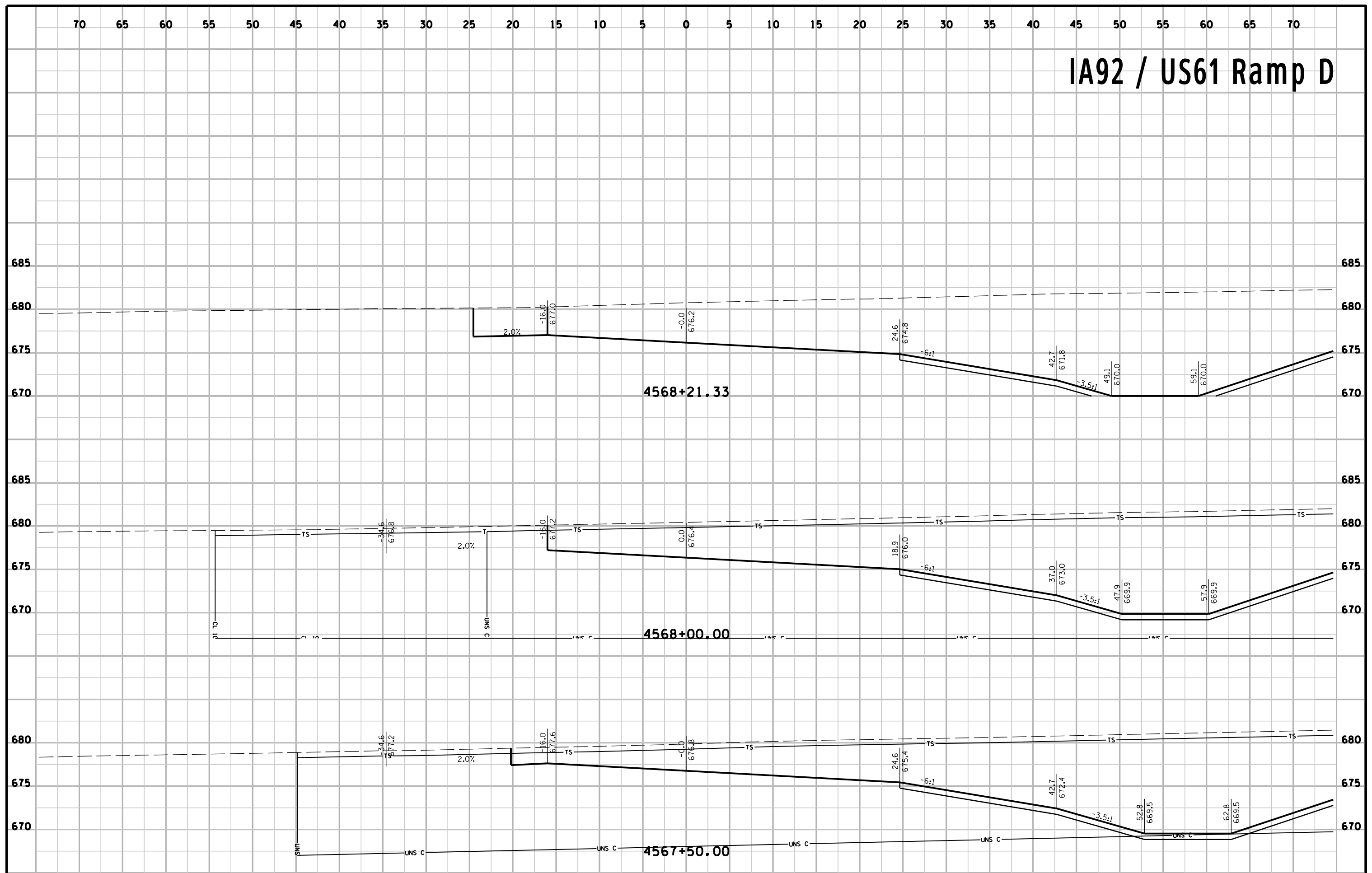
# IA92 / US61 Ramp D



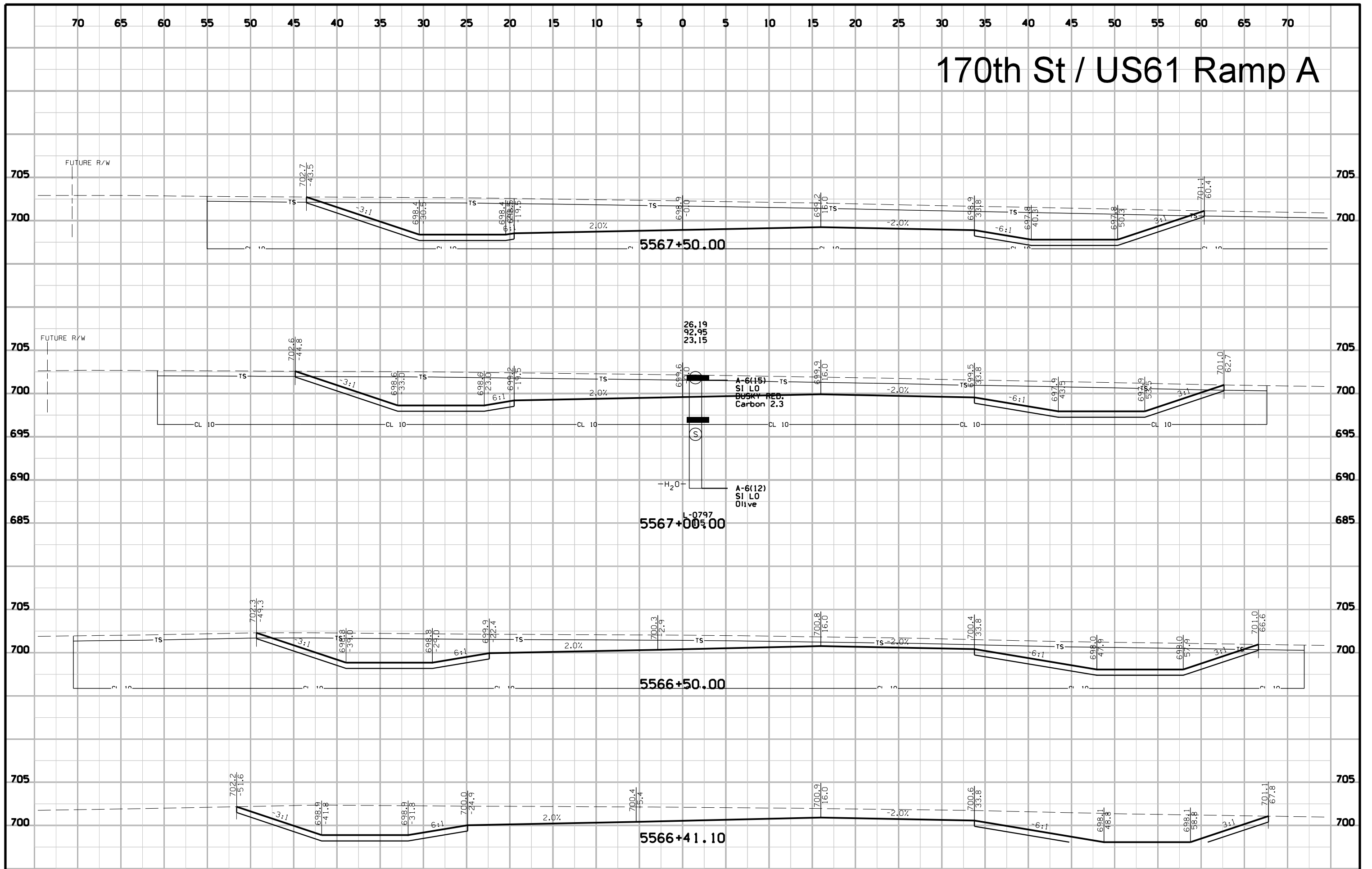
# IA92 / US61 Ramp D



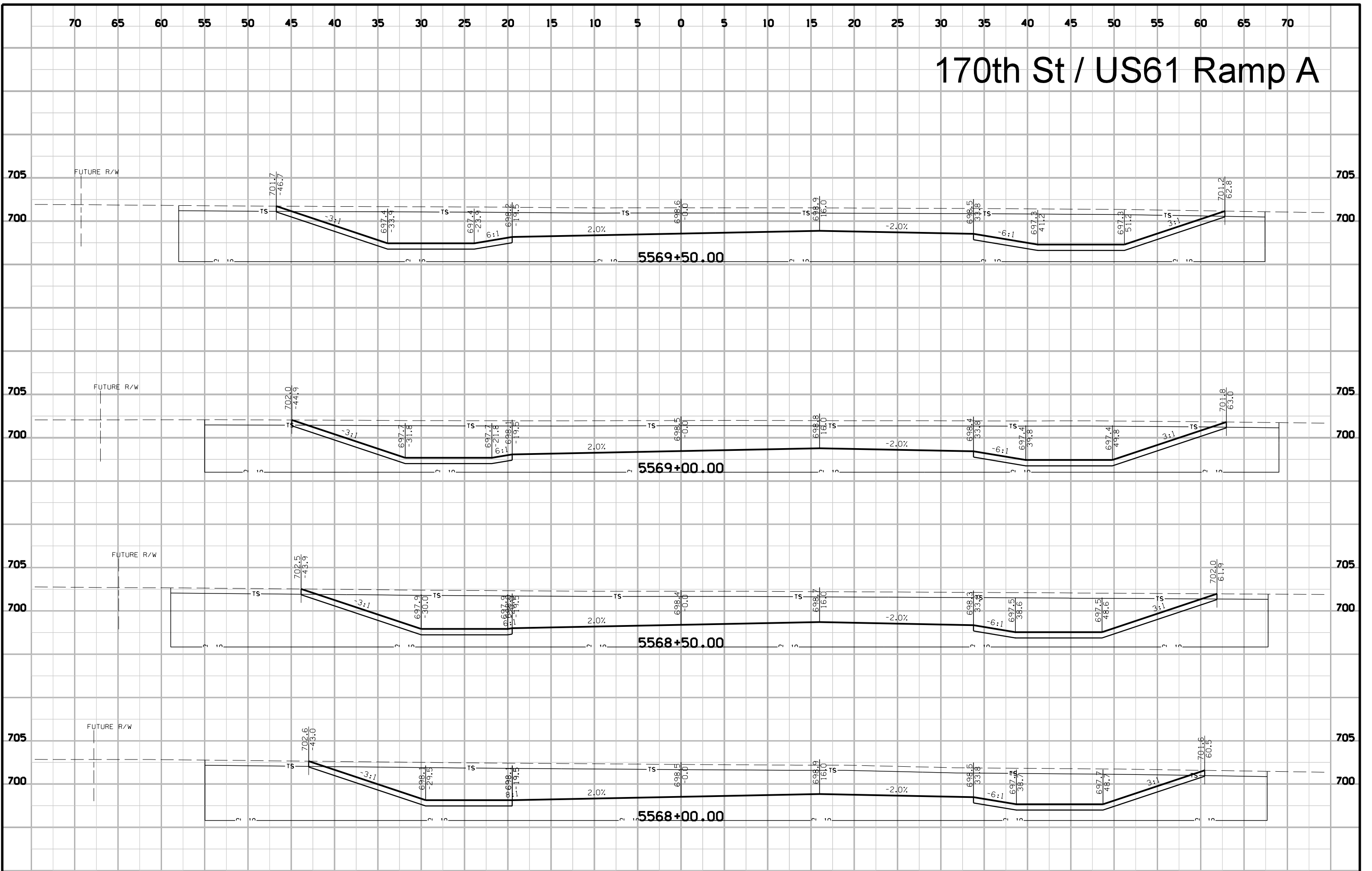
# IA92 / US61 Ramp D



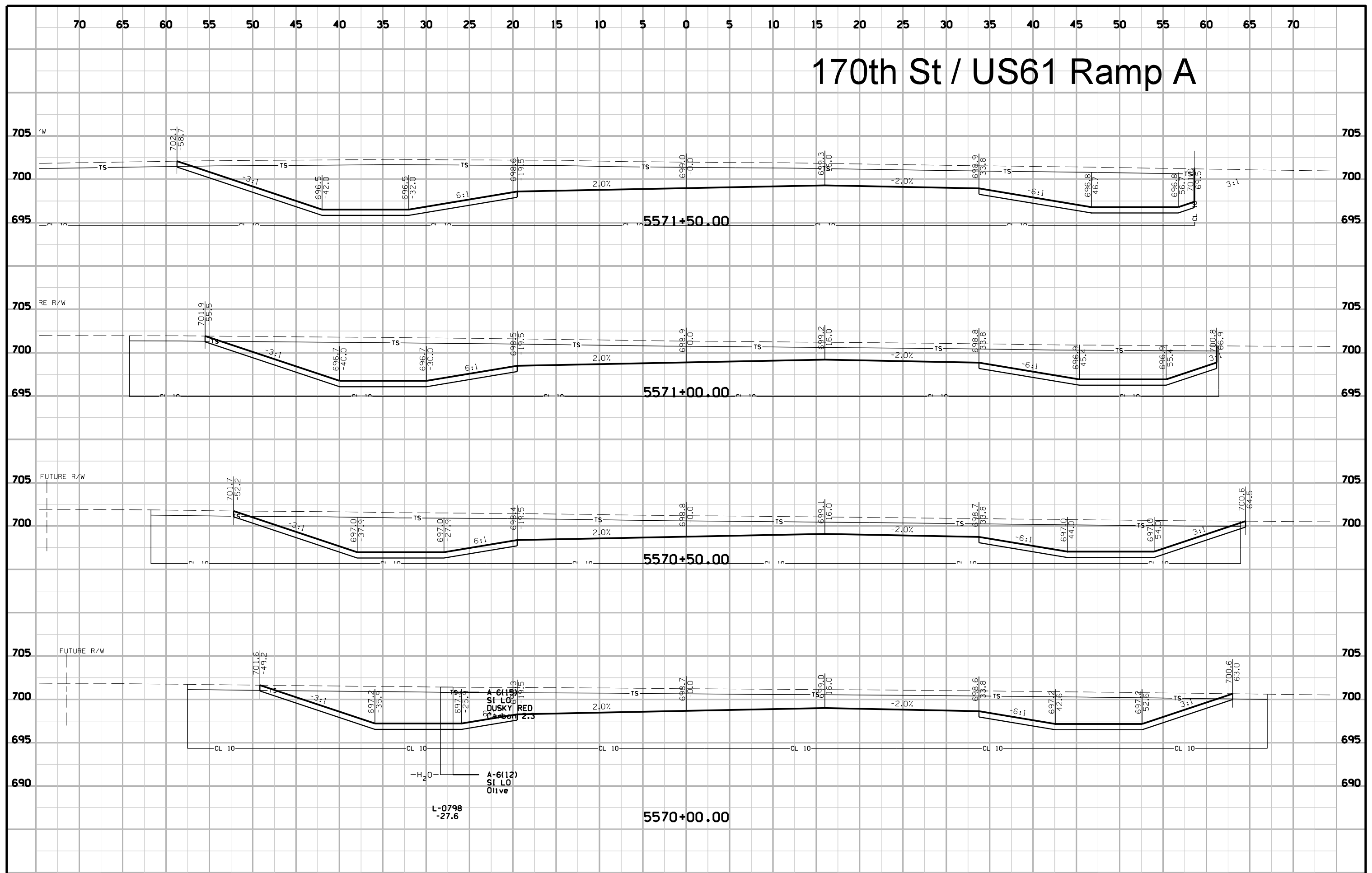
# 170th St / US61 Ramp A



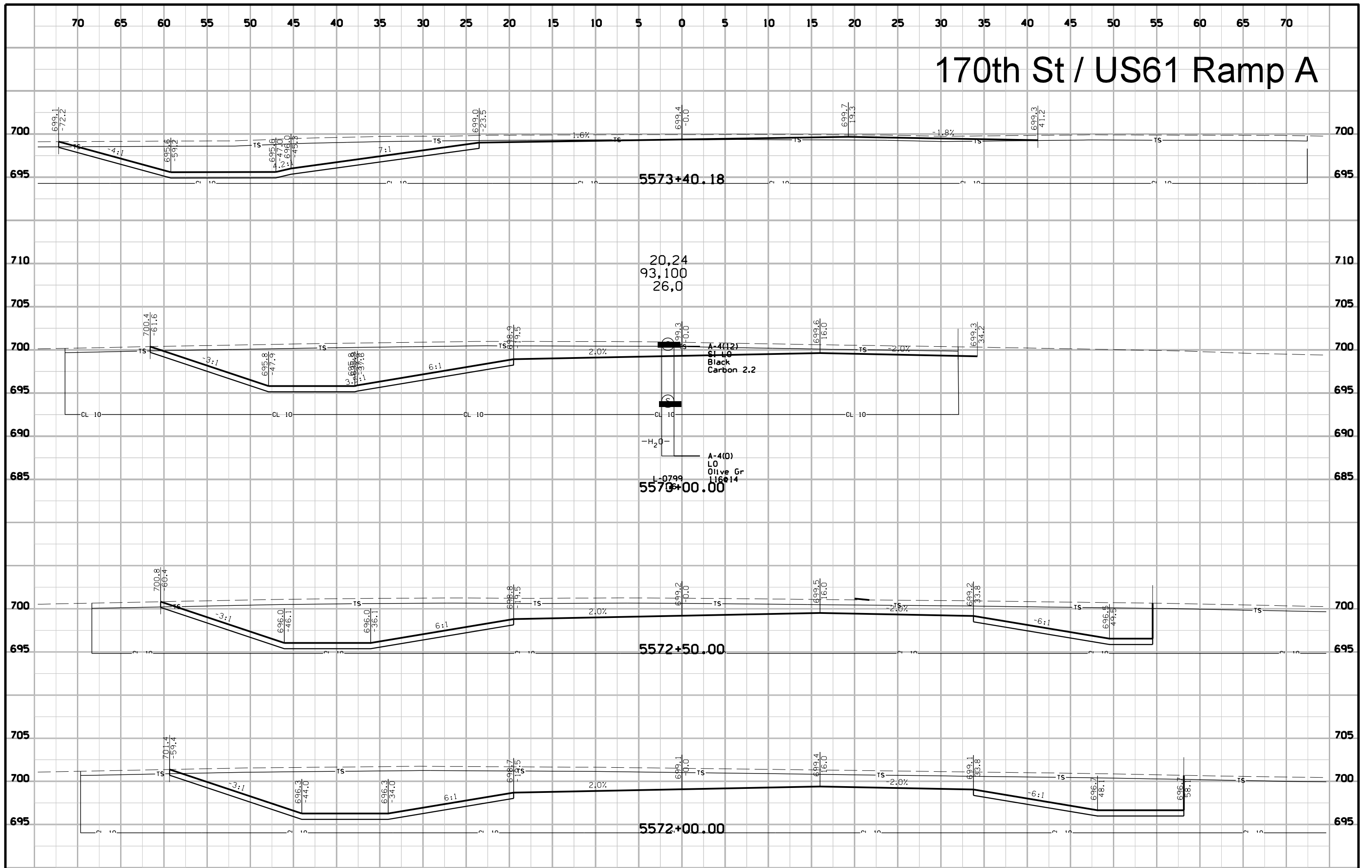
