

DUBUQUE COUNTY
 GRADING
 LETTING DATE
 03-21-2017
 NHSX-032-1(36)--3H-31

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 6	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
C.1 - 2	Estimated Project Quantities
C.2 - 4	Estimate Reference Information
C.5	Standard Road Plans
C.5	Index of Tabulations
C.5 - 6	Pollution Prevention Plan
C.7 - 30	Tabulations (beg. with tab. of incidentals if needed)
CS Sheets	Soils Tabulations
CS.1	Soils Tabulations
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 4	Southwest Arterial
E Sheets	Side Road Plan and Profile Sheets
* E.1	Access Road "B"
* E.2	Military Road
* E.3	U.S. 61 Connector Road "A"
* E.4	U.S. 61 Connector Road "B"
* E.5 - 6	U.S. 61 Ramp Connections
G Sheets	Survey Sheets
G.1 - 2	Reference Ties and Bench Marks
G.3 - 7	Horizontal Control Tab. & Super for all Alignments
H Sheets	Right-of-Way Sheets
H.1 - 4	Southwest Arterial
H.5	U.S. 61 Connector Roads "A" & "B"
H.6	U.S. 61 Ramps "A" & "D" and Loops "B" & "C"
J Sheets	Traffic Control and Staging Sheets
* J.1 - 2	Traffic Control Plan, Tabulation of Special Events, Staging Notes
K Sheets	Interchange Sheets
* K.1	Southwest Arterial & U.S. 61
* K.2	U.S. 61 Ramp "A"
* K.3	U.S. 61 Loop "B"
* K.4	U.S. 61 Loop "C"
* K.5	U.S. 61 Ramp "D"
L Sheets	Geometric, Staking and Jointing Sheets
L.1 - 3	Intersection Southwest Arterial Ramp A and Loop C
L.4 - 6	Intersection Southwest Arterial Loop B and Ramp D
L.7 - 9	Intersection Southwest Arterial and Olde Davenport Rd.
M Sheets	Storm Sewer Sheets
M.1	Storm Sewer Tabulations
* M.2	Storm Sewer Plan and Profile Sheet "Southwest Arterial"
MIT Sheets	Wetland Sheets
* MIT.1 - 2	Wetland Sheets
Q Sheets	Soils Sheets
Q.1	Soils Legend & Symbol Information Sheet
Q.2 - 20	Soils Sheets
S Sheets	Sidewalk Sheets
* S.1	Sidewalk Legend & Symbol Information Sheet
* S.2 - 4	Shared Use Path Plan & Profile Sheets
SPS Sheets	Bridge Plan Soils Sheets
SPS.1 - 5	Bridge Plan Soils Sheets
T Sheets	Earthwork Quantity Sheets
* T.1A - 1B	Earthwork Legend Sheets
T.2 - 19	Earthwork Quantity Sheets
U Sheets	500 Series, Mod.Stds. and Detail Sheets
U.1 - 14	500 Series, Modified Standards and Detail Sheets
V Sheets	Bridge and Culvert Situation Plans
V.1 - 24	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 7	Access Road B Cross Sections (Mainline Baseline)
W.8 - 81	Mainline Cross Sections



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM DUBUQUE COUNTY GRADING

US 61/US 151 to US 20 (SW Arterial in Dubuque)
Military Road to Old Davenport Rd.

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

MILEAGE SUMMARY			
Div.	Location	Lin. Ft.	Miles
	Access Road B Sta. 81+89.60 to Sta. 86+51.22	462.51	0.088
	Southwest Arterial Sta. 315+00.00 to Sta. 380+48.56	6548.56	1.240
	U.S. 61 Connector Road "A" Sta. 6+95.00 to Sta. 29+44.05	2249.05	0.426
	Silverwood Drive Sta. 16+50.00 to Sta. 18+80.00	230.00	0.044
	U.S. 61 Connector Road "B" Sta. 10+55.12 to Sta. 40+00.00	2944.88	0.558
	Ramp A Sta. 1519+08.66 to Sta. 1536+48.79	1740.13	0.330
	Loop B Sta. 2522+75.00 to Sta. 2530+26.57	751.57	0.142
	Loop C Sta. 3522+48.98 to Sta. 3529+94.64	745.66	0.141
	Ramp D Sta. 4517+38.72 to Sta. 4531+87.06	1448.34	0.274
	Project Totals=	16658.19	3.243

DESIGN DATA RURAL

20--	AA DT	N/A	V.P.D.
2030	AA DT	21,100	V.P.D.
2030	DHV	2030	V.P.H.
TRUCKS		--	%
Total			
Design	ESALS	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Mark D. Durbahn, PE AECOM	Primary Signature Block
CS.1, Q.1-Q.20	Theresa M. Stromberg-Murphy, PE Terracon	Soils Sheets
SPS.1-SPS.5	Theresa M. Stromberg-Murphy, PE Terracon	Soils Sheets
V.1-V.24	Michael P. Caven, PE AECOM	RCB Sheets
CULVERT STANDARDS	Norman L. McDonald	Structural Design

REVISIONS

TOTAL
481
PROJECT IDENTIFICATION NUMBER
94-31-032-010
PROJECT NUMBER
NHSX-032-1(36)--3H-31
R.O.W. PROJECT NUMBER
NHSN-032-1(20)--2R-31



INDEX OF SHEETS	
No.	DESCRIPTION
X Sheets	Side Road Cross Sections
X.1 - 20	US 61 - Loop C Taper Cross Sections
X.21 - 27	US 61 - Ramp A Taper Cross Sections
X.28 - 36	US 61 - Loop B Taper Cross Sections
X.37 - 48	US 61 - Ramp D Taper Cross Sections
X.49	US 61 Culvert Cross Sections
X.50 - 95	US 61 Connector Road A Cross Sections
X.96 - 140	US 61 Connector Road B Cross Sections
Y Sheets	Ramp Cross Sections
Y.1 - 32	Ramp A Cross Sections
Y.33	Ramp A Culvert Cross Sections
Y.34 - 44	Loop B Cross Sections
Y.45	Loop B Culvert Cross Sections
Y.46 - 61	Loop C Cross Sections
Y.62 - 85	Ramp D Cross Sections
Z Sheets	Borrow Cross Sections
Z.1 - 6	Wetland Cross Sections
	* Color Plan Sheets

APPROVED

CITY ENGINEER _____ DATE _____

CITY OF DUBUQUE, IOWA

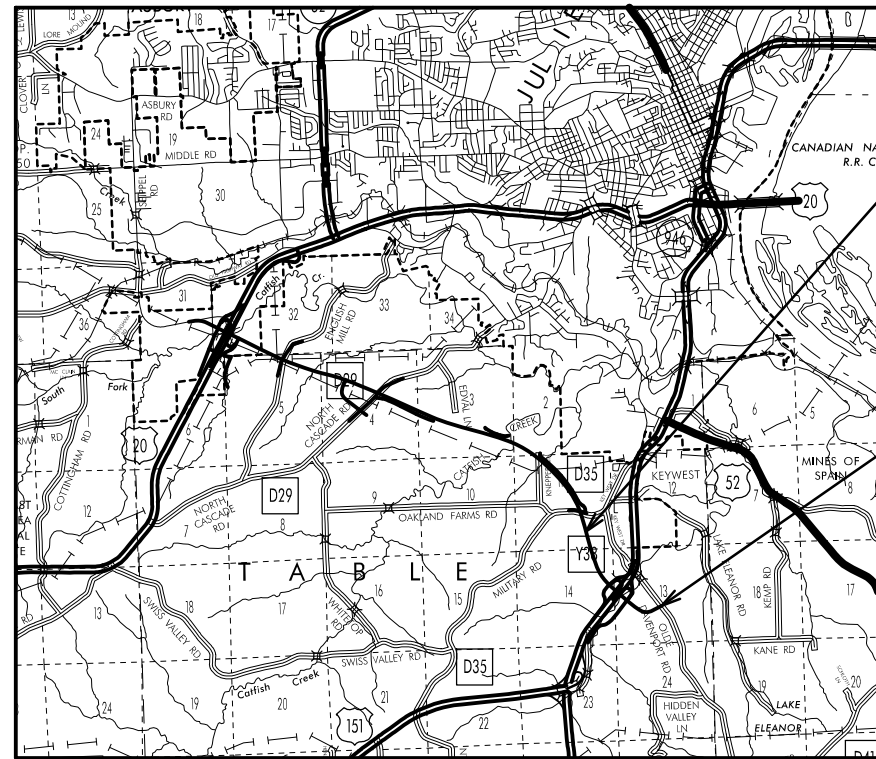
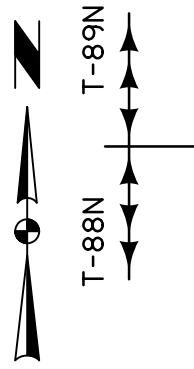
I hereby certify that this Engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

Mark Durbahn 1/18/17
MARK DURBAHN Date

License number 13157

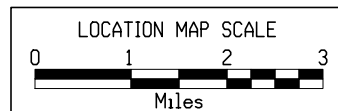
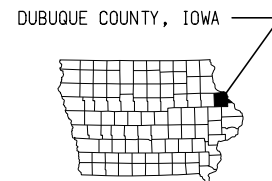
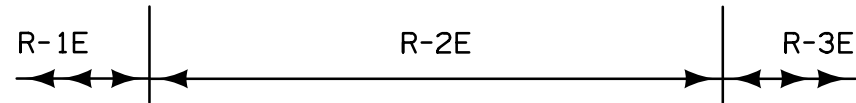
My license renewal date is December 31, 2016

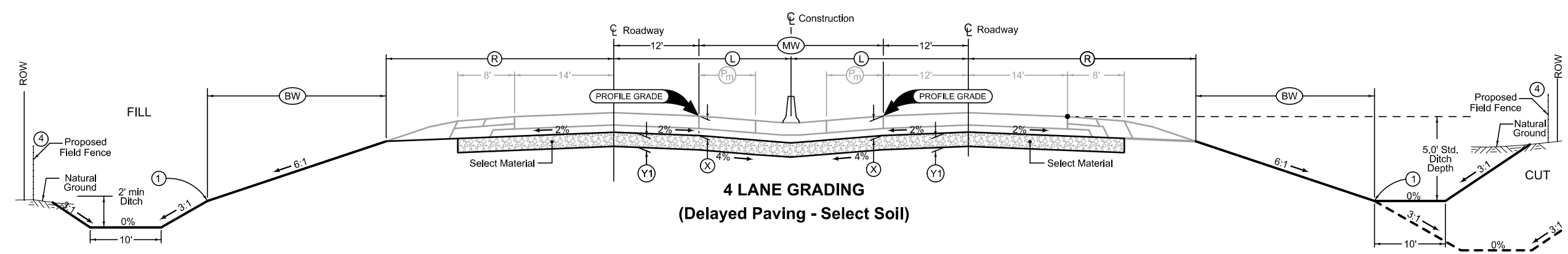
Pages or sheets covered by this seal:
A.1-2, B.1-6, C.1-30, D.1-4, E.1-6, G.1-7, H.1-6
H.1-6, J.1-J.2, K.1-5, L.1-9, M.1-2, MIT.1-2, S.1-4
T.1A-19, U.1-14, V.1-77, X.1-140, Y.1-85, Z.1-6



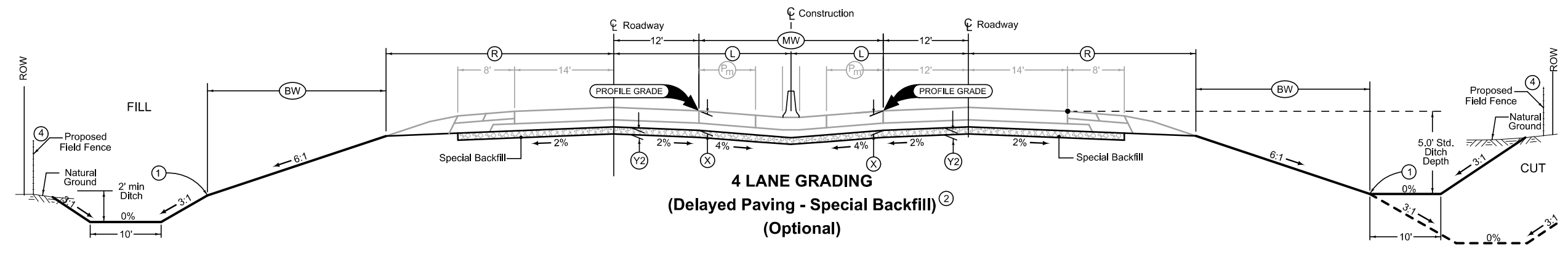
BEGIN PROJECT
STA. 315+00.00

END PROJECT
STA. 380+48.56





**4 LANE GRADING
(Delayed Paving - Select Soil)**



**4 LANE GRADING
(Delayed Paving - Special Backfill) (Optional)**

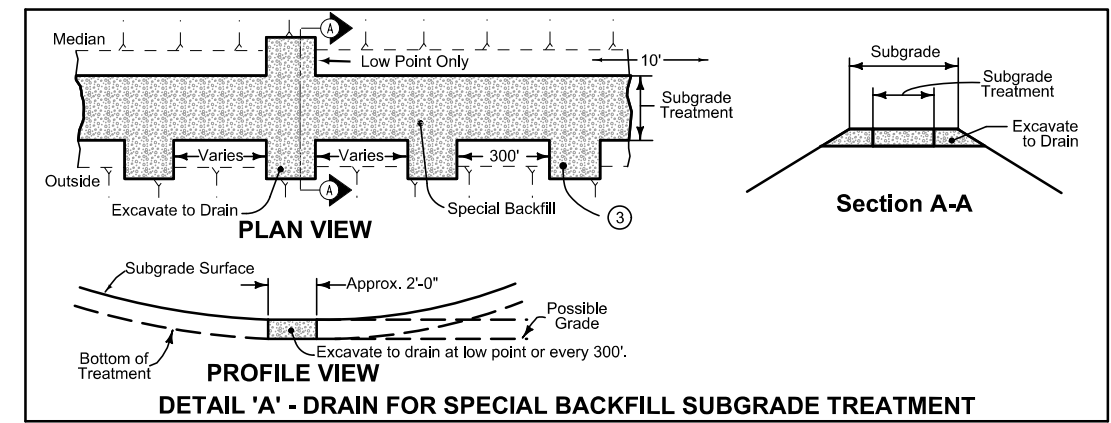
- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail "A"
- ③ Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.
- ④ See Tabulation 100-7 and Plan Sheets for Locations.
- ⑤ Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

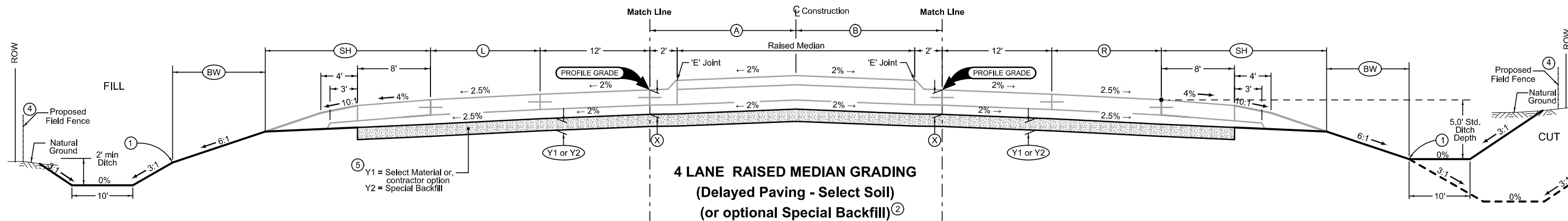
ROAD IDENTIFICATION	LOCATION		DIMENSIONS							
	STATION TO	STATION FROM	L	R	X	BW	MW	Y1	Y2	
	Feet	Feet	Feet	Feet	Inches	Feet	Feet	Inches	Inches	
Southwest Arterial	315+00	338+65	25	32.5	16.0	19.3	26.0	24.0	12.0	
Southwest Arterial	338+65	340+15	25-22	32.5	16.0	19.3	20.0	24.0	12.0	

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

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

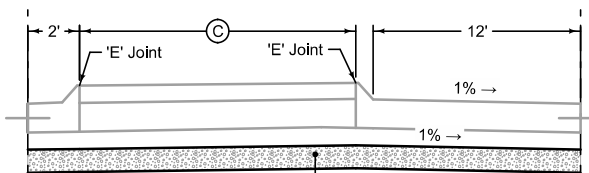
Quantity calculations based on Contractor-supplied Select Soil (Y-1 dimensions) except as modified by detail AECOM-1 on sheet B.5.



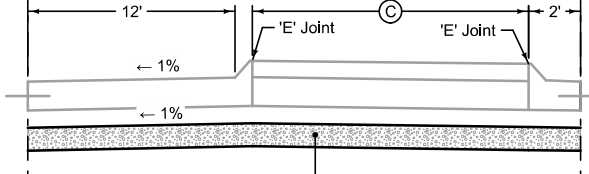


**4 LANE RAISED MEDIAN GRADING
(Delayed Paving - Select Soil)
(or optional Special Backfill) ②**

BEGIN STATION	END STATION	③ Feet
341+35.0	344+53.1	5



BEGIN STATION	END STATION	③ Feet
345+30.7	346+90.1	5
358+37.4	360+50.1	5



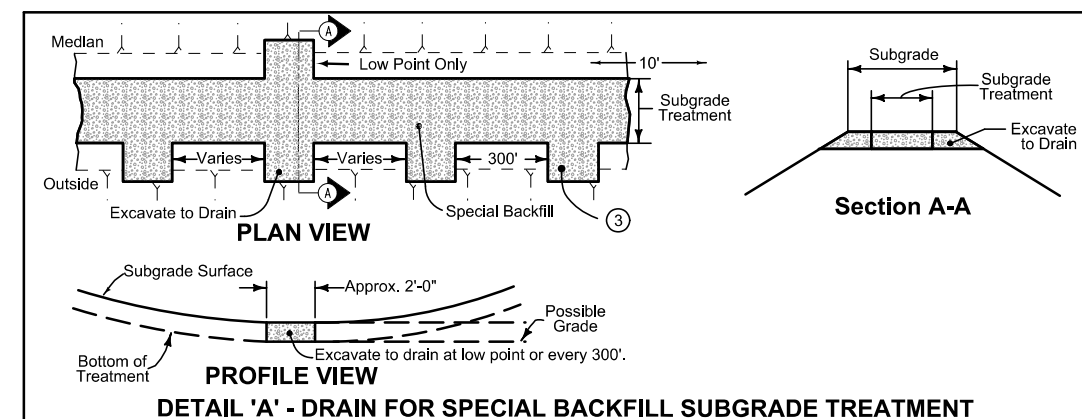
- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail 'A'
- ③ Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.
- ④ See Tabulation 100-7 and Plan Sheets for Locations.
- ⑤ Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

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

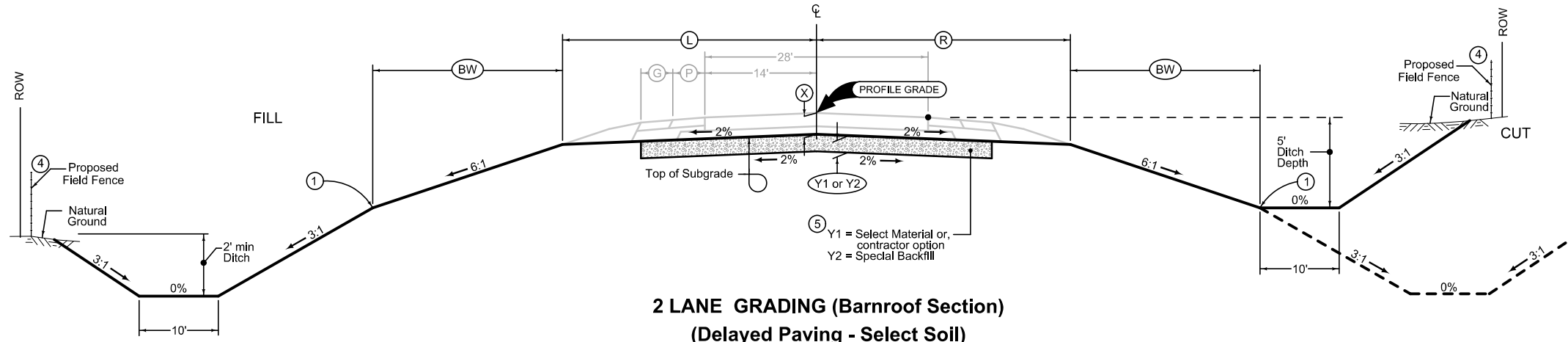
See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

Quantity calculations based on Contractor-supplied Select Soil (Y-1 dimensions) except as modified by detail AECOM-1 on sheet B.5.

ROAD IDENTIFICATION	LOCATION	STATION TO STATION	DIMENSIONS										
			① Feet	② Feet	③ Inches	④ Feet	⑤ Feet	⑥ Inches	⑦ Inches	⑧ Feet	⑨ Feet	⑩ Feet	⑪ Feet
Southwest Arterial		340+15 346+43.6	10.0	10.0	16.0	19.0	18.6	24.0	12.0	12.0	14.0	12.0	14.0
Southwest Arterial		346+43.6 348+10.0	10-8.2	-	16.0	19.0	18.6	24.0	12.0	12.0	14.0	-	-
Southwest Arterial		348+10.0 349+90.1	8.2-4	-	16.0	19.0	18.6	24.0	12.0	12.0	14-2	-	-
Southwest Arterial		349+90.1 350+01.6	4.0	-	16.0	19.0	18.6	24.0	12.0	12.0	2.0	-	-
Southwest Arterial		346+43.6 346+50.4	-	10.0	16.0	19.0	18.6	24.0	12.0	-	-	12.0	14.0
Southwest Arterial		346+50.4 349+30.2	-	10-4	16.0	19.0	18.6	24.0	12.0	-	-	12.0	14.0
Southwest Arterial		349+30.2 350.01.6	-	4.0	16.0	19.0	18.6	24.0	12.0	-	-	12.0	14.0
Bridge		350+01.6 355+62.6											
Southwest Arterial		355+62.6 357+81.6	4.0	4.0	16.0	19.0	18.6	24.0	12.0	12.0	2.0	12.0	14.0
Southwest Arterial		357+81.6 360+50.0	4.0	-	16.0	19.0	18.6	24.0	12.0	12.0	12.0	-	-
Southwest Arterial		360+50.0 362+50.0	4-2	-	16.0	19.0	18.6	24.0	12.0	12.0	2.0	-	-
Southwest Arterial		362+50.0 364+50.0	0	-	16.0	19.0	18.6	24.0	12.0	14.0	0	-	-
Southwest Arterial		357+81.6 358+37.4	-	4-16	16.0	19.0	18.6	24.0	12.0	-	-	14.0	0
Southwest Arterial		358+37.4 360+50.0	-	16.0	16.0	19.0	18.6	24.0	12.0	-	-	14.0	0
Southwest Arterial		360+50.0 364+50.0	-	16-0	16.0	19.0	18.6	24.0	12.0	-	-	14.0	0



- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail 'A'
- ③ Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.
- ④ See Tabulation 100-7 and Plan Sheets for Locations.
- ⑤ Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

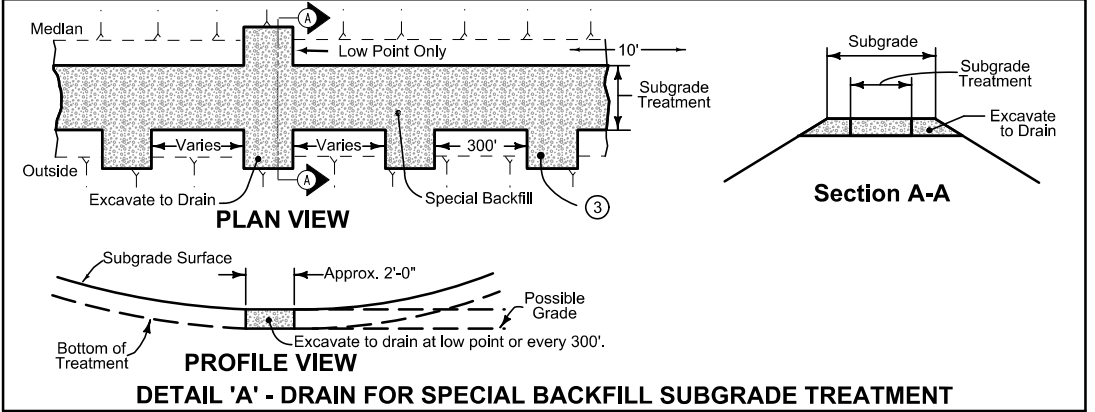


**2 LANE GRADING (Barnroof Section)
(Delayed Paving - Select Soil)
(or optional Special Backfill) ②**

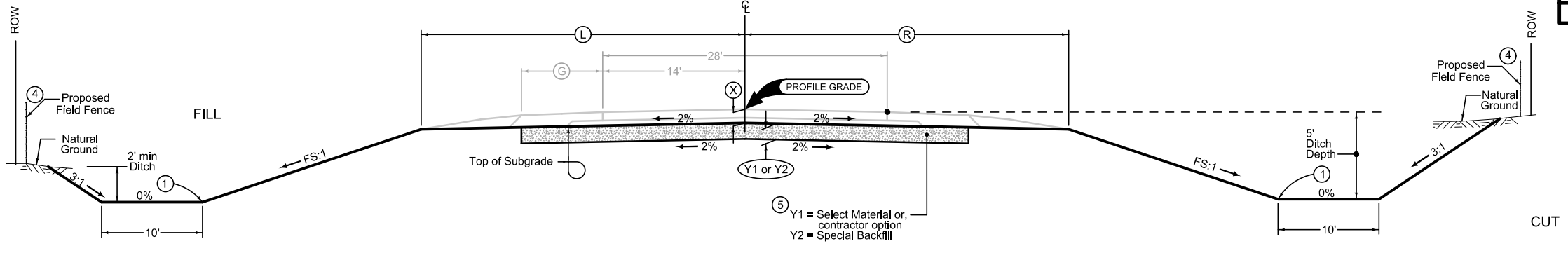
LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	Y1 Inches	Y2 Inches	
Southwest Arterial	364+50.0 - 380+37.37	31.9	31.9	16	19.9	24	12	

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

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



- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail 'A'
- ③ Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.
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- ⑤ Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

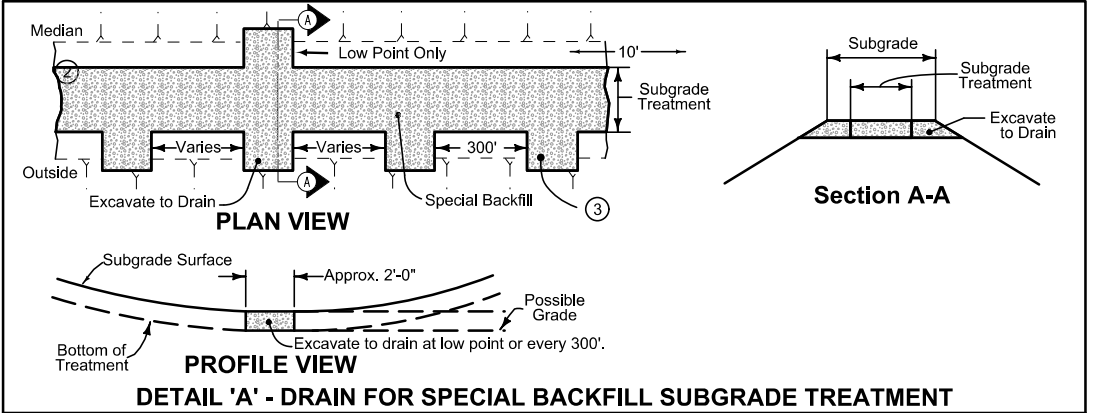


**2 LANE GRADING
(Delayed Paving - Select Soil)
(or optional Special Backfill) ②**

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	FS	Y1 Inches	Y2 Inches	
US61 CONN RD A	6+95.00 - 29+08.04	22.4	22.4	14.5	3	24	12	
SILVERWOOD DRIVE	1116+50.00 - 1117+81.51	22.4	22.4	14.5	3	24	12	
US61 CONN RD B	10+55.00 - 17+55.63	22.4	22.4	14.5	3	24	12	
US61 CONN RD B	20+21.82 - 39+69.50	22.4	22.4	14.5	3	24	12	

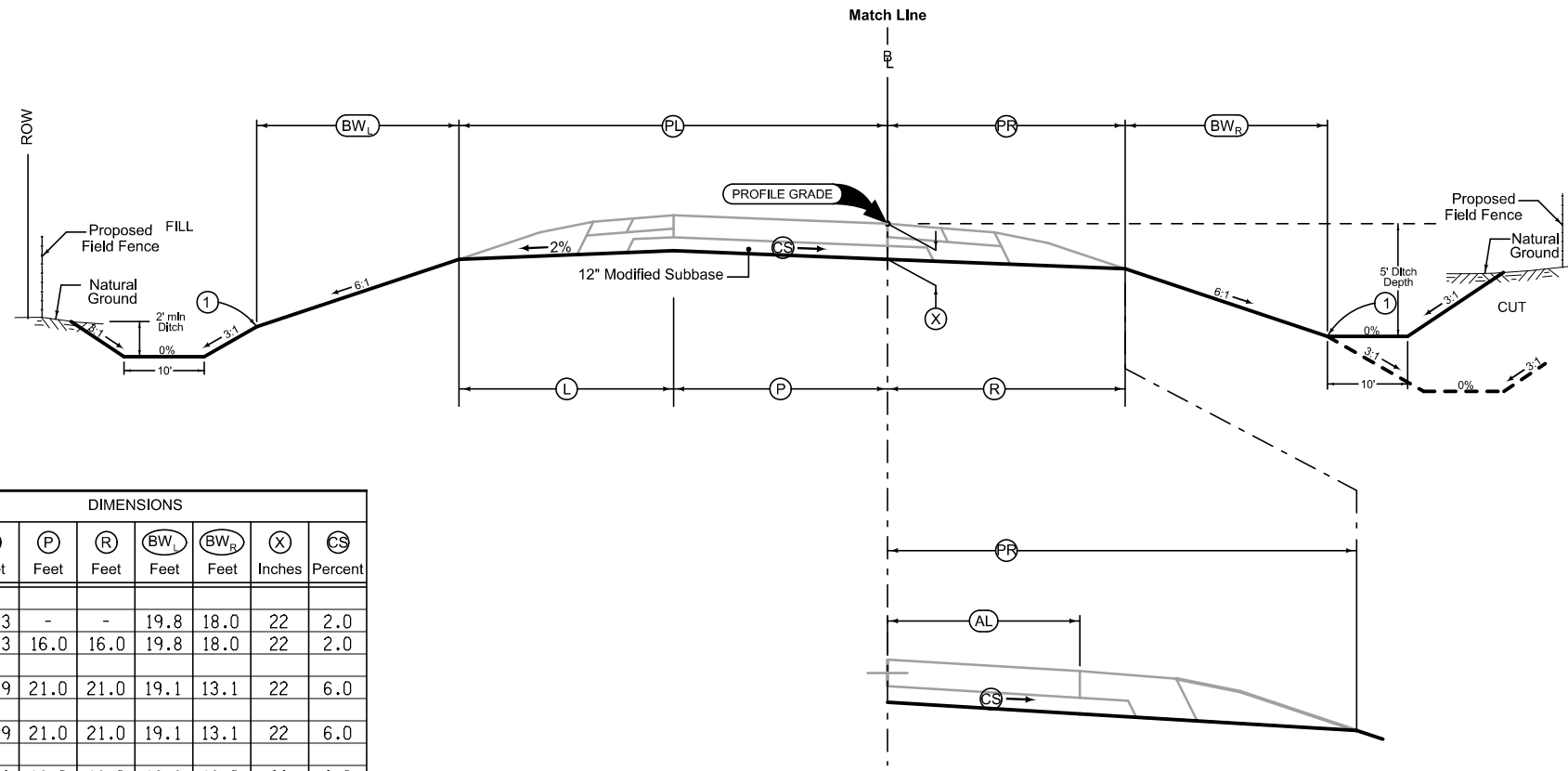
Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.

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



Section view is in direction of traffic.
Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super-elevated curves.

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



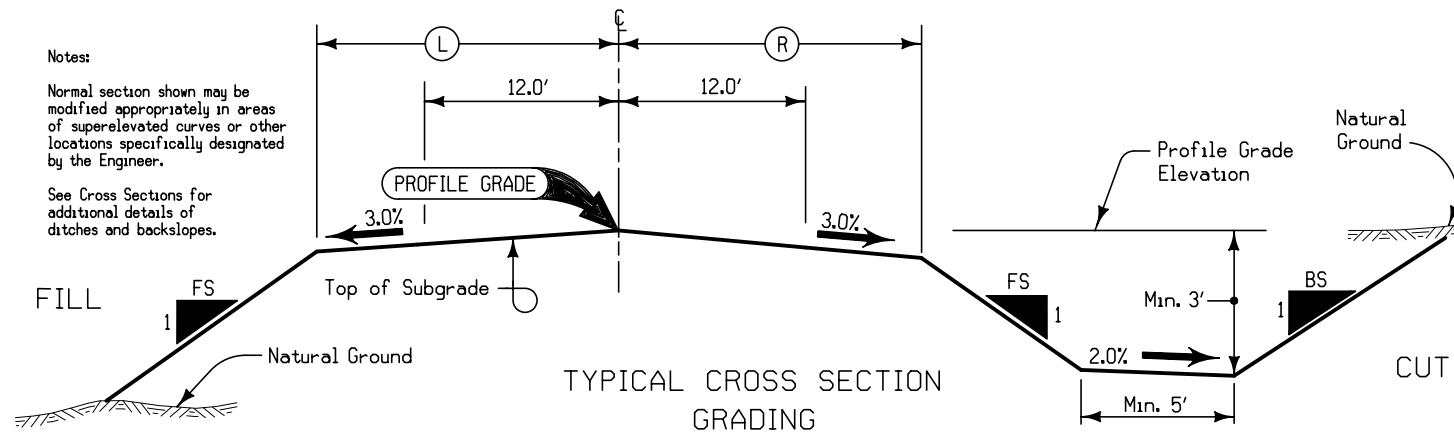
Auxiliary Lane

Longitudinal joint: L or KT
Transverse joint: Match Mainline

STATION TO STATION		AL Feet	R Feet
1522+38.90	1525+58.12	12-0	28.0-16.0

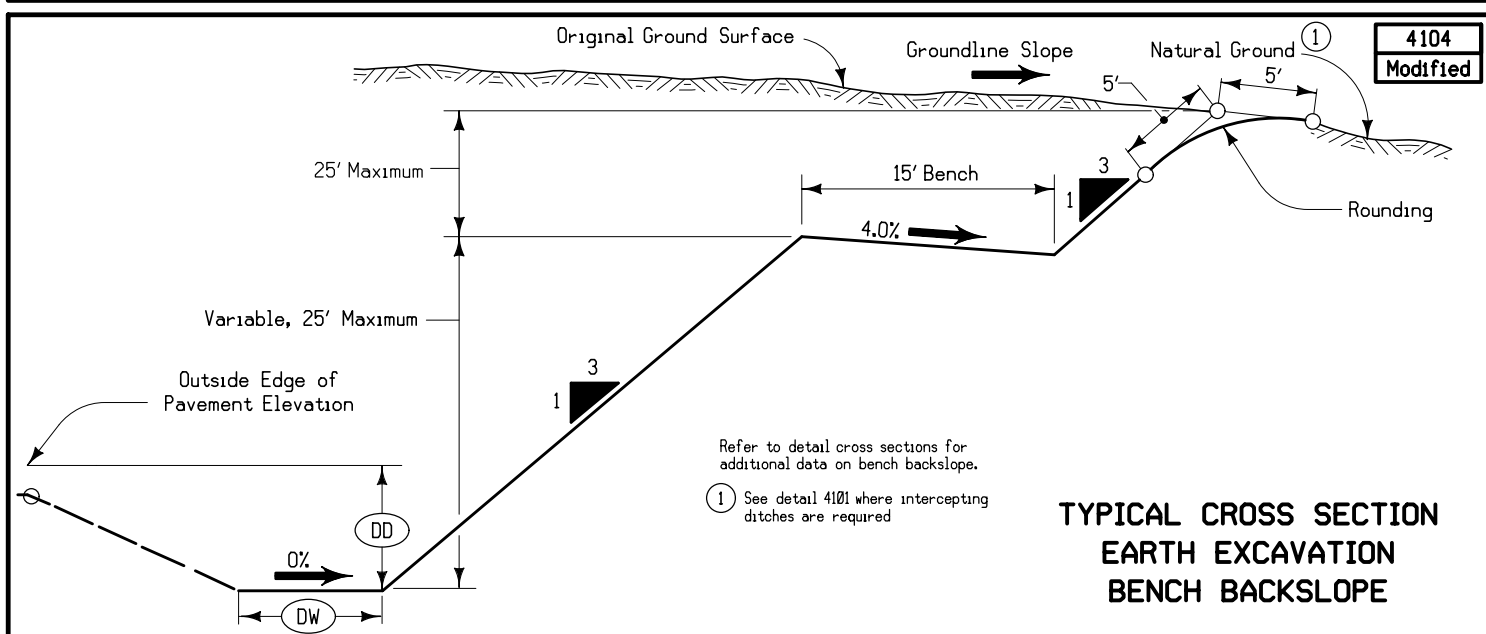
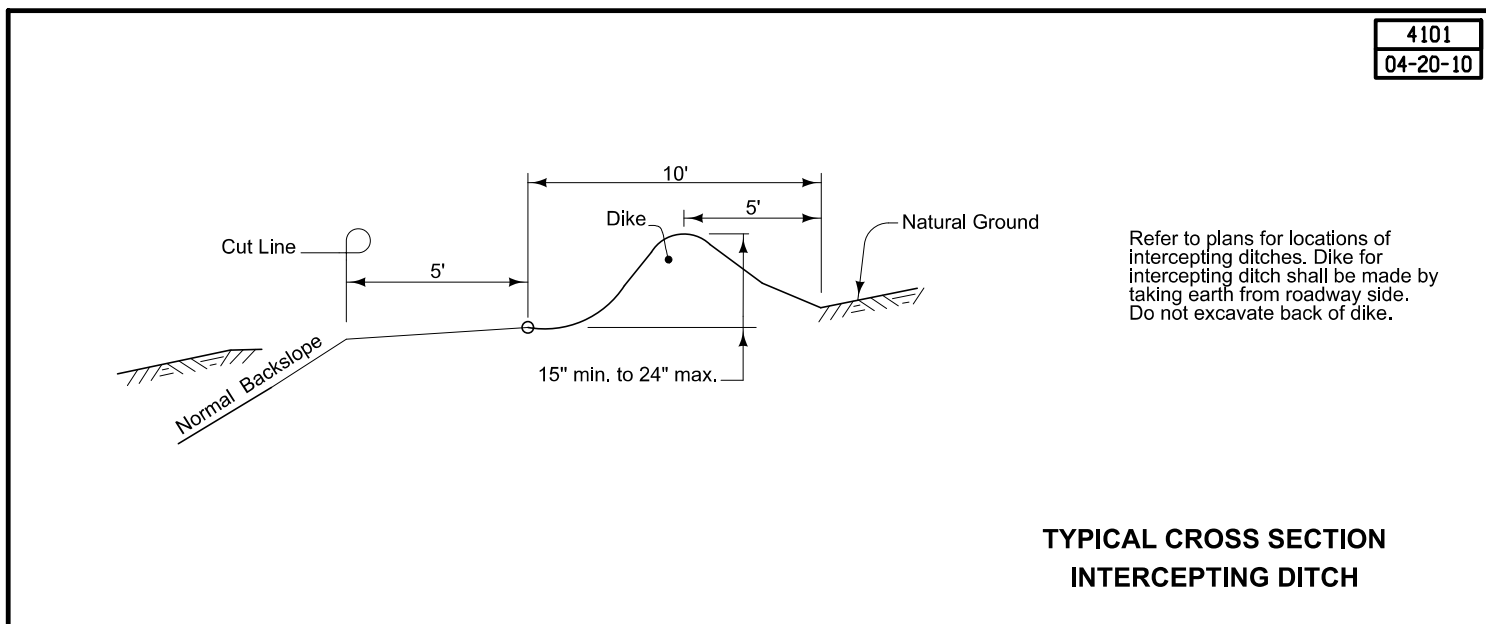
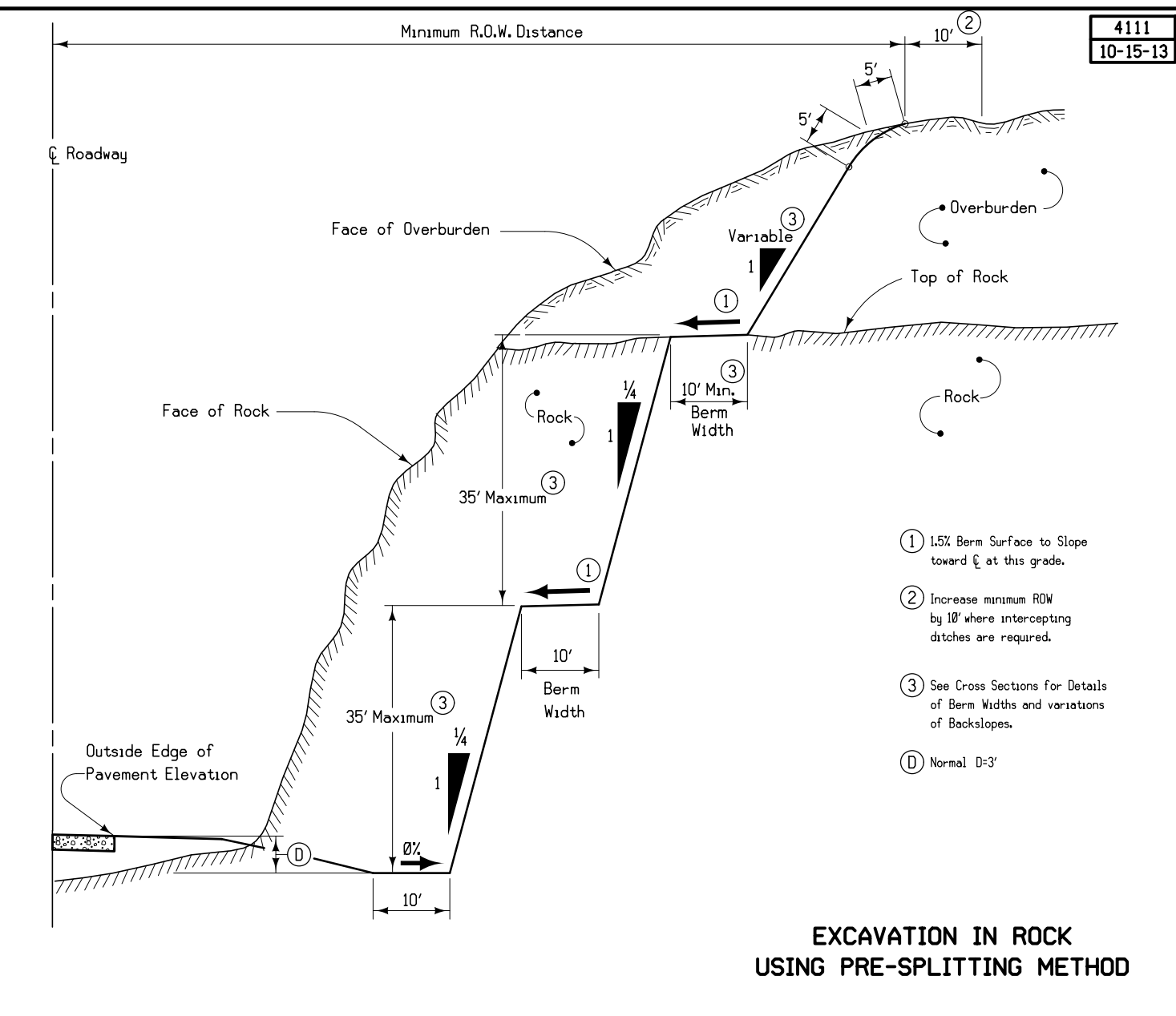
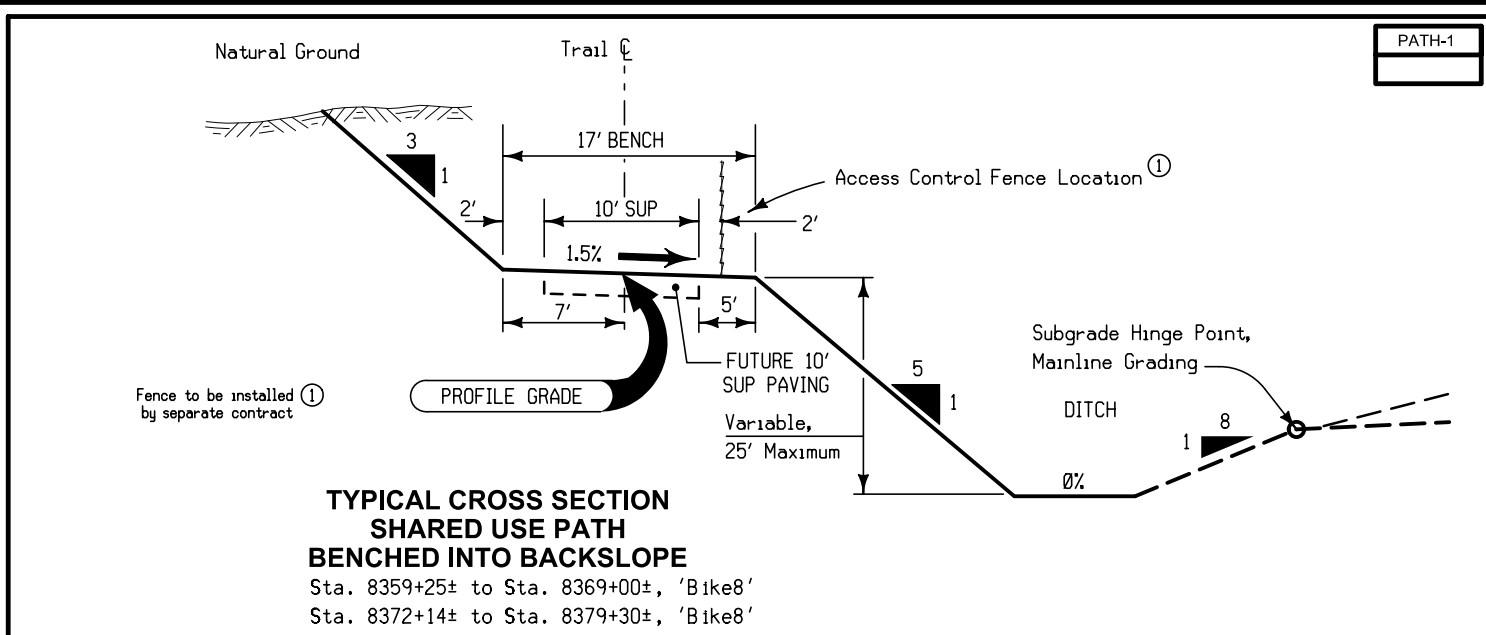
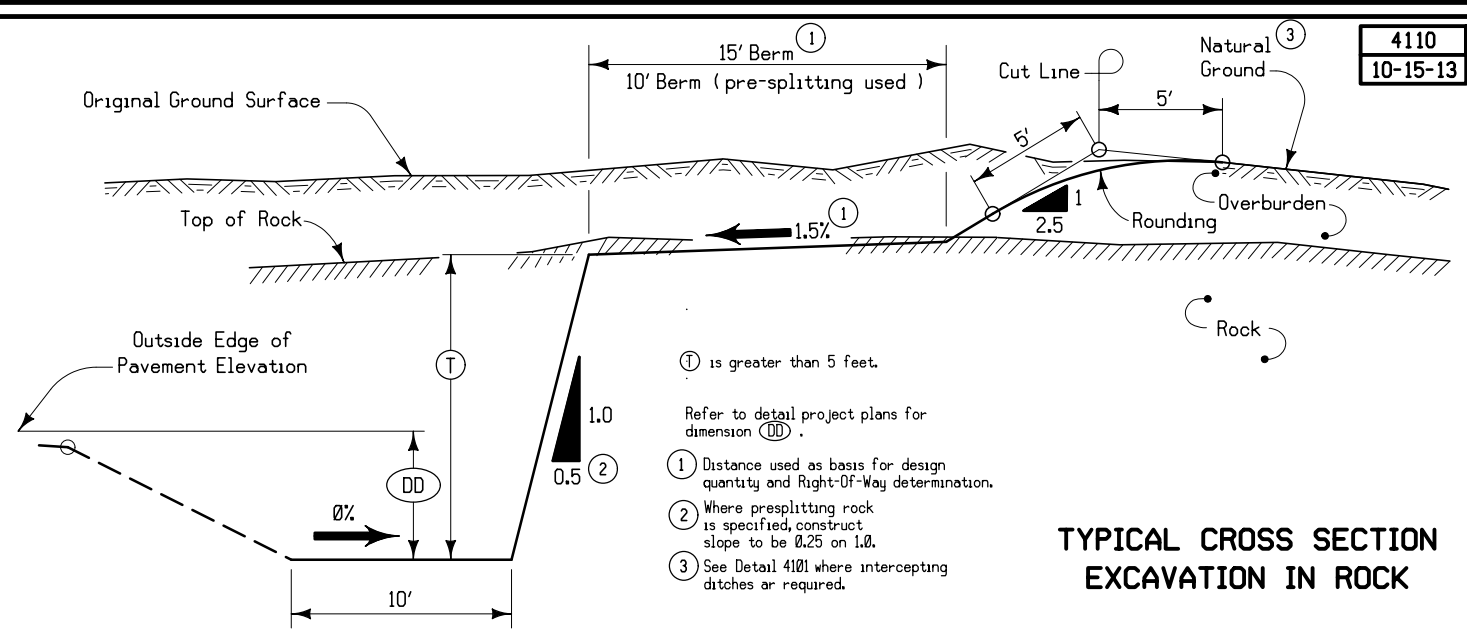
LOCATION			DIMENSIONS							
INTERCHANGE	RAMP	STATION TO STATION	L Feet	P Feet	R Feet	BW _L Feet	BW _R Feet	X Inches	CS Percent	
US-61/151	A	1522+38.90	1525+58.12	30.3	-	-	19.8	18.0	22	2.0
	A	1525+58.12	1536+00.00	30.3	16.0	16.0	19.8	18.0	22	2.0
	B	2522+75.00	2530+26.00	32.9	21.0	21.0	19.1	13.1	22	6.0
	C	3522+48.98	3529+88.90	32.9	21.0	21.0	19.1	13.1	22	6.0
	D	4517+66.72	4531+87.06	30.3	16.0	16.0	19.8	18.0	22	2.0

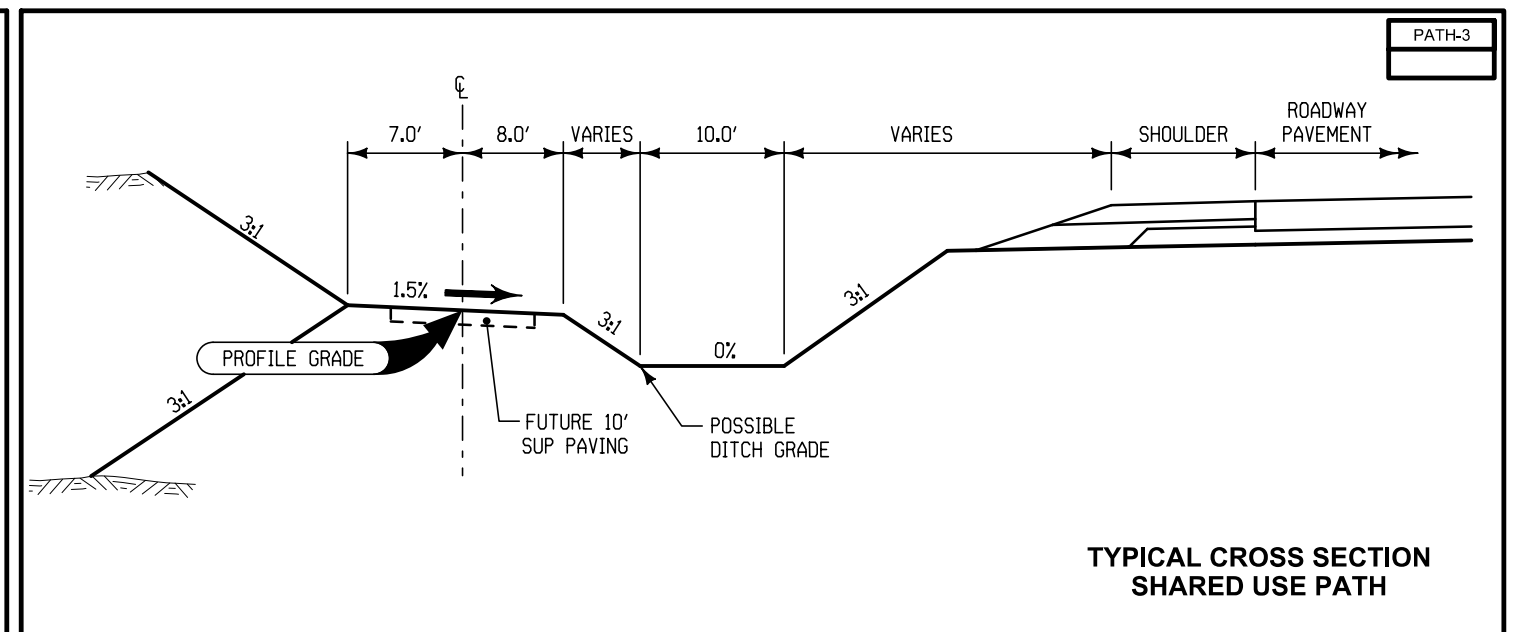
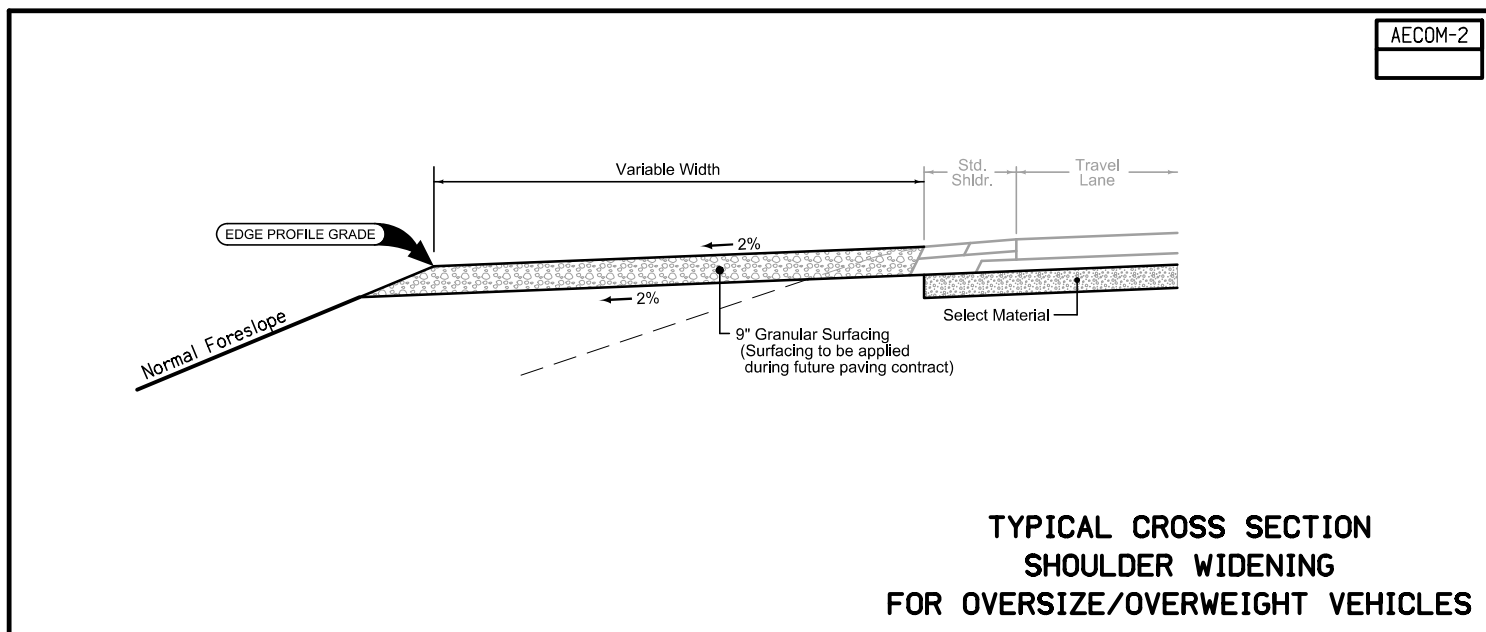
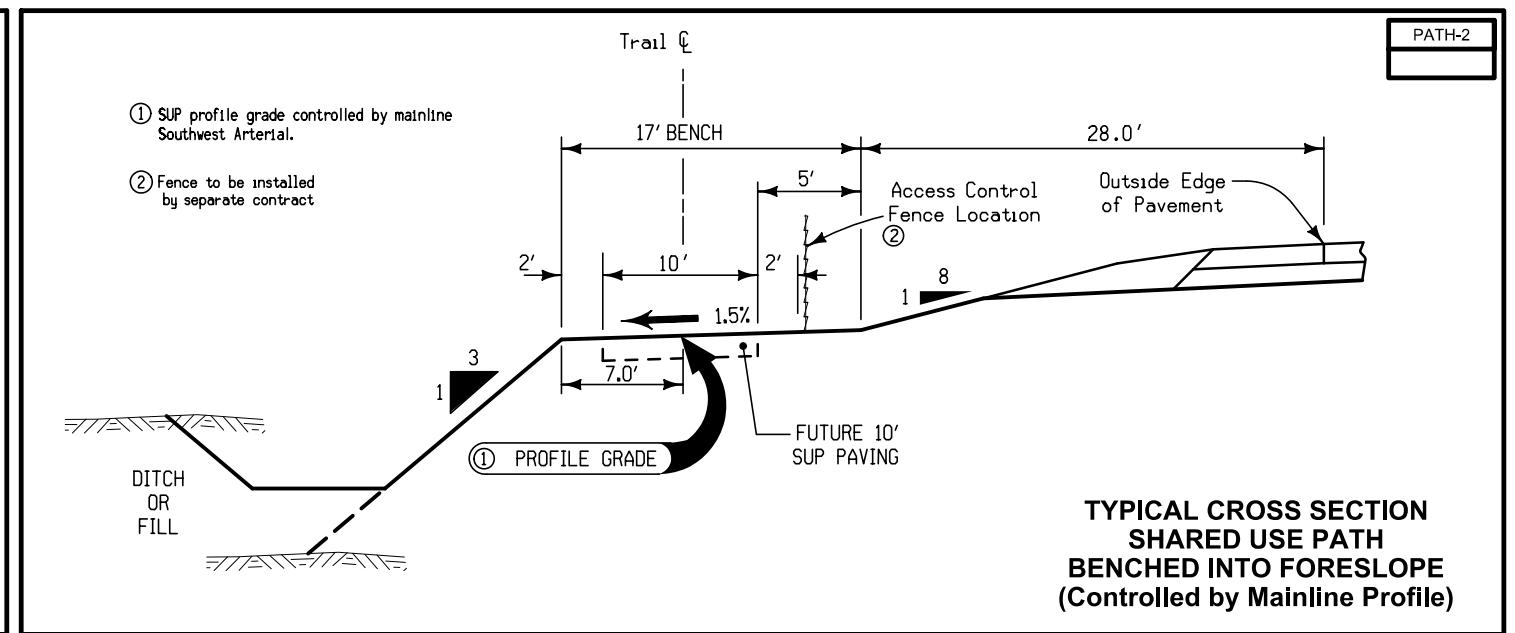
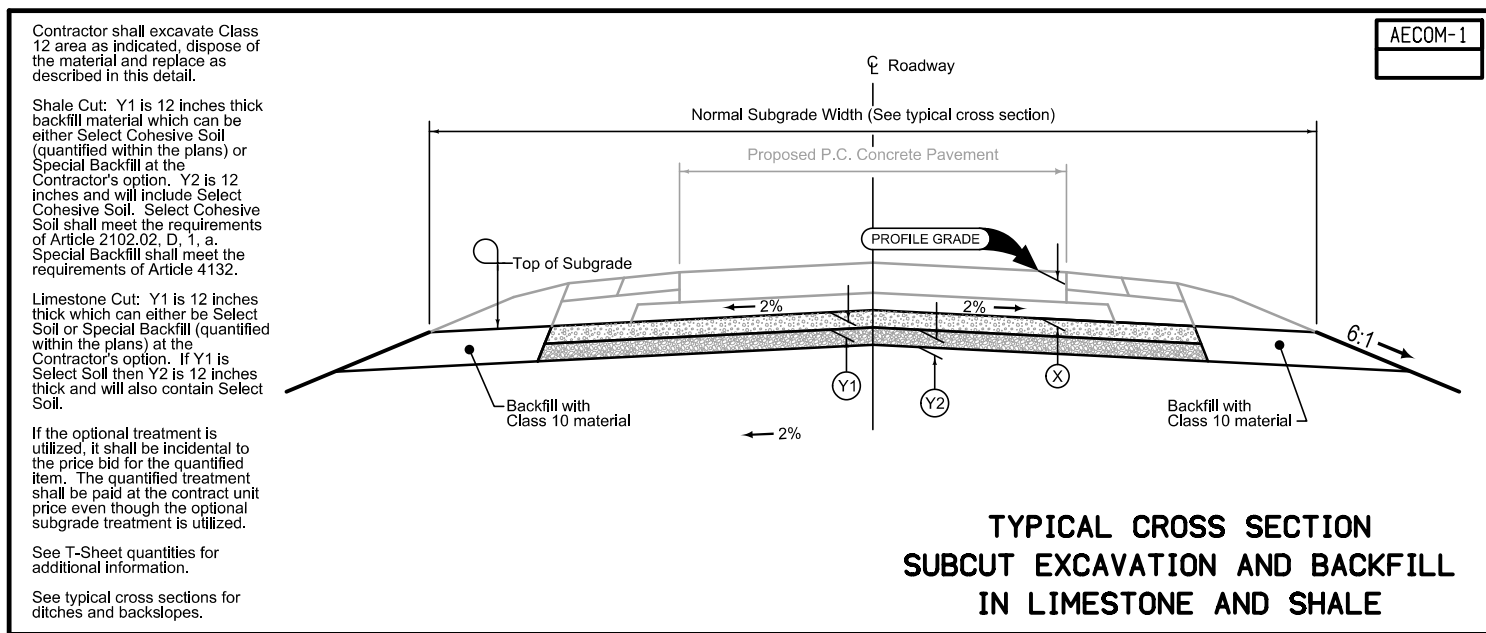
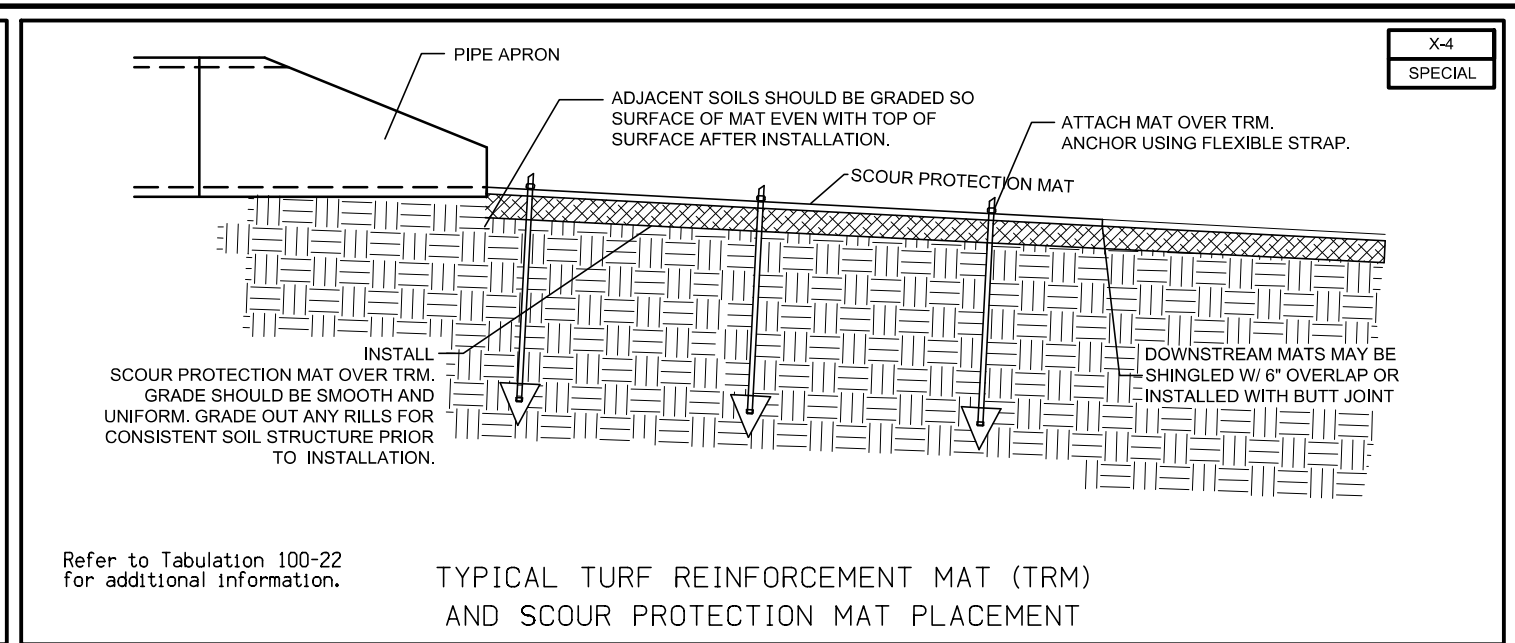
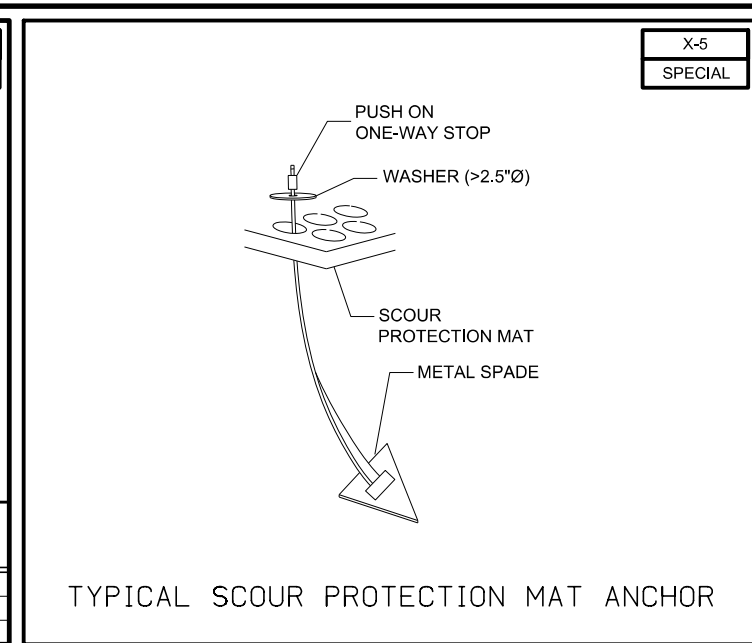
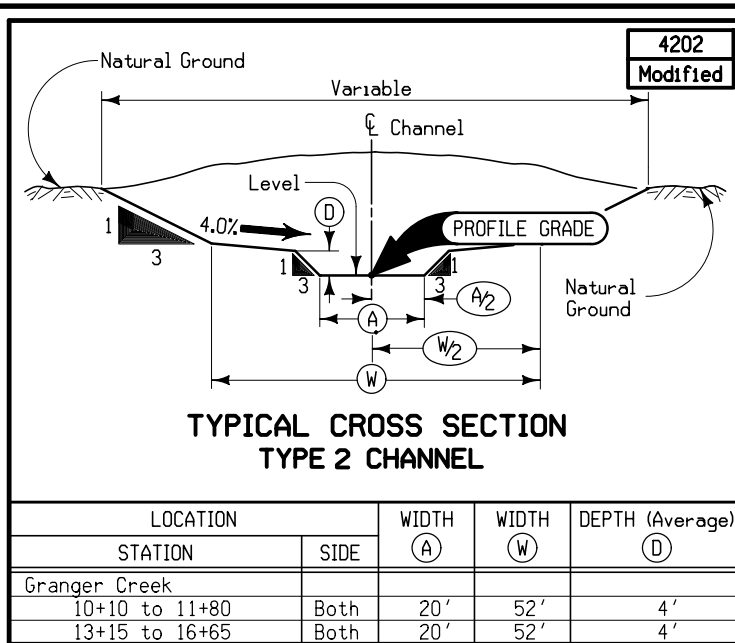
RAMP/LOOP GRADING



Notes:
Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.
See Cross Sections for additional details of ditches and backslopes.

LOCATION		DIMENSIONS		SLOPES		
ROAD IDENTIFICATION	STATION TO STATION	L	R	FS	BS	
ACCESS ROAD "B"	81+89.60	86+51.22	15'	15'	3	3





PROJECT DESCRIPTION

This project includes 4-lane grading of Southwest Arterial from Military Road to Olde Davenport Road. Grading of US-61 interchange ramps A' and 'D', and loops 'B' and 'C'. Grading of US-61 Connector Roads 'A' and 'B' including property accesses. Construction of a wetland mitigation site.

**ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)**

Item No.	Item Code	Item	Unit	Quantities										
				Estimated					As Built					
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
1	2101-0850001	CLEARING AND GRUBBING	ACRE	12.8					12.8					
2	2101-0850002	CLEARING AND GRUBBING	UNIT	366					366					
3	2102-0425071	SPECIAL BACKFILL	CY	1808.0					1808.0					
4	2102-2200000	INTERCEPTING DITCHES AND FLUMES	LF	5675.0					5675.0					
5	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT	CY	61542.8					61542.8					
6	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	595304.0					595304.0					
7	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	151316.0					151316.0					
8	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	150.0					150.0					
9	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW	CY	116695.0					116695.0					
10	2102-3240000	WATER FOR EMBANKMENT CONSTRUCTION	MGAL	250.00					250.00					
11	2102-4560000	LOCATING TILE LINES	STA	370.00					370.00					
12	2103-0000100	PRESPLITTING OF ROCK CUT	SY	29530.0					29530.0					
13	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	4601.0					4601.0					
14	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	85508.0					85508.0					
15	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	443988.0					443988.0					
16	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	1136.0					1136.0					
17	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	669.8					669.8					
18	2402-0425040	FLOODED BACKFILL	CY	2524.5					2524.5					
19	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	1561.5					1561.5					
20	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EACH	5					5					
21	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	2					2					
22	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	10					10					
23	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	2					2					
24	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	2					2					
25	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EACH	6					6					
26	2416-0100054	APRONS, CONCRETE, 54 IN. DIA.	EACH	2					2					
27	2416-1180018	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA.	LF	18.0					18.0					
28	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	218.0					218.0					
29	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	50.0					50.0					
30	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	122.0					122.0					
31	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	346.0					346.0					
32	2416-1180054	CULVERT, CONCRETE ROADWAY PIPE, 54 IN. DIA.	LF	258.0					258.0					
33	2416-1240024	CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	172.0					172.0					
34	2416-1240048	CULVERT, 3000D CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	250.0					250.0					
35	2422-0360024	APRONS, UNCLASSIFIED, 24 IN. DIA.	EACH	4					4					
36	2422-0360036	APRONS, UNCLASSIFIED, 36 IN. DIA.	EACH	4					4					
37	2422-1722024	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA.	LF	114.0					114.0					
38	2422-1722036	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 36 IN. DIA.	LF	116.0					116.0					
39	2435-0254702	BARRIER INTAKE, SW-547, WELL ONLY	EACH	7					7					
40	2435-0254902	BARRIER INTAKE, SW-549, WELL ONLY	EACH	3					3					
41	2502-8212206	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.	LF	390.0					390.0					
42	2502-8221305	SUBDRAIN OUTLET, DR-305	EACH	1					1					
43	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.	LF	709.0					709.0					
44	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.	LF	250.0					250.0					
45	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.	LF	120.0					120.0					
46	2506-4984000	FLOWABLE MORTAR	CY	49.3					49.3					
47	2507-3250005	ENGINEERING FABRIC	SY	7460.4					7460.4					
48	2507-6800061	REVTMENT, CLASS E	TON	179.6					179.6					
49	2507-8029000	EROSION STONE	TON	4672.1					4672.1					
50	2510-6745850	REMOVAL OF PAVEMENT	SY	99.7					99.7					
51	2518-6910000	SAFETY CLOSURE	EACH	22					22					
52	2520-3350015	FIELD OFFICE	EACH	1					1					
53	2526-8285000	CONSTRUCTION SURVEY	LS	1.00					1.00					
54	2528-8445110	TRAFFIC CONTROL	LS	1.00					1.00					
55	2528-8445113	FLAGGERS	EACH	See Proposal					See Proposal					
56	2533-4980005	MOBILIZATION	LS	1.00					1.00					
57	2599-9999001	STABILIZING CROP - NATIVE GRASS SEEDING AND FERTILIZING	ACRE	83.6					83.6					
58	2599-9999001	SUBGRADE STABILIZATION	ACRE	23.0					23.0					
59	2599-9999009	DITCH CHECKS	LF	17795.0					17795.0					
60	2599-9999009	MAINTENANCE OF DITCH CHECKS	LF	1779.5					1779.5					
61	2599-9999009	REMOVAL OF DITCH CHECKS	LF	17795.0					17795.0					
62	2601-2633100	MOWING	ACRE	50.0					50.0					
63	2601-2634100	MULCHING	ACRE	167.2					167.2					
64	2601-2636015	NATIVE GRASS SEEDING	ACRE	0.8					0.8					
65	2601-2636018	WETLAND GRASS SEEDING	ACRE	2.5					2.5					
66	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT	SQ	3815					3815					
67	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	83.6					83.6					

**ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)**

Item No.	Item Code	Item	Unit	Quantities												
				Estimated					As Built							
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5		
68	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	986.80							986.80					
69	2601-2643300	MOBILIZATION FOR WATERING	EACH	3							3					
70	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2	SQ	1119							1119					
71	2602-0000020	SILT FENCE	LF	2013.0							2013.0					
72	2602-0000050	SILT BASINS	EACH	86							86					
73	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	2013.0							2013.0					
74	2602-0000080	REMOVAL OF SILT BASINS	EACH	86							86					
75	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	201.3							201.3					
76	2602-0000130	TEMPORARY SEDIMENT CONTROL BASIN	EACH	6							6					
77	2602-0000135	REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	6							6					
78	2602-0000140	MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	18							18					
79	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE	LF	800.0							800.0					
80	2602-0000160	ROCK CHECK DAM	LF	6596.0							6596.0					
81	2602-0000170	MAINTENANCE OF ROCK CHECK DAM	EACH	963							963					
82	2602-0000180	REMOVAL OF ROCK CHECK DAM	EACH	741							741					
83	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1800.0							1800.0					
84	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	36560.0							36560.0					
85	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	38360.0							38360.0					
86	2602-0000400	TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	10							10					
87	2602-0000410	MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	10							10					
88	2602-0000420	REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	10							10					
89	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1							1					
90	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1							1					
91	2610-0000120	TREES	EACH	375							375					
NOTE: SEE V-SHEETS FOR ADDITIONAL STRUCTURAL QUANTITIES.																

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10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING See Tabulation 110-17 and the D, E and K-Sheets for locations and details.
-	-	-
2	2101-0850002	CLEARING AND GRUBBING Item is for the removal of field fence within the project construction limits. See Tabulation 110-17 for location and details.
-	-	-
3	2102-0425071	SPECIAL BACKFILL Item is for subgrade treatment in areas with existing limestone cut. See Typical AECOM-1 on the B-sheets for details. Also see CS-Sheets and W-Sheets for additional information.
-	-	-
4	2102-2200000	INTERCEPTING DITCHES AND FLUMES Refer to Tabulation 100-16, B-Sheet Detail 4101 and the U-sheets for locations and details.
-	-	-
5	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT Quantity is for subgrade treatment under Southwest Arterial. See Typical 4 Lane Grading, (Delayed Paving-Select Soil), on the B-Sheets and Tabulation 103-11 for locations and details. Also see D-Sheets and W-Sheets for additional information. Compaction with Moisture Control considered incidental to the Contractor Furnished Select Treatment item. See Tabulation 100-026 for details.
-	-	-
6	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW Item is for Class 10 excavation. Refer to Tabulation 107-28 for template quantities.
-	-	-
7	2102-2710090	EXCAVATION, CLASS 10, WASTE Item is for Class 10 waste. Refer to Tabulation 107-28 for template quantities.
-	-	-
8	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS Item is for boulders that may be uncovered during excavation. See Tabulation 103-7 for details.
-	-	-
9	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW Item is for limestone (rock), and shale uncovered during excavation. Bedrock, mostly consisting of shale, was encountered at various depths across the Southwest Arterial alignment. Some of the excavations will extend into the bedrock. Ripability of the bedrock will vary depending on the type of bedrock. In general, significant penetration into the shale bedrock was possible when the soil borings were obtained. The shale material is typically weathered and behaves similar to a hard soil. Therefore, excavation with backhoes equipped with teeth may be possible in the shale bedrock, although no guarantees of this condition can be made. Placement of the shale in the new constructed embankments shall comply with the Special Provisions for Shale and Soft Rock Embankments. No payment for overhaul

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ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	will be allowed for this item. Measurement and payment for this item will include all work necessary to meet this Special Provision. There is a stockpile of shale east of North Cascade Road near Sta. 175+00 which is to be used as fill on this project following the same requirements as described in the Special Provision above. Refer to Tabulation 107-28 for template quantities. Total quantity is based on Template Rock Volume column, [6] plus Template Shale Volume column, [7].
-	-	Refer to Tabulation 107-25 on the CS Sheet for locations of rock splitting. The contractor may also choose to crush the excavated rock and use it as special backfill in lieu of select soil on the project.
10	2102-3240000	WATER FOR EMBANKMENT CONSTRUCTION Item is for the shale processing as described in the special provision.
-	-	-
11	2102-4560000	LOCATING TILE LINES Item is for locating tile lines along Southwest Arterial corridor. See Standard Road Plan DR-302 for farm tile replacement. Tile replacement or repair will be handled as extra work.
-	-	-
12	2103-0000100	PRESPLITTING OF ROCK CUT Item for pre-splitting of limestone encountered on the project. See Tabulation 107-25 for details.
-	-	-
13	2105-8425005	TOPSOIL, FURNISH AND SPREAD Contractor shall furnish and spread topsoil as referenced in Tabulation 103-4. Also refer to Tabulation 107-28 for locations. Measurement and payment per cubic yard will be full compensation for constructing this item in accordance with the specifications and the following provisions. Payment shall include all materials, equipment, tools and labor necessary to furnish and spread the topsoil.
-	-	-
14	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD Topsoil will be stripped at locations as described in Tabulation 103-4. Also refer to Tabulation 107-28 for locations. No payment for overhaul will be allowed for this item. Topsoil shall be placed at a depth of 6" on disturbed areas along Connector Road A, Connector Road, B, Ramp A, Loop B and Loop C. Topsoil shall be placed at a depth of 8" on disturbed areas along SW Arterial, U.S. 61 and Ramp D. Measurement and payment per cubic yard will be full compensation for constructing this item in accordance with the specifications and the following provisions. Payment shall include all materials, equipment, tools and labor necessary to strip, salvage and spread topsoil.
-	-	-
15	2107-0875100	COMPACTION WITH MOISTURE CONTROL Refer to Tabulation 103-6 for details and locations requiring Compaction with Moisture Control.
-	-	-
16	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	Item is for backfill in drainage ways. Refer to Tabulation 104-5C for locations and details.
17	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE Refer to Tabulation 102-3 and the D-sheets, E-Sheets and K-Sheets for locations and details.
18	2402-0425040	FLOODED BACKFILL Quantity is for pipe culvert and box culvert backfill. Refer to Tabulation 104-3 for pipe culvert locations and details. Refer to Tabulation 104-4 for box culvert locations and details.
19	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT Quantity is for excavation of the roadway pipe culvert locations. Refer to Tabulation 104-3 for locations and details.
20-38	2416-0100015 2416-0100018 2416-0100024 2416-0100030 2416-0100036 2416-0100048 2416-0100054 2416-1180018 2416-1180024 2416-1180030 2416-1180036 2416-1180048 2416-1180054 2416-1240024 2416-1240048 2422-0360024 2422-0360036 2422-1722024 2422-1722036	APRONS, CONCRETE, 15 IN. DIA. APRONS, CONCRETE, 18 IN. DIA. APRONS, CONCRETE, 24 IN. DIA. APRONS, CONCRETE, 30 IN. DIA. APRONS, CONCRETE, 36 IN. DIA. APRONS, CONCRETE, 48 IN. DIA. APRONS, CONCRETE, 54 IN. DIA. CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA. CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA. CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA. CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA. CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA. CULVERT, CONCRETE ROADWAY PIPE, 54 IN. DIA. CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA. CULVERT, 3000D CONCRETE ROADWAY PIPE, 48 IN. DIA. APRONS, UNCLASSIFIED, 24 IN. DIA. APRONS, UNCLASSIFIED, 36 IN. DIA. CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA. CULVERT, UNCLASSIFIED ENTRANCE PIPE, 36 IN. DIA. See Tabulations 102-3, 104-3, 104-5B and the D, E, K, M and S Sheets for locations and details.
39-40	2435-0254702 2435-0254902	BARRIER INTAKE, SW-547, WELL ONLY BARRIER INTAKE, SW-549, WELL ONLY See the D-Sheets and the M-Sheets for locations and details.
41-42	2502-8212206 2502-8221305	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA. SUBDRAIN OUTLET, DR-305 Items are for subdrain to be placed around the working blanket in drainage ways. Refer to Tabulation 104-5C for locations and details.
43-45	2503-0114215 2503-0114218 2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN. STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN. STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN. See Tabulation 104-5B and the D and M sheets for locations and details.
46	2506-4984000	FLOWABLE MORTAR Quantity is for pipe culvert backfill. Refer to Tabulation 104-3 for locations and details.
47-49	2507-3250005 2507-6800061 2507-8029000	ENGINEERING FABRIC REVTMENT, CLASS E EROSION STONE Items are for the construction of rock splash basins at culvert outlets. They are also for the construction of rock erosion control in ditches. See Tabulation 100-23 and the U-Sheets for locations and details.
50	2510-6745850	REMOVAL OF PAVEMENT Refer to Tabulation 110-1 for location and details.
51	2518-6910000	SAFETY CLOSURE See Tabulation 108-13A for locations and details.
52	2520-3350015	FIELD OFFICE In addition to meeting the requirements of Specification 2520.03, the field office shall have two separate rooms with each having an outside entrance and a doorway between. The rooms shall be at least 8'x20' (nominal dimensions) with climate control in each room. One room shall be set up as an office with at least 2 work stations. The other room shall be equipped with a microwave, a work bench, and be mostly open to allow for meeting space. An 8' folding table with a dozen chairs shall also be provided.
54	2528-8445110	TRAFFIC CONTROL Item is for all tools, materials, labor, and equipment necessary for traffic control, except for those items which are specifically covered by another bid item. Refer to Tabulations 108-23A and 108-26A on the J-Sheets for details.
57	2599-9999001	STABILIZING CROP - NATIVE GRASS SEEDING AND FERTILIZING Seed for "STABILIZING CROP - NATIVE GRASS SEEDING AND FERTILIZING" will be furnished and mixed by the Contracting Authority. Contact the contracting authority 48 hours before seeding and the seed will be delivered to the project site. Seed will be delivered in lots of 40 acres per delivery. Once the seed is delivered to the project,

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	Contracting Authority.
-	-	Contact the contracting authority 48 hours before seeding and the seed will be delivered to the project site.
-	-	Seed will be delivered in lots of 40 acres per delivery. Once the seed is delivered to the project, the seed must be stored inside a rodent and moisture free environment.
-	-	Included for areas where topsoil slope dressing has been spread and the final grading is completed, and for areas identified for Native Grass Seeding per Standard Road Plan EC-502.
-	-	Prepare seedbed according to 2601.03, B, 4, a. Fertilize all disturbed areas per Article 2601.03, C.1.
-	-	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.
58	2599-9999001	SUBGRADE STABILIZATION Subgrade Stabilization shall be installed from hinge point to hinge point of roadway cross section, (including across subgrade treatment), when select soil is used for subgrade treatment. In locations where special backfill is used for subgrade treatment in lieu of select soil, only apply the subgrade stabilization across area from hinge point to start of subgrade treatment on each side of cross section. Subgrade Stabilization does not need to be installed over granular materials. Apply and distribute evenly and uniformly 1.5 tons per acre of dry cereal straw or native grass straw. Use Certified Noxious Weed Seed Free Mulch certified by the Iowa Crop Improvement Association or other state's Crop Improvement Program. The general absence of straw longer than 6 inches after the distribution will be considered excessive pulverization and will not be accepted. After the application of the dry cereal straw or native grass straw, apply a tackifier that will easily mix with water and shall be noncorrosive to hydraulic application equipment. The tackifier will be nonfoaming and contain mixture enhancers to prevent foaming and mixing problems during agitation in the application equipment. Application equipment will have both mechanical agitation and a slurry bypass. Application rate will be as indicated by the manufacturer product label for the site conditions and time of year. Tackifiers will be considered safe to the applicator, adjacent workers and the environment when properly applied according to the Environmental Protection Agency (EPA) and other regulatory agencies. Material Safety Data Sheets (MSDS) will be required to be submitted to the Engineer prior to application. The tackifier will be nontoxic to plants, fish and other wildlife and 100% biodegradable. The tackifier will be water soluble natural proteins, vegetable gums, guar gums, starch, psyllium, pitch, or rosen type blended with gelling and hardening agents, or a water soluble blend of hydrophilic polymers, viscosifiers, sticking aids or other gums. Guar gum based tackifiers will consist of a minimum of 95% guar gum, by weight. The remaining 5% will consist of dispersing and cross-link additives. Starch will be a non-ionic, cold-water soluble (pre-gelatinized) granular cornstarch. Psyllium will be a finely ground muciloid coating of plantago seeds that is applied in a wet slurry to the surface of the soil. Pitch and Rosen will be a non-ionic pitch and rosin emulsion that has a minimum solids content of 48 percent. The rosin will be a minimum of 26 percent of the total solids content. The tackifier will be a non-corrosive, water dilutable emulsion that cures to water-insoluble binding and cementing agent upon application. Approved products include: Hydratack P by Innovative Turf Solutions, LLC HF5000 Tack by Rantec Corporation Second Nature Tacpac GTX by Central Fiber Corp. Startack 100 P by Chemstar Method of Measurement will be in acres to the nearest 0.1 acre of subgrade stabilized. Basis of Payment for Subgrade Stabilization will be the contract unit price per acre to the nearest 0.1 acre for Subgrade Stabilization. Payment is full compensation for preparing the area and all materials, labor and for equipment required to stabilize the subgrade.
59	2599-9999009	DITCH CHECKS Install silt fence per contract documents or slash mulch berm at locations indicated on Tabulation 100-18 and the U-Sheets. The slash mulch berms shall be a trapezoid 6 feet wide at the base, minimum 30 inches in height, and 1/2:1 side slopes. The maximum height of the berm shall not exceed 40 inches. All material used for the slash mulch berms will have a maximum length of individual pieces not to

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		exceed 20 inches. Maximum width shall not exceed 2 inches. Material shall be accepted based upon a visual inspection.
		Method of Measurement: Linear feet to the nearest 0.1 foot.
		Basis of Payment: Per linear foot for the length of ditch check properly installed.
60	2599-9999009	MAINTENANCE OF DITCH CHECKS Maintain silt fence or slash mulch berm ditch checks. Refer to Article 2602.03, G and H for maintenance of silt fence and clean out of slash mulch berms.
		Maintenance on slash mulch berms will be required when the berm height is less than 30 inches or the base is less than 6 feet wide. The Contractor shall be responsible for all labor, materials, equipment and services that may be necessary for, and incidental to, the maintenance of the slash mulch berms.
		Method of Measurement: Linear feet to the nearest 0.1 foot.
		Basis of Payment: Per linear foot for the length of the ditch check properly cleaned out or repaired.
61	2599-9999009	REMOVAL OF DITCH CHECKS Dispose of the ditch check material off the project unless Engineer approves a suitable site within the project limits.
62	2601-2633100	MOWING All mowings must be completed with a flail type mower. No rotary, disk or sickle type mowers will be allowed.
		Areas inaccessible to field equipment shall be cut with appropriate hand equipment and kept current with the mowing of adjacent areas.
63	2601-2634100	MULCHING Straw Mulch: Rate 1 1/2 tons of straw per acre. All mulch is to be consolidated into the soil with the mulch stabilizer. Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent state's Crop Improvement Associations.
64-65	2601-2636015 2601-2636018	NATIVE GRASS SEEDING WETLAND GRASS SEEDING Items are for wetland mitigation. Refer to MIT-Sheets and Table 400-1 on the C-Sheets for locations and details.
66	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT See Tabulation 100-22 and U-Sheets for locations and details. Seed according to Table 2601.03-7.
67	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING Included for disturbed areas prior to final grading and topsoil placement. Refer to "STABILIZING CROP-NATIVE GRASS SEEDING AND FERTILIZING" for seeding once final grading and topsoil is placed. Seed and fertilize all disturbed areas per Article 2601.03, C.1.
68-69	2601-2643110 2601-2643300	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION MOBILIZATION FOR WATERING Quantities are for watering special ditch control and turf reinforcement mat items. Refer to C-sheets and U-sheets for locations and details.
70	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2 See Tabulation 100-22 and the U-Sheets for locations and details. Seed according to Table 2601.03-7.
71	2602-0000020	SILT FENCE Refer to Tabulation 100-17 and the U-Sheets for locations and details. The tabulation includes estimated locations for placement of Silt Fence to address possible erosion during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
72	2602-0000050	SILT BASINS Refer to Tabulation 100-14 and the U-Sheets for locations and details. The tabulation includes estimated locations for placement of Silt Basins to address possible erosion during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 100% additional quantity for field adjustments and maintenance.
73	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence removal required for staging reasons, for replacement (replacement to be paid separately), or for areas where grading activities are complete. See Tabulations 100-17 and 100-18 for details.
74	2602-0000080	REMOVAL OF SILT BASINS Refer to Tabulation 100-14 and the U-Sheets for locations and details. Bid item includes 100% additional quantity for field adjustments and maintenance.
75	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for cleanout and repair of the silt fence during the project. See Tabulations 100-17 and 100-18 for details.
76	2602-0000130	TEMPORARY SEDIMENT CONTROL BASIN See Tabulation 100-33 and the U-Sheets for locations and details. Method of measurement will be by count for each Temporary Sediment Control Basin installed. Basis of payment for Temporary Sediment

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Control Basin will be at the contract unit price per each for Temporary Sediment Control Basin. Payment is full compensation for preparing the areas and all materials, labor and equipment required to install the temporary sediment control basin.
77	2602-0000135	REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN See Tabulation 100-33 and the U-Sheets for locations and details. Method of measurement will be by count for each Temporary Sediment Control Basin removed. Basis of payment for Temporary Sediment Control Basin will be at the contract unit price per each Temporary Sediment Control Basin removed. Payment is full compensation for all labor required to remove each Temporary Sediment Control Basin.
78	2602-0000140	MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN See Tabulation 100-33 and the U-Sheets for locations and details. Method of measurement will be by count for each Temporary Sediment Control Basin maintained. Basis of payment for Maintenance of Temporary Sediment Control Basin will be at the contract unit price per each time maintenance is required for a temporary sediment control basin.
79	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE Construct temporary entrances at locations where construction traffic leaves construction site and enters onto a public road. Method of measurement will be per linear feet for Stabilized Construction Entrances. Basis of Payment for Stabilized Construction Entrance will be at the contract unit price per linear foot to the nearest 0.1 linear foot for Stabilized Construction. Assume 100 linear feet per entrance. Payment is full compensation for preparing the area and all materials, labor and equipment required to construct and maintain the entrances.
80	2602-0000160	ROCK CHECK DAM Bid quantity includes both rock check dams used to replace silt fence for ditch checks as needed and rock check dams used for storm water storage. See Tabulation 100-32 and the U-Sheets for locations and details. Method of measurement will be per linear foot for Rock Check Dams. Basis of payment for Rock Check Dams will be at the contract unit price per linear foot to the nearest linear foot for Rock Check Dam. Payment is full compensation for preparing the areas and all materials, labor and equipment required to install the rock check dams.
81	2602-0000170	MAINTENANCE OF ROCK CHECK DAM This item is included for cleanout and repair of the rock check dams during the project. See Tabulation 100-32 for details. Method of measurement for Maintenance of Rock Check Dam will be by count for each Rock Check Dam maintained. Basis of payment for Maintenance of Rock Check Dam will be at the contract unit price per each time maintenance is required for a rock check dam.
82	2602-0000180	REMOVAL OF ROCK CHECK DAM This item is included for rock check dam removal required for staging reasons, for replacement (replacement to be paid separately), or for areas where grading activities are complete. See Tabulations 100-32 for details. Method of measurement will be by count for each Rock Check Dam removed. Basis of payment for Removal of Rock Check Dam will be at the contract unit price per each Rock Check Dam removed. Payment is full compensation for all labor required to remove each Rock Check Dam.
83-85	2602-0000312 2602-0000320 2602-0000350	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE See Tabulation 100-19 and the U-Sheets for locations and details. Method of measurement and basis of payment shall be per Section 2601 of the Standard Specifications.
86-88	2602-0000400 2602-0000410 2602-0000420	TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY Items are for temporary cover on median intakes. Refer to Tabulation 100-11 and the U-Sheets for locations and details.
89	2602-0010010	MOBILIZATIONS, EROSION CONTROL Quantity is for installation and maintenance of erosion control within the project limits.
90	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL Quantity is for repair or reinstallation of erosion control due to events requiring emergency measures as determined by the engineer.
91	2610-0000120	TREES See Tabulation 100-20 and the MIT-Sheets and U-Sheets for locations and details.
		NOTE: SEE V-SHEETS FOR ADDITIONAL STRUCTURAL QUANTITIES.

232-10
10-21-14

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.iowatrepeests.com/eab_regulations.html.

262-6
10-18-05

**UTILITIES
(NOT A POINT 25 PROJECT)**

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

111-25
10-18-11

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281-1
10-15-13

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Regional Permit 7, Permit No. 2015-154. 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.

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
DR-101	04-19-16	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-111	04-21-15	Box Culvert (Backfill)
DR-121	10-20-15	Connected Pipe Joints
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-141	04-21-15	Pipe Bends and Half Pipe
DR-201	04-21-15	Concrete Aprons
DR-203	04-21-15	Metal Pipe Aprons and Beveled Ends
DR-213	04-21-15	Pipe Apron Guard
DR-301	04-21-15	Subdrains for Fill or Foundation Drainage (Standard)
DR-302	10-20-15	Subdrains Standard (Farm Tile Replacement)
DR-305	04-21-15	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
DR-601	10-20-15	Reinforced Concrete Pipe Culvert
DR-611	04-21-15	Reinforced Concrete Pipe Culvert Letdown Structure
DR-621	04-21-15	Pipe Extension
DR-641	10-18-16	Concrete/Corrugated Pipe Culvert Letdown Structure with Metal Apron
DR-651	10-20-15	Unclassified Pipe Culvert
DR-652	04-21-15	Unclassified Letdown Structure Single Elbow
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection
EC-104	04-19-16	Turf Reinforced Mat (TRM)
EC-201	10-18-16	Silt Fence
EC-204	04-19-16	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
EC-501	04-21-15	Trees and Shrubs
EC-502	04-21-15	Seeding in Rural Areas
EW-102	10-20-15	Allowable Placement of Unsuitable Soil in Embankments
EW-103	10-20-15	Embankment Subgrade Treatment, Moisture Density Control and Special Compaction
EW-110	10-20-15	Ditch Blocks and Dikes
EW-202	04-19-16	Bridge Berm Grading without Recoverable Slope (Non-Barnroof Section)
EW-204	04-21-15	Bridge Berm Grading with Recoverable Slope (Barnroof Section)
EW-301	10-20-15	Guardrail Grading
EW-402	10-20-15	Temporary Stream Diversion
EW-403	10-18-16	Temporary Erosion Control Measures
EW-501	10-20-15	Rural Entrance
EW-503	10-20-15	Side Road Grading
PV-301	04-19-11	Superelevation Details Two Lane Roadway
PV-302	04-17-12	Superelevation Details Four Lane Roadway Depressed Median
PV-303	04-19-11	Superelevation Details Ramps
PV-412	10-18-11	Deceleration Taper for 18' Exit Loop
PV-414	10-18-11	Acceleration Taper for 18' Entrance Loop
SI-881	10-18-16	Special Signs for Workzones
SW-547	04-21-15	Triple-Grate Barrier Intake
SW-549	04-21-15	Single-Grate Barrier Intake, Rectangular
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-213	04-17-12	Lane Closure with Flaggers
TC-271	10-18-16	Signalized Equipment Crossing
TC-272	10-18-16	Unsignalized Equipment Crossing
TC-273	04-20-10	Construction Site Entrance
TC-402	04-21-15	Work Within 15 ft of Traveled Way

110-12A
10-18-16

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base 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. Affected contractors/subcontractors are anyone responsible for sediment or erosion controls or involved in land disturbing activities. 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 an Erosion Control Implementation Plan (ECIP) according to Specifications Section 2602 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. Comply with training and certification requirements of Specifications Section 2602.
7. 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 record 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).

POLLUTION PREVENTION PLAN

II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the grading of the SW Arterial project, east of the Military Road project.
- B. This PPP covers approximately 776.0 acres with an estimated 416.5 acres being disturbed. The portion of the PPP covered by this contract has 83.6 acres disturbed.
- C. The PPP is located in an area of one soil association, (Downs-Fayette-Nordess). The estimated weighted average runoff coefficient number for this PPP after completion will be 0.20.
- 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) - Project Location Map and 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 (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.
- F. Runoff from this work will flow into Catfish Creek.

III. CONTROLS

- A. The contractor's ECIP 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. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations 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 or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
 - 2) Stabilization practices 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.
 - 4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation.
 - 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
 - 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.
 - 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. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
 - 2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) 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 plans 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 occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) 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 practices to be used on this project are referenced in the Standard Road Plans Tabulation. 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. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these

POLLUTION PREVENTION PLAN

- facilities do not overflow during storm events.
- 7) Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
 - 8) Vehicle and Equipment Storage and Maintenance Areas - 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. Employ washing practices that prevent contamination of surface and ground water from wash water.
 - 9) Litter Management - Ensure employees properly dispose of litter.
 - 10) Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
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.
 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 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. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.
- VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION
Silt, 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, storm water monitoring inspection reports, and fieldbook entries made by the inspector.
C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and bid 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. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Mark Durbahn
Signature

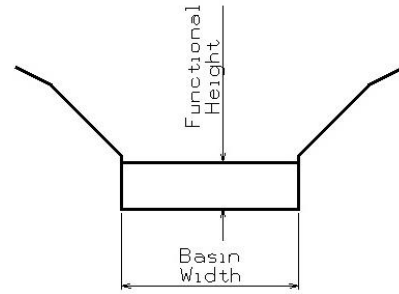
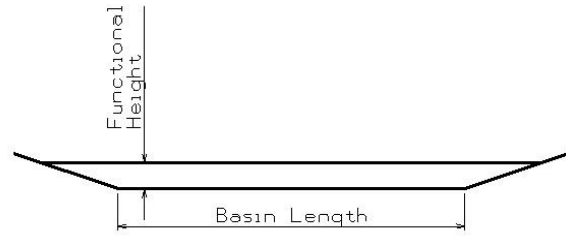
MARK DURBAHN
Printed or Typed Name

Roger R. Walton
Signature

Roger R. Walton
Printed or Typed Name

SILT BASINS

Possible Standard: EW-403

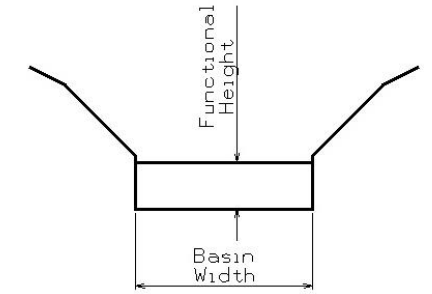
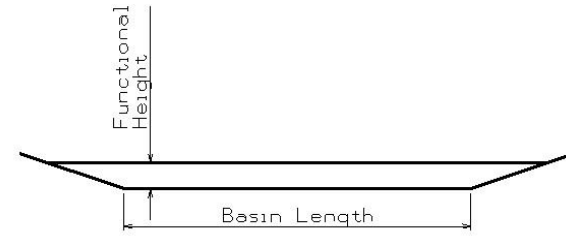


* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: $(0.5 * \text{Length} * (\text{Width} * \text{Height} + \text{Width} * (\text{Height} - \text{Length} * \text{Avg} \% \text{Slope})))$

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation EACH	Removal EACH	Basin Width FT	Basin Length FT	Height FT	Avg. % Slope	Volume* CF	
1	321+35.00	LT	1	1	10.0	50.0	2.85	9.8%	712.5	
1	323+45.00	LT	1	1	10.0	50.0	2.85	12.8%	712.5	
1	331+25.00	LT	1	1	10.0	50.0	2.85	2.2%	1150.0	
1	332+50.00	LT	1	1	10.0	50.0	2.85	8.6%	712.5	
1	333+30.00	LT	1	1	10.0	50.0	2.85	8.6%	712.5	
1	309+25.00	RT	1	1	10.0	50.0	2.85	4.5%	862.5	
1	309+65.00	RT	1	1	10.0	50.0	2.85	9.9%	712.5	
1	310+55.00	RT	1	1	10.0	50.0	2.85	8.2%	712.5	
1	324+95.00	RT	1	1	10.0	50.0	2.85	5.2%	775.0	
Basin 1 Totals:			9	9					7062.5	
2	337+30.00	LT	1	1	10.0	50.0	2.85	7.4%	712.5	
2	338+30.00	LT	1	1	10.0	50.0	2.85	7.6%	712.5	
2	338+50.00	RT	1	1	10.0	50.0	2.85	2.1%	1162.5	
2	339+25.00	RT	1	1	10.0	50.0	2.85	5.8%	712.5	
Basin 2 Totals:			4	4					3300.0	
3	27+00.00	LT	1	1	10.0	50.0	2.85	3.6%	975.0	Conn. Rd. A
3	27+65.00	LT	1	1	10.0	50.0	2.85	16.8%	712.5	Conn. Rd. A
3	515+75.00	LT	1	1	10.0	50.0	2.85	2.0%	1175.0	U.S. 61
Basin 3 Totals:			3	3					2862.5	
4	12+65.00	LT	1	1	10.0	50.0	2.85	4.3%	887.5	Conn. Rd. A
4	15+65.00	LT	1	1	10.0	50.0	2.85	4.5%	862.5	Conn. Rd. A
4	12+00.00	RT	1	1	10.0	50.0	2.85	2.7%	1087.5	Conn. Rd. A
4	15+60.00	RT	1	1	10.0	50.0	2.85	4.5%	862.5	Conn. Rd. A
Basin 4 Totals:			4	4					3700.0	
5	514+90.00	LT	1	1	10.0	50.0	2.85	2.0%	1175.0	U.S. 61
Basin 5 Totals:			1	1					1175.0	
6	363+25.00	RT	1	1	10.0	50.0	2.85	5.6%	725.0	
6	37+60.00	RT	1	1	10.0	50.0	2.85	6.1%	712.5	Conn. Rd. B
6	38+40.00	RT	1	1	10.0	50.0	2.85	6.1%	712.5	Conn. Rd. B
Basin 6 Totals:			3	3					2150.0	
7	375+65.00	LT	1	1	10.0	50.0	2.85	12.0%	712.5	
7	377+95.00	LT	1	1	10.0	50.0	2.85	15.6%	712.5	
7	378+90.00	LT	1	1	10.0	50.0	2.85	15.6%	712.5	
7	373+40.00	RT	1	1	10.0	50.0	2.85	19.7%	712.5	
7	378+20.00	RT	1	1	10.0	50.0	2.85	10.7%	712.5	
7	379+05.00	RT	1	1	10.0	50.0	2.85	6.1%	712.5	
Basin 7 Totals:			6	6					4275.0	
8	34+45.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	Conn. Rd. B
8	34+00.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
8	34+00.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	Conn. Rd. B
Basin 8 Totals:			3	3					3937.5	
9	17+20.00	LT	1	1	10.0	50.0	2.85	2.2%	1150.0	Conn. Rd. B.
9	20+70.00	LT	1	1	10.0	50.0	2.85	1.2%	1275.0	Conn. Rd. B.
9	25+65.00	LT	1	1	10.0	50.0	2.85	1.4%	1250.0	Conn. Rd. B.
9	17+00.00	RT	1	1	10.0	50.0	2.85	2.4%	1125.0	Conn. Rd. B.
9	20+70.00	RT	1	1	10.0	50.0	2.85	1.2%	1275.0	Conn. Rd. B.
9	29+65.00	RT	1	1	10.0	50.0	2.85	0.9%	1312.5	Conn. Rd. B.
Basin 9 Totals:			6	6					7387.5	

SILT BASINS

Possible Standard: EW-403



* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: $(0.5 * \text{Length} * (\text{Width} * \text{Height} + \text{Width} * (\text{Height} - \text{Length} * \text{Avg} \% \text{Slope})))$

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation EACH	Removal EACH	Basin Width FT	Basin Length FT	Height FT	Avg. % Slope	Volume* CF	
10	364+10.00	LT	1	1	10.0	50.0	2.85	4.2%	900.0	
10	4524+10.00	RT	1	1	10.0	50.0	2.85	14.5%	712.5	Ramp D
Basin 10 Totals:			2	2					1612.5	
11	1532+30.00	LT	1	1	10.0	50.0	2.85	3.0%	1050.0	Ramp A
11	1533+07.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	Ramp A
Basin 11 Totals:			2	2					2412.5	
Tab Quantity			43	43					39875.0	
Bid Tab Quantity (Tab Quantity*2)			86	86						

TABULATION OF INTERCEPTING DITCHES

Location				Length	Remarks
Station to Station	Side				
330+00.00	338+50.00	RT		850.0	
364+00.00	380+00.00	RT		1600.0	
14+25.00	24+00.00	LT		975.0	Connector Road A
23+50.00	36+50.00	RT		1300.0	Connector Road B
1527+00.00	1536+50.00	LT		950.0	Ramp A
Total:				5675.0	

INCIDENTAL ITEMS

Special or unique items where method of measurement / basis of payment is not indicated in the specifications or other contract documents.

No.	Incidental Item	Unit	Quantity	Incidental To		Remarks
				Item Code	Item	
1	COMPACTION WITH MOISTURE CONTROL	CY	61542.8	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT	

TABULATION OF SILT FENCES

Refer to EC-201

Location		Side	Length LF	Remarks
Begin Station	End Station			
Box Culverts				
316+00.00	316+00.00	RT	20.0	
320+00.00	320+00.00	LT	20.0	
325+00.00	325+00.00	LT	20.0	
329+00.00	329+00.00	RT	20.0	
330+20.00	330+20.00	RT	50.0	Box Culvert
331+75.00	331+75.00	LT	50.0	Box Culvert
332+95.00	332+95.00	LT	20.0	
336+50.00	336+50.00	LT	20.0	
337+95.00	337+95.00	LT	40.0	
338+90.00	338+90.00	RT	40.0	
373+85.00	373+85.00	RT	40.0	
375+15.00	375+15.00	LT	40.0	
378+35.00	378+35.00	LT	40.0	
378+70.00	378+70.00	RT	40.0	
1527+55.00	1527+55.00	LT	50.0	Ramp A Box Culvert
1528+55.00	1528+55.00	RT	50.0	Ramp A Box Culvert
1532+20.00	1532+20.00	RT	30.0	Ramp A
1532+65.00	1532+65.00	LT	30.0	Ramp A
4527+00.00	4527+00.00	LT	30.0	Ramp D
4527+00.00	4527+00.00	RT	30.0	Ramp D
4532+15.00	4532+15.00	RT	50.0	Ramp D Box Culvert
515+31.00	515+31.00	LT	30.0	U.S. 61
520+92.00	520+92.00	LT	30.0	U.S. 61
520+92.00	520+92.00	RT	30.0	U.S. 61
535+30.00	535+30.00	LT	30.0	U.S. 61 Ex. Pipe
535+45.00	535+45.00	RT	30.0	U.S. 61 Ex. Pipe
543+30.00	543+30.00	RT	30.0	U.S. 61 Ex. Pipe
7325+05.00	7325+05.00	LT	30.0	Bike-7
7325+20.00	7325+20.00	RT	30.0	Bike-7
8363+65.00	8363+65.00	LT	20.0	Bike-8
8363+80.00	8363+80.00	RT	20.0	Bike-8
27+38.00	27+38.00	LT	30.0	Conn. Rd. A
27+38.00	27+38.00	RT	30.0	Conn. Rd. A
34+40.00	34+40.00	LT	30.0	Conn. Rd. B
34+40.00	34+40.00	RT	30.0	Conn. Rd. B
38+00.00	38+00.00	LT	40.0	Conn. Rd. B
38+00.00	38+00.00	RT	40.0	Conn. Rd. B
11+55.00	11+55.00	RT	50.0	Conn. Rd. A Box Culv
12+05.00	12+05.00	LT	50.0	Conn. Rd. A Box Culv
14+60.00	14+60.00	LT	30.0	Conn. Rd. A Entr.
14+70.00	14+70.00	RT	30.0	Conn. Rd. A Entr.
15+30.00	15+30.00	RT	30.0	Conn. Rd. A Entr.
15+40.00	15+40.00	LT	30.0	Conn. Rd. A Entr.
24+70.00	24+70.00	LT	30.0	Conn. Rd. B Entr.
25+25.00	25+25.00	LT	30.0	Conn. Rd. B Entr.
28+80.00	28+80.00	RT	30.0	Conn. Rd. B Entr.
29+15.00	29+15.00	RT	30.0	Conn. Rd. B Entr.
18+95.00	18+95.00	RT	30.0	Key West Dr. Ex Pipe
19+00.00	19+00.00	LT	30.0	Key West Dr. Ex Pipe
Tab Quantity:			1610.0	
Bid Quantity:			2013.0	Tab Quantity x 125%
Maintenance of Silt Fence				
Bid Quantity:			201.3	Bid Quantity x 10%
Removal of Silt Fence				
Bid Quantity:			2013.0	Bid Quantity x 100%

ROLLED EROSION CONTROL

Refer to EC-101, EC-103 and EC-104

Road Identification	Begin Station	End Station	Side	L FT	W FT	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103) Squares	Special Ditch Control (EC-101) Squares	Remarks
						Type 1	Type 2	Type 3	Type 4			
						Squares	Squares	Squares	Squares			
Final Stabilization												
Southwest Arterial-Left Ditches	315+05.00	315+90.00	Lt.	85	22				19			
	316+05.00	319+65.00	Lt.	360	22						79	
	320+10.00	321+00.00	Lt.	90	22				20			
	321+65.00	322+15.00	Lt.	50	22				11			
	322+95.00	323+00.00	Lt.	50	22				11			
	323+75.00	324+75.00	Lt.	100	22						22	
	325+10.00	330+60.00	Lt.	550	22						121	
	333+90.00	334+90.00	Lt.	130	22				29			
	335+70.00	336+30.00	Lt.	60	22				13			
	336+60.00	336+95.00	Lt.	35	22				8			
	338+60.00	340+20.00	Lt.	160	22				35			
	341+25.00	343+35.00	Lt.	240	22						53	
	341+75.00	344+00.00	Lt.	470	27						111	
	364+35.00	370+15.00	Lt.	580	34						197	
Southwest Arterial-Right Ditches	316+60.00	324+40.00	Rt.	780	22						172	
	358+95.00	362+80.00	Rt.	385	22			85				
	363+60.00	369+85.00	Rt.	625	34						213	
	367+05.00	371+15.00	Rt.	410	33						135	
	370+75.00	371+45.00	Rt.	70	34						24	
	371+45.00	372+65.00	Rt.	120	22						26	
	372+80.00	373+15.00	Rt.	35	22				8			
	373+90.00	374+35.00	Rt.	45	22						10	
	374+45.00	375+55.00	Rt.	110	22				24			
	376+85.00	377+95.00	Rt.	110	22				24			
Southwest Arterial-Median Ditches	315+15.00	330+60.00	Med.	1545	26						402	
61CONRDA Right Ditches	12+25.00	13+60.00	Rt.	135	22						30	
	16+05.00	22+20.00	Rt.	615	22						135	
	23+65.00	27+20.00	Rt.	355	22						78	
	24+95.00	27+45.00	Rt.	250	27						68	
	27+65.00	27+70.00	Rt.	55	27						15	
	27+65.00	28+55.00	Rt.	140	22						31	
61CONRDA Left Ditches	12+95.00	14+35.00	Lt.	140	22						31	
	16+05.00	22+20.00	Lt.	615	22						135	
	16+85.00	18+70.00	Lt.	185	27						50	
	20+15.00	22+00.00	Lt.	185	27						50	
	22+85.00	27+35.00	Lt.	450	27						122	
	23+65.00	26+80.00	Lt.	315	22						69	
	24+15.00	27+20.00	Lt.	305	27						82	
61CONRDB Right Ditches	14+05.00	16+55.00	Rt.	250	22						55	
	21+05.00	23+45.00	Rt.	240	22						53	
61CONRDB Left Ditches	15+05.00	16+90.00	Lt.	185	22				41			
	24+15.00	24+45.00	Lt.	30	22				7			
61RAMP-D Right Ditch	4519+95.00	4522+80.00	Rt.	285	22						63	
	4522+90.00	4523+80.00	Rt.	90	22				20		20	
61LOOP-C Right Ditch	3523+85.00	3526+55.00	Rt.	270	28						76	
61LOOP-C Left Ditch	3521+35.00	3526+65.00	Lt.	530	42							
	3521+85.00	3525+70.00	Lt.	385	28						108	
	3525+70.00	3529+85.00	Lt.	415	28						116	
61RAMP-A Right Ditch	1519+65.00	1522+40.00	Rt.	275	28						77	
61RAMP-A Left Ditch	1520+60.00	1522+55.00	Lt.	195	28							
	1523+05.00	1525+55.00	Lt.	250	22				55			
	1528+25.00	1531+80.00	Lt.	355	22						78	
	1533+45.00	1533+95.00	Lt.	50	47						24	
	1534+95.00	1535+80.00	Lt.	85	30						26	
	1535+80.00	1536+45.00	Lt.	65	47						31	
	1535+25.00	1535+75.00	Lt.	50	27						14	
	1535+95.00	1536+45.00	Lt.	50	22				11			
US61 Left Ditch	510+55.00	511+75.00	Lt.	120	22				26			
	512+20.00	518+55.00	Lt.	635	22						140	
	514+10.00	514+40.00	Lt.	30	22				7			
	536+50.00	539+20.00	Lt.	270	40				108			
	536+85.00	537+95.00	Lt.	110	22						24	
	538+10.00	538+95.00	Lt.	85	22				19			
	538+35.00	538+70.00	Lt.	35	23				8			
	539+10.00	539+55.00	Lt.	45	22						10	
	540+45.00	540+90.00	Lt.	45	22						10	

ROLLED EROSION CONTROL

Refer to EC-101, EC-103 and EC-104

Location				L	W	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103) Squares	Special Ditch Control (EC-101) Squares	Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Squares	Type 2 Squares	Type 3 Squares	Type 4 Squares			
				FT	FT							
	541+15.00	542+30.00	Lt.	115	22						25	
Bike 7 Right Ditch	7314+75.00	7315+85.00	Rt.	110	12						13	
	7318+25.00	7320+45.00	Rt.	220	22						48	
	7324+45.00	7325+05.00	Rt.	60	22			13				
	7325+45.00	7328+25.00	Rt.	280	22			62				
	7330+60.00	7331+75.00	Rt.	115	22			25				
	7334+80.00	7337+05.00	Rt.	225	27						61	
	7335+85.00	7337+80.00	Rt.	195	22						43	
	7339+55.00	7340+15.00	Rt.	60	22						13	
	7340+60.00	7343+15.00	Rt.	255	27						69	
	7342+45.00	7344+10.00	Rt.	165	22						36	
	7348+25.00	7349+15.00	Rt.	90	22						20	
	7349+25.00	7349+95.00	Rt.	70	22			15				
Bike 8 Left Ditch	8359+20.00	8360+95.00	Rt.	175	22			39				
	8361+10.00	8362+20.00	Rt.	110	22						24	
	8362+35.00	8364+60.00	Rt.	225	22			50				
	8370+65.00	8374+20.00	Rt.	355	22			78				
	8375+15.00	8376+10.00	Rt.	95	22						21	
	8376+20.00	8376+65.00	Rt.	45	22						10	
	8378+25.00	8378+95.00	Rt.	70	22			15				
						Totals:		1119			3815	

EROSION CONTROL FOR INTAKE OR MANHOLE WELL

Possible Detail: 570-5

Location Station	Side	Cover Assembly EACH	Remarks
316+00.00	Med.	1	
320+00.00	Med.	1	
325+00.00	Med.	1	
329+00.00	Med.	1	
331+00.00	Med.	1	
332+50.00	Med.	1	
332+94.00	Med.	1	
333+50.00	Med.	1	
334+50.00	Med.	1	
336+50.00	Med.	1	
Temporary Intake or Manhole Cover Assembly			
Total:		10 Each	
Maintenance of Temporary Intake or Manhole Cover Assembly			
Total:		10 Each	
Removal of Temporary Intake or Manhole Assembly			
Total:		10 Each	

ROCK EROSION CONTROL

Refer to EC-301

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone TON	Class E Revetment TON	Eng. Fabric SY	
			Lt./Rt.	FT	FT									
SW Arterial	316+00.00	316+00.00	Rt.	9	9			1		9.7		13.0		
SW Arterial	320+00.00	320+00.00	Lt.	9	9			1		9.7		13.0		
SW Arterial	325+00.00	325+00.00	Lt.	9	9			1		9.7		13.0		
SW Arterial	329+00.00	329+00.00	Rt.	9	9			1		9.7		13.0		
SW Arterial	332+95.00	332+95.00	Lt.	11	11			1		14.5		18.3		
SW Arterial	336+50.00	336+50.00	Lt.	9	9			1		9.7		13.0		
SW Arterial	337+92.00	337+92.00	Lt.	14	14			1			21.6	28.0		
SW Arterial	375+19.00	375+19.00	Lt.	15	15			1			24.8	31.7		
SW Arterial	378+34.00	378+34.00	Lt.	14	14			1			21.6	28.0		
Bike-7	7325+24.00	7325+24.00	Rt.	11	11			1		14.5		18.3		
Bike-8	8363+54.00	8363+54.00	Lt.	10	10			1		12.0		15.6		
Connector Road A	14+54.00	14+54.00	Lt.	13	13			1			18.6	24.6	Entrance Pipe	
Connector Road A	14+64.00	14+64.00	Rt.	11	11			1		14.5		18.3	Entrance Pipe	
Connector Road A	27+38.00	27+38.00	Rt.	11	11			1		14.5		18.3		
Connector Road B	24+66.00	24+66.00	Lt.	11	11			1		14.5		18.3	Entrance Pipe	
Connector Road B	28+73.00	28+73.00	Rt.	13	13			1			18.6	24.6	Entrance Pipe	
Connector Road B	34+40.00	34+40.00	Lt.	12	12			1			15.8	21.3		
Connector Road B	38+00.00	38+00.00	Lt.	14	14			1			21.6	28.0		
Ramp A	1532+18.00	1532+18.00	Rt.	11	11			1		14.5		18.3		
Ramp D	4527+00.00	4527+00.00	Rt.	11	11			1		14.5		18.3		
U.S. 61	520+93.00	520+93.00	Rt.	13	13			1			18.6	24.6		
U.S. 62	535+29.00	535+29.00	Lt.	11	11			1		14.5		18.3		
U.S. 63	543+27.00	543+27.00	Rt.	13	13			1			18.6	24.6		
Key West Drive	19+00.00	19+00.00	Lt.	11	11			1		14.5		18.3		
Final Stabilization														
SW Arterial	315+10.00	315+10.00	Lt.	22	4	1				15.8		24.4		
SW Arterial	315+35.00	315+35.00	Lt.	22	4	1				15.8		24.4		
SW Arterial	315+60.00	315+60.00	Lt.	22	4	1				15.8		24.4		
SW Arterial	315+85.00	315+85.00	Lt.	22	4	1				15.8		24.4		
SW Arterial	319+85.00	319+85.00	Lt.	22	4	1				15.8		24.4		
SW Arterial	320+15.00	320+15.00	Lt.	22	4	1				15.8		24.4		
SW Arterial	320+35.00	320+35.00	Lt.	22	4	1				15.8		24.4		

ROCK EROSION CONTROL

Refer to EC-301

Location		Rock Erosion Control (REC)					Material Bid Quantities			Remarks				
Road Identification	Begin Station	End Station	Side Lt./Rt.	L	W	Type 1	Type 2	Type 3	Type 4		Type 5	Erosion Stone	Class E Revetment	Eng. Fabric
				FT	FT	Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin		Rock Slope Protection	TON	TON	SY
SW Arterial	320+55.00	320+55.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	320+75.00	320+75.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	320+95.00	320+95.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	321+70.00	321+70.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	322+10.00	322+10.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	322+55.00	322+55.00	Lt.	22	10						18.5		35.2	
SW Arterial	322+75.00	322+75.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	322+95.00	322+95.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	333+65.00	333+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	333+85.00	333+85.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+05.00	334+05.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+25.00	334+25.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+45.00	334+45.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+65.00	334+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+85.00	334+85.00	Lt.	22	4	1					15.8		24.4	
Bike-7	7324+50.00	7324+50.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7324+65.00	7324+65.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7324+85.00	7324+85.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+00.00	7325+00.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+55.00	7325+55.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+75.00	7325+75.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+95.00	7325+95.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+15.00	7326+15.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+35.00	7326+35.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+55.00	7326+55.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+75.00	7326+75.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+95.00	7326+95.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7327+15.00	7327+15.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7327+40.00	7327+40.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7327+65.00	7327+65.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7327+90.00	7327+90.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7328+20.00	7328+20.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7330+65.00	7330+65.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7330+90.00	7330+90.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7331+15.00	7331+15.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7331+40.00	7331+40.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7331+70.00	7331+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	335+75.00	335+75.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+00.00	336+00.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+25.00	336+25.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+65.00	336+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+90.00	336+90.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	338+65.00	338+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	338+90.00	338+90.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+15.00	339+15.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+40.00	339+40.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+65.00	339+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+90.00	339+90.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	340+15.00	340+15.00	Lt.	22	4	1					15.8		24.4	
Bike-7	7349+30.00	7349+30.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7349+55.00	7349+55.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7349+75.00	7349+75.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7350+65.00	7350+65.00	Rt.	22	10		1				18.5		35.2	
U.S. 61	510+60.00	510+60.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	510+85.00	510+85.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	511+05.00	511+05.00	Lt.	22	10			1			18.5		35.2	
U.S. 61	511+45.00	511+45.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	511+70.00	511+70.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	514+15.00	514+15.00	Lt.	22	10				1		18.5		35.2	
U.S. 61	514+35.00	514+35.00	Lt.	22	10					1	18.5		35.2	
SW Arterial	359+00.00	359+00.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	359+30.00	359+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	359+60.00	359+60.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	359+90.00	359+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	360+20.00	360+20.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	360+50.00	360+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	360+80.00	360+80.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+10.00	361+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+40.00	361+40.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+70.00	361+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+90.00	361+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+10.00	362+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+30.00	362+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+50.00	362+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+70.00	362+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	371+40.00	371+40.00	Rt.	33	4	1					23.8		36.7	
Bike-8	8370+70.00	8370+70.00	Lt.	14	4	1					10.1		15.6	
Bike-8	8370+95.00	8370+95.00	Lt.	15	4	1					10.8		16.7	
Bike-8	8371+25.00	8371+25.00	Lt.	17	4	1					12.2		18.9	
Bike-8	8371+45.00	8371+45.00	Lt.	18	6		1				6.5		20.8	

ROCK EROSION CONTROL

Refer to EC-301

Location		Rock Erosion Control (REC)					Material Bid Quantities			Remarks				
Road Identification	Begin Station	End Station	Side Lt./Rt.	(L) FT	(W) FT	Type 1	Type 2	Type 3	Type 4		Type 5	Erosion Stone	Class E Revetment	Eng. Fabric
						Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin		Rock Slope Protection	TON	TON	SY
Bike-8	8371+70.00	8371+70.00	Lt.	19	7						9.1		24.1	
Bike-8	8372+00.00	8372+00.00	Lt.	20	8						12.0		27.6	
Bike-8	8372+25.00	8372+25.00	Lt.	22	4						15.8		24.4	
Bike-8	8372+45.00	8372+45.00	Lt.	22	4						15.8		24.4	
Bike-8	8372+65.00	8372+65.00	Lt.	22	4						15.8		24.4	
Bike-8	8372+85.00	8372+85.00	Lt.	22	4						15.8		24.4	
Bike-8	8373+05.00	8373+05.00	Lt.	22	4						15.8		24.4	
Bike-8	8373+20.00	8373+20.00	Lt.	22	4						15.8		24.4	
Bike-8	8373+40.00	8373+40.00	Lt.	22	4						15.8		24.4	
Bike-8	8373+60.00	8373+60.00	Lt.	22	4						15.8		24.4	
Bike-8	8373+80.00	8373+80.00	Lt.	22	4						15.8		24.4	
Bike-8	8373+95.00	8373+95.00	Lt.	22	4						15.8		24.4	
Bike-8	8374+15.00	8374+15.00	Lt.	22	4						15.8		24.4	
Bike-8	8376+25.00	8376+25.00	Lt.	22	10						18.5		35.2	
Bike-8	8376+45.00	8376+45.00	Lt.	22	10						18.5		35.2	
Bike-8	8376+65.00	8376+65.00	Lt.	22	10						18.5		35.2	
Bike-8	8378+30.00	8378+30.00	Lt.	22	10						18.5		35.2	
Bike-8	8378+50.00	8378+50.00	Lt.	22	10						18.5		35.2	
Bike-8	8378+70.00	8378+70.00	Lt.	22	10						18.5		35.2	
Bike-8	8378+90.00	8378+90.00	Lt.	22	10						18.5		35.2	
SW Arterial	372+85.00	372+85.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	373+10.00	373+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	374+50.00	374+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	374+70.00	374+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	374+90.00	374+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	375+10.00	375+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	375+30.00	375+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	375+50.00	375+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	376+90.00	376+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+10.00	377+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+30.00	377+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+50.00	377+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+70.00	377+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+90.00	377+90.00	Rt.	22	4	1					15.8		24.4	
Connector Road A	15+10.00	15+10.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	15+35.00	15+35.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	15+60.00	15+60.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	15+85.00	15+85.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+10.00	16+10.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+35.00	16+35.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+60.00	16+60.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+85.00	16+85.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	24+20.00	24+20.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	24+40.00	24+40.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+25.00	8359+25.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+45.00	8359+45.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+70.00	8359+70.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+95.00	8359+95.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+20.00	8360+20.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+45.00	8360+45.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+70.00	8360+70.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+90.00	8360+90.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8362+40.00	8362+40.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8362+65.00	8362+65.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8362+90.00	8362+90.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8363+10.00	8363+10.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8363+30.00	8363+30.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8363+70.00	8363+70.00	Lt.	18	6						6.5		20.8	
Bike-8	8363+90.00	8363+90.00	Lt.	17	5						4.1		17.8	
Bike-8	8364+30.00	8364+30.00	Lt.	14	4	1					10.1		15.6	
Bike-8	8364+55.00	8364+55.00	Lt.	13	4	1					9.4		14.4	
Ramp D	4522+95.00	4522+95.00	Rt.	22	10						18.5		35.2	
Ramp D	4523+15.00	4523+15.00	Rt.	22	10						18.5		35.2	
Ramp D	4523+35.00	4523+35.00	Rt.	22	10						18.5		35.2	
Ramp D	4523+55.00	4523+55.00	Rt.	22	10						18.5		35.2	
Ramp D	4523+75.00	4523+75.00	Rt.	22	10						18.5		35.2	
Ramp D	4524+45.00	4524+45.00	Rt.	22	10						18.5		35.2	
Loop C	3521+40.00	3521+40.00	Lt.	22	4	1					15.8		24.4	
Loop C	3521+65.00	3521+65.00	Lt.	22	4	1					15.8		24.4	
Loop C	3521+95.00	3521+95.00	Lt.	22	4	1					15.8		24.4	
Loop C	3522+25.00	3522+25.00	Lt.	22	4	1					15.8		24.4	
Loop C	3522+65.00	3522+65.00	Lt.	28	4	1					20.2		31.1	
Loop C	3522+90.00	3522+90.00	Lt.	28	4	1					20.2		31.1	
Loop C	3523+10.00	3523+10.00	Lt.	28	4	1					20.2		31.1	
Loop C	3523+30.00	3523+30.00	Lt.	28	4	1					20.2		31.1	
Loop C	3523+55.00	3523+55.00	Lt.	28	4	1					20.2		31.1	
Loop C	3524+00.00	3524+00.00	Lt.	28	4	1					20.2		31.1	
Loop C	3524+50.00	3524+50.00	Lt.	28	4	1					20.2		31.1	
Loop C	3524+80.00	3524+80.00	Lt.	28	4	1					20.2		31.1	
Loop C	3525+25.00	3525+25.00	Lt.	28	4	1					20.2		31.1	

ROCK EROSION CONTROL

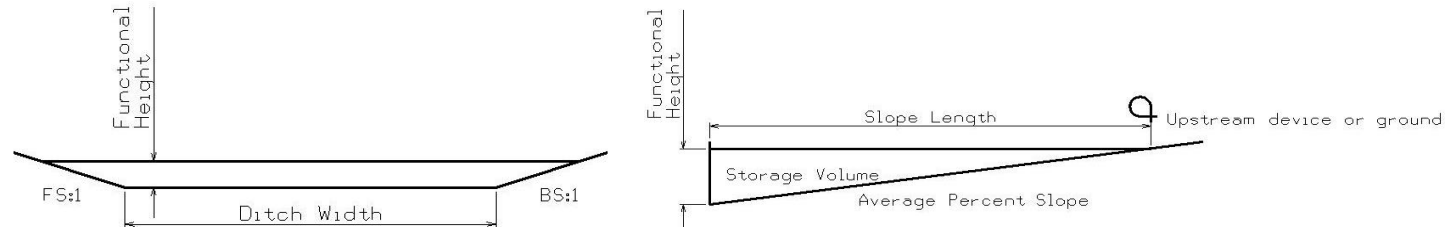
Refer to EC-301

Location			Side	L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station				Type 1	Type 2	Type 3	Type 4	Type 5	Erosion Stone	Class E Revetment	Eng. Fabric	
			Lt./Rt.	FT	FT	Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection	TON	TON	SY	
Loop C	3525+45.00	3525+45.00	Lt.	28	4	1					20.2		31.1	
Loop C	3525+85.00	3525+85.00	Lt.	28	4	1					20.2		31.1	
Loop C	3526+35.00	3526+35.00	Lt.	28	4	1					20.2		31.1	
Loop C	3526+60.00	3526+60.00	Lt.	28	4	1					20.2		31.1	
Ramp A	1523+10.00	1523+10.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+30.00	1523+30.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+50.00	1523+50.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+70.00	1523+70.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+90.00	1523+90.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+10.00	1524+10.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+30.00	1524+30.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+50.00	1524+50.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+70.00	1524+70.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+90.00	1524+90.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1525+10.00	1525+10.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1525+30.00	1525+30.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1525+50.00	1525+50.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1536+00.00	1536+00.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1536+20.00	1536+20.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1536+40.00	1536+40.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	538+15.00	538+15.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	538+40.00	538+40.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	538+65.00	538+65.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	538+90.00	538+90.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	536+55.00	536+55.00	Lt.	38	20			1			77.5		103.0	
U.S. 61	536+75.00	536+75.00	Lt.	38	20			1			77.5		103.0	
U.S. 61	536+95.00	536+95.00	Lt.	38	20			1			77.5		103.0	
U.S. 61	537+15.00	537+15.00	Lt.	39	21			1			84.2		110.1	
U.S. 61	537+35.00	537+35.00	Lt.	40	22			1			91.2		117.3	
U.S. 61	537+55.00	537+55.00	Lt.	40	22			1			91.2		117.3	
U.S. 61	537+75.00	537+75.00	Lt.	40	22			1			91.2		117.3	
U.S. 61	537+95.00	537+95.00	Lt.	41	23			1			98.4		124.8	
U.S. 61	538+15.00	538+15.00	Lt.	41	23			1			98.4		124.8	
U.S. 61	538+35.00	538+35.00	Lt.	42	24			1			105.8		132.5	
U.S. 61	538+55.00	538+55.00	Lt.	42	24			1			105.8		132.5	
U.S. 61	538+75.00	538+75.00	Lt.	42	24			1			105.8		132.5	
U.S. 61	538+95.00	538+95.00	Lt.	42	24			1			105.8		132.5	
U.S. 61	539+15.00	539+15.00	Lt.	42	24			1			105.8		132.5	
				Totals:		132	73		24		4672.1	179.6	7460.4	

Notes:
 Erosion Stone for Rock Splash Basins shall be used on all pipes less than 30" and Rip Rap shall be used on all pipes equal to or great than 30" unless otherwise specified.
 Erosion Stone and/or Rip Rap shall have a minimum thickness of 2 feet for Rock Splash Basins.
 Erosion Stone shall be used for Rock Ditch Checks and shall have a minimum thickness of 3 feet.

ROCK CHECK DAM

Possible Detail: 570-2



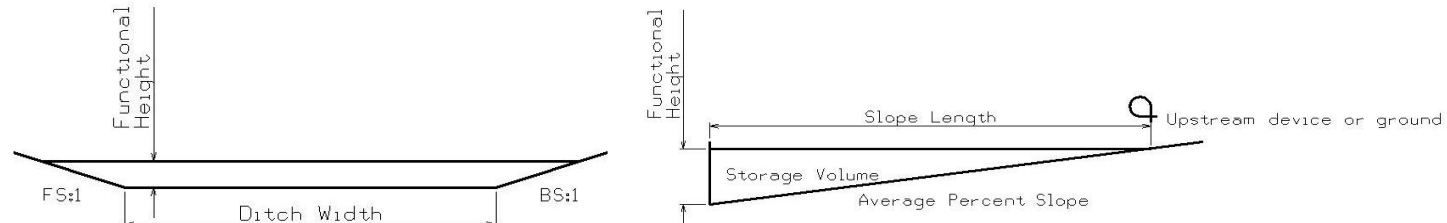
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.

* Volume equation: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset FT	Installation LF	Maintenance Each	Removal Each	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope	Volume* CF	
1	315+10.00	LT	187.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	315+35.00	LT	188.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	315+60.00	LT	189.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	315+85.00	LT	190.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	319+85.00	LT	126.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+15.00	LT	135.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+35.00	LT	138.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+55.00	LT	140.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+75.00	LT	143.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+95.00	LT	146.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	321+70.00	LT	156.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	322+10.00	LT	150.0	22.0	22	22	3.0	3.0	10.0	2.4%	1108.8	
1	322+55.00	LT	143.0	22.0	22	22	3.0	3.0	10.0	12.8%	277.2	
1	322+75.00	LT	147.0	22.0	22	22	3.0	3.0	10.0	12.8%	277.2	
1	322+95.00	LT	152.0	22.0	22	22	3.0	3.0	10.0	12.8%	277.2	
1	333+65.00	LT	114.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	333+85.00	LT	109.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+05.00	LT	104.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+25.00	LT	99.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+45.00	LT	95.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+65.00	LT	90.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+85.00	LT	85.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	7324+50.00	RT	24.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7324+65.00	RT	27.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7324+85.00	RT	29.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+00.00	RT	30.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+55.00	RT	36.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+75.00	RT	40.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+95.00	RT	43.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+15.00	RT	47.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+35.00	RT	50.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+55.00	RT	54.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+75.00	RT	58.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+95.00	RT	62.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7327+15.00	RT	66.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7327+40.00	RT	69.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7327+65.00	RT	72.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7327+90.00	RT	75.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7328+20.00	RT	78.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7330+65.00	RT	59.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7330+90.00	RT	52.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7331+15.00	RT	43.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7331+40.00	RT	40.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7331+70.00	RT	34.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
Basin 1 Totals:				968.0	968	968					13929.3	
2	335+75.00	LT	83.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+00.00	LT	89.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+25.00	LT	94.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+65.00	LT	103.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+90.00	LT	109.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	338+65.00	LT	117.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	338+90.00	LT	111.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+15.00	LT	105.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+40.00	LT	99.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+65.00	LT	94.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+90.00	LT	88.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	340+15.00	LT	82.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
Basin 2 Totals:				264.0	264	264					4158.0	
3	7349+30.00	RT	46.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
3	7349+55.00	RT	53.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
3	7349+75.00	RT	58.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
3	7350+65.00	RT	58.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
Basin 3 Totals:				88.0	88	88					1108.8	

ROCK CHECK DAM

Possible Detail: 570-2



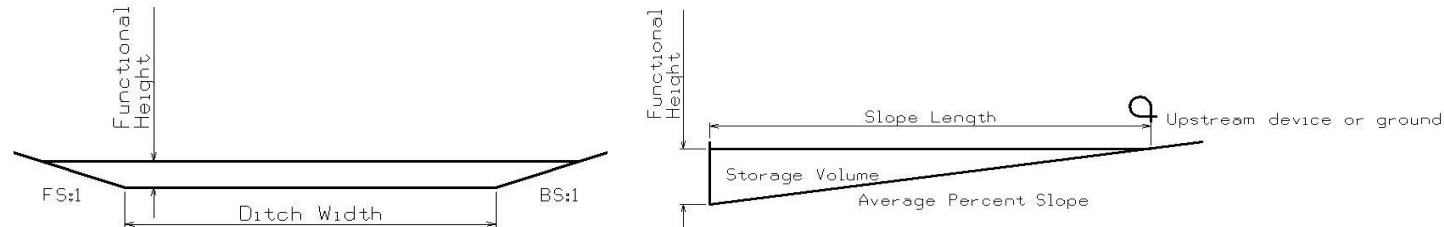
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.

* Volume equation: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks	
	Station	Side	Offset FT	Installation LF	Maintenance Each	Removal Each	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope	Volume* CF		
5	510+60.00	LT	128.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper	
5	510+85.00	LT	137.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper	
5	511+05.00	LT	139.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	U.S. 61 Loop C Taper	
5	511+45.00	LT	151.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper	
5	511+70.00	LT	151.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper	
5	514+15.00	LT	114.0	22.0	22	22	3.0	3.0	10.0	10.4%	277.2	U.S. 61 Loop C Taper	
5	514+35.00	LT	121.0	22.0	22	22	3.0	3.0	10.0	10.4%	277.2	U.S. 61 Loop C Taper	
Basin 5 Totals:				154.0	154	154						2217.6	U.S. 61 Loop C Taper
6	359+00.00	RT	134.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	359+30.00	RT	121.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	359+60.00	RT	108.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	359+90.00	RT	103.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	360+20.00	RT	100.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	360+50.00	RT	98.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	360+80.00	RT	95.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	361+10.00	RT	91.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	361+40.00	RT	88.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	361+70.00	RT	84.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8		
6	361+90.00	RT	80.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2		
6	362+10.00	RT	77.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2		
6	362+30.00	RT	73.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2		
6	362+50.00	RT	70.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2		
6	362+70.00	RT	67.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2		
6	371+40.00	RT	192.0	33.0	33	33	6.0	3.0	15.0	6.0%	623.7		
Basin 6 Totals:				363.0	363	363						6167.7	
7	8370+70.00	LT	19.0	14.0	14	14	3.0	3.0	2.0	8.0%	166.5	Bike-8N	
7	8370+95.00	LT	26.0	15.0	15	15	3.0	3.0	3.0	8.0%	189.0	Bike-8N	
7	8371+25.00	LT	31.0	17.0	17	17	3.0	3.0	5.0	8.0%	234.0	Bike-8N	
7	8371+45.00	LT	34.0	18.0	18	18	3.0	3.0	6.0	12.0%	205.2	Bike-8N	
7	8371+70.00	LT	39.0	19.0	19	19	3.0	3.0	7.0	12.0%	223.2	Bike-8N	
7	8372+00.00	LT	46.0	20.0	20	20	3.0	3.0	8.0	12.0%	241.2	Bike-8N	
7	8372+25.00	LT	52.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8372+45.00	LT	57.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8372+65.00	LT	61.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8372+85.00	LT	65.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8373+05.00	LT	70.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8373+20.00	LT	74.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8373+40.00	LT	78.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8373+60.00	LT	82.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8373+80.00	LT	86.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8373+95.00	LT	91.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8374+15.00	LT	95.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N	
7	8376+25.00	LT	75.0	22.0	22	22	3.0	3.0	10.0	10.5%	277.2	Bike-8N	
7	8376+45.00	LT	82.0	22.0	22	22	3.0	3.0	10.0	10.5%	277.2	Bike-8N	
7	8376+65.00	LT	88.0	22.0	22	22	3.0	3.0	10.0	10.5%	277.2	Bike-8N	
7	8378+30.00	LT	81.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N	
7	8378+50.00	LT	73.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N	
7	8378+70.00	LT	67.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N	
7	8378+90.00	LT	63.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N	
7	372+85.00	RT	83.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5		
7	373+10.00	RT	88.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5		
7	374+50.00	RT	91.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2		
7	374+70.00	RT	85.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2		
7	374+90.00	RT	79.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2		
7	375+10.00	RT	73.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2		
7	375+30.00	RT	67.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2		
7	375+50.00	RT	61.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2		
7	376+90.00	RT	60.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2		
7	377+10.00	RT	66.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2		
7	377+30.00	RT	73.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2		
7	377+50.00	RT	78.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2		
7	377+70.00	RT	83.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2		
7	377+90.00	RT	88.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2		

ROCK CHECK DAM

Possible Detail: 570-2



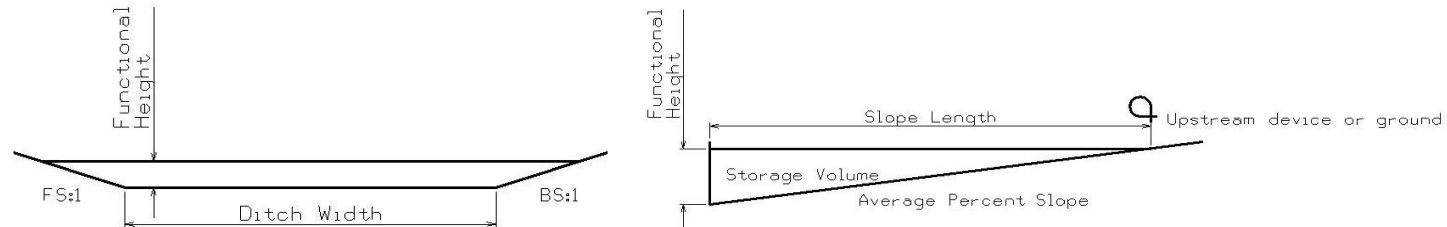
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.

* Volume equation: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset FT	Installation LF	Maintenance Each	Removal Each	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope	Volume* CF	
Basin 7 Totals:				807.0	807	807					10268.1	
9	15+10.00	LT	42.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	15+35.00	LT	46.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	15+60.00	LT	51.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	15+85.00	LT	56.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+10.00	LT	60.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+35.00	LT	69.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+60.00	LT	77.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+85.00	LT	81.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	24+20.00	LT	57.0	22.0	22	22	3.0	3.0	10.0	9.2%	277.2	Connector Road B
9	24+40.00	LT	53.0	22.0	22	22	3.0	3.0	10.0	9.2%	277.2	Connector Road B
Basin 9 Totals:				220.0	220	220					3326.4	
10	8359+25.00	LT	41.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8359+45.00	LT	36.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8359+70.00	LT	32.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8359+95.00	LT	31.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+20.00	LT	28.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+45.00	LT	25.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+70.00	LT	20.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+90.00	LT	17.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8362+40.00	LT	23.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	Bike-8N
10	8362+65.00	LT	22.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	Bike-8N
10	8362+90.00	LT	19.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	Bike-8N
10	8363+10.00	LT	18.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	Bike-8N
10	8363+30.00	LT	18.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	Bike-8N
10	8363+70.00	LT	18.0	18.0	18	18	3.0	3.0	6.0	10.4%	205.2	Bike-8N
10	8363+90.00	LT	16.0	17.0	17	17	3.0	3.0	5.0	10.4%	187.2	Bike-8N
10	8364+10.00	LT	13.0	15.0	15	15	3.0	3.0	3.0	10.4%	151.2	Bike-8N
10	8364+30.00	LT	11.0	14.0	14	14	3.0	3.0	2.0	8.5%	133.2	Bike-8N
10	8364+55.00	LT	9.0	13.0	13	13	3.0	3.0	1.0	8.5%	115.2	Bike-8N
10	4522+95.00	RT	50.0	22.0	22	22	3.0	3.0	10.0	12.3%	277.2	Ramp D
10	4523+15.00	RT	55.0	22.0	22	22	3.0	3.0	10.0	12.3%	277.2	Ramp D
10	4523+35.00	RT	63.0	22.0	22	22	3.0	3.0	10.0	12.3%	277.2	Ramp D
10	4523+55.00	RT	70.0	22.0	22	22	3.0	3.0	10.0	14.4%	277.2	Ramp D
10	4523+75.00	RT	77.0	22.0	22	22	3.0	3.0	10.0	14.4%	277.2	Ramp D
10	4524+45.00	RT	104.0	22.0	22	22	3.0	3.0	10.0	14.4%	277.2	Ramp D
10	3521+40.00	LT	73.0	22.0	22	22	3.0	3.0	10.0	8.0%	346.5	Loop C
10	3521+65.00	LT	80.0	22.0	22	22	3.0	3.0	10.0	8.0%	346.5	Loop C
10	3521+95.00	LT	84.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	Loop C
10	3522+25.00	LT	84.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	Loop C
10	3522+65.00	LT	93.0	28.0	28	28	6.0	3.0	10.0	8.0%	407.3	Loop C
10	3522+90.00	LT	93.0	28.0	28	28	6.0	3.0	10.0	15.0%	325.8	Loop C
10	3523+10.00	LT	88.0	28.0	28	28	6.0	3.0	10.0	13.0%	325.8	Loop C
10	3523+30.00	LT	89.0	28.0	28	28	6.0	3.0	10.0	14.0%	325.8	Loop C
10	3523+55.00	LT	96.0	28.0	28	28	6.0	3.0	10.0	8.0%	407.3	Loop C
10	3524+00.00	LT	89.0	28.0	28	28	6.0	3.0	10.0	4.5%	733.1	Loop C
10	3524+50.00	LT	96.0	28.0	28	28	6.0	3.0	10.0	16.0%	325.8	Loop C
10	3524+80.00	LT	99.0	28.0	28	28	6.0	3.0	10.0	17.0%	325.8	Loop C
10	3525+25.00	LT	98.0	28.0	28	28	6.0	3.0	10.0	25.0%	325.8	Loop C
10	3525+45.00	LT	88.0	28.0	28	28	6.0	3.0	10.0	25.0%	325.8	Loop C
10	3525+85.00	LT	74.0	28.0	28	28	6.0	3.0	10.0	3.6%	814.5	Loop C
10	3526+35.00	LT	79.0	28.0	28	28	6.0	3.0	10.0	3.6%	814.5	Loop C
10	3526+60.00	LT	74.0	28.0	28	28	6.0	3.0	10.0	6.0%	488.7	Loop C
Basin 10 Totals:				947.0	947	947					14222.3	
11	1523+10.00	LT	51.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+30.00	LT	57.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+50.00	LT	63.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+70.00	LT	68.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+90.00	LT	74.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+10.00	LT	80.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+30.00	LT	86.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+50.00	LT	92.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A

ROCK CHECK DAM

Possible Detail: 570-2



* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.
* Volume equation: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset FT	Installation LF	Maintenance Each	Removal Each	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope	Volume* CF	
11	1524+70.00	LT	97.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+90.00	LT	103.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1525+10.00	LT	109.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1525+30.00	LT	114.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1525+50.00	LT	121.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1536+00.00	LT	117.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	Ramp A
11	1536+20.00	LT	123.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	Ramp A
11	1536+40.00	LT	117.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	Ramp A
11	538+15.00	LT	157.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	U.S. 61
11	538+40.00	LT	129.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	U.S. 61
11	538+65.00	LT	128.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61
11	538+90.00	LT	157.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61
11	536+55.00	LT	117.0	38.0	38	38	6.0	3.0	20.0	10.0%	505.8	U.S. 61
11	536+75.00	LT	118.0	38.0	38	38	6.0	3.0	20.0	10.0%	505.8	U.S. 61
11	536+95.00	LT	116.0	38.0	38	38	6.0	3.0	20.0	10.0%	505.8	U.S. 61
11	537+15.00	LT	113.0	39.0	39	39	6.0	3.0	21.0	10.0%	523.8	U.S. 61
11	537+35.00	LT	114.0	40.0	40	40	6.0	3.0	22.0	10.0%	541.8	U.S. 61
11	537+55.00	LT	112.0	40.0	40	40	6.0	3.0	22.0	10.0%	541.8	U.S. 61
11	537+75.00	LT	112.0	40.0	40	40	6.0	3.0	22.0	10.0%	541.8	U.S. 61
11	537+95.00	LT	111.0	41.0	41	41	6.0	3.0	23.0	10.0%	559.8	U.S. 61
11	538+15.00	LT	106.0	41.0	41	41	6.0	3.0	23.0	10.0%	559.8	U.S. 61
11	538+35.00	LT	105.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	538+55.00	LT	104.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	538+75.00	LT	102.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	538+95.00	LT	101.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	539+15.00	LT	100.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61

Basin 11 Totals:				1005.0	1005	1005						13357.8	
Tab Quantity:				4816.0	4816	4816							

Rock Check Dams Used for Storm Water Storage Subtotals

Rock Check Dam Bid Tab Quantity = Tab Quantity = 4816 LF

Maintenance of Rock Check Dam Bid Tab Quantity = Tab Quantity x 3 Cleanouts = 210 x 3 = 630 Each

Removal of Rock Check Dams Bid Tab Quantity = Tab Quantity = 630 Each

Rock Check Dams Used to Replace Silt Fence for Ditch Checks Subtotals

Rock Check Dam Bid Tab Quantity = Silt Fence for Ditch Check Bid Quantity x 10% = 1780 LF

Maintenance of Rock Check Dam Bid Tab Quantity = Rock Check Dam Bid Quantity / 16 = 111 Each x 3 Cleanouts = 333 Each

Removal of Rock Check Dam Bid Tab Quantity = Rock Check Dam Bid Quantity / 16 = 111 Each

Total Quantities

Rock Check Dam Bid Tab Quantity = 4816 LF + 1780 LF = 6596 LF

Maintenance of Rock Check Dam Bid Tab Quantity = 630 Each + 333 Each = 963 Each

Removal of Rock Check Dam Bid Tab Quantity = 630 Each + 111 Each = 741 Each

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Table with columns: Location (Begin Station, End Station, Side), Length of Installation (9 inch Dia, 12 inch Dia, 20 inch Dia), and Remarks. Contains 50 rows of data.

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Table with columns: Location (Begin Station, End Station, Side), Length of Installation (9 inch Dia, 12 inch Dia, 20 inch Dia), and Remarks. Contains 50 rows of data.

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

100-19
04-19-16

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
1522+45.00	1522+45.00	RT			30.0	RAMP A
3521+90.00	3521+90.00	LT			40.0	LOOP C
3522+25.00	3522+25.00	LT			40.0	LOOP C
3522+50.00	3522+50.00	LT			40.0	LOOP C
3522+85.00	3522+85.00	LT			40.0	LOOP C
3523+20.00	3523+20.00	LT			40.0	LOOP C
3523+55.00	3523+55.00	LT			40.0	LOOP C
3523+90.00	3523+90.00	LT			40.0	LOOP C
3524+25.00	3524+25.00	LT			40.0	LOOP C
3524+60.00	3524+60.00	LT			40.0	LOOP C
3524+95.00	3524+95.00	LT			40.0	LOOP C
3525+55.00	3525+55.00	LT			30.0	LOOP C
3526+15.00	3526+15.00	LT			30.0	LOOP C
3526+50.00	3526+50.00	LT			30.0	LOOP C
3526+80.00	3526+80.00	LT			30.0	LOOP C
3527+10.00	3527+10.00	LT			30.0	LOOP C
3527+40.00	3527+40.00	LT			30.0	LOOP C
3527+70.00	3527+70.00	LT			30.0	LOOP C
3528+00.00	3528+00.00	LT			30.0	LOOP C
3528+30.00	3528+30.00	LT			30.0	LOOP C
3528+55.00	3528+55.00	LT			30.0	LOOP C
3528+80.00	3528+80.00	LT			30.0	LOOP C
3529+05.00	3529+05.00	LT			30.0	LOOP C
3529+30.00	3529+30.00	LT			30.0	LOOP C
3529+55.00	3529+55.00	LT			30.0	LOOP C
3529+80.00	3529+80.00	LT			30.0	LOOP C
3523+90.00	3523+90.00	RT			30.0	LOOP C
3524+20.00	3524+20.00	RT			30.0	LOOP C
3524+60.00	3524+60.00	RT			30.0	LOOP C
3525+00.00	3525+00.00	RT			30.0	LOOP C
3525+40.00	3525+40.00	RT			30.0	LOOP C
3525+80.00	3525+80.00	RT			30.0	LOOP C
3526+20.00	3526+20.00	RT			30.0	LOOP C
342+05.00	342+05.00	LT			30.0	
342+35.00	342+35.00	LT			30.0	
342+65.00	342+65.00	LT			30.0	
342+95.00	342+95.00	LT			30.0	
343+25.00	343+25.00	LT			30.0	
342+40.00	342+40.00	LT			20.0	
343+00.00	343+00.00	LT			20.0	
343+60.00	343+60.00	LT			20.0	
1520+35.00	1520+35.00	LT			20.0	RAMP A
1520+70.00	1520+70.00	LT			20.0	RAMP A
1521+30.00	1521+30.00	LT			30.0	RAMP A
1521+90.00	1521+90.00	LT			30.0	RAMP A
1522+50.00	1522+50.00	LT			30.0	RAMP A
1526+25.00	1526+25.00	LT			20.0	RAMP A
1528+30.00	1528+30.00	LT			20.0	RAMP A
1528+60.00	1528+60.00	LT			20.0	RAMP A
1528+90.00	1528+90.00	LT			20.0	RAMP A
1529+55.00	1529+55.00	LT			20.0	RAMP A
1530+20.00	1530+20.00	LT			20.0	RAMP A
1530+85.00	1530+85.00	LT			20.0	RAMP A
1531+50.00	1531+50.00	LT			20.0	RAMP A
1531+95.00	1531+95.00	LT			30.0	RAMP A
1532+30.00	1532+30.00	LT			50.0	RAMP A
1532+65.00	1532+65.00	LT			50.0	RAMP A
1535+00.00	1535+00.00	LT			30.0	RAMP A
1535+35.00	1535+35.00	LT			20.0	RAMP A
1535+70.00	1535+70.00	LT			30.0	RAMP A
1536+15.00	1536+15.00	LT			50.0	RAMP A
536+90.00	536+90.00	LT			20.0	US 61
537+20.00	537+20.00	LT			20.0	US 61
537+50.00	537+50.00	LT			20.0	US 61
537+80.00	537+80.00	LT			20.0	US 61
538+10.00	538+10.00	LT			20.0	US 61
538+40.00	538+40.00	LT			20.0	US 61
538+70.00	538+70.00	LT			20.0	US 61
539+00.00	539+00.00	LT			20.0	US 61
539+65.00	539+65.00	LT			20.0	US 61
540+30.00	540+30.00	LT			20.0	US 61
540+65.00	540+65.00	LT			20.0	US 61
540+90.00	540+90.00	LT			20.0	US 61
541+15.00	541+15.00	LT			20.0	US 61
541+40.00	541+40.00	LT			20.0	US 61
541+65.00	541+65.00	LT			20.0	US 61
541+90.00	541+90.00	LT			20.0	US 61
542+15.00	542+15.00	LT			20.0	US 61
540+15.00	540+15.00	LT			40.0	US 61
541+15.00	541+15.00	LT			40.0	US 61
542+15.00	542+15.00	LT			40.0	US 61

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

100-19
04-19-16

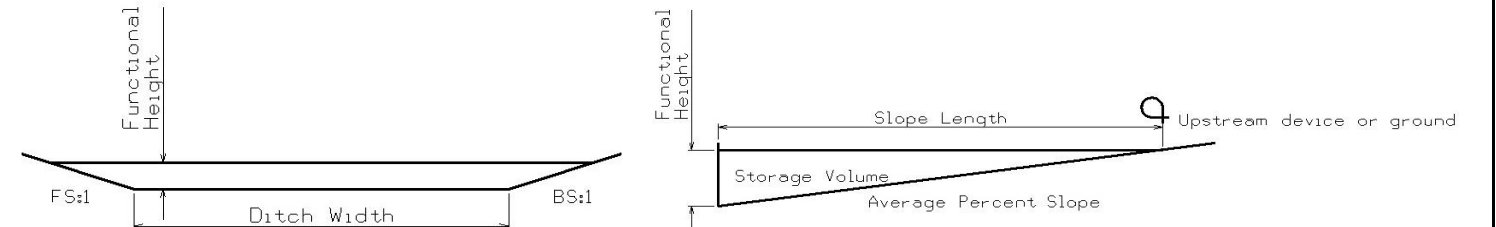
Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
539+40.00	539+40.00	RT			30.0	US 61
541+20.00	541+20.00	RT			30.0	US 61
308+00.00	308+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
312+00.00	312+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
316+00.00	316+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
320+00.00	320+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
325+00.00	325+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
329+00.00	329+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
331+00.00	331+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
332+50.00	332+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
332+94.00	332+94.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
333+50.00	333+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
334+50.00	334+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
336+50.00	336+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
			Totals:	1800.0	36560.0	

TEMPORARY SEDIMENT CONTROL BASIN

100-33
10-18-16

Possible Detail 570-3



* The functional height used in the volume equation is 95% of effective height. Effective height is 2.5 feet as shown in 570-3.
 * Volume equation: $V = \frac{1}{4}(FS*H^2) + (DW*H) + \frac{1}{4}(BS*H^2) * (H/Avg\%Slope)$

Basin No.	Location		Bid Items			Stormwater Storage Volume Summary				Remarks	
	Station	Side	Installation Each	Maintenance Each	Removal Each	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Average % Slope		Volume* CF
1	329+45.00	RT	1	1	1	3.0	3.0	10.00	3.1%	1558.0	
1	330+70.00	RT	1	1	1	3.0	3.0	10.00	7.0%	690.0	
Basin 1 Totals:			2	2	2					2248.0	
10	3520+65.00	LT	1	1	1	3.0	6.0	10.00	0.5%	11669.0	
10	3521+60.00	LT	1	1	1	3.0	6.0	10.00	0.5%	11669.0	
Basin 10 Totals:			2	2	2					23338.1	
11	1526+75.00	LT	1	1	1	3.0	3.0	10.00	0.5%	9659.6	
11	1528+00.00	LT	1	1	1	3.0	3.0	10.00	4.1%	1178.0	
Basin 11 Totals:			2	2	2					10837.6	
Tab Quantity:			6	6	6					36423.6	

Temporary Sediment Control Basin Bid Tab Quantity = Tab Quantity = 6 Each

Maintenance of Temporary Sediment Control Basin Bid Tab Quantity = Tab Quantity x 3 Cleanouts = 6x3 = 18 Each

Removal of Temporary Sediment Control Basin Bid Tab Quantity = Tab Quantity = 6 Each

100-20
08-01-08

PLANTING QUANTITIES LISTING

No.	Code	Botanical Names	Common Name	Size	Unit	Total	As Built Quan.
1	PWP	Pinus strobus	White Pine	3" CAL	B+B	17	
2	PNS	Picea abies	Norway Spruce	3" CAL	B+B	15	
3	ACF	Abies concolor	White Fir	3" CAL	B+B	15	
4	CRD	Cornus sericea occidentalis	Red Osier Dogwood	3" CAL	B+B	15	
5	PCN	Physocarpus Opulus Intermedia	Common Ninebark	3" CAL	B+B	30	
6	SCL	Syringa vulgaris	Common Lilac	3" CAL	B+B	30	
7	VNB	Viburnum lentago	Nannyberry	3" CAL	B+B	20	
8	CAH	Corylus americana	American Hazelnut	3" CAL	B+B	35	
9	QSO	Quercus Bicolor	Swamp White Oak	1" CAL	B+B	66	
10	QPO	Quercus Palustris	Pin Oak	1" CAL	B+B	66	
11	BRB	Betula Nigra	River Birch	1" CAL	B+B	66	
						Total	375

100-34
04-19-16

STORMWATER DRAINAGE BASIN

Basin No.	Station to Station		Side	Disturbed Area Acres	Discharge Point		Required Storage Volume CF	Remarks
					Station	Side		
1	315+00.00	335+70.00	Both	13.7	332+00.00	LT	49320.0	
2	335+70.00	342+00.00	Both	4.6	337+90.00	LT	16560.0	
3	342+00.00	351+30.00	RT	8.3	342+00.00	LT	29880.0	
4	11+00.00	23+10.00	Both	5.3	11+00.00	RT	19080.0	Connector Road A Stationing
5	510+40.00	515+30.00	LT	1.3	510+85.00	LT	4680.0	U.S. 61 Stationing
6	351+30.00	371+50.00	RT	7.7	355+10.00	RT	27720.0	
7	368+80.00	380+50.00	Both	5.7	378+40.00	LT	20520.0	
8	31+25.00	35+20.00	Both	1.4	33+90.00	LT	5040.0	Connector Road B Stationing
9	14+00.00	31+25.00	Both	5.6	19+10.00	RT	20160.0	Connector Road B Stationing
10	344+85.00	371+45.00	Both	16.7	4524+70.00	RT	60120.0	Discharge Point-Ramp D Stationing
11	1521+50.00	1536+50.00	Both	13.7	4532+45.00	RT	49320.0	Start and End-Ramp A Stationing
12	534+25.00	544+25.00	RT	1.9	542+80.00	RT	6840.0	Discharge Point-Ramp D Stationing

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area		Saw Cut*	Remarks
				SY	LF		
ML032							
368+19.70		Lt	PCC	99.7			Concrete slab from former silo

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks
U.S. 61 Station 509+51.40 LT	Remove 7' - Existing 36" RCP Remove 1 - Existing 36" Concrete Apron	For Pipe Extension, see E Sheets and Cross Sections for details.
Station 515+31.25 LT	Remove 10' - Existing 24" RCP Remove 1 - Existing 24" Concrete Apron	For Pipe Extension, see E Sheets and Cross Sections for details.
Station 520+92.32 LT	Remove 8' - Existing 36" RCP Remove 1 - Existing 36" Concrete Apron	For Pipe Extension, see E Sheets and Cross Sections for details.
Station 520.92.32 RT	Remove 22' - Existing 36" RCP Remove 1 - Existing 36" Concrete Apron	For Pipe Extension, see E Sheets and Cross Sections for details.
		Removal of existing RCP and aprons shall be included in payment for related pipe extension construction bid items.

100-35
04-19-16

SUMMARY OF STORMWATER STORAGE

Basin No.	Item	Total Storage Volume Provided	Total Storage Volume Required	Remarks
		CF	CF	
1	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	77952.0		
	Rock Check Dams	13923.3		
	Silt Basins	7062.5		
	Temporary Sediment Control Basins	2248.0		
	Basin 1 Totals:	101185.8	49320.0	
2	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	30452.9		
	Rock Check Dams	4158.0		
	Silt Basins	3300.0		
	Basin 2 Totals:	37910.9	16560.0	
3	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	38788.4		
	Rock Check Dams	1108.8		
	Silt Basins	2862.5		
	Basin 3 Totals:	42759.7	29880.0	
4	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	21199.7		
	Silt Basins	3700.0		
	Basin 4 Totals:	24899.7	19080.0	
5	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	12418.1		
	Rock Check Dams	2117.6		
	Silt Basins	1175.0		
	Basin 5 Totals:	15710.7	4680.0	
6	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	18572.5		
	Rock Check Dams	6167.7		
	Silt Basins	2150.0		
	Basin 6 Totals:	26890.2	27720.0	
7	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	6502.3		
	Rock Check Dams	10268.1		
	Silt Basins	4275.0		
	Basin 7 Totals:	21045.4	20520.0	
8	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	7395.1		
	Silt Basins	3937.5		
	Basin 8 Totals:	11332.6	5040.0	
9	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	26000.5		
	Rock Check Dams	3326.4		
	Silt Basins	7387.5		
	Basin 9 Totals:	36714.4	20160.0	
10	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	36237.8		
	Rock Check Dams	14222.3		
	Silt Basins	1612.5		
	Temporary Sediment Control Basins	23338.1		
	Basin 10 Totals:	75410.7	60120.0	
11	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	32970.4		
	Rock Check Dams	13357.8		
	Silt Basins	2412.5		
	Temporary Sediment Control Basins	10837.6		
	Basin 11 Totals:	59578.3	49320.0	
12	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	6787.1		
	Basin 12 Totals:	6787.1	6840.0	

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of unclassified pipe calculated is based on using Reinforced Concrete 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.

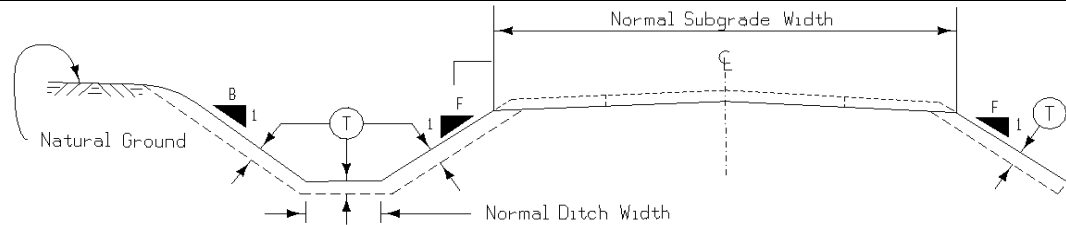
Station	Side	Type A, B, C, Safety Ramp, or Predetermined*	Length of Opening ①			Pipe Culvert ③			Aprons No.	Driveway Surface Area		Driveway Surfacing Material TON	Remarks				
			Case 1 or 2	1 1/2" Dropped Curb LF	3" Dropped Curb LF	W FT	PR FT	SR FT		H FT	Size IN			Pipe Length LF	Lt. LF	Rt. LF	
																	HMA SY
61 Conn Rd A 15+00.00	Lt	C				24.0		15.0	5.0	36.0	82.0	47.4	50.2	2		85.890	Provide surfacing across roadway subgrade
15+00.00	Rt	C				24.0		15.0	2.5	24.0	62.0	37.6	36.3	2		51.205	Provide surfacing across roadway subgrade
61 Conn Rd B 25+00.00	Lt	C				24.0		15.0	3.0	24.0	52.0	32.6	31.6	2		40.110	Provide surfacing across roadway subgrade
29+00.00	Rt	C				24.0		15.0	1.2	36.0	34.0	23.1	26.9	2		492.555	Quantity includes temporary granular surfacing across roadway subgrade from Sta. 25+00 to Sta. 29+00. No surfacing required
35+20.00	Rt					24.0		15.0									
Totals:																669.760	
											24" Pipe	114.0					
											36" Pipe	116.0					
											24" Apron	4.0					
											36" Apron	4.0					

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
7316+00.00	1		Bike-7 Project Start
315+00.00	1		SW Arterial Project Start
330+60.00 LT		1	Box Culvert
331+60.00 LT		1	Box Culvert
328+25.00 RT		1	Wetland
330+20.00 RT		1	Box Culvert
331+30.00 RT		1	Box Culvert
331+45.00 RT		1	Wetland
349+50.00		1	Bridge
356+00.00		1	Bridge
380+50.00	1		SW Arterial Project End
11+35.00	1		Conn. Rd. A Project Start
12+05.00		1	Conn. Rd. A-Box Culvert
14+00.00	1		Conn. Rd. B Project Start
1527+80.00		1	Ramp A-Box Culvert
1528+20.00		1	Ramp A-Box Culvert
1533+00.00	1		Ramp A-Stop Grading
1535+50.00	1		Ramp A-Continue Grading
23+85.00	1		Davenport Road-Project End
4531+90.00		1	Ramp D-Box Culvert Ext.
542+60.00 LT	1		U.S. 61-Project End
544+25.00 RT	1		U.S. 61-Project End
Totals:	10	12	
22 Safety Closures			

TABULATION OF SPREADING TOPSOIL

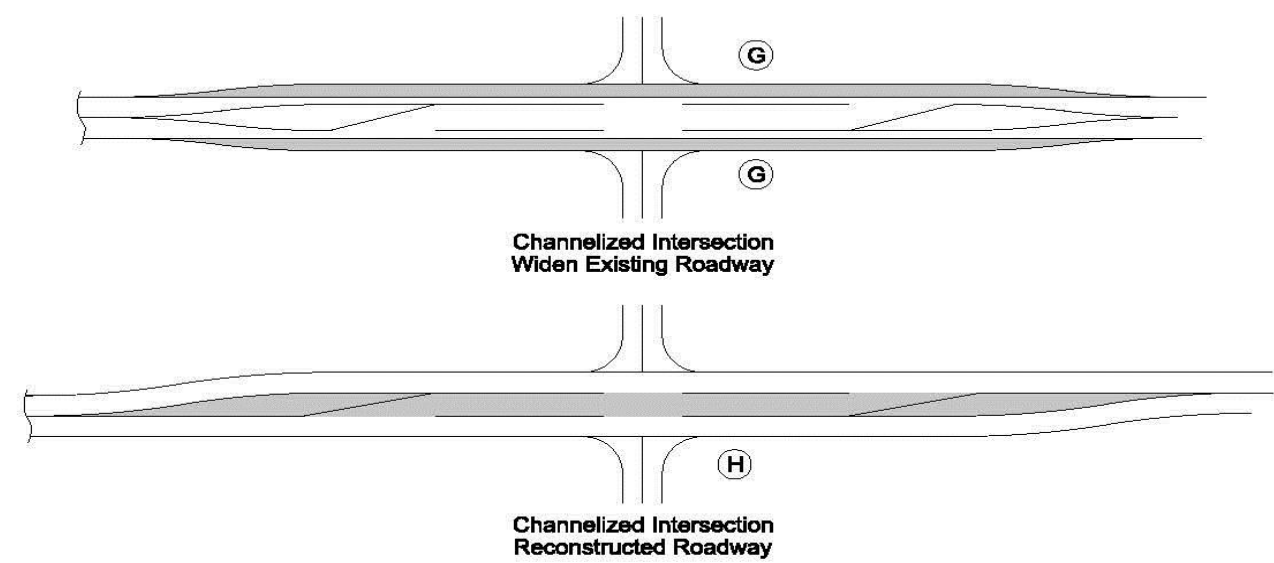
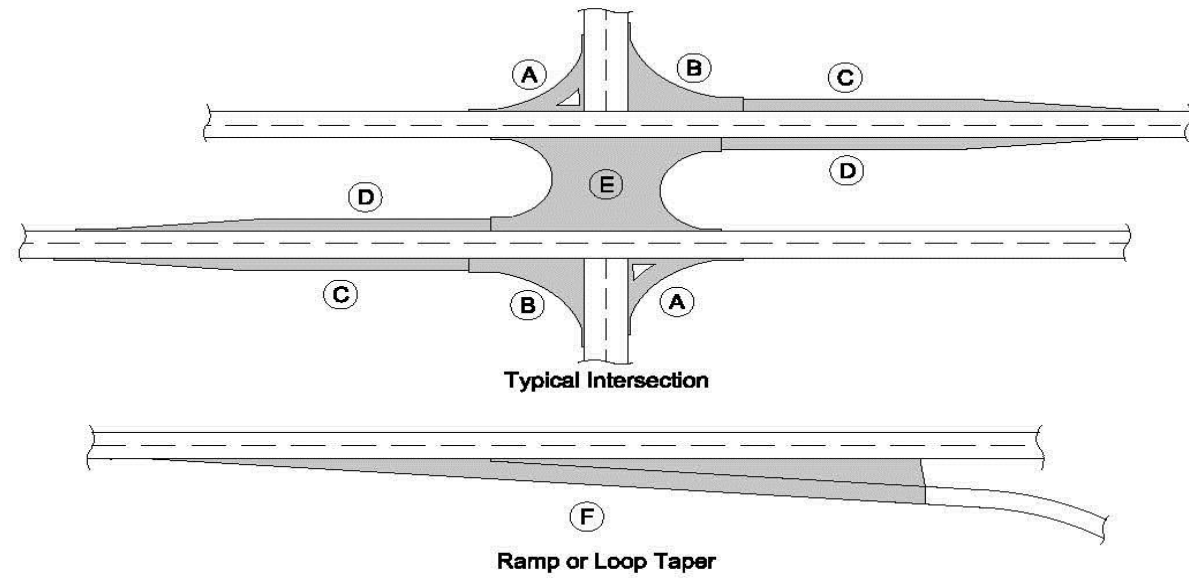


Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

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

Area No.	Quantity CY	Placement Description				Remarks	Topsoil Excavation Available From			Remarks	
		Station to Station	Side L. or R.	Slope B. or F.	T IN		Amount Reserved CY	Station to Station	Remarks		
1	1130.0	285+75.00	290+50.00	L. and R. B. and F.	8.0		1491.0	285+75.00	290+50.00	SW Arterial	
2	15481.0	315+25.00	350+50.00	L. and R. B. and F.	8.0		92.0	315+25.00	350+50.00	SW Arterial	
3	6109.0	11+50.00	29+00.00	L. and R. B. and F.	6.0		21674.0	315+25.00	350+50.00	SW Arterial	
4	4511.0	1519+50.00	1536+45.00	L. and R. B. and F.	6.0		8553.0	11+50.00	29+00.00	61 Connector Road A	
							3557.0	315+25.00	350+50.00	SW Arterial	
							554.0	11+50.00	29+00.00	61 Connector Road A	
							315.0	3522+50.00	3529+53.54	US 61 Loop C	
							1890.0			Topsoil Furnish and Spread	
5	2145.0	3522+50.00	3529+53.54	L. and R. B. and F.	6.0		3003.0	3522+50.00	3529+53.54	US 61 Loop C	
6	4838.0	506+70.00	542+50.00	L. and R. B. and F.	8.0		4410.0	506+70.00	542+50.00	US 61 SB	
							2364.0			Topsoil Furnish and Spread	
	34214.0	Stage 1 Subtotal					47903.0				
7	11704.0	355+00.00	380+25.00	L. and R. B. and F.	8.0		16386.0	355+00.00	380+25.00	SW Arterial	
8	4306.0	14+00.00	39+00.00	L. and R. B. and F.	6.0		6029.0	14+00.00	39+00.00	61 Connector Road B	
9	3704.0	4518+00.00	4531+55.00	L. and R. B. and F.	8.0		4586.0	4518+00.00	4531+55.00	US 61 Ramp D	
							600.0	355+00.00	380+25.00	SW Arterial	
							2457.0	355+00.00	380+25.00	SW Arterial	
10	1755.0	2522+75.00	2529+75.00	L. and R. B. and F.	6.0		2413.0	515+50.00	544+25.00	U.S. 61 NB	
							1860.0	355+00.00	380+25.00	SW Arterial	
11	6942.0	4525+75.00	4532+75.00	L. and R. B. and F.	8.0	Wetland Earthwork-Ramp D Stationing	4690.0	4525+75.00	4532+75.00	Wetland-(Ramp D Stationing)	
							515.0	355+00.00	380+25.00	SW Arterial	
							2325.0	14+00.00	39+00.00	61 Connector Road B	
							2189.0			Topsoil Furnish and Spread	
	31463.0	Stage 2 Subtotal					44050.0				
Total	65677.0						Totals:	91953.0		6443	Topsoil, Strip, Salvage and Spread
										Topsoil, Furnish and Spread	

SELECT TREATMENT
Possible Detail: G_4D_Grade_Delay_S



Road Identification	Location		Length FT	Width FT	Mainline Shoulder Width				Pavement & Subgrade Thickness X IN	Area SF	Section Area								Total Area (Mainline + Section) SF	Select Treatment Thickness Y1 IN	Contractor Furnished Select Treatment CY	Remarks																					
	Direction of Travel	Station to Station			Median Side		Outside				A	B	C	D	E	F	G	H					Area																				
					GM	PM	PO	GO																																			
					FT	FT	FT	FT																																			
Southwest Arterial	WB	315+00.00	338+65.00	2365.0	26.0	5.0	8.0	8.0		111155.0										111155.0	24.0	8233.7																					
Southwest Arterial	EB	315+00.00	338+65.00	2365.0	26.0	5.0	8.0	8.0		111155.0										111155.0	24.0	8233.7																					
Southwest Arterial	WB	338+65.00	340+15.00	150.0	26.0	5.0	8.0	8.0		7050.0										1652.2	1652.2	8702.2	24.0	644.6																			
Southwest Arterial	EB	338+65.00	340+15.00	150.0	26.0	5.0	8.0	8.0		7050.0										1797.7	1797.7	8847.7	24.0	655.4																			
Southwest Arterial	WB	340+15.00	346+43.60	628.6	26.0			8.0		21372.4	5065.7	2106.2								5972.9	13144.8	34517.2	24.0	2556.8																			
Southwest Arterial	EB	340+15.00	346+43.60	628.6	26.0			8.0		21372.4	2757.7	2595.9								6107.6	11461.2	32833.6	24.0	2432.1																			
Southwest Arterial	WB	346+43.60	348+10.00	166.4	26.0			8.0		5657.6										1794.8	1794.8	7452.4	24.0	552.0																			
Southwest Arterial	WB	348+10.00	349+90.10	180.1	26.0			8.0		6123.4										791.6	791.6	6915.0	24.0	512.2																			
Southwest Arterial	WB	349+90.10	350+01.60	11.5	26.0			8.0		391.0										34.4	34.4	425.4	24.0	31.5																			
Southwest Arterial	EB	346+43.60	346+50.40	6.8	26.0			8.0		231.2										57.2	57.2	288.4	24.0	21.4																			
Southwest Arterial	EB	346+50.40	349+30.20	279.8	26.0			8.0		9513.2										1887.1	1887.1	11400.3	24.0	844.5																			
Southwest Arterial	EB	349+30.20	350+01.60	71.4	26.0			8.0		2427.6										213.9	213.9	2641.5	24.0	195.7																			
Southwest Arterial	WB	355+62.60	357+81.60	219.0	26.0			8.0		7446.0	1899.0									646.0	2545.0	9991.0	24.0	740.1																			
Southwest Arterial	EB	355+62.60	357+81.60	219.0	26.0			8.0		7446.0	2327.7									646.1	2973.8	10419.8	24.0	771.8																			
Southwest Arterial	WB	357+81.60	360+50.00	268.4	26.0			8.0		9125.6		3273.4									3273.4	12399.0	24.0	918.4																			
Southwest Arterial	WB	360+50.00	362+50.00	200.0	26.0			8.0		6800.0										400.1	400.1	7200.1	24.0	533.3																			
Southwest Arterial	WB	362+50.00	364+50.00	200.0	26.0			8.0		6800.0										1046.3	1046.3	7846.3	24.0	581.2																			
Southwest Arterial	EB	357+81.60	358+37.40	55.8	26.0			8.0		1897.2										529.3	529.3	2426.5	24.0	179.7																			
Southwest Arterial	EB	358+37.40	360+50.00	212.6	26.0			8.0		7228.4		1874.7								3189.1	5063.8	12292.2	24.0	910.5																			
Southwest Arterial	EB	360+50.00	364+50.00	400.0	26.0			8.0		13600.0										2880.3	2880.3	16480.3	24.0	1220.8																			
Southwest Arterial	WB	364+50.00	380+37.37	1587.4	26.0			8.0		53970.6	3504.3										3504.3	57474.9	24.0	4257.4																			
Southwest Arterial	EB	364+50.00	380+37.37	1587.4	26.0			8.0		53970.6		2932.4									2932.4	56903.0	24.0	4215.0																			
US61 Conn Rd A	NB	6+95.00	29+08.04	2213.0	26.0			4.0		66391.2											66391.2	24.0	4917.9																				
US61 Conn Rd A	SB	6+95.00	29+08.04	2213.0	26.0			4.0		66391.2		1489.6									1489.6	67880.8	24.0	5028.2																			
Silverwood Drive	WB	1116+50.00	1117+81.51	131.5	26.0			4.0		3945.3											3945.3	24.0	292.2																				
Silverwood Drive	EB	1116+50.00	1117+81.51	131.5	26.0			4.0		3945.3											3945.3	24.0	292.2																				
US61 Conn Rd B	NB	10+55.00	17+55.63	700.6	26.0			4.0		21018.9											21018.9	24.0	1557.0																				
US61 Conn Rd B	SB	10+55.00	17+55.63	700.6	26.0			4.0		21018.9											21018.9	24.0	1557.0																				
US61 Conn Rd B	NB	20+21.82	39+69.50	1947.7	26.0			4.0		58430.4											58430.4	24.0	4328.2																				
US61 Conn Rd B	SB	20+21.82	39+69.50	1947.7	26.0			4.0		58430.4											58430.4	24.0	4328.2																				
																						Total:																				61542.8	

DRAINAGE STRUCTURES BY CULVERT CONTRACTOR

* Not a Bid Item

Location	Design Number	Size	Kind	Lgth. New Const.	No. of Aprons	Flow Line Elevation				Dimensions - Lin. Ft.				Skew Ahead		By Road Contractor				Floodable* Backfill	Porous* Backfill	Flooded Backfill	Remarks		
										Total		Extensions		Degrees		Dike			Comp. Backfill						
										Left	Right	Left	Right	Left	Right	Rt.	Location Station	Top. Elev.						Type	Cu. Yds.
				Left	Right	Left	Right	Left	Right	Lt.				Cu. Yds.	Cu. Yds.	Cu. Yds.									
331+00.00		10x6	RCB	302	2	731.61	737.95			146	156									391.5	51.7	443.2			
11+75.00		12x8	RCB	125	2	724.18	722.24			74	51									162.0	24.4	186.4	U.S. 61 Connector Road A		
1528+00.00		10x8	RCB	204	2	709.99	706.17			93	111									264.4	34.9	299.3	U.S. 61 Ramp A		
4531+55.00		6x6	RCB	38	1	697.86	697.56				38									49.3	4.6	54.0	U.S. 61 Ramp D, Box Culvert Extension		
Totals:																							982.9		

CLEARING AND GRUBBING

Location		Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters													All Other Materials		Estimated Quantities			Remarks			
Station to Station or Milepost to Milepost or Description	Direction of Travel		3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Length	Width	Units	Area	Herbicide Application				
			FT	FT	Units	Acres	Each															FT	FT	Units
ML032																								
331+38 - 332+58	Both	Field Fence - Clearing														480.0		28.8						
371+94 - 372+69	Both	Field Fence - Clearing													150.0		9.0							
375+15 - 376+35	Both	Field Fence - Clearing													345.0		20.7							
376+85 - 377+99	Both	Field Fence - Clearing													425.0		25.5							
380+17	Both	Field Fence - Clearing													320.0		19.2							
US-61 Ramp A																								
1523+85	Both	Field Fence - Clearing													675.0		40.5							
1526+59	Both	Field Fence - Clearing													530.0		31.8							
1527+69	Both	Field Fence - Clearing													525.0		31.5							
1530+81	Both	Field Fence - Clearing													250.0		15.0							
US-61/151																								
492+49 - 495+19	NB	Field Fence - Clearing													255.0		15.3							
518+36 - 521+39	NB	Field Fence - Clearing													315.0		18.9							
520+61 - 529+54	SB	Field Fence - Clearing													915.0		54.9							
528+76 - 531+45	NB	Field Fence - Clearing													280.0		16.8							
US-61 Conn. Rd. 'A' 20+53 - 22+29	Both	Field Fence - Clearing													365.0		21.9							
US-61 Conn. Rd. 'B' 29+71 - 31+95	Both	Field Fence - Clearing													275.0		16.5							
ML032																								
Sta. 316+00 Lt		Trees - Grubbing																	0.4					
Sta. 327+15 Lt		Trees - Grubbing																	0.7					
Sta. 331+00 Lt & Rt		Trees - Grubbing																	1.7					
Sta. 338+45 Lt & Rt		Trees - Grubbing																	1.1					
Sta. 350+20 Lt		Trees - Grubbing																	0.6					
Sta. 353+25 Lt		Trees - Grubbing																	0.2					
Sta. 374+80 Lt & Rt		Trees - Grubbing																	0.2					
Sta. 378+25 Lt & Rt		Trees - Grubbing																	0.7					
US-61/151																								
Sta. 499+30 Rt		Trees - Grubbing																		2.6				
Sta. 513+00 Rt		Trees - Grubbing																		0.5				
Sta. 524+65 Lt		Trees - Grubbing																		0.5				
Sta. 526+40 Rt		Trees - Grubbing																		0.6				
Sta. 528+75 Lt		Trees - Grubbing																		0.5				
Sta. 533+17 Lt		Trees - Grubbing																		0.1				
Sta. 537+40 Lt		Trees - Grubbing																		0.3				
Sta. 539+50 Rt		Trees - Grubbing																		1.7				
Sta. 540+85 Lt		Trees - Grubbing																		0.4				
Totals:																		366.3	12.8					

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

* Not a bid item

① Diameter or equivalent diameter

② UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area	Location	Type	Size ①	Kind Of Pipe ②	Length New Const. LF	Bedding Class	Design Cover (H) FT	Apron No.				Apron Guard* (DR-213) No.	Elbow* (DR-141) No.	Diaphragm* (DR-501) No.	Tee Section* (DR-142) No.	"D" Section* (DR-141) No.	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121) Type	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft.		Skew Ahead Degrees		Dike			Class 20 CY	Flowable Mortar CY	Floodable* Backfill CY	Porous* Backfill CY	Flooded Backfill CY	Remarks			
								IN	OUT	No.	No.							Type	No.			Lt.	Rt.	Other	Other	Total Lt.	Total Rt.	Extensions Lt.	Extensions Rt.	Lt.	Rt.	Lt.							Location Station	Top Elevation	Type
								ACRE	IN	OUT	No.							No.	Type			No.	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.							Lt.	Location Station	Top Elevation
23.3	SW Arterial 338+46	DR-601	48	RCP 2000D	238	B	13.2	1	1								Type 3			740.41	751.24			134.4	119.4			24					279.1	0.0	251.7	27.4	279.1				
29.7	374+26	DR-641	54	RCP 2000D	258	B	14.2	1	1			2					Type 3			756.41	772.38	756.65	770.57	170.2	101.9			29					36.7	0.0	33.3	3.4	36.7	2-15° ELBOWS A=188' B=52' C=1' D=190' E=18' L=8' DR-641 with RCP Letdown			
32.6	378+57	DR-641	48	RCP 3000D	250	B	18.4	1	1			2					Type 3			756.25	769.80	756.43	767.88	159.2	105.0			9					94.0	0.0	87.1	6.9	94.0	2-17° ELBOWS A=200' B=38' C=1' D=202' E=12' L=8' DR-641 with RCP Letdown			
3.3	CONN. RD. A 27+38	DR-601	24	RCP 2000D	48	B	2.7	1	1	2							Type 3			757.89	757.26			30.4	29.9								99.9	16.0	78.8	5.1	83.9				
9.1	CONN. RD. B 34+40	DR-601	30	RCP 2000D	50	B	2.0	1	1	2							Type 3			736.30	736.95			32.2	30.1								112.4	17.4	89.3	5.7	95.0				
24.9	38+00	DR-641	48	RCP 2000D	108	B	6.8	1	1	2	2						Type 3			719.23	729.20	719.37	728.43	76.1	46.5								163.1	0.0	151.6	11.5	163.1	2-17° ELBOWS A=70' B=30' C=1' D=78' E=8' L=8' DR-641 with RCP Letdown			
2.3	US 61 RAMP A 1532+50.00	DR-601	24	RCP 2000D	114	B	6.1	1	1	2							Type 3			718.87	716.59			41.3	85.0			25					355.1	0.0	346.1	9.0	355.1				
4.2	US 61 RAMP D 4527+00	DR-601	24	RCP 3000D	172	B	20.3	1	1								Type 3			704.07	702.80			98.7	85.6								29.1	0.0	13.6	15.6	29.2				
9.8	BIKE 7 7325+10.71	DR-611	24	RCP 2000D	36	B	5.8	1	1			1					Type 3			777.72	769.75	770.06		19.7	29.5			22					83.3	0.0	108.5	4.2	112.7	1-15° ELBOW F=22.1'			
2.7	BIKE 8 8363+60.06	DR-611	18	RCP 2000D	18	B	2.0	1	1			1					Type 3			758.42	759.92	758.54		12.4	17.7			30					25.9	6.0	17.5	2.3	19.8	1-4° ELBOW F=12.1'			
2.9	US 61 515+31.25	DR-621	24	RCP 2000D	20	B	2.0			1							Type 3			723.73	723.15					77.7	51.0LT						30.8	6.3	21.9	2.6	24.5	Remove Ex. Pipe and Apron up to tie in.			
15.8	520+92.32 LT	DR-621	36	RCP 2000D	34	B	2.0			1		1					Type 3			722.27	720.13	721.02				91.2	49.0LT						10.1	3.6	4.7	1.8	6.5	1-5° ELBOW F=10' Extension in form of DR-611. Remove Ex. Pipe and Apron up to tie in.			
15.8	520+92.32 RT	DR-621	36	RCP	88	B	12.5			1		1					Type 3			711.40	702.54	702.71				74.6	171.1L						242.0	0.0	234.5	7.5	242.0	1-5° ELBOW F=14'			

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

- * Not a bid item
 ① Diameter or equivalent diameter
 ② UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area ACRE	Location	Type	Size ① IN	Kind Of Pipe ②	Length New Const. LF	Bedding Class	Design Cover (H) FT	Apron No.		Apron Guard* (DR-213) No.	Elbow* (DR-141) No.	Diaphragm* (DR-501) No.	Tee Section* (DR-142) No.	"D" Section* (DR-141) No.	Reducer*	Type 'C' Connections* (DR-122) Type		Connected Pipe Joint* (DR-121) Type	4" Perforated Subdrain*	Flow Line Elevations				Skew Ahead Degrees		Dike			Class 20 CY	Flowable Mortar CY	Floodable* Backfill (A) CY	Porous* Backfill (B) CY	Flooded Backfill (A+B) CY	Remarks											
								IN	OUT							Lt.	Rt.			Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Location Station							Top Elevation	Type									
	Totals:	18" RCP Aprons			2	Each				8	10																																		
		24" RCP Aprons			9	Each																																							
		30" RCP Aprons			2	Each																																							
		36" RCP Aprons			2	Each																																							
		48" RCP Aprons			6	Each																																							
		54" RCP Aprons			2	Each																																							
		2000D 18" RCP			18	LF																																							
		2000D 24" RCP			218	LF																																							
		2000D 30" RCP			50	LF																																							
		2000D 36" RCP			122	LF																																							
		2000D 48" RCP			346	LF																																							
		2000D 54" RCP			258	LF																																							
		3000D 24" RCP			172	LF																																							
		3000D 48" RCP			250	LF																																							

Notes: For letdown structures, use Class C Bedding under the letdown portion and class B Bedding on the portion of the pipe under the roadway.

Flooded backfill quantity has been calculated as if the pipe continued to the foreslope at the same slope as the cross road portion of the pipe. See IOWA DOT design manual section 5B-2 for further details.

For roadway pipes not installed under pavements, bedding and backfill is incidental to pipe culvert and pipe excavation, respectively.

Common Name	Scientific Name	Moisture Class	PLS Rate (Oz/Acre)
Grasses			
Big Bluestem	<i>Andropogon gerardii</i>	W-M-D	18.0
Side-Oats Grama	<i>Bouteloua curtipendula</i>	M-D	20.0
Blue Joint Grass	<i>Calamagrostis canadensis</i>	W	1.0
Brown Fox Sedge	<i>Carex vulpinoidea</i>	W-M	2.0
Switchgrass	<i>Panicum virgatum</i>	W-M-D	5.0
Prairie Cordgrass	<i>Spartina pectinata</i>	W	16.0
Prairie Dropseed	<i>Sporobolus heterolepis</i>	M-D	3.0
Indian Grass	<i>Sorghastrum nutans</i>	M-D	15.0
Great Spike Rush	<i>Eleocharis palustris</i>	W	4.0
Little Bluestem	<i>Schizachyrium scoparius</i>	M-D	14.0
Prairie Brome	<i>Bromus kalmii</i>	M	22.0
Copper-Shoulder Oval Sedge	<i>Carex bicknellii</i>	M	5.0

Common Name	Scientific Name	Moisture Class	PLS Rate (Oz/Acre)
Showy Tick Trefoil	<i>Desmodium canadense</i>	M	8.0
Pale Purple Coneflower	<i>Echinacea pallida</i>	M-D	5.0
Joe Pye Weed	<i>Eupatorium maculatum</i>	W	1.0
Boneset	<i>Eupatorium perfoliatum</i>	W	1.0
Bottle Gentian	<i>Gentiana andrewsii</i>	W-M	0.5
Great St. Johns Wort	<i>Hypericum pyramidatum</i>	W-M	1.0
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	W-M	4.0
False Indigo	<i>Amorpha fruticosa</i>	W	3.0
Buttonbush	<i>Cephalanthus occidentalis</i>	W	7.0
Swamp Milkweed	<i>Asclepias incarnata</i>	W-M	4.0
Ox-Eye Sunflower	<i>Heliopsis helianthoides</i>	M-D	7.0
Purple Prairie Clover	<i>Dalea purpurea</i>	M-D	6.0
Partridge Pea	<i>Cassia fasciculata</i>	M-D	16.0
Prairie Blazingstar	<i>Liatris pycnostachya</i>	W-M	1.0
Great Blue Lobelia	<i>Lobelia siphilitica</i>	W-M	0.5
Common Mt. Mint	<i>Pycnanthemum virginianum</i>	W-M	1.0
Black-Eyed Susan	<i>Rudbeckia hirta</i>	M-D	1.0
Rosinweed	<i>Silphium integrifolium</i>	W-M-D	4.0
Compass Plant	<i>Silphium laciniatum</i>	M-D	7.0
Grass Leaved Goldenrod	<i>Solidago graminifolia</i>	W-M	1.0
Round-headed Bush Clover	<i>Lespedeza capitata</i>	M-D	8.0
Wild Bergamot	<i>Monard fistulosa</i>	W-M-D	0.5
Culver's Root	<i>Veronicastrum virginicum</i>	W-M	0.2
Golden Alexanders	<i>Zizia aurea</i>	W-M	4.0
Total (Forbs)			91.7

103-6
04-19-11

EMBANKMENT WITH MOISTURE CONTROL

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 and Embankment in-place, Contractor Furnished fill placed at all locations and depths. Topsoil will not require Moisture Control.

Moisture Control is required on all select soil subgrade treatments. See Tab 103-11 for the Select Treatment quantity.

103-7
08-01-08

SHRINKAGE DATA

Material	%	Remarks
Topsoil	40%	
Unsuitable Type A	35%	
Unsuitable Type B	35%	
Class 10	30%	
Limestone	10%	Swelling Factor
Estimated Boulder Quantity		150 CY

107-25
08-01-08

TABULATION OF ROCK SPLITTING

Location				Remarks
No.	Station to Station	Side		
1	1532+25	1534+00	R/L	Limestone
2	3522+50	3526+75	R/L	Limestone
3	511+00	518+50	R/L	Limestone
4	537+00	542+00	R/L	Limestone

LIST OF SUBDRAIN WORK

Refer to DR-121, DR-201, DR-203, DR-301, DR-302, DR-303, DR-304, and DR-305.

* Not a bid item

No.	Location		Type of Installation	Pipe		Aprons		Outlets		Connected Pipe Joints*		Trench Drain	Granular Material	Porous Backfill*	Class "A" Crushed Stone*	Remarks		
	Station to Station	Type of Installation		Concrete C.M.P., C.M.P. Coated, or Plastic	Dia.	Length	DR-201	DR-203	DR-304	DR-305							DR-121	
										No.	No.						Type	No.
1	329+00	333+00	DR-301, DR-302, DR-303	Plastic	6.0	390											Working blanket in existing drainage way. Refer to Note 1.	

Note 1: The Working Blanket shown on the Q sheets and on Tab. 104-5C may be deleted if determined not to be necessary at the time of construction. Daylight drain to left ditch near Station 330+00.



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.

Theresa Stromberg-Murphy 11/7/2017
 Signature Date

TERESA STROMBERG-MURPHY
 Printed or Typed Name

My license renewal date is December 31, 2017

Pages or sheets covered by this seal: CS.1, Q.1-Q.20

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Luminaire
	Fruit Tree		Traffic Signal
	Shrub (Bushes)		Traffic Signal with Luminaire
	Timber		Telephone Pedestal
	Hedge		Television Pedestal
	Stump		Telephone Pole
	Swamp		Telephone Pole (Second Company)
	Rock Outcrop		Telephone Pole (Third Company)
	Broken Concrete		Telephone Pole (Fourth Company)
	Revetment (Rip Rap)		Telephone Pole (Fifth Company)
	Cemetery		Power Pole
	Grave		Power Pole (Second Company)
	Cave		Power Pole (Third Company)
	Sink Hole		Power Pole (Fourth Company)
	Board Fence		Power Pole (Fifth Company)
	Chain Link or Security Fence		Electrical Highline Tower (Metal or Concrete)
	Wire Fence		Telephone Riser Pole
	Terrace		Power Riser Pole
	Earth Dam or Dike (Existing)		Telegraph Pole
	Earth Dam or Dike (Proposed)		Satellite TV Dish
	Tile Outlet		Guardrail (Beam or Cable)
	Edge of Water		Guard Post (one or two)
	Existing Drainage		Guard Post (over two)
	Proposed Drainage		Filler Pipe
	Right of Way Rail or Lot Corner		Gas Valve
	Concrete Monument		Water Valve
	Well		Speed Limit Sign
	Windmill		Mile Marker Post
	Beehive Intake		Sign
	Existing Intake		Water Hook Up
	Proposed Intake		Radio Tower
	Existing Utility Access (Manhole)		Tower Anchor
	Proposed Utility Access (Manhole)		Electric Box
	Fire Hydrant		Traffic Signal Control Box
	Water Hydrant (Rural)		Rail Road Signal Control Box
			Telephone Switch Box

UTILITY LEGEND

	City of Dubuque Water Works Bob Schiesl 563-589-4270 bschiesl@cityofdubuque.org
	Alliant Energy (formerly Interstate Light and Power) Jason Hogan 608-458-4871 jasonhogan@alliantenergy.com
	Black Hills Energy (formerly Aquila) Brad Fleming 402-221-2714 brad.fleming@blackhillscorp.com
	BP Pipelines (North America) Inc. David Sommerfeld 630-536-2729 david.sommerfeld@bp.com
	Maquoketa Valley Rural Electric James Lauzon 319-462-3541 jlauzon@mvec.com
	Mediacom (cable TV) Dennis Jarding 3900 26th Avenue Moline, IL 61265 309-743-4750 (Office) djarding@mediacomcc.com
	Windstream Communications (formerly PAETEC) Stephen Kness 1420 North Center Point Rd/ P.O. Box 3177 Hiawatha, IA 52233 319-790-7678 (Office) stephen.kness@windstream.com
	Centurylink (formerly Qwest Communications) Brent Giese 3908 Utica Ridge Road Bettendorf, IA 52722 563-355-2592 (Office) brent.giese@centurylink.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)	Temporary Pavement Shading	
Gray, Light (48)	Proposed Pavement Shading	
Gray, Med (80)	Proposed Granular Shading	
Gray, Dark (112)	Proposed Grade and Pave Shading "In conjunction with a paving project"	
Brown, Light (236)	Grading Shading	
Tan (8)	Proposed Sidewalk Shading	
Blue, Light (230)	Proposed Sidewalk Landing Shading	
Pink (11)	Proposed Sidewalk Ramp Shading	

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

Symbol	Description
	Reference Point
	Station
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	High Tension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

Symbol	Description
	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

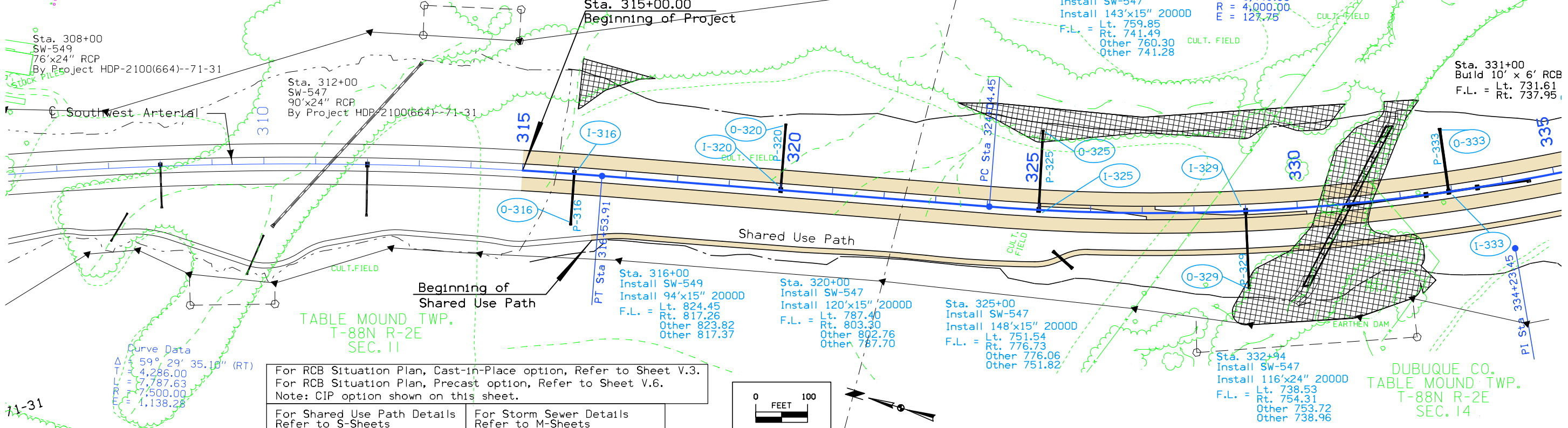
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

NOTE:
 Grading from Sta. 300+00.00
 to Sta. 315+00.00 to be **E1**
 completed by others
 Refer to Project HDP-2100(664)--71-31

Sta. 311+26.55
 418'x36" RCP
 Skew=48° Lt. Ahd.
 By Project HDP-2100(664)--71-31

Curve Data
 $\Delta = 28^\circ 35' 02.91''$ (LT)
 $T = 1,019.00$
 $L = 1,995.55$
 $R = 4,000.00$
 $E = 127.75$



For RCB Situation Plan, Cast-in-Place option, Refer to Sheet V.3.
 For RCB Situation Plan, Precast option, Refer to Sheet V.6.
 Note: CIP option shown on this sheet.

For Shared Use Path Details Refer to S-Sheets
 For Storm Sewer Details Refer to M-Sheets

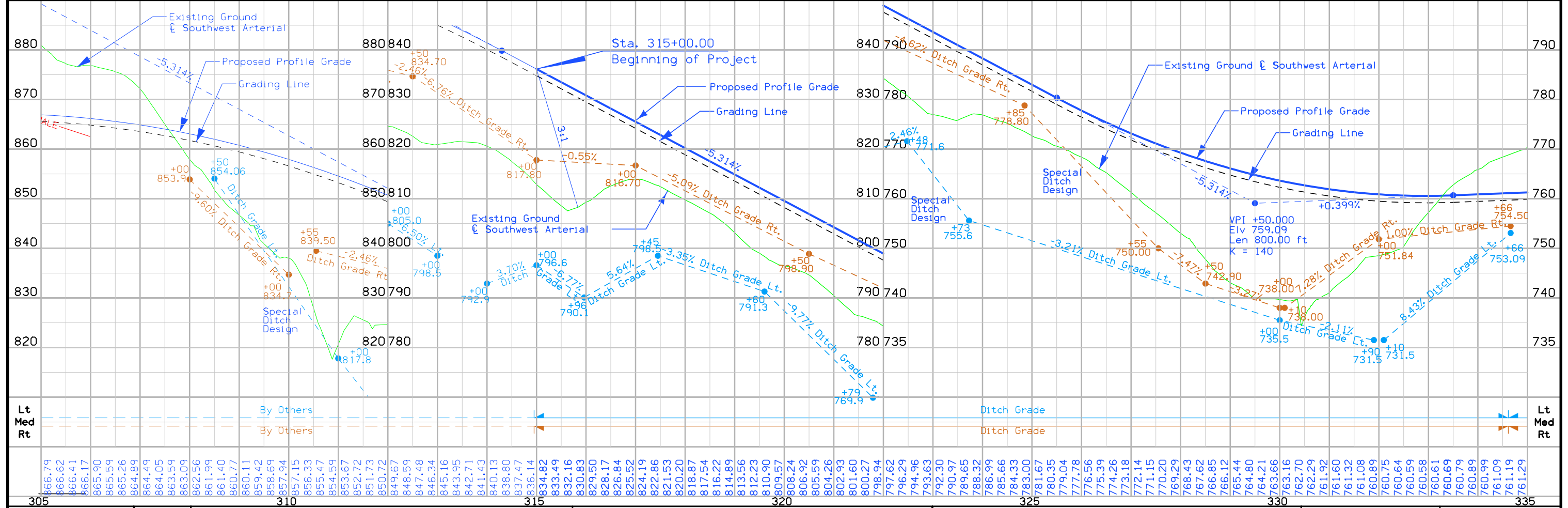
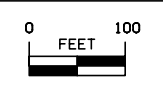
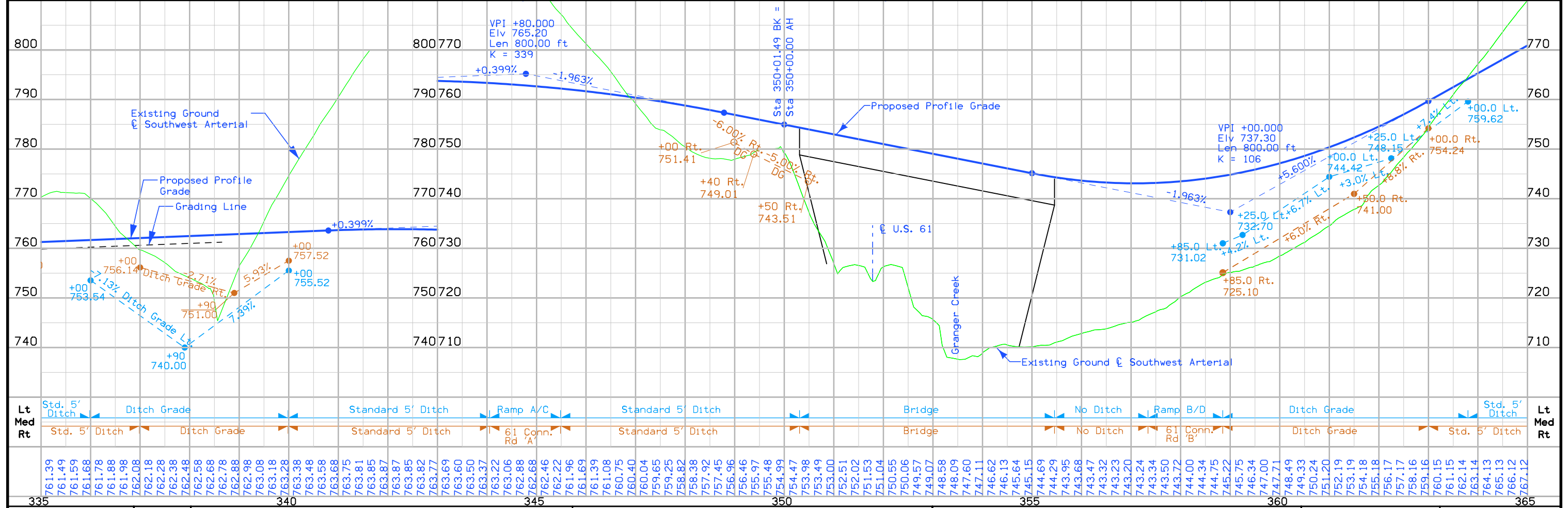
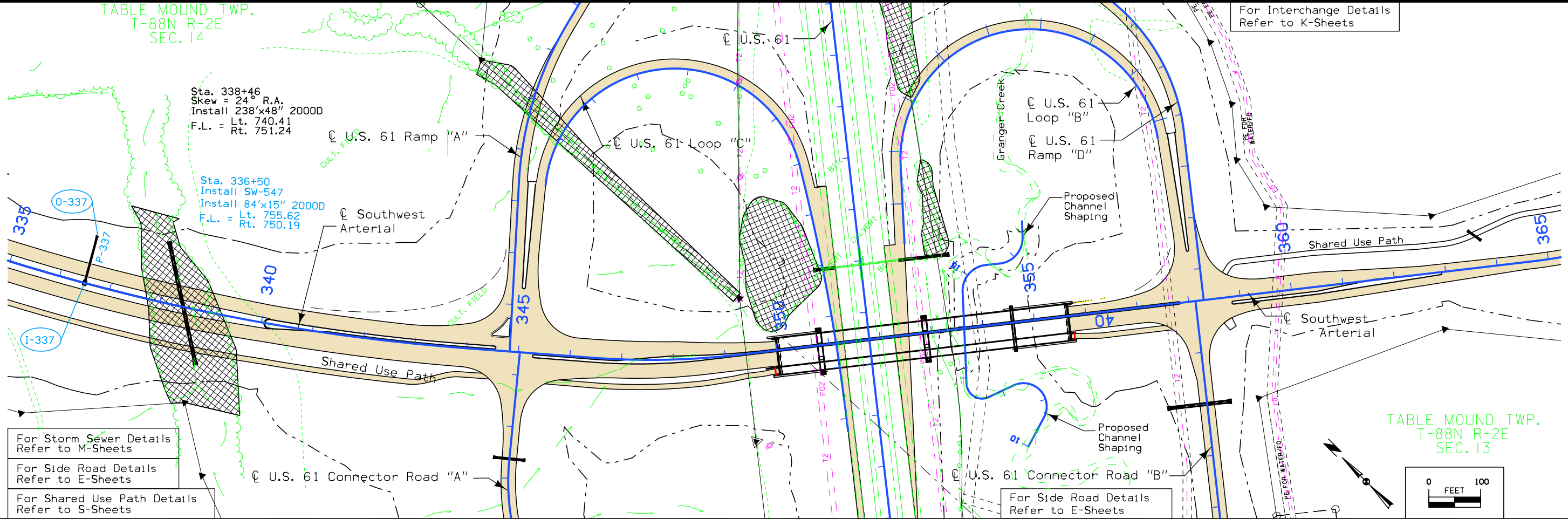


TABLE MOUND TWP.
T-88N R-2E
SEC. 14

For Interchange Details
Refer to K-Sheets



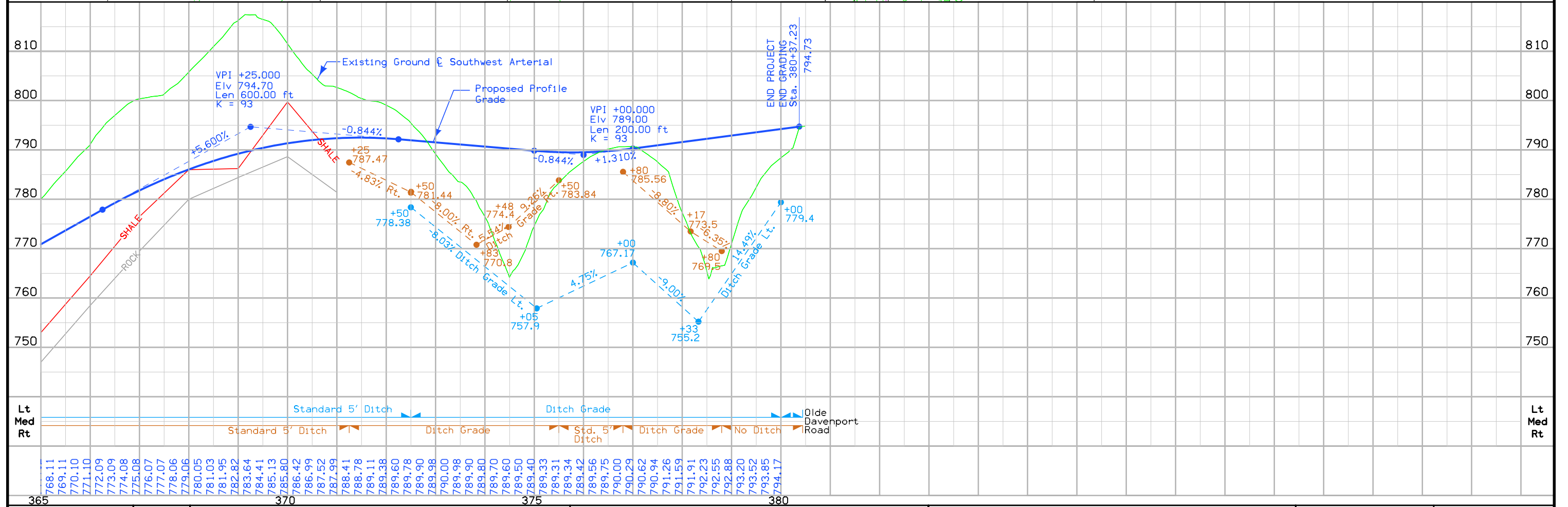
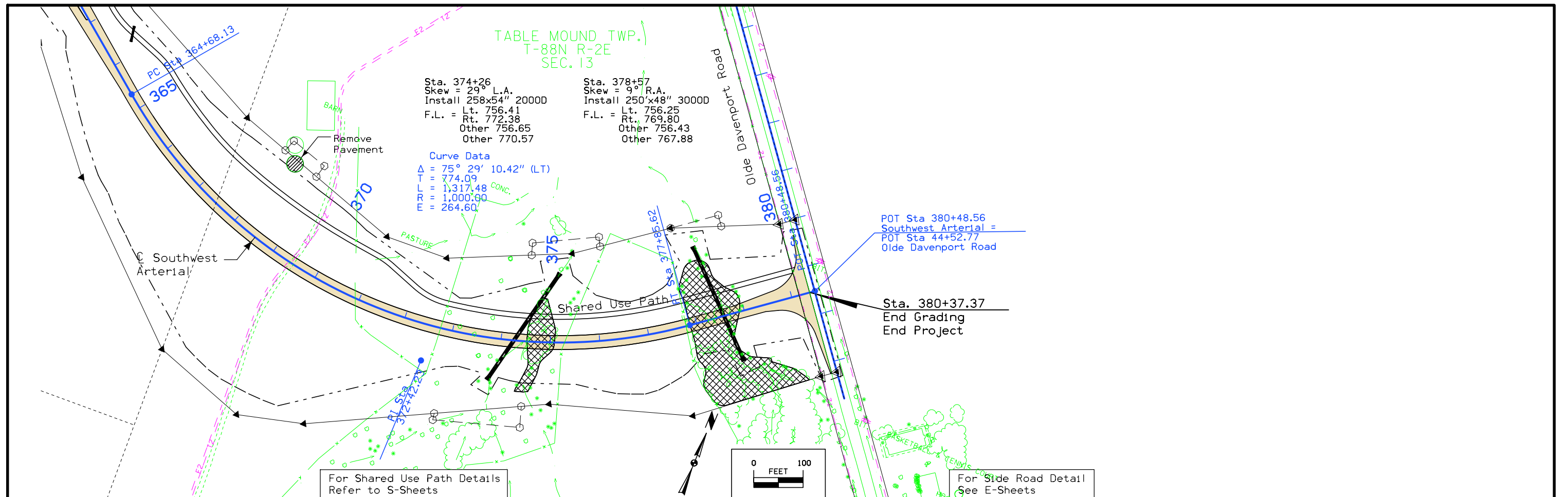


TABLE MOUND TWP.
T-88N R-2E

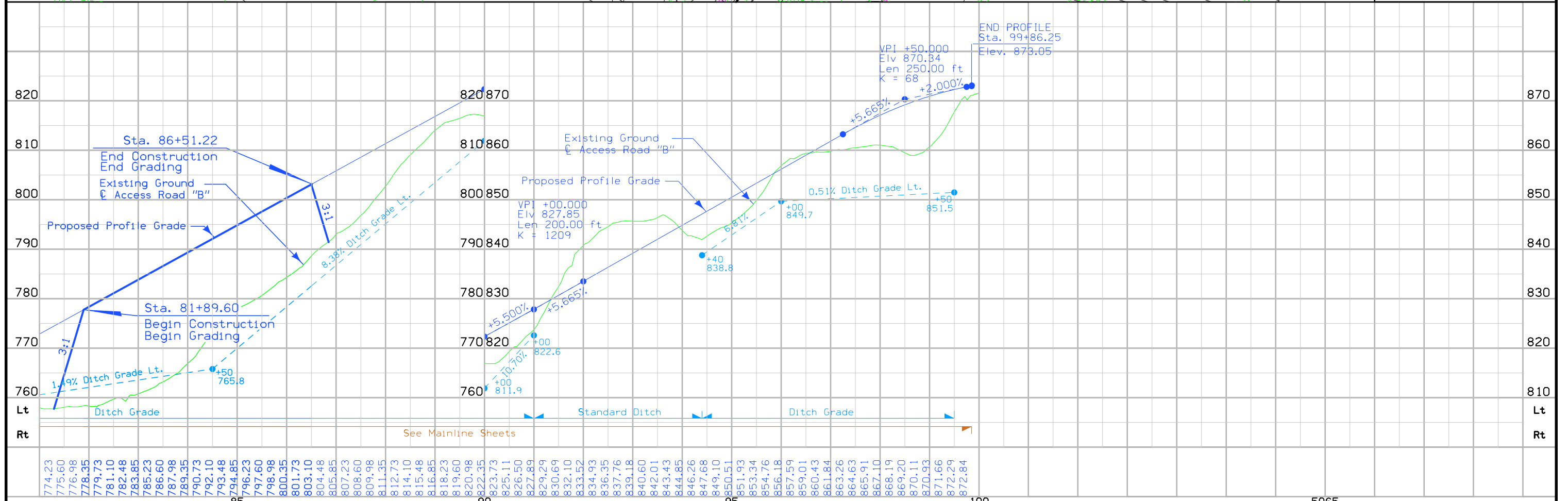
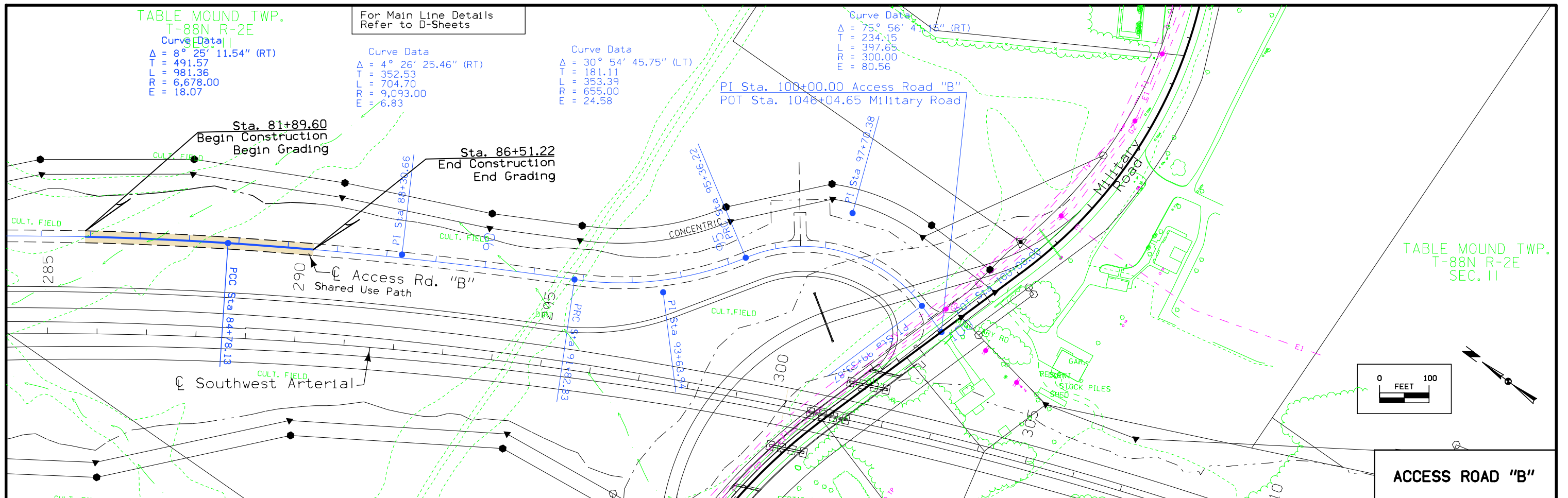
Curve Data
 $\Delta = 8^\circ 25' 11.54''$ (RT)
 T = 491.57
 L = 981.36
 R = 6,678.00
 E = 18.07

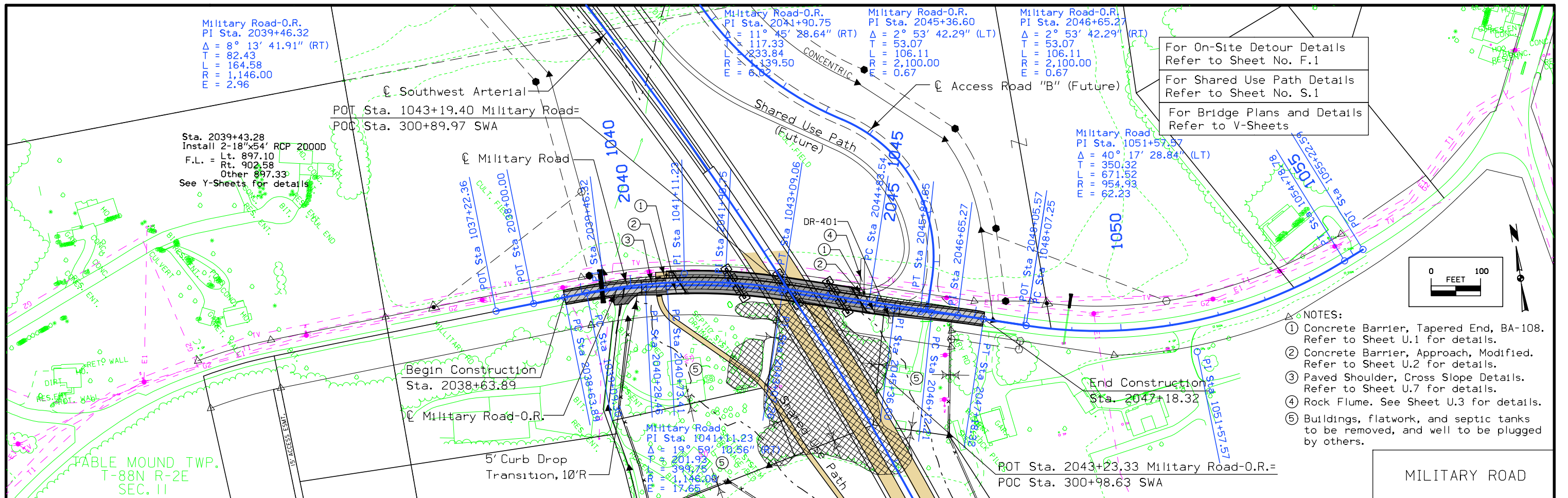
For Main Line Details
Refer to D-Sheets

Curve Data
 $\Delta = 4^\circ 26' 25.46''$ (RT)
 T = 352.53
 L = 704.70
 R = 9,093.00
 E = 6.83

Curve Data
 $\Delta = 30^\circ 54' 45.75''$ (LT)
 T = 181.11
 L = 353.39
 R = 655.00
 E = 24.58

Curve Data
 $\Delta = 75^\circ 56' 41.15''$ (RT)
 T = 234.15
 L = 397.65
 R = 300.00
 E = 80.56



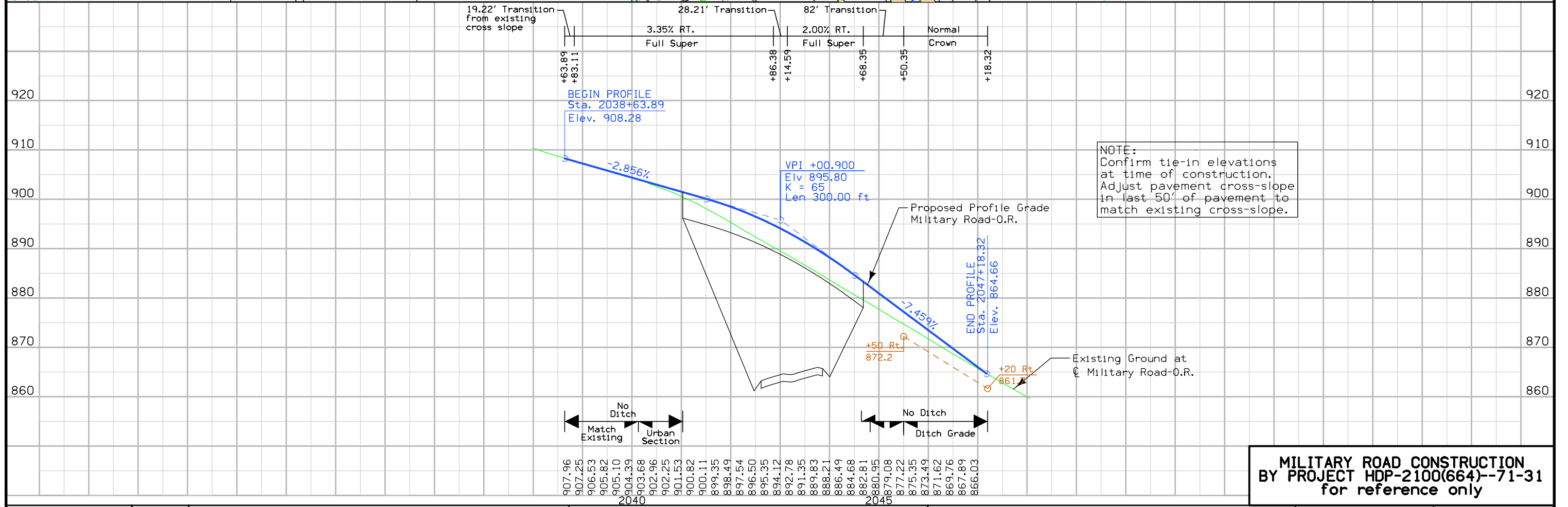


For On-Site Detour Details
Refer to Sheet No. F.1

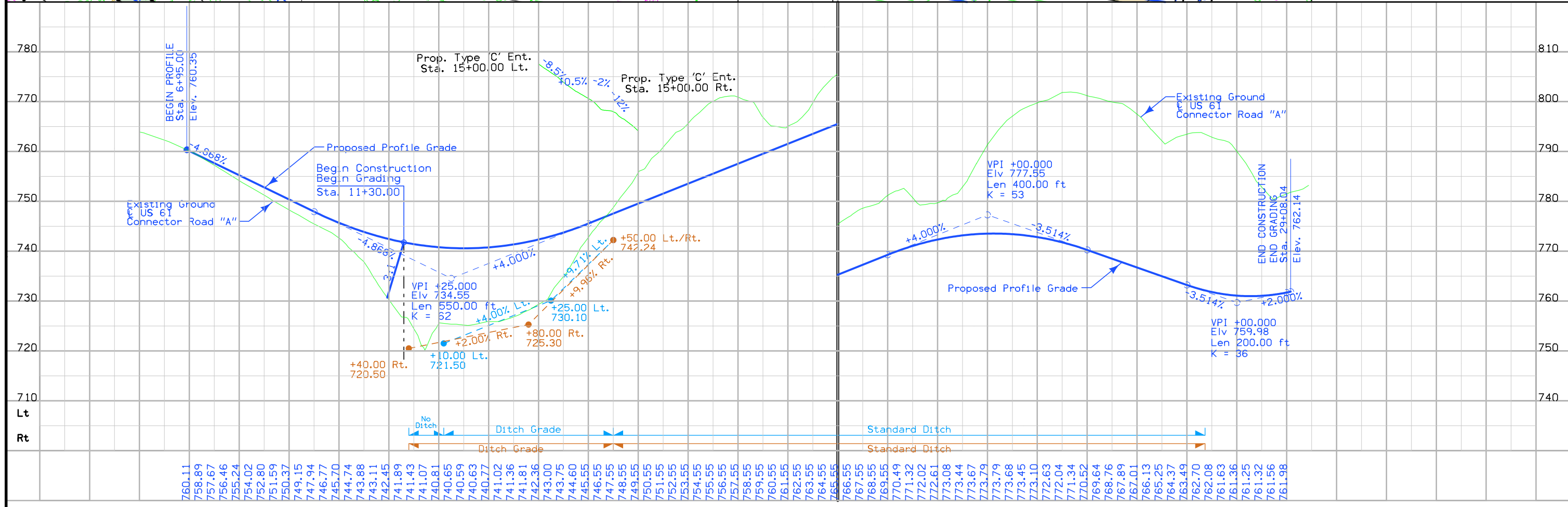
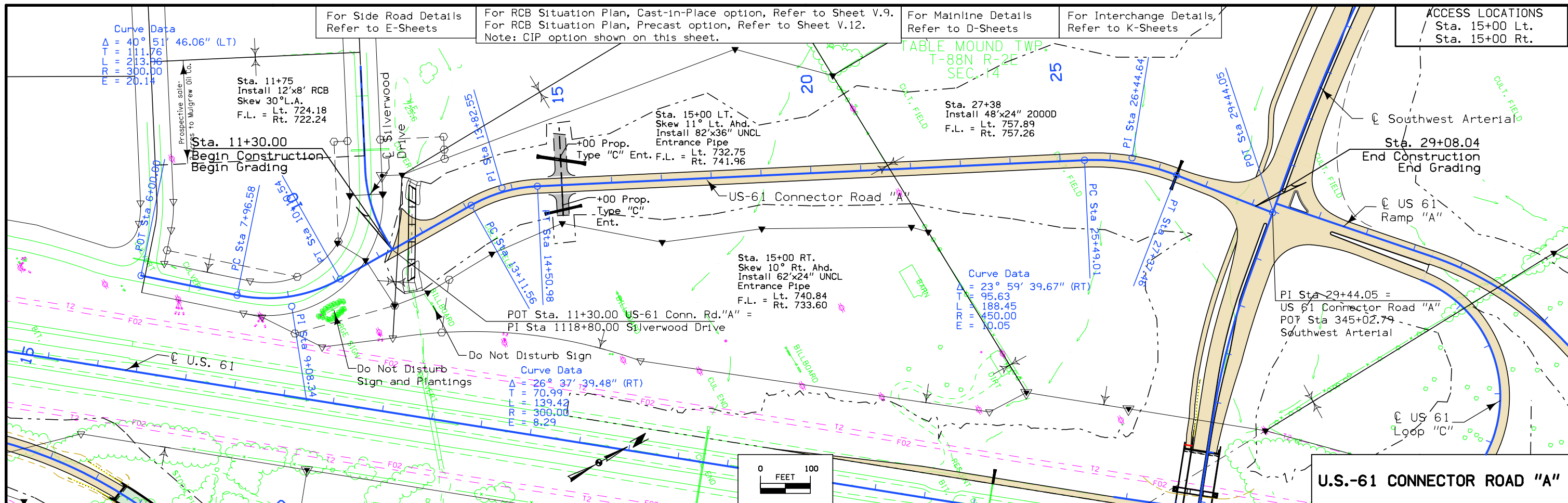
For Shared Use Path Details
Refer to Sheet No. S.1

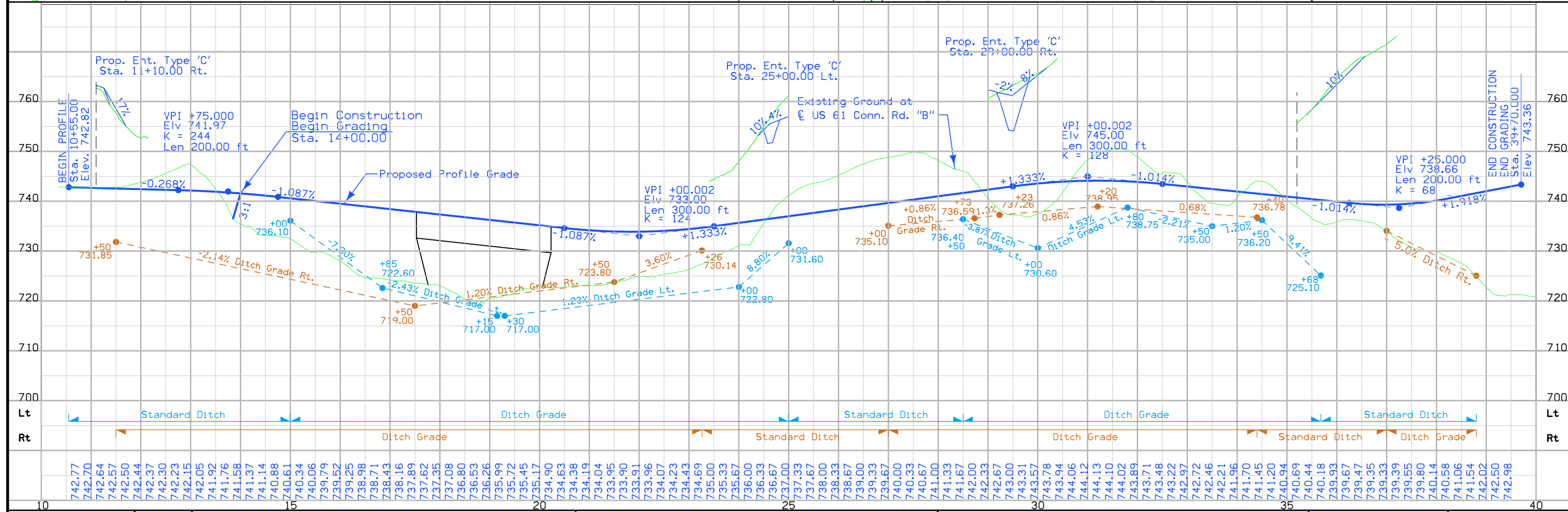
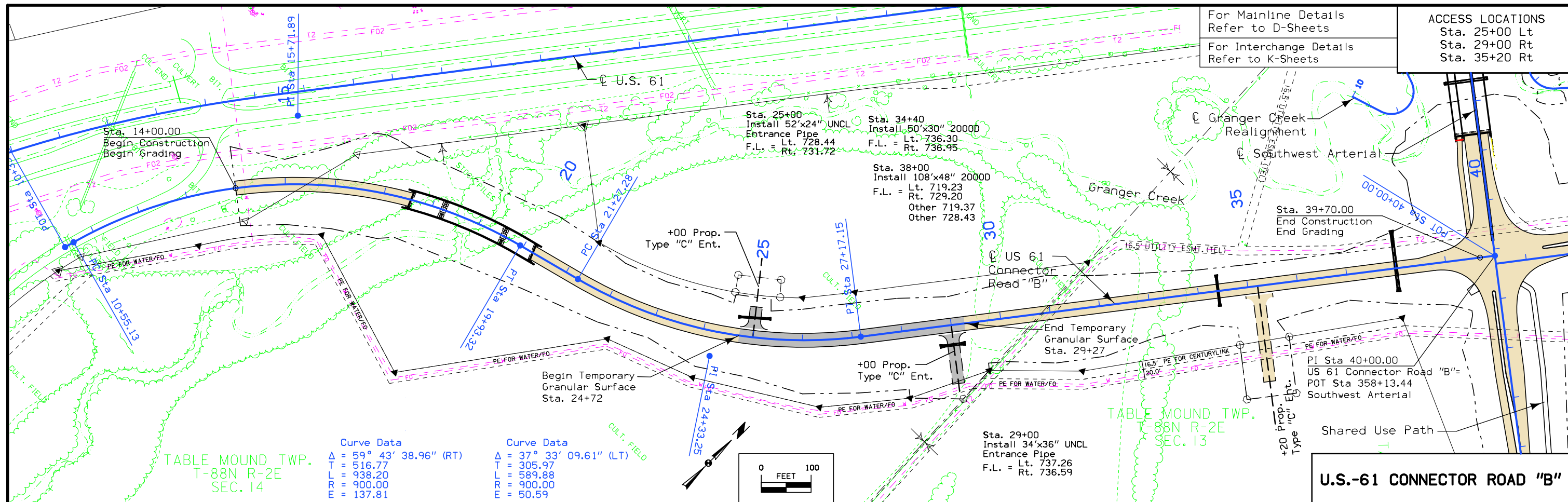
For Bridge Plans and Details
Refer to V-Sheets

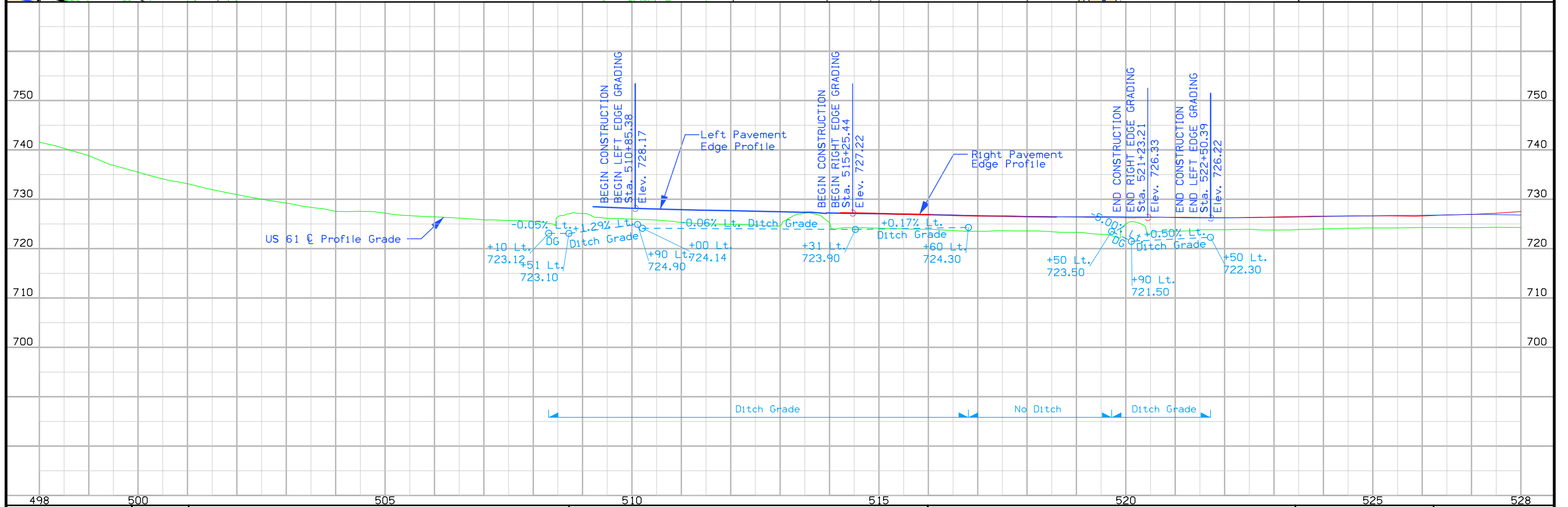
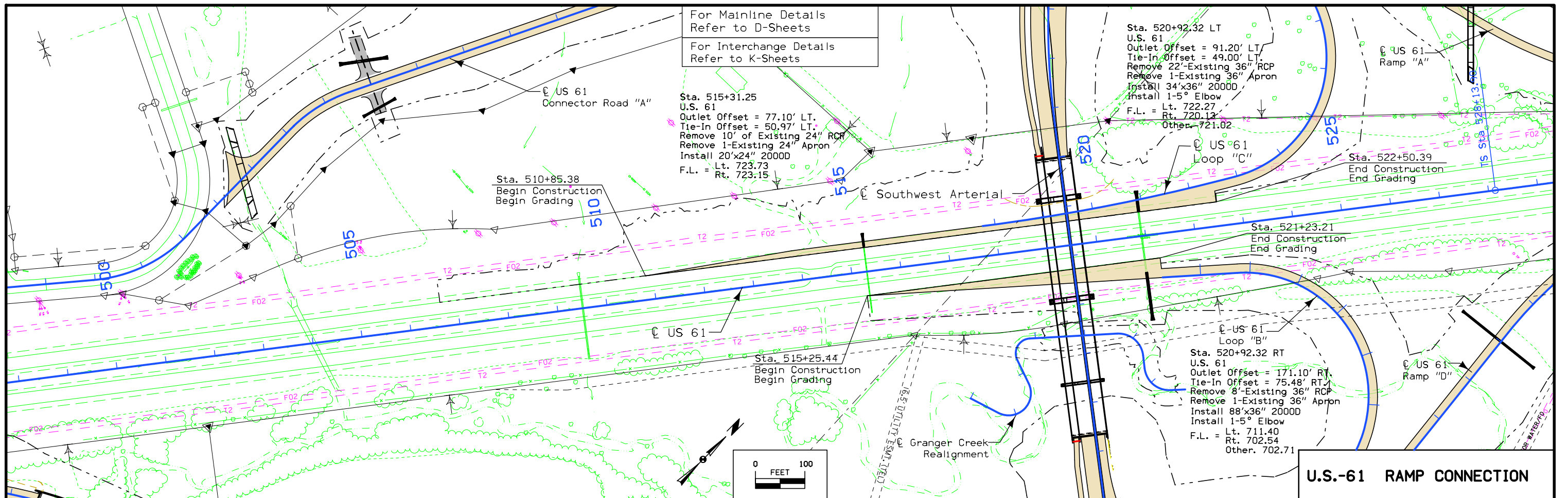
- NOTES:
- ① Concrete Barrier, Tapered End, BA-108. Refer to Sheet U.1 for details.
 - ② Concrete Barrier, Approach, Modified. Refer to Sheet U.2 for details.
 - ③ Paved Shoulder, Cross Slope Details. Refer to Sheet U.7 for details.
 - ④ Rock Flume. See Sheet U.3 for details.
 - ⑤ Buildings, flatwork, and septic tanks to be removed, and well to be plugged by others.

