

LETTING DATE
08/19/2014

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

LOUISA CO.



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
LOUISA COUNTY
GRADING

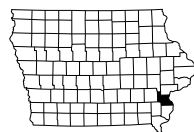
From Approx. 2 Miles S. Of Ia. 92 N. To Muscatine Co. Line

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

| INDEX OF SHEETS | |
|------------------|---|
| No. | DESCRIPTION |
| 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 | Estimated Project Quantities |
| C.2 - 4 | Estimate Reference Information |
| C.5 | Standard Road Plans |
| C.5 | Index of Tabulations |
| C.6 | Pollution Prevention Plan |
| C.7 | General Notes |
| C.7 - 14 | Tabulations |
| CS Sheets | Soil Quantities and General Information |
| CS.1 - 2 | Soil Tabulations and General Notes |
| CS.3 | Typical Detail - Overbuild |
| D Sheets | Mainline Plan and Profile Sheets |
| * D.1 | Color Legend for Sheets D, E, F, & K |
| * D.2 - 12 | US 61 Mainline |
| * D.13 - 16 | US 61 Northbound Tie |
| E Sheets | Side Road Plan and Profile Sheets |
| * E.1 | 145th Street |
| * E.2 | 170th Street |
| * E.3 - 4 | 175th Street |
| * E.5 | 180th Street |
| F Sheets | Detour Plan and Profile Sheets |
| * F.1 - 2 | Detour 905 |
| * F.3 - 5 | Detour 985 |
| G Sheets | Survey Sheets |
| G.1 - 9 | Bench Marks and Reference Ties |
| G.10 - 14 | Horizontal Control Tabulations |
| G.15 | Superelevation Table |
| H Sheets | Mainline Right-of-Way Sheets (Preliminary) |
| * H.1 - 11 | US 61 Mainline (For Information Only) |
| HE Sheets | Side Road Right-of-Way Sheets (Preliminary) |
| * HE.1 | 145th Street (For Information Only) |
| * HE.2 | IA 92 (For Information Only) |
| * HE.3 | 170th Street (For Information Only) |
| * HE.4 - 5 | 175th Street (For Information Only) |
| * HE.6 | 180th Street (For Information Only) |
| * HE.7 | Existing 61 (For Information Only) |
| * HE.8 | 160th Street (For Information Only) |
| J Sheets | Traffic Control and Staging Sheets |
| * J.1 | Traffic Control Plan and Staging Notes |
| * J.2 | Traffic Control & Staging Legend & Symbol Info. Sheet |
| * J.3 - 4 | Staging and Traffic Control - 145th Street |
| * J.5 - 6 | Staging and Traffic Control - 175th Street |
| K Sheets | Interchange Sheets |
| * K.1 - 2 | US 61/IA 92 Interchange Layout |
| * K.3 - 6 | IA 92 Ramps A, B, C, & D - Plan and Profile Sheets |
| * K.7 - 8 | US 61/170th St Interchange Layout |
| * K.9 - 12 | 170th St Ramps A, B, C, & D - Plan and Profile Sheets |



For Project Location Map
Refer to Sheet A.2

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

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



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

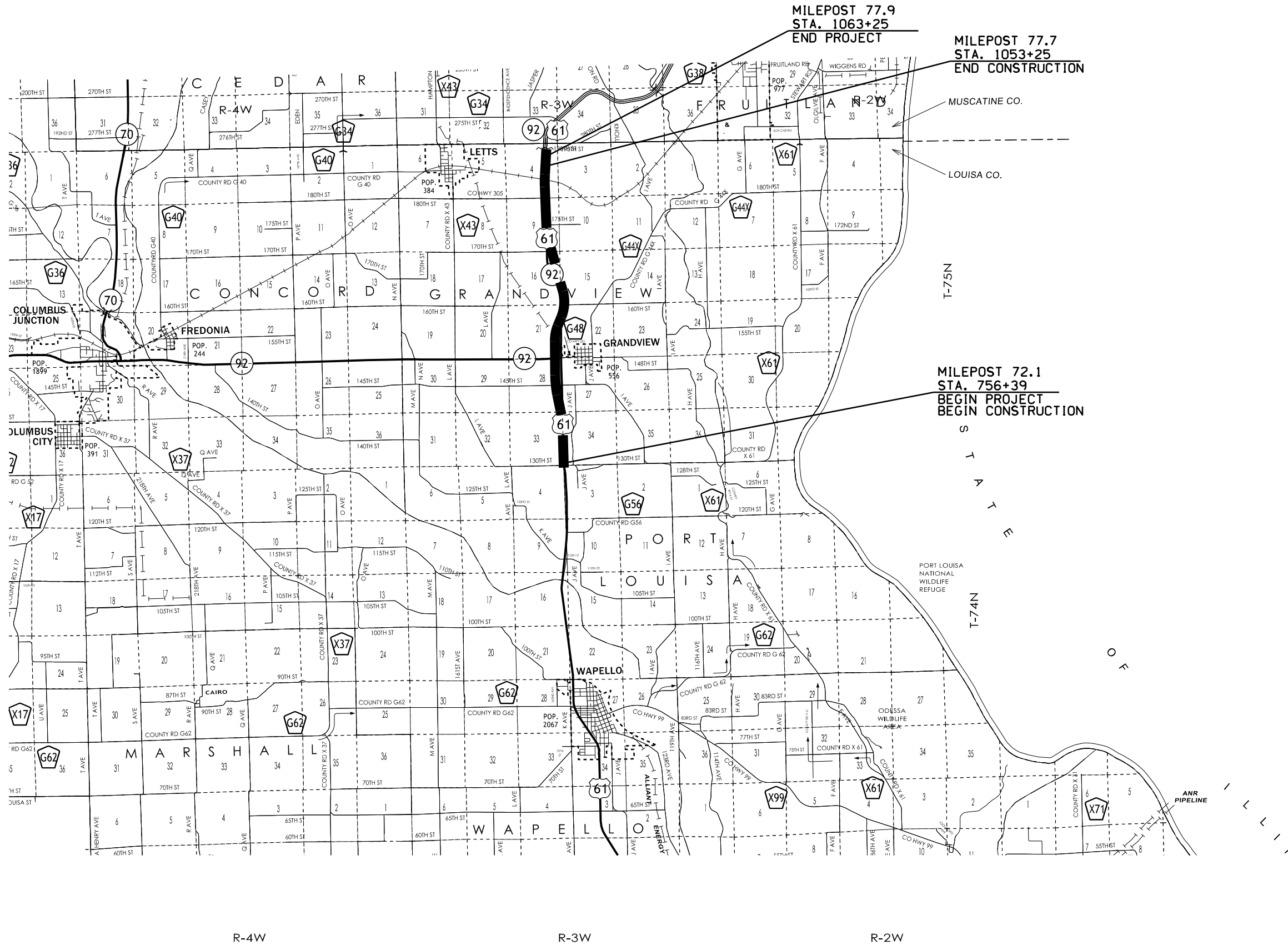
| | |
|-------------------------------|-----------------------|
| REVISIONS | TOTAL 434 |
| PROJECT IDENTIFICATION NUMBER | 09-58-061-030 |
| PROJECT NUMBER | NHSX-061-3(57)--3H-58 |
| R.O.W. PROJECT NUMBER | NHSN-061-3(55)--2R-58 |

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

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

08/01/2014
DATE

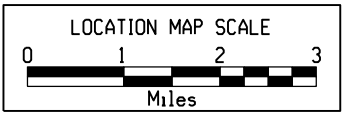
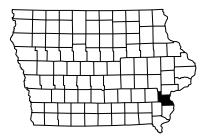
ANNE M. MURILLO, P.E.
License Number: 20794
My license renewal date is DECEMBER 31, 2014
Pages or sheets covered by this seal:
A.1-A.2, B.1-B.6, C.1-C.14, D.1-D.16, E.1-E.5, F.1-F.5,
G.1-G.15, H.1-H.11, HE.1-HE.8, J.1-J.6, K.1-K.12, M.1-M.6,
T.1-T.9, U.1-U.11, V.1-V.10, W.1-W.116, X.1-X.218, Y.1-Y.71

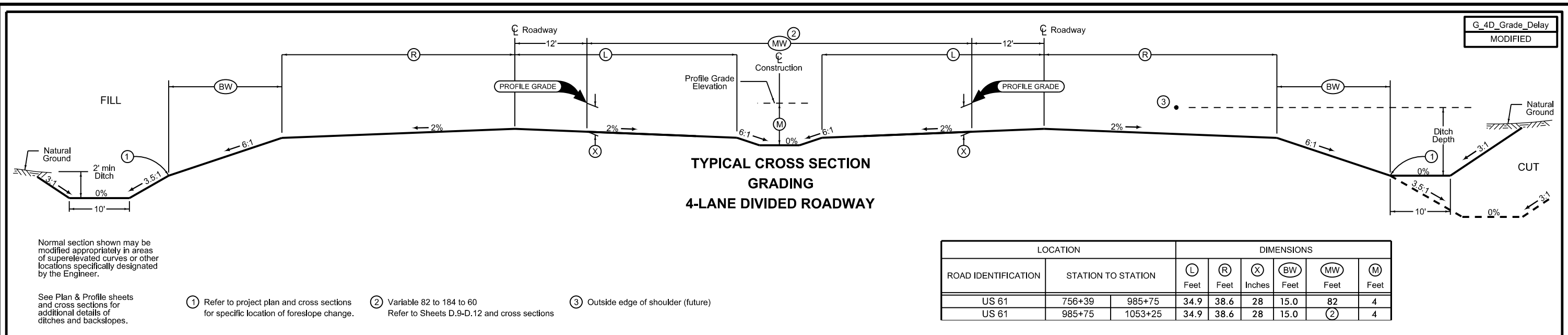


MILEPOST 77.9
STA. 1063+25
END PROJECT

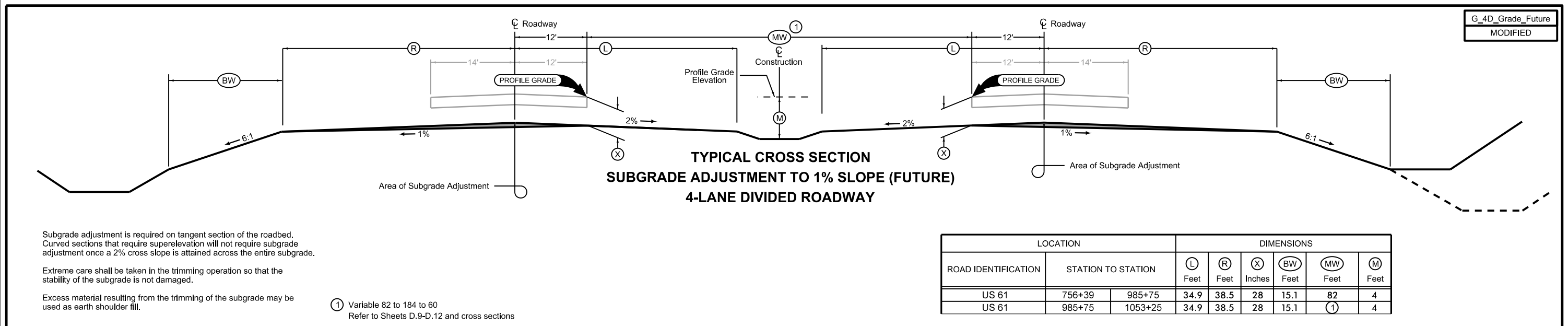
MILEPOST 77.7
STA. 1053+25
END CONSTRUCTION

MILEPOST 72.1
STA. 756+39
BEGIN PROJECT
BEGIN CONSTRUCTION

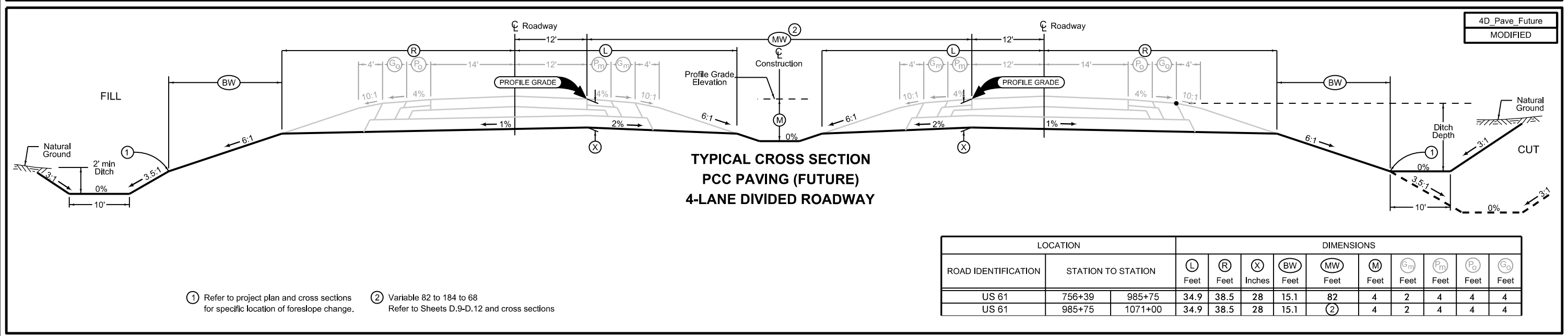




| LOCATION | | DIMENSIONS | | | | | | |
|---------------------|--------------------|------------|-----------|-------------|------------|------------|-----------|--|
| ROAD IDENTIFICATION | STATION TO STATION | L Feet | R Feet | X Inches | BW Feet | MW Feet | M Feet | |
| US 61 | 756+39 - 985+75 | 34.9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

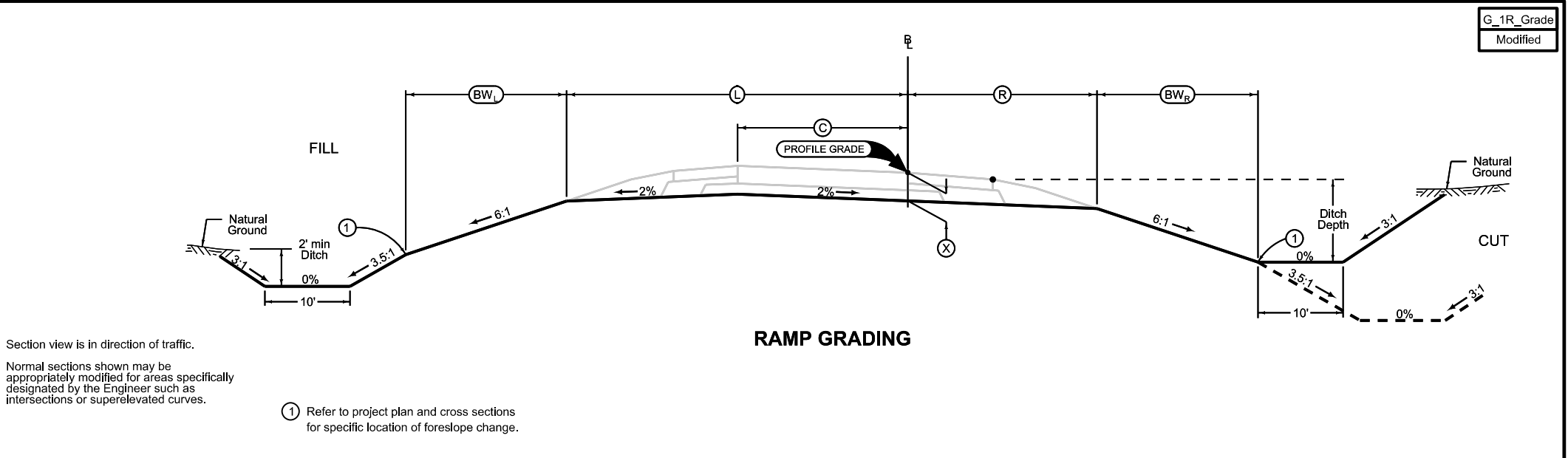


| LOCATION | | DIMENSIONS | | | | | | |
|---------------------|--------------------|------------|-----------|-------------|------------|------------|-----------|--|
| ROAD IDENTIFICATION | STATION TO STATION | L Feet | R Feet | X Inches | BW Feet | MW Feet | M Feet | |
| US 61 | 756+39 - 985+75 | 34.9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



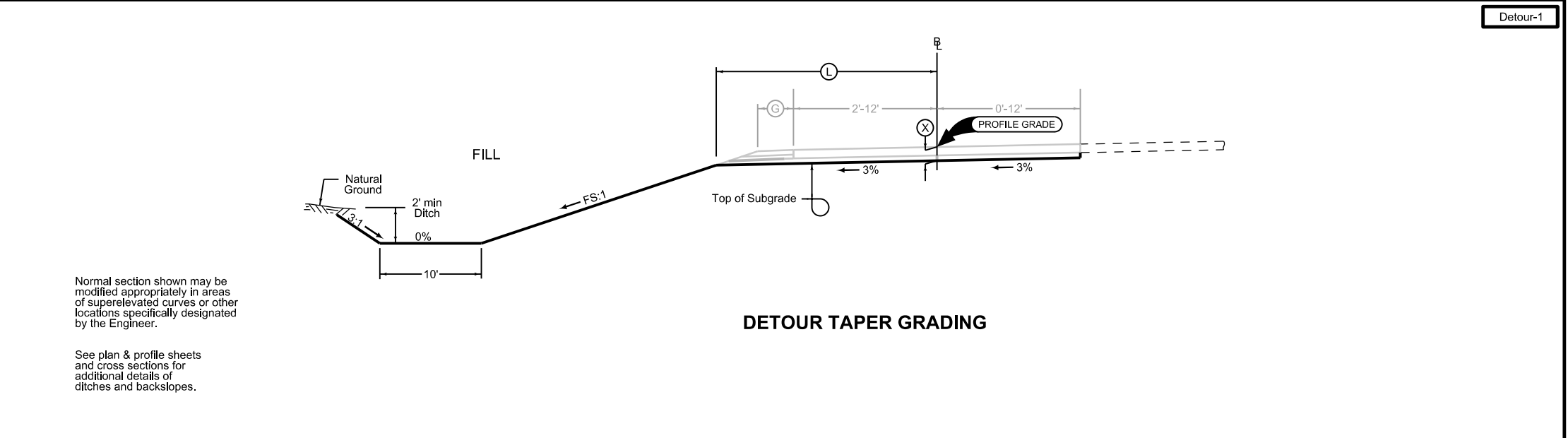
| LOCATION | | DIMENSIONS | | | | | | | | | | |
|---------------------|--------------------|------------|-----------|-------------|------------|------------|-----------|------------------------|------------------------|------------------------|------------------------|--|
| ROAD IDENTIFICATION | STATION TO STATION | L Feet | R Feet | X Inches | BW Feet | MW Feet | M Feet | G _m Feet | P _m Feet | P _o Feet | G _o Feet | |
| US 61 | 756+39 - 985+75 | 34.9 | 38.5 | 28 | 15.1 | 82 | 4 | 2 | 4 | 4 | 4 | |
| US 61 | 985+75 - 1071+00 | 34.9 | 38.5 | 28 | 15.1 | (2) | 4 | 2 | 4 | 4 | 4 | |

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



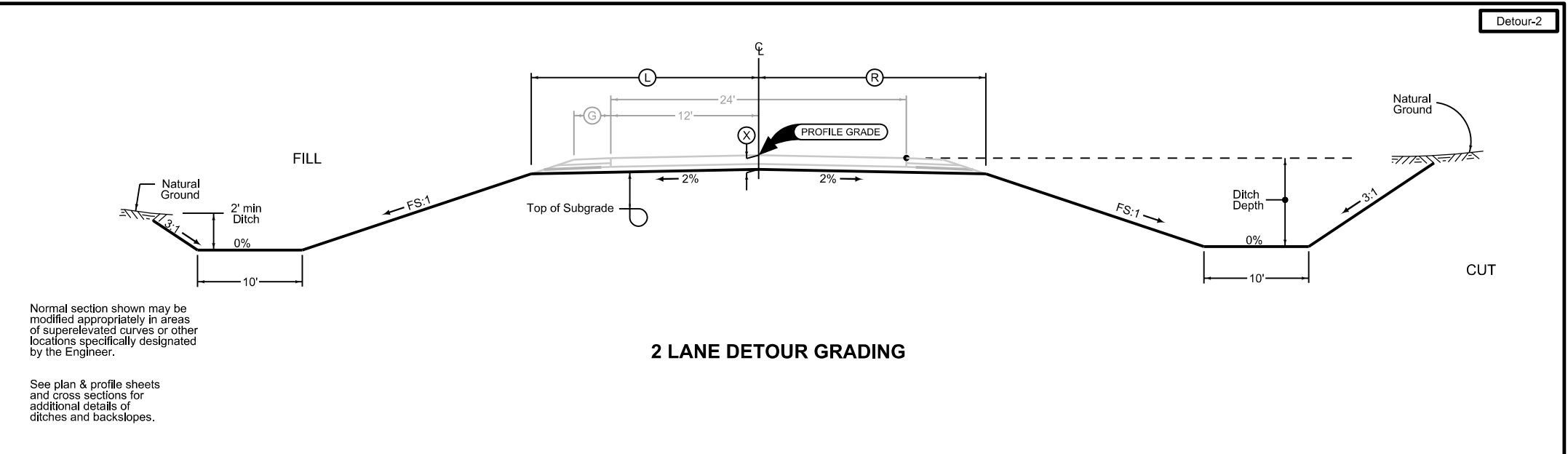
G_1R_Grade
Modified

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



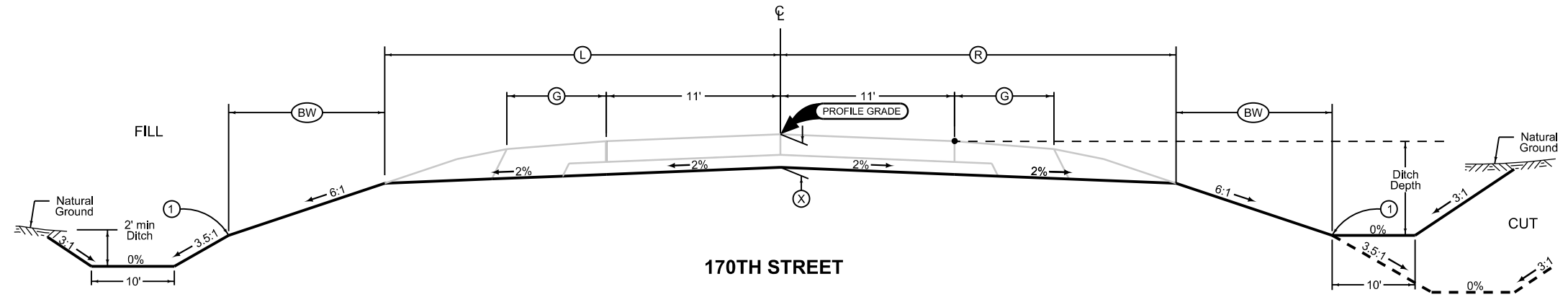
Detour-1

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



Detour-2

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

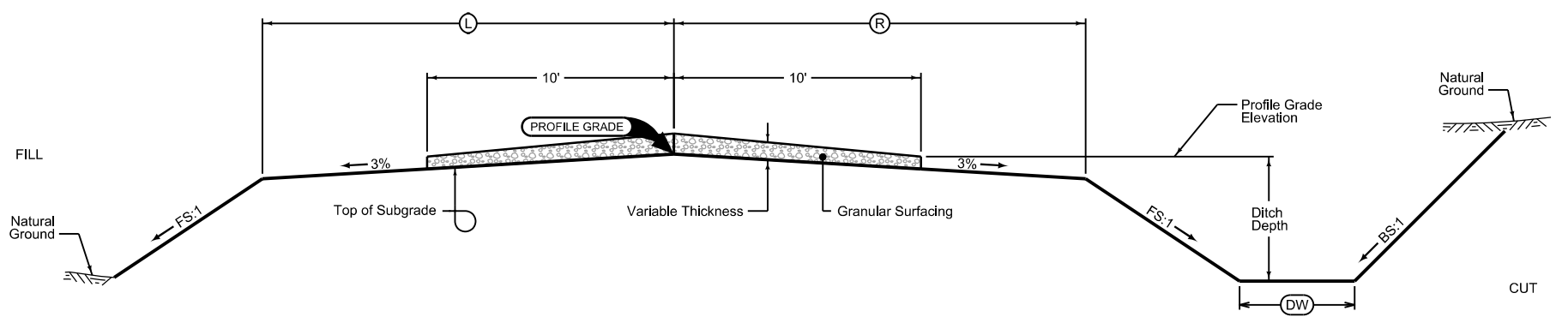


| LOCATION | | DIMENSIONS | | | | |
|---------------------|--------------------|------------|-----------|-------------|------------|-----------|
| ROAD IDENTIFICATION | STATION TO STATION | L Feet | R Feet | X Inches | BW Feet | G Feet |
| 170TH STREET | 8959+00 8970+20 | 30.5 | 30.5 | 22 | 18.1 | 6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

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

Sta 3947+47.70 BK = Sta 8958+09.61 AH

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

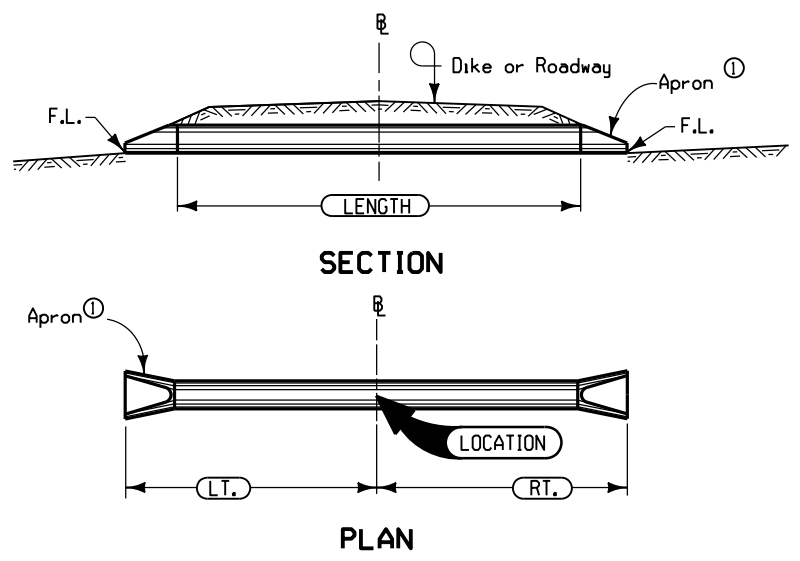


Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

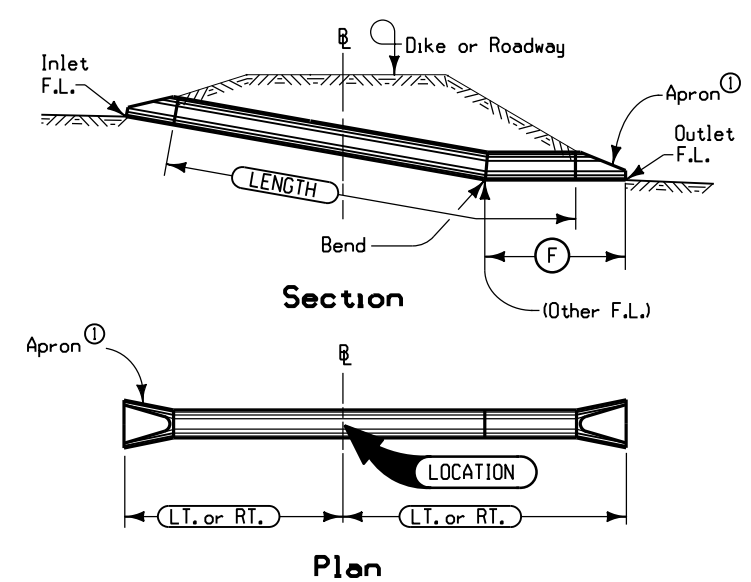
Place Granular Surfacing as follows:
Grading design application rate is 4150 tons per mile.

1101
04-30-02



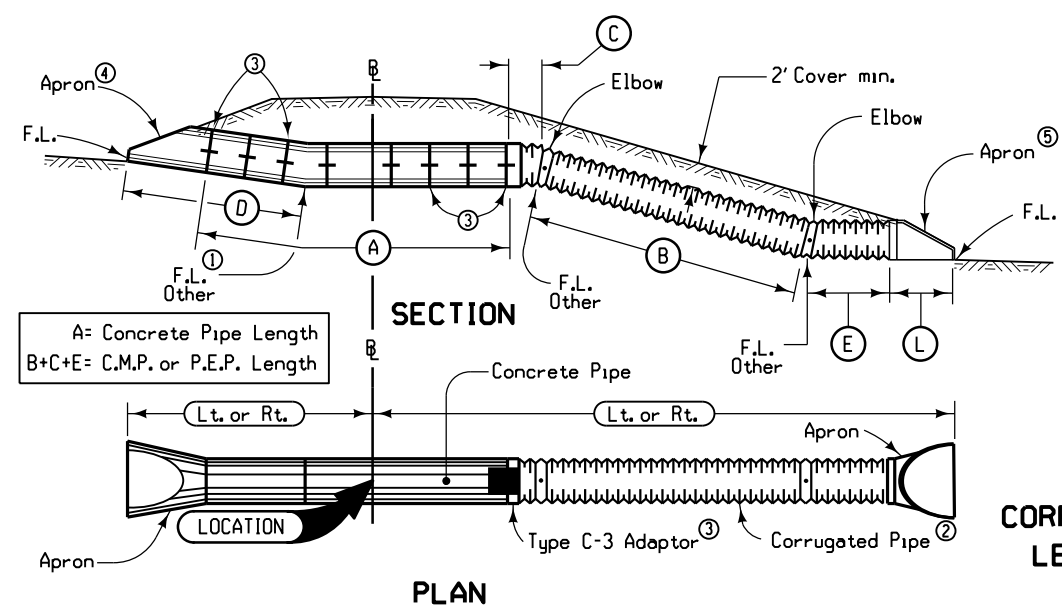
Notes:
 ② shall be \bar{C} of roadway, dike, survey, or other; as detailed on plans.
 Skew angle is the angle which one end of the pipe is ahead (by stationing) of line perpendicular to the \bar{C} (example skew Rt. ahead 30°).
 Refer to tabular listing and other plans for additional information.
 ①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

1201
10-16-12



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

1501
04-20-10

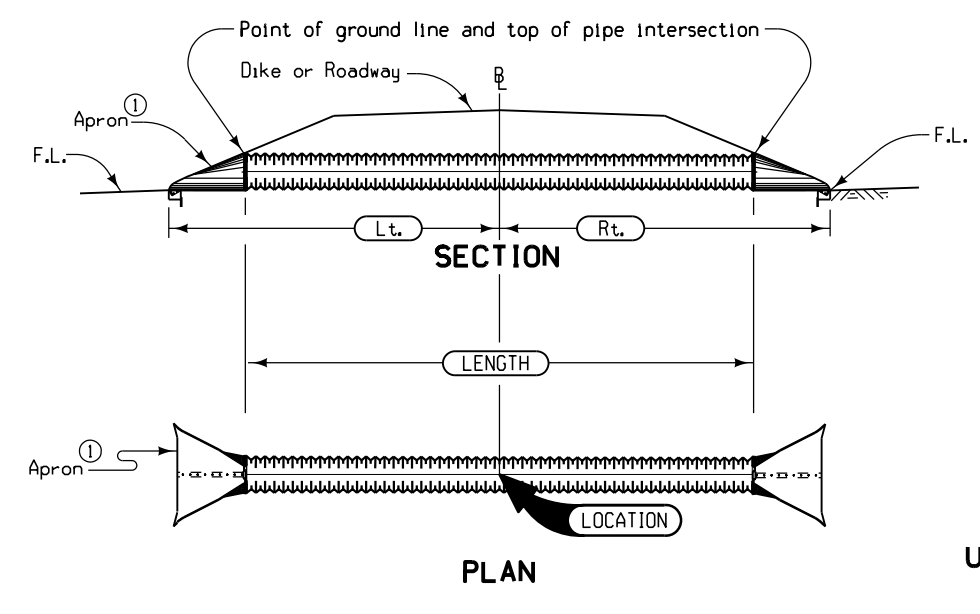


℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.
Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the ℄.
Refer to Tabulation 104-3.

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

CORRUGATED PIPE - CONCRETE LETDOWN STRUCTURE WITH METAL APRON

1601
10-16-12

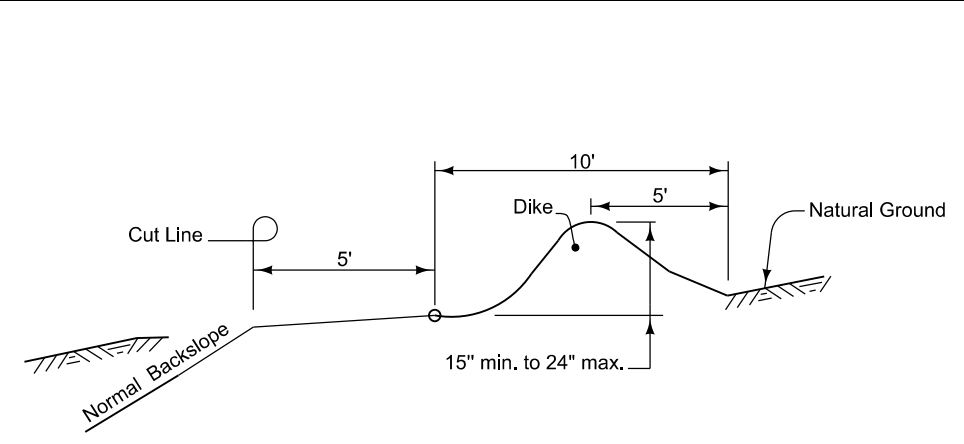


℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.
Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the ℄ (example skew Rt. ahead 30 degrees).

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

UNCLASSIFIED PIPE CULVERT

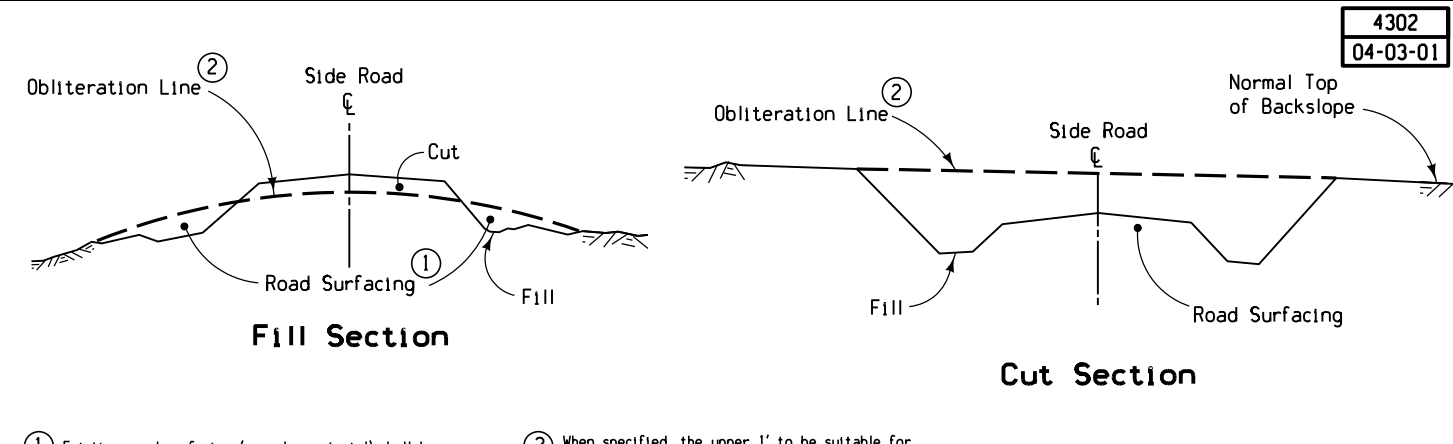
4101
04-20-10



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

TYPICAL CROSS SECTION INTERCEPTING DITCH

4302
04-03-01

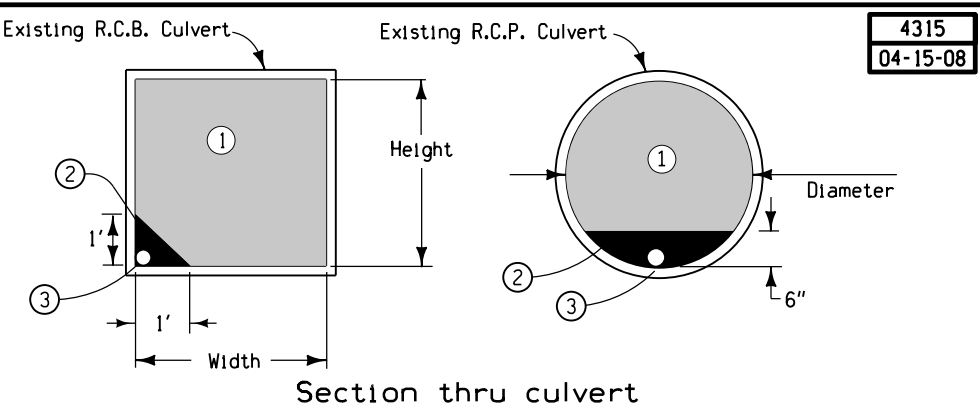
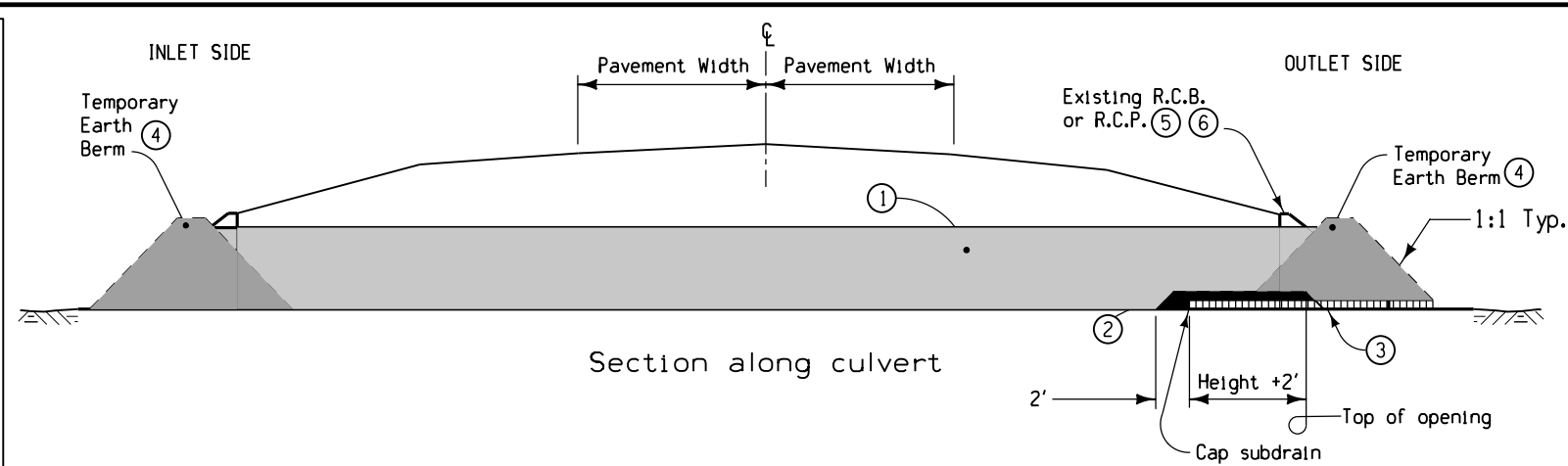
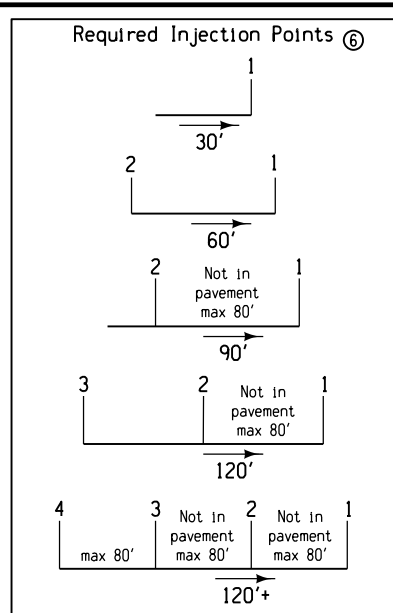


① Existing road surfacing (granular material) shall be placed as shown unless otherwise directed by the Engineer or provided for in the detail project plans.
② When specified, the upper 1' to be suitable for vegetation (grass or crops).

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

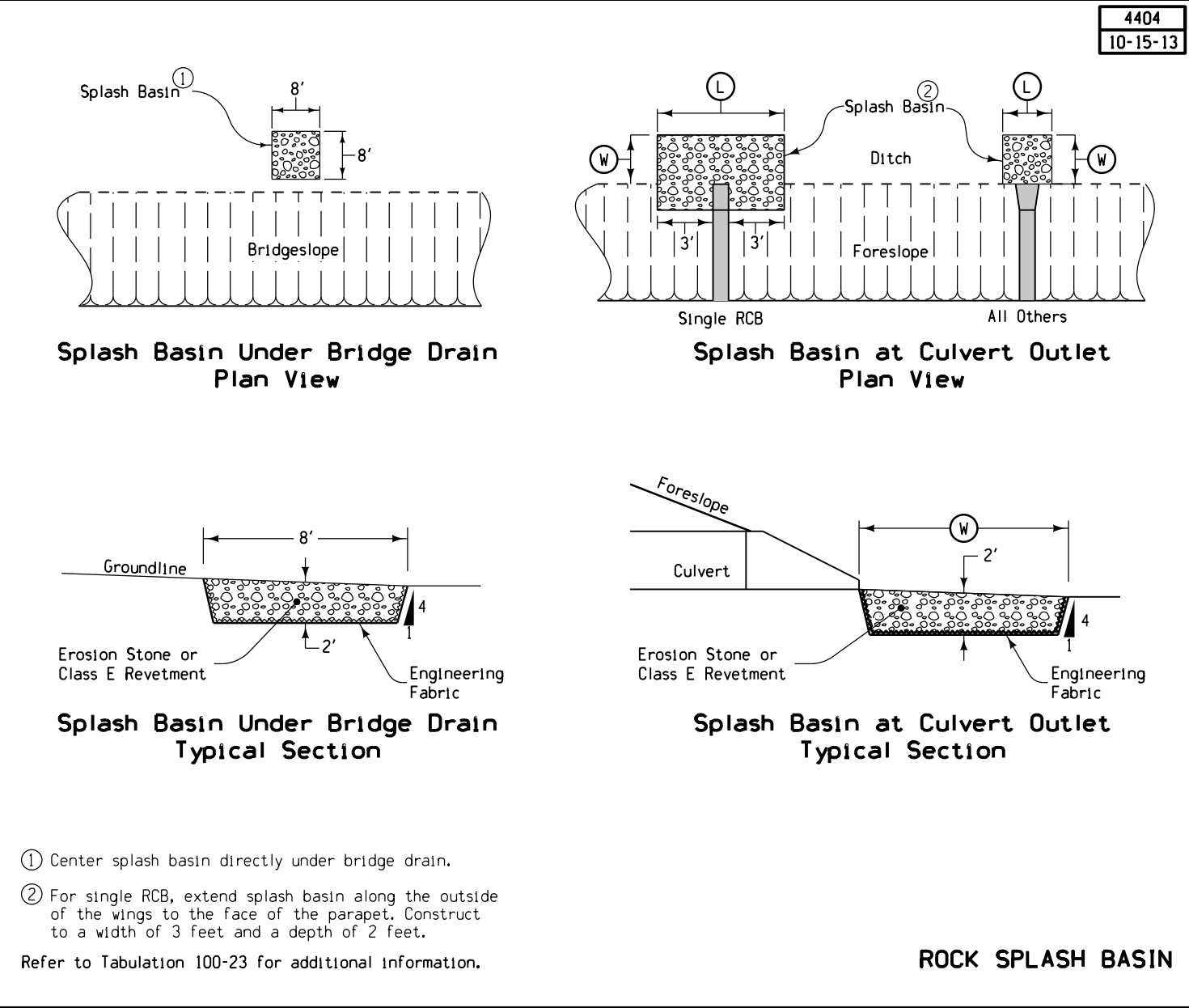
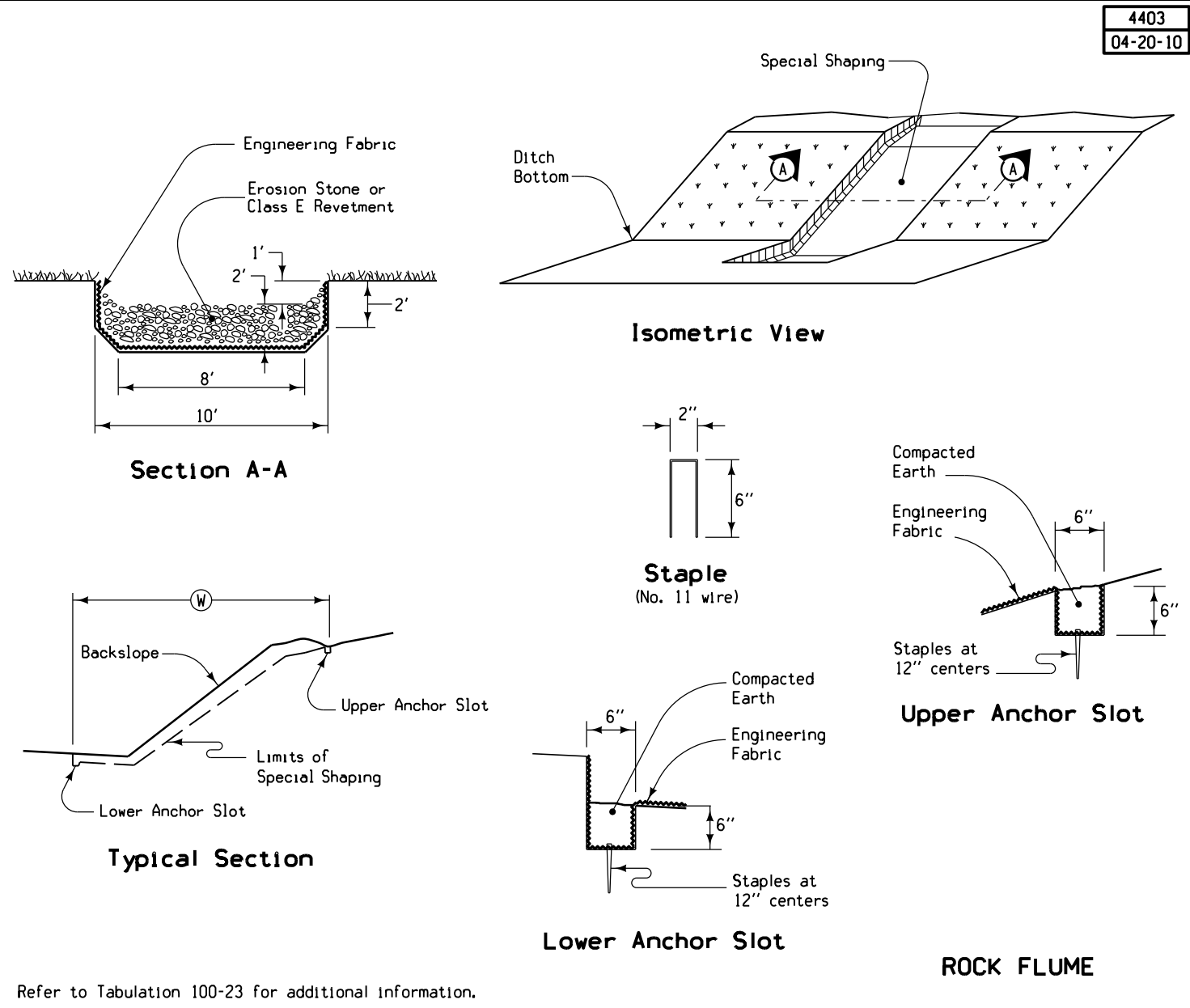
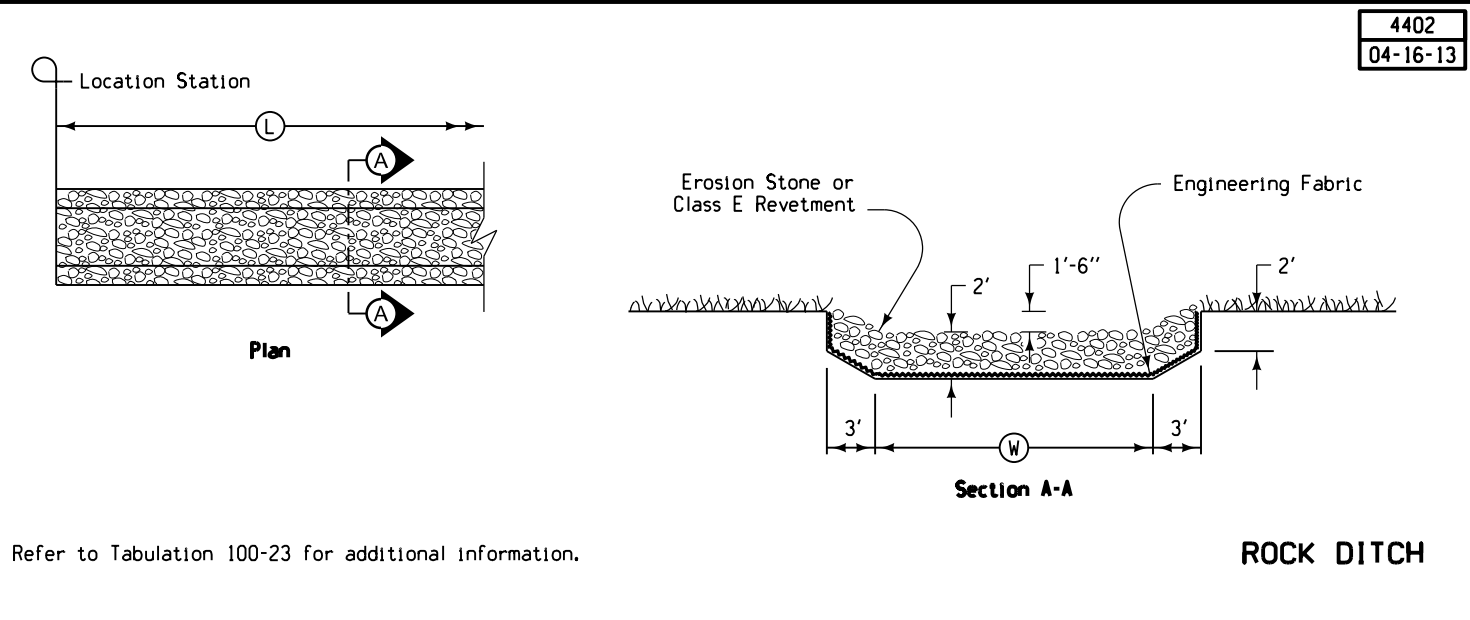
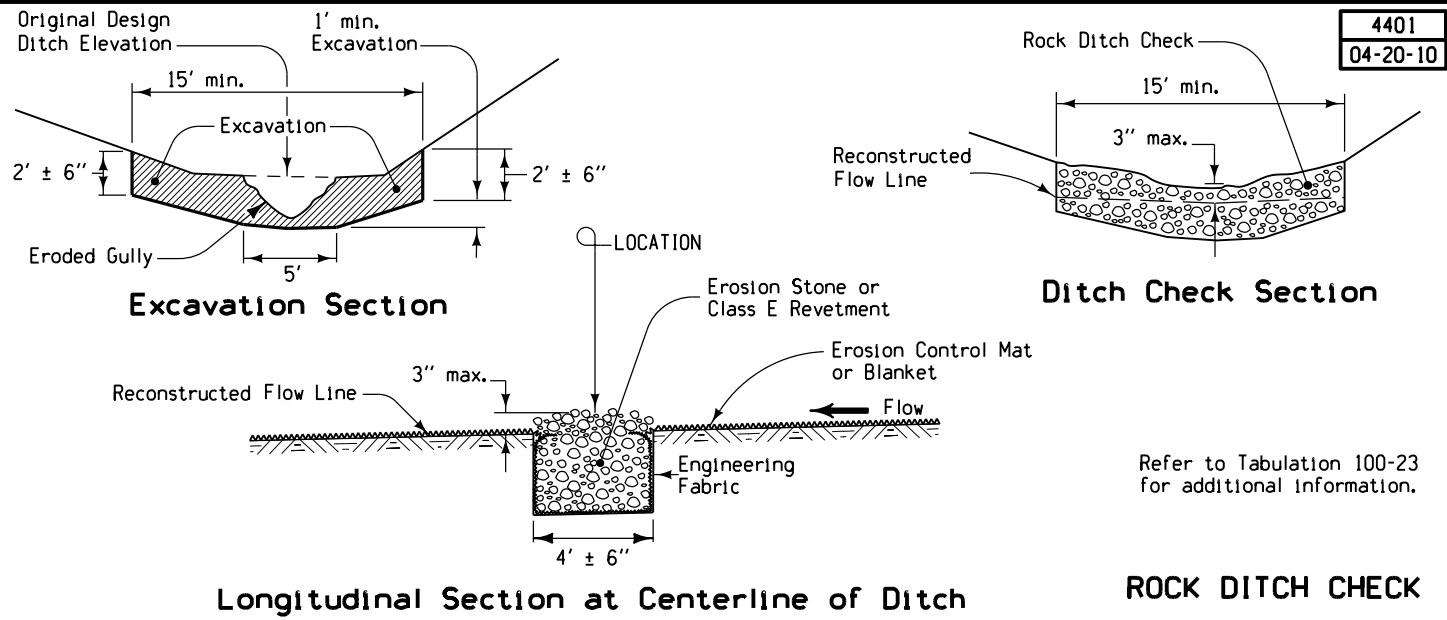
TYPICAL DETAILS FOR OBLITERATION EXISTING ROADBED

4315
04-15-08

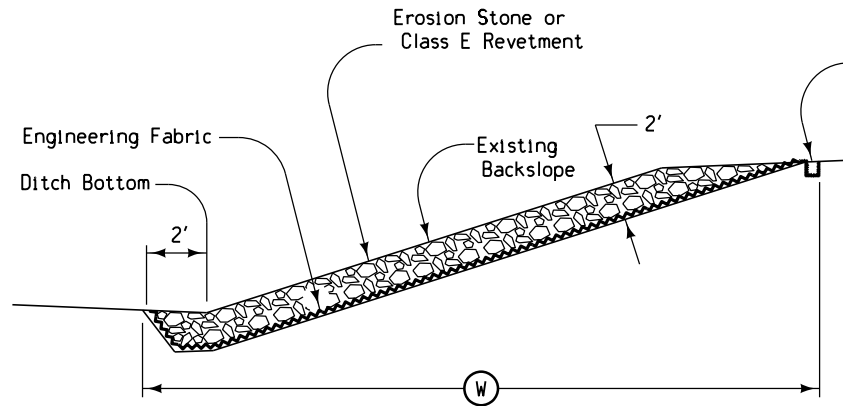


① Flowable Mortar.
② Granular Backfill.
③ 4" subdrain at flowline elevation of culvert shall be extended into the culvert a distance of 2' plus the height of the culvert. Granular Backfill covers subdrain and extends an additional 2'. Subdrain and granular backfill are incidental to flowable mortar.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

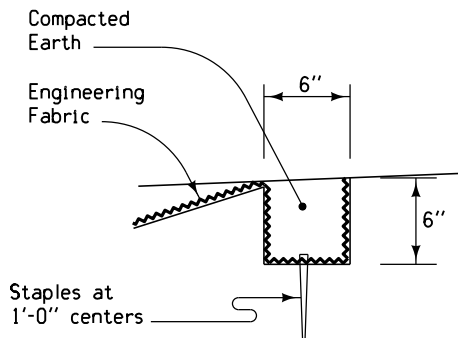
DETAILS OF CULVERT ABANDONMENT WITH FLOWABLE MORTAR (Rectangular structures less than 8' in either height or width. Circular structures less than 10' Dia.)



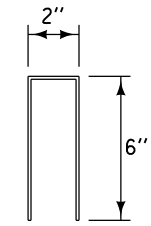
4405
04-20-10



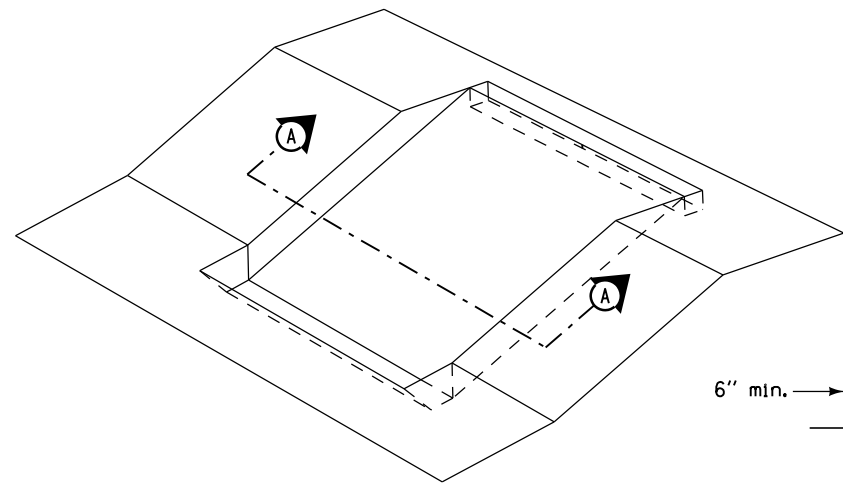
Typical Section



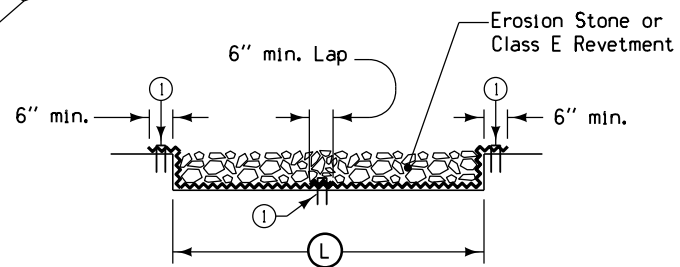
Anchor Slot



Staple
(No. 11 wire)



Isometric View



Section A-A

ROCK SLOPE PROTECTION

① Staples at 12" centers
Refer to Tabulation 100-23 for additional information.

PROJECT DESCRIPTION

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

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

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

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

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

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

ESTIMATE REFERENCE INFORMATION

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

ESTIMATE REFERENCE INFORMATION

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

ESTIMATE REFERENCE INFORMATION

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

ESTIMATE REFERENCE INFORMATION

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

INDEX OF TABULATIONS

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| 100-1A | Estimated Project Quantities (1 Division Project) | C.1 |
| 100-1D | Project Description | C.1 |
| 100-4A | Estimate Reference Information | C.2-C.4 |
| 100-14 | Silt Basins | C.9 |
| 100-16 | Tabulation of Intercepting Ditches | C.7 |
| 100-17 | Tabulation of Silt Fences | C.9 |
| 100-18 | Tabulation of Silt Fences for Ditch Checks | C.9 |
| 100-22 | Special Ditch Control and Slope Protection | C.7 |
| 100-23 | Rock Ditch Checks/Ditches/Flumes/Splash Basins/Slope Protection | C.8 |
| 100-30 | Tabulation of Temporary Sediment Control Device | C.9 |
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| 103-5 | Settlement Plates | CS.2 |
| 103-6 | Embankment with Moisture Control | CS.2 |
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| 104-3 | Drainage Structure by Road Contractor | C.11-C.12 |
| 104-5B | Storm Sewer | M.1 |
| 104-5C | List of Subdrain Work | CS.1 |
| 105-4 | Standard Road Plans | C.5 |
| 107-23 | Grading for Guardrail Installations | C.13 |
| 108-13A | Safety Closures | C.14 |
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| WSD-1 | Summary of Wick Drains of Sand Drain Fields | CS.1 |

STANDARD ROAD PLANS

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

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

POLLUTION PREVENTION PLAN

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

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

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

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

B. Contractor/Subcontractor:

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

C. RCE/Inspector:

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

II. PROJECT SITE DESCRIPTION

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

III. CONTROLS

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

POLLUTION PREVENTION PLAN

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

2. OTHER CONTROLS

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

3. APPROVED STATE OR LOCAL PLANS

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

IV. MAINTENANCE PROCEDURES

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

V. INSPECTION REQUIREMENTS

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

VI. NON-STORM WATER DISCHARGES

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

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

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

VIII. DEFINITIONS

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

213-3
04-15-14

SUBSOIL TILLAGE

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

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

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

232-4
10-18-11

EROSION CONTROL (SELECTIVE CLEARING)

Selective clearing will be required on this project.

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

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

Do not disturb native grass areas outside the construction limits.

232-10
Modified

EMERALD ASH BORER

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

281-1
10-15-13

SECTION 404 PERMIT AND CONDITIONS

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

262-5
10-18-05

UTILITIES (POINT 25 PROJECT)

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

100-16
10-19-10

TABULATION OF INTERCEPTING DITCHES

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

100-22
08-01-08

SPECIAL DITCH CONTROL AND SLOPE PROTECTION

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

* Design shown for mandatory locations is the minimum allowed.

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

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

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

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

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

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

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

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

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

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

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

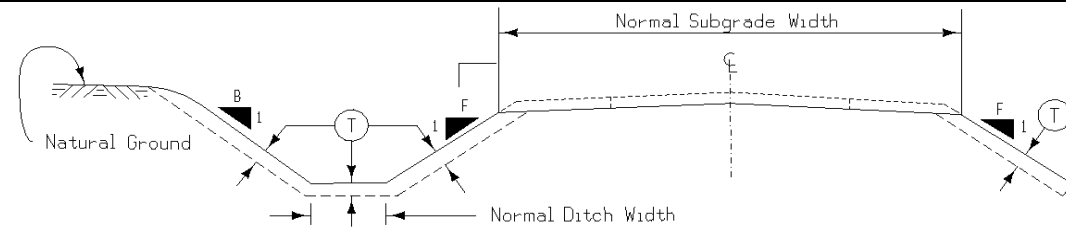
- ① Refer to MI-210
- ② Refer to EW-501.
- ③ Refer to EW-501 or EW-502.

*Predetermined for access point not constructed with this project.

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

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

TABULATION OF SPREADING TOPSOIL



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

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

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

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Corrugated Metal 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 | Camber* (RF-308) FT | Apron No. | | Apron Guard* (RF-26) No. | Elbow* (RF-13) No. | Diaphragm* (RF-7) No. | Tee Section* (RF-21) No. | "D" Section* (RF-13) No. | Reducer* No. | Adaptors* (RF-2) Type No. | Connected Pipe Joint* (RF-14) Type | 4" Perforated Subdrain* FT | 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 | | | | | | | | | | Lt. | Rt. | Other | Other | Total Lt. | Total Rt. | Extensions Lt. | Extensions Rt. | Lt. | Rt. | Lt. | Rt. | Lt. | | | | | | | Location Station | Top Elevation | Type | | | | | | |
| | | | | | | | | | | | | | | | | | | | | Lt. | Rt. | | | | | | | | | | | | | | | | | | | | | | (A) | (B) | (A+B) | | |
| 14.0 | 170th Ramp B | 1101 | 24 | RCP | 68 | B | 2.8 | 0.10 | 1 | 1 | | | | | | | | | | | 700.04 | 700.71 | | | 45.4 | 34.6 | | | | | | | | 41.4 | 12.3 | 37.7 | 10.9 | 48.3 | Twin pipe 1 of 2 | | | | | | | | |
| 14.0 | 6563+47.25 | 1101 | 24 | RCP | 68 | B | 2.8 | 0.10 | 1 | 1 | | | | | | | | | | | 700.04 | 700.71 | | | 45.4 | 34.6 | | | | | | | | | | | | | | Twin pipe 2 of 2 | | | | | | | |
| Totals: | | | 18 | UNCL | 56 | | | 24" | CMP | 1 | 12 | 1 | | | | | 1 | | | | | | | | | | | | | | | | | | | 12187.4 | 342.3 | 6874.6 | 589.2 | 7463.5 | | | | | | | |
| trenchless | | | 2000D | 24 | RCP | 1724 | | 30" | RCP | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 24 | RCP | 106 | | 36" | RCP | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 3000D | 24 | RCP | 286 | | 42" | RCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 30 | RCP | 624 | | 48" | RCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 3000D | 30 | RCP | 138 | | 54" | RCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 3750D | 30 | RCP | 360 | | 72" | RCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 36 | RCP | 328 | | 78" | RCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 36 | RCP | 128 | | 22"x14" | LCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 3000D | 36 | RCP | 720 | | 29"x18" | LCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 42 | RCP | 116 | | 44"x27" | LCP | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 48 | RCP | 254 | | 52"x32" | LCP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 3000D | 54 | RCP | 330 | | 59"x36" | LCP | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 72 | RCP | 268 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 78 | RCP | 336 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 22x14 | LCP | 66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 29x18 | LCP | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 44x27 | LCP | 154 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 52x32 | LCP | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| trenchless | | | 2000D | 59x36 | LCP | 256 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

[A] = Class B bedding on the portion of the pipe under the roadway, Class C bedding under the let-down portion
 [B] = Lay 112 LF beneath SB, jack 128 LF beneath existing 61 (future NB), for a total of 240 LF
 [C] = 60 LF RCP, 70 LF CMP
 [D] = Metal Apron, refer to Standard Road Plan RF-5
 [E] = Other elevations: 683.84, 682.54, and 670.21
 [F] = Skew: 10°19'29" Lt.
 [G] = Pipe centered in and parallel to US 61 median ditch, and centered across median access point crossing
 [H] = Camber less than 1 inch

- Notes:
 1. Temporary pipe
 2. Includes 50 CY for dike
 3. Beneath bridge berm
 4. Class 3750D pipe
 5. Class 3000D pipe
 6. Includes 200 CY for dike
 7. Trenchless pipe
 8. A=54.0', B=44.0', C=2.0', D=12.125', E=26.0', L=3.5'
 9. Temporary pipe, to remain in place at end of project
 10. Twin pipe 1 of 2, F=102.15'
 11. Twin pipe 2 of 2, F=102.15'

GRADING FOR GUARDRAIL INSTALLATIONS

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

Refer to EW-301

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

LIST OF FIELD TILE WORK

Refer to Standard Road Plan RF-19B

* Not a bid item

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

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

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

CULVERT ABANDONMENT

Refer to Details 4315 and 4316

* Not a bid item

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

SUMMARY OF WICK DRAINS OR SAND DRAIN FIELDS

* Not a bid item.

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

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

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

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

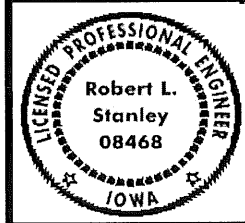
LIST OF SUBDRAIN WORK

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

* Not a bid item

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

GEOTECHNICAL DESIGN



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

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

Printed or Typed Name: Robert L. Stanley

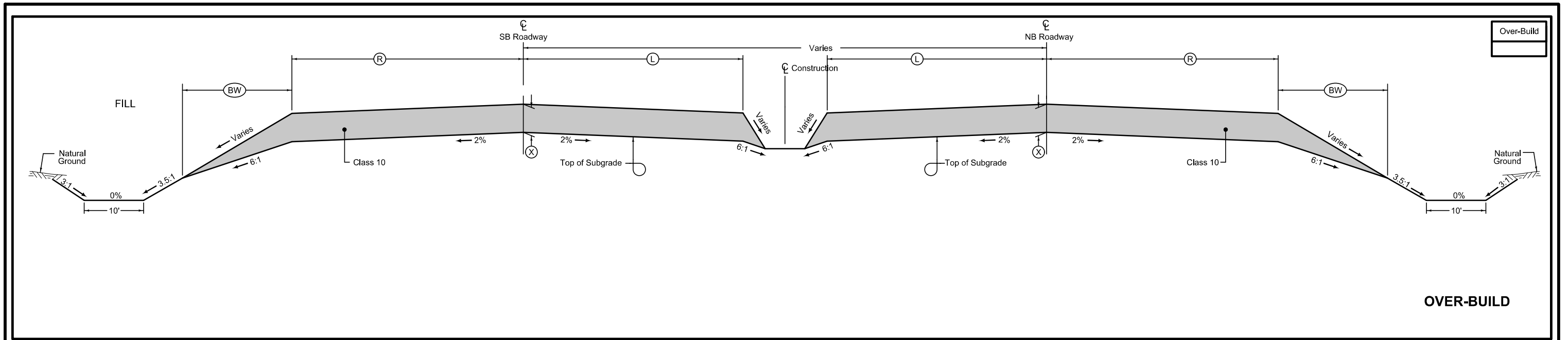
* license renewal date is December 31, 2014

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

| SETTLEMENT PLATES | | | 103-5 10-15-13 |
|------------------------------------|----------|--------|-------------------|
| Refer to Standard Road Plan EW-212 | | | |
| No. | Location | | Remarks |
| | Station | Offset | |
| 1 | 854+25 | -75.0 | |
| 2 | 855+22 | -35.0 | |
| 3 | 857+76 | -75.0 | |
| 4 | 858+71 | -35.0 | |
| 5 | 854+32 | 35.0 | |
| 6 | 855+29 | 75.0 | |
| 7 | 857+83 | 35.0 | |
| 8 | 858+78 | 75.0 | |
| 9 | 962+35 | -35.0 | |
| 10 | 963+35 | -75.0 | |
| 11 | 966+73 | -35.0 | |
| 12 | 967+73 | -75.0 | |
| 13 | 962+06 | 75.0 | |
| 14 | 963+06 | 35.0 | |
| 15 | 966+45 | 75.0 | |
| 16 | 967+45 | 35.0 | |
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| EMBANKMENT WITH MOISTURE CONTROL | 103-6 04-19-11 |
|--|-------------------|
| Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below. | |
| Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control. | |

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

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

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

SURVEY SYMBOLS

- MIS Miscellaneous
- LIN Miscellaneous Line
- PIP Pipe Culvert
- TIL Tile Line
- OUT Tile Outlet
- IN Storm Sewer Intake
- CUL Culvert
- INB Storm Sewer Beehive Intake
- MM Mile Marker Post
- RRW Railroad Switch
- RRS Railroad Signal
- RRF Railroad Frog
- EB Electrical Box
- BRG Bridge
- GDL Guard Rail Steel
- BB Billboard
- SL Speed Limit Sign
- PPA Power Pole Co. 1
- TA Tower Anchor
- PR Electric Riser Pole
- LUM Luminaire
- MH Utility Access (Manhole)
- SI Sign
- PPC Power Pole Co. 3
- LC Lot Corner
- TEV Evergreen Tree
- TDC Tree Deciduous
- HDG Hedge Row
- SHR Shrub
- HT Electrical Highline Tower
- TPD Telephone Pedestal
- TSG Traffic Signal
- GV Gas Valve
- UV Underground Utility Vault
- FW Wire Fence
- GPR Guard Post (4 or More Posts)
- BLD Building or Foundation
- FCL Chain Link and Security Fence
- BNK Stream Bank
- EP Edge of Paved Roads (ML or SR)
- SNP Unpaved Shoulder
- DIK Centerline of Dike or Dam
- SNK Sink Hole
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- EG Edge of Gravel Road
- ENU Edge Unpaved Entrance & Parking
- SH Paved Shoulder
- ENT Centerline BL of Entrance
- CON Concrete or A/C Slab
- ENP Edge Paved Entrance & Park Lot
- RR Centerline of Railroad Tracks
- EW Edge of Water
- CU Back of Curb
- GU Gutter In Front of Curb
- E1 ELA Underground Electric Line Co. 1
- E2 ELB Underground Electric Line Co. 2
- Overhead Electric Line Co. 1
- T1 TLA Underground Telephone Line Co. 1
- F04 FOD Underground Fiber Optic Co. 4
- G-HP GHA Underground High Pres Gas Co. 1
- F03 FOC Underground Fiber Optic Co. 3
- F0 FOA Underground Fiber Optic Co. 1
- BL Topo Breakline
- BLD Building or Foundation
- SWP Swamp or Marsh
- SWK Sidewalk
- WM Wind Mill
- LP L.P. Tank
- TV Satellite TV Dish
- BB Billboard
- FLG Flag Poles
- RET Retaining Walls
- FCL Chain Link and Security Fence
- C Centerline BL of Road (ML or SR)
- FWD Wood Fence
- SHR Shrub
- TER Terrace

UTILITY LEGEND

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terry.r.burke@windstream.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

CONVENTIONAL SIGNS

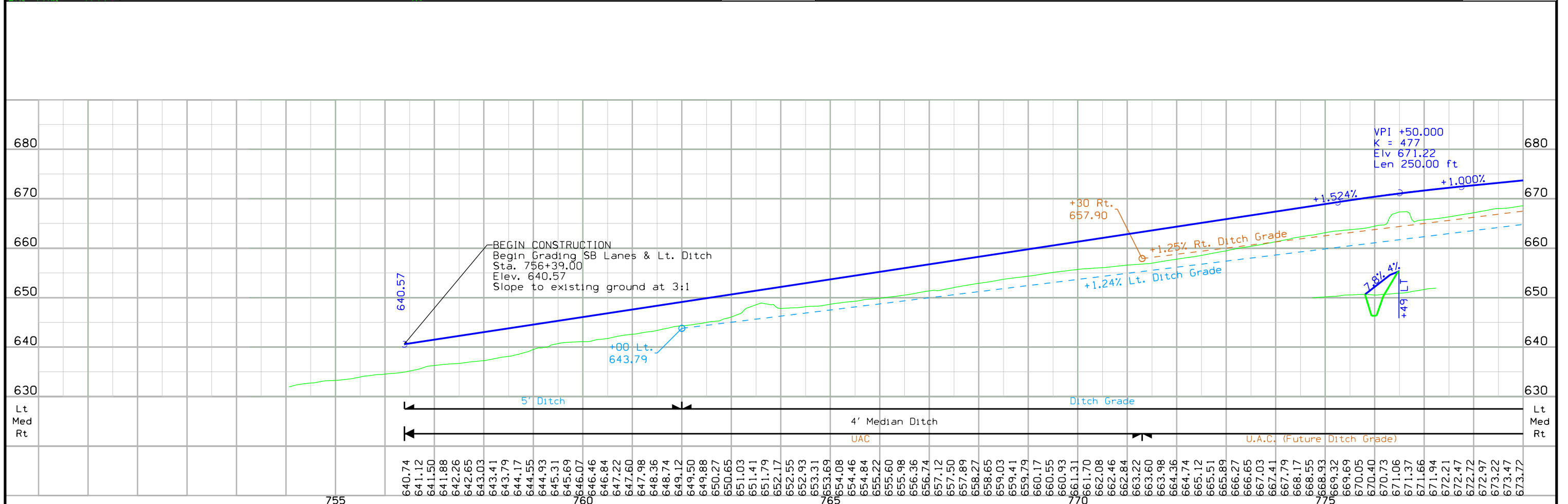
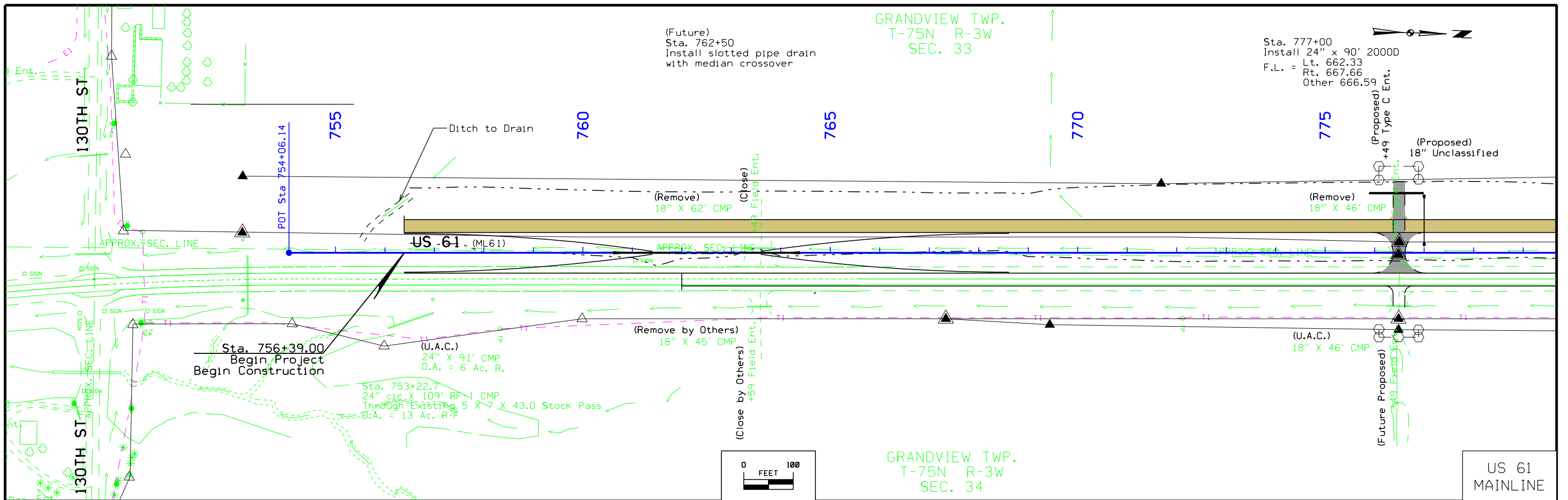
- Reference Point
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Obliterate Roadway (Granular)
- Pavement Removal & Obliterate Roadway

RIGHT-OF-WAY LEGEND

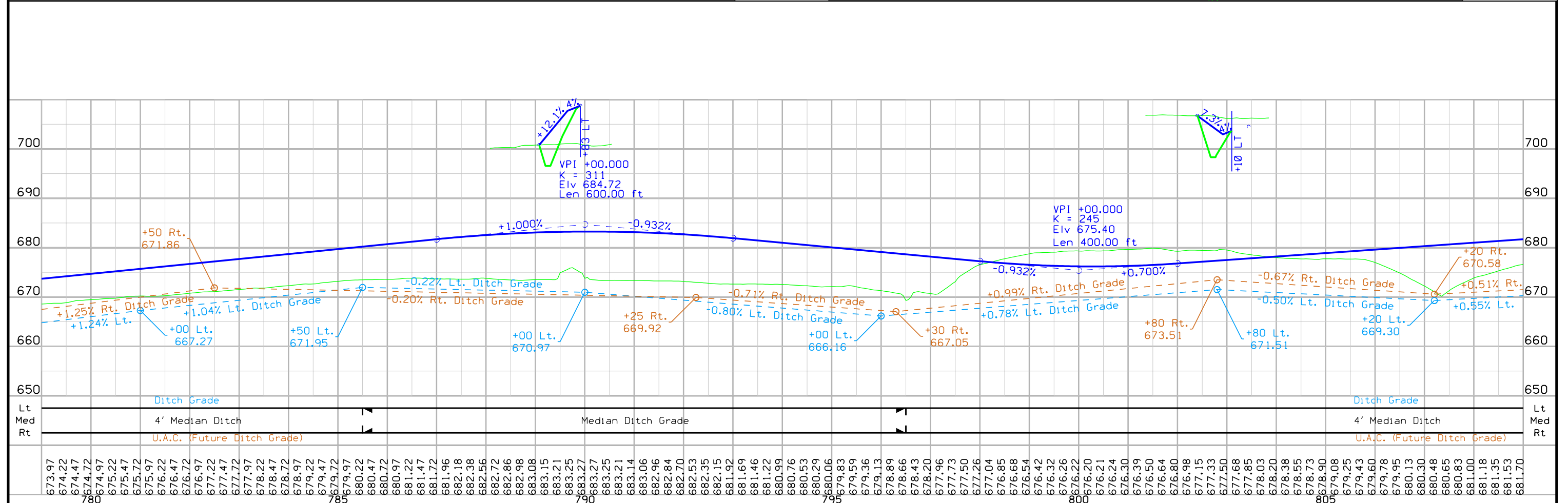
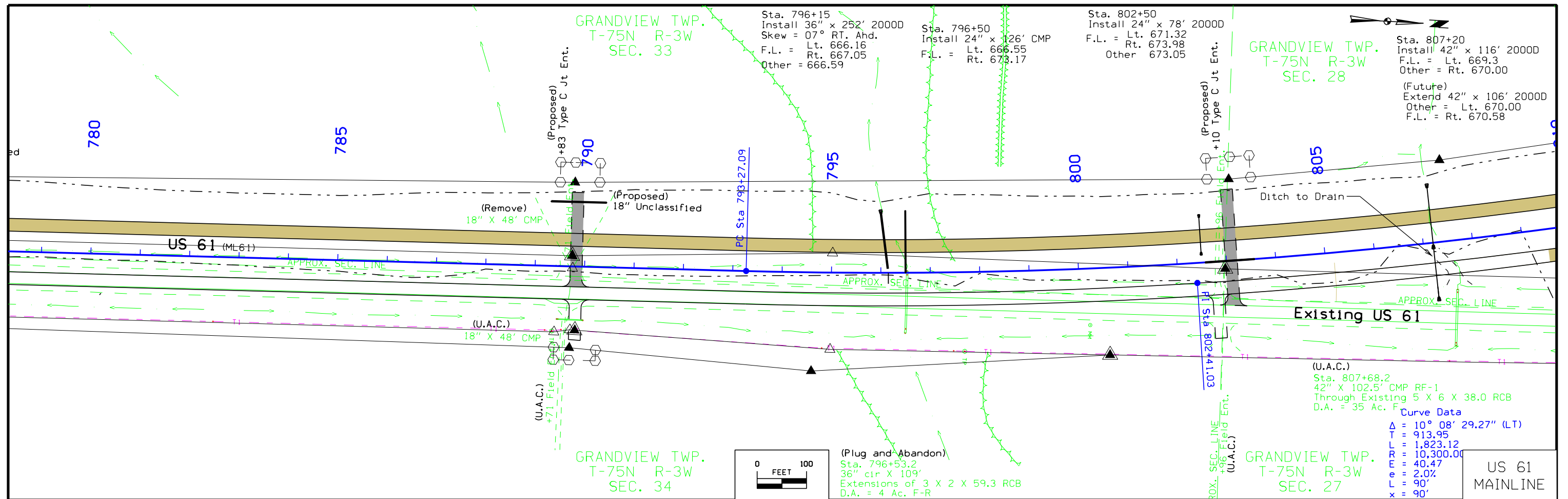
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

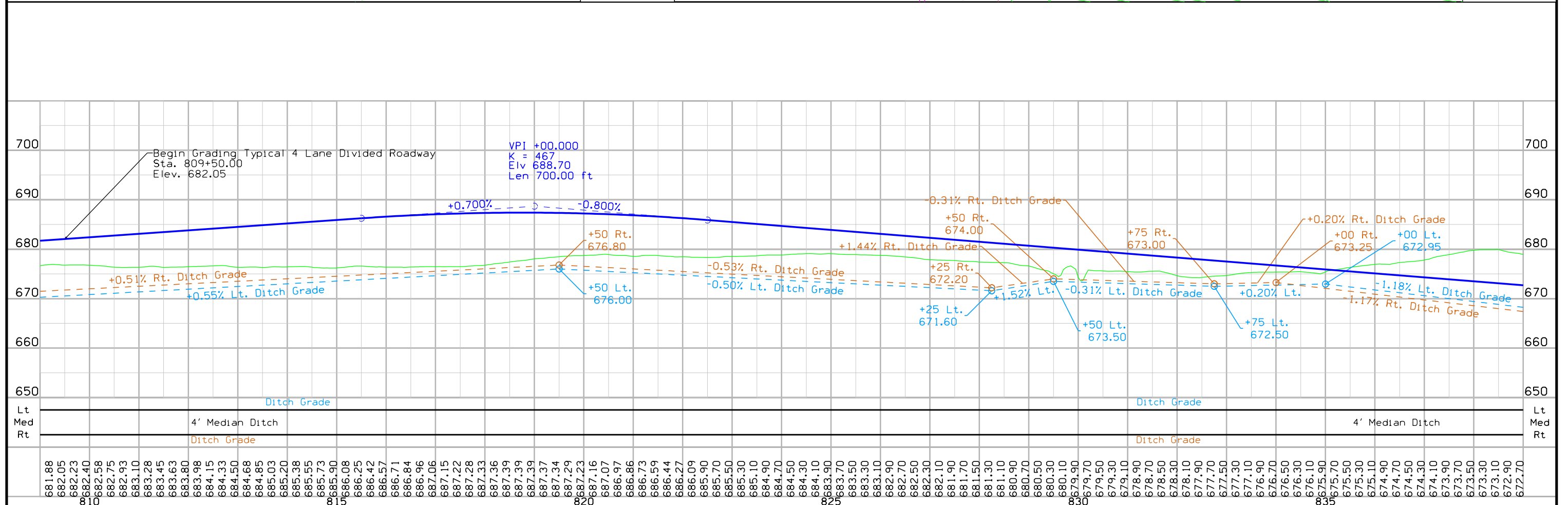
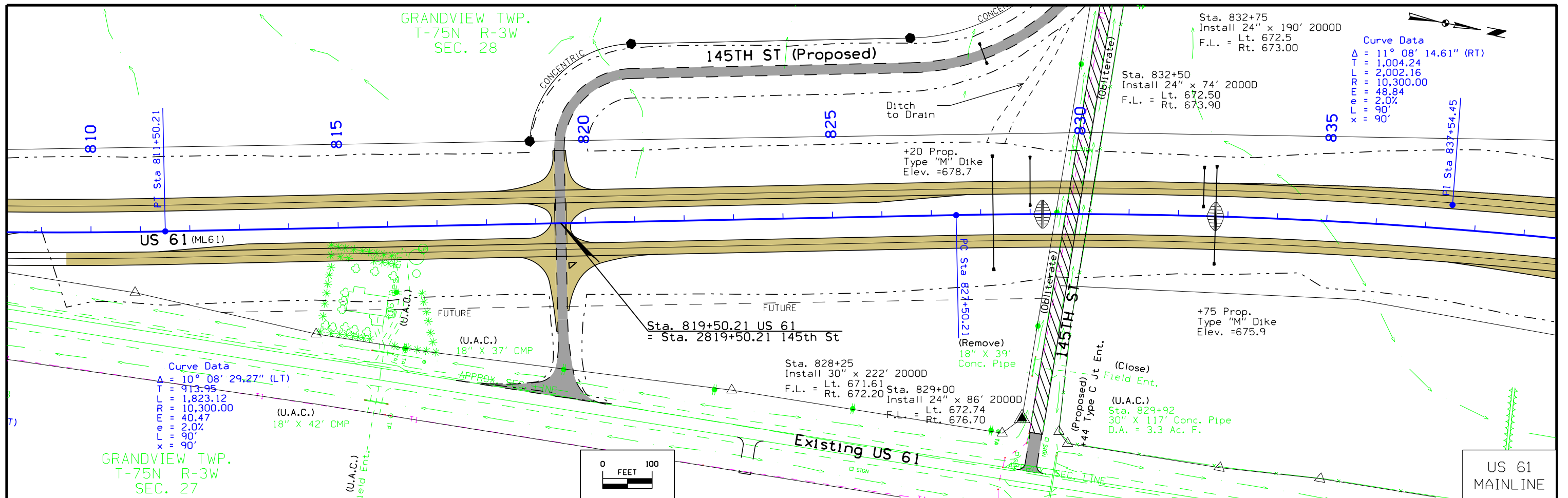
(COVERS SHEET SERIES D, E, F, & K)



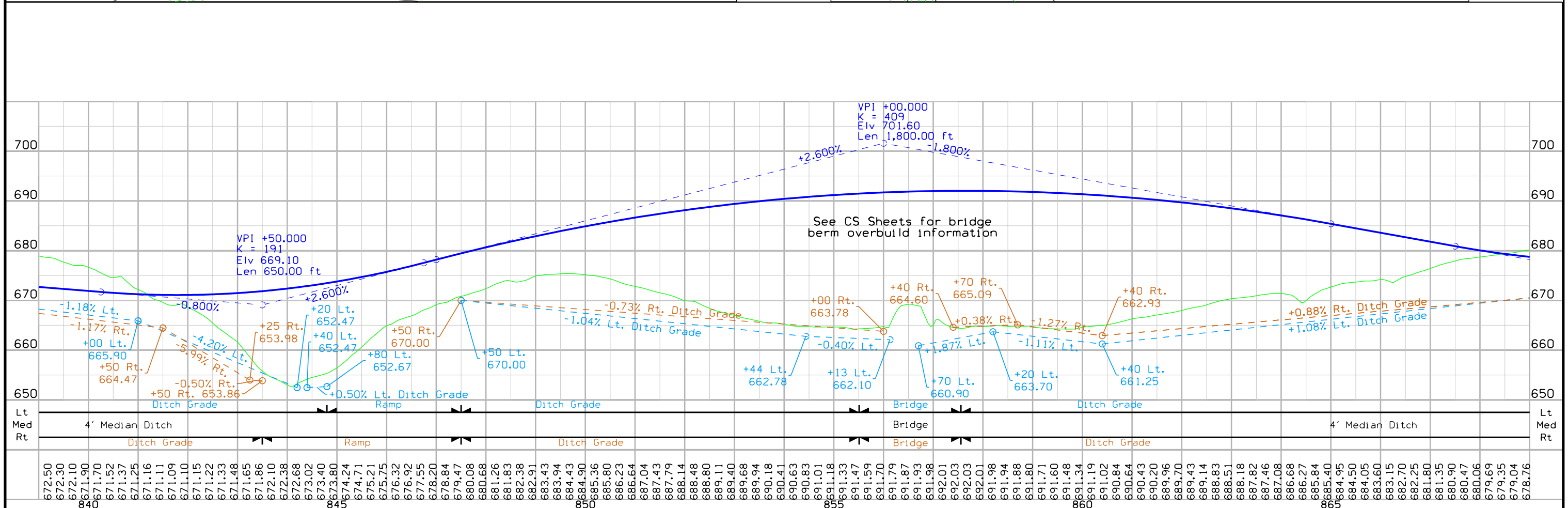
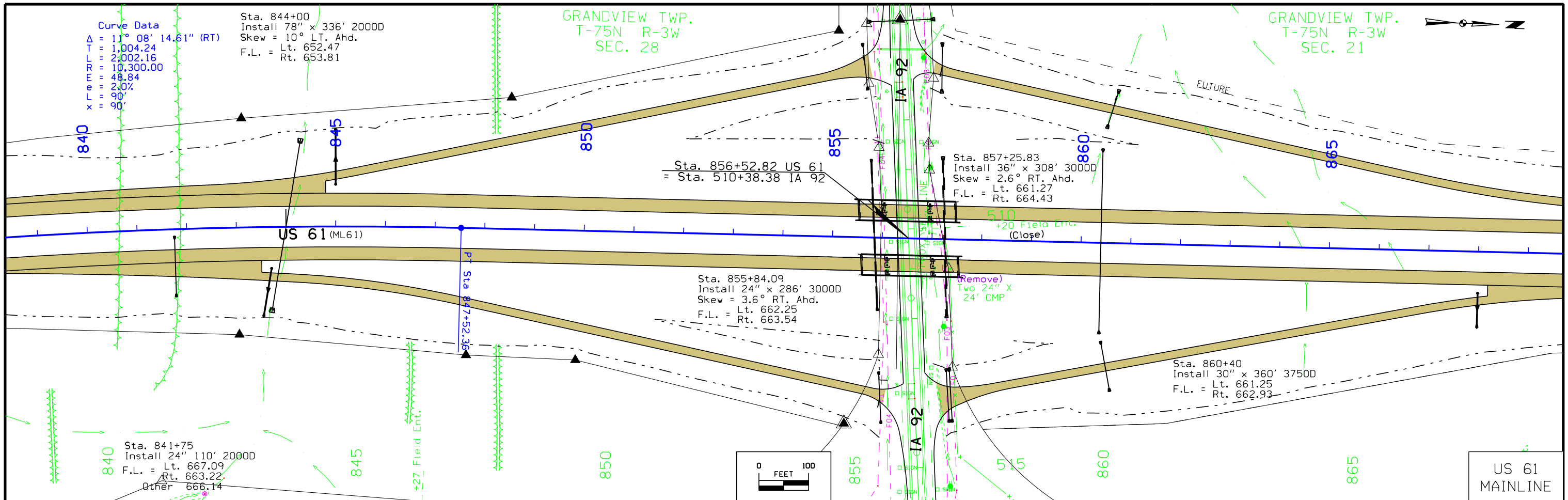
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|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER NHSX-061-3(57)--3H-58 | SHEET NUMBER D.2 |
|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|



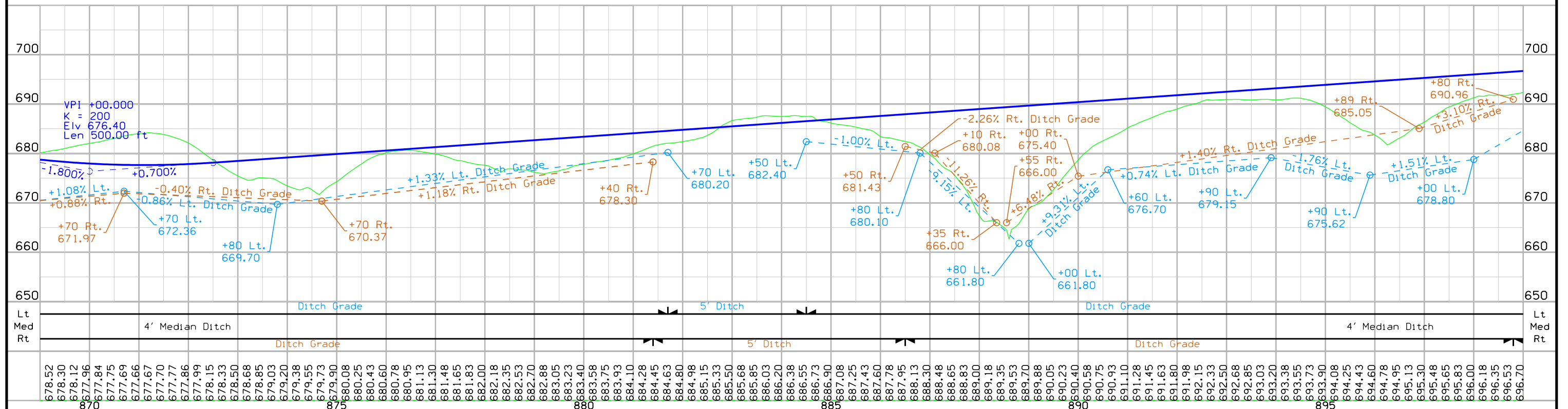
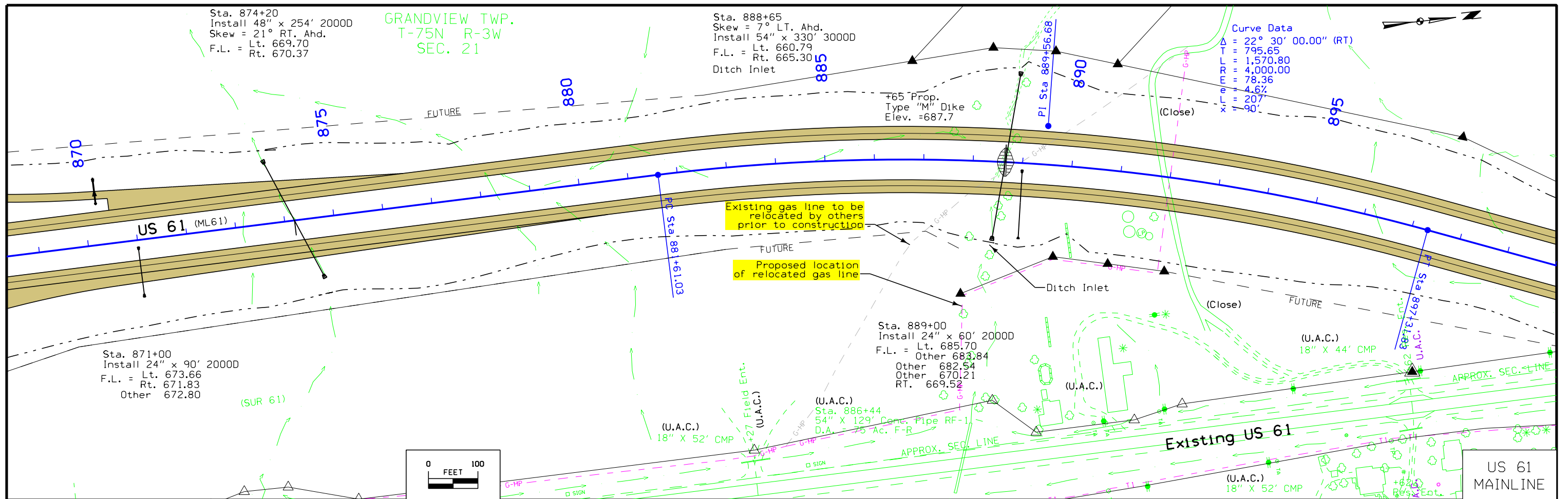
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|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER NHSX-061-3(57)--3H-58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

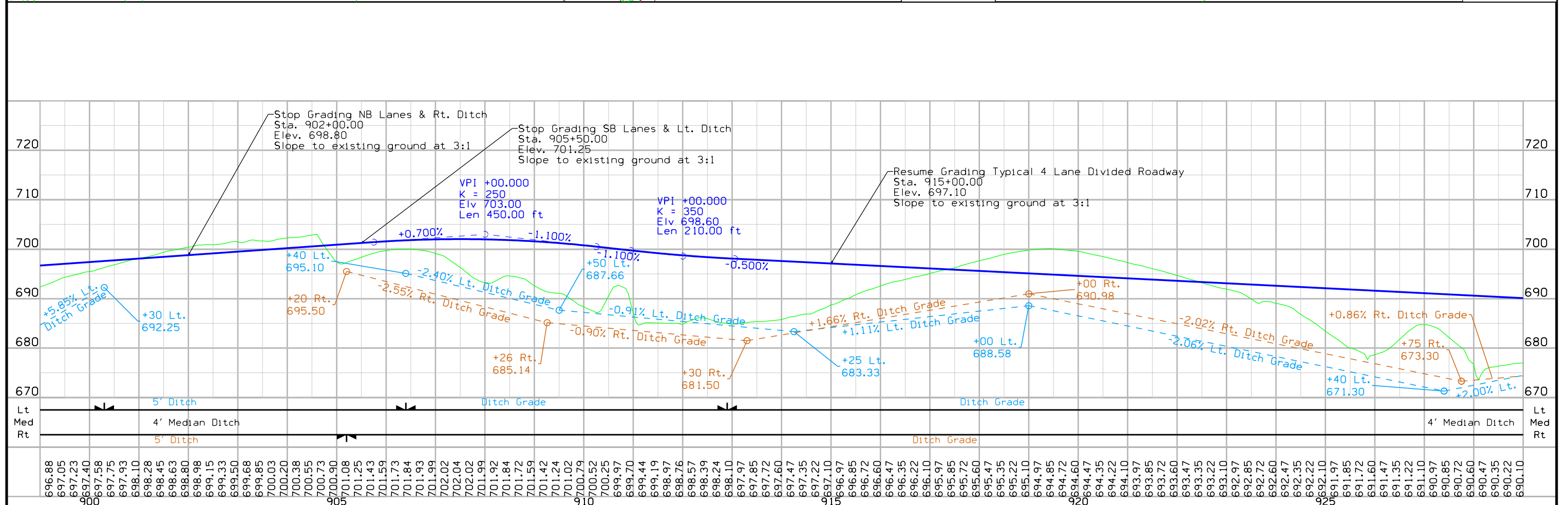
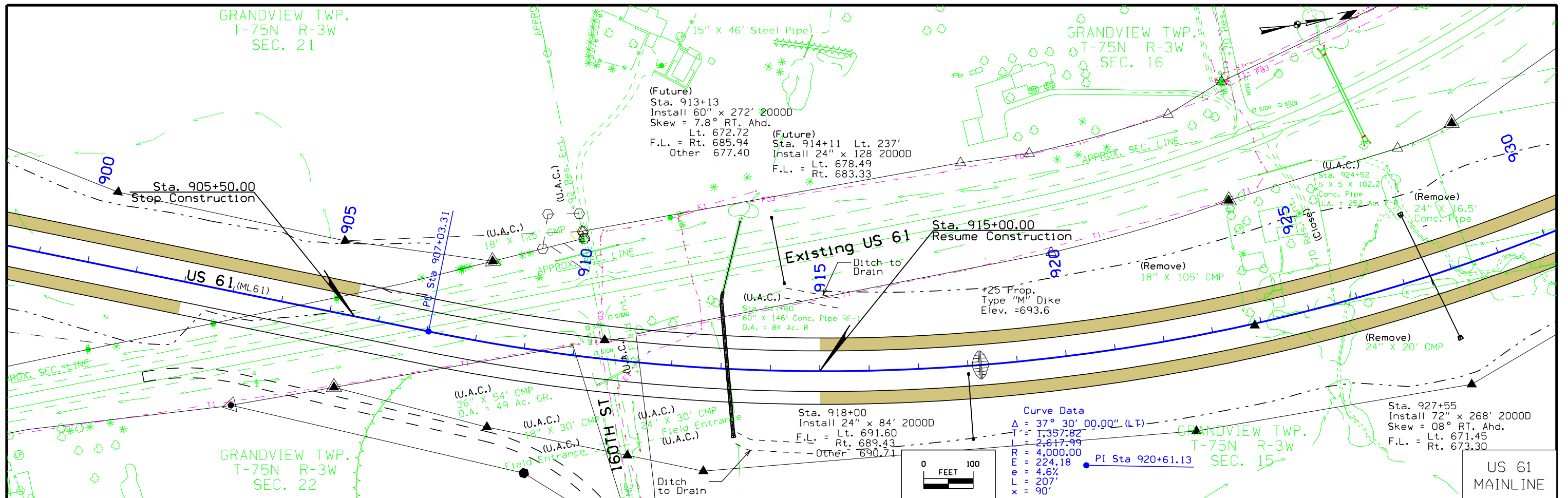


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| FILE NO. | ENGLISH | DESIGN TEAM | Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER | NHSX-061-3(57)--3H-58 | SHEET NUMBER | D.4 |
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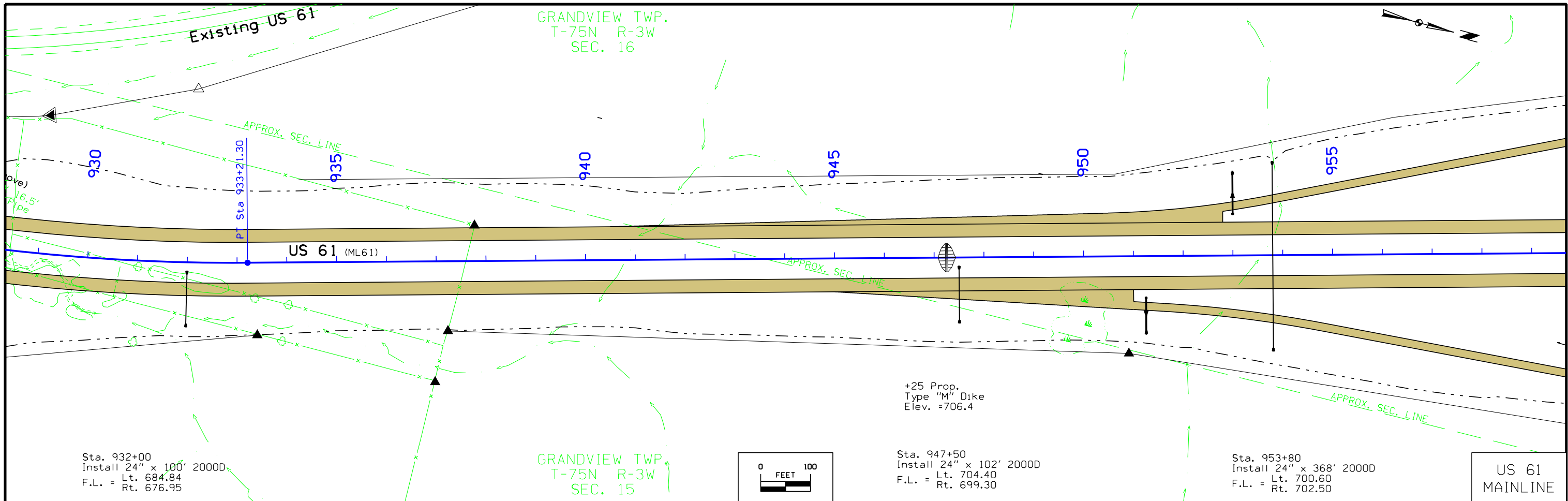


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| FILE NO. | ENGLISH | DESIGN TEAM | Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER | NHSX-061-3(57)--3H-58 | SHEET NUMBER | D.5 |
|----------|---------|-------------|---------------------------|---------------|----------------|-----------------------|--------------|-----|



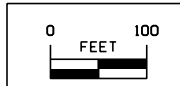


| | | | | | |
|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER NHSX-061-3(57)--3H-58 | SHEET NUMBER D.7 |
|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|



Sta. 932+00
Install 24" x 100' 2000D
F.L. = Lt. 684.84
Rt. 676.95

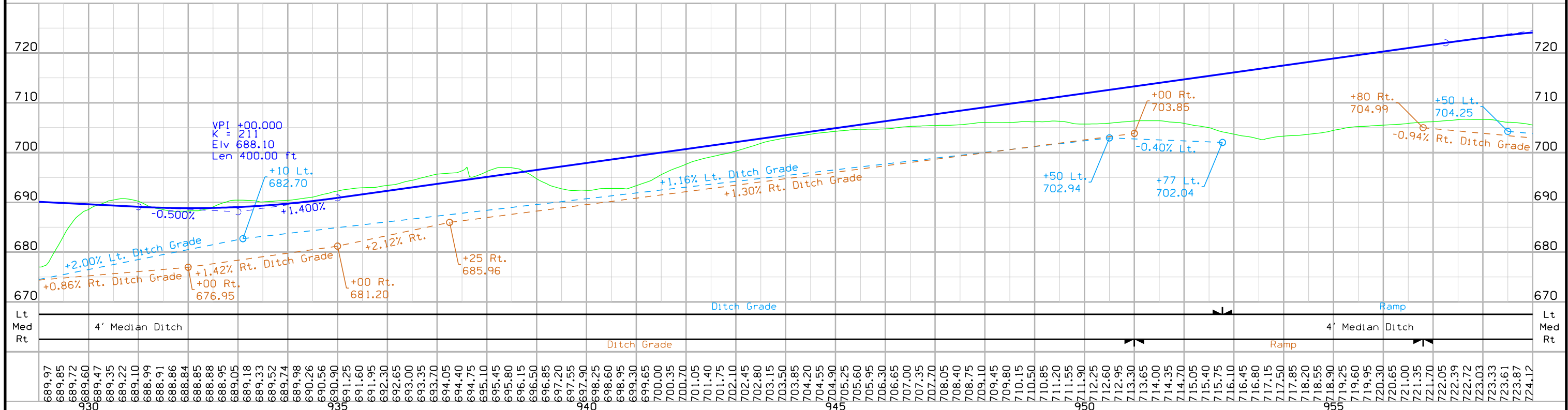
GRANDVIEW TWP.
T-75N R-3W
SEC. 15



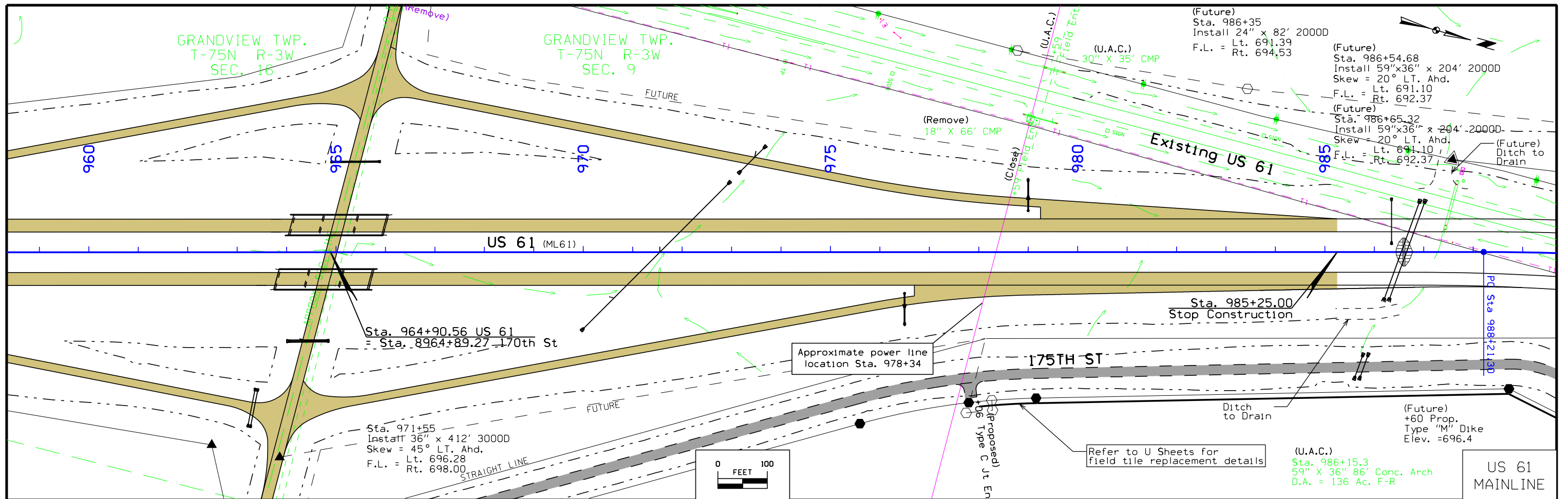
Sta. 947+50
Install 24" x 102' 2000D
F.L. = Lt. 704.40
Rt. 699.30

Sta. 953+80
Install 24" x 368' 2000D
F.L. = Lt. 700.60
Rt. 702.50

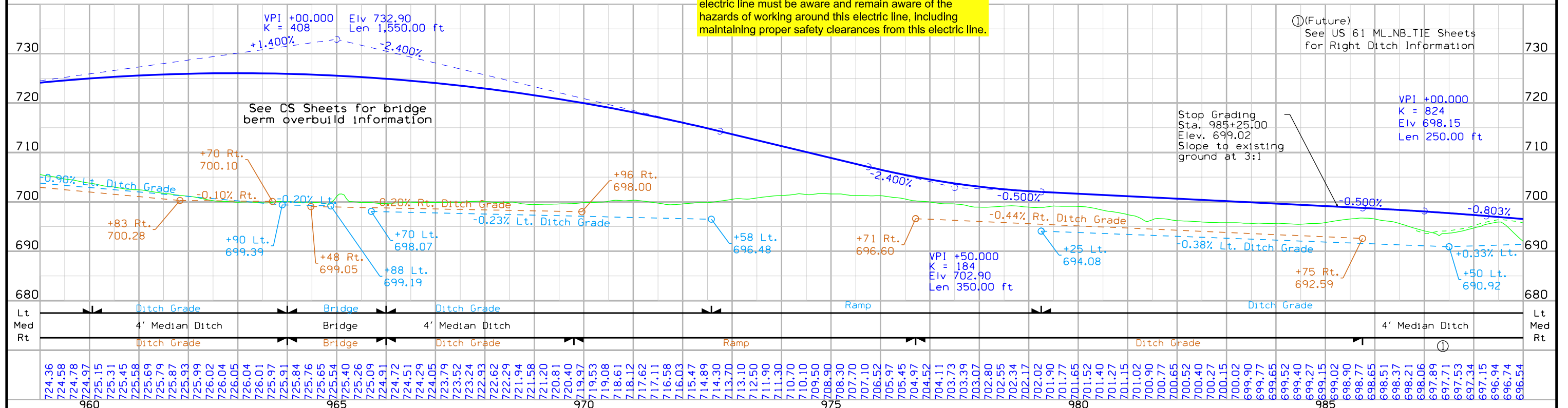
US 61
MAINLINE

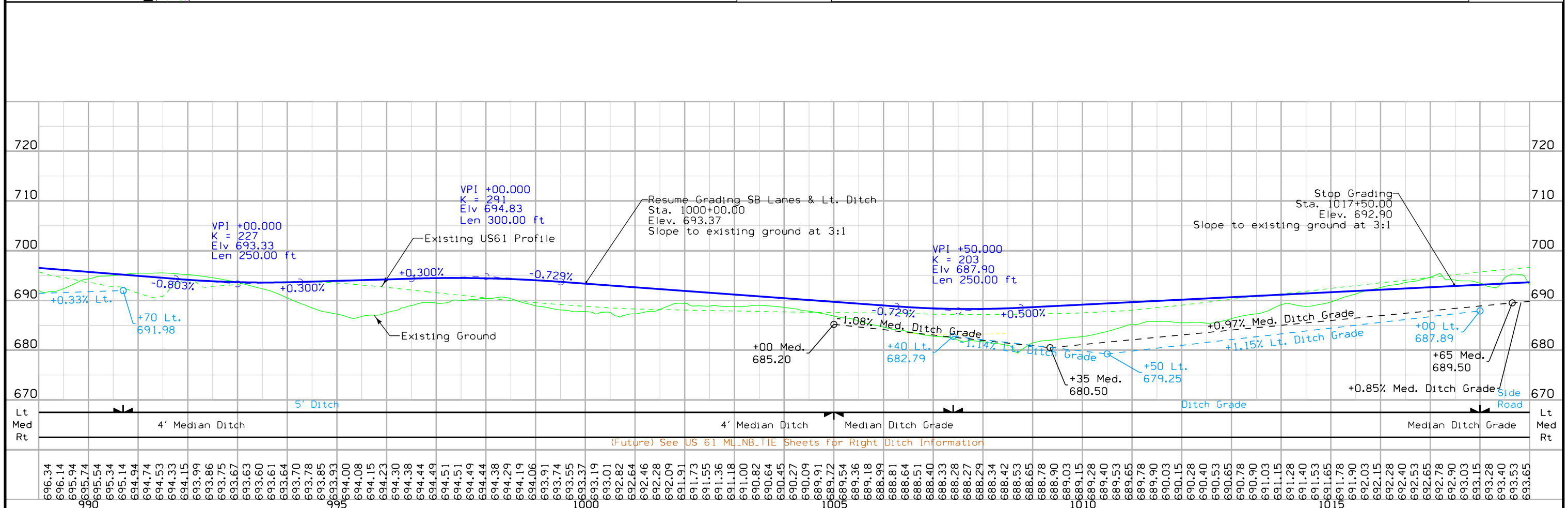
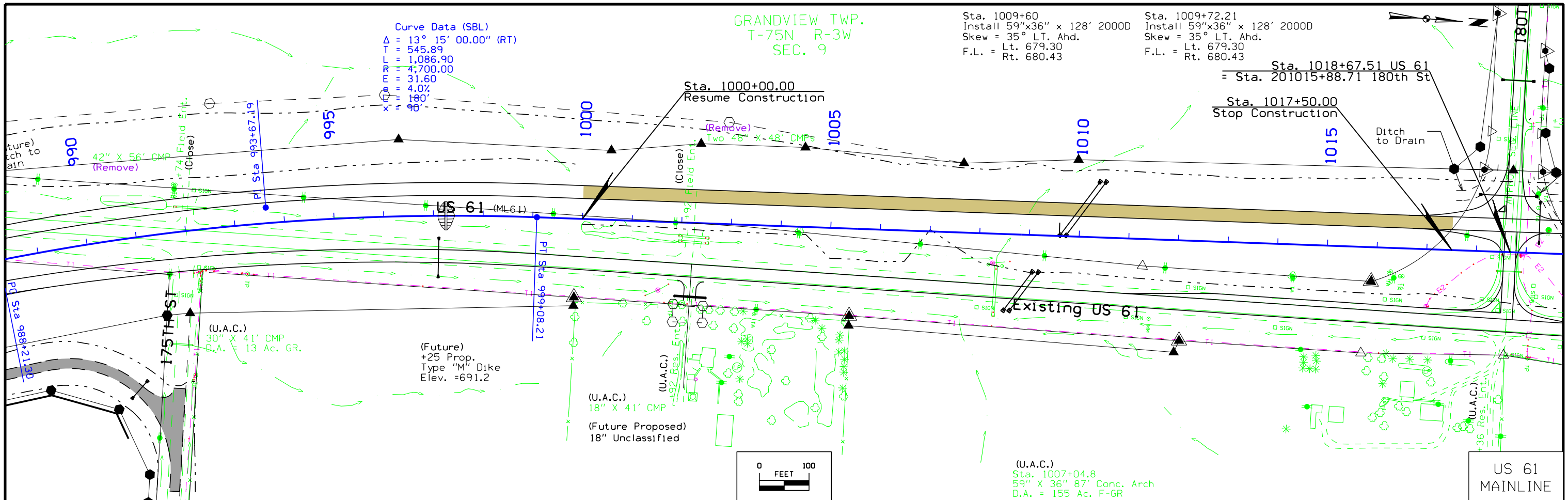


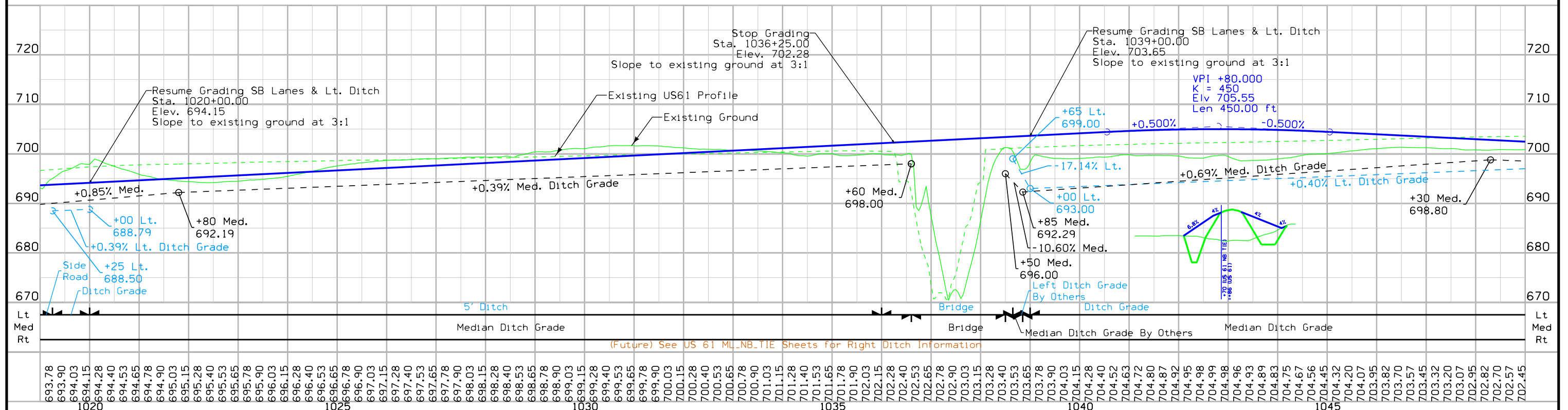
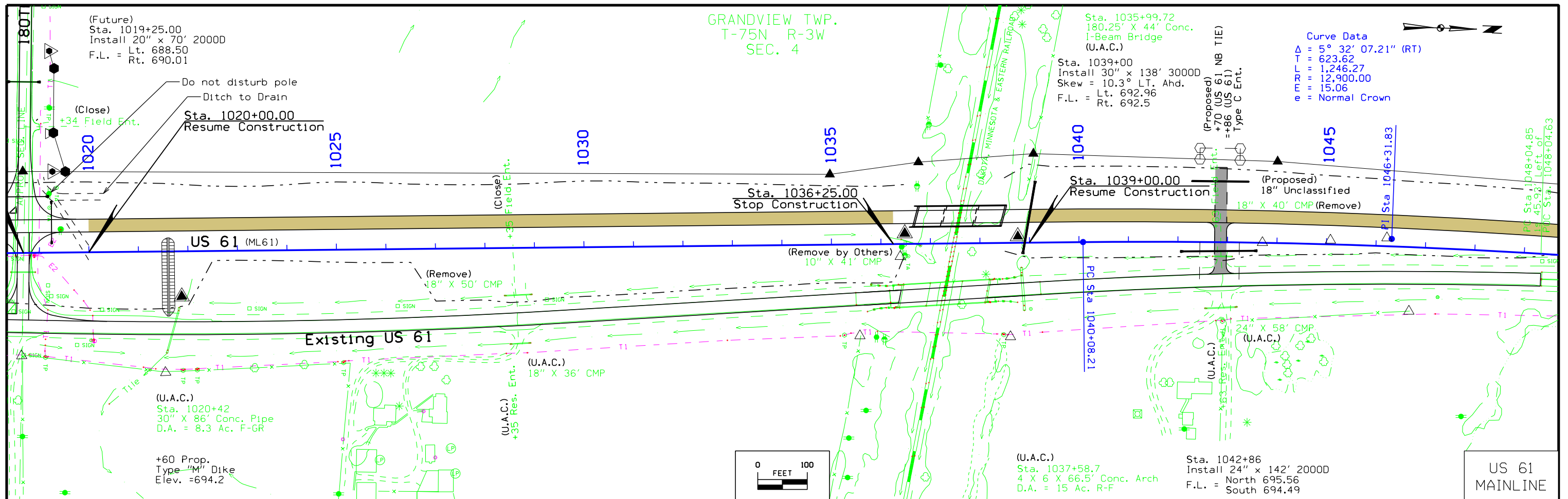
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|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER NHSX-061-3(57)--3H-58 | SHEET NUMBER D.8 |
|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|



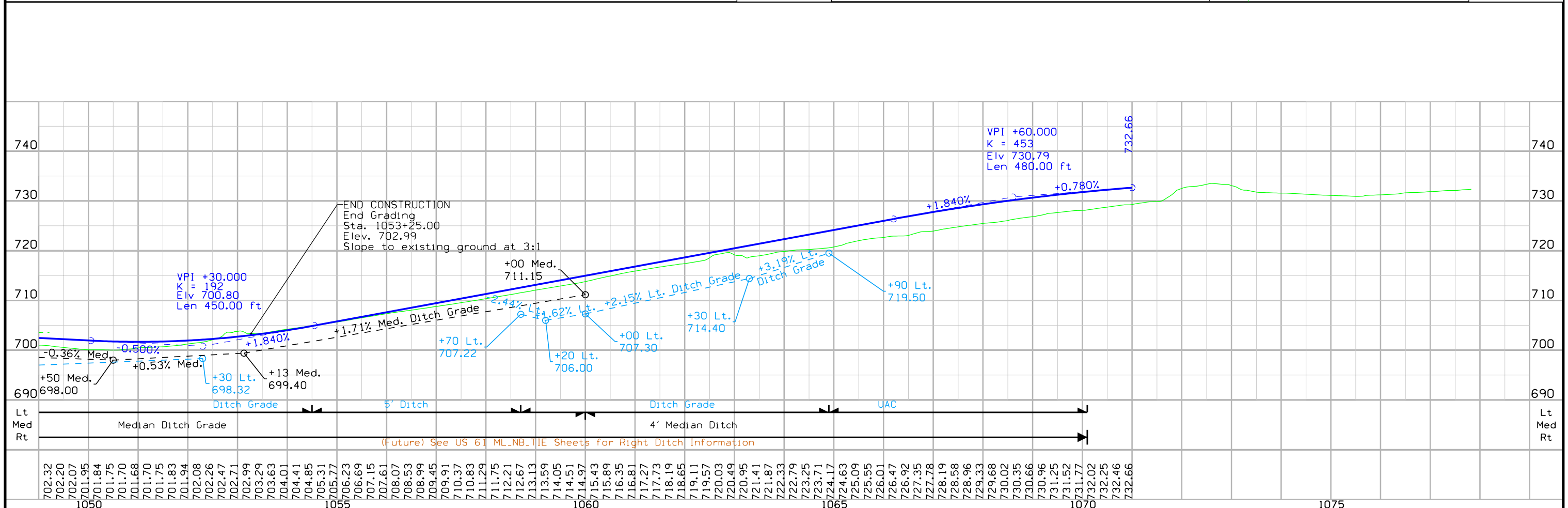
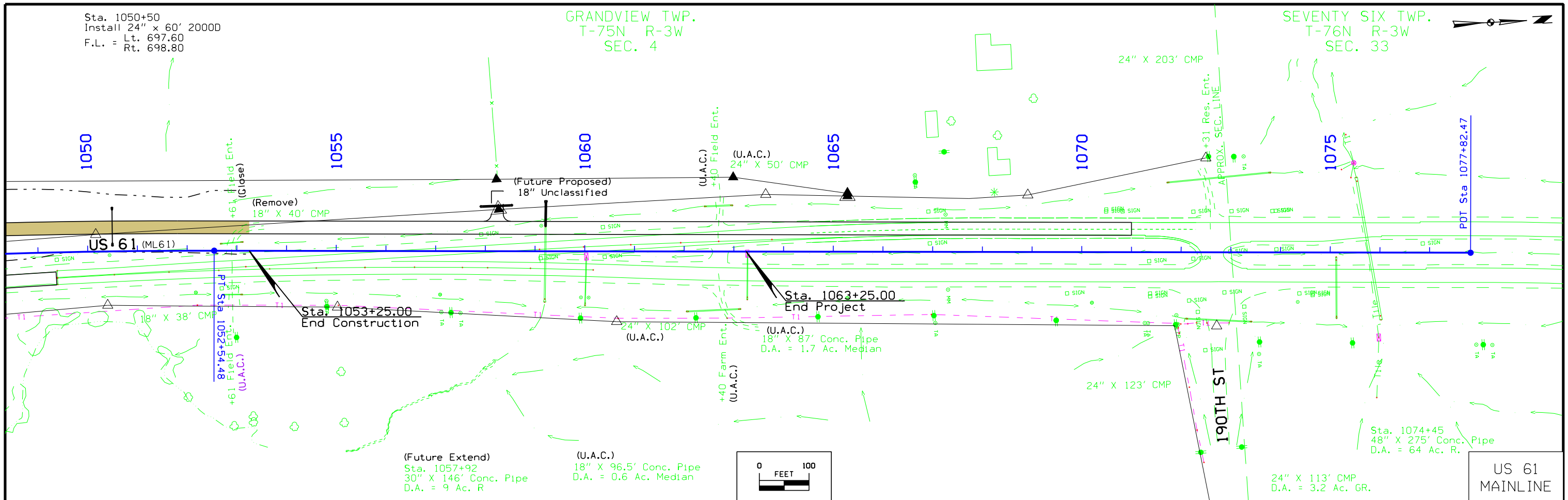
Note that the overhead 345,000-volt electric line in the project area is continuously energized. The conductors on this electric line are bare and uninsulated and contact with this electric line can cause serious injury or death. All people involved with any construction, maintenance, or similar activities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

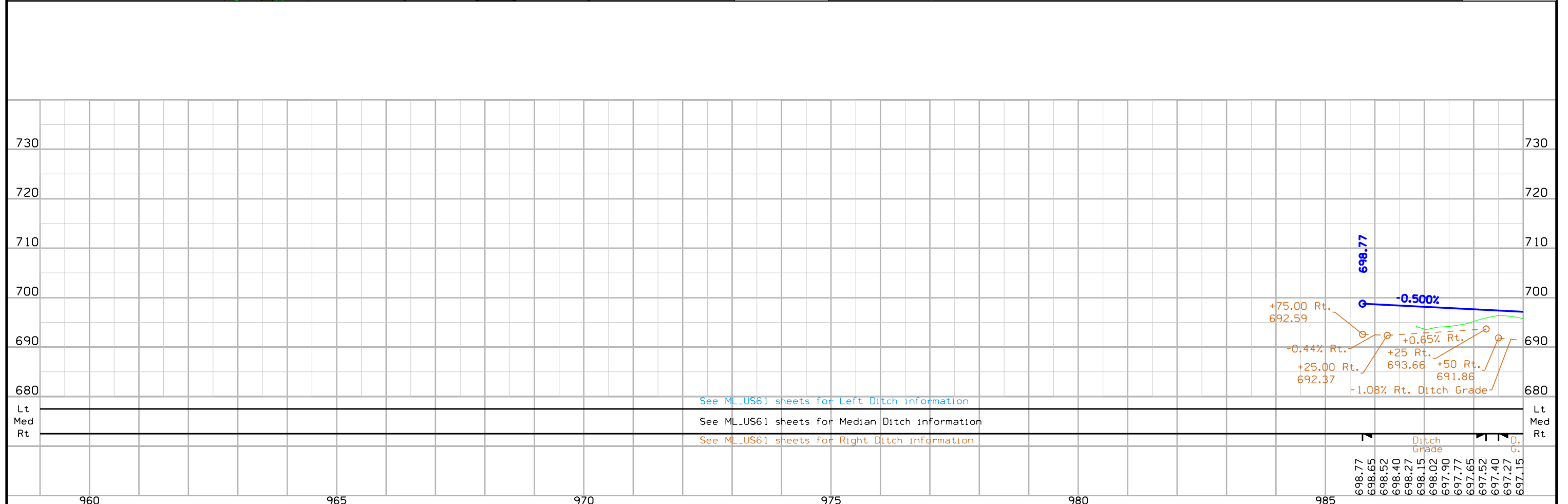
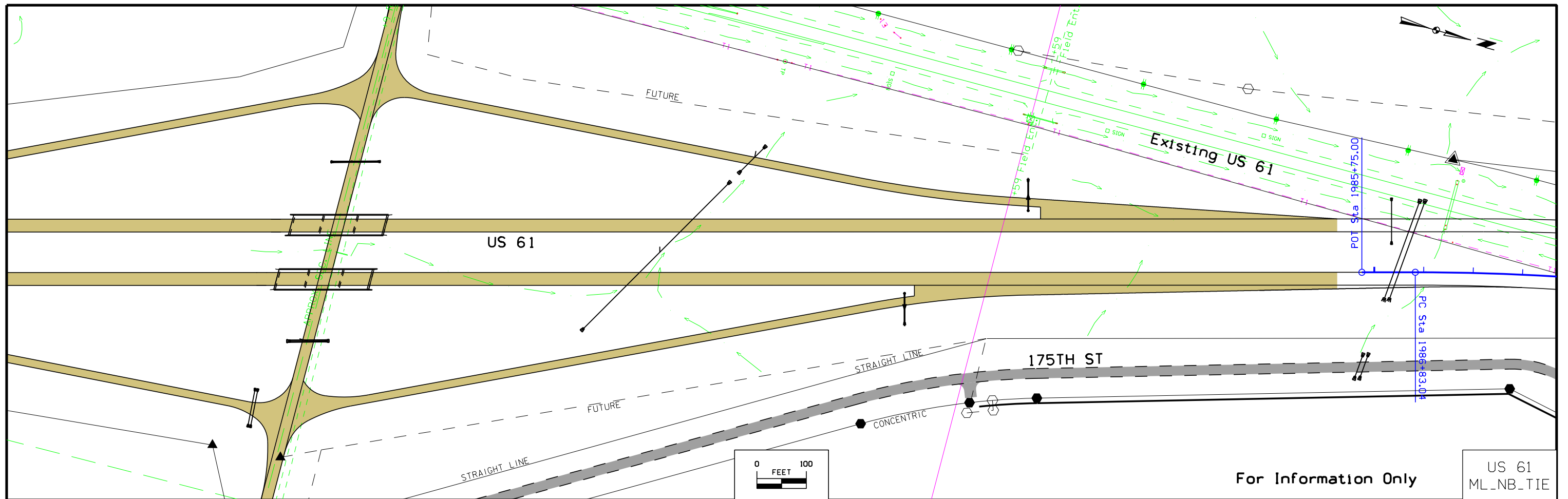


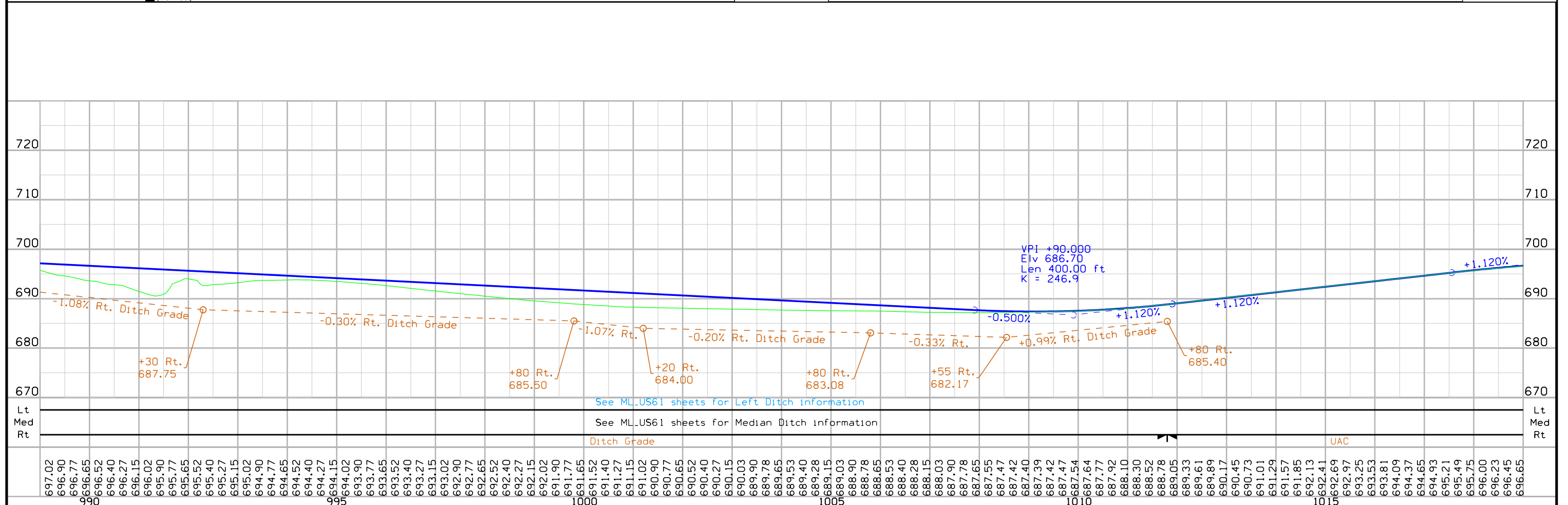
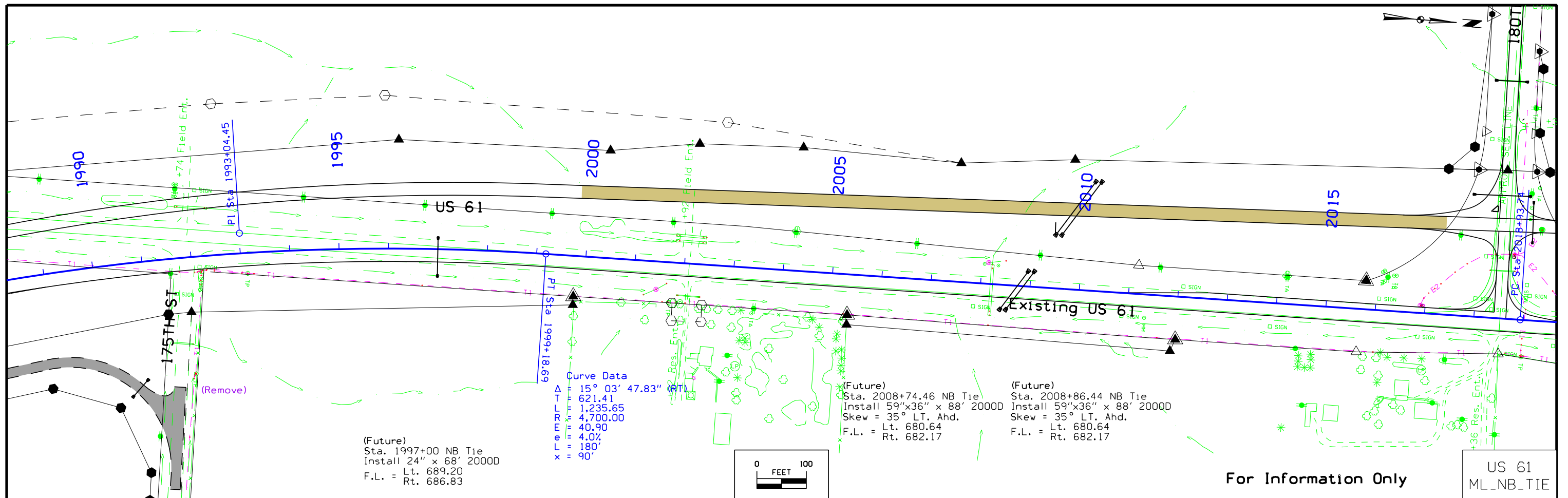


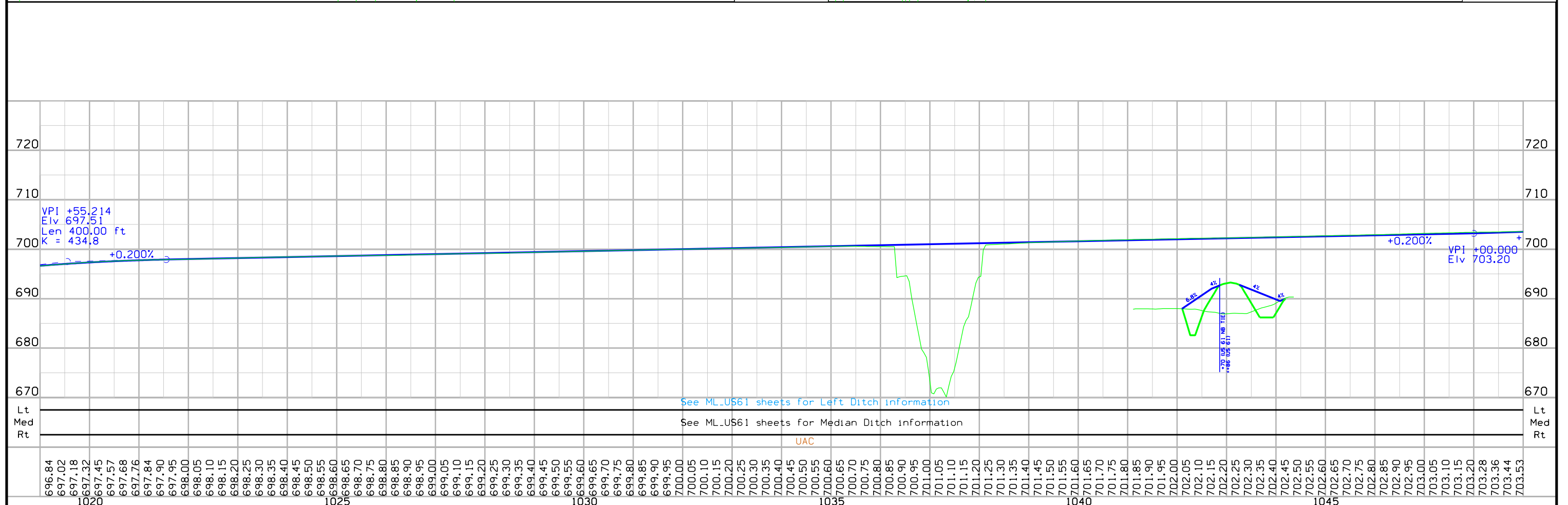
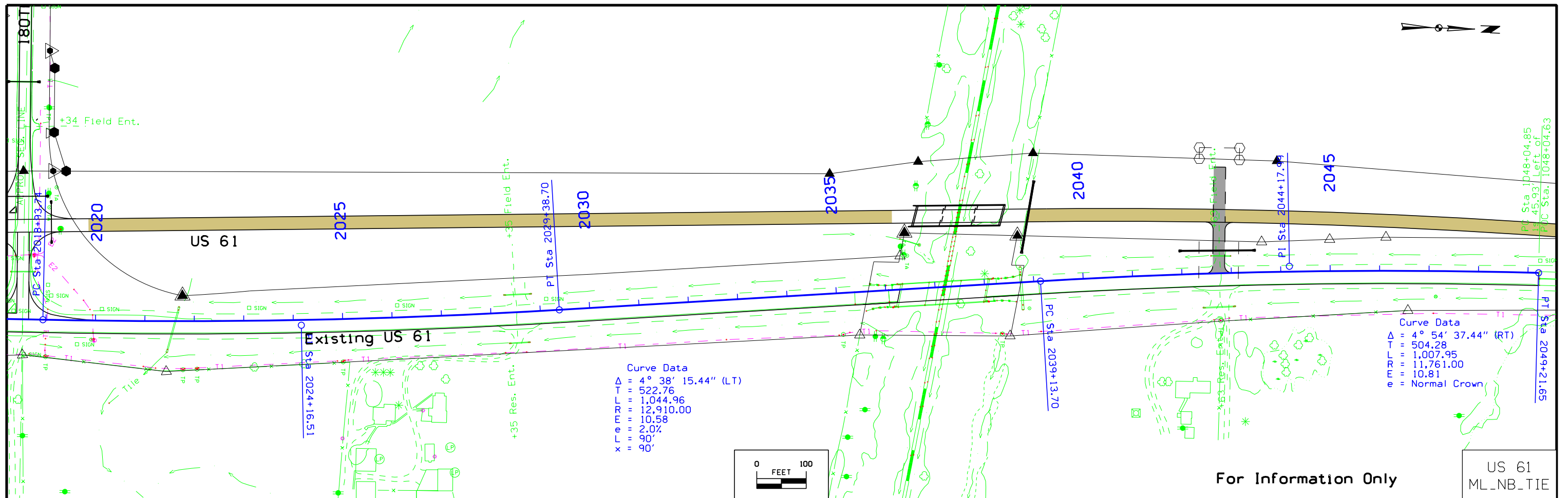


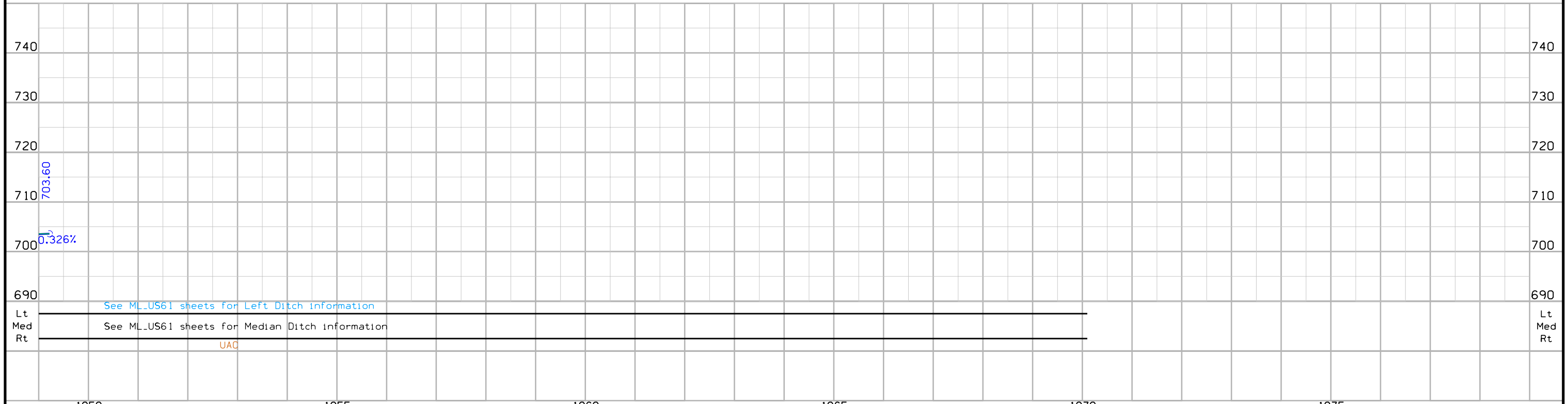
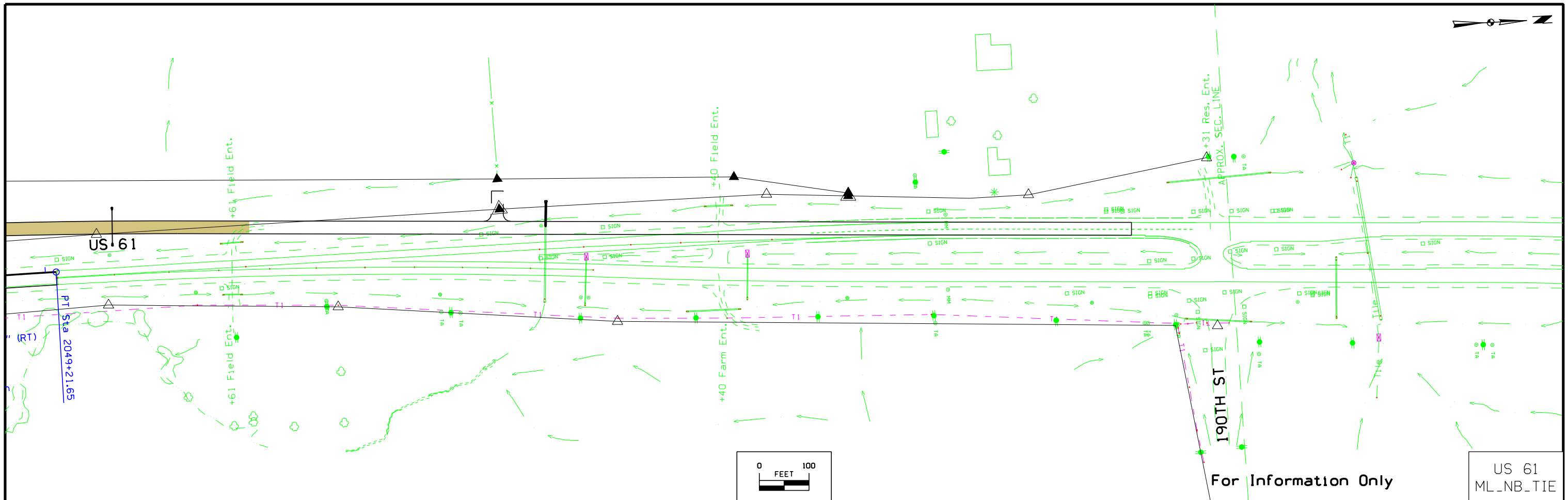
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|----------|---------|---------------------------------------|---------------|--------------------------------------|-------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER NHSX-061-3(57)--3H-58 | SHEET NUMBER D.11 |
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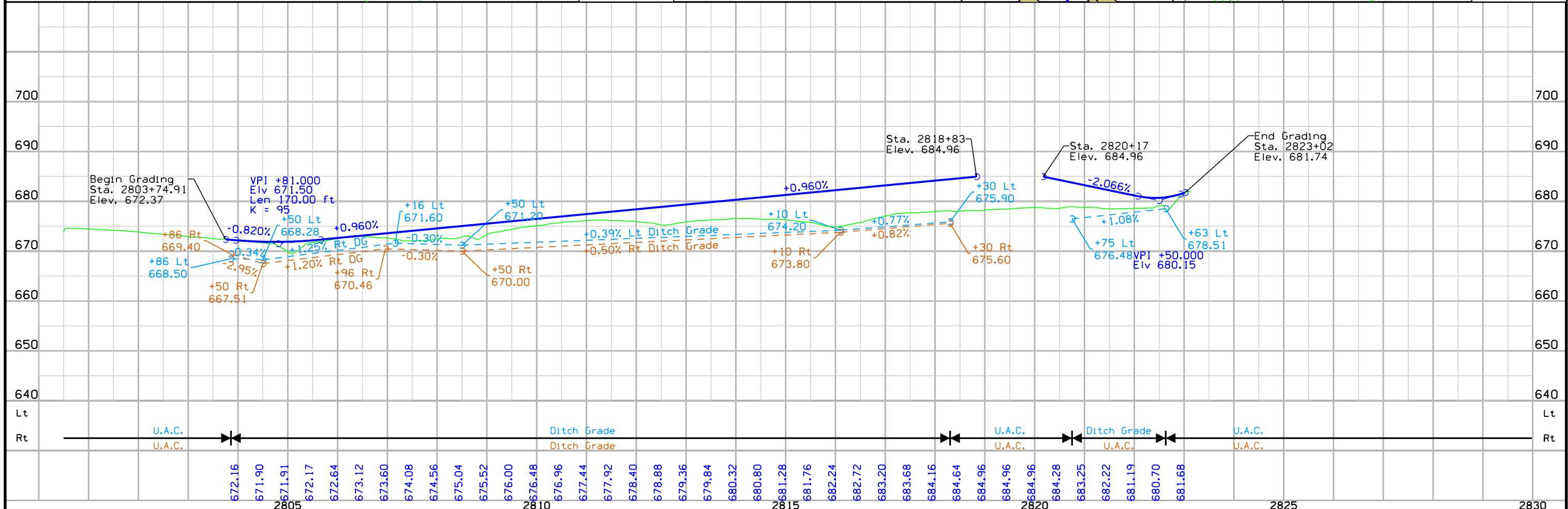
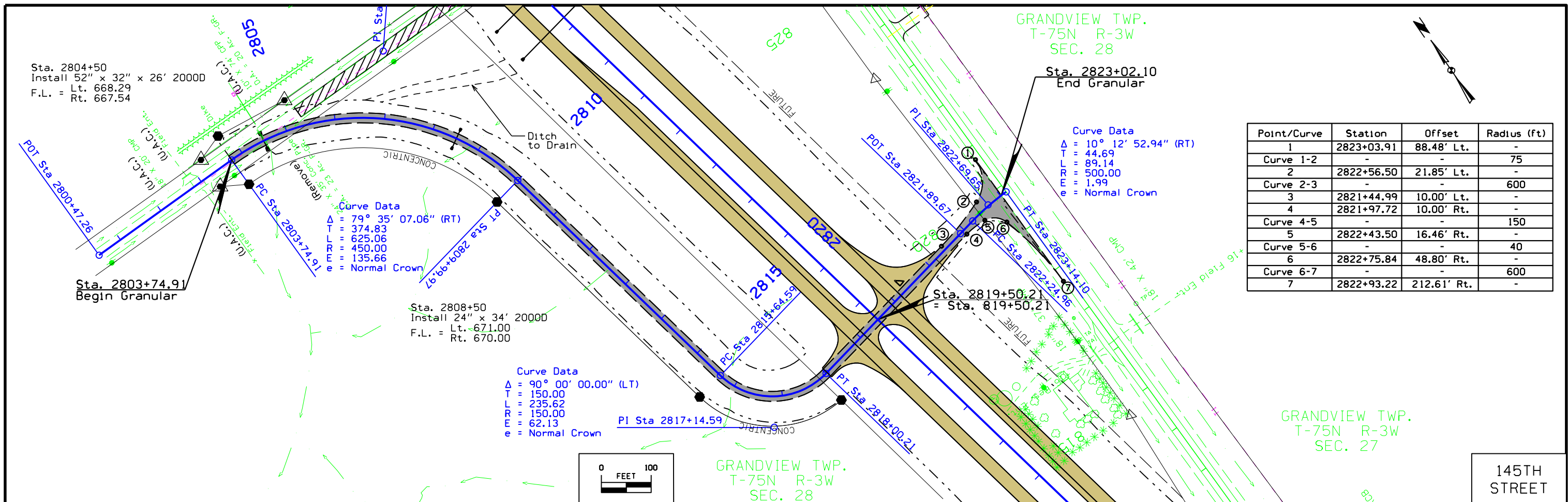


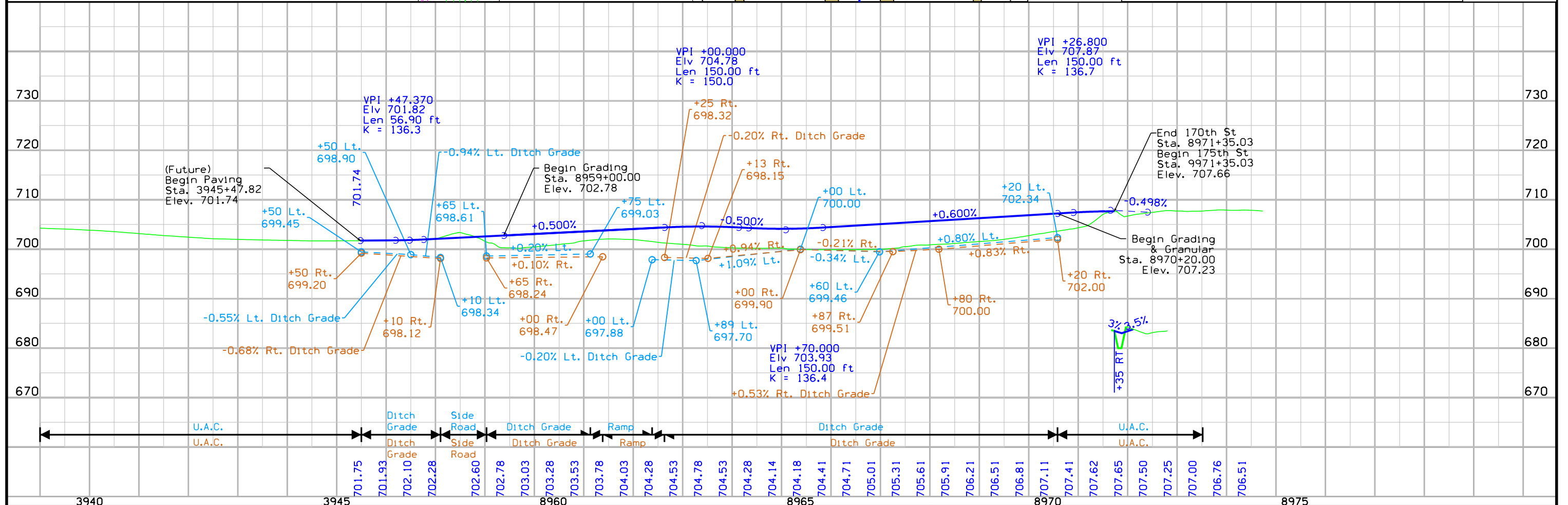
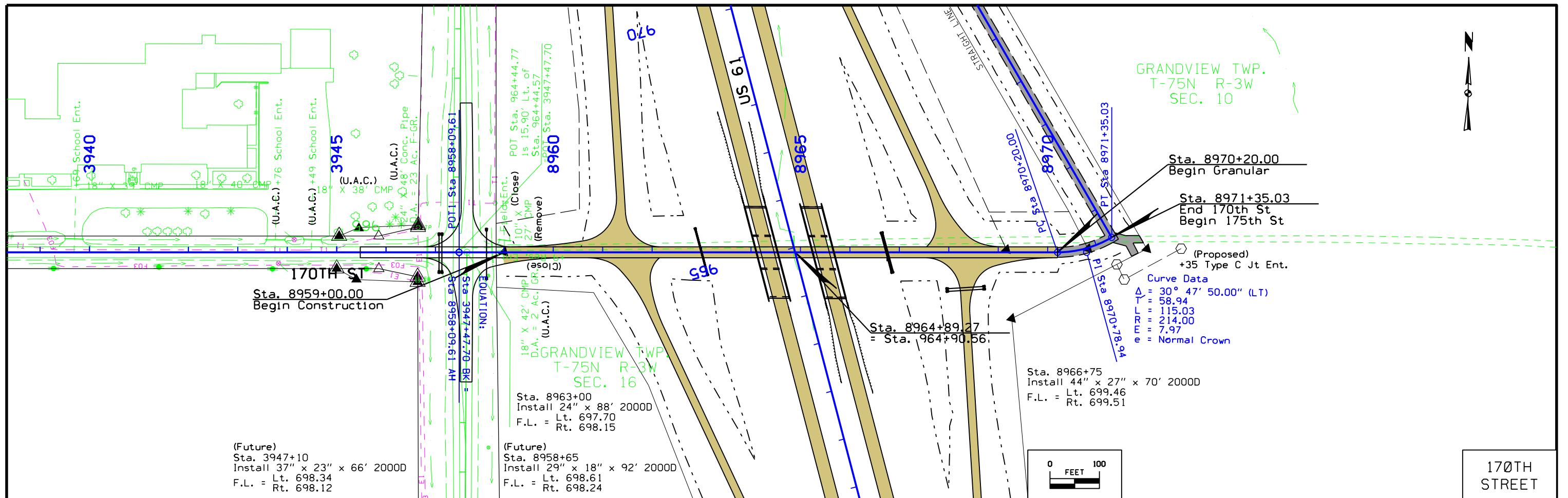


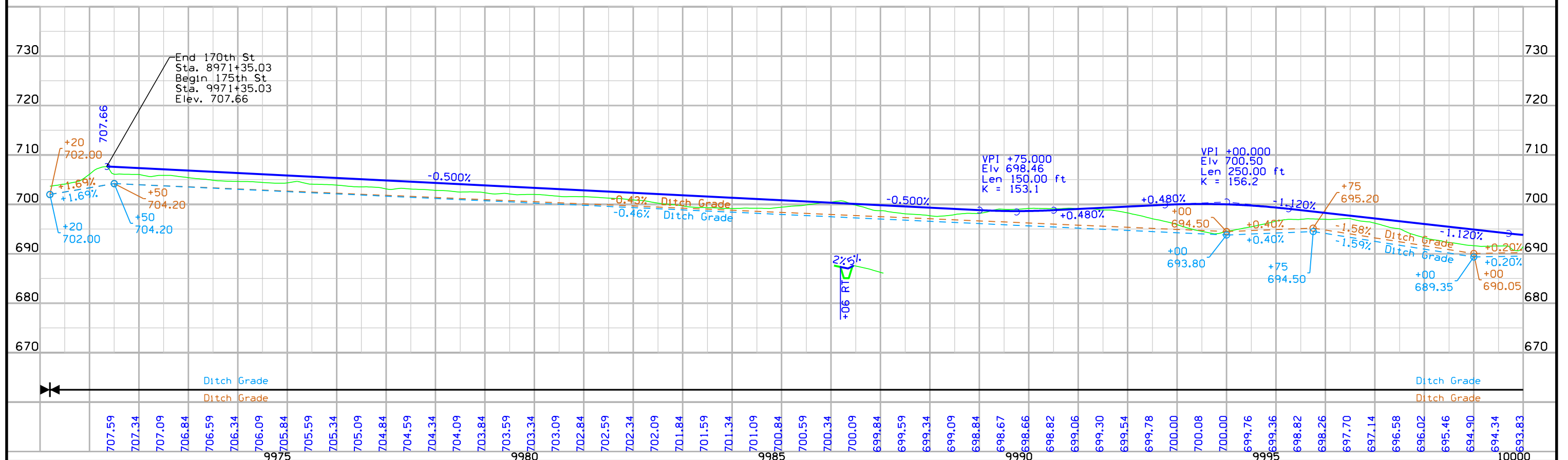
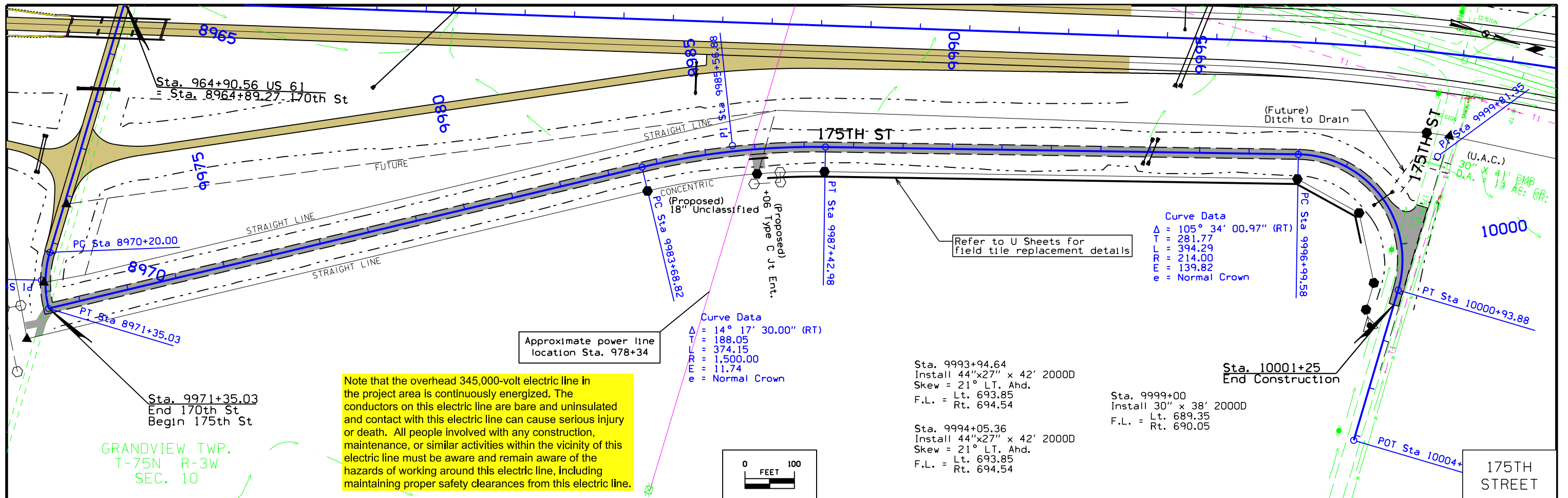