# 170th St / US61 Ramp A



# 170th St / US61 Ramp A

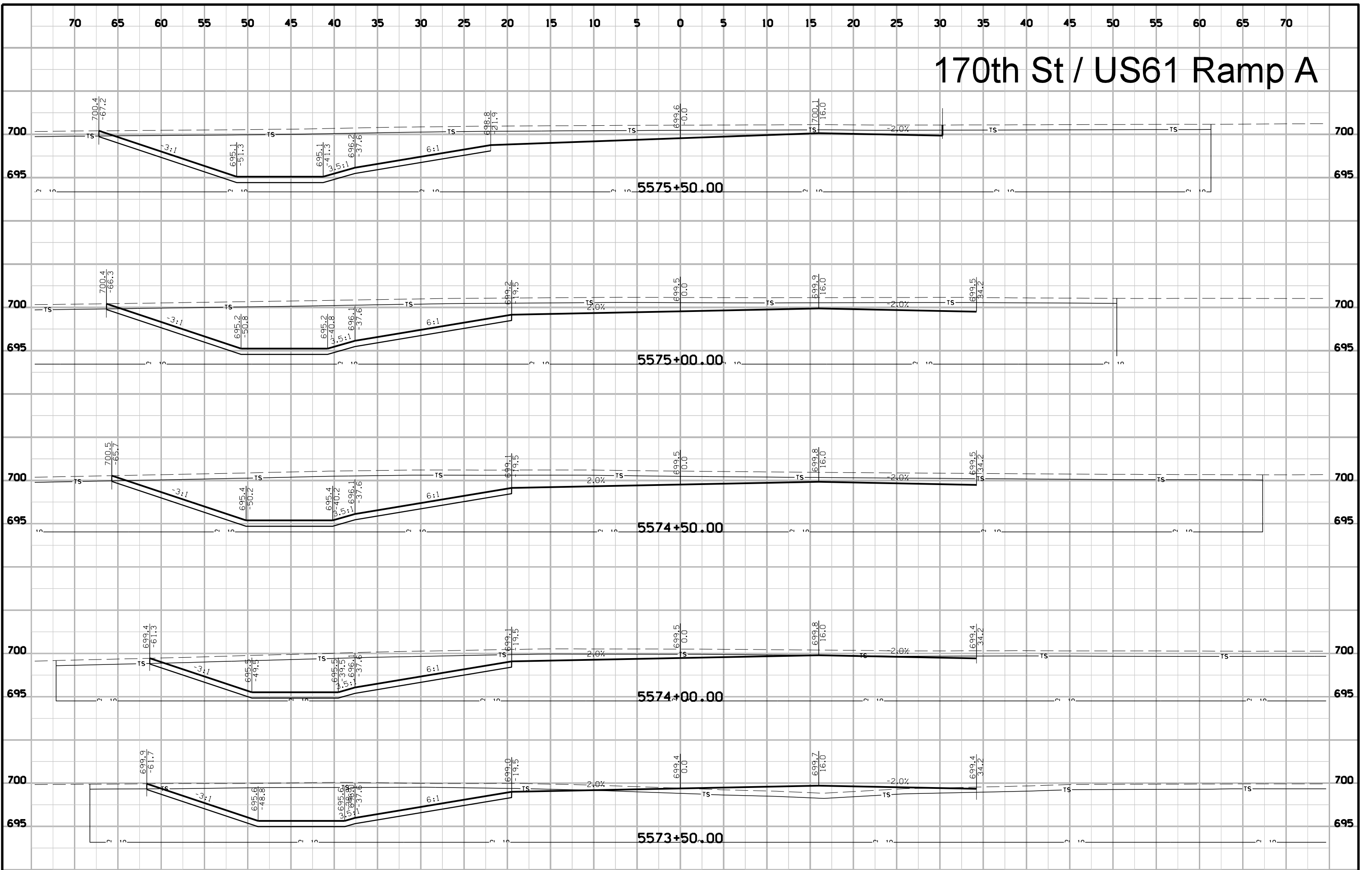


# 170th St / US61 Ramp A

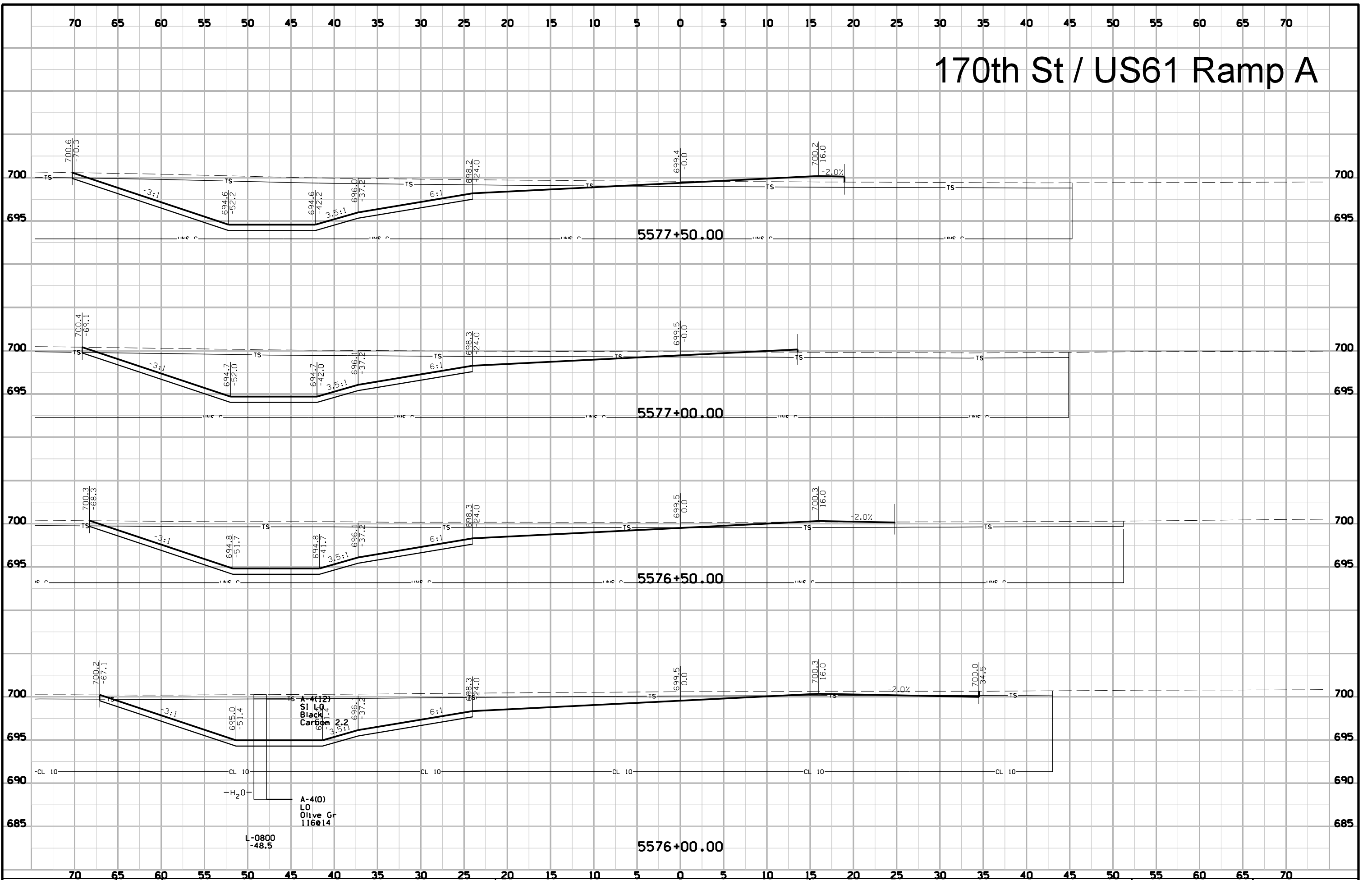




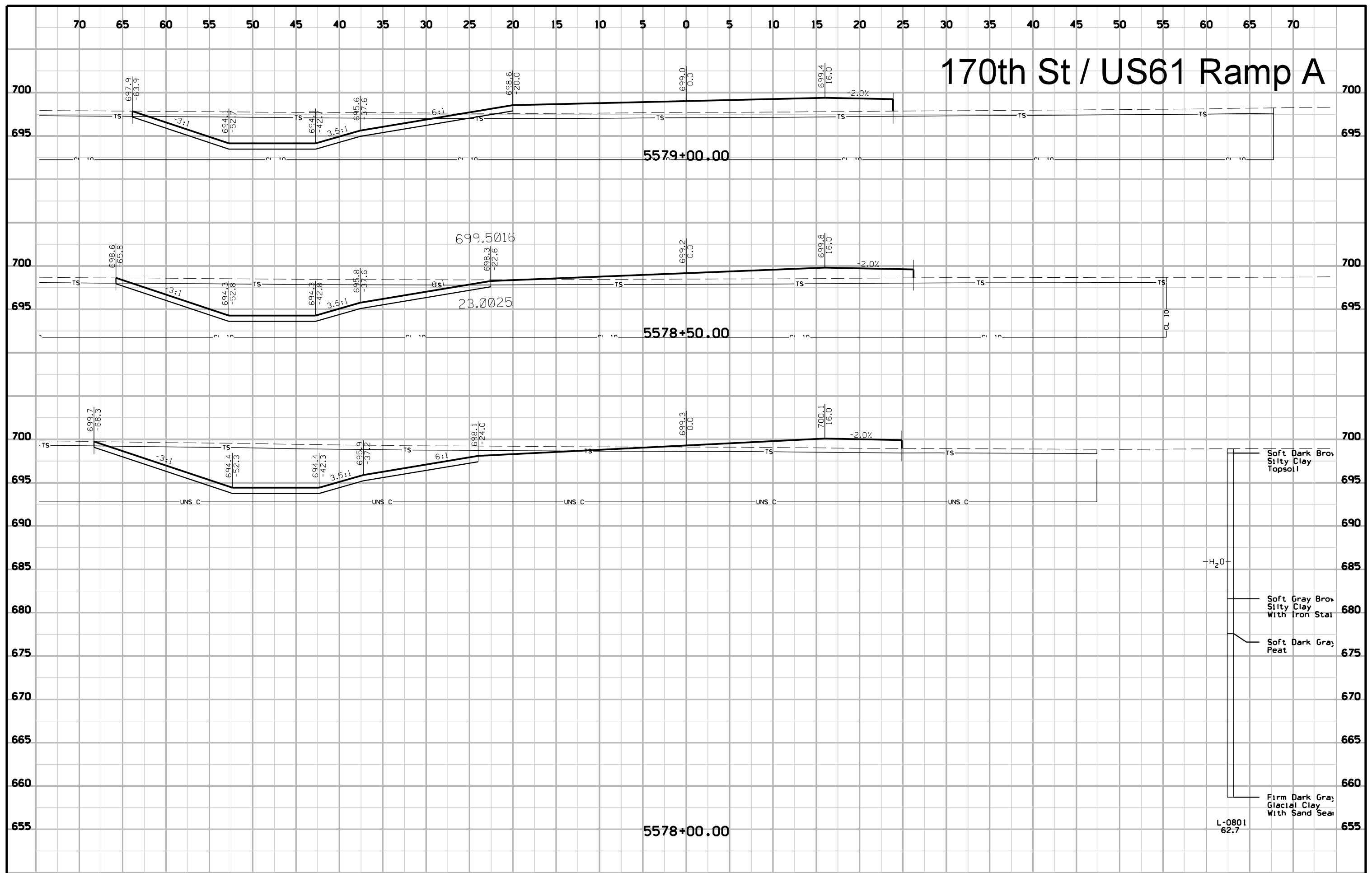
# 170th St / US61 Ramp A



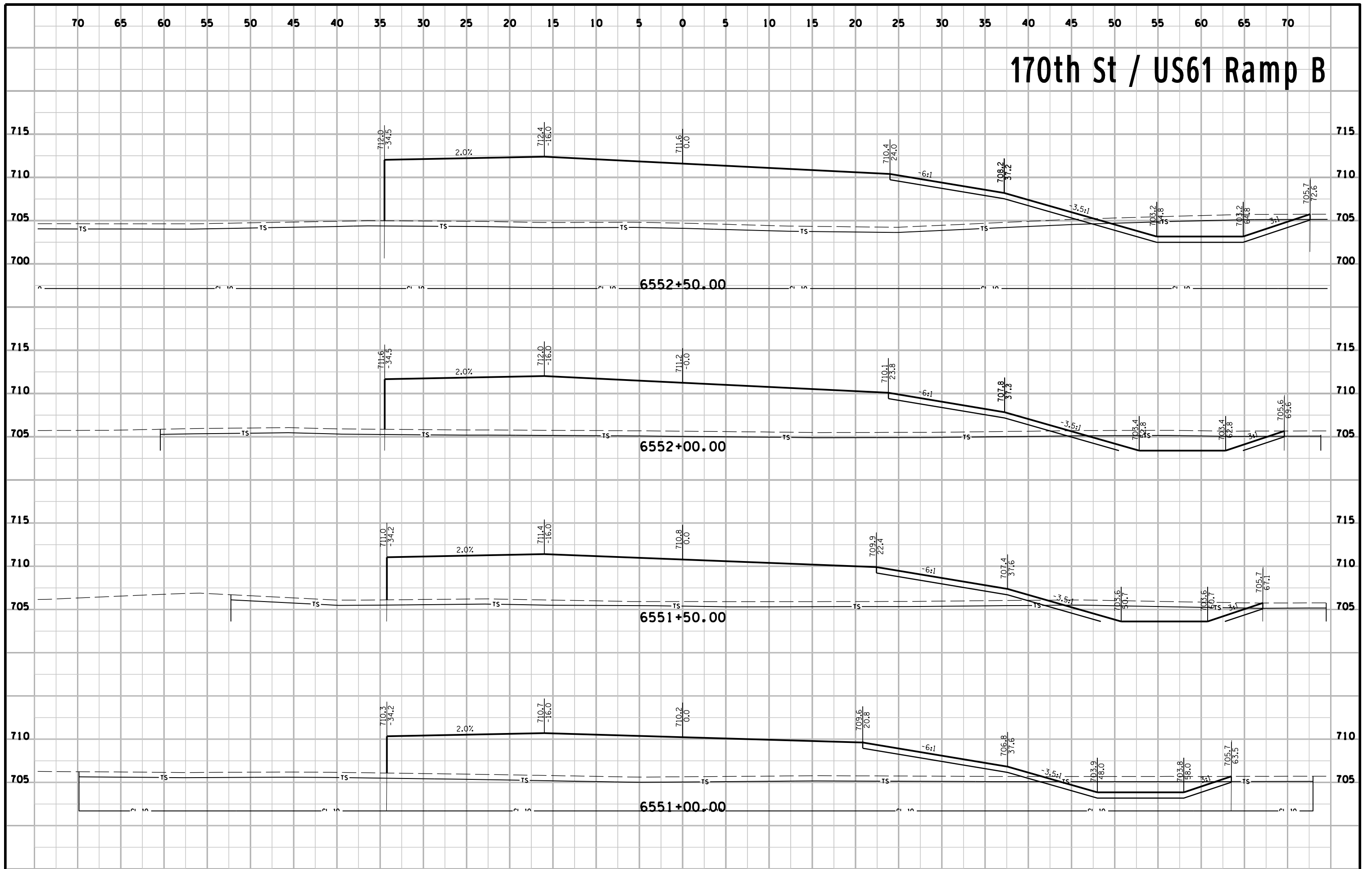
# 170th St / US61 Ramp A



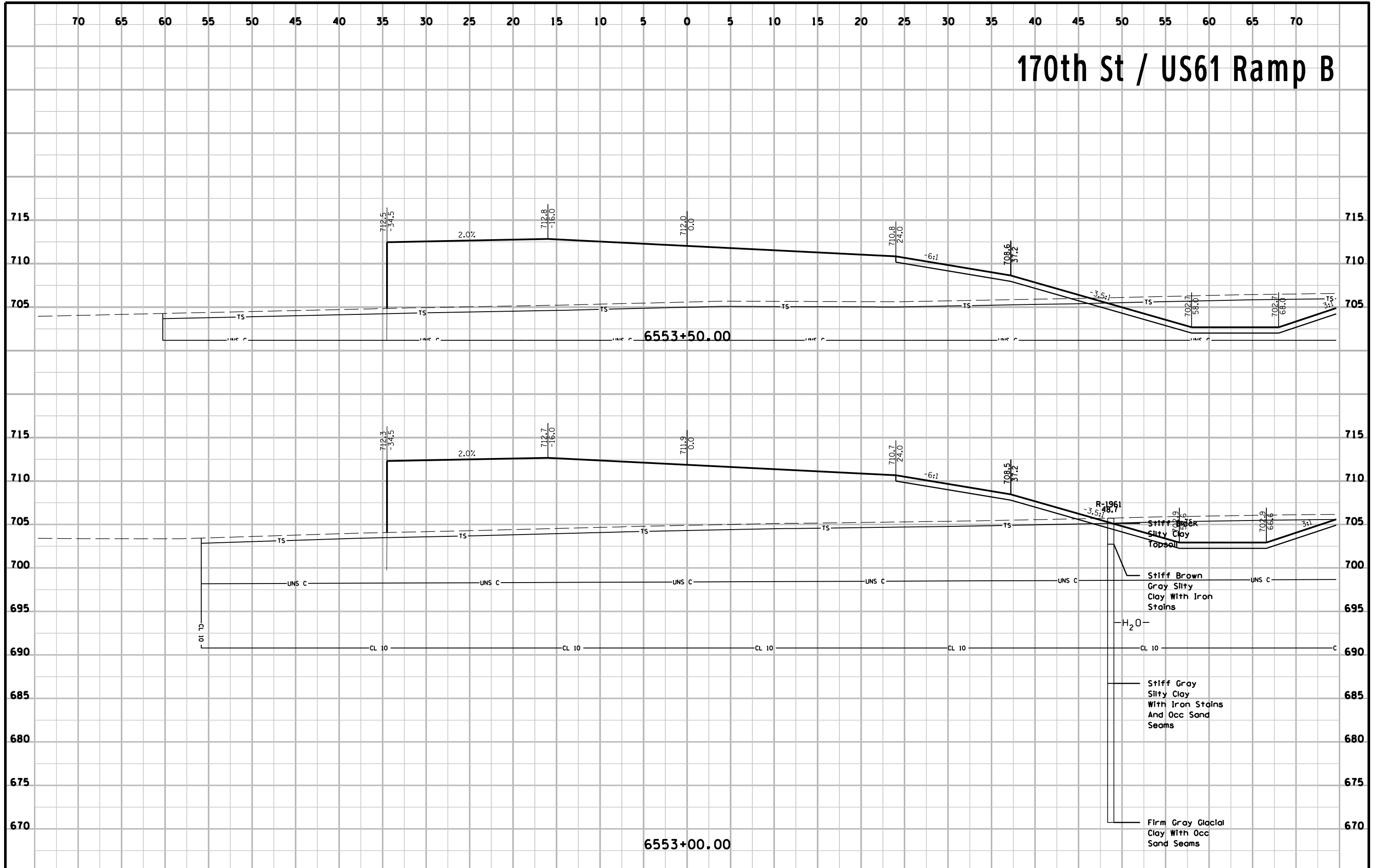
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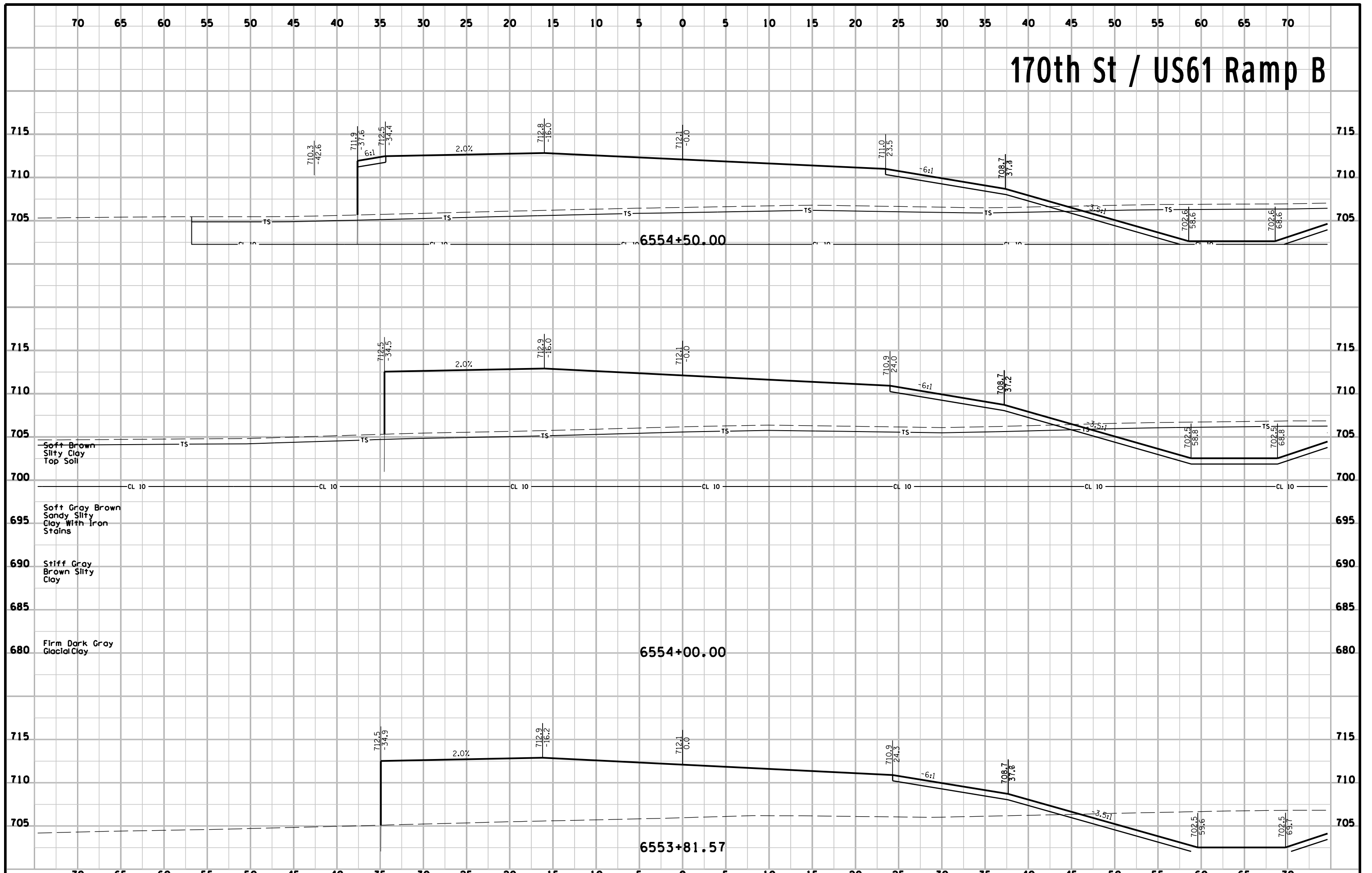