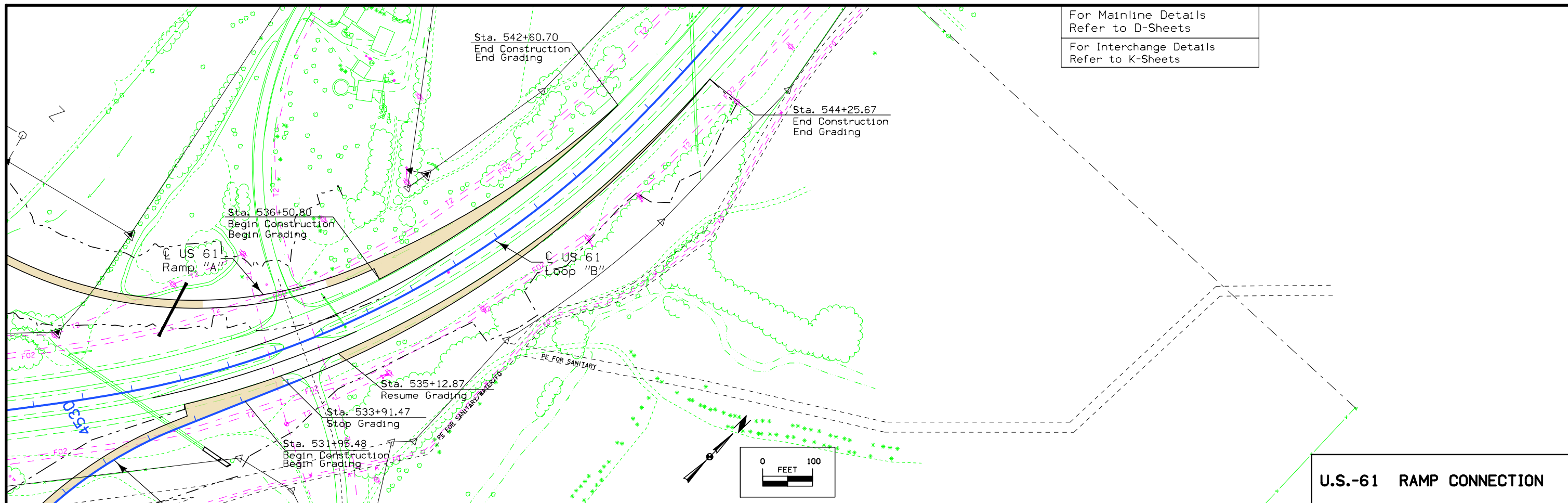


**MILITARY ROAD CONSTRUCTION
BY PROJECT HDP-2100(664)--71-31
for reference only**



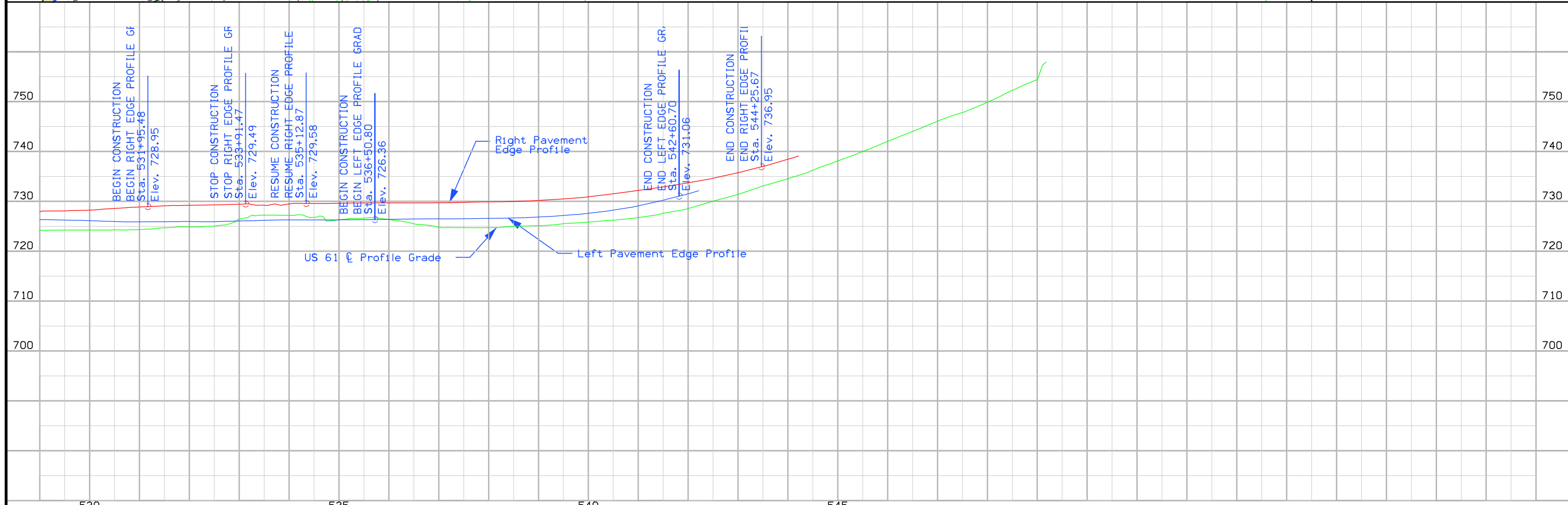


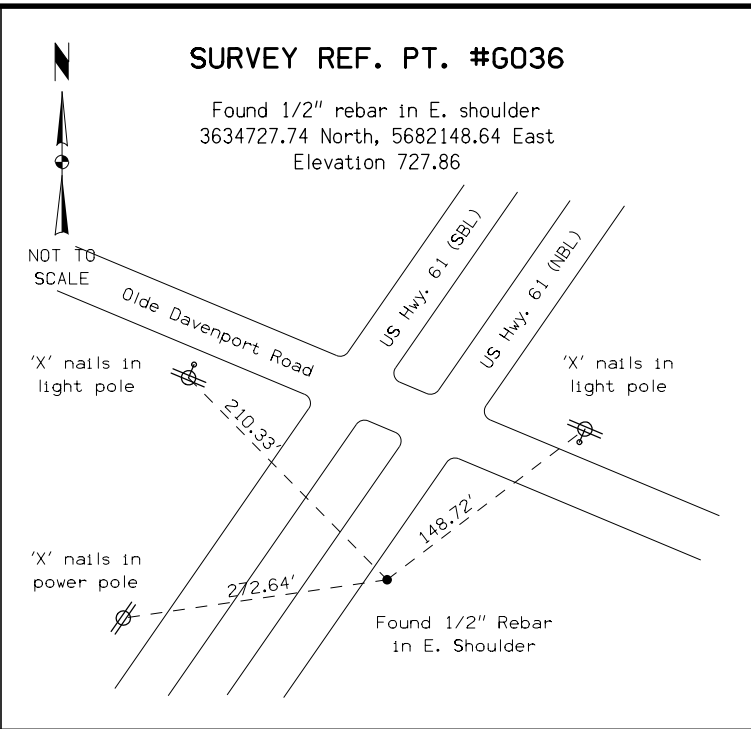
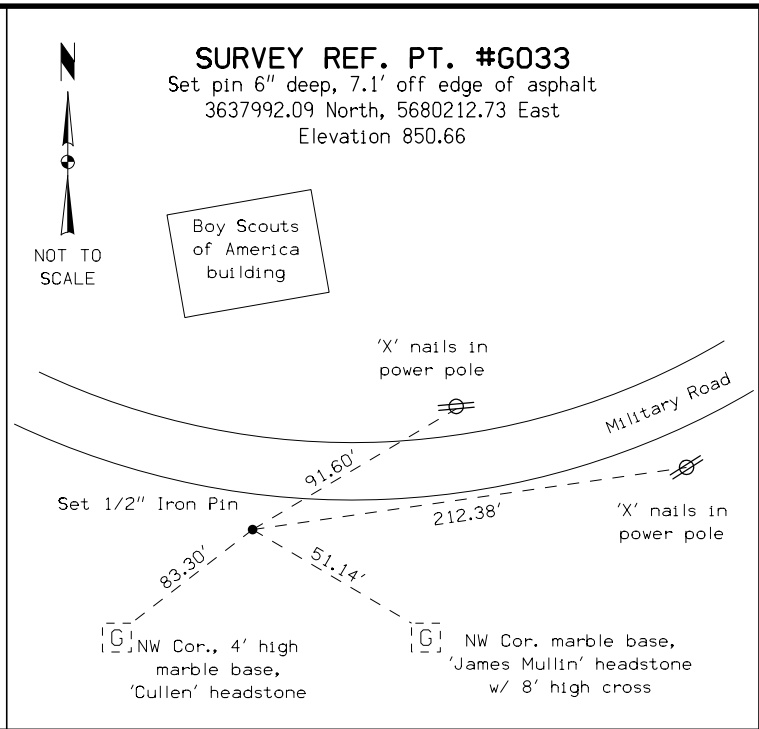
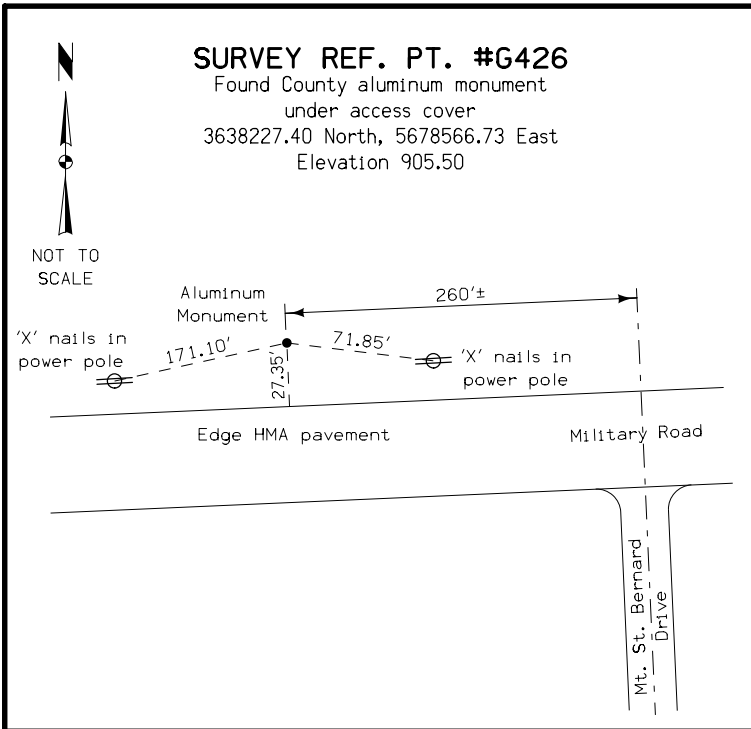




For Mainline Details
Refer to D-Sheets
For Interchange Details
Refer to K-Sheets

U.S.-61 RAMP CONNECTION





DETAILS OF REFERENCE INFORMATION

All References are Plumb Distances unless otherwise noted.

ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
ML032	Southwest Arterial	Centerline																	
21000		55+00.09	3,648,592.07	5,657,653.83															
21001							61+47.98	3,648,714.17	5,658,290.11	66+09.11	3,648,801.07	5,658,742.98	70+28.48	3,648,562.34	5,659,137.50				
21002							95+17.82	3,647,273.61	5,661,267.28	112+10.59	3,646,397.26	5,662,715.55	128+81.18	3,645,955.73	5,664,349.73				
21003							141+99.25	3,645,611.94	5,665,622.18	149+85.07	3,645,406.97	5,666,380.80	157+68.64	3,645,104.83	5,667,106.20				
21004							168+62.03	3,644,684.42	5,668,115.54	175+69.35	3,644,412.46	5,668,768.48	182+76.21	3,644,100.89	5,669,403.47				
21005							192+23.66	3,643,683.55	5,670,254.04	197+91.97	3,643,433.21	5,670,764.25	203+58.39	3,643,257.50	5,671,304.73				
21006							238+66.28	3,642,173.01	5,674,640.77	281+52.28	3,640,847.95	5,678,716.81	316+53.91	3,636,663.51	5,679,644.35				
21007							324+04.45	3,635,930.76	5,679,806.77	334+23.45	3,634,935.91	5,680,027.29	344+00.00	3,634,167.82	5,680,696.92				
21008							346+41.41	3,633,985.86	5,680,855.56	347+86.25	3,633,876.68	5,680,950.75	349+30.20	3,633,787.73	5,681,065.06				
21009		351+01.49	3,633,682.54	5,681,200.25															
ML032-2	Southwest Arterial	Centerline																	
21010		350+00.00	3,633,743.95	5,681,121.33															
21011							364+68.13	3,632,842.37	5,682,280.02	372+42.23	3,632,367.00	5,682,890.96	377+85.62	3,632,839.31	5,683,504.26				
21012		380+48.56	3,632,999.74	5,683,712.59															
61CONRDA	U.S. 61 Connector Road "A"																		
22411		6+00.00	3,632,044.25	5,679,776.44															
22412							7+96.58	3,632,193.81	5,679,904.02	9+08.34	3,632,278.83	5,679,976.55	10+10.54	3,632,390.58	5,679,975.78				
22413							13+11.56	3,632,691.60	5,679,973.70	13+82.55	3,632,762.59	5,679,973.21	14+50.98	3,632,826.27	5,680,004.59				
22415							25+49.01	3,633,811.22	5,680,489.92	26+44.64	3,633,897.00	5,680,532.19	27+37.46	3,633,958.18	5,680,605.69				
22416		29+44.05	3,634,090.35	5,680,764.47															
61CONRDB	U.S. 61 Connector Road "B"																		
22501		10+35.32	3,631,240.99	5,679,708.97															
22502							10+55.12	3,631,260.04	5,679,714.40	15+71.89	3,631,756.97	5,679,856.17	19+93.32	3,631,885.05	5,680,356.82				
22503							21+27.27	3,631,918.25	5,680,486.59	24+33.24	3,631,994.08	5,680,783.01	27+17.15	3,632,234.87	5,680,971.80				
22504		40+00.00	3,633,244.42	5,681,763.32															
US61	U.S. Highway 61																		
20066		497+27.60	3,631,885.28	5,679,896.01															
20062					528+13.90	3,634,316.98	5,681,796.57	531+63.90	3,634,599.09	5,682,003.50	536+94.76	3,635,011.01	5,682,339.01	541+64.50	3,635,541.19	5,682,305.10	545+14.50	3,635,891.03	
20063		581+95.62	3,639,568.62	5,682,139.41															
61RAMP-A	U.S.61 Ramp "A"																		
20100		1519+08.66	3,634,105.07	5,680,751.64															
20101							1522+38.78	3,634,327.10	5,680,995.93	1524+01.64	3,634,436.64	5,681,116.45	1525+58.12	3,634,477.54	5,681,274.09				
20102							1528+46.71	3,634,550.02	5,681,553.43	1532+51.17	3,634,651.59	5,681,944.93	1536+00.00	3,635,021.74	5,682,107.92				
20103							1536+00.00	3,635,021.74	5,682,107.92	1536+24.40	3,635,044.07	5,682,117.76	1536+48.79	3,635,066.65	5,682,126.99				
61LOOP-B	U.S.61 Loop "B"																		
20201		2521+23.00	3,633,718.26	5,681,441.03															
20202							2522+75.00	3,633,831.52	5,681,542.40	2567+14.01	3,637,139.25	5,684,502.76	2530+32.27	3,633,520.04	5,681,932.52				
61LOOP-C	U.S.61 Loop "C"																		
20301		3517+00.00	3,633,477.33	5,681,062.63															
20302							3517+75.00	3,633,536.41	5,681,108.82	3520+35.36	3,633,741.52	5,681,269.20	3522+95.00	3,633,965.69	5,681,401.63				
20303							3522+95.00	3,633,965.69	5,681,401.63	3537+38.39	3,635,208.42	5,682,135.81	3529+94.64	3,634,285.00	5,681,026.45				
61RAMP-D	U.S.61 Ramp "D"																		
20401		4517+38.72	3,633,234.59	5,681,775.95															
20402							4520+66.41	3,633,493.22	5,681,977.19	4522+19.21	3,633,613.81	5,682,071.02	4523+56.98	3,633,765.80	5,682,055.25				
20403							4527+23.25	3,634,130.11	5,682,017.45	4529+44.07	3,634,349.75	5,681,994.66	4531+55.00	3,634,551.94	5,682,083.42				
20404		4534+25.00	3,634,799.17	5,682,191.95															
DAVENPORT	Olde Davenport Road																		
11001		11+93.88	3,635,435.95	5,681,647.24															
11002							12+67.41	3,635,363.89	5,681,661.88	15+83.45	3,635,054.17	5,681,724.82	18+54.54	3,634,915.87	5,682,009.01				
11003							21+53.03	3,634,785.26	5,682,277.41	22+91.88	3,634,724.50	5,682,402.26	24+25.51	3,634,613.46	5,682,485.62				
11004		36+06.11	3,633,669.34	5,683,194.46															
11005		46+78.62	3,632,820.91	5,683,850.53															
ACCRD-B	Access Road B																		
ARB101		57+00.00	3,641,405.40	5,676,977.34															
ARB102							58+47.66	3,641,258.41	5,676,963.19	59+28.35	3,641,178.09	5,676,955.46	59+95.73	3,641,127.37	5,677,018.22				
ARB103							64+02.24	3,640,871.86	5,677,334.40	69+20.96	3,640,545.83	5,677,737.85	74+37.11	3,640,155.38	5,678,079.35				
ARB105							74+96.76	3,640,110.48	5,678,118.63	79+88.33	3,639,740.48	5,678,442.26	84+78.13	3,639,327.08	5,678,708.22				
ARB106							84+78.13	3,639,327.08	5,678,708.22	88+30.66	3,639,030.60	5,678,898.96	91+82.83	3,638,720.25	5,679,066.17				
ARB107							91+82.83	3,638,720.25	5,679,066.17	93+63.94	3,638,560.81	5,679,152.07	95+36.22	3,638,468.15	5,679,307.68				
ARB108							95+36.22	3,638,468.15	5,679,307.68	97+70.38	3,638,348.35	5,679,508.87	99+33.87	3,638,124.09	5,679,441.51				
ARB109		100+00.00	3,638,060.76	5,679,422.49															

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

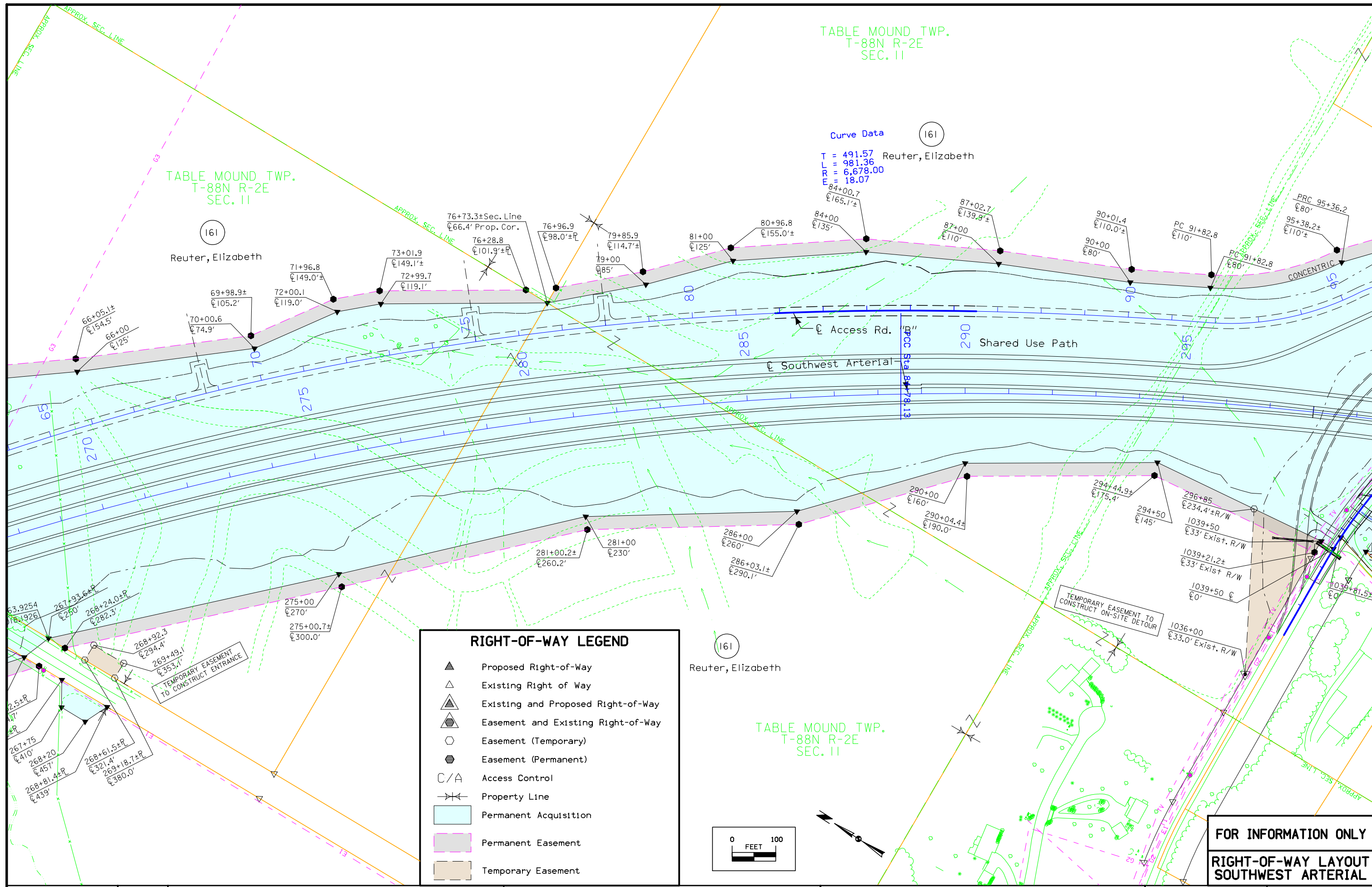
Name	Location	Δ _{scs}	Horizontal Alignment Data												Remarks				
			Spiral Data						Curve Data										
			θ _s	L _s	T _s	Es	X _c	Y _c	L.T.	S.T.	Δ _c	T	L	R		E			
ML032 21001	Southwest Arterial Centerline													42° 02' 26.77" RT	461.13'	880.50'	1,200.00'	85.55'	
21002														16° 03' 31.95" LT	1,692.78'	3,363.36'	12,000.00'	118.81'	
21003														7° 29' 35.83" RT	785.82'	1,569.39'	12,000.00'	25.70'	
21004														3° 31' 22.38" RT	707.31'	1,414.18'	23,000.00'	10.87'	
21005														8° 07' 36.90" LT	568.32'	1,134.73'	8,000.00'	20.16'	
21006														59° 29' 35.10" RT	4,286.00'	7,787.63'	7,500.00'	1,138.28'	
21007														28° 35' 02.91" LT	1,019.00'	1,995.55'	4,000.00'	127.75'	
21008														11° 01' 51.80" LT	144.84'	288.79'	1,500.00'	6.98'	
ML032-2 21011	Southwest Arterial Centerline													75° 29' 10.42" LT	774.09'	1,317.48'	1,000.00'	264.60'	
61CONRDA 22412	U.S. 61 Connector Road "A"													40° 51' 46.06" LT	111.76'	213.96'	300.00'	20.14'	
22413														26° 37' 39.48" RT	70.99'	139.42'	300.00'	8.29'	
22415														23° 59' 39.67" RT	95.63'	188.45'	450.00'	10.05'	
61CONRDB 22502	U.S. 61 Connector Road "B"													59° 43' 38.96" RT	516.77'	938.20'	900.00'	137.81'	
22503														37° 33' 09.61" LT	305.97'	589.88'	900.00'	50.59'	
US61 20062	U.S. Highway 61		40° 31' 05.00" LT	5° 15' 00.00"	-350.00'	TS	116.76'	349.71'	10.68'	233.44'	116.76'			30° 01' 05.00" LT	512.07'	1,000.60'	1,909.86'	67.46'	
61RAMP-A 20101	U.S.61 Ramp "A"													27° 43' 19.93" RT	162.86'	319.34'	660.00'	19.80'	
20102														51° 41' 19.93" LT	404.45'	753.29'	835.00'	92.80'	
20103														1° 31' 44.84" LT	24.40'	48.79'	1,828.13'	0.16'	
61LOOP-B 20202	U.S.61 Loop "B"													173° 33' 11.30" RT	4,439.01'	757.27'	250.00'	4,196.04'	
61LOOP-C 20302	U.S.61 Loop "C"													7° 26' 54.17" LT	260.36'	520.00'	4,000.00'	8.46'	
20303														160° 20' 50.60" LT	1,443.39'	699.65'	250.00'	1,214.88'	
61RAMP-D 20402	U.S.61 Ramp "D"													43° 48' 38.65" LT	152.80'	290.56'	380.00'	29.57'	
20403														29° 37' 32.60" RT	220.82'	431.75'	835.00'	28.70'	
DAVENPORT 11002	Olde Davenport Road													52° 33' 44.87" LT	316.05'	587.13'	640.00'	73.78'	
11003														27° 09' 04.17" RT	138.85'	272.48'	575.00'	16.53'	
ACCRD-B ARB102	Access Road B													56° 33' 22.43" LT	80.69'	148.06'	150.00'	20.33'	
ARB103														9° 52' 56.15" RT	518.72'	1,034.87'	6,000.00'	22.38'	
ARB105														8° 25' 11.54" RT	491.57'	981.36'	6,678.00'	18.07'	
ARB106														4° 26' 25.46" RT	352.53'	704.70'	9,093.00'	6.83'	
ARB107														30° 54' 45.75" LT	181.11'	353.39'	655.00'	24.58'	
ARB108														75° 56' 41.15" RT	234.15'	397.65'	300.00'	80.56'	

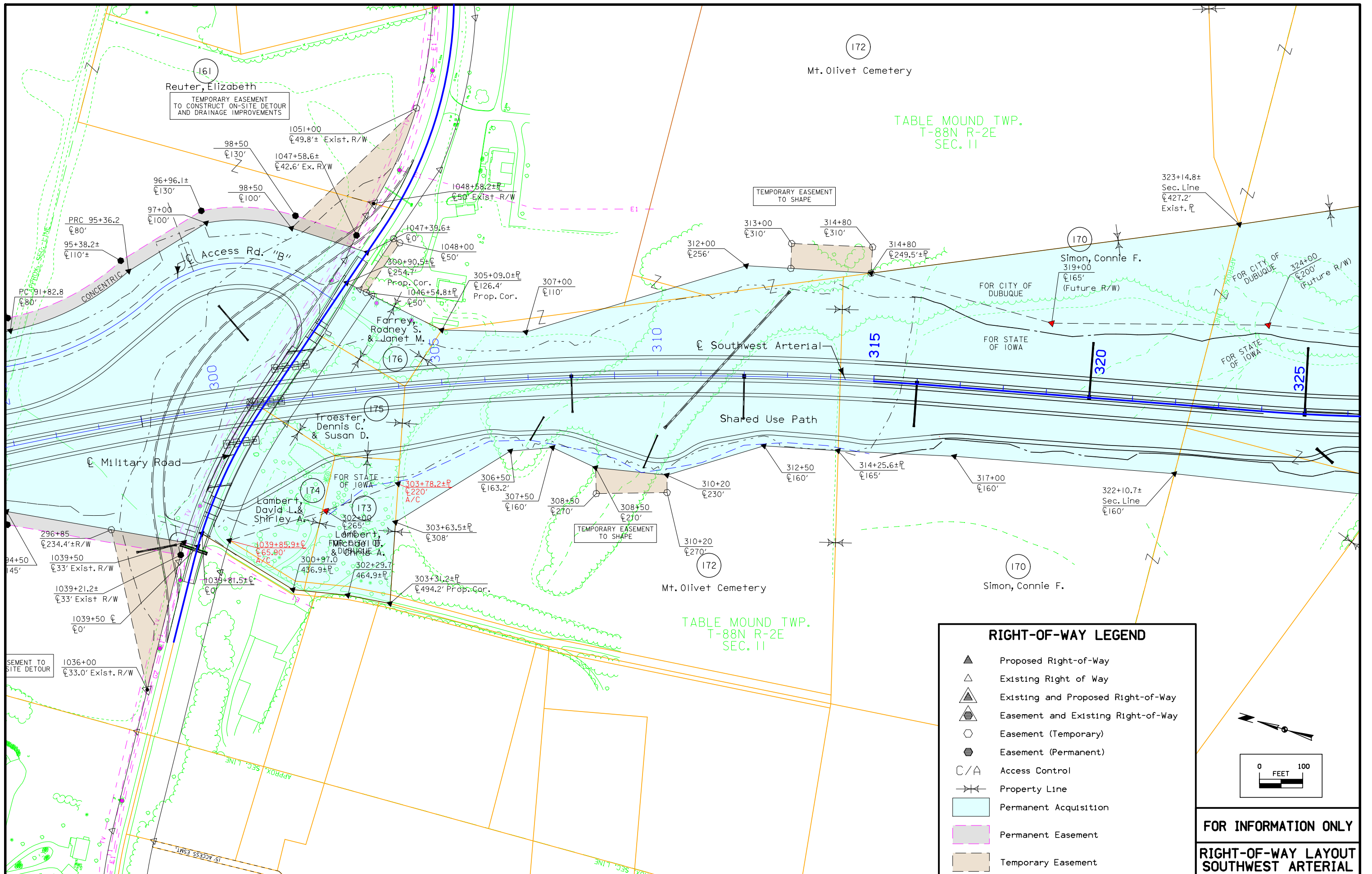
SUPERELEVATION DATA

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														
ML032	21006	7500	2.45	102	84	PV-302	237+10.88	237+94.88	238+78.88	238+96.88				238+66.28		237+94.88			Design Speed 70mph
							318+09.31	317+25.31	316+41.31	316+23.31				316+53.91		317+25.31			
ML032	21007	4000	2.70	97	72	PV-302	322+64.55	323+36.55	324+08.55	324+33.55				324+04.45		323+36.55			Design Speed 50mph
							339+89.90	339+17.90	338+45.90	338+20.90				338+50.00		339+17.90			
ML032	21009	1000	3.80	84	44	PV-302	364+75.20	365+19.20	365+63.20	366+03.20		365+78.00				365+19.20			Design Speed 34mph
							378+85.42	378+41.42	377+97.42	377+57.42		377+82.62				378+41.42			
61RAMP-A	20101	660	-5.80	140	48	PV-303	1520+92.78	1521+40.78	1522+38.78	1522+80.78									Design Speed 40mph
							1527+04.12	1526+56.12	1525+58.12	1525+16.12									
61RAMP-A	20102	835	6.00	168	56	PV-303	1527+85.11		1528+46.71	1528+97.11						1527+29.11			Design Speed 50mph
							1536+61.60		1536+00.00	1535+49.60						1537+17.60			
61RAMP-A	20103	1828	6.00	75	19	PV-303	1535+66.50		1536+00.00	1536+22.50						1535+47.50			Design Speed 100mph
							1536+82.29		1536+48.79	1536+26.29						1537+01.29			
61RAMP-D	20402	380	6.00	135	45	PV-303	4519+26.91	4519+71.91	4520+66.41	4521+06.91						4519+71.91			Design Speed 35mph
							4524+96.48	4524+51.48	4523+56.98	4523+16.48						4524+51.48			
61RAMP-D	20403	835	6.00	168	56	PV-303	4526+61.65		4527+23.25	4527+73.65						4526+05.65			Design Speed 30mph
							4532+16.60		4531+55.00	4531+04.60						4532+72.60			
61LOOP-B	20202	250	-6.00	137	46	PV-303	2522+25.10		2522+75.00	2523+16.10									Design Speed 30mph
							2530+82.17		2530+32.27	2529+91.17									
61LOOP-C	20303	250	6.00	137	46	PV-303	3522+45.10		3522+95.00	3523+36.10						3521+99.10			Design Speed 30mph
							3530+44.54		3529+94.64	3529+53.54						3530+90.54			
61CONRDA	22413	300	4.00	73	36	PV-301	12+24.46	12+60.46	12+96.46	13+33.46		13+11.56				12+60.46			Design Speed 30mph
							15+38.08	15+02.08	14+66.08	14+29.08		14+50.98				15+02.08			
61CONRDA	22415	450	3.50	64	36	PV-301	24+68.21	25+04.21	25+40.21	25+68.21		25+49.01				25+04.21			Design Speed 30mph
							28+18.26	27+82.26	27+46.26	27+18.26		27+37.46				27+82.26			
61CONRDB	22502	900	3.60	75	41	PV-301	9+61.62	10+02.62	10+43.62	10+77.62		10+55.12				10+02.62			Design Speed 40mph
							20+86.82	20+45.82	20+04.82	19+70.82		19+93.32				20+45.82			
61CONRDB	22503	900	3.60	75	41	PV-301	20+33.77	20+74.77	21+15.77	21+49.77		21+27.27				20+74.77			Design Speed 40mph
							28+10.65	27+69.65	27+28.65	26+94.65		27+17.15				27+69.65			

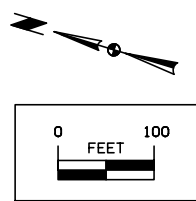
Shared Use Path Curve Data				CIRCULAR CURVE COORDINATE									CIRCULAR CURVE DATA							
NO.	Offset Measured From Roadway:	Roadway Station at Curve PI	Offset From Roadway	No.	P.C.			P.I.			P.T.			No.	△	D	T	L	E	R
					Station	Coordinates		Station	Coordinates		Station	Coordinates								
BIKE7	Southwest Arterial			BIKE7									BIKE7							
BK7001	Southwest Arterial	299+39.37	215.78' RT	BK7001				7298+83.45	3,638,187.43	5,678,891.42										
BIKE-7-1	Southwest Arterial	299+83.24	240.96' RT	BIKE-7-1	7298+98.68	3,638,172.25	5,678,890.04	7299+32.87	3,638,138.21	5,678,886.95	7299+62.29	3,638,114.83	5,678,911.89	BIKE-7-1	52° 03' 32.50" LT	81° 51' 04.0"	34.19'	63.60'	7.90'	70.00'
BIKE-7-2	Southwest Arterial	302+23.37	143.96' RT	BIKE-7-2	7301+46.26	3,637,989.03	5,679,046.13	7301+81.37	3,637,965.03	5,679,071.75	7302+15.56	3,637,932.99	5,679,086.13	BIKE-7-2	22° 41' 19.58" RT	32° 44' 25.6"	35.11'	69.30'	3.49'	175.00'
BIKE-7-3	Southwest Arterial	303+95.40	139.83' RT	BIKE-7-3	7303+31.54	3,637,827.18	5,679,133.62	7303+49.27	3,637,811.00	5,679,140.88	7303+66.99	3,637,795.38	5,679,149.27	BIKE-7-3	4° 03' 45.54" LT	11° 27' 33.0"	17.73'	35.45'	0.31'	500.00'
BIKE-7-4	Southwest Arterial	306+08.66	114.33' RT	BIKE-7-4	7305+39.41	3,637,643.48	5,679,230.83	7305+60.44	3,637,624.95	5,679,240.78	7305+81.04	3,637,604.14	5,679,243.84	BIKE-7-4	19° 52' 45.65" RT	47° 44' 47.3"	21.03'	41.64'	1.83'	120.00'
BIKE-7-5	Southwest Arterial	306+50.09	122.97' RT	BIKE-7-5	7305+82.54	3,637,602.67	5,679,244.05	7306+01.70	3,637,583.71	5,679,246.84	7306+20.74	3,637,565.62	5,679,253.17	BIKE-7-5	10° 56' 44.02" LT	28° 38' 52.4"	19.16'	38.21'	0.92'	200.00'
BIKE-7-6	Southwest Arterial	307+77.49	123.80' RT	BIKE-7-6	7306+90.34	3,637,499.93	5,679,276.17	7307+26.89	3,637,465.44	5,679,288.25	7307+62.63	3,637,428.91	5,679,287.35	BIKE-7-6	20° 42' 36.38" RT	28° 38' 52.4"	36.54'	72.29'	3.31'	200.00'
BIKE-7-7	Southwest Arterial	310+18.13	207.99' RT	BIKE-7-7	7309+19.11	3,637,272.48	5,679,283.50	7309+75.99	3,637,215.61	5,679,282.10	7310+25.35	3,637,178.53	5,679,325.24	BIKE-7-7	50° 43' 32.34" LT	47° 44' 47.3"	56.88'	106.24'	12.80'	120.00'
BIKE-7-8	Southwest Arterial	311+00.74	157.09' RT	BIKE-7-8	7310+40.37	3,637,168.74	5,679,336.63	7310+63.80	3,637,153.46	5,679,354.40	7310+86.65	3,637,132.63	5,679,365.11	BIKE-7-8	22° 05' 37.30" RT	47° 44' 47.3"	23.43'	46.27'	2.27'	120.00'
BIKE-7-9	Southwest Arterial	312+49.88	128.47' RT	BIKE-7-9	7311+89.47	3,637,041.20	5,679,412.15	7312+12.29	3,637,020.90	5,679,422.59	7312+34.86	3,636,998.61	5,679,427.47	BIKE-7-9	14° 51' 41.21" RT	32° 44' 25.6"	22.82'	45.39'	1.48'	175.00'
BIKE-7-10	Southwest Arterial	314+37.73	136.55' RT	BIKE-7-10	7313+72.43	3,636,864.22	5,679,456.92	7313+96.74	3,636,840.48	5,679,462.12	7314+21.00	3,636,816.35	5,679,465.00	BIKE-7-10	5° 33' 53.76" RT	11° 27' 33.0"	24.30'	48.56'	0.59'	500.00'
BIKE-7-11	Southwest Arterial	314+96.13	143.72' RT	BIKE-7-11	7314+30.12	3,636,807.29	5,679,466.08	7314+54.45	3,636,783.14	5,679,468.96	7314+78.46	3,636,760.68	5,679,478.31	BIKE-7-11	15° 49' 37.11" LT	32° 44' 25.6"	24.33'	48.34'	1.68'	175.00'
BK7002	Southwest Arterial	316+61.77	117.20' RT	BK7002				7316+19.16	3,636,630.48	5,679,531.62										
BIKE-7-12	Southwest Arterial	316+93.46	112.05' RT	BIKE-7-12	7316+26.20	3,636,623.94	5,679,534.23	7316+51.27	3,636,600.65	5,679,543.51	7316+76.22	3,636,576.15	5,679,548.80	BIKE-7-12	9° 33' 11.27" RT	19° 05' 54.9"	25.07'	50.02'	1.05'	300.00'
BIKE-7-13	Southwest Arterial	318+12.33	112.71' RT	BIKE-7-13	7316+86.80	3,636,565.81	5,679,551.03	7317+70.03	3,636,484.45	5,679,568.59	7318+53.26	3,636,403.27	5,679,586.94	BIKE-7-13	0° 33' 25.48" LT	00° 20' 04.8"	83.23'	166.46'	0.20'	17,120.09'
BK7003	Southwest Arterial	320+50.10	111.72' RT	BK7003				7320+07.79	3,636,252.54	5,679,621.01										
BIKE-7-14	Southwest Arterial	321+75.03	107.08' RT	BIKE-7-14	7320+67.91	3,636,194.29	5,679,635.90	7321+32.82	3,636,131.57	5,679,652.58	7321+97.69	3,636,068.10	5,679,666.17	BIKE-7-14	2° 47' 52.52" RT	02° 09' 21.1"	64.90'	129.78'	0.79'	2,657.69'
BIKE-7-15	Southwest Arterial	322+64.86	107.90' RT	BIKE-7-15	7321+97.69	3,636,068.10	5,679,666.17	7322+22.62	3,636,043.69	5,679,671.22	7322+47.55	3,636,019.27	5,679,676.24	BIKE-7-15	0° 01' 37.64" RT	00° 03' 15.9"	24.93'	49.86'	0.00'	105,317.11'
BIKE-7-16	Southwest Arterial	323+94.69	111.59' RT	BIKE-7-16	7322+47.55	3,636,019.27	5,679,676.24	7323+52.51	3,635,916.14	5,679,695.71	7324+57.28	3,635,815.53	5,679,725.60	BIKE-7-16	5° 51' 32.68" LT	02° 47' 37.3"	104.95'	209.73'	2.68'	2,050.90'
BIKE-7-17	Southwest Arterial	325+19.27	104.25' RT	BIKE-7-17	7324+59.56	3,635,813.34	5,679,726.25	7324+80.20	3,635,793.55	5,679,732.13	7325+00.27	3,635,777.71	5,679,745.36	BIKE-7-17	23° 19' 26.79" LT	57° 17' 44.8"	20.64'	40.71'	2.11'	100.00'
BIKE-7-18	Southwest Arterial	325+75.42	77.08' RT	BIKE-7-18	7325+21.38	3,635,761.51	5,679,758.90	7325+43.16	3,635,744.80	5,679,772.86	7325+64.27	3,635,723.79	5,679,778.60	BIKE-7-18	24° 34' 20.37" RT	57° 17' 44.8"	21.78'	42.89'	2.34'	100.00'
BIKE-7-19	Southwest Arterial	332+32.68	128.54' RT	BIKE-7-19	7325+67.53	3,635,720.64	5,679,779.47	7332+17.83	3,635,093.39	5,679,951.06	7338+57.26	3,634,550.64	5,680,309.26	BIKE-7-19	18° 07' 29.72" LT	01° 24' 19.2"	650.30'	1,289.73'	51.54'	4,077.04'
BIKE-7-20	Southwest Arterial	339+40.36	76.22' RT	BIKE-7-20	7338+57.26	3,634,550.64	5,680,309.26	7339+33.70	3,634,487.69	5,680,352.61	7340+10.11	3,634,426.41	5,680,398.28	BIKE-7-20	2° 08' 57.90" LT	01° 24' 22.5"	76.43'	152.85'	0.72'	4,074.34'
BIKE-7-21	Southwest Arterial	341+50.69	76.33' RT	BIKE-7-21	7340+10.11	3,634,426.41	5,680,398.28	7341+48.01	3,634,314.25	5,680,478.50	7342+85.80	3,634,207.76	5,680,566.12	BIKE-7-21	3° 52' 37.30" LT	01° 24' 22.7"	137.90'	275.69'	2.33'	4,074.19'
BIKE-7-22	Southwest Arterial	343+10.08	74.07' RT	BIKE-7-22	7342+92.87	3,634,202.30	5,680,570.62	7343+10.29	3,634,188.85	5,680,581.68	7343+27.36	3,634,179.94	5,680,596.65	BIKE-7-22	19° 45' 44.18" LT	57° 17' 44.8"	17.42'	34.49'	1.51'	100.00'
BIKE-7-23	Southwest Arterial	343+76.13	51.05' RT	BIKE-7-23	7343+64.85	3,634,160.75	5,680,628.86	7343+80.87	3,634,152.55	5,680,642.61	7343+96.61	3,634,140.47	5,680,653.12	BIKE-7-23	18° 11' 41.39" RT	57° 17' 44.8"	16.01'	31.76'	1.27'	100.00'
BIKE-7-24	Southwest Arterial	344+14.13	51.02' RT	BIKE-7-24	7344+00.18	3,634,137.78	5,680,655.46	7344+18.90	3,634,123.65	5,680,667.75	7344+37.63	3,634,109.63	5,680,680.17	BIKE-7-24	0° 31' 47.87" LT	01° 24' 53.4"	18.73'	37.46'	0.04'	4,049.63'
BIKE8N	Southwest Arterial			BIKE8N										BIKE8N						
BIKE8001	Southwest Arterial	358+37.74	00.00' LT	BIKE8001				8358+05.15	3,633,229.50	5,681,782.49										
BIKE8N-1	Southwest Arterial	358+91.57	66.00' LT	BIKE8N-1	8358+80.82	3,633,246.41	5,681,856.25	8358+90.32	3,633,248.53	5,681,865.51	8358+98.55	3,633,242.70	5,681,873.00	BIKE8N-1	50° 48' 00.98" RT	286° 28' 44.0"	9.50'	17.73'	20.00'	2.14'
BIKE8002	Southwest Arterial	360+51.14	66.00' LT	BIKE8002				8360+48.63	3,633,150.54	5,681,991.45										
BIKE8003	Southwest Arterial	362+51.33	53.99' LT	BIKE8003				8362+49.18	3,633,018.12	5,682,142.07										
BIKE8N-2	Southwest Arterial	363+26.59	53.24' LT	BIKE8N-2	8362+95.76	3,632,989.15	5,682,178.55	8363+24.44	3,632,971.31	5,682,201.00	8363+52.61	3,632,961.58	5,682,227.97	BIKE8N-2	18° 36' 44.37" LT	32° 44' 25.6"	28.68'	56.85'	175.00'	2.33'
BIKE8N-3	Southwest Arterial	364+48.14	92.82' LT	BIKE8N-3	8364+25.55	3,632,936.81	5,682,296.58	8364+51.77	3,632,927.91	5,682,321.24	8364+77.60	3,632,912.18	5,682,342.21	BIKE8N-3	17° 02' 24.72" RT	17° 02' 24.7"	26.22'	52.05'	175.00'	1.95'
BIKE8N-4	Southwest Arterial	365+38.75	92.03' LT	BIKE8N-4	8364+77.60	3,632,912.18	5,682,342.21	8365+35.45	3,632,877.45	5,682,388.48	8365+93.15	3,632,848.89	5,682,438.80	BIKE8N-4	7° 18' 27.51" LT	06° 19' 26.8"	57.85'	115.55'	905.99'	1.85'
BIKE8N-5	Southwest Arterial	366+71.08	93.01' LT	BIKE8N-5	8366+07.07	3,632,842.02	5,682,450.91	8366+55.30	3,632,818.21	5,682,492.85	8367+03.29	3,632,801.86	5,682,538.21	BIKE8N-5	9° 45' 25.54" LT	10° 08' 27.0"	48.22'	96.22'	565.00'	2.05'
BIKE8N-6	Southwest Arterial	368+84.01	94.15' LT	BIKE8N-6	8367+03.29	3,632,801.86	5,682,538.21	8368+47.71	3,632,752.88	5,682,674.08	8369+90.91	3,632,735.54	5,682,817.45	BIKE8N-6	12° 55' 29.45" LT	04° 29' 37.6"	144.42'	287.62'	1,275.00'	8.15'
BIKE8N-7	Southwest Arterial	371+18.23	95.83' LT	BIKE8N-7	8370+41.43	3,632,729.47	5,682,867.61	8370+57.98	3,632,727.48	5,682,884.04	8370+74.40	3,632,721.96	5,682,899.65	BIKE8N-7	12° 35' 43.28" RT	38° 11' 49.9"	16.55'	32.97'	150.00'	0.91'
BIKE8N-8	Southwest Arterial	372+35.81	51.27' LT	BIKE8N-8	8371+38.28	3,632,700.65	5,682,959.86	8371+75.45	3,632,688.24	5,682,994.90	8372+11.15	3,632,693.63	5,683,031.68	BIKE8N-8	27° 50' 11.50" LT	38° 11' 49.9"	37.17'	72.88'	150.00'	4.54'
BIKE8N-9	Southwest Arterial	375+30.31	20.24' LT	BIKE8N-9	8372+11.15	3,632,693.63	5,683,031.68	8374+58.59	3,632,729.54	5,683,276.50	8376+95.22	3,632,880.51	5,683,472.54	BIKE8N-9	29° 15' 22.92" LT	06° 02' 37.9"	247.43'	484.07'	948.00'	31.76'
BIKE8004	Southwest Arterial																			



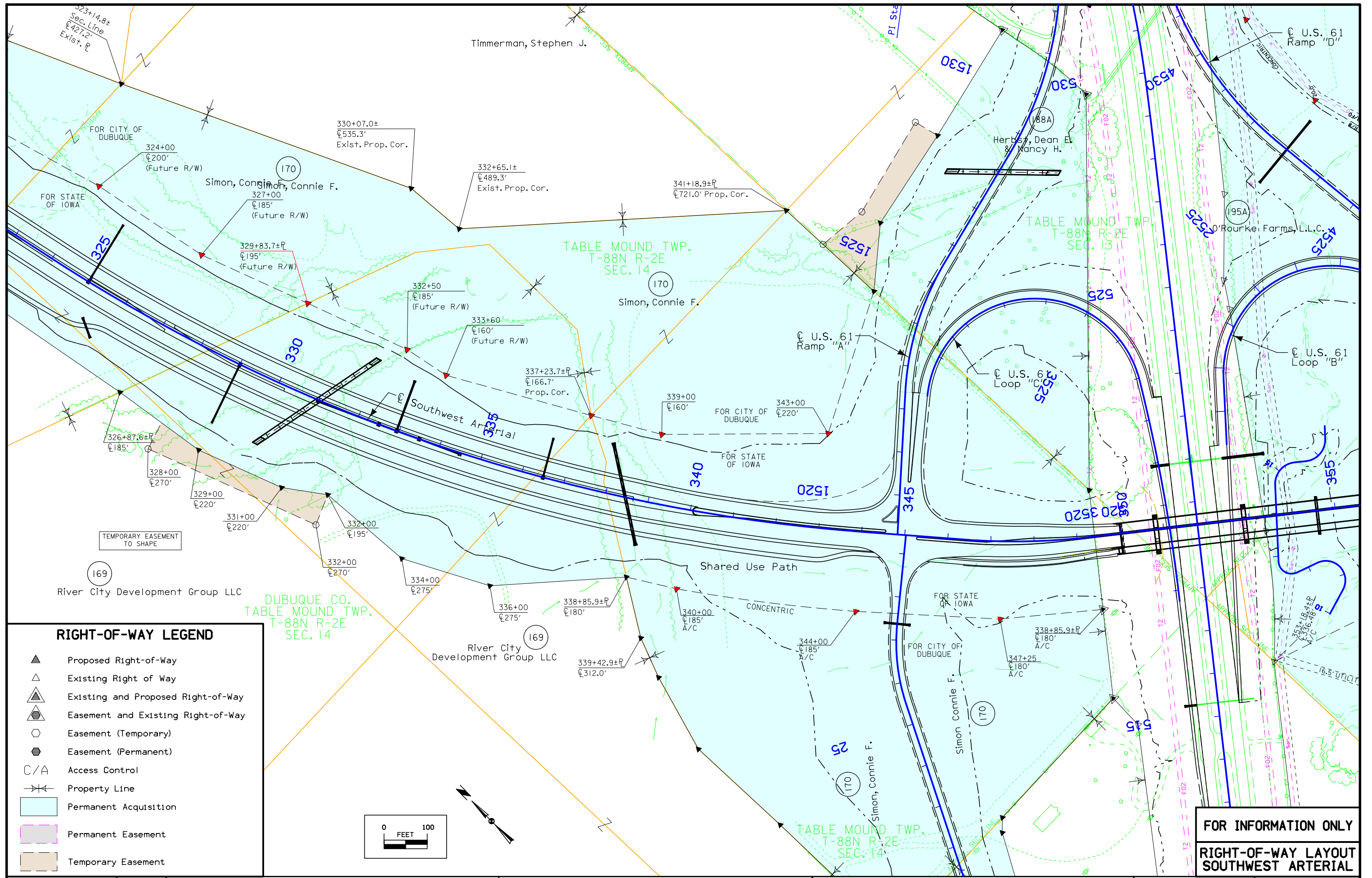


RIGHT-OF-WAY LEGEND

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

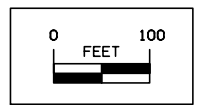


FOR INFORMATION ONLY
RIGHT-OF-WAY LAYOUT
SOUTHWEST ARTERIAL



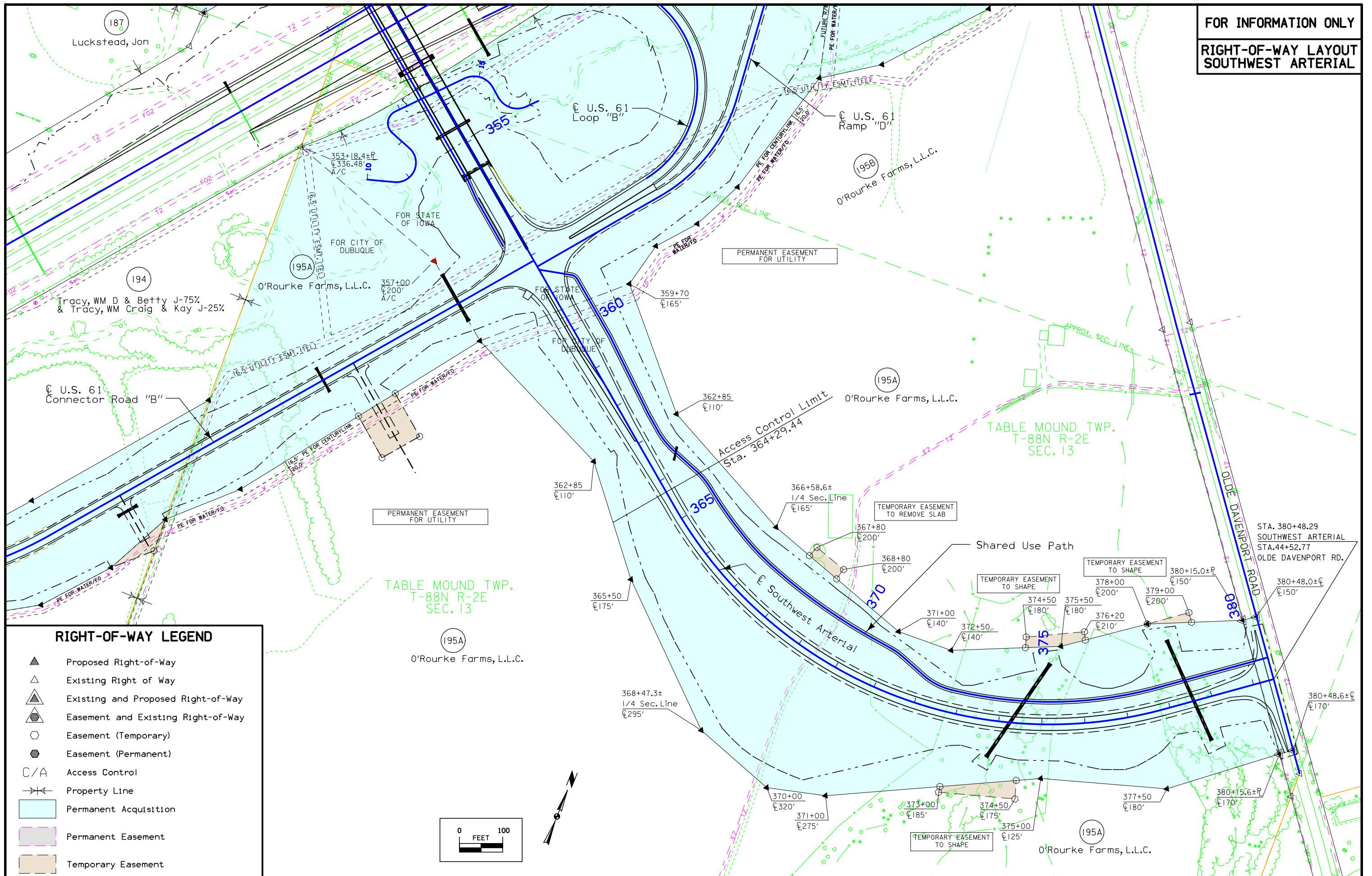
RIGHT-OF-WAY LEGEND

- ▲ Proposed Right-of-Way
- △ Existing Right of Way
- ▲ Existing and Proposed Right-of-Way
- ⊕ Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- ⊗ Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement



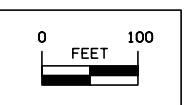
FOR INFORMATION ONLY
RIGHT-OF-WAY LAYOUT
SOUTHWEST ARTERIAL

FOR INFORMATION ONLY
**RIGHT-OF-WAY LAYOUT
 SOUTHWEST ARTERIAL**



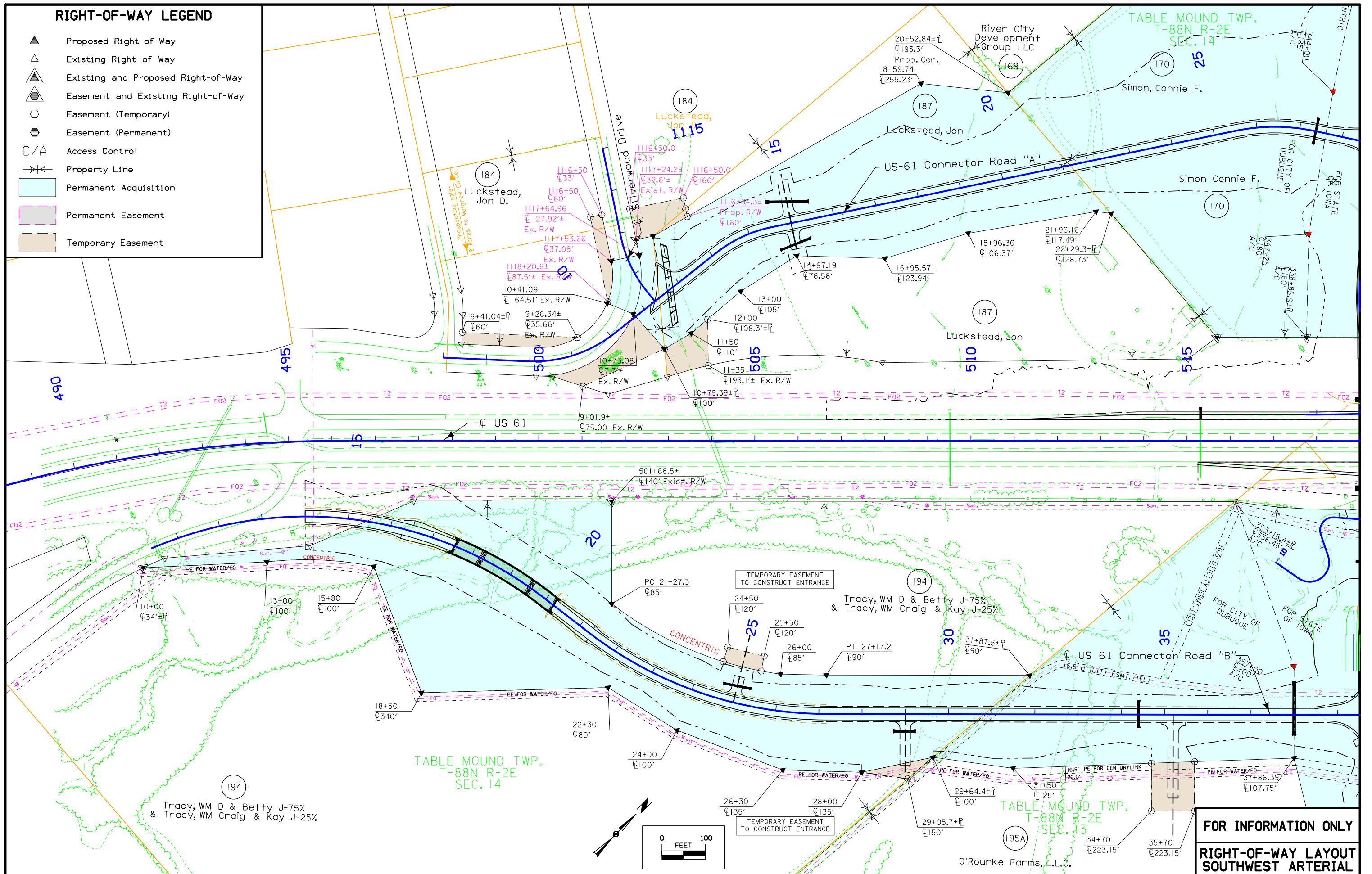
RIGHT-OF-WAY LEGEND

- ▲ Proposed Right-of-Way
- △ Existing Right of Way
- ▲ Existing and Proposed Right-of-Way
- ⊕ Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement

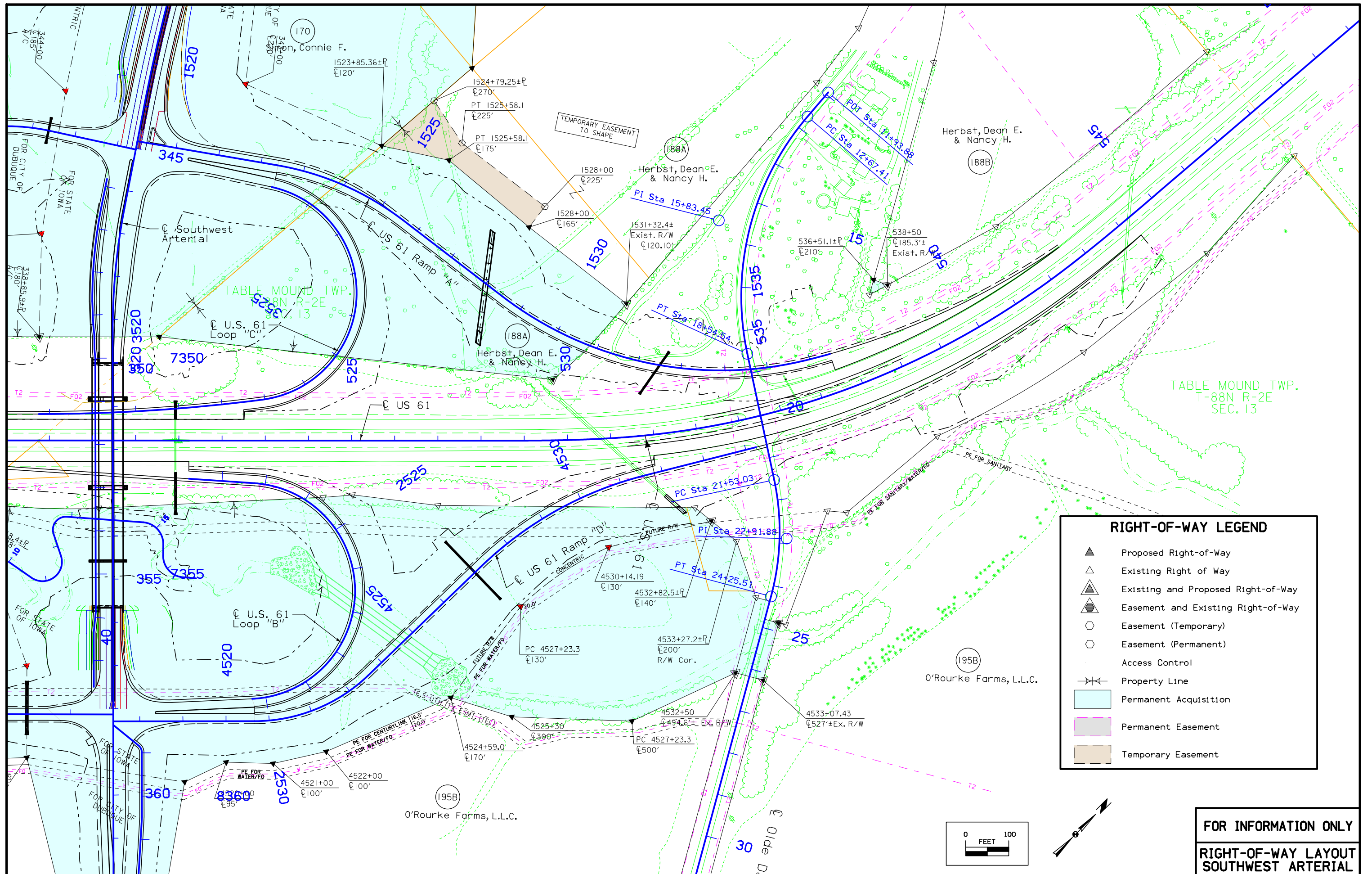


RIGHT-OF-WAY LEGEND

- ▲ Proposed Right-of-Way
- △ Existing Right of Way
- ▲ Existing and Proposed Right-of-Way
- ⬢ Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- ⚡ Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement

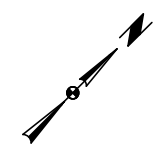
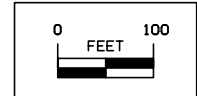


FOR INFORMATION ONLY
RIGHT-OF-WAY LAYOUT
SOUTHWEST ARTERIAL



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 (Permanent)
	Access Control
	Property Line
	Permanent Acquisition
	Permanent Easement
	Temporary Easement

FOR INFORMATION ONLY
**RIGHT-OF-WAY LAYOUT
 SOUTHWEST ARTERIAL**



108-23A 08-01-08
TRAFFIC CONTROL PLAN
<p>US 151 / 61</p> <ul style="list-style-type: none"> - Maintain two lanes of traffic, both northbound and southbound, at all times during construction. - An equipment crossing is not to be used to cross US 151/61. However, the Contractor may use legal load vehicles to transport material on US 151/61, using existing intersections/access points to enter the highway. Direct crossing of US 151 / 61 is not allowed at Key West Drive / Olde Davenport Road and at driveways and field entrances. The Contractor is not to utilize E. Tamarack Drive. U-Turns are not allowed at Tamarack Drive, Lake Eleanor Road and at driveways and field entrances. - Construction along U.S. 61 shall not include the removal of the existing shoulder. See TC-402 for traffic control. <p>Key West Drive, Olde Davenport Road, Elmwood Road and Tamarack Business Park roads shall remain open at all times. The Contractor is responsible for any damage occurring due to hauling on roadways.</p>

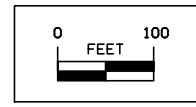
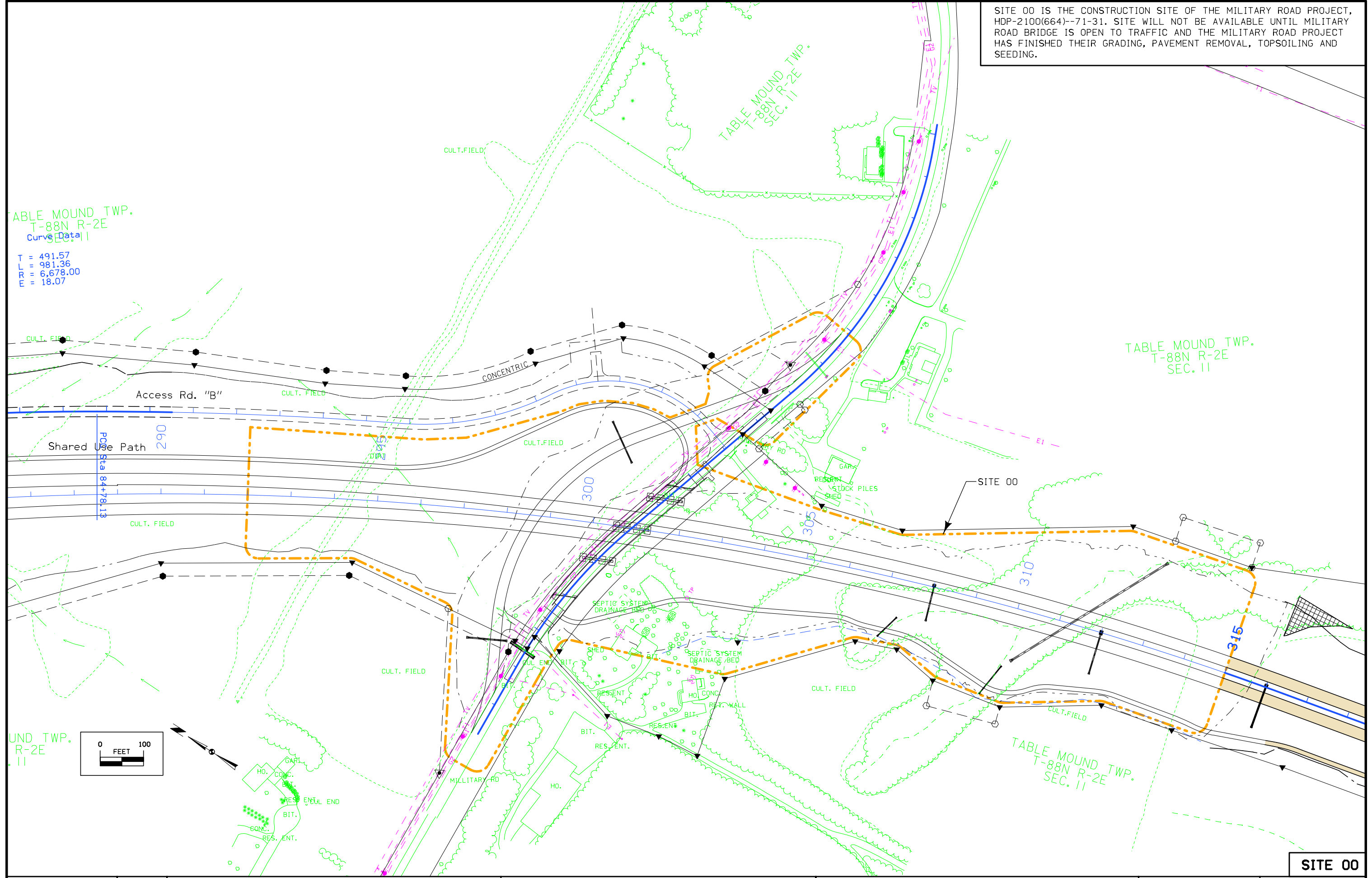
108-26A 08-01-08
STAGING NOTES
<p>Stage 1 Construction: The construction of the wetland mitigation site shall be constructed as a first priority. This includes grading, wetland seeding and planting of trees.</p> <p>There are not specific construction staging requirements for this project other than the staged construction described above. There are, however, some features of this project which may require special sequencing of operations. These features include:</p> <ol style="list-style-type: none"> 1. Access to Parcel 194 across Connector Road "B" utilizing the entrance at Sta. 25+00 left and the entrance at Sta. 29+00 right. 24' wide, 6" thick granualr surfacing shall be placed for access across Connector Road "B". 2. Construction of Military Road will be occurring during the construction of this project and is shown on J.2 and described as Site 00. Site 00 will not be available until the Military Road Bridge is open to traffic and the Military Road project has finished grading, pavement removal, topsoiling and seeding. The approximate availability date is April 1, 2018.

111-01 04-17-12								
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.								
<table border="1"> <thead> <tr> <th>Project</th> <th>Type of Work</th> </tr> </thead> <tbody> <tr> <td>Military Road HDP-2100(664)--71-31</td> <td>Pave, Grade and Bridge</td> </tr> <tr> <td>Southwest Arterial Bridge Over US 151/61 NHSX-032-1(40)--3H-31</td> <td>Bridge</td> </tr> <tr> <td>Elmwood Drive Bridge Over Granger Creek NHSX-032-1(41)--3H-31</td> <td>Bridge</td> </tr> </tbody> </table>	Project	Type of Work	Military Road HDP-2100(664)--71-31	Pave, Grade and Bridge	Southwest Arterial Bridge Over US 151/61 NHSX-032-1(40)--3H-31	Bridge	Elmwood Drive Bridge Over Granger Creek NHSX-032-1(41)--3H-31	Bridge
Project	Type of Work							
Military Road HDP-2100(664)--71-31	Pave, Grade and Bridge							
Southwest Arterial Bridge Over US 151/61 NHSX-032-1(40)--3H-31	Bridge							
Elmwood Drive Bridge Over Granger Creek NHSX-032-1(41)--3H-31	Bridge							

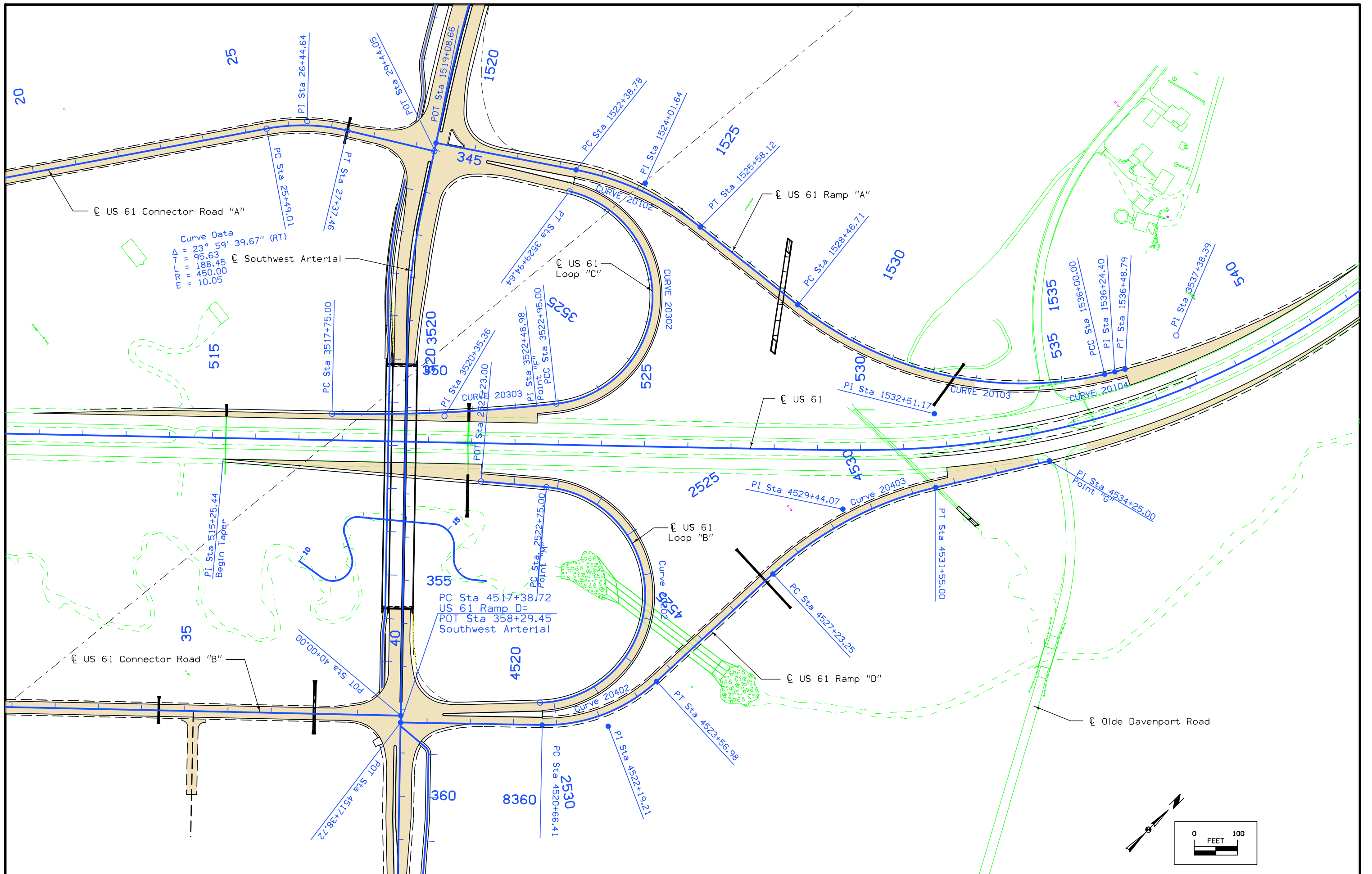
SITE 00 IS THE CONSTRUCTION SITE OF THE MILITARY ROAD PROJECT, HDP-2100(664)--71-31. SITE WILL NOT BE AVAILABLE UNTIL MILITARY ROAD BRIDGE IS OPEN TO TRAFFIC AND THE MILITARY ROAD PROJECT HAS FINISHED THEIR GRADING, PAVEMENT REMOVAL, TOPSOILING AND SEEDING.

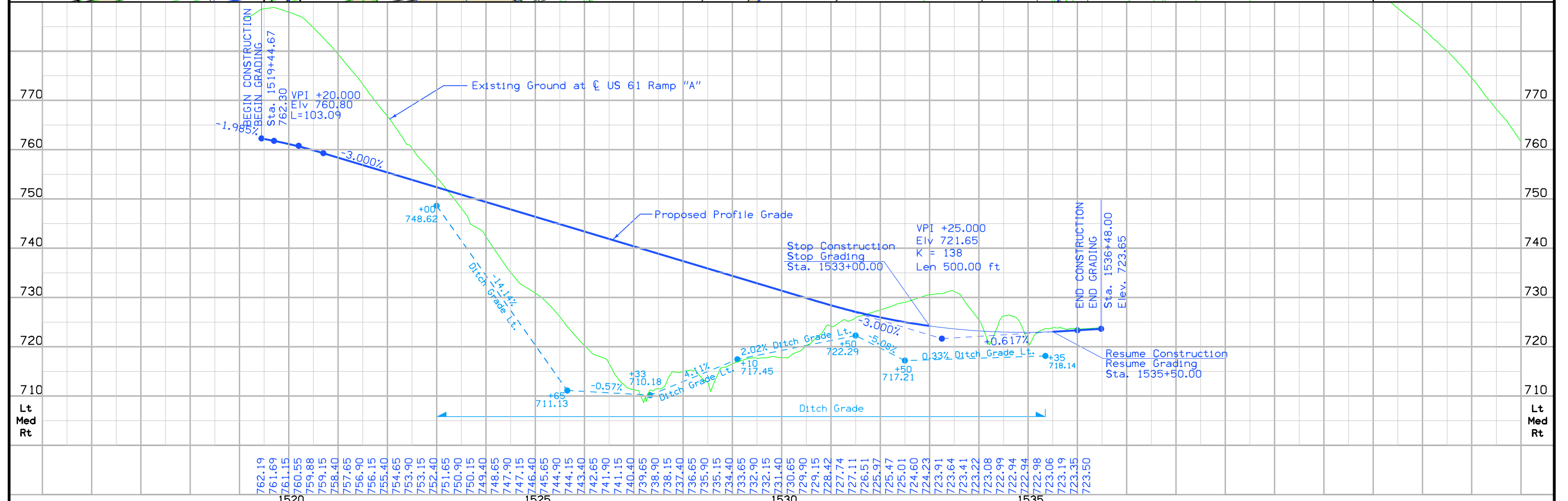
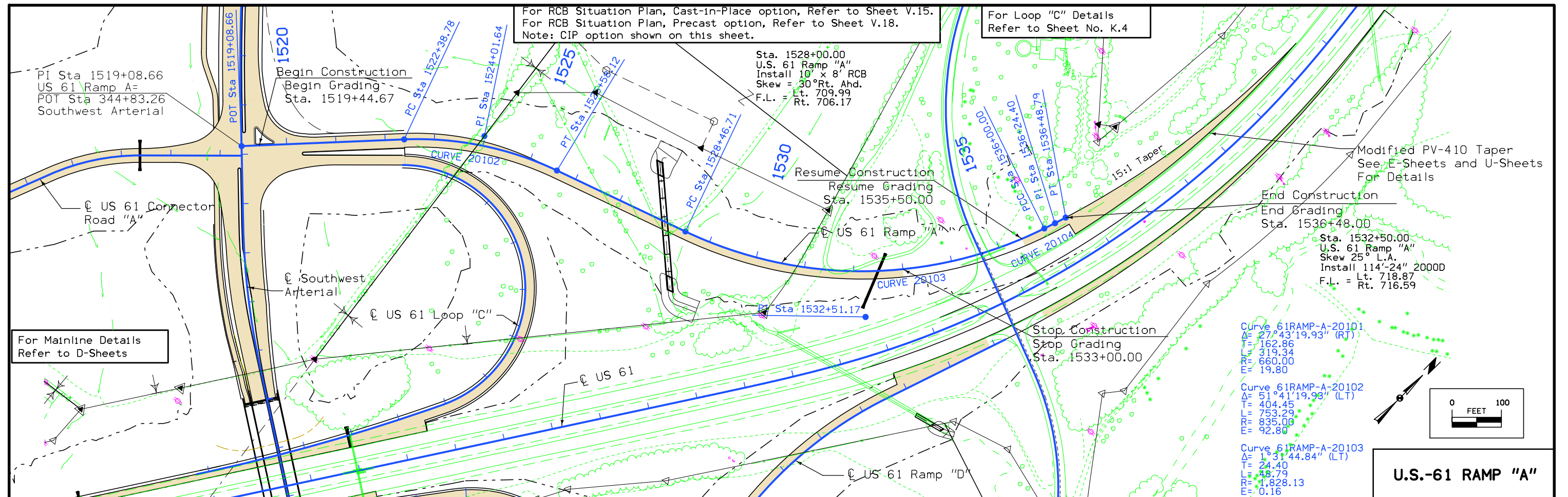
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L = 981.36
R = 6,678.00
E = 18.07

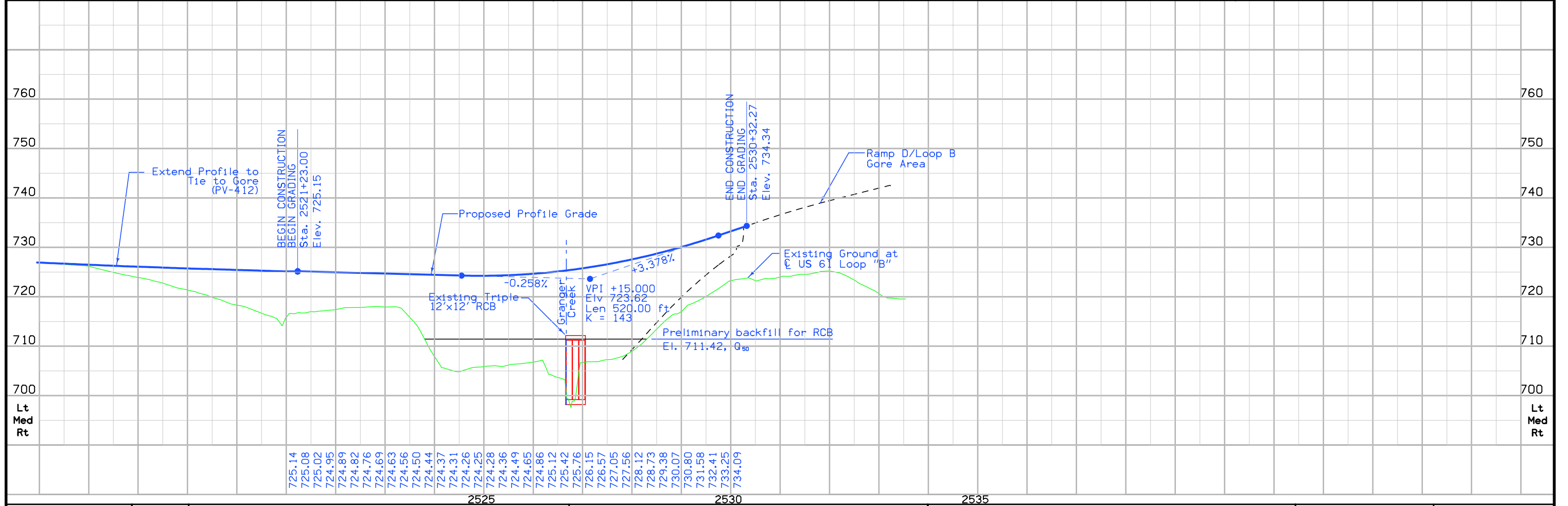
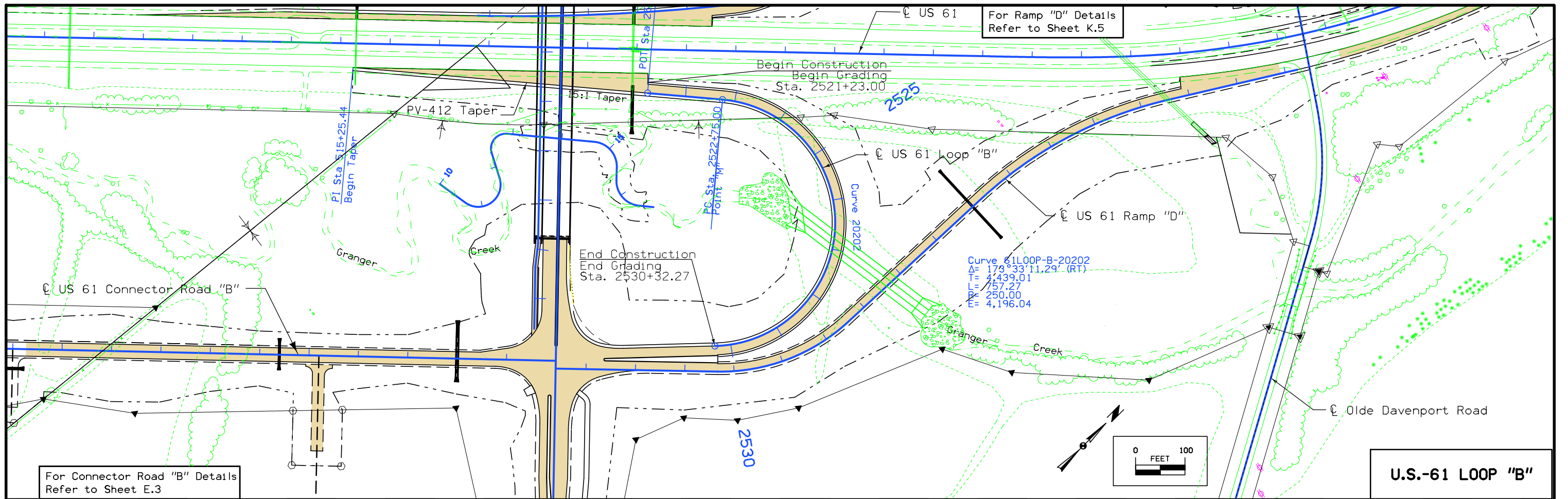
TABLE MOUND TWP.
T-88N R-2E
SEC. 11



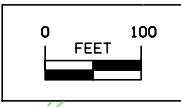
SITE 00





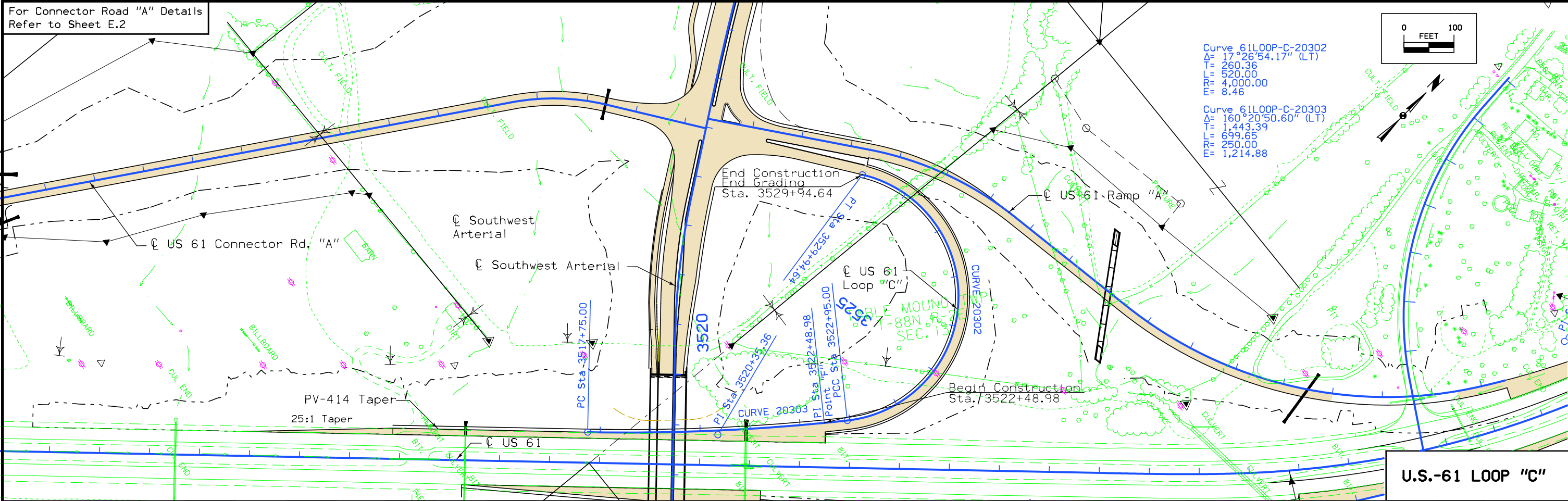


For Connector Road "A" Details Refer to Sheet E.2

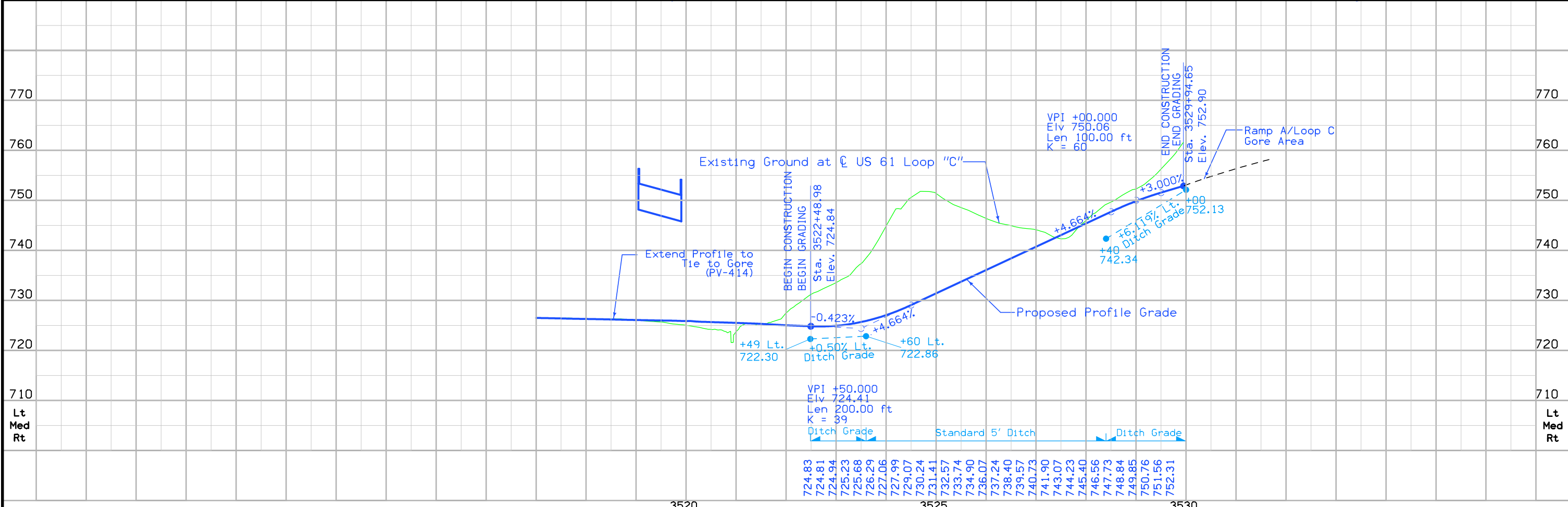


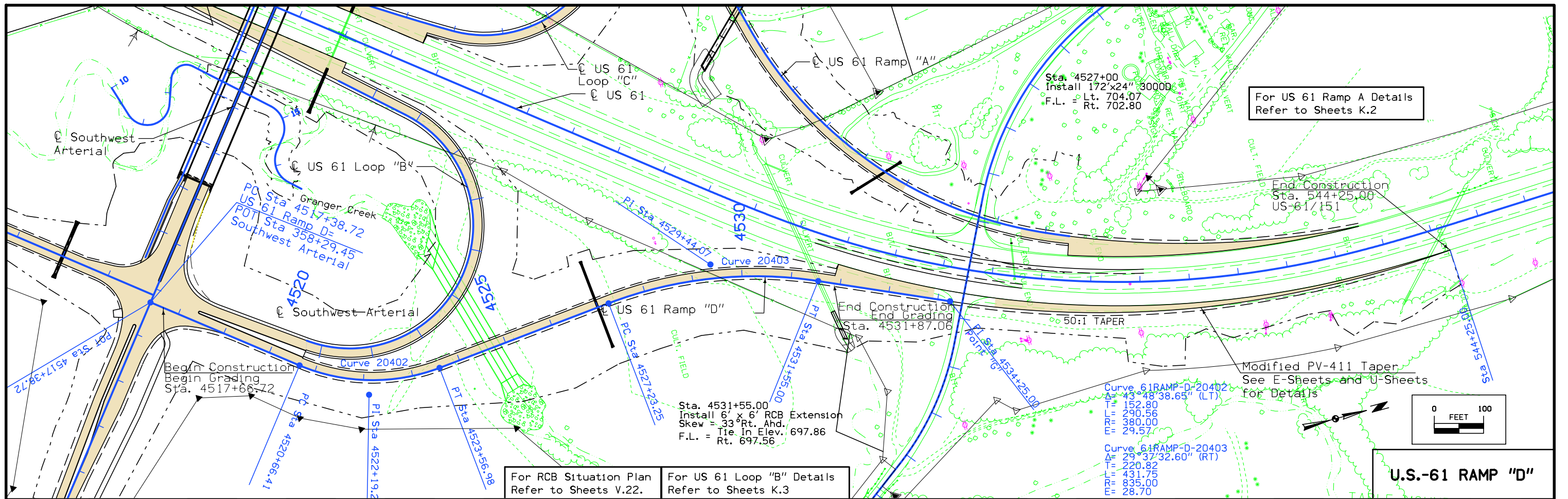
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Curve 61LOOP-C-20303
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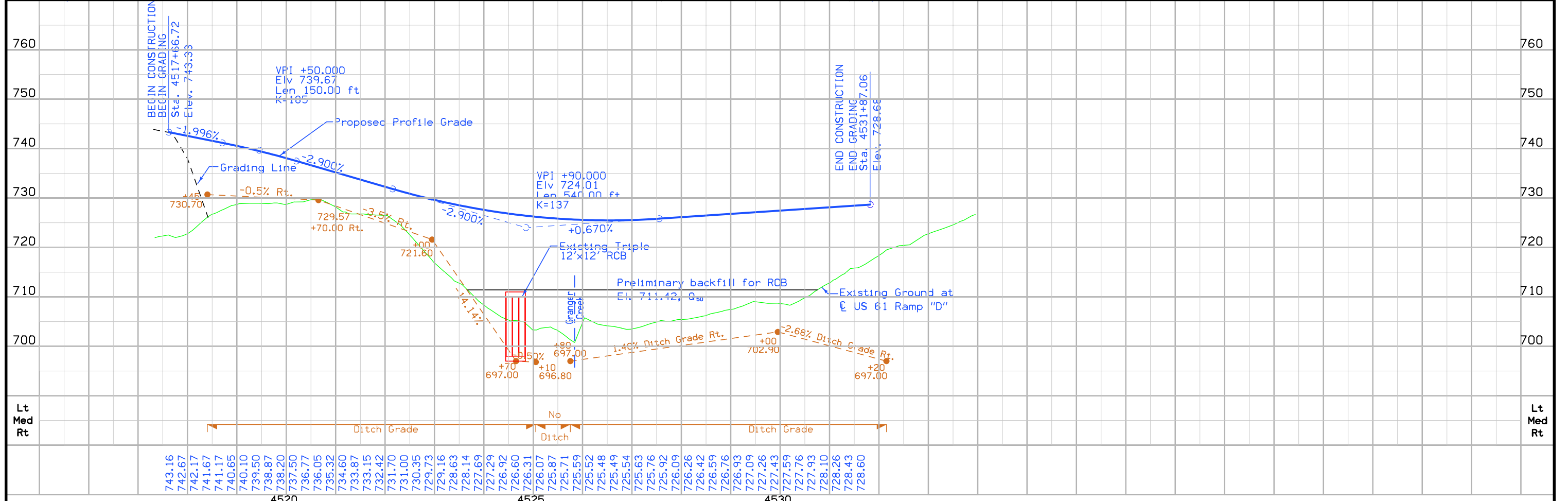
U.S.-61 LOOP "C"

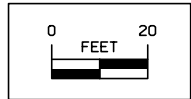
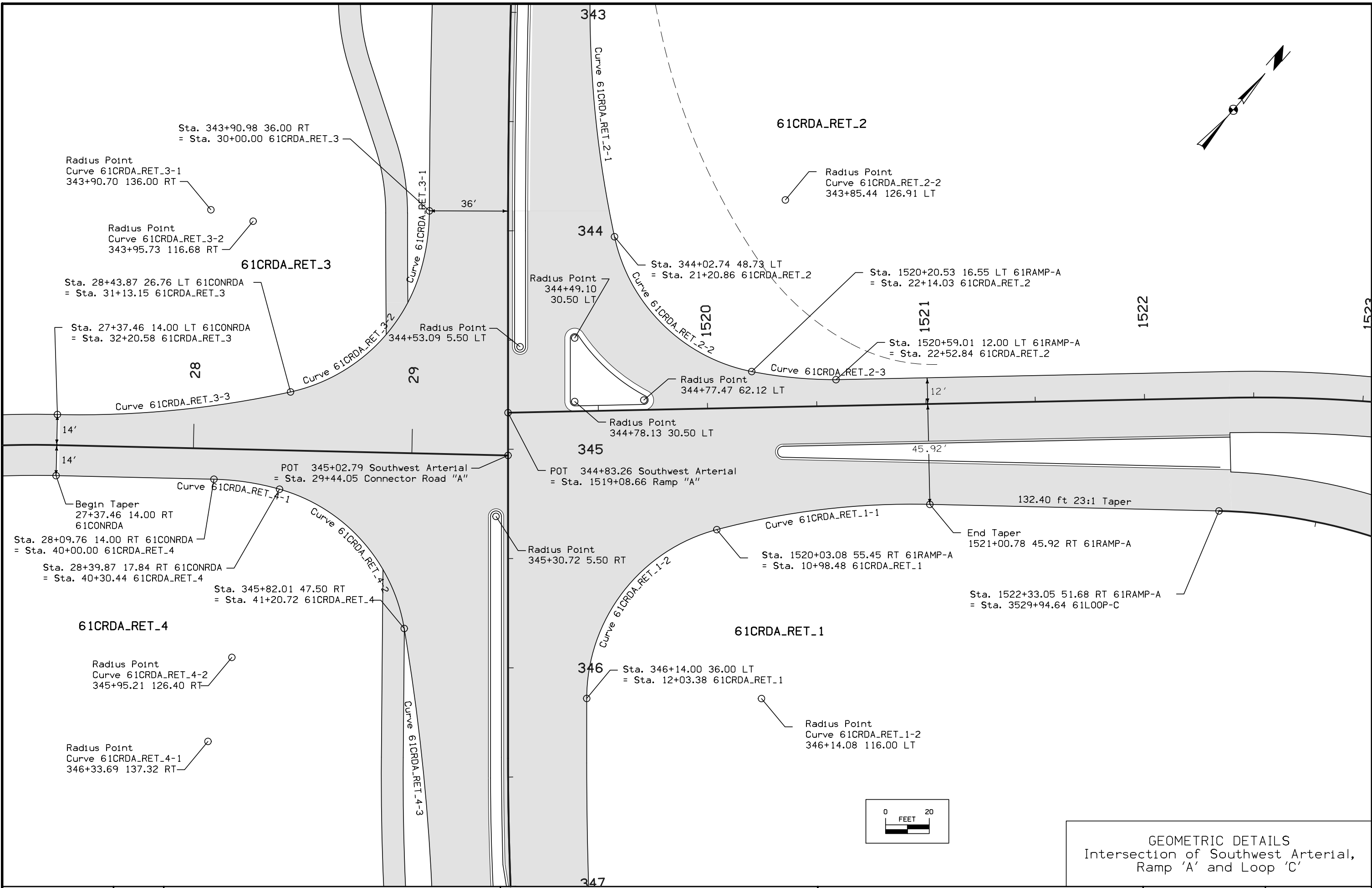
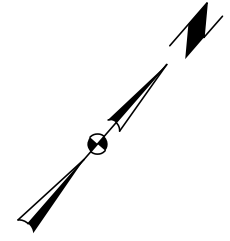




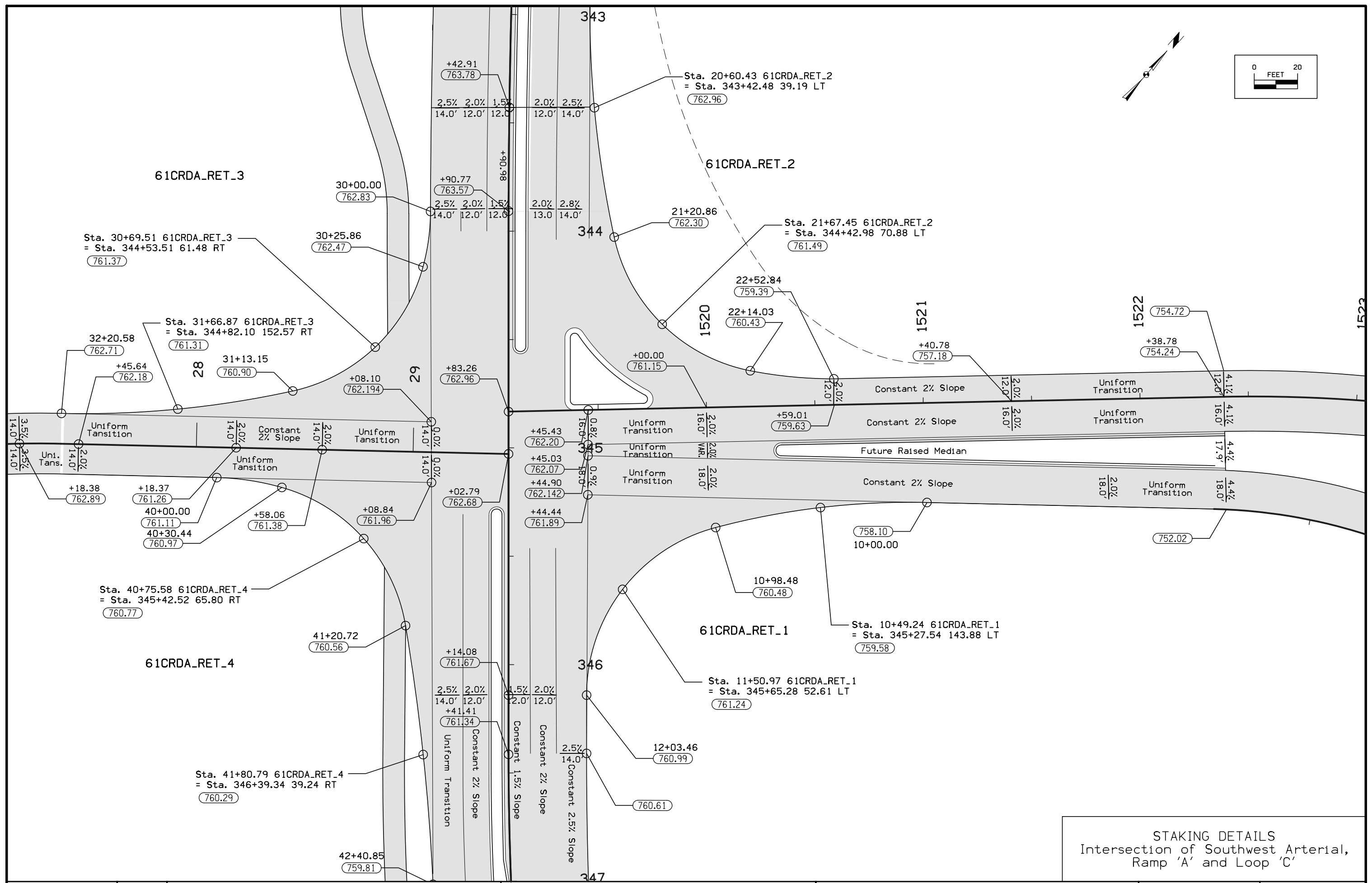
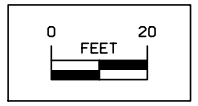
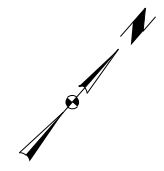
For RCB Situation Plan Refer to Sheets V.22. For US 61 Loop "B" Details Refer to Sheets K.3

U.S.-61 RAMP "D"

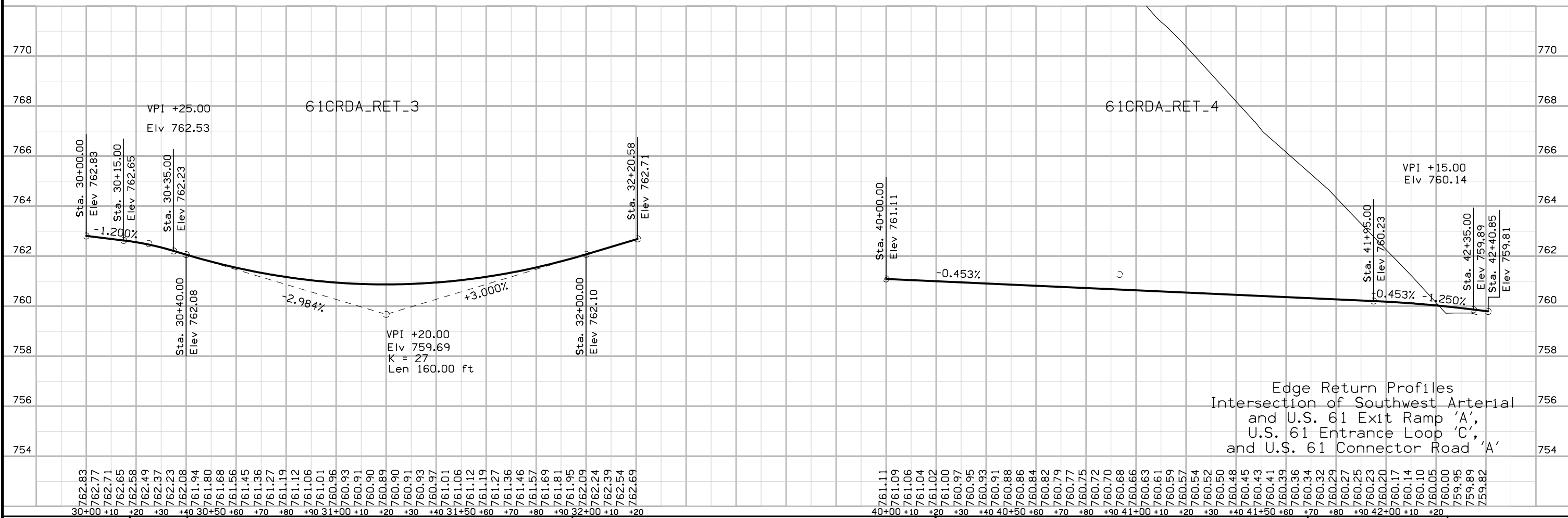
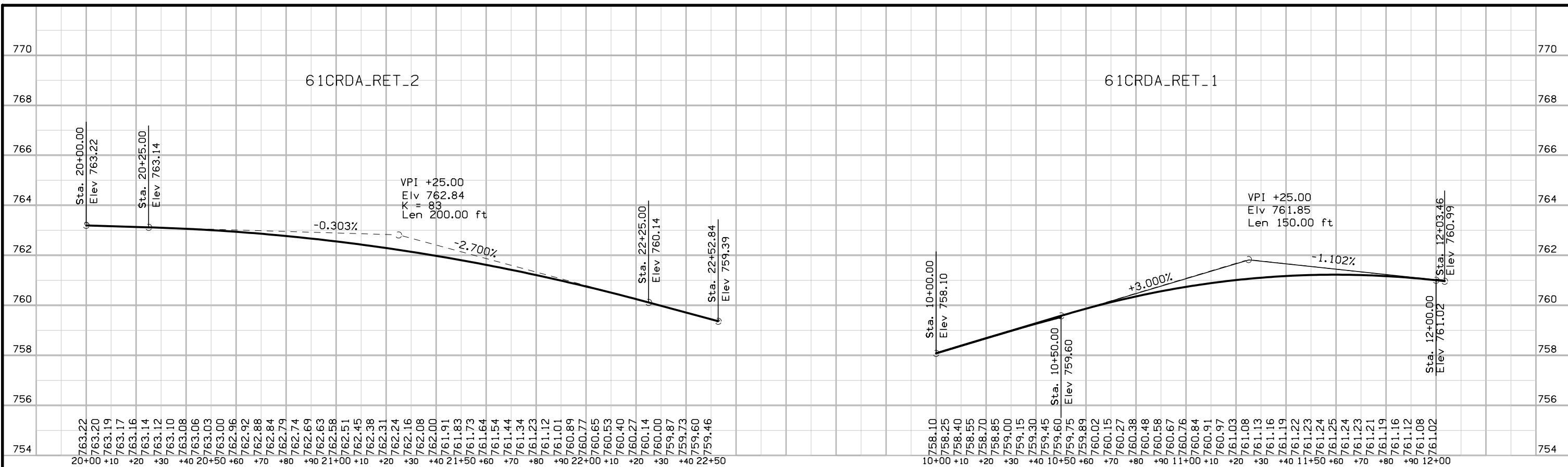




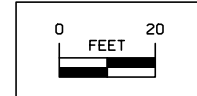
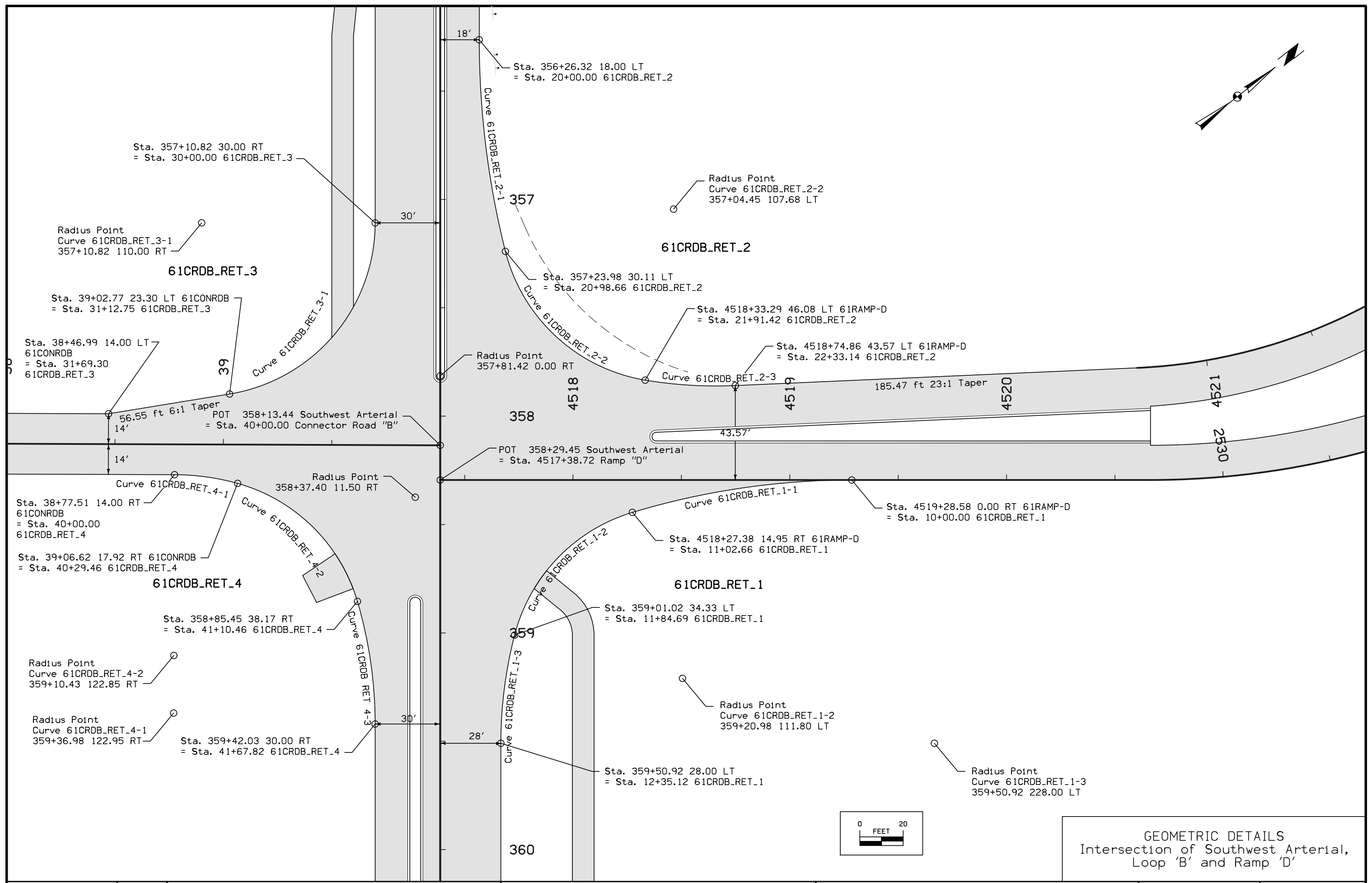
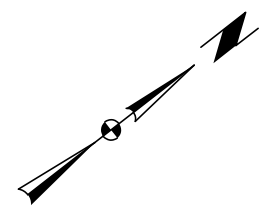
GEOMETRIC DETAILS
 Intersection of Southwest Arterial,
 Ramp 'A' and Loop 'C'



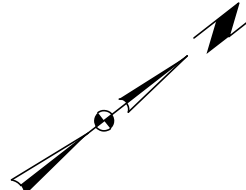
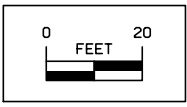
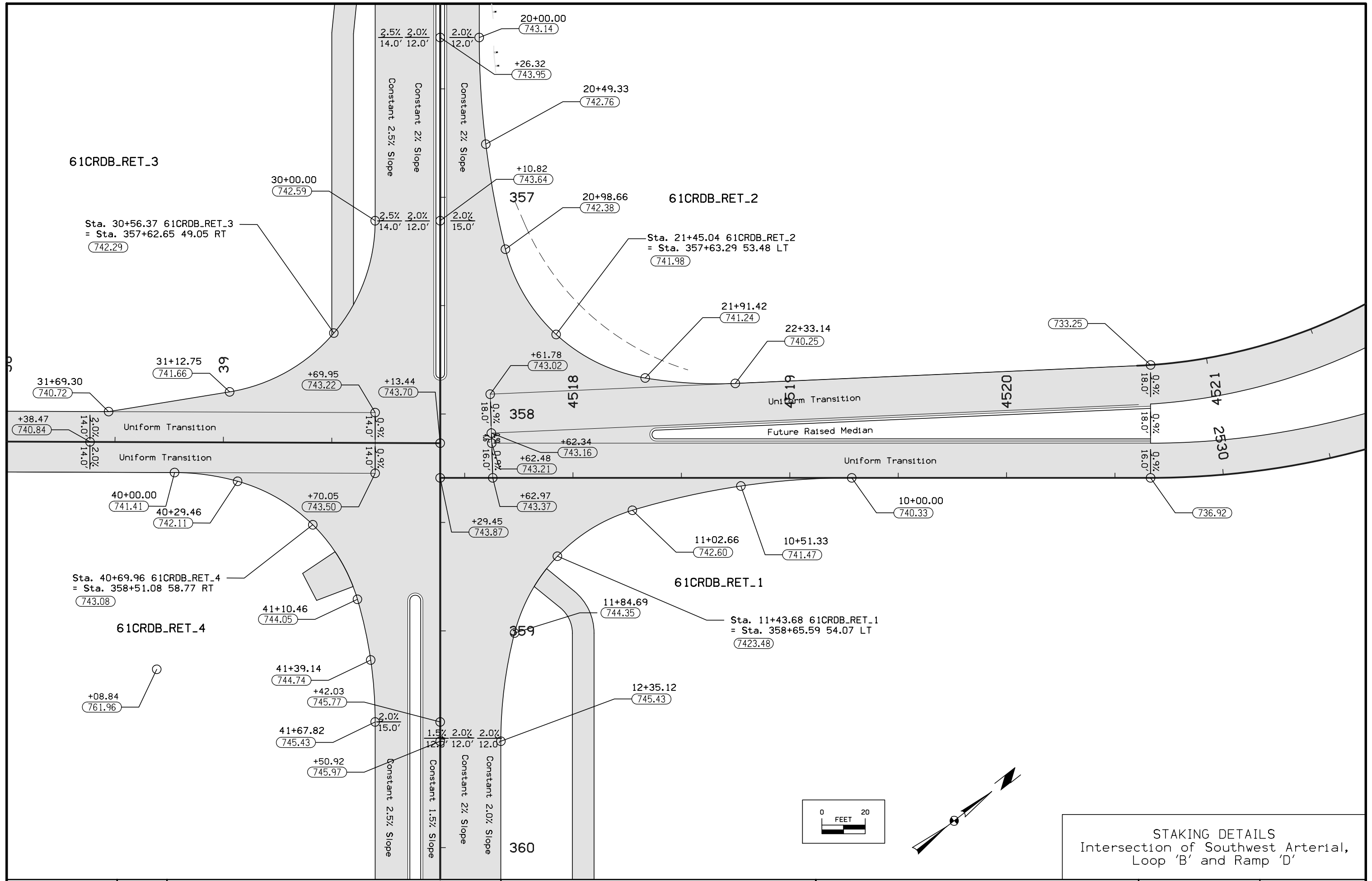
STAKING DETAILS
 Intersection of Southwest Arterial,
 Ramp 'A' and Loop 'C'



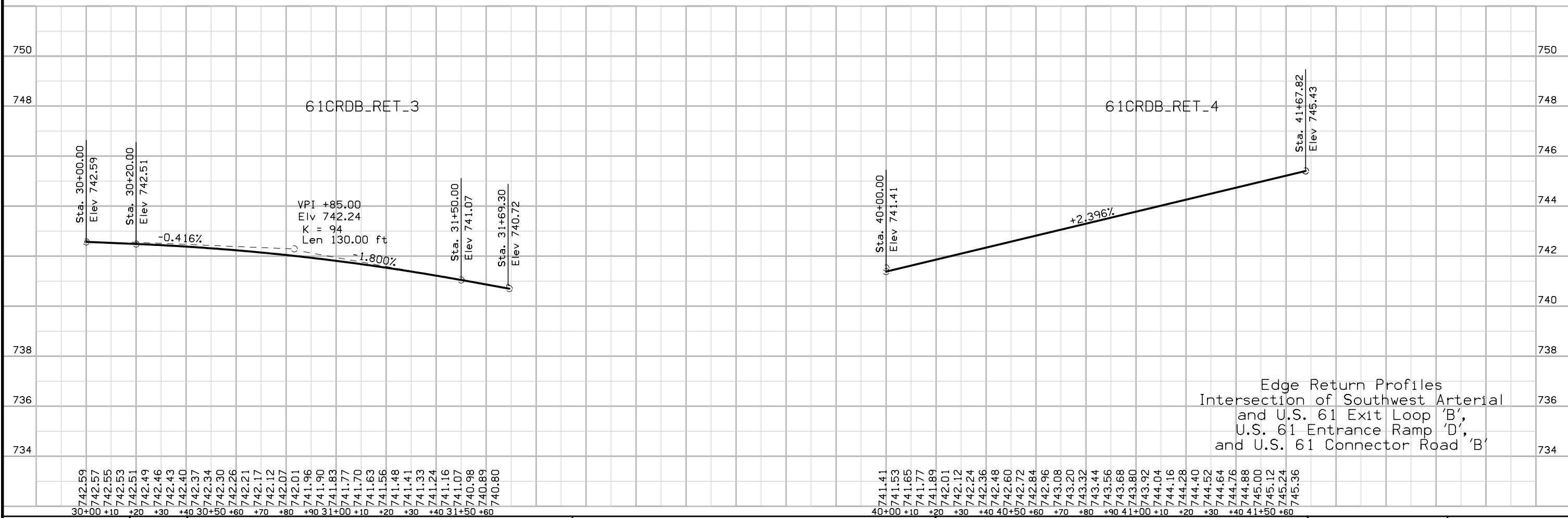
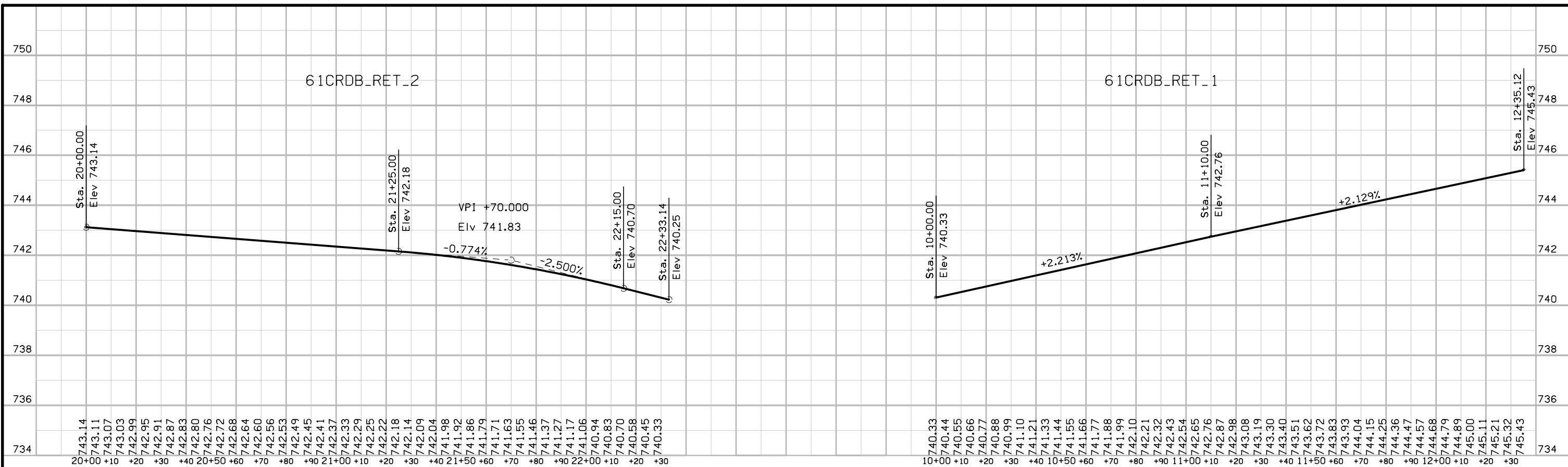
Edge Return Profiles
 Intersection of Southwest Arterial
 and U.S. 61 Exit Ramp 'A',
 U.S. 61 Entrance Loop 'C',
 and U.S. 61 Connector Road 'A'



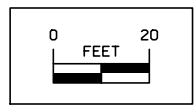
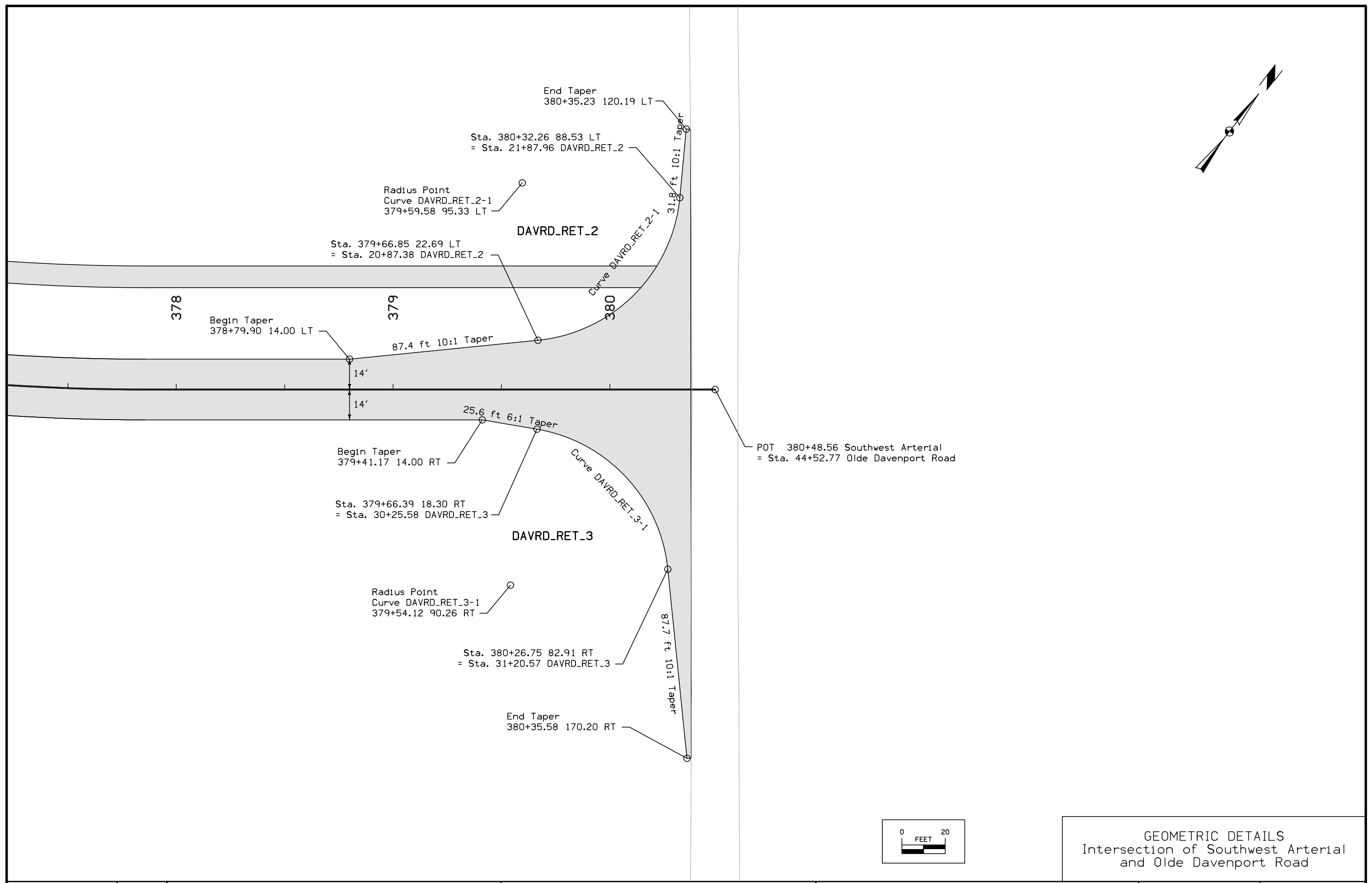
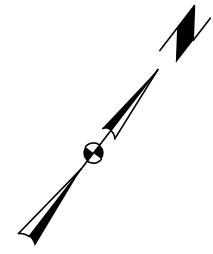
GEOMETRIC DETAILS
Intersection of Southwest Arterial,
Loop 'B' and Ramp 'D'



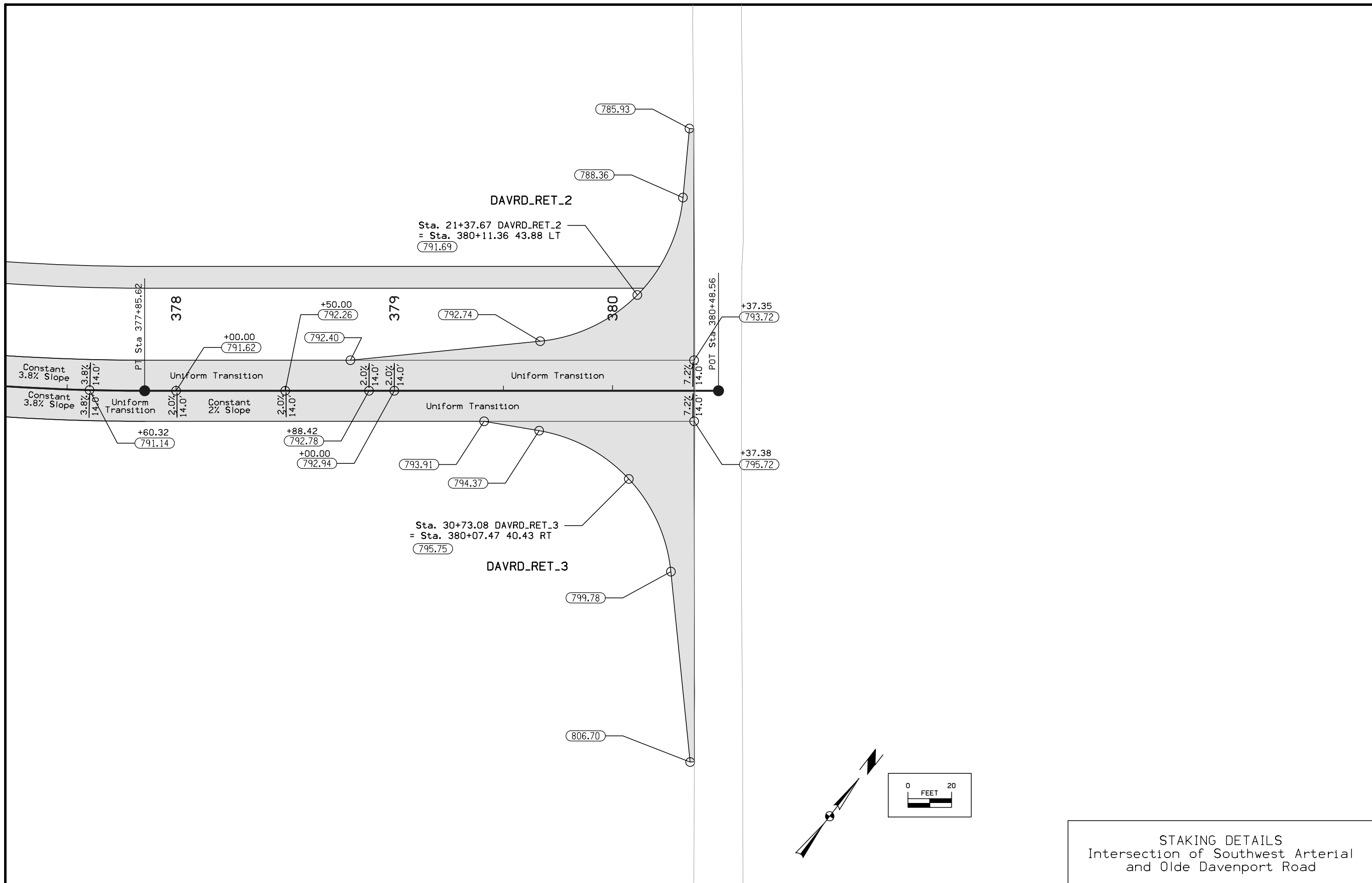
STAKING DETAILS
 Intersection of Southwest Arterial,
 Loop 'B' and Ramp 'D'



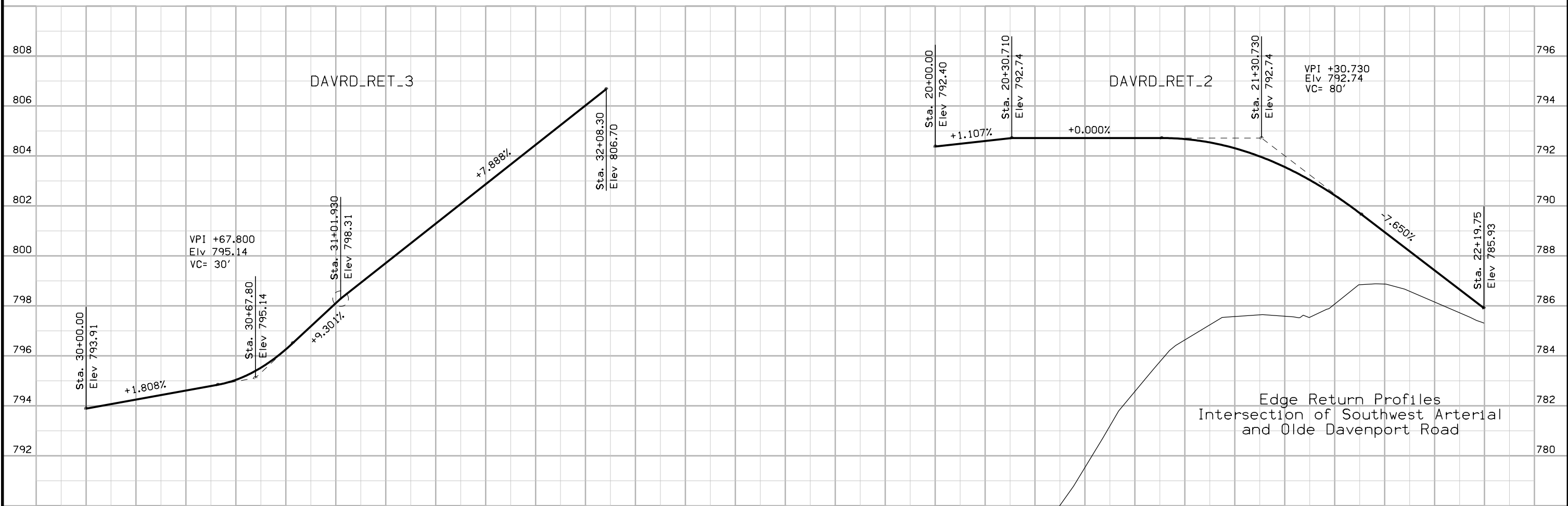
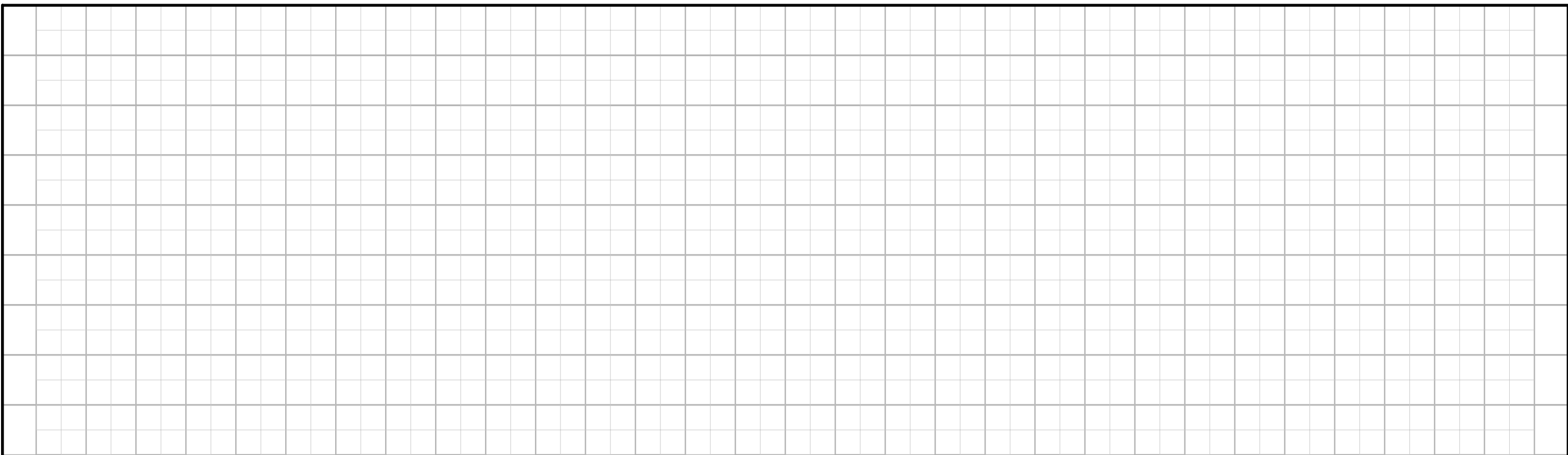
Edge Return Profiles
 Intersection of Southwest Arterial
 and U.S. 61 Exit Loop 'B',
 U.S. 61 Entrance Ramp 'D',
 and U.S. 61 Connector Road 'B'



GEOMETRIC DETAILS
Intersection of Southwest Arterial
and Olde Davenport Road



STAKING DETAILS
 Intersection of Southwest Arterial
 and Olde Davenport Road



STORM SEWER

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

INTAKES AND UTILITY ACCESSES

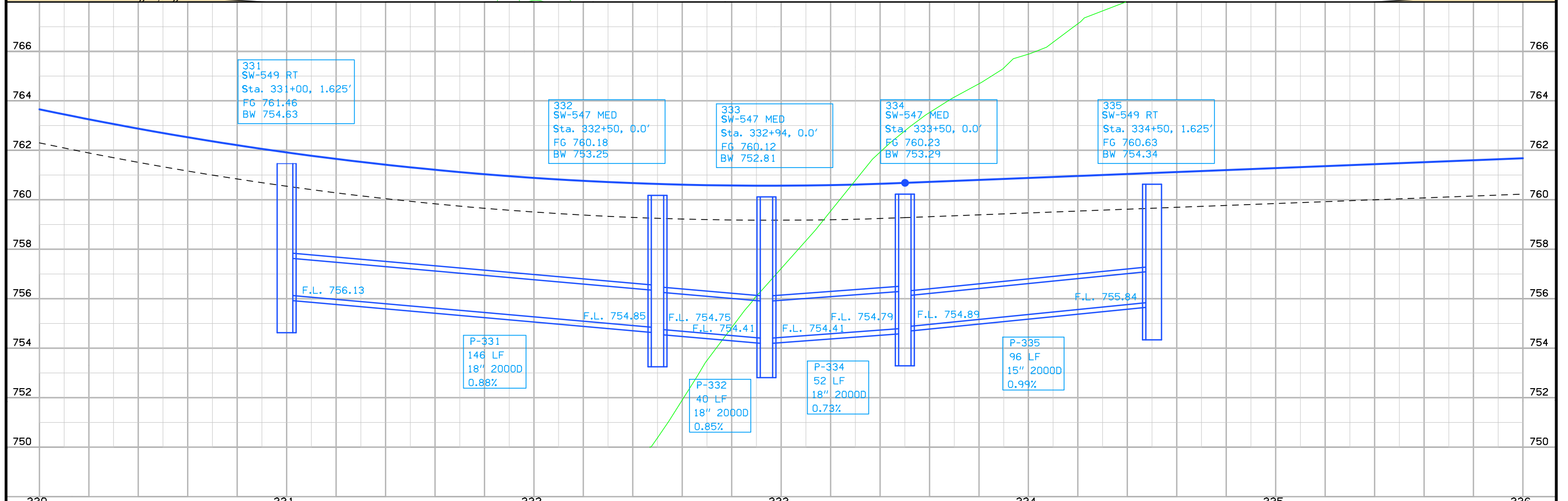
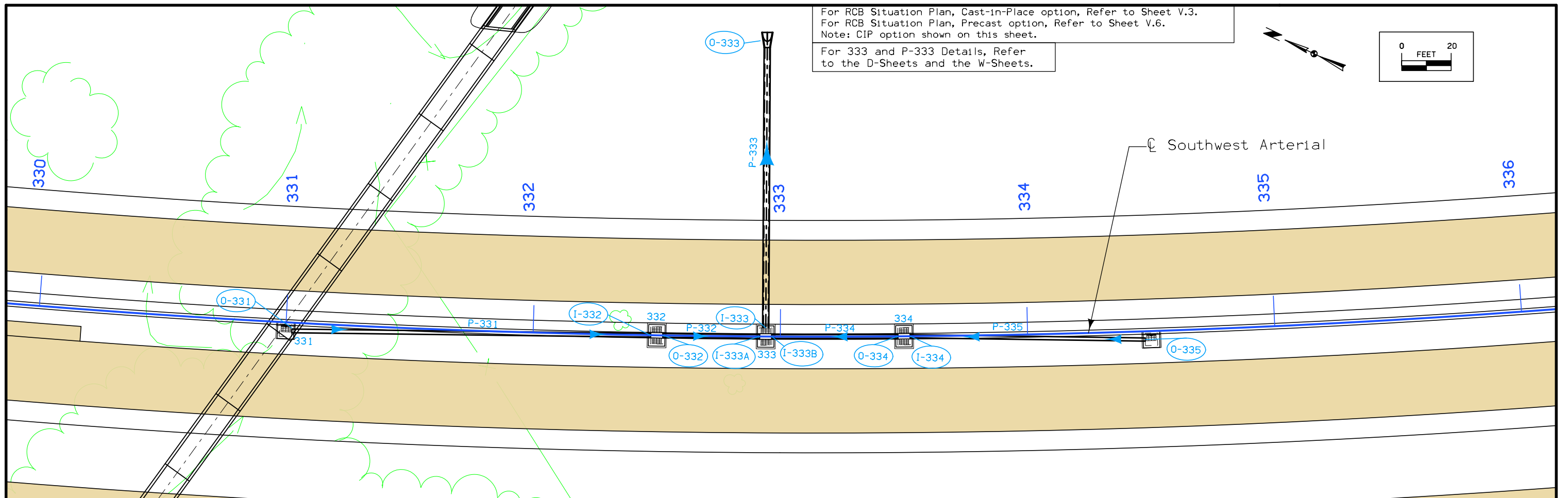
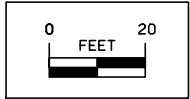
PIPES

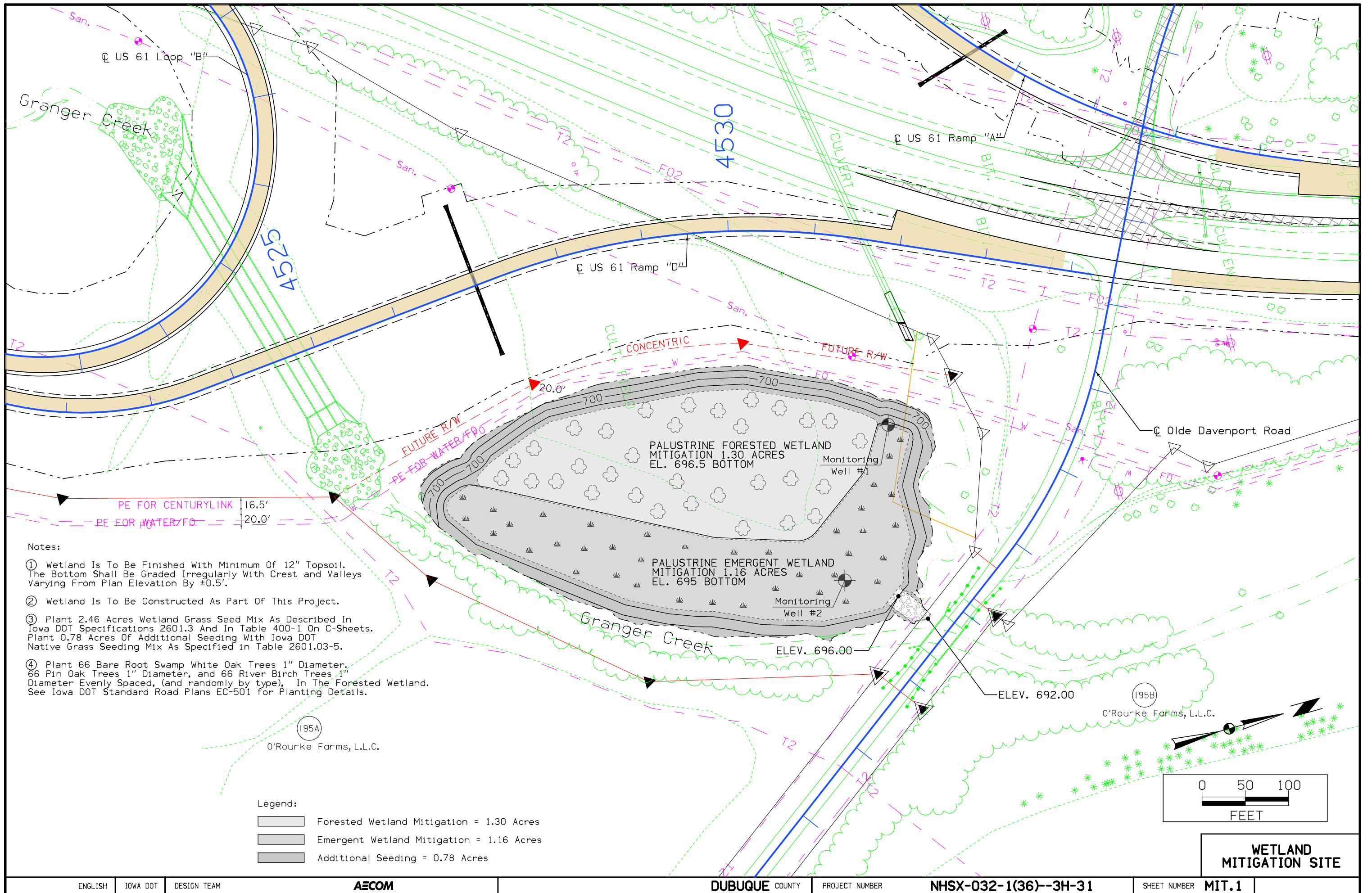
Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade	Bottom Well	Extension Length**	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe Size ①	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121)	Flow Lines			Pipe Profile Sheet No.	Notes
			Elev.	Elev.	FT			From	To							Inlet Elevation	Outlet Elevation	Other Elevation		
			IN	FT	FT			Type	Elevation							Elevation	Elevation			
316	316+00.00, 1.625' LT	SW-549	830.37	822.95		Well Only	P-316	I-316	O-316	2000	15	98	94.0	7.65	3	824.45	817.26	823.82 817.37	^	RCP Letdown 1-15" Apron 2-15° Elbows A=60', B=24' E=10', L=6.1'
320	320+00.00, CL	SW-547	809.11	801.8		Well Only														
325	325+00.00, CL	SW-547	782.65	776.23		Well Only														
329	329+00.00, CL	SW-547	765.66	758.35		Well Only	P-320	I-320	O-320	2000	15	124	120.0	13.25	3	803.30	787.40	802.76 787.70	^	RCP Letdown 1-15" Apron 2-15° Elbows A=52', B=56' E=12', L=6.1'
331	331+00.00, 1.625' RT	SW-549	761.46	754.63		Well Only														
332	332+50.00, CL	SW-547	760.18	753.25		Well Only														
333	332+94.00, CL	SW-547	760.12	752.81		Well Only														
334	333+50.00, CL	SW-547	760.23	753.29		Well Only														
335	334+50.00, 1.625' RT	SW-549	760.63	754.34		Well Only	P-325	I-325	O-325	2000	15	152	148.0	17.02	3	776.73	751.54	776.06 751.82	^	RCP Letdown 1-15" Apron 2-17° Elbows A=64', B=76' E=8', L=6.1'
337	336+50.00	SW-547	761.43	754.12		Well Only														
		Total: SW-547, (Well Only) SW-549, (Well Only)	7 3				P-329	I-329	O-329	2000	15	147	143.0	12.84	3	759.85	741.49	760.30 741.28	^	RCP Letdown 1-15" Apron 2-17° Elbows A=78', B=58' E=7', L=6.1'
							P-331	O-331	I-332	2000	18	150	146.0	0.88		756.13	754.85		M.2	
							P-332	O-332	I-333A	2000	18	44	40.0	0.85		754.75	754.41		M.2	
							P-333	I-333	O-333	2000	24	120	116.0	13.603	3	754.31	738.53	753.72 738.96	M.2, ^	RCP Letdown 1-24" Apron 2-19° Elbows A=56', B=44' E=16', L=6.1'
							P-334	O-334	I-333B	2000	18	56	52.0	0.7308		754.79	754.41		M.2	
							P-335	O-335	I-334	2000	15	100	96.0	0.9896		755.84	754.89		M.2	
							P-337	I-337	O-337	2000	15	88	84.0	6.4643	3	755.62	750.19		^	1-15" Apron
										Total:										
										2000	15	709								
										2000	18	250								
										2000	24	120								
										^ See D-Sheets for further details.										

For RCB Situation Plan, Cast-in-Place option, Refer to Sheet V.3.
 For RCB Situation Plan, Precast option, Refer to Sheet V.6.
 Note: CIP option shown on this sheet.

For 333 and P-333 Details, Refer to the D-Sheets and the W-Sheets.



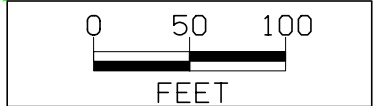


Notes:

- ① Wetland Is To Be Finished With Minimum Of 12" Topsoil. The Bottom Shall Be Graded Irregularly With Crest and Valleys Varying From Plan Elevation By $\pm 0.5'$.
- ② Wetland Is To Be Constructed As Part Of This Project.
- ③ Plant 2.46 Acres Wetland Grass Seed Mix As Described In Iowa DOT Specifications 2601.3 And In Table 400-1 On C-Sheets. Plant 0.78 Acres Of Additional Seeding With Iowa DOT Native Grass Seeding Mix As Specified In Table 2601.03-5.
- ④ Plant 66 Bare Root Swamp White Oak Trees 1" Diameter, 66 Pin Oak Trees 1" Diameter, and 66 River Birch Trees 1" Diameter Evenly Spaced, (and randomly by type), In The Forested Wetland. See Iowa DOT Standard Road Plans EC-501 For Planting Details.

Legend:

- Forested Wetland Mitigation = 1.30 Acres
- Emergent Wetland Mitigation = 1.16 Acres
- Additional Seeding = 0.78 Acres



WETLAND MITIGATION SITE

LOG OF WELL NO. MW-1 Page 1 of 1

CLIENT AECOM		PROJECT SOUTHWEST ARETERIAL																											
SITE DUBUQUE, IOWA		Approx. Boring Location: N 5682299, E 3634526 DESCRIPTION																											
GRAPHIC LOG	WELL DETAIL in in in ft ft	DEPTH, ft	USCS SYMBOL	SAMPLES	TESTS																								
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS /ft	WATER CONTENT, %	DRY UNIT WT pcf																				
2.5				TOPSOIL: LEAN CLAY trace sand and organics Dark Brown																									
				LEAN CLAY trace sand Light Brown Gray																									
8				FINE TO COARSE SAND trace gravel, clay, and organics Black																									
12				LIMESTONE** Gray																									
12.5				<p style="text-align: center;">BOTTOM OF BORING Practical auger refusal on apparent limestone at 12.5 feet. ***Classification of rock material based on driller's observation of drilling characteristics during field operations and visual identification of samples obtained. Core Samples and/or petrographic analysis may indicate other rock types.</p>																									
The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">WATER LEVEL OBSERVATIONS, ft</td> <td colspan="2">BORING STARTED</td> <td colspan="2">7-25-11</td> </tr> <tr> <td>WL 8</td> <td>wd</td> <td colspan="2">BORING COMPLETED</td> <td colspan="2">7-25-11</td> </tr> <tr> <td>WL</td> <td></td> <td>RIG</td> <td>977</td> <td>FOREMAN</td> <td>SZ</td> </tr> <tr> <td>WL</td> <td></td> <td>APPROVED</td> <td>TSM</td> <td>JOB #</td> <td>08099079</td> </tr> </table>		WATER LEVEL OBSERVATIONS, ft		BORING STARTED		7-25-11		WL 8	wd	BORING COMPLETED		7-25-11		WL		RIG	977	FOREMAN	SZ	WL		APPROVED	TSM	JOB #	08099079
WATER LEVEL OBSERVATIONS, ft		BORING STARTED		7-25-11																									
WL 8	wd	BORING COMPLETED		7-25-11																									
WL		RIG	977	FOREMAN	SZ																								
WL		APPROVED	TSM	JOB #	08099079																								

Date	Groundwater Elevation	
	Well No. 1	Well No. 2
7-25-11	694.5	691.5
8-23-11	697.25	696.83
9-28-11	696.72	695.91
10-27-11	696.43	695.64
11-28-11	697.08	696.15
12-16-11	697.81	696.85
1-24-12	697.12	696.13
2-09-12	697.63	696.57
3-21-12	697.75	696.66
4-17-12	697.26	696.22
5-18-12	697.12	695.97
6-10-13		697.57

Well Information		
	Well No. 1	Well No. 2
Station (U.S. 61)	532+49	532+48
Offset	291' Rt.	478' Rt.
North	5682299	5682460
East	3634526	3634431
Ground elev.	702.5	699.5
Top of pipe elev.	705.63	701.86

LOG OF WELL NO. MW-2 Page 1 of 1

CLIENT AECOM		PROJECT SOUTHWEST ARETERIAL																											
SITE DUBUQUE, IOWA		Approx. Boring Location: N 5682460, E 3634431 DESCRIPTION																											
GRAPHIC LOG	WELL DETAIL 4 in 2 in ft ft	DEPTH, ft	USCS SYMBOL	SAMPLES	TESTS																								
				NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS /ft	WATER CONTENT, %	DRY UNIT WT pcf																				
3				TOPSOIL: LEAN CLAY trace sand and organics Dark Brown																									
				LEAN CLAY trace sand Light Brown Gray																									
8				FINE TO COARSE SAND with gravel and clay Brown																									
12				LIMESTONE** Gray																									
12.5				<p style="text-align: center;">BOTTOM OF BORING Practical auger refusal on apparent limestone at about 12.5 feet. ***Classification of rock material based on driller's observation of drilling characteristics during field operations and visual identification of samples obtained. Core Samples and/or petrographic analysis may indicate other rock types.</p>																									
The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">WATER LEVEL OBSERVATIONS, ft</td> <td colspan="2">BORING STARTED</td> <td colspan="2">7-25-11</td> </tr> <tr> <td>WL 8</td> <td>wd</td> <td colspan="2">BORING COMPLETED</td> <td colspan="2">7-25-11</td> </tr> <tr> <td>WL</td> <td></td> <td>RIG</td> <td>977</td> <td>FOREMAN</td> <td>SZ</td> </tr> <tr> <td>WL</td> <td></td> <td>APPROVED</td> <td>TSM</td> <td>JOB #</td> <td>08099079</td> </tr> </table>		WATER LEVEL OBSERVATIONS, ft		BORING STARTED		7-25-11		WL 8	wd	BORING COMPLETED		7-25-11		WL		RIG	977	FOREMAN	SZ	WL		APPROVED	TSM	JOB #	08099079
WATER LEVEL OBSERVATIONS, ft		BORING STARTED		7-25-11																									
WL 8	wd	BORING COMPLETED		7-25-11																									
WL		RIG	977	FOREMAN	SZ																								
WL		APPROVED	TSM	JOB #	08099079																								

PLAN VIEW COLOR LEGEND OF SOILS SHEETS

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

PROFILE VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design Color No.	
Blue	(1)	Proposed Alignment, Stationing, and Alignment Annotation
Green	(2)	Existing Ground Line Profile
Green, Med	(227)	Topsoil
Green, Med	(227)	Slope Dressing Only
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

Drill	Dig/Core	Date(s) Drilled _____
Water	Treatment	Sandstone
Dry	Sand Blanket	Unsuitable A
Sample	Soil Remediation Area	Unsuitable B
Plugged	Select Soil	Unsuitable C
Moisture	Select Sand	Sandy Soil
Shelby	Slope Dressing Only	Boulders
Blow Count	Broken and Weathered Rock	Shale
Dens. Core	Rock	

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
	Access Control

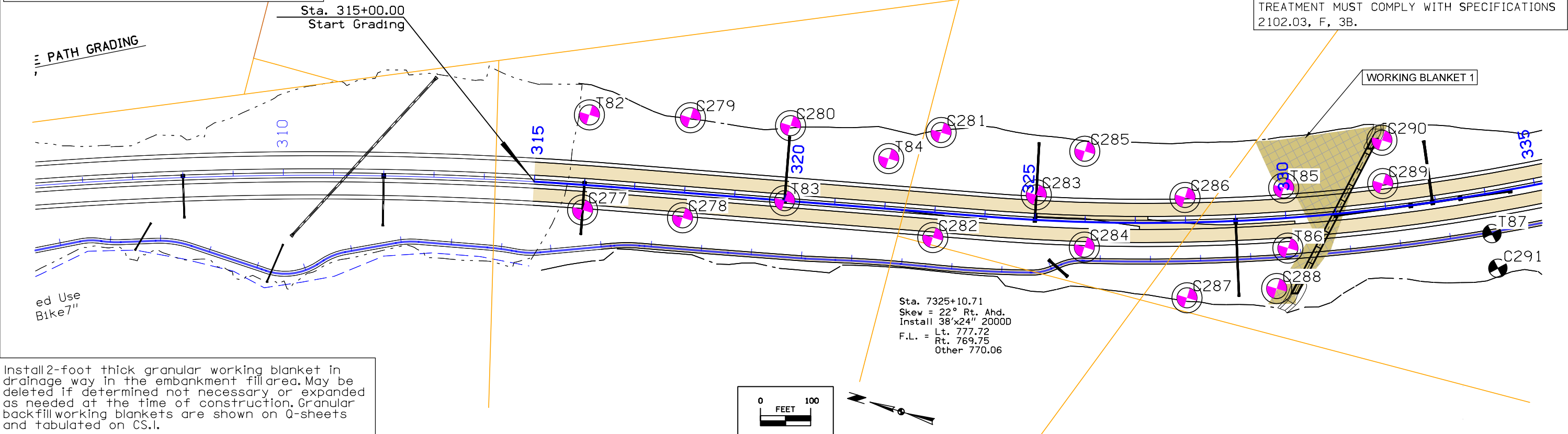
SOILS

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.

(COVERS SHEET SERIES Q & R)

SPECIAL ATTENTION (SLIVER FILL)
 Special attention should be given to Article 2107.03.C, Standard Specification Series of 2015, on this project.

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.

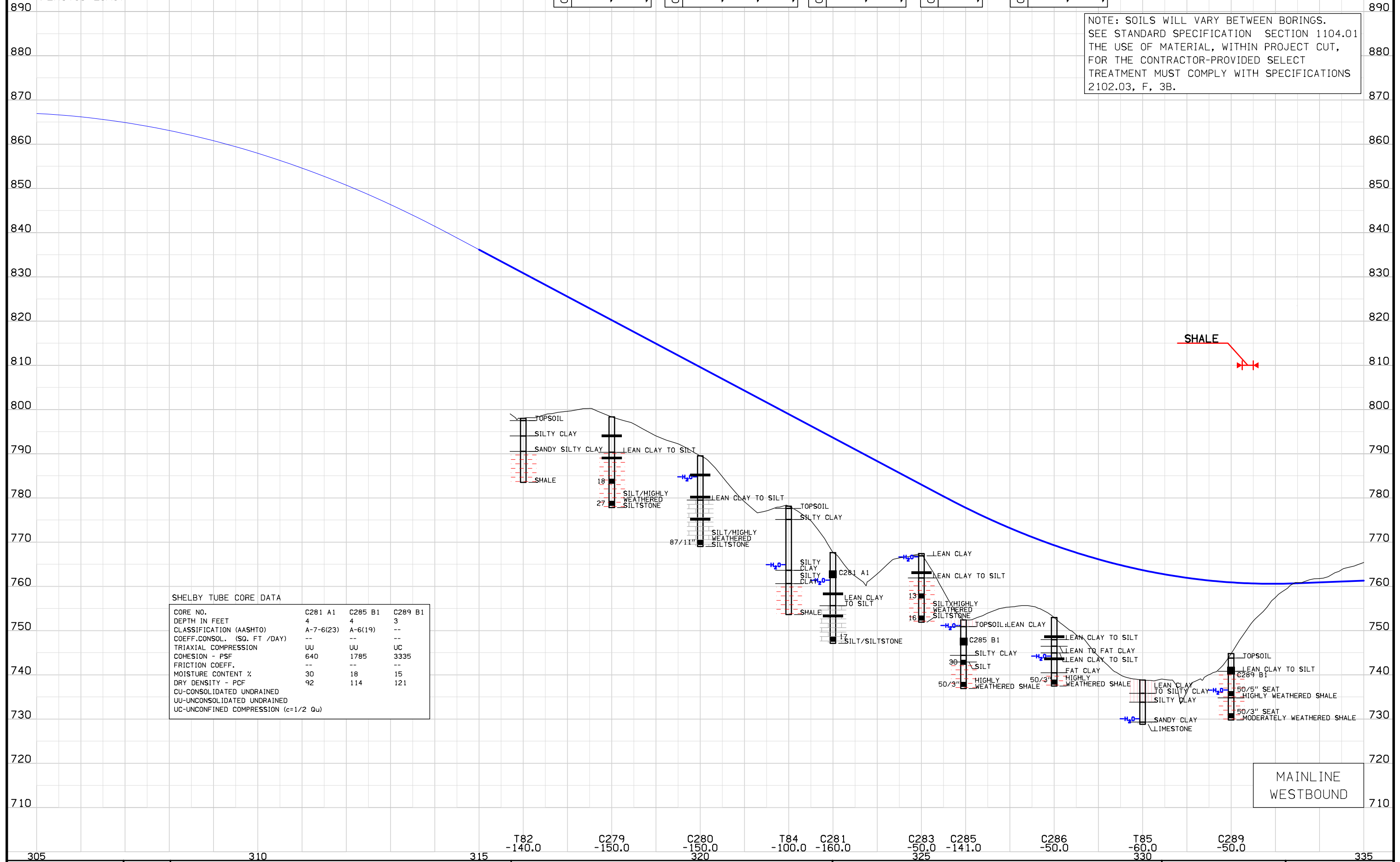


Refer to Next Q sheet For Soil Profile Information

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

C-279	23, 102,	17, 103,		C-280	25, 100,	25, 99,	33, ?		C-281	24, 100,	17, 115,		C-283	26, 99,		C-286	26, 99,	22, 106,
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NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C281 A1	C285 B1	C289 B1
DEPTH IN FEET	4	4	3
CLASSIFICATION (AASHTO)	A-7-6(23)	A-6(19)	--
COEFF. CONSOL. (SQ. FT / DAY)	--	--	--
TRIAXIAL COMPRESSION	UU	UU	UC
COHESION - PSF	640	1785	3335
FRICTION COEFF.	--	--	--
MOISTURE CONTENT %	30	18	15
DRY DENSITY - PCF	92	114	121
CU-CONSOLIDATED UNDRAINED			
UU-UNCONSOLIDATED UNDRAINED			
UC-UNCONFINED COMPRESSION (c=1/2 Qu)			

MAINLINE
WESTBOUND

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

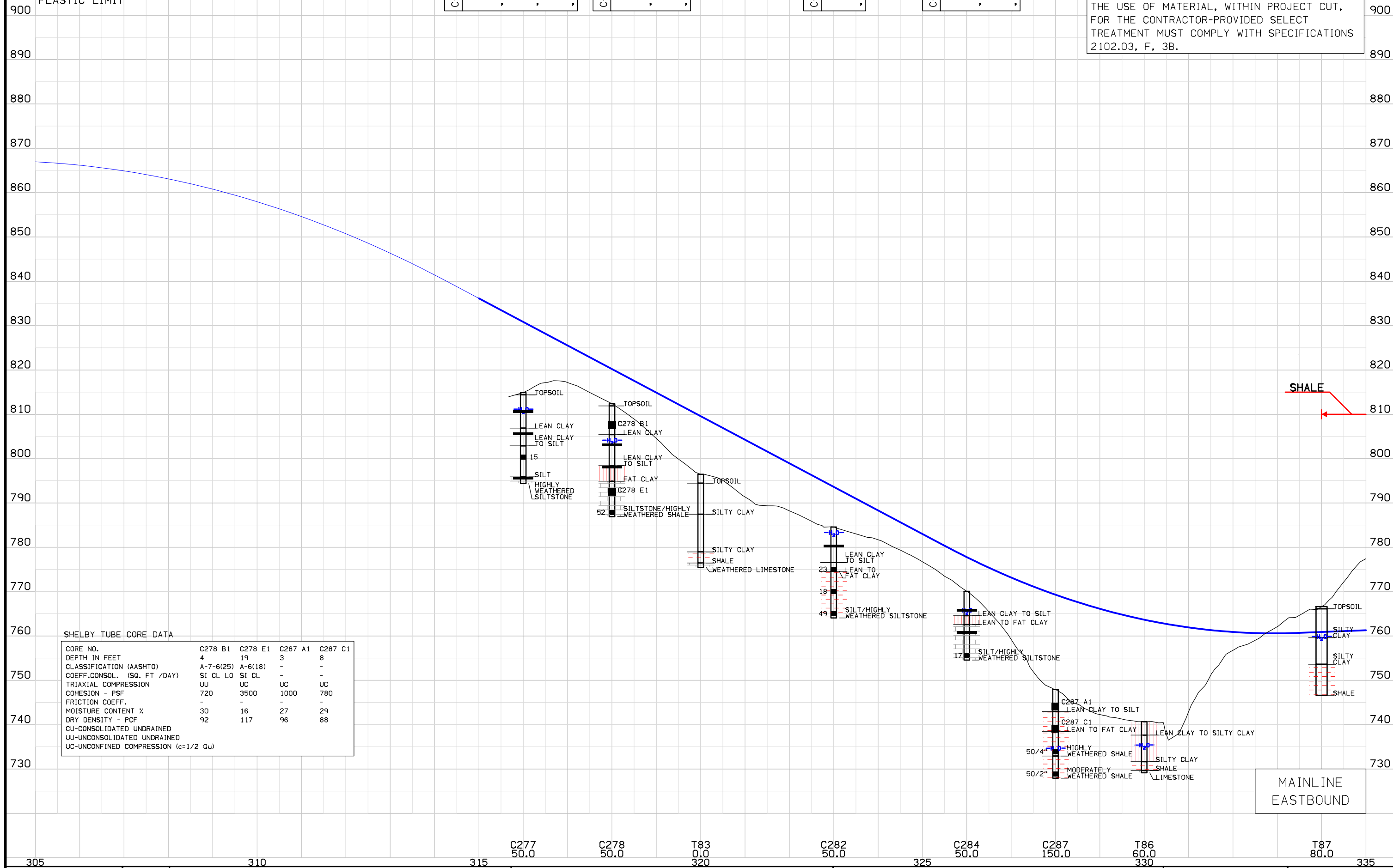
C-277	27, 94, ,	19, 107, ,	12, 121, ,
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C-278	25, 94, ,	24, 98, ,
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C-282	26, 95, ,
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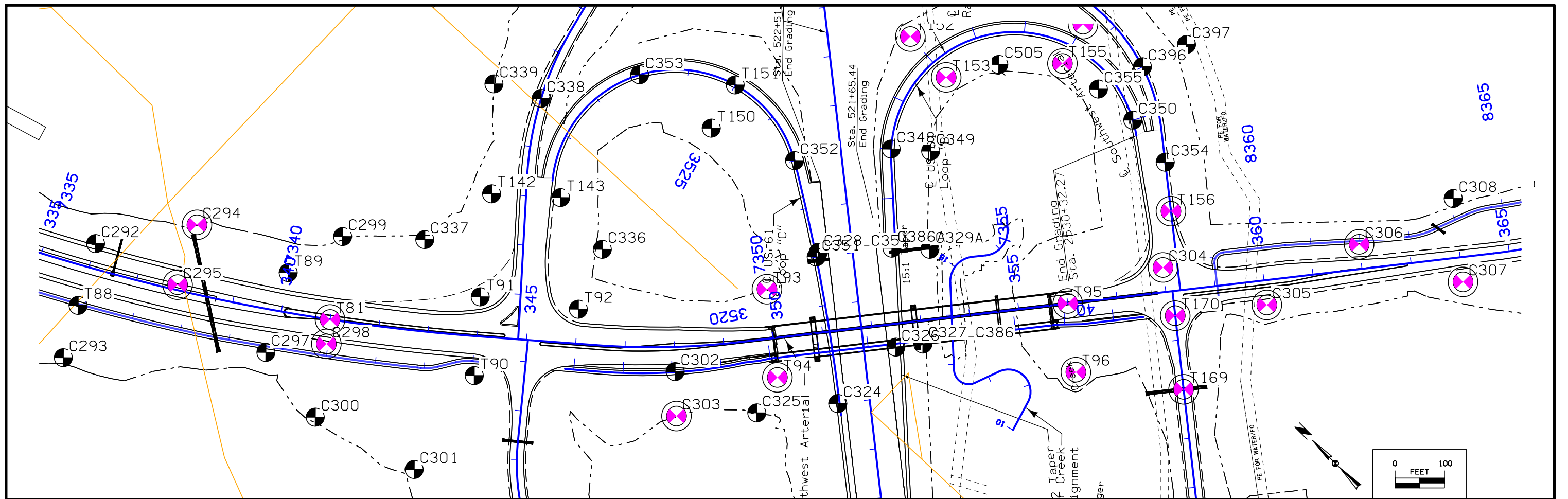
C-284	26, 97, ,
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NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C278 B1	C278 E1	C287 A1	C287 C1
DEPTH IN FEET	4	19	3	8
CLASSIFICATION (AASHTO)	A-7-6(25)	A-6(18)	-	-
COEFF. CONSOL. (SQ. FT / DAY)	SI CL LO	SI CL	-	-
TRIAxIAL COMPRESSION	UU	UC	UC	UC
COHESION - PSF	720	3500	1000	780
FRICITION COEFF.	-	-	-	-
MOISTURE CONTENT %	30	16	27	29
DRY DENSITY - PCF	92	117	96	88
CU-CONSOLIDATED UNDRAINED				
UU-UNCONSOLIDATED UNDRAINED				
UC-UNCONFINED COMPRESSION (c=1/2 Qu)				



NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

C-292
26, 23,
106, 110,
19, 16,

C-295
28, 20,
87, 96,

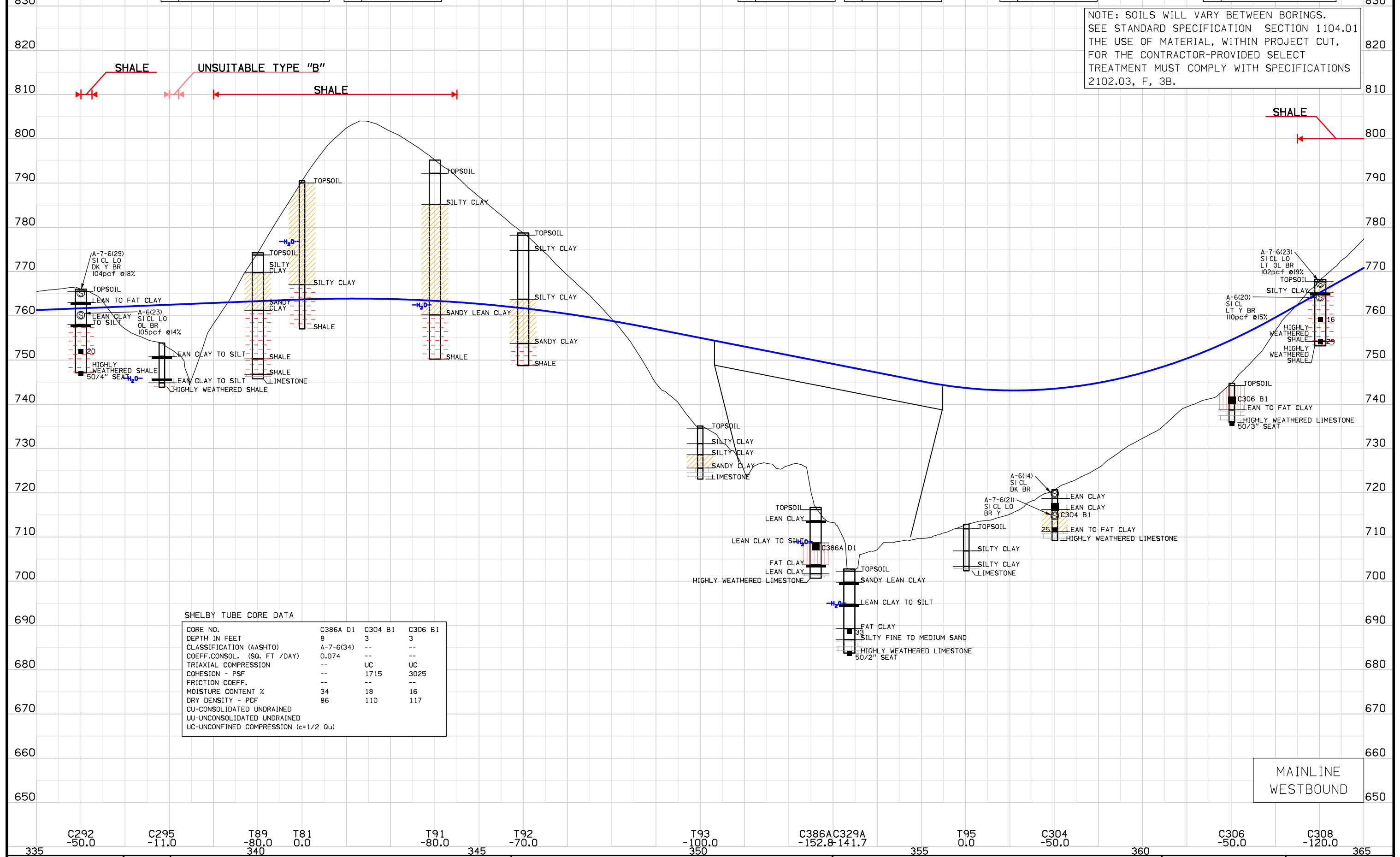
C-386A
29, 31,
93, 92,

C-329A
21, 25,
9, 93,

C-304
22, 19,

C-308
16, 15,
119, 15,

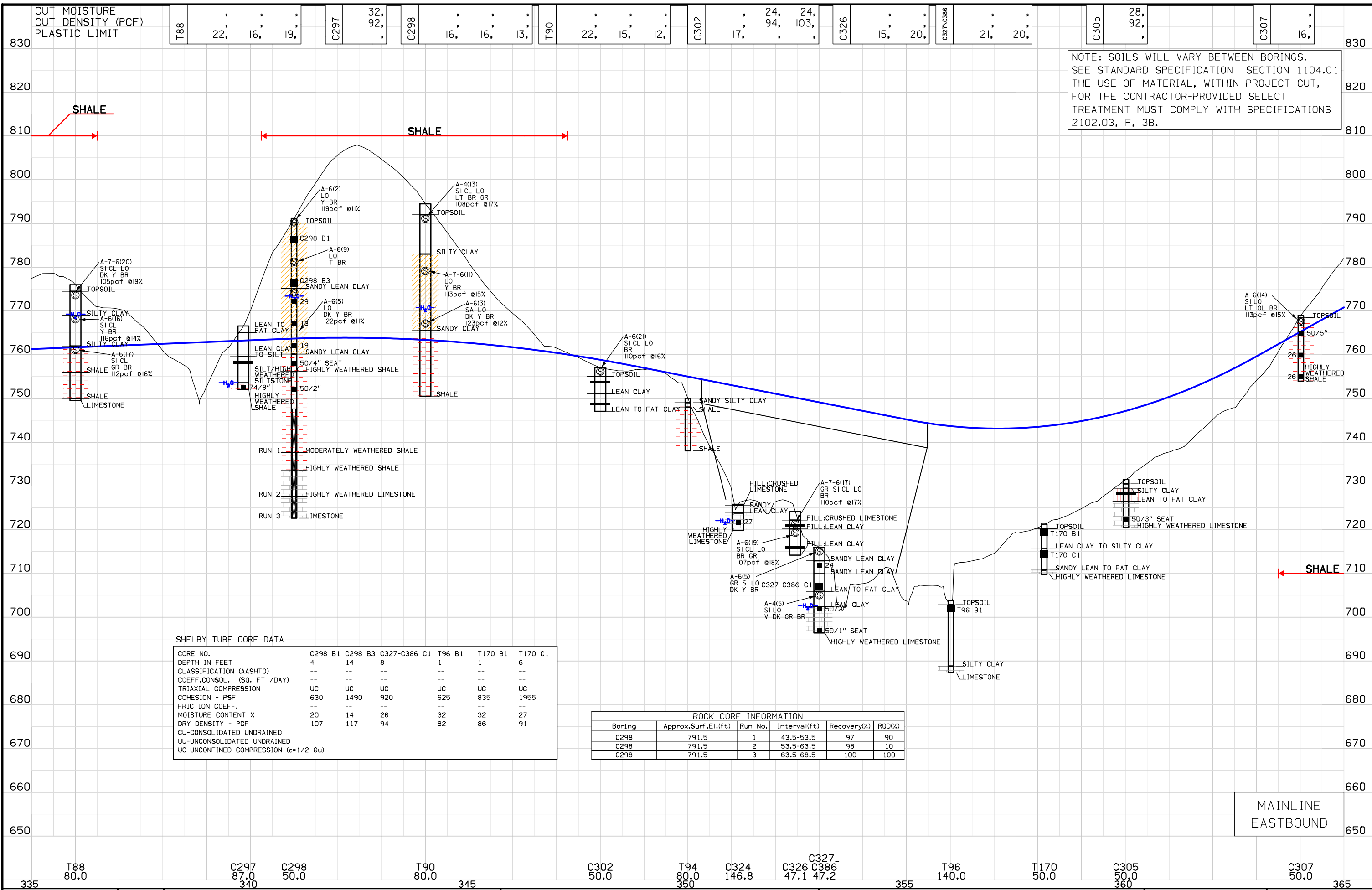
NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C386A D1	C304 B1	C306 B1
DEPTH IN FEET	8	3	3
CLASSIFICATION (AASHTO)	A-7-6(34)	--	--
COEFF. CONSOL. (SQ. FT / DAY)	0.074	--	--
TRIAxIAL COMPRESSION	--	UC	UC
COHESION - PSF	--	1715	3025
FRICTION COEFF.	--	--	--
MOISTURE CONTENT %	34	18	16
DRY DENSITY - PCF	86	110	117
CU-CONSOLIDATED UNDRAINED			
UU-UNCONSOLIDATED UNDRAINED			
UC-UNCONFINED COMPRESSION (c=1/2 Qu)			

MAINLINE
WESTBOUND

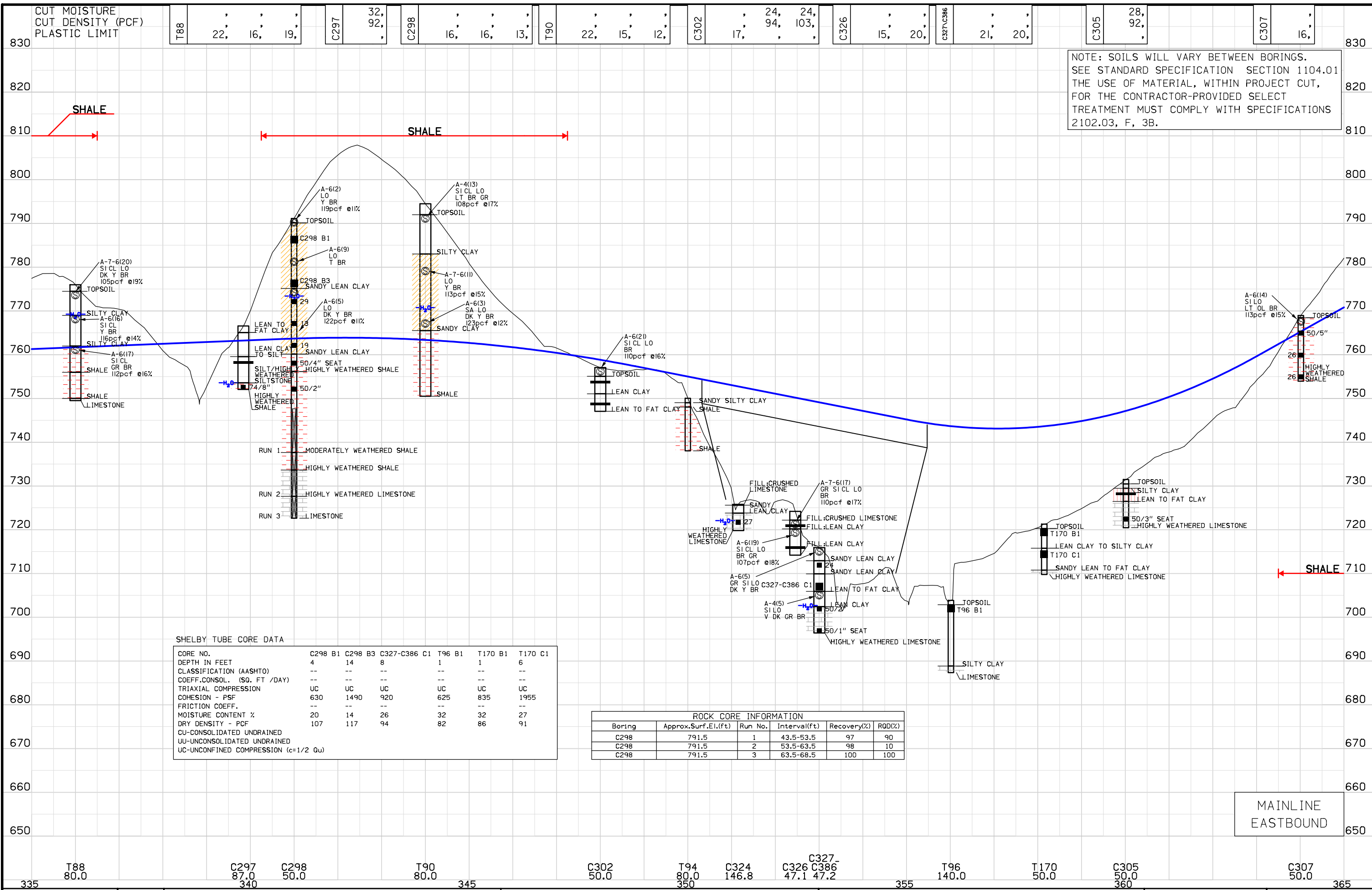


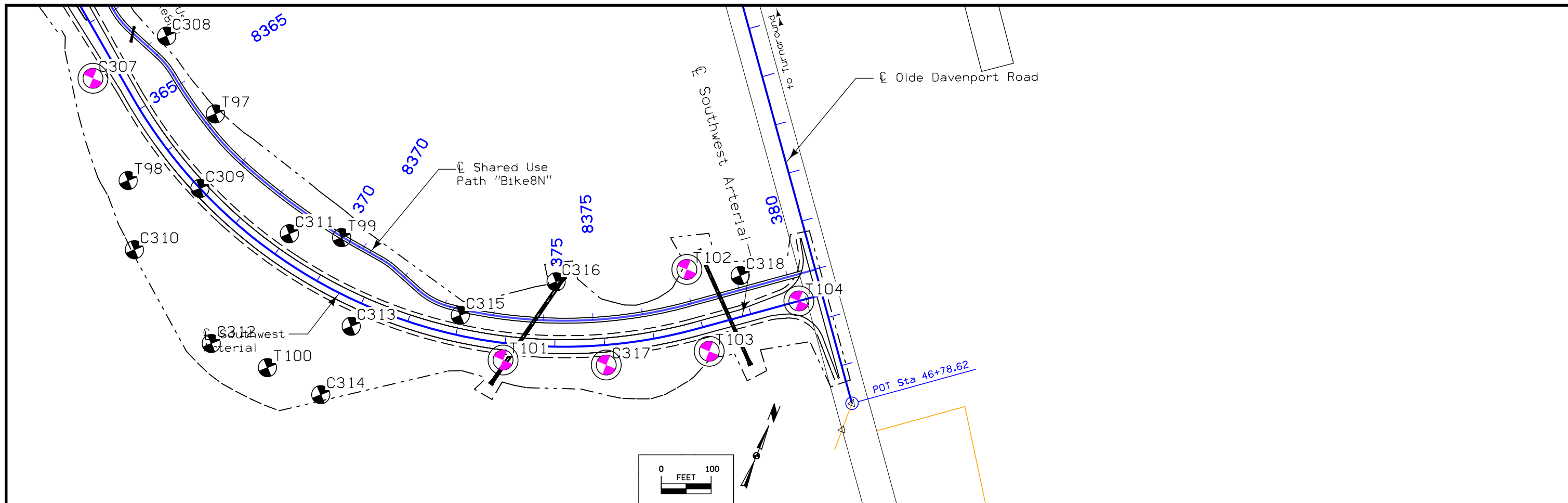
SHELBY TUBE CORE DATA

CORE NO.	C298 B1	C298 B3	C327-C386 C1	T96 B1	T170 B1	T170 C1
DEPTH IN FEET	4	14	8	1	1	6
CLASSIFICATION (AASHTO)	--	--	--	--	--	--
COEFF. CONSOL. (SQ. FT / DAY)	--	--	--	--	--	--
TRIAxIAL COMPRESSION	UC	UC	UC	UC	UC	UC
COHESION - PSF	630	1490	920	625	835	1955
FRICTION COEFF.	--	--	--	--	--	--
MOISTURE CONTENT %	20	14	26	32	32	27
DRY DENSITY - PCF	107	117	94	82	86	91
CU-CONSOLIDATED UNDRAINED						
UU-UNCONSOLIDATED UNDRAINED						
UC-UNCONFINED COMPRESSION (c=1/2 Qu)						

ROCK CORE INFORMATION

Boring	Approx. Surf. El. (ft)	Run No.	Interval (ft)	Recovery (%)	RQD (%)
C298	791.5	1	43.5-53.5	97	90
C298	791.5	2	53.5-63.5	98	10
C298	791.5	3	63.5-68.5	100	100





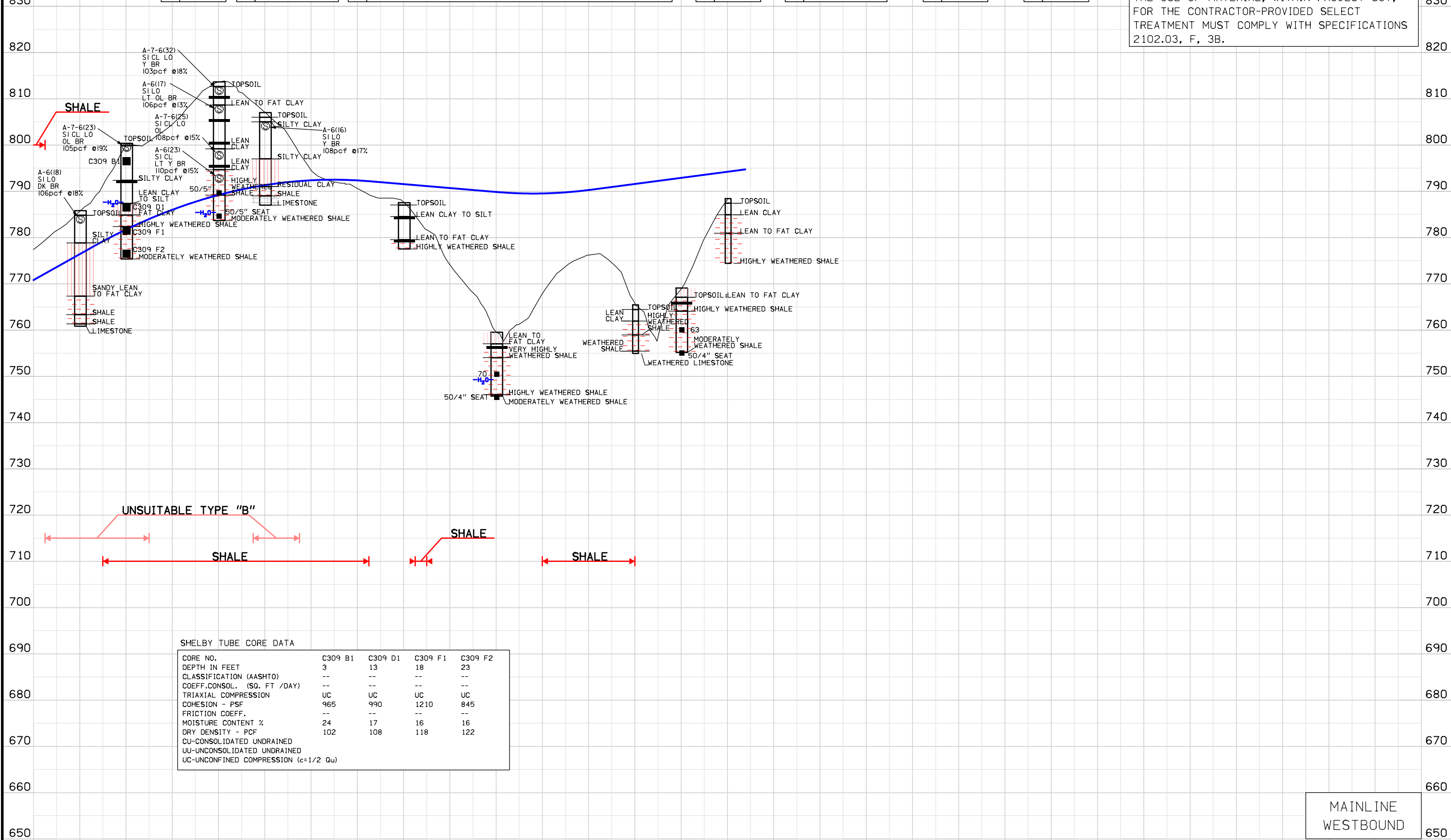
NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

T-97	21,	C-309	19,	C-311	30,	25,	23,	13,	T-99	20,	C-315	24,	15,	C-316	17,	C-318	18,
					91,	101,	105,	126,				105,	120,			111,	
					18,	15,	15,	15,									

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

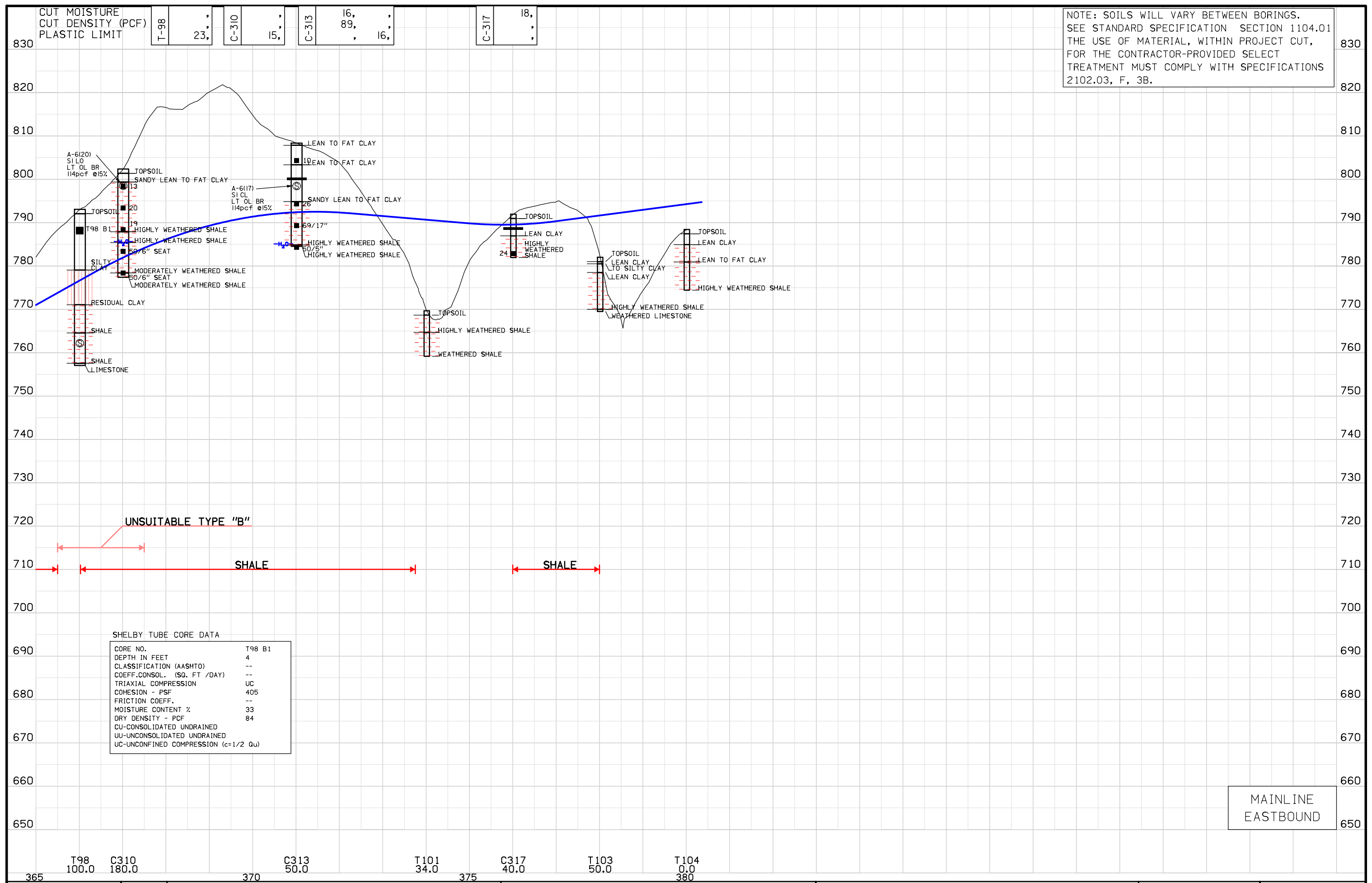
CORE NO.	C309 B1	C309 D1	C309 F1	C309 F2
DEPTH IN FEET	3	13	18	23
CLASSIFICATION (AASHTO)	--	--	--	--
COEFF. CONSOL. (SQ. FT / DAY)	--	--	--	--
TRIAXIAL COMPRESSION	UC	UC	UC	UC
COHESION - PSF	965	990	1210	845
FRICTION COEFF.	--	--	--	--
MOISTURE CONTENT %	24	17	16	16
DRY DENSITY - PCF	102	108	118	122
CU-UNCONSOLIDATED UNDRAINED				
UU-UNCONSOLIDATED UNDRAINED				
UC-UNCONFINED COMPRESSION (c=1/2 Qu)				

MAINLINE
WESTBOUND

T97	C309	C311	T99	C315	C316	T102	C318	T104
-120.0	0.0	-50.0	-100.0	-40.0	-130.0	-120.0	-80.0	0.0
365			370		375			380

CUT MOISTURE	T-98	C-310	C-313	C-317
CUT DENSITY (PCF)	23,	15,	16,	18,
PLASTIC LIMIT			89,	
			16,	

NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.

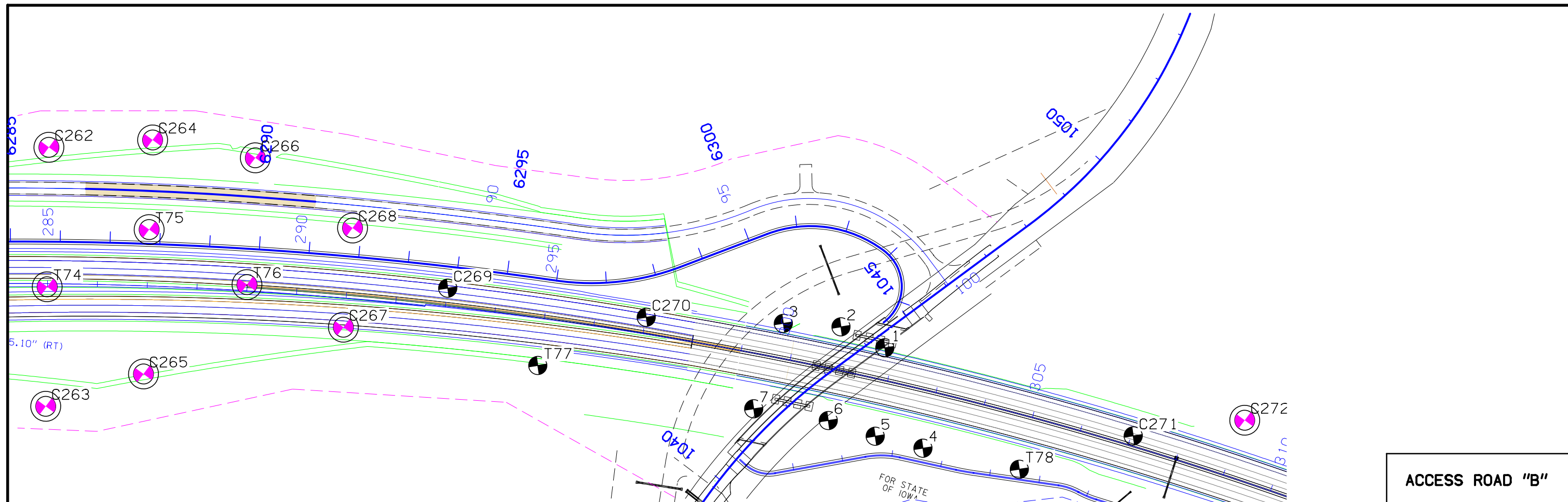


SHELBY TUBE CORE DATA

CORE NO.	T98 B1
DEPTH IN FEET	4
CLASSIFICATION (AASHTO)	--
COEFF. CONSOL. (SQ. FT / DAY)	--
TRIAxIAL COMPRESSION	UC
COHESION - PSF	405
FRICTION COEFF.	--
MOISTURE CONTENT %	33
DRY DENSITY - PCF	84
CU-CONSOLIDATED UNDRAINED	
UU-UNCONSOLIDATED UNDRAINED	
UC-UNCONFINED COMPRESSION (c=1/2 Qu)	

MAINLINE
EASTBOUND

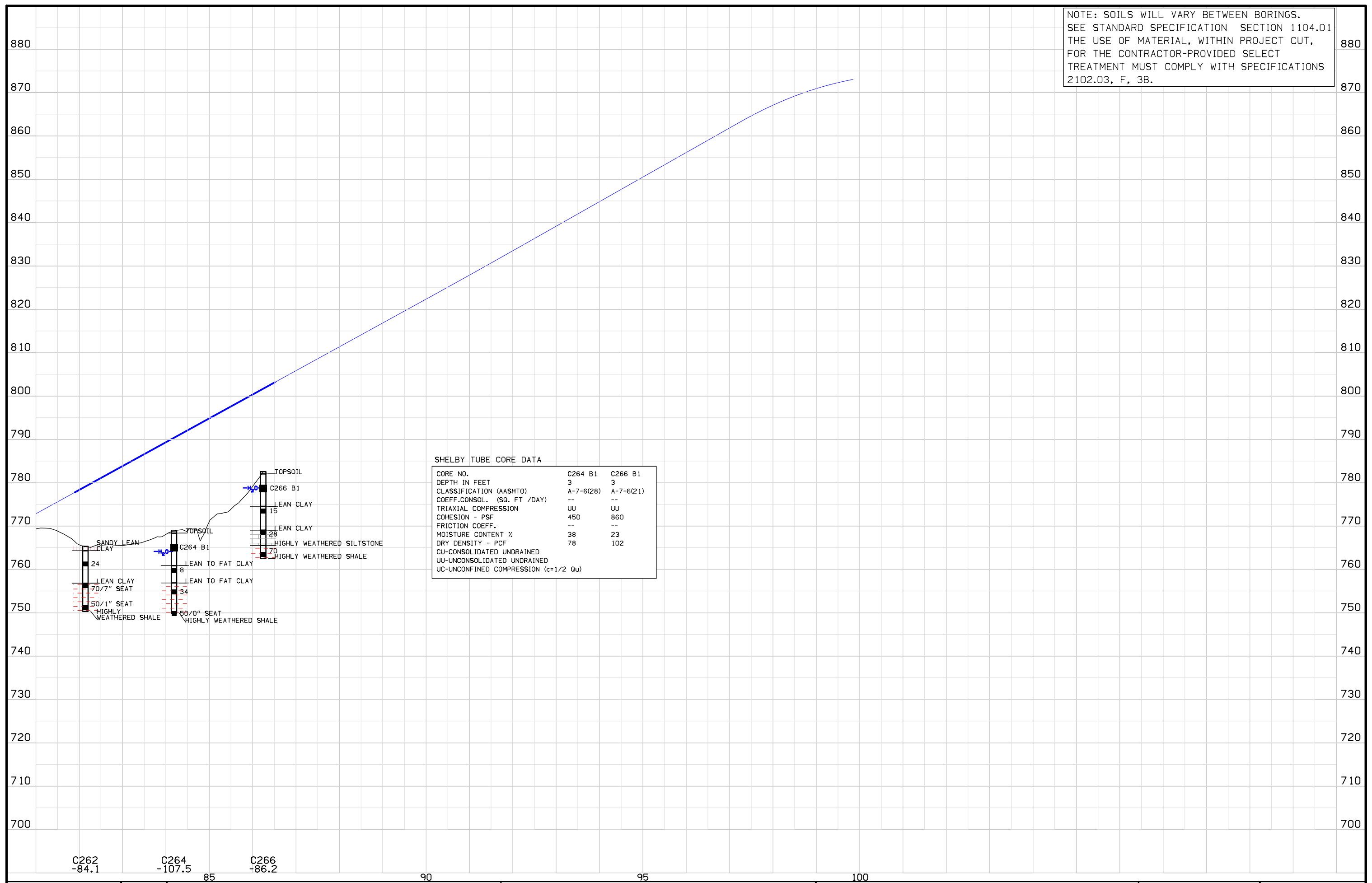
365	T98 100.0	C310 180.0	370	C313 50.0	T101 34.0	375	C317 40.0	T103 50.0	T104 0.0	380
-----	--------------	---------------	-----	--------------	--------------	-----	--------------	--------------	-------------	-----

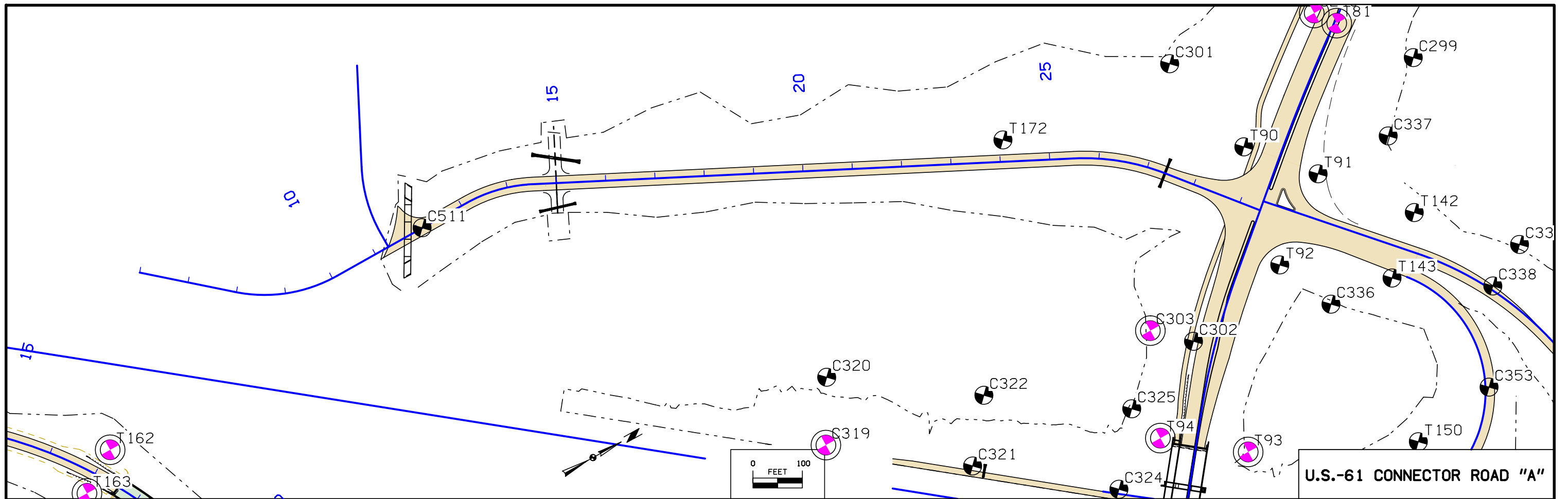


NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.





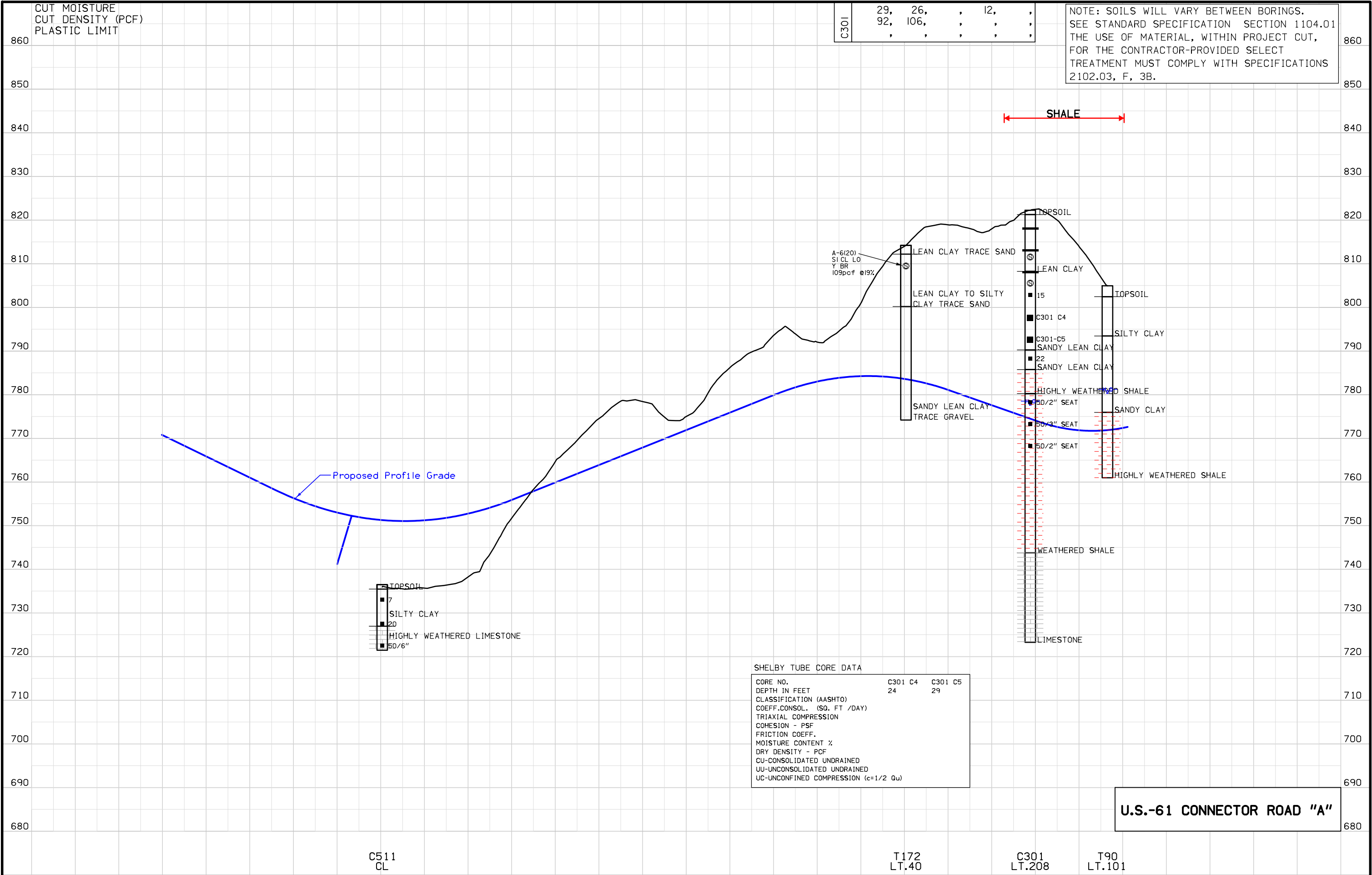
NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

C301	29,	26,		12,	
	92,	106,			

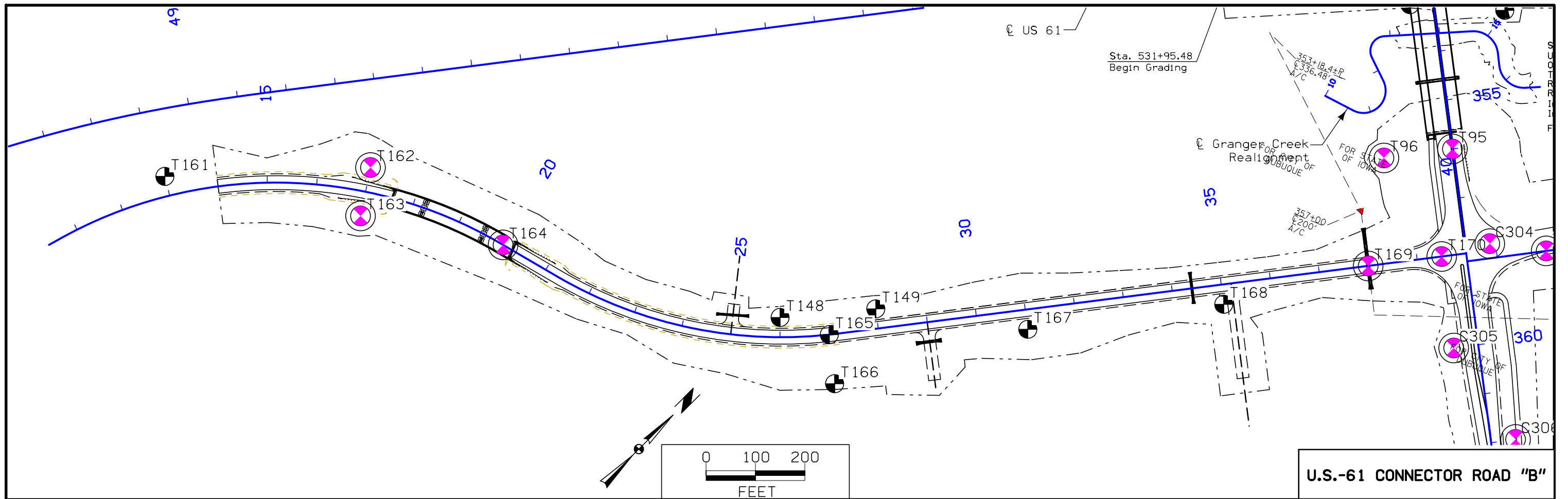
NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C301 C4	C301 C5
DEPTH IN FEET	24	29
CLASSIFICATION (AASHTO)		
COEFF. CONSOL. (SQ. FT / DAY)		
TRIAxIAL COMPRESSION		
COHESION - PSF		
FRICTION COEFF.		
MOISTURE CONTENT %		
DRY DENSITY - PCF		
CU-CONSOLIDATED UNDRAINED		
UU-UNCONSOLIDATED UNDRAINED		
UC-UNCONFINED COMPRESSION (c=1/2 Qu)		

U.S.-61 CONNECTOR ROAD "A"



NOTE: SOILS WILL VARY BETWEEN BORINGS.
 SEE STANDARD SPECIFICATION SECTION 1104.01
 THE USE OF MATERIAL, WITHIN PROJECT CUT,
 FOR THE CONTRACTOR-PROVIDED SELECT
 TREATMENT MUST COMPLY WITH SPECIFICATIONS
 2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

T-161	20,	T-162	39,
-------	-----	-------	-----

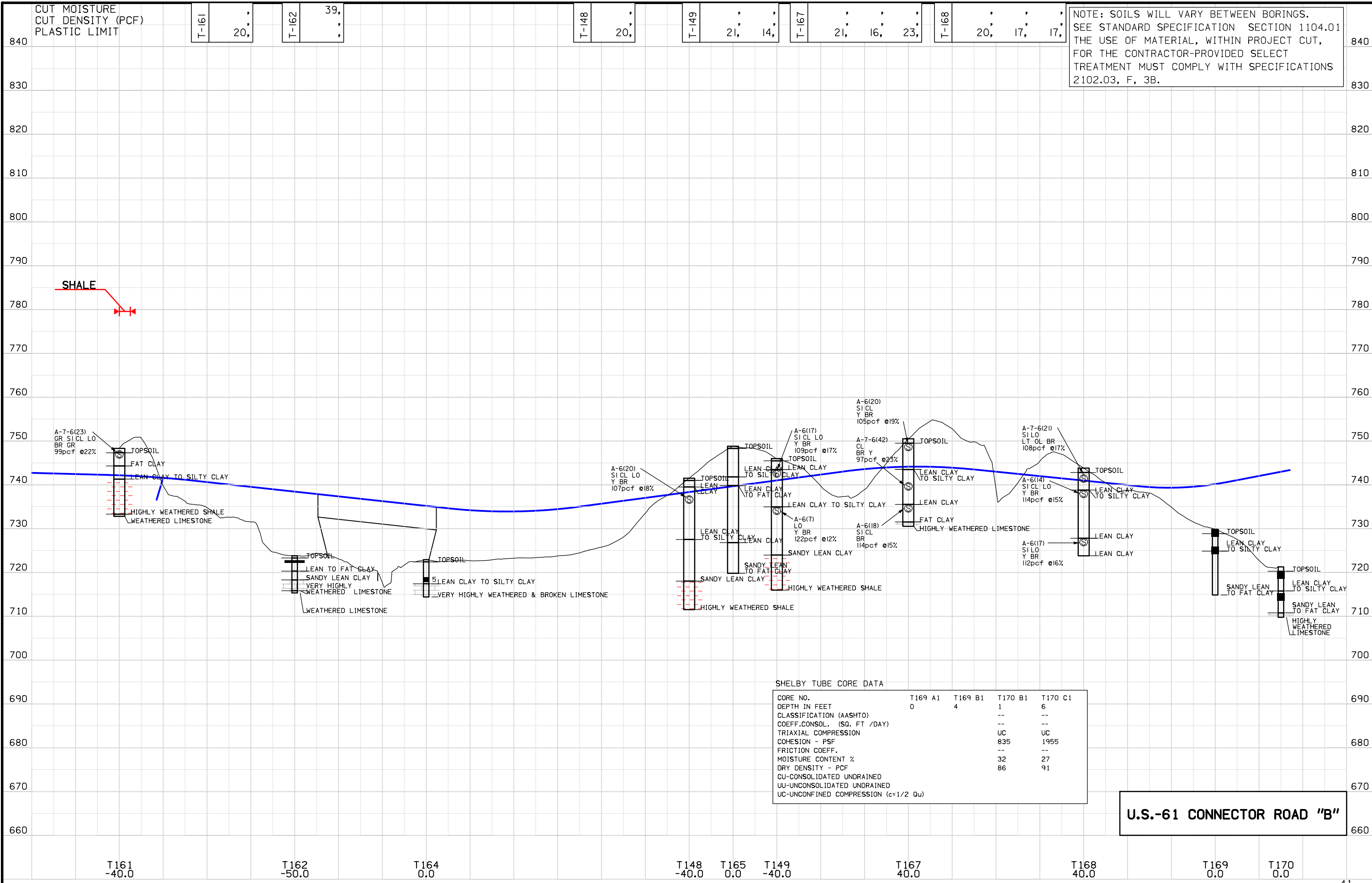
T-148	20,
-------	-----

T-149	21,	14,
-------	-----	-----

T-167	21,	16,	23,
-------	-----	-----	-----

T-168	20,	17,	17,
-------	-----	-----	-----

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	T169 A1	T169 B1	T170 B1	T170 C1
DEPTH IN FEET	0	4	1	6
CLASSIFICATION (AASHTO)			--	--
COEFF. CONSOL. (SQ. FT / DAY)			--	--
TRIAxIAL COMPRESSION			UC	UC
COHESION - PSF			835	1955
FRICTION COEFF.			--	--
MOISTURE CONTENT %			32	27
DRY DENSITY - PCF			86	91
CU-CONSOLIDATED UNDRAINED				
UU-UNCONSOLIDATED UNDRAINED				
UC-UNCONFINED COMPRESSION (c=1/2 Qu)				

U.S.-61 CONNECTOR ROAD "B"

T161
-40.0

T162
-50.0

T164
0.0

T148
-40.0

T165
0.0

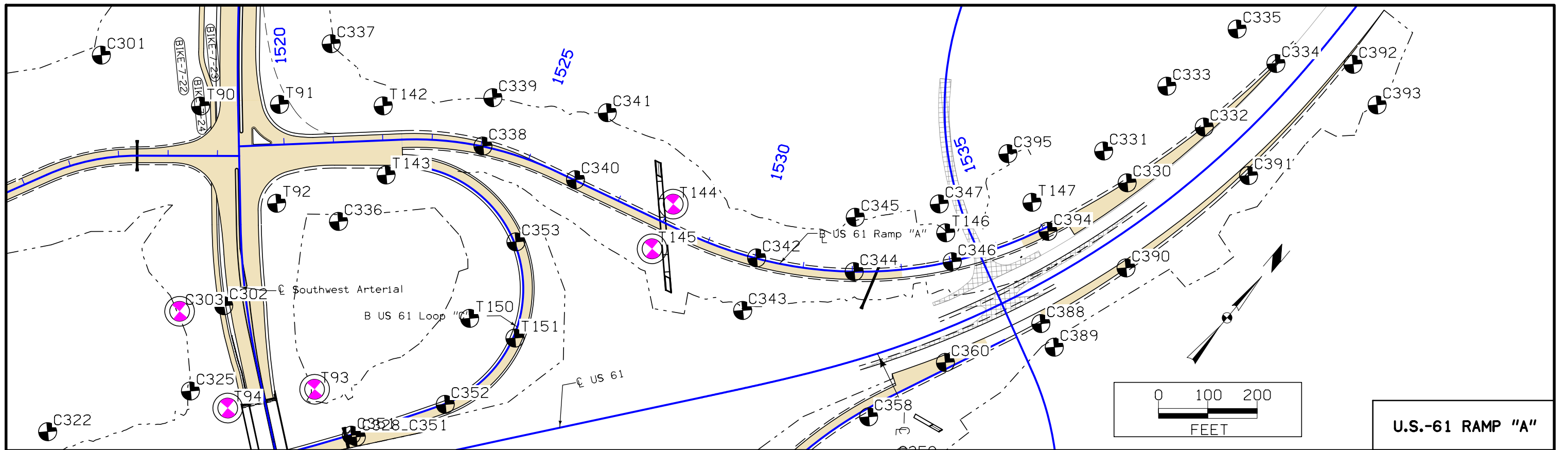
T149
-40.0

T167
40.0

T168
40.0

T169
0.0

T170
0.0

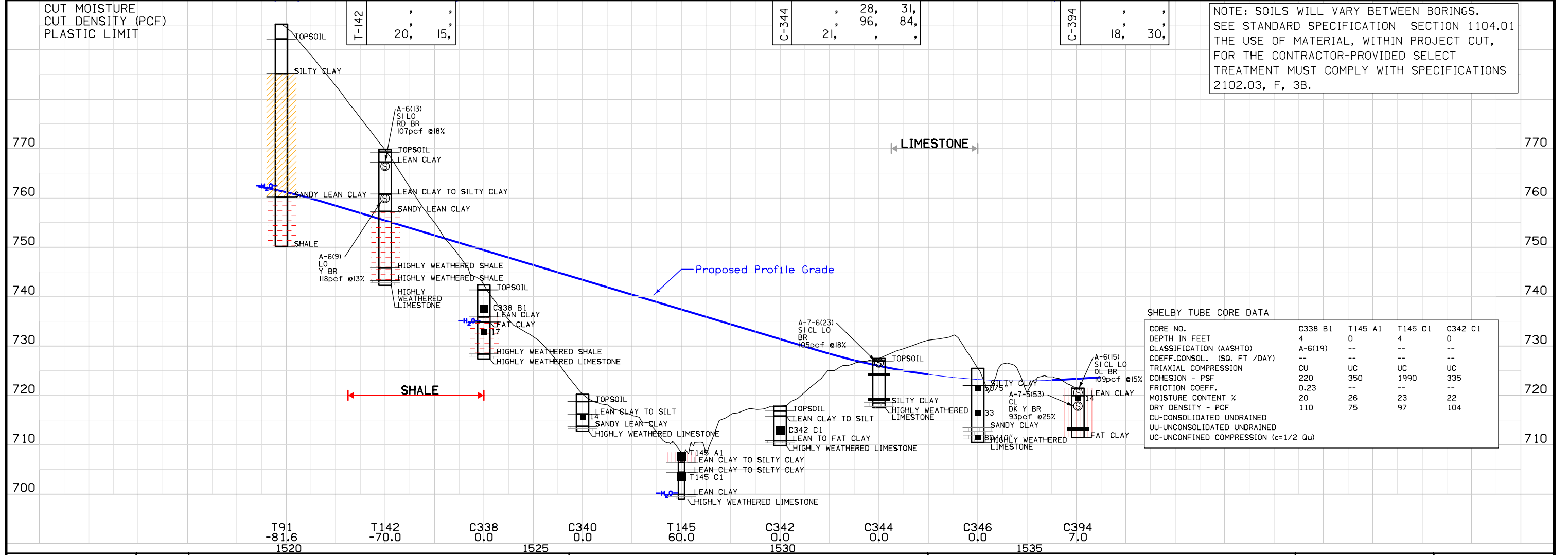


U.S.-61 RAMP "A"

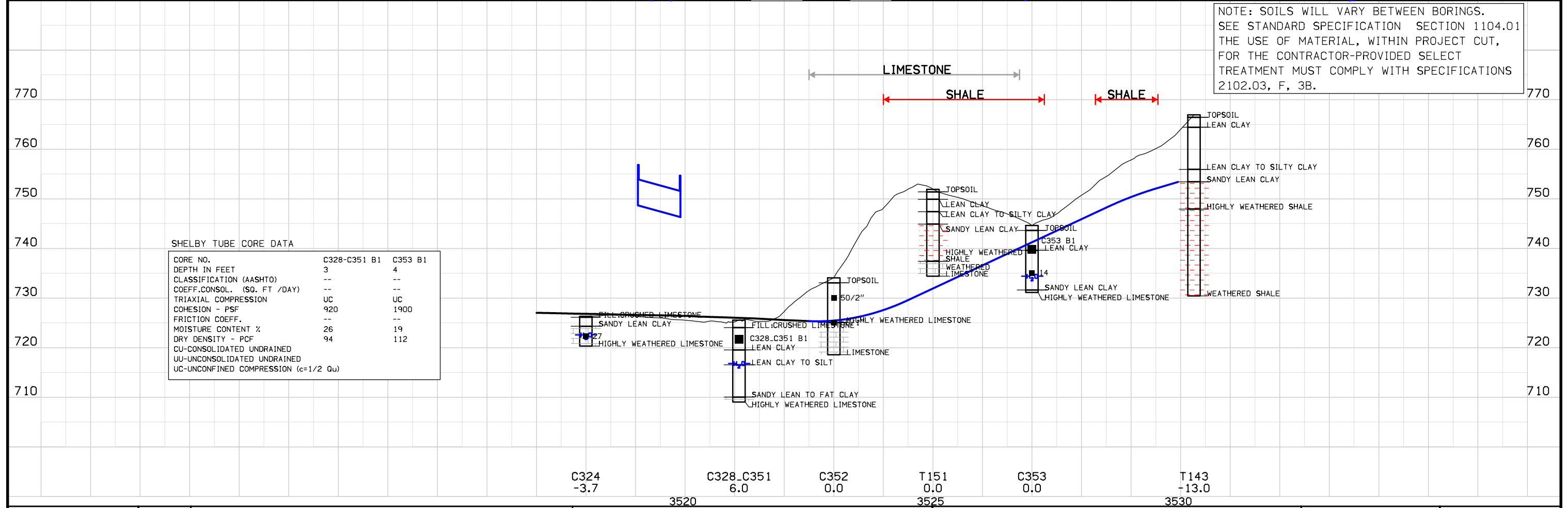
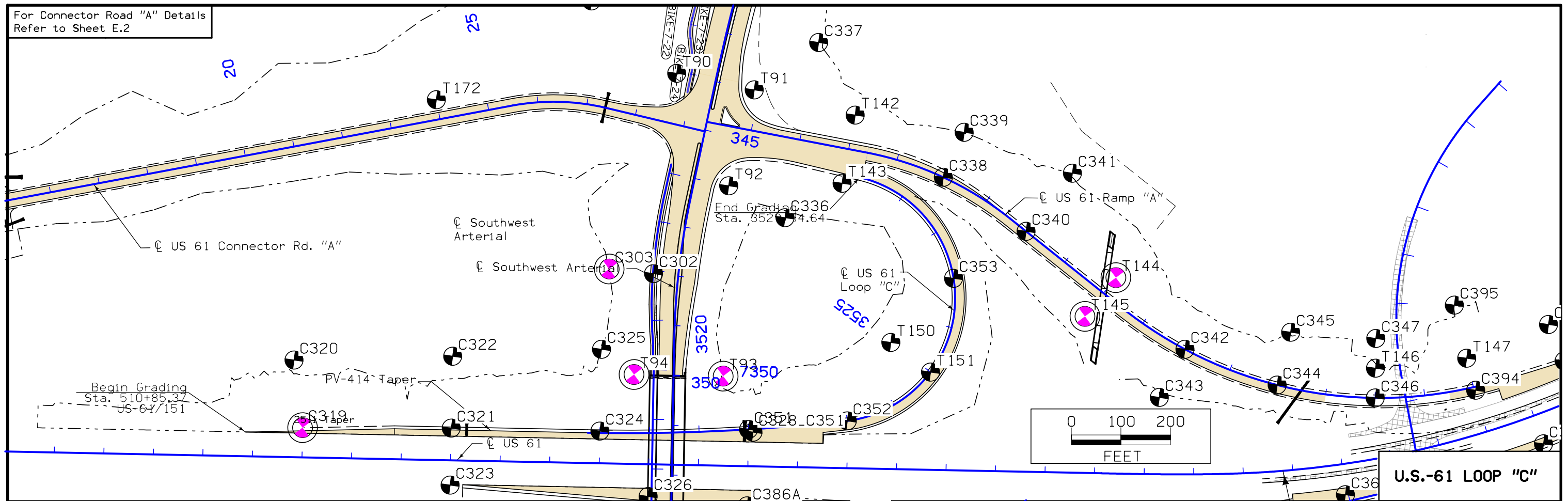
CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

T-142	20,	15,		
C-344	21,	28,	31,	
		96,	84,	
C-394	18,		30,	

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

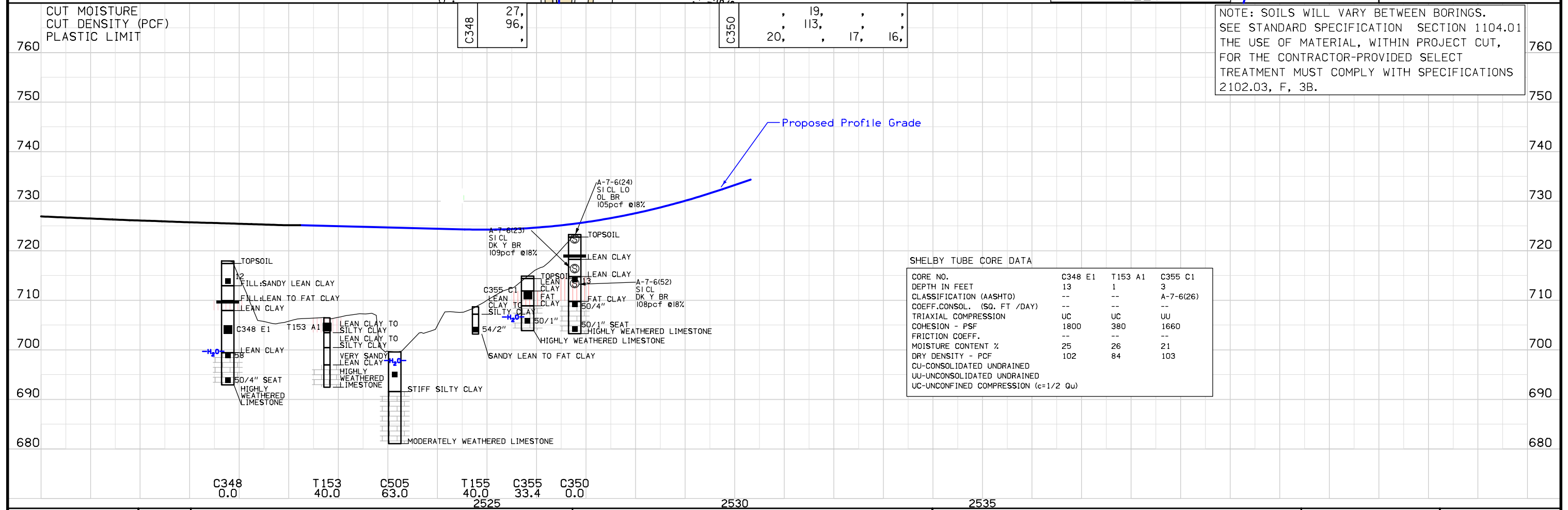
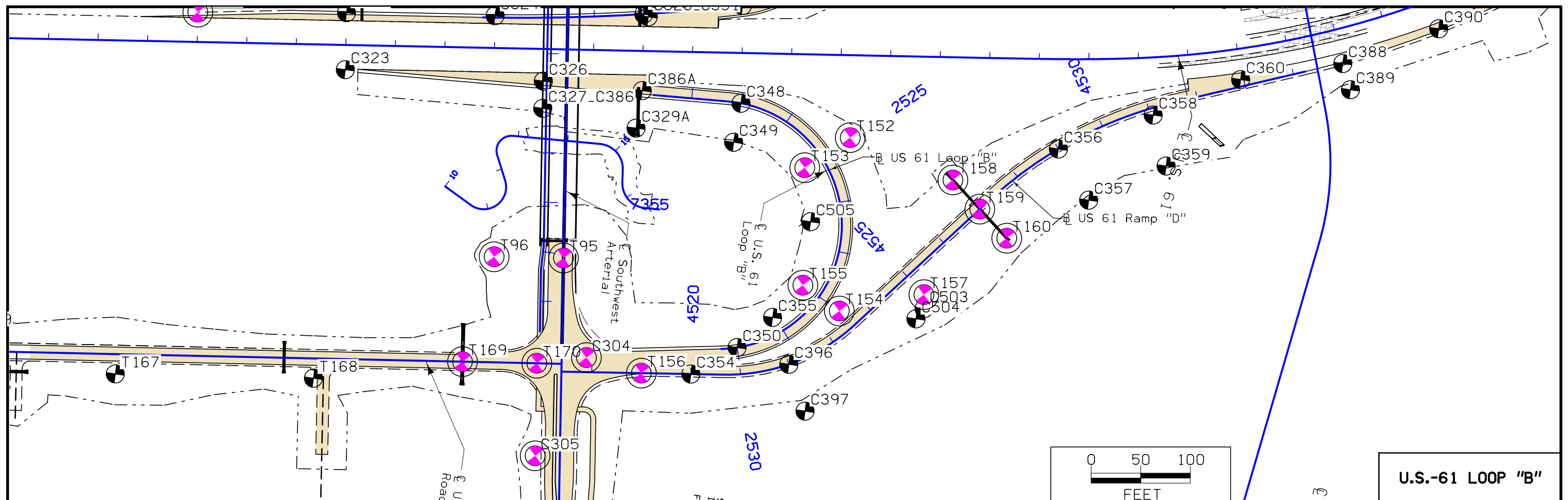


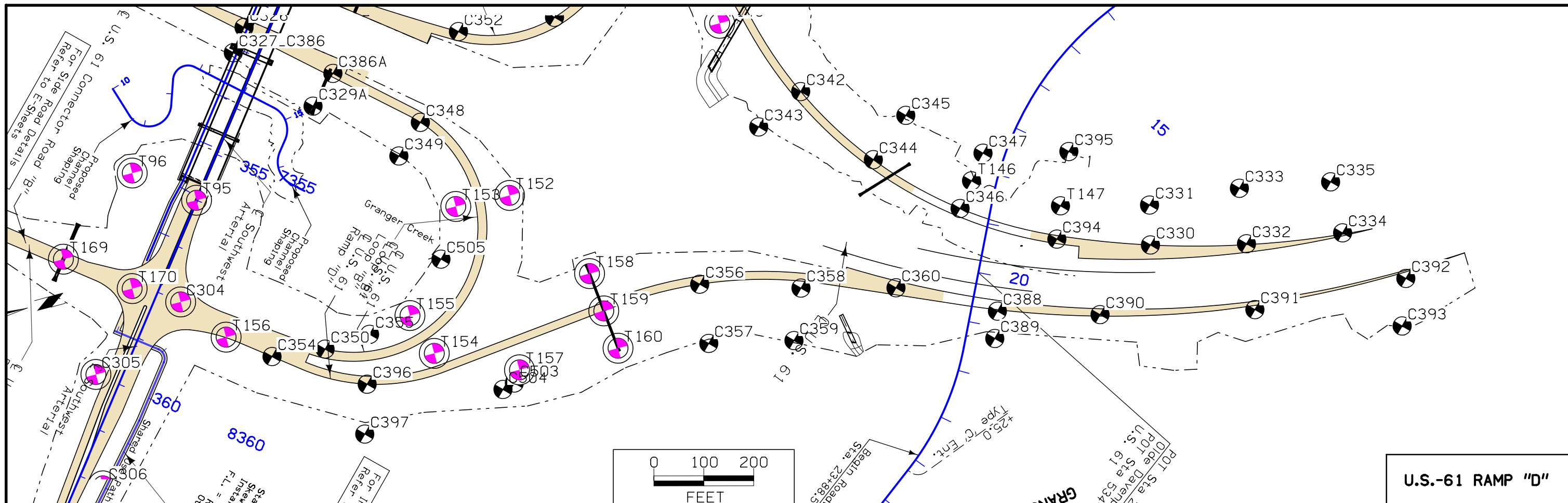
For Connector Road "A" Details
Refer to Sheet E.2



SHELBY TUBE CORE DATA

CORE NO.	C328-C351 B1	C353 B1
DEPTH IN FEET	3	4
CLASSIFICATION (AASHTO)	--	--
COEFF. CONSOL. (SQ. FT / DAY)	--	--
TRIAxIAL COMPRESSION	UC	UC
COHESION - PSF	920	1900
FRICTION COEFF.	--	--
MOISTURE CONTENT %	26	19
DRY DENSITY - PCF	94	112
CU-CONSOLIDATED UNDRAINED		
UU-UNCONSOLIDATED UNDRAINED		
UC-UNCONFINED COMPRESSION (c=1/2 Qu)		

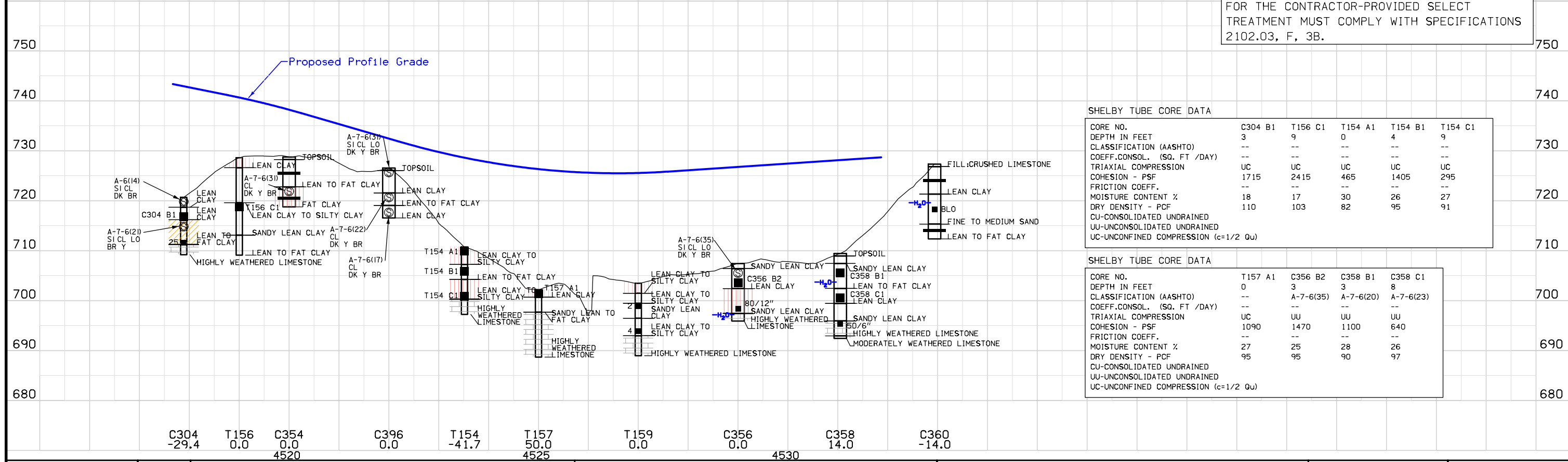




U.S.-61 RAMP "D"

CUT MOISTURE	CUT DENSITY (PCF)	PLASTIC LIMIT
C-304	18,	108,
C-354	20,	105,
C-396		
C-356	21,	105,
C-360	24,	

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C304 B1	T156 C1	T154 A1	T154 B1	T154 C1
DEPTH IN FEET	3	9	0	4	9
CLASSIFICATION (AASHTO)	--	--	--	--	--
COEFF. CONSOL. (SQ. FT / DAY)	--	--	--	--	--
TRIAXIAL COMPRESSION	UC	UC	UC	UC	UC
COHESION - PSF	1715	2415	465	1405	295
FRICTION COEFF.	--	--	--	--	--
MOISTURE CONTENT %	18	17	30	26	27
DRY DENSITY - PCF	110	103	82	95	91
CU-CONSOLIDATED UNDRAINED					
UU-UNCONSOLIDATED UNDRAINED					
UC-UNCONFINED COMPRESSION (c=1/2 Qu)					

SHELBY TUBE CORE DATA

CORE NO.	T157 A1	C356 B2	C358 B1	C358 C1
DEPTH IN FEET	0	3	3	8
CLASSIFICATION (AASHTO)	--	A-7-6(35)	A-7-6(20)	A-7-6(23)
COEFF. CONSOL. (SQ. FT / DAY)	--	--	--	--
TRIAXIAL COMPRESSION	UC	UU	UU	UU
COHESION - PSF	1090	1470	1100	640
FRICTION COEFF.	--	--	--	--
MOISTURE CONTENT %	27	25	28	26
DRY DENSITY - PCF	95	95	90	97
CU-CONSOLIDATED UNDRAINED				
UU-UNCONSOLIDATED UNDRAINED				
UC-UNCONFINED COMPRESSION (c=1/2 Qu)				

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Luminaire
	Fruit Tree		Traffic Signal
	Shrub (Bushes)		Traffic Signal with Luminaire
	Timber		Telephone Pedestal
	Hedge		Television Pedestal
	Stump		Telephone Pole
	Swamp		Telephone Pole (Second Company)
	Rock Outcrop		Telephone Pole (Third Company)
	Broken Concrete		Telephone Pole (Fourth Company)
	Revetment (Rip Rap)		Telephone Pole (Fifth Company)
	Cemetery		Power Pole
	Grave		Power Pole (Second Company)
	Cave		Power Pole (Third Company)
	Sink Hole		Power Pole (Fourth Company)
	Board Fence		Power Pole (Fifth Company)
	Chain Link or Security Fence		Electrical Highline Tower (Metal or Concrete)
	Wire Fence		Telephone Riser Pole
	Terrace		Power Riser Pole
	Earth Dam or Dike (Existing)		Telegraph Pole
	Earth Dam or Dike (Proposed)		Satellite TV Dish
	Tile Outlet		Guardrail (Beam or Cable)
	Edge of Water		Guard Post (one or two)
	Existing Drainage		Guard Post (over two)
	Proposed Drainage		Filler Pipe
	Right of Way Rail or Lot Corner		Gas Valve
	Concrete Monument		Water Valve
	Well		Speed Limit Sign
	Windmill		Mile Marker Post
	Beehive Intake		Sign
	Existing Intake		Water Hook Up
	Proposed Intake		Radio Tower
	Existing Utility Access (Manhole)		Tower Anchor
	Proposed Utility Access (Manhole)		Electric Box
	Fire Hydrant		Traffic Signal Control Box
	Water Hydrant (Rural)		Rail Road Signal Control Box
			Telephone Switch Box

UTILITY LEGEND

	City of Dubuque Water Works Bob Schiesl 563-589-4270 bschiesl@cityofdubuque.org
	Alliant Energy (formerly Interstate Light and Power) Jason Hogan 608-458-4871 jasonhogan@alliantenergy.com
	Black Hills Energy (formerly Aquila) Brad Fleming 402-221-2714 brad.fleming@blackhillscorp.com
	BP Pipelines (North America) Inc. David Sommerfeld 630-536-2729 david.sommerfeld@bp.com
	Maquoketa Valley Rural Electric James Lauzon 319-462-3541 jlauzon@mvec.com
	Mediacom (cable TV) Dennis Jarding 3900 26th Avenue Moline, IL 61265 309-743-4750 (Office) djarding@mediacomcc.com
	Windstream Communications (formerly PAETEC) Stephen Kness 1420 North Center Point Rd/ P.O. Box 3177 Hiawatha, IA 52233 319-790-7678 (Office) stephen.kness@windstream.com
	Centurylink (formerly Qwest Communications) Brent Giese 3908 Utica Ridge Road Bettendorf, IA 52722 563-355-2592 (Office) brent.giese@centurylink.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Magenta	(5)		Detectable Warning
Yellow	(4)		Highlight for Critical Notes or Features
Red	(3)		Delineates Restricted Areas
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading
Brown, Light	(236)		Grading Shading

Reference Point

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

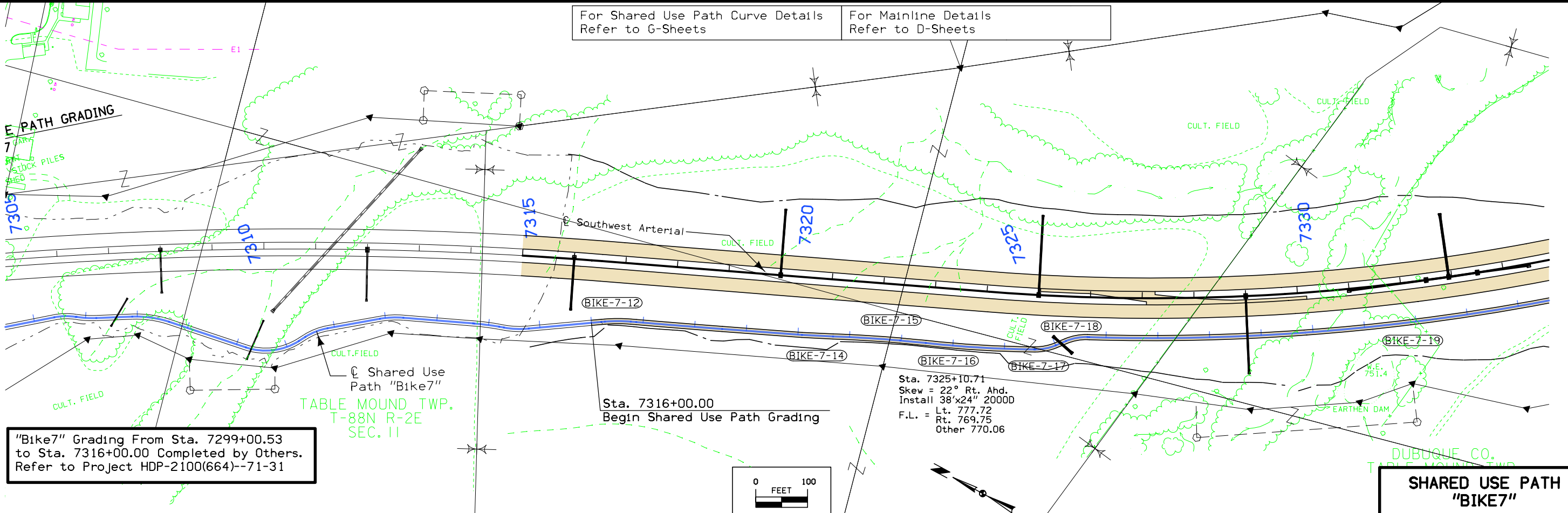
RIGHT-OF-WAY LEGEND

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

**SIDEWALK
LEGEND AND SYMBOL
INFORMATION SHEET**

(COVERS SHEET SERIES S)

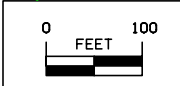
For Shared Use Path Curve Details Refer to G-Sheets
 For Mainline Details Refer to D-Sheets



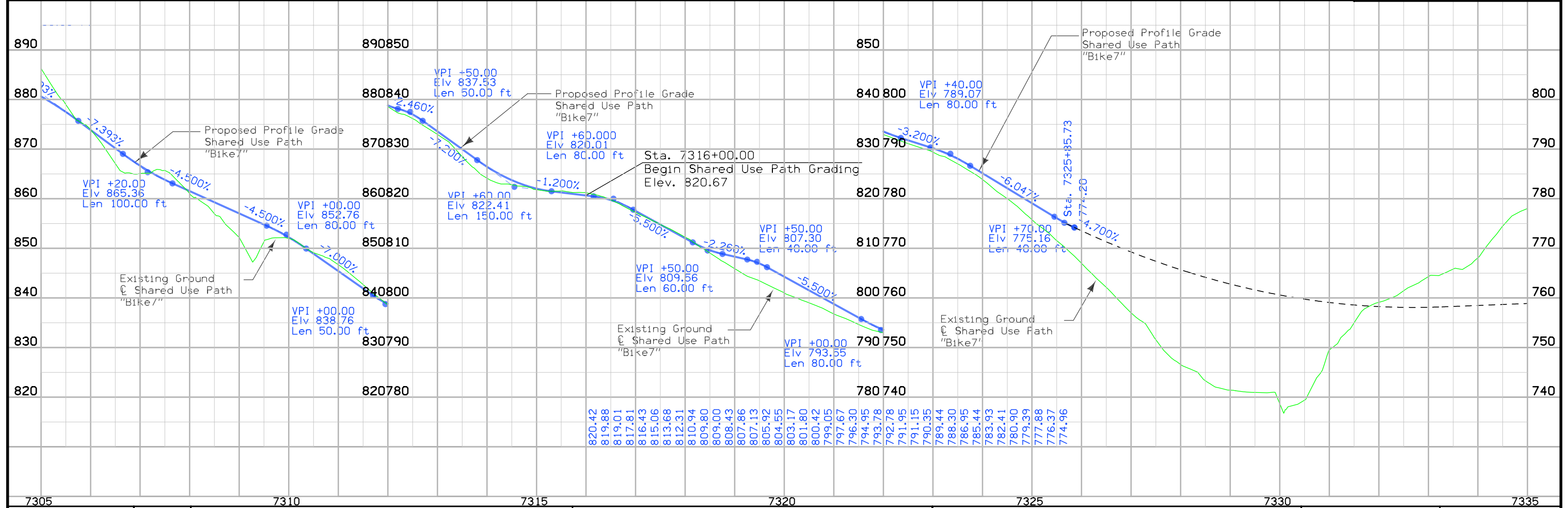
"Bike7" Grading From Sta. 7299+00.53 to Sta. 7316+00.00 Completed by Others. Refer to Project HDP-2100(664)--71-31

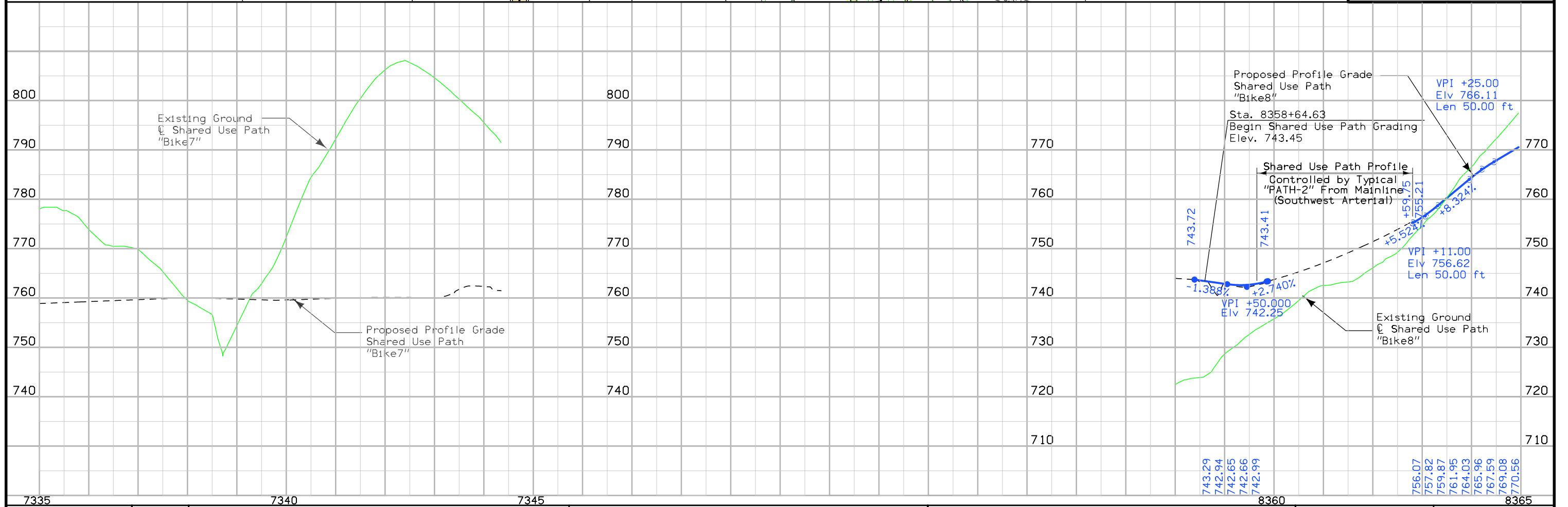
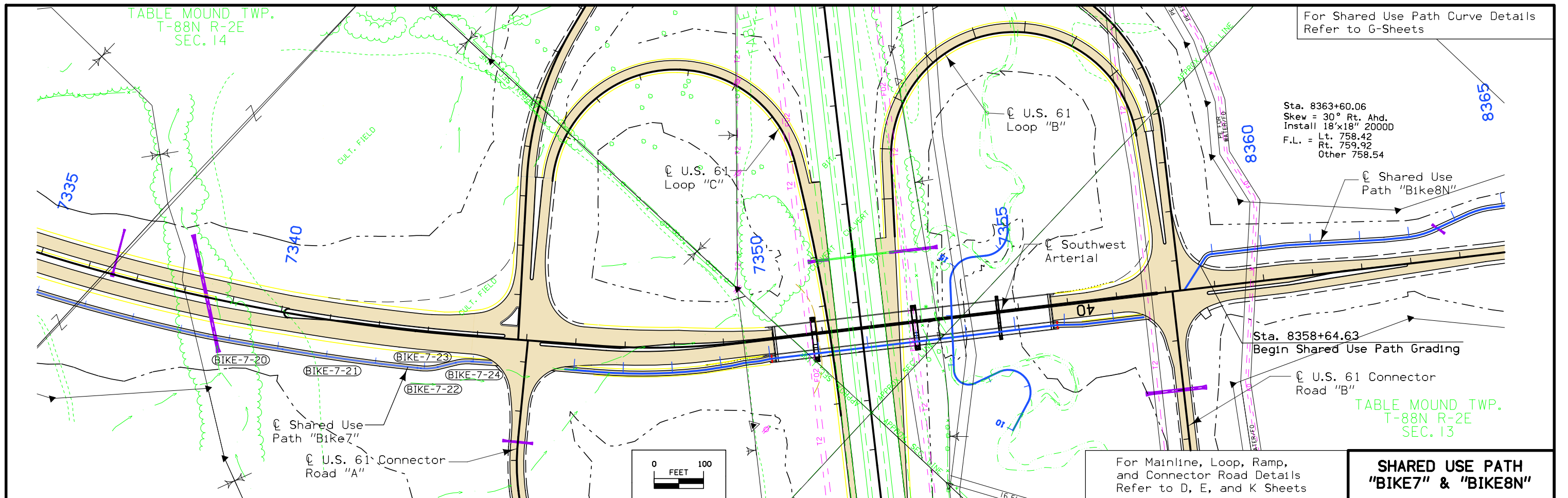
TABLE MOUND TWP.
T-88N R-2E
SEC. 11

DUBUQUE CO.
TABLE MOUND TWP.