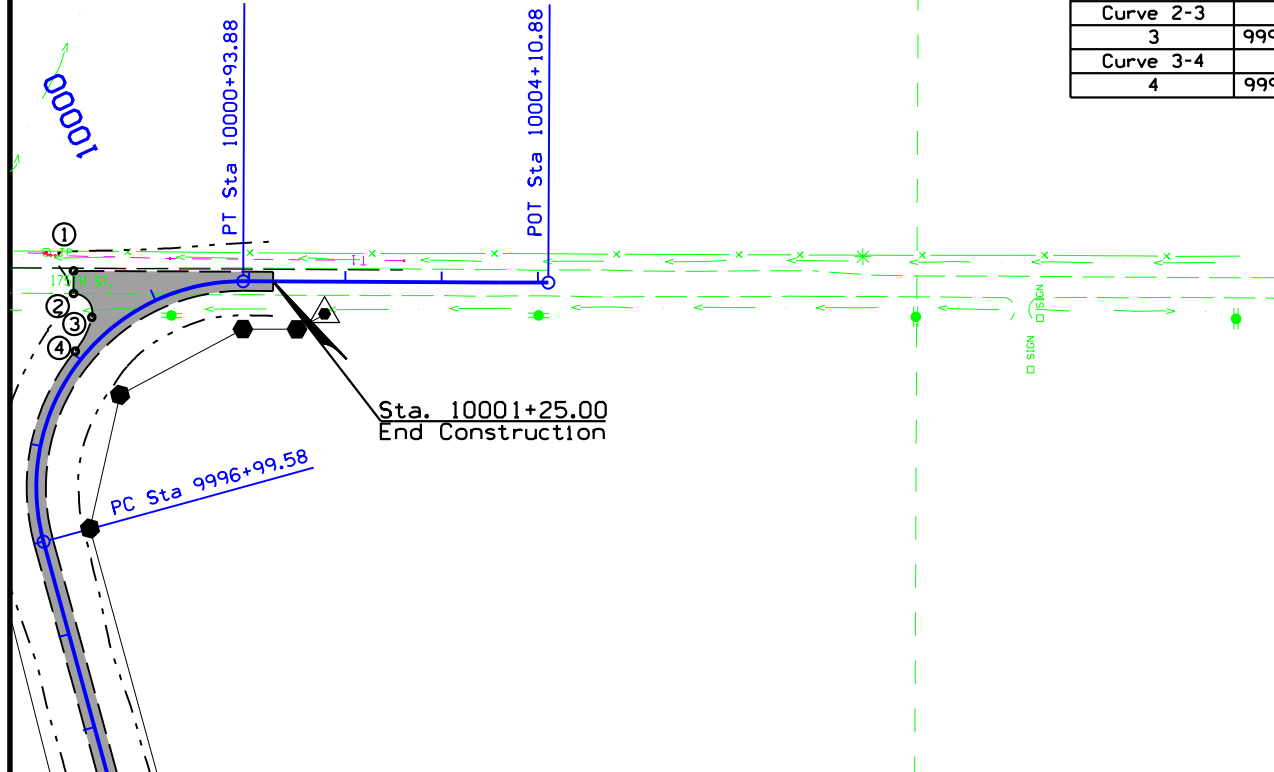




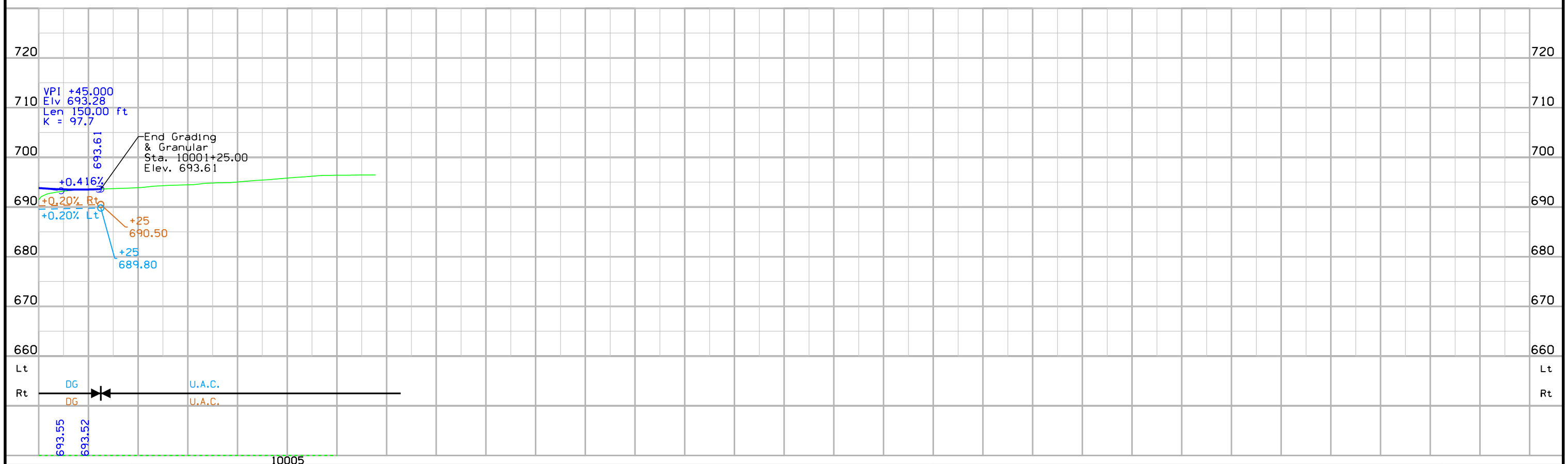


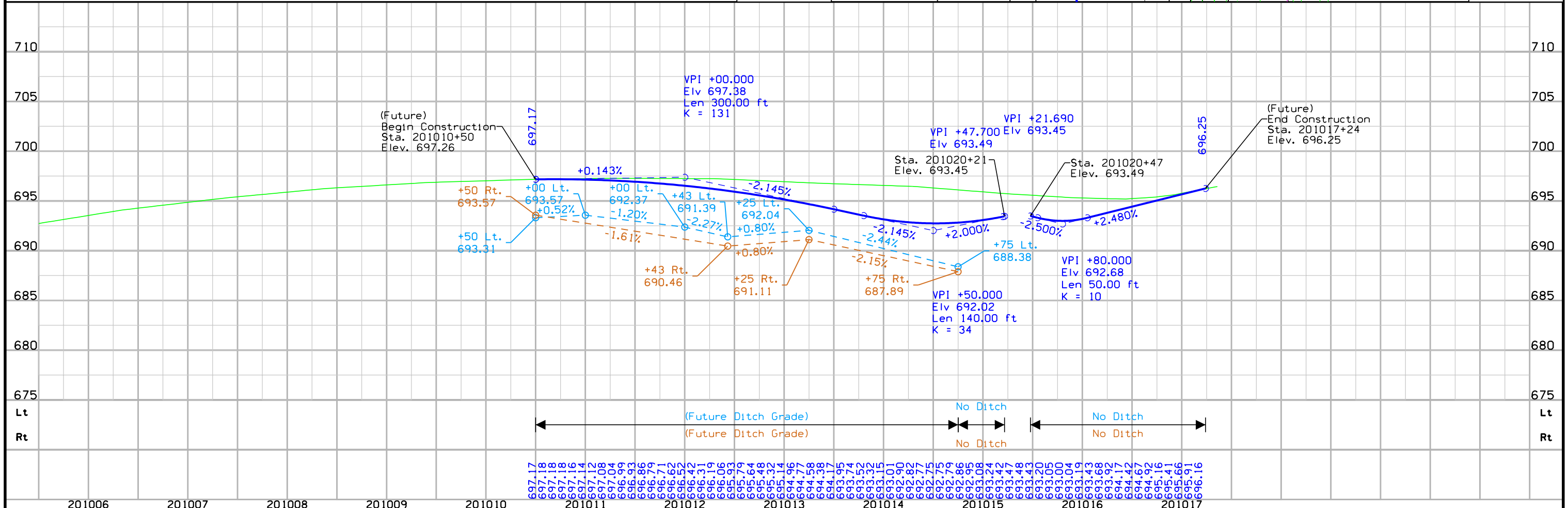
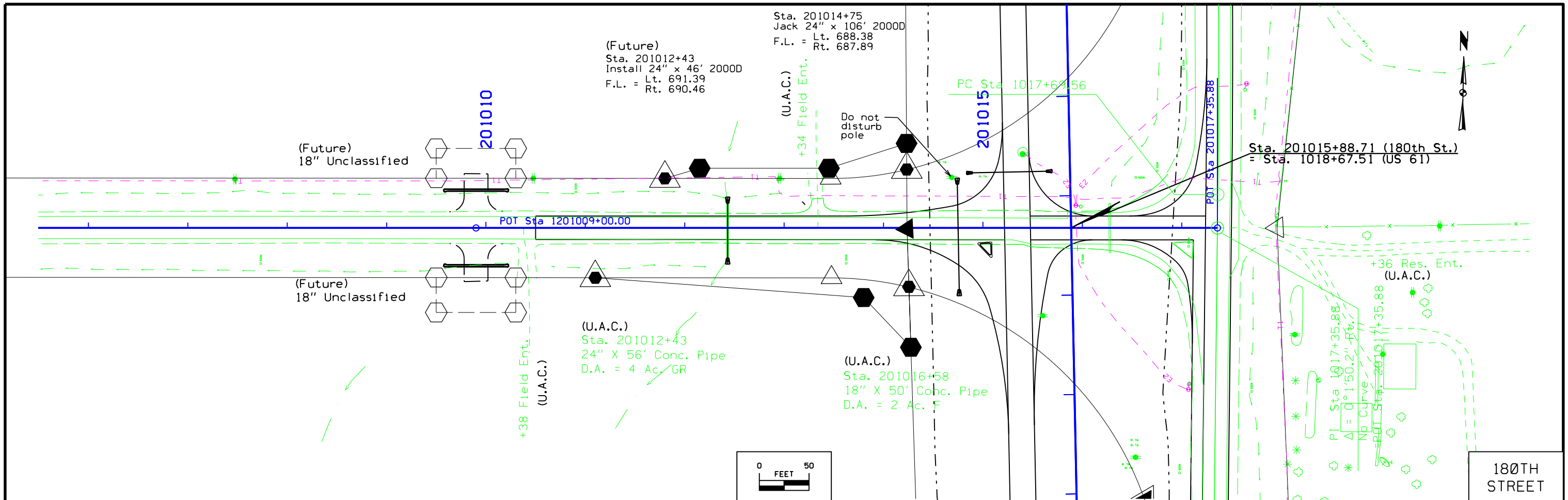
GRANDVIEW TWP.
T-75N R-3W
SEC. 10

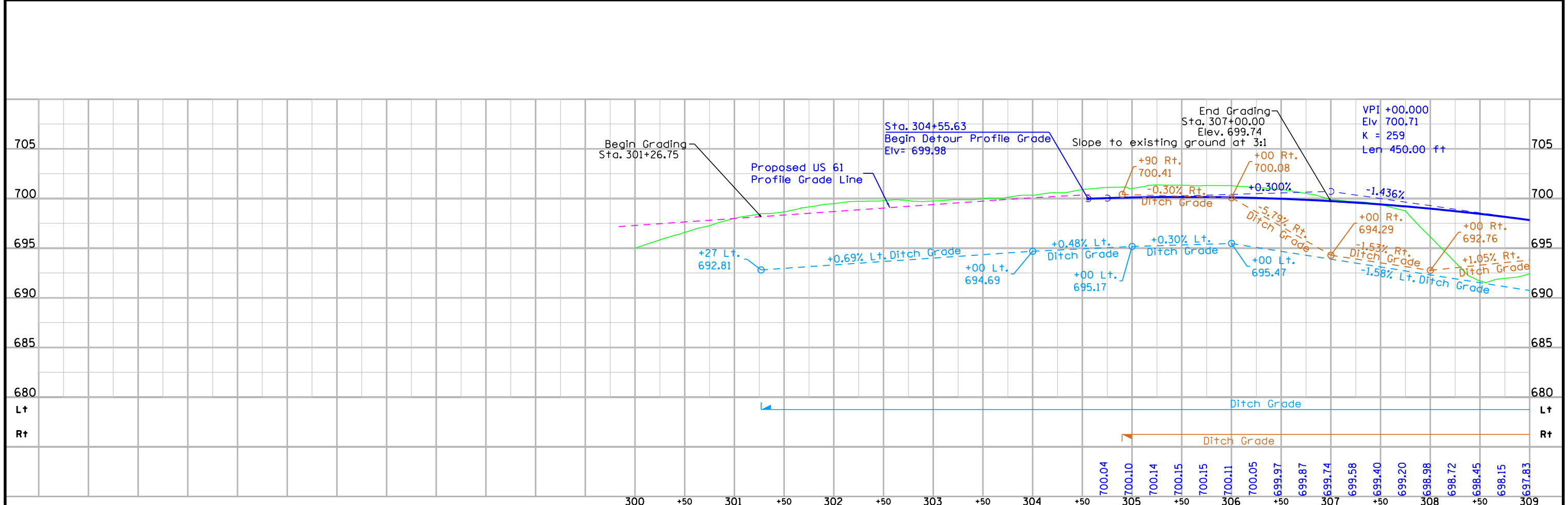
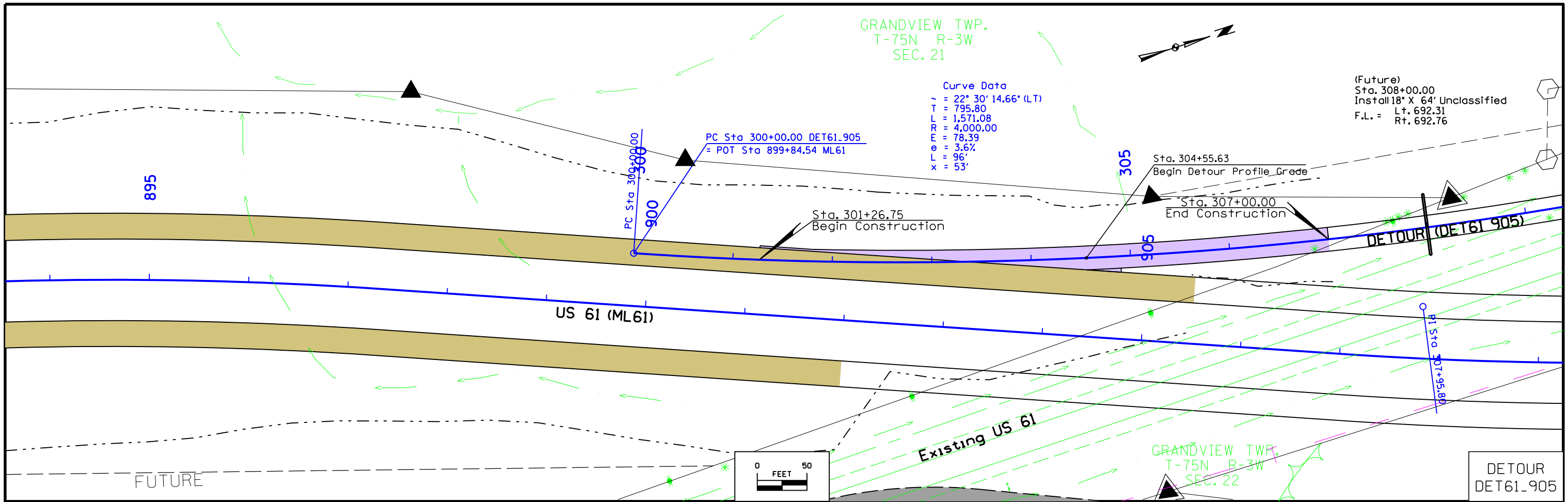
| Point/Curve | Station | Offset | Radius (ft) |
|-------------|------------|------------|-------------|
| 1 | 9999+51.21 | 71.03' Lt. | - |
| 2 | 9999+39.48 | 52.97' Lt. | - |
| Curve 2-3 | - | - | 20 |
| 3 | 9999+37.81 | 21.57' Rt. | - |
| Curve 3-4 | - | - | 90 |
| 4 | 9999+03.13 | 10.00' Rt. | -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

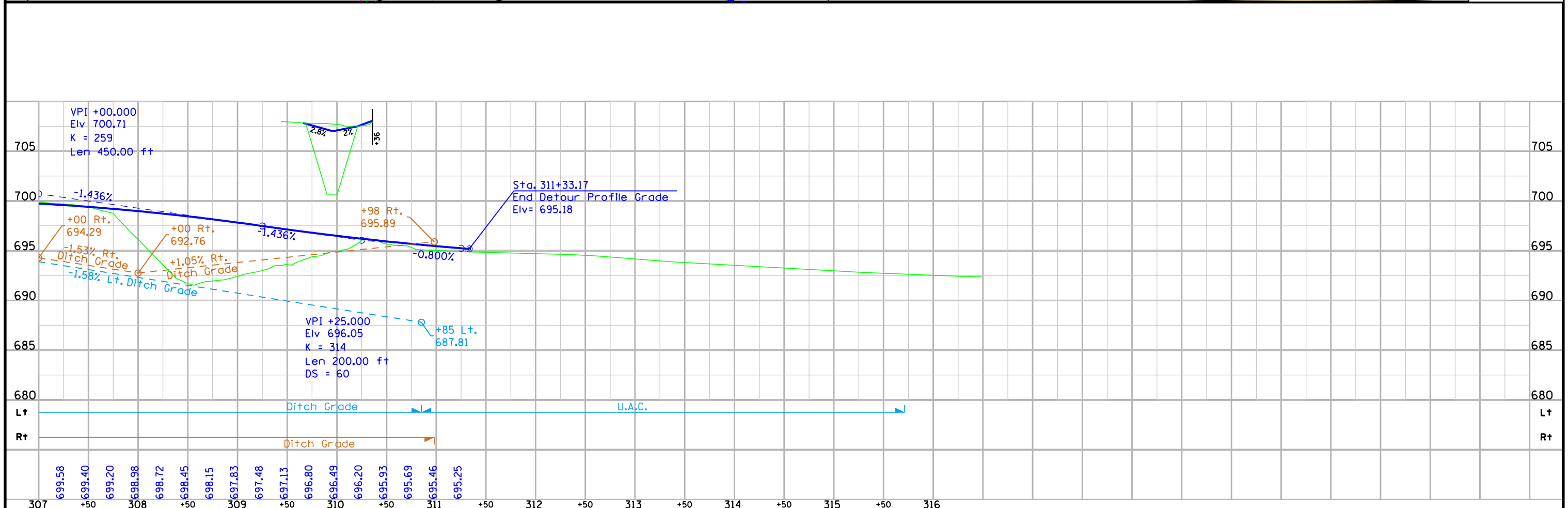
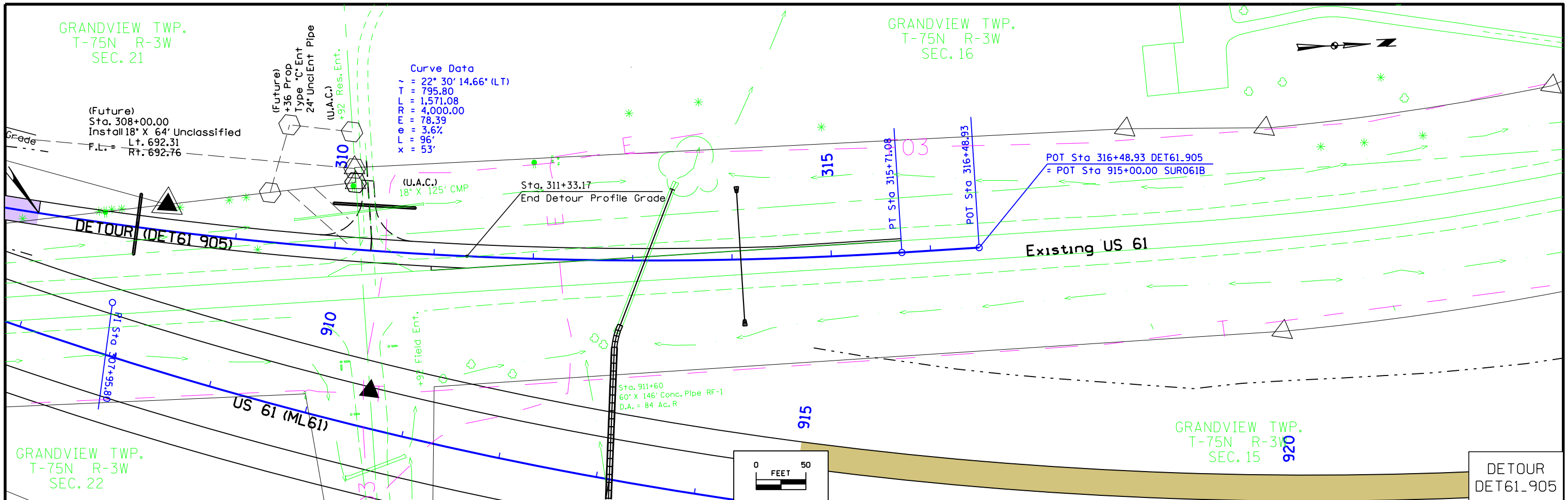


175TH STREET

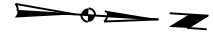




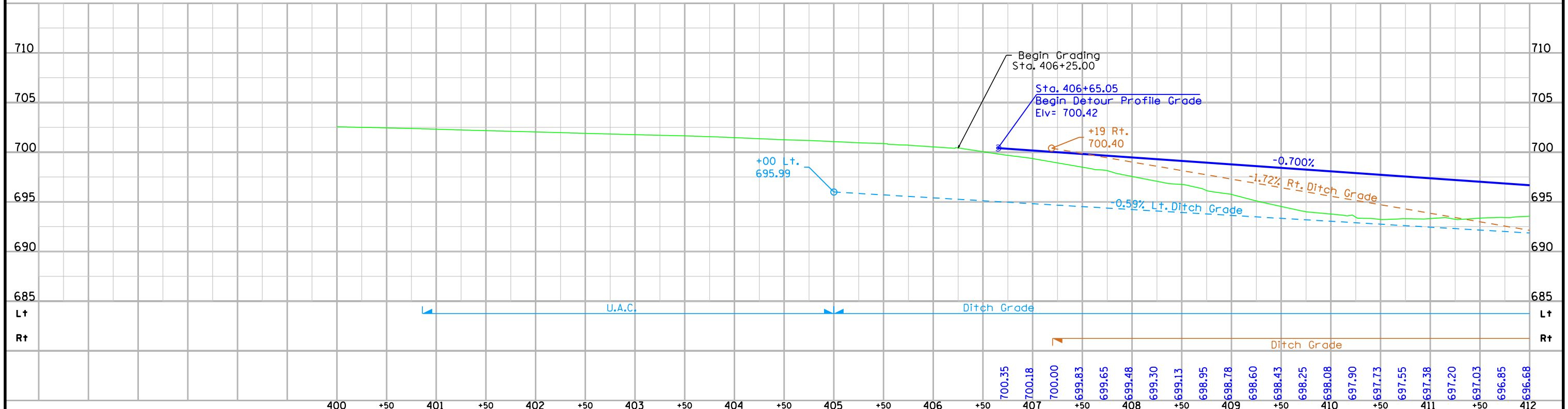
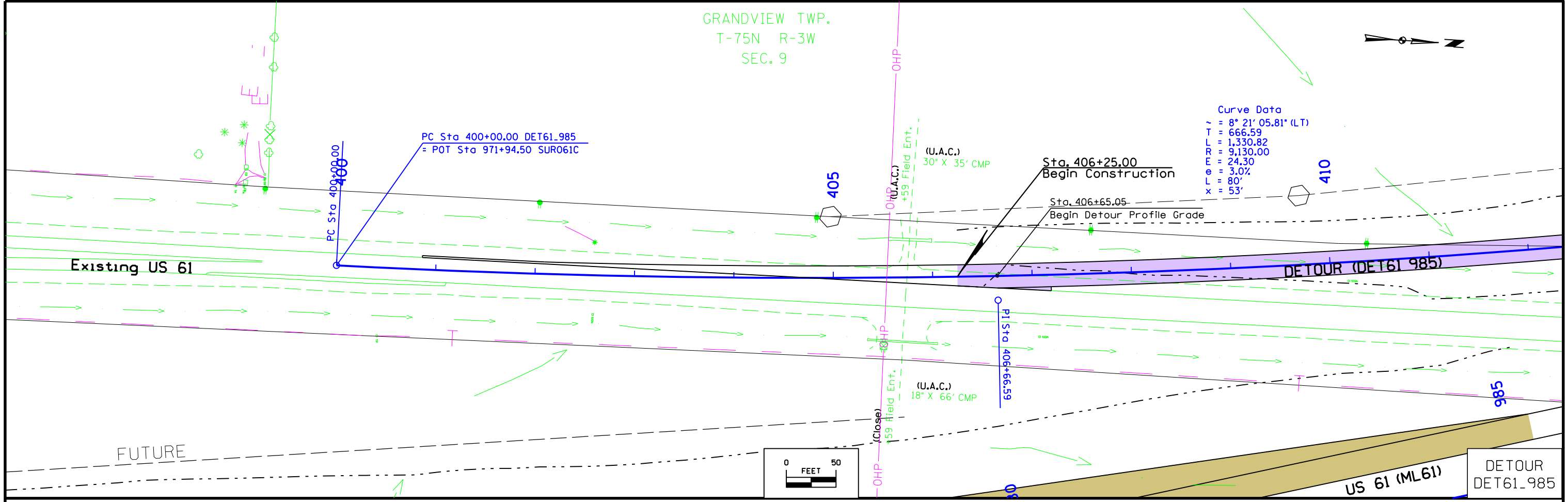


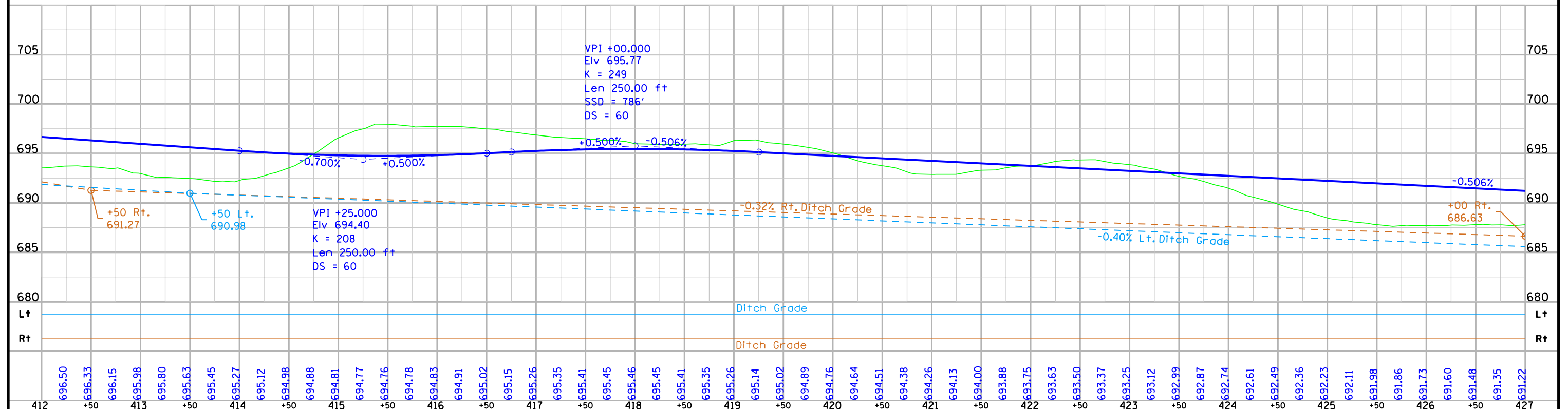
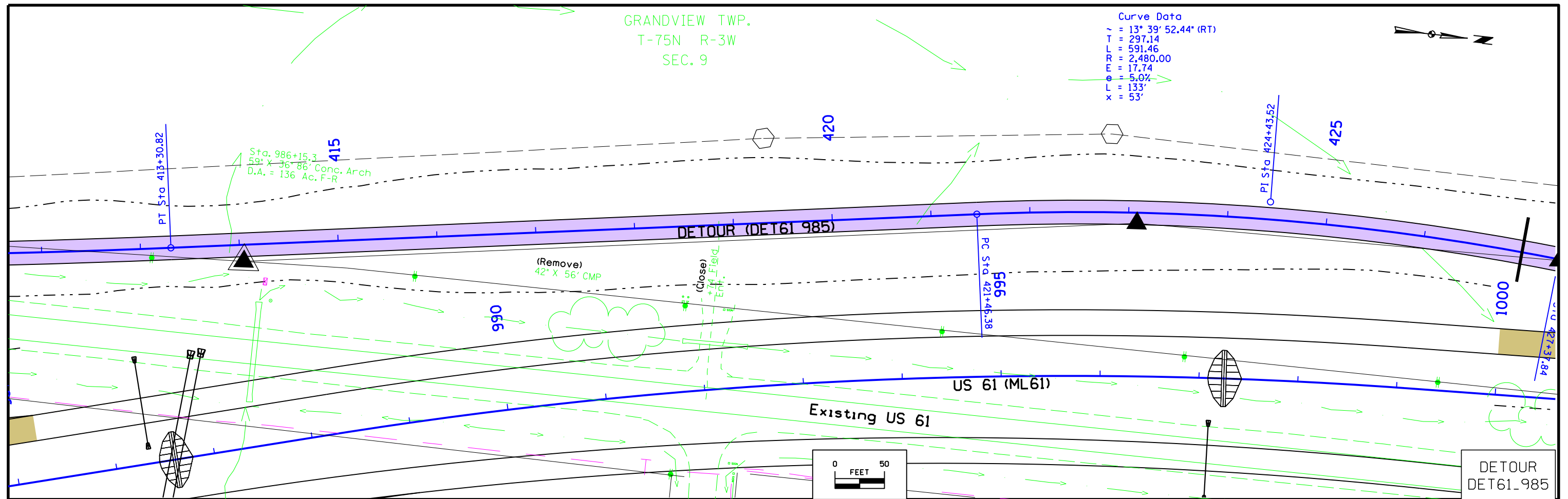


GRANDVIEW TWP.
T-75N R-3W
SEC. 9



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



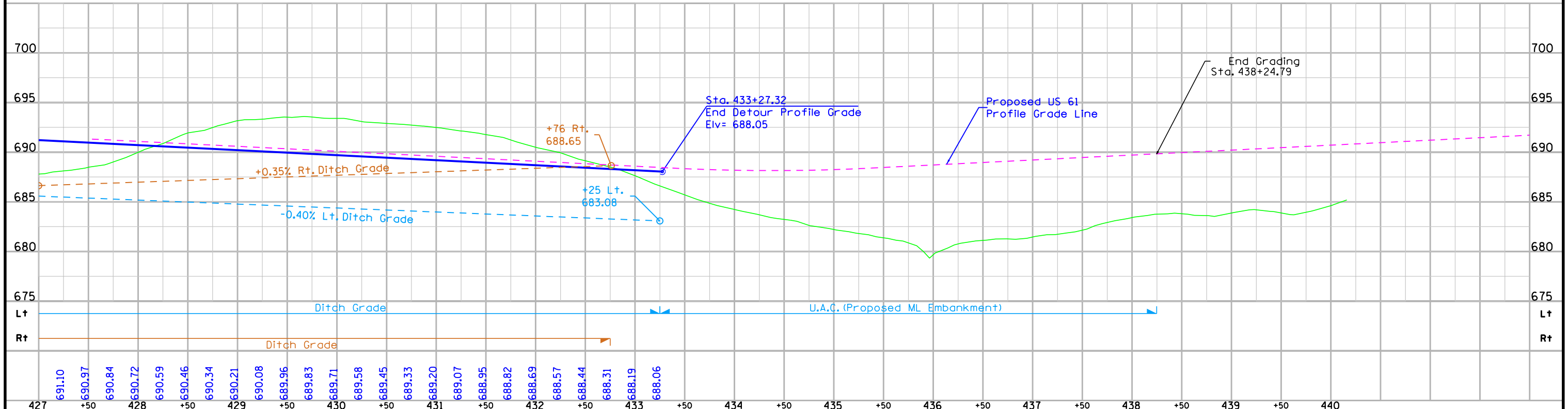
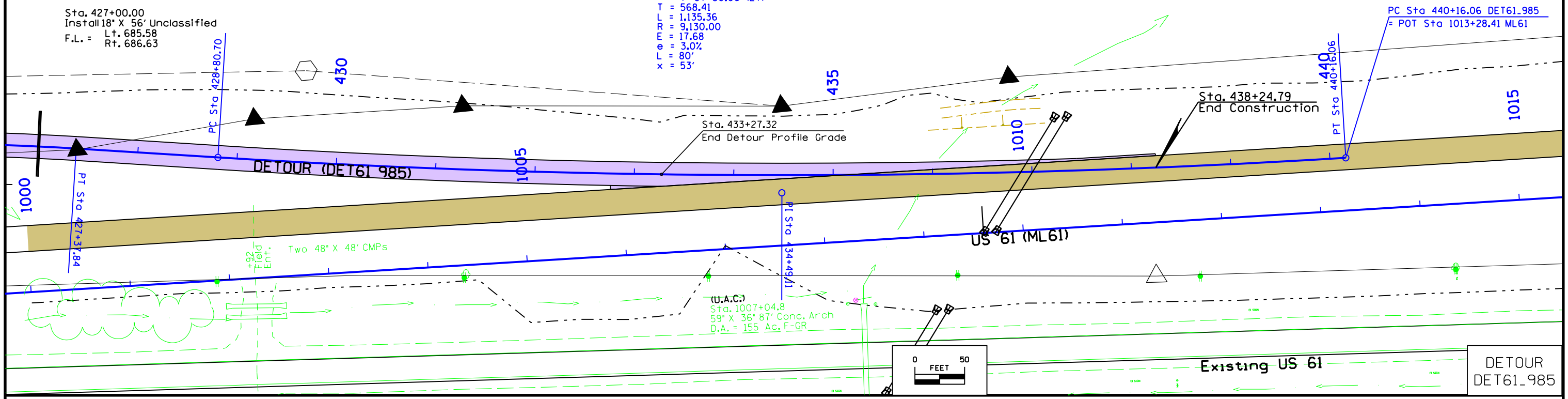


GRANDVIEW TWP.
T-75N R-3W
SEC. 9



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

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



| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|-----|
| 691.10 | 690.97 | 690.84 | 690.72 | 690.59 | 690.46 | 690.34 | 690.21 | 690.08 | 689.96 | 689.83 | 689.71 | 689.58 | 689.45 | 689.33 | 689.20 | 689.07 | 688.95 | 688.82 | 688.69 | 688.57 | 688.44 | 688.31 | 688.19 | 688.06 | | |
| 427 | +50 | 428 | +50 | 429 | +50 | 430 | +50 | 431 | +50 | 432 | +50 | 433 | +50 | 434 | +50 | 435 | +50 | 436 | +50 | 437 | +50 | 438 | +50 | 439 | +50 | 440 |

SURVEY INFORMATION

General Information

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

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

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

Vertical Datum

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

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

Vertical Equations:

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

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

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

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

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

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

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

Alignments

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

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

Alignment Equations

Begin Alignment ML1

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

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

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

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

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

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

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

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

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

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

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

SURVEY INFORMATION

Begin Alignment ML2

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

ML2 Stationing held fixed backed up and carried forward here

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

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

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

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

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

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

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

Begin Alignment ML3

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

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

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

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

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

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

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

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

Begin Alignment ML4

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

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

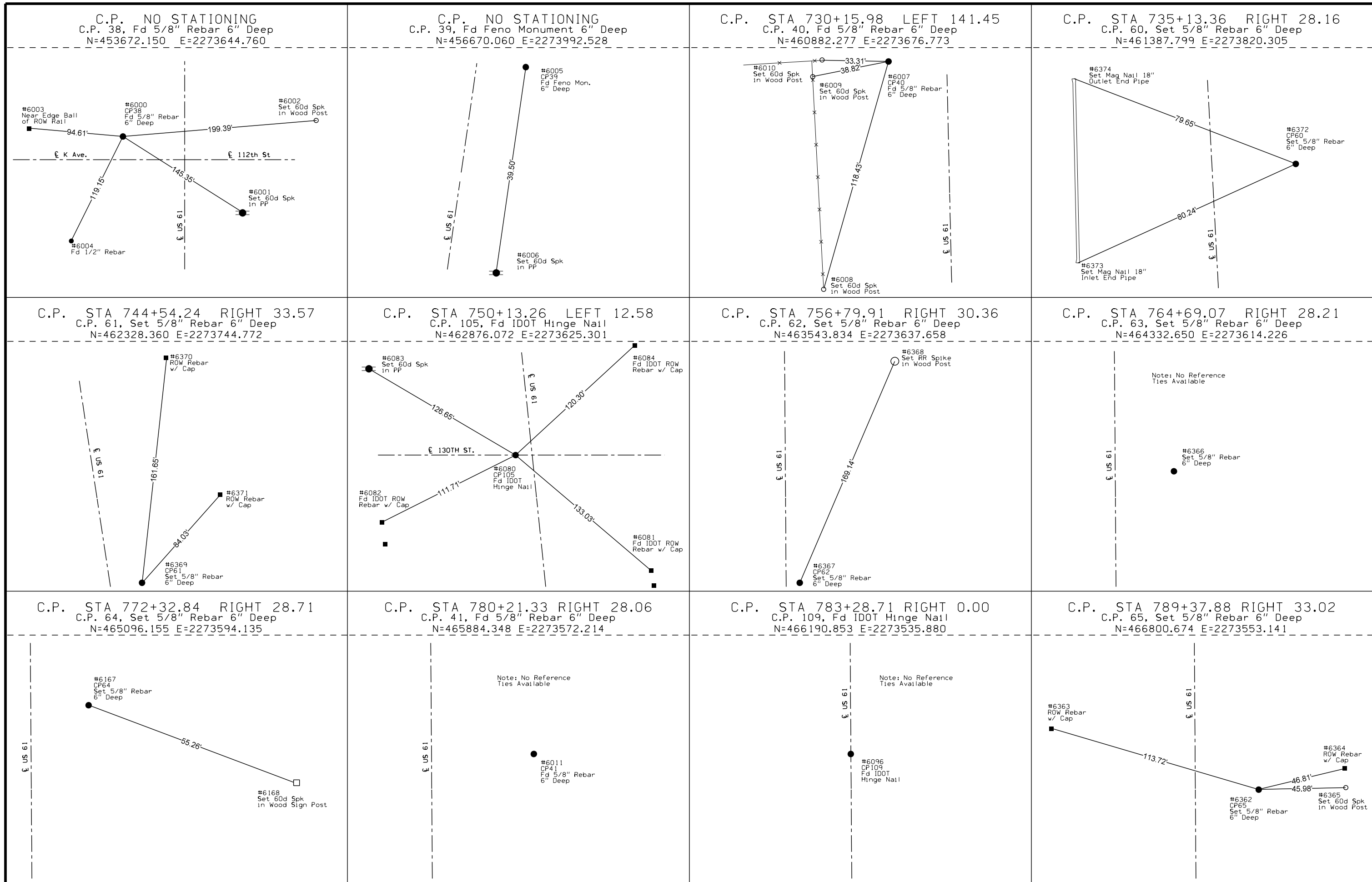
PRC Sta 1059+41.89 This Survey
 =PRC Sta 18+10.520 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

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

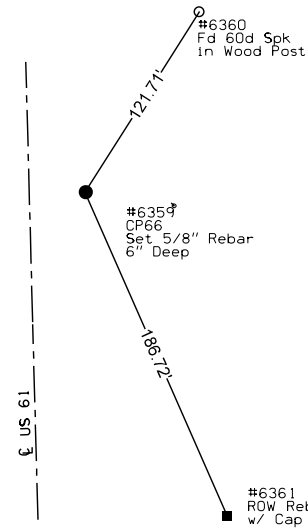
PI Sta 1085+07.72 This Survey
 =PI Sta 25+92.602 AB Stationing (Louisa Co. Plan NHSX-61-4(91)—3H-70 Metric PCC Plan)

SURVEY INFORMATION

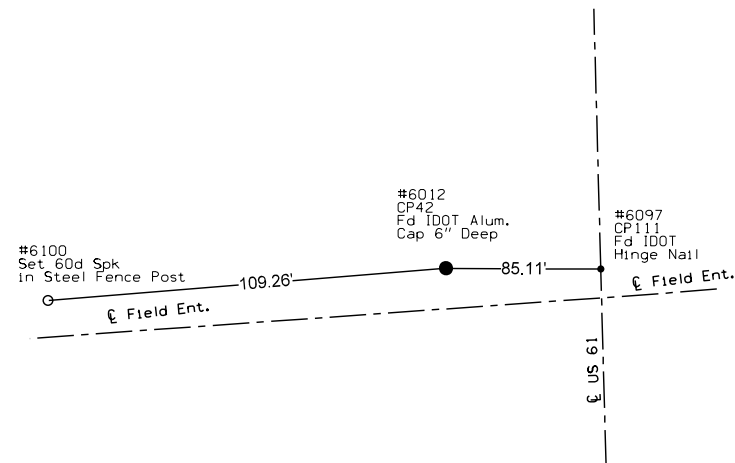
| | | | | | | |
|-------------|------------|-------------|---------|------------|------------|--|
| 500 | 462467.616 | 2273734.222 | 620.860 | 745+93.43 | 44.622 | BM CUT "X" ON INLET END 24" RCP APRON |
| 501 | 462920.412 | 2274164.798 | 625.316 | 750+07.98 | 528.711 | BM SET RR SPK N SIDE PP |
| 502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



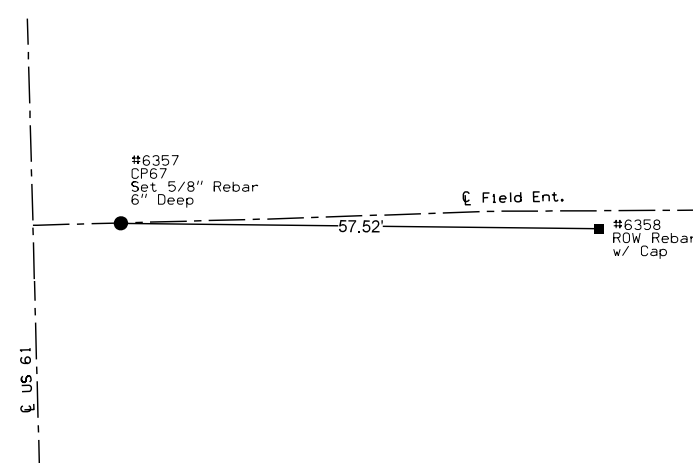
C.P. STA 796+72.42 RIGHT 29.08
 C.P. 66, Set 5/8" Rebar 6" Deep
 N=467534.865 E=2273530.216



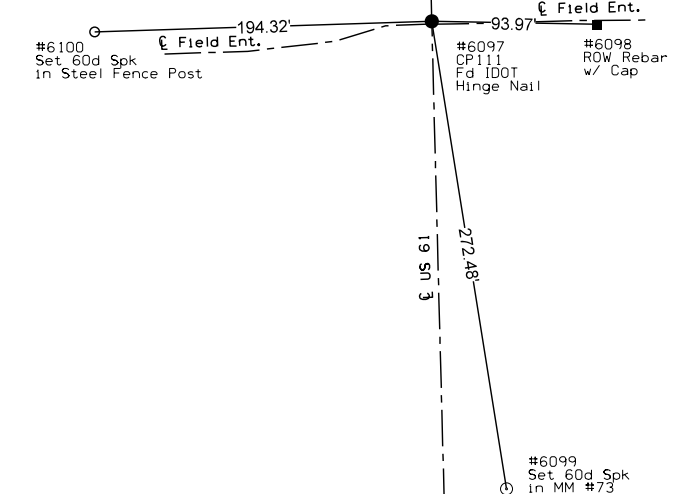
C.P. STA 802+95.23 LEFT 85.07
 C.P. 42, Fd IDOT Alum. Cap 6" Deep
 N=468154.520 E=2273400.000



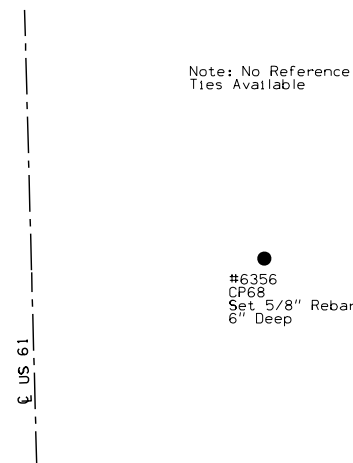
C.P. STA 802+95.66 RIGHT 36.43
 C.P. 67, Set 5/8" Rebar 6" Deep
 N=468158.085 E=2273521.362



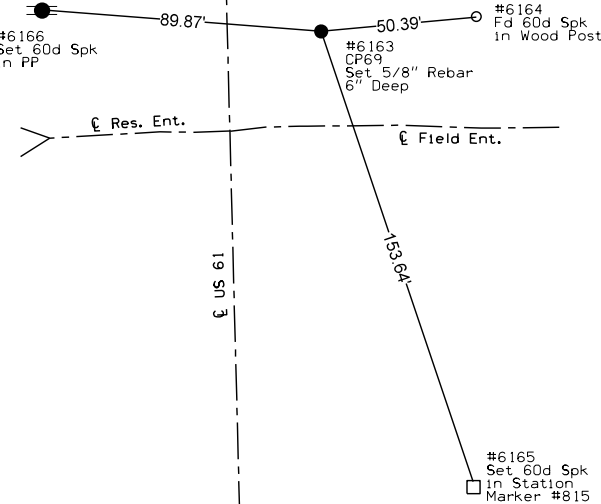
C.P. STA 802+97.70 RIGHT 0.00
 C.P. 111, Fd IDOT Hinge Nail
 N=468159.186 E=2273484.978



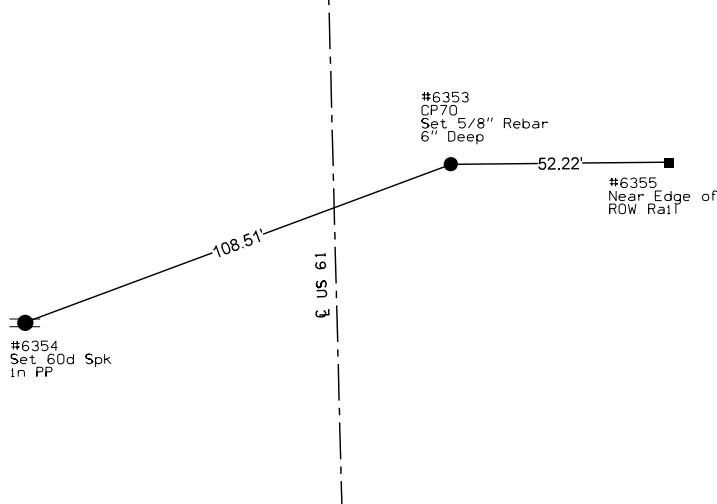
C.P. STA 809+01.74 RIGHT 28.99
 C.P. 68, Set 5/8" Rebar 6" Deep
 N=468763.772 E=2273498.442



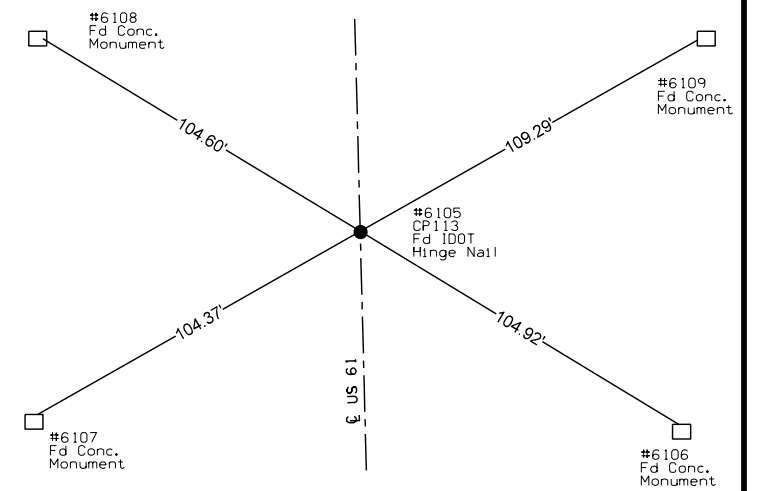
C.P. STA 816+47.02 RIGHT 30.28
 C.P. 69, Set 5/8" Rebar 6" Deep
 N=469508.837 E=2273480.582



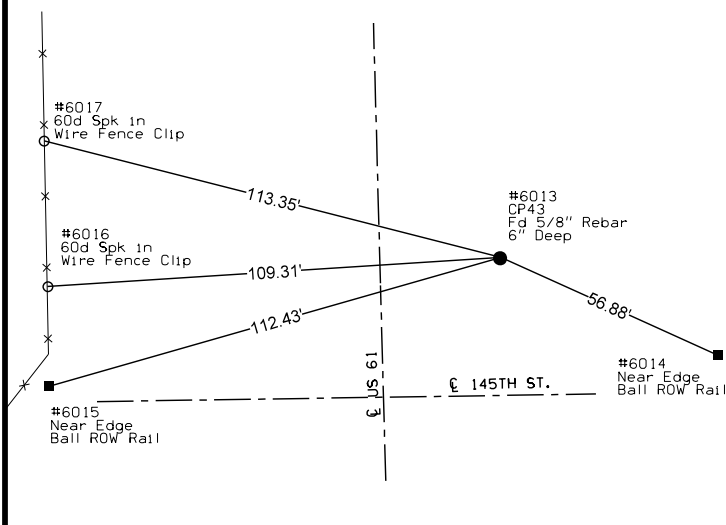
C.P. STA 823+23.44 RIGHT 28.02
 C.P. 70, Set 5/8" Rebar 6" Deep
 N=470184.980 E=2273460.949



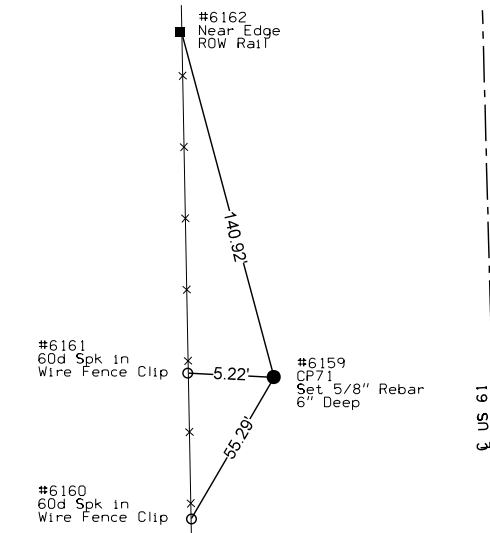
C.P. STA 829+43.76 RIGHT 0.00
 C.P. 113, Fd IDOT Hinge Nail
 N=470804.374 E=2273417.004



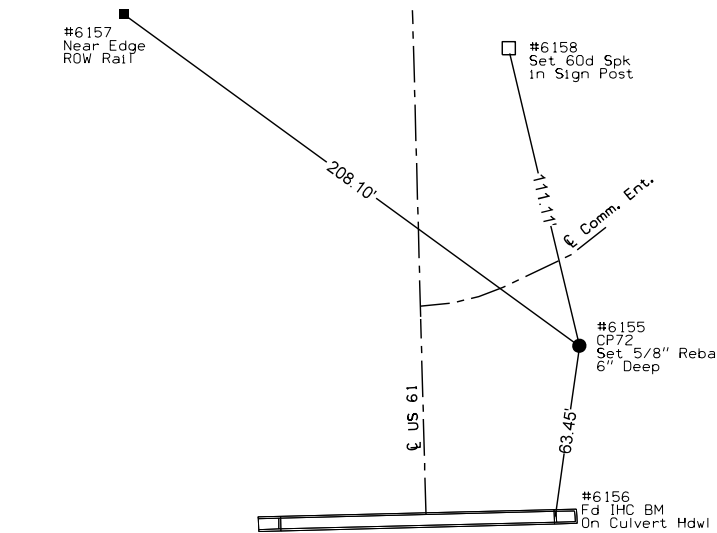
C.P. STA 830+41.33 RIGHT 28.83
 C.P. 43, Fd 5/8" Rebar 6" Deep
 N=470902.650 E=2273443.314



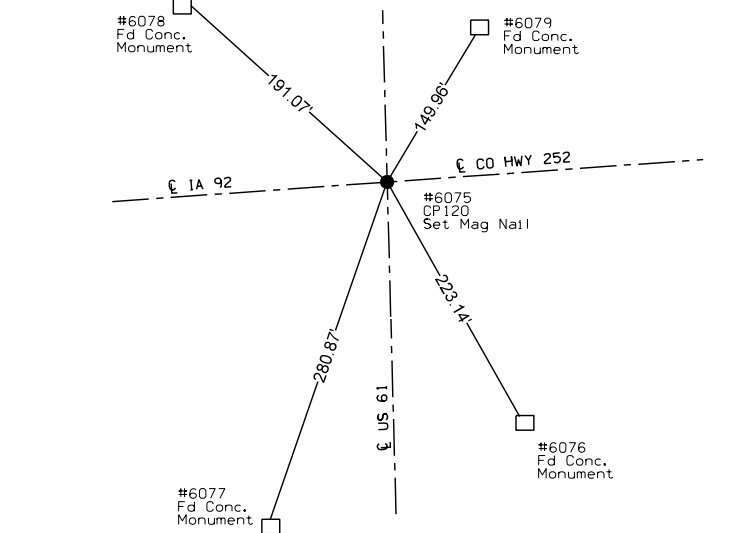
C.P. STA 838+33.65 LEFT 85.90
 C.P. 71, Set 5/8" Rebar 6" Deep
 N=471691.762 E=2273308.265

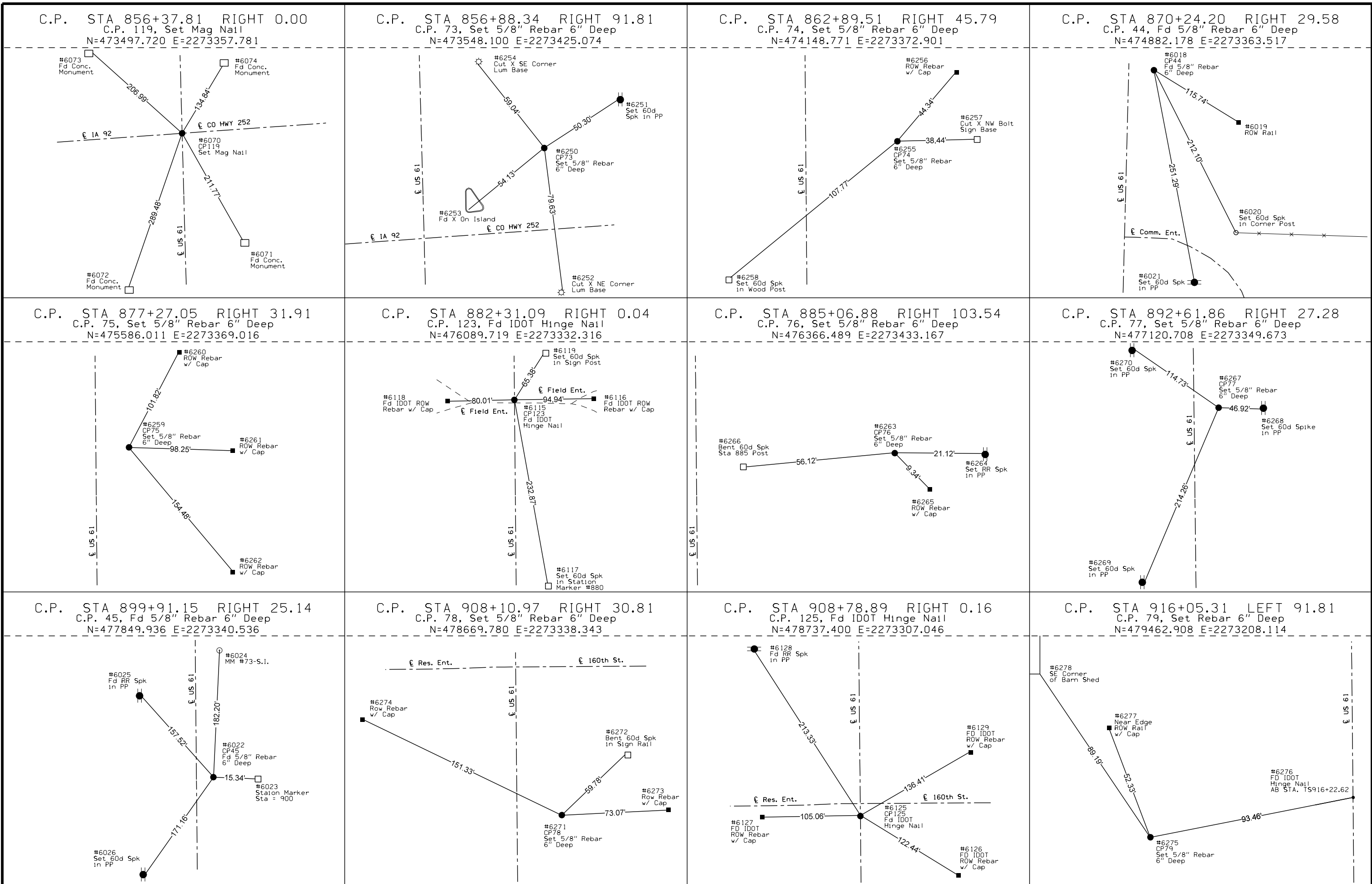


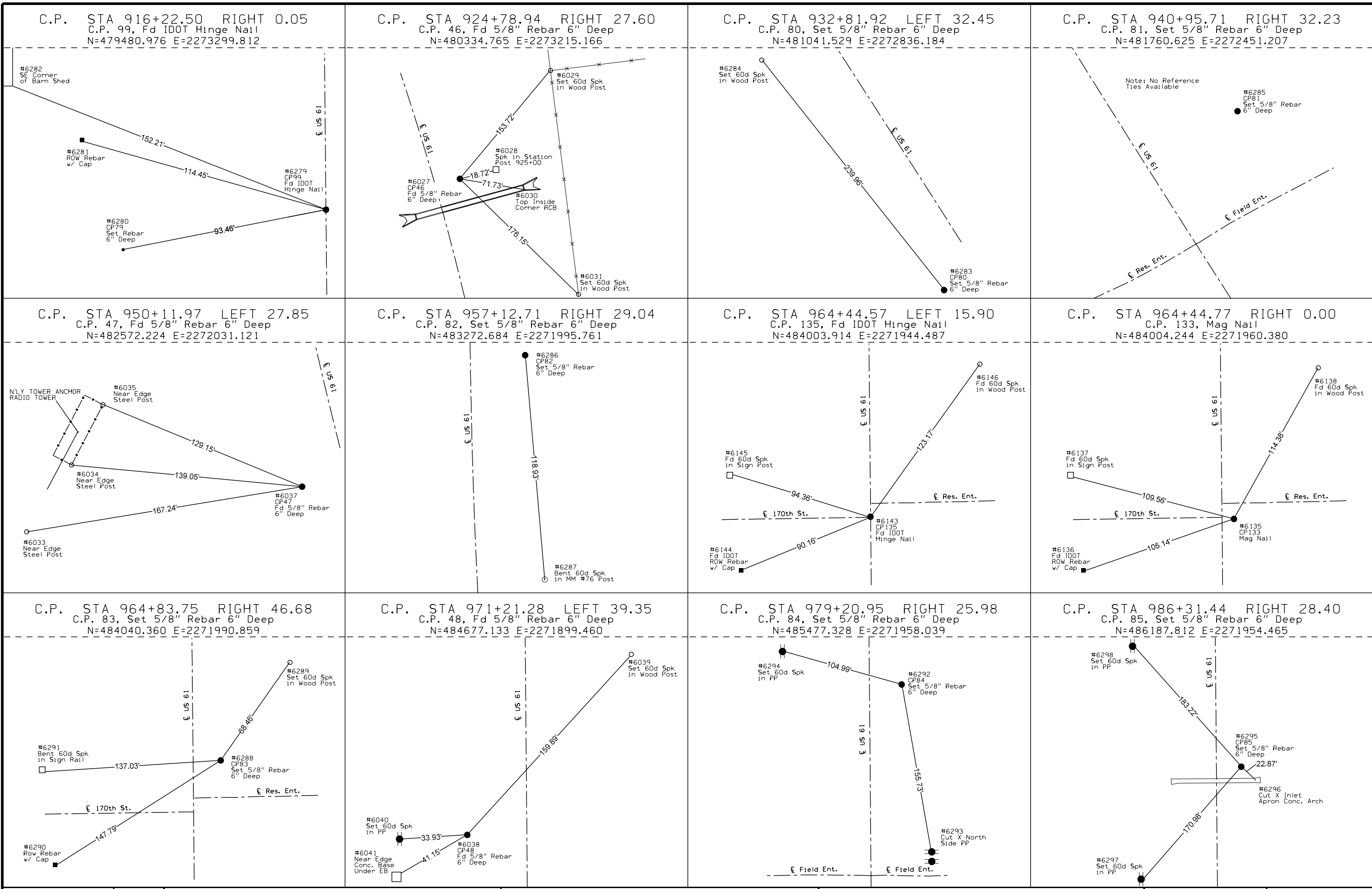
C.P. STA 846+13.34 RIGHT 58.70
 C.P. 72, Set 5/8" Rebar 6" Deep
 N=472474.913 E=2273432.785

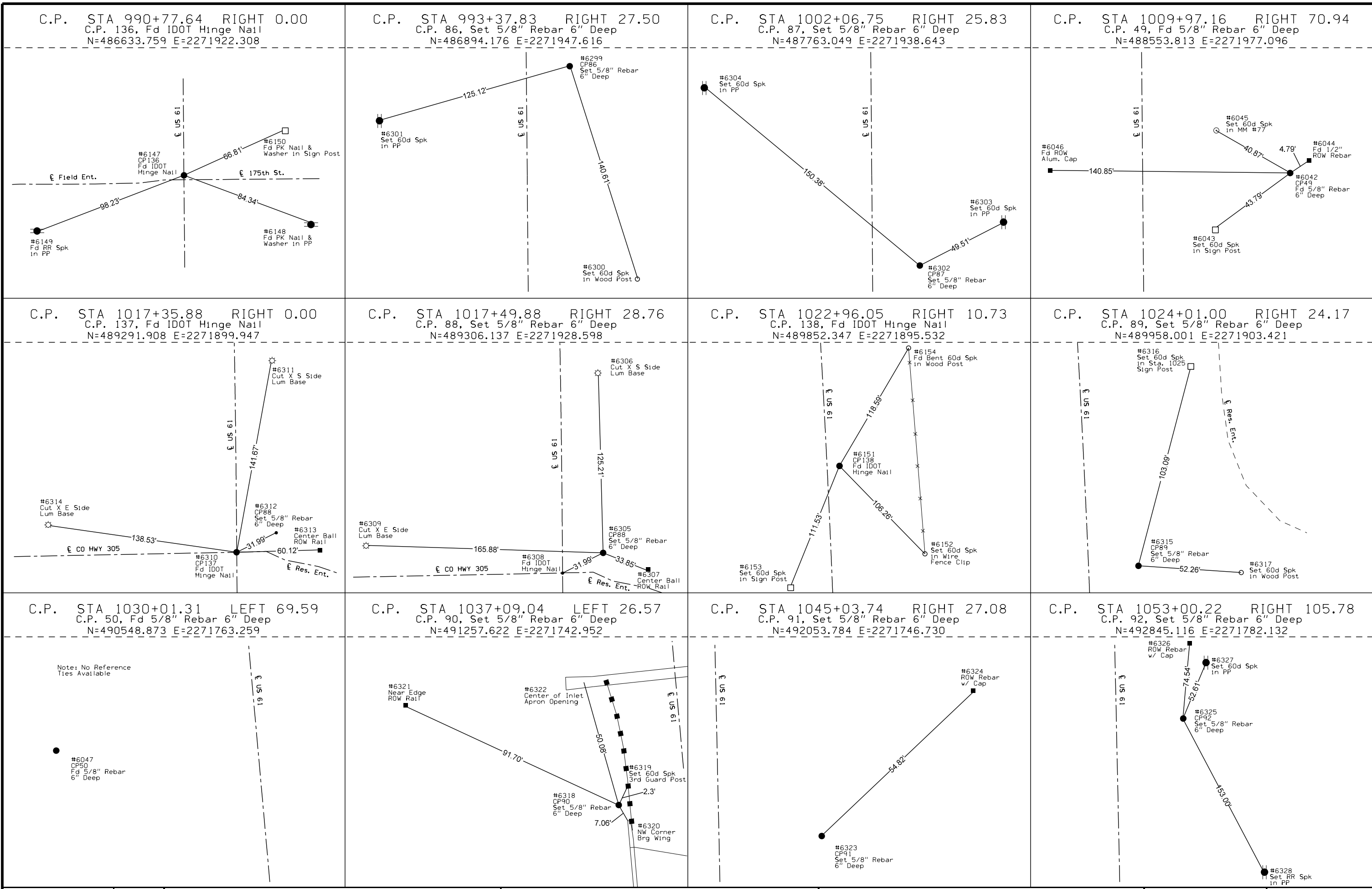


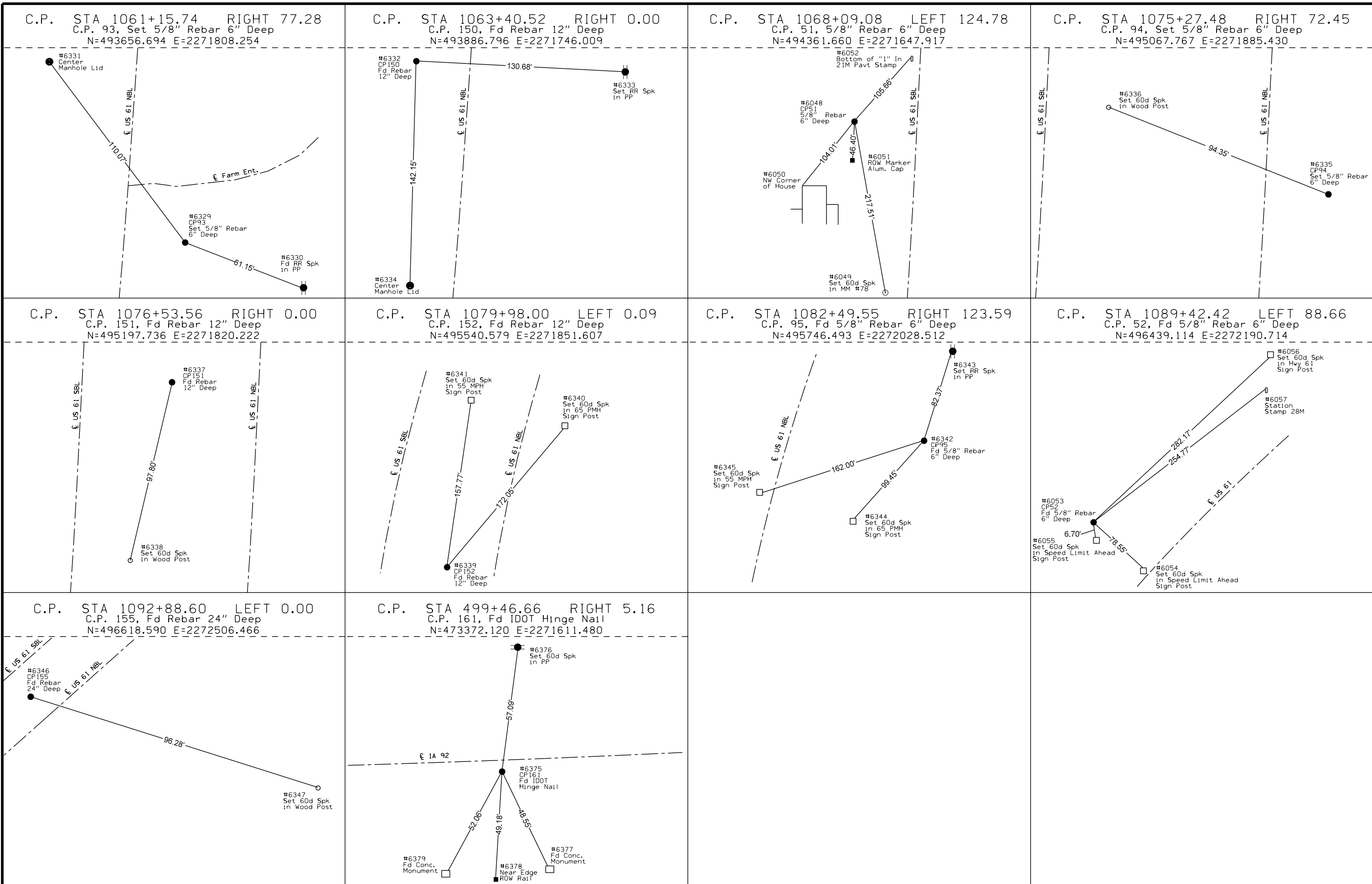
C.P. STA 856+36.30 LEFT 24.00
 C.P. 120, Set Mag Nail
 N=473495.996 E=2273333.793











ALIGNMENT COORDINATES

101-16
10-20-09

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

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

| Name | Location | Δ _{scc} | Horizontal Alignment Data | | | | | | | | | | | Remarks | | | | |
|---------------------------|----------|------------------|---------------------------|----------------|----------------|----------------|----------------|----------------|------------|---------|----------------|--------------------|-----------|-----------|------------|---------|--|--|
| | | | Spiral Data | | | | | | Curve Data | | | | | | | | | |
| | | | θ _s | L _s | T _s | E _s | X _c | Y _c | L.T. | S.T. | Δ _c | T | L | | R | E | | |
| Survey 61/ Existing 61 | | | | | | | | | | | | | | | | | | |
| C12 | | | | | | | | | | | | 5° 53' 36.03" LT | 315.81' | 631.07' | 6,135.32' | 8.12' | | |
| C13 | | | | | | | | | | | | 7° 19' 36.64" RT | 393.42' | 785.77' | 6,144.70' | 12.58' | | |
| C14 | | | | | | | | | | | | 0° 57' 34.51" RT | 300.00' | 599.99' | 35,824.44' | 1.26' | | |
| C15 | | | | | | | | | | | | 2° 10' 42.82" RT | 321.23' | 642.38' | 16,894.55' | 3.05' | | |
| C16 | | | | | | | | | | | | 2° 08' 28.50" LT | 321.22' | 642.38' | 17,188.74' | 3.00' | | |
| S4 | | 32° 13' 28.31" | 1° 44' 57.34" | 175.00' | 915.52' | 117.64' | 174.98' | 1.78' | 116.67' | 58.34' | | 32° 13' 28.31" LT | 733.89' | 1,436.91' | 2,866.00' | 92.47' | | |
| S5 | | 32° 17' 42.45" | 1° 44' 58.13" | 175.00' | 917.33' | 118.16' | 174.98' | 1.78' | 116.67' | 58.34' | | 32° 17' 42.45" RT | 735.67' | 1,440.24' | 2,865.64' | 92.92' | | |
| C17 | | | | | | | | | | | | 4° 40' 05.44" LT | 526.78' | 1,052.97' | 12,923.86' | 10.73' | | |
| C18 | | | | | | | | | | | | 4° 54' 37.19" RT | 503.78' | 1,006.94' | 11,749.44' | 10.80' | | |
| C19 | | | | | | | | | | | | 5° 27' 24.49" RT | 568.95' | 1,137.04' | 11,938.76' | 13.55' | | |
| C20 | | | | | | | | | | | | 1° 54' 42.80" LT | 199.33' | 398.63' | 11,946.18' | 1.66' | | |
| S6 | | 45° 04' 39.16" | 6° 00' 57.80" | 344.49' | 854.21' | 138.92' | 344.11' | 12.05' | 229.79' | 114.95' | | 45° 04' 39.16" RT | 486.62' | 946.11' | 1,640.42' | 70.66' | | |
| Survey IA 92 | | | | | | | | | | | | | | | | | | |
| C11 | | | | | | | | | | | | 3° 55' 17.09" LT | 301.79' | 603.34' | 8,815.40' | 5.16' | | |
| US 61 | | | | | | | | | | | | | | | | | | |
| 20202 | | | | | | | | | | | | 10° 08' 29.27" LT | 913.95' | 1,823.12' | 10,300.00' | 40.47' | | |
| 20302 | | | | | | | | | | | | 11° 08' 14.61" RT | 1,004.24' | 2,002.16' | 10,300.00' | 48.84' | | |
| 20502 | | | | | | | | | | | | 22° 30' 00.00" RT | 795.65' | 1,570.80' | 4,000.00' | 78.36' | | |
| 20702 | | | | | | | | | | | | 37° 30' 00.00" LT | 1,357.82' | 2,617.99' | 4,000.00' | 224.18' | | |
| 20802 | | | | | | | | | | | | 13° 15' 00.00" RT | 545.89' | 1,086.90' | 4,700.00' | 31.60' | | |
| 20902 | | | | | | | | | | | | 5° 32' 07.21" RT | 623.62' | 1,246.27' | 12,900.00' | 15.06' | | |
| US 61 NB Tie | | | | | | | | | | | | | | | | | | |
| 22116 | | | | | | | | | | | | 15° 03' 47.83" RT | 621.41' | 1,235.65' | 4,700.00' | 40.90' | | |
| 22117 | | | | | | | | | | | | 4° 38' 15.44" LT | 522.76' | 1,044.96' | 12,910.00' | 10.58' | | |
| 22118 | | | | | | | | | | | | 4° 54' 37.44" RT | 504.28' | 1,007.95' | 11,761.00' | 10.81' | | |
| 145th St. (Ult.) | | | | | | | | | | | | | | | | | | |
| 50122 | | | | | | | | | | | | 79° 35' 07.06" RT | 374.83' | 625.06' | 450.00' | 135.66' | | |
| 50132 | | | | | | | | | | | | 90° 00' 00.00" LT | 150.00' | 235.62' | 150.00' | 62.13' | | |
| 50172 | | | | | | | | | | | | 79° 47' 07.06" LT | 125.39' | 208.88' | 150.00' | 45.50' | | |
| 145th St. (Grad.) | | | | | | | | | | | | | | | | | | |
| SR145_GRADING-1 | | | | | | | | | | | | 79° 35' 07.06" RT | 374.83' | 625.06' | 450.00' | 135.66' | | |
| SR145_GRADING-2 | | | | | | | | | | | | 90° 00' 00.00" LT | 150.00' | 235.62' | 150.00' | 62.13' | | |
| SR145_GRADING-3 | | | | | | | | | | | | 10° 12' 52.94" RT | 44.69' | 89.14' | 500.00' | 1.99' | | |
| IA 92 | | | | | | | | | | | | | | | | | | |
| 55501 | | | | | | | | | | | | 3° 55' 17.09" LT | 301.79' | 603.34' | 8,815.40' | 5.16' | | |
| 170th St. | | | | | | | | | | | | | | | | | | |
| 30150 | | | | | | | | | | | | 30° 47' 50.00" LT | 58.94' | 115.03' | 214.00' | 7.97' | | |
| 175th St. | | | | | | | | | | | | | | | | | | |
| 90250 | | | | | | | | | | | | 14° 17' 30.00" RT | 188.05' | 374.15' | 1,500.00' | 11.74' | | |
| 90350 | | | | | | | | | | | | 105° 34' 00.97" RT | 281.77' | 394.29' | 214.00' | 139.82' | | |
| ENTL 497 | | | | | | | | | | | | | | | | | | |
| C9270 | | | | | | | | | | | | 88° 52' 55.50" RT | 4.90' | 7.76' | 5.00' | 2.00' | | |
| ENTR 497 | | | | | | | | | | | | | | | | | | |
| 9255 | | | | | | | | | | | | 92° 00' 00.00" LT | 103.55' | 160.57' | 100.00' | 43.96' | | |
| 9260 | | | | | | | | | | | | 91° 47' 49.01" RT | 103.19' | 160.22' | 100.00' | 43.69' | | |
| 160th St. | | | | | | | | | | | | | | | | | | |
| 160.1 | | | | | | | | | | | | 24° 08' 17.33" RT | 99.42' | 195.90' | 465.00' | 10.51' | | |
| 160.2 | | | | | | | | | | | | 65° 46' 03.62" RT | 300.64' | 533.76' | 465.00' | 88.72' | | |
| DET61.905 | | | | | | | | | | | | | | | | | | |
| 10110 | | | | | | | | | | | | 22° 30' 14.66" LT | 795.80' | 1,571.08' | 4,000.00' | 78.39' | | |
| DET61.985 | | | | | | | | | | | | | | | | | | |
| 10011 | | | | | | | | | | | | 8° 21' 05.81" LT | 666.59' | 1,330.82' | 9,130.00' | 24.30' | | |
| 10021 | | | | | | | | | | | | 13° 39' 52.44" RT | 297.14' | 591.46' | 2,480.00' | 17.74' | | |
| 10031 | | | | | | | | | | | | 7° 07' 30.06" LT | 568.41' | 1,135.36' | 9,130.00' | 17.68' | | |
| DET_E61 | | | | | | | | | | | | | | | | | | |
| C10205 | | | | | | | | | | | | 92° 26' 04.25" RT | 104.34' | 161.33' | 100.00' | 44.52' | | |

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

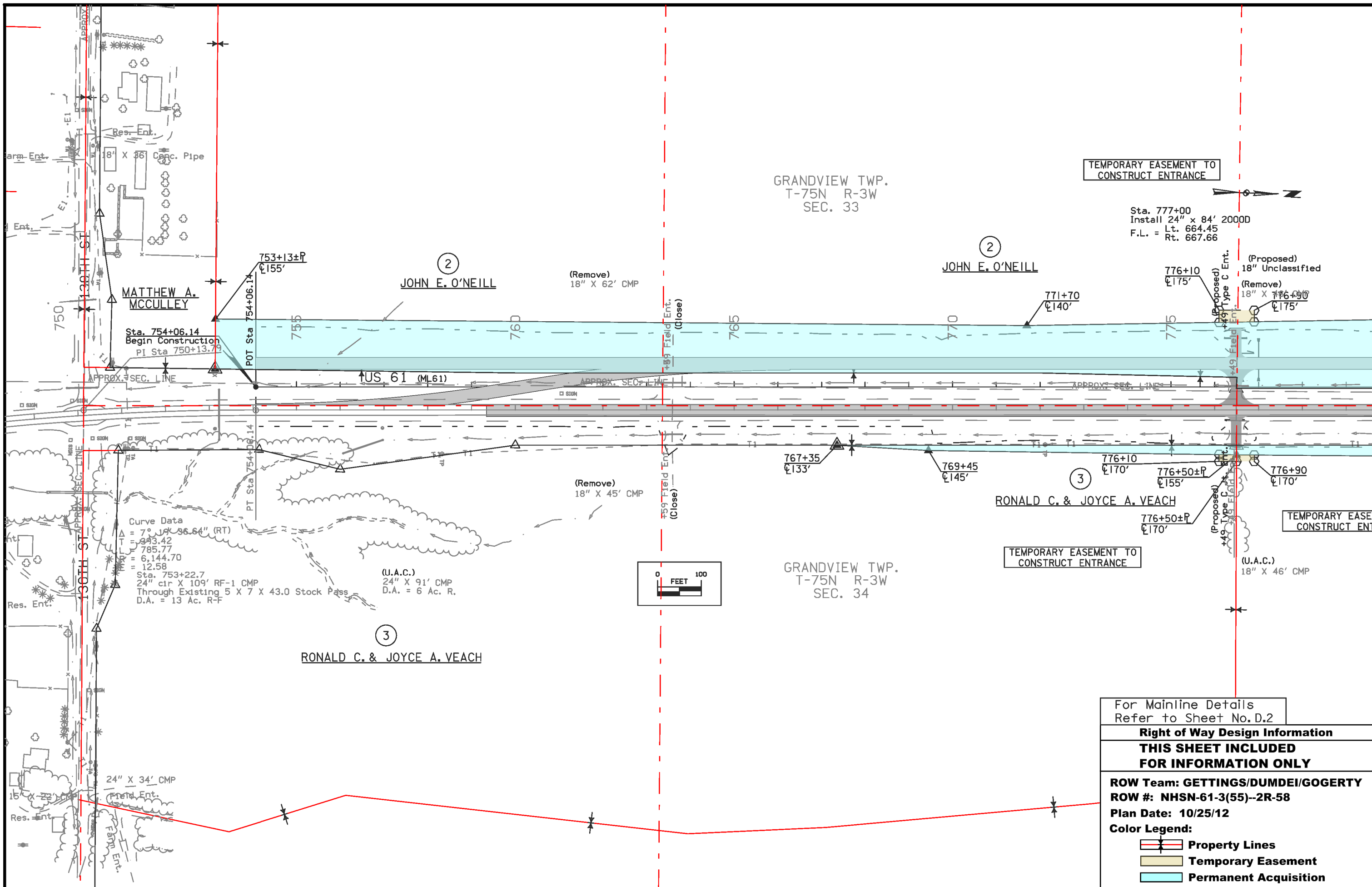
| Name | Location | Δ_{scs} | Horizontal Alignment Data | | | | | | | | | | | | | Remarks | |
|-----------------------|----------|----------------|---------------------------|-------|-------|-------|-------|------------|------|------|------------|-------------------|---------|---------|-----------|---------|--|
| | | | Spiral Data | | | | | Curve Data | | | | | | | | | |
| | | | θ_s | L_s | T_s | E_s | X_c | Y_c | L.T. | S.T. | Δ_c | T | L | R | E | | |
| IA 92 Ramp A 44001 | | | | | | | | | | | | 7° 28' 47.19" LT | 150.34' | 300.26' | 2,300.00' | 4.91' | |
| IA 92 Ramp B 45001 | | | | | | | | | | | | 9° 33' 22.01" RT | 167.17' | 333.57' | 2,000.00' | 6.97' | |
| IA 92 Ramp C 46001 | | | | | | | | | | | | 8° 45' 28.96" LT | 153.16' | 305.71' | 2,000.00' | 5.86' | |
| IA 92 Ramp D 47001 | | | | | | | | | | | | 10° 28' 30.82" RT | 183.34' | 365.65' | 2,000.00' | 8.39' | |
| 170th Ramp A 64001 | | | | | | | | | | | | 7° 17' 56.31" LT | 159.45' | 318.48' | 2,500.00' | 5.08' | |
| 170th Ramp B 65001 | | | | | | | | | | | | 7° 17' 40.81" RT | 159.36' | 318.29' | 2,500.00' | 5.07' | |
| 170th Ramp C 66001 | | | | | | | | | | | | 9° 18' 59.91" LT | 162.97' | 325.21' | 2,000.00' | 6.63' | |
| 170th Ramp D 67002 | | | | | | | | | | | | 9° 12' 59.92" RT | 161.21' | 321.72' | 2,000.00' | 6.49' | |
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SUPERELEVATION DATA

See PV-300 Series

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

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



TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

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

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

②
JOHN E. O'NEILL

MATTHEW A. MCCULLEY

②
JOHN E. O'NEILL

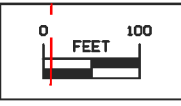
③
RONALD C. & JOYCE A. VEACH

③
RONALD C. & JOYCE A. VEACH

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

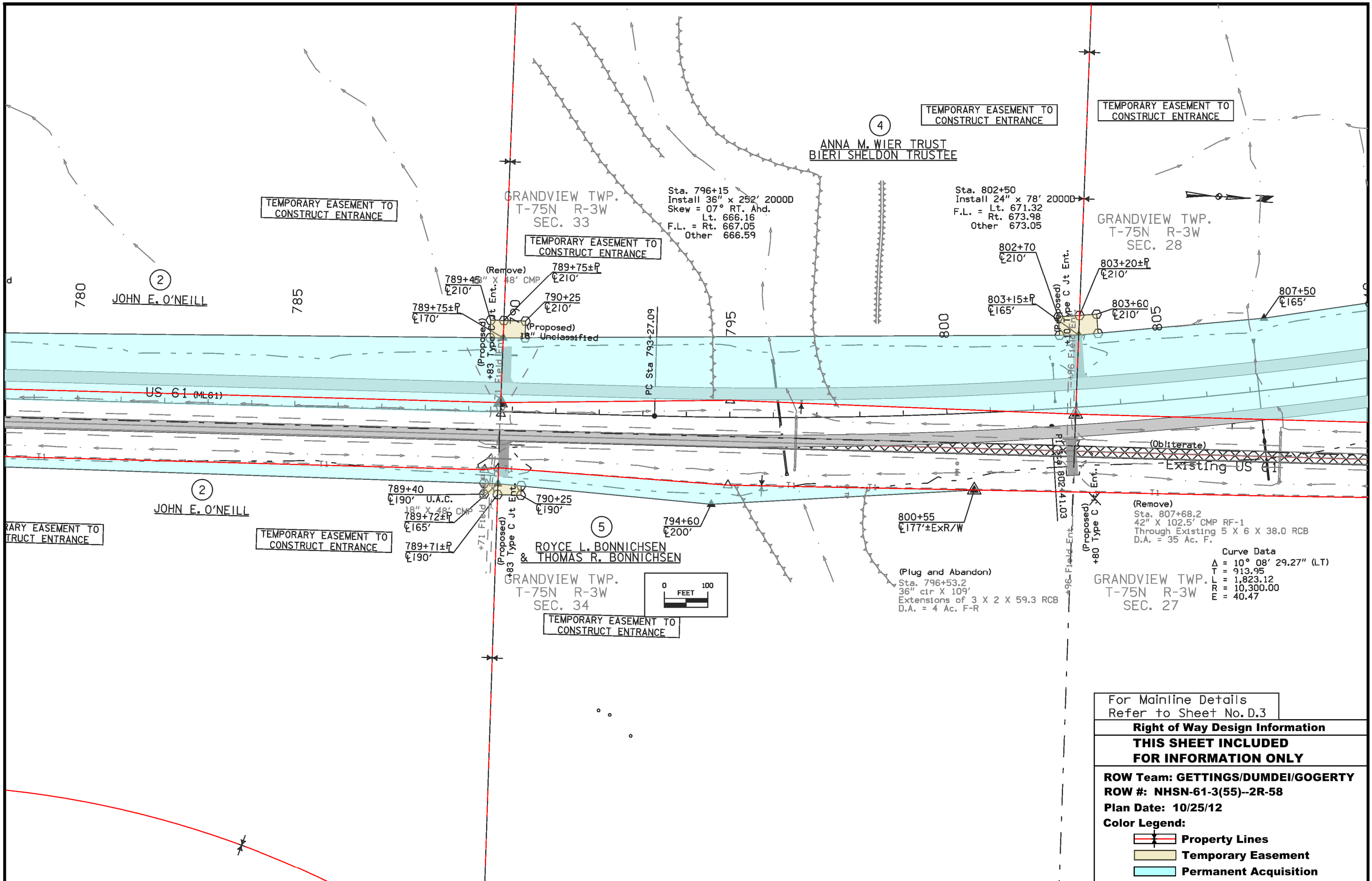
Curve Data
= 7° 19' 36.64" (RT)
= 43.42
= 785.77
= 6,144.70
= 12.58
Sta. 753+22.7
24" cir X 109' RF-1 CMP
Through Existing 5 X 7 X 43.0 Stock Pass
D.A. = 13 Ac. R-F

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

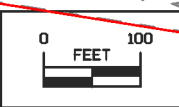
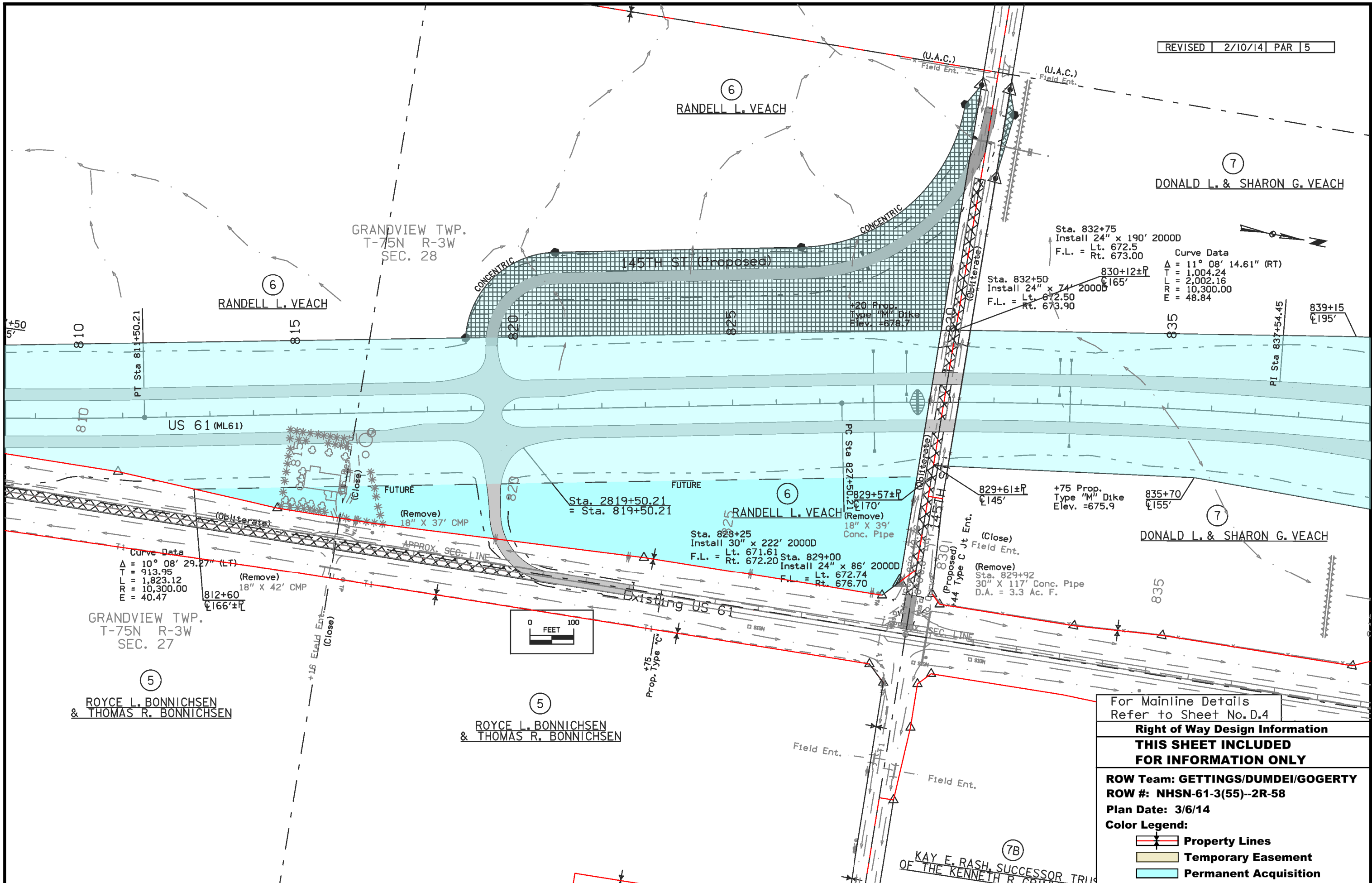


For Mainline Details
Refer to Sheet No. D.2

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



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



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

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

7A
ANNA J. DAWSON

7
DONALD L. & SHARON G. VEACH

8
INVESTMENT REAL ESTATE LLC

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

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

Curve Data
 $\Delta = 11^{\circ} 08' 14.51''$ (RT)
 $T = 1,004.24$
 $L = 2,002.16$
 $RR = 10,300.00$
 $E = 48.84$

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

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

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

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

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

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

Sta. 510+38.38
 = Sta. 856+52.82

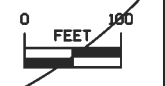
Sta. 2556+17 Ramp B
 Install 24" x 88' 20000
 Skew = 15° RT. Ahd.
 F.L. = Lt. 664.54
 Rt. 664.98

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

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

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

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



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

Right of Way Design Information

**THIS SHEET INCLUDED
 FOR INFORMATION ONLY**

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

Plan Date: 11/19/13

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

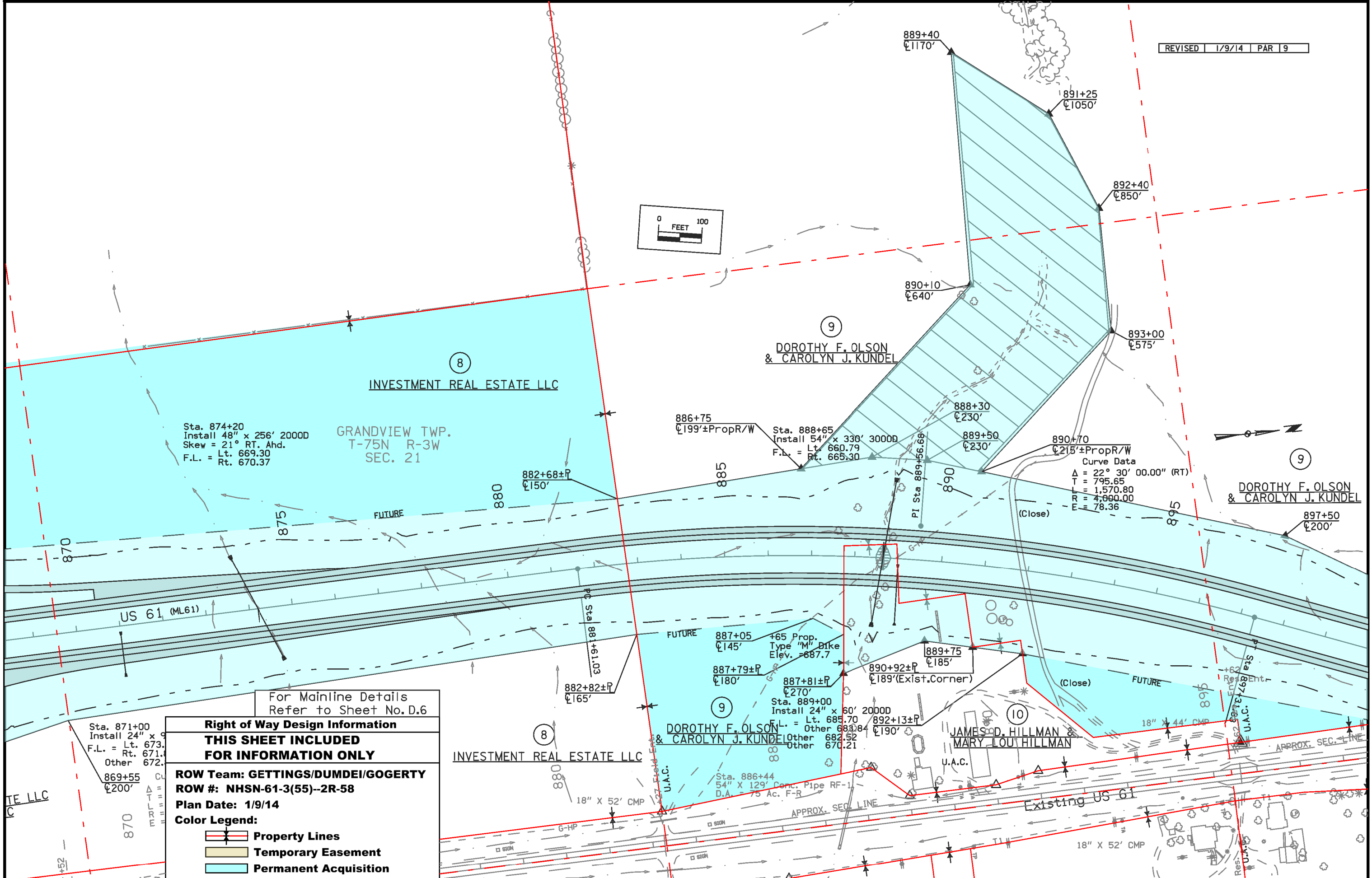
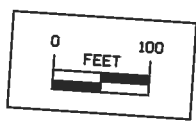
Curve Data
 $\Delta = 0^{\circ} 57' 34.51''$ (RT)
 $T = 300.00$
 $L = 599.99$
 $RR = 35,824.44$
 $E = 1.26$

Curve Data
 $\Delta = 2^{\circ} 10' 42.82''$ (RT)
 $T = 321.23$
 $L = 642.38$
 $RR = 16,894.55$
 $E = 3.05$

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

8A
8B
CARNER, INC.
LOUISA COUNTY AREA
VIETNAM VETERANS

8E
KAREN J. SCHANTZ



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

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

DOROTHY F. OLSON
& CAROLYN J. KUNDEL

DOROTHY F. OLSON
& CAROLYN J. KUNDEL

DOROTHY F. OLSON
& CAROLYN J. KUNDEL

JAMES D. HILLMAN &
MARY LOU HILLMAN

For Mainline Details Refer to Sheet No. D.6

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

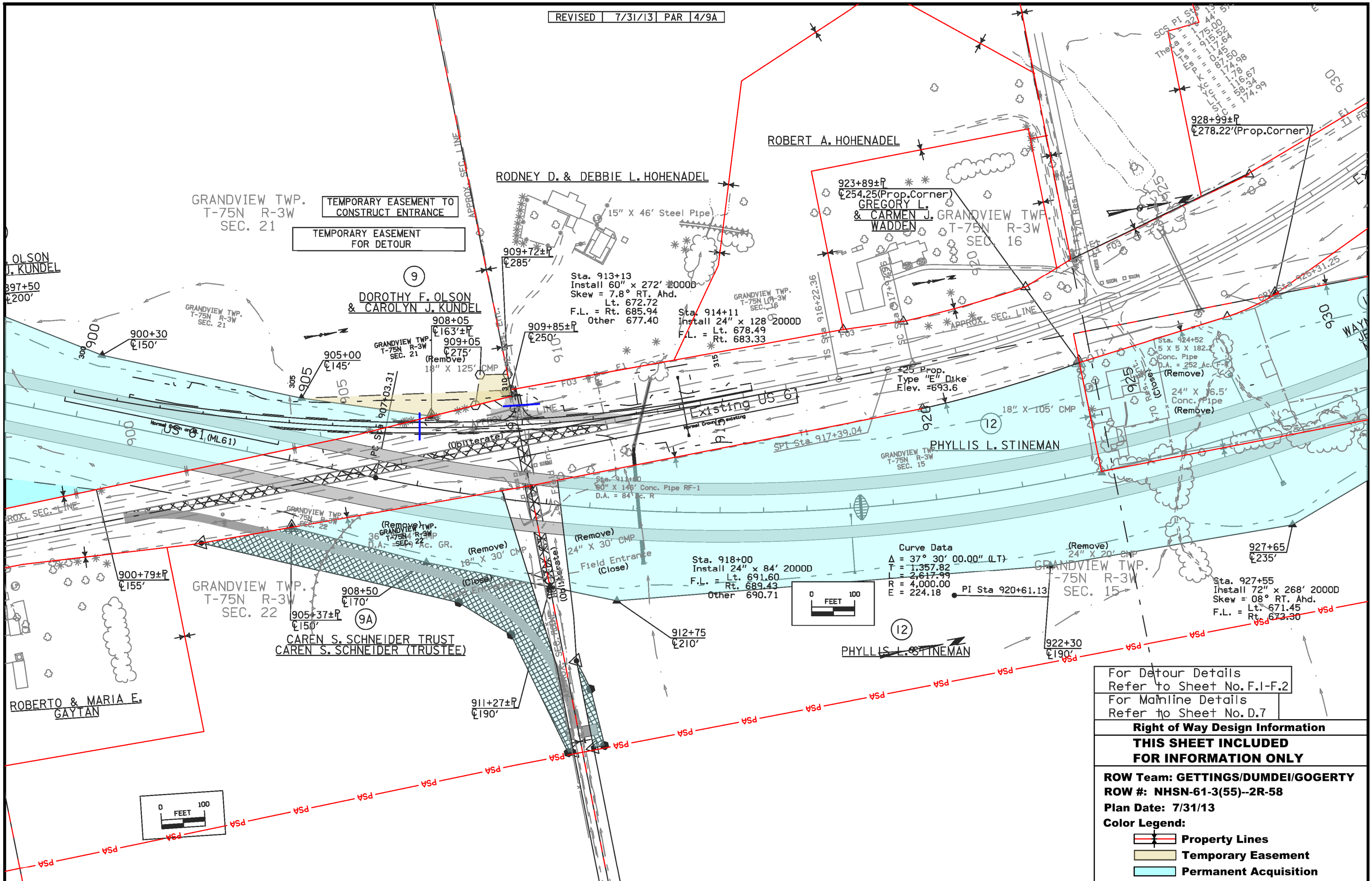
ROW Team: GETTINGS/DUMDEI/GOGERTY

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

Plan Date: 1/9/14

Color Legend:

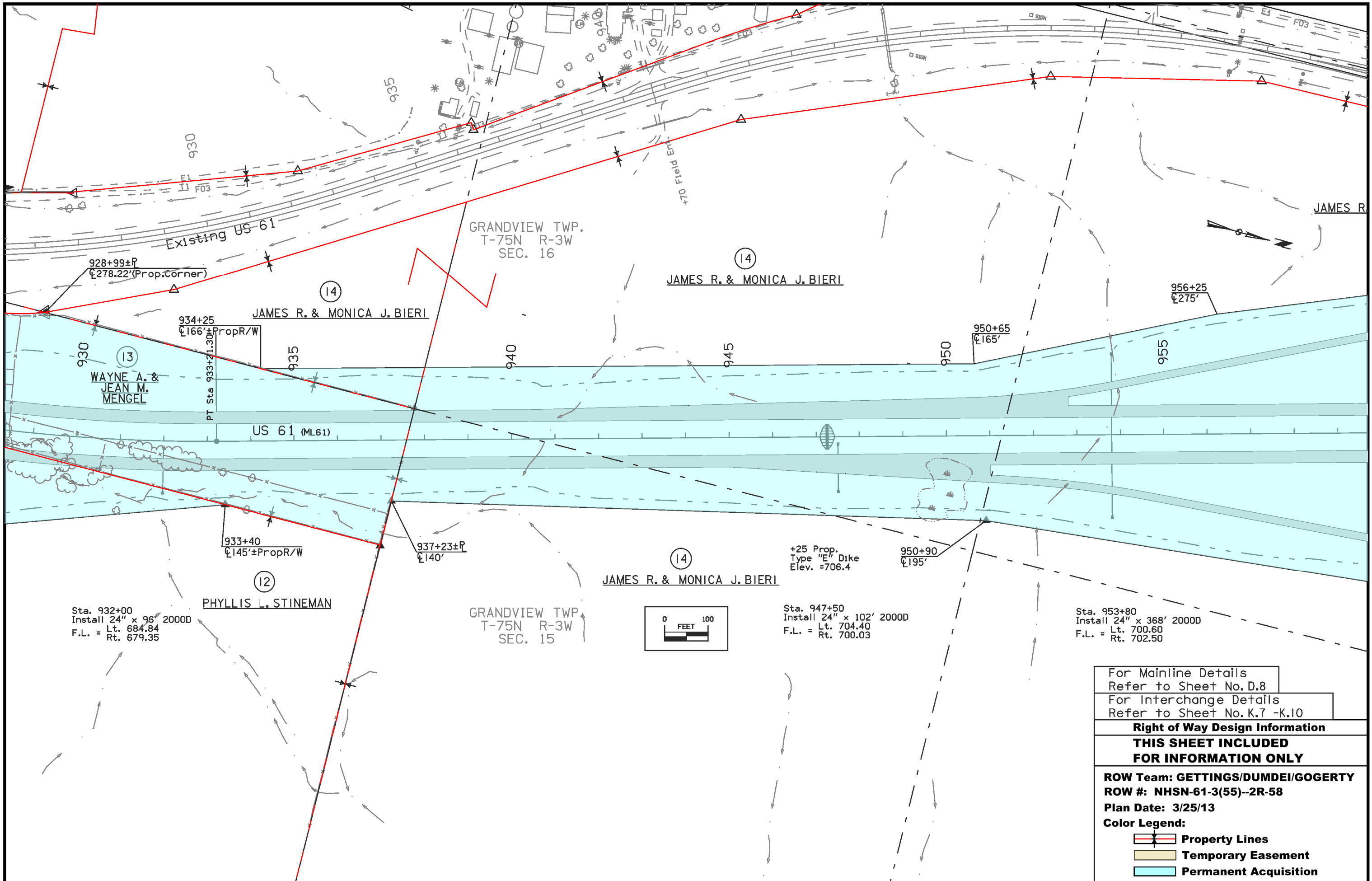
- Property Lines**
- Temporary Easement**
- Permanent Acquisition**



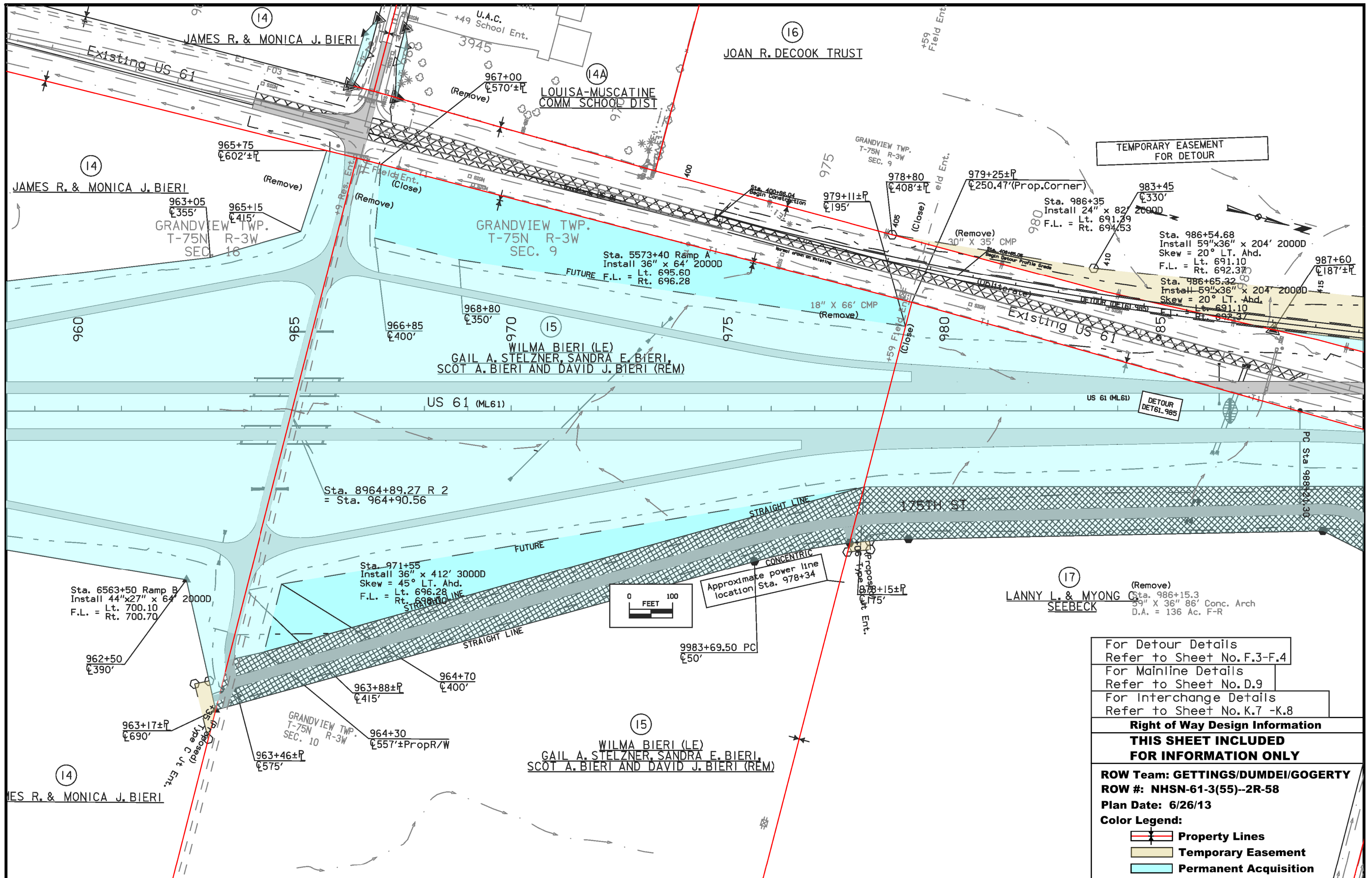
TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE
 TEMPORARY EASEMENT FOR DETOUR

For Detour Details
 Refer to Sheet No. F.1-F.2
 For Mainline Details
 Refer to Sheet No. D.7

| | |
|---|-----------------------|
| Right of Way Design Information | |
| THIS SHEET INCLUDED FOR INFORMATION ONLY | |
| ROW Team: GETTINGS/DUMDEI/GOGERTY | |
| ROW #: NHSN-61-3(55)--2R-58 | |
| Plan Date: 7/31/13 | |
| Color Legend: | |
| | Property Lines |
| | Temporary Easement |
| | Permanent Acquisition |



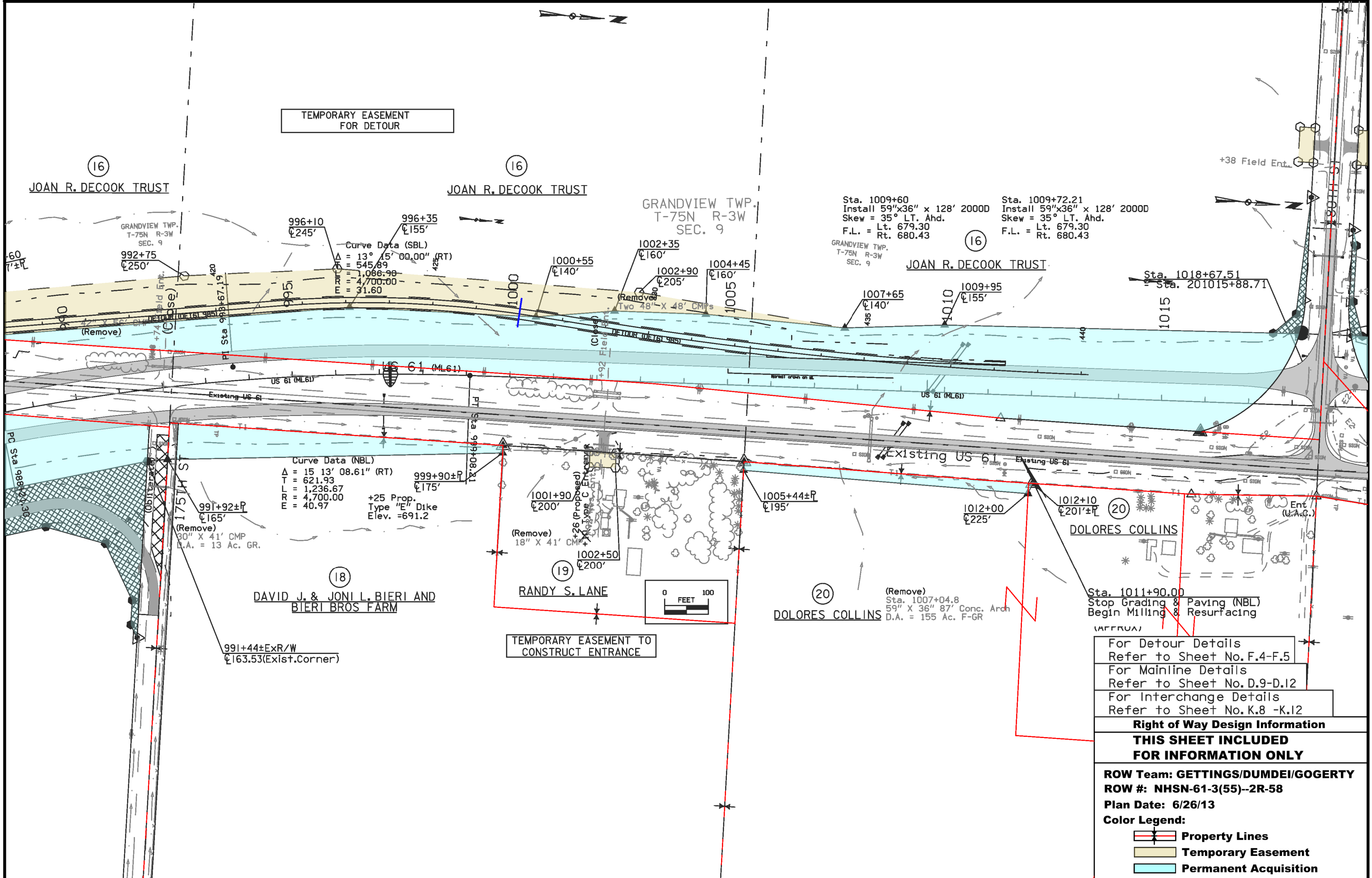
| |
|---|
| For Mainline Details Refer to Sheet No. D.8 |
| For Interchange Details Refer to Sheet No. K.7 -K.10 |
| Right of Way Design Information |
| THIS SHEET INCLUDED FOR INFORMATION ONLY |
| ROW Team: GETTINGS/DUMDEI/GOGERTY |
| ROW #: NHSN-61-3(55)--2R-58 |
| Plan Date: 3/25/13 |
| Color Legend: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



TEMPORARY EASEMENT FOR DETOUR

For Detour Details
Refer to Sheet No. F.3-F.4
For Mainline Details
Refer to Sheet No. D.9
For Interchange Details
Refer to Sheet No. K.7 -K.8

Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY
ROW Team: GETTINGS/DUMDEI/GOGERTY
ROW #: NHSN-61-3(55)--2R-58
Plan Date: 6/26/13
Color Legend:
 Property Lines
 Temporary Easement
 Permanent Acquisition



TEMPORARY EASEMENT
FOR DETOUR

(16)
JOAN R. DECOOK TRUST

(16)
JOAN R. DECOOK TRUST

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

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

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

(16)
JOAN R. DECOOK TRUST

Sta. 1018+67.51
Sta. 201015+88.71

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

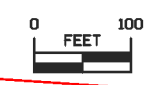
(18)
DAVID J. & JONI L. BIERI AND
BIERI BROS FARM

(19)
RANDY S. LANE

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

(20)
DOLORES COLLINS

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



TEMPORARY EASEMENT TO
CONSTRUCT ENTRANCE

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

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

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

Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

T-75N R-3W
SEC. 4

REVISED 1/13/14 PAR 21, 23R

TEMPORARY EASEMENT TO
CONSTRUCT ENTRANCE

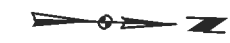
(23)
MARK A. STOUT

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

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

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

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



(21)
JAMES R. & MONICA J. BIERI

(23R)
DAKOTA, MINNESOTA
& EASTERN RR

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

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

1042+45
±190'

1043+25
±190'

1044+00
±165'

(Proposed)
18" Unclassified

PI Sta 1046+31.83

1035+00
±142±PropR/W

1036+79±P
±165'

(Remove)
10" 109±
41' CMP

(Proposed)
+70 Typ. Ent.
±63 Field Ent.

Sta. 1049+35.53
End Milling
& Resurfacing

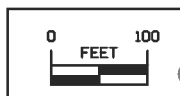
US 61 (ML61)

Existing US 61

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

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

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



(23R)
DAKOTA, MINNESOTA
& EASTERN RR

JOHN T. &
LINDA S. VERTINK

BRUCE & VICKIE COLBURN, LLC

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

TODD J. &
SHELLY S. STURMS

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

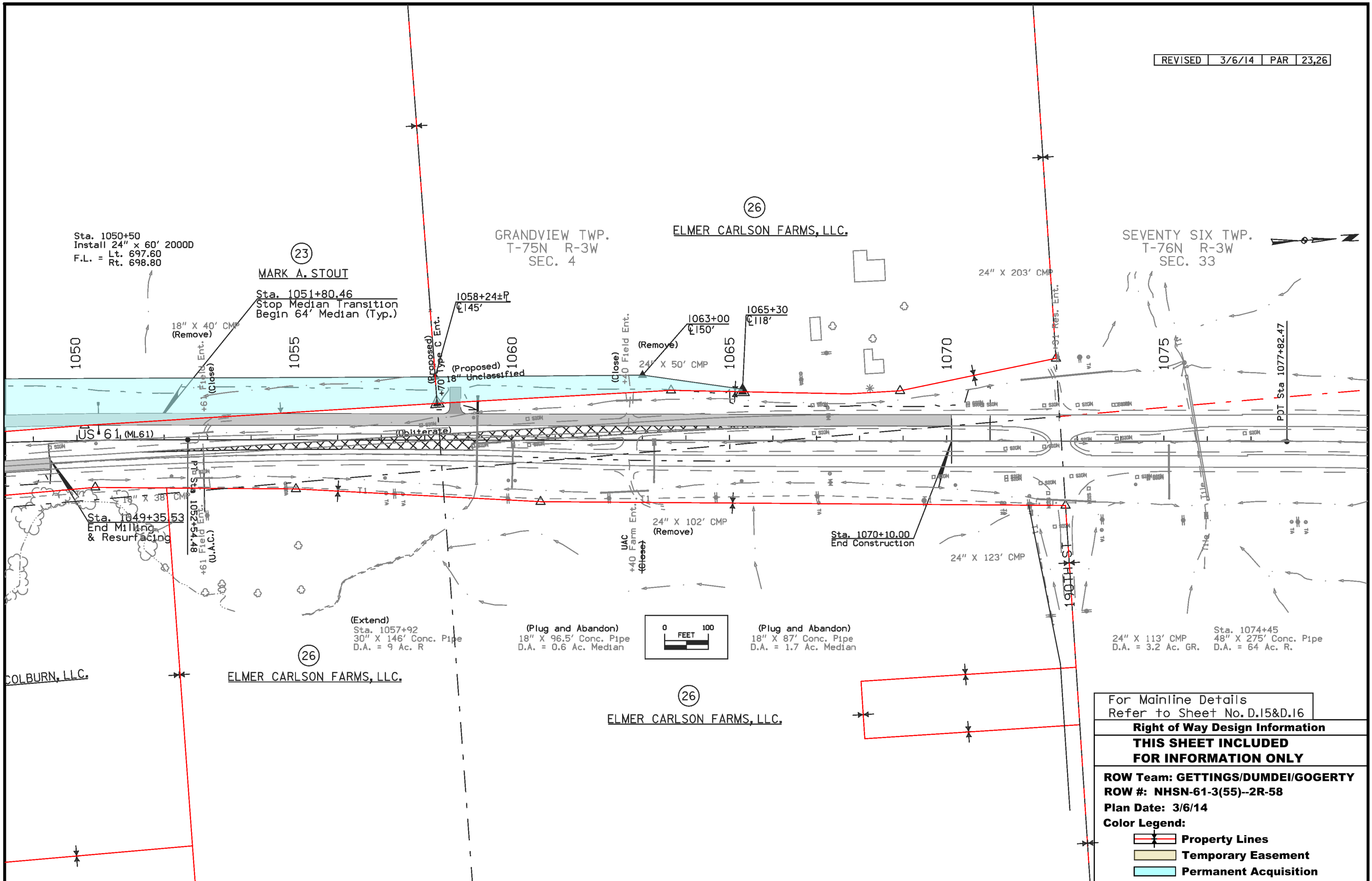
Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

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

Plan Date: 3/5/14

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition



For Mainline Details
Refer to Sheet No. D.15&D.16

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

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

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

7 DONALD L. & SHARON G. VEACH

5 ROYCE L. BONNICHSEN & THOMAS R. BONNICHSEN

6 RANDELL L. VEACH

5 ROYCE L. BONNICHSEN & THOMAS R. BONNICHSEN

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

2803+80
±55'
2803+25
±36'±ExR/W

2805+15±ExR/W
±60'

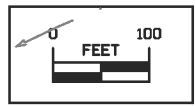
2803+74.91 PC
±60'

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

2803+25
±30'±ExR/W

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

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



Sta. 2818+73.21
End Granular
Begin Paving

2815+64.59 PC
±60'

2817+14.59 PI
±60'

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

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

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

Sta. 2819+50.21
= Sta. 2819+50.21

145th Street

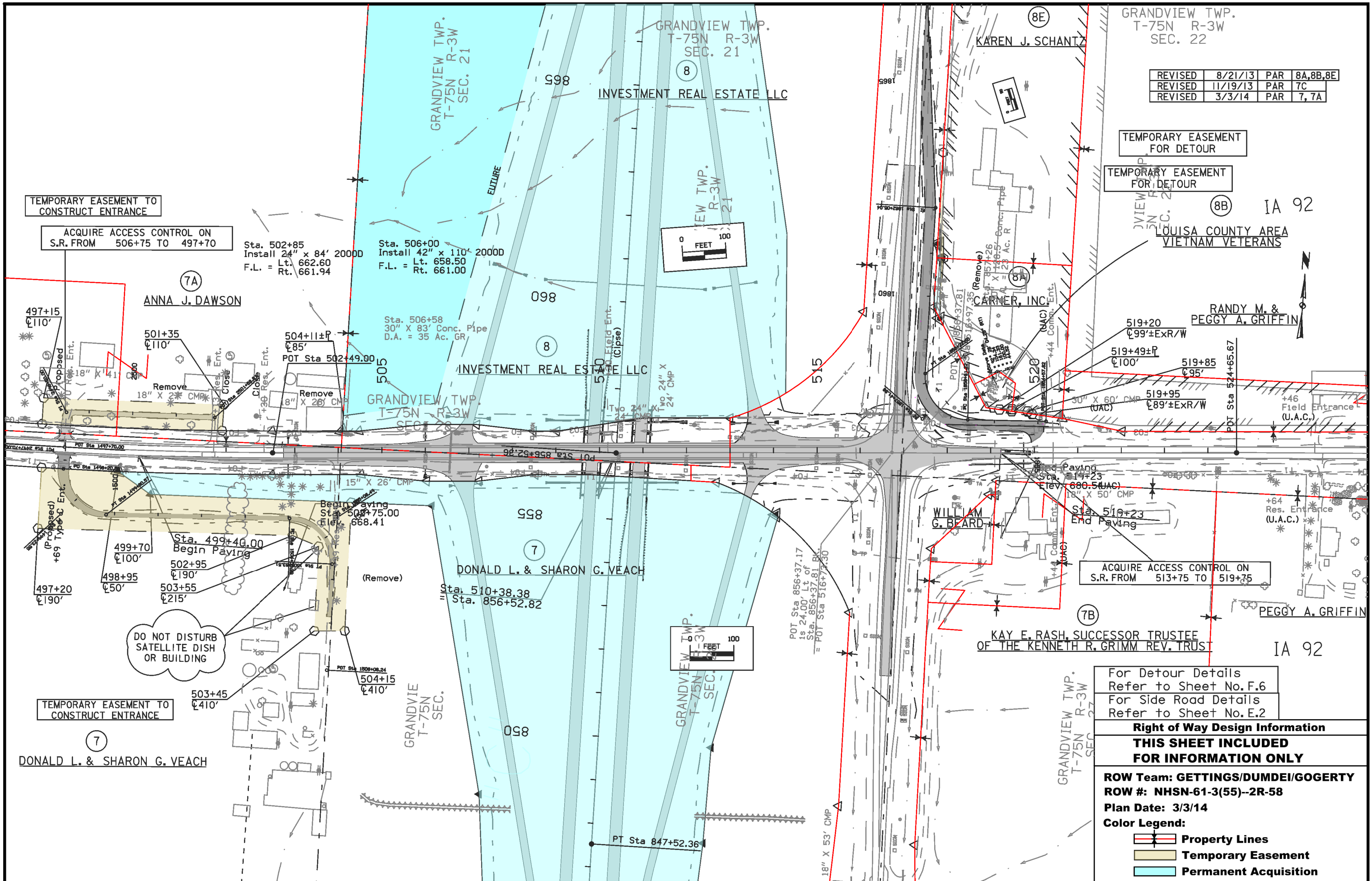
For Side Road Details
Refer to Sheet No. E.1

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

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

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition



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

TEMPORARY EASEMENT FOR DETOUR

TEMPORARY EASEMENT FOR DETOUR

LOUISA COUNTY AREA VIETNAM VETERANS

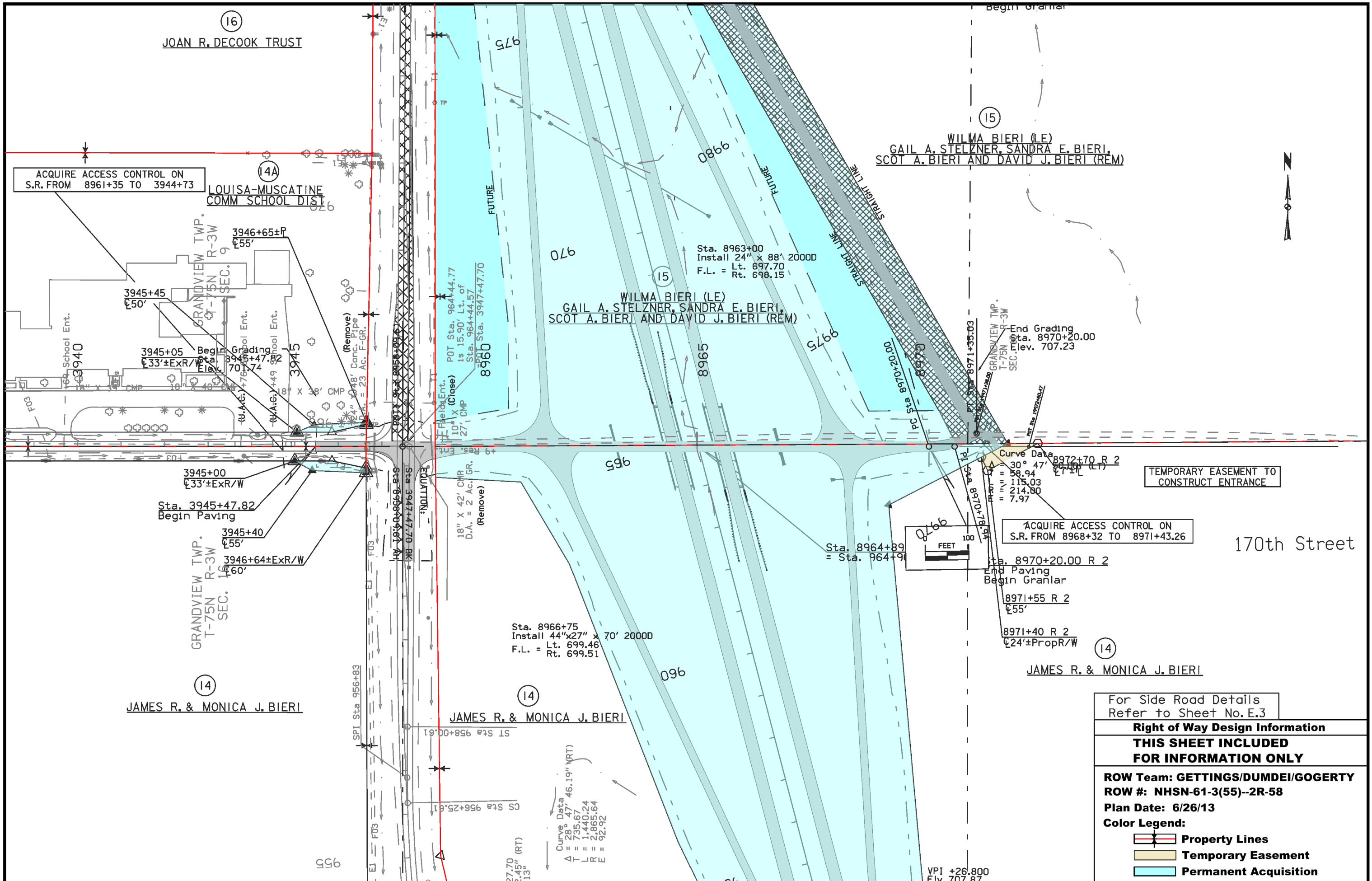
ACQUIRE ACCESS CONTROL ON S.R. FROM 513+75 TO 519+75

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

Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY

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

- Property Lines
- Temporary Easement
- Permanent Acquisition



(16)
JOAN R. DECOOK TRUST

(15)
WILMA BIERI (LE)
GAIL A. STELZNER, SANDRA E. BIERI,
SCOT A. BIERI AND DAVID J. BIERI (REM)

(14A)
LOUISA-MUSCATINE
COMM SCHOOL DIST

(15)
WILMA BIERI (LE)
GAIL A. STELZNER, SANDRA E. BIERI,
SCOT A. BIERI AND DAVID J. BIERI (REM)

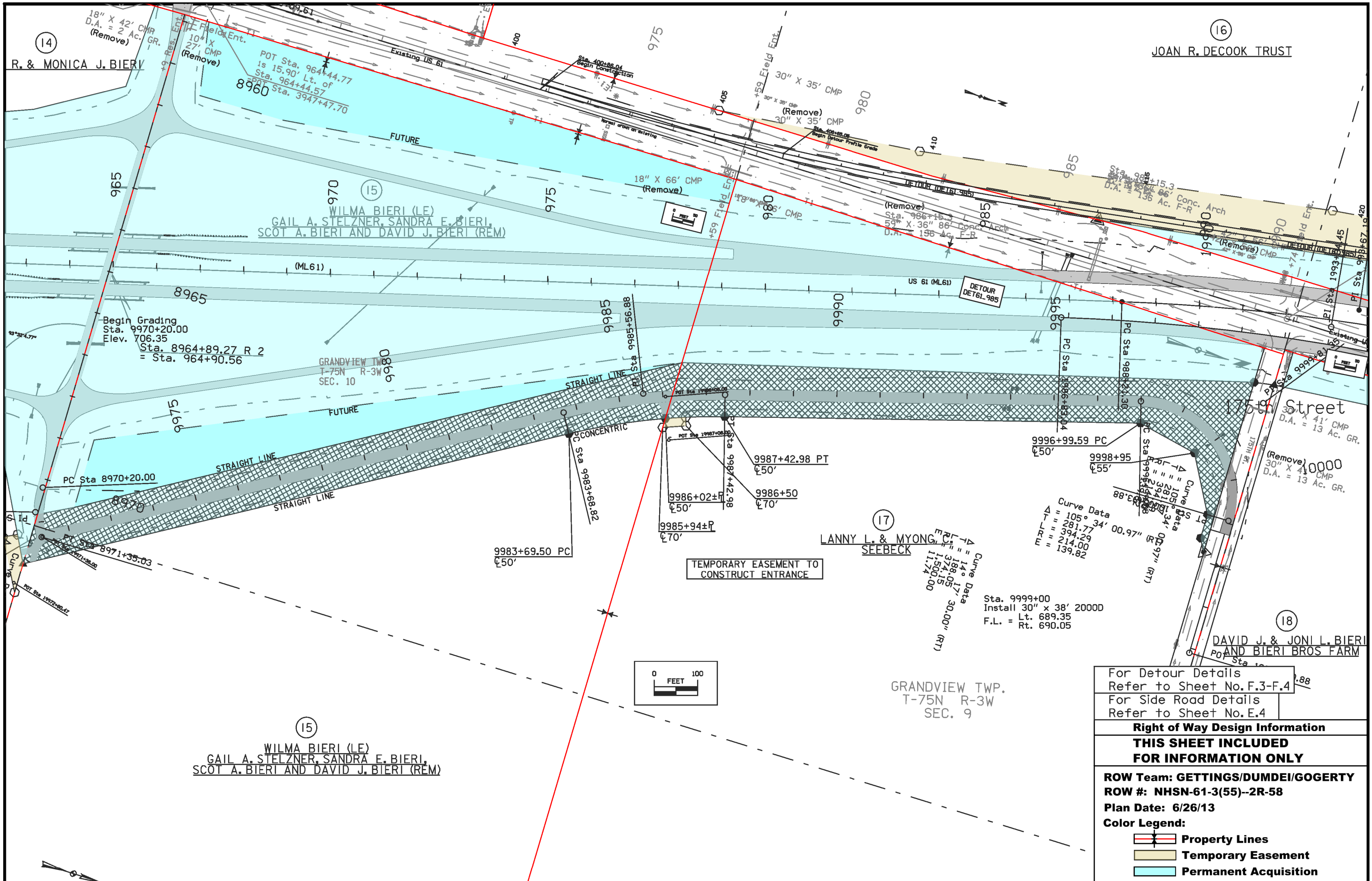
(14)
JAMES R. & MONICA J. BIERI

(14)
JAMES R. & MONICA J. BIERI

(14)
JAMES R. & MONICA J. BIERI

170th Street

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



16
JOAN R. DECOOK TRUST

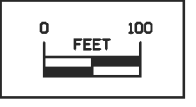
14
R. & MONICA J. BIERI

15
WILMA BIERI (LE)
GAIL A. STELZNER, SANDRA E. BIERI,
SCOT A. BIERI AND DAVID J. BIERI (REM)

17
LANNY L. & MYONG
SEEBECK

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

15
WILMA BIERI (LE)
GAIL A. STELZNER, SANDRA E. BIERI,
SCOT A. BIERI AND DAVID J. BIERI (REM)



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

For Detour Details
Refer to Sheet No. F.3-F.4

For Side Road Details
Refer to Sheet No. E.4

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

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

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

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

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

Begin Grading
 Sta. 10001+25.00
 Elev. 693.61

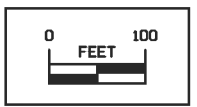
POT Sta. 10004+10.88

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

(17)
 LANNY L. & MYONG C.
 SEEBECK

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

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



175th Street

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

Right of Way Design Information

**THIS SHEET INCLUDED
 FOR INFORMATION ONLY**

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

Color Legend:

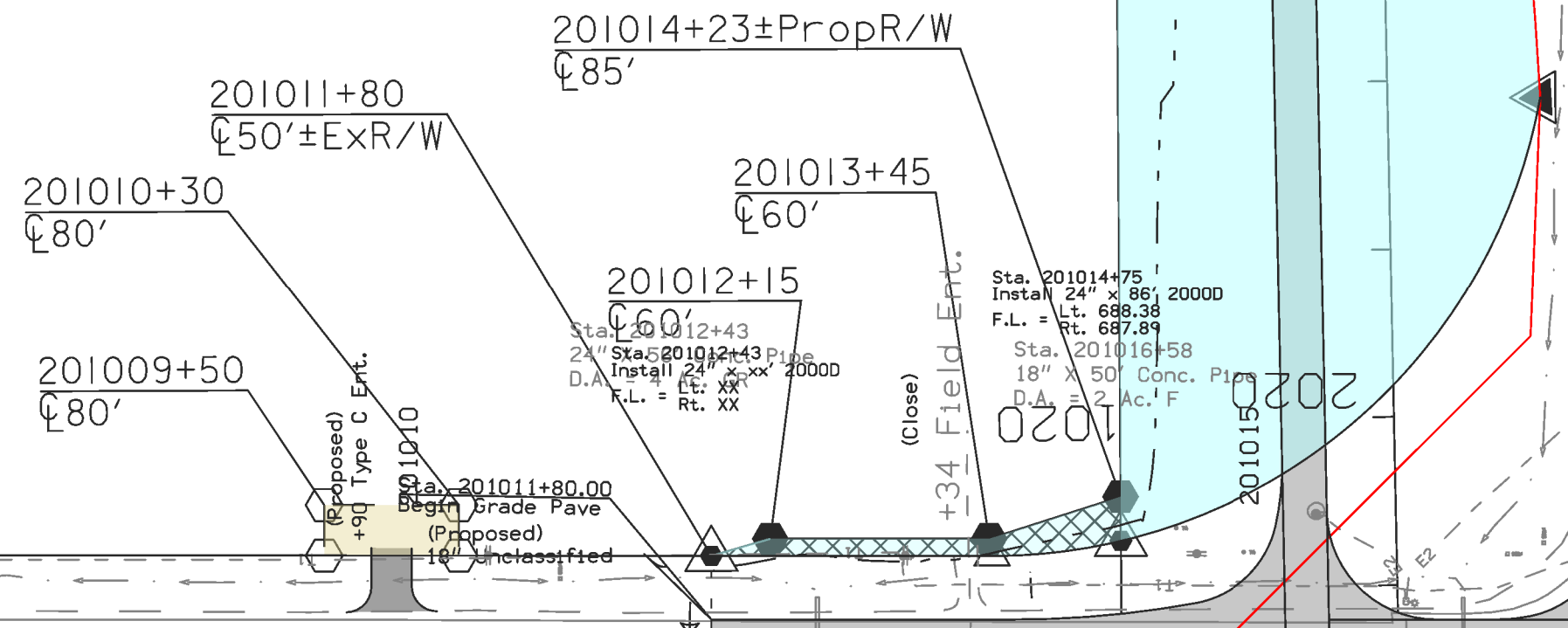
- Property Lines
- Temporary Easement
- Permanent Acquisition

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

TEMPORARY EASEMENT TO
CONSTRUCT ENTRANCE

JAMES R. & MONICA J. BIERI

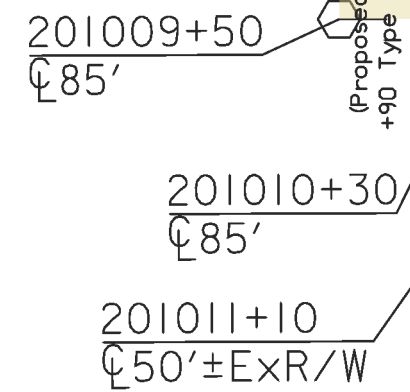
(21)



Sta. 201014+75
Instal 24" x 86' 2000D
Lt. 688.38
F.L. = Rt. 687.89
Sta. 201016+58
18" x 50' Conc. Pipe
D.A. = 2 Ac. F

Sta. 201012+43
24" x 86' 2000D
Instal 24" x xx' 2000D
Lt. xx
F.L. = Rt. xx

Sta. 201011+80.00
Begin Grade Pave
(Proposed)
10" Unclassified



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

TEMPORARY EASEMENT TO
CONSTRUCT ENTRANCE

JOAN R. DECOOK TRUST

(16)

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

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

DOLORES COLLI

180th St

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

Right of Way Design Information

**THIS SHEET INCLUDED
FOR INFORMATION ONLY**

ROW Team: GETTINGS/DUMDEI/GOGERTY

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

Plan Date: 3/5/14

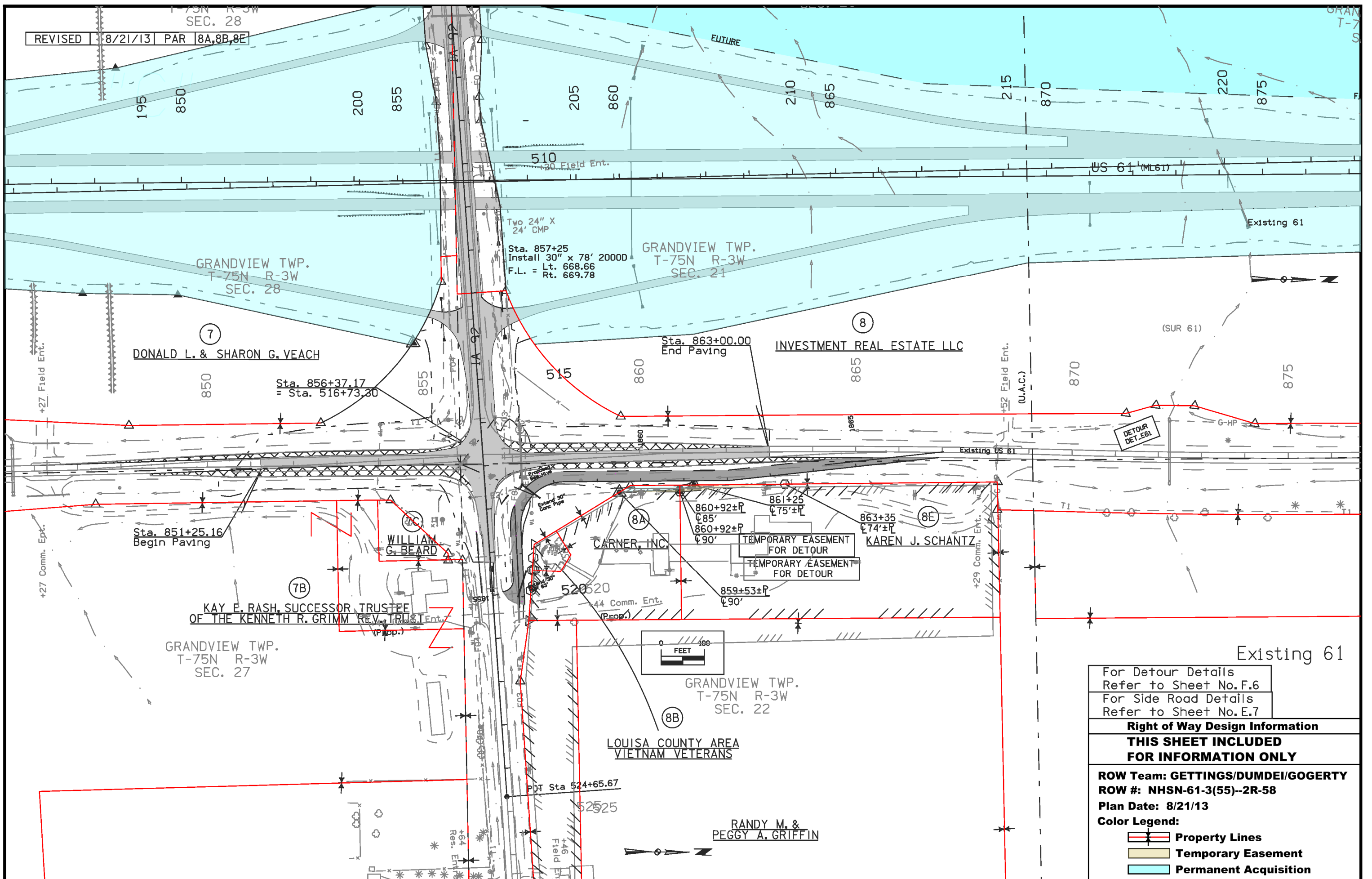
Color Legend:

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

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

T-75N R-3W SEC. 28

GRAND T-75N S

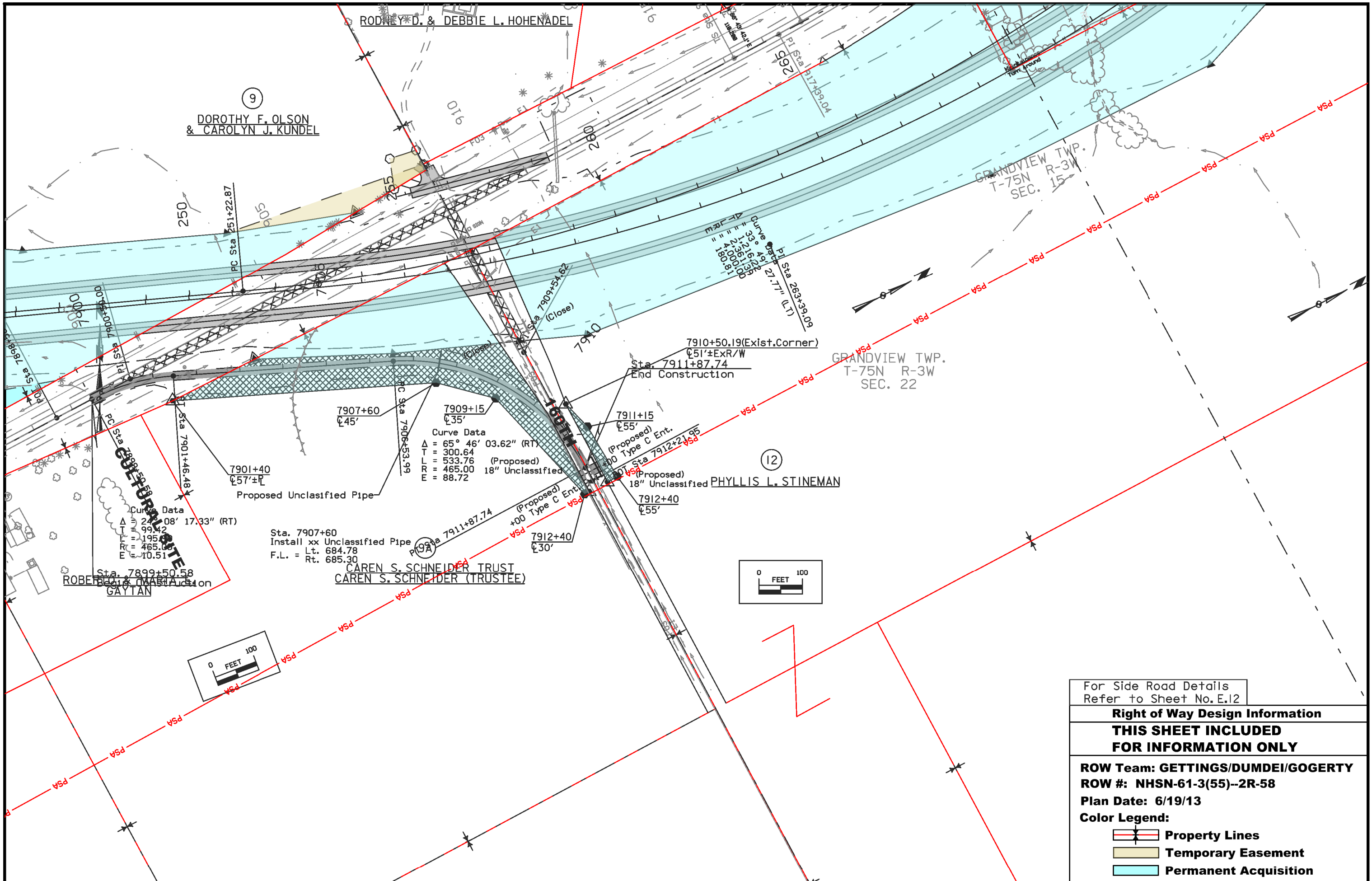


For Detour Details
Refer to Sheet No. F.6
For Side Road Details
Refer to Sheet No. E.7

Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: GETTINGS/DUMDEI/GOGERTY
ROW #: NHSN-61-3(55)--2R-58
Plan Date: 8/21/13

Color Legend:
 Property Lines
 Temporary Easement
 Permanent Acquisition



| | |
|---|------------------------------|
| For Side Road Details Refer to Sheet No. E.12 | |
| Right of Way Design Information | |
| THIS SHEET INCLUDED FOR INFORMATION ONLY | |
| ROW Team: GETTINGS/DUMDEI/GOGERTY ROW #: NHSN-61-3(55)--2R-58 Plan Date: 6/19/13 Color Legend: | |
| | Property Lines |
| | Temporary Easement |
| | Permanent Acquisition |

TRAFFIC CONTROL PLAN

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

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

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

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

COORDINATED OPERATIONS

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

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

STAGING NOTES

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

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

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

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

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

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










511 TRAVEL RESTRICTIONS

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

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

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

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




















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

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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

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

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

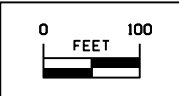
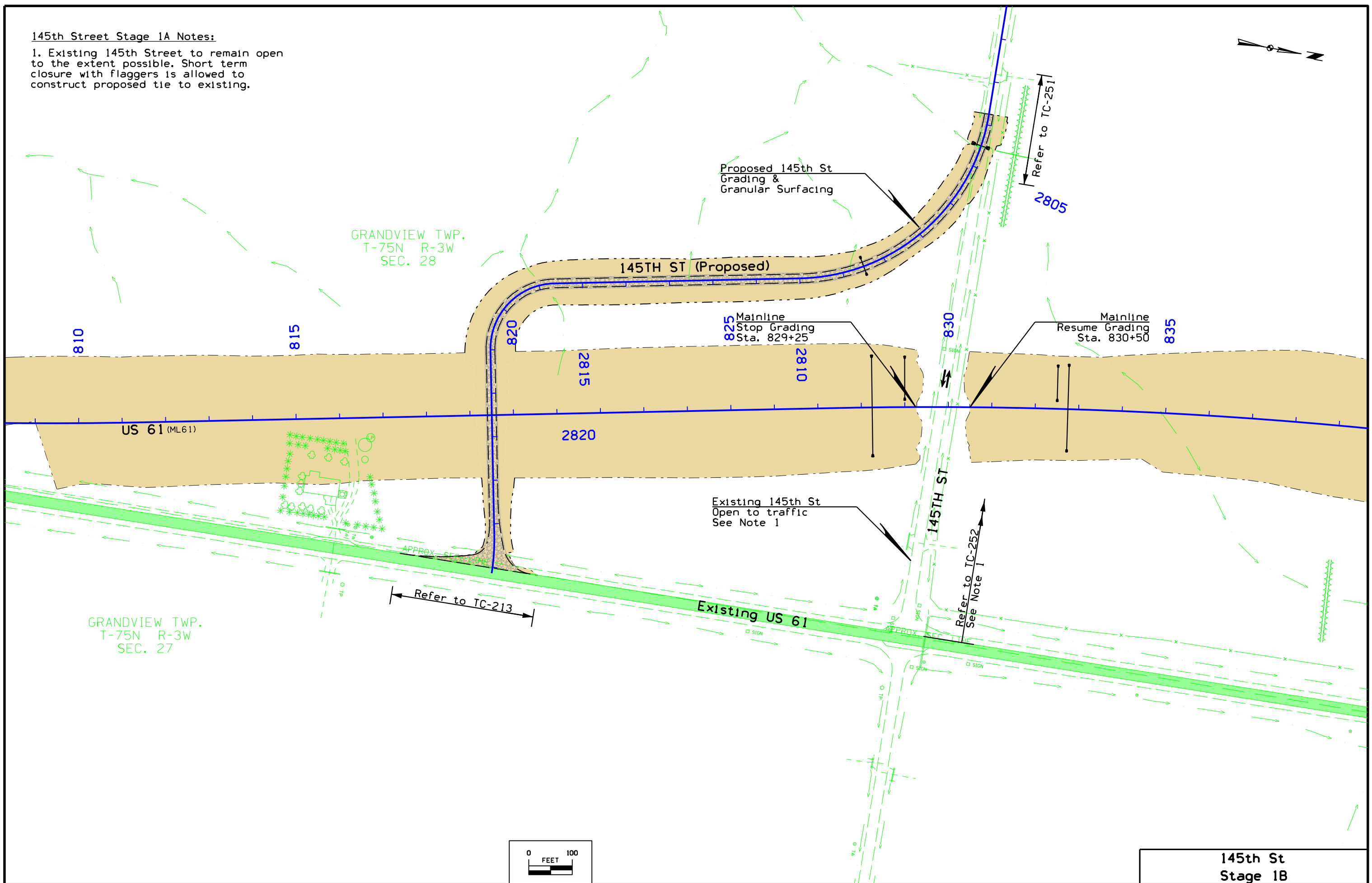
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

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

(COVERS SHEET SERIES J)

145th Street Stage 1A Notes:

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



| | |
|------------------------------|------------|
| 145th St Stage 1B | |
| SHEET NUMBER | J.3 |



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

810

815

820

825

830

835

145TH ST (Proposed)

Proposed 145th St
Open to traffic

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

US 61 (ML61)

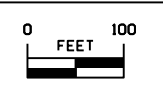
Obliterate
Existing 145th St

Entrance Drive
Grading &
Granular Surfacing

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

Existing US 61

Refer to TC-213



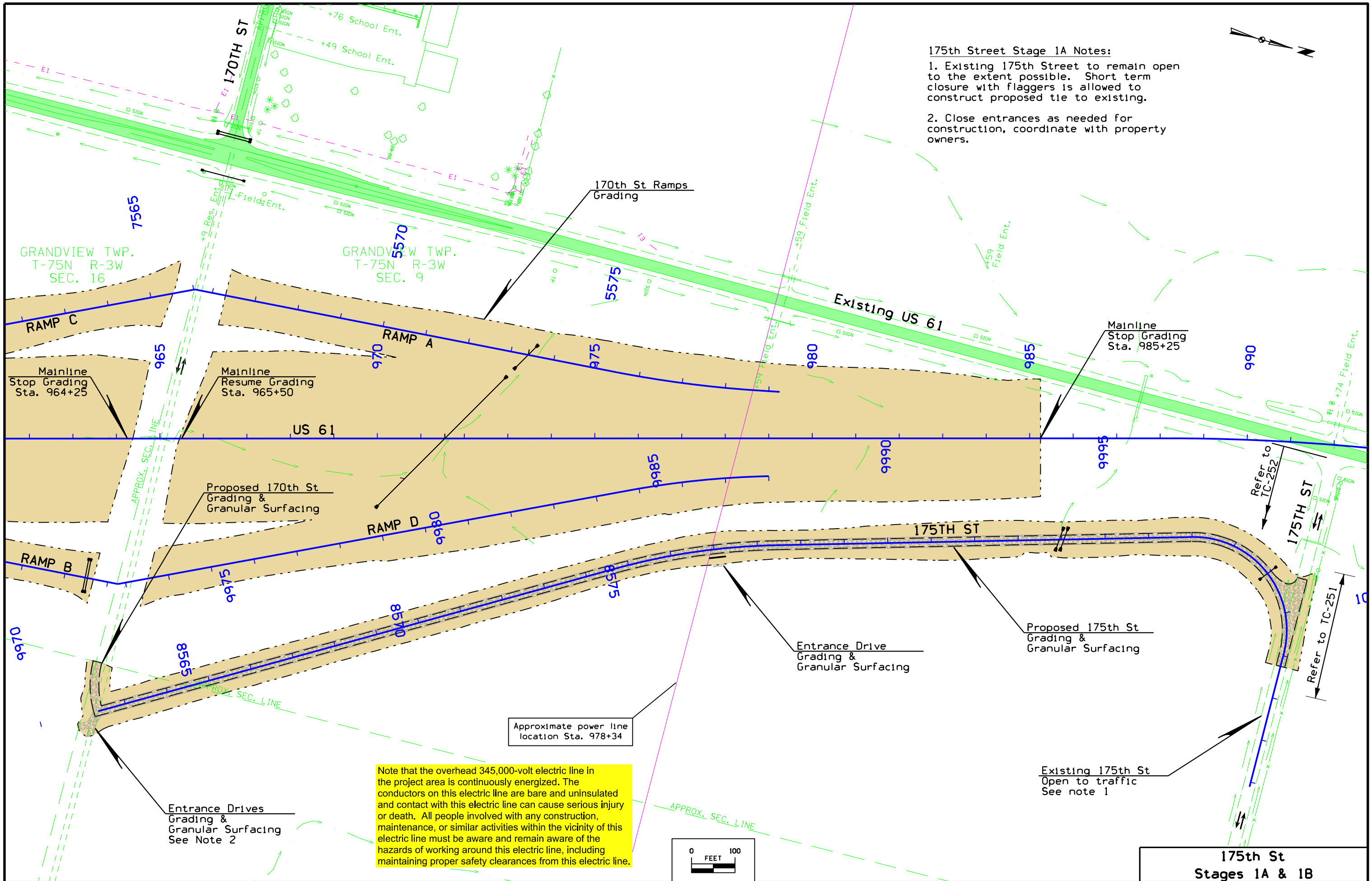
145th St
Stage 1C

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

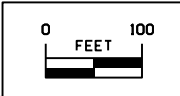


175th Street Stage 1A Notes:

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



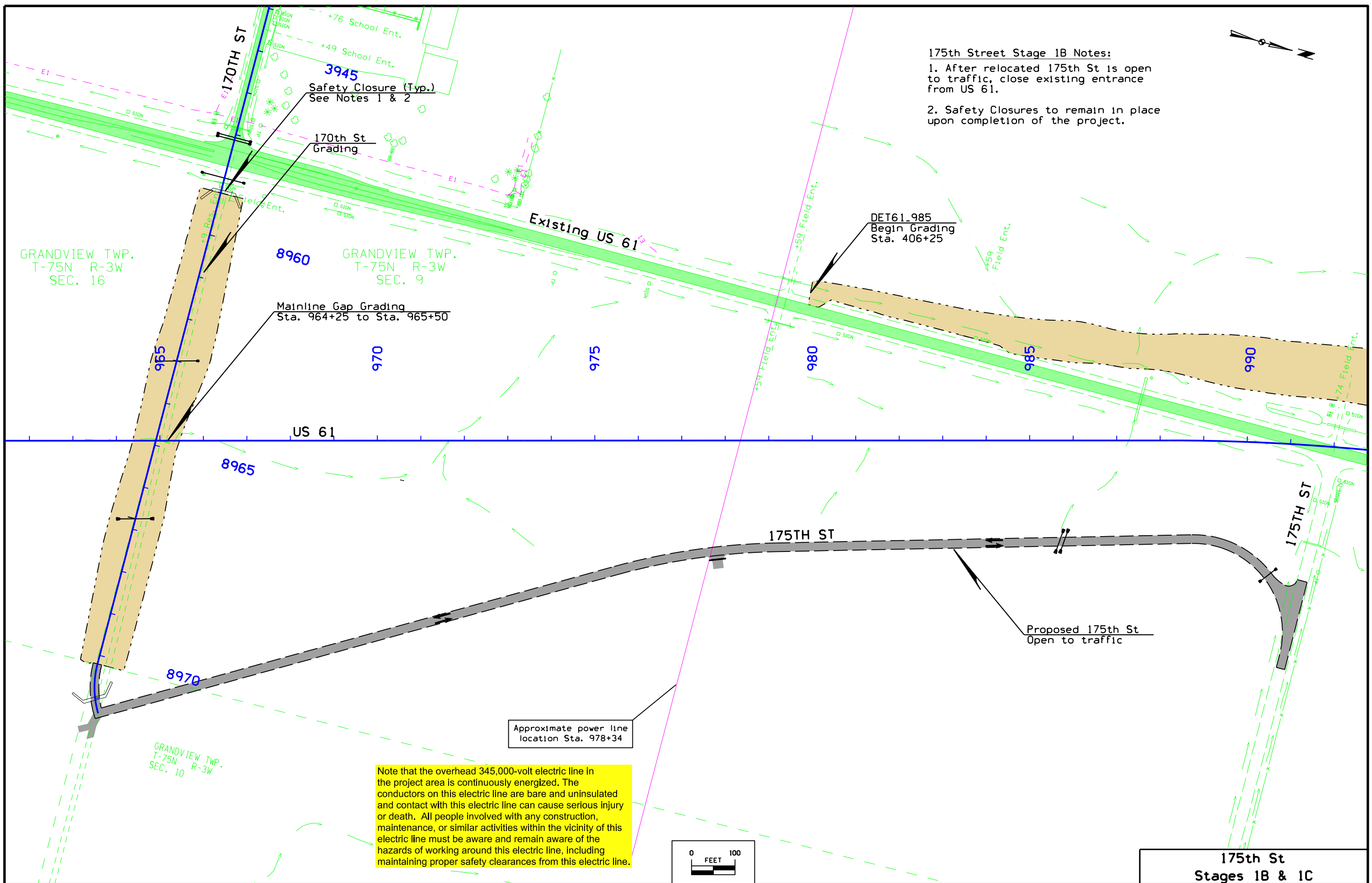
Note that the overhead 345,000-volt electric line in the project area is continuously energized. The conductors on this electric line are bare and uninsulated and contact with this electric line can cause serious injury or death. All people involved with any construction, maintenance, or similar activities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



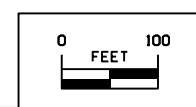
| | |
|--|-----|
| 175th St Stages 1A & 1B | |
| SHEET NUMBER | J.5 |