# 170th St / US61 Ramp B



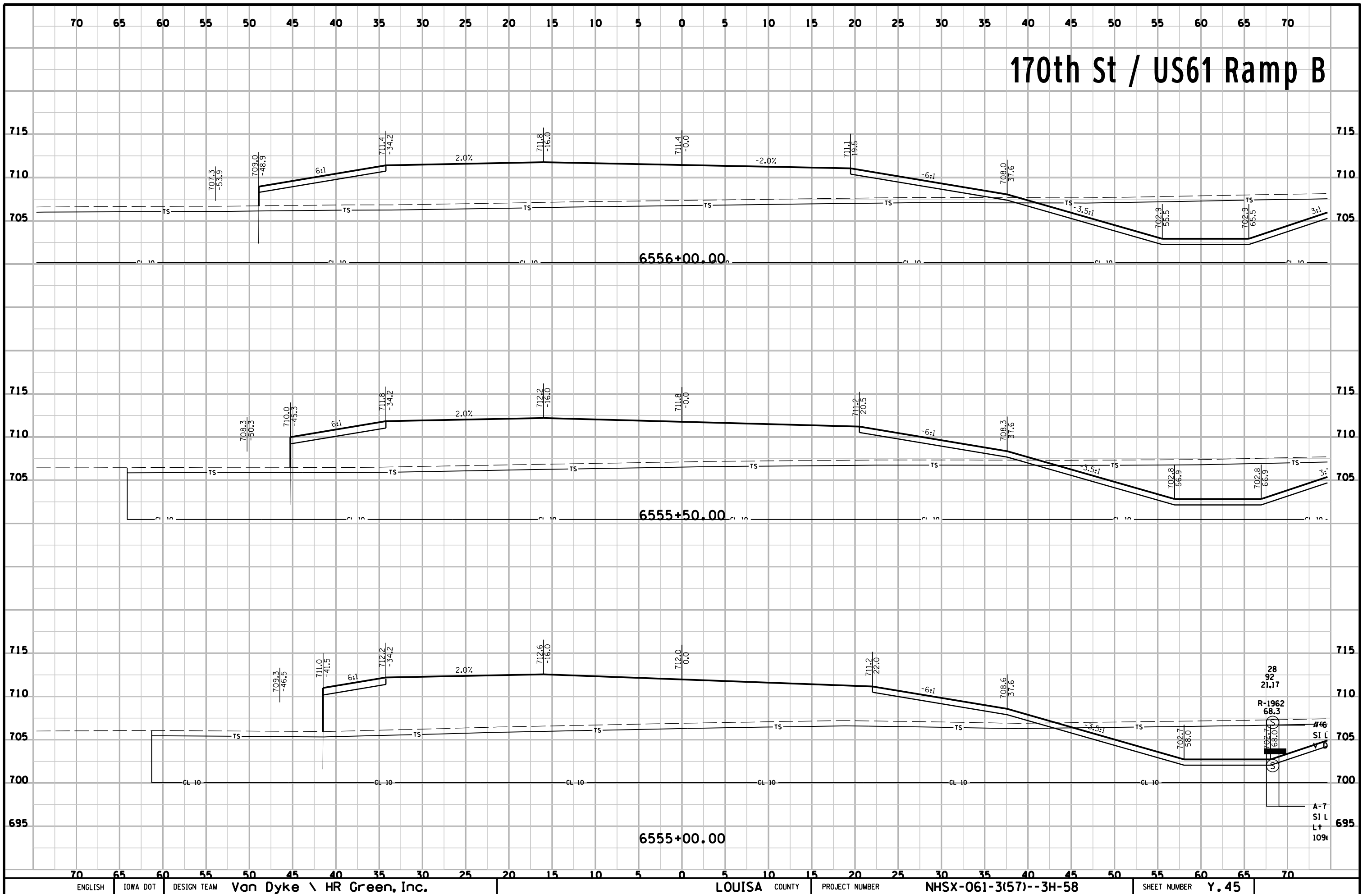
# 170th St / US61 Ramp B



# 170th St / US61 Ramp B

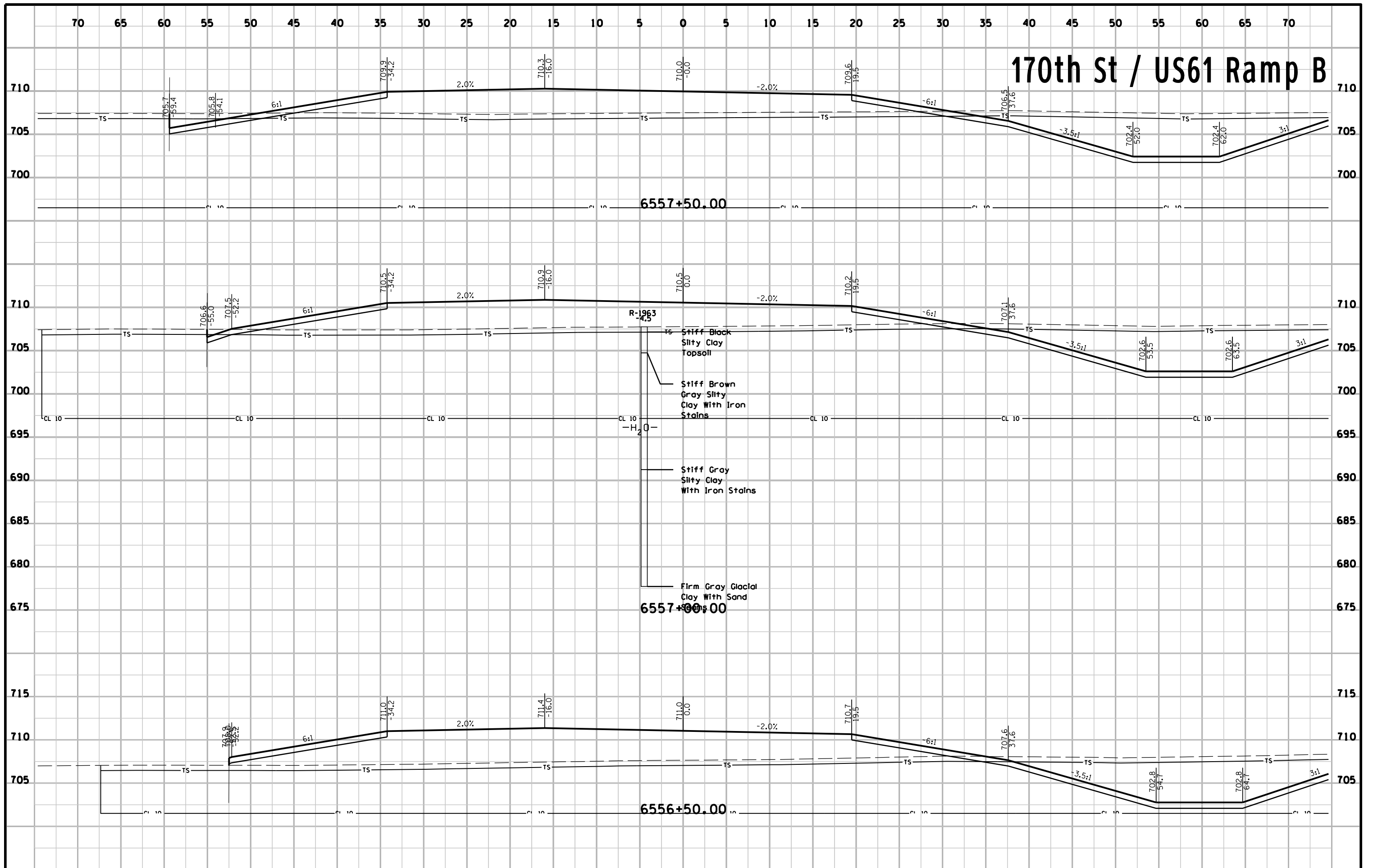


# 170th St / US61 Ramp B



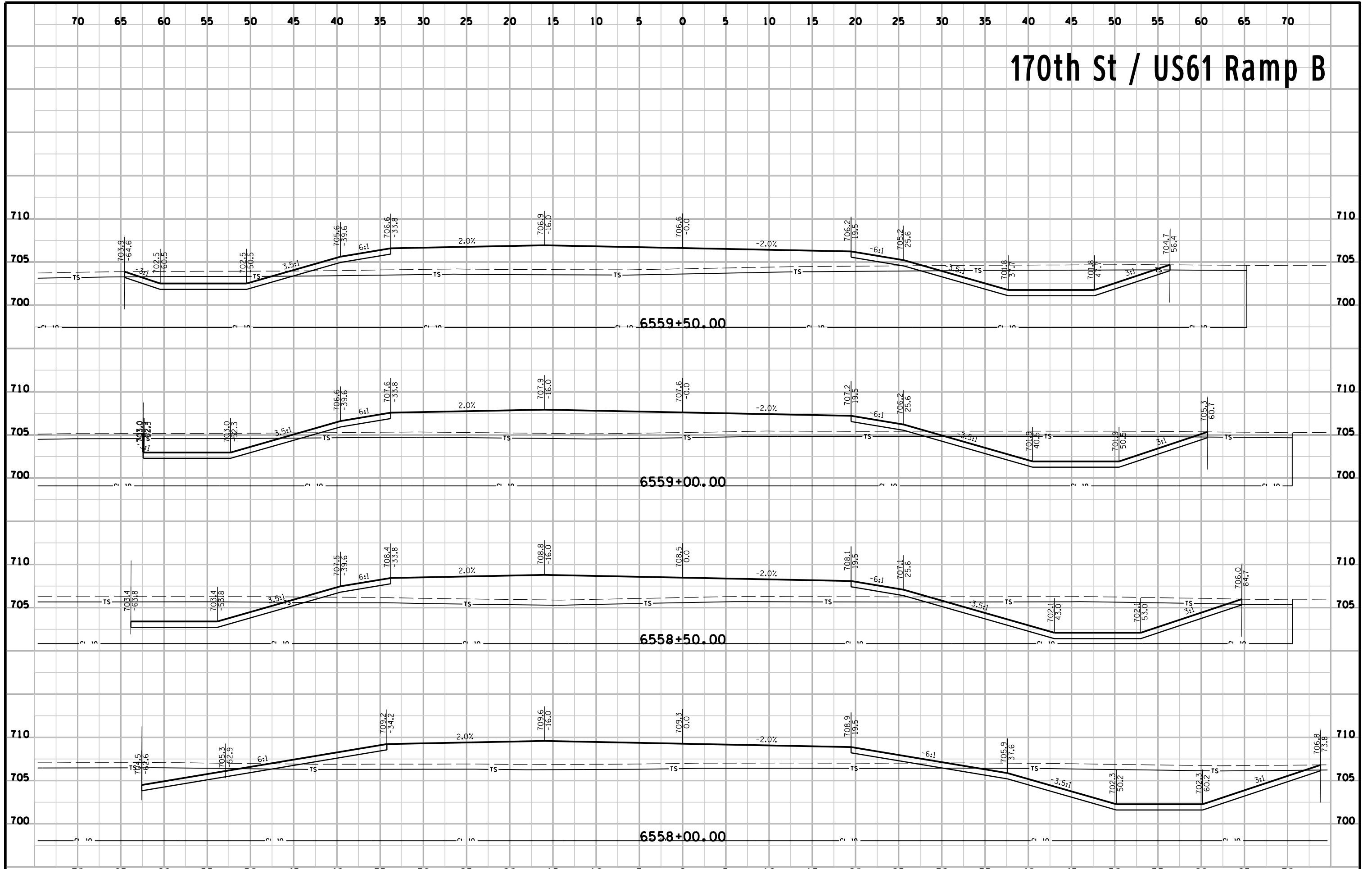
28  
92  
21.17  
R-1962  
68.3  
A-96  
SIL  
V-D  
A-7  
SIL  
L+  
109'