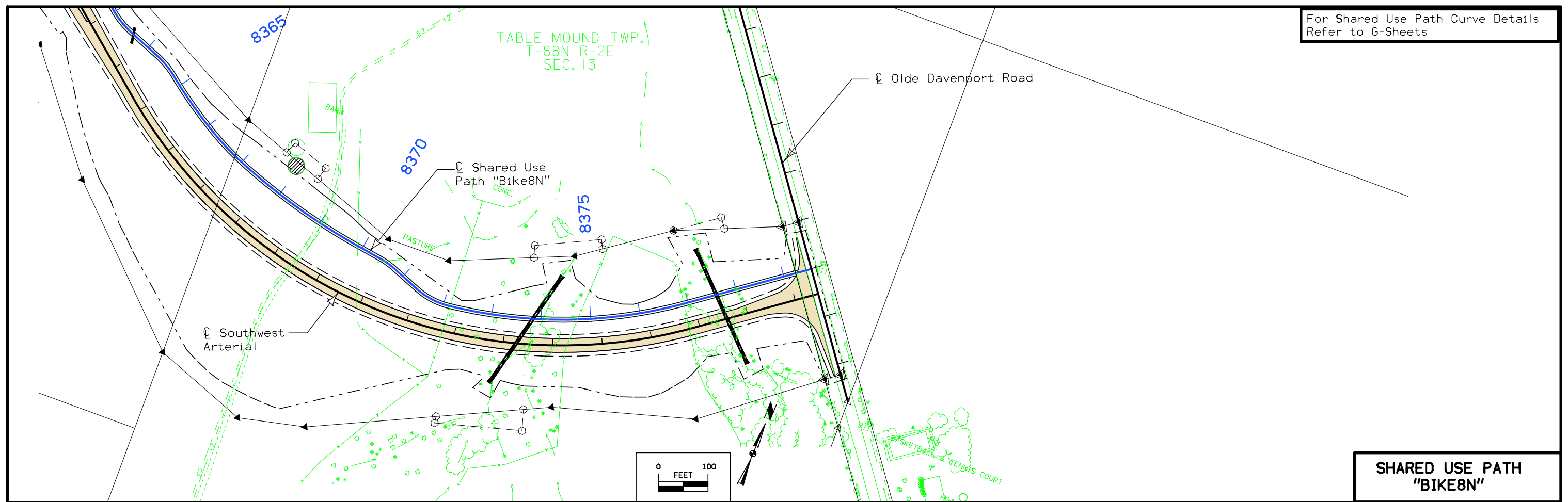


SHARED USE PATH "BIKE7"

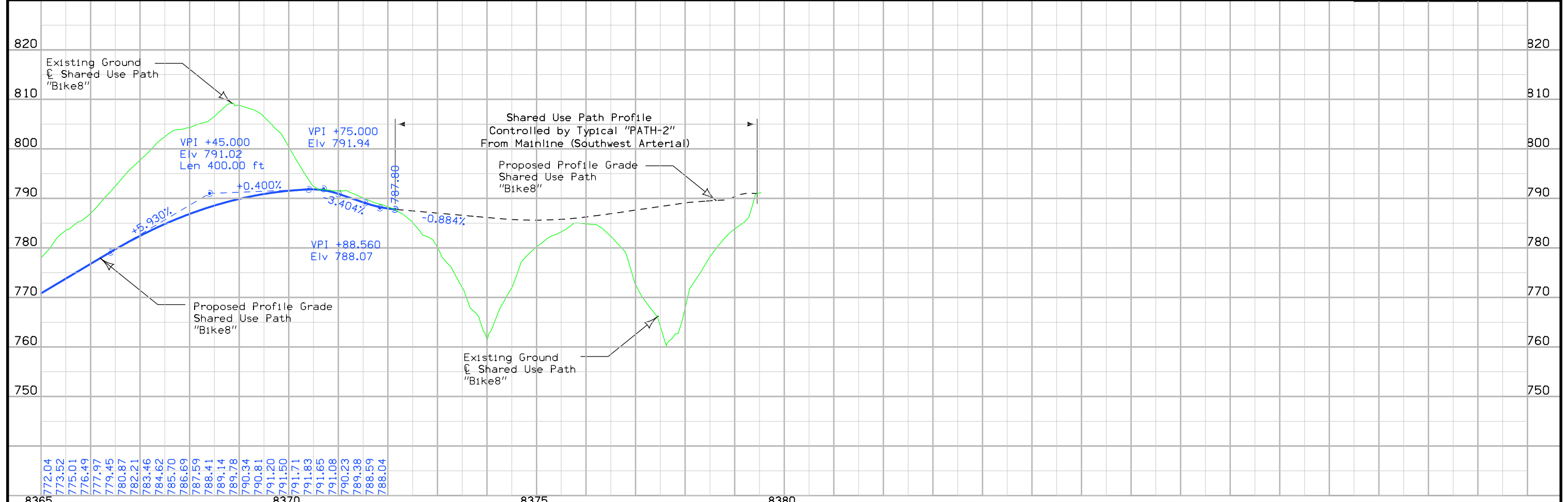




For Shared Use Path Curve Details Refer to G-Sheets



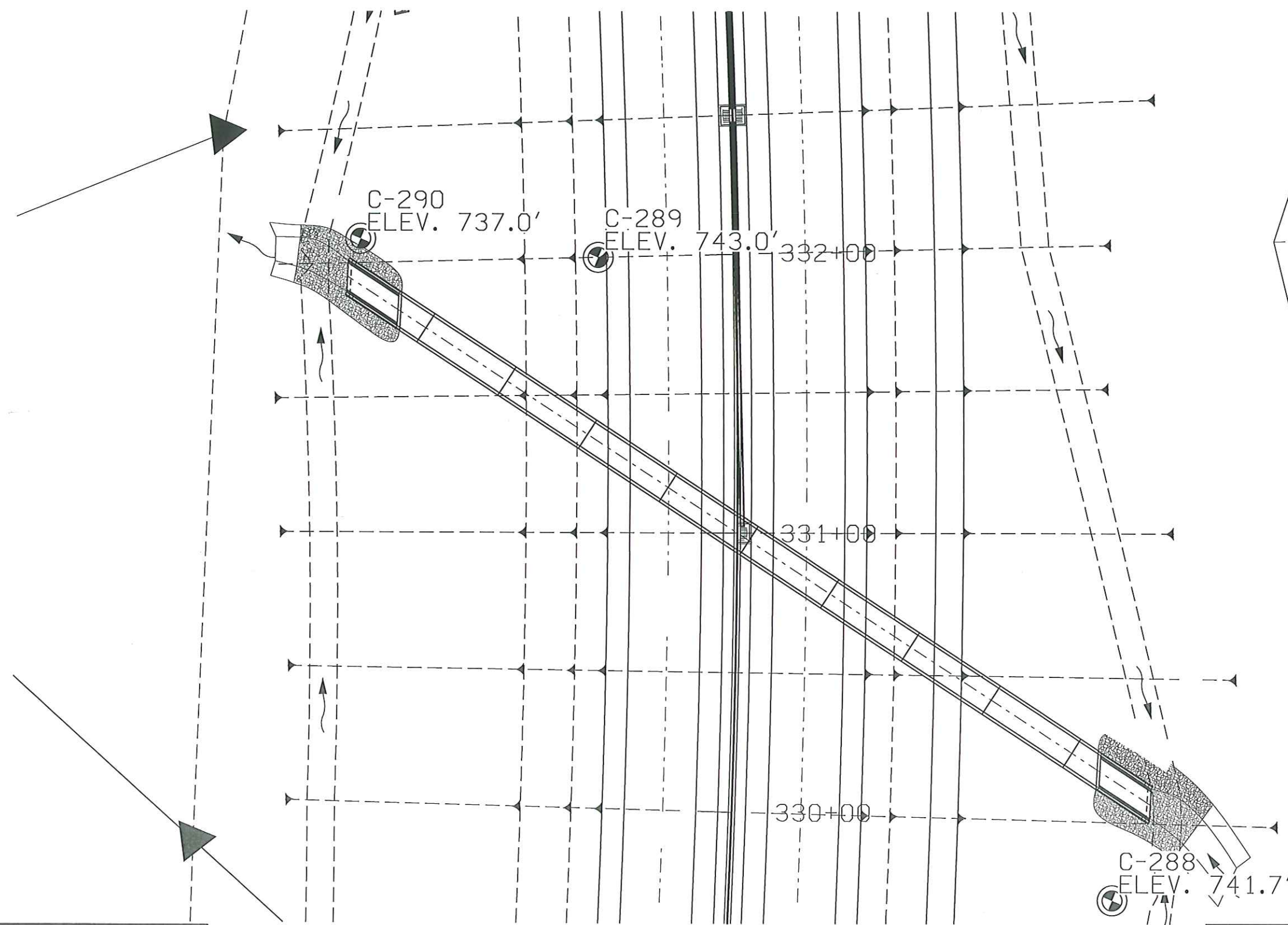
SHARED USE PATH "BIKE8N"



8365	772.04	773.52	775.01	776.49	777.97	779.45	780.87	782.21	783.46	784.62	785.70	786.69	787.59	788.41	789.14	789.78	790.34	790.81	791.20	791.50	791.71	791.83	791.65	791.08	790.23	789.38	788.59	788.04	8370	8375	8380
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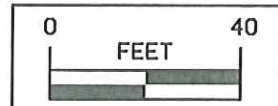
THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

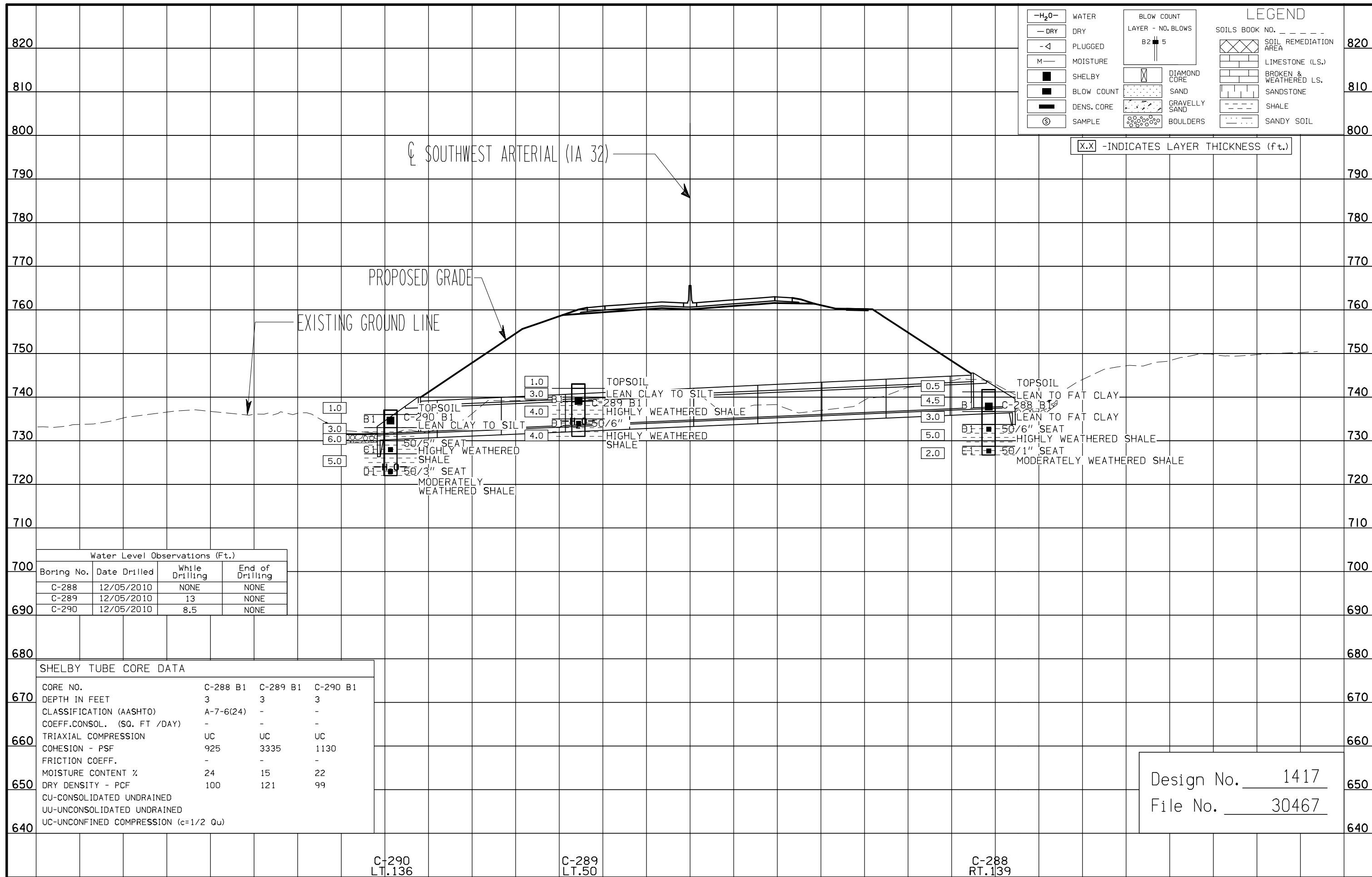


LOCATION
 SW ARTERIAL (IA 32)
 OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 14
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4379511°
 LONG. -90.6886064°

DESIGN FOR 33° SKEW (L.A.)
10'x6'x302'-Ø REINFORCED CONCRETE BOX CULVERT
SOILS PROFILE SHEET
 STA. 331+00.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 2 FILE NO. 30467 DESIGN NO. 1417



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: *Theresa Stromberg-Murphy* Date: 11/21/17
 Theresa STROMBERG-MURPHY
 Printed or Typed Name
 My license renewal date is December 31, 2017

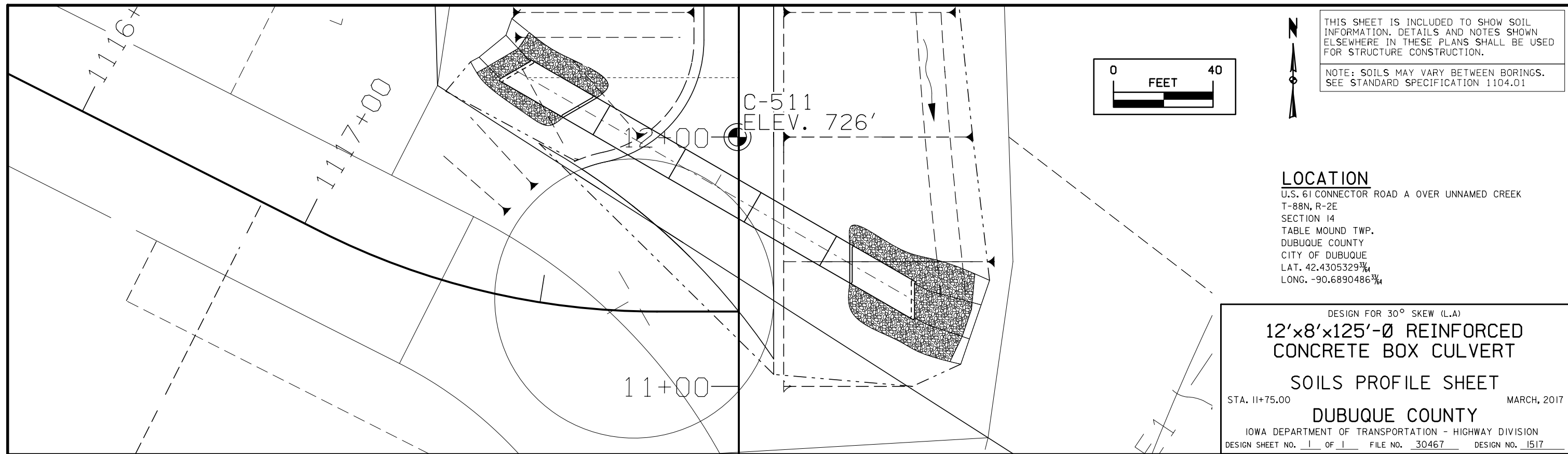


WATER	BLOW COUNT LAYER - NO. BLOWS B2 5	SOILS BOOK NO. - - - - -
DRY	DIAMOND CORE	SOIL REMEDIATION AREA
PLUGGED	SAND	LIMESTONE (L.S.)
MOISTURE	GRAVELLY SAND	BROKEN & WEATHERED L.S.
SHELBY	BOULDERS	SANDSTONE
BLOW COUNT		SHALE
DENS. CORE		SANDY SOIL
SAMPLE		

Water Level Observations (Ft.)			
Boring No.	Date Drilled	While Drilling	End of Drilling
C-288	12/05/2010	NONE	NONE
C-289	12/05/2010	13	NONE
C-290	12/05/2010	8.5	NONE

SHELBY TUBE CORE DATA			
CORE NO.	C-288 B1	C-289 B1	C-290 B1
DEPTH IN FEET	3	3	3
CLASSIFICATION (AASHTO)	A-7-6(24)	-	-
COEFF. CONSOL. (SQ. FT / DAY)	-	-	-
TRIAxIAL COMPRESSION	UC	UC	UC
COHESION - PSF	925	3335	1130
FRICTION COEFF.	-	-	-
MOISTURE CONTENT %	24	15	22
DRY DENSITY - PCF	100	121	99
CU-CONSOLIDATED UNDRAINED			
UU-UNCONSOLIDATED UNDRAINED			
UC-UNCONFINED COMPRESSION (c=1/2 Qu)			

Design No. 1417
 File No. 30467

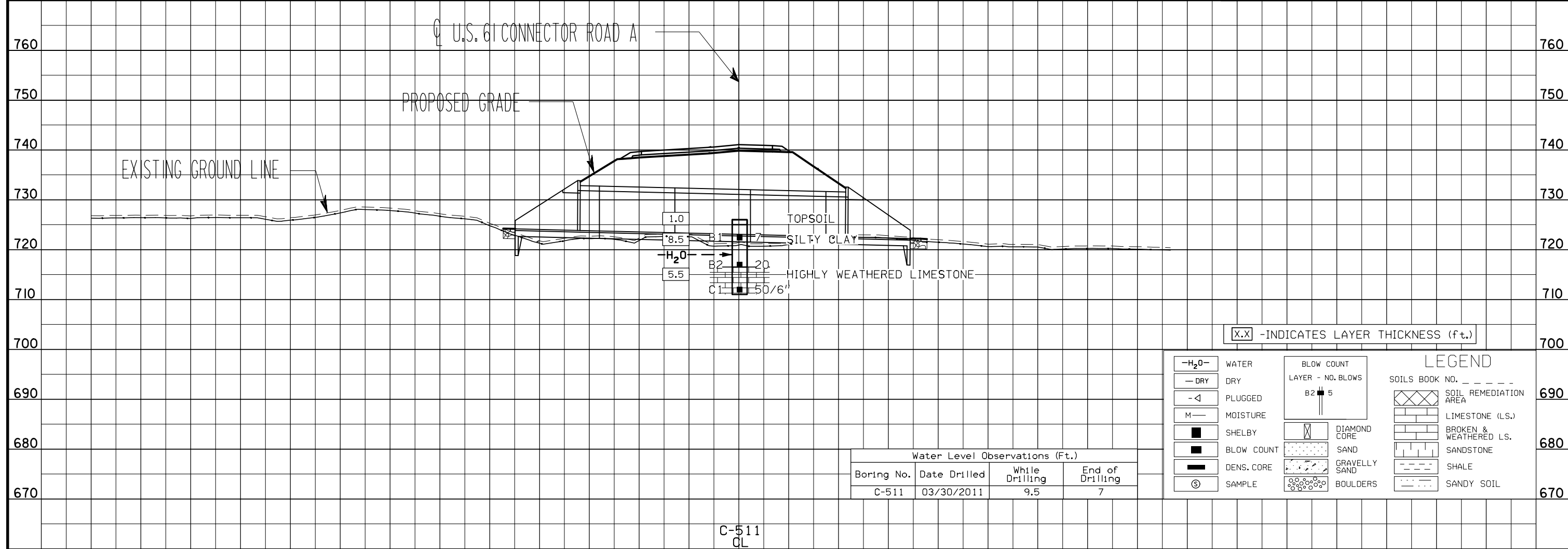


THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

LOCATION
 U.S. 61 CONNECTOR ROAD A OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 14
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4305329 3/4
 LONG. -90.6890486 3/4

DESIGN FOR 30° SKEW (L.A)
12'x8'x125'-Ø REINFORCED CONCRETE BOX CULVERT
SOILS PROFILE SHEET
 STA. 11+75.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. 30467 DESIGN NO. 1517



[X.X] -INDICATES LAYER THICKNESS (ft.)

WATER	DRY	PLUGGED	MOISTURE	SHELBY	BLOW COUNT	DENS. CORE	SAMPLE	SOIL REMEDIATION AREA	LIMESTONE (L.S.)	BROKEN & WEATHERED L.S.	SANDSTONE	SHALE	SANDY SOIL				
WATER	DRY	PLUGGED	MOISTURE	SHELBY	BLOW COUNT LAYER - NO. BLOWS B2 5	DENS. CORE	SAMPLE	DIAMOND CORE	SAND	GRAVELLY SAND	BOULDERS	SOIL REMEDIATION AREA	LIMESTONE (L.S.)	BROKEN & WEATHERED L.S.	SANDSTONE	SHALE	SANDY SOIL

Water Level Observations (Ft.)			
Boring No.	Date Drilled	While Drilling	End of Drilling
C-511	03/30/2011	9.5	7

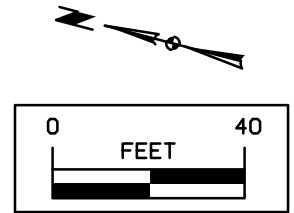
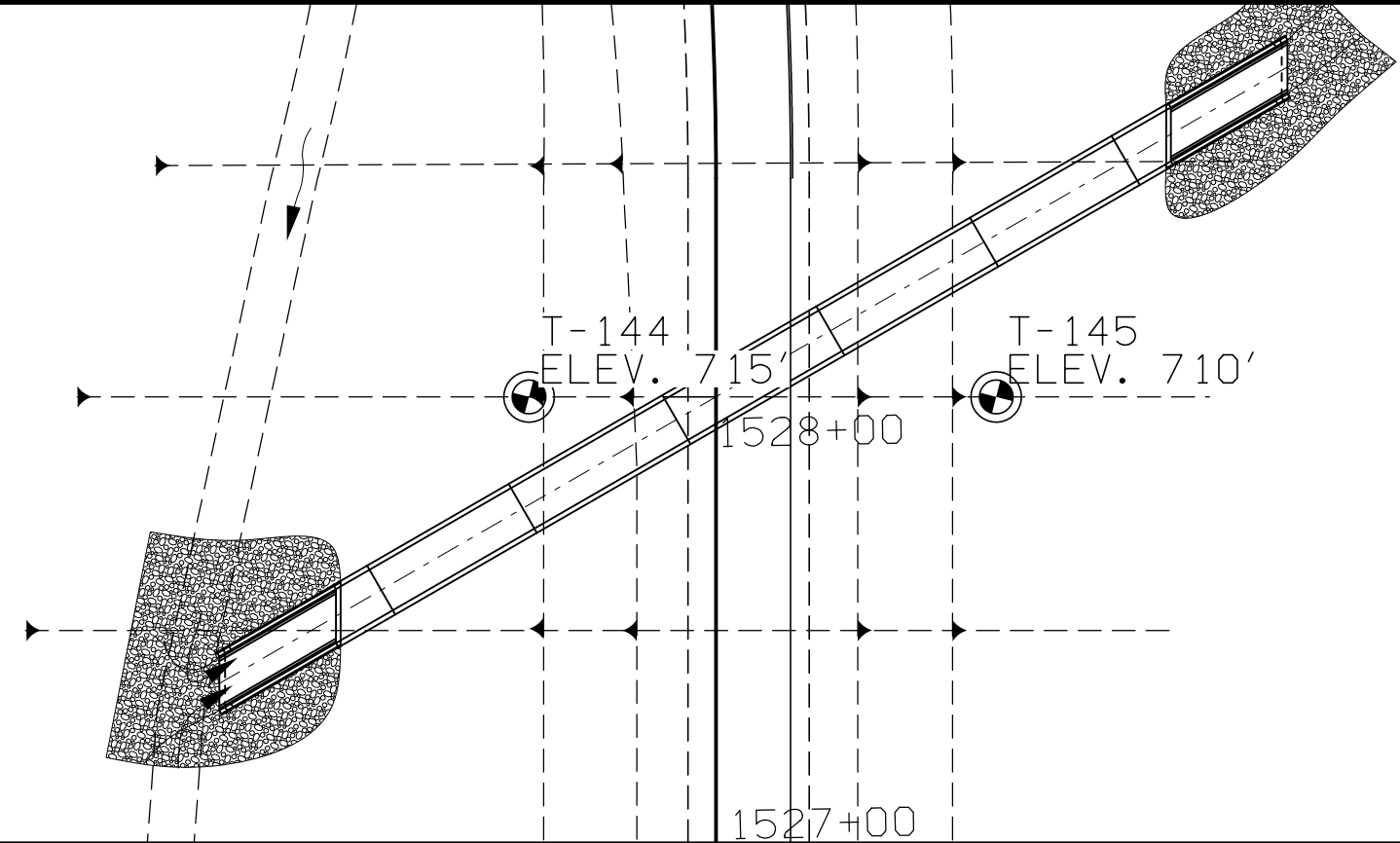
LEGEND

-H ₂ O-	WATER	BLOW COUNT	SOILS BOOK NO. -----
- DRY	DRY	LAYER - NO. BLOWS	SOIL REMEDIATION AREA
- <	PLUGGED	DIAMOND CORE	LIMESTONE (L.S.)
M-	MOISTURE	SAND	BROKEN & WEATHERED L.S.
■	SHELBY	GRAVELLY SAND	SANDSTONE
■	BLOW COUNT	BOULDERS	SHALE
■	DENS. CORE		SANDY SOIL
⊙	SAMPLE		

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

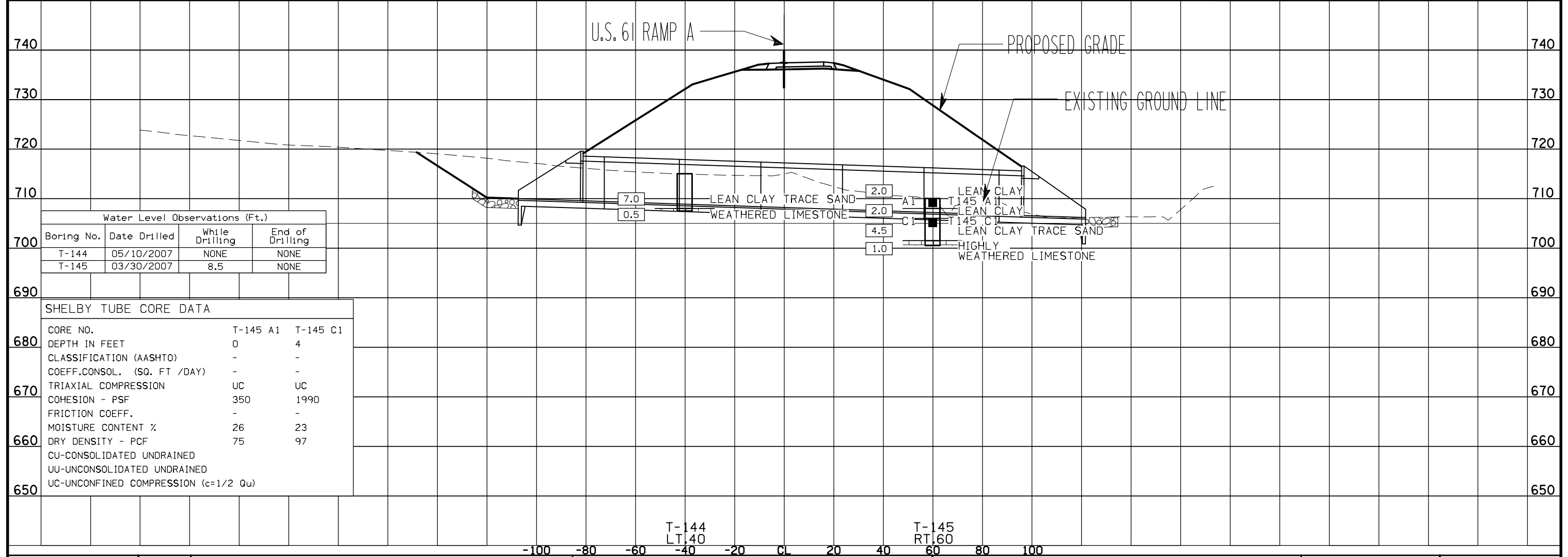
[X.X] -INDICATES LAYER THICKNESS (ft.)



LOCATION

U.S. 61 RAMP A OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 13
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4358319°
 LONG. -90.6831264°

DESIGN FOR 30° SKEW (R.A.)
10'x8'x204'-Ø REINFORCED CONCRETE BOX CULVERT
 SOILS PROFILE SHEET
 STA. 1528+00.00 MARCH, 2017
 DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. 30467 DESIGN NO. 1617



Water Level Observations (Ft.)

Boring No.	Date Drilled	While Drilling	End of Drilling
T-144	05/10/2007	NONE	NONE
T-145	03/30/2007	8.5	NONE

SHELBY TUBE CORE DATA

CORE NO.	T-145 A1	T-145 C1
DEPTH IN FEET	0	4
CLASSIFICATION (AASHTO)	-	-
COEFF. CONSOL. (SQ. FT / DAY)	-	-
TRIAxIAL COMPRESSION	UC	UC
COHESION - PSF	350	1990
FRICTION COEFF.	-	-
MOISTURE CONTENT %	26	23
DRY DENSITY - PCF	75	97
CU-CONSOLIDATED UNDRAINED		
UU-UNCONSOLIDATED UNDRAINED		
UC-UNCONFINED COMPRESSION (c=1/2 Qu)		

LEGEND

-H ₂ O-	WATER	BLOW COUNT	SOILS BOOK NO. _____
- DRY	DRY	LAYER - NO. BLOWS	SOIL REMEDIATION AREA
- <	PLUGGED	B2 5	LIMESTONE (L.S.)
M	MOISTURE	DIAMOND CORE	BROKEN & WEATHERED L.S.
■	SHELBY	SAND	SANDSTONE
■	BLOW COUNT	GRAVELLY SAND	SHALE
■	DENS. CORE	BOULDERS	SANDY SOIL
⊙	SAMPLE		

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

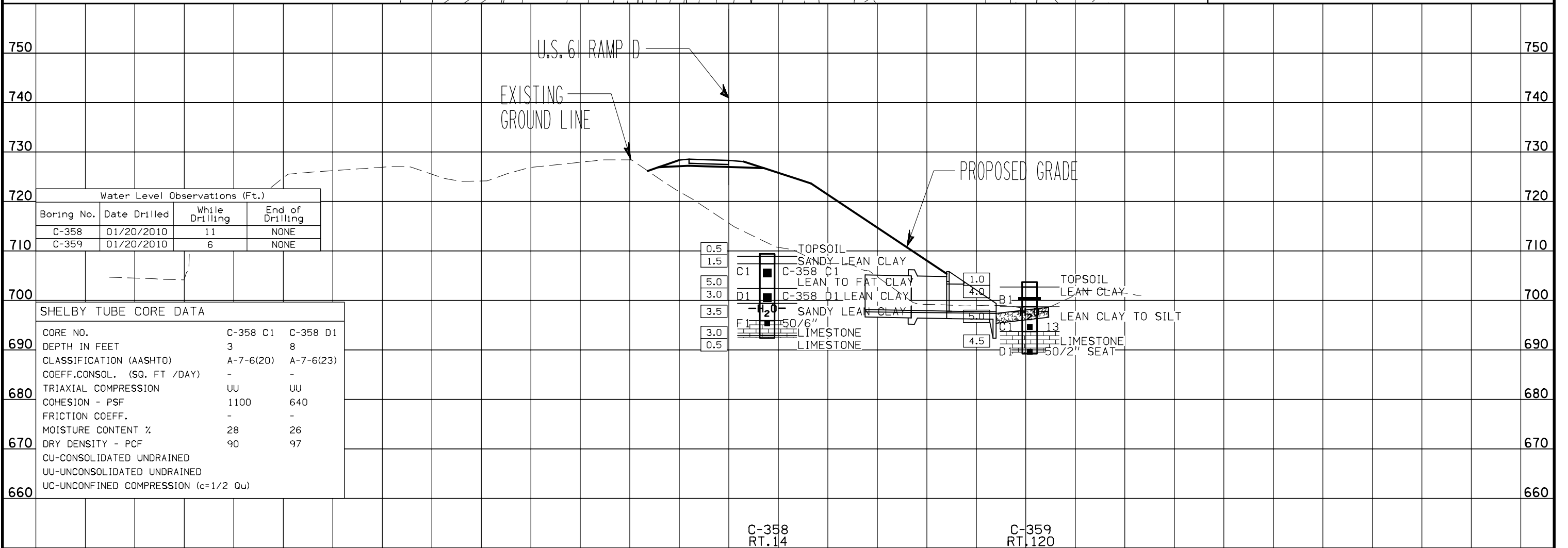
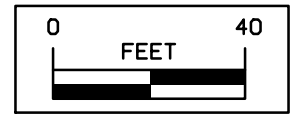
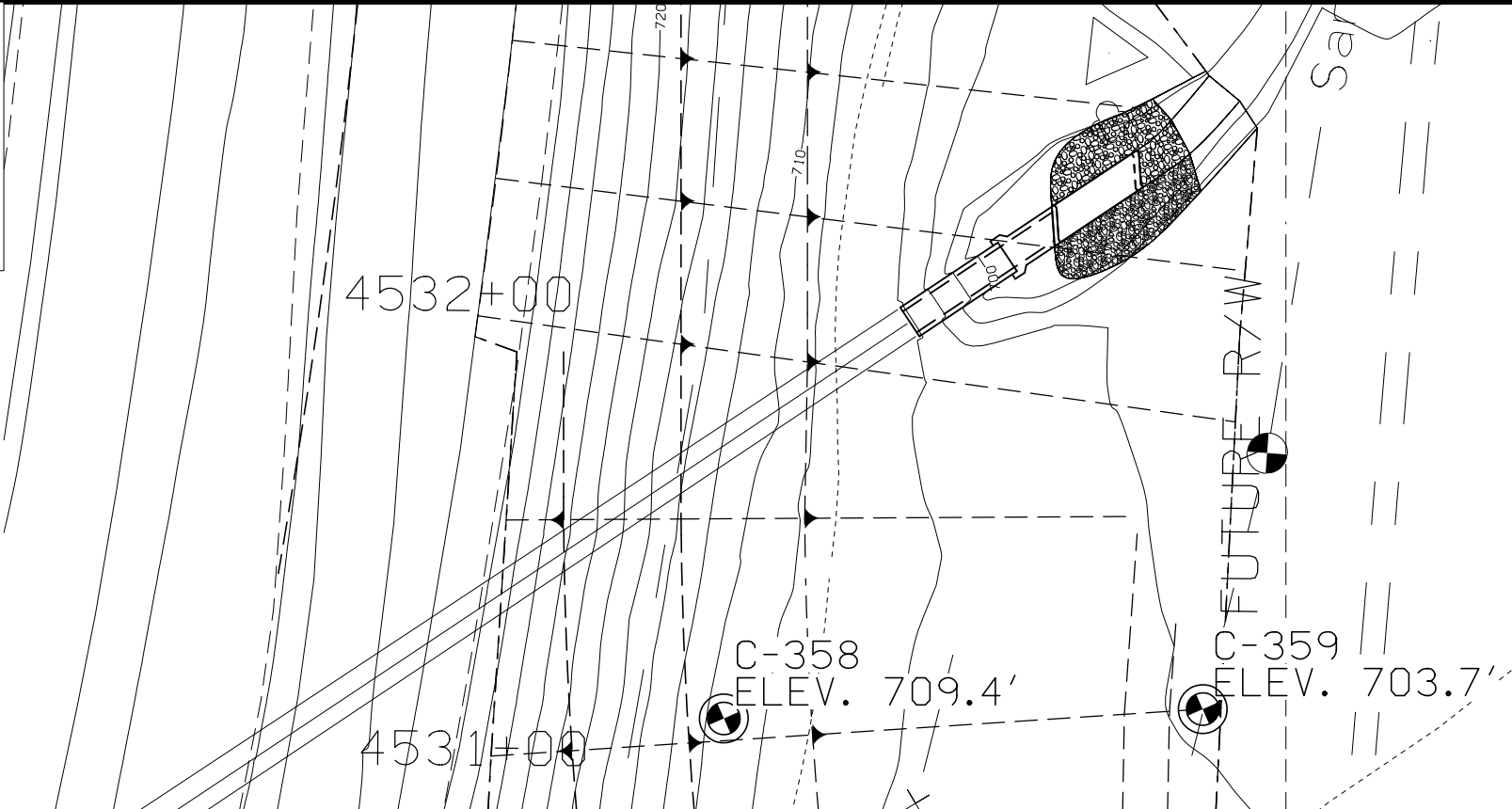
NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

[X.X] - INDICATES LAYER THICKNESS (ft.)

LOCATION

U.S. 61 RAMP D OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 13
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4358452°
 LONG. -90.6807450°

DESIGN FOR 33° SKEW (R.A.)
6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION
 SOILS PROFILE SHEET
 STA. 4534+55.00 MARCH, 2017
 DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. 30467 DESIGN NO. 1717

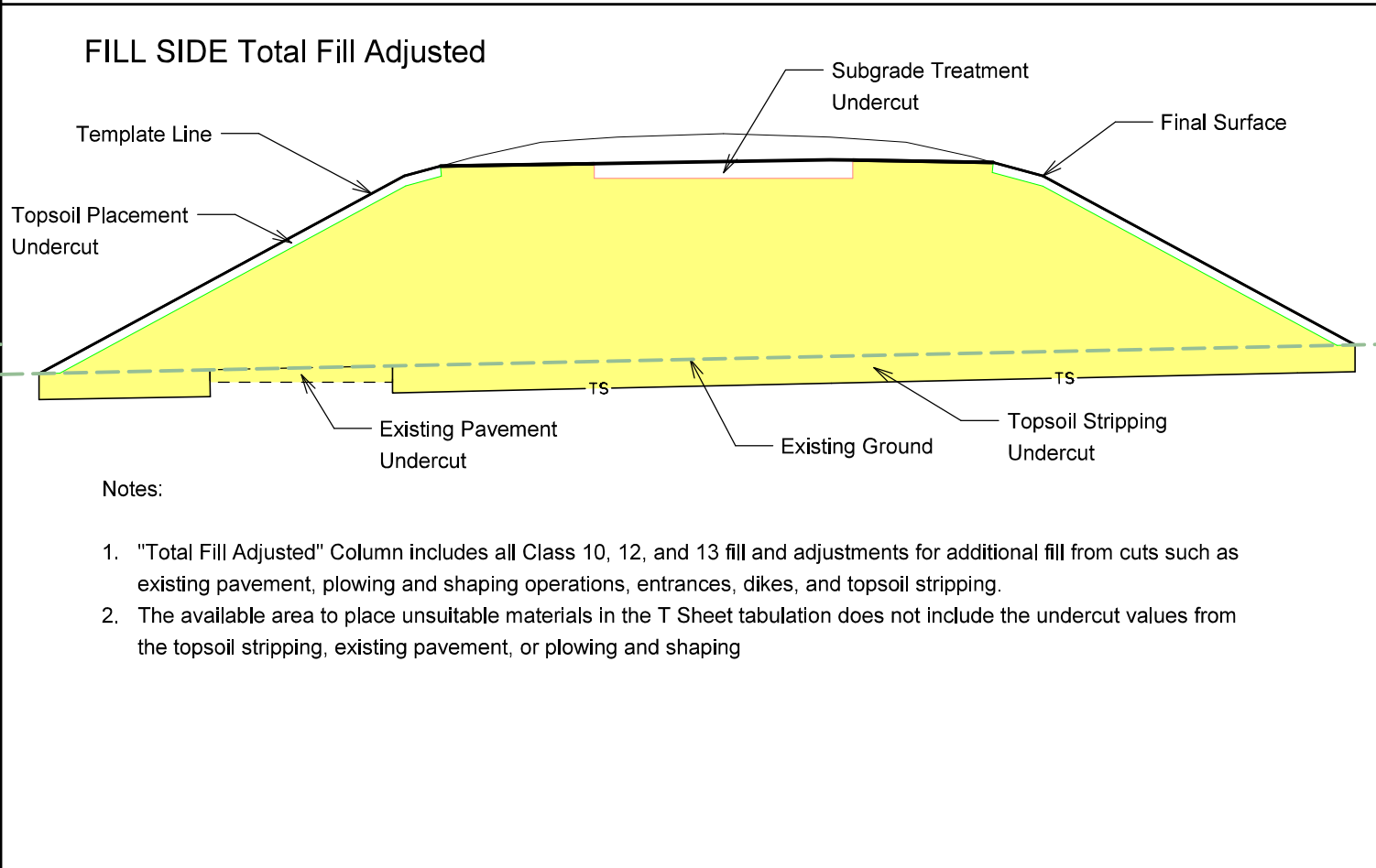
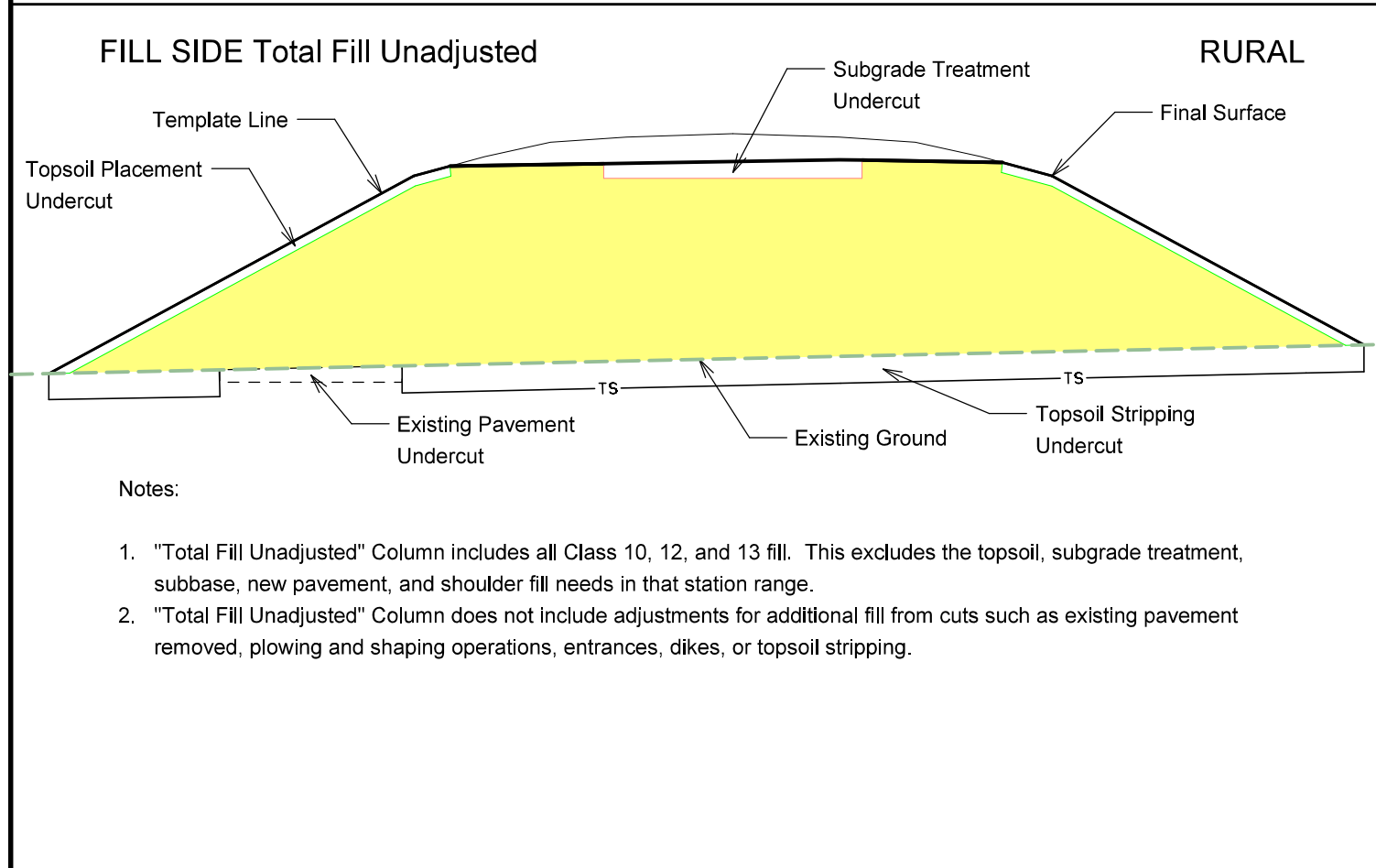
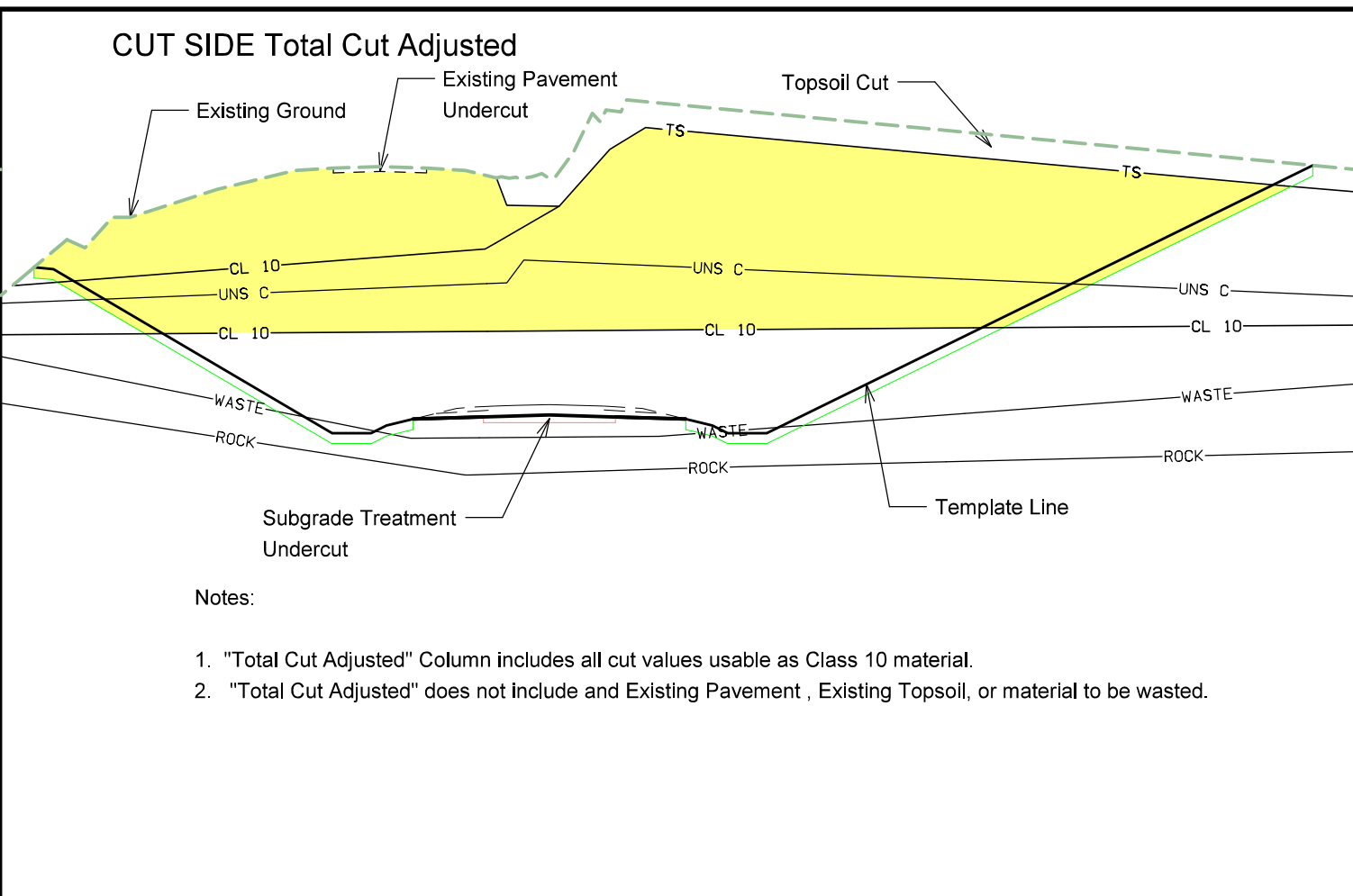
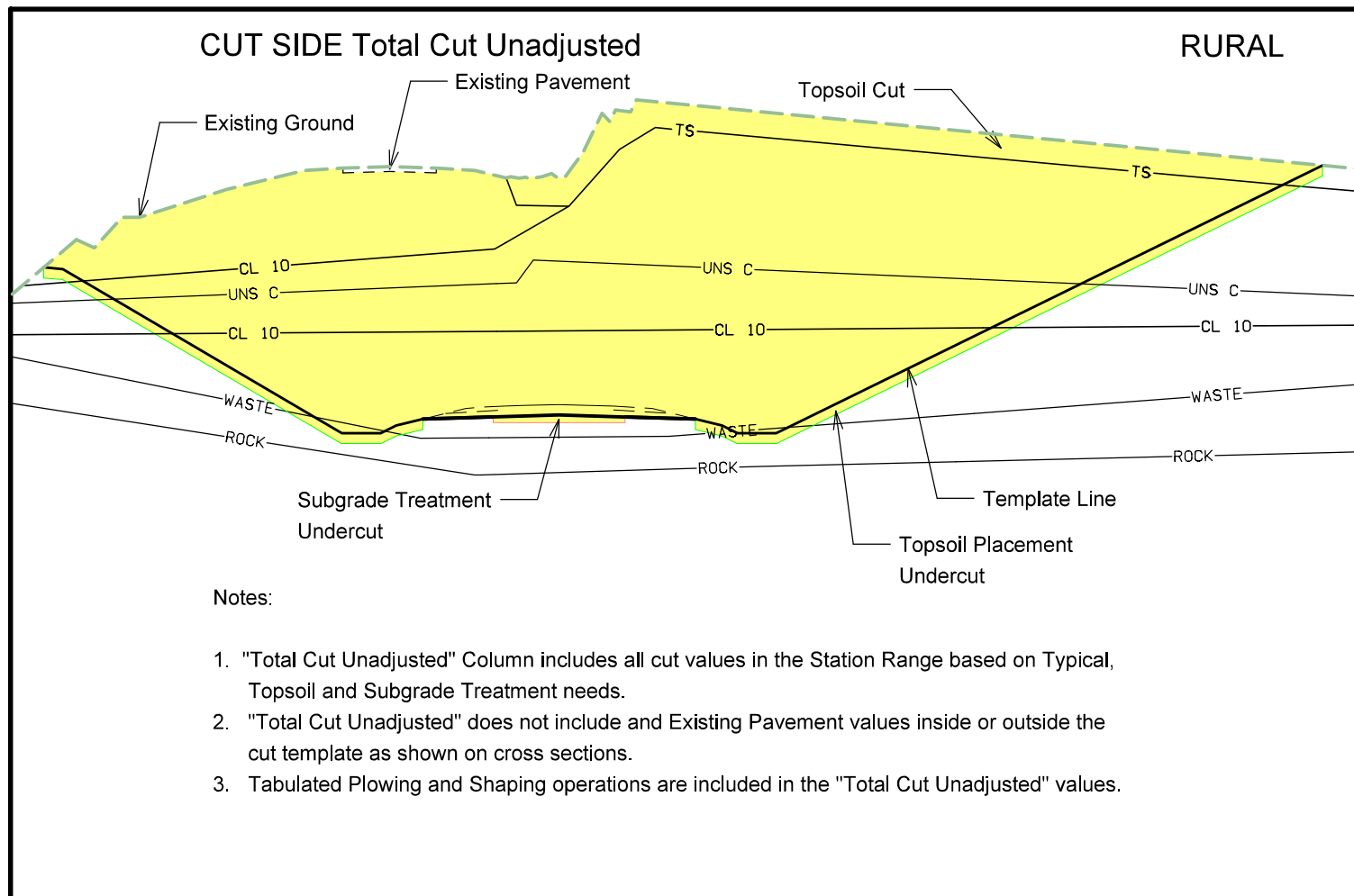


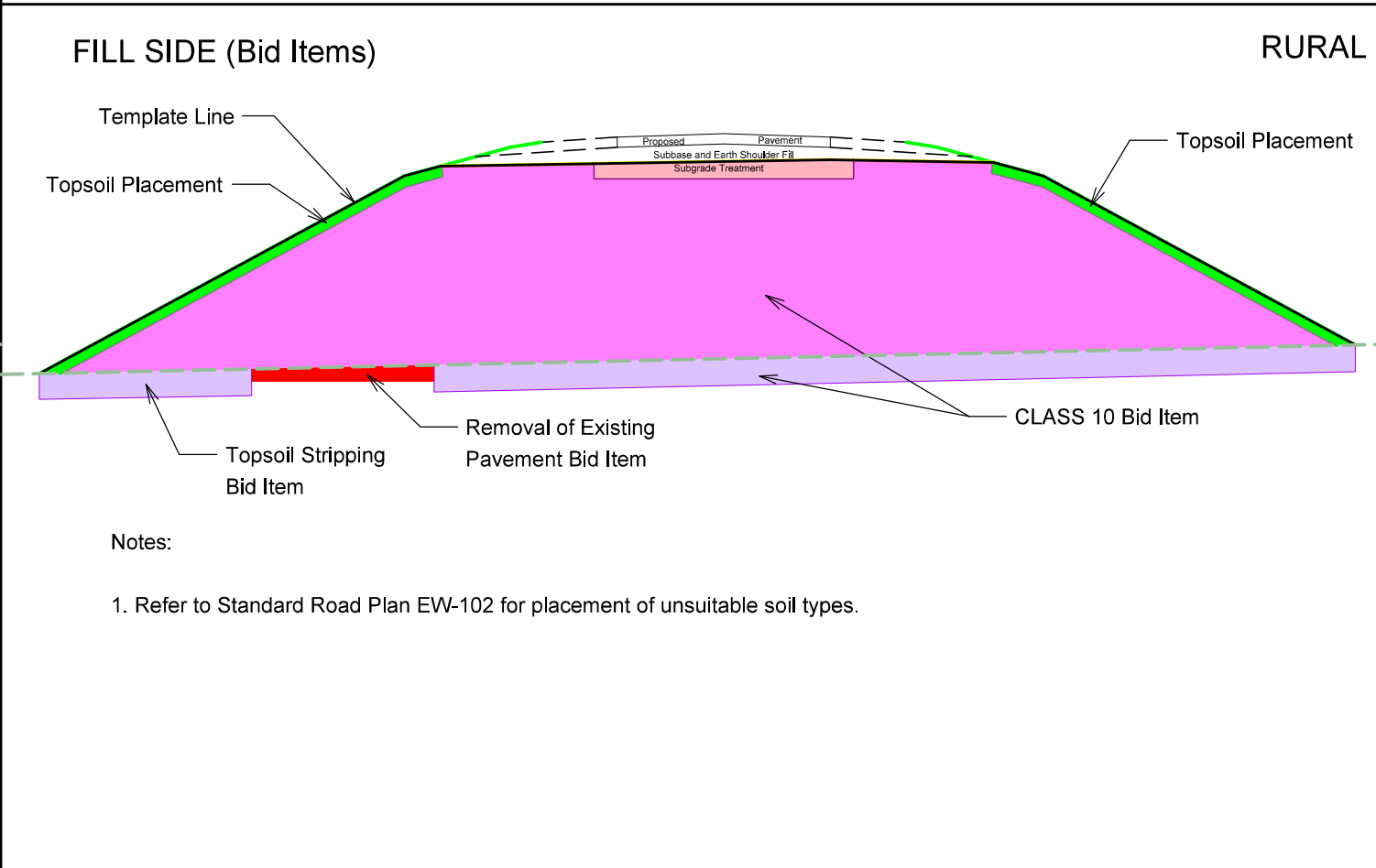
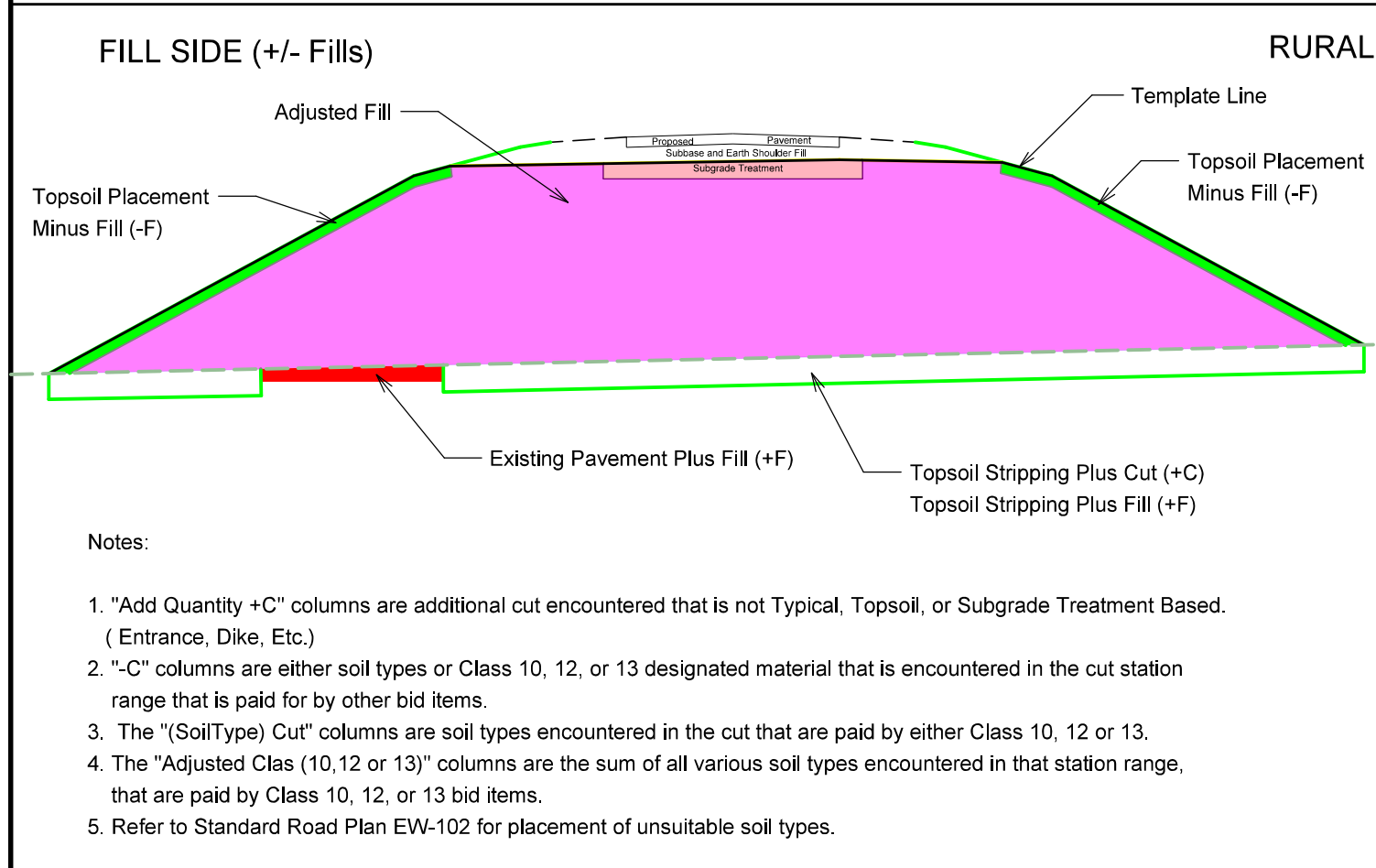
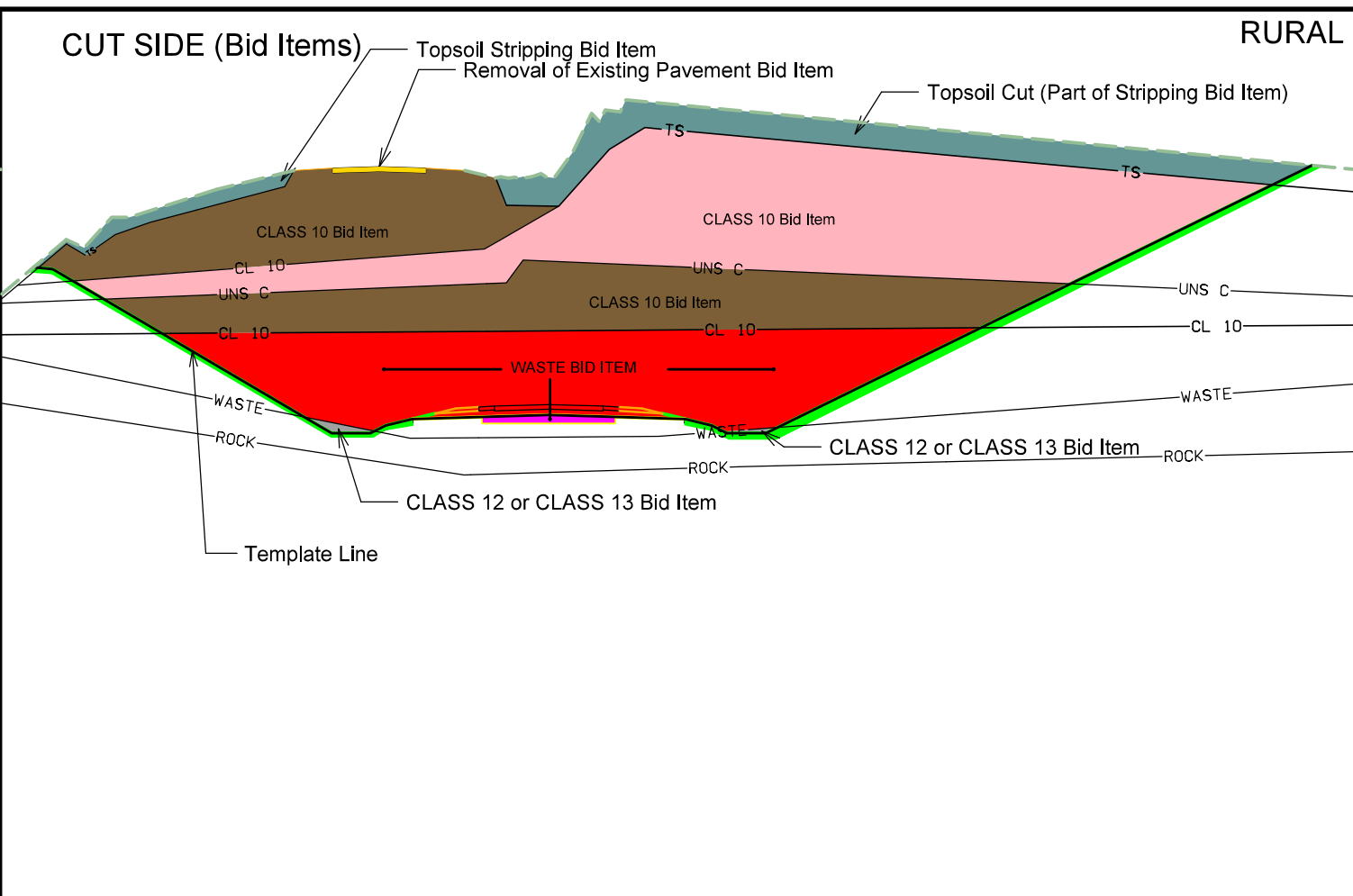
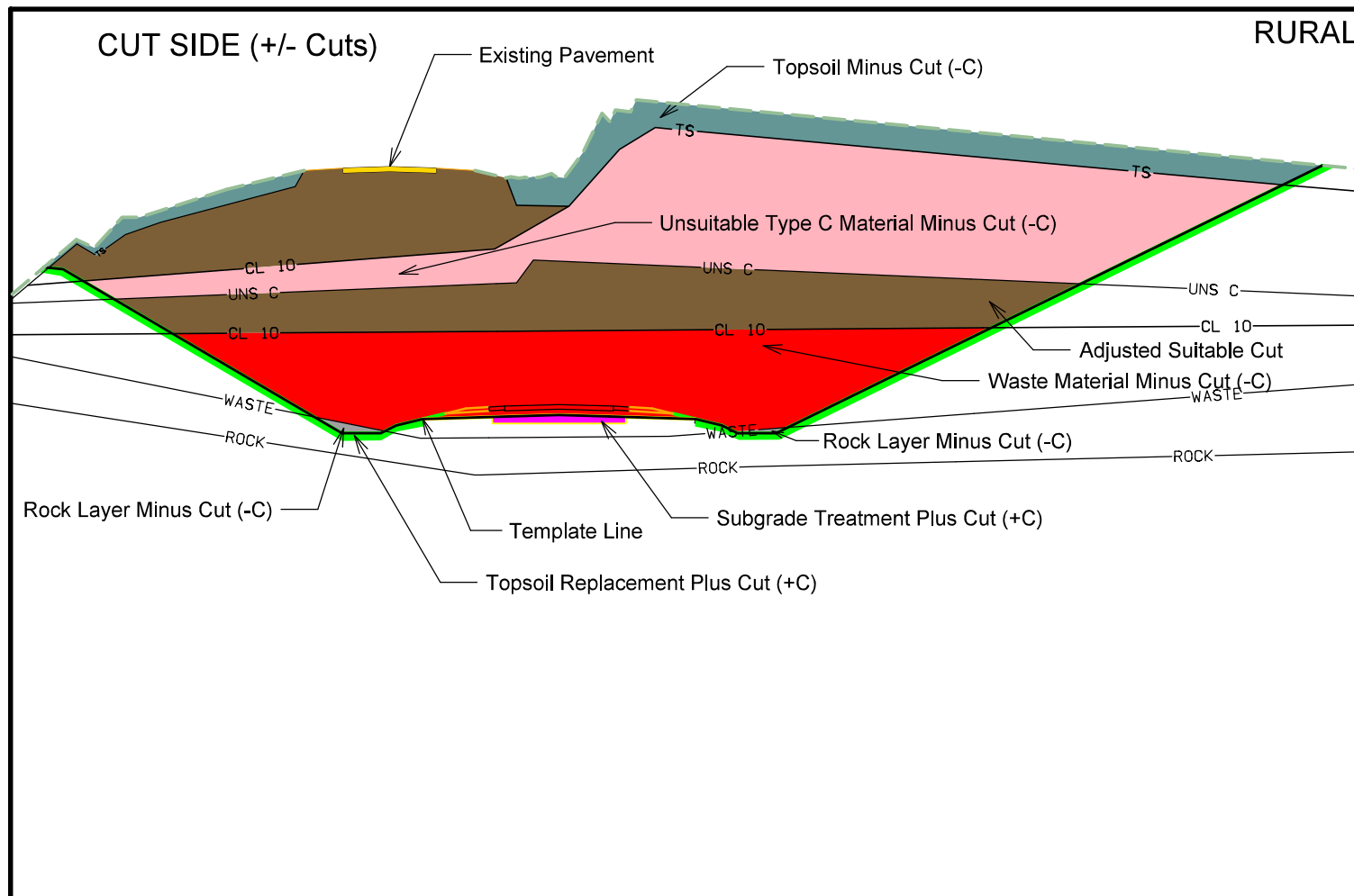
Water Level Observations (Ft.)

Boring No.	Date Drilled	While Drilling	End of Drilling
C-358	01/20/2010	11	NONE
C-359	01/20/2010	6	NONE

SHELBY TUBE CORE DATA

CORE NO.	C-358 C1	C-358 D1
DEPTH IN FEET	3	8
CLASSIFICATION (AASHTO)	A-7-6(20)	A-7-6(23)
COEFF. CONSOL. (SQ. FT / DAY)	-	-
TRIAxIAL COMPRESSION	UU	UU
COHESION - PSF	1100	640
FRICTION COEFF.	-	-
MOISTURE CONTENT %	28	26
DRY DENSITY - PCF	90	97
CU-CONSOLIDATED UNDRAINED		
UU-UNCONSOLIDATED UNDRAINED		
UC-UNCONFINED COMPRESSION (c=1/2 Qu)		





TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil				[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]		
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
Stage 1																						
ML032_ACCRDB																						
285+75.00	128	29	99	0	0	0	0	29	1,618	75	1,693	2,133	-2,104	0	0	99	50	70	29			
286+00.00	108	14	94	0	0	0	0	14	1,738	76	1,814	2,286	-2,272	0	0	94	50	70	24			
286+25.00	98	14	83	0	0	0	0	14	1,786	70	1,856	2,339	-2,325	0	0	83	51	71	12			
286+50.00	91	17	74	0	0	0	0	17	1,807	65	1,872	2,359	-2,342	0	0	74	52	73	1			
286+75.00	91	17	74	0	0	0	0	17	1,829	65	1,894	2,387	-2,370	0	0	74	54	76	-2			
287+00.00	93	20	73	0	0	0	0	20	1,871	64	1,935	2,438	-2,418	0	0	73	56	78	-6			
287+25.00	98	24	74	0	0	0	0	24	1,933	64	1,997	2,516	-2,492	0	0	74	58	81	-7			
287+50.00	115	33	82	0	0	0	0	33	1,949	71	2,020	2,545	-2,512	0	0	82	61	85	-4			
287+75.00	131	48	84	0	0	0	0	48	1,866	71	1,937	2,441	-2,393	0	0	84	64	90	-6			
288+00.00	141	57	84	0	0	0	0	57	1,703	70	1,773	2,234	-2,177	0	0	84	67	94	-10			
288+25.00	116	36	81	0	0	0	0	36	1,529	70	1,599	2,015	-1,979	0	0	81	67	94	-13			
288+50.00	86	10	77	0	0	0	0	10	1,403	68	1,471	1,854	-1,844	0	0	77	62	87	-10			
288+75.00	83	11	72	0	0	0	0	11	1,314	63	1,377	1,735	-1,724	0	0	72	60	84	-12			
289+00.00	72	7	65	0	0	0	0	7	1,261	61	1,322	1,666	-1,659	0	0	65	55	77	-12			
289+25.00	62	1	61	0	0	0	0	1	1,199	59	1,258	1,585	-1,584	0	0	61	51	71	-10			
289+50.00	70	8	62	0	0	0	0	8	1,097	56	1,153	1,453	-1,445	0	0	62	53	74	-12			
289+75.00	93	29	63	0	0	0	0	29	1,010	53	1,063	1,339	-1,310	0	0	63	55	77	-14			
290+00.00	129	66	63	0	0	0	0	66	924	49	973	1,226	-1,160	0	0	63	55	77	-14			
290+25.00	161	98	63	0	0	0	0	98	837	46	883	1,113	-1,015	0	0	63	55	77	-14			
290+50.00	180	117	63	0	0	0	0	117	759	45	804	1,013	-896	0	0	63	54	76	-13			
ML032_ACCRDB																						
Totals:	2,146	656	1,491	0	0	0	0	656	29,433	1,261	30,694	38,675	-38,019	0	0	1,491	1,130	1,582	-91			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]			
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
ML032-SEG2																							
315+25.00	366	176	189	0	0	0	0	176	4,108	143	4,251	5,356	-5,180	4,055	4,591	189	159	223	-34				
315+50.00	325	156	169	0	0	0	0	156	4,100	125	4,225	5,324	-5,168	4,046	4,583	169	155	217	-48				
315+75.00	311	145	166	0	0	0	0	145	3,822	123	3,945	4,971	-4,826	0	0	166	151	211	-45				
316+00.00	300	149	151	0	0	0	0	149	3,097	110	3,207	4,041	-3,892	0	0	151	136	190	-39				
316+23.31	23	12	11	0	0	0	0	12	204	8	212	267	-255	0	0	11	10	14	-3				
316+25.00	226	123	103	0	0	0	0	123	1,826	73	1,899	2,393	-2,270	0	0	103	91	127	-24				
316+41.31	123	68	54	0	0	0	0	68	871	38	909	1,145	-1,077	0	0	54	47	66	-12				
316+50.00	314	166	148	0	0	0	0	166	2,157	106	2,263	2,851	-2,685	0	0	148	126	176	-28				
316+75.00	256	119	137	0	0	0	0	119	1,757	102	1,859	2,342	-2,223	0	0	137	112	157	-20				
317+00.00	231	101	131	0	0	0	0	101	1,498	101	1,599	2,015	-1,914	0	0	131	104	146	-15				
317+25.00	4	1	2	0	0	0	0	1	17	2	19	24	-23	0	0	2	1	1	1				
317+25.31	222	96	126	0	0	0	0	96	1,321	99	1,420	1,789	-1,693	0	0	126	98	137	-11				
317+50.00	226	100	126	0	0	0	0	100	1,262	98	1,360	1,714	-1,614	0	0	126	97	136	-10				
317+75.00	231	106	125	0	0	0	0	106	1,227	96	1,323	1,667	-1,561	0	0	125	96	134	-10				
318+00.00	86	40	46	0	0	0	0	40	449	35	484	610	-570	0	0	46	36	50	-4				
318+09.31	147	69	78	0	0	0	0	69	758	59	817	1,030	-961	0	0	78	60	84	-6				
318+25.00	233	107	126	0	0	0	0	107	1,207	97	1,304	1,643	-1,536	0	0	126	98	137	-11				
318+50.00	224	96	129	0	0	0	0	96	1,230	99	1,329	1,675	-1,579	0	0	129	101	141	-12				
318+75.00	211	82	129	0	0	0	0	82	1,283	100	1,383	1,743	-1,661	0	0	129	101	141	-12				
319+00.00	195	69	126	0	0	0	0	69	1,362	99	1,461	1,841	-1,772	0	0	126	98	137	-11				
319+25.00	181	58	123	0	0	0	0	58	1,467	100	1,567	1,975	-1,917	0	0	123	94	132	-9				
319+50.00	235	53	182	0	0	0	0	53	1,576	161	1,737	2,189	-2,136	0	0	182	92	129	53				
319+75.00	248	63	186	0	0	0	0	63	1,669	162	1,831	2,307	-2,244	0	0	186	98	137	49				
320+00.00	264	44	194	0	0	0	27	71	1,718	167	1,885	2,375	-2,304	0	0	194	104	146	48				
320+25.00	258	16	196	0	0	0	46	62	1,762	170	1,932	2,434	-2,372	0	0	196	106	148	48				
320+50.00	193	29	144	0	0	0	20	49	1,838	120	1,958	2,467	-2,418	0	0	144	107	150	-6				
320+75.00	186	42	144	0	0	0	0	42	1,929	120	2,049	2,582	-2,540	0	0	144	108	151	-7				
321+00.00	158	31	127	0	0	0	0	31	2,012	108	2,120	2,671	-2,640	0	0	127	103	144	-17				
321+25.00	145	21	124	0	0	0	0	21	2,046	109	2,155	2,715	-2,694	0	0	124	99	139	-15				
321+50.00	154	24	130	0	0	0	0	24	2,019	112	2,131	2,685	-2,661	0	0	130	100	140	-10				
321+75.00	161	33	129	0	0	0	0	33	1,990	108	2,098	2,644	-2,611	0	0	129	100	140	-11				
322+00.00	176	51	126	0	0	0	0	51	2,012	104	2,116	2,666	-2,615	0	0	126	97	136	-10				
322+25.00	186	62	124	0	0	0	0	62	2,087	101	2,188	2,757	-2,695	0	0	124	94	132	-8				
322+50.00	112	40	72	0	0	0	0	40	1,268	58	1,326	1,671	-1,631	0	0	72	55	77	-5				
322+64.55	87	33	53	0	0	0	0	33	939	43	982	1,237	-1,204	0	0	53	41	57	-4				
322+75.00	210	82	128	0	0	0	0	82	2,315	103	2,418	3,047	-2,965	0	0	128	100	140	-12				
323+00.00	209	78	131	0	0	0	0	78	2,362	107	2,469	3,111	-3,033	0	0	131	104	146	-15				
323+25.00	93	32	61	0	0	0	0	32	1,092	50	1,142	1,439	-1,407	0	0	61	49	69	-8				
323+36.55	107	36	72	0	0	0	0	36	1,253	59	1,312	1,653	-1,617	0	0	72	58	81	-9				
323+50.00	213	77	136	0	0	0	0	77	2,167	112	2,279	2,872	-2,795	0	0	136	110	154	-18				
323+75.00	230	93	137	0	0	0	0	93	1,890	112	2,002	2,523	-2,430	0	0	137	112	157	-20				
324+00.00	81	34	47	0	0	0	0	34	582	38	620	781	-747	0	0	47	38	53	-6				
324+08.55	150	60	90	0	0	0	0	60	1,060	73	1,133	1,428	-1,368	0	0	90	73	102	-12				
324+25.00	74	28	46	0	0	0	0	28	526	38	564	711	-683	0	0	46	37	52	-6				
324+33.55	147	55	91	0	0	0	0	55	990	73	1,063	1,339	-1,284	0	0	91	75	105	-14				
324+50.00	231	89	142	0	0	0	0	89	1,482	111	1,593	2,007	-1,918	0	0	142	119	167	-25				
324+75.00	229	86	143	0	0	0	0	86	1,485	116	1,601	2,017	-1,931	0	0	143	120	168	-25				
325+00.00	234	66	144	0	0	0	24	90	1,479	119	1,598	2,014	-1,924	0	0	144	121	169	-25				
325+25.00	253	68	161	0	0	0	24	92	1,450	125	1,575	1,985	-1,893	0	0	161	118	165	-4				
325+50.00	277	89	188	0	0	0	0	89	1,400	140	1,540	1,940	-1,851	0	0	188	112	157	31				
325+75.00	288	90	198	0	0	0	0	90	1,343	148	1,491	1,879	-1,789	0	0	198	108	151	47				
326+00.00	282	88	194	0	0	0	0	88	1,330	143	1,473	1,856	-1,768	0	0	194	108	151	43				
326+25.00	257	94	163	0	0	0	0	94	1,367	123	1,490	1,877	-1,783	0	0	163	110	154	9				
326+50.00	234	97	137	0	0	0	0	97	1,470	110	1,580	1,991	-1,894	0	0	137	112	157	-20				
326+75.00	226	87	139	0	0	0	0	87	1,633	113	1,746	2,200	-2,113	0	0	139	114	160	-21				
327+00.00	218	78	140	0	0	0	0	78	1,825	115	1,940	2,444	-2,366	0	0	140	115	161	-21				
327+25.00	205	64	141	0	0	0	0	64	2,050	119	2,169	2,733	-2,669	0	0	141	117	164	-23				
327+50.00	201	58	143	0	0	0	0	58	2,306	122	2,428	3,059	-3,001	0	0	143	119	167	-24				
327+75.00	211	66	145	0	0	0	0	66	2,587	123	2,710	3,415	-3,349	0	0	145	122	171	-26				
328+00.00	219	72	147	0	0	0	0	72	2,873	124	2,997	3,776	-3,704	0	0	147	124	174	-27				
328+25.00	226	79	148	0	0	0	0	79	3,150	124	3,274	4,125	-4,046	0	0	148	127	178	-30				
328+50.00	235	85	150	0	0	0	0	85	3,441	126	3,567	4,495	-4,410	0	0	150	128	179	-29				
328+75.00	236	86	150	0	0	0	0	86	3,713	126	3,839	4,837	-4,751	0	0	150	129	181	-31				
329+00.00	232	81	151	0	0	0	0	81	3,969	128	4,097	5,162	-5,081	0	0	151	130	182	-31				
329+25.00	239	76	163	0	0	0	0	76	4,135	140	4,275	5,387	-5,311	0	0	163	130	182	-19				
329+50.00	447	58	389	0	0	0	0	58	4,170	372	4,542	5,723	-5,665	0	0	389	127	178	211				
329+75.00	710	73	637	0</																			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
330+00.00	862	205	657	0	0	0	0	205	4,055	618	4,673	5,888	-5,683	0	0	657	145	203	454			
330+25.00	713	283	431	0	0	0	0	283	4,043	390	4,433	5,586	-5,303	0	0	431	140	196	235			
330+50.00	506	323	183	0	0	0	0	323	3,996	146	4,142	5,219	-4,896	0	0	183	139	195	-12			
330+75.00	368	215	153	0	0	0	0	215	3,905	121	4,026	5,073	-4,858	0	0	153	137	192	-39			
331+00.00	295	150	146	0	0	0	0	150	3,309	122	3,431	4,323	-4,173	0	0	146	130	182	-36			
331+25.00	352	223	130	0	0	0	0	223	2,567	112	2,679	3,376	-3,153	0	0	130	120	168	-38			
331+50.00	392	229	163	0	0	0	0	229	2,179	127	2,306	2,906	-2,677	0	0	163	117	164	-1			
331+75.00	462	263	199	0	0	0	0	263	1,686	157	1,843	2,322	-2,059	0	0	199	110	154	45			
332+00.00	648	425	209	0	0	0	13	438	1,230	147	1,377	1,735	-1,297	0	0	209	113	158	51			
332+25.00	899	683	199	0	0	0	17	700	837	100	937	1,181	-481	0	0	199	125	175	24			
332+50.00	1,058	893	161	0	0	0	4	897	452	68	520	655	242	0	0	161	124	174	-13			
332+75.00	1,268	1,121	147	0	0	0	0	1,121	151	46	197	248	873	0	0	147	125	175	-28			
333+00.00	1,541	1,394	147	0	0	0	0	1,394	10	14	24	30	1,364	0	0	147	125	175	-28			
333+25.00	1,849	1,701	147	0	0	0	0	1,701	0	1	1	1	1,700	0	0	147	124	174	-27			
333+50.00	2,040	1,896	145	0	0	0	0	1,896	0	0	0	0	1,896	0	0	145	121	169	-24			
333+75.00	2,088	1,876	140	0	0	0	72	1,948	0	0	0	0	1,948	0	0	140	116	162	-22			
334+00.00	2,188	1,973	135	0	0	0	80	2,053	2	3	3	3	2,050	0	0	135	109	153	-18			
334+25.00	2,448	2,301	131	0	0	0	16	2,317	3	4	3	4	2,313	0	0	131	103	144	-13			
334+50.00	2,795	2,648	130	0	0	0	17	2,665	1	1	1	1	2,664	0	0	130	102	143	-13			
334+75.00	3,180	3,025	136	0	0	0	18	3,043	0	0	0	0	3,043	0	0	136	110	154	-18			
335+00.00	3,533	3,338	143	0	0	0	52	3,390	0	0	0	0	3,390	0	0	143	120	168	-25			
335+25.00	3,724	3,421	147	0	0	0	156	3,577	0	0	0	0	3,577	0	0	147	124	174	-27			
335+50.00	3,624	3,039	187	0	0	0	398	3,437	0	0	0	0	3,437	0	0	187	125	175	12			
335+75.00	3,292	2,201	233	0	0	0	858	3,059	0	0	0	0	3,059	0	0	233	124	174	59			
336+00.00	2,913	1,955	234	0	0	0	723	2,678	0	0	0	0	2,678	0	0	234	126	176	58			
336+25.00	2,545	2,185	191	0	0	0	170	2,355	0	0	0	0	2,355	0	0	191	130	182	9			
336+50.00	2,172	2,000	152	0	0	0	20	2,020	223	3	226	285	1,735	0	0	152	132	185	-33			
336+75.00	1,878	1,725	153	0	0	0	0	1,725	346	20	366	461	1,264	0	0	153	132	185	-32			
337+00.00	1,689	1,536	153	0	0	0	0	1,536	459	39	498	628	909	0	84	153	133	186	-33			
337+25.00	1,609	1,305	293	11	0	0	0	1,316	579	178	757	954	362	0	234	293	128	179	114			
337+50.00	1,422	984	427	11	0	0	0	995	586	338	924	1,164	-169	0	242	427	118	165	262			
337+75.00	1,110	653	430	26	0	0	0	679	827	355	1,182	1,489	-810	6	543	430	116	162	268			
338+00.00	736	353	315	68	0	0	0	421	875	229	1,104	1,391	-970	246	694	315	98	137	178			
338+20.90	125	31	49	19	0	0	26	76	187	31	218	275	-199	129	217	49	19	27	22			
338+25.00	558	217	160	50	0	0	130	397	612	36	648	817	-420	0	358	160	94	132	28			
338+45.90	99	83	15	0	0	0	0	83	133	0	133	168	-85	54	142	15	18	25	-10			
338+50.00	607	532	75	0	0	0	0	532	1,261	22	1,283	1,617	-1,085	536	1,072	75	110	154	-79			
338+75.00	609	543	67	0	0	0	0	543	915	18	933	1,176	-633	93	630	67	106	148	-81			
339+00.00	513	447	54	0	0	0	12	459	269	16	285	359	100	0	0	54	74	104	-50			
339+17.90	250	214	23	0	0	0	13	227	24	3	27	34	193	0	0	23	29	41	-18			
339+25.00	1,253	910	104	0	0	0	240	1,150	27	2	29	37	1,113	0	0	104	99	139	-35			
339+50.00	1,951	1,354	125	0	0	154	0	318	1,826	6	6	8	1,818	0	0	125	99	139	-14			
339+75.00	1,533	1,066	75	0	0	265	0	127	1,458	0	0	0	1,458	0	0	75	59	83	-8			
339+89.90	1,205	786	51	0	0	284	0	84	1,154	0	0	0	1,154	0	0	51	40	56	-5			
340+00.00	3,655	1,944	129	0	0	1,288	0	294	3,526	0	0	0	3,526	0	0	129	105	147	-18			
340+25.00	4,795	1,767	146	0	0	2,216	0	666	4,649	0	0	0	4,649	0	0	146	118	165	-19			
340+50.00	6,078	1,389	182	0	0	3,537	0	970	5,896	0	0	0	5,896	0	0	182	138	193	-11			
340+75.00	7,321	853	217	0	0	5,246	0	1,004	7,103	0	0	0	7,103	0	0	217	155	217	0			
341+00.00	8,627	1,098	240	0	0	6,185	0	1,104	8,387	0	0	0	8,387	0	0	240	170	238	2			
341+25.00	10,015	2,192	256	0	0	6,386	0	1,181	9,759	0	0	0	9,759	0	0	256	183	256	0			
341+50.00	11,318	3,280	265	0	0	6,441	0	1,332	11,053	0	0	0	11,053	0	0	265	192	269	-4			
341+75.00	12,468	4,231	271	0	0	6,370	0	1,595	12,196	0	0	0	12,196	0	0	271	199	279	-8			
342+00.00	13,420	5,048	273	0	0	6,366	0	1,734	13,148	0	0	0	13,148	0	0	273	205	287	-14			
342+25.00	14,129	5,667	277	0	0	6,442	0	1,743	13,852	0	0	0	13,852	0	0	277	216	302	-25			
342+50.00	14,432	5,863	279	0	0	6,606	0	1,684	14,153	0	0	0	14,153	0	0	279	225	315	-36			
342+75.00	14,294	5,610	250	0	0	6,798	0	1,636	14,044	0	0	0	14,044	0	0	250	210	294	-44			
343+00.00	13,573	5,944	202	0	0	6,620	0	808	13,372	0	0	0	13,372	0	0	202	171	239	-37			
343+25.00	12,251	5,935	308	0	0	6,008	0	0	11,943	0	0	0	11,943	0	0	308	127	178	130			
343+50.00	10,509	4,623	536	0	0	5,350	0	0	9,973	0	0	0	9,973	0	0	536	85	119	417			
343+75.00	8,605	3,303	600	0	0	4,702	0	0	8,005	0	0	0	8,005	0	0	600	56	78	522			
344+00.00	6,689	2,081	502	0	0	3,793	0	314	6,188	0	0	0	6,188	0	0	502	37	52	450			
344+25.00	3,892	1,008	302	0	0	2,211	0	372	3,591	0	0	0	3,591	0	0	302	14	20	282			
344+50.00	1,993	594	157	0	0	1,157	0	84	1,835	0	0	0	1,835	0	0	157	0	0	157			
344+75.00	1,786	627	91	0	0	1,036	0	33	1,696	0	0	0	1,696	0	0	91	0	0	91			
345+00.00	1,559	619	33	0	0	898	0	9	1,526	0	0	0	1,526	0	0	33	0	0	33			
345+25.00	1,350	560	33	0	0	755	0	2	1,317	0	0	0	1,317	0	0	33	0	0	33			
345+50.00	1,437	683	40	0	0	715	0	0	1,398	0	0	0	1,398	0	0	40	0	0	40			
345+75.00	1,667	875	53	0	0	739	0	0	1,614	0	0	0	1,614	0	0	53	5	7	46			
Subtotals:	250,765	118,499	13,387	185	0	98,568	0	20,129	237,381	35,755												

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
346+00.00	2,269	1,354	82	0	0	803	0	30	2,187	0	0	0	2,187	0	0	82	44	62	20				
346+25.00	2,711	1,927	120	0	0	615	0	49	2,591	0	0	0	2,591	0	0	120	92	129	-9				
346+50.00	2,440	1,990	139	0	0	280	0	30	2,300	0	0	0	2,300	0	0	139	117	164	-25				
346+75.00	2,153	1,847	145	0	0	146	0	15	2,008	0	0	0	2,008	0	0	145	125	175	-30				
347+00.00	1,853	1,614	142	0	0	93	0	5	1,712	7	3	10	1,699	0	0	142	119	167	-25				
347+25.00	1,536	1,342	132	0	0	48	0	13	1,403	33	15	48	1,343	0	0	132	106	148	-16				
347+50.00	1,266	1,079	174	0	0	0	0	13	1,092	89	44	133	924	0	0	174	91	127	47				
347+75.00	1,025	789	236	0	0	0	0	0	789	169	87	256	466	0	0	236	83	116	120				
348+00.00	802	561	242	0	0	0	0	0	561	284	111	395	498	63	0	242	76	106	136				
348+25.00	617	427	190	0	0	0	0	0	427	427	99	526	663	-236	0	190	65	91	99				
348+50.00	492	371	121	0	0	0	0	0	371	556	71	627	790	-419	0	121	59	83	38				
348+75.00	416	322	94	0	0	0	0	0	322	637	59	696	877	-555	0	94	60	84	10				
349+00.00	436	339	98	0	0	0	0	0	339	622	54	676	852	-513	0	98	66	92	6				
349+25.00	562	440	114	0	0	0	0	7	447	524	51	575	725	-278	0	114	75	105	9				
349+50.00	667	516	143	0	0	0	0	7	523	439	64	503	634	-111	0	143	84	118	25				
349+75.00	630	480	150	0	0	0	0	0	480	392	68	460	580	-100	0	150	82	115	35				
350+00.00	532	336	196	0	0	0	0	0	336	1,075	133	1,208	1,522	-1,186	0	196	60	84	112				
350+40.00	40	0	40	0	0	0	0	0	0	393	40	433	546	-546	0	40	0	0	40				
350+50.00																							
ML032-SEG2																							
Totals:	285,614	139,119	25,323	185	0	100,553	0	20,439	260,296	168,315	12,059	180,374	227,276	33,021	9,164	15,064	25,323	15,481	21,674	3,649			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]			
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
61CONNRDA																							
11+50.00	304	137	167	0	0	0	0	0	137	2,396	138	2,534	3,193	-3,056	0	0	167	114	160	8			
12+00.00	147	60	87	0	0	0	0	0	60	1,098	70	1,168	1,472	-1,412	0	0	87	62	87	0			
12+24.46	172	87	85	0	0	0	0	0	87	1,055	61	1,116	1,406	-1,319	0	0	85	67	94	-9			
12+50.00	71	36	35	0	0	0	0	0	36	437	25	462	582	-546	0	0	35	28	39	-4			
12+60.46	196	80	116	0	0	0	0	0	80	1,496	86	1,582	1,993	-1,913	0	0	116	92	129	-13			
12+96.46	16	5	11	0	0	0	0	0	5	149	8	157	198	-193	0	0	11	9	13	-2			
13+00.00	139	38	101	0	0	0	0	0	38	1,400	79	1,479	1,864	-1,826	0	0	101	79	111	-10			
13+33.46	62	13	49	0	0	0	0	0	13	663	39	702	885	-872	0	0	49	38	53	-4			
13+50.00	184	41	143	0	0	0	0	0	41	1,814	114	1,928	2,429	-2,388	0	0	143	109	153	-10			
14+00.00	161	80	81	0	0	0	0	0	80	840	61	901	1,135	-1,055	0	0	81	61	85	-5			
14+29.08	186	127	58	0	0	0	0	0	127	435	40	475	599	-472	0	0	58	44	62	-4			
14+50.00	178	135	43	0	0	0	0	0	135	221	26	247	311	-176	0	0	43	32	45	-2			
14+66.08	496	405	91	0	0	0	0	0	405	206	36	242	305	100	0	0	91	69	97	-6			
15+00.00	36	31	6	0	0	0	0	0	31	2	1	3	4	27	0	0	6	4	6	0			
15+02.08	755	657	98	0	0	0	0	0	657	20	9	29	37	620	0	0	98	74	104	-6			
15+38.08	303	271	32	0	0	0	0	0	271	0	0	0	271	0	0	32	24	34	-2				
15+50.00	1,983	1,839	144	0	0	0	0	0	1,839	0	0	0	1,839	0	0	144	110	154	-10				
16+00.00	3,153	2,988	165	0	0	0	0	0	2,988	0	0	0	2,988	0	0	165	132	185	-20				
16+50.00	4,270	4,077	193	0	0	0	0	0	4,077	0	0	0	4,077	0	0	193	159	223	-30				
17+00.00	5,377	5,160	218	0	0	0	0	0	5,160	0	0	0	5,160	0	0	218	184	258	-40				
17+50.00	6,026	5,799	227	0	0	0	0	0	5,799	0	0	0	5,799	0	0	227	194	272	-45				
18+00.00	5,442	5,215	227	0	0	0	0	0	5,215	0	0	0	5,215	0	0	227	194	272	-45				
18+50.00	3,400	3,210	190	0	0	0	0	0	3,210	0	0	0	3,210	0	0	190	156	218	-28				
19+00.00	2,319	2,166	153	0	0	0	0	0	2,166	0	0	0	2,166	0	0	153	120	168	-15				
19+50.00	3,271	3,110	161	0	0	0	0	0	3,110	0	0	0	3,110	0	0	161	127	178	-17				
20+00.00	4,543	4,351	192	0	0	0	0	0	4,351	0	0	0	4,351	0	0	192	158	221	-29				
21+00.00	5,648	5,428	219	0	0	0	0	0	5,428	0	0	0	5,428	0	0	219	186	260	-41				
21+50.00	5,782	5,558	224	0	0	0	0	0	5,558	0	0	0	5,558	0	0	224	191	267	-43				
22+00.00	4,695	4,478	217	0	0	0	0	0	4,478	0	0	0	4,478	0	0	217	184	258	-41				
22+50.00	3,975	3,777	198	0	0	0	0	0	3,777	0	0	0	3,777	0	0	198	165	231	-33				
23+00.00	5,378	5,168	210	0	0	0	0	0	5,168	0	0	0	5,168	0	0	210	177	248	-38				
23+50.00	8,443	8,190	254	0	0	0	0	0	8,190	0	0	0	8,190	0	0	254	220	308	-54				
24+00.00	11,346	11,064	283	0	0	0	0	0	11,064	0	0	0	11,064	0	0	283	249	349	-66				
24+50.00	13,694	13,381	313	0	0	0	0	0	13,381	0	0	0	13,381	0	0	313	280	392	-79				
24+68.21	5,442	5,321	121	0	0	0	0	0	5,321	0	0	0	5,321	0	0	121	109	153	-32				
25+00.00	9,681	9,465	216	0	0	0	0	0	9,465	0	0	0	9,465	0	0	216	195	273	-57				
25+04.21	1,291	1,262	29	0	0	0	0	0	1,262	0	0	0	1,262	0	0	29	26	36	-7				
25+40.21	10,962	10,714	248	0	0	0	0	0	10,714	0	0	0	10,714	0	0	248	224	314	-66				
25+50.00	2,958	2,883	67	0	0	0	0	0	2,891	0	0	0	2,891	0	0	67	60	84	-17				
25+68.21	5,461	5,146	180	0	0	135	0	0	5,281	0	1	1	5,280	0	0	180	109	153	27				
26+00.00	9,421	8,076	412	0	0	934	0	0	9,010	0	1	1	9,009	0	0	412	185	259	153				
26+50.00	15,978	11,339	693	0	0	3,727	0	219	15,285	0	1	1	15,284	0	0	693	313	438	255				
27+00.00	17,337	9,899	699	0	0	6,109	0	630	16,638	0	1	1	16,637	0	0	699	316	442	257				
27+18.26	6,001	3,038	226	0	0	2,423	0	314	5,775	0	0	0	5,775	0	0	226	101	141	85				
27+46.26	7,804	3,810	261	0	0	3,212	0	522	7,544	0	0	0	7,544	0	0	261	112	157	104				
27+50.00	993	477	31	0	0	411	0	74	962	0	0	0	962	0	0	31	13	18	13				
27+82.26	8,522	3,943	276	0	0	3,557	0	746	8,246	0	0	0	8,246	0	0	276	116	162	114				
28+00.00	4,281	1,779	169	0	0	1,859	0	474	4,112	0	0	0	4,112	0	0	169	53	74	95				
28+18.26	3,928	1,455	199	0	0	1,786	0	488	3,729	0	0	0	3,729	0	0	199	49	69	130				
28+50.00	3,827	1,265	200	0	0	1,867	0	494	3,626	0	0	0	3,626	0	0	200	36	50	150				
29+00.00	1,780	515	88	0	0	1,015	0	162	1,692	0	0	0	1,692	0	0	88	0	0	88				
61CONNRDA Totals:	217,818	177,549	9,106	0	0	27,043	0	4,123	208,715	12,232	797	13,029	16,418	192,298	0	0	9,106	6,109	8,553	554			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill				Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]		
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
US61RAMPA																						
1519+50.00	1,225	565	0	0	0	660	0	0	1,225	0	0	0	1,225	0	0	0	0	0	0	0	0	0
1519+75.00	1,259	555	0	0	0	705	0	0	1,260	0	0	0	1,260	0	0	0	0	0	0	0	0	0
1520+00.00	1,405	629	0	0	0	775	0	0	1,404	0	0	0	1,404	0	0	0	0	0	0	0	0	0
1520+25.00	2,959	1,411	0	2	0	1,542	0	4	2,959	0	0	0	2,959	0	0	0	0	29	41	-41		
1520+50.00	4,286	2,090	0	6	0	2,166	0	25	4,287	0	0	0	4,287	0	0	0	0	60	84	-84		
1520+75.00	2,926	1,462	0	9	0	1,422	0	34	2,927	0	0	0	2,927	0	0	0	0	47	66	-66		
1520+92.78	1,118	578	0	6	0	519	0	15	1,118	0	0	0	1,118	0	0	0	0	19	27	-27		
1521+00.00	3,571	1,851	0	40	0	1,619	0	61	3,571	0	0	0	3,571	0	0	0	0	61	85	-85		
1521+25.00	2,500	1,321	0	33	0	1,079	0	67	2,500	0	0	0	2,500	0	0	0	0	56	78	-78		
1521+40.78	1,616	905	0	12	0	644	0	54	1,615	0	0	0	1,615	0	0	0	0	43	60	-60		
1521+50.00	3,826	2,346	0	9	0	817	0	654	3,826	0	0	0	3,826	0	0	0	0	106	148	-148		
1521+75.00	3,128	2,345	0	0	0	0	0	784	3,129	0	0	0	3,129	0	0	0	0	95	133	-133		
1522+00.00	2,627	2,226	0	0	0	0	0	401	2,627	0	0	0	2,627	0	0	0	0	90	126	-126		
1522+25.00	905	761	0	0	0	0	0	144	905	0	0	0	905	0	0	0	0	37	52	-52		
1522+38.00	34	29	0	0	0	0	0	5	34	0	0	0	34	0	0	0	0	2	3	-3		
1522+38.78	456	399	0	0	0	0	0	57	456	0	0	0	456	0	0	0	0	22	31	-31		
1522+50.00	803	755	0	0	0	0	0	48	803	0	0	0	803	0	0	0	0	48	67	-67		
1522+75.00	147	146	0	0	0	0	0	0	146	0	0	0	146	0	0	0	0	11	15	-15		
1522+80.78	387	387	0	0	0	0	0	0	387	0	0	0	387	0	0	0	0	35	49	-49		
1523+00.00	306	306	0	0	0	0	0	0	306	0	0	0	306	0	0	0	0	49	69	-69		
1523+25.00	181	181	0	0	0	0	0	0	181	24	24	30	151	0	0	0	0	57	80	-80		
1523+50.00	145	145	0	0	0	0	0	0	145	121	121	153	-8	0	0	0	0	54	76	-76		
1523+75.00	137	137	0	0	0	0	0	0	137	261	261	329	-192	0	0	0	0	49	69	-69		
1524+00.00	121	121	0	0	0	0	0	0	121	444	444	560	-439	0	0	0	0	55	77	-77		
1524+25.00	75	75	0	0	0	0	0	0	75	697	697	878	-803	0	0	0	0	57	80	-80		
1524+50.00	26	26	0	0	0	0	0	0	26	986	986	1,242	-1,216	0	0	0	0	59	83	-83		
1524+75.00	12	12	0	0	0	0	0	0	12	1,260	1,260	1,588	-1,576	0	0	0	0	65	91	-91		
1525+00.00	12	12	0	0	0	0	0	0	12	930	930	1,172	-1,160	0	0	0	0	45	63	-63		
1525+16.12	4	4	0	0	0	0	0	0	4	546	546	688	-684	0	0	0	0	24	34	-34		
1525+25.00	3	3	0	0	0	0	0	0	3	1,723	1,723	2,171	-2,168	0	0	0	0	72	101	-101		
1525+50.00	3	4	0	0	0	0	0	0	4	628	628	791	-787	0	0	0	0	26	36	-36		
1525+58.12	17	17	0	0	0	0	0	0	17	1,441	1,441	1,816	-1,799	0	0	0	0	57	80	-80		
1525+75.00	45	44	0	0	0	0	0	0	44	2,392	2,392	3,014	-2,970	0	0	0	0	88	123	-123		
1526+00.00	62	62	0	0	0	0	0	0	62	2,596	2,596	3,271	-3,209	0	0	0	0	89	125	-125		
1526+25.00	93	93	0	0	0	0	0	0	93	2,732	2,732	3,442	-3,349	0	0	0	0	90	126	-126		
1526+50.00	29	29	0	0	0	0	0	0	29	685	685	863	-834	0	0	0	0	22	31	-31		
1526+56.12	102	103	0	0	0	0	0	0	103	2,150	2,150	2,709	-2,606	0	0	0	0	70	98	-98		
1526+75.00	151	151	0	0	0	0	0	0	151	2,857	2,857	3,600	-3,449	0	0	0	0	96	134	-134		
1527+00.00	26	26	0	0	0	0	0	0	26	468	468	590	-564	0	0	0	0	16	22	-22		
1527+04.12	151	151	0	0	0	0	0	0	151	2,365	2,365	2,980	-2,829	0	0	0	0	83	116	-116		
1527+25.00	33	33	0	0	0	0	0	0	33	464	464	585	-552	0	0	0	0	17	24	-24		
1527+29.11	173	173	0	0	0	0	0	0	173	2,334	2,334	2,941	-2,768	0	0	0	0	85	119	-119		
1527+50.00	194	194	0	0	0	0	0	0	194	2,732	2,732	3,442	-3,248	0	0	0	0	101	141	-141		
1527+75.00	72	72	0	0	0	0	0	0	72	1,084	1,084	1,366	-1,294	0	0	0	0	40	56	-56		
1527+85.11	102	101	0	0	0	0	0	0	101	1,590	1,590	2,003	-1,902	0	0	0	0	59	83	-83		
1528+00.00	165	165	0	0	0	0	0	0	165	2,607	2,607	3,285	-3,120	0	0	0	0	99	139	-139		
1528+25.00	126	126	0	0	0	0	0	0	126	2,218	2,218	2,795	-2,669	0	0	0	0	85	119	-119		
1528+46.71	16	16	0	0	0	0	0	0	16	336	336	423	-407	0	0	0	0	13	18	-18		
1528+50.00	114	114	0	0	0	0	0	0	114	2,339	2,339	2,947	-2,833	0	0	0	0	95	133	-133		
1528+75.00	64	65	0	0	0	0	0	0	65	1,762	1,762	2,220	-2,155	0	0	0	0	78	109	-109		
1528+97.11	4	4	0	0	0	0	0	0	4	212	212	267	-263	0	0	0	0	10	14	-14		
1529+00.00	28	28	0	0	0	0	0	0	28	1,712	1,712	2,157	-2,129	0	0	0	0	80	112	-112		
1529+25.00	36	36	0	0	0	0	0	0	36	1,510	1,510	1,903	-1,867	0	0	0	0	75	105	-105		
1529+50.00	46	47	0	0	0	0	0	0	47	1,356	1,356	1,709	-1,662	0	0	0	0	73	102	-102		
1529+75.00	61	61	0	0	0	0	0	0	61	1,264	1,264	1,593	-1,532	0	0	0	0	73	102	-102		
1530+00.00	75	75	0	0	0	0	0	0	75	1,148	1,148	1,447	-1,372	0	0	0	0	72	101	-101		
1530+25.00	81	80	0	0	0	0	0	0	80	934	934	1,177	-1,097	0	0	0	0	67	94	-94		
1530+50.00	116	116	0	0	0	0	0	0	116	652	652	822	-706	0	0	0	0	63	88	-88		
1530+75.00	173	173	0	0	0	0	0	0	173	398	398	502	-329	0	0	0	0	58	81	-81		
1531+00.00	235	235	0	0	0	0	0	0	235	247	247	311	-76	0	0	0	0	56	78	-78		
1531+25.00	274	274	0	0	0	0	0	0	274	150	150	189	85	0	0	0	0	55	77	-77		
1531+50.00	368	369	0	0	0	0	0	0	369	76	76	96	273	0	0	0	0	54	76	-76		
1531+75.00	552	547	0	0	0	0	5	0	552	29	29	37	515	0	0	0	0	62	87	-87		
1532+00.00	782	773	0	0	0	0	9	0	782	3	3	4	778	0	0	0	0	66	92	-92		
1532+25.00	1,004	998	0	0	0	0	5	0	1,003	0	0	0	1,003	0	0	0	0	64	90	-90		
1532+50.00	1,124	1,116	0	0	0	0	7	0	1,123	0	0	0	1,123	0	0	0	0	74	104	-104		
1532+75.00	1,162	1,152	0	0	0	0	10	0	1,162	0	0	0	1,162	0	0	0	0	74	104	-104		
Subtotals:	44,059	29,606	0	117	0	11,948	36	2,353	44,060	52,463	0	52,463	66,105	-22,045	0	0	0	3,732	5,225	-5,225		

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill				Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
1533+00.00	1,239	1,215	0	7	0	0	18	0	1,240	0	0	0	1,240	0	0	0	63	88	-88			
1533+25.00	1,245	1,198	0	14	0	0	33	0	1,245	15	15	19	1,226	0	0	0	64	90	-90			
1533+50.00	1,116	1,044	0	23	0	0	39	0	1,114	38	38	48	1,066	0	0	0	65	91	-91			
1533+75.00	902	809	0	47	0	0	39	0	903	52	52	66	837	0	0	0	58	81	-81			
1534+00.00	433	353	0	36	0	0	44	0	433	35	35	44	389	0	0	0	44	62	-62			
1534+25.00	263	230	0	6	0	0	26	0	262	7	7	9	253	0	0	0	39	55	-55			
1534+50.00	387	386	0	0	0	0	0	0	386	0	0	0	386	0	0	0	42	59	-59			
1534+75.00	322	322	0	0	0	0	0	0	322	0	0	0	322	0	0	0	43	60	-60			
1535+00.00	528	528	0	0	0	0	0	0	528	12	12	15	513	0	0	0	52	73	-73			
1535+25.00	851	851	0	0	0	0	0	0	851	21	21	27	825	0	0	0	64	90	-90			
1535+49.60	15	15	0	0	0	0	0	0	15	0	0	0	15	0	0	0	1	1	-1			
1535+50.00	891	840	0	11	14	0	27	0	892	18	18	23	869	0	0	0	65	91	-91			
1535+75.00	840	735	0	16	28	0	62	0	841	16	16	20	821	0	0	0	55	77	-77			
1536+00.00	937	848	0	6	27	0	56	0	937	15	15	19	918	0	0	0	65	91	-91			
1536+25.00	882	843	0	0	11	0	28	0	882	10	10	13	869	0	0	0	59	83	-83			
1536+45.00																						
US61RAMPA																						
Totals:	54,910	39,823	0	283	96	11,948	408	2,353	54,911	52,702	0	52,702	66,407	-11,496	0	0	0	4,511	6,316	-6,316		

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil				[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]		
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
US61LOOPC																						
3522+50.00	1,449	1,289	77	0	0	0	84	0	1,373	0	0	0	1,373	0	0	77	65	91	-14			
3522+75.00	1,253	1,096	67	0	0	0	89	0	1,185	0	0	0	1,185	0	0	67	59	83	-16			
3522+94.99	330	289	18	0	0	0	22	0	311	0	0	0	311	0	0	18	17	24	-6			
3523+00.00	1,580	1,292	83	0	0	0	205	0	1,497	0	0	0	1,497	0	0	83	82	115	-32			
3523+25.00	774	555	38	0	0	0	181	0	736	0	0	0	736	0	0	38	37	52	-14			
3523+36.00	1,117	757	53	0	0	0	307	0	1,064	0	0	0	1,064	0	0	53	48	67	-14			
3523+75.00	2,364	1,551	99	0	0	0	713	0	2,264	0	0	0	2,264	0	0	99	86	120	-21			
3524+00.00	2,877	1,806	107	0	0	0	432	531	2,769	0	0	0	2,769	0	0	107	94	132	-25			
3524+25.00	3,099	1,847	107	0	0	0	22	1,123	2,992	0	0	0	2,992	0	0	107	93	130	-23			
3524+50.00	3,179	1,811	105	0	0	0	231	1,031	3,073	0	0	0	3,073	0	0	105	91	127	-22			
3524+75.00	3,360	1,756	108	0	0	0	438	1,058	3,252	0	0	0	3,252	0	0	108	95	133	-25			
3525+00.00	3,444	1,667	114	0	0	0	488	1,175	3,330	0	0	0	3,330	0	0	114	101	141	-27			
3525+25.00	3,158	1,521	113	0	0	0	502	1,022	3,045	0	0	0	3,045	0	0	113	100	140	-27			
3525+50.00	2,771	1,419	109	0	0	0	230	1,013	2,662	0	0	0	2,662	0	0	109	96	134	-25			
3525+75.00	2,655	1,529	122	0	0	0	77	927	2,533	0	0	0	2,533	0	0	122	98	137	-15			
3526+00.00	2,550	1,671	132	0	0	0	130	618	2,419	0	0	0	2,419	0	0	132	100	140	-8			
3526+25.00	2,277	1,625	159	0	0	0	144	348	2,117	1	1	1	2,116	0	0	159	97	136	23			
3526+50.00	2,056	1,525	189	0	0	0	138	203	1,866	1	1	1	1,865	0	0	189	95	133	56			
3526+75.00	1,648	1,278	175	0	0	0	56	139	1,473	0	0	0	1,473	0	0	175	82	115	60			
3527+00.00	1,225	990	160	0	0	0	9	66	1,065	0	0	0	1,065	0	0	160	68	95	65			
3527+25.00	981	808	151	0	0	0	0	21	829	6	6	8	821	0	0	151	63	88	63			
3527+50.00	773	628	143	0	0	0	0	2	630	7	24	31	591	0	0	143	59	83	60			
3527+75.00	687	541	147	0	0	0	0	0	541	7	25	32	501	0	0	147	59	83	64			
3528+00.00	704	558	146	0	0	0	0	0	558	1	8	9	547	0	0	146	58	81	65			
3528+25.00	757	619	131	0	0	0	0	7	626	1	1	1	625	0	0	131	54	76	55			
3528+50.00	798	653	116	0	0	0	0	29	682	0	0	0	682	0	0	116	48	67	49			
3528+75.00	830	656	105	0	0	0	0	69	725	0	0	0	725	0	0	105	49	69	36			
3529+00.00	850	642	93	0	0	0	0	114	756	0	0	0	756	0	0	93	51	71	22			
3529+25.00	864	617	80	0	0	0	0	167	784	0	0	0	784	0	0	80	48	67	13			
3529+50.00	904	597	63	0	0	0	0	244	841	0	0	0	841	0	0	63	46	64	-2			
3529+53.54	133	84	8	0	0	0	0	42	126	0	0	0	126	0	0	8	6	8	0			
US61LOOPC																						
Totals:	51,447	33,677	3,318	0	0	0	4,498	9,949	48,124	16	65	81	103	48,022	0	0	3,318	2,145	3,003	315		

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61SB																							
506+70.00	34	22	12	0	0	0	0	0	22	15	9	24	30	-8	0	0	12	22	31	-19			
507+00.00	70	35	34	0	0	0	0	0	35	48	28	76	96	-61	0	0	34	59	83	-49			
507+50.00	67	34	33	0	0	0	0	0	34	56	27	83	105	-71	0	0	33	57	80	-47			
508+00.00	67	36	31	0	0	0	0	0	36	57	26	83	105	-69	0	0	31	53	74	-43			
508+50.00	64	36	28	0	0	0	0	0	36	43	23	66	83	-47	0	0	28	49	69	-41			
509+00.00	99	62	37	0	0	0	0	0	62	47	22	69	87	-25	0	0	37	59	83	-46			
510+00.00	140	96	44	0	0	0	0	0	96	39	19	58	73	23	0	0	44	68	95	-51			
510+50.00	184	136	49	0	0	0	0	0	136	17	14	31	39	97	0	0	49	73	102	-53			
511+00.00	384	294	80	0	0	0	10	0	304	12	11	23	29	275	0	0	80	114	160	-80			
511+50.00	562	433	107	0	0	0	22	0	455	10	10	20	25	430	0	0	107	149	209	-102			
512+00.00	547	417	105	0	0	0	25	0	442	10	9	19	24	418	0	0	105	146	204	-99			
512+50.00	567	433	105	0	0	0	29	0	462	9	8	17	22	441	0	0	105	145	203	-98			
513+00.00	695	548	112	0	0	0	35	0	583	5	7	12	15	568	0	0	112	153	214	-102			
513+50.00	739	594	104	0	0	0	19	22	635	2	4	6	8	627	0	0	104	141	197	-93			
514+00.00	652	525	80	0	0	0	25	22	572	0	1	1	1	571	0	0	80	108	151	-71			
514+50.00	472	359	61	0	0	0	52	0	411	0	0	0	0	411	0	0	61	81	113	-52			
515+00.00	510	389	70	0	0	0	50	0	439	0	0	0	0	439	0	0	70	94	132	-62			
515+25.44	391	319	48	0	0	0	24	0	343	0	1	1	1	342	0	0	48	65	91	-43			
515+50.00	440	366	49	0	0	0	25	0	391	0	2	2	3	388	0	0	49	65	91	-42			
809	809	674	93	0	0	0	42	0	716	0	0	0	0	716	0	0	93	125	175	-82			
516+00.00	701	576	97	0	0	0	28	0	604	0	0	0	0	604	0	0	97	130	182	-85			
516+50.00	780	651	109	0	0	0	21	0	672	0	0	0	0	672	0	0	109	141	197	-88			
517+00.00	864	672	176	0	0	0	17	0	689	0	2	2	3	686	0	0	176	144	202	-26			
517+50.00	999	720	257	0	0	0	21	0	741	0	3	3	4	737	0	0	257	160	224	33			
518+00.00	522	377	134	0	0	0	11	0	388	0	1	1	1	387	0	0	134	85	119	15			
518+25.23	413	295	96	0	0	0	10	12	317	0	2	2	3	314	0	0	96	60	84	12			
518+50.00	113	80	24	0	0	0	3	5	88	0	1	1	1	87	0	0	24	15	21	3			
518+91.74	748	534	182	0	0	0	14	18	566	0	6	6	8	558	0	0	182	114	160	22			
519+00.00	120	85	34	0	0	0	1	0	86	0	1	1	1	85	0	0	34	21	29	5			
519+50.00	695	483	209	0	0	0	4	0	487	0	5	5	6	481	0	0	209	128	179	30			
519+75.90	345	264	81	0	0	0	0	0	264	0	1	1	1	263	0	0	81	65	91	-10			
520+00.00	314	264	50	0	0	0	0	0	264	2	1	3	4	260	0	0	50	60	84	-34			
520+22.11	267	219	47	0	0	0	0	0	219	27	7	34	43	176	0	0	47	55	77	-30			
520+42.47	295	255	40	0	0	0	0	0	255	24	4	28	35	220	0	0	40	47	66	-26			
520+50.00	117	105	13	0	0	0	0	0	105	0	0	0	0	105	0	0	13	15	21	-8			
521+00.00	559	483	76	0	0	0	0	0	483	3	4	7	9	474	0	0	76	91	127	-51			
521+50.00	774	685	90	0	0	0	0	0	685	3	3	6	8	677	0	0	90	104	146	-56			
521+65.44	412	376	36	0	0	0	0	0	376	0	0	0	0	376	0	0	36	42	59	-23			
Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
537+00.00	1,822	258	156	0	0	0	1,103	305	1,666	18	17	35	44	1,622	0	0	156	161	225	-69			
537+50.00	1,441	66	128	0	0	164	883	199	1,312	6	9	15	19	1,293	0	0	128	128	179	-51			
538+00.00	1,377	133	116	0	0	255	846	27	1,261	0	3	3	4	1,257	0	0	116	116	162	-46			
538+50.00	1,634	386	119	0	0	91	981	56	1,514	0	5	5	6	1,508	0	0	119	125	175	-56			
539+00.00	2,345	698	136	0	0	0	1,207	304	2,209	0	3	3	4	2,205	0	0	136	152	213	-77			
539+50.00	2,808	871	148	0	0	0	1,148	642	2,661	0	0	0	0	2,661	0	0	148	171	239	-91			
540+00.00	2,512	820	145	0	0	0	860	687	2,367	0	0	0	0	2,367	0	0	145	171	239	-94			
540+50.00	1,929	626	138	0	0	0	744	422	1,792	0	0	0	0	1,792	0	0	138	164	230	-92			
541+00.00	1,402	437	123	0	0	0	544	298	1,279	0	0	0	0	1,279	0	0	123	146	204	-81			
541+50.00	859	270	107	0	0	50	245	187	752	0	1	1	1	751	0	0	107	128	179	-72			
542+00.00	301	110	61	0	0	50	79	1	240	0	2	2	3	237	0	0	61	73	102	-41			
US61SB Totals:	34,961	17,607	4,410	0	0	610	9,128	3,207	30,552	453	302	755	953	29,600	0	0	4,410	4,838	6,774	-2,364			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]					
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink					
Stage 2																									
ML032-SEG3																									
355+00.00	188	0	188	0	0	0	0	0	4,456	188	4,644	5,852	-5,852	4,004	4,681	188	0	0	188						
355+50.00	123	0	122	0	0	0	0	0	3,496	122	3,618	4,559	-4,559	2,715	4,032	122	48	67	55						
355+70.00	40	0	40	0	0	0	0	0	1,011	40	1,051	1,324	-1,324	0	0	40	24	34	6						
355+75.00	194	0	194	0	0	0	0	0	5,550	193	5,743	7,236	-7,236	0	0	194	130	182	12						
356+00.00	205	0	205	0	0	0	0	0	5,426	204	5,630	7,094	-7,094	0	0	205	128	179	26						
356+25.00	185	0	185	0	0	0	0	0	5,088	184	5,272	6,643	-6,643	0	0	185	118	165	20						
356+50.00	136	0	136	0	0	0	0	0	4,945	135	5,080	6,401	-6,401	0	0	136	115	161	-25						
356+75.00	130	0	130	0	0	0	0	0	4,762	129	4,891	6,163	-6,163	0	0	130	108	151	-21						
357+00.00	117	0	117	0	0	0	0	0	4,445	117	4,562	5,748	-5,748	0	0	117	85	119	-2						
357+25.00	91	0	91	0	0	0	0	0	3,730	91	3,821	4,815	-4,815	0	0	91	42	59	32						
357+50.00	69	0	69	0	0	0	0	0	2,209	69	2,278	2,870	-2,870	0	0	69	9	13	56						
357+75.00	72	0	72	0	0	0	0	0	1,141	72	1,213	1,528	-1,528	0	0	72	0	0	72						
358+00.00	75	0	75	0	0	0	0	0	1,057	75	1,132	1,426	-1,426	0	0	75	0	0	75						
358+25.00	55	0	55	0	0	0	0	0	995	55	1,050	1,323	-1,323	0	0	55	0	0	55						
358+50.00	100	0	100	0	0	0	0	0	1,830	100	1,930	2,432	-2,432	0	0	100	24	34	66						
358+75.00	212	31	181	0	0	0	0	31	2,718	161	2,879	3,628	-3,597	0	0	181	49	69	112						
359+00.00	258	65	193	0	0	0	0	65	2,568	155	2,723	3,431	-3,366	0	0	193	73	102	91						
359+25.00	236	63	174	0	0	0	0	63	2,240	140	2,380	2,999	-2,936	0	0	174	92	129	45						
359+50.00	261	91	170	0	0	0	0	91	2,001	131	2,132	2,686	-2,595	0	0	170	91	127	43						
359+75.00	303	133	170	0	0	0	0	133	1,842	125	1,967	2,479	-2,346	0	0	170	93	130	40						
360+00.00	321	164	157	0	0	0	0	164	1,694	116	1,810	2,281	-2,117	0	0	157	91	127	30						
360+25.00	336	205	131	0	0	0	0	205	1,548	94	1,642	2,069	-1,864	0	0	131	90	126	5						
360+50.00	327	219	108	0	0	0	0	219	1,405	73	1,478	1,862	-1,643	0	0	108	88	123	-15						
360+75.00	293	189	104	0	0	0	0	189	1,300	71	1,371	1,728	-1,539	0	0	104	83	116	-12						
361+00.00	228	129	99	0	0	0	0	129	1,248	70	1,318	1,661	-1,532	0	0	99	78	109	-10						
361+25.00	161	68	92	0	0	0	0	68	1,194	70	1,264	1,593	-1,525	0	0	92	71	99	-8						
361+50.00	129	41	88	0	0	0	0	41	1,094	69	1,163	1,465	-1,424	0	0	88	66	92	-5						
361+75.00	139	52	87	0	0	0	0	52	955	66	1,021	1,287	-1,235	0	0	87	67	94	-7						
362+00.00	165	78	87	0	0	0	0	78	815	63	878	1,106	-1,028	0	0	87	68	95	-8						
362+25.00	154	69	84	0	0	0	0	69	666	62	728	917	-848	0	0	84	65	91	-7						
362+50.00	113	36	78	0	0	0	0	36	506	60	566	713	-677	0	0	78	58	81	-3						
362+75.00	105	31	74	0	0	0	0	31	324	57	381	480	-449	0	0	74	54	76	-2						
363+00.00	127	53	74	0	0	0	0	53	156	47	203	256	-203	0	0	74	54	76	-2						
363+25.00	217	140	77	0	0	0	0	140	50	27	77	97	43	0	0	77	58	81	-4						
363+50.00	449	364	82	0	0	3	0	367	5	7	12	15	352	0	0	82	67	94	-12						
363+75.00	802	685	89	0	0	28	0	713	11	11	11	14	699	0	0	89	77	108	-19						
364+00.00	1,184	1,038	96	0	0	50	0	1,088	11	11	11	14	1,074	0	0	96	87	122	-26						
364+25.00	1,586	1,458	102	0	0	25	0	1,483	0	0	0	0	1,483	0	0	102	96	134	-32						
364+50.00	1,991	1,884	107	0	0	0	0	1,884	0	0	0	0	1,884	0	0	107	103	144	-37						
364+75.00	16	15	1	0	0	0	0	15	0	0	0	0	15	0	0	1	1	1	0						
364+75.18	2,342	2,200	143	0	0	0	0	2,200	0	0	0	0	2,200	0	0	143	108	151	-8						
365+00.00	2,059	1,900	159	0	0	0	0	1,900	0	0	0	0	1,900	0	0	159	88	123	36						
365+19.18	669	614	55	0	0	0	0	614	0	0	0	0	614	0	0	55	27	38	17						
365+25.00	3,071	2,830	242	0	0	0	0	2,830	0	0	0	0	2,830	0	0	242	121	169	73						
365+50.00	1,735	1,604	131	0	0	0	0	1,604	0	0	0	0	1,604	0	0	131	66	92	39						
365+63.18	1,621	1,502	119	0	0	0	0	1,502	0	0	0	0	1,502	0	0	119	60	84	35						
365+75.00	3,651	3,395	257	0	0	0	0	3,395	0	0	0	0	3,395	0	0	257	130	182	75						
366+00.00	487	454	33	0	0	0	0	454	0	0	0	0	454	0	0	33	17	24	9						
366+03.18	3,508	2,750	233	0	0	0	524	3,274	0	0	0	0	3,274	0	0	233	119	167	66						
366+25.00	4,383	2,785	278	0	0	0	1,320	4,105	0	0	0	0	4,105	0	0	278	144	202	76						
366+50.00	4,777	2,917	270	0	0	0	1,590	4,507	0	1	1	1	4,506	0	0	270	151	211	59						
366+75.00	5,168	2,983	259	0	0	0	1,926	4,909	0	0	0	0	4,909	0	0	259	159	223	36						
367+00.00	5,587	3,150	279	0	0	0	2,158	5,308	0	0	0	0	5,308	0	0	279	173	242	37						
367+25.00	6,032	3,445	323	0	0	0	2,263	5,708	0	1	1	1	5,707	0	0	323	186	260	63						
367+50.00	6,441	3,698	354	0	0	0	2,389	6,087	0	0	0	0	6,087	0	0	354	194	272	82						
367+75.00	6,777	3,876	365	0	0	0	2,536	6,412	0	0	0	0	6,412	0	0	365	201	281	84						
368+00.00	7,084	4,016	372	0	0	0	2,696	6,712	0	0	0	0	6,712	0	0	372	206	288	84						
368+25.00	7,502	4,258	378	0	0	0	2,865	7,123	0	1	1	1	7,122	0	0	378	210	294	84						
368+50.00	8,020	4,591	384	0	0	0	3,045	7,636	0	1	1	1	7,635	0	0	384	214	300	84						
368+75.00	8,543	4,919	389	0	0	0	3,235	8,154	0	1	1	1	8,153	0	0	389	217	304	85						
369+00.00	8,961	5,253	393	0	0	0	3,315	8,568	0	1	1	1	8,567	0	0	393	220	308	85						
369+25.00	8,963	5,314	352	0	0	0	3,297	8,611	0	1	1	1	8,610	0	0	352	221	309	43						
369+50.00	8,445	4,783	342	0	0	0	3,320	8,103	0	0	0	0	8,103	0	0</										

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
370+25.00	5,923	2,499	374	0	0	0	0	3,050	5,549	0	1	1	1	5,548	0	0	374	207	290	84		
370+50.00	5,184	2,043	321	0	0	0	0	2,820	4,863	0	1	1	1	4,862	0	0	321	198	277	44		
370+75.00	4,507	1,650	247	0	0	0	0	2,610	4,260	0	1	1	1	4,259	0	0	247	183	256	-9		
371+00.00	4,009	1,602	214	0	0	0	0	2,193	3,795	0	5	5	6	3,789	0	0	214	169	237	-23		
371+25.00	3,631	1,744	219	0	0	0	0	1,669	3,413	0	8	8	10	3,403	0	0	219	162	227	-8		
371+50.00	3,259	1,741	228	0	0	0	0	1,291	3,032	0	4	4	5	3,027	0	0	228	158	221	7		
371+75.00	2,854	1,660	211	0	0	0	5	977	2,642	0	1	1	1	2,641	0	0	211	145	203	8		
372+00.00	2,401	1,525	194	0	0	0	5	678	2,208	0	1	1	1	2,207	0	0	194	132	185	9		
372+25.00	1,965	1,360	187	0	0	0	0	418	1,778	0	1	1	1	1,777	0	0	187	127	178	9		
372+50.00	1,650	1,162	192	0	0	0	0	296	1,458	0	2	2	3	1,455	0	0	192	129	181	11		
372+75.00	1,331	983	197	0	0	0	0	151	1,134	15	17	32	40	1,094	0	0	197	128	179	18		
373+00.00	1,110	855	203	0	0	0	0	52	907	140	53	193	243	664	0	0	203	125	175	28		
373+25.00	968	704	222	0	0	0	0	43	747	407	97	504	635	112	0	0	222	124	174	48		
373+50.00	696	452	239	0	0	0	0	5	457	830	142	972	1,225	-768	0	0	239	121	169	70		
373+75.00	529	280	246	0	0	0	0	3	283	1,441	165	1,606	2,024	-1,741	0	0	246	125	175	71		
374+00.00	483	231	252	0	0	0	0	0	231	2,007	171	2,178	2,744	-2,513	0	0	252	128	179	73		
374+25.00	13	5	8	0	0	0	0	0	5	113	6	119	150	-145	0	0	8	5	7	1		
374+25.98	264	48	217	0	0	0	0	0	48	2,952	165	3,117	3,928	-3,880	0	0	217	130	182	35		
374+50.00	396	79	317	0	0	0	0	0	79	2,596	224	2,820	3,553	-3,474	0	0	317	118	165	152		
374+75.00	510	153	357	0	0	0	0	0	153	2,353	268	2,621	3,303	-3,150	0	0	357	121	169	188		
375+00.00	553	213	340	0	0	0	0	0	213	1,792	269	2,061	2,597	-2,384	0	0	340	119	167	173		
375+25.00	509	215	294	0	0	0	0	0	215	1,143	238	1,381	1,740	-1,525	0	0	294	112	157	137		
375+50.00	473	218	253	0	0	0	0	1	219	587	179	766	965	-746	29	368	253	109	153	100		
375+75.00	617	329	229	0	0	0	0	59	388	264	101	365	460	-72	0	0	229	111	155	74		
376+00.00	927	501	240	0	0	0	0	186	687	137	64	201	253	434	0	0	240	119	167	73		
376+25.00	1,178	605	248	0	0	0	0	324	929	68	53	121	153	777	0	0	248	124	174	74		
376+50.00	1,301	659	251	0	0	0	0	392	1,051	27	44	71	90	962	0	0	251	125	175	76		
376+75.00	1,424	710	258	0	0	0	0	455	1,165	24	45	69	87	1,078	0	0	258	130	182	76		
377+00.00	1,612	846	275	0	0	0	0	490	1,336	65	51	116	146	1,190	0	0	275	141	197	78		
377+25.00	1,711	985	292	0	0	0	0	435	1,420	169	71	240	302	1,118	0	0	292	153	214	78		
377+50.00	707	411	130	0	0	0	0	165	576	122	43	165	208	368	0	48	130	66	92	38		
377+60.42	920	519	194	0	0	0	0	207	726	266	75	341	430	296	0	150	194	93	130	64		
377+75.00	1,093	480	334	0	0	0	0	279	759	1,134	176	1,310	1,651	-892	712	1,050	334	154	216	118		
378+00.00	11	2	5	0	0	0	0	4	6	29	3	32	40	-34	107	113	5	2	3	2		
378+00.42	566	112	342	0	0	0	0	112	224	2,300	259	2,559	3,224	-3,000	2,186	2,519	342	143	200	142		
378+25.00	288	32	254	0	0	0	0	3	35	2,631	202	2,833	3,570	-3,535	2,714	3,029	254	104	146	108		
378+44.42	49	0	49	0	0	0	0	0	0	880	35	915	1,153	-1,153	832	1,079	49	27	38	11		
378+50.00	96	3	94	0	0	0	0	0	3	1,192	80	1,272	1,603	-1,600	1,067	1,435	94	39	55	39		
378+57.34	304	13	291	0	0	0	0	0	13	2,620	261	2,881	3,630	-3,617	2,465	3,038	291	98	137	154		
378+75.00	189	13	176	0	0	0	0	0	13	1,720	160	1,880	2,369	-2,356	1,797	1,978	176	65	91	85		
378+88.42	153	9	143	0	0	0	0	1	10	1,306	133	1,439	1,813	-1,803	1,331	1,487	143	49	69	74		
379+00.00	297	7	288	0	0	0	0	2	9	2,200	272	2,472	3,115	-3,106	2,022	2,361	288	94	132	156		
379+25.00	229	3	226	0	0	0	0	0	3	1,493	212	1,705	2,148	-2,145	0	0	226	76	106	120		
379+50.00	190	6	183	0	0	0	0	0	6	982	167	1,149	1,448	-1,442	0	0	183	72	101	82		
379+75.00	207	9	196	0	0	0	0	2	11	625	177	802	1,011	-1,000	0	0	196	70	98	98		
380+00.00	239	6	231	0	0	0	0	2	8	515	221	736	927	-919	0	0	231	41	57	174		
380+25.00																						
ML032-SEG3																						
Totals:	199,484	115,000	21,818	0	0	106	20	62,540	177,666	111,637	8,369	120,006	151,211	26,455	21,980	27,367	21,818	11,704	16,386	5,432		

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]			
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
61CONNRDB																							
14+00.00	523	240	283	0	0	0	0	0	240	650	165	815	1,027	-787	0	0	283	108	151	132			
14+50.00	317	65	252	0	0	0	0	0	65	784	176	960	1,210	-1,145	0	0	252	92	129	123			
15+00.00	318	119	199	0	0	0	0	0	119	968	136	1,104	1,391	-1,272	0	0	199	102	143	56			
15+50.00	417	263	154	0	0	0	0	0	263	1,202	95	1,297	1,634	-1,371	0	0	154	120	168	-14			
16+00.00	551	373	178	0	0	0	0	0	373	1,708	109	1,817	2,290	-1,917	0	0	178	138	193	-15			
16+50.00	529	329	200	0	0	0	0	0	329	2,127	124	2,251	2,836	-2,507	0	0	200	151	211	-11			
17+00.00	340	130	210	0	0	0	0	0	130	1,852	170	2,022	2,548	-2,418	0	0	210	108	151	59			
17+50.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
20+30.00	34	22	12	0	0	0	0	0	22	591	4	595	750	-728	0	0	12	22	31	-19			
20+50.00	192	86	106	0	0	0	0	0	86	1,036	76	1,112	1,401	-1,315	0	0	106	80	112	-6			
20+86.82	70	31	38	0	0	0	0	0	31	352	28	380	479	-448	0	0	38	28	39	-1			
21+00.00	249	112	137	0	0	0	0	0	112	1,194	98	1,292	1,628	-1,516	0	0	137	101	141	-5			
21+49.77	2	1	1	0	0	0	0	0	1	5	1	6	8	-7	0	0	1	0	0	1			
21+50.00	235	106	129	0	0	0	0	0	106	959	89	1,048	1,321	-1,215	0	0	129	95	133	-4			
22+00.00	204	83	121	0	0	0	0	0	83	833	87	920	1,159	-1,076	0	0	121	87	122	-1			
22+50.00	185	70	115	0	0	0	0	0	70	746	83	829	1,045	-975	0	0	115	82	115	0			
23+00.00	325	199	126	0	0	0	0	0	199	566	75	641	808	-609	0	0	126	92	129	-3			
23+50.00	608	467	141	0	0	0	0	0	467	346	62	408	514	-47	0	0	141	107	150	-9			
24+00.00	716	581	135	0	0	0	0	0	581	129	33	162	204	377	0	0	135	100	140	-5			
24+50.00	1,201	1,073	128	0	0	0	0	0	1,073	7	5	12	15	1,058	0	0	128	93	130	-2			
25+00.00	2,133	1,993	140	0	0	0	0	0	1,993	0	0	0	0	1,993	0	0	140	106	148	-9			
25+50.00	2,759	2,602	156	0	0	0	0	0	2,602	0	0	0	0	2,602	0	0	156	123	172	-16			
26+00.00	3,227	3,059	168	0	0	0	0	0	3,059	0	0	0	0	3,059	0	0	168	134	188	-20			
26+50.00	3,173	3,019	154	0	0	0	0	0	3,019	0	0	0	0	3,019	0	0	154	124	174	-20			
26+94.65	386	368	19	0	0	0	0	0	368	0	0	0	0	368	0	0	19	15	21	-2			
27+00.00	2,054	1,956	98	0	0	0	0	0	1,956	0	0	0	0	1,956	0	0	98	79	111	-13			
27+28.65	1,530	1,458	72	0	0	0	0	0	1,458	0	0	0	0	1,458	0	0	72	58	81	-9			
27+50.00	1,383	1,317	66	0	0	0	0	0	1,317	0	0	0	0	1,317	0	0	66	53	74	-8			
27+69.65	1,978	1,877	101	0	0	0	0	0	1,877	0	0	0	0	1,877	0	0	101	81	113	-12			
28+00.00	635	601	35	0	0	0	0	0	601	0	0	0	0	601	0	0	35	28	39	-4			
28+10.65	1,998	1,878	121	0	0	0	0	0	1,878	0	0	0	0	1,878	0	0	121	94	132	-11			
28+50.00	1,361	1,198	162	0	0	0	0	0	1,198	13	51	64	81	1,117	0	0	162	83	116	46			
29+00.00	355	216	139	0	0	0	0	0	216	192	86	278	350	-134	0	0	139	58	81	58			
29+50.00	205	104	101	0	0	0	0	0	104	384	71	455	573	-469	0	0	101	64	90	11			
30+00.00	505	346	159	0	0	0	0	0	346	223	59	282	355	-10	0	0	159	71	99	60			
30+50.00	1,369	1,119	250	0	0	0	0	0	1,119	19	24	43	54	1,065	0	0	250	91	127	123			
31+00.00	2,416	2,113	303	0	0	0	0	0	2,113	0	2	2	3	2,110	0	0	303	117	164	139			
31+50.00	2,676	2,360	316	0	0	0	0	0	2,360	0	2	2	3	2,357	0	0	316	124	174	142			
32+00.00	2,060	1,767	293	0	0	0	0	0	1,767	0	1	1	1	1,766	0	0	293	113	158	135			
32+50.00	1,324	1,067	257	0	0	0	0	0	1,067	0	1	1	1	1,066	0	0	257	95	133	124			
33+00.00	807	584	223	0	0	0	0	0	584	35	37	72	91	493	0	0	223	78	109	114			
33+50.00	730	508	222	0	0	0	0	0	508	50	53	103	130	378	0	0	222	77	108	114			
34+00.00	1,217	965	253	0	0	0	0	0	965	15	18	33	42	923	0	0	253	93	130	123			
34+50.00	1,269	1,009	260	0	0	0	0	0	1,009	4	10	14	18	991	0	0	260	96	134	126			
35+00.00	756	516	240	0	0	0	0	0	516	116	64	180	227	289	0	0	240	86	120	120			
35+50.00	497	275	222	0	0	0	0	0	275	216	114	330	416	-141	0	0	222	77	108	114			
36+00.00	449	236	212	0	0	0	0	0	236	184	111	295	372	-136	0	0	212	72	101	111			
36+50.00	348	147	201	0	0	0	0	0	147	252	125	377	475	-328	0	0	201	67	94	107			
37+00.00	310	77	232	0	0	0	0	0	77	686	180	866	1,091	-1,014	0	0	232	82	115	117			
37+50.00	383	104	279	0	0	0	0	0	104	1,166	221	1,387	1,748	-1,644	0	0	279	106	148	131			
38+00.00	226	54	171	0	0	0	0	0	54	921	142	1,063	1,339	-1,285	0	0	171	55	77	94			
38+50.00	63	0	63	0	0	0	0	0	0	853	63	916	1,154	-1,154	0	0	63	0	0	63			
39+00.00																							
61CONNRDB																							
Totals:	47,598	39,243	8,353	0	0	0	0	0	39,243	21,384	3,051	24,435	30,790	8,454	0	0	8,353	4,306	6,029	2,325			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]			
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61RAMPD																							
4518+00.00	94	0	94	0	0	0	0	0	0	1,637	94	1,731	2,181	-2,181	0	0	94	7	10	84			
4518+25.00	103	0	103	0	0	0	0	0	0	1,541	103	1,644	2,072	-2,072	0	0	103	14	20	83			
4518+50.00	123	23	101	0	0	0	0	23	0	1,517	94	1,611	2,030	-2,007	0	0	101	48	67	34			
4518+75.00	155	54	100	0	0	0	0	54	0	1,589	86	1,675	2,111	-2,057	0	0	100	83	116	-16			
4519+00.00	169	70	99	0	0	0	0	70	0	1,445	83	1,528	1,925	-1,855	0	0	99	82	115	-16			
4519+25.00	189	90	99	0	0	0	0	90	0	1,371	81	1,452	1,830	-1,740	0	0	99	82	115	-16			
4519+50.00	210	110	100	0	0	0	0	110	0	1,311	80	1,391	1,753	-1,643	0	0	100	83	116	-16			
4519+75.00	215	114	100	0	0	0	0	114	0	1,244	80	1,324	1,668	-1,554	0	0	100	83	116	-16			
4520+00.00	216	117	99	0	0	0	0	117	0	1,157	78	1,235	1,556	-1,439	0	0	99	82	115	-16			
4520+25.00	222	123	98	0	0	0	0	123	0	1,054	77	1,131	1,425	-1,302	0	0	98	80	112	-14			
4520+50.00	145	81	63	0	0	0	0	81	0	625	49	674	849	-768	0	0	63	51	71	-9			
4520+66.41	66	42	24	0	0	0	0	42	0	191	17	208	262	-220	0	0	24	19	27	-3			
4520+75.00	156	110	46	0	0	0	0	110	0	216	26	242	305	-195	0	0	46	37	52	-6			
4521+00.00	40	27	13	0	0	0	0	27	0	64	8	72	91	-64	0	0	13	11	15	-2			
4521+06.91	108	74	34	0	0	0	0	74	0	178	20	198	250	-176	0	0	34	31	43	-9			
4521+25.00	186	137	49	0	0	0	0	137	0	249	26	275	347	-210	0	0	49	46	64	-15			
4521+50.00	223	171	52	0	0	0	0	171	0	234	27	261	329	-158	0	0	52	49	69	-17			
4521+75.00	219	168	51	0	0	0	0	168	0	213	26	239	301	-133	0	0	51	45	63	-12			
4522+00.00	175	127	48	0	0	0	0	127	0	215	27	242	305	-178	0	0	48	39	55	-7			
4522+25.00	128	80	48	0	0	0	0	80	0	279	31	310	391	-311	0	0	48	38	53	-5			
4522+50.00	98	50	48	0	0	0	0	50	0	398	34	432	544	-494	0	0	48	38	53	-5			
4522+75.00	79	32	48	0	0	0	0	32	0	542	36	578	728	-696	0	0	48	38	53	-5			
4523+00.00	71	37	34	0	0	0	0	37	0	437	25	462	582	-545	0	0	34	26	36	-2			
4523+16.48	54	35	19	0	0	0	0	35	0	251	13	264	333	-298	0	0	19	17	24	-5			
4523+25.00	198	137	61	0	0	0	0	137	0	840	40	880	1,109	-972	0	0	61	61	85	-24			
4523+50.00	61	42	18	0	0	0	0	42	0	262	12	274	345	-303	0	0	18	18	25	-7			
4523+56.98	148	100	48	0	0	0	0	100	0	762	33	795	1,002	-902	0	0	48	44	62	-14			
4523+75.00	203	131	72	0	0	0	0	131	0	1,305	51	1,356	1,709	-1,578	0	0	72	65	91	-19			
4524+00.00	232	153	79	0	0	0	0	153	0	1,602	57	1,659	2,090	-1,937	0	0	79	72	101	-22			
4524+25.00	229	183	46	0	0	0	0	183	0	872	35	907	1,143	-960	0	0	46	81	113	-67			
4524+50.00	11	11	0	0	0	0	0	11	0	0	0	0	11	0	0	0	5	7	7	-7			
4524+51.48	144	119	25	0	0	0	0	119	0	1,058	25	1,083	1,365	-1,246	0	0	25	82	115	-90			
4524+75.00	66	66	0	0	0	0	0	66	0	1,977	0	1,977	2,491	-2,425	0	0	0	71	99	-99			
4524+96.48	15	11	4	0	0	0	0	11	0	333	4	337	425	-414	0	0	4	12	17	-13			
4525+00.00	101	41	59	0	0	0	0	41	0	2,392	59	2,451	3,088	-3,047	0	0	59	87	122	-63			
4525+25.00	87	0	87	0	0	0	0	0	0	2,445	86	2,531	3,189	-3,189	0	0	87	80	112	-25			
4525+50.00	94	0	94	0	0	0	0	0	0	2,622	94	2,716	3,422	-3,422	0	0	94	85	119	-25			
4525+75.00	95	0	95	0	0	0	0	0	0	3,004	95	3,099	3,905	-3,905	0	0	95	90	126	-31			
4526+00.00	21	0	21	0	0	0	0	0	0	712	21	733	924	-924	0	0	21	20	28	-7			
4526+05.65	68	0	68	0	0	0	0	0	0	1,994	68	2,062	2,598	-2,598	0	0	68	66	92	-24			
4526+25.00	84	0	84	0	0	0	0	0	0	2,140	83	2,223	2,801	-2,801	0	0	84	82	115	-31			
4526+50.00	40	0	40	0	0	0	0	0	0	1,023	40	1,063	1,339	-1,339	0	0	40	39	55	-15			
4526+61.65	46	0	46	0	0	0	0	0	0	1,192	46	1,238	1,560	-1,560	0	0	46	45	63	-17			
4526+75.00	87	0	87	0	0	0	0	0	0	2,292	86	2,378	2,996	-2,996	0	0	87	86	120	-33			
4527+00.00	81	0	81	0	0	0	0	0	0	2,146	80	2,226	2,805	-2,805	0	0	81	81	113	-32			
4527+23.25	6	0	6	0	0	0	0	0	0	160	6	166	209	-209	0	0	6	6	8	-2			
4527+25.00	86	0	86	0	0	0	0	0	0	2,211	85	2,296	2,893	-2,893	0	0	86	87	122	-36			
4527+50.00	79	0	79	0	0	0	0	0	0	1,996	78	2,074	2,613	-2,613	0	0	79	81	113	-34			
4527+73.65	4	0	4	0	0	0	0	0	0	112	4	116	146	-146	0	0	4	5	7	-3			
4527+75.00	81	0	81	0	0	0	0	0	0	2,047	80	2,127	2,680	-2,680	0	0	81	83	116	-35			
4528+00.00	117	0	117	0	0	0	0	0	0	1,994	116	2,110	2,659	-2,659	0	0	117	80	112	5			
4528+25.00	151	0	151	0	0	0	0	0	0	1,908	150	2,058	2,593	-2,593	0	0	151	78	109	42			
4528+50.00	147	0	147	0	0	0	0	0	0	1,797	146	1,943	2,448	-2,448	0	0	147	75	105	42			
4528+75.00	145	0	145	0	0	0	0	0	0	1,699	144	1,843	2,322	-2,322	0	0	145	75	105	40			
4529+00.00	146	0	146	0	0	0	0	0	0	1,640	145	1,785	2,249	-2,249	0	0	146	75	105	41			
4529+25.00	147	0	147	0	0	0	0	0	0	1,620	146	1,766	2,225	-2,225	0	0	147	76	106	41			
4529+50.00	144	0	144	0	0	0	0	0	0	1,629	143	1,772	2,233	-2,233	0	0	144	74	104	40			
4529+75.00	139	0	139	0	0	0	0	0	0	1,617	138	1,755	2,211	-2,211	0	0	139	72	101	38			
4530+00.00	109	0	109	0	0	0	0	0	0	1,542	108	1,650	2,079	-2,079	0	0	109	69	97	12			
4530+25.00	79	0	79	0	0	0	0	0	0	1,439	78	1,517	1,912	-1,912	0	0	79	67	94	-15			
4530+50.00	72	0	72	0	0	0	0	0	0	1,333	71	1,404	1,769	-1,769	0	0	72	64	90	-18			
4530+75.00	68	0	68	0	0	0	0	0	0	1,242	67	1,309	1,649	-1,649	0	0	68	62	87	-19			
4531+00.00	12	0	12	0	0	0	0	0	0	220	12	232	292	-292	0	0	12	11	15	-3			
4531+04.60	51	0	51	0	0	0	0	0	0	938	51	989	1,246	-1,246	0	0	51	49	69	-18			
4531+25.00	59	0	59	0	0	0	0	0	0	1,073	58	1,131	1,425	-1,425	0	0	59	58	81	-22			
4531+50.00	11	0	11	0	0	0	0	0	0	206	11	217	274	-274	0	0	11	11	15	-4			
4531+75.00	48	0	48	0	0	0	0	0	0	804	48	852	1,074	-1,074	0	0	48	45	63	-15			
US61RAMPD																							

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

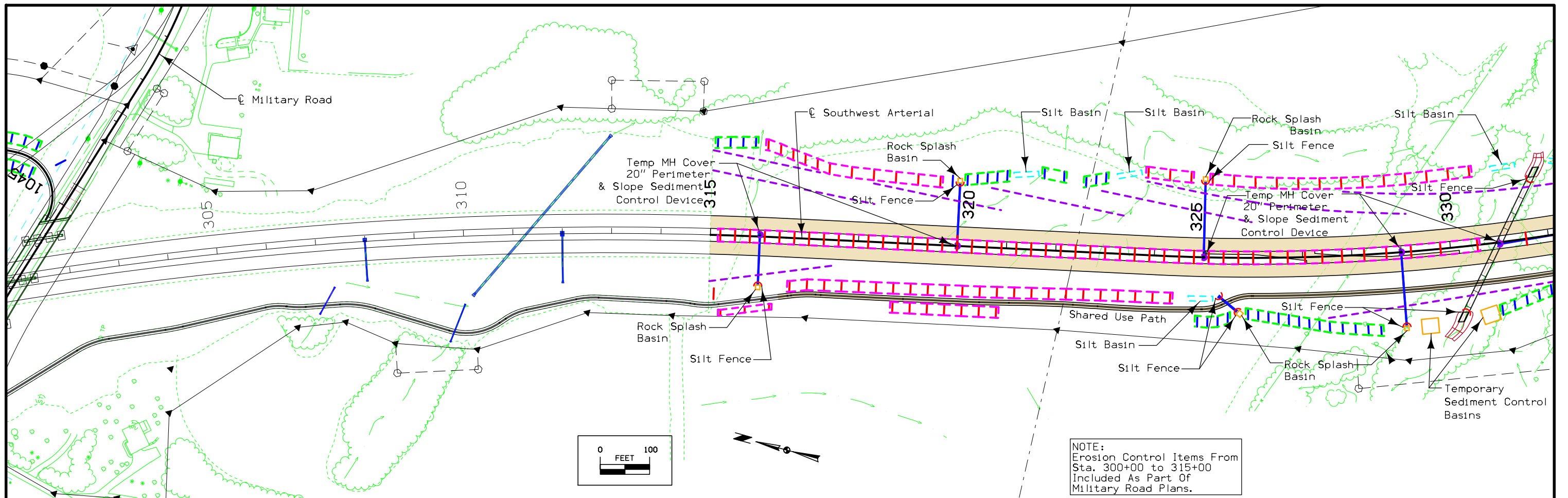
Station	Cut									Fill					Checks (EW-102)		Topsoil					[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]			
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US6100PB																							
2522+75.00	0	0	0	0	0	0	0	0	0	551		551	694	-694	0	0	0	49	69	-69			
2523+00.00	0	0	0	0	0	0	0	0	0	379		379	478	-478	0	0	0	33	46	-46			
2523+16.10	0	0	0	0	0	0	0	0	0	222		222	280	-280	0	0	0	19	27	-27			
2523+25.00	0	0	0	0	0	0	0	0	0	703		703	886	-886	0	0	0	56	78	-78			
2523+50.00	0	0	0	0	0	0	0	0	0	857		857	1,080	-1,080	0	0	0	59	83	-83			
2523+75.00	0	0	0	0	0	0	0	0	0	1,056		1,056	1,331	-1,331	0	0	0	62	87	-87			
2524+00.00	0	0	0	0	0	0	0	0	0	1,285		1,285	1,619	-1,619	0	0	0	64	90	-90			
2524+25.00	0	0	0	0	0	0	0	0	0	1,530		1,530	1,928	-1,928	0	0	0	66	92	-92			
2524+50.00	0	0	0	0	0	0	0	0	0	1,722		1,722	2,170	-2,170	0	0	0	73	102	-102			
2524+75.00	0	0	0	0	0	0	0	0	0	1,812		1,812	2,283	-2,283	0	0	0	78	109	-109			
2525+00.00	0	0	0	0	0	0	0	0	0	1,824		1,824	2,298	-2,298	0	0	0	81	113	-113			
2525+25.00	0	0	0	0	0	0	0	0	0	1,798		1,798	2,266	-2,266	0	0	0	80	112	-112			
2525+50.00	0	0	0	0	0	0	0	0	0	1,765		1,765	2,224	-2,224	0	0	0	80	112	-112			
2525+75.00	1	0	0	0	0	0	0	0	0	1,793		1,793	2,259	-2,259	0	0	0	83	116	-116			
2526+00.00	2	2	0	0	0	0	0	0	2	1,936		1,936	2,439	-2,437	0	0	0	90	126	-126			
2526+25.00	2	2	0	0	0	0	0	0	0	2,294		2,294	2,891	-2,889	0	0	0	84	118	-118			
2526+50.00	0	0	0	0	0	0	0	0	0	2,725		2,725	3,434	-3,434	0	0	0	77	108	-108			
2526+75.00	0	0	0	0	0	0	0	0	0	2,461		2,461	3,101	-3,101	0	0	0	75	105	-105			
2527+00.00	0	0	0	0	0	0	0	0	0	1,931		1,931	2,433	-2,433	0	0	0	70	98	-98			
2527+25.00	0	0	0	0	0	0	0	0	0	1,780		1,780	2,243	-2,243	0	0	0	63	88	-88			
2527+50.00	0	0	0	0	0	0	0	0	0	1,679		1,679	2,116	-2,116	0	0	0	51	71	-71			
2527+75.00	0	0	0	0	0	0	0	0	0	1,568		1,568	1,976	-1,976	0	0	0	47	66	-66			
2528+00.00	0	0	0	0	0	0	0	0	0	1,405		1,405	1,770	-1,770	0	0	0	45	63	-63			
2528+25.00	0	0	0	0	0	0	0	0	0	1,209		1,209	1,523	-1,523	0	0	0	44	62	-62			
2528+50.00	0	0	0	0	0	0	0	0	0	1,037		1,037	1,307	-1,307	0	0	0	45	63	-63			
2528+75.00	0	0	0	0	0	0	0	0	0	921		921	1,161	-1,161	0	0	0	46	64	-64			
2529+00.00	0	0	0	0	0	0	0	0	0	836		836	1,053	-1,053	0	0	0	43	60	-60			
2529+25.00	0	0	0	0	0	0	0	0	0	773		773	974	-974	0	0	0	45	63	-63			
2529+50.00	0	0	0	0	0	0	0	0	0	719		719	906	-906	0	0	0	47	66	-66			
2529+75.00	0	0	0	0	0	0	0	0	0														
US6100PB Totals:	5	4	0	0	0	0	0	0	4	40,571	0	40,571	51,121	-51,117	0	0	0	1,755	2,457	-2,457			

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil				[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]		
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
US61NB																						
515+50.00	74	43	32	0	0	0	0	43	66	26	92	116	-73	0	0	32	52	73	-41			
516+00.00	76	41	35	0	0	0	0	41	96	29	125	158	-117	0	0	35	55	77	-42			
516+50.00	80	41	40	0	0	0	0	41	134	34	168	212	-171	0	0	40	57	80	-40			
517+00.00	83	39	45	0	0	0	0	39	179	39	218	275	-236	0	0	45	59	83	-38			
517+50.00	88	38	50	0	0	0	0	38	228	45	273	344	-306	0	0	50	61	85	-35			
518+00.00	45	19	26	0	0	0	0	19	128	23	151	190	-171	0	0	26	31	43	-17			
518+25.23	36	15	21	0	0	0	0	15	108	19	127	160	-145	0	0	21	24	34	-13			
518+44.90	9	4	6	0	0	0	0	4	30	5	35	44	-40	0	0	6	6	8	-2			
518+50.00	78	31	47	0	0	0	0	31	274	43	317	400	-369	0	0	47	52	73	-26			
518+91.74	16	6	10	0	0	0	0	6	61	9	70	88	-82	0	0	10	10	14	-4			
519+00.00	101	38	63	0	0	0	0	38	413	57	470	592	-554	0	0	63	66	92	-29			
519+50.00	58	21	38	0	0	0	0	21	292	35	327	412	-391	0	0	38	44	62	-24			
519+75.90	56	19	38	0	0	0	0	19	340	36	376	474	-455	0	0	38	49	69	-31			
520+00.00	53	17	36	0	0	0	0	17	337	35	372	469	-452	0	0	36	44	62	-26			
520+22.11	48	15	33	0	0	0	0	15	335	32	367	463	-448	0	0	33	41	57	-24			
520+42.47	18	5	12	0	0	0	0	5	131	12	143	180	-175	0	0	12	15	21	-9			
520+50.00	121	36	86	0	0	0	0	36	979	84	1,063	1,339	-1,303	0	0	86	107	150	-64			
521+00.00	128	37	91	0	0	0	0	37	958	88	1,046	1,318	-1,281	0	0	91	100	140	-49			
521+50.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
532+00.00	149	30	119	0	0	0	0	30	1,934	115	2,049	2,582	-2,552	0	0	119	122	171	-52			
532+50.00	143	27	117	0	0	0	0	27	1,760	114	1,874	2,361	-2,334	0	0	117	131	183	-66			
533+00.00	131	27	105	0	0	0	0	27	1,426	102	1,528	1,925	-1,898	0	0	105	121	169	-64			
533+50.00	120	31	90	0	0	0	0	31	991	86	1,077	1,357	-1,326	0	0	90	106	148	-58			
534+00.00	244	115	129	0	0	0	0	115	342	127	469	591	-476	0	0	129	78	109	20			
534+50.00	112	112	0	0	0	0	0	112	147	147	147	185	-73	0	0	0	61	85	-85			
535+00.00	74	26	49	0	0	0	0	26	295	47	342	431	-405	0	0	49	58	81	-32			
535+50.00	74	13	49	0	13	0	0	26	288	47	335	422	-396	0	0	49	58	81	-32			
536+00.00	76	14	49	0	13	0	0	27	285	47	332	418	-391	0	0	49	59	83	-34			
536+50.00	76	27	49	0	0	0	0	27	279	46	325	410	-383	0	0	49	60	84	-35			
537+00.00	74	26	48	0	0	0	0	26	273	46	319	402	-376	0	0	48	61	85	-37			
537+50.00	96	25	71	0	0	0	0	25	367	69	436	549	-524	0	0	71	92	129	-58			
538+00.00	123	24	99	0	0	0	0	24	522	96	618	779	-755	0	0	99	131	183	-84			
538+50.00	97	25	73	0	0	0	0	25	394	70	464	585	-560	0	0	73	98	137	-64			
539+00.00	116	72	45	0	0	0	0	72	144	32	176	222	-150	0	0	45	62	87	-42			
539+50.00	260	208	52	0	0	0	0	208	72	22	94	119	90	0	0	52	72	101	-49			
540+00.00	282	228	54	0	0	0	0	228	55	21	76	96	132	0	0	54	75	105	-51			
540+50.00	161	115	46	0	0	0	0	115	64	23	87	110	5	0	0	46	66	92	-46			
541+00.00	88	49	38	0	0	0	0	49	88	28	116	146	-97	0	0	38	56	78	-40			
541+50.00	92	27	65	0	0	0	0	27	310	61	371	468	-441	0	0	65	92	129	-64			
542+00.00	116	13	88	0	0	0	15	28	591	84	675	851	-823	0	0	88	125	175	-87			
542+50.00	116	15	86	0	0	0	15	30	776	82	858	1,081	-1,051	0	0	86	123	172	-86			
543+00.00	114	32	83	0	0	0	0	32	696	79	775	977	-945	0	0	83	121	169	-86			
543+50.00	102	32	70	0	0	0	0	32	431	67	498	628	-596	0	0	70	105	147	-77			
544+00.00	46	16	30	0	0	0	0	16	168	29	197	248	-232	0	0	30	46	64	-34			
544+25.00																						
US61NB Totals:	4,250	1,794	2,413	0	26	0	30	0	1,850	17,787	2,191	19,978	25,175	-23,324	0	0	2,413	3,052	4,273	-1,860		

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut									Fill					Checks (EW-102)		Topsoil					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Unsuitable Type C Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.26 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink		
Summary:																						
Stage 1																						
ML032_ACCRDB	2,146	656	1,491	0	0	0	0	656	29,433	1,261	30,694	38,676	-38,020	0	0	1,491	1,130	1,582	-92			
ML032-SEG2	285,614	139,119	25,323	185	0	100,553	0	20,439	168,315	12,059	180,374	227,276	33,021	9,164	15,064	25,323	15,481	21,674	3,649			
61CONNRDA	217,818	177,549	9,106	0	0	27,043	0	4,123	12,232	797	13,029	16,418	192,298	0	0	9,106	6,109	8,553	554			
US61RAMP	54,910	39,823	0	283	96	11,948	408	2,353	54,911	0	52,702	66,407	-11,496	0	0	0	4,511	6,316	-6,316			
US61LOOPC	51,447	33,677	3,318	0	0	0	4,498	9,949	48,124	16	81	103	48,022	0	0	3,318	2,145	3,003	315			
US61SB	34,961	17,607	4,410	0	0	610	9,128	3,207	30,552	453	302	953	29,600	0	0	4,410	4,838	6,774	-2,364			
Stage 1 Subtotals:	646,896	408,431	43,648	468	96	140,154	14,034	40,071	603,254	263,151	14,484	277,635	349,833	253,425	9,164	15,064	43,648	34,214	47,902	-4,254		
Stage 2																						
ML032-SEG3	199,484	115,000	21,818	0	0	106	20	62,540	177,666	111,637	8,369	120,006	151,212	26,455	21,981	27,367	21,818	11,704	16,386	5,433		
61CONNRDB	47,598	39,243	8,353	0	0	0	0	0	39,243	21,384	3,051	24,435	30,790	8,454	0	0	8,353	4,306	6,029	2,325		
US61RAMP	7,456	2,866	4,586	0	0	0	0	0	2,866	78,158	4,121	82,279	103,675	-100,809	0	0	4,586	3,704	5,186	-600		
US61LOOPB	5	4	0	0	0	0	0	0	4	40,571	0	40,571	51,121	-51,117	0	0	0	1,755	2,457	-2,457		
US61NB	4,250	1,794	2,413	0	26	0	30	0	1,850	17,787	2,191	19,978	25,175	-23,324	0	0	2,413	3,052	4,273	-1,860		
WETLAND	43,124	38,432	4,690	0	0	0	0	0	38,432	33	126	159	201	38,232	0	0	4,690	6,942	9,719	-5,029		
Stage 2 Subtotals:	301,917	197,339	41,860	0	26	106	50	62,540	260,061	269,570	17,858	287,428	362,174	-102,109	21,981	27,367	41,860	31,463	44,050	-2,188		
Project Totals:	948,813	605,770	85,508	468	122	140,260	14,084	102,611	863,315	532,721	32,342	565,063	712,007	151,316	31,145	42,431	85,508	65,677	91,952	-6,442		
Excavation, Class 10, Roadway & Borrow 863,315 - 14,084 - 102,611 - 151,316 = 595,304 [9] - [7] - [8] - [14]																						
Excavation, Class 10, Waste 151,316 [14]																						
Excavation, Class 12, Roadway & Borrow 14,084 + 102,611 = 116,695 [7] + [8]																						
Topsoil, Strip, Salvage and Spread 85,508 [17]																						
Topsoil, Furnish and Spread 4,601 -[20]/1.4																						



Notes:

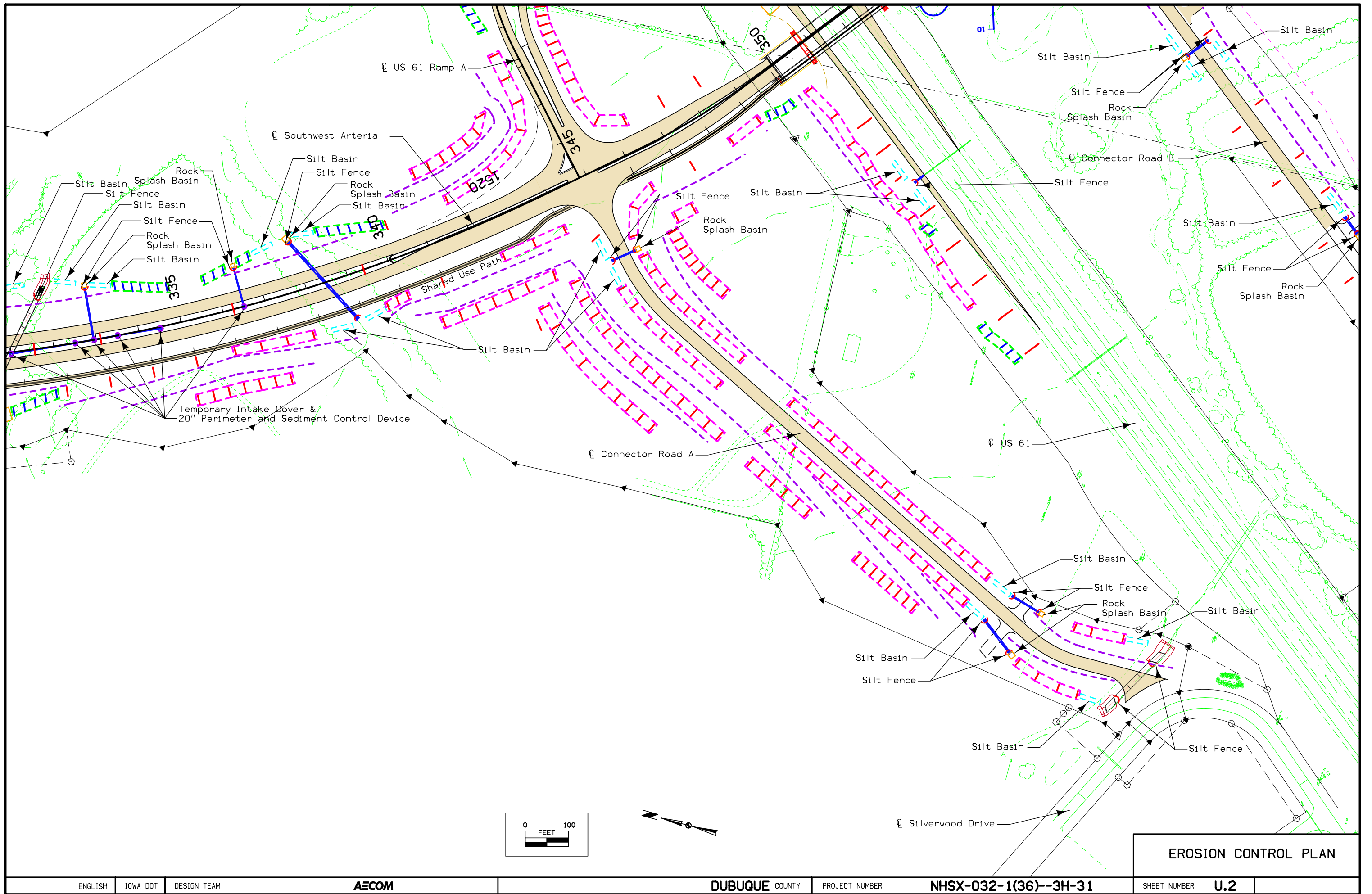
1. Silt Fence for Ditch Checks, (or optional Slash Mulch Berms), shall be installed in locations shown in Tabulation 100-18 on the C-Sheets, where ditch grades are less than or equal to 6%. Items shall be removed once grading activities are complete.
2. Rock Check Dams shall be installed in locations shown in Tabulation 100-32 on the C-Sheets, where ditch grades are greater than 6%. Rock Check Dams shall be removed once grading activities are complete.
3. Rock Ditch Checks shall be installed, in combination with Turf Reinforcement Mat, to replace Rock Check Dams, once removed where ditch grades are greater than 6% and less than 10%. Rock Ditch Checks shall remain in place until Final Stabilization, (70% permanent growth), has been achieved. See Tabulation 100-23 for locations and material details.
4. Rock Ditches shall be installed, in combination with Turf Reinforcement Mat, to replace Rock Check Dams, once removed where ditch grades are greater than or equal to 10%. Rock ditches shall remain in place until Final Stabilization, (70% permanent growth), has been achieved. See Tabulation 100-23 for locations and material details.
5. 12" Wood Excelsior Perimeter and Slope Sediment Control Devices shall be installed, in combination with Special Ditch Control, (Wood Excelsior Mat), to replace Silt Fence for Ditch Checks, once removed, in medians. These items shall remain in place until Final Stabilization has been achieved. See Tabulation 100-19 on the C-Sheets for location and details.
6. 20" Wood Excelsior Perimeter and Slope Sediment Control Devices shall be installed, in combination with Special Ditch Control, (Wood Excelsior Mat), to replace Silt Fence for Ditch Checks, once removed, in outside ditches. These items shall remain in place until Final Stabilization has occurred. See Tabulation 100-19 on the C-Sheets for location and details.
7. 20" Wood Excelsior Perimeter and Slope Sediment Control Devices shall also be installed, to break up slopes greater than or equal to 33%. See Tabulation 100-19 on the C-Sheets for locations and details.
8. 20" Wood Excelsior Perimeter and Slope Sediment Control Devices shall also be installed around intakes which do not yet have tops in place. See Tabulation 100-19 on the C-Sheets for locations and details.

9. Special Ditch Control, (Wood Excelsior Mat), shall be installed, in combination with the 12" and 20" Perimeter and Slope Sediment Control Devices, along ditches with grades from 2% - 6%. The Special Ditch Control shall be installed after the Silt Fence for Ditch Checks have been removed. See Tabulation 100-22 on the C-Sheets for locations and details.
10. Turf Reinforcement Mat, (Type 2), shall be installed, in combination with Rock Ditch Checks, along ditches with grades of 6% or greater. The Turf Reinforcement Mat shall be installed after the Rock Check Dams have been removed. See Tabulation 100-22 on the C-Sheets for locations and details.
11. Place Silt Basins in roadway ditches preceding drainage structure inlets and at ditch outlets that flow offsite. Silt Basins shall be removed once Final Stabilization is reached. See Tabulation 100-14 on the C-Sheets for details and locations.
12. Temporary Sediment Control Basins are used to capture sediment before it leaves the right-of-way. They are required for drainage basins which involve 10 or more acres of disturbed area. Maintain Temporary Sediment Control Basins until the area upstream from the basin is fully vegetated. See Tabulation 100-33 on the C-Sheets for locations and details.
13. Silt Fence shall be installed around all inlets and outlets of pipe crossings and box culverts. Item may be removed once Final Stabilization has occurred. See Tabulation 100-17 on the C-Sheets for locations and details.
14. Install Rock Splash Basins at pipe outlets. See Tabulation 100-23 for material and location details.
15. Intercepting Ditches shall be required at the top of ditch backslopes where offsite drainage ties into the proposed roadside ditch. See Tabulation 100-16 on the C-Sheets for locations and details.

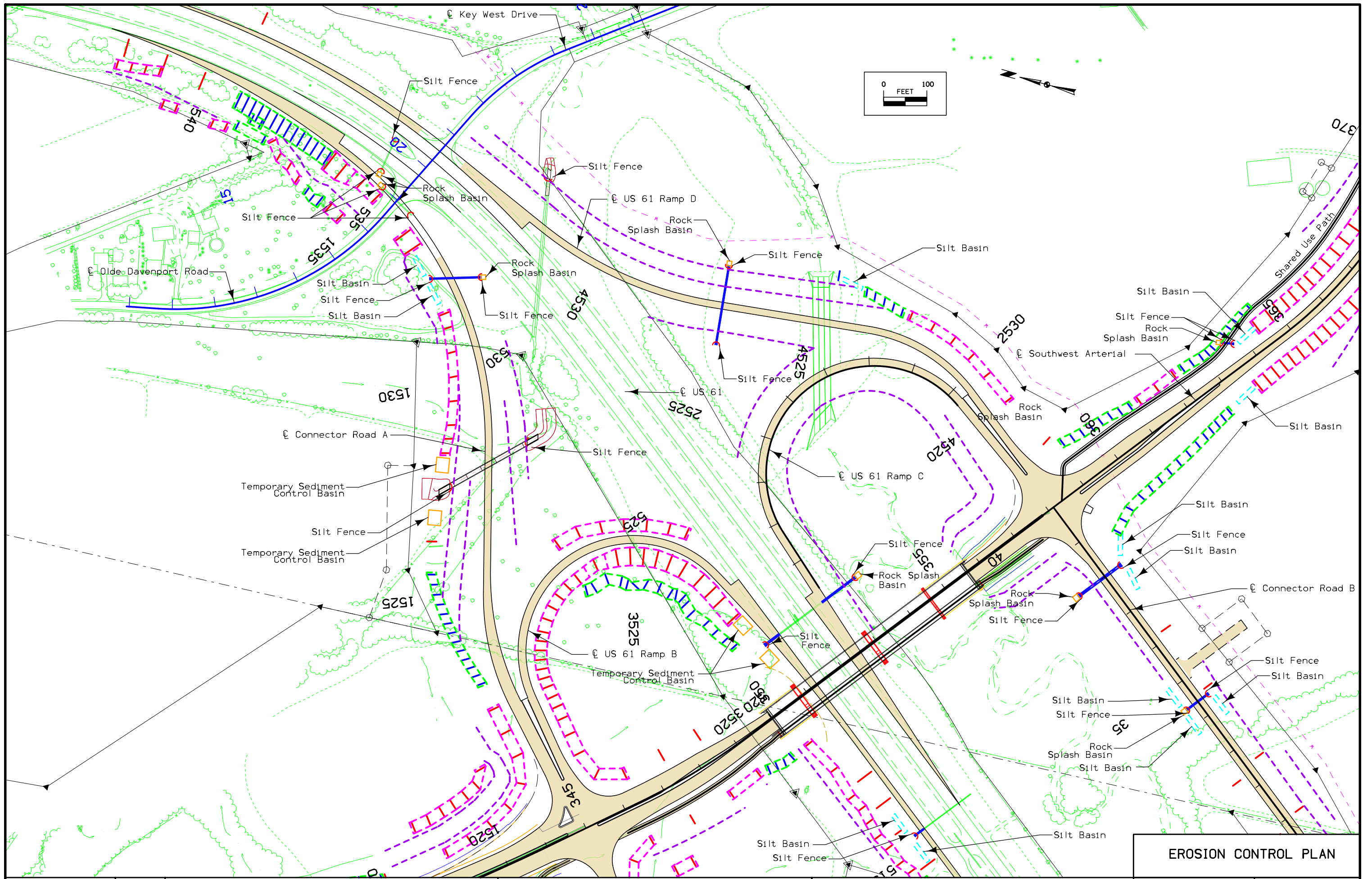
LEGEND

- TEMPORARY-SILT FENCE FOR DITCH CHECKS, (OR OPTIONAL SLASH MULCH BERMS), FINAL STABILIZATION-12" & 20" PERIMETER AND SLOPE SEDIMENT CONTROL DEVICES
- TEMPORARY-ROCK CHECK DAMS OR ROCK DITCHES FINAL STABILIZATION-ROCK DITCH CHECKS
- - - 20" PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE
- - - TURF REINFORCEMENT MAT, TYPE 2
- - - SPECIAL DITCH CONTROL, (WOOD EXCELSIOR MAT)
- - - SILT BASIN
- TEMPORARY SEDIMENT CONTROL BASIN
- - - SILT FENCE
- ROCK SPLASH BASIN

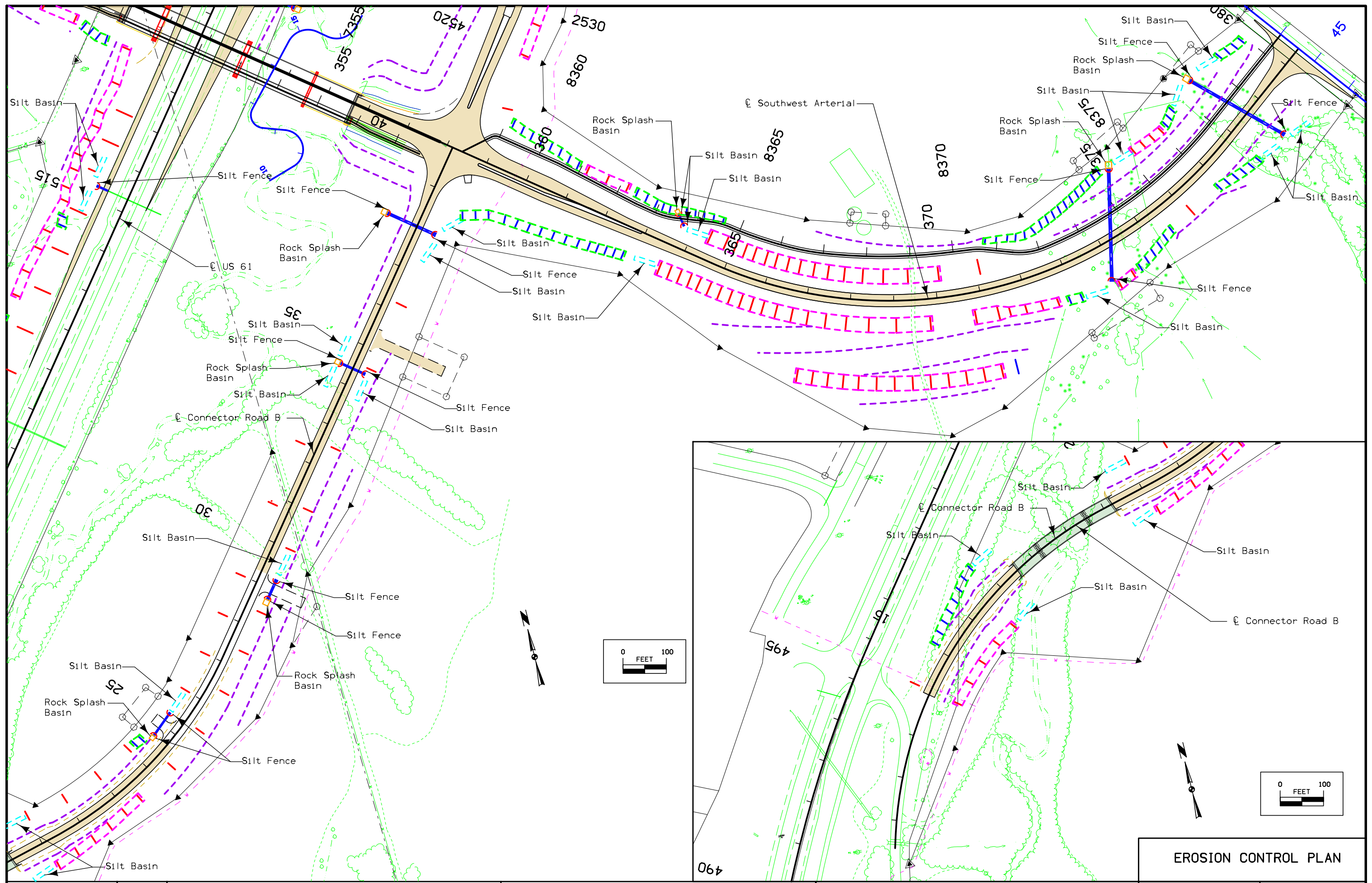
EROSION CONTROL PLAN



EROSION CONTROL PLAN



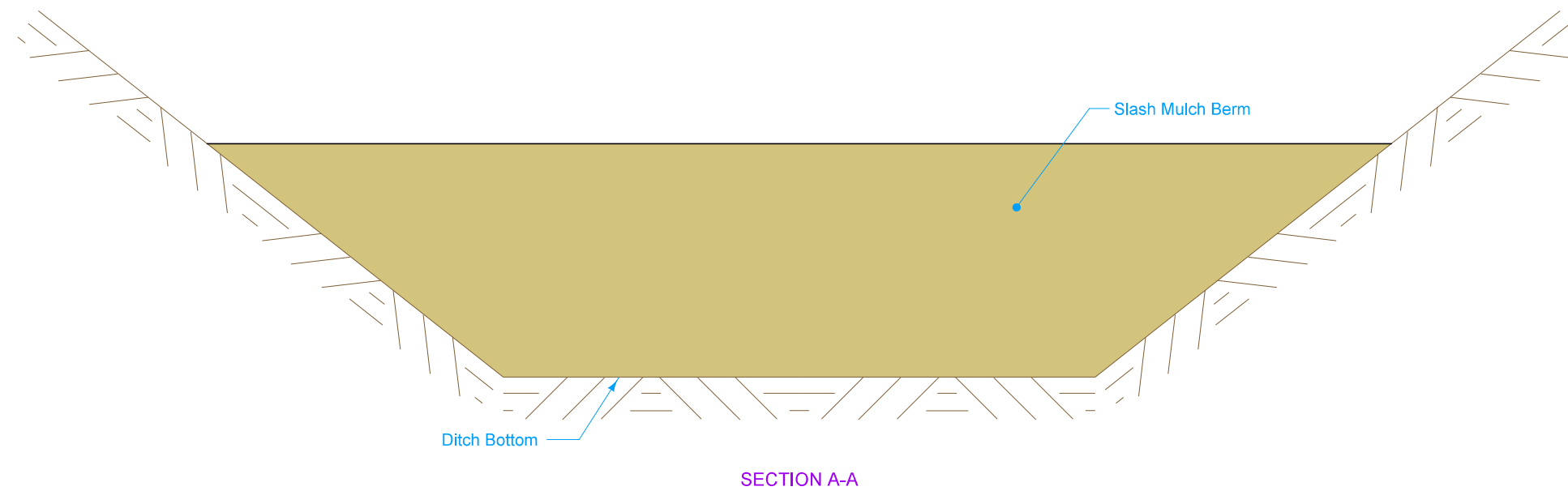
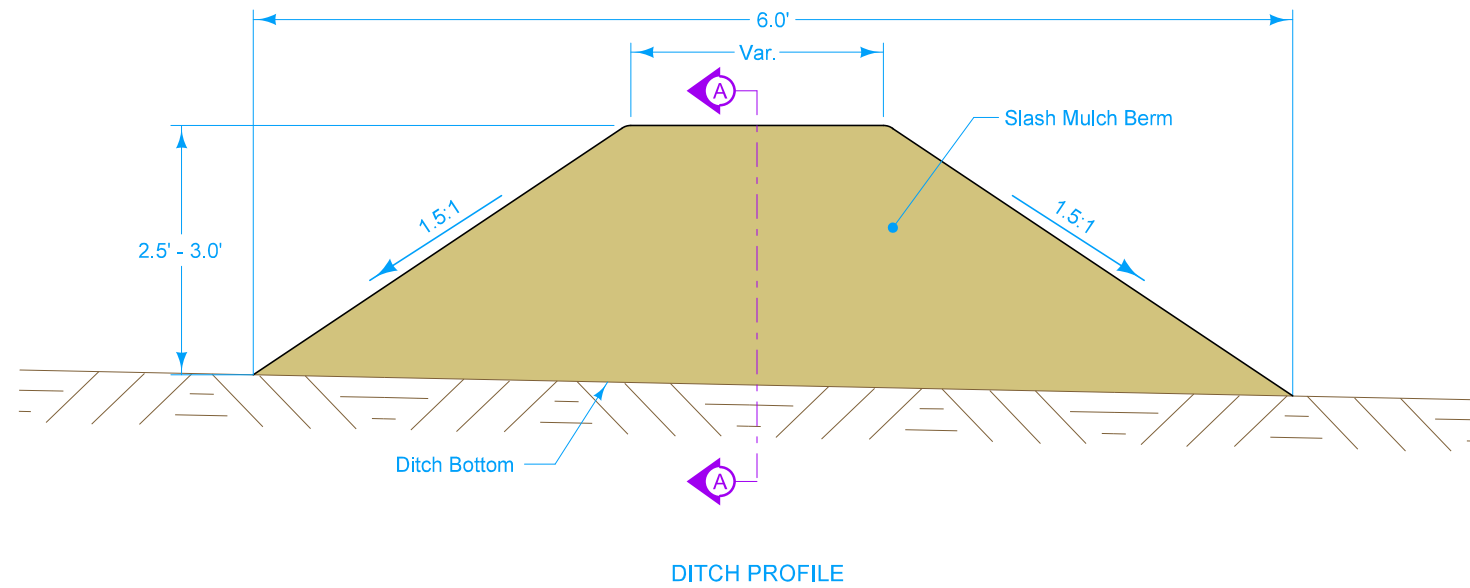
EROSION CONTROL PLAN



EROSION CONTROL PLAN

Slash mulch consists of waste material from clearing and grubbing. Use material with a maximum length of 20 inches and maximum width of 2 inches for individual pieces. Material will be accepted based on visual inspection.

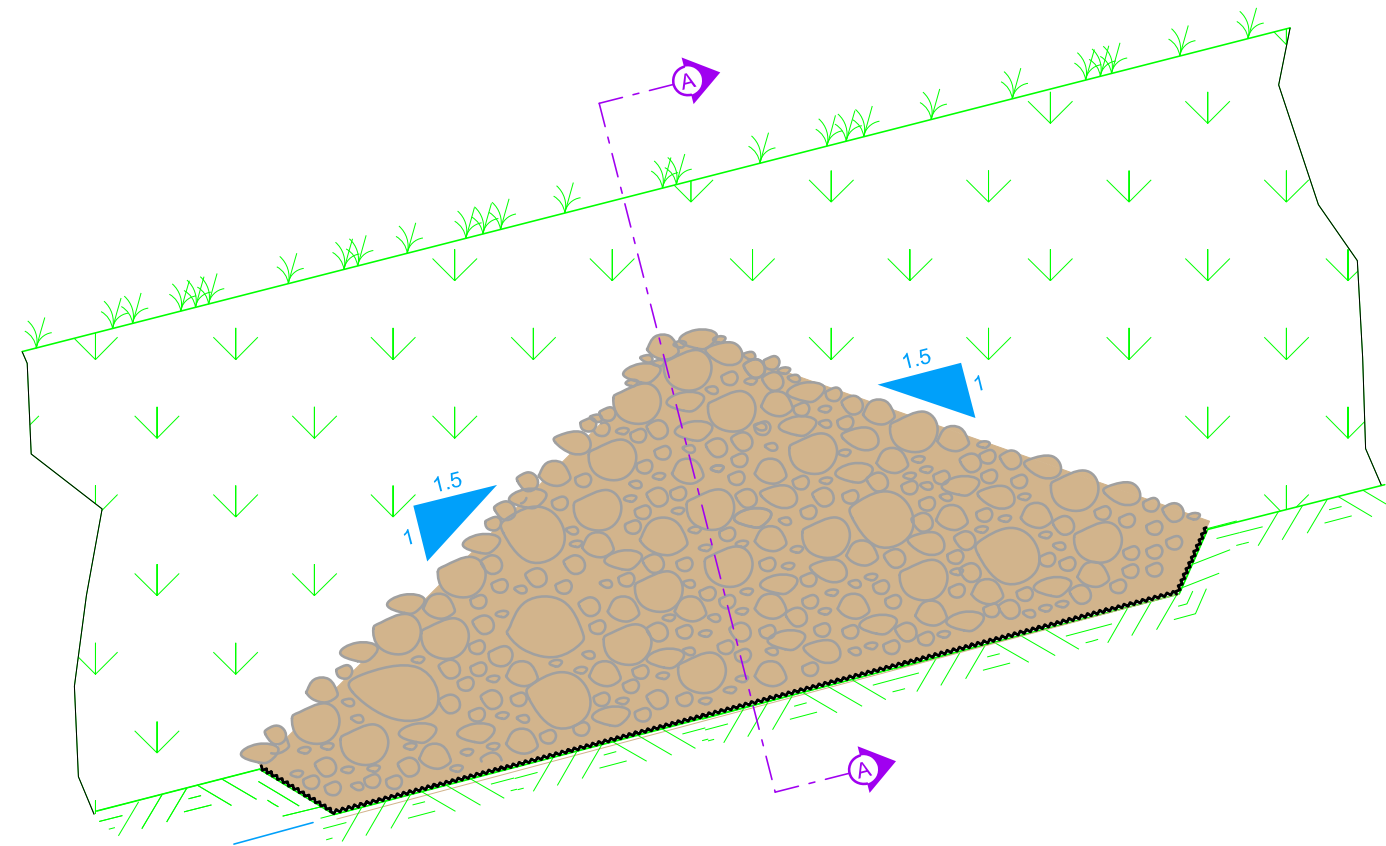
Dispose of the slash mulch berm material off the project unless the Engineer approves a suitable site within the project limits.



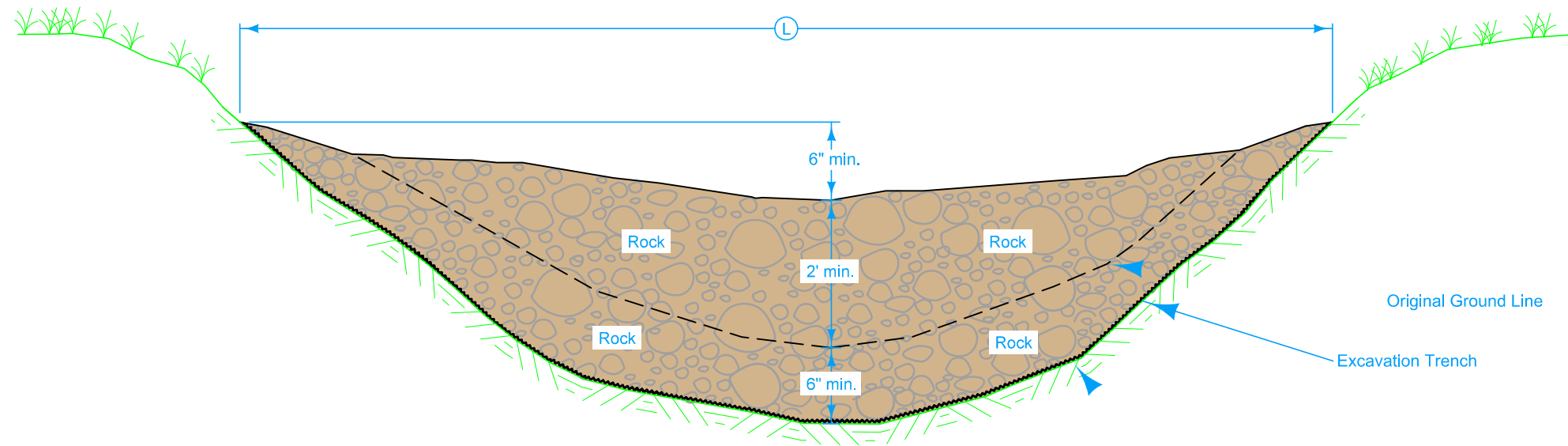
	REVISION	
	1	10-18-16
ROAD DESIGN DETAIL		570-1
		SHEET 1 of 1

REVISIONS: Corrected typo from 'much' to 'mulch' in general notes.

SLASH MULCH BERM



DITCH PROFILE



SECTION A-A

Use Class D Revetment to construct Rock Check Dam.

Method of Measurement for Rock Check Dam will be in linear feet to the nearest 0.1 feet.

Basis of Payment for Rock Check Dam will be the contract unit price per linear foot. Payment is full compensation for all materials, labor, and equipment required to construct the Rock Check Dam as shown. Class 10 excavation required to cut trench and engineering fabric installed prior to placing revetment are incidental and will not be paid for separately.

Method of Measurement for Maintenance of Rock Check Dam will be by count.

Basis of Payment for Maintenance of Rock Check Dam will be at the contract unit price for each occurrence. Payment is full compensation for clean out and disposal of material when capacity reaches 50%, and for any repair that is needed during the project.

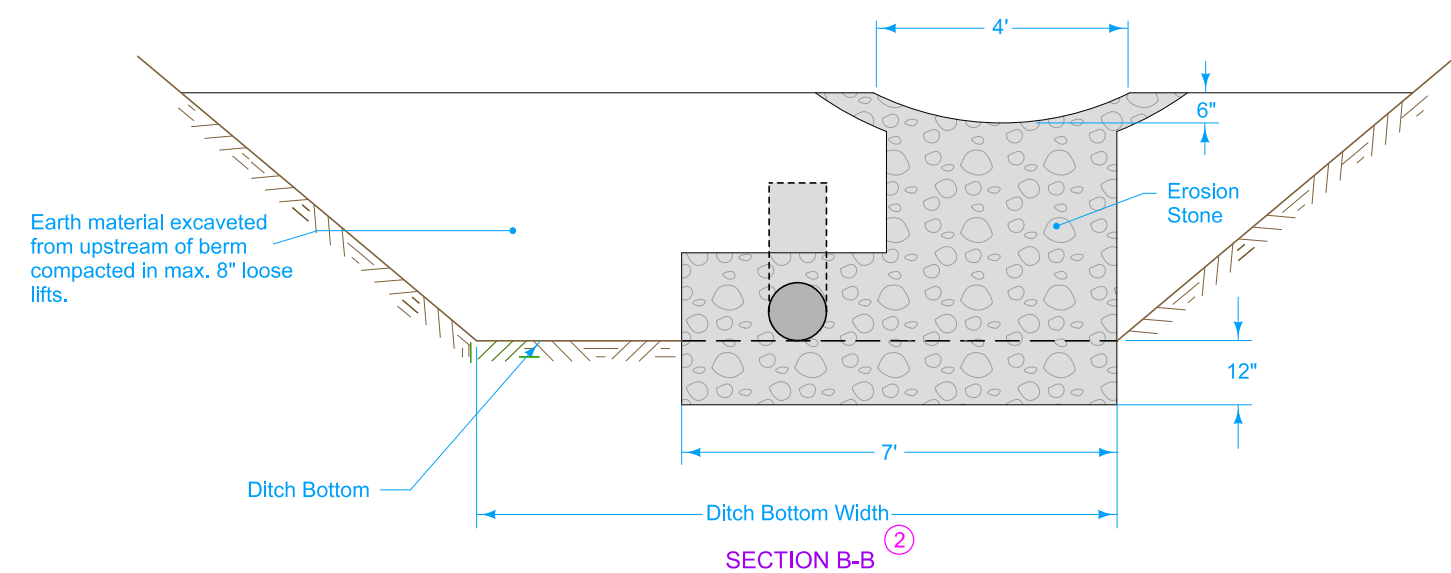
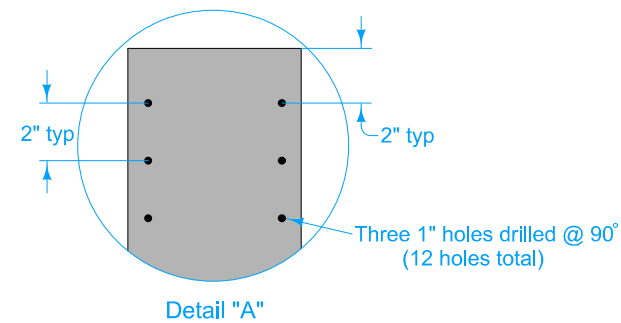
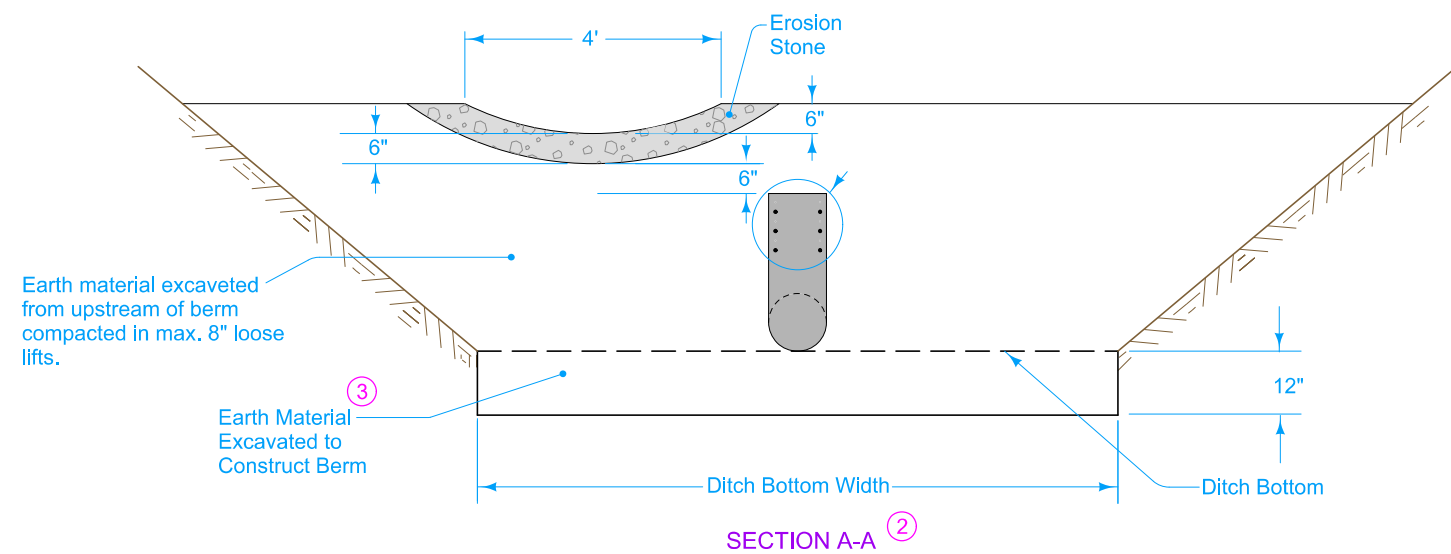
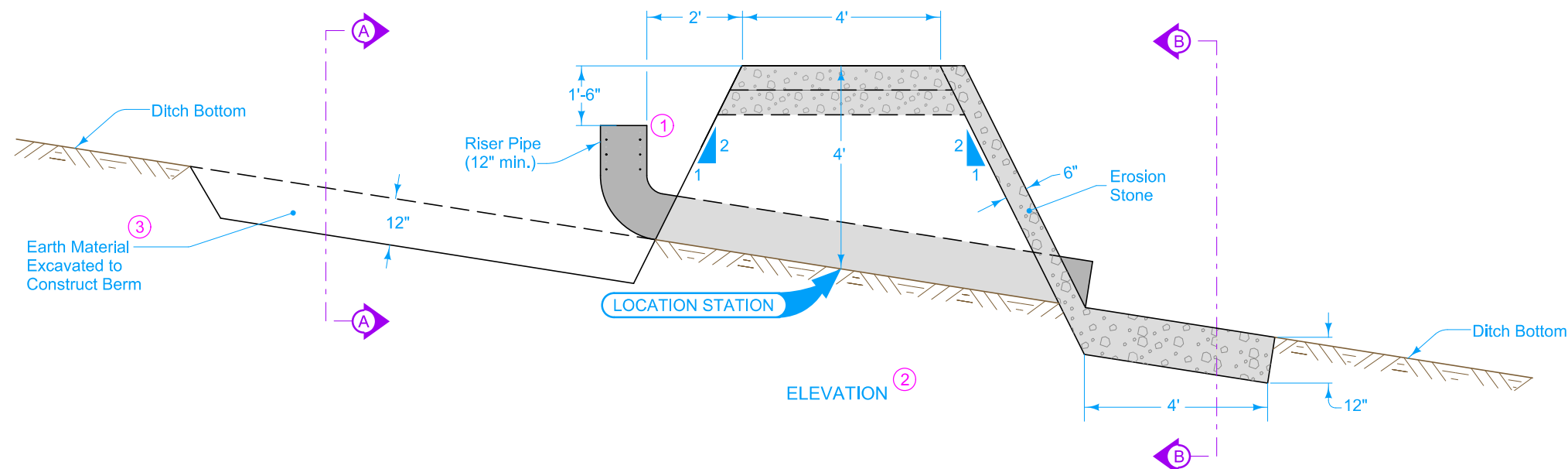
Method of Measurement for Removal of Rock Check Dam will be by count.

Basis of Payment for Removal of Rock Check Dam will be at the contract unit price for each Rock Check Dam removed. Payment is full compensation for all labor and equipment required to remove all rock and material above original ditch grade. Rock, silt, and engineering fabric that is flush with and/or below final ditch grade will be allowed to remain in the excavation trench.

Possible Contract Items:
 Rock Check Dam
 Maintenance of Rock Check Dam
 Removal of Rock Check Dam

Possible Tabulation:
 100-32

	REVISION	
	NEW	04-19-16
ROAD DESIGN DETAIL	570-2	
	SHEET 1 of 1	
REVISIONS: New		
ROCK CHECK DAM		



Measurement for Temporary Sediment Control Basin will be by count.

Basis of Payment for Temporary Sediment Control Basin will be at the contract unit price for each device installed. Payment is full compensation for furnishing all equipment, labor, and materials required to construct the Temporary Sediment Control Basin as shown.

Method of Measurement for Maintenance of Temporary Sediment Control Basin will be by count.

Basis of Payment for Maintenance of Temporary Sediment Control Basin will be at the contract unit price for each occurrence. Payment is full compensation for clean out and disposal of material when capacity reaches 50%, and for any other repair needed during the project.

Measurement for Removal of Temporary Sediment Control Basin will be by count.

Basis of Payment for Removal of Temporary Sediment Control Basin will be at the contract unit price for each device removed. Payment is full compensation for all labor and equipment required to remove all rock and material above designed ditch grade and to place topsoil per note 3 below. Rock and engineering fabric that is flush with and/or below designed ditch grade will be allowed to remain in place.

- ① Ensure Riser Pipe remains vertical.
- ② Dimensions shown are minimums.
- ③ When Temporary Sediment Control Basin is removed, if basin has not silted in to designed ditch grade, use topsoil to bring up to designed ditch grade .

Possible Contract Items:

- Temporary Sediment Control Basin
- Maintenance of Temporary Sediment Control Basin
- Removal of Temporary Sediment Control Basin

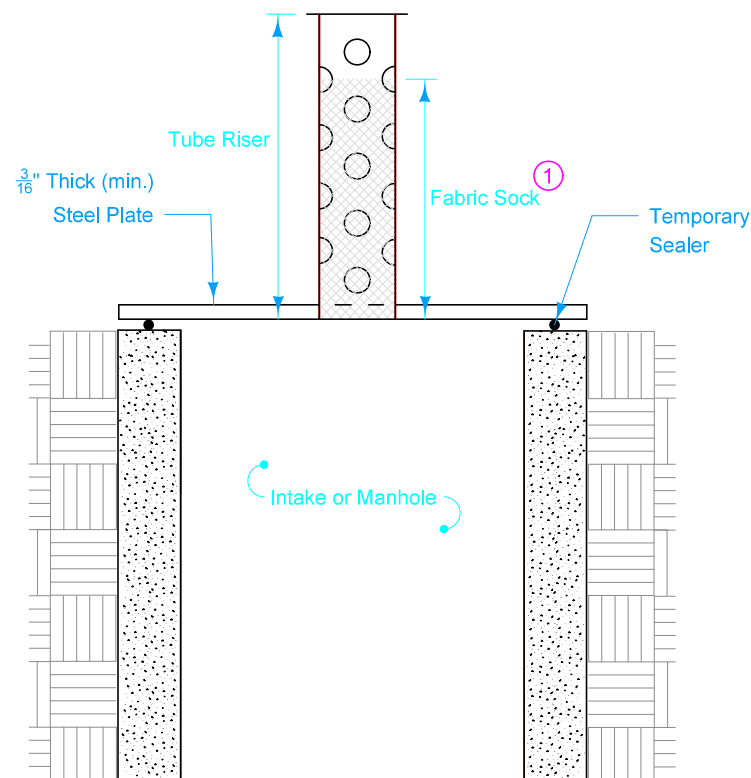
Incidental to Temporary Sediment Control Basin:

- Erosion Stone
- Pipe
- Excavated Earth Material

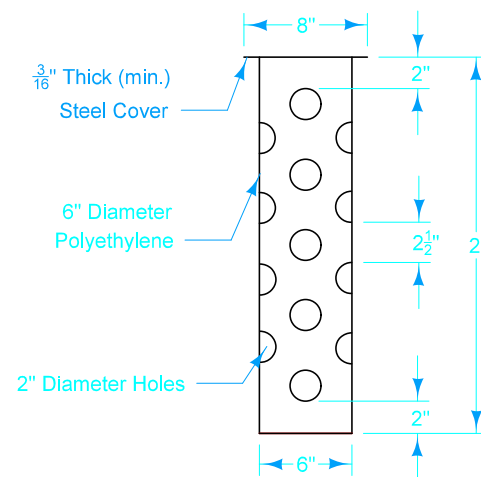
Possible Tabulation:

100-30

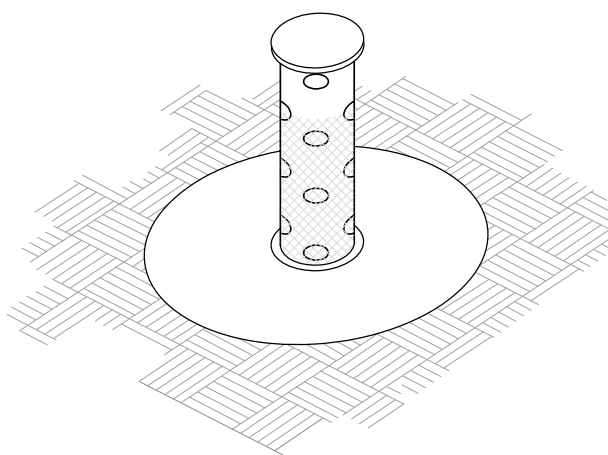
ROAD DESIGN DETAIL	REVISION	
	NEW	04-19-16
570-3		SHEET 1 of 1
REVISIONS: New		
TEMPORARY SEDIMENT CONTROL BASIN		



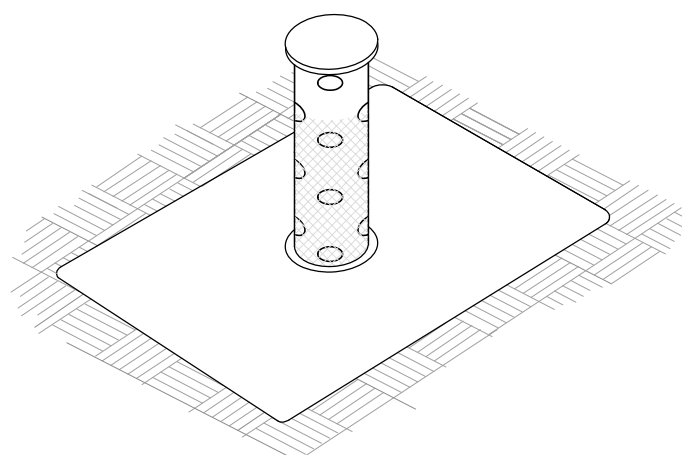
SECTION VIEW



TUBE RISER (2)

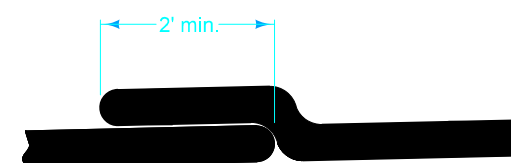
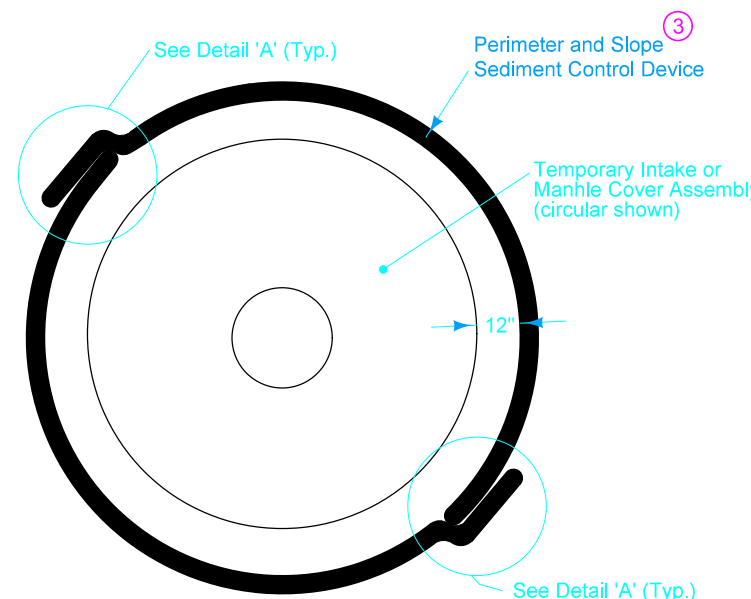


ISOMETRIC VIEW (Circular)



ISOMETRIC VIEW (Rectangular)

TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY



DETAIL 'A' (4)
(Overlap Joint)

PERIMETER AND SLOPE SEDIMENT CONTROL

Method of Measurement for Temporary Intake or Manhole Cover Assembly will be by count.

Basis of Payment for Temporary Intake or Manhole Cover Assembly will be at the contract unit price for each device installed.

Method of Measurement for Maintenance of Temporary Intake or Manhole Cover Assembly will be by count.

Basis of Payment for Maintenance of Temporary Intake or Manhole Cover Assembly will be at the contract unit price for each occurrence. Payment is full compensation for inspecting fabric sock and replacing when flow capacity has been reduced to 50%.

Method of Measurement for Removal of Temporary Intake or Manhole Cover Assembly will be by count.

Basis of Payment for Removal of Temporary Intake or Manhole Cover Assembly will be at the contract unit price for each device removed.

- ① Wrap fabric sock around tube riser. Use fabric complying with Article 4196.01, B, 1 with a minimum flow rate of 90 gallons per minute per square foot. Ensure top of sock is below form grade elevation.
- ② Tube riser may be such that it can be pushed down and pulled up.
- ③ Place Perimeter and Slope Sediment Control Devices around all intake or manhole wells. Use 20 inch diameter device.
- ④ Extra material required to install overlaps will not be included in the installation length.

Possible Contract Items:

- Temporary Intake or Manhole Cover Assembly
- Maintenance of Temporary Intake or Manhole Cover Assembly
- Removal of Temporary Intake or Manhole Cover Assembly
- Perimeter and Slope Sediment Control Device

Possible Tabulations:

- 100-11
- 100-19

	REVISION	
	1	04-18-17
ROAD DESIGN DETAIL		570-5
		SHEET 1 of 1

REVISIONS: Add bid items for maintenance and removal. Added basis of payment and method of measurement.

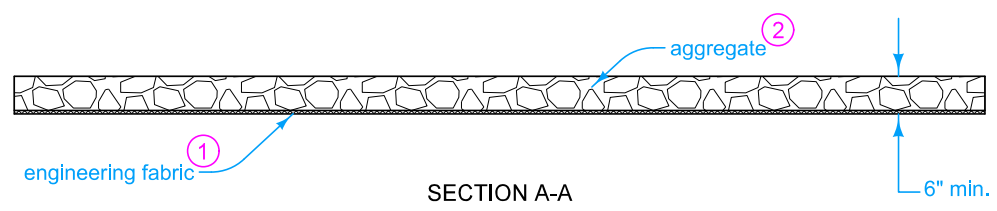
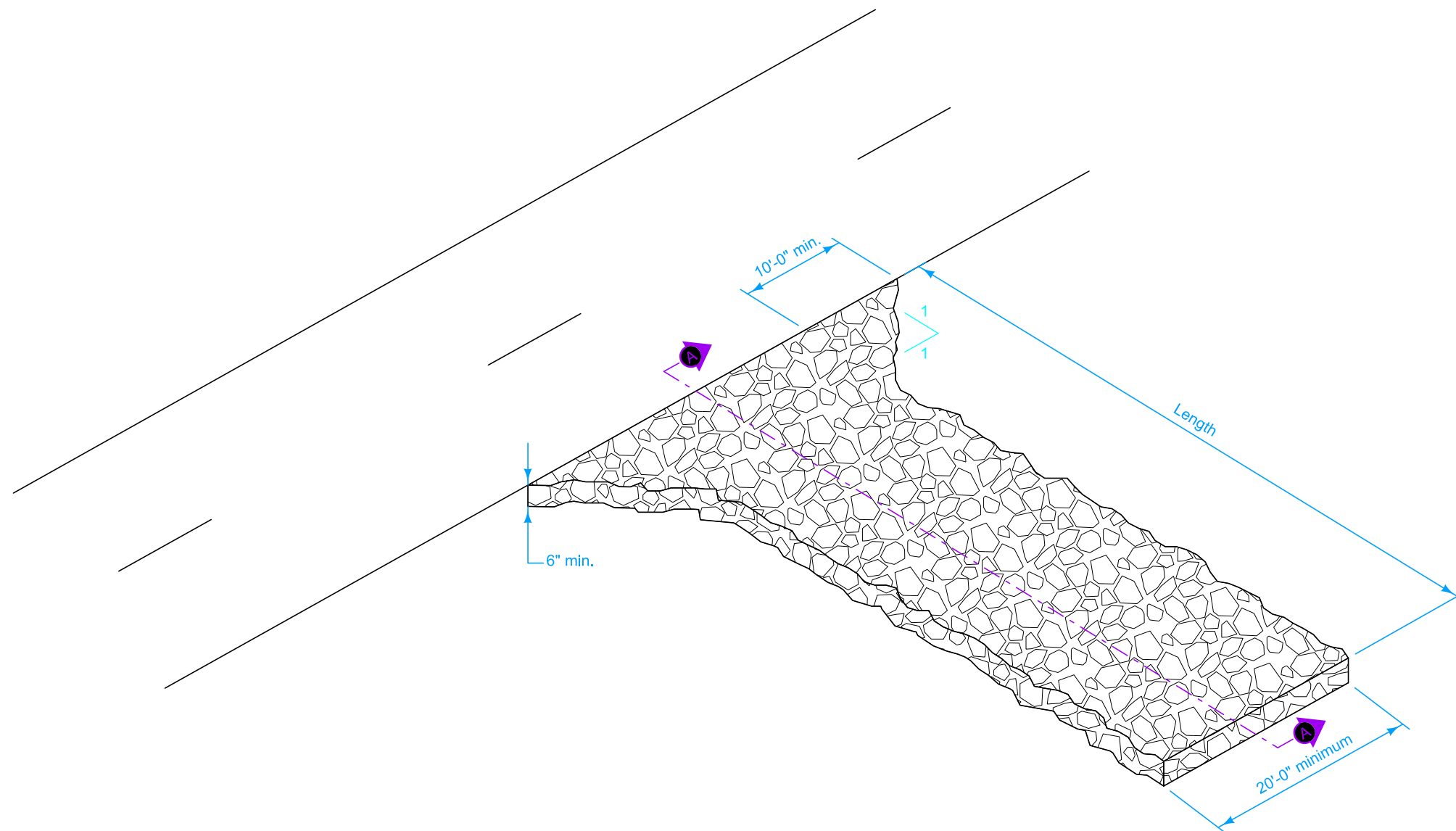
EROSION CONTROL FOR INTAKE OR MANHOLE WELL

Obtain the Engineer's approval for location and length of stabilized entrances prior to constructing.

Method of Measurement for Stabilized Construction Entrance will be in linear feet measured along the length of the entrance at the entrance centerline.

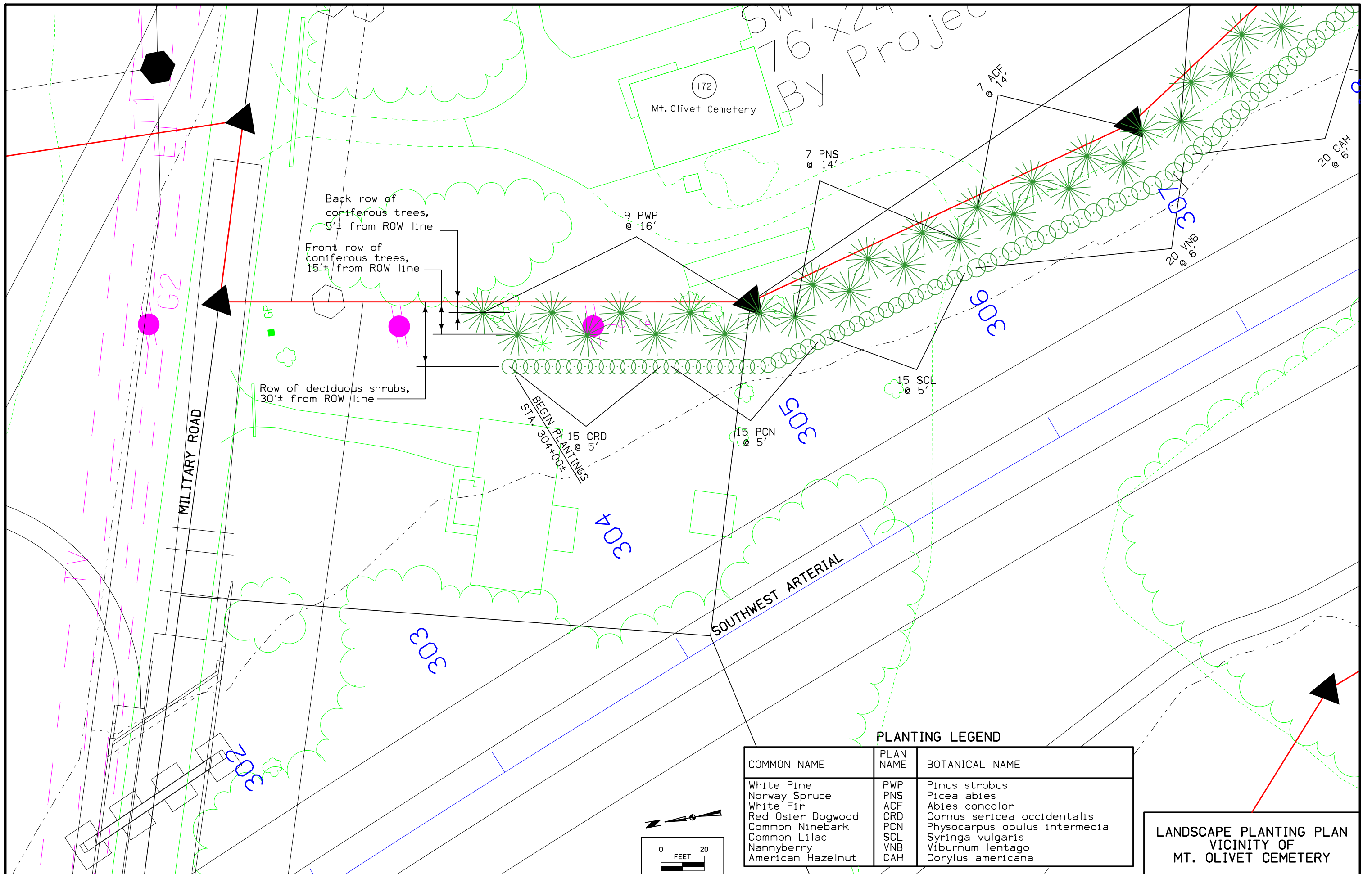
Basis of Payment for Stabilized Construction Entrance will be at the contract unit price per linear foot. Payment is full compensation for furnishing all materials and work necessary for installation, maintenance, and removal of stabilized construction entrance. Maintenance includes installing additional material or cleaning required to maintain the entrance in a functional condition.

- ① Place engineering fabric prior to placing aggregate. Use fabric for Embankment Erosion Control complying with Section 4196 of the Standard Specifications.
- ② Use aggregate meeting Gradation No. 13 of Section 4109 of the Standard Specifications.



Possible Contract Item:
Stabilized Construction Entrance

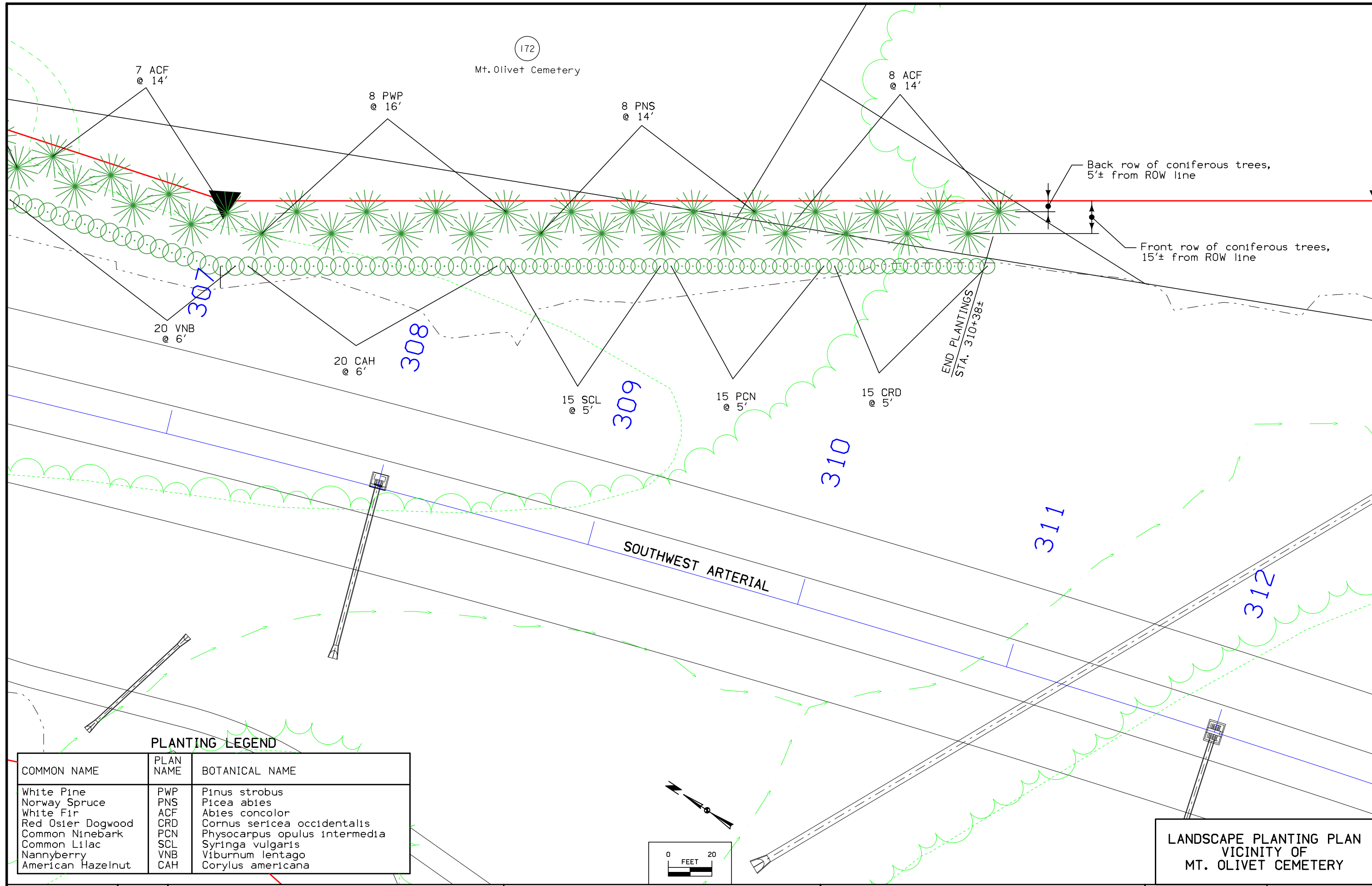
	REVISION	
	NEW	04-18-17
ROAD DESIGN DETAIL		570-10
		SHEET 1 of 1
REVISIONS: NEW		
STABILIZED CONSTRUCTION ENTRANCE		



PLANTING LEGEND

COMMON NAME	PLAN NAME	BOTANICAL NAME
White Pine	PWP	<i>Pinus strobus</i>
Norway Spruce	PNS	<i>Picea abies</i>
White Fir	ACF	<i>Abies concolor</i>
Red Oster Dogwood	CRD	<i>Cornus sericea occidentalis</i>
Common Ninebark	PCN	<i>Physocarpus opulus intermedia</i>
Common Lilac	SCL	<i>Syringa vulgaris</i>
Nannyberry	VNB	<i>Viburnum lentago</i>
American Hazelnut	CAH	<i>Corylus americana</i>

**LANDSCAPE PLANTING PLAN
VICINITY OF
MT. OLIVET CEMETERY**



172
Mt. Olivet Cemetery

7 ACF
@ 14'

8 PWP
@ 16'

8 PNS
@ 14'

8 ACF
@ 14'

20 VNB
@ 6'

20 CAH
@ 6'

15 SCL
@ 5'

15 PCN
@ 5'

15 CRD
@ 5'

Back row of coniferous trees,
5'± from ROW line

Front row of coniferous trees,
15'± from ROW line

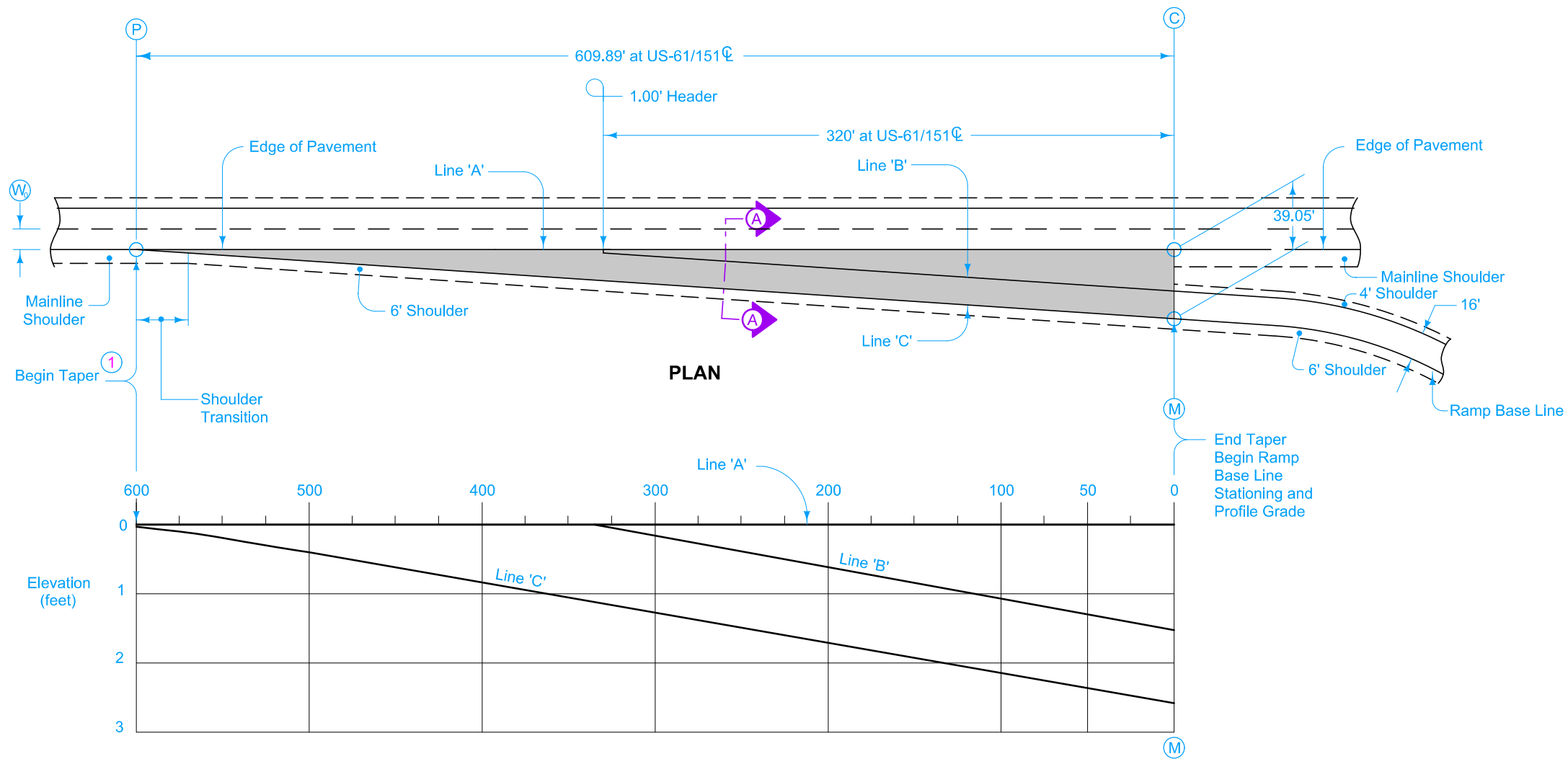
END PLANTINGS
STA. 310+38±

SOUTHWEST ARTERIAL

PLANTING LEGEND

COMMON NAME	PLAN NAME	BOTANICAL NAME
White Pine	PWP	<i>Pinus strobus</i>
Norway Spruce	PNS	<i>Picea abies</i>
White Fir	ACF	<i>Abies concolor</i>
Red Osier Dogwood	CRD	<i>Cornus sericea occidentalis</i>
Common Ninebark	PCN	<i>Physocarpus opulus intermedia</i>
Common Lilac	SCL	<i>Syringa vulgaris</i>
Nannyberry	VNB	<i>Viburnum lentago</i>
American Hazelnut	CAH	<i>Corylus americana</i>

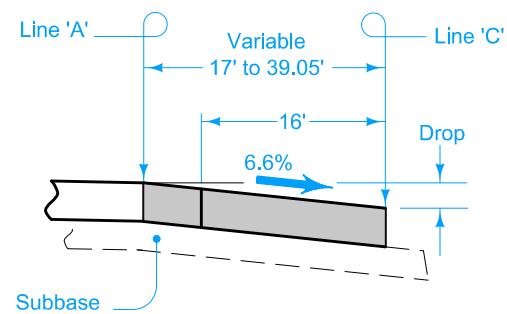
LANDSCAPE PLANTING PLAN
VICINITY OF
MT. OLIVET CEMETERY



NOTE: The algebraic difference between profile grade for Ramp Base Line at (M) and relative profile grade of Mainline at (C) is 0.43%.

PROFILE

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																											
DISTANCE (Ft.)	609.89	600	575	550	525	513.70	500	475	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
OFFSET (Ft.)	0	0.53	1.90	3.28	4.69	5.33	6.11	7.56	9.03	10.53	12.04	13.58	15.14	16.72	18.32	19.94	21.58	23.24	24.93	26.63	28.35	30.09	31.84	33.62	35.41	37.22	39.02
SLOPE (%)	4.60	4.81	5.33	5.85	6.37	Constant 6.6% Slope																					
DROP (Ft.)	0	0.03	0.10	0.19	0.30	0.35	0.40	0.50	0.60	0.70	0.79	0.90	1.00	1.10	1.21	1.32	1.42	1.53	1.65	1.76	1.87	1.99	2.10	2.22	2.34	2.47	2.58

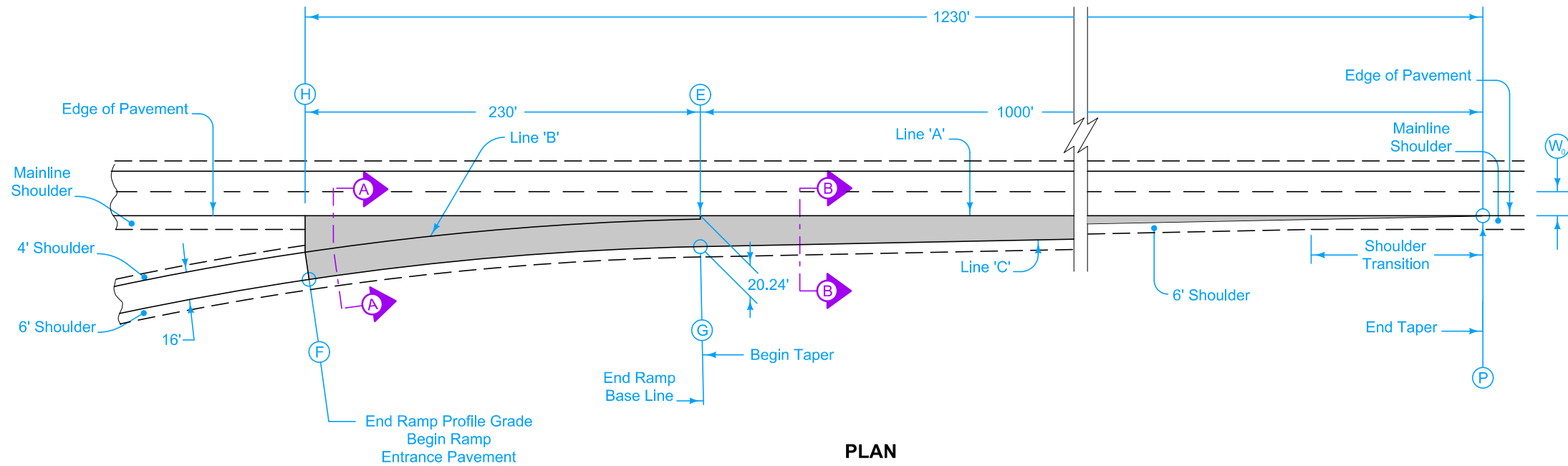


SECTION A-A

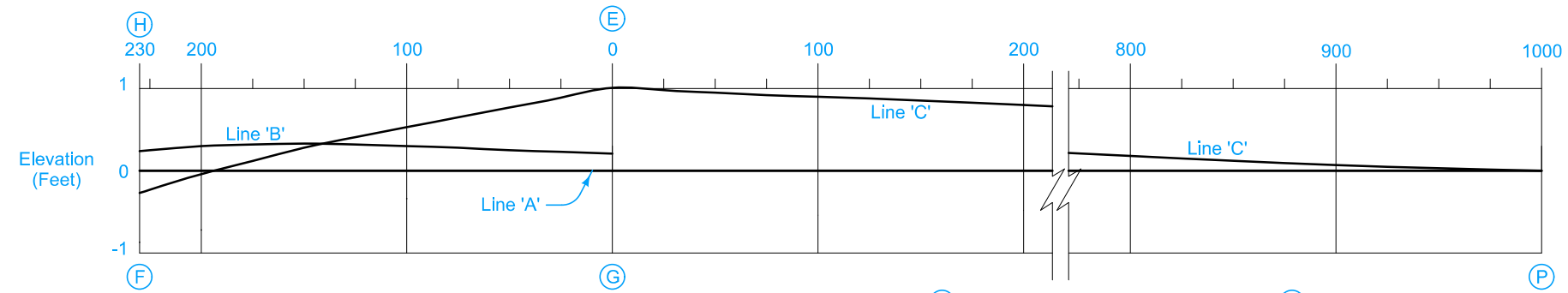
TABLE OF SHOULDER TRANSITION LENGTHS			
W ₀	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	60'	90'
14'	30'	60'	NA

NOTE: W₀ is the width of the outside lane to the Edge of Pavement.

MODIFIED	
	PV-410
STANDARD ROAD PLAN	
DECELERATION TAPER FOR 16' EXIT RAMP	



PLAN



PROFILE

NOTE: The algebraic difference between profile grade for Ramp Base Line at (F) and relative profile grade of Mainline at (H) is 0.16%.