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



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



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

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



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

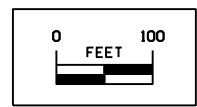
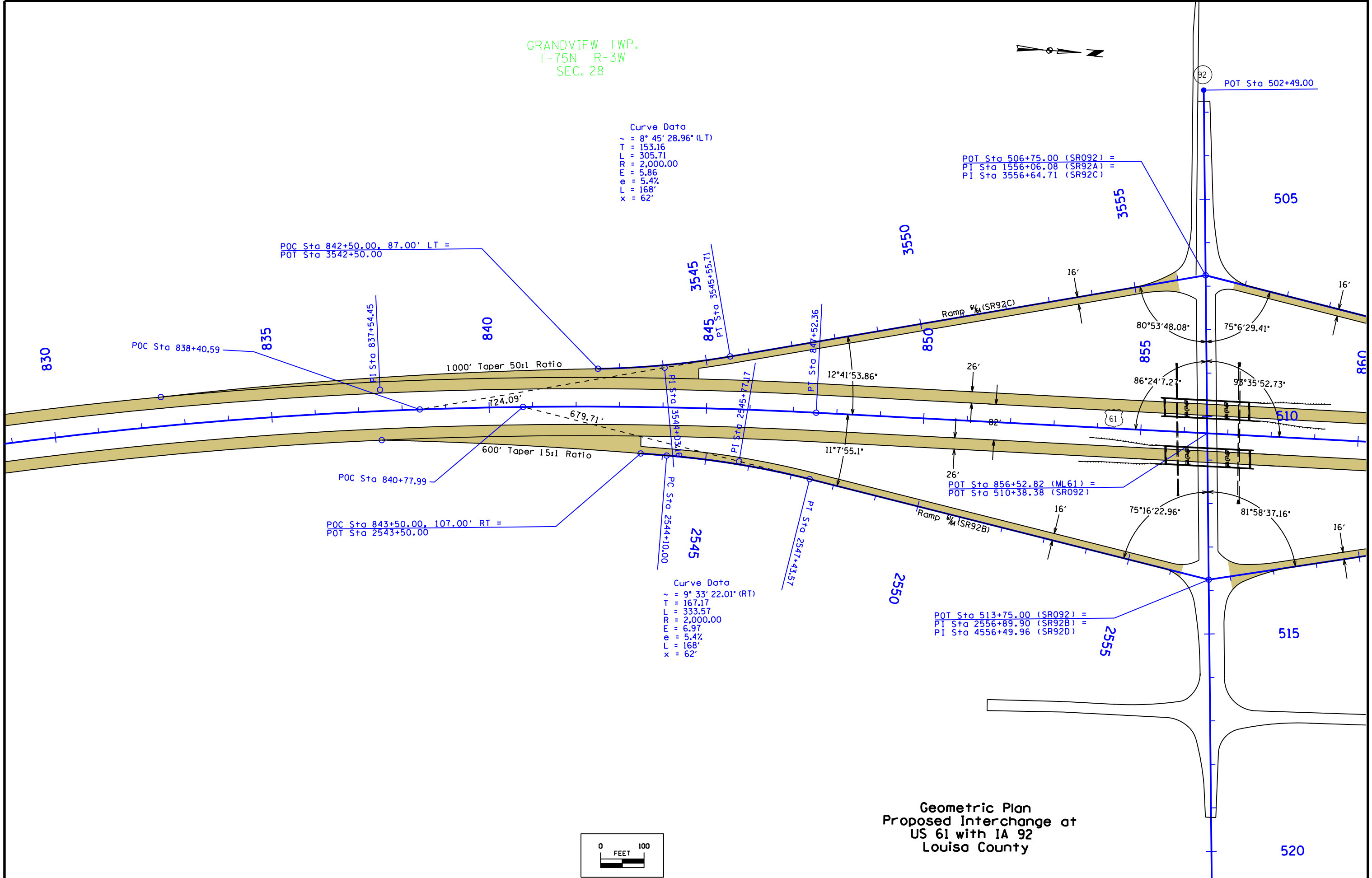
POT Sta 506+75.00 (SR92) =
 PI Sta 1556+06.08 (SR92A) =
 PI Sta 3556+64.71 (SR92C) =

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

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

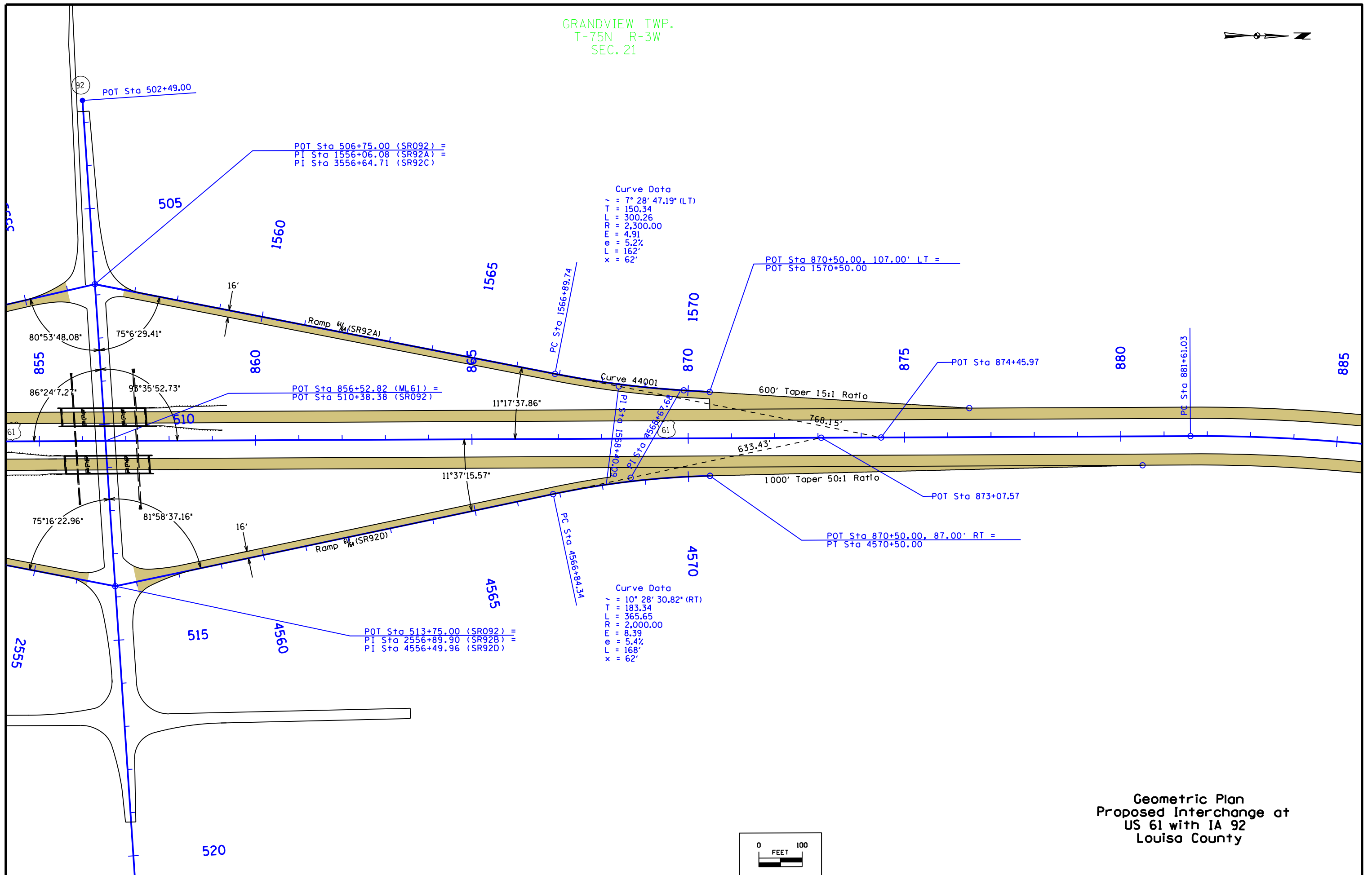
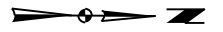
Curve Data
 Δ = 9° 33' 22.01" (RT)
 T = 167.17
 L = 333.57
 R = 2,000.00
 e = 6.97
 f = 5.4%
 L = 168'
 x = 62'

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

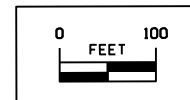


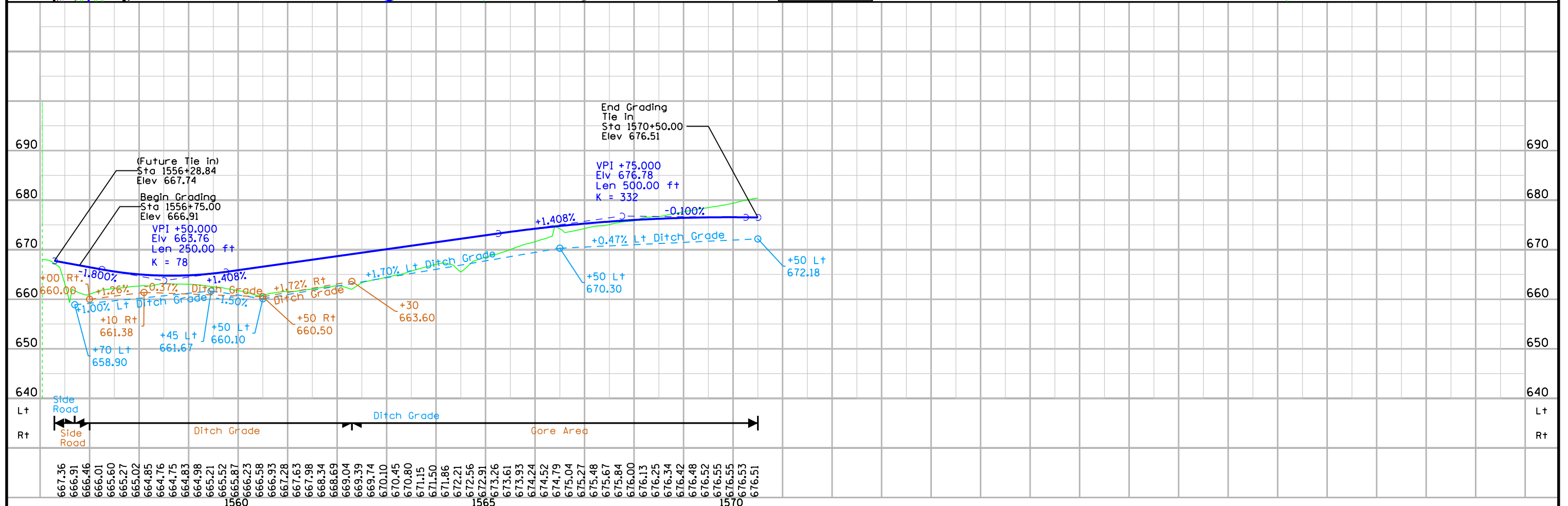
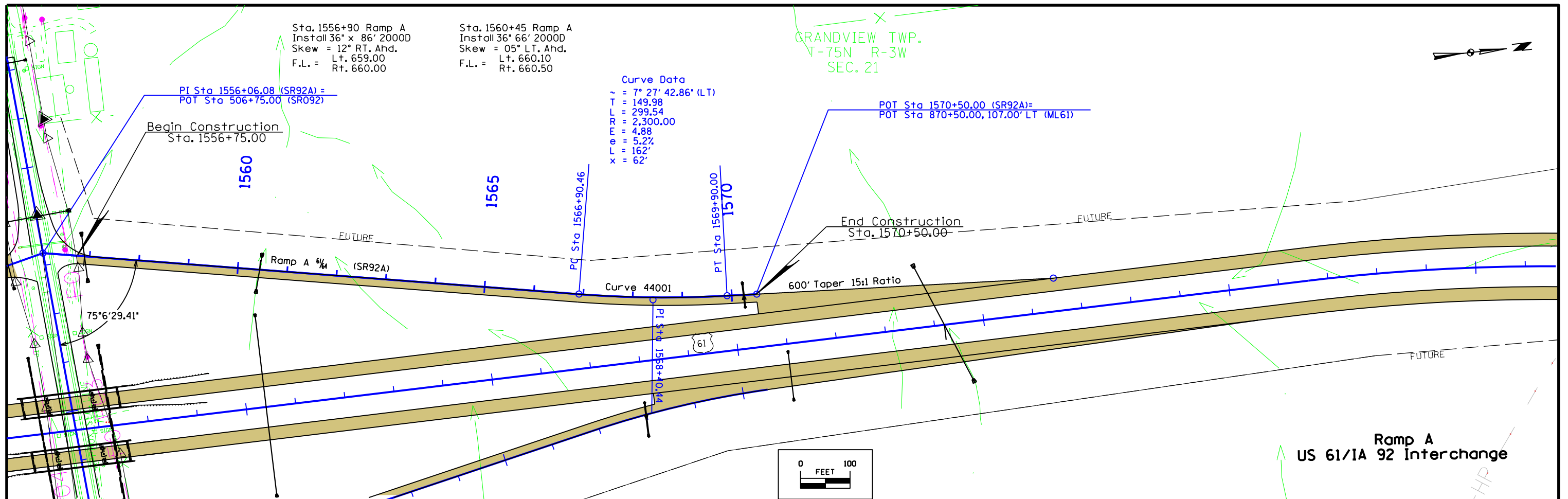
Geometric Plan
 Proposed Interchange at
 US 61 with IA 92
 Louisa County

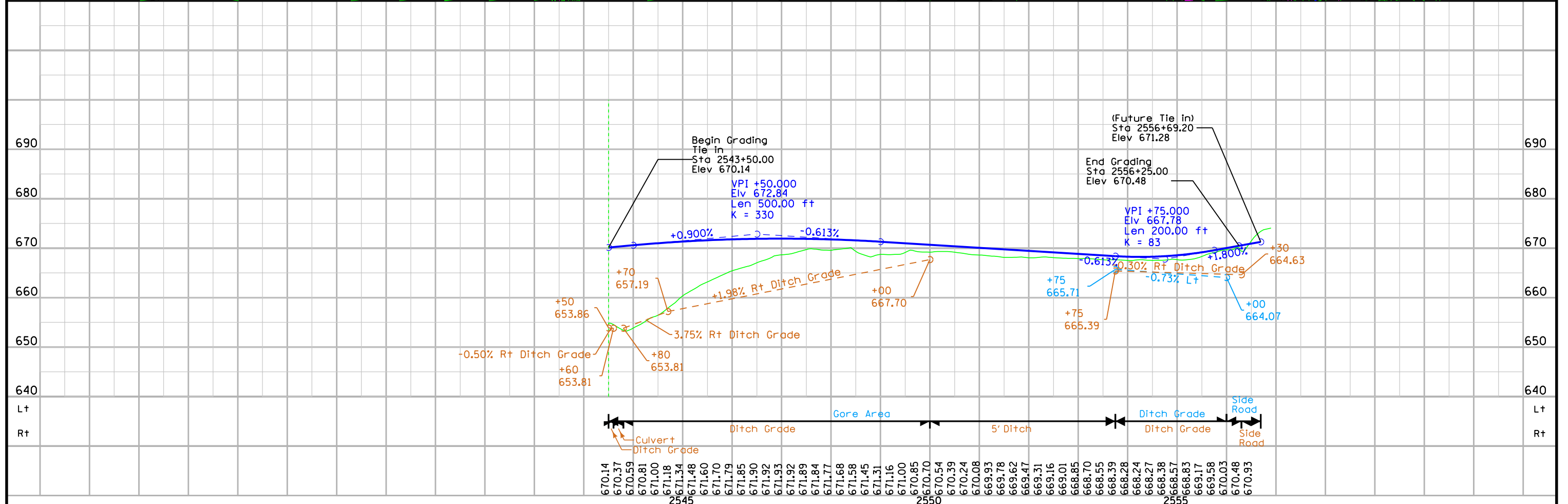
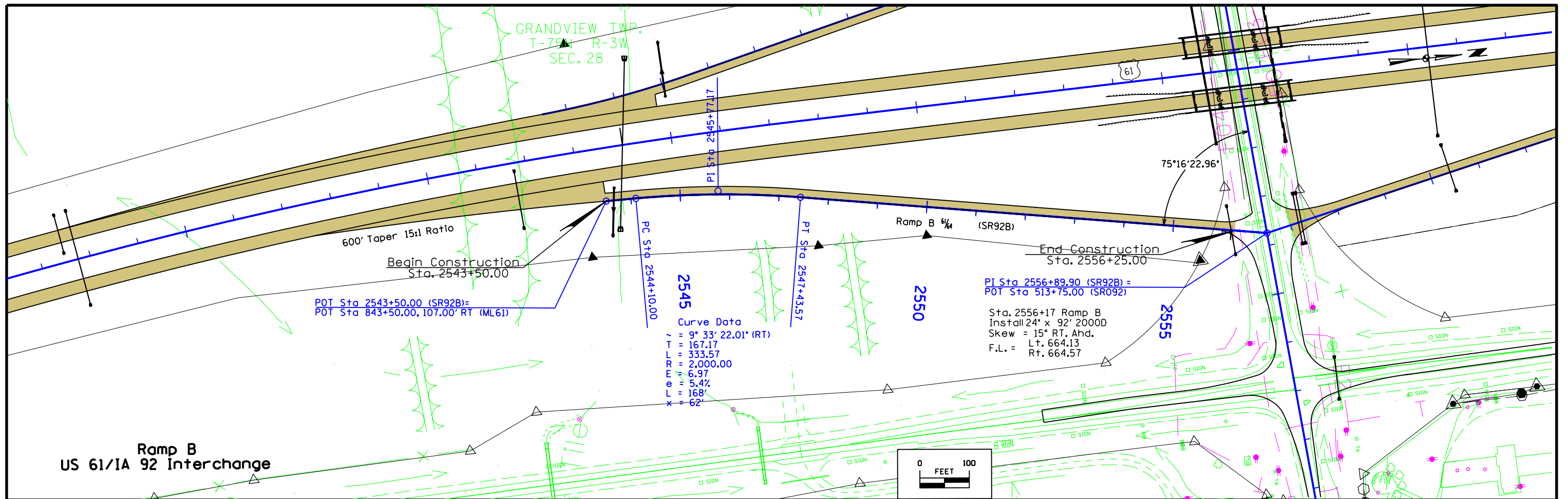
GRANDVIEW TWP.
T-75N R-3W
SEC. 21

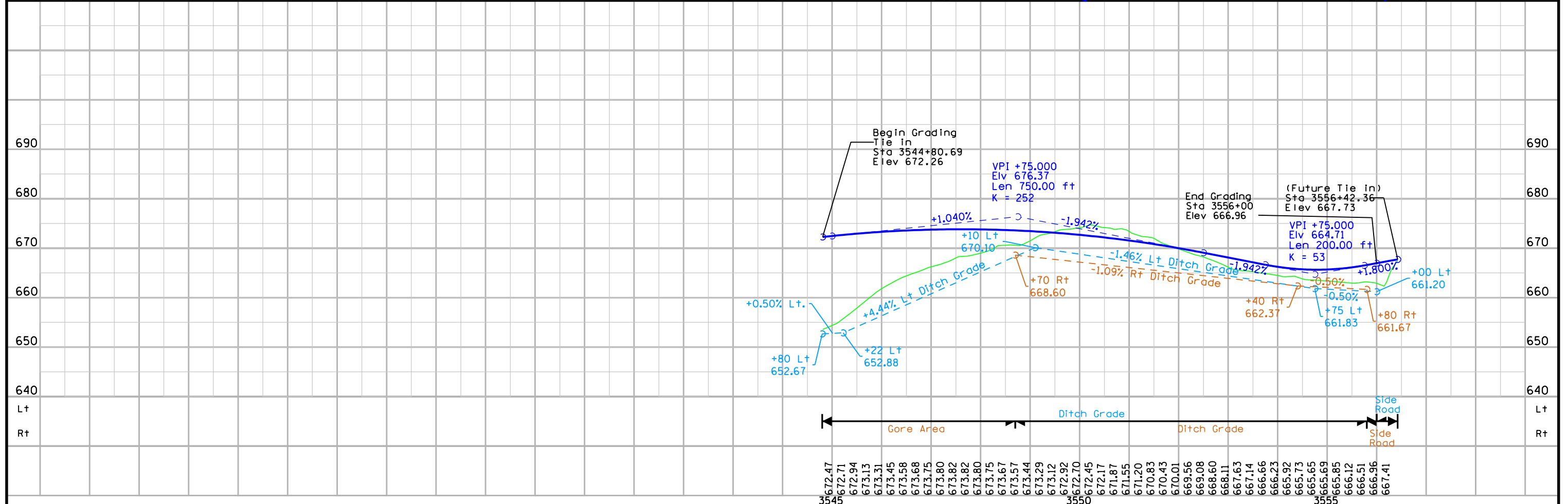
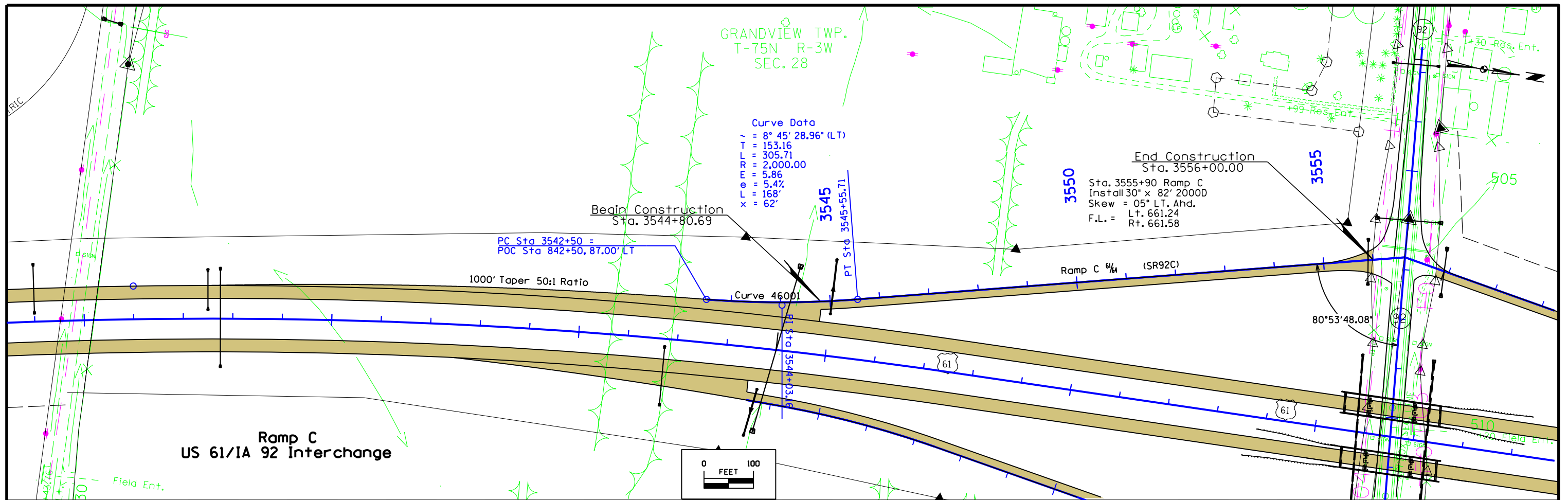


Geometric Plan
Proposed Interchange at
US 61 with IA 92
Louisa County

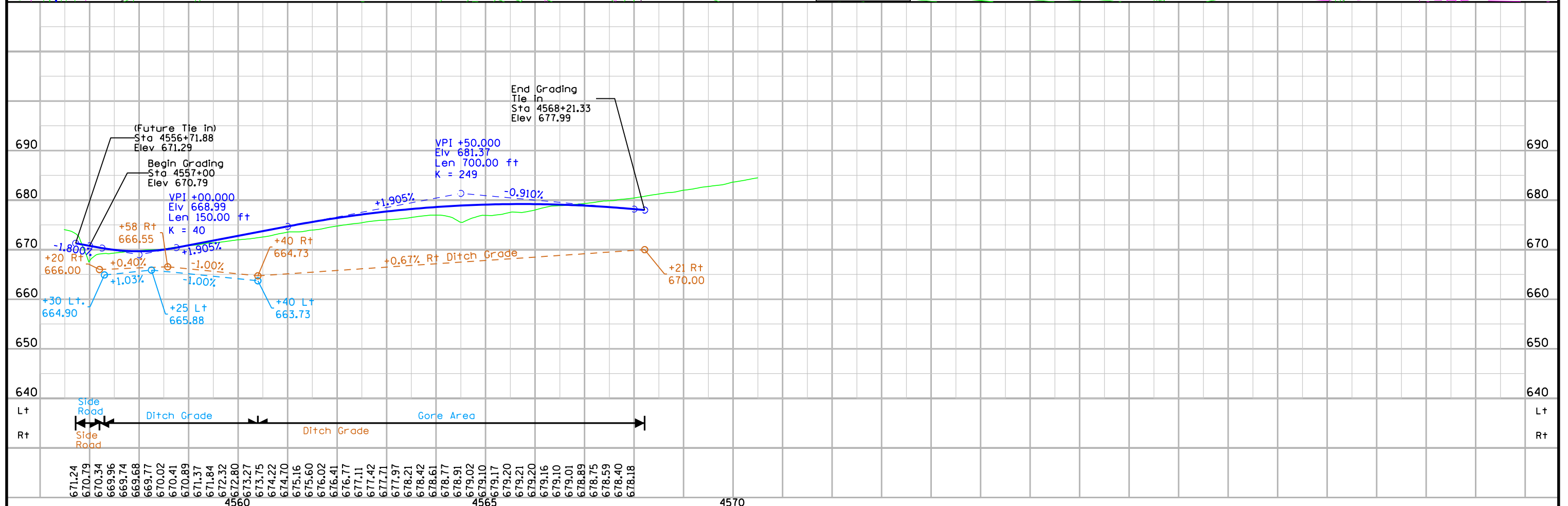
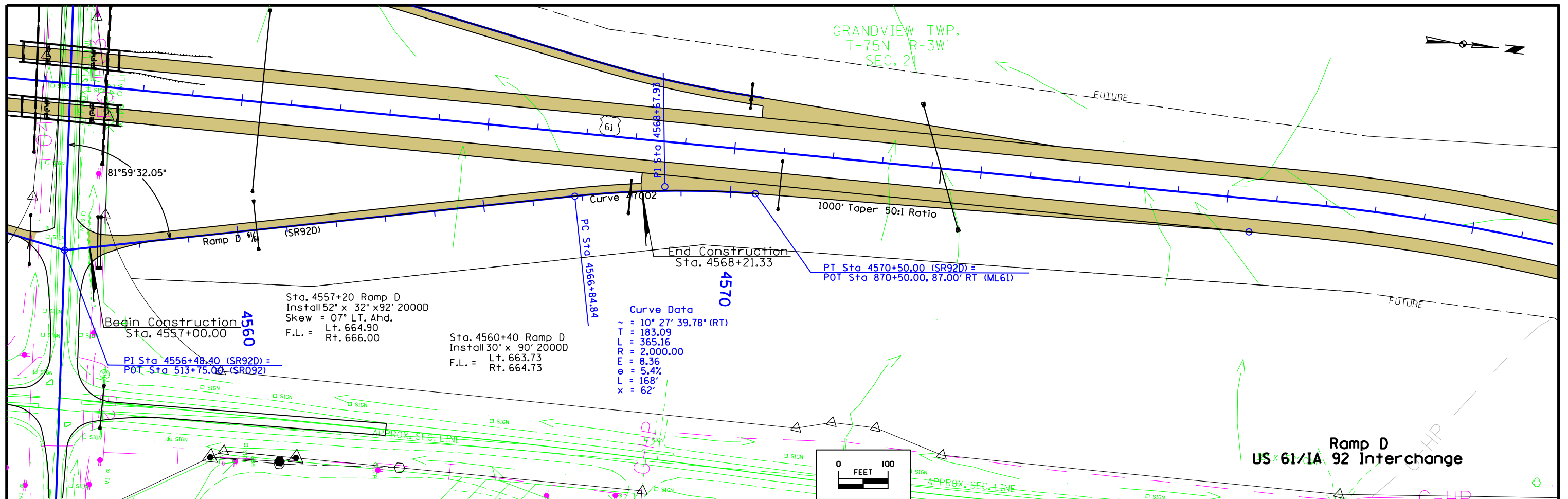




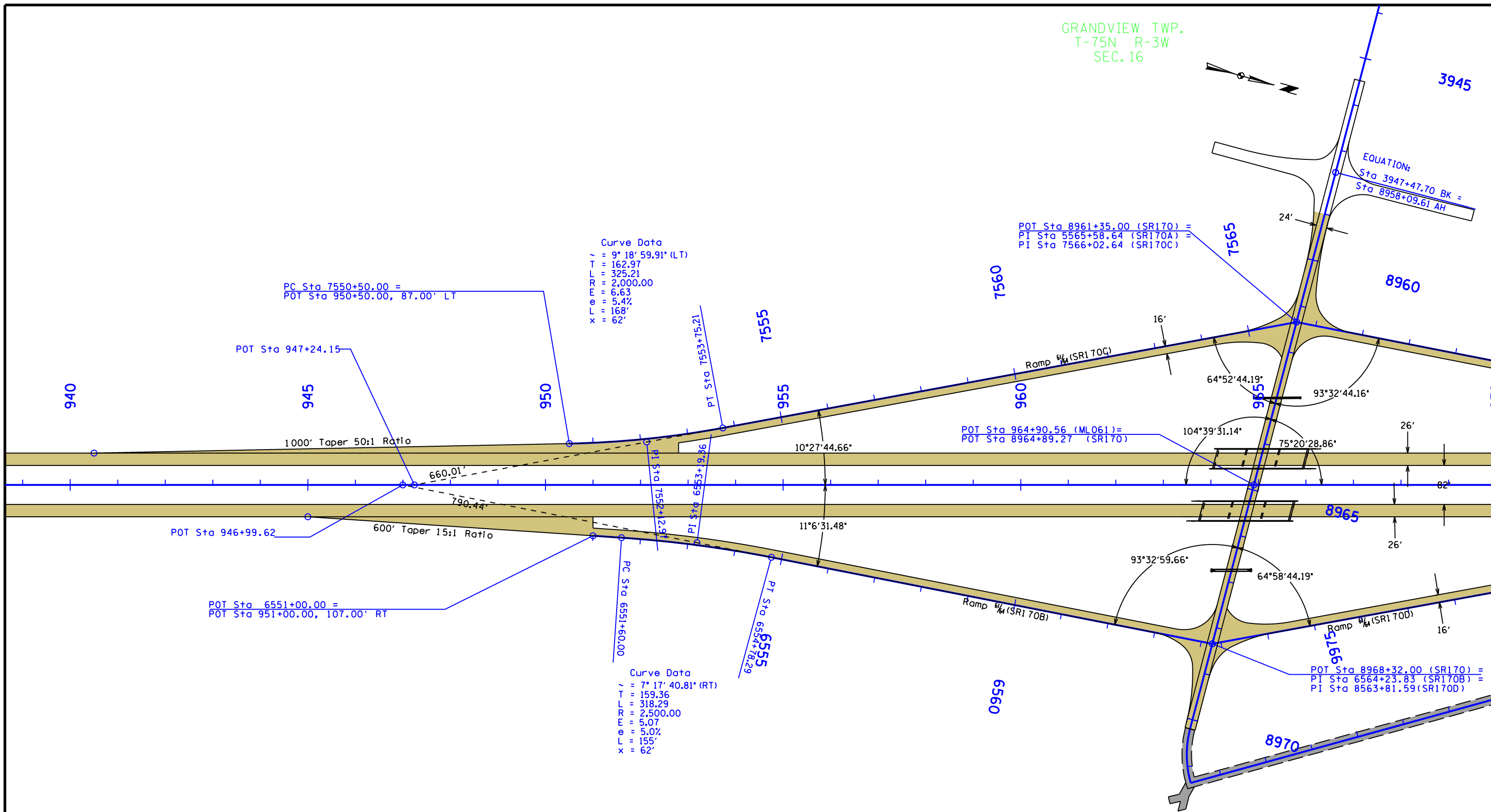




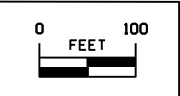
| | | | | | | | | |
|---------|----------|-------------|---------------------------|---------------|----------------|-----------------------|--------------|-----|
| ENGLISH | IOWA DOT | DESIGN TEAM | Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER | NHSX-061-3(57)--3H-58 | SHEET NUMBER | K.5 |
|---------|----------|-------------|---------------------------|---------------|----------------|-----------------------|--------------|-----|



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

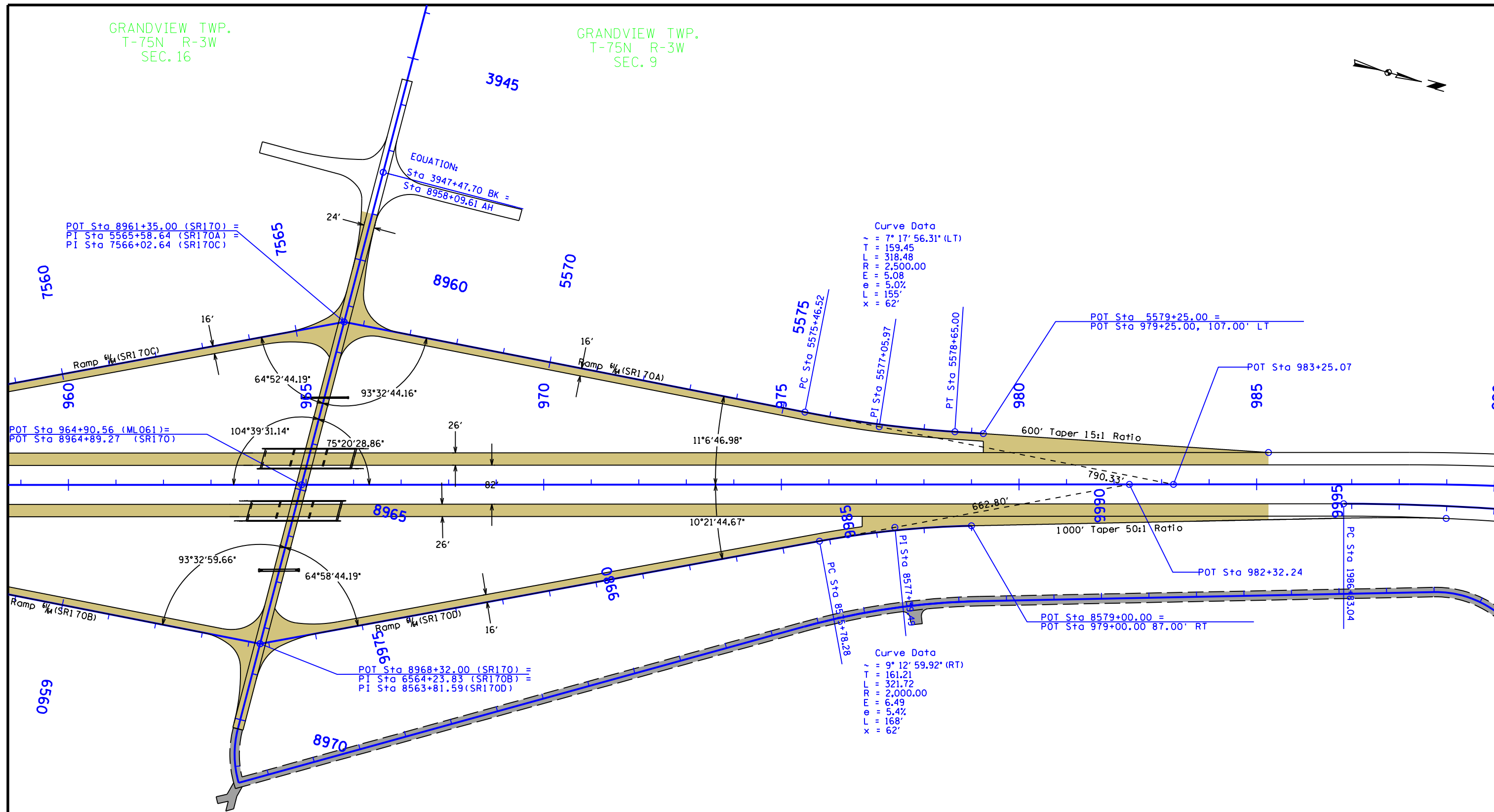


Geometric Plan
Proposed Interchange of
US 61 with 170th Street
Louisa County



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

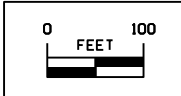
GRANDVIEW TWP.
T-75N R-3W
SEC. 9



Curve Data
 T = 7° 17' 56.31" (LT)
 L = 159.45
 R = 318.48
 R = 2,500.00
 E = 5.08
 e = 5.02%
 L = 155°
 x = 62'

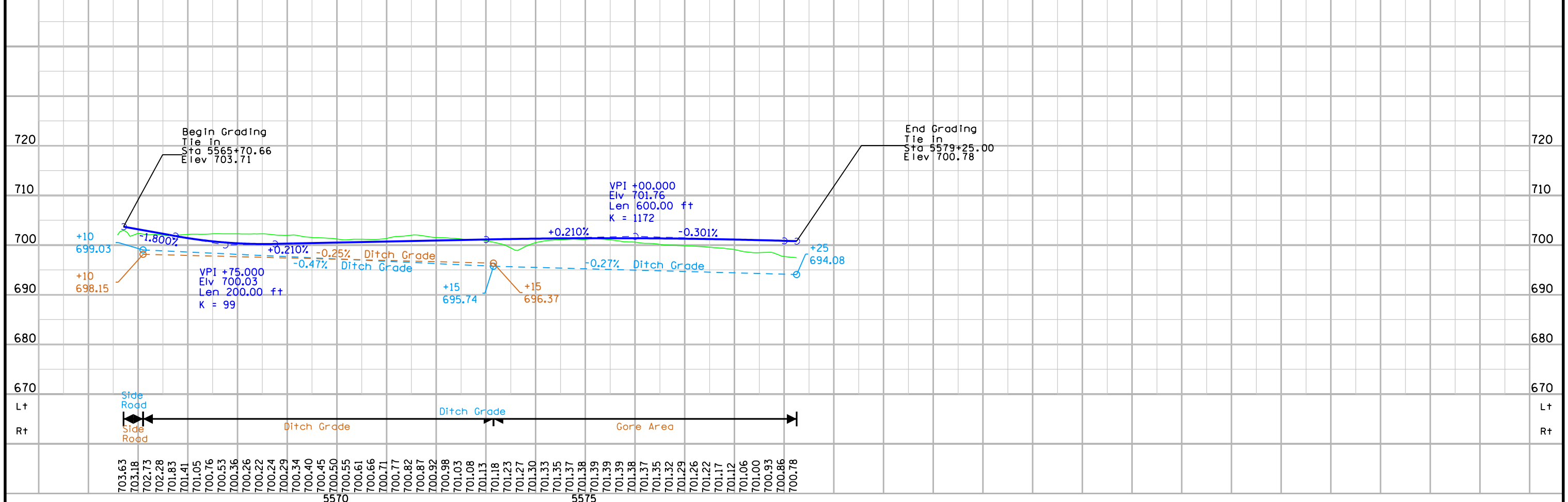
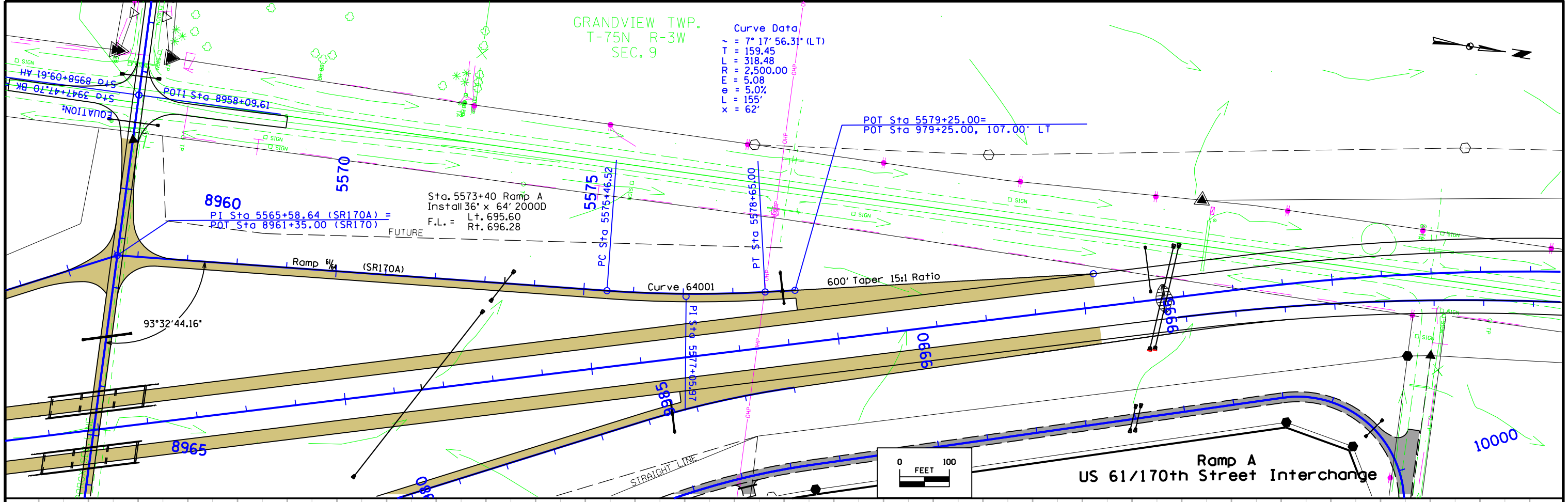
Curve Data
 T = 9° 12' 59.92" (RT)
 L = 161.21
 R = 321.72
 R = 2,000.00
 E = 6.49
 e = 5.4%
 L = 168°
 x = 62'

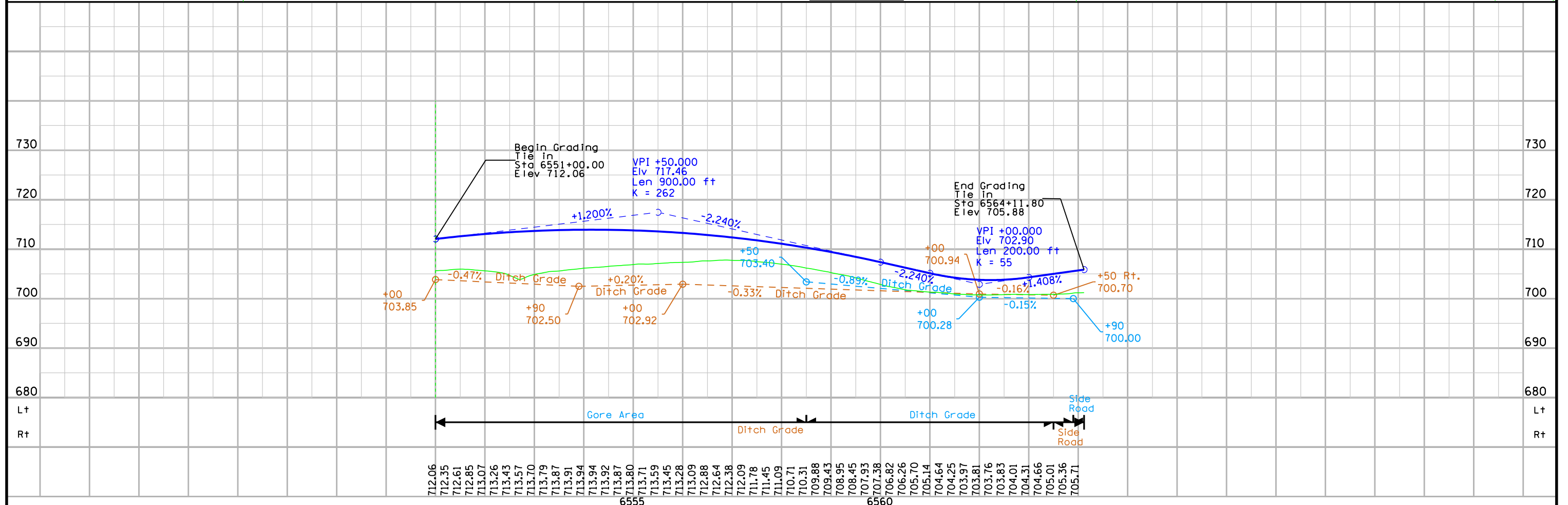
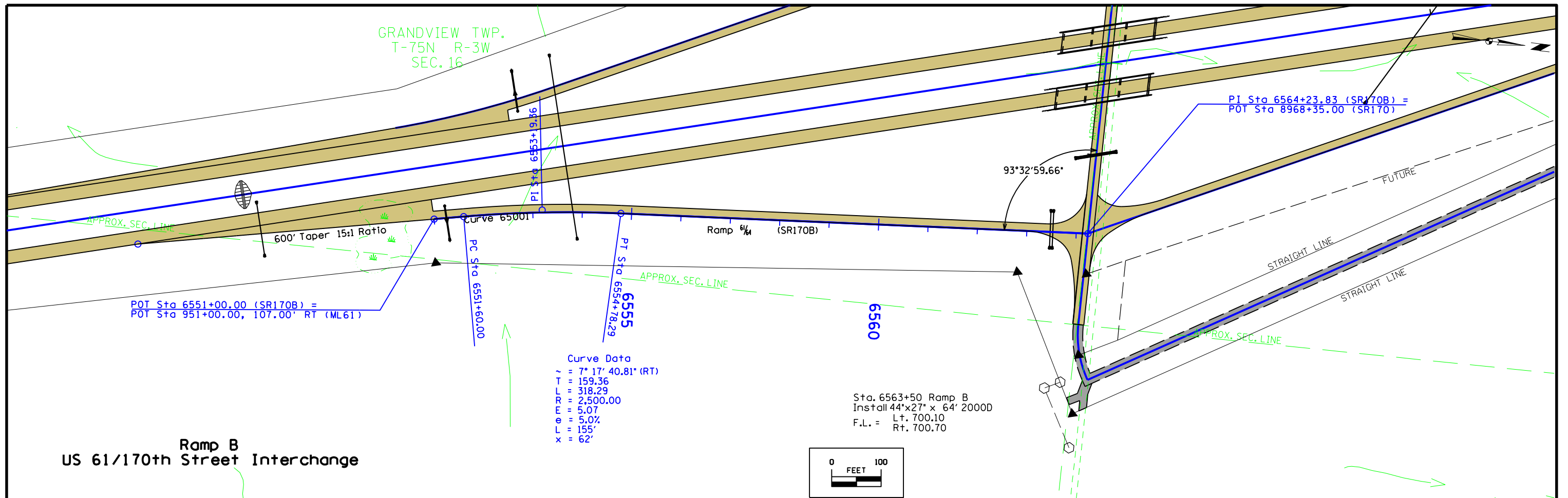
Geometric Plan
 Proposed Interchange of
 US 61 with 170th Street
 Louisa County

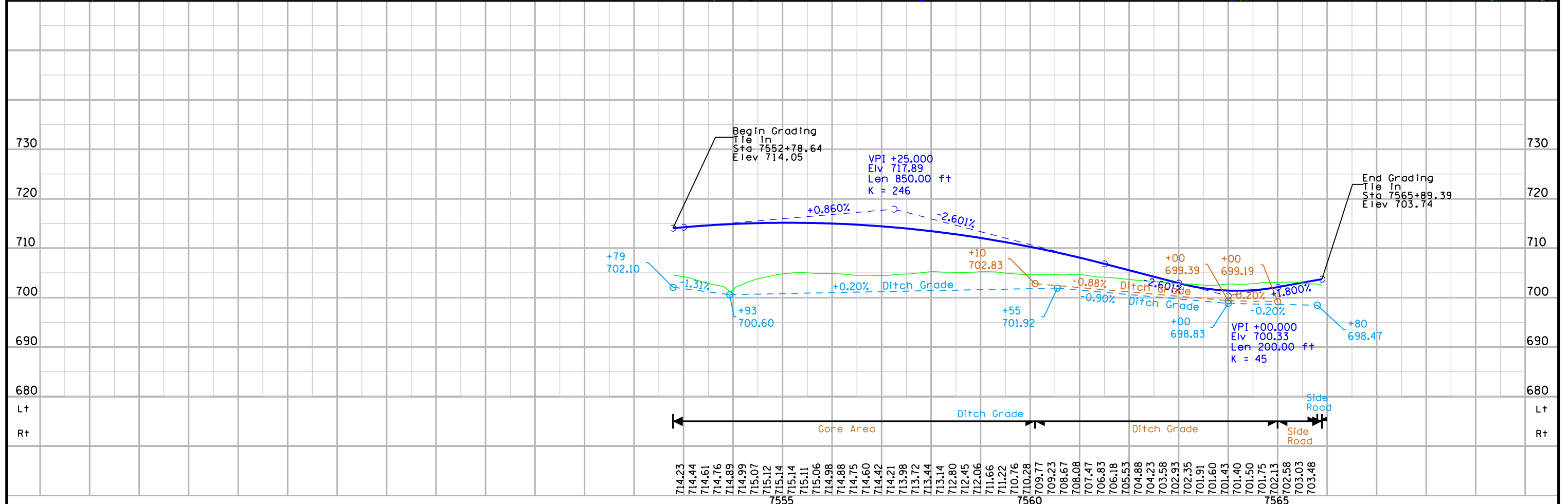
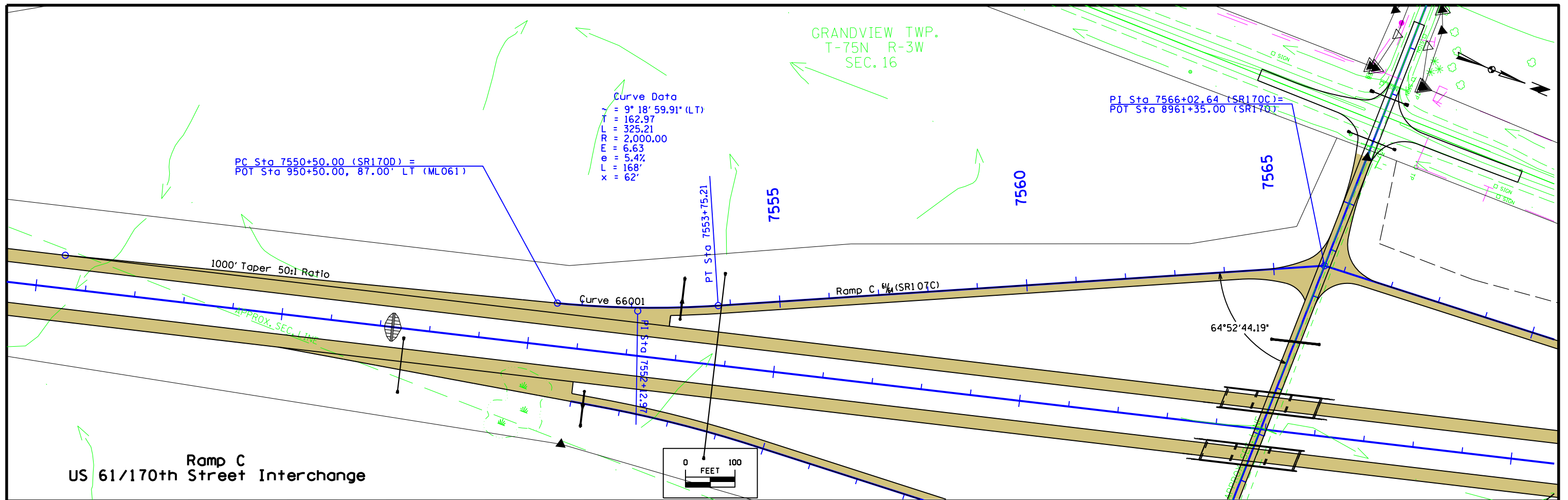


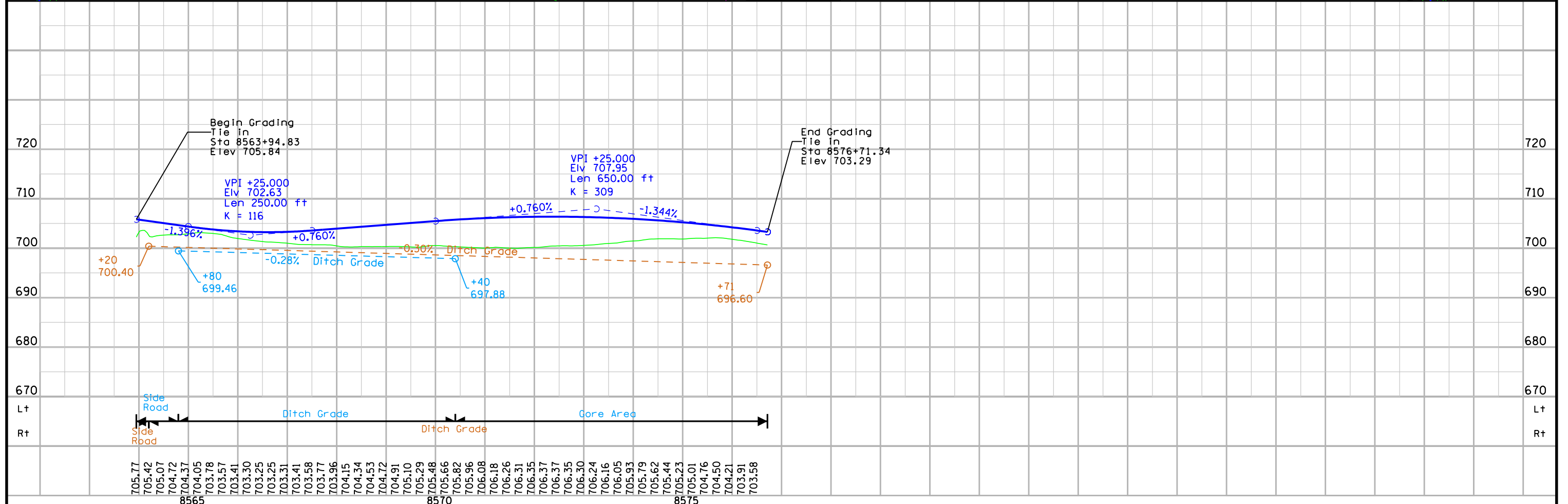
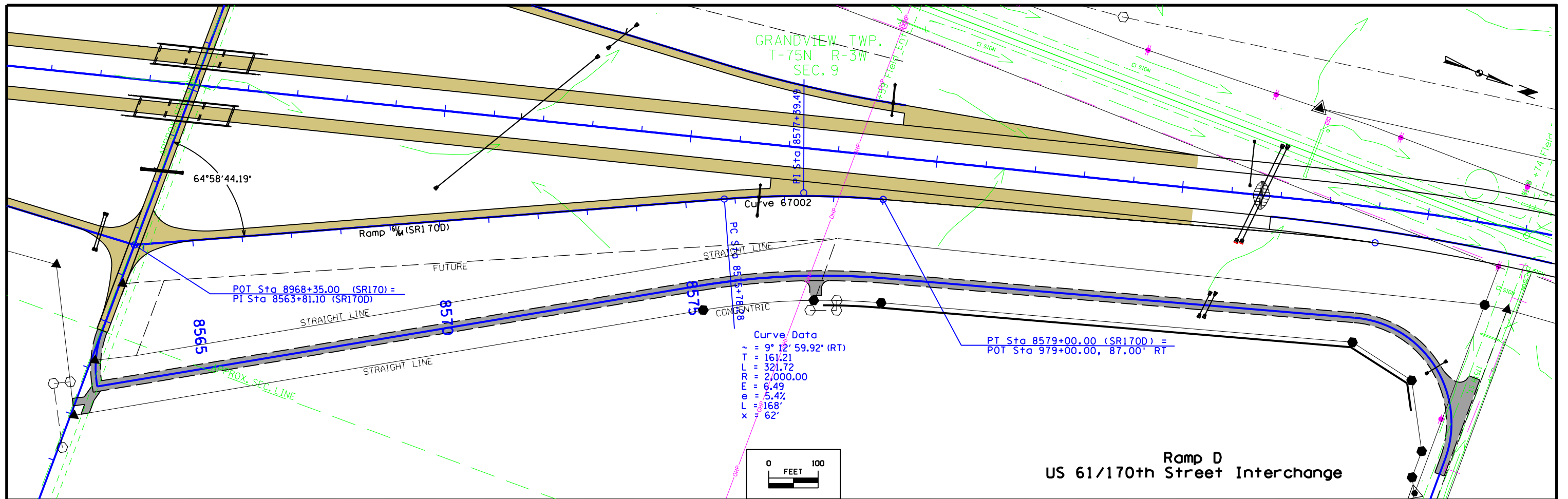
GRANDVIEW TWP.
T-75N R-3W
SEC. 9

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









STORM SEWER

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

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

SURVEY SYMBOLS

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

UTILITY LEGEND

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

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

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

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

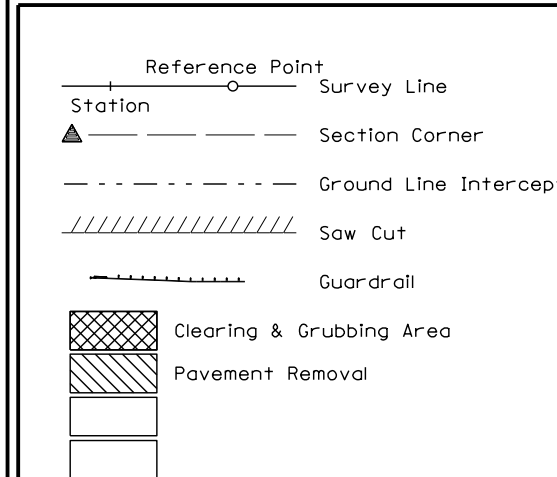
| | | | |
|------------|-------|---|--|
| LINEWORK | | Design Color No. | |
| Gray, Dark | (112) | Existing Ground Line Profile and Existing Utilities Information | |
| Black | (17) | Proposed Pipes and Intakes | |

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

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

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

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

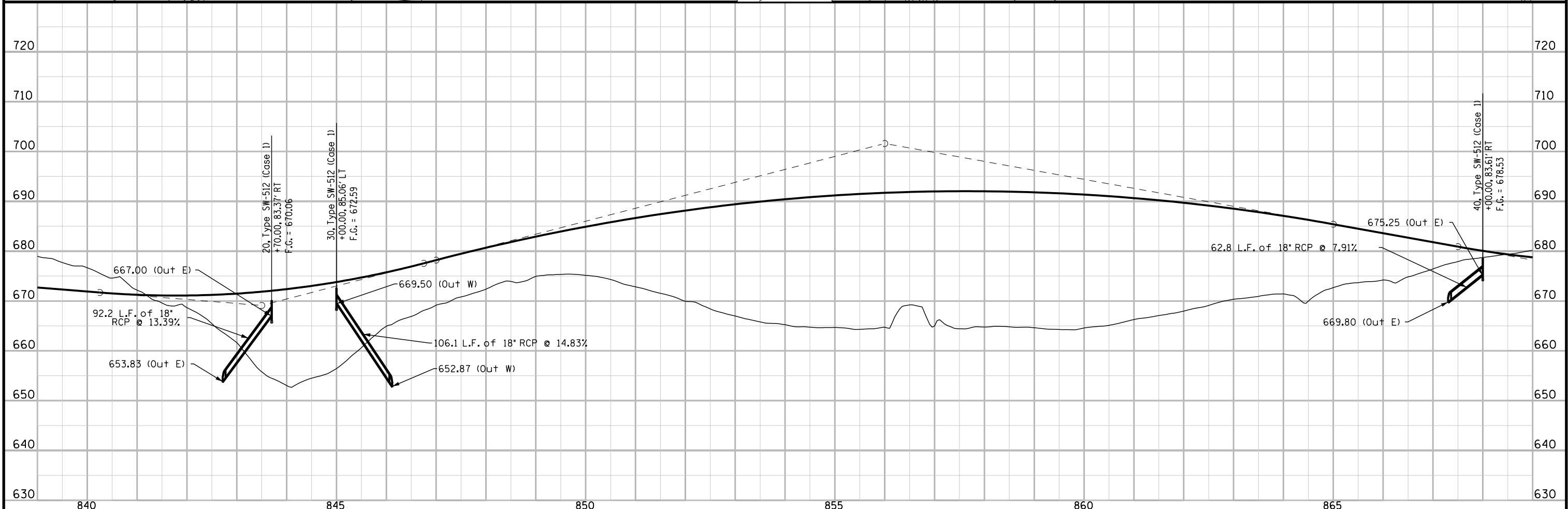
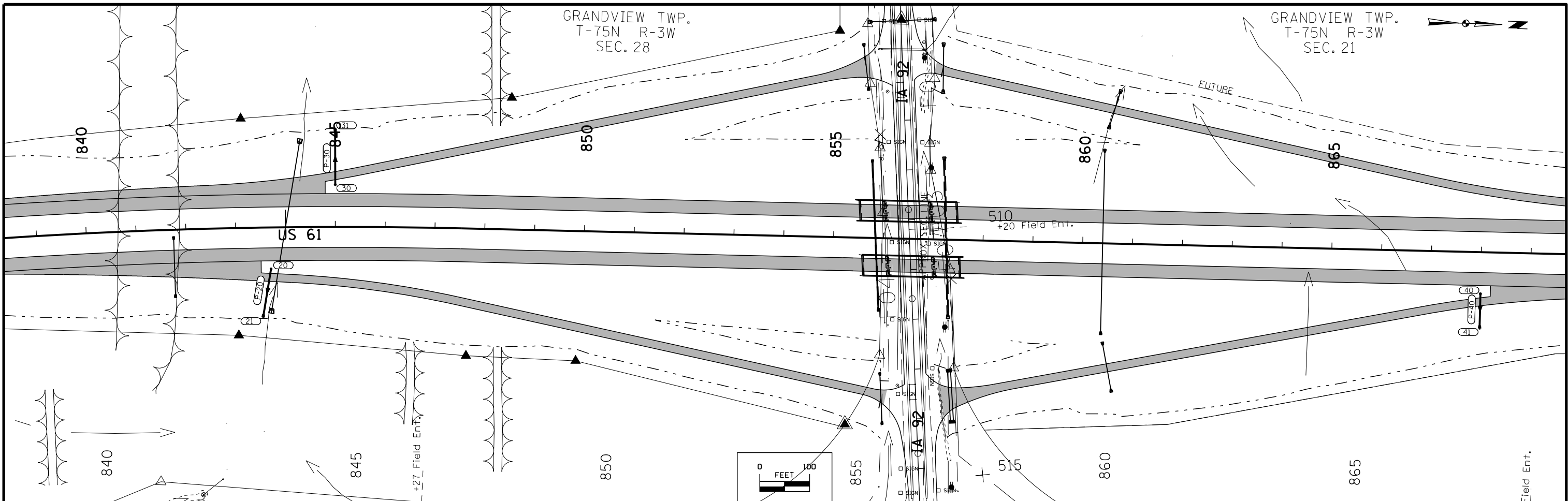


RIGHT-OF-WAY LEGEND

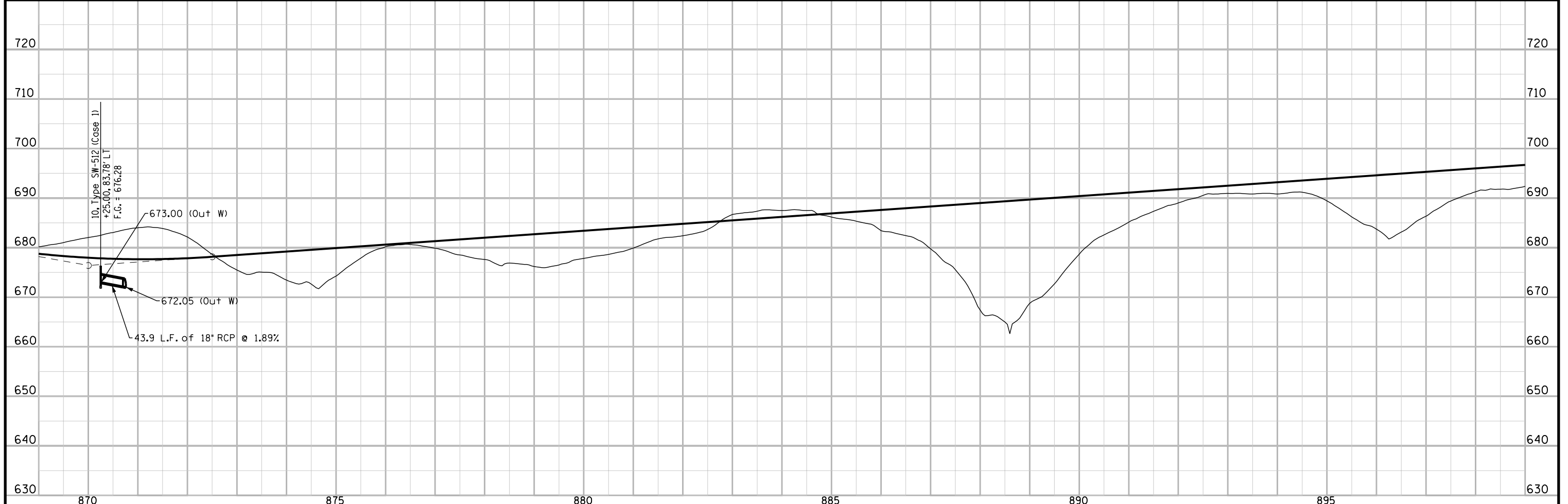
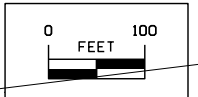
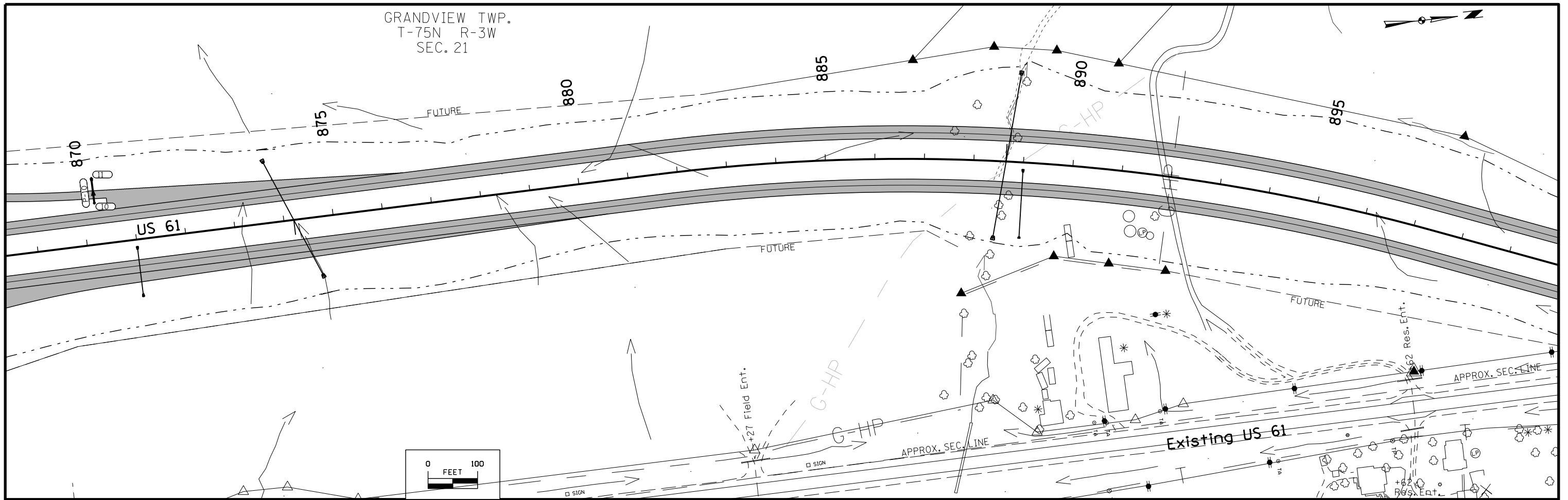
| | |
|-----|------------------------------------|
| ▲ | Proposed Right-of-Way |
| ▲ | Existing and Proposed Right-of-Way |
| Ⓢ | Easement and Existing Right-of-Way |
| ■ | Borrow |
| ⊗ | Easement (Temporary) |
| Ⓢ | Easement |
| X | Excess |
| A/C | Access Control |

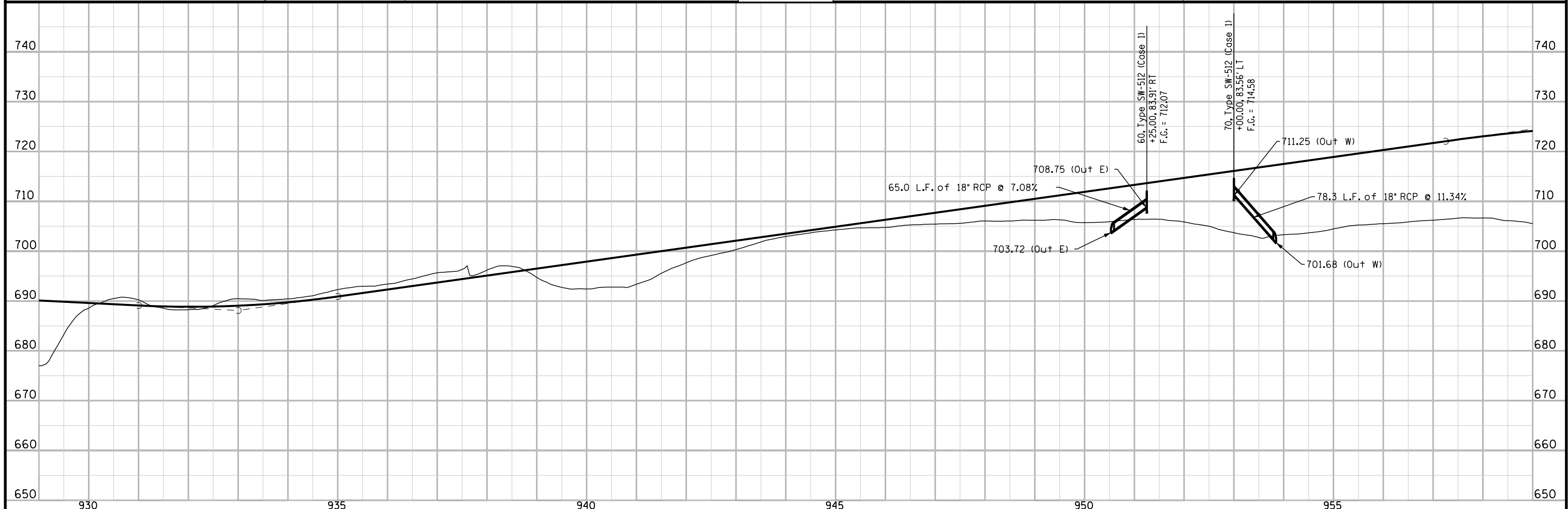
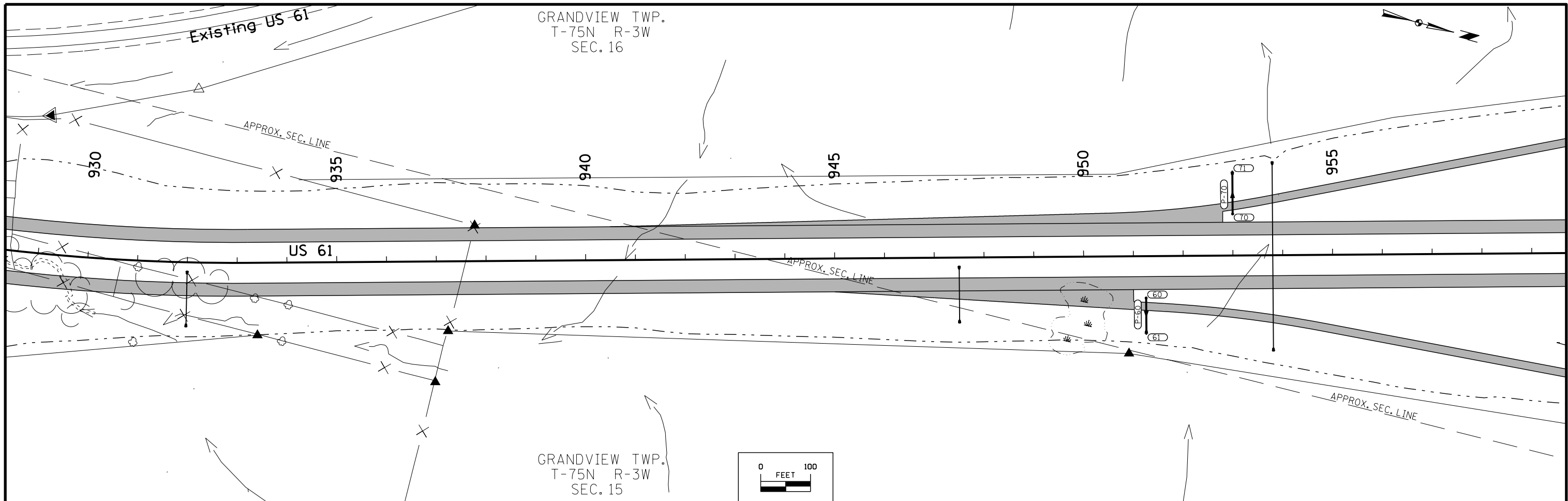
**STORM SEWER
LEGEND AND SYMBOL
INFORMATION SHEET**

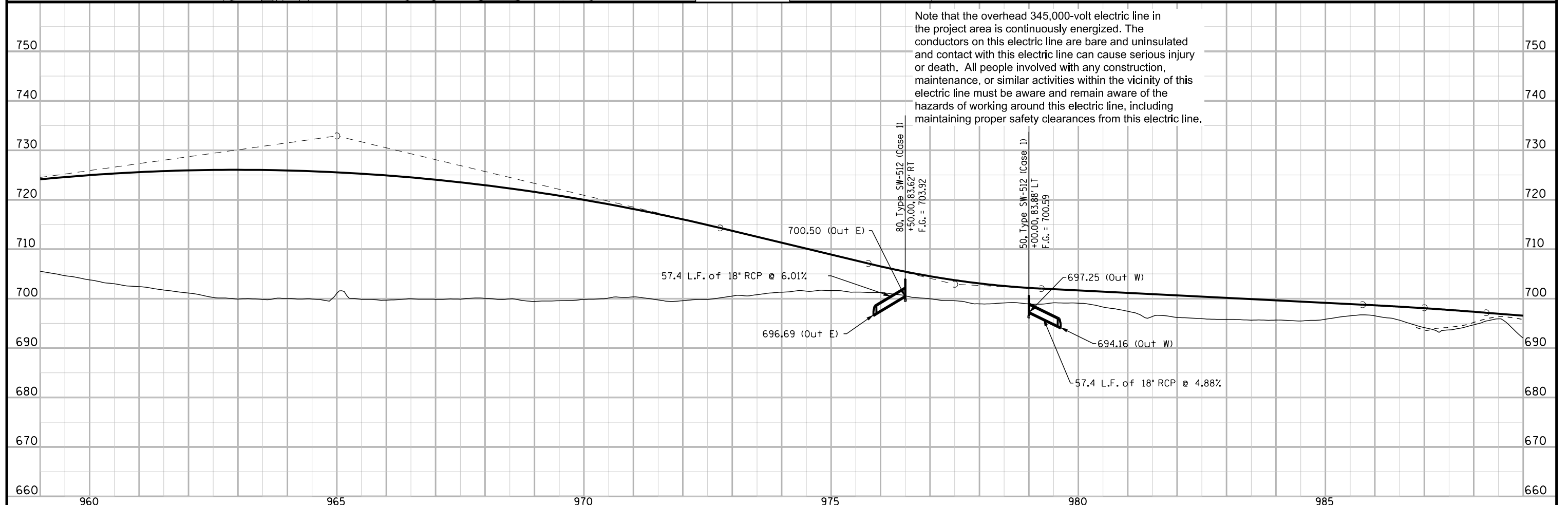
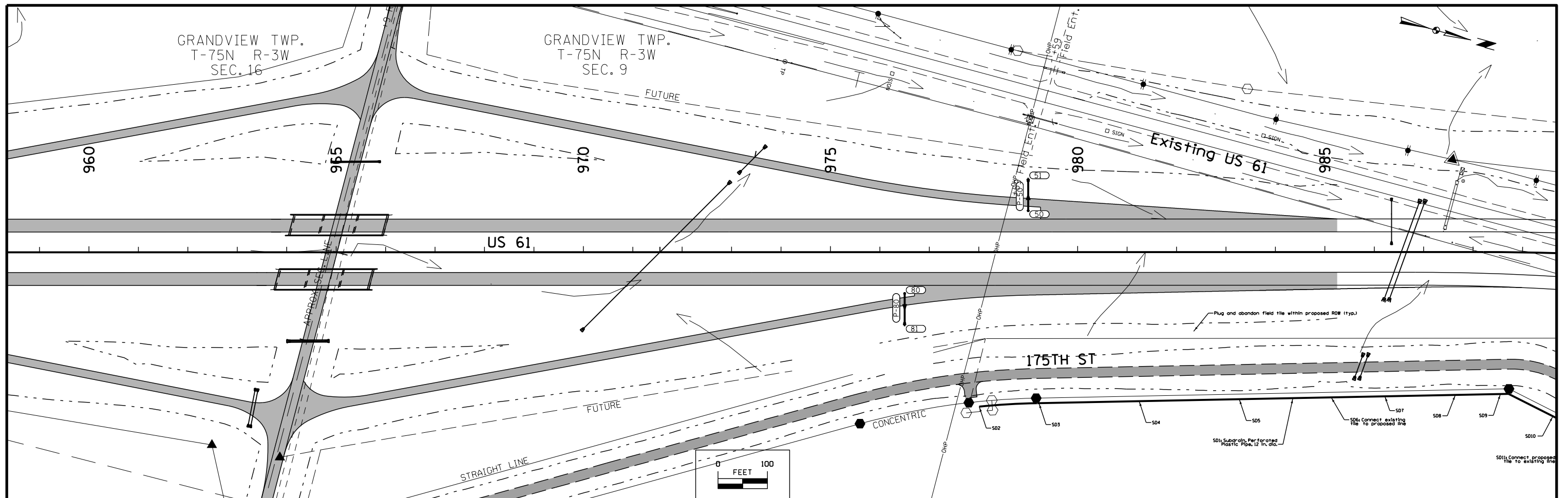
(COVERS SHEET SERIES M)



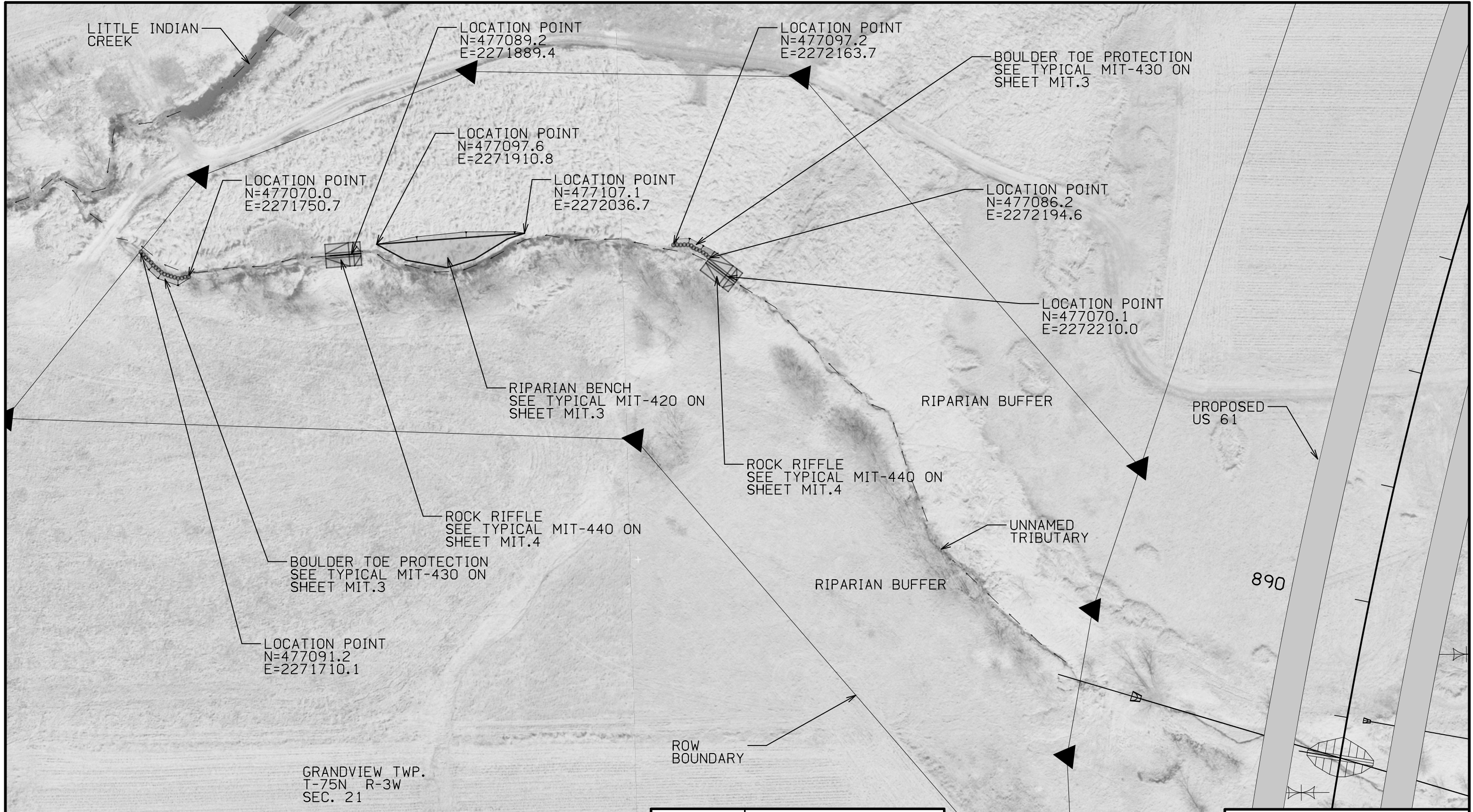
GRANDVIEW TWP.
T-75N R-3W
SEC. 21







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



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

ESTIMATED QUANTITIES

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



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

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

Pages or sheets covered by this seal: ALL MIT SHEETS



**STREAM MITIGATION
GENERAL SITE PLAN**

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

RIPARIAN BUFFER

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

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

UNNAMED
TRIBUTARY

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

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

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

RIPARIAN BUFFER

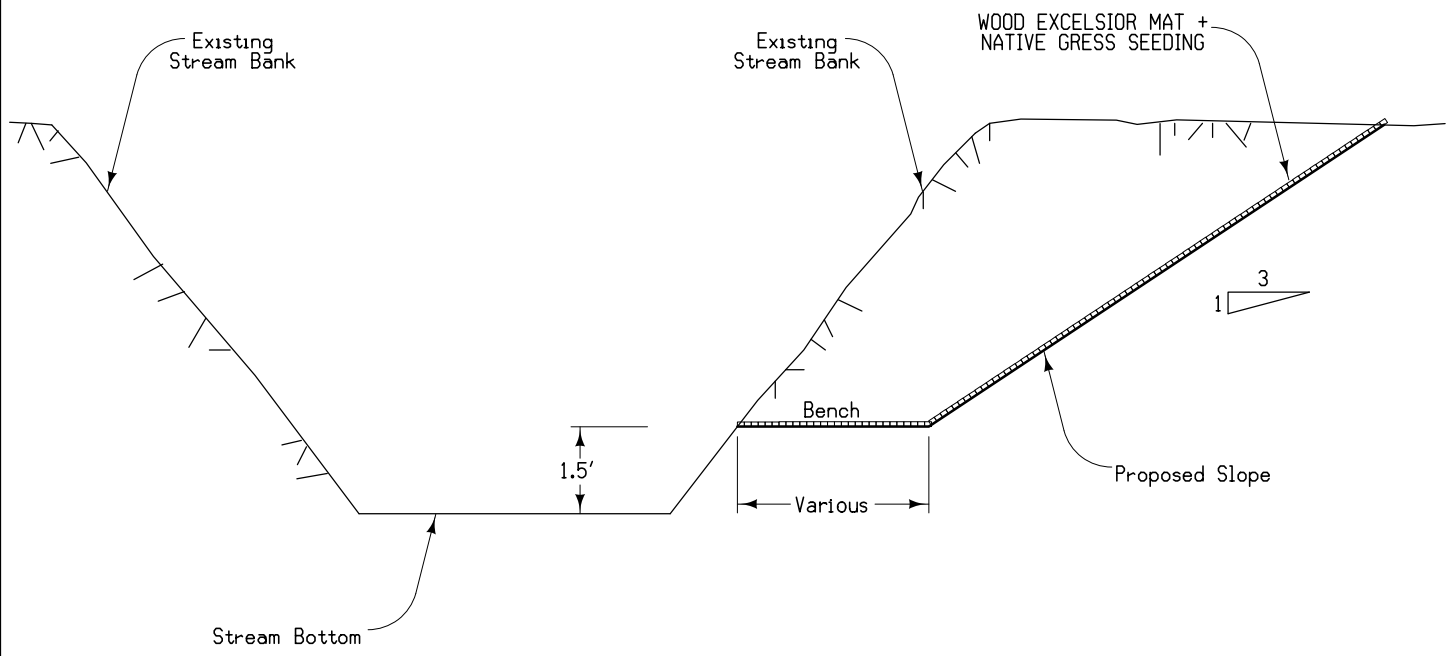
ROW
BOUNDARY



STREAM MITIGATION
GRADING PLAN



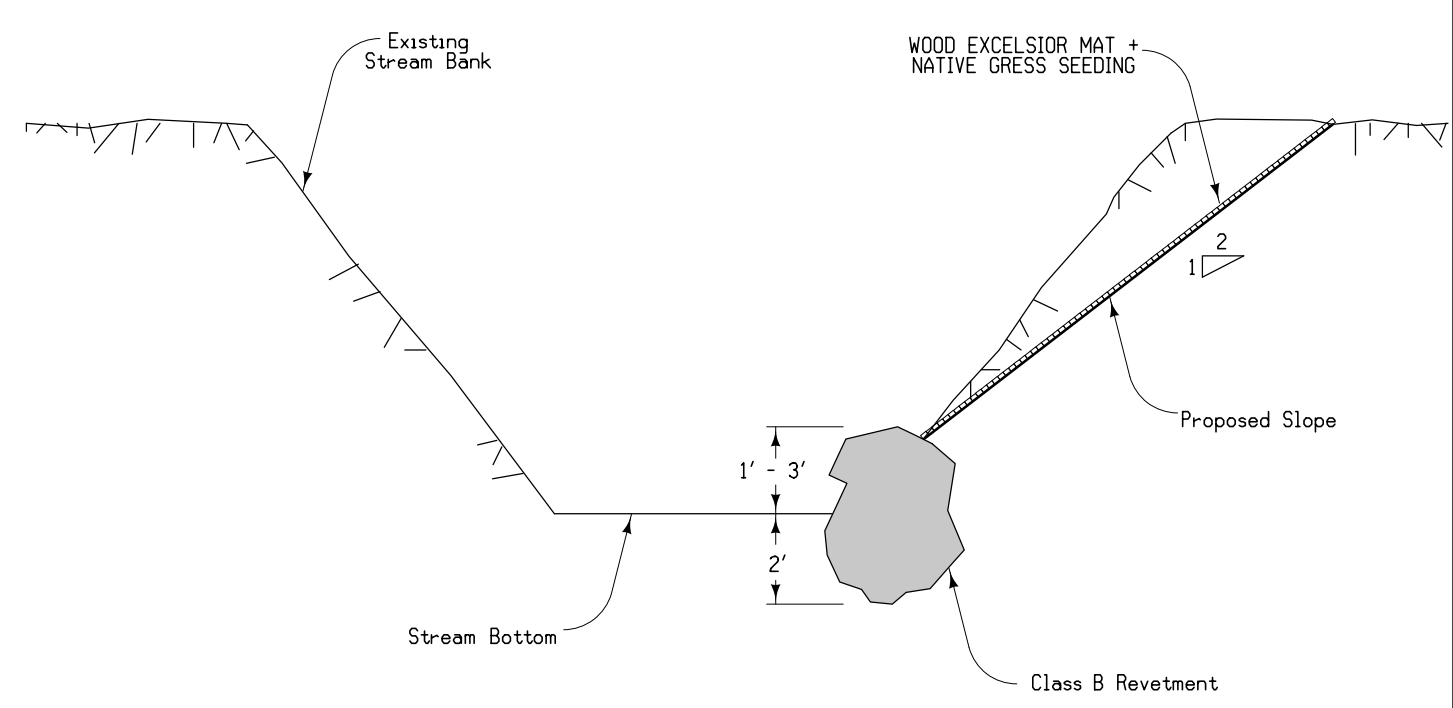
MIT-420
4-4-2013



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

TYPICAL RIPARIAN BENCH

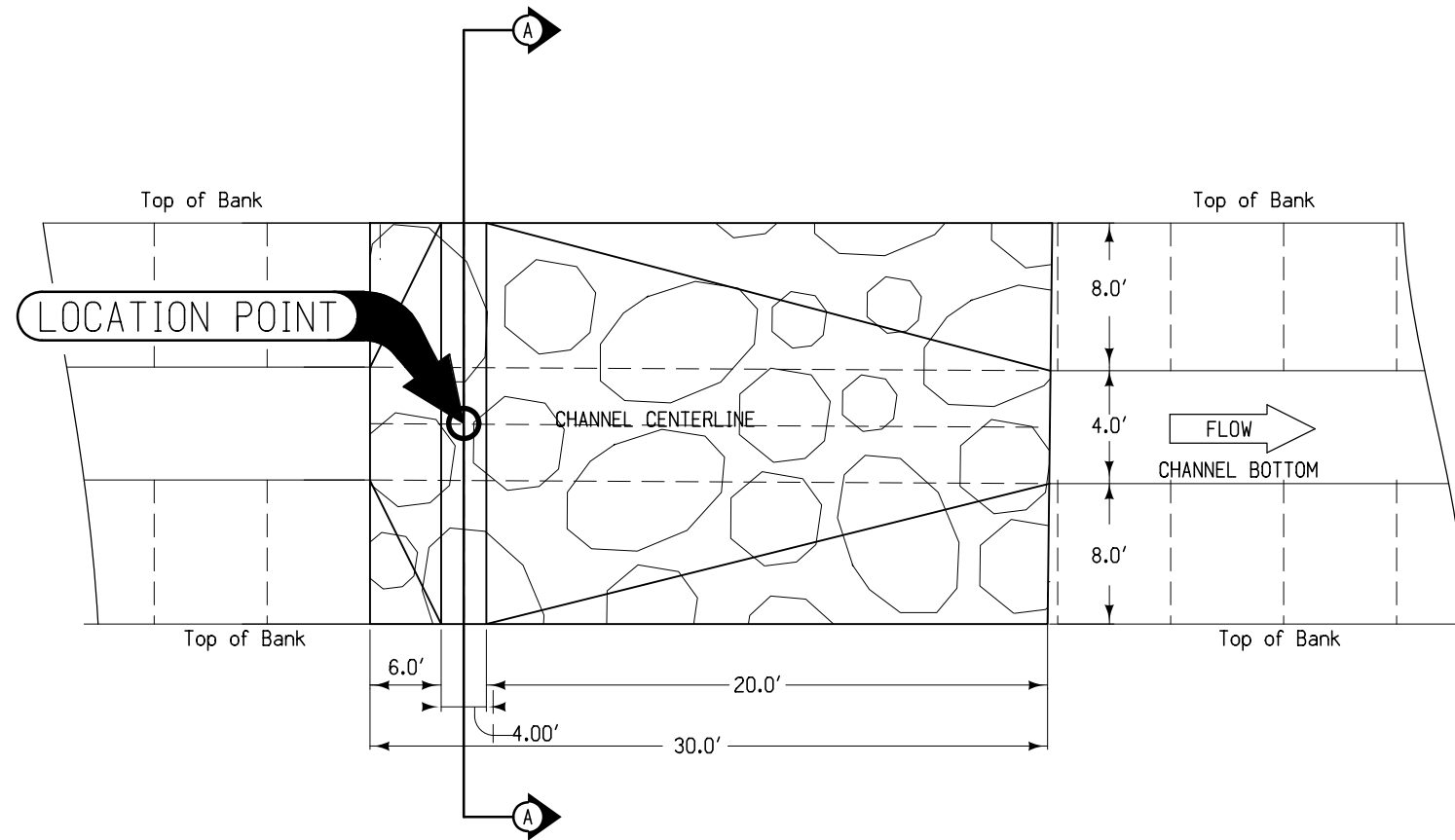
MIT-430
4-4-2013



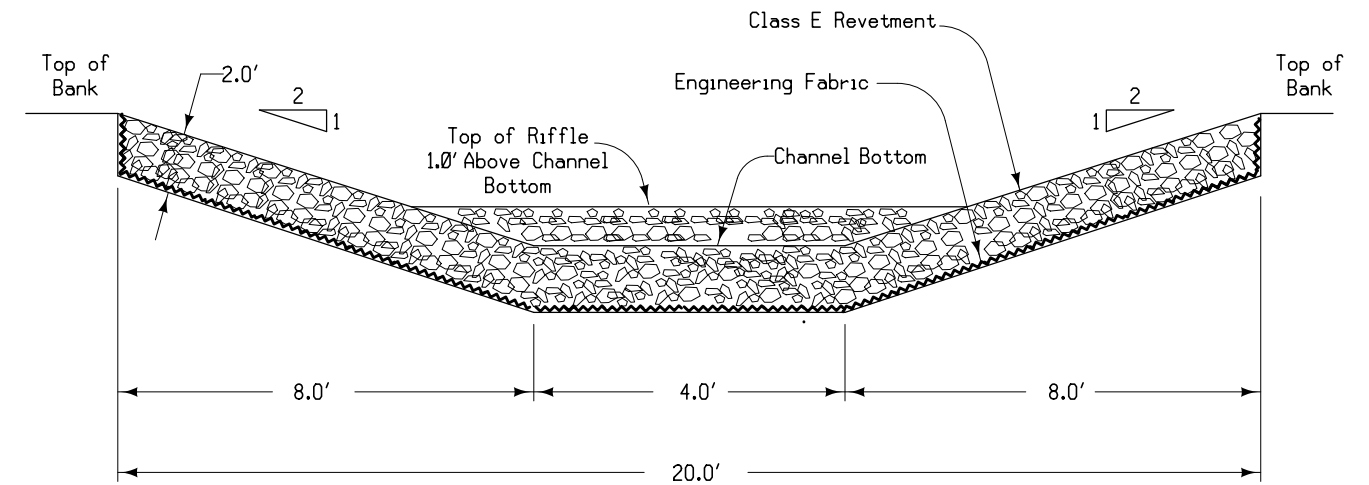
NOTE: SEEDING NEEDS TO BE PLACED BEFORE WOOD EXCELSIOR MAT.

TYPICAL BOULDER TOE PROTECTION

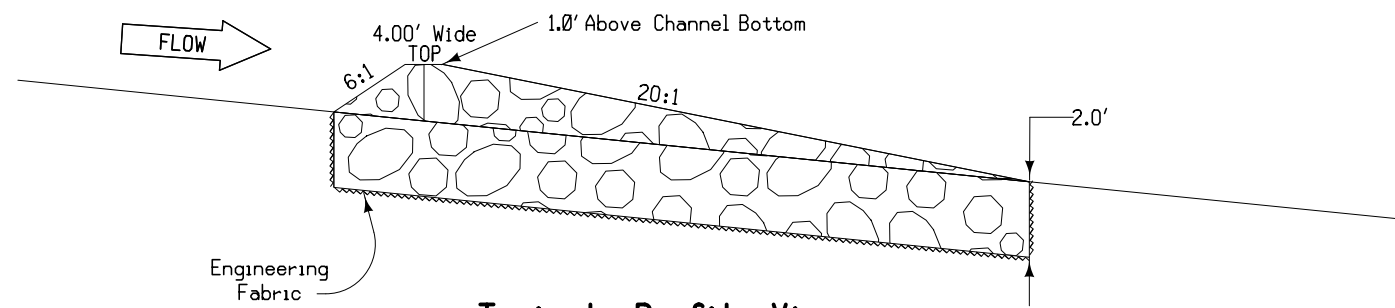
STREAM MITIGATION TYPICAL RIPARIAN BENCH AND BOULDER TOE PROTECTION



PLAN VIEW



Typical Cross Section A-A



Typical Profile View

TYPICAL ROCK RIFFLE STRUCTURE

STREAM MITIGATION TYPICAL ROCK RIFFLE STRUCTURE

SURVEY SYMBOLS

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF SOILS SHEETS

| LINEWORK | Design Color No. | |
|---------------|------------------|---|
| 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) | Class 10 Topsoil |
| Green, M.Light | (226) | Unsuitable A Topsoil |
| Green, Light | (225) | Unsuitable B Topsoil |
| Green, V.Light | (224) | Unsuitable C Topsoil |
| Orange | (6) | Loam |
| Brown, Dark | (238) | Class 10 |
| Brown, Med | (237) | Sand |
| Red | (3) | Unsuitable A |
| Pink, Dark | (13) | Unsuitable B |
| Pink | (11) | Unsuitable C |
| Red | (3) | Shale |
| Red | (3) | Waste |
| Gray, Light | (48) | Broken and Weathered Rock |
| Gray, Med | (80) | Rock |
| Gray, V.Dark | (128) | Boulders |

PATTERN AND SYMBOL LEGEND OF SOILS SHEETS

| Soils Book No. J, K, L | | Date(s) Drilled 2012, 2013, 2014 | |
|------------------------|---------------------------|----------------------------------|----------------------|
| Water | Sand Blanket | Treatment | Unsuitable A Topsoil |
| Dry | Soil Remediation Area | Select Soil | Unsuitable B Topsoil |
| Sample | Select Sand | Shale | Unsuitable C Topsoil |
| Plugged | Broken and Weathered Rock | Rock | Unsuitable A |
| Moisture | Sandstone | Unsuitable B | Unsuitable C |
| Shelby | | Sandy Soil | Boulders |
| Blow Count | | | |
| Dens. Core | | | |

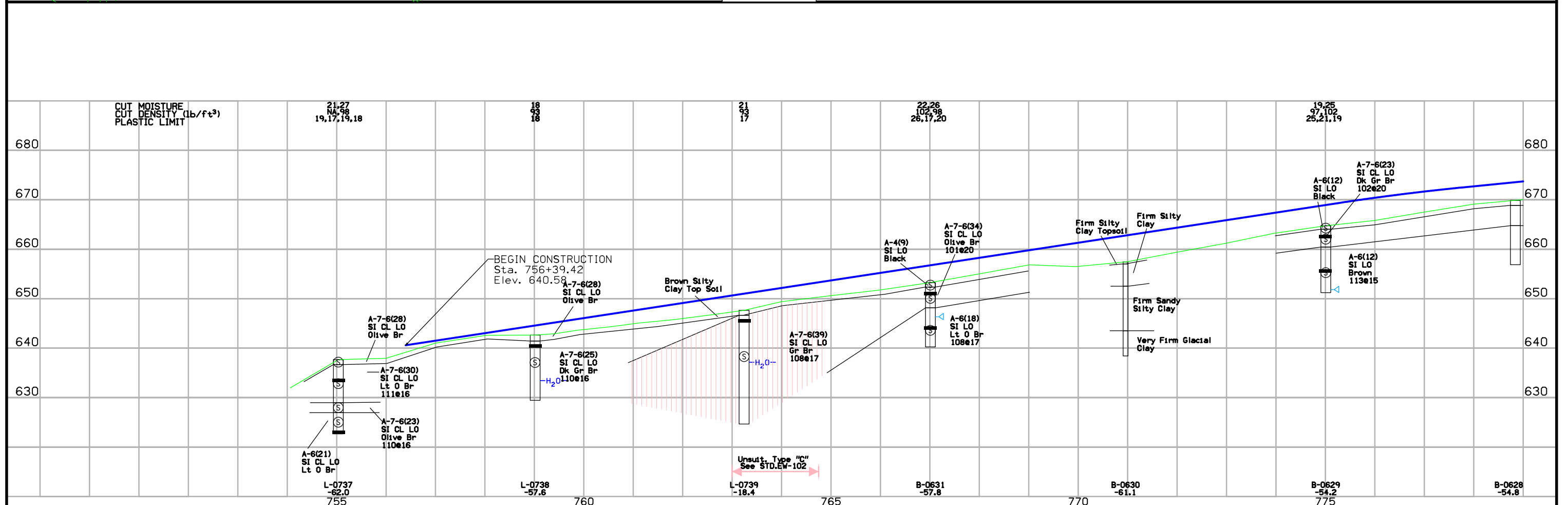
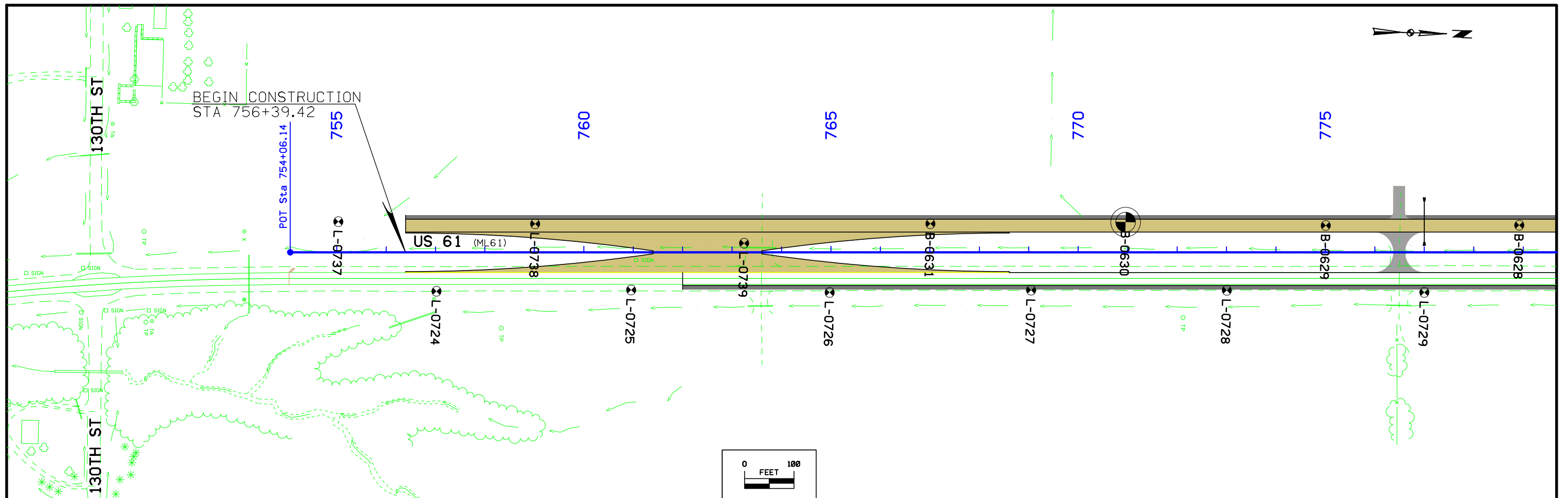
| | |
|-----------------------|--------------------------|
| Reference Point | Survey Line |
| Station | Section Corner |
| Ground Line Intercept | Saw Cut |
| Guardrail | Clearing & Grubbing Area |
| Pavement Removal | |

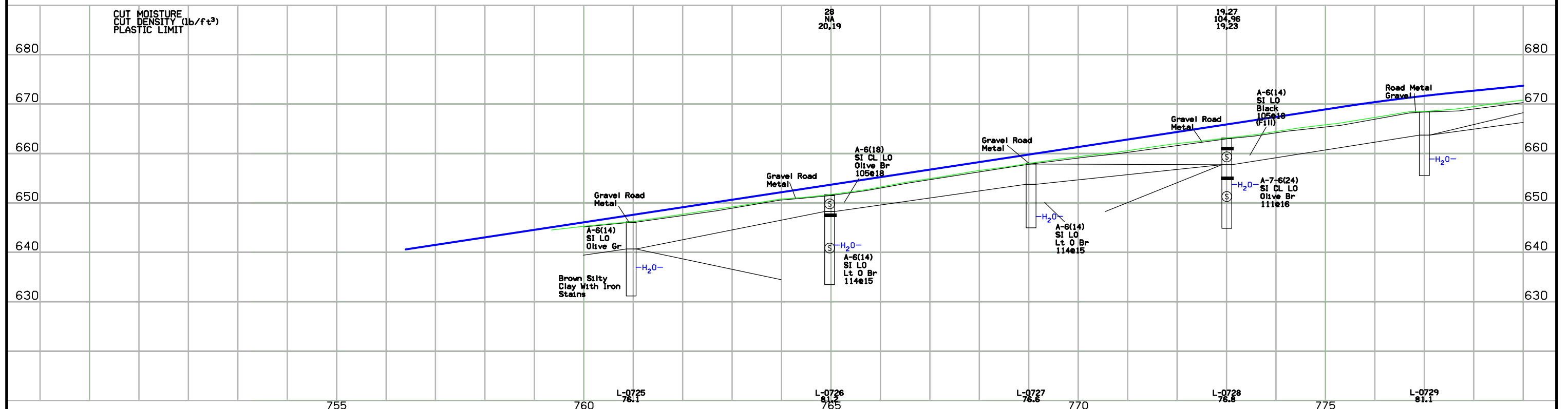
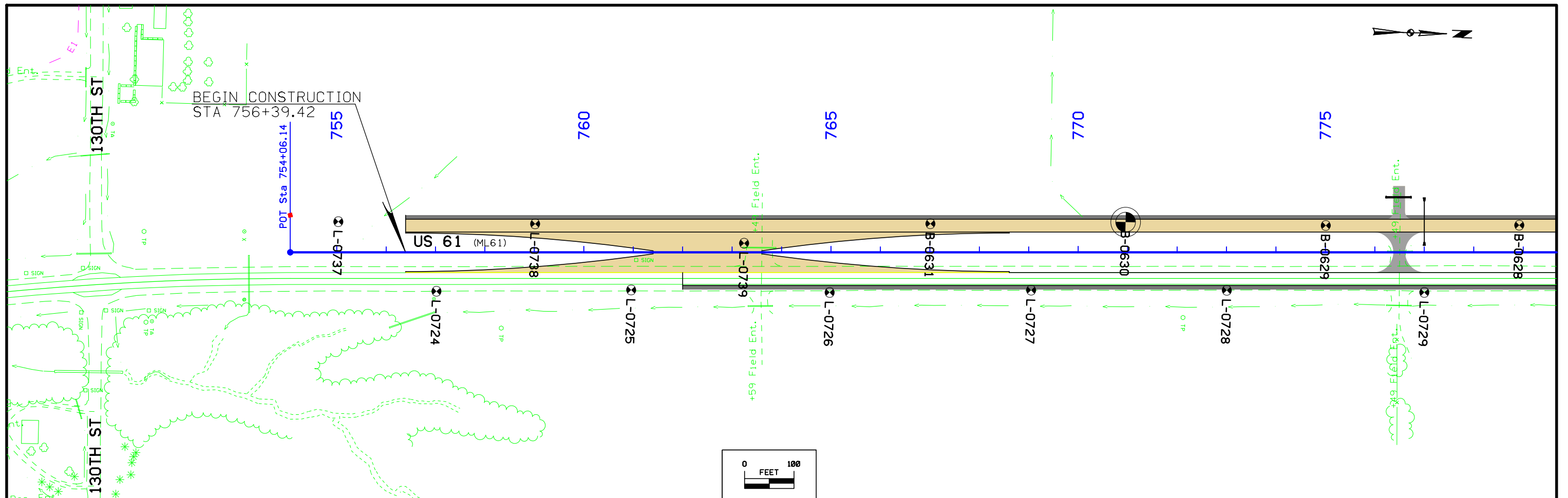
| RIGHT-OF-WAY LEGEND | |
|---------------------|------------------------------------|
| | Proposed Right-of-Way |
| | Existing and Proposed Right-of-Way |
| | Easement and Existing Right-of-Way |
| | Borrow |
| | Easement (Temporary) |
| | Easement |
| | Excess |
| | A/C Access Control |

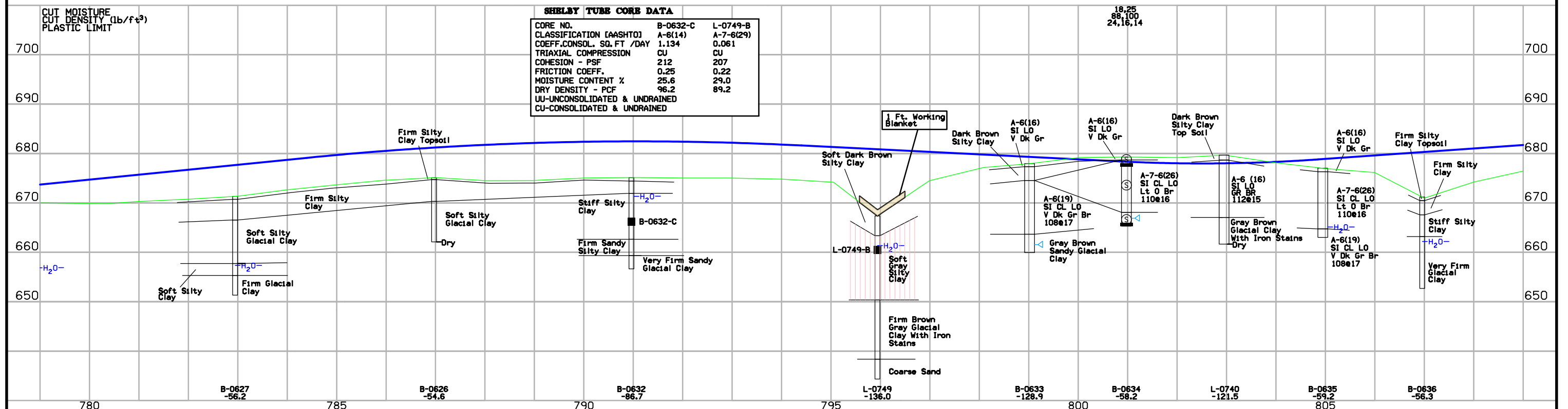
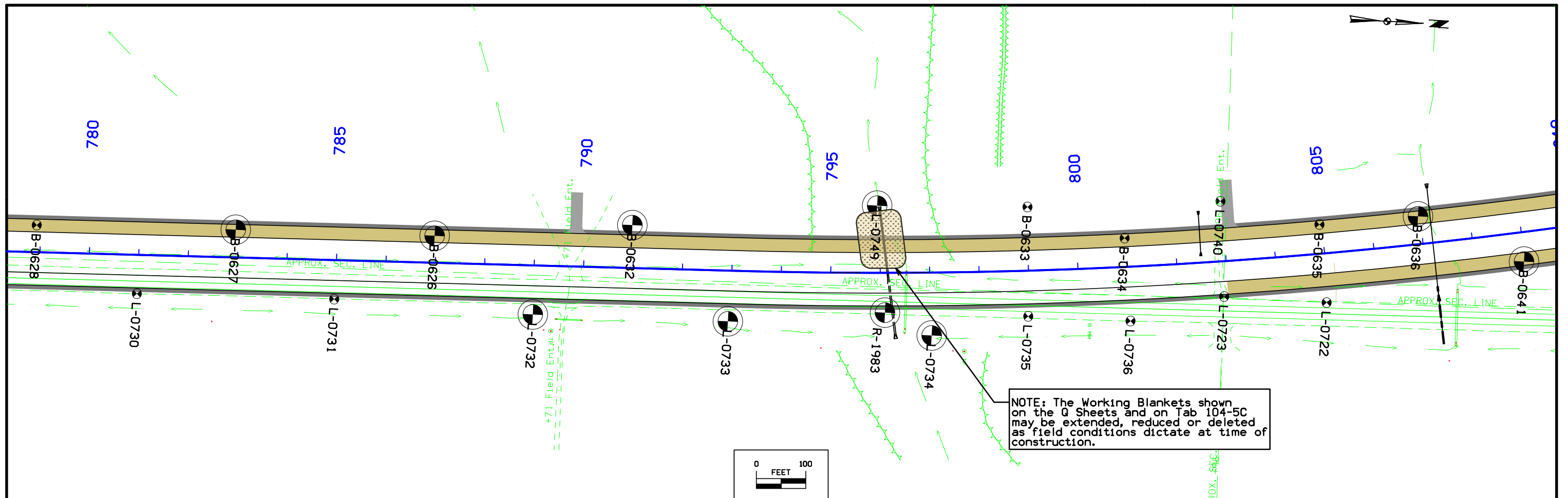
NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and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

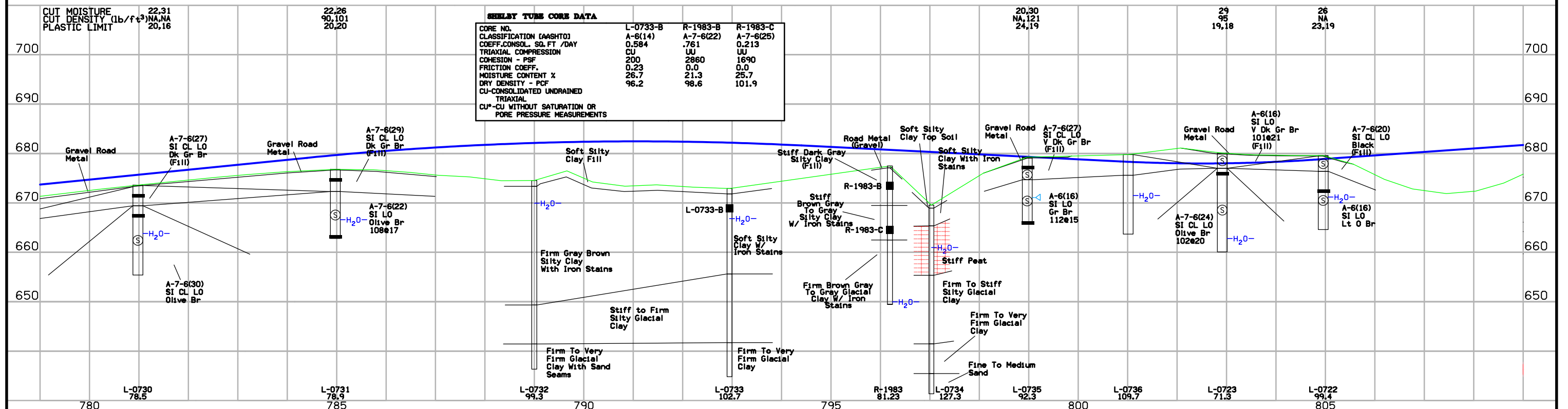
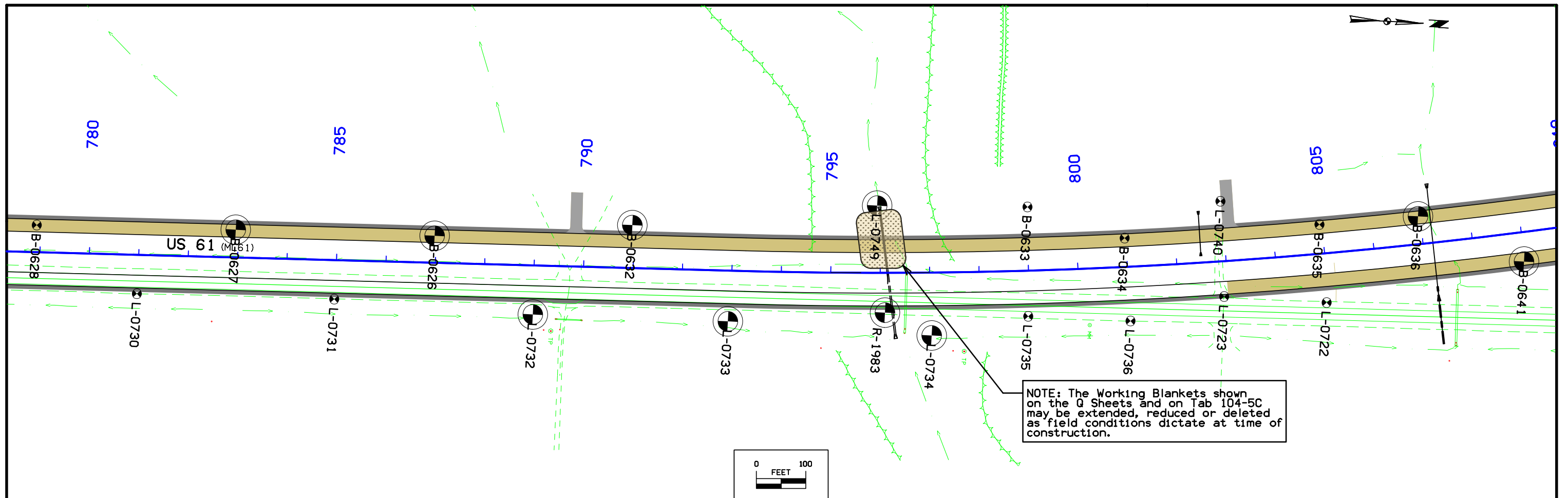
SOILS LEGEND AND SYMBOL INFORMATION SHEET

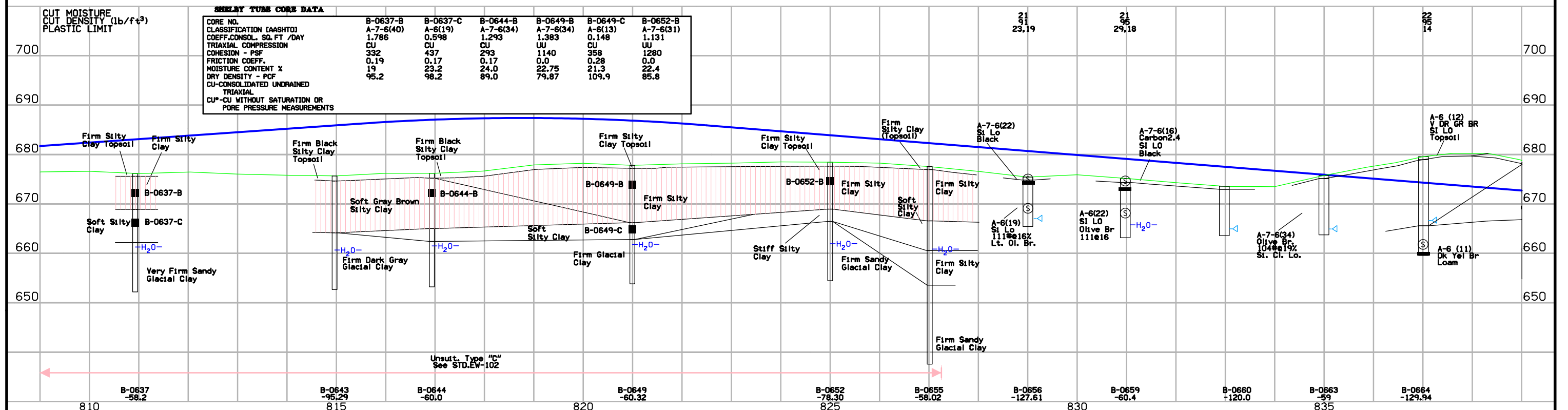
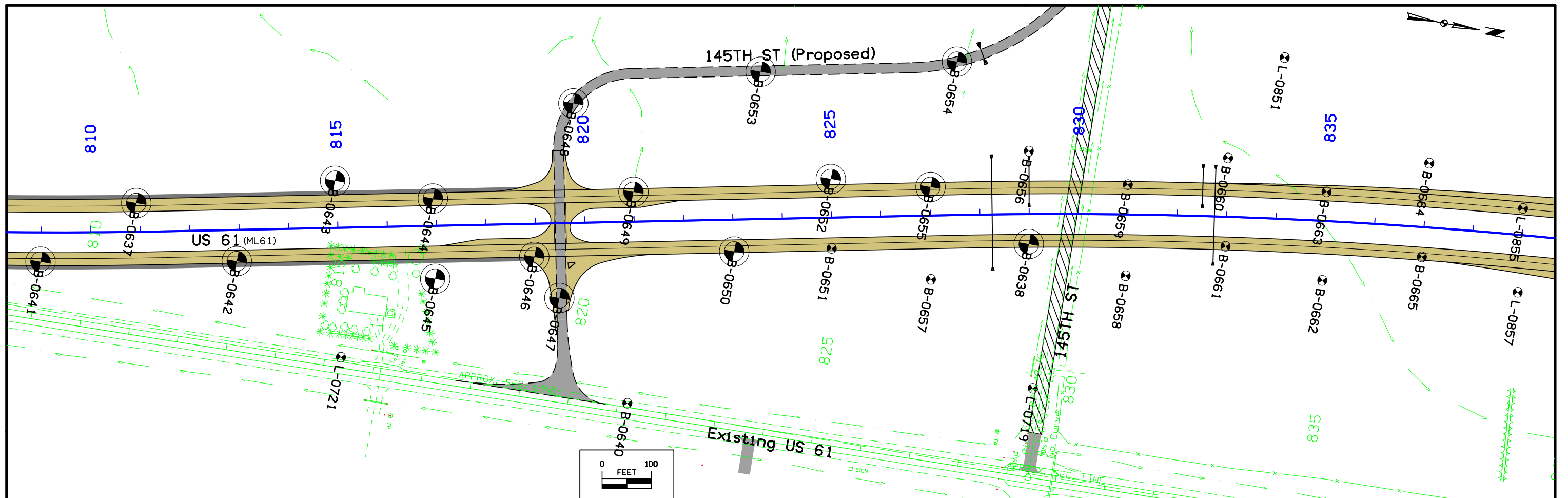
(COVERS SHEET SERIES Q & R)

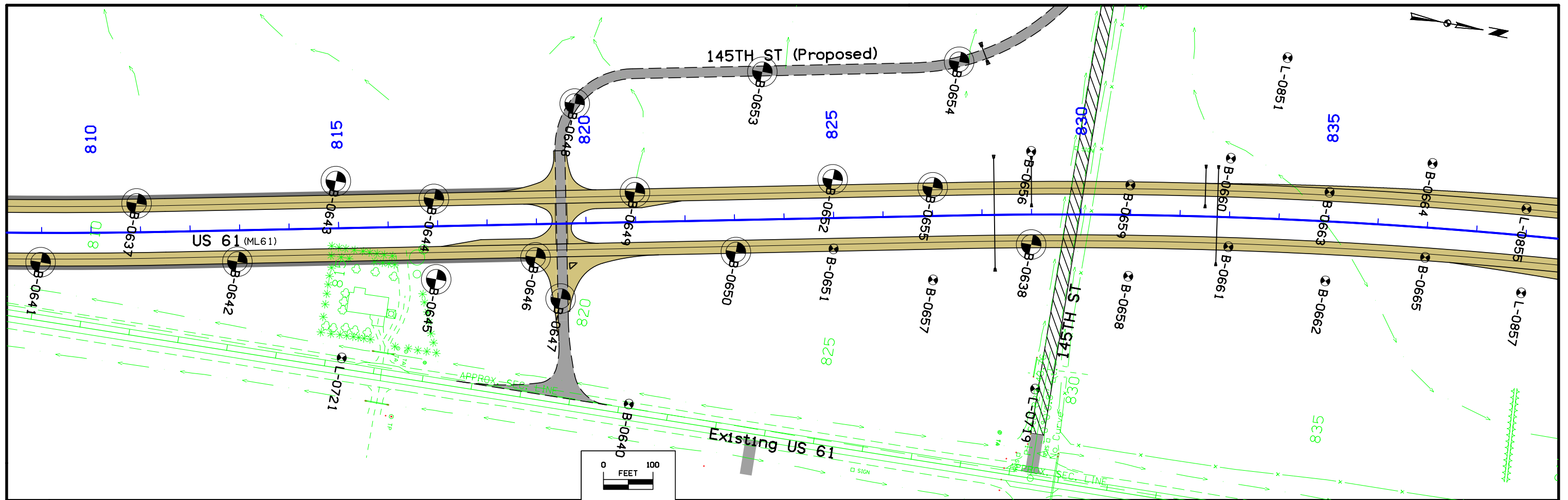








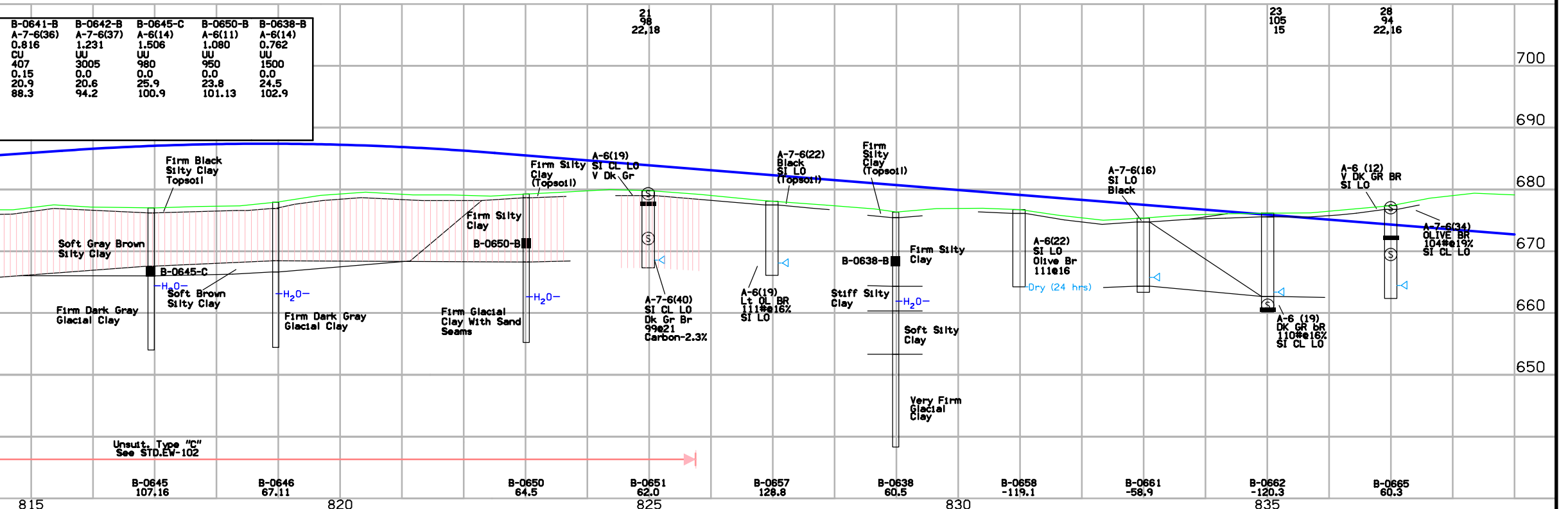


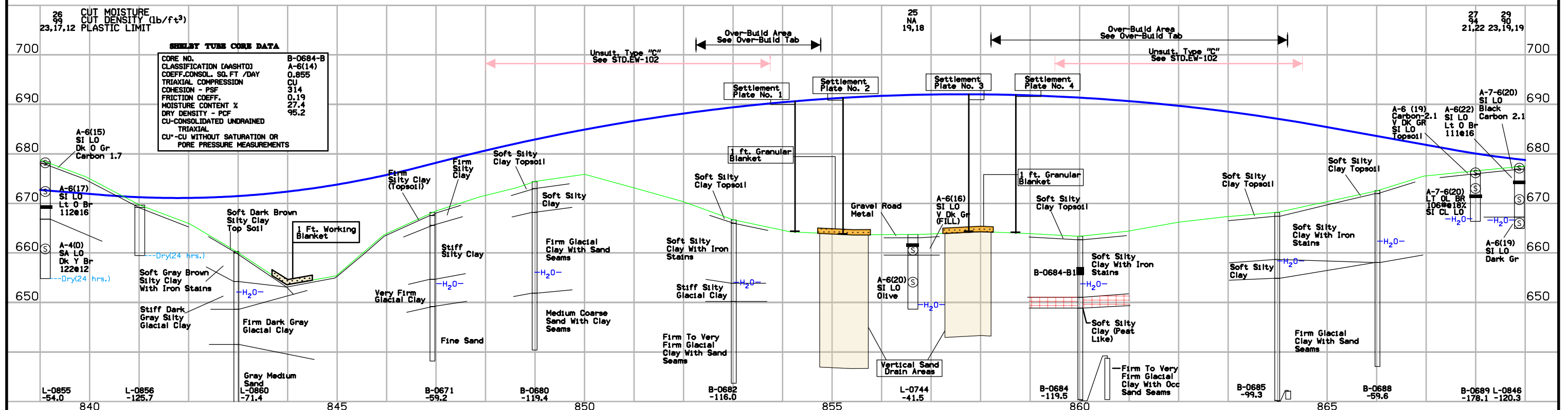
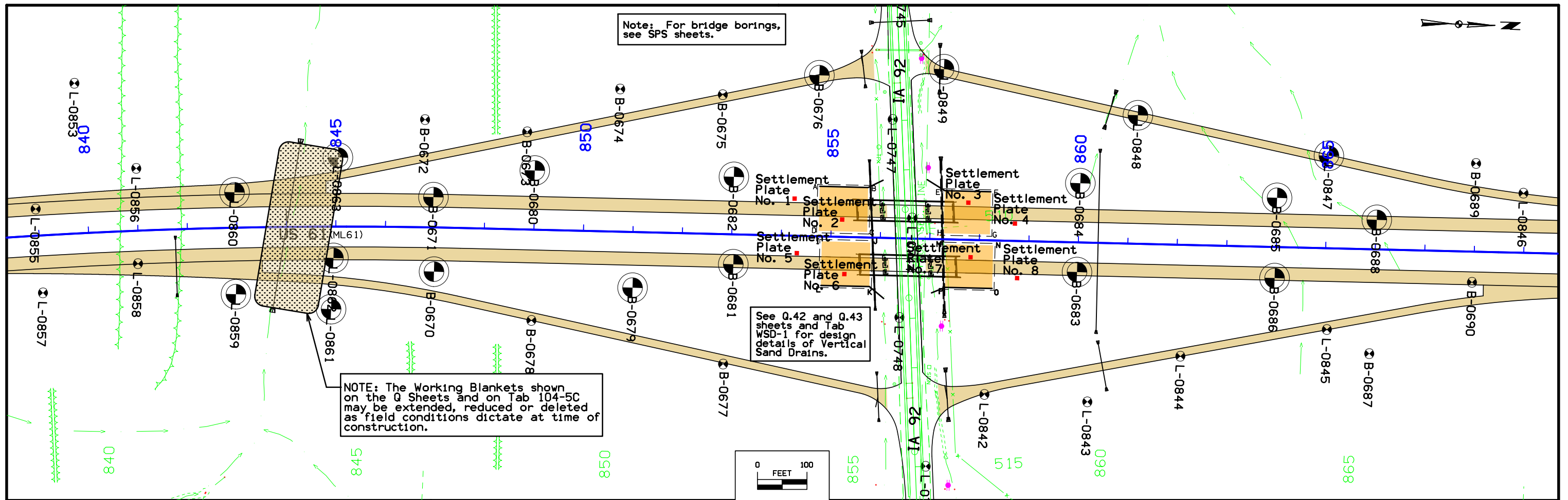


CUT MOISTURE CUT DENSITY (lb/ft³) PLASTIC LIMIT

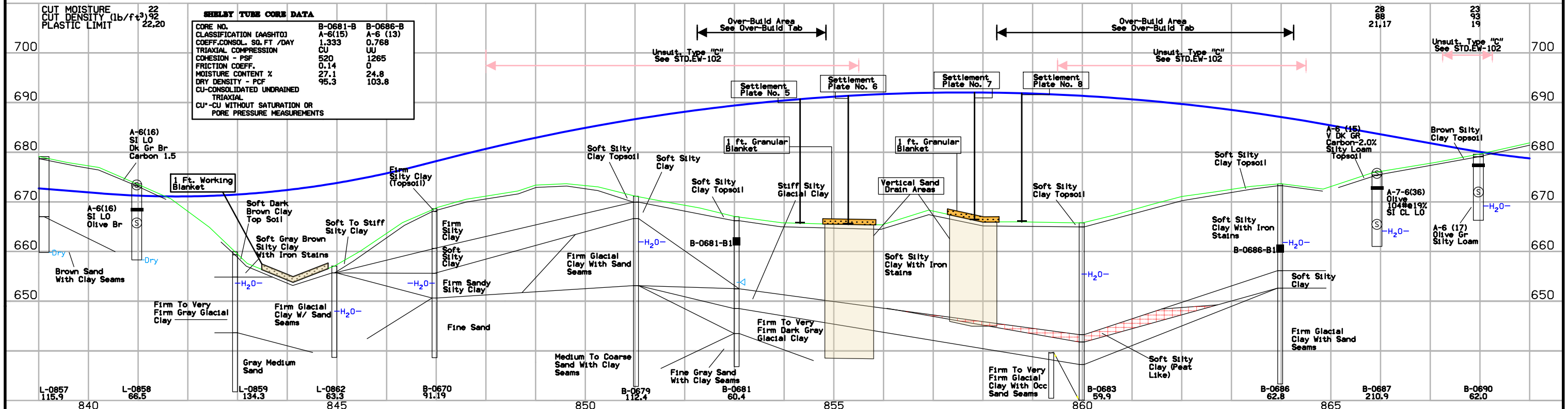
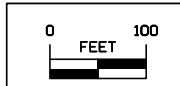
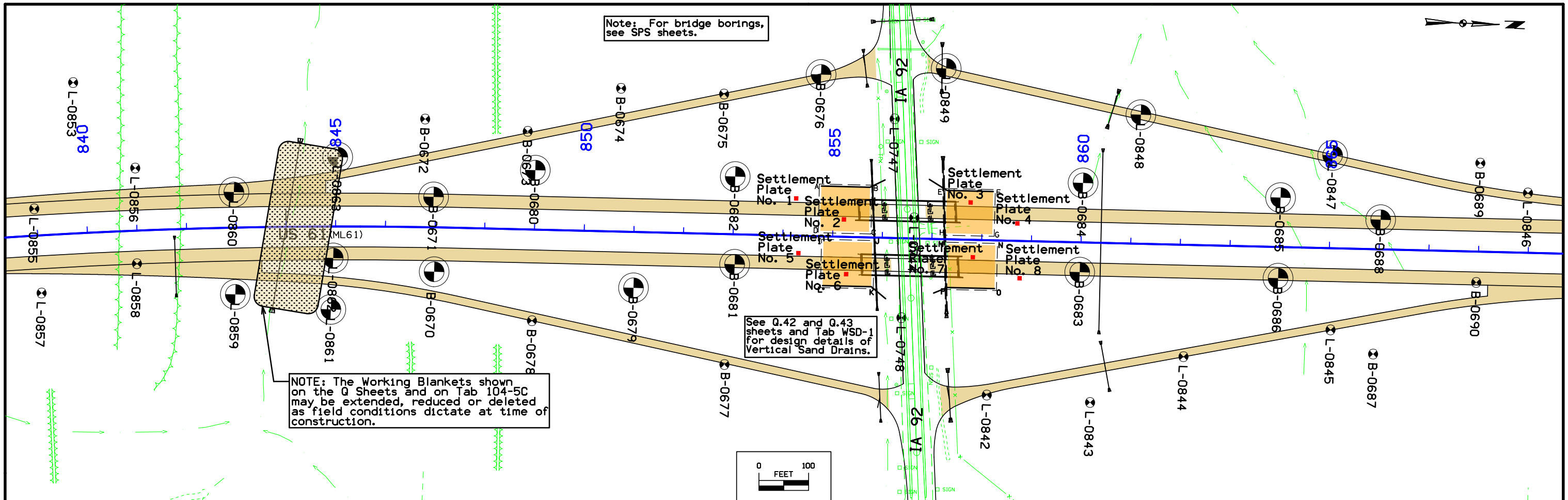
SEEBY TUBE CORE DATA

| CORE NO. | B-0641-B | B-0642-B | B-0645-C | B-0650-B | B-0638-B |
|---|-----------|-----------|----------|----------|----------|
| CLASSIFICATION (AASHTO) | A-7-6(36) | A-7-6(37) | A-6(14) | A-6(11) | A-6(14) |
| COEFF. CONSOL. SQ. FT / DAY | 0.816 | 1.231 | 1.506 | 1.080 | 0.762 |
| TRIAXIAL COMPRESSION | CU | UU | UU | UU | UU |
| COHESION - PSF | 407 | 3005 | 980 | 950 | 1500 |
| FRICTION COEFF. | 0.15 | 0.0 | 0.0 | 0.0 | 0.0 |
| MOISTURE CONTENT % | 20.9 | 20.6 | 25.9 | 23.8 | 24.5 |
| DRY DENSITY - PCF | 88.3 | 94.2 | 100.9 | 101.13 | 102.9 |
| CU-CONSOLIDATED UNDRAINED TRIAXIAL | | | | | |
| CUP-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS | | | | | |



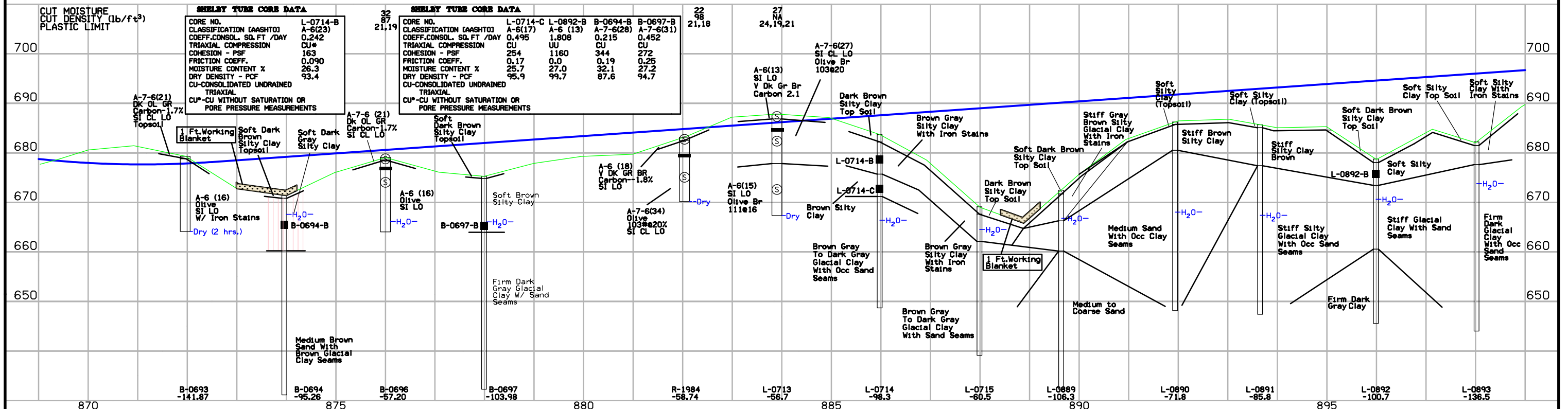
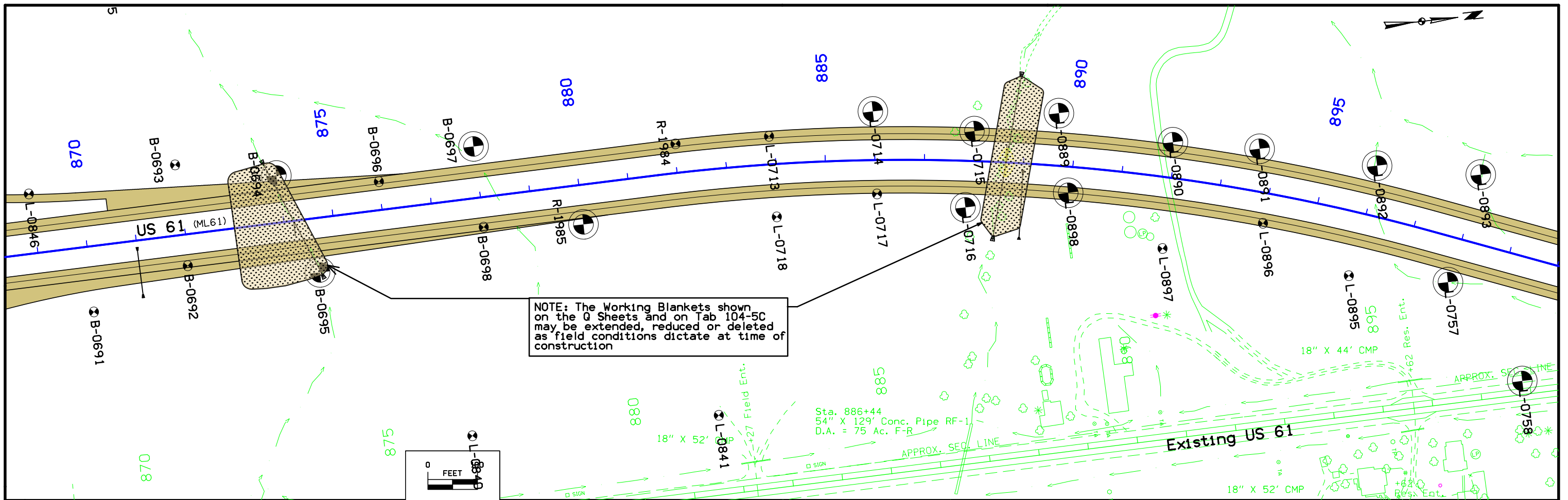


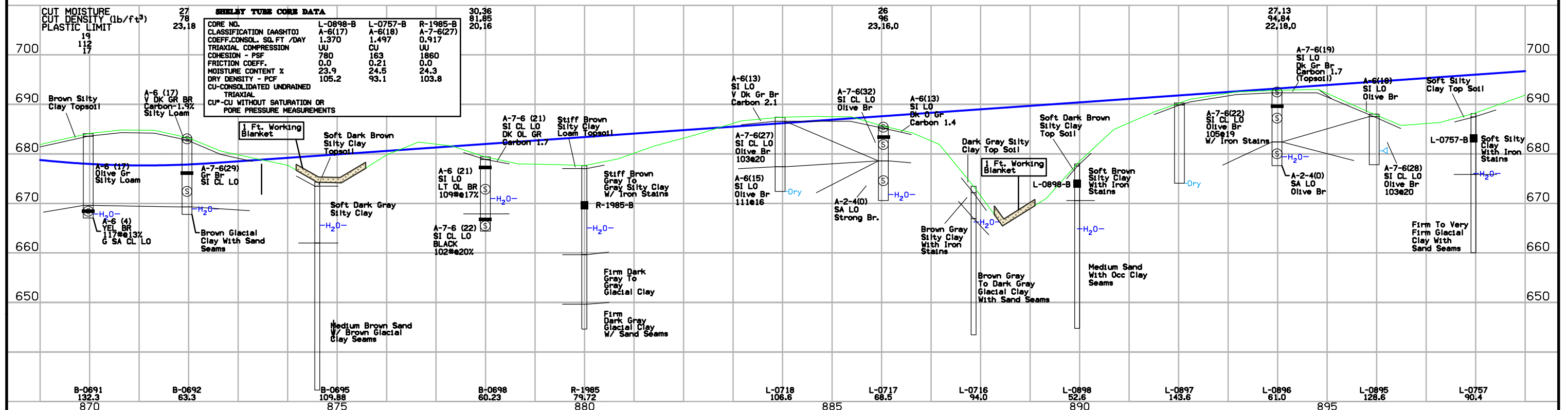
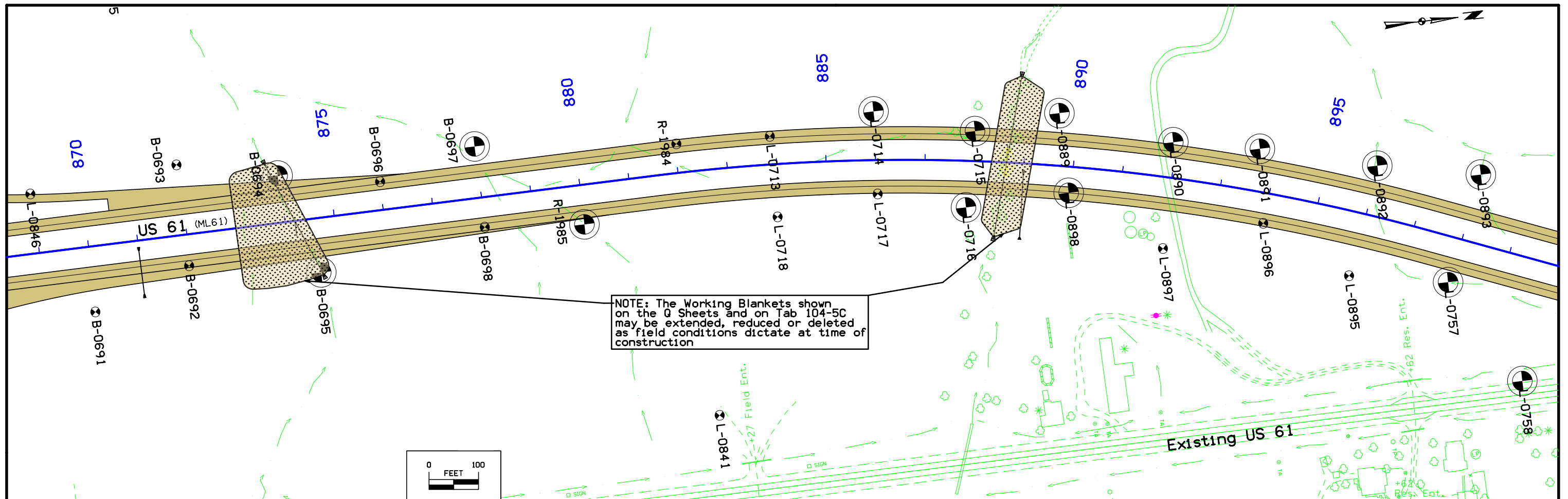
Note: For bridge borings, see SPS sheets.