# 170th St / US61 Ramp B

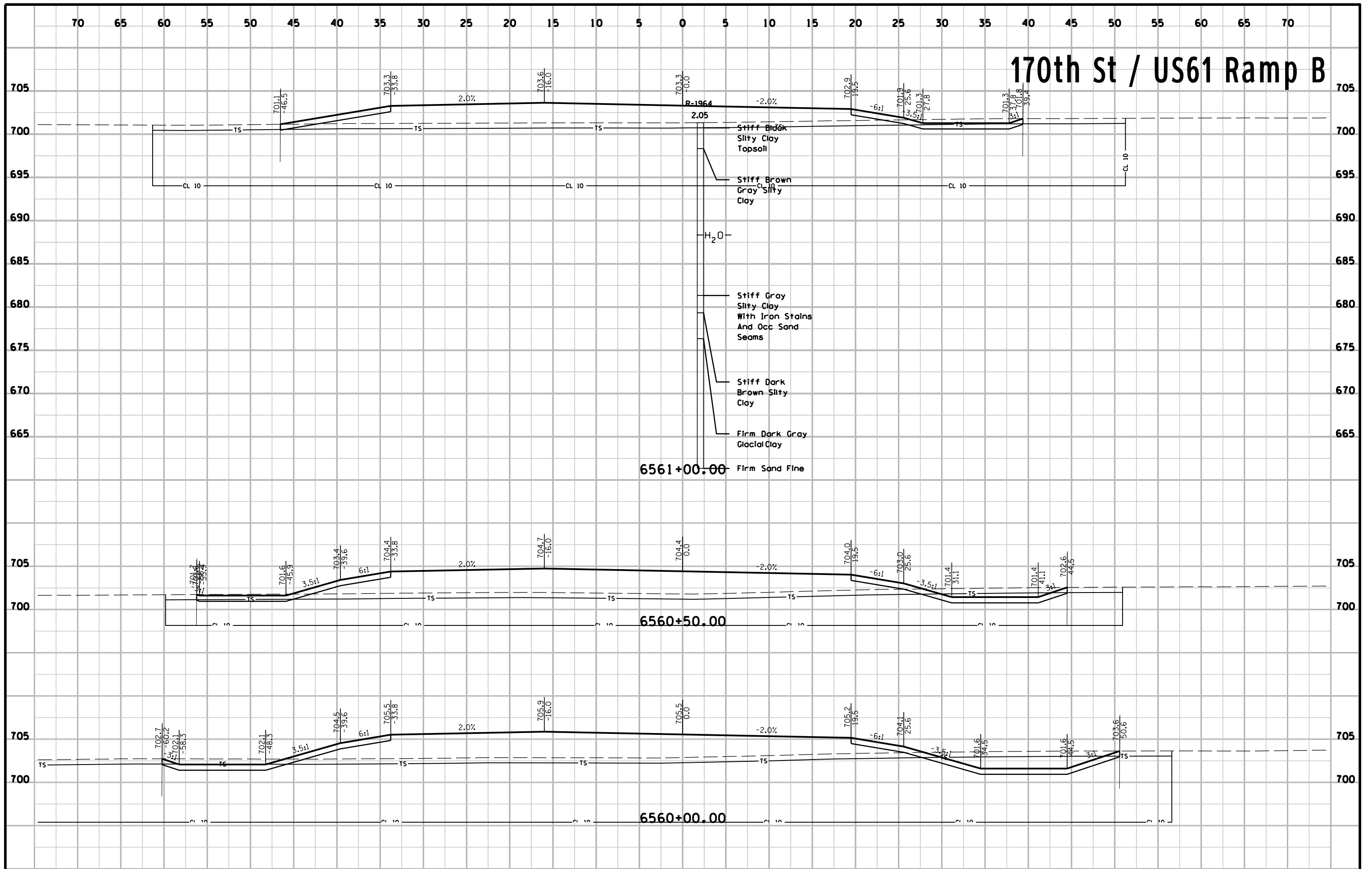




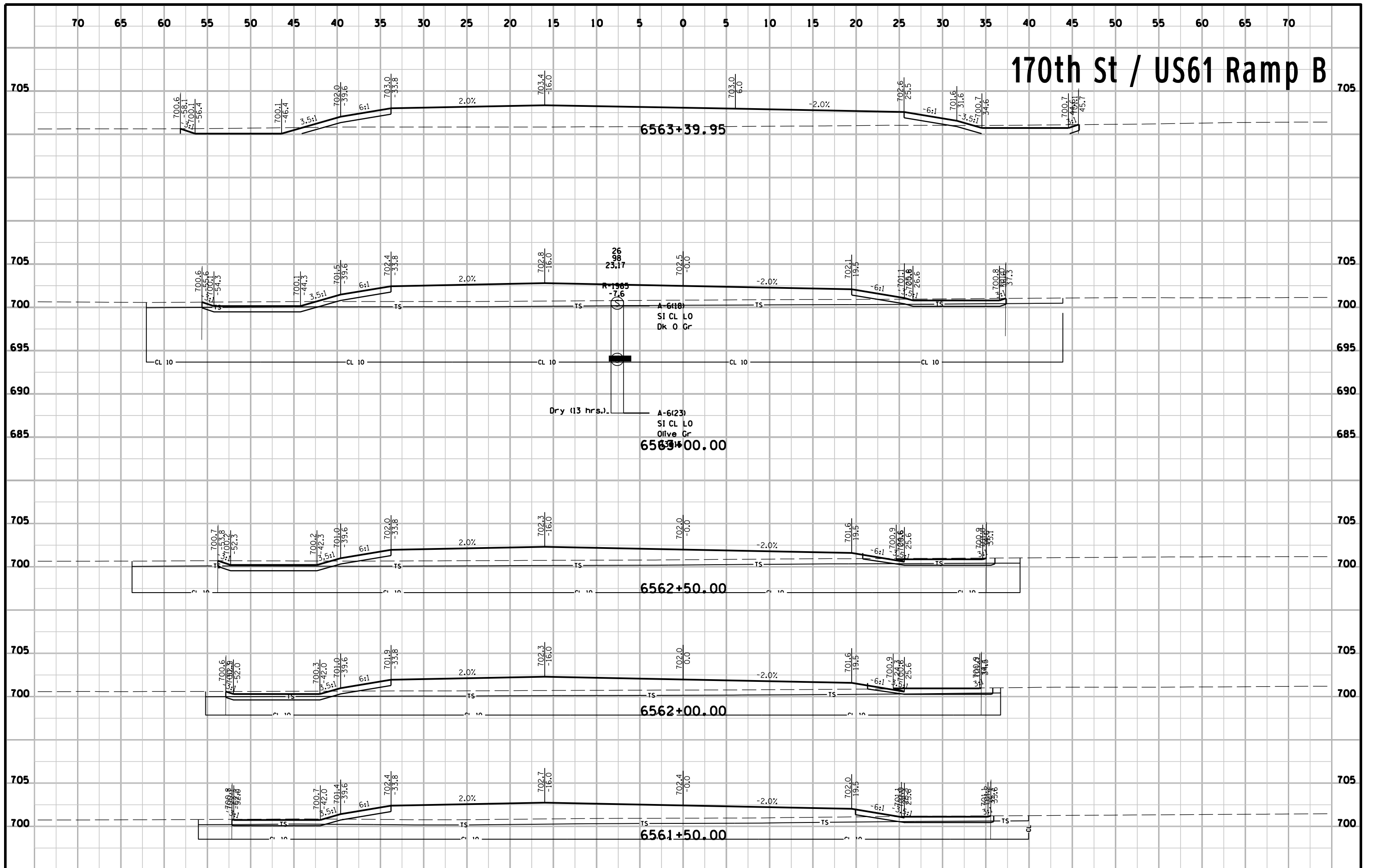
# 170th St / US61 Ramp B



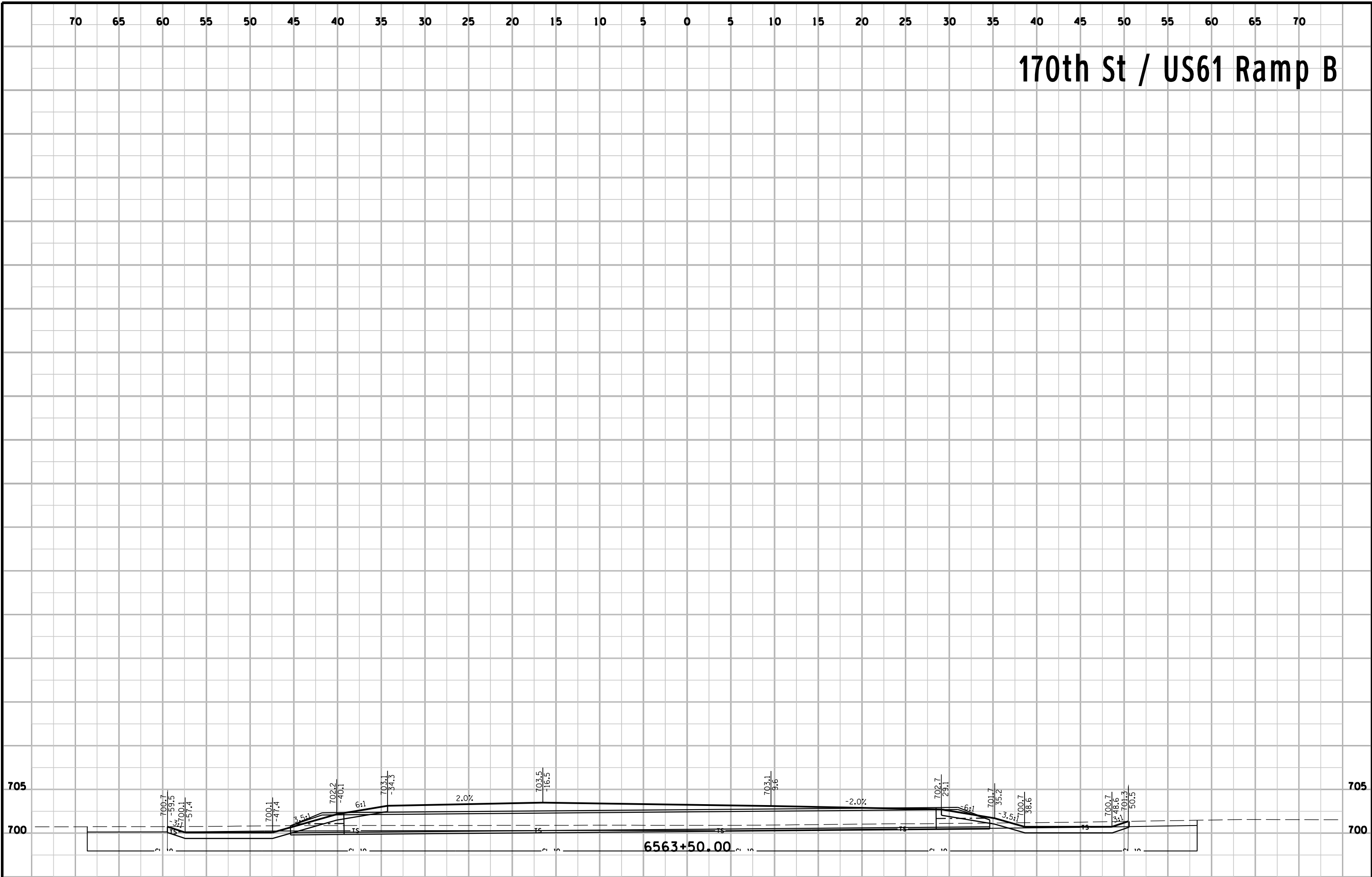
# 170th St / US61 Ramp B



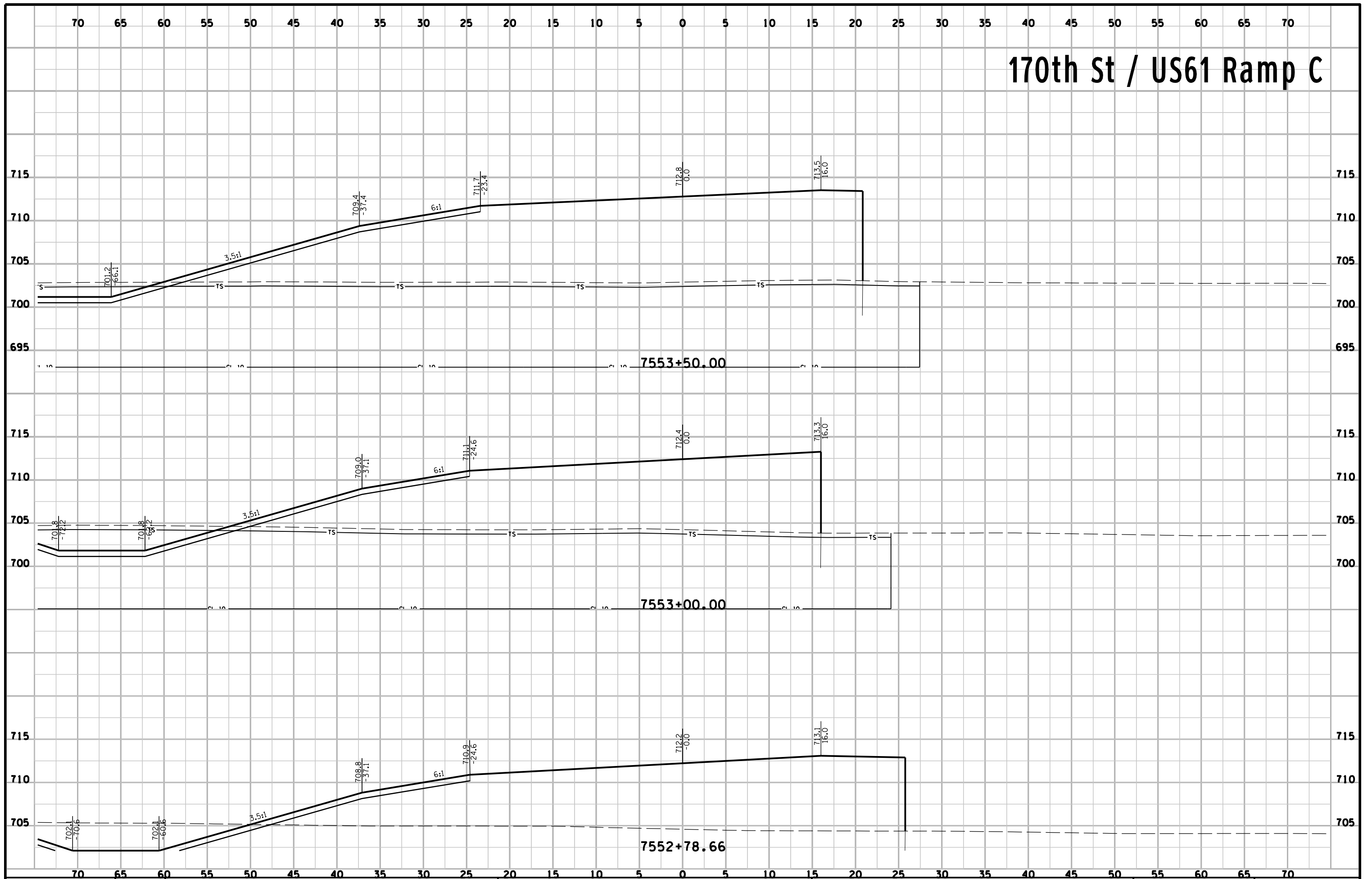
# 170th St / US61 Ramp B



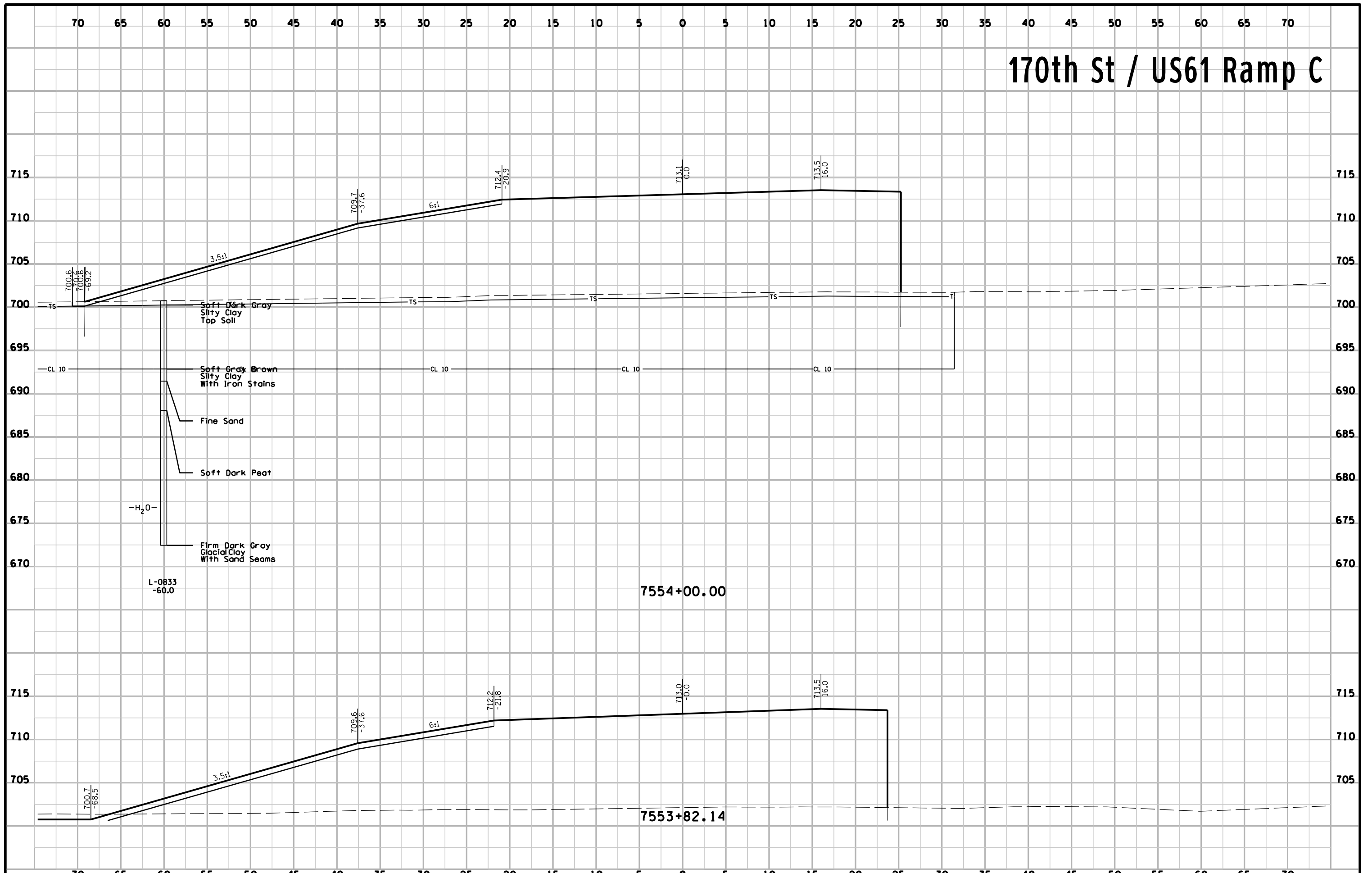