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																												
Distance From Point (E) Along Line 'A' (Ft.)		230	225	200	175	150	125	100	75	50	25	0	25	50	75	100	200	300	400	500	600	700	739.02	800	900	1000		
From Line 'A' To Line 'B'	Offset (Ft.)	23.87	23.13	19.67	16.55	13.78	11.35	9.26	7.50	6.08	4.99	4.24																
	Slope (%)	1.0	Uniform Transition Slope											5.0														
	Elev. Change (Ft.)	0.24	0.25	0.30	0.32	0.33	0.32	0.30	0.28	0.25	0.23	0.21																
From Line 'B' To Line 'C'	Offset (Ft.)	Constant 16.0' Offset																										
	Slope (%)	-3.17	Uniform Transition Slope											5.0														
	Elev. Change (Ft.)	-0.51	-0.48	-0.34	-0.20	-0.05	0.09	0.23	0.37	0.52	0.66	0.80																
From Line 'A' To Line 'C'	Offset (Ft.)												19.7	19.1	18.5	17.9	16.1	14.2	12.3	10.3	7.7	5.7	5.1	4.4	2.6	0.0		
	Slope (%)													Constant 5.0% Slope											4.1	2.5	1.0	
	Elev. Change (Ft.)	-0.27	-0.23	-0.04	0.12	0.28	0.41	0.53	0.65	0.77	0.89	1.01	0.98	0.95	0.92	0.90	0.80	0.71	0.61	0.52	0.38	0.28	0.26	0.18	0.07	0.0		
Distance From Point (G) Along Line 'C' (Ft.)		237.94	232.67	206.53	180.47	154.50	128.59	102.74	76.94	51.18	25.00	0.00																

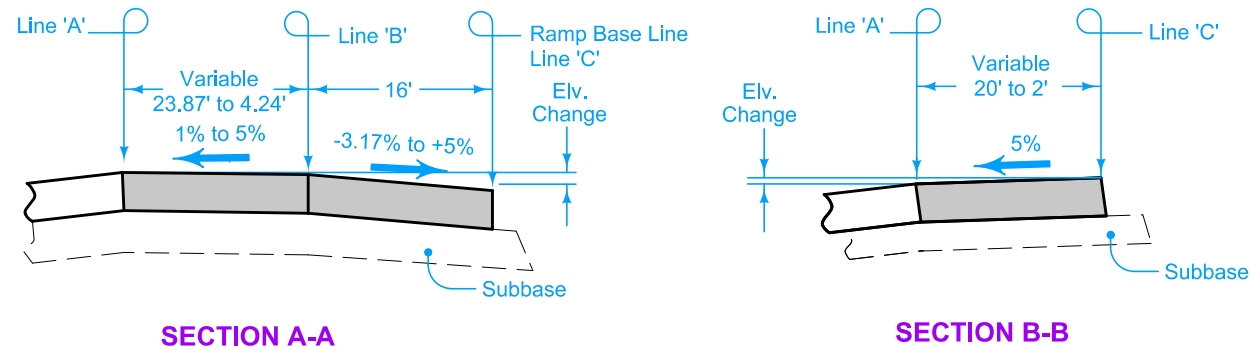
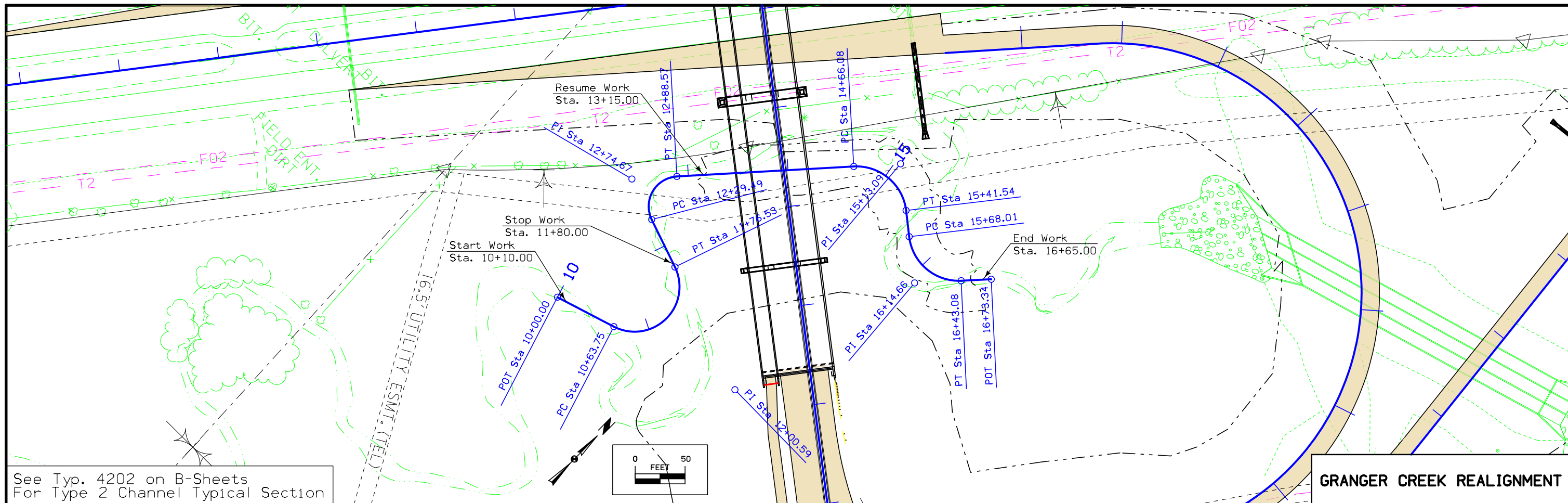


TABLE OF SHOULDER TRANSITION LENGTHS			
W ₀	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	200'	300'
14'	100'	200'	NA

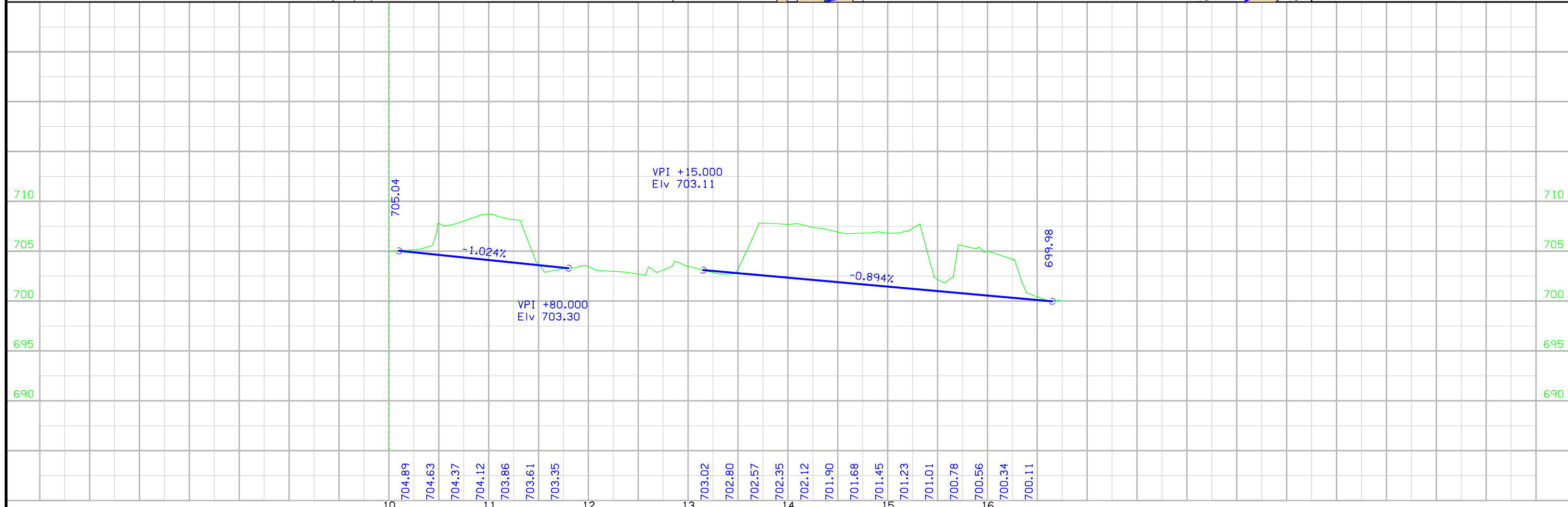
NOTE: W₀ is the width of the outside lane to the Edge of Pavement.

MODIFIED	
	PV-411
STANDARD ROAD PLAN	
ACCELERATION TAPER FOR 16' ENTRANCE RAMP	



See Typ. 4202 on B-Sheets
For Type 2 Channel Typical Section

GRANGER CREEK REALIGNMENT




ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1417

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	205.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	360.0	
3	2402-2722000	EXCAVATION, CLASS 22	CY	755.0	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	441.8	
5	2404-7775000	REINFORCING STEEL	LB	80,898.0	
6	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
7	2507-3250005	ENGINEERING FABRIC	SY	195.0	
8	2507-6800061	REVTMENT, CLASS E	TON	205.0	

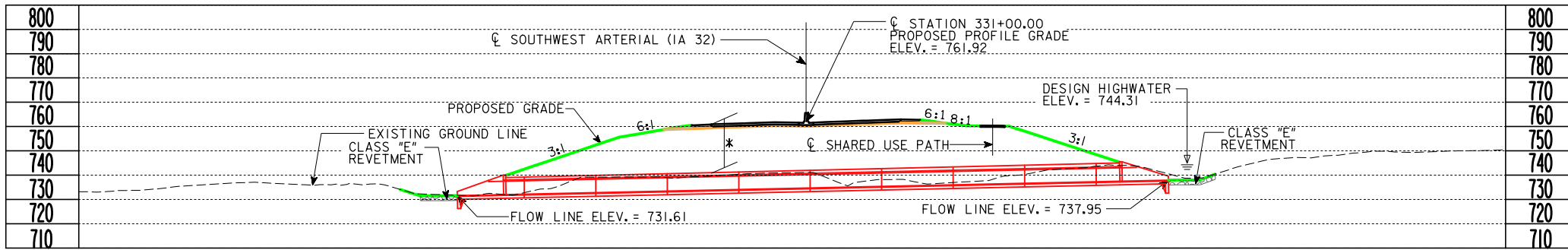
ESTIMATE REFERENCE INFORMATION - DESIGN # 1417

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE SITUATION PLAN. SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
3	2402-2722000	EXCAVATION, CLASS 22 IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, THE CURTAIN WALL IS TO EXTENDED INTO THE ROCK A MINIMUM OF 6". SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT) --
5	2404-7775000	REINFORCING STEEL INCLUDES ADJUSTING 5t1, 5t2, 5u1, AND 6pl CURTAIN WALL BARS, AS NECESSARY, TO ACCOMMODATE CHANGES IN CURTAIN WALL DEPTH IF ROCK IS ENCOUNTERED.
6	2418-0000010	TEMPORARY STREAM DIVERSION SEE STANDARD ROAD PLAN EW-402.
7	2507-3250005	ENGINEERING FABRIC SEE "C.I.P. SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
8	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "C.I.P. SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

	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: <u>Michael P. Caven</u> Date: <u>12-20-16</u> Printed or Typed Name: MICHAEL P. CAVEN
	My license renewal date is December 31, 2018 Pages or sheets covered by this seal: <u>V.1-V.22</u>

DESIGN FOR 33° SKEW (L.A.)
10'x6'x302'-0 REINFORCED CONCRETE BOX CULVERT
QUANTITIES
 STA. 331+00.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1417



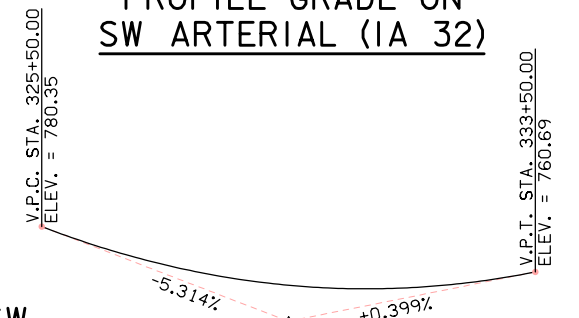
LONGITUDINAL SECTION ALONG CL BOX CULVERT

* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = 0.3"

BENCHMARK:

BM #14- 7" SPIKE IN CORNER POST 2000' SOUTH OF MILITARY ROAD ON EXTENSION OF DRIVE AT MT. ST. BERNARD ROAD AT NORTH-SOUTH FENCE / EAST-WEST FENCE T-INTERSECTION 3636697.07 NORTH, 5678865.76 EAST, ELEV. 769.84

PROFILE GRADE ON SW ARTERIAL (IA 32)



CURVE DATA SW ARTERIAL (IA 32)

ENTERING CURVE DATA (CURVE 21007)
P.I. STA. 334+23.45
DELTA = 28° 35' 02.91" (LT)
DEGREE = 1° 25' 56.62"
TANGENT = 1,019.00'
LENGTH = 1,995.55'
RADIUS = 4,000.00'
EXTERNAL = 127.75'
LONG CHORD = 1,974.92'
MID. ORD. = 123.80'
P.C. STA. 324+04.45
P.T. STA. 344+00.00

HYDRAULIC DATA

DRAINAGE AREA = 202 ACRES
DESIGN DISCHARGE, Q50 = 393 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 744.31

LOCATION

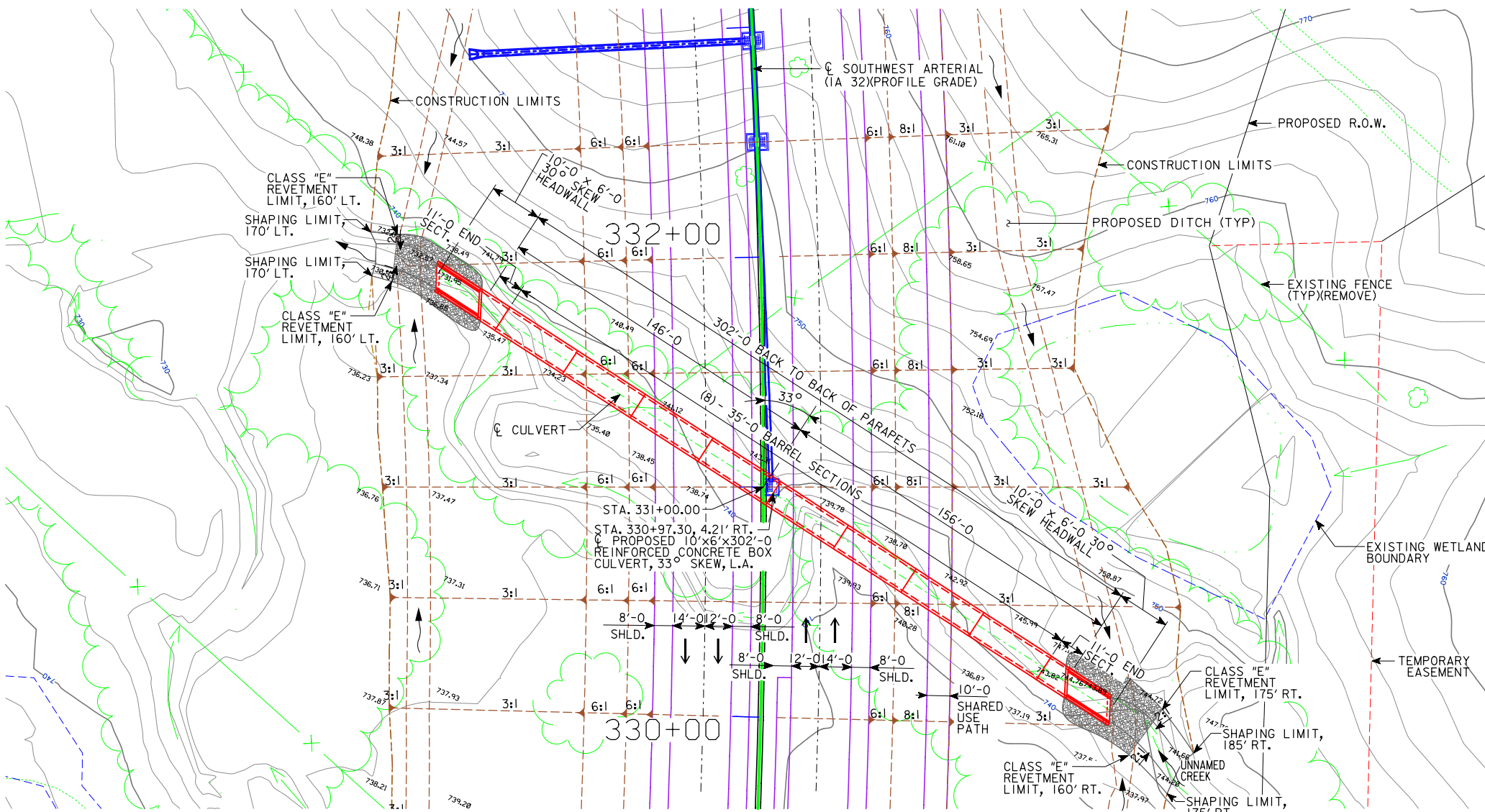
SW ARTERIAL (IA 32)
OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4379511°
LONG. -90.6886064°

TRAFFIC ESTIMATE

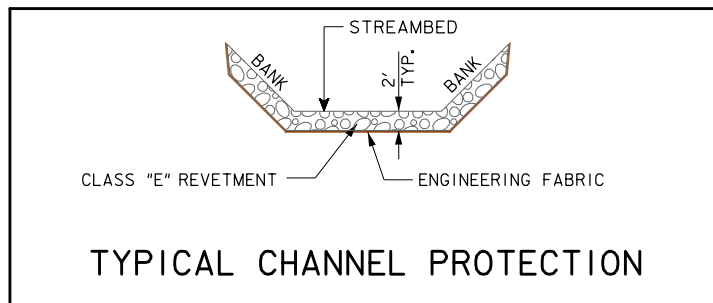
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	16,000	V.P.D.
	TRUCKS	7	%

PLAN NOTES

- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



SITUATION PLAN



ESTIMATED REVETMENT QUANTITIES

LOCATION	REVTMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	105	100	70
OUTLET	100	95	65
TOTALS	205	195	135

* QUANTITY FOR EMBEDDED REVETMENT

DESIGN FOR 33° SKEW (L.A.)
10'x6'x302'-0 REINFORCED CONCRETE BOX CULVERT
C.I.P. SITUATION PLAN
STA. 331+00.00 MARCH, 2017
DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1417



ESTIMATED PRECAST CULVERT QUANTITIES (ALTERNATE)- DESIGN # 1417

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2102-0425070	SPECIAL BACKFILL	TON	180.0	
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	210.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	405.0	
4	2402-2722000	EXCAVATION, CLASS 22	CY	810.0	
5	2415-2111006	PRECAST CONCRETE BOX CULVERT, 10 FT. X 6 FT.	LF	306.0	
6	2415-2201006	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 6 FT.	EACH	2.0	
7	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
8	2507-3250005	ENGINEERING FABRIC	SY	200.0	
9	2507-6800061	REVTMENT, CLASS E	TON	220.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1417

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-0425070	SPECIAL BACKFILL SEE GRANULAR BEDDING DETAILS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE SPECIAL BACKFILL.
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "PRECAST SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
3	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE 6" BEDDING.
4	2402-2722000	EXCAVATION, CLASS 22 IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO 6" BELOW THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, EXCAVATION SHALL ACCOMMODATE THE NEW CURTAIN WALL. SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
5	2415-2111006	PRECAST CONCRETE BOX CULVERT, 10 FT. X 6 FT. --
6	2415-2201006	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 6 FT. --
7	2418-0000010	TEMPORARY STREAM DIVERSION SEE STANDARD ROAD PLAN EW-402.
8	2507-3250005	ENGINEERING FABRIC SEE "PRECAST SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
9	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "PRECAST SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 33° SKEW (L.A.)
**10'x6'x312'-11 PRECAST
 CONCRETE BOX CULVERT**
 QUANTITIES

STA. 331+00.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1417

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO INSTALL A SINGLE 10'x6'x312'-11 PRECAST REINFORCED CONCRETE BOX CULVERT SKEWED 33° LEFT AHEAD AT STATION 331+00.00 (¼ SW ARTERIAL)(IA 32).

UTILITY COMPANIES AND MUNICIPALITIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

THE PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 21 FEET.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR BEDDING DETAIL".

A MINIMUM OF 6 INCH OF GRANULAR MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF ¾ INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE. THE 6 INCH GRANULAR BEDDING SHALL BE BID AS "SPECIAL BACKFILL".

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST BOX SECTIONS TO THE OFFICE OF BRIDGES AND STRUCTURES FOR ALL PROJECTS. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

- A. A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
- B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
- C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
- D. A DETAIL OF THE PRECAST CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE OFFICE OF BRIDGES AND STRUCTURES PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER OR OTHER EQUIVALENT SOFTWARE CAN BE USED TO DESIGN THE PRECAST BOX CULVERT BARREL SECTIONS, PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF ¼ INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADIUS OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

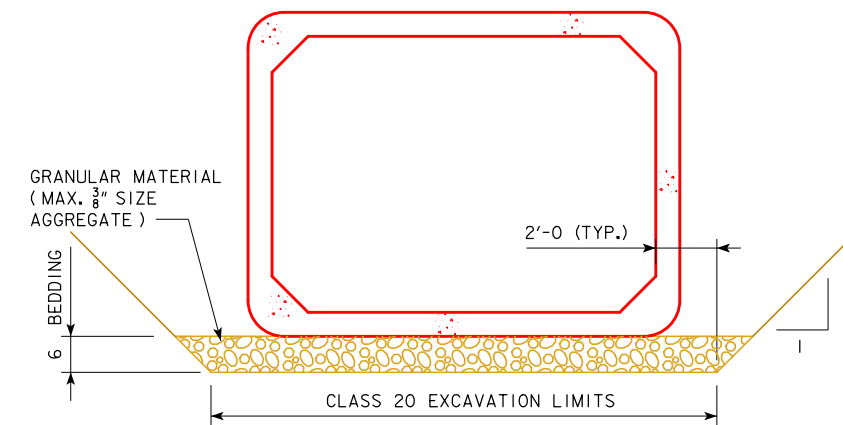
SPECIFICATIONS:

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010: BAR REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR END SECTION DESIGN f'c = 5 KSI.



GRANULAR BEDDING DETAIL

GRANULAR MATERIAL SHALL TERMINATE 3'-0 SHORT OF THE PRECAST CURTAIN WALL.

TRAFFIC CONTROL PLAN
NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

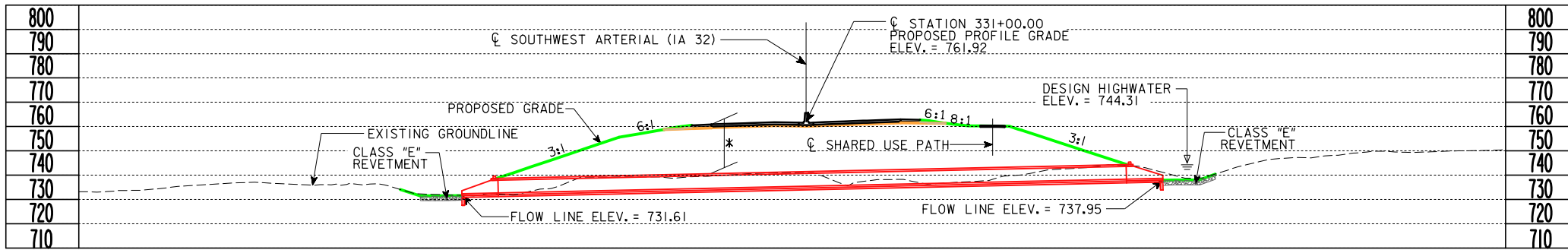
NOTE:
SEE SHEET D.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

STANDARDS:
FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS:

STANDARD	ISSUED	REVISED
PRCB G1-13	1-13	07-16
PRCB G2-13	1-13	07-16
PRCB 10-13	1-13	--
PES 2-13-T3	1-13	07-16
PES 3-13-T3	1-13	07-16
PEP 1-13	1-13	12-15

DESIGN FOR 33° SKEW (L.A.)
10'x6'x312'-11 PRECAST CONCRETE BOX CULVERT
GENERAL NOTES
STA. 331+00.00 MARCH, 2017
DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1417



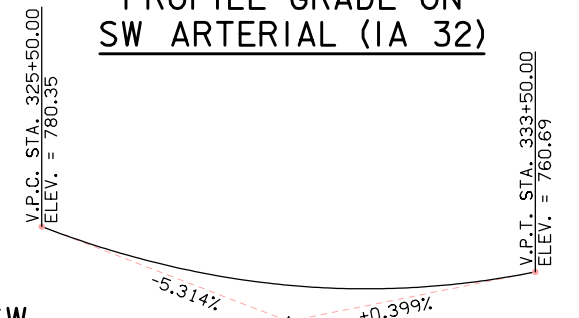
LONGITUDINAL SECTION ALONG CL BOX CULVERT

* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = 0.3"

BENCHMARK:

BM #14- 7" SPIKE IN CORNER POST 2000' SOUTH OF MILITARY ROAD ON EXTENSION OF DRIVE AT MT. ST. BERNARD ROAD AT NORTH-SOUTH FENCE / EAST-WEST FENCE T-INTERSECTION 3636697.07 NORTH, 5678865.76 EAST, ELEV. 769.84

PROFILE GRADE ON SW ARTERIAL (IA 32)



CURVE DATA SW ARTERIAL (IA 32)

ENTERING CURVE DATA (CURVE 21007)
P.I. STA. 334+23.45
DELTA = 28° 35' 02.91" (LT)
DEGREE = 1° 25' 56.62"
TANGENT = 1,019.00'
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RADIUS = 4,000.00'
EXTERNAL = 127.75'
LONG CHORD = 1,974.92'
MID. ORD. = 123.80'
P.C. STA. 324+04.45
P.T. STA. 344+00.00

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DRAINAGE AREA = 202 ACRES
DESIGN DISCHARGE, Q50 = 393 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 744.31

LOCATION

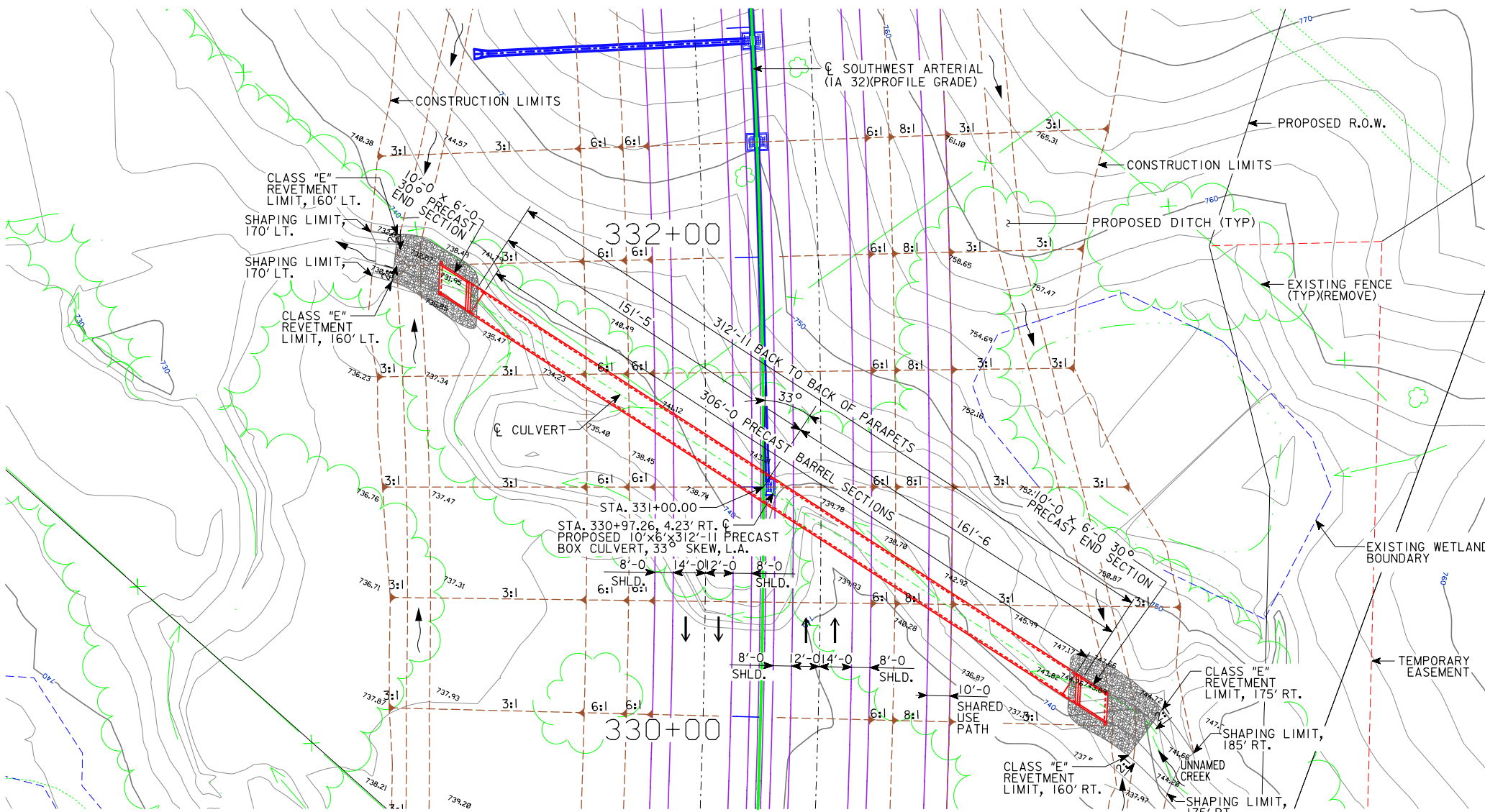
SW ARTERIAL (IA 32)
OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4379511°
LONG. -90.6886064°

TRAFFIC ESTIMATE

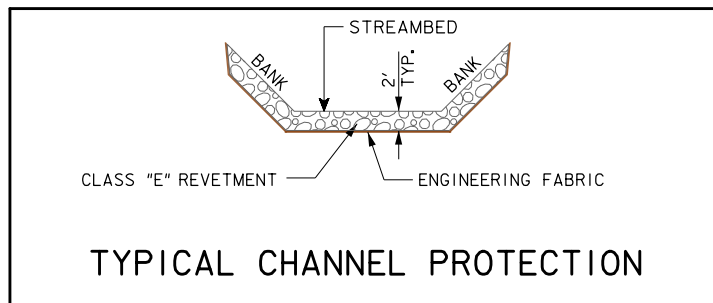
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	16,000	V.P.D.
	TRUCKS	7	%

PLAN NOTES

- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



SITUATION PLAN



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	120	110	75
OUTLET	100	90	65
TOTALS	220	200	140

* QUANTITY FOR EMBEDDED REVETMENT.

DESIGN FOR 33° SKEW (L.A.)
10'x6'x312'-11 PRECAST CONCRETE BOX CULVERT
PRECAST SITUATION PLAN
STA. 331+00.00 MARCH, 2017
DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1417



ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1517

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	225.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	120.0	
3	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	236.0	
4	2404-7775000	REINFORCING STEEL	LB	44,332.0	
5	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
6	2507-3250005	ENGINEERING FABRIC	SY	250.0	
7	2507-6800061	REVTMENT, CLASS E	TON	265.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1517

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "C.I.P. SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
3	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT) --
4	2404-7775000	REINFORCING STEEL --
5	2418-0000010	TEMPORARY STREAM DIVERSION SEE STANDARD ROAD PLAN EW-402.
6	2507-3250005	ENGINEERING FABRIC SEE "C.I.P. SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVTMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
7	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "C.I.P. SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVTMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (L.A)
**12'x8'x125'-0 REINFORCED
 CONCRETE BOX CULVERT**
QUANTITIES
 STA. 11+75.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1517

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A SINGLE 12' x 8' x 125'-0 REINFORCED CONCRETE BOX CULVERT SKEWED 30° LEFT AHEAD AT STATION 11+75.00 (CL US 61 CONNECTOR ROAD A).

THE DESIGN FILL HEIGHT IS 9'.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS A DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE CLASS 20 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF PROJECTS LISTED ON SHEET J.I

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

SEE SHEET J.I FOR TRAFFIC CONTROL PLANS.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

SUMMARY OF REINFORCING STEEL		
LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	2 AT 4,979	9,958
10'-0 END SECTION	2 AT 2,735	5,470
35'-0 BARREL SECTION	3 AT 9,572	28,716
5#1 x 3'-6 DOWEL BAR SET	4 AT 47	188
	TOTAL (LB)	44,332

CONCRETE PLACEMENT QUANTITIES					
LOCATION	FLOOR	WALLS	SLAB	TOTAL	
HEADWALL 30° SKEW	2 AT 21.9	2 AT 10.4	2 AT 1.8	68.2	
10'-0 END SECTION	2 AT 5.3	2 AT 4.2	2 AT 3.9	26.8	
35'-0 BARREL SECTION	3 AT 18.7	3 AT 14.8	3 AT 13.5	141.0	
	TOTAL (CY)	110.5	73.6	51.9	236.0

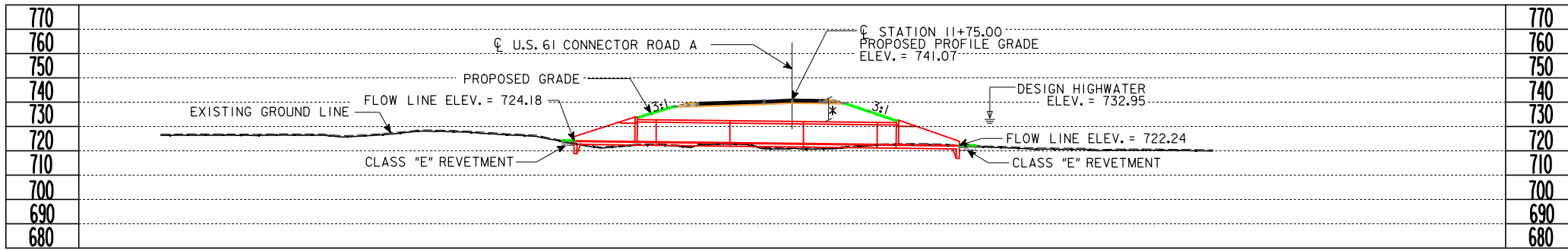
STANDARDS		
FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.		
STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 12-8-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-5-12	4-12	07-16

TRAFFIC CONTROL PLAN
NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET E.3 FOR ADDITIONAL GRADING PLAN INFORMATION.

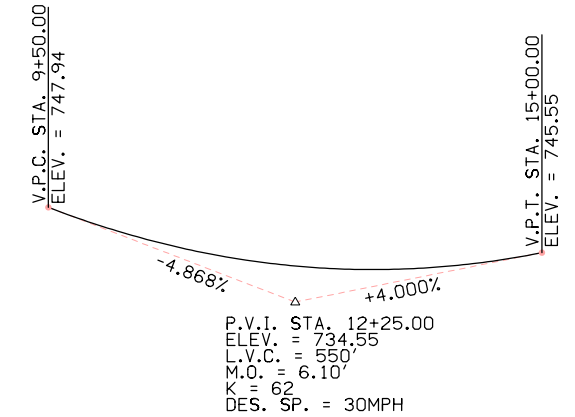
NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (L.A)
**12'x8'x125'-0 REINFORCED
 CONCRETE BOX CULVERT**
 GENERAL NOTES
 STA. 11+75.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1517



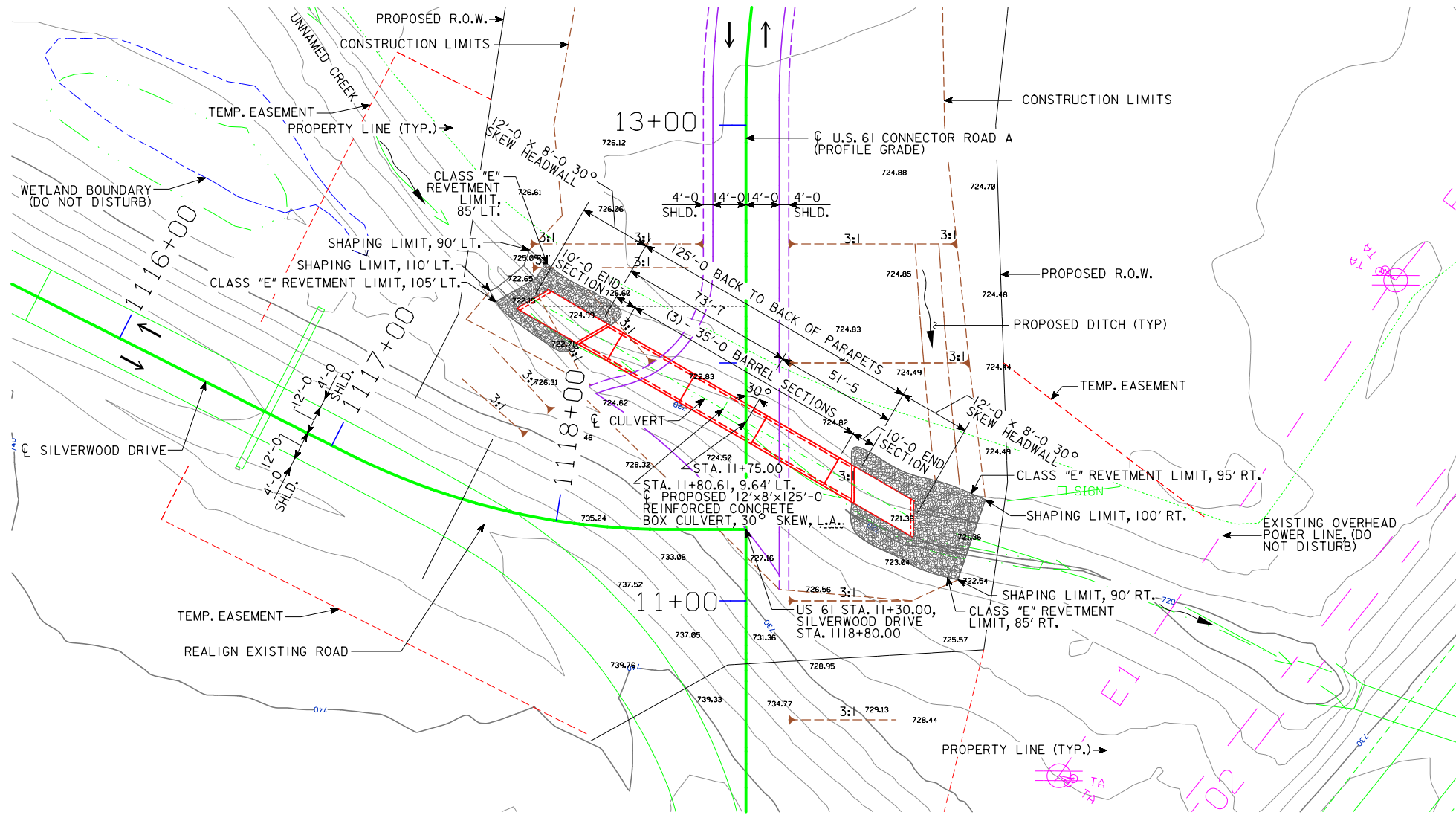
BENCHMARK:
 BM 61.1 - "X" CUT ON LIGHT POLE BASE AT INTERSECTION OF HWY 61 AND EAST TAMARACK DRIVE. 3631743.07 NORTH, 5679648.31 EAST, ELEV. 762.39
 BM 61.2 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-6TH POWER POLE NORTH OF EAST TAMARACK DRIVE. 3632616.75 NORTH, 5680247.46 EAST, ELEV. 725.65

PROFILE GRADE ON U.S. 61 CONN. ROAD A



LONGITUDINAL SECTION ALONG CL BOX CULVERT

* DESIGN FILL = 9'
 ANTICIPATED SETTLEMENT = 1"



U.S. 61 CONNECTOR ROAD A ALIGNMENT

U.S. 61 CONN. ROAD A TANGENT BETWEEN CURVES
 PT STA. 10+10.54
 PC STA. 13+11.56

HYDRAULIC DATA

DRAINAGE AREA = 613 ACRES
 DESIGN DISCHARGE, Q50 = 763 CFS
 DESIGN HIGH WATER ELEVATION, Q50 = 732.95

TRAFFIC ESTIMATE

2015 AADT	NA	V.P.D.
TRUCKS	NA	%
2030 AADT	3,300	V.P.D.
TRUCKS	7	%

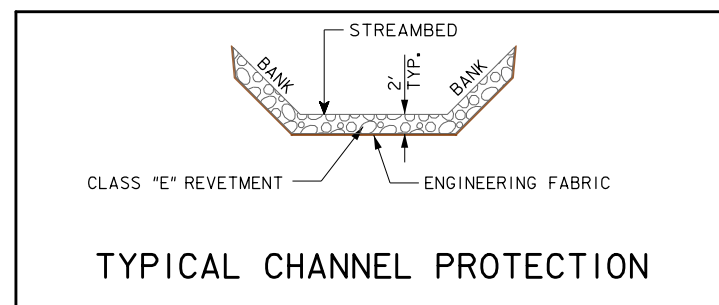
LOCATION

U.S. 61 CONNECTOR ROAD A OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 14
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4305329°
 LONG. -90.6890486°

PLAN NOTES

- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
- CALLOUTS BASED ON US 61 CONNECTOR ROAD A UNLESS OTHERWISE NOTED.

SITUATION PLAN



ESTIMATED REVETMENT QUANTITIES

LOCATION	REVTMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	85	80	55
OUTLET	180	170	115
TOTALS	265	250	170

* QUANTITY FOR EMBEDDED REVETMENT.



DESIGN FOR 30° SKEW (L.A.)
12'x8'x125'-0 REINFORCED CONCRETE BOX CULVERT
C.I.P. SITUATION PLAN
 STA. 11+75.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1517

ESTIMATED PRECAST CULVERT QUANTITIES (ALTERNATE)- DESIGN # 1517

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2102-0425070	SPECIAL BACKFILL	TON	160.0	
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	210.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	110.0	
4	2415-2111208	PRECAST CONCRETE BOX CULVERT, 12 FT. X 8 FT.	LF	126.0	
5	2415-2201208	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 12 FT. X 8 FT.	EACH	2.0	
6	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
7	2507-3250005	ENGINEERING FABRIC	SY	235.0	
8	2507-6800061	REVTMENT, CLASS E	TON	250.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1517

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-0425070	SPECIAL BACKFILL SEE GRANULAR BEDDING DETAILS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE SPECIAL BACKFILL.
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "PRECAST SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
3	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE 6" BEDDING.
4	2415-2111208	PRECAST CONCRETE BOX CULVERT, 12 FT. X 8 FT. - -
5	2415-2201208	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 12 FT. X 8 FT. - -
6	2418-0000010	TEMPORARY STREAM DIVERSION SEE STANDARD ROAD PLAN EW-402.
7	2507-3250005	ENGINEERING FABRIC SEE "PRECAST SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
8	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "PRECAST SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (L.A)
**12'x8'x134'-1 PRECAST
 CONCRETE BOX CULVERT**
QUANTITIES
 STA. 11+75.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1517

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO INSTALL A SINGLE 12'x8'x134'-1 PRECAST REINFORCED CONCRETE BOX CULVERT SKEWED 30° LEFT AHEAD AT STATION 11+75.00 (C US 61 CONNECTOR ROAD A).

UTILITY COMPANIES AND MUNICIPALITIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

THE PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 9 FEET.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR BEDDING DETAIL".

A MINIMUM OF 6 INCH OF GRANULAR MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF 3/8 INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE. THE 6 INCH GRANULAR BEDDING SHALL BE BID AS "SPECIAL BACKFILL".

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST BOX SECTIONS TO THE OFFICE OF BRIDGES AND STRUCTURES FOR ALL PROJECTS. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

- A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
- DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
- A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
- A DETAIL OF THE PRECAST CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE OFFICE OF BRIDGES AND STRUCTURES PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER OR OTHER EQUIVALENT SOFTWARE CAN BE USED TO DESIGN THE PRECAST BOX CULVERT BARREL SECTIONS, PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF 3/4 INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADIUS OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

SPECIFICATIONS:

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

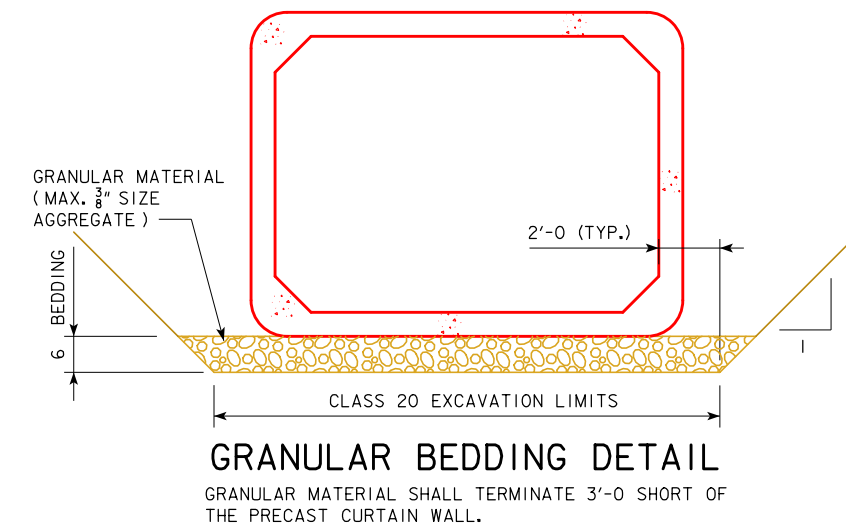
CONSTRUCTION:

IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010:

BAR REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'_c FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR END SECTION DESIGN $f'_c = 5$ KSI.



TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:

SEE SHEET E.3 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:

POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

STANDARDS:

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS:

STANDARD	ISSUED	REVISED
PRCB G1-13	1-13	07-16
PRCB G2-13	1-13	07-16
PRCB I2-13	1-13	--
PES 2-13-T3	1-13	07-16
PES 3-13-T3	1-13	07-16
PEP 1-13	1-13	12-15

DESIGN FOR 30° SKEW (L.A.)
**12'x8'x134'-1 PRECAST
CONCRETE BOX CULVERT**

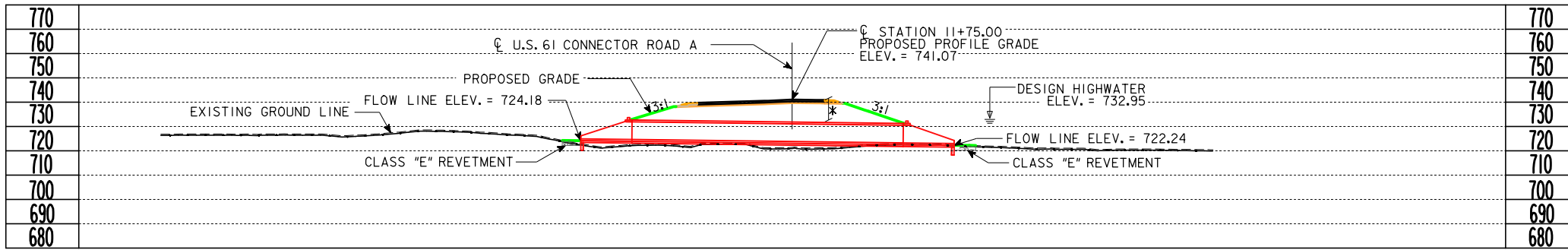
GENERAL NOTES

STA. 11+75.00

MARCH, 2017

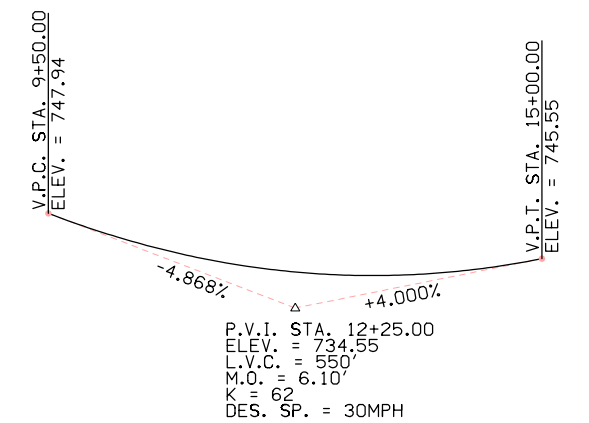
DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1517



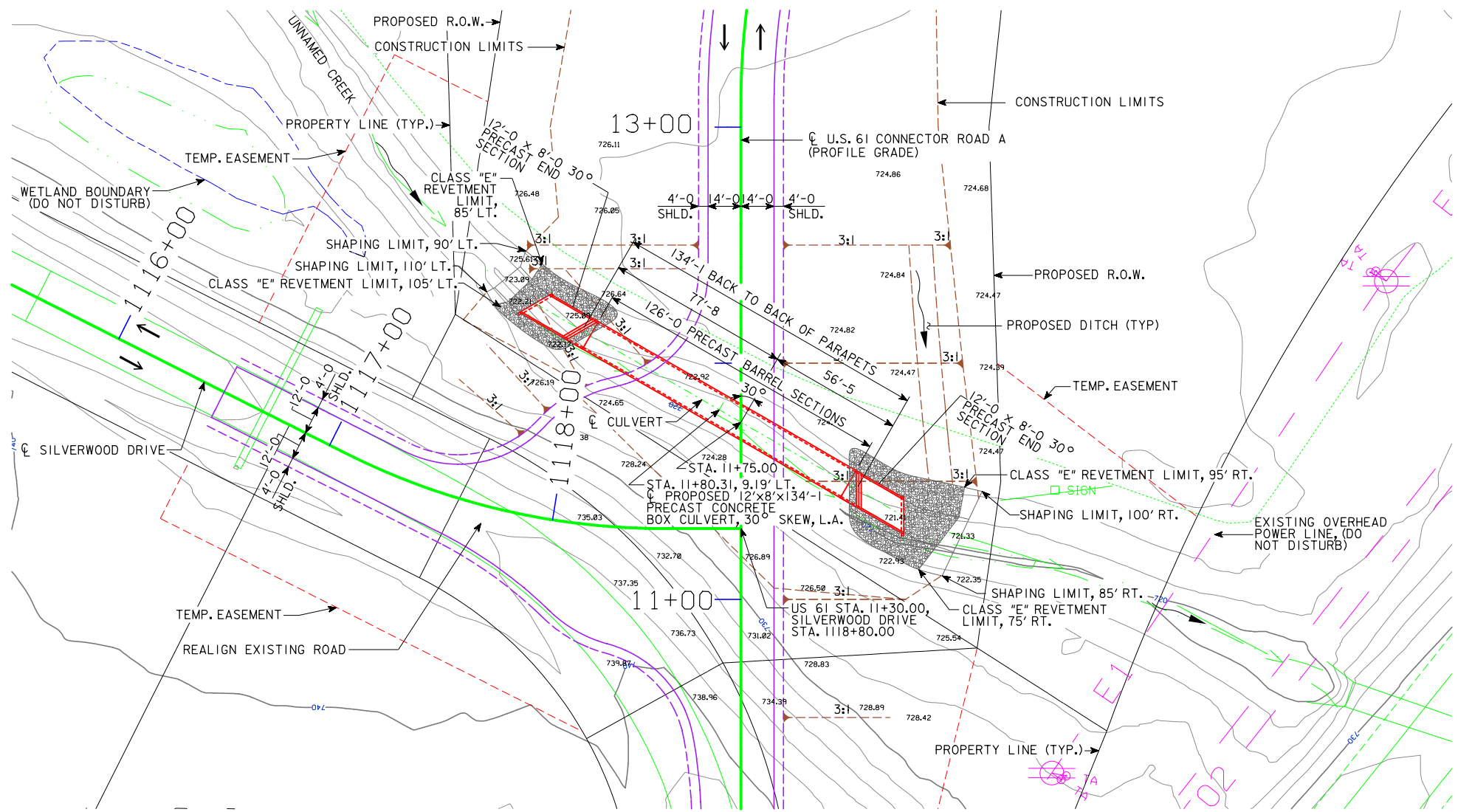
BENCHMARK:
 BM 61.1 - "X" CUT ON LIGHT POLE BASE AT INTERSECTION OF HWY 61 AND EAST TAMARACK DRIVE. 3631743.07 NORTH, 5679648.31 EAST, ELEV. 762.39
 BM 61.2 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-6TH POWER POLE NORTH OF EAST TAMARACK DRIVE. 3632616.75 NORTH, 5680247.46 EAST, ELEV. 725.65

PROFILE GRADE ON U.S. 61 CONN. ROAD A



LONGITUDINAL SECTION ALONG CL BOX CULVERT

* DESIGN FILL = 9'
 ANTICIPATED SETTLEMENT = 1"



U.S. 61 CONNECTOR ROAD A ALIGNMENT

U.S. 61 CONN. ROAD A TANGENT BETWEEN CURVES
 PT STA. 10+10.54
 PC STA. 13+11.56

HYDRAULIC DATA

DRAINAGE AREA = 613 ACRES
 DESIGN DISCHARGE, Q50 = 763 CFS
 DESIGN HIGH WATER ELEVATION, Q50 = 732.95

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	3,300	V.P.D.
	TRUCKS	7	%

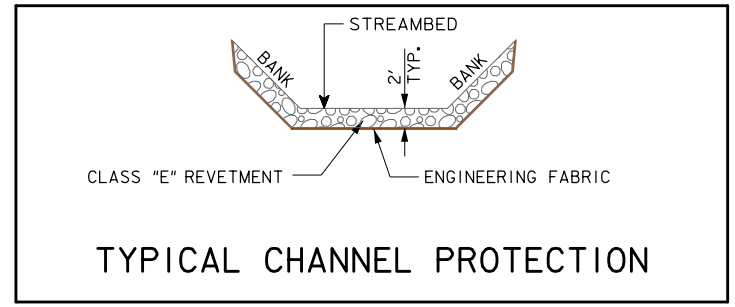
LOCATION

U.S. 61 CONNECTOR ROAD A OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 14
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4305329°
 LONG. -90.6890486°

PLAN NOTES

- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
- CALLOUTS BASED ON US 61 CONNECTOR ROAD A UNLESS OTHERWISE STATED.

SITUATION PLAN

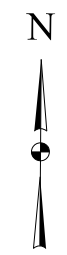


ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	90	85	55
OUTLET	160	150	100
TOTALS	250	235	155

* QUANTITY FOR EMBEDDED REVETMENT.

DESIGN FOR 30° SKEW (L.A.)
12'x8'x134'-1 PRECAST CONCRETE BOX CULVERT
PRECAST SITUATION PLAN
 STA. 11+75.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1517



ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1617

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	1,020.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	1185.0	
3	2402-2722000	EXCAVATION, CLASS 22	CY	55.0	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	363.4	
5	2404-7775000	REINFORCING STEEL	LB	65,089.0	
6	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
7	2507-3250005	ENGINEERING FABRIC	SY	665.0	
8	2507-6800061	REVTMENT, CLASS E	TON	715.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1617

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "C.I.P. SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
3	2402-2722000	EXCAVATION, CLASS 22 IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, THE CURTAIN WALL IS TO EXTENDED INTO THE ROCK A MINIMUM OF 6". SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT) --
5	2404-7775000	REINFORCING STEEL INCLUDES ADJUSTING 5t1, 5t2, 5u1, AND 6p1 CURTAIN WALL BARS, AS NECESSARY, TO ACCOMMODATE CHANGES IN CURTAIN WALL DEPTH IF ROCK IS ENCOUNTERED.
6	2418-0000010	TEMPORARY STREAM DIVERSION SEE STANDARD ROAD PLAN EW-402.
7	2507-3250005	ENGINEERING FABRIC SEE "C.I.P. SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
8	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "C.I.P. SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (R.A.)
**10'x8'x204'-0 REINFORCED
 CONCRETE BOX CULVERT**
 QUANTITIES

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1617

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A SINGLE 10' x 8' x 204'-0 REINFORCED CONCRETE BOX CULVERT SKEWED 30° RIGHT AHEAD AT STATION 1528+00.00 (☺ US RAMP A).

THE DESIGN FILL HEIGHT IS 21'.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS A DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE CLASS 20 AND CLASS 22 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF PROJECTS LISTED ON SHEET J.1

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

SEE SHEET J.1 FOR TRAFFIC CONTROL PLANS.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

SUMMARY OF REINFORCING STEEL

LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	2 AT 4,538	9,076
10'-0 END SECTION	2 AT 2,734	5,468
35'-0 BARREL SECTION	2 AT 9,569	19,138
38'-0 BARREL SECTION	3 AT 10,389	31,167
5" I x 3'-6 DOWEL BAR SET	6 AT 40	240
	TOTAL (LB)	65,089

CONCRETE PLACEMENT QUANTITIES

LOCATION	FLOOR	WALLS	SLAB	TOTAL
HEADWALL 30° SKEW	2 AT 17.9	2 AT 10.4	2 AT 1.6	59.8
10'-0 END SECTION	2 AT 5.8	2 AT 4.5	2 AT 4.6	29.8
35'-0 BARREL SECTION	2 AT 20.2	2 AT 15.6	2 AT 16.2	104.0
38'-0 BARREL SECTION	3 AT 22.0	3 AT 17.0	3 AT 17.6	169.8
	TOTAL (CY)	153.8	112.0	97.6
				363.4

STANDARDS

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.

STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 10-8-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-6-12	4-12	07-16

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET K.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (R.A.)
**10'x8'x204'-0 REINFORCED
CONCRETE BOX CULVERT**

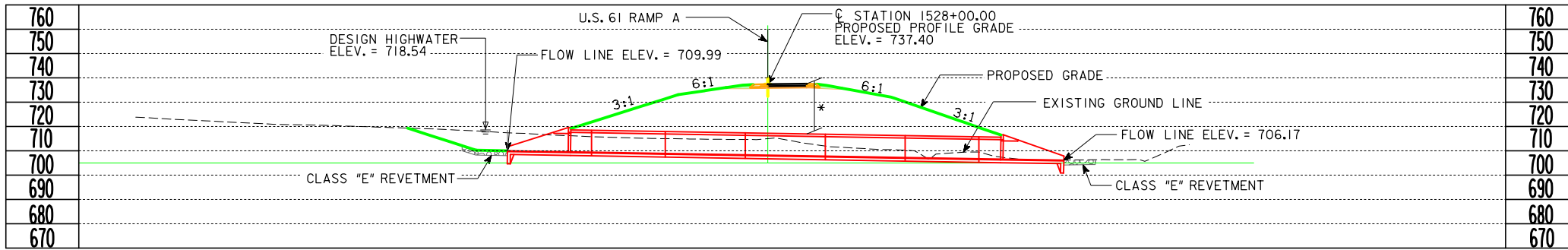
GENERAL NOTES

STA. 1528+00.00

MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1617



LONGITUDINAL SECTION ALONG ϕ BOX CULVERT

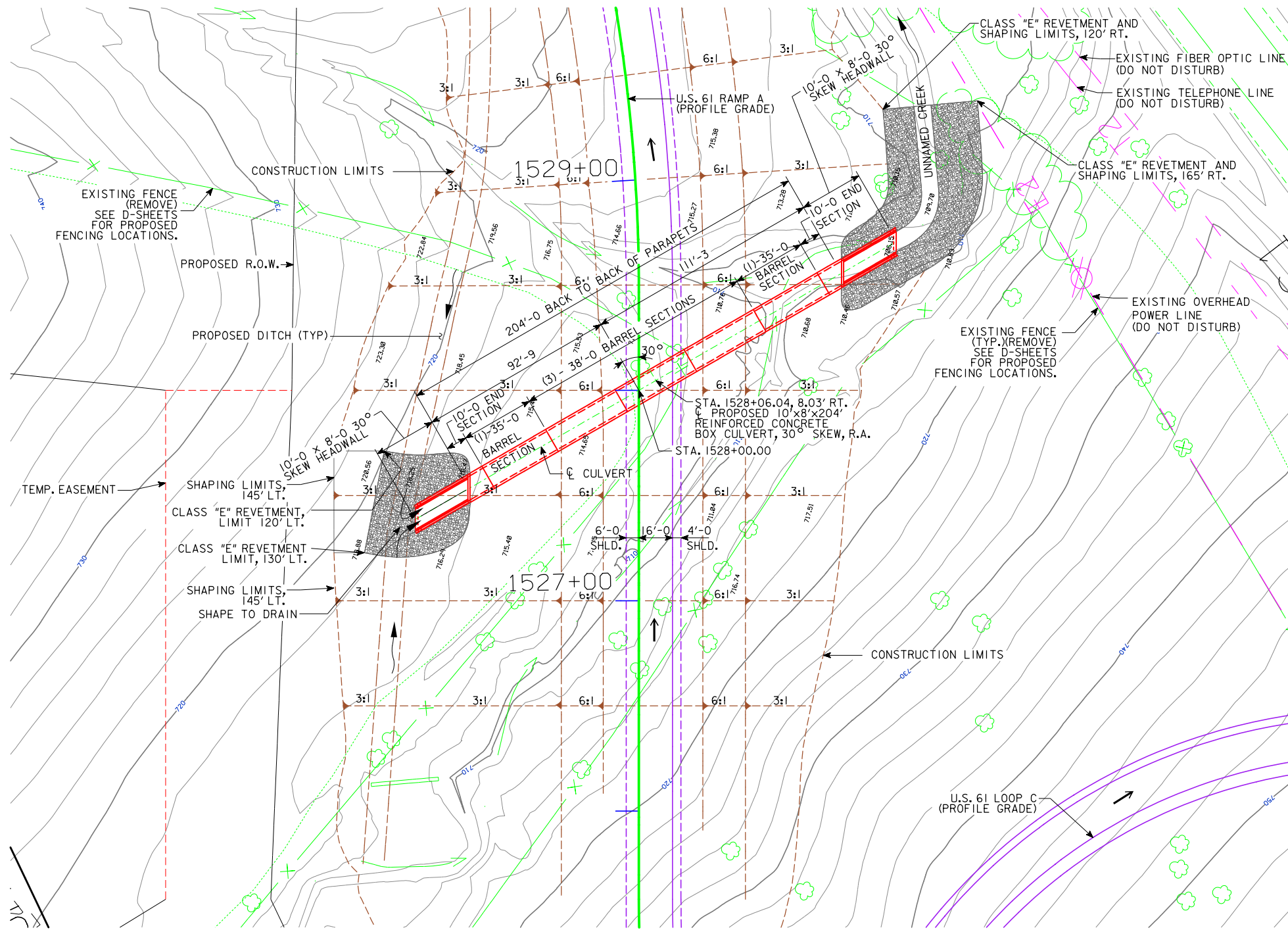
* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = NEGLIGIBLE

BENCHMARK:

BM 61.4 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-4TH POWER POLE SOUTH OF COUNTY ROAD Y38. 3634165.11 NORTH, 5681433.36 EAST, ELEV. 752.87
GO 36 - REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61-108' (+/-) SOUTH OF OLDE DAVENPORT ROAD CENTERLINE, 17.5' (+/-) NORTHWEST OF EAST "DO NOT ENTER" SIGN. 3634727.74 NORTH, 5682148.64 EAST, ELEV. 727.86

PROFILE GRADE ON U.S. 61 RAMP A

V.P.T. STA. 1520+70.00 ELEV. = 759.30
-3.00%
V.P.C. STA. 1530+75.00 ELEV. = 729.15



U.S. 61 RAMP A ALIGNMENT

U.S. 61 RAMP A TANGENT BETWEEN CURVES
PT STA. 1525+58.12
PC STA. 1528+46.71

HYDRAULIC DATA

DRAINAGE AREA = 347 ACRES
DESIGN DISCHARGE, Q50 = 613 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 718.54

TRAFFIC ESTIMATE

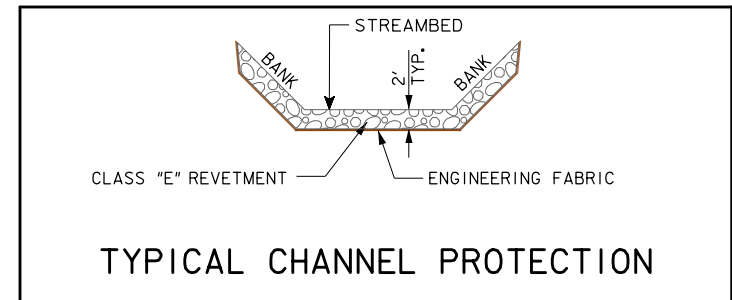
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	6,200	V.P.D.
	TRUCKS	7	%

LOCATION

U.S. 61 RAMP A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4358319°
LONG. -90.6831264°

PLAN NOTES

- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	235	215	150
OUTLET	480	450	300
TOTALS	715	665	450

* QUANTITY FOR EMBEDDED REVETMENT.

SITUATION PLAN

DESIGN FOR 30° SKEW (R.A.)
10'x8'x204'-0 REINFORCED CONCRETE BOX CULVERT
C.I.P. SITUATION PLAN
STA. 1528+00.00
DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1617
MARCH, 2017



ESTIMATED PRECAST CULVERT QUANTITIES (ALTERNATE)- DESIGN # 1617

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2102-0425070	SPECIAL BACKFILL	TON	135.0	
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	970.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	1155.0	
4	2402-2722000	EXCAVATION, CLASS 22	CY	95.0	
5	2415-2111008	PRECAST CONCRETE BOX CULVERT, 10 FT. X 8 FT.	LF	207.0	
6	2415-2201008	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 8 FT.	EACH	2.0	
7	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
8	2507-3250005	ENGINEERING FABRIC	SY	660.0	
9	2507-6800061	REVTMENT, CLASS E	TON	710.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1617

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-0425070	SPECIAL BACKFILL SEE GRANULAR BEDDING DETAILS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE SPECIAL BACKFILL.
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "PRECAST SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
3	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE 6" BEDDING.
4	2402-2722000	EXCAVATION, CLASS 22 IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO 6" BELOW THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, EXCAVATION SHALL ACCOMMODATE THE NEW CURTAIN WALL. SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
5	2415-2111008	PRECAST CONCRETE BOX CULVERT, 10 FT. X 8 FT. --
6	2415-2201008	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 8 FT. --
7	2418-0000010	TEMPORARY STREAM DIVERSION SEE STANDARD ROAD PLAN EW-402.
8	2507-3250005	ENGINEERING FABRIC SEE "PRECAST SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
9	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "PRECAST SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (R.A.)
**10'x8'x214'-0 PRECAST
 CONCRETE BOX CULVERT**
QUANTITIES

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1617

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO INSTALL A SINGLE 10'x8'x214'-0 PRECAST REINFORCED CONCRETE BOX CULVERT SKEWED 30° RIGHT AHEAD AT STATION 1528+00.00 (½ US 61 RAMP A).

UTILITY COMPANIES AND MUNICIPALITIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

THE PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 21 FEET.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR BEDDING DETAIL".

A MINIMUM OF 6 INCH OF GRANULAR MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF ¾ INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE. THE 6 INCH GRANULAR BEDDING SHALL BE BID AS "SPECIAL BACKFILL".

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST BOX SECTIONS TO THE OFFICE OF BRIDGES AND STRUCTURES FOR ALL PROJECTS. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

- A. A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
- B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
- C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
- D. A DETAIL OF THE PRECAST CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE OFFICE OF BRIDGES AND STRUCTURES PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER OR OTHER EQUIVALENT SOFTWARE CAN BE USED TO DESIGN THE PRECAST BOX CULVERT BARREL SECTIONS, PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF ¼ INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADIUS OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

SPECIFICATIONS:

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

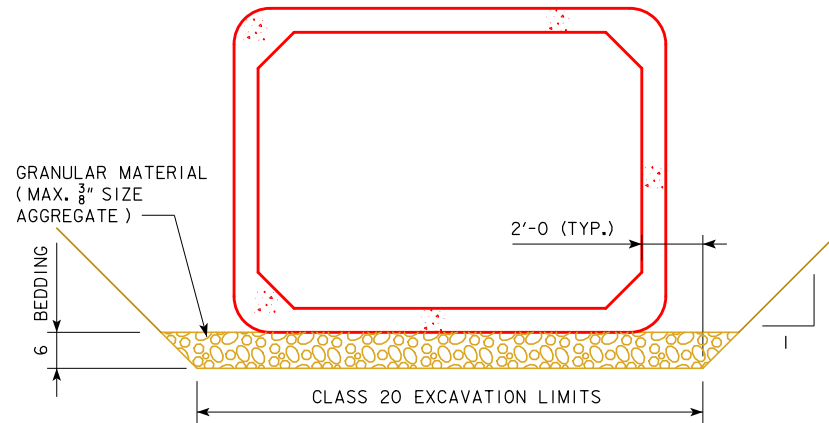
CONSTRUCTION:

IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010:

BAR REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR END SECTION DESIGN f'c = 5 KSI.



GRANULAR BEDDING DETAIL

GRANULAR MATERIAL SHALL TERMINATE 3'-0 SHORT OF THE PRECAST CURTAIN WALL.

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:

SEE SHEET K.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:

POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

STANDARDS:

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS:

STANDARD	ISSUED	REVISED
PRCB G1-13	1-13	07-16
PRCB G2-13	1-13	07-16
PRCB 10-13	1-13	--
PES 2-13-T3	1-13	07-16
PES 3-13-T3	1-13	07-16
PEP 1-13	1-13	12-15

DESIGN FOR 30° SKEW (R.A.)
10'x8'x214'-0 PRECAST CONCRETE BOX CULVERT

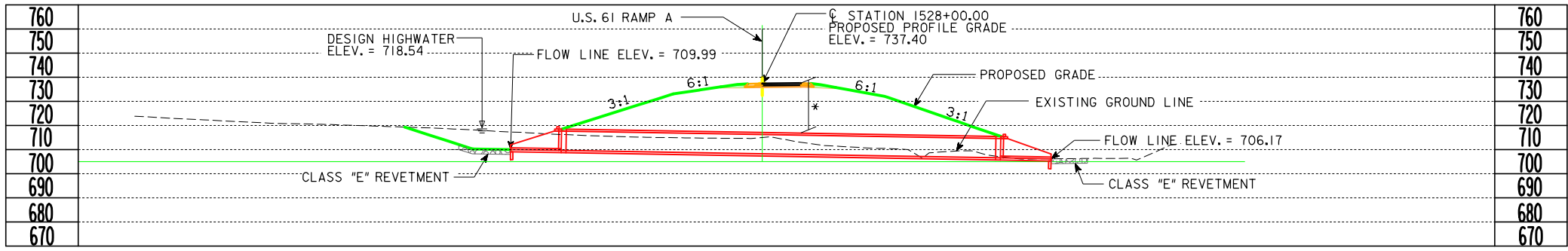
GENERAL NOTES

STA. 1528+00.00

MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1617



BENCHMARK:
 BM 61.4 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-4TH POWER POLE SOUTH OF COUNTY ROAD Y38. 3634165.11 NORTH, 5681433.36 EAST, ELEV. 752.87
 GO 36 - REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61-108' (+/-) SOUTH OF OLDE DAVENPORT ROAD CENTERLINE, 17.5' (+/-) NORTHWEST OF EAST "DO NOT ENTER" SIGN. 3634727.74 NORTH, 5682148.64 EAST, ELEV. 727.86

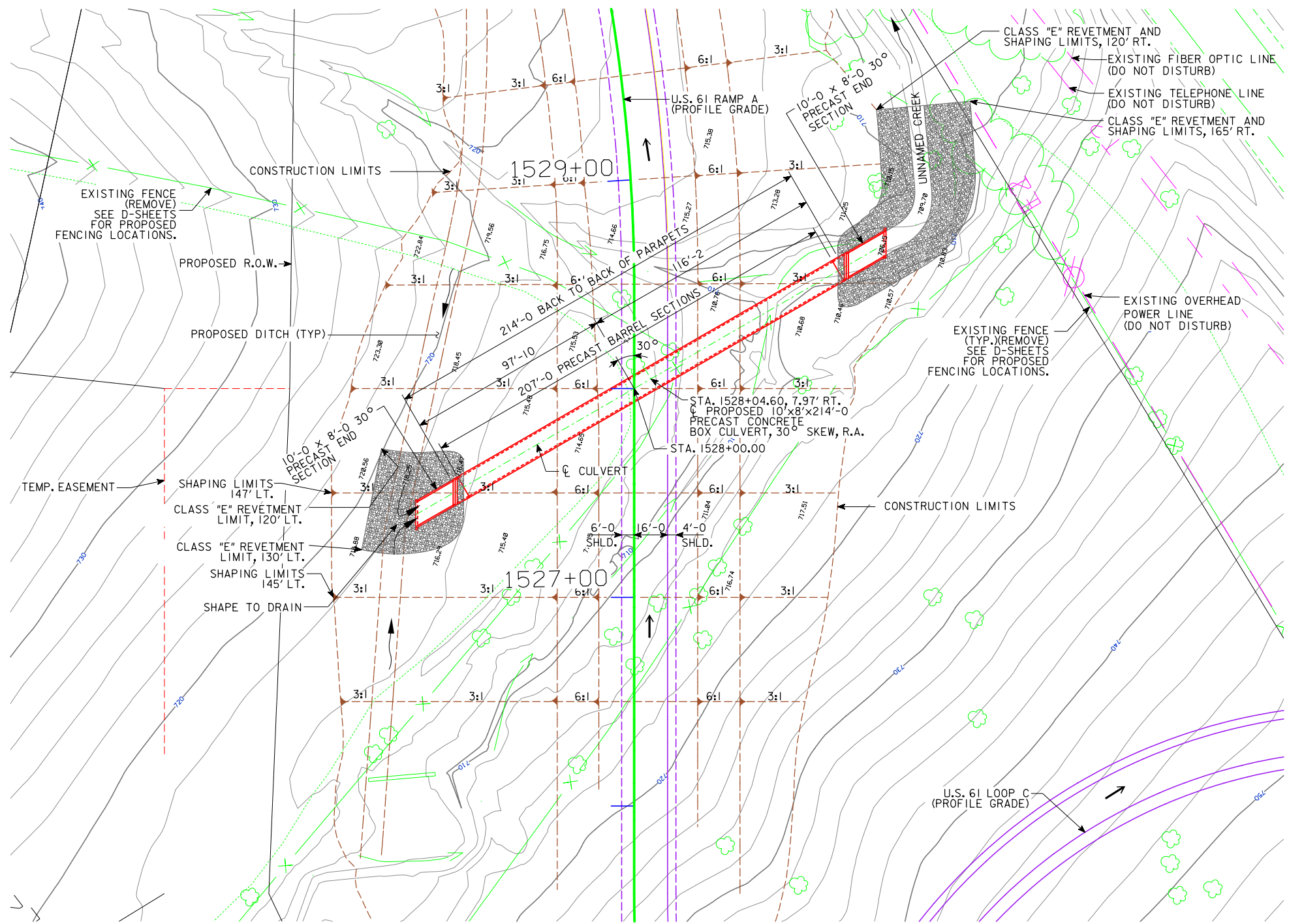
PROFILE GRADE ON U.S. 61 RAMP A

LONGITUDINAL SECTION ALONG ϕ BOX CULVERT
 * DESIGN FILL = 21'
 ANTICIPATED SETTLEMENT = NEGLIGIBLE

V.P.T. STA. 1520+70.00
 ELEV. = 759.30

-3.00%

V.P.C. STA. 1530+75.00
 ELEV. = 729.15



U.S. 61 RAMP A ALIGNMENT HYDRAULIC DATA
 U.S. 61 RAMP A TANGENT BETWEEN CURVES
 PT STA. 1525+58.12
 PC STA. 1528+46.71

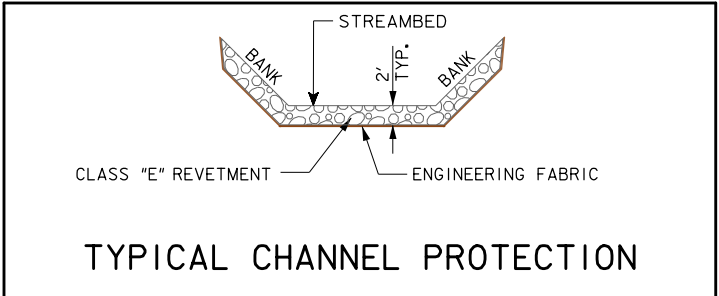
TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	6,200	V.P.D.
	TRUCKS	7	%

LOCATION
 U.S. 61 RAMP A OVER UNNAMED CREEK
 T-88N, R-2E
 SECTION 13
 TABLE MOUND TWP.
 DUBUQUE COUNTY
 CITY OF DUBUQUE
 LAT. 42.4358319°
 LONG. -90.6831264°

PLAN NOTES

- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	240	220	150
OUTLET	470	440	295
TOTALS	710	660	445

* QUANTITY FOR EMBEDDED REVETMENT

DESIGN FOR 30° SKEW (R.A.)
10'x8'x214'-0 PRECAST CONCRETE BOX CULVERT
PRECAST SITUATION PLAN
 STA. 1528+00.00
 DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1617

SITUATION PLAN

ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1717

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	85.0	
2	2401-6750001	REMOVALS, AS PER PLAN	LS	1.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	80.0	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	49.7	
5	2404-7775000	REINFORCING STEEL	LB	7,920.0	
6	2507-3250005	ENGINEERING FABRIC	SY	85.0	
7	2507-6800061	REVTMENT, CLASS E	TON	95.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1717

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE SITUATION PLAN. SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2401-6750001	REMOVALS, AS PER PLAN INCLUDES ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO REMOVE AND OFF-SITE DISPOSE OF EXISTING CULVERT HEADWALL AS SHOWN IN THESE PLANS. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO MATERIAL NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO ADDITIONAL COST.
3	2402-2720000	EXCAVATION, CLASS 20 INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT) INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED.
5	2404-7775000	REINFORCING STEEL --
6	2507-3250005	ENGINEERING FABRIC SEE "SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
7	2507-6800061	REVTMENT, CLASS E REVTMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 33° SKEW (R.A.)
**6'x6' REINFORCED CONCRETE
 BOX CULVERT EXTENSION**
QUANTITIES
 STA. 4531+55.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 4 FILE NO. 30467 DESIGN NO. 1717

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A C.I.P. EXTENSION TO AN EXISTING SINGLE 6' x 6' REINFORCED CONCRETE BOX CULVERT SKEWED 33° RIGHT AHEAD AT STATION 4531+55.00 (Q US 61 RAMP D).

FAINT LINES ON PLANS INDICATE EXISTING STRUCTURE.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

THE R.C.B. CULVERT EXTENSION SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 22 FEET. THIS DESIGN IS BASED ON LOAD AND RESISTANCE FACTOR DESIGN, ACCORDING TO THE 2010 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

VERTICAL EARTH PRESSURE, EV=0.120 kcf.

HORIZONTAL EARTH PRESSURE, EHmax = 0.060 kcf MAX, EHmin = 0.030 kcf.

THE CONTRACTOR MAY SUBMIT ALTERNATE FROST TROUGH DIMENSIONS FOR APPROVAL. ANY ADDITIONAL COSTS DUE TO CHANGE IN THE FROST TROUGH DIMENSIONS IS TO BE PAID FOR BY THE CONTRACTOR.

FLOOR OF BARREL IS TO BE FINISHED SMOOTH. SIDES OF FOOTING ARE TO BE FORMED TO INSURE CORRECT LINE AND GRADE.

THE PERMISSIBLE CONSTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED AT THE CONTRACTOR'S OPTION WITH ENGINEER'S APPROVAL.

THE VERTICAL BARS IN THE WALLS MAY BE SPLICED ABOVE THE FOOTING AT THE CONTRACTOR'S OPTION AS FOLLOWS:

BAR SIZE NUMBER	4	5	6	7	8
MINIMUM SPLICE LENGTH	17"	21"	31"	41"	51"

THIS SPLICE, IF USED WILL BE AT THE CONTRACTOR'S EXPENSE.

METAL BAR CHAIRS SPACED AT NOT OVER 3'-0 C.-C. IN EITHER DIRECTION ARE TO BE USED TO SUPPORT ALL SLAB AND FLOOR STEEL AS OUTLINED IN THE STANDARD SPECIFICATIONS.

THE REINFORCEMENT SUPPLIED FOR THIS STRUCTURE SHALL BE GRADE 60. REINFORCING BAR CLEARANCES WILL BE AS FOLLOWS:

EDGE CLEARANCES: 2" EXCEPT
 TOP OF FLOOR 2 1/4" TO NEAR TRANSV. REINF. BAR
 BOTTOM OF FLOOR 3 1/2" TO NEAR TRANSV. REINF. BAR
 END CLEARANCES:
 VERTICAL TOP 2"
 VERTICAL BOTTOM 3" OR 3 1/2" IF OVERALL HEIGHT OF THE CULVERT IS NOT TO A FULL INCH
 TRANSVERSE 2"

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

CLASS 20 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "C.I.P. SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

CLASS 20 EXCAVATION MATERIAL UNSUITABLE FOR BACKFILLING SHALL BE DISPOSED OF IN A MANNER THAT WILL LEAVE THE SITE IN A NEAT CONDITION.

THE PRICE BID FOR "REMOVALS AS PER PLAN" SHALL INCLUDE THE COST FOR REMOVALS OF PORTIONS OF THE EXISTING CULVERT, AND THE SETTING OF THE DOWEL REINFORCING BARS INTO EXISTING CONCRETE.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION IN RELATION TO EXISTING PORTIONS OF THE STRUCTURE SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

REMOVAL OF THE EXISTING CULVERT SHALL BE ON A VERTICAL PLANE PARALLEL WITH AND AT THE FRONT FACE OF THE EXISTING PARAPET, AND TO THE WIDTH OF THE FLOOR OF THE PROPOSED EXTENSION. THE WALLS SHALL BE CUT NORMAL TO THE BARREL WALLS AND AS SHOWN ON THE "PART REMOVAL PLAN". THE REMOVAL LINE SHALL BE INITIATED WITH A 2" ± DEEP SAW CUT ON THE TOP AND BOTH SIDES OF EACH WALL, AND ACROSS THE TOP OF THE FLOOR. THIS SAW CUT SHOULD CUT THRU ANY EXISTING LONGITUDINAL REINFORCING THEREBY FACILITATING A NEAT NON-SPALLED BREAK LINE. IF EXISTING TOP OF PARAPETS WILL BE WITHIN 0'-6 OF PROPOSED SUBGRADE ELEVATION, THE PARAPETS SHALL BE REMOVED DOWN TO AN ELEVATION 1" ± ABOVE THE TOP OF THE EXISTING SLAB. ANY EXISTING PARAPET VERTICAL BARS EXPOSED DURING PARAPET REMOVAL SHALL BE CUT OFF FLUSH WITH THE PARAPET REMOVAL LINE AND PAINTED WITH TWO COATS OF ZINC RICH PAINT.

ALL REMOVALS SHALL BE CAREFULLY ACCOMPLISHED AND ANY CONCRETE DAMAGED BY THE CONTRACTOR THAT IS NOT TO BE REMOVED SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE STATE. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.

THE PROPOSED CULVERT EXTENSION SHALL ABUT AGAINST THE FRONT FACE OF THE EXISTING PARAPET. 5z1 x 2'-6 DOWEL REINFORCING BARS WITH A 10" MINIMUM EMBEDMENT INTO EXISTING CONCRETE SHALL BE SET AROUND THE ENTIRE PERIPHERY OF THE EXISTING CULVERT. 5z1 DOWEL REINFORCING BARS SHALL BE CENTERED IN THE EXISTING SLAB, WALLS AND FLOOR. 5z1 DOWEL REINFORCING BARS SHALL BE AT 1'-0 MAXIMUM SPACING C.-C. OF DOWELS. 5z1 DOWEL REINFORCING BARS SHALL BE SET WITH POLYMER GROUT IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS, AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

SEE SHEET J.1 FOR TRAFFIC CONTROL PLANS

THE ROADWAY WILL BE OPEN TO TRAFFIC DURING CONSTRUCTION.

SINCE THE HIGHWAY WILL NOT BE CLOSED TO TRAFFIC DURING THIS CONSTRUCTION, THE CONTRACTOR MAY FEEL TEMPORARY SHORING (SHEET PILE OR OTHER) IS NECESSARY TO ENSURE THAT THE SHOULDER WILL NOT SLOUGH IN WHILE CULVERT IS BEING EXTENDED. HOWEVER, IF FOR ANY REASON SUCH SHORING IS DEEMED NECESSARY, THE CONTRACTOR WILL SUBMIT THE SHORING PLAN TO THE ENGINEER FOR APPROVAL. COST OF SHORING IF REQUIRED WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO DIRECT PAYMENT WILL BE MADE. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07, OF THE STANDARD SPECIFICATIONS, STILL APPLIES.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

TRAFFIC WILL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS SHOWN IN THESE PLANS.

TRAFFIC CONTROL ADJACENT TO THE CULVERT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR CONSTRUCTING THE CULVERT AND IS TO COORDINATE CONSTRUCTION OF THE CULVERT WITH THE CONTRACTOR DOING THE GRADING.

ANY DIMENSIONAL TRANSITION REQUIRED BETWEEN EXISTING STRUCTURE AND THE EXTENSION SHALL BE MADE IN THE FIRST 1'-0 OF NEW WORK.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION PROJECTS LISTED ON SHEET J.1

SPECIFICATIONS:

DESIGN: AASHTO LRFD 5th Ed, SERIES OF 2010.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5th Ed, SERIES OF 2010. REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60. CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4.0 KSI.

LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	1 AT 2,455	2,455
12'-0 END SECTION	1 AT 1,519	1,519
26'-0 BARREL SECTION	1 AT 3,291	3,291
5r1 x 3'-6 DOWEL BAR SET	1 AT 26	26
BELL JOINTS	1 AT 629	629
	TOTAL (LB)	7,920

LOCATION	FLOOR	WALLS	SLAB	TOTAL	
HEADWALL 30° SKEW	1 AT 8.4	1 AT 5.7	1 AT 1.2	15.3	
12'-0 END SECTION	1 AT 3.4	1 AT 3.8	1 AT 2.6	9.8	
26'-0 BARREL SECTION	1 AT 7.4	1 AT 8.1	1 AT 5.7	21.2	
BELL JOINTS	1 AT 1.3	1 AT 1.0	1 AT 1.1	3.4	
	TOTAL (CY)	20.5	18.6	10.6	49.7

STANDARDS

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.

STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 6-6-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-8-12	4-12	07-16
CBJ 2-12	4-12	07-13
CBJ 4-12	4-12	

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

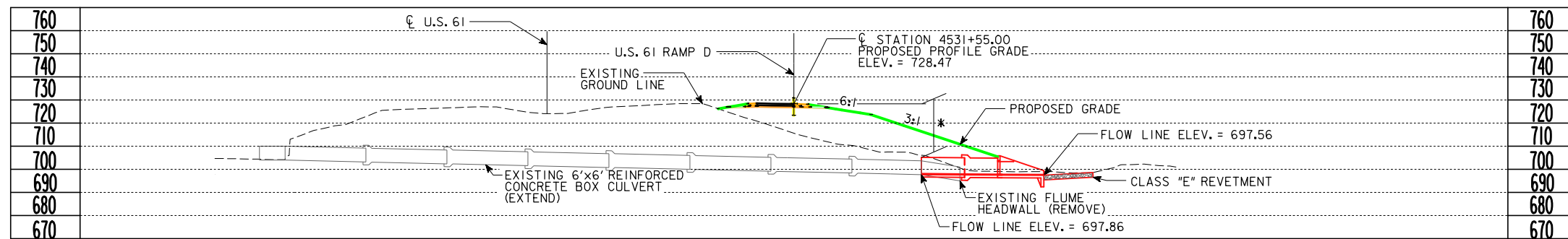
NOTE:
SEE SHEET K.5 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN HISTORY AT THIS SITE
(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
2364	ORIGINAL DESIGN
1717	CULVERT EXTENSION

DESIGN FOR 33° SKEW (R.A.)
6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION
GENERAL NOTES
 STA. 4531+55.00 MARCH, 2017
DUBUQUE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 4 FILE NO. 30467 DESIGN NO. 1717



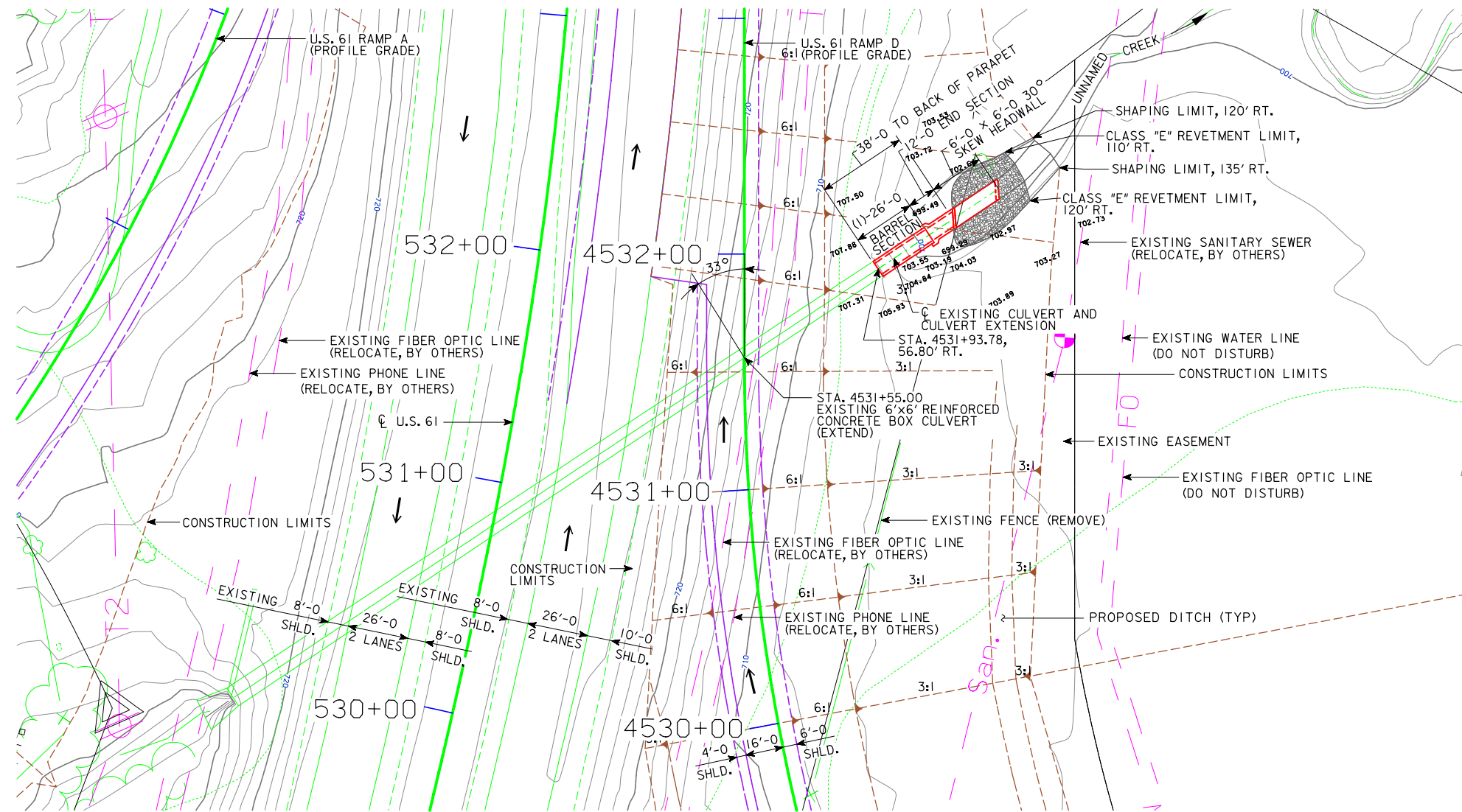
LONGITUDINAL SECTION ALONG CL BOX CULVERT

* DESIGN FILL = 22'
ANTICIPATED SETTLEMENT = 0.5"

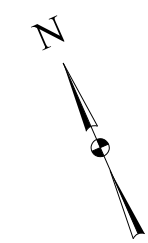
BENCHMARK:
GO 36 - REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61, 108' (+/-) SOUTH OF OLDE DAVENPORT ROAD CENTERLINE, 17.5' (+/-) NORTHWEST OF EAST "DO NOT ENTER" SIGN. 3634727.74 NORTH, 5682148.64 EAST, ELEV. 727.86.
BM 61.5 - 12" SPIKE WEST SIDE POWER POLE EAST SIDE OF HWY 61-3RD POWER POLE NORTH OF OLDE DAVENPORT ROAD. 3634933.50 NORTH, 5682309.86 EAST, ELEV. 722.79.

PROFILE GRADE ON U.S. 61 RAMP D

V.P.T. STA. 4527+50.00 ELEV. = 725.75
0.670%
V.P.C. STA. 4531+87.06 ELEV. = 728.68



SITUATION PLAN



**CURVE DATA
U.S. 61 RAMP D**

ENTERING CURVE DATA (CURVE 20403)
P.I. STA. 4529+44.07
DELTA = 29° 37' 32.60" (RT)
DEGREE = 6° 51' 42.37"
TANGENT = 220.82'
LENGTH = 431.75'
RADIUS = 835.00'
EXTERNAL = 28.70'
LONG CHORD = 426.96'
MID. ORD. = 27.75'
P.C. STA. 4527+23.25
P.T. STA. 4531+55.00

HYDRAULIC DATA

DRAINAGE AREA = 367 ACRES
DESIGN DISCHARGE, Q50 = 638 CFS

LOCATION

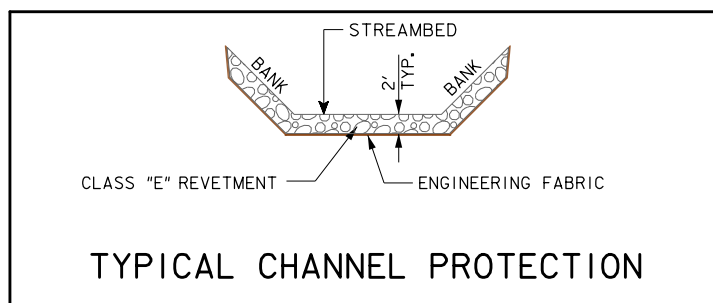
U.S. 61 RAMP D OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4358452°
LONG. -90.6807450°

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	6,100	V.P.D.
	TRUCKS	7	%

PLAN NOTES

- DRAINAGE THROUGH EXISTING CULVERT/CHANNEL MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.
- SEE SHEET D.1 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
- CALLOUTS BASED ON U.S. 61 RAMP D STATIONING UNLESS OTHERWISE STATED.
- BELL JOINTS SHALL BE PLACED ON THE UPSTREAM END OF THE BARREL SECTIONS TO MATCH EXISTING PLANS.

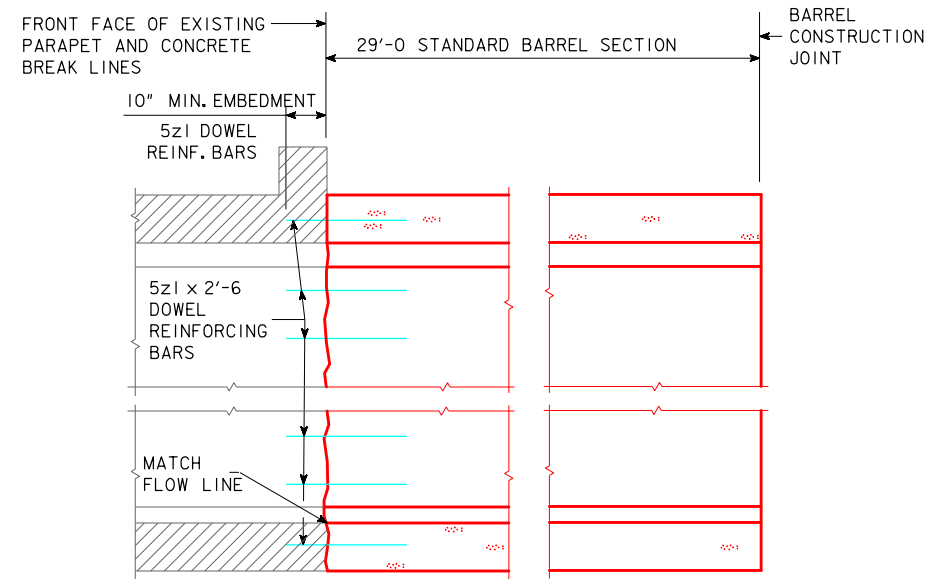


ESTIMATED REVETMENT QUANTITIES

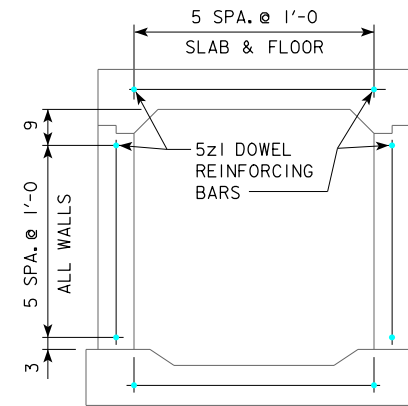
LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	--	--	--
OUTLET	95	85	60
TOTALS	95	85	60

* QUANTITY FOR EMBEDDED REVETMENT.

DESIGN FOR 33° SKEW (R.A.)
6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION
SITUATION PLAN
STA. 4531+55.00
DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 4 FILE NO. 30467 DESIGN NO. 1717

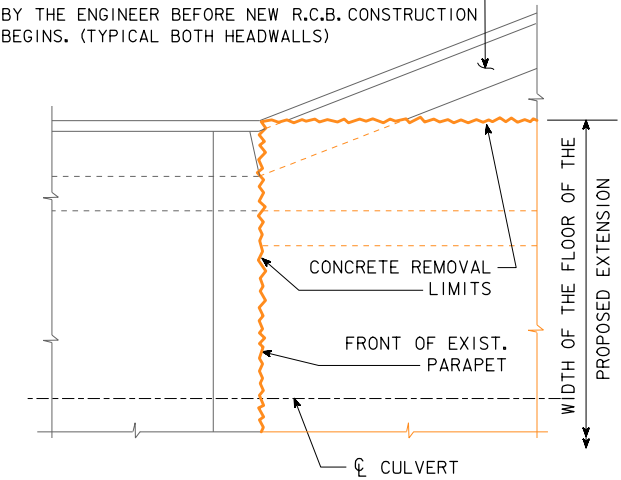


LONGITUDINAL WALL SECTION
(SHOWING 5z1 DOWELS)

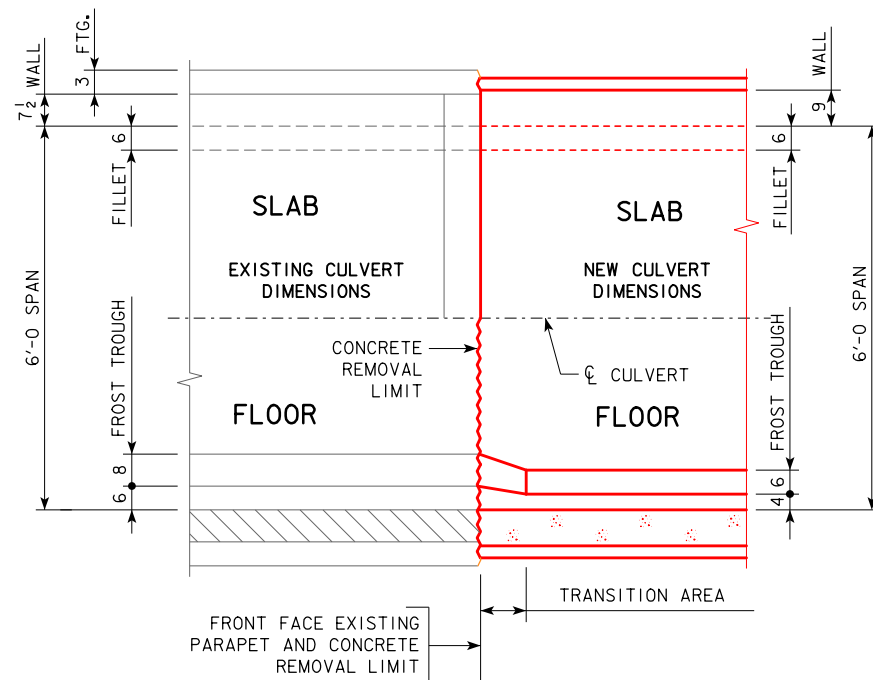


SECTION NEAR EXTENSION
(SHOWING SPACING OF 5z1 DOWEL REINFORCING BARS)

THE EXISTING WINGWALL MAY BE REMOVED AS NECESSARY TO FACILITATE NEW R.C.B. CONSTRUCTION. THE CONTRACTOR'S SCHEME FOR MAINTAINING STABILITY OF PORTIONS OF WINGWALLS NOT REMOVED SHALL BE APPROVED BY THE ENGINEER BEFORE NEW R.C.B. CONSTRUCTION BEGINS. (TYPICAL BOTH HEADWALLS)

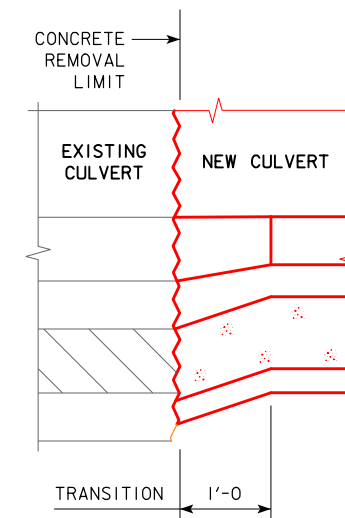


PART REMOVAL PLAN



CONCRETE TRANSITION DETAILS
(PLAN VIEW)

NOTE: CONTRACTOR SHALL FIELD VERIFY EXISTING CULVERT DIMENSIONS.



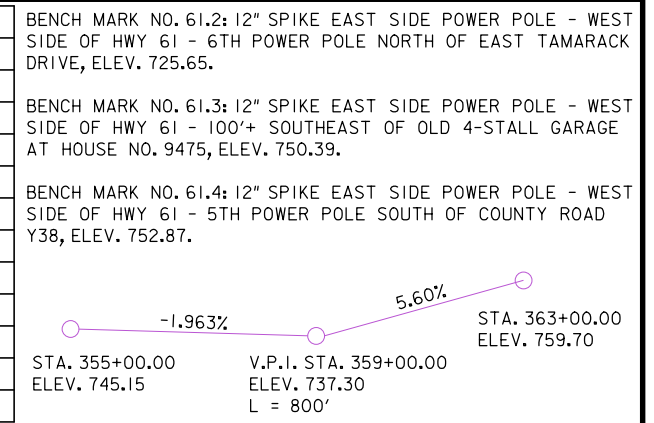
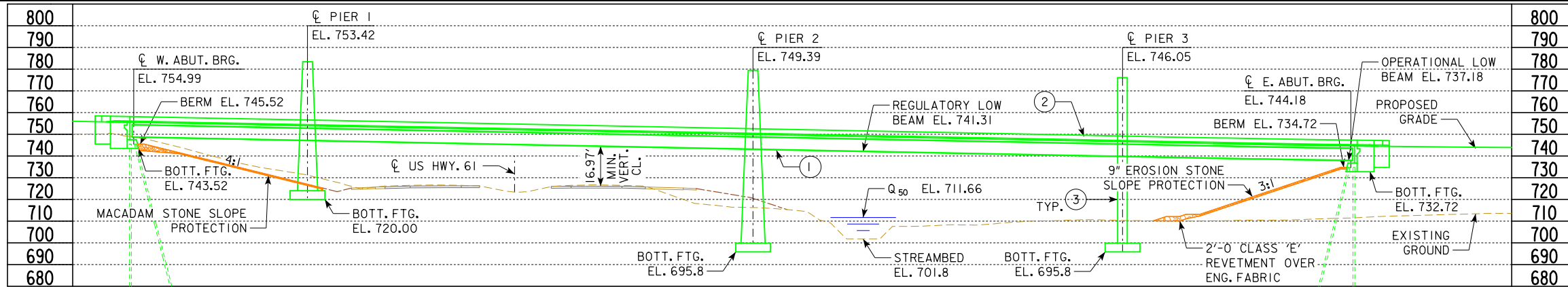
CONCRETE TRANSITION DETAILS
(WALL TRANSITION SHOWN - TYPICAL FOR SLAB)

NEW BARREL CONCRETE THICKNESSES SHALL BE MAINTAINED MINIMALLY WHEN TRANSITIONING TO MEET EXISTING BARREL INTERIOR SURFACES. OUTSIDE CONCRETE SURFACES DO NOT HAVE TO BE TRANSITIONED TO MATCH EXISTING SURFACES.

DESIGN FOR 33° SKEW (R.A.)
**6'x6' REINFORCED CONCRETE
BOX CULVERT EXTENSION**
MISCELLANEOUS DETAIL

STA. 4531+55.00 MARCH, 2017

DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 4 OF 4 FILE NO. 30467 DESIGN NO. 1717

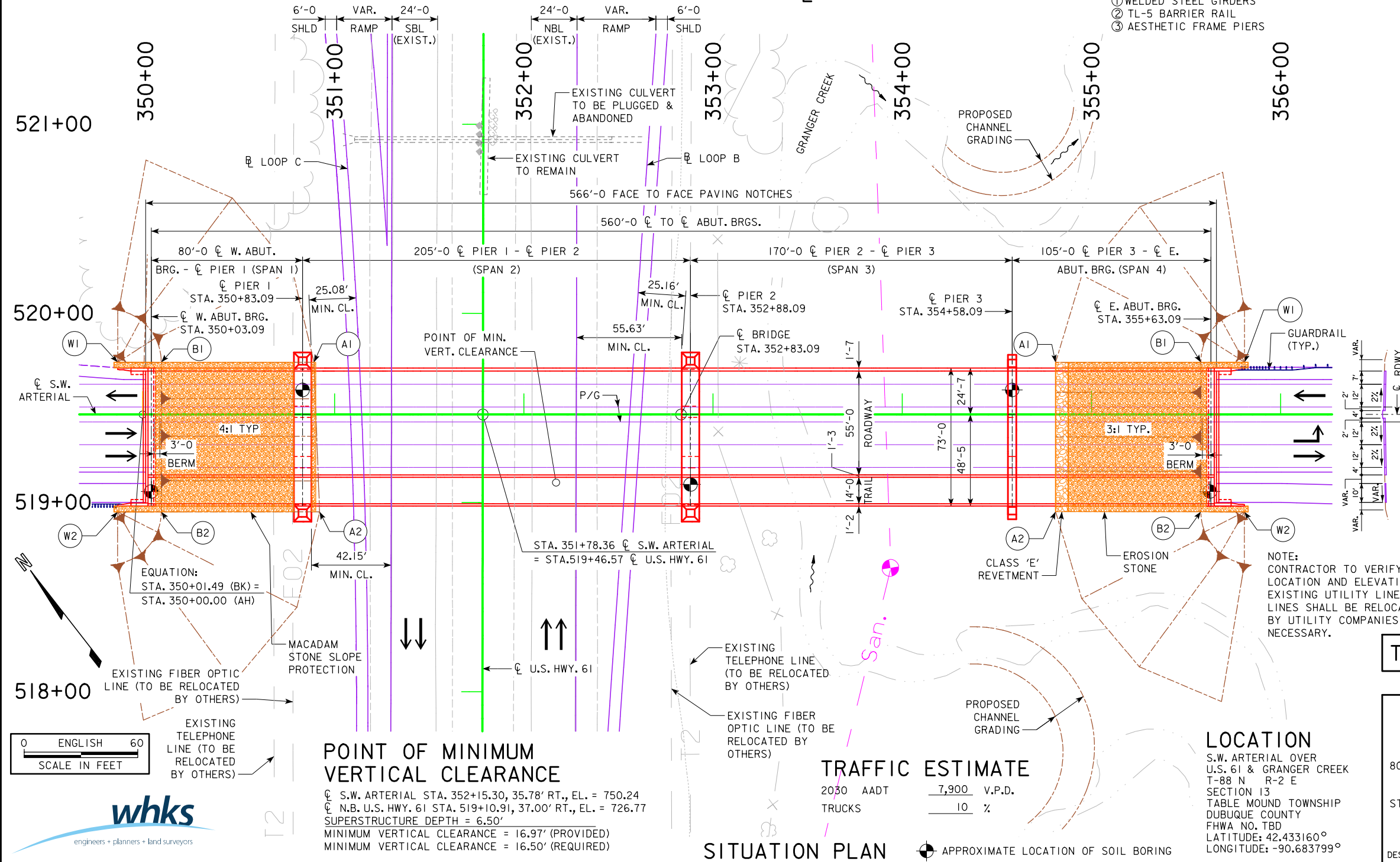


LONGITUDINAL SECTION ALONG C BRIDGE

- KEYNOTES:**
 ① WELDED STEEL GIRDERS
 ② TL-5 BARRIER RAIL
 ③ AESTHETIC FRAME PIERS

S.W. ARTERIAL PROFILE GRADE

NOTE:
 ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.
 PIERS 1 AND 2 ARE BEYOND THE CLEAR ZONE FOR 61 MAINLINE AND RAMPS.
 BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.
 TOP OF BRIDGE ELEVATIONS SHOWN ARE 0.08' ABOVE THE PROFILE GRADE.
 NOTE TO FINAL DESIGN: BID ITEM REFERENCE NOTES SHALL RESTRICT BROKEN CONCRETE AS A SUBSTITUTE FOR REVETMENT.
 CLASS E REVETMENT IS NON-EMBEDDED.
 SEE DESIGN SHEET 2 FOR UTILITY LEGEND.



HYDRAULIC DATA

DRAINAGE AREA = 7.9 mi²
 STREAM SLOPE = 25.2 FT./MI.

Q₅₀ = 3,050 CFS
 STAGE = 711.66
 BACKWATER = 0.27 FT.
 AVG. BRIDGE VELOCITY = 4.2 FPS

Q₁₀₀ = 3,678 CFS
 STAGE = 712.77
 BACKWATER = 0.80 FT.
 AVG. BRIDGE VELOCITY = 4.75 FPS

Q = 4,225 CFS
 STAGE = 713.84

Q₅₀₀ = 5,000 CFS
 STAGE = 715.54

ROADWAY OVERTOP = 726.7

THIS SHEET FOR REFERENCE ONLY

PRELIMINARY

DESIGN FOR 0° SKEW

560'-0 X 55'-0 W/ 14'-0 TRAIL CONT. WELDED GIRDER BRIDGE

80'-0 & 105'-0 END SPANS 205'-0 & 170'-0 INTERIOR SPANS

SITUATION PLAN

STA. 352+83.09 (C SW ARTERIAL) DECEMBER, 2016

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. DESIGN NO.

POINT OF MINIMUM VERTICAL CLEARANCE

C S.W. ARTERIAL STA. 352+15.30, 35.78' RT., EL. = 750.24
 C N.B. U.S. HWY. 61 STA. 519+10.91, 37.00' RT., EL. = 726.77
 SUPERSTRUCTURE DEPTH = 6.50'
 MINIMUM VERTICAL CLEARANCE = 16.97' (PROVIDED)
 MINIMUM VERTICAL CLEARANCE = 16.50' (REQUIRED)

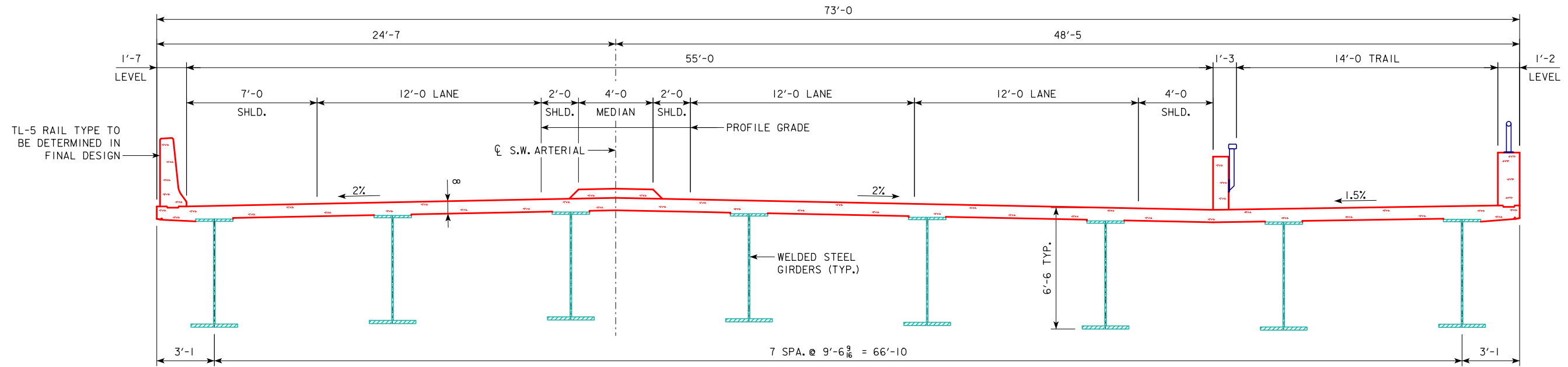
TRAFFIC ESTIMATE

2030 AADT 7,900 V.P.D.
 TRUCKS 10 %

LOCATION

S.W. ARTERIAL OVER U.S. 61 & GRANGER CREEK
 T-88 N R-2 E
 SECTION 13
 TABLE MOUND TOWNSHIP
 DUBUQUE COUNTY
 FHWA NO. TBD
 LATITUDE: 42.433160°
 LONGITUDE: -90.683799°

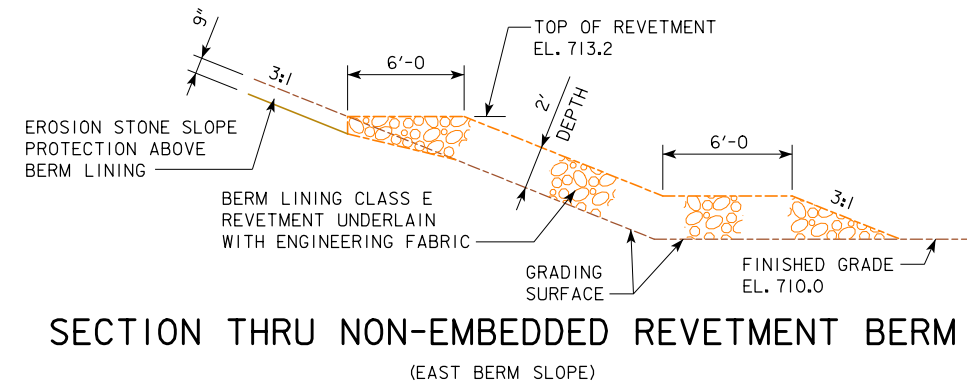




TYPICAL SECTION
LOOKING UPSTATION

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	350+89.07	27.65' LT	725.71	354+81.06	27.65' LT	709.77
A2	350+92.06	51.48' RT	725.86	354+81.06	51.48' RT	710.92
B1	350+08.34	27.65' LT	745.52	355+57.84	27.65' LT	734.72
B2	350+08.34	51.48' RT	745.52	355+57.84	51.48' RT	734.72
W1	349+86.83	27.65' LT	754.72	355+80.84	27.65' LT	743.33
W2	349+86.83	51.48' RT	754.77	355+80.84	51.48' RT	743.38

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE
STATION AND OFFSET BASED ON CENTERLINE SWA



SECTION THRU NON-EMBEDDED REVETMENT BERM
(EAST BERM SLOPE)

ESTIMATED BERM ARMORING QUANTITIES				
LOCATION	REVETMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING - EAST ABUT	157.9	249.1	770.9	155.7

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

UTILITIES LEGEND:

- F02 — FIBER OPTIC CABLE 2 - CENTURYLINK
- T2 — TELEPHONE 2 CABLE (COPPER) - CENTURYLINK
- San. — SANITARY SEWER - CITY OF DUBUQUE

THIS SHEET FOR REFERENCE ONLY

DESIGN FOR 0° SKEW

560'-0" X 55'-0" W/ 14'-0" TRAIL

CONT. WELDED GIRDER BRIDGE

80'-0" & 105'-0" END SPANS 205'-0" & 170'-0" INTERIOR SPANS

SITUATION PLAN

STA. 352+83.09 (CL SW ARTERIAL) DECEMBER, 2016

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. DESIGN NO.



LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS----- Topsoil (Class 10)
- Slope Dressing Only
- 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.

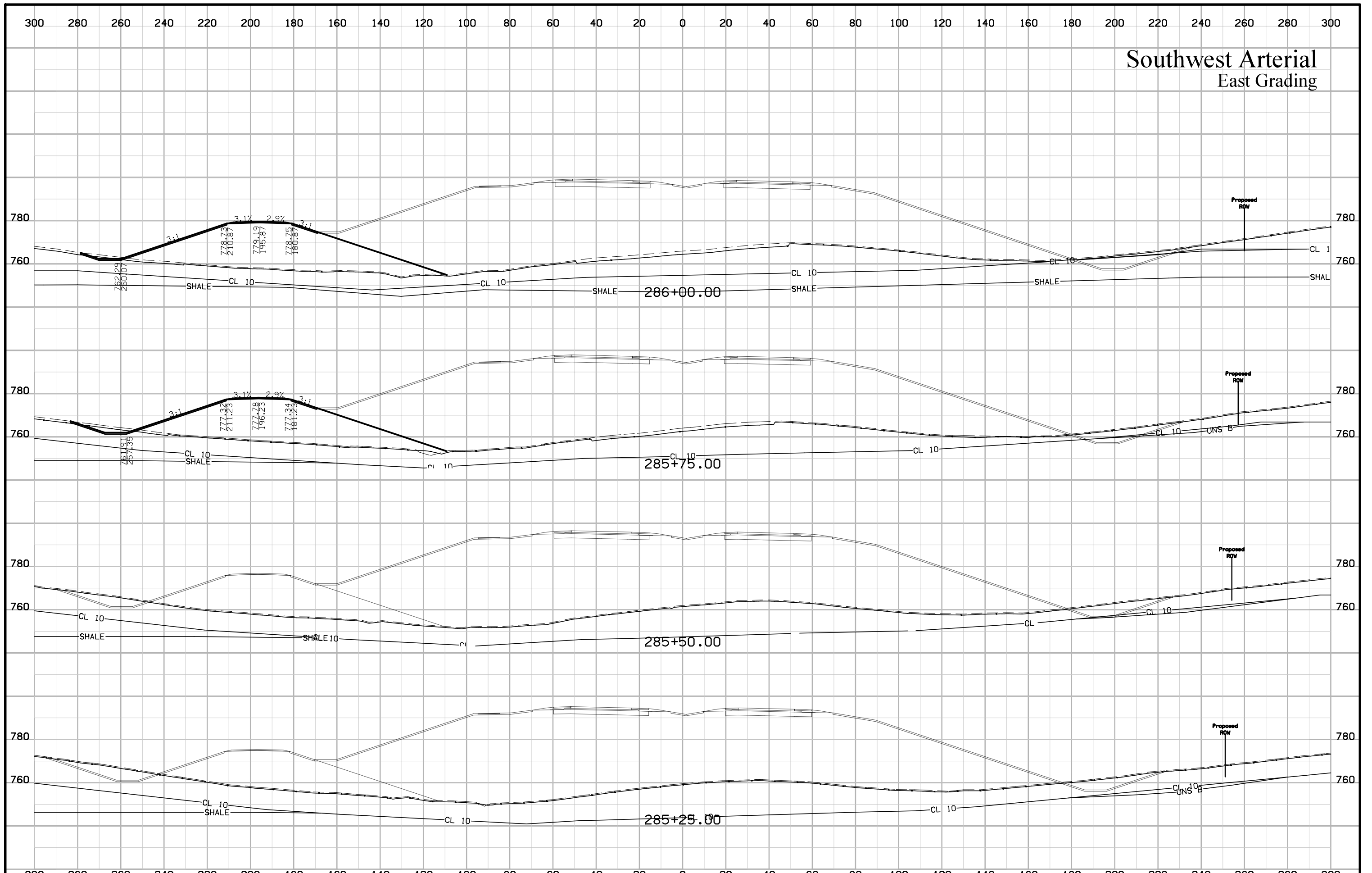
SYMBOL LEGEND OF CROSS SECTION SHEETS

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

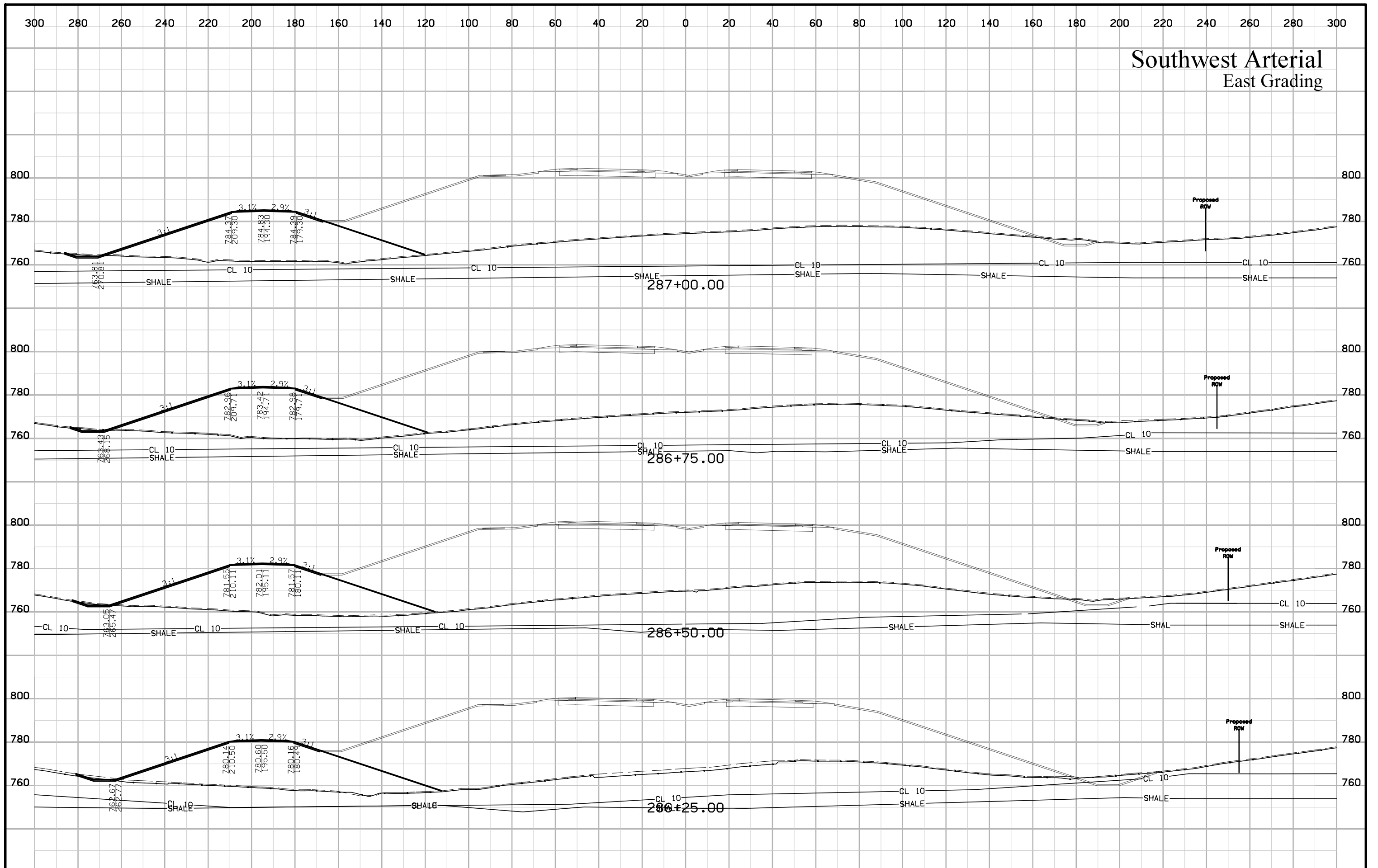
CROSS SECTION

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

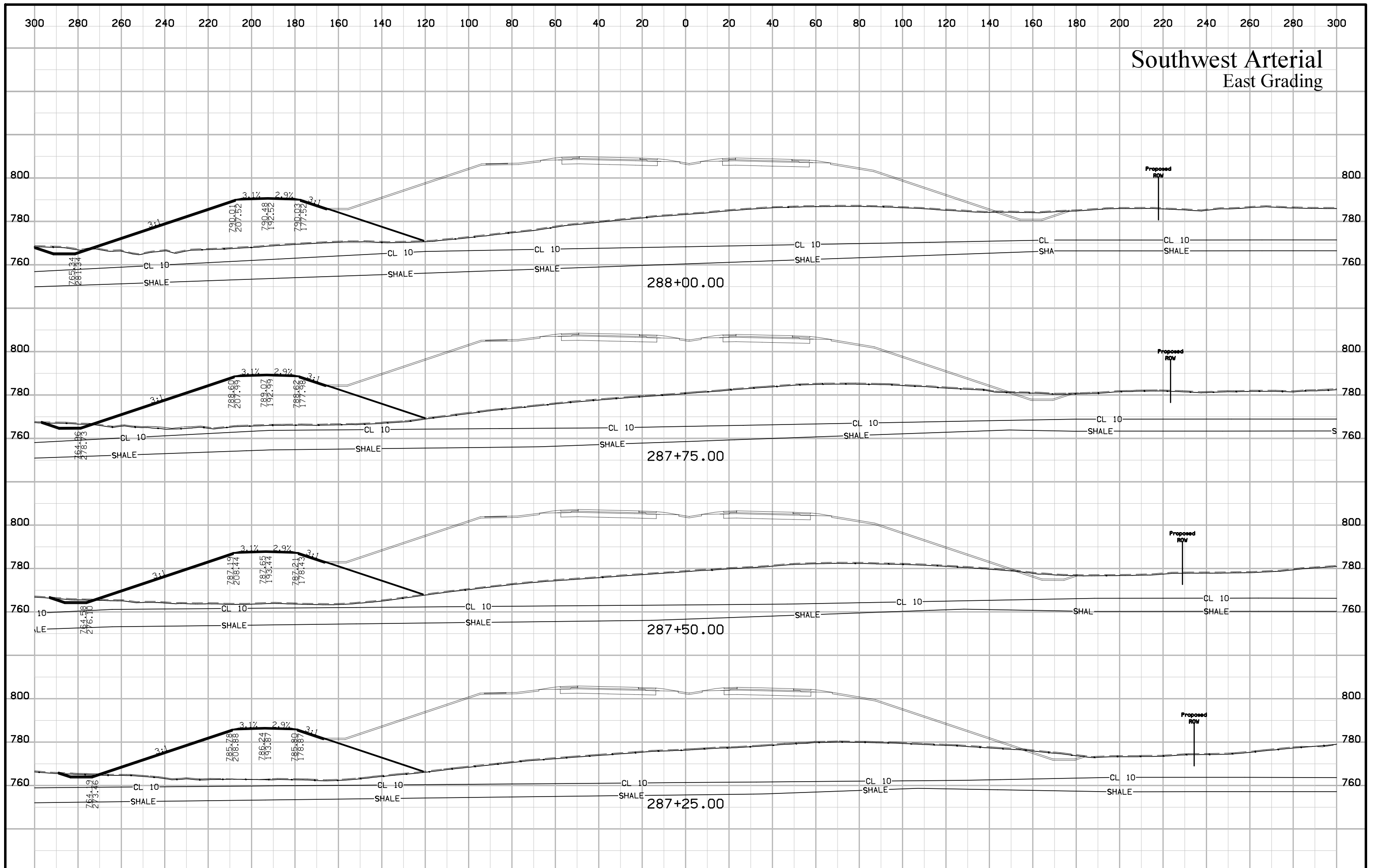
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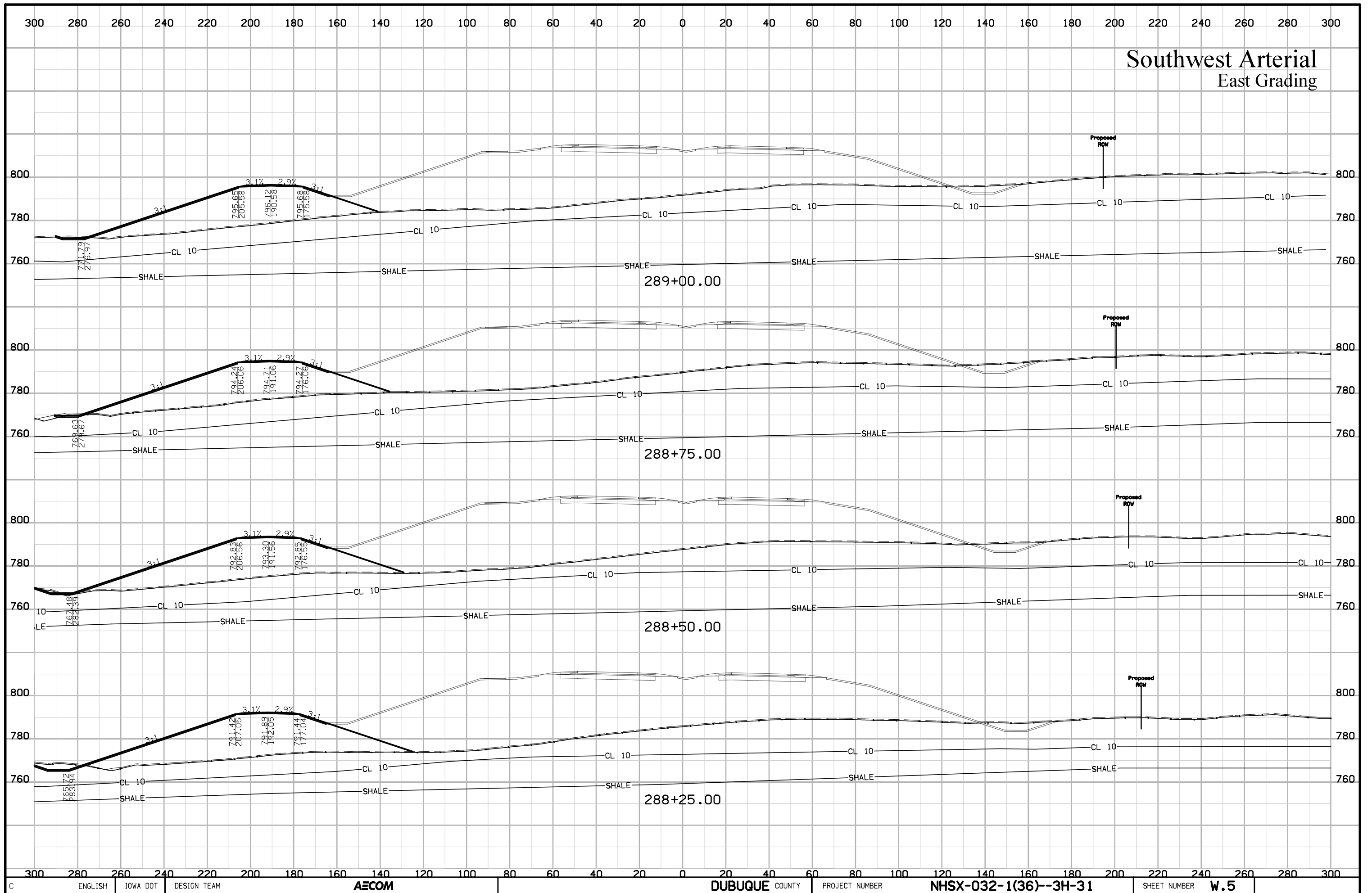
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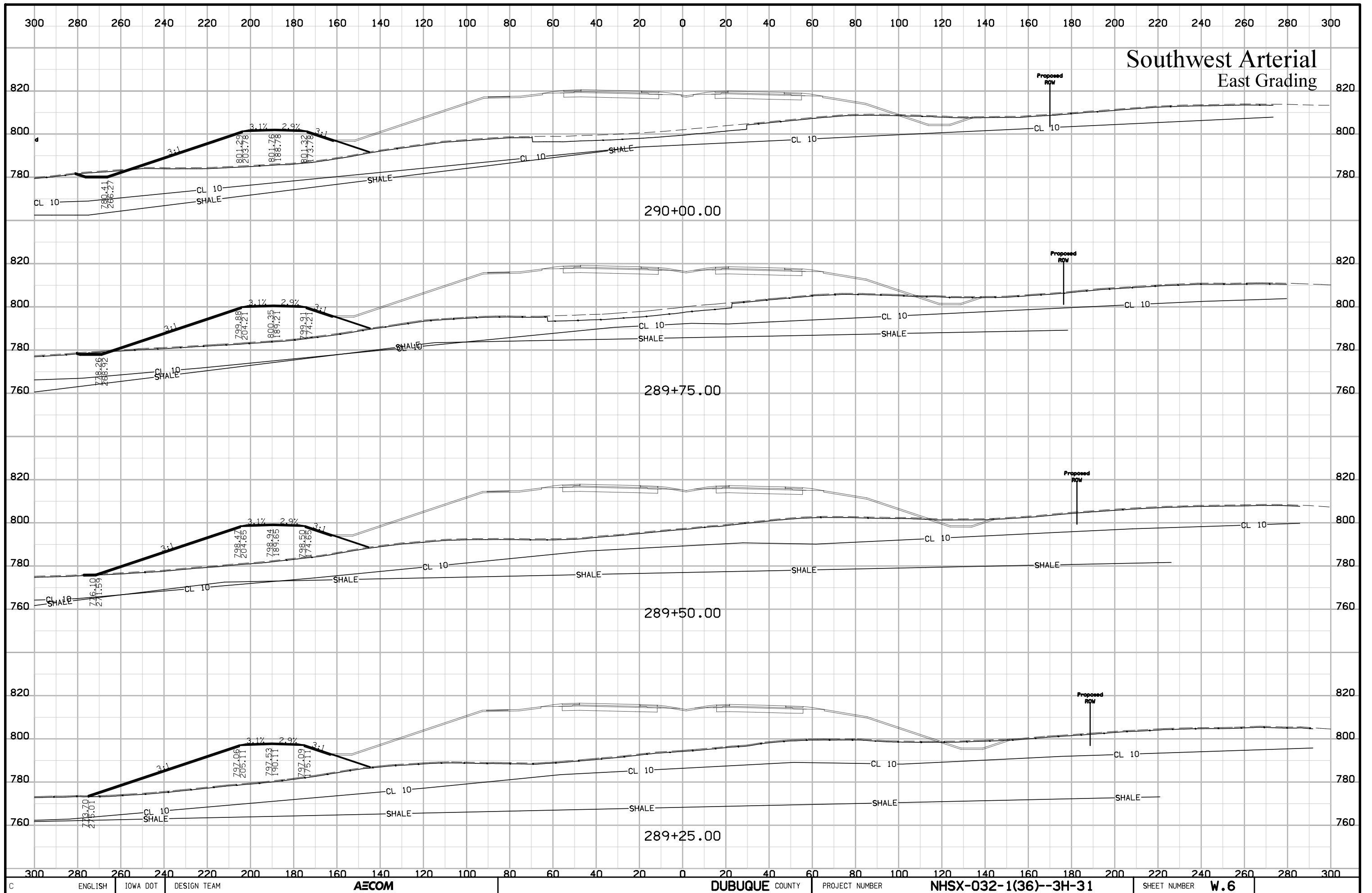
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Southwest Arterial East Grading

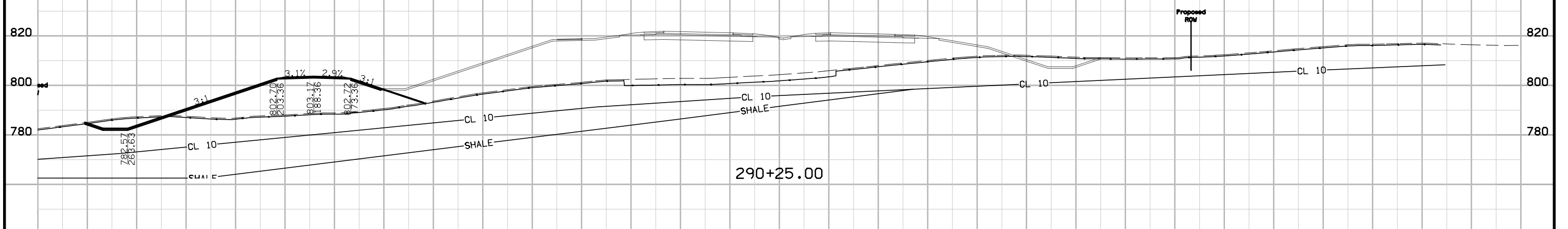
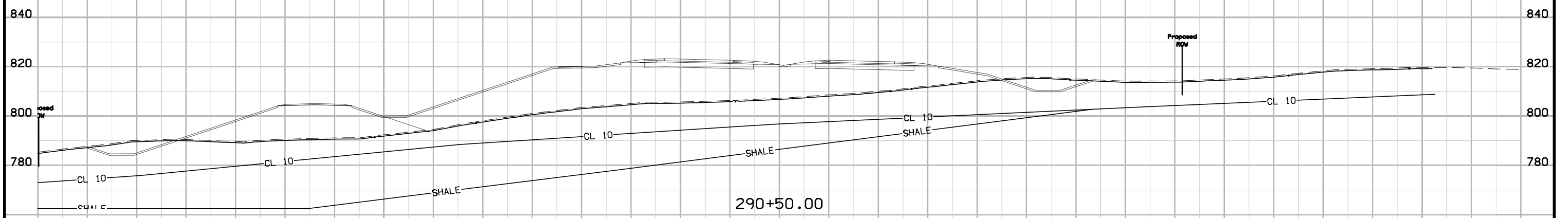
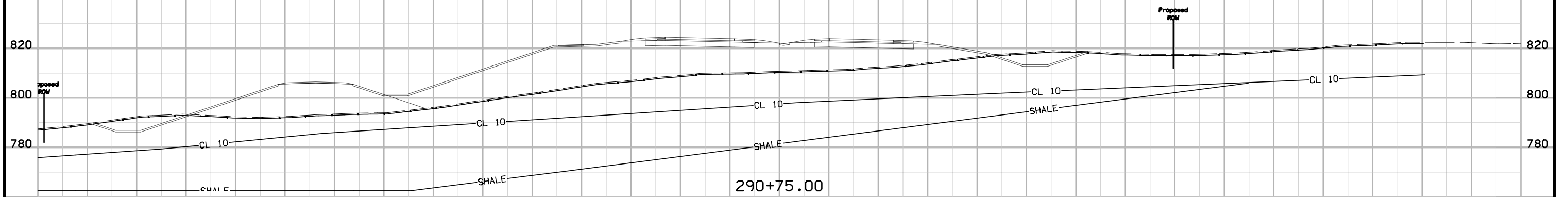


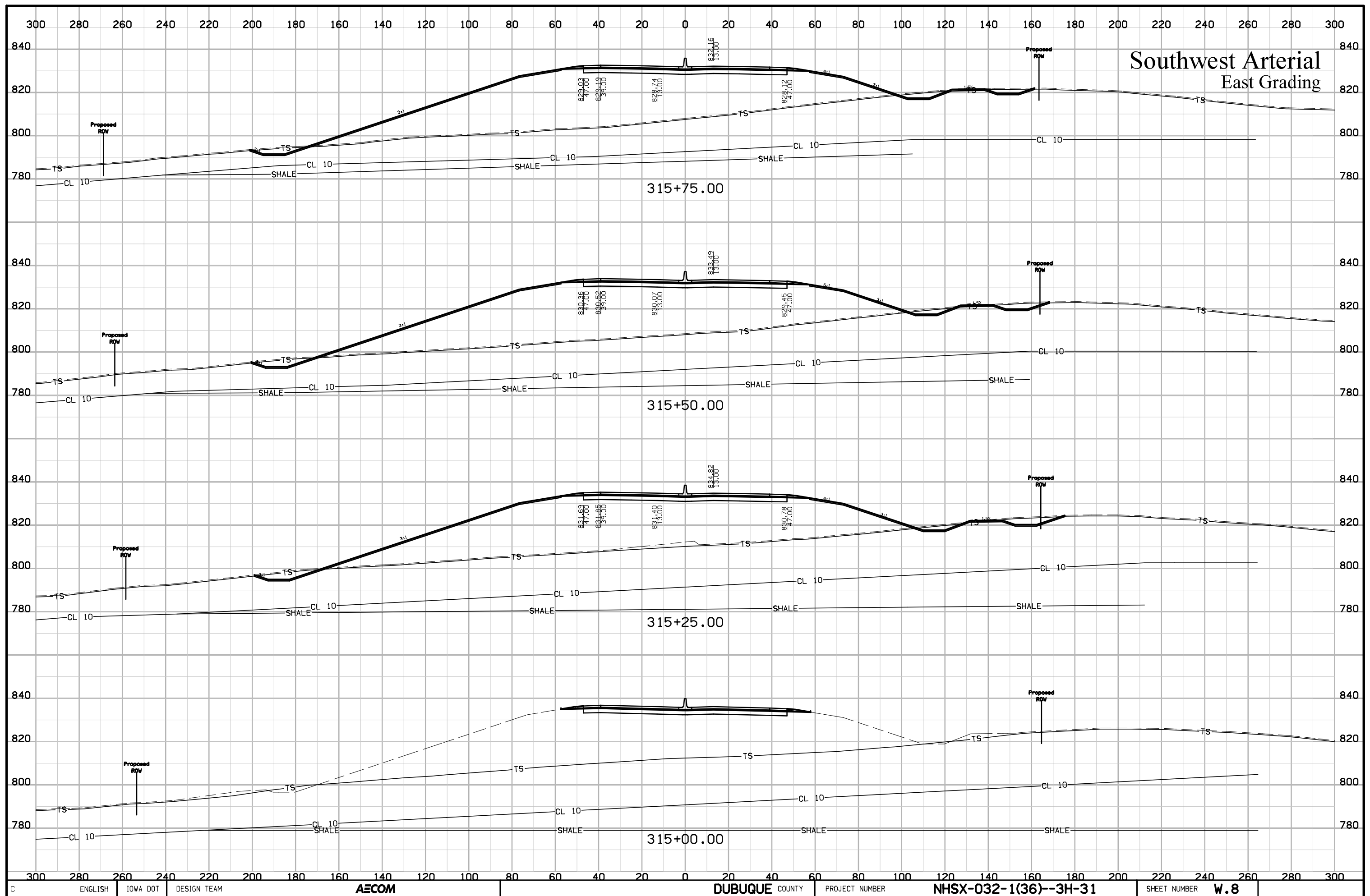
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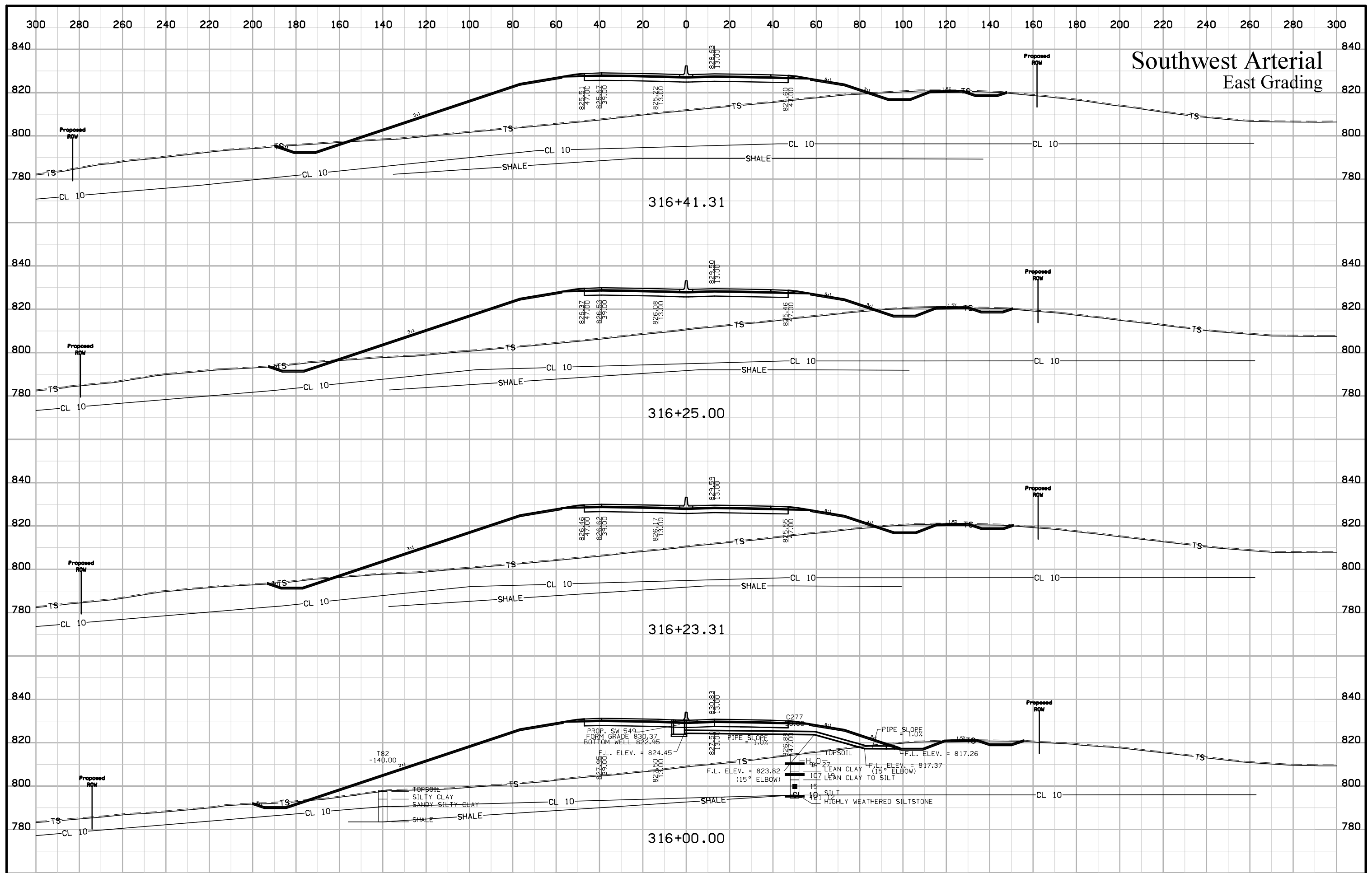
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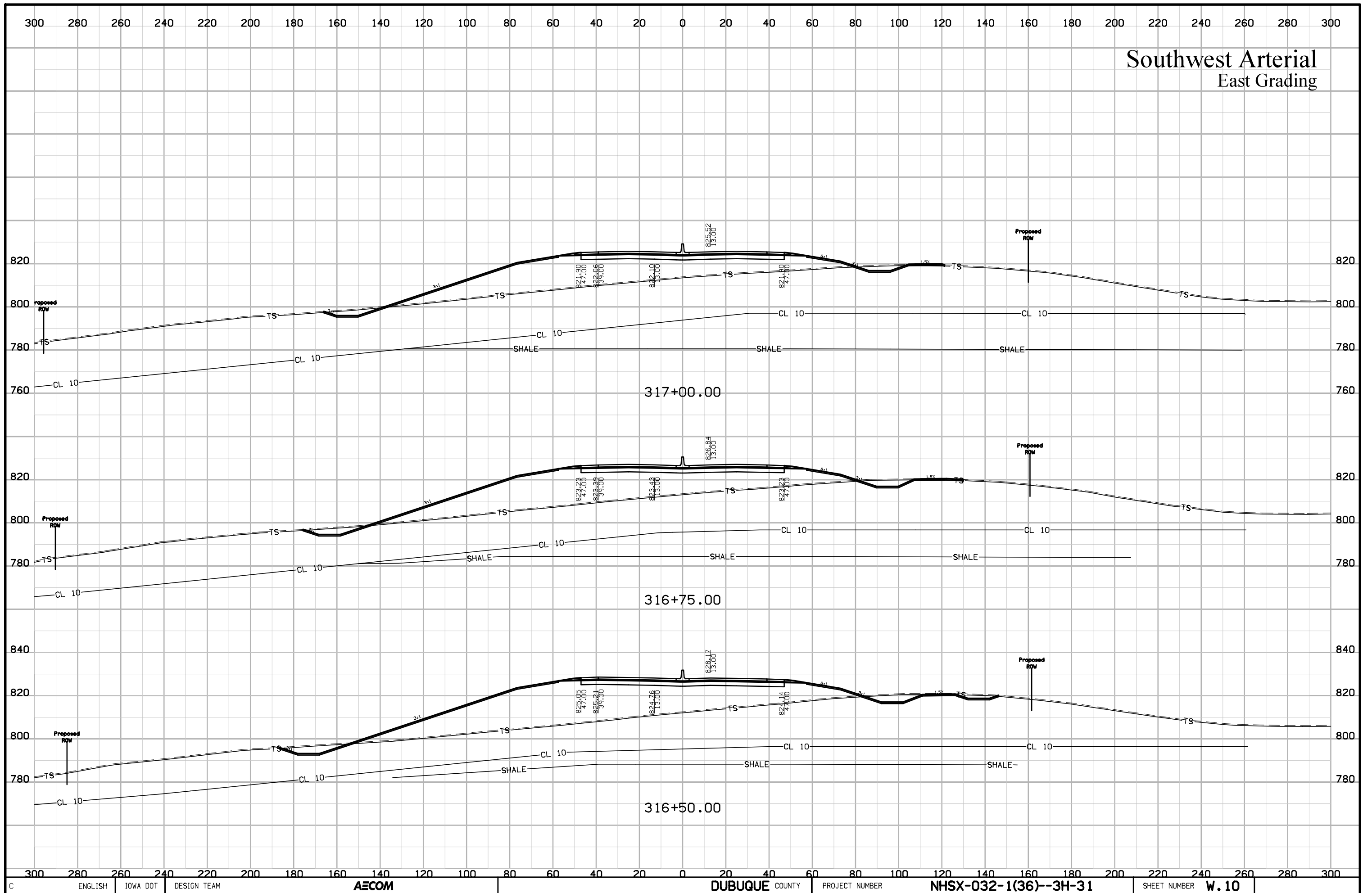




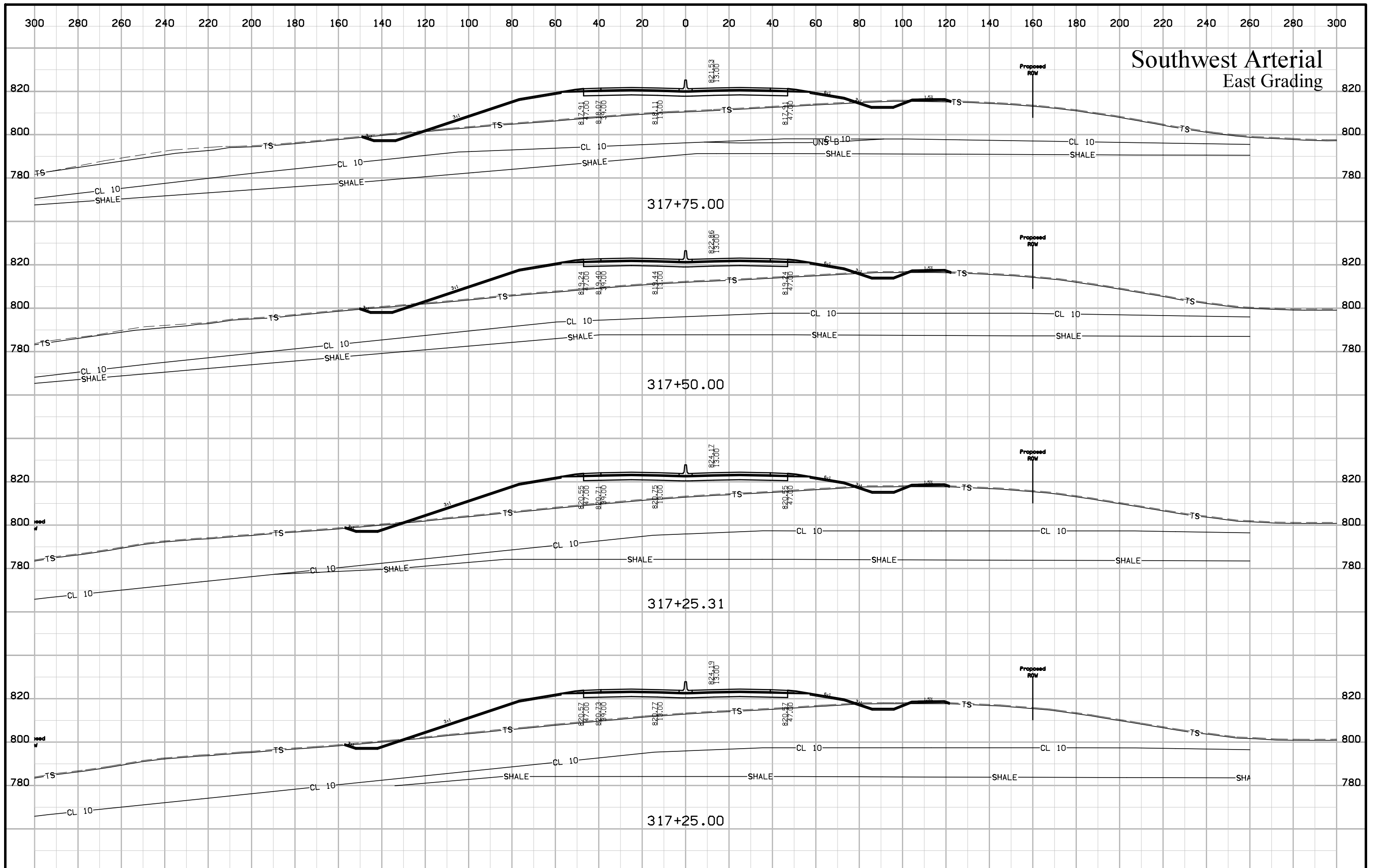
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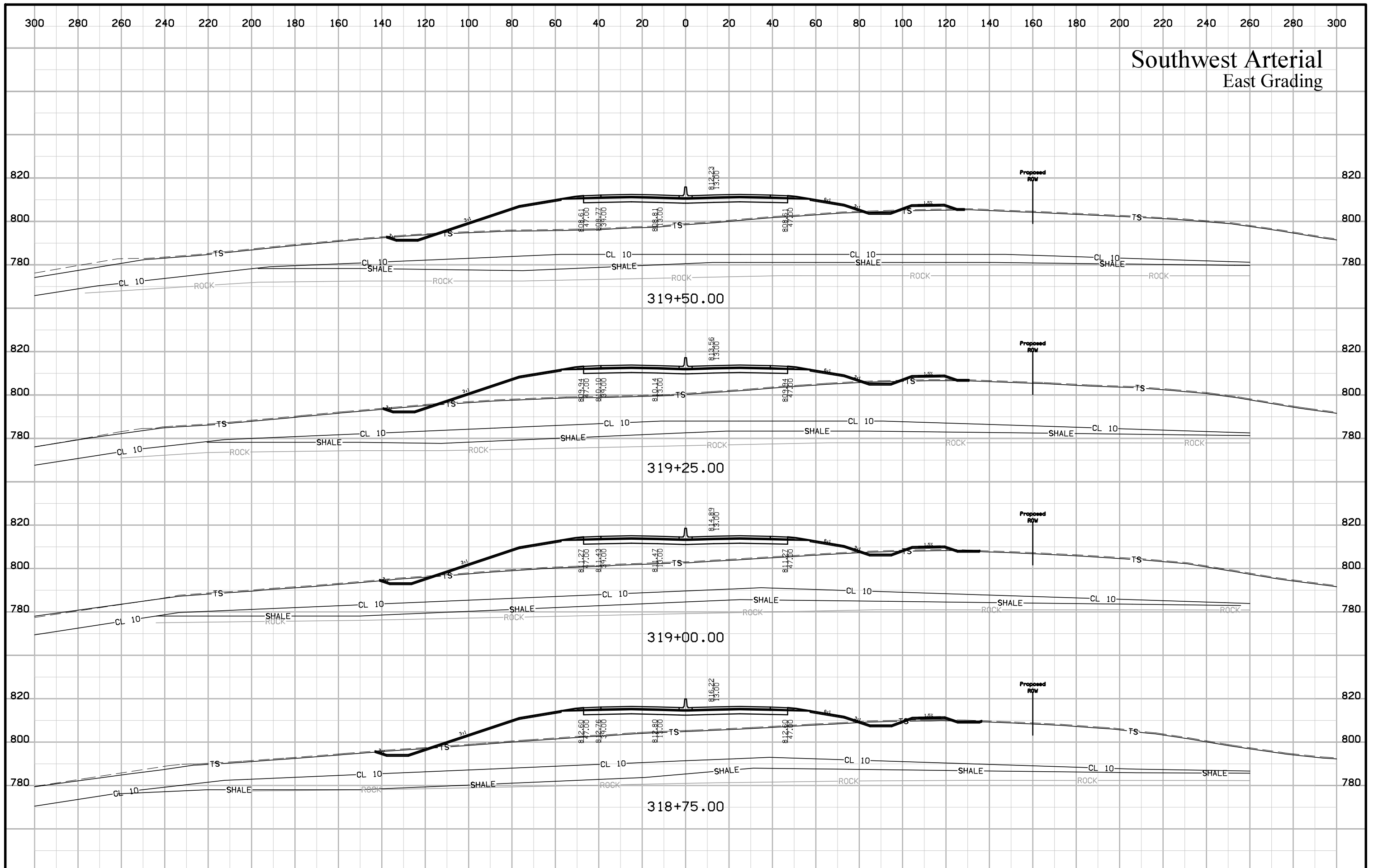
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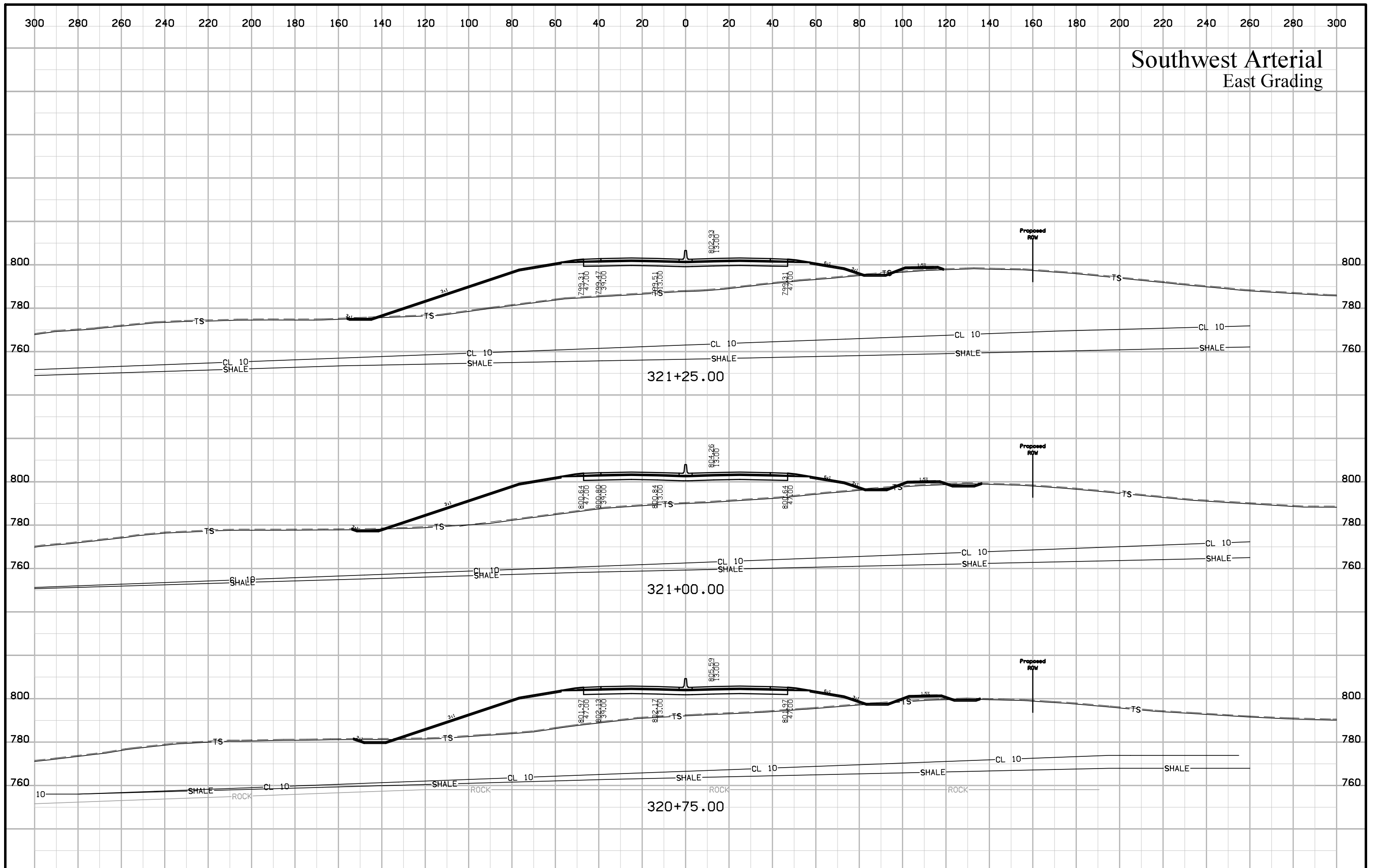
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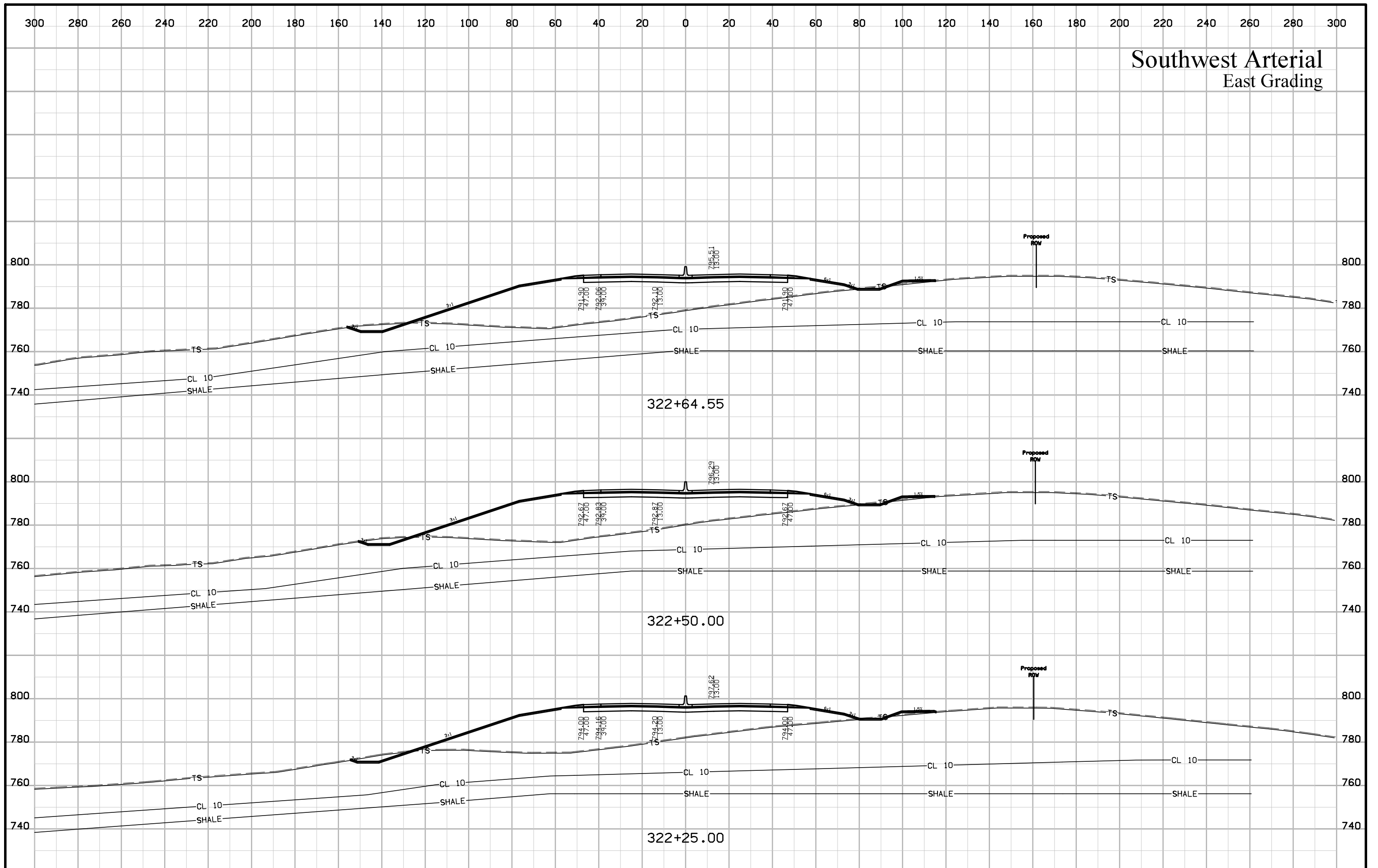
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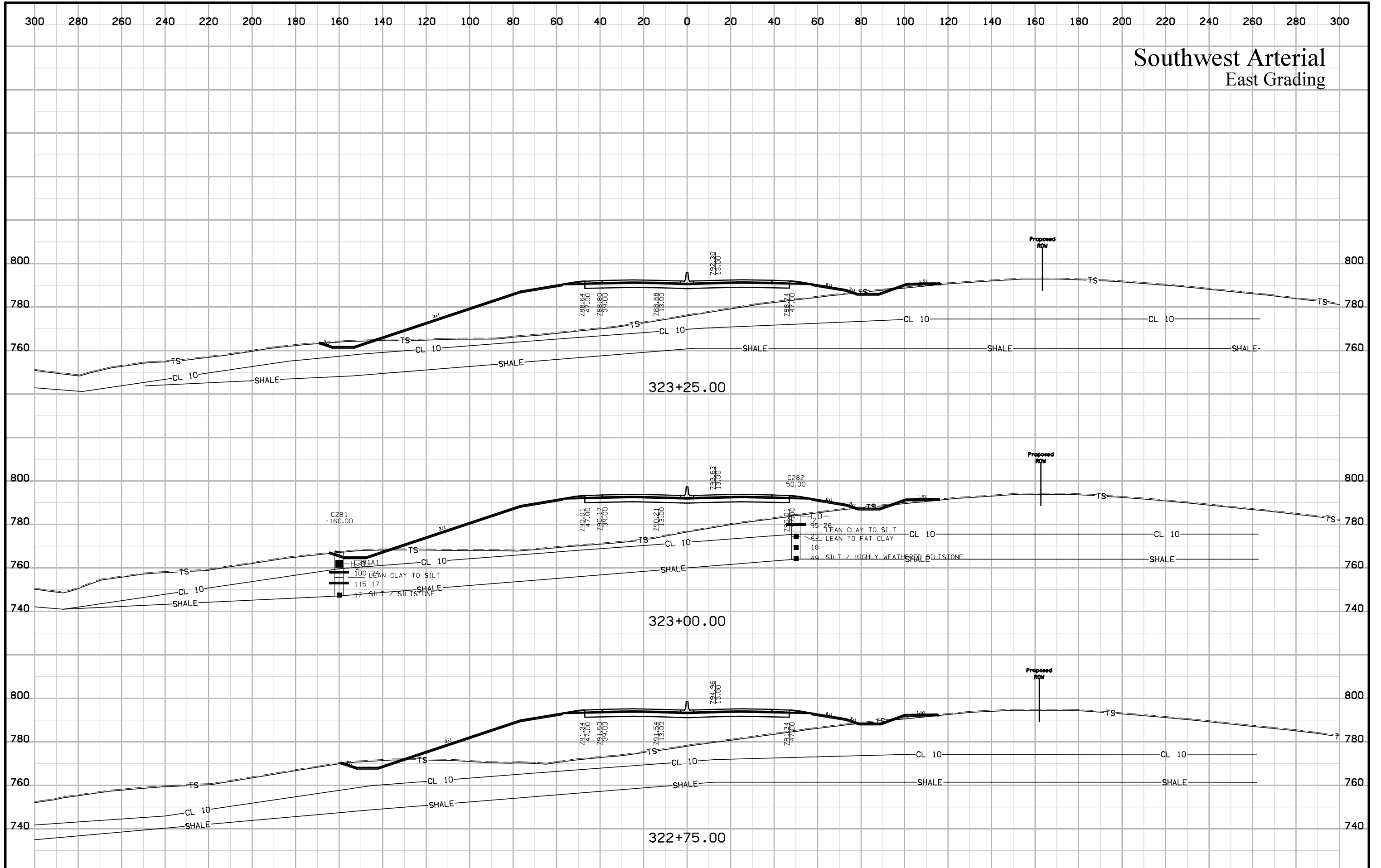
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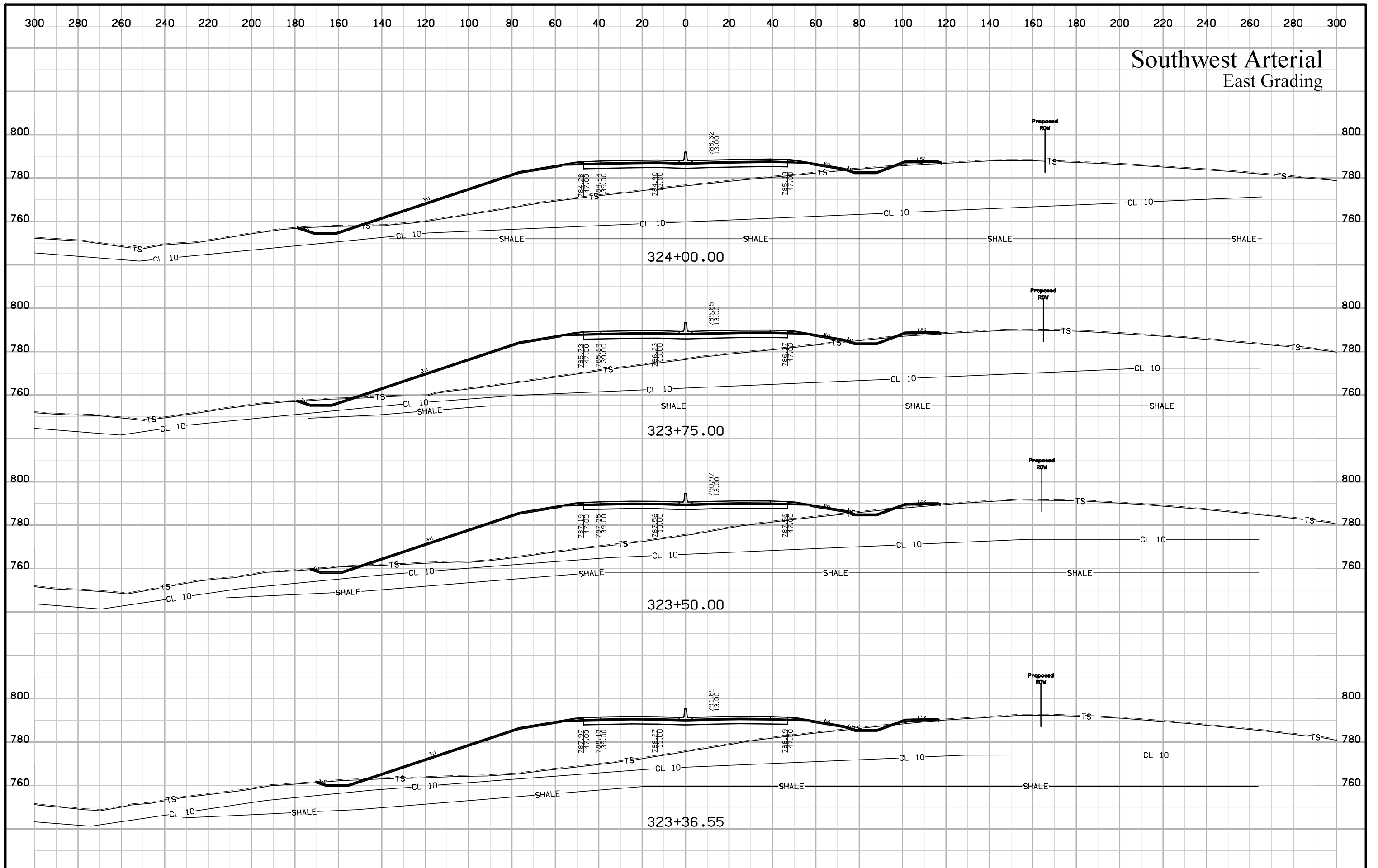
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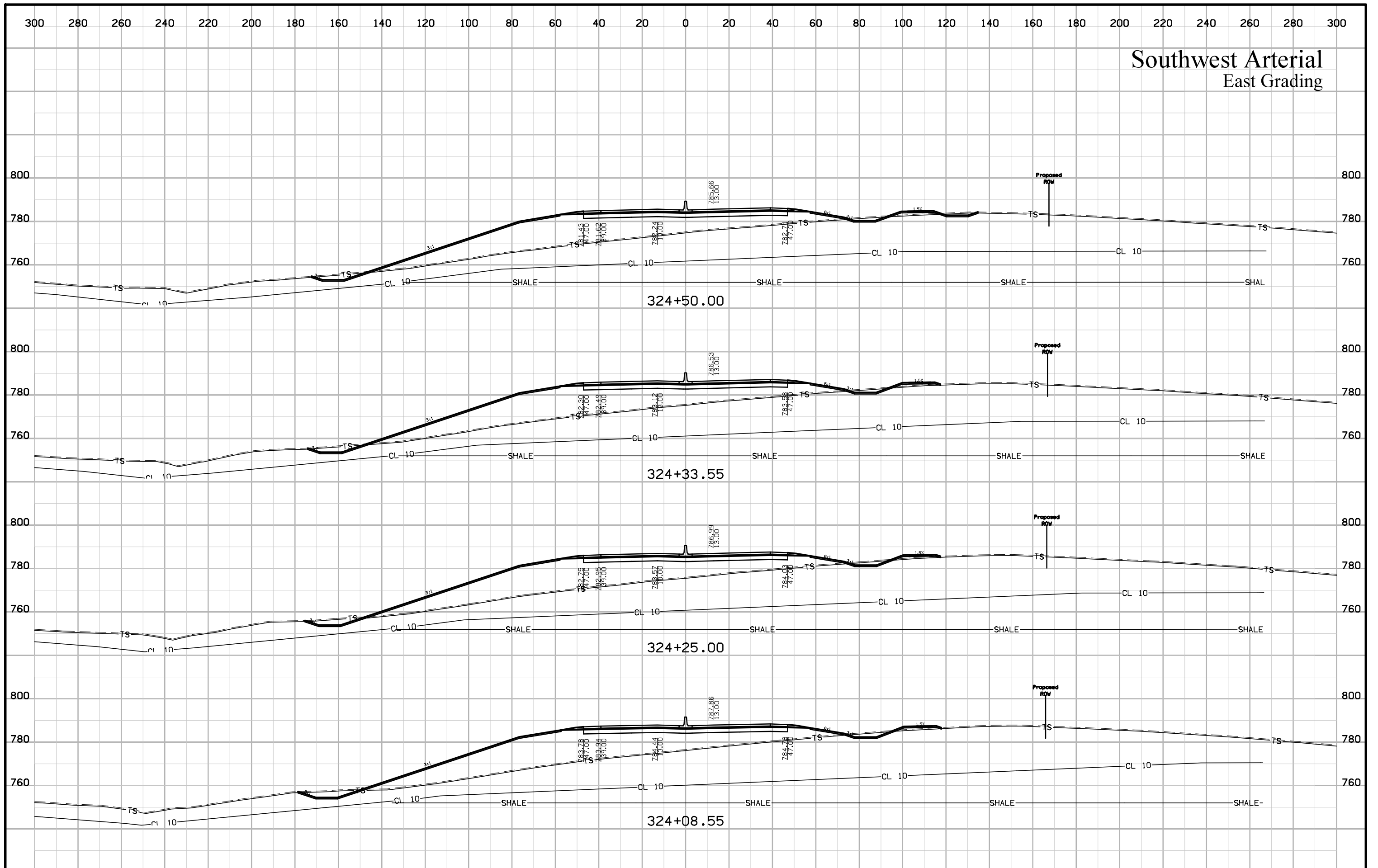
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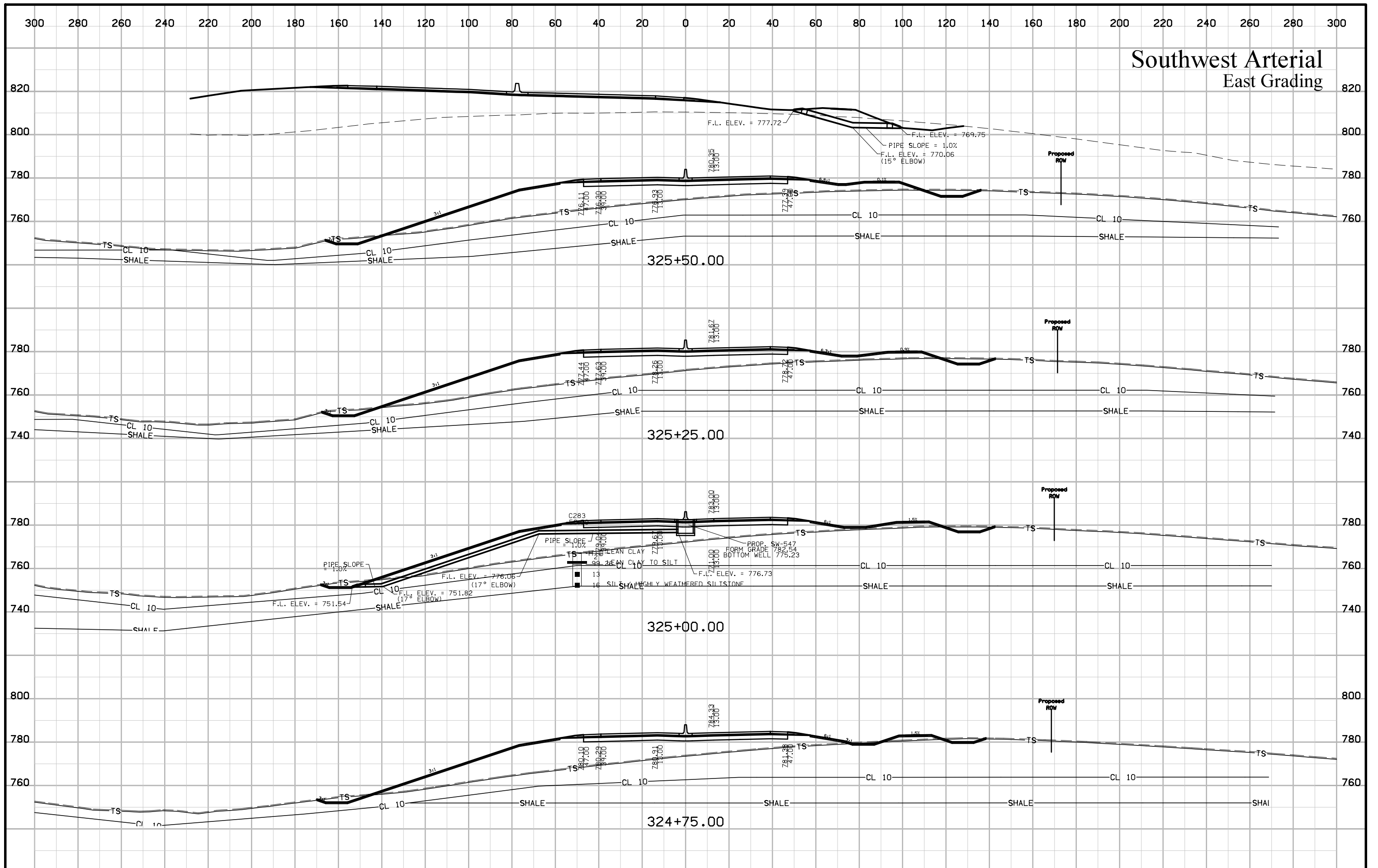
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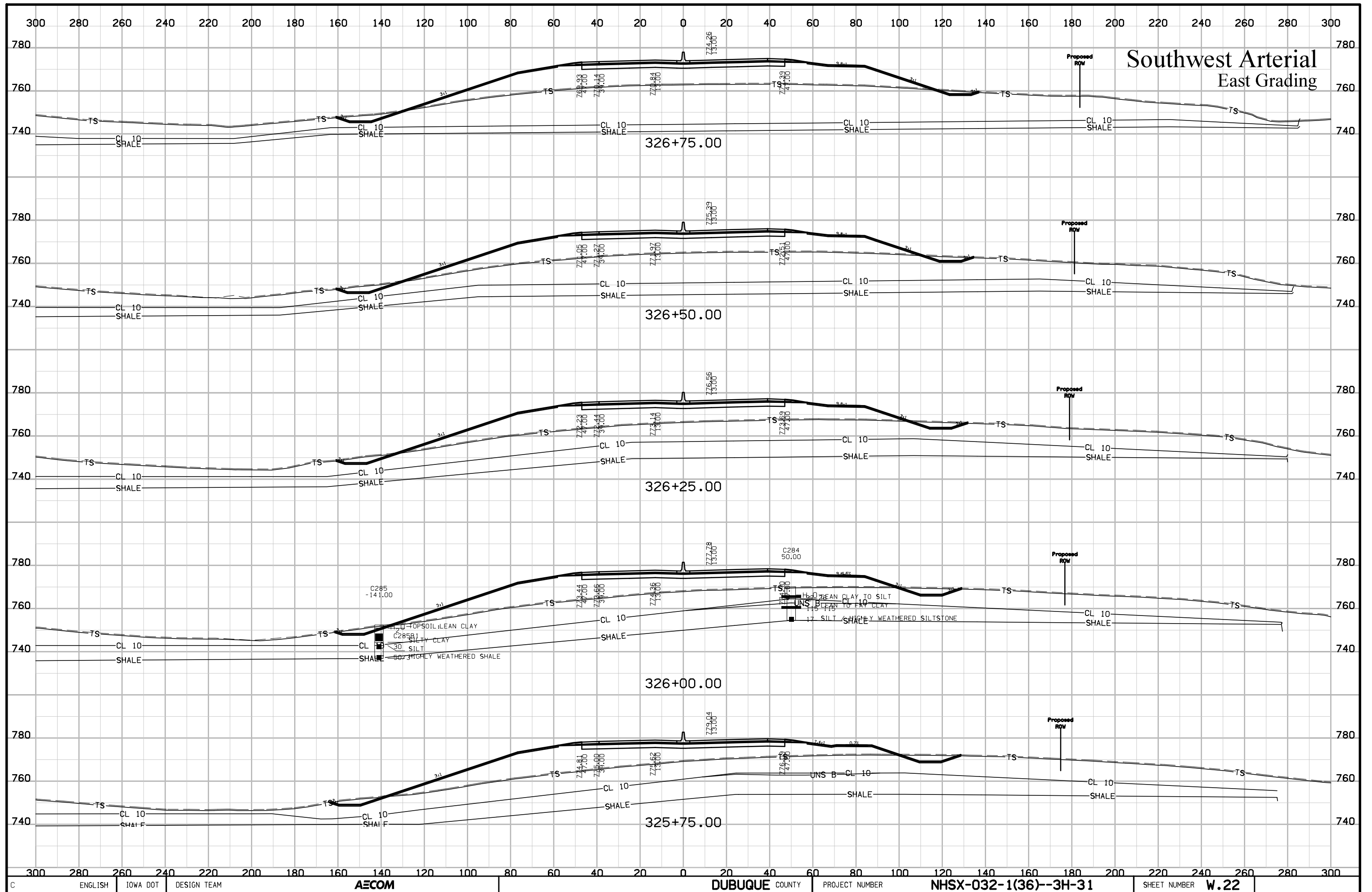


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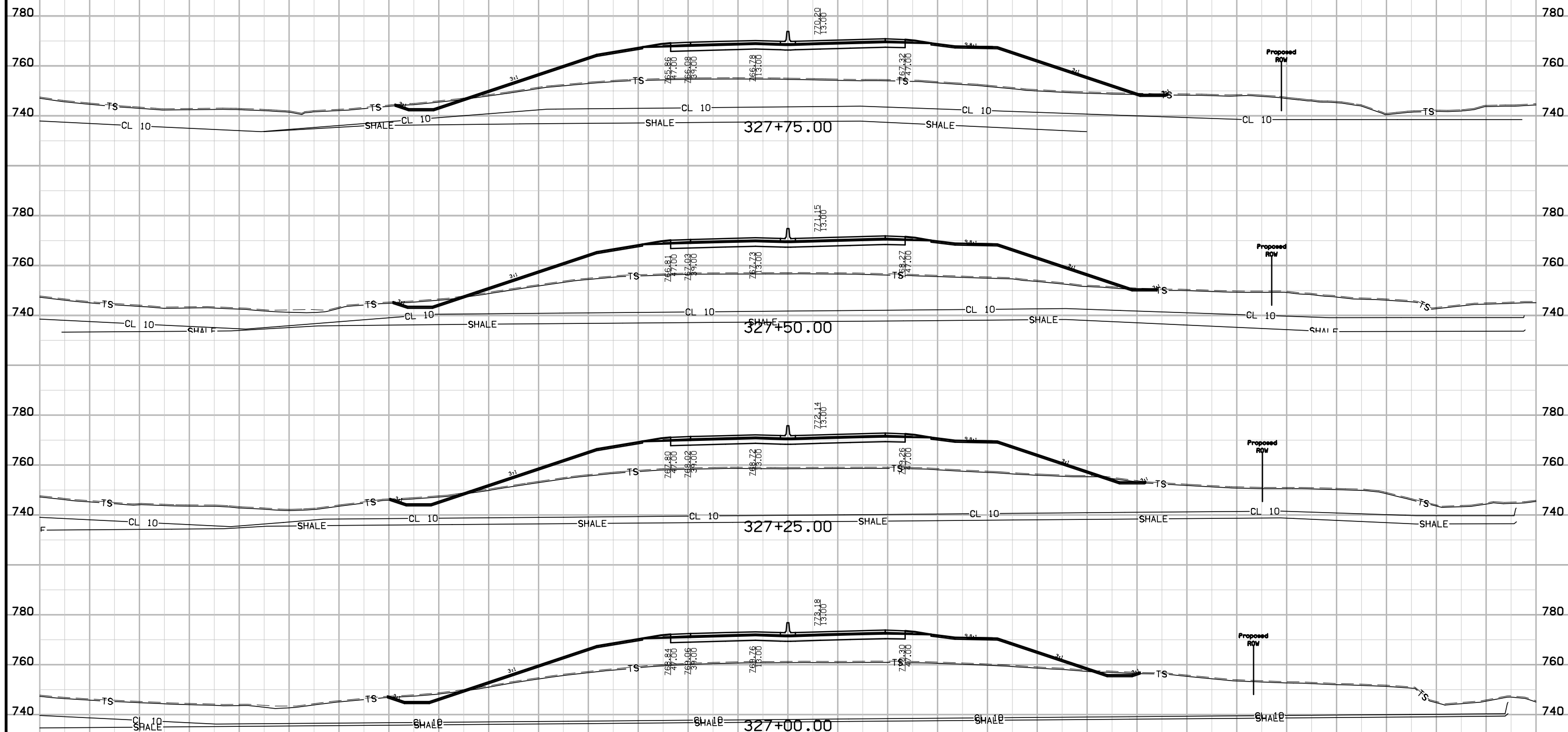




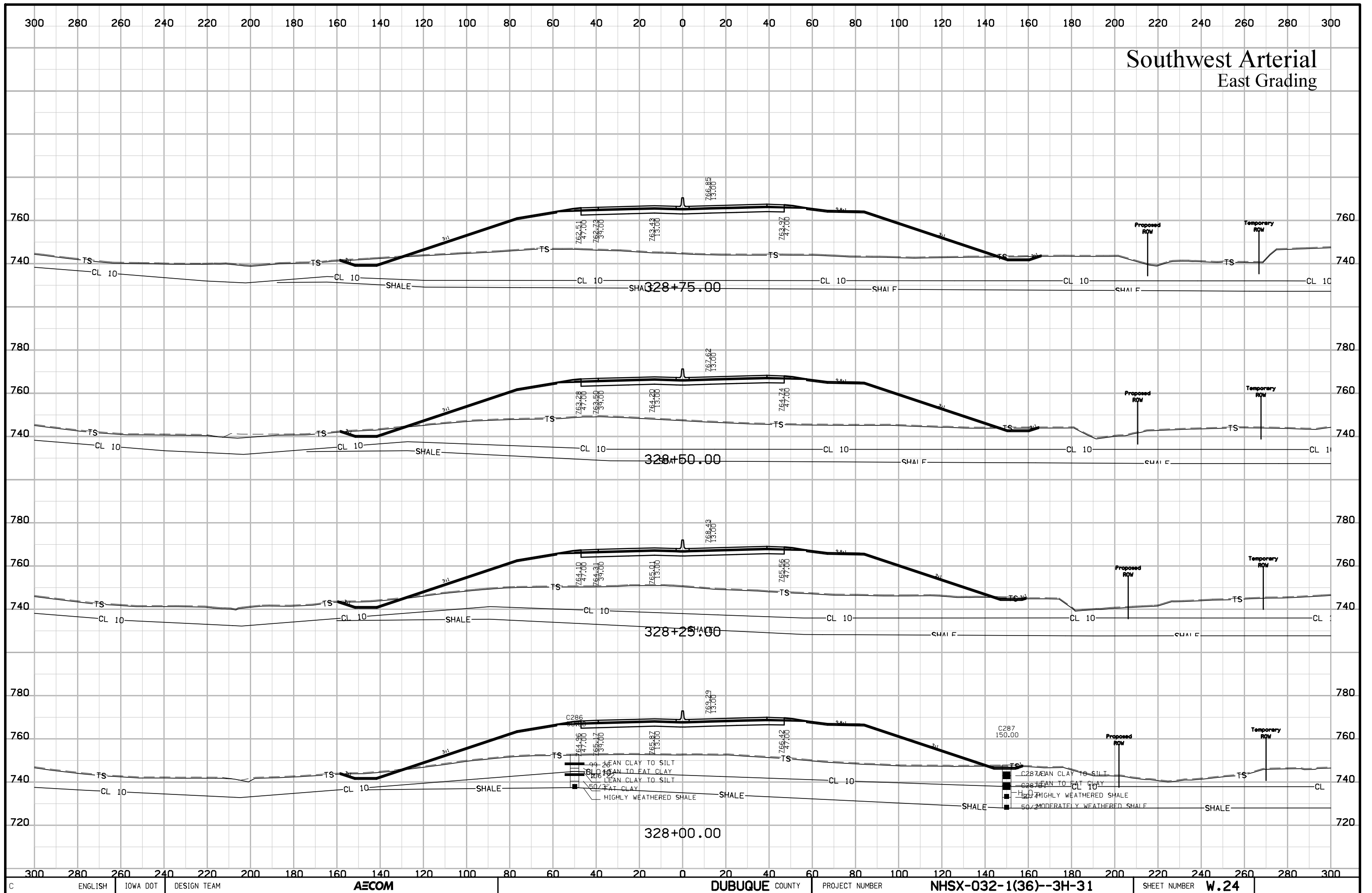
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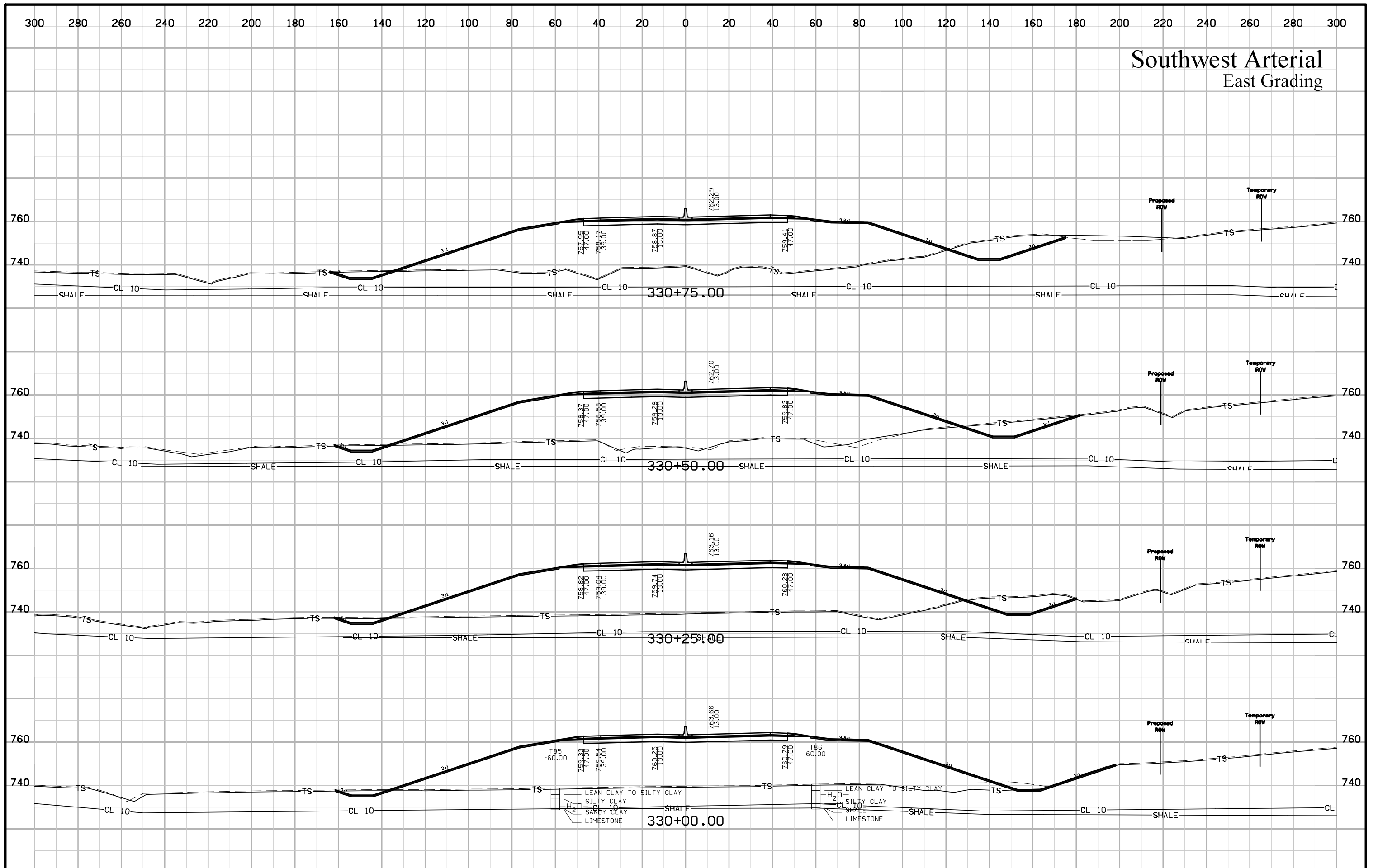
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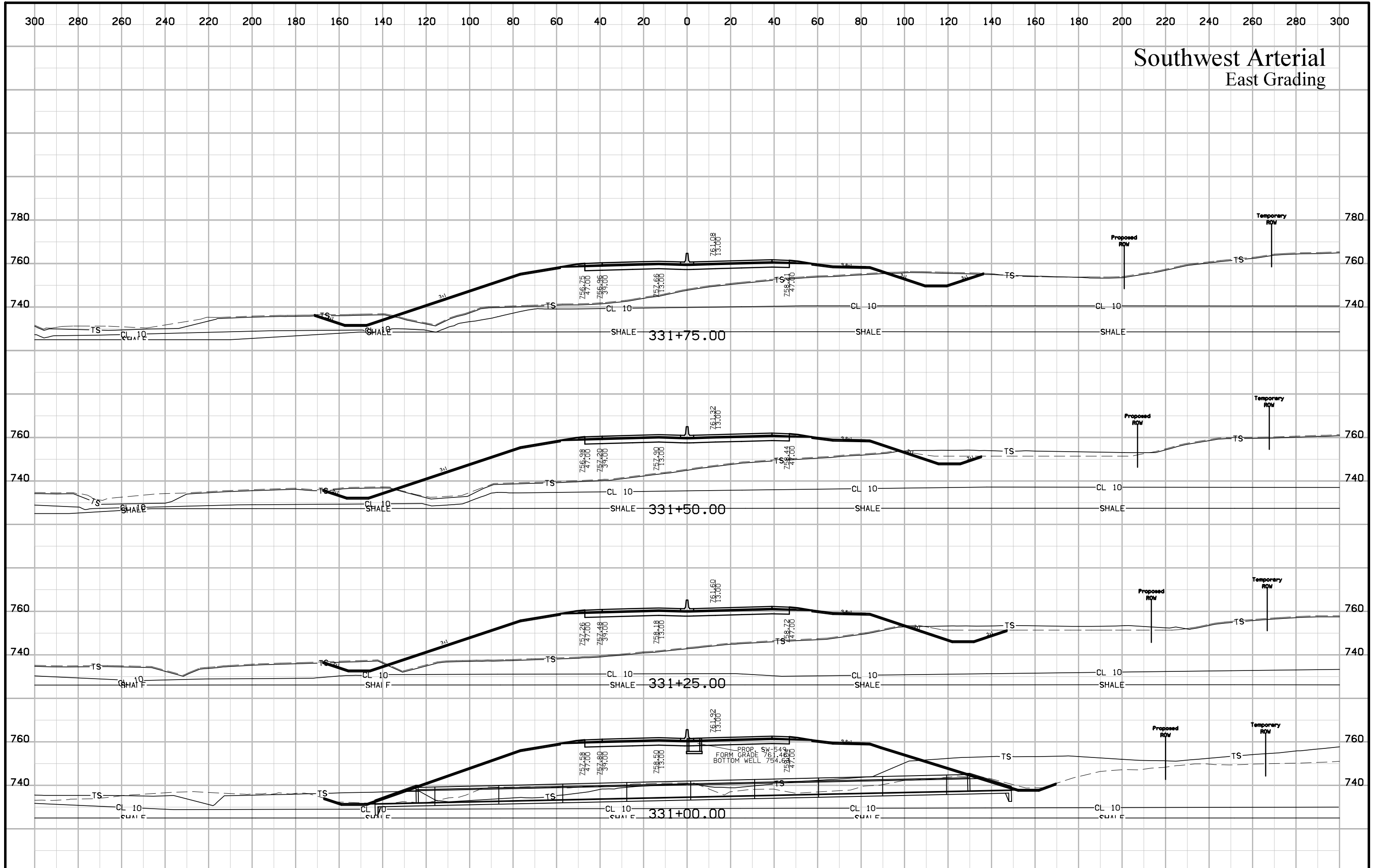
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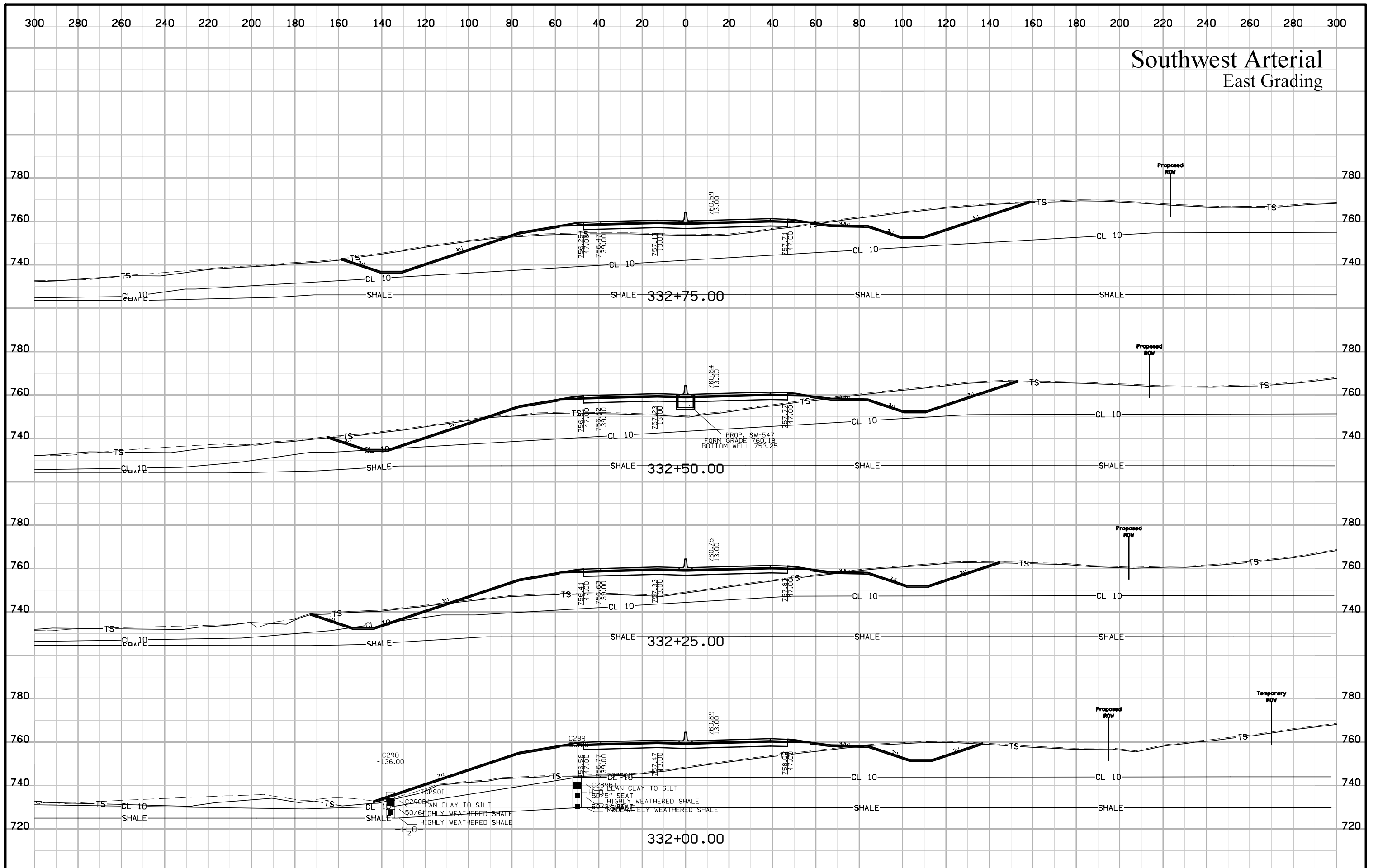
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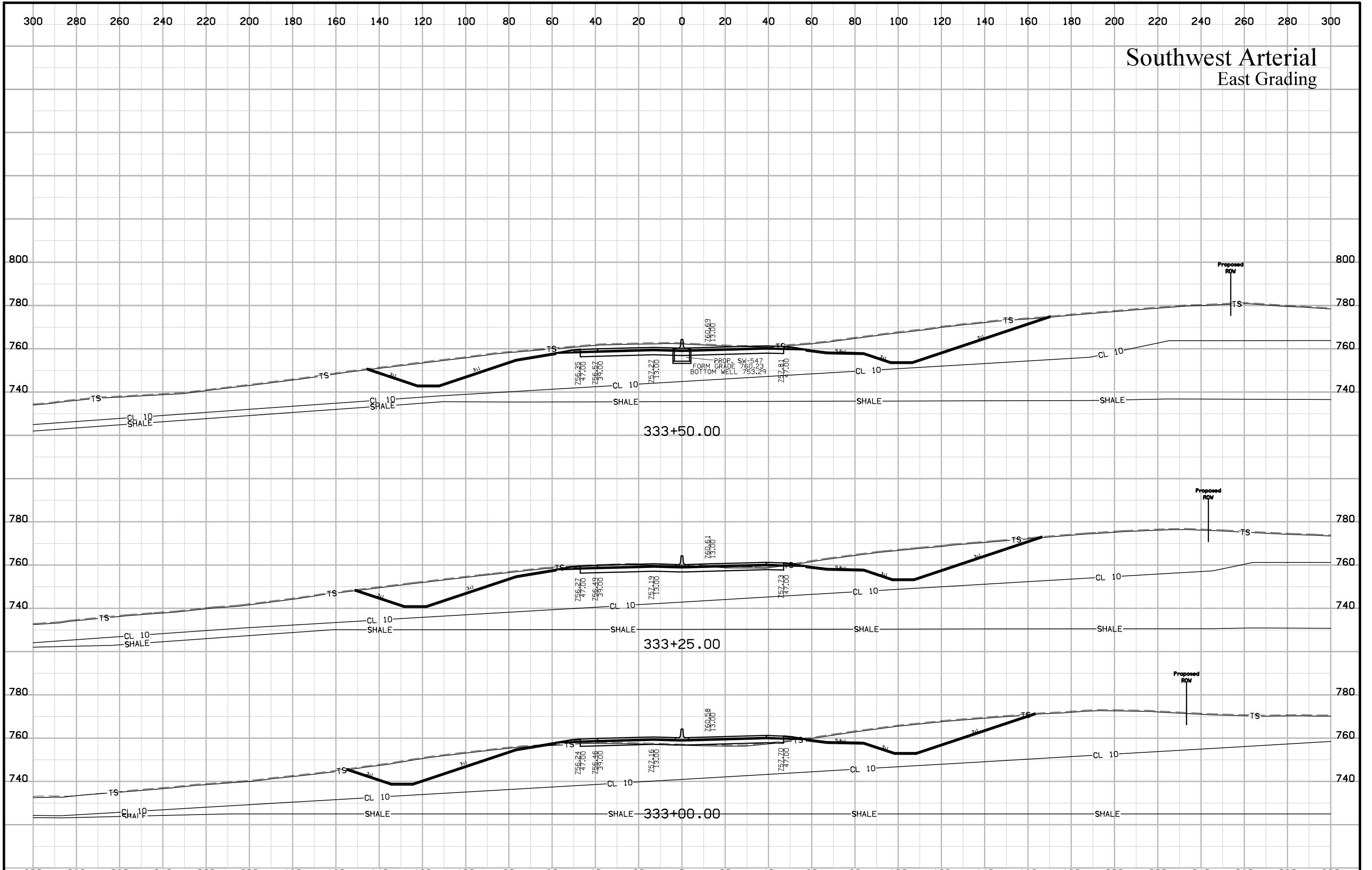
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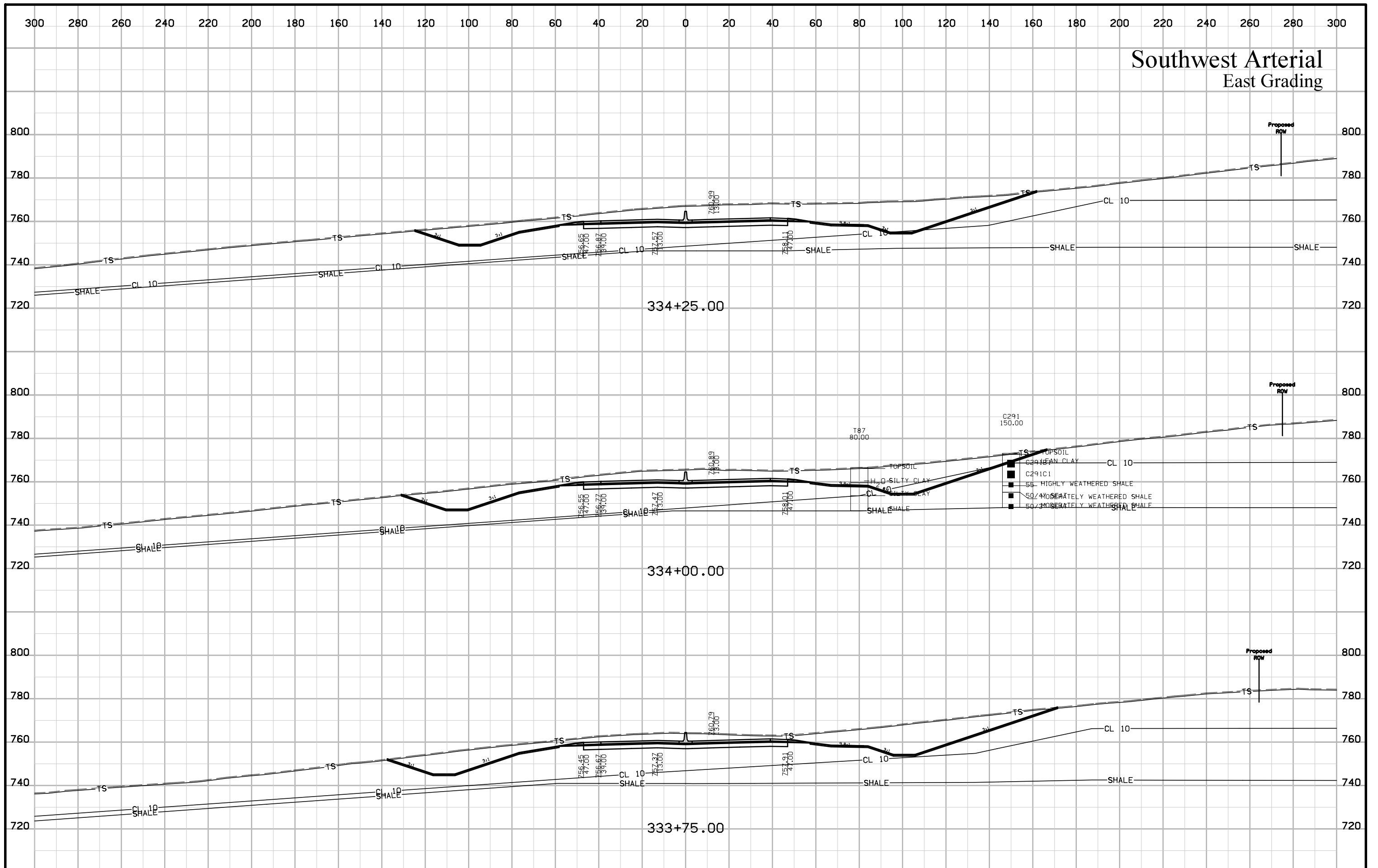
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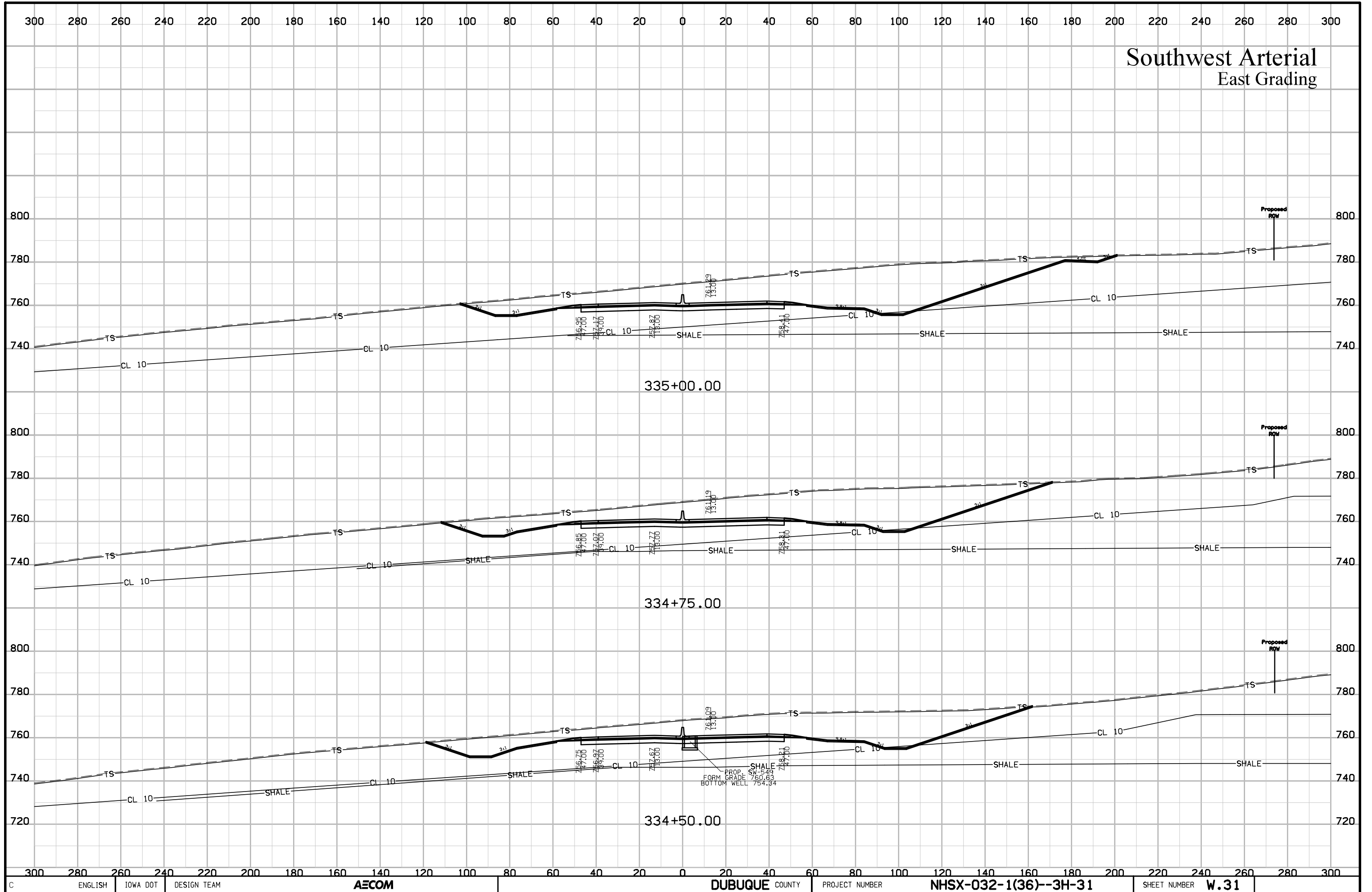


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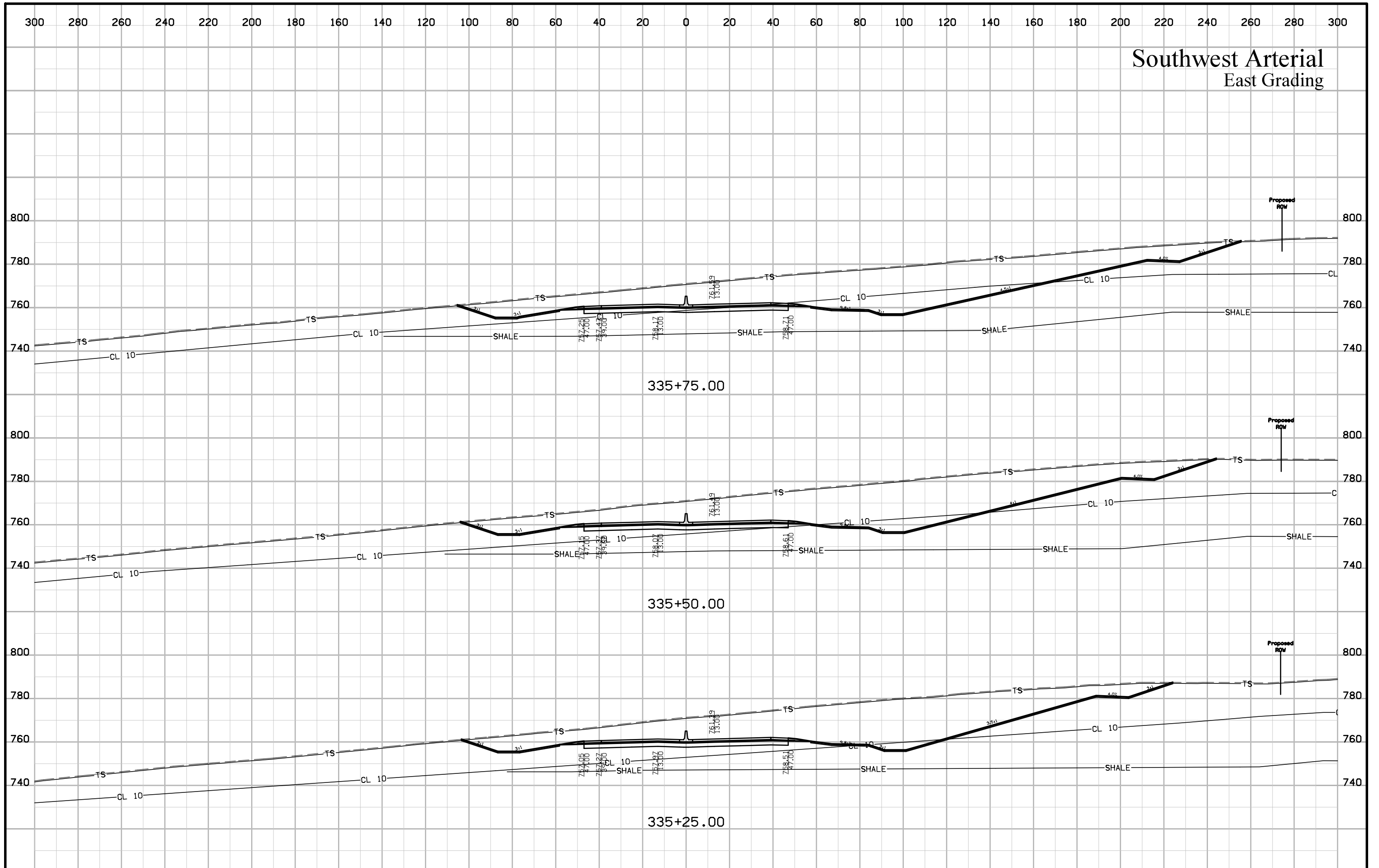


- TOPSOIL
- C291C1 LEAN CLAY
- C291C1
- 55% HIGHLY WEATHERED SHALE
- 50% MODERATELY WEATHERED SHALE
- 50% MODERATELY WEATHERED SHALE

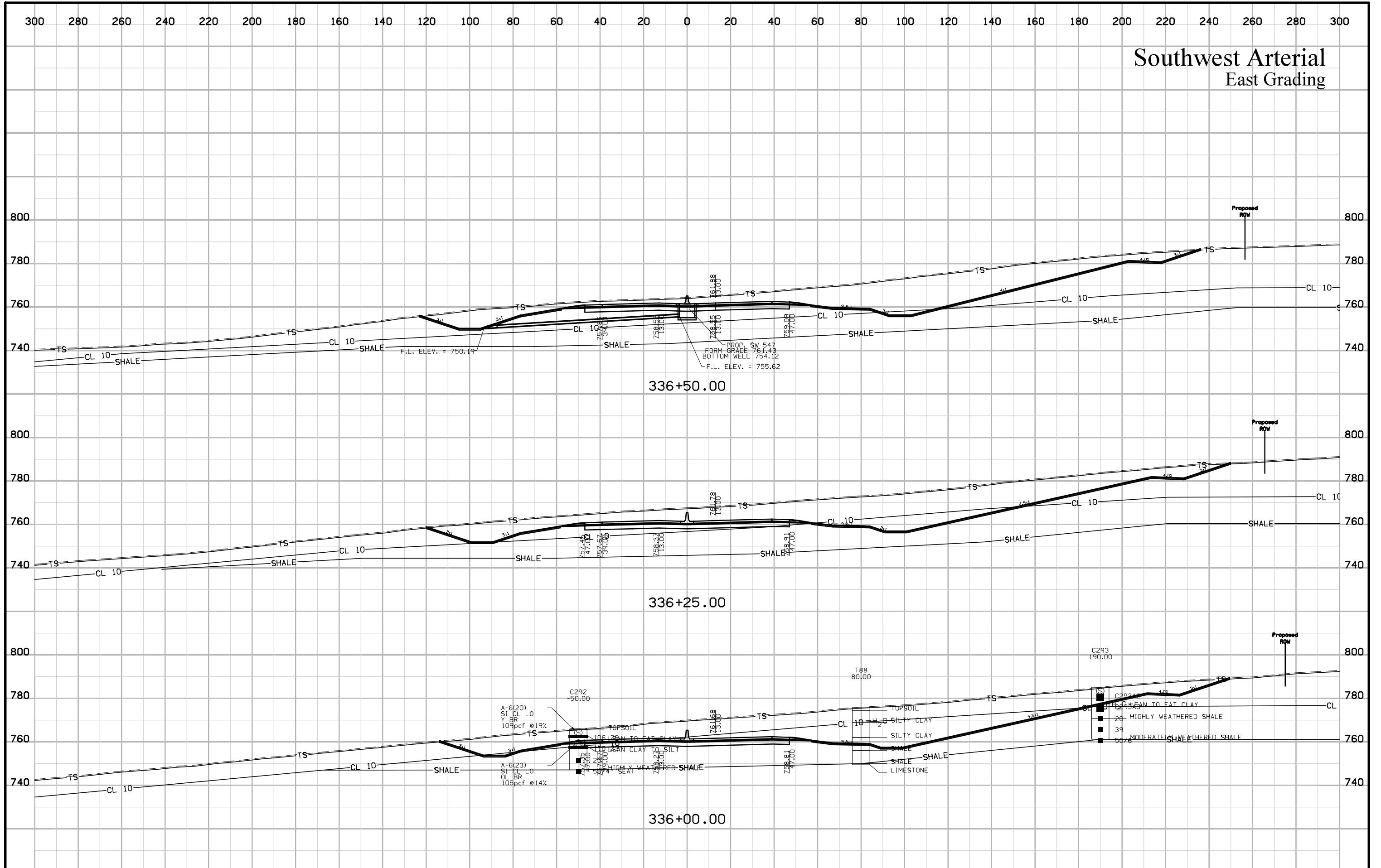
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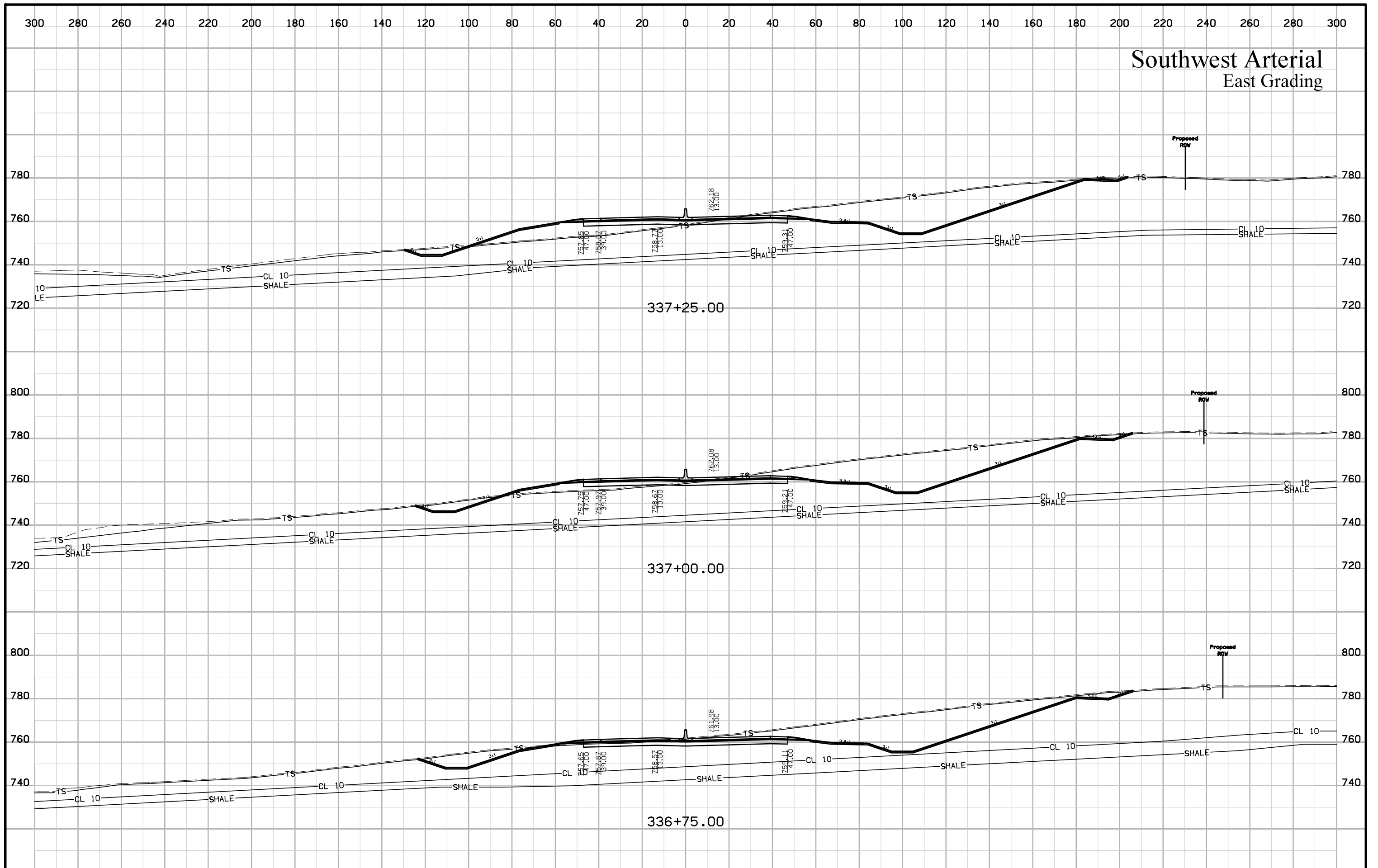
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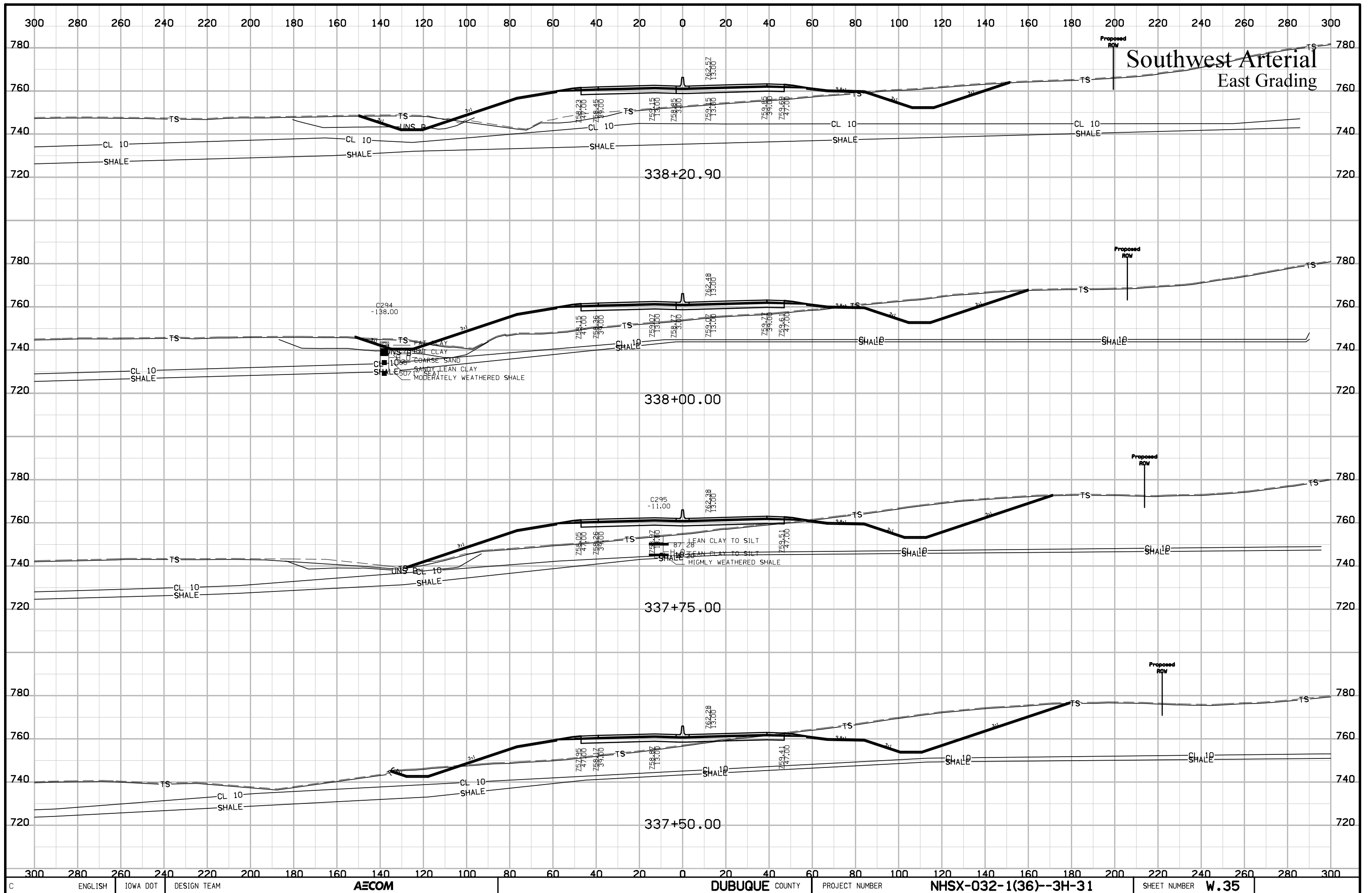


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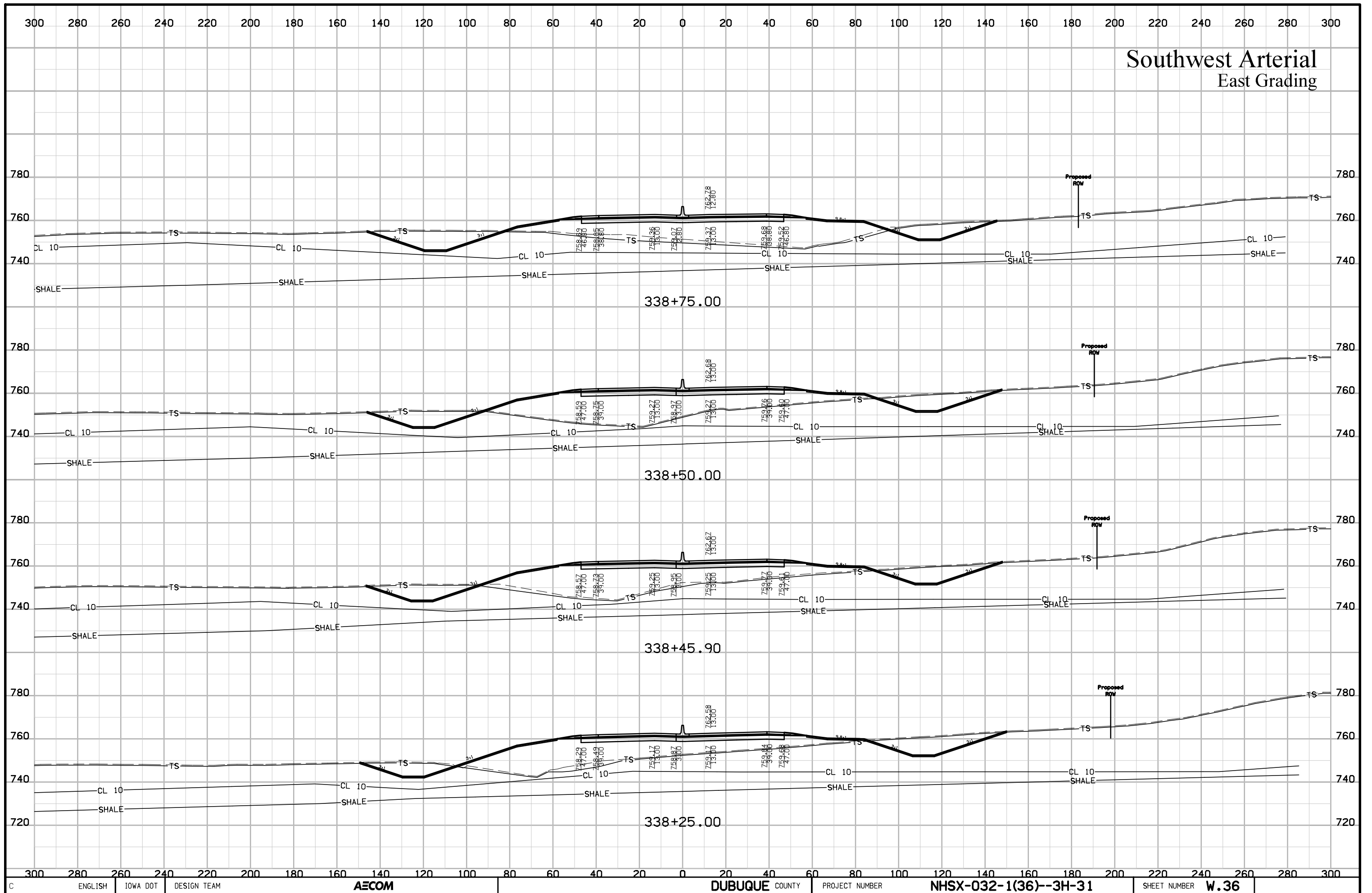


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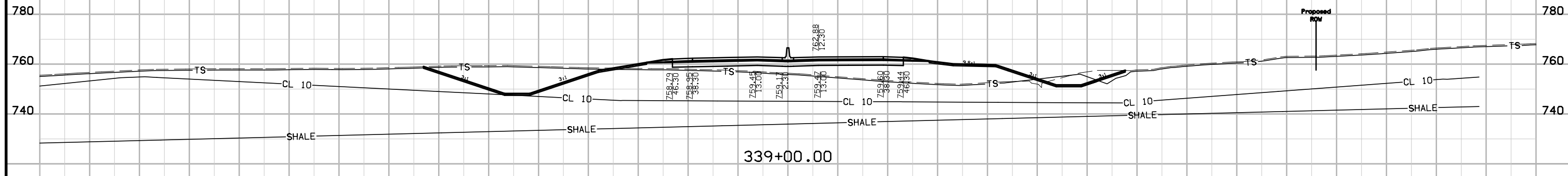
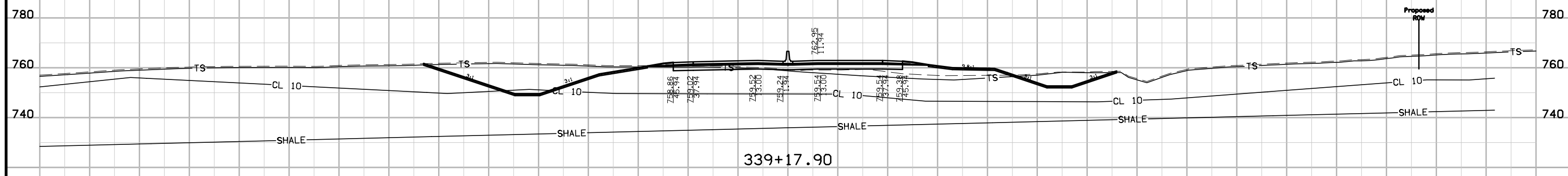
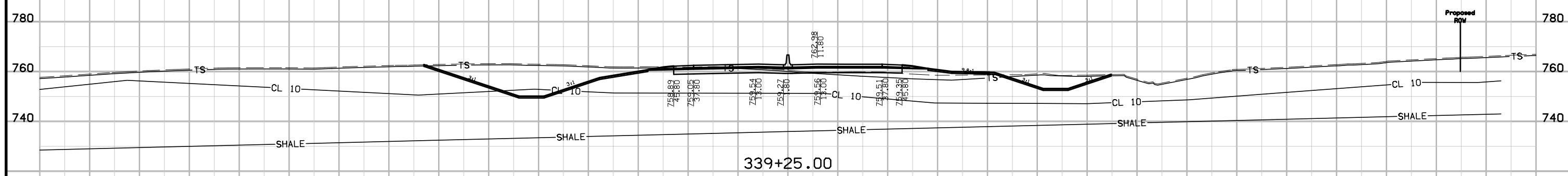
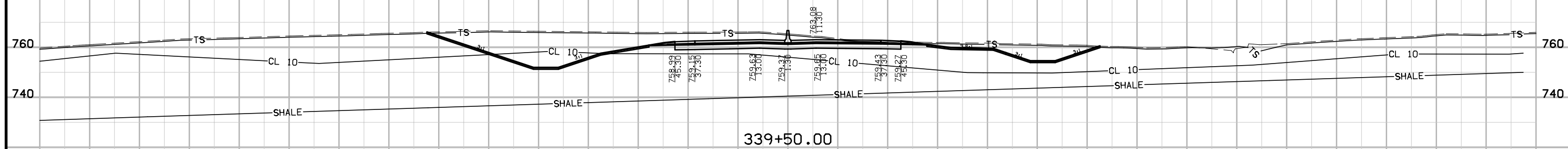


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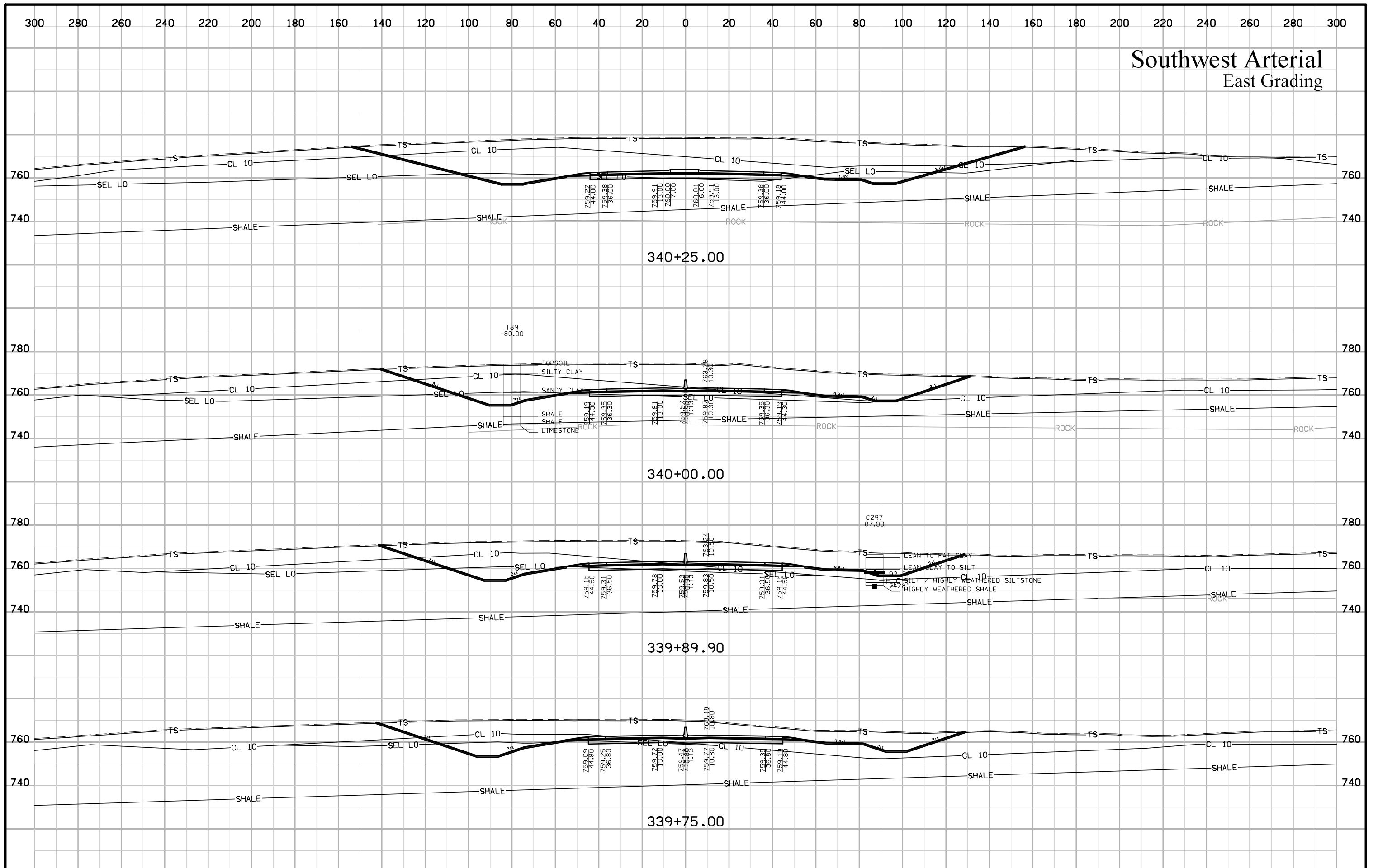