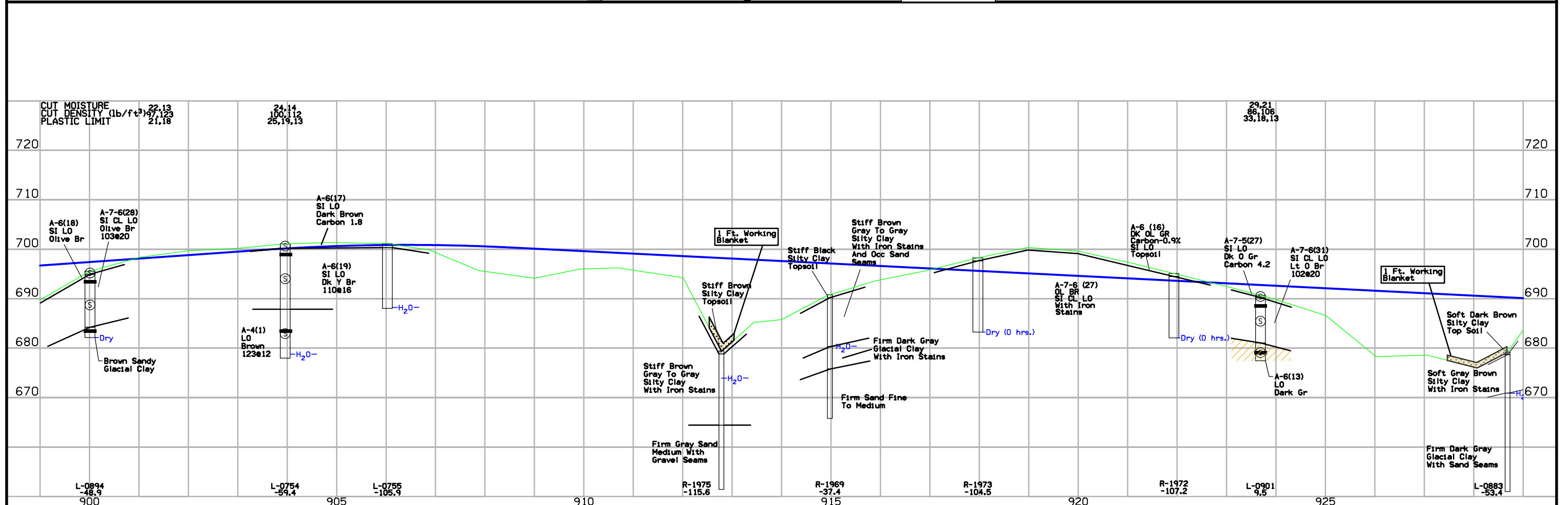
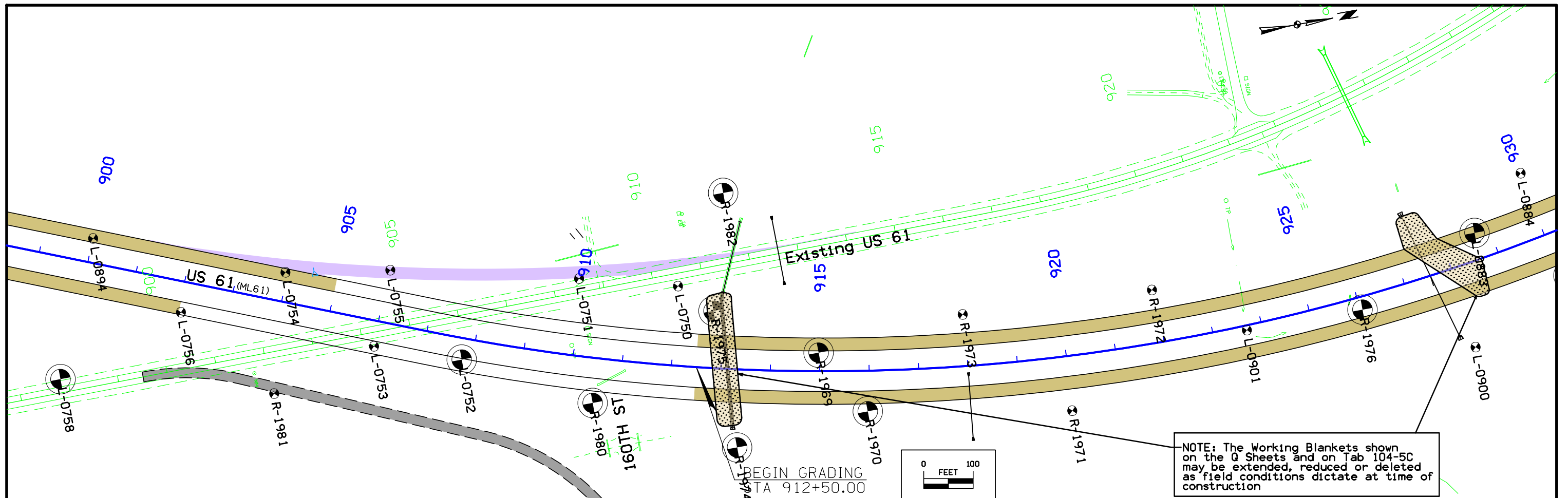


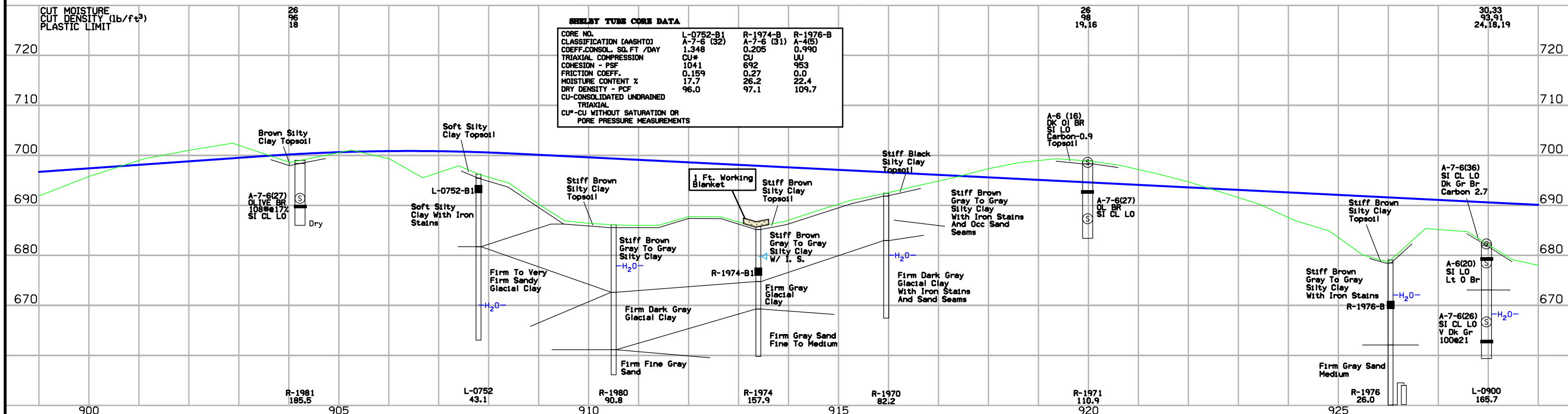
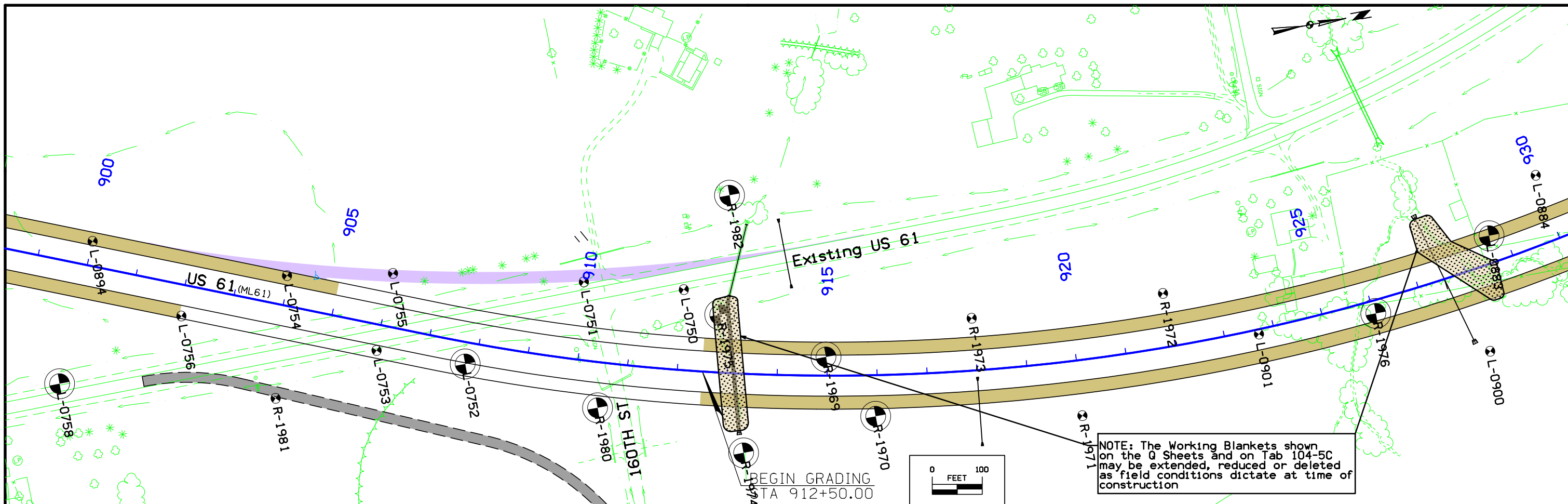
SEELY TUBE CORE DATA

| CORE NO. | B-0681-B | B-0686-B |
|--|----------|----------|
| CLASSIFICATION (AASHTO) | A-6(15) | A-6(13) |
| COEFF. CONSOL. SQ. FT / DAY | 1.333 | 0.768 |
| TRIAxIAL COMPRESSION | CU | UU |
| COHESION - PSF | 520 | 1265 |
| FRICTION COEFF. | 0.14 | 0 |
| MOISTURE CONTENT % | 27.1 | 24.8 |
| DRY DENSITY - PCF | 95.3 | 103.8 |
| CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS | | |



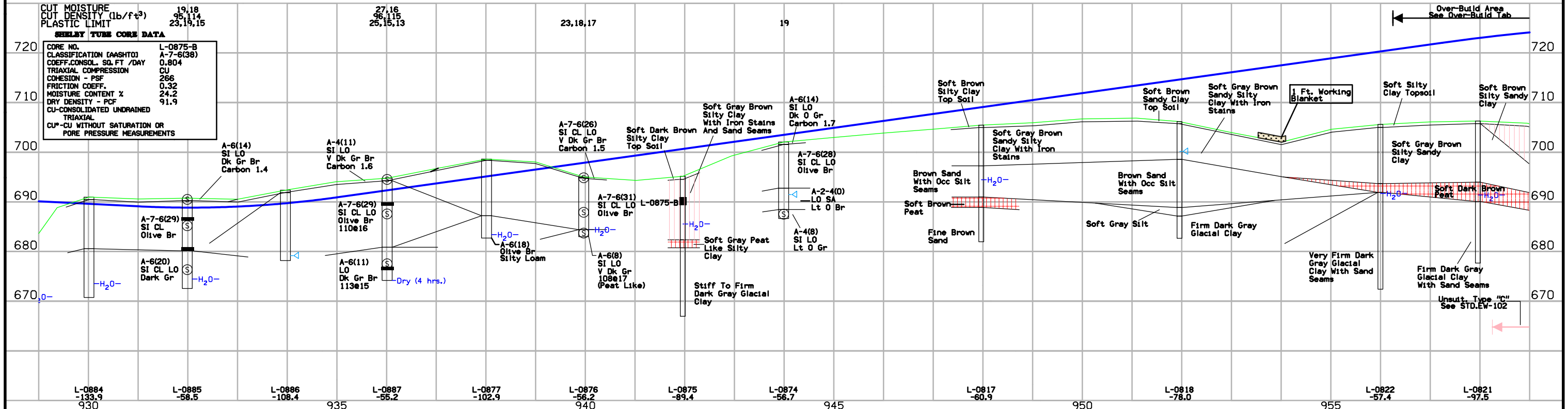
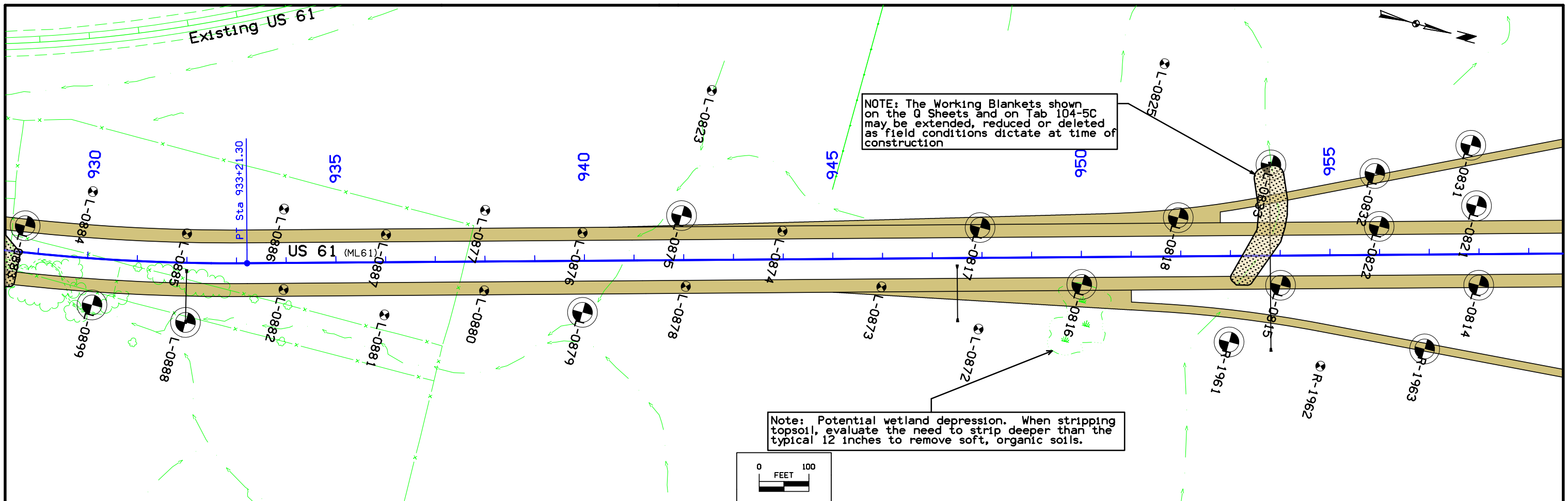


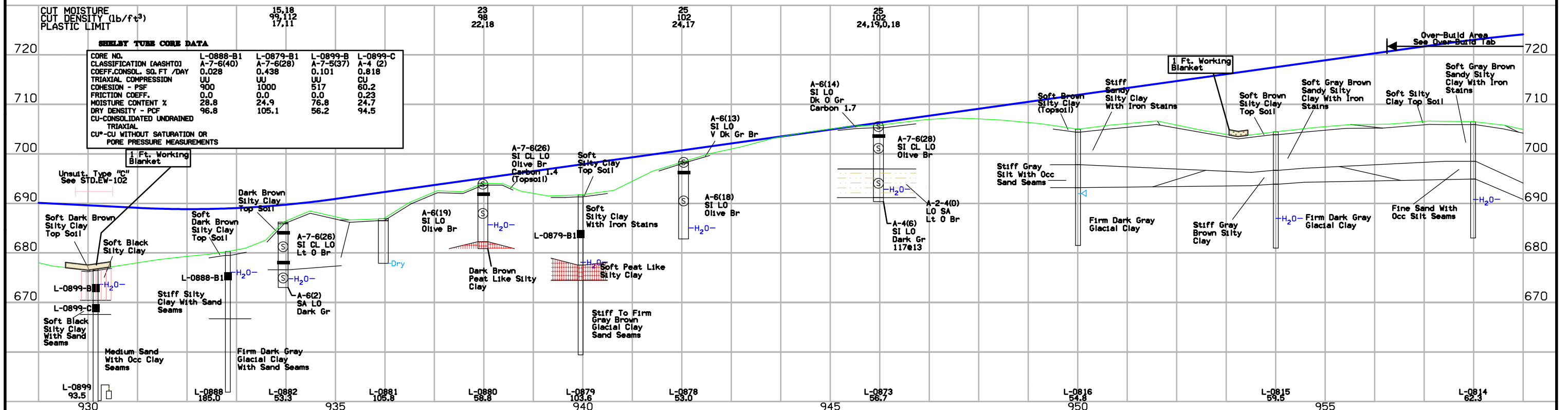
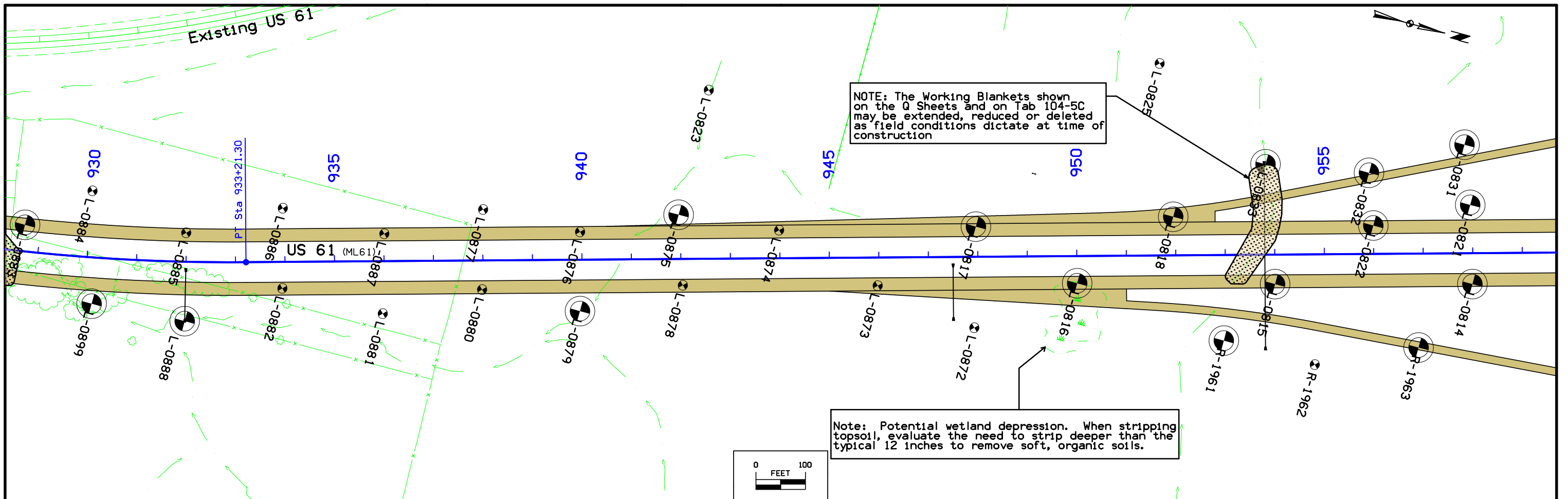




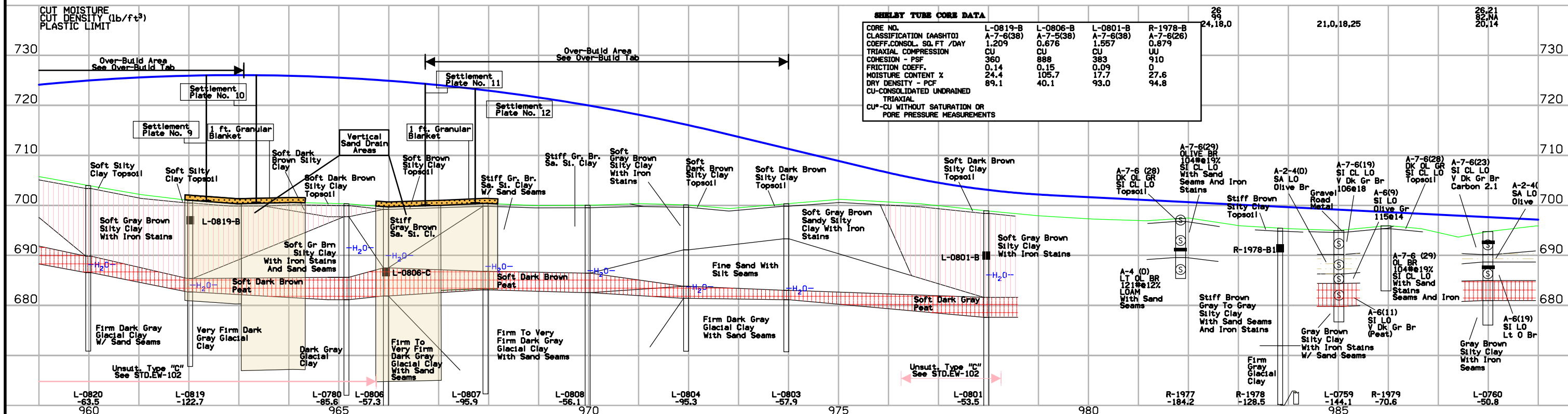
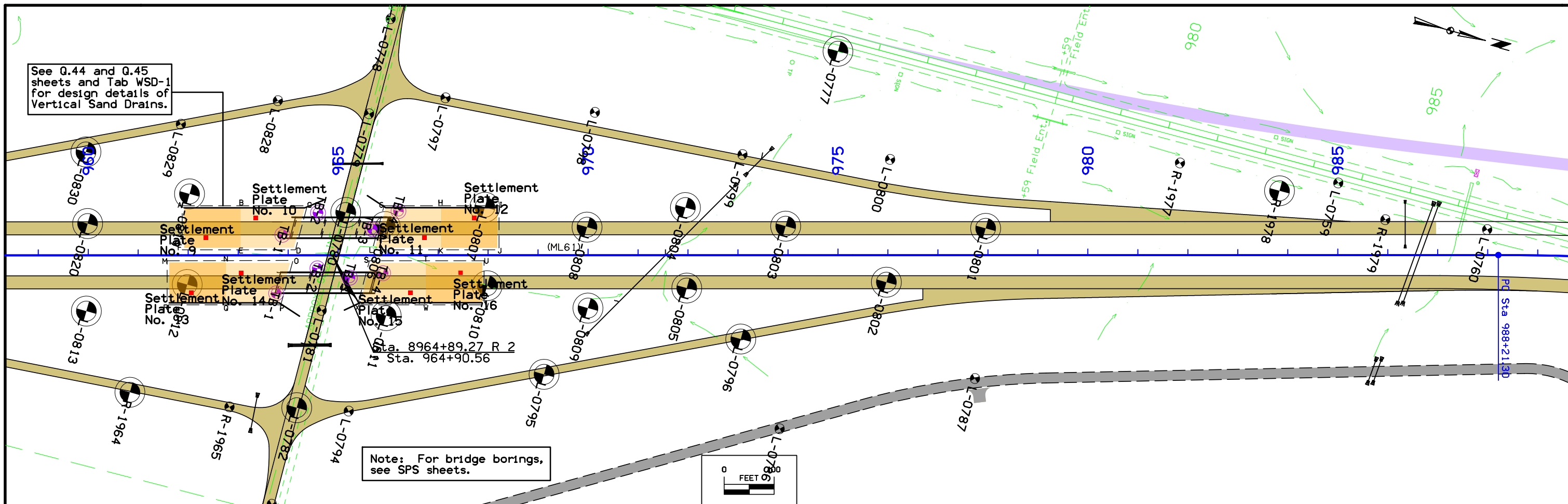
SHELBY TUBE CORE DATA

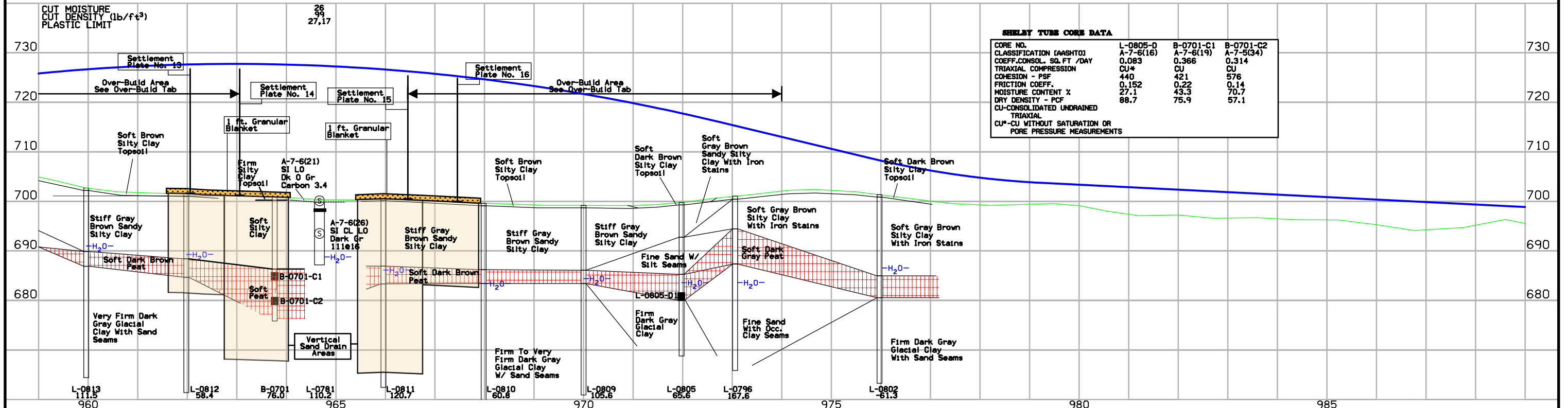
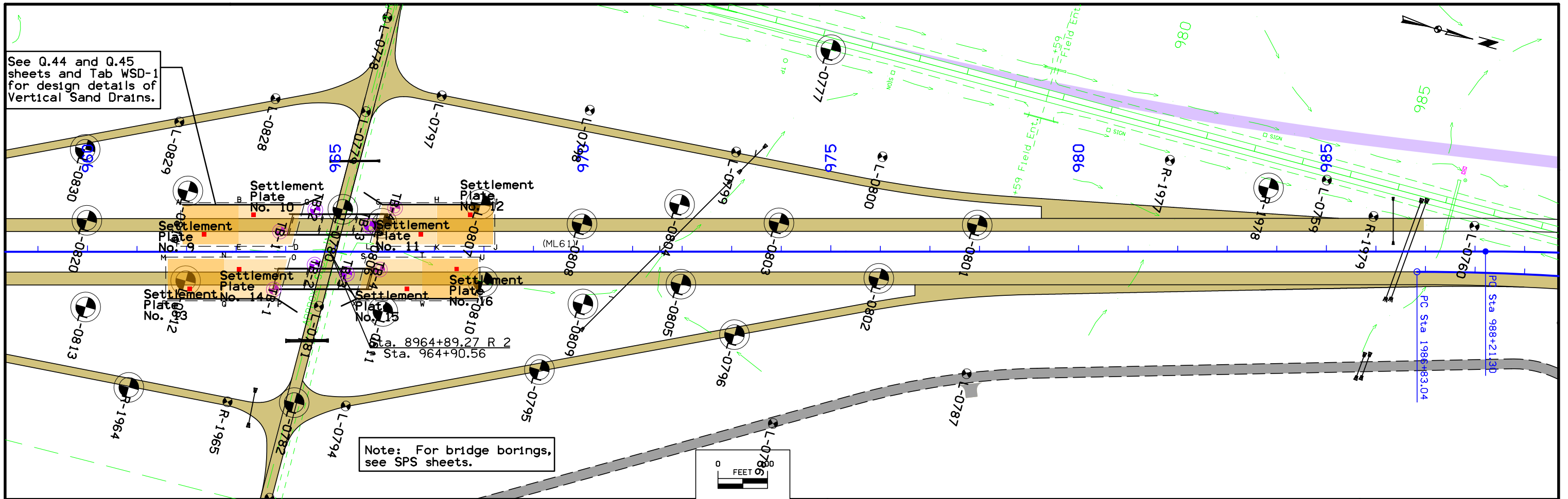
| CORE NO. | L-0752-B1 | R-1974-B | R-1976-B |
|---|------------|------------|----------|
| CLASSIFICATION (AASHTO) | A-7-6 (32) | A-7-6 (31) | A-4(5) |
| COEFF. CONSOL. SQ. FT / DAY | 1.348 | 0.205 | 0.990 |
| TRIAxIAL COMPRESSION | CU* | CU | UJ |
| COHESION - PSF | 1041 | 692 | 953 |
| FRICTION COEFF. | 0.159 | 0.27 | 0.0 |
| MOISTURE CONTENT % | 17.7 | 26.2 | 22.4 |
| DRY DENSITY - PCF | 96.0 | 97.1 | 109.7 |
| CU* - CONSOLIDATED UNDRAINED TRIAXIAL | | | |
| CU* - CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS | | | |

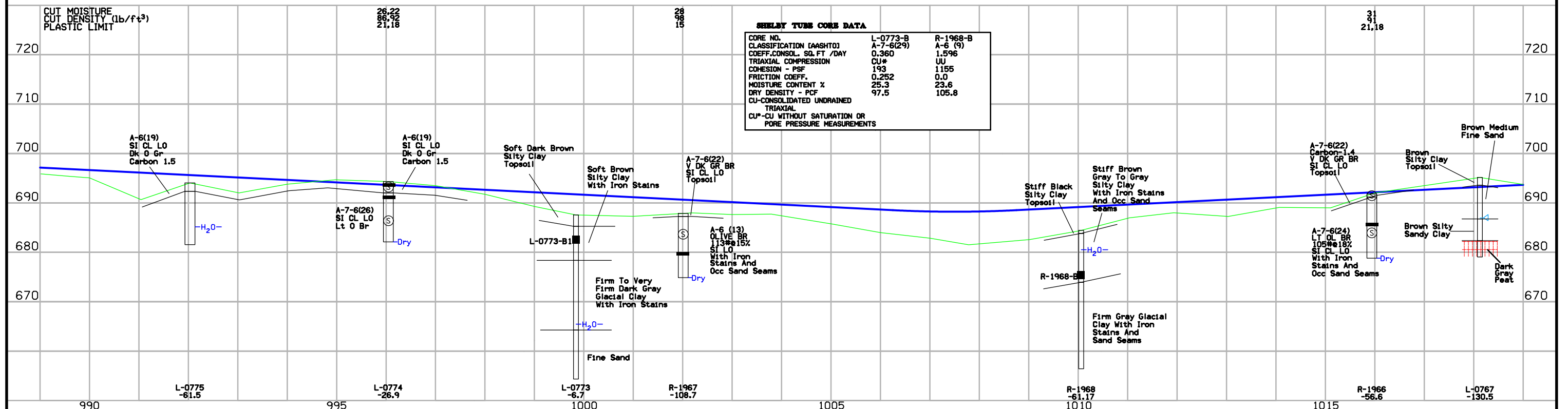
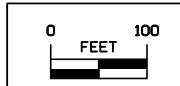
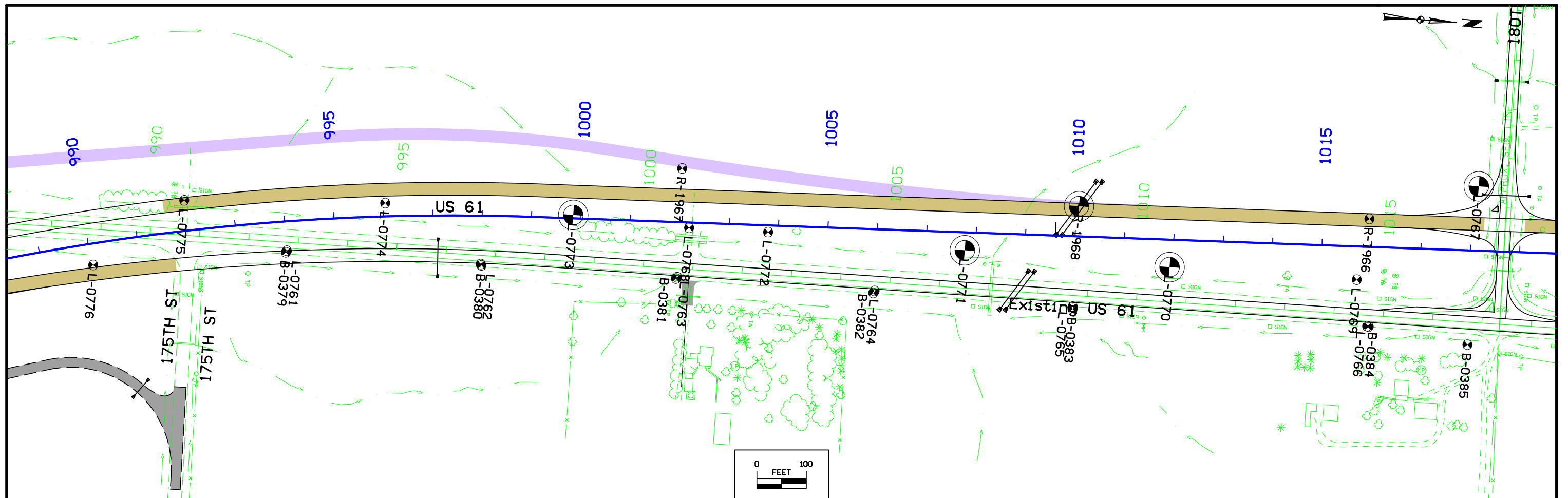


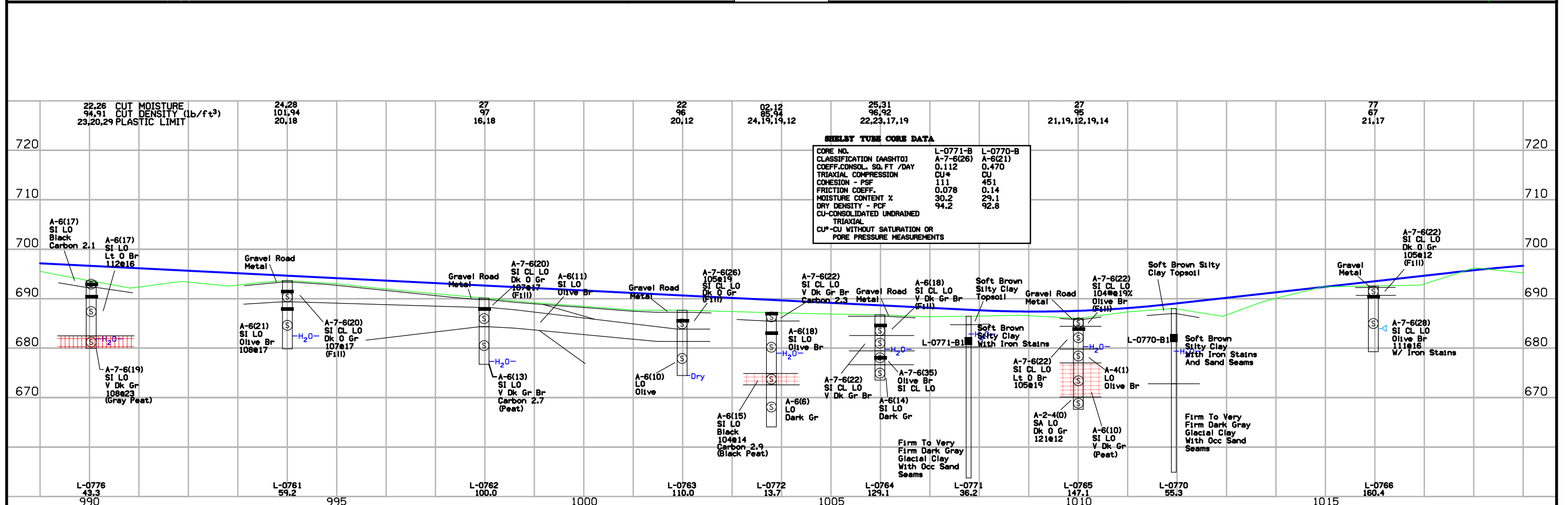
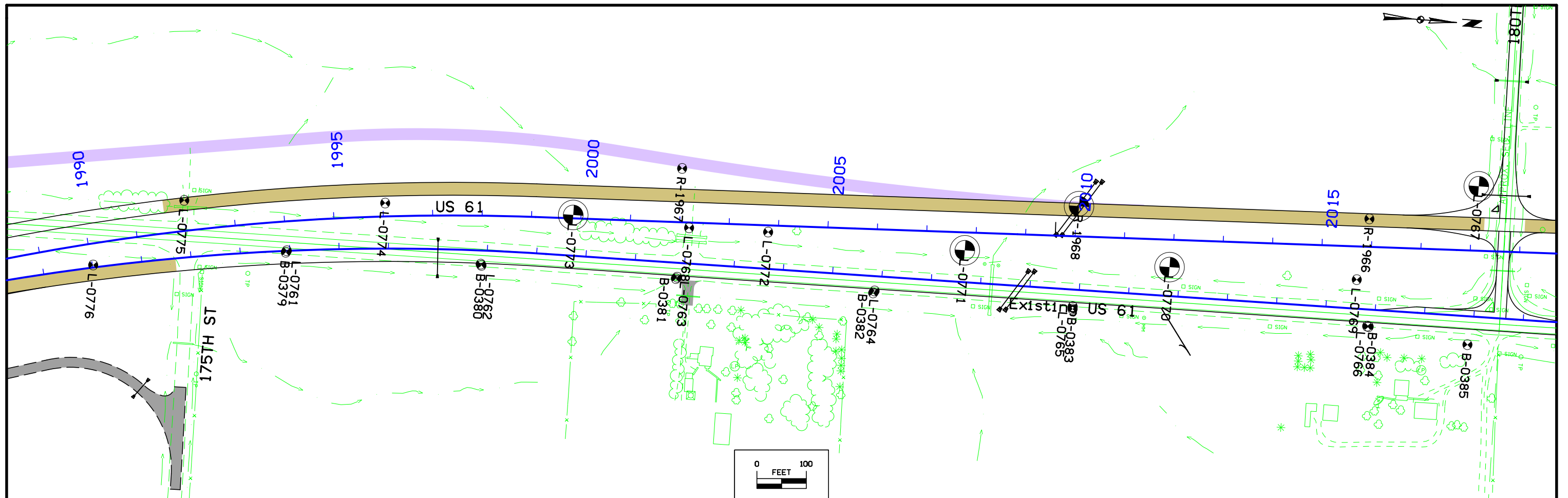


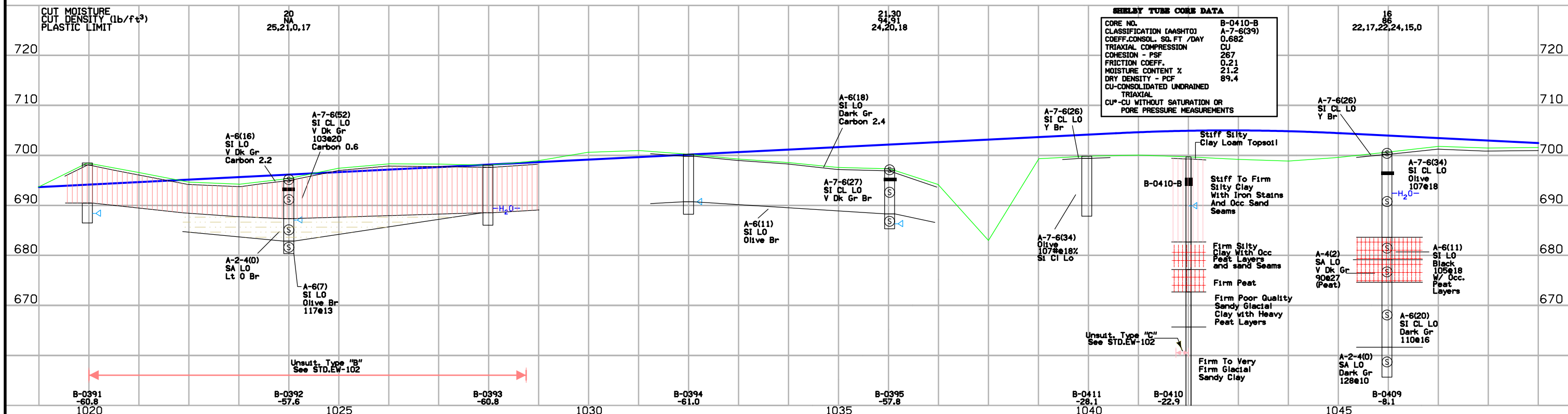
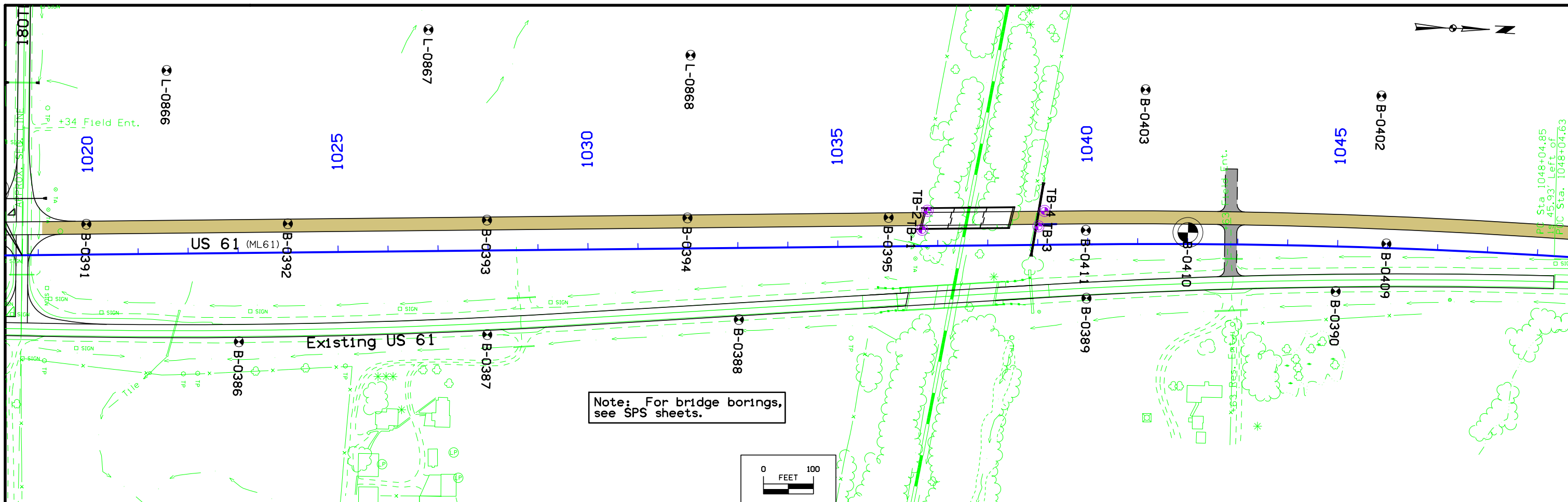
| SEEBLY TUBE CORE DATA | | | | |
|--|-----------|-----------|-----------|----------|
| CORE NO. | L-0888-B1 | L-0879-B1 | L-0899-B | L-0899-C |
| CLASSIFICATION (AASHTO) | A-7-6(40) | A-7-6(26) | A-7-6(37) | A-4 (2) |
| COEFF. CONSOL. SQ. FT / DAY | 0.028 | 0.438 | 0.101 | 0.818 |
| TRIAxIAL COMPRESSION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

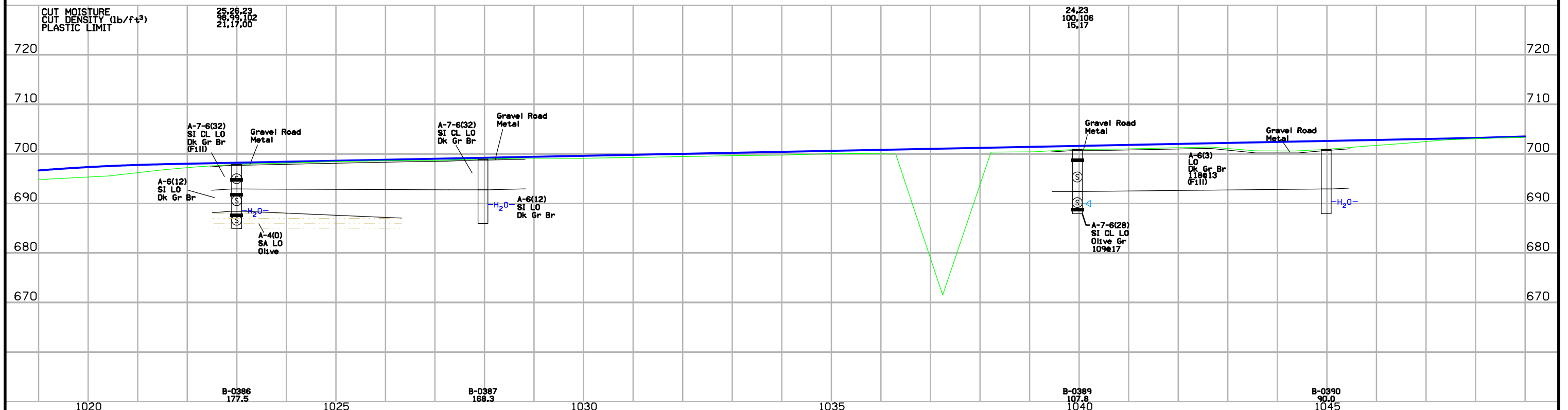
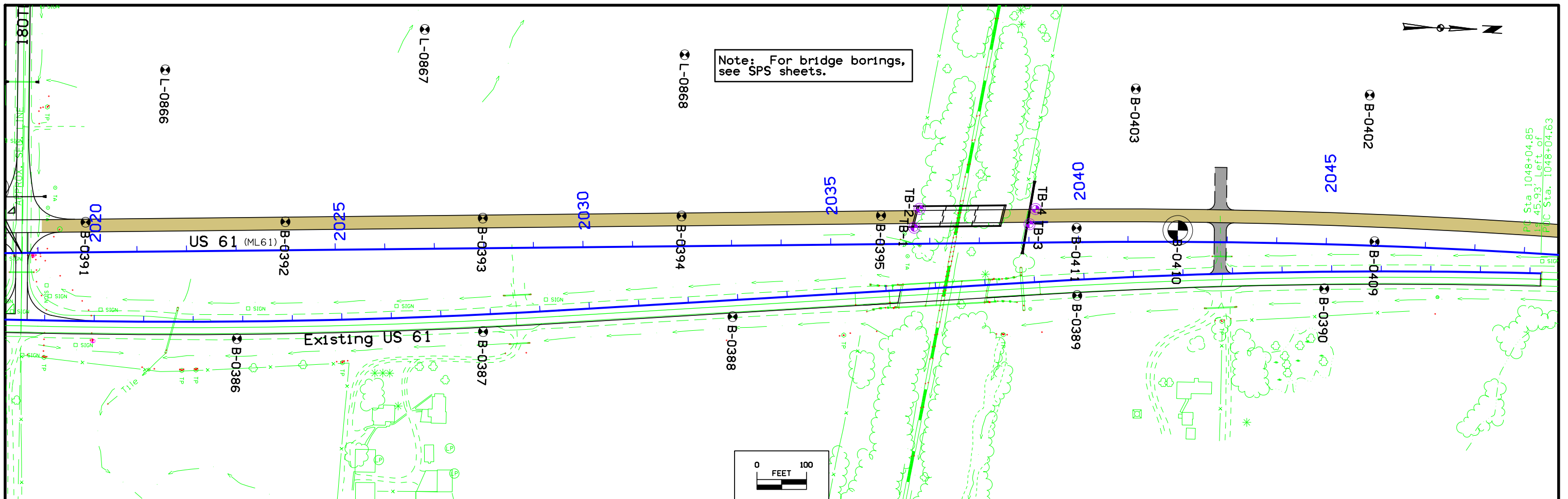


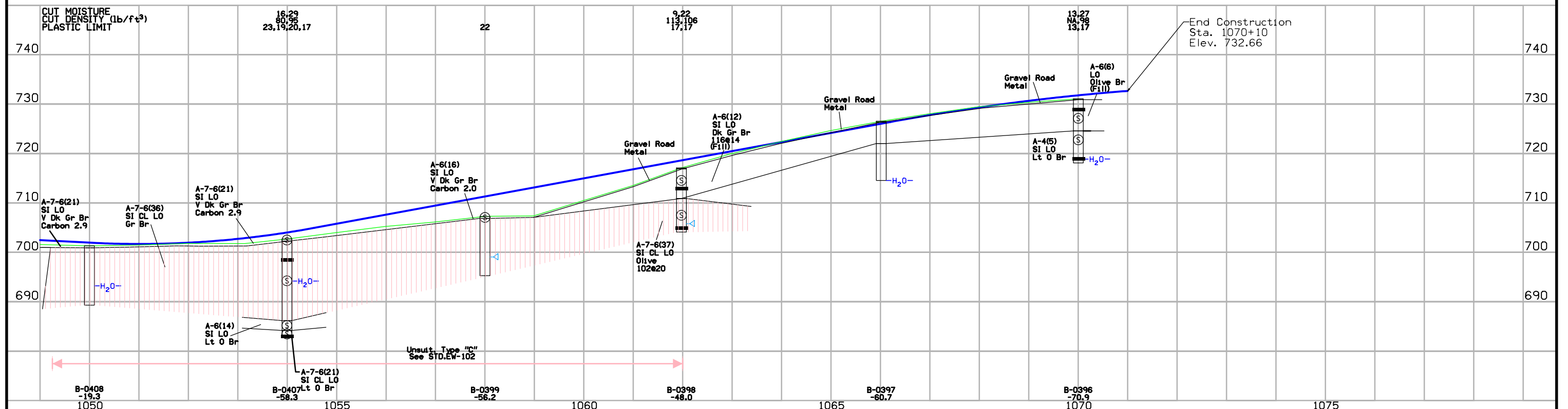
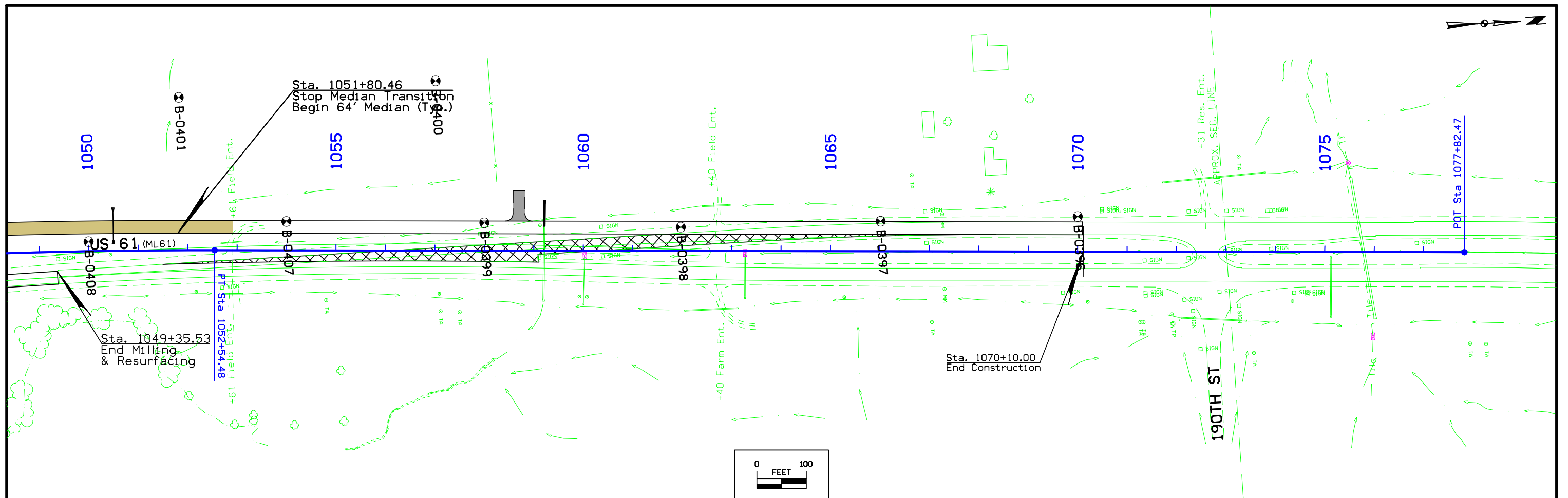


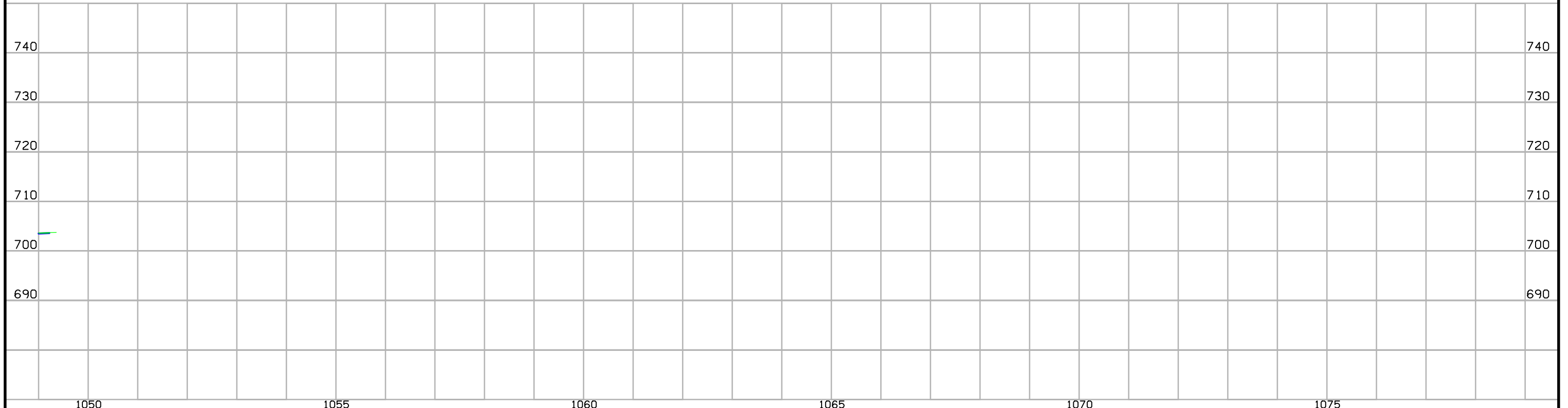
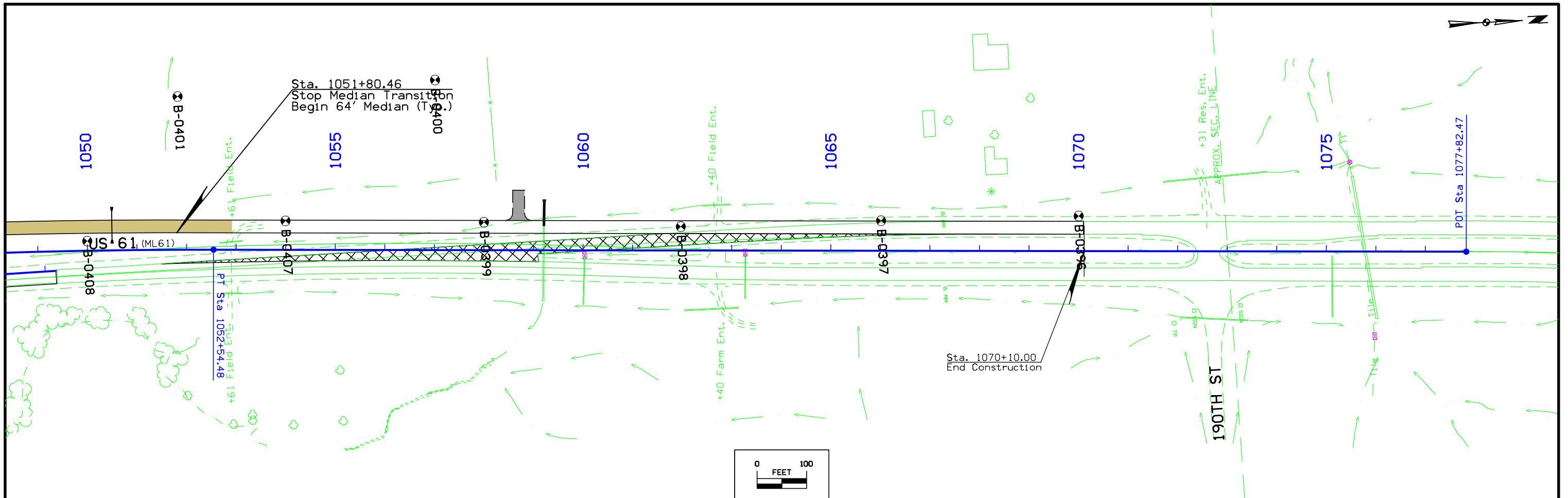


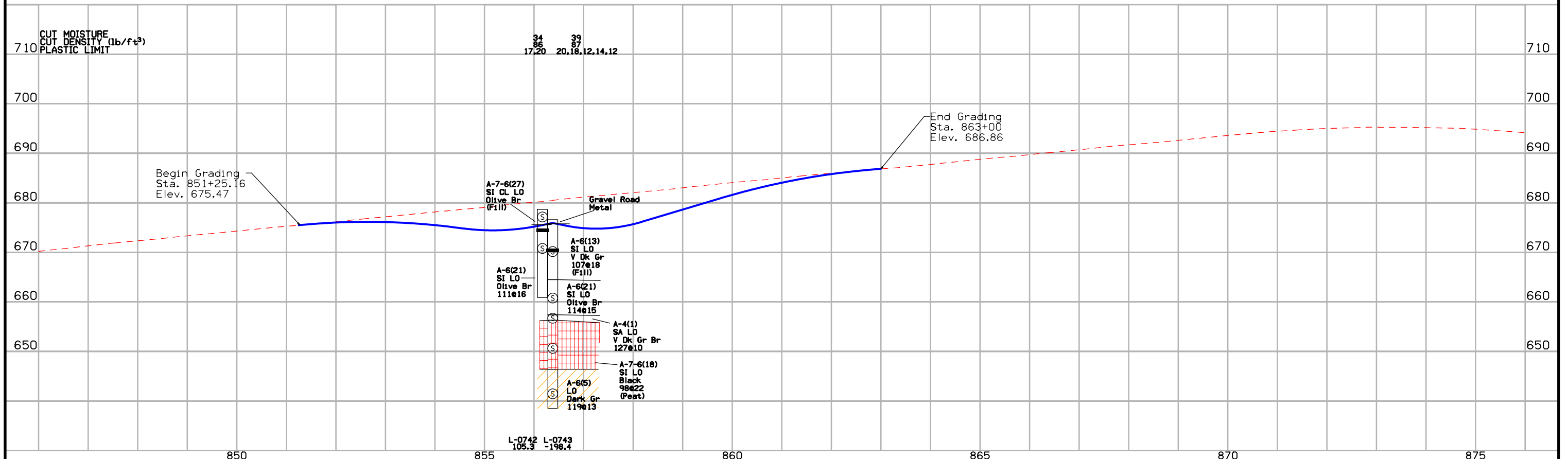
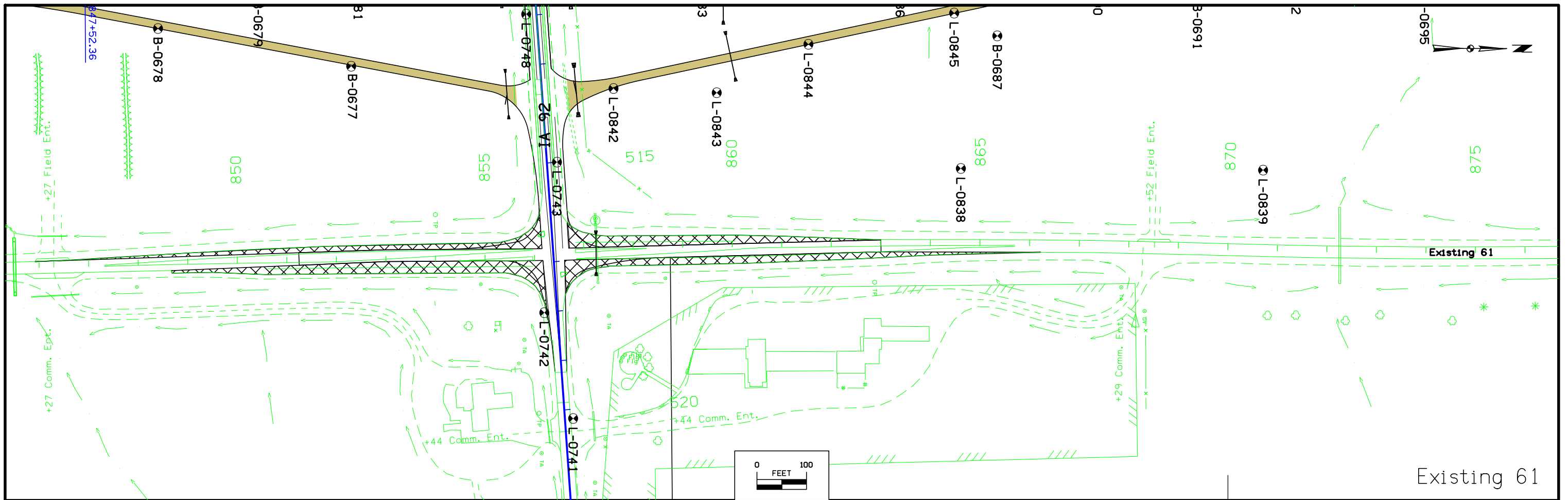


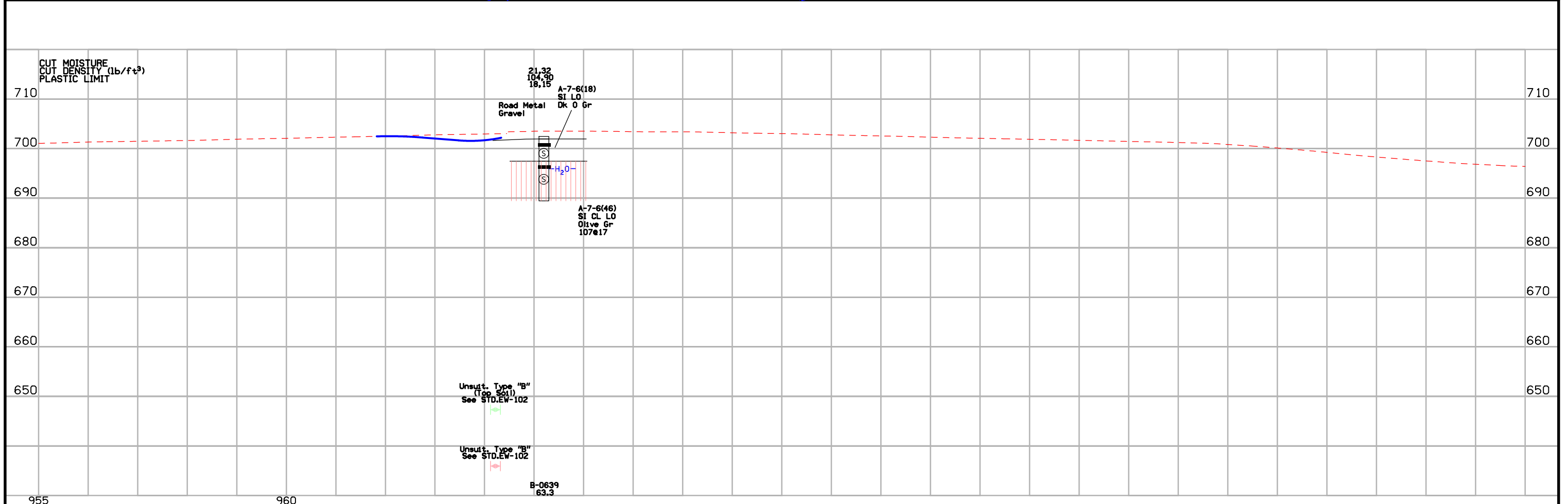
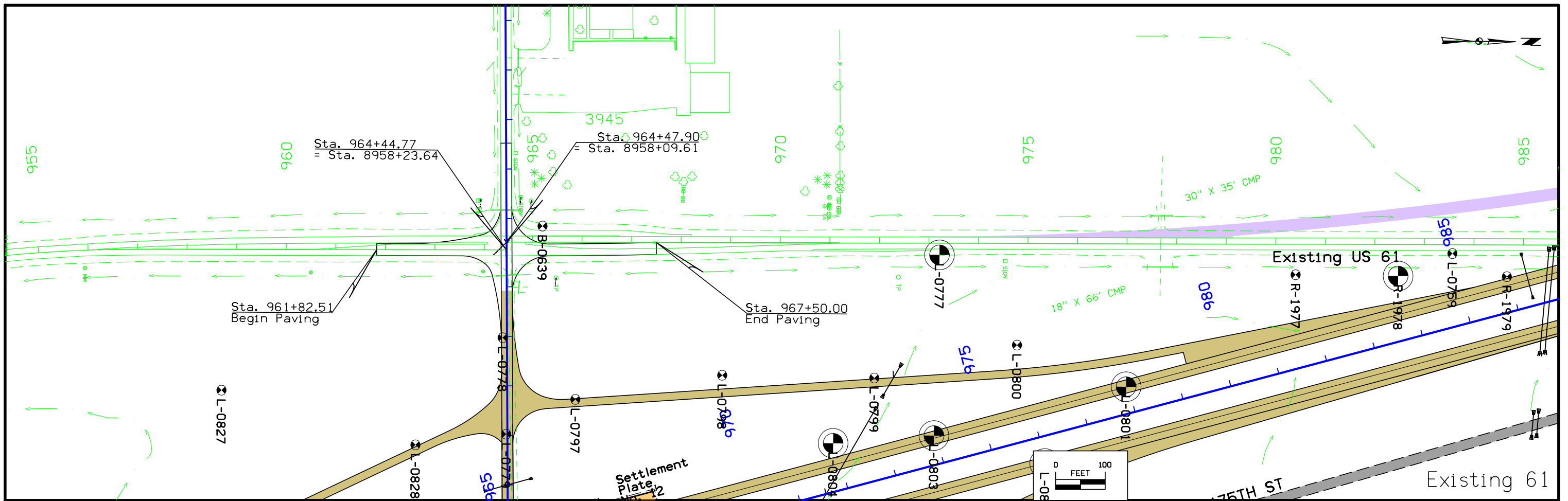


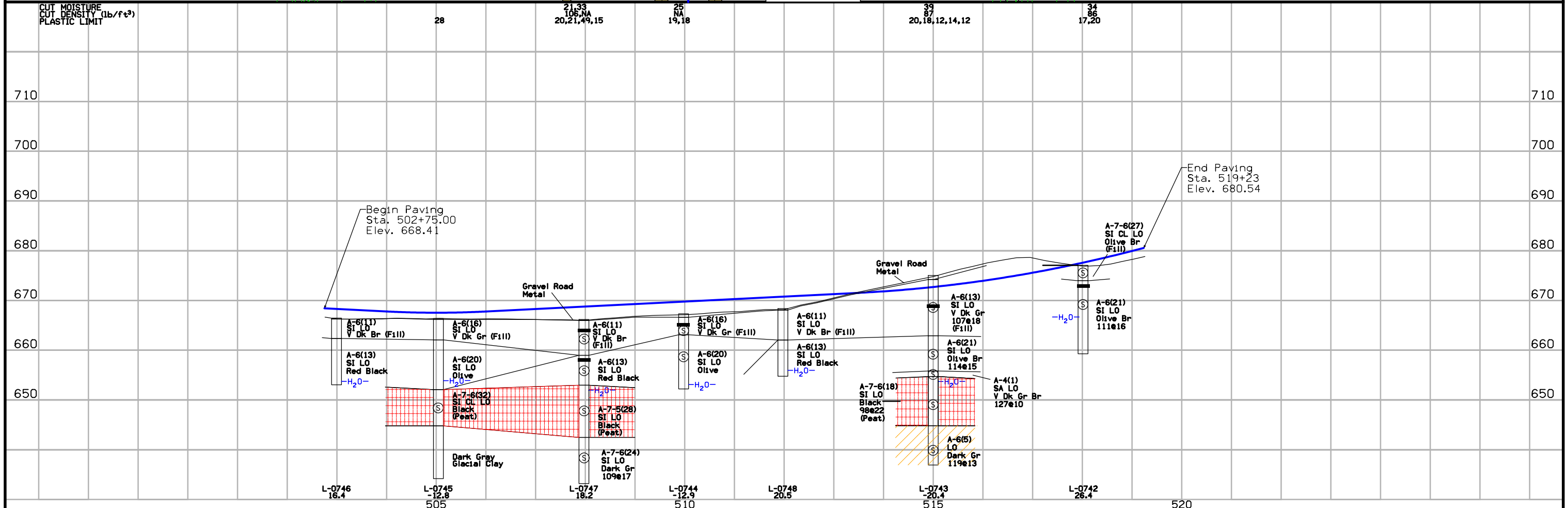
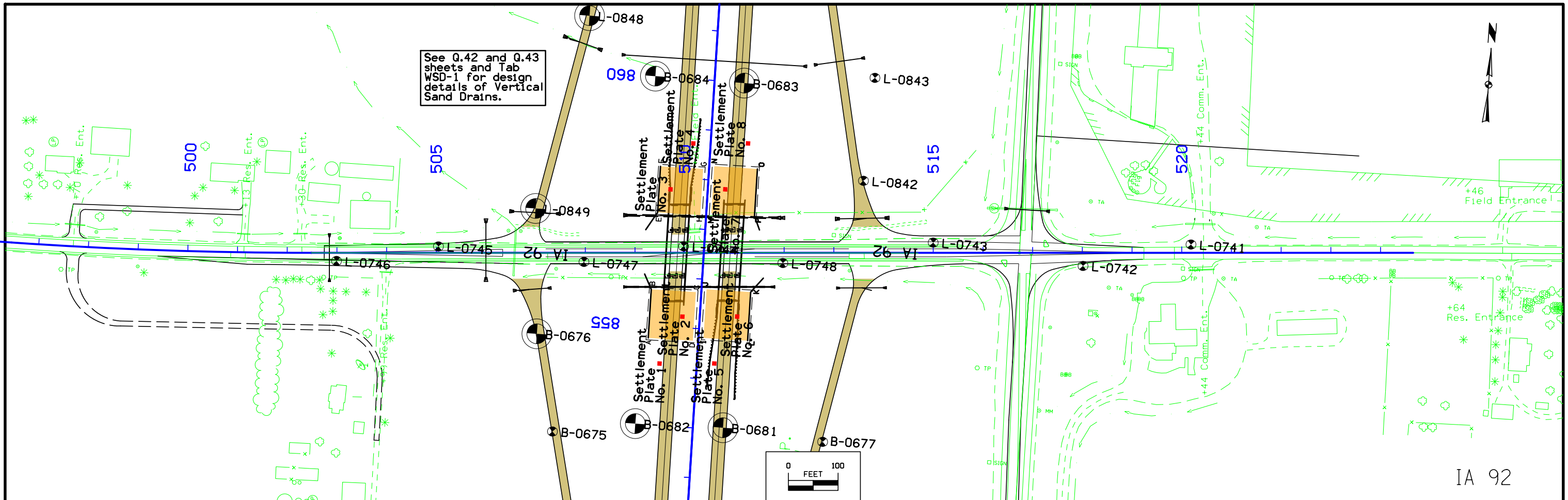


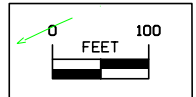
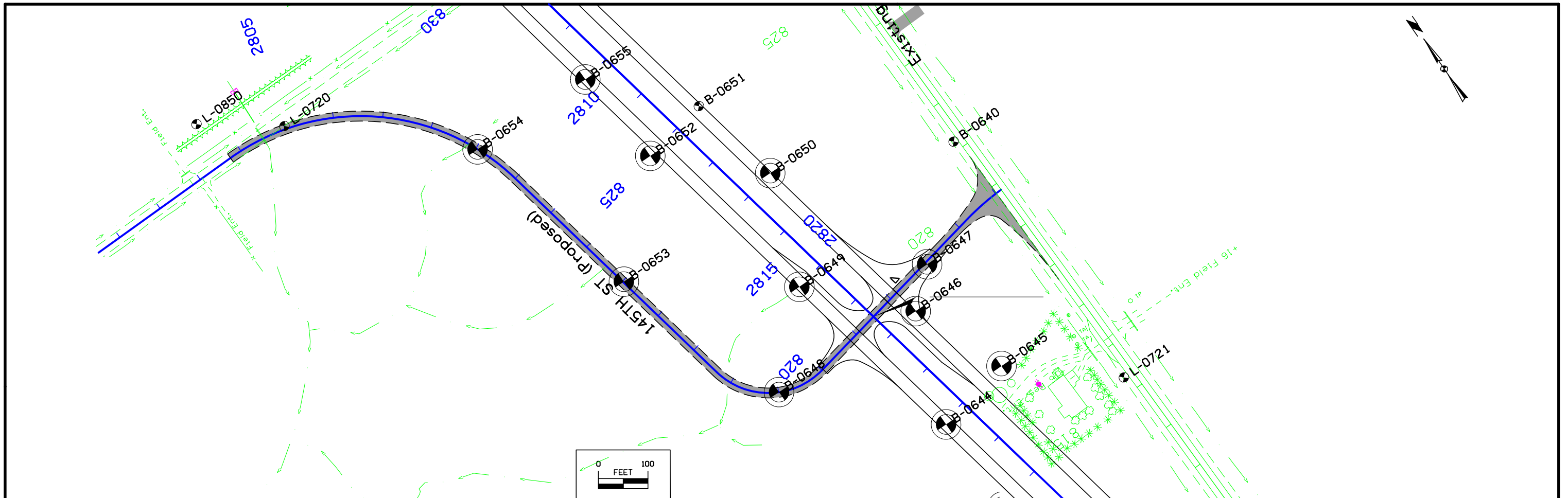








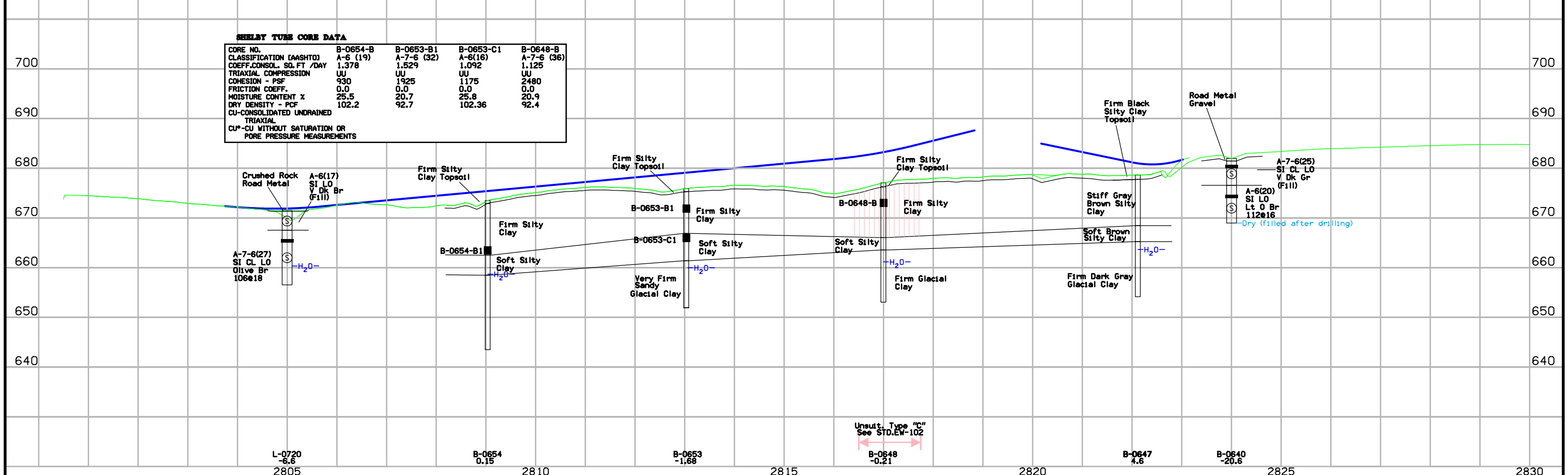




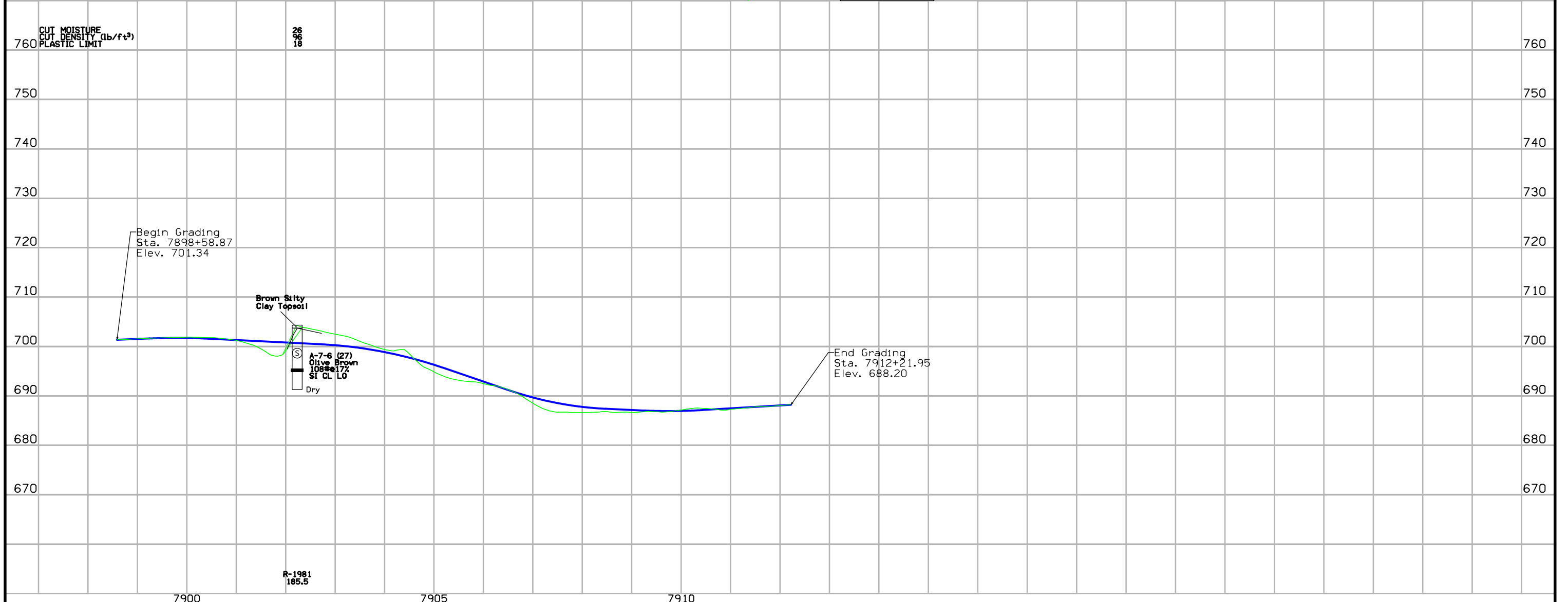
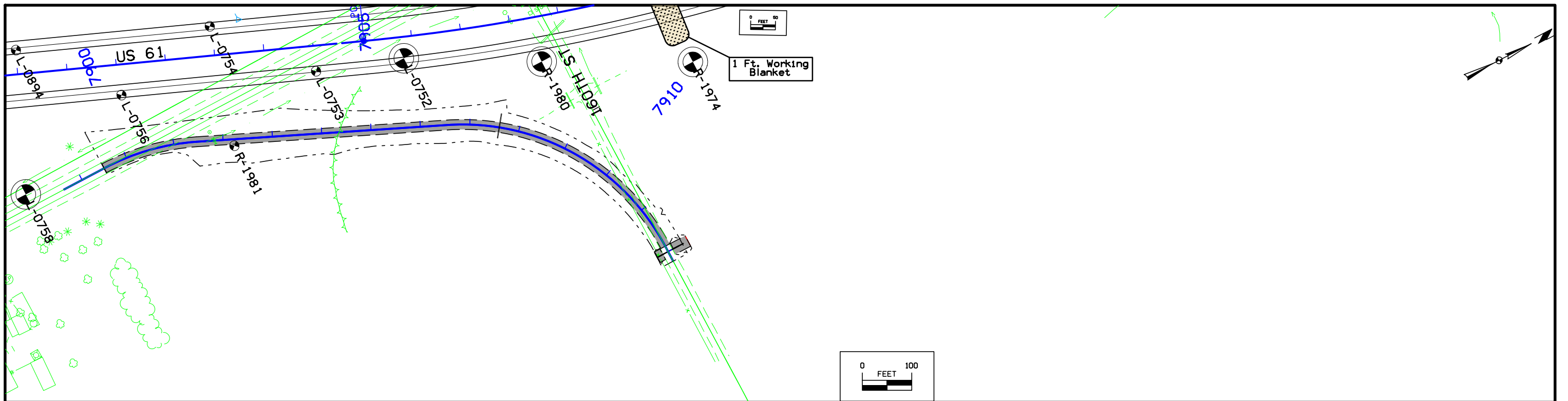
| | | |
|-----------------------------------|-------|---------|
| CUT MOISTURE | 28 | 28.25 |
| CUT DENSITY (lb/ft ³) | NA | NA, 101 |
| PLASTIC LIMIT | 18,19 | 19,19 |

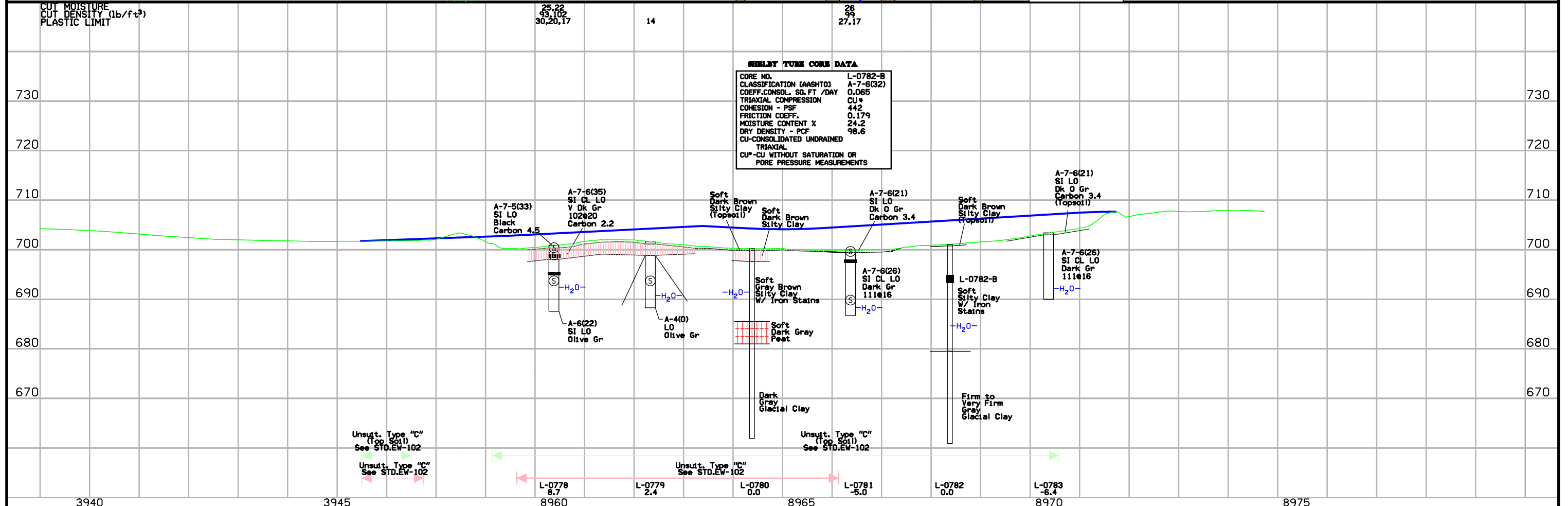
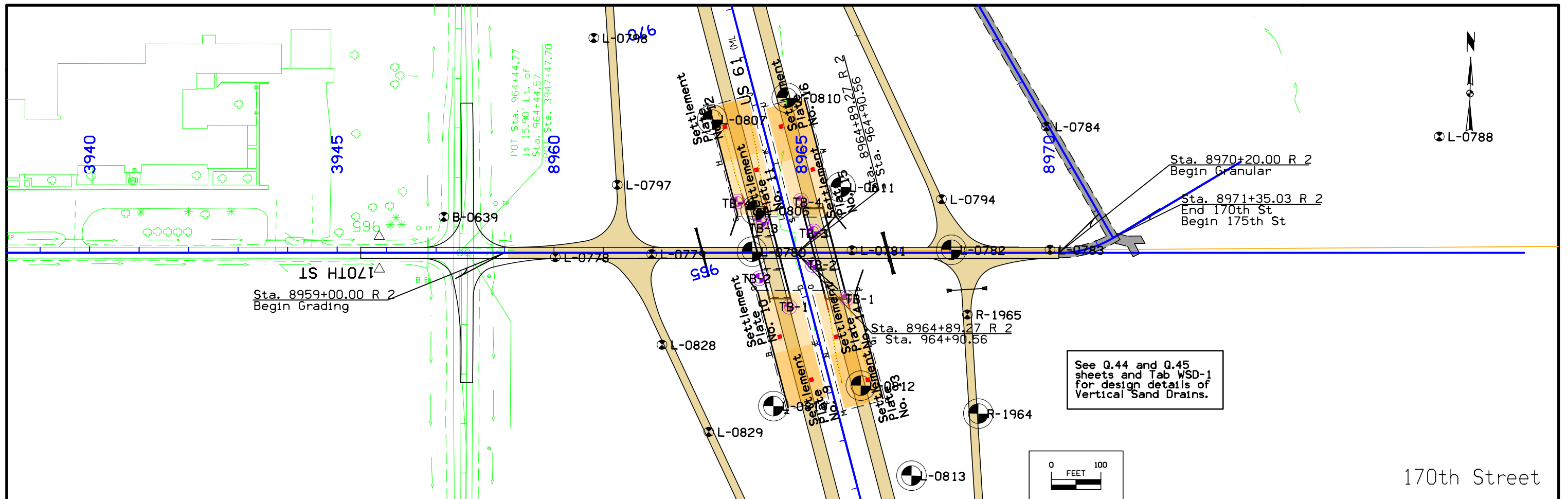
SHELBY TUBE CORE DATA

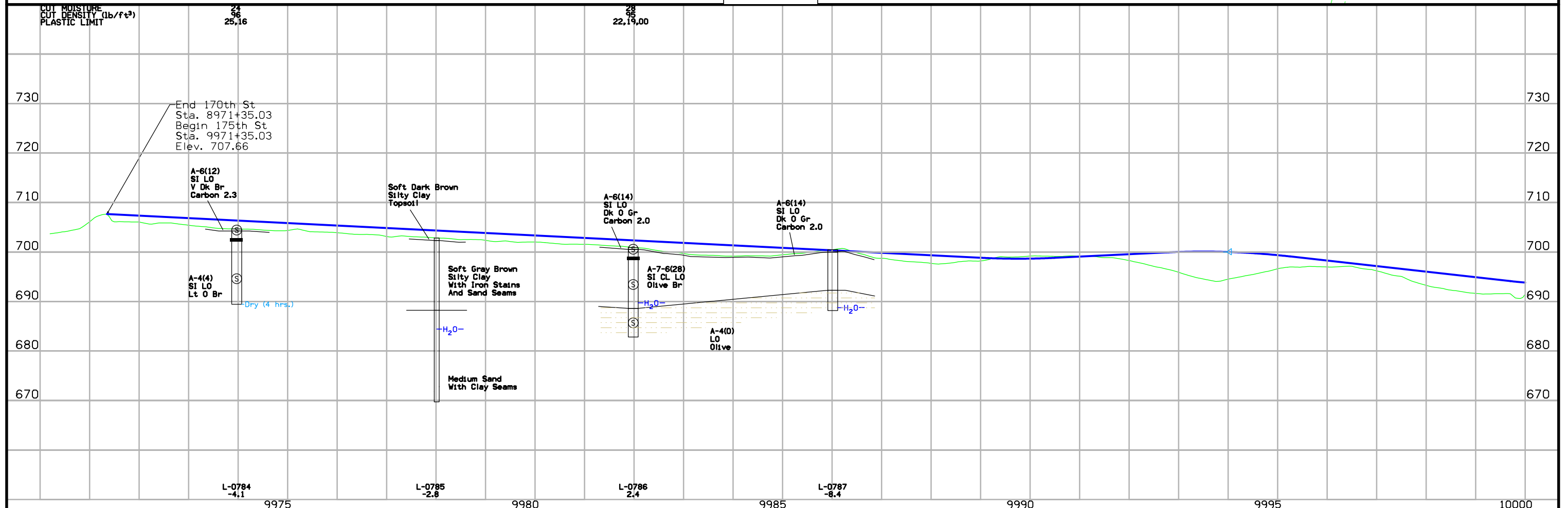
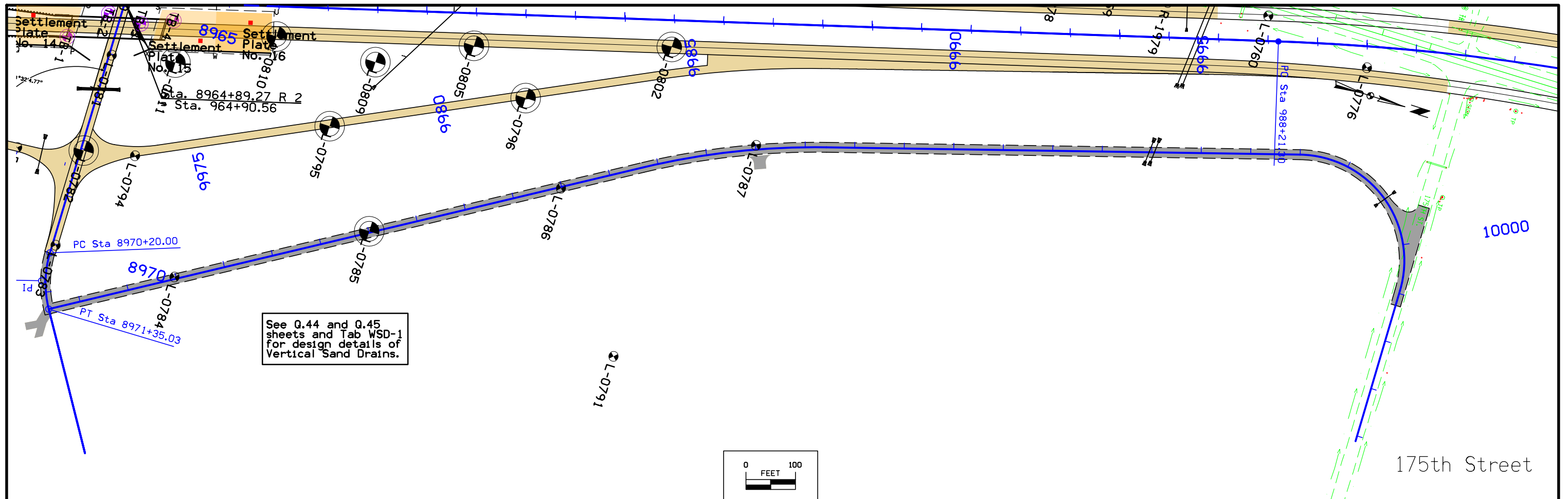
| CORE NO. | B-0654-B | B-0653-B1 | B-0653-C1 | B-0648-B |
|--|----------|------------|-----------|------------|
| CLASSIFICATION (AASHTO) | A-6 (19) | A-7-6 (32) | A-6(16) | A-7-6 (36) |
| COEFF. CONSOL. SQ. FT / DAY | 1,378 | 1,529 | 1,092 | 1,125 |
| TRIAxIAL COMPRESSION | UU | UU | UU | UU |
| COHESION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

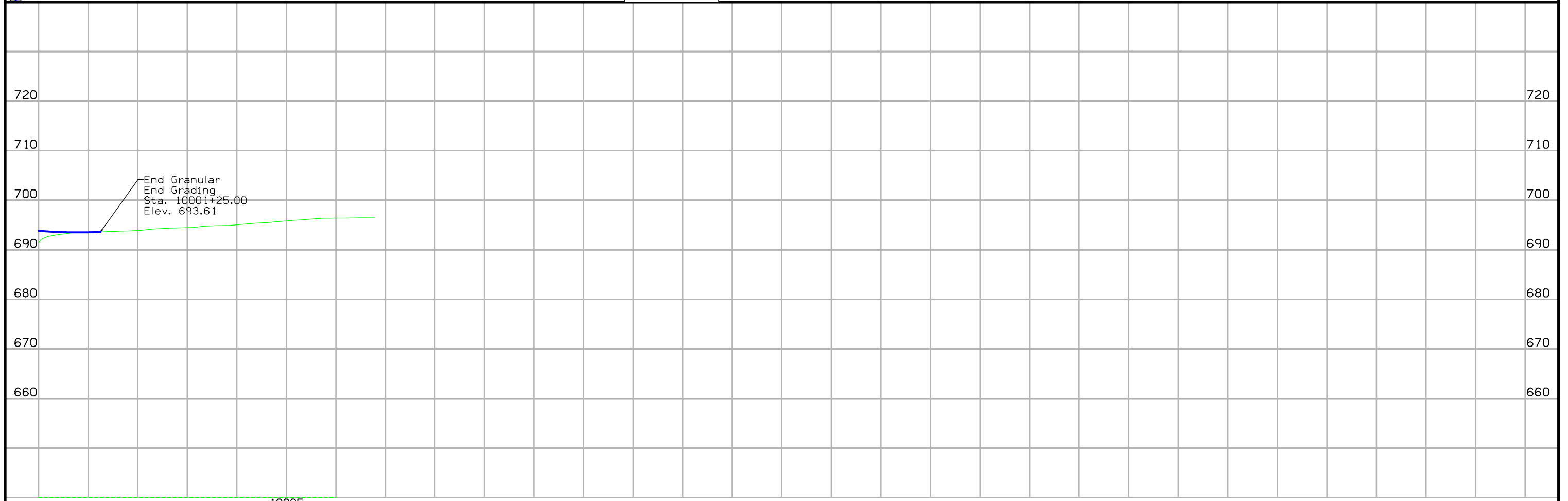
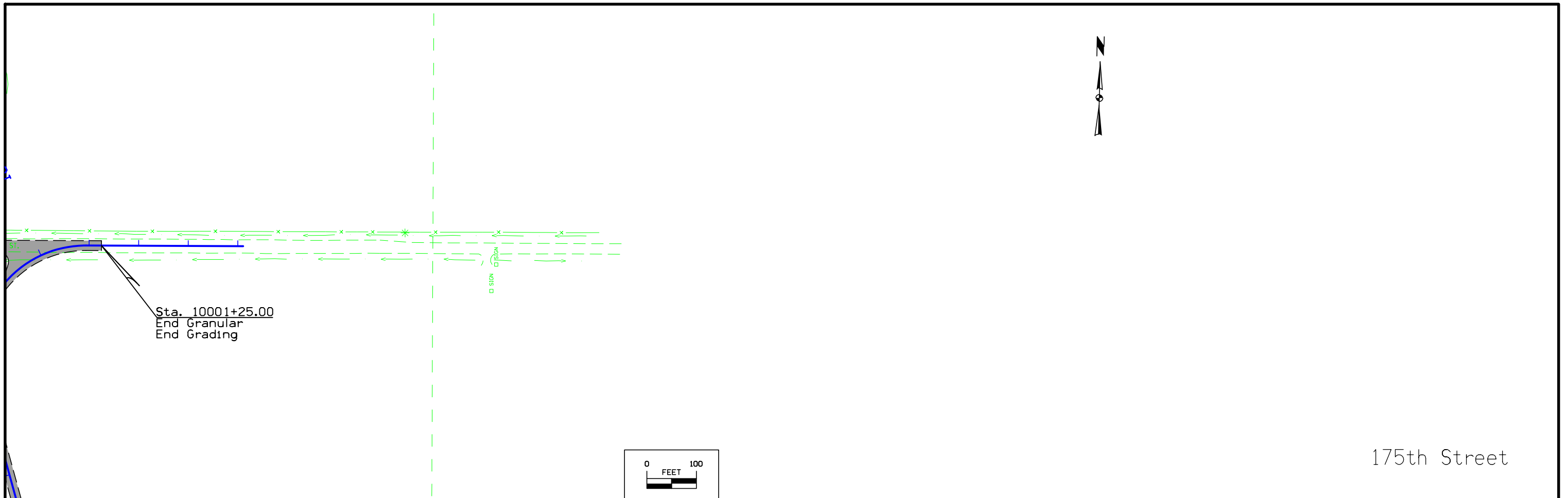


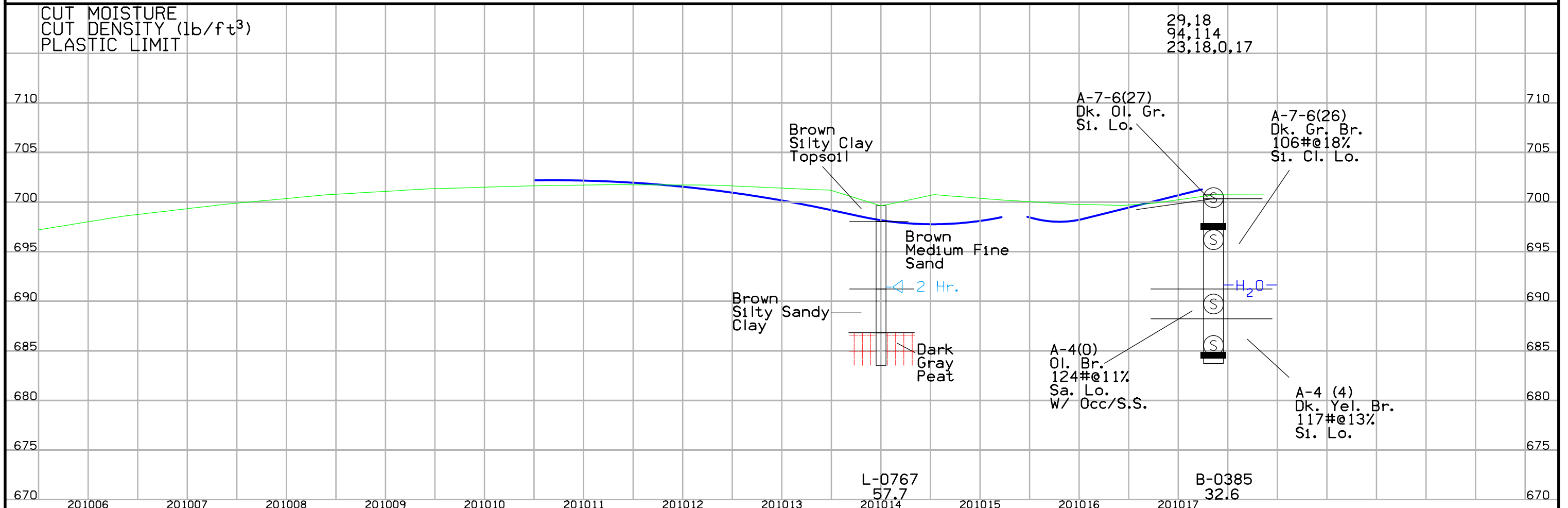
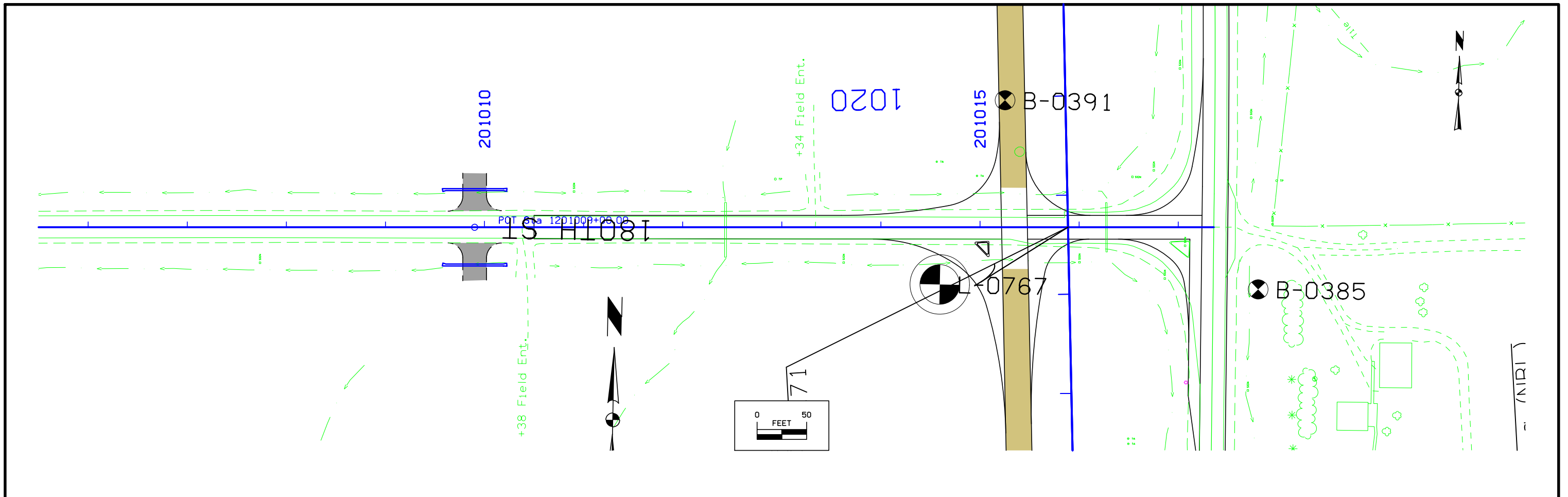
Unsat. Type "C"
See STD.EW-102

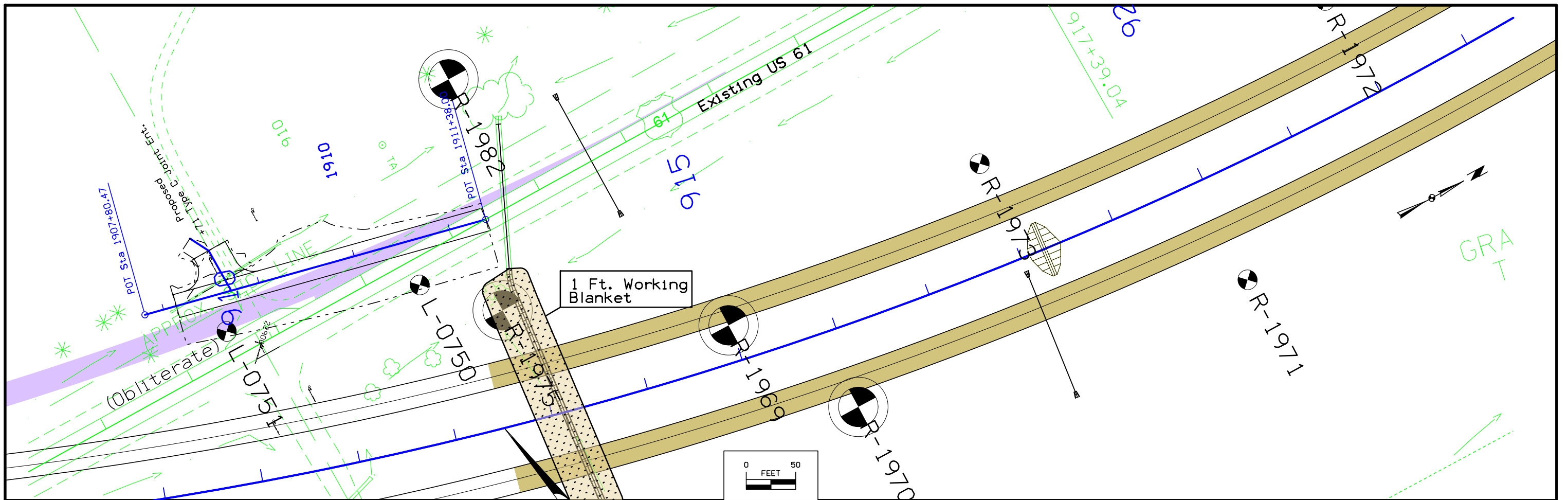




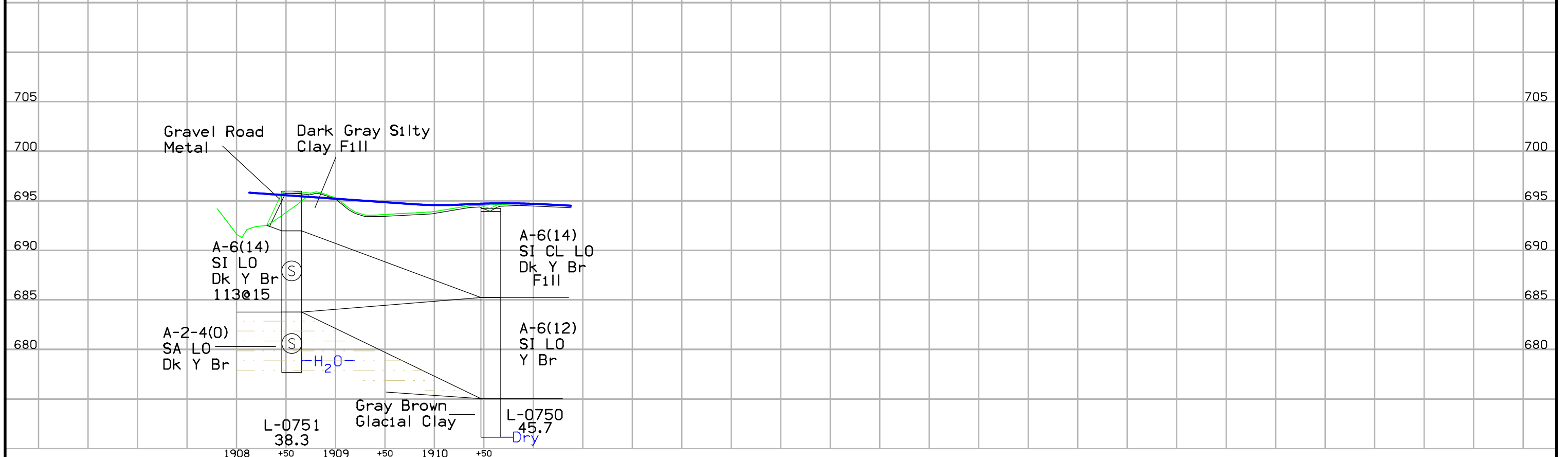


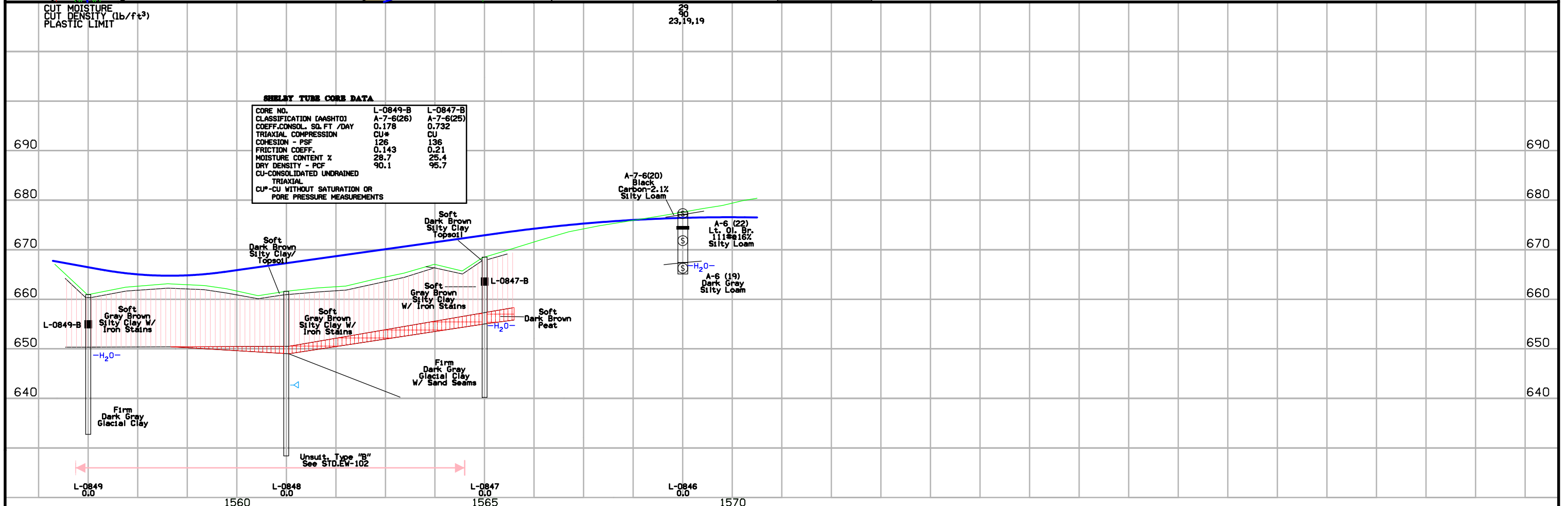
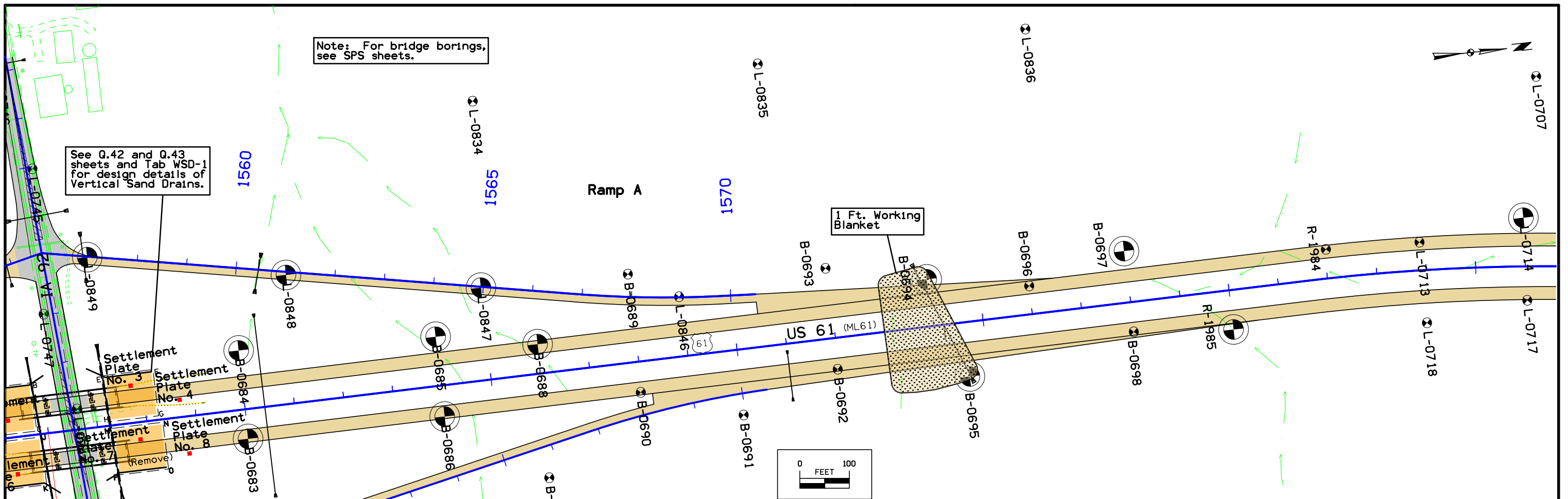


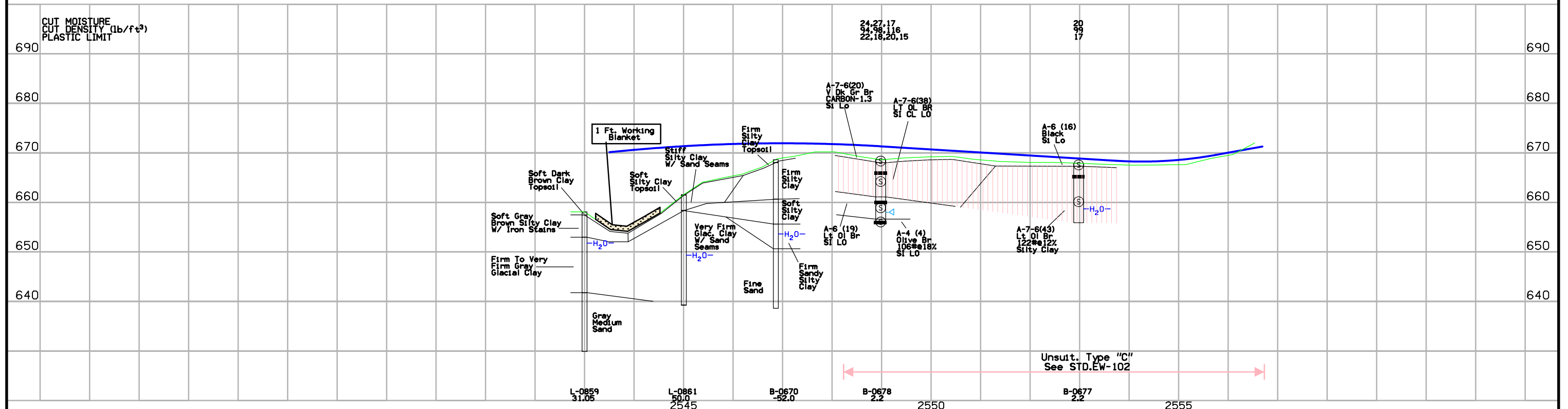
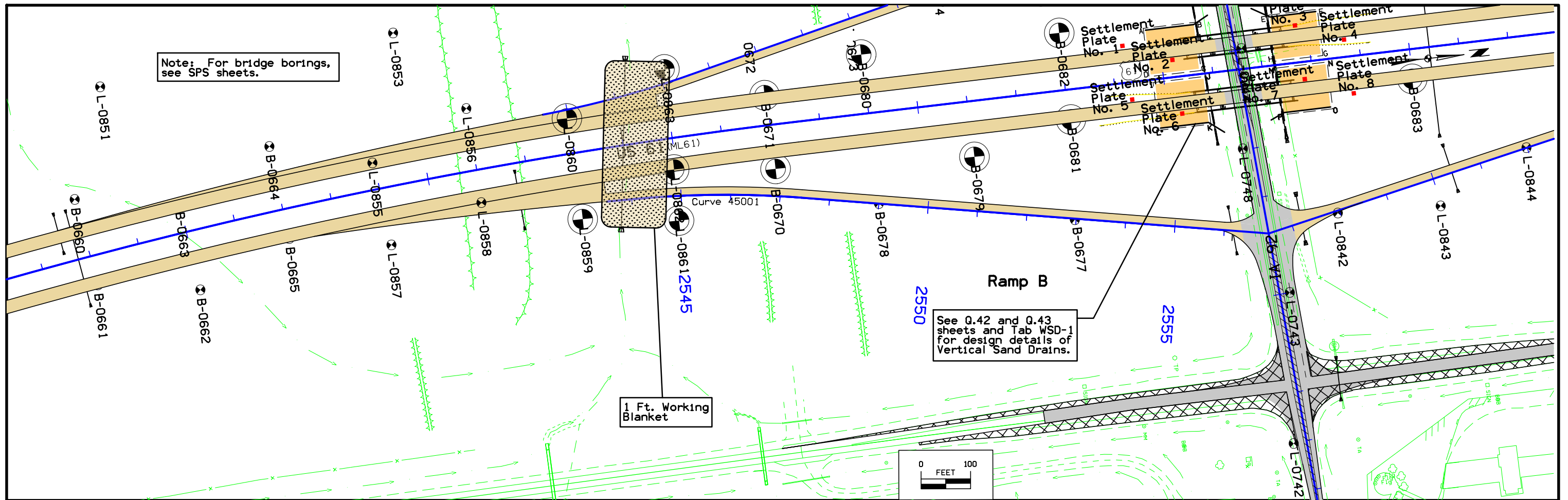


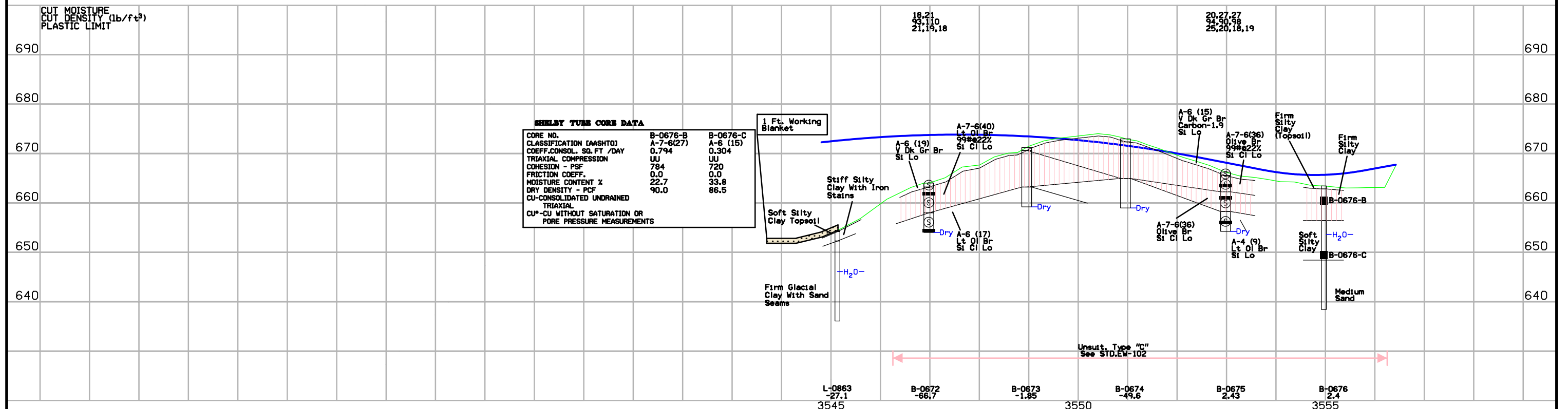
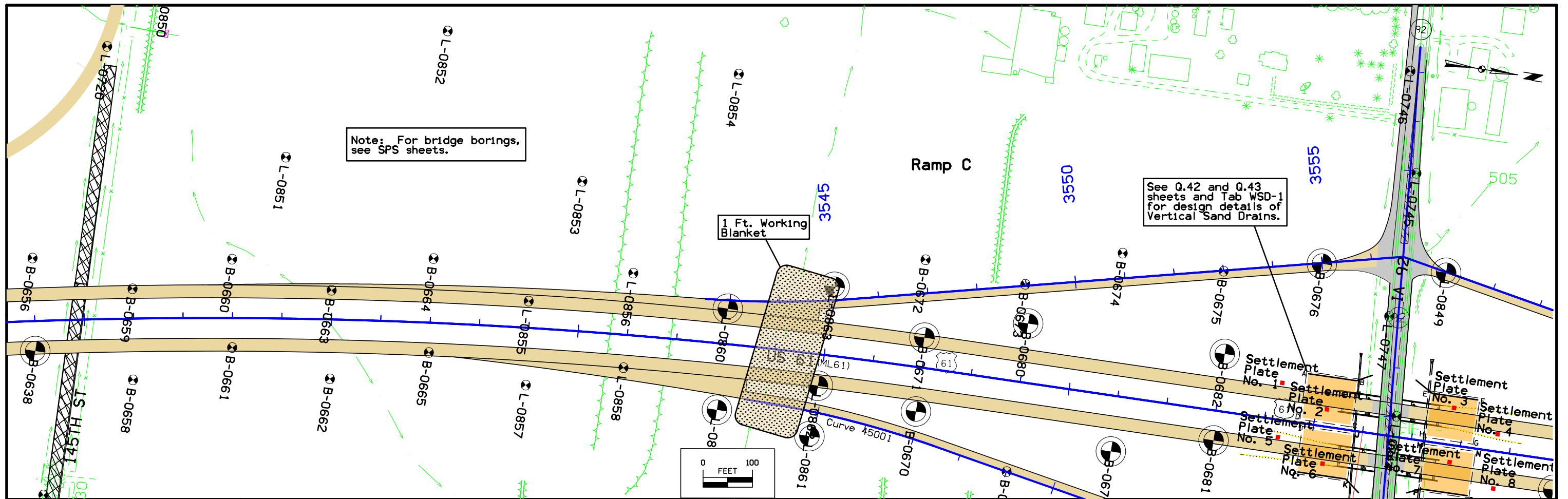


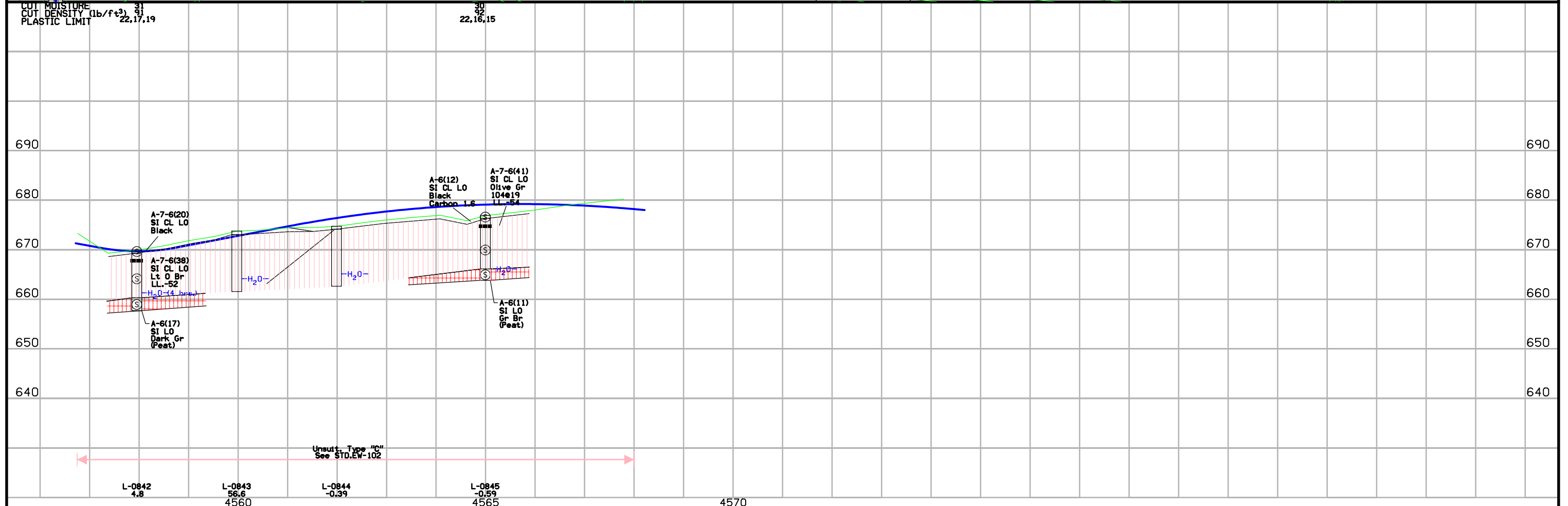
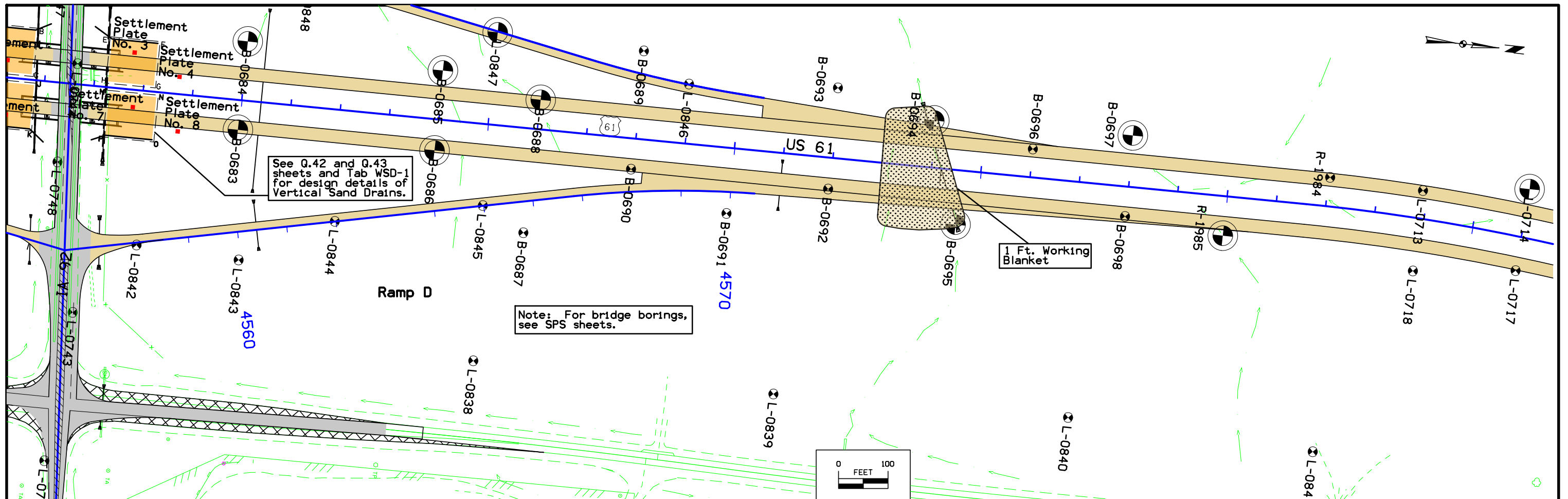
CUT MOISTURE
 CUT DENSITY (lb/ft³) 19.00
 PLASTIC LIMIT



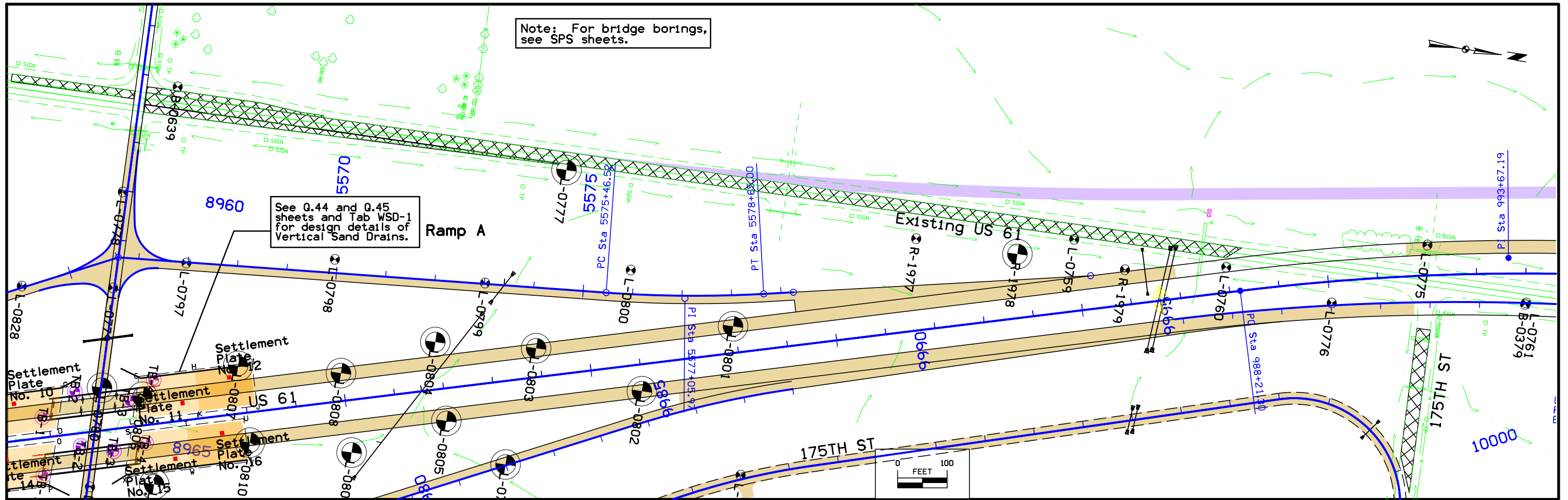






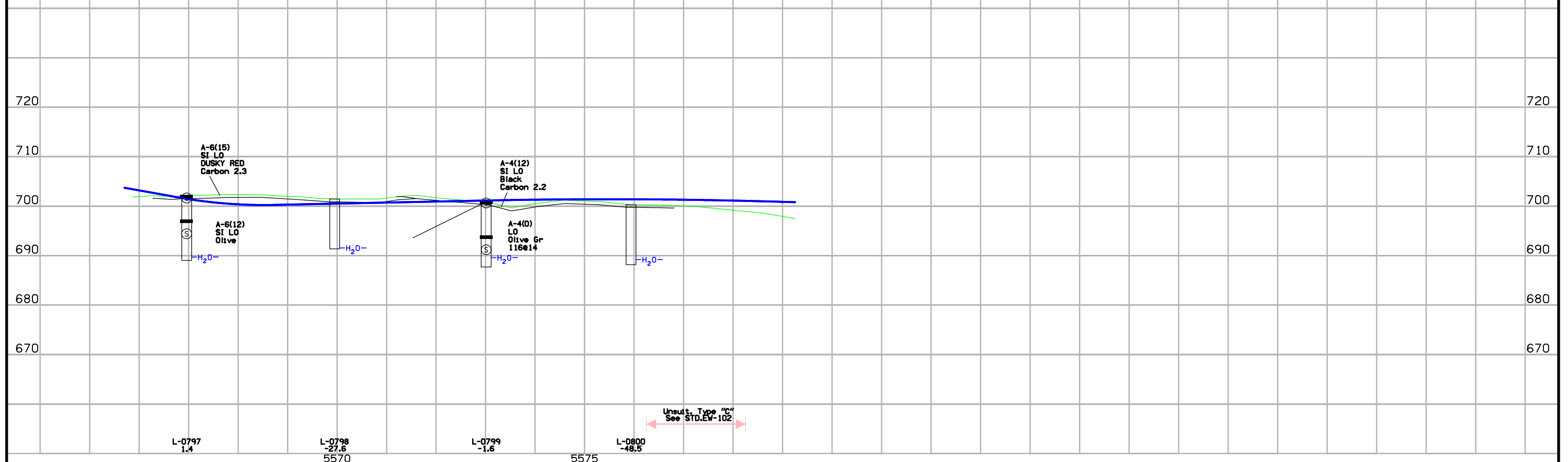


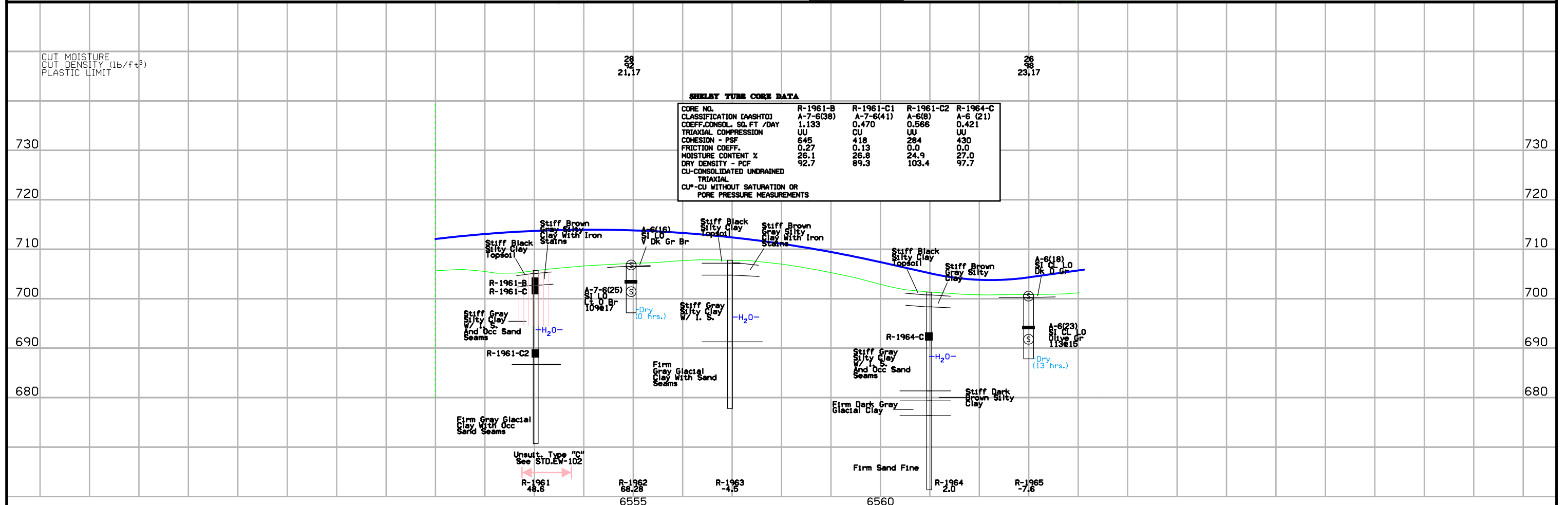
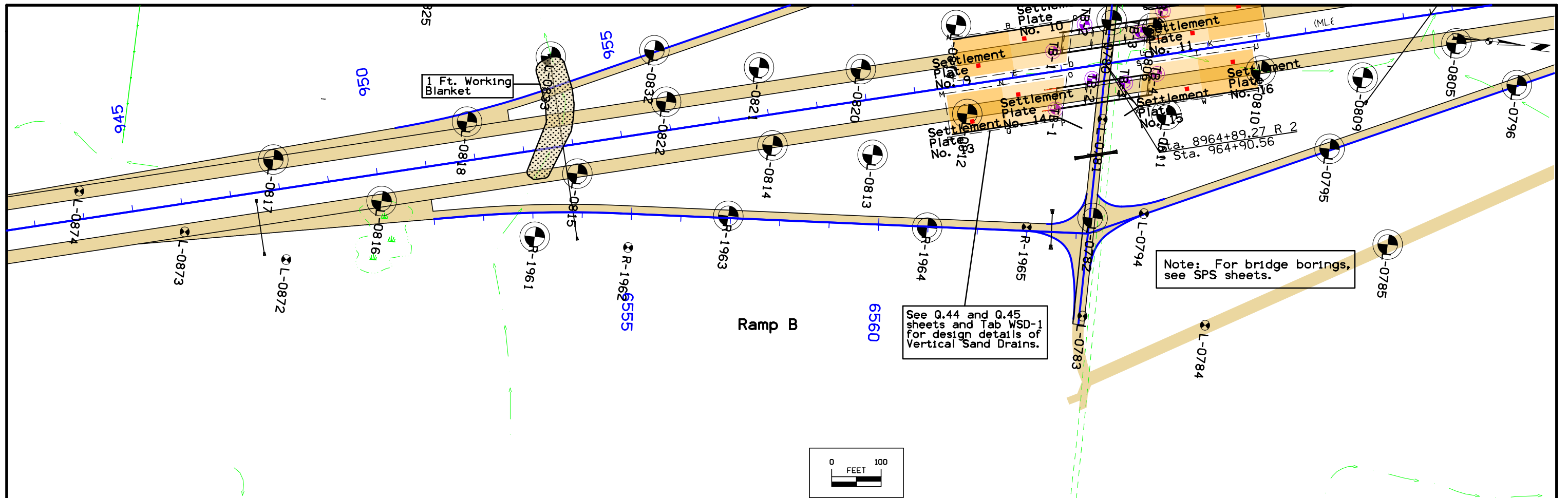
Note: For bridge borings, see SPS sheets.

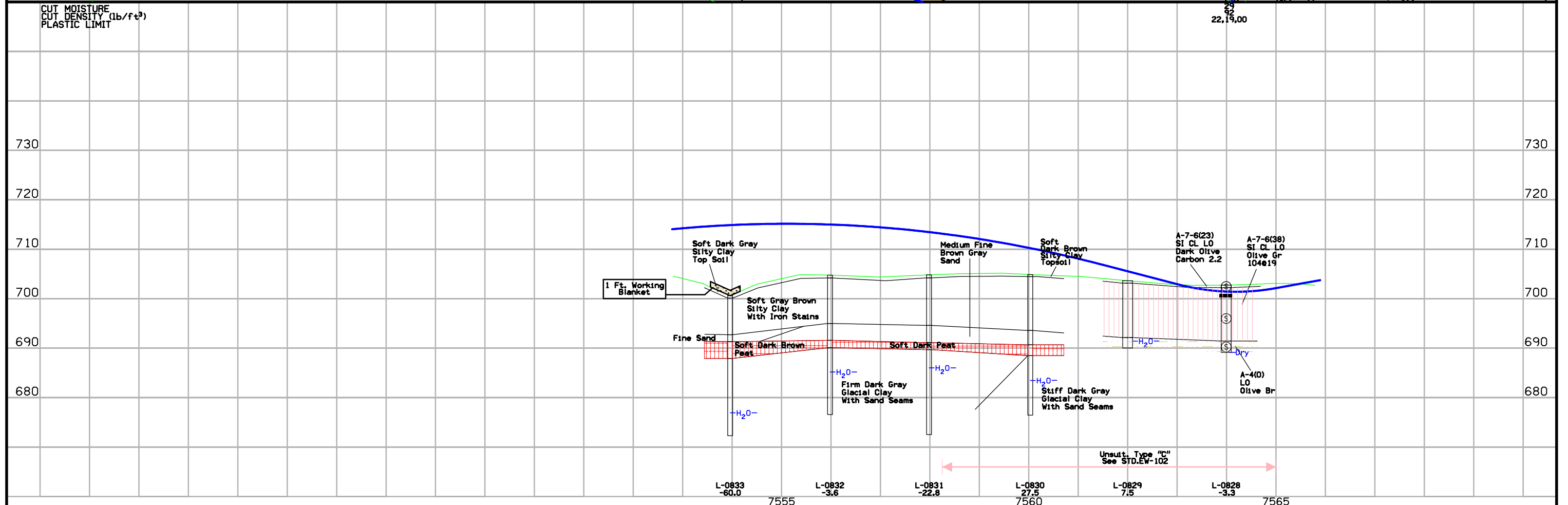
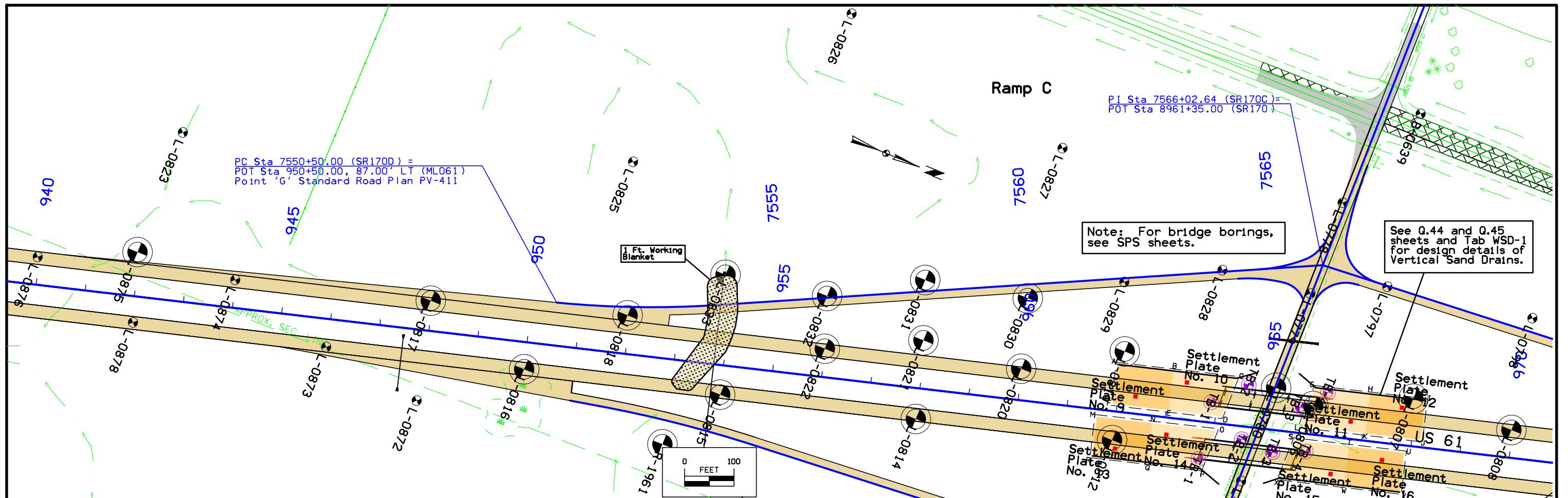


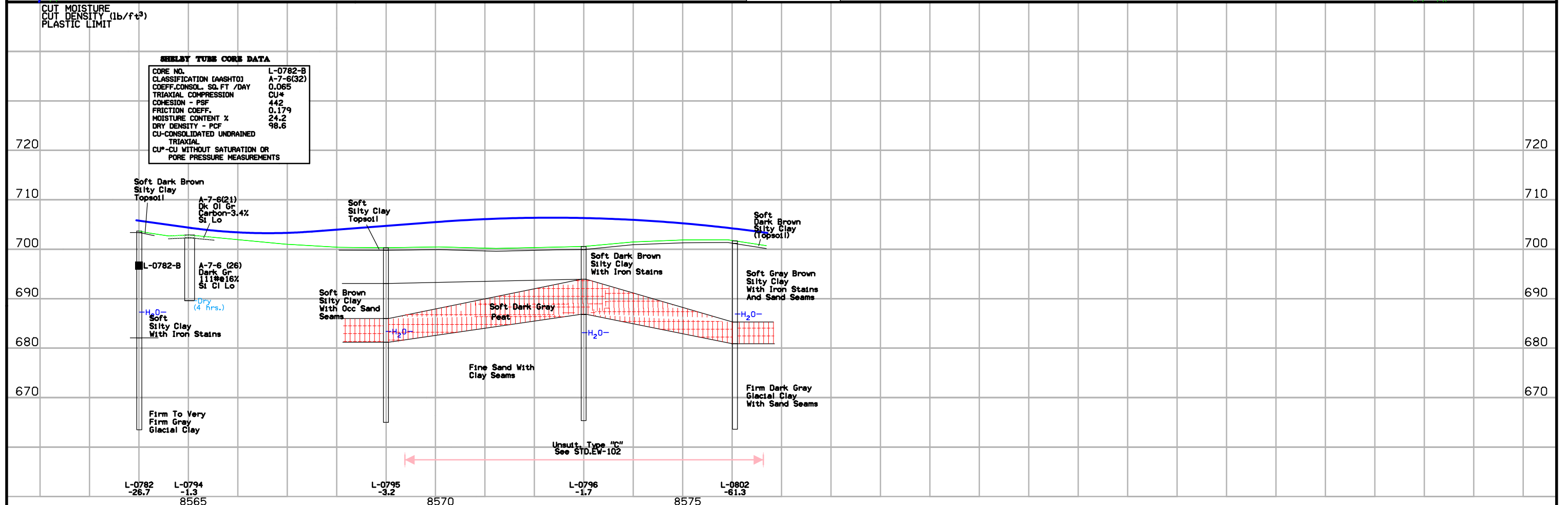
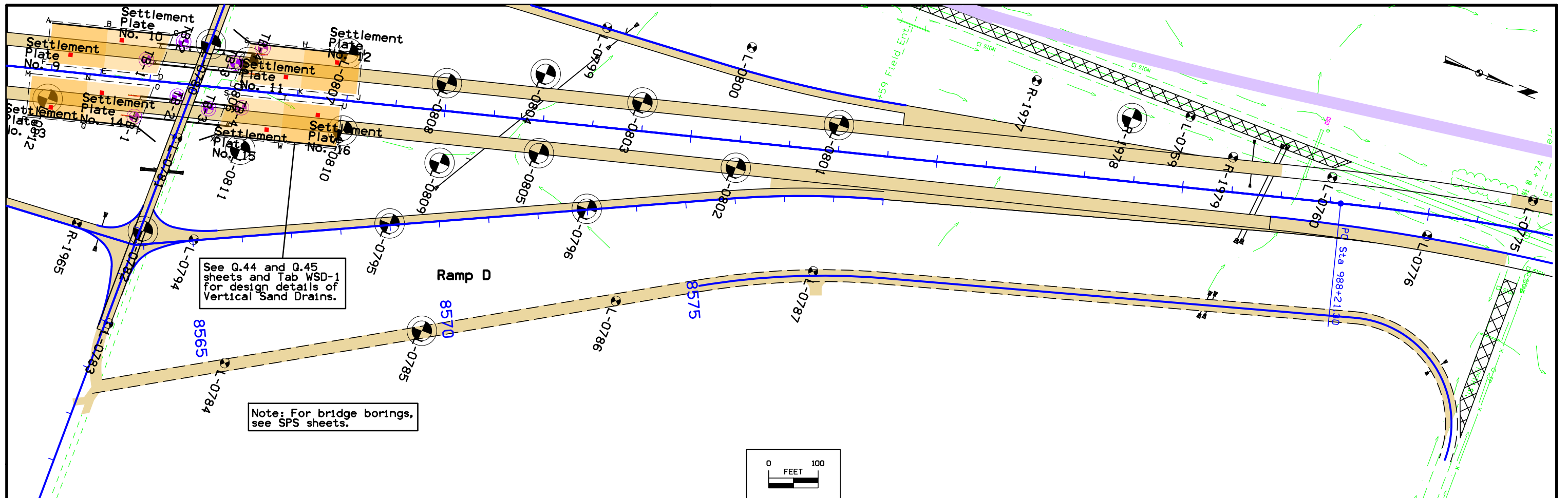
CUT MOISTURE 25.18
 CUT DENSITY (lb/ft³) 23.15
 PLASTIC LIMIT 26.00

26.24
 23.100
 26.00









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

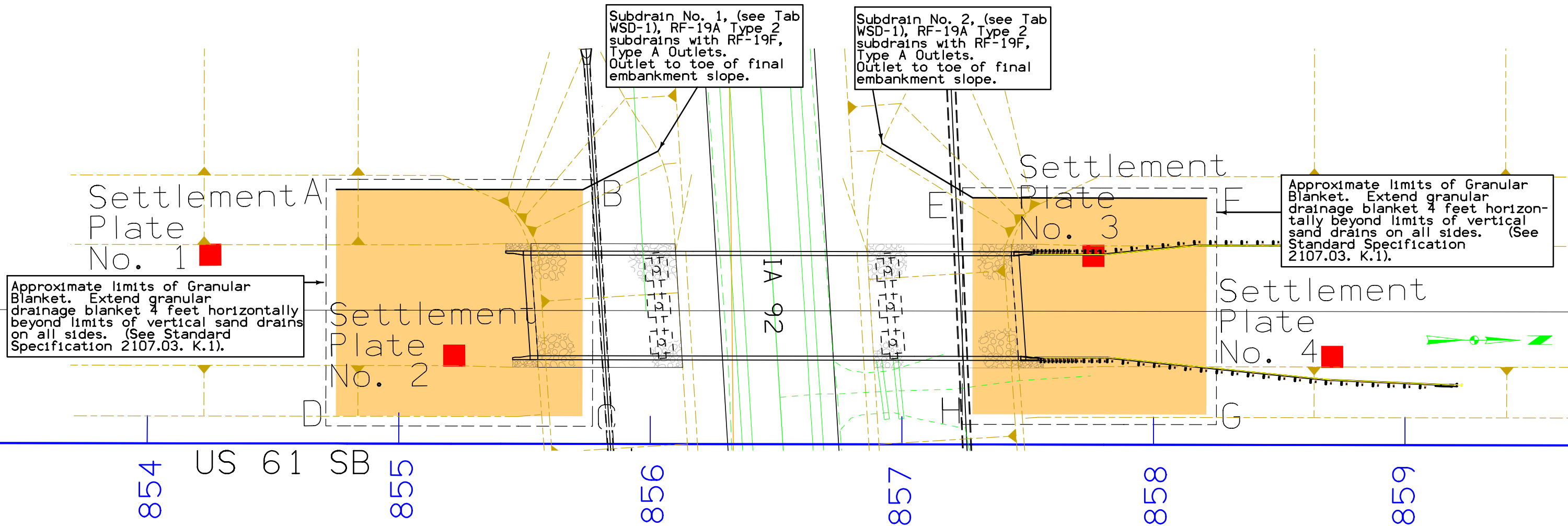
Sand drain auger holes shall be clean and free of auger cuttings and extend through the near surficial silty clay into the underlying medium sand and glacial clay soils. Approximate depths are shown in the design requirements table for each boundary area. Auger cuttings shall be removed from around the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

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

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

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

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



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

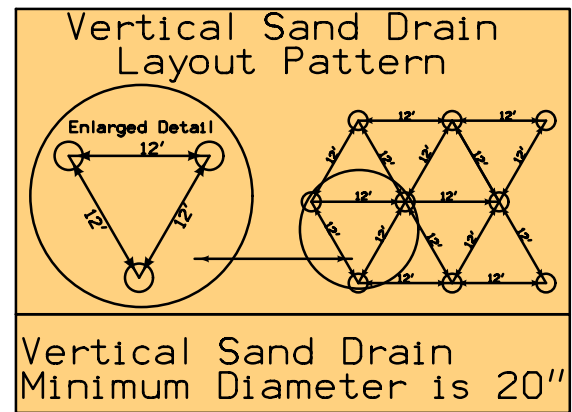
Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K.1).

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

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

Not To Scale

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



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

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

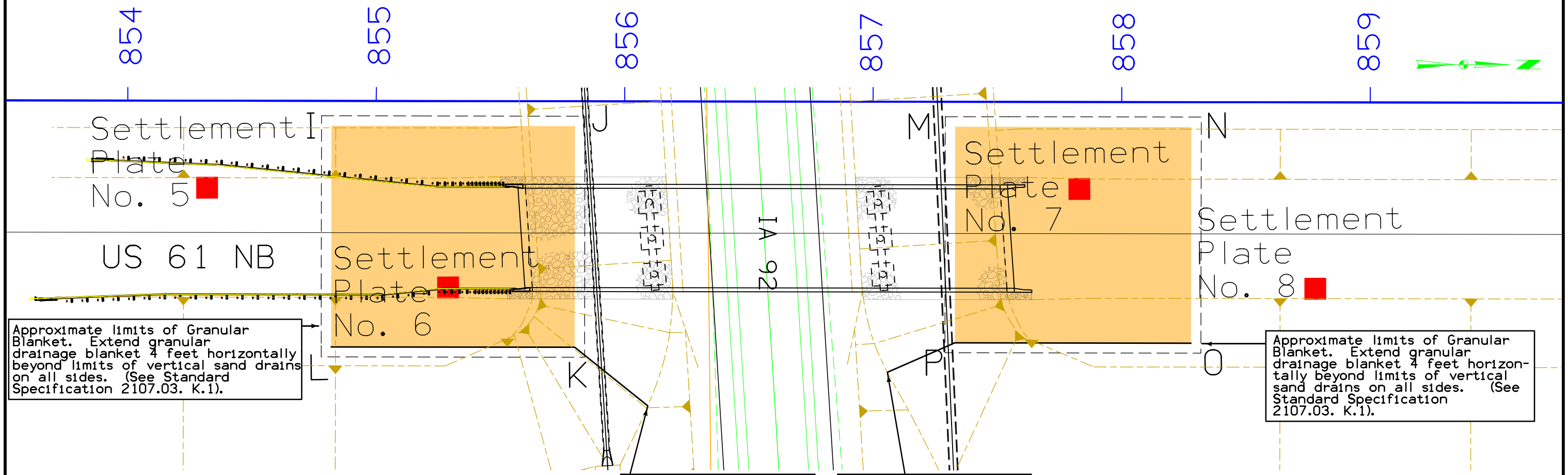
Granular Blanket Note
 Install 1-foot thick Granular Blanket with horizontal subdrains. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. This grading shall be incidental to vertical sand drain installation. Blankets will be drained by RF-19A Type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

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

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

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

Not To Scale



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

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

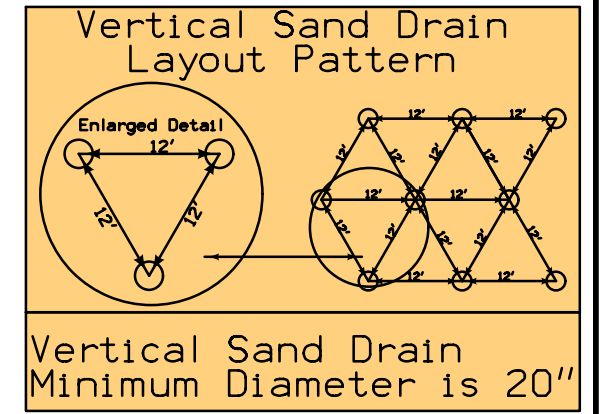
Subdrain No. 3, (see Tab WSD-1), RF-19A Type 2 subdrains with RF-19F, Type A Outlets. Outlet to toe of final embankment slope.

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

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

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

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



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

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

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

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

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

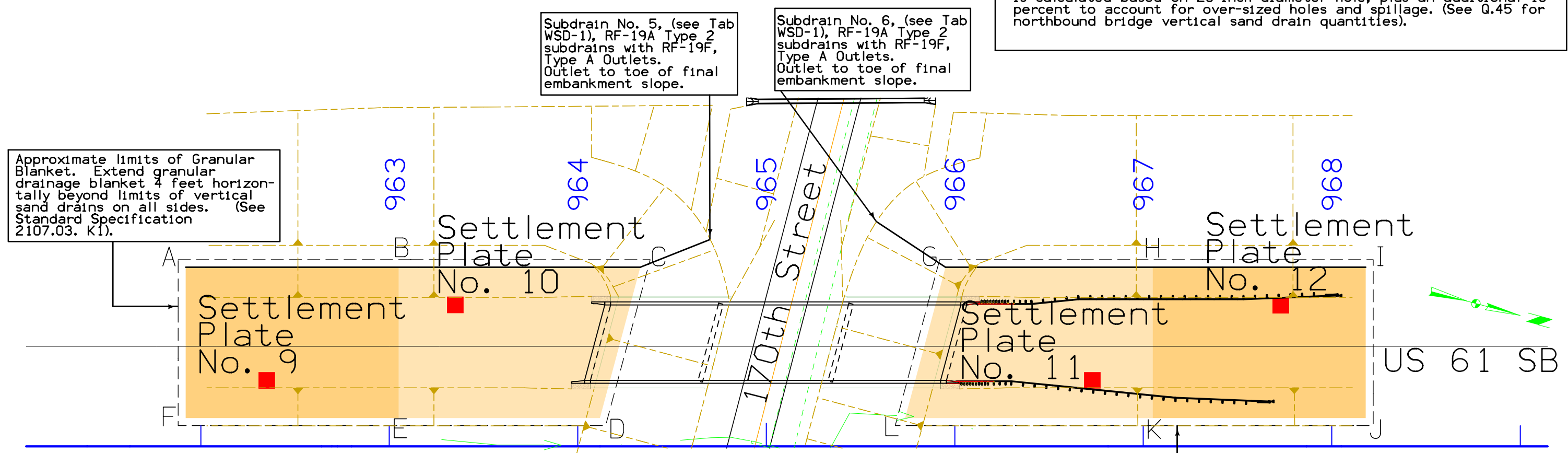
* Depth of sand drains will likely vary based on the design intent.
 Granular Backfill quantity estimated for the Southbound bridge to be 398 cubic yards (672 Tons) for 161 Vertical Sand Drains. Quantity is calculated based on 20-inch diameter hole, plus an additional 10 percent to account for over-sized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

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

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

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

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

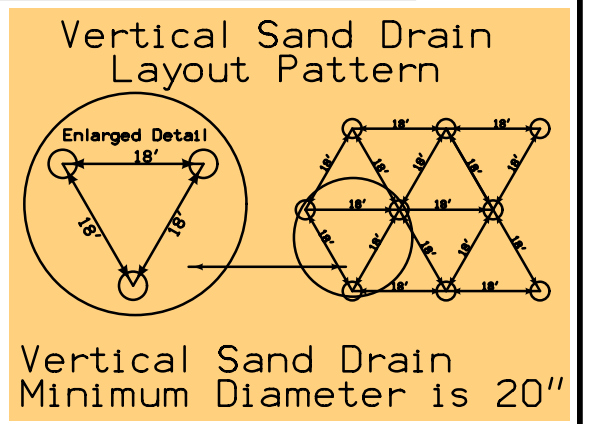
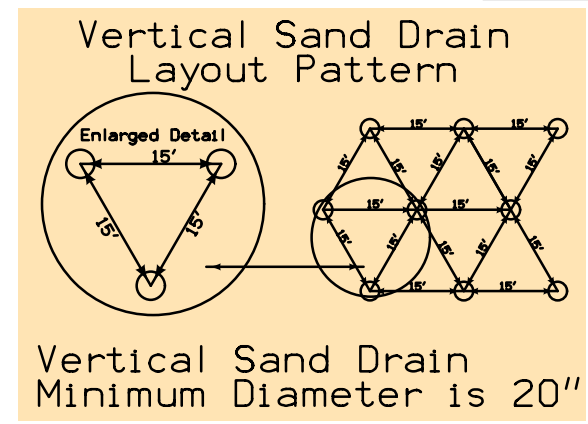


| Sand Drain Corner Points | | | |
|--------------------------|--------|---------|--------|
| Roadway | Corner | Station | Offset |
| SB | A | 961+92 | Lt. 95 |
| | B | 963+05 | Lt. 95 |
| | C | 964+33 | Lt. 95 |
| | D | 964+12 | Lt. 15 |
| | E | 963+05 | Lt. 15 |
| | F | 961+92 | Lt. 15 |
| | G | 965+95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

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

Not To Scale

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



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

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

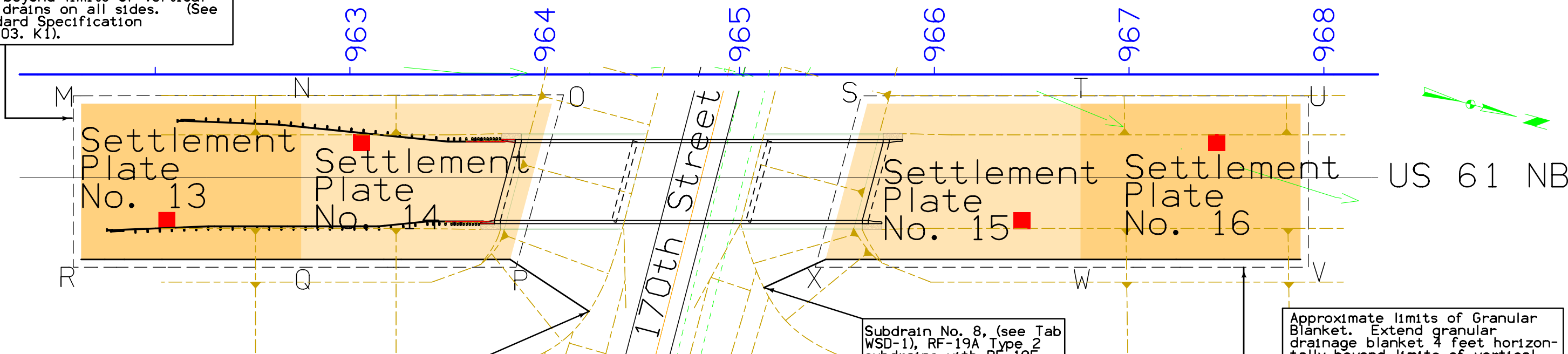
Granular Blanket Note
Install 1-foot thick Granular Blanket with horizontal subdrains. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. This grading shall be incidental to vertical sand drain installation. Blankets will be drained by RF-19A Type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

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

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

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

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



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

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

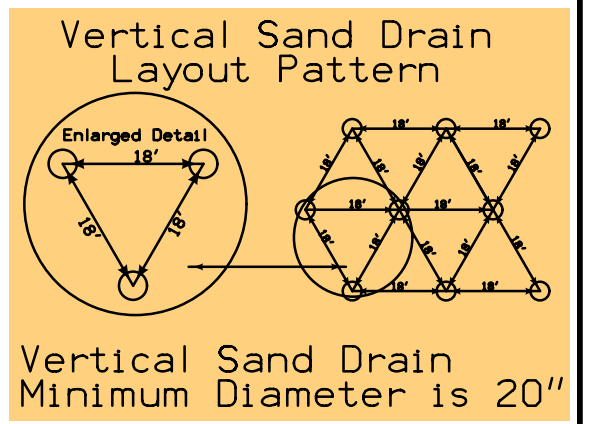
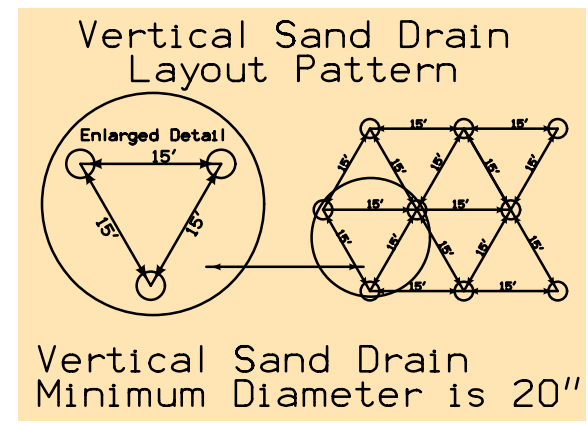
Approximate limits of Granular Blanket. Extend granular drainage blanket 4 feet horizontally beyond limits of vertical sand drains on all sides. (See Standard Specification 2107.03. K1).

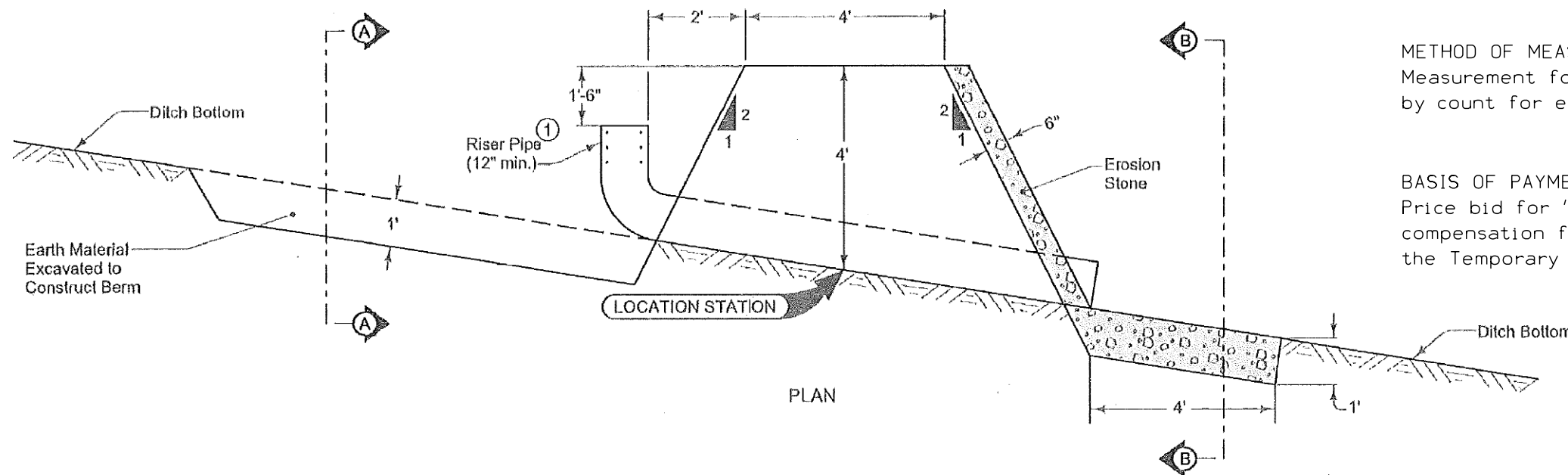
| Sand Drain Corner Points | | | |
|--------------------------|--------|---------|--------|
| Roadway | Corner | Station | Offset |
| NB | M | 961+62 | Rt. 15 |
| | N | 962+75 | Rt. 15 |
| | O | 964+04 | Rt. 15 |
| | P | 963+82 | Rt. 95 |
| | Q | 962+75 | Rt. 95 |
| | R | 961+62 | Rt. 95 |
| | S | 965+66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

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

Not To Scale

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

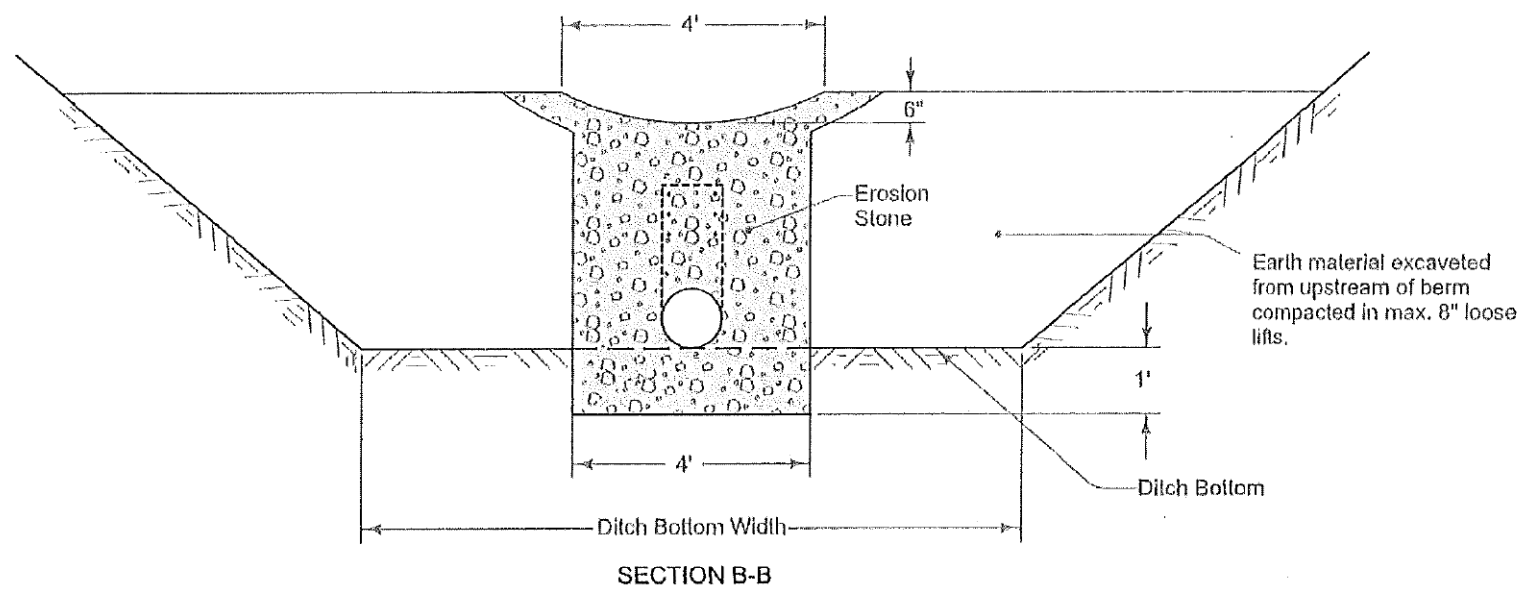
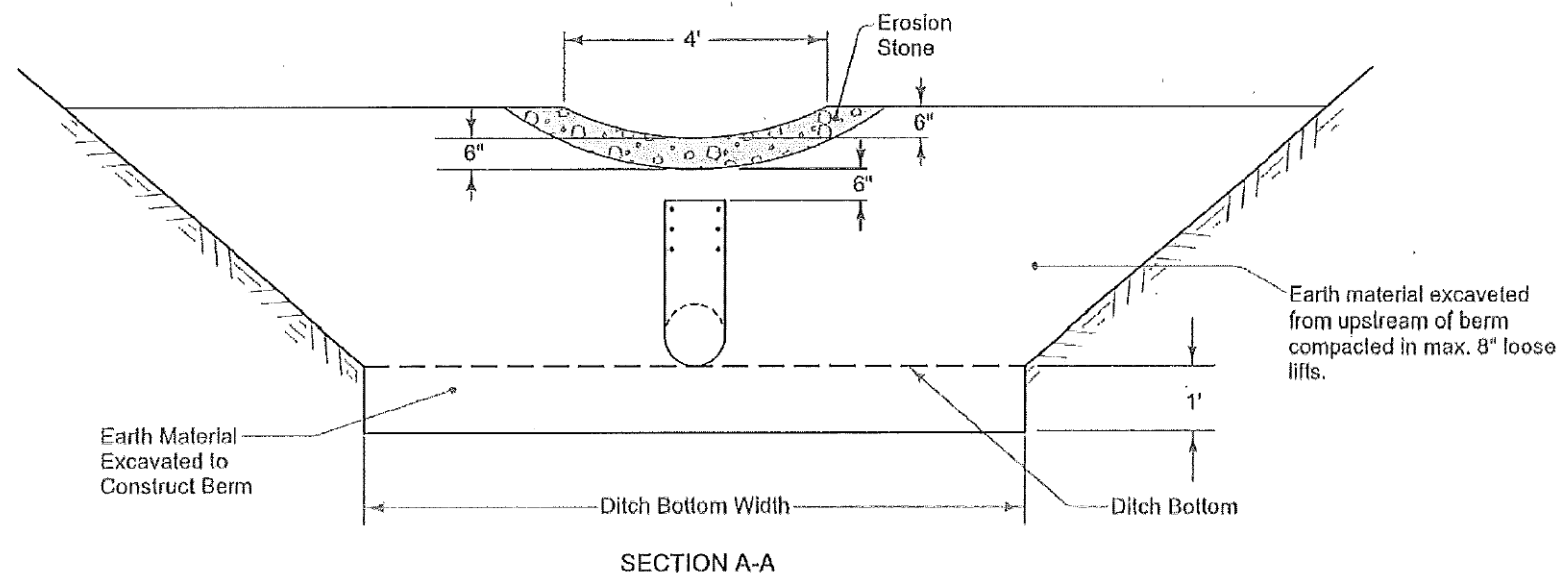




METHOD OF MEASUREMENT:
Measurement for "Temporary Sediment Control Device" will be by count for each Temporary Sediment Control Device.

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

① Ensure Riser Pipe remains vertical.