# 170th St / US61 Ramp B



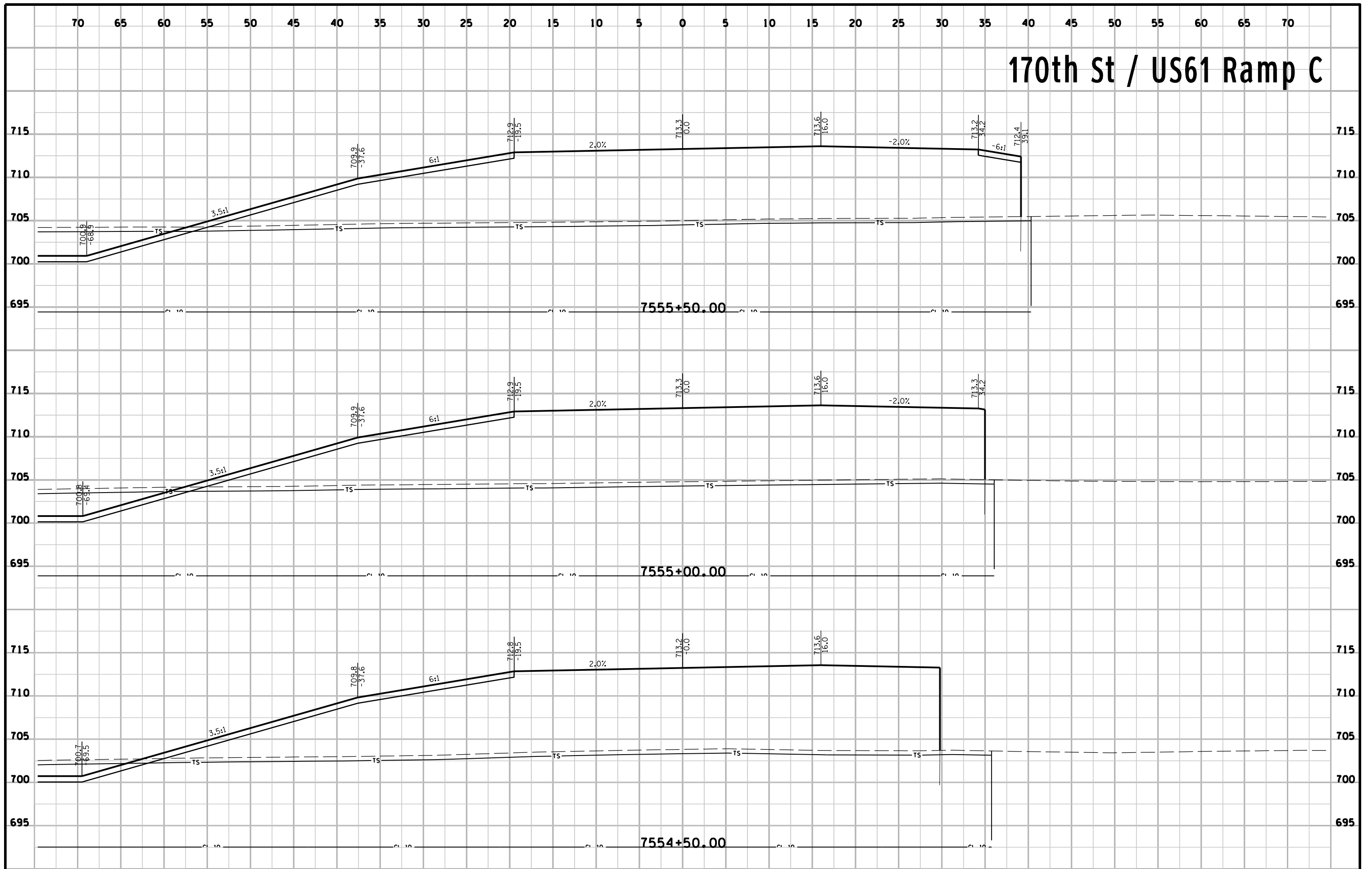
# 170th St / US61 Ramp C



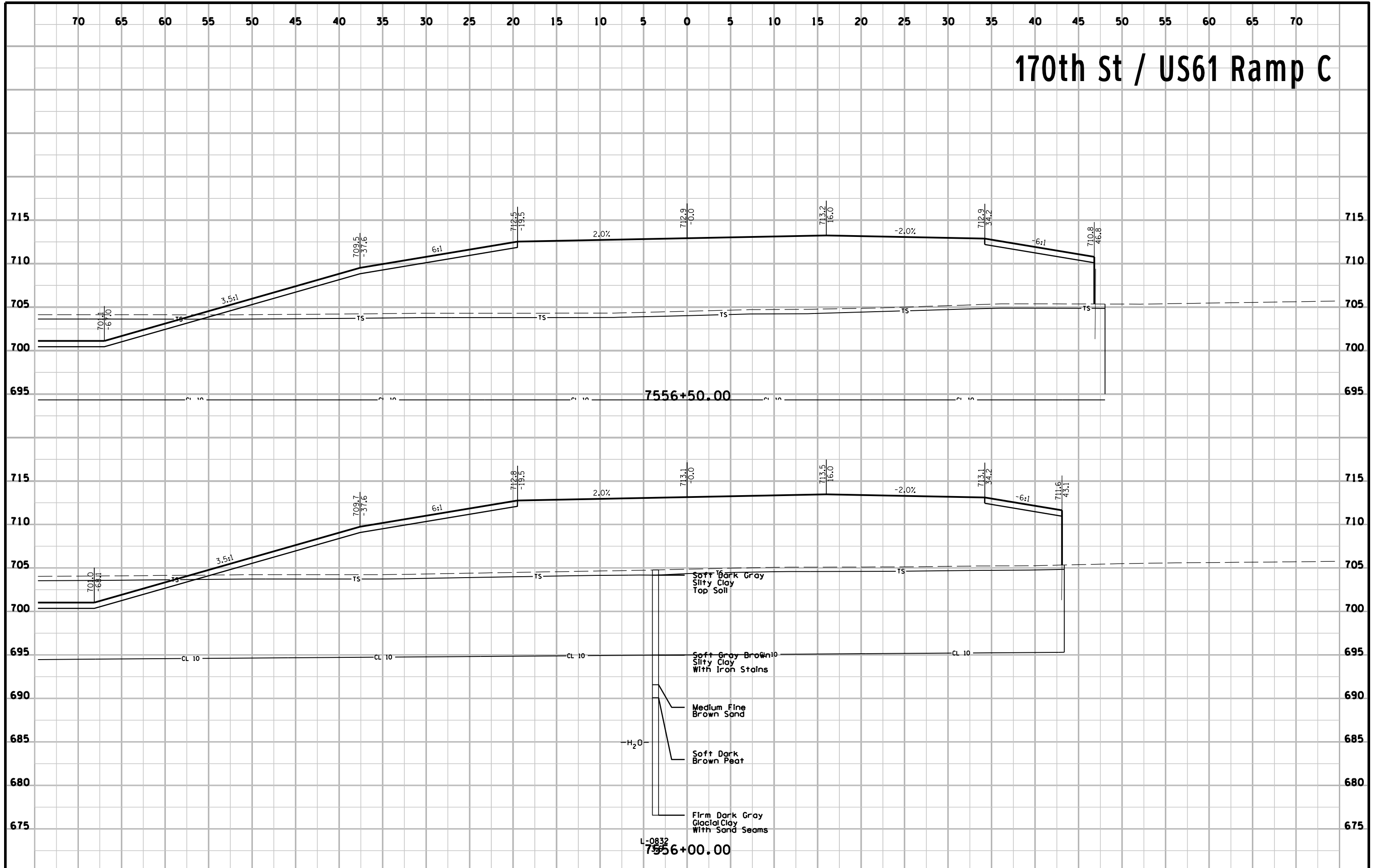
# 170th St / US61 Ramp C



# 170th St / US61 Ramp C

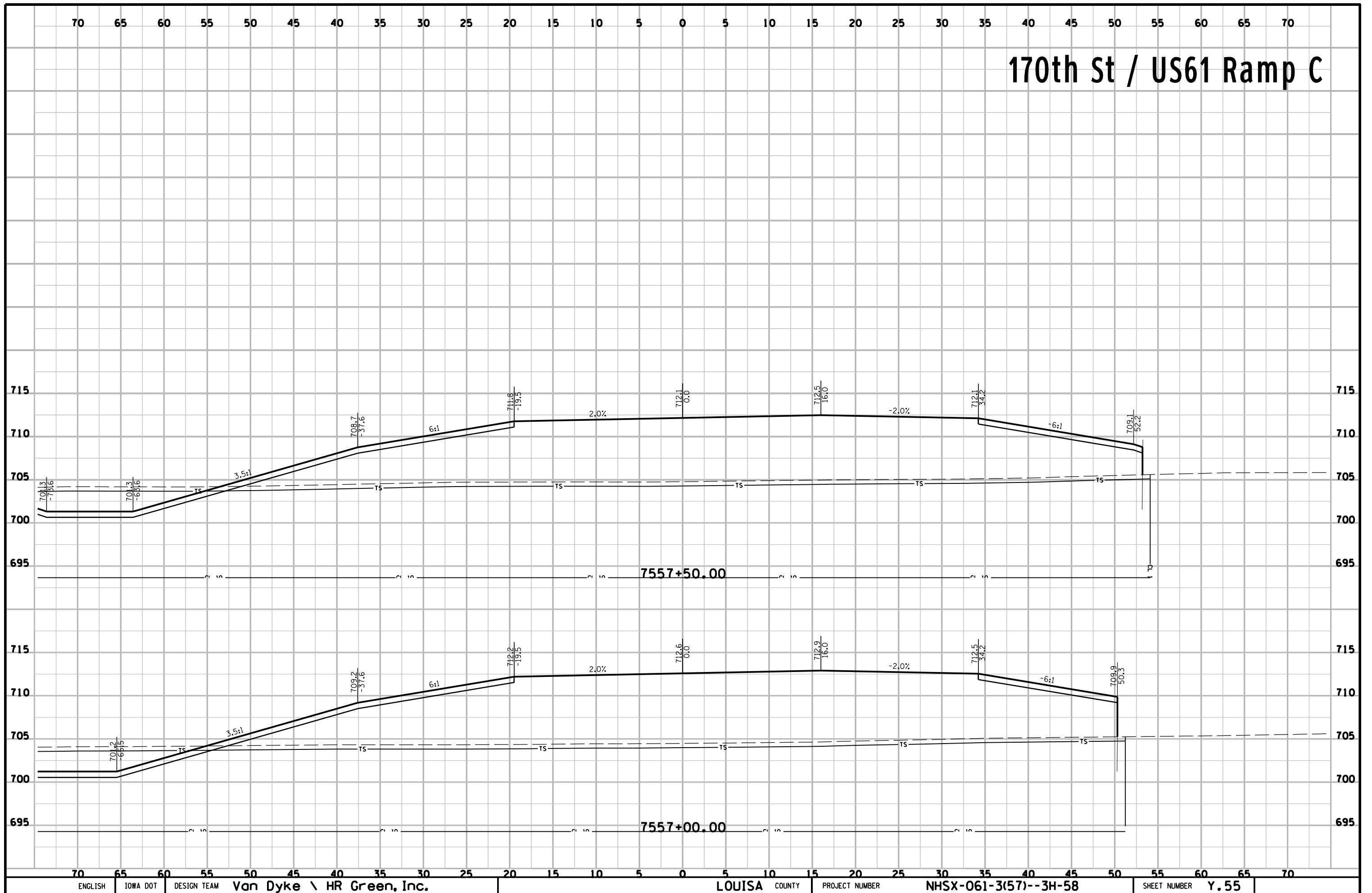


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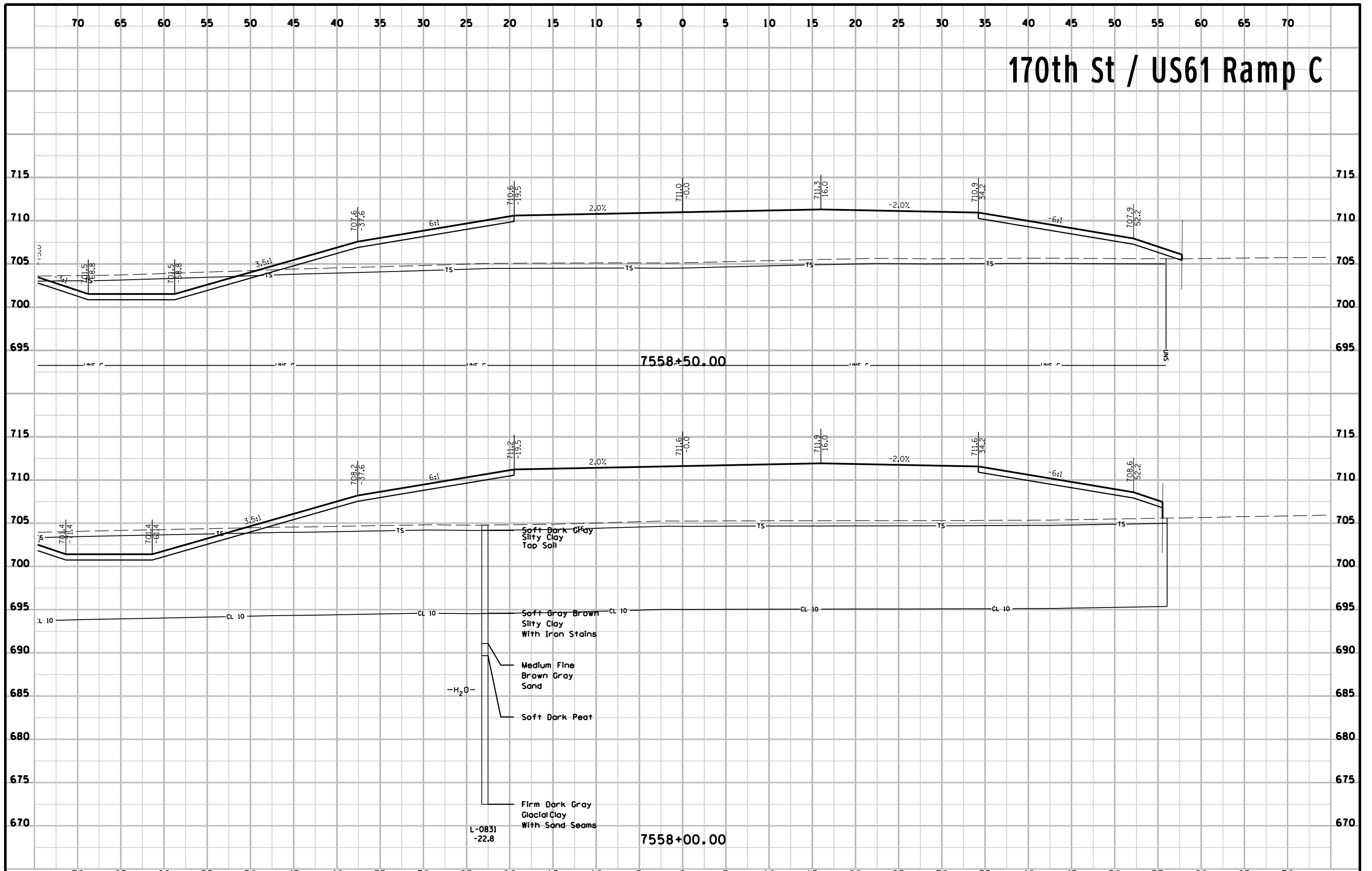