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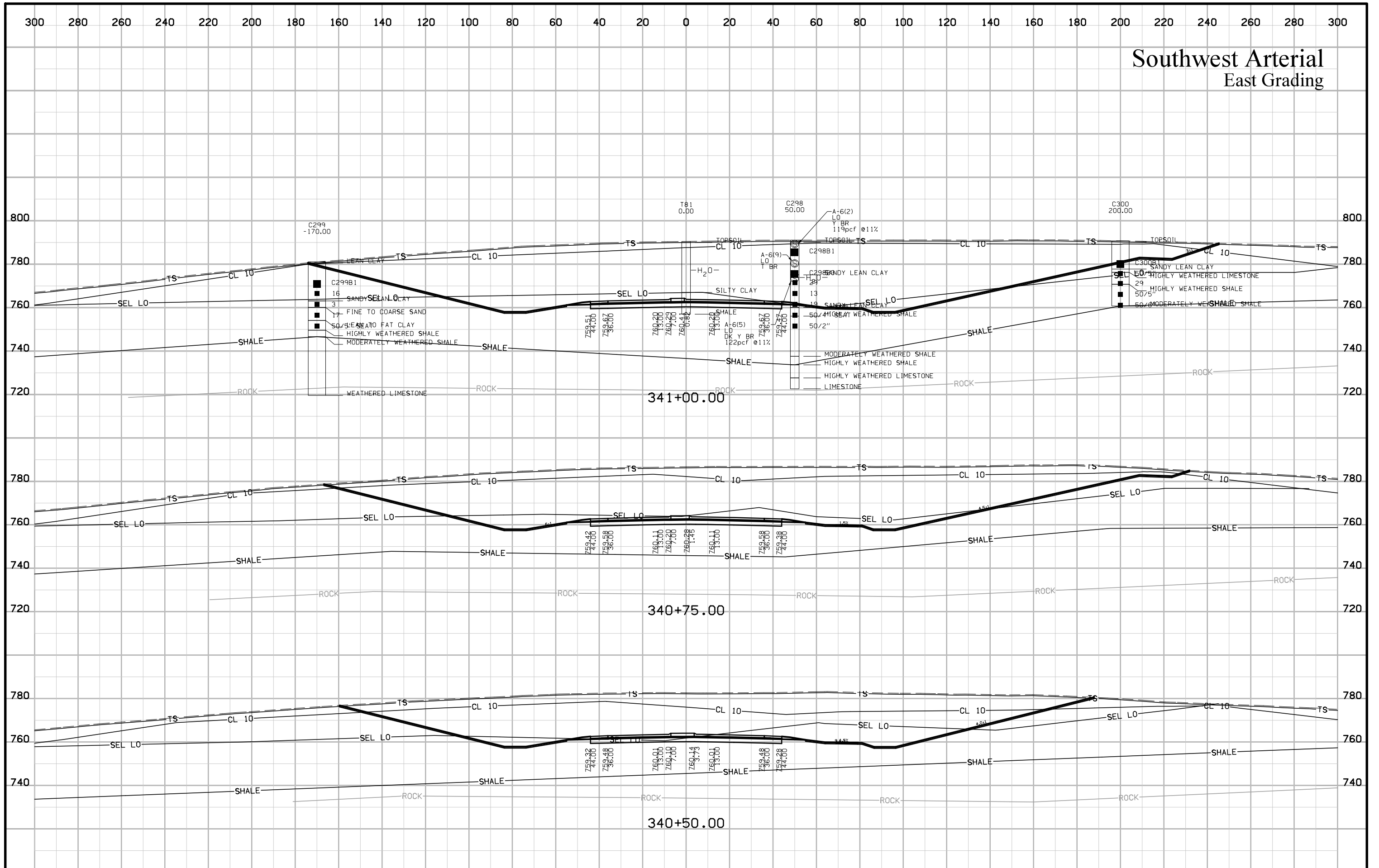
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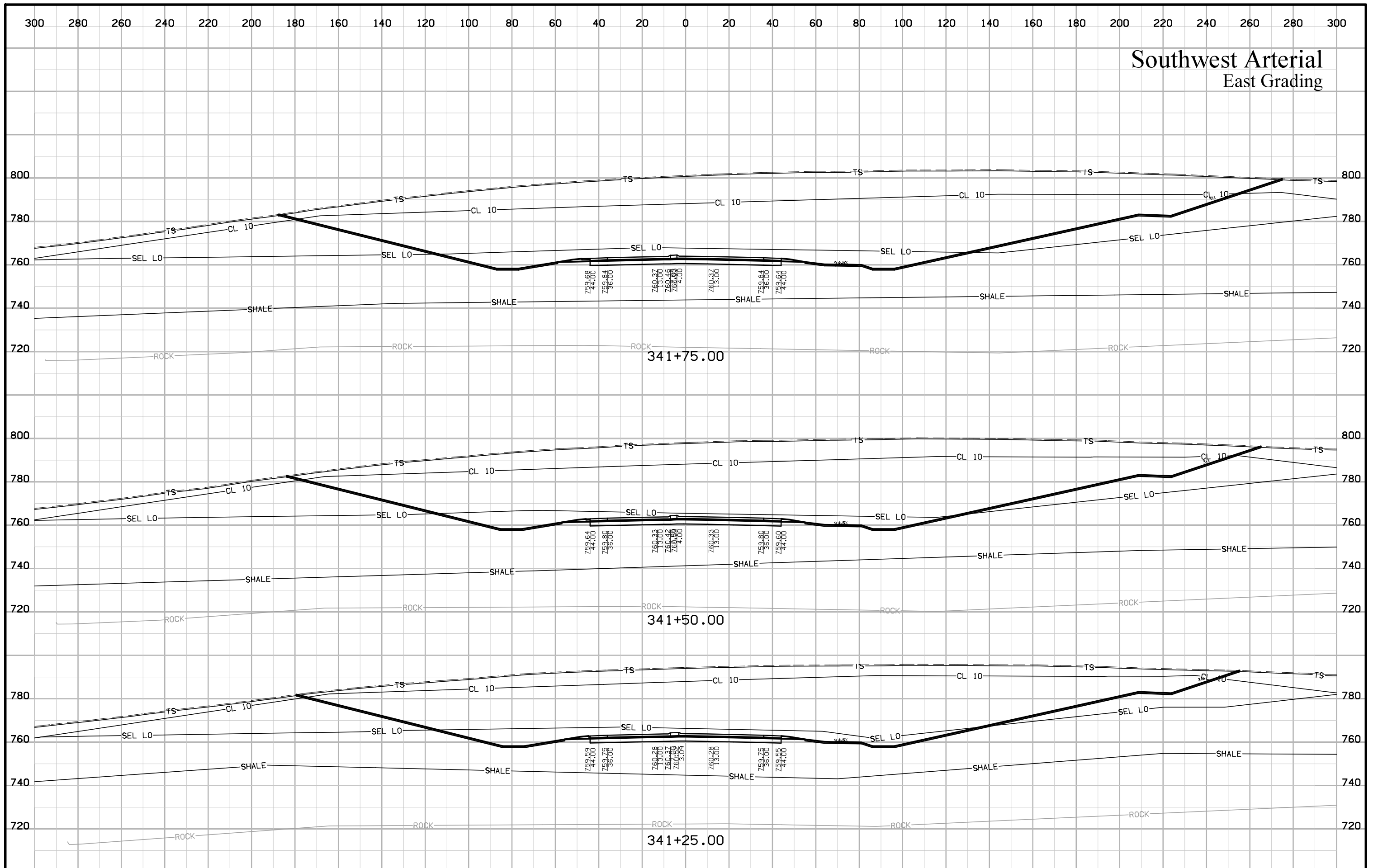
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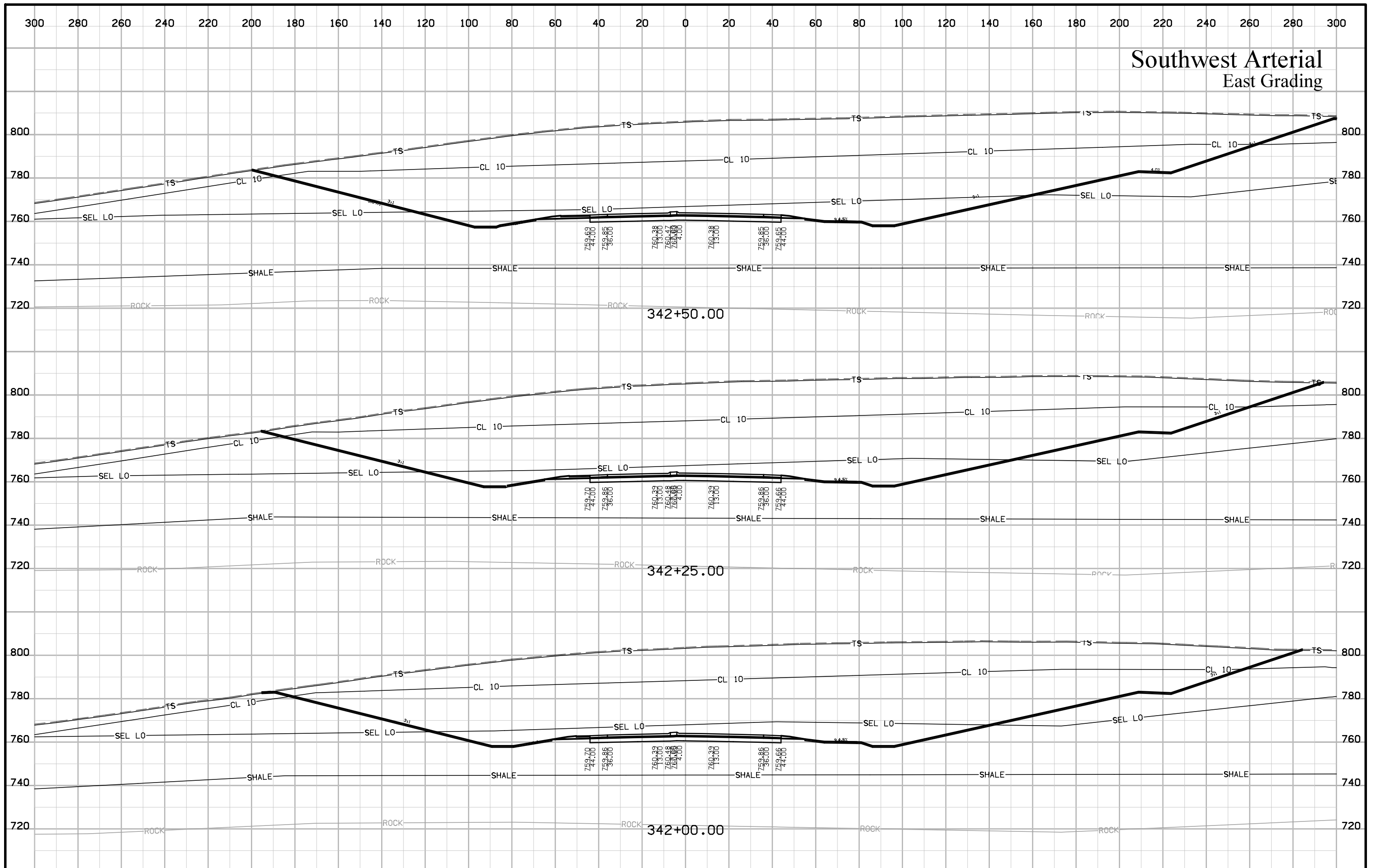
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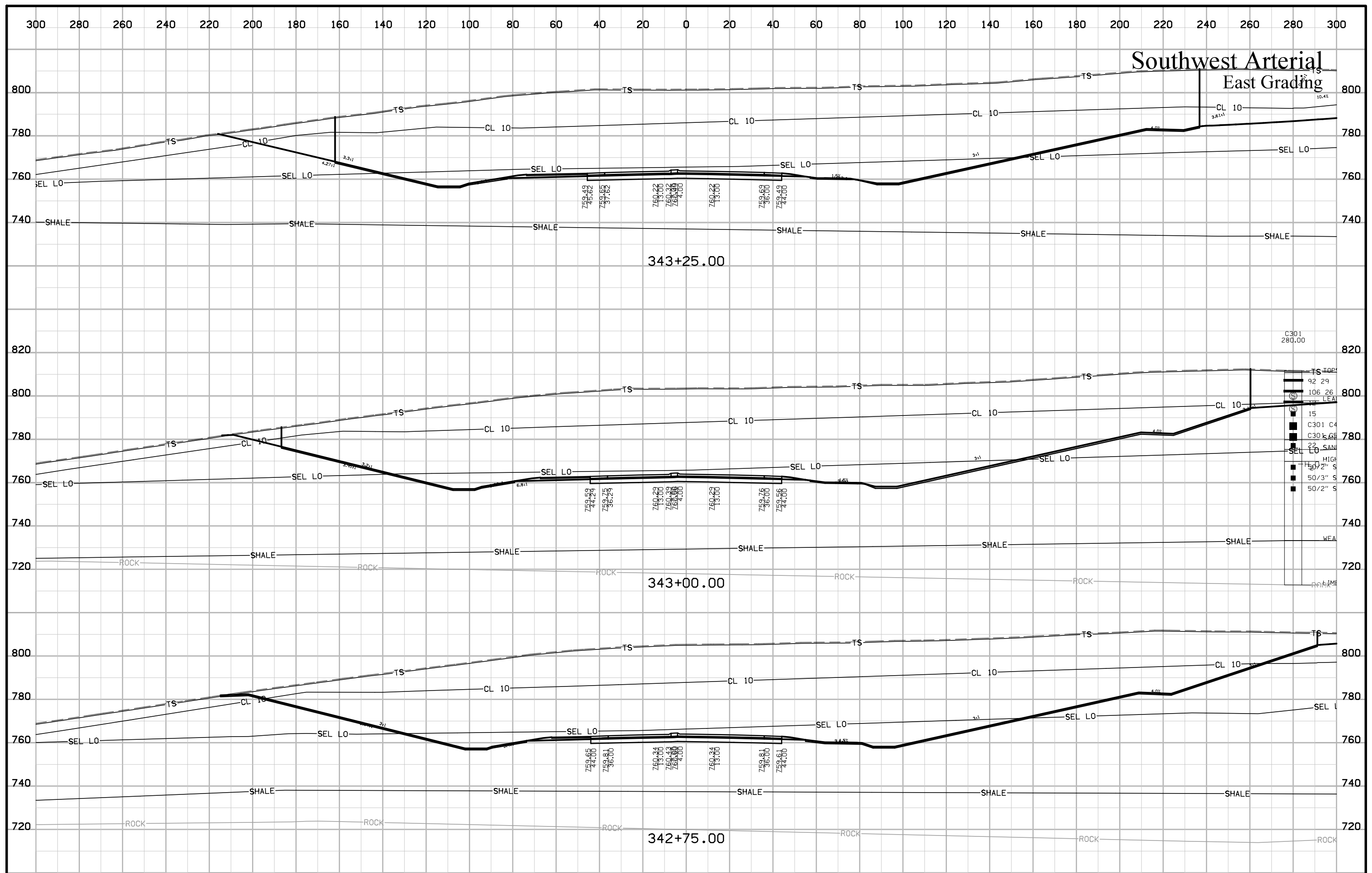


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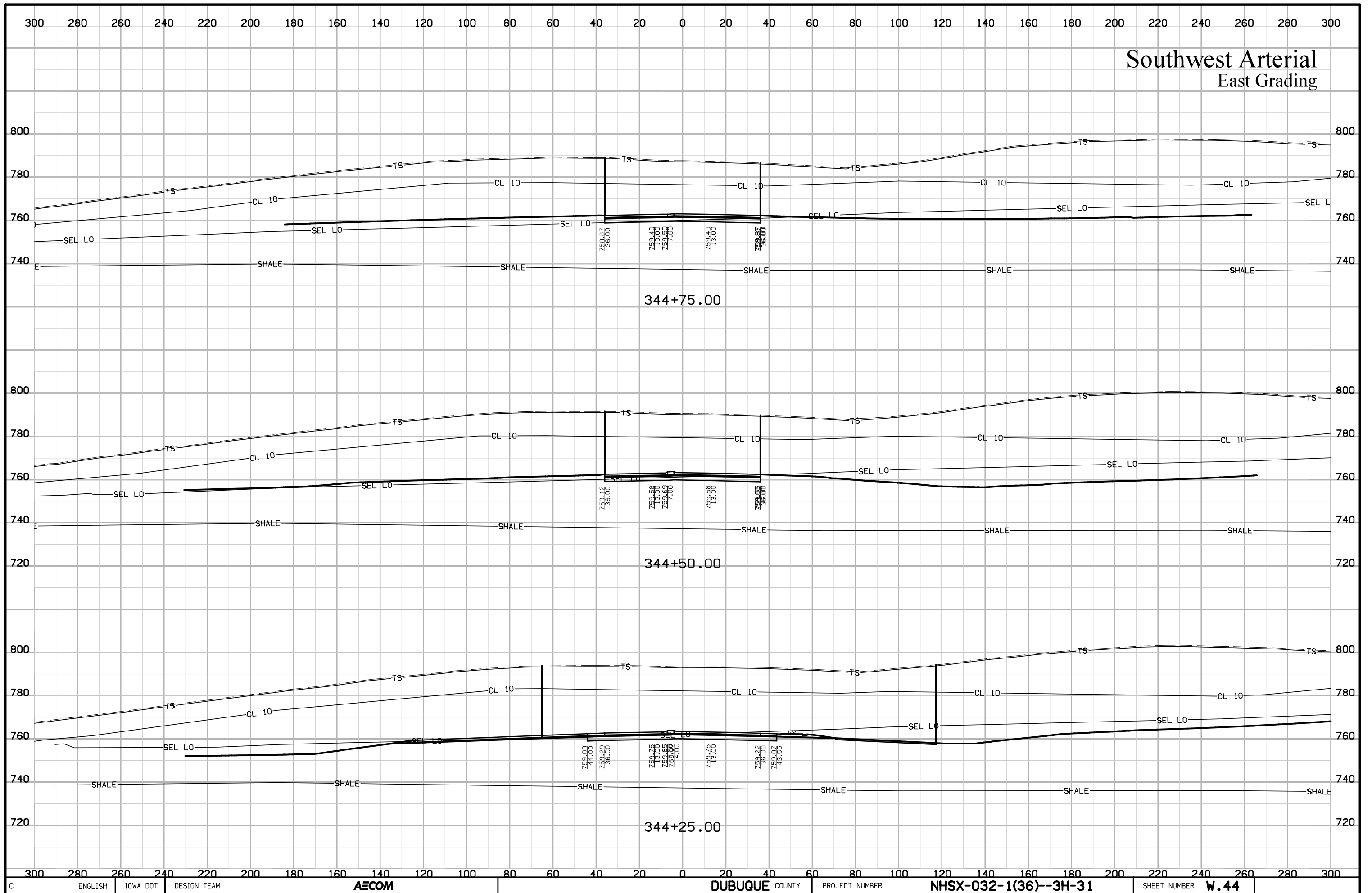


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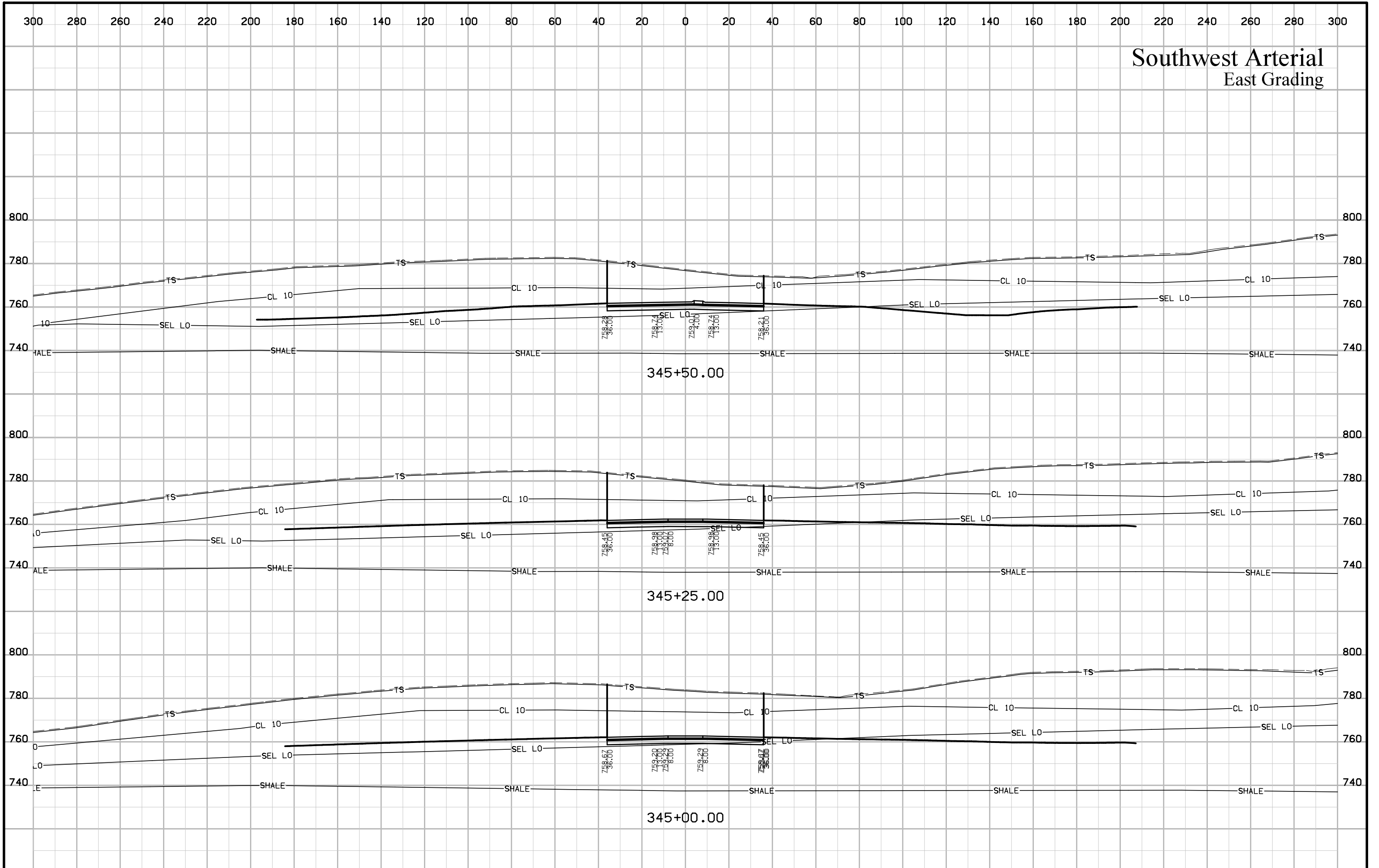




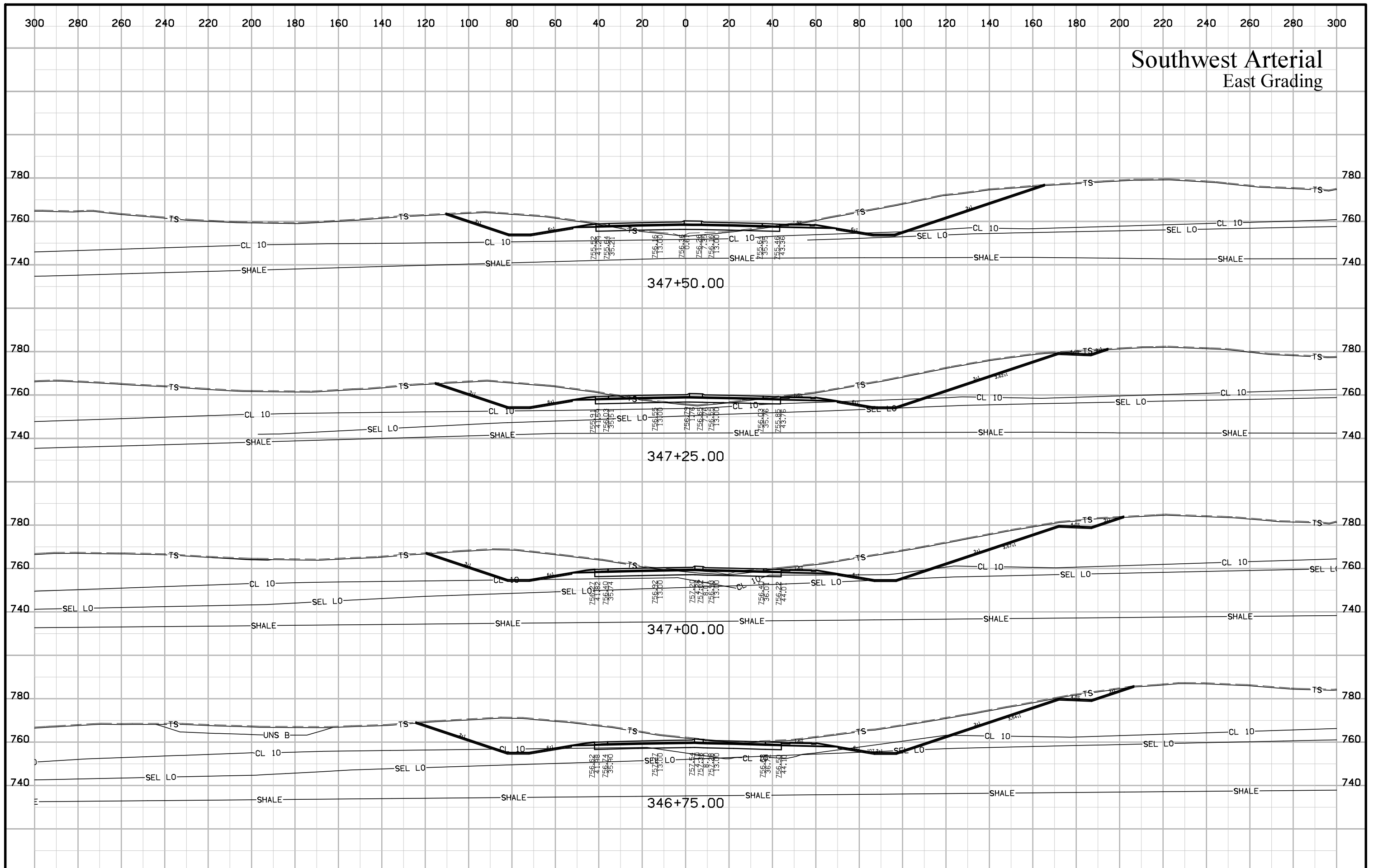
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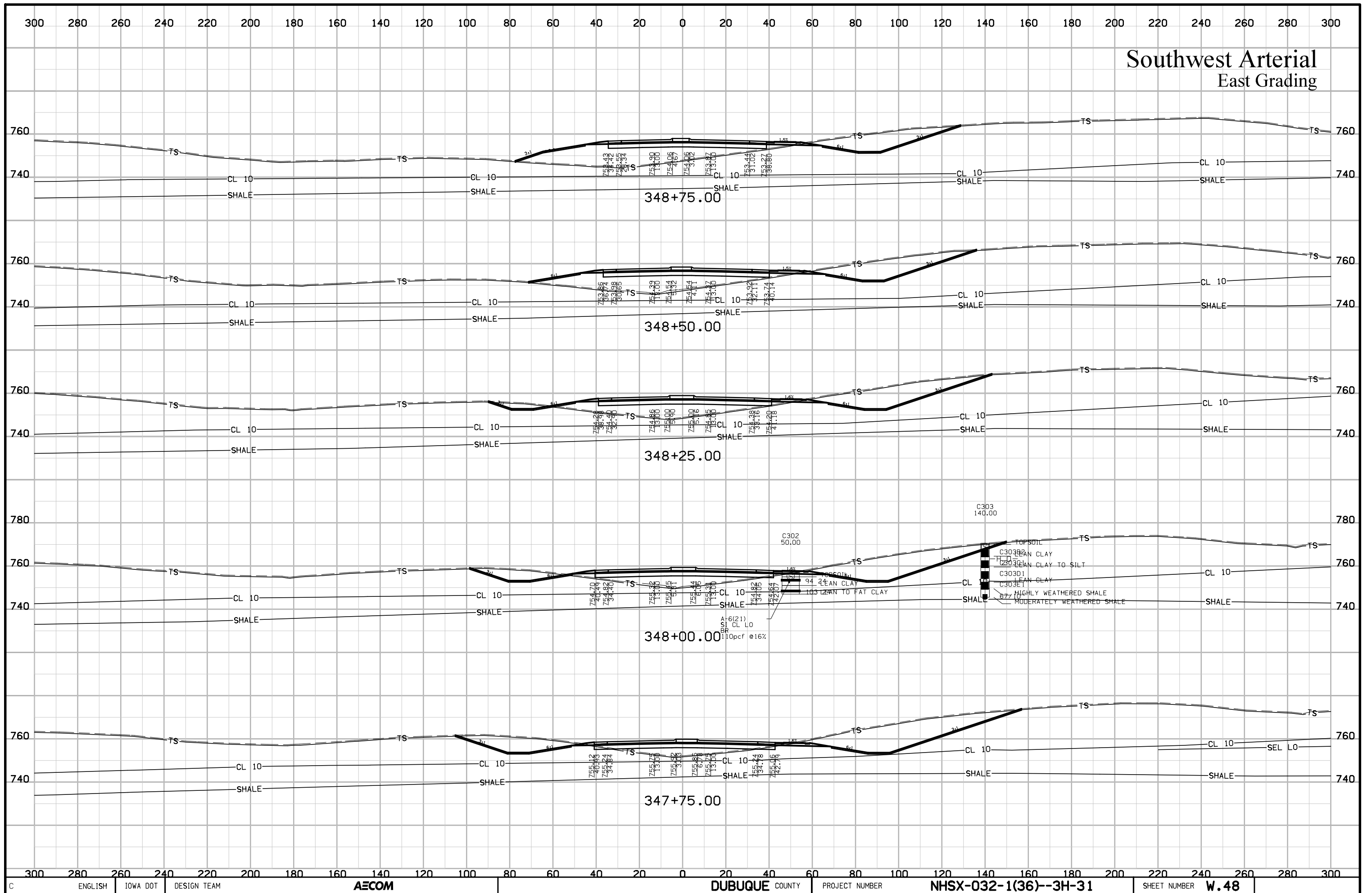
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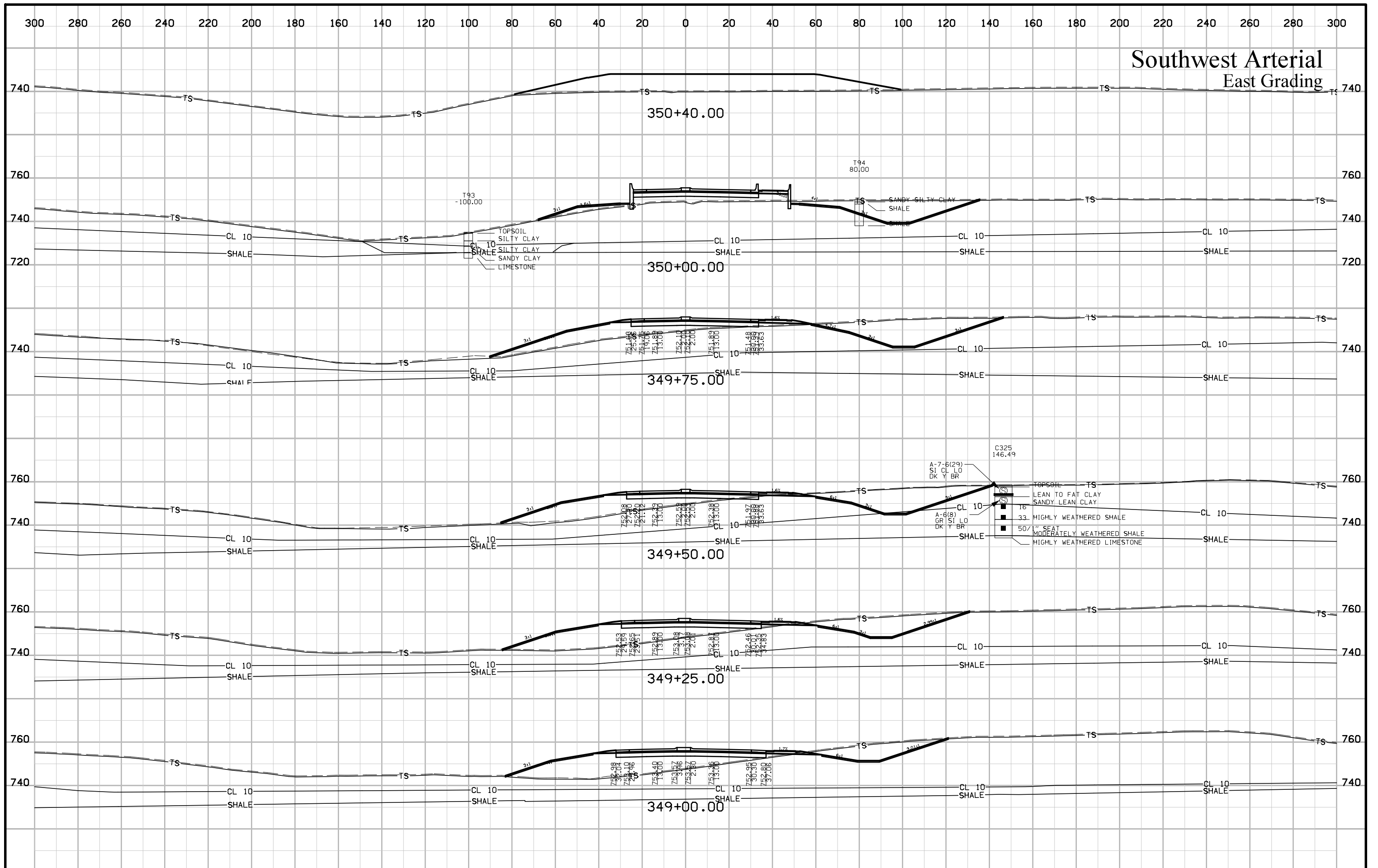
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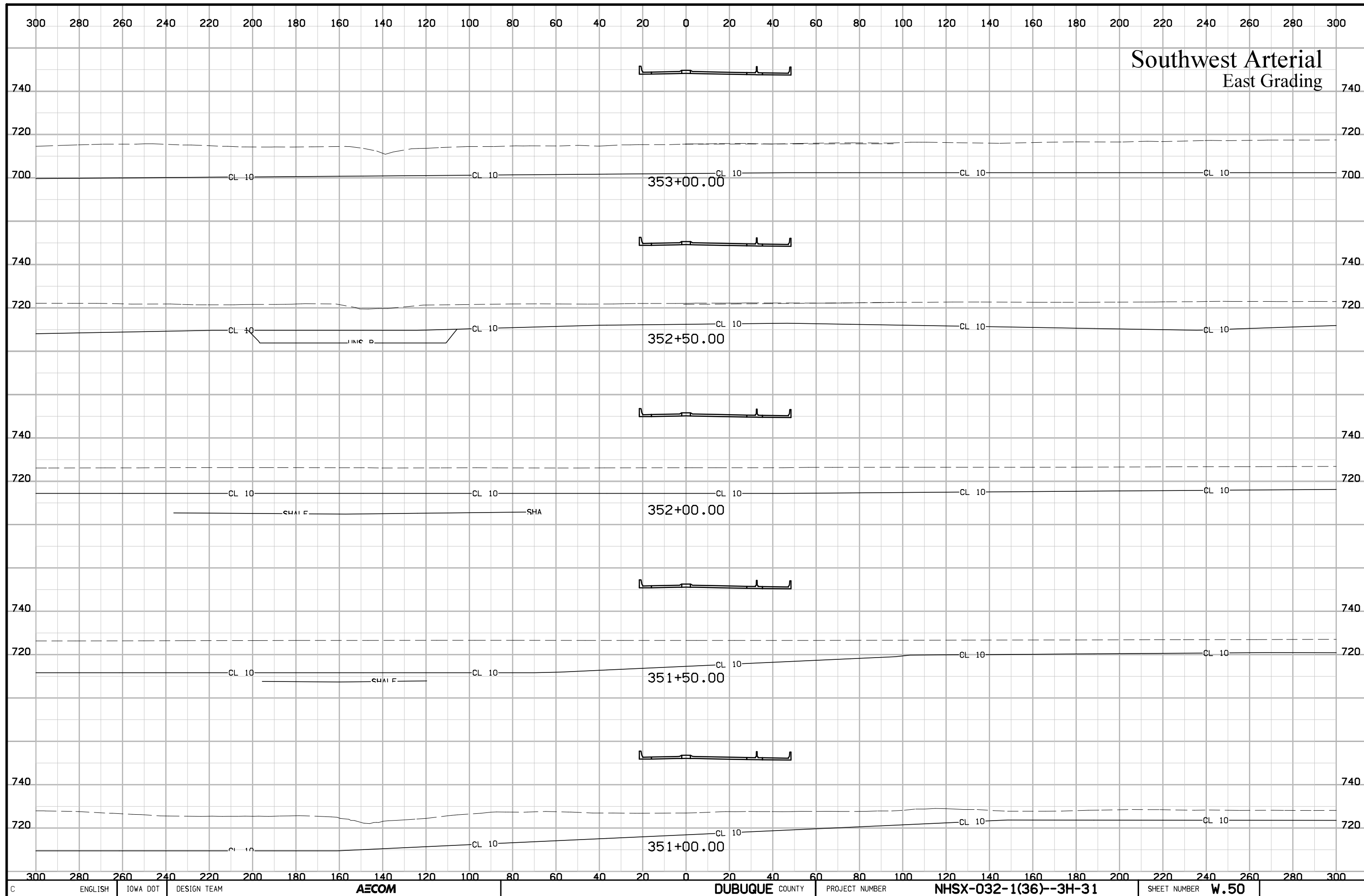


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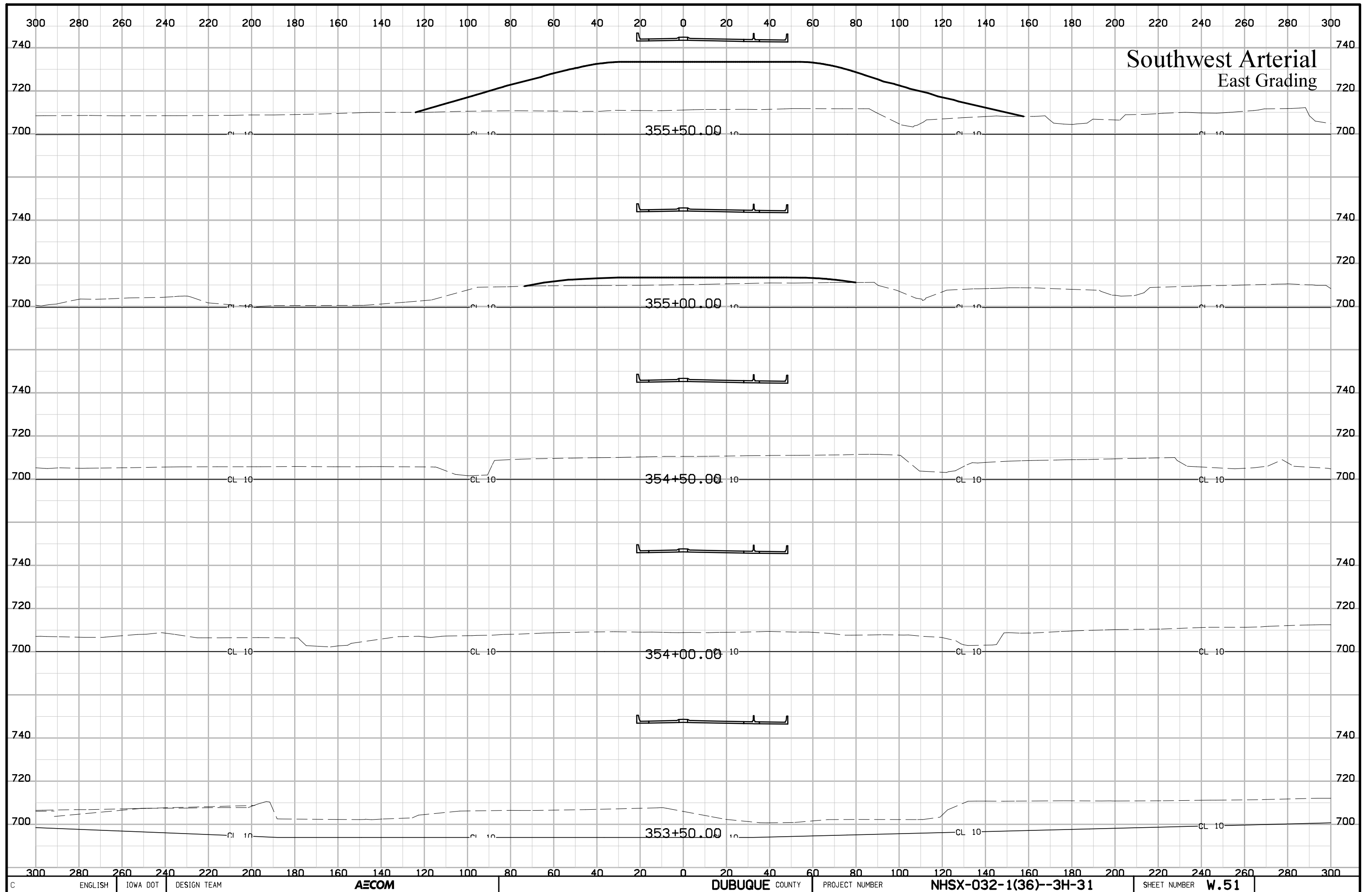


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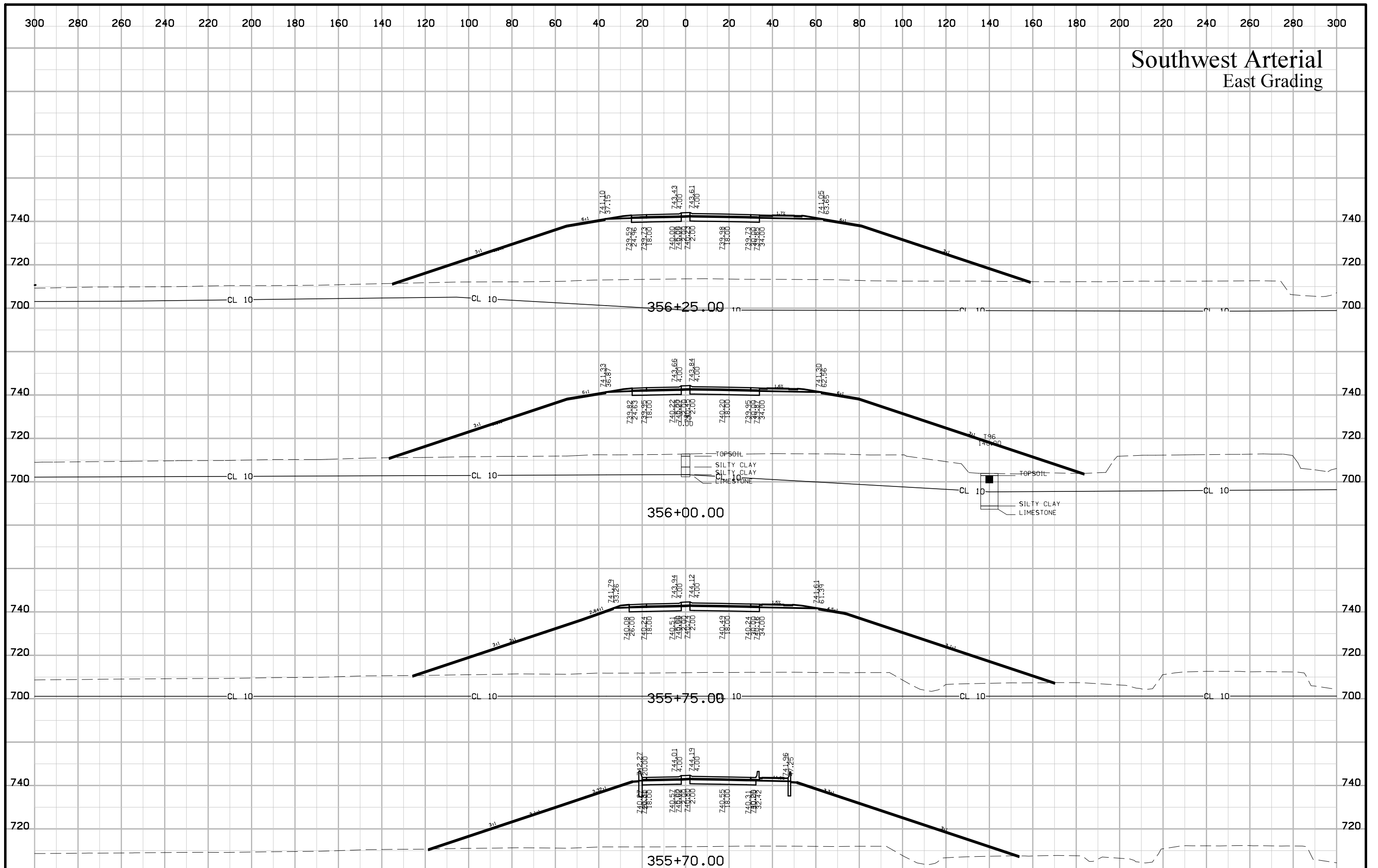


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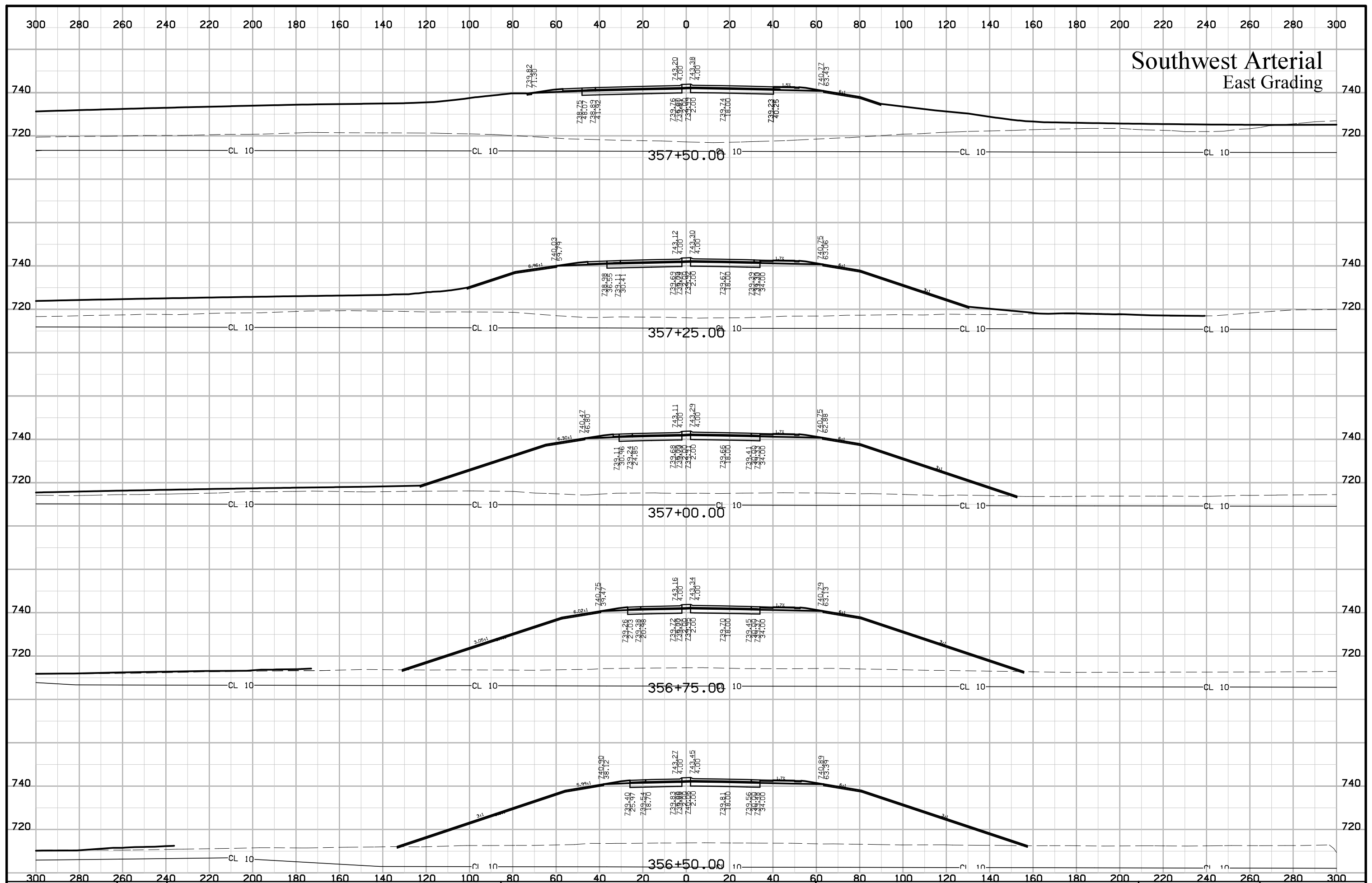


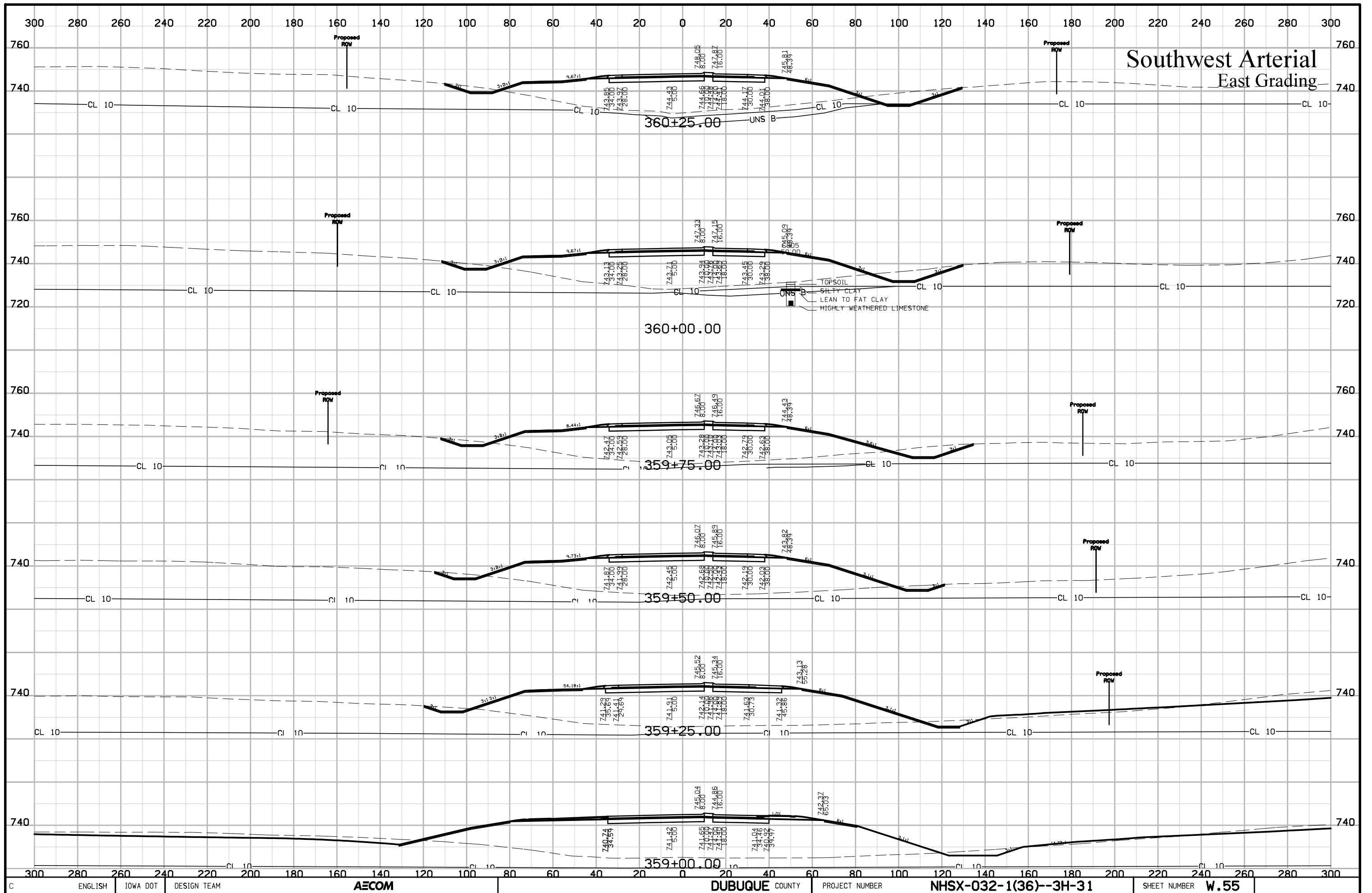
Southwest Arterial
East Grading

Southwest Arterial East Grading

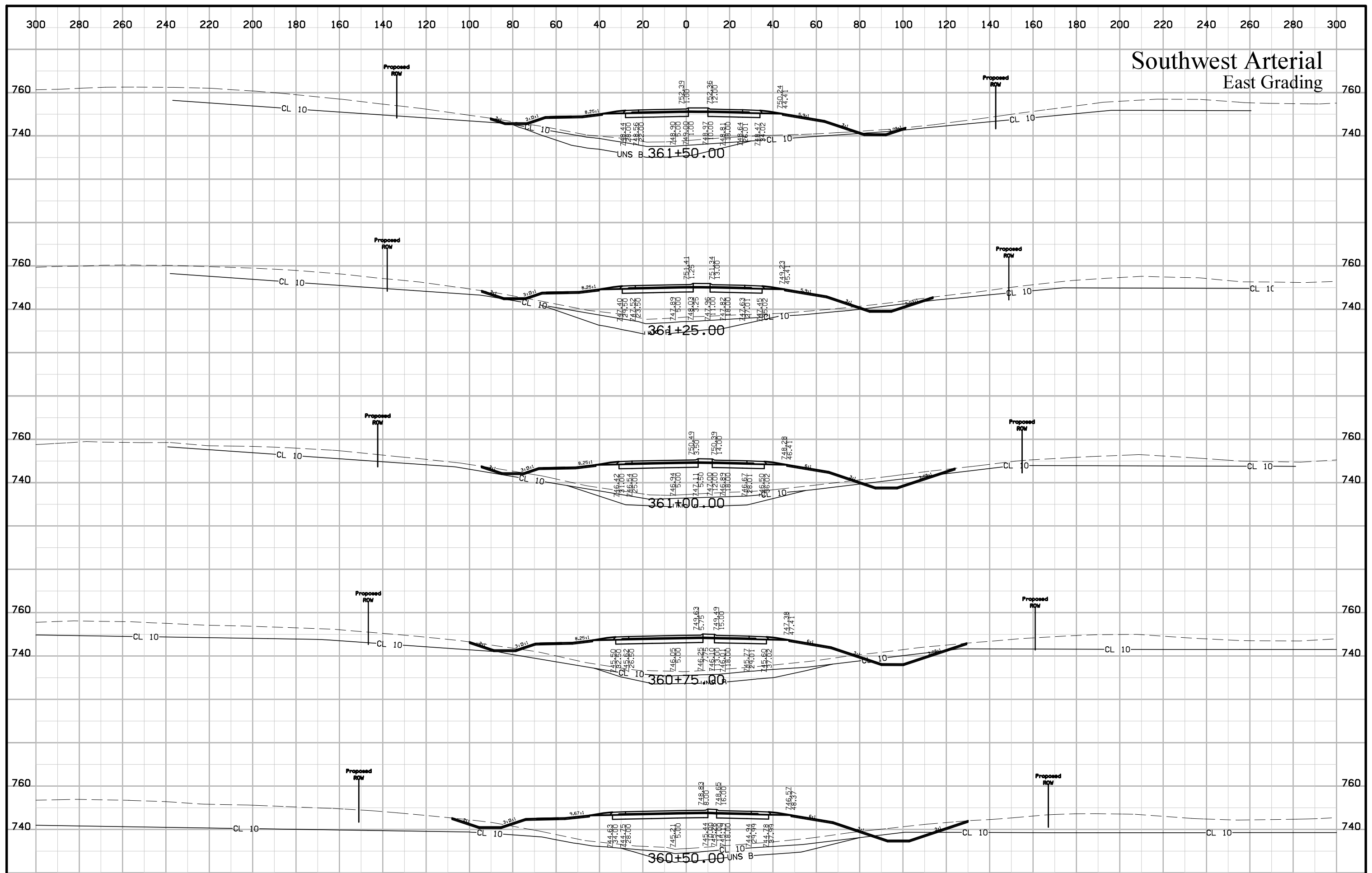


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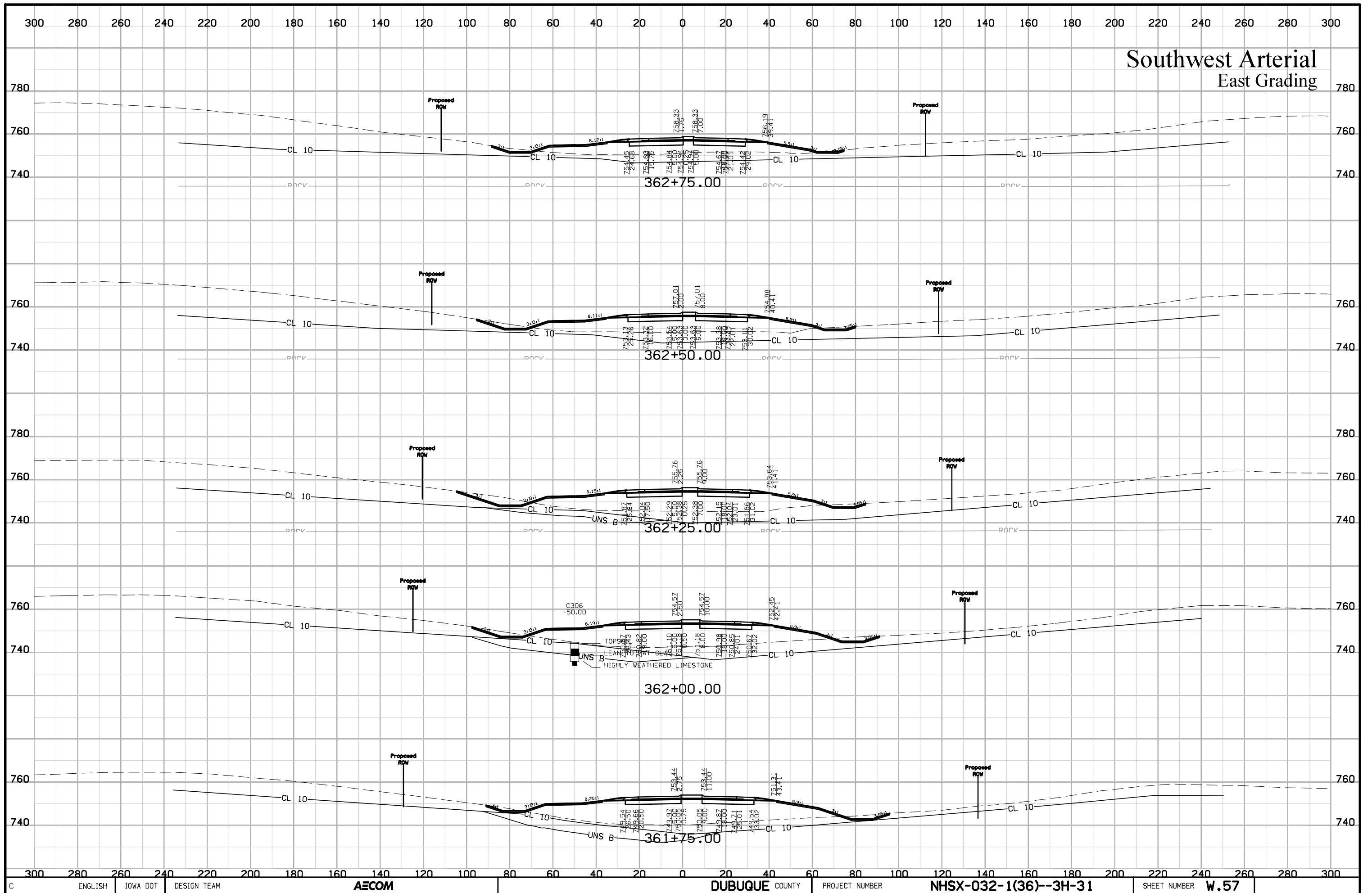




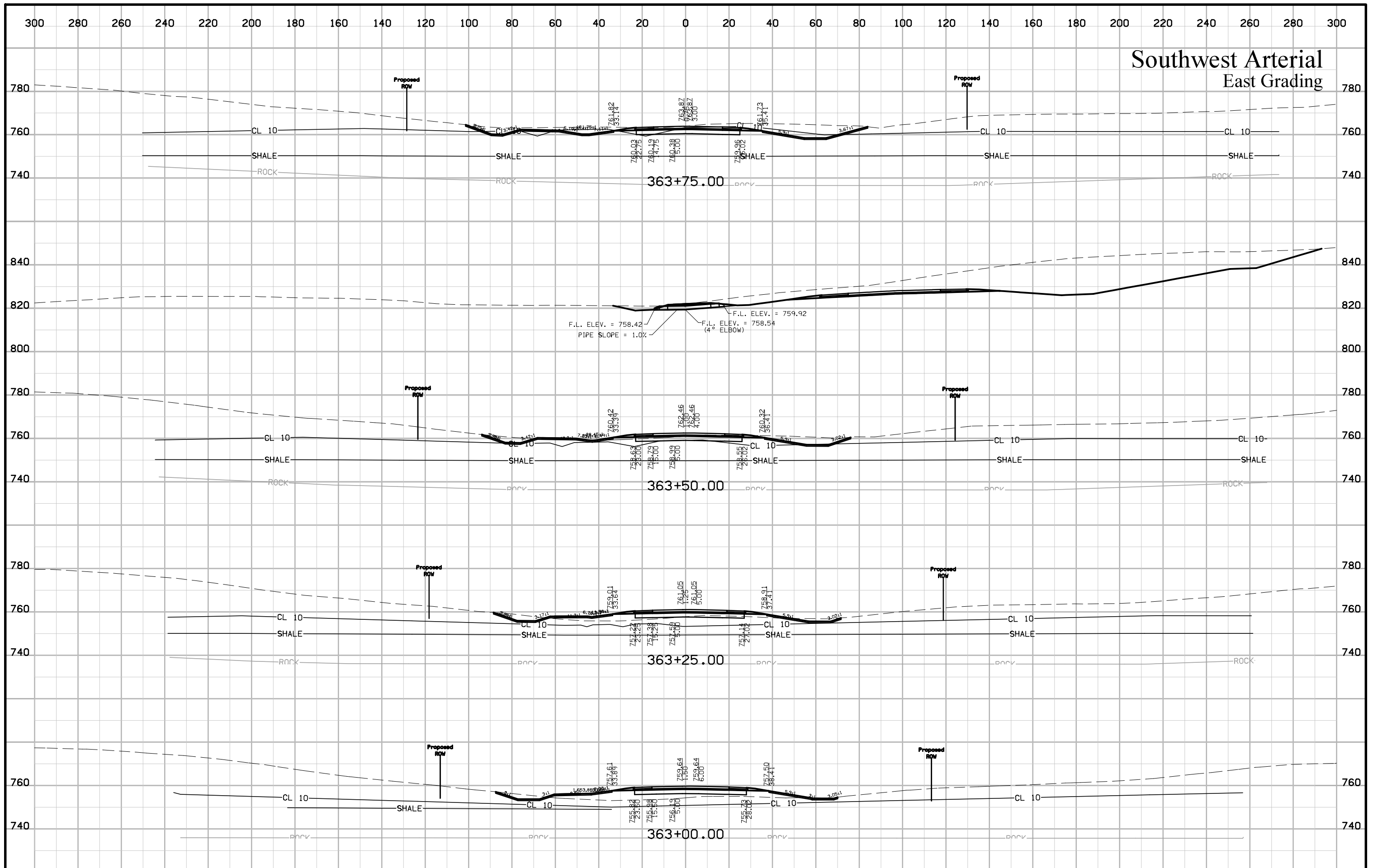
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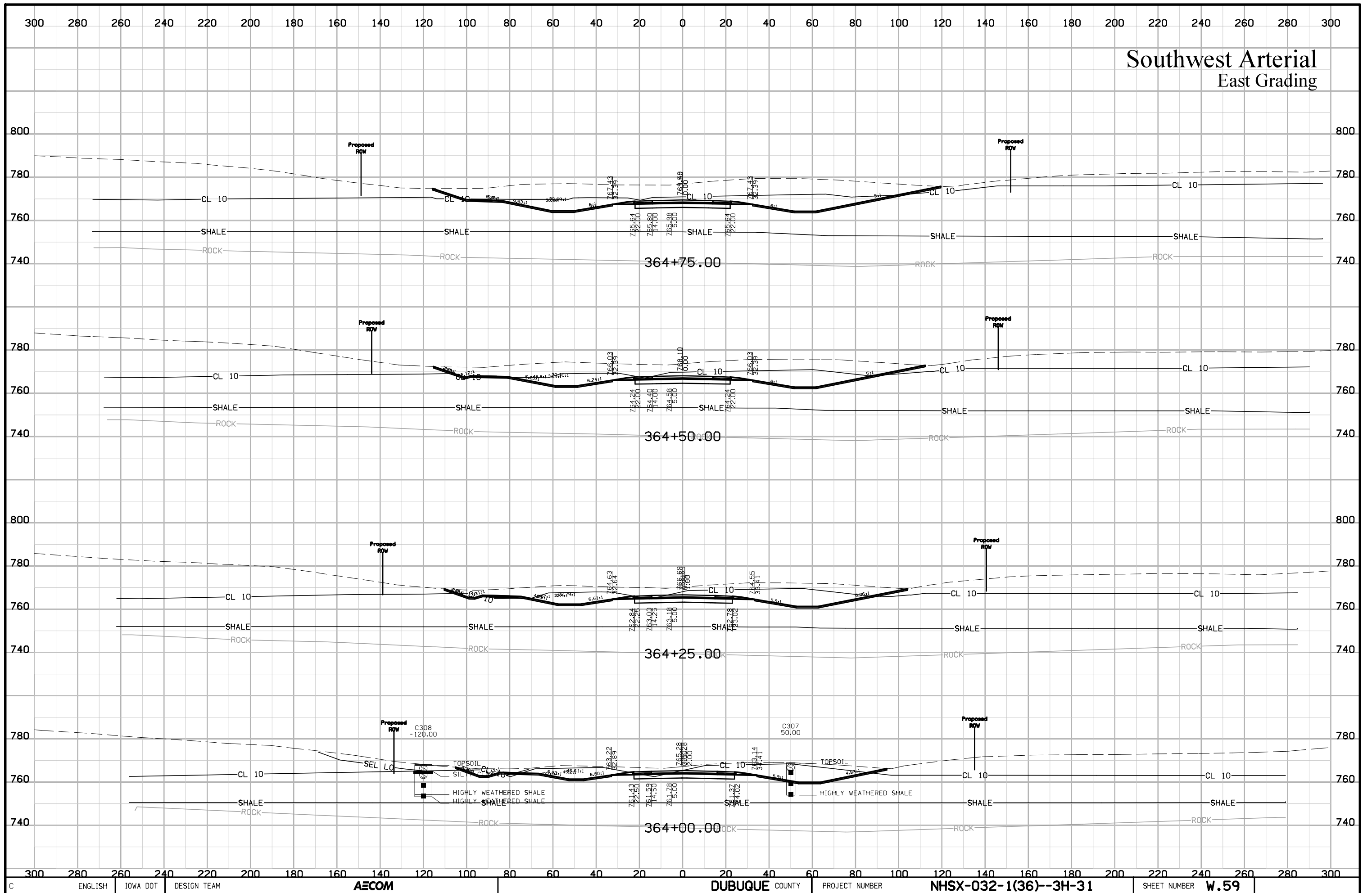
Southwest Arterial East Grading



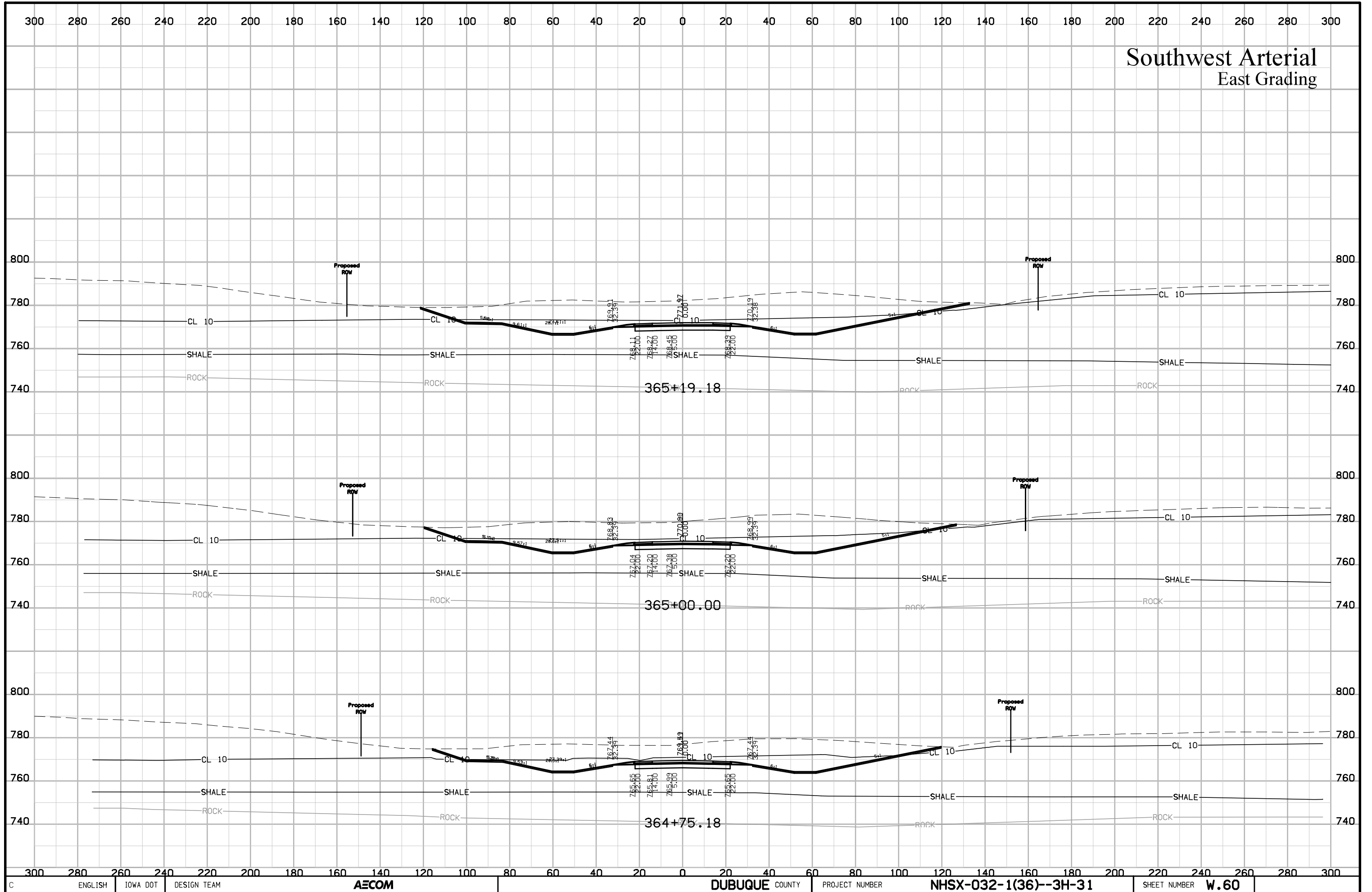
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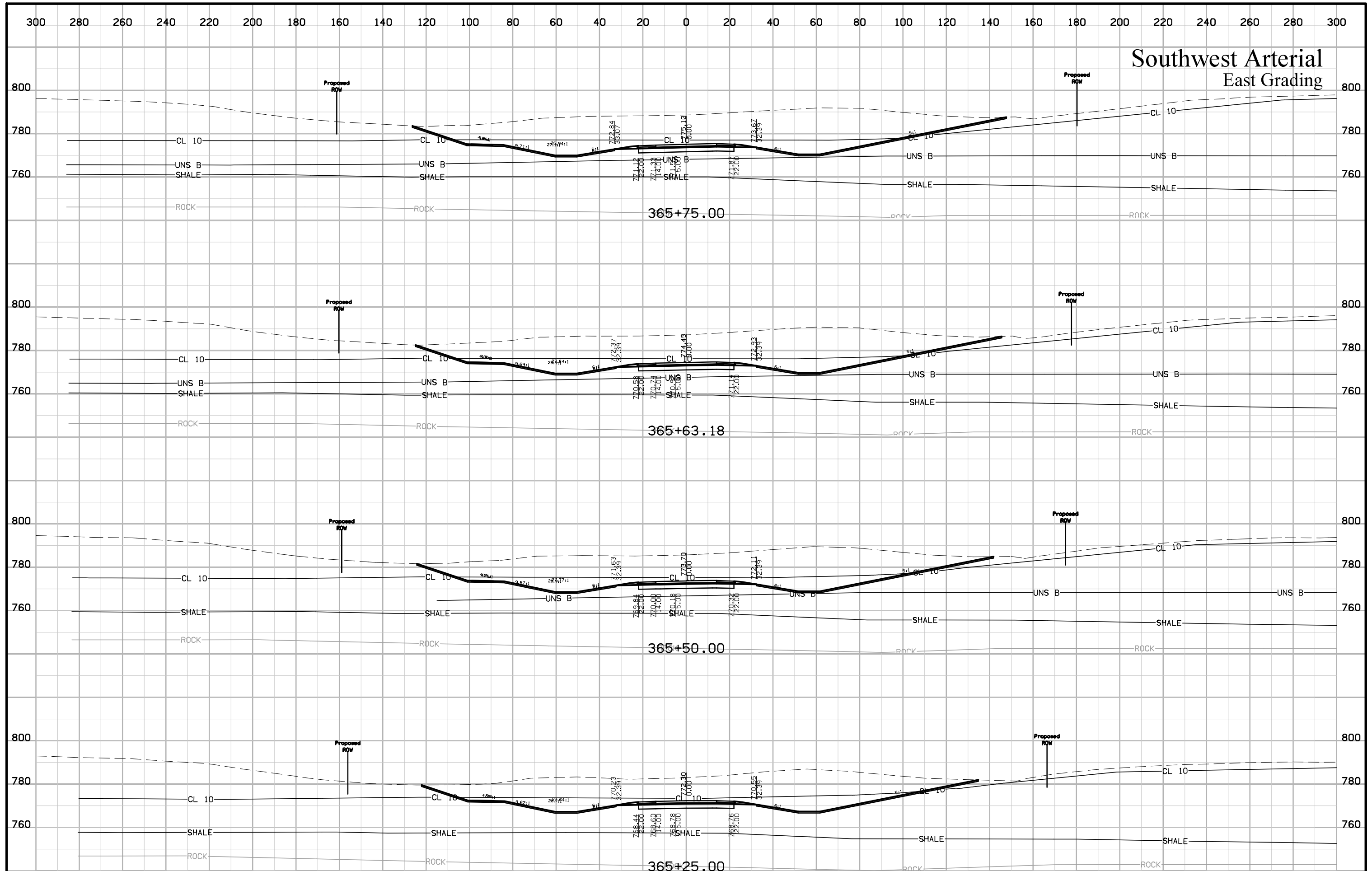
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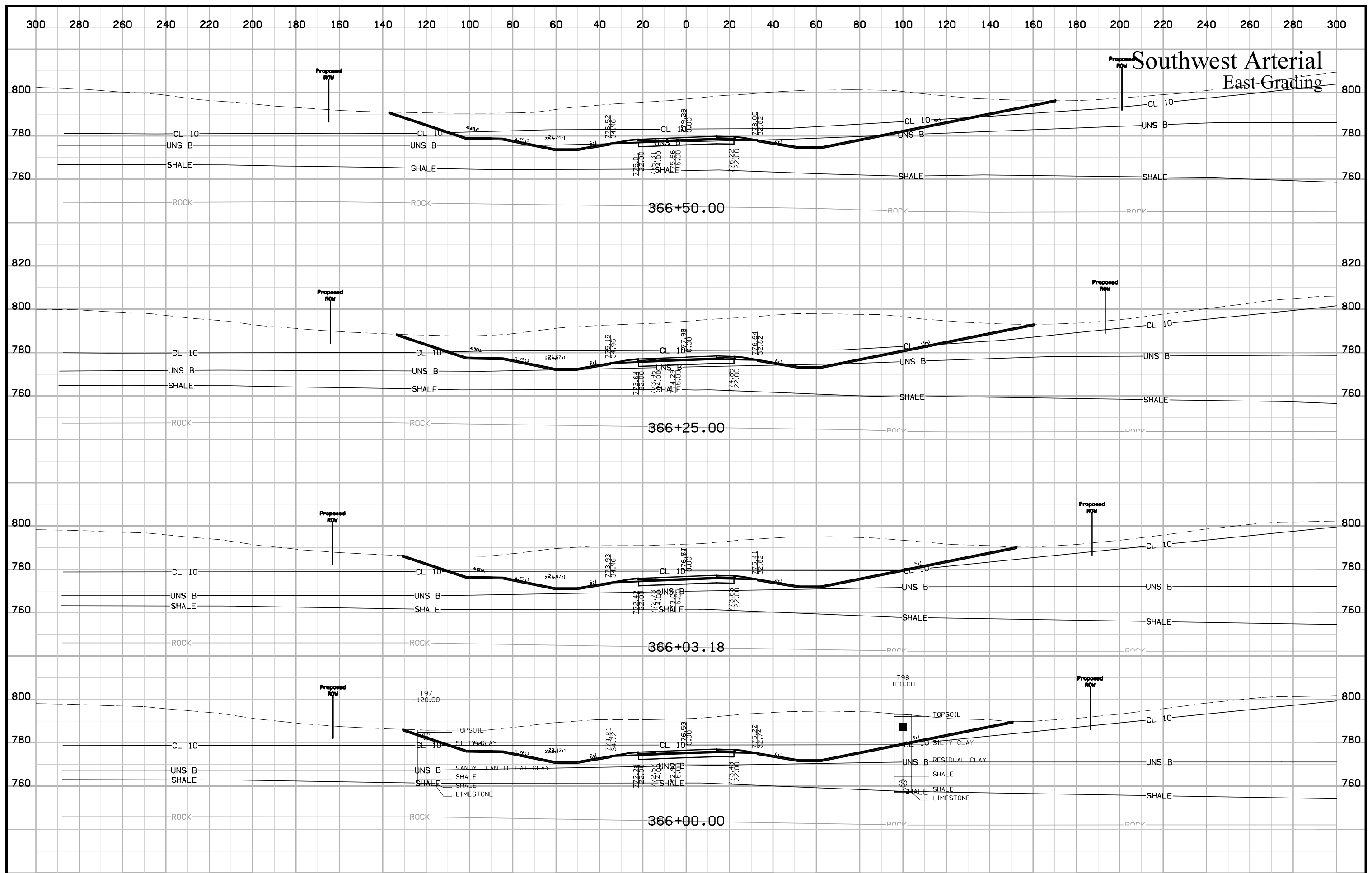


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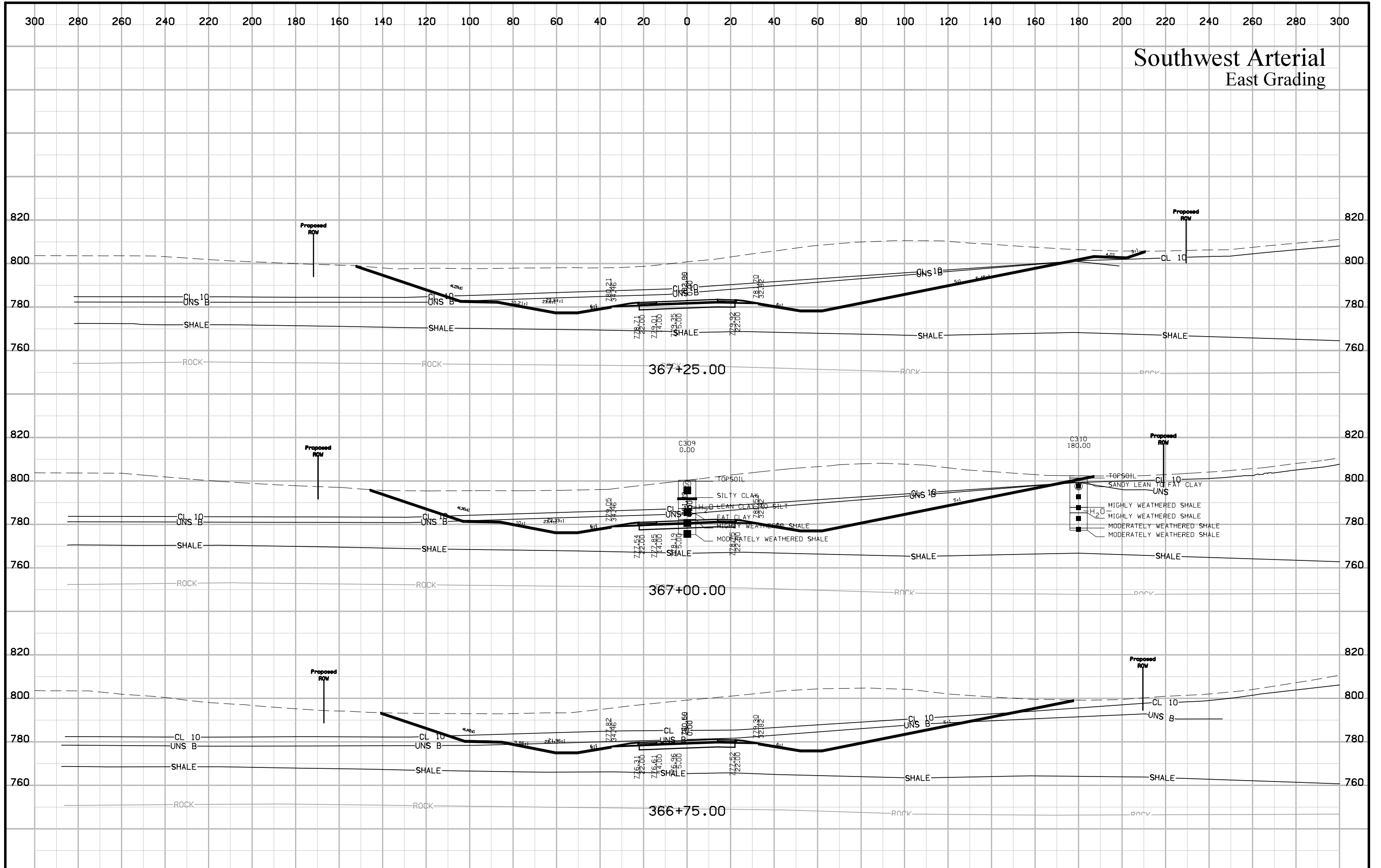
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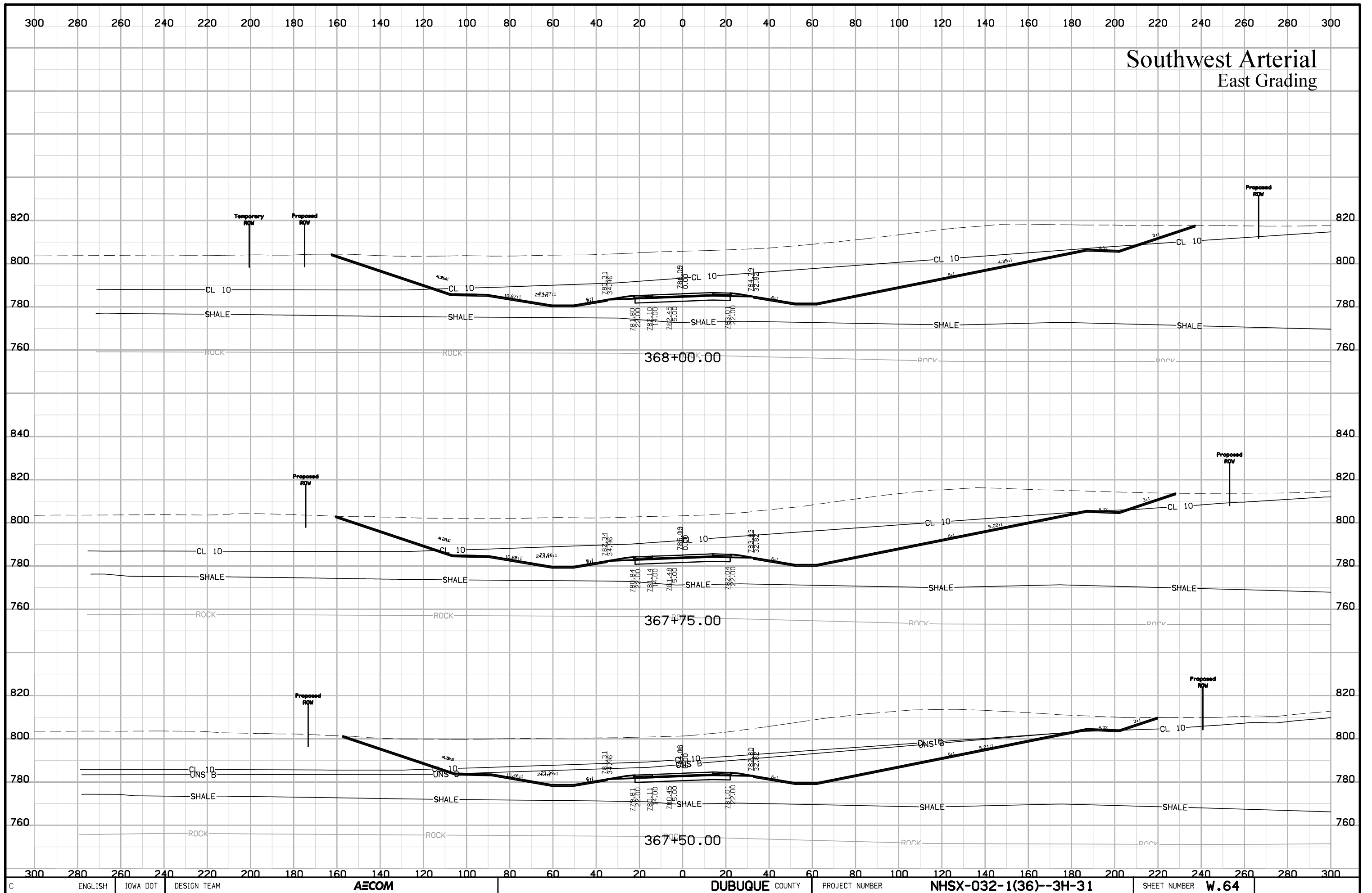


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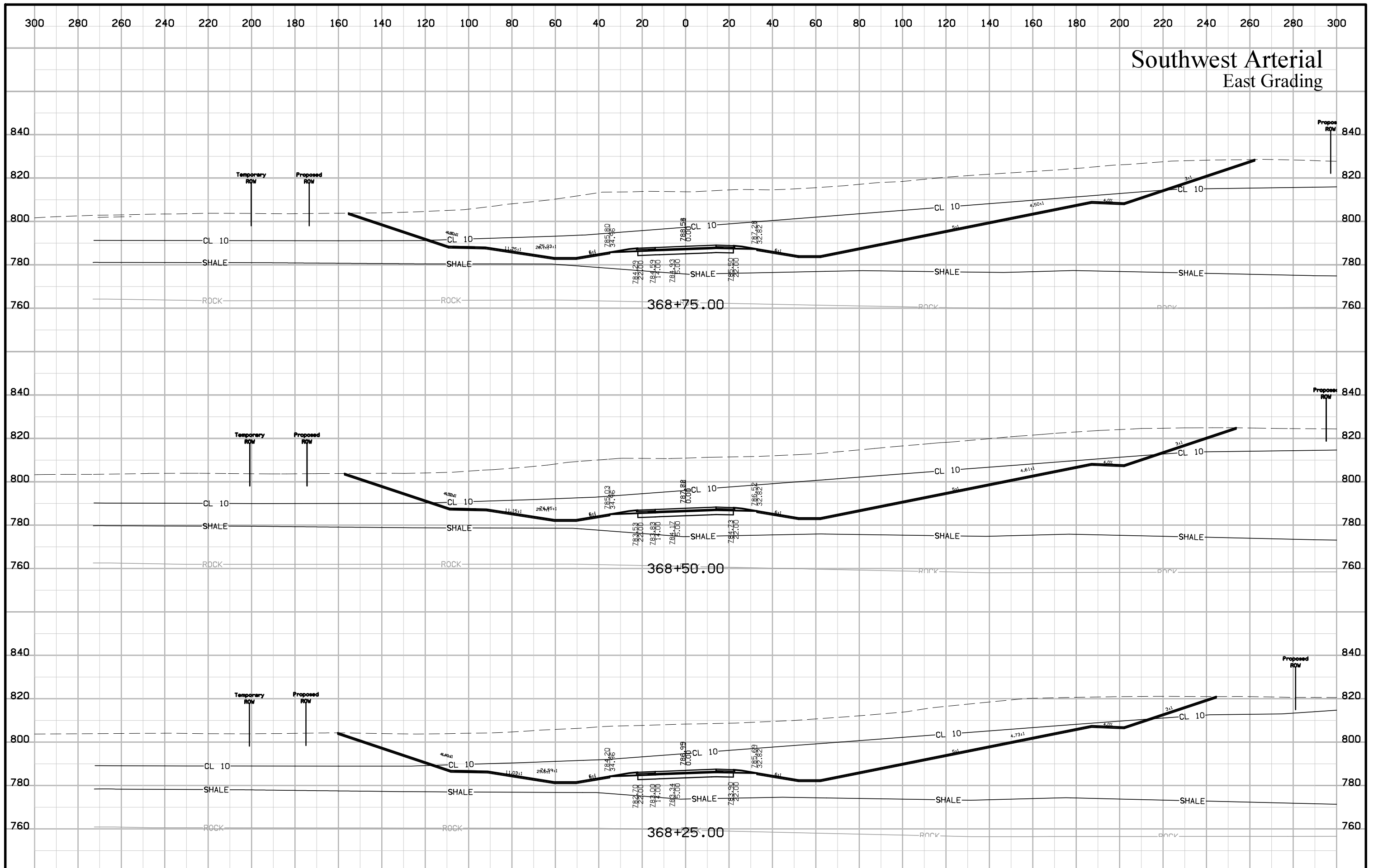
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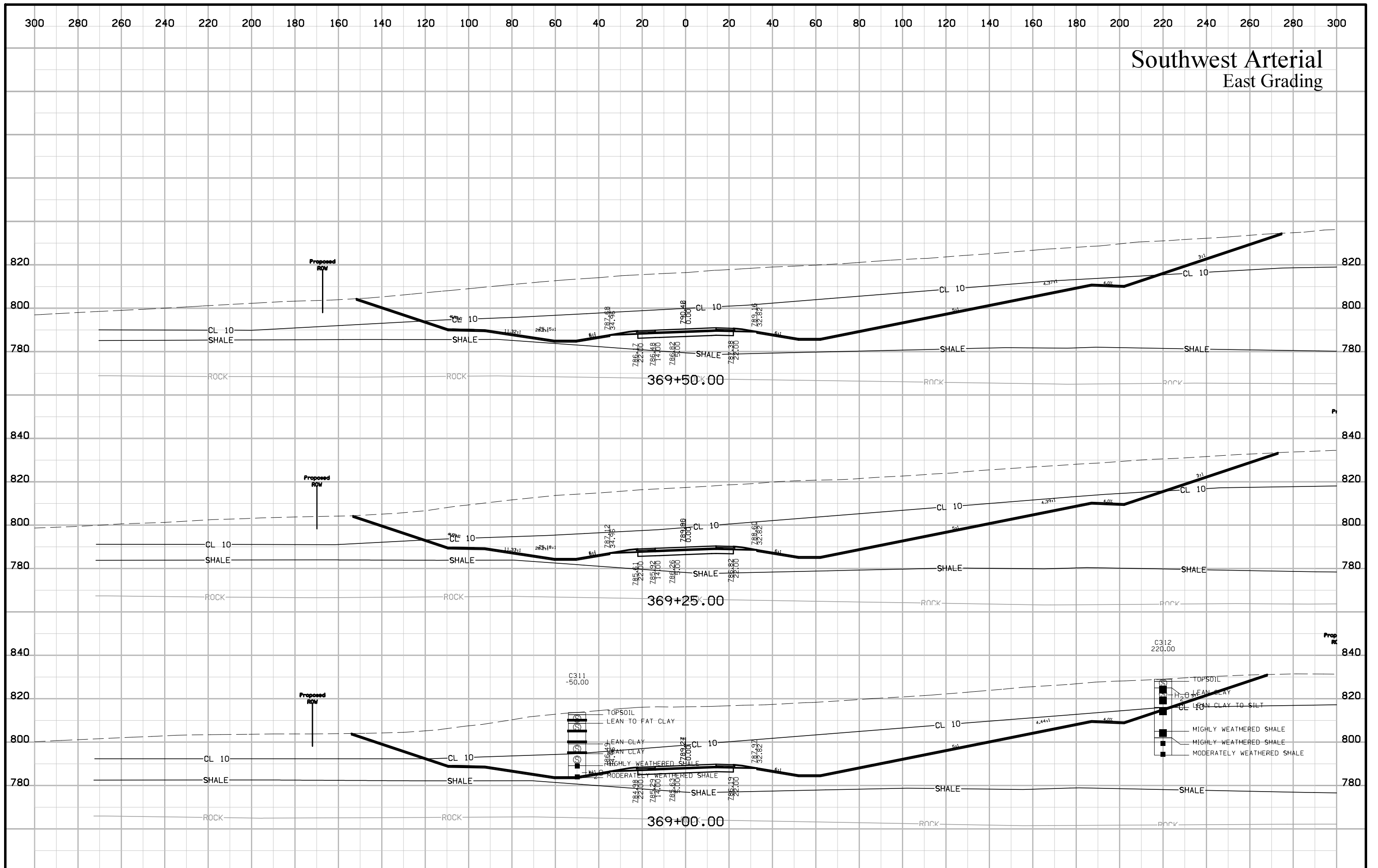
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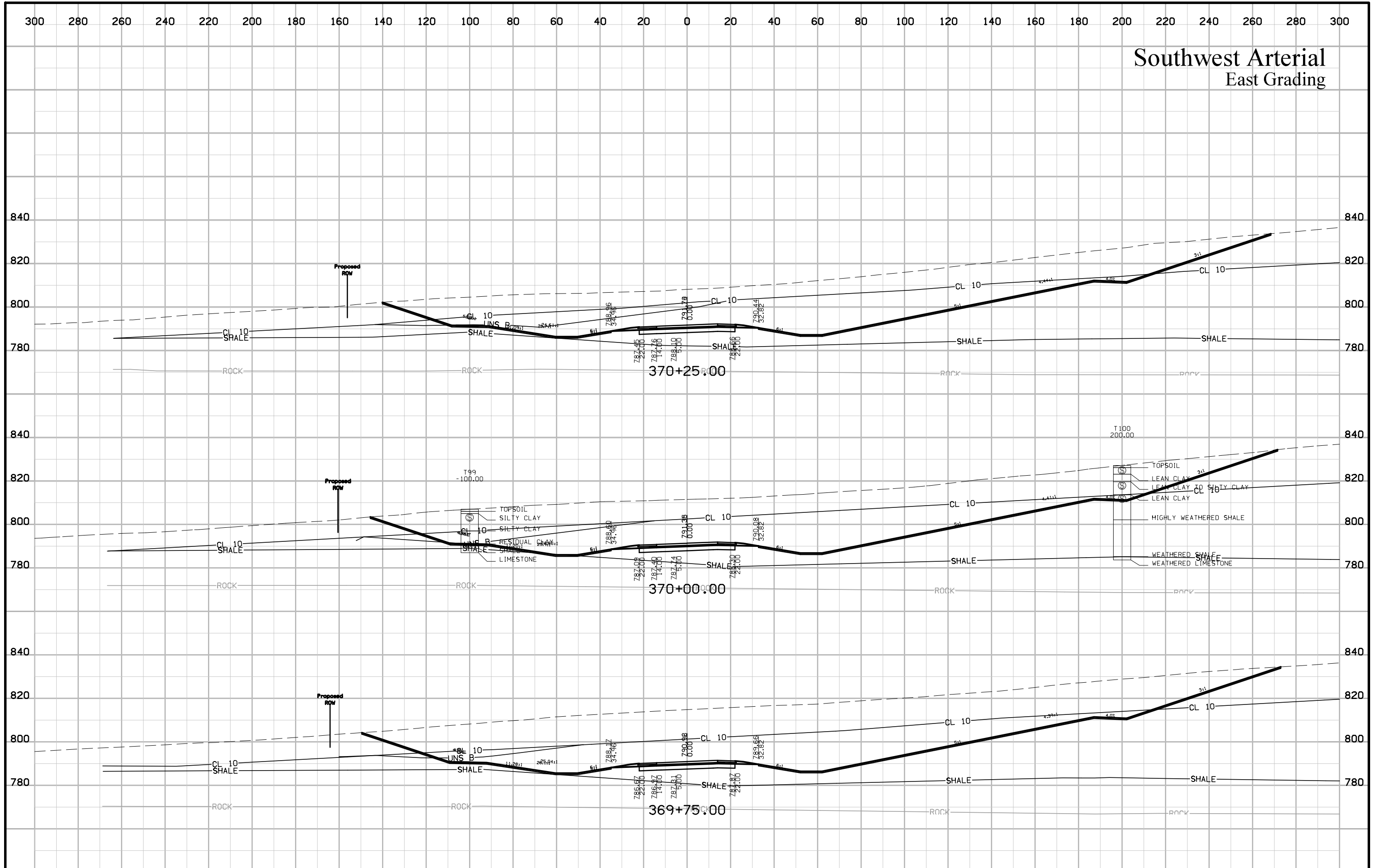
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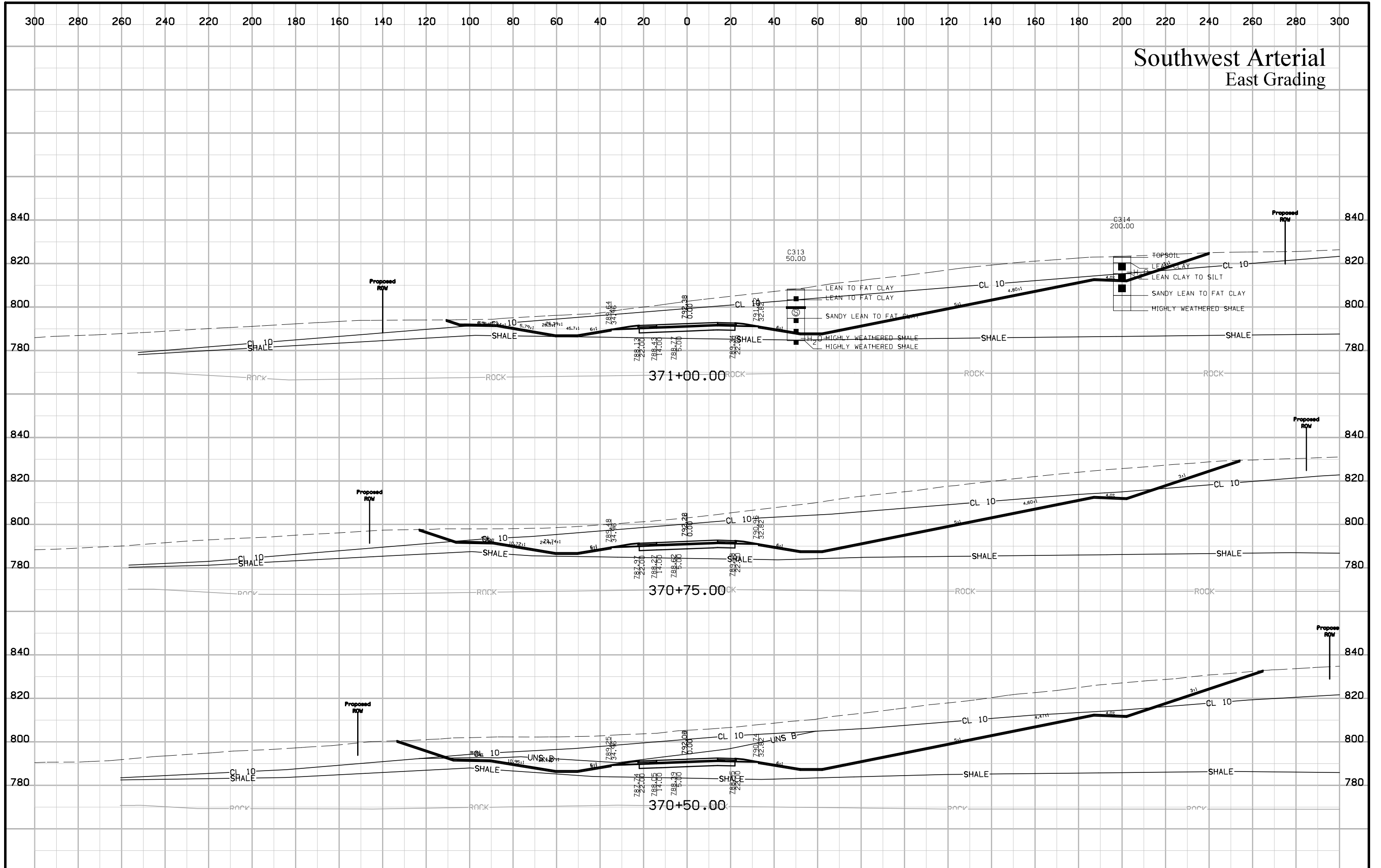
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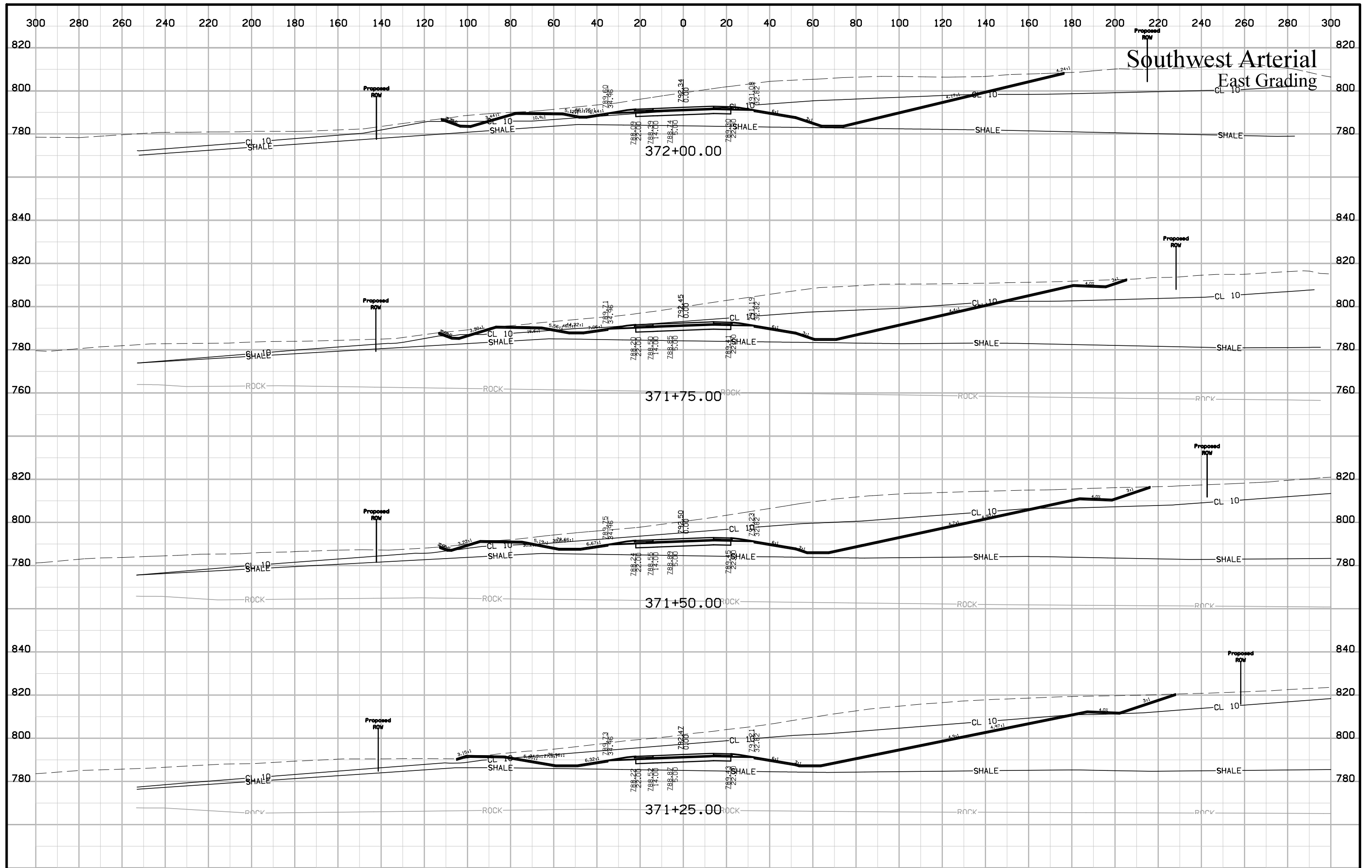


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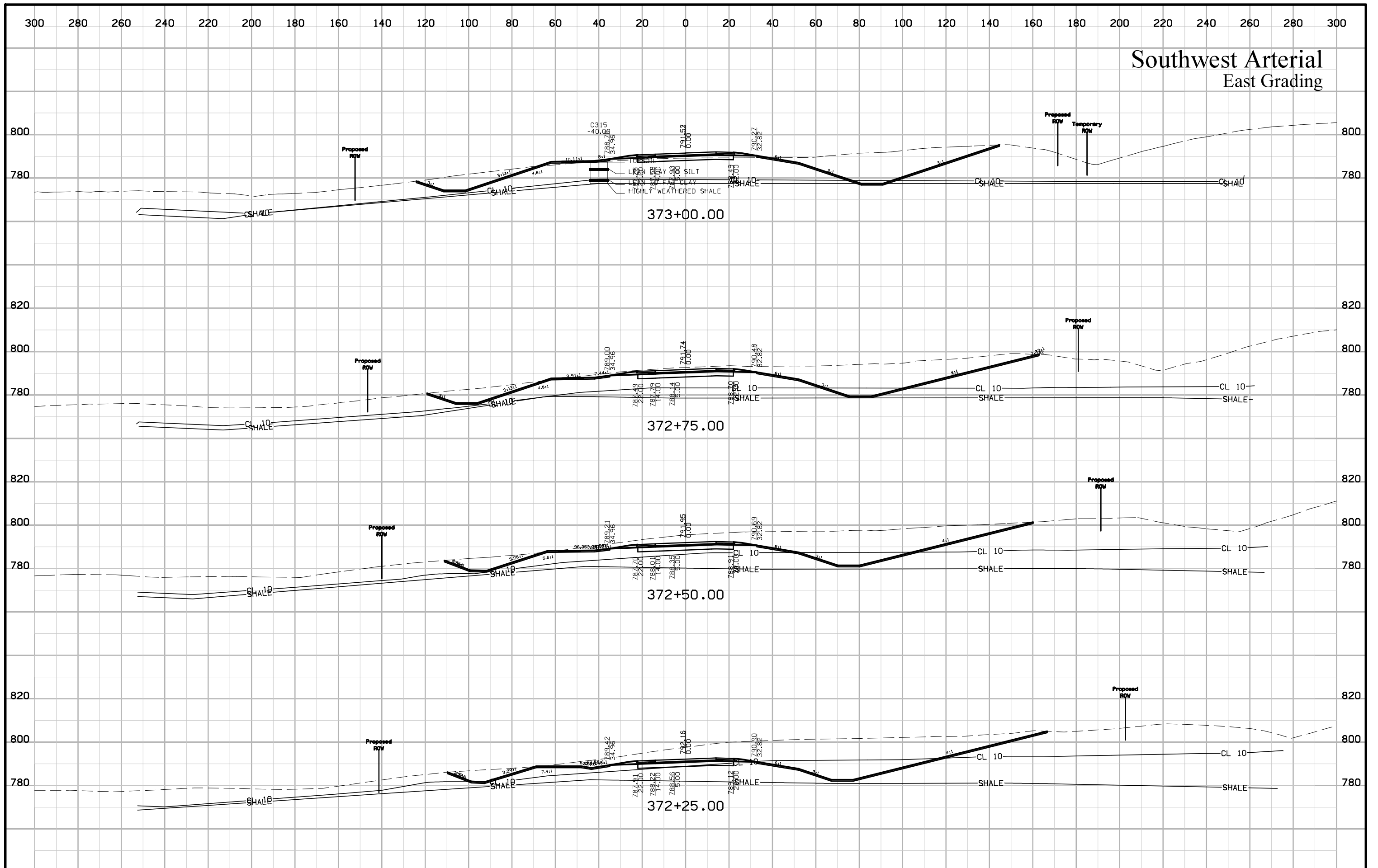
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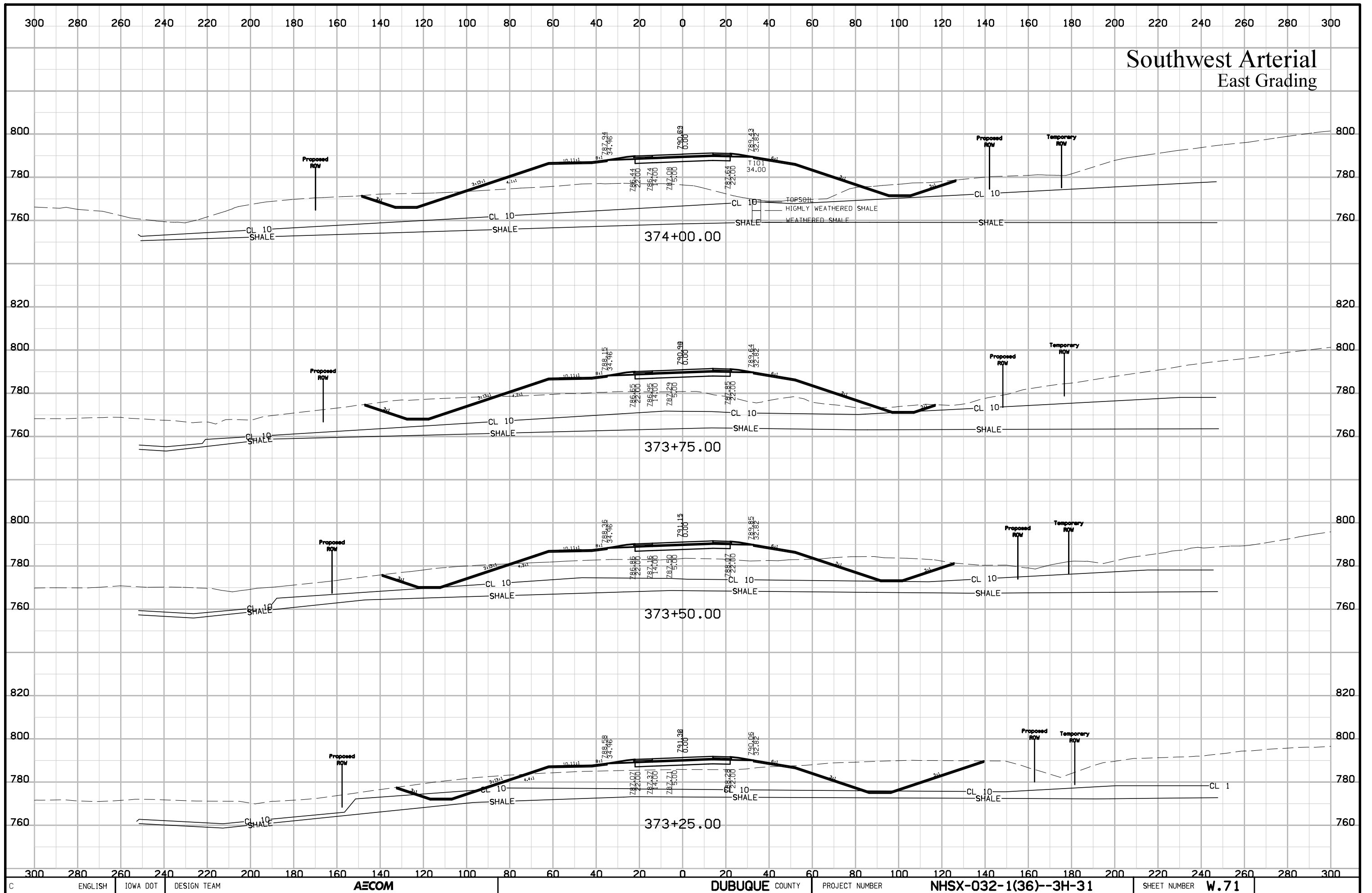


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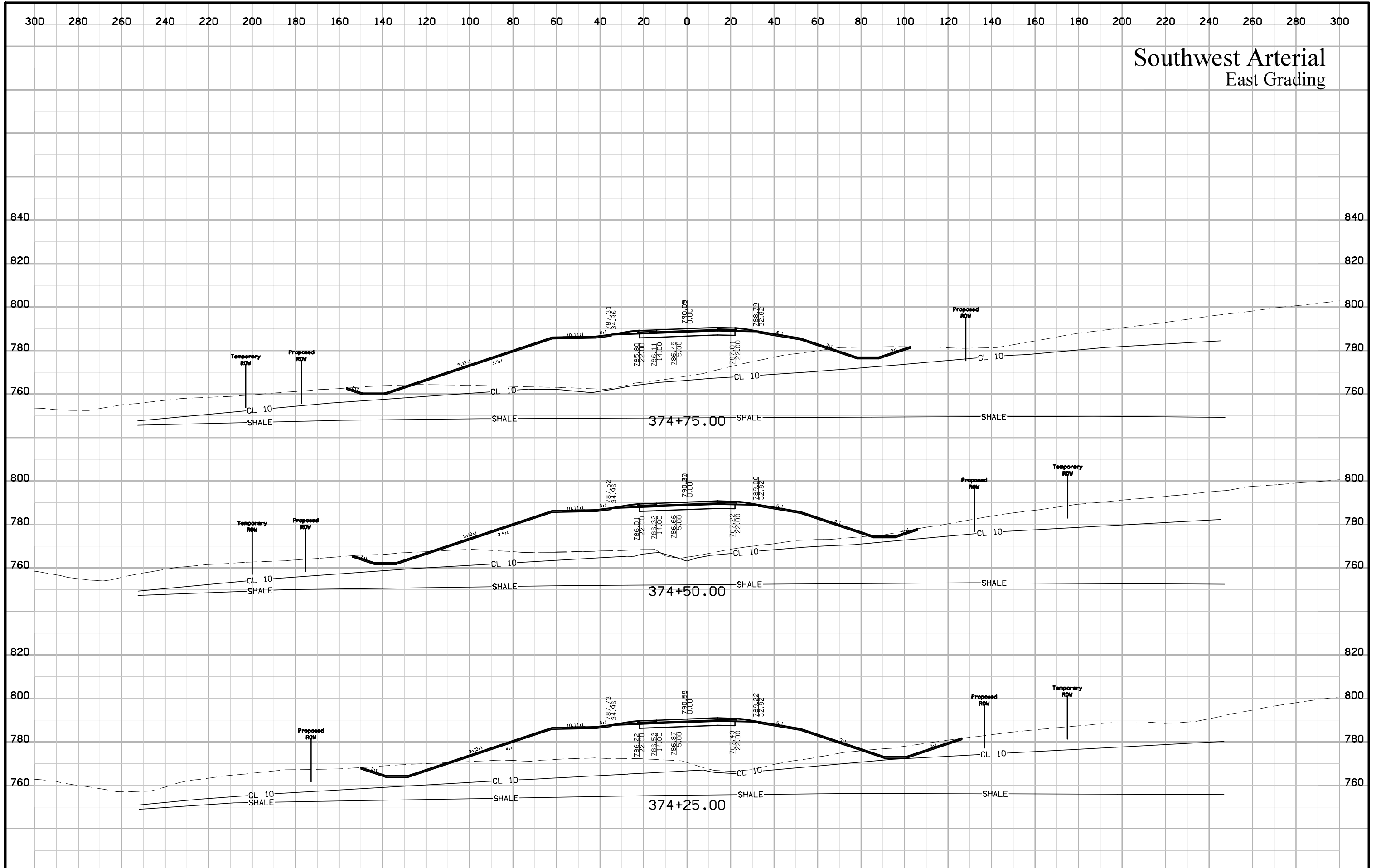
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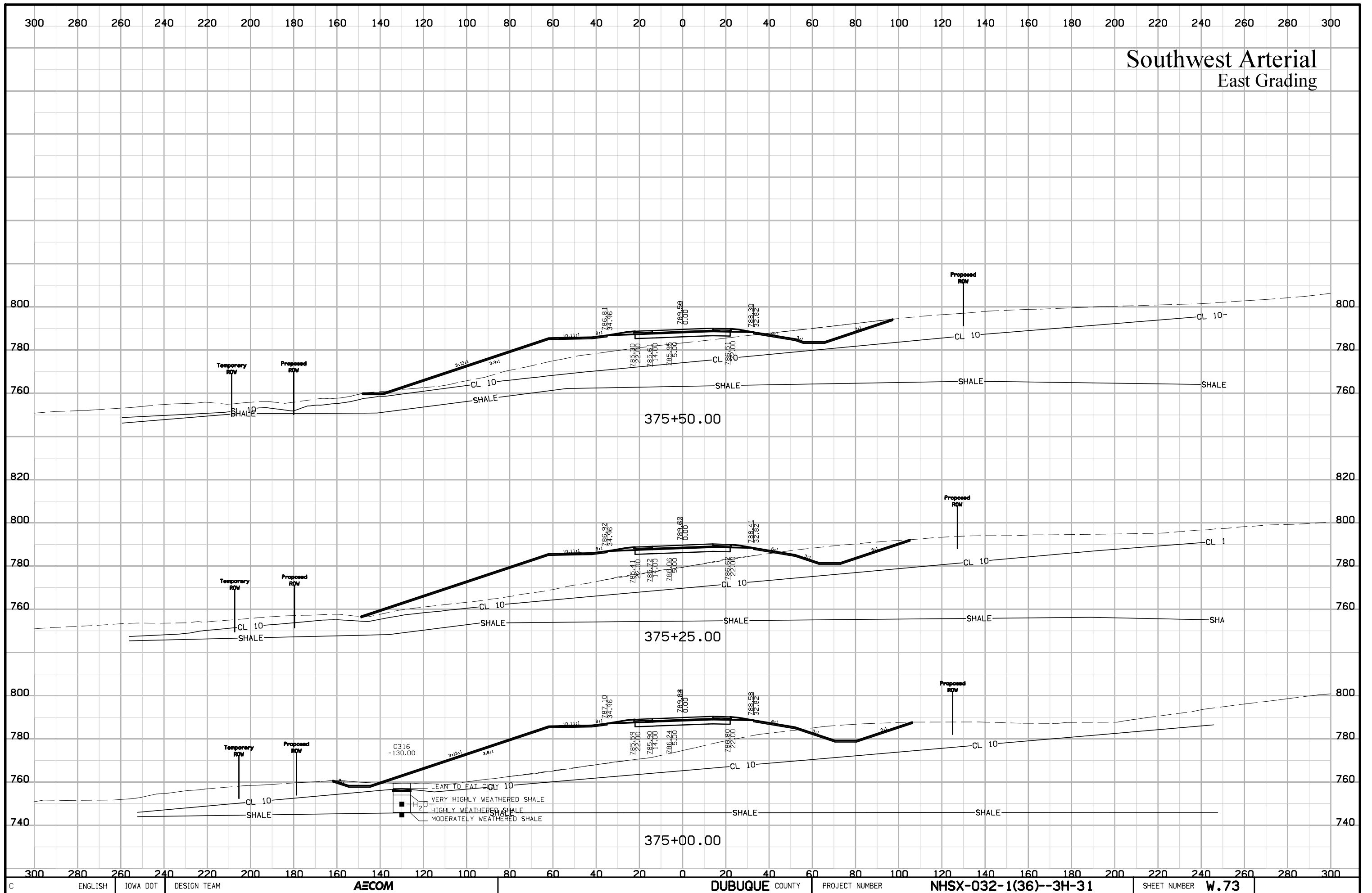
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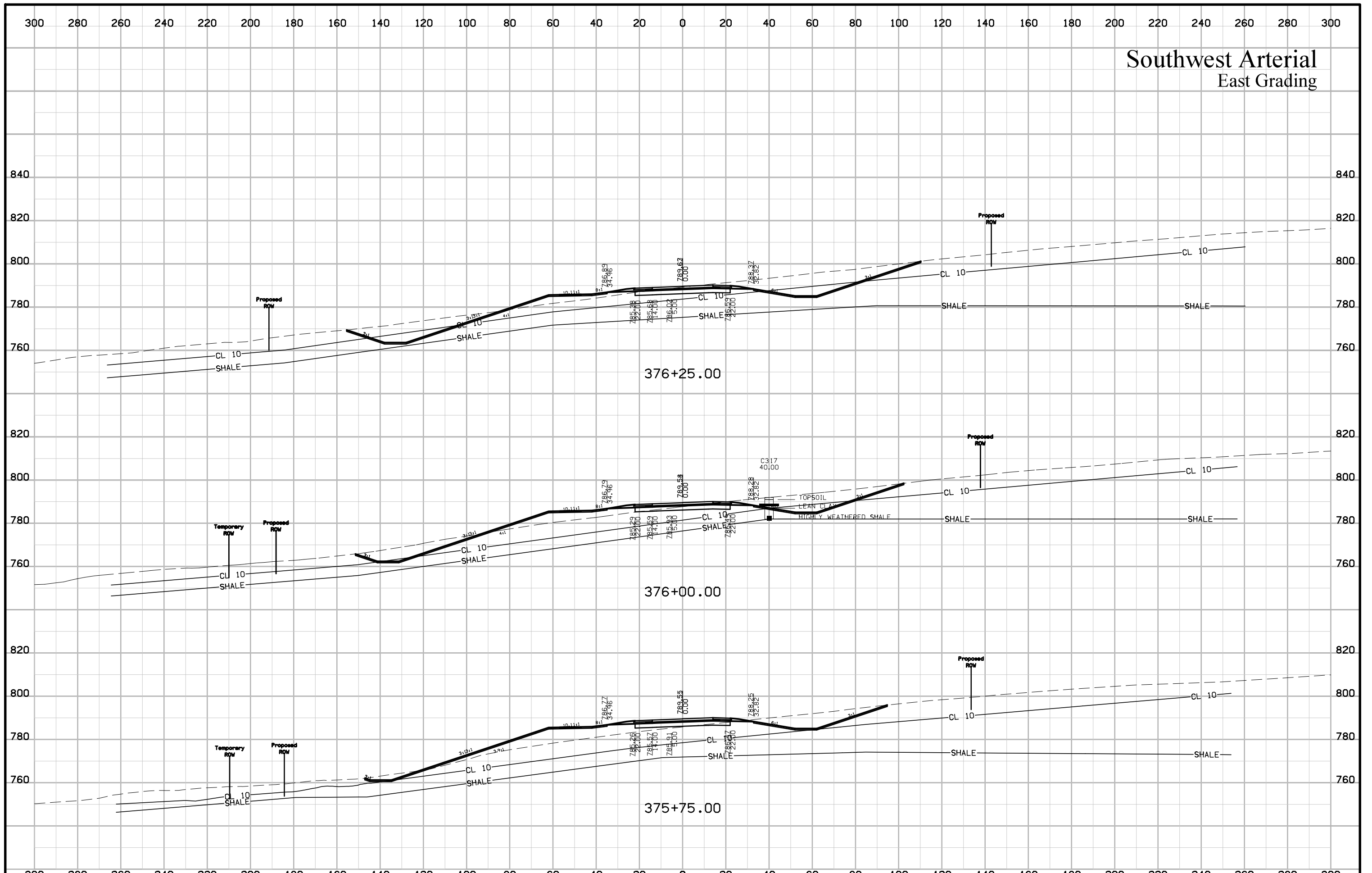
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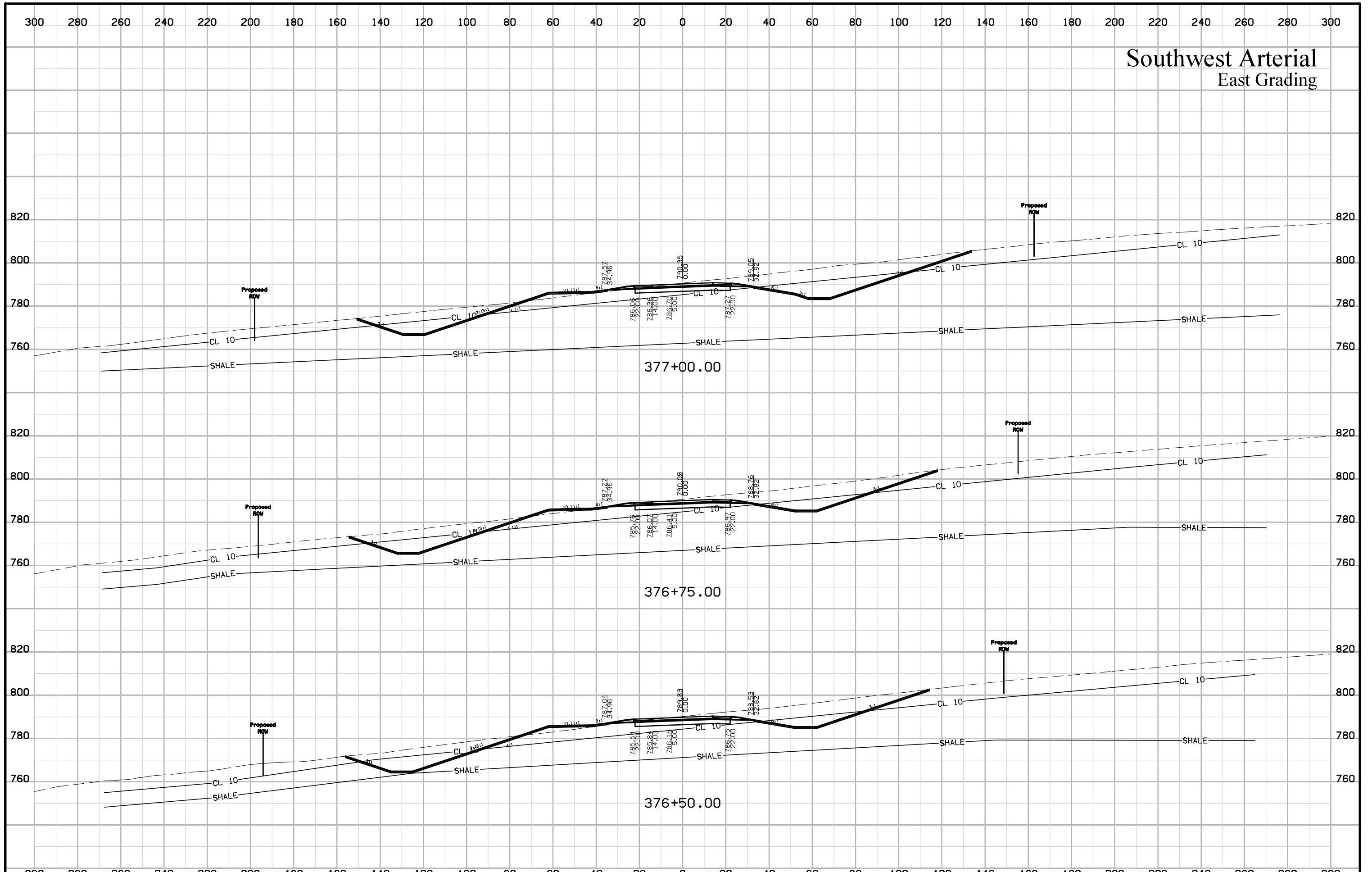
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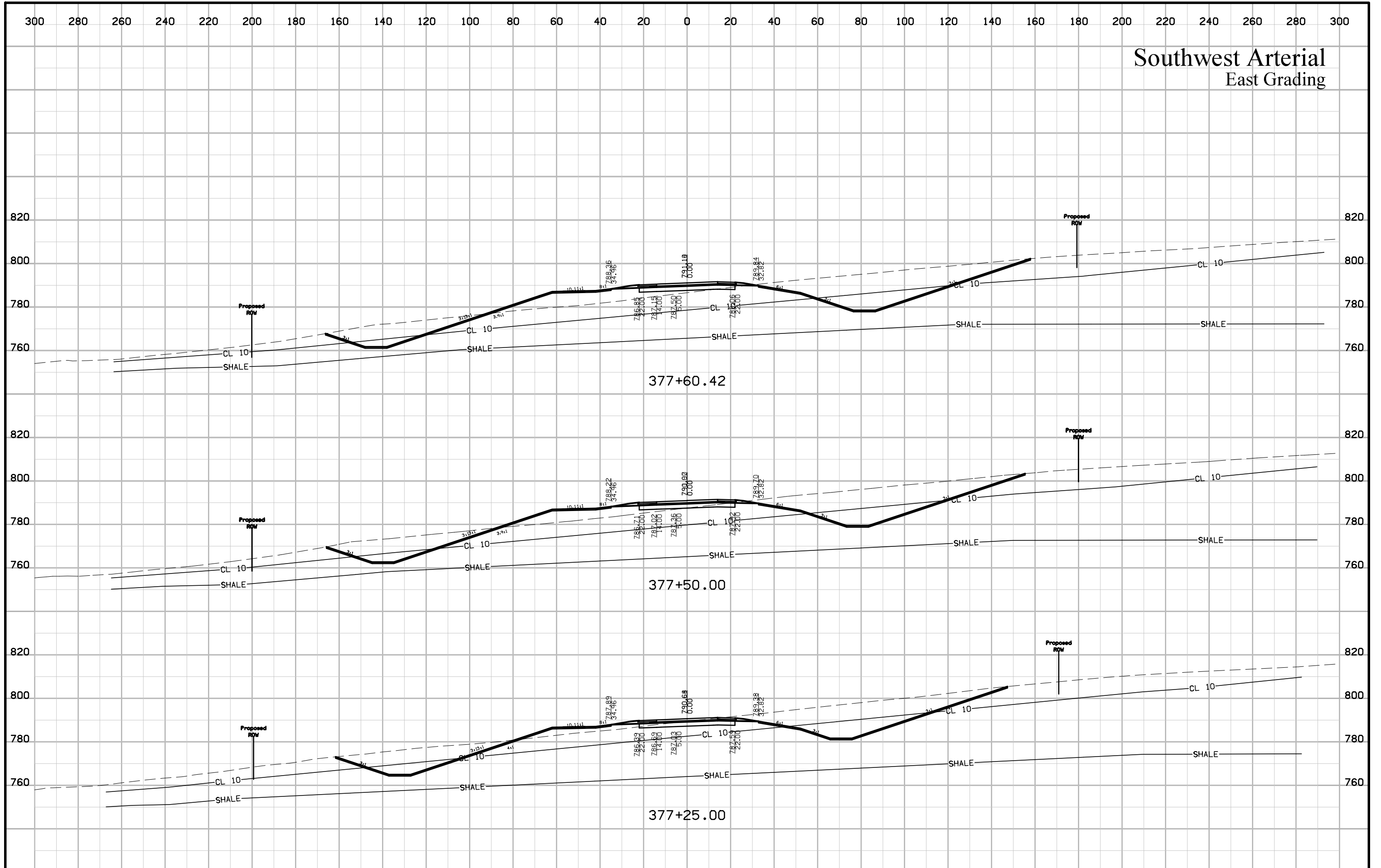
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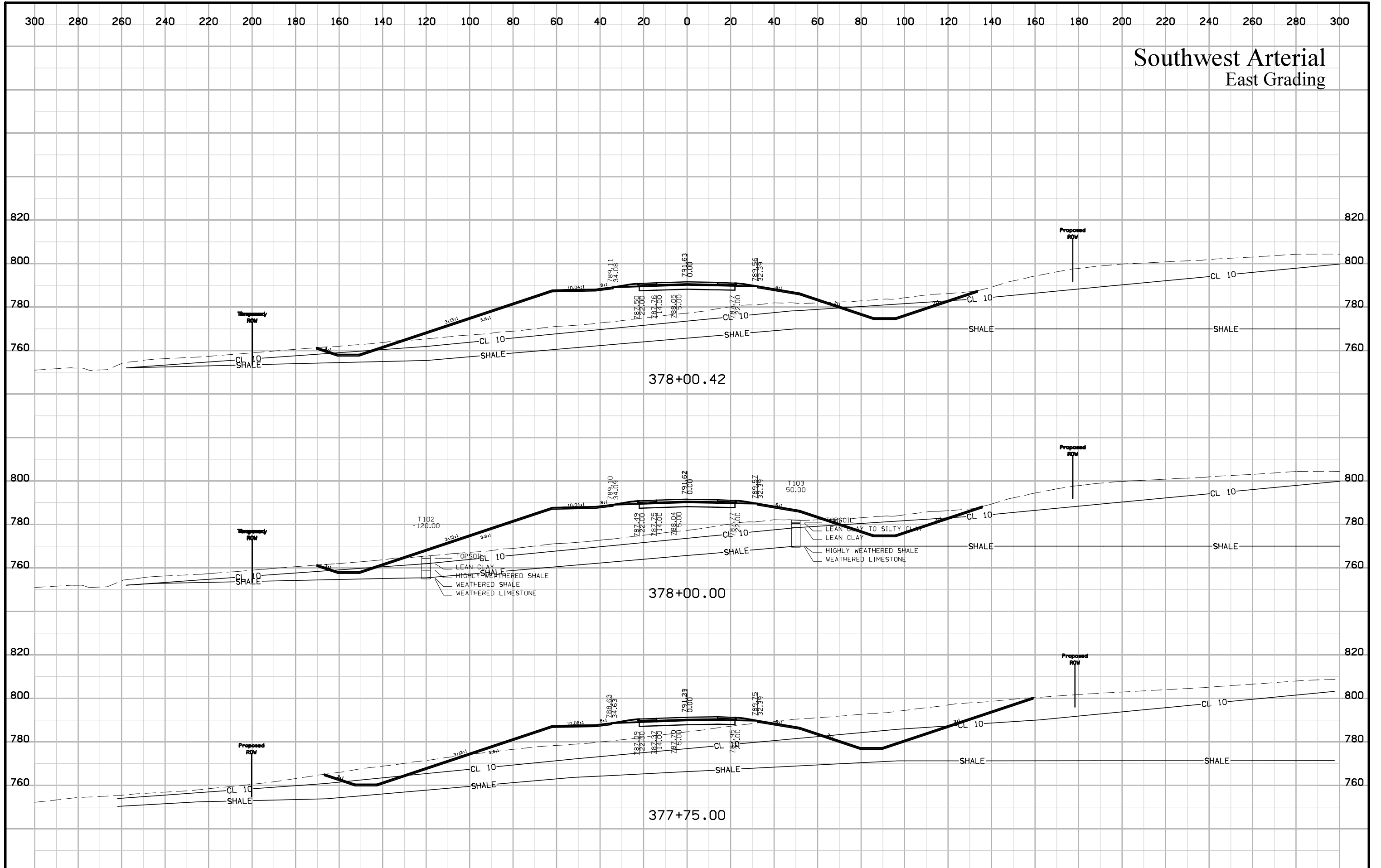
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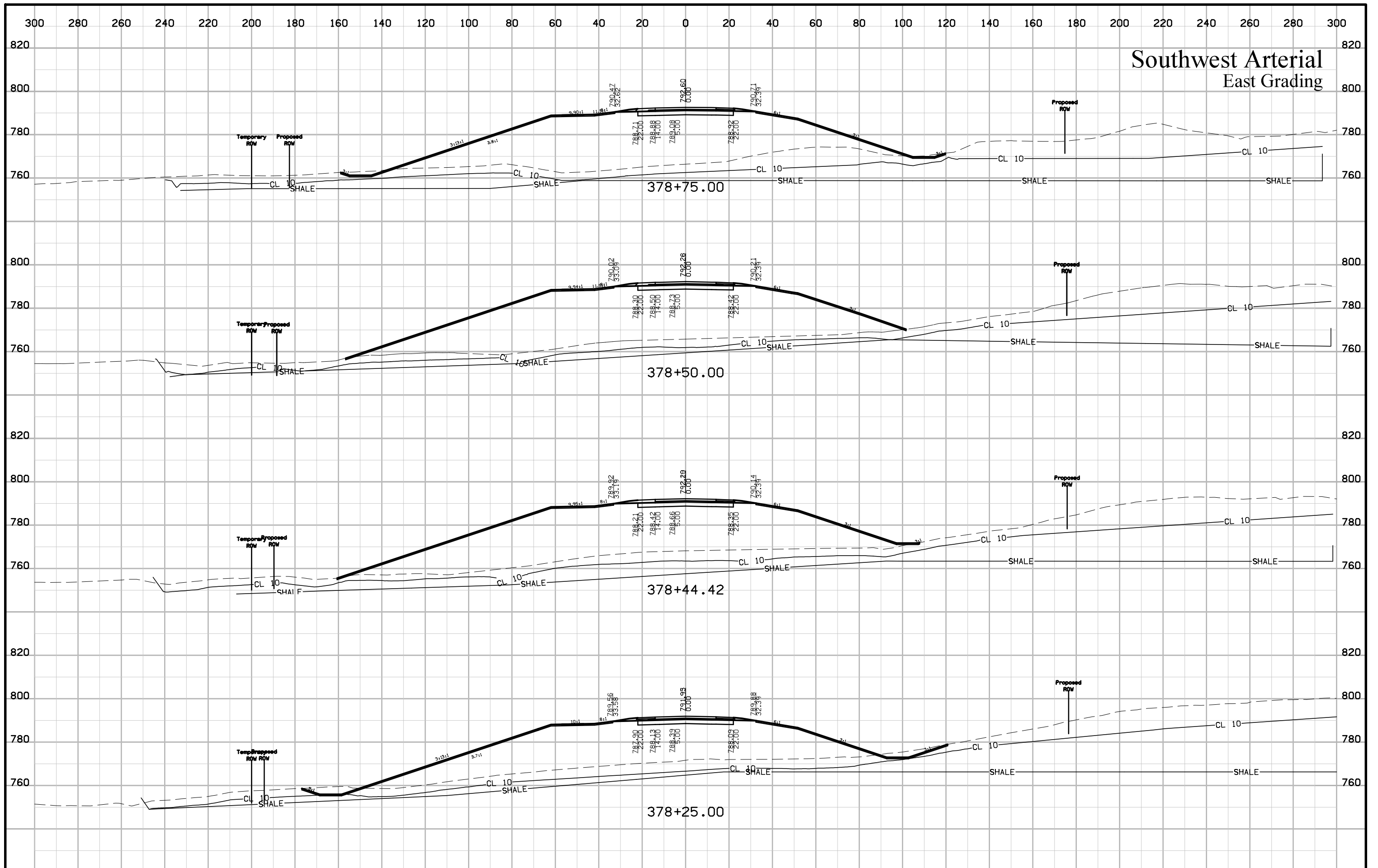
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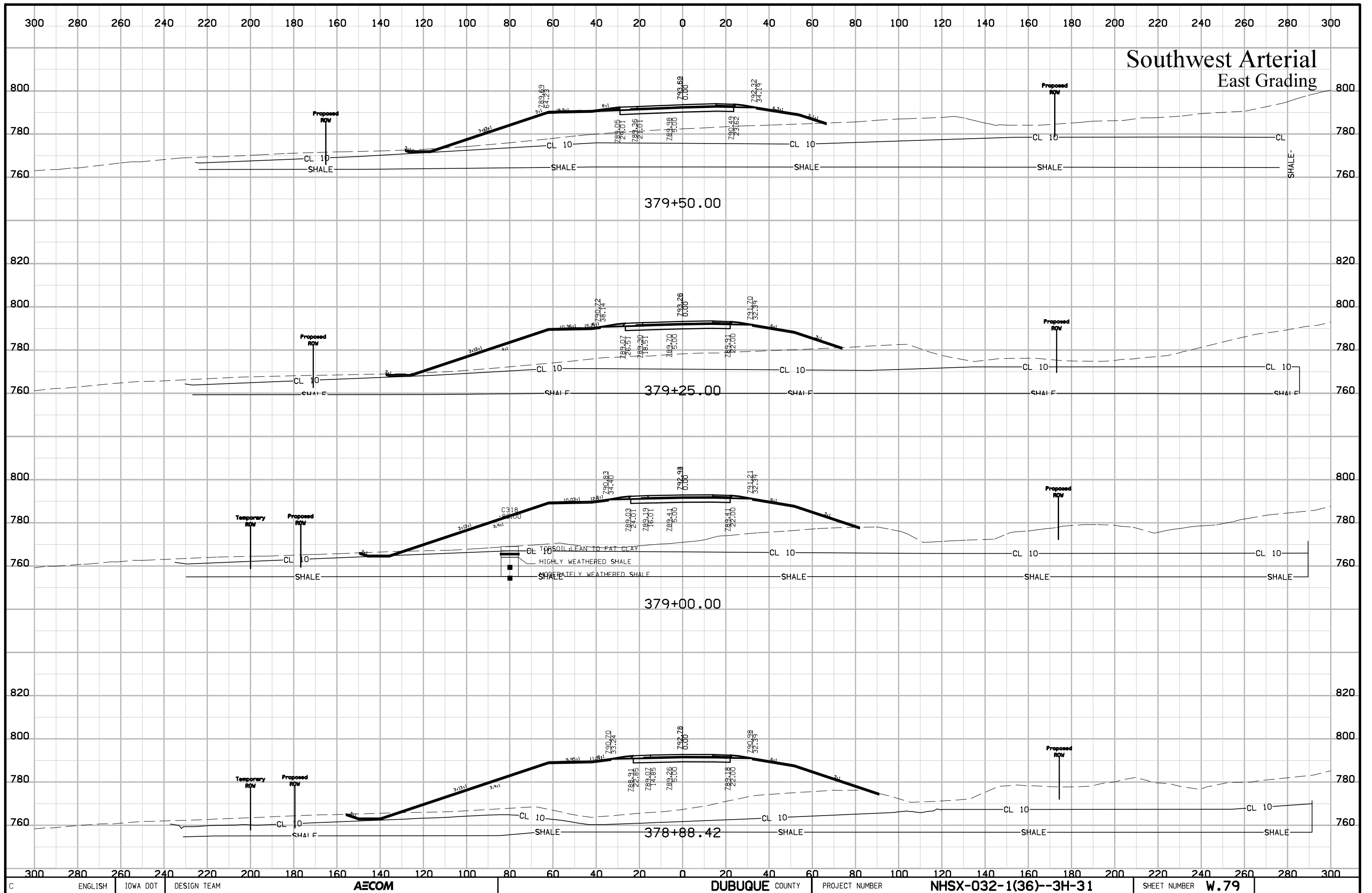
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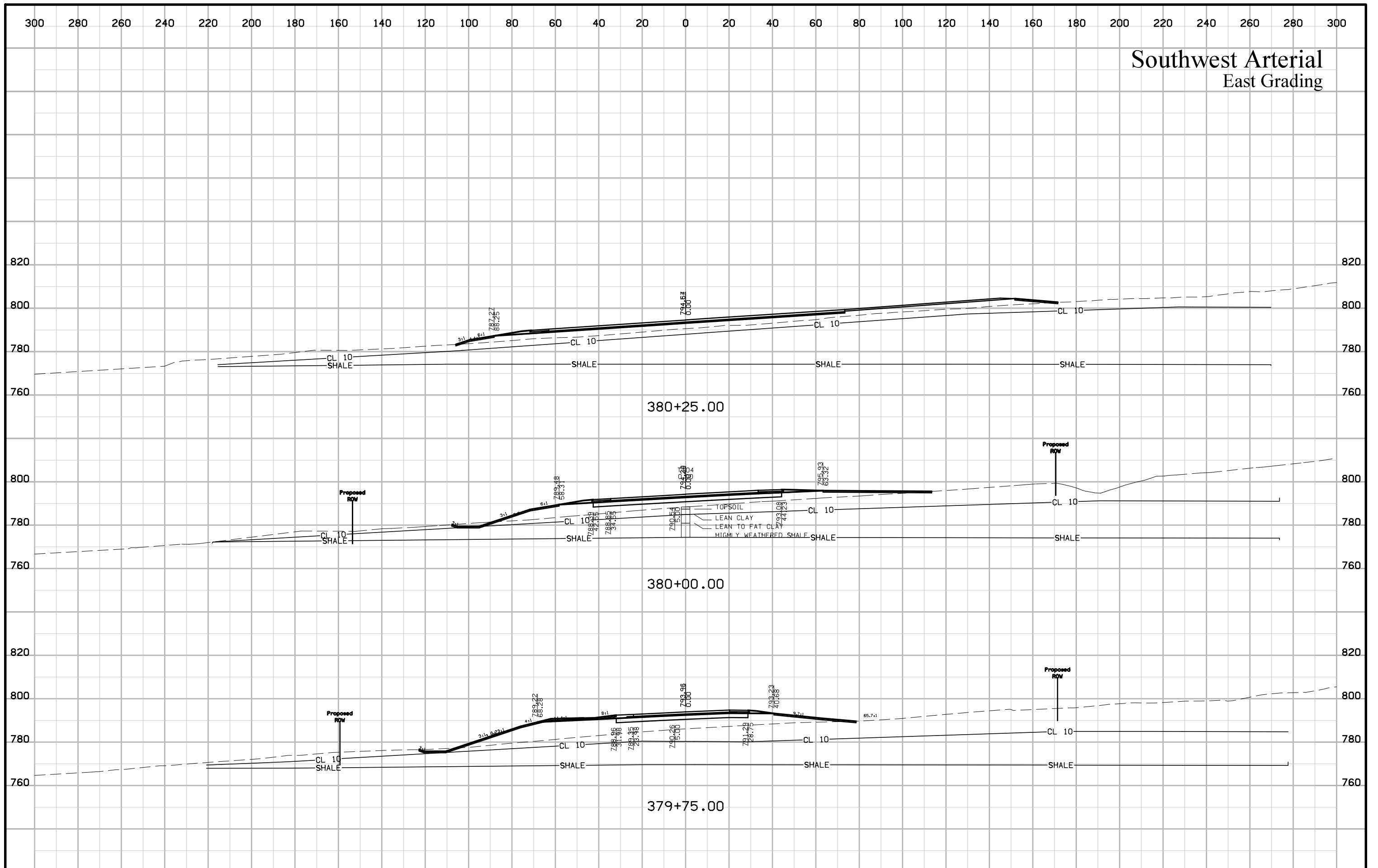
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Southwest Arterial East Grading

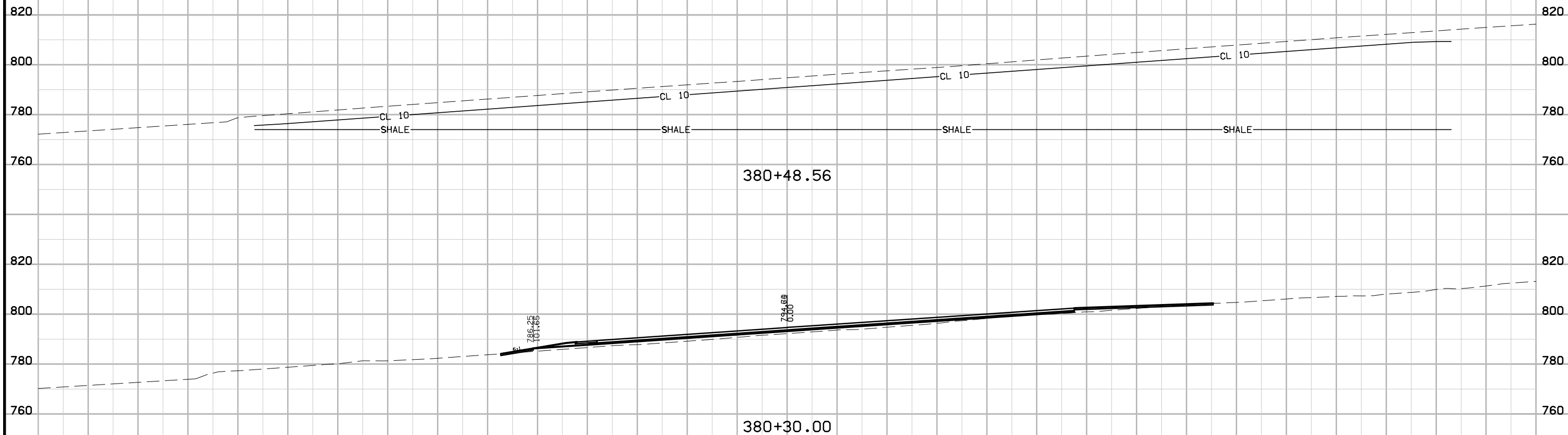


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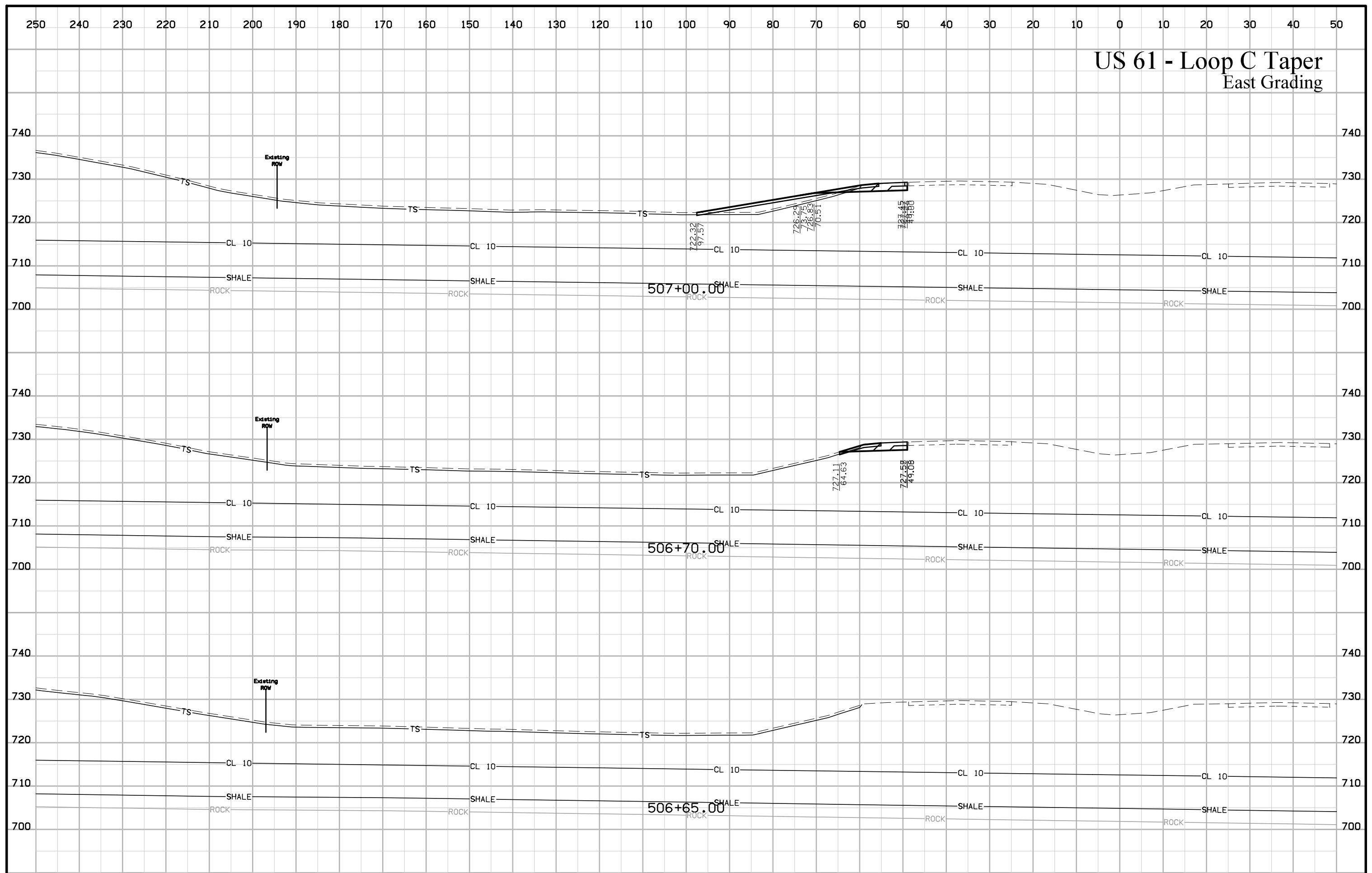


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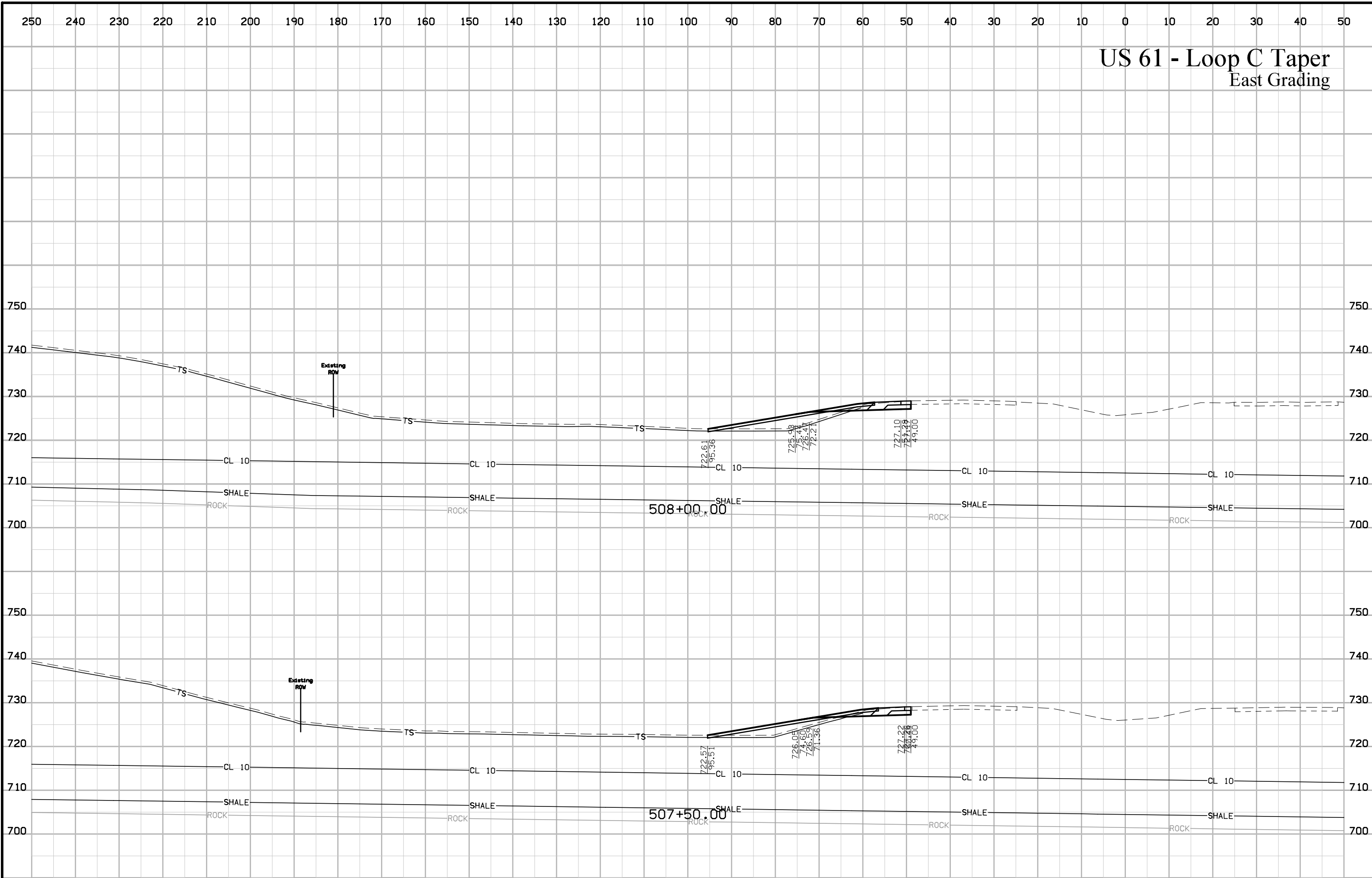
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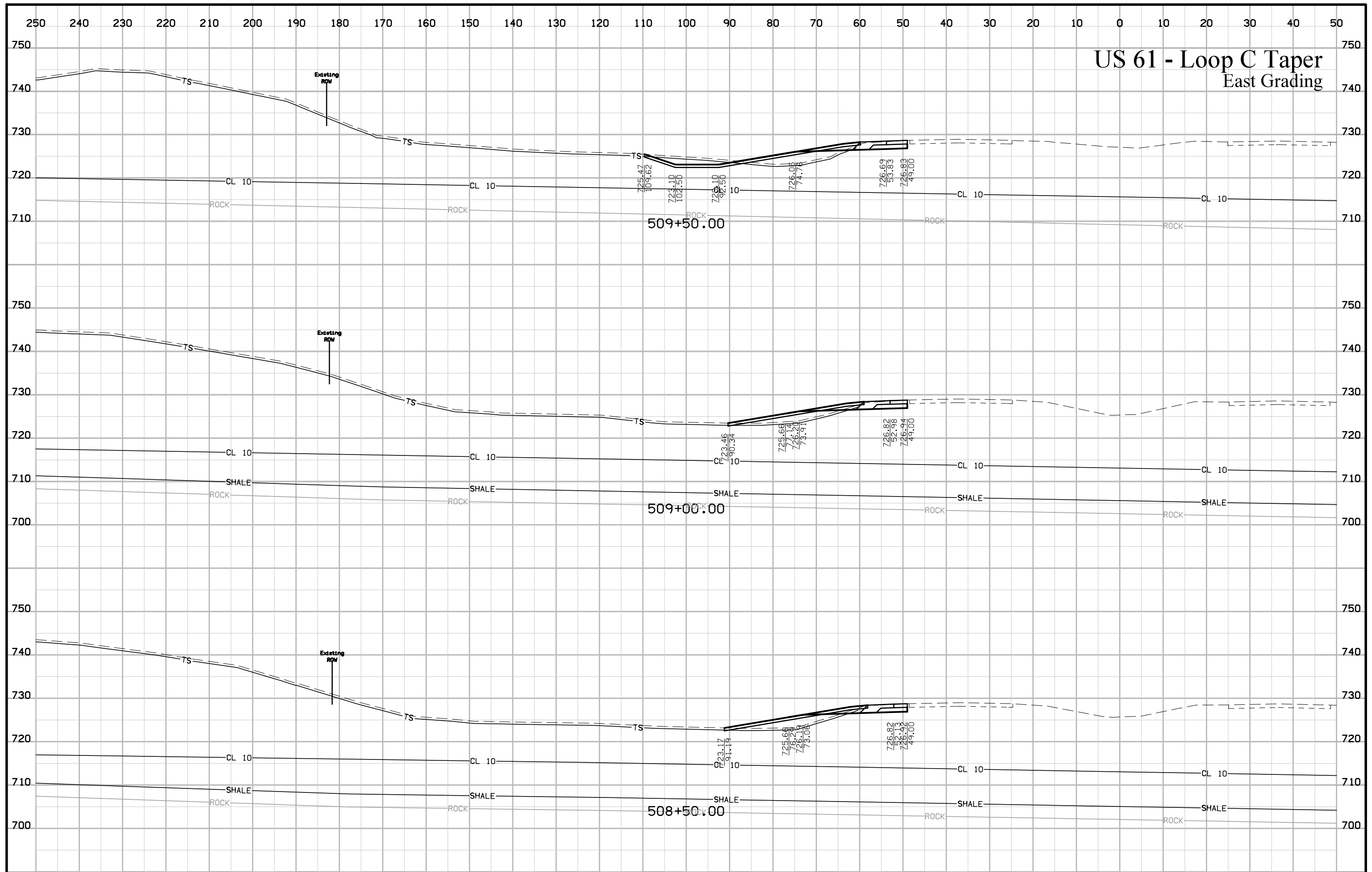
US 61 - Loop C Taper East Grading



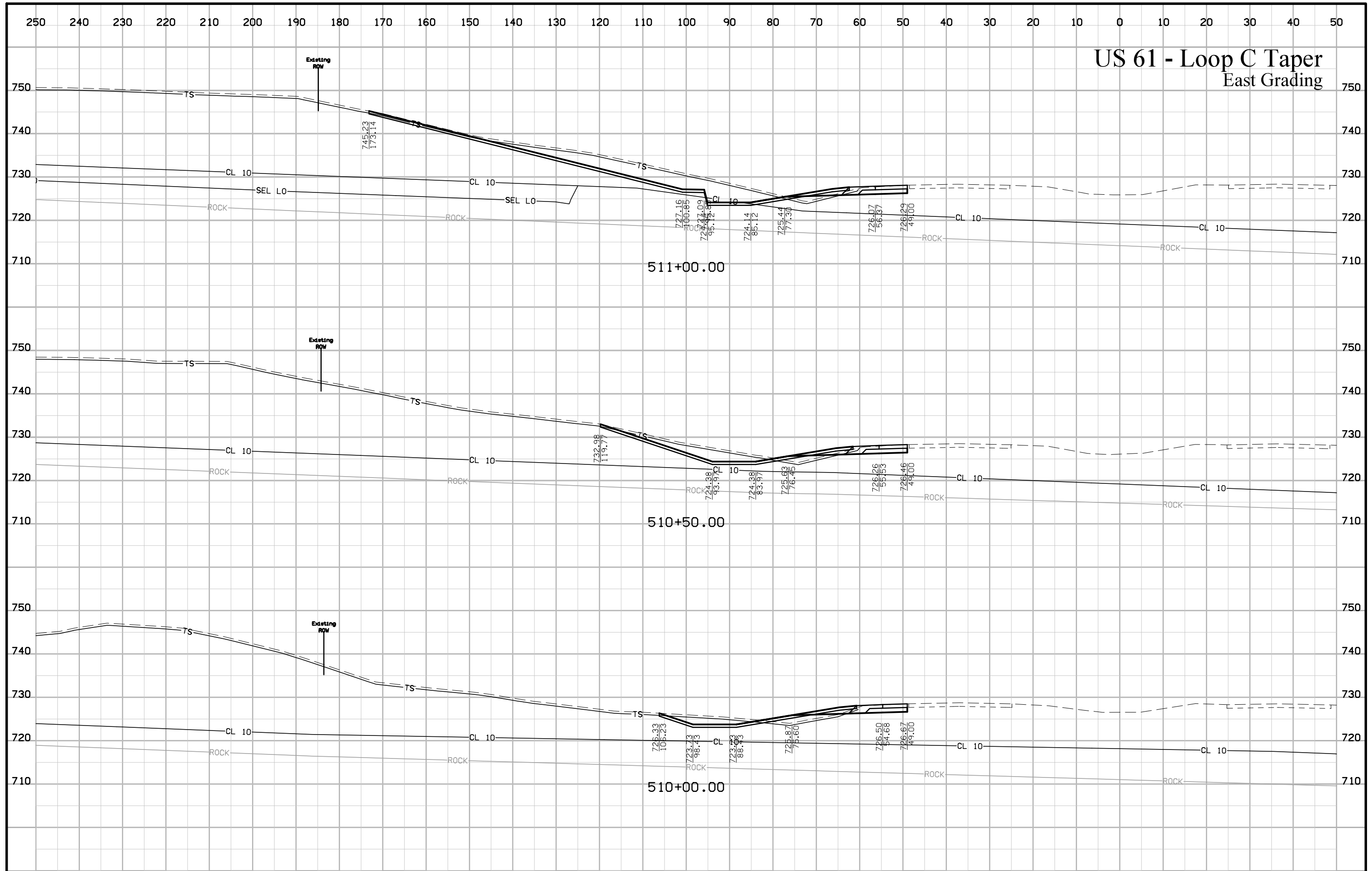
US 61 - Loop C Taper East Grading



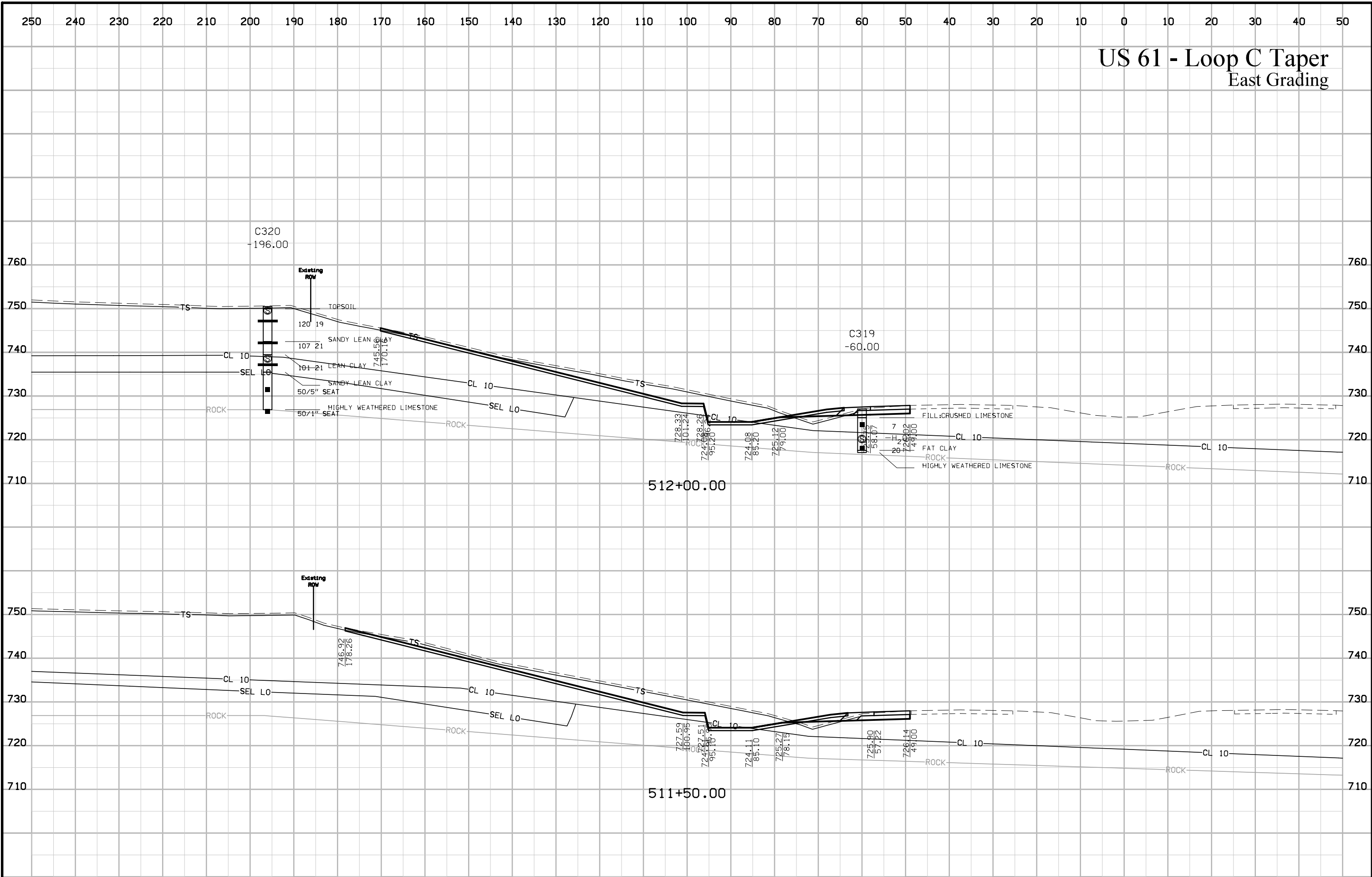
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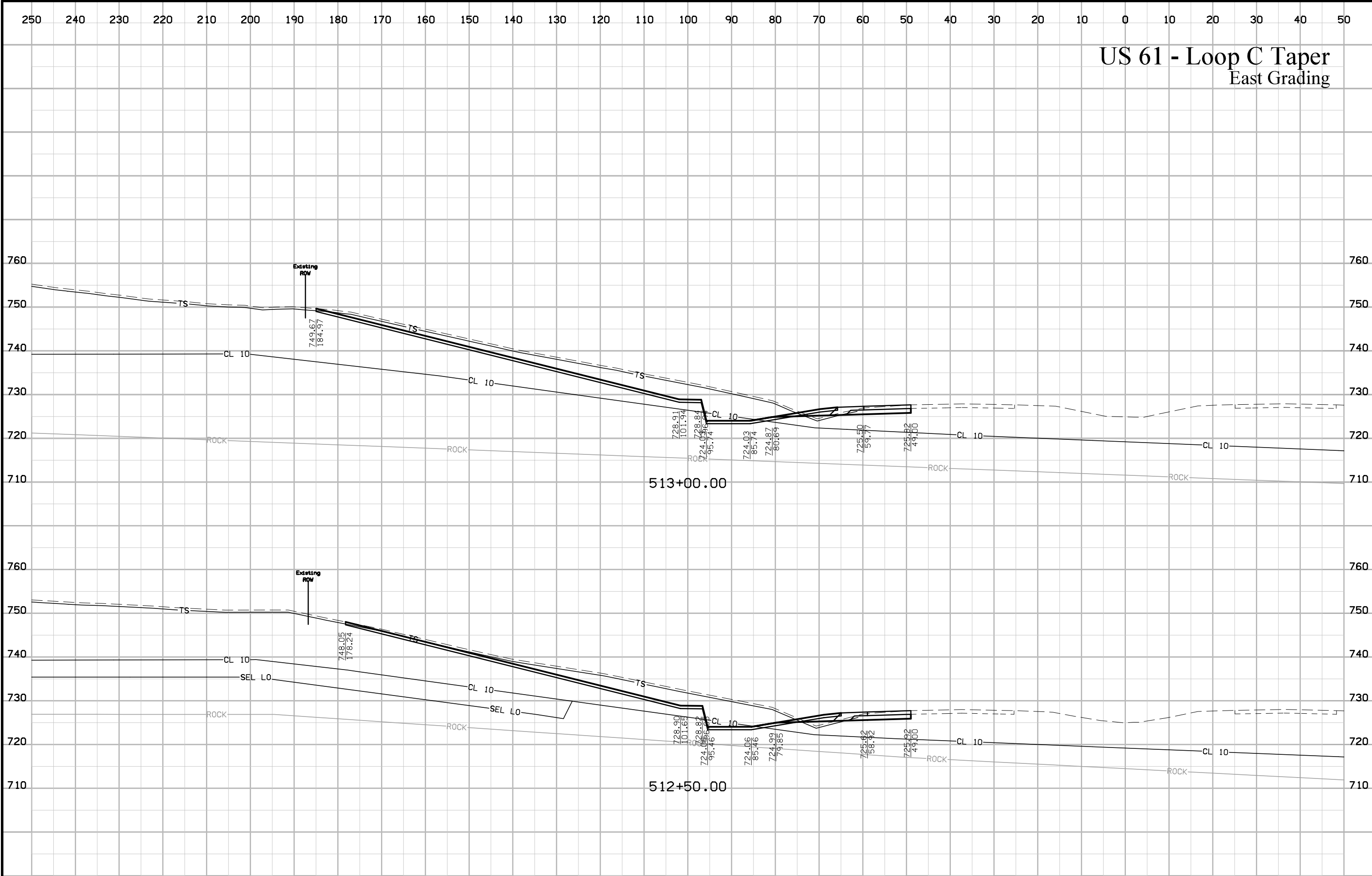
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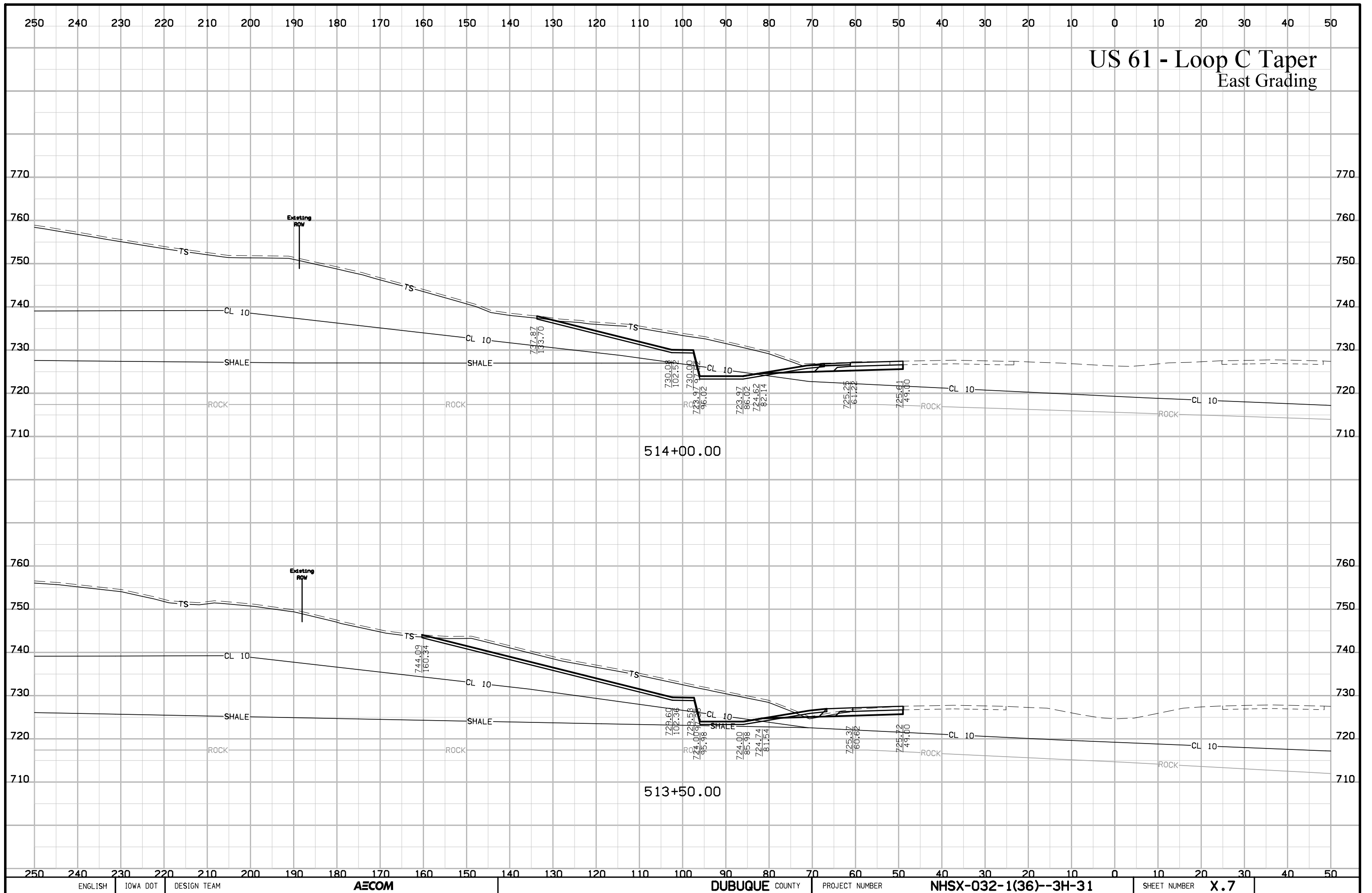
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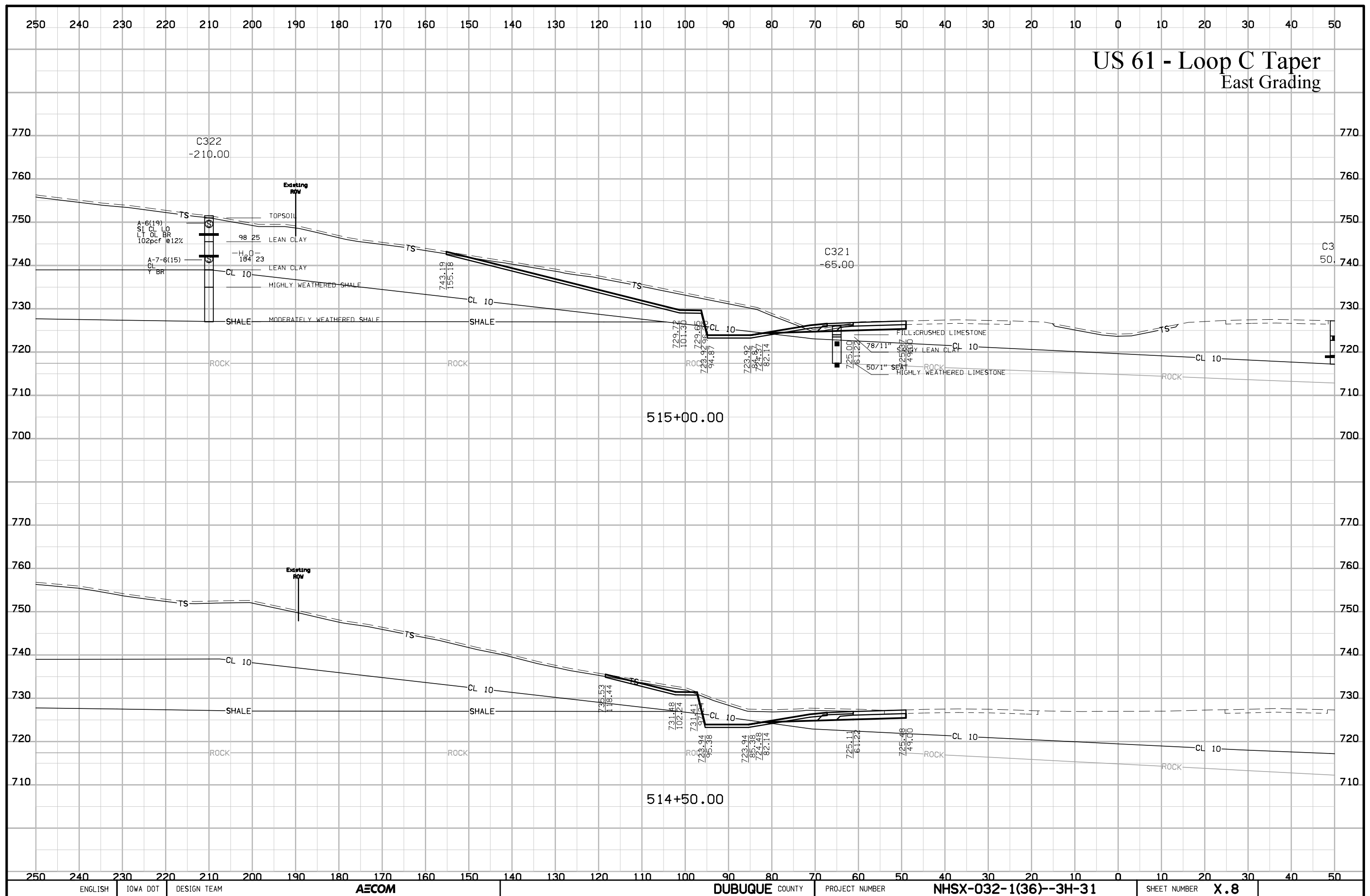
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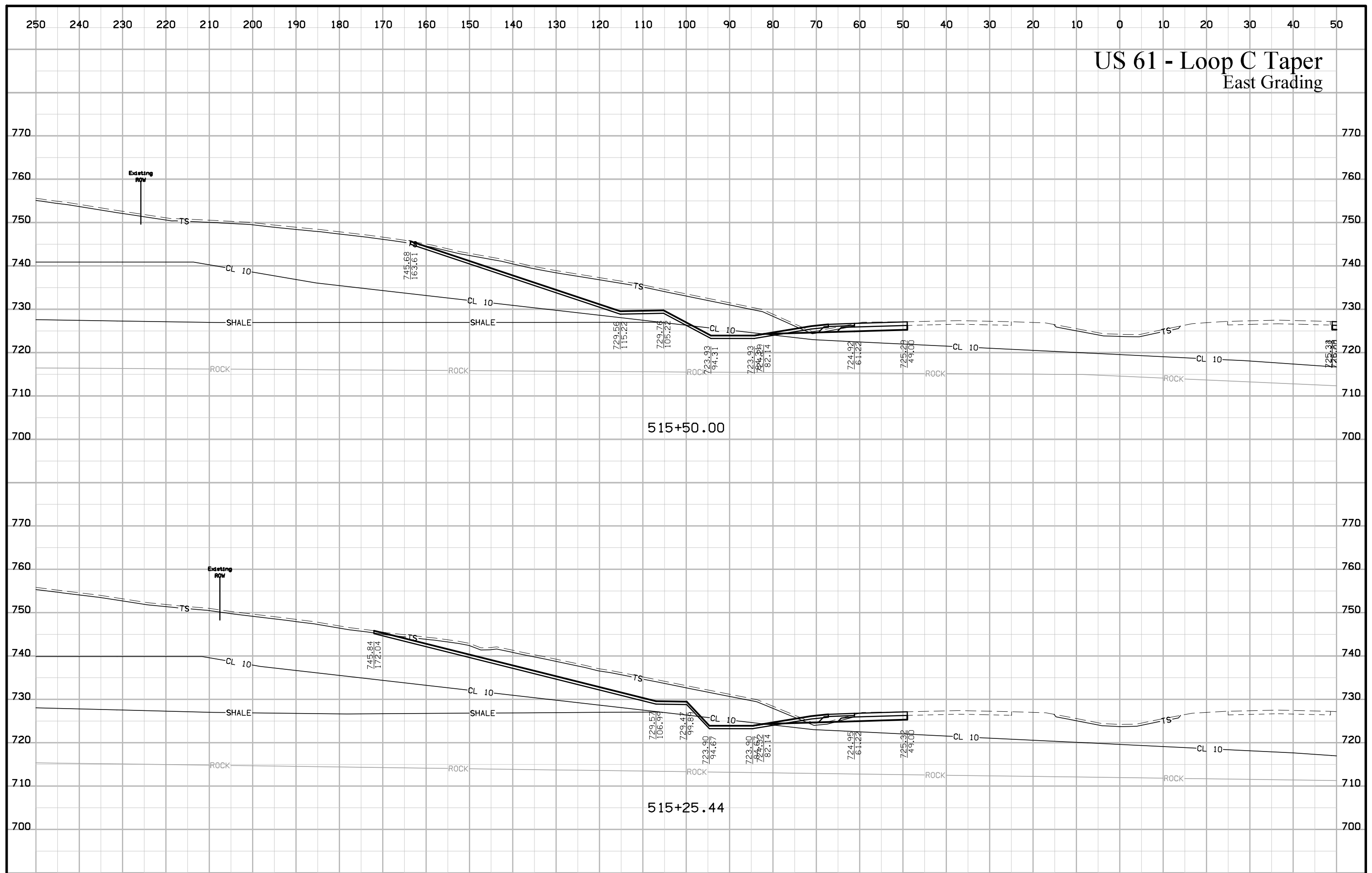
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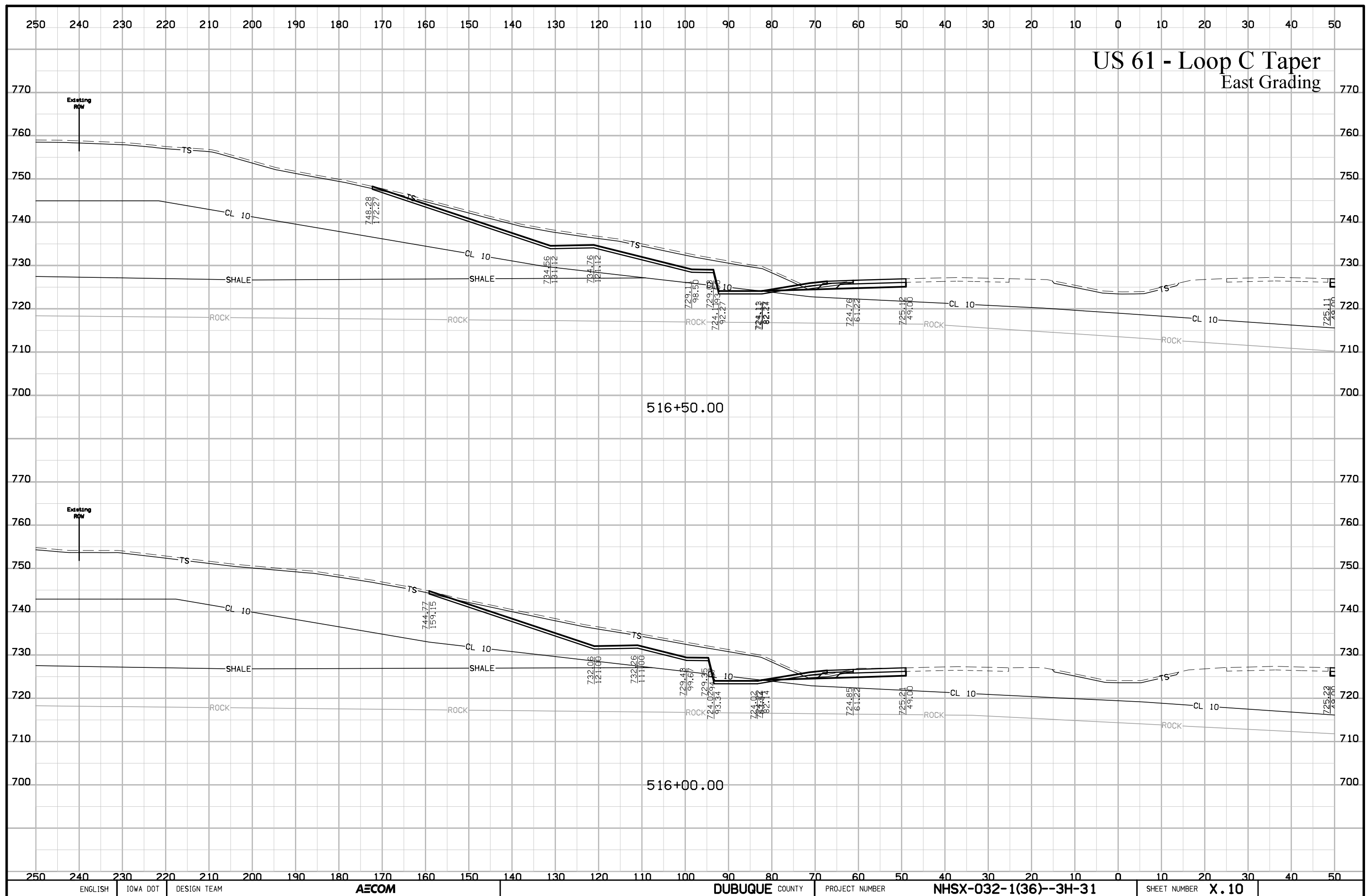
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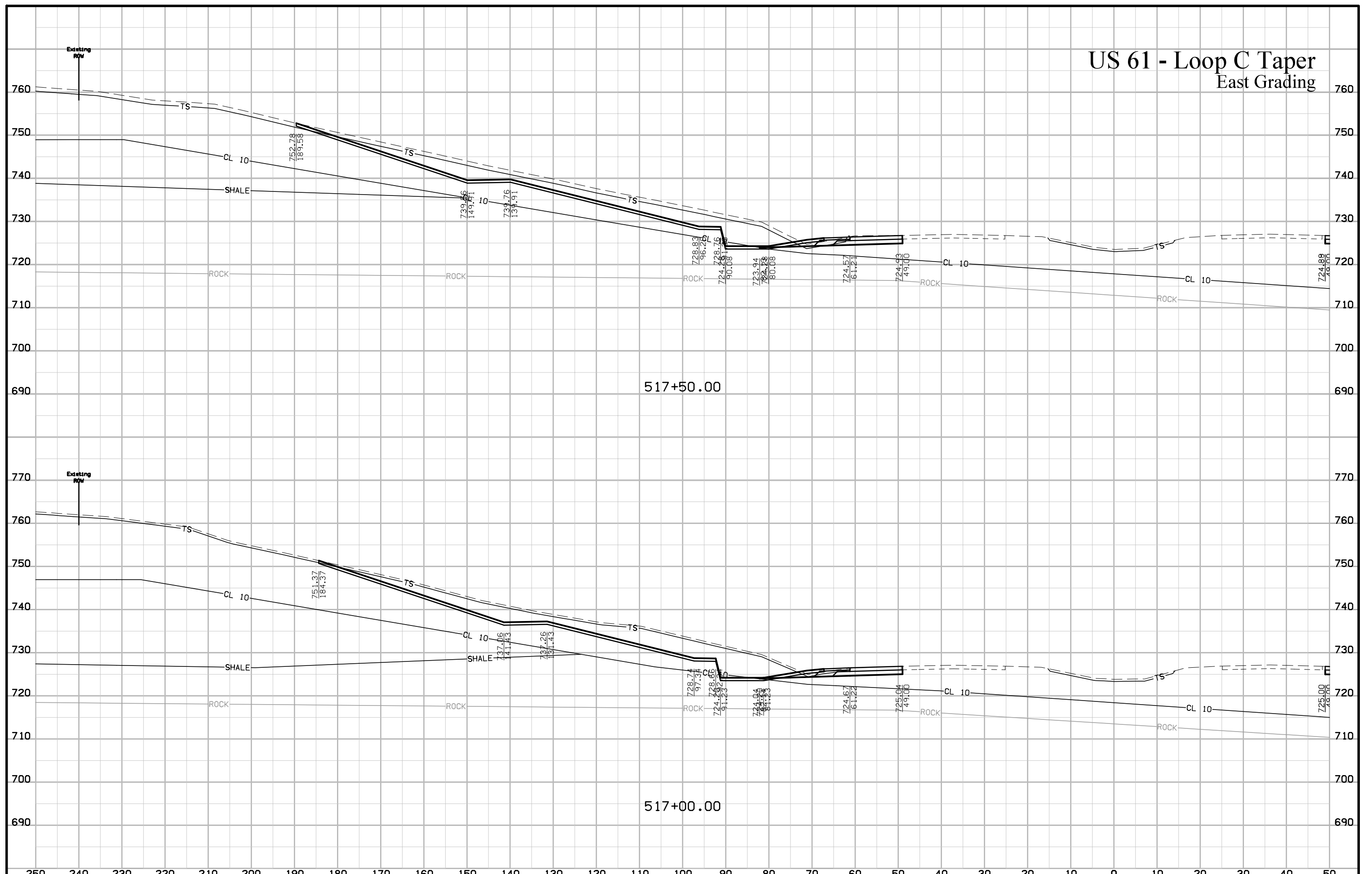
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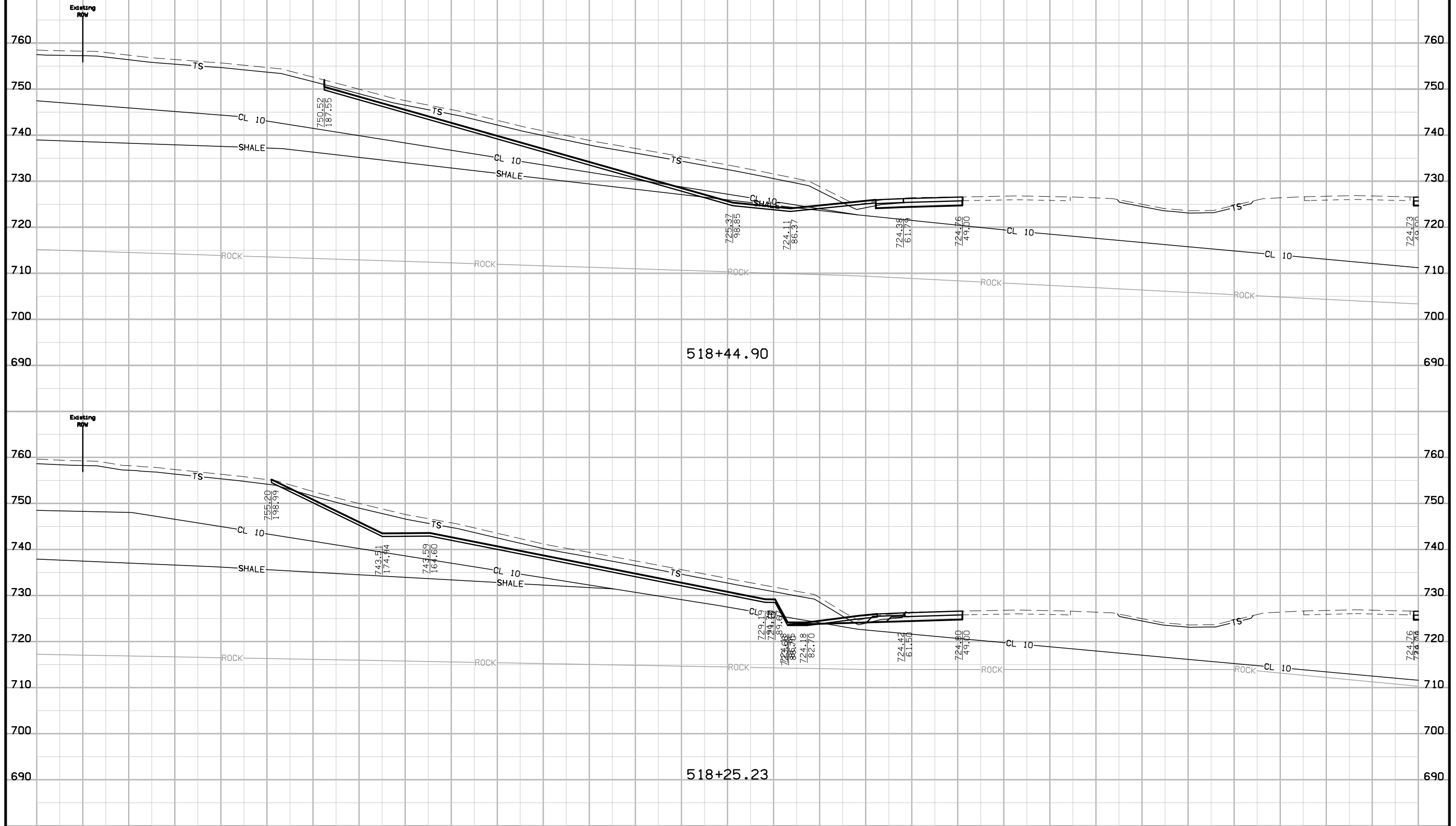
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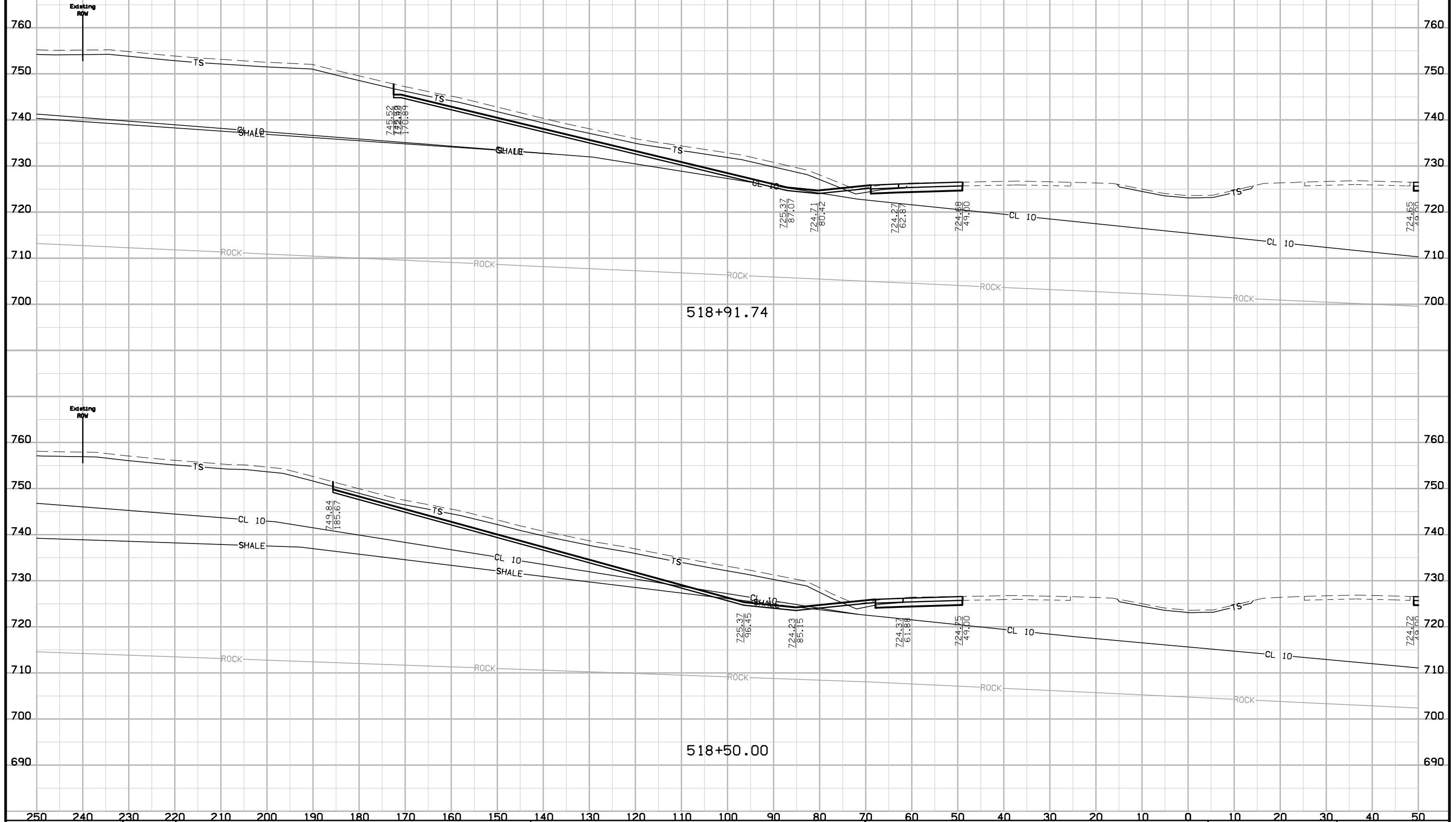
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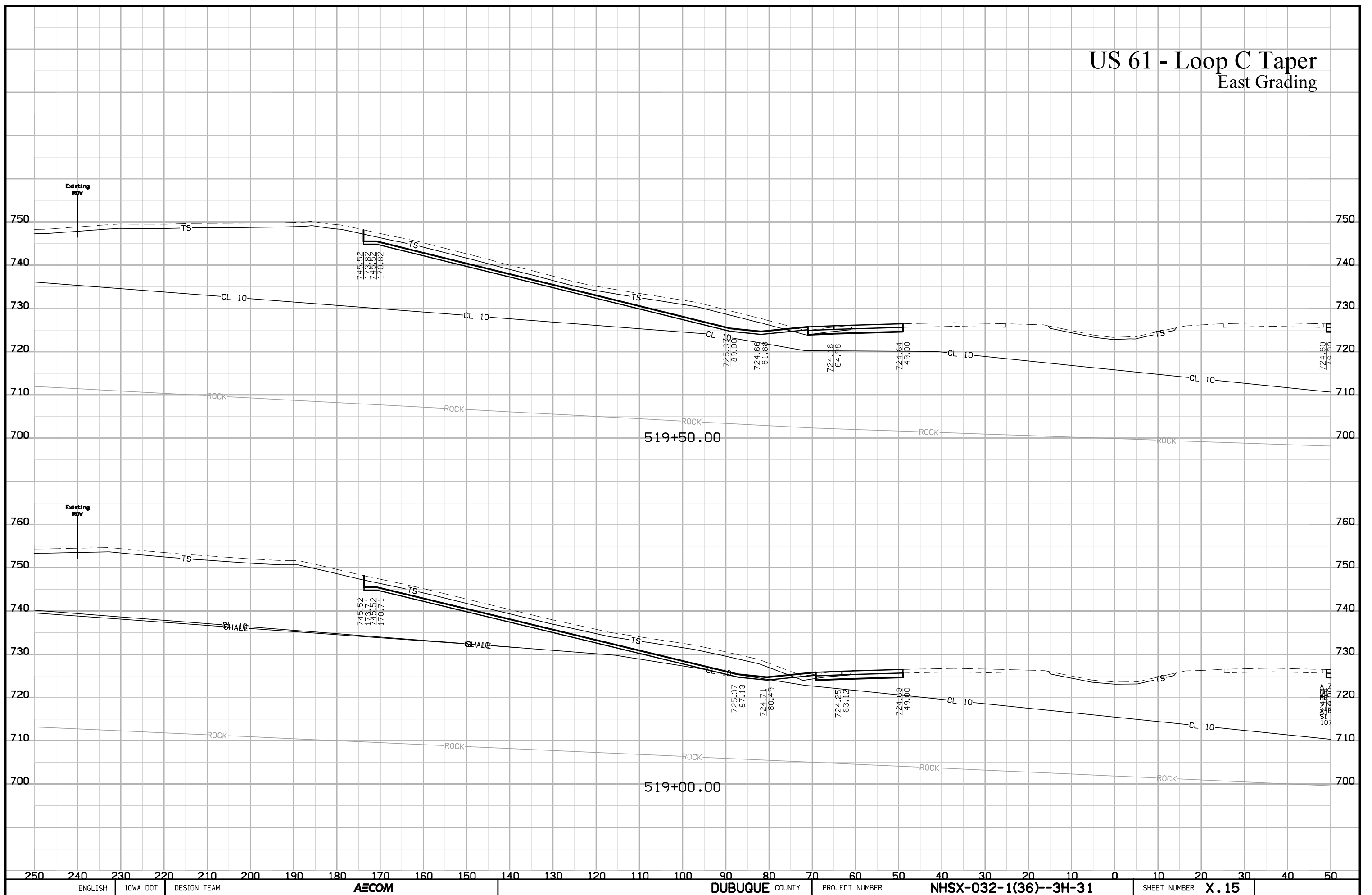
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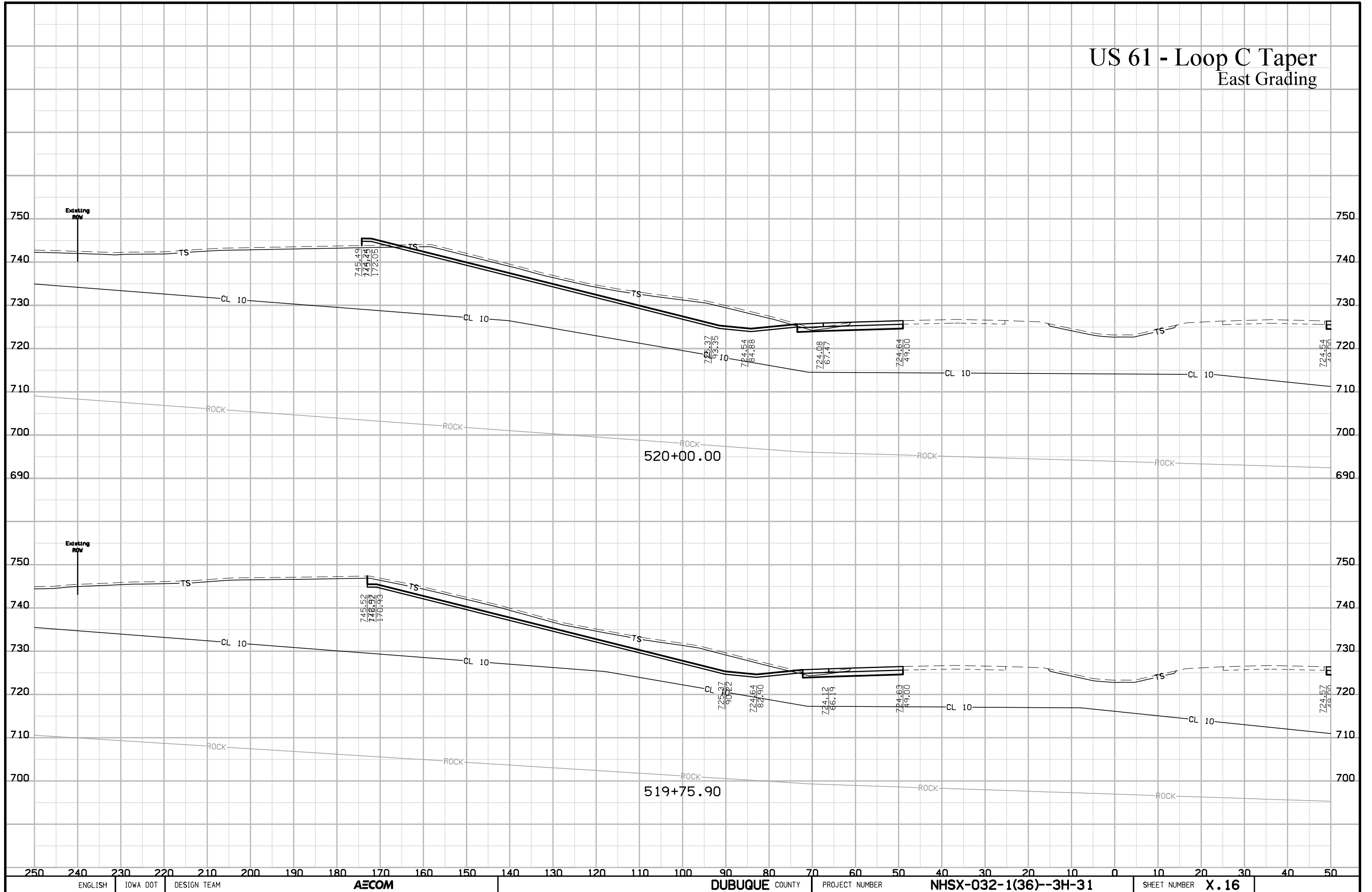
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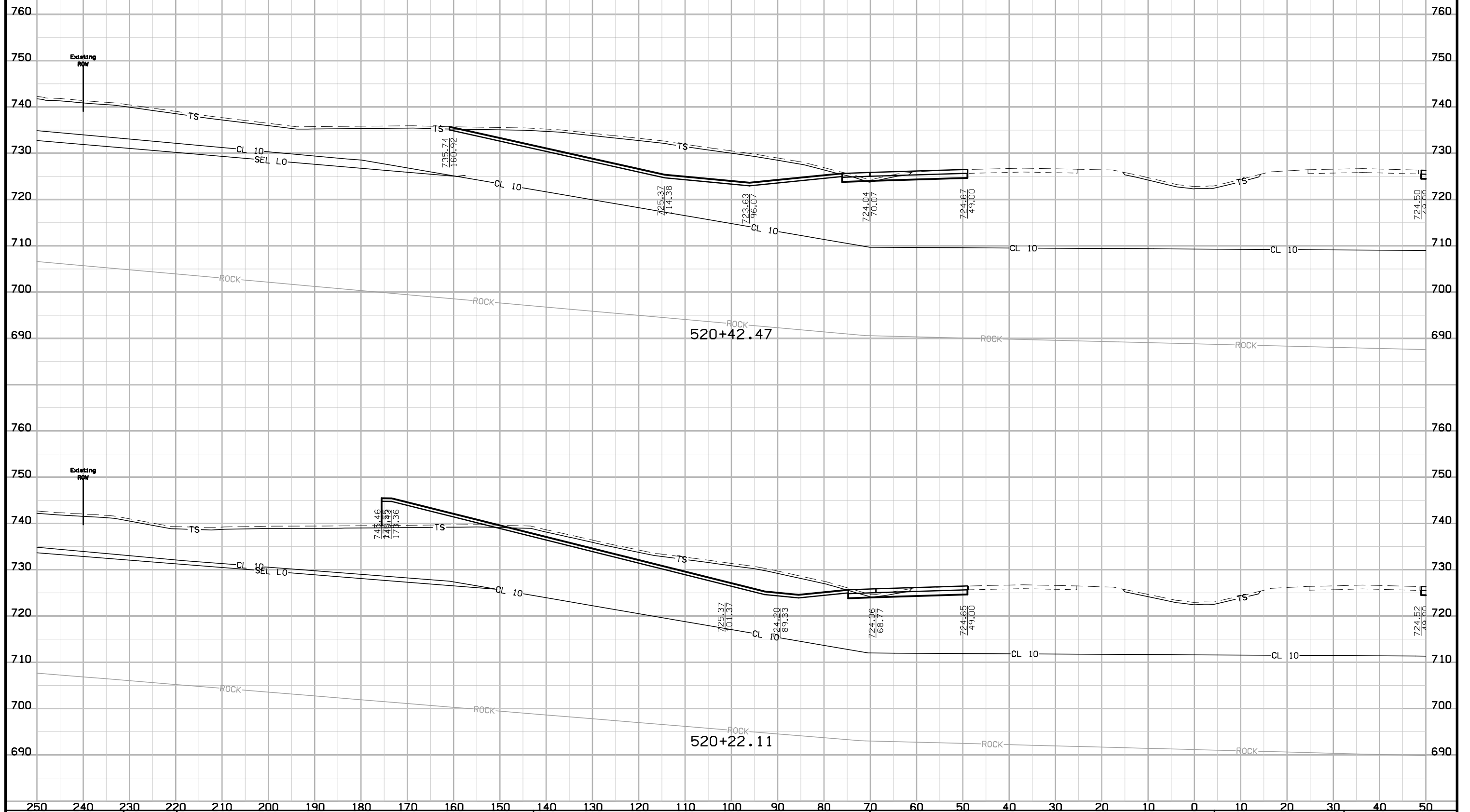
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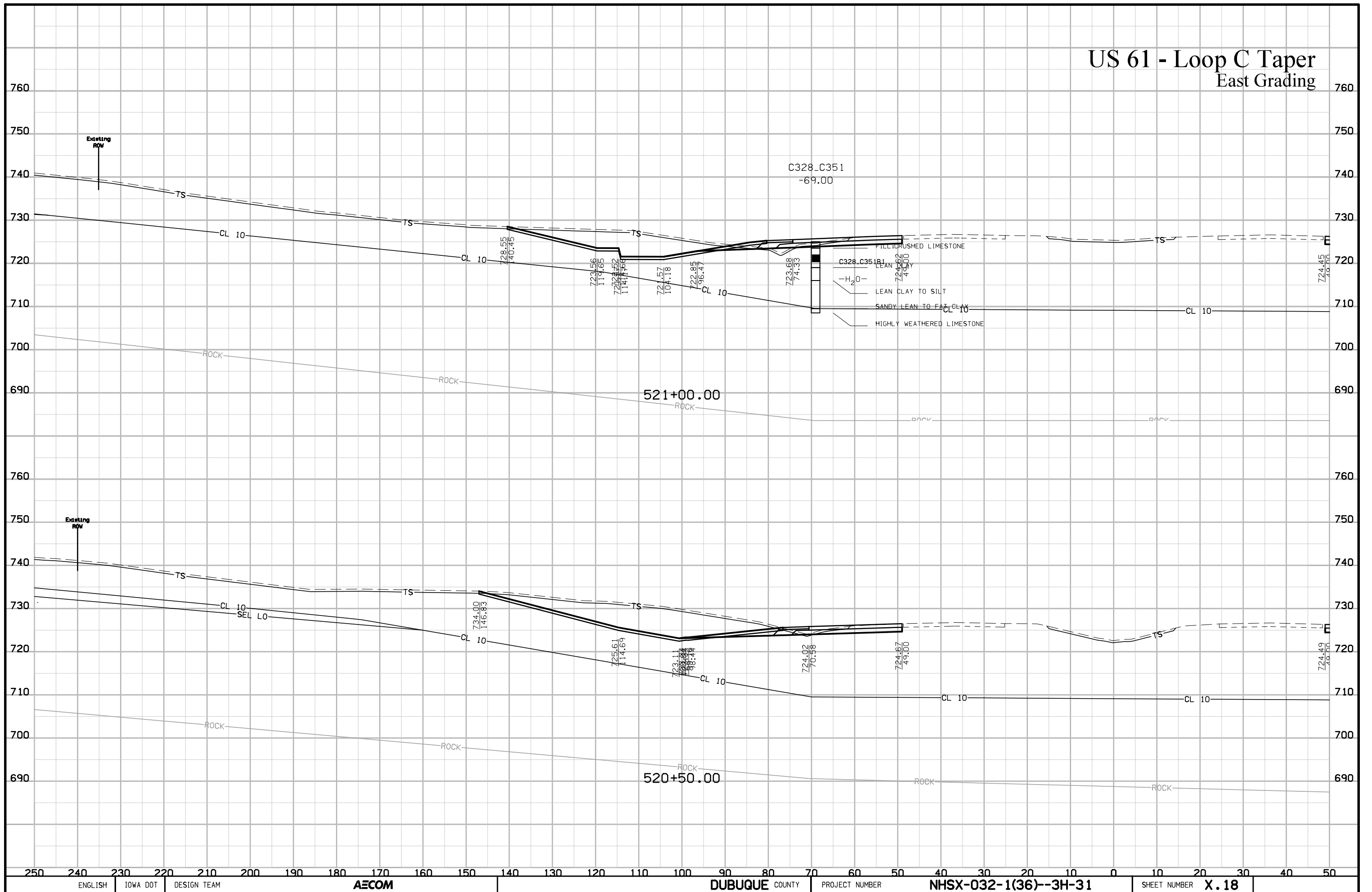
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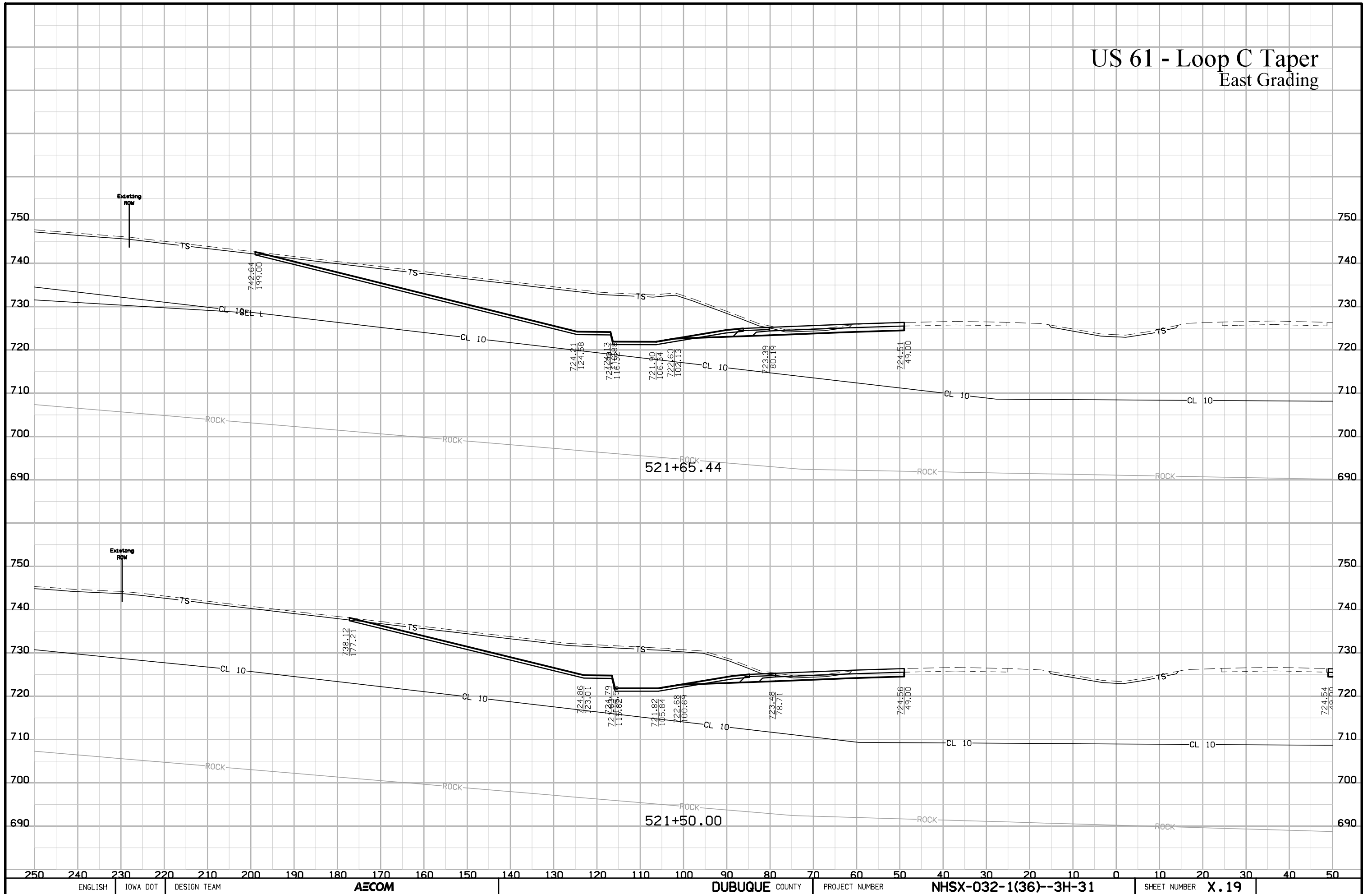
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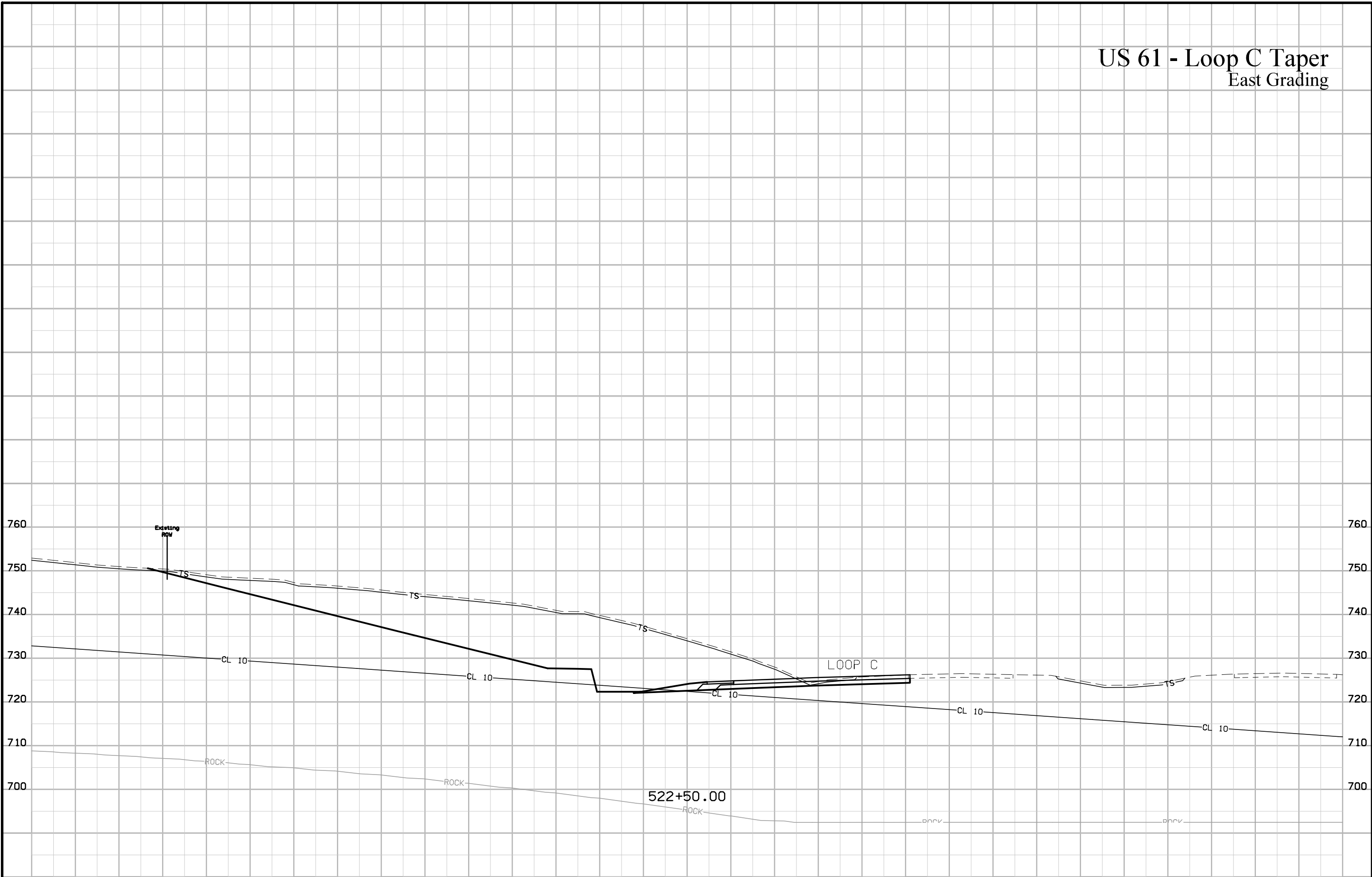
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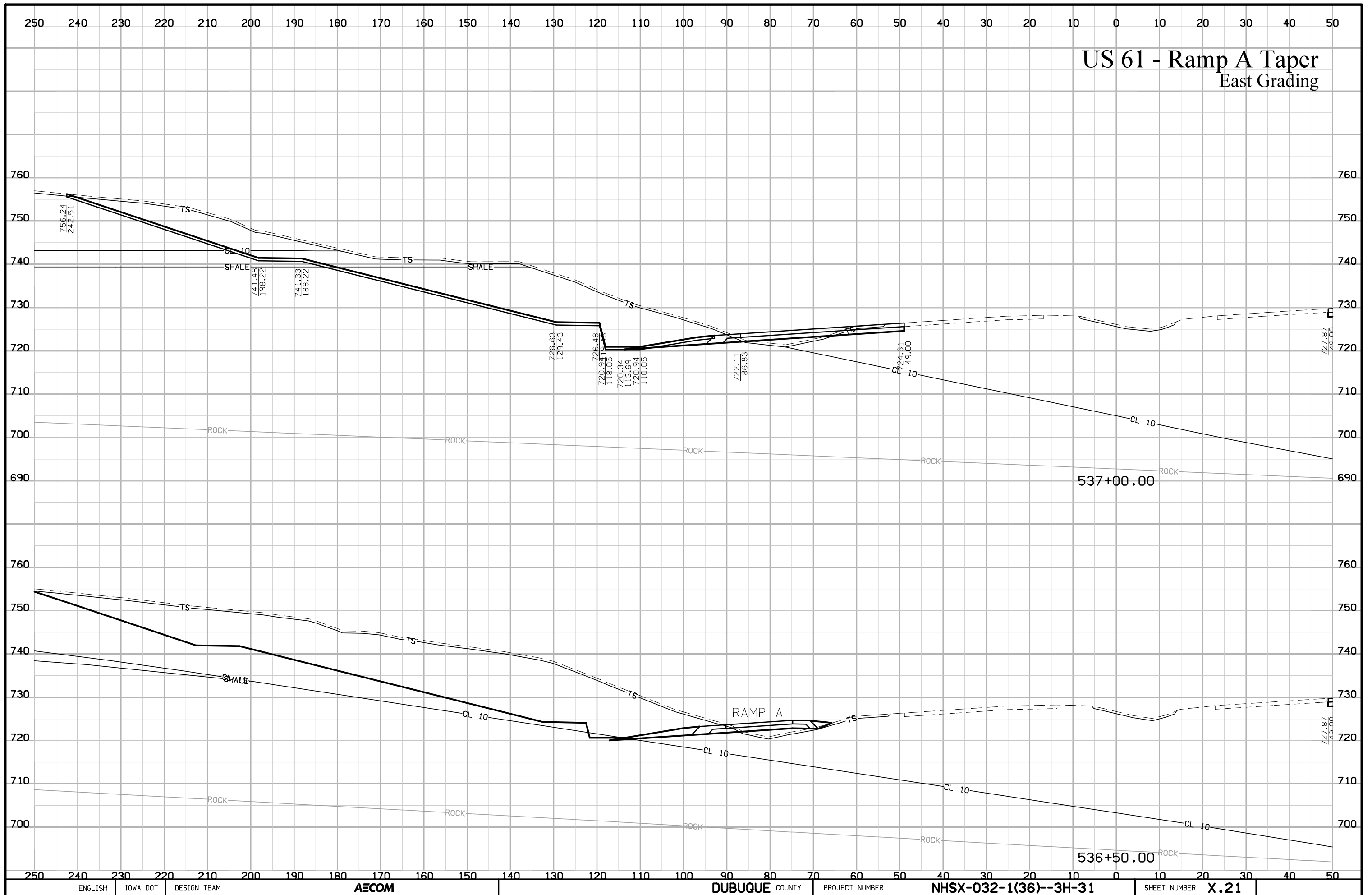
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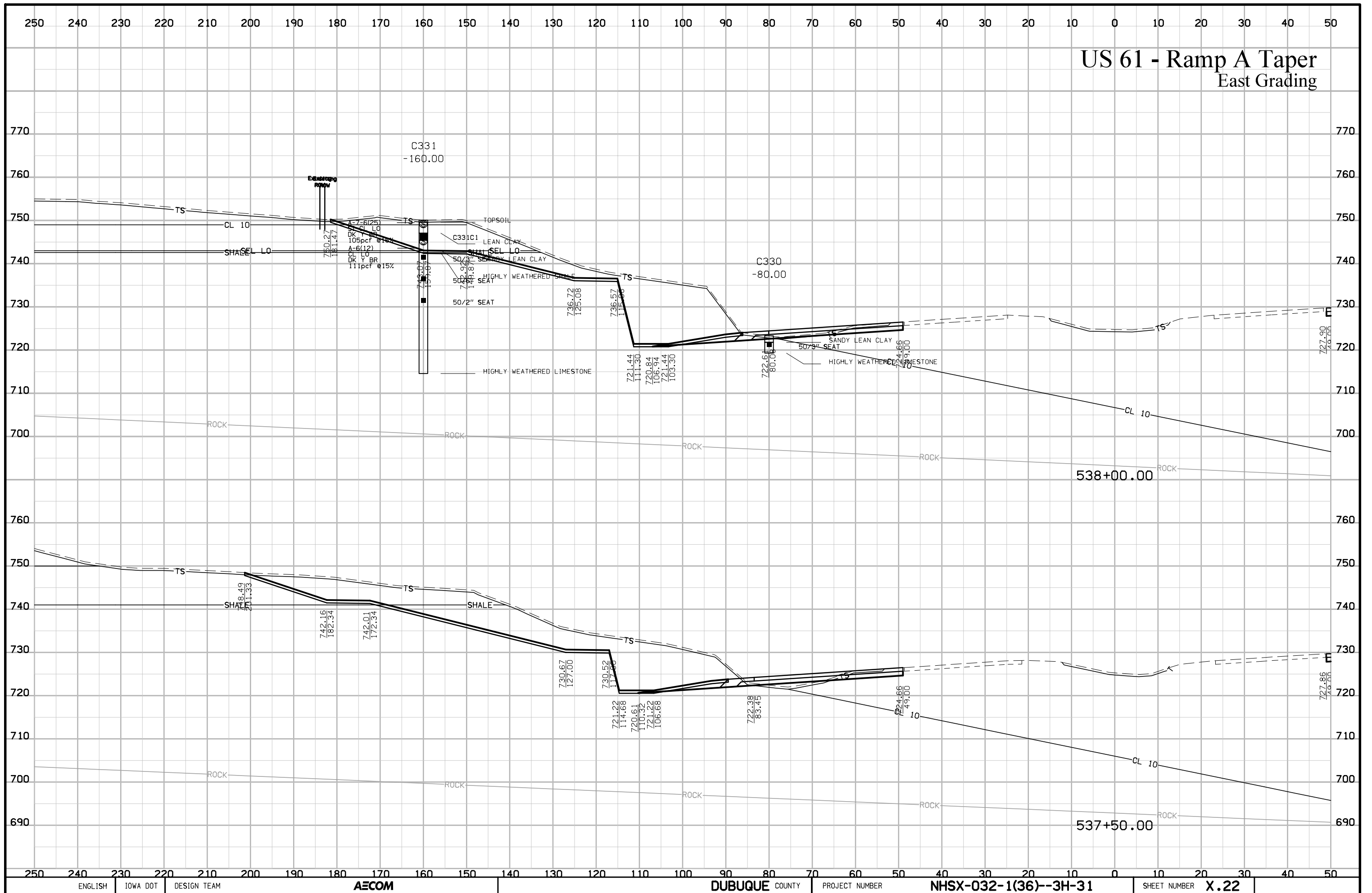
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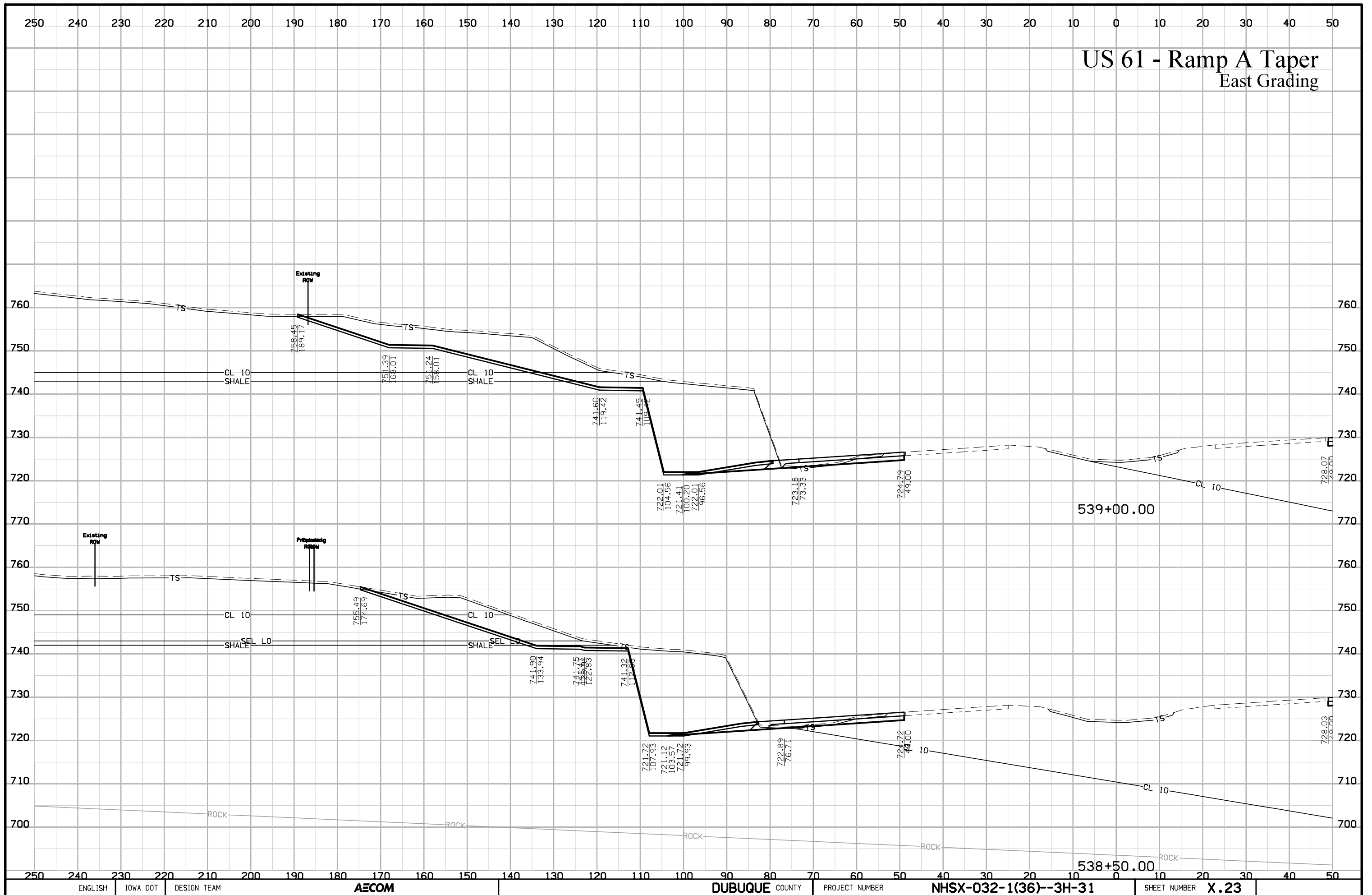
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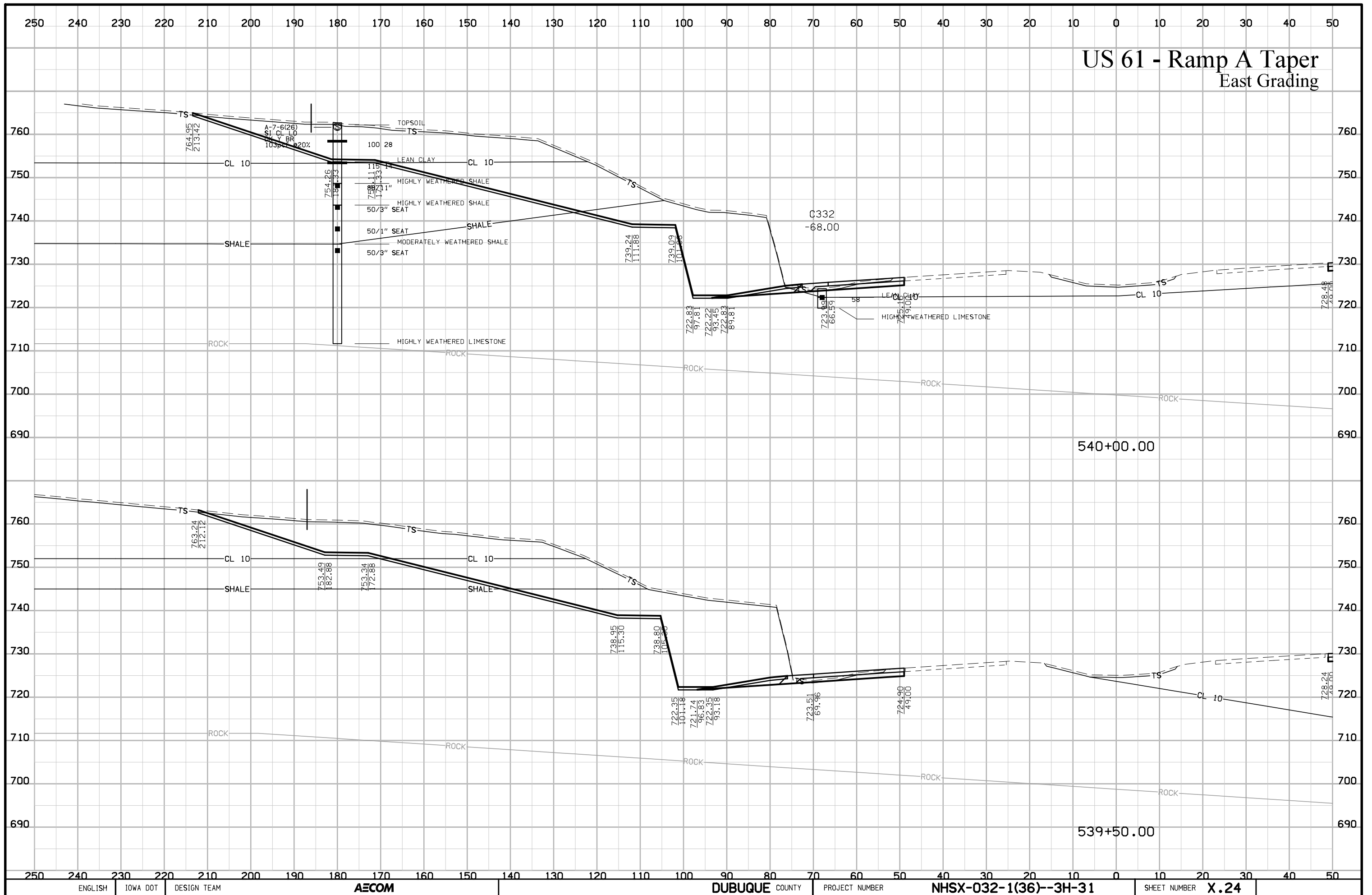
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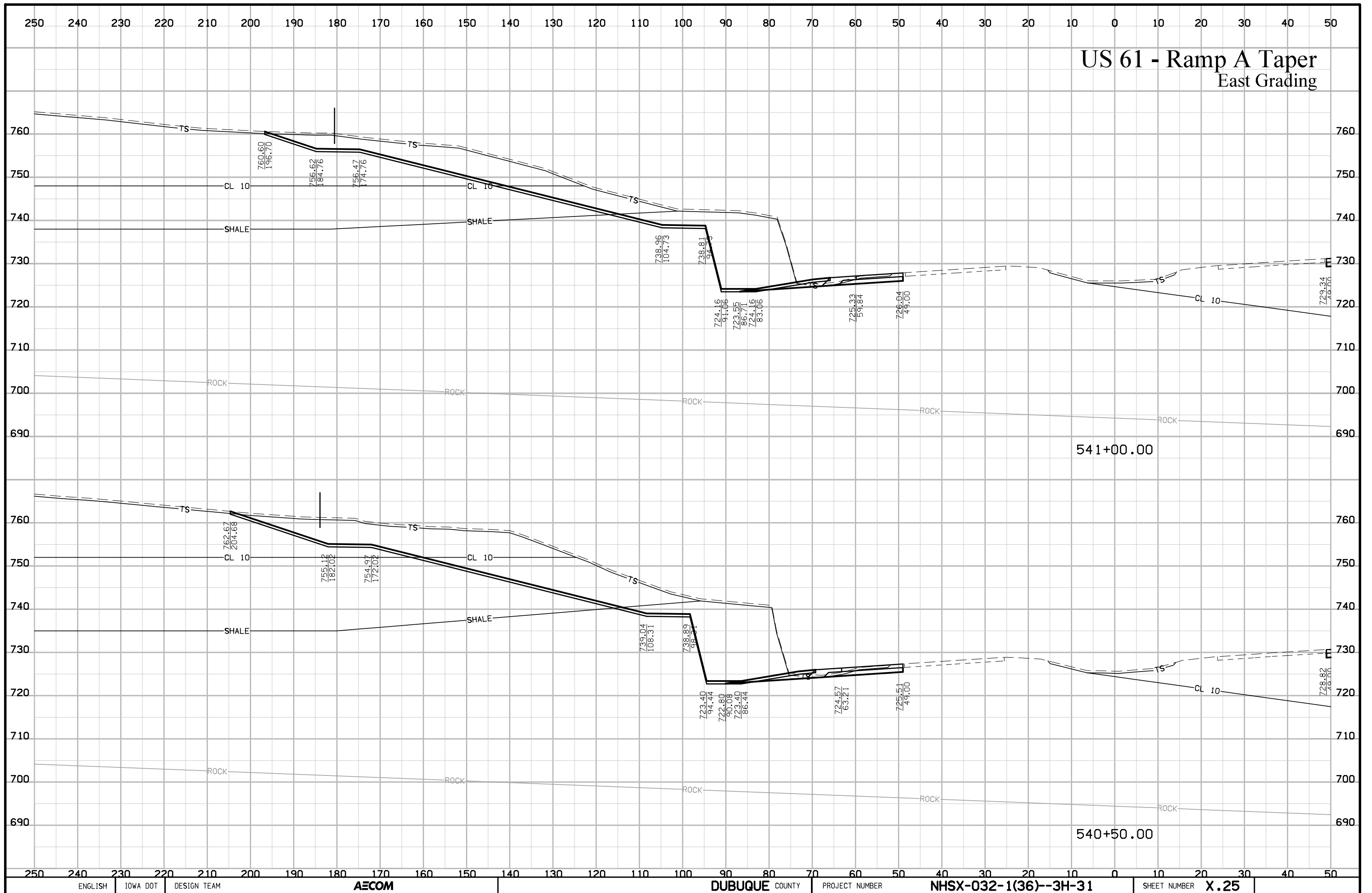
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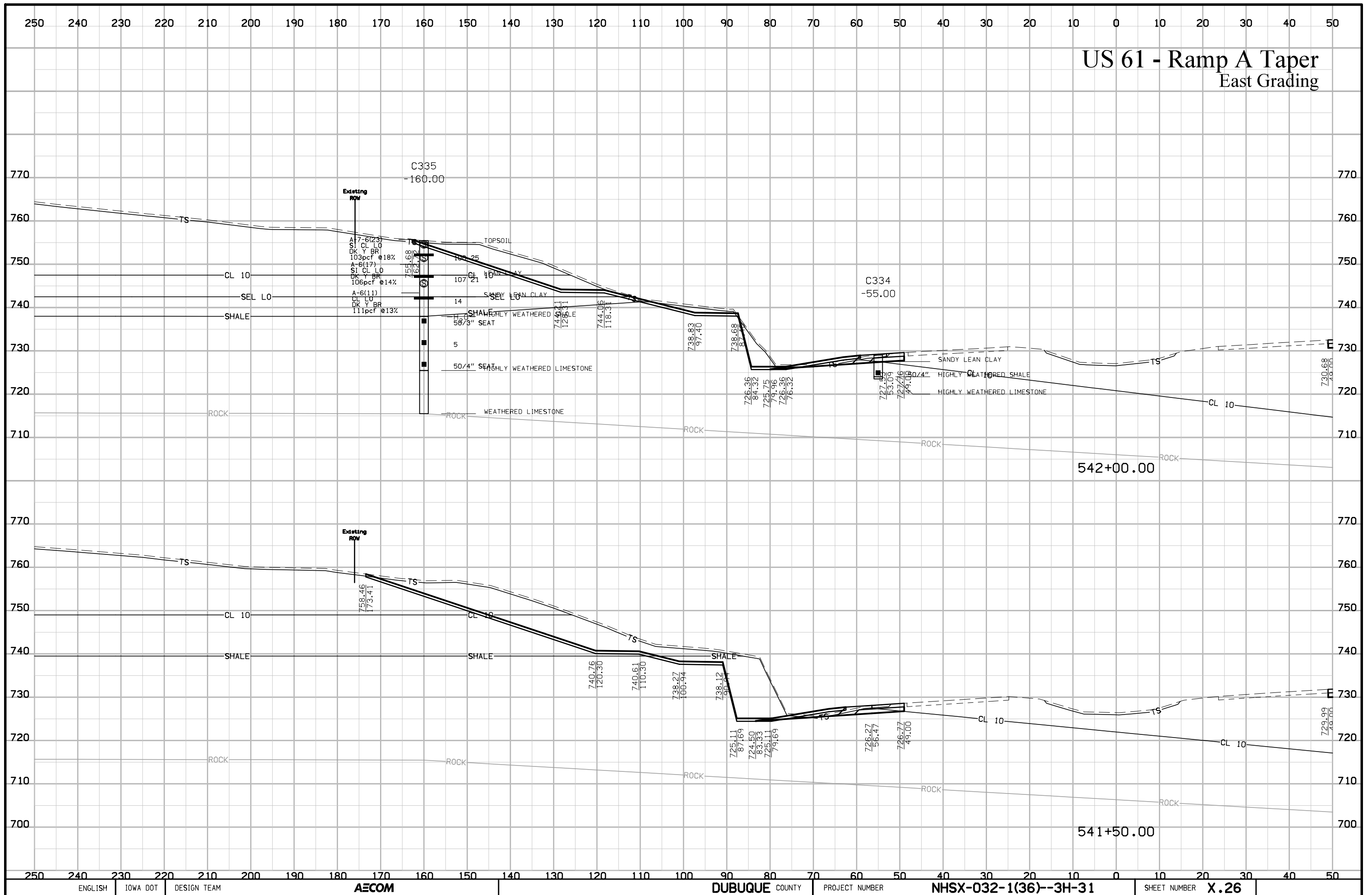
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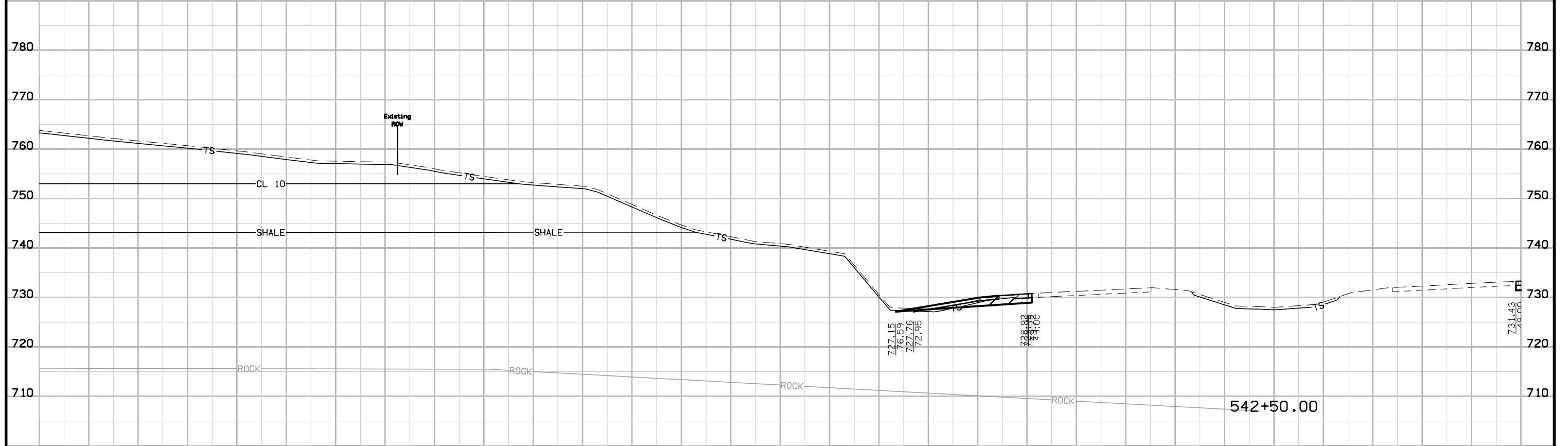
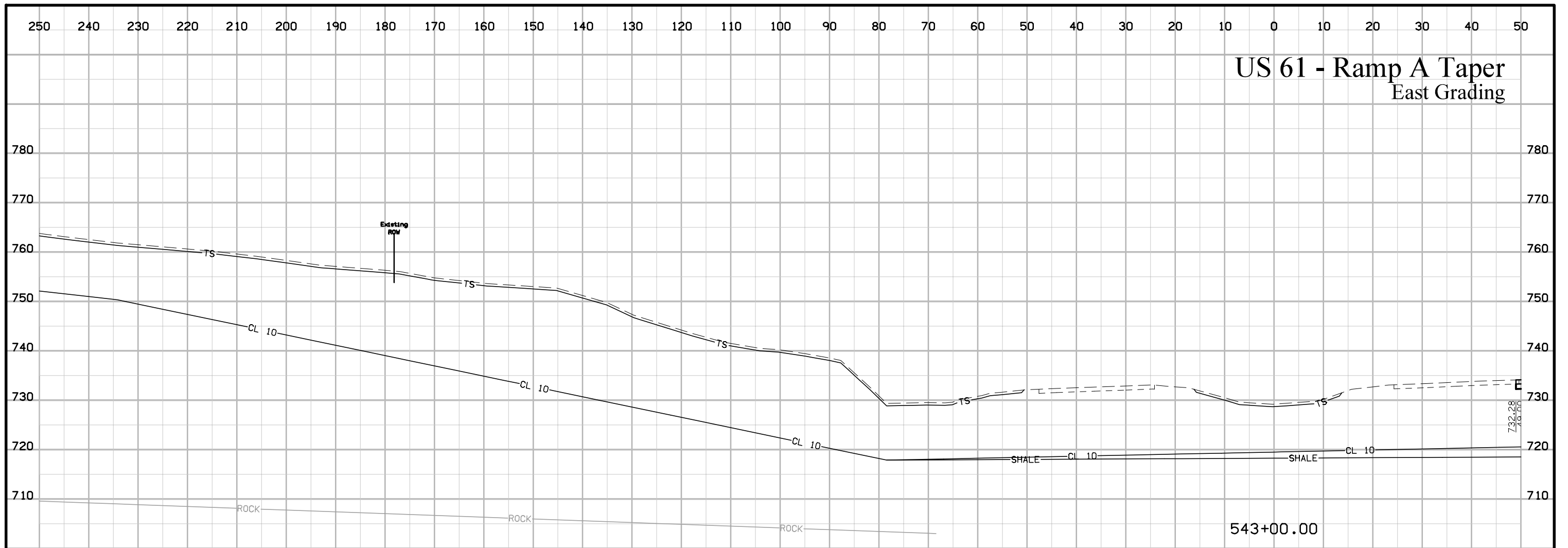
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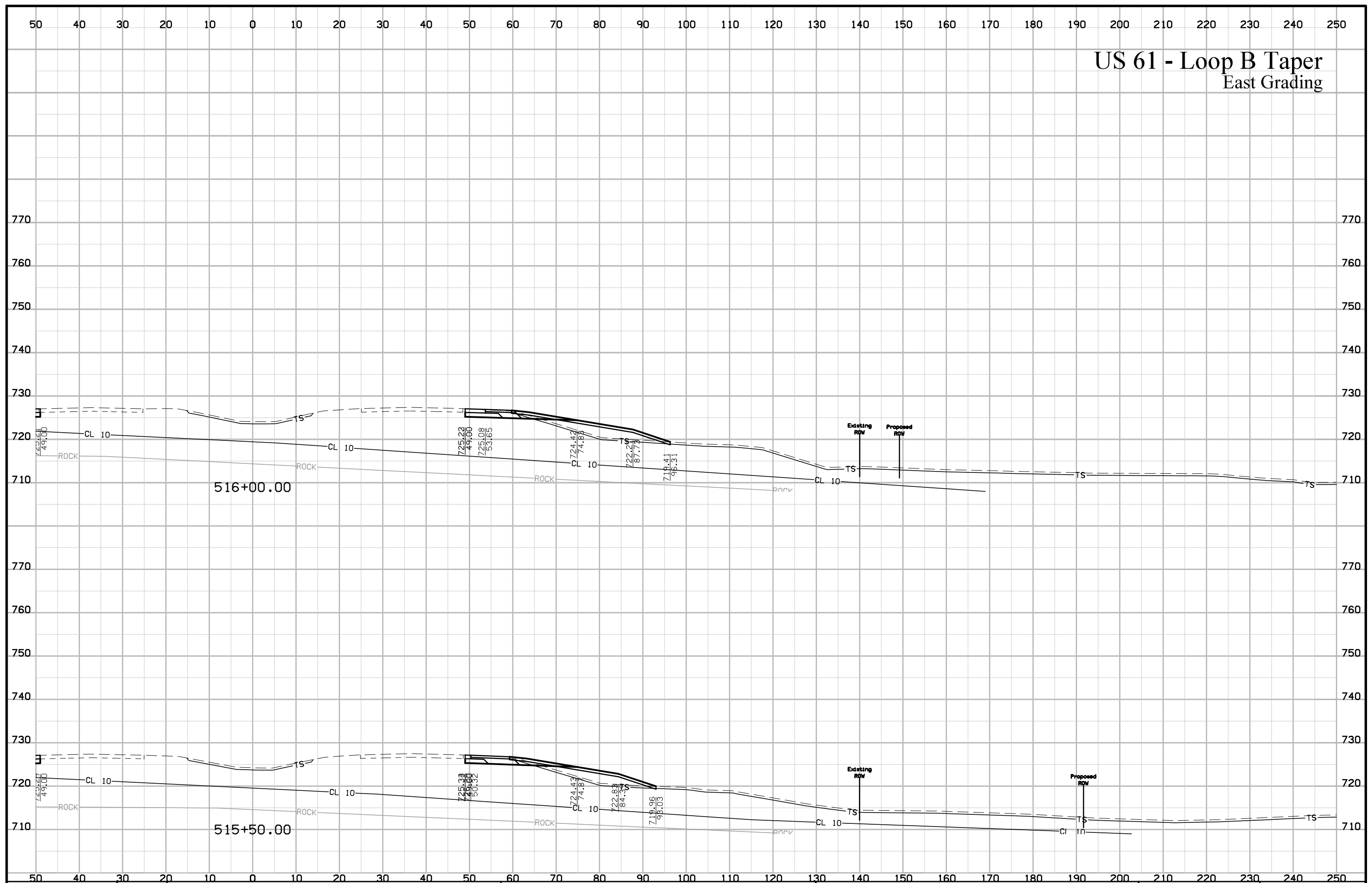
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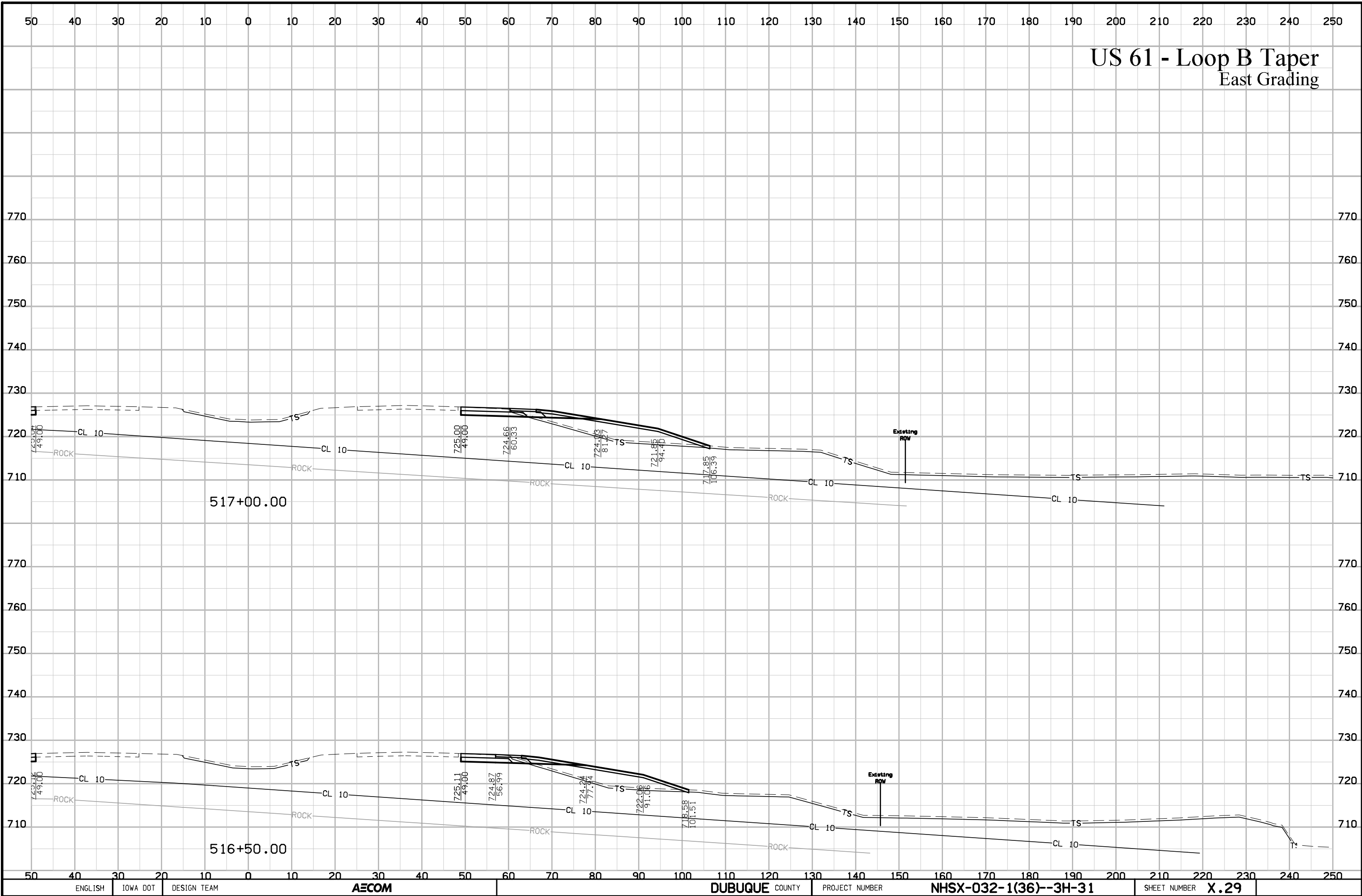
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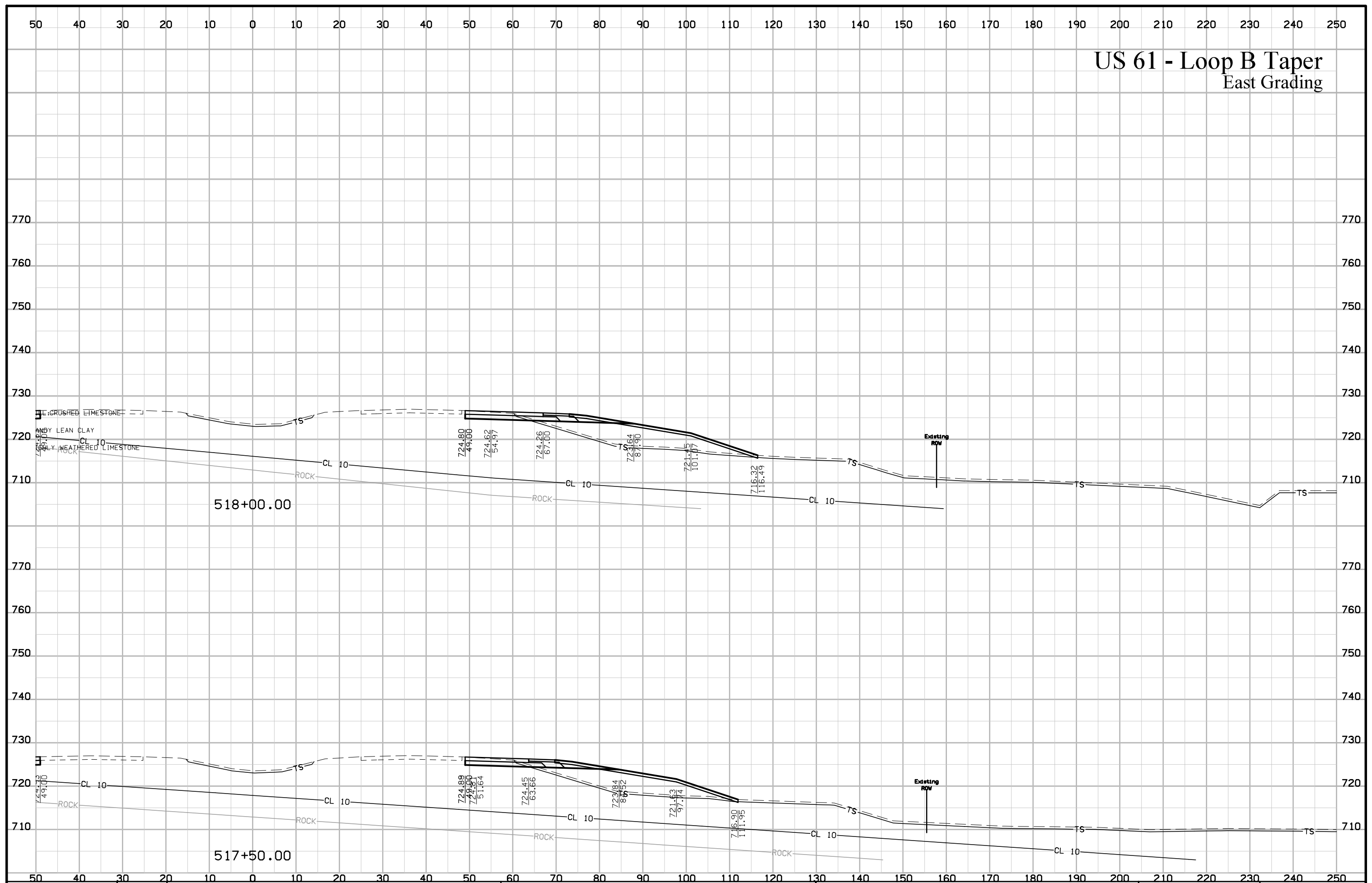
US 61 - Loop B Taper East Grading