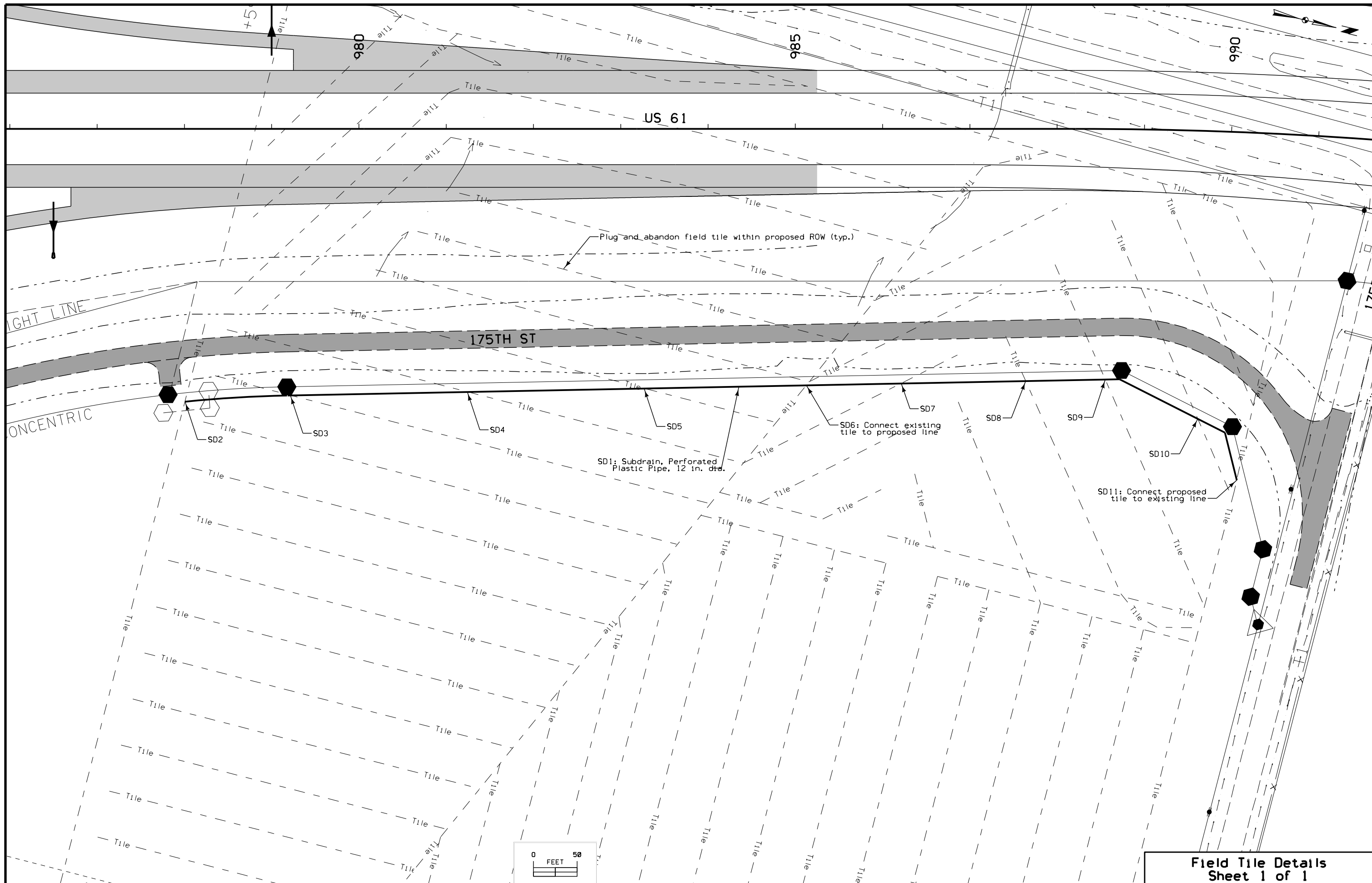


Possible Contract Items:
Temporary Sediment Control Device

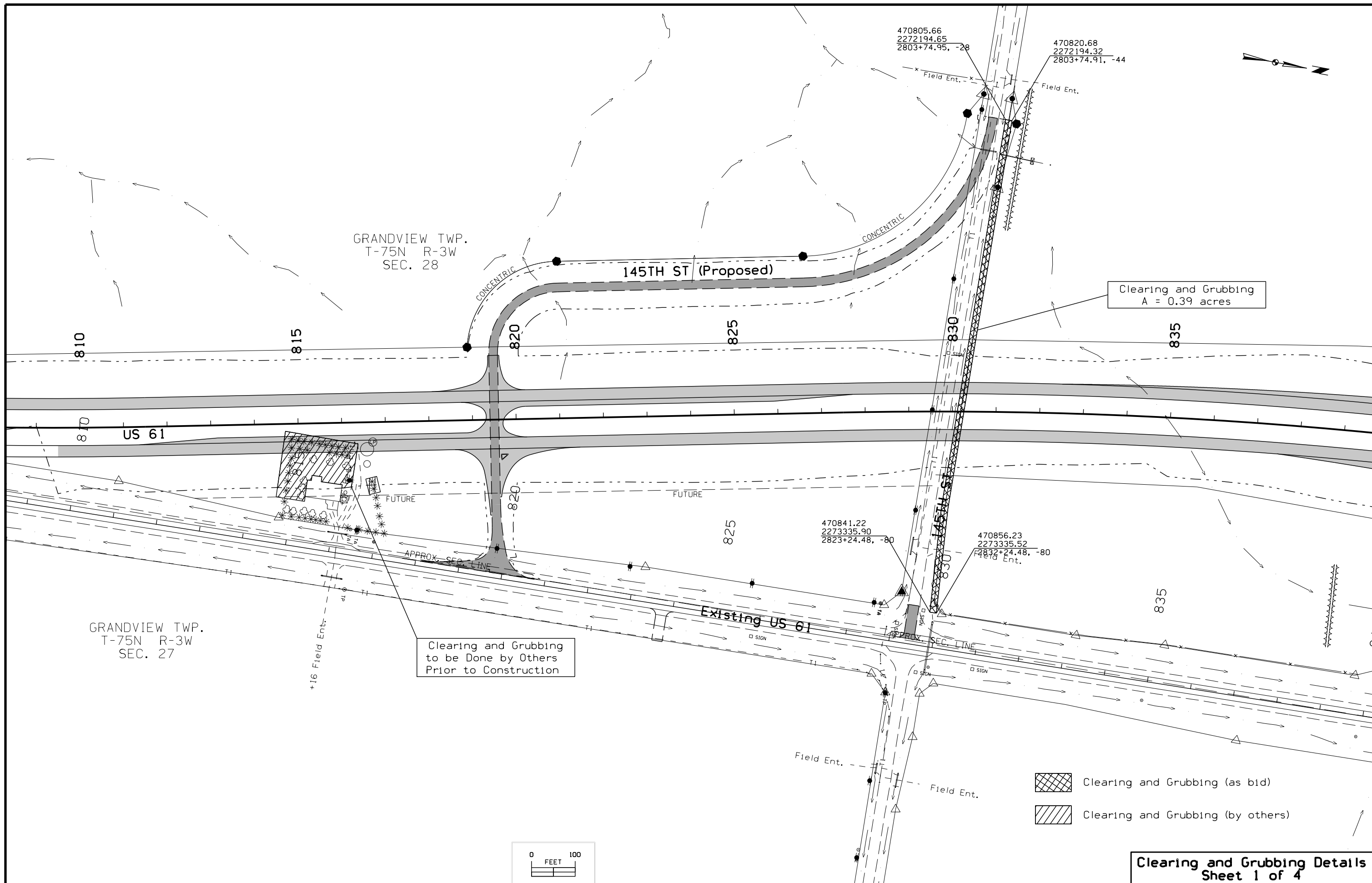
Incidental to Temporary Sediment Control Device:
Erosion Stone
Pipe
Excavated Earth Material

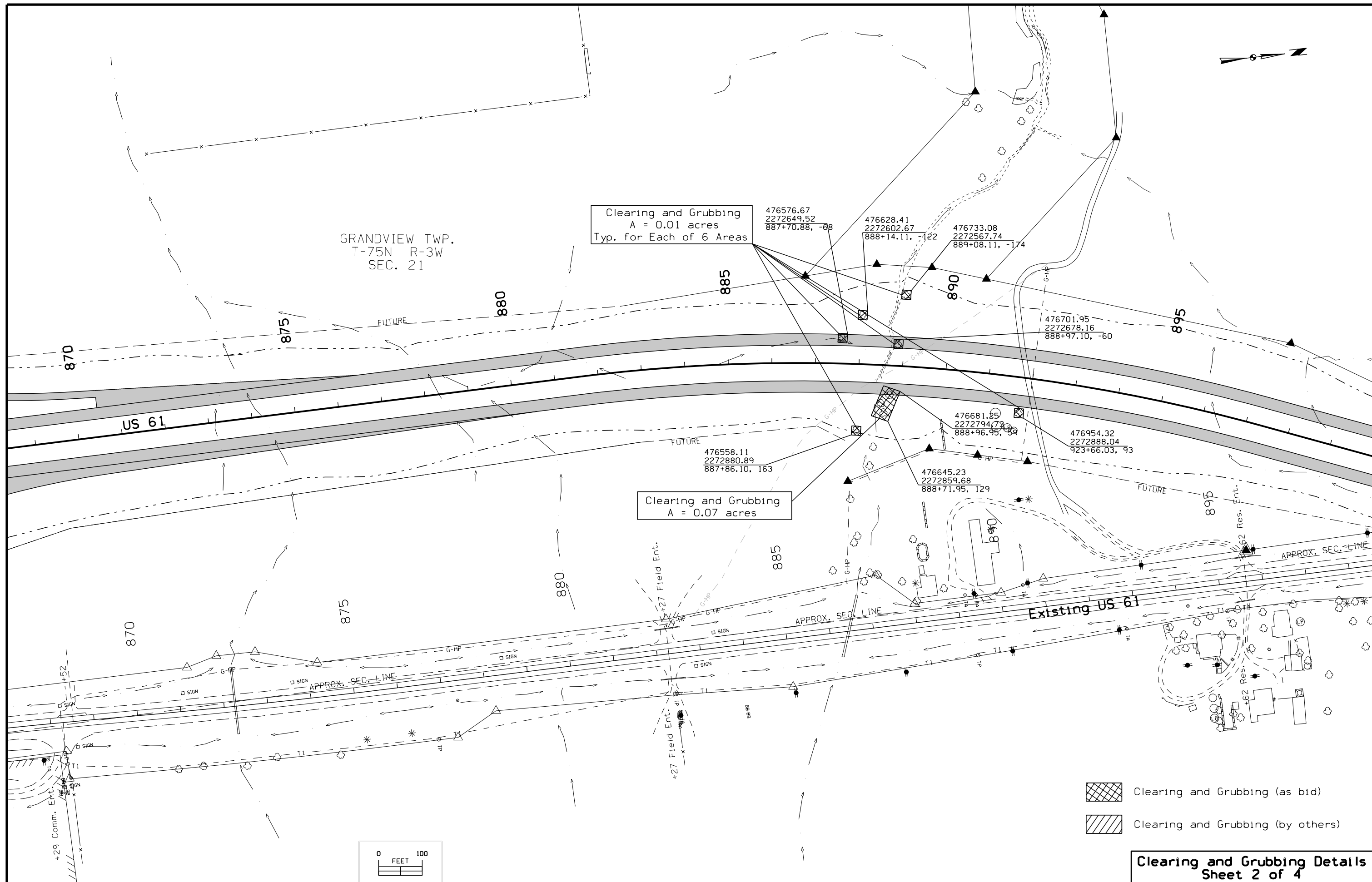
Possible Tabulation
100-30

TEMPORARY SEDIMENT CONTROL DEVICE



Field Tile Details
Sheet 1 of 1







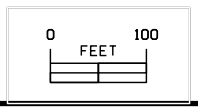
GRANDVIEW TWP.
T-75N R-3W
SEC. 21

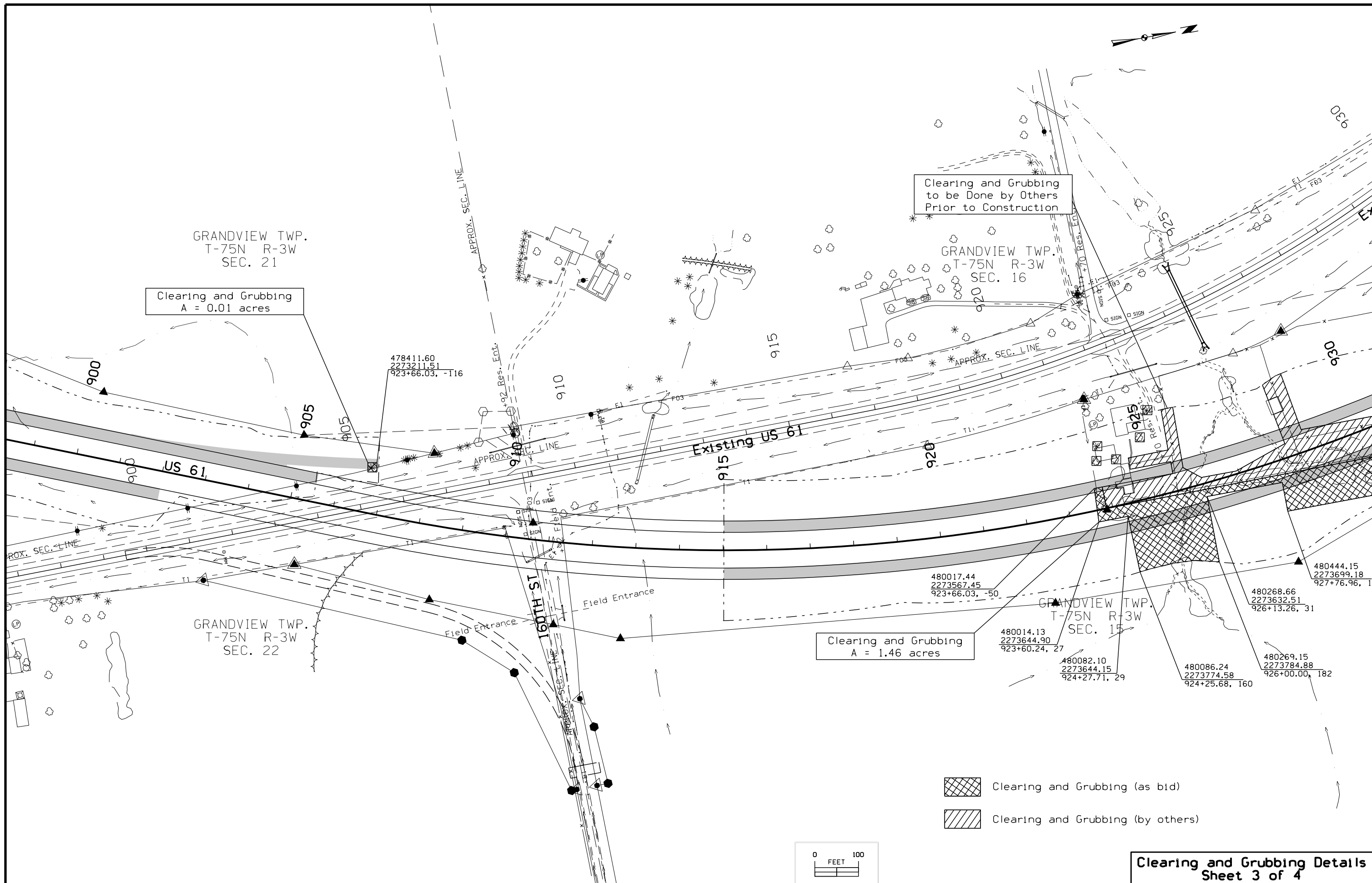
Clearing and Grubbing
A = 0.01 acres
Typ. for Each of 6 Areas

Clearing and Grubbing
A = 0.07 acres

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

Clearing and Grubbing Details
Sheet 2 of 4



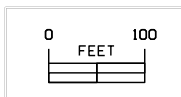


Clearing and Grubbing
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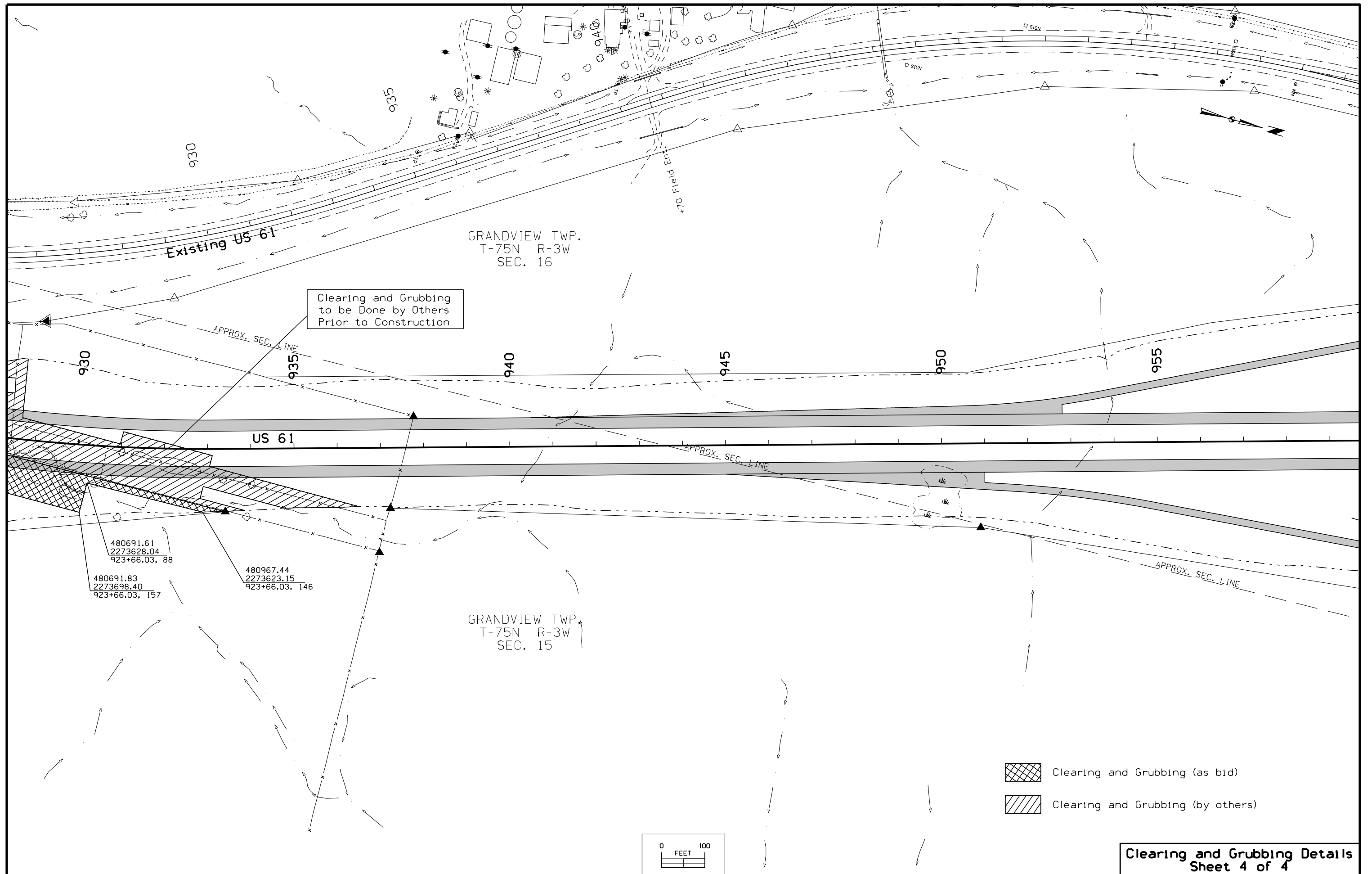
Clearing and Grubbing
to be Done by Others
Prior to Construction

Clearing and Grubbing
A = 1.46 acres



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- Clearing and Grubbing (by others)

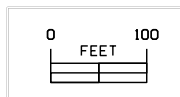


Clearing and Grubbing Details
Sheet 3 of 4

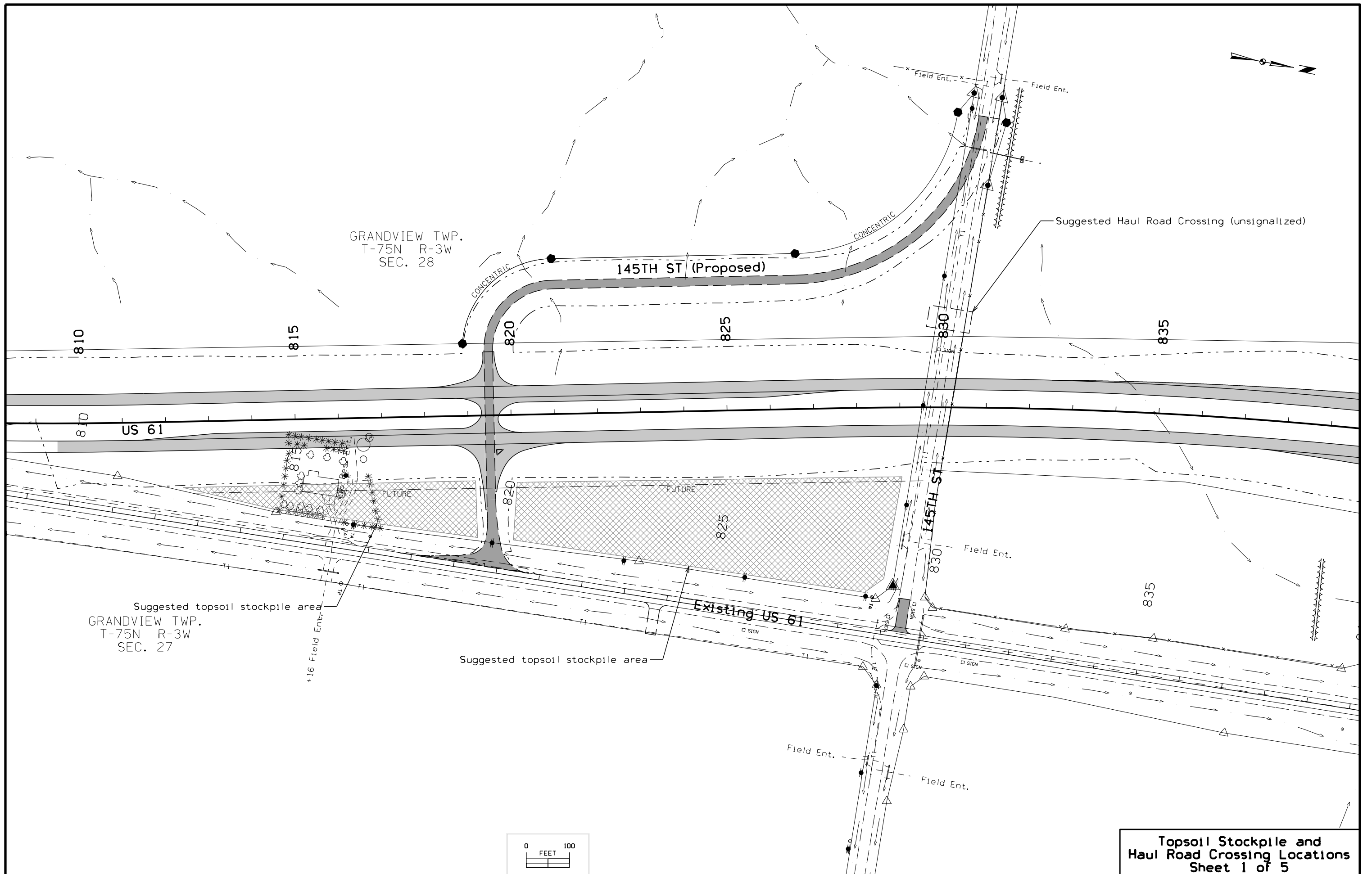


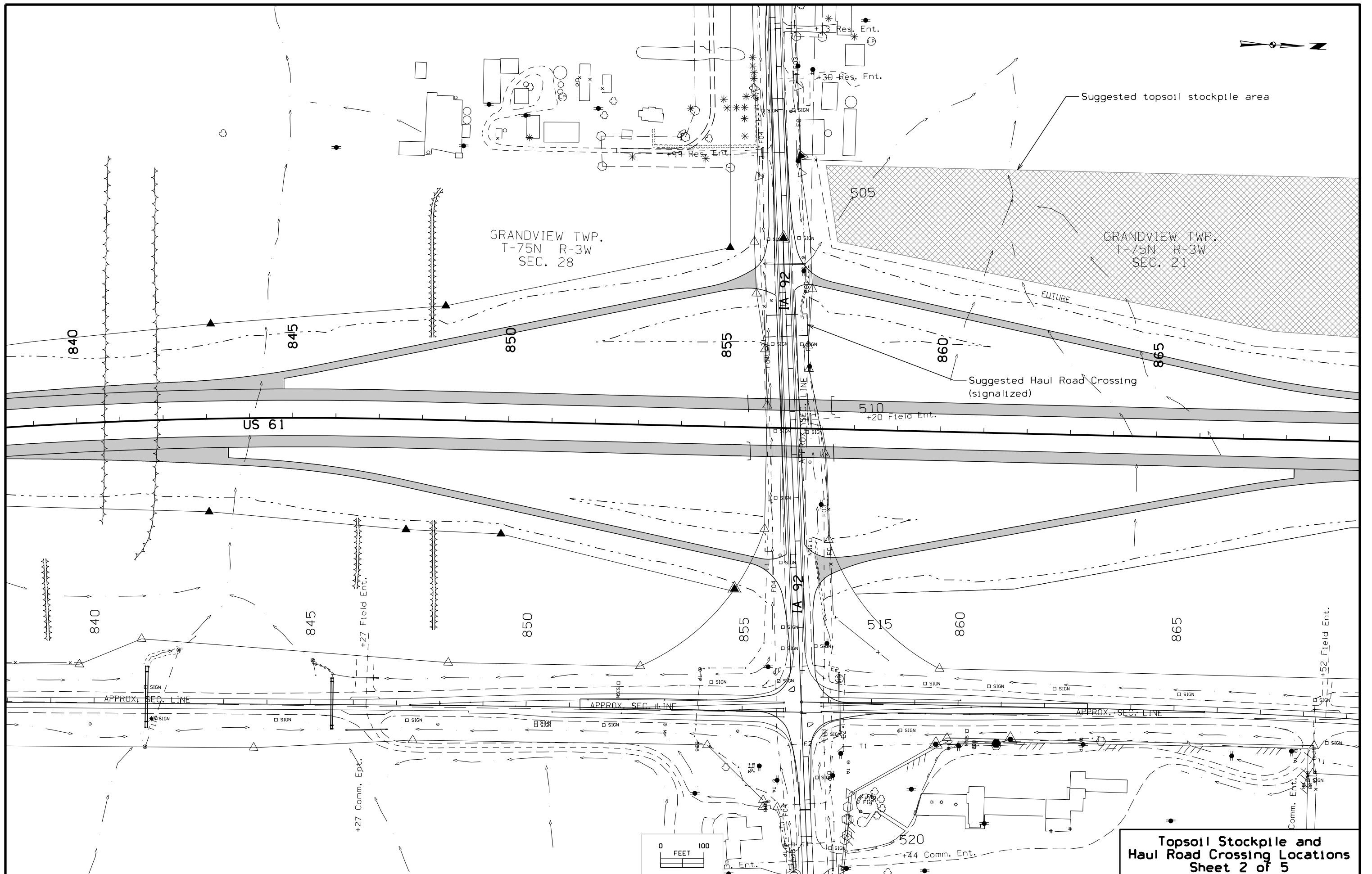
Clearing and Grubbing
to be Done by Others
Prior to Construction

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

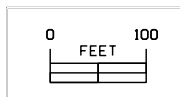
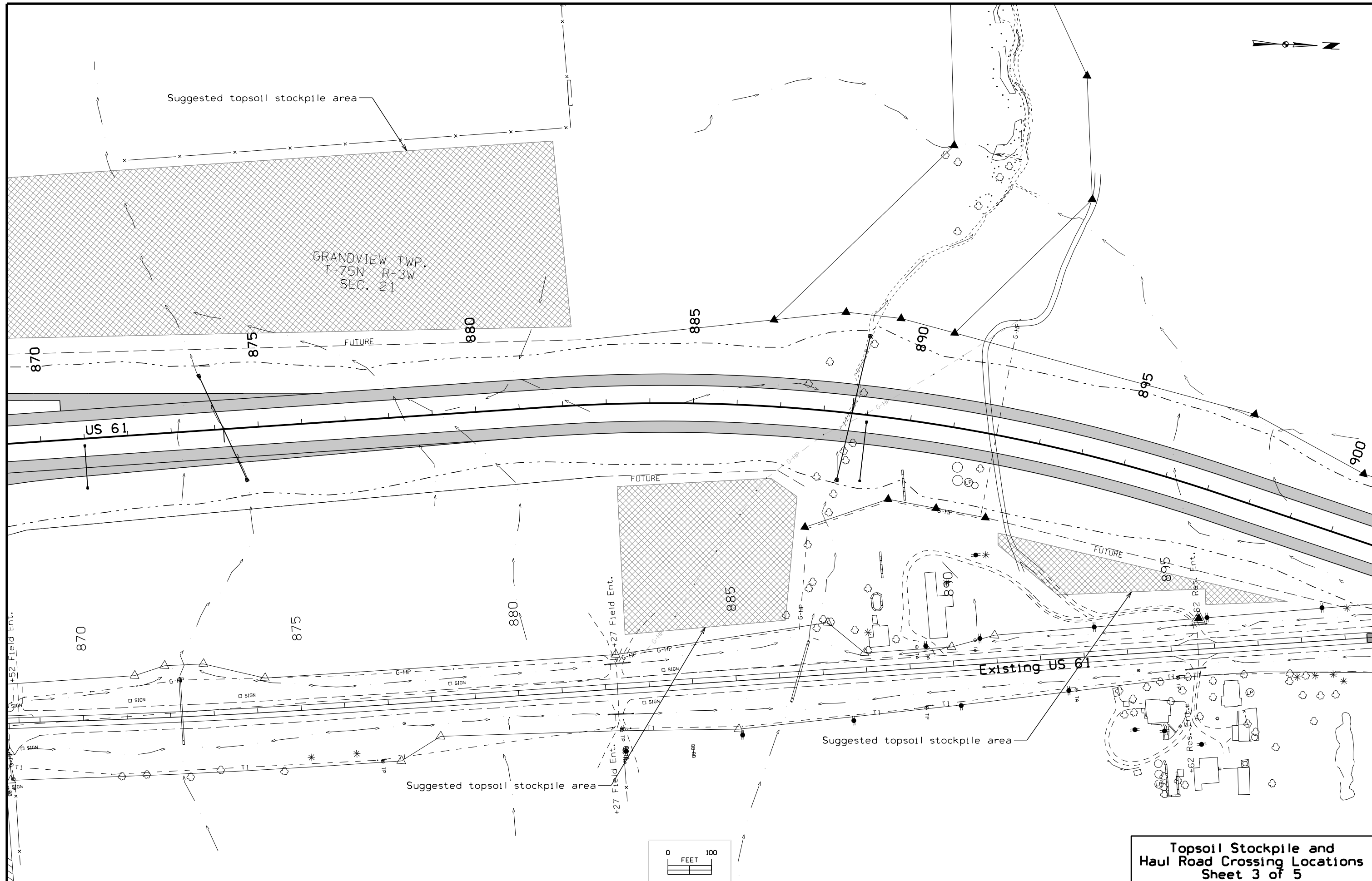
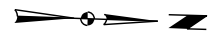


Clearing and Grubbing Details
Sheet 4 of 4



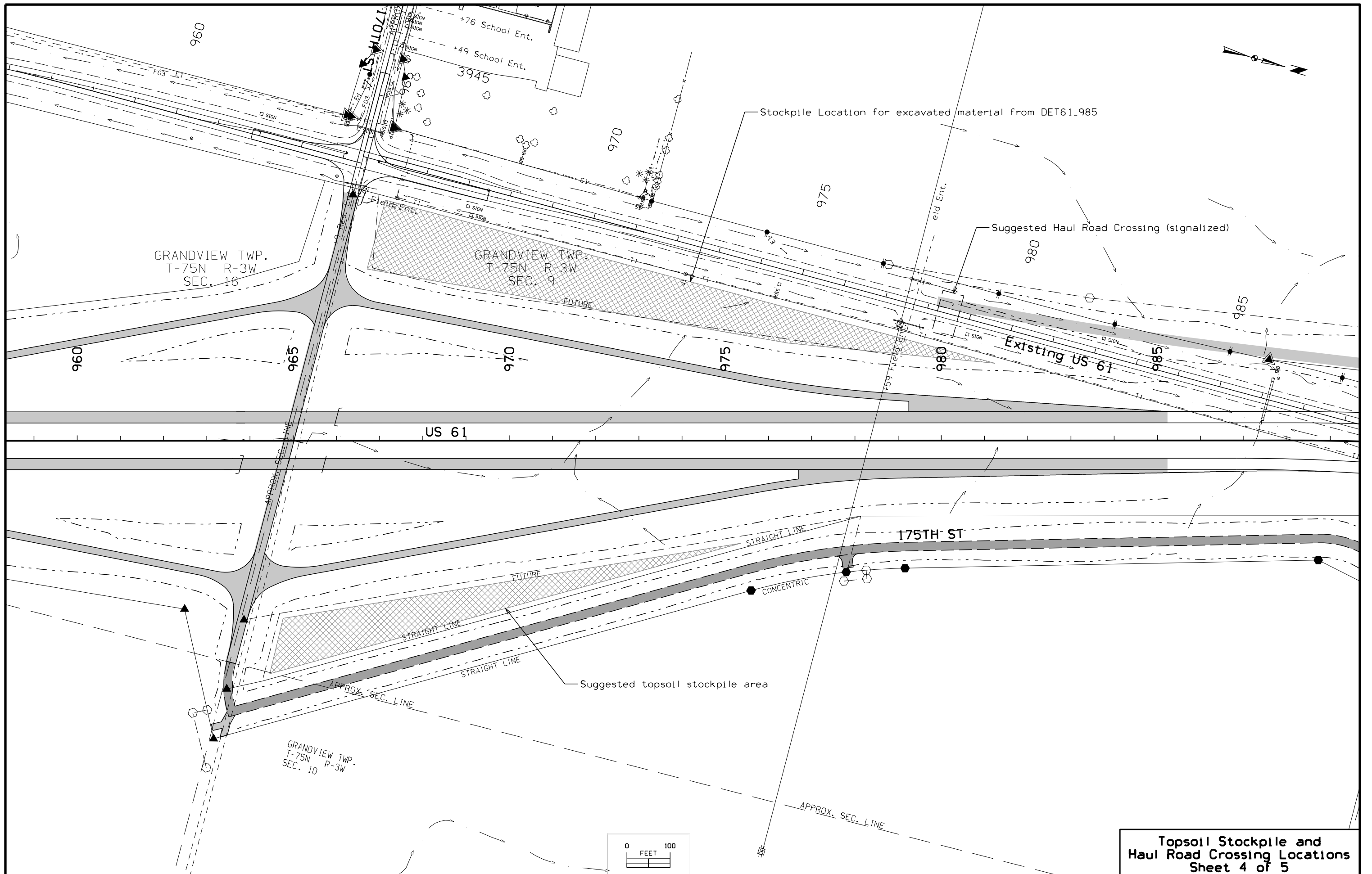


**Topsoil Stockpile and
Haul Road Crossing Locations
Sheet 2 of 5**

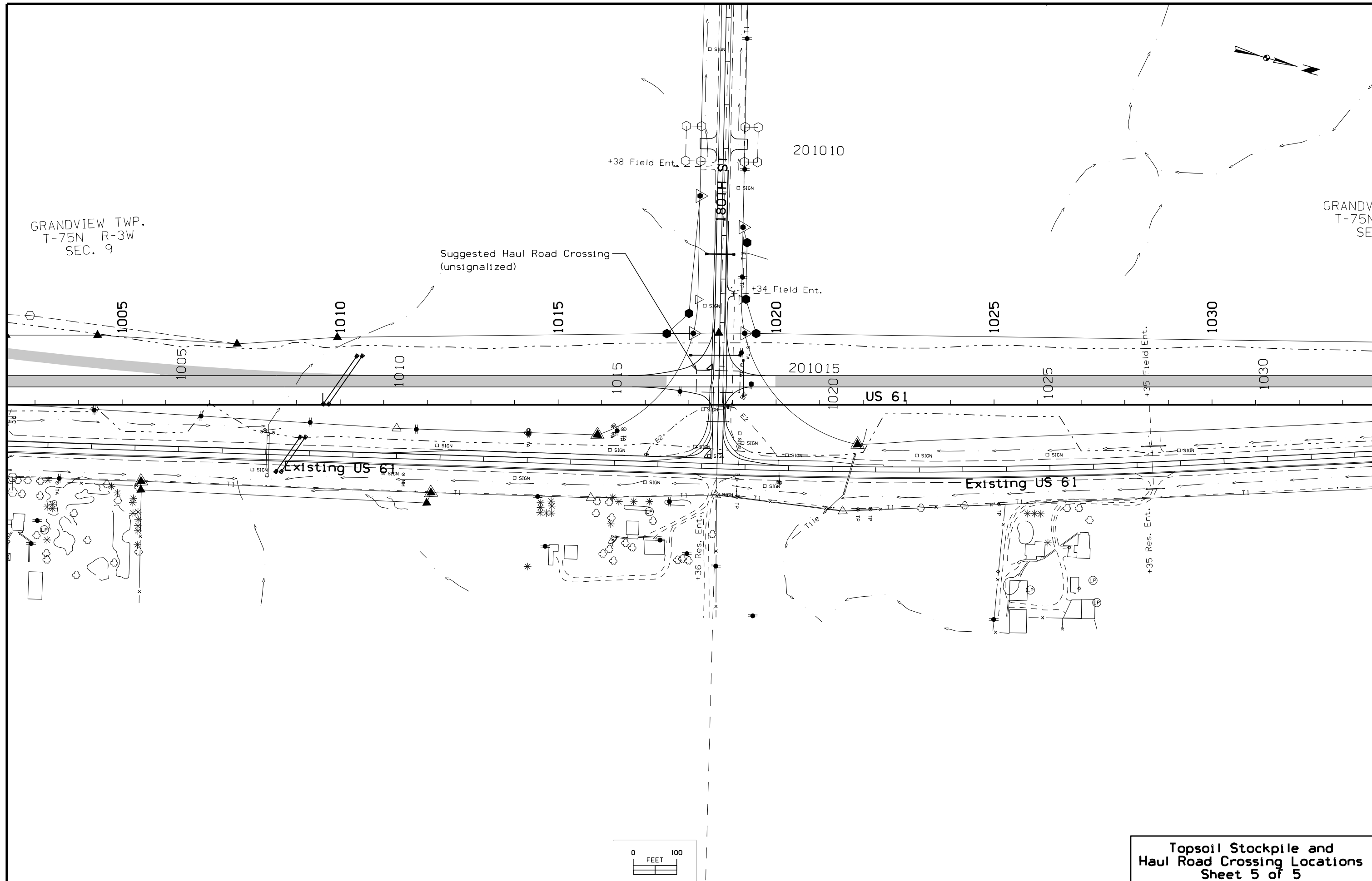


**Topsoil Stockpile and
Haul Road Crossing Locations
Sheet 3 of 5**

| | | | | | |
|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Van Dyke \ HR Green, Inc. | LOUISA COUNTY | PROJECT NUMBER NHSX-061-3(57)--3H-58 | SHEET NUMBER U.9 |
|----------|---------|---------------------------------------|---------------|--------------------------------------|------------------|



Topsoil Stockpile and
Haul Road Crossing Locations
Sheet 4 of 5



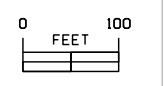
GRANDVIEW TWP.
T-75N R-3W
SEC. 9

GRANDVIEW TWP.
T-75N
SEC. 9

Suggested Haul Road Crossing
(unsignalized)

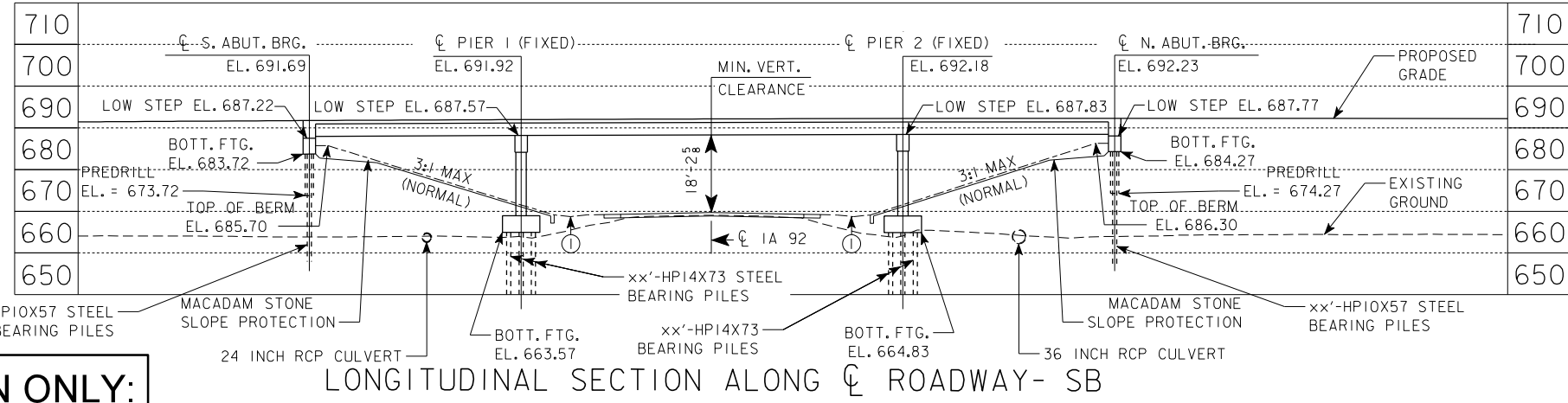
Existing US 61

Existing US 61

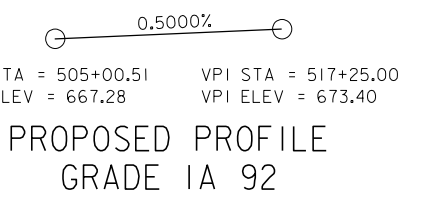
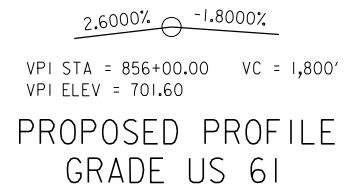


Topsoil Stockpile and
Haul Road Crossing Locations
Sheet 5 of 5

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



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



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

TRAFFIC ESTIMATE

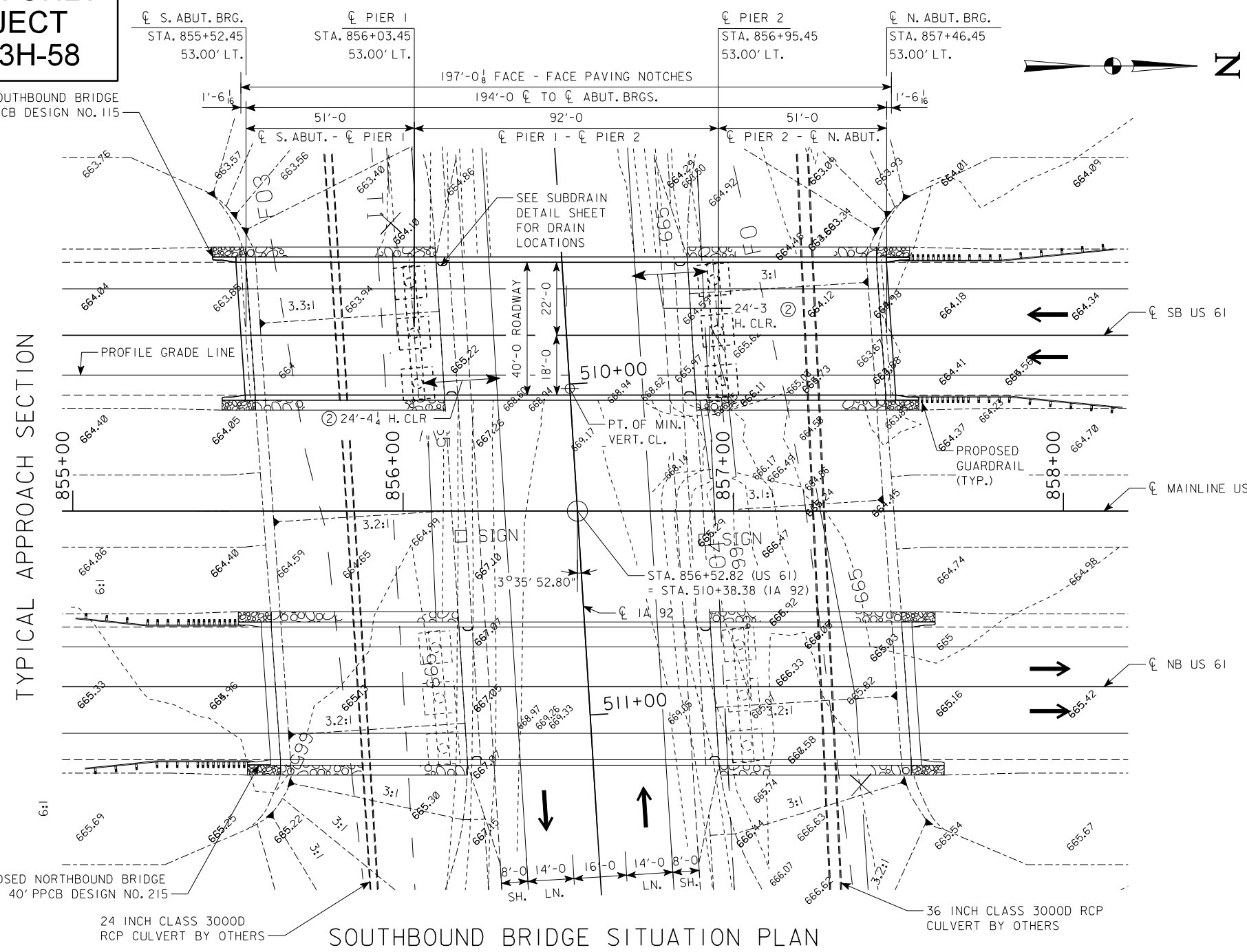
| | | |
|--------------------|-------|--------|
| 2016 AADT | 5,629 | V.P.D. |
| 2036 AADT | 7,677 | V.P.D. |
| 202.0HV | | V.P.H. |
| TRUCKS | 18 | % |
| TOTAL DESIGN ESALS | | |

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

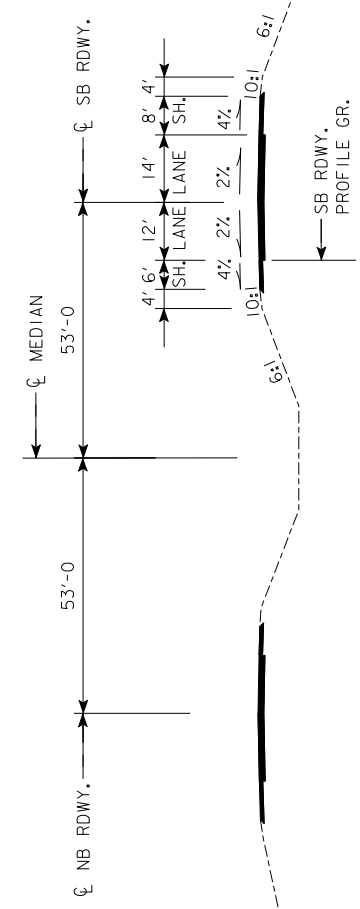
PRELIMINARY

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

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



TYPICAL APPROACH SECTION

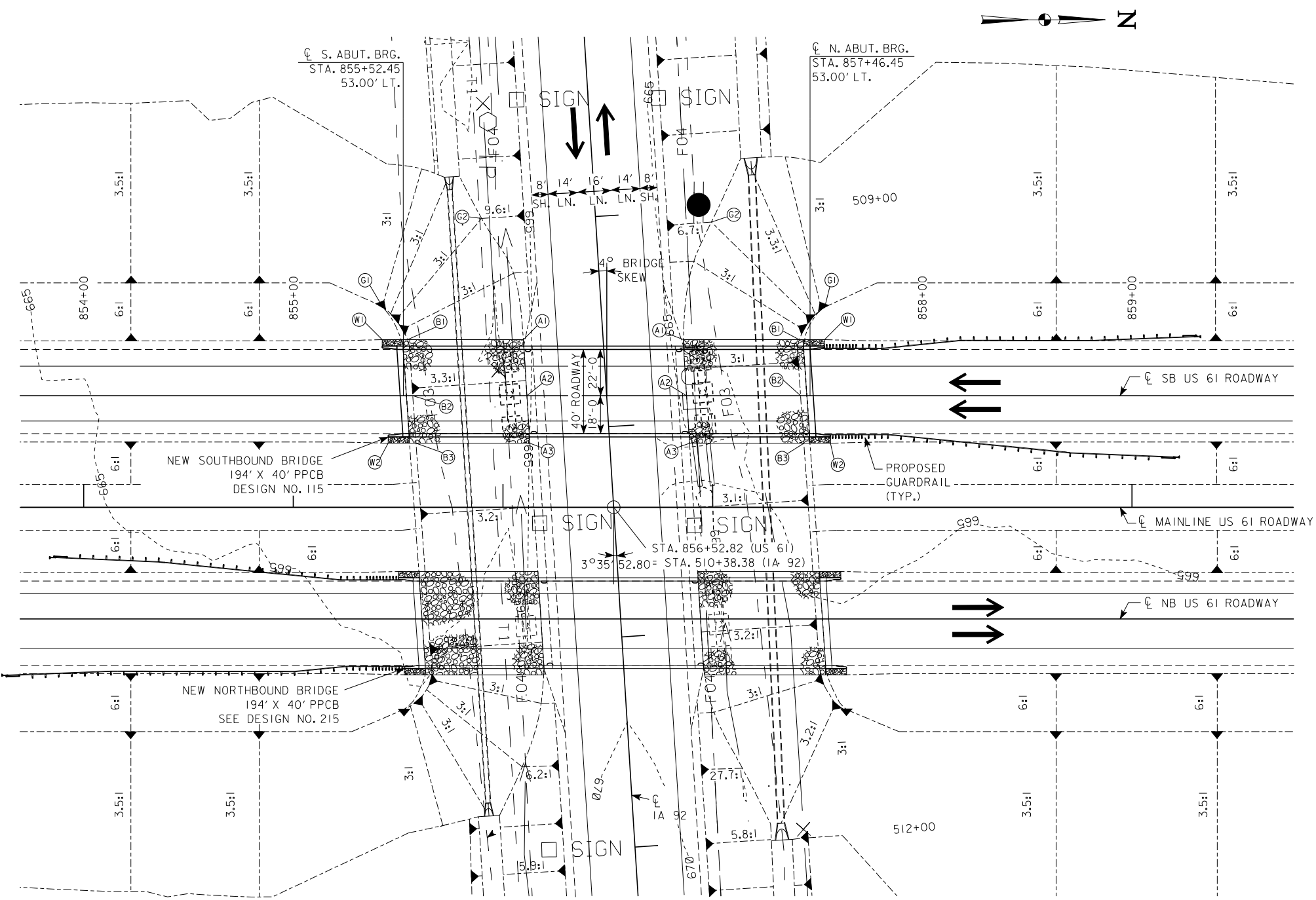


SOUTHBOUND BRIDGE SITUATION PLAN

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

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

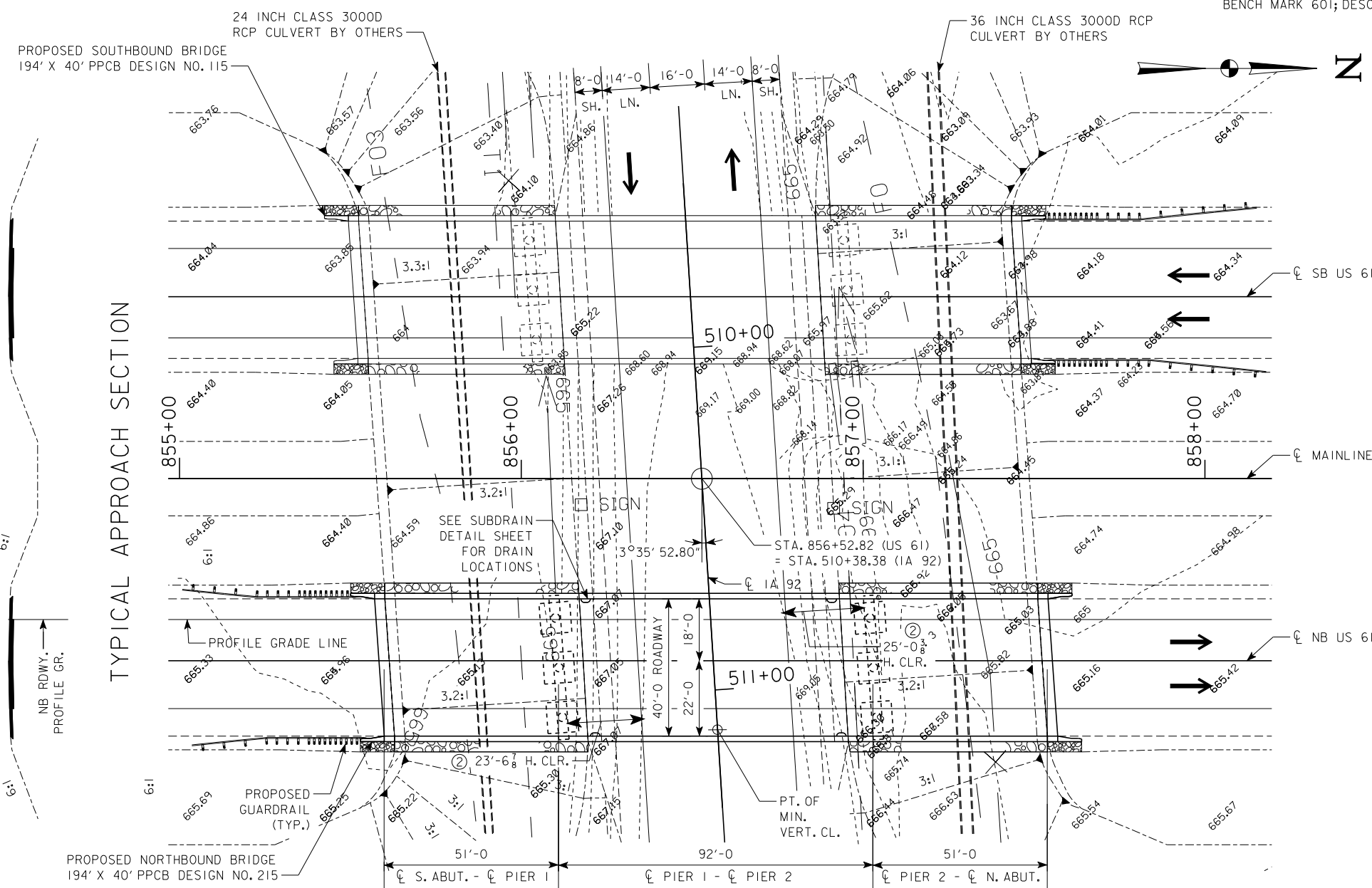
UTILITIES LEGEND:
 FO - FIBER OPTIC - WINDSTREAM
 FO3 - FIBER OPTIC - PAETEC
 FO4 - FIBER OPTIC - MUTUAL TEL. CO. OF MORNING SUN, IA
 T1 - TELEPHONE - WINDSTREAM
 ● - POWER POLE - EASTERN IOWA LIGHT AND POWER



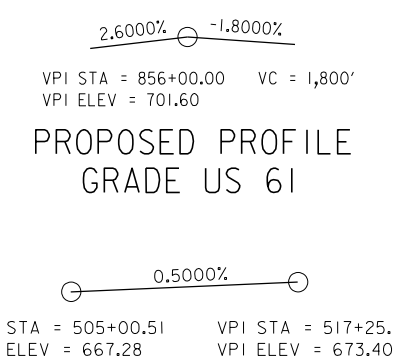
**FOR INFORMATION ONLY:
REFER TO PROJECT
NHSX-061-3(70)--3H-58**

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

SITE PLAN



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



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

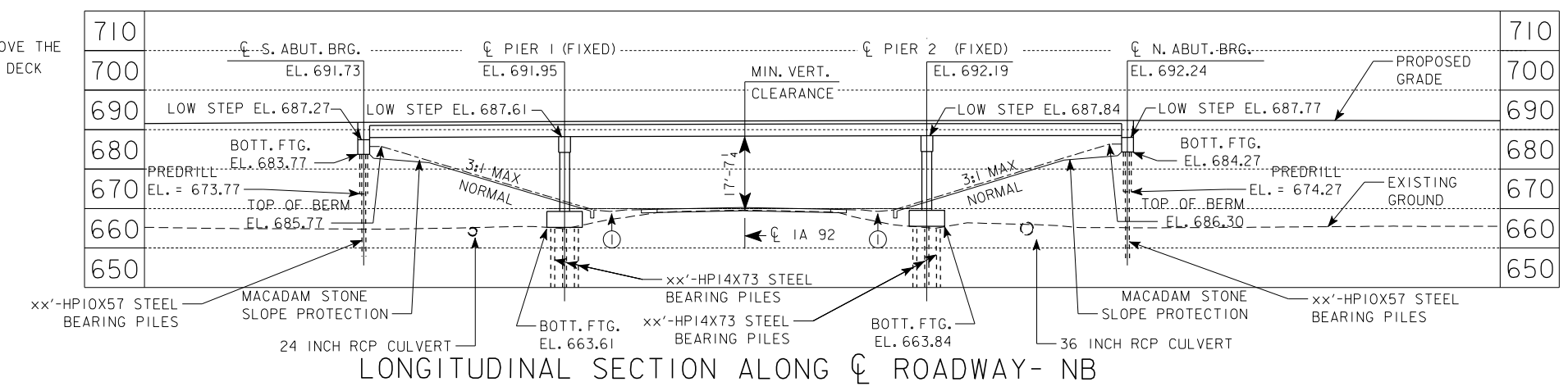
TRAFFIC ESTIMATE

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

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

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

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

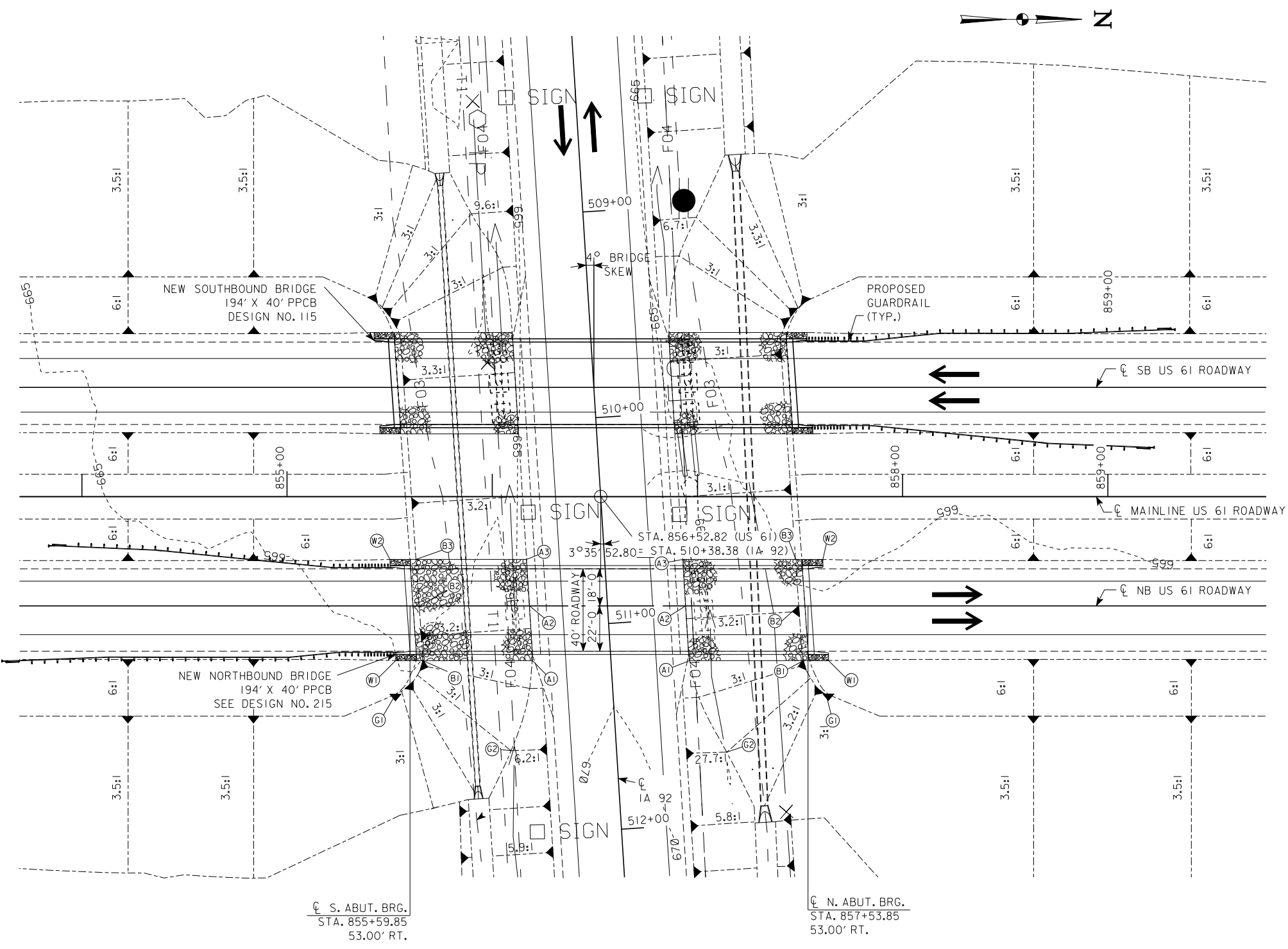


PRELIMINARY
 DESIGN FOR 4° SKEW (R.A.)
**194'-0" x 40' PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 51'-0" END SPANS 92'-0" INTERIOR SPAN
NORTHBOUND SITUATION PLAN
 STA. 856+56.86, 53.00' RT AUGUST, 2014
 LOUISA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF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

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

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

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



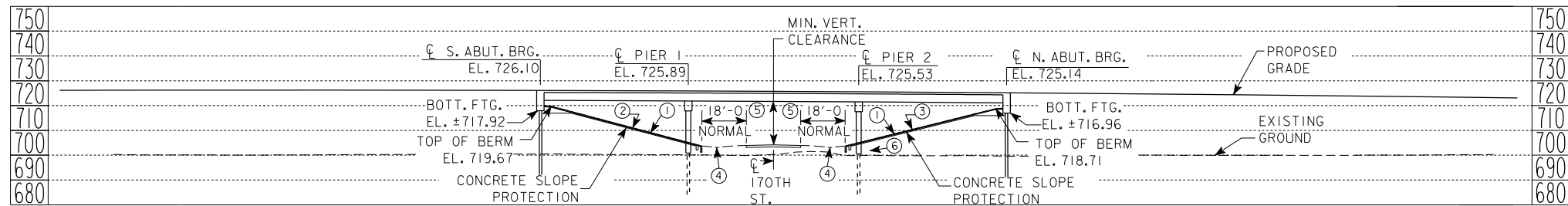
**FOR INFORMATION ONLY:
REFER TO PROJECT
NHSX-061-3(70)--3H-58**

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

SITE PLAN

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

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



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

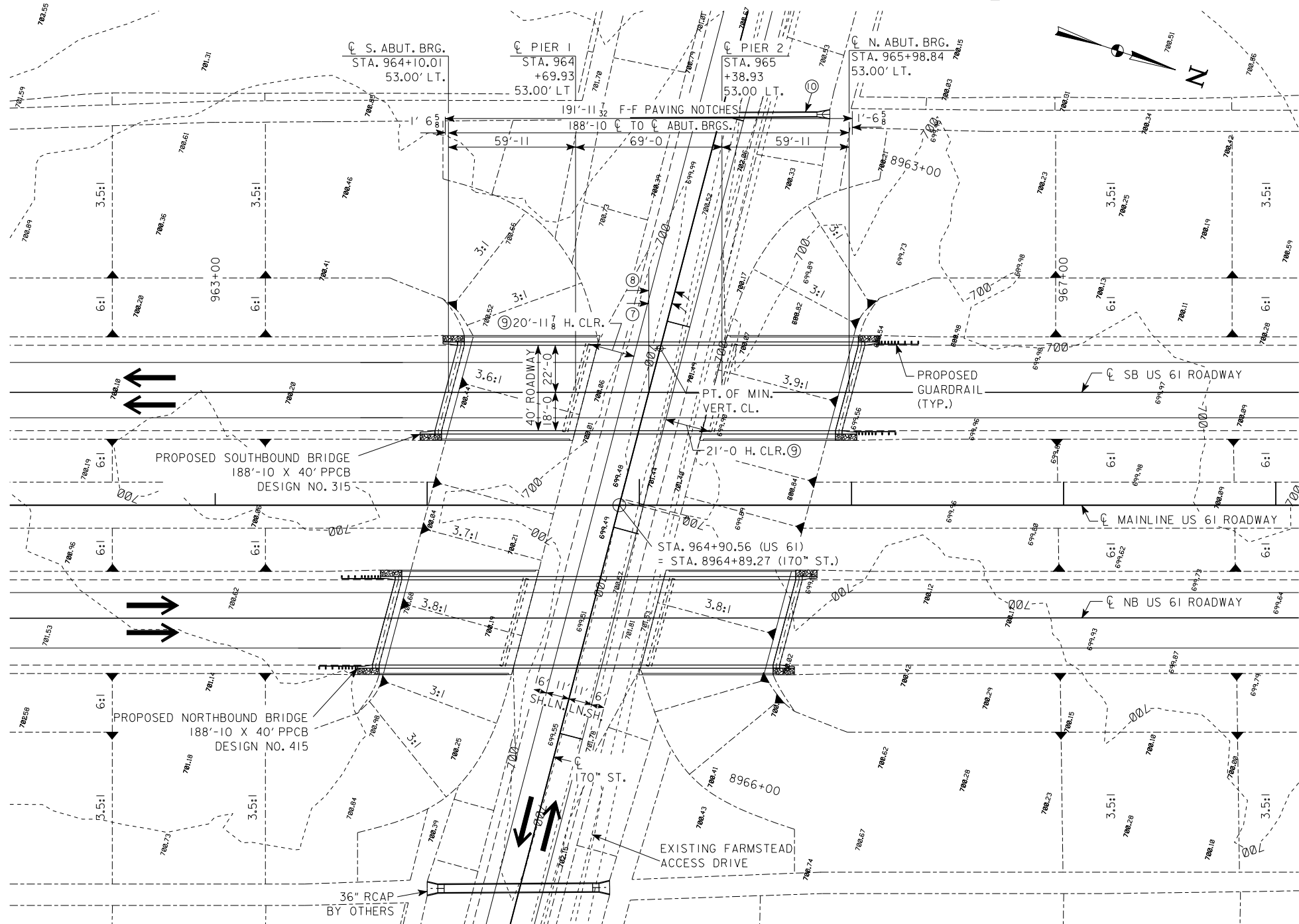
- ⑦ BRIDGE SKEW 15°
- ⑧ ROADWAY SKEW 14° 39' 31.32". ROADWAY SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO PROPOSED ROADWAY CL OF 170TH STREET. ROADWAY CL OF US 61 ALONG CL OF SOUTHBOUND LANES.
- ⑨ MEASURED FROM EDGE OF DRIVING LANE TO FACE OF PIER WALL
- ⑩ 24" RCP BY OTHERS

UTILITIES LEGEND:

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

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

SOUTHBOUND BRIDGE LONGITUDINAL SECTION ALONG CL ROADWAY



1.4000% -2.4000%

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

PROPOSED PROFILE GRADE US 61

-0.5000% 0.6000%

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

PROPOSED PROFILE GRADE 170TH STREET

MINIMUM VERTICAL CLEARANCE

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

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

LOCATION

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

PRELIMINARY

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

SITUATION PLAN

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

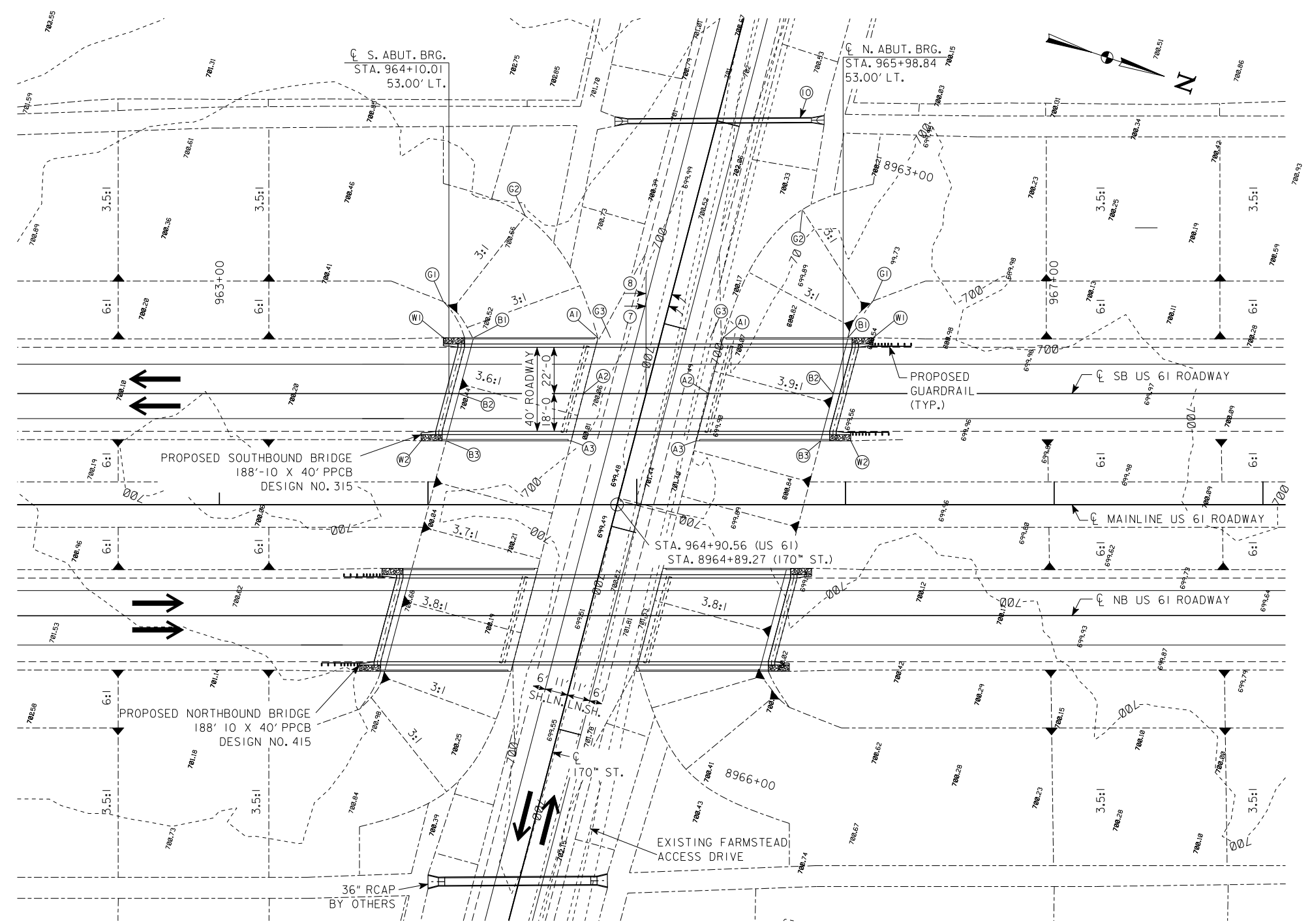
LOUISA COUNTY

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

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

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

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

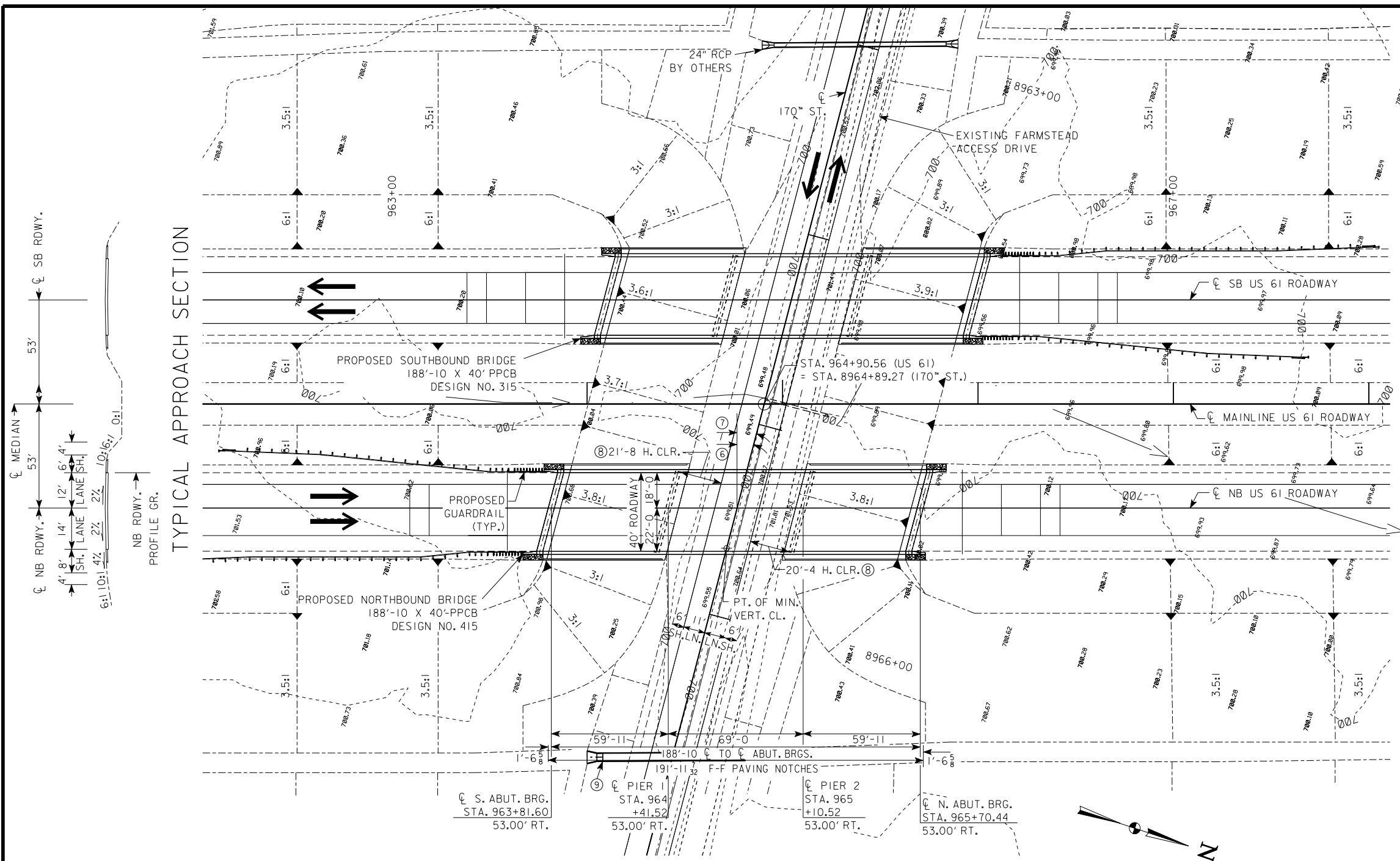


SOUTHBOUND BRIDGE SITE PLAN

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

PRELIMINARY

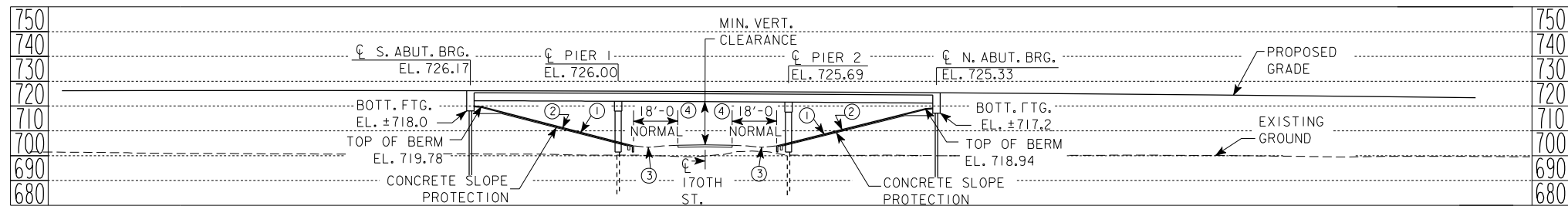
DESIGN FOR 15° SKEW (L.A.)
 188'-10" x 40' PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE
 59'-11" END SPANS 69'-0" INTERIOR SPAN
 SITE PLAN
 STA. 965+.04.43, 53.00' LT MAY, 2014
 LOUISA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 315



NORTHBOUND BRIDGE SITUATION PLAN

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

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



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

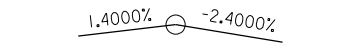
NORTHBOUND BRIDGE LONGITUDINAL SECTION ALONG \bar{C} ROADWAY

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

UTILITIES LEGEND:

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

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



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

PROPOSED PROFILE GRADE US 61



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

PROPOSED PROFILE GRADE 170TH STREET

MINIMUM VERTICAL CLEARANCE

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

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

LOCATION

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

PRELIMINARY

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

SITUATION PLAN

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

LOUISA COUNTY

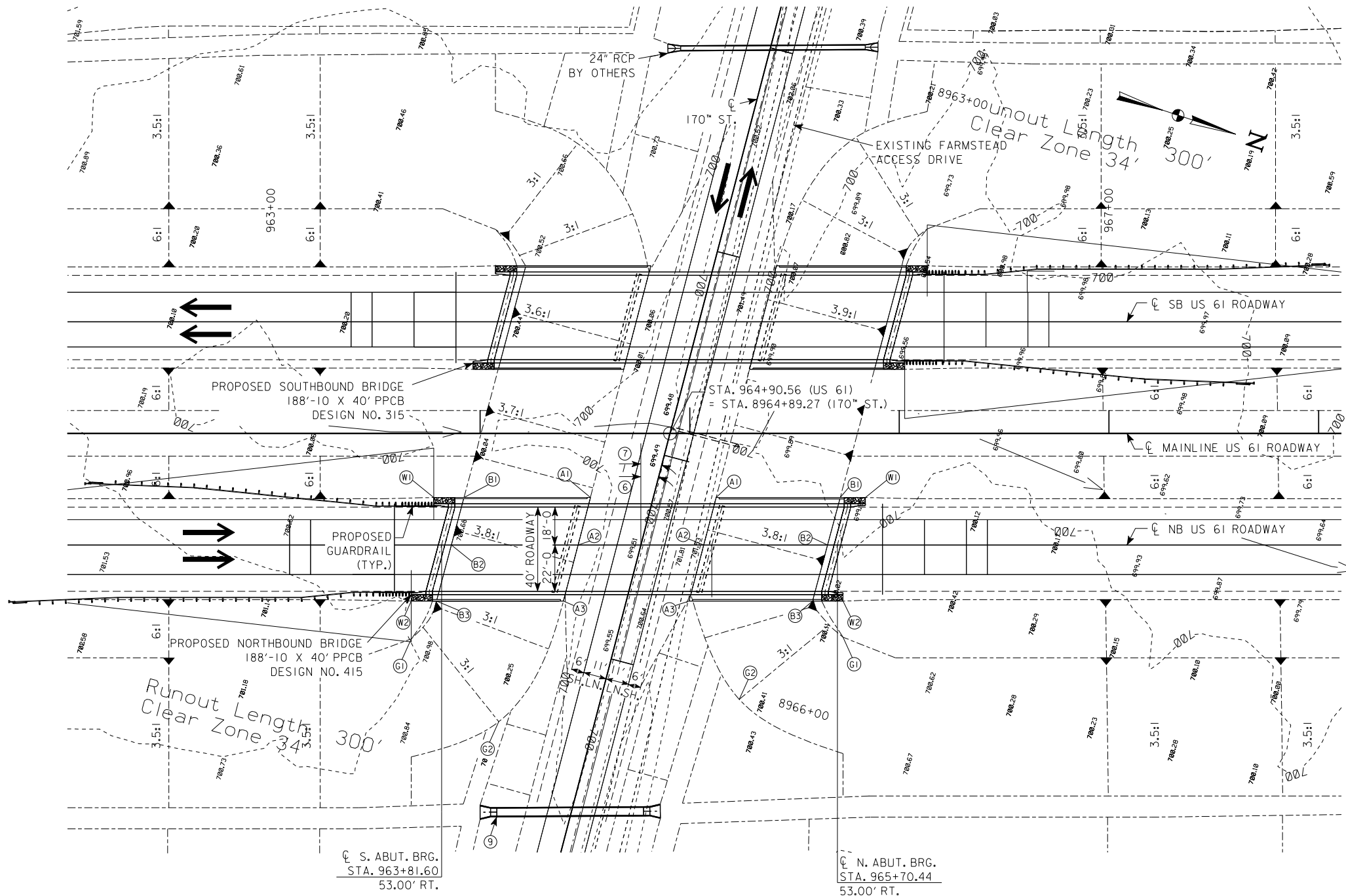
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. ? OF ? FILE NO. 30755 DESIGN NO. 415

BERM SLOPE LOCATION TABLE
NORTHBOUND BRIDGE

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

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

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



NORTHBOUND BRIDGE SITE PLAN

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

PRELIMINARY

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

SITE PLAN

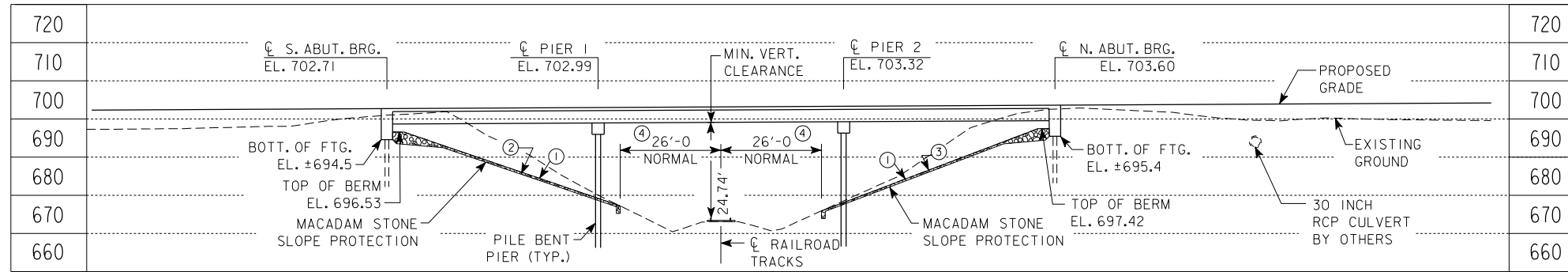
STA. 964+76.70, 53.00' RT MAY, 2014

LOUISA COUNTY

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

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

① GRADING SURFACE ② 2.9:1 NORMAL BERM SLOPE ③ 2.6:1 NORMAL BERM SLOPE ④ MEASURED FROM \bar{C} OF RAILROAD TRACKS TO TOE OF BERM



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

SOUTHBOUND BRIDGE LONGITUDINAL SECTION ALONG \bar{C} ROADWAY

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

UTILITIES LEGEND:

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

0.5000%

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

PROPOSED PROFILE GRADE US 61

MINIMUM VERTICAL CLEARANCE

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

TRAFFIC ESTIMATE

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

LOCATION

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

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

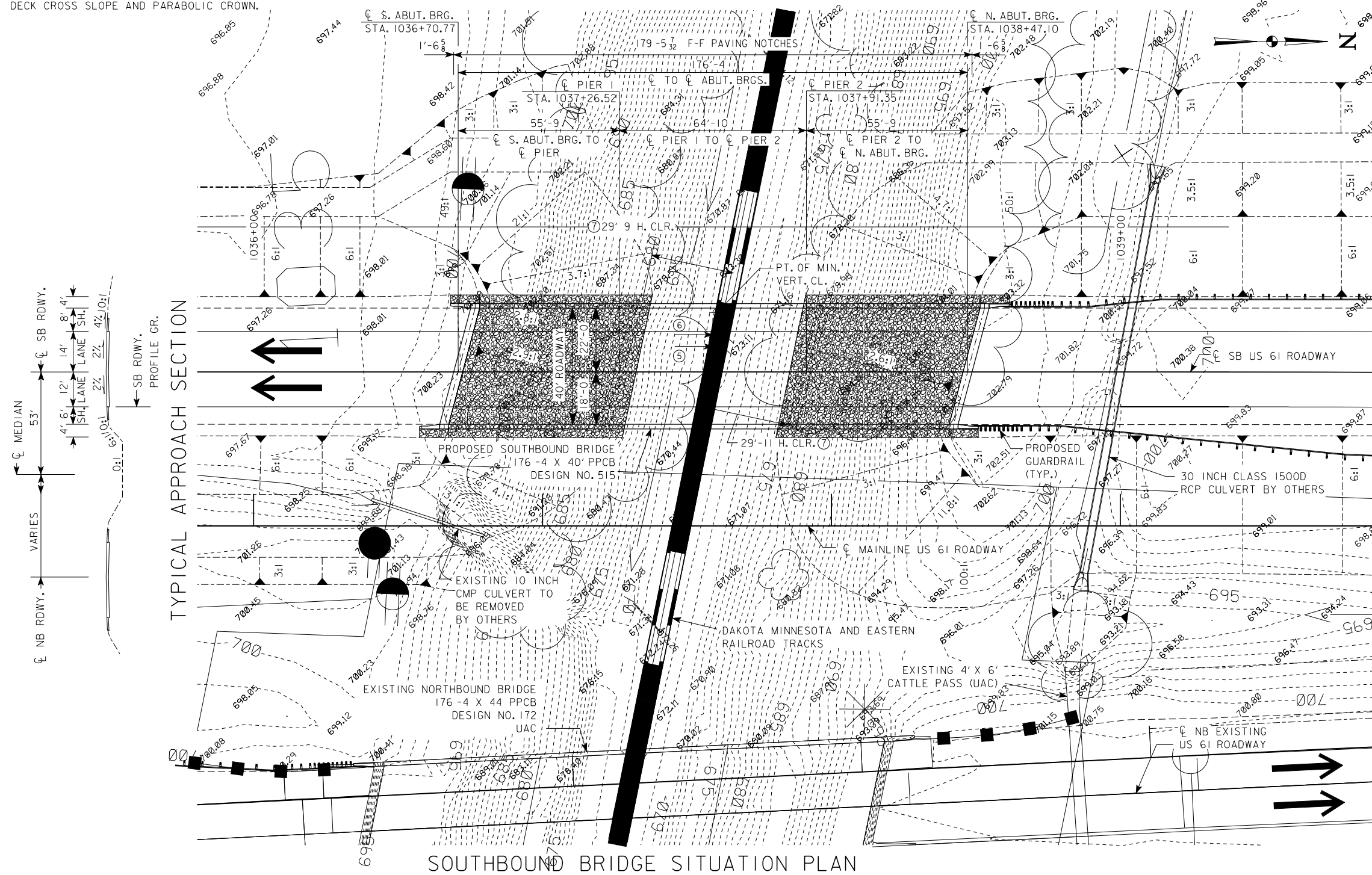
PRELIMINARY

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

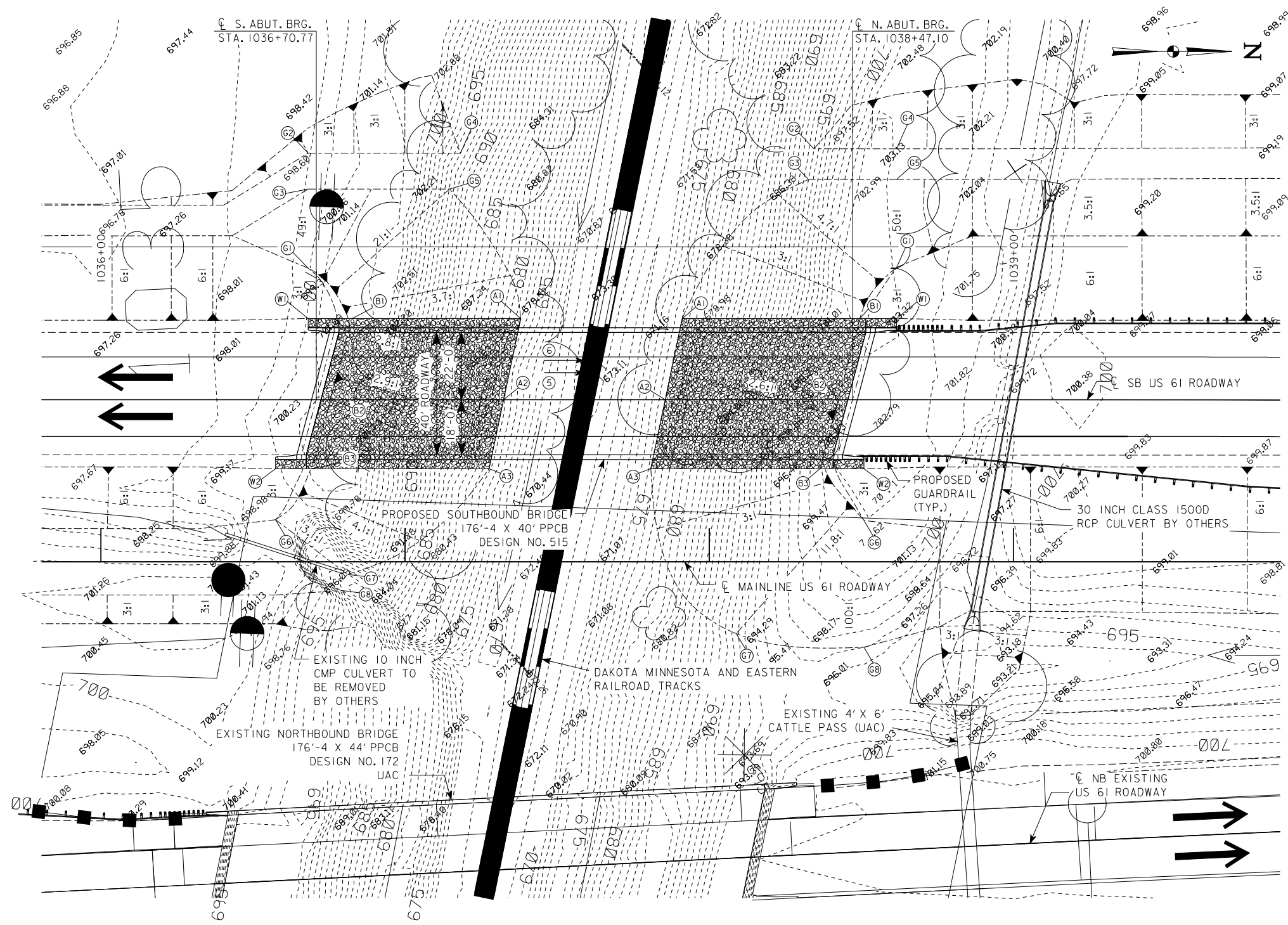
SITUATION PLAN

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

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



SOUTHBOUND BRIDGE SITUATION PLAN



SOUTHBOUND BRIDGE SITE PLAN

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

- W - END WING / EROSION STONE
BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE
- ⑤ BRIDGE SKEW 15°
- ⑥ RAILROAD SKEW 11° 53' 28.32". RAILROAD SKEW ANGLE IS MEASURED FROM LINE NORMAL TO CL OF US 61 TO CENTERLINE OF EXISTING RAILROAD TRACKS. ROADWAY CL OF US 61 ALONG CL OF SOUTHBOUND LANES.

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

PRELIMINARY

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

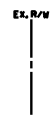
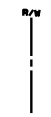

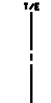
LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

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

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

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

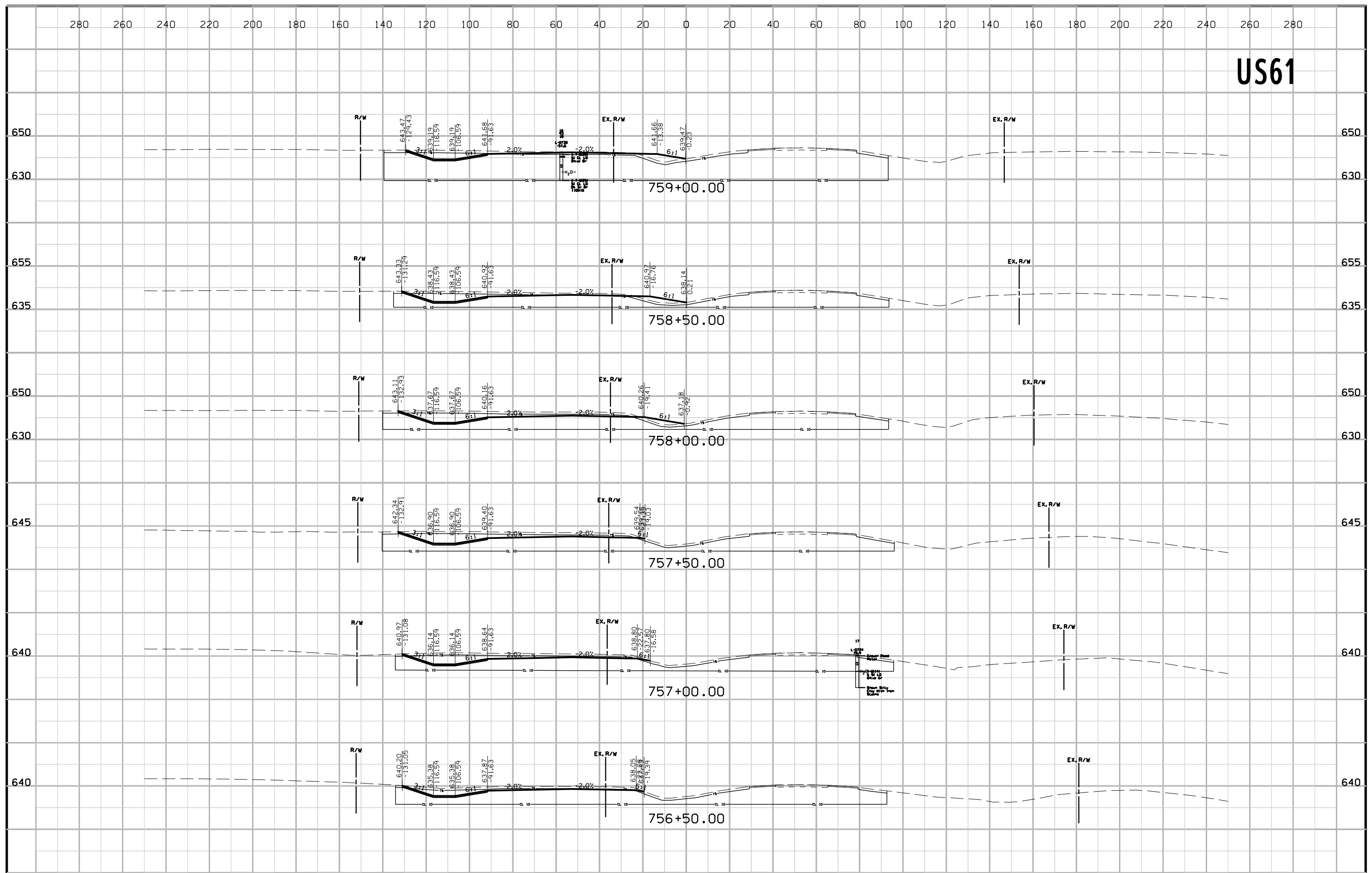
SYMBOL LEGEND OF CROSS SECTION SHEETS

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

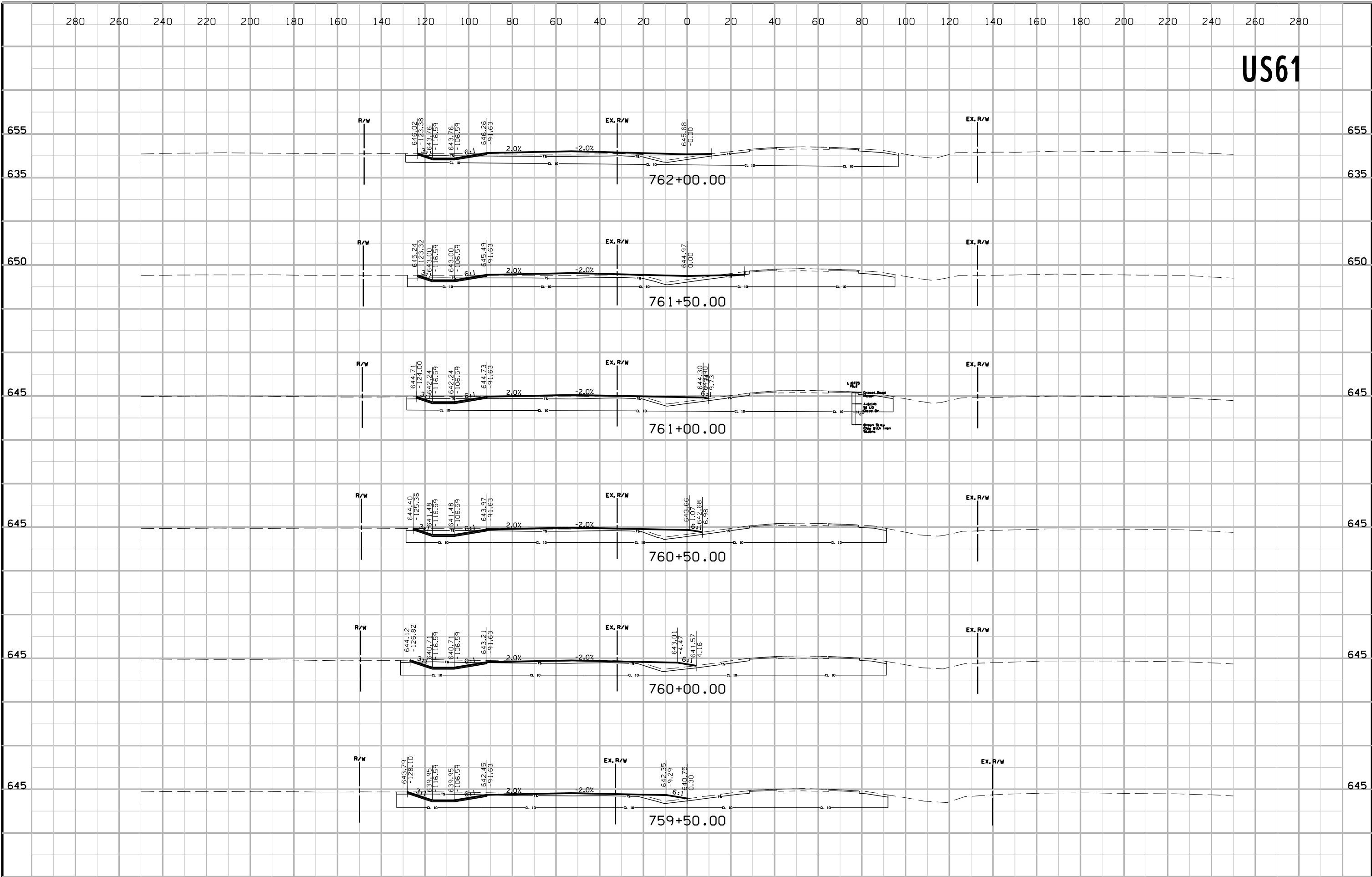
**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

(COVERS SHEET SERIES W, X, & Y)

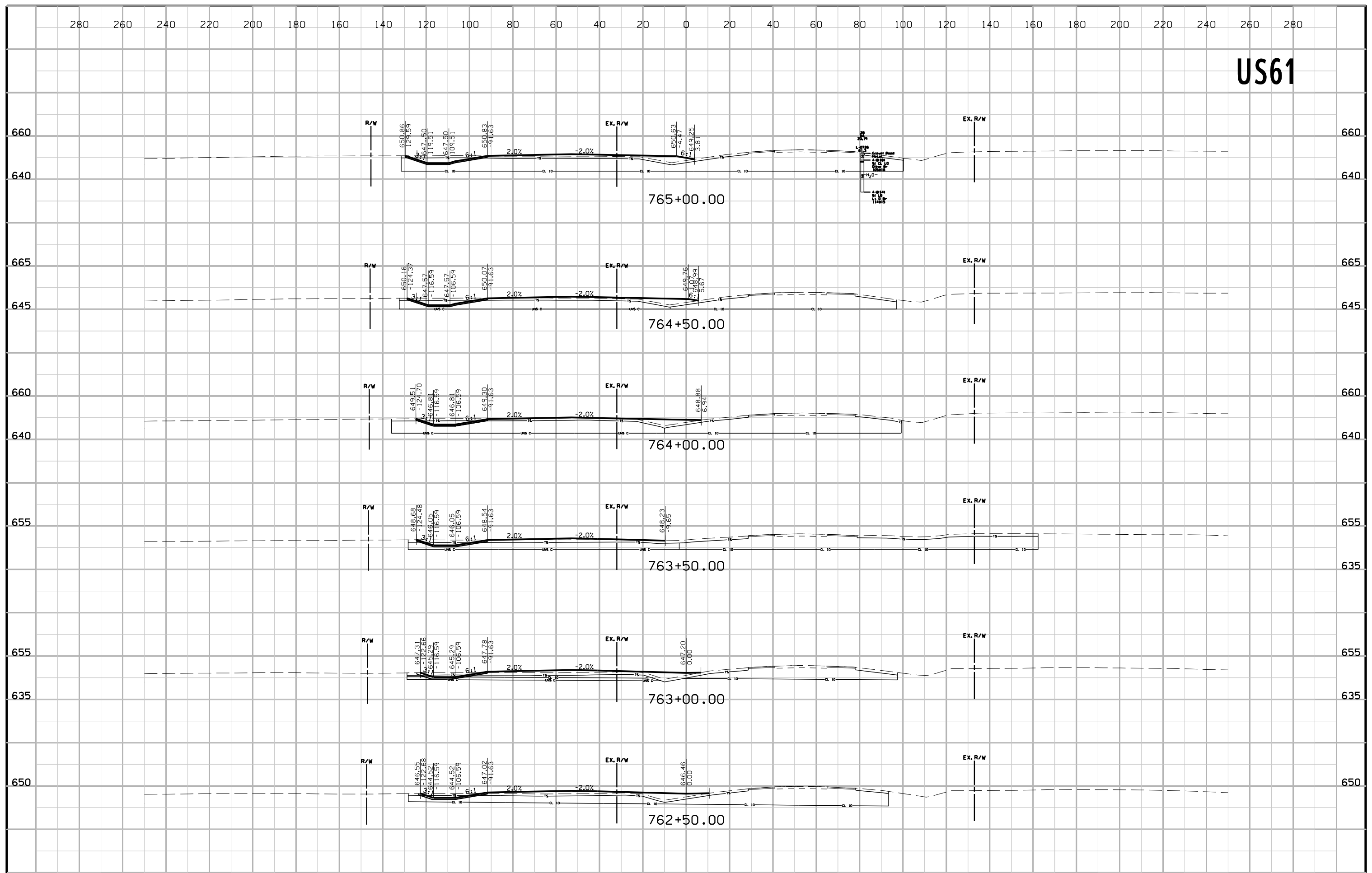
US61



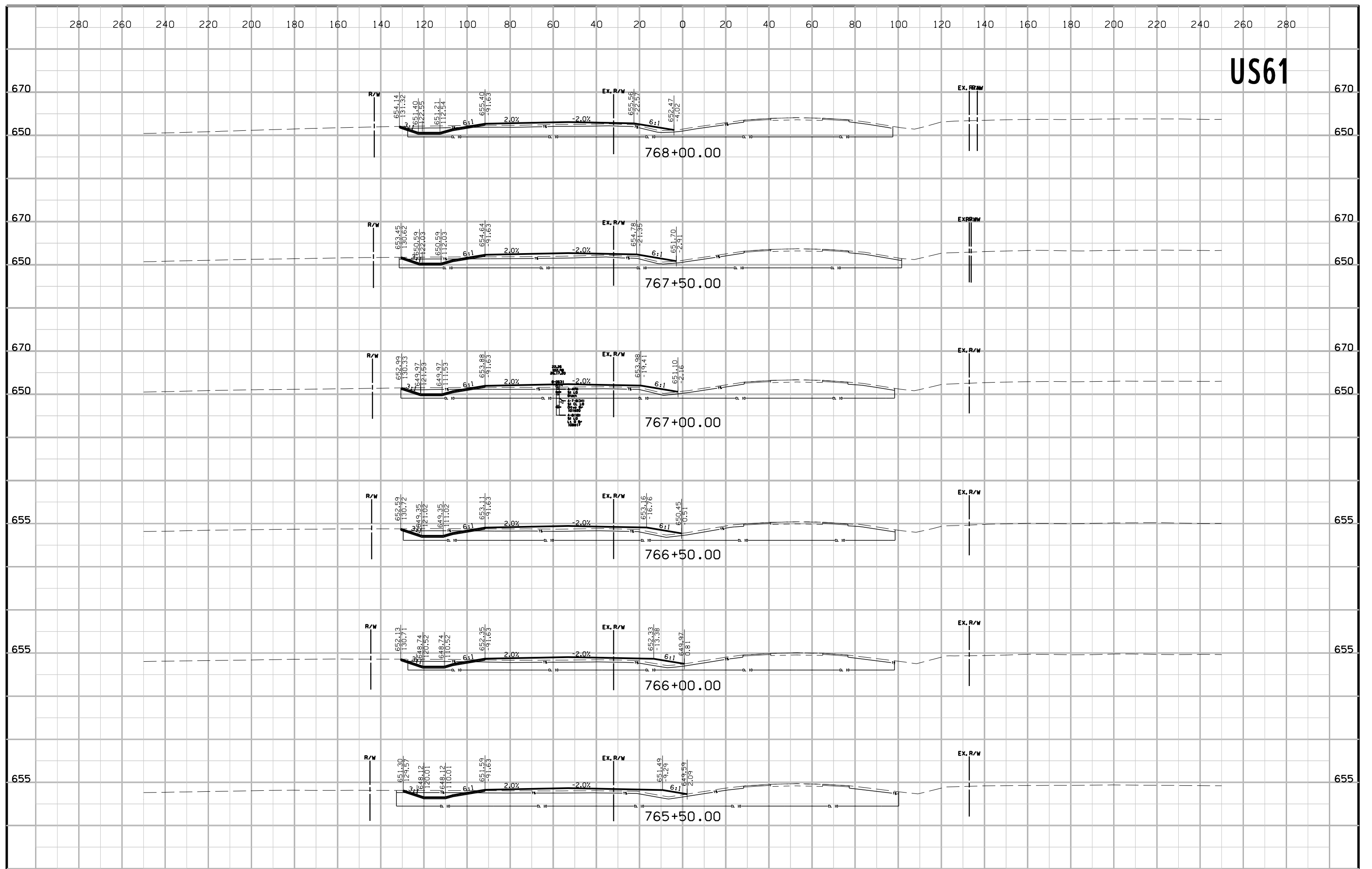
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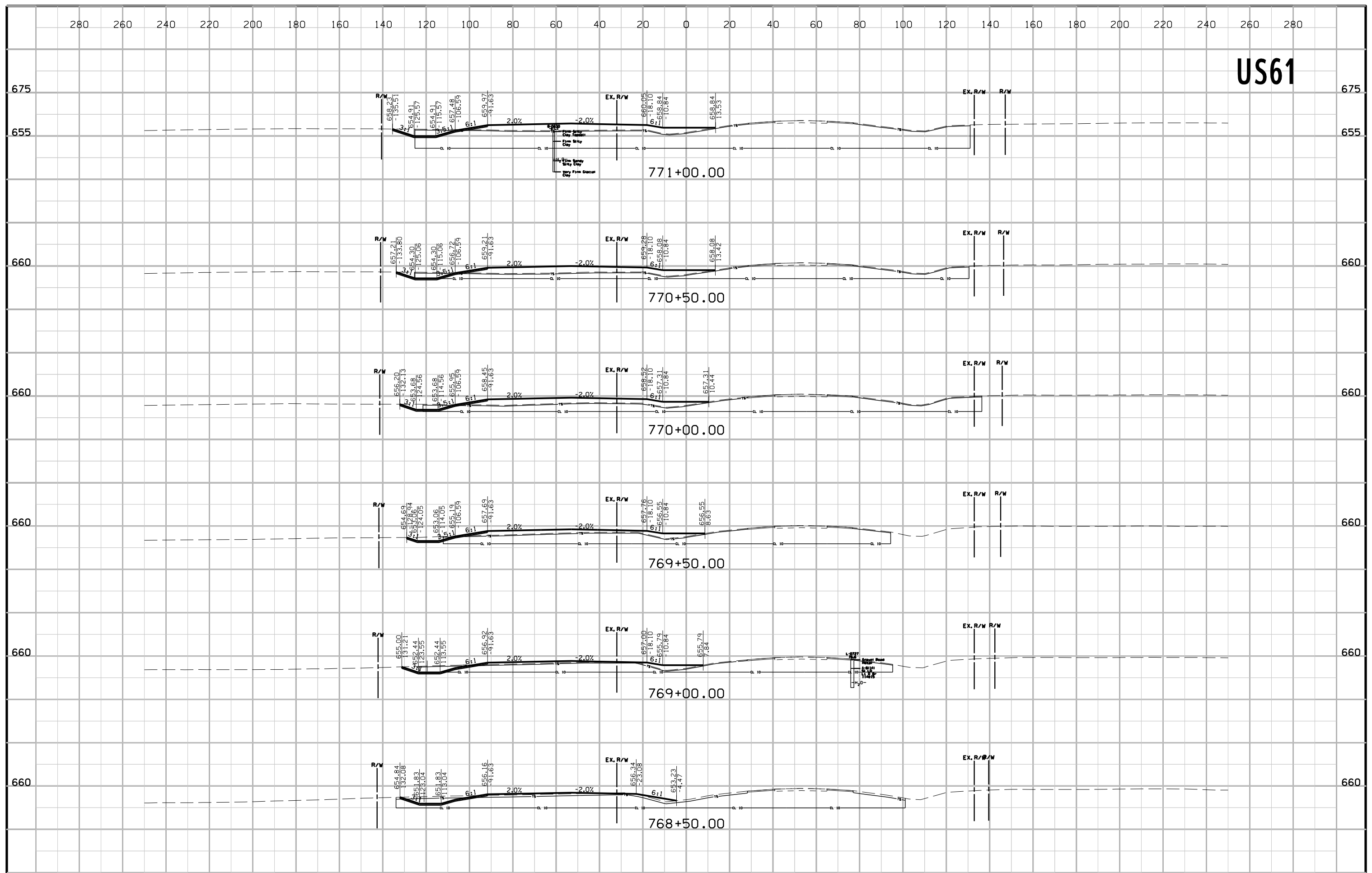
US61



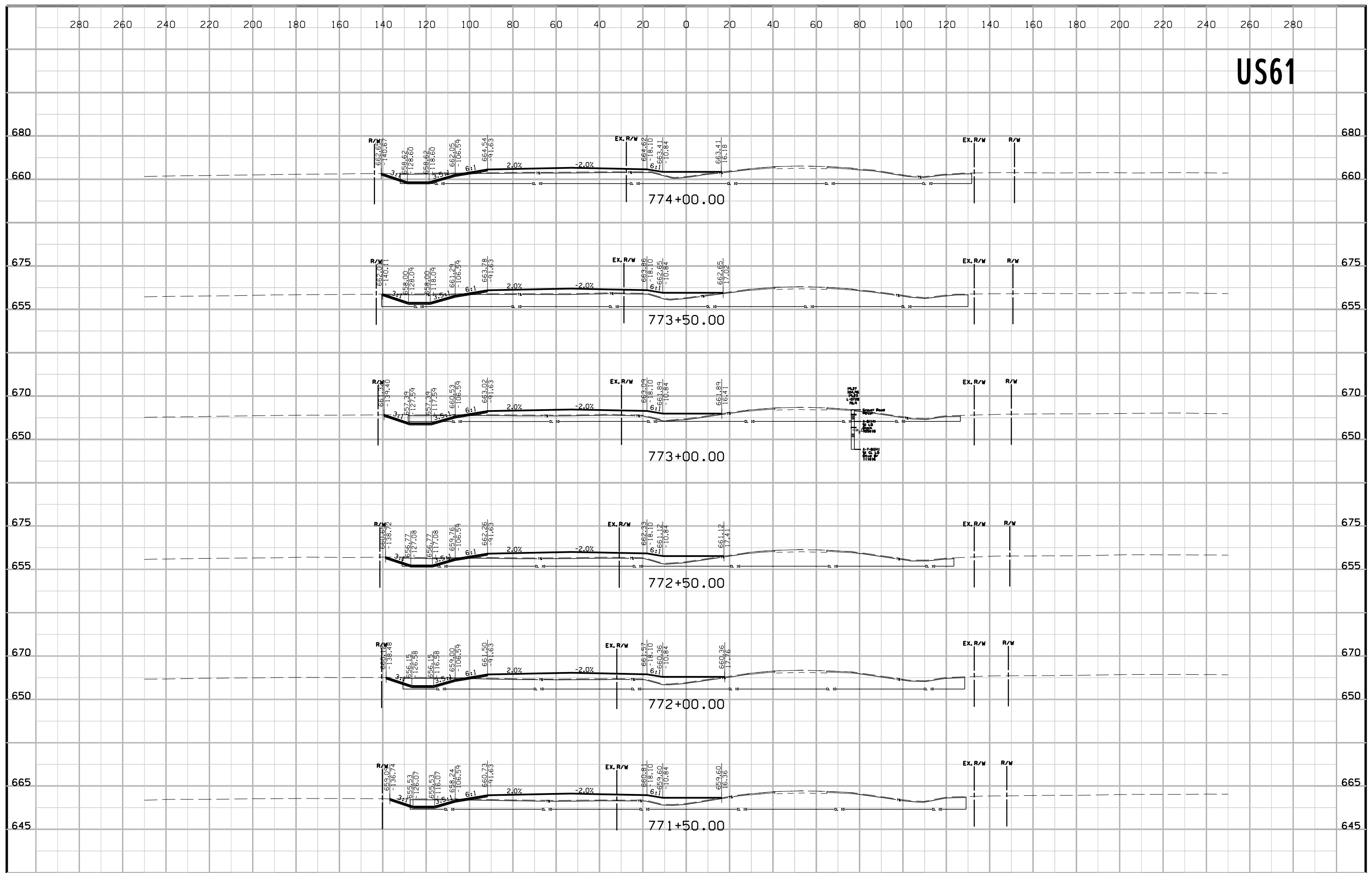
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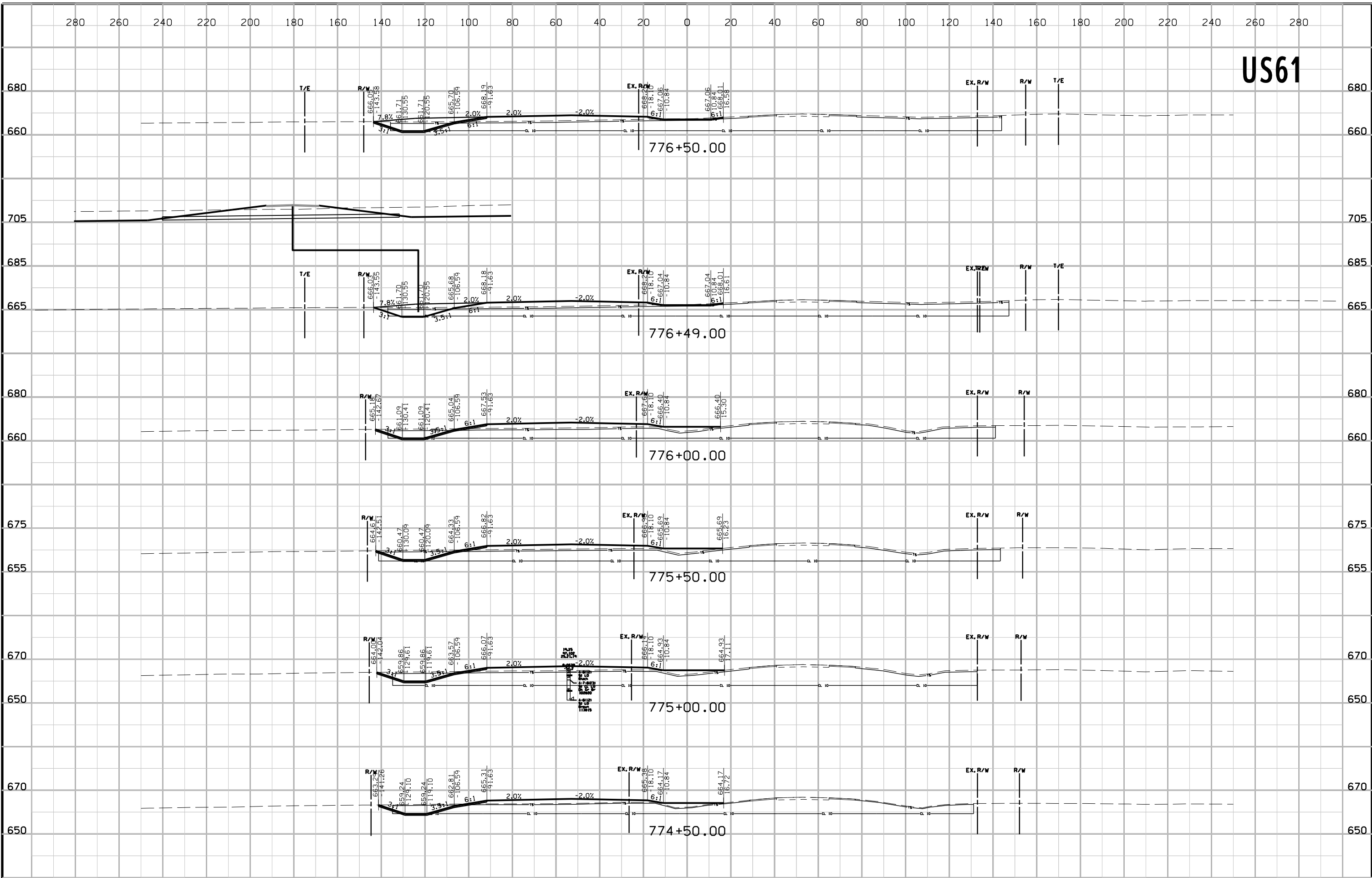
US61



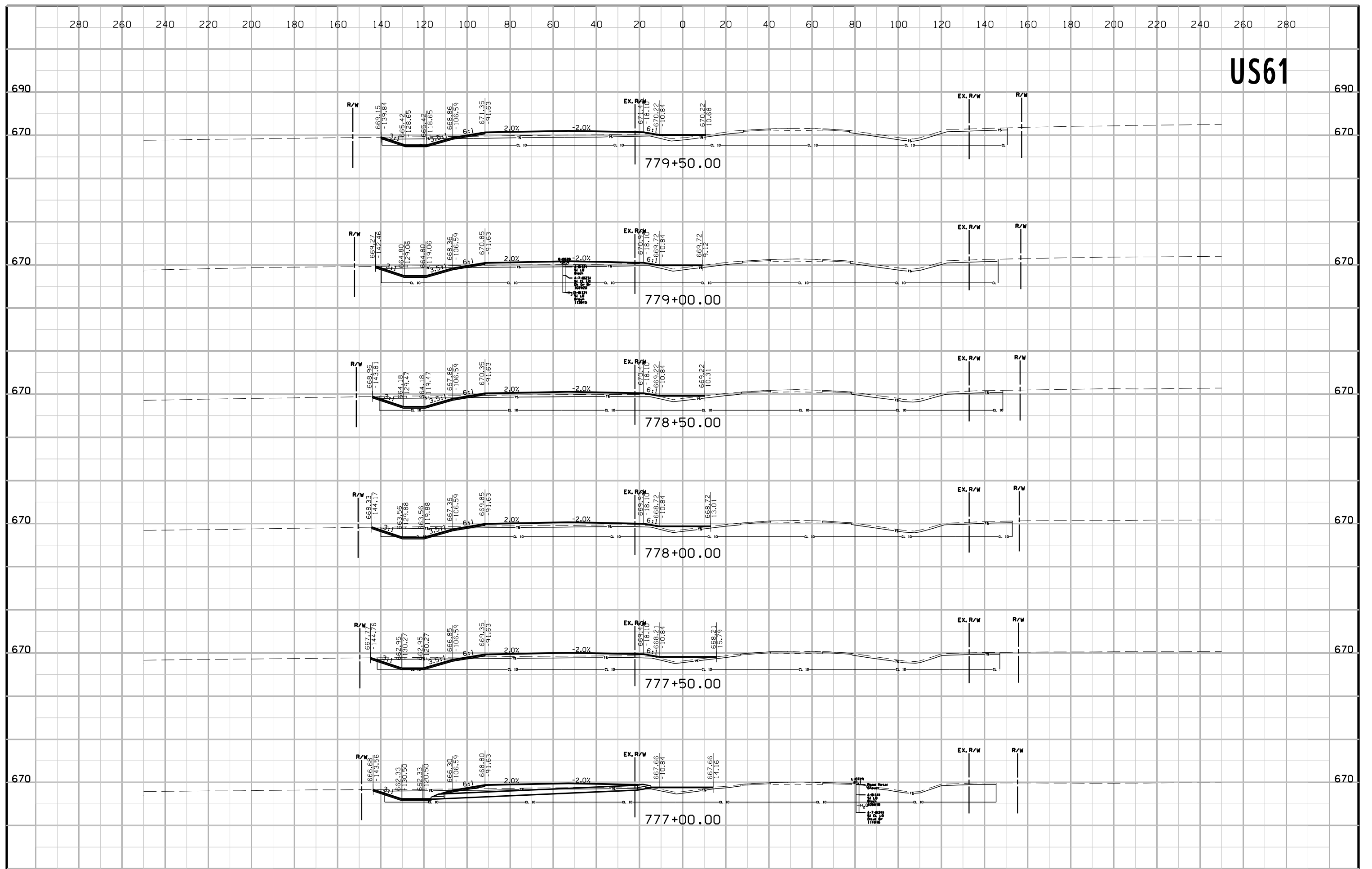
US61



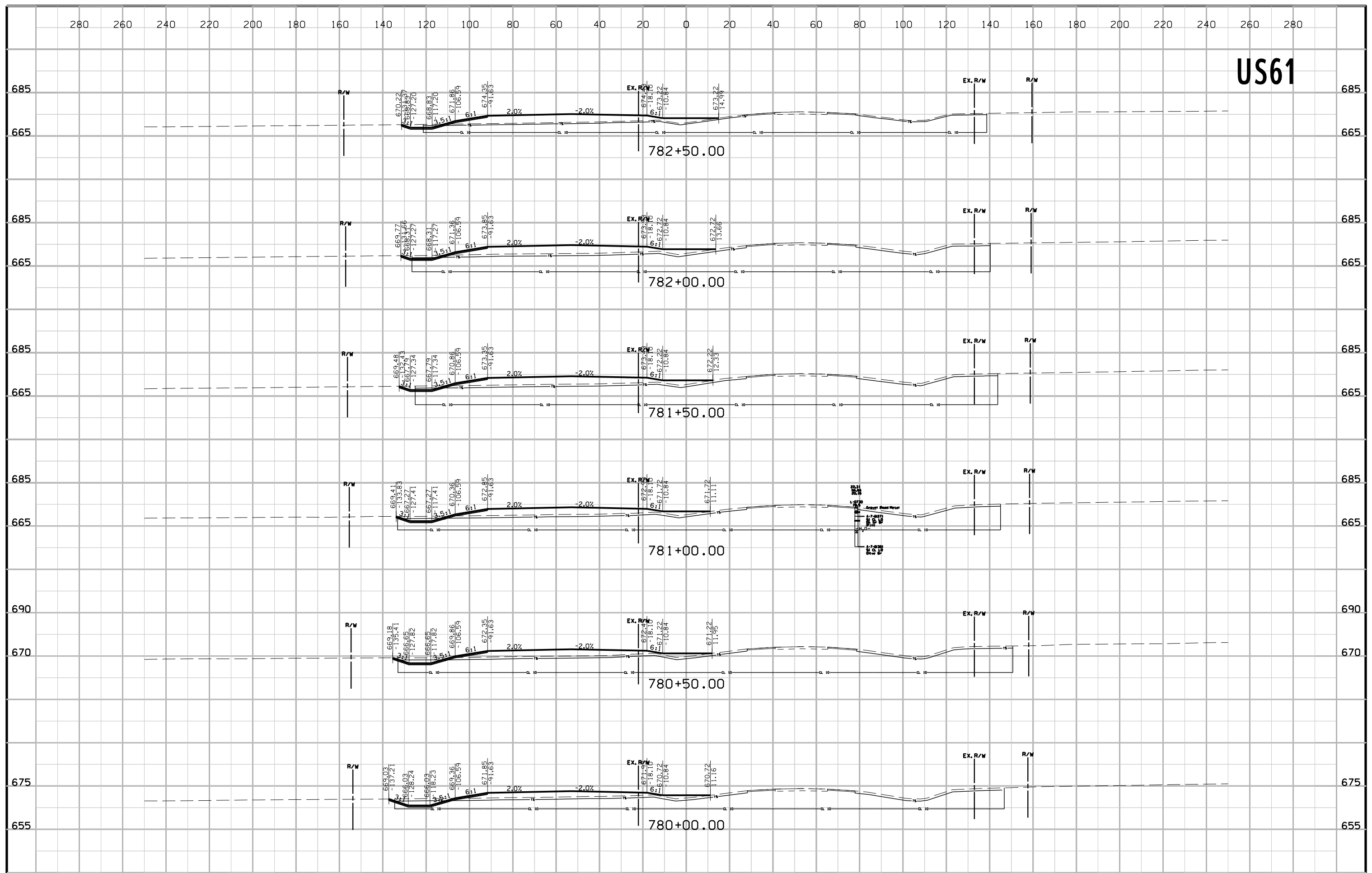
US61



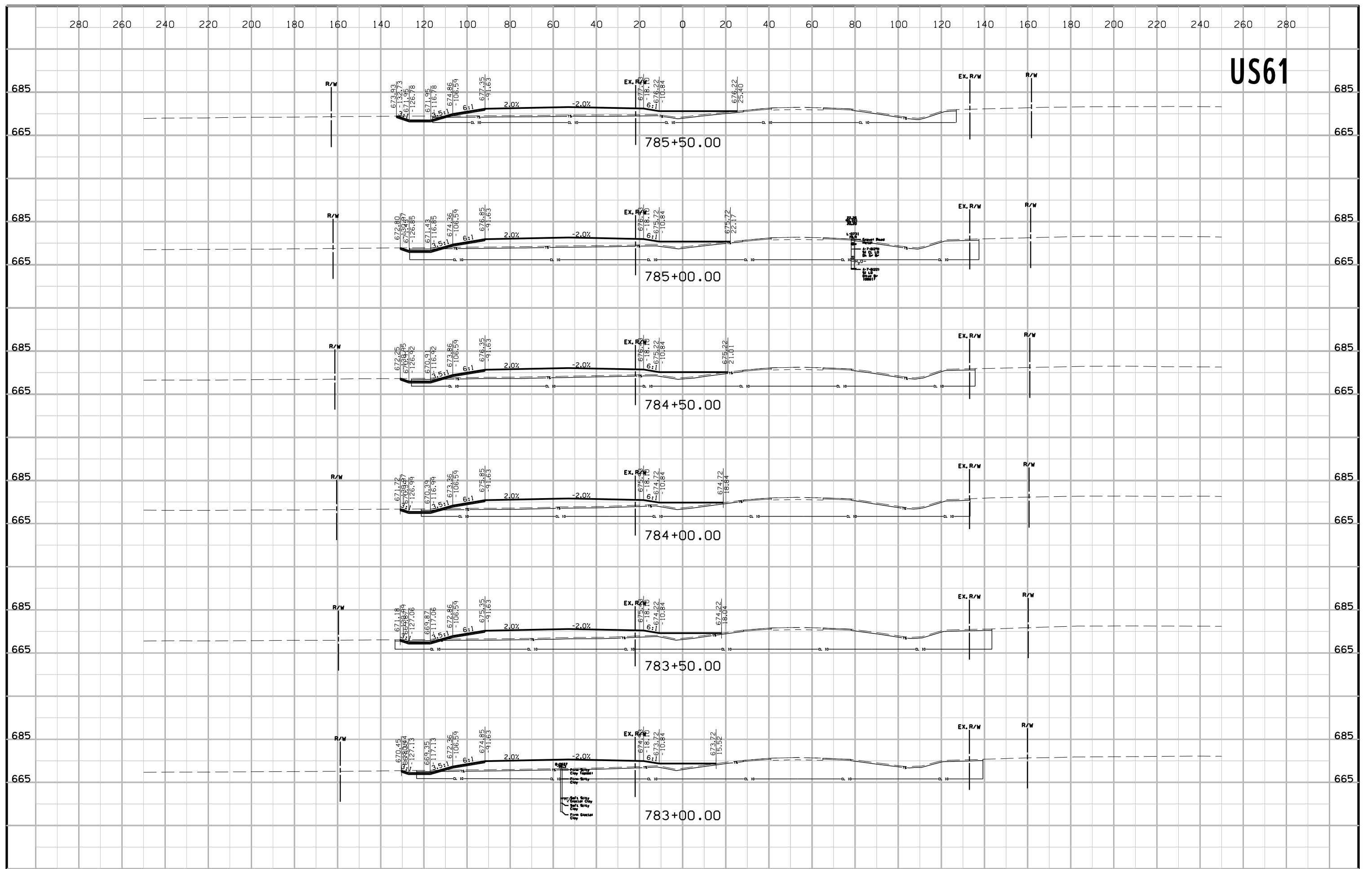
US61



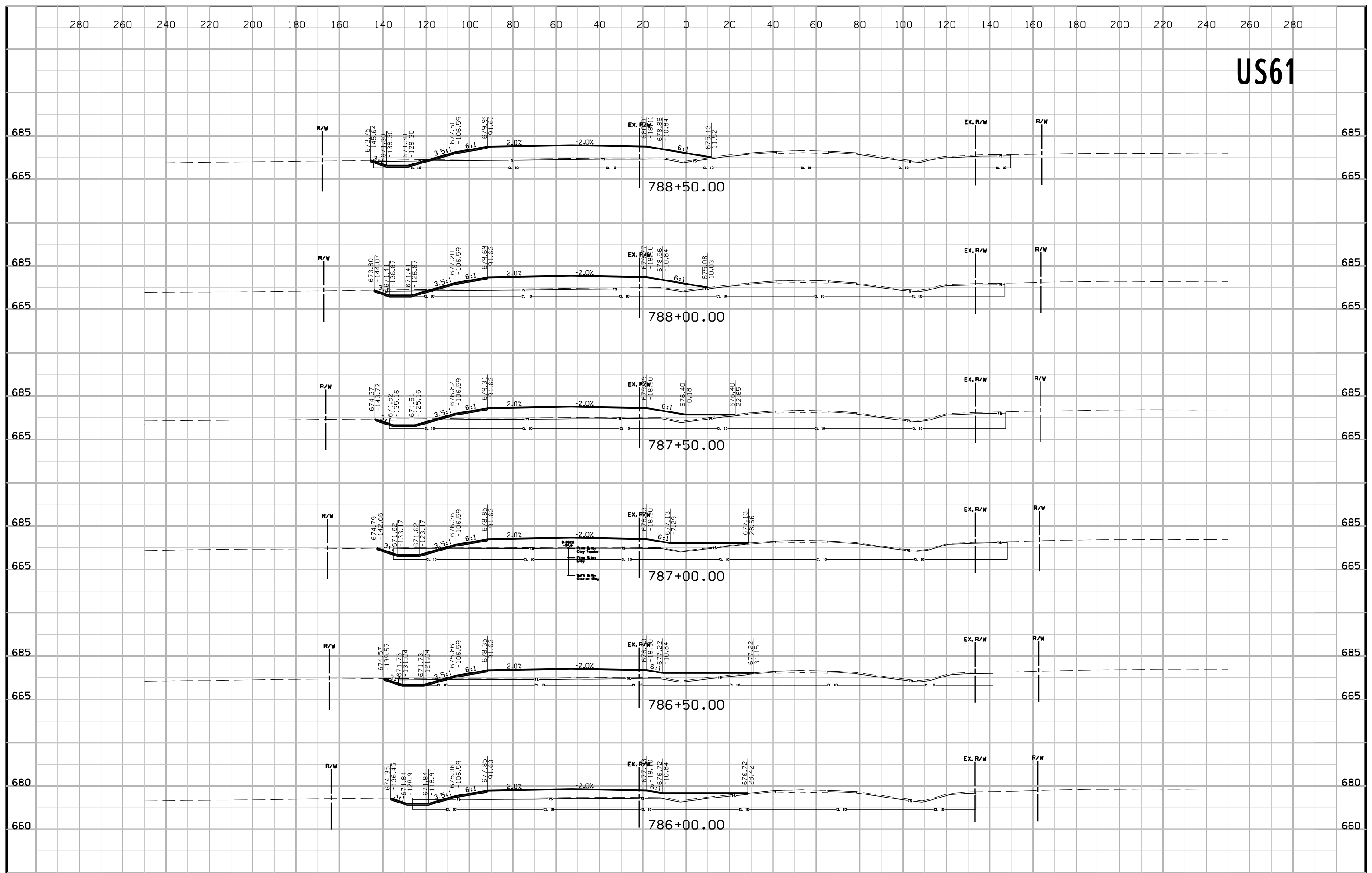
US61



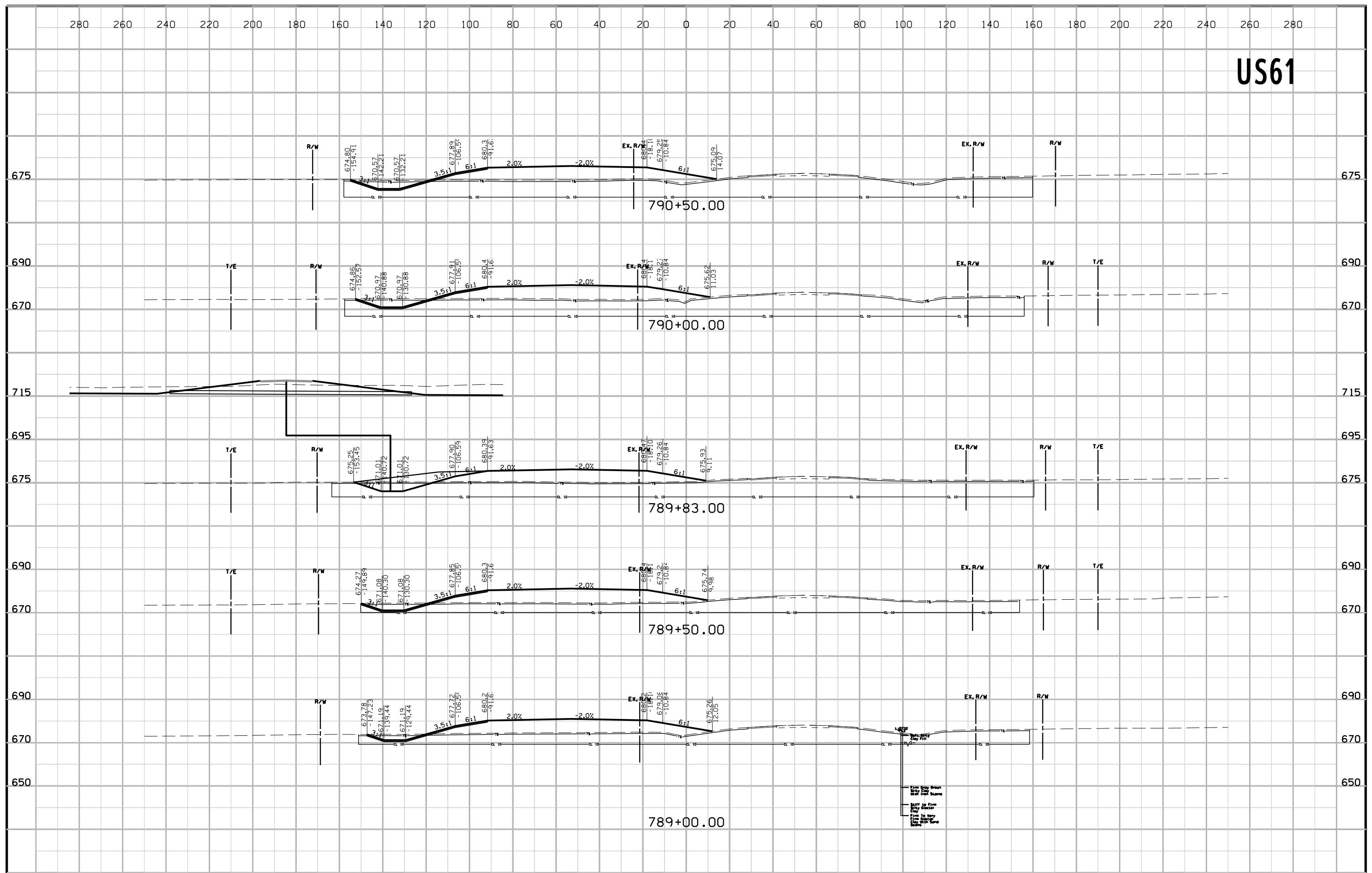
US61



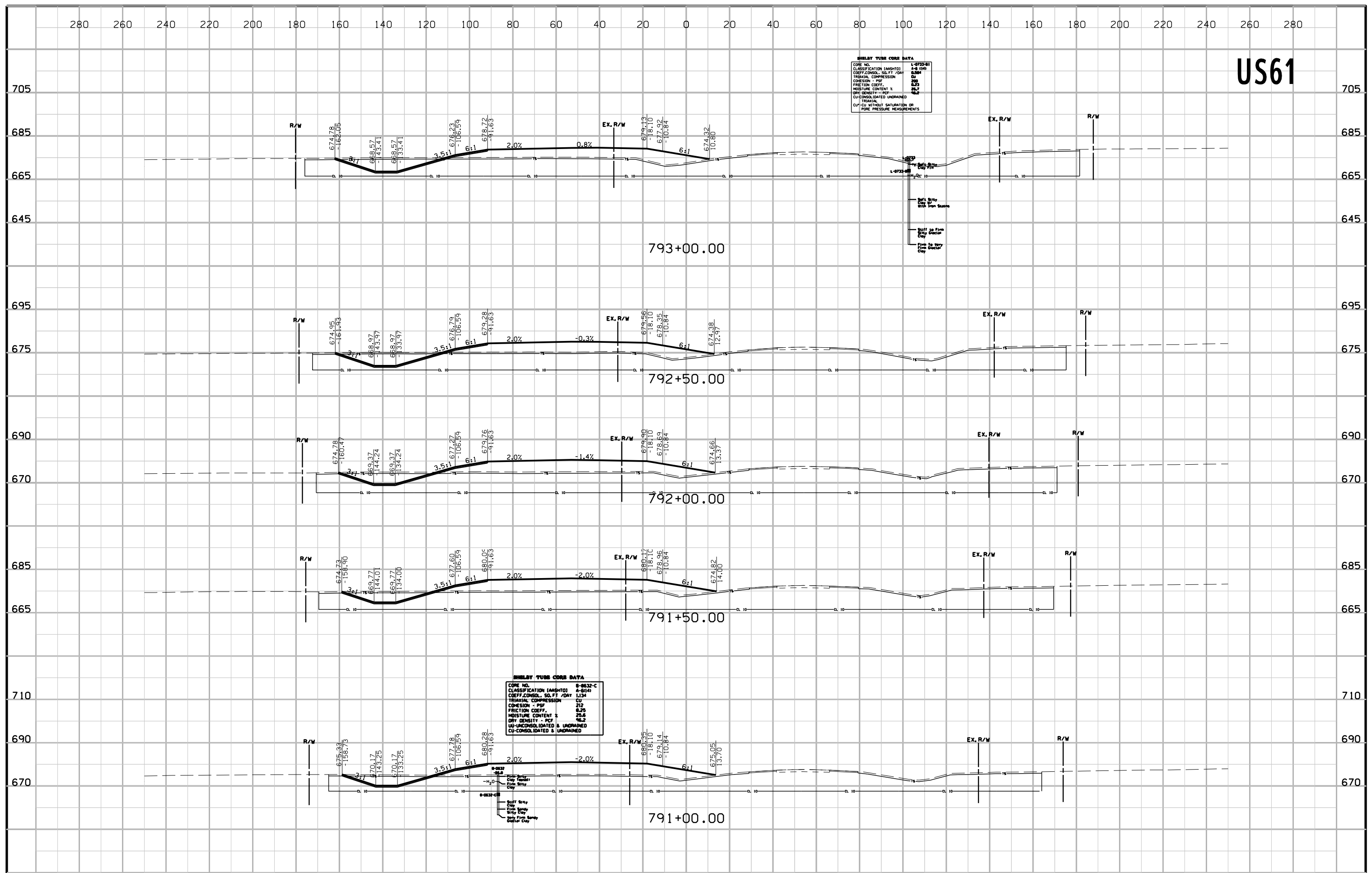
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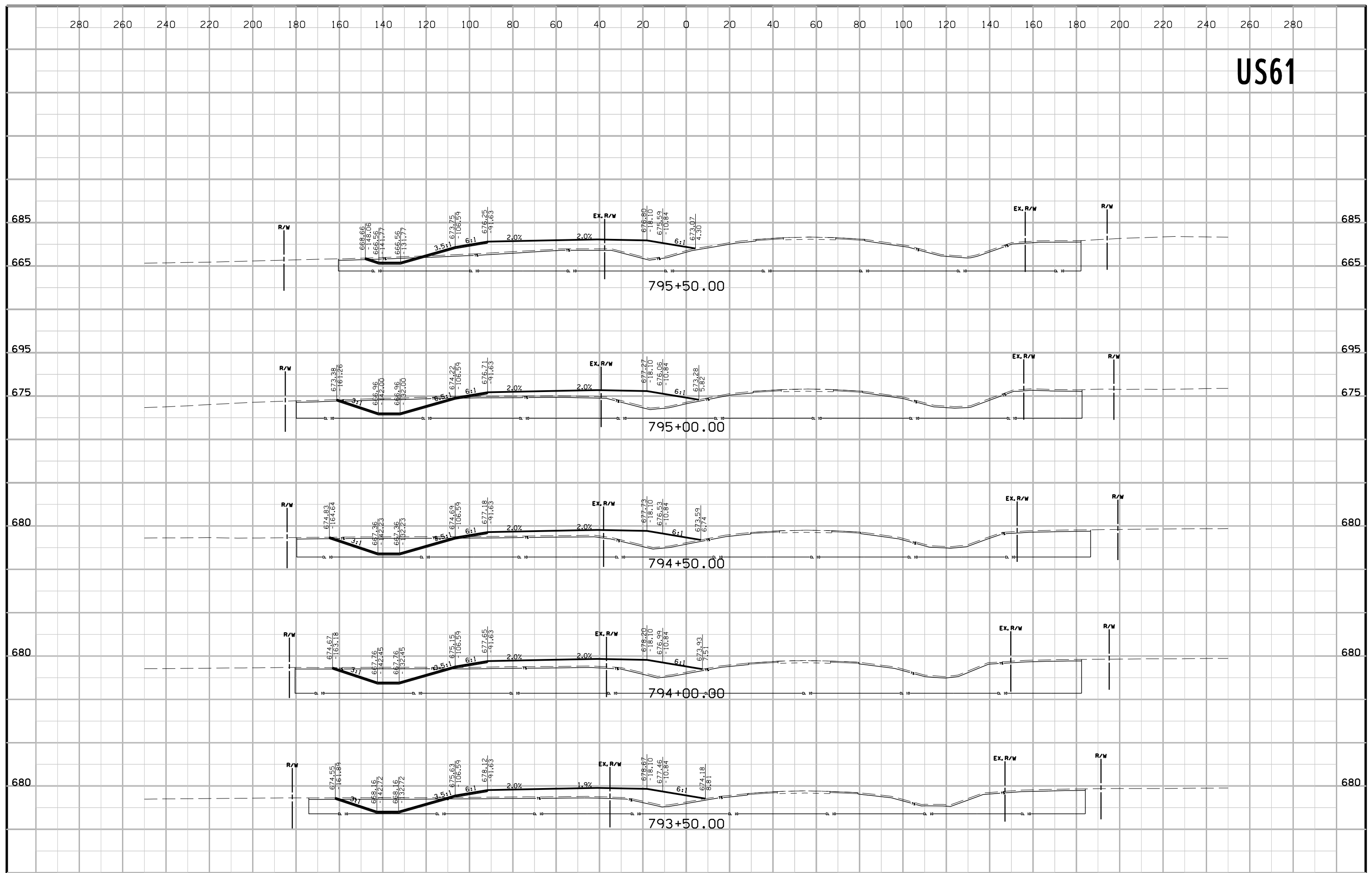
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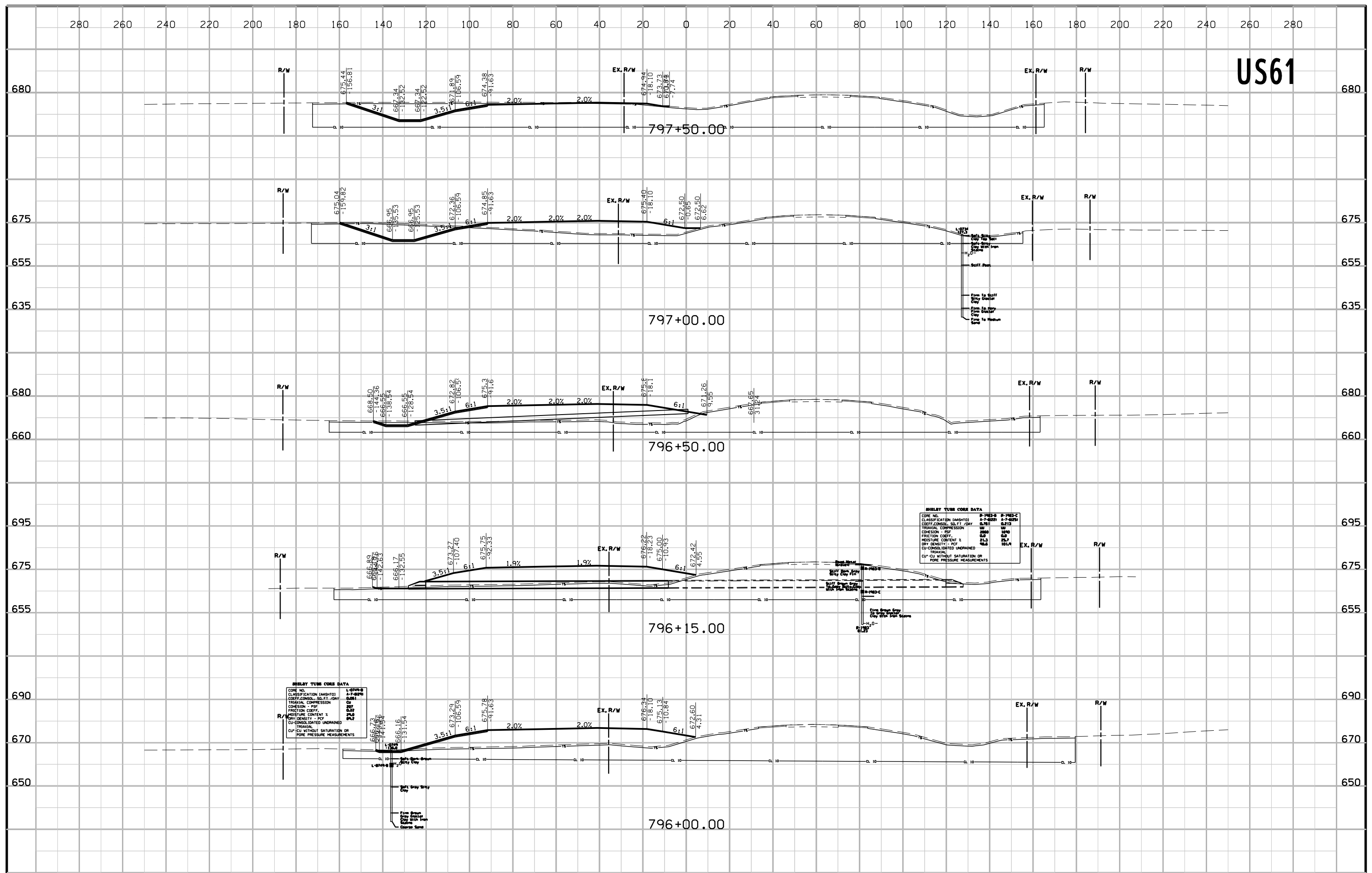
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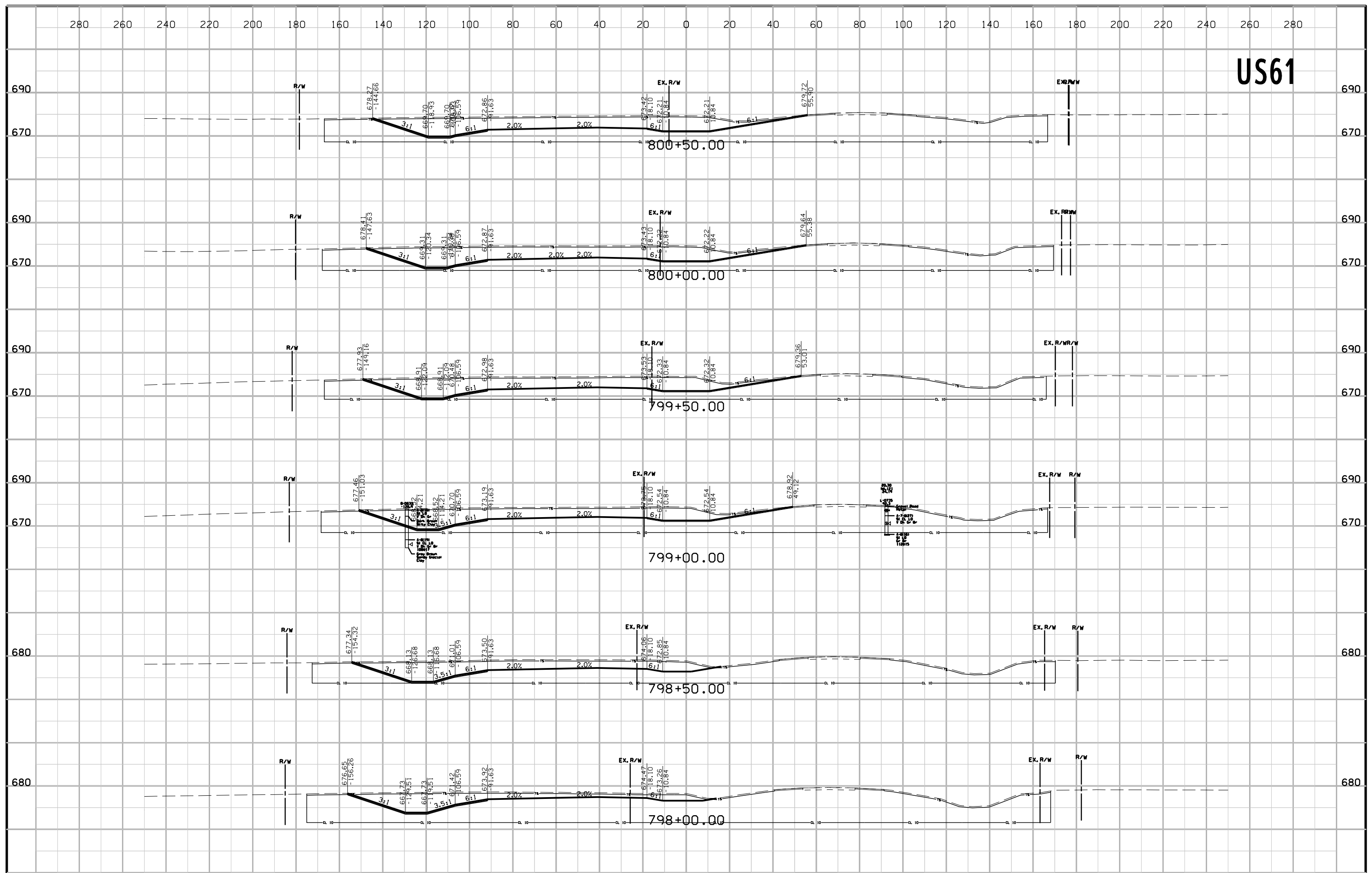
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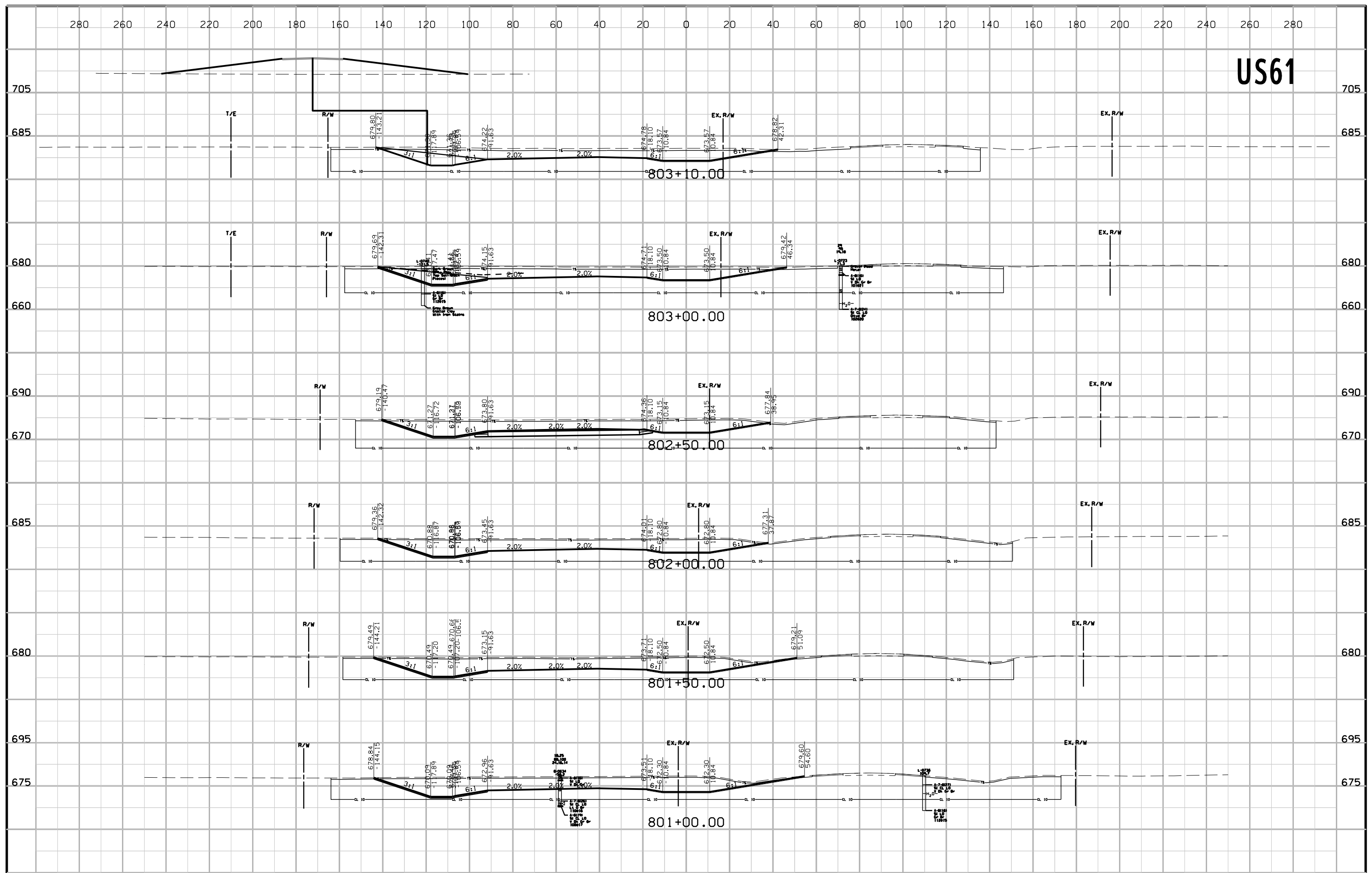
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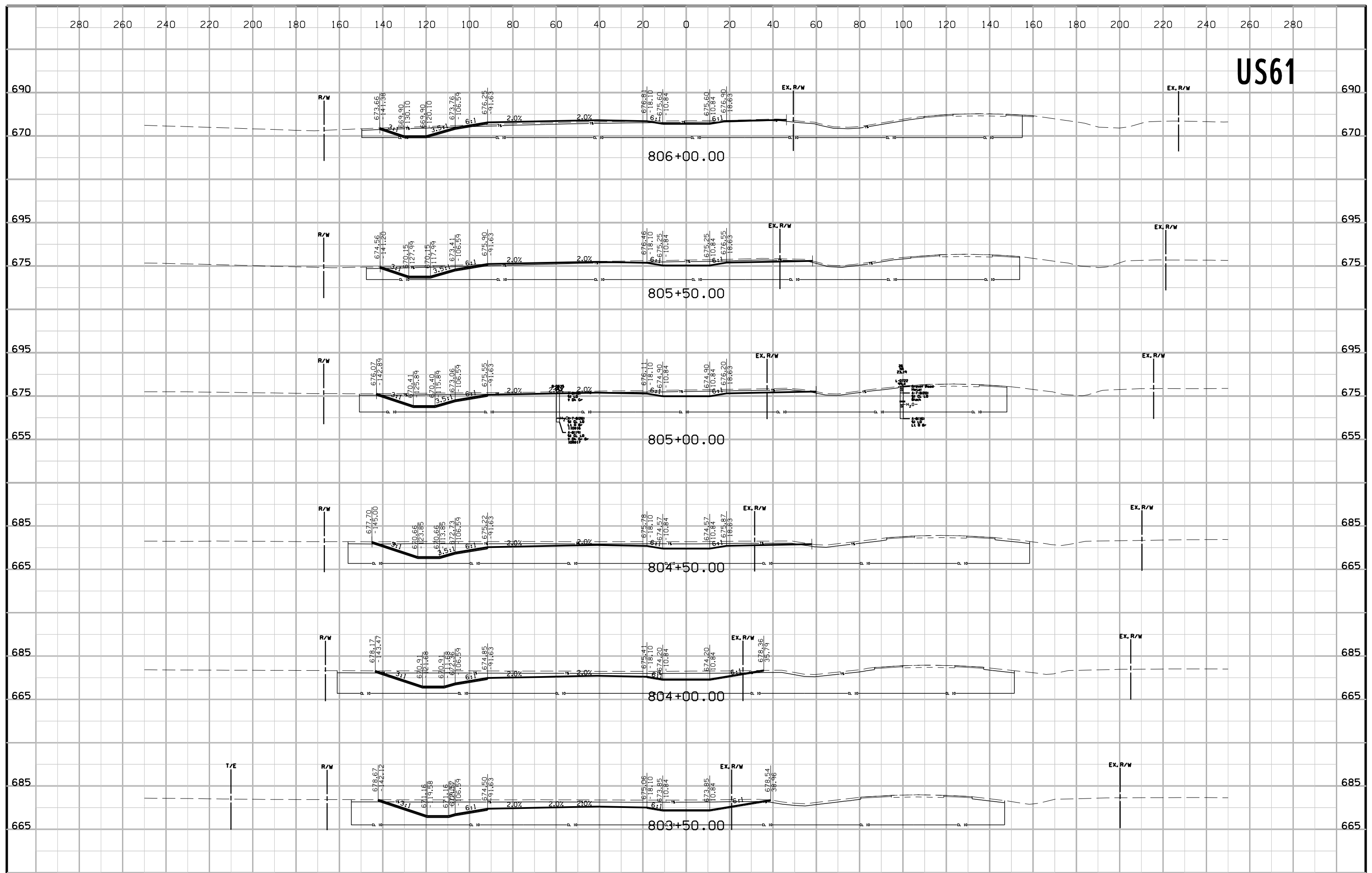
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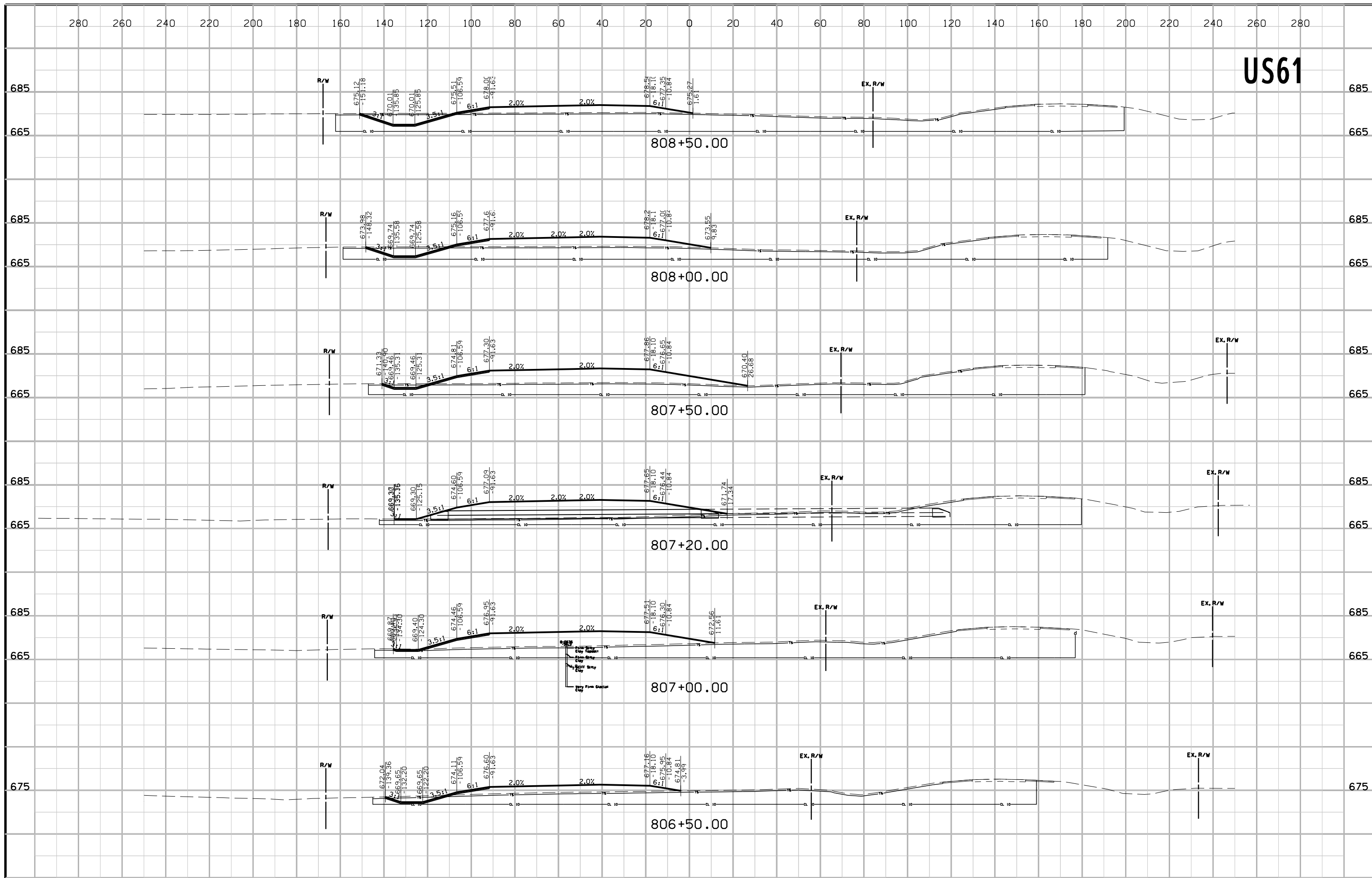


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US61





US61

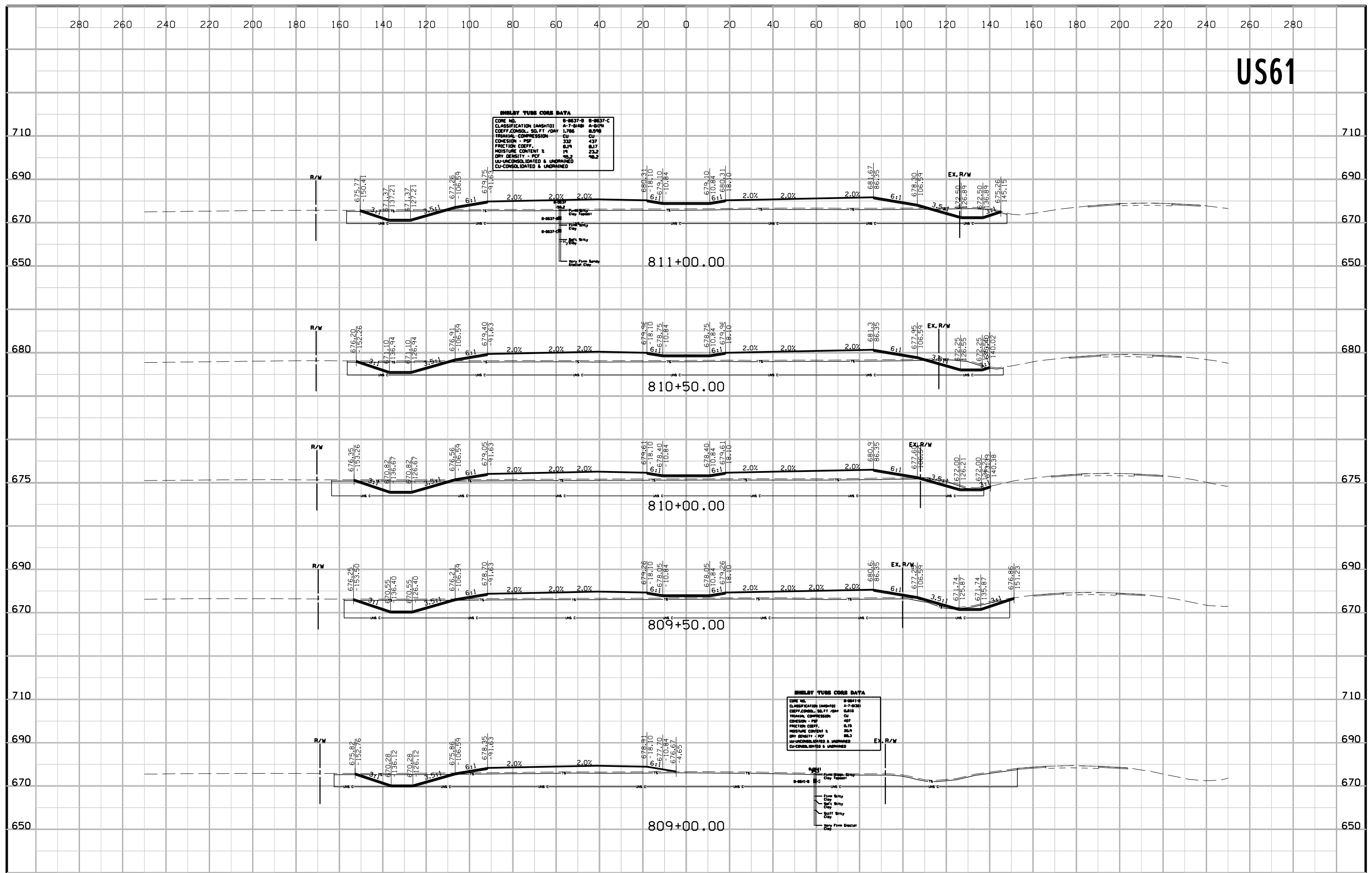
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SHIELBY TUBE CORE DATA