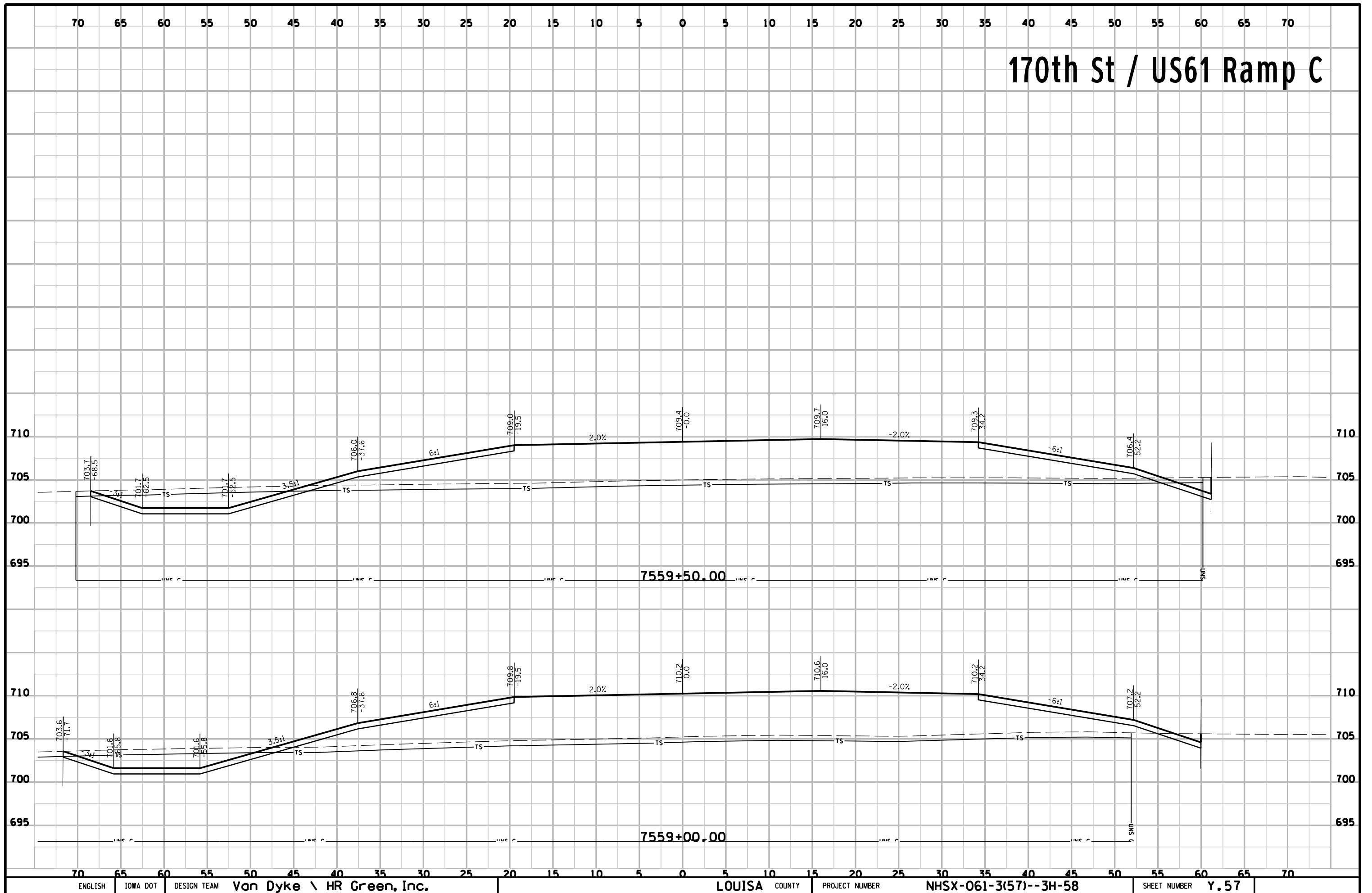
# 170th St / US61 Ramp C



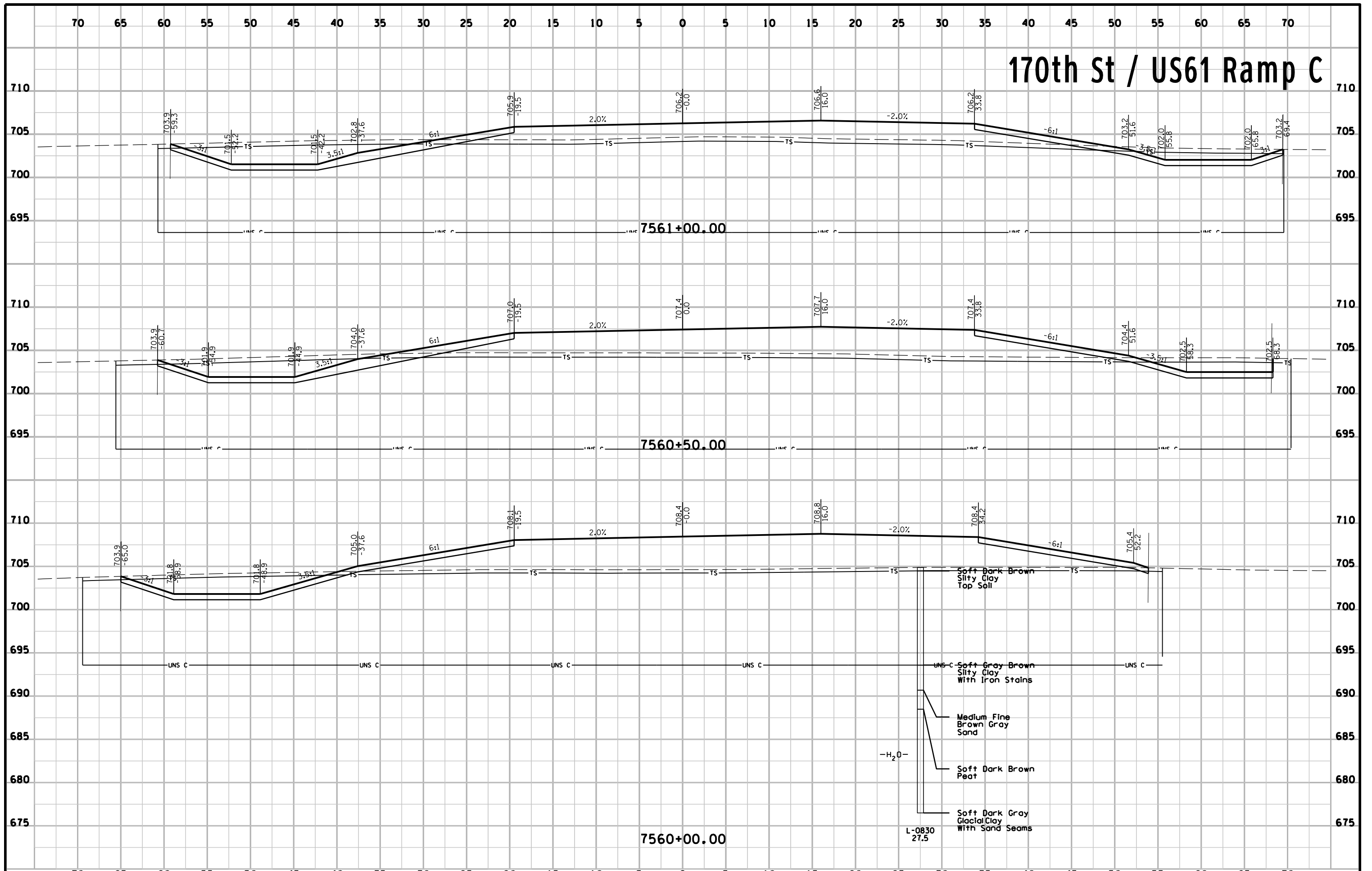
# 170th St / US61 Ramp C



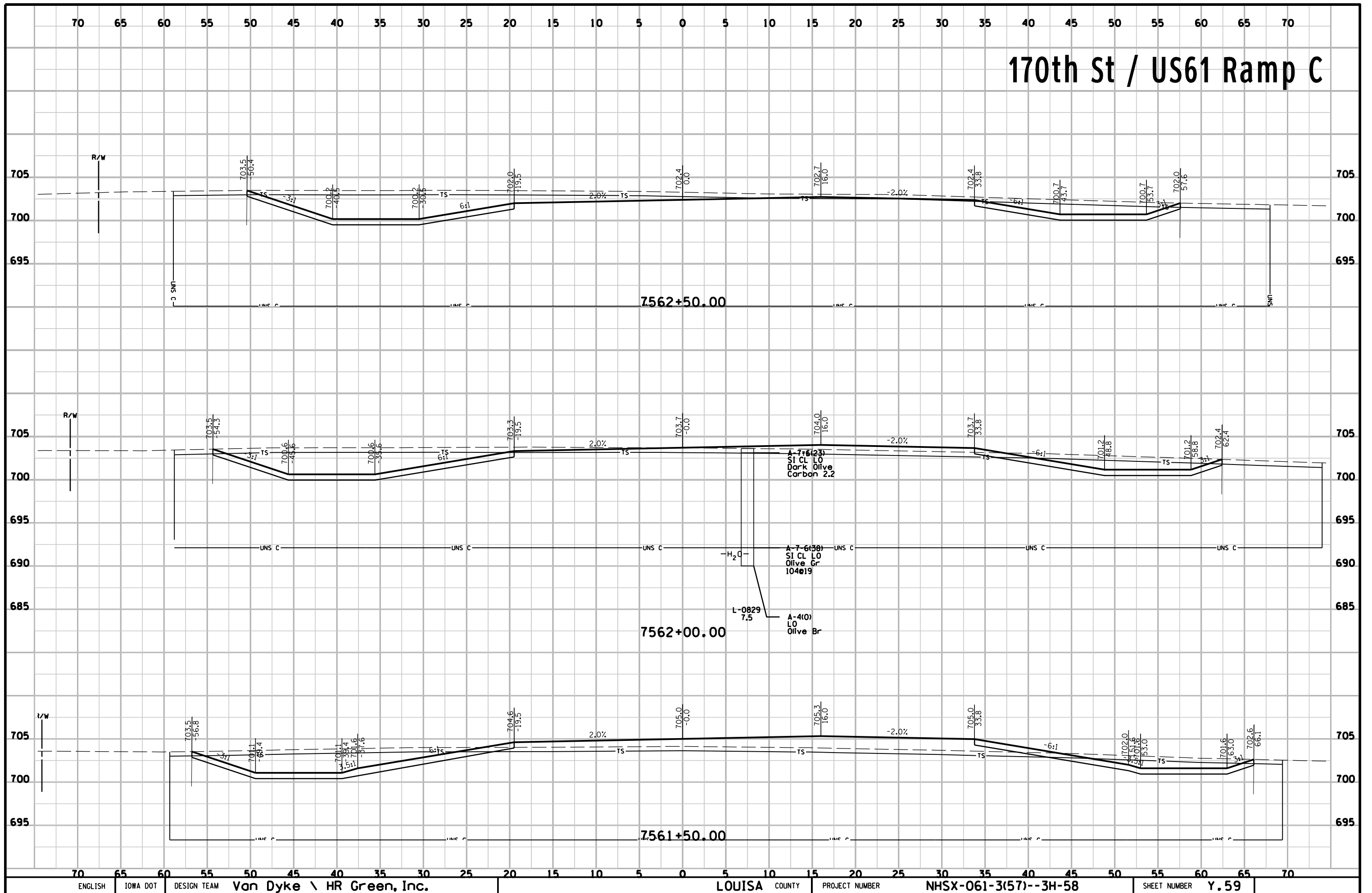
# 170th St / US61 Ramp C



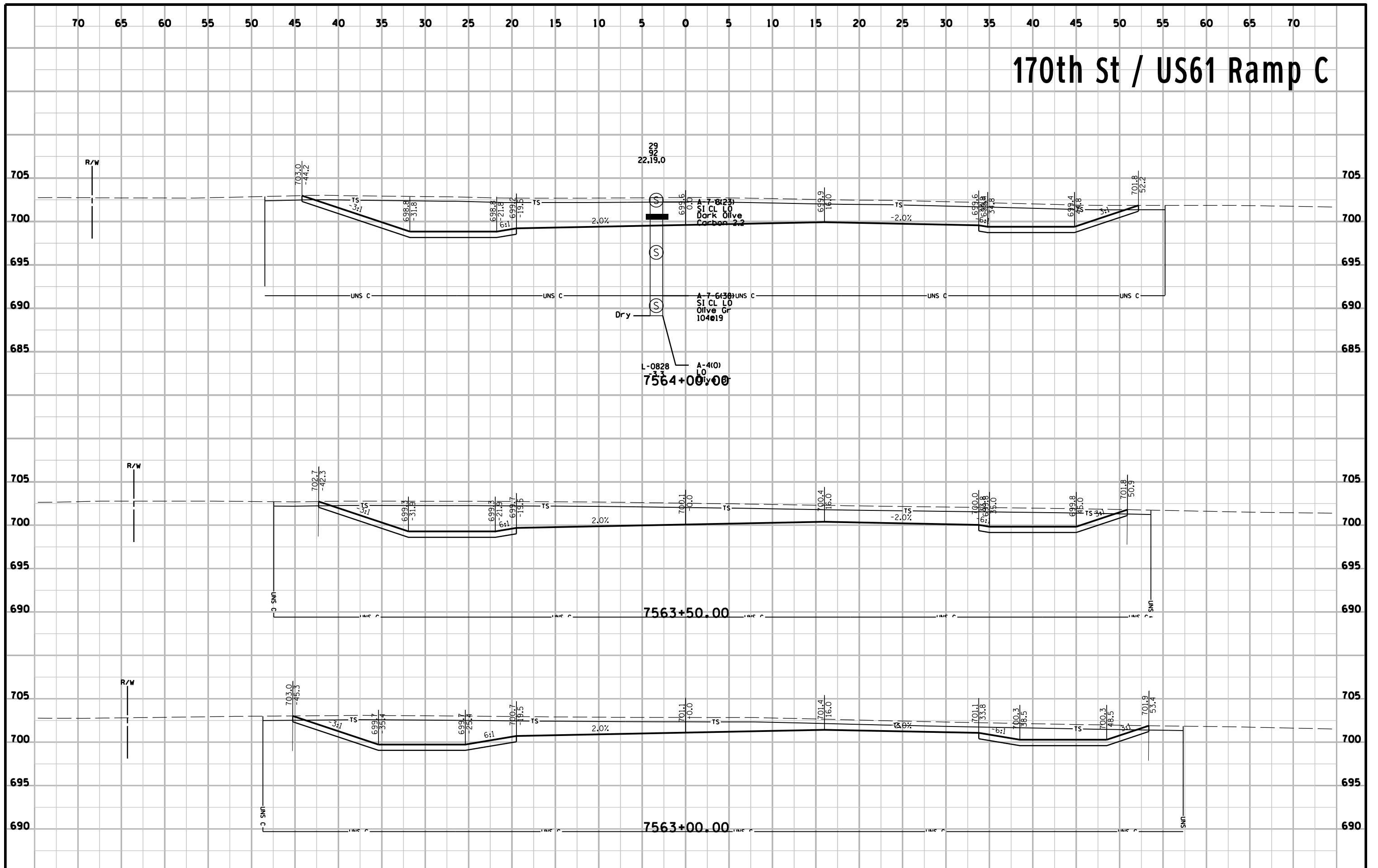
# 170th St / US61 Ramp C



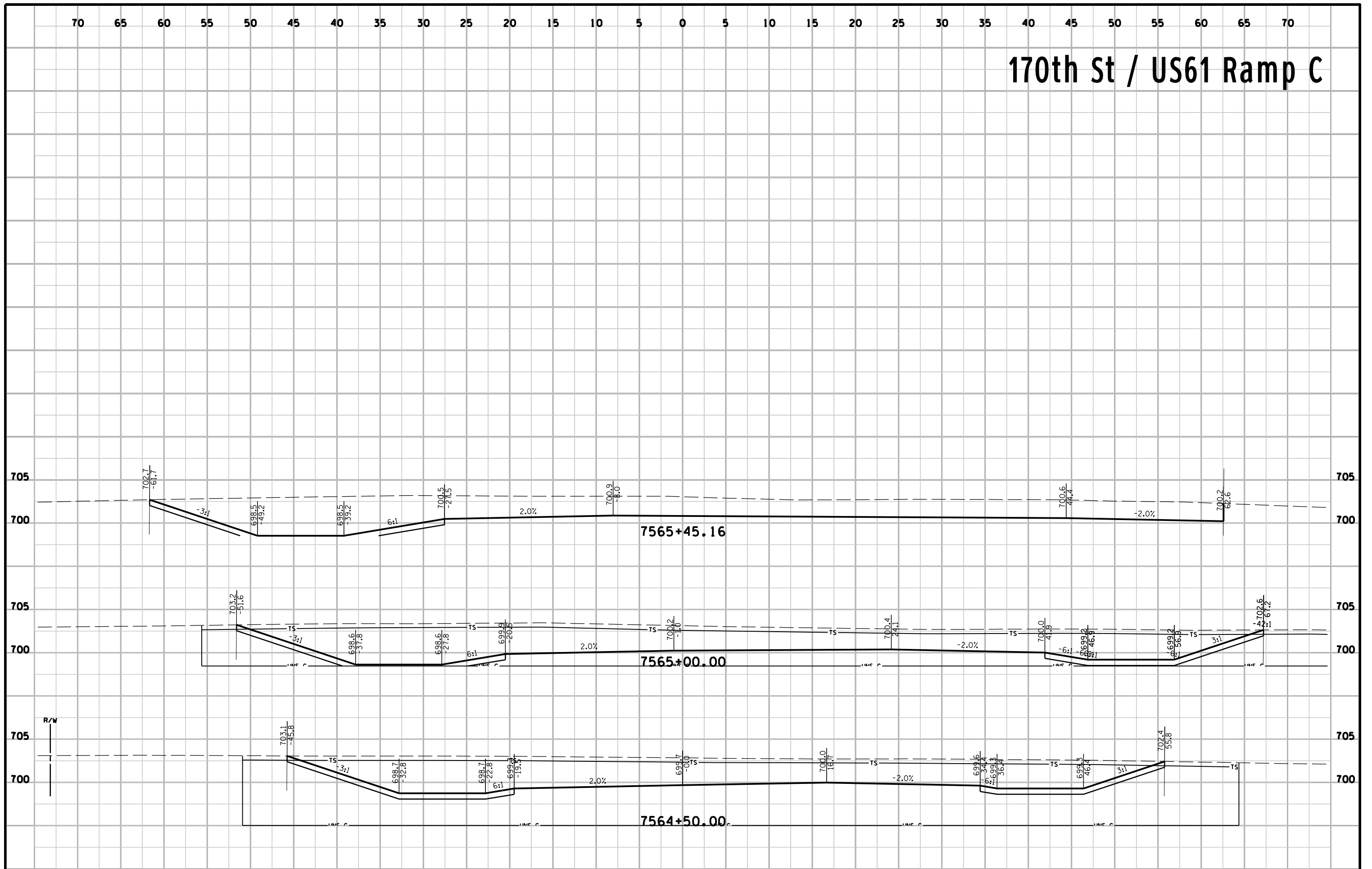
# 170th St / US61 Ramp C



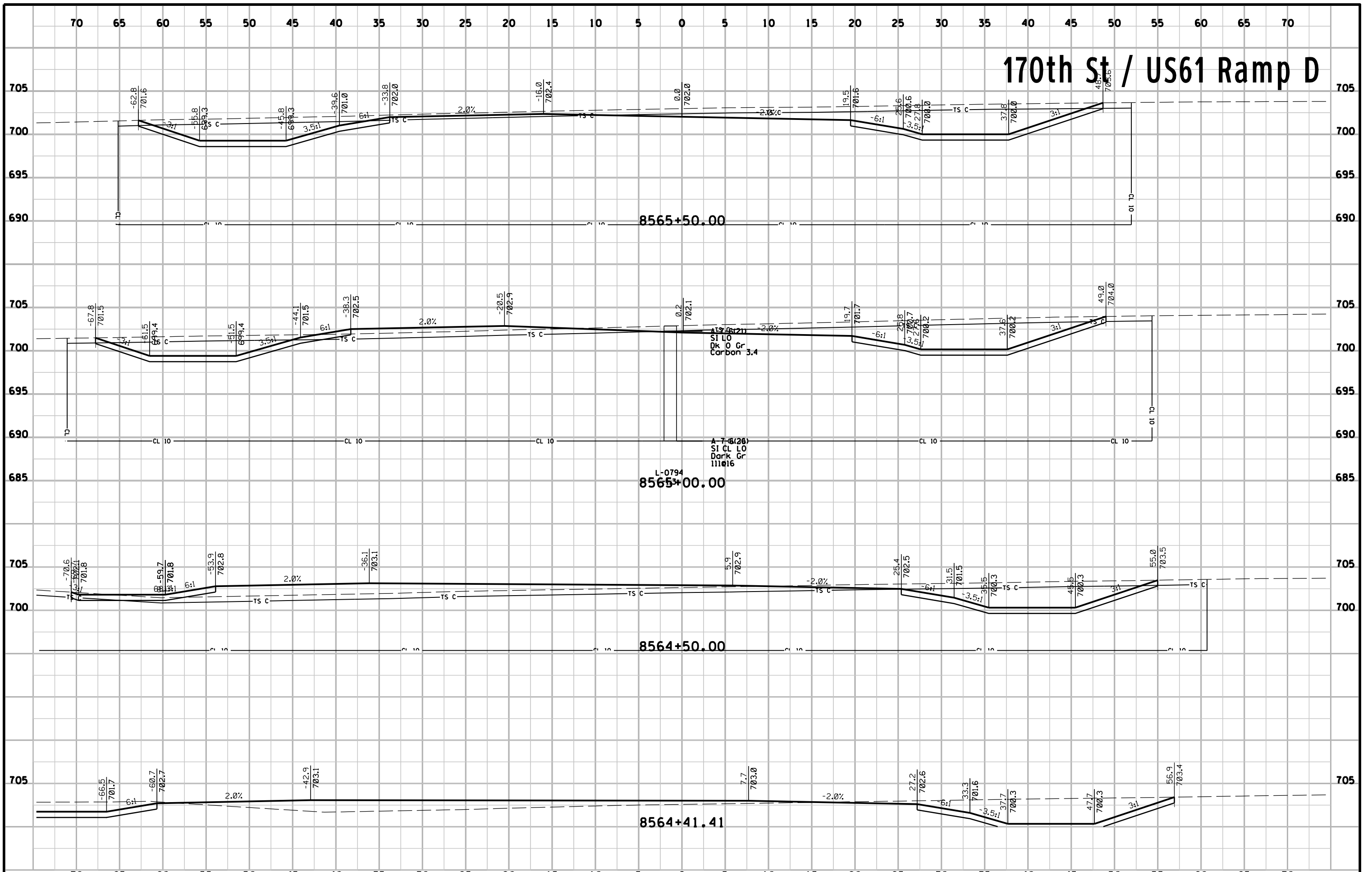