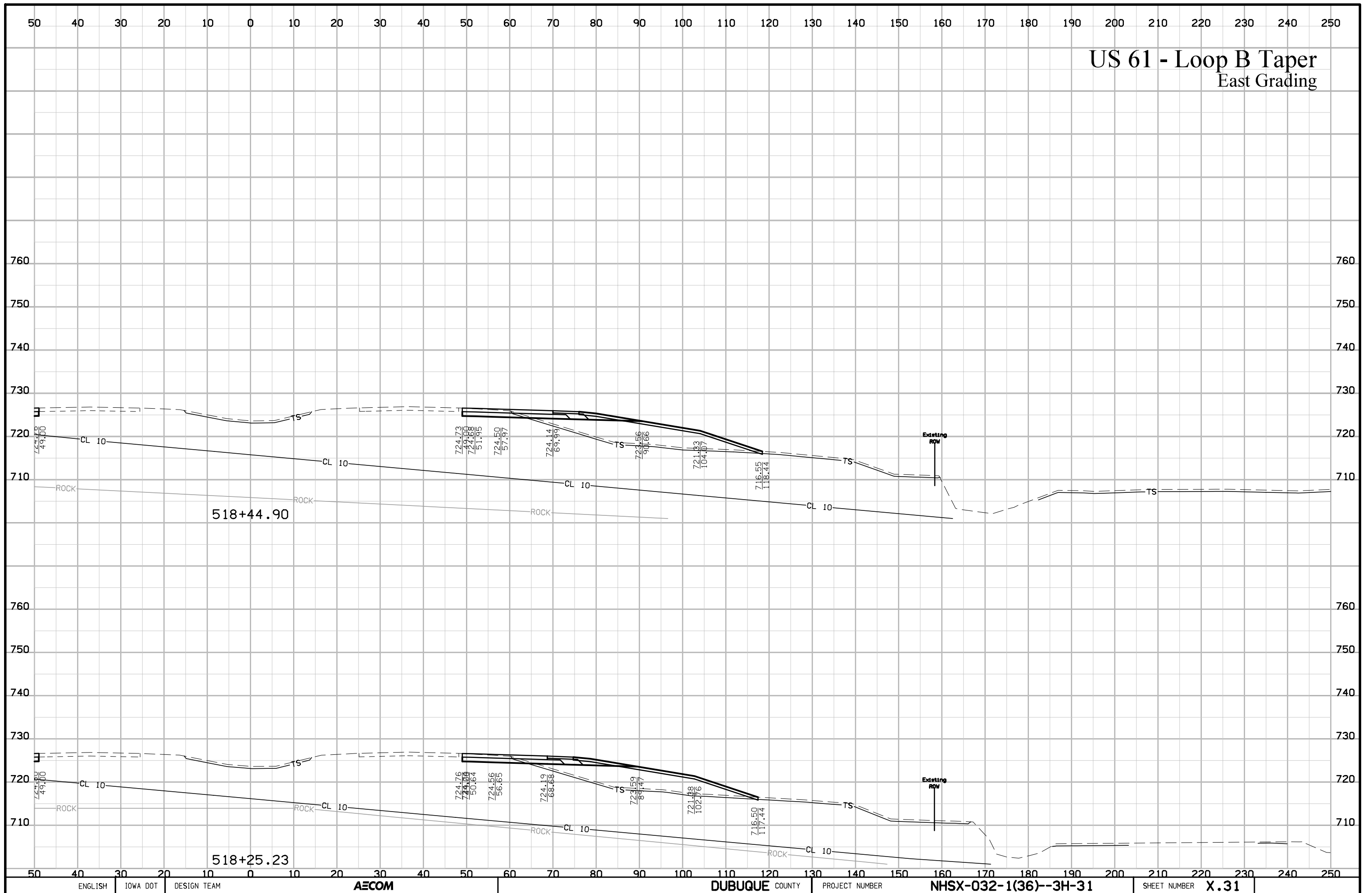
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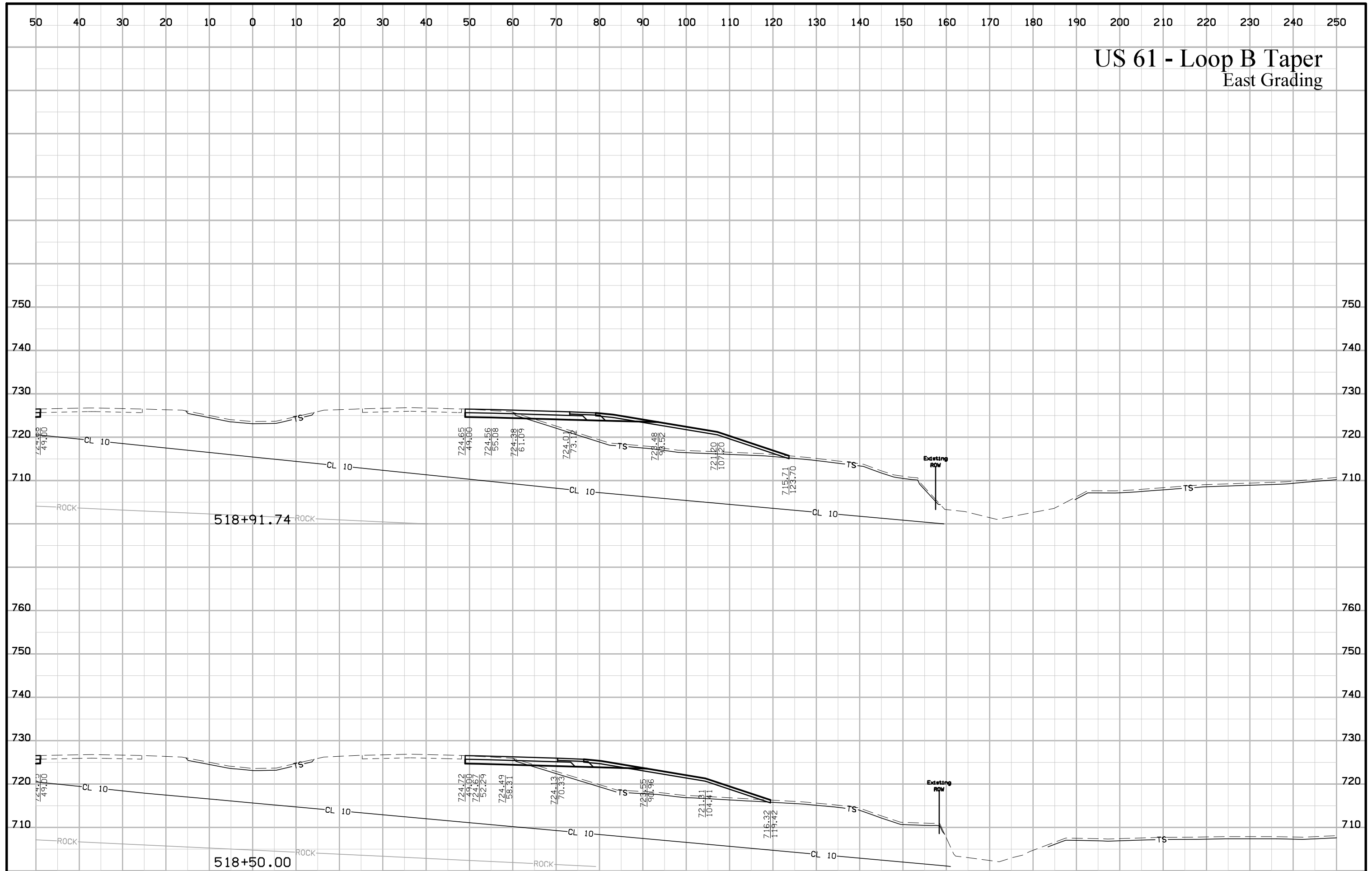
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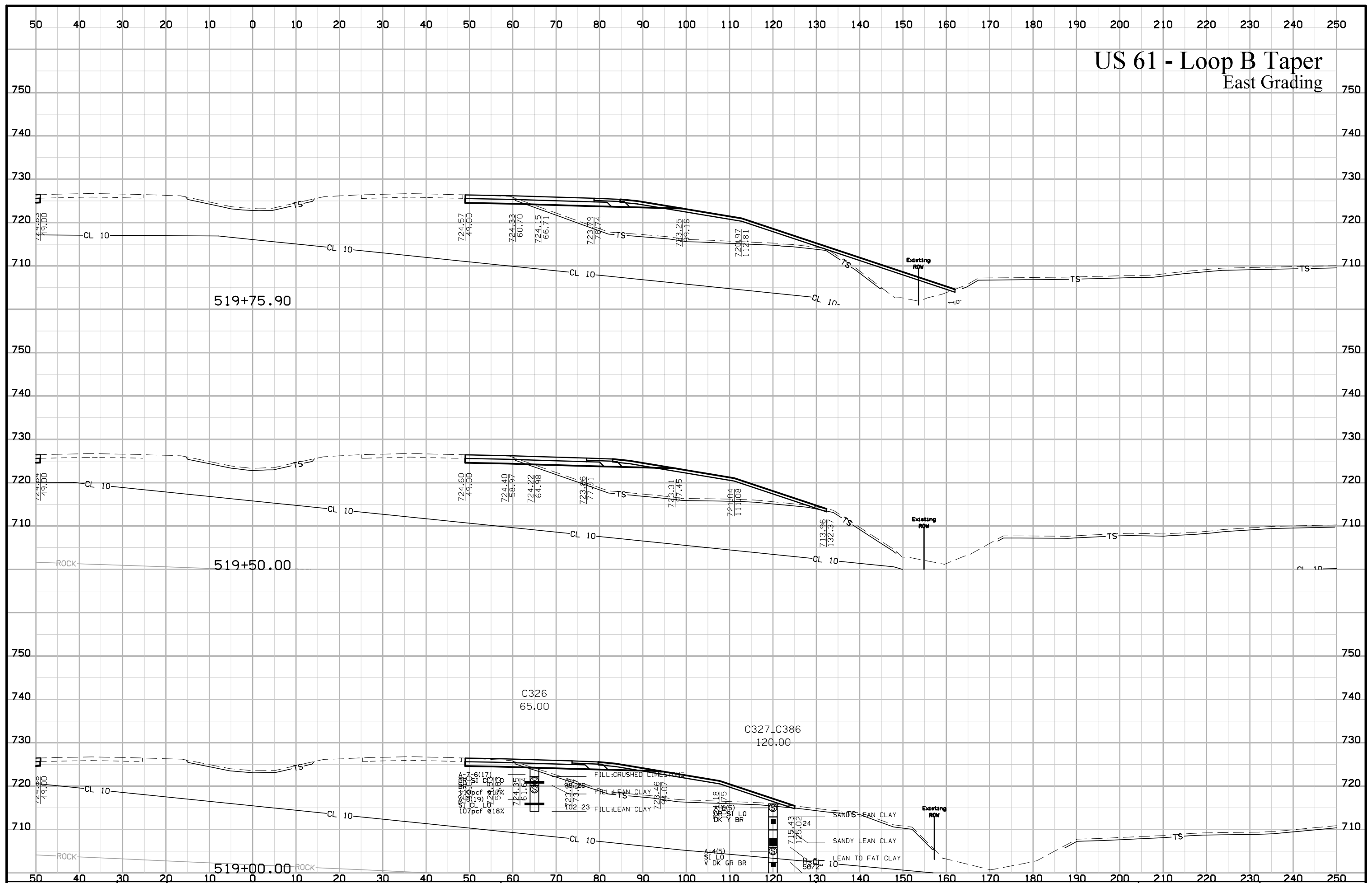
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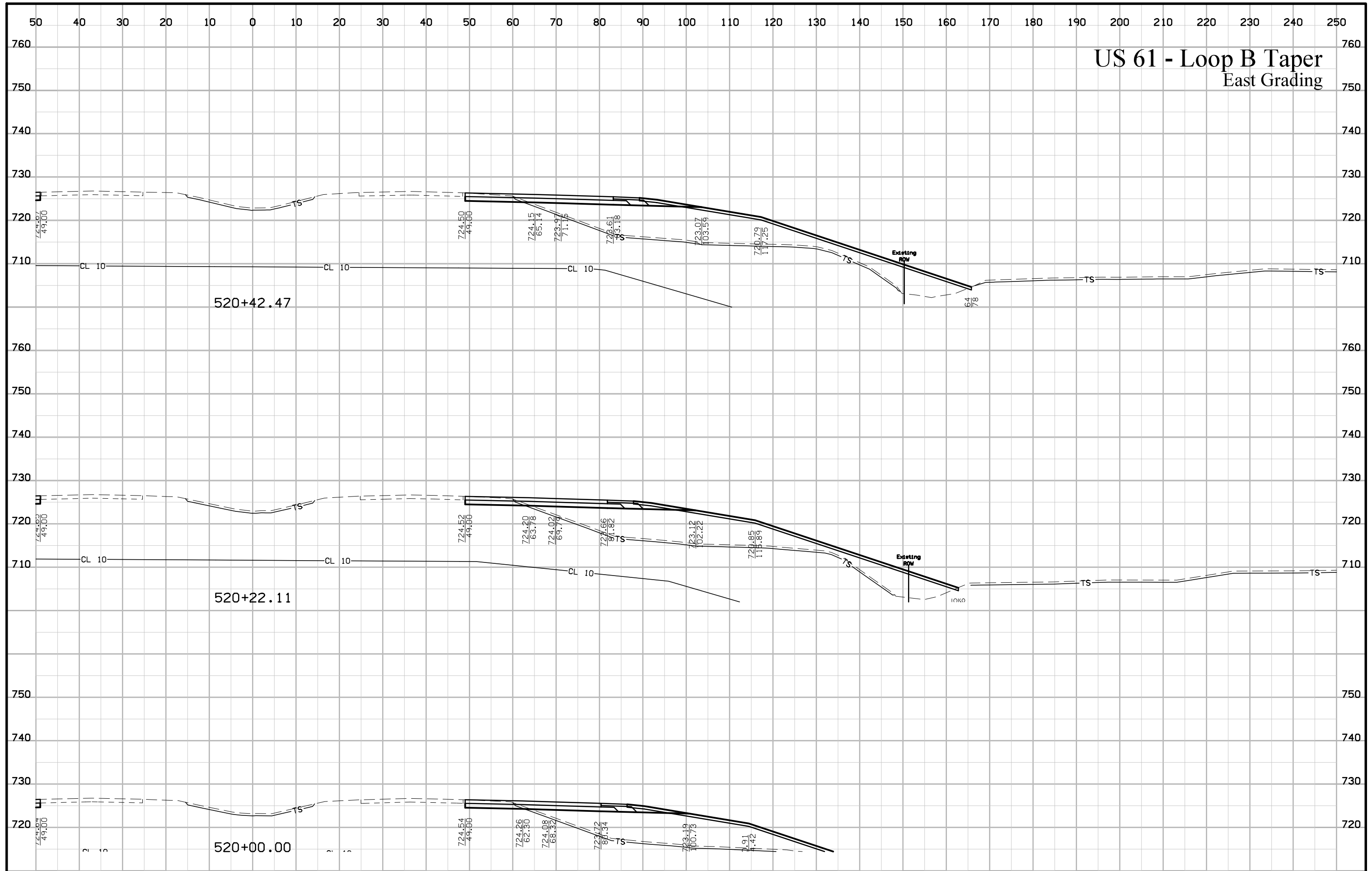
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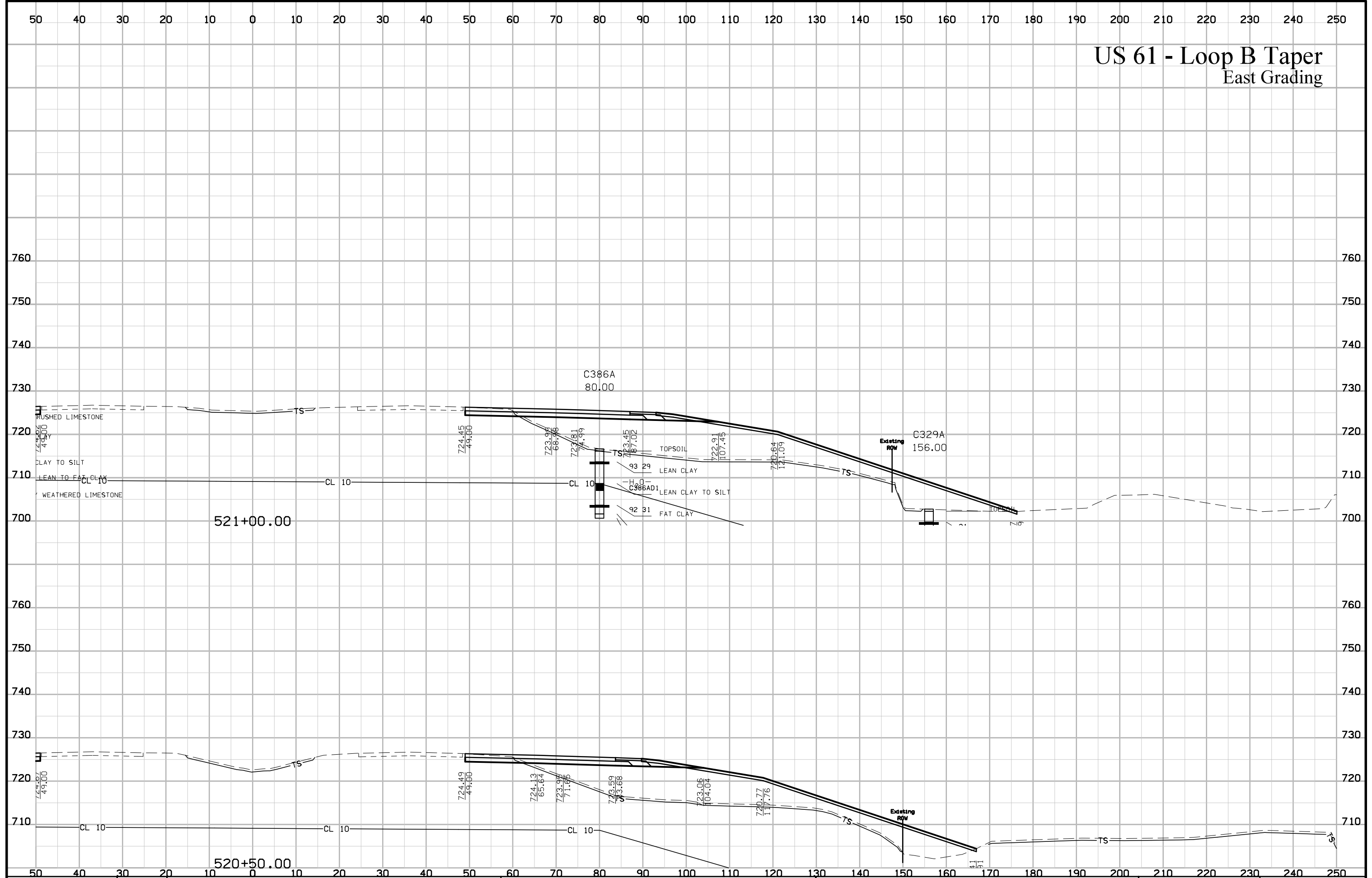
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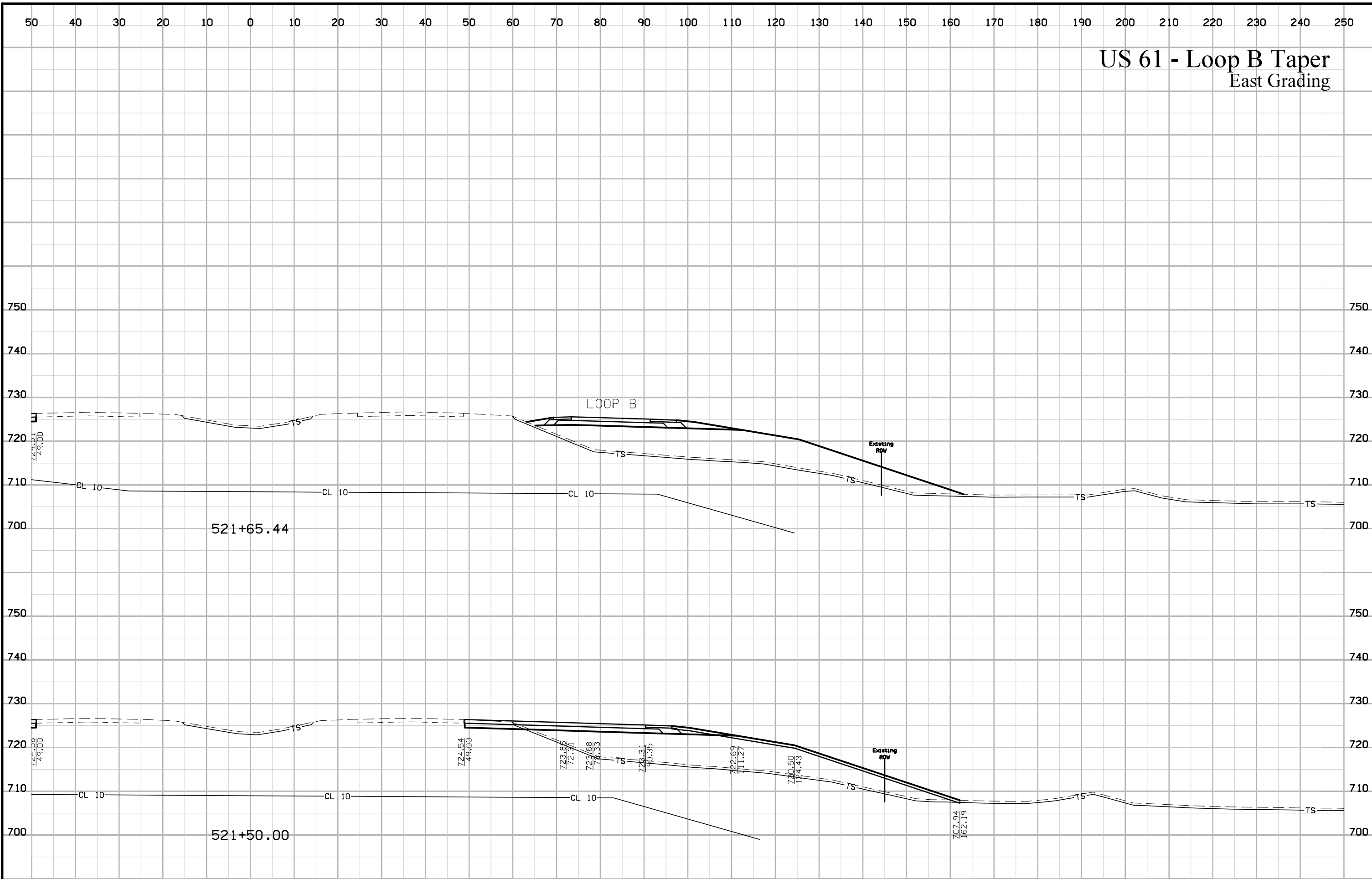
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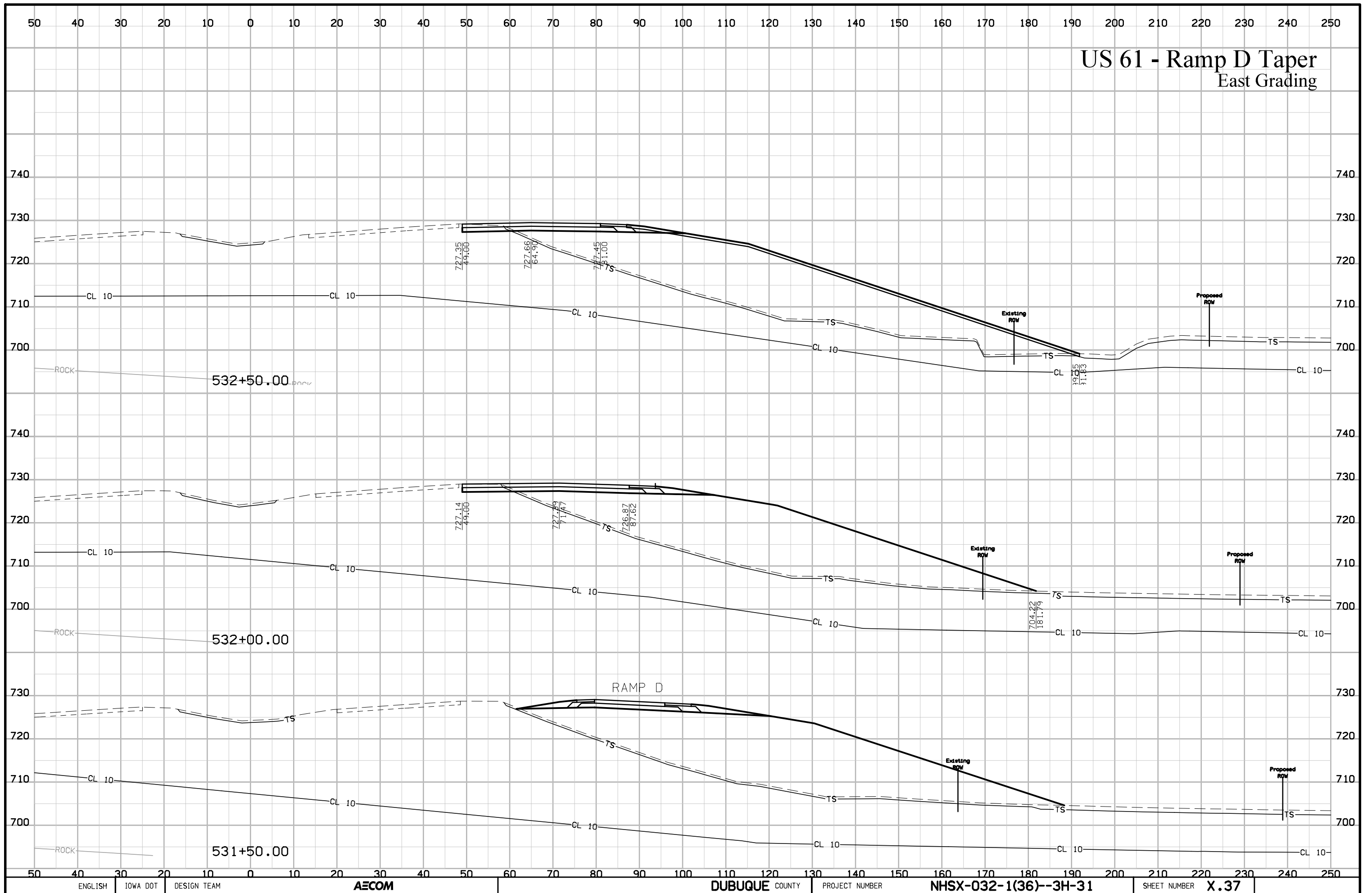
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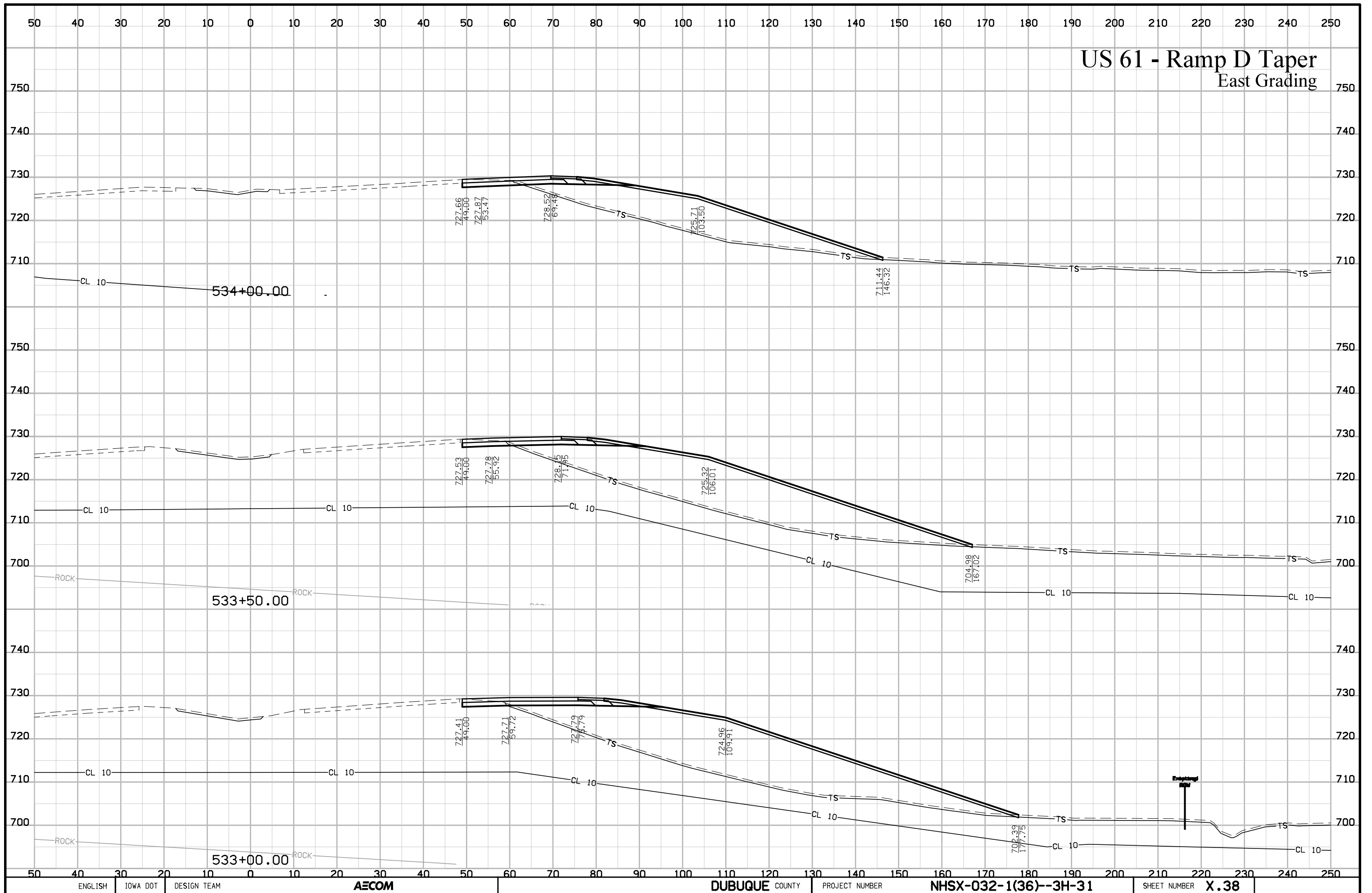
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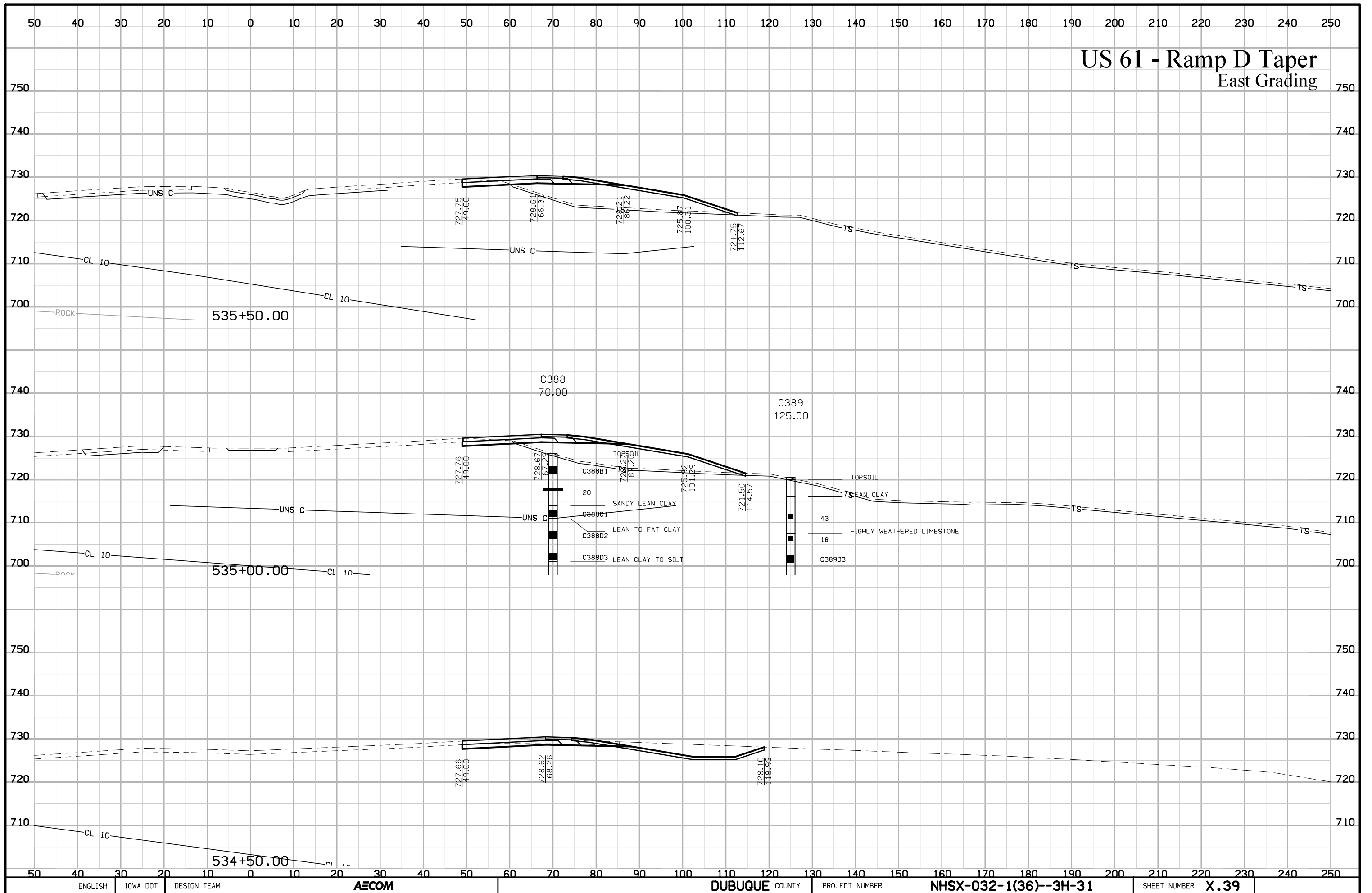
US 61 - Ramp D Taper East Grading



US 61 - Ramp D Taper East Grading



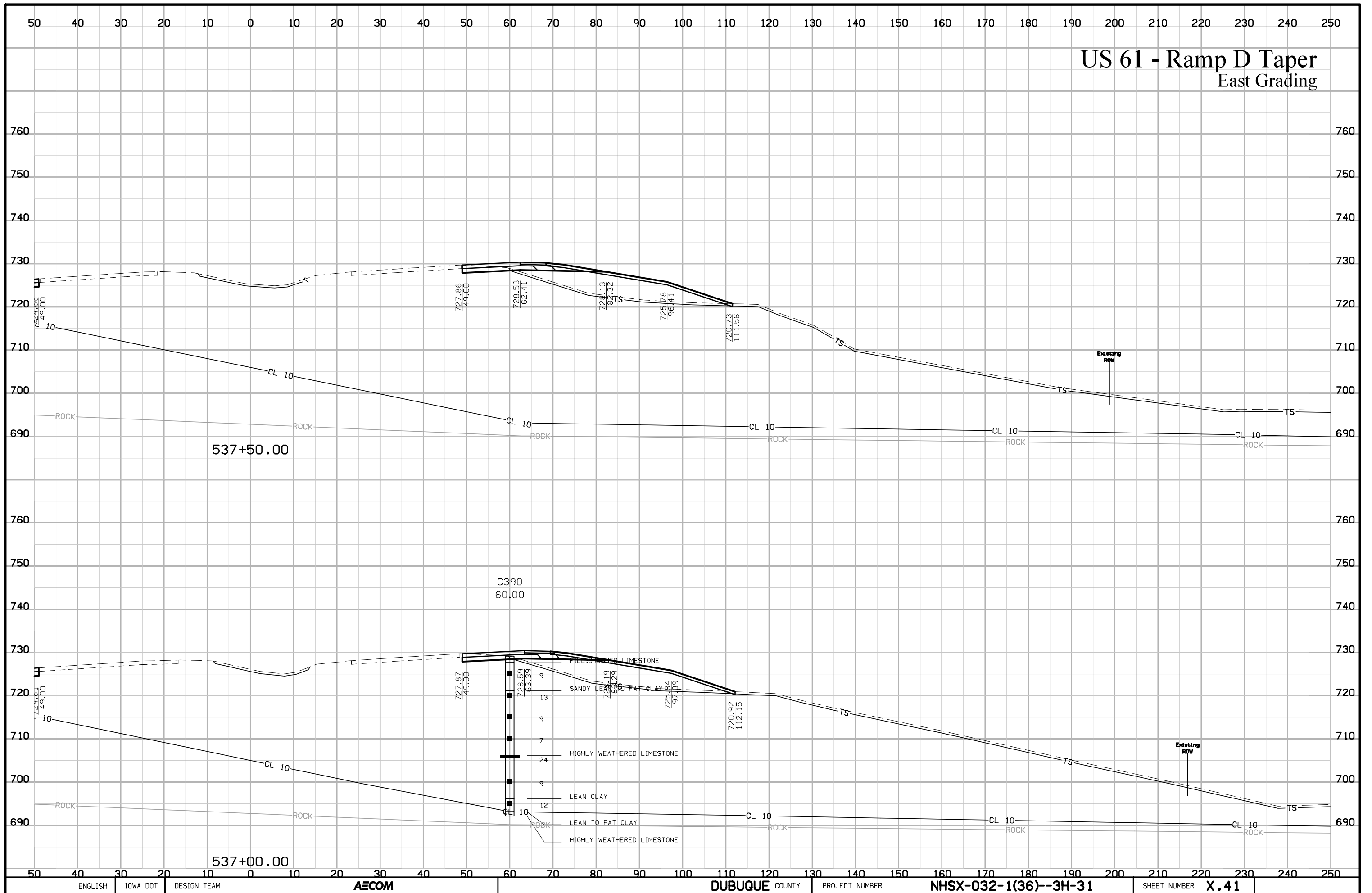
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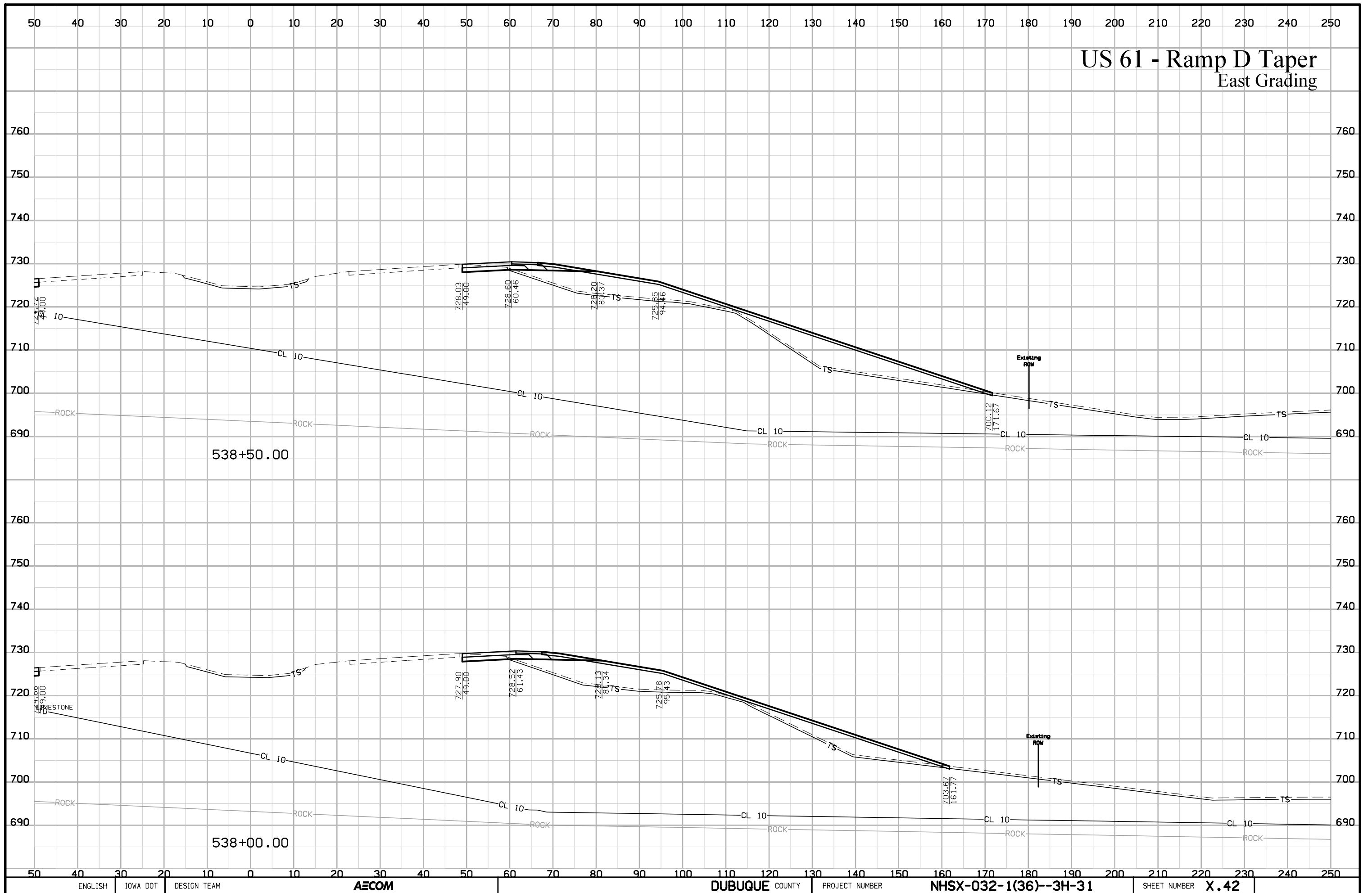
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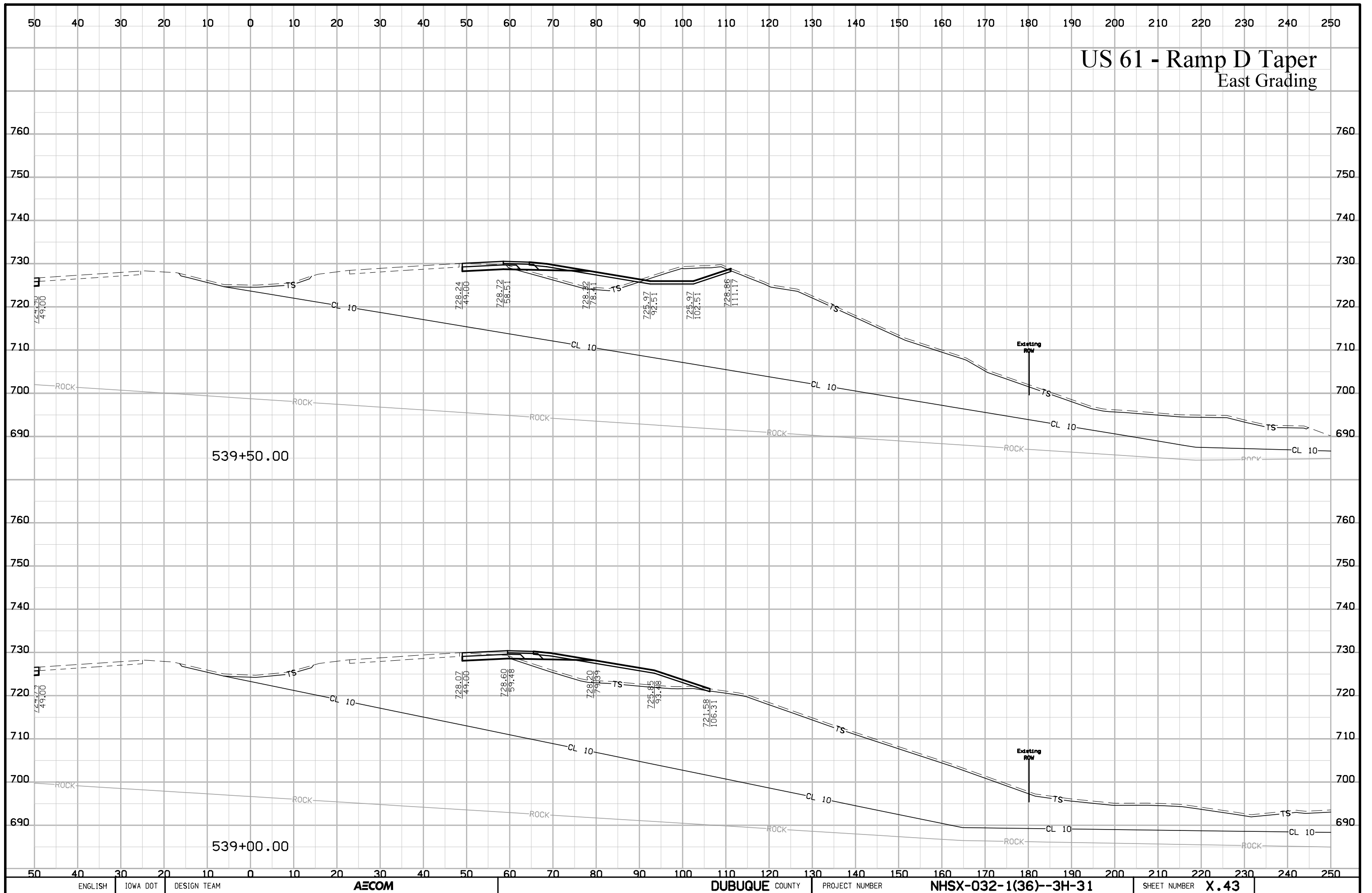
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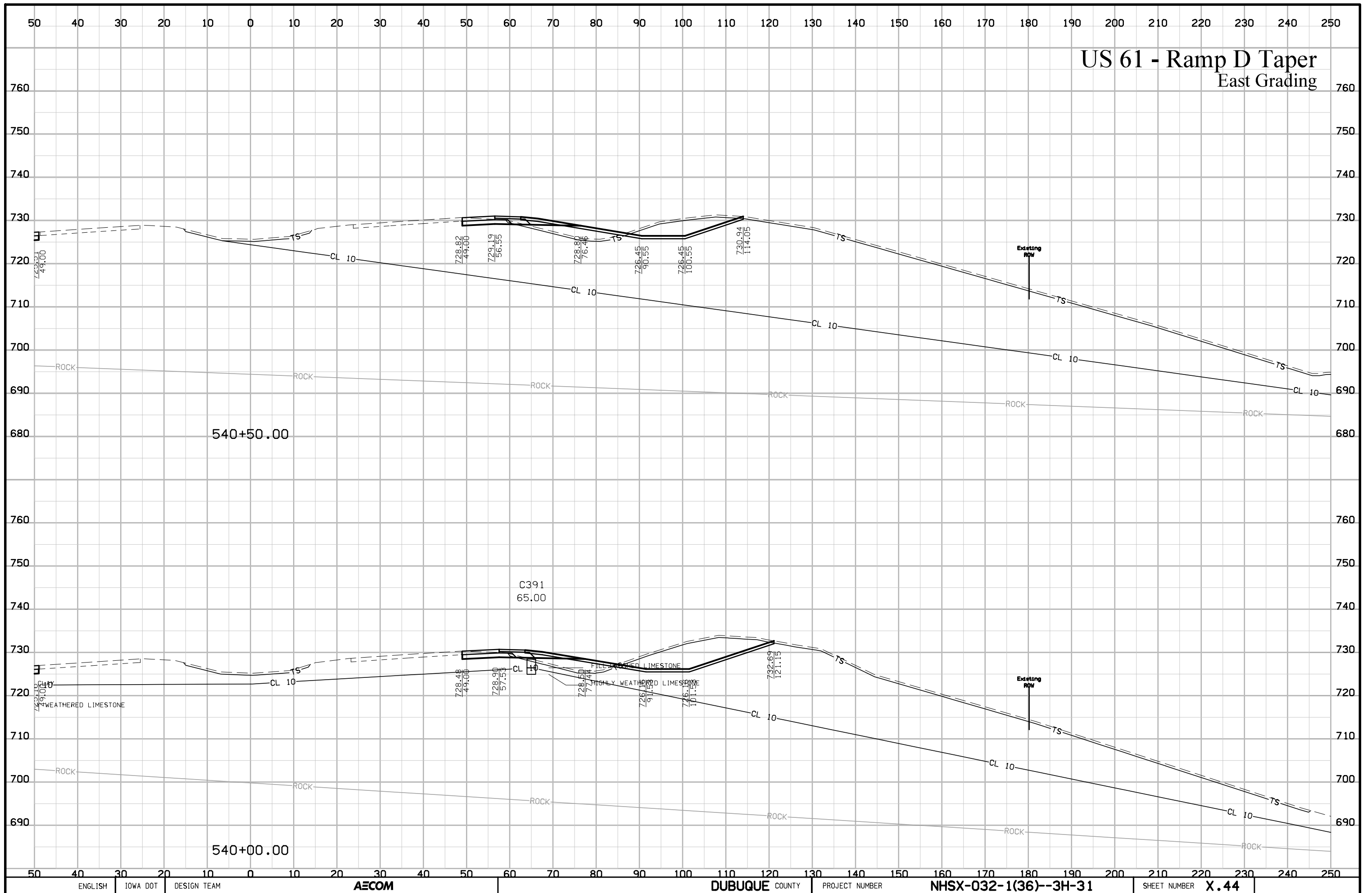
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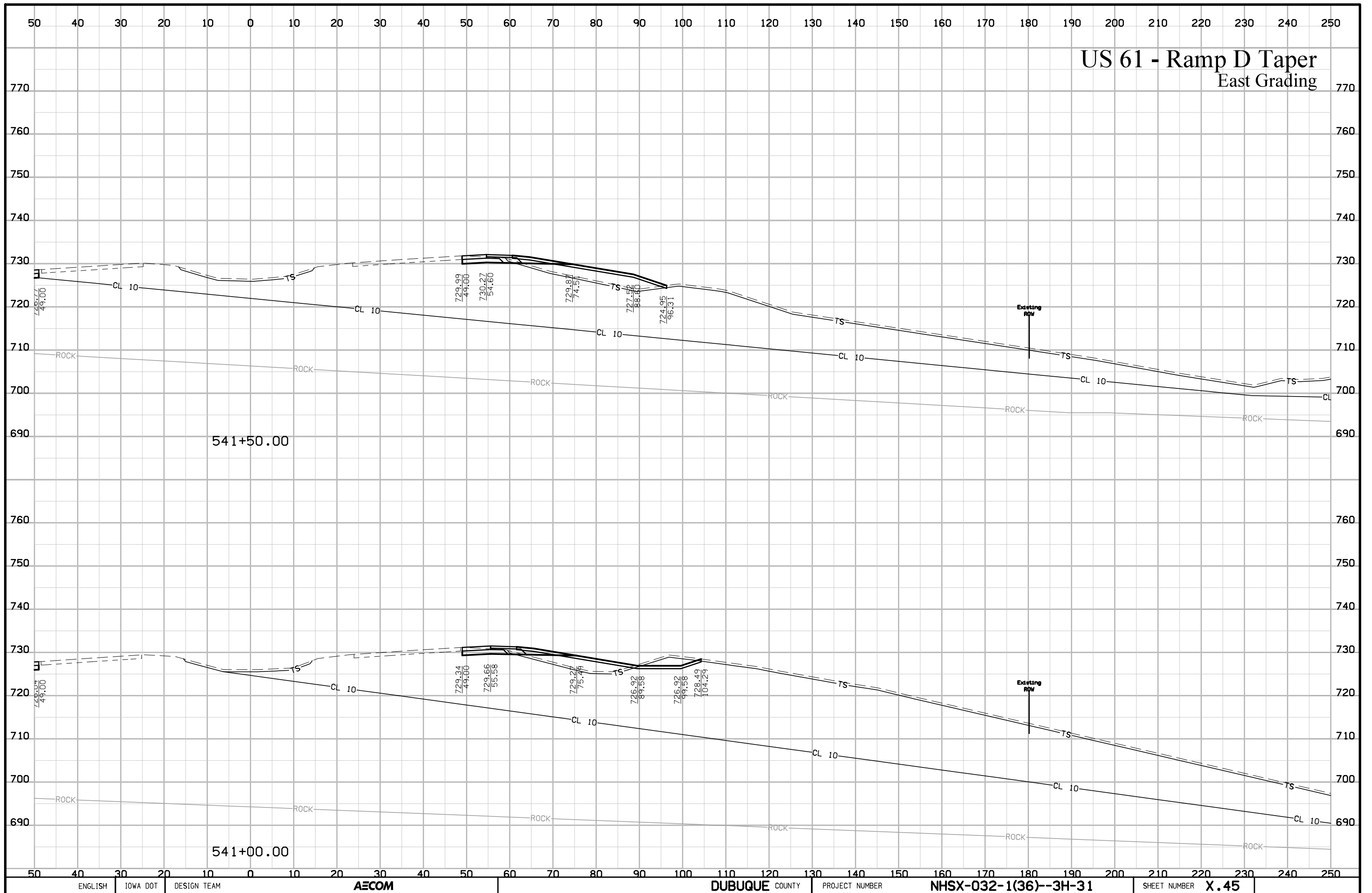
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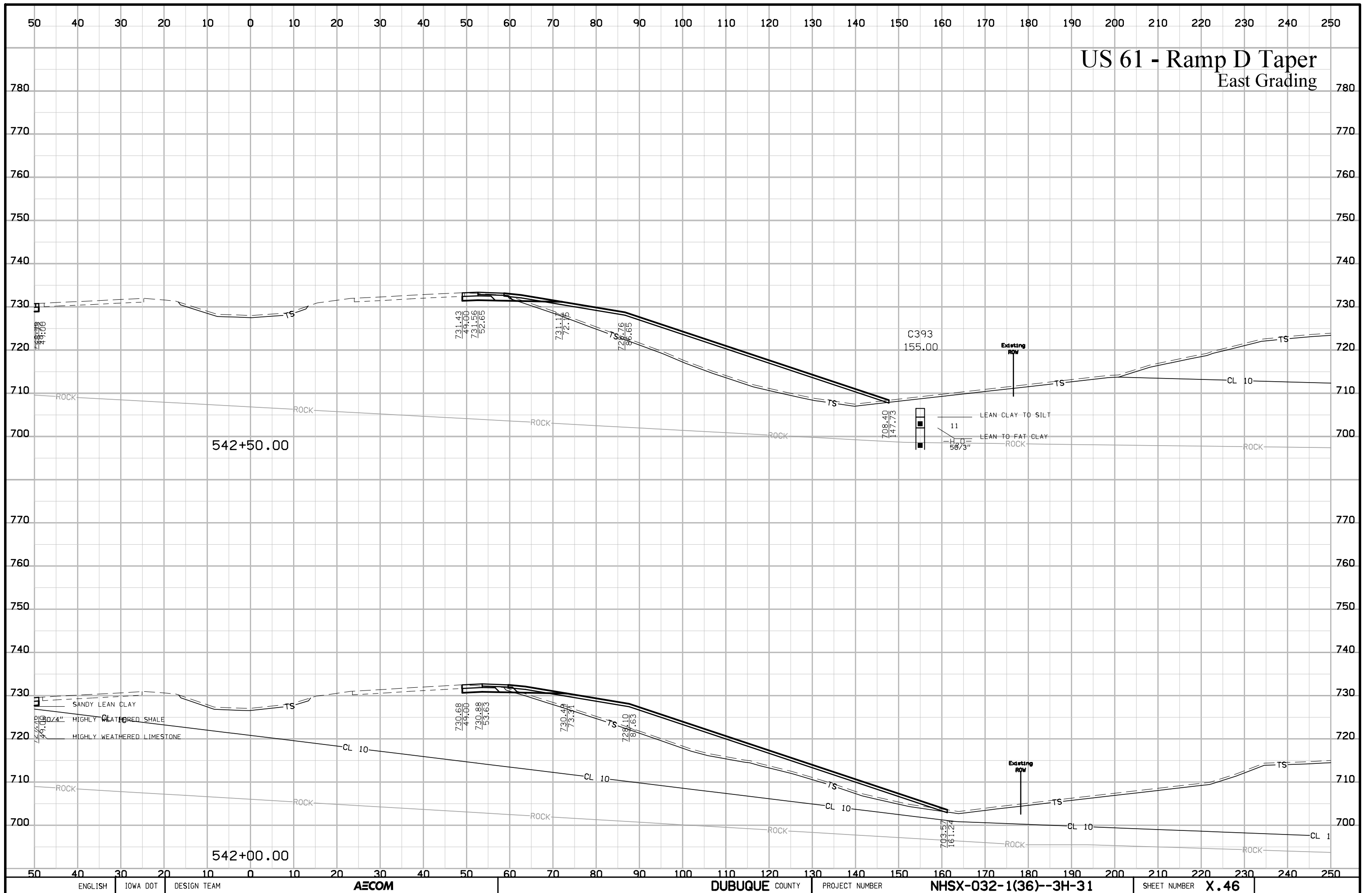
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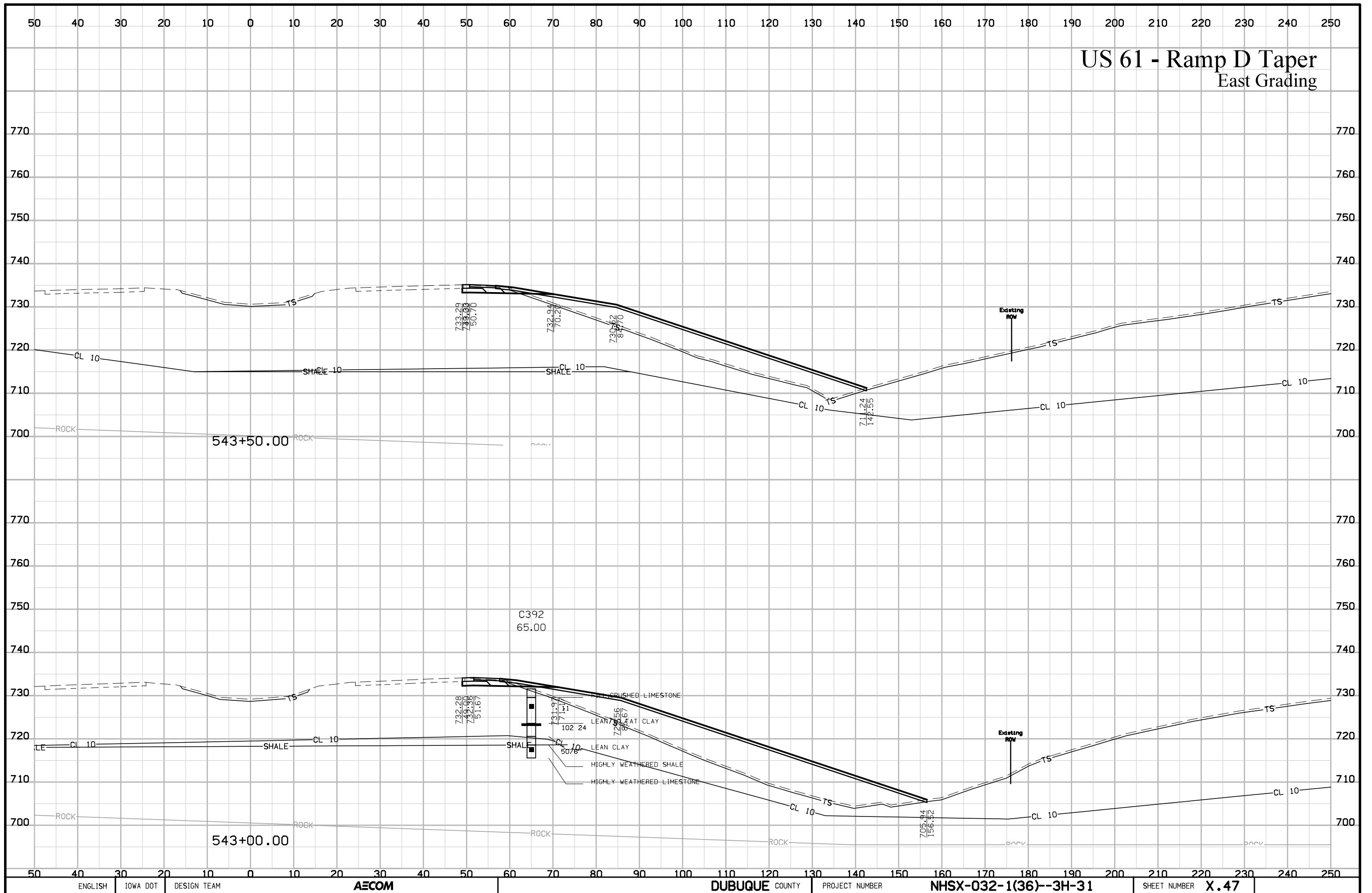
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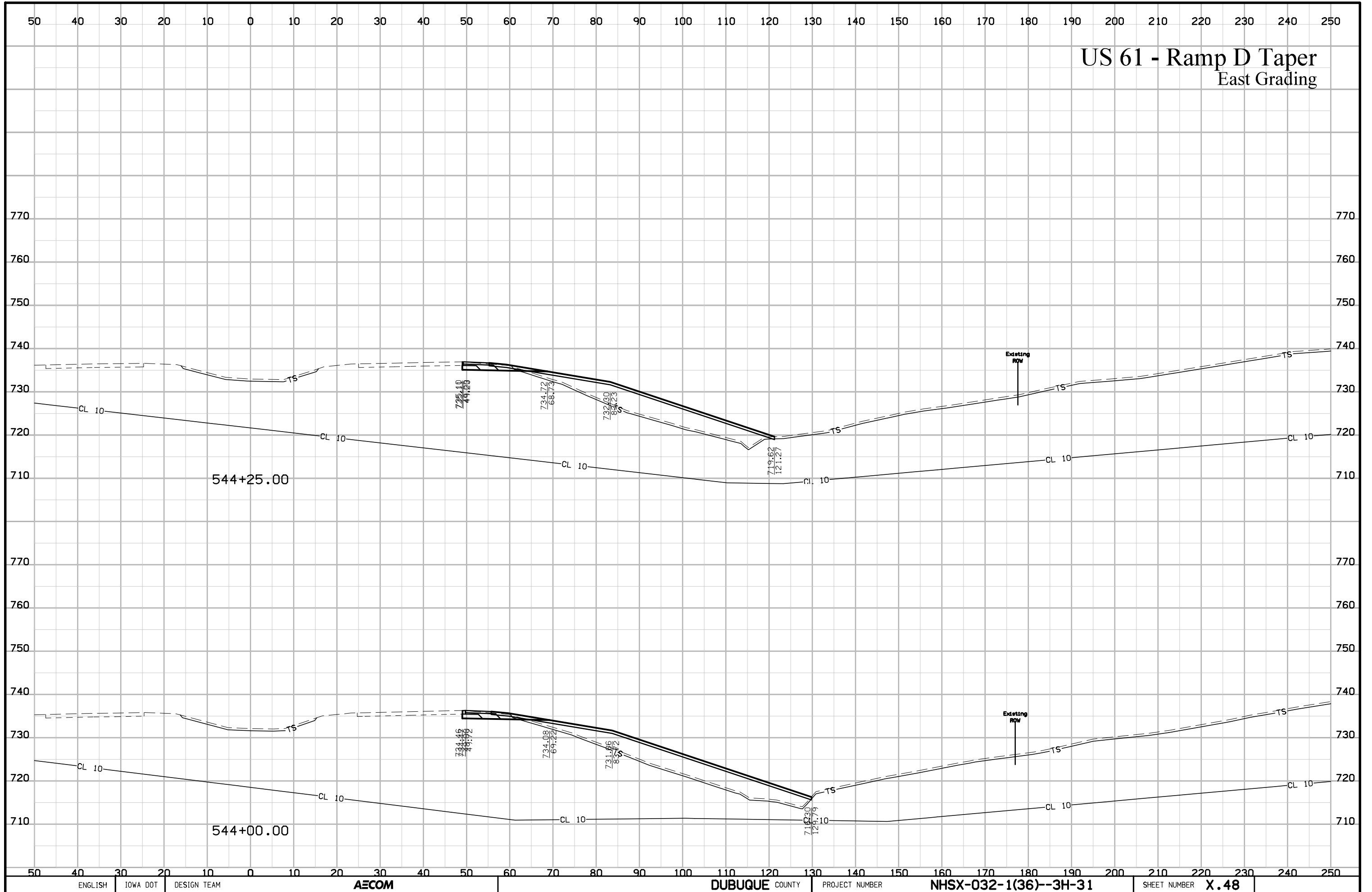
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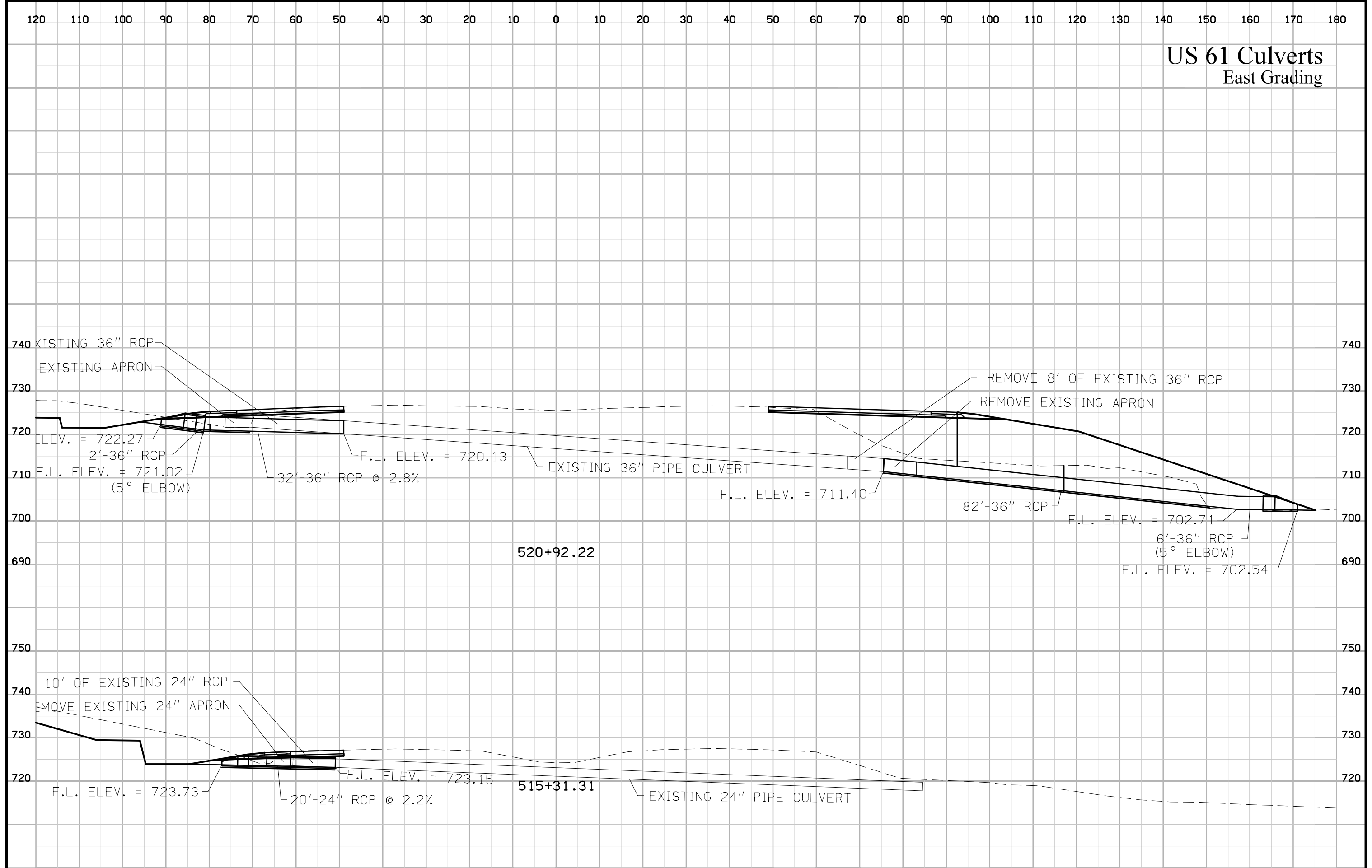
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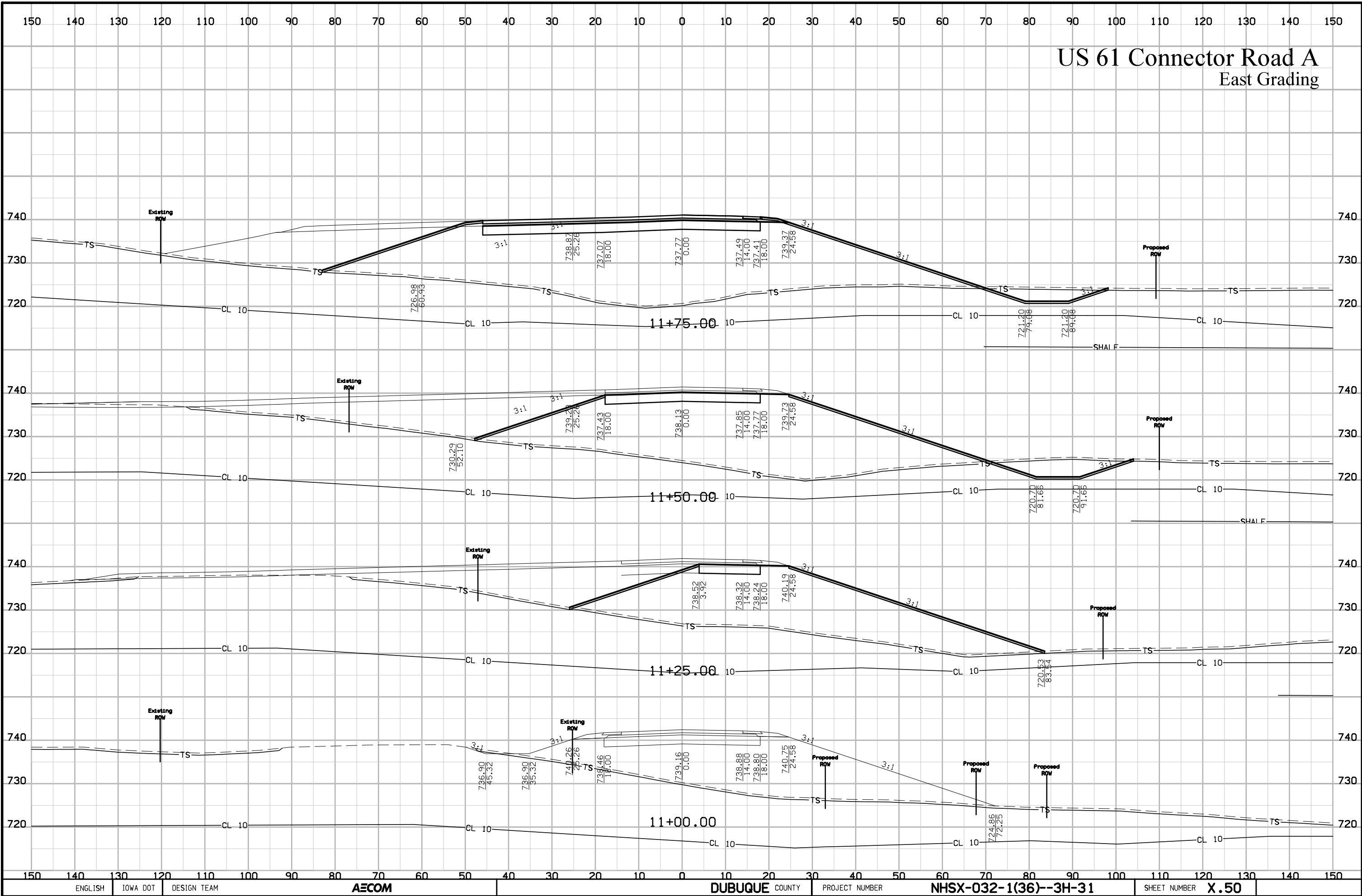
US 61 - Ramp D Taper East Grading



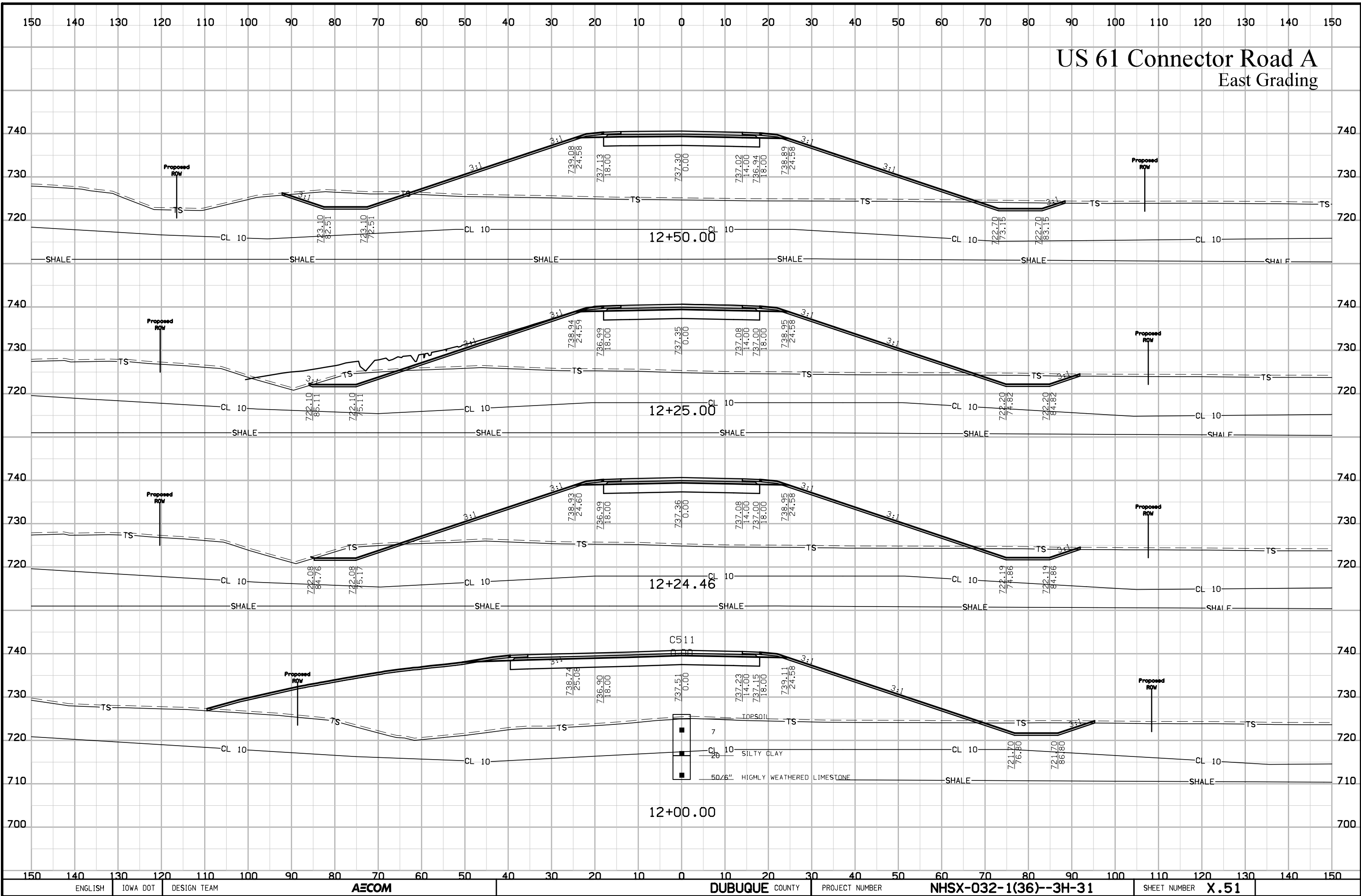
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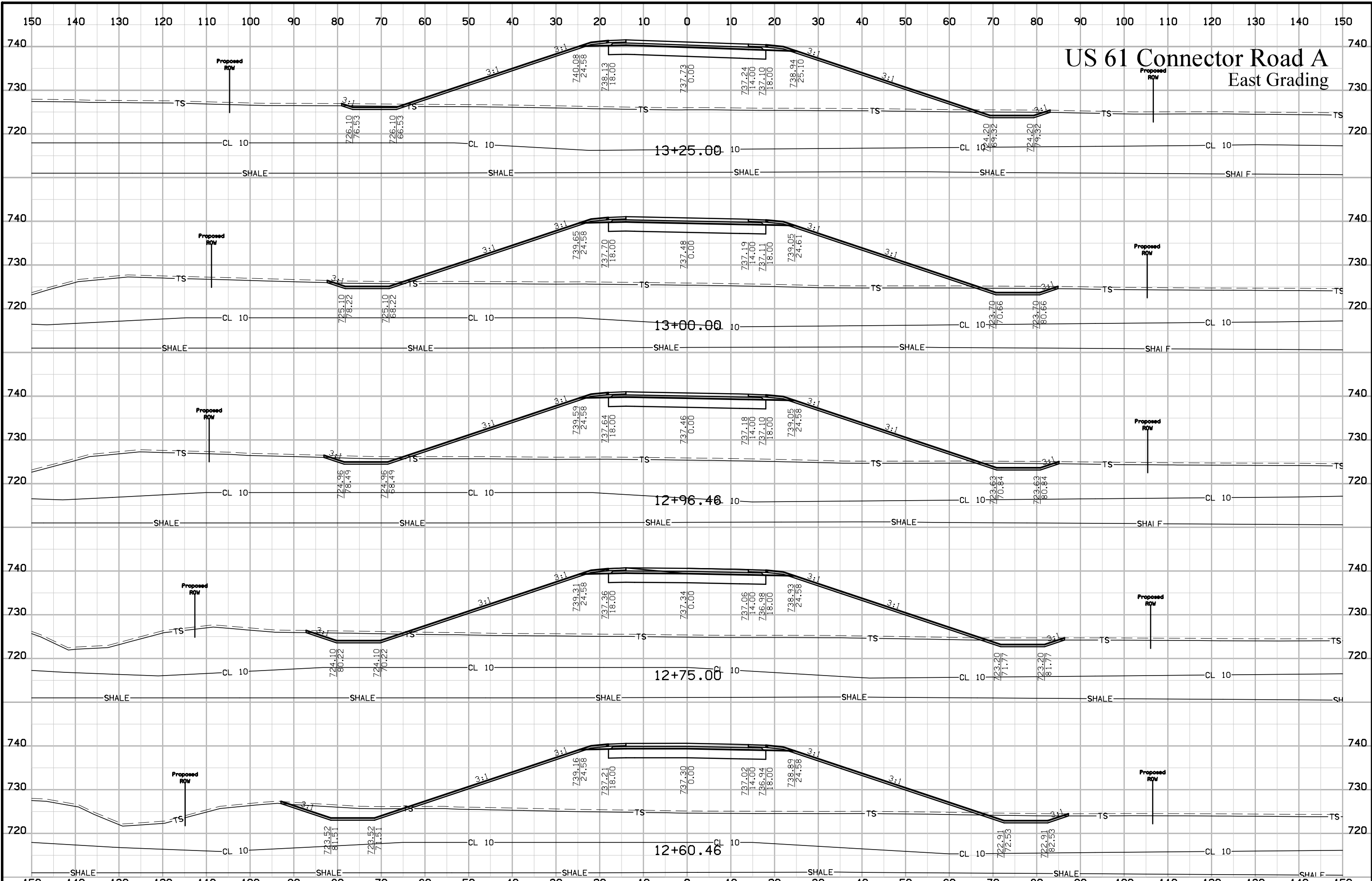
US 61 Connector Road A East Grading



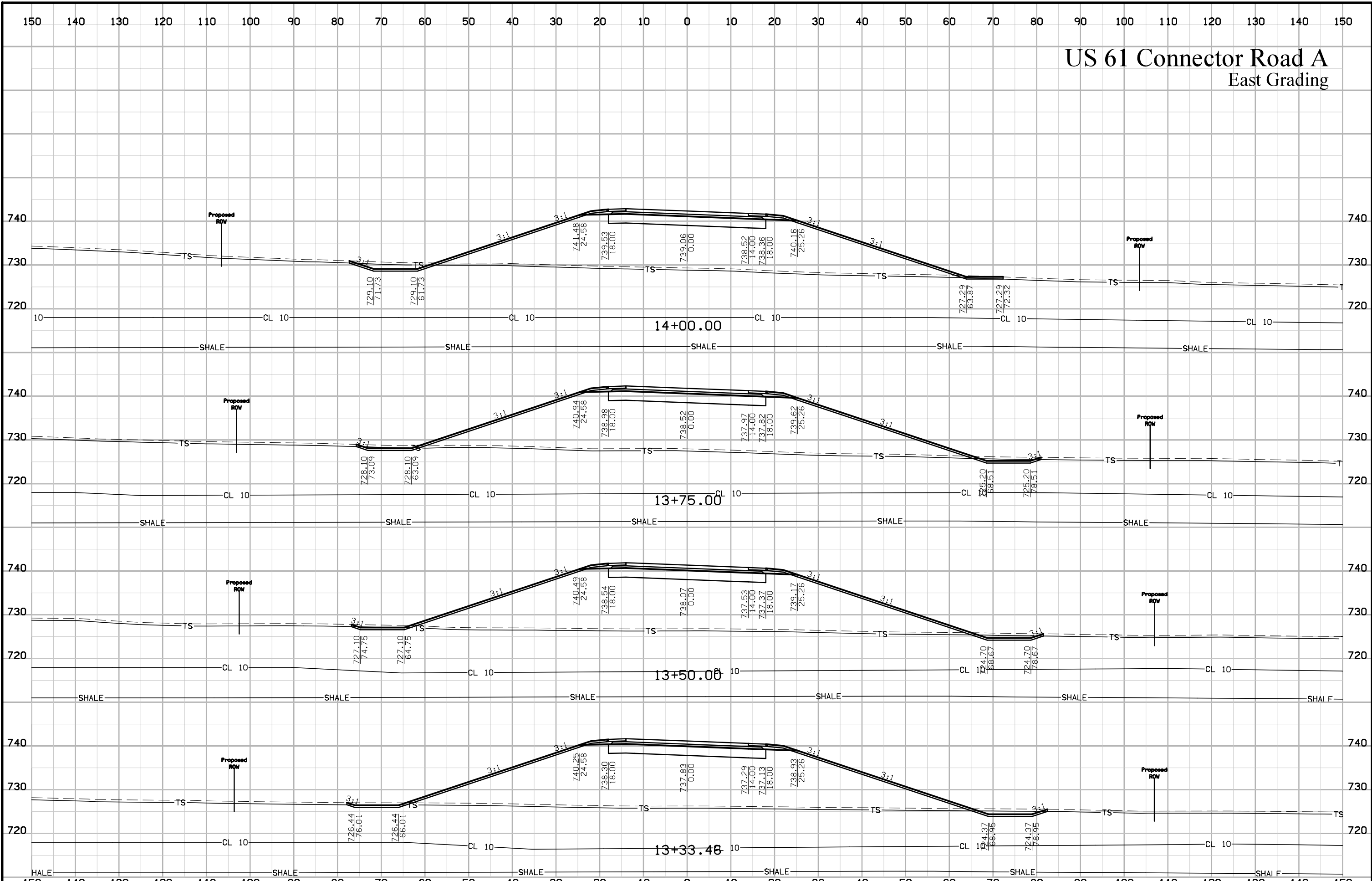
US 61 Connector Road A East Grading



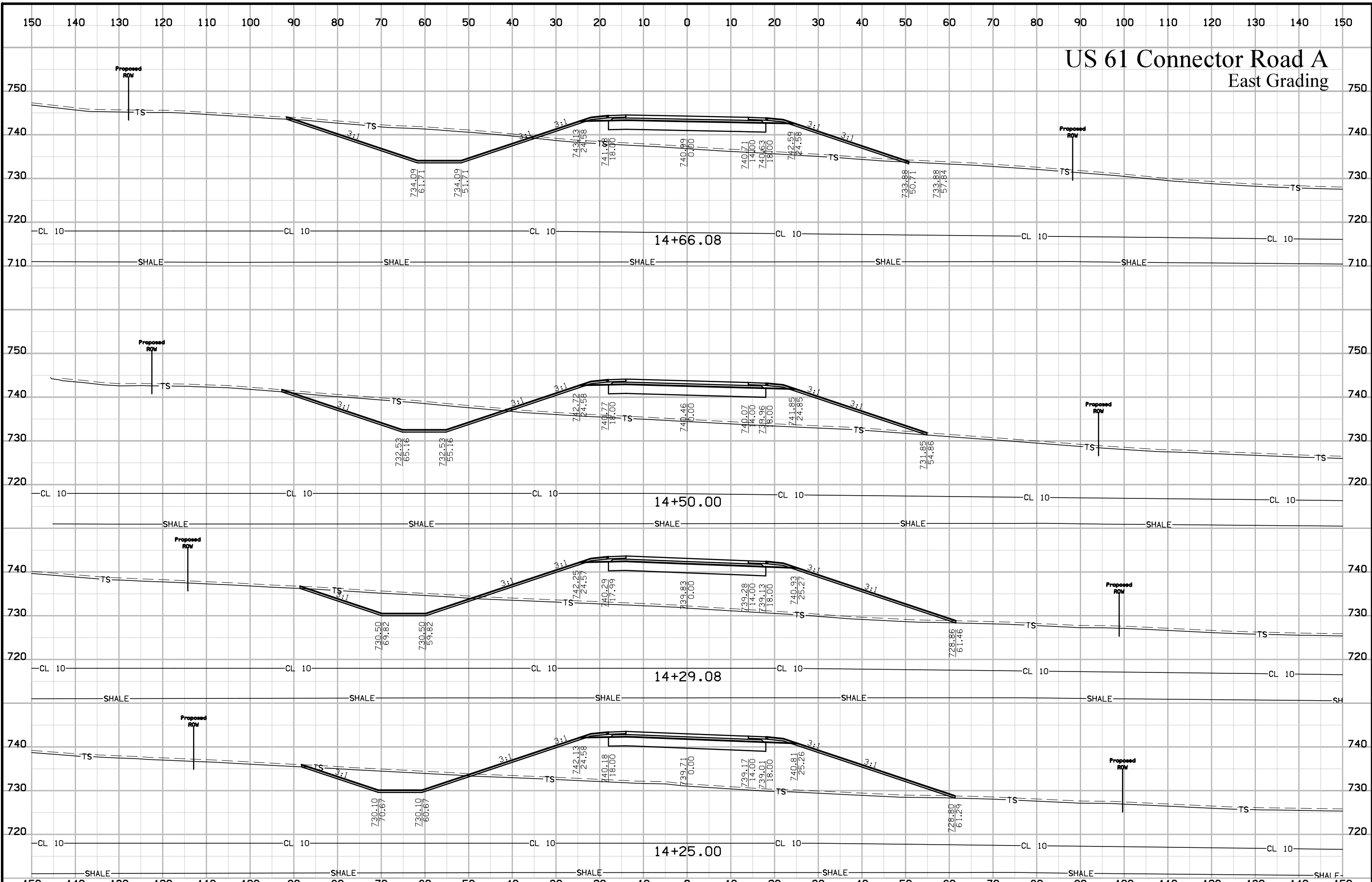
US 61 Connector Road A East Grading



US 61 Connector Road A East Grading

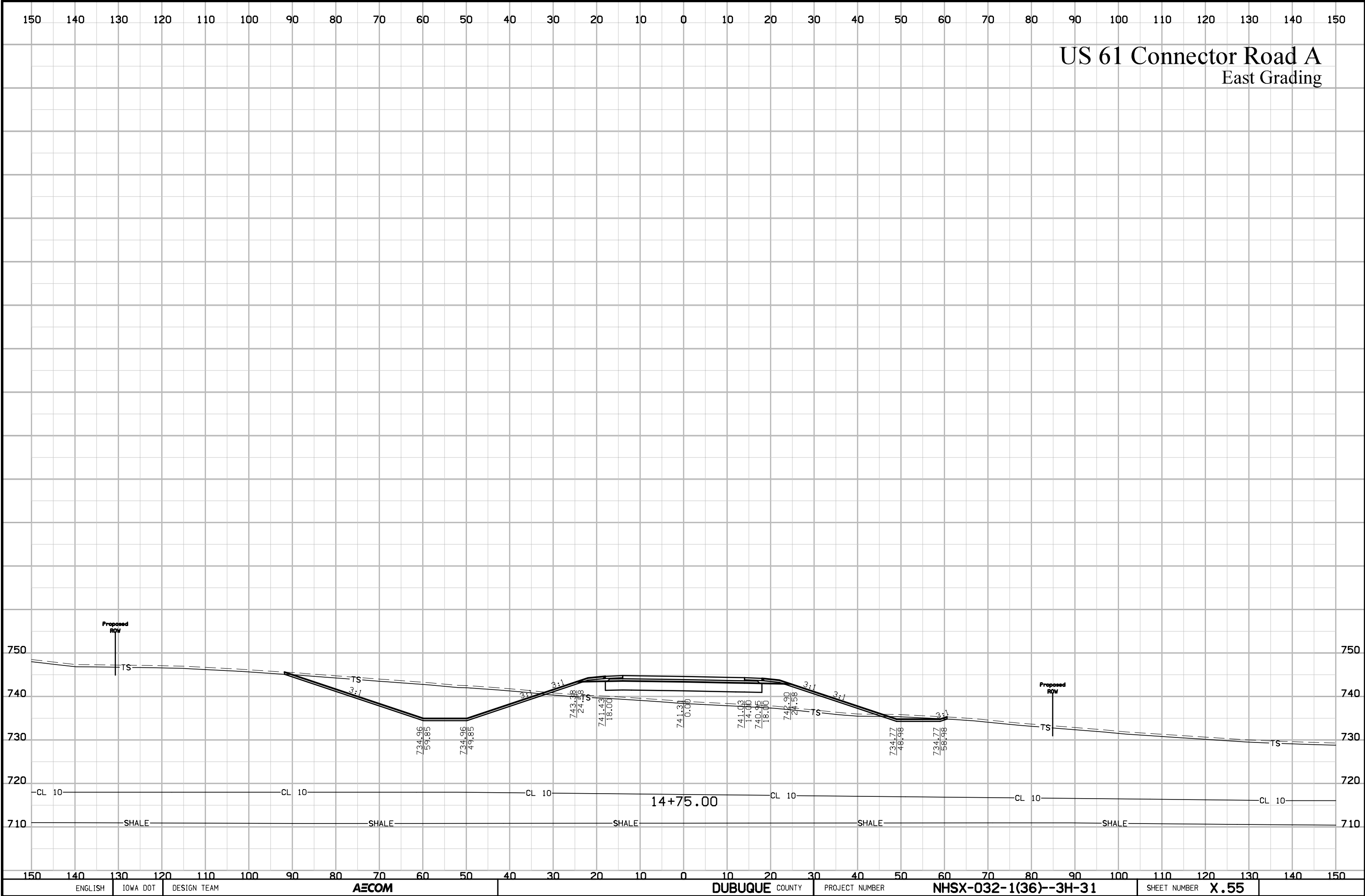


US 61 Connector Road A East Grading

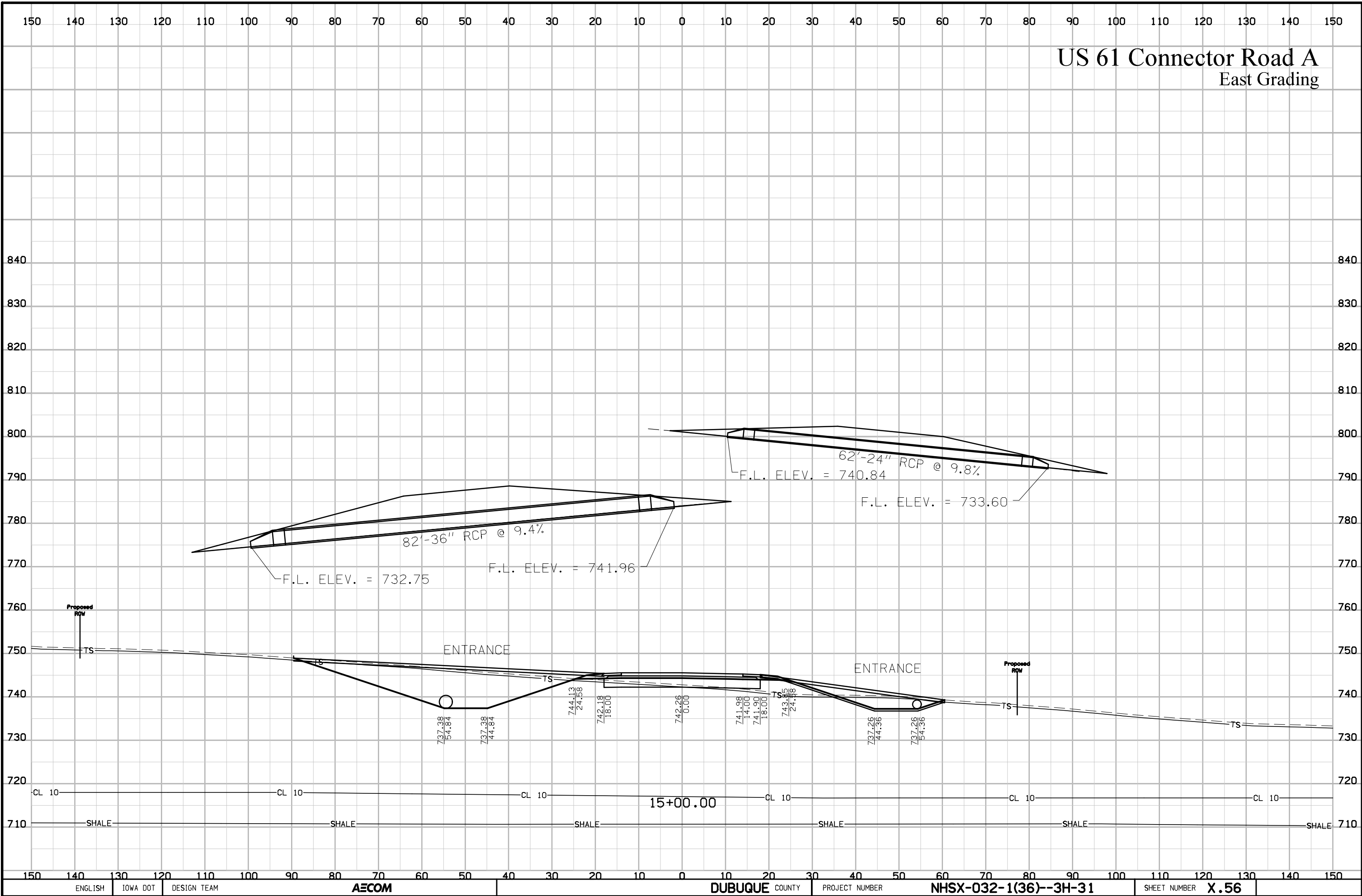


US 61 Connector Road A

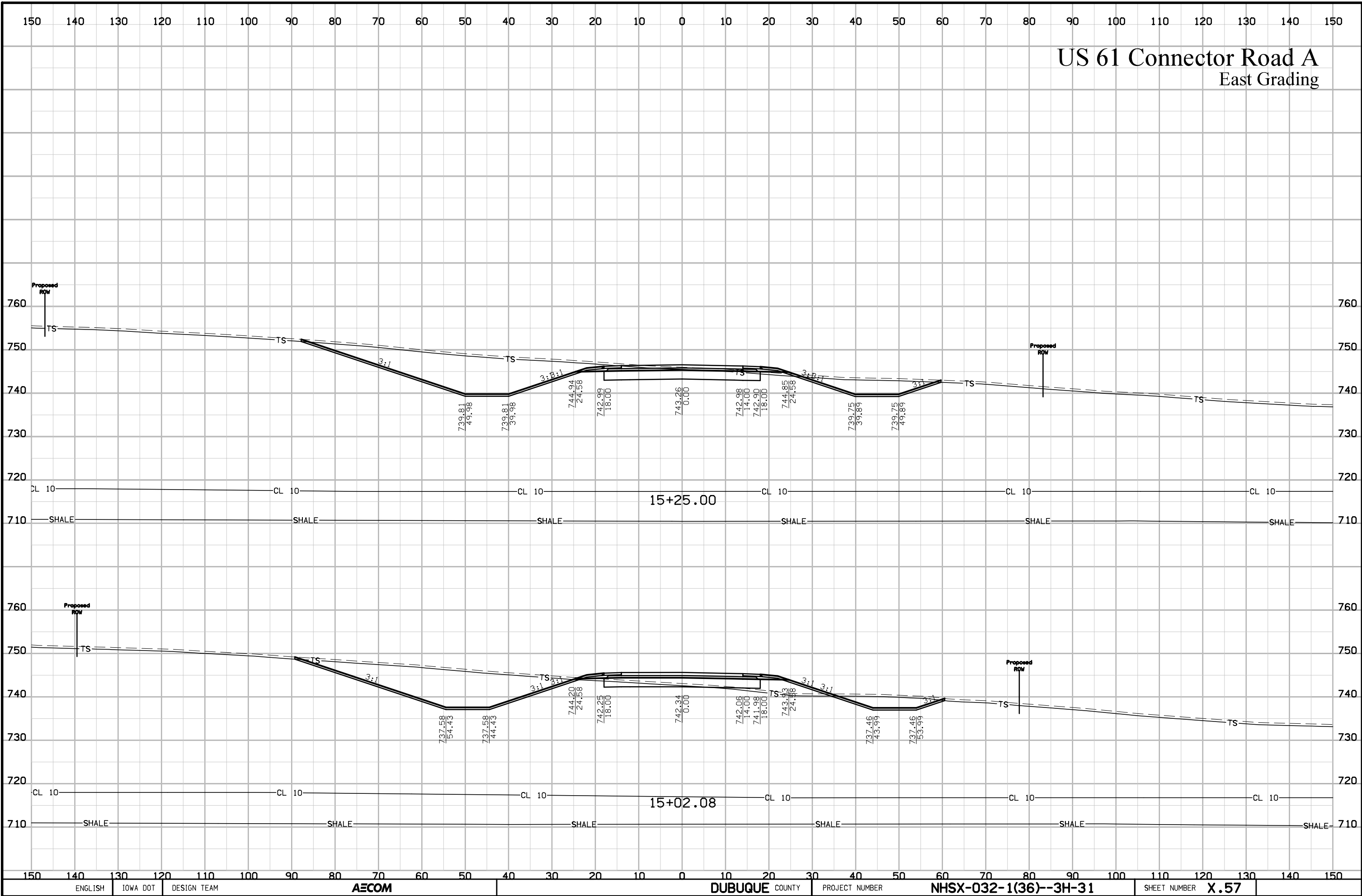
East Grading



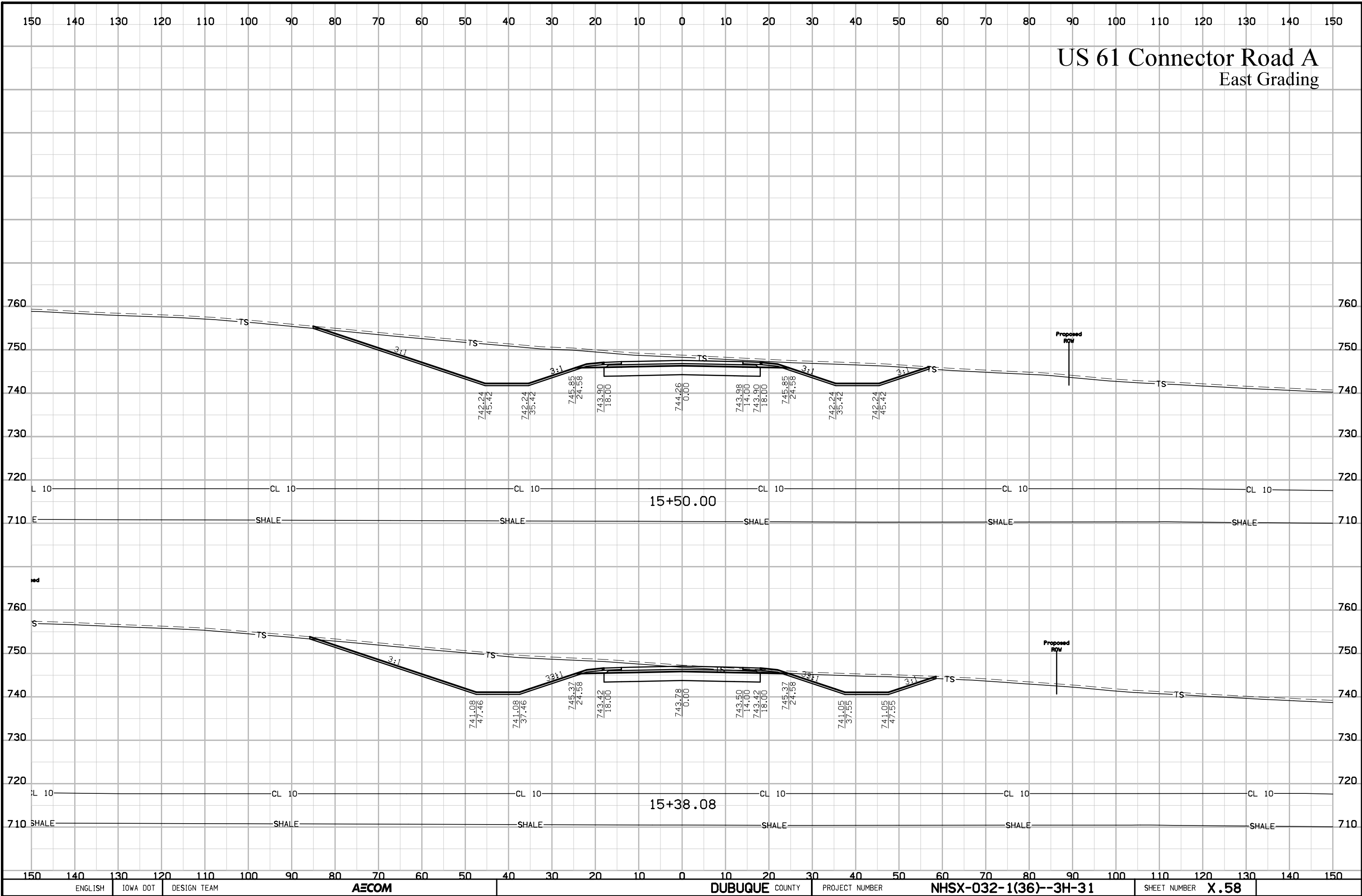
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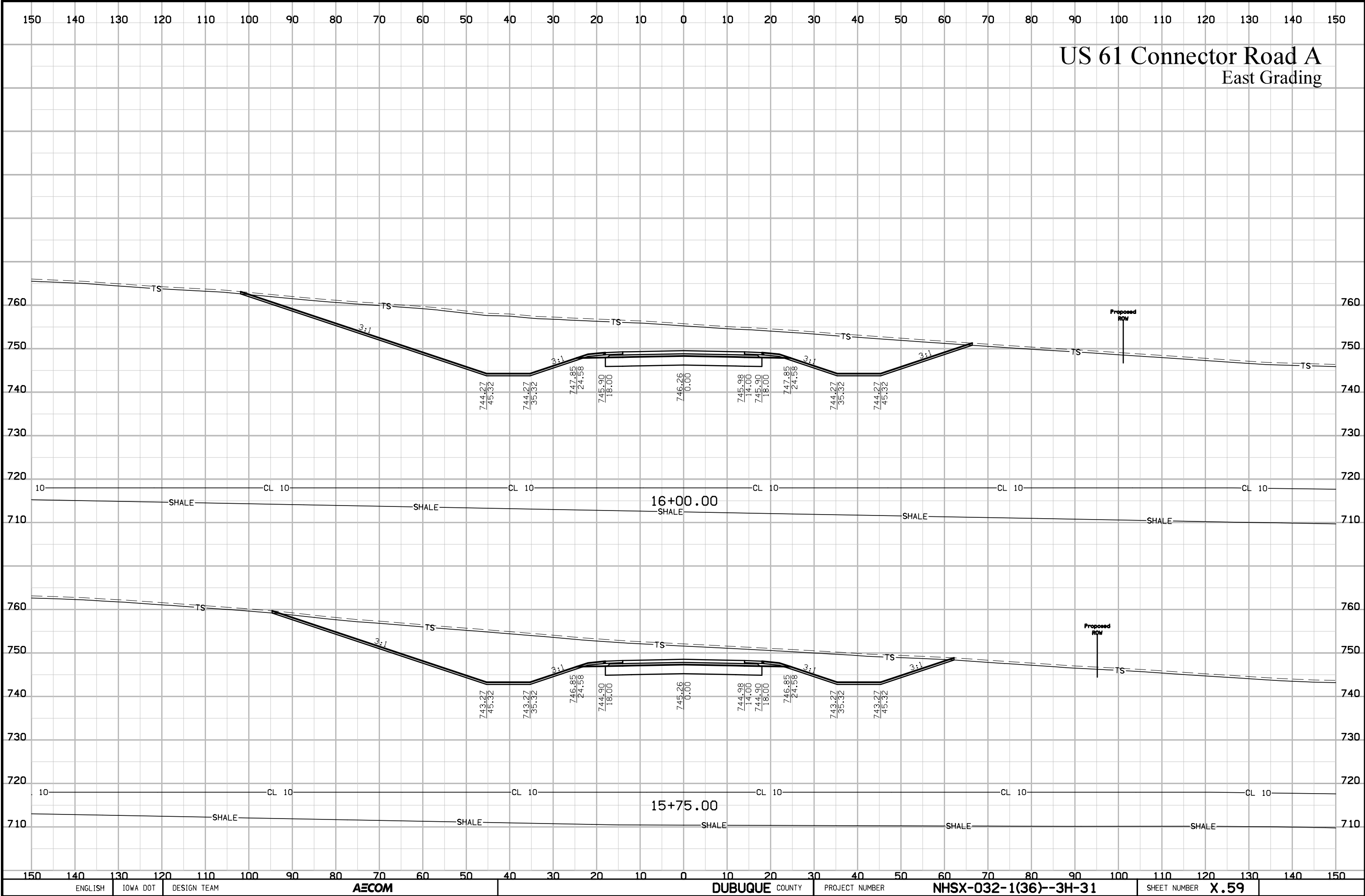
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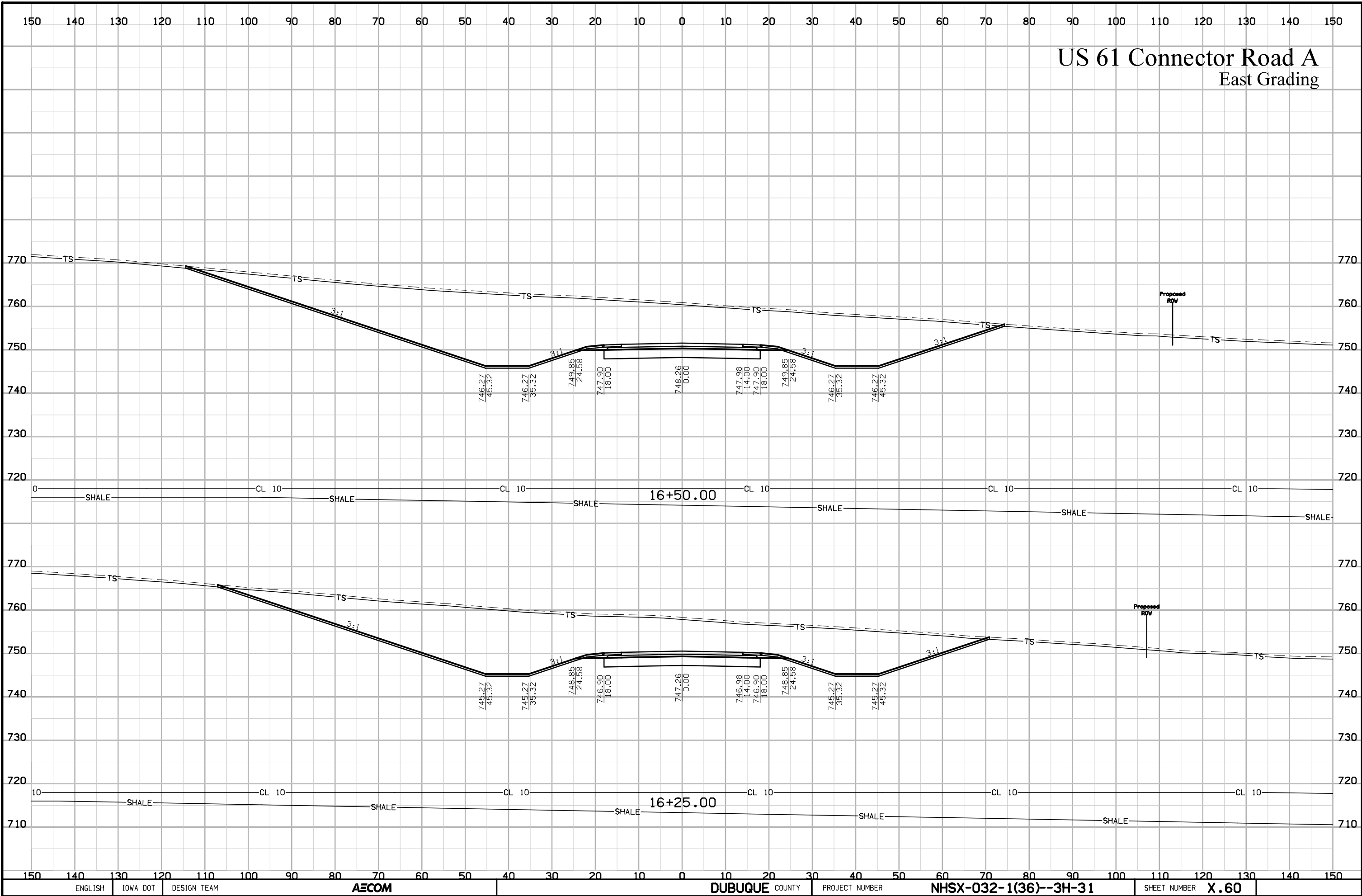
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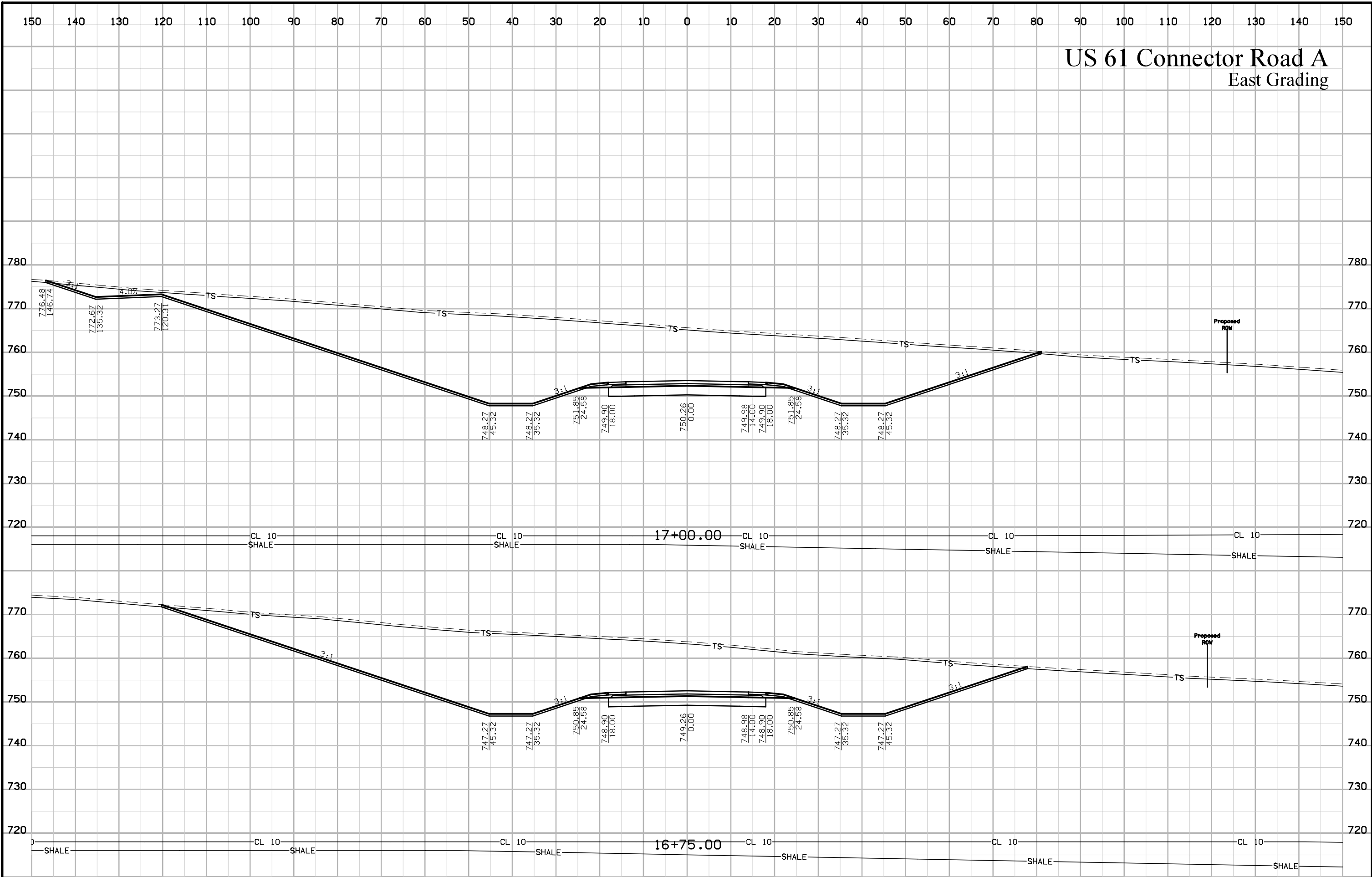
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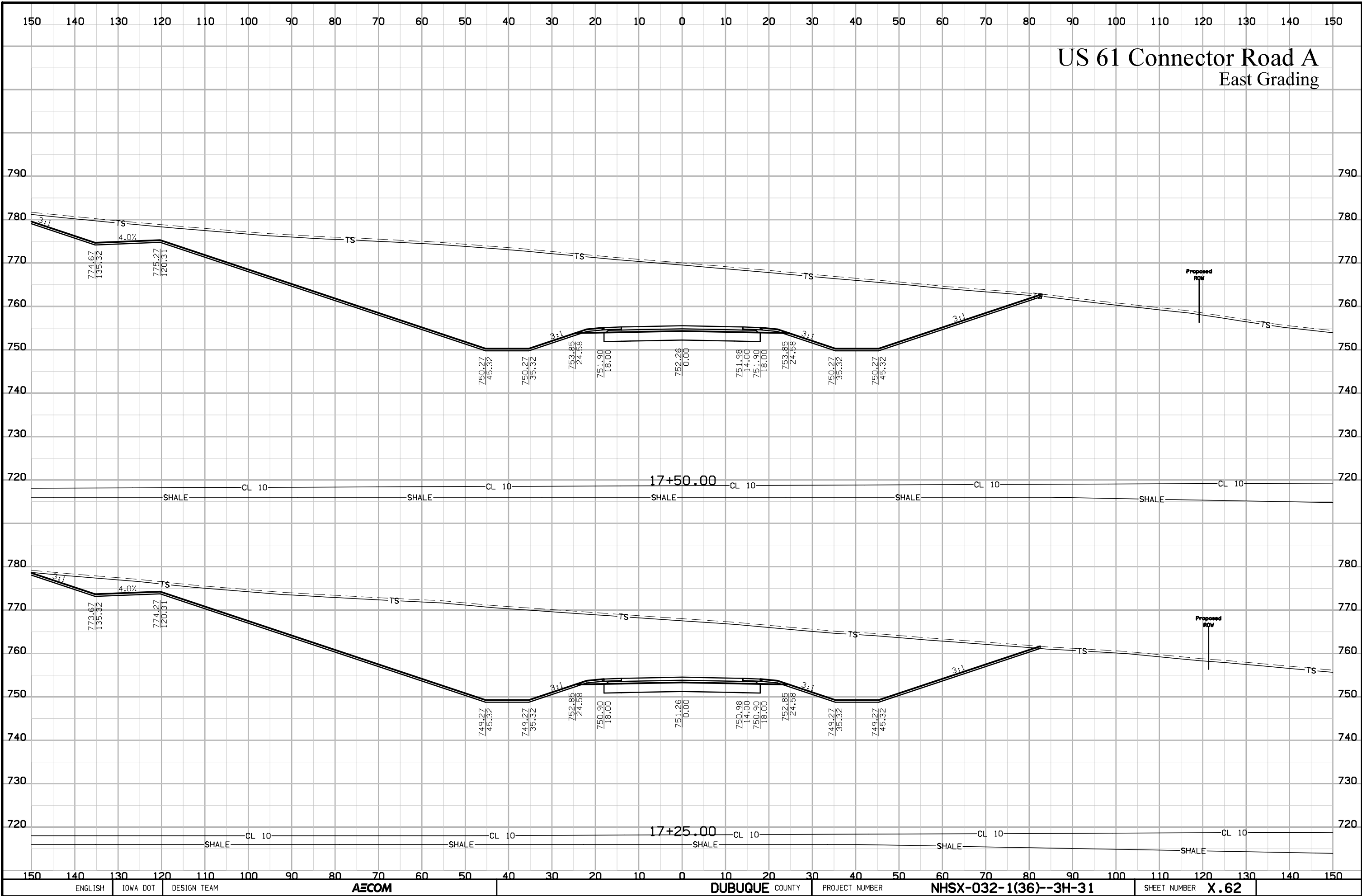
US 61 Connector Road A East Grading



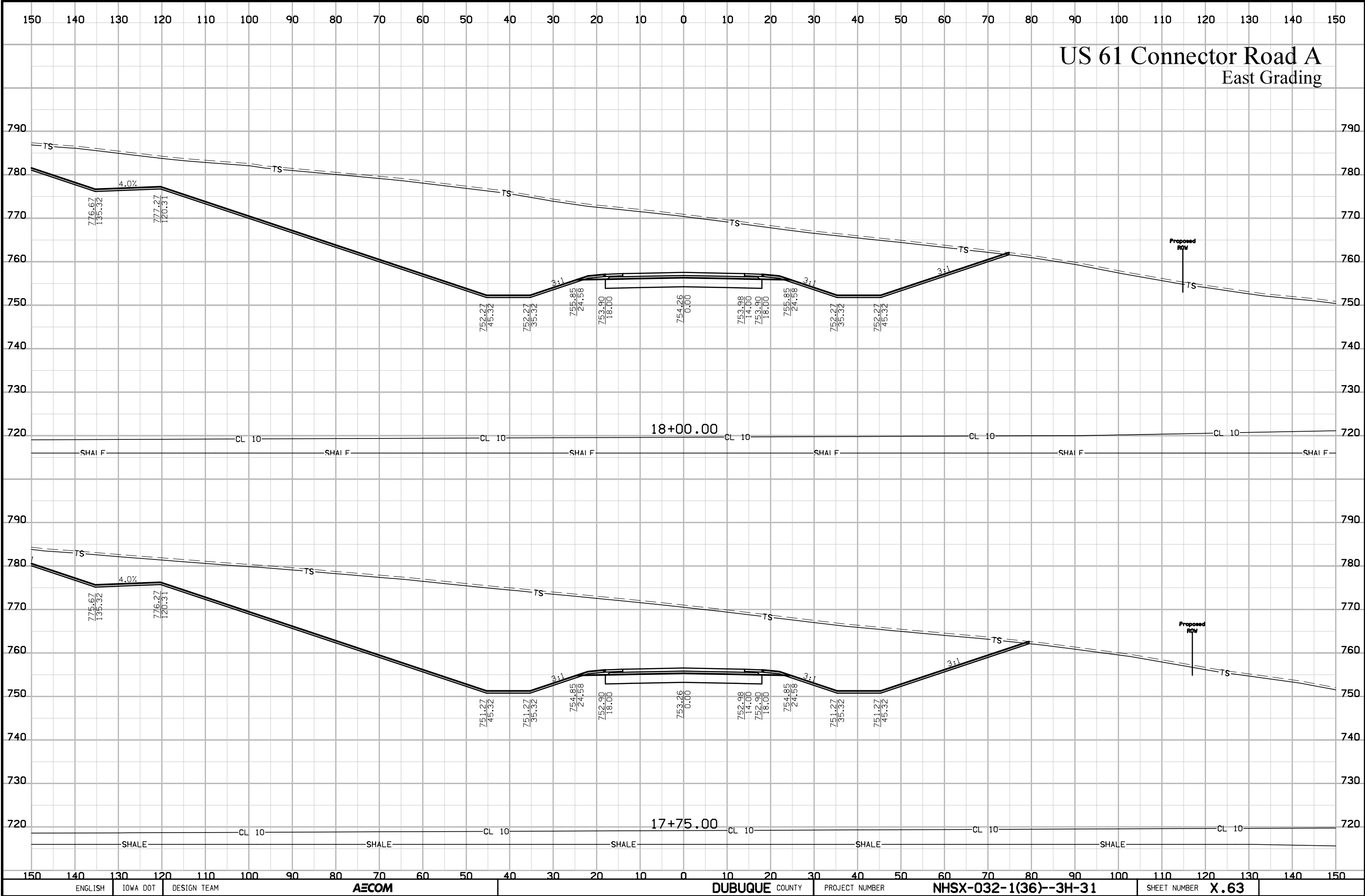
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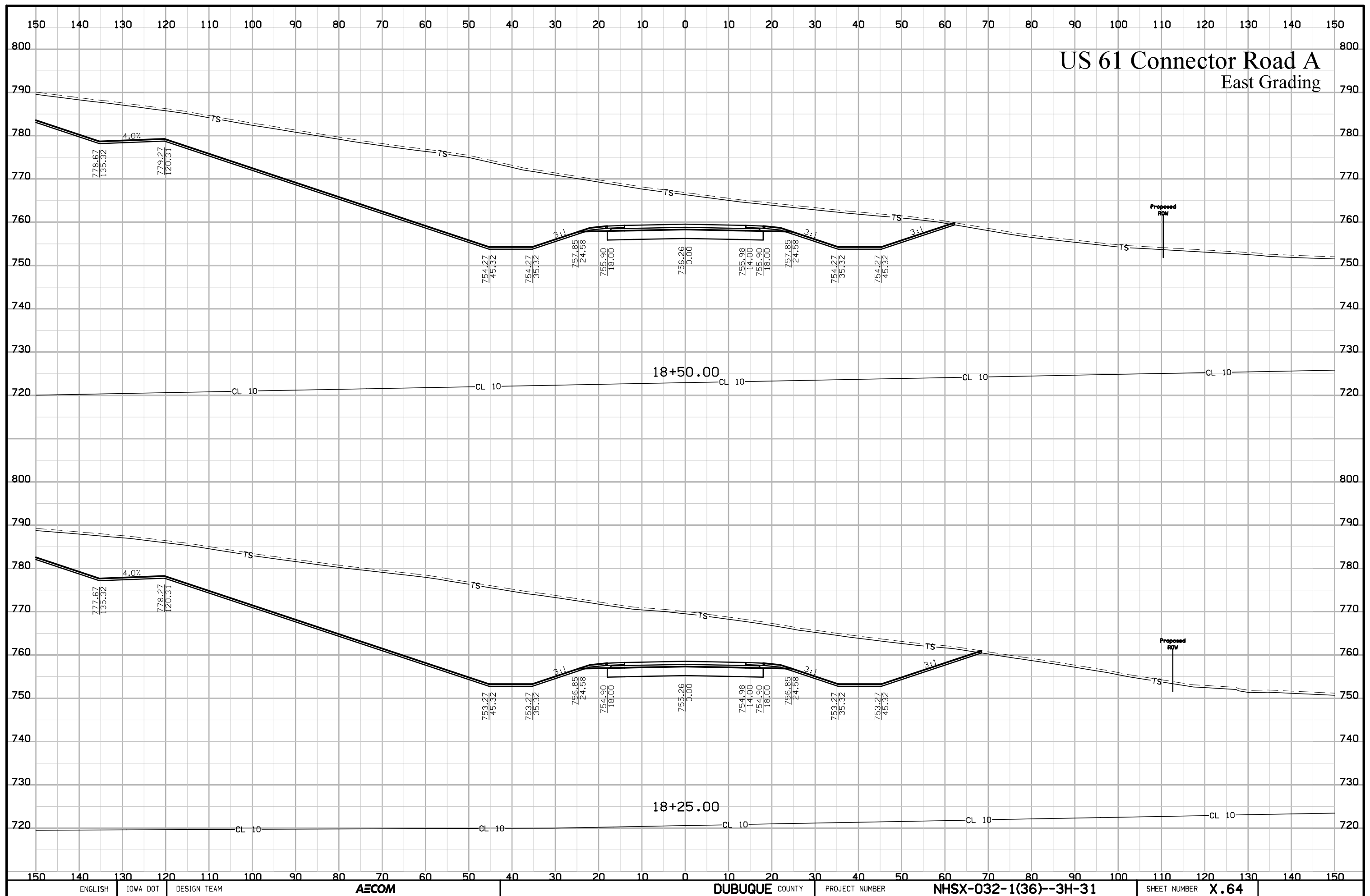
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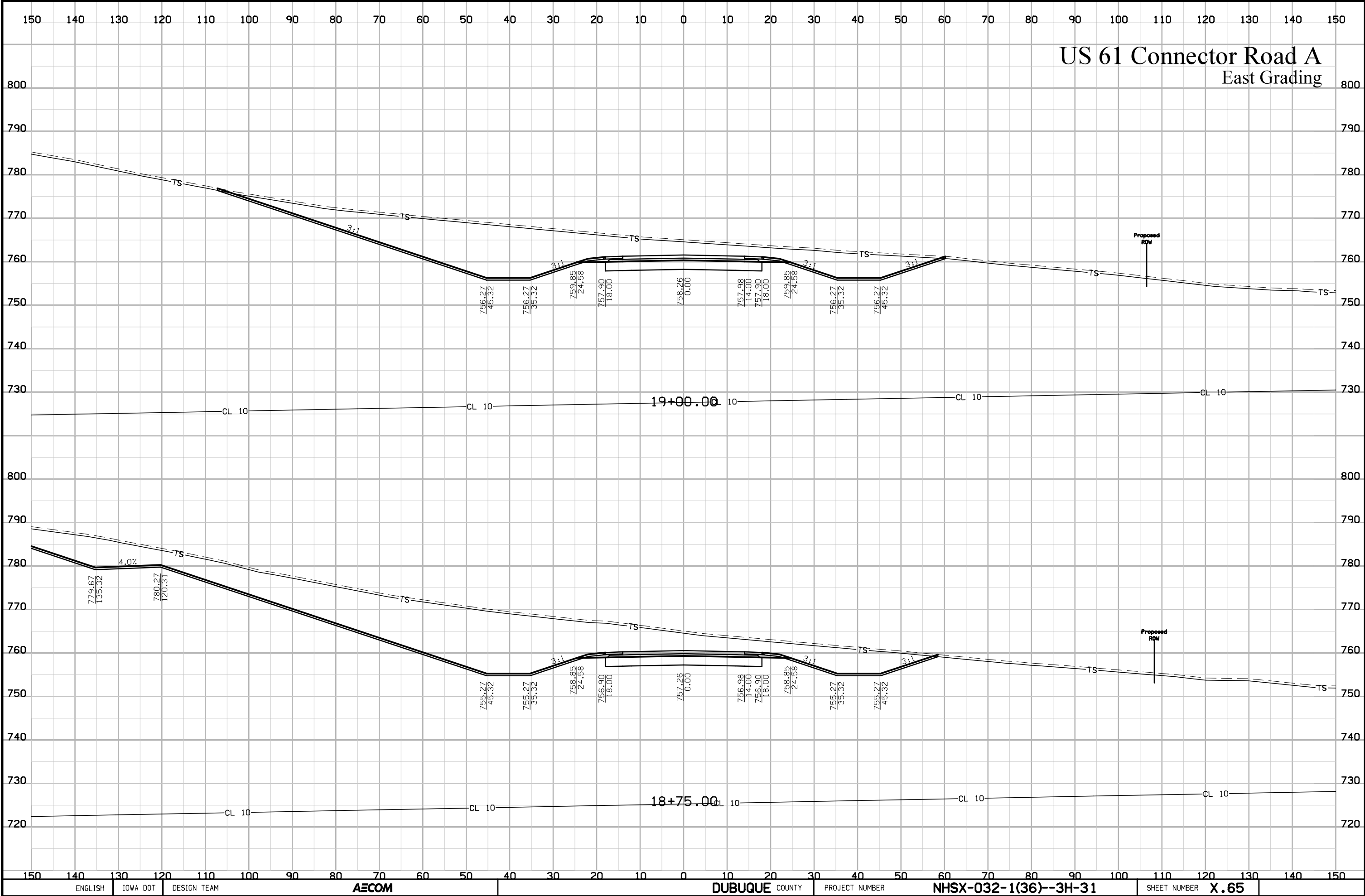
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US 61 Connector Road A East Grading

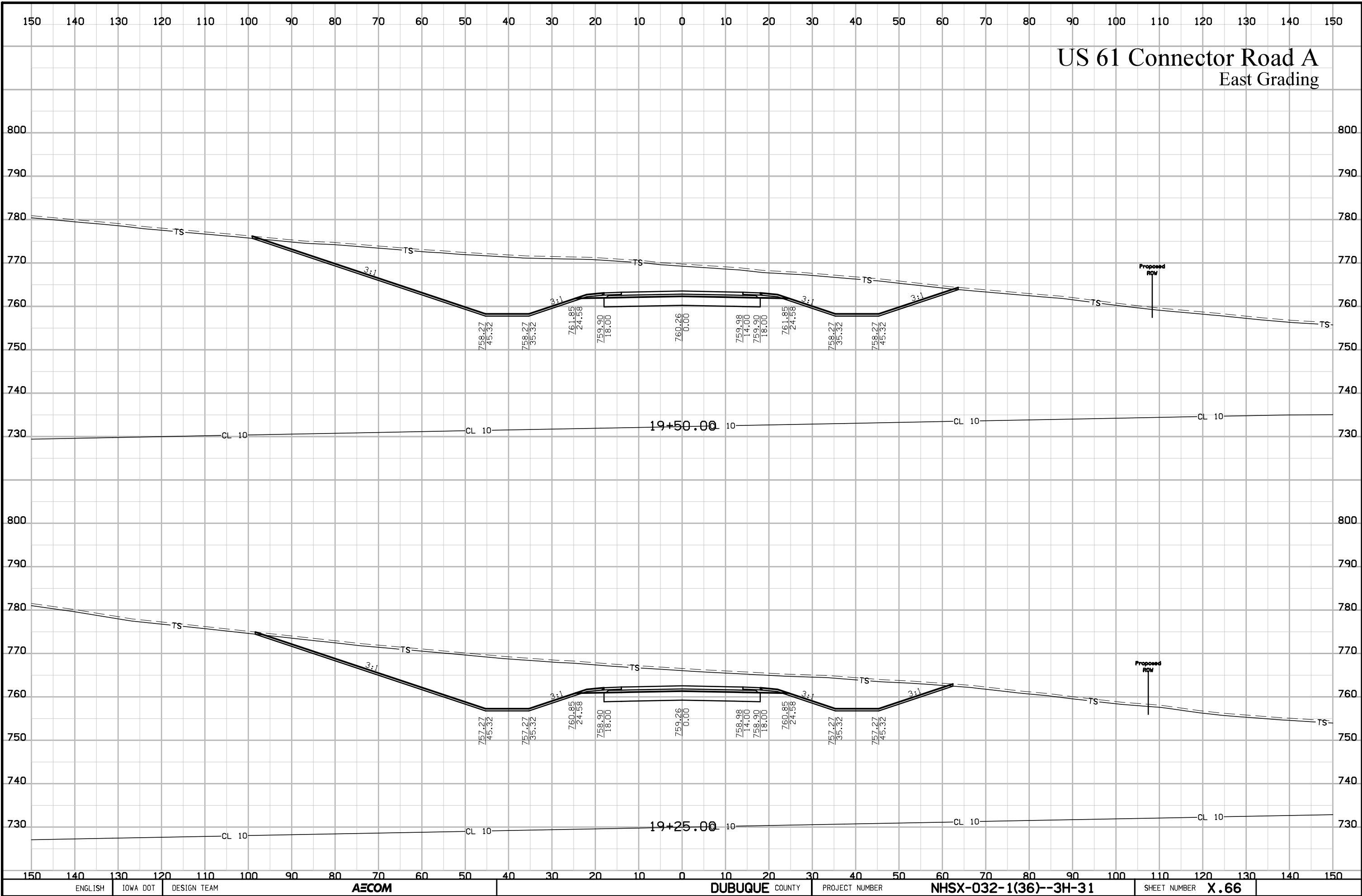


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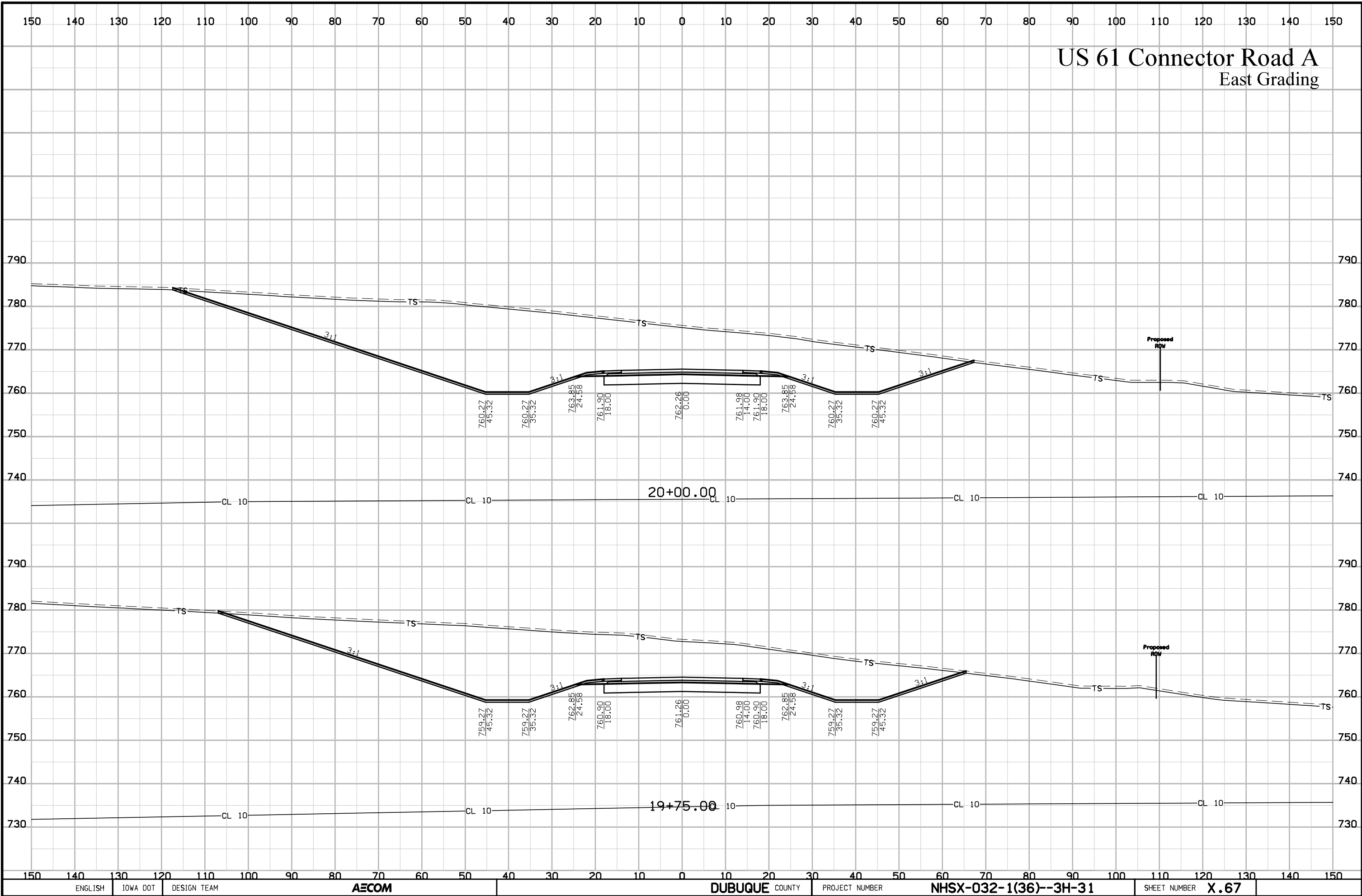
US 61 Connector Road A

East Grading

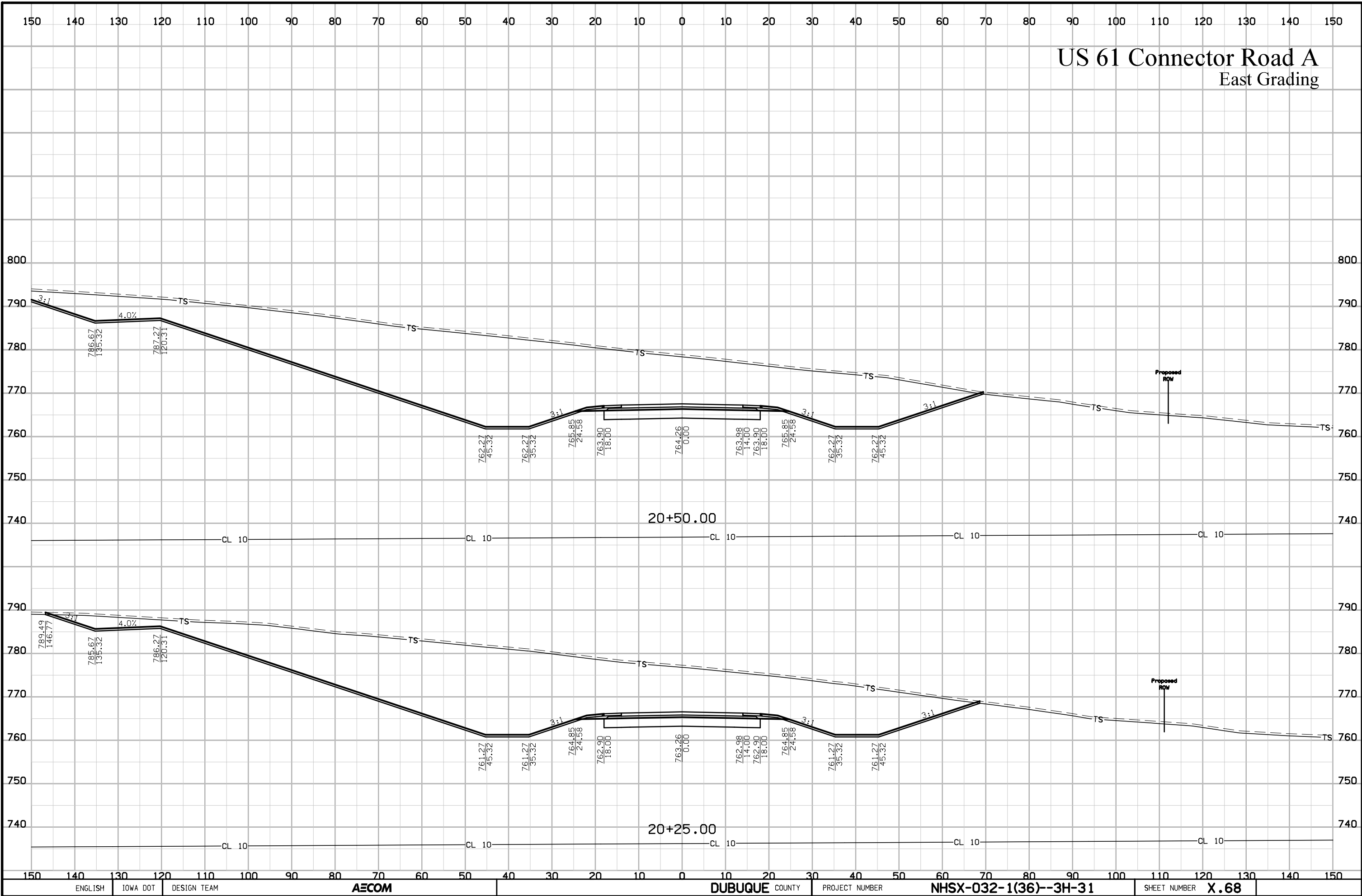


US 61 Connector Road A

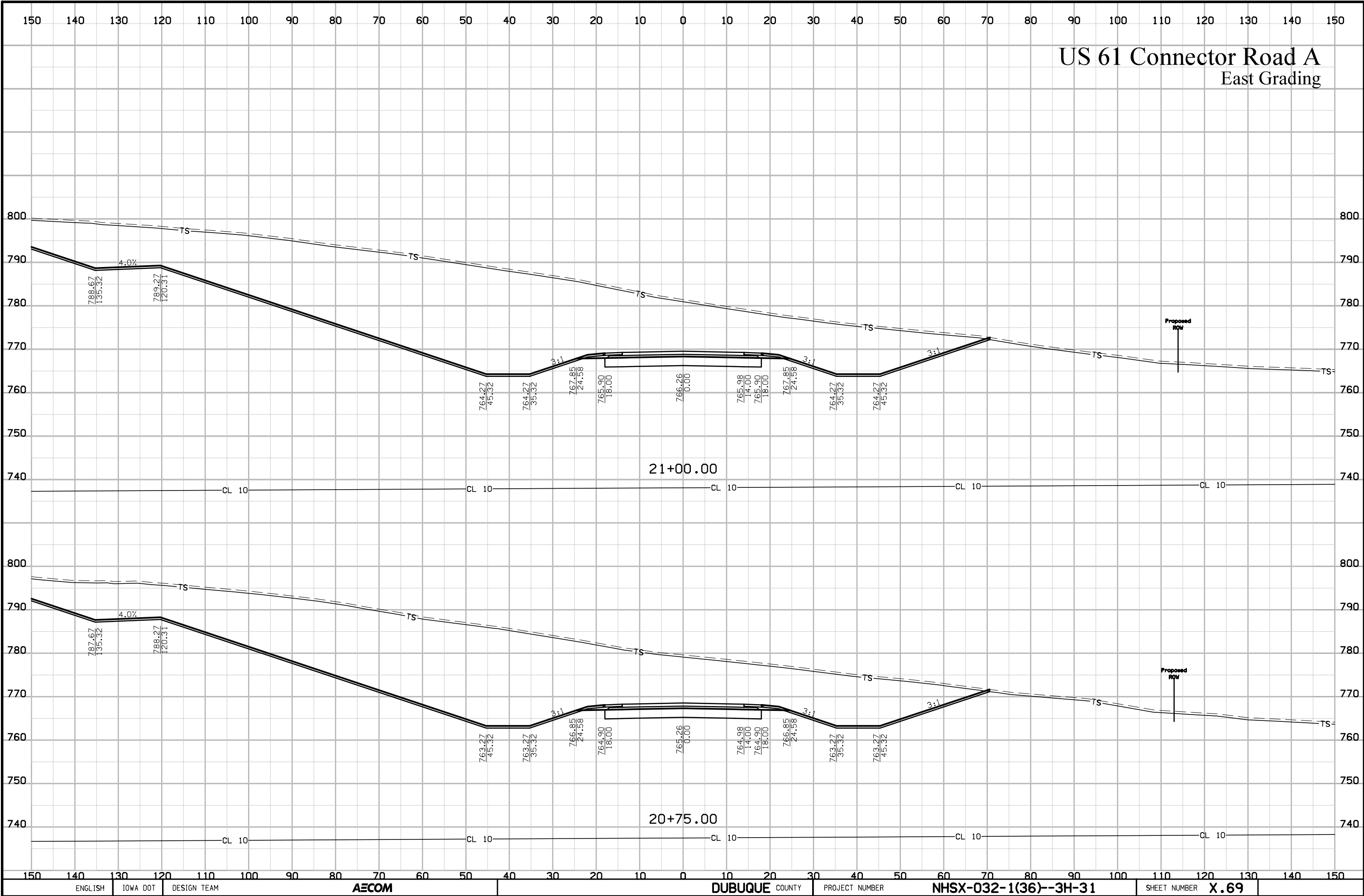
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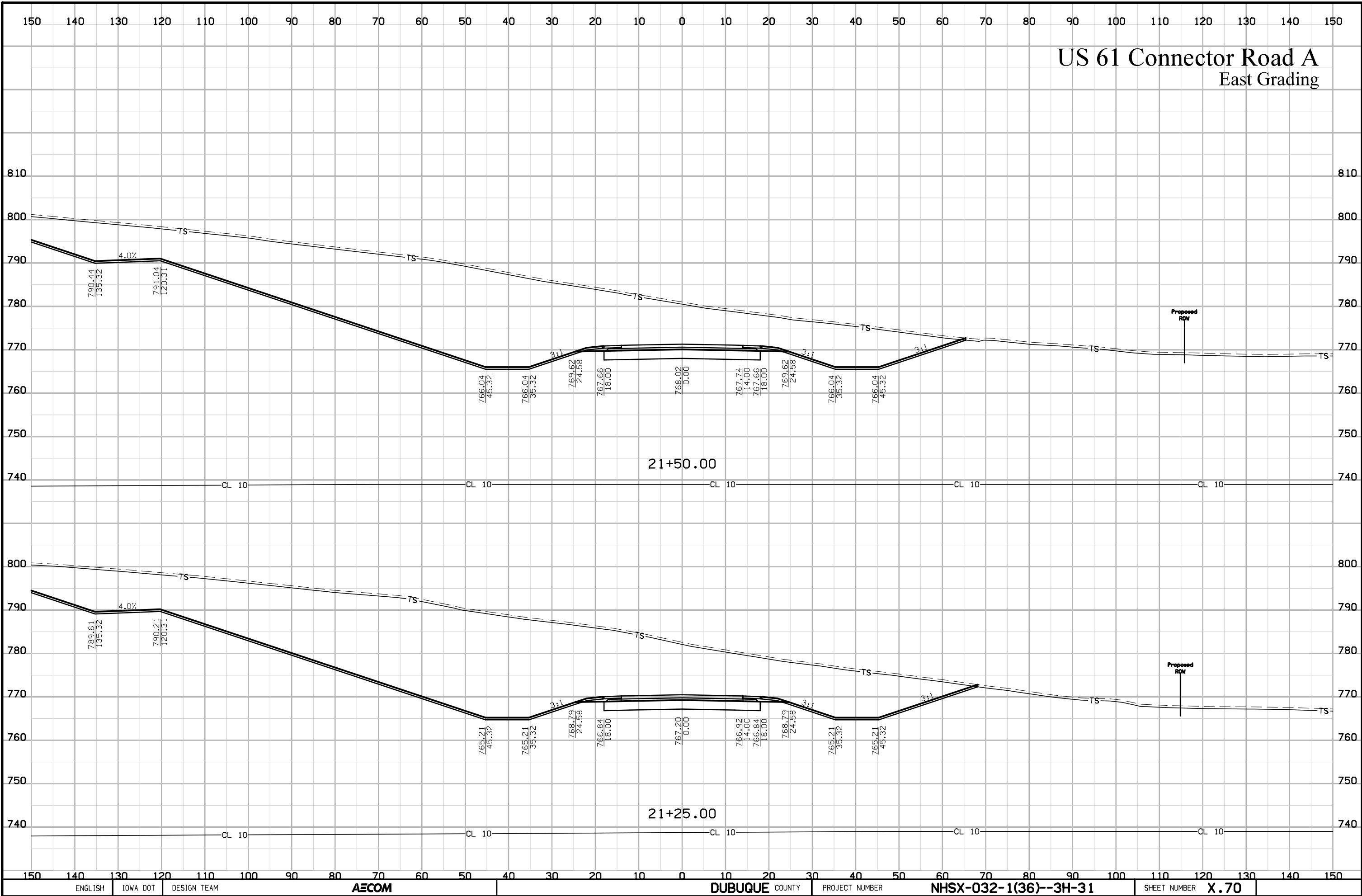
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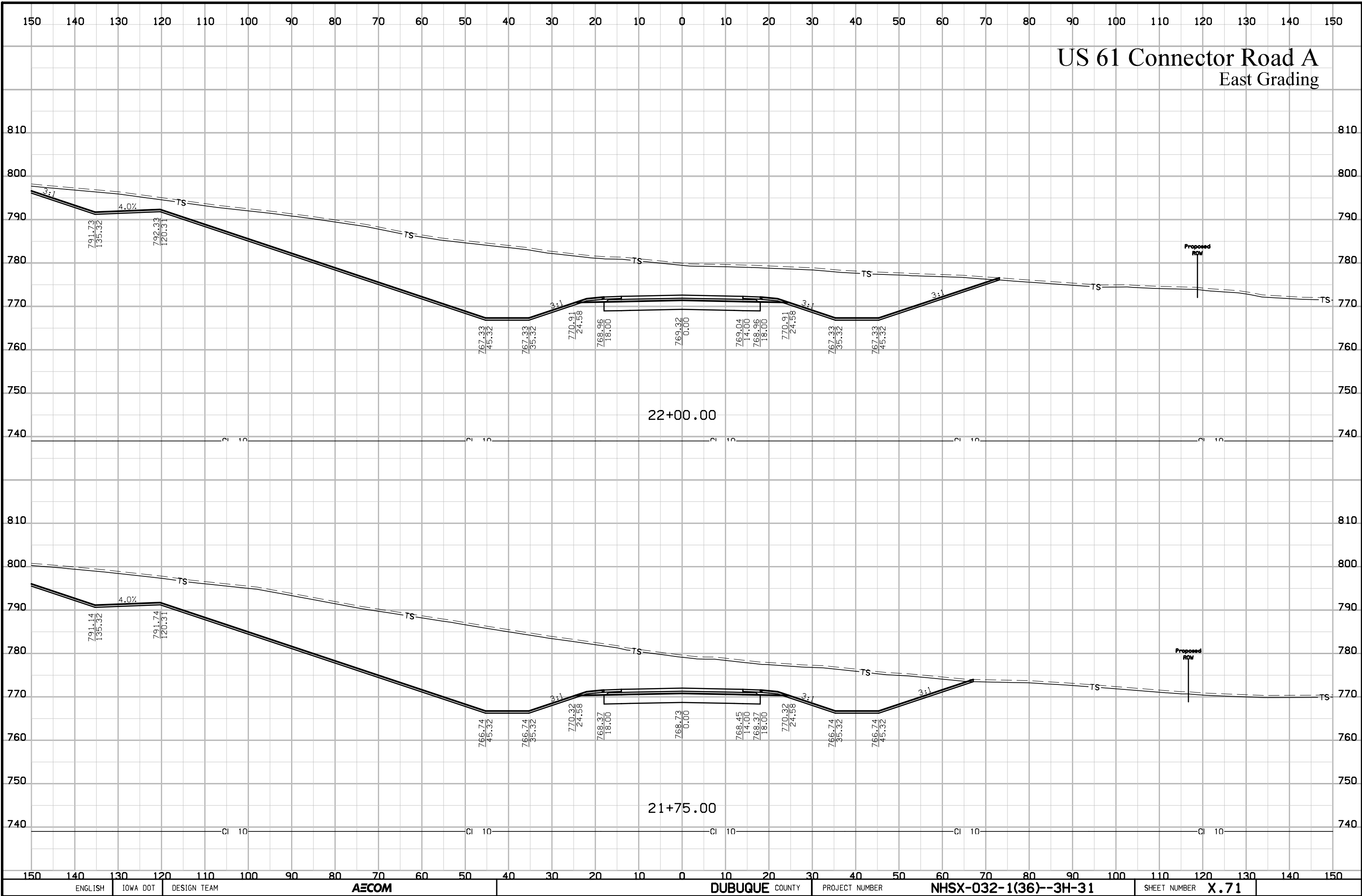
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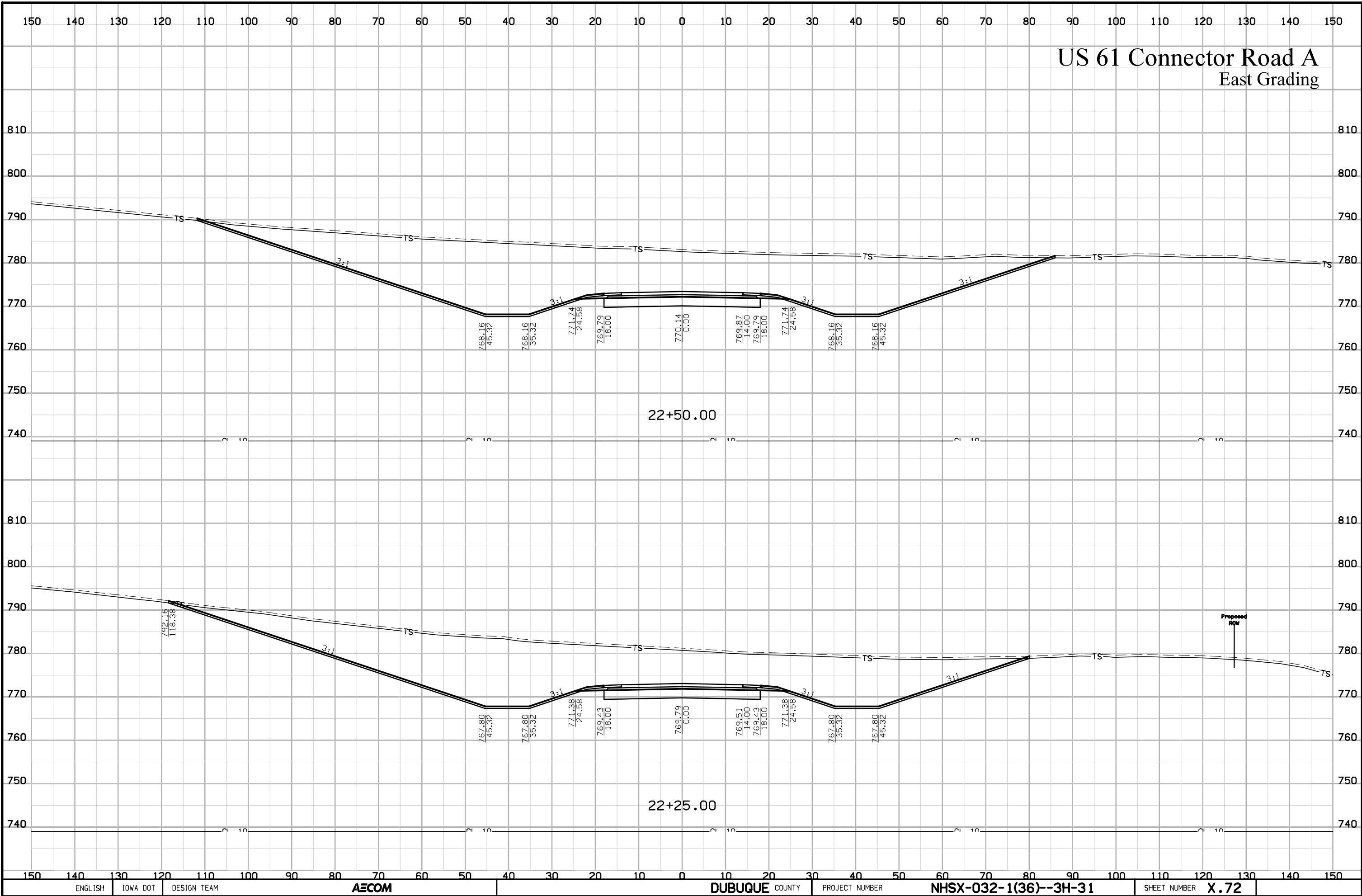


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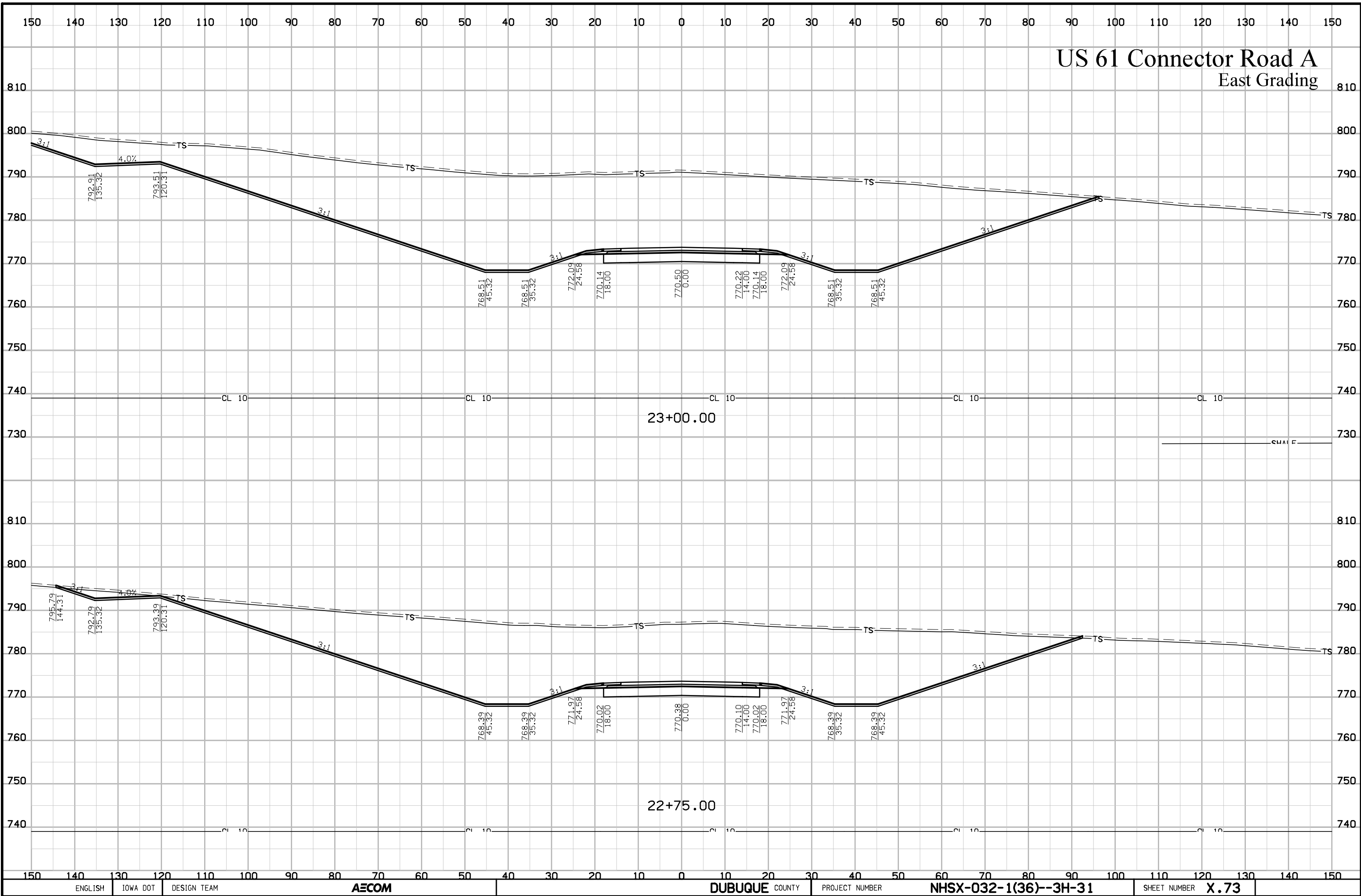
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East Grading



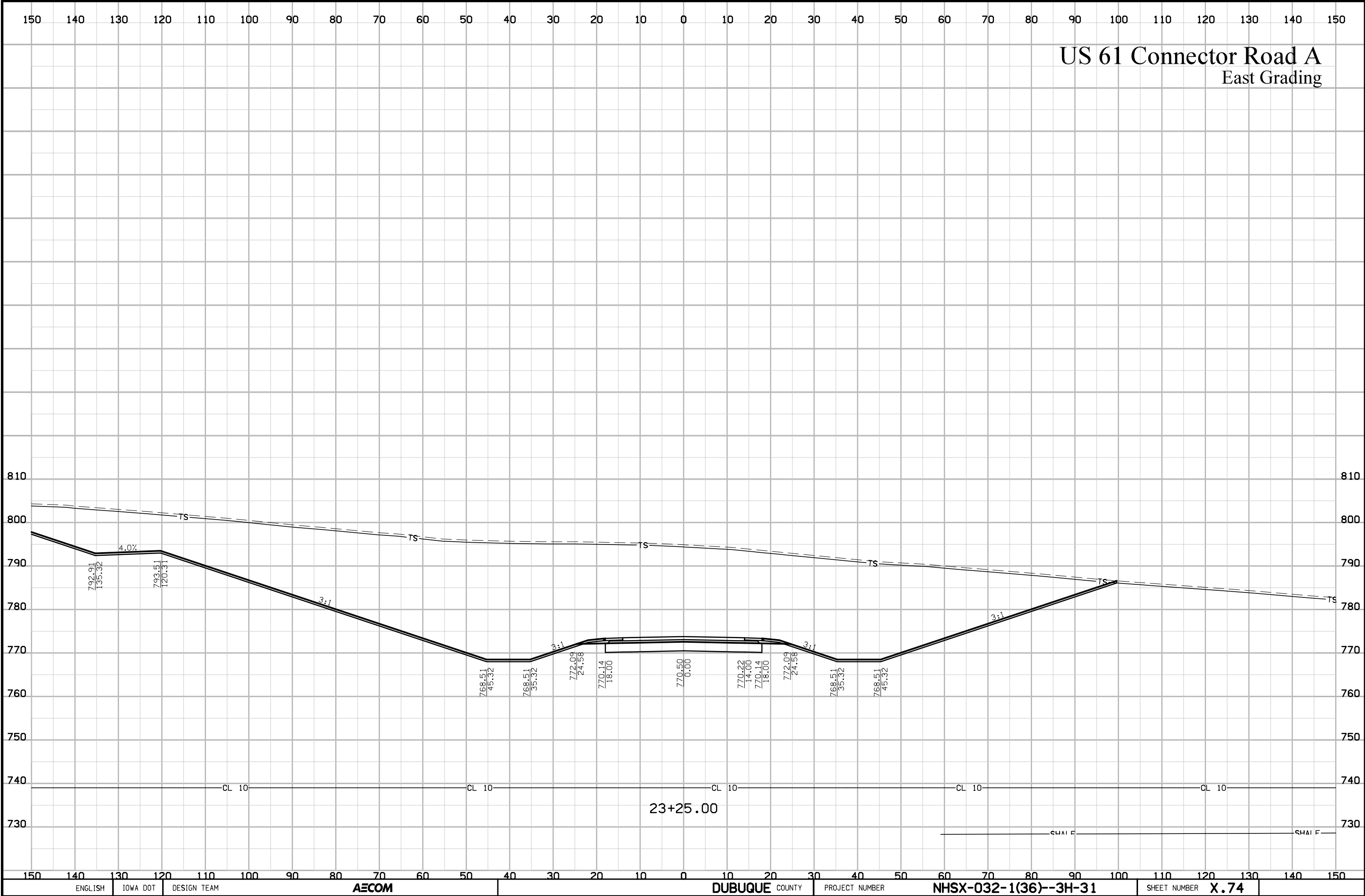
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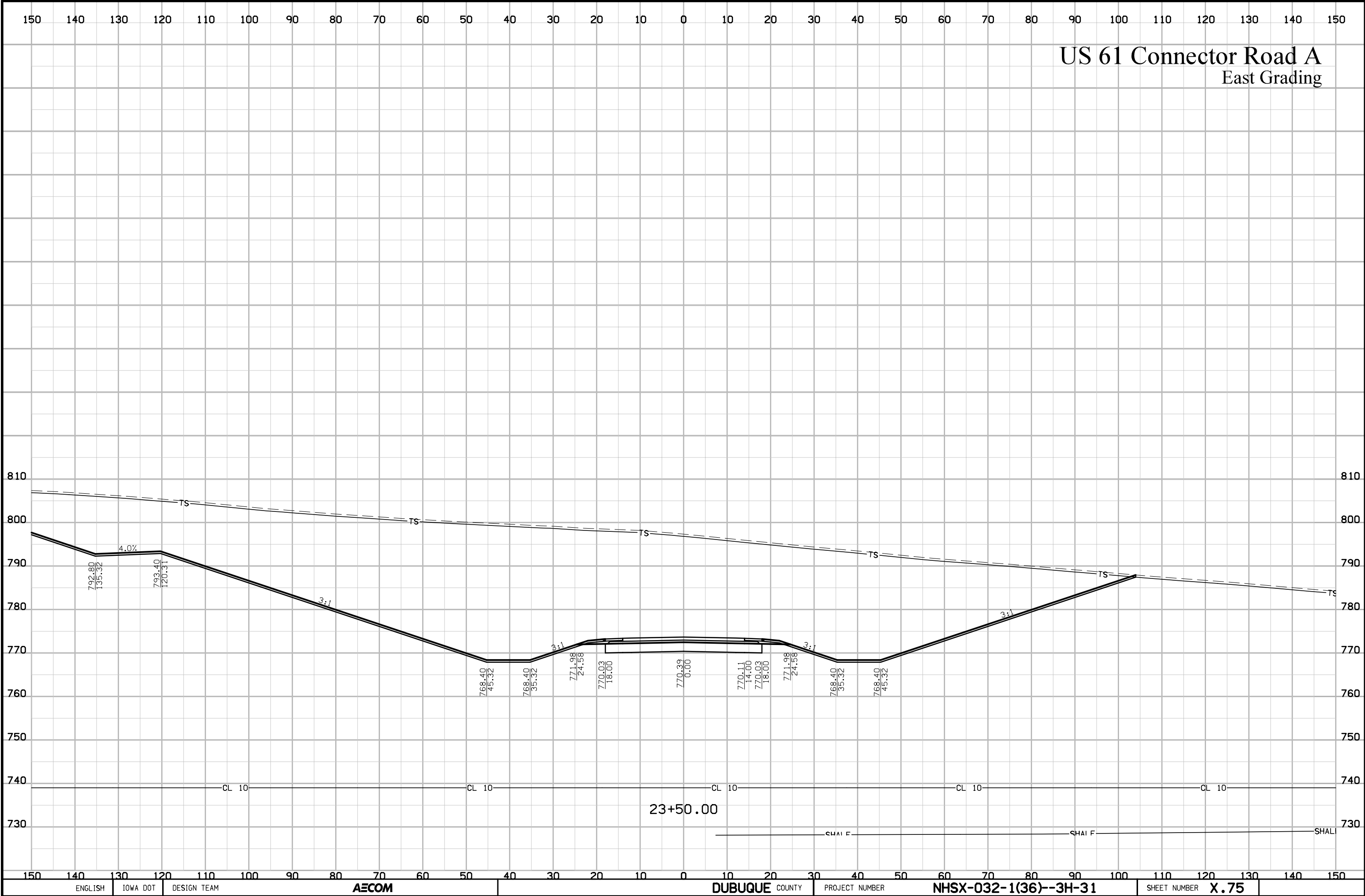


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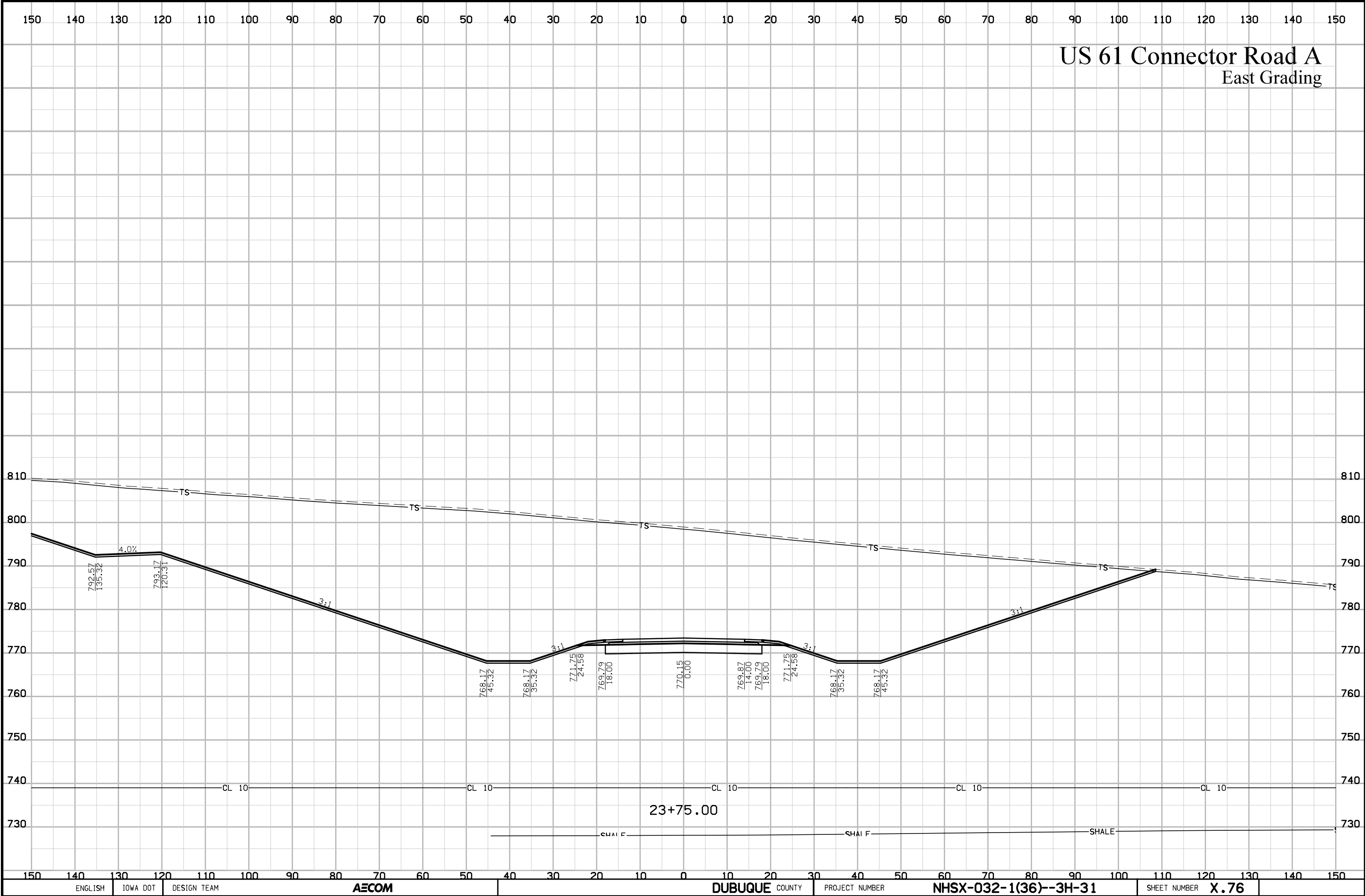
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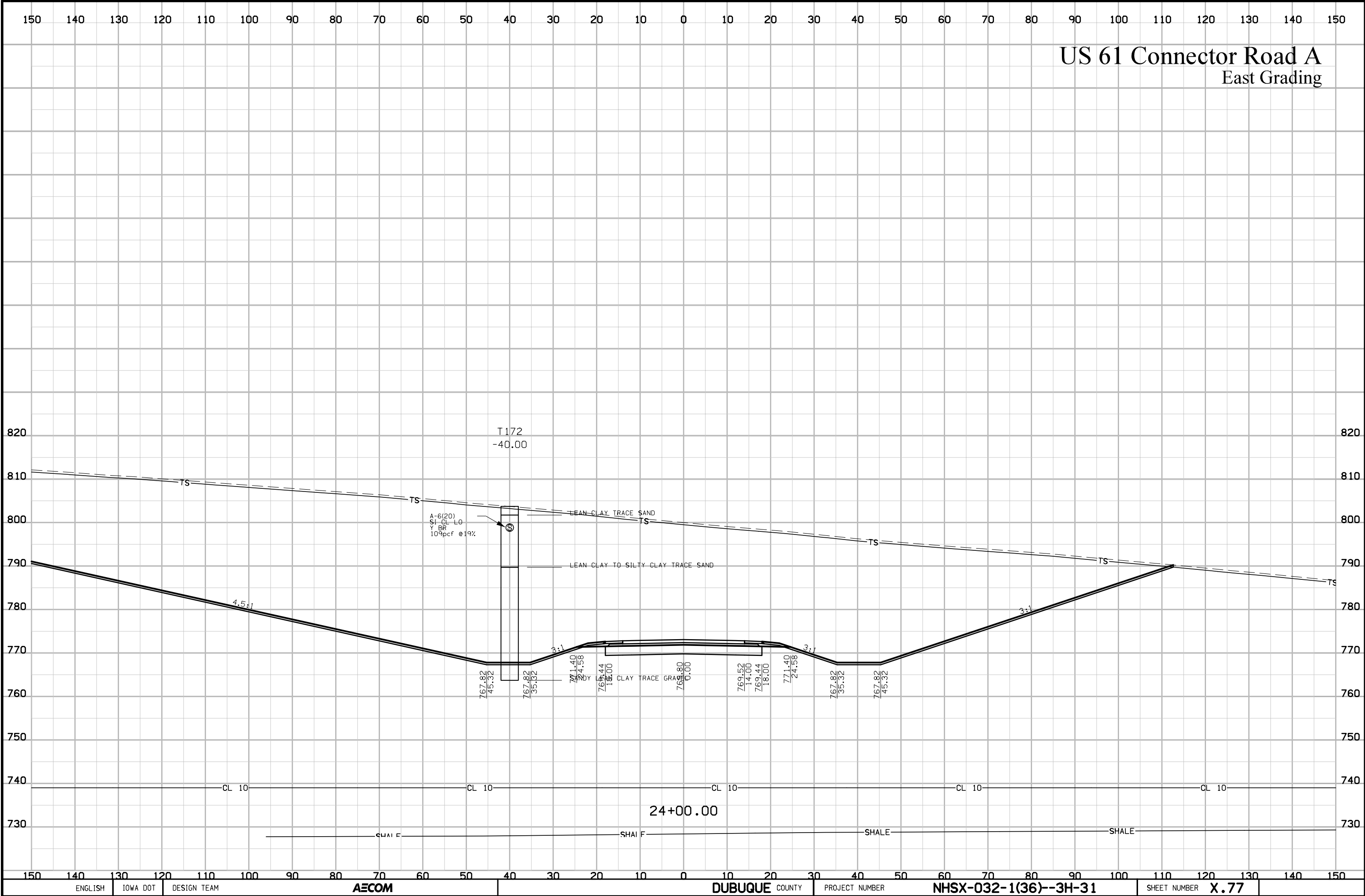
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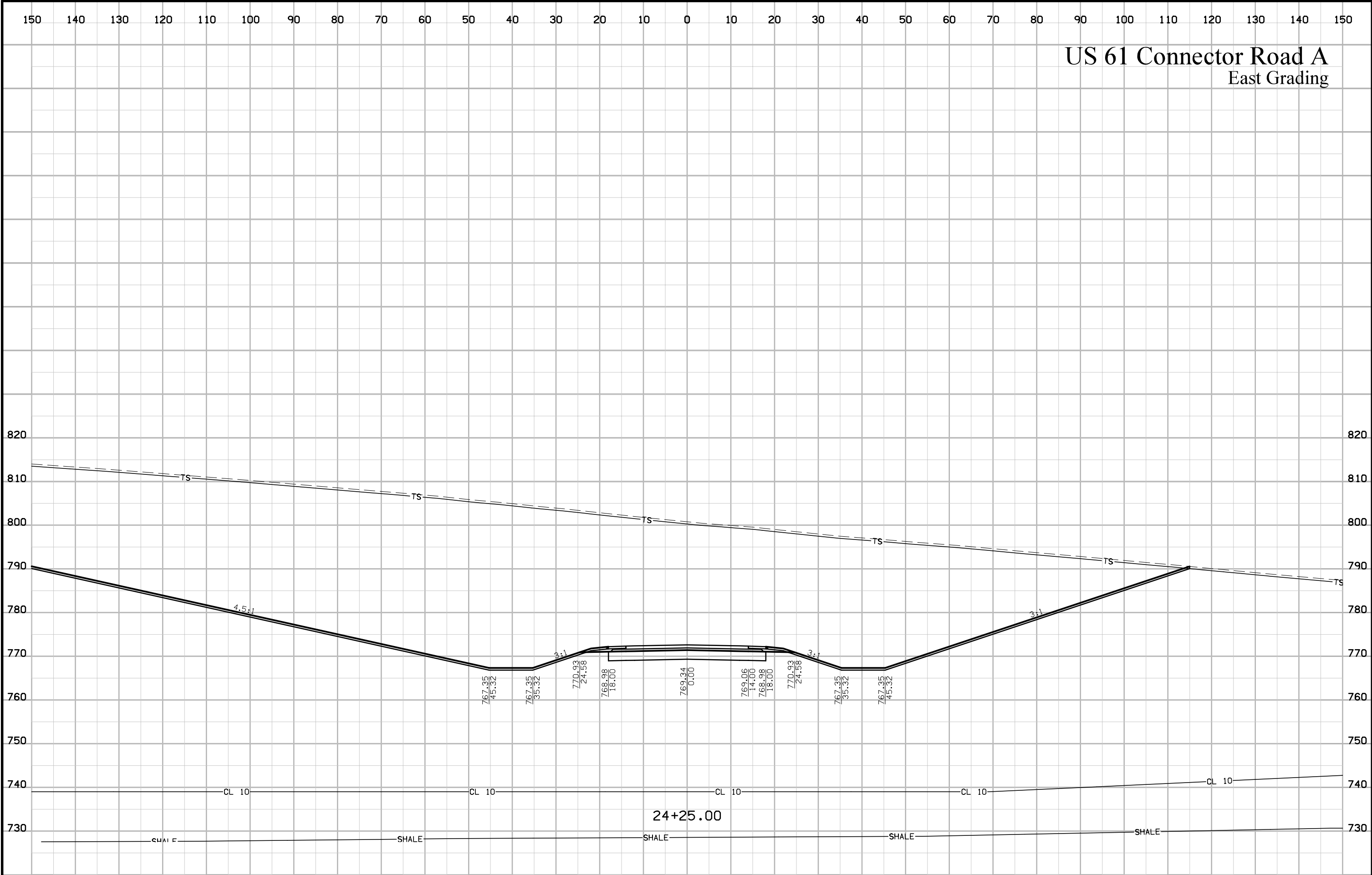


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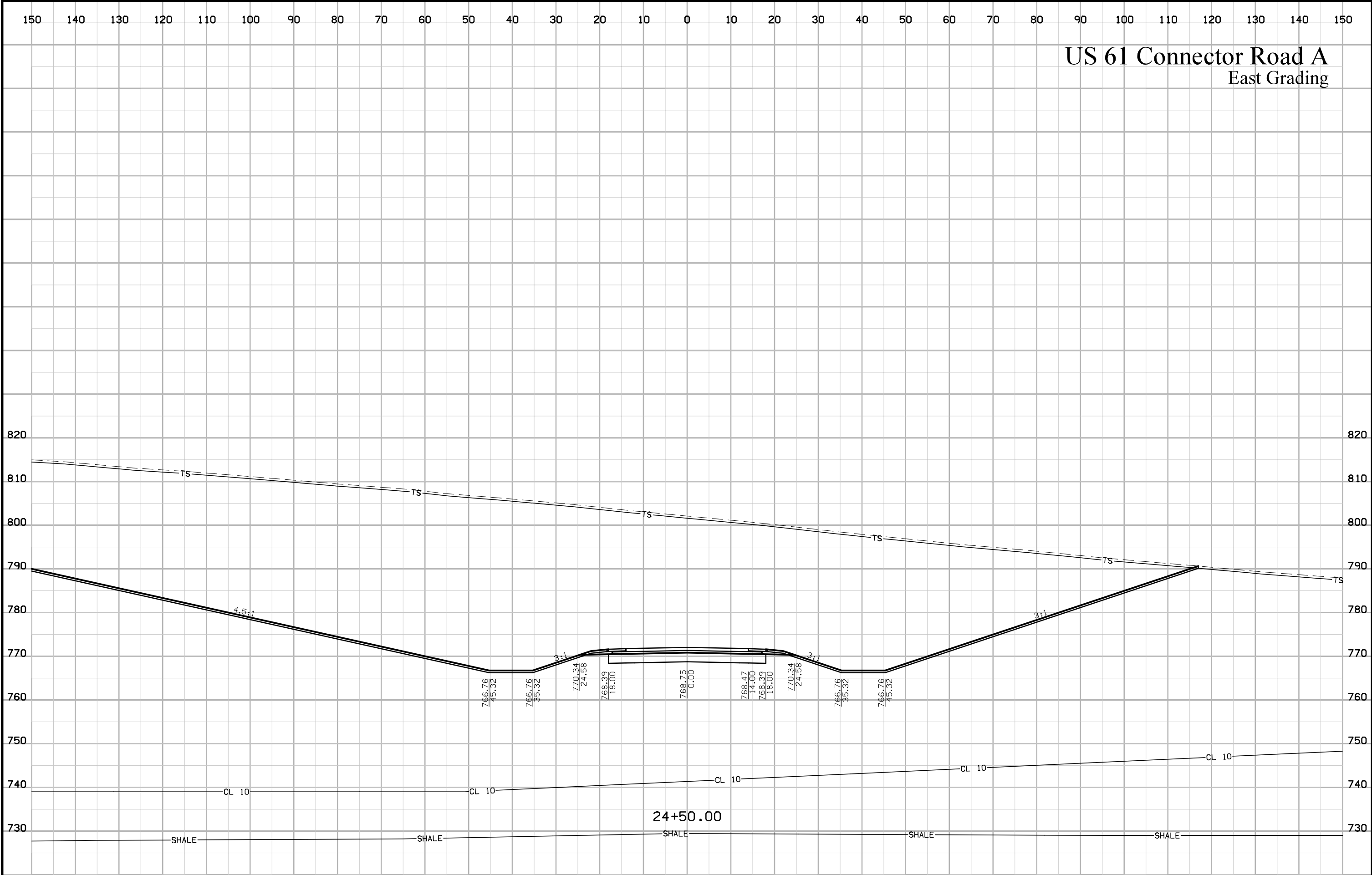
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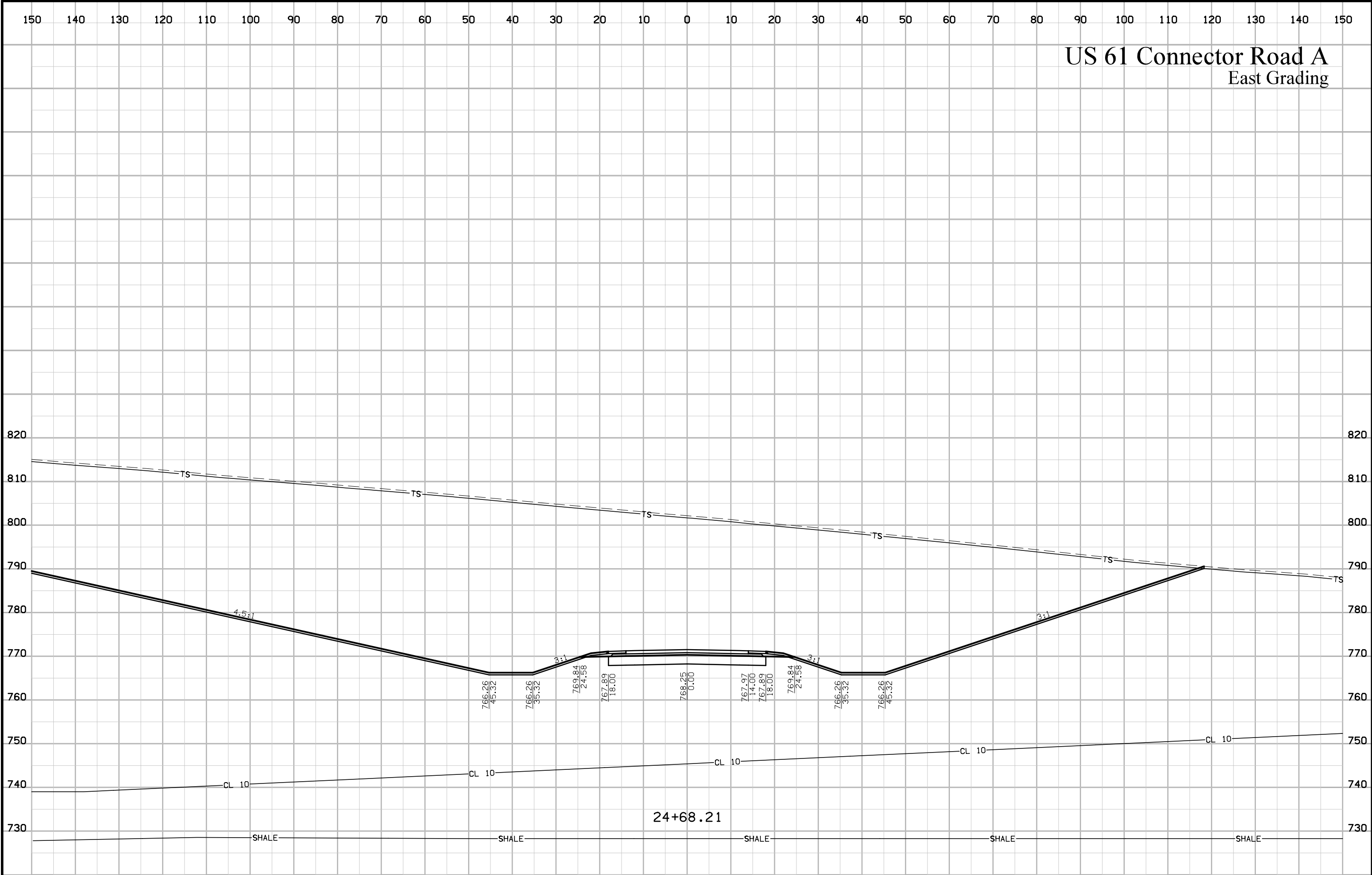


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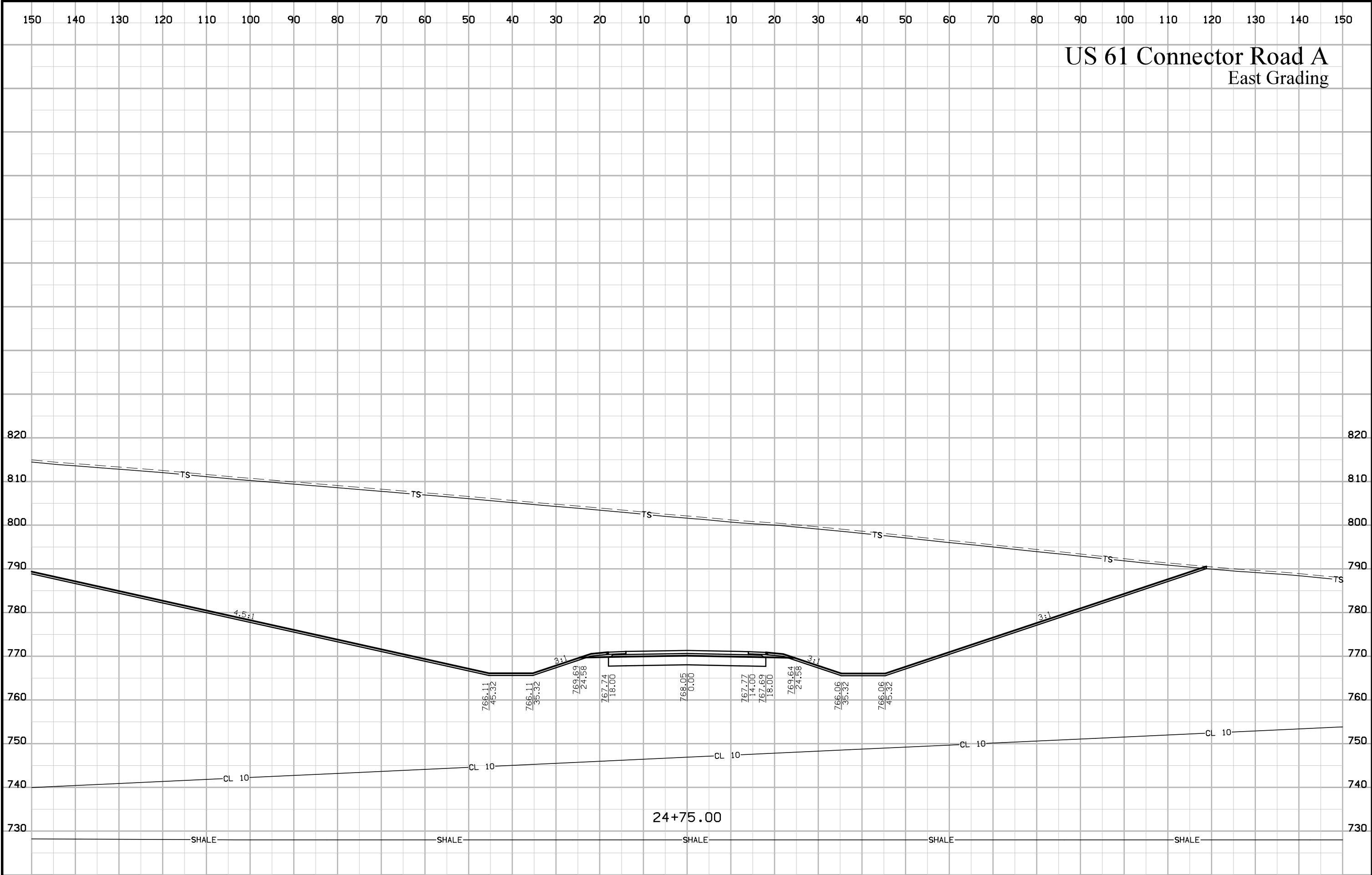


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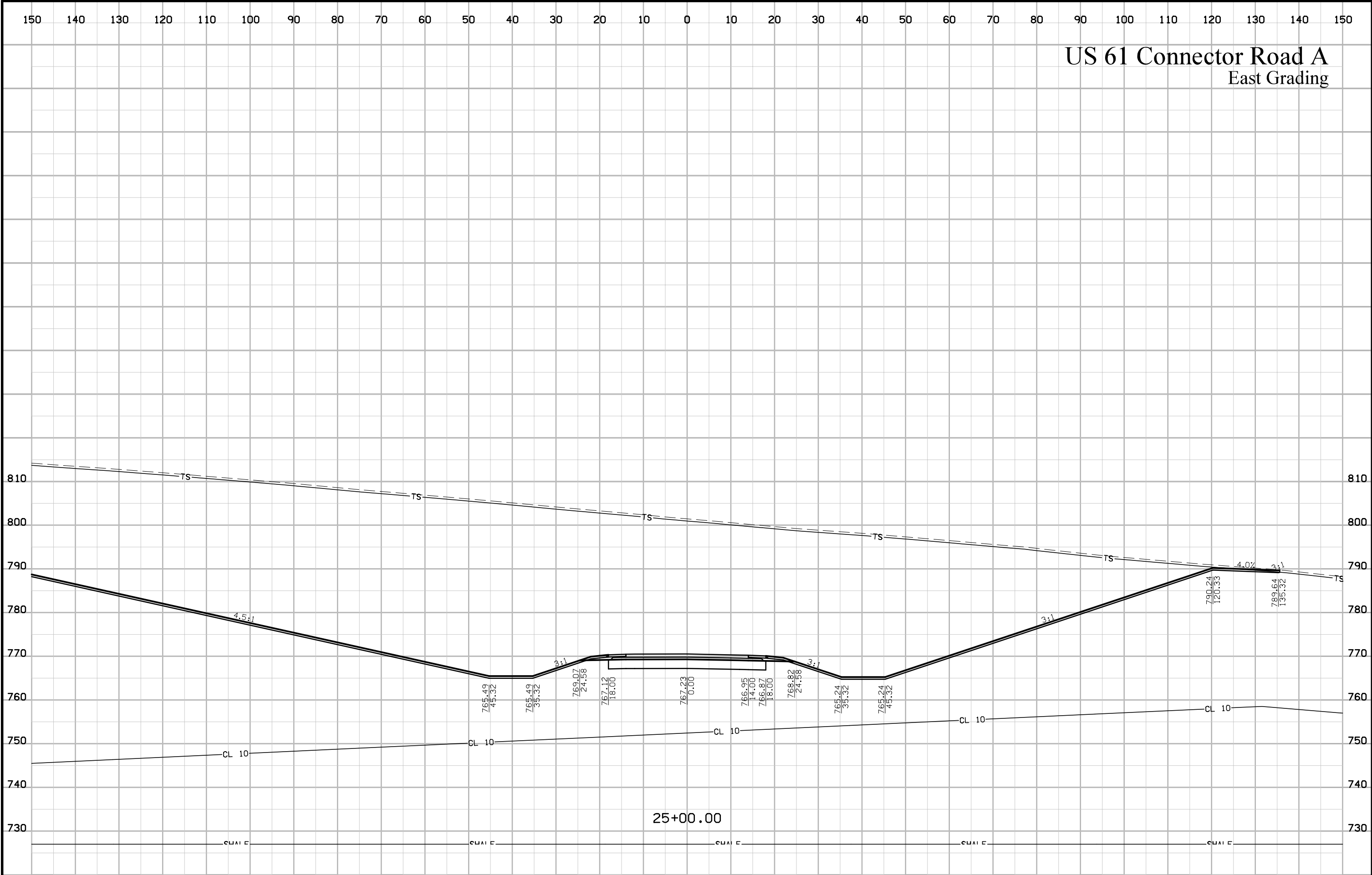


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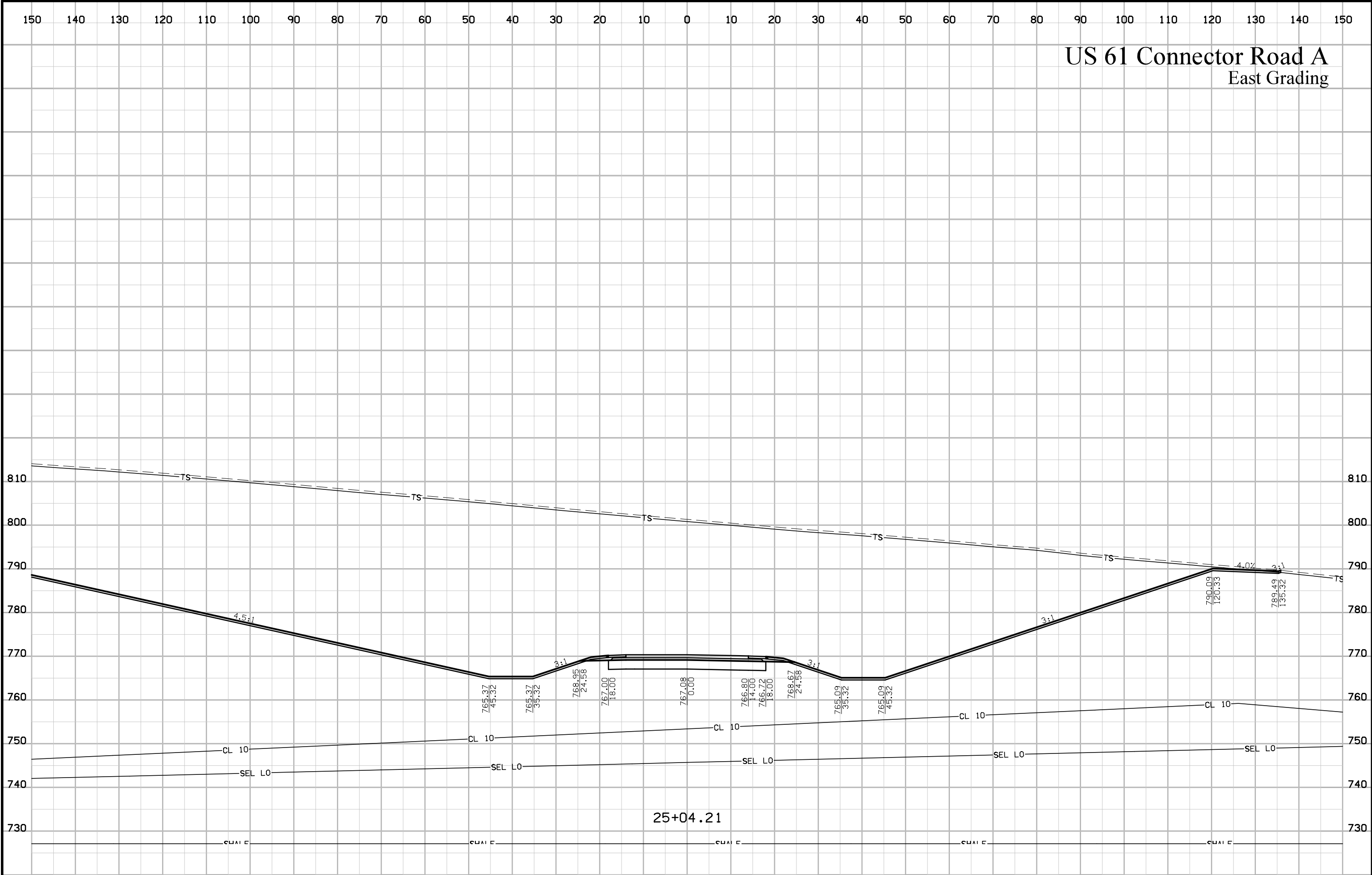
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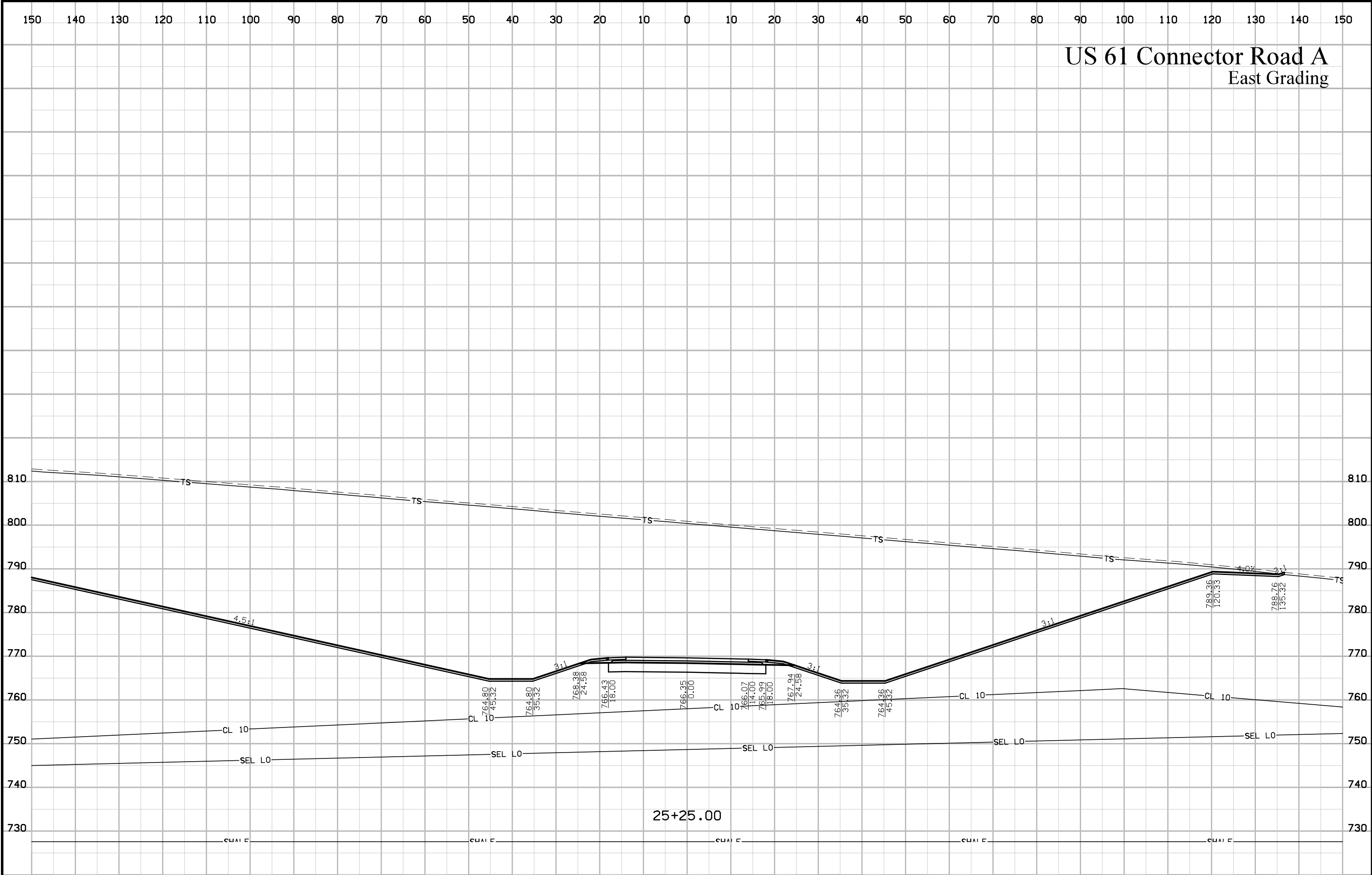
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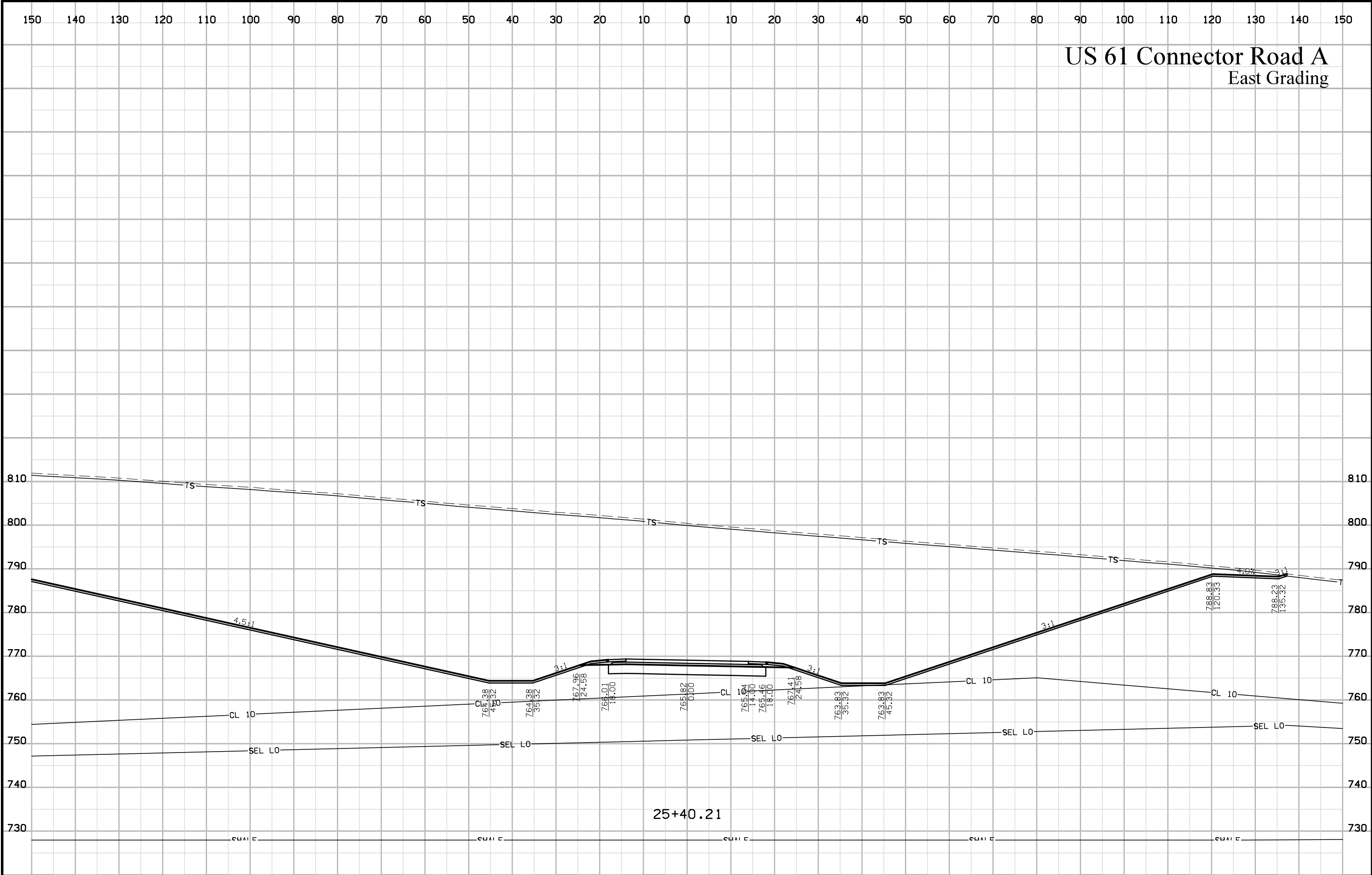


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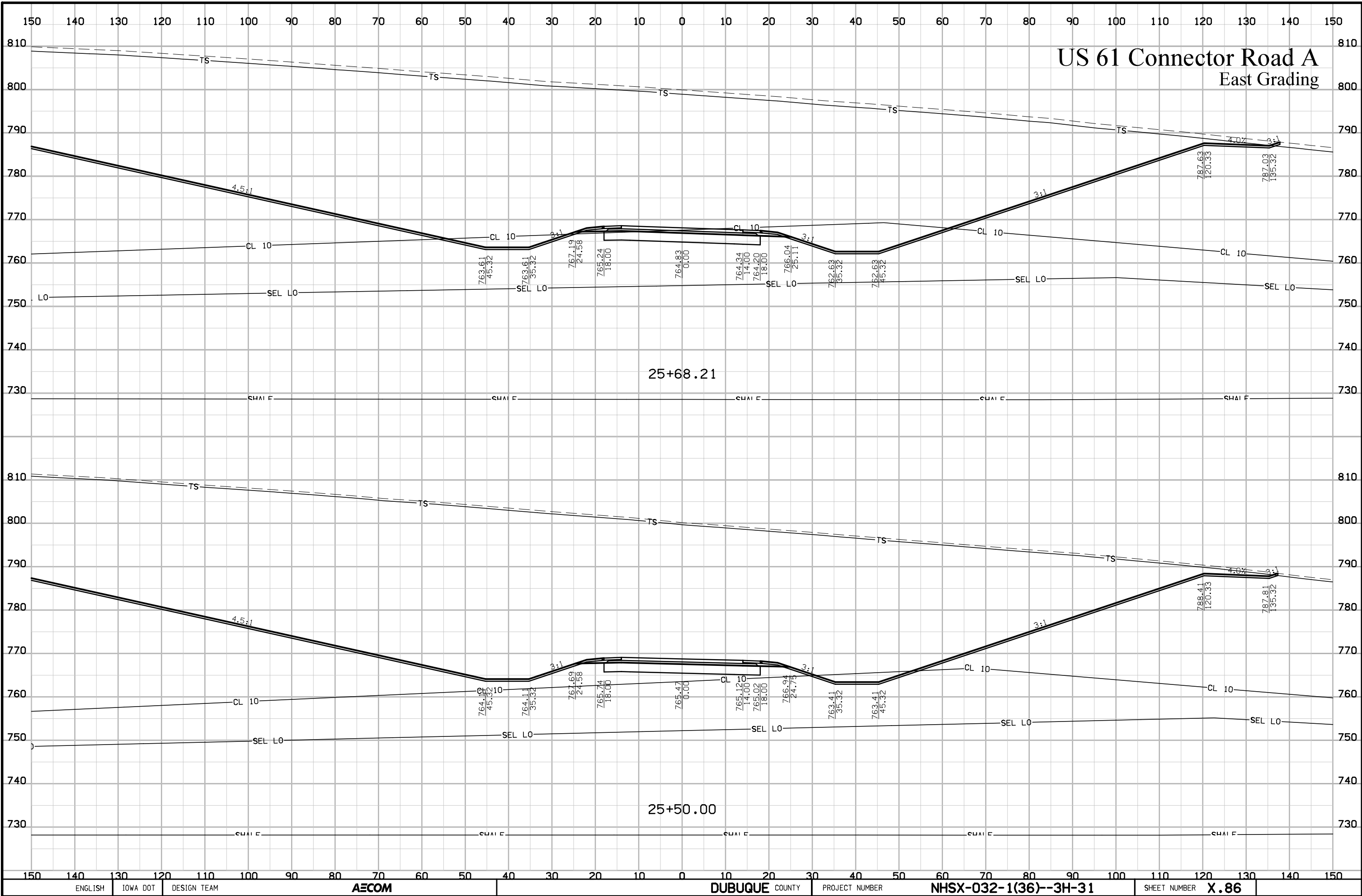


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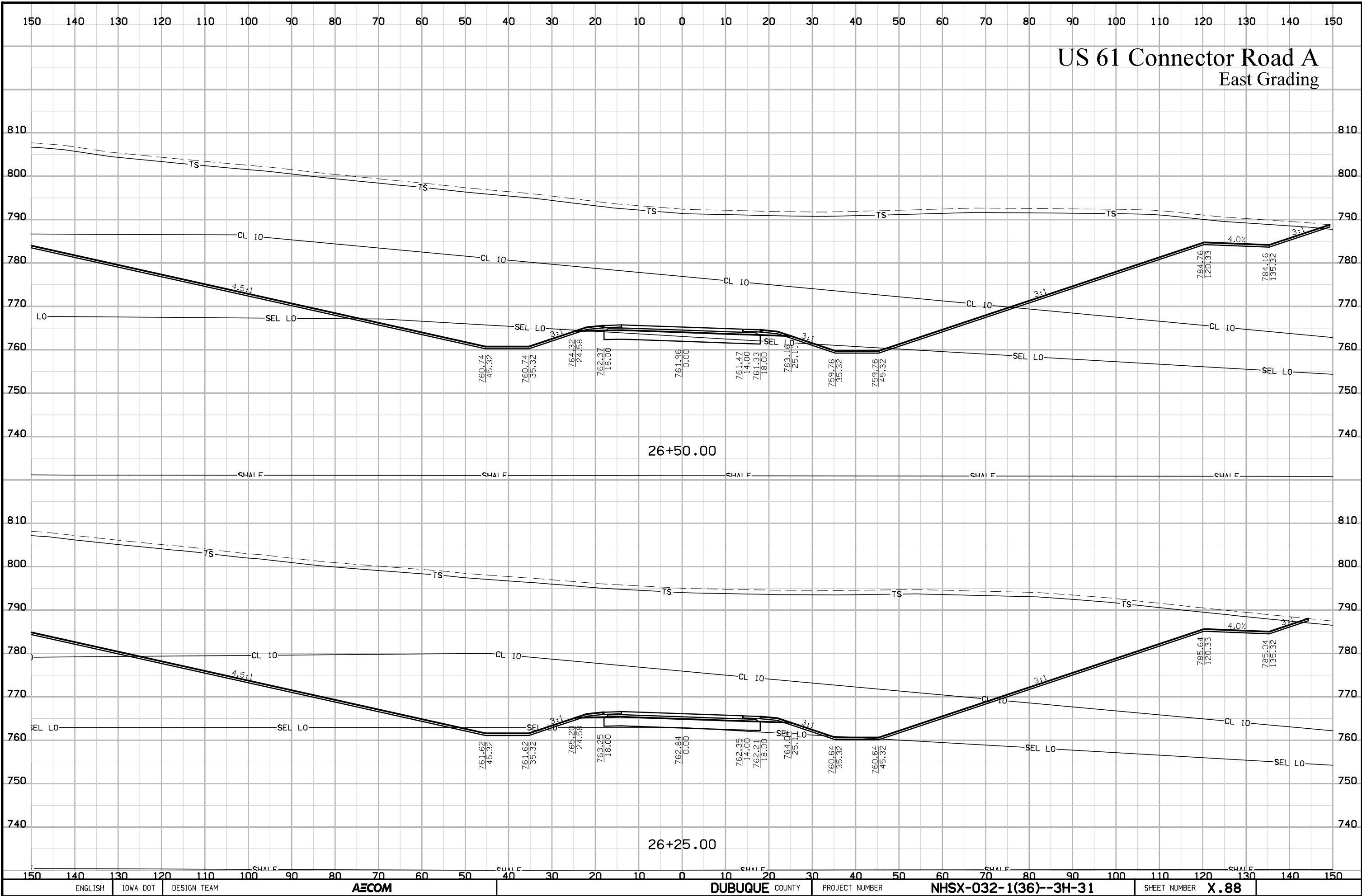
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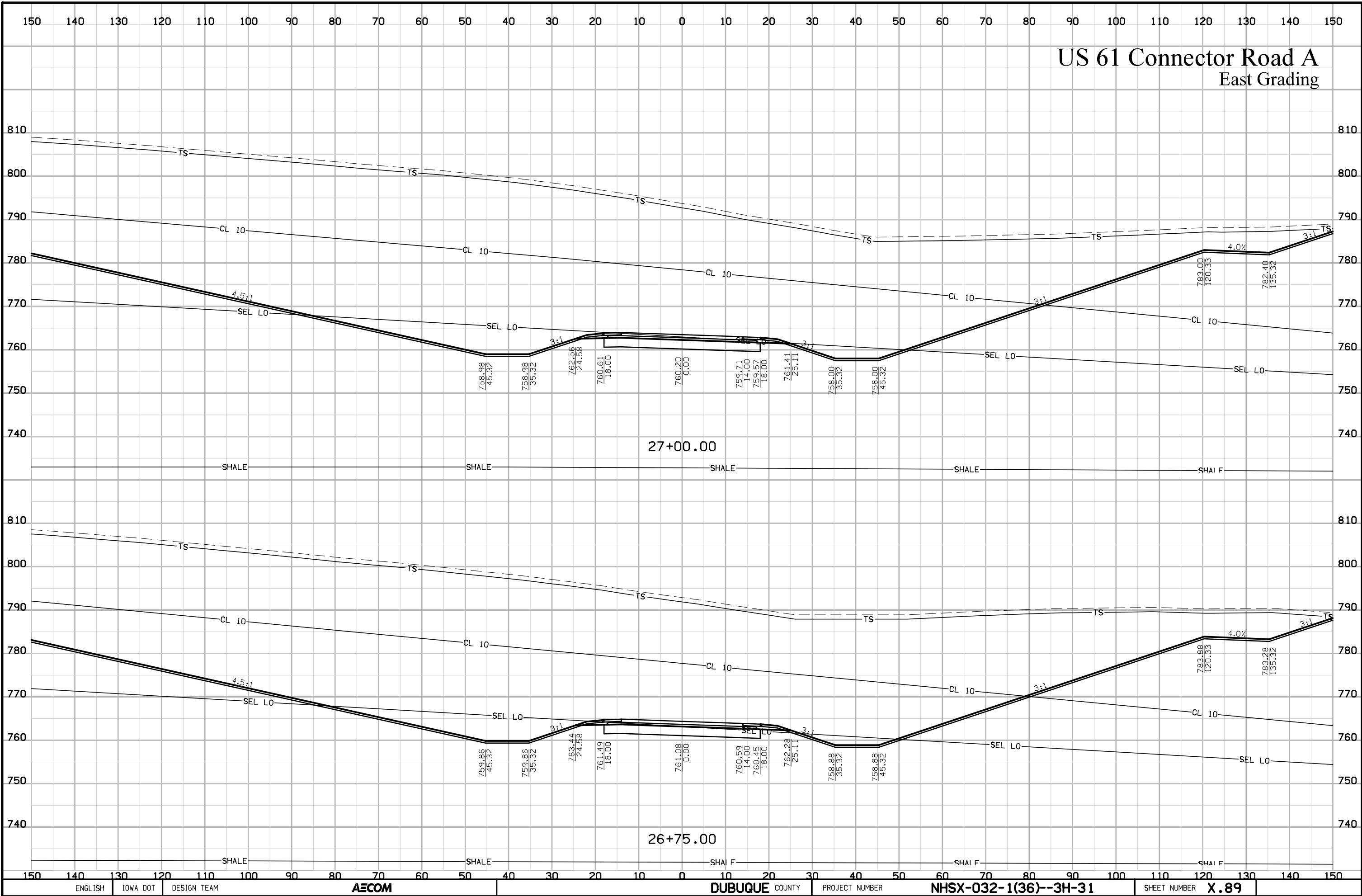
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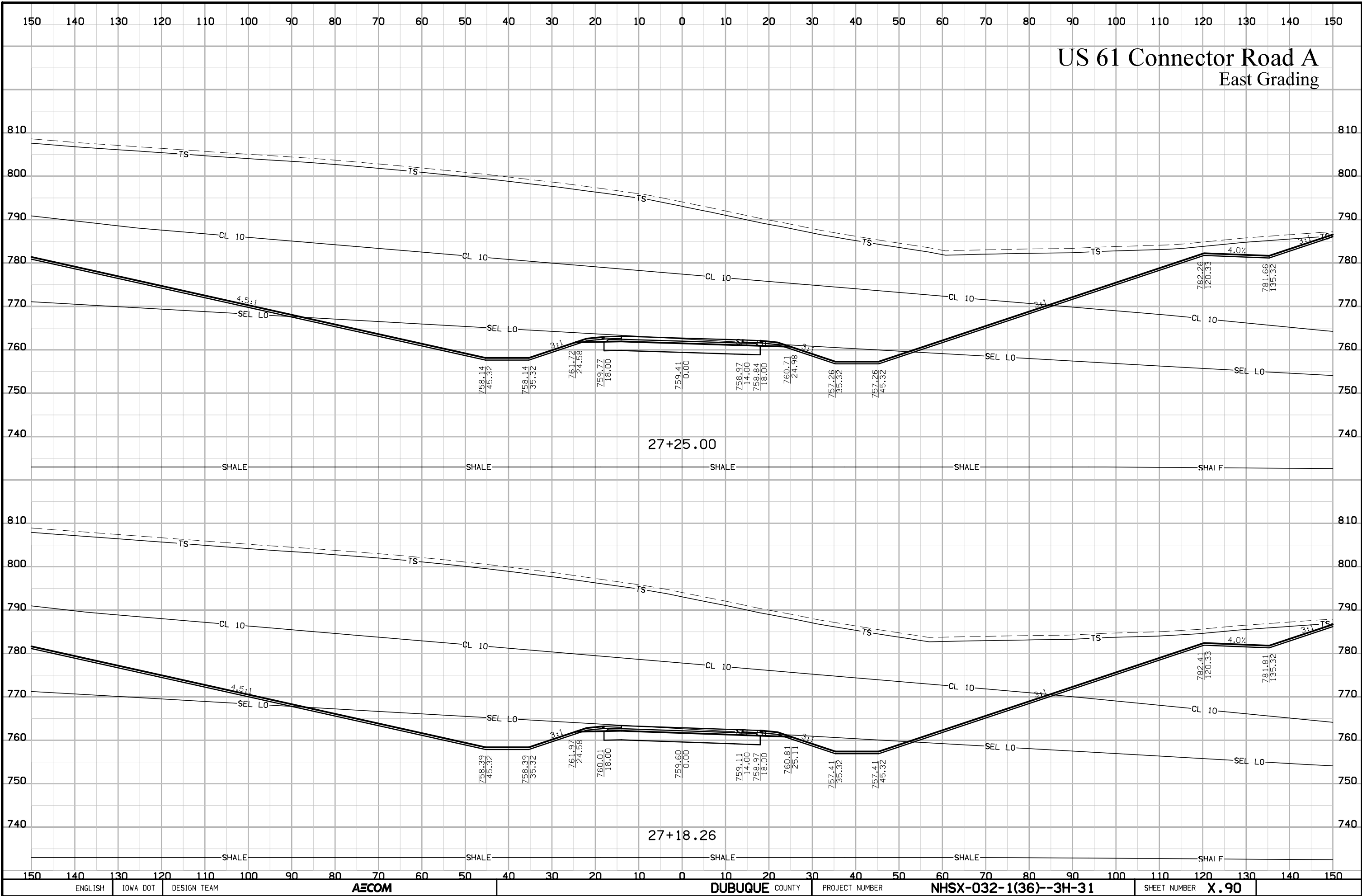
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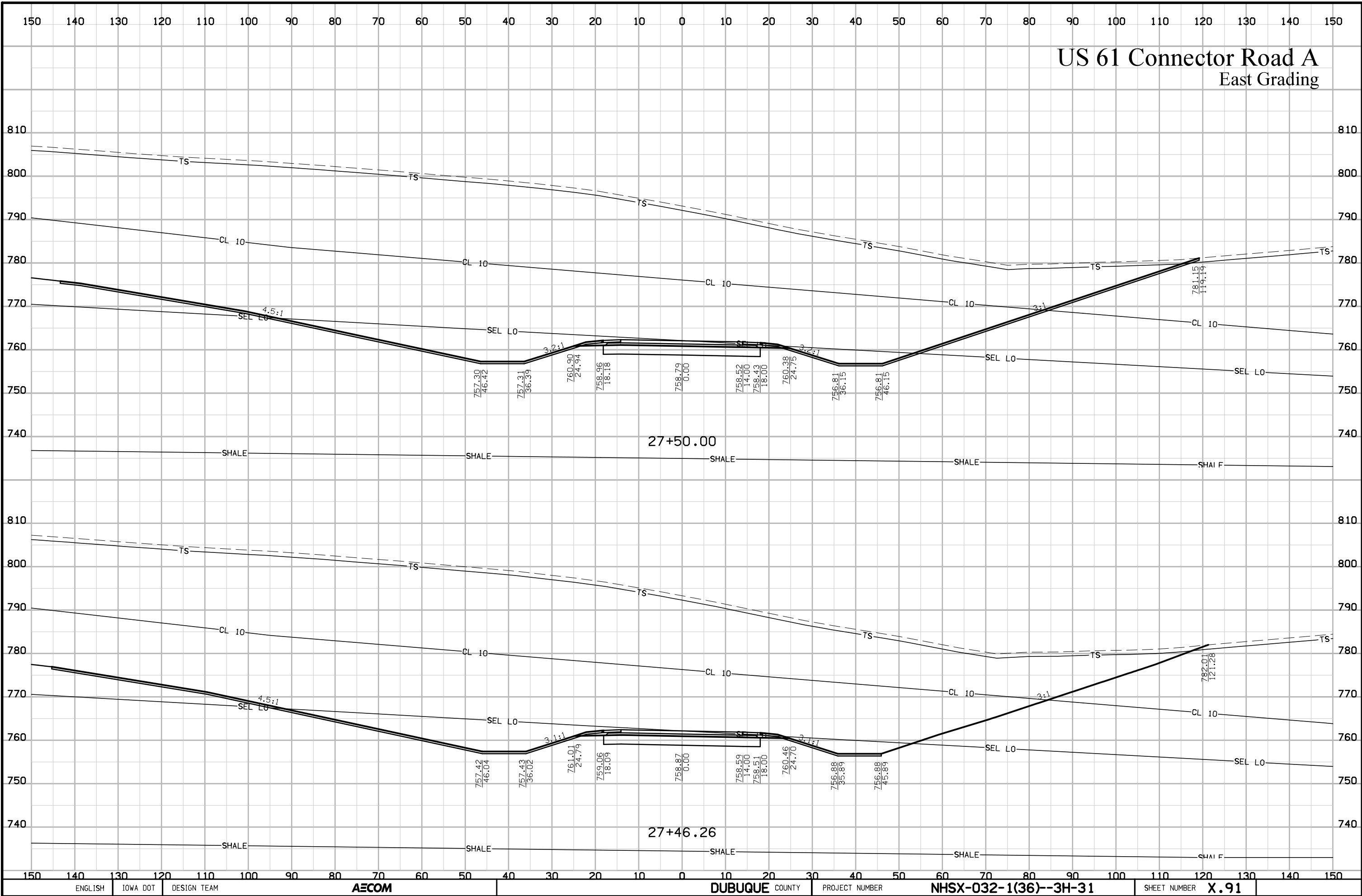
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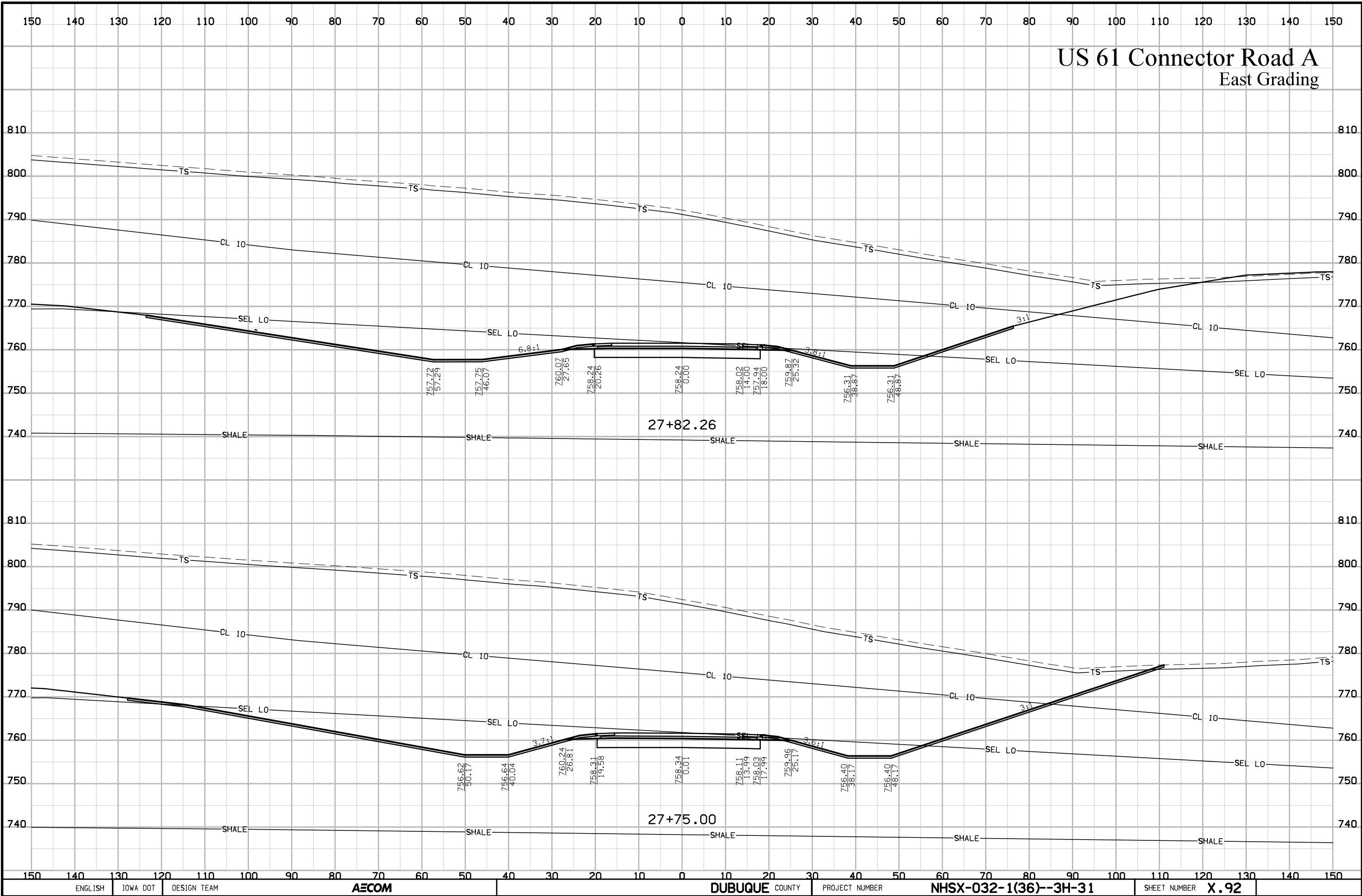
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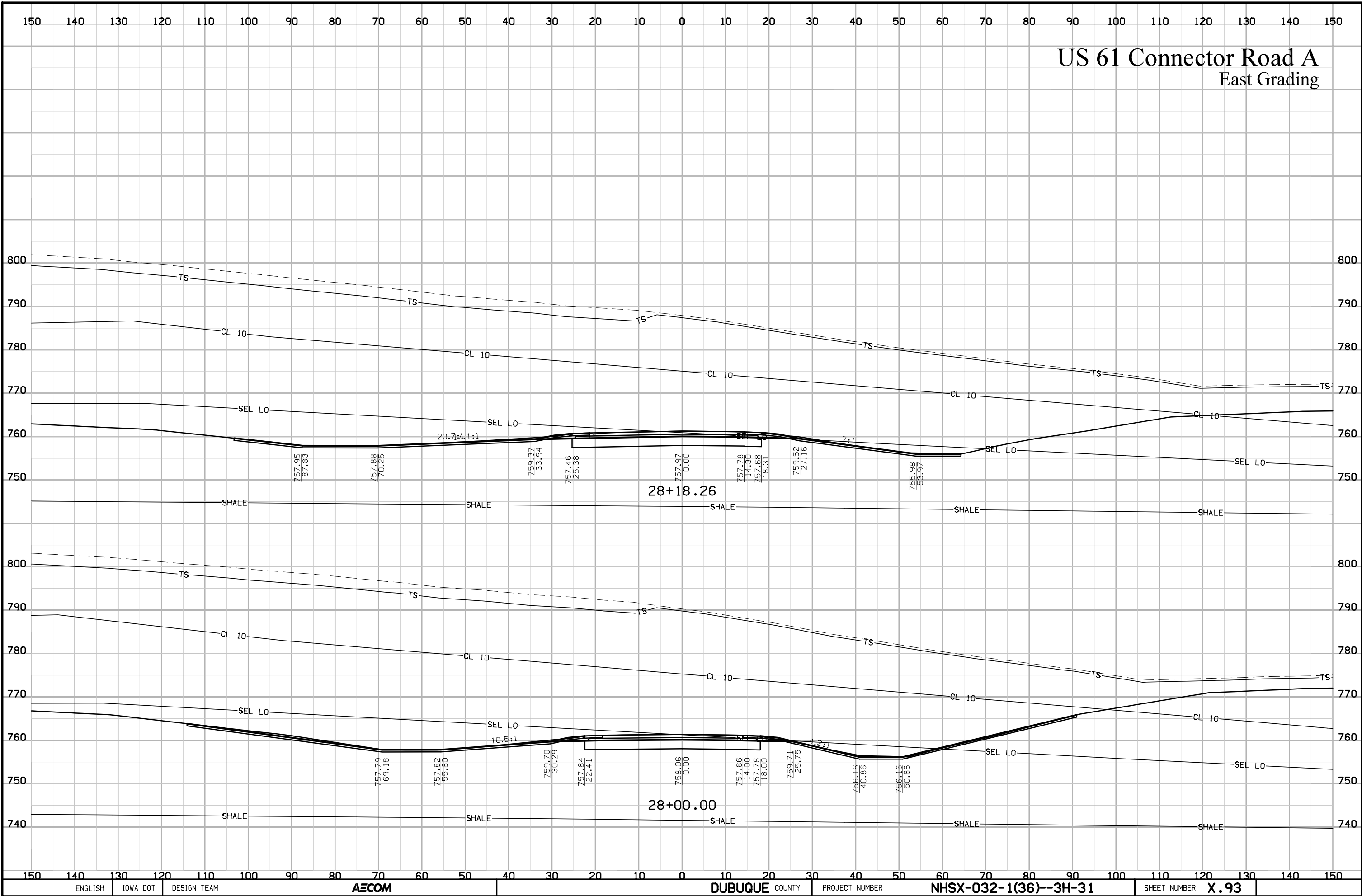
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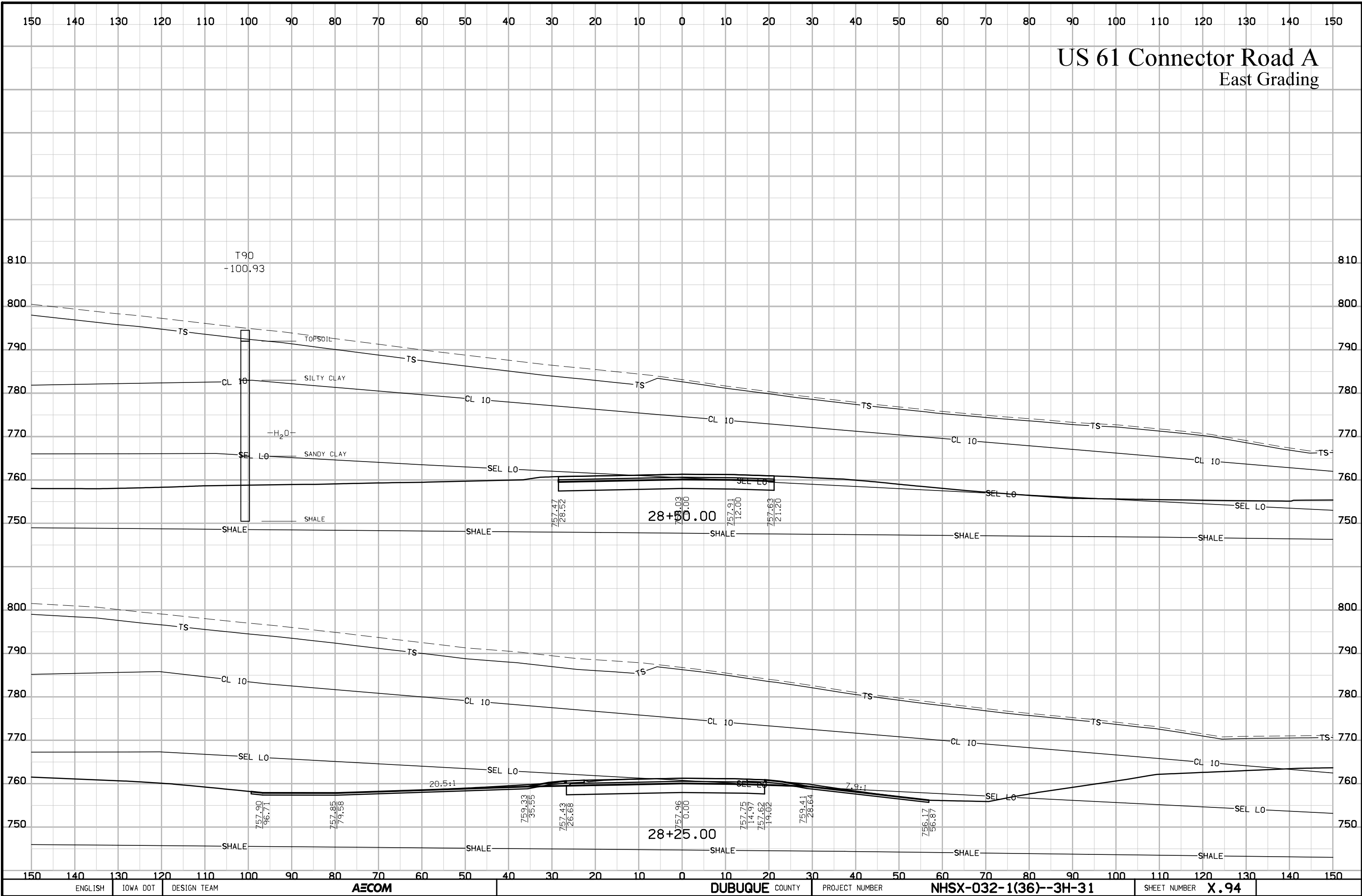
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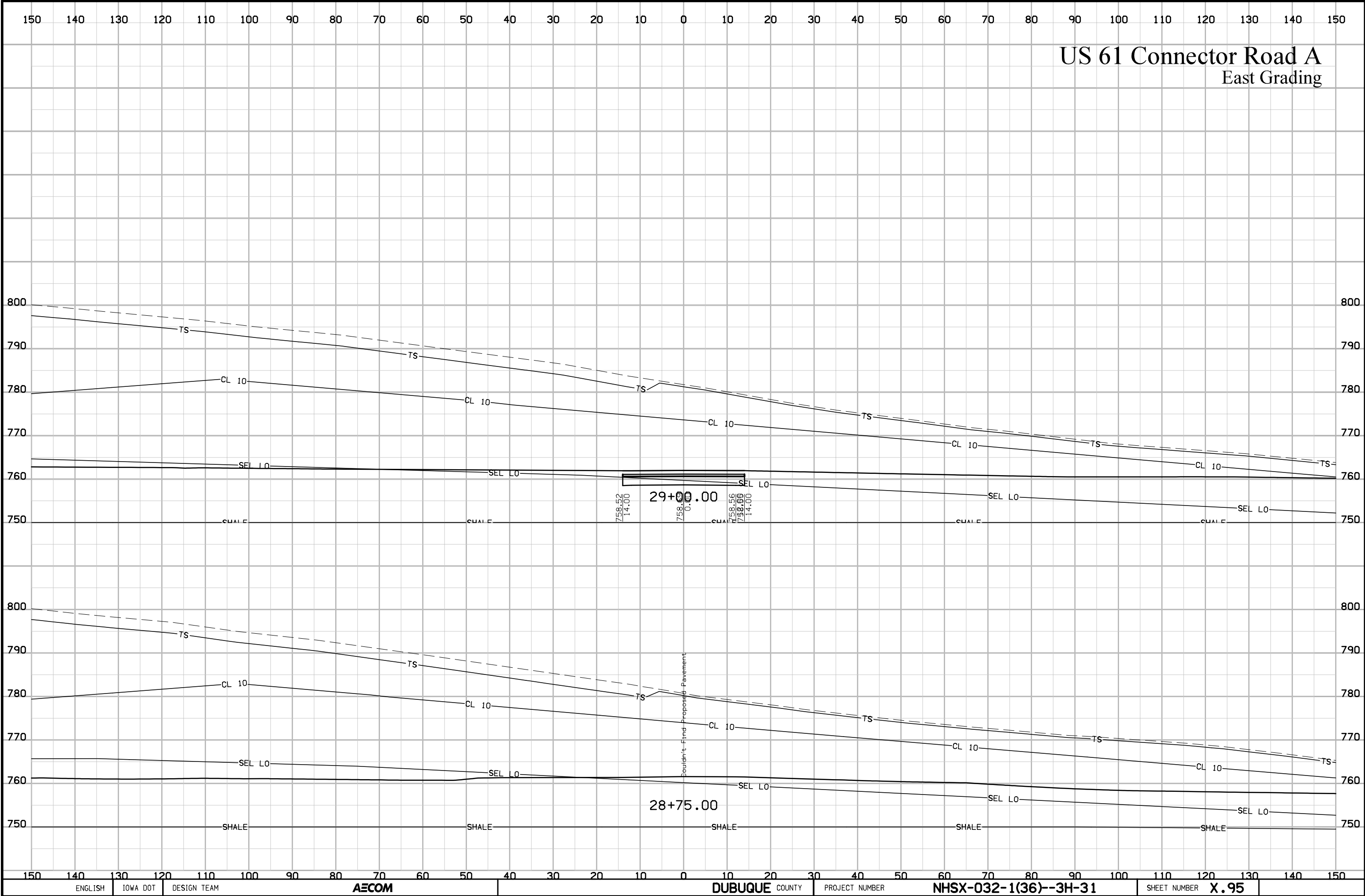