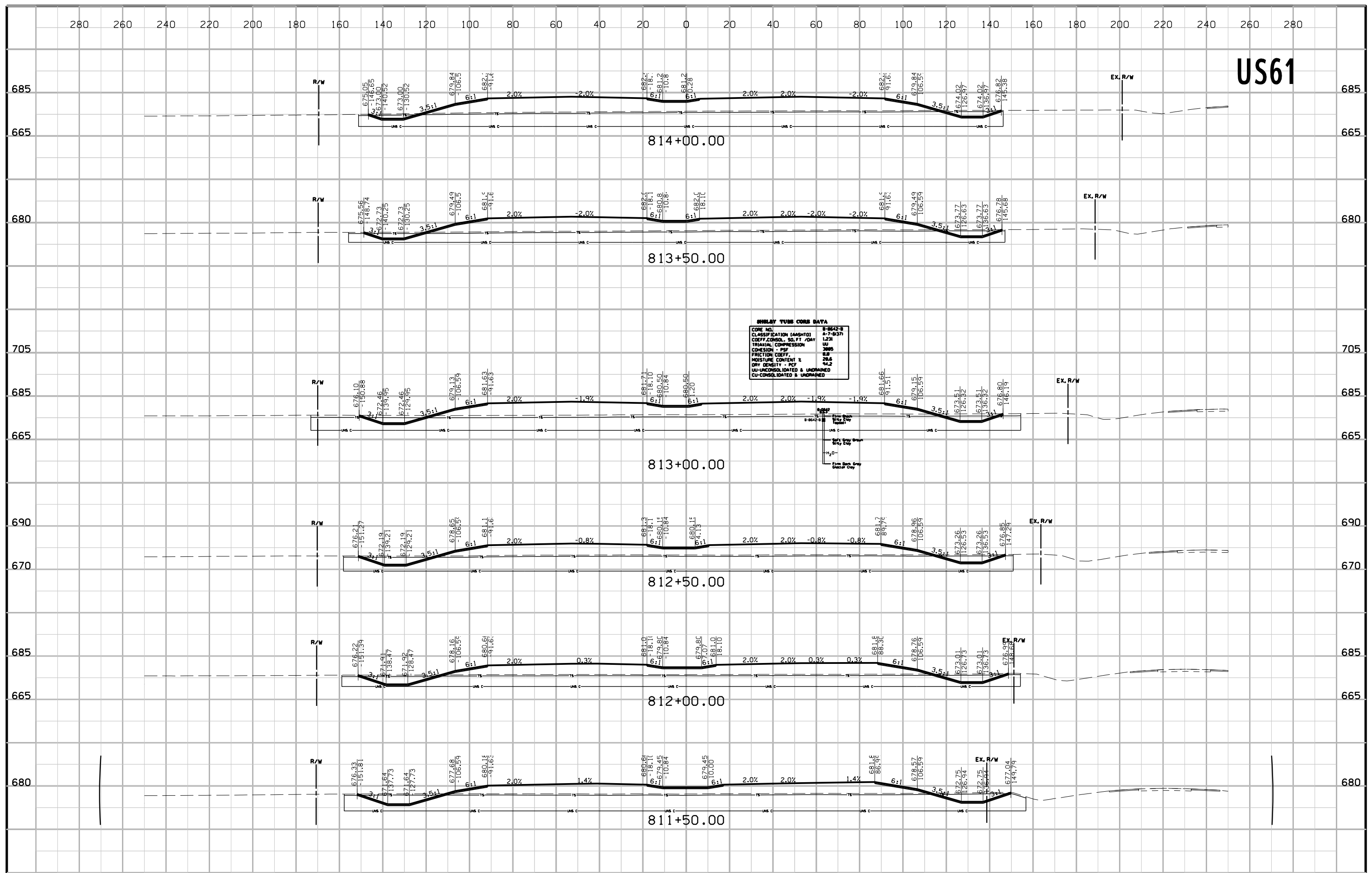
| | | |
|------------------------------|-----------|----------|
| CORE NO. | 0-8637-B | 0-8637-C |
| CLASSIFICATION (ASHSTO) | A-7-6(4)B | A-6(1) |
| COEFF. CONSOL. SO. FT. / DAY | 1.765 | 0.576 |
| TRIAL COMPRESSION | CU | CU |
| COHESION - PSF | 332 | 437 |
| FRICITION COEFF. | 0.19 | 0.17 |
| MOISTURE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

SHIELBY TUBE CORE DATA

| | | |
|------------------------------|-----------|----------|
| CORE NO. | 0-8641-B | 0-8641-C |
| CLASSIFICATION (ASHSTO) | A-7-6(2)B | A-6(1) |
| COEFF. CONSOL. SO. FT. / DAY | 0.816 | 0.816 |
| TRIAL COMPRESSION | CU | CU |
| COHESION - PSF | 407 | 407 |
| FRICITION COEFF. | 0.19 | 0.19 |
| MOISTURE CONTENT % | 20.9 | 20.9 |
| DRY DENSITY - PCF | 88.3 | 88.3 |
| UNCONSOLIDATED & UNDRAINED | | |
| CU-CONSOLIDATED & UNDRAINED | | |

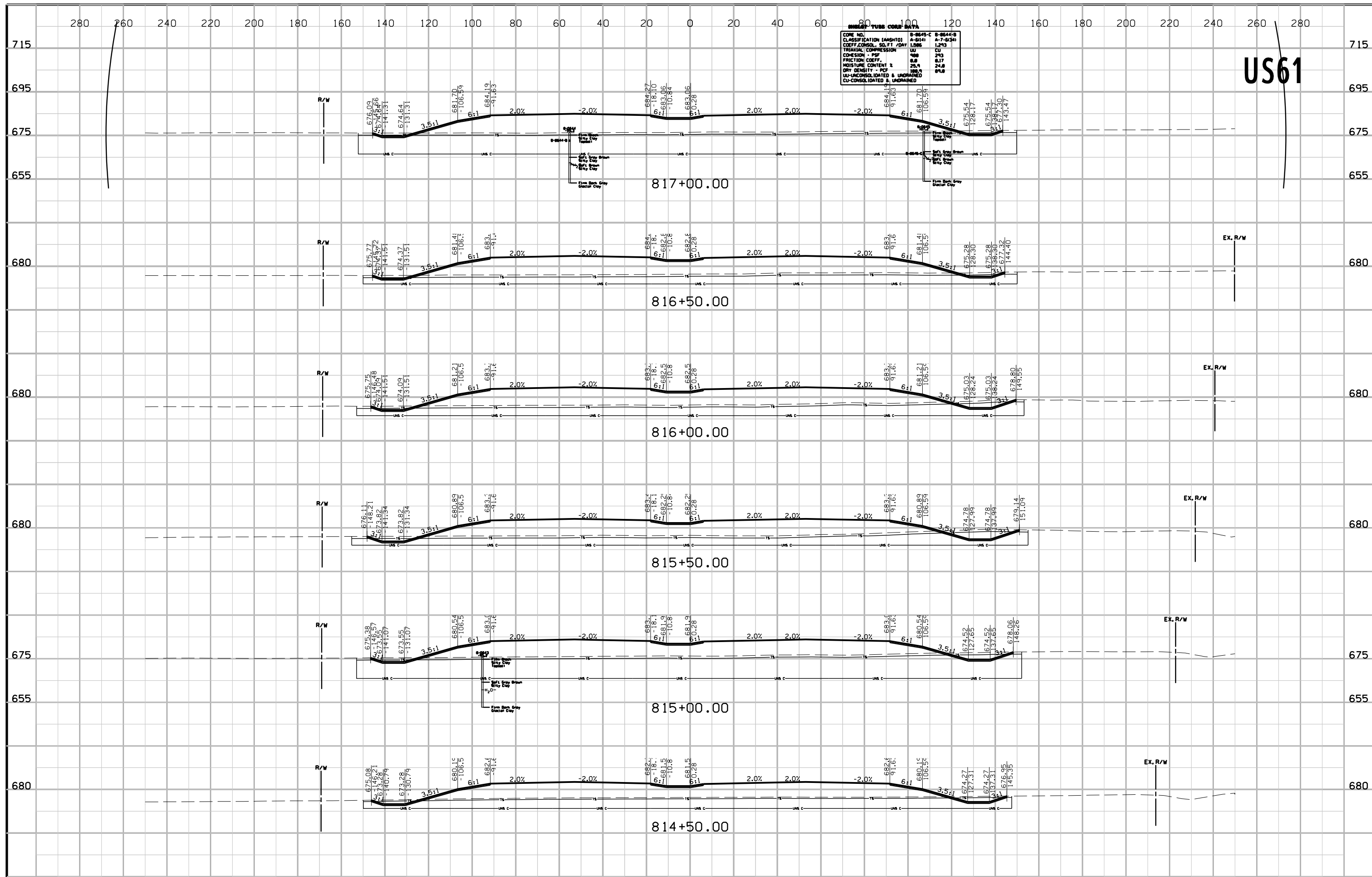


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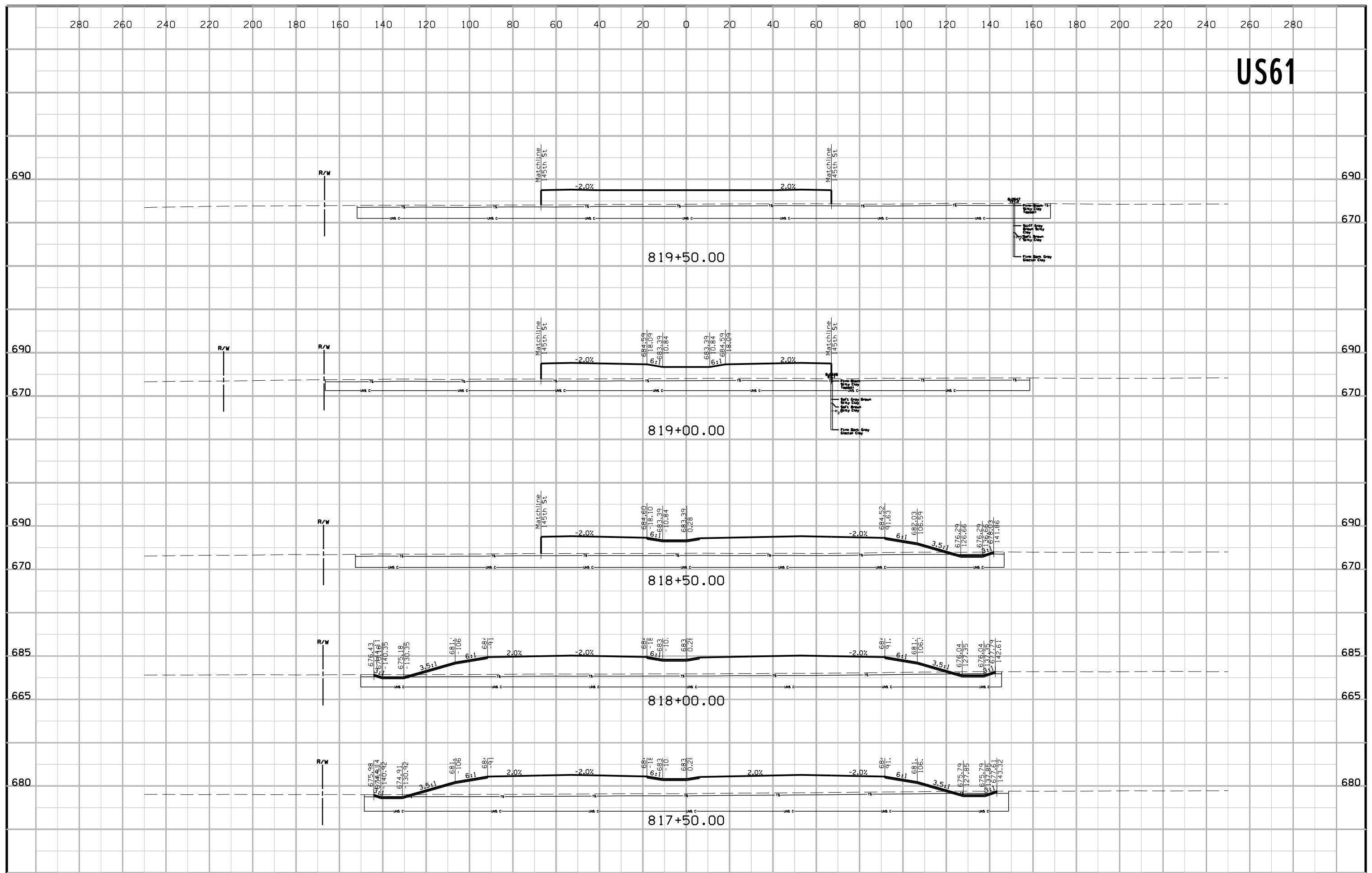
SHIRLEY TUBE CORE DATA

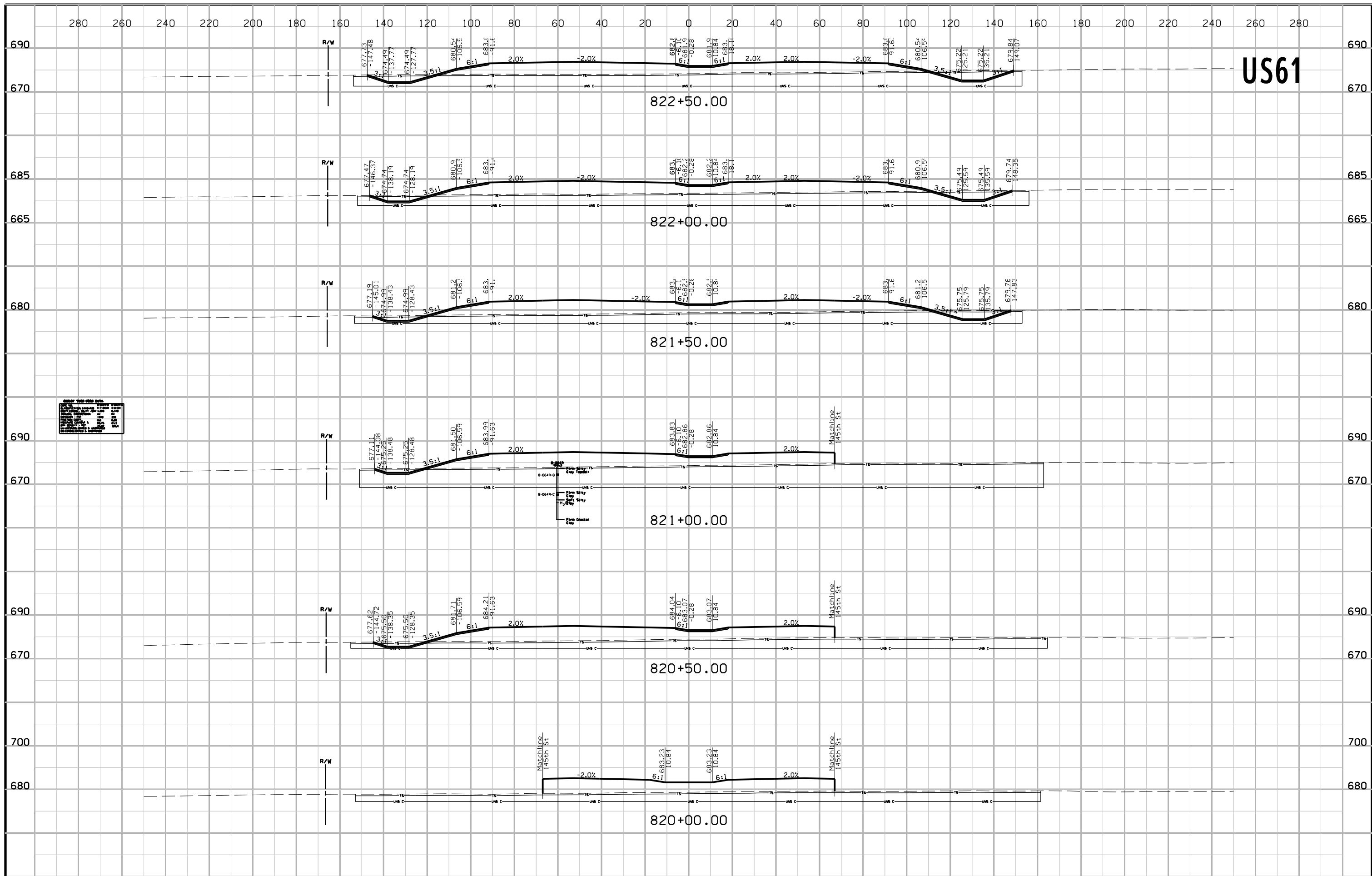
| | |
|-------------------------------|-----------|
| CORE NO. | S-8642-B |
| CLASSIFICATION (AASHTO) | A-7-6(37) |
| COEFF. CONSOL. SO. FT./DAY | 1.231 |
| TRIALSIAL COMPRESSION | 11 |
| COHESION - PSF | 2895 |
| FRICTION COEFF. | 0.8 |
| MOISTURE CONTENT % | 70.5 |
| DRY DENSITY - PCF | 94.2 |
| UN-UNCONSOLIDATED & UNDRAINED | |
| CU-CONSOLIDATED & UNDRAINED | |



US61

US61





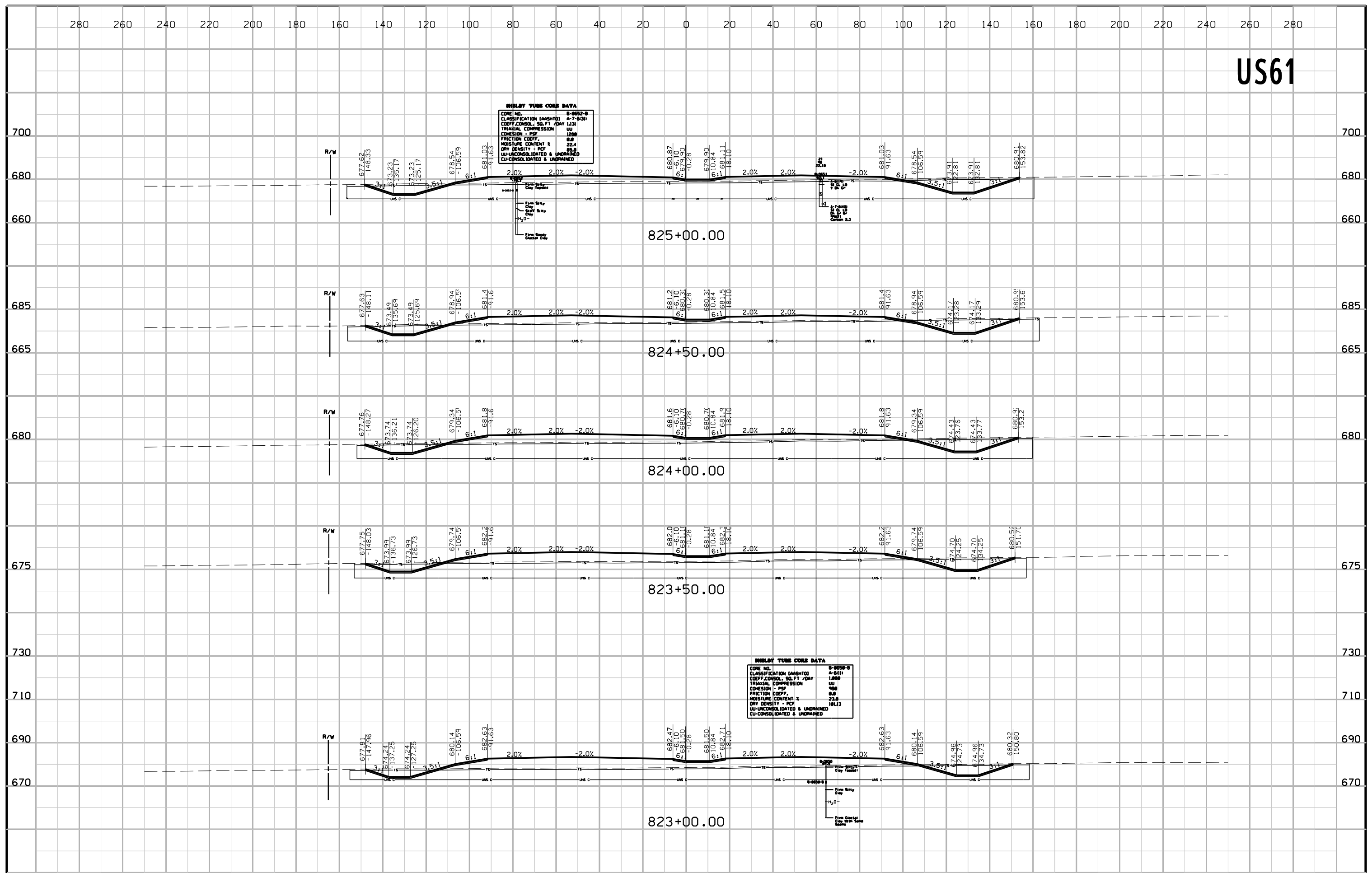
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GROUP NAME: 0000
 FILE NO.:
 DESIGNER:
 CHECKER:
 DATE: 7/17/2014
 PROJECT NO.:
 SHEET NO.:

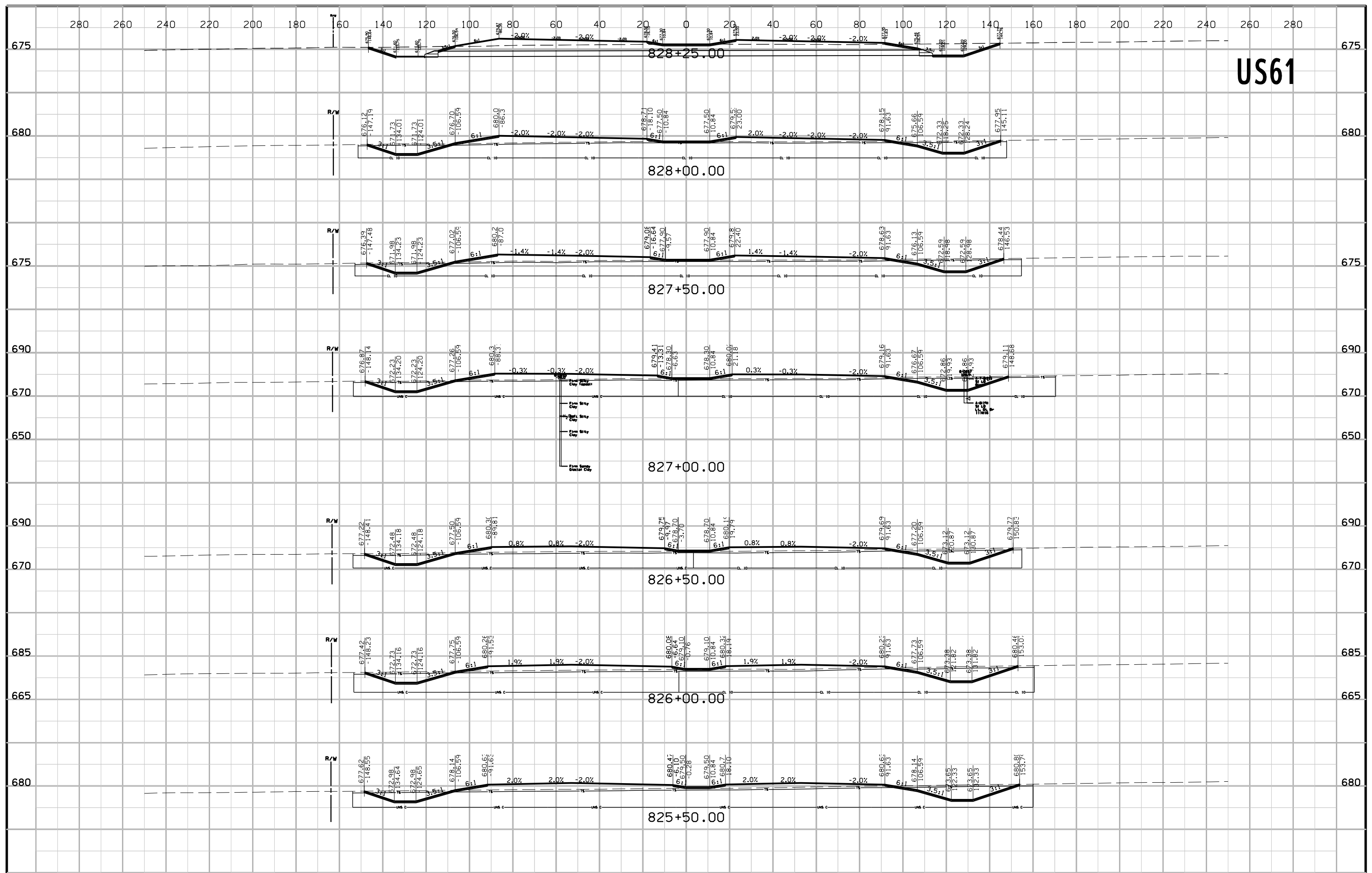
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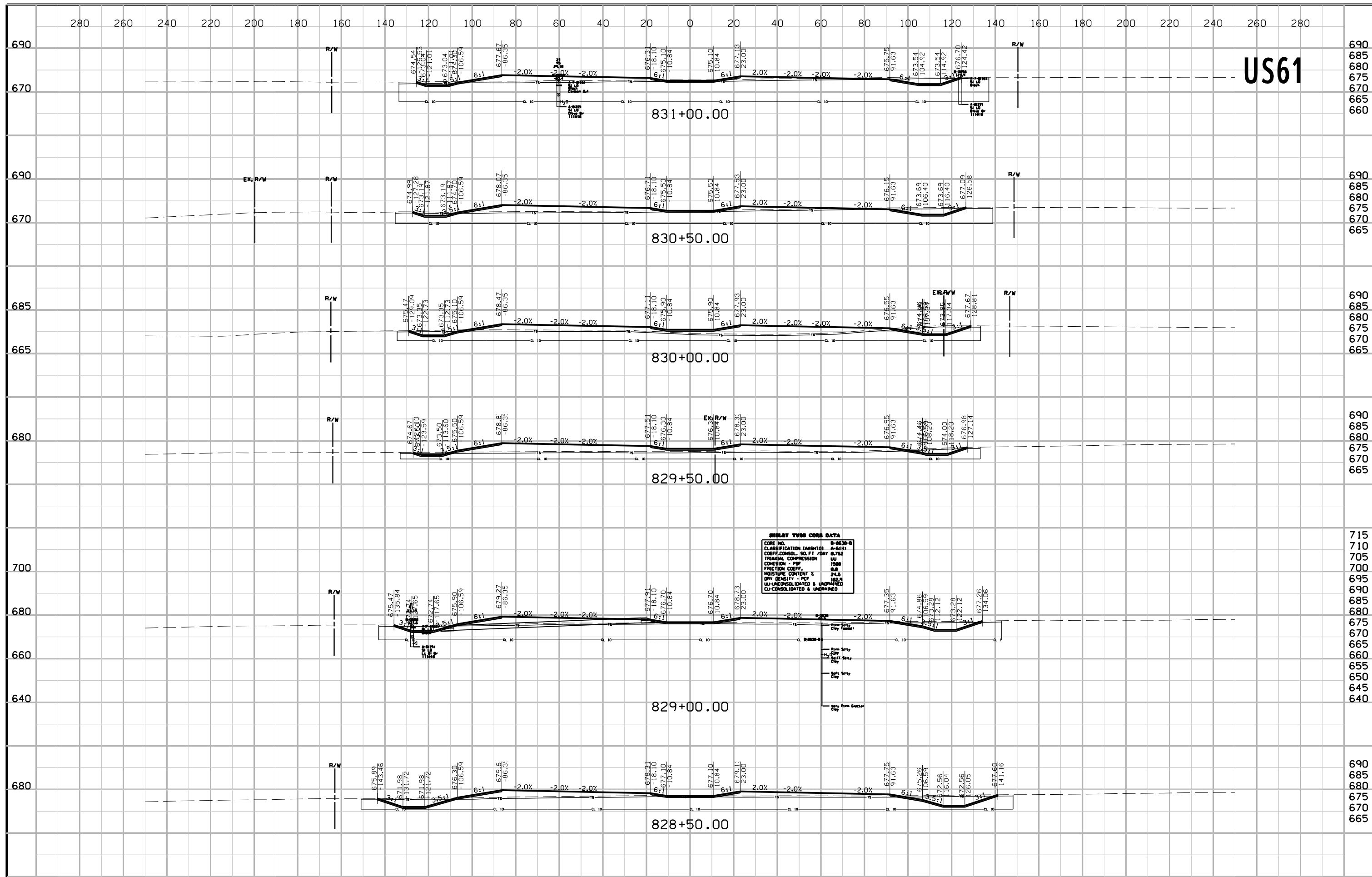
SHIELT TUBE CORE DATA
 CORE NO. 8-9552-B
 CLASSIFICATION (ASTM) A-7-92H
 COEFF. CONSOL. SO. FT. / DAY 1.13
 TRIAXIAL COMPRESSION UU 1288
 COHESION - PSF 9.8
 FRICTION COEFF. 0.8
 MOISTURE CONTENT % 22.4
 DRY DENSITY - PCF 95.8
 UN-CONSOLIDATED & UNDRAINED
 CU-CONSOLIDATED & UNDRAINED

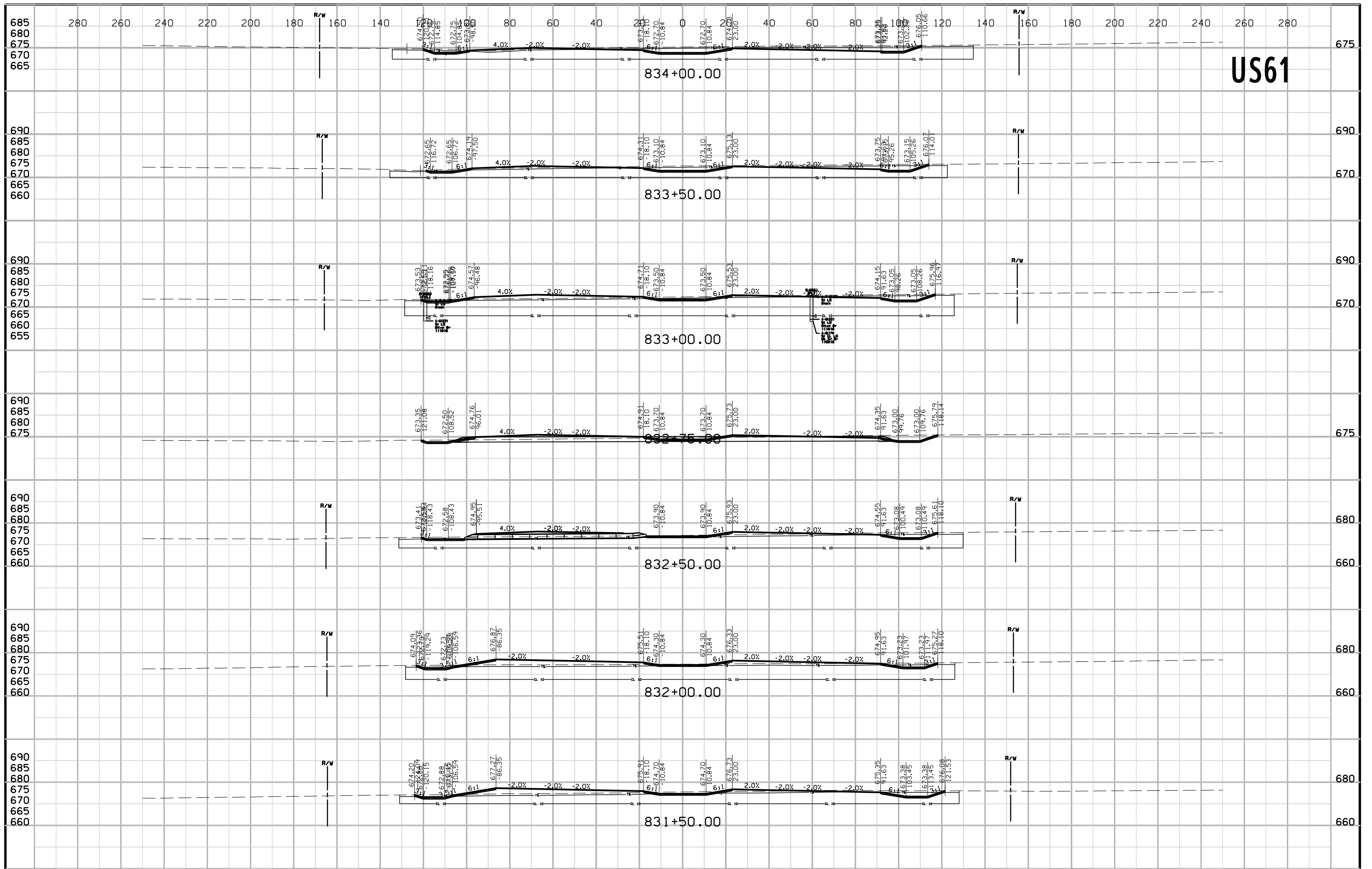
SHIELT TUBE CORE DATA
 CORE NO. 8-9556-B
 CLASSIFICATION (ASTM) A-601
 COEFF. CONSOL. SO. FT. / DAY 1.009
 TRIAXIAL COMPRESSION UU 958
 COHESION - PSF 9.8
 FRICTION COEFF. 0.8
 MOISTURE CONTENT % 23.8
 DRY DENSITY - PCF 101.13
 UN-CONSOLIDATED & UNDRAINED
 CU-CONSOLIDATED & UNDRAINED



US61

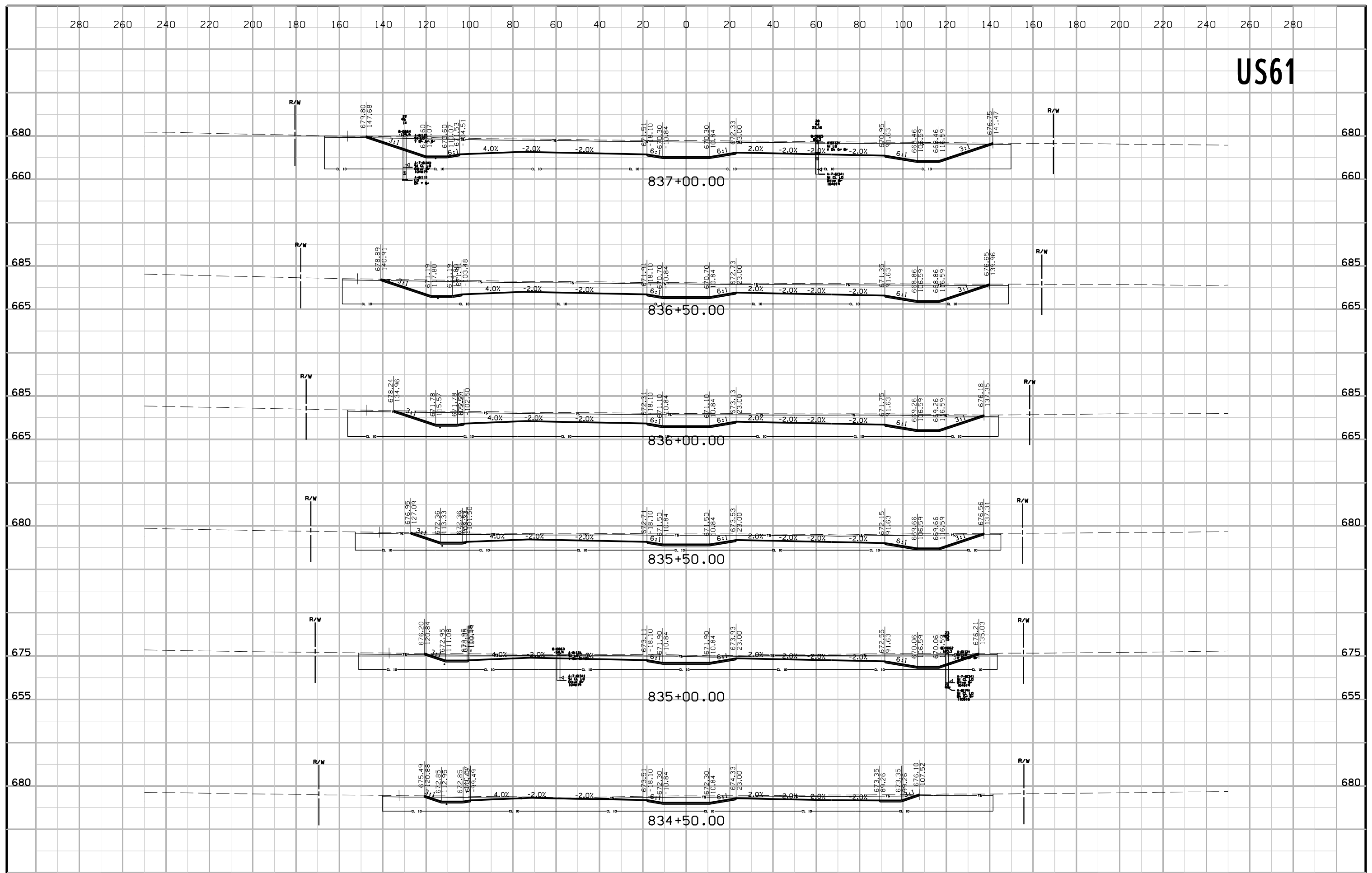




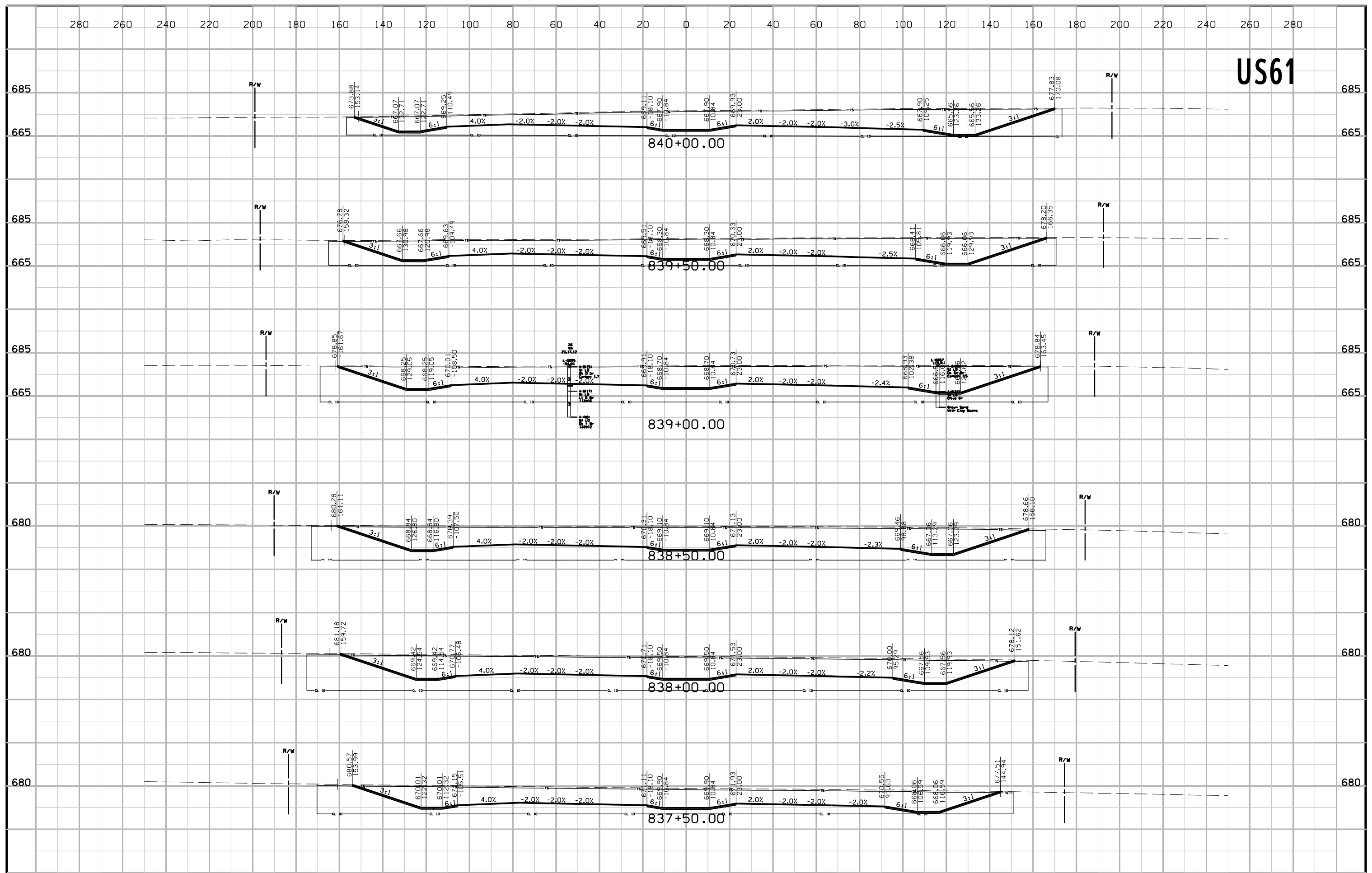


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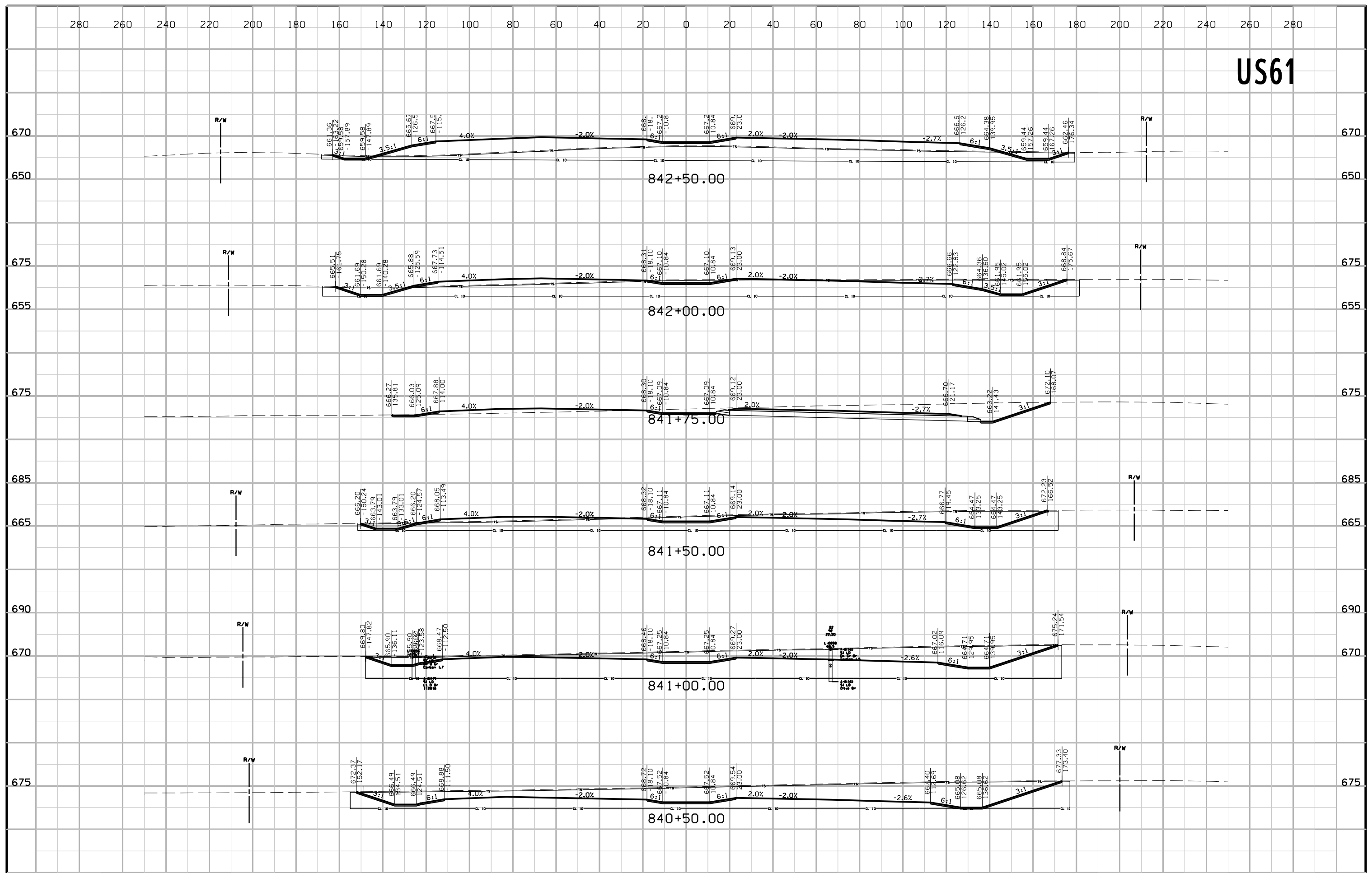
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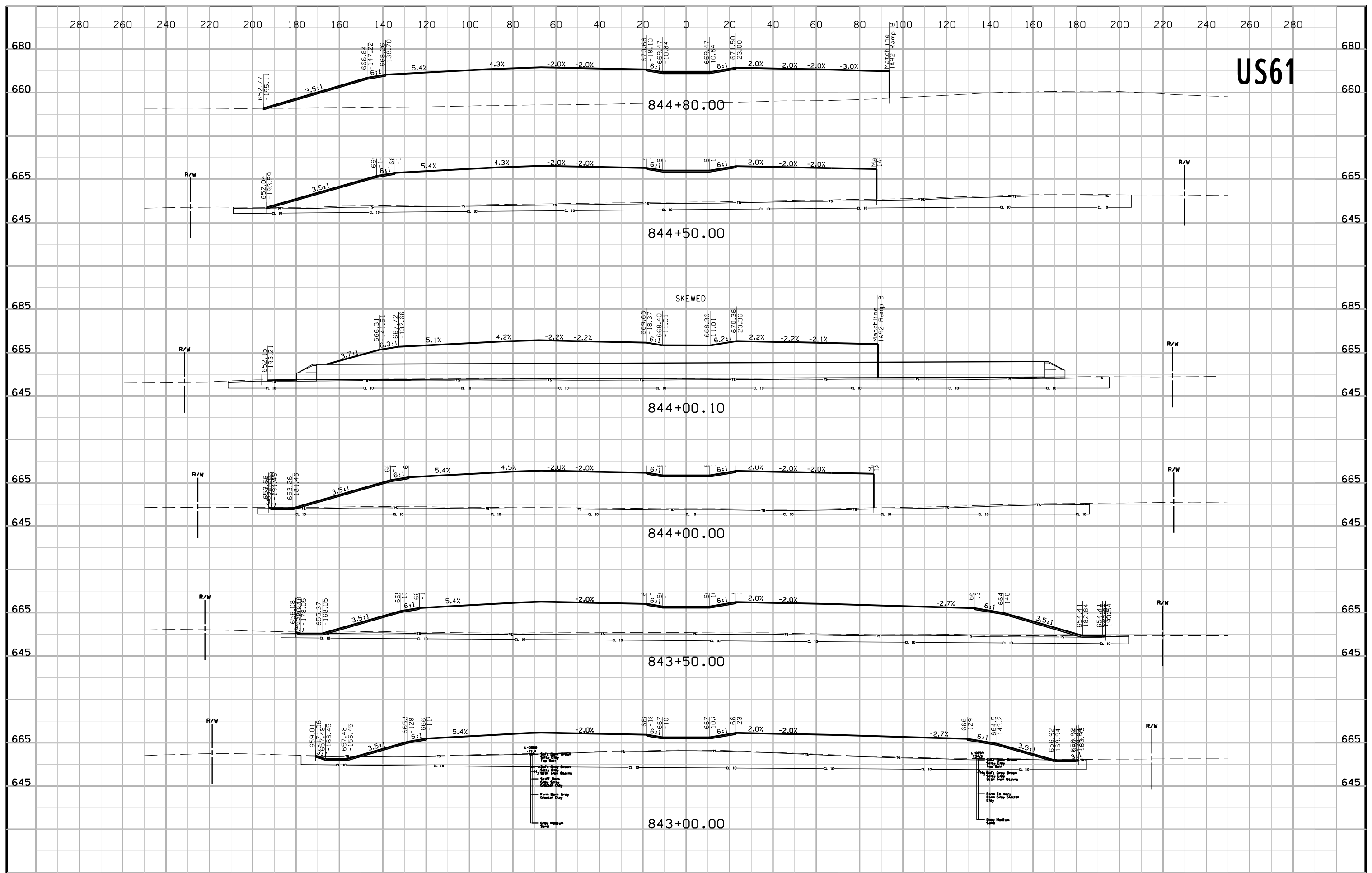
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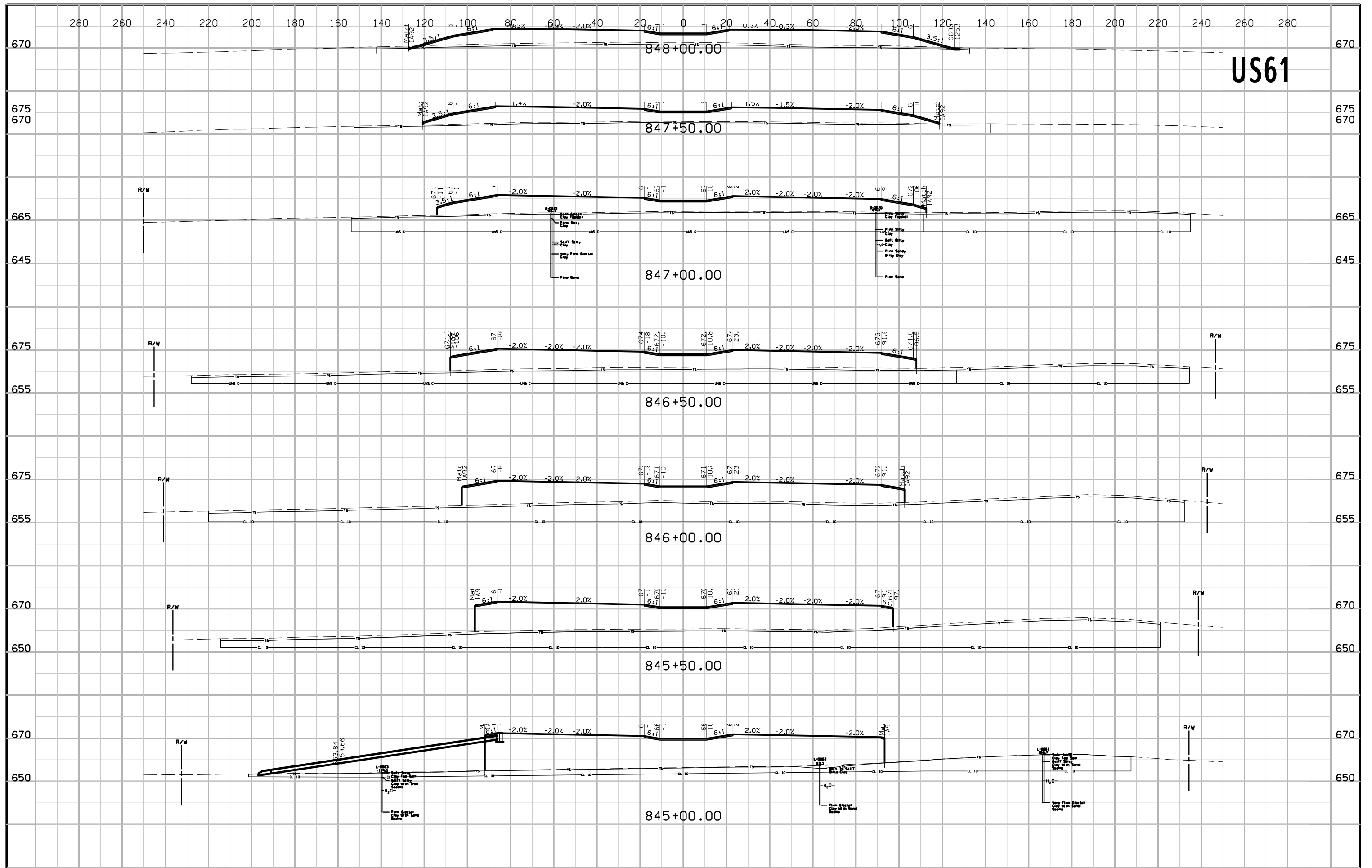


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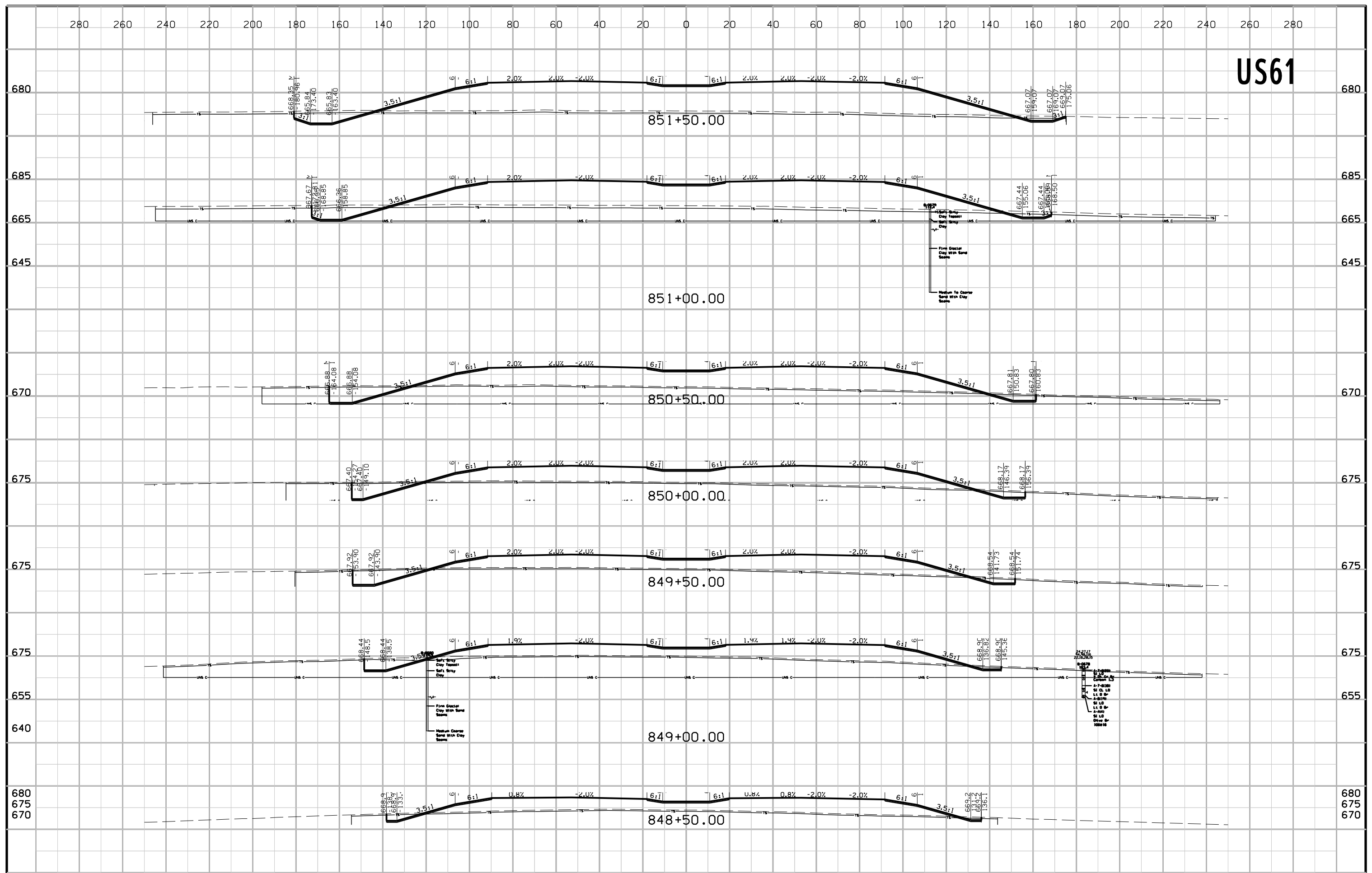
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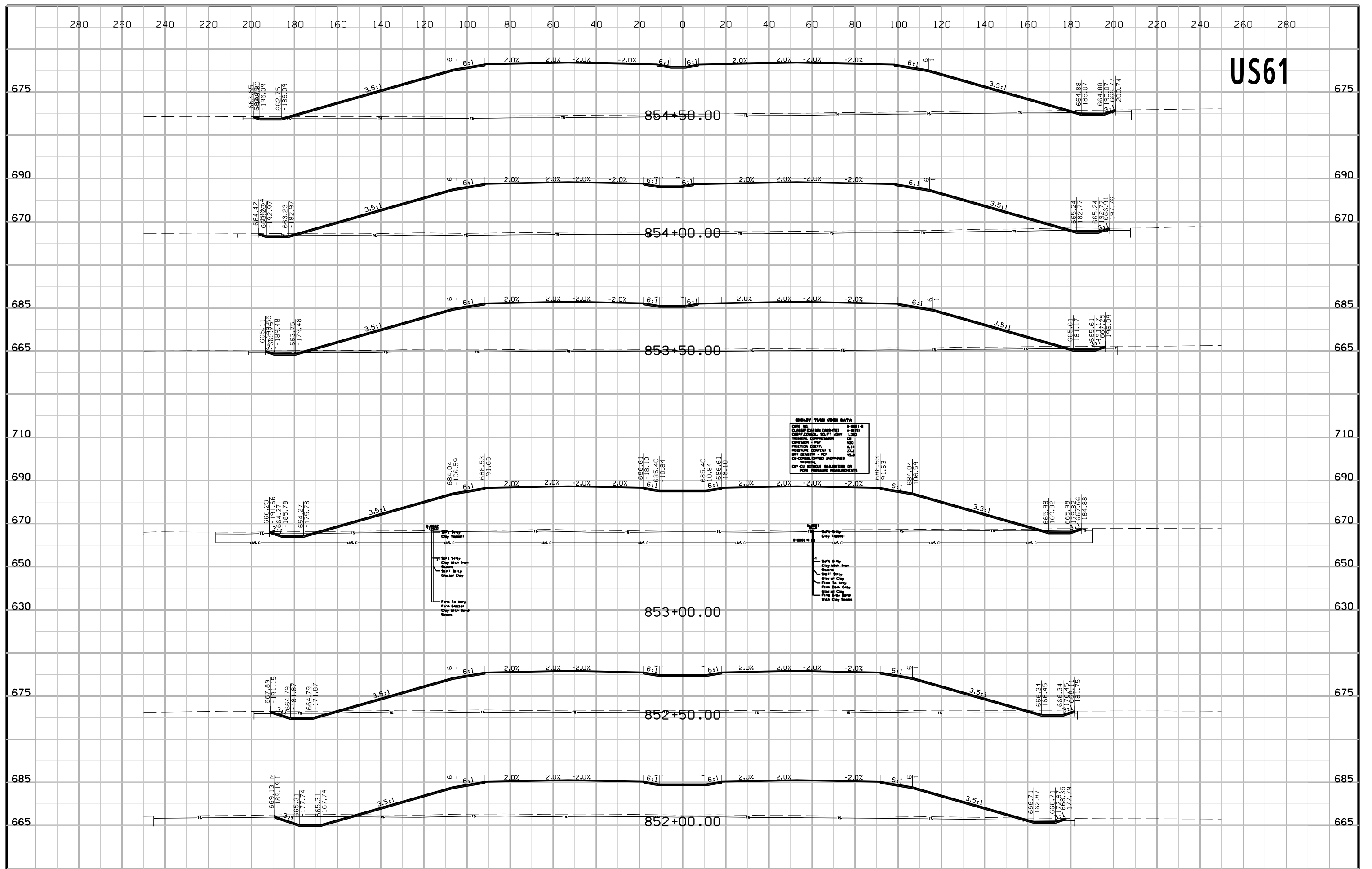


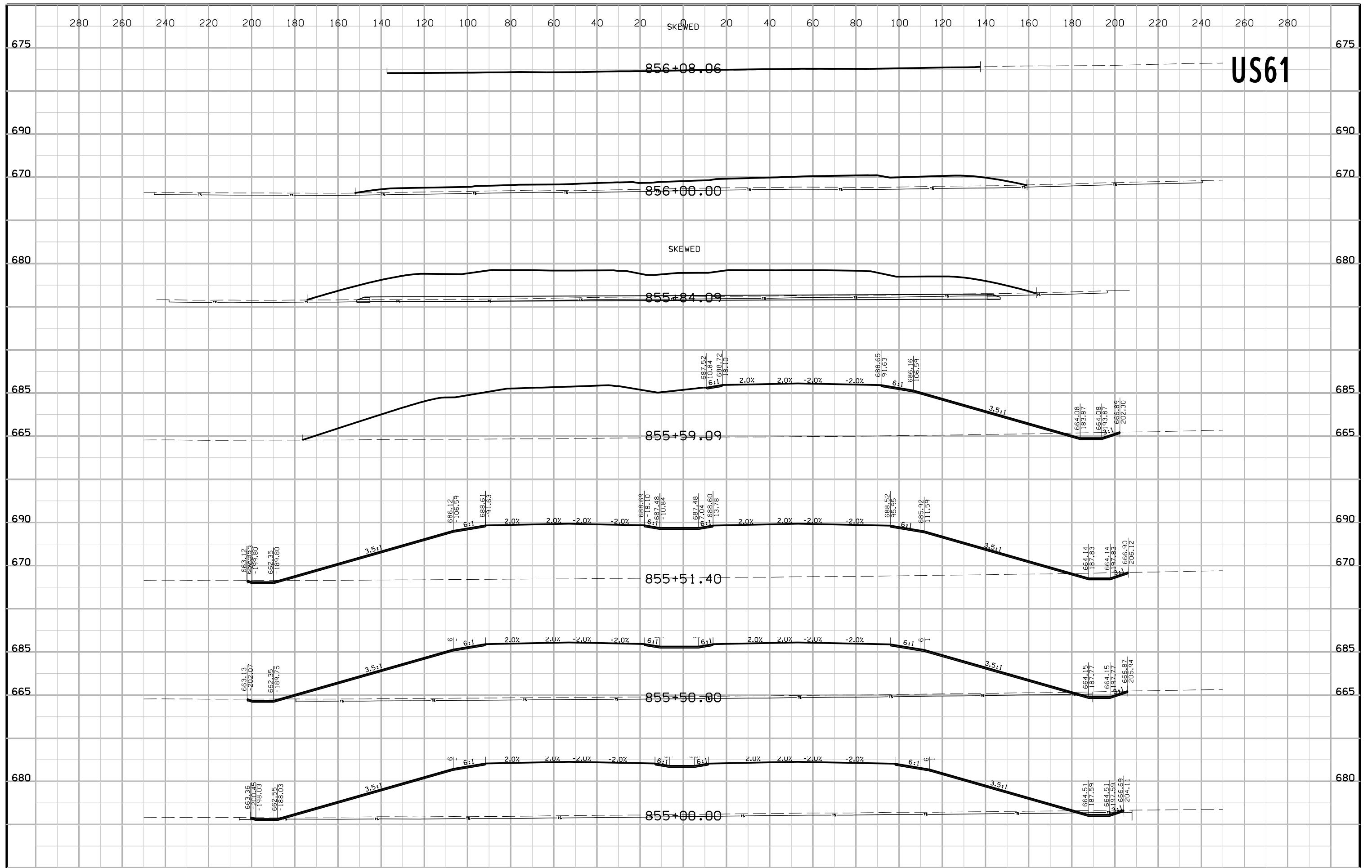
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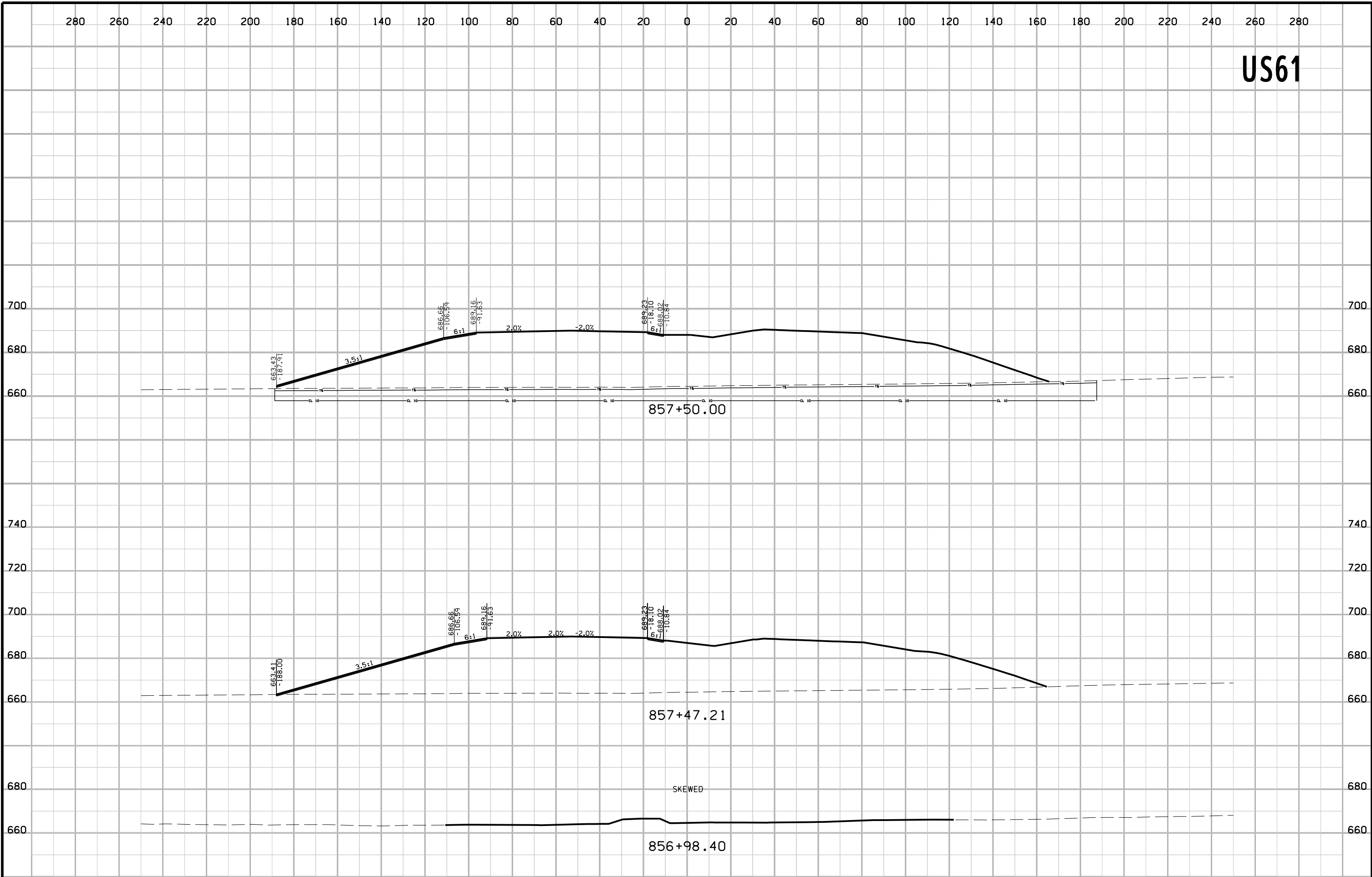
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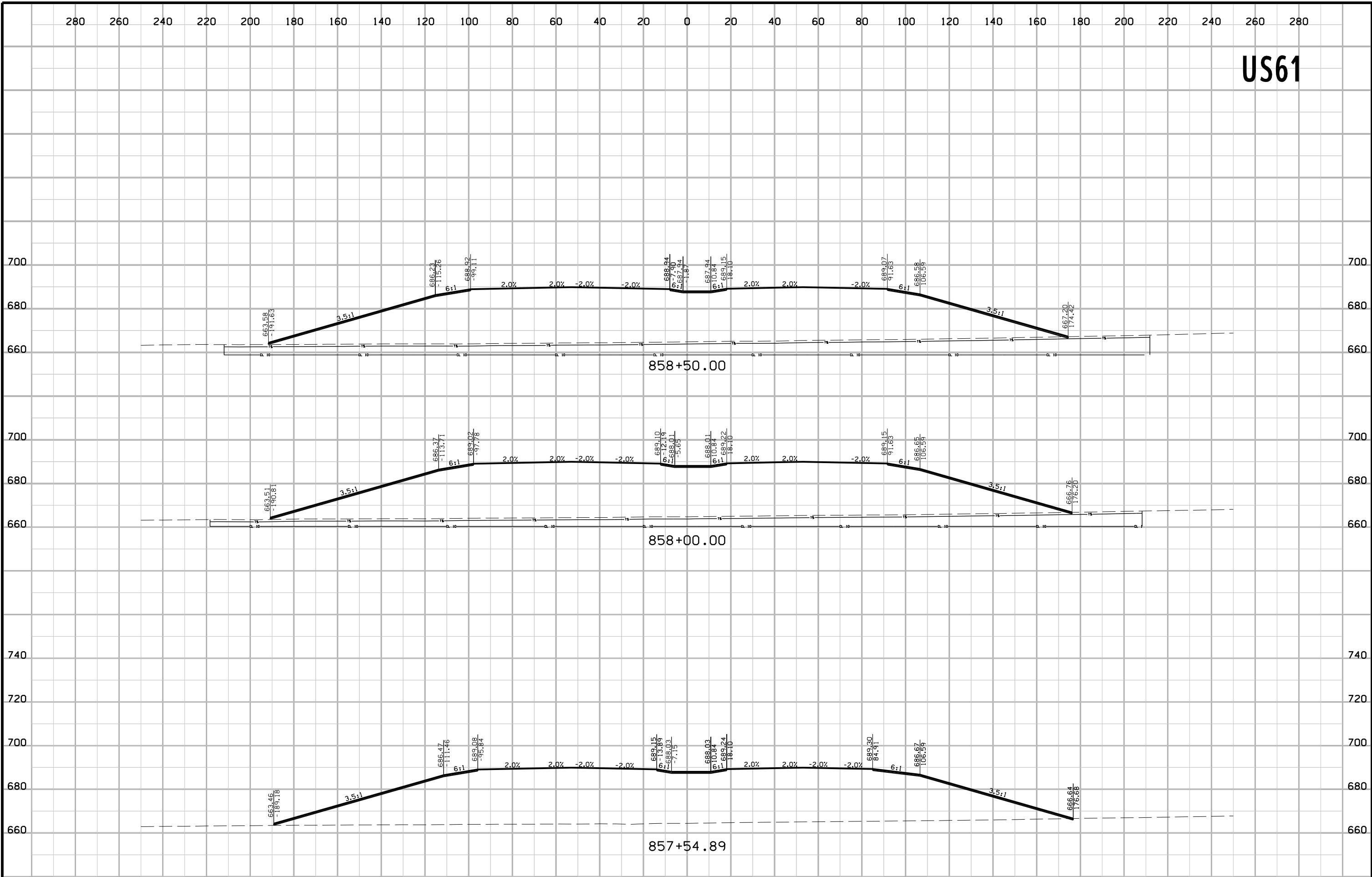


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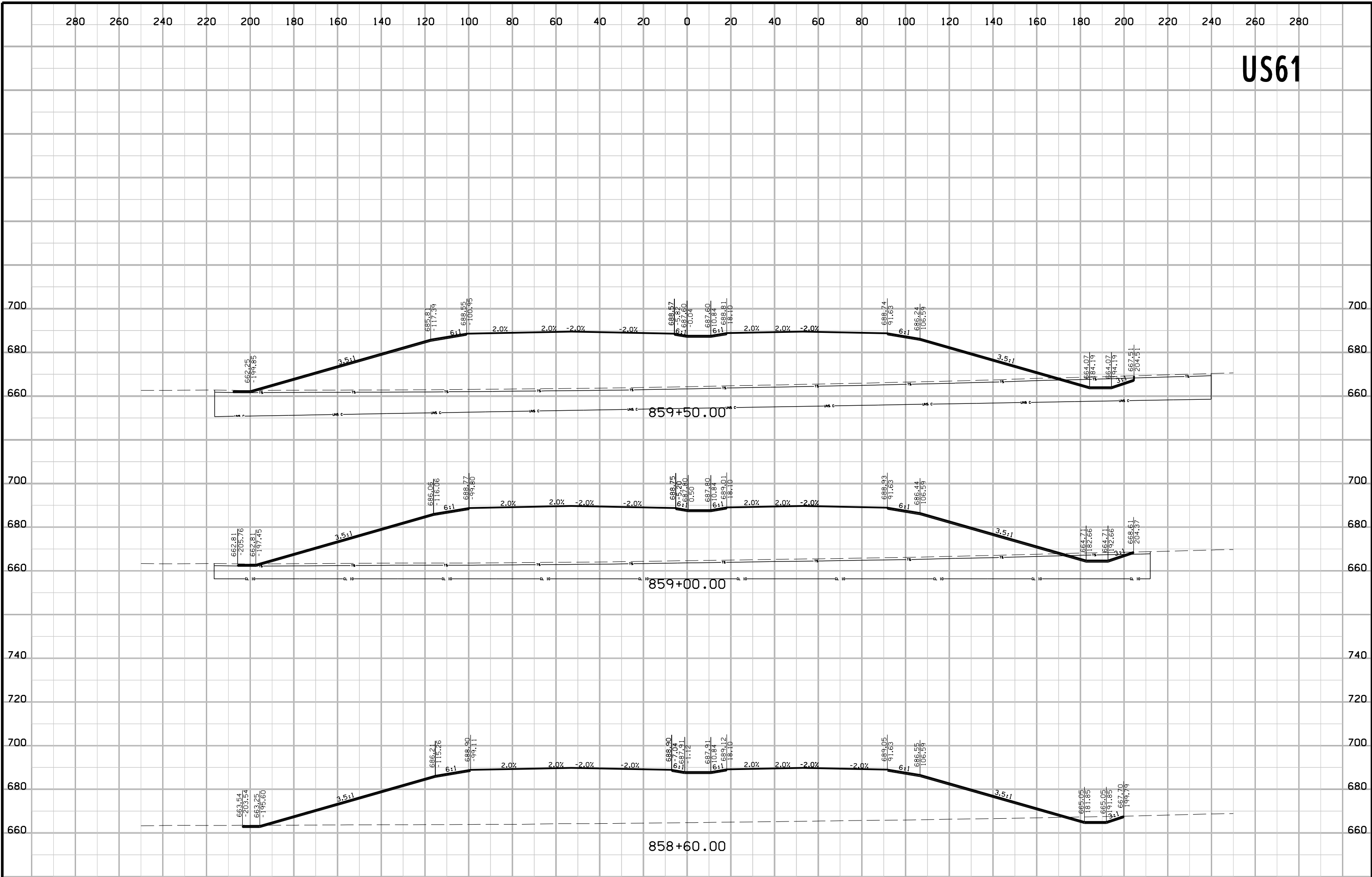
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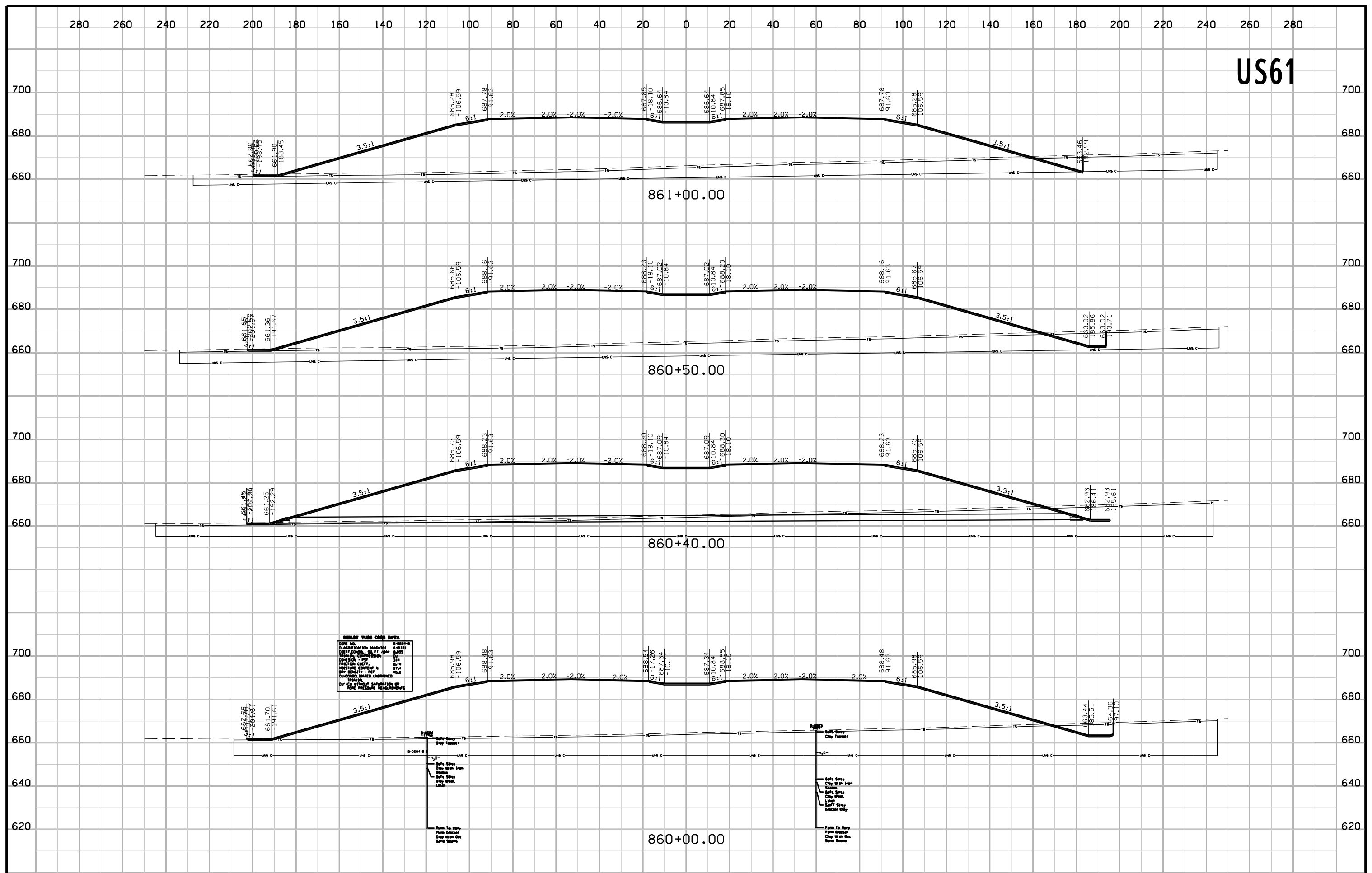
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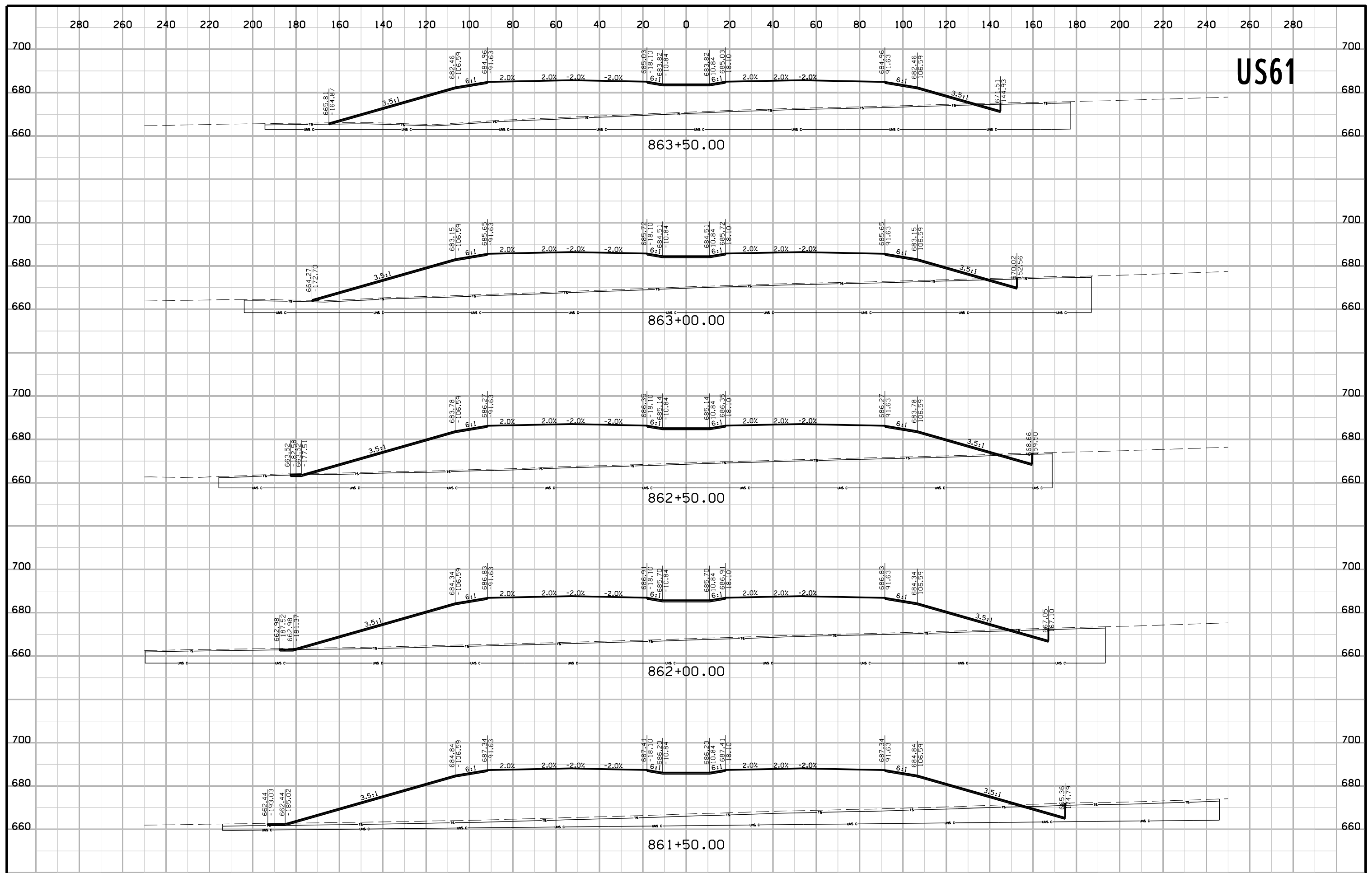
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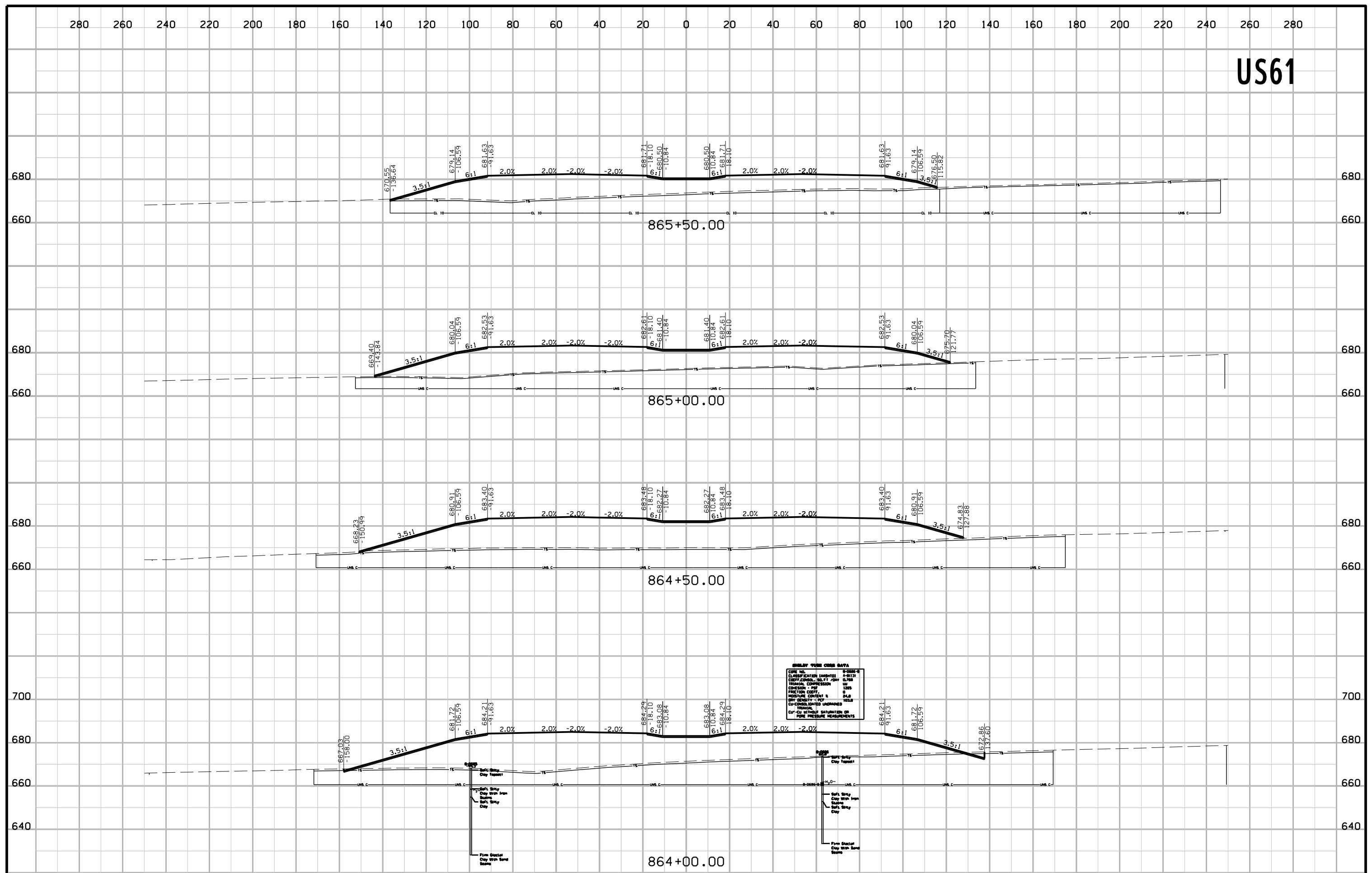
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US61



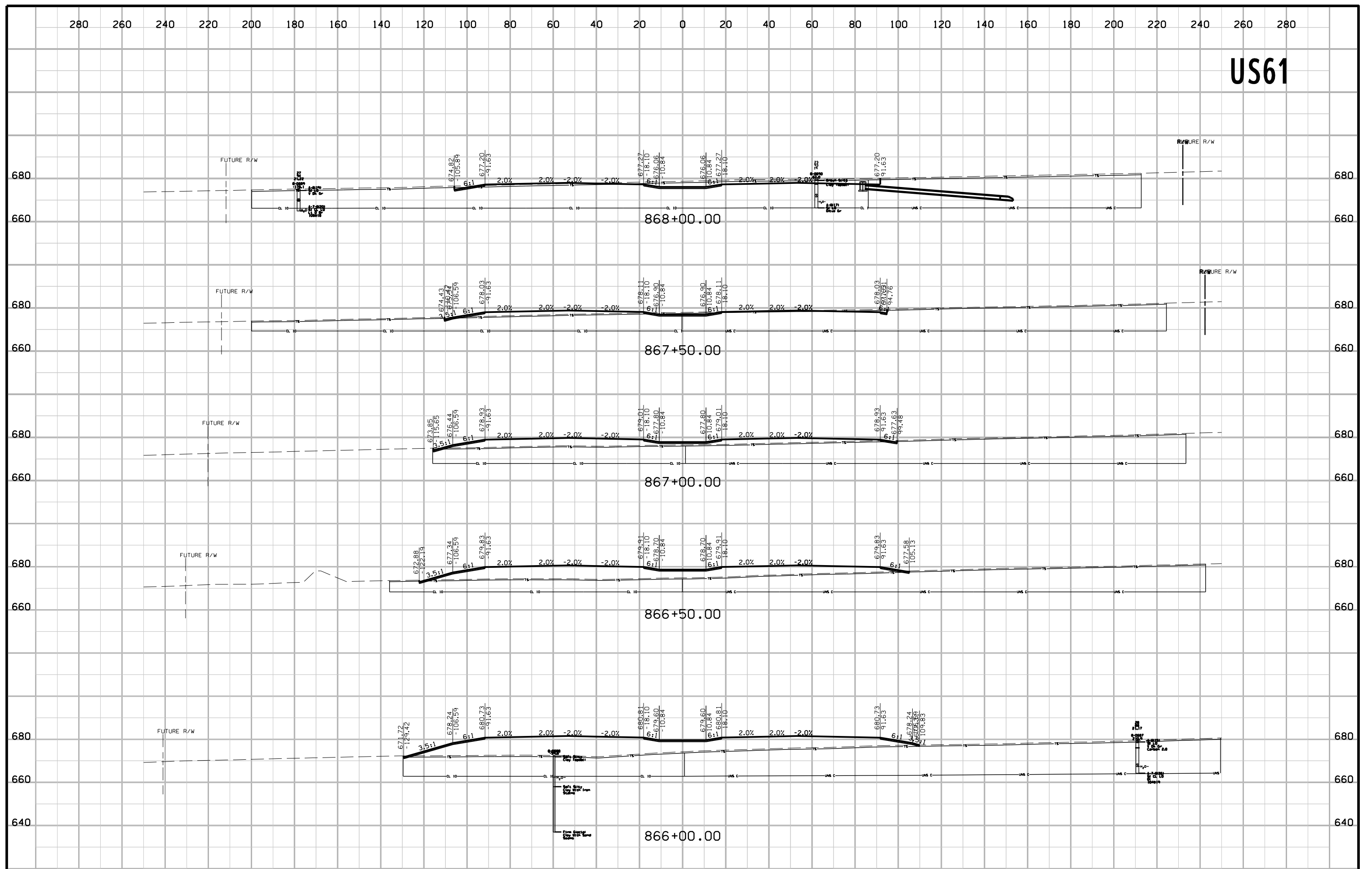
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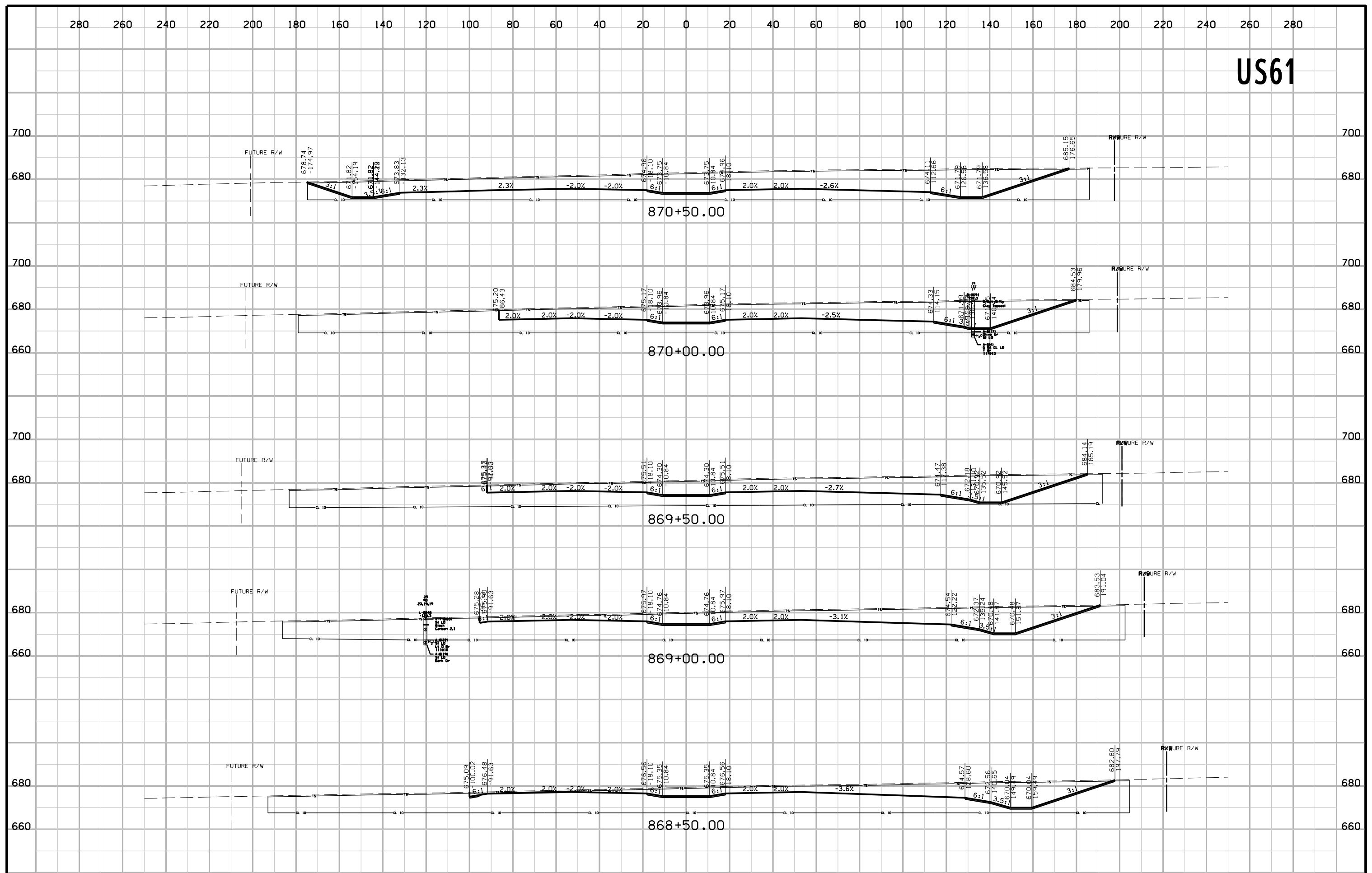
EMLEY TUBE CORP DATA

| | |
|----------------------------------|----------|
| CORE NO. | 8-0326-6 |
| CLASSIFICATION (ASTM) | CL-ML |
| COEFF. OF COMP. (SO. FI. / 100) | 0.108 |
| WATER CONTENT (%) | 12.85 |
| LIQUID LIMIT (LL) | 24.5 |
| PLASTICITY INDEX (PI) | 11.7 |
| UNSATURATED SWELLING (%) | 0.0 |
| UNSATURATED SHRINKAGE (%) | 0.0 |
| UNSATURATED SWELLING INDEX (SI) | 0.0 |
| UNSATURATED SHRINKAGE INDEX (SI) | 0.0 |
| UNSATURATED SWELLING INDEX (SI) | 0.0 |
| UNSATURATED SHRINKAGE INDEX (SI) | 0.0 |

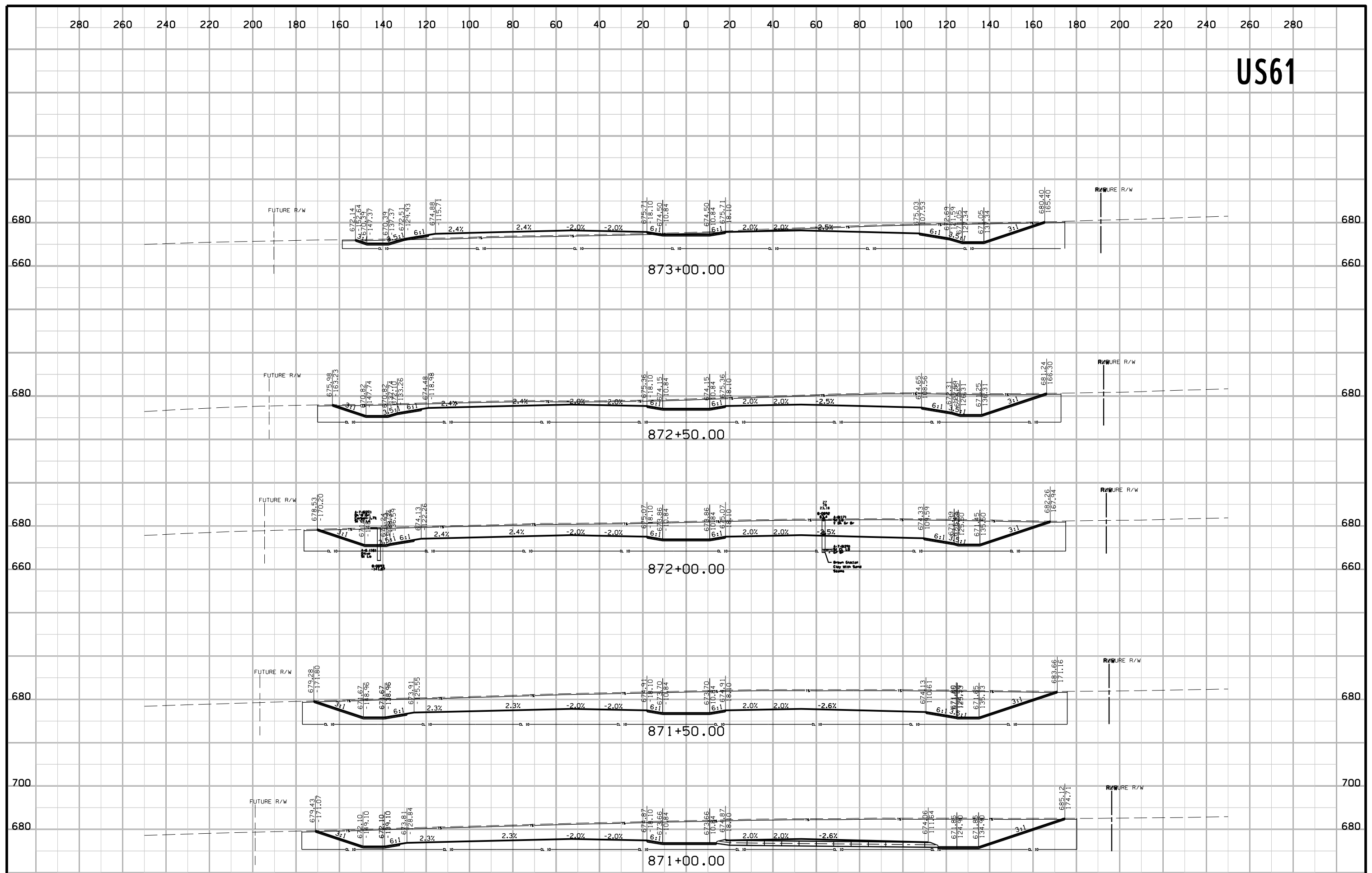
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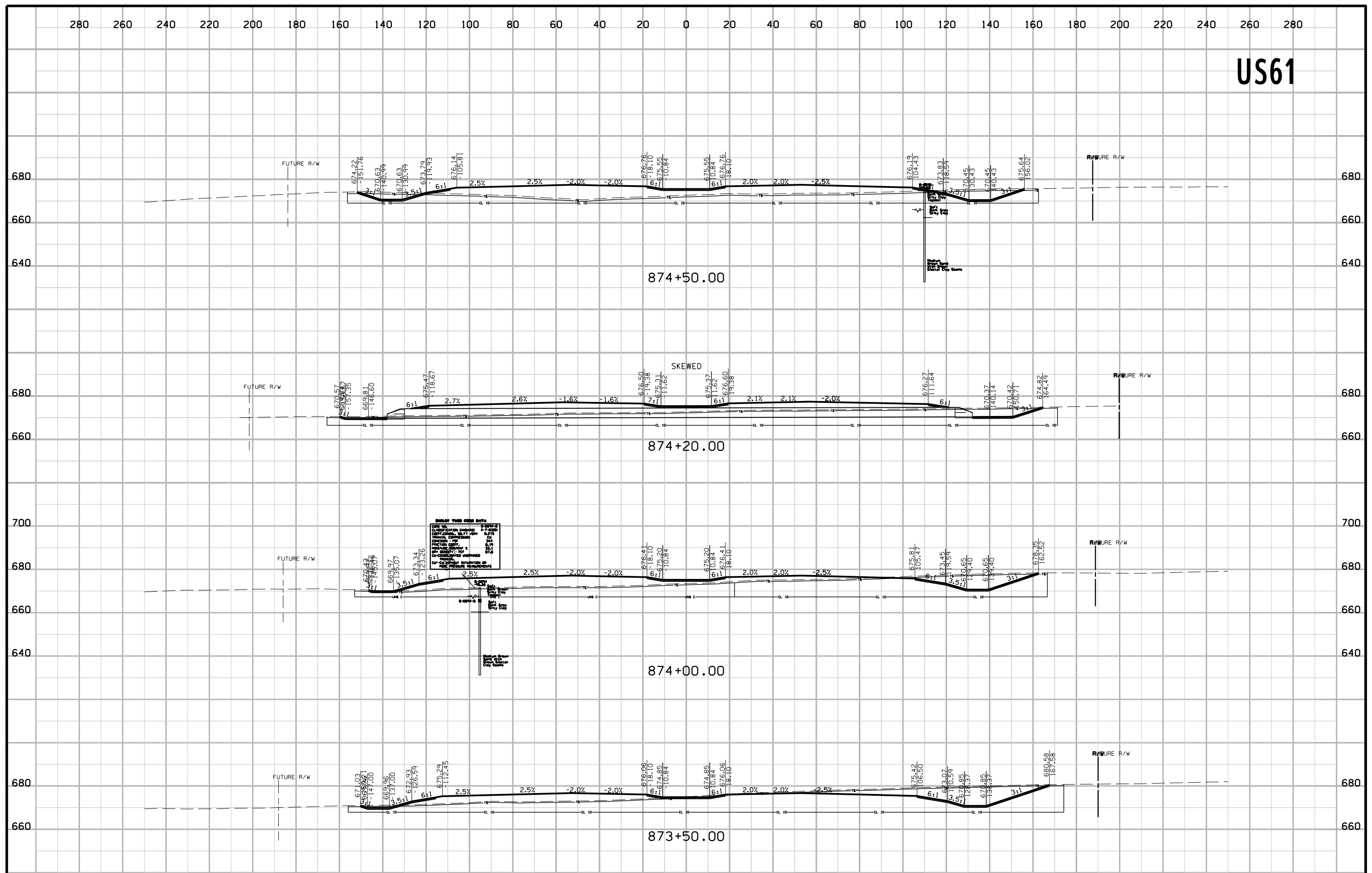
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US61



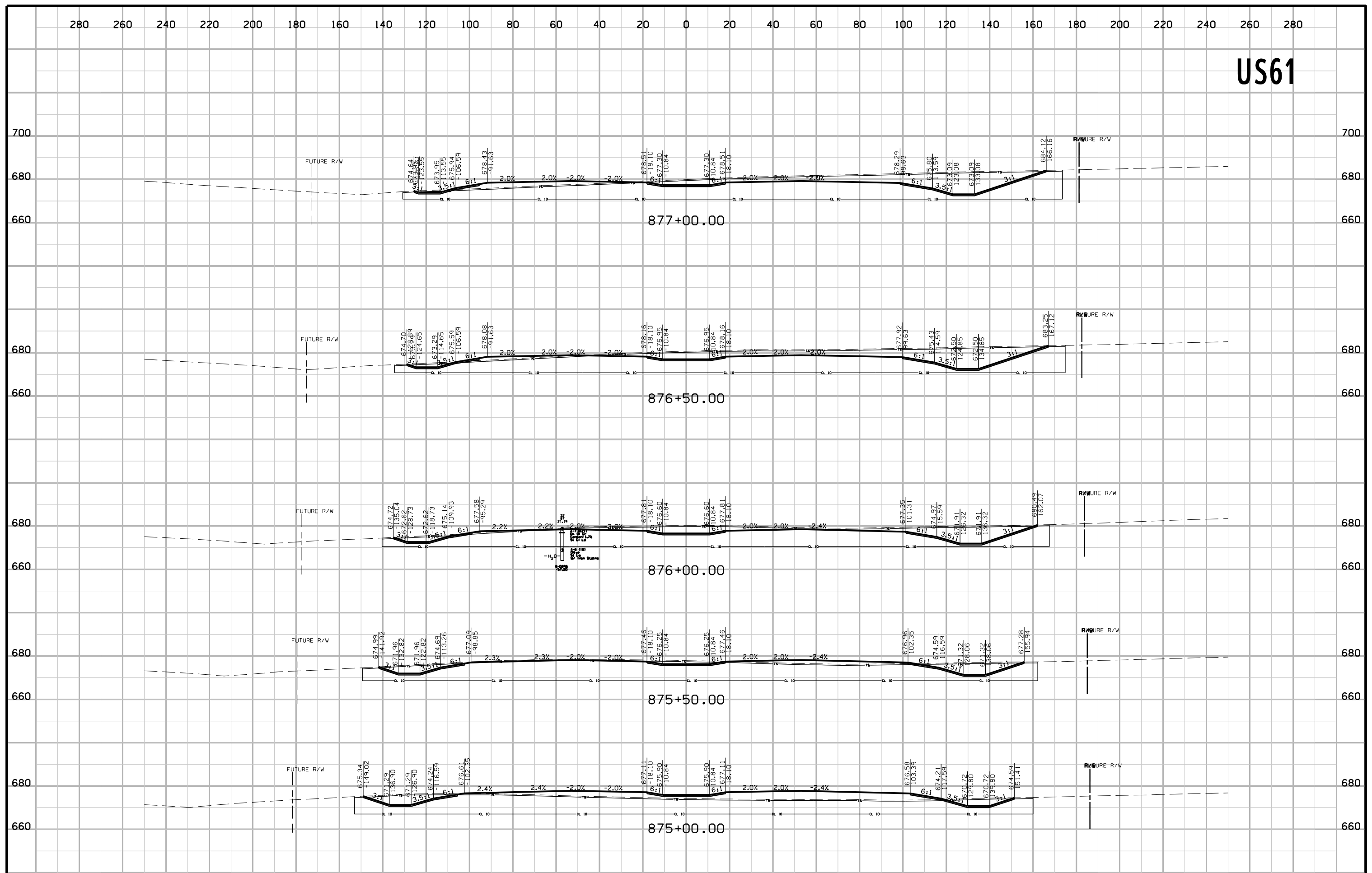
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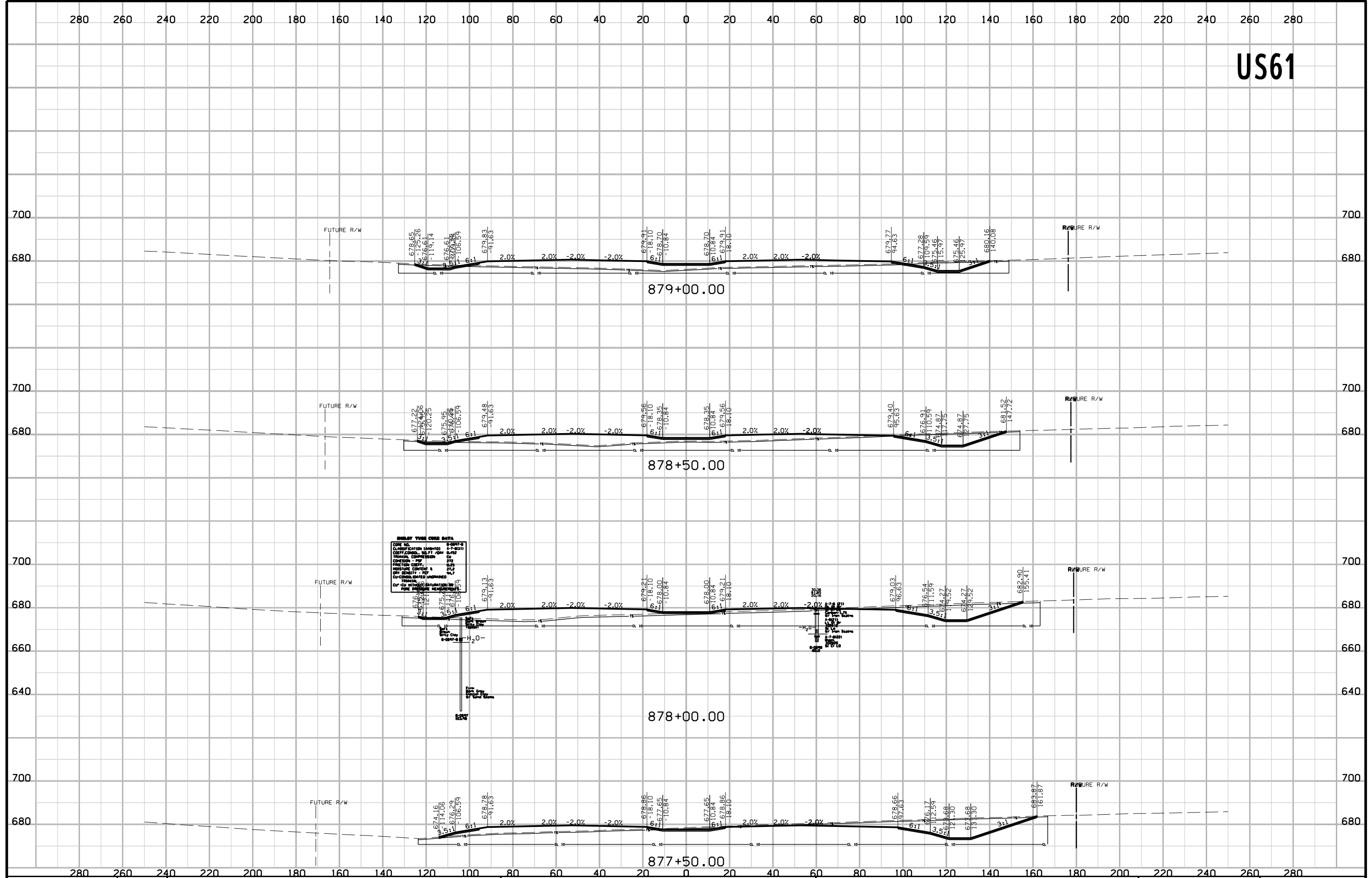
SHOULD THIS CROSS DATA

| | |
|----------------|---------------------------|
| CLASSIFICATION | UNCLASSIFIED |
| DATE | 06/27/2014 |
| PROJECT | NHSX-061-3(57)--3H-58 |
| DESIGNER | Van Dyke \ HR Green, Inc. |
| CHECKER | |
| DATE | |
| PROJECT | |
| DESIGNER | |
| CHECKER | |
| DATE | |
| PROJECT | |
| DESIGNER | |
| CHECKER | |
| DATE | |

US61

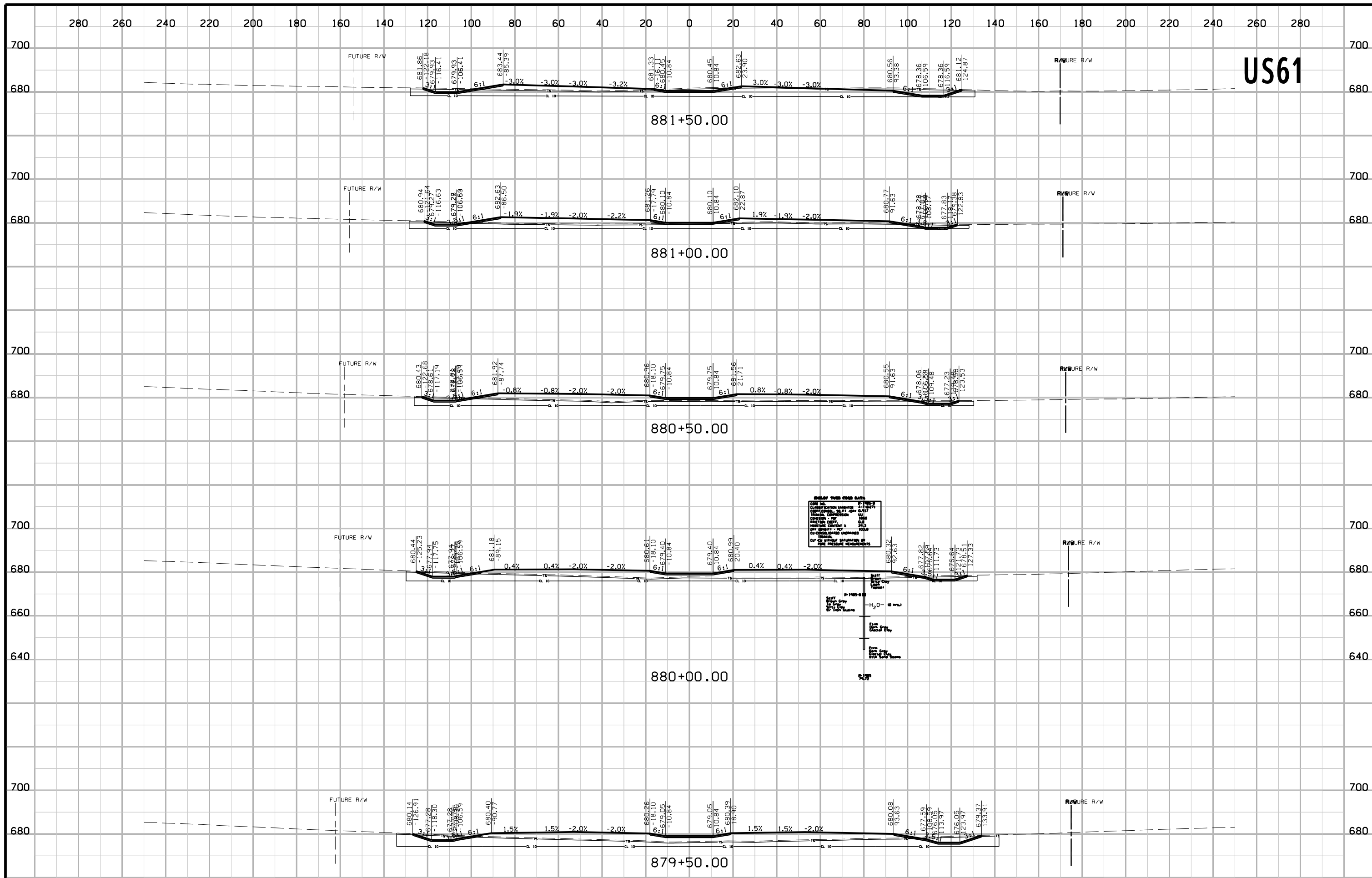


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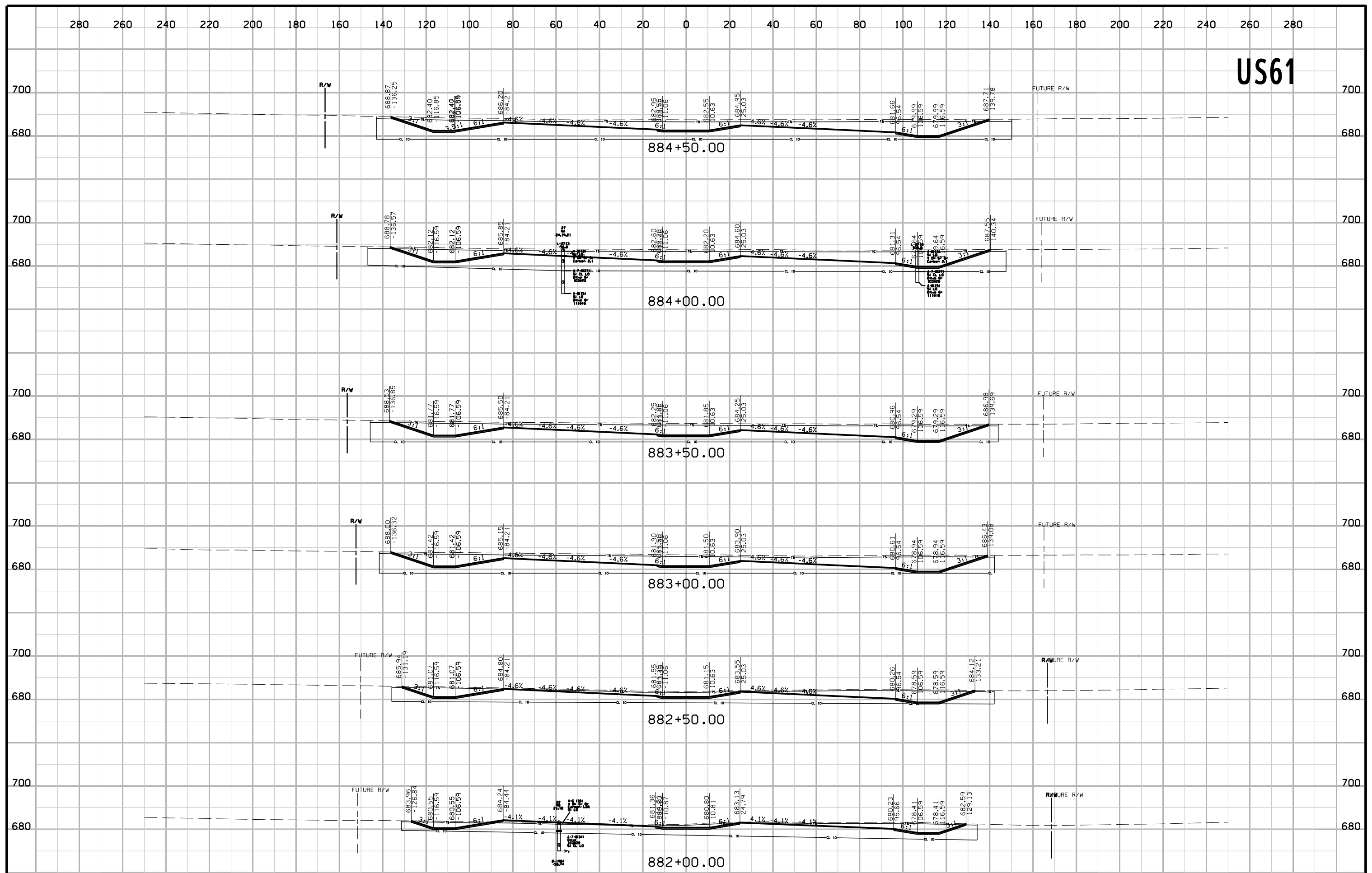
SHOULDER TYPE CURB DATA

| | |
|---------------------------|----------|
| CODE NO. | 4-7-8211 |
| CLASSIFICATION (ASPH/CON) | 4-7-8211 |
| COEFFICIENT OF FRICTION | 0.50 |
| MINIMUM COMPRESSION | 12 |
| COMPRESSION - PSI | 275 |
| FRACTION CURB | 1.0 |
| MINIMUM COVER | 2.0 |
| MIN. CURB HGT | 4.0 |
| CONSTRUCTION VARIATION | 1.0 |
| MIN. CURB HGT | 4.0 |
| MIN. CURB HGT | 4.0 |

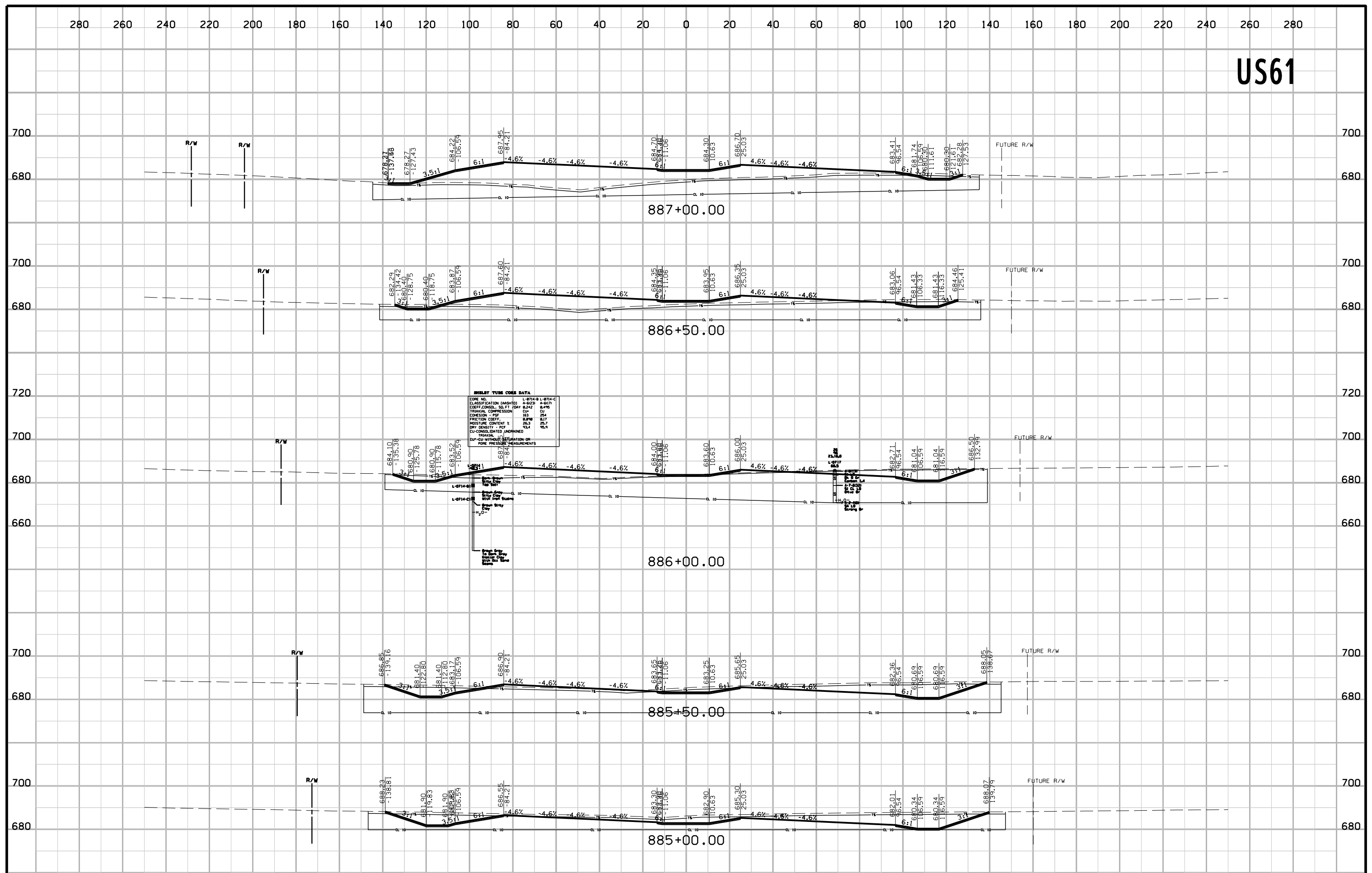


BELOW THIS CROSS DATA:
 DATE: 06/20/14
 DRAWN BY: J. H. GREEN
 CHECKED BY: J. H. GREEN
 PROJECT: NHSX-061-3(57)--3H-58
 SHEET: W.50
 SCALE: 1"=40'
 UNIT: FEET
 OR AS NOTED OTHERWISE ON THE PLANS AND ELEVATIONS

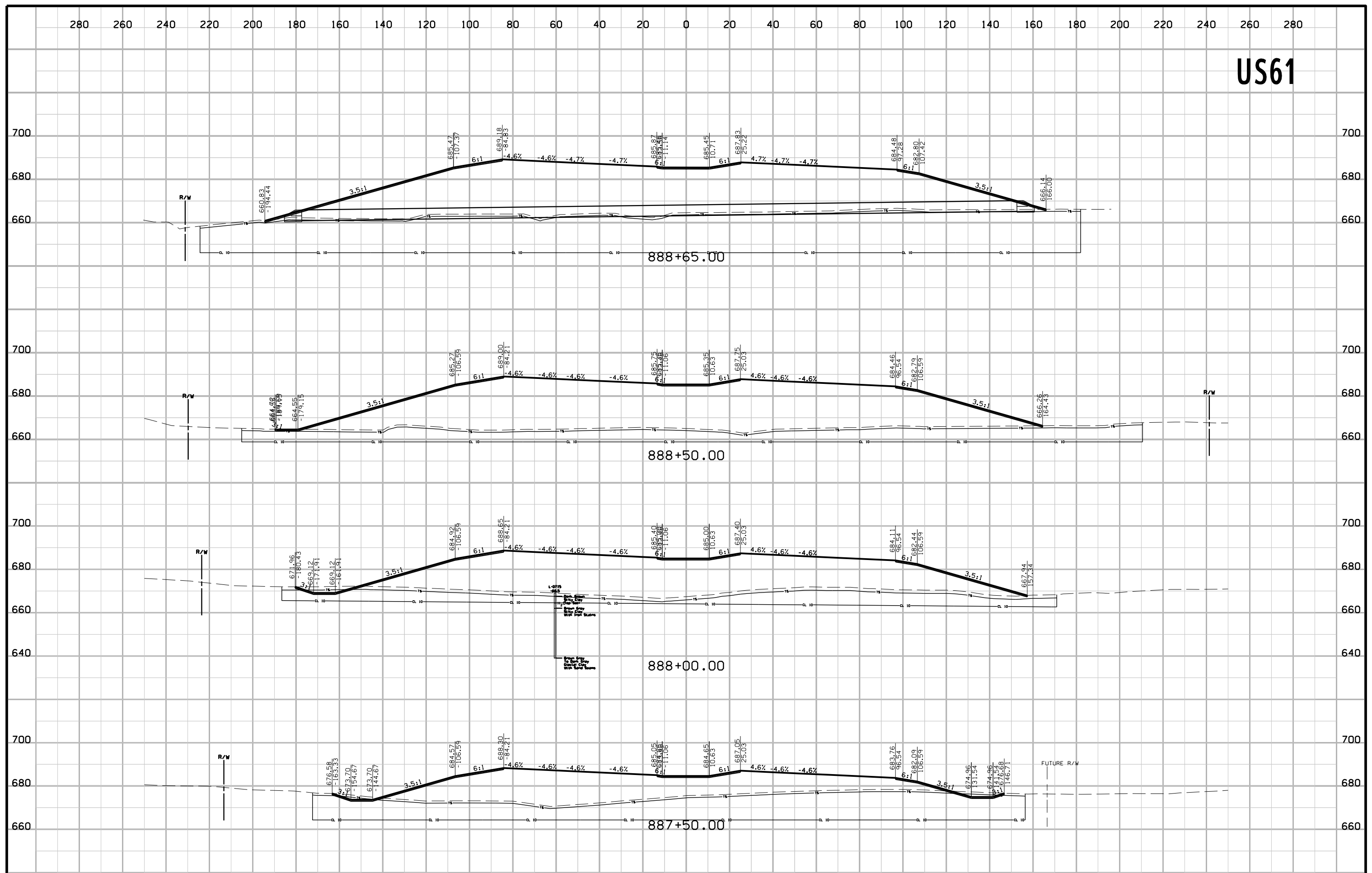
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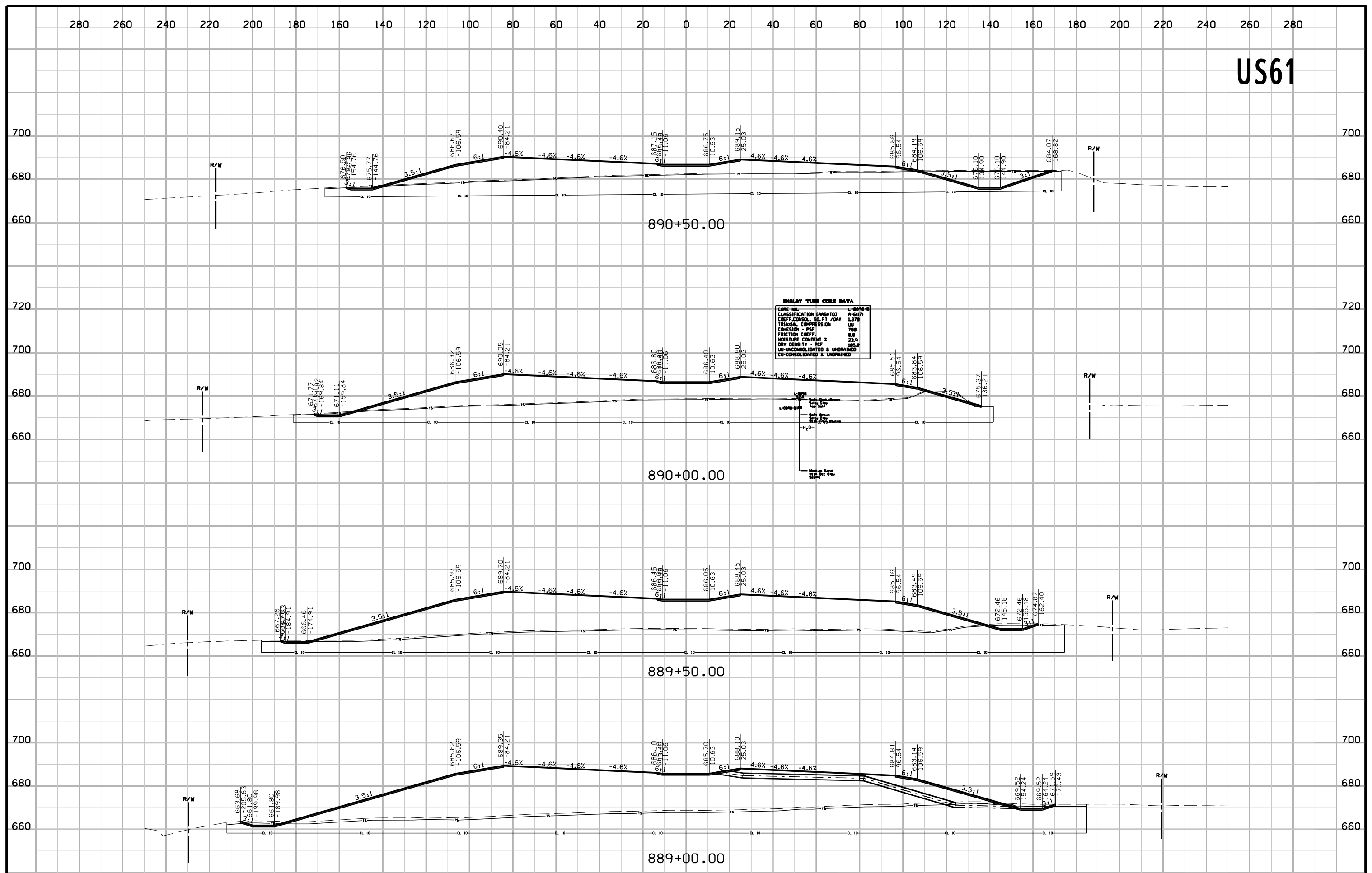
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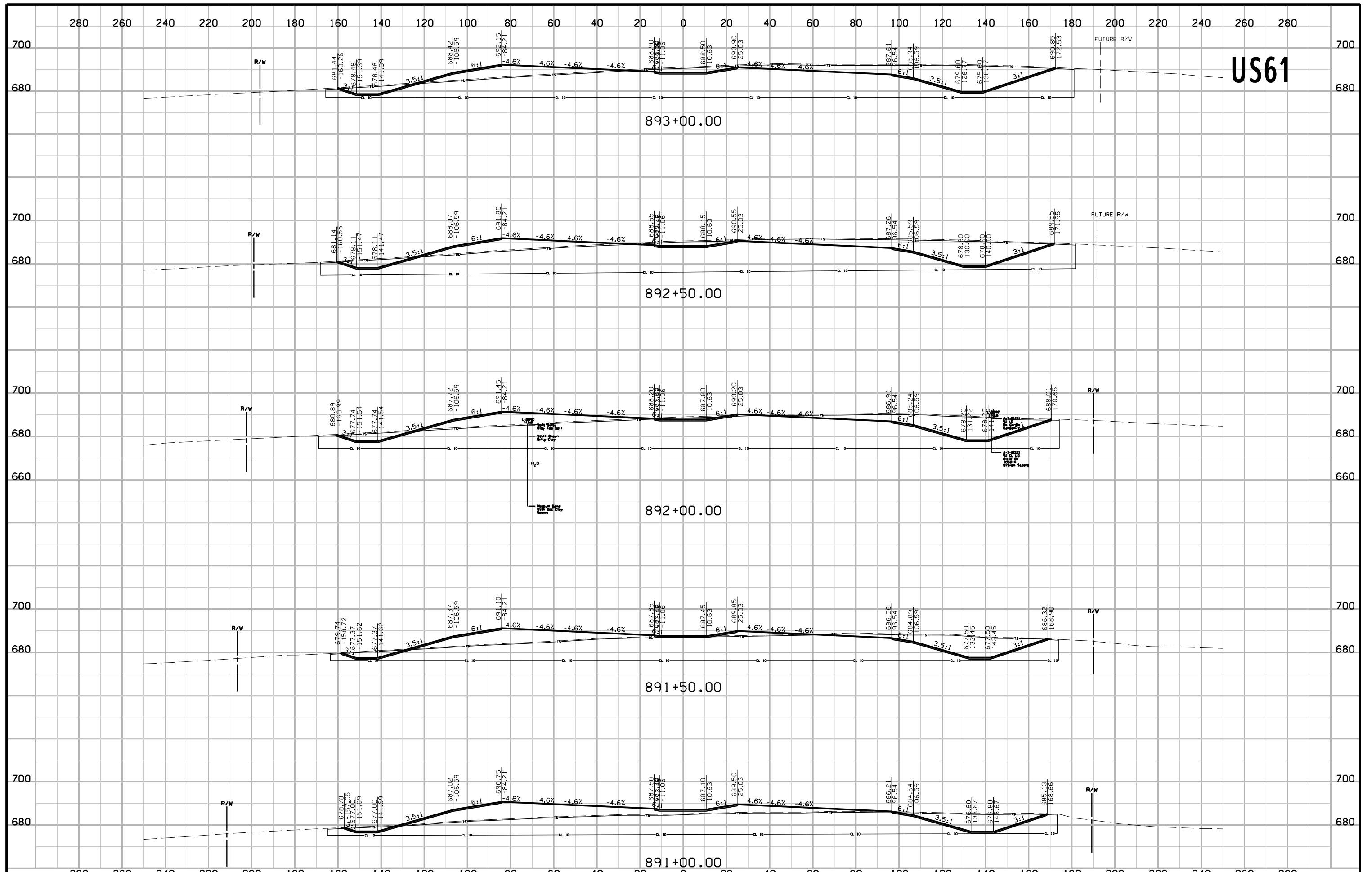


US61



US61





US61

893+00.00

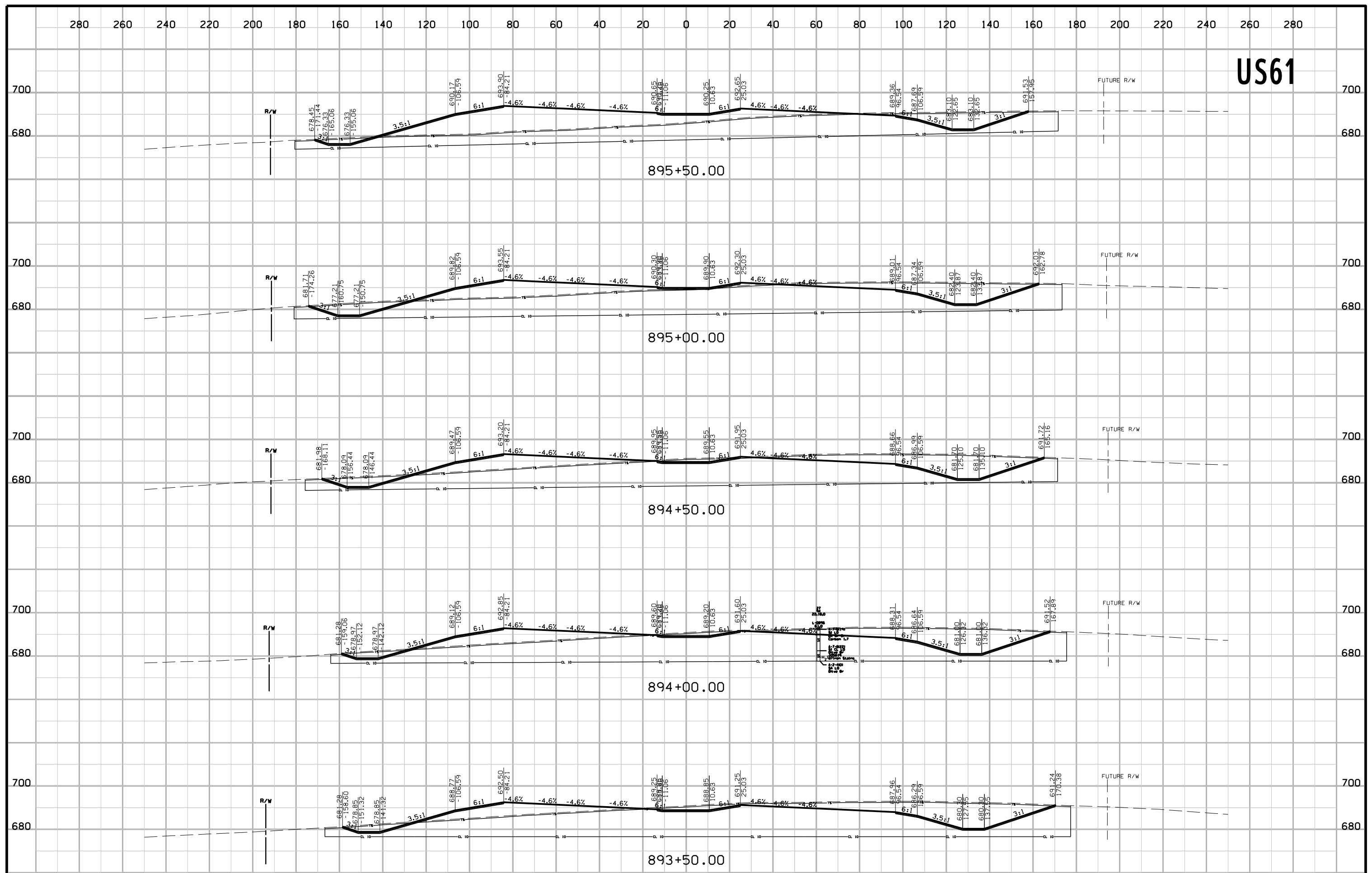
892+50.00

892+00.00

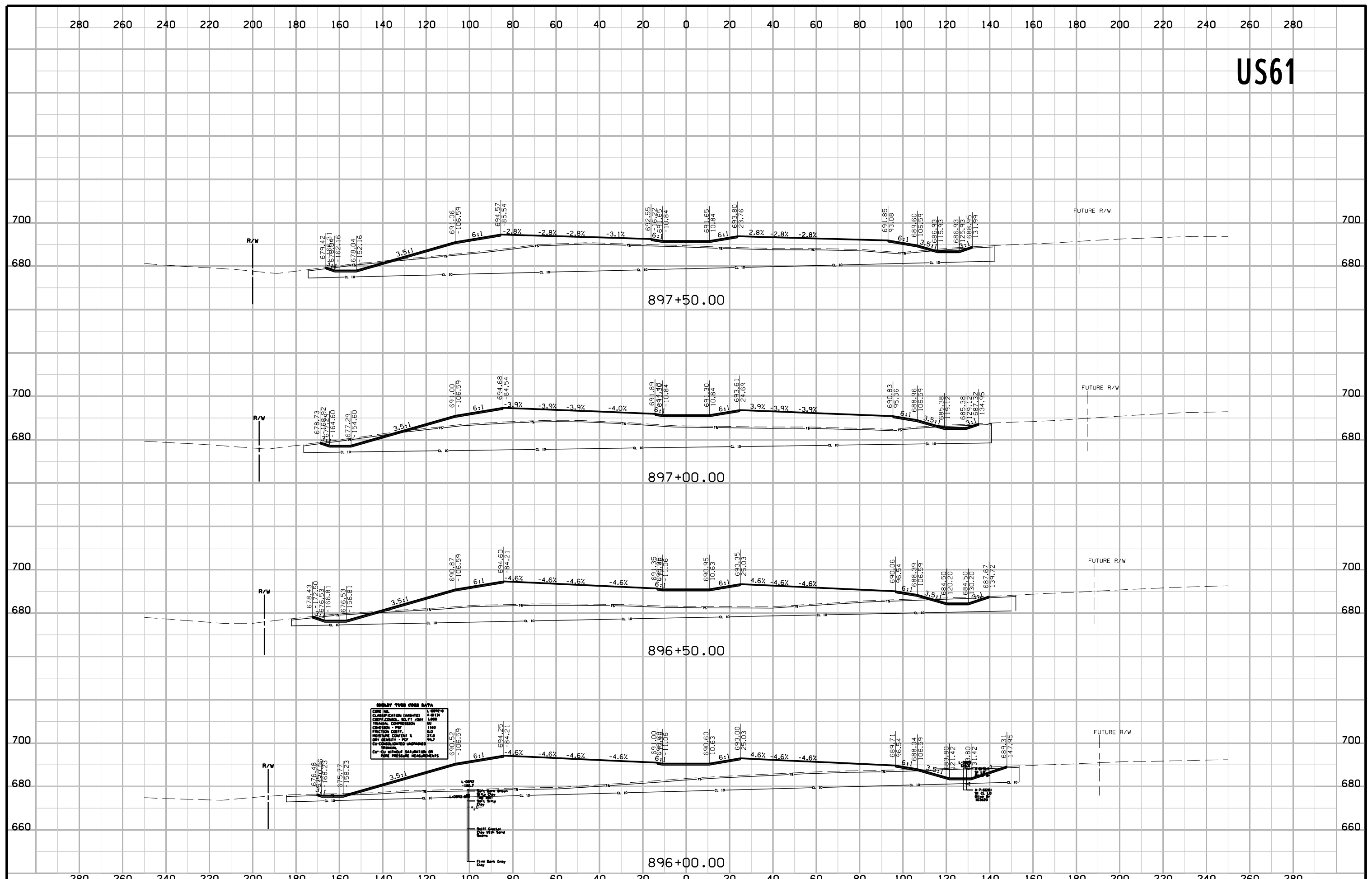
891+50.00

891+00.00

US61

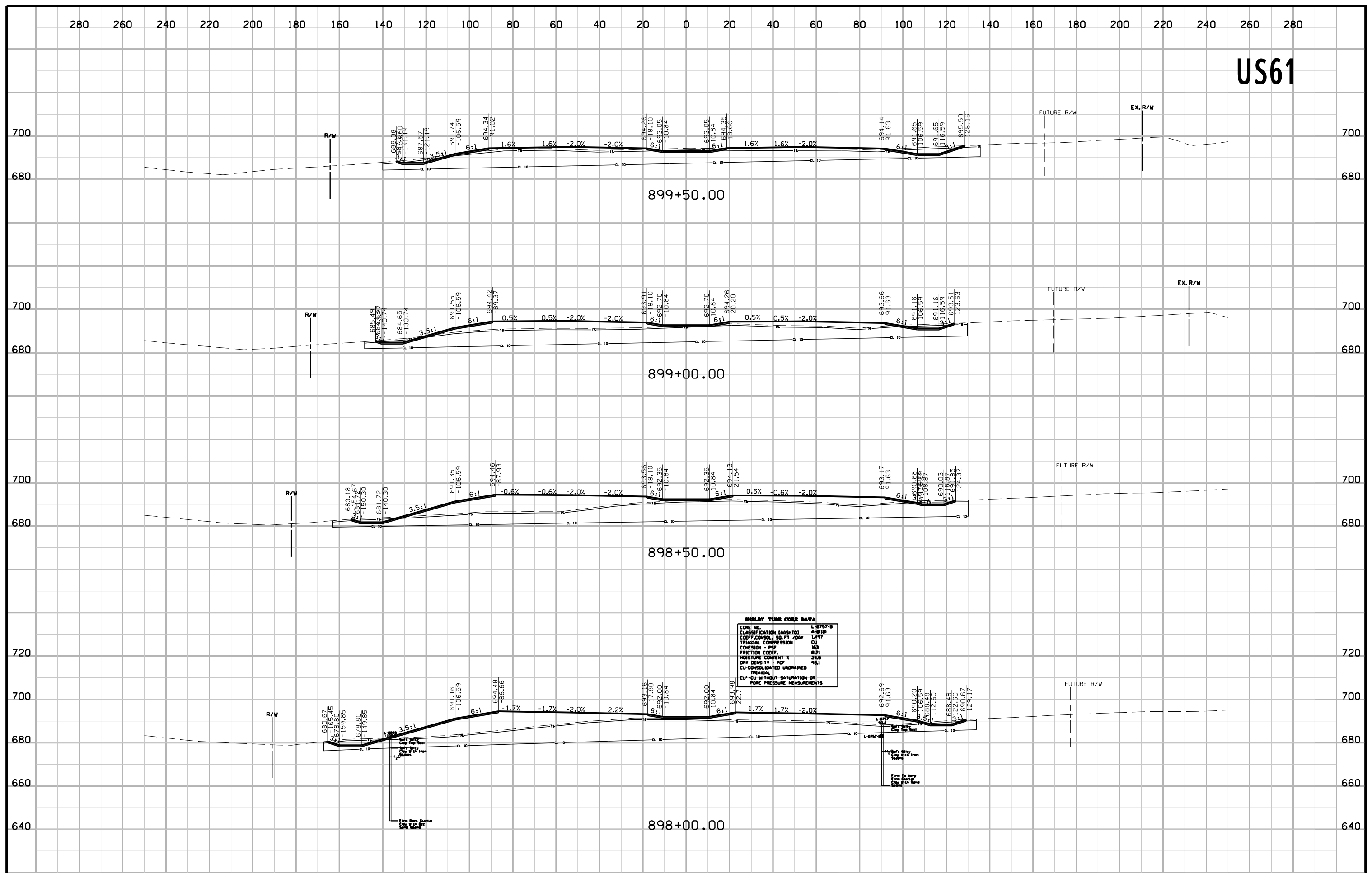


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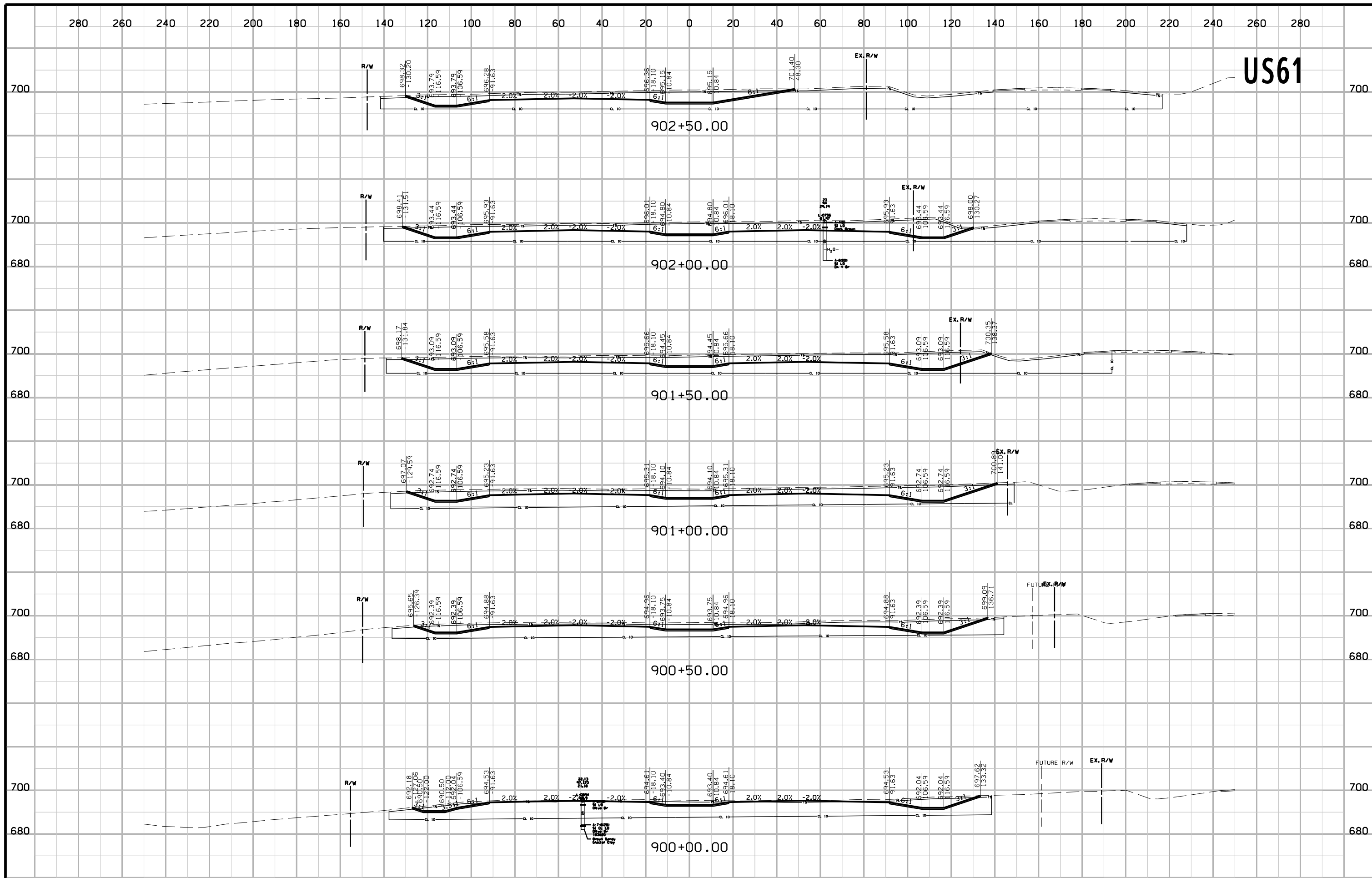
| SHELLY TUBE CORING DATA | |
|---------------------------------|---------|
| CORE NO. | L-092-4 |
| CLASSIFICATION (ASTM) | CL-ML |
| COEFF. OF UNIFORMITY (U) | 1.80 |
| FLATNESS COEFFICIENT (F) | 0.60 |
| COMPRESSION (PP) | 180 |
| MOISTURE COEFF. (M) | 0.60 |
| MOISTURE CONTENT (%) | 27.0 |
| SHRINKAGE (%) | 12.0 |
| LIQUID LIMIT (LL) | 42 |
| PLASTIC LIMIT (PL) | 20 |
| PI | 22 |
| CI - UNCONSOLIDATED UNSATURATED | |
| BRAND | |
| CU - WITHOUT SATURATION OR | |
| PORE PRESSURE MEASUREMENTS | |

US61



SHREVE TUBE CORE DATA

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



US61

902+50.00

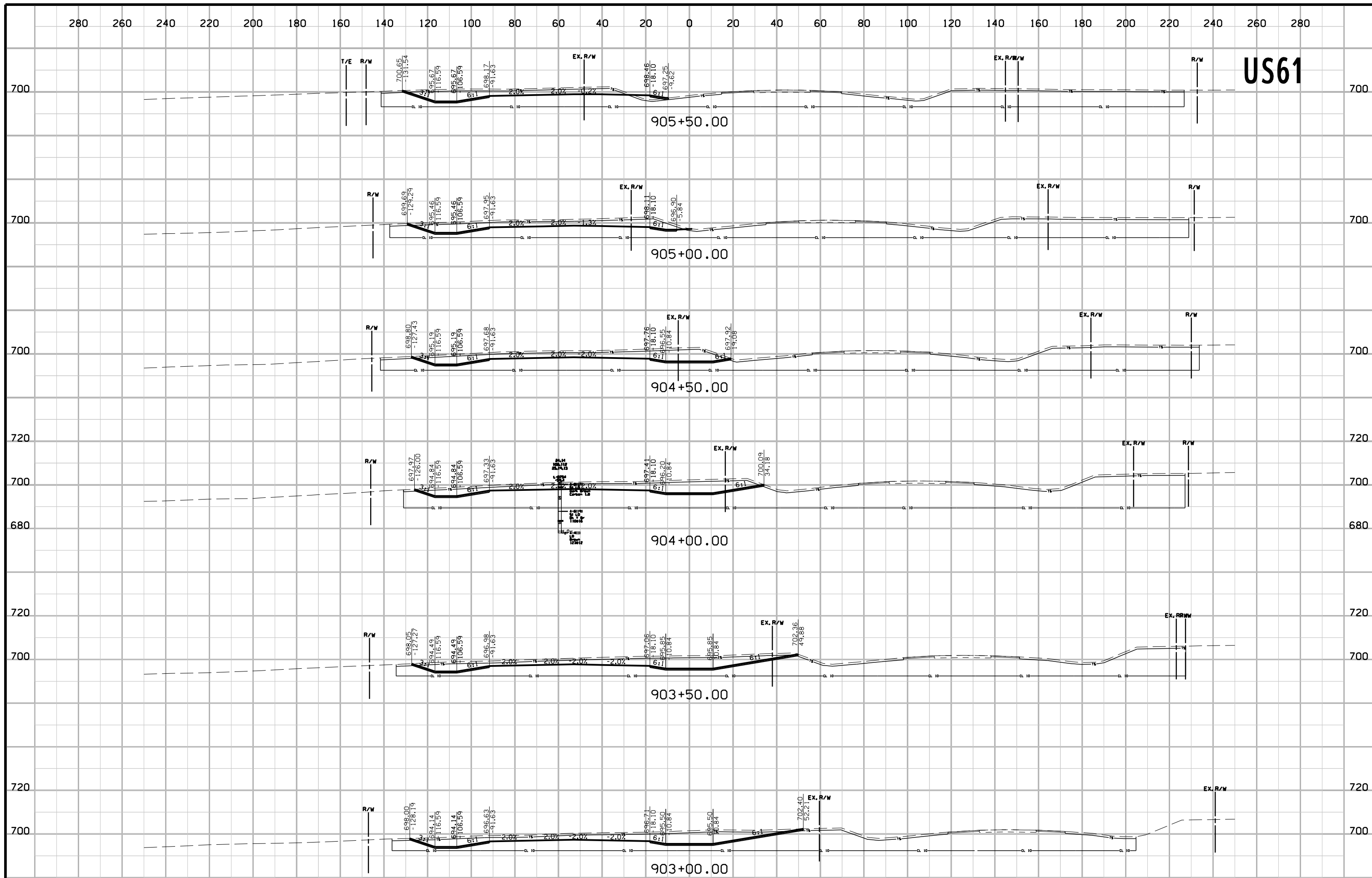
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901+50.00

901+00.00

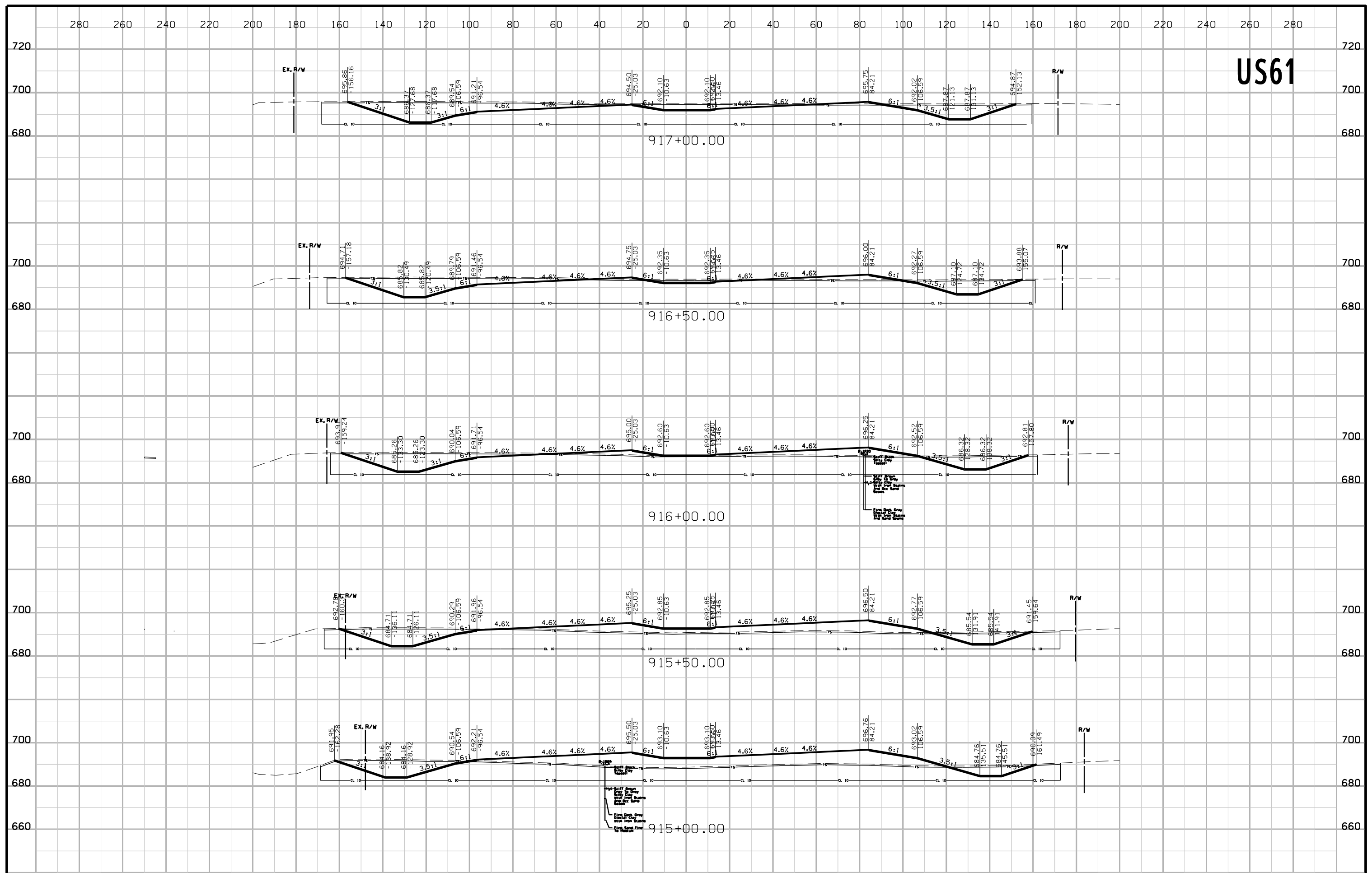
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900+00.00