# 170th St / US61 Ramp C



# 170th St / US61 Ramp C

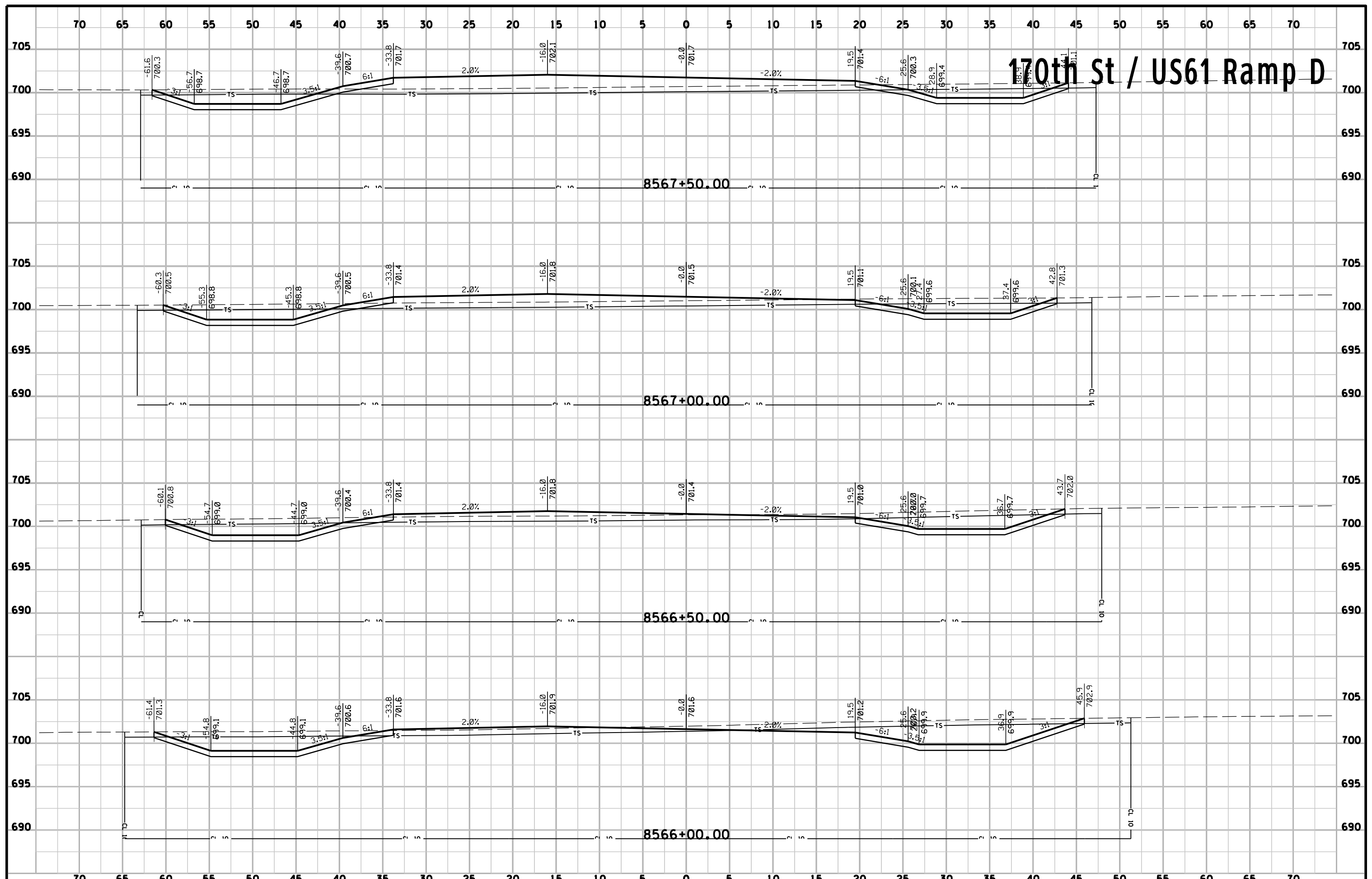


# 170th St / US61 Ramp D

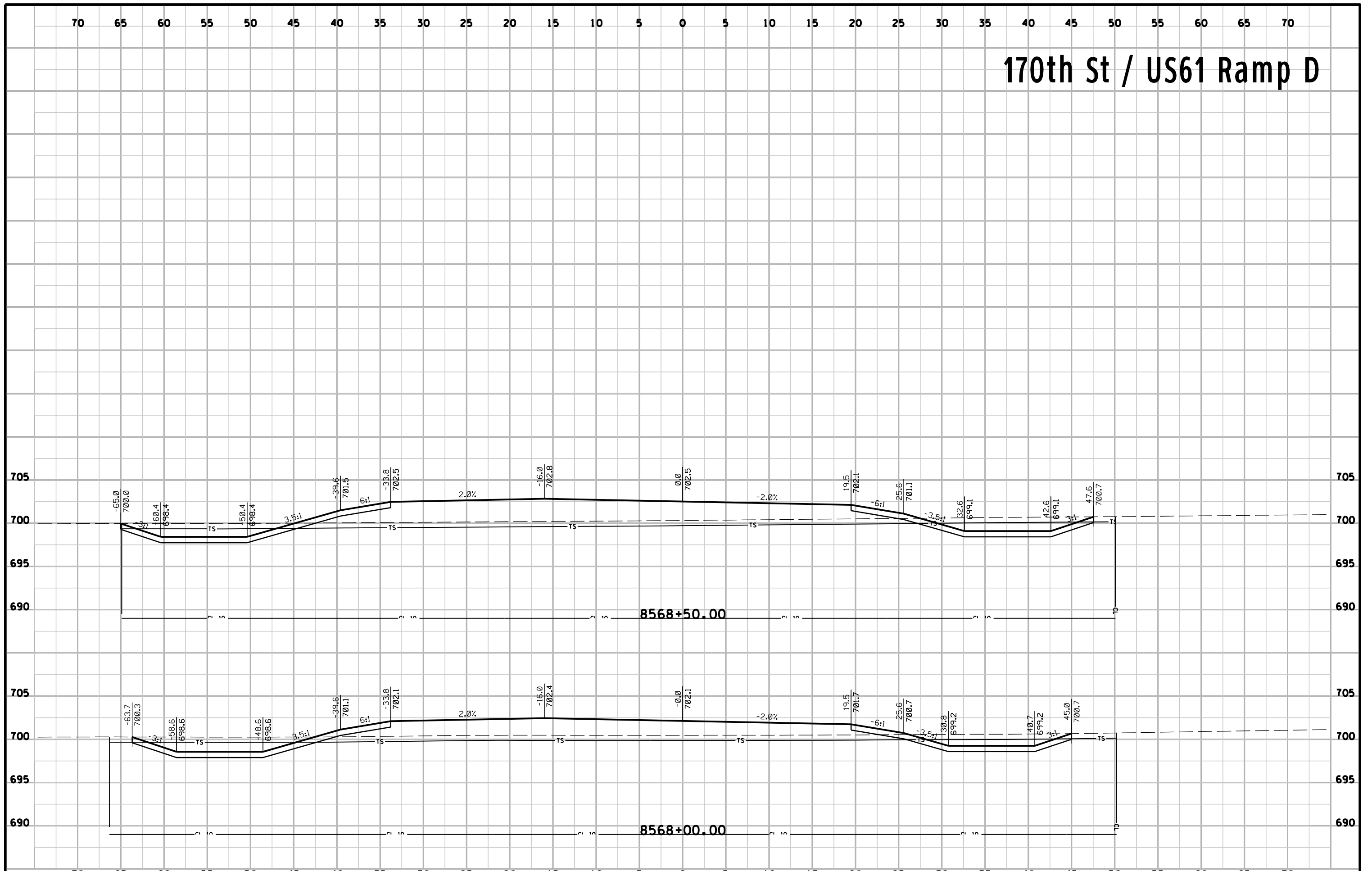




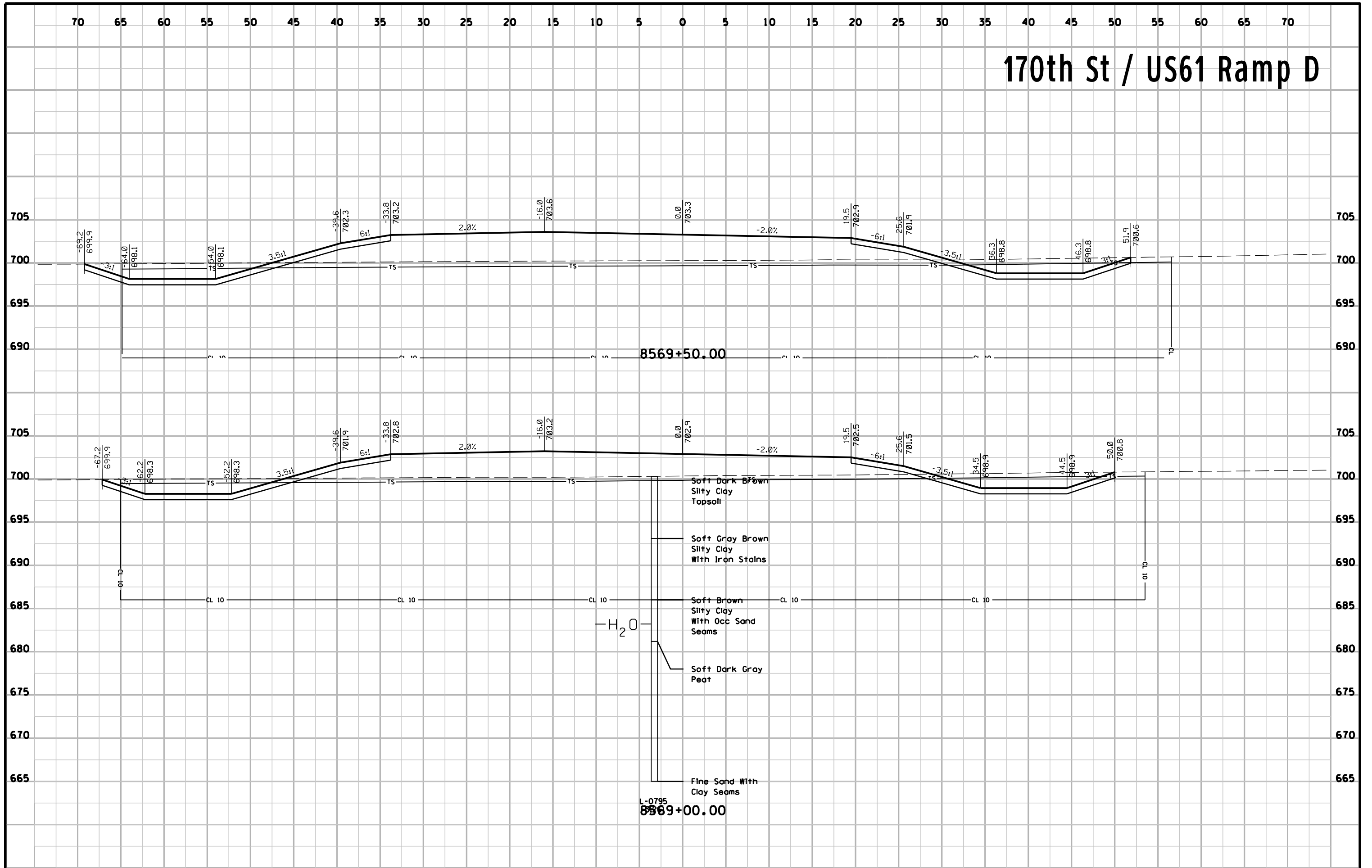
# 170th St / US61 Ramp D



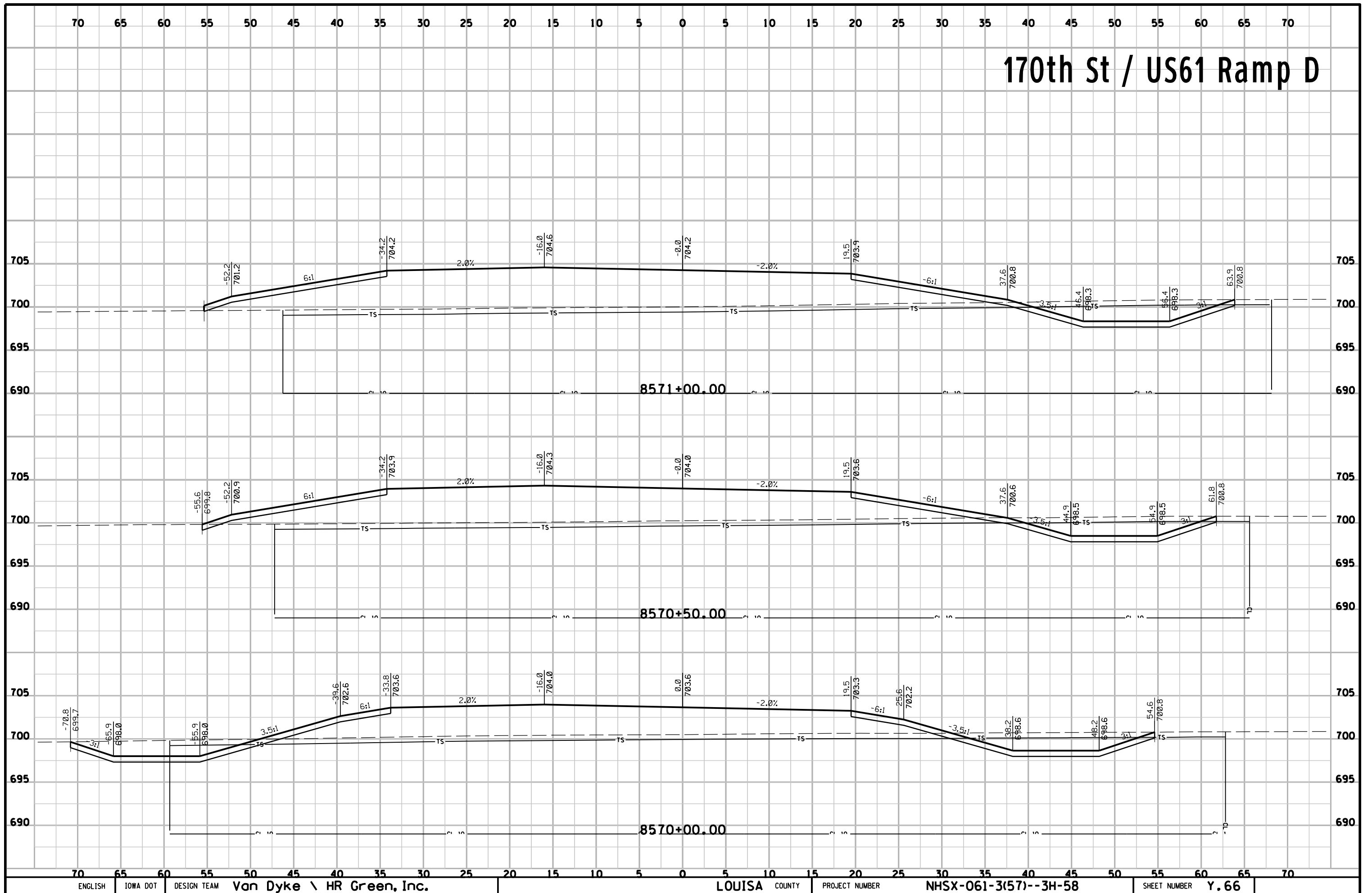
# 170th St / US61 Ramp D



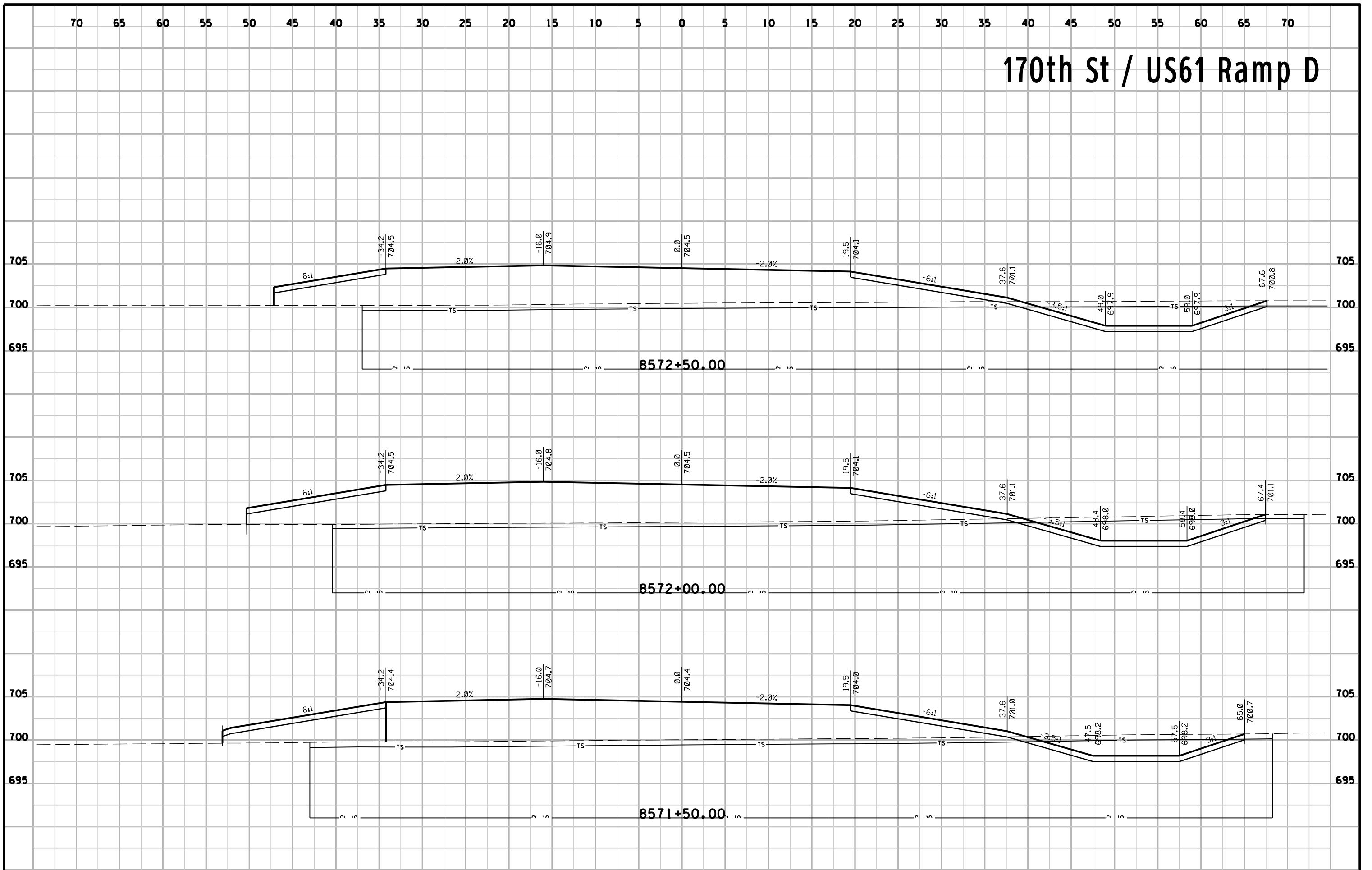