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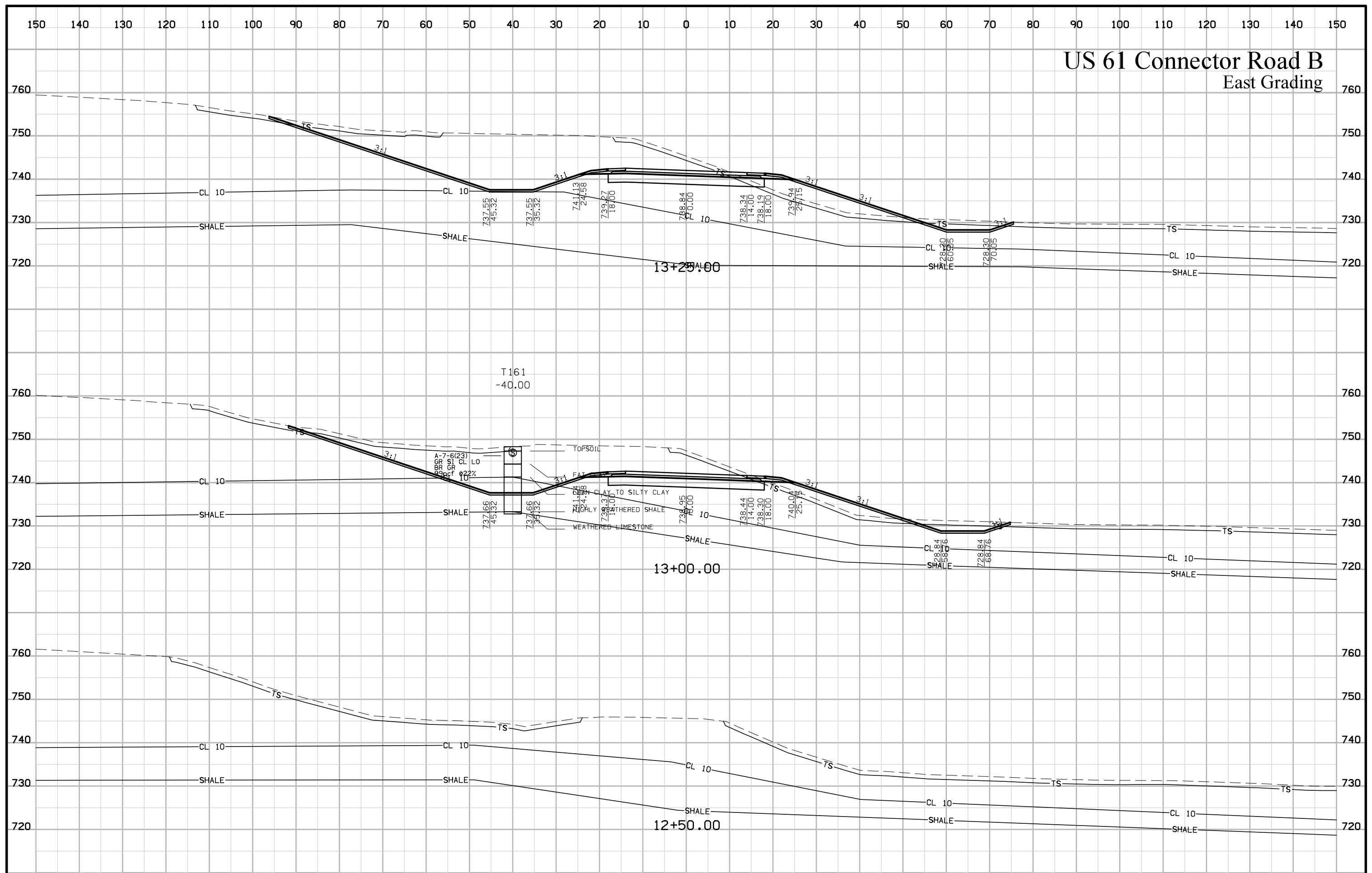


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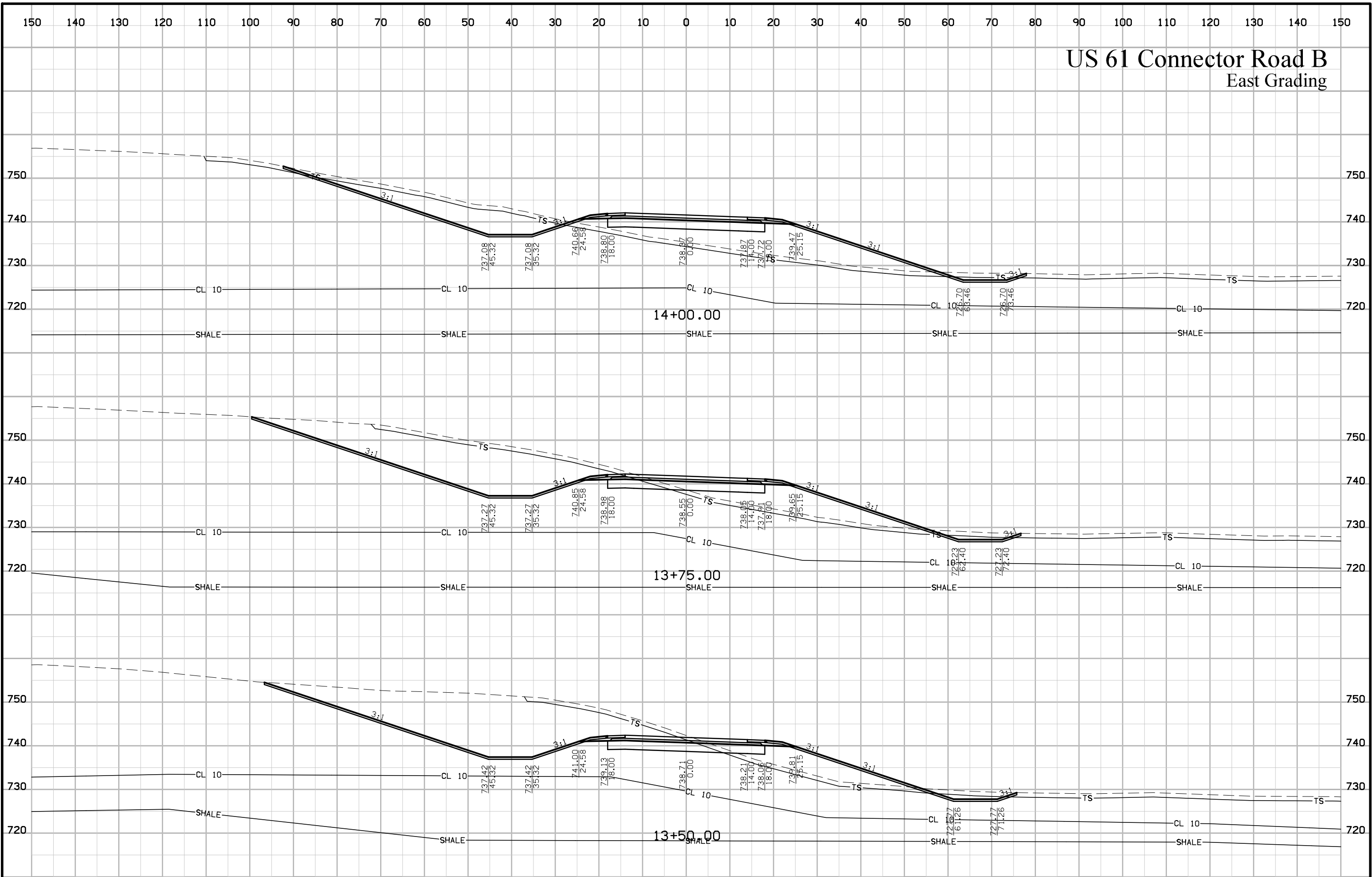
East Grading



US 61 Connector Road B East Grading

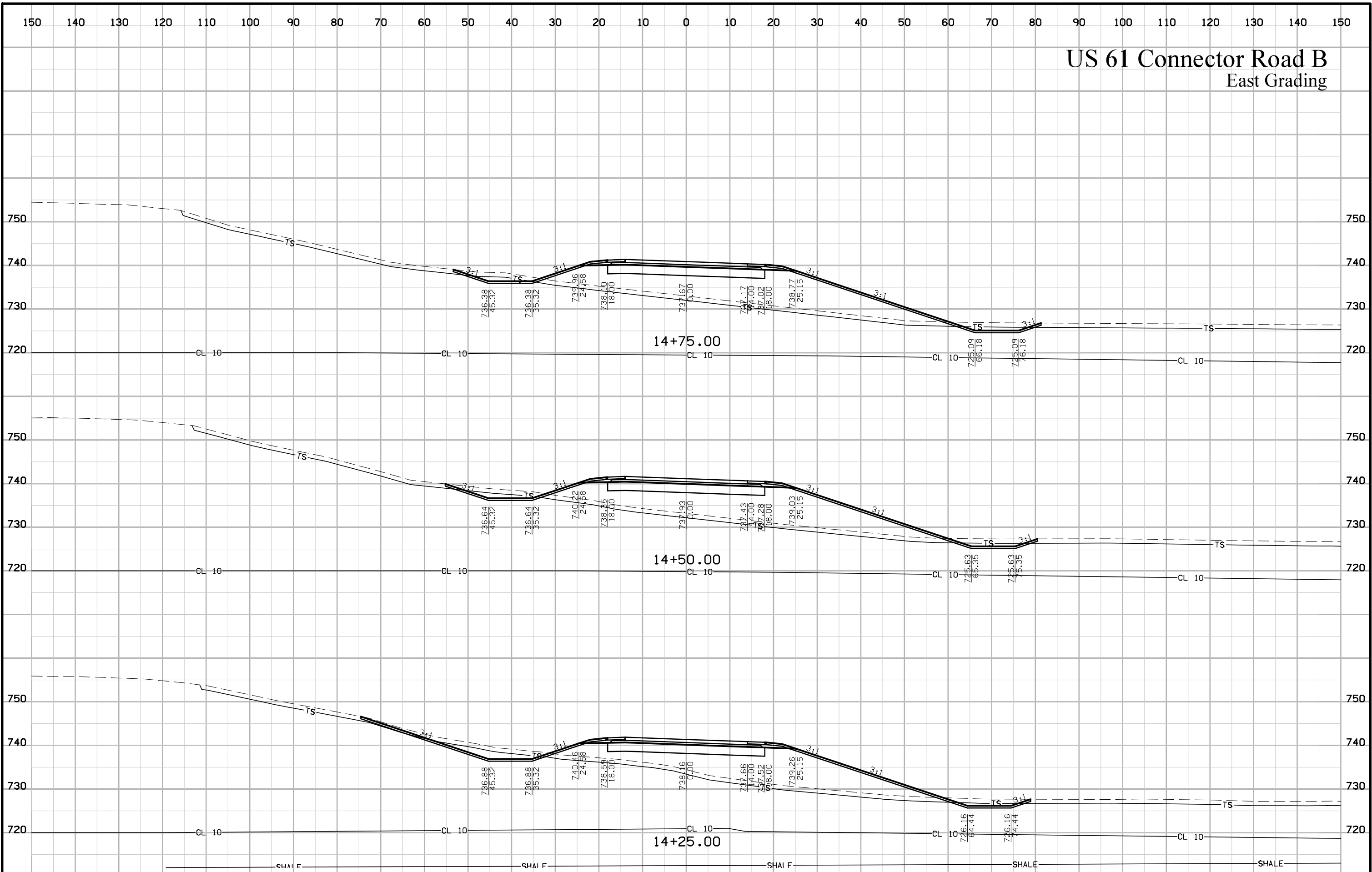


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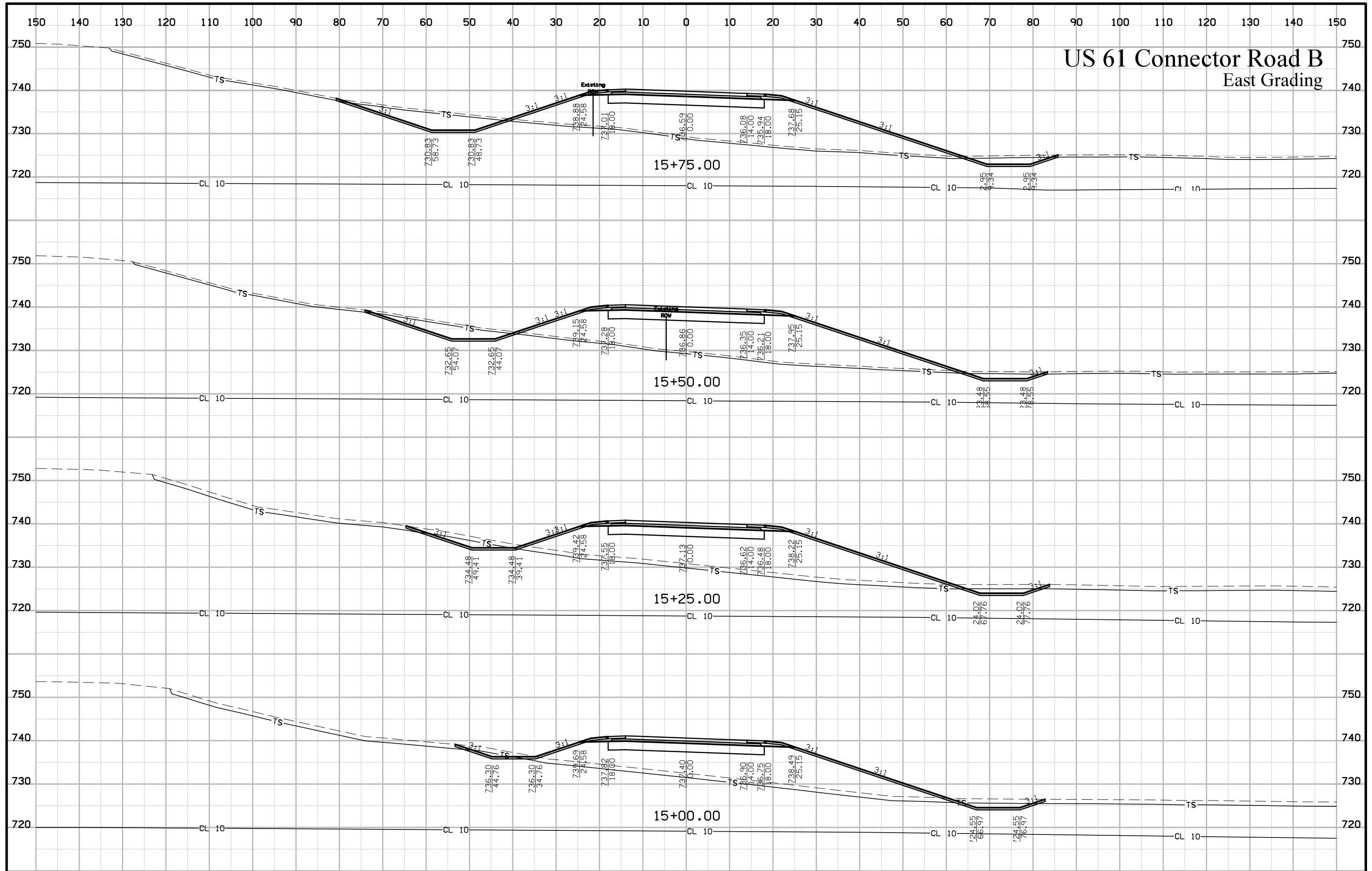


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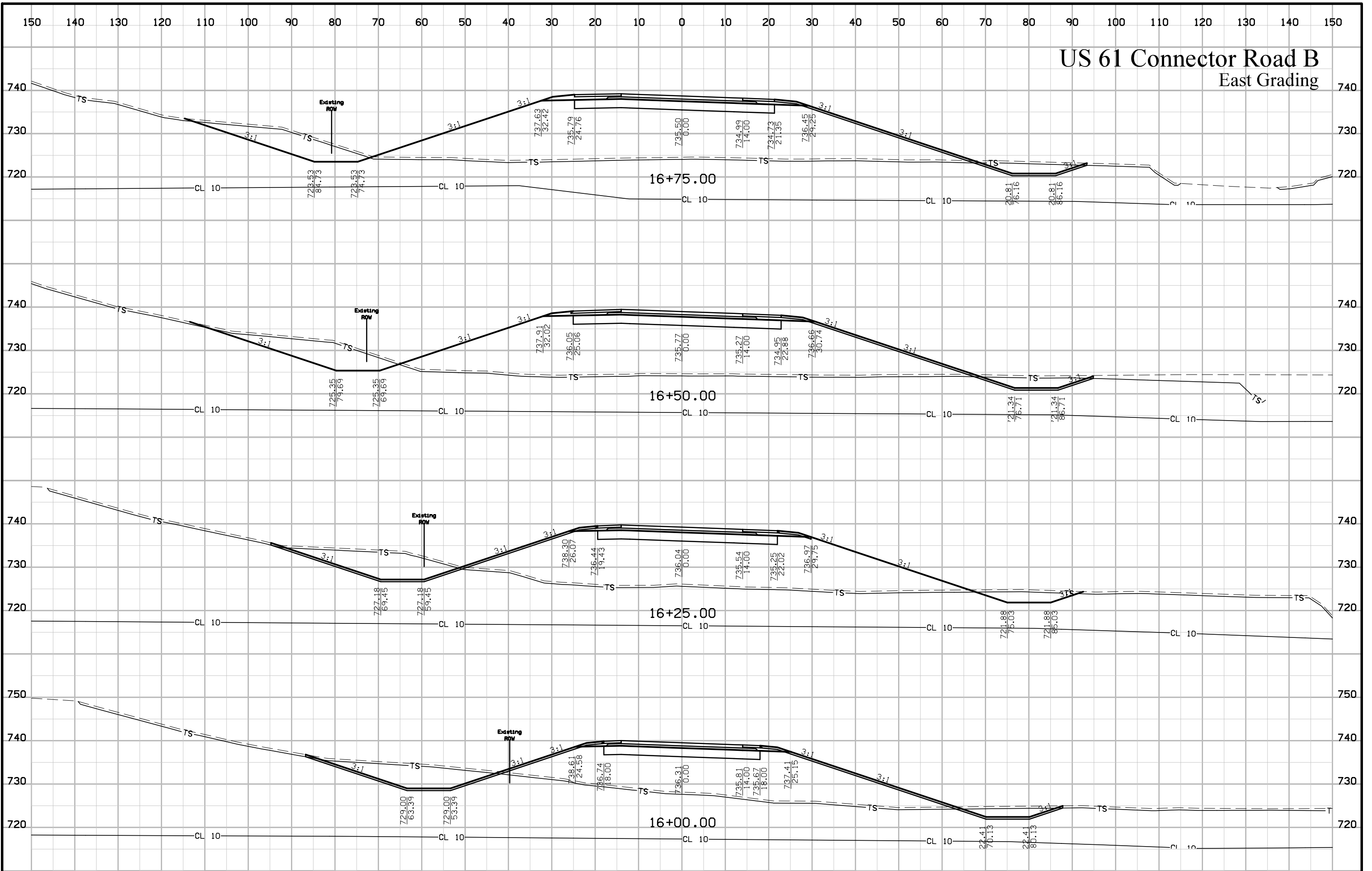
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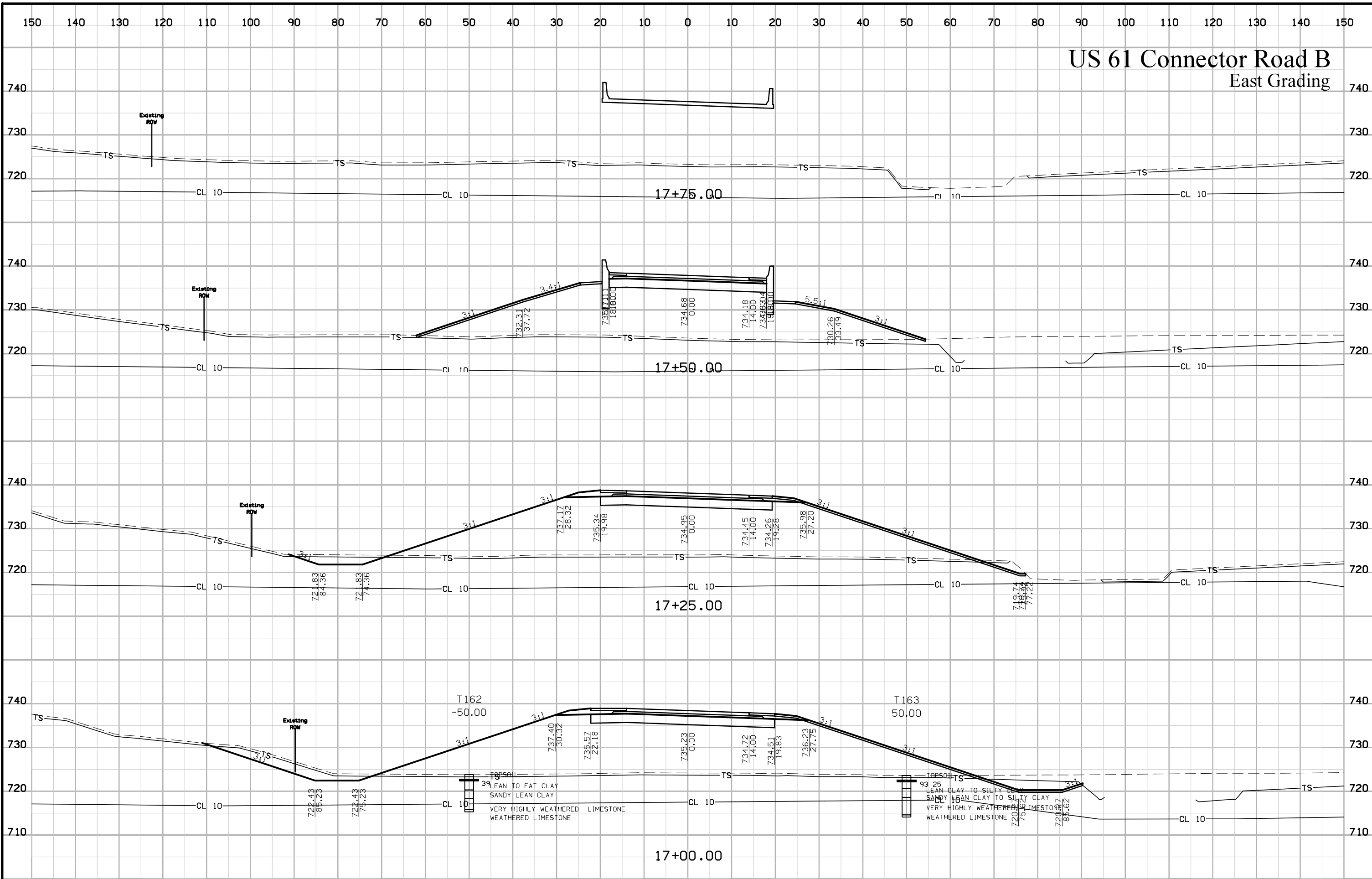
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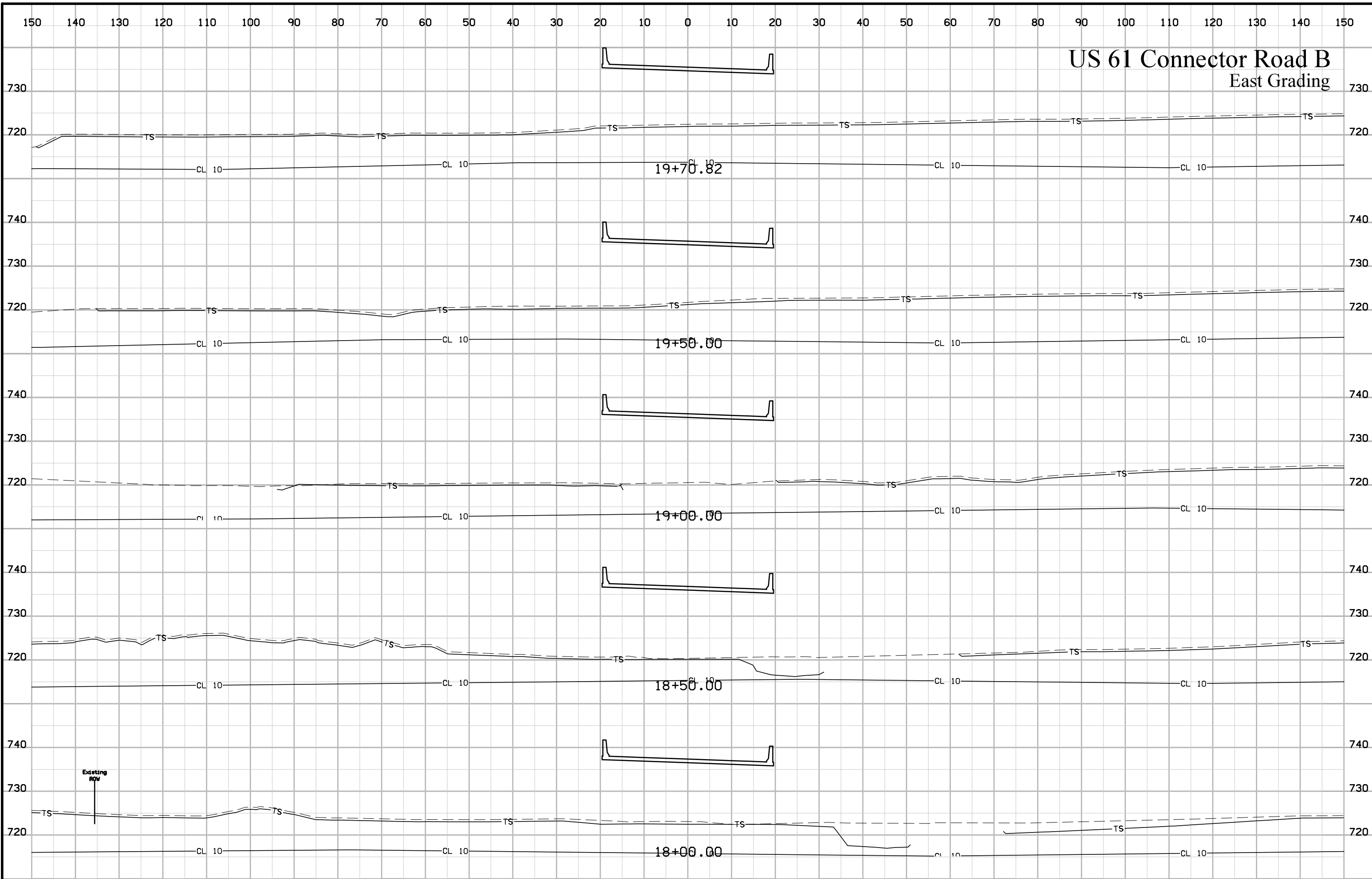


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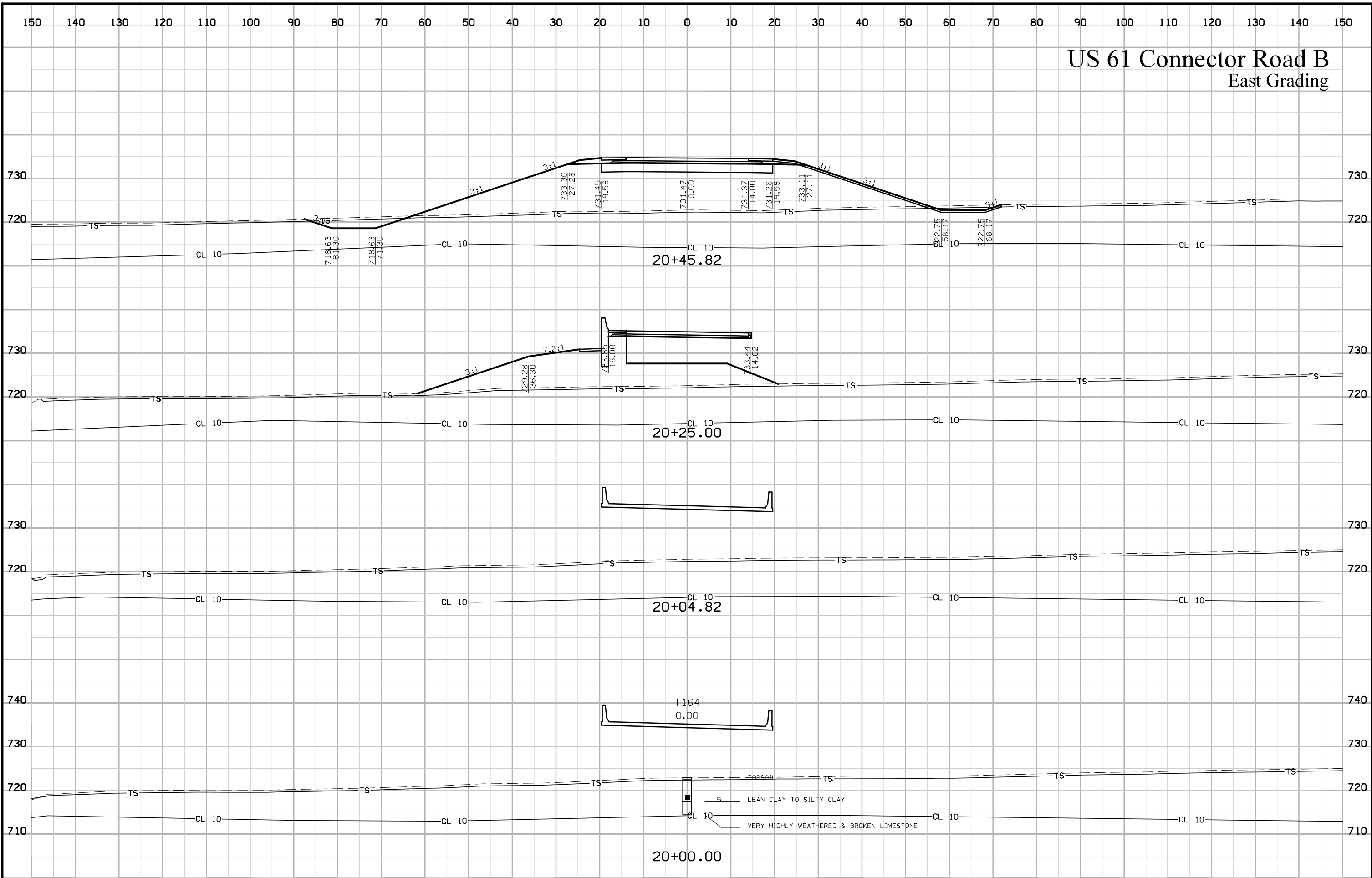


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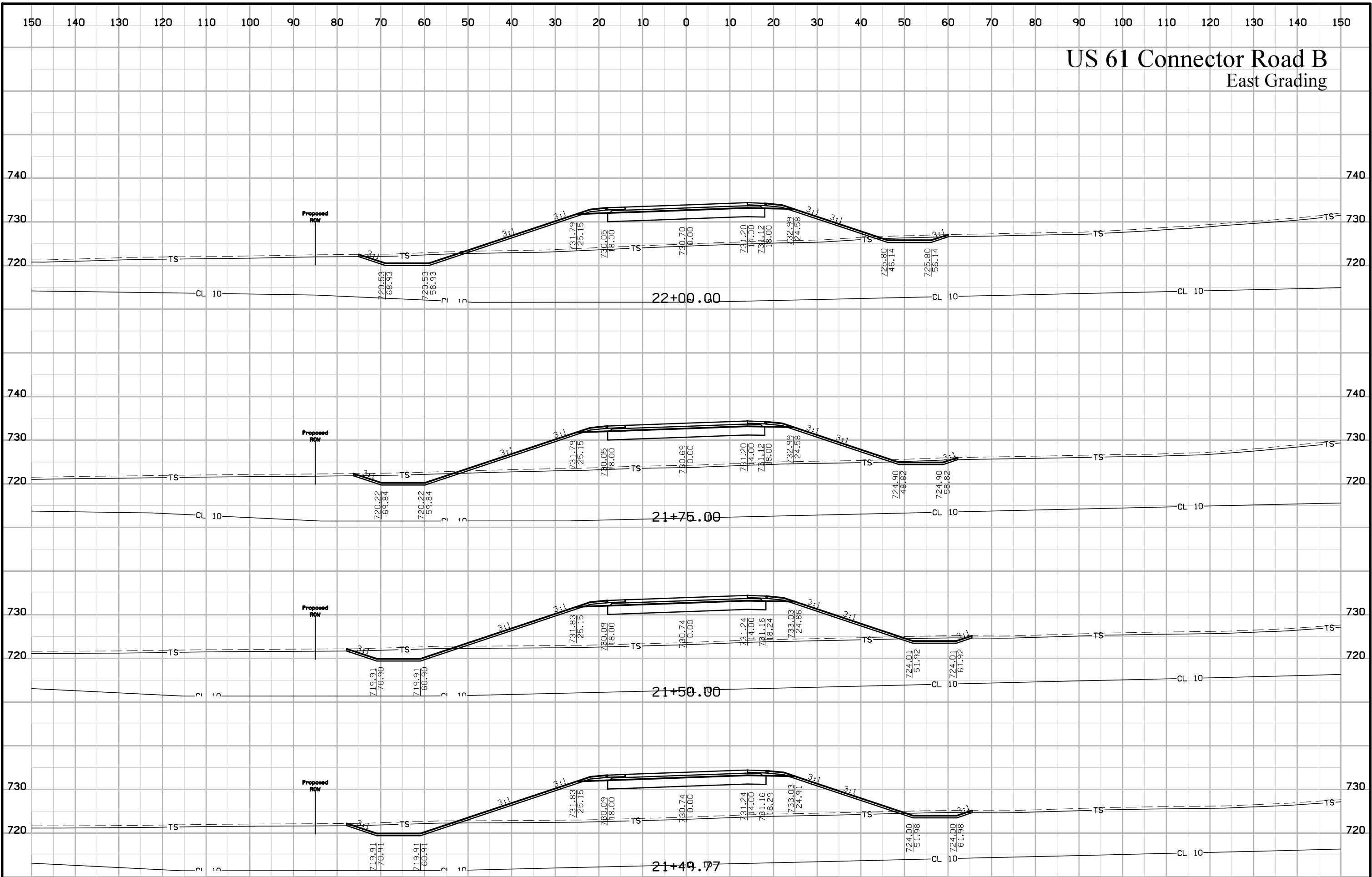
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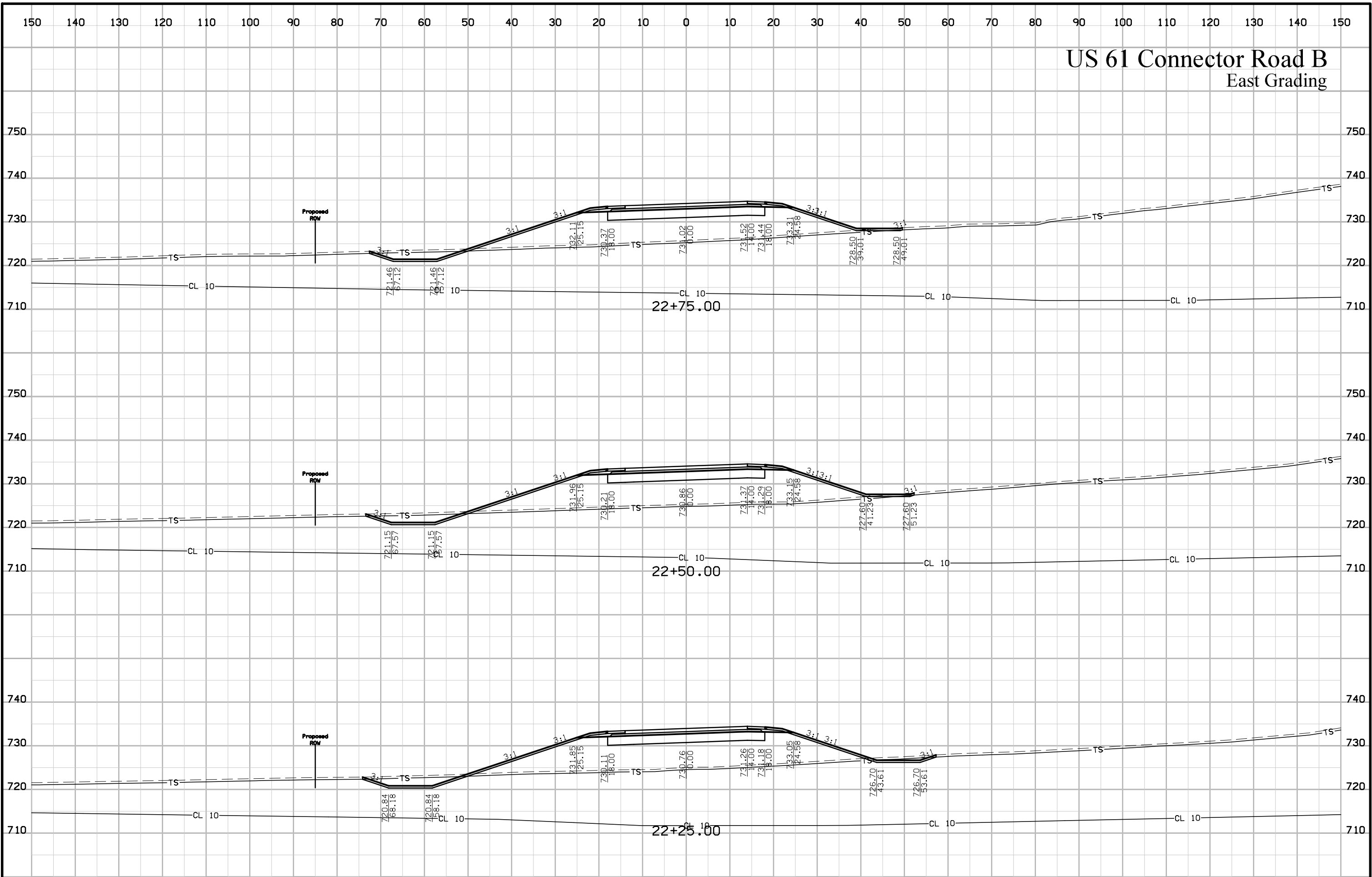
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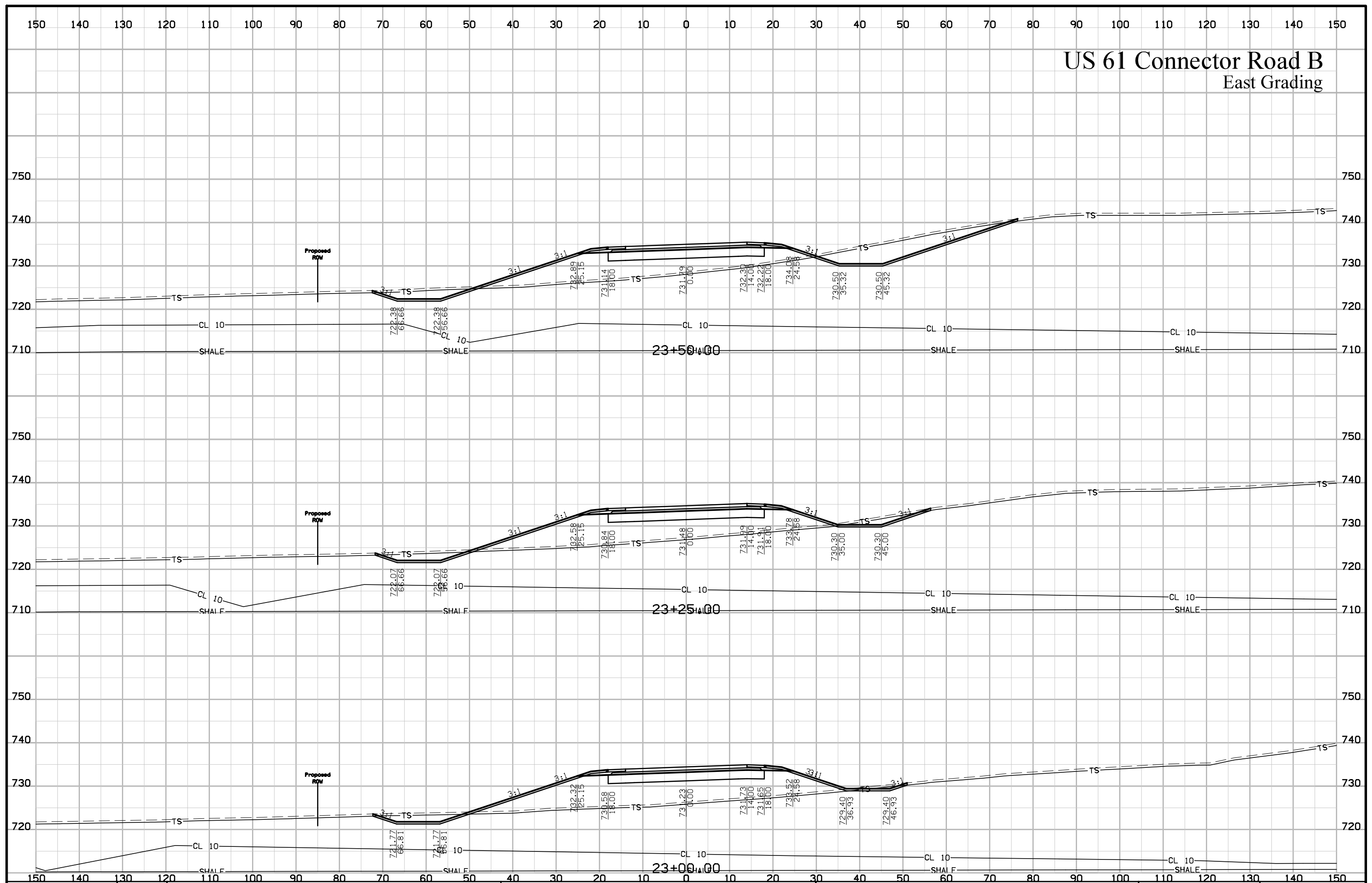


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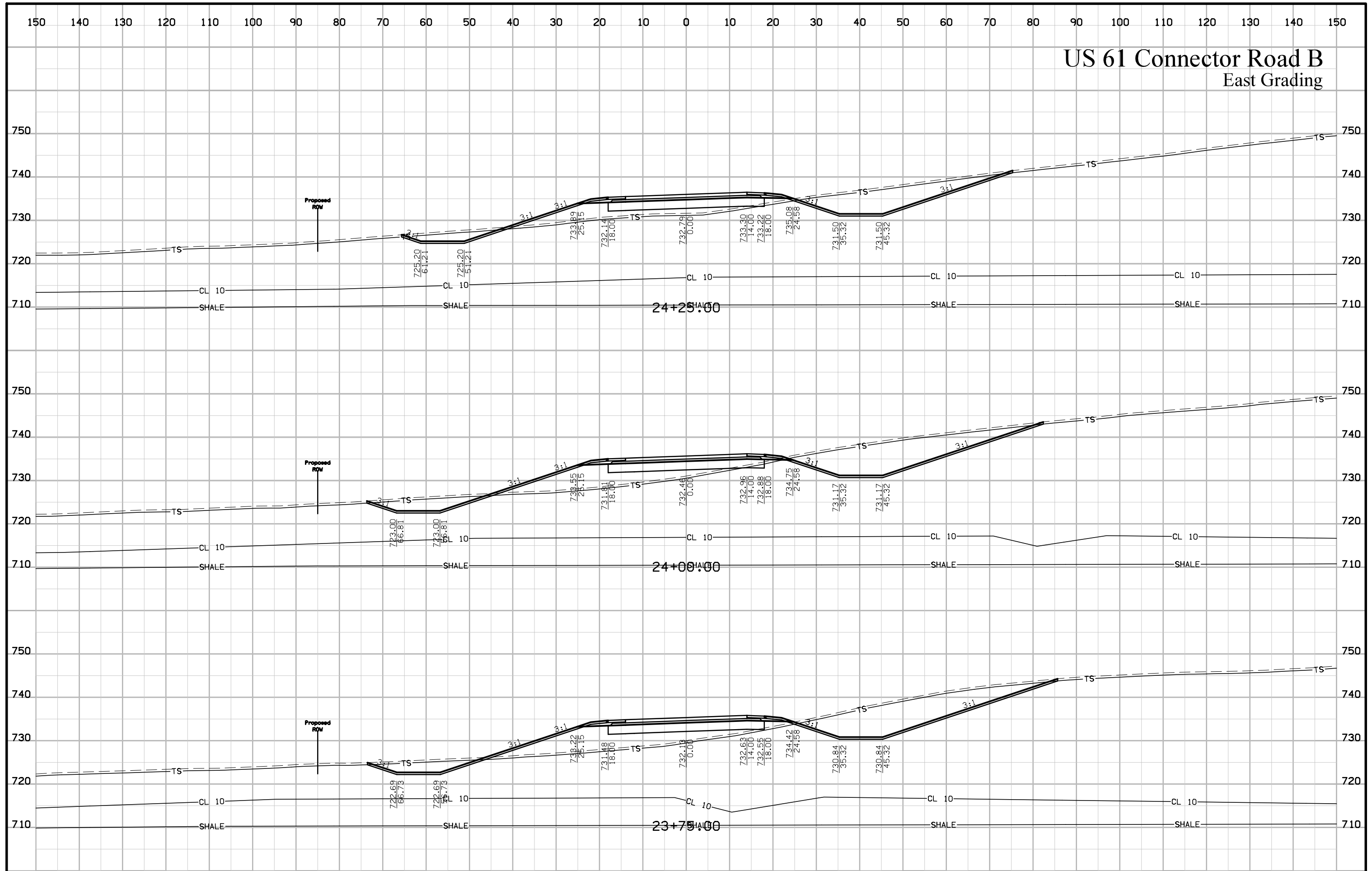


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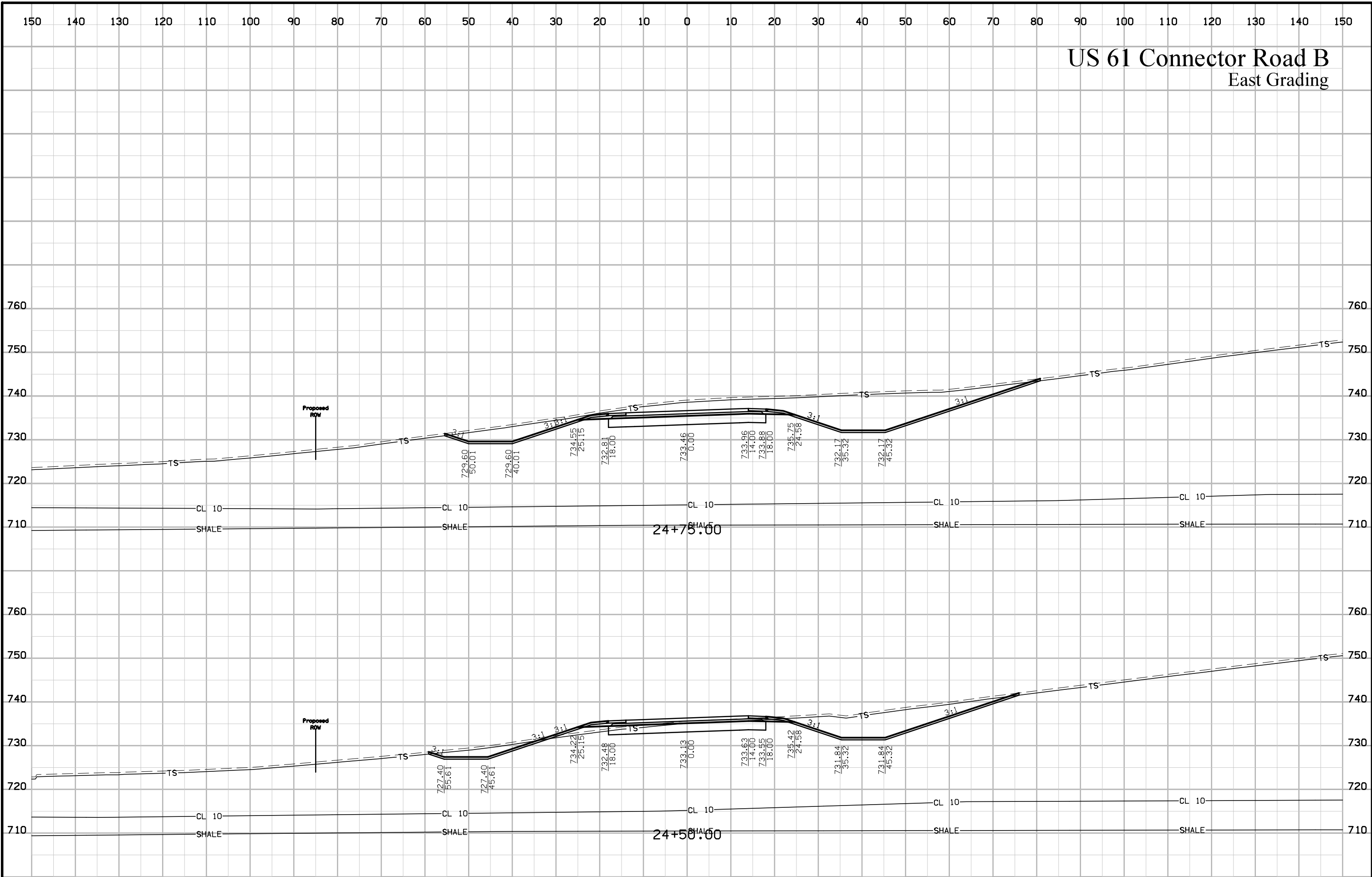
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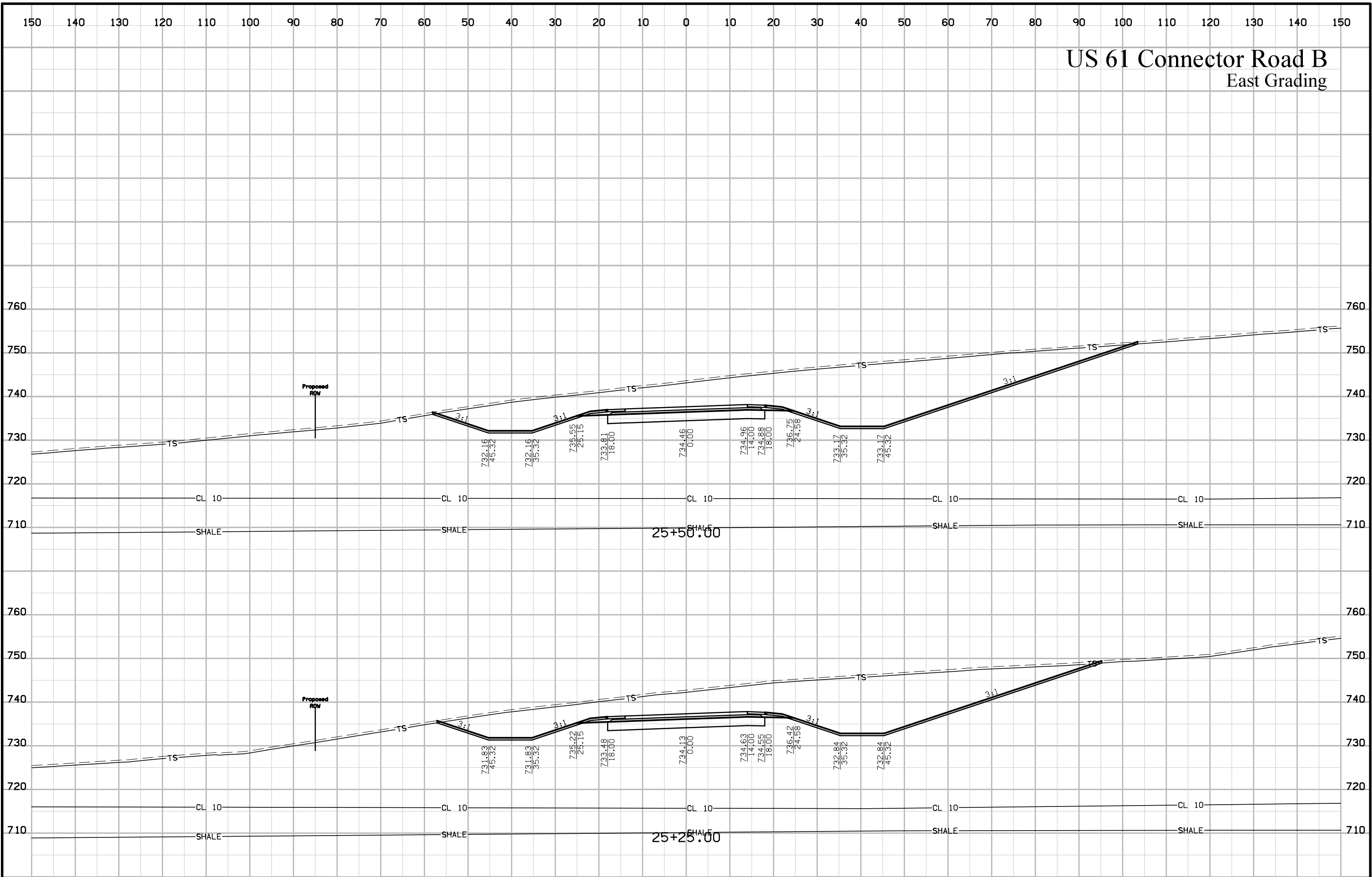


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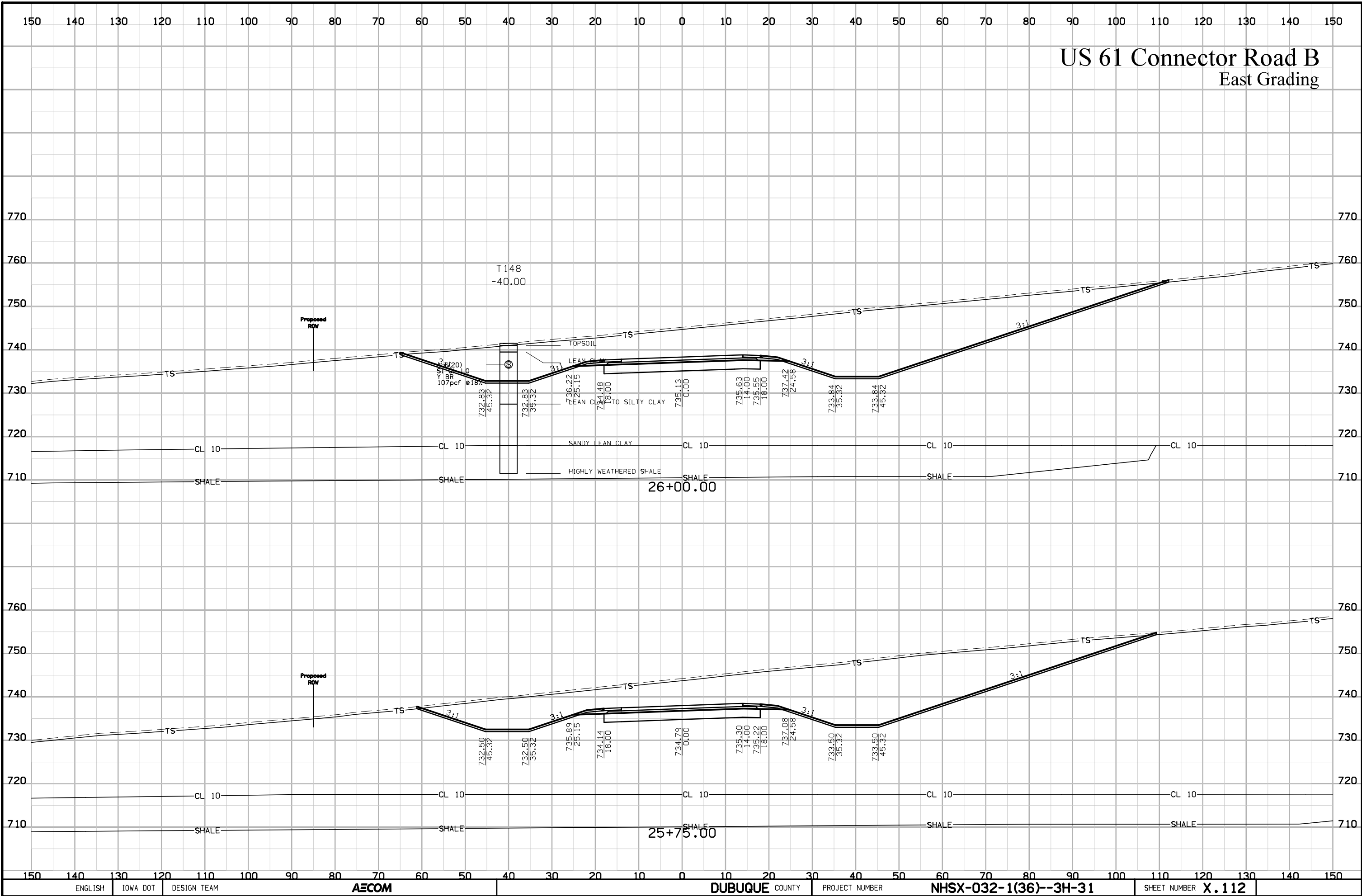


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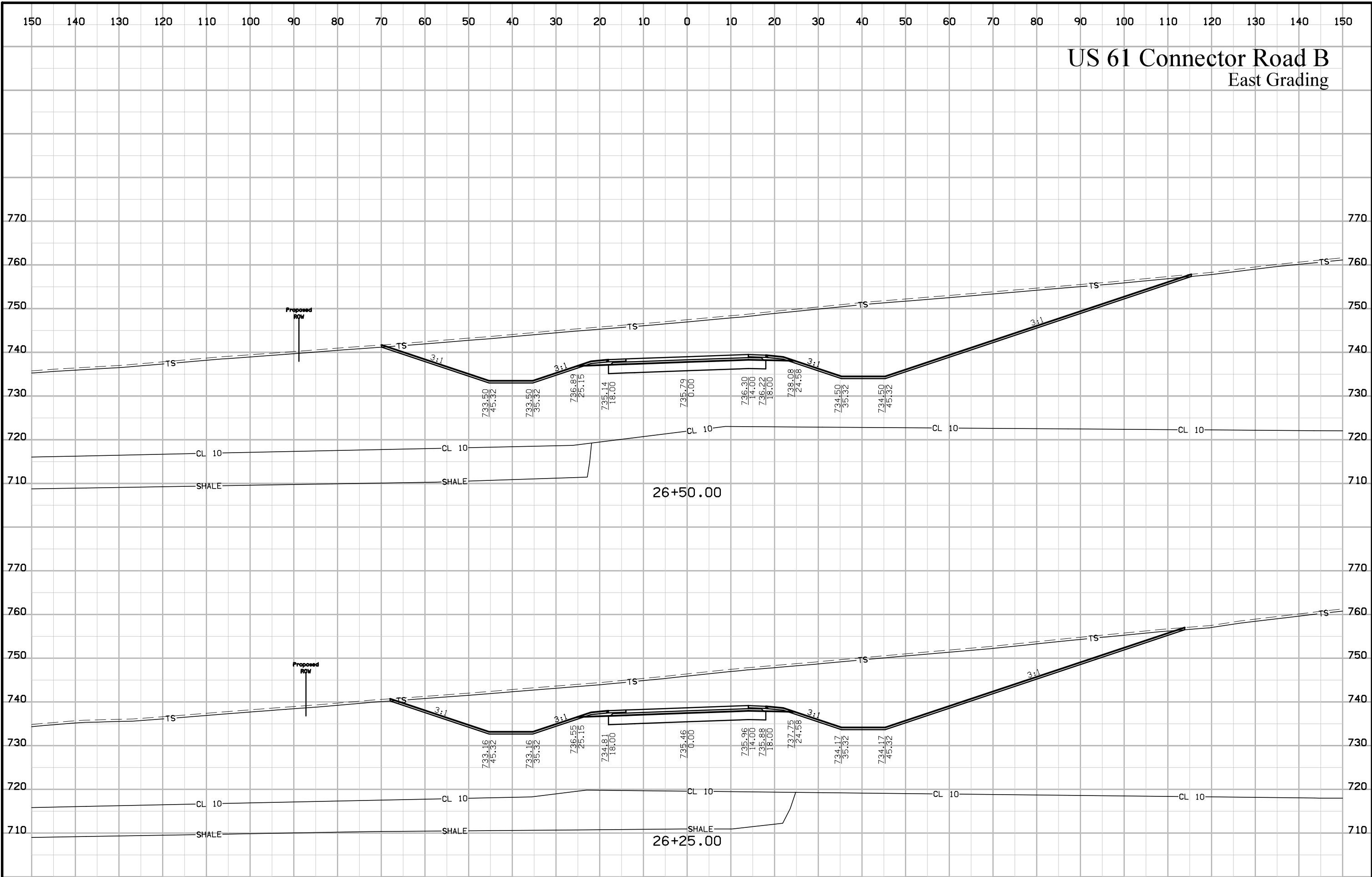
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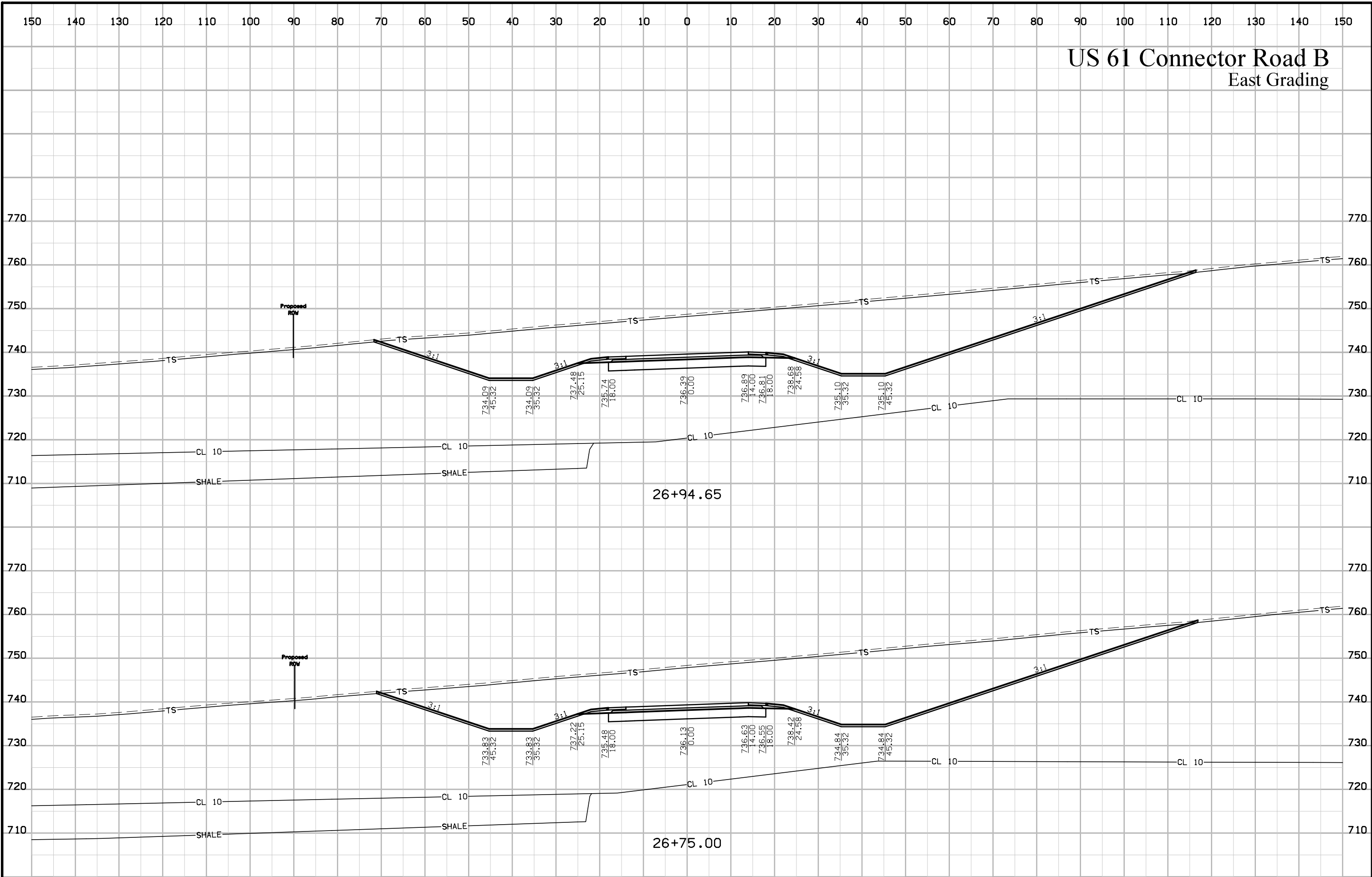
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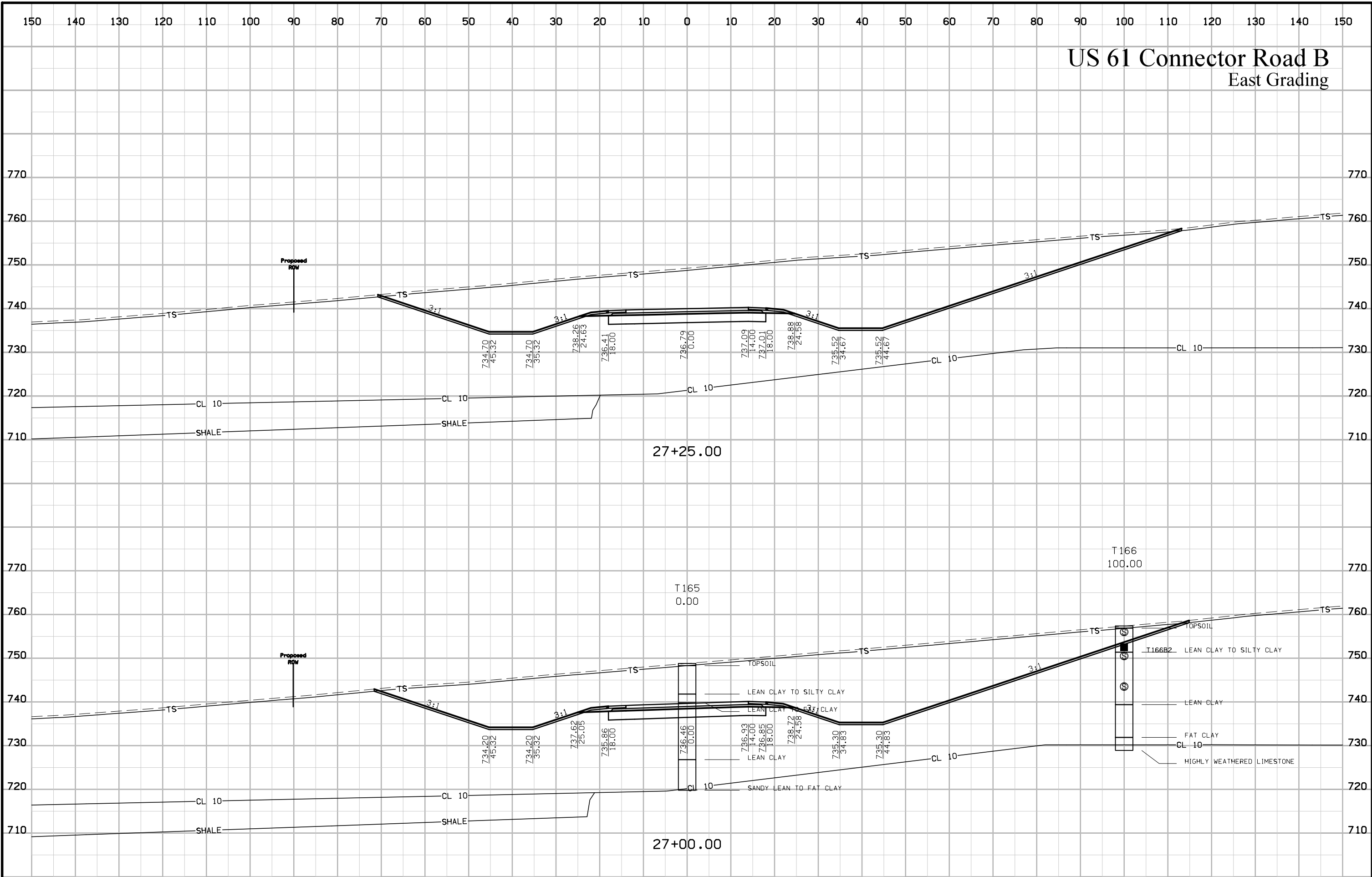
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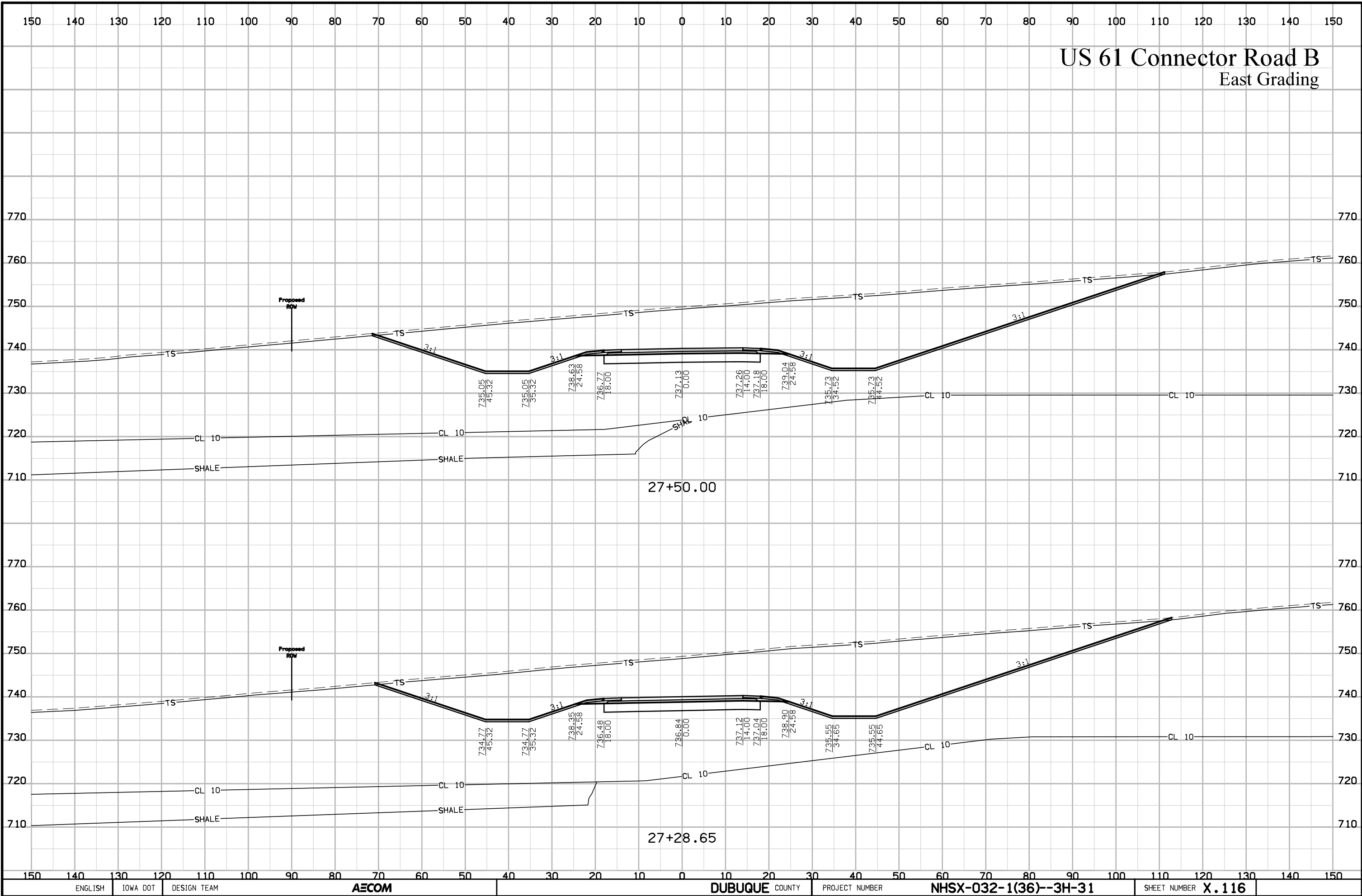
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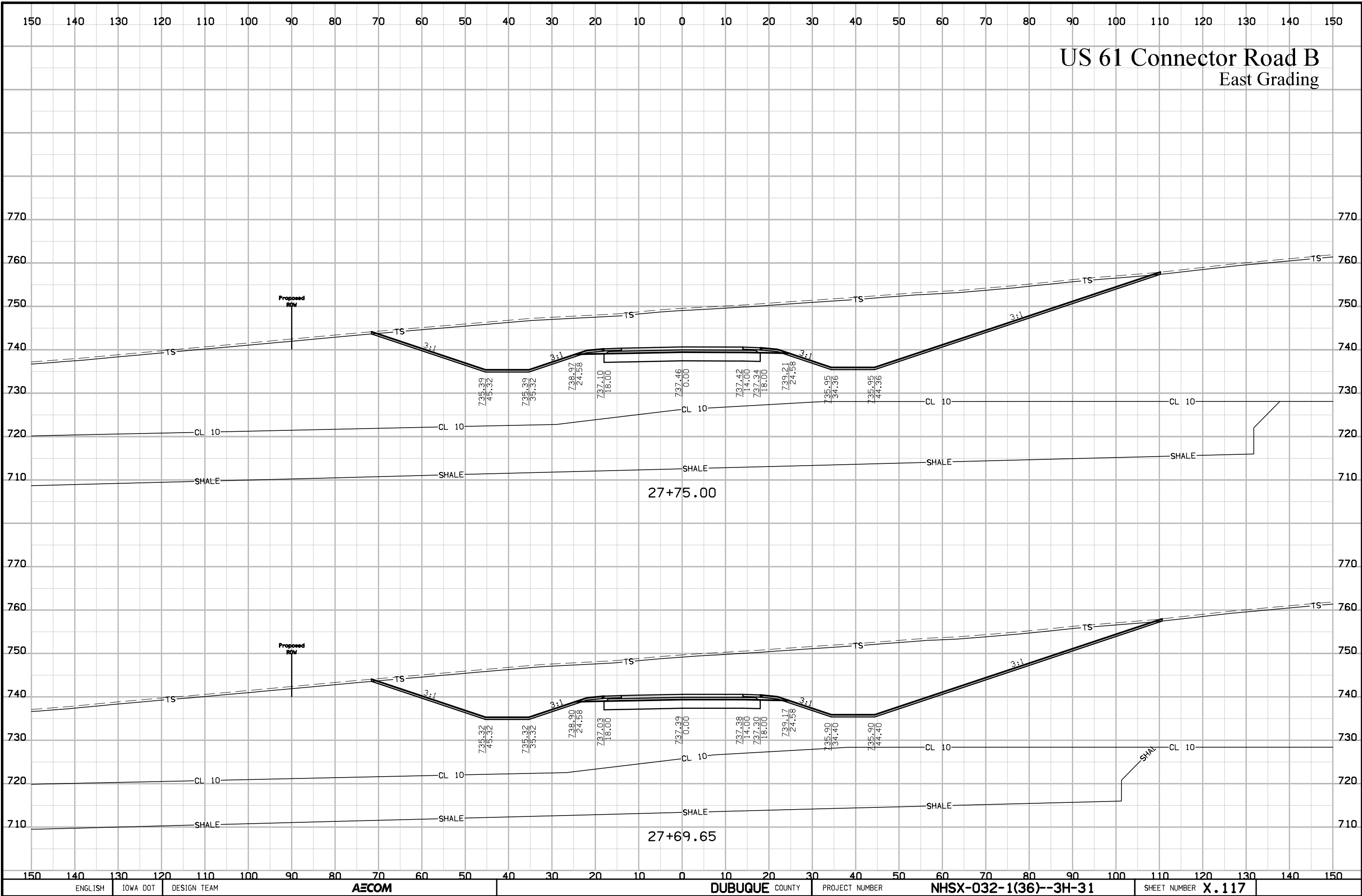


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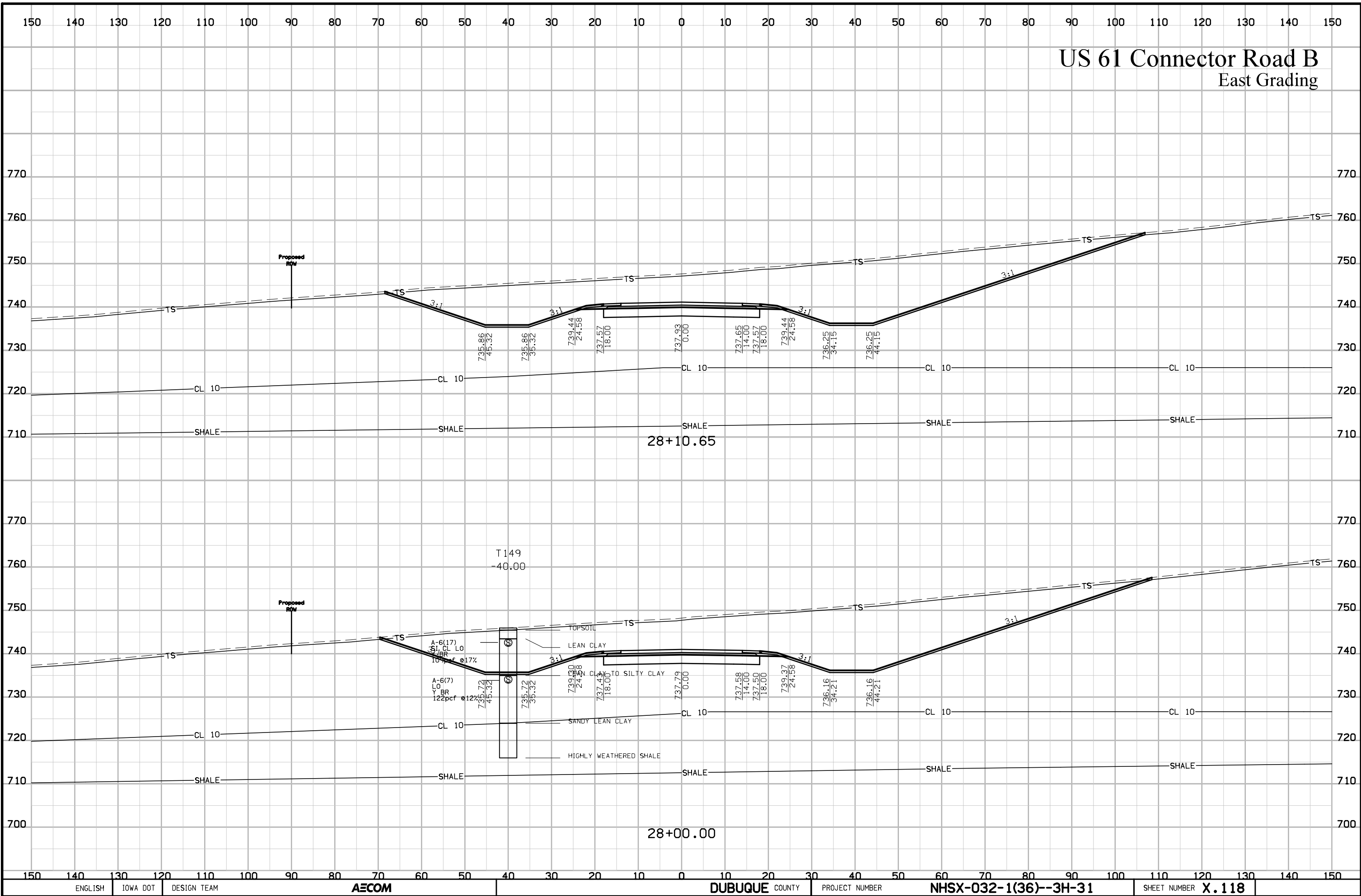


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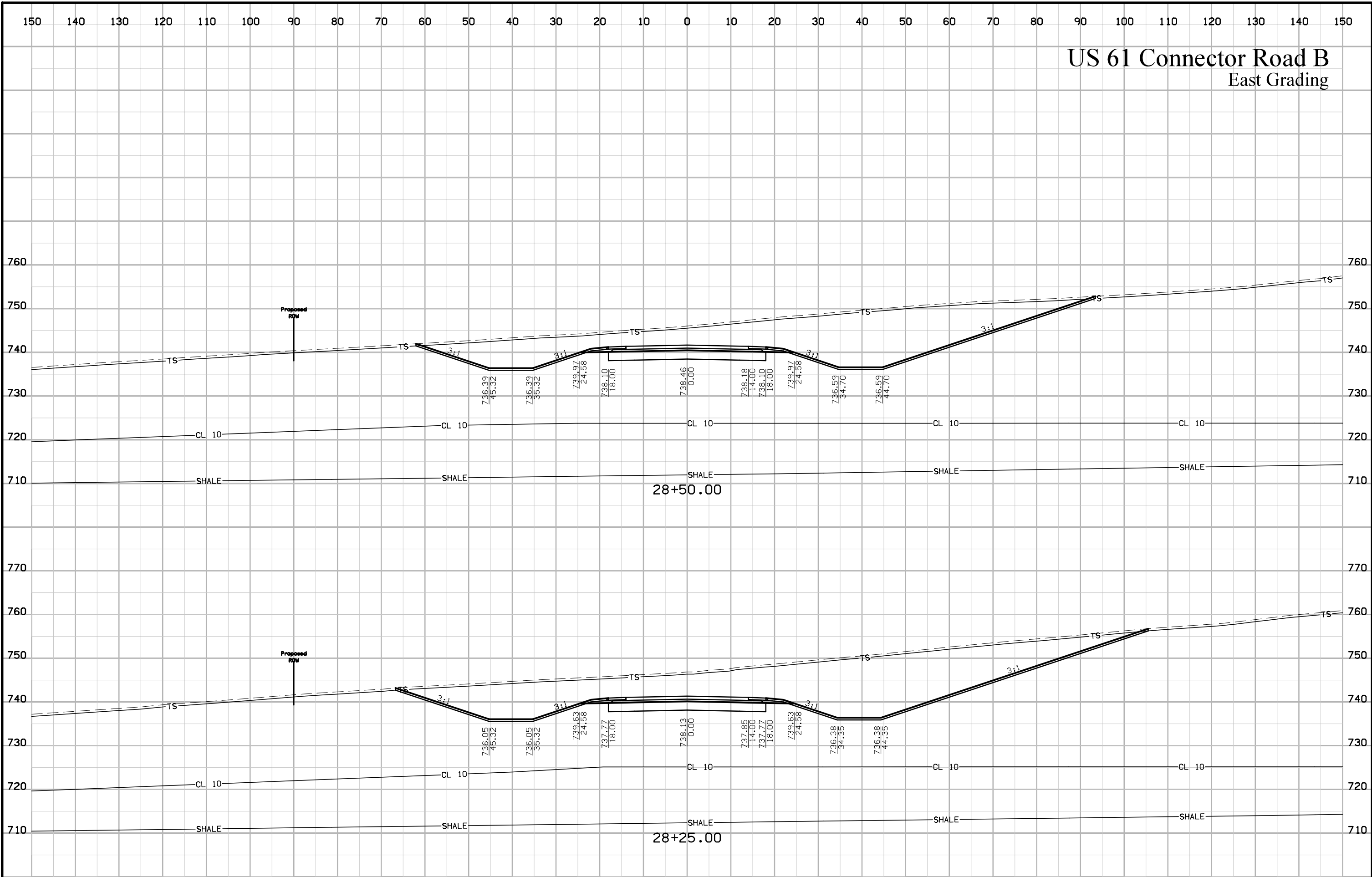
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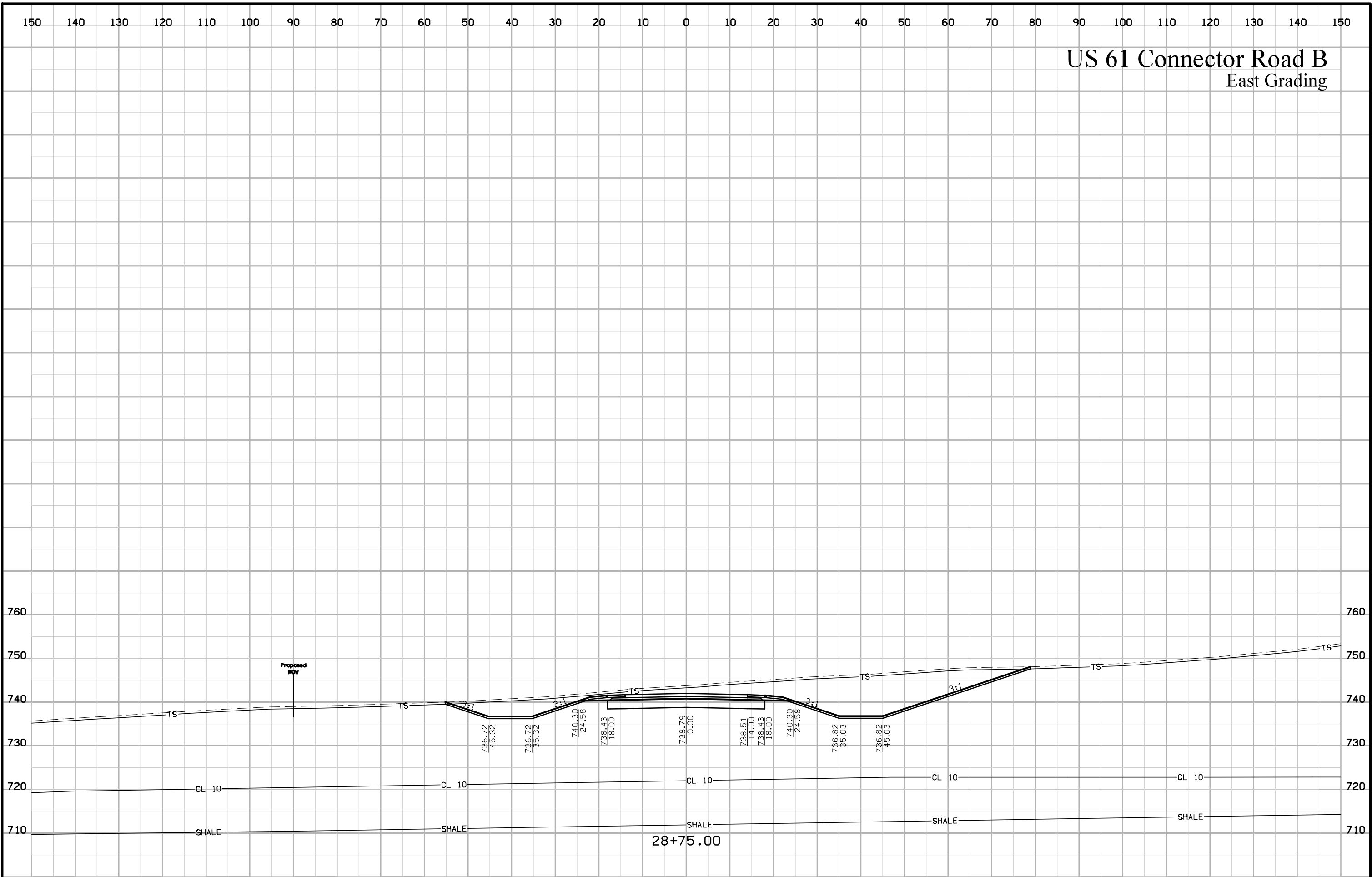


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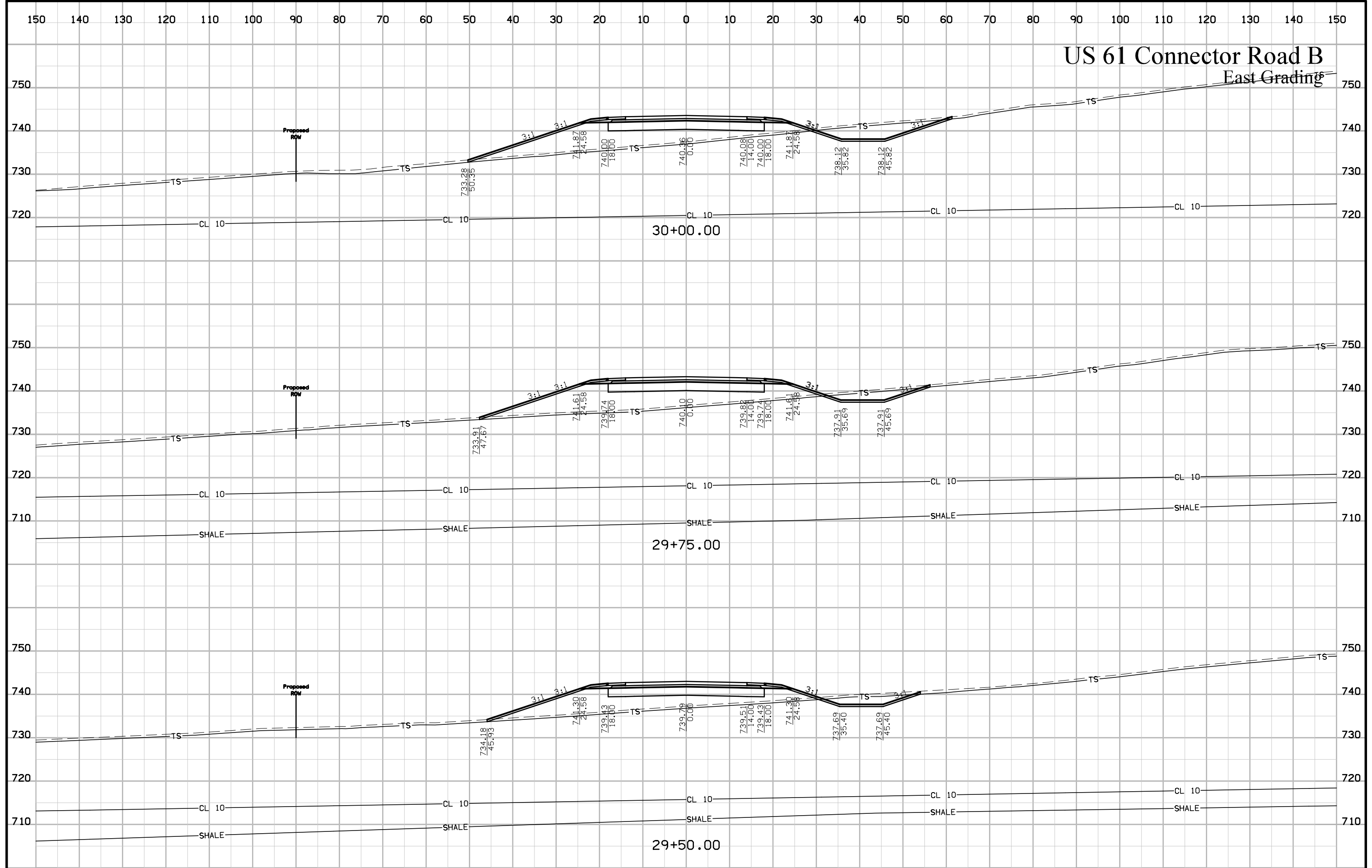
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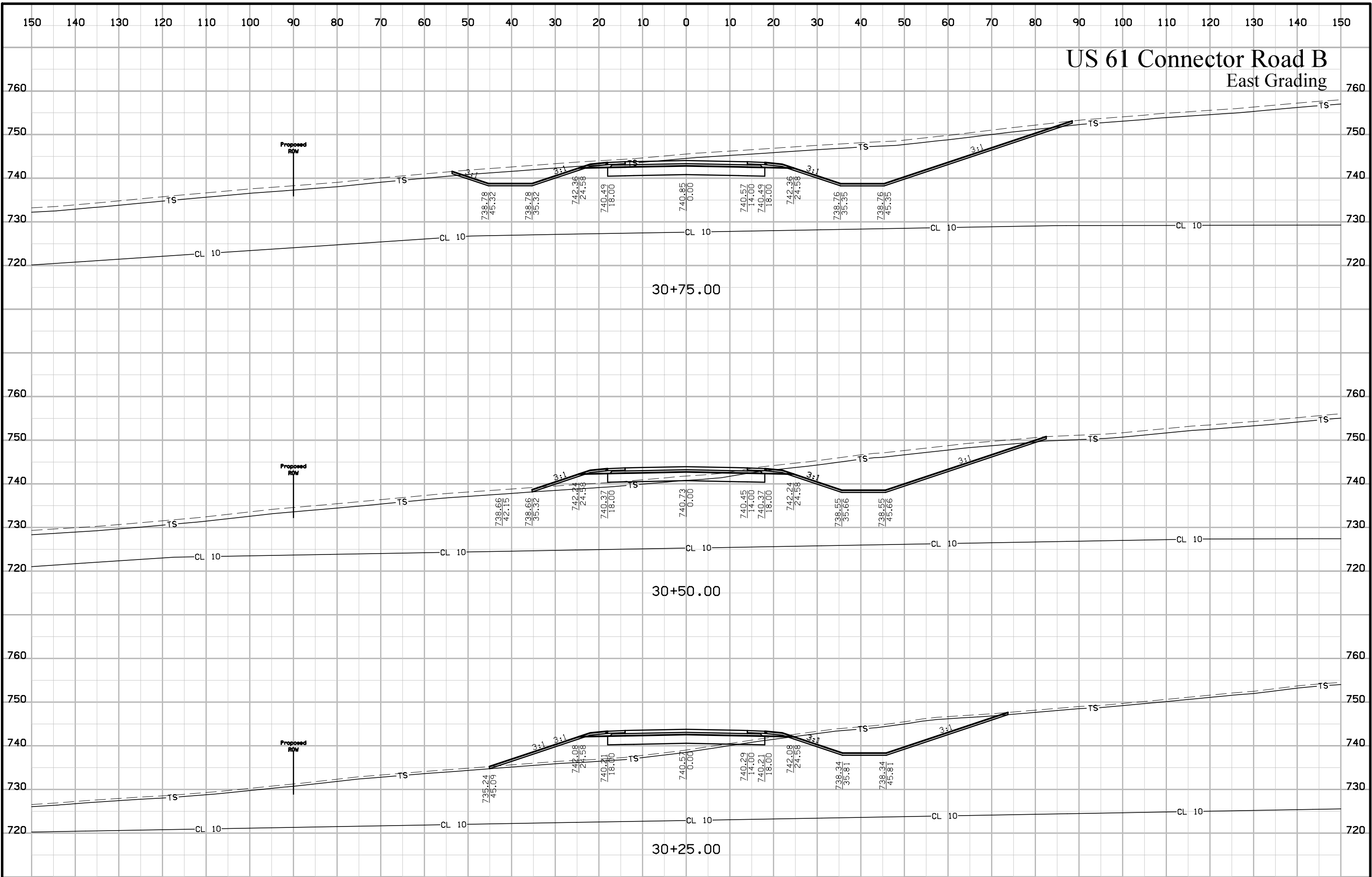


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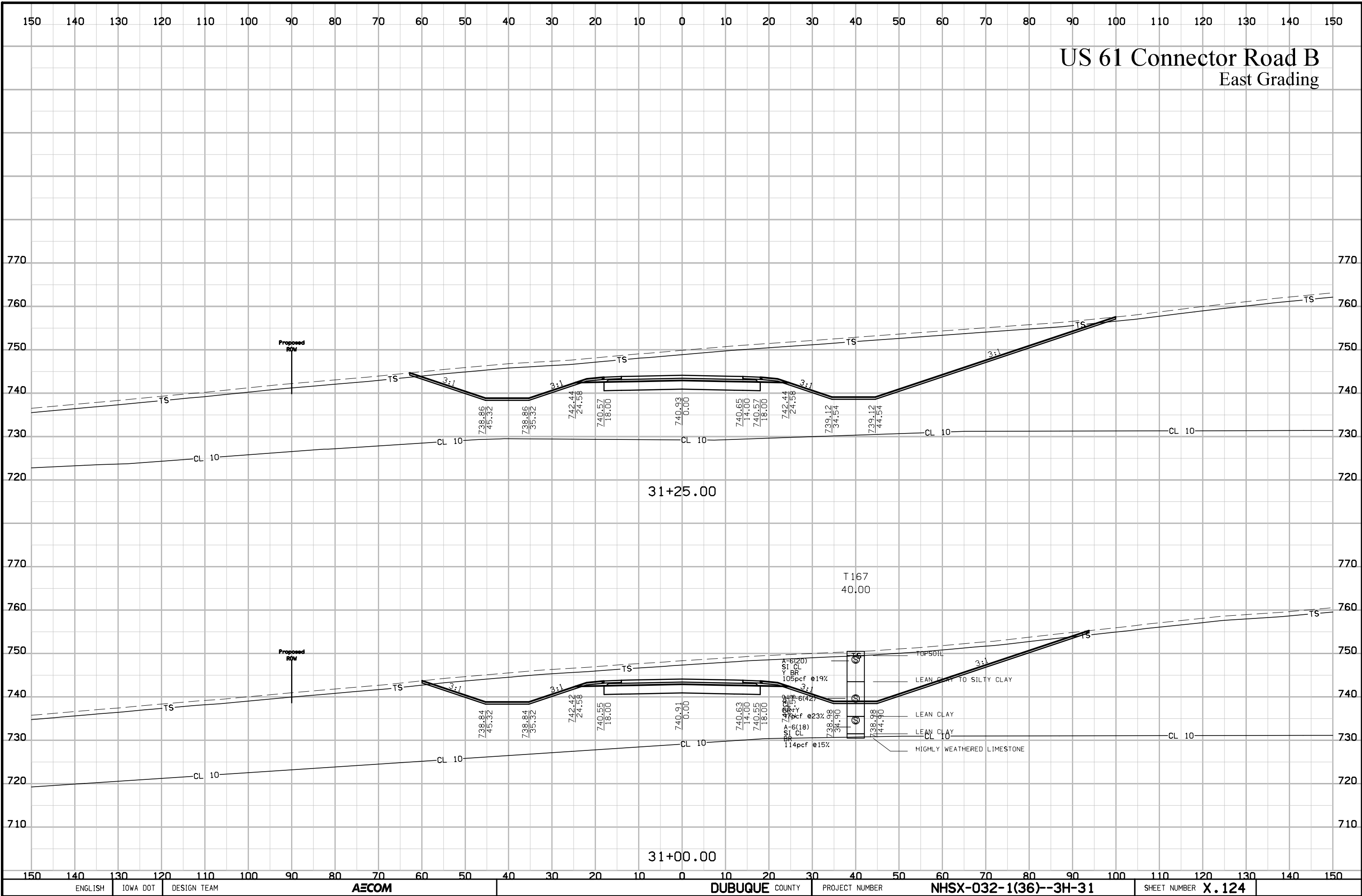
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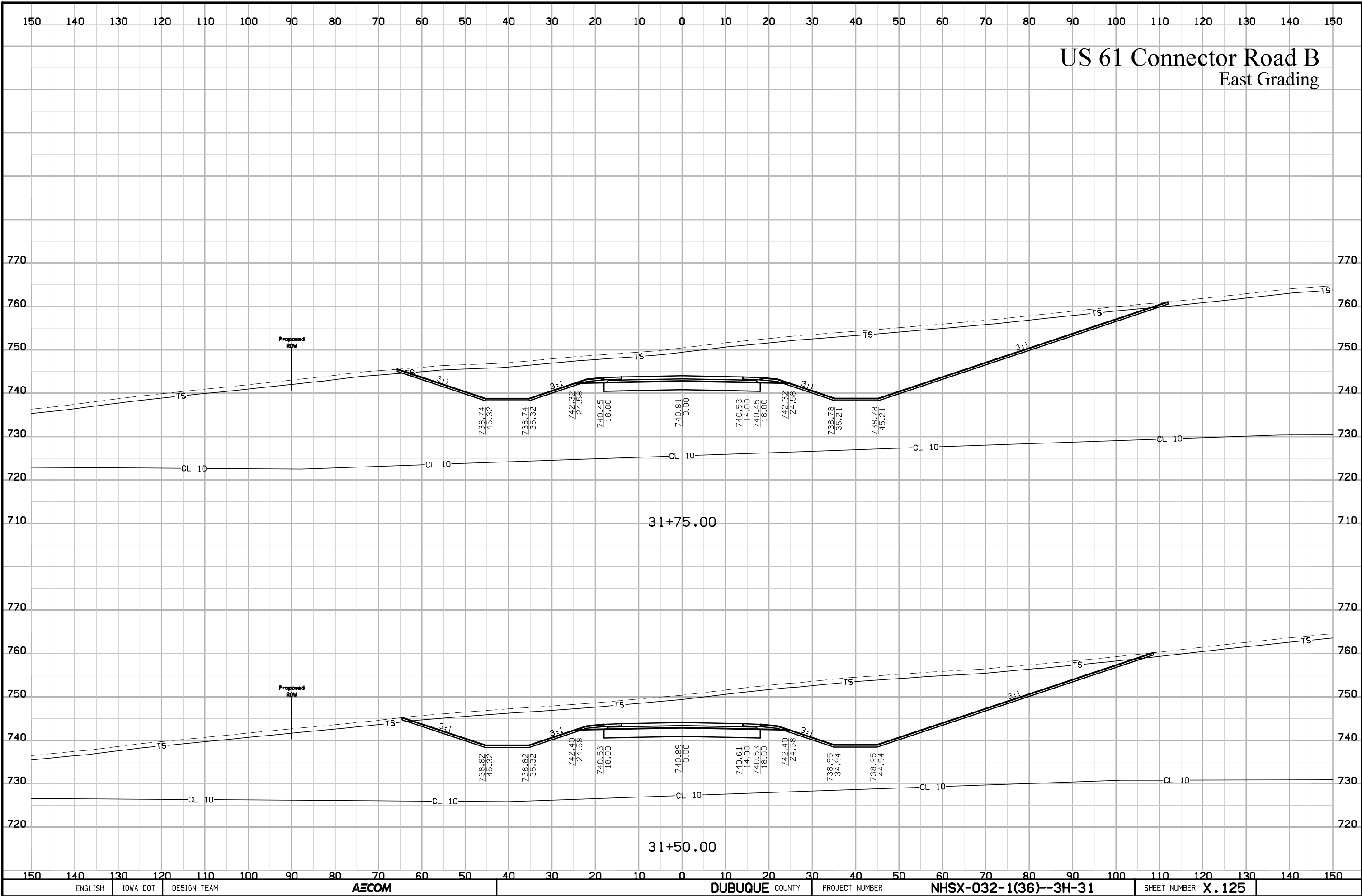


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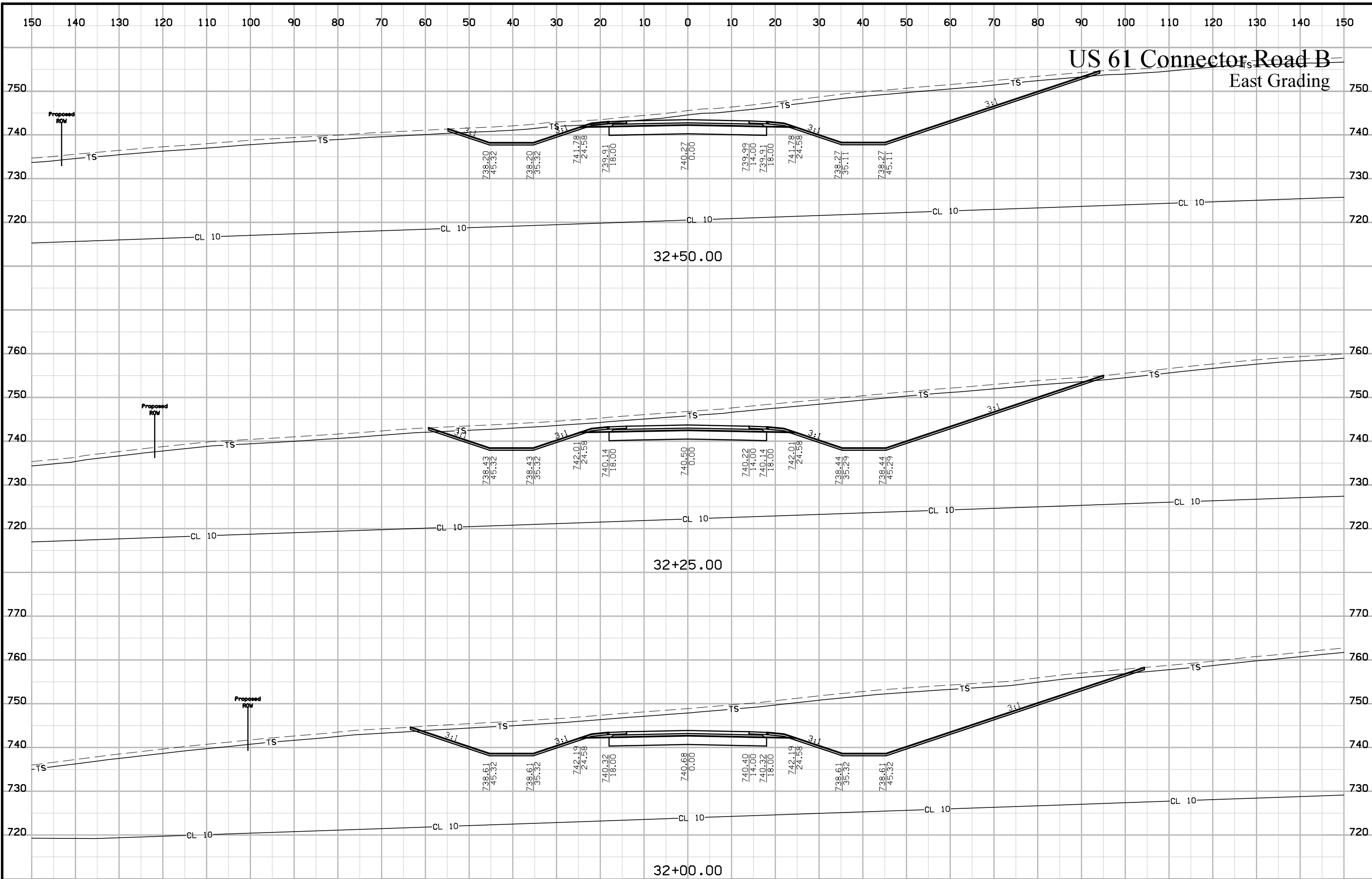


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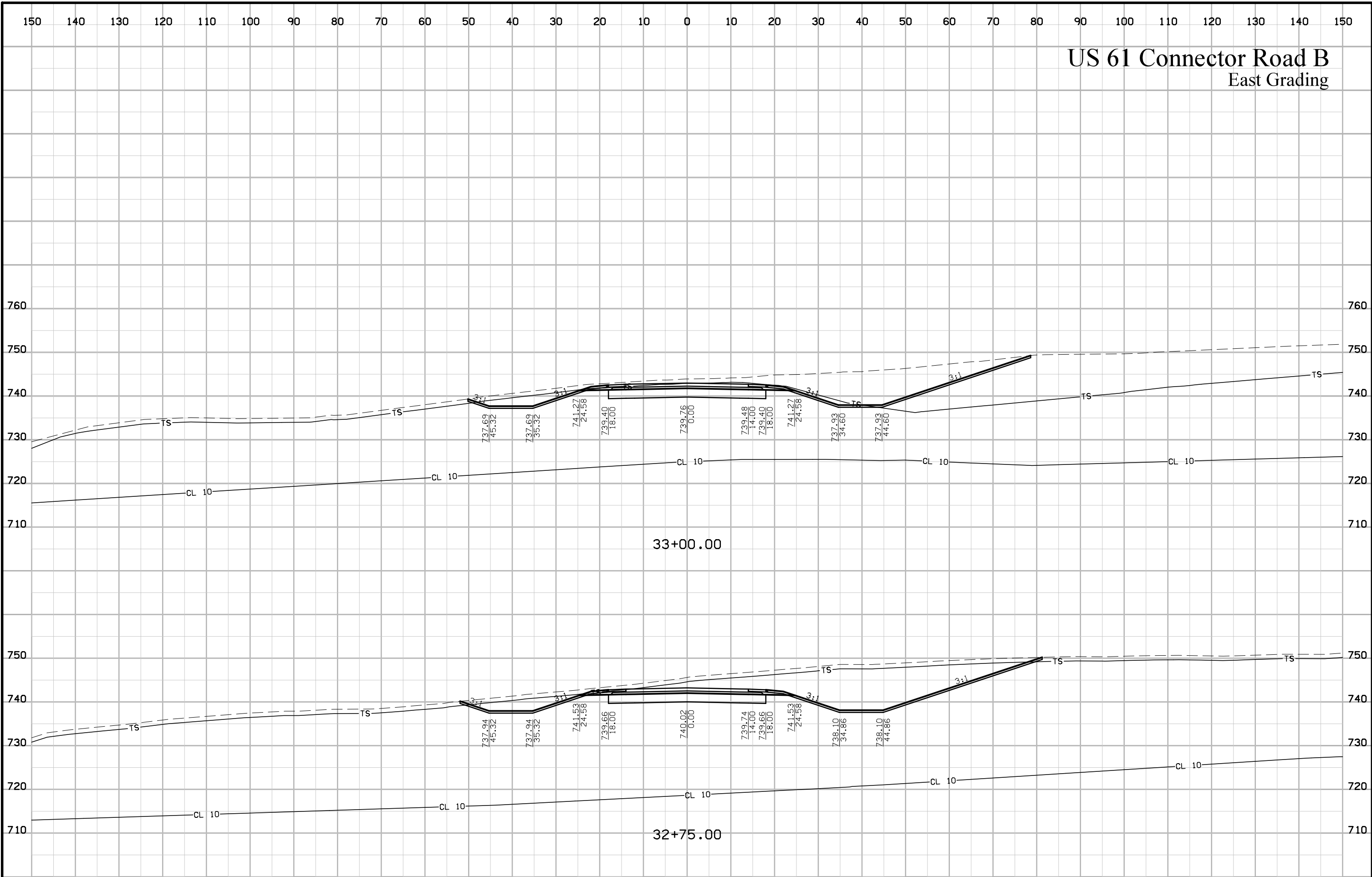


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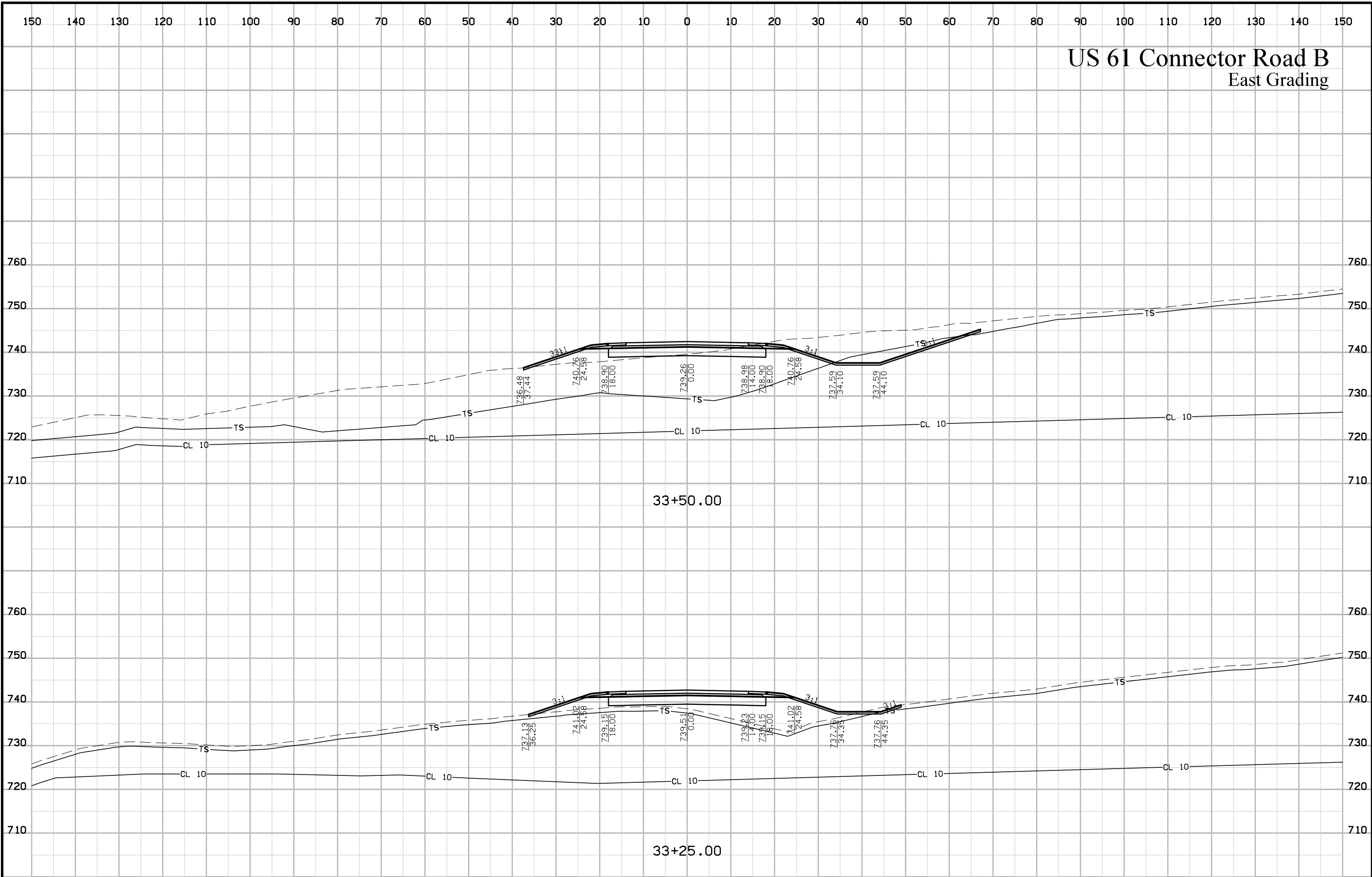
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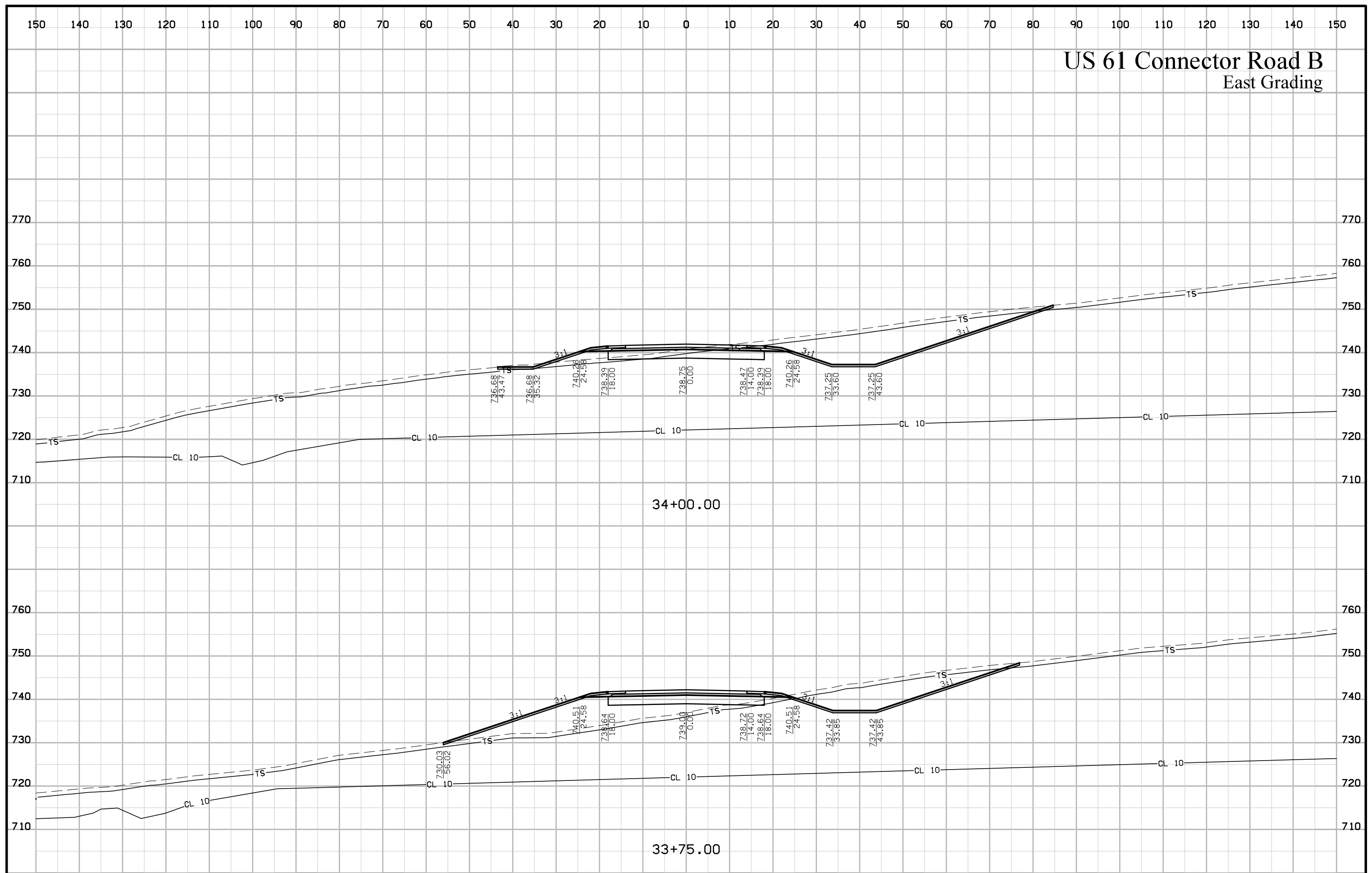
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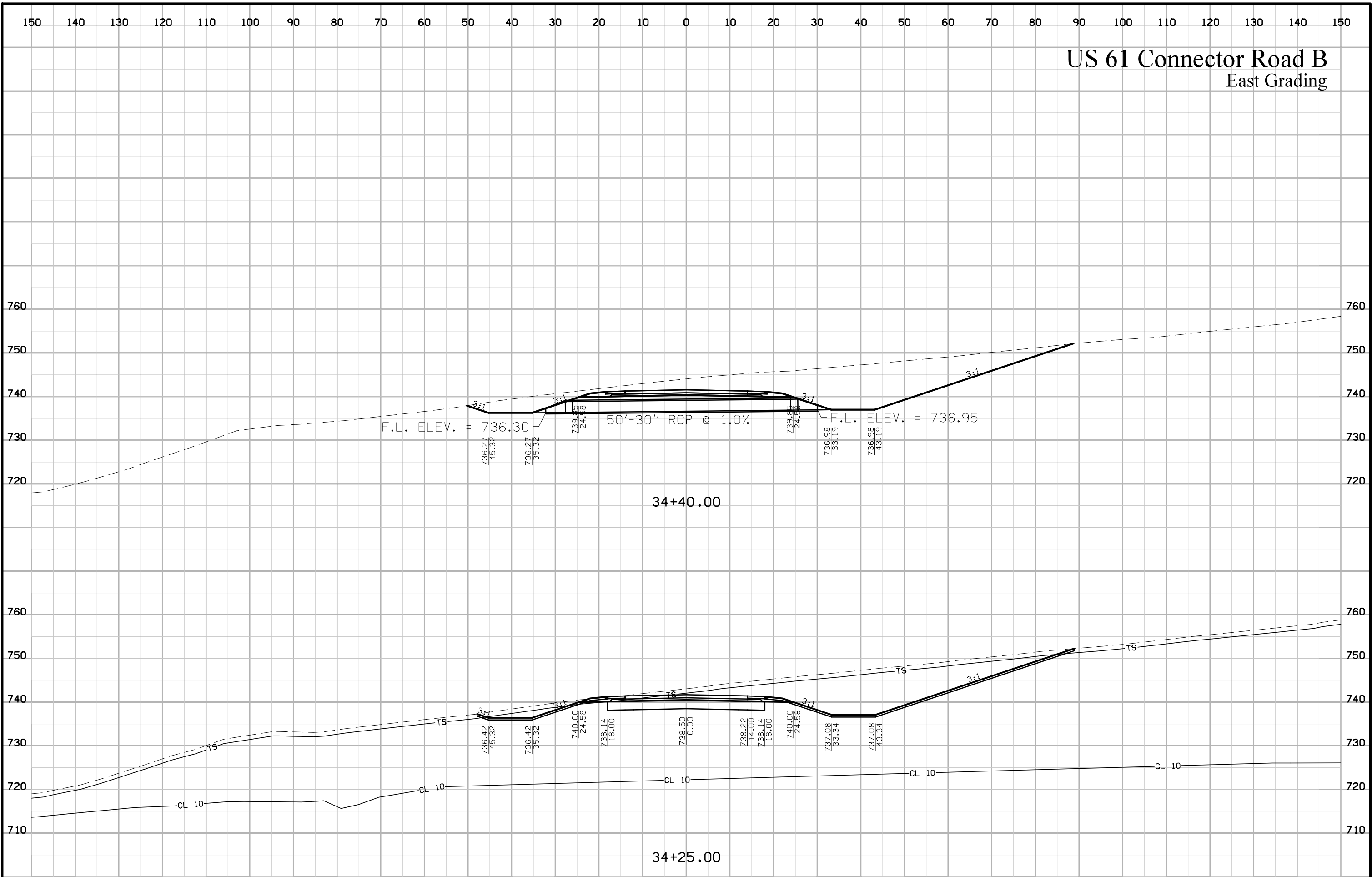
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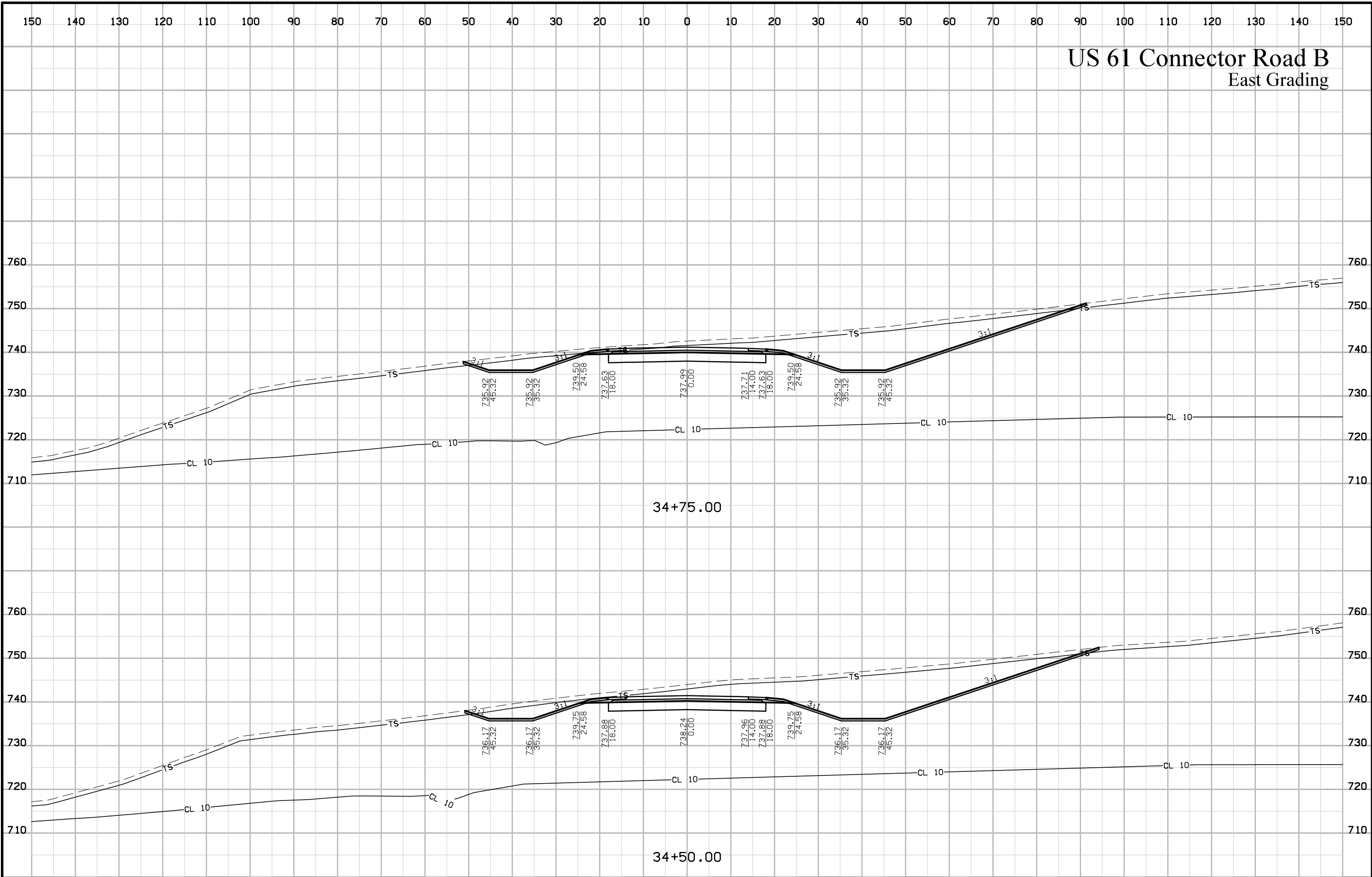


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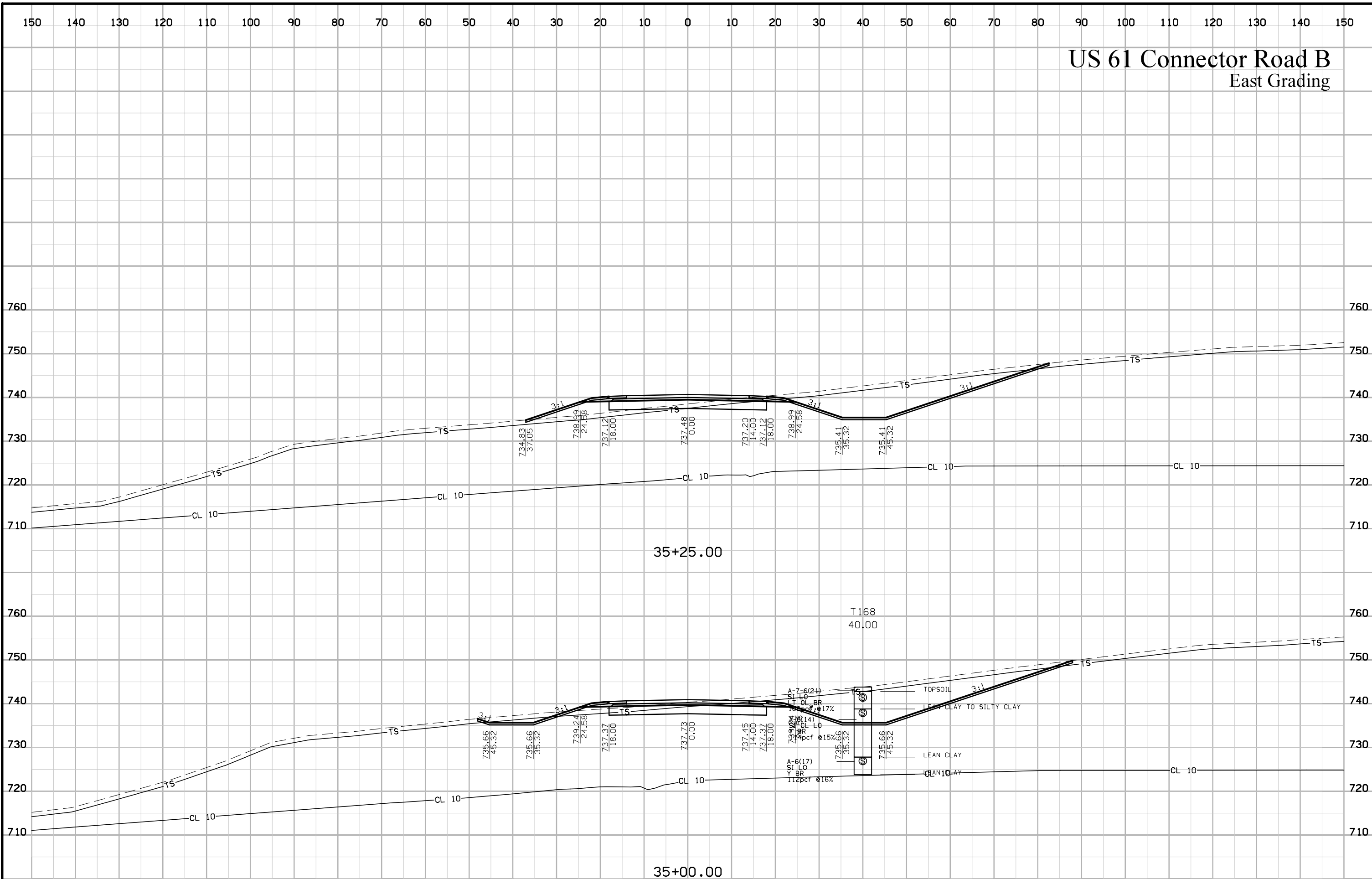
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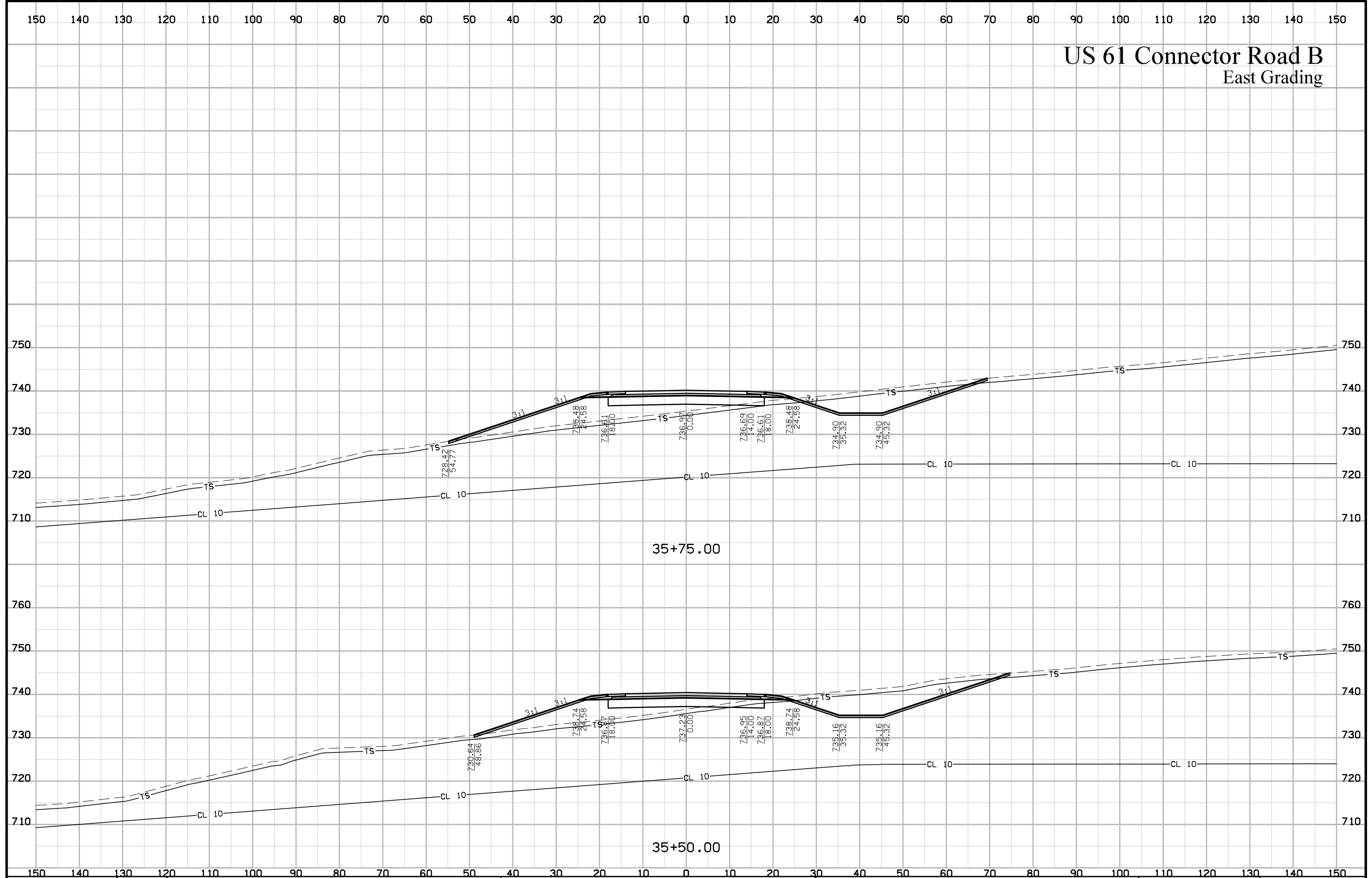


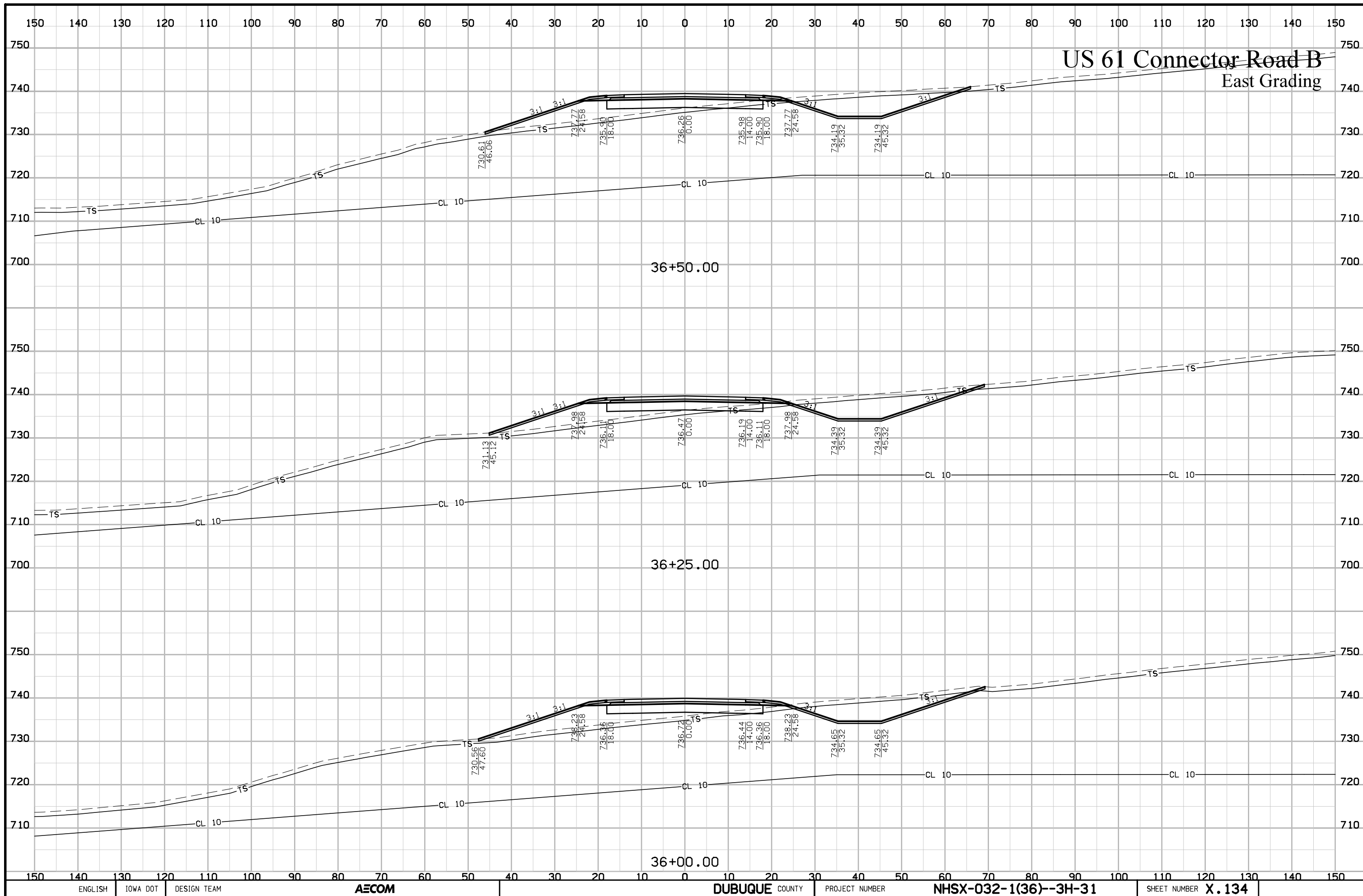
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US 61 Connector Road B

East Grading

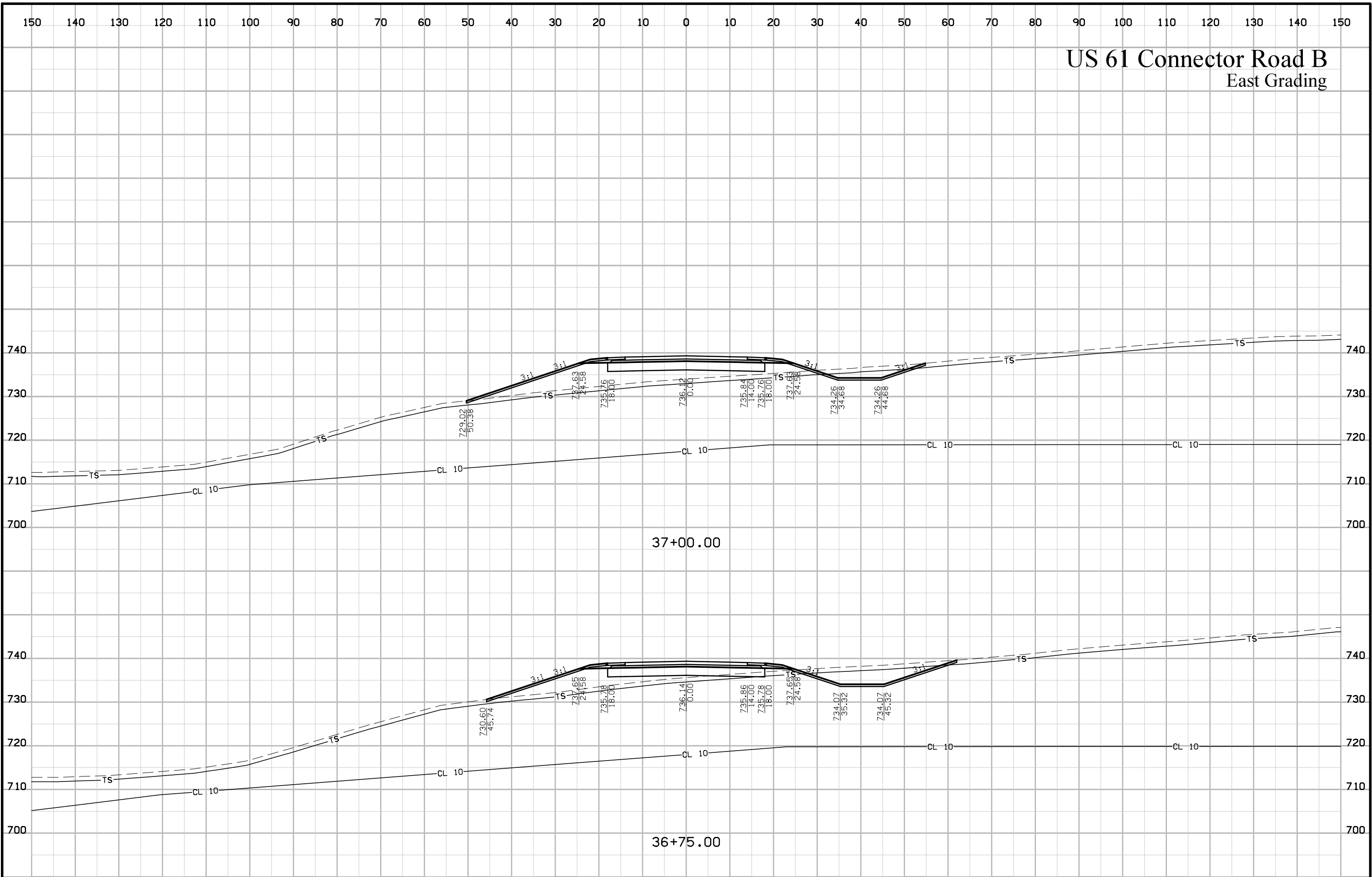




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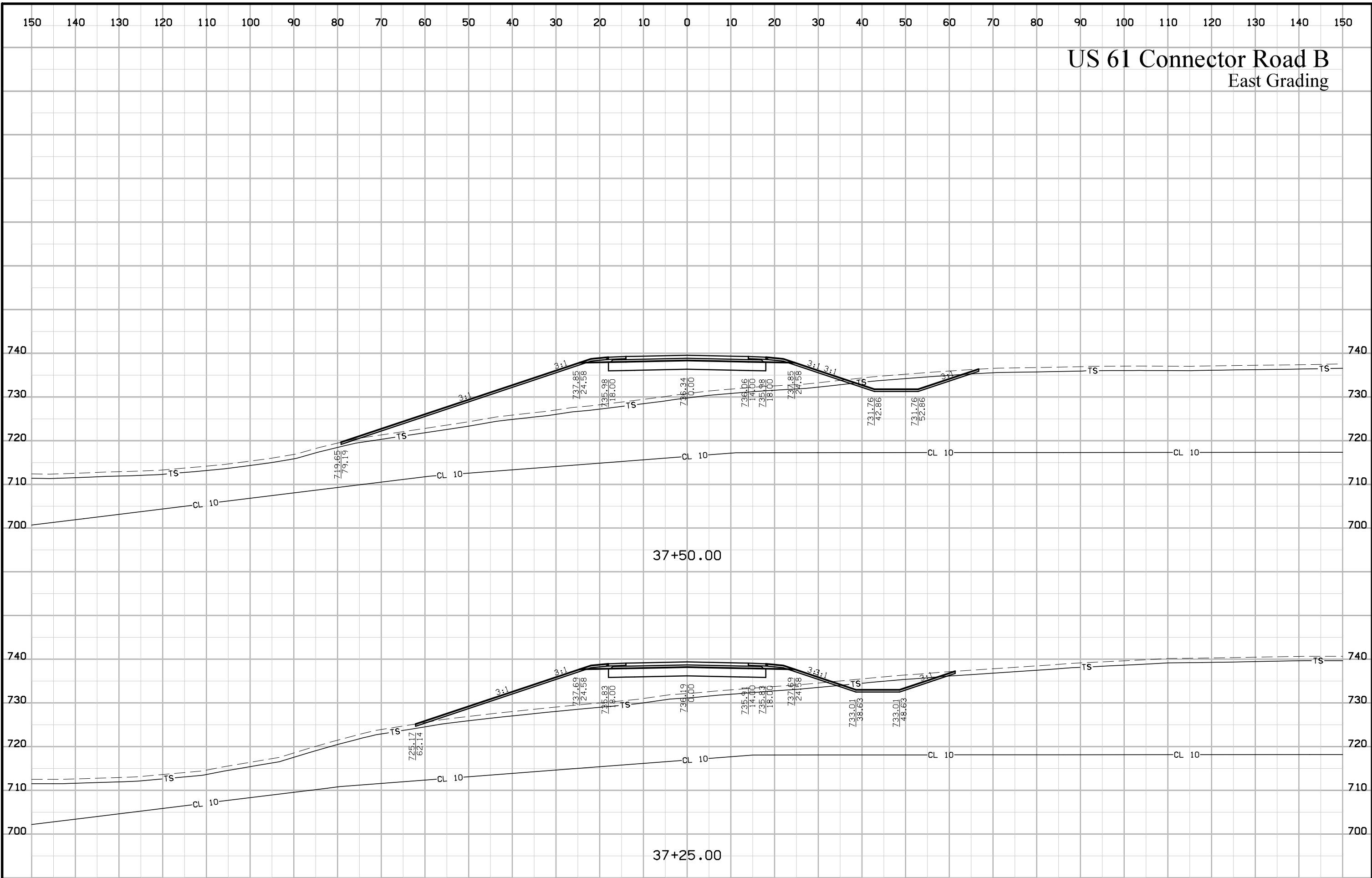
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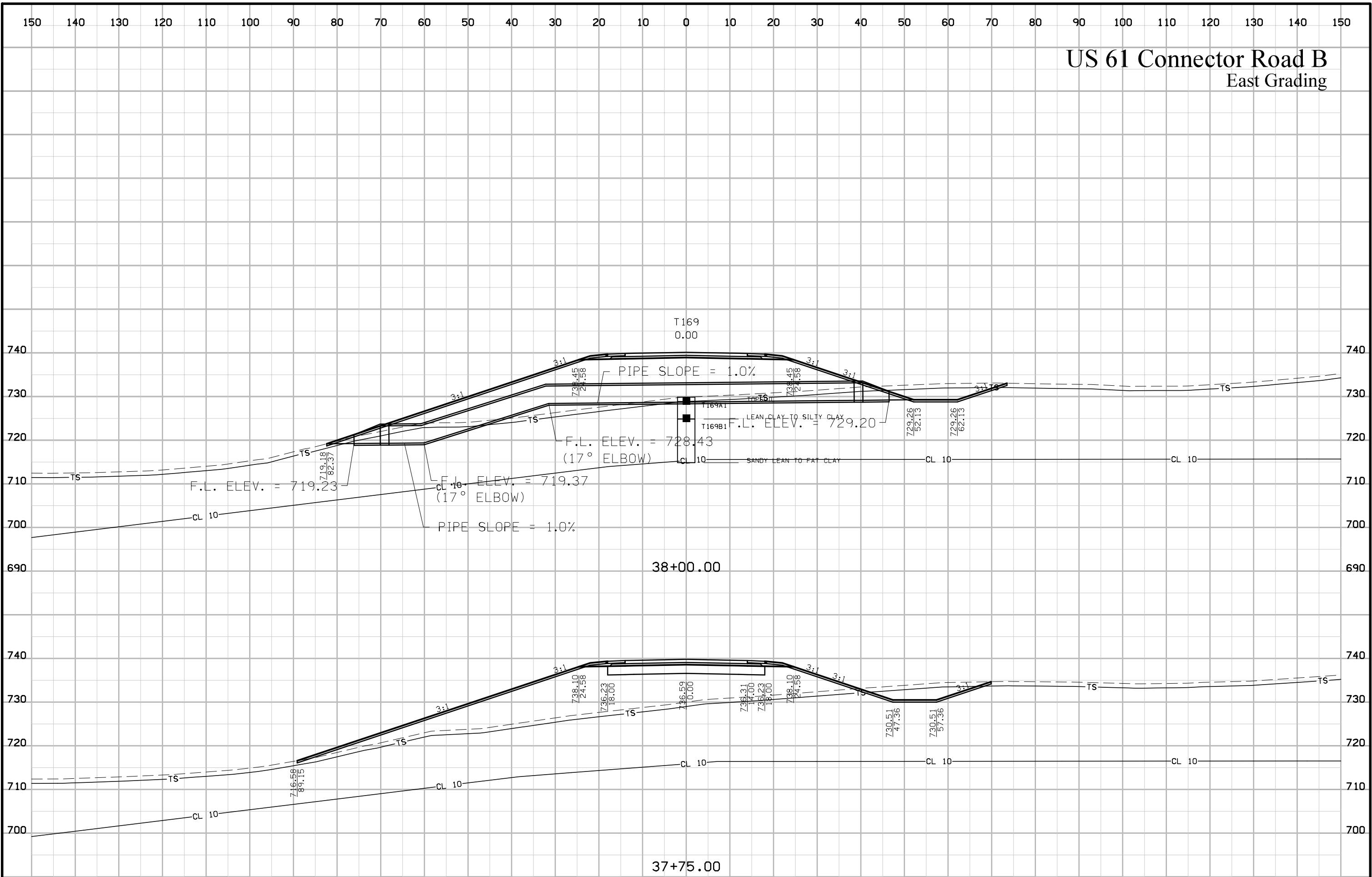
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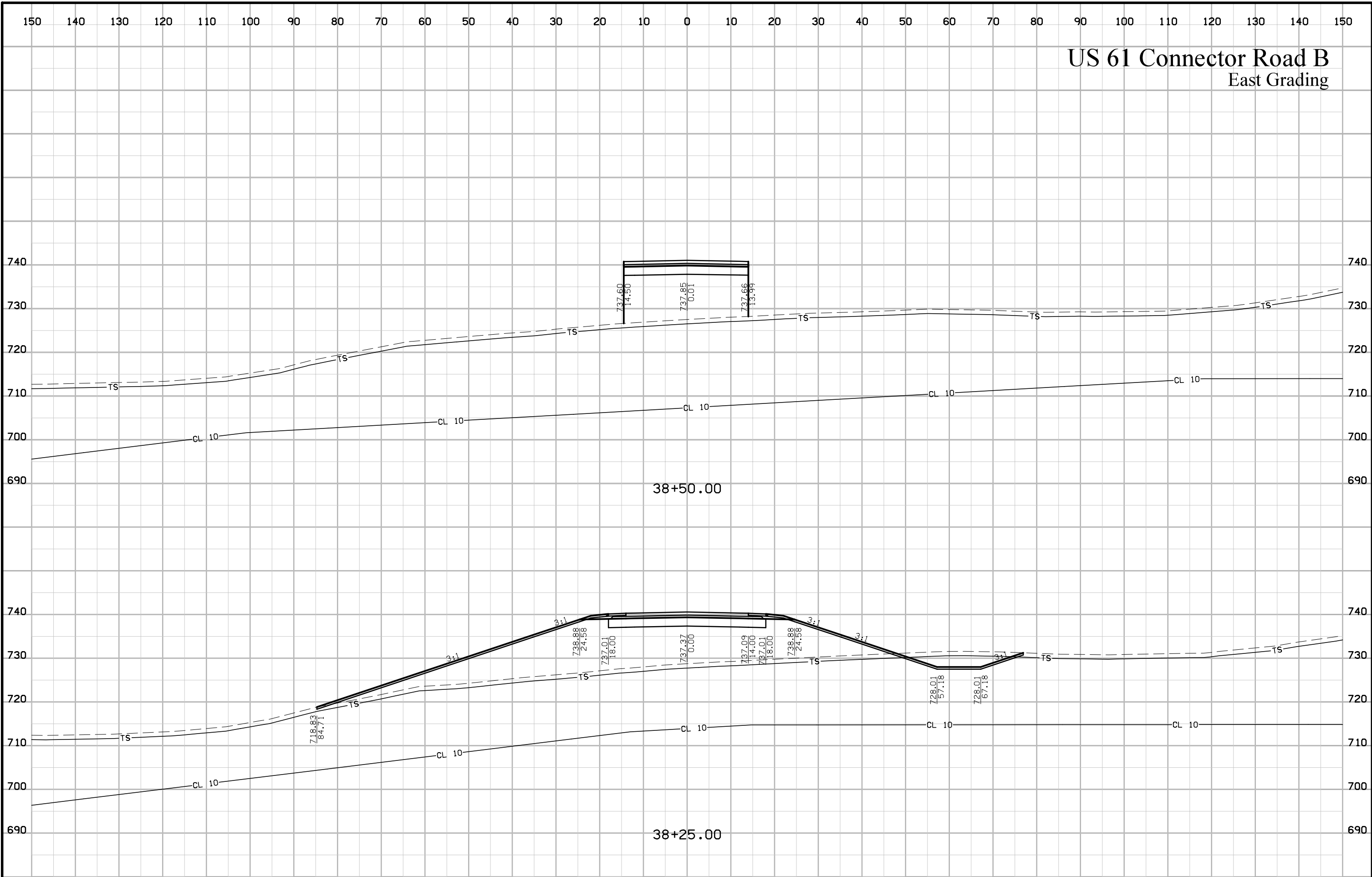
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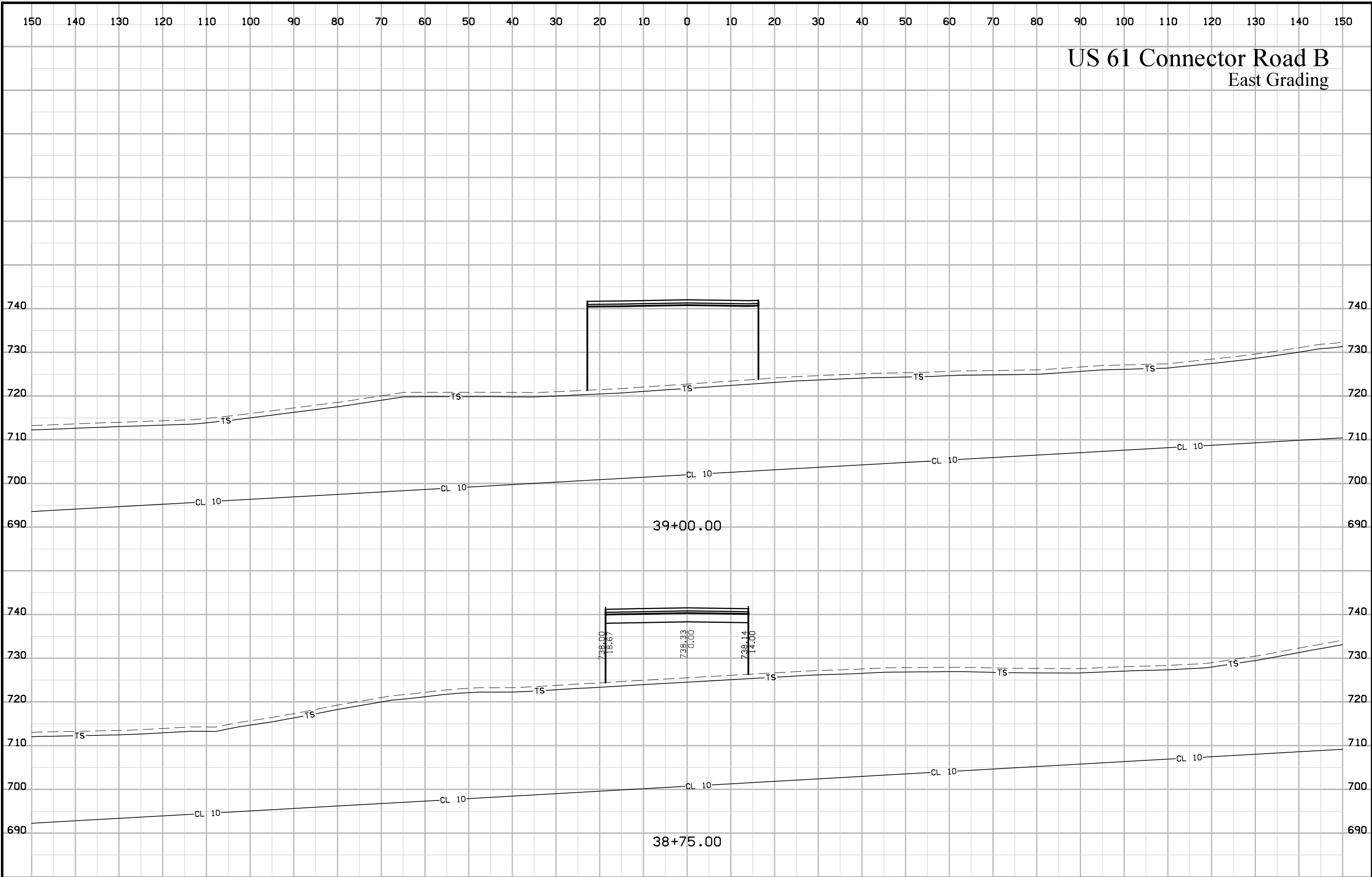
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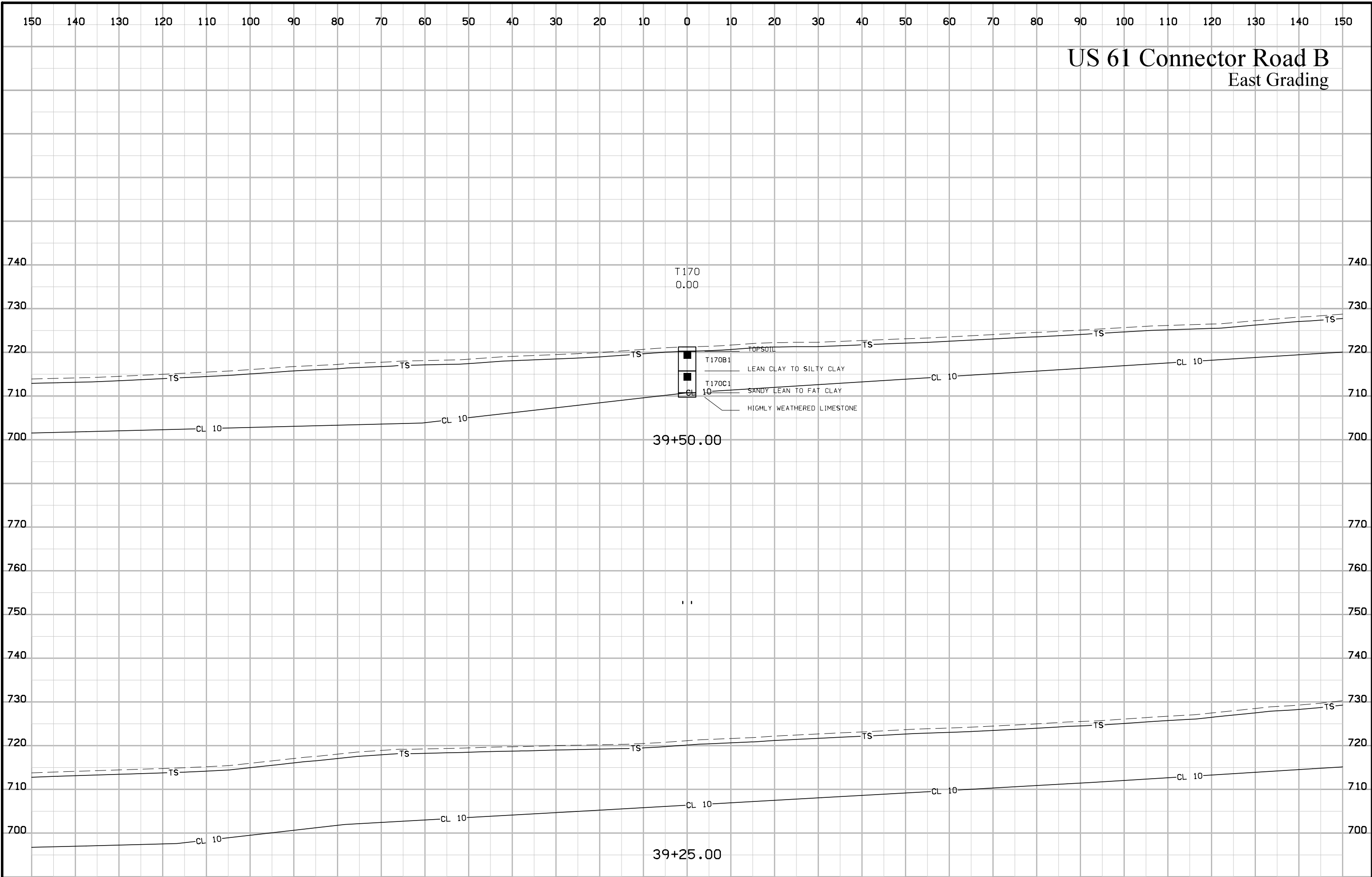


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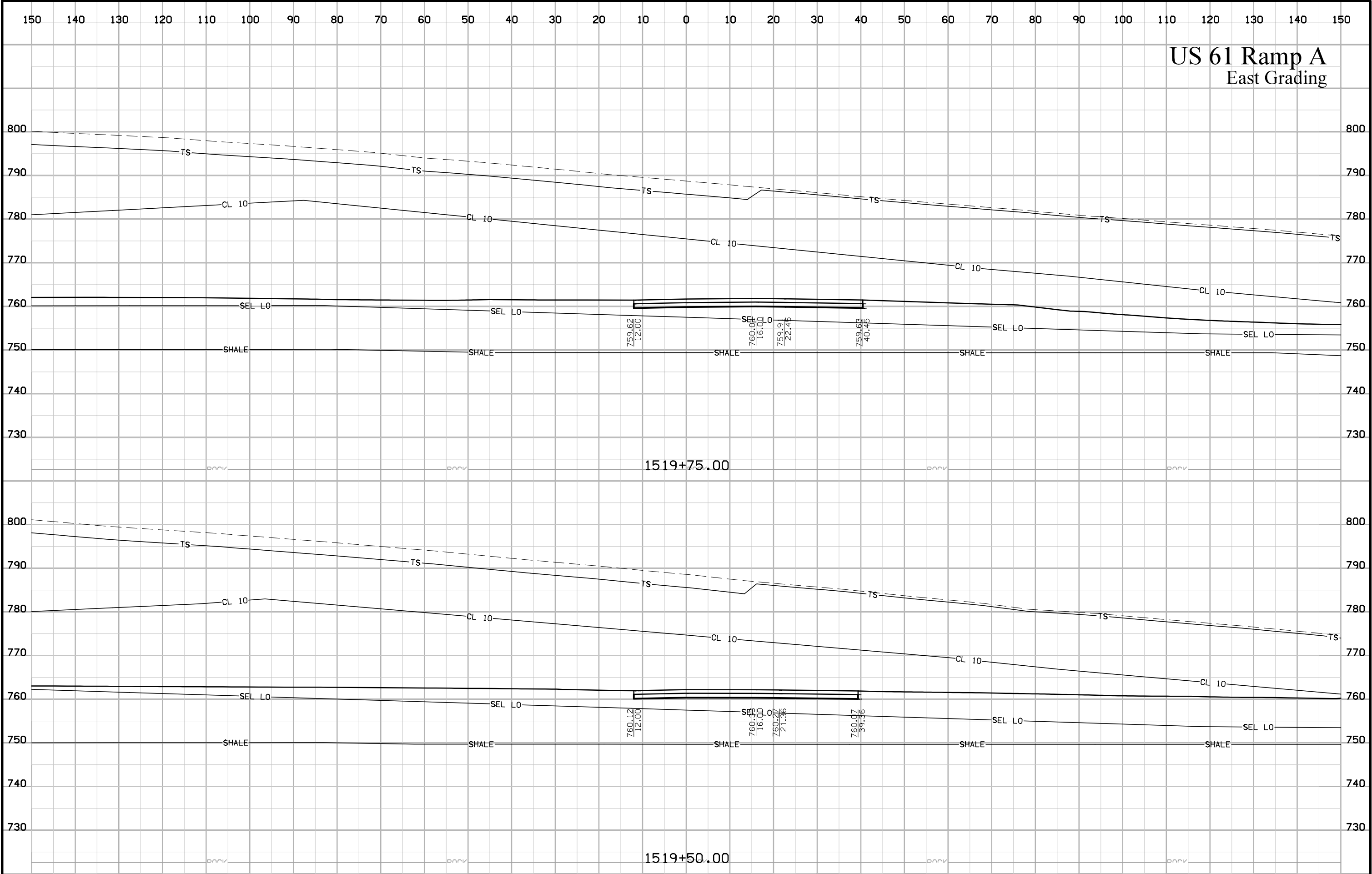
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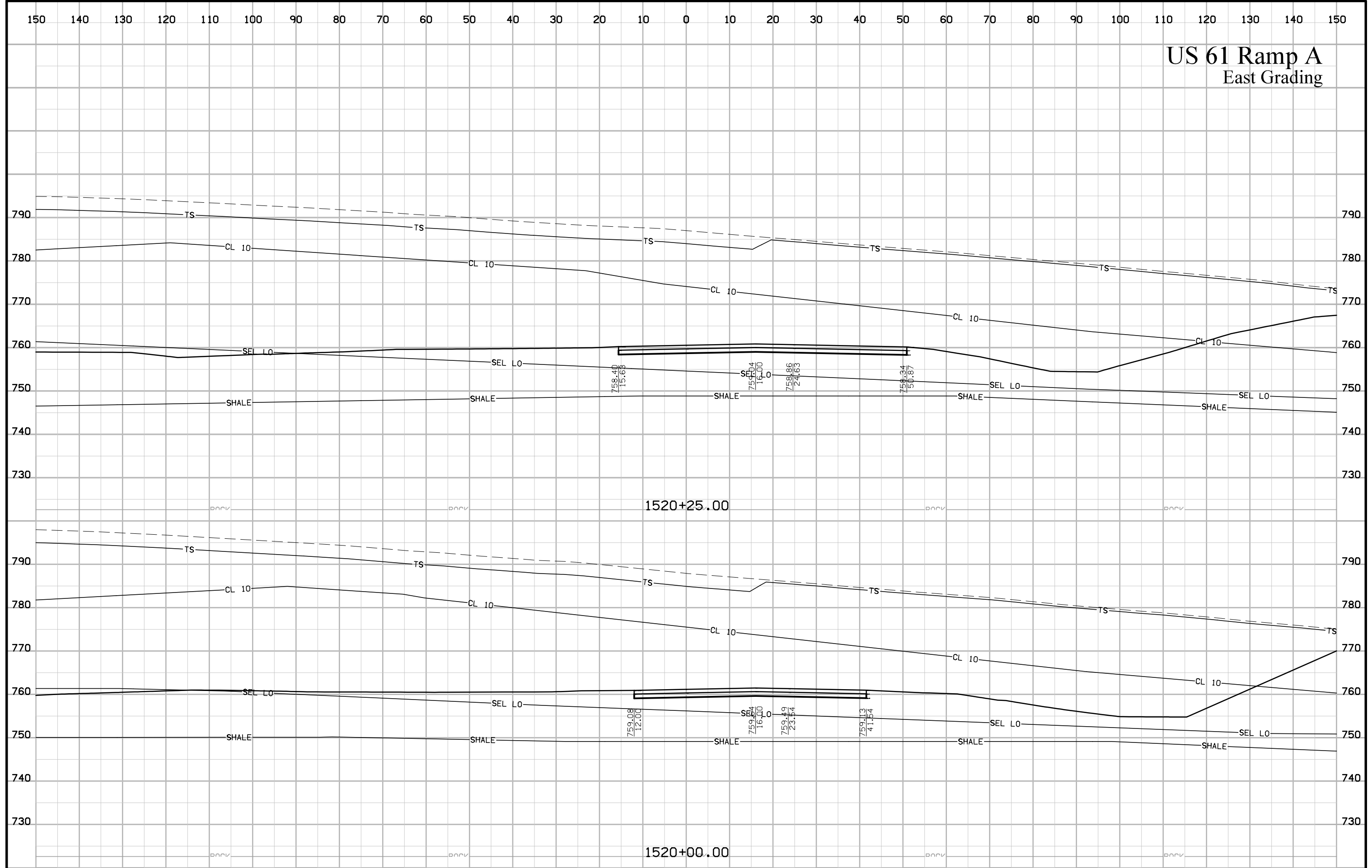
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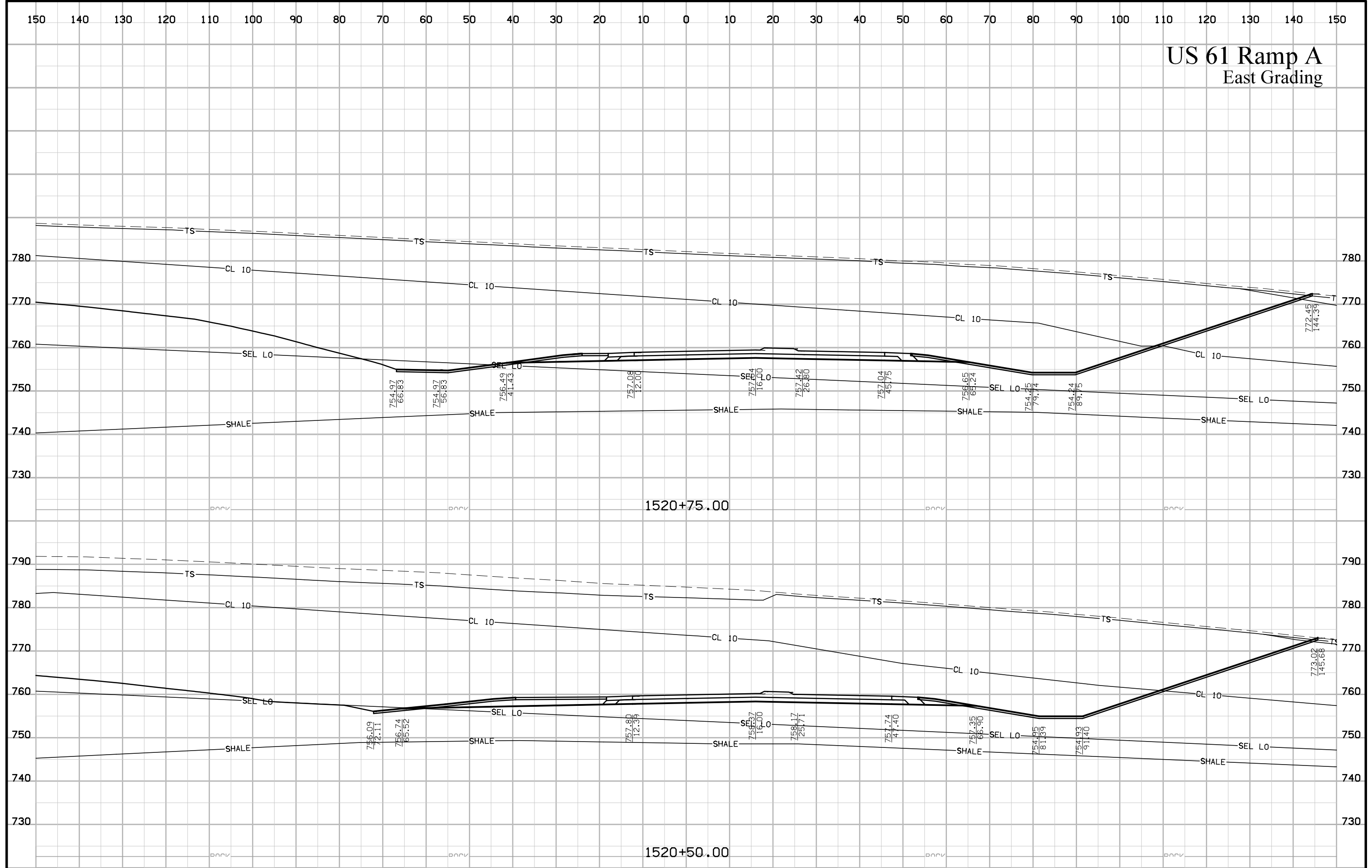
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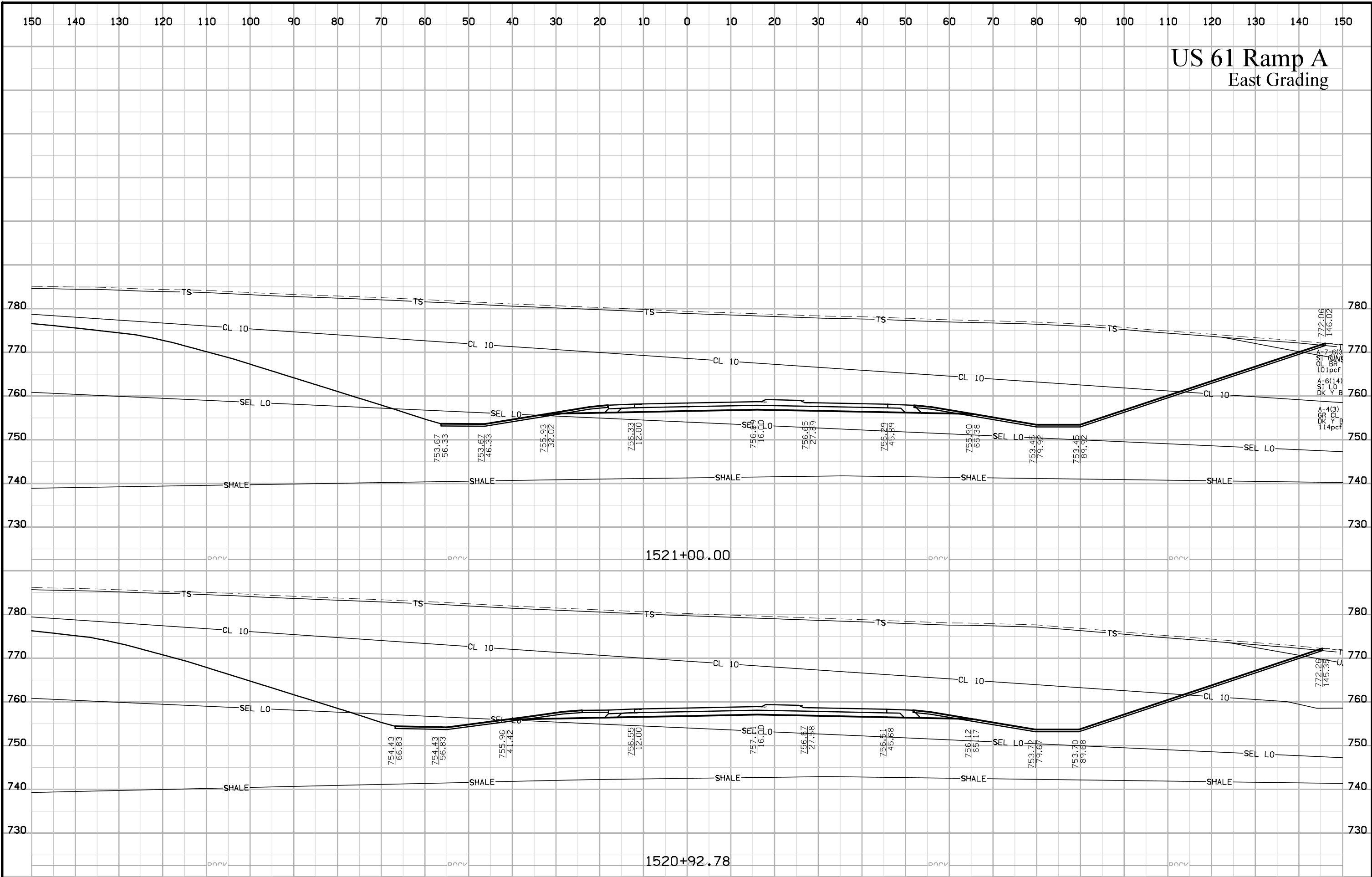
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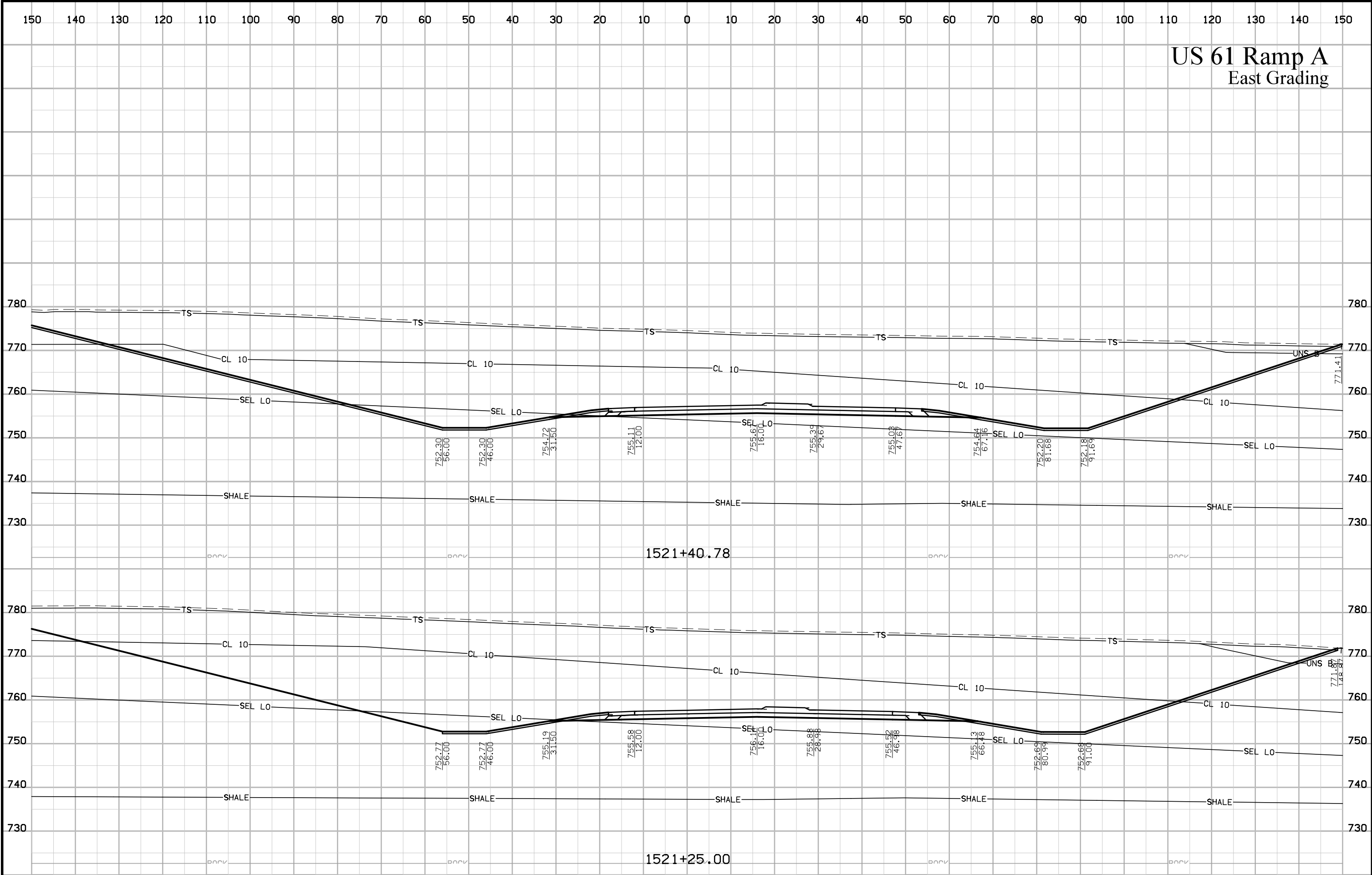
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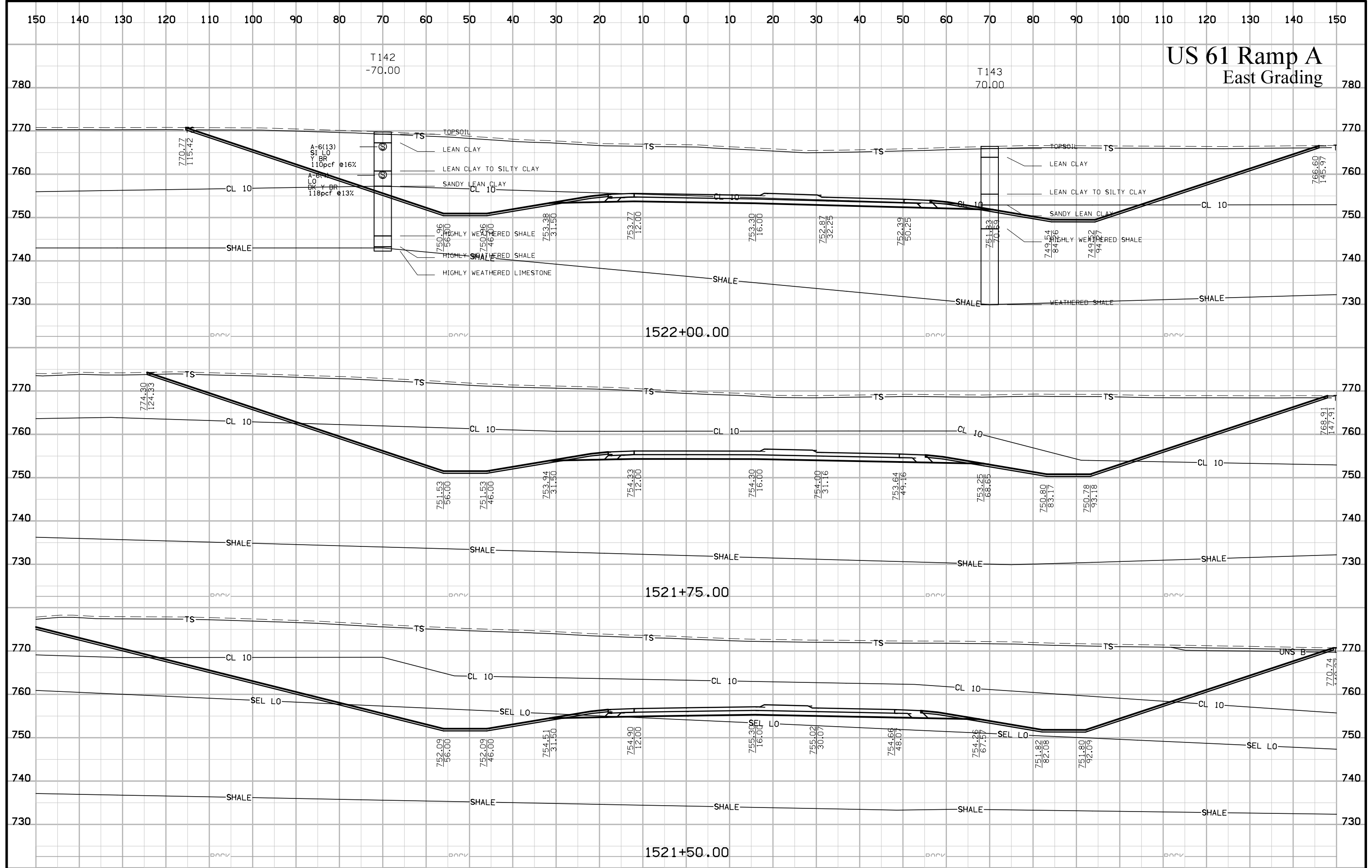
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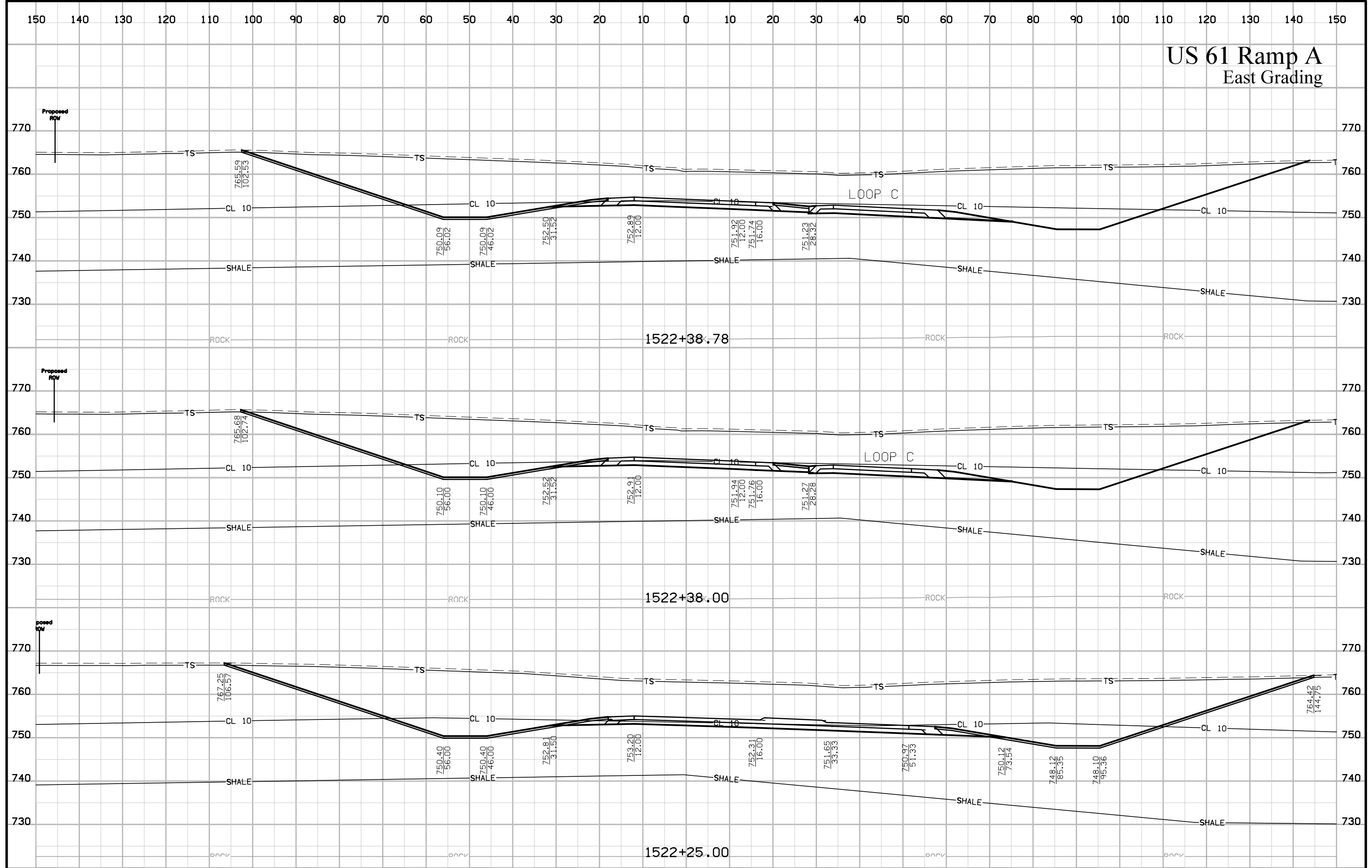
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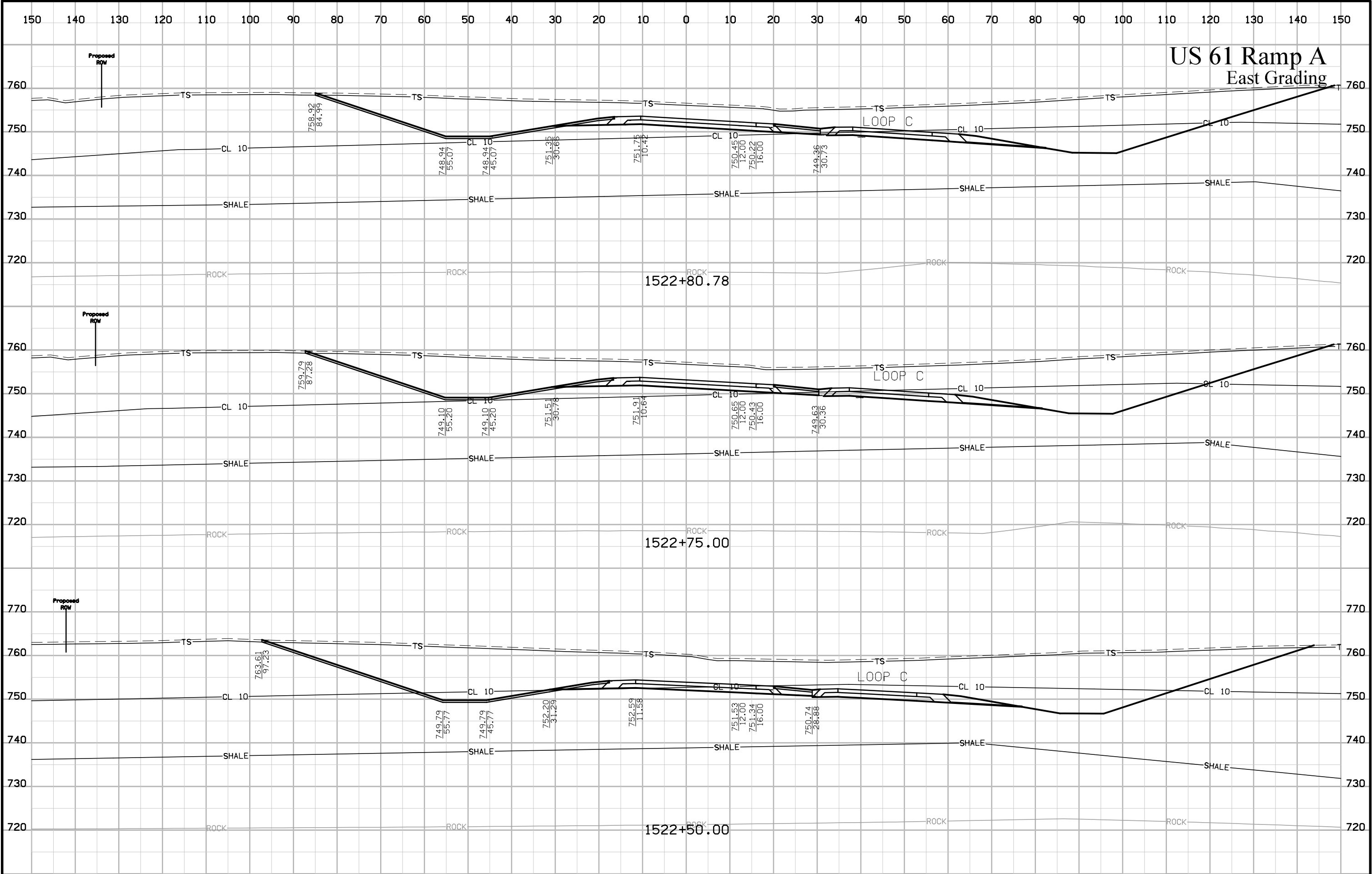
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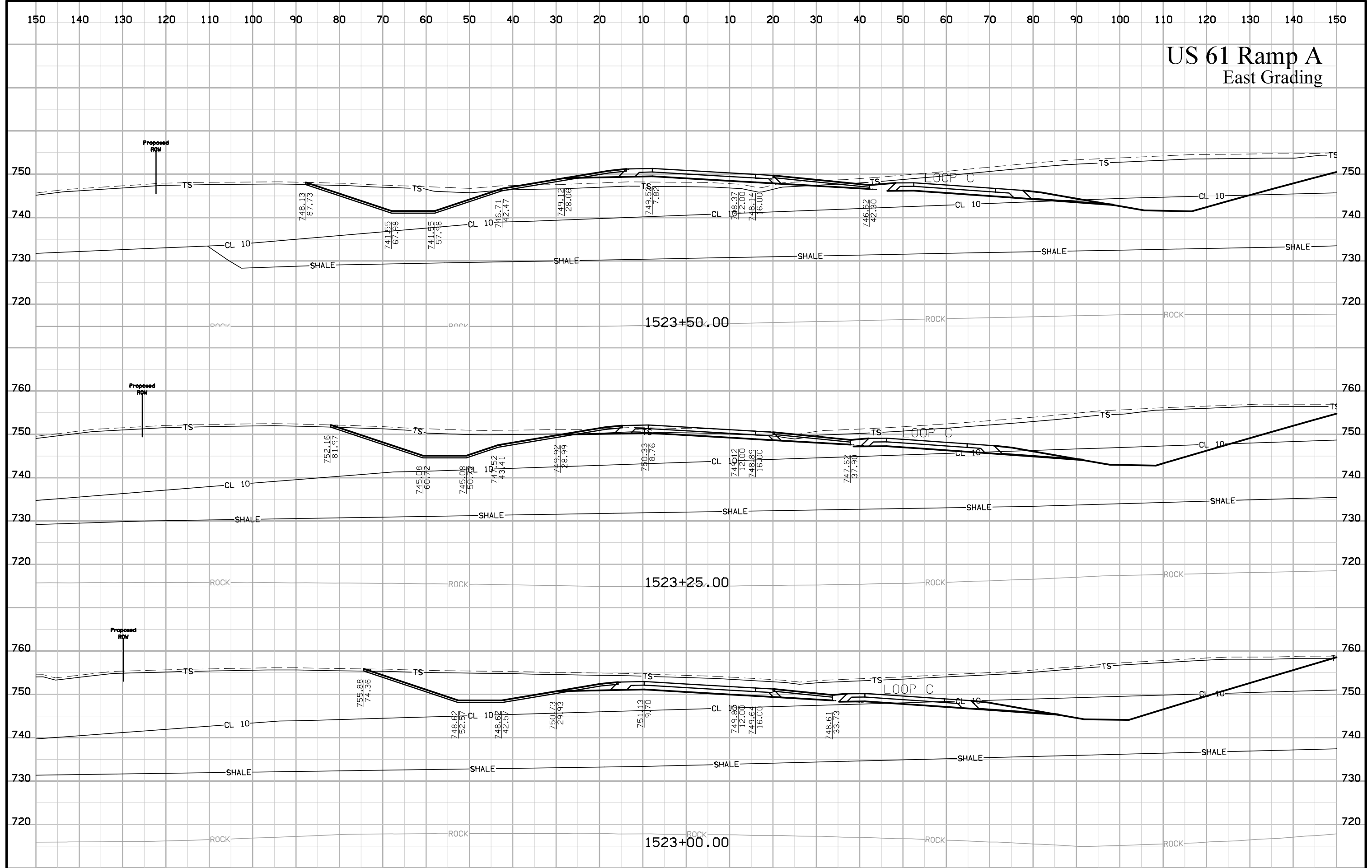
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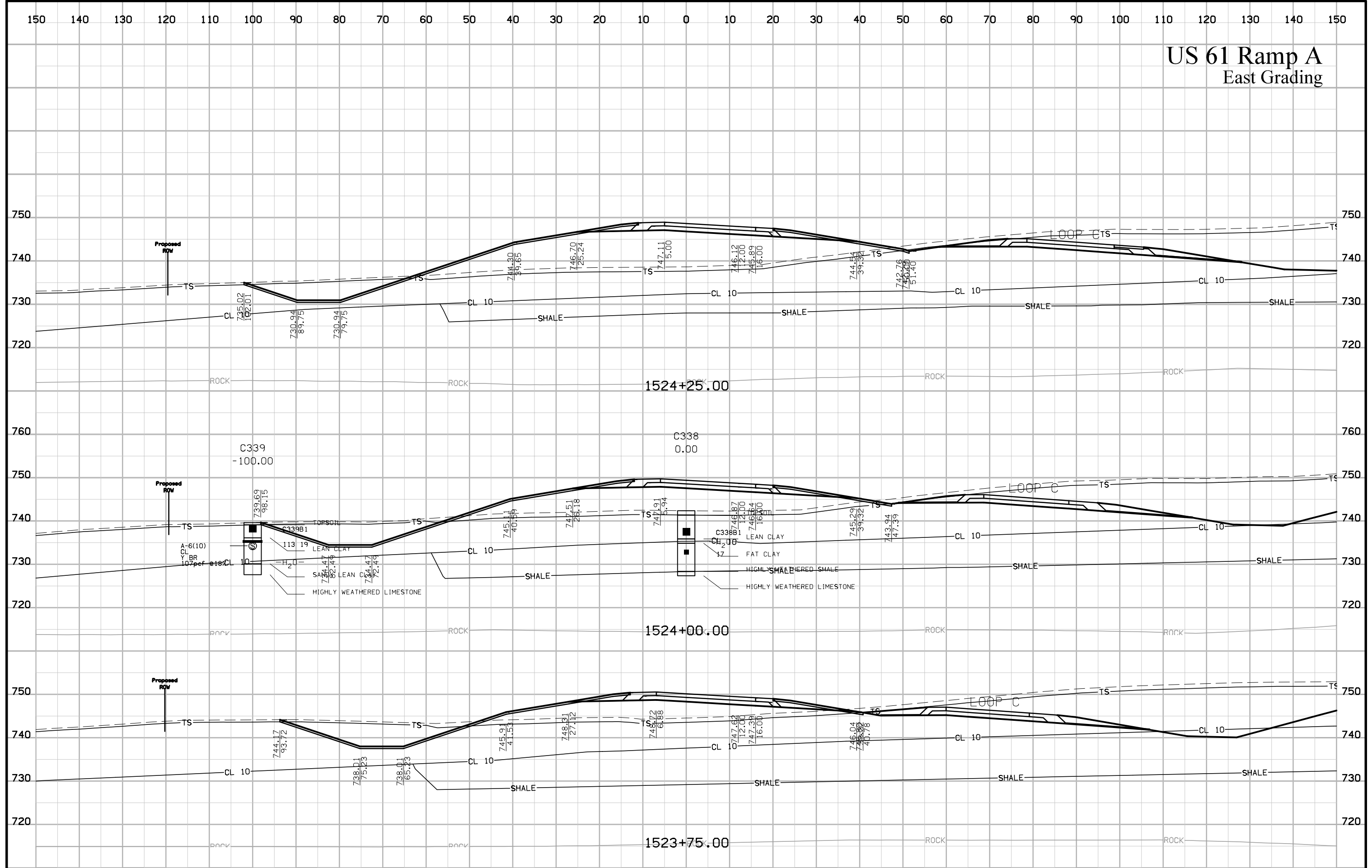
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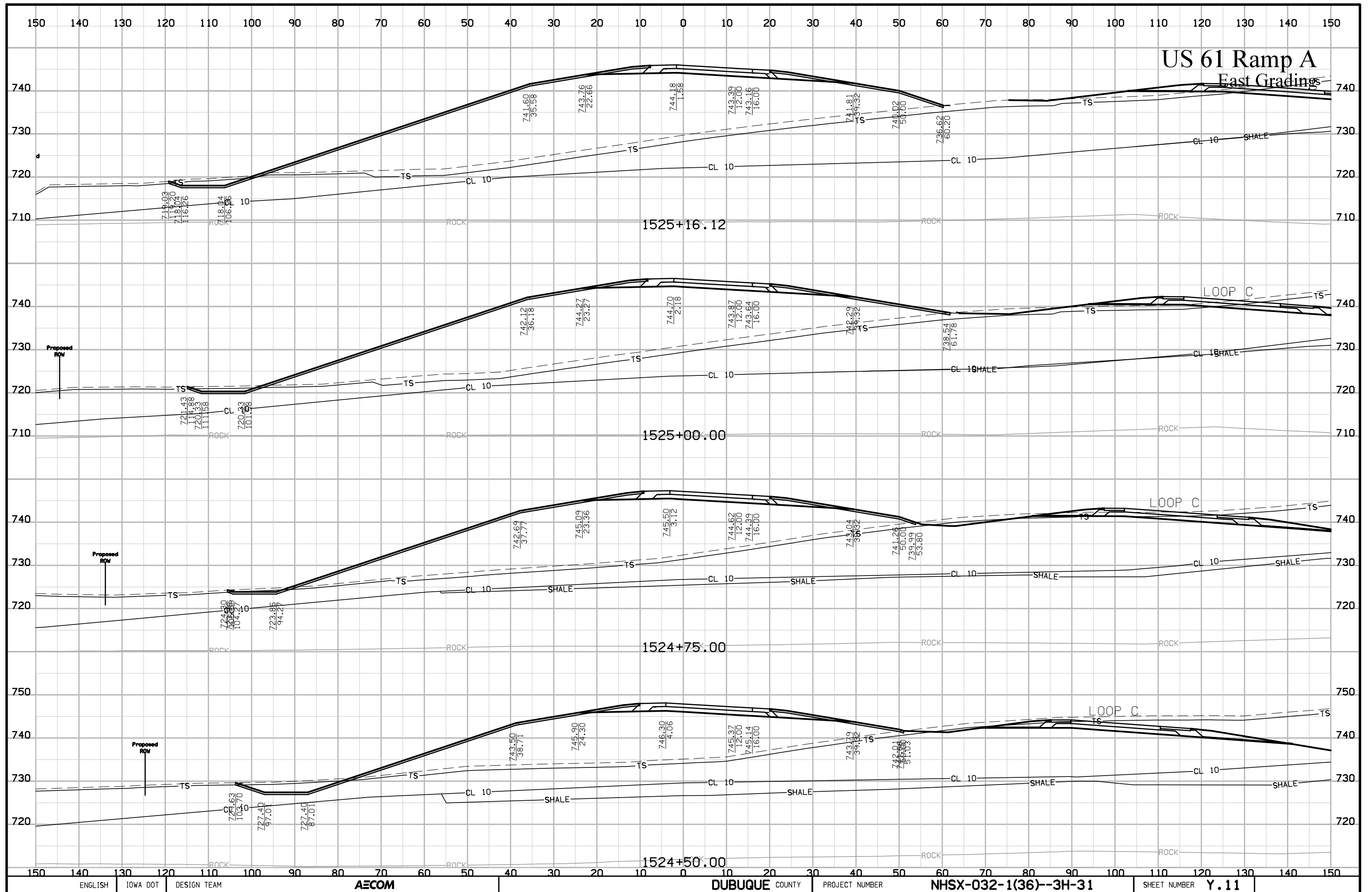


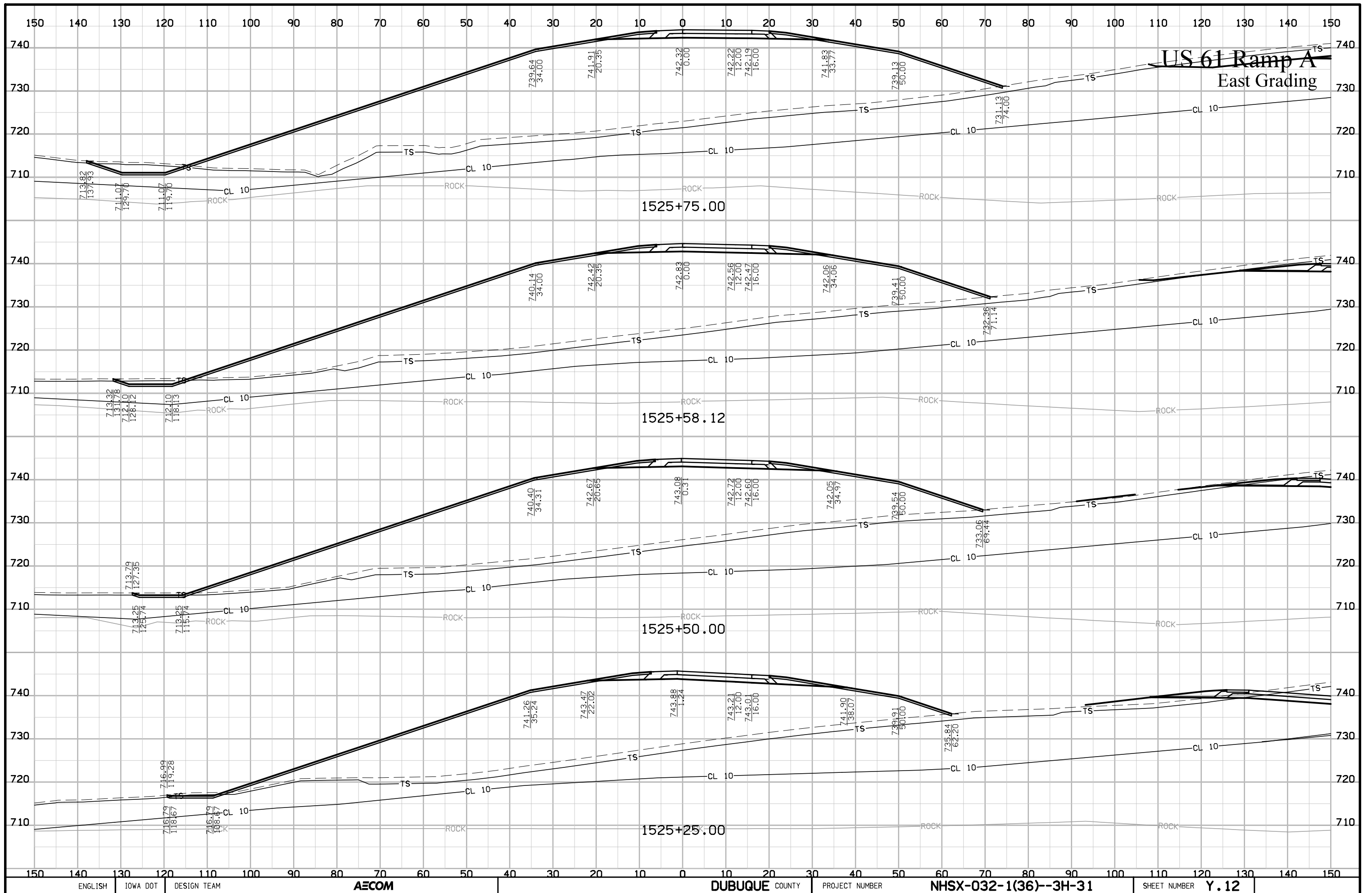
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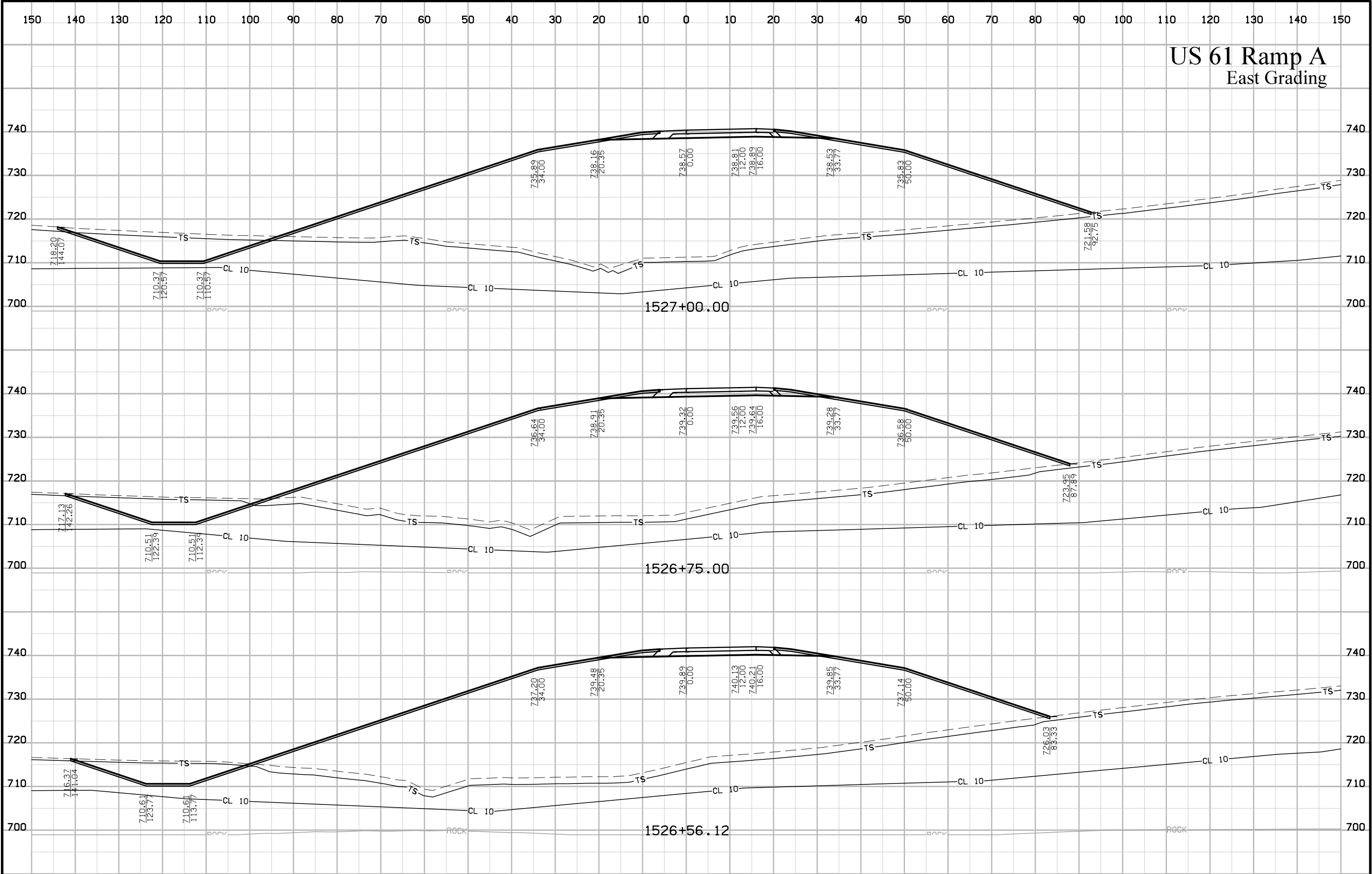
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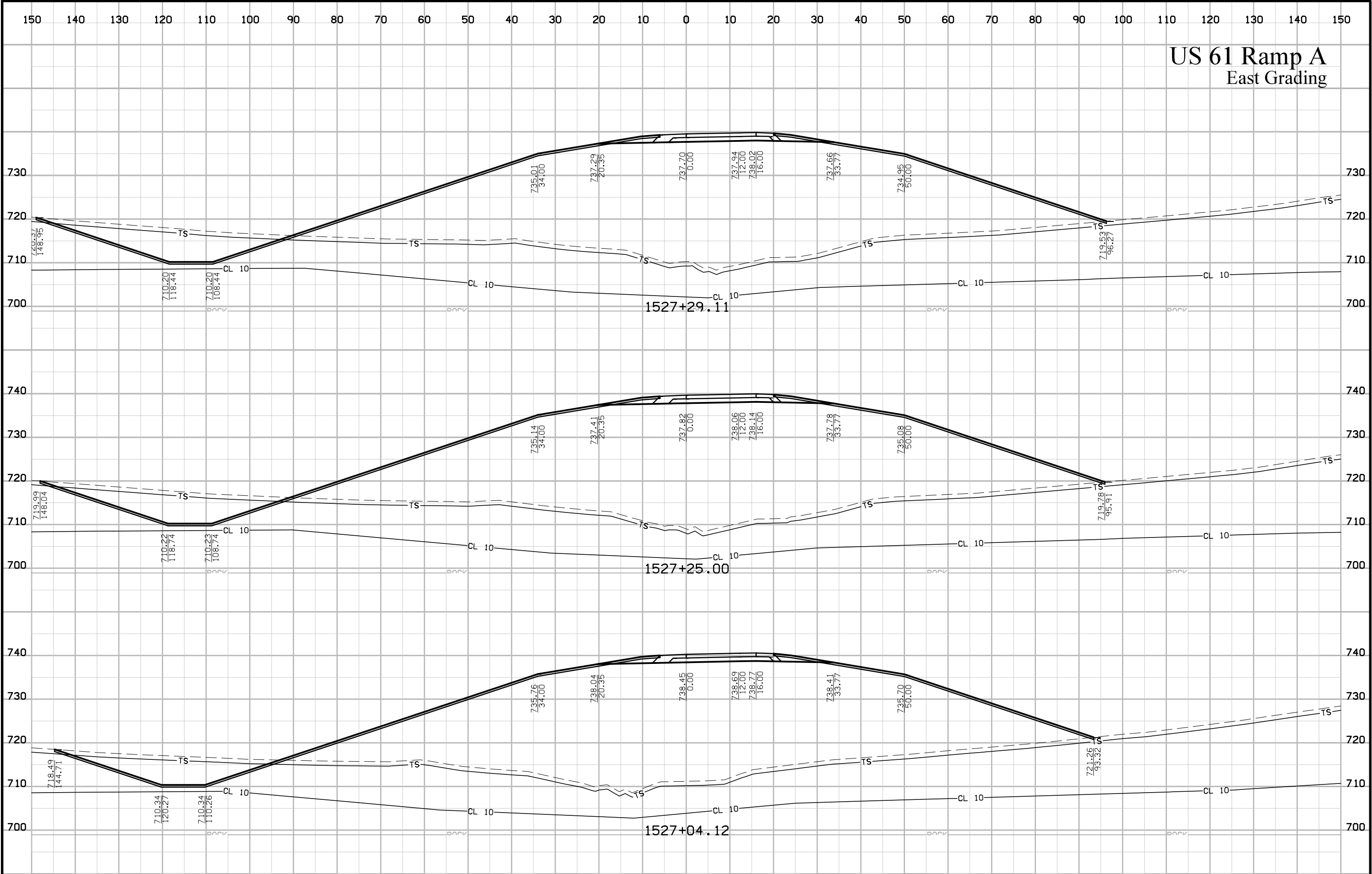