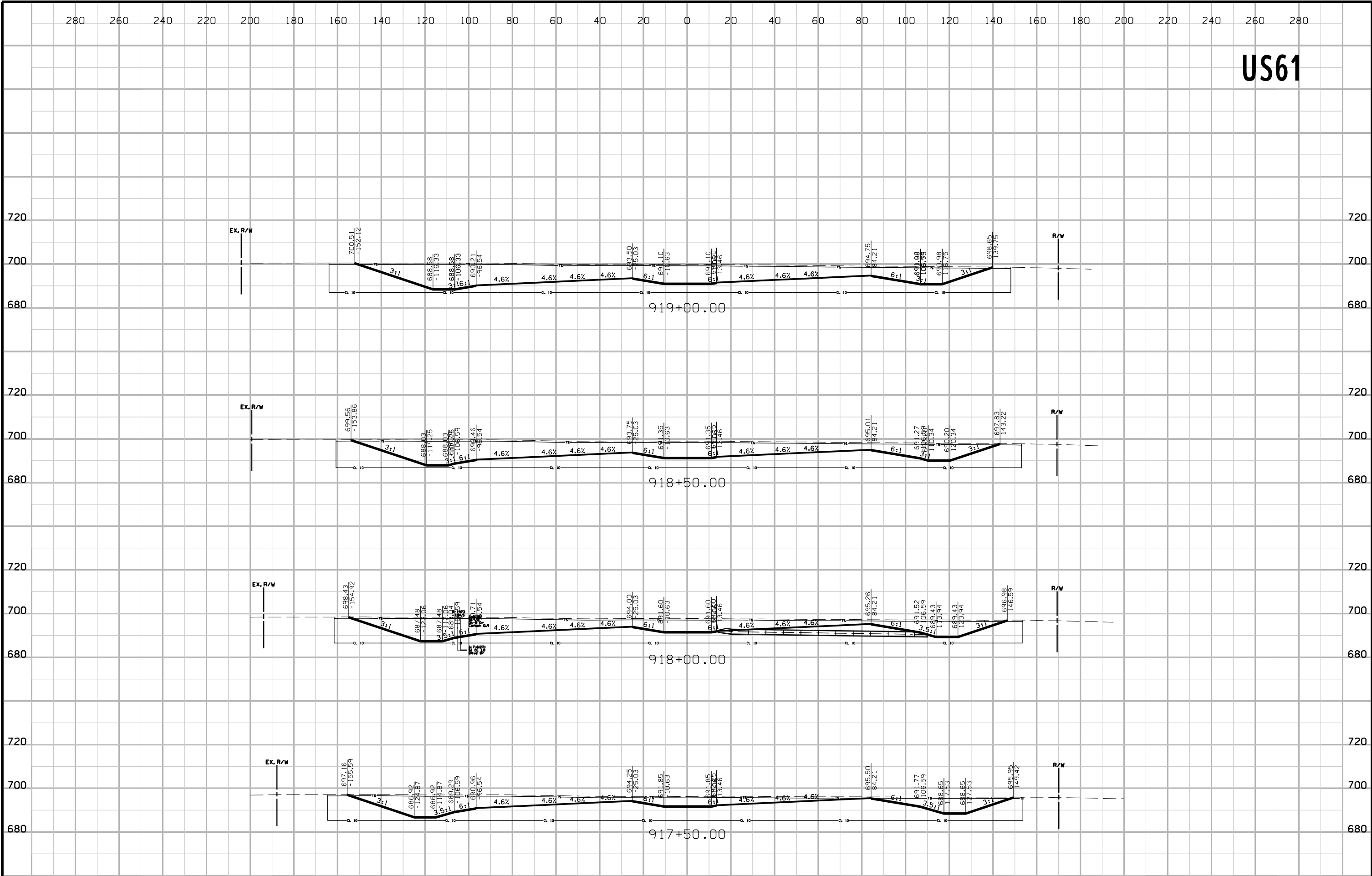


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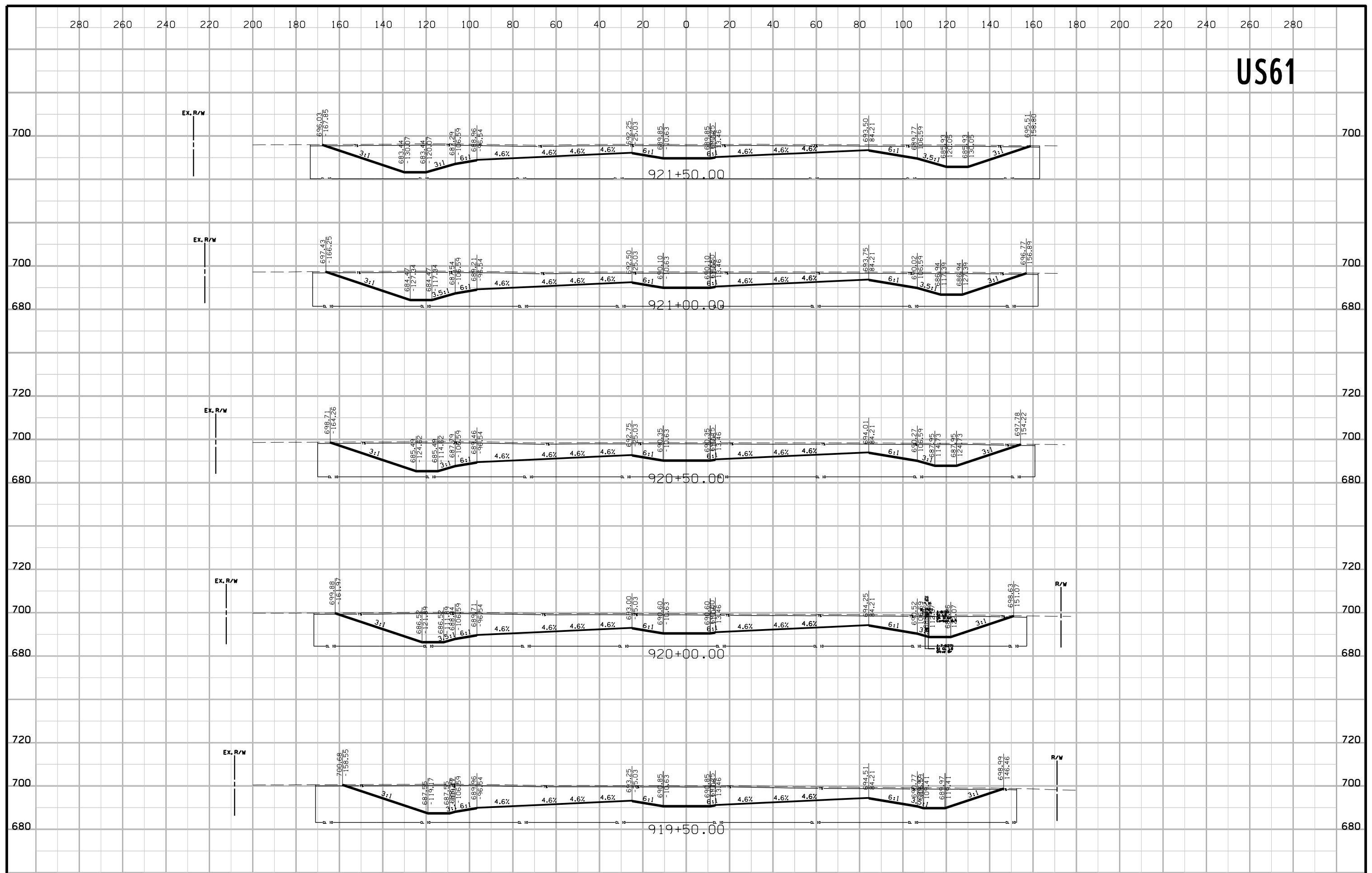
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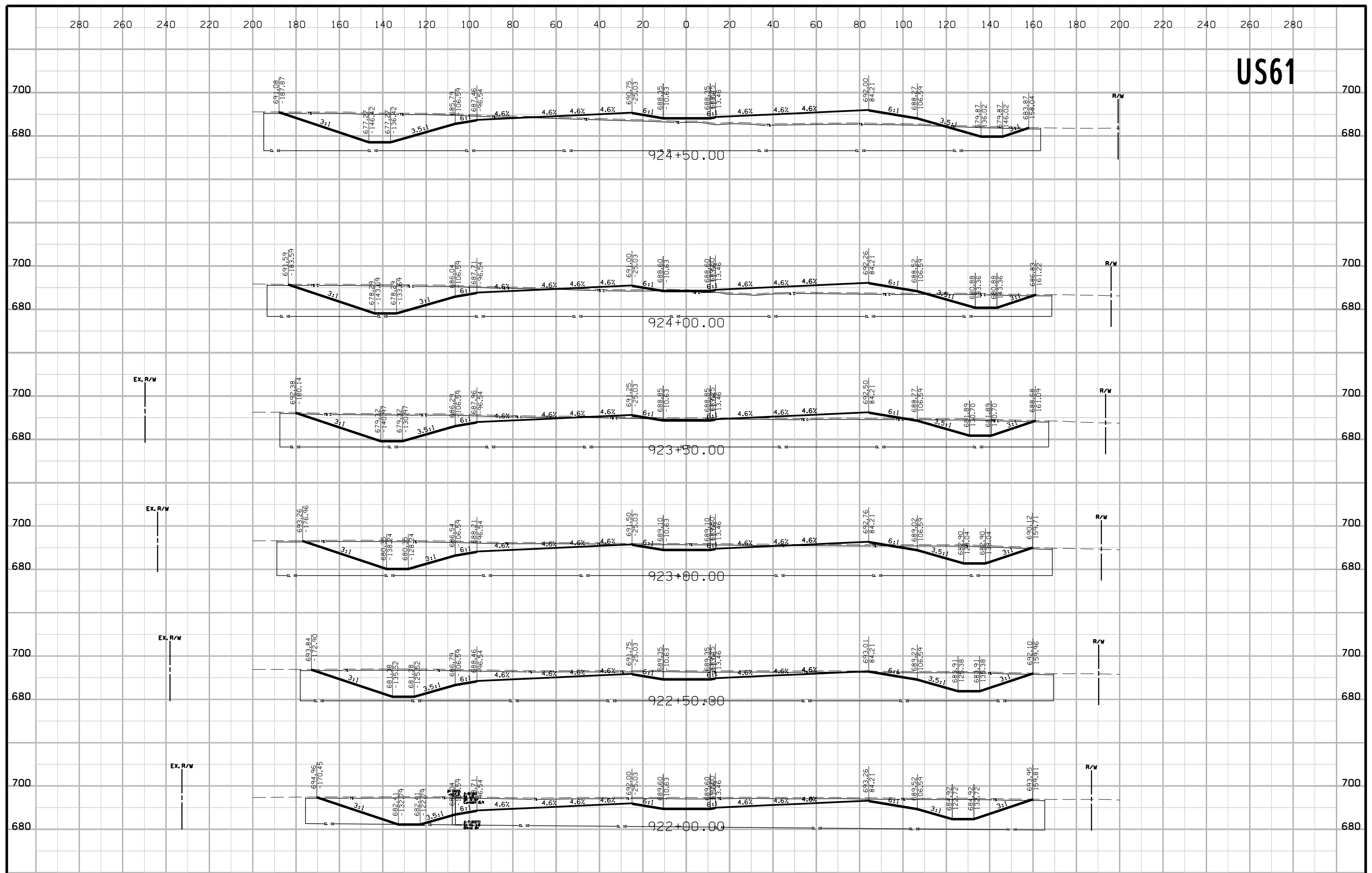
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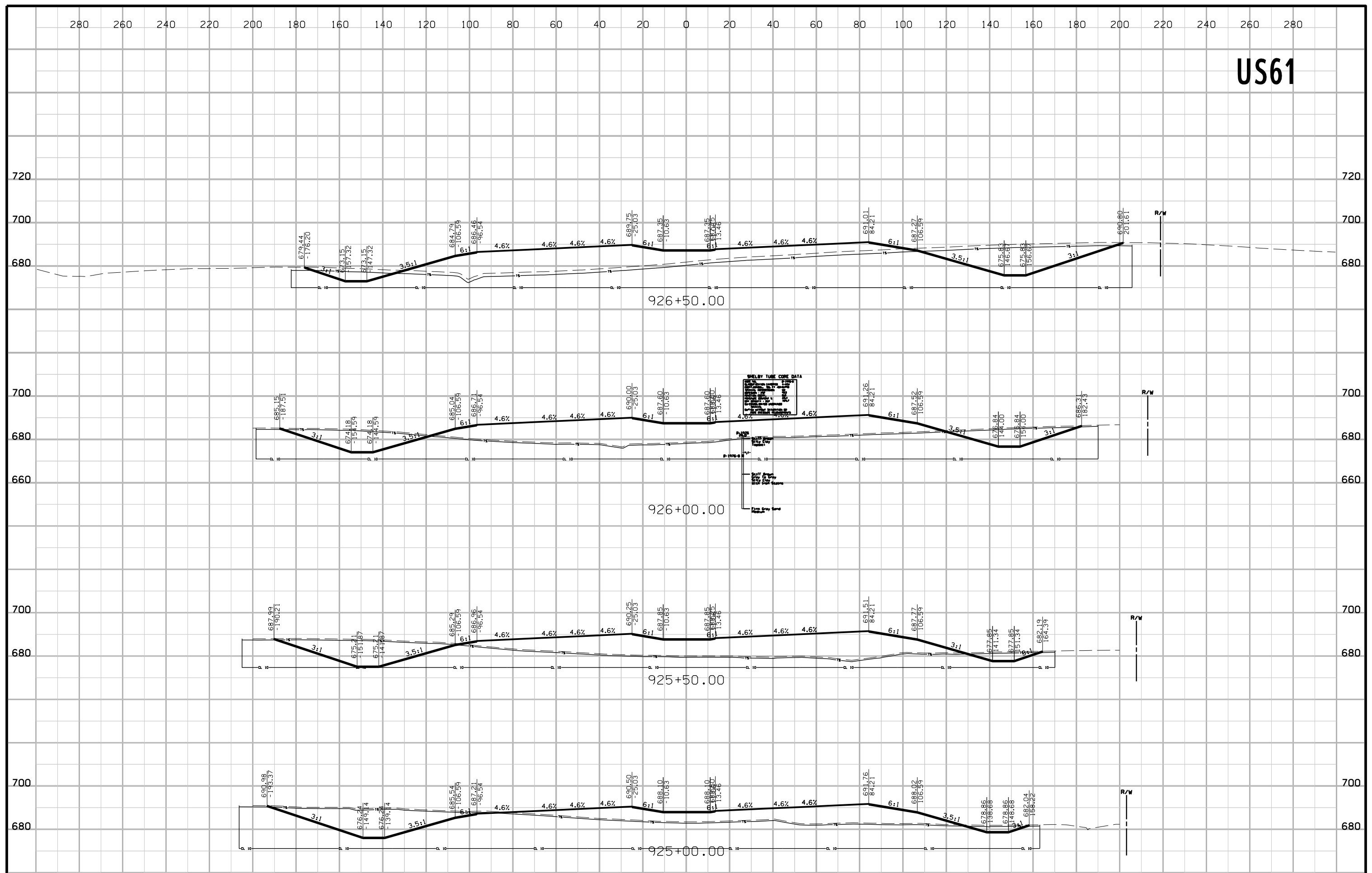
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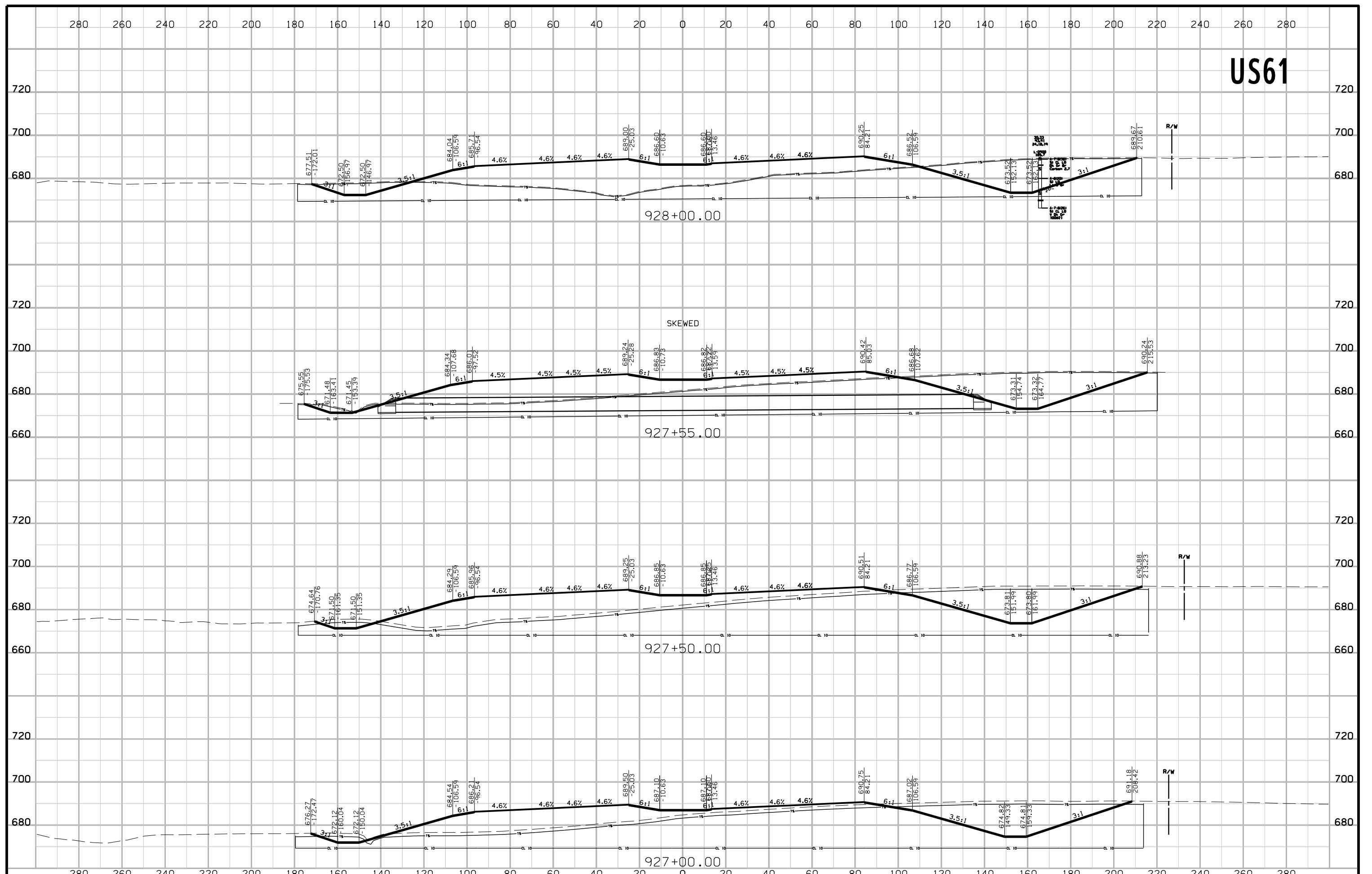
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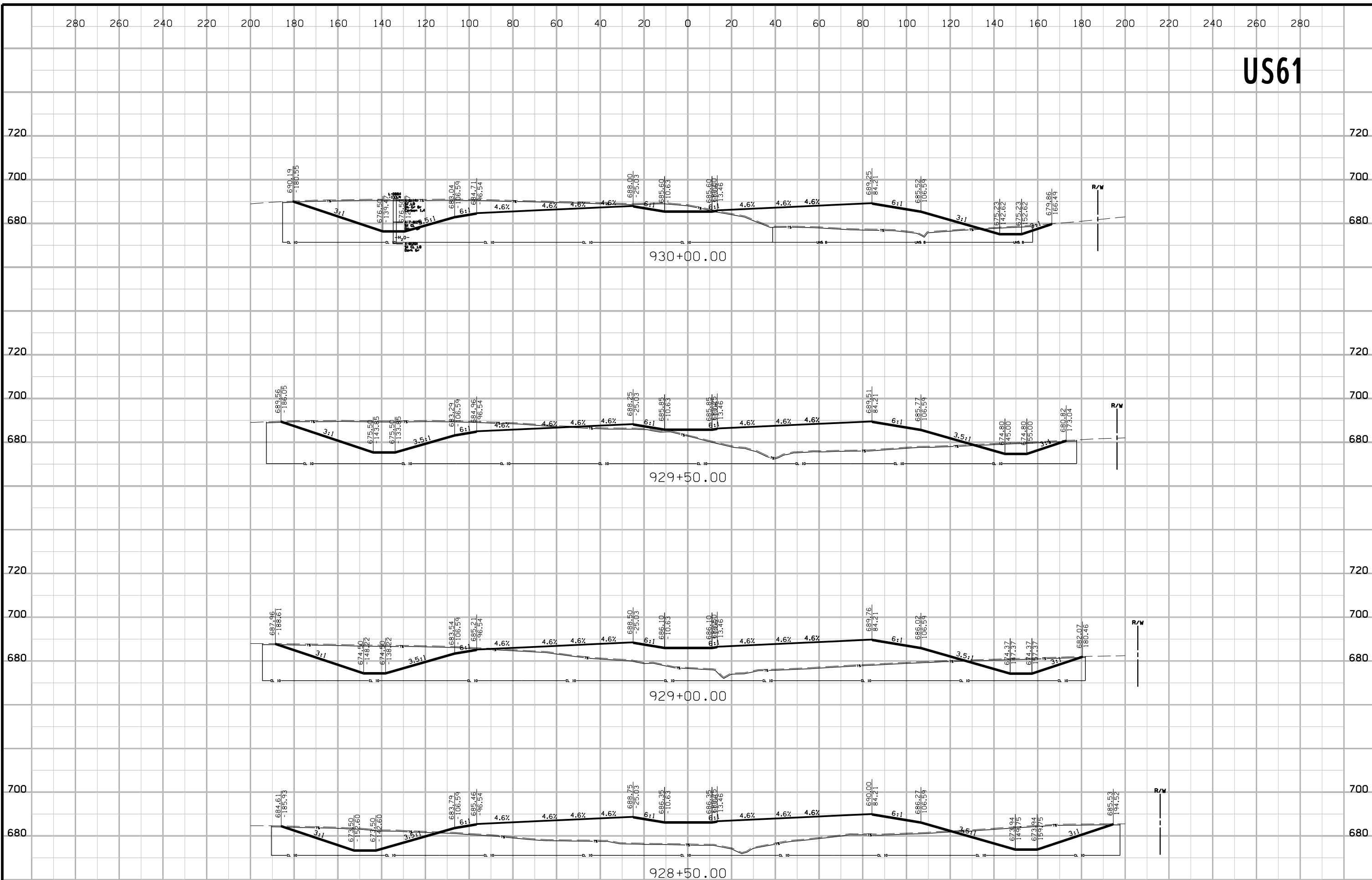
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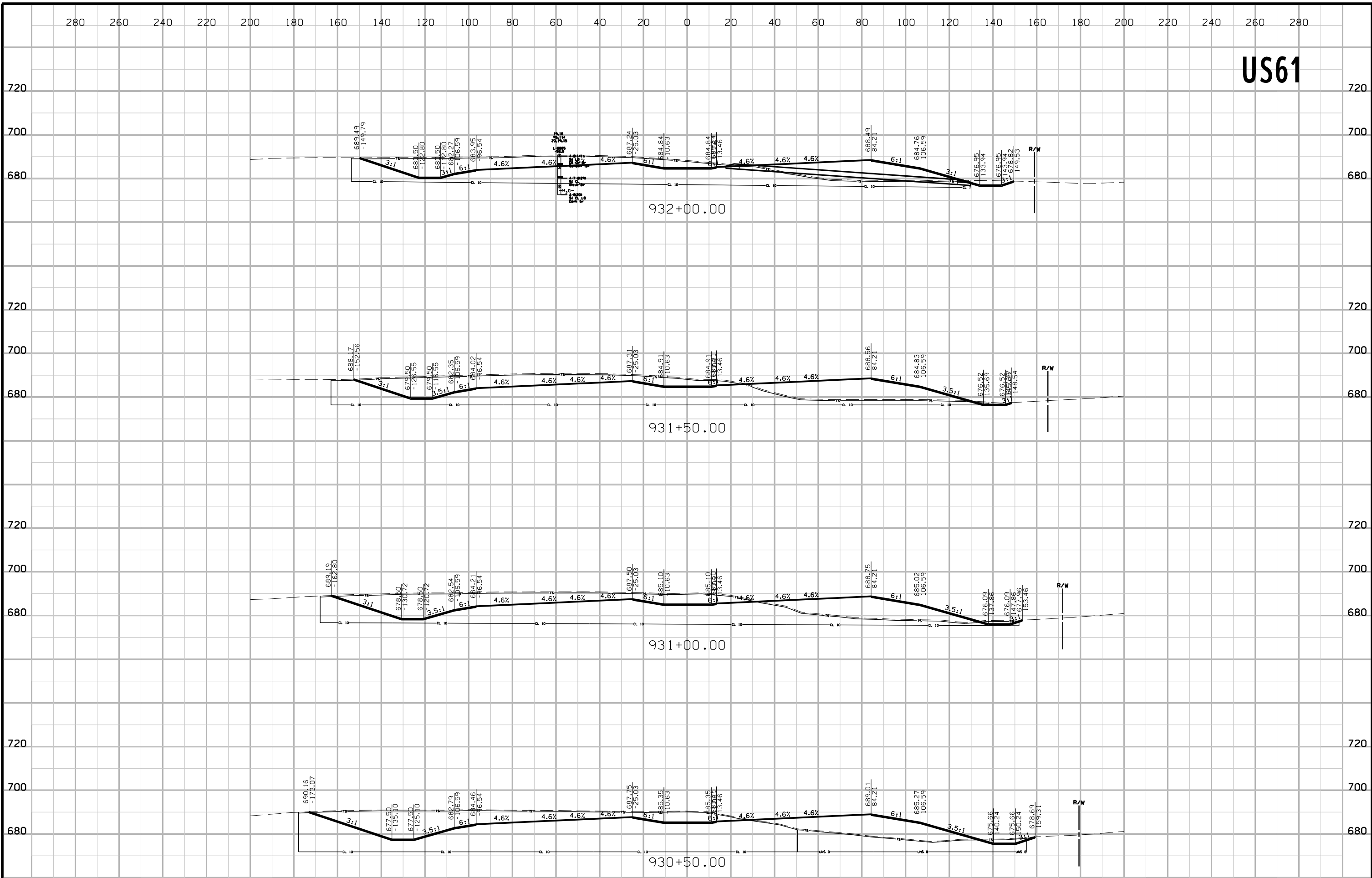
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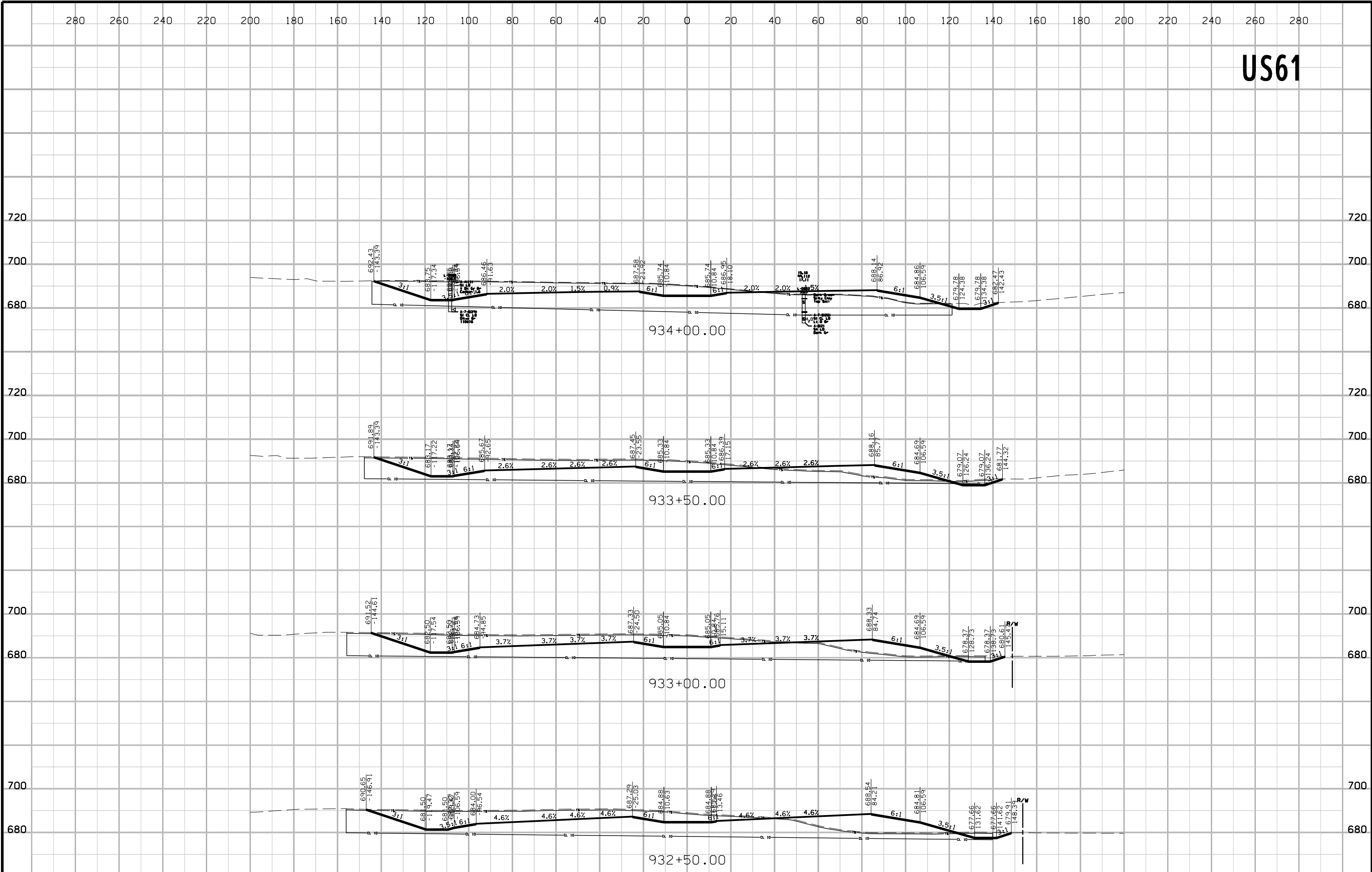
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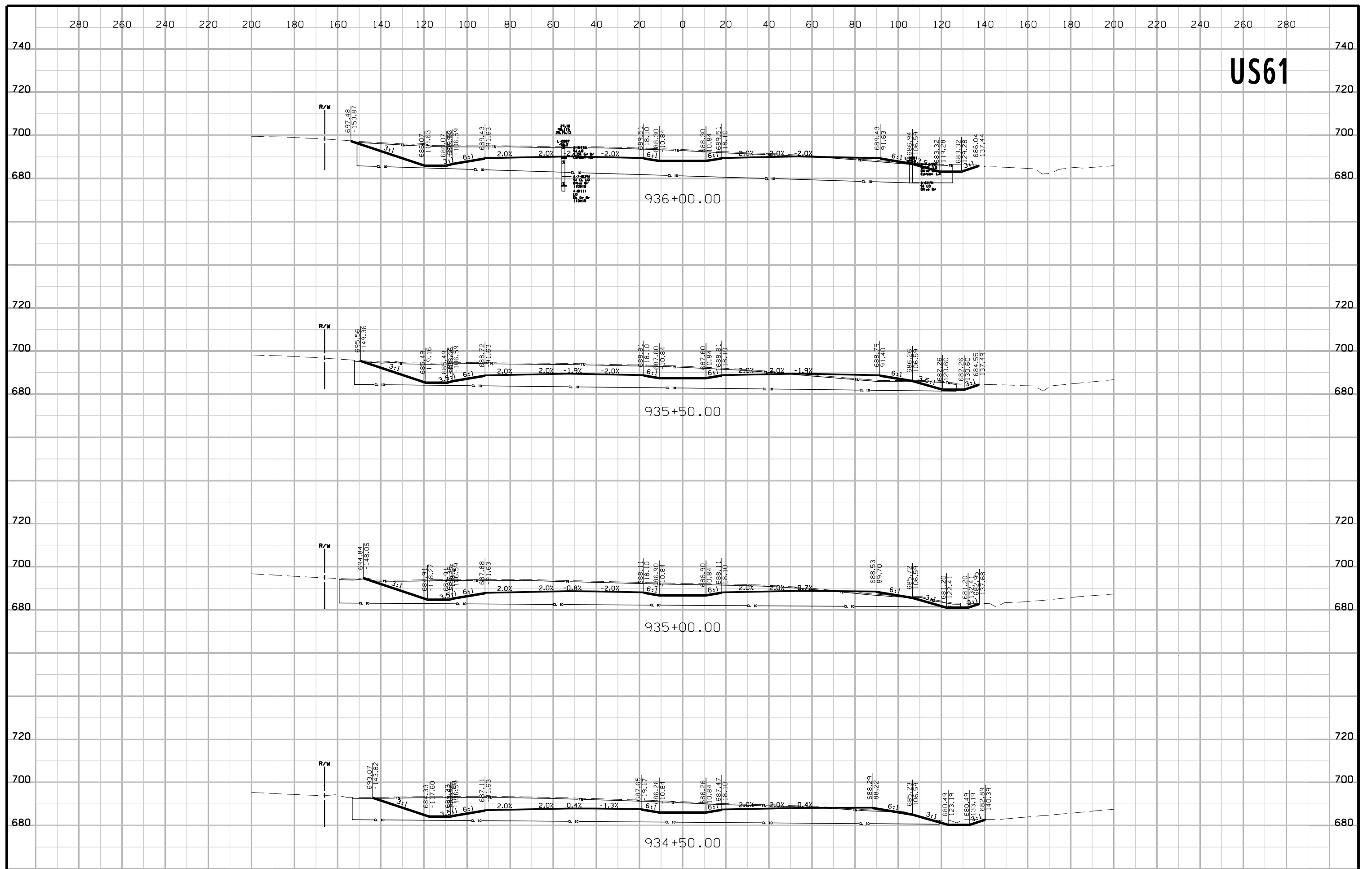
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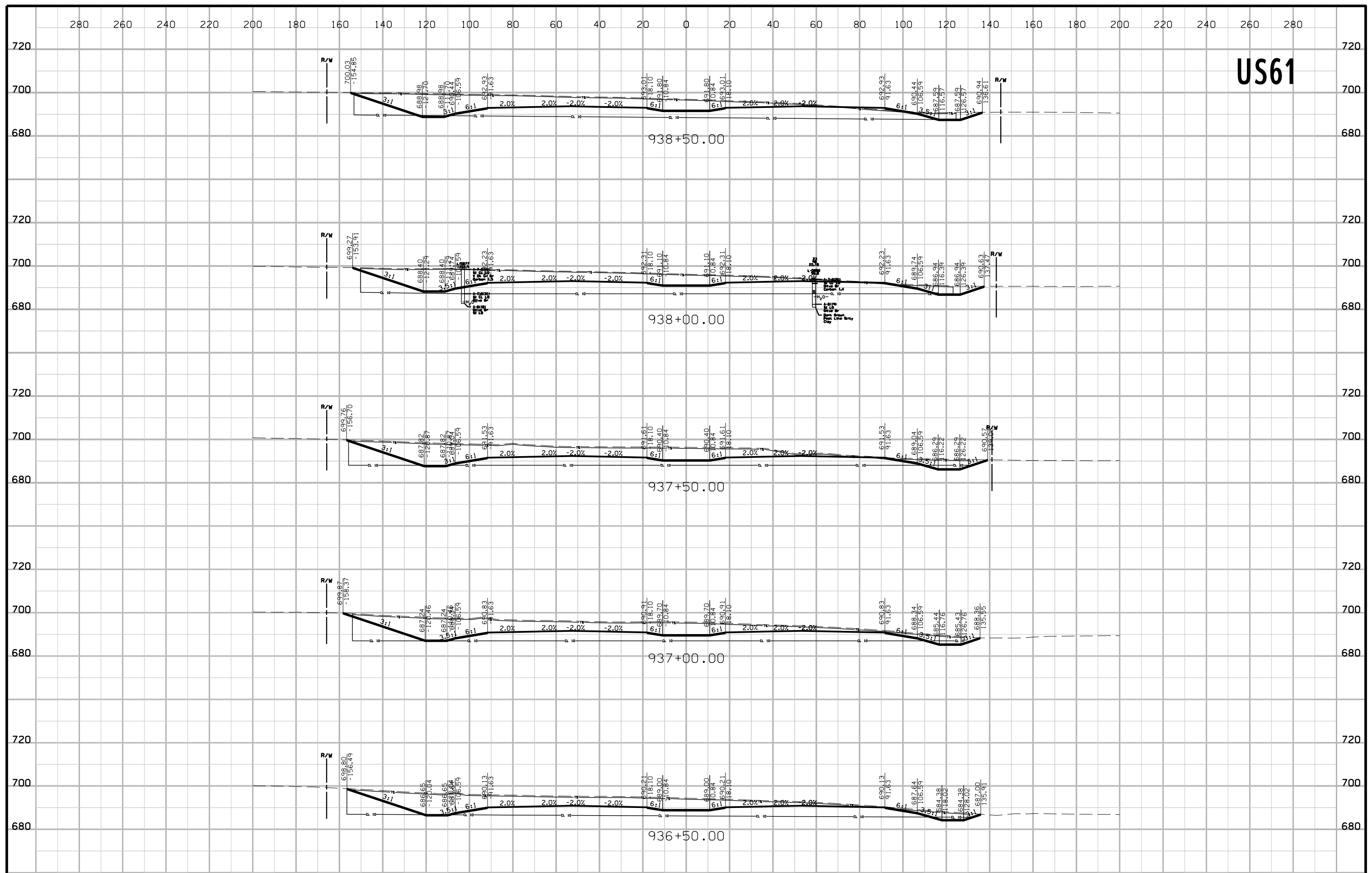
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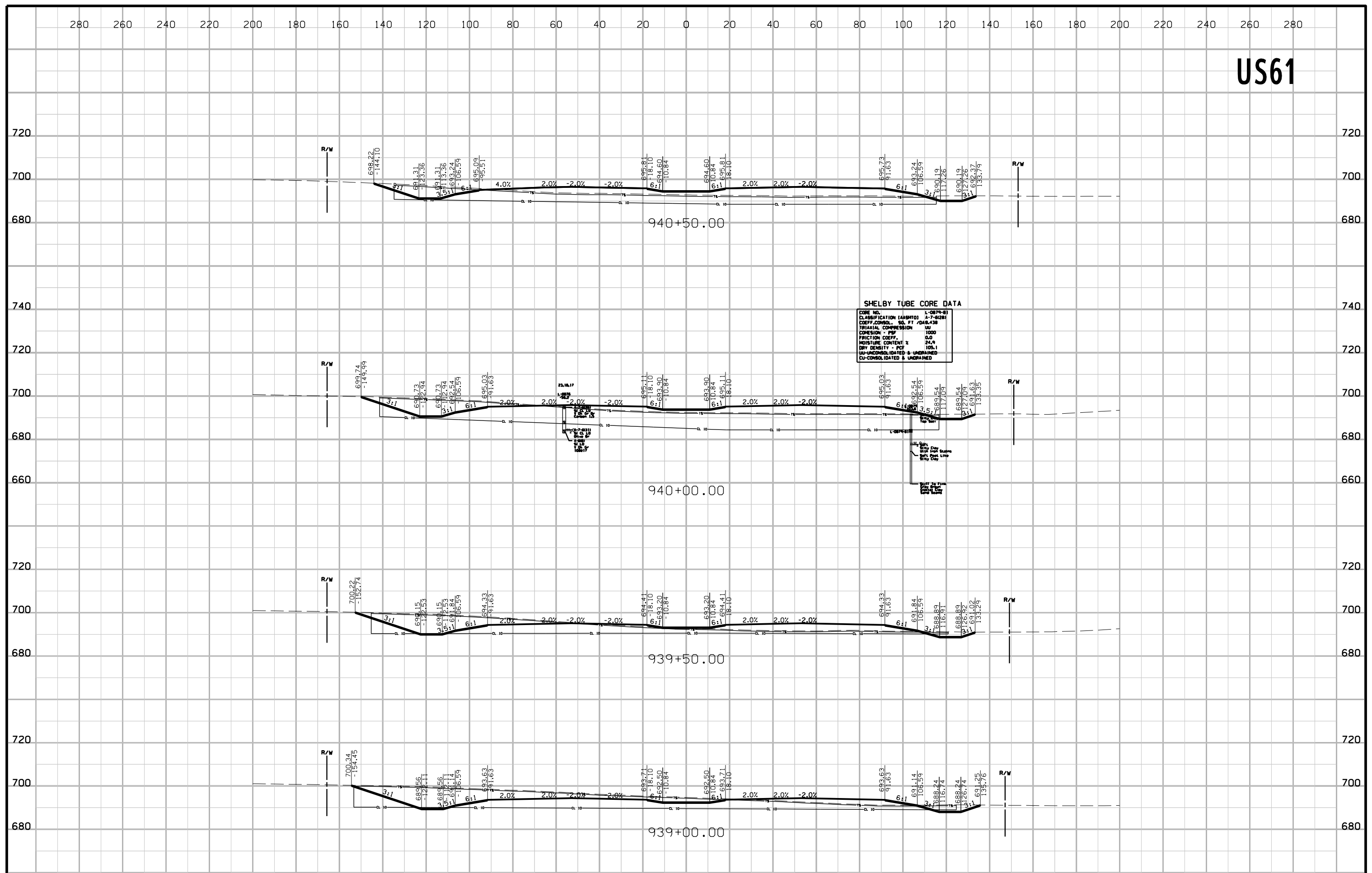
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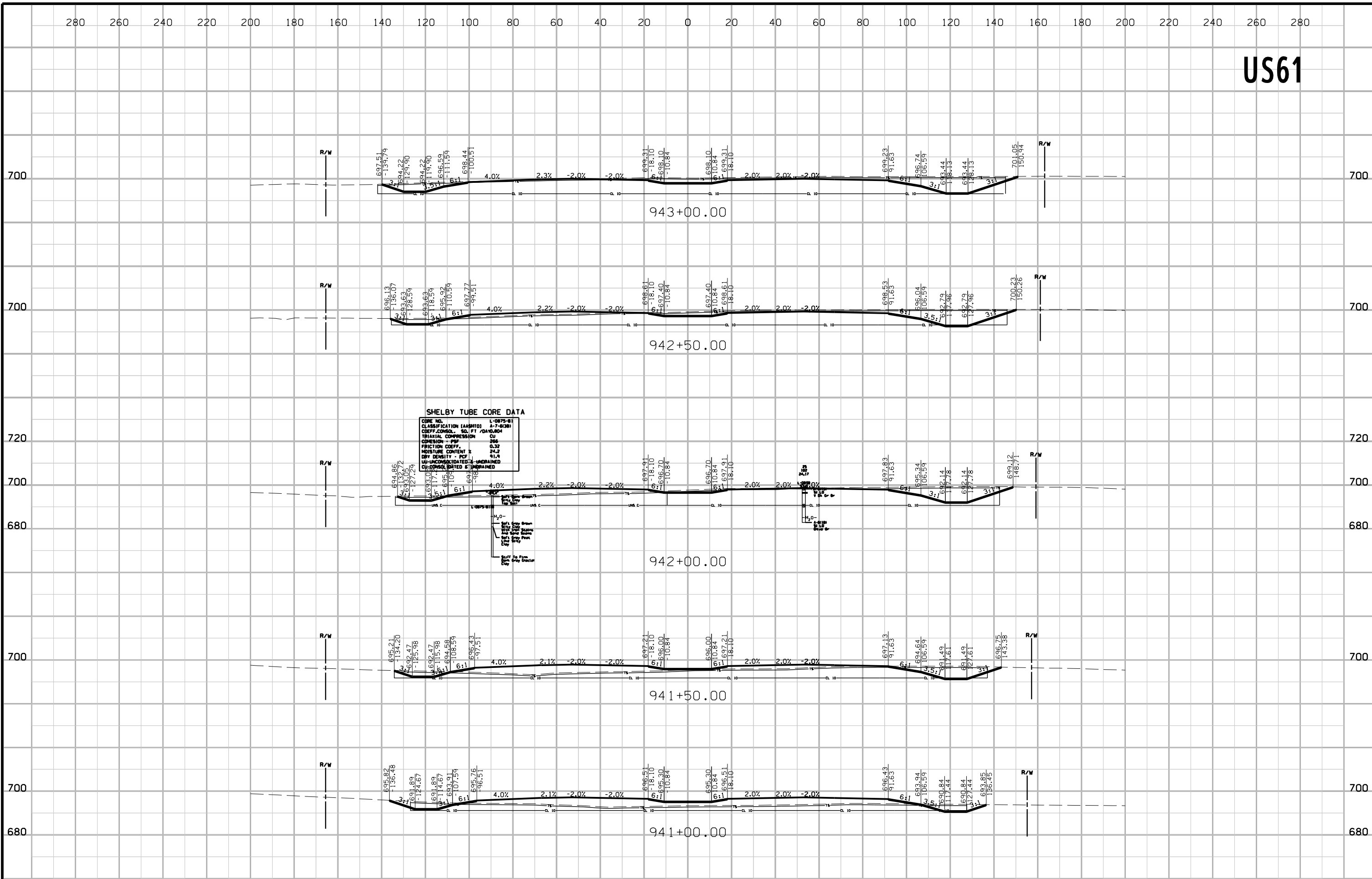
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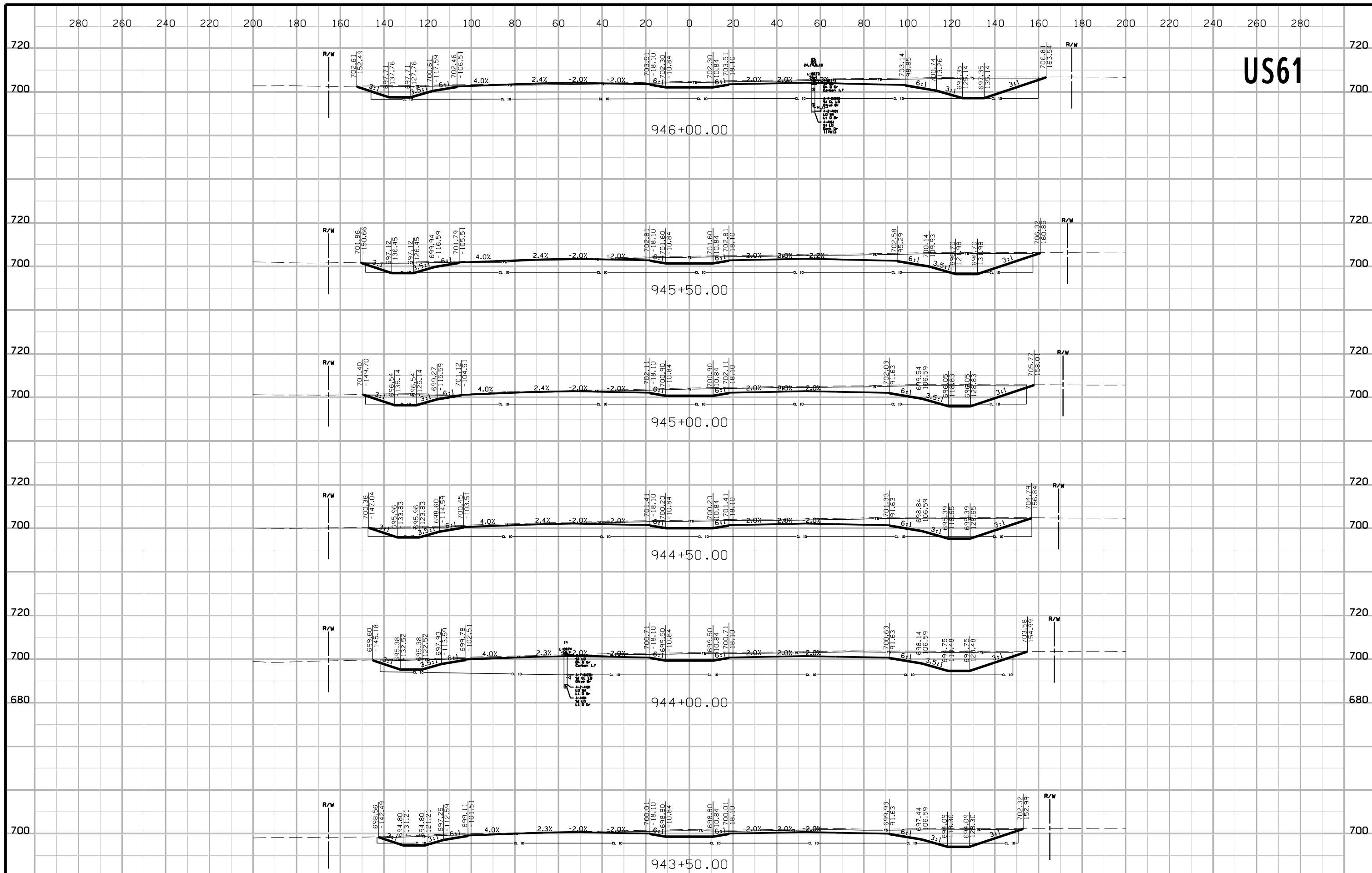


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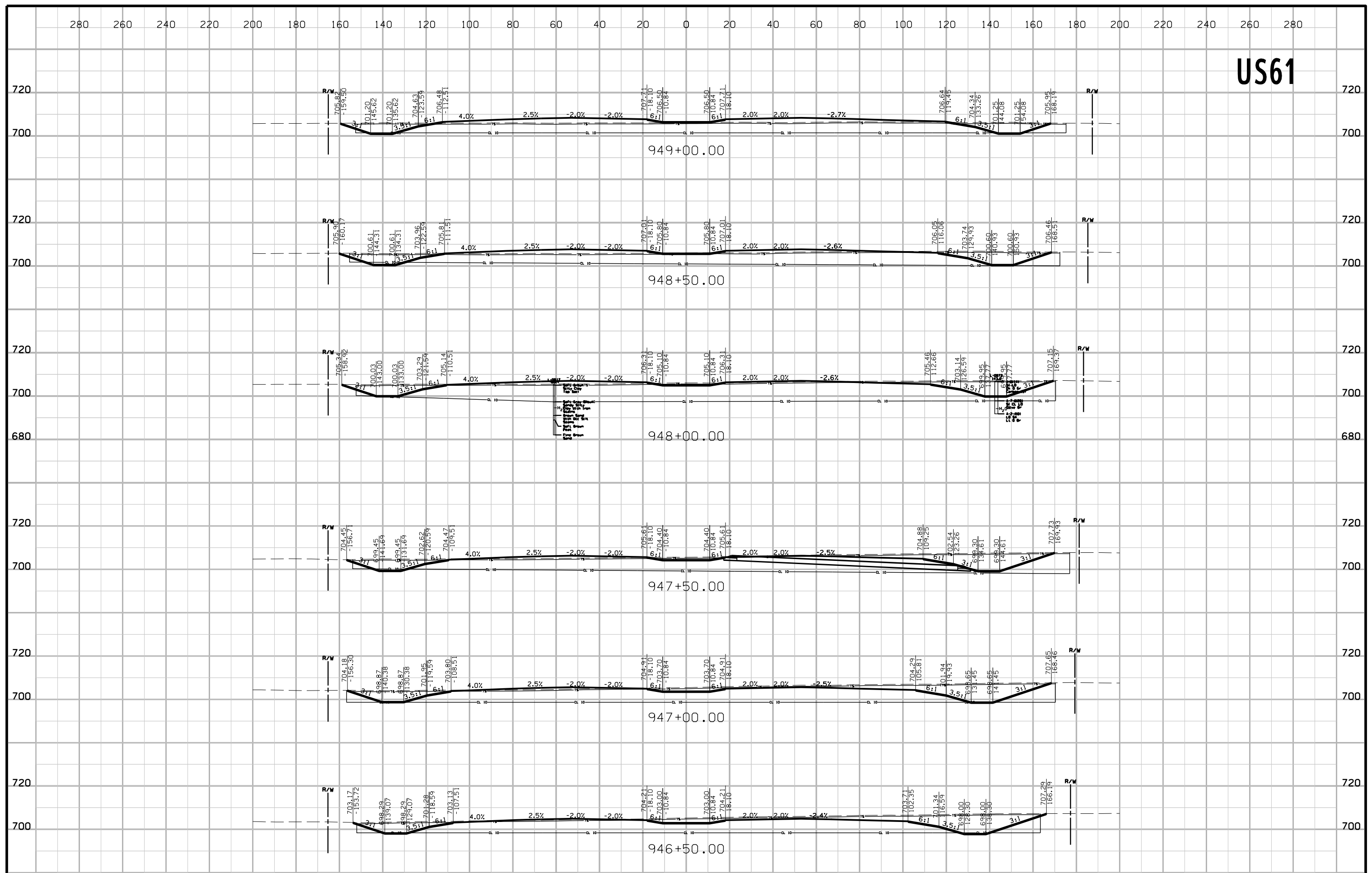
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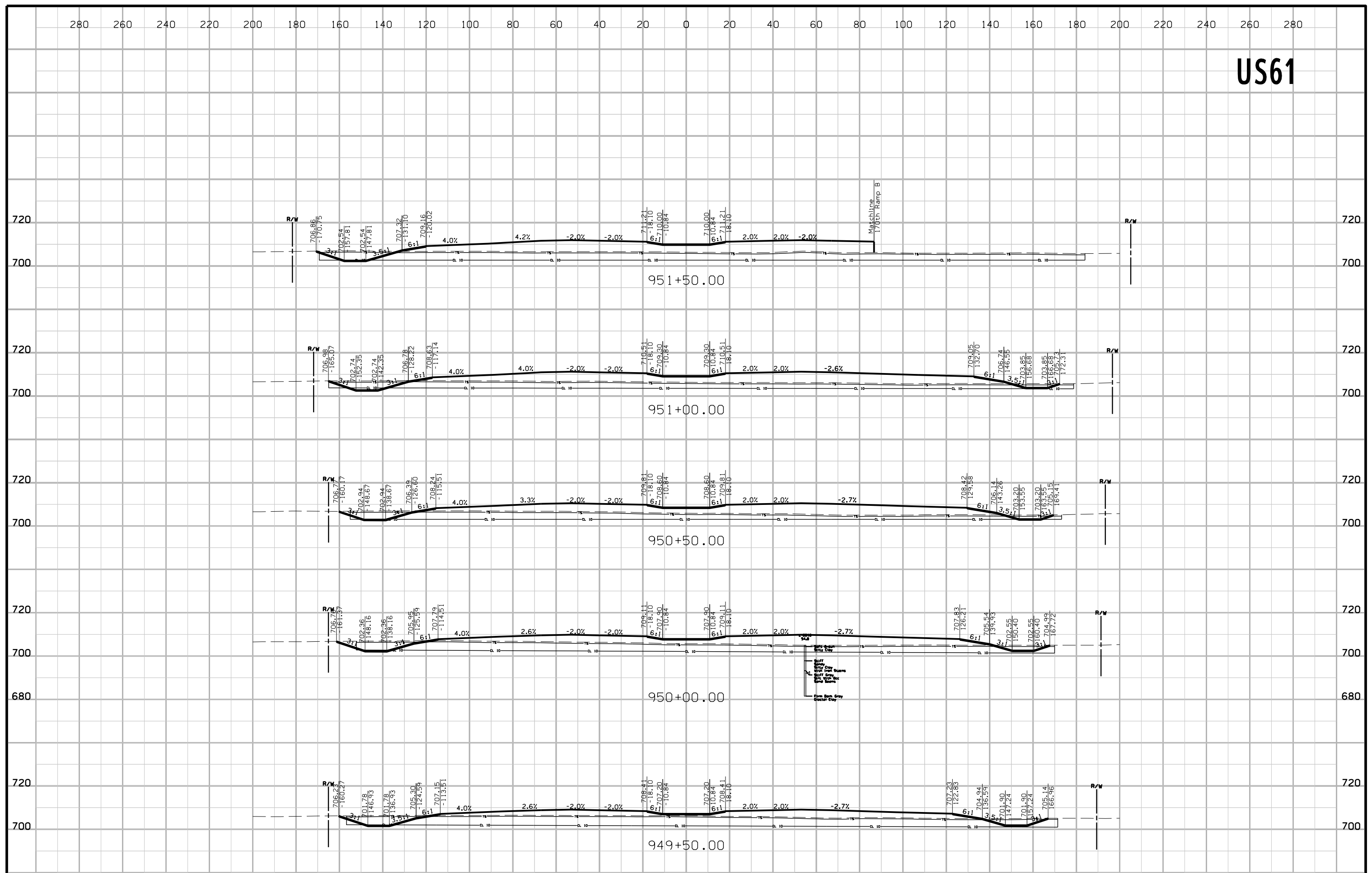


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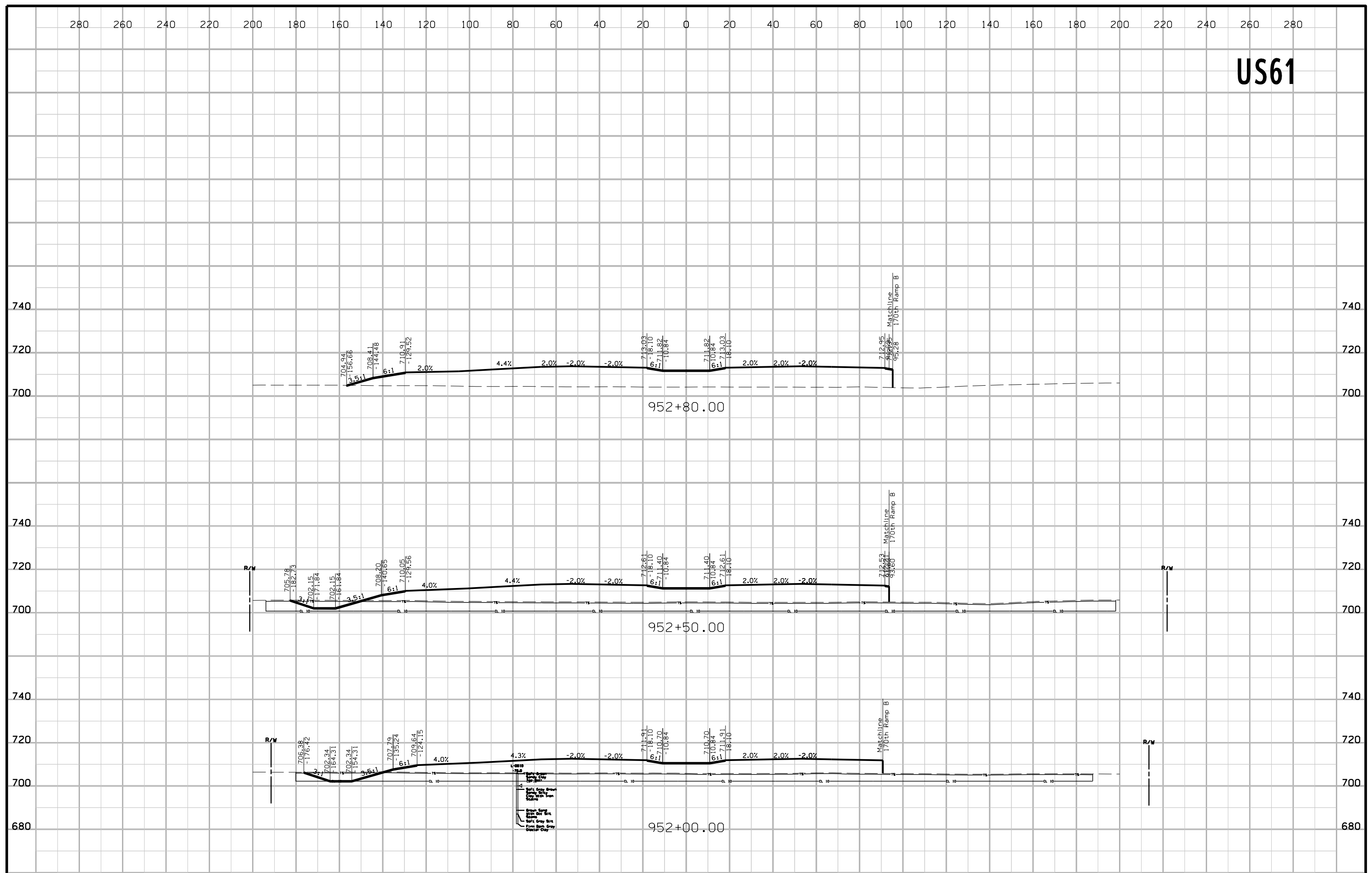
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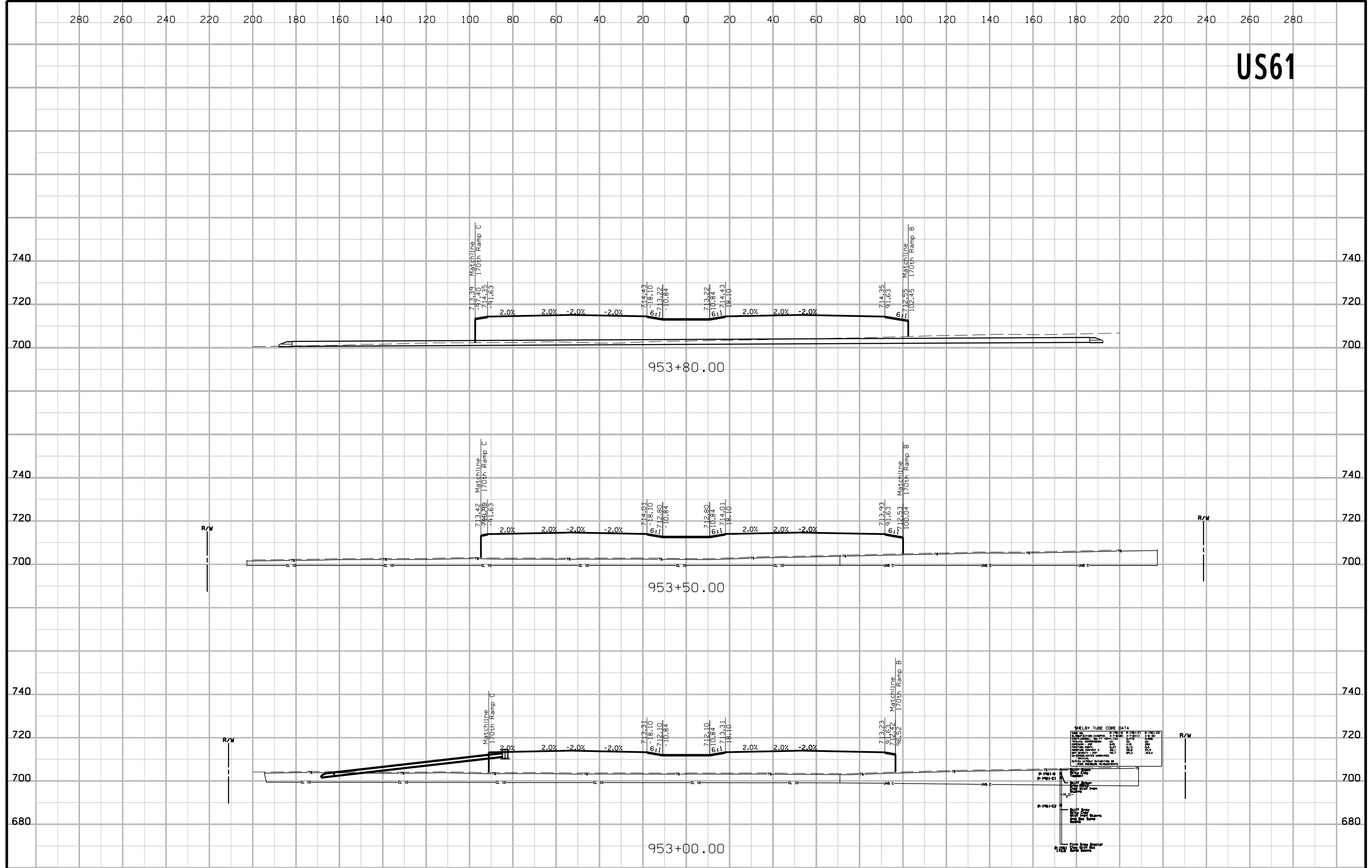
US61



US61



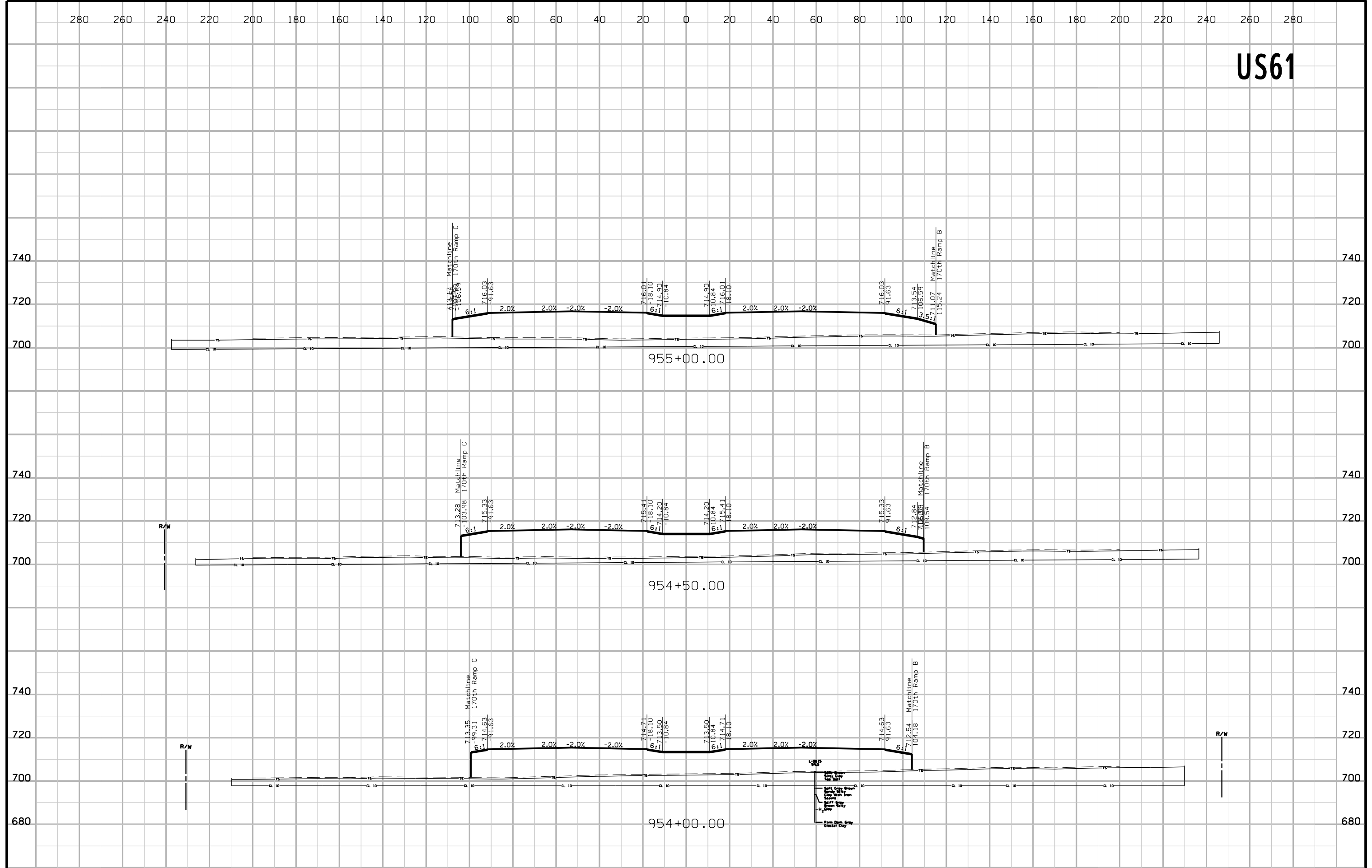
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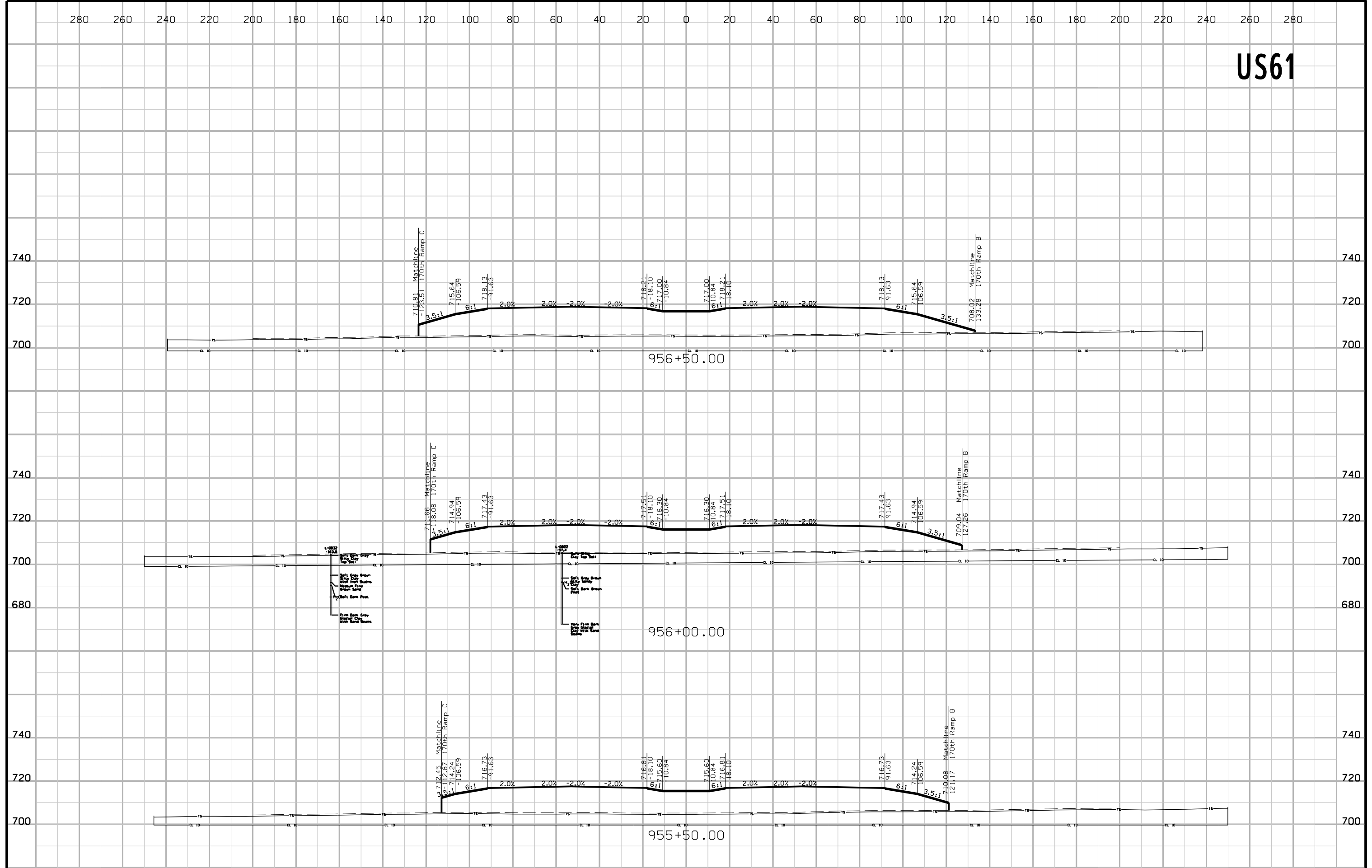
SHELBY TUBE CORE DATA

| Core No. | Location | Depth (ft) | Soil Type | Moisture (%) | Specific Gravity | Unit Weight (pcf) | Void Ratio | Compaction |
|----------|-------------------|------------|-----------|--------------|------------------|-------------------|------------|------------|
| 1 | Station 953+00.00 | 0-12 | CL | 18.5 | 2.65 | 118.0 | 0.65 | 95% |
| 2 | Station 953+00.00 | 12-24 | CL | 18.5 | 2.65 | 118.0 | 0.65 | 95% |
| 3 | Station 953+00.00 | 24-36 | CL | 18.5 | 2.65 | 118.0 | 0.65 | 95% |
| 4 | Station 953+00.00 | 36-48 | CL | 18.5 | 2.65 | 118.0 | 0.65 | 95% |
| 5 | Station 953+00.00 | 48-60 | CL | 18.5 | 2.65 | 118.0 | 0.65 | 95% |

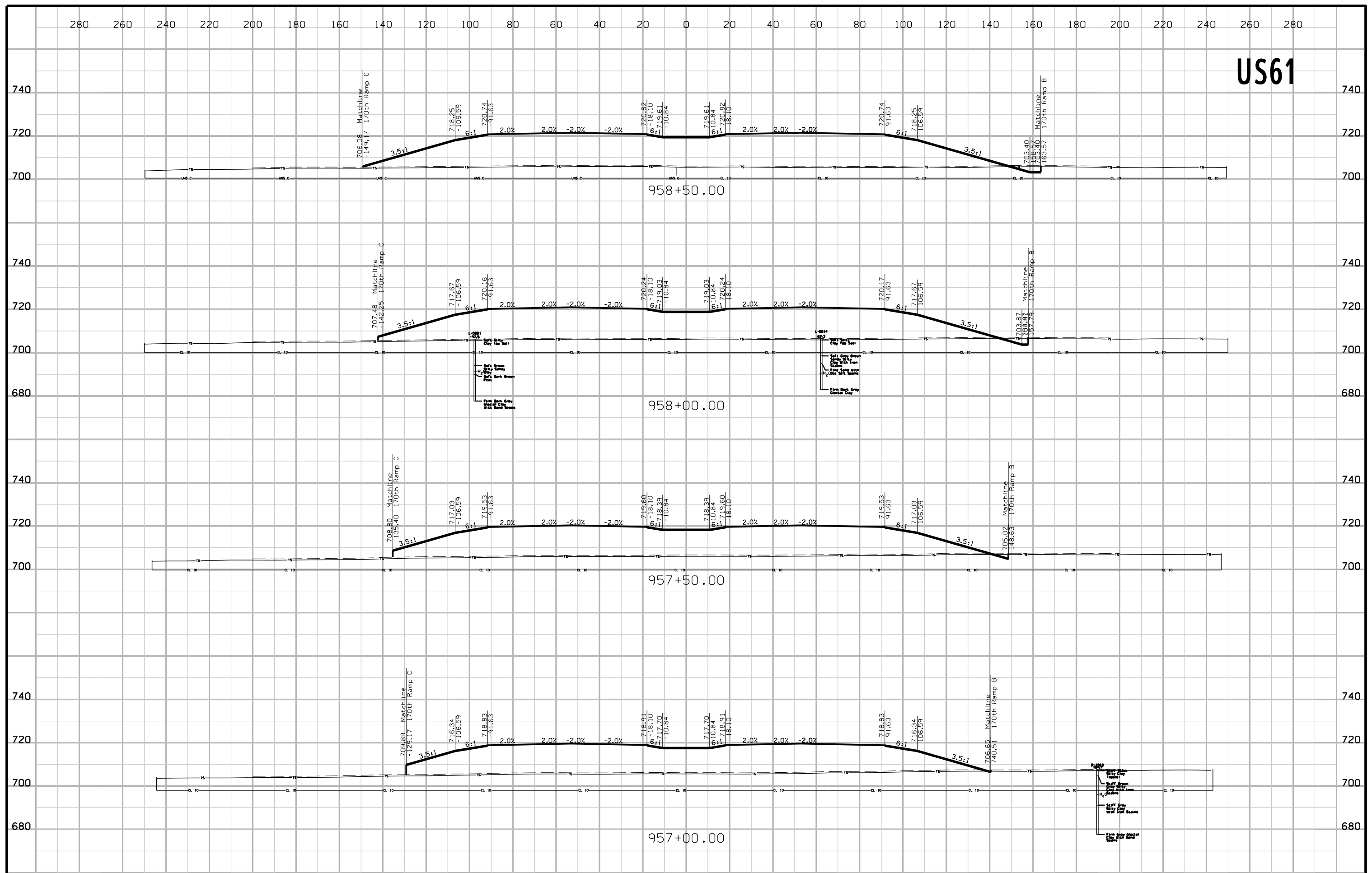
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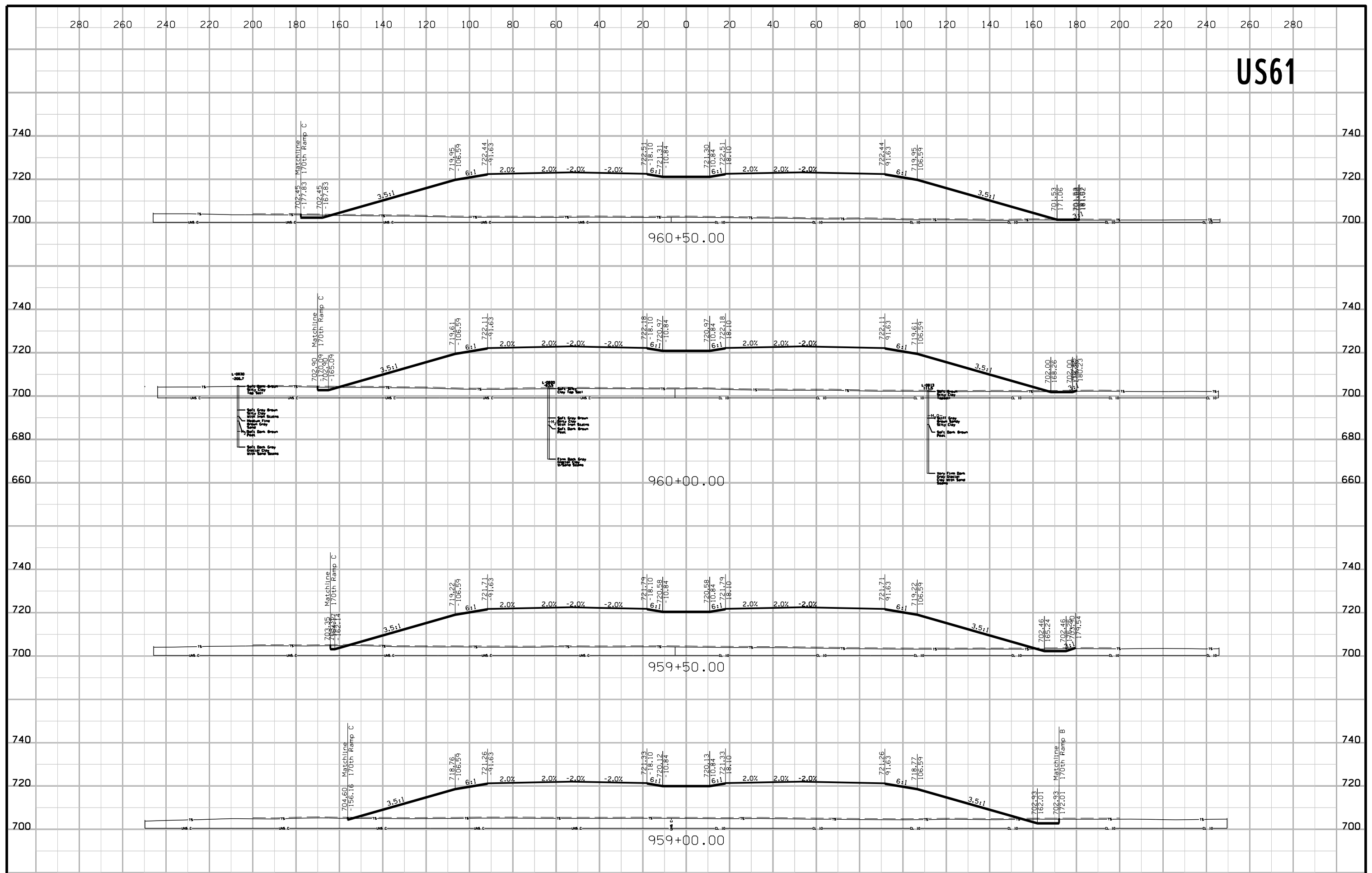
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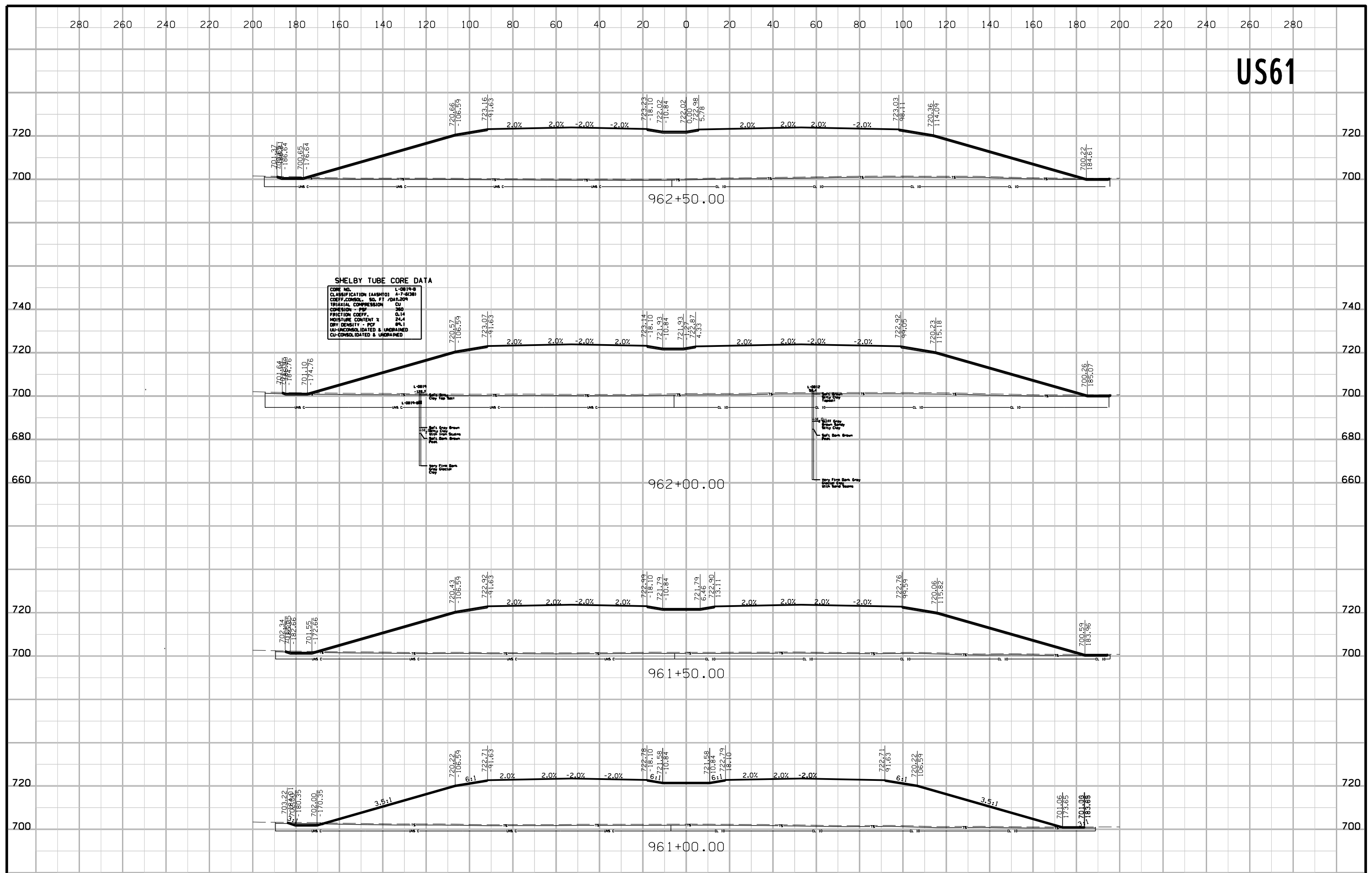
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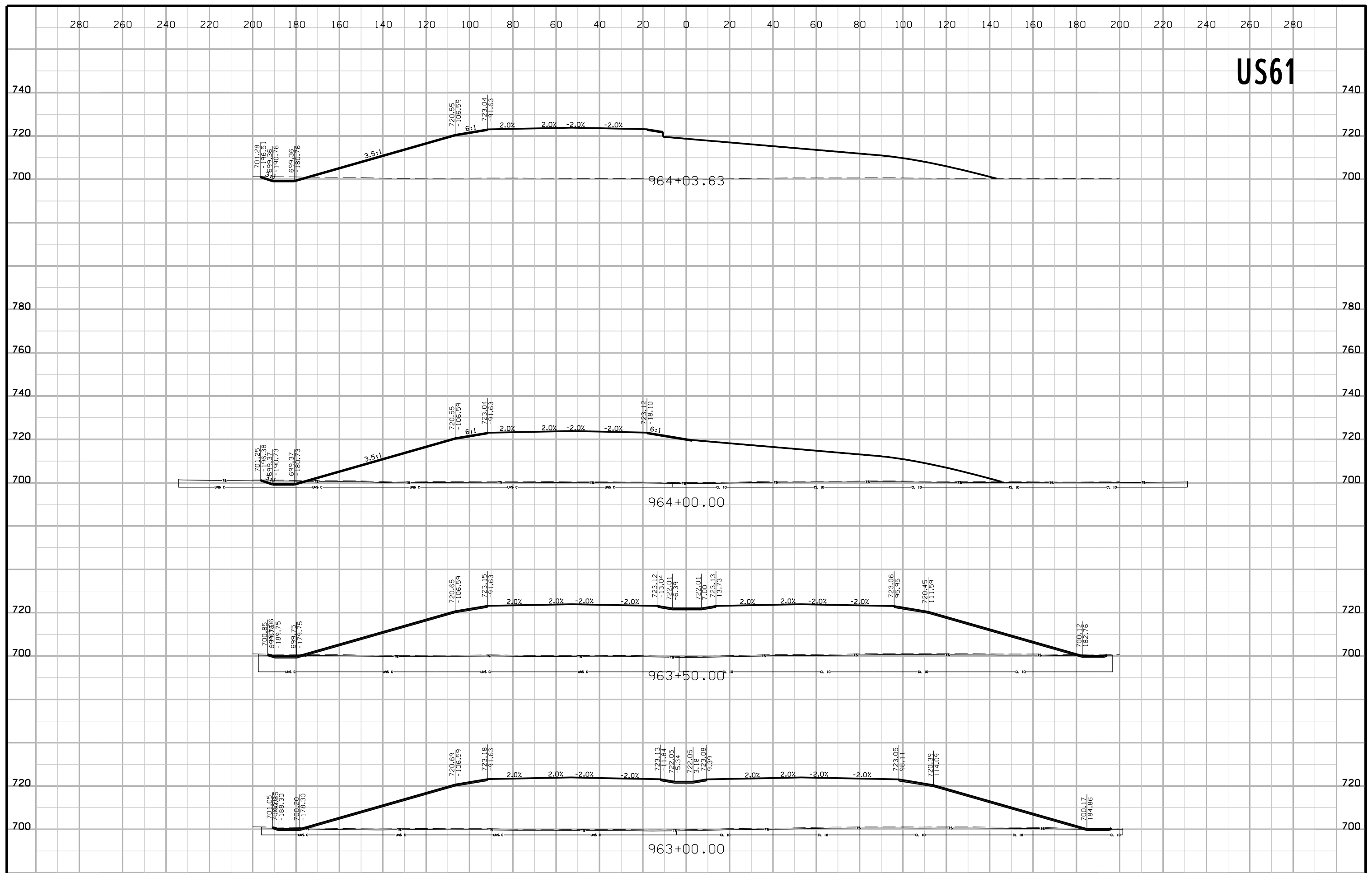
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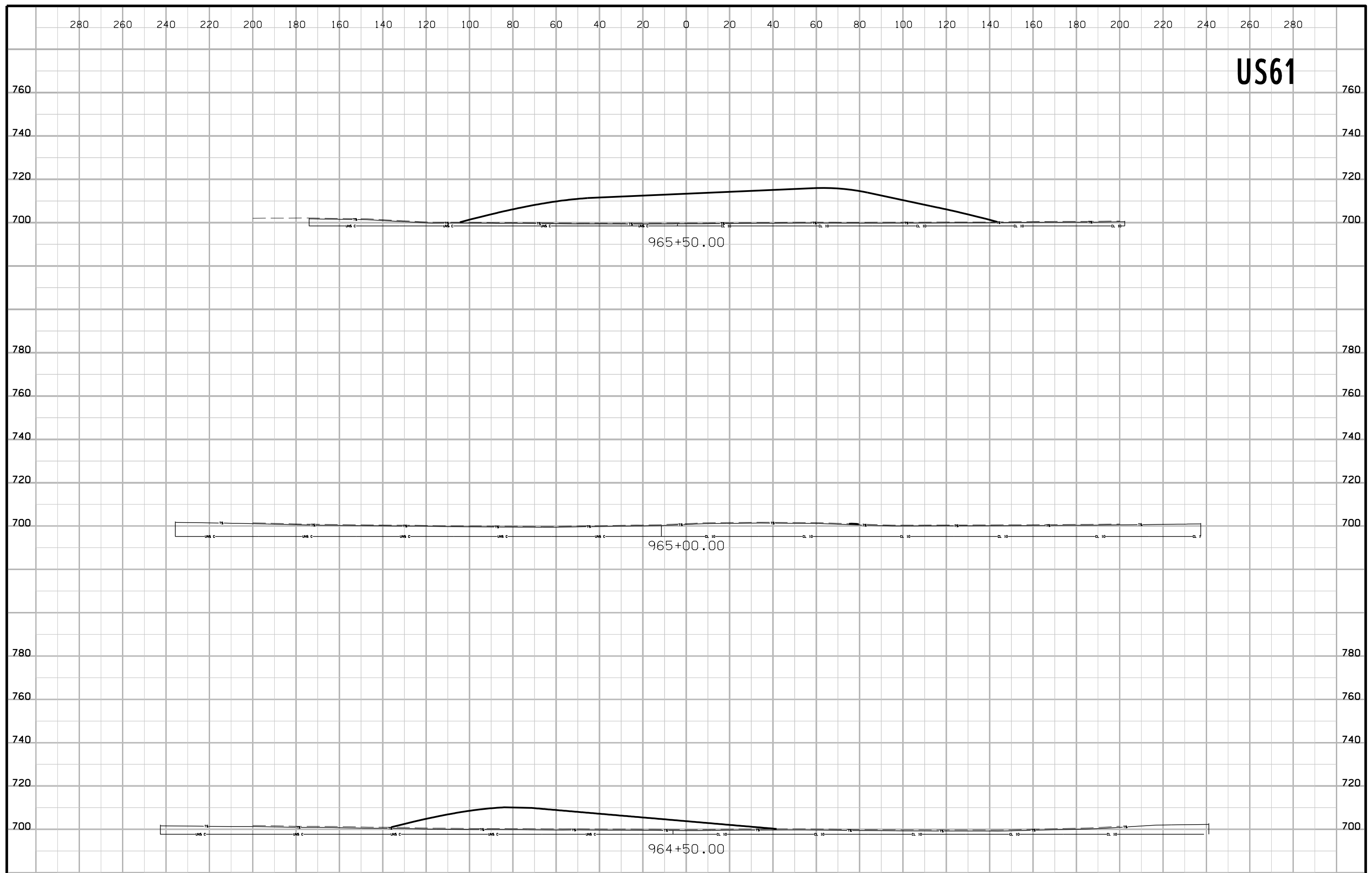
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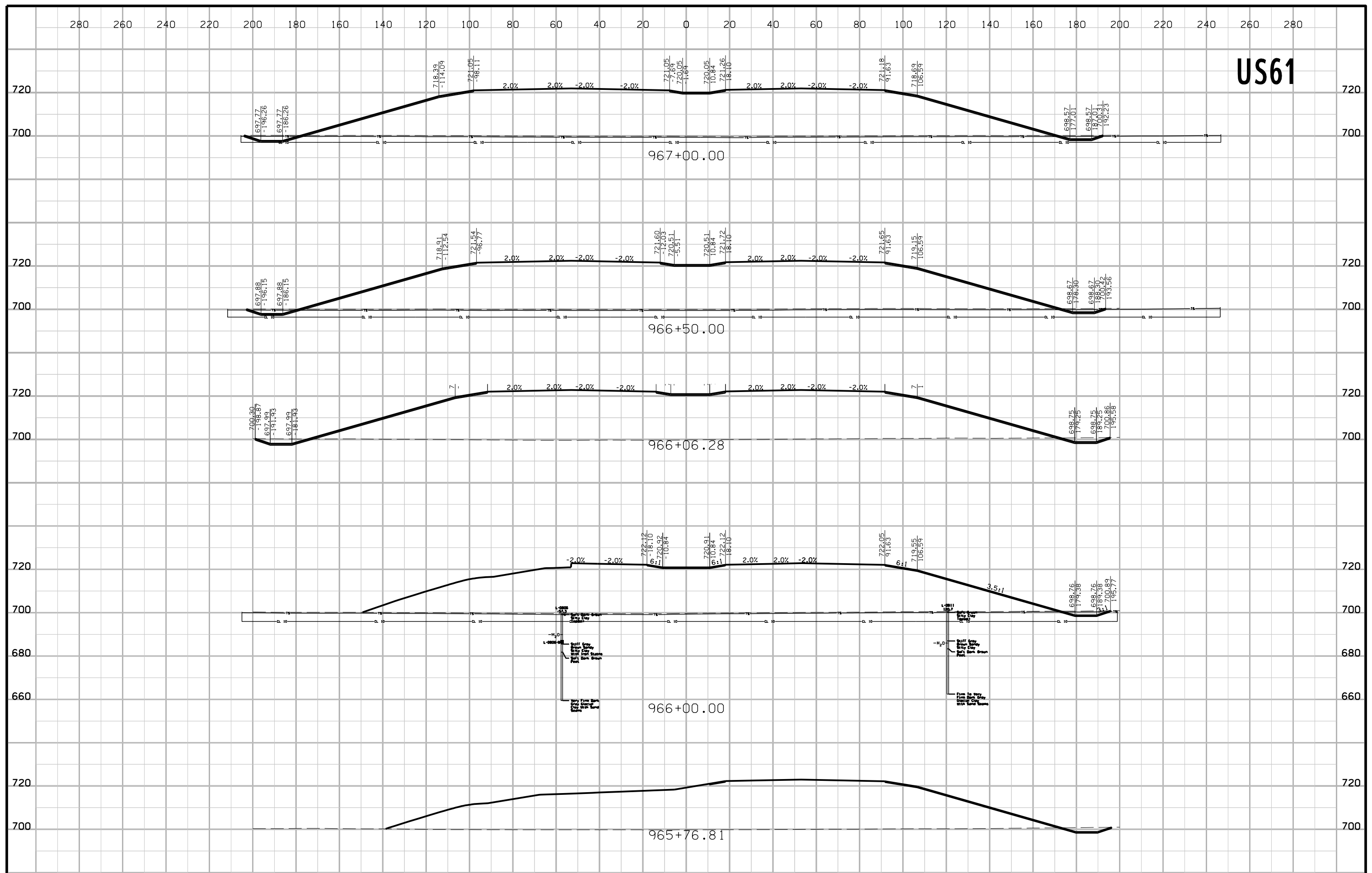
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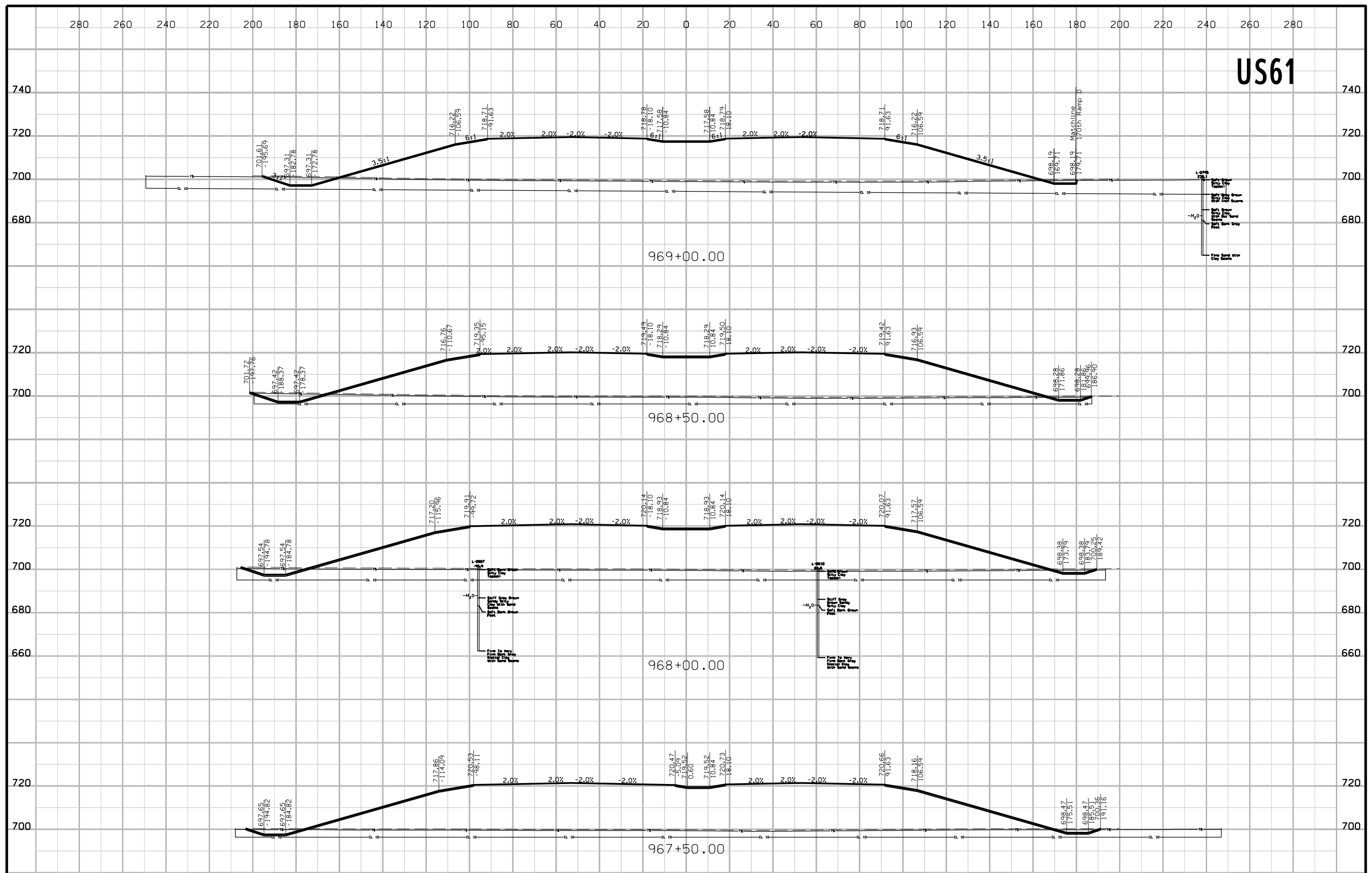
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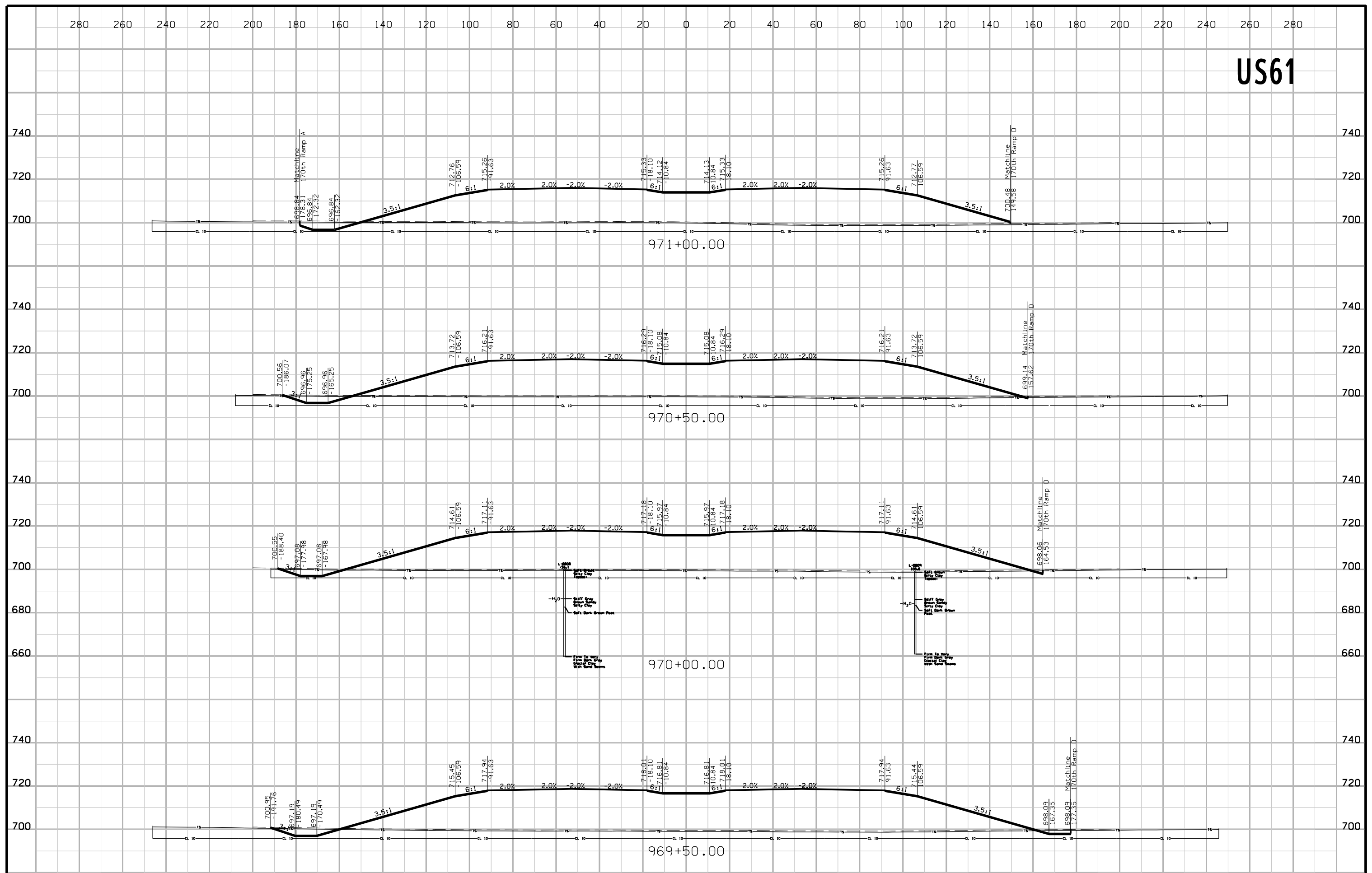
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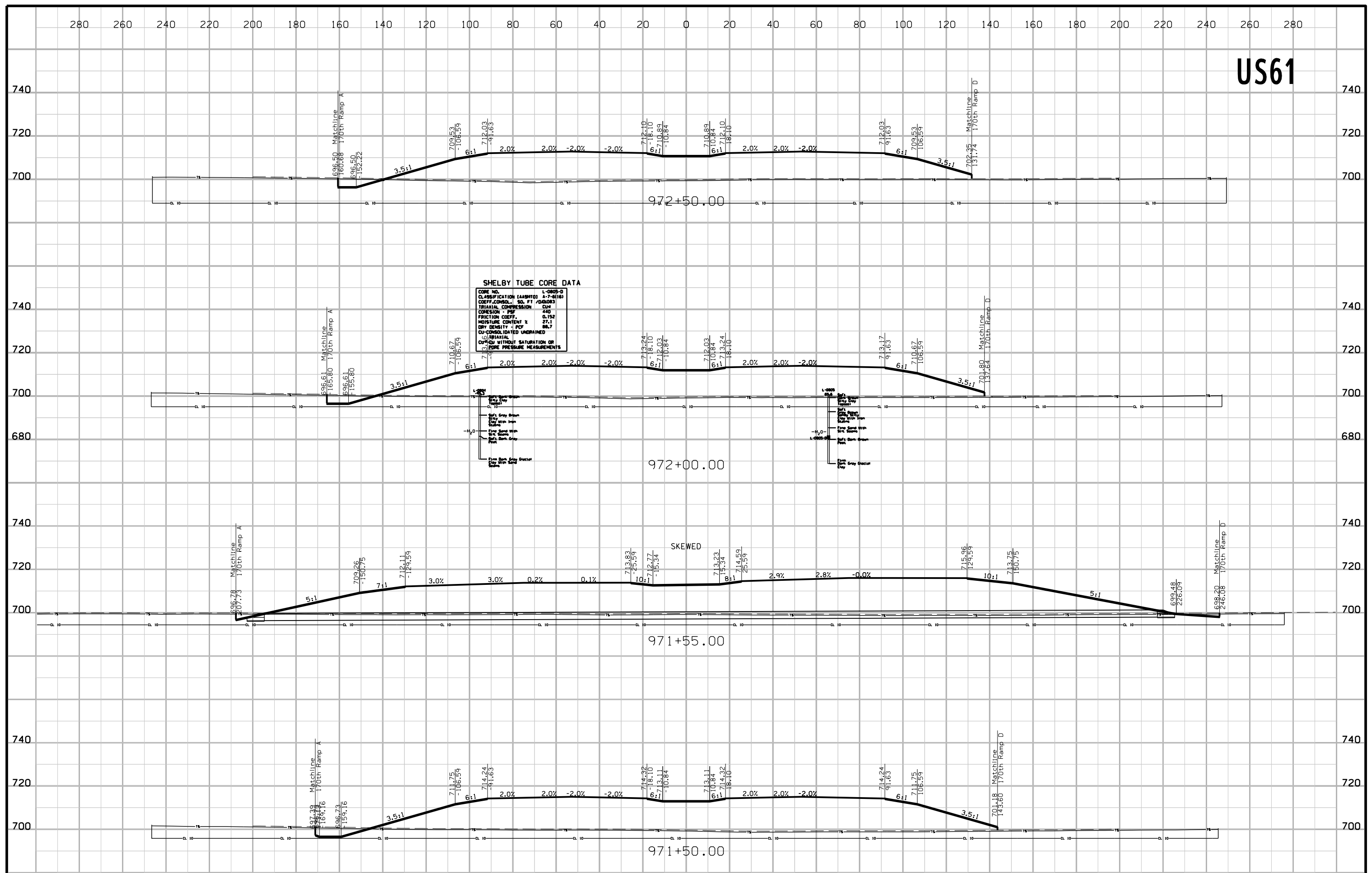
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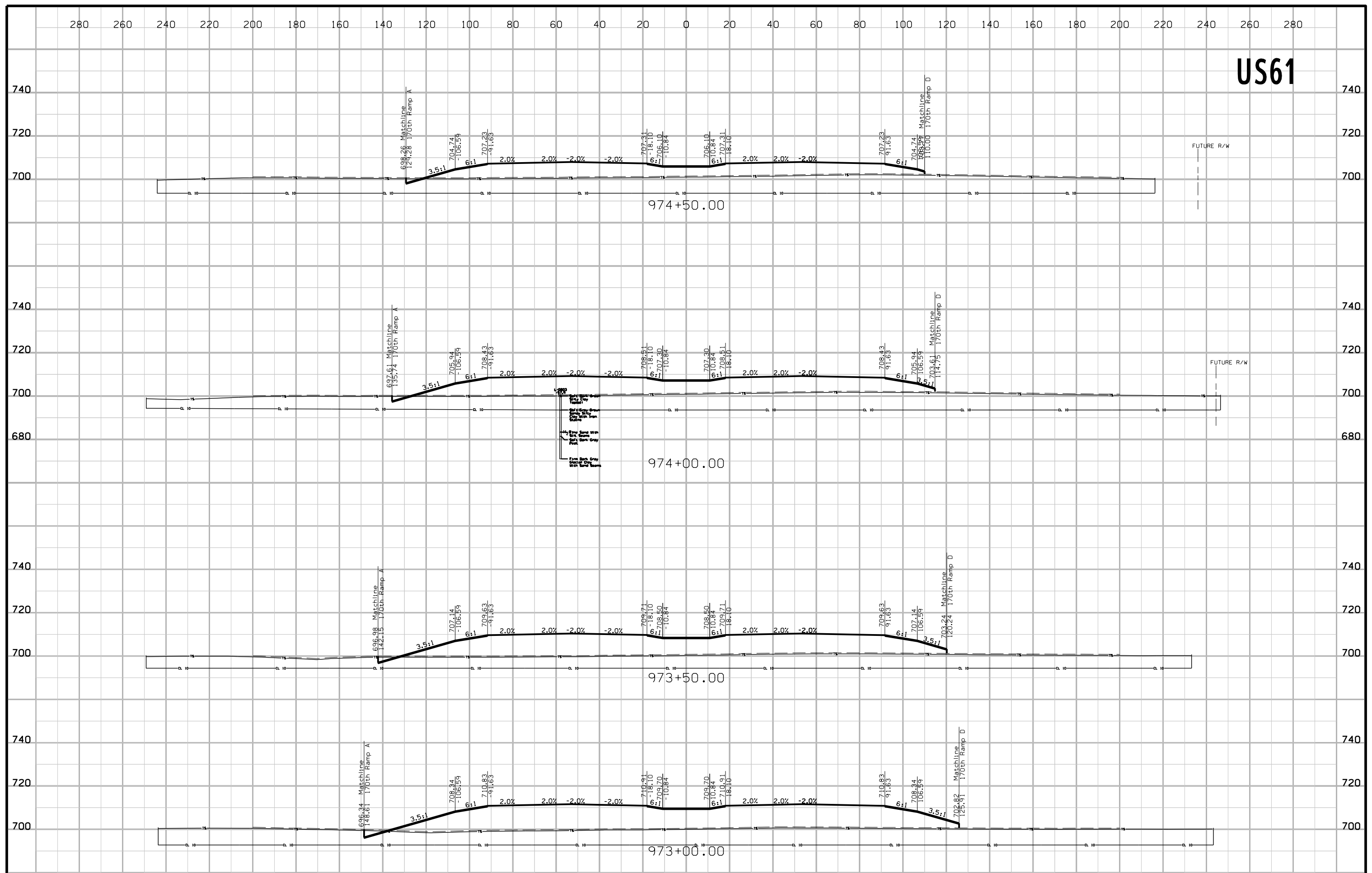
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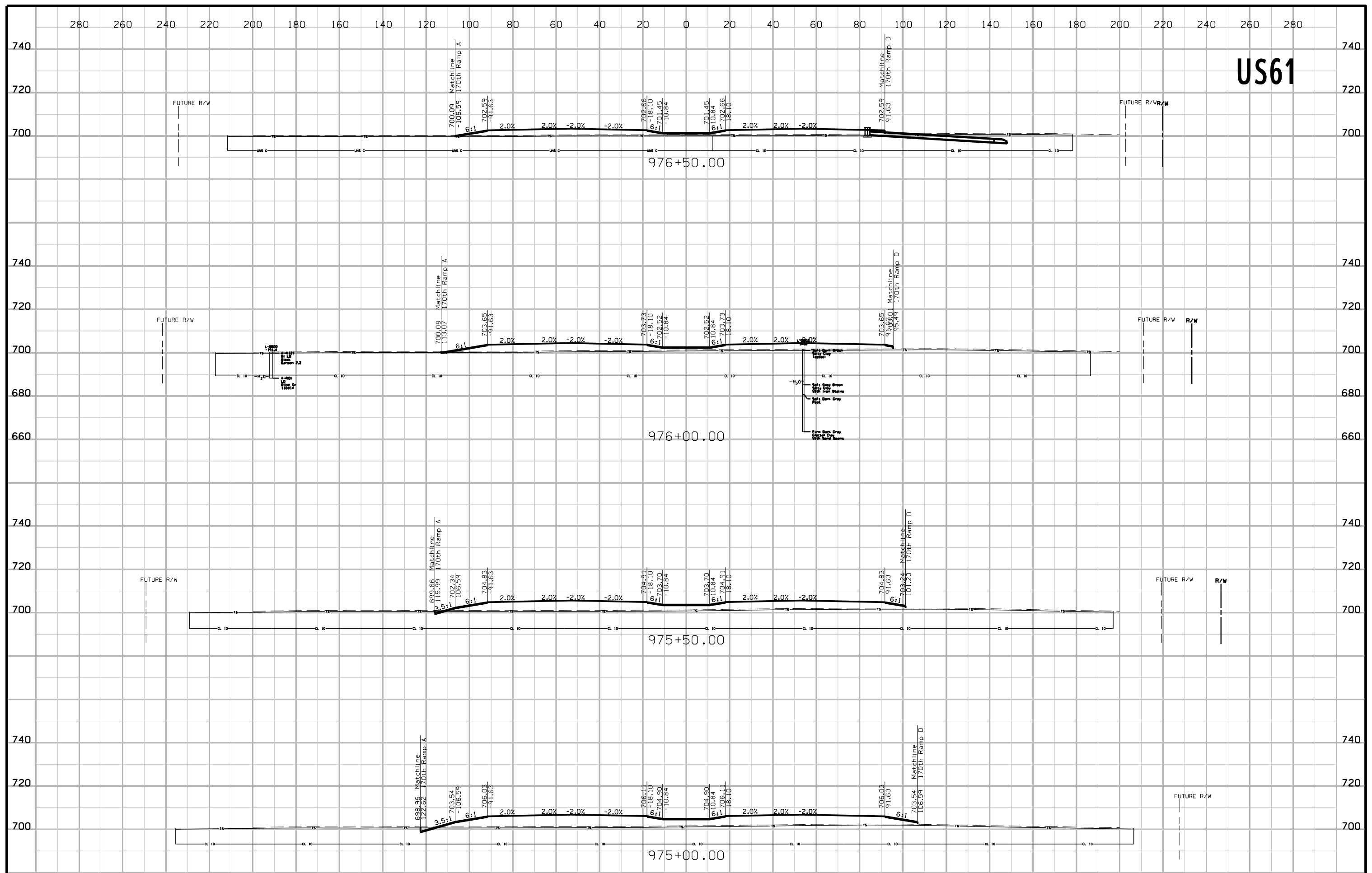
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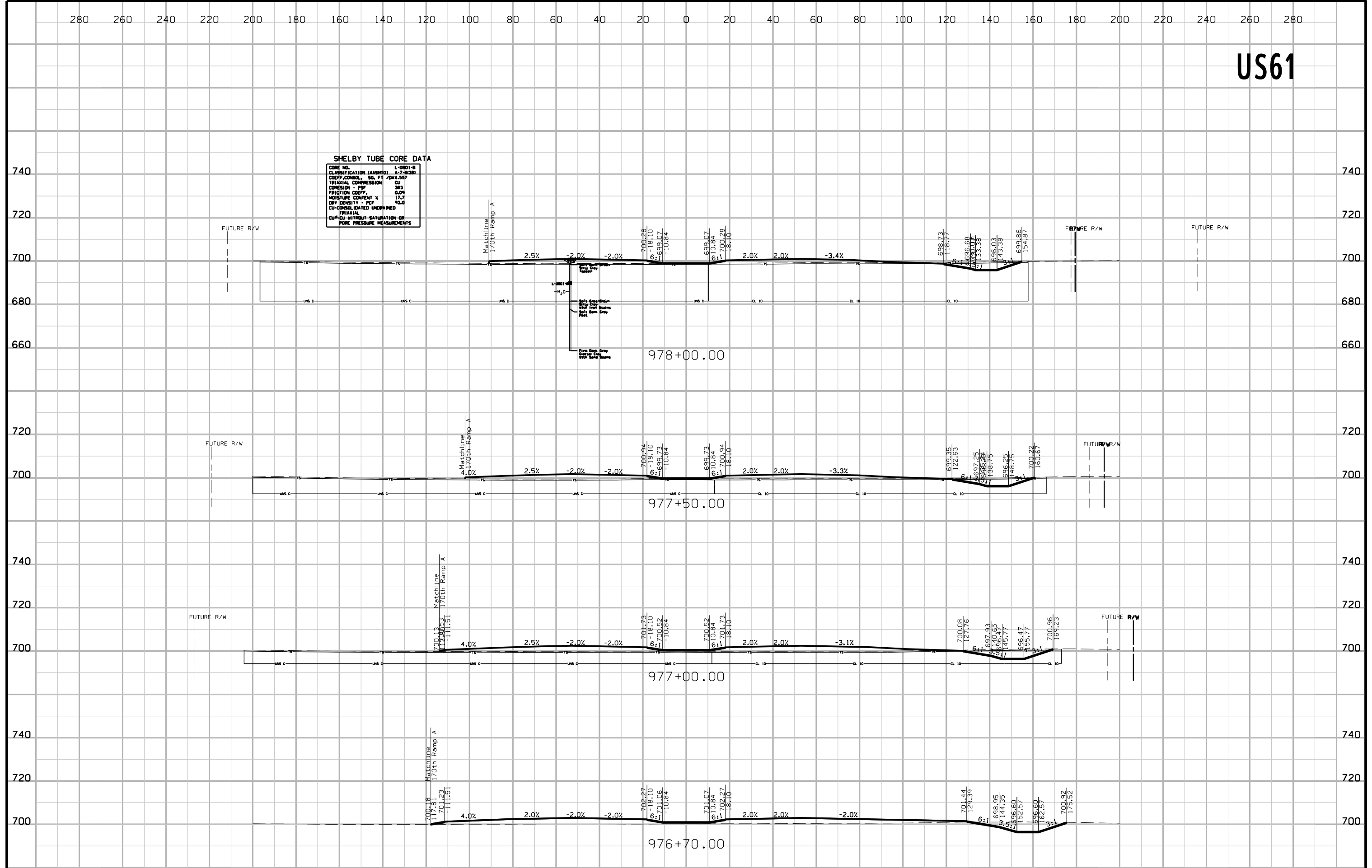
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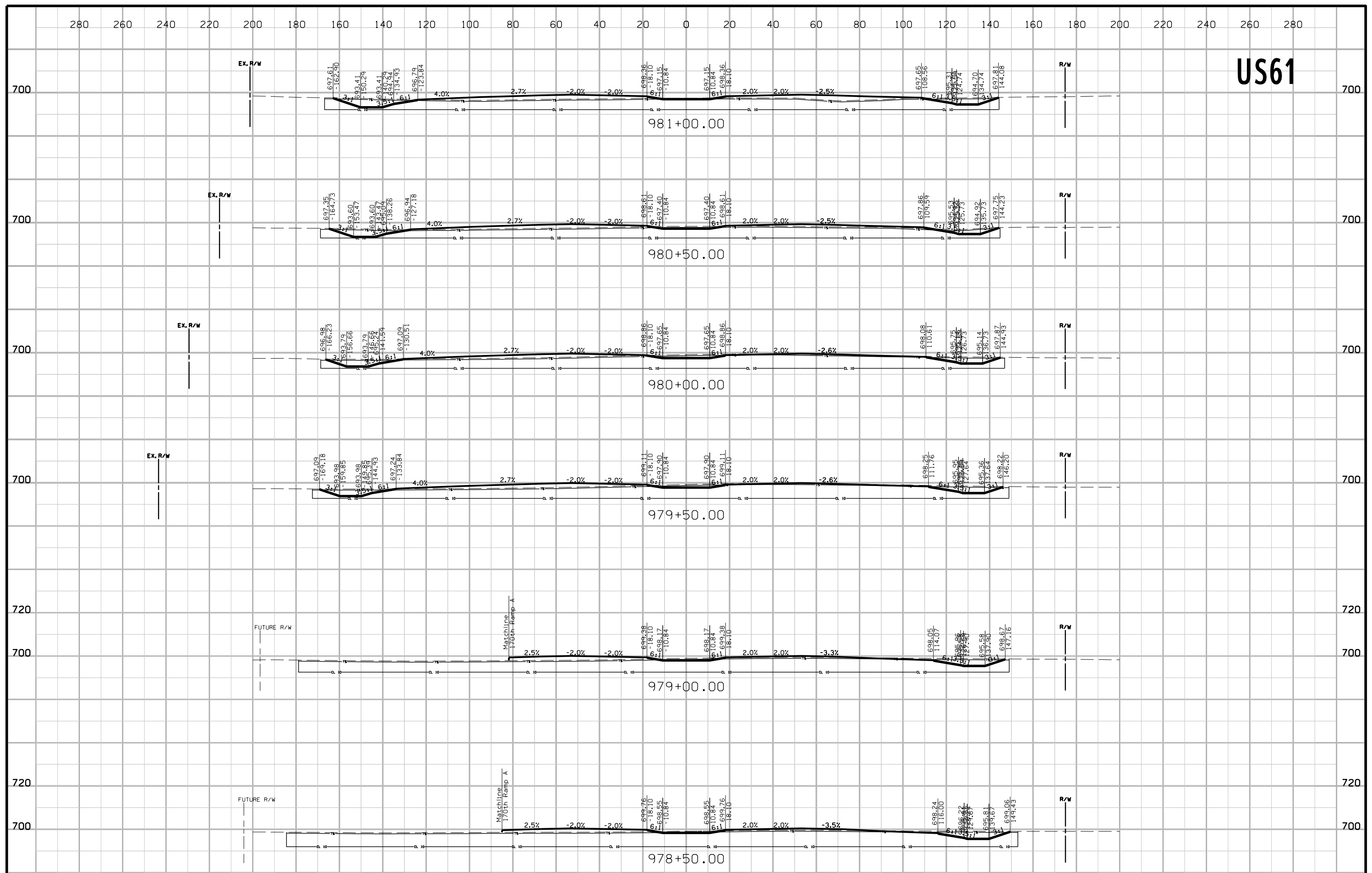
US61

SHELBY TUBE CORE DATA

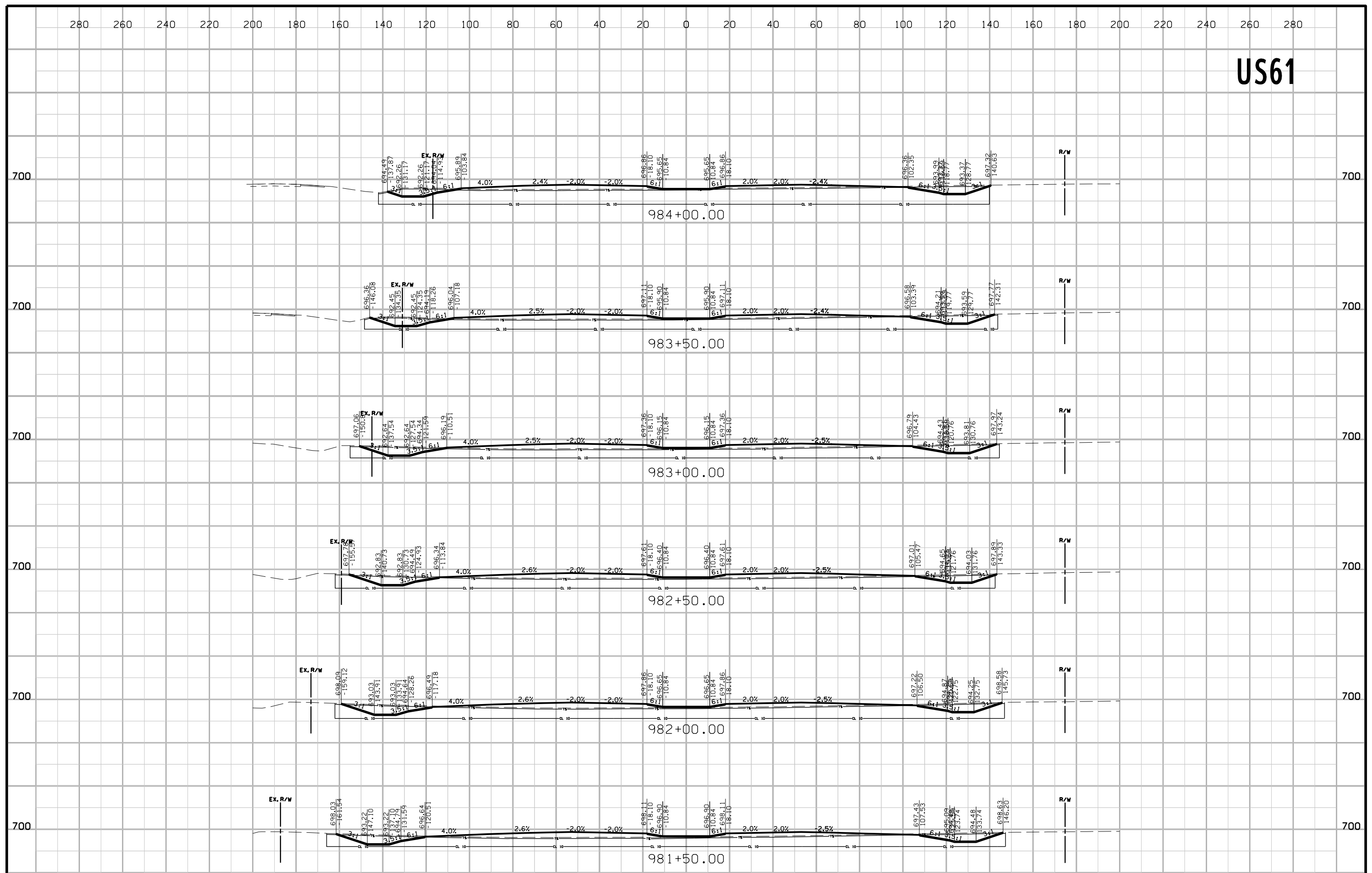
| | |
|--|-----------|
| CORE NO. | L-0801-B |
| CLASSIFICATION (AASHTO) | A-7-6(38) |
| COEFF. CONSOL. SO. FT / DAY | 0.57 |
| TRIAxIAL COMPRESSION | CU |
| COHESION - PSF | 303 |
| FRICITION COEFF. | 0.09 |
| MOISTURE CONTENT % | 17.7 |
| DRY DENSITY - PCF | 93.0 |
| CU-CONSOLIDATED UNDRAINED TRIAXIAL | |
| CU-CU WITHOUT SATURATION OR PORE PRESSURE MEASUREMENTS | |



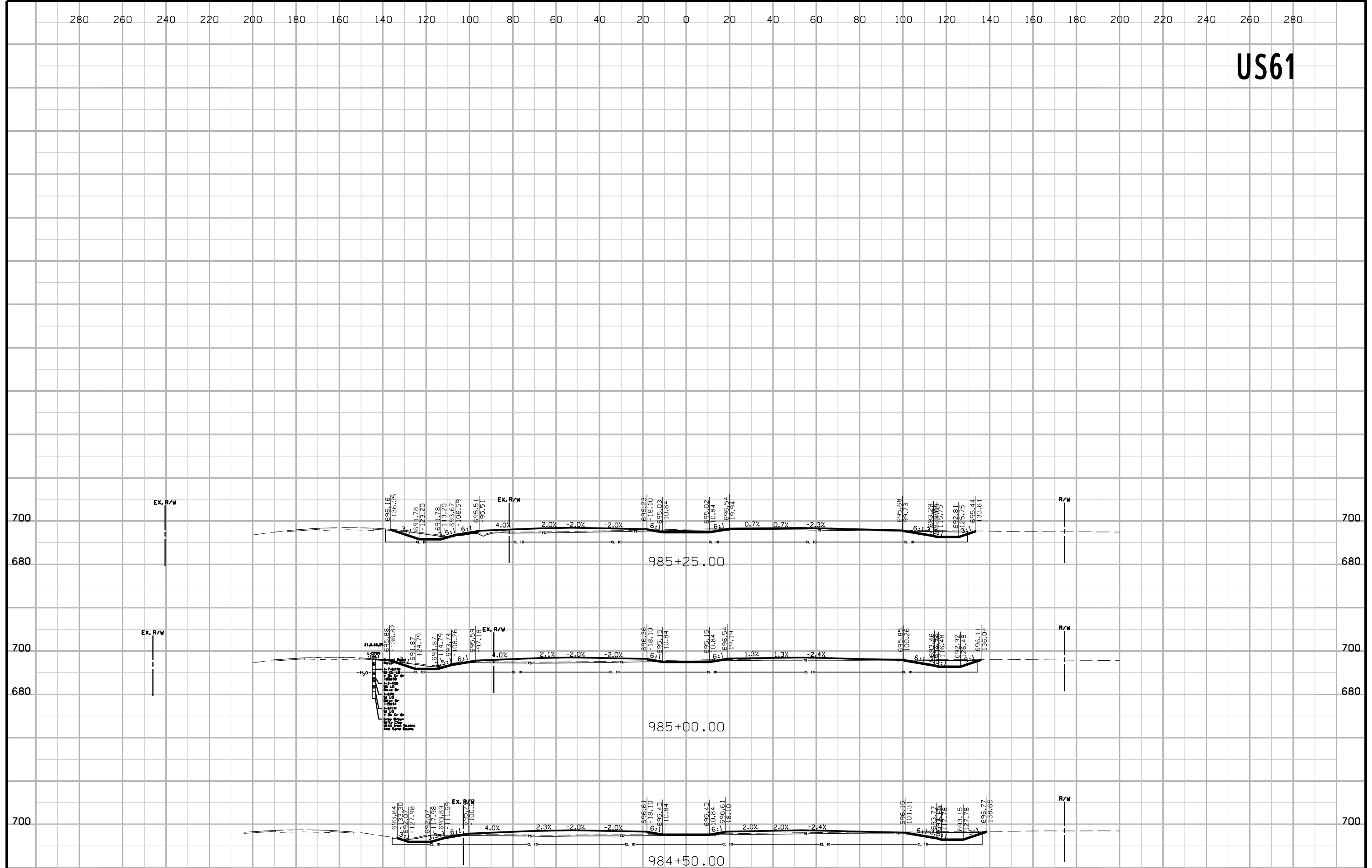
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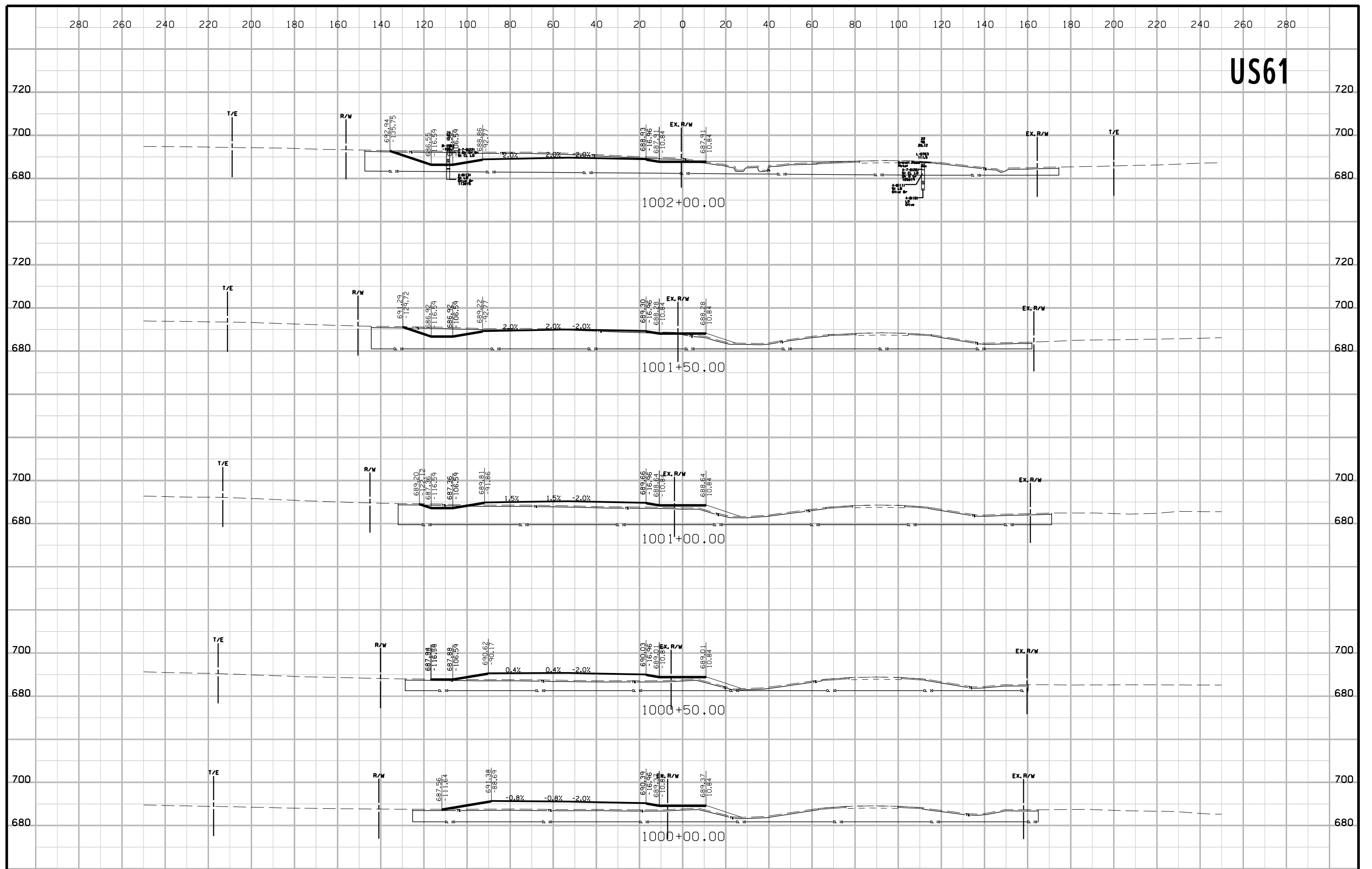
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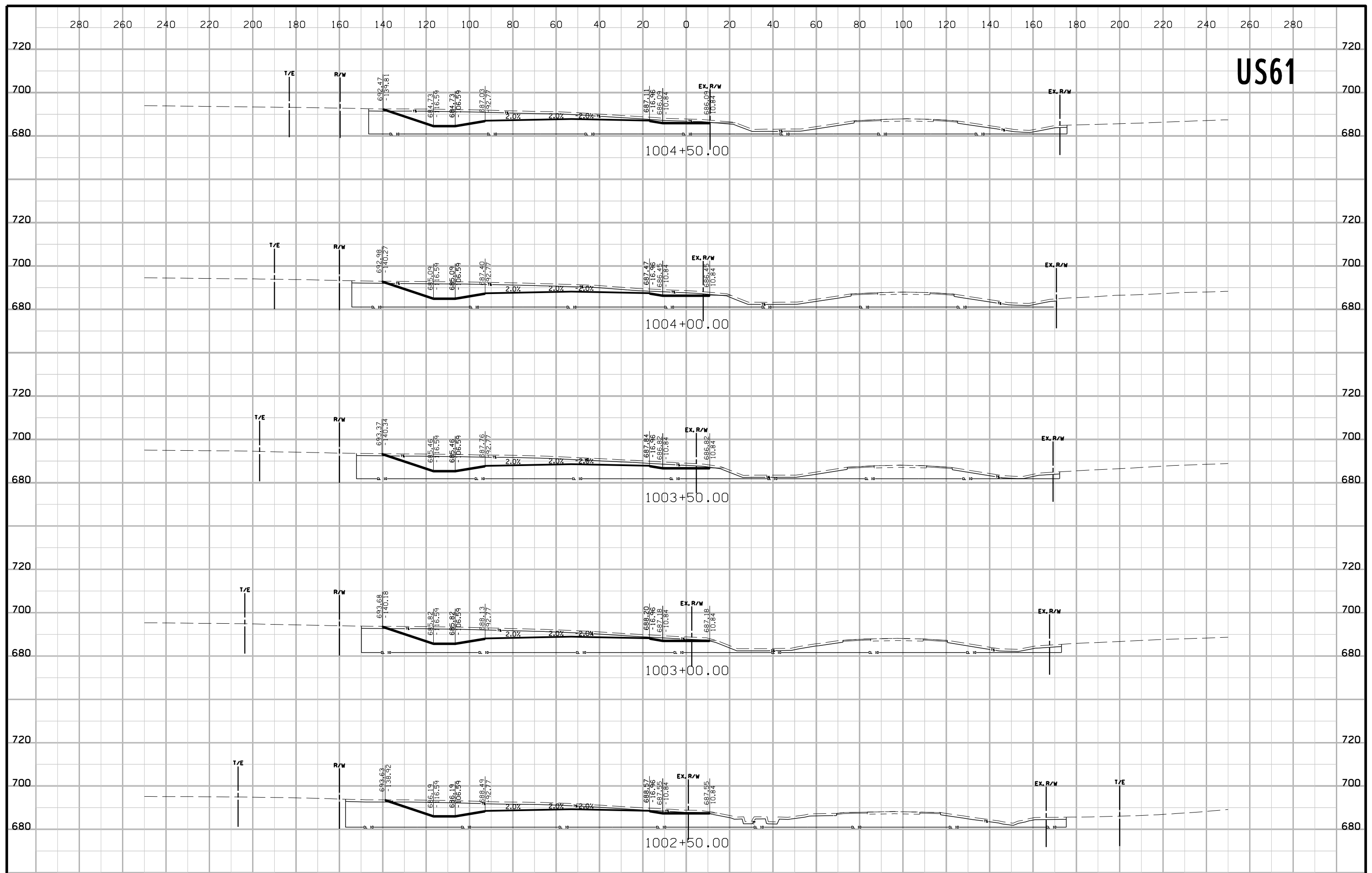
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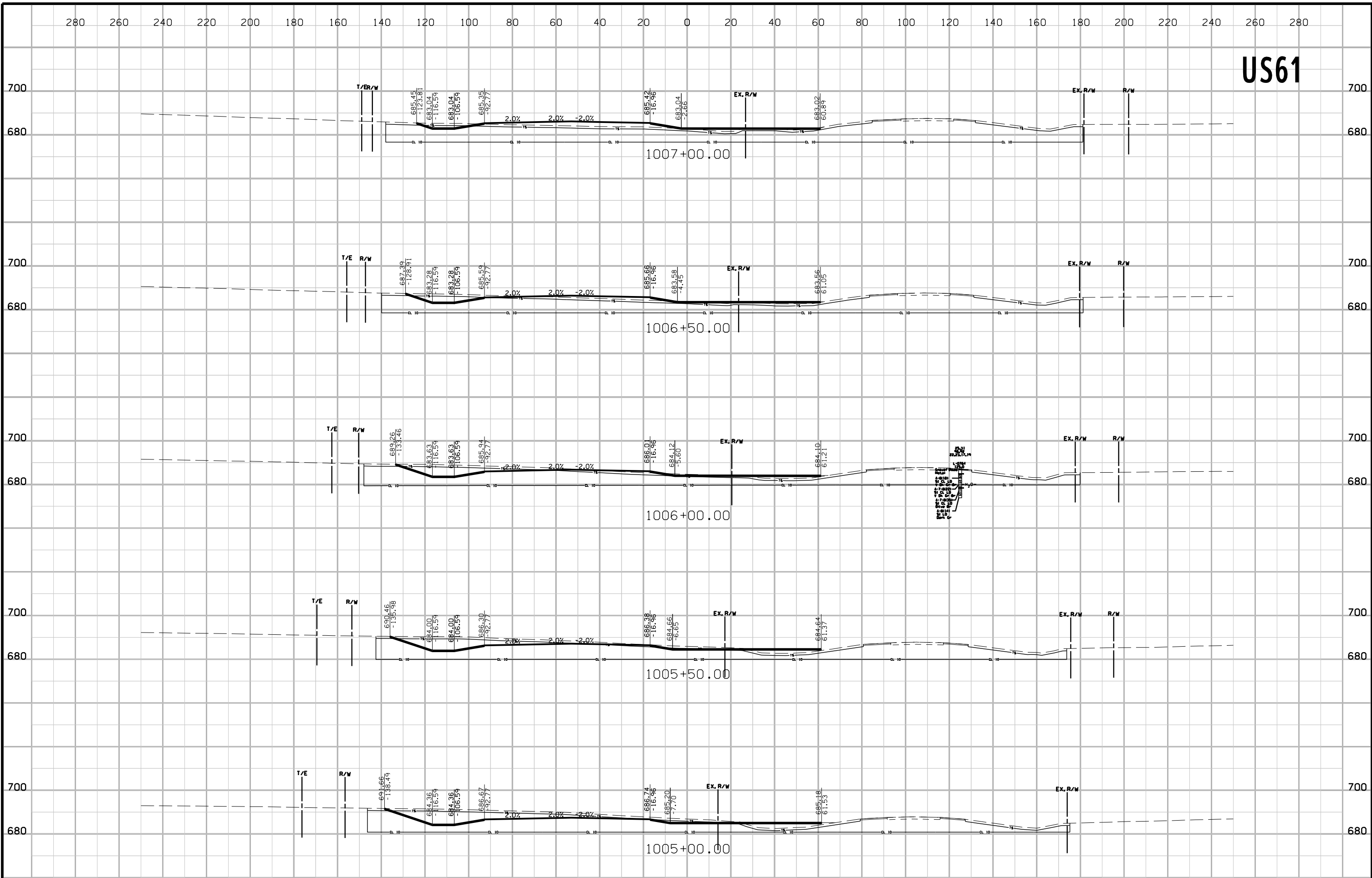
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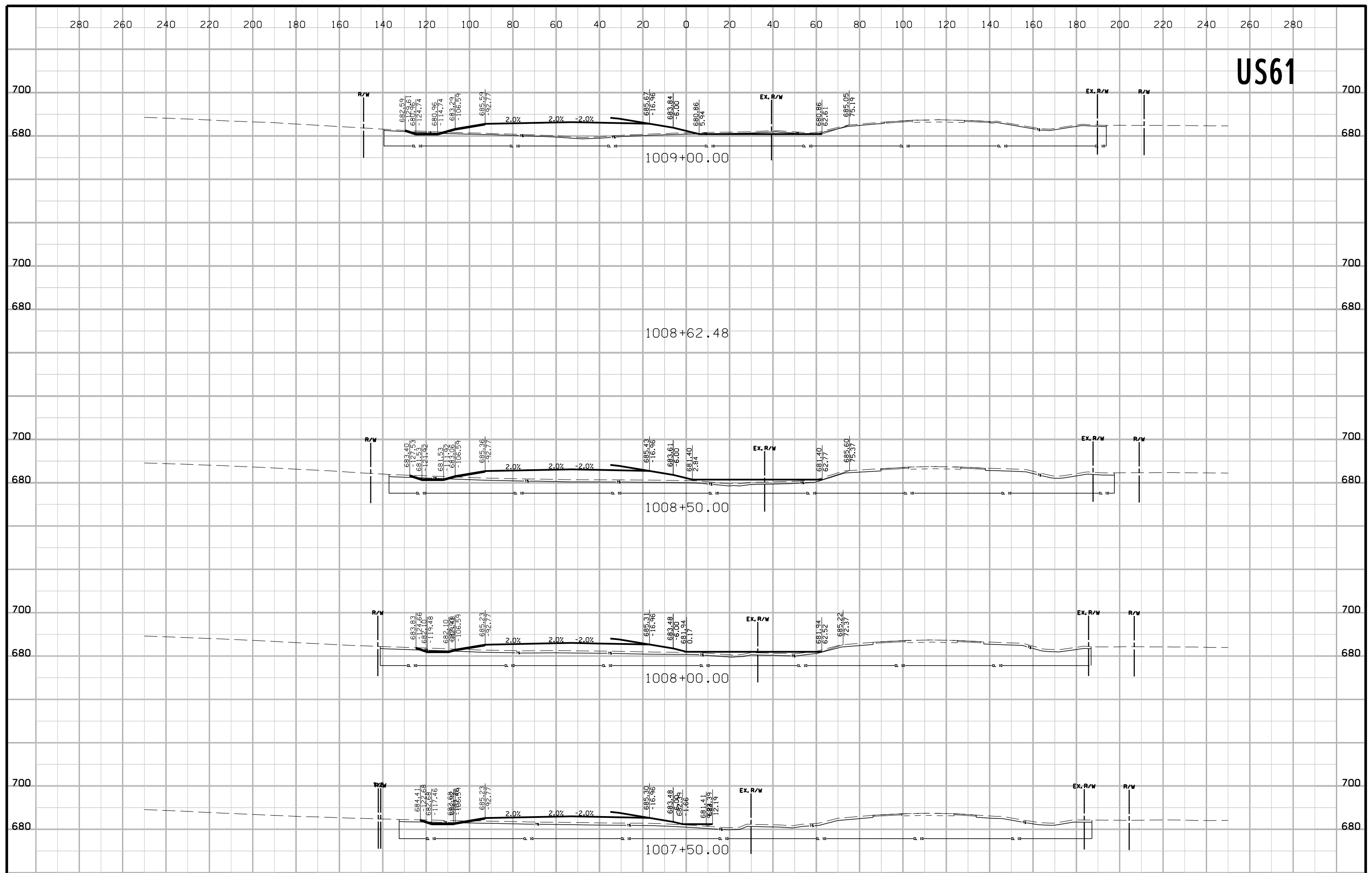
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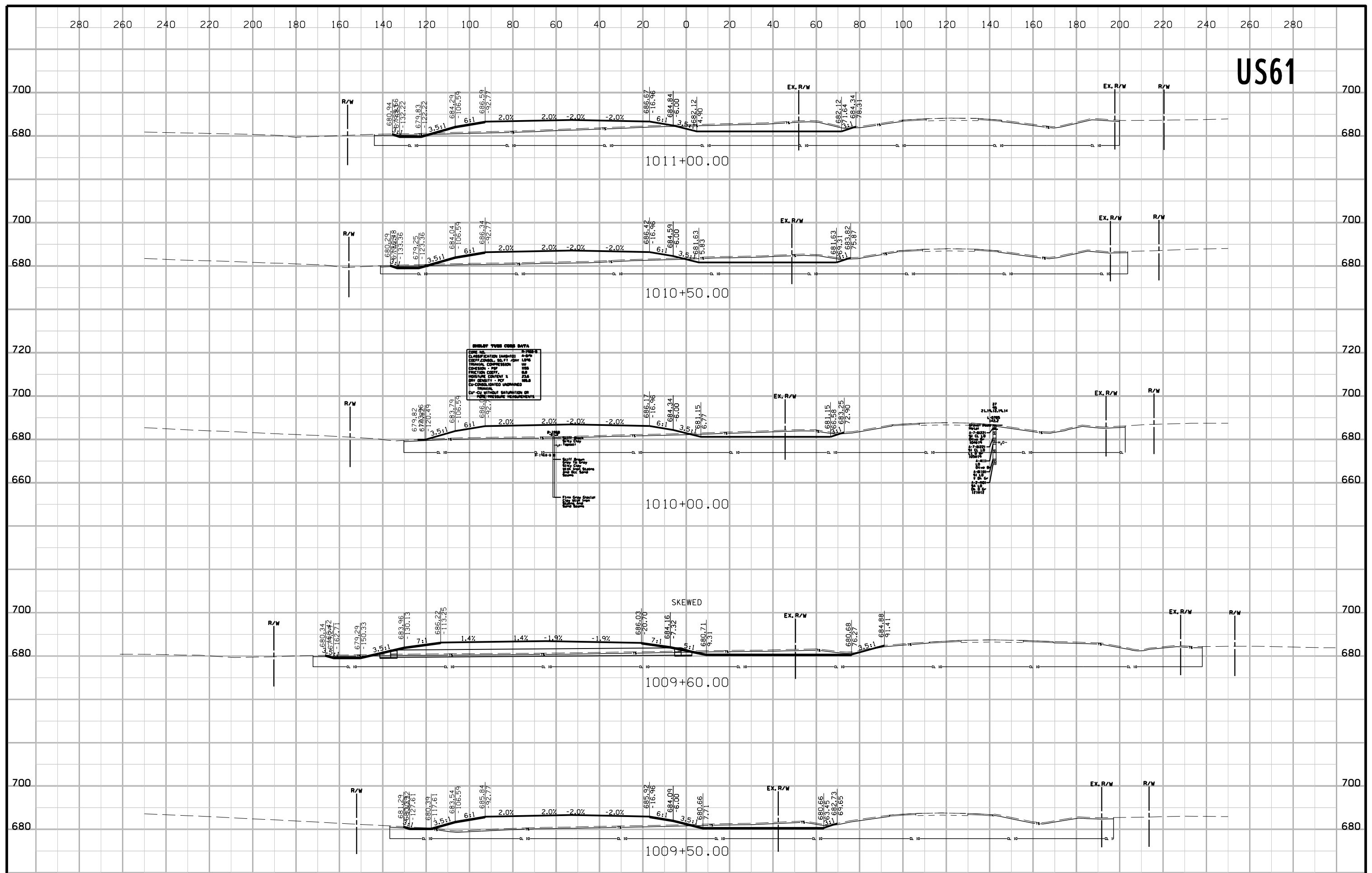
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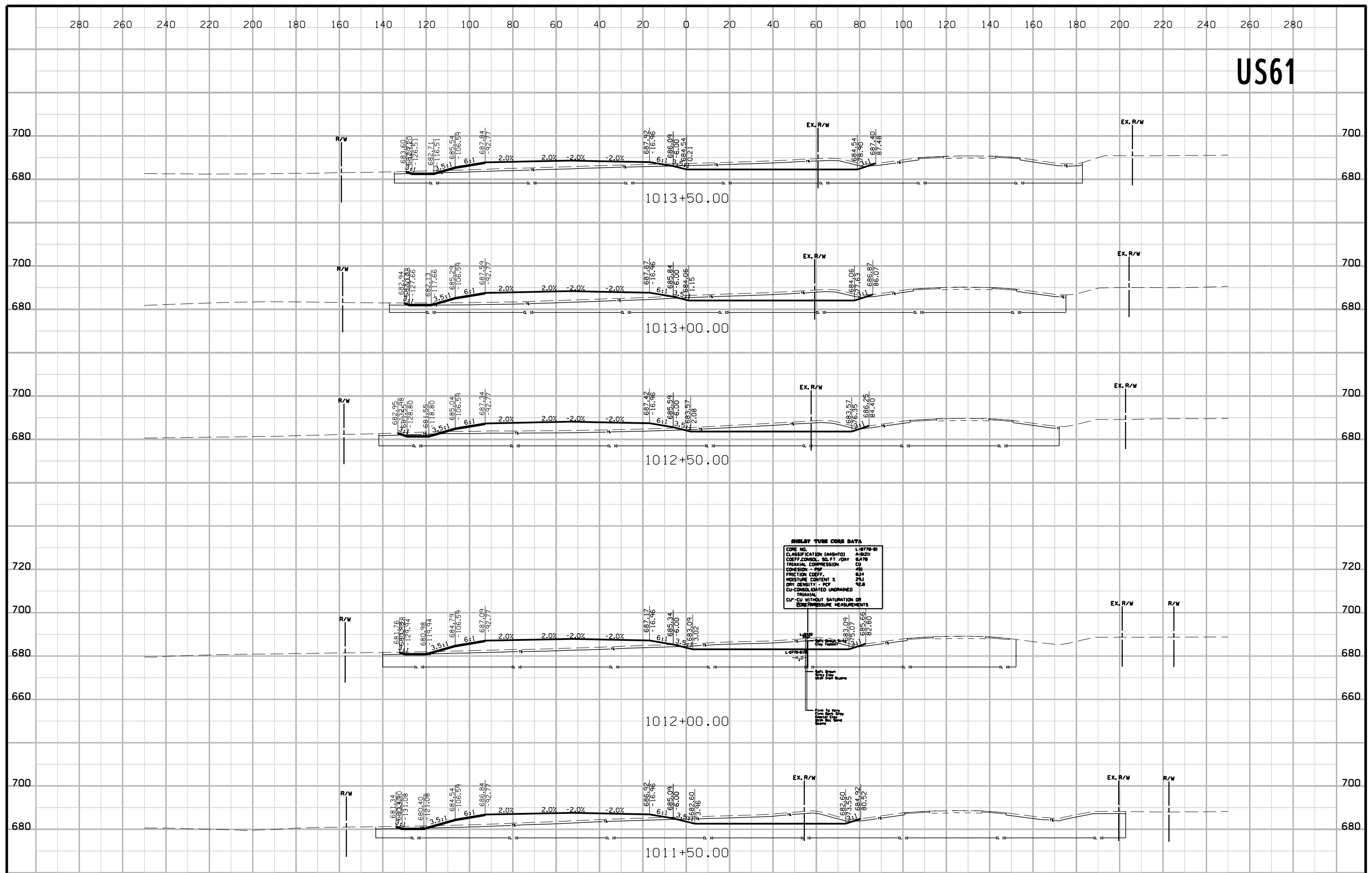
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US61



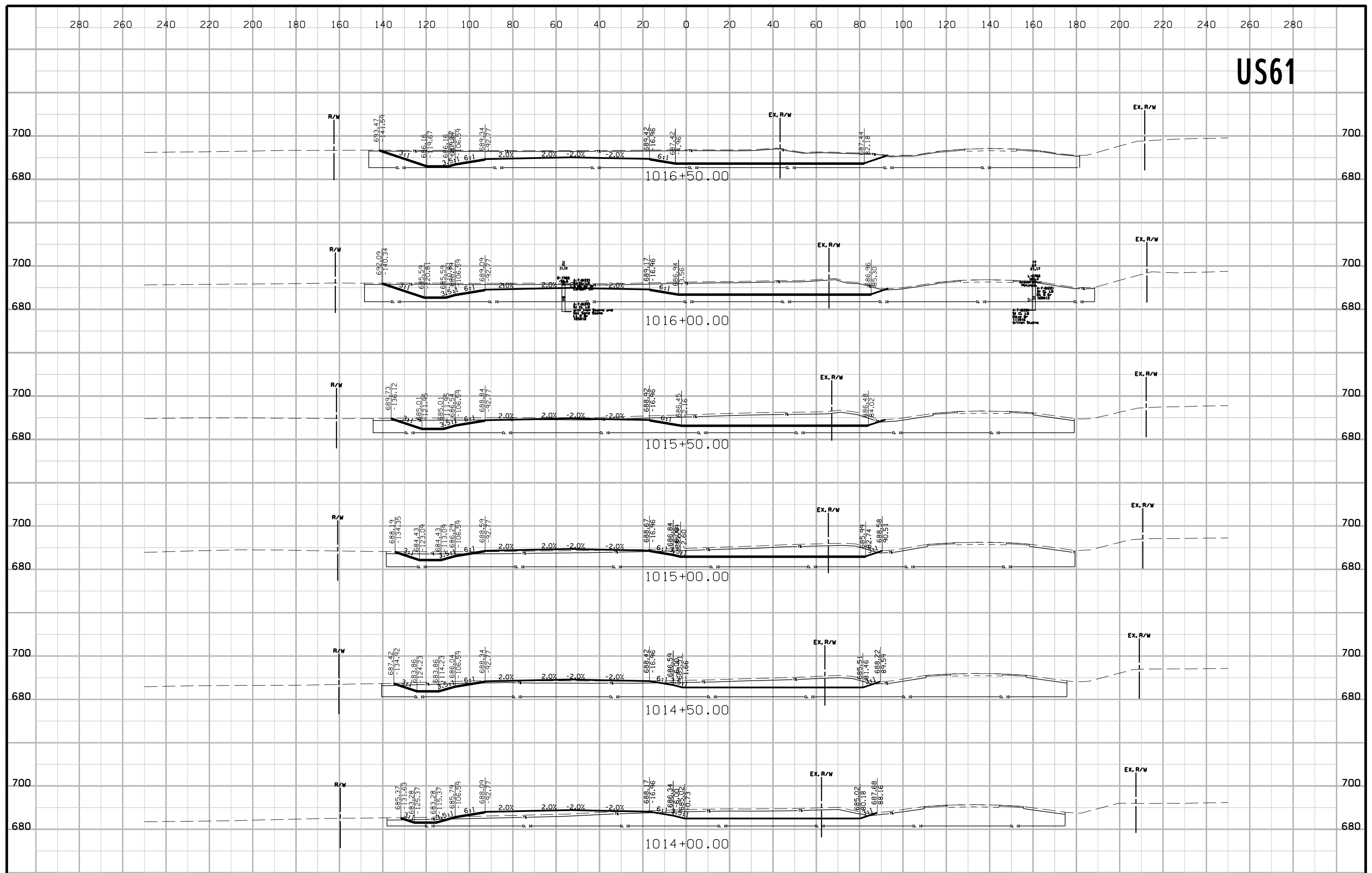
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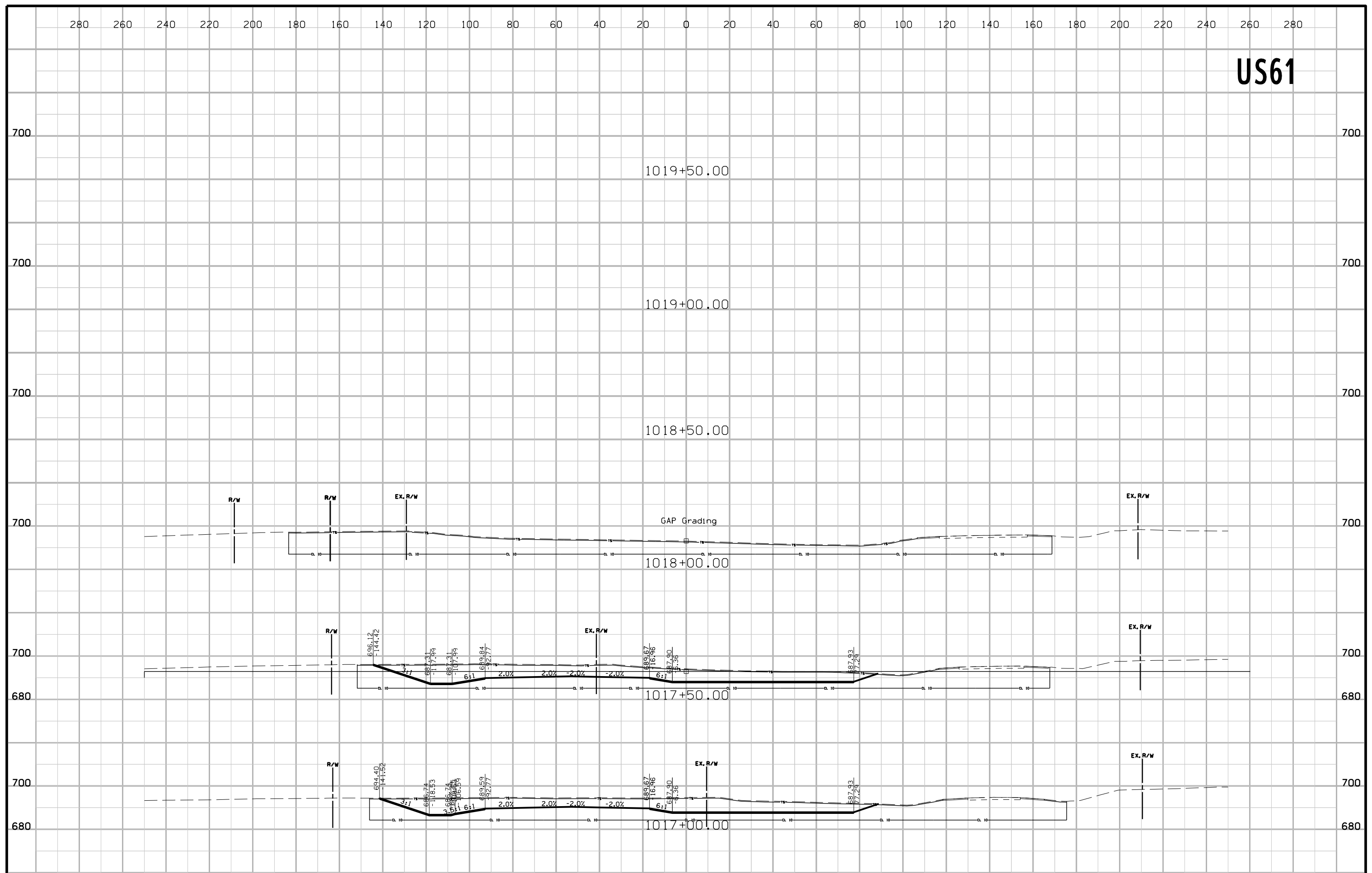
SHILLY TUBE CORB DATA

| | |
|---|-----------|
| CORE NO. | L-6778-01 |
| CLASSIFICATION (AASHTO) | A-6(2) |
| COEFF. CONSOL. SO. FT / DAY | 0.478 |
| TRIAL COMPRESSION | CU |
| COHESION - PSF | 451 |
| FRICTION COEFF. | 0.24 |
| MOISTURE CONTENT % | 24.1 |
| DRY DENSITY - PCF | 92.8 |
| CU-CONSOLIDATED UNDRAINED TRIAXIAL | |
| CU-CU WITHOUT SATURATION OR BOREPRESSURE MEASUREMENTS | |