# 170th St / US61 Ramp D



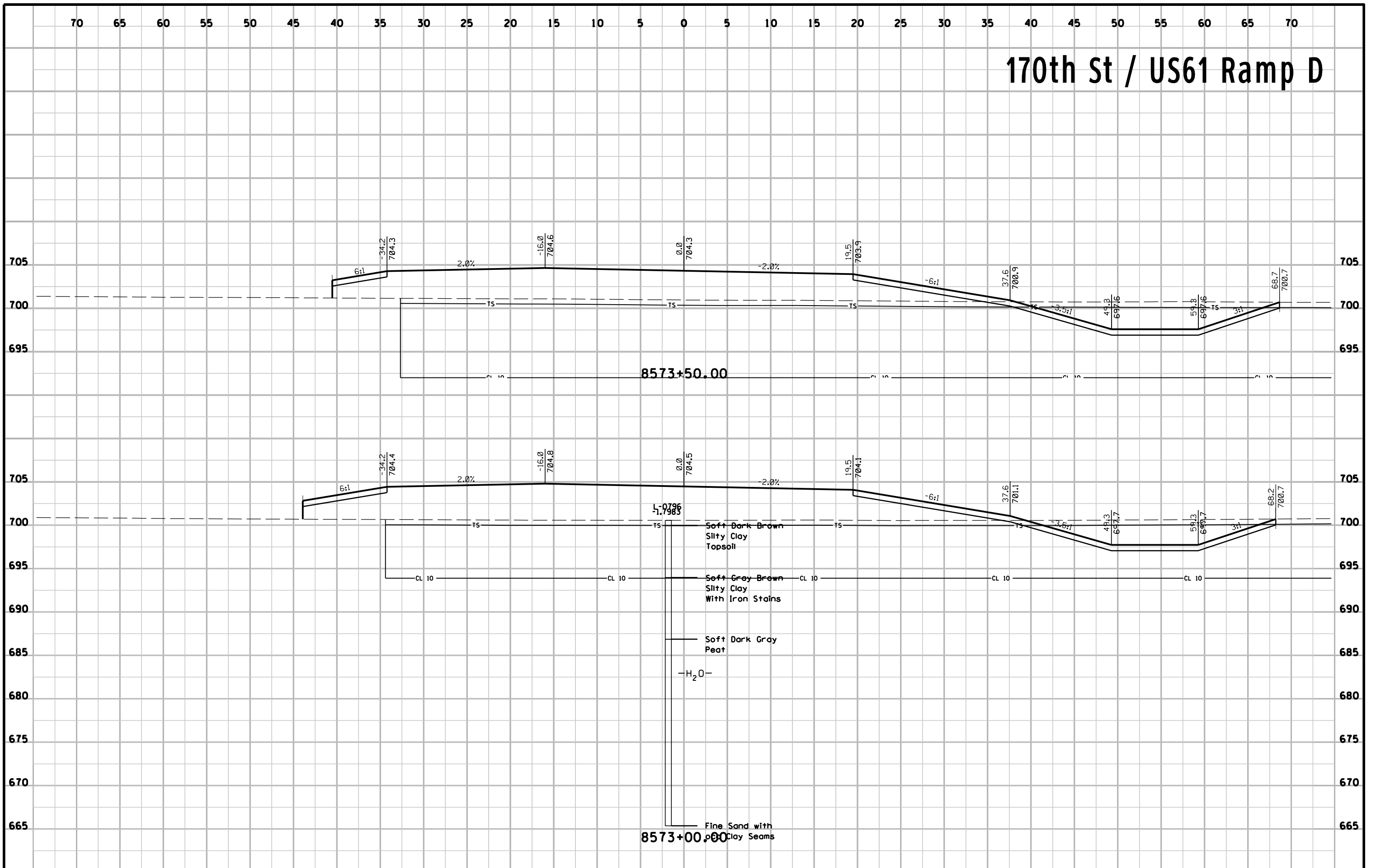
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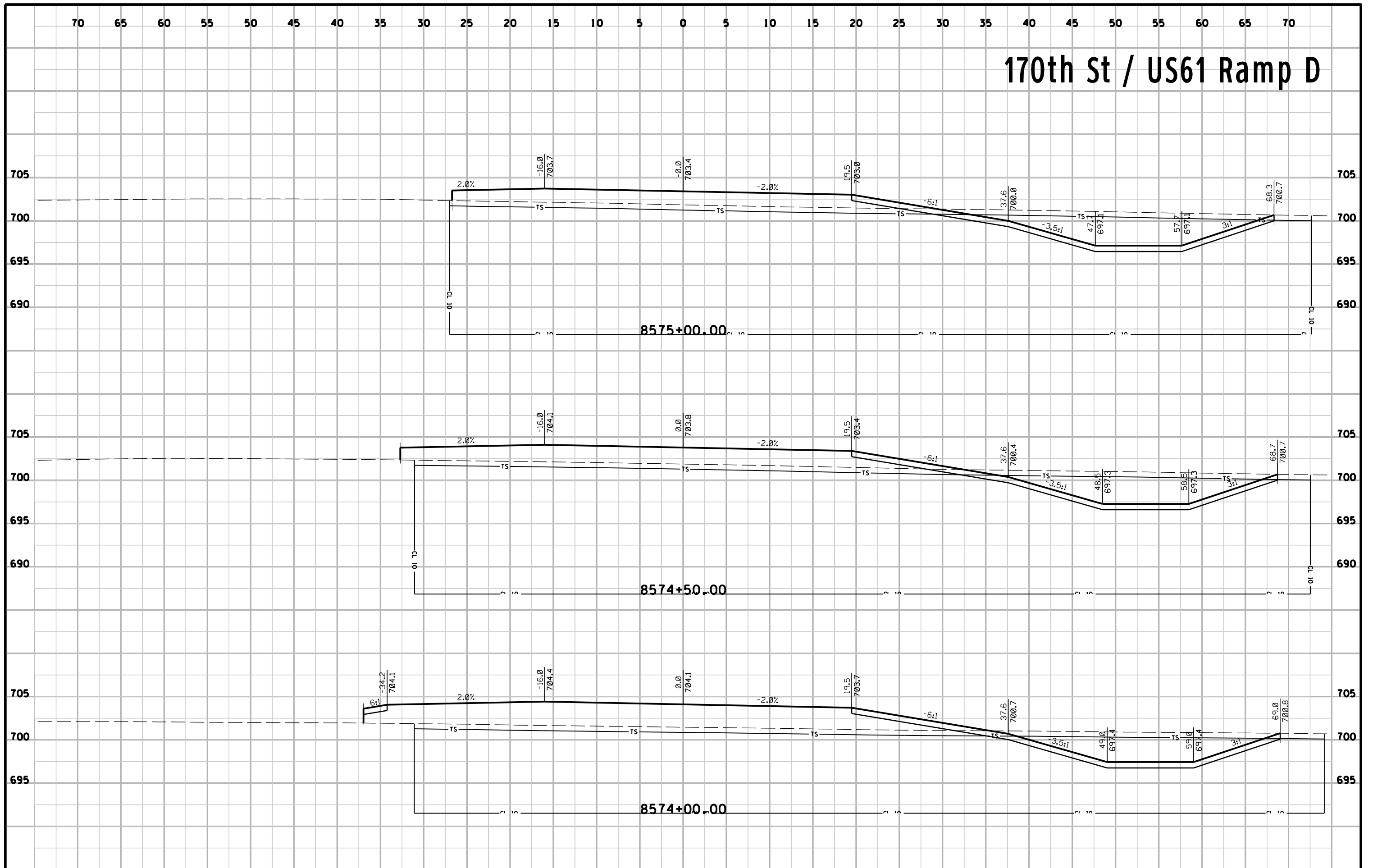
# 170th St / US61 Ramp D



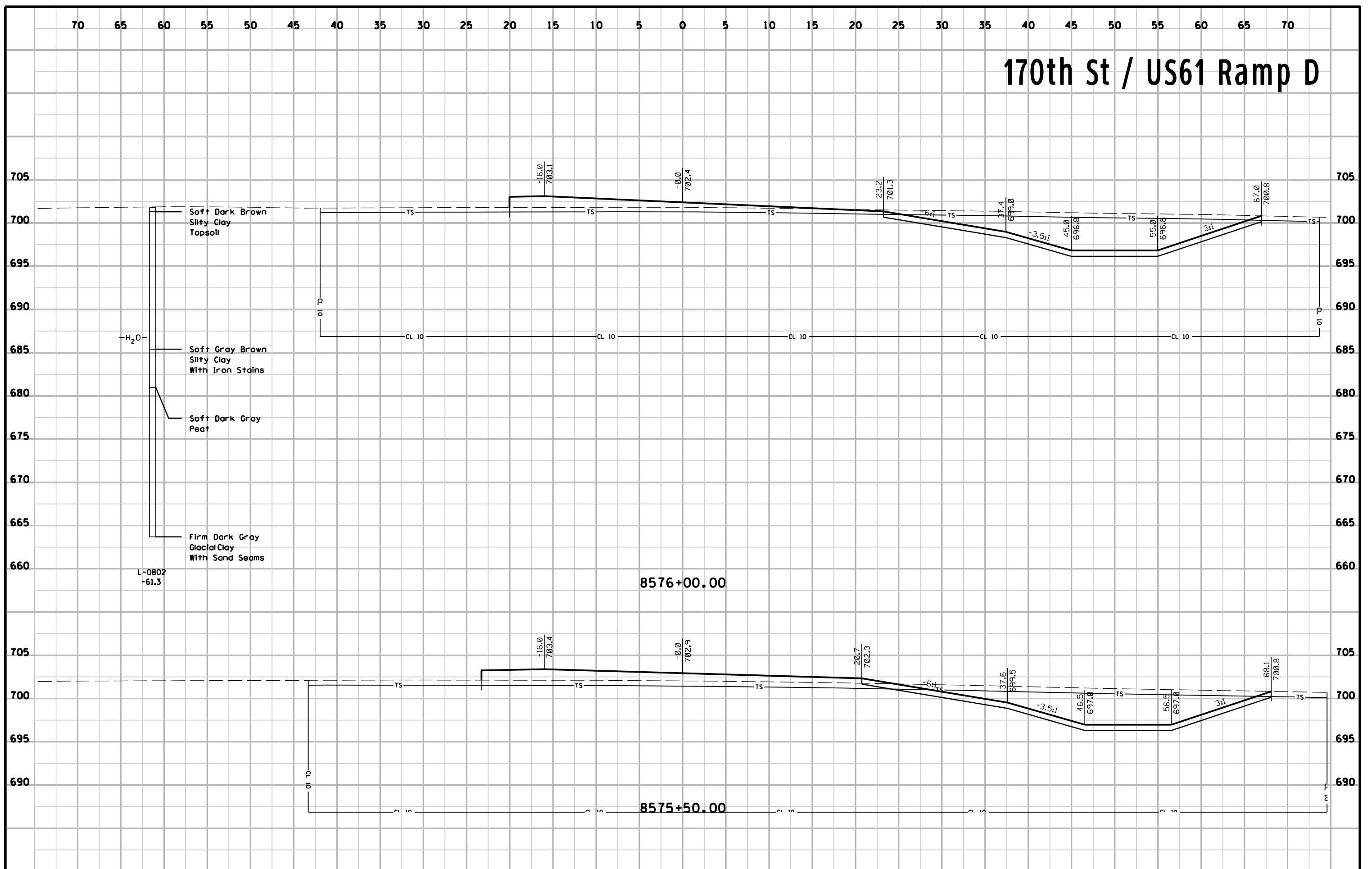
# 170th St / US61 Ramp D



# 170th St / US61 Ramp D



# 170th St / US61 Ramp D





# 170th St / US61 Ramp D