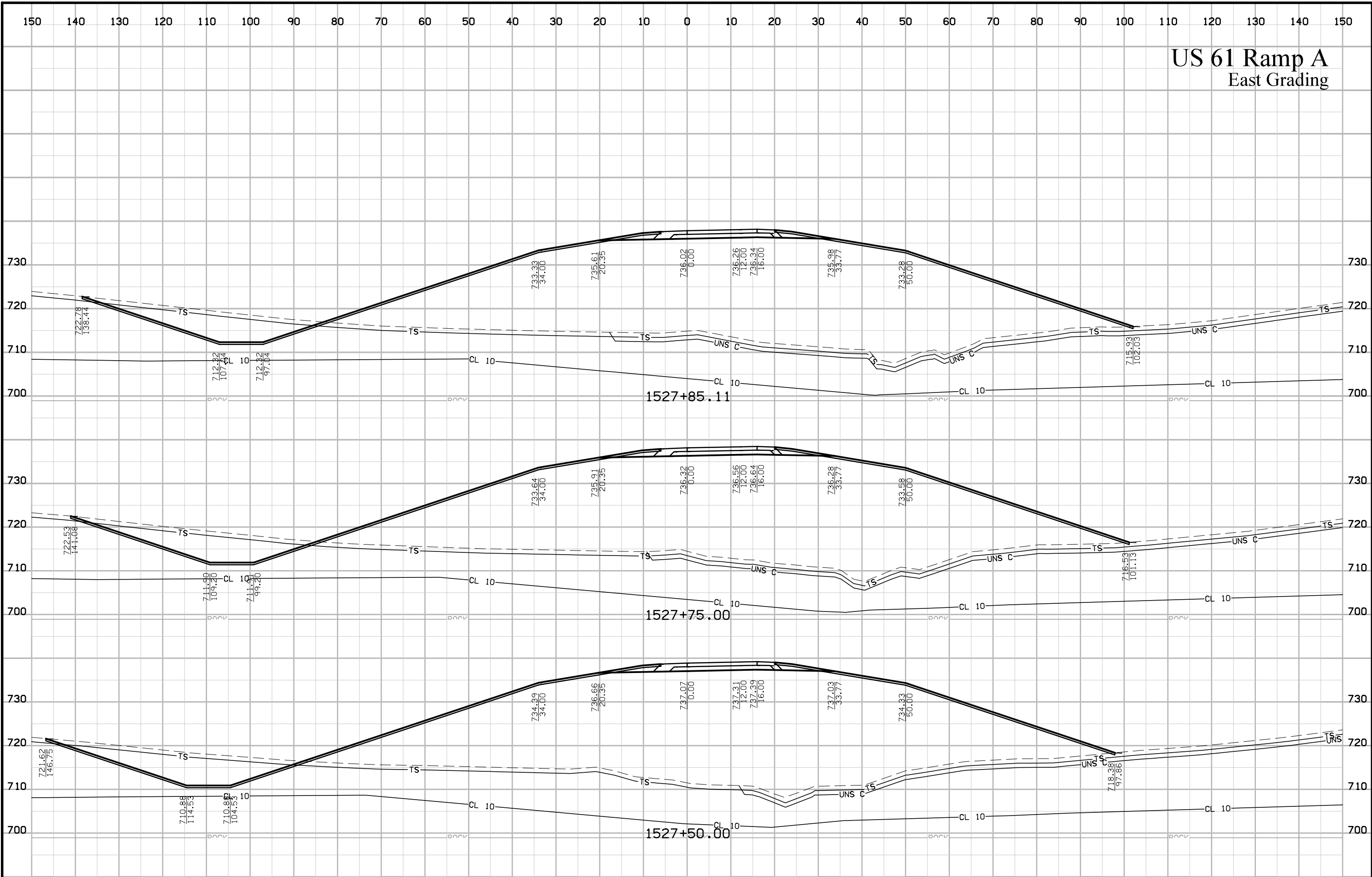
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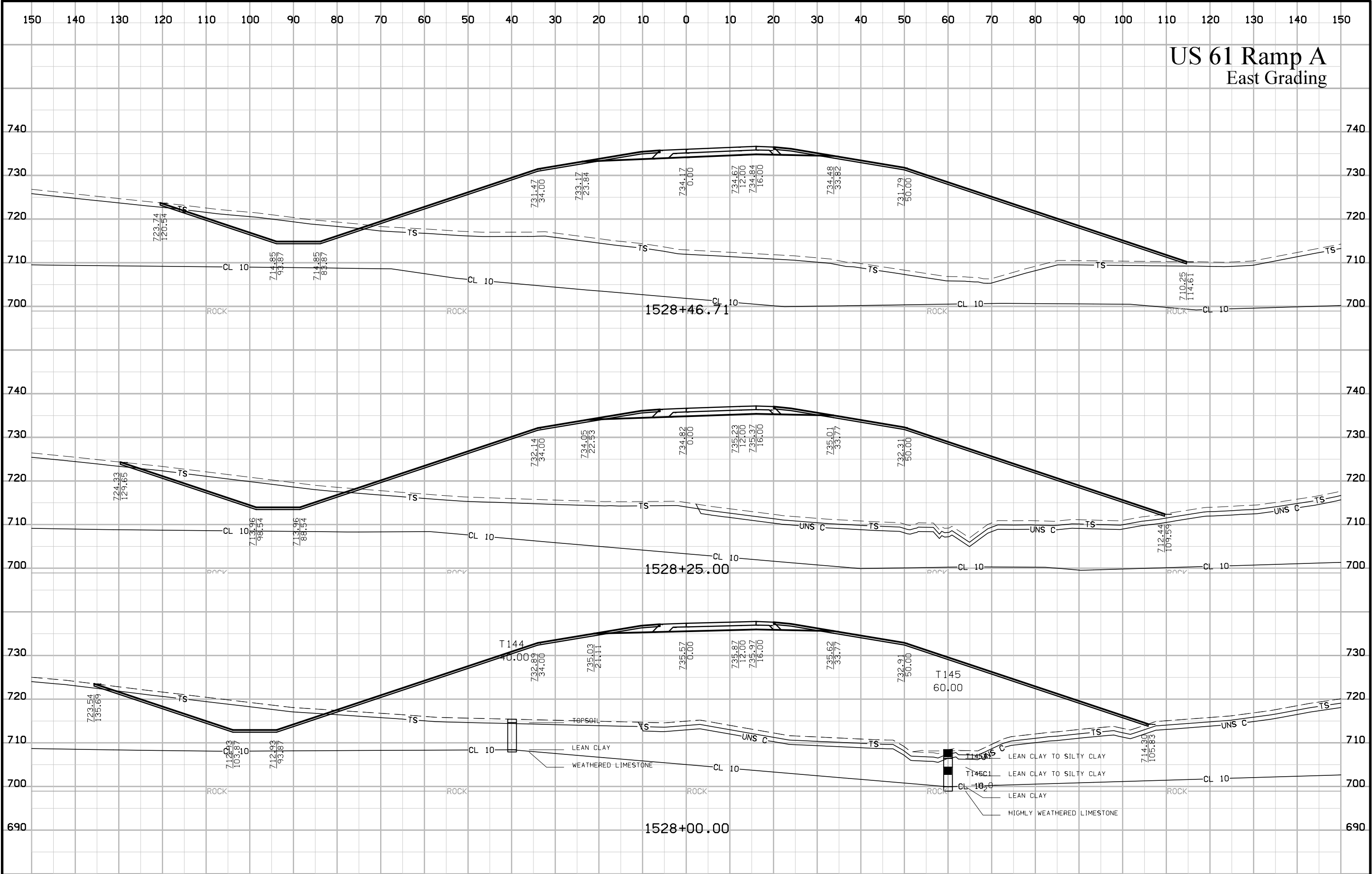
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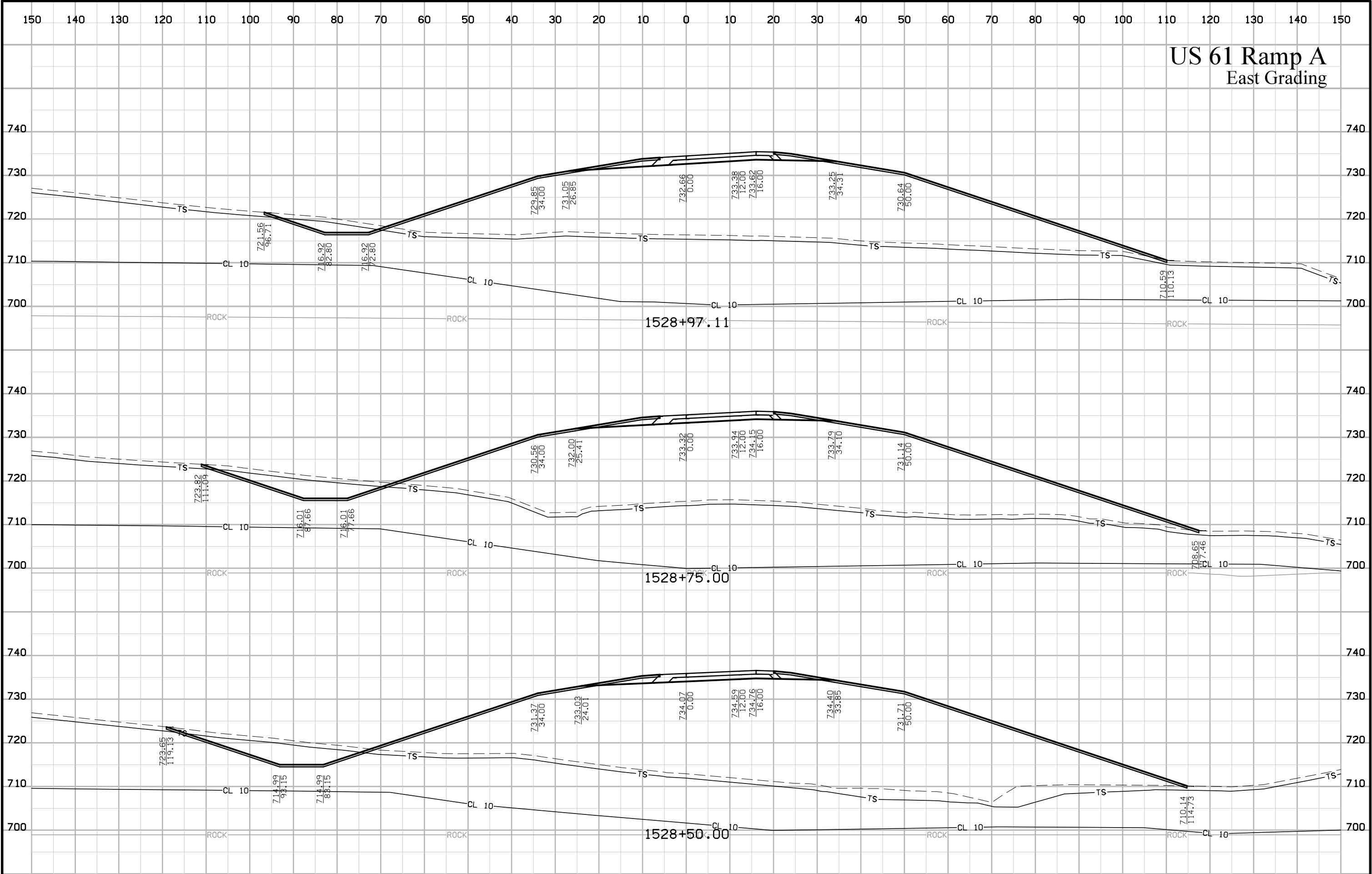
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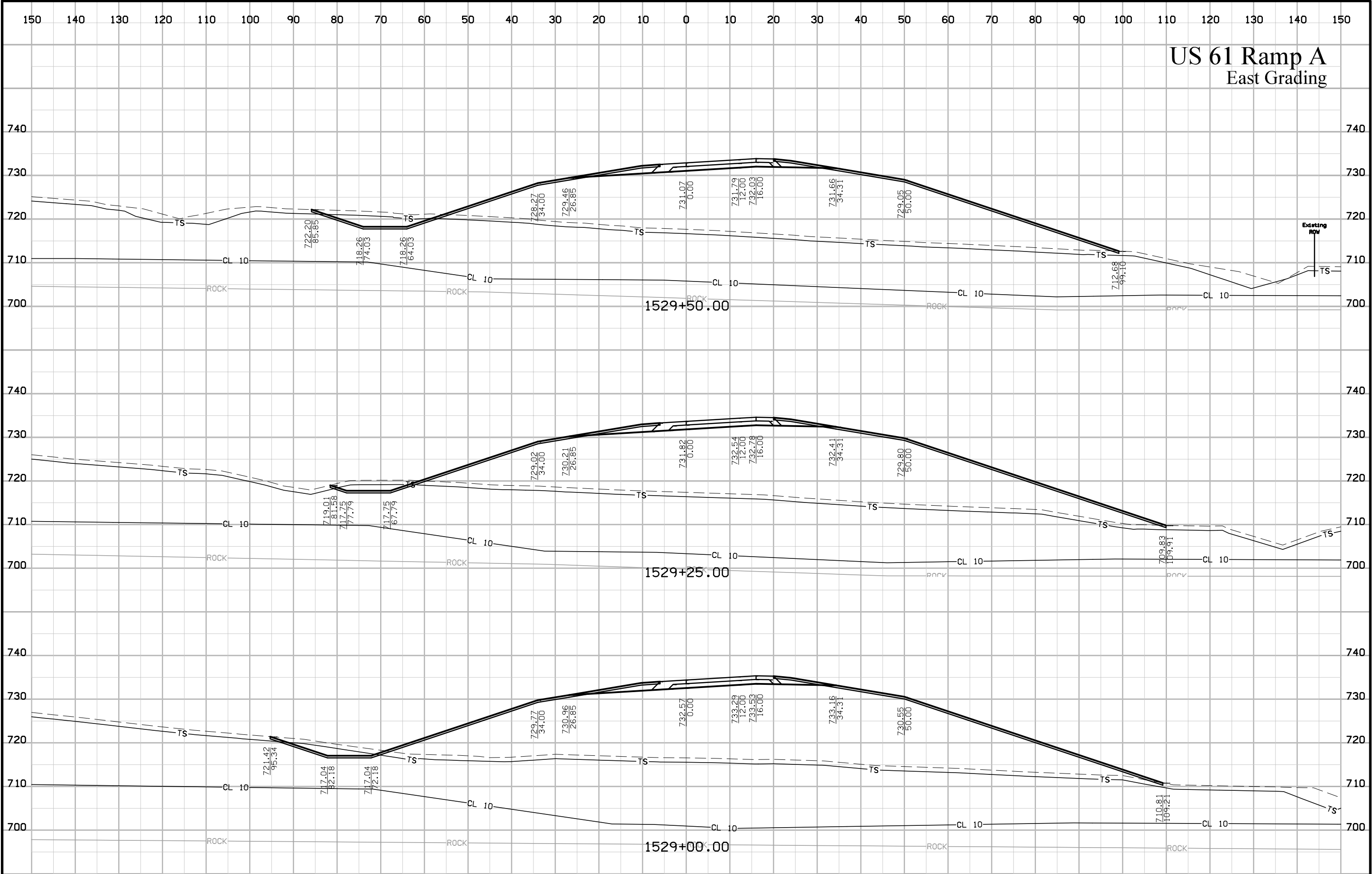
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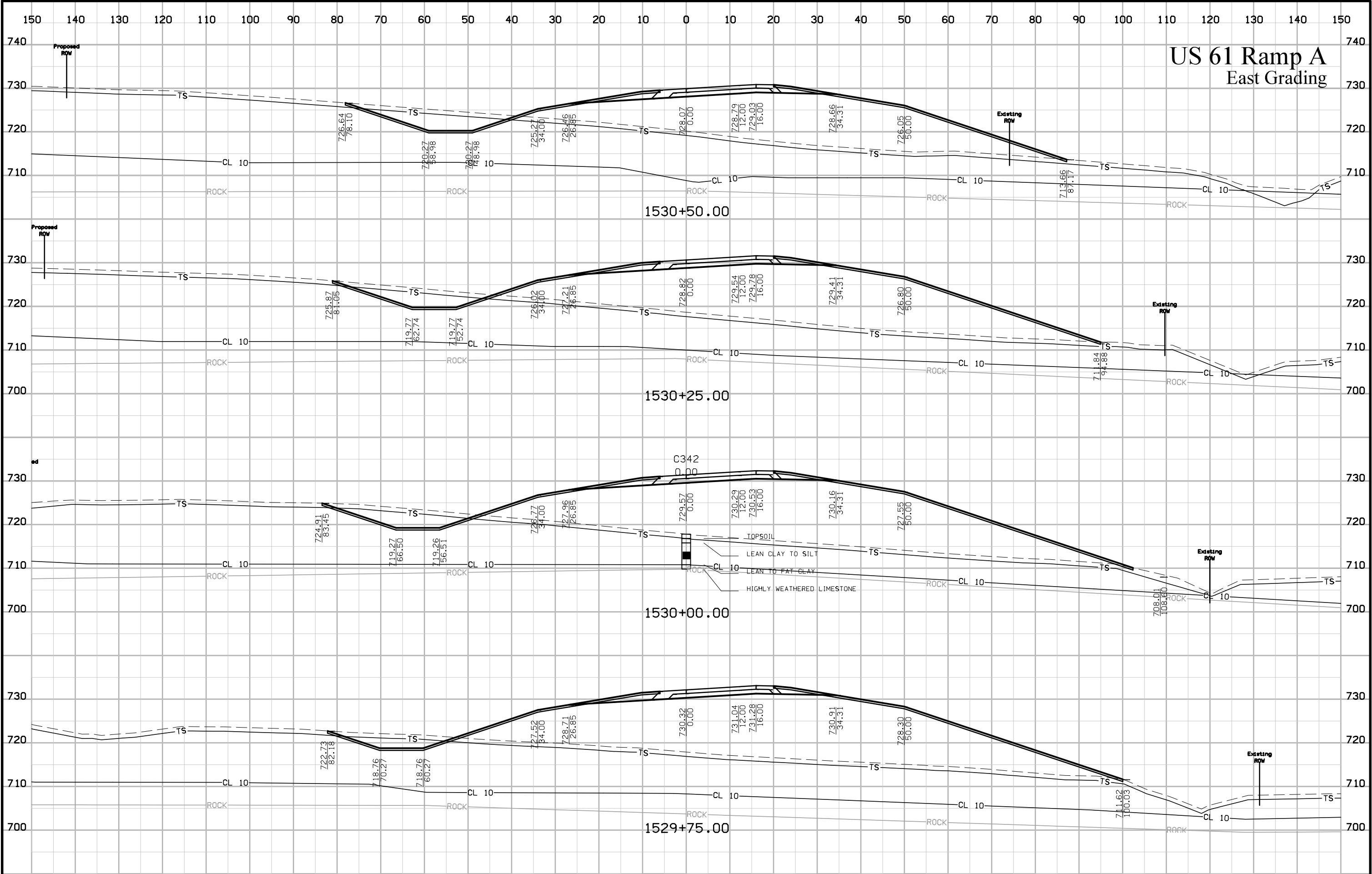
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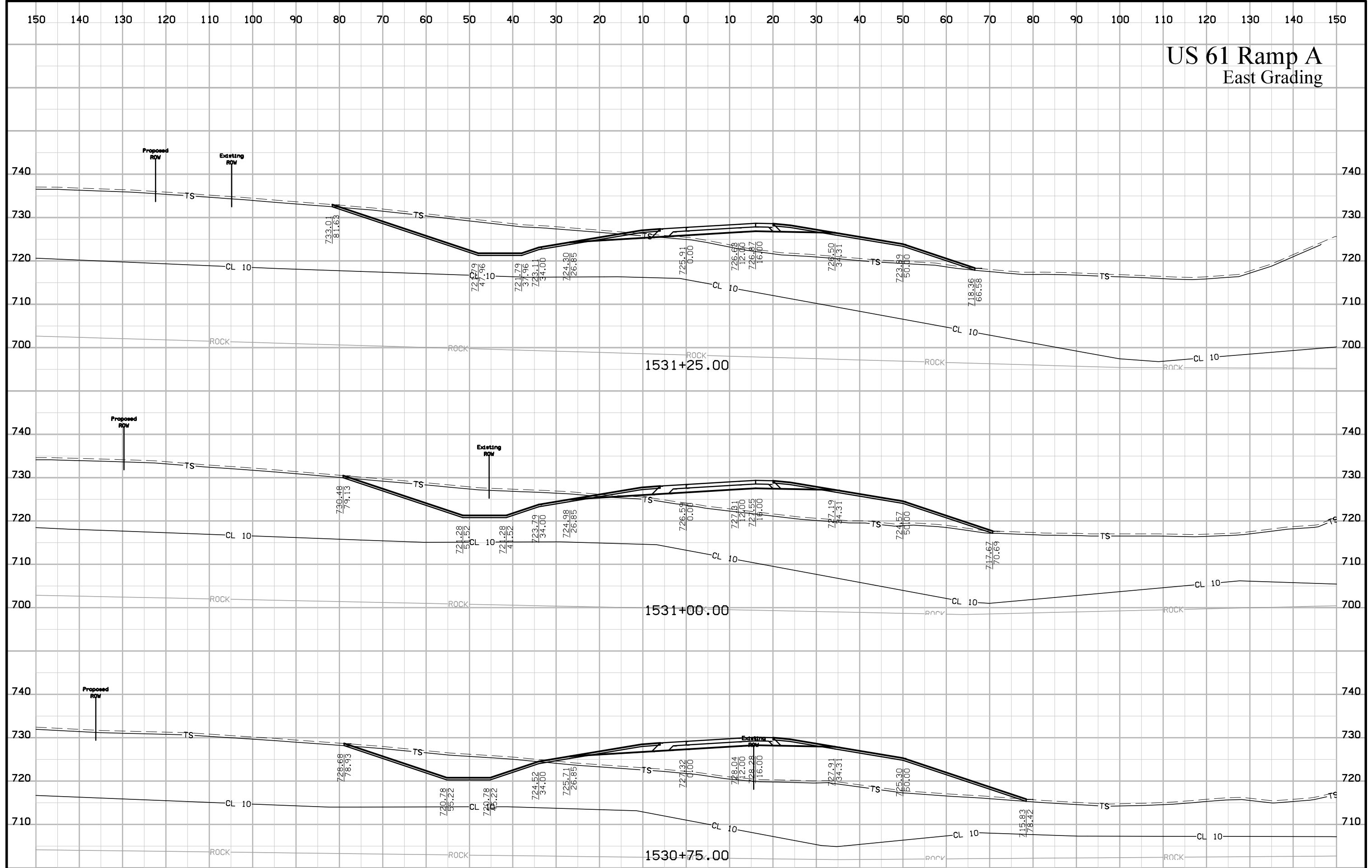
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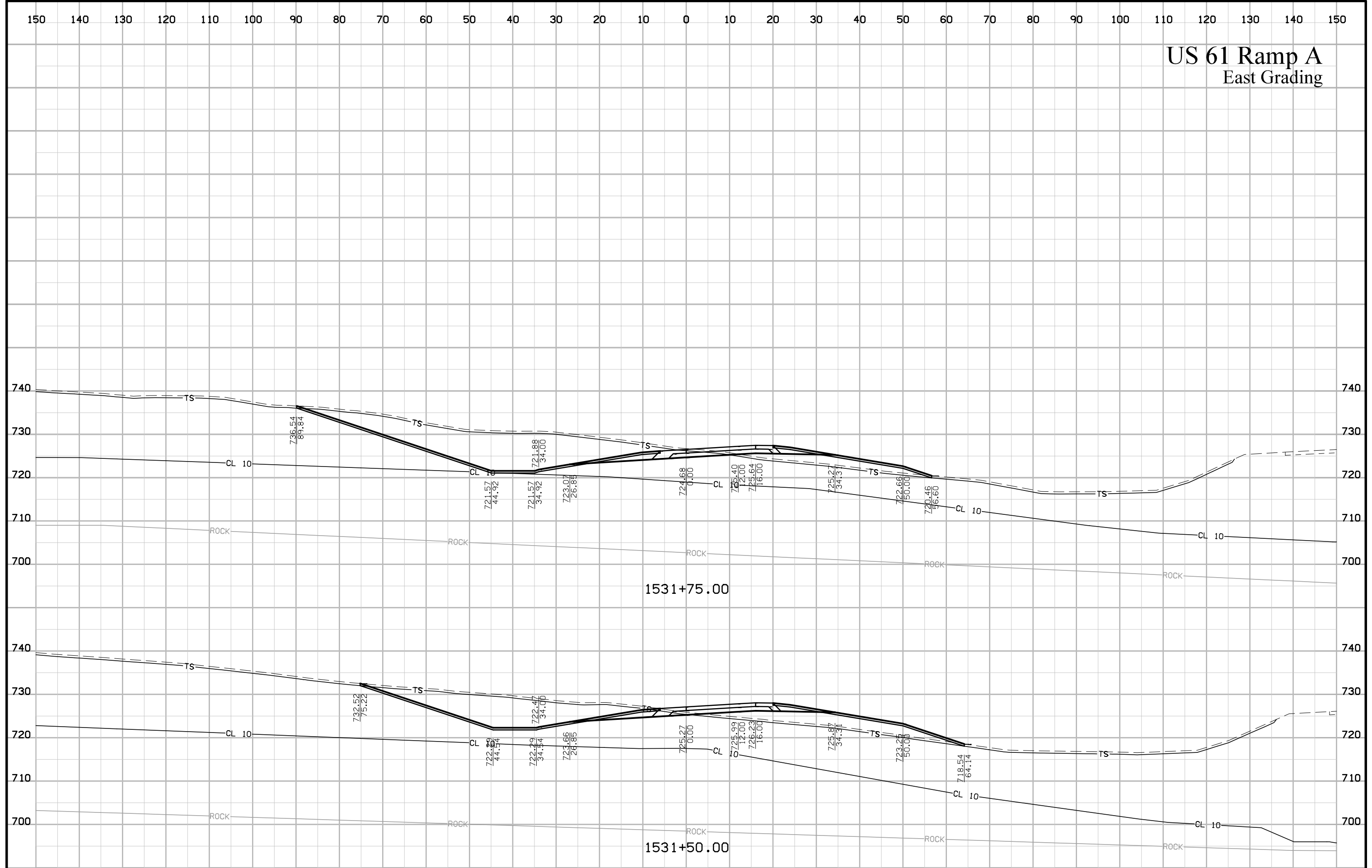
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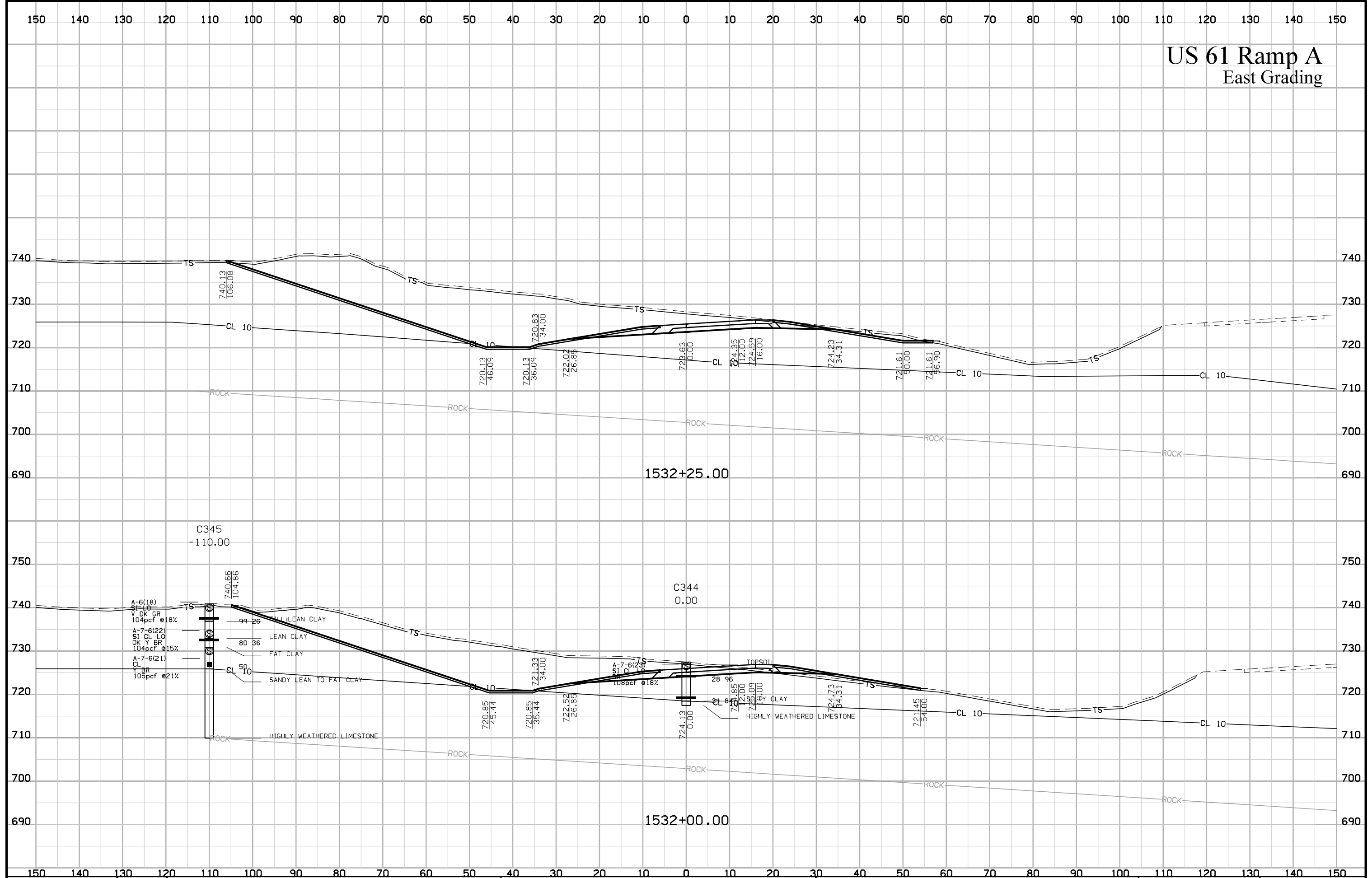
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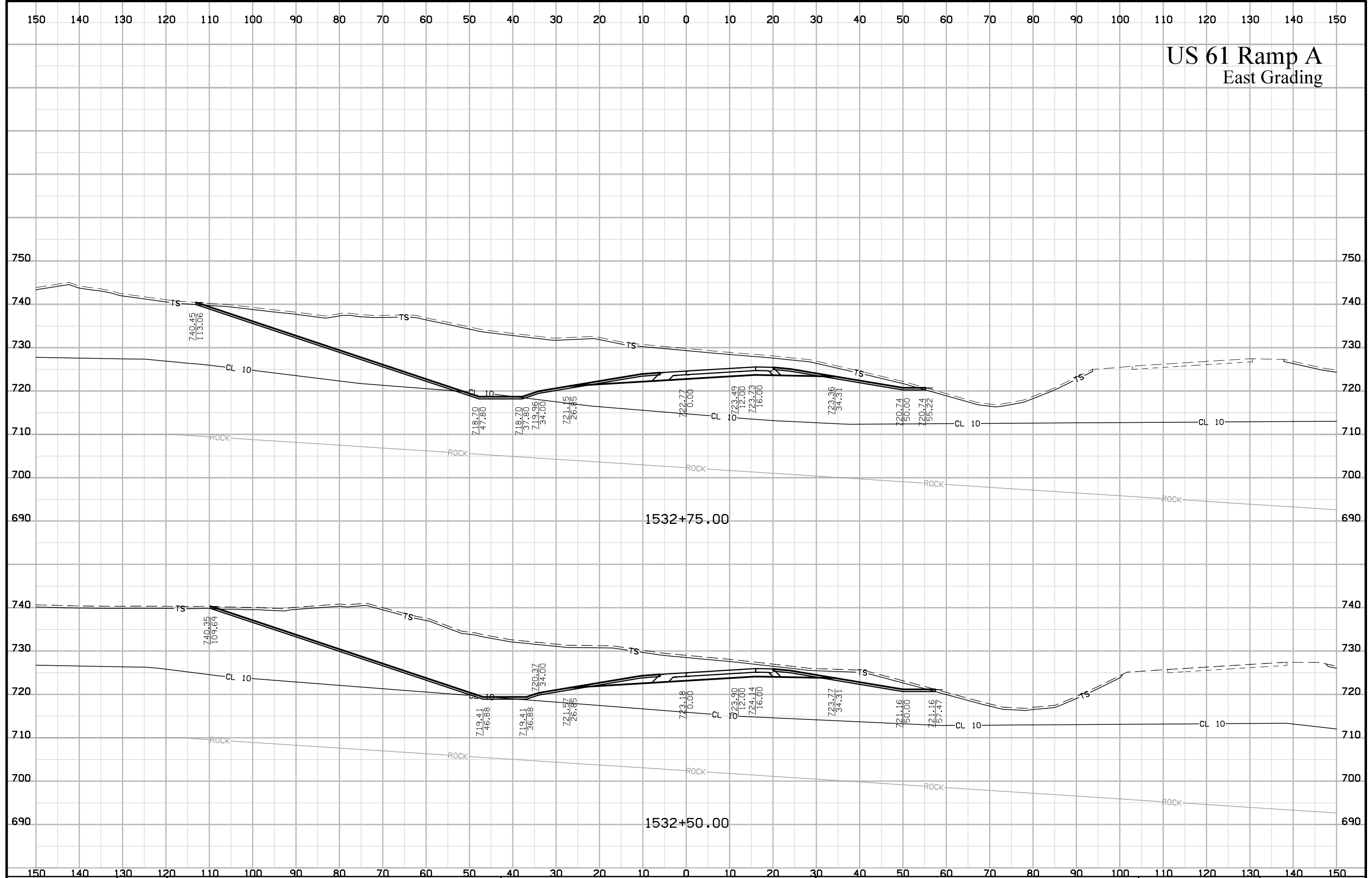
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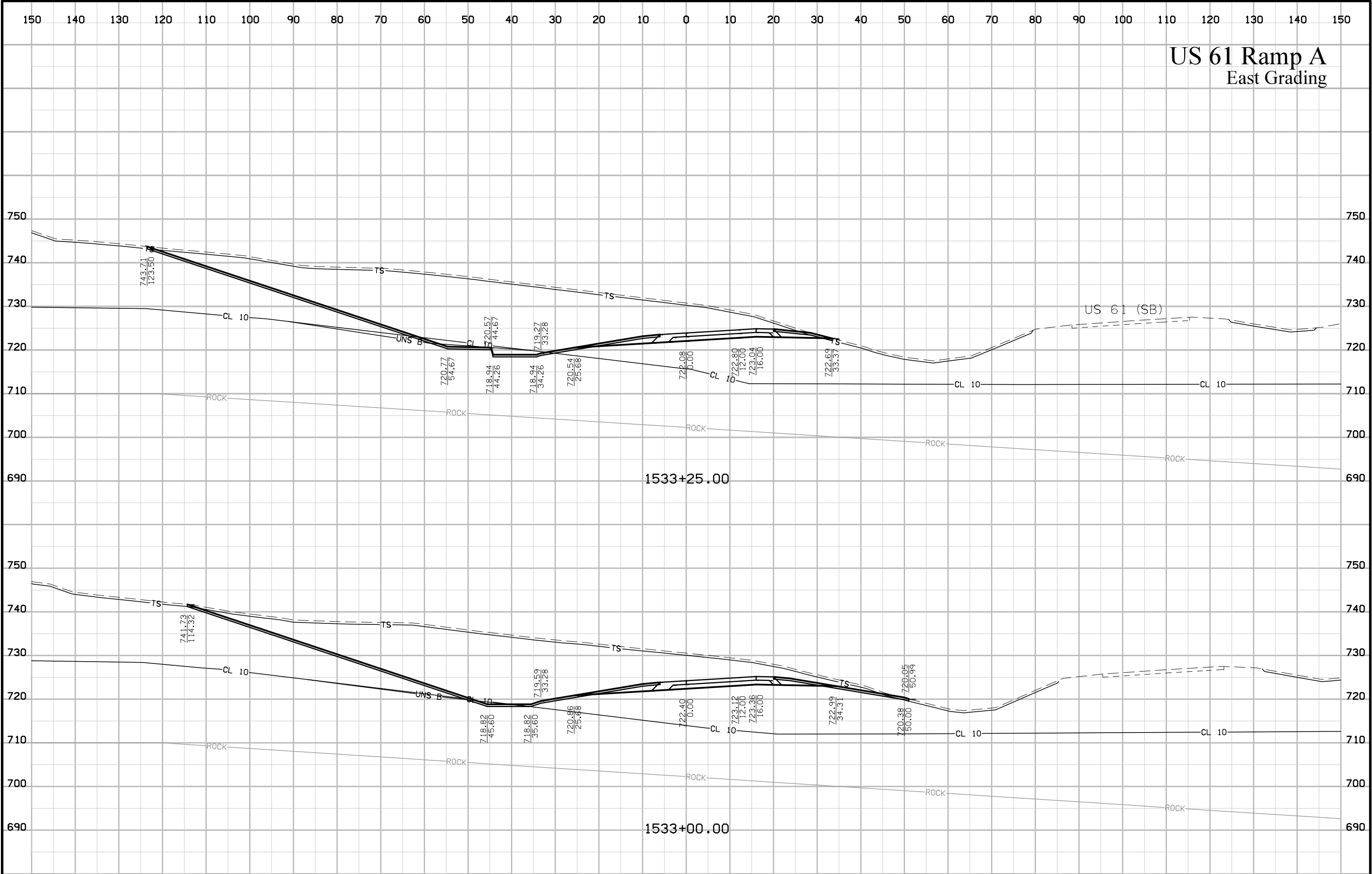
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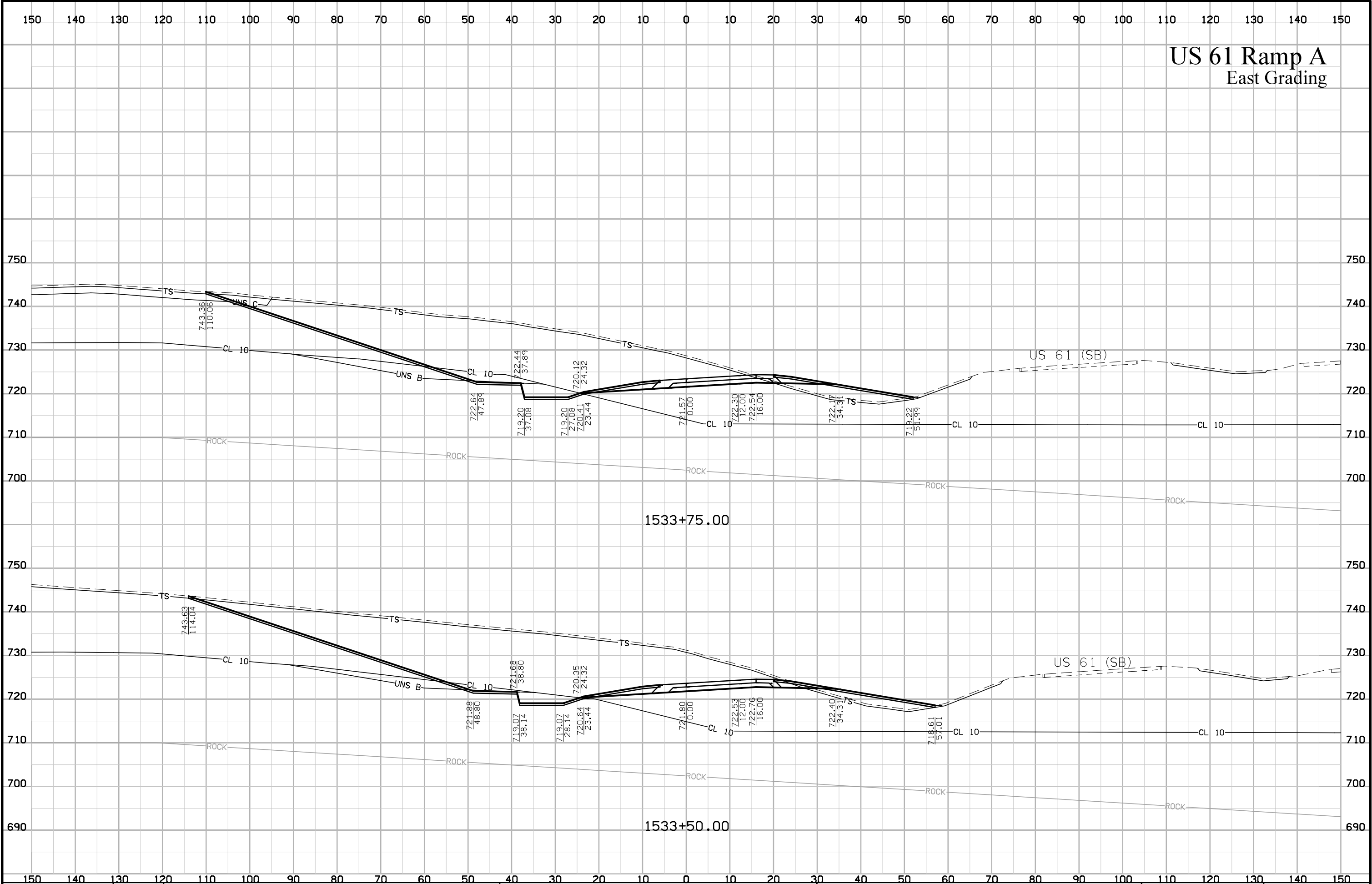
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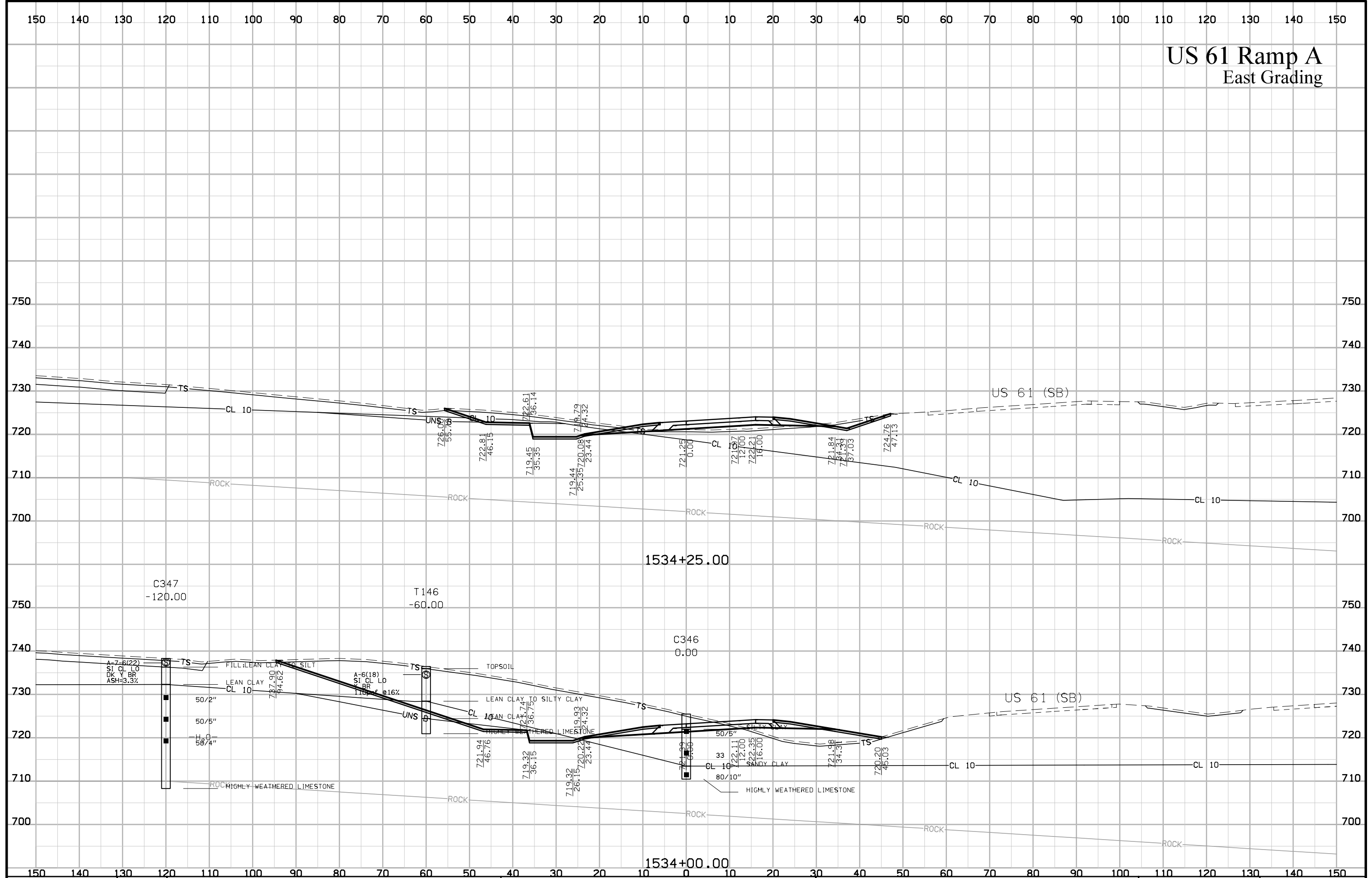
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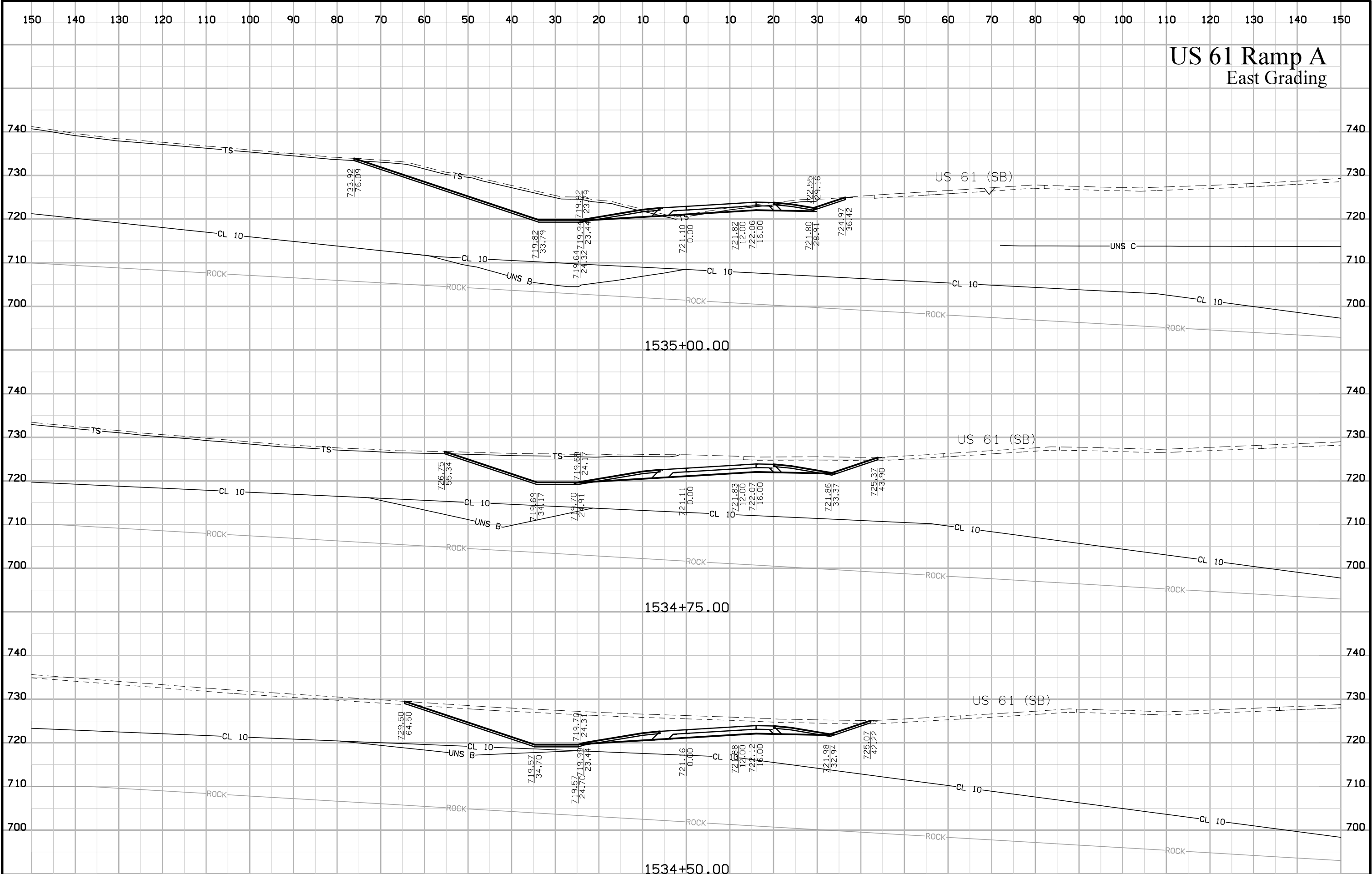
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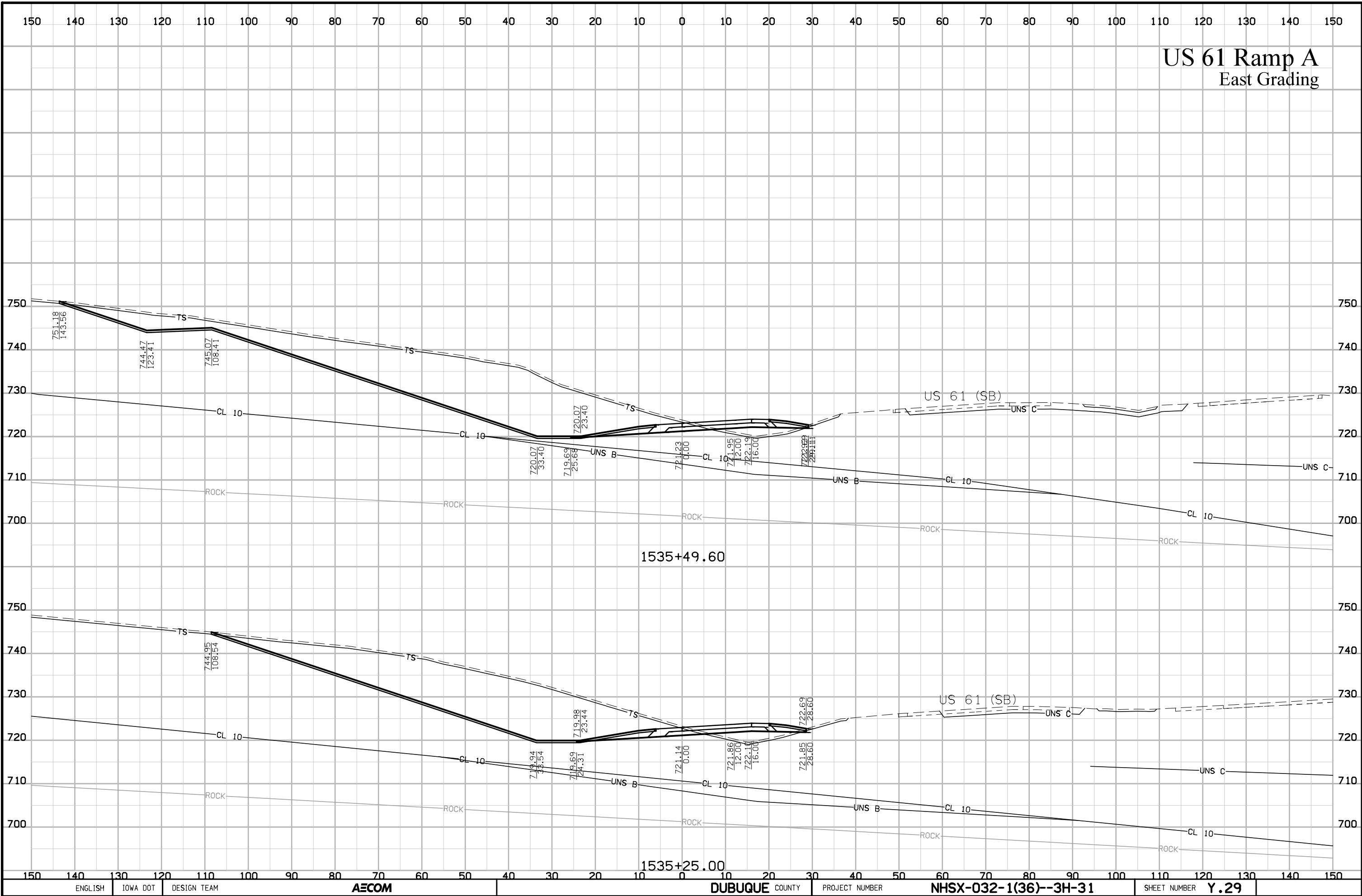
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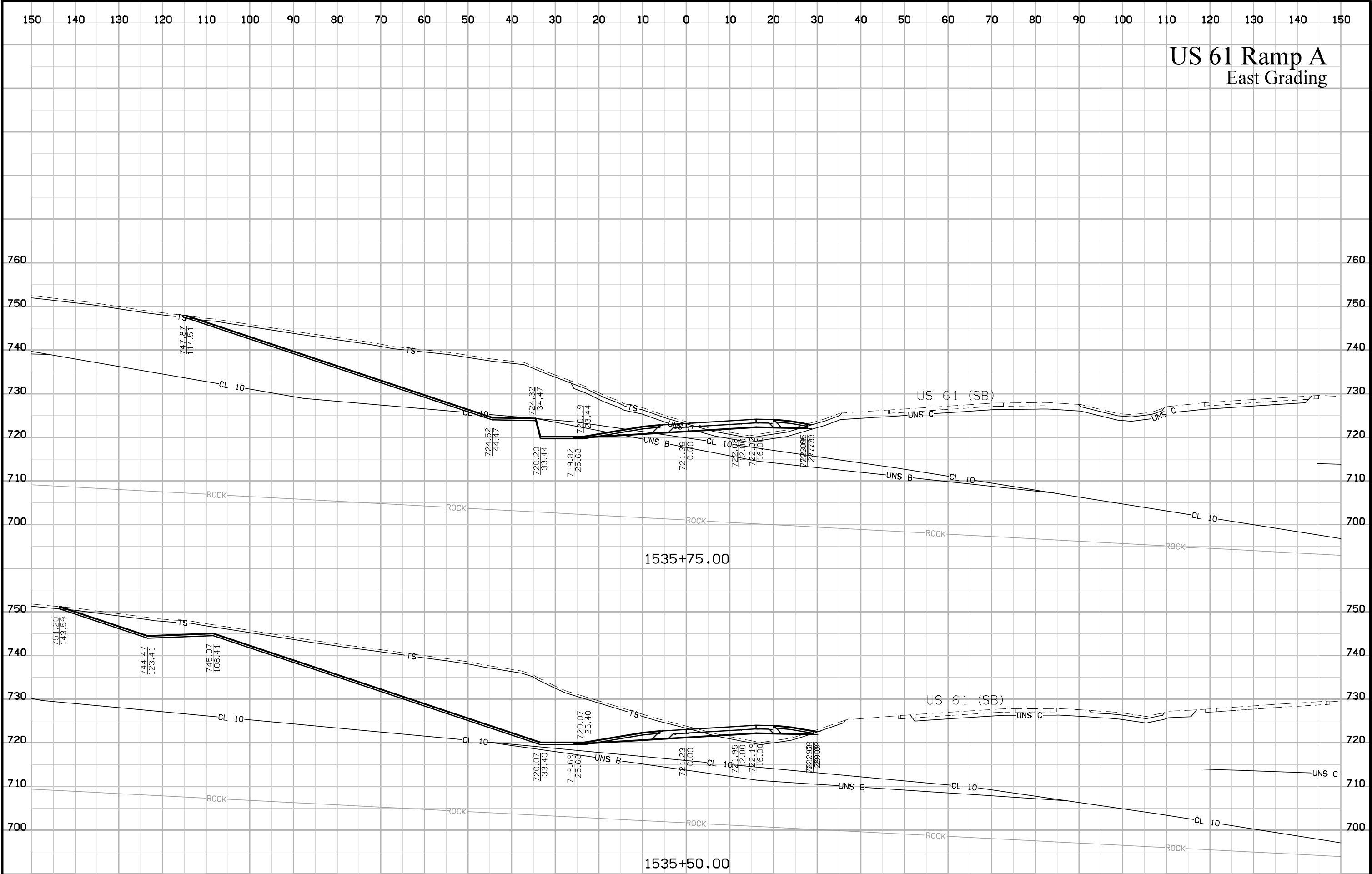
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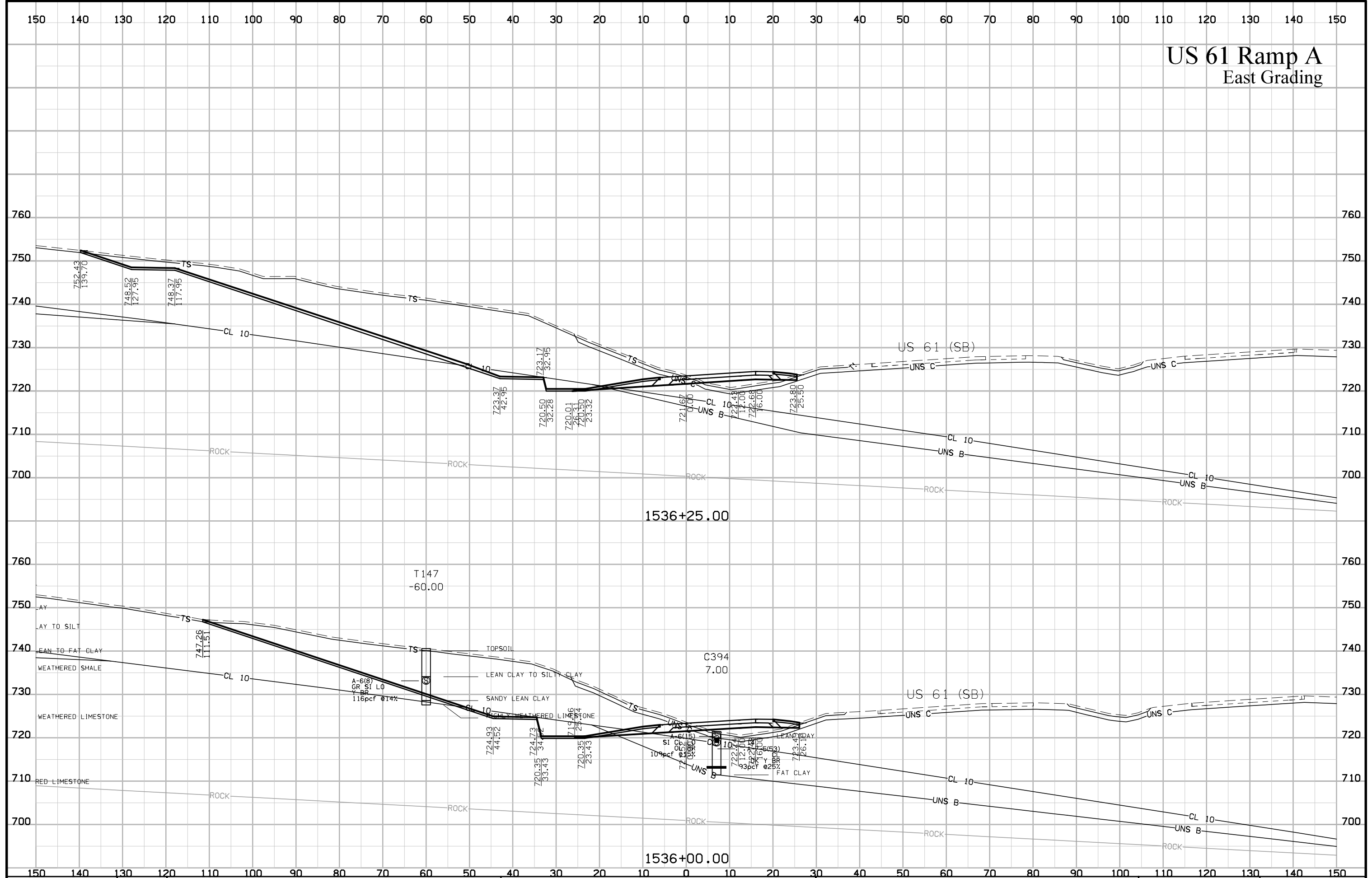
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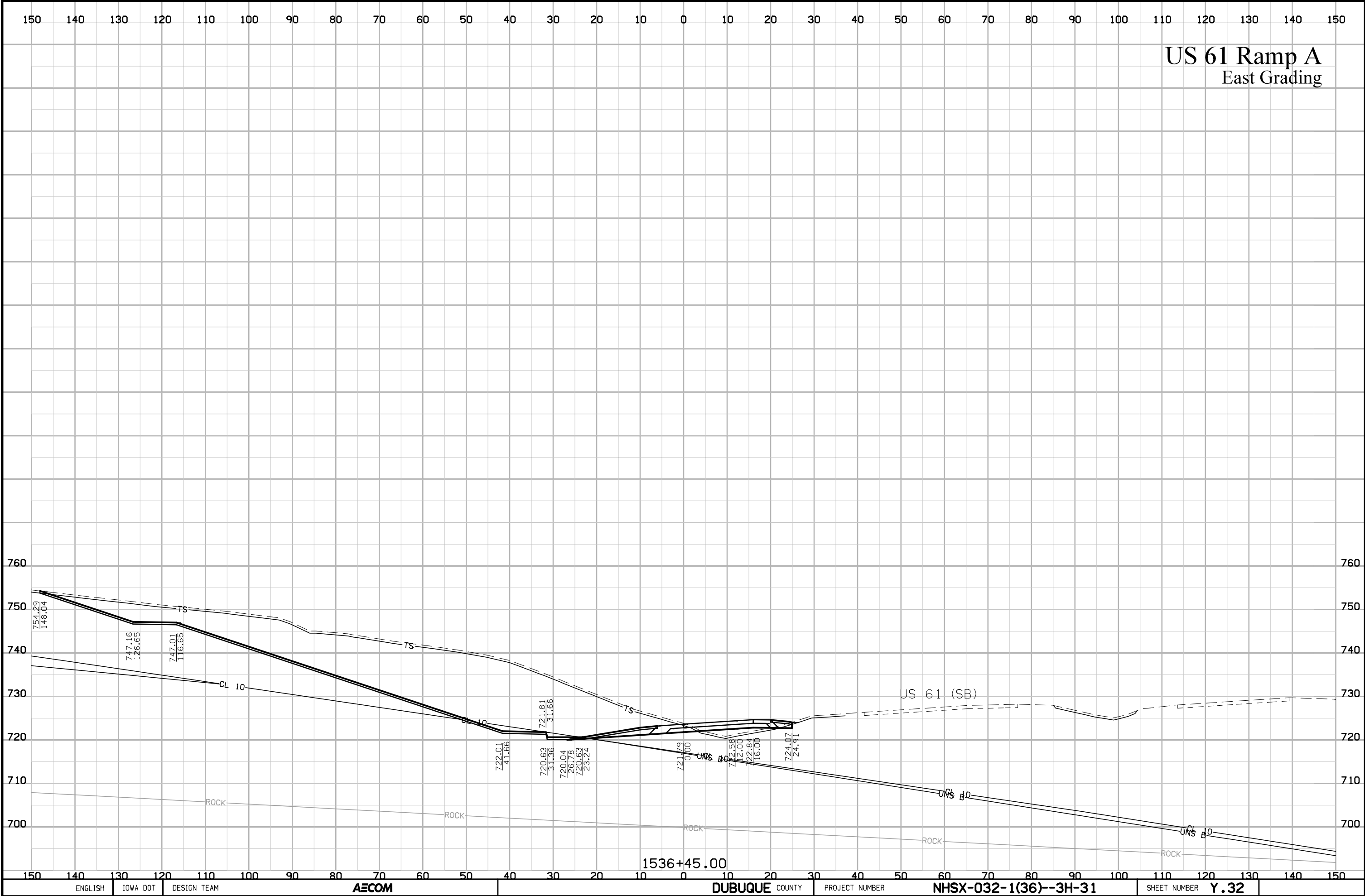
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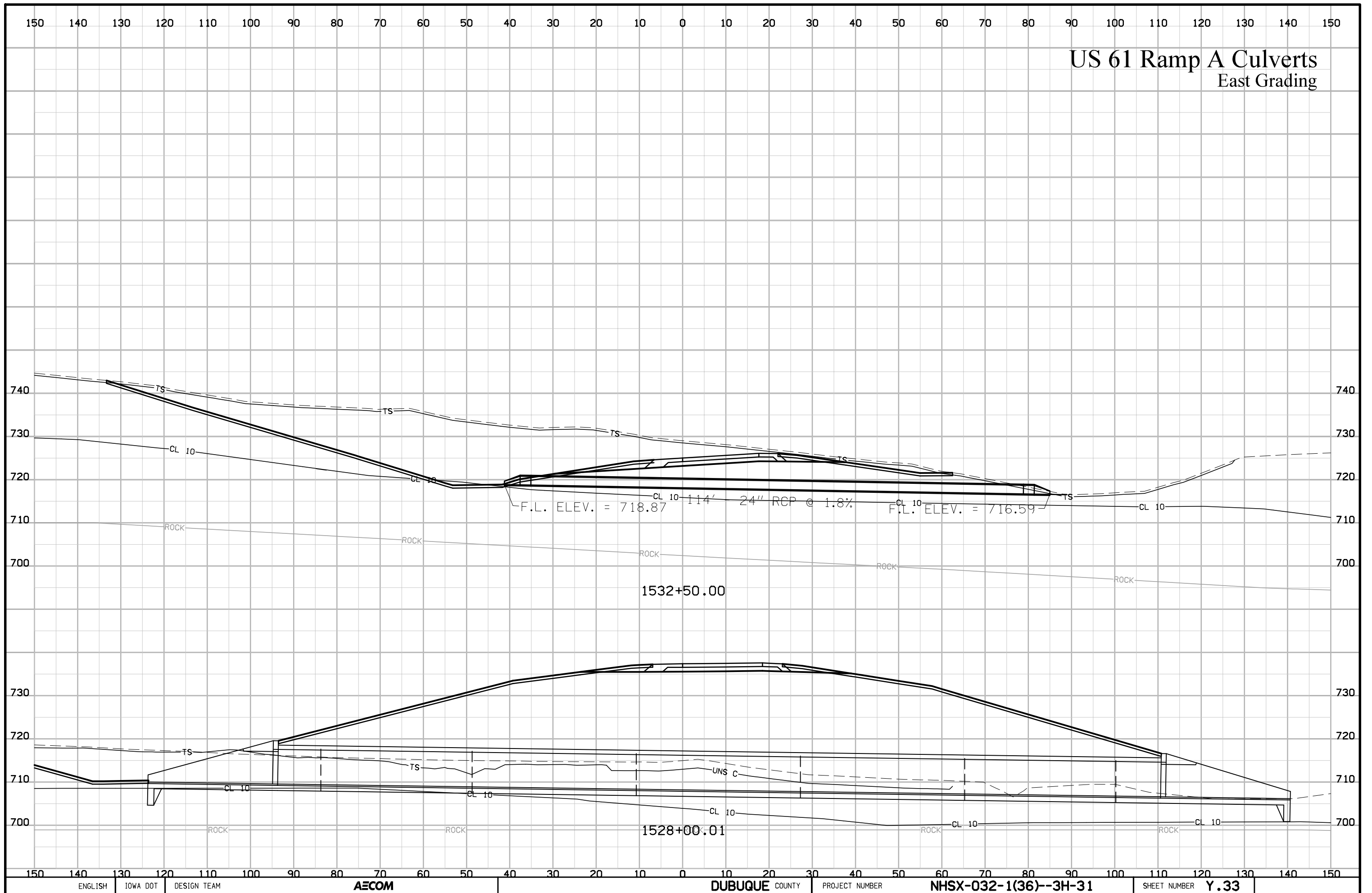
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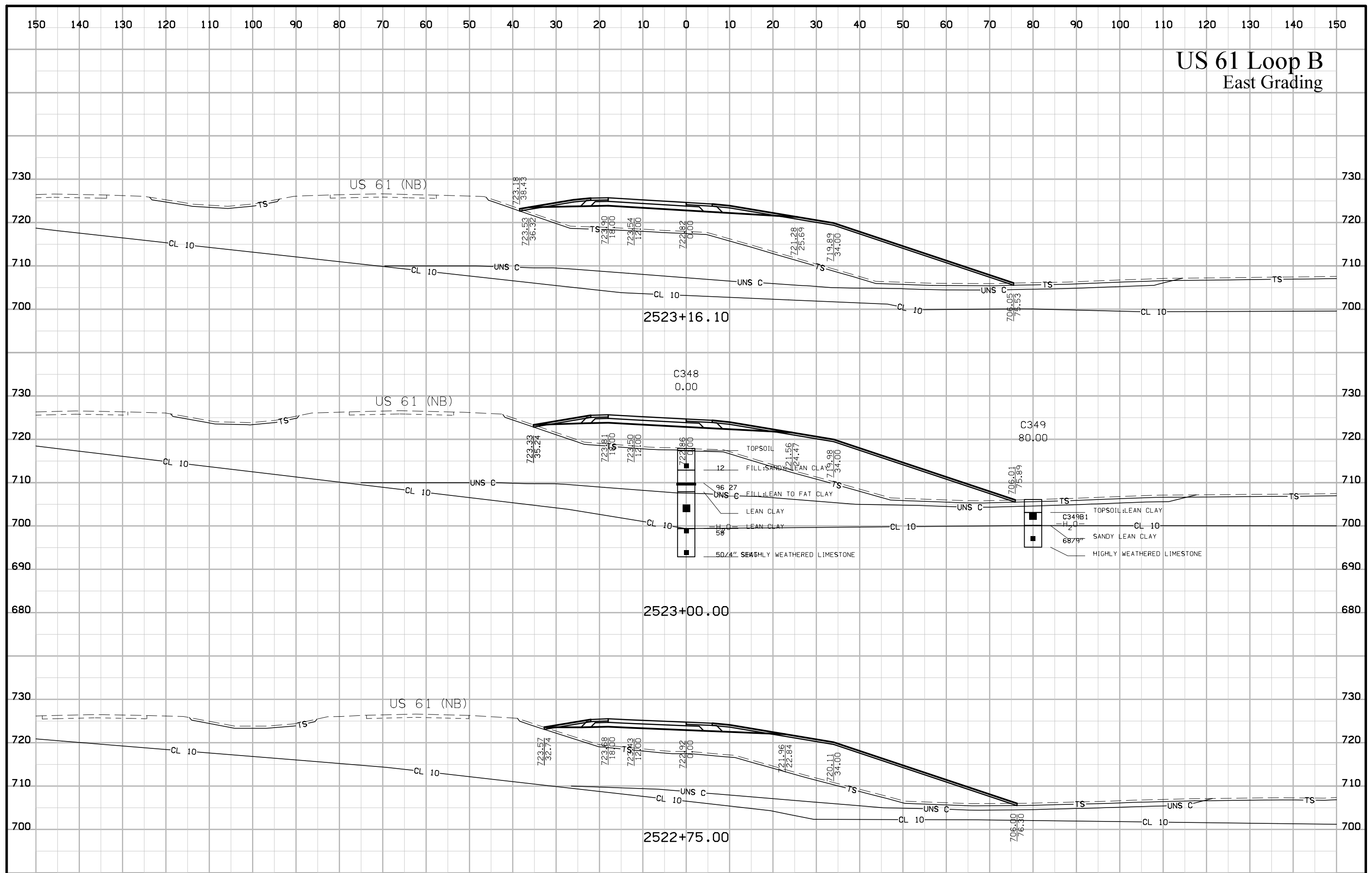
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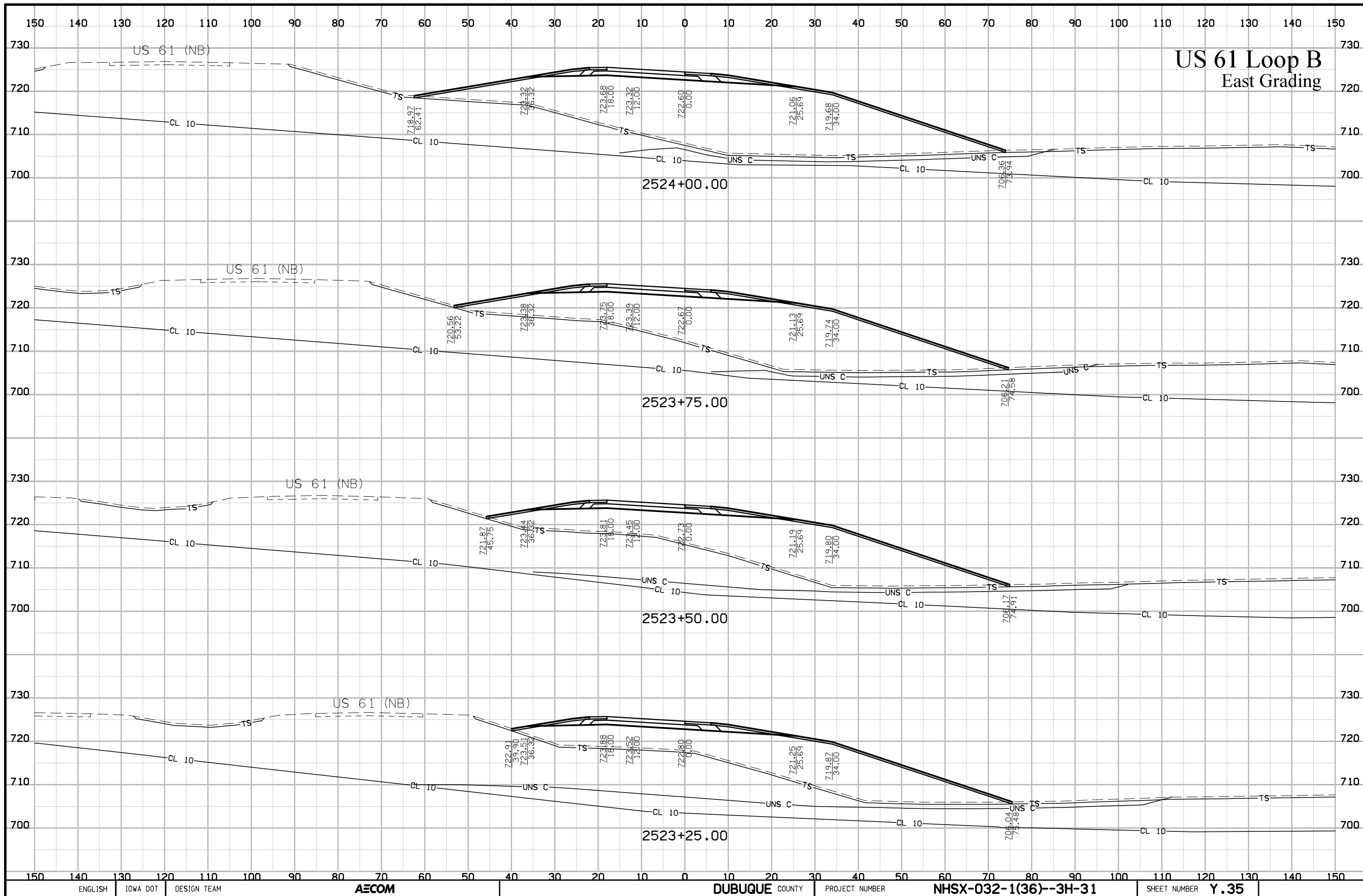


US 61 Ramp A Culverts East Grading

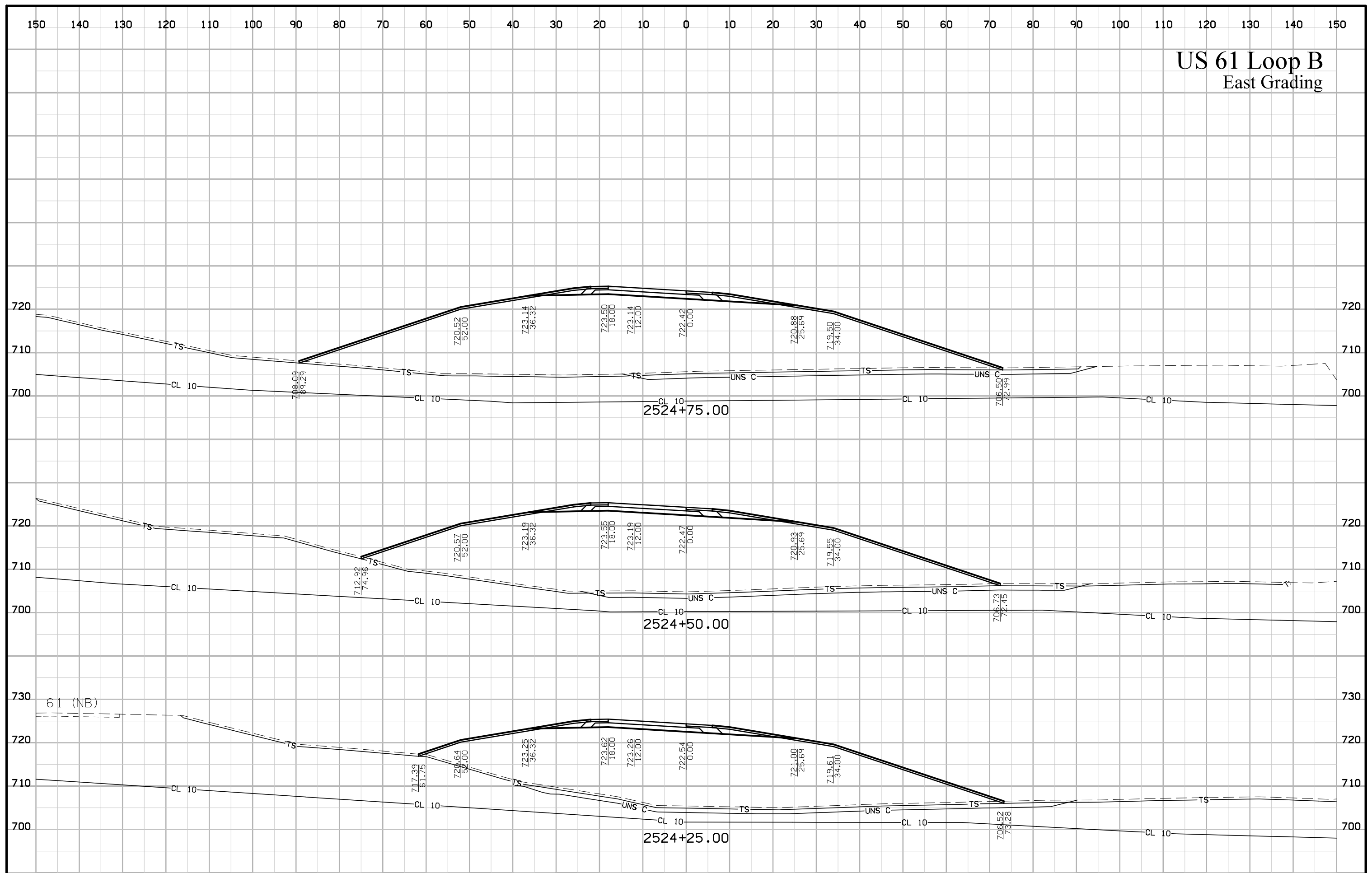


US 61 Loop B East Grading

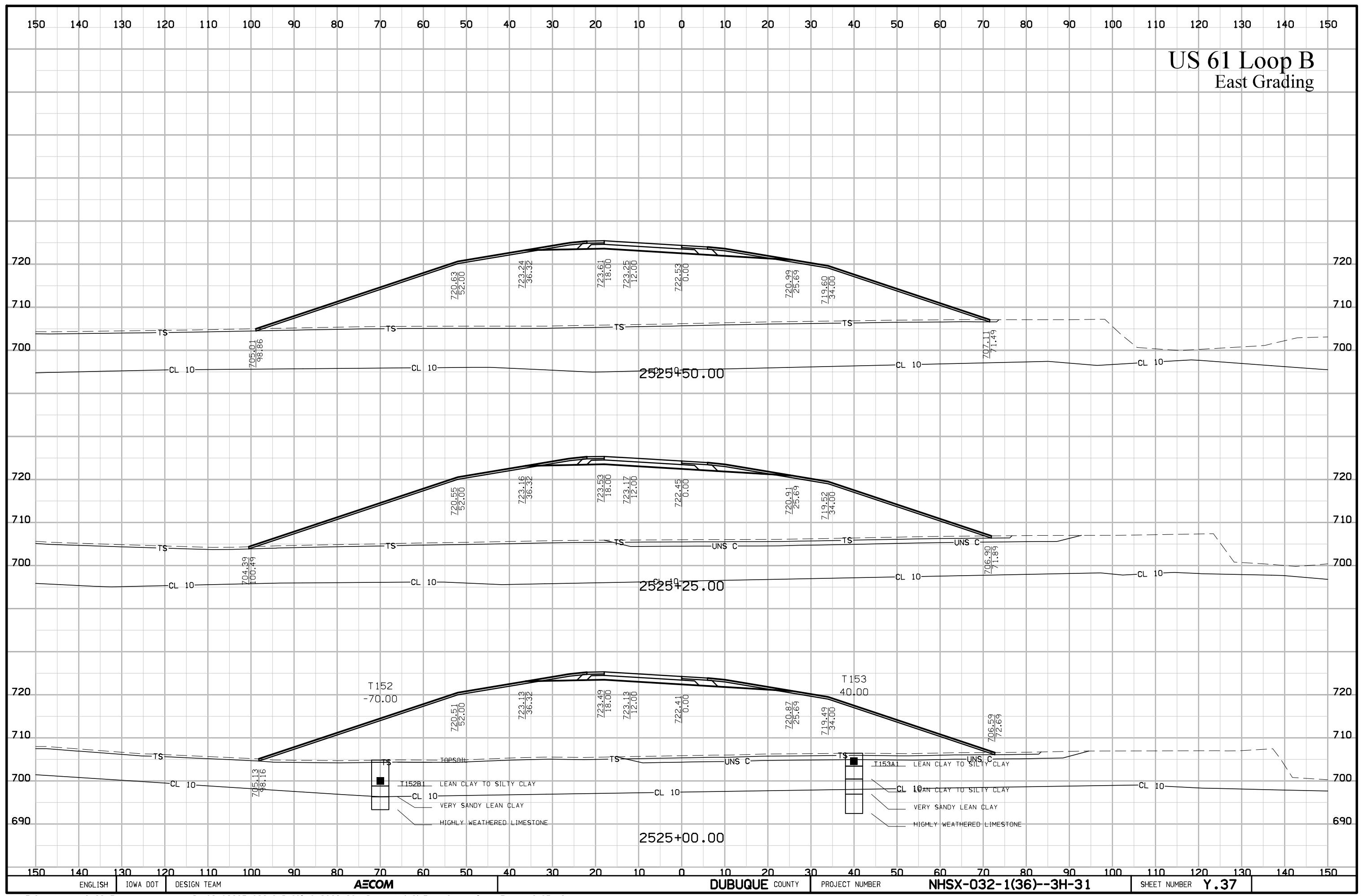




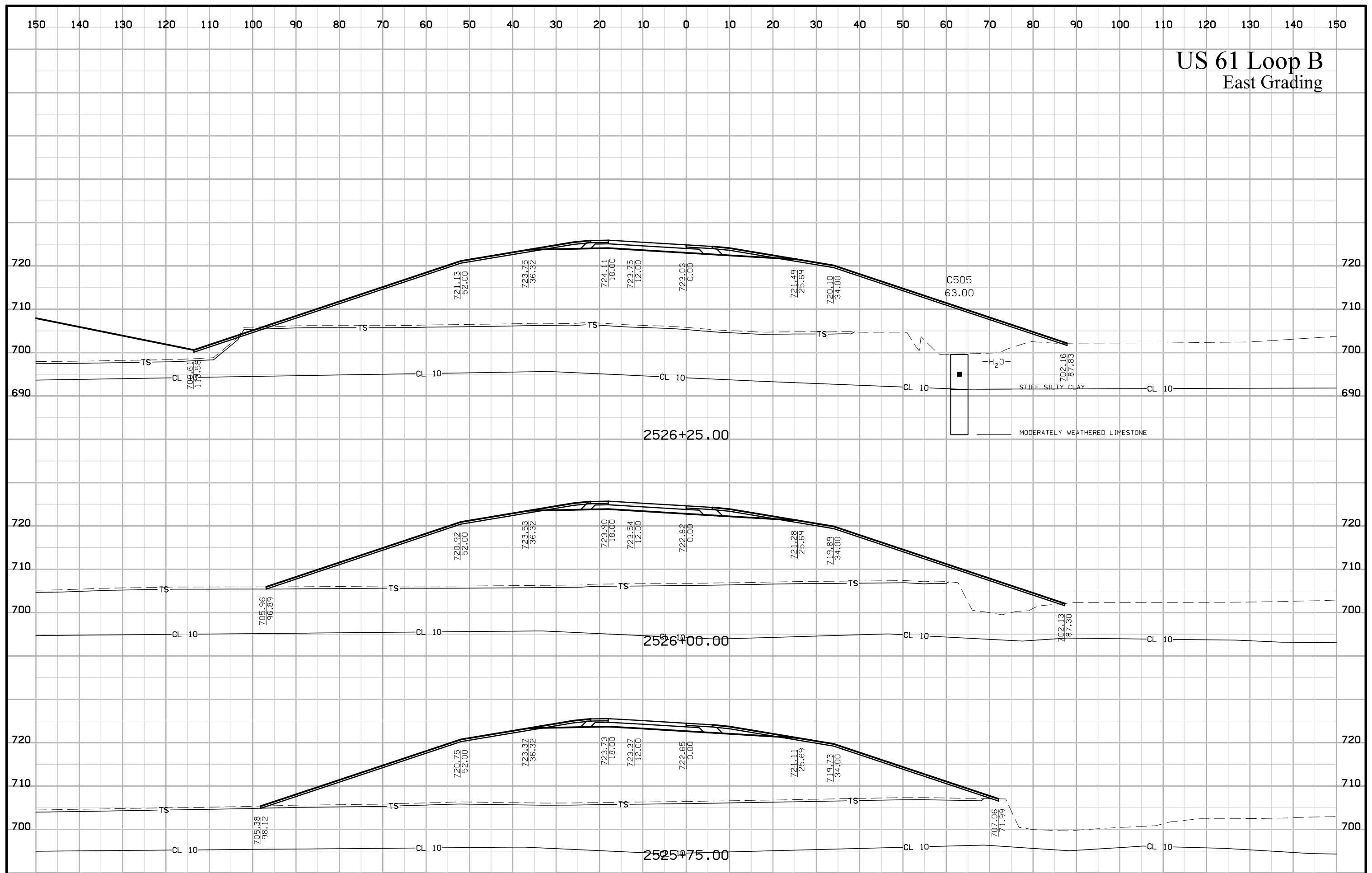
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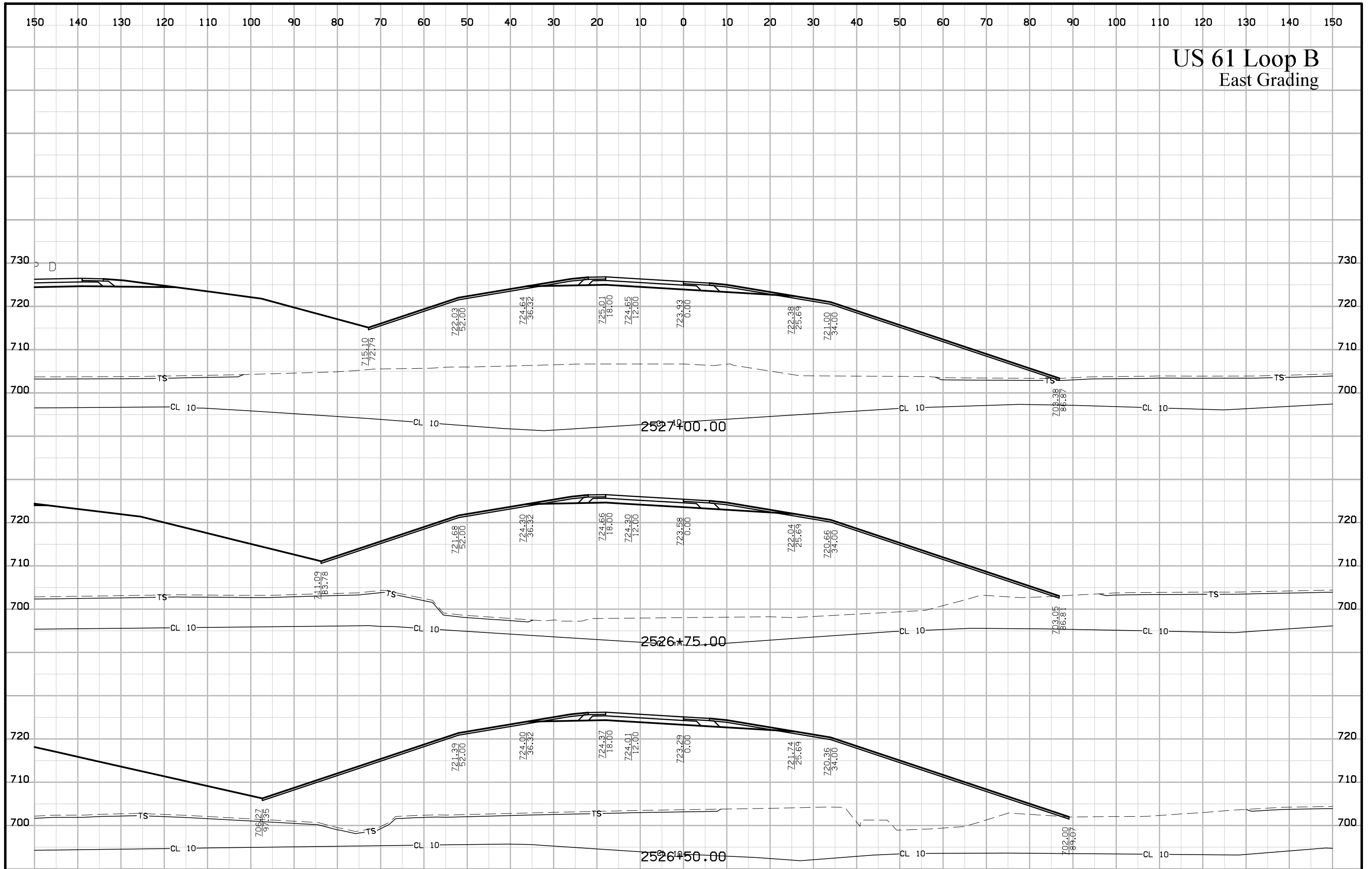
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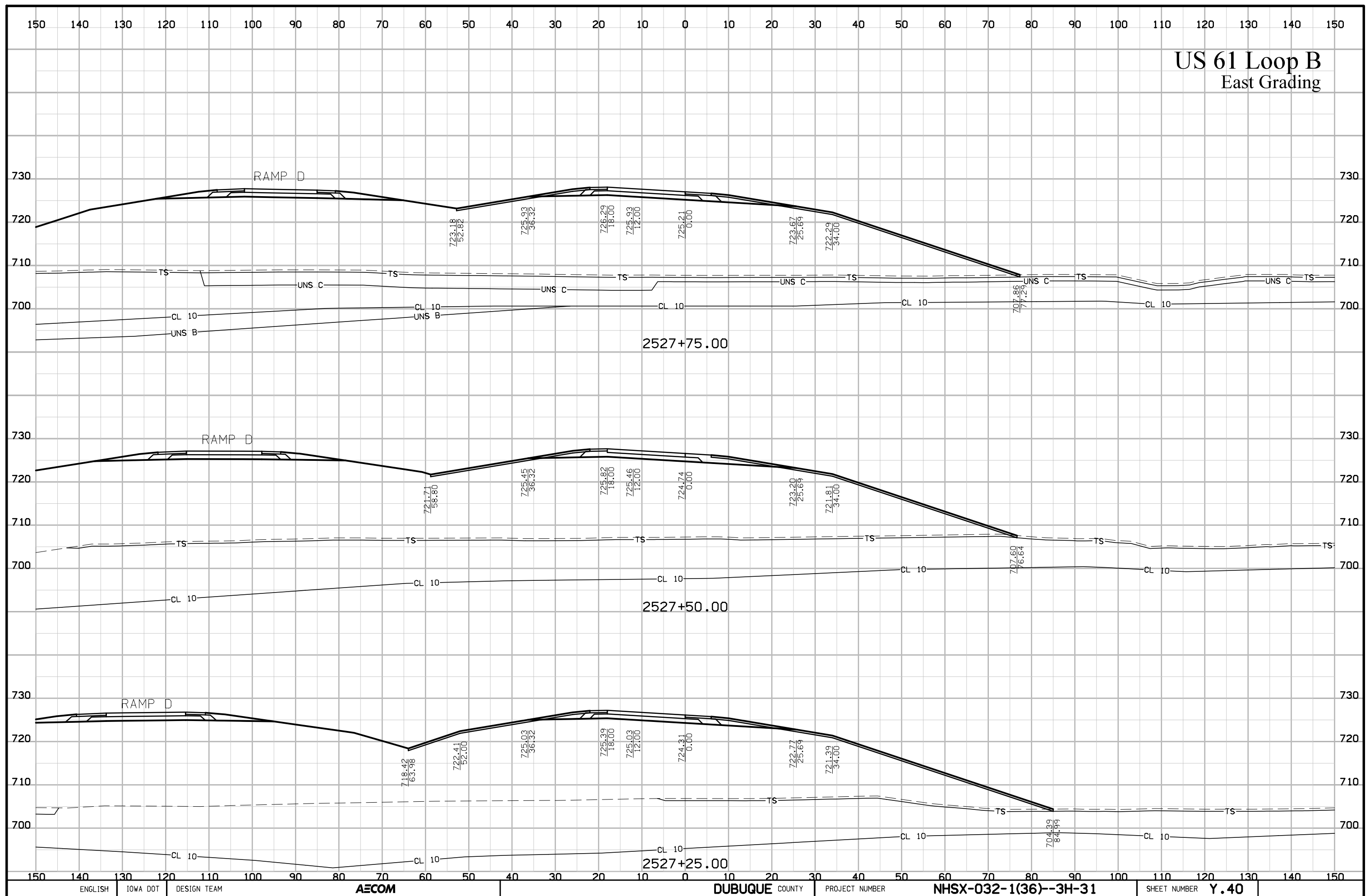
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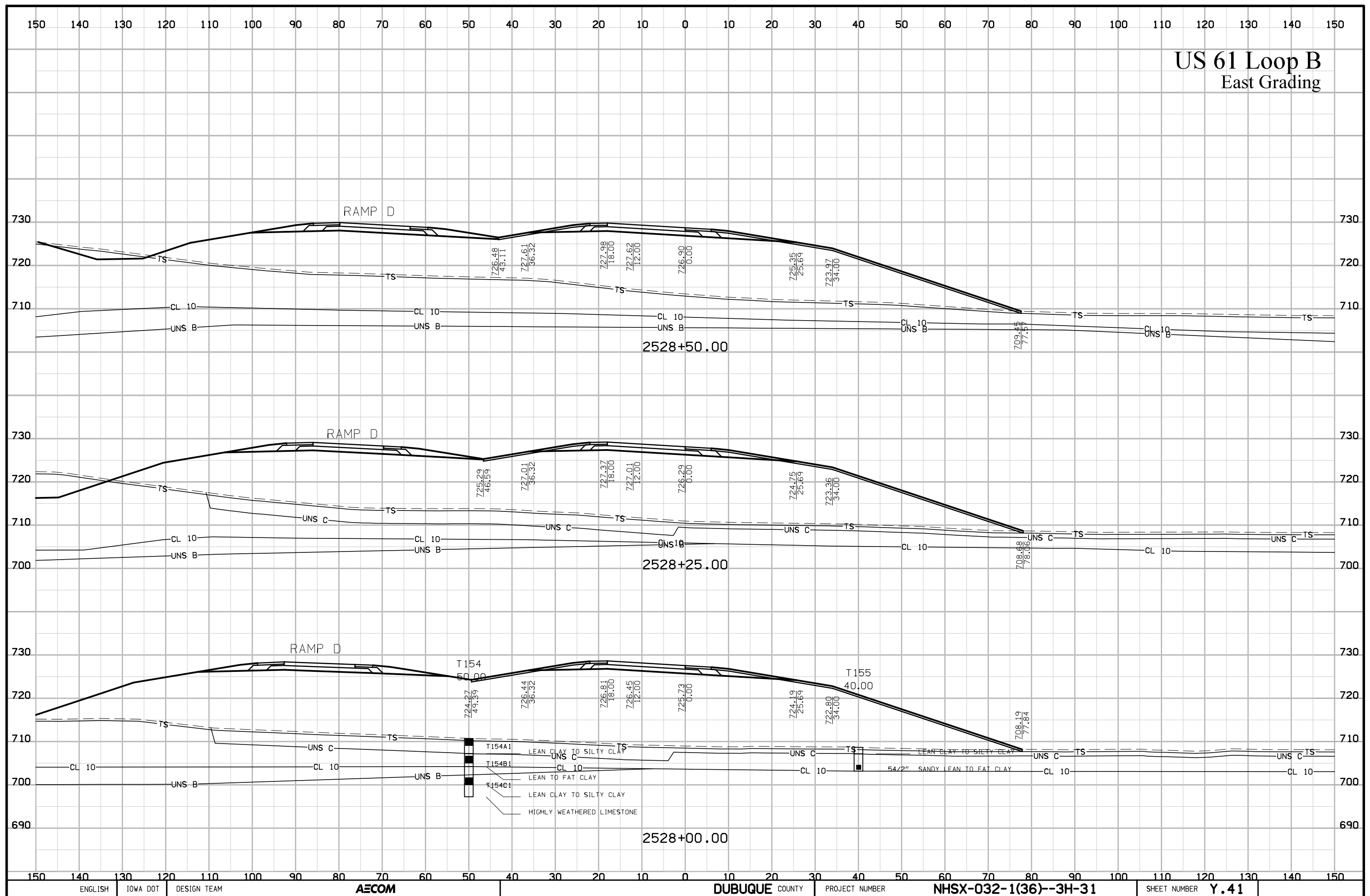
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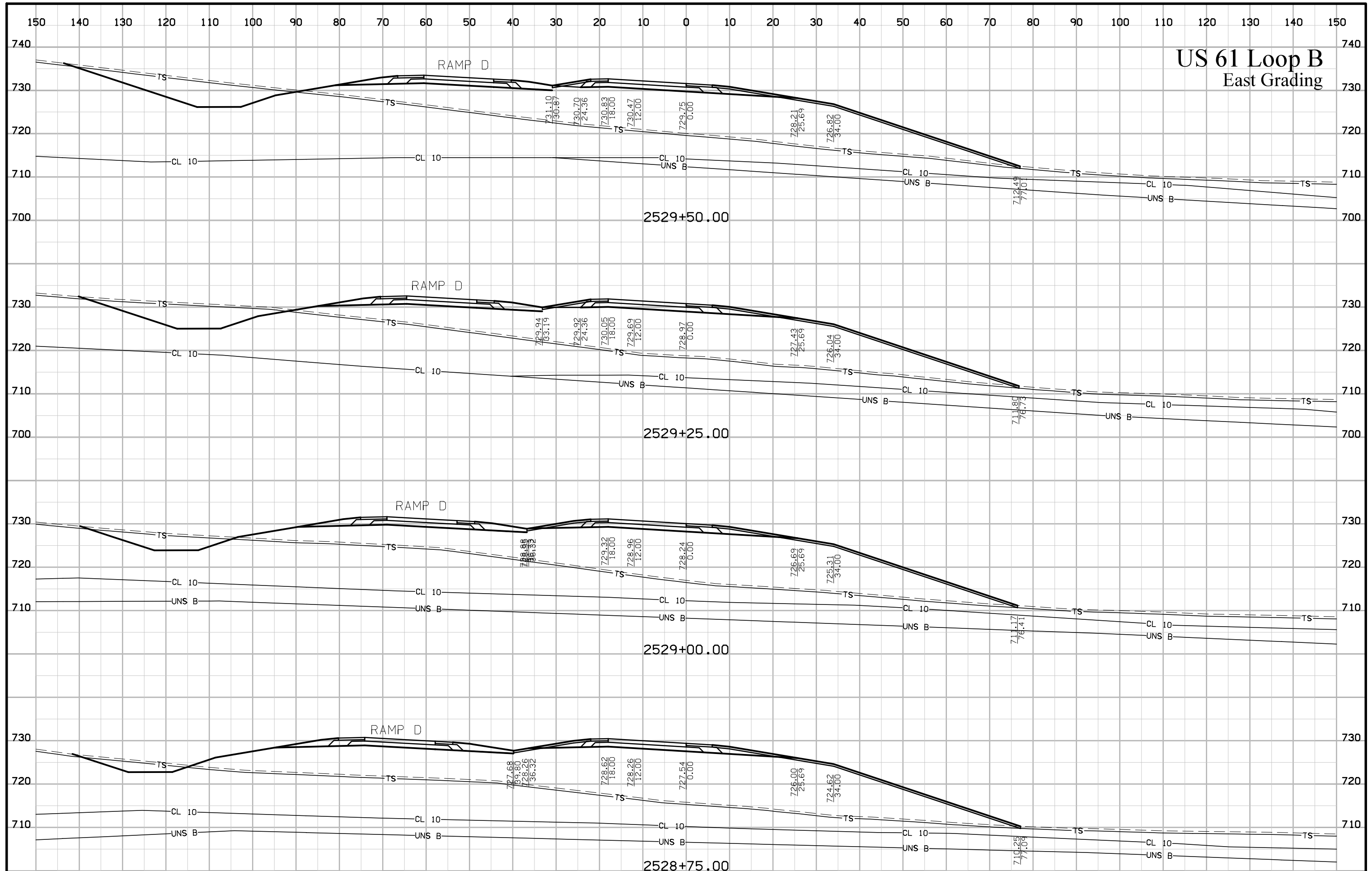
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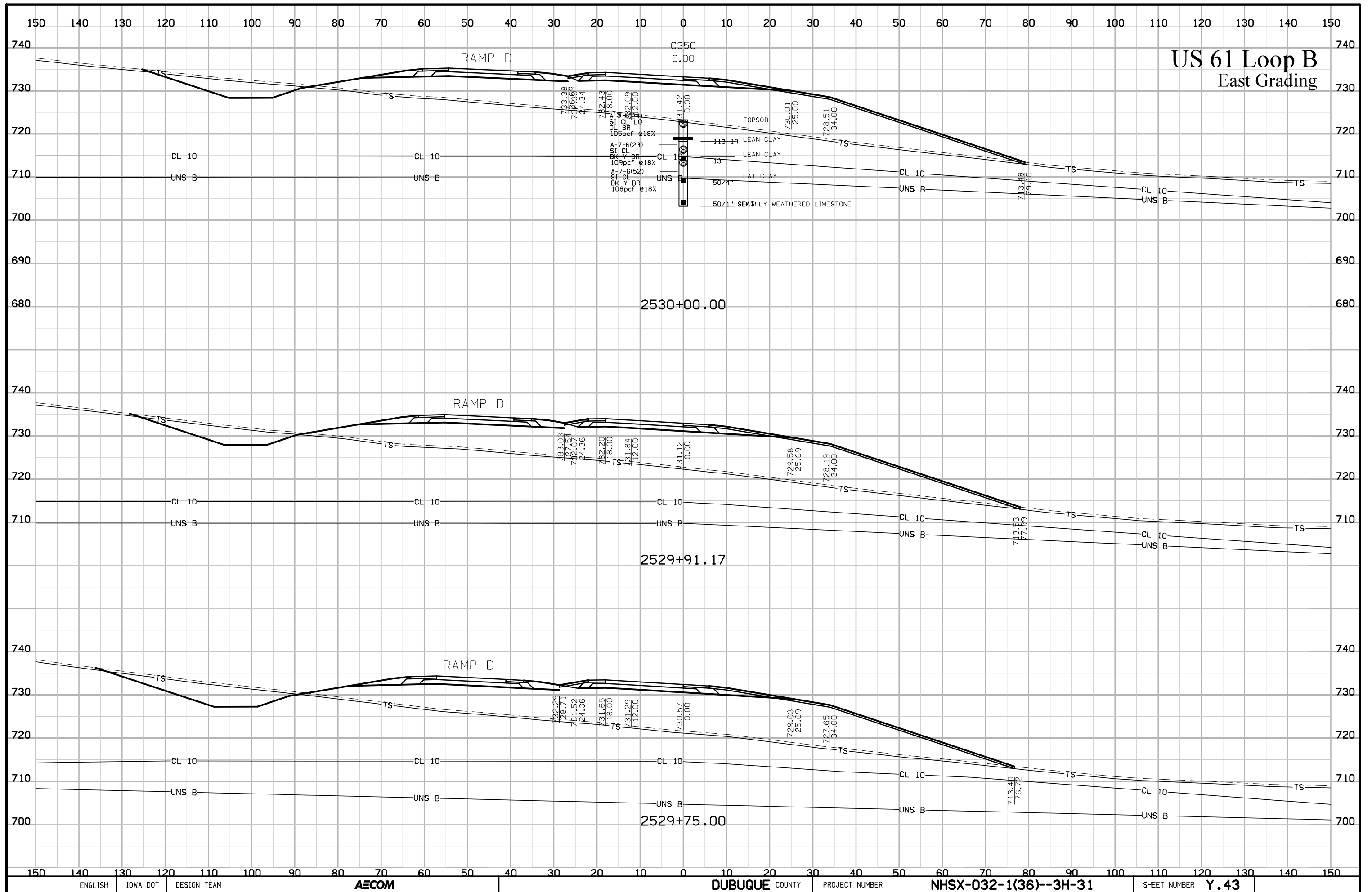


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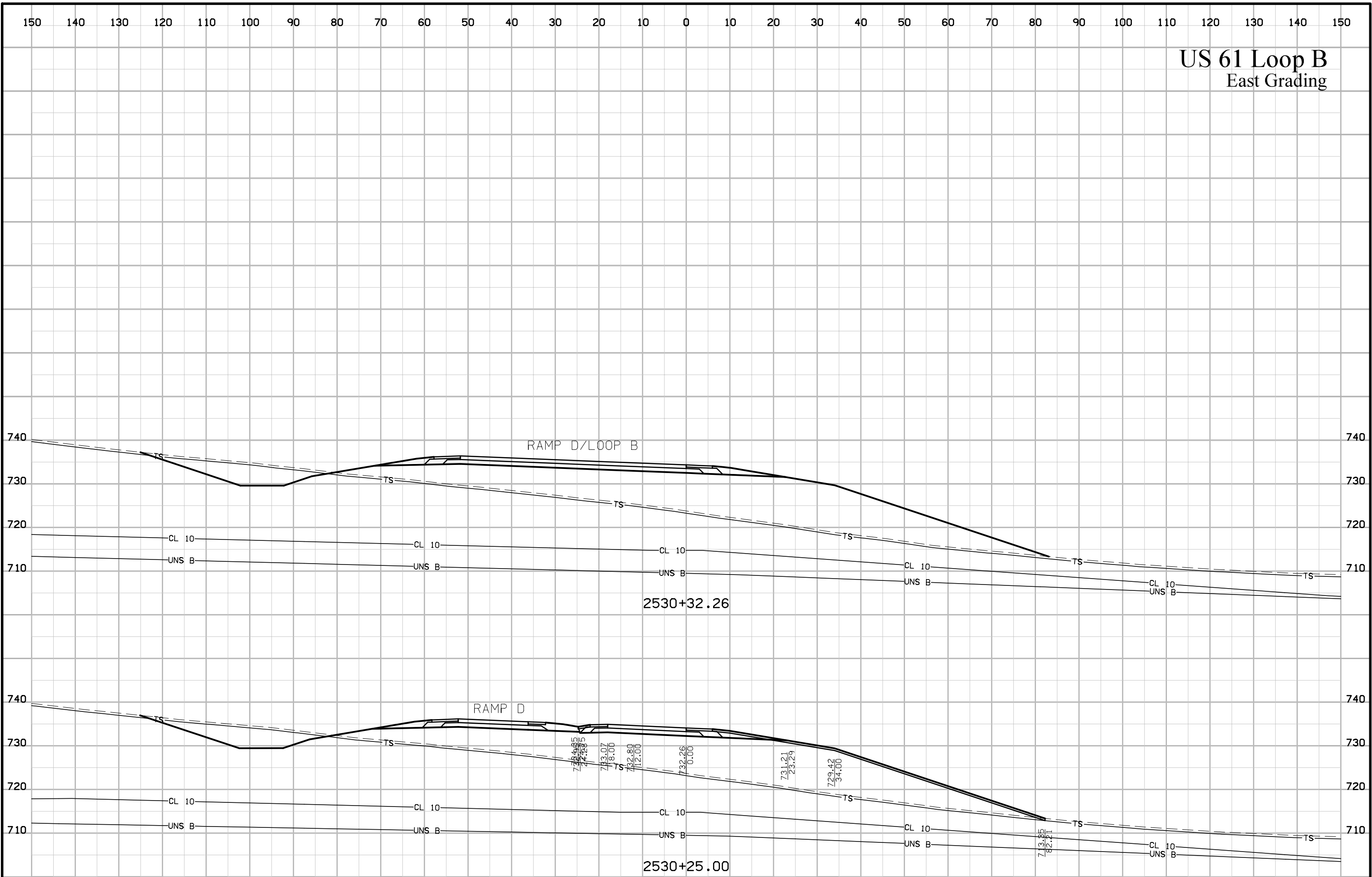


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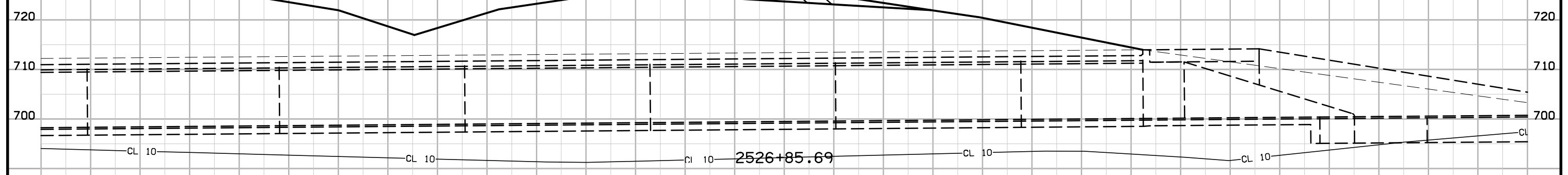


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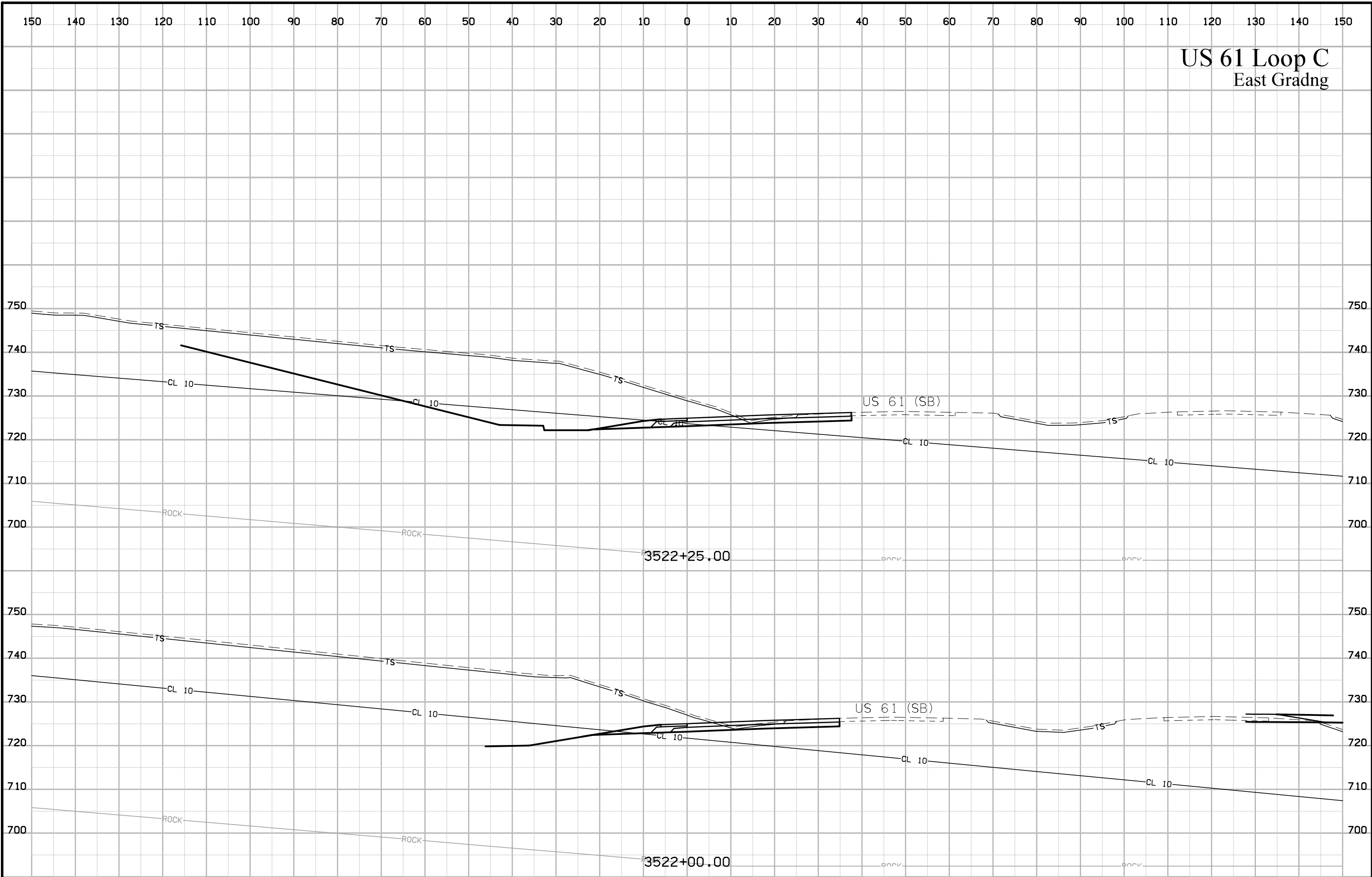
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US 61 Loop B Culverts East Grading

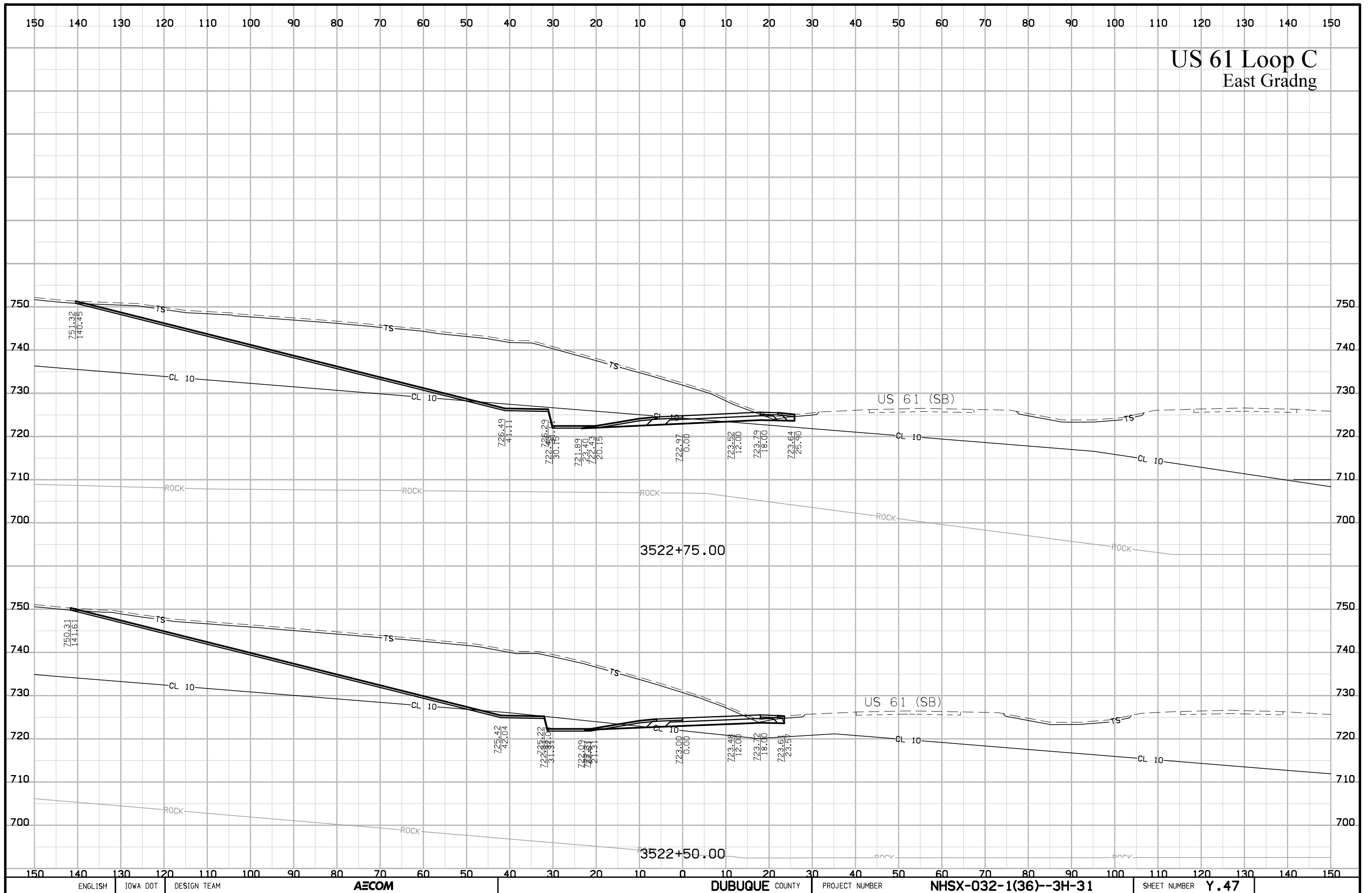


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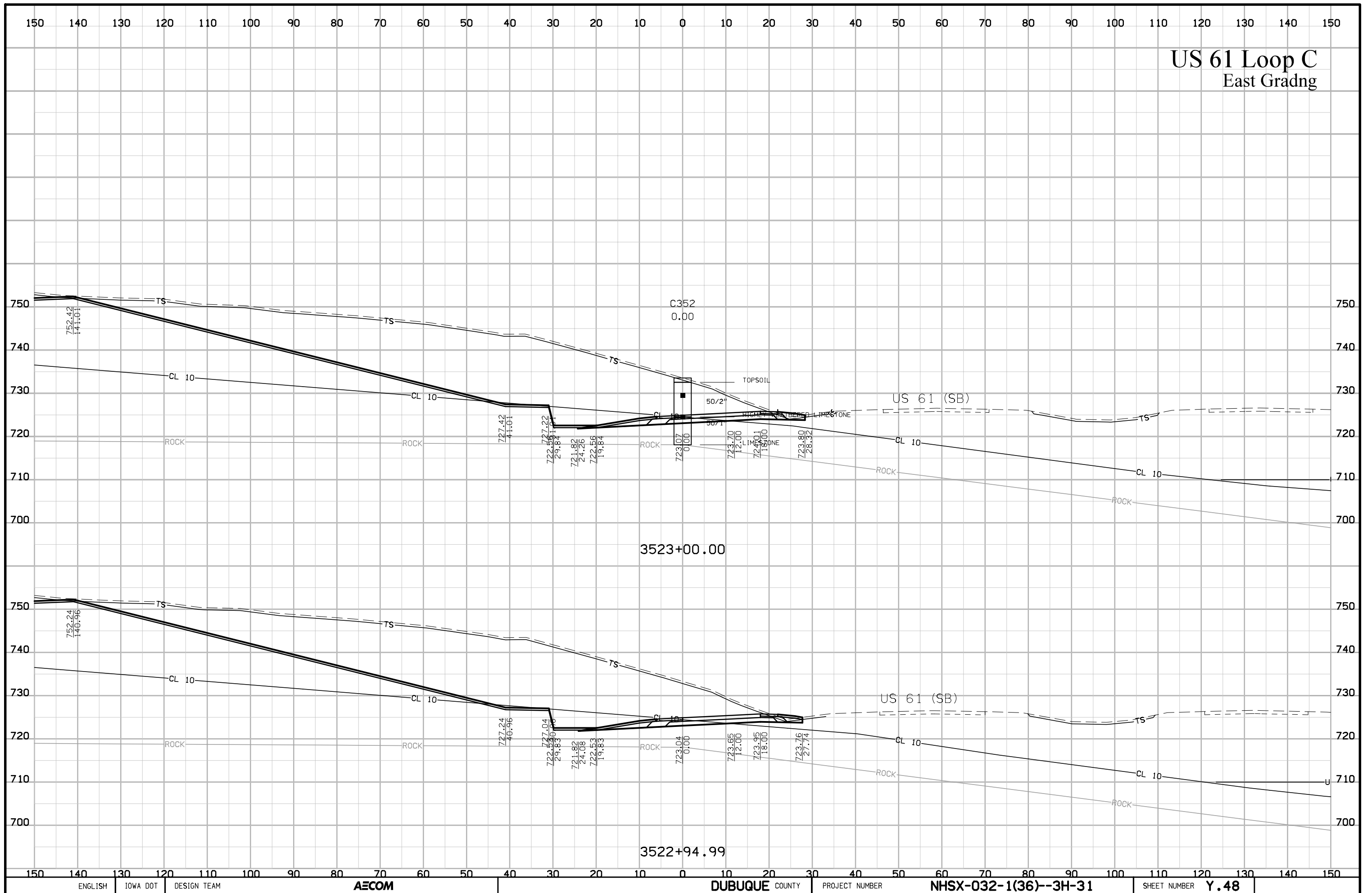
US 61 Loop C East Gradng



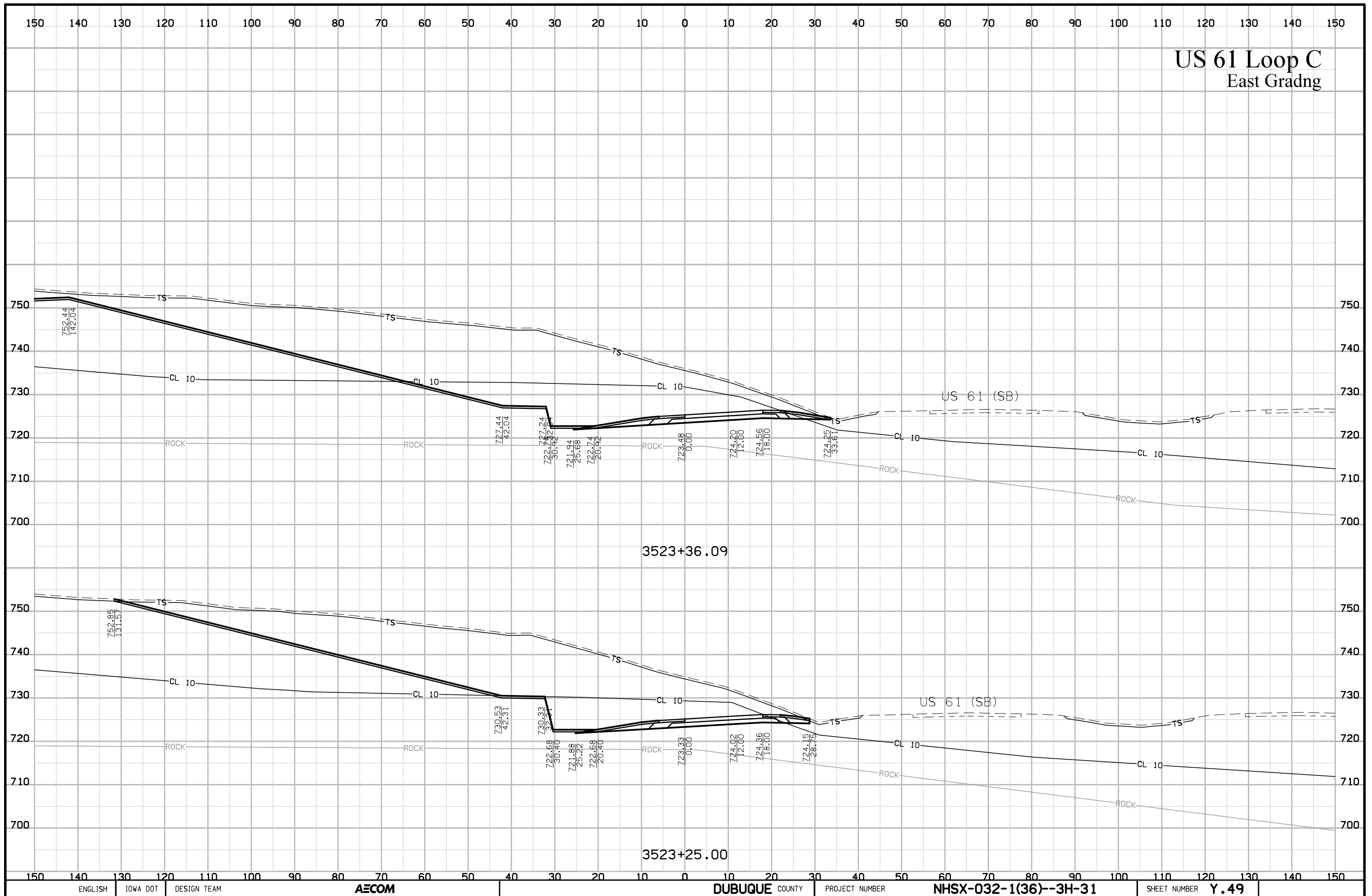
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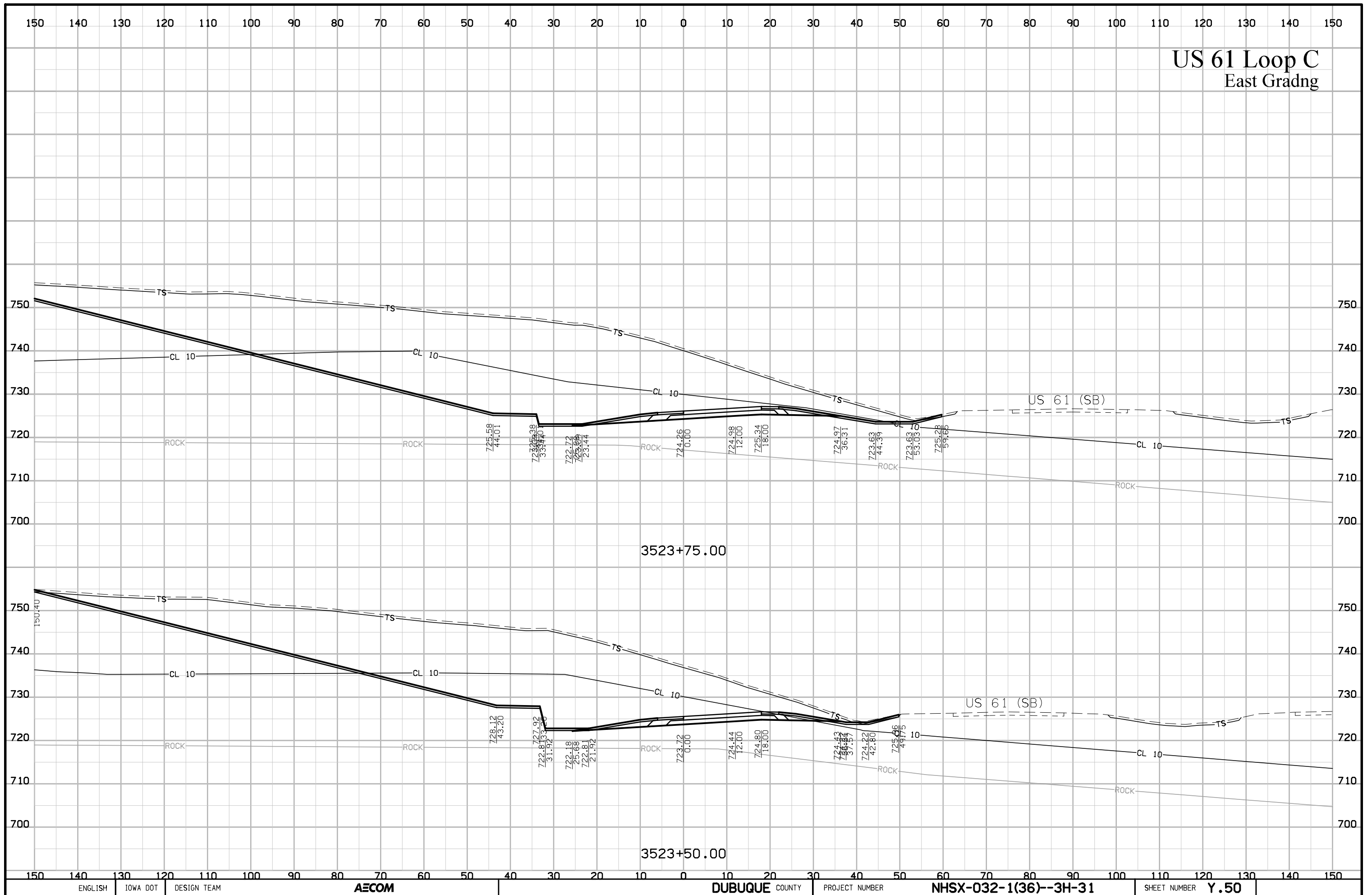
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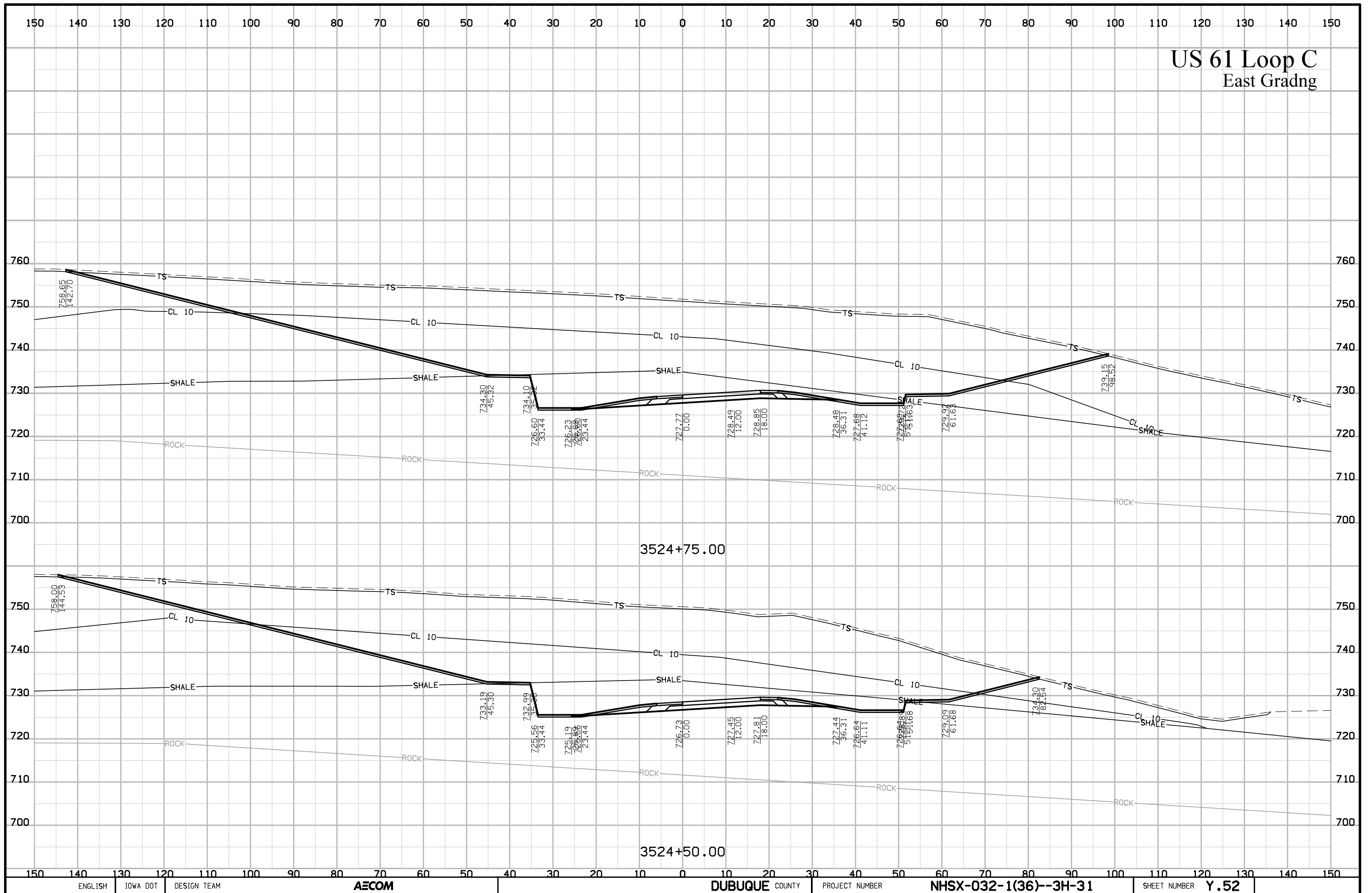
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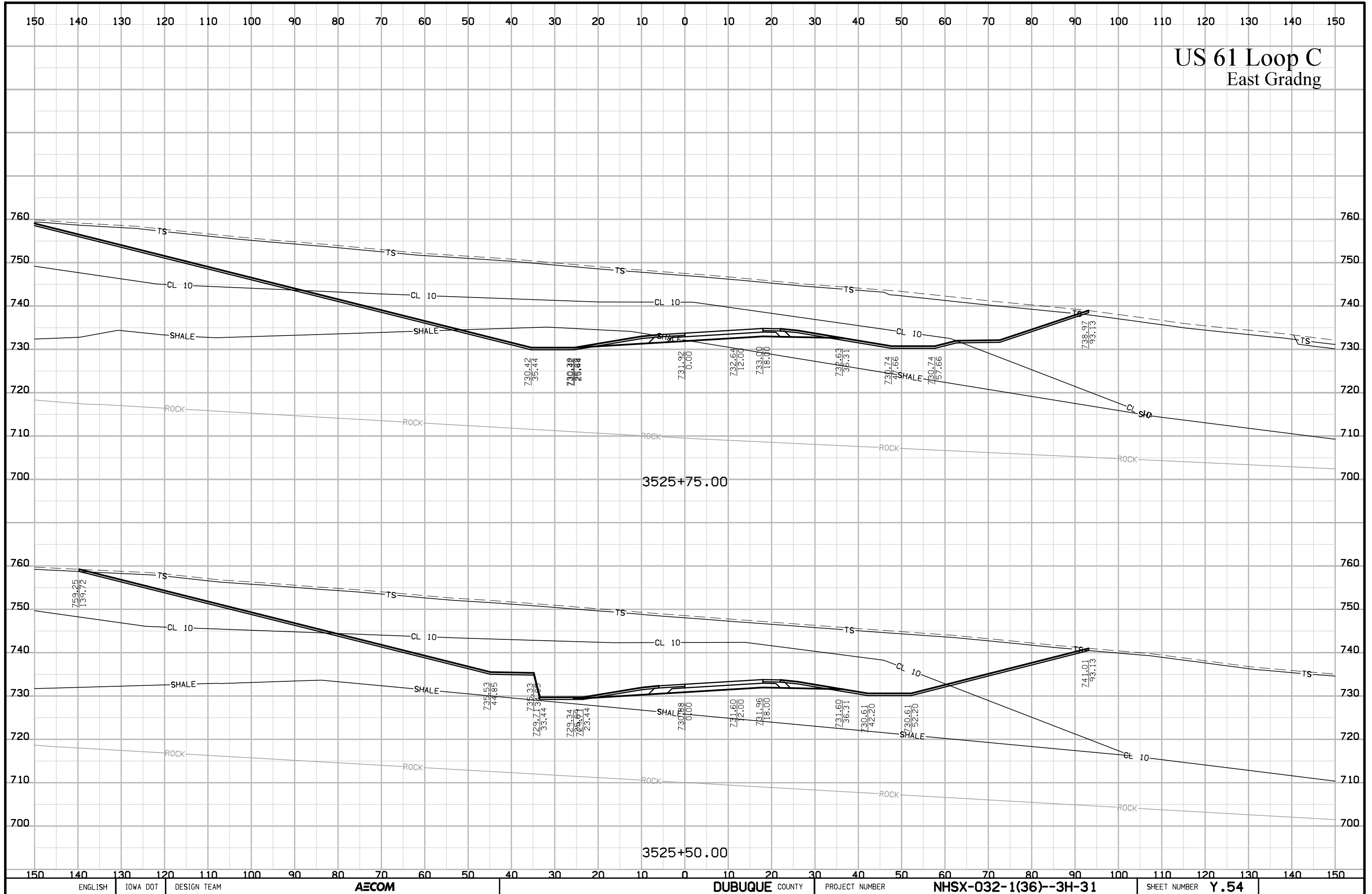
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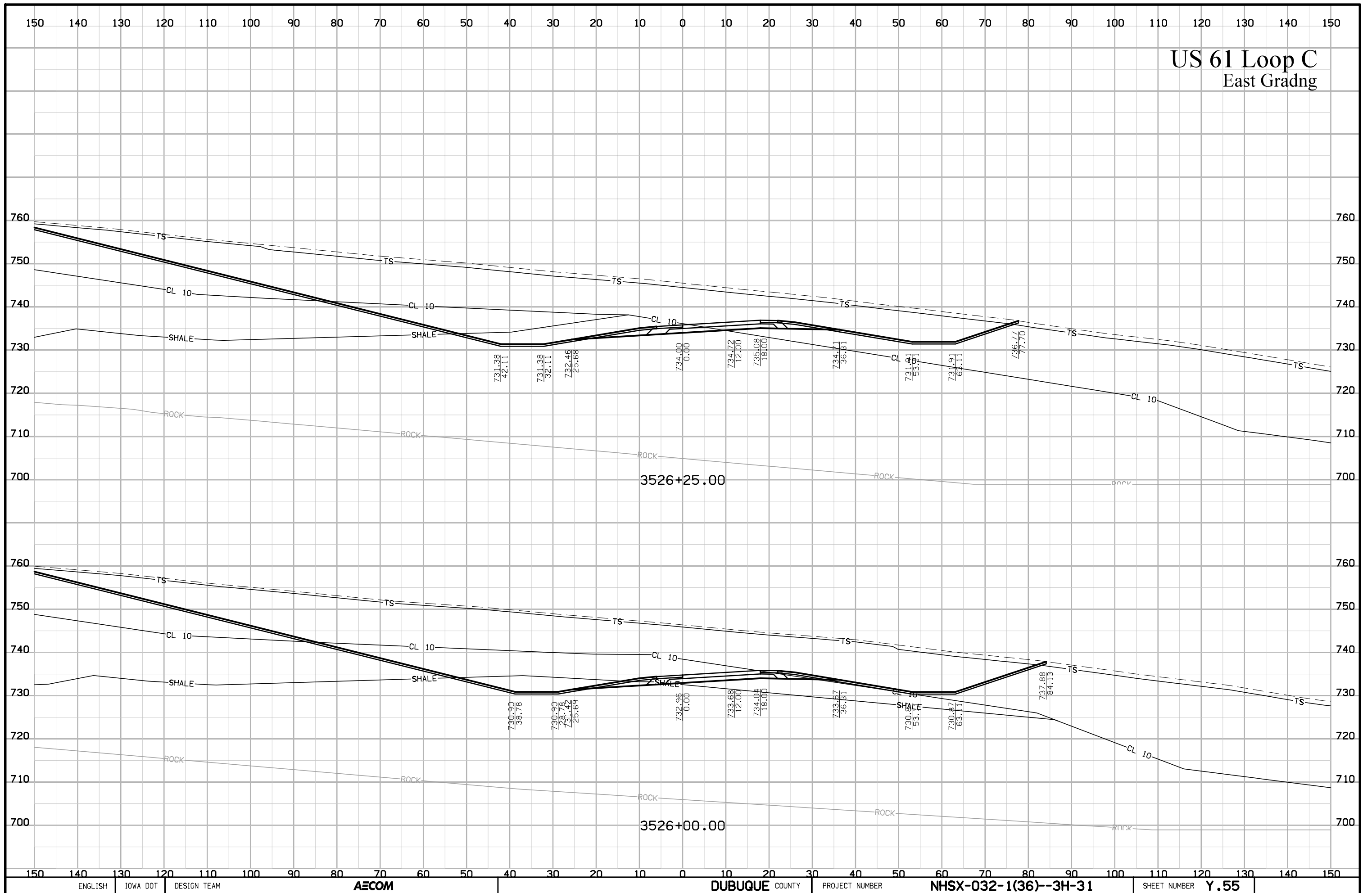
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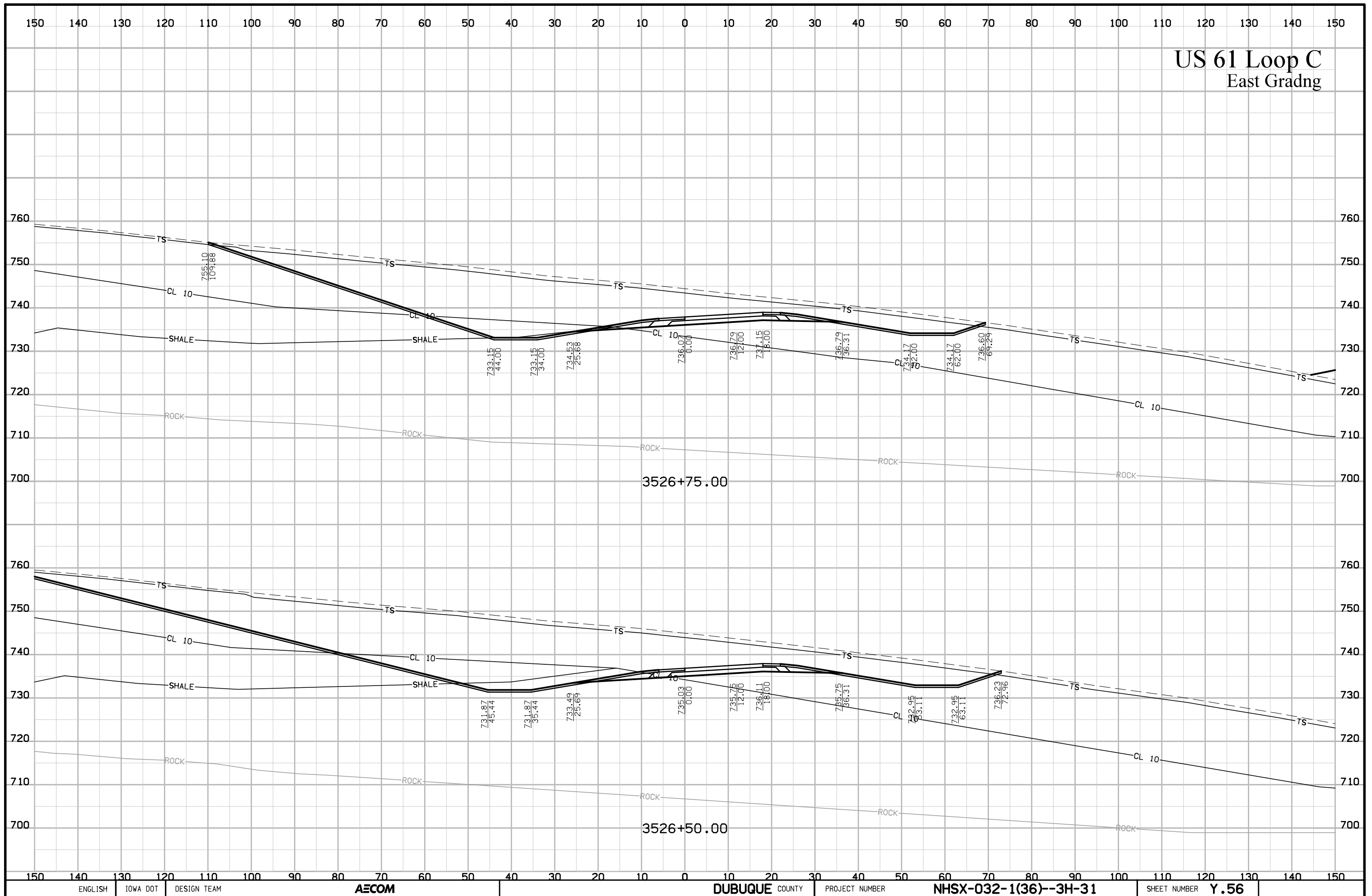
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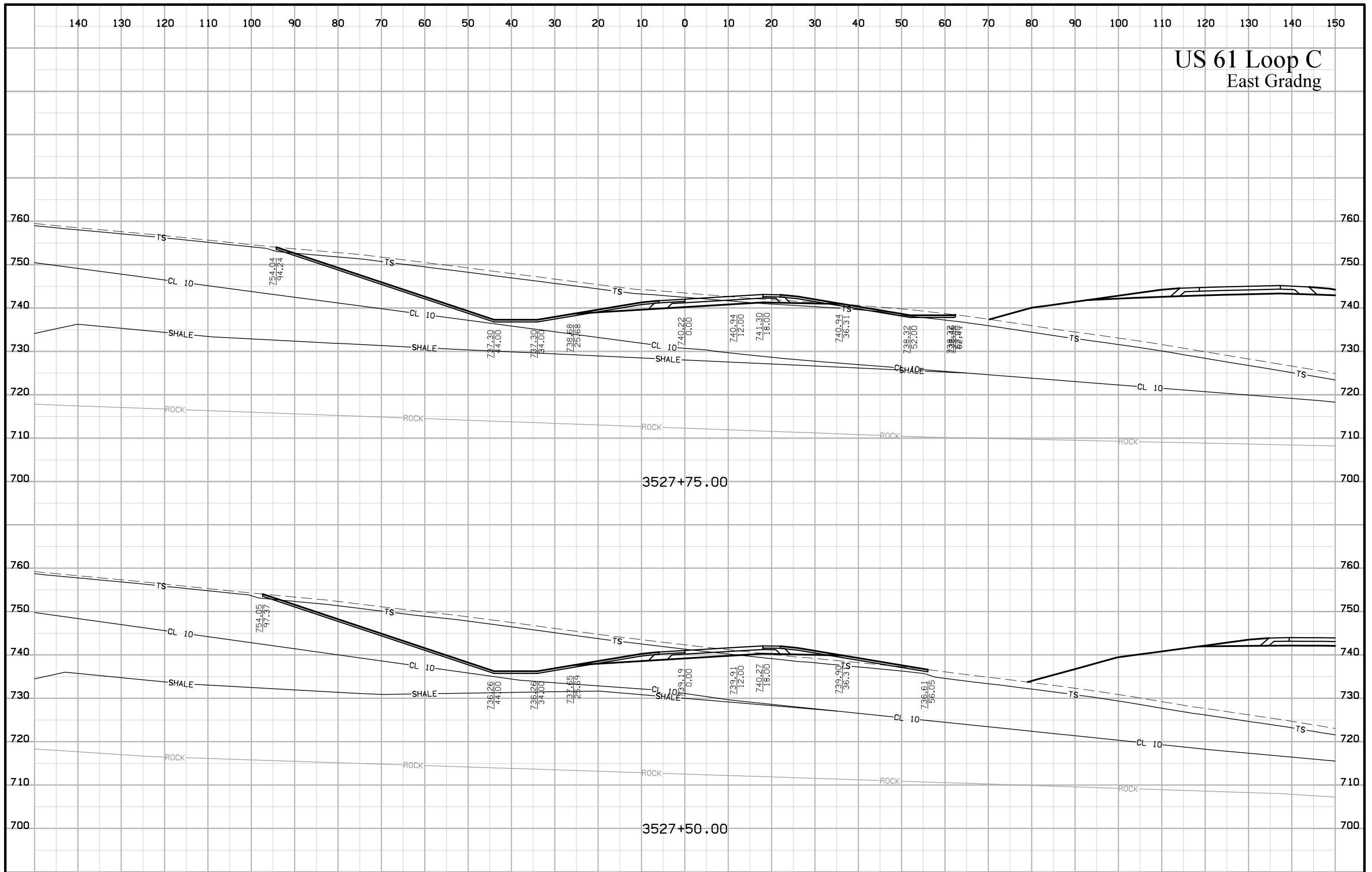
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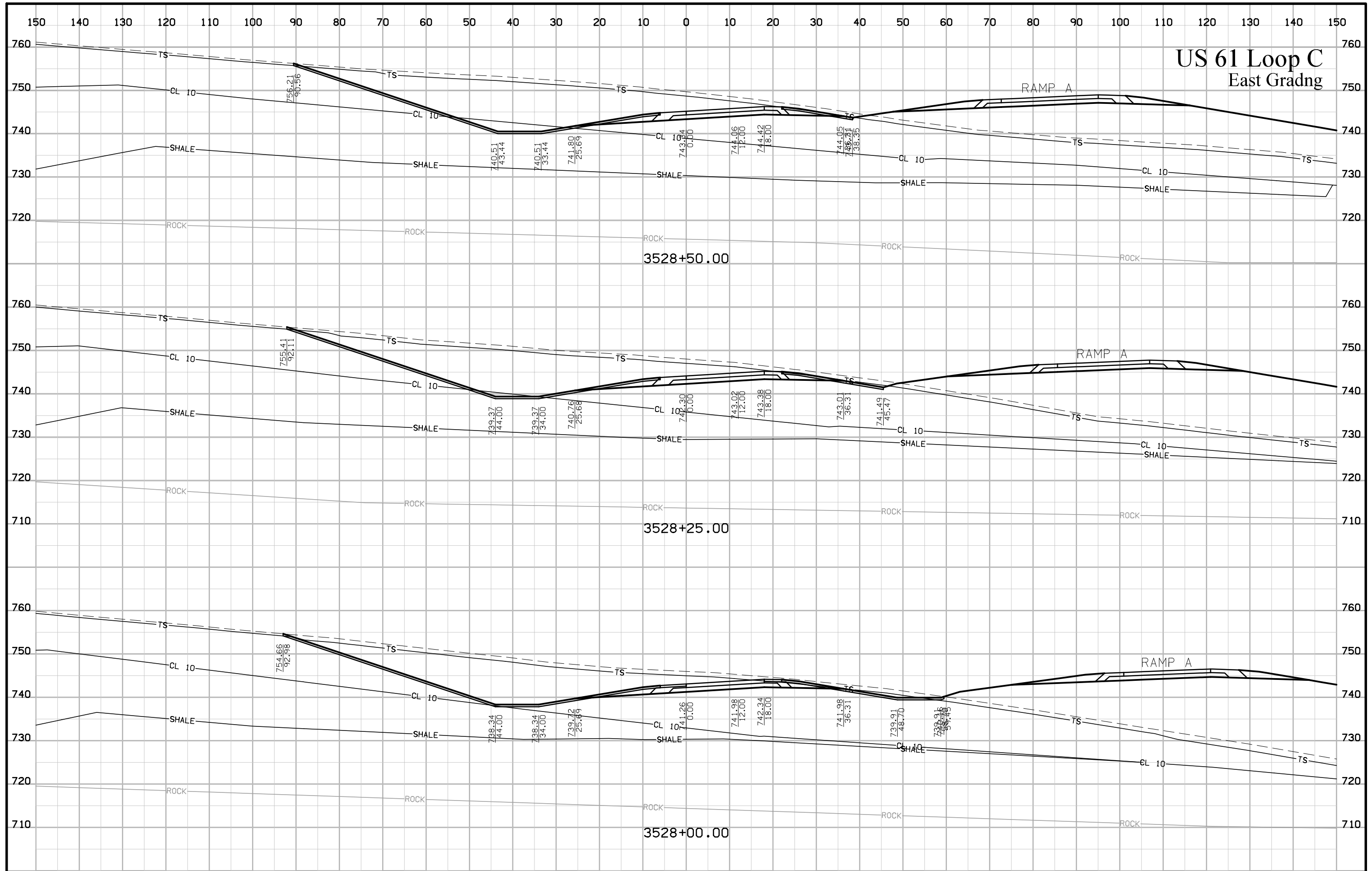
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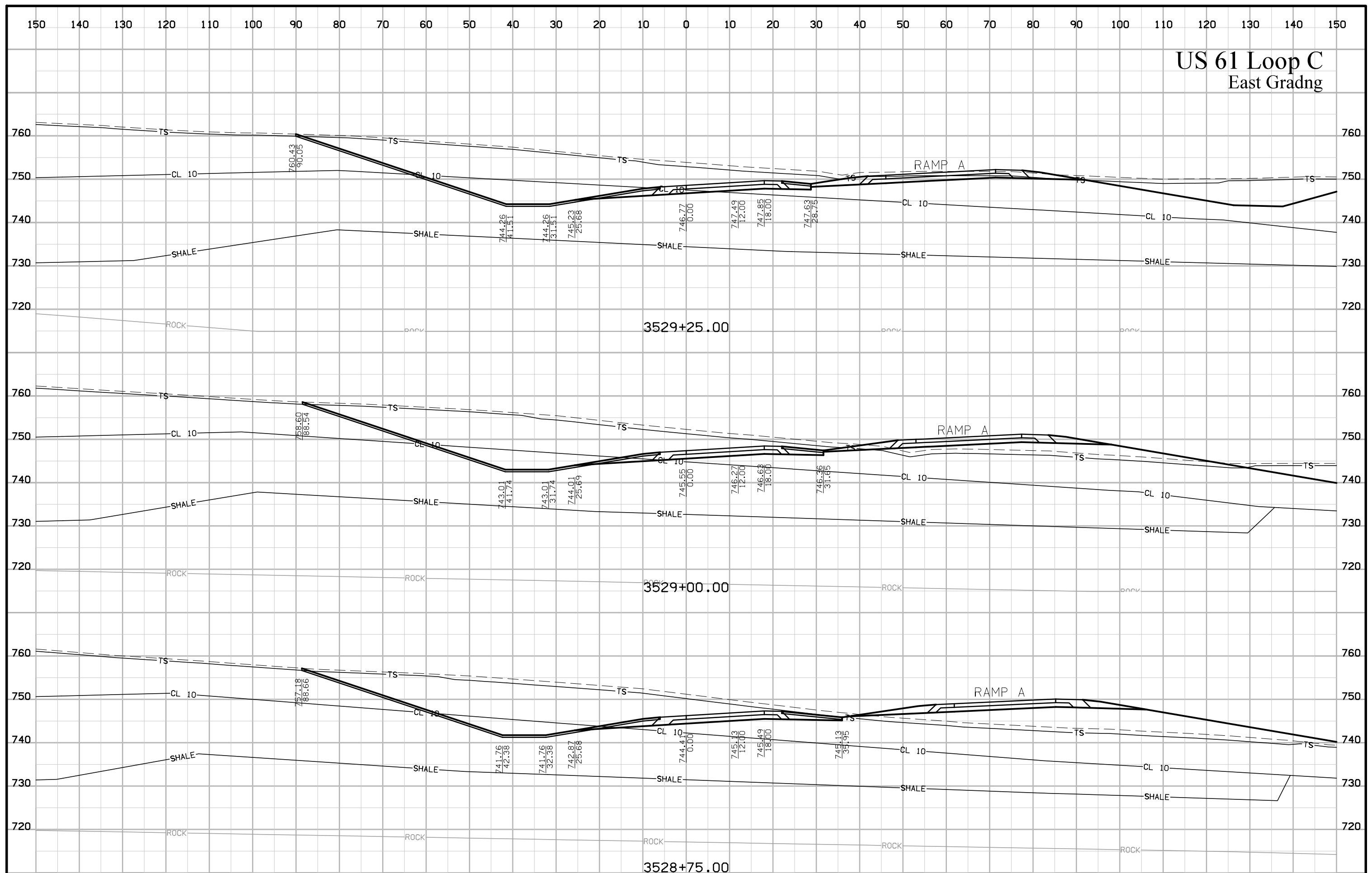
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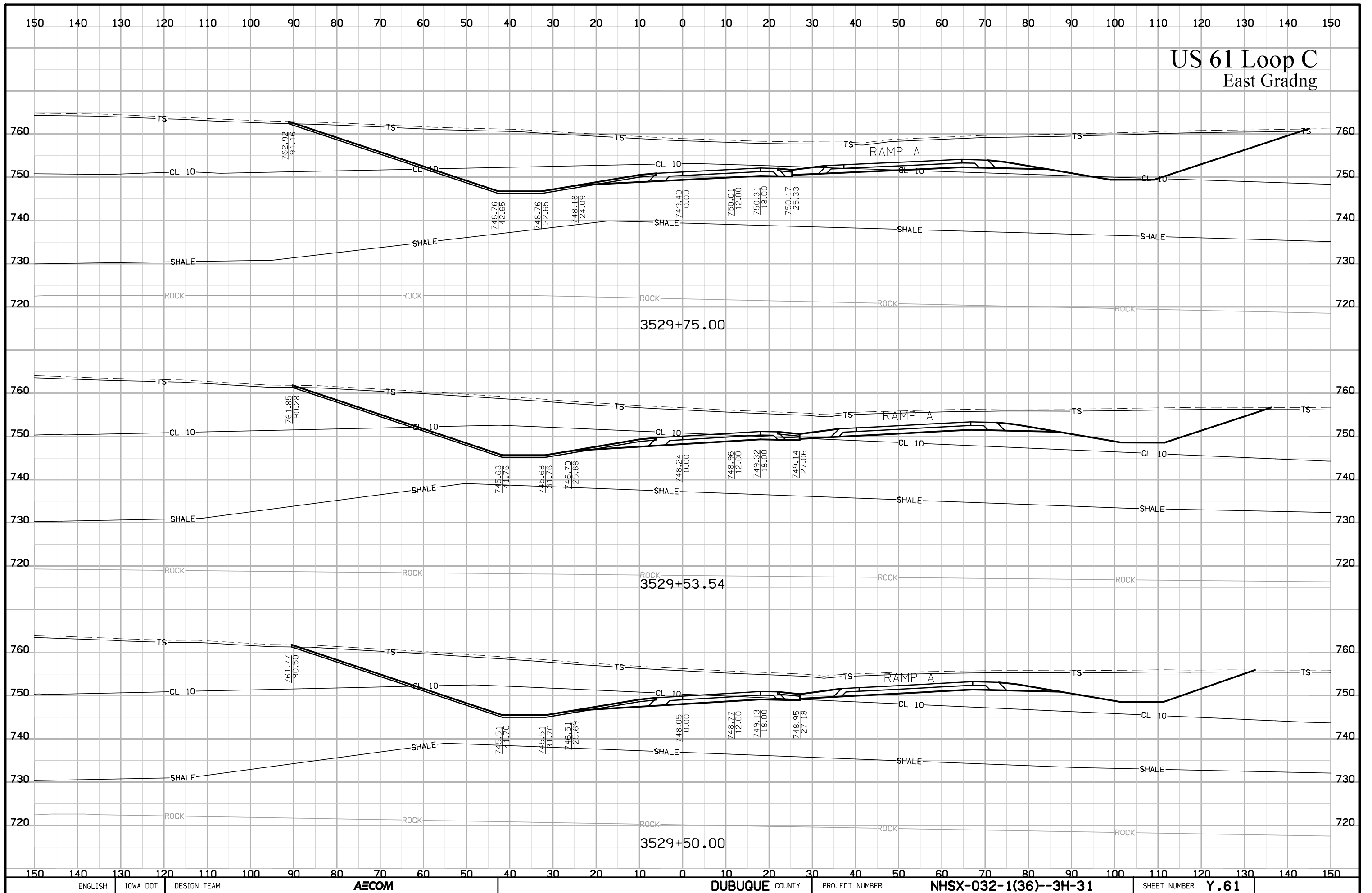
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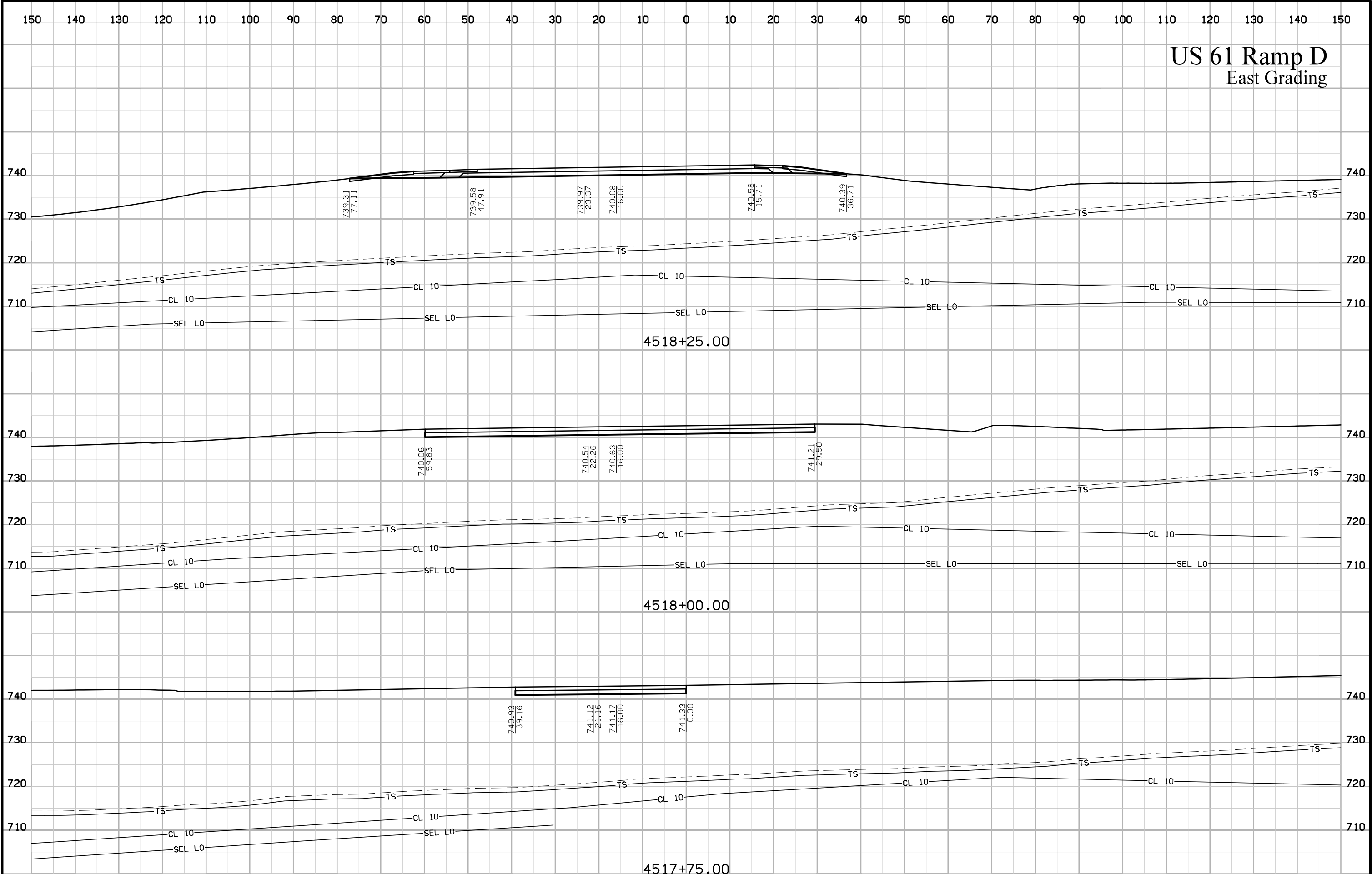
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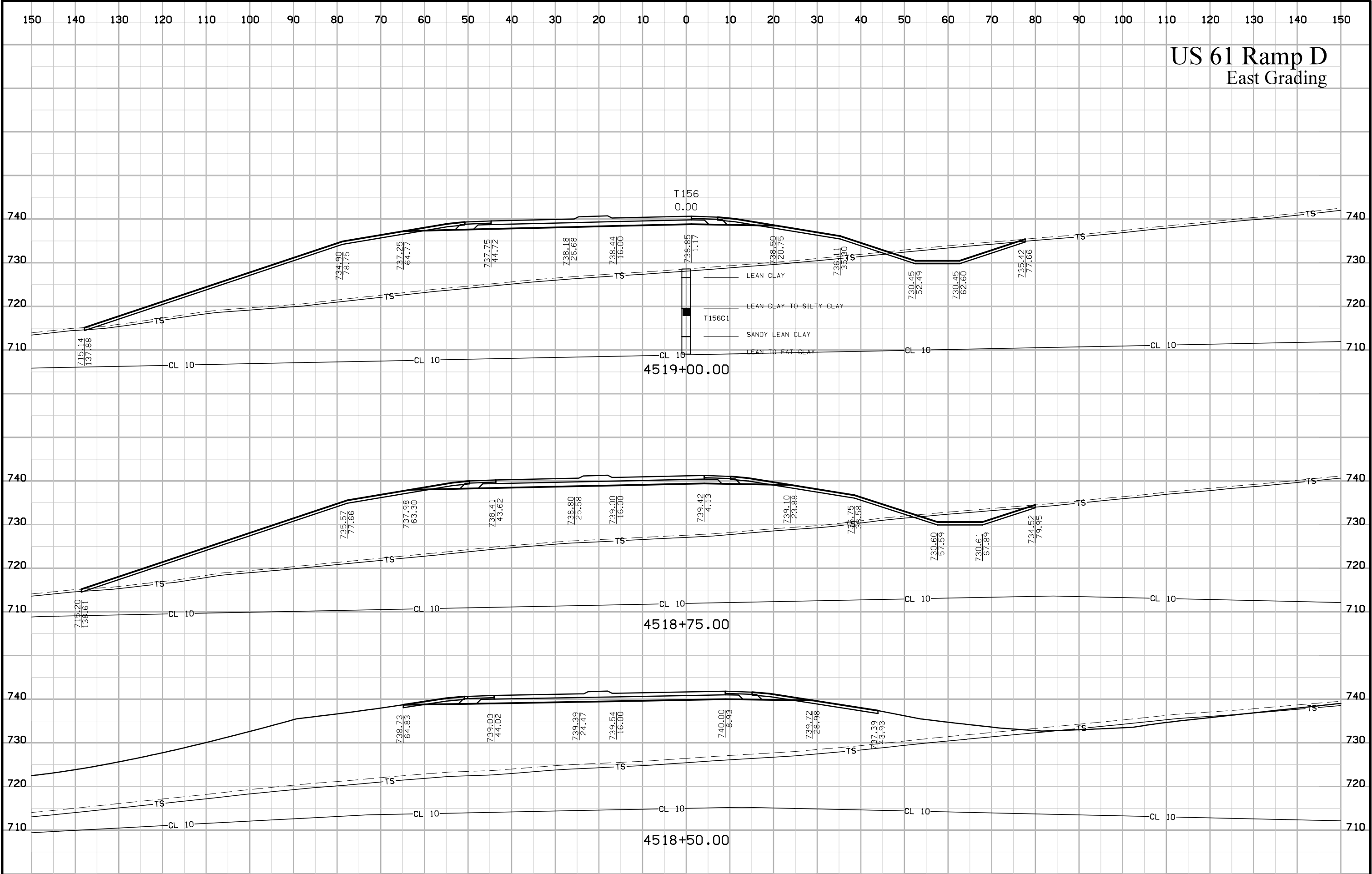
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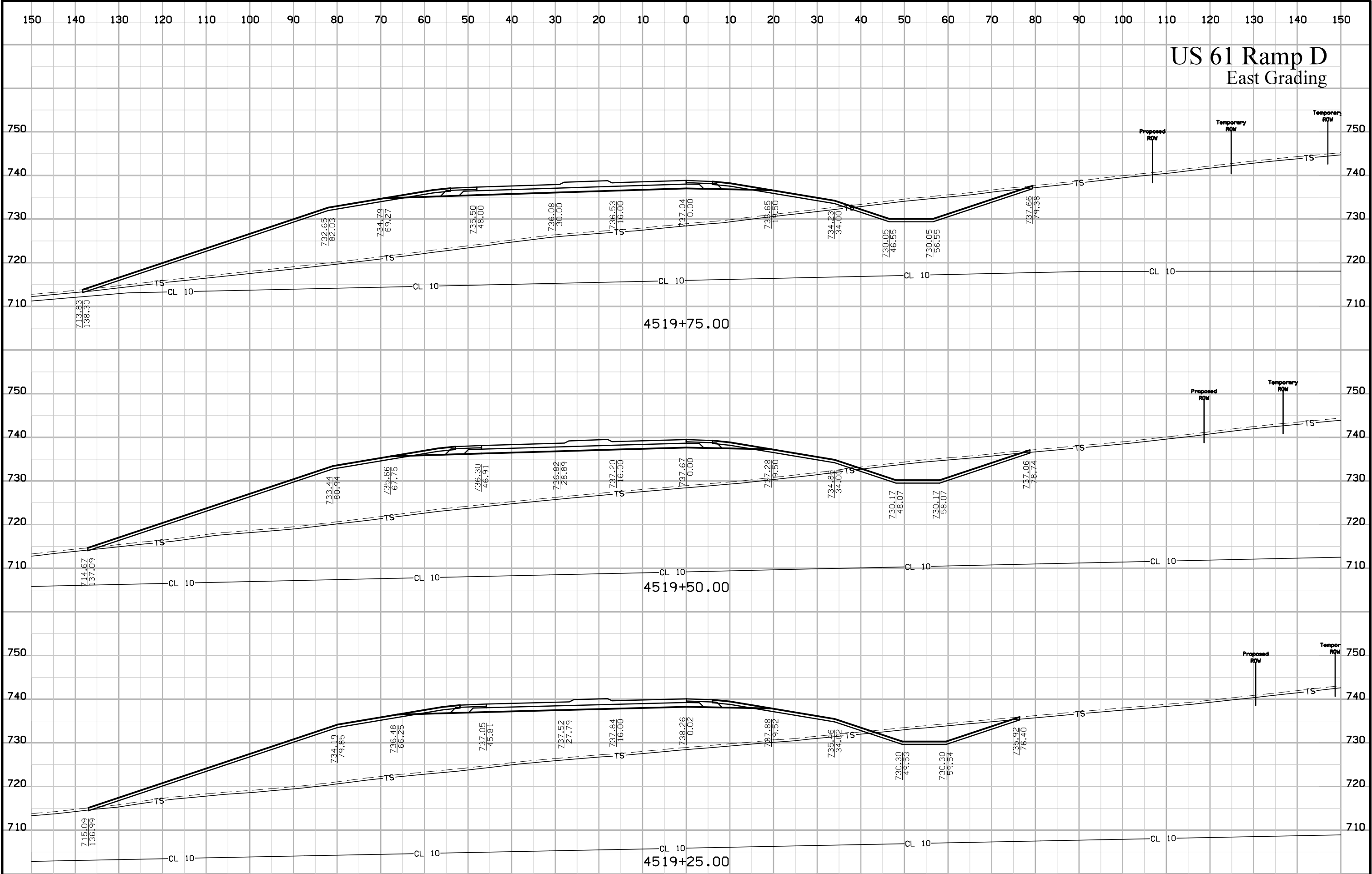
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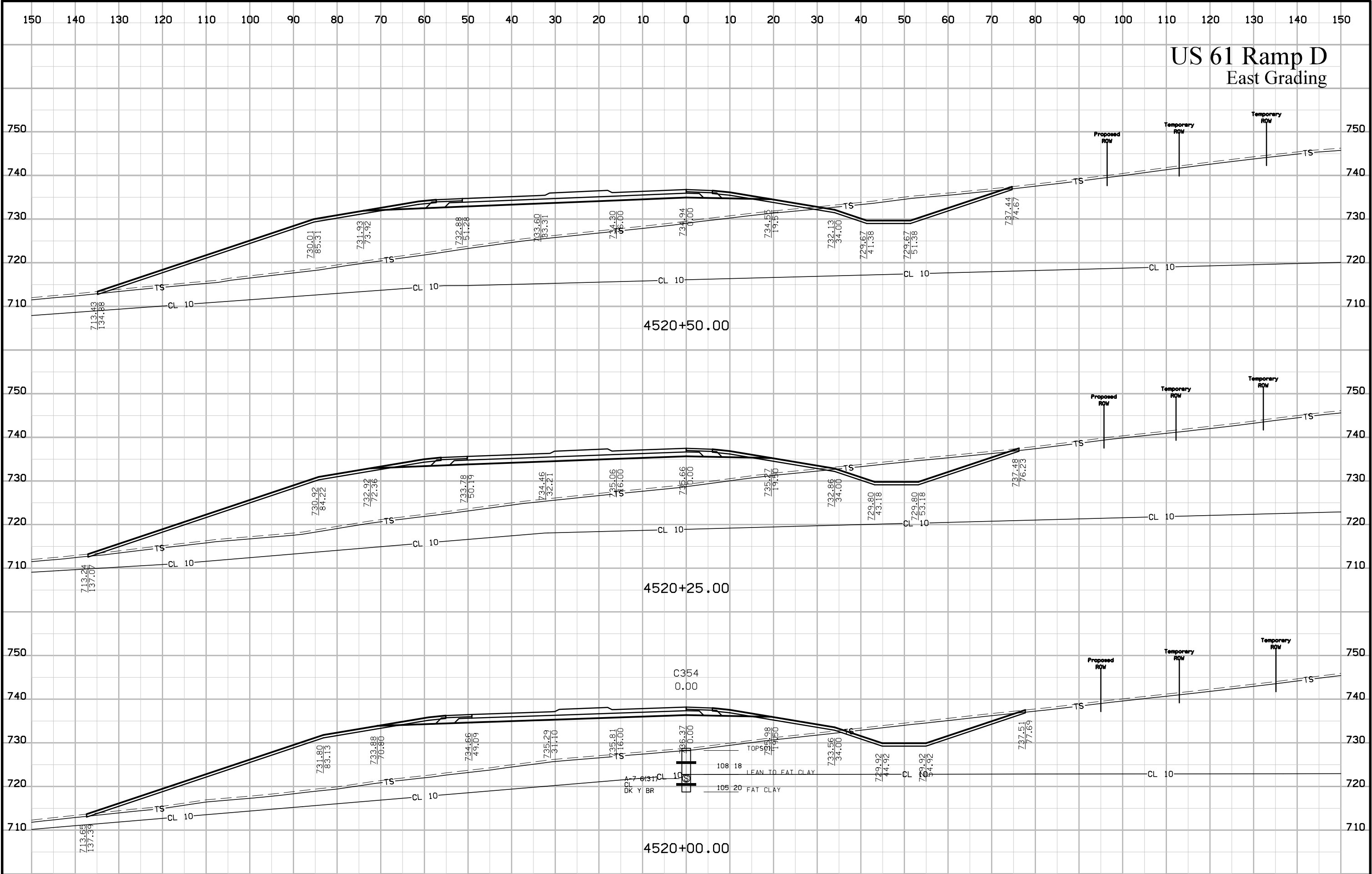
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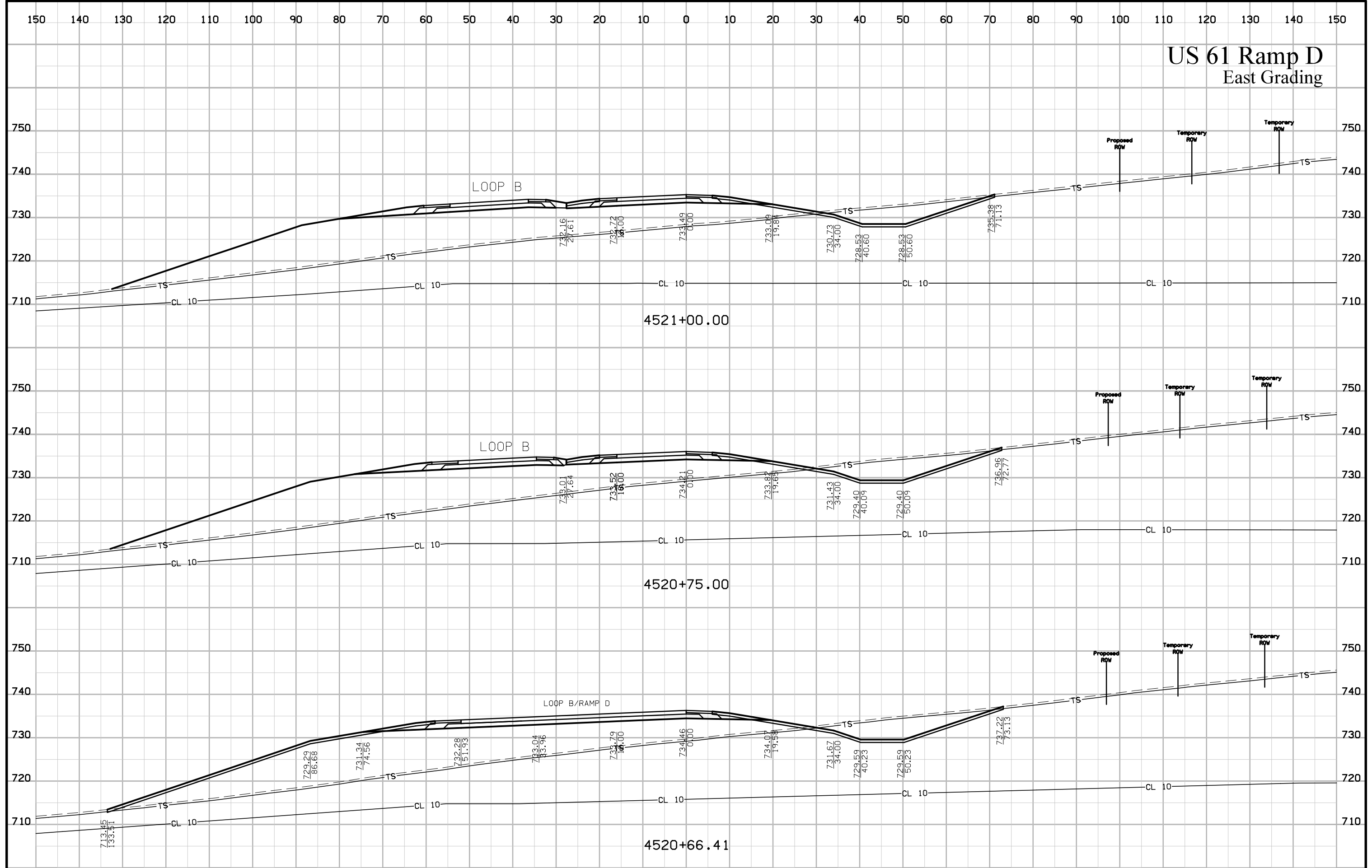
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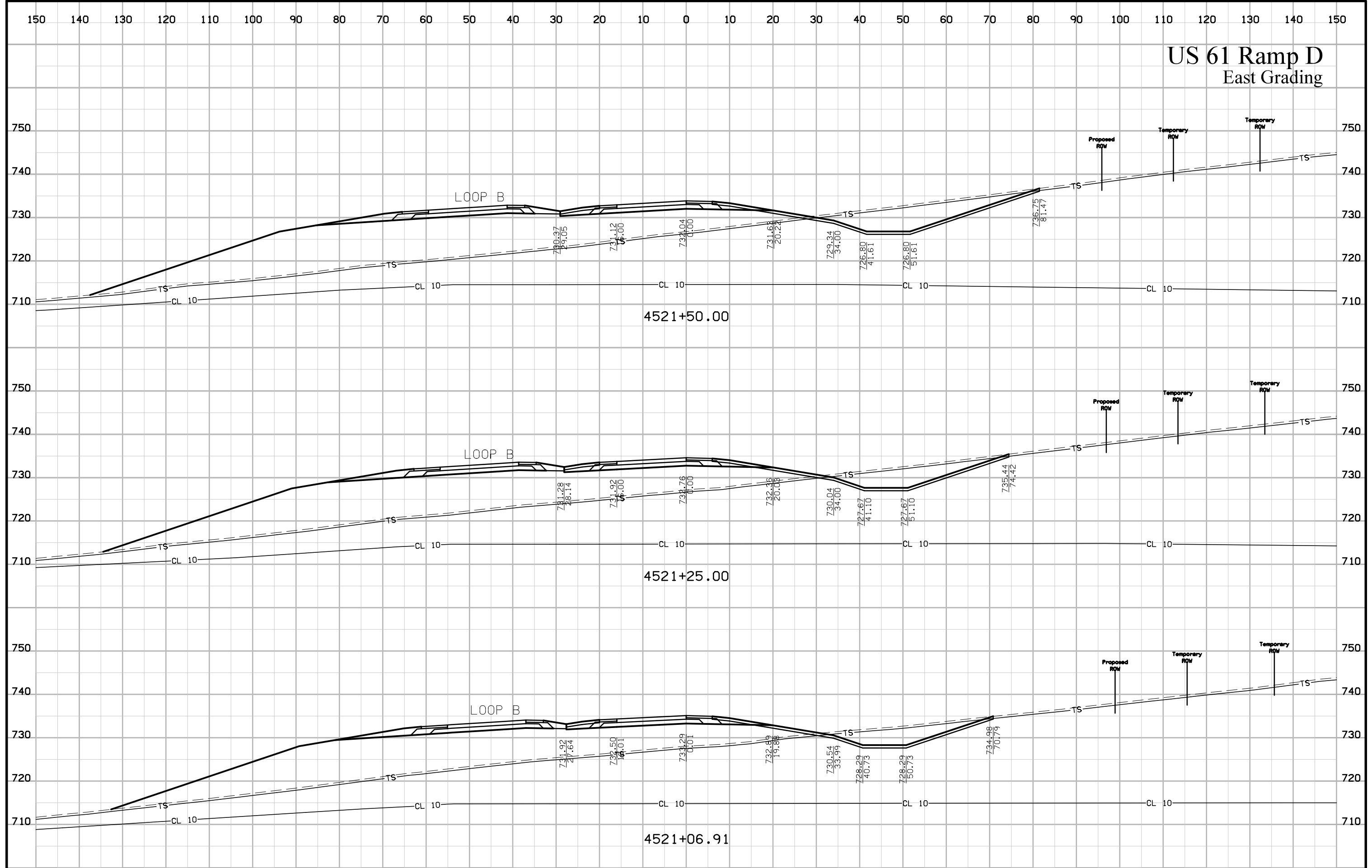
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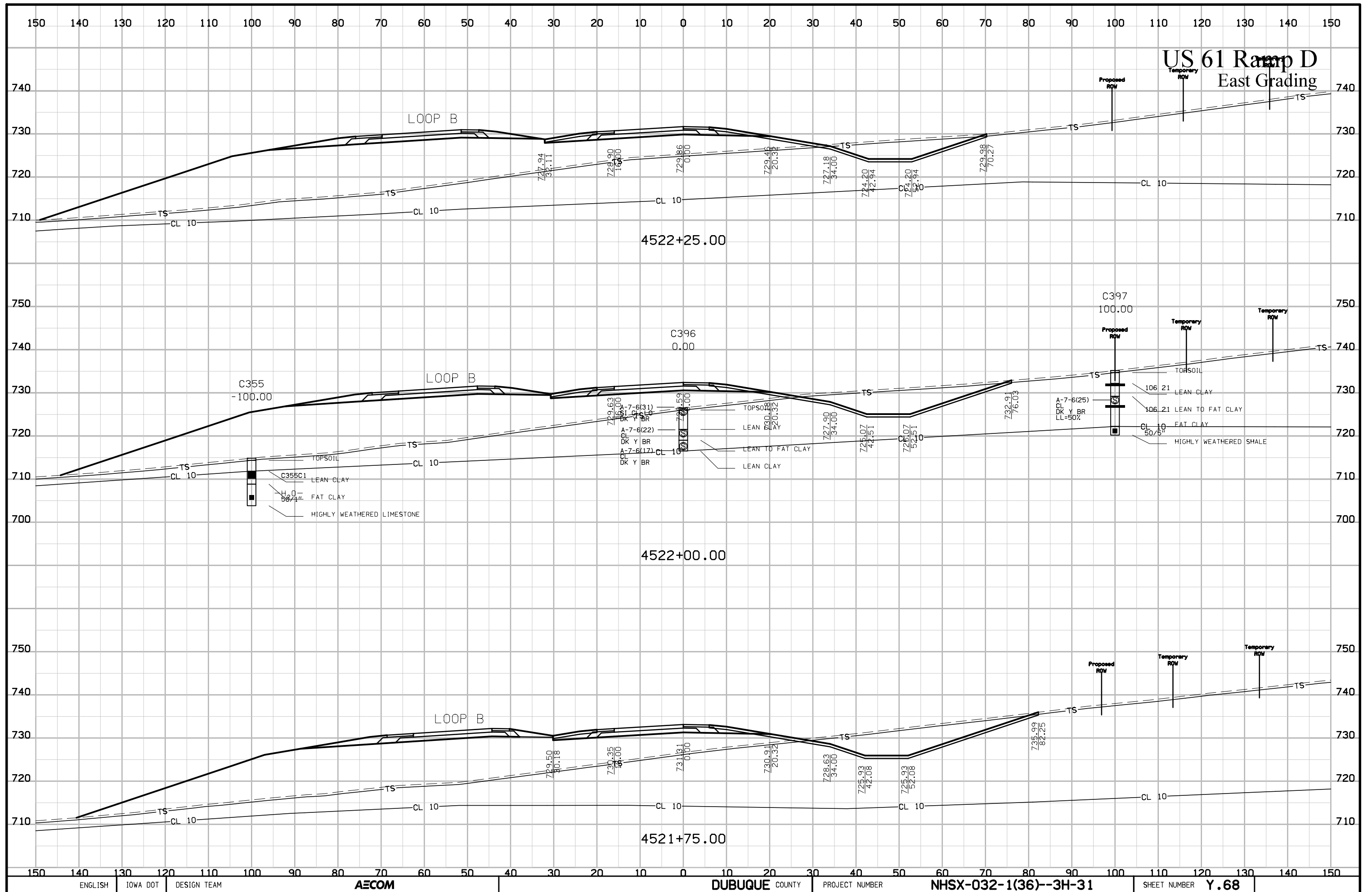


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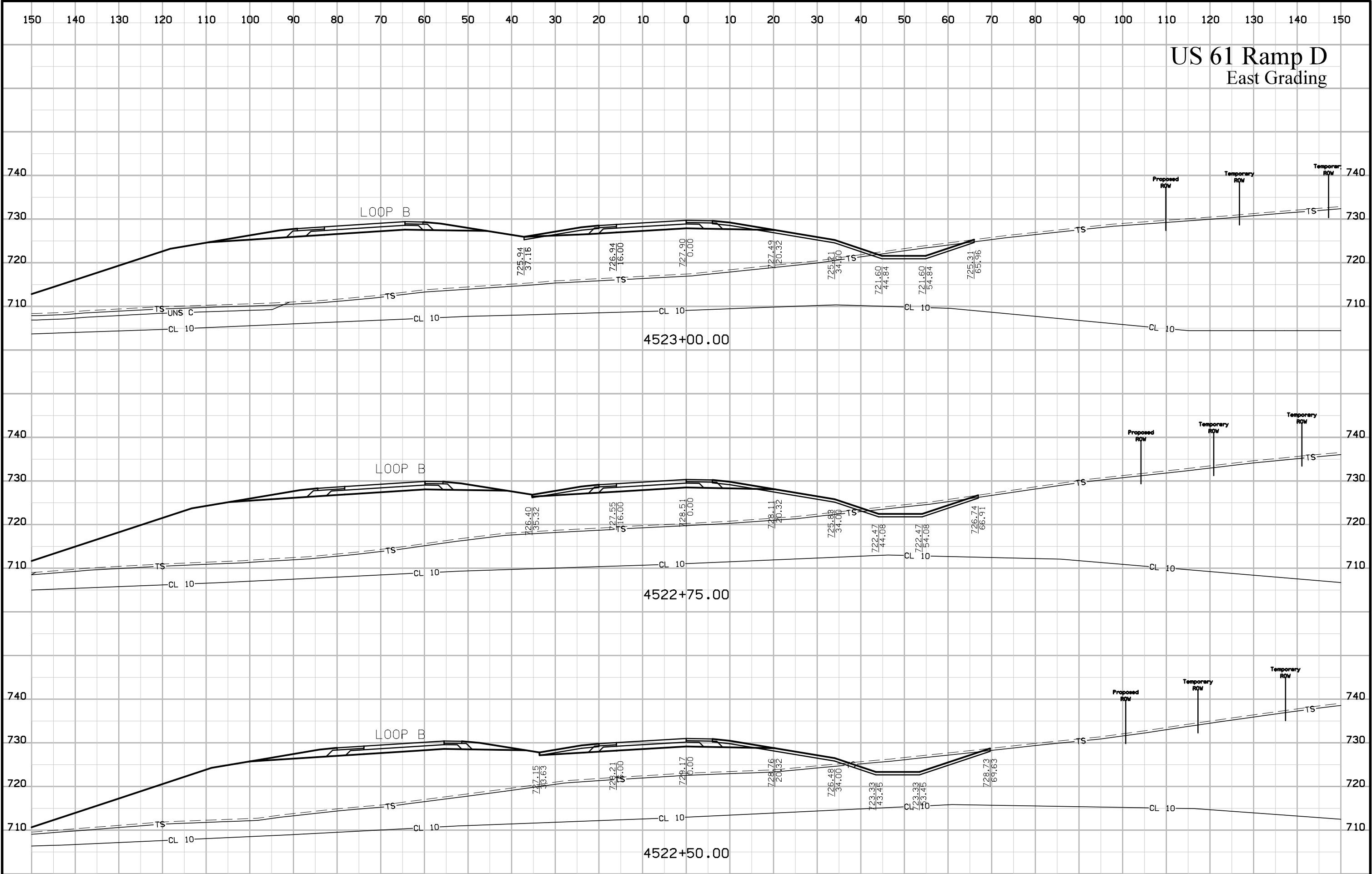
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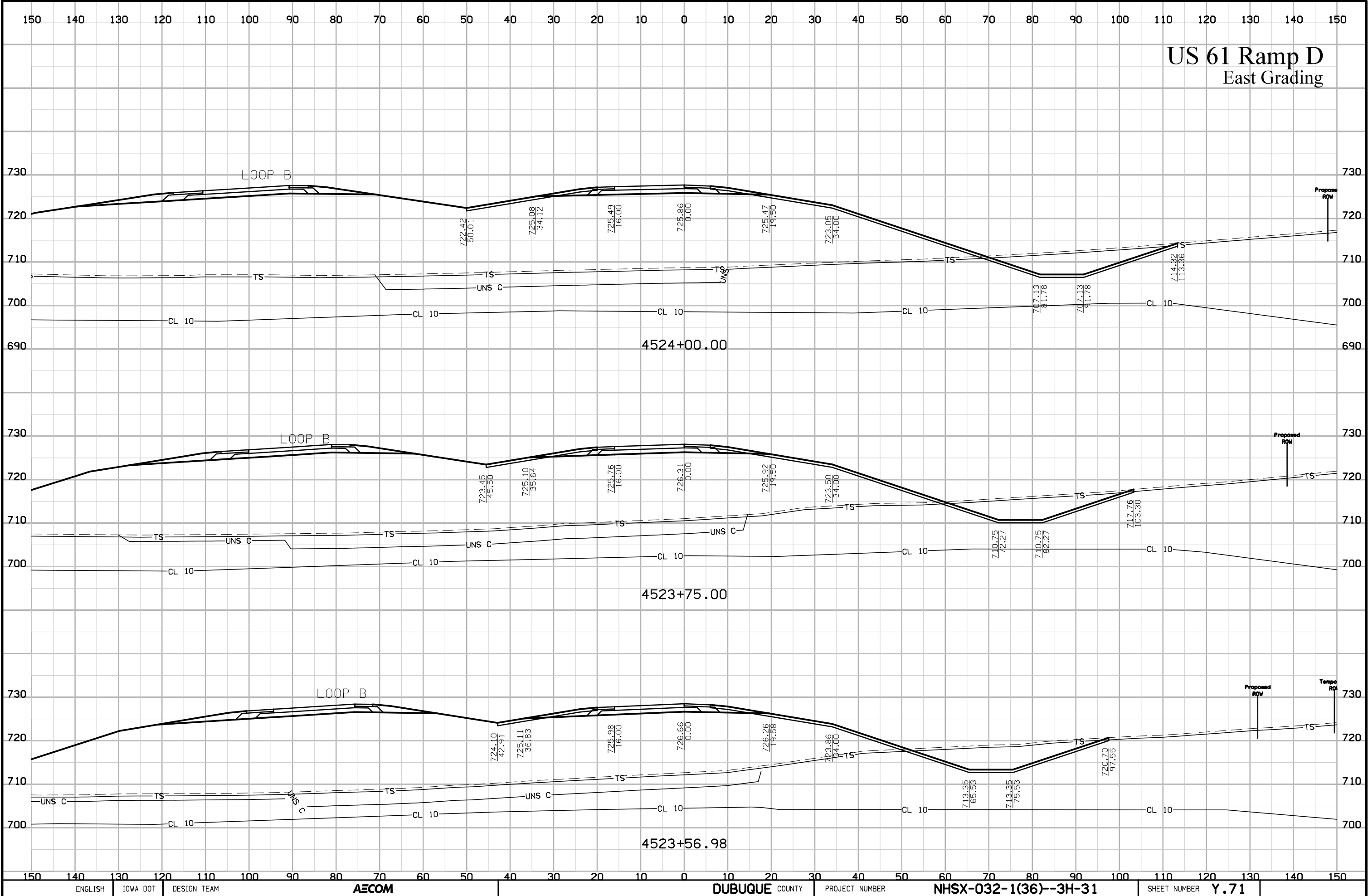


**US 61 Ramp D
East Grading**

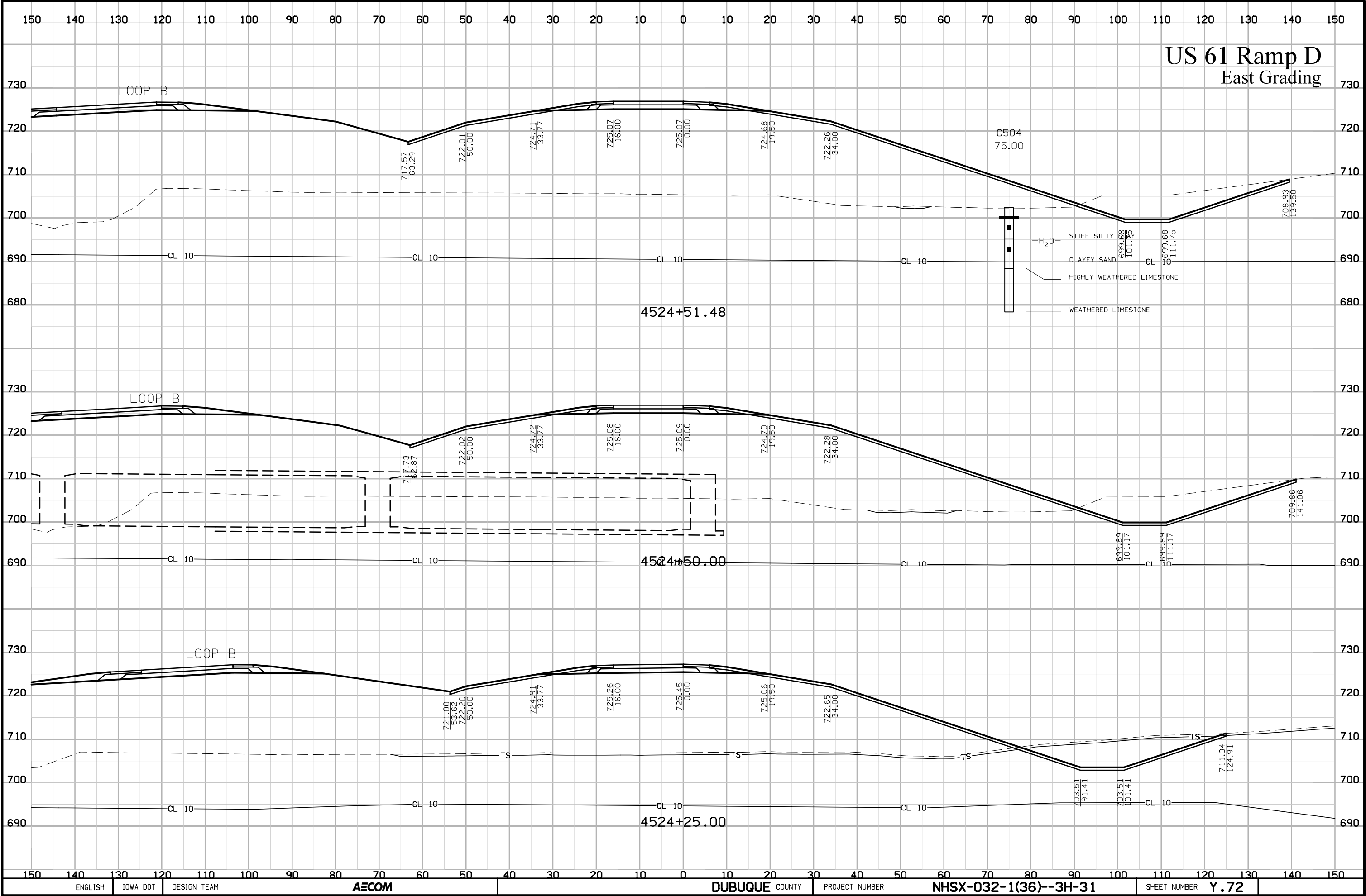
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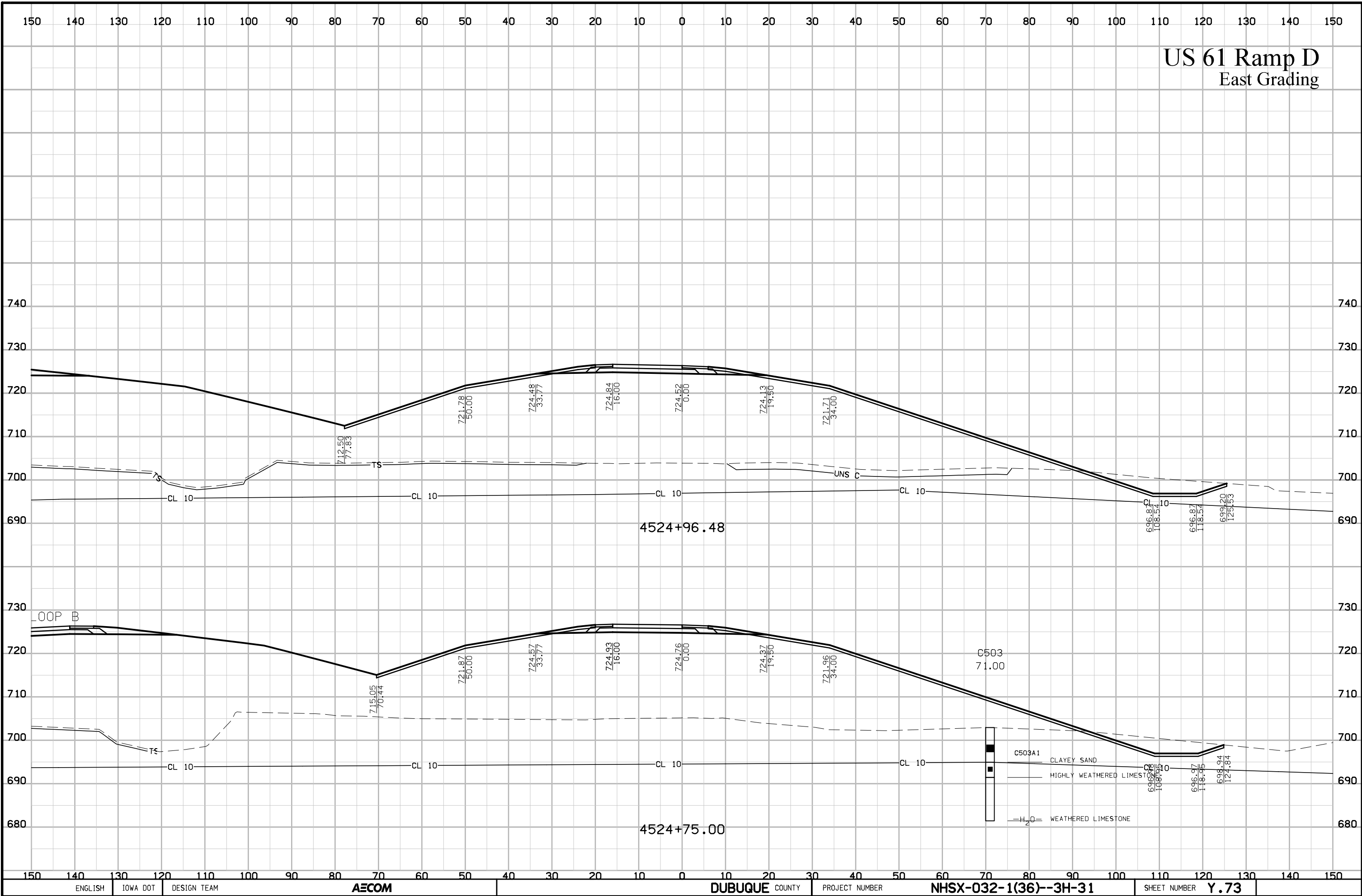
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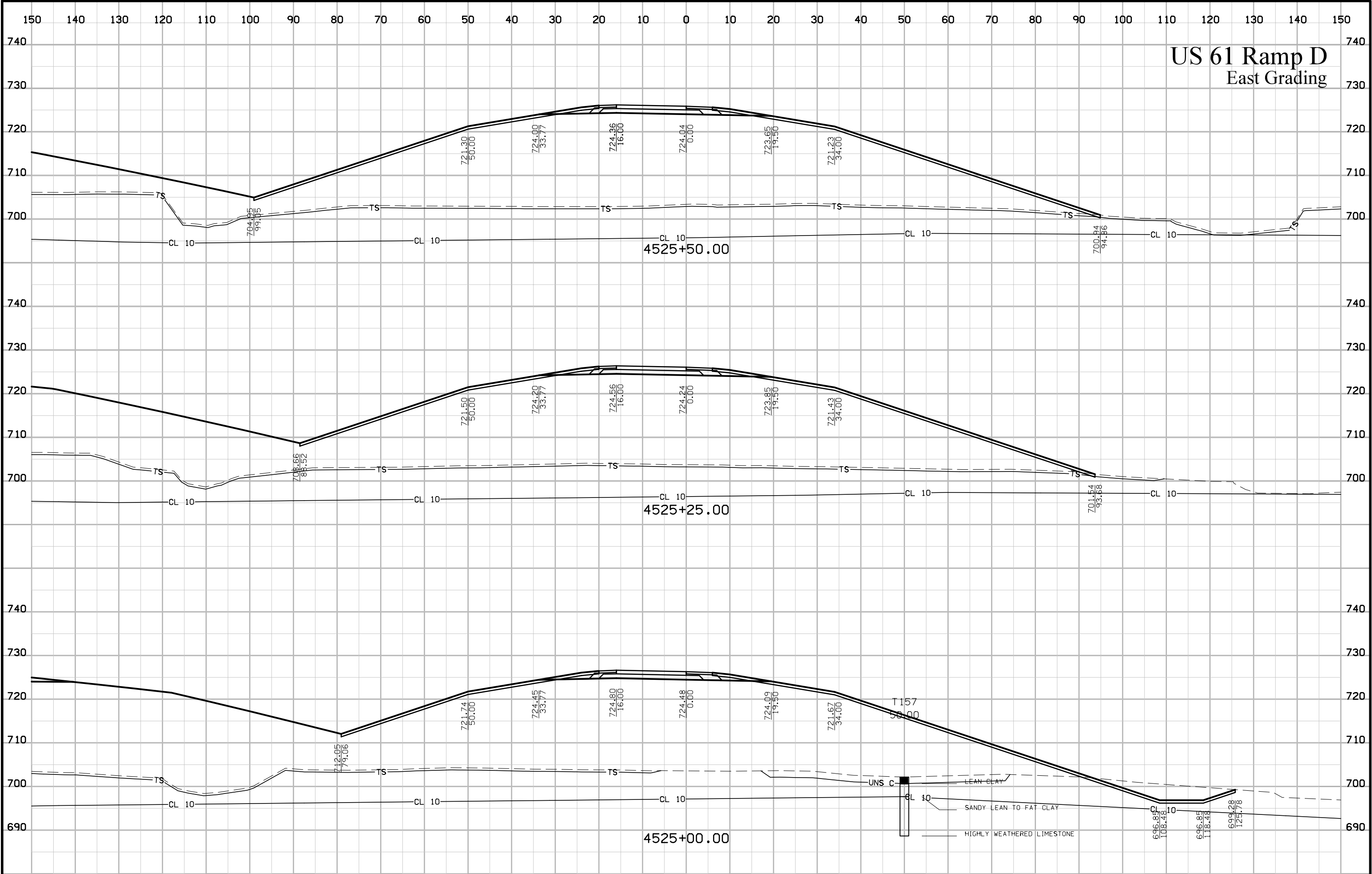
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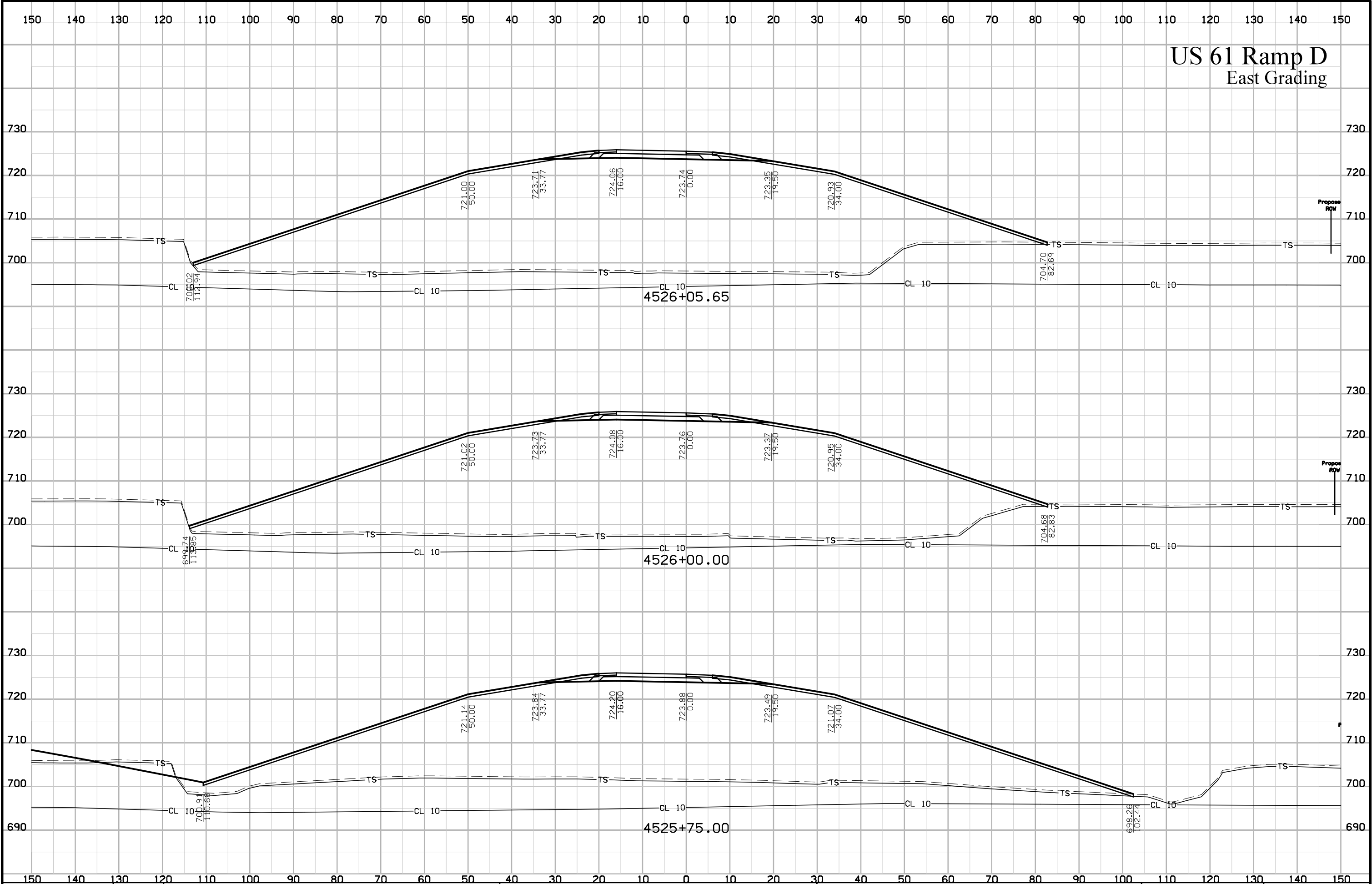
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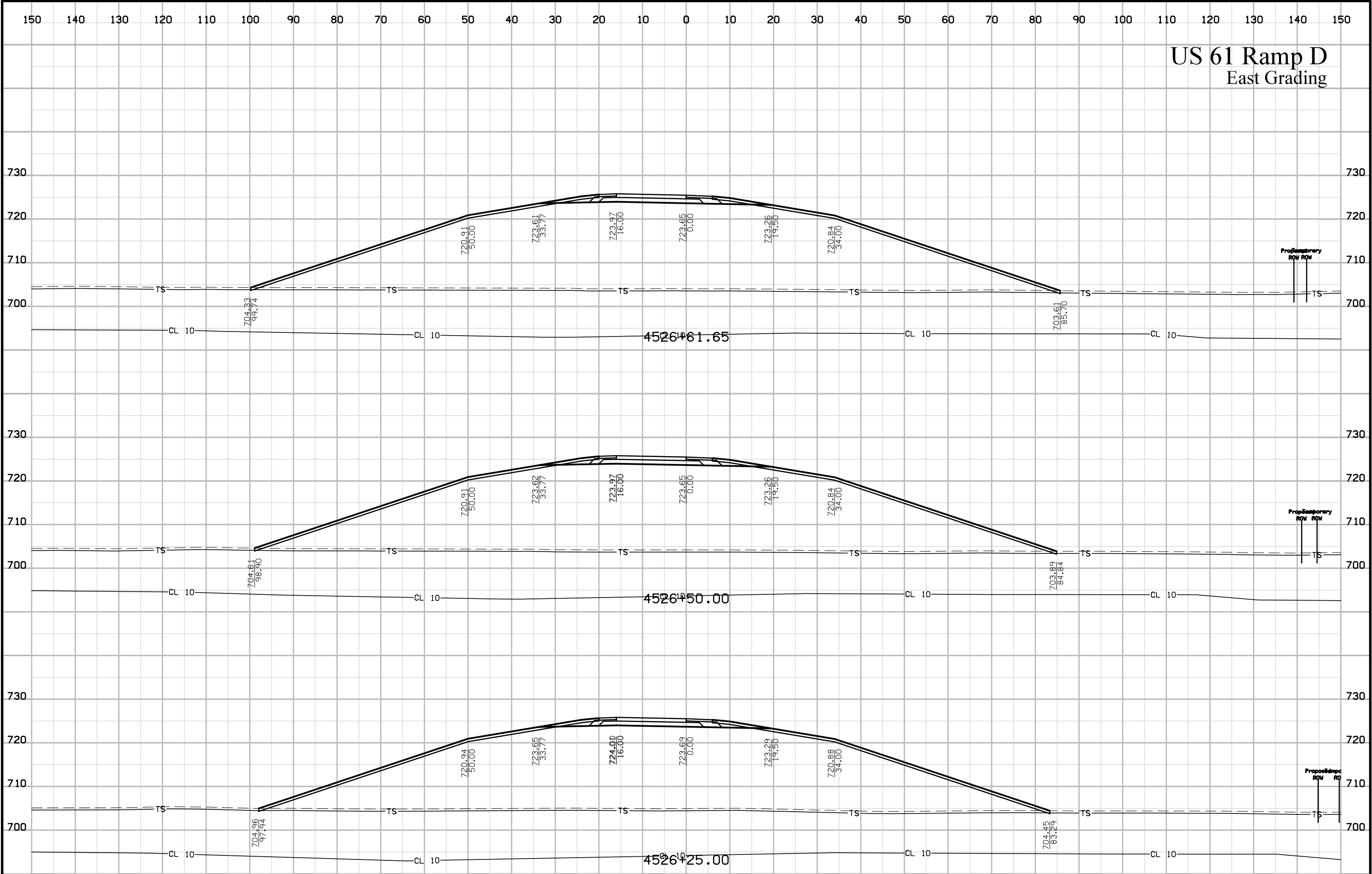
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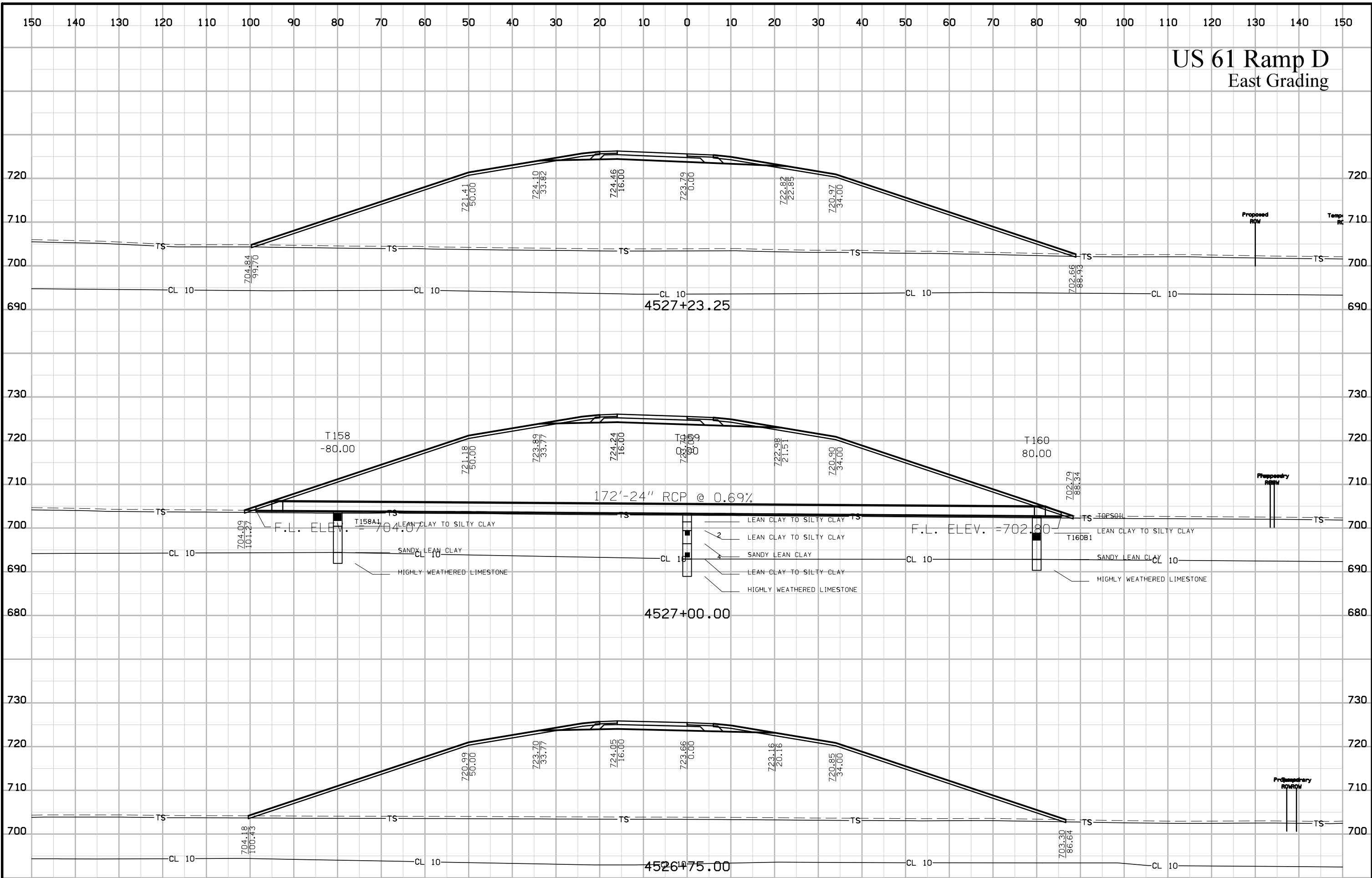
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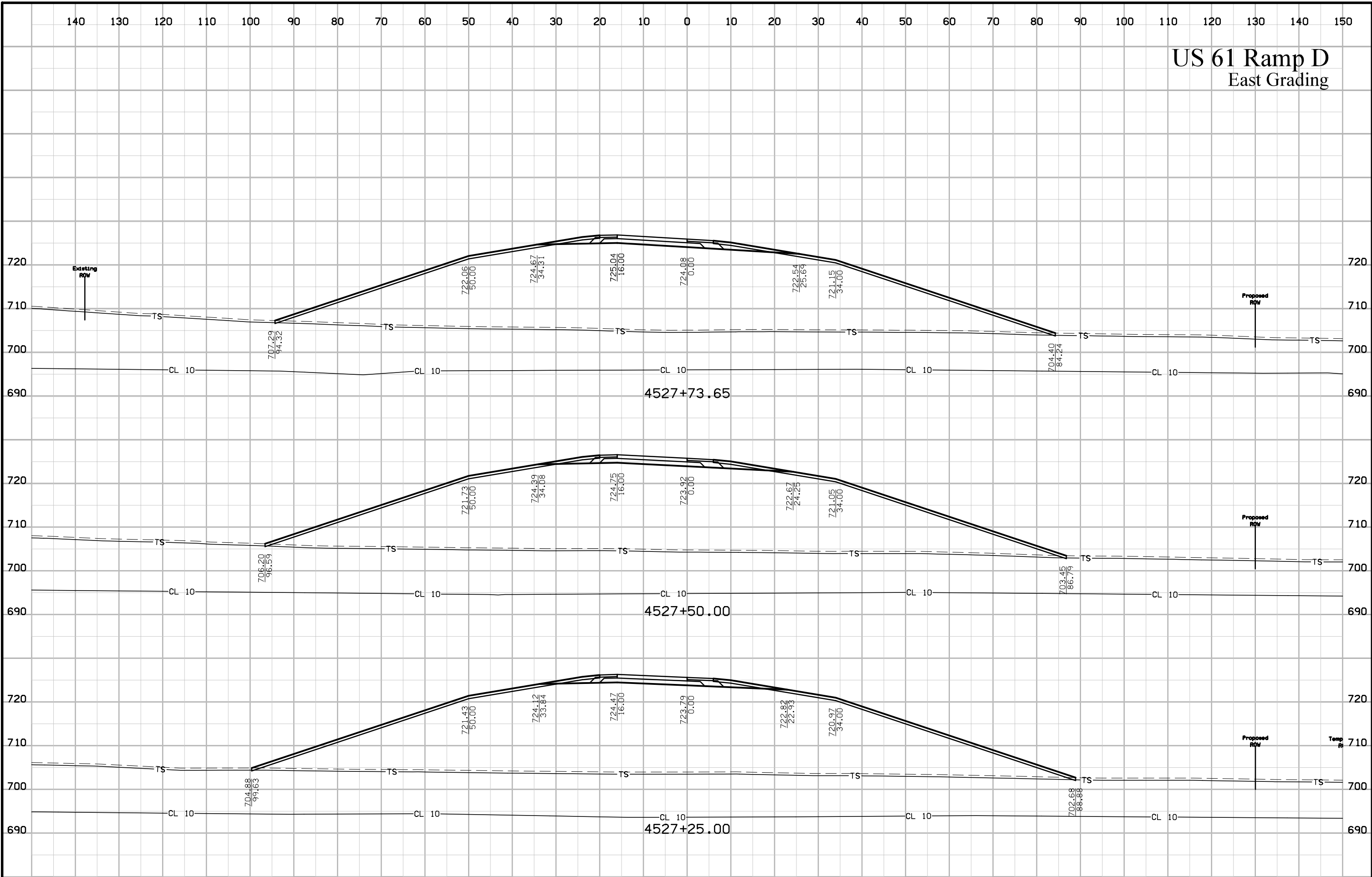
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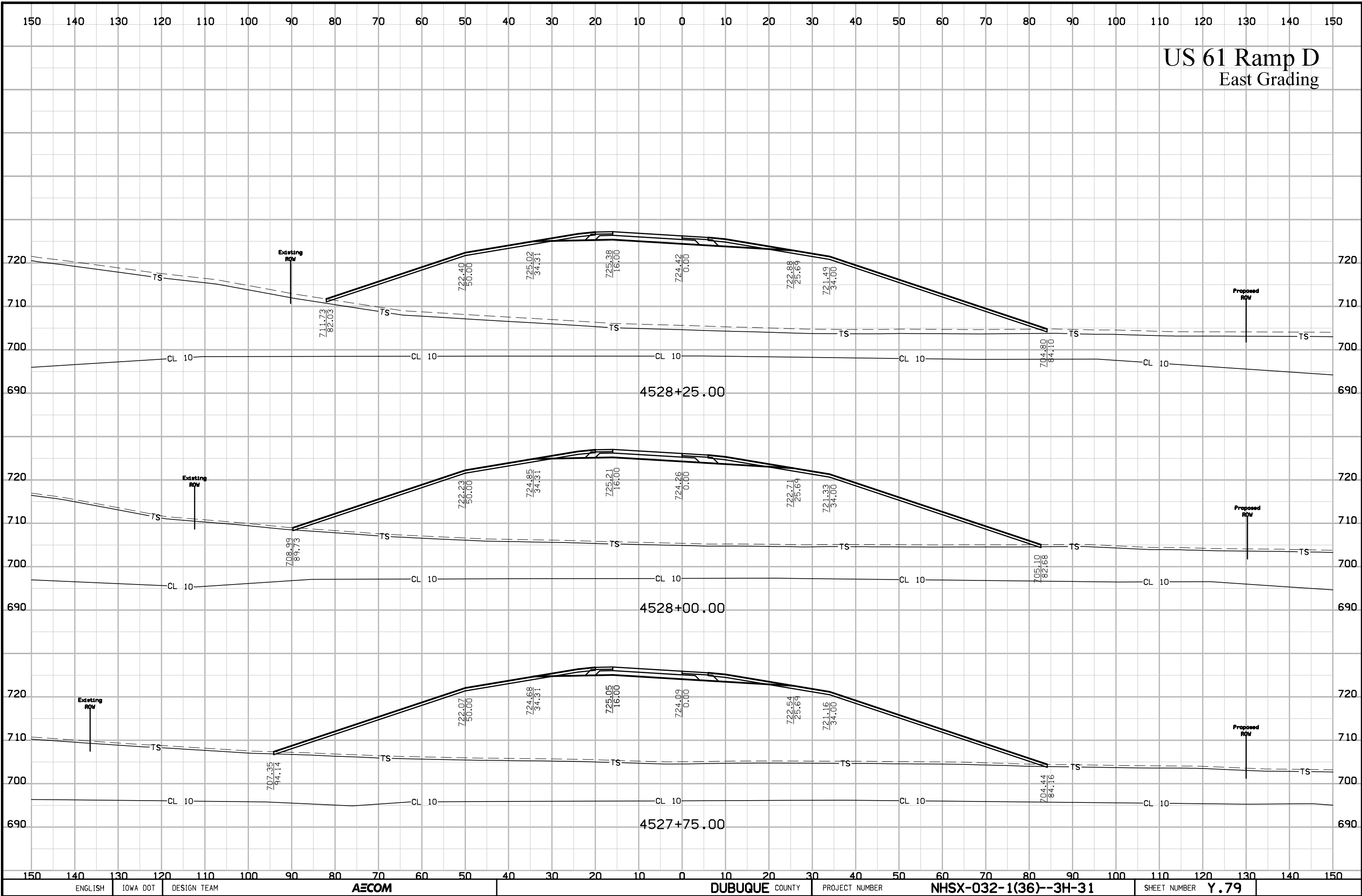
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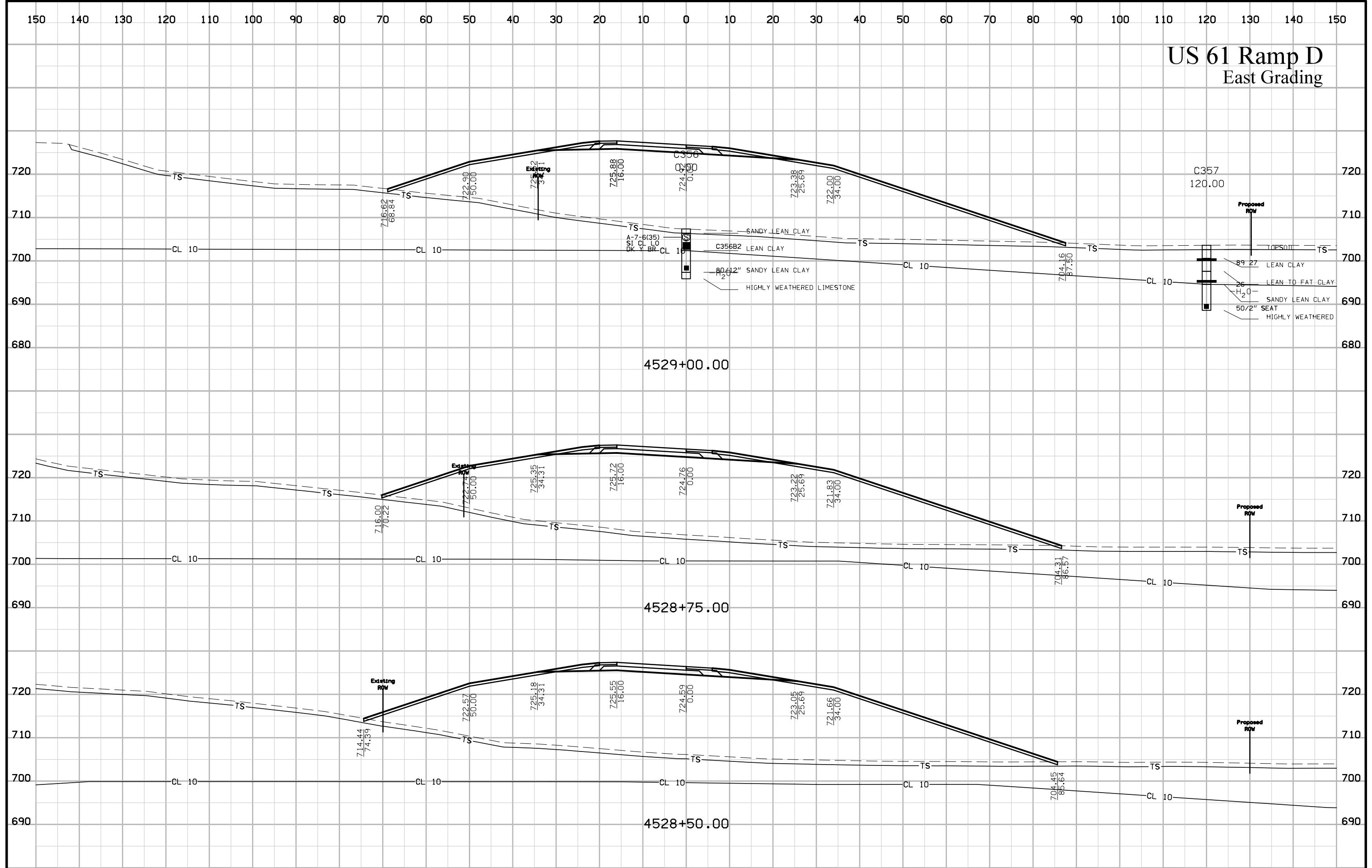
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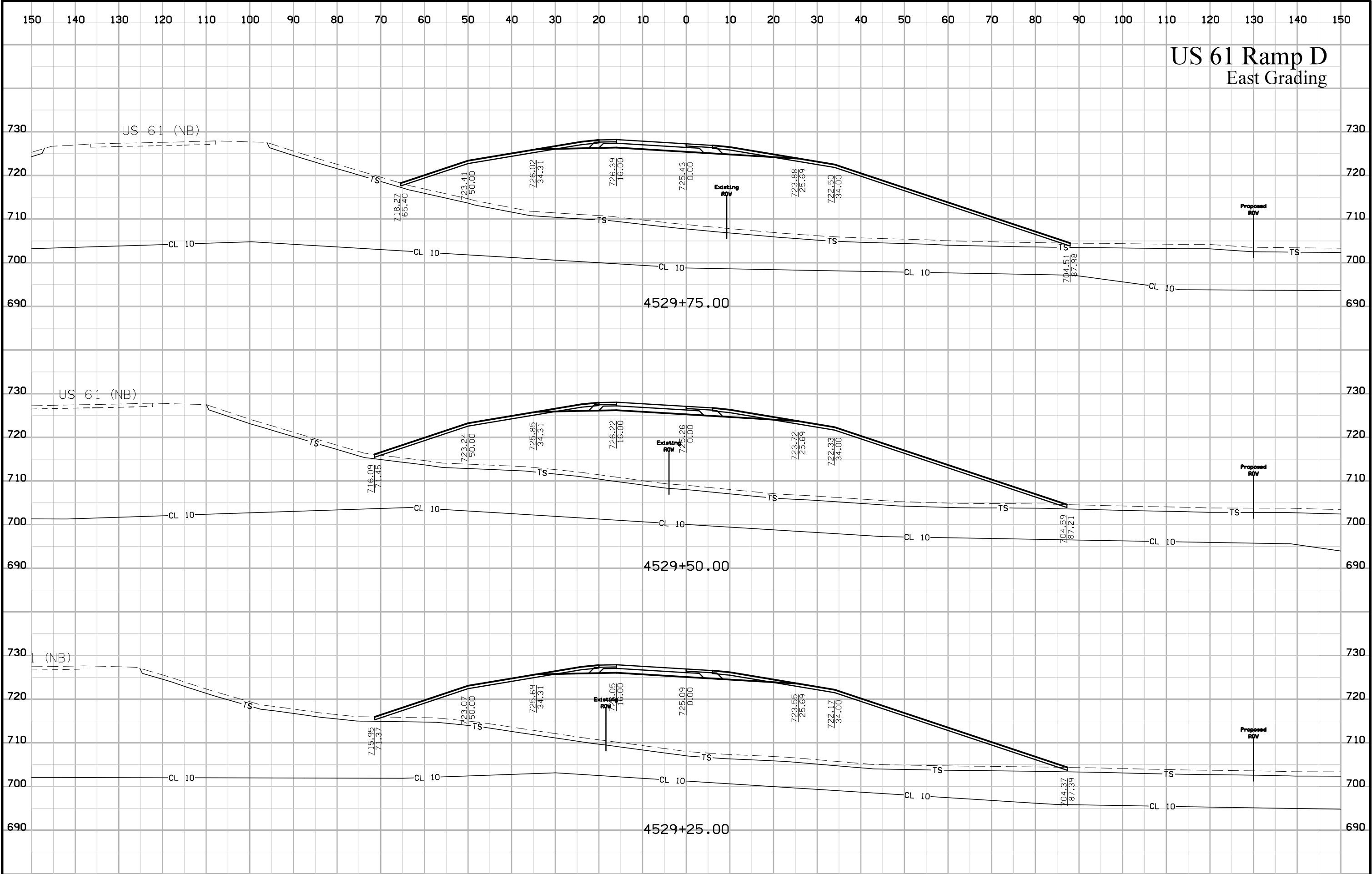
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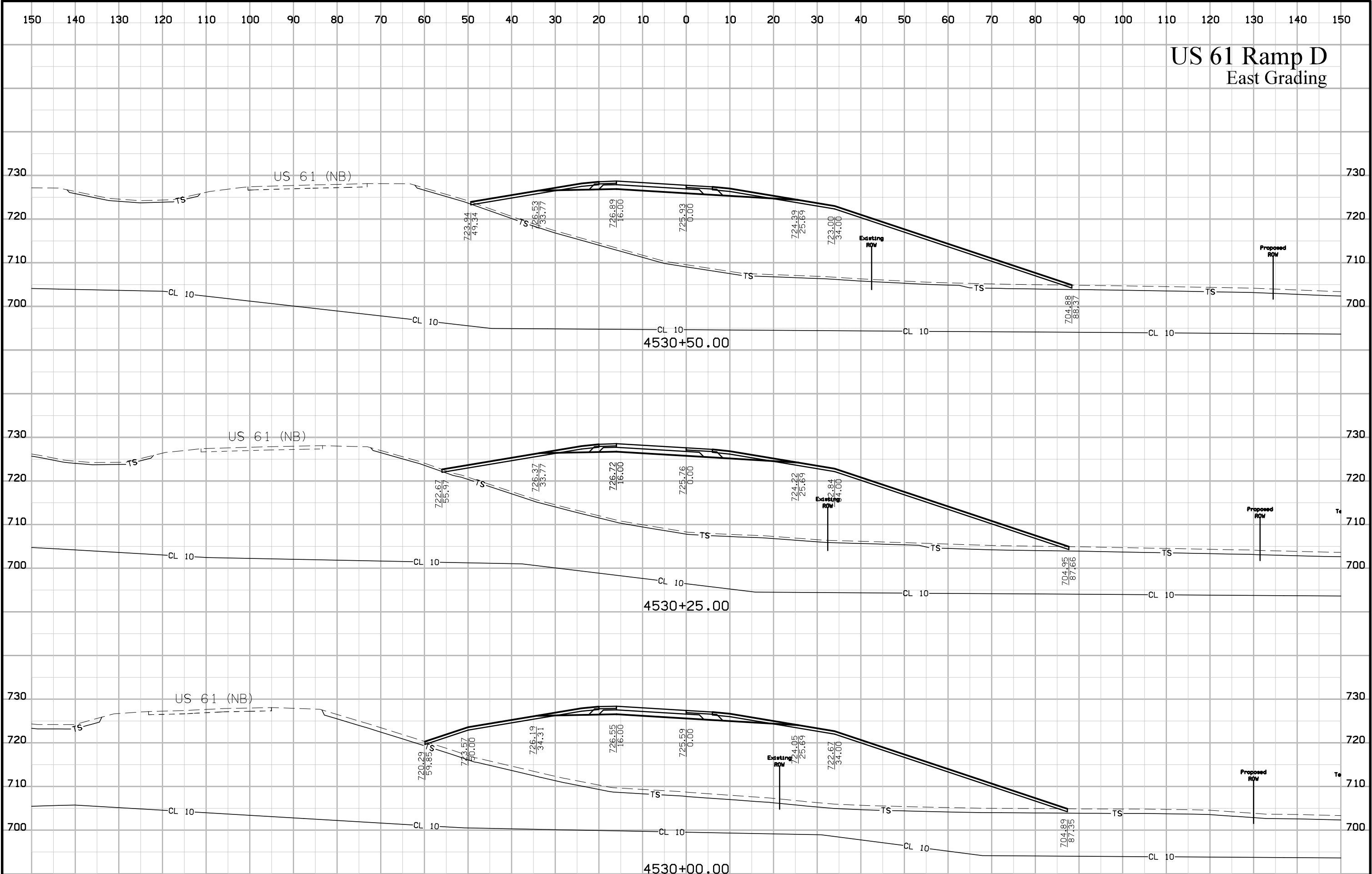
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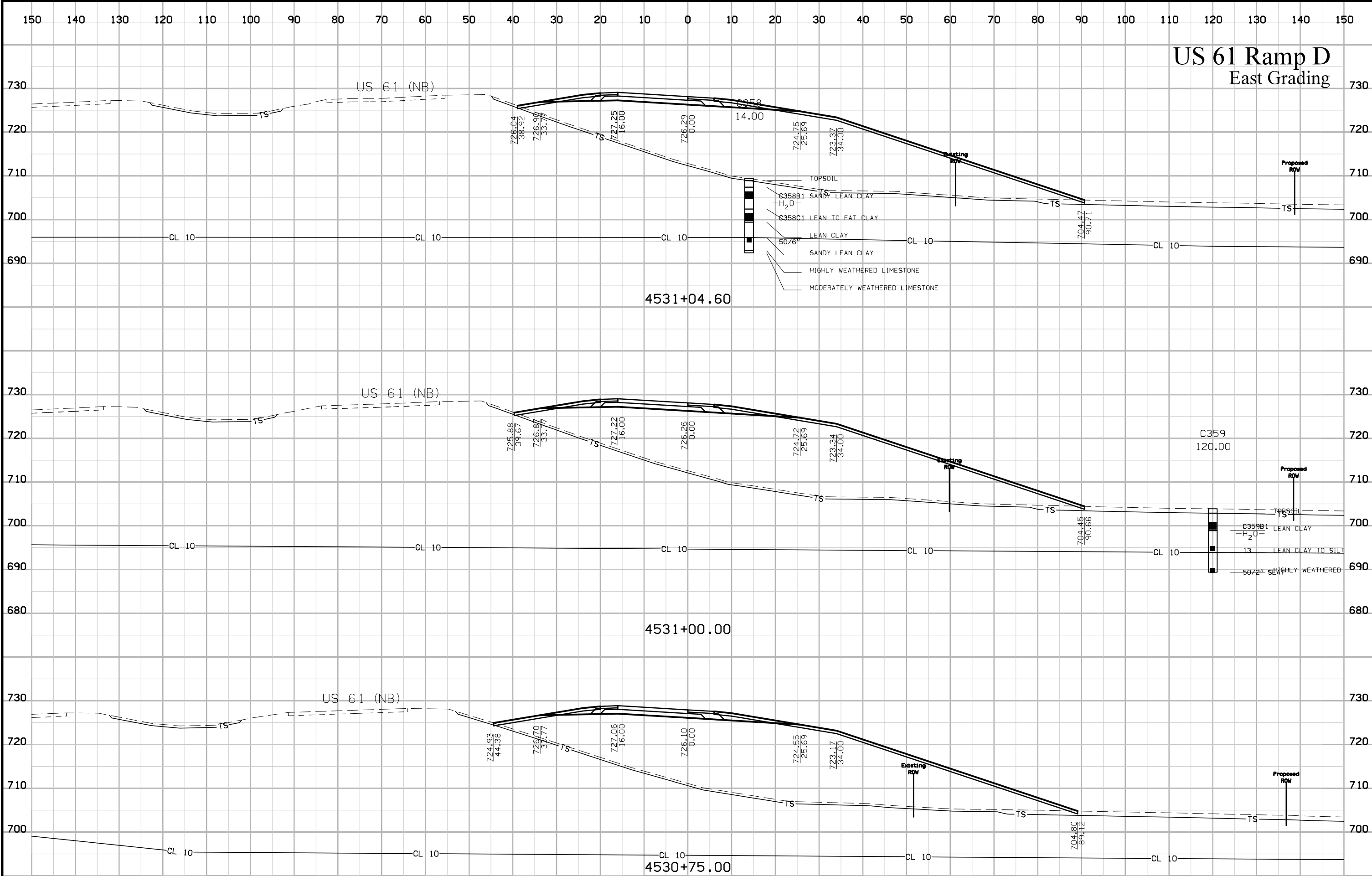
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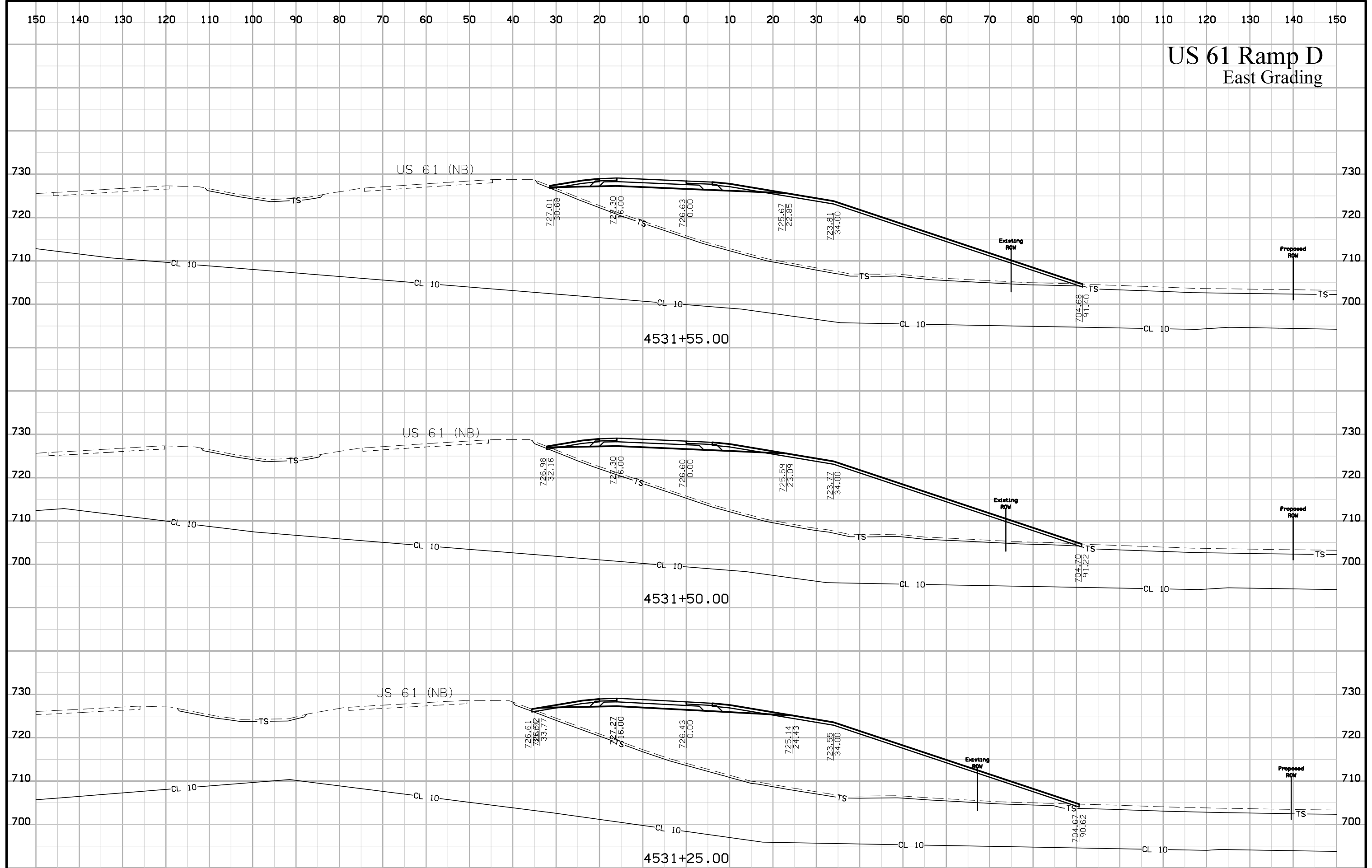
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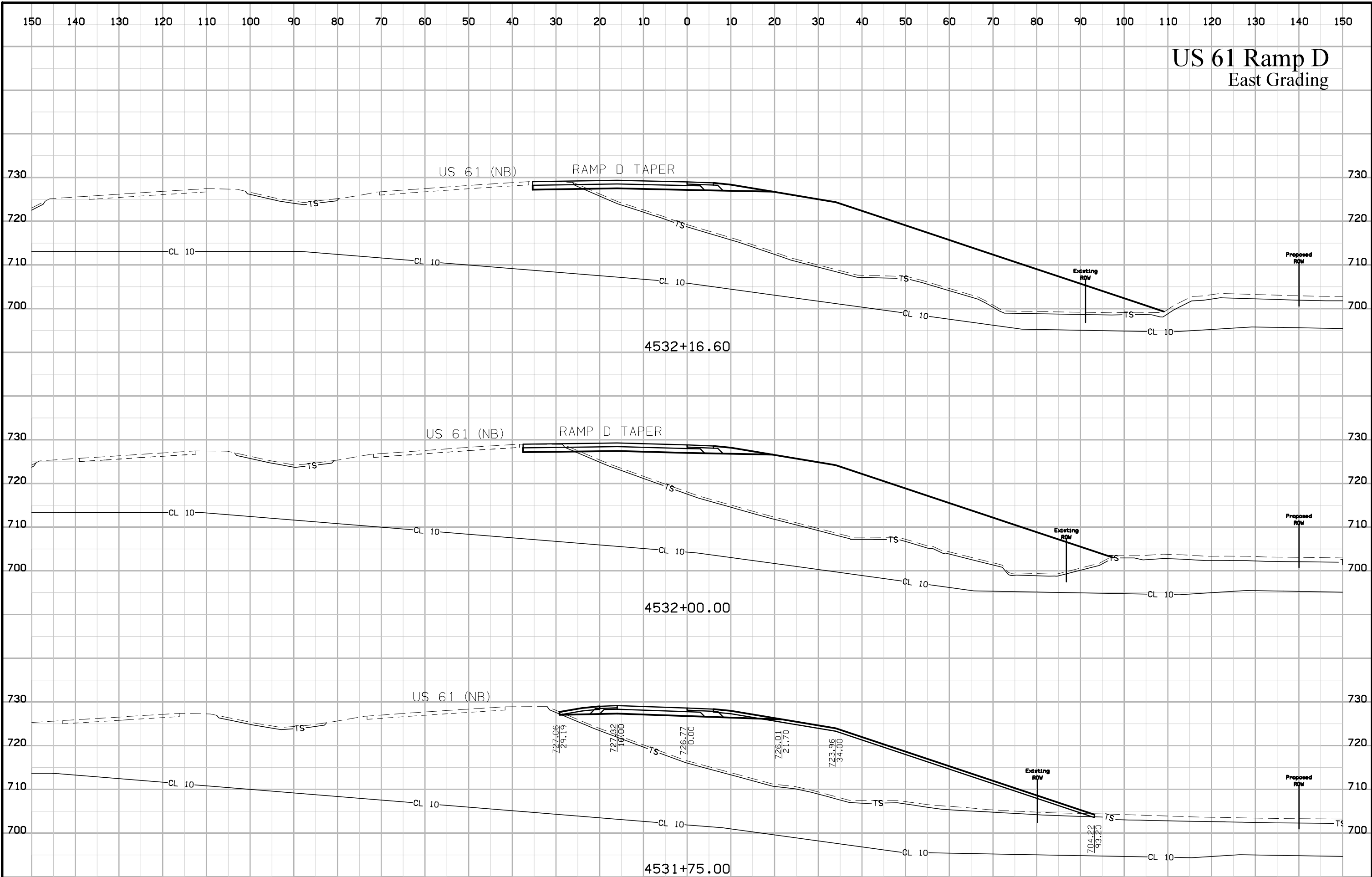
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US 61 Ramp D East Grading

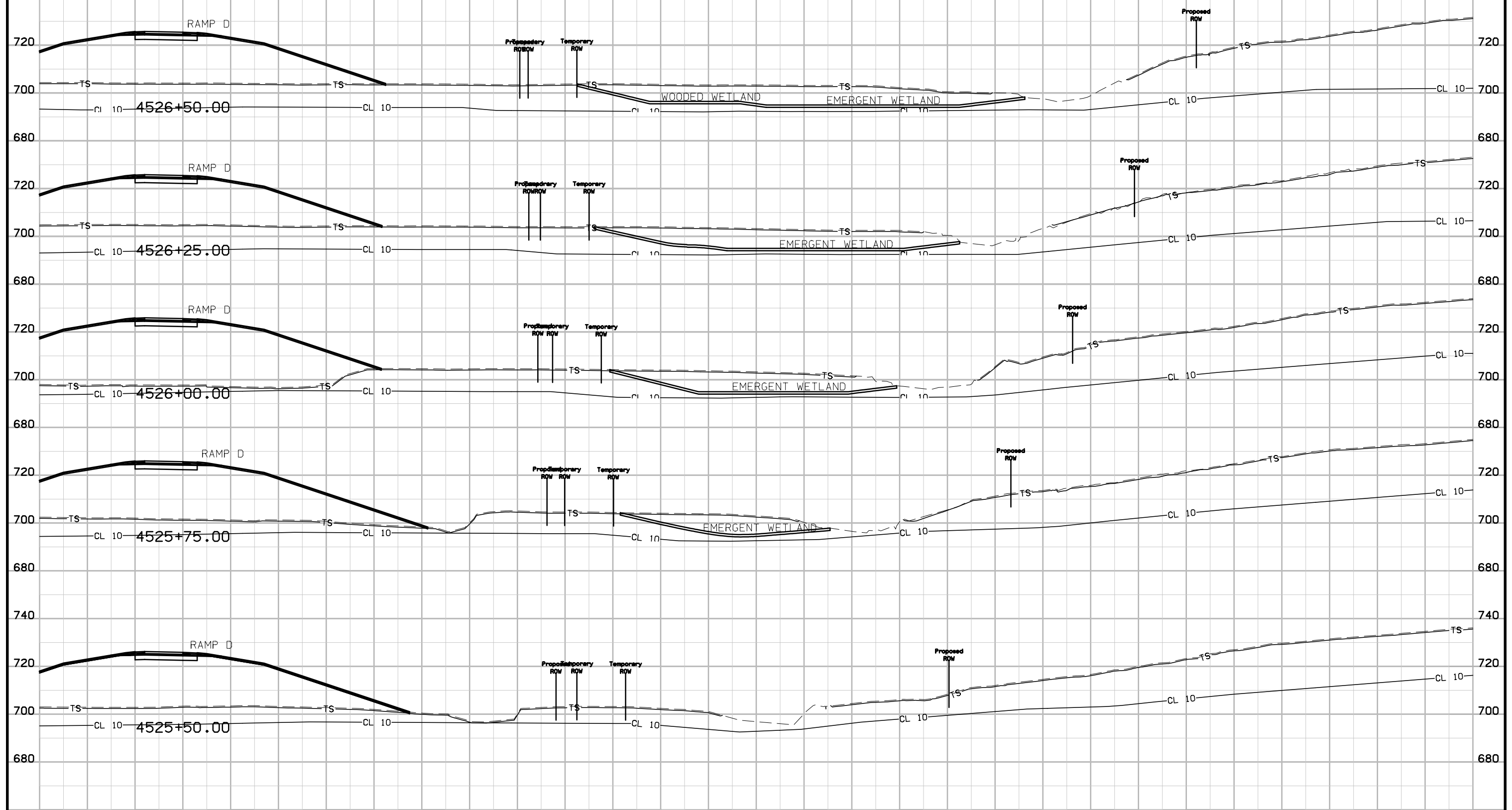


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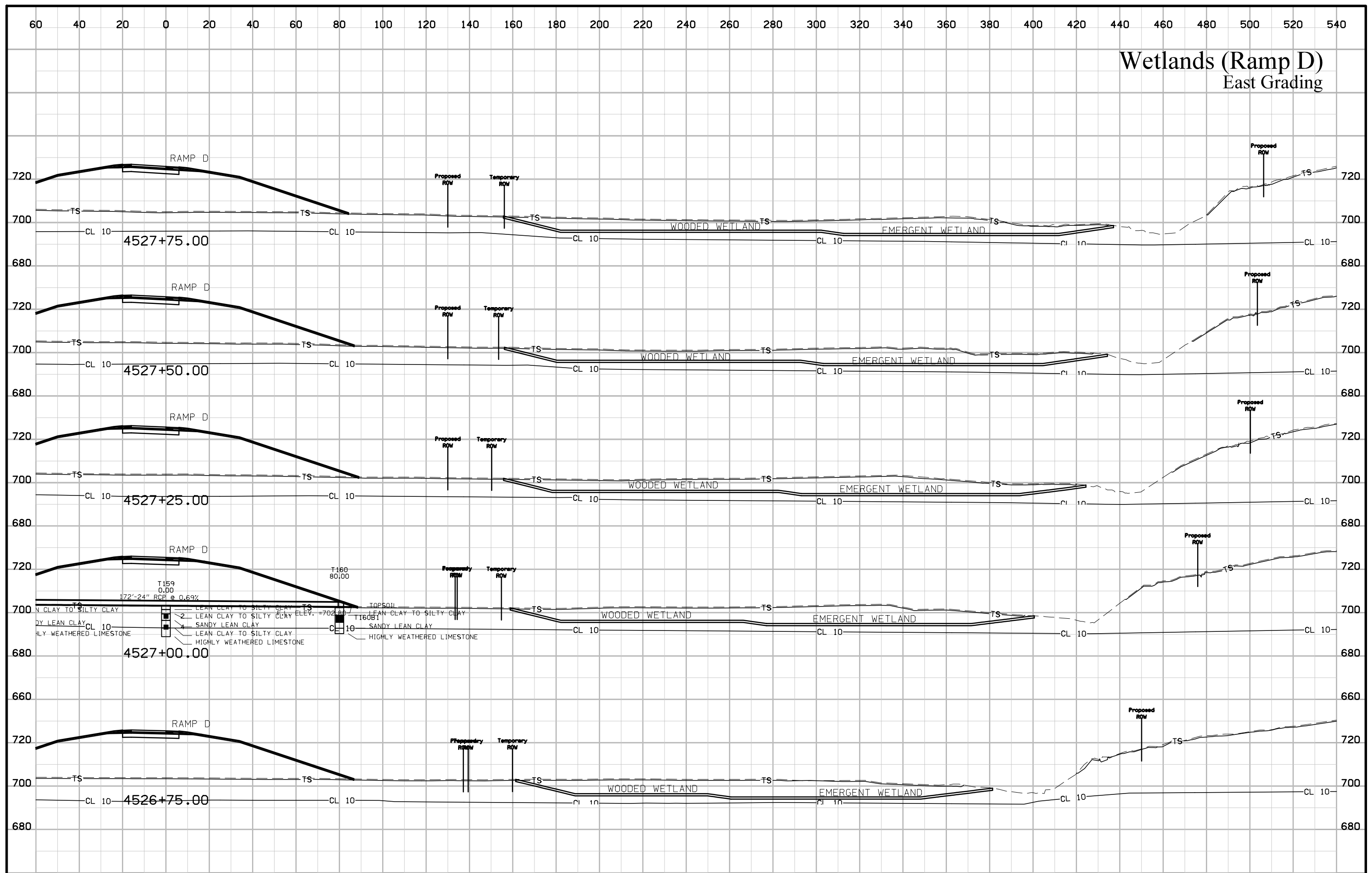


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Wetlands (Ramp D) East Grading

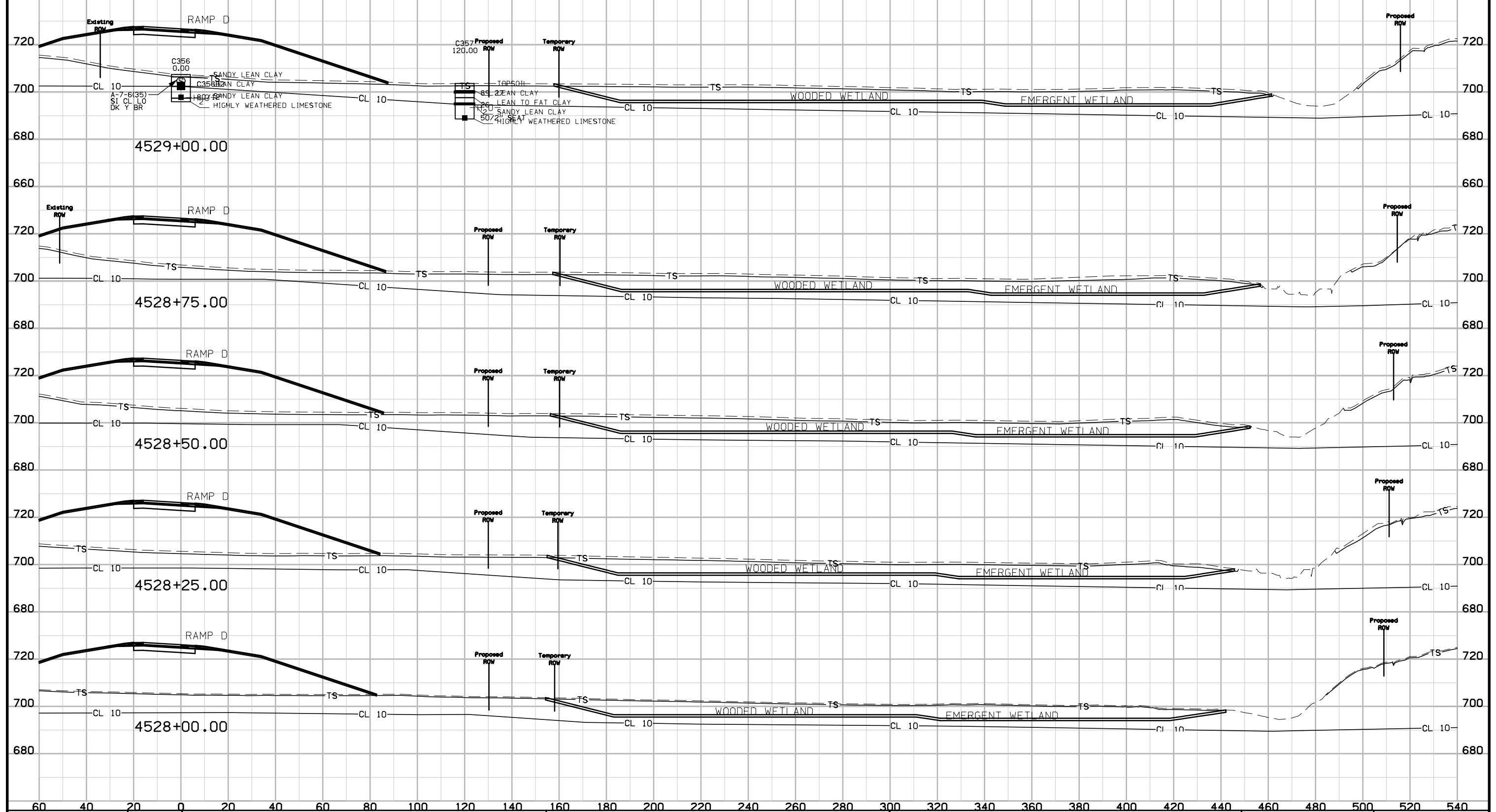


Wetlands (Ramp D) East Grading

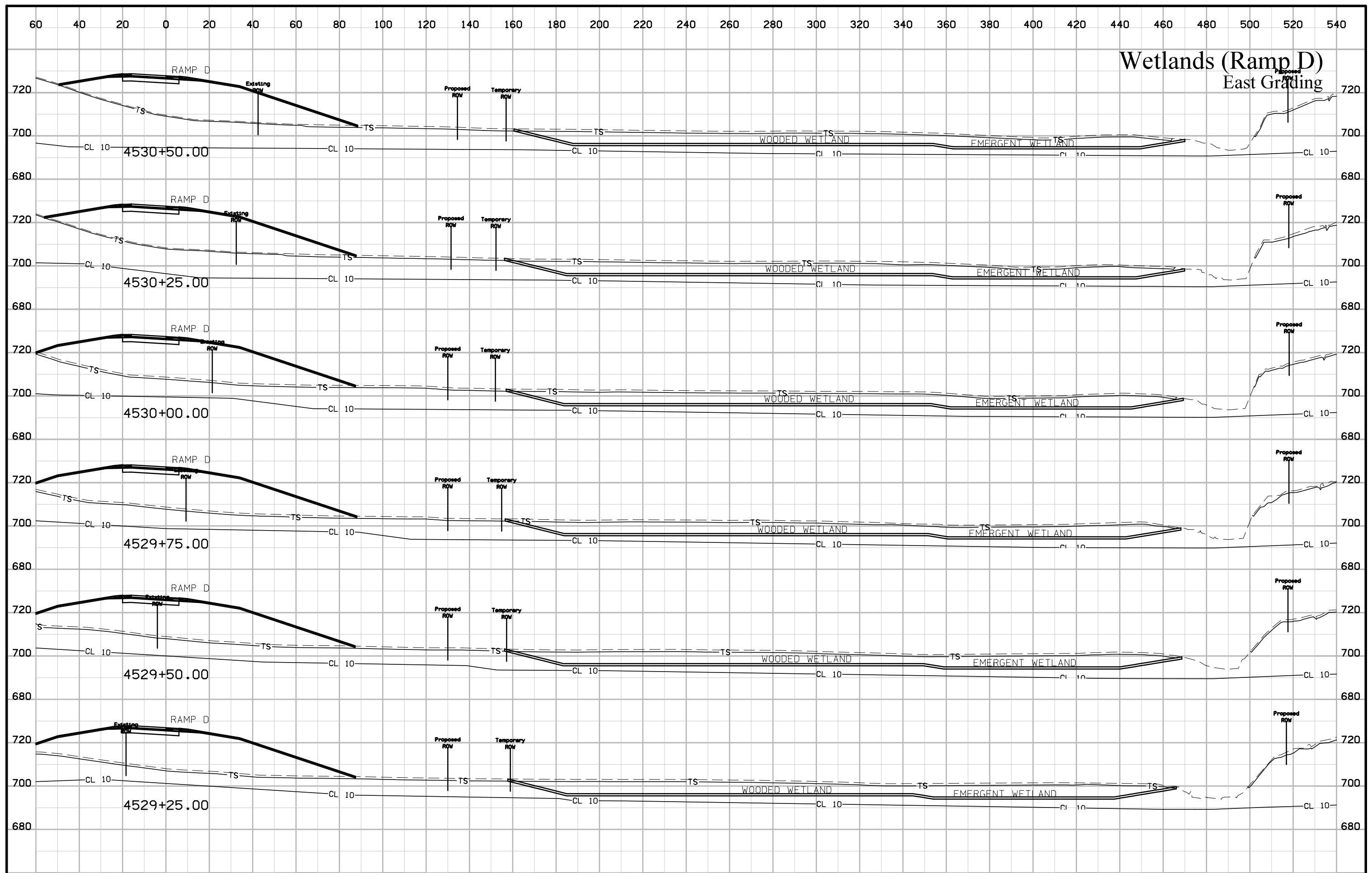


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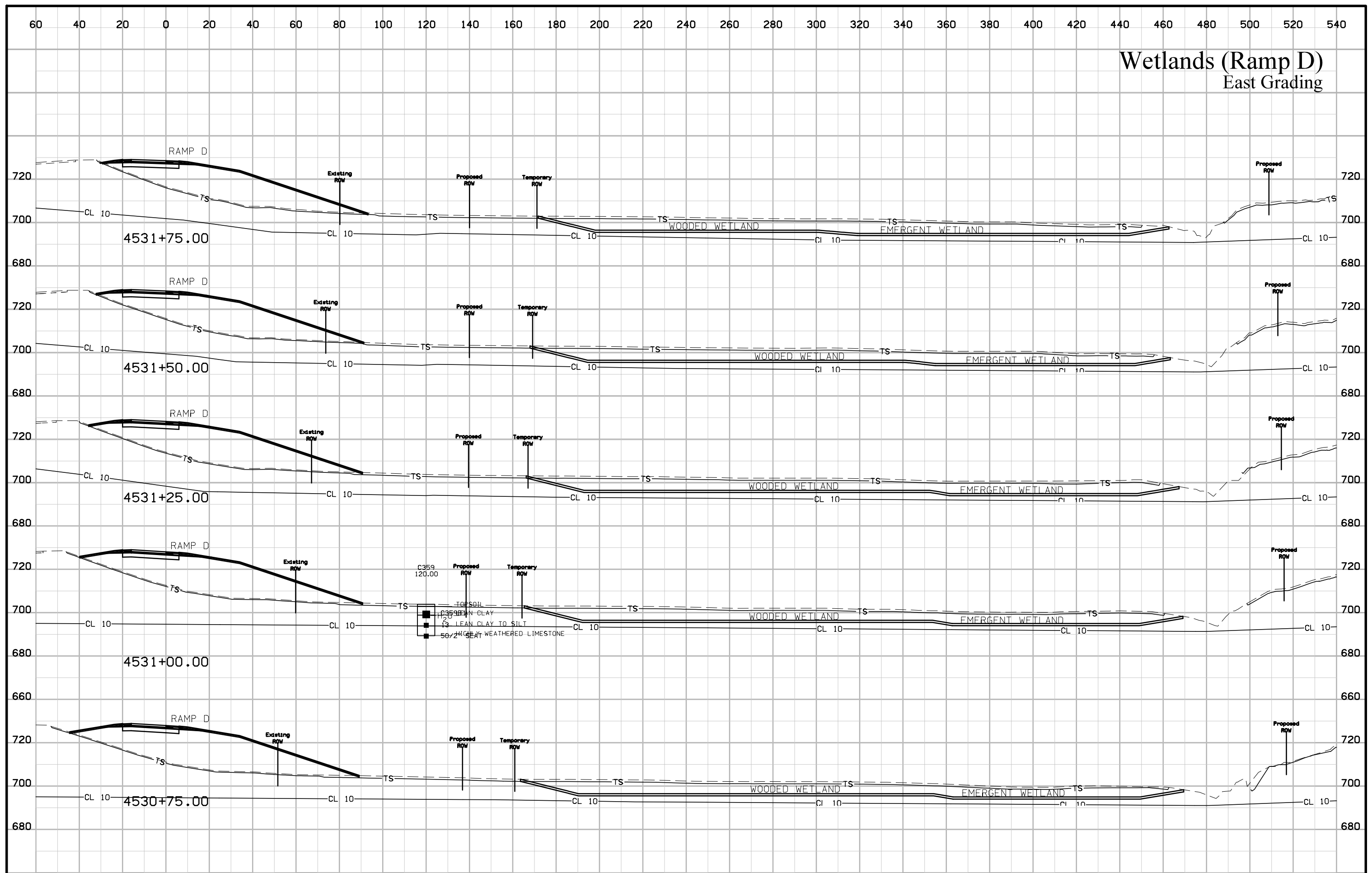
Wetlands (Ramp D) East Grading



Wetlands (Ramp D) East Grading



Wetlands (Ramp D) East Grading



Wetlands (Ramp D) East Grading