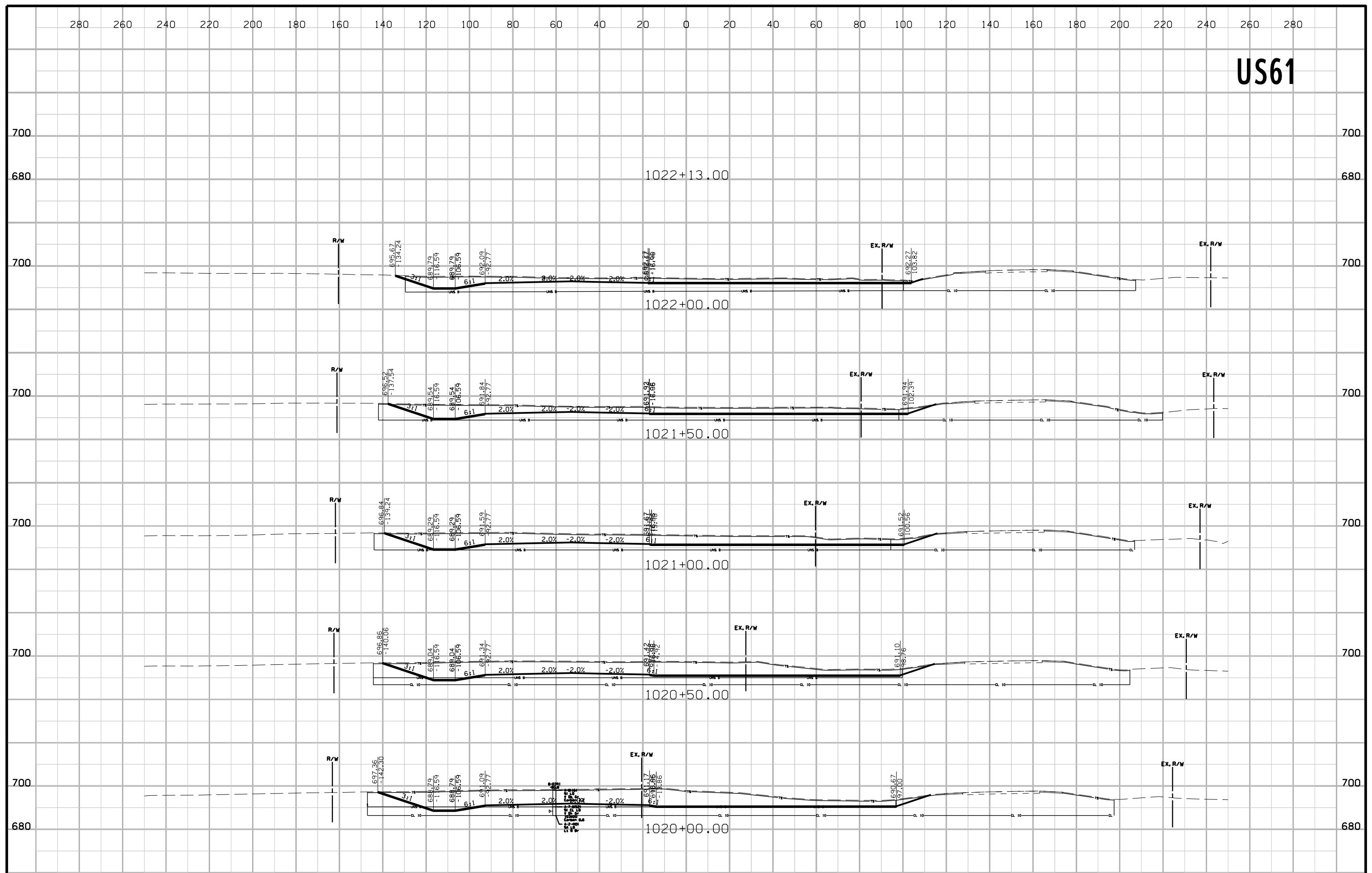
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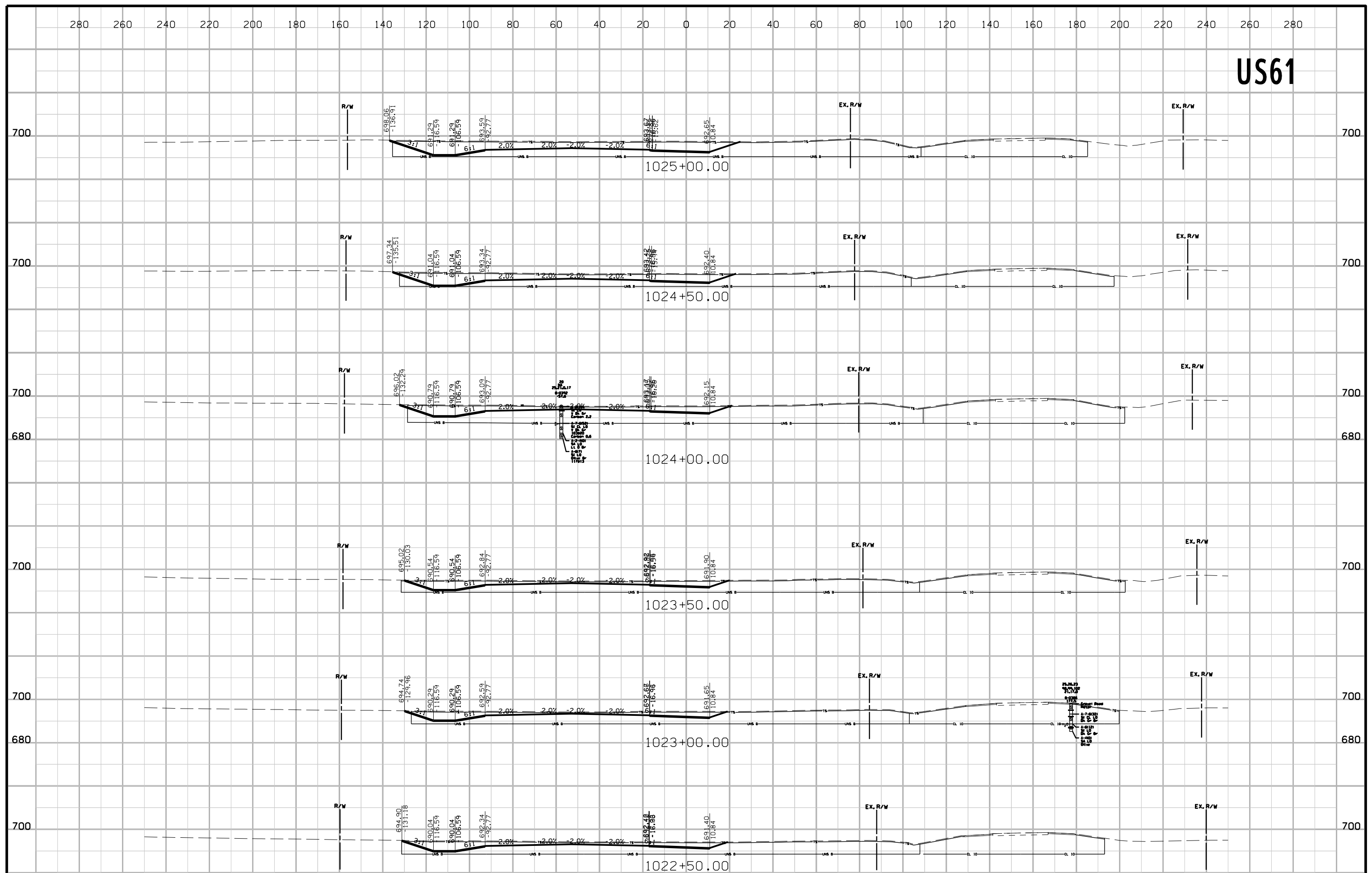
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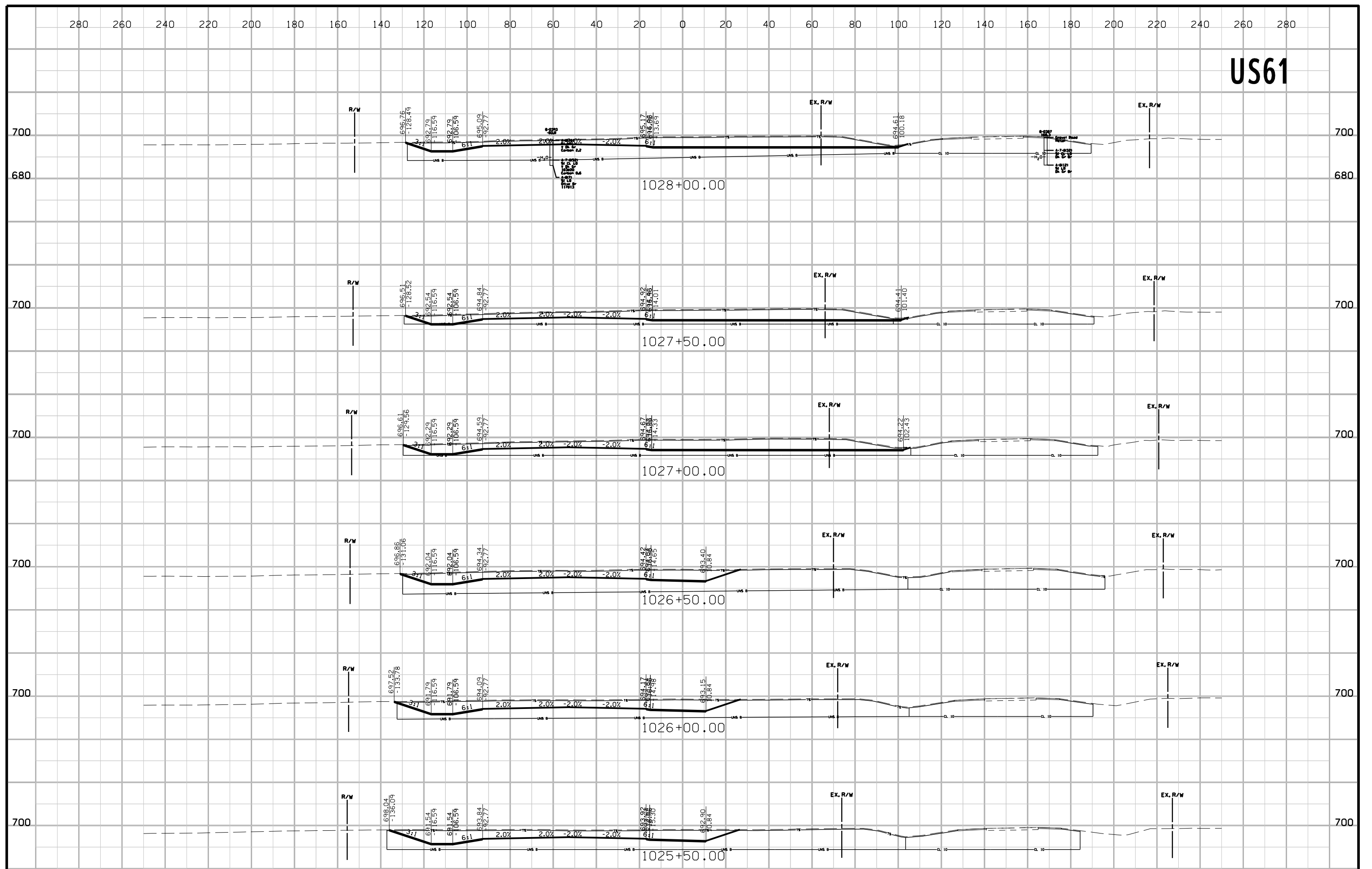
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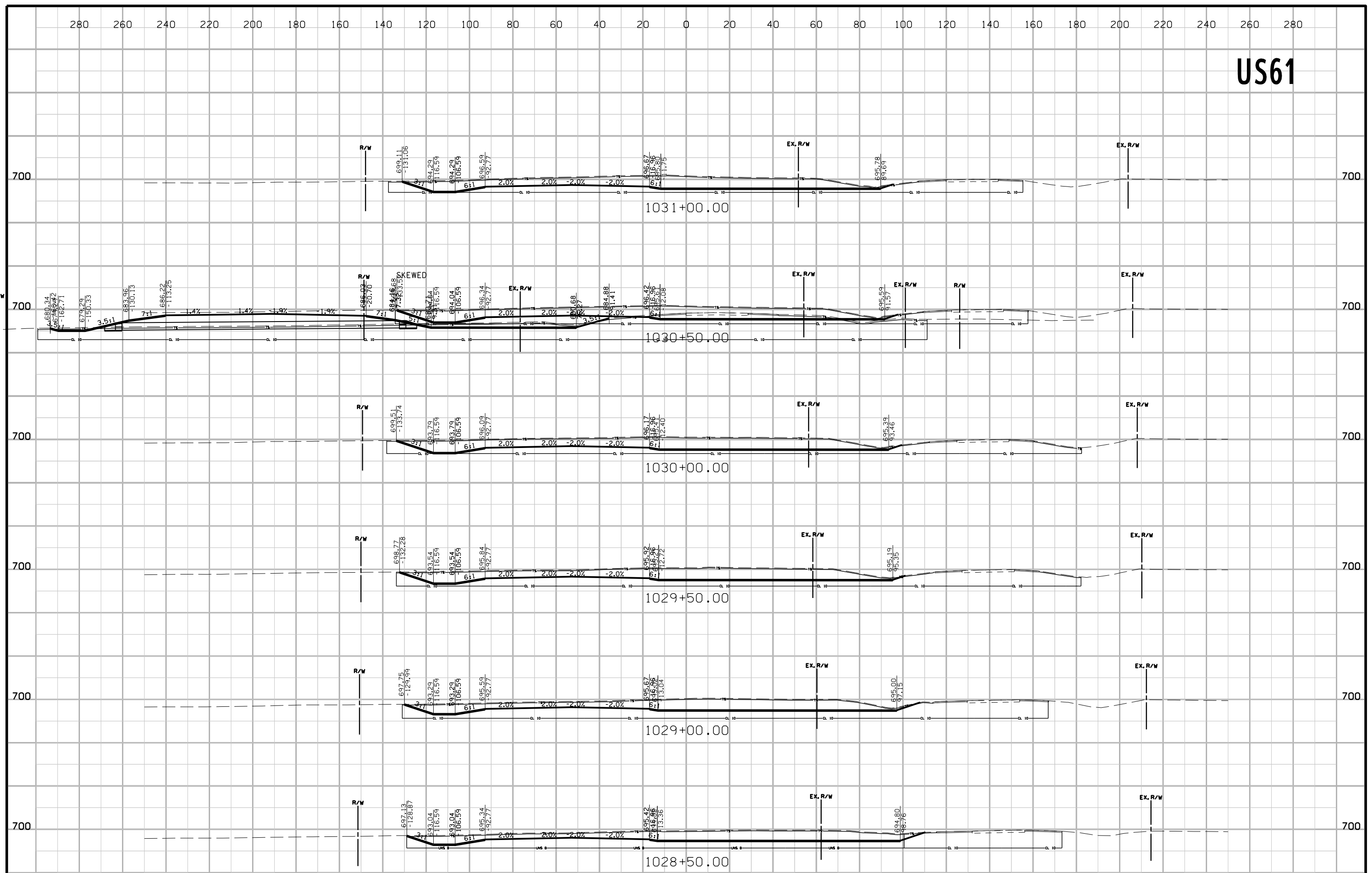
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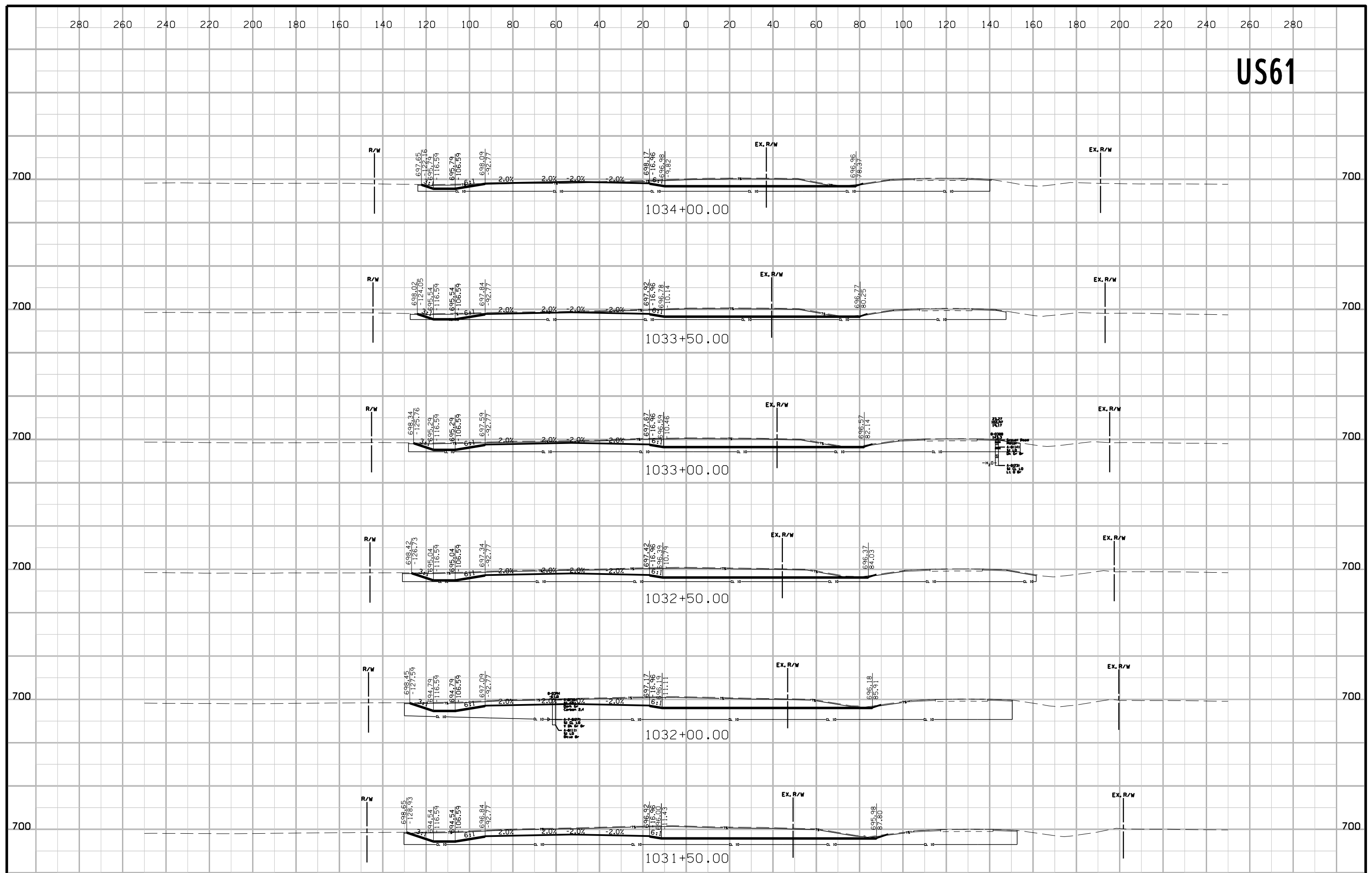
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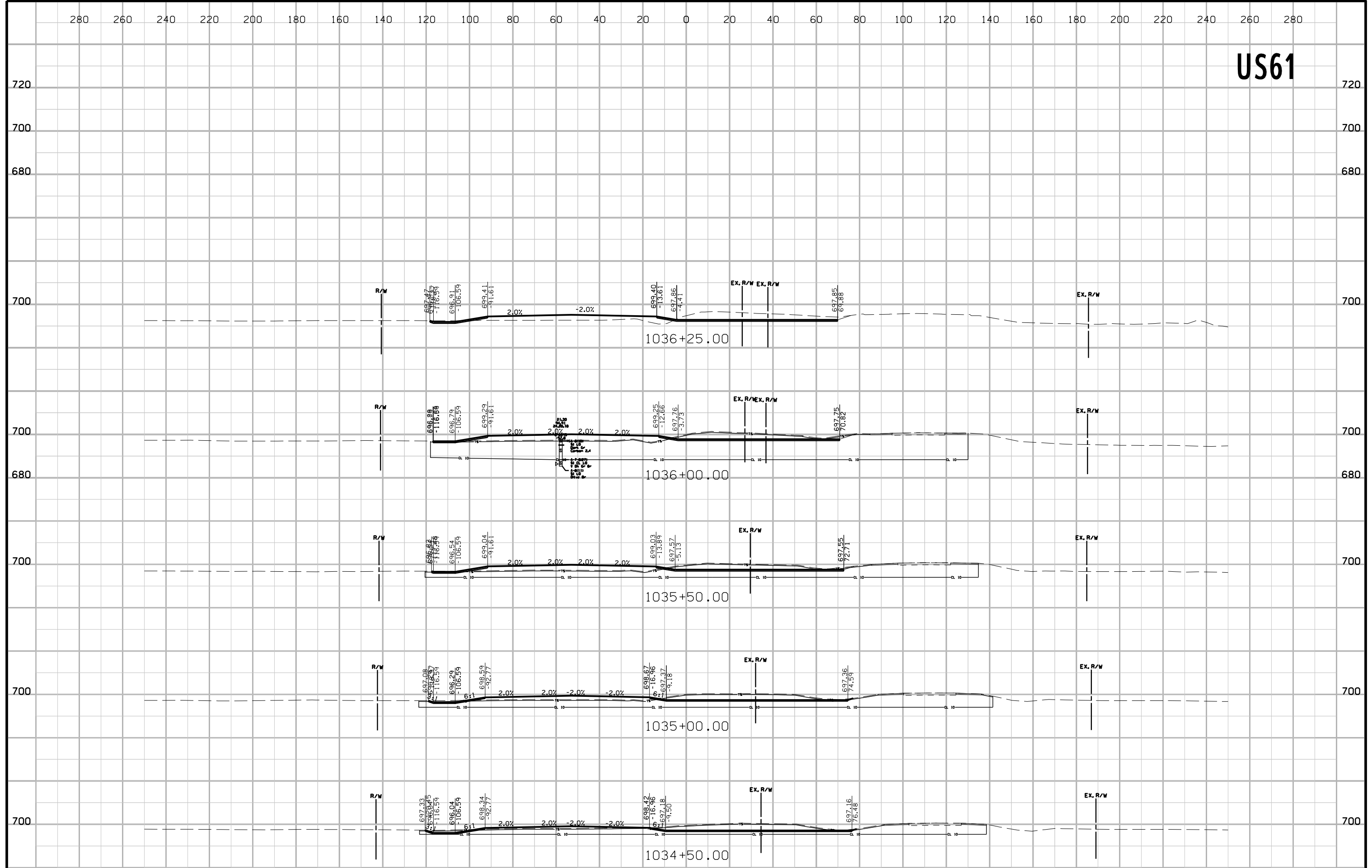
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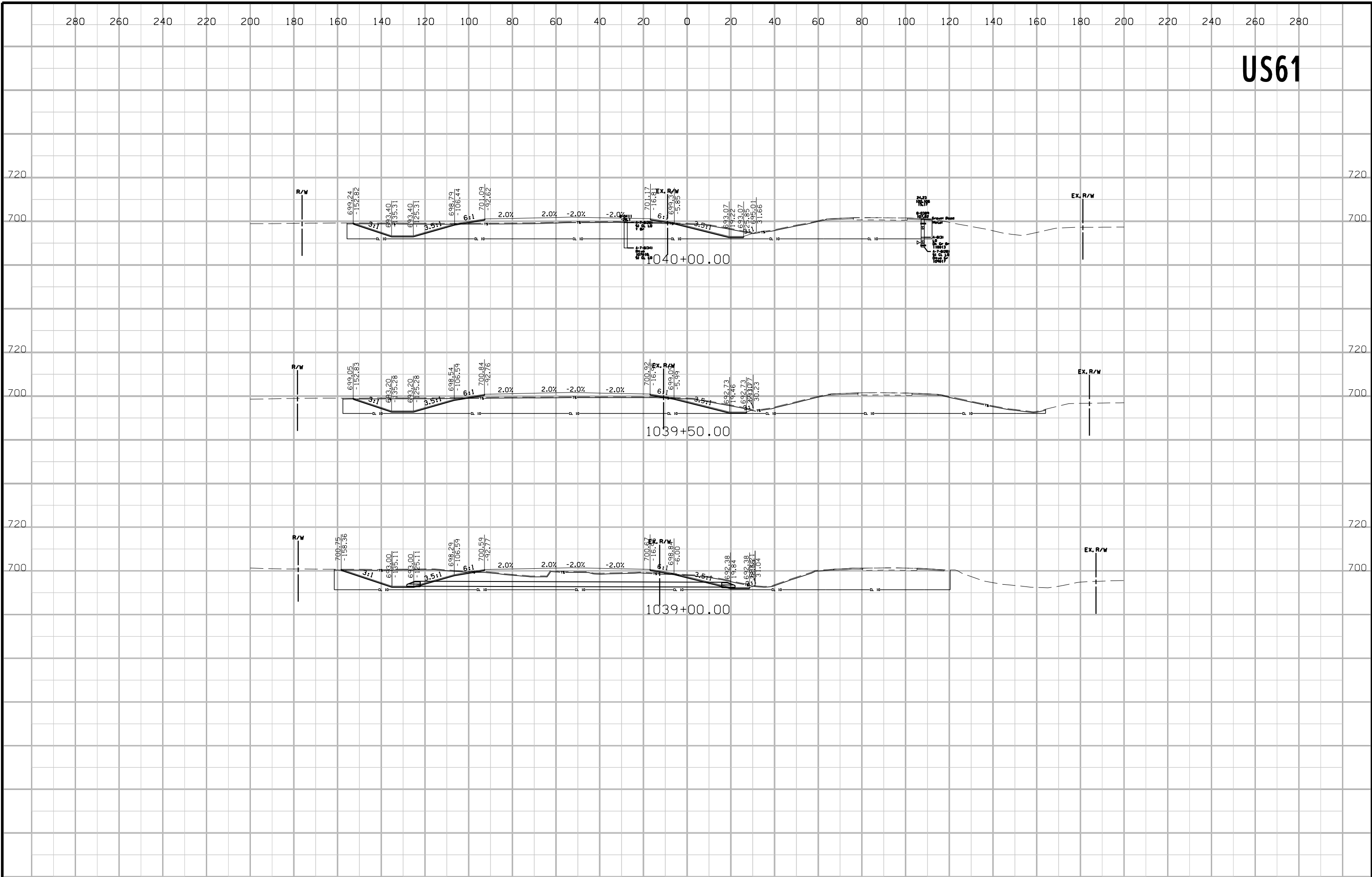
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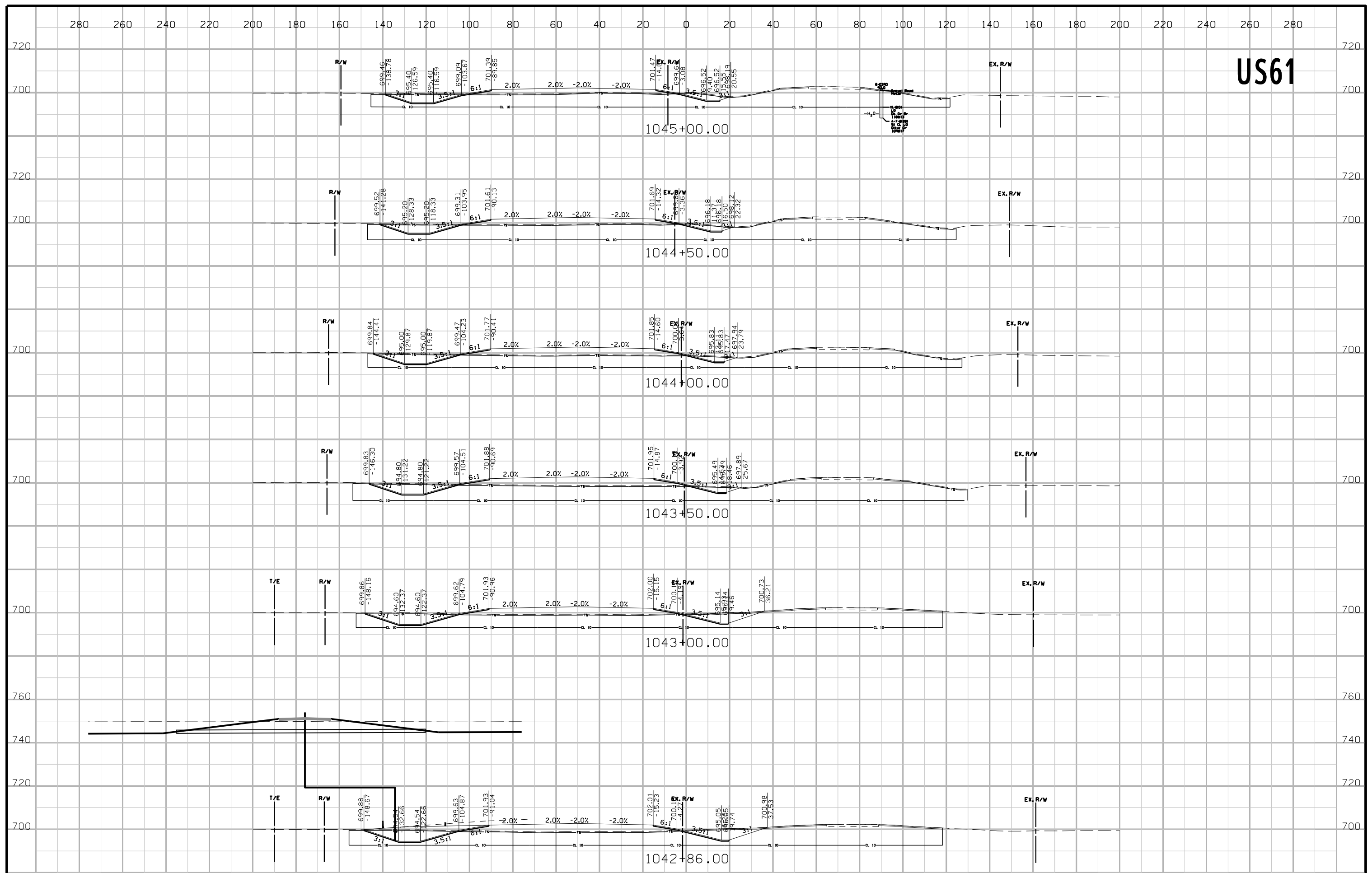
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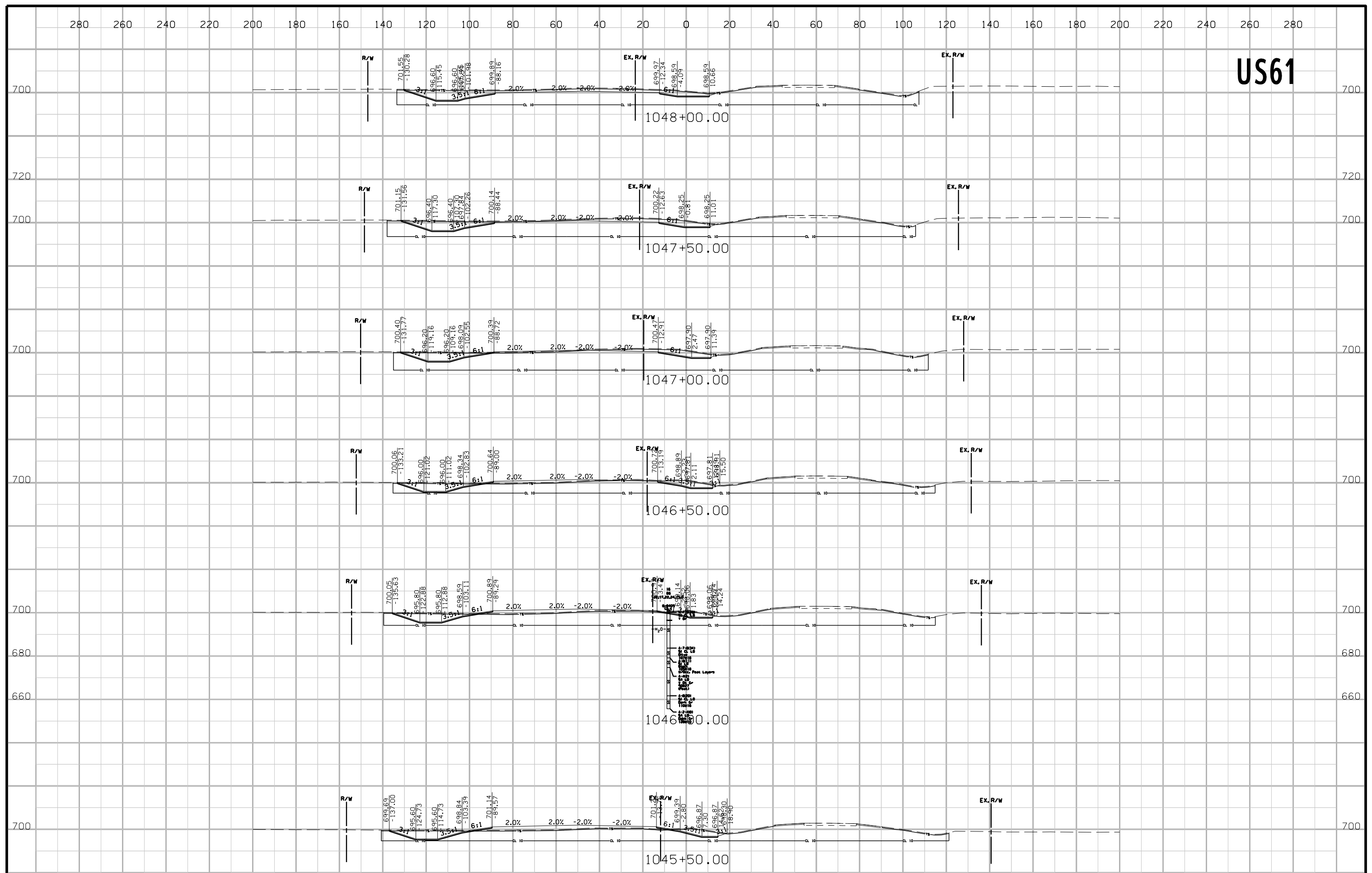
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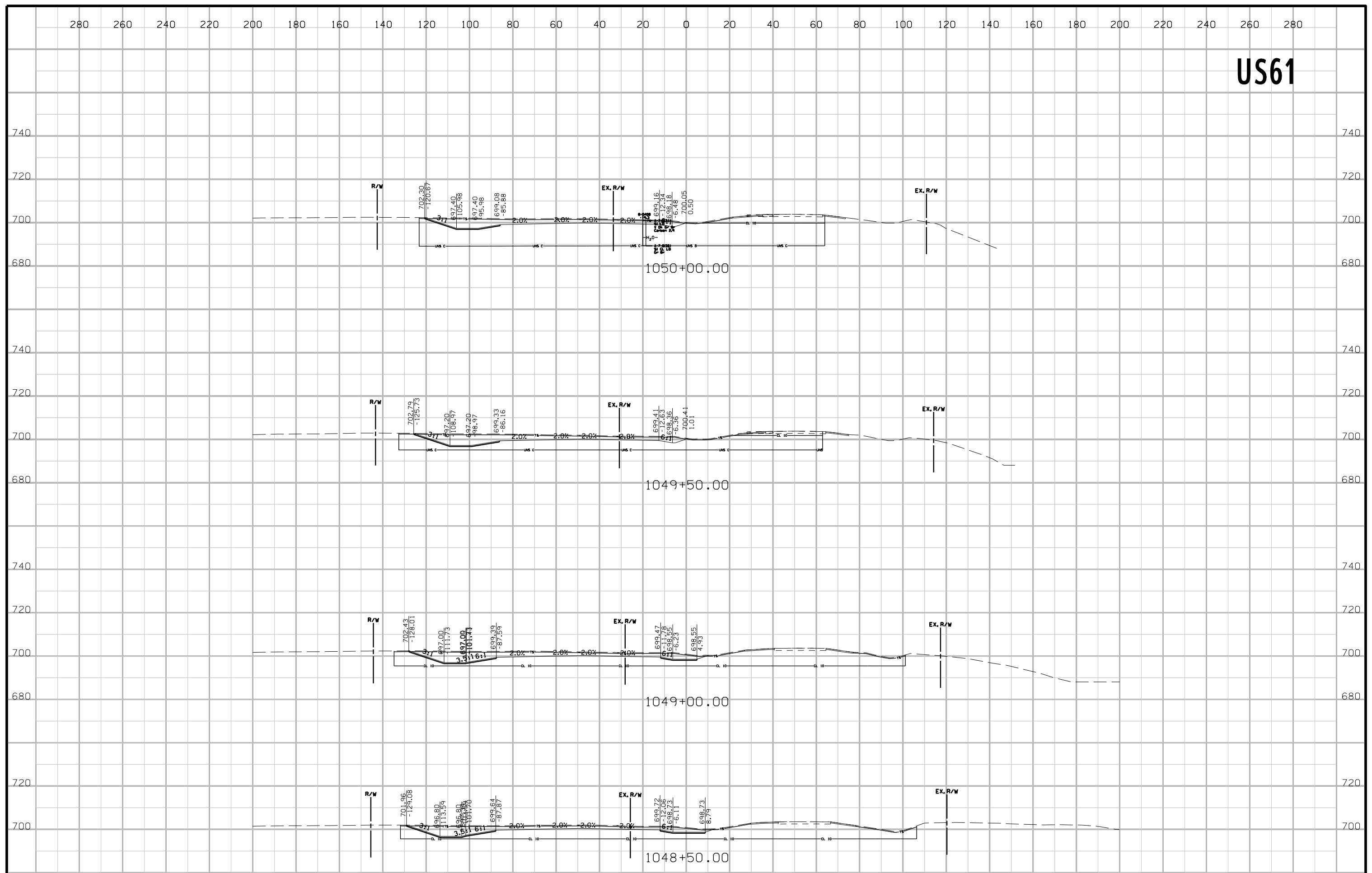
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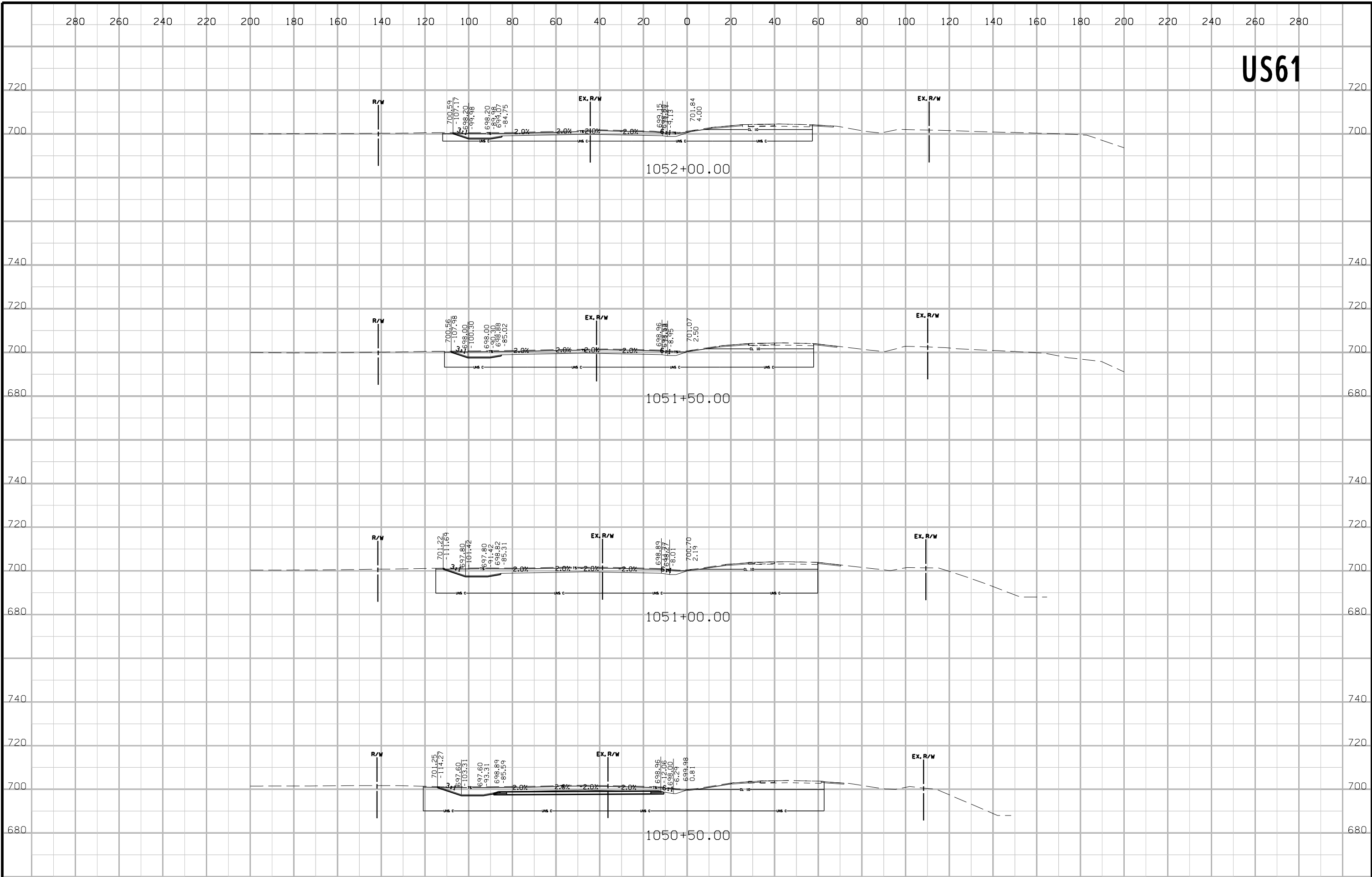
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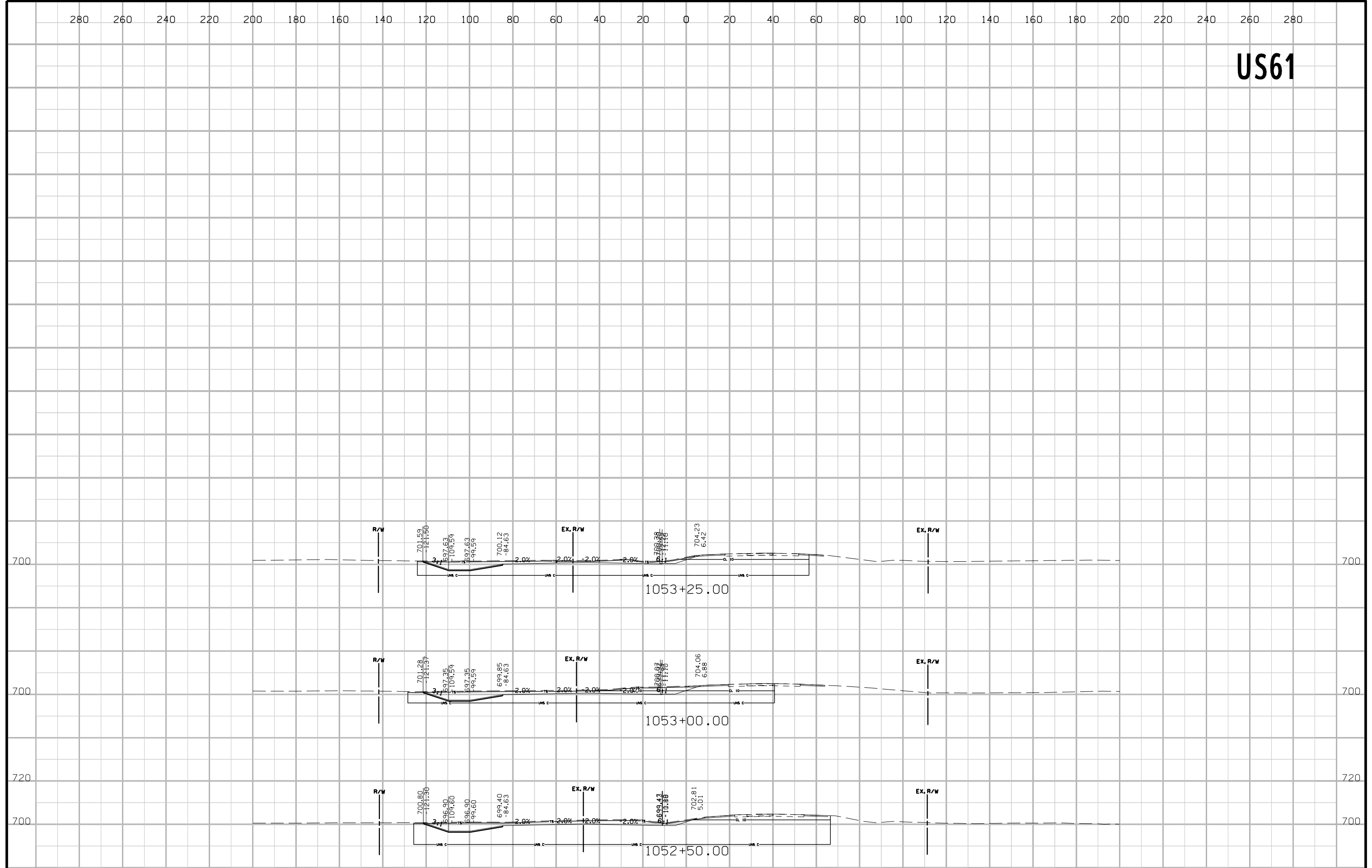
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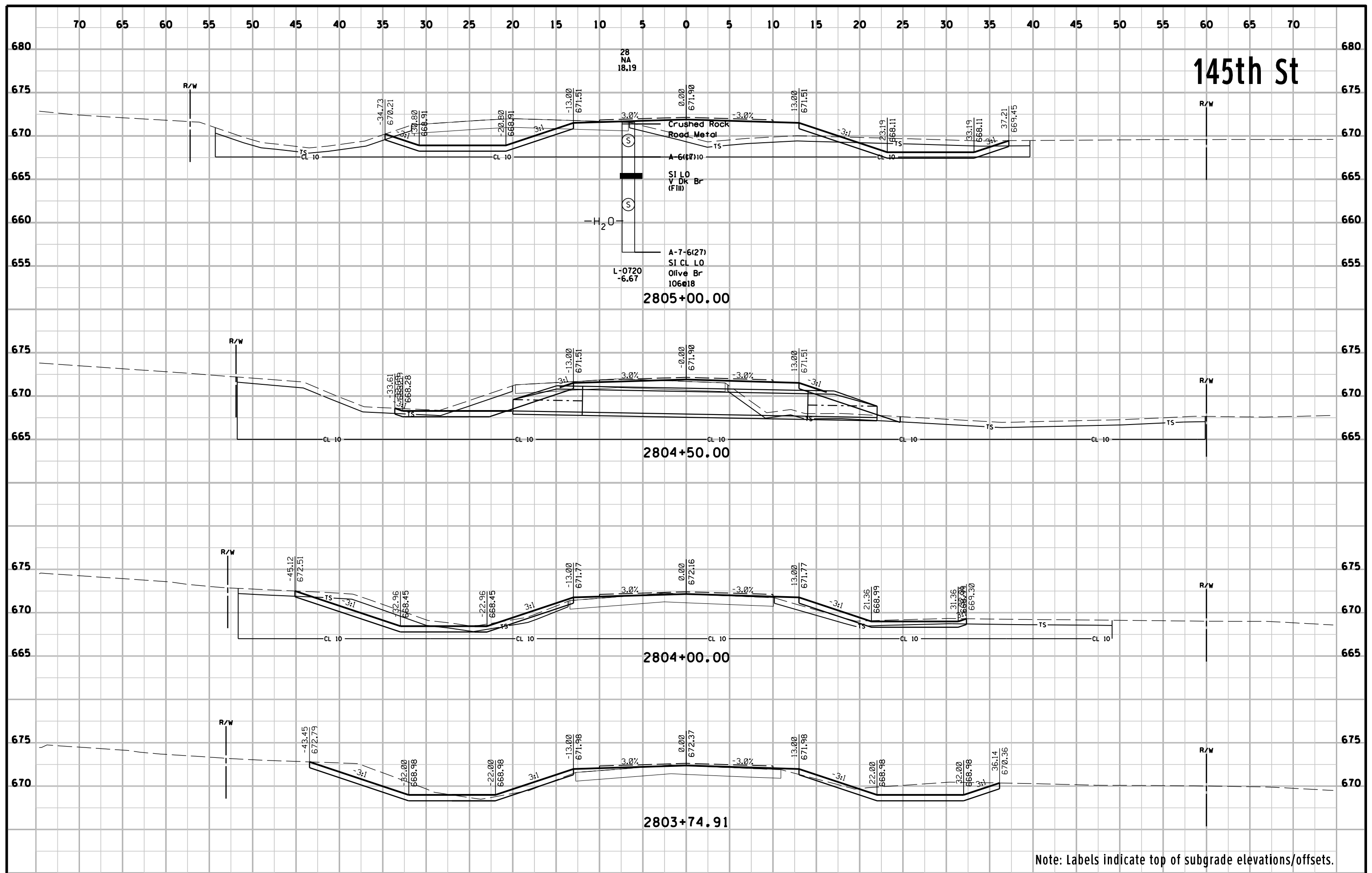
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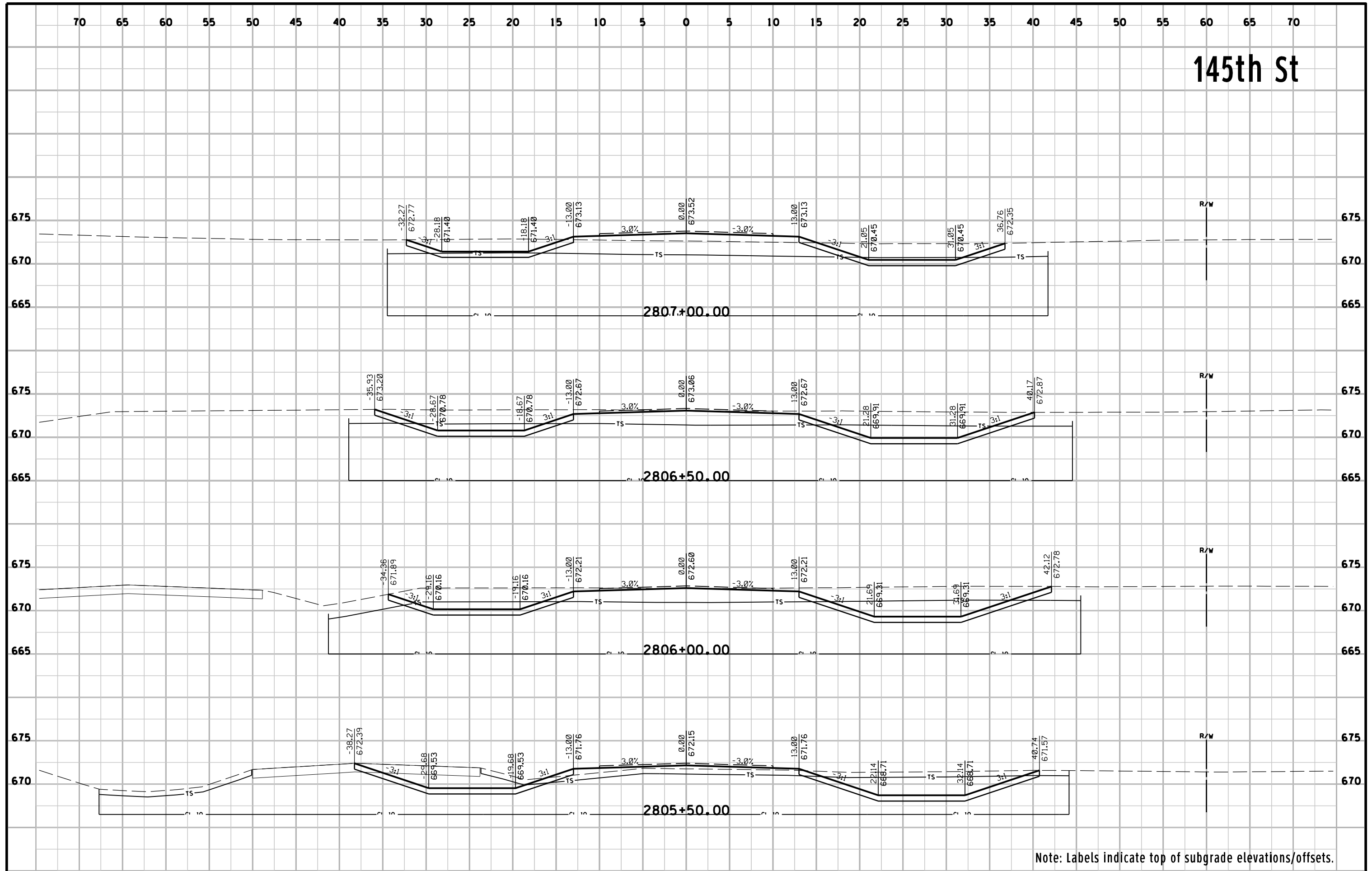
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145th St

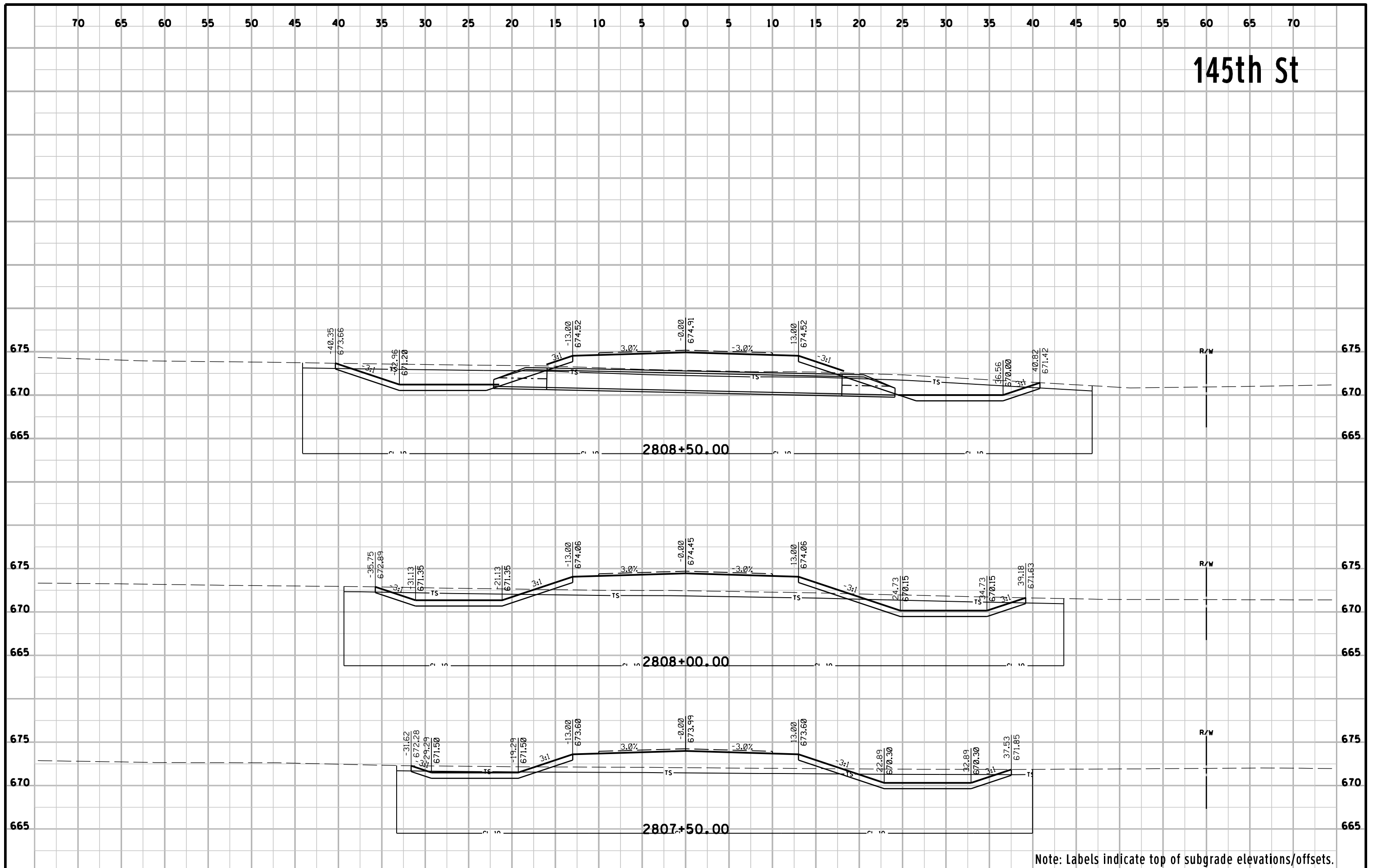


145th St

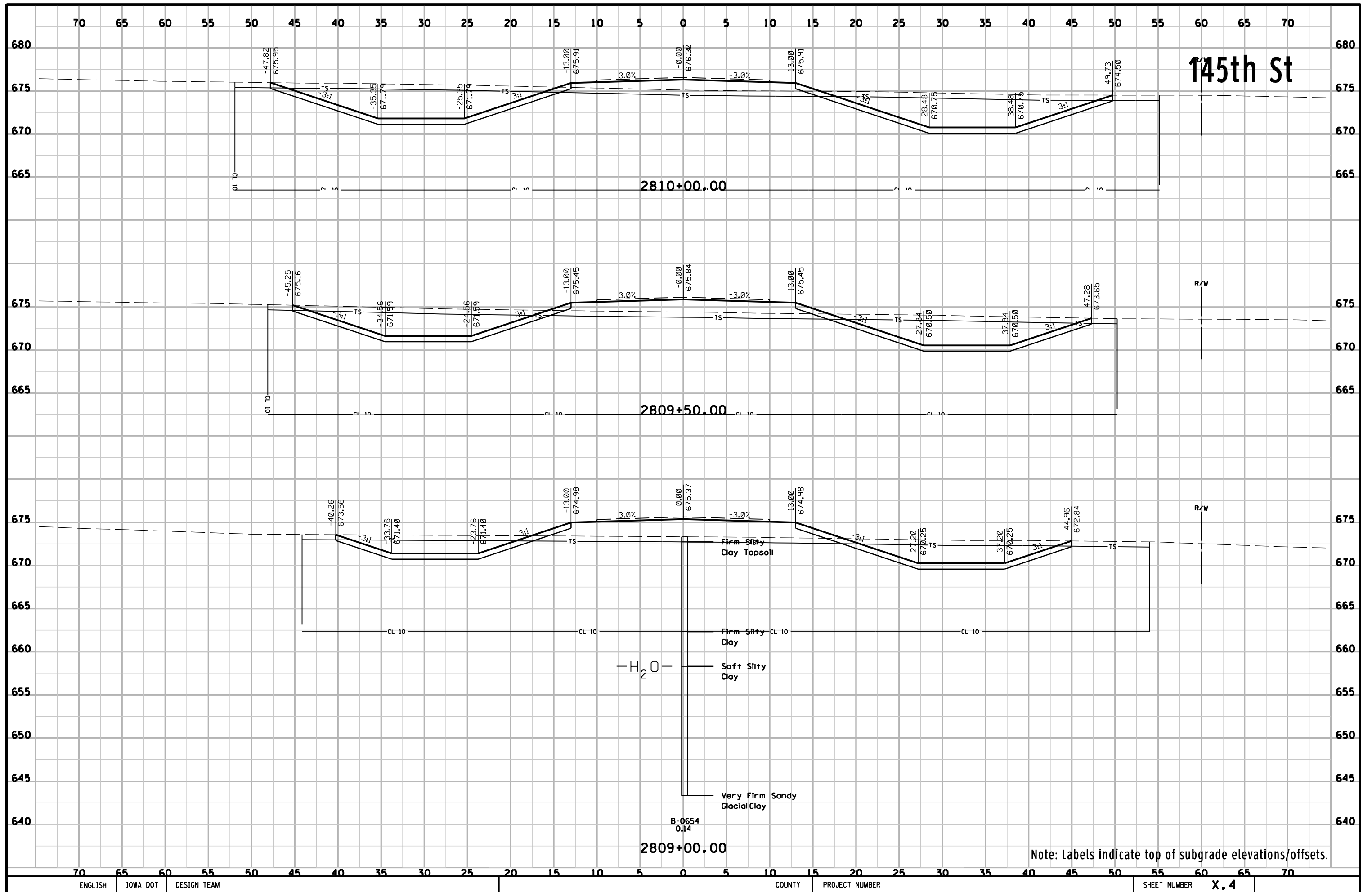


Note: Labels indicate top of subgrade elevations/offsets.

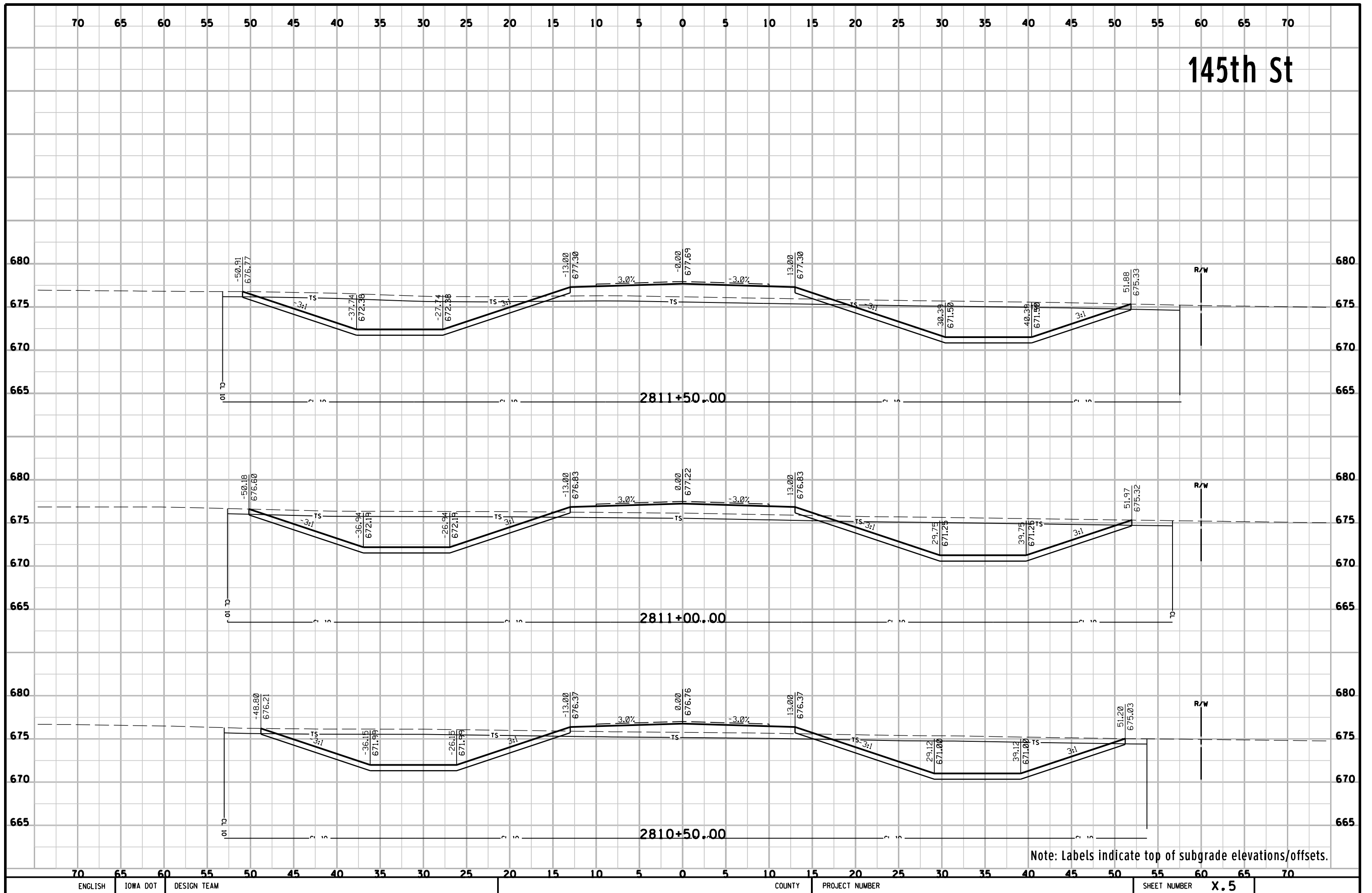
145th St



Note: Labels indicate top of subgrade elevations/offsets.

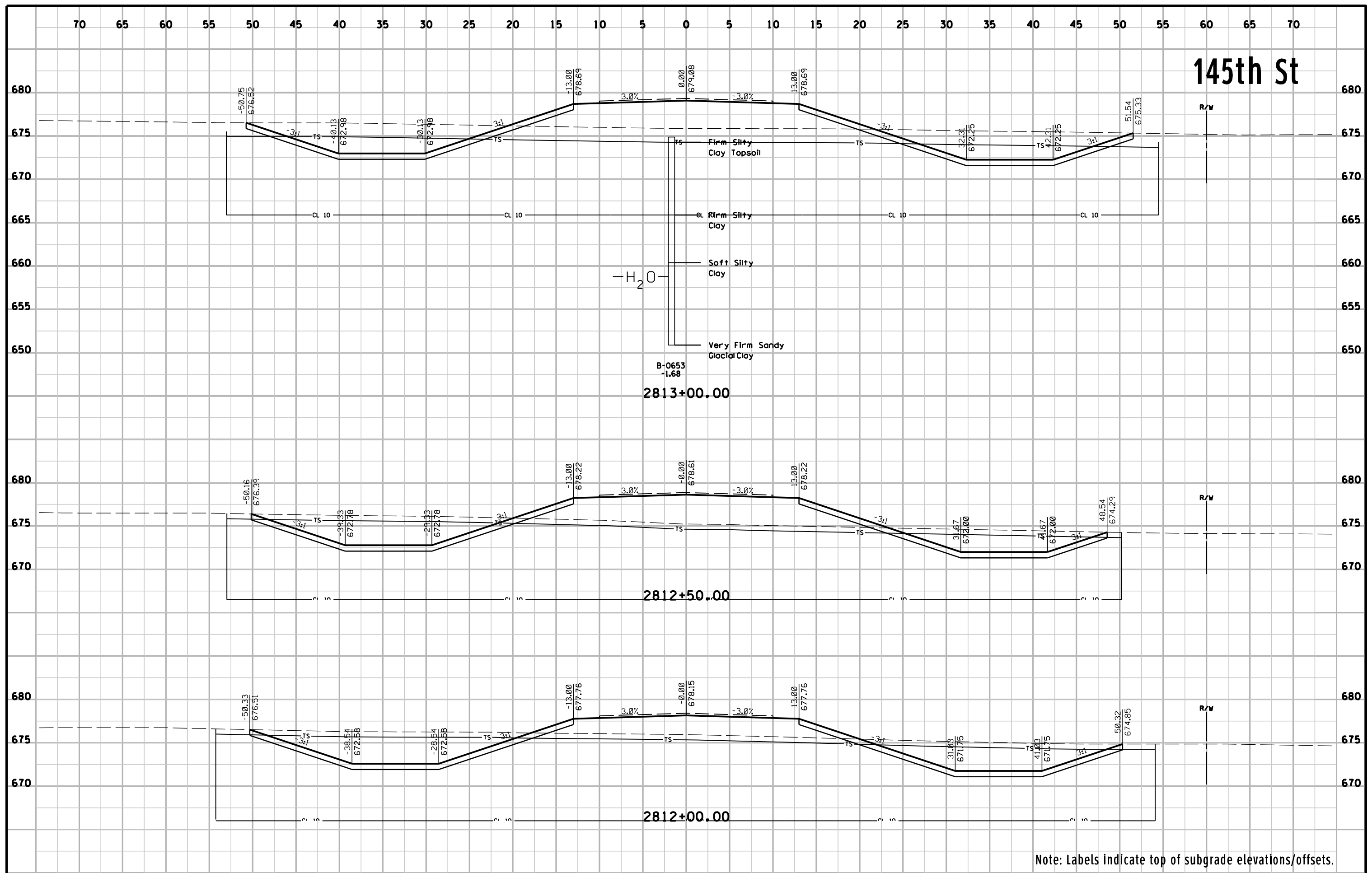


145th St



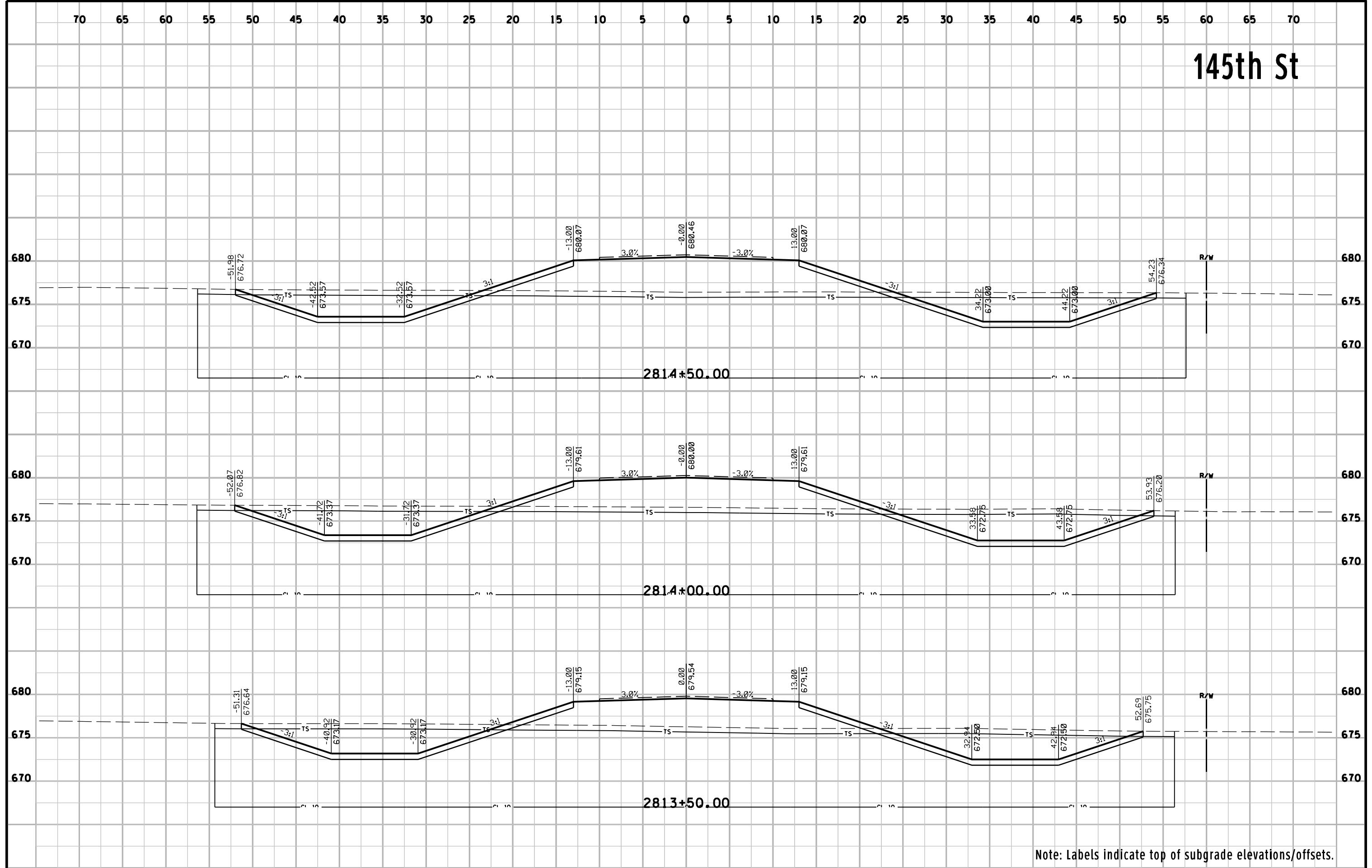
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145th St



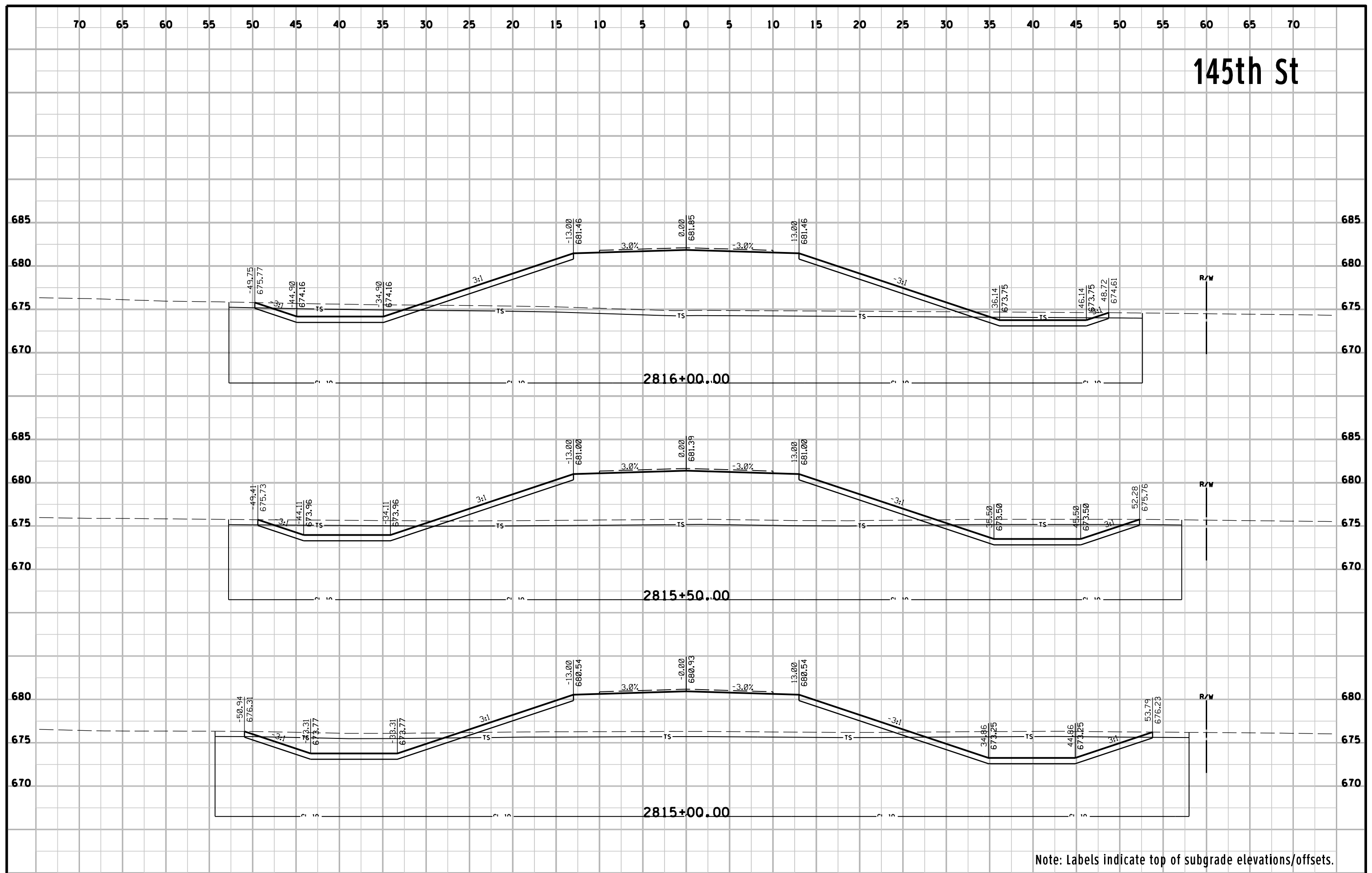
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145th St



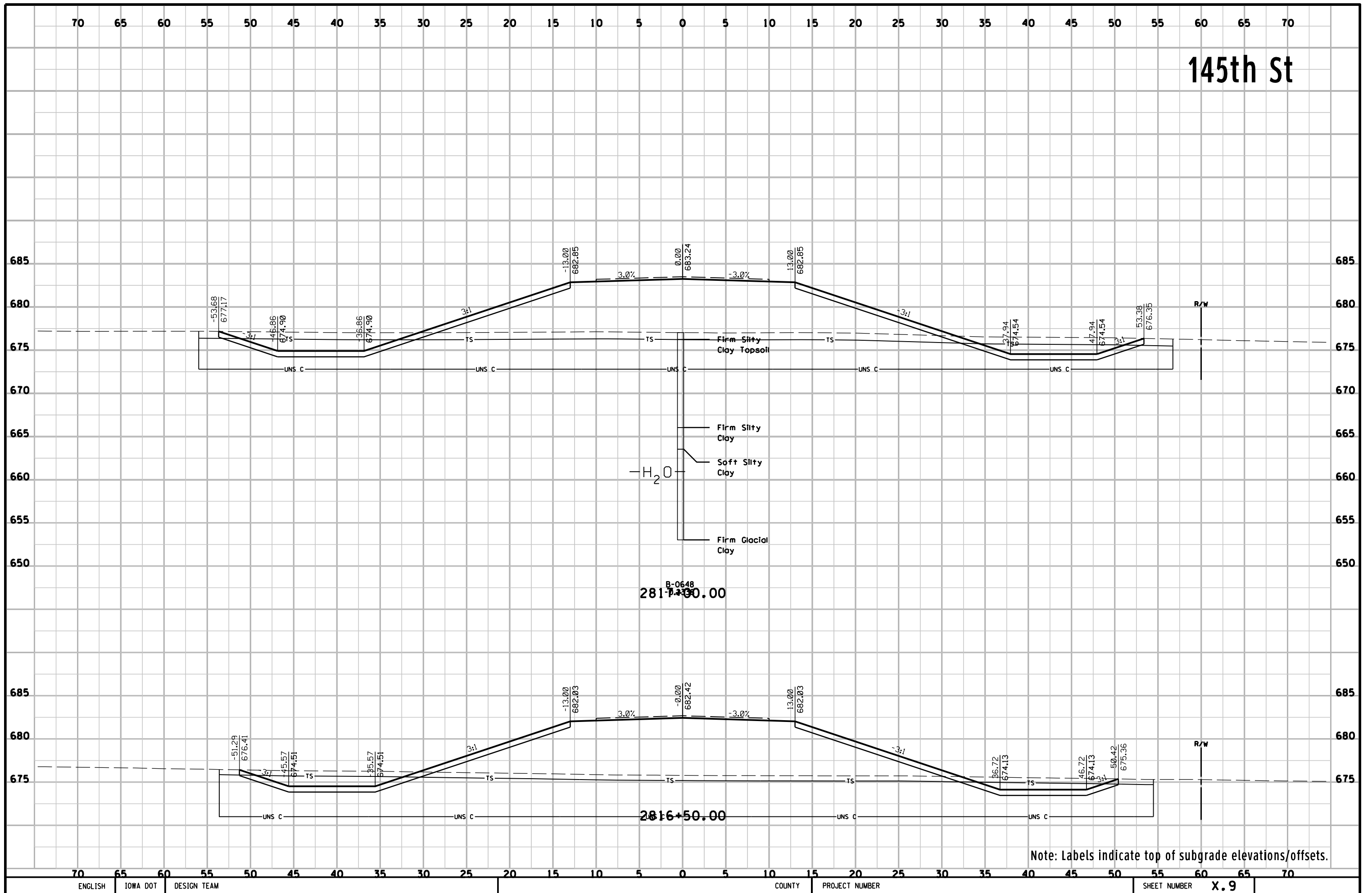
Note: Labels indicate top of subgrade elevations/offsets.

145th St



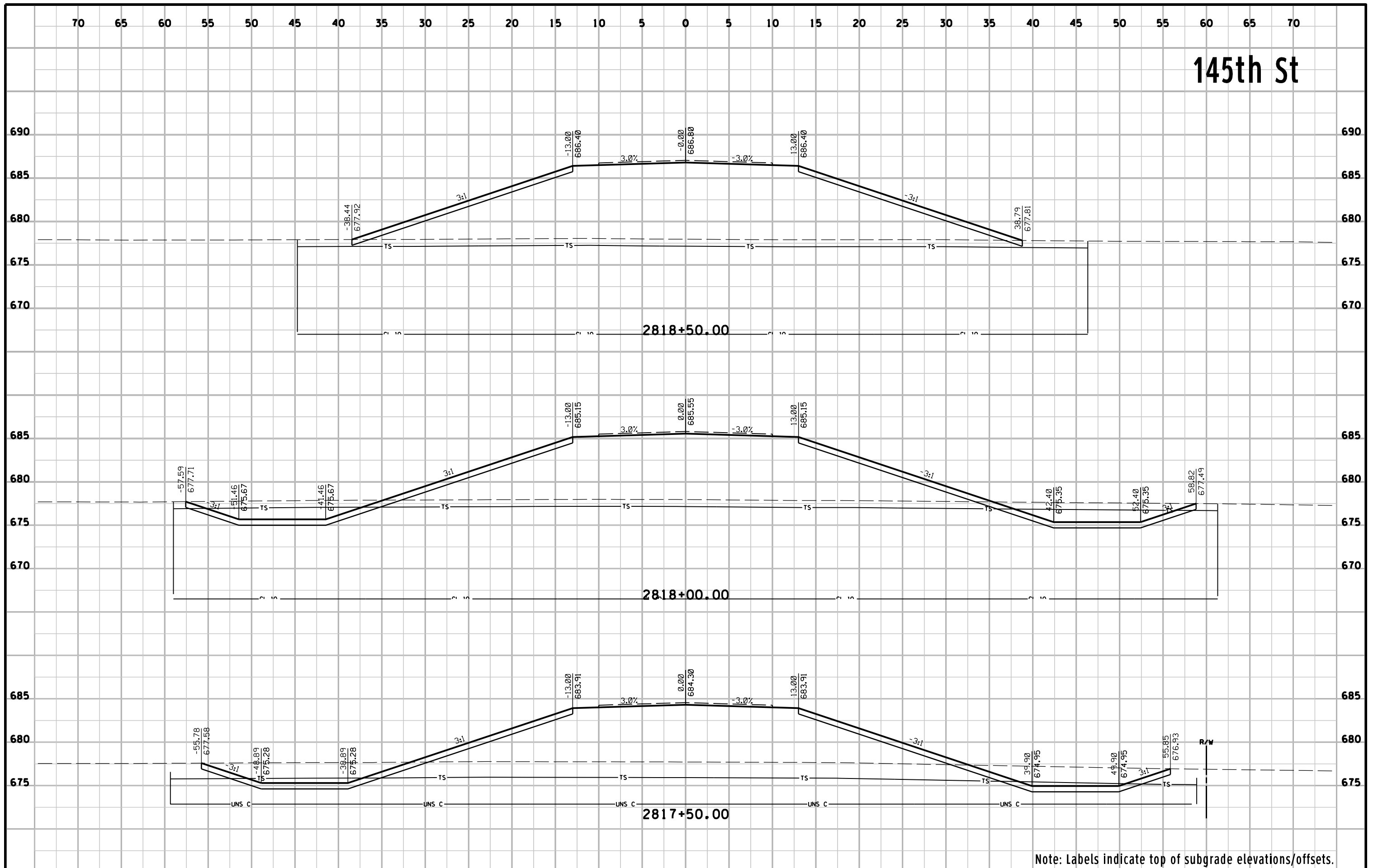
Note: Labels indicate top of subgrade elevations/offsets.

145th St



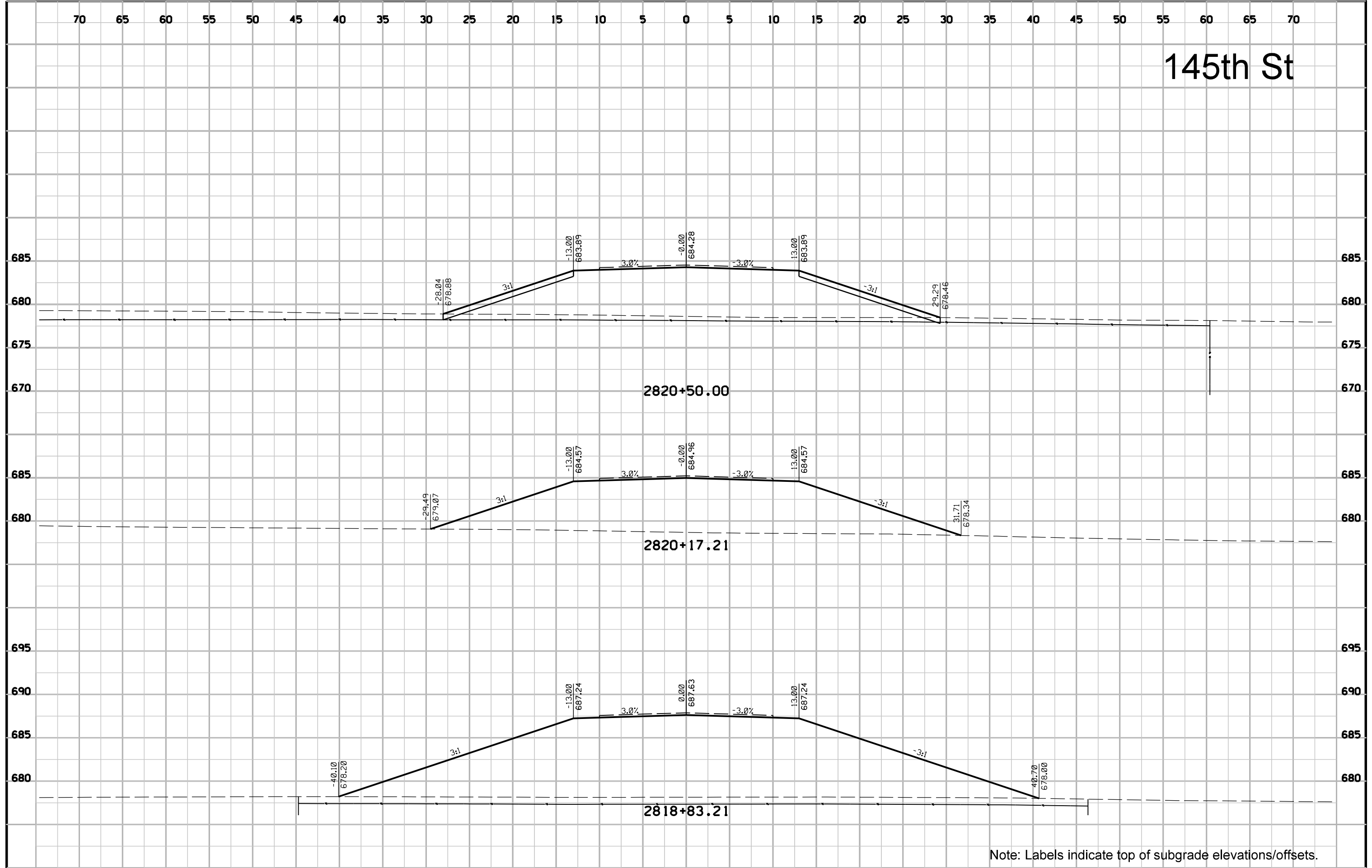
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145th St



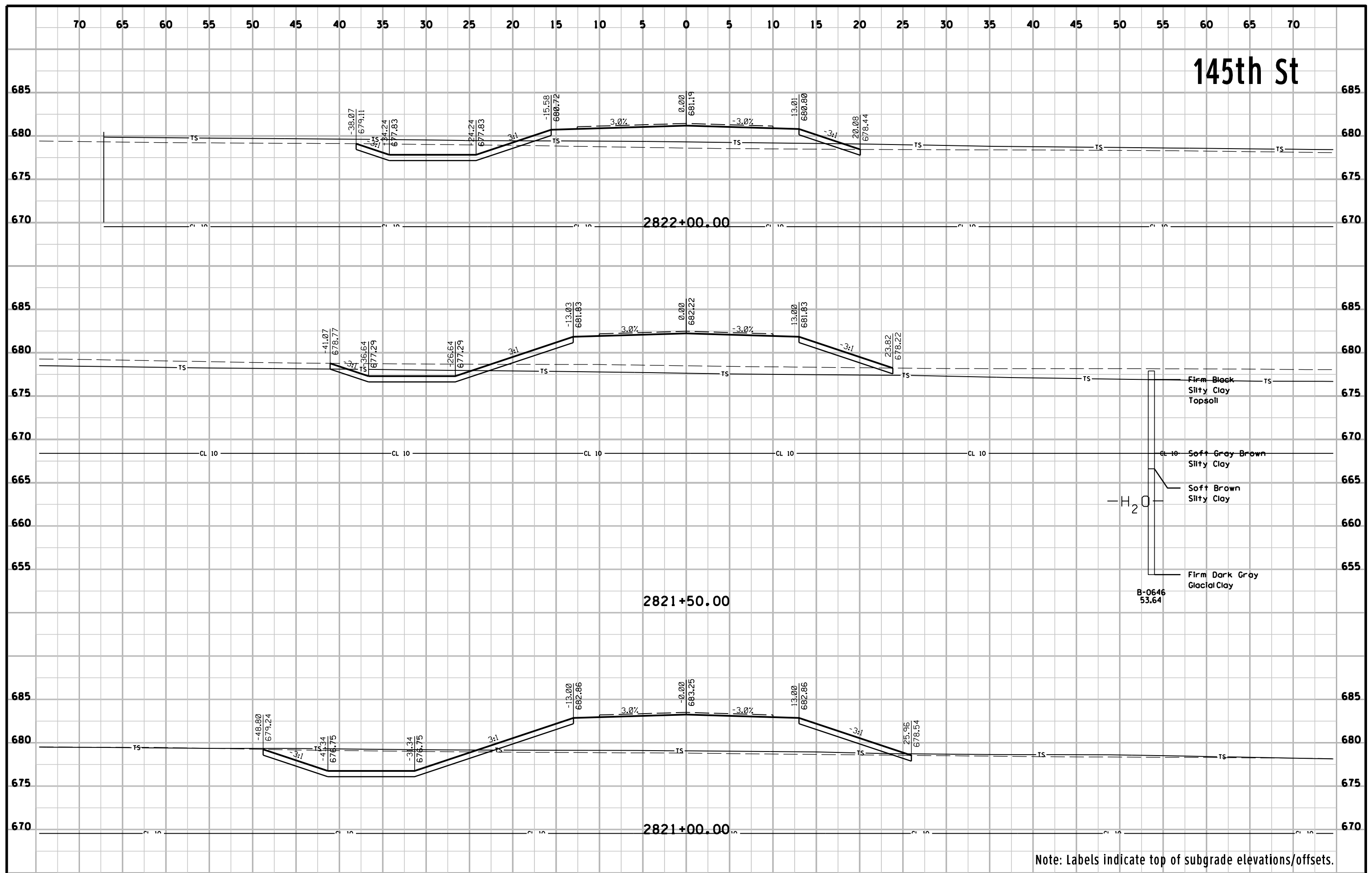
Note: Labels indicate top of subgrade elevations/offsets.

145th St



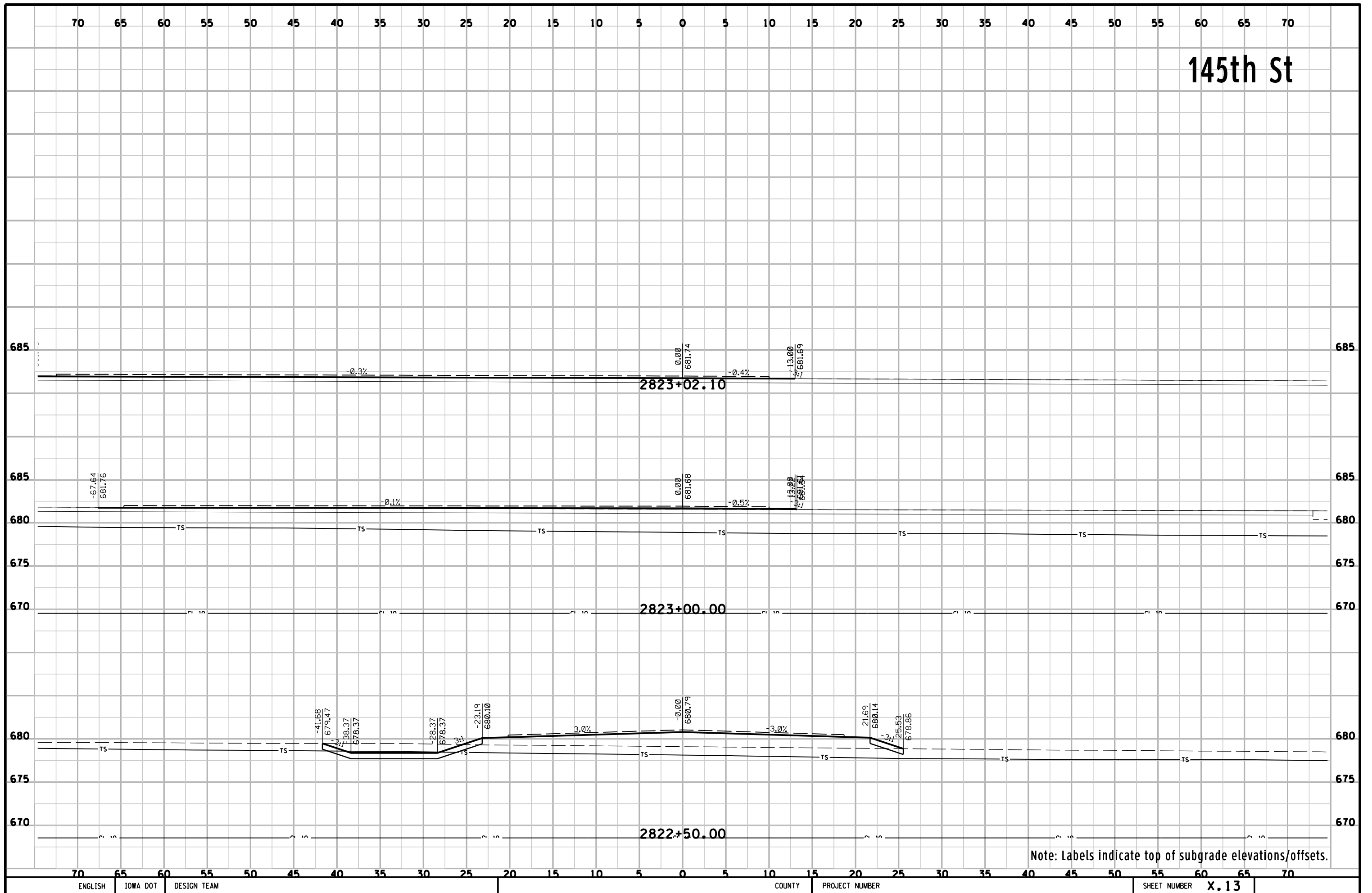
Note: Labels indicate top of subgrade elevations/offsets.

145th St



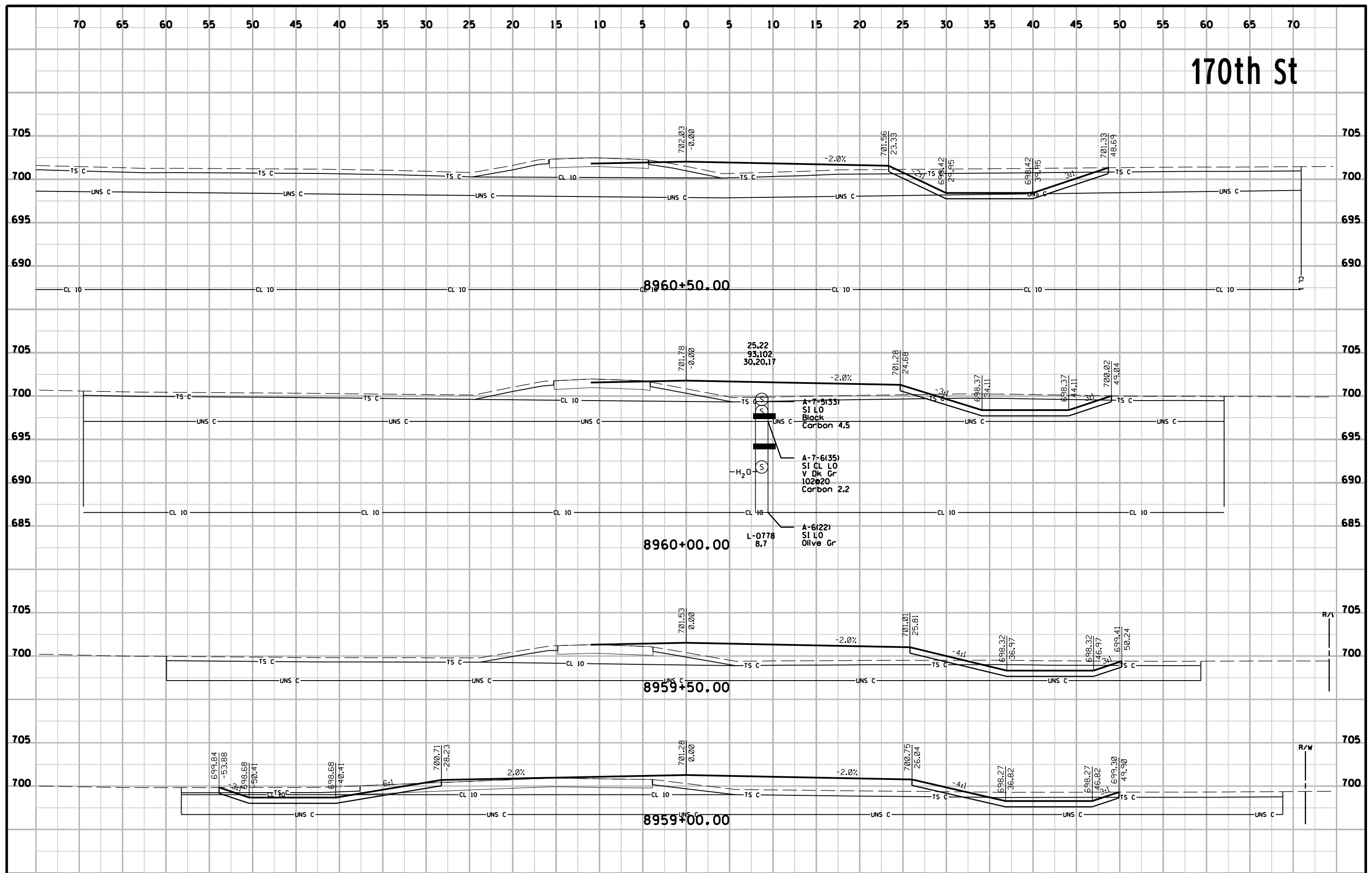
Note: Labels indicate top of subgrade elevations/offsets.

145th St

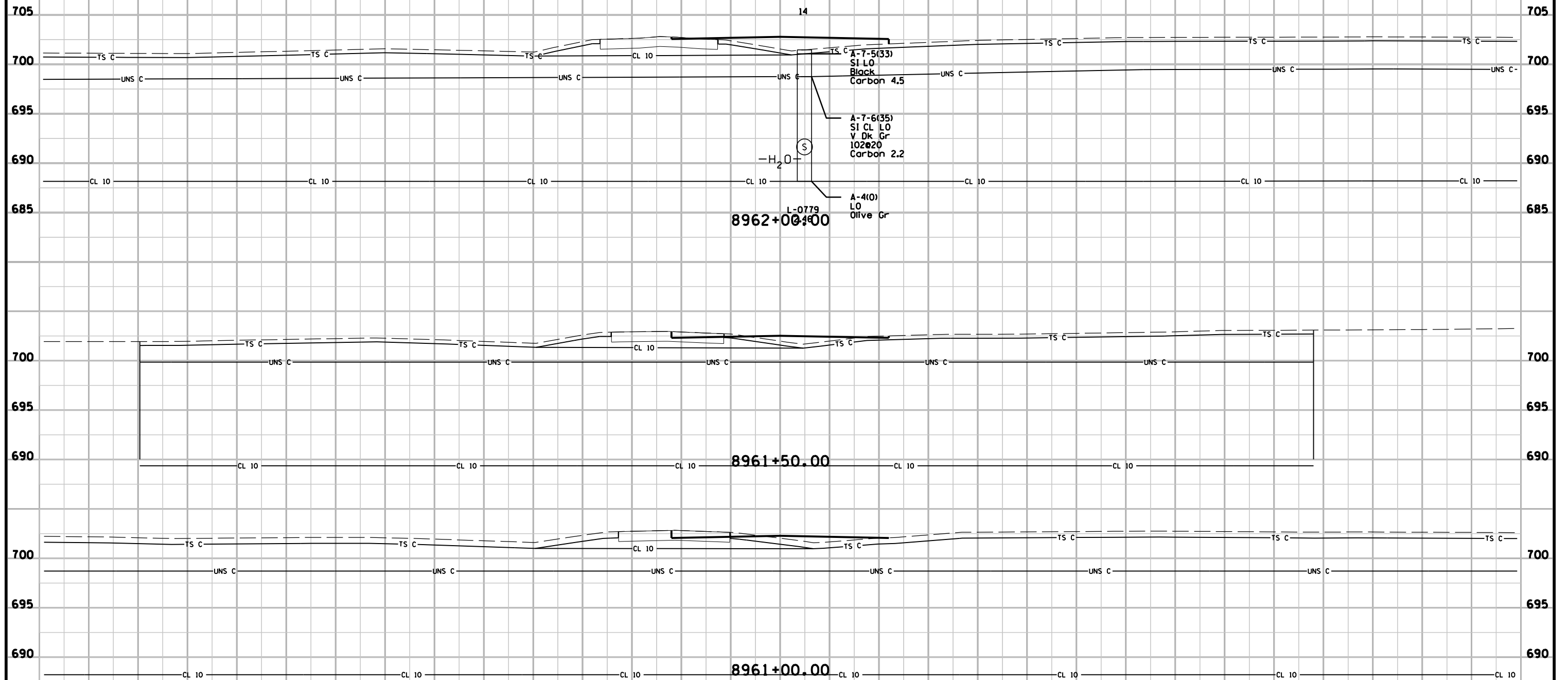


Note: Labels indicate top of subgrade elevations/offsets.

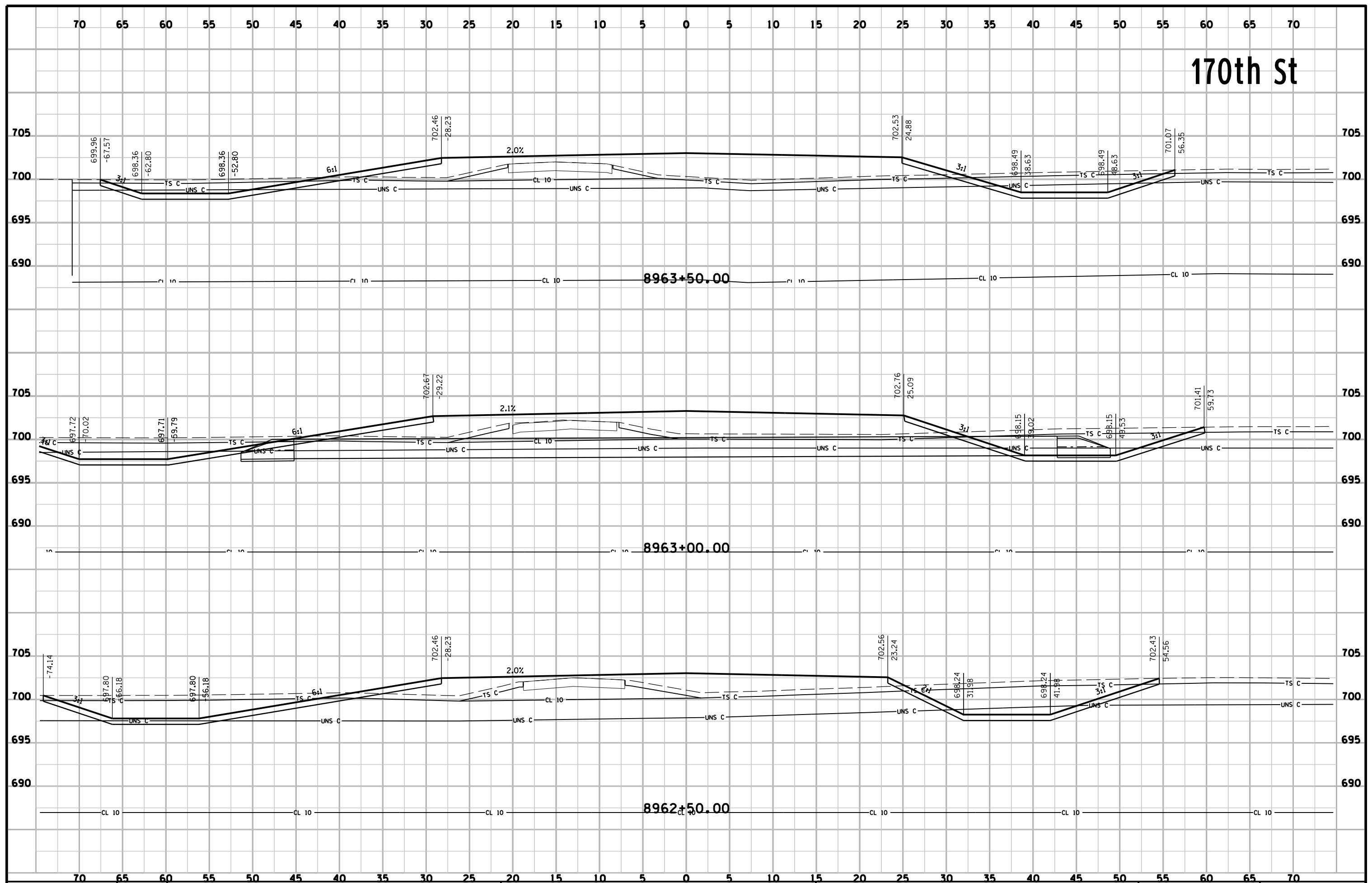
170th St



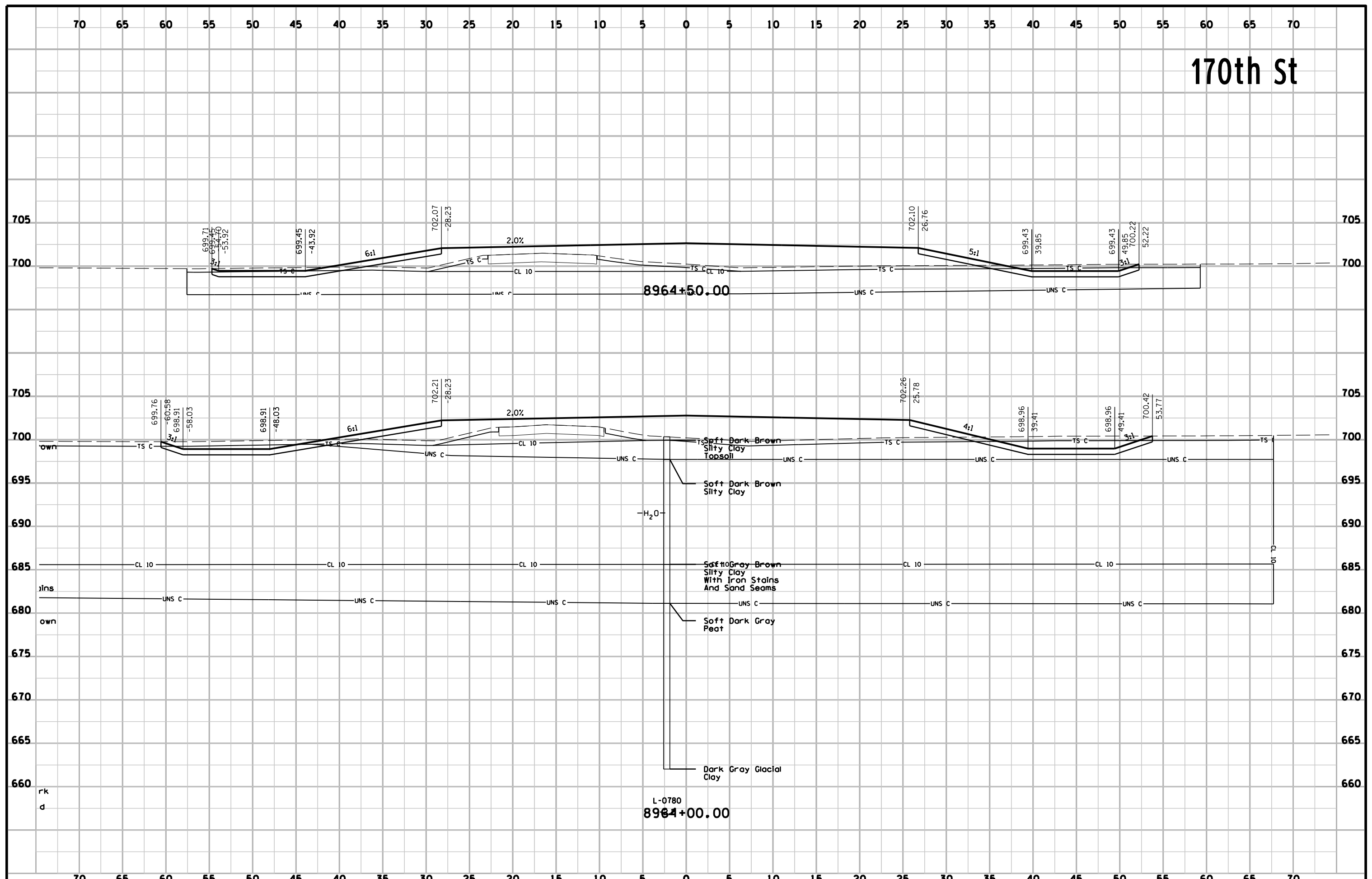
170th St



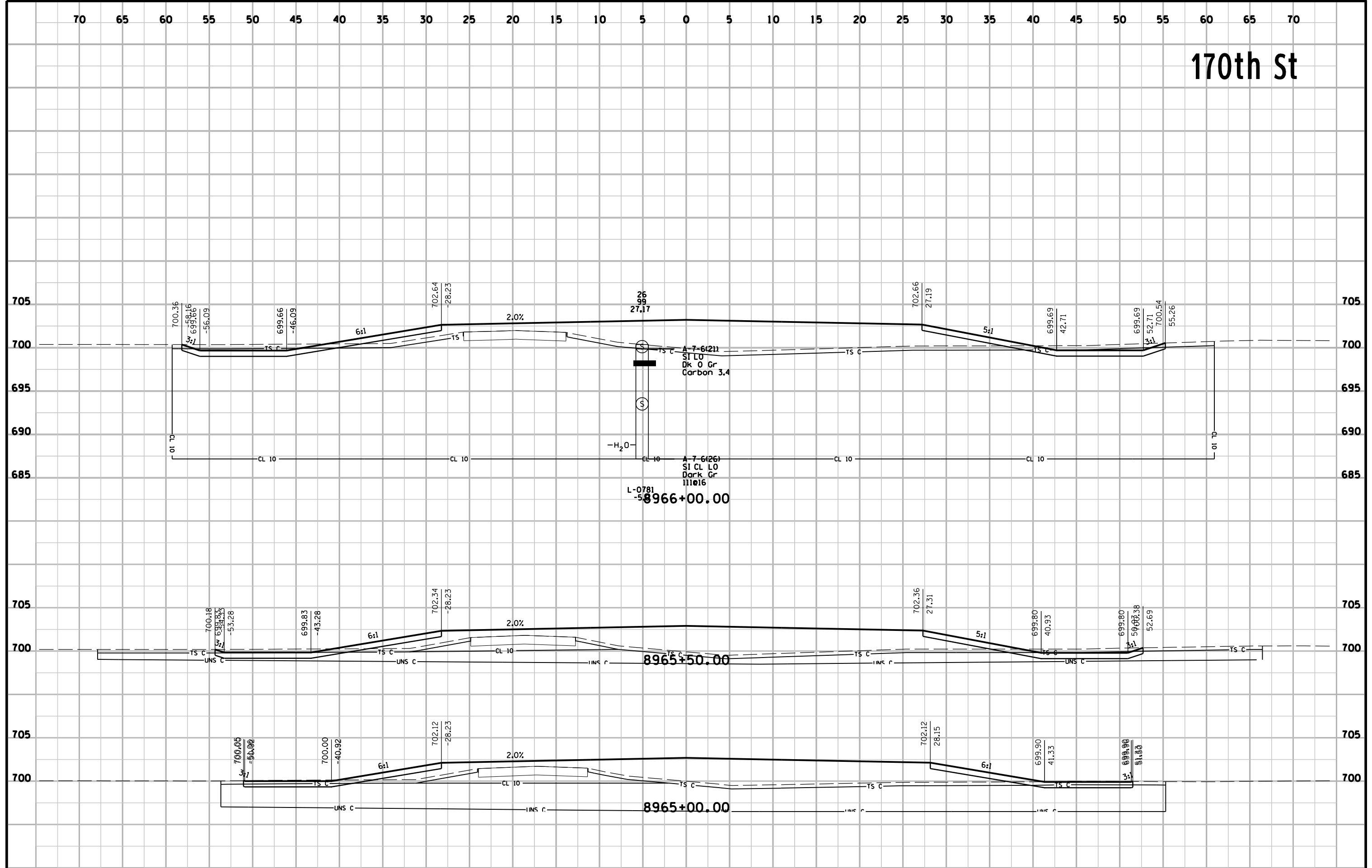
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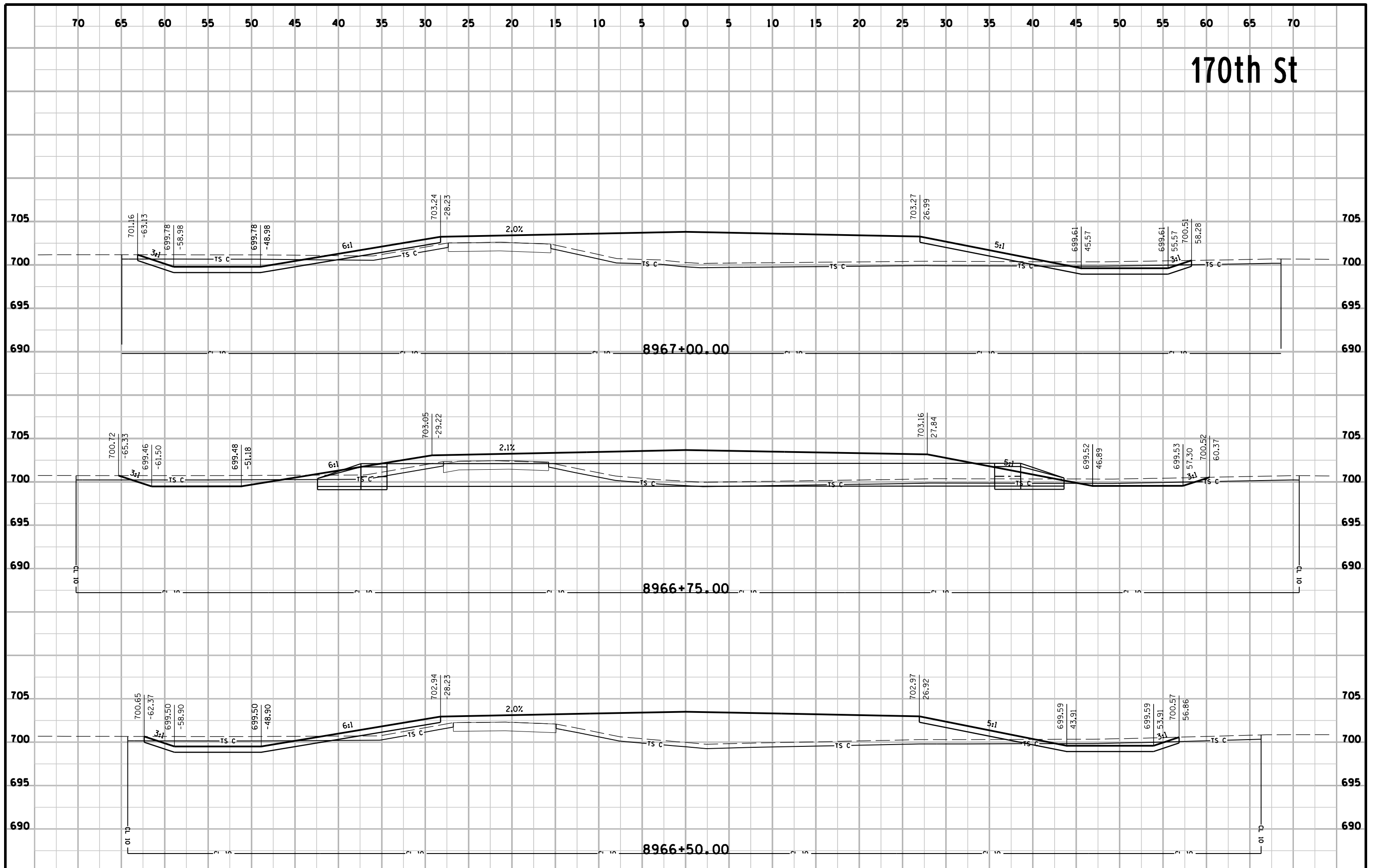
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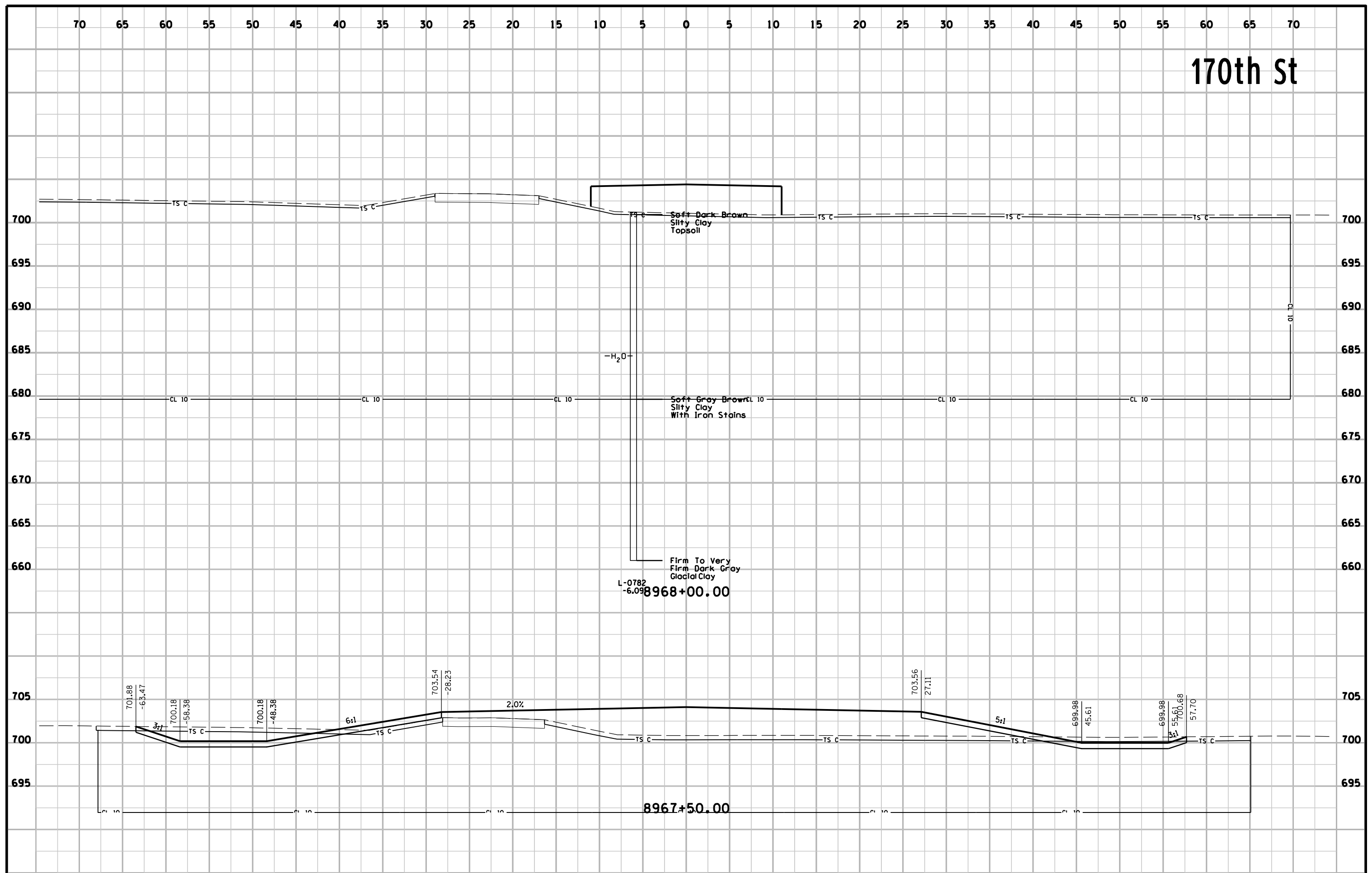
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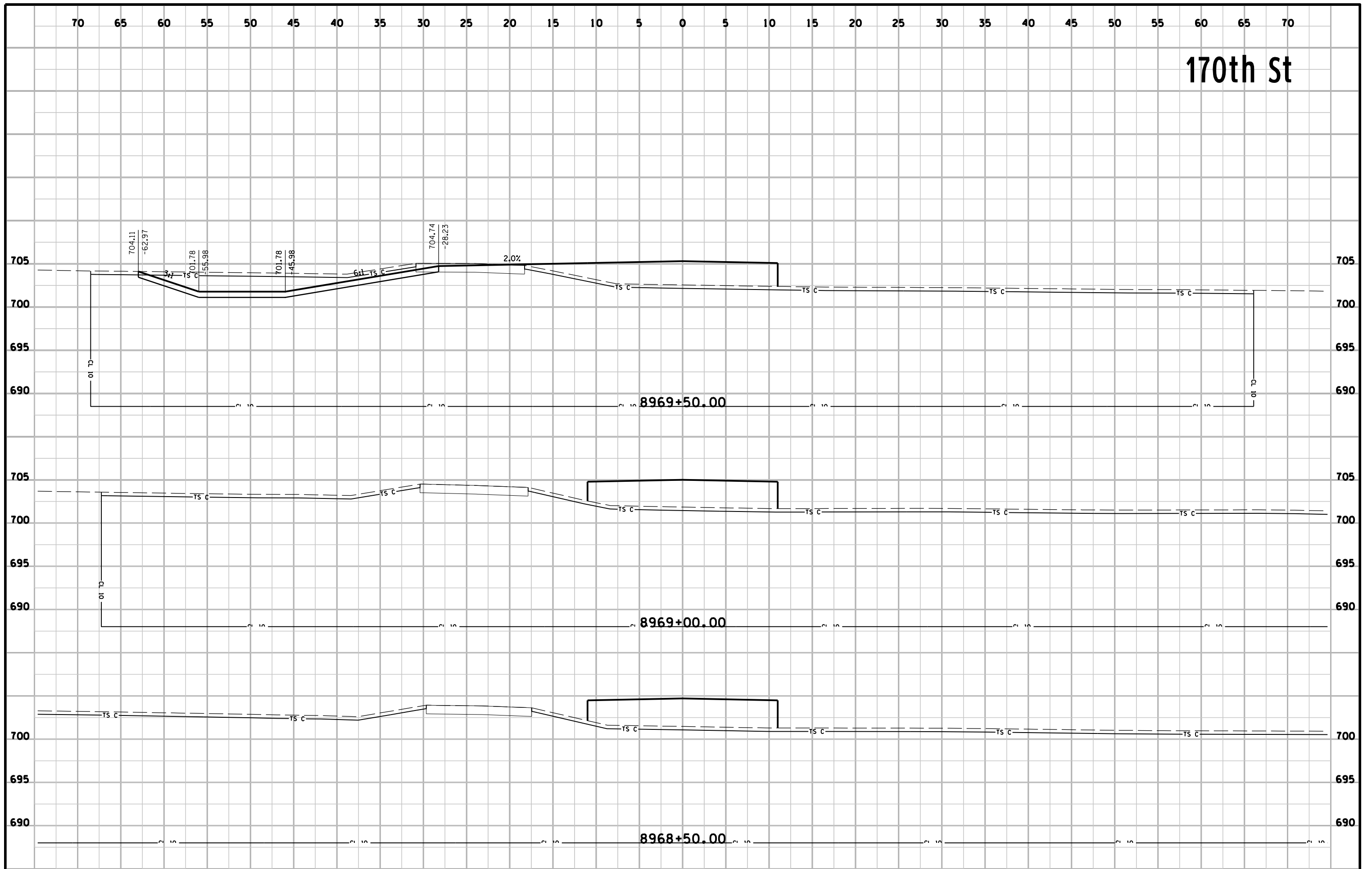
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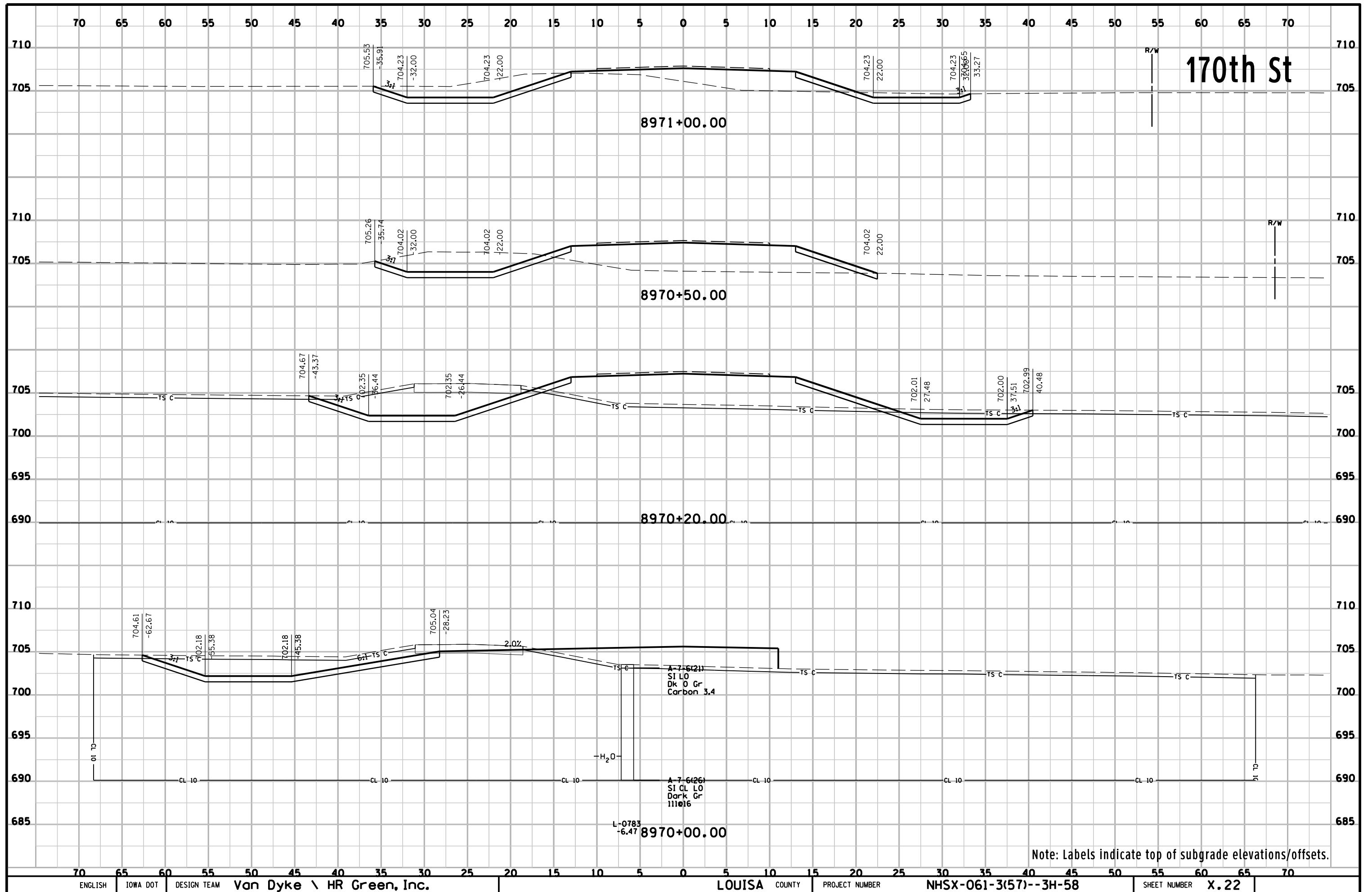


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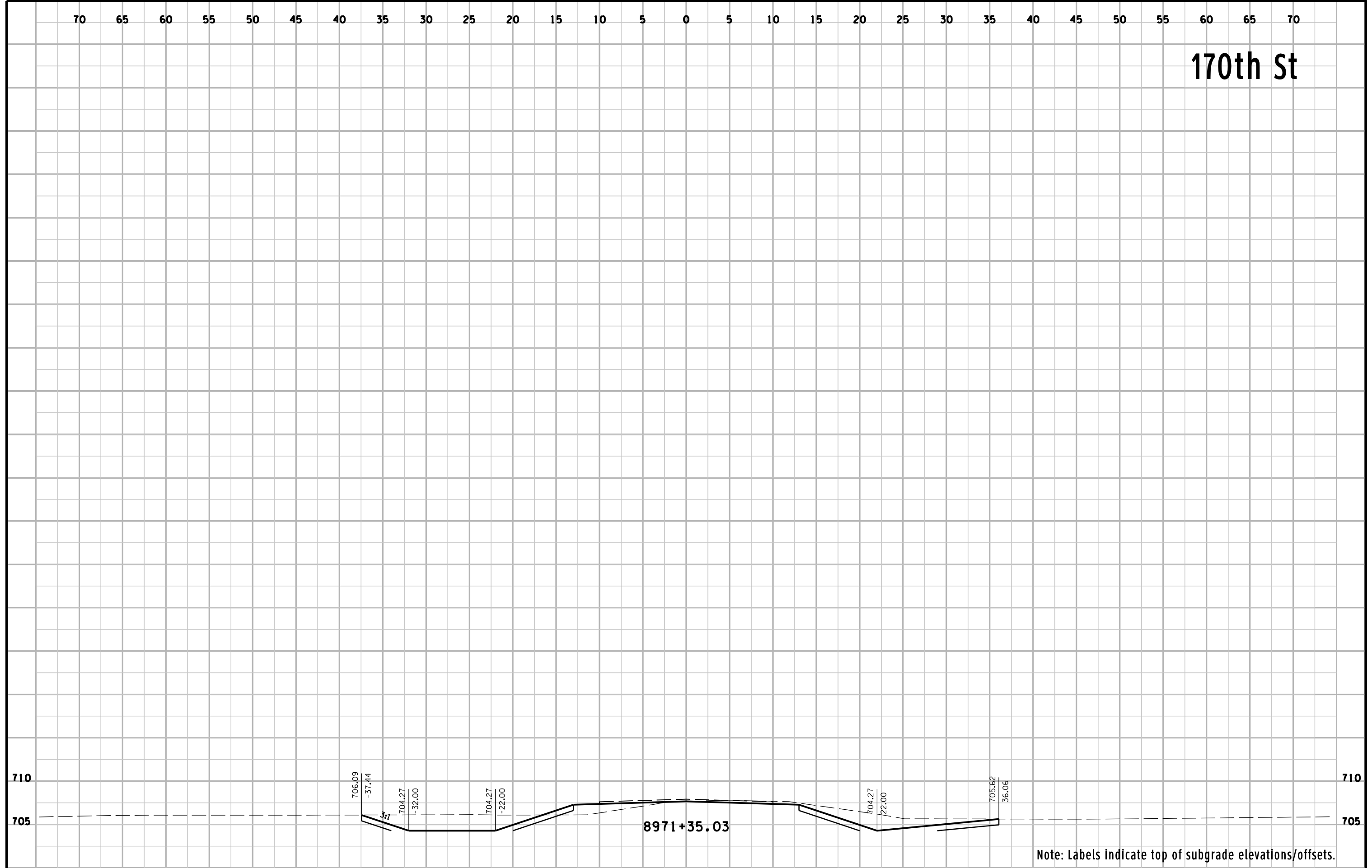


170th St



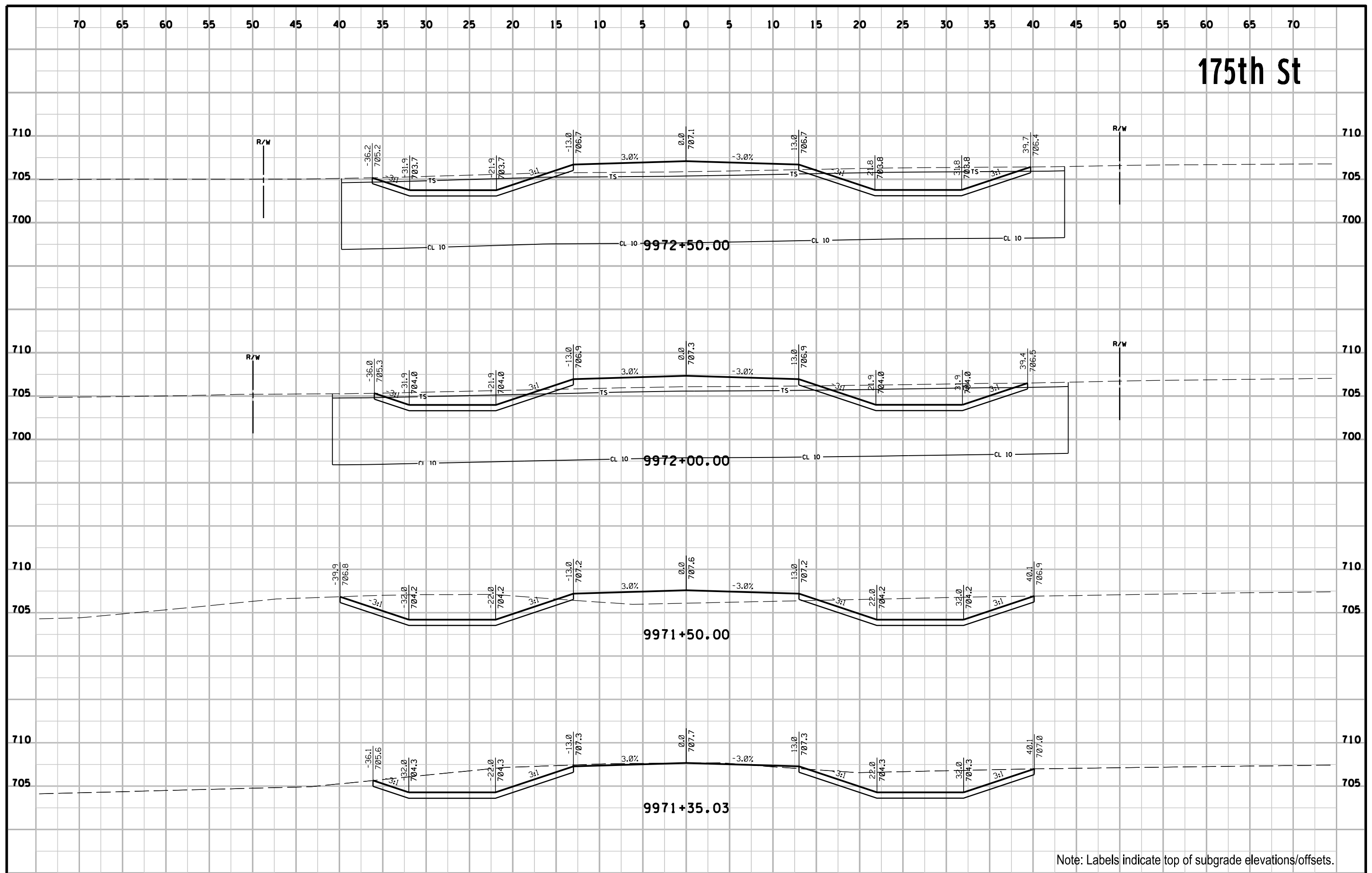


170th St



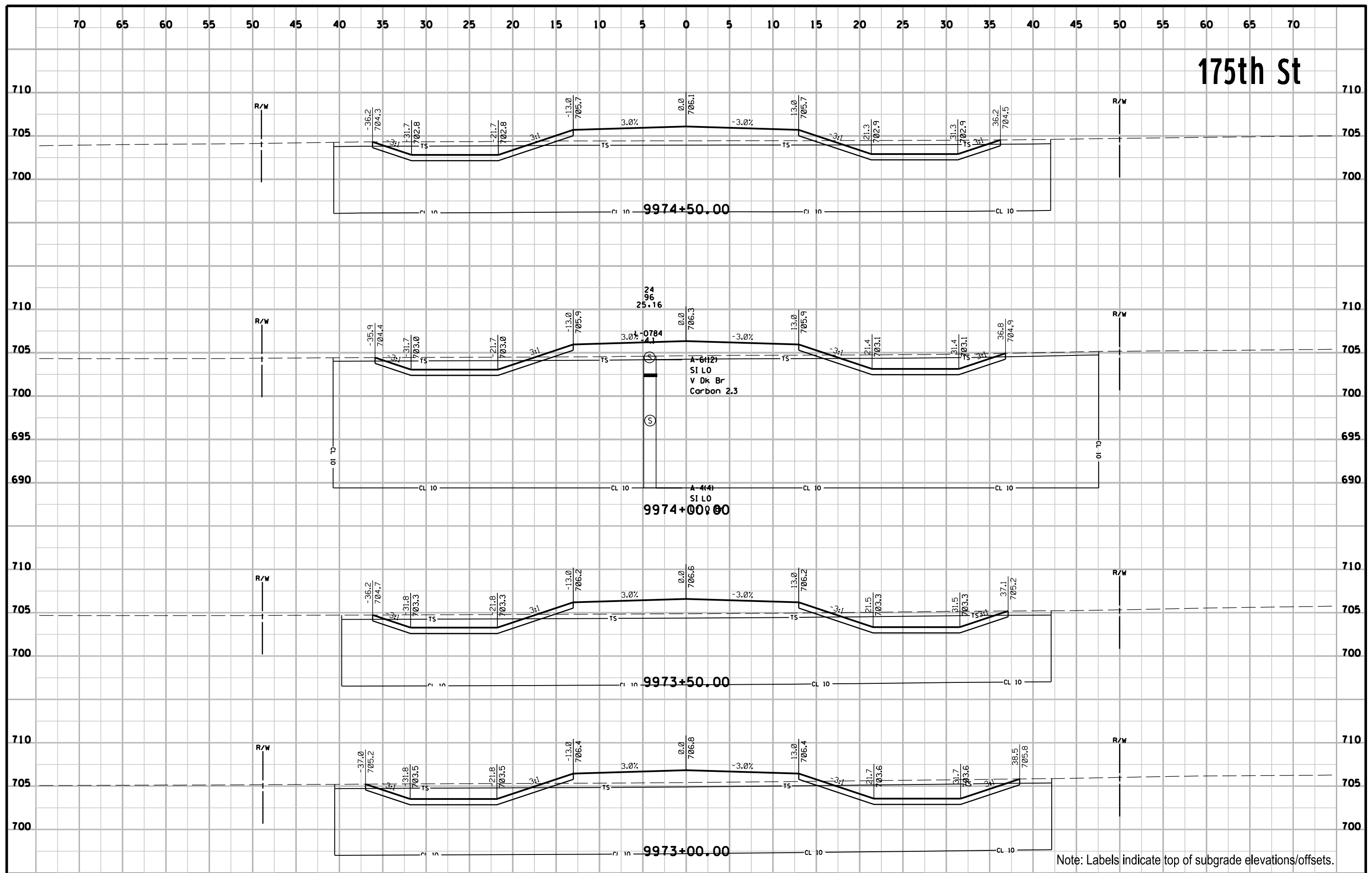
Note: Labels indicate top of subgrade elevations/offsets.

175th St



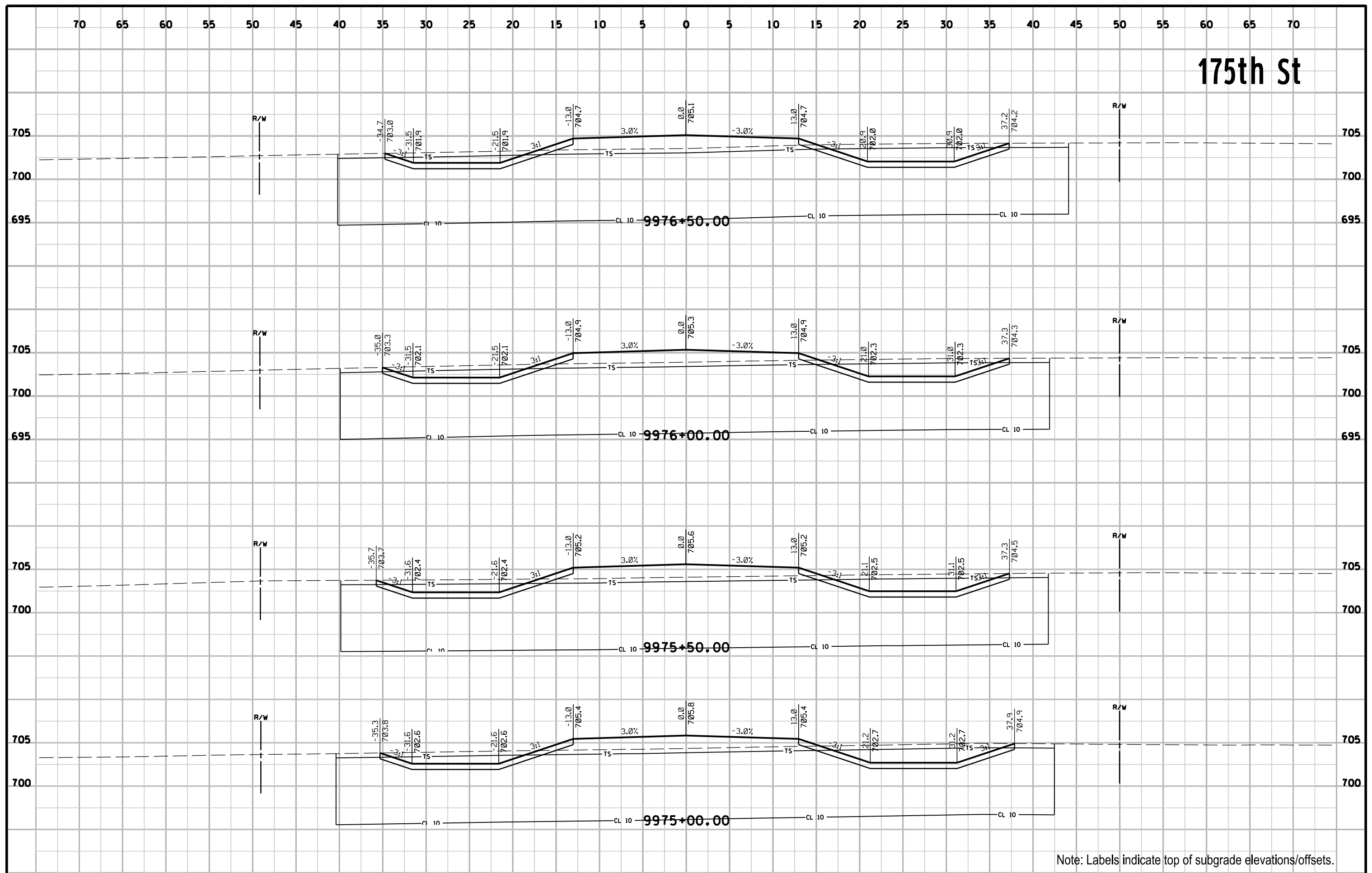
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175th St



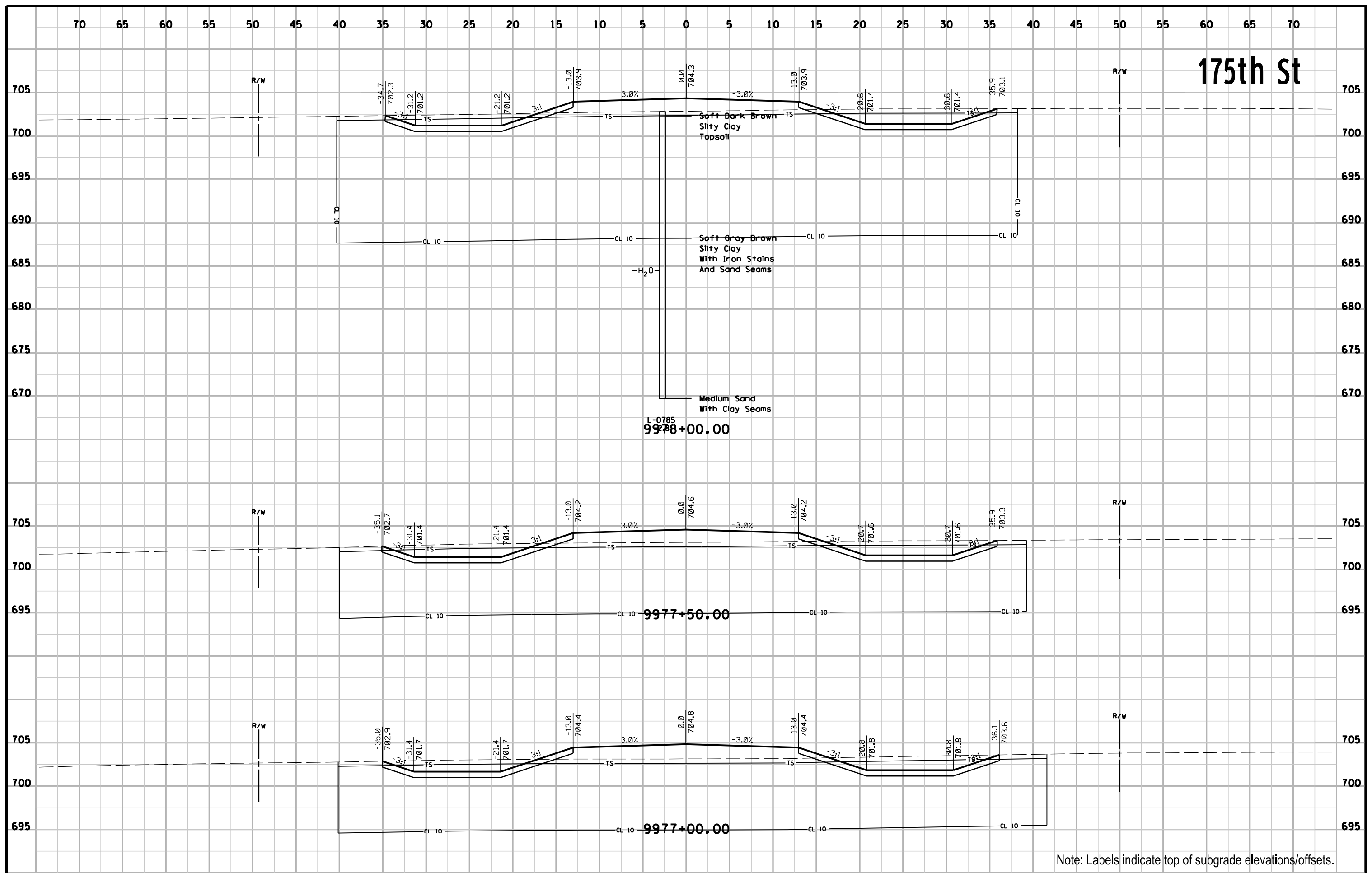
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175th St



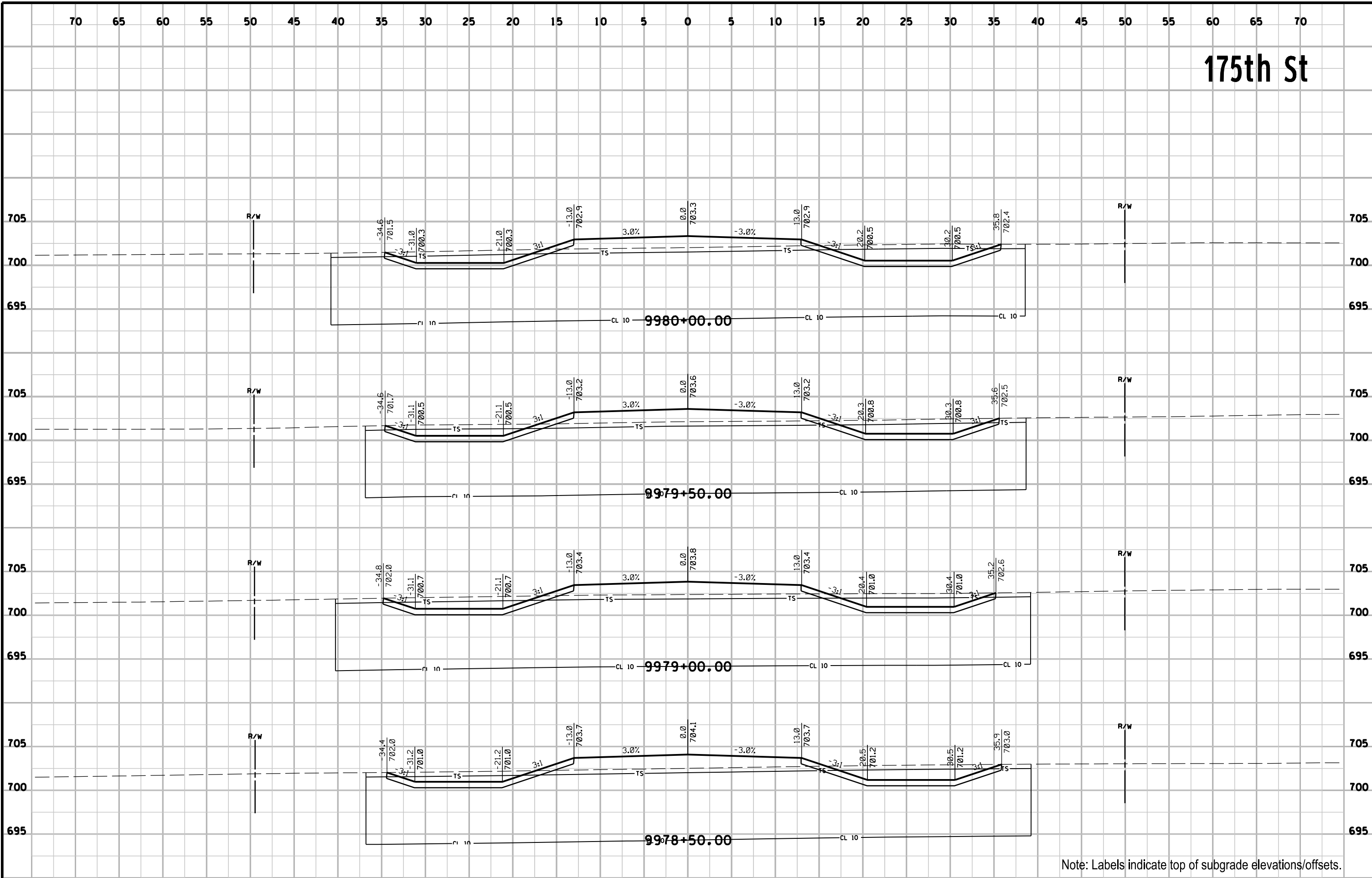
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175th St



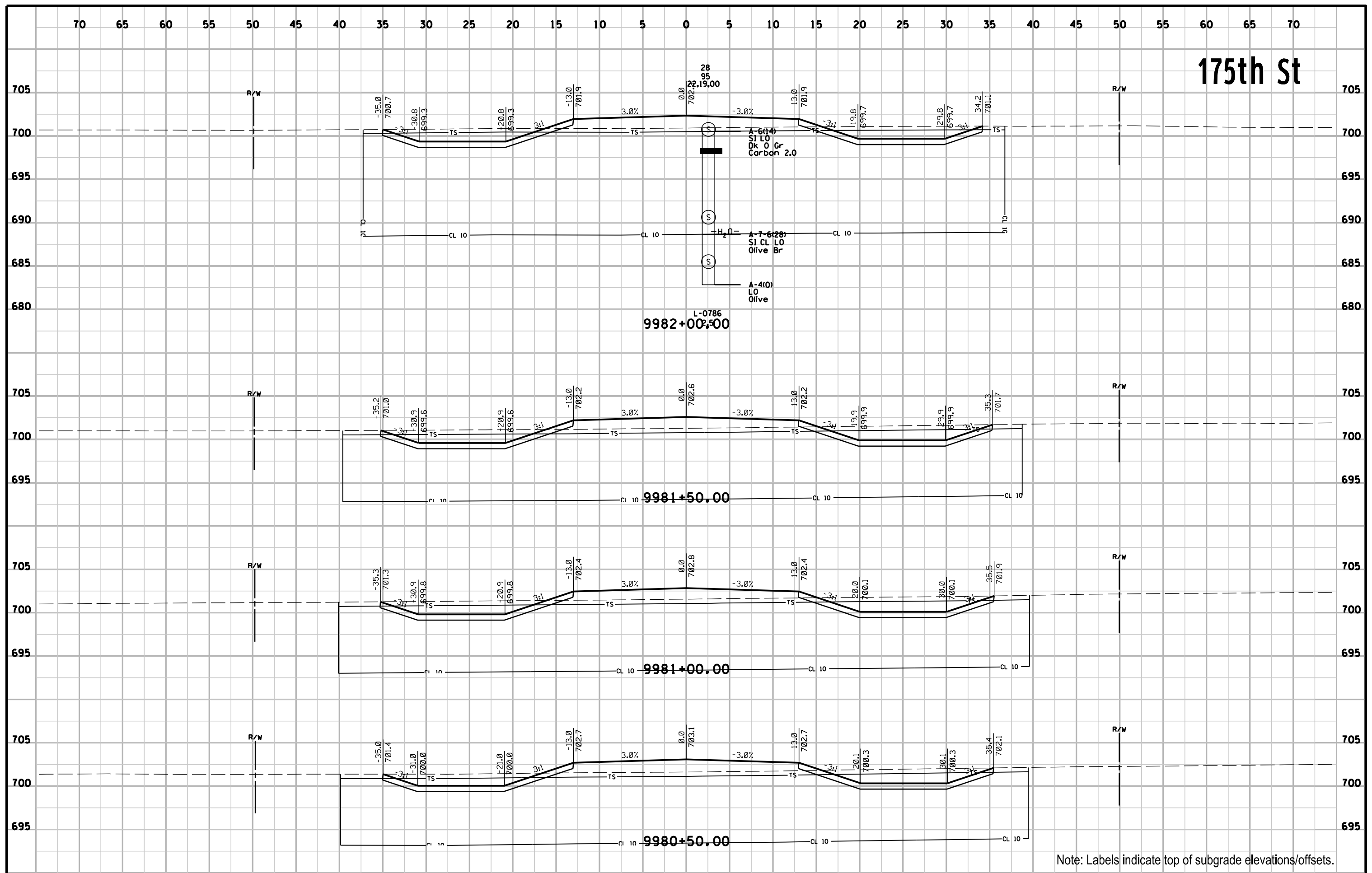
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175th St



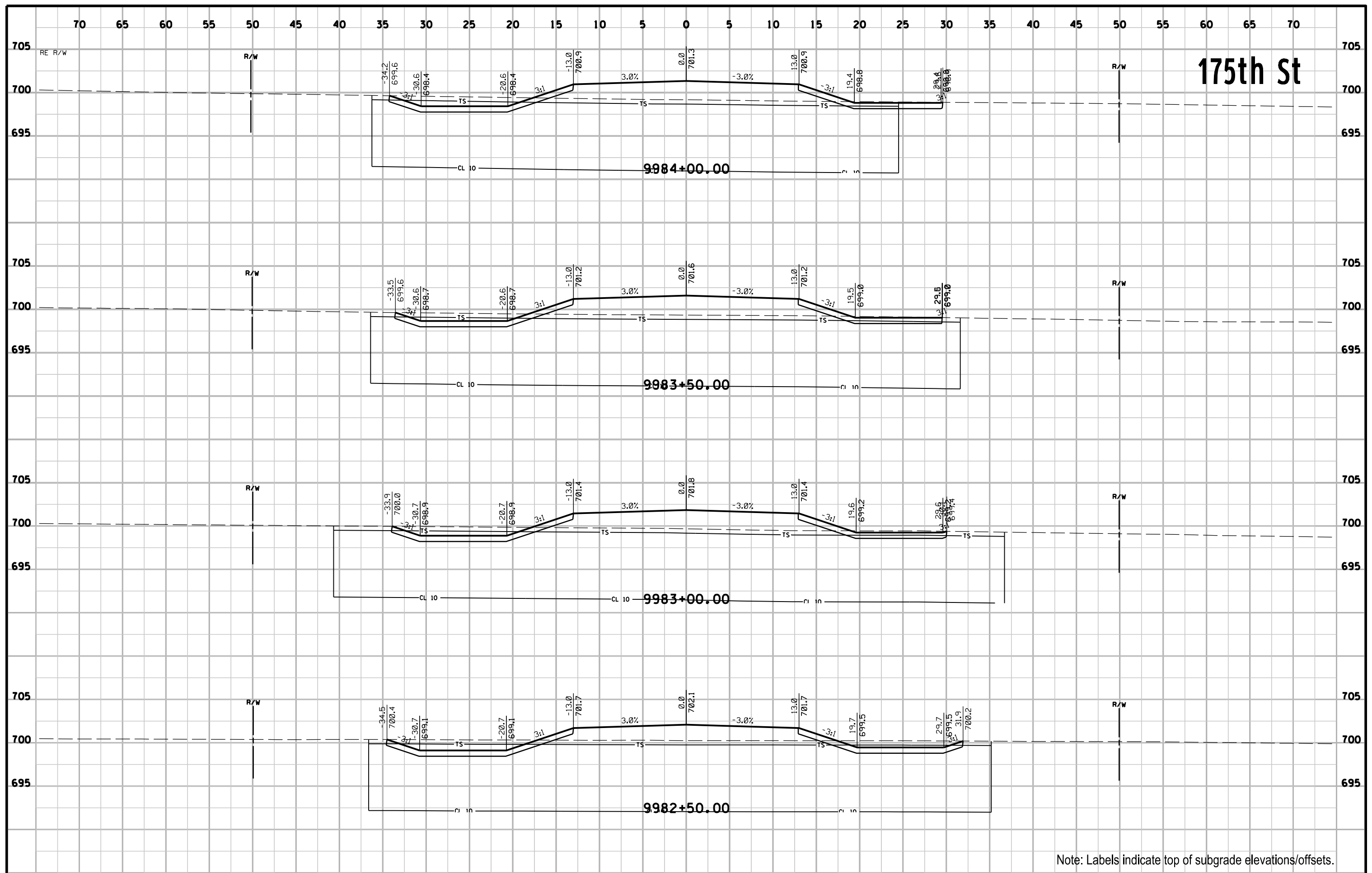
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175th St



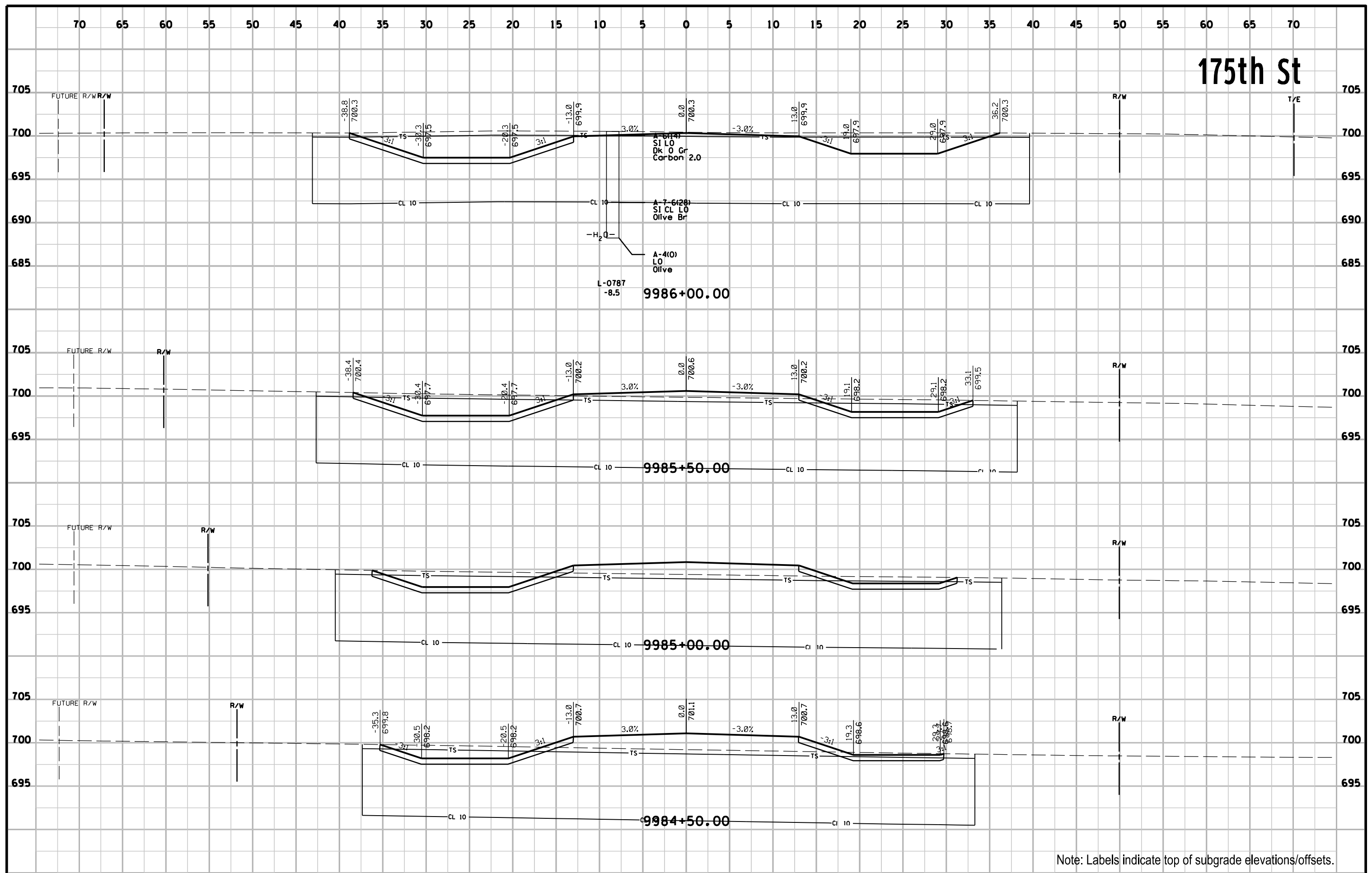
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175th St



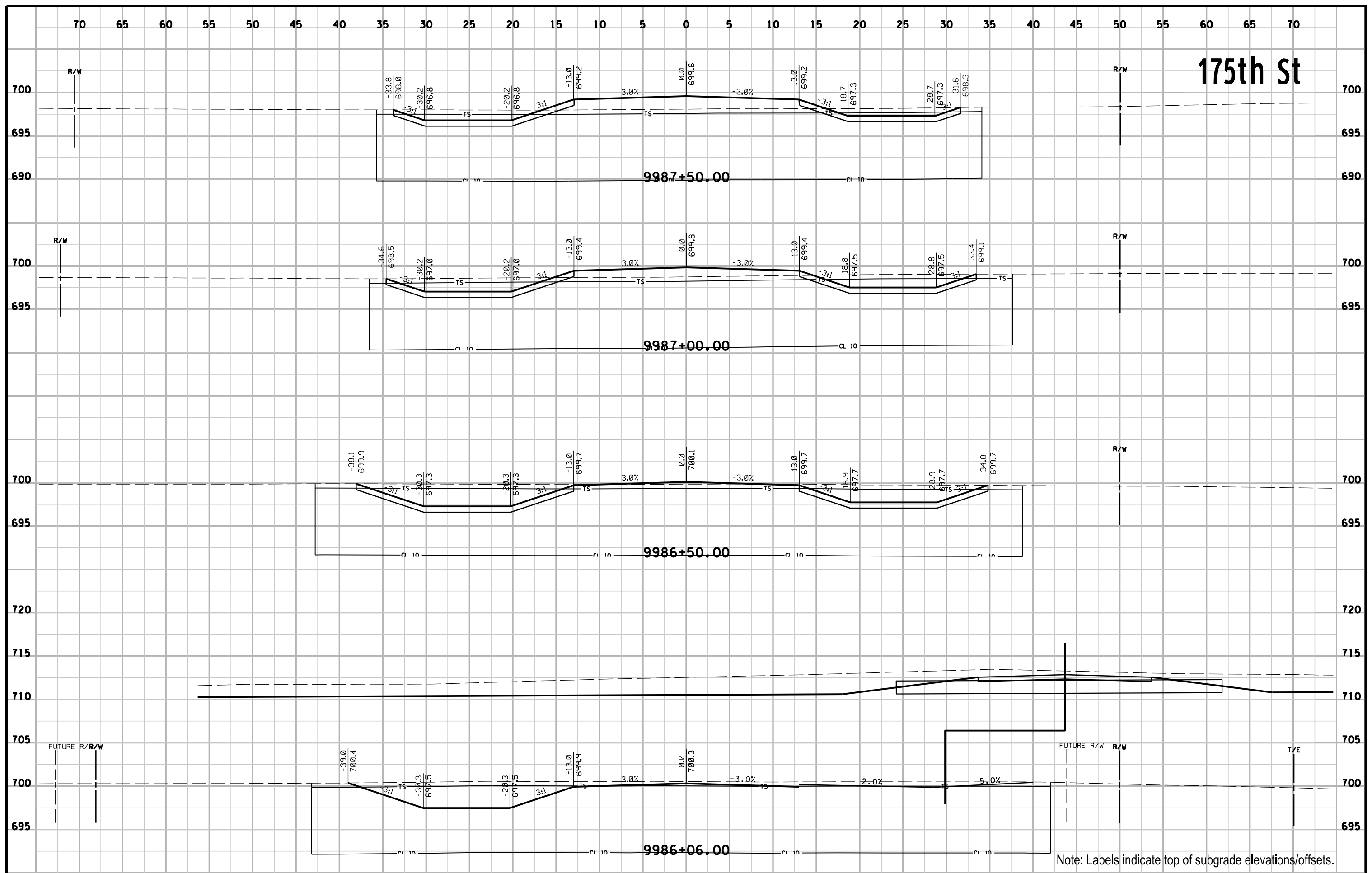
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175th St



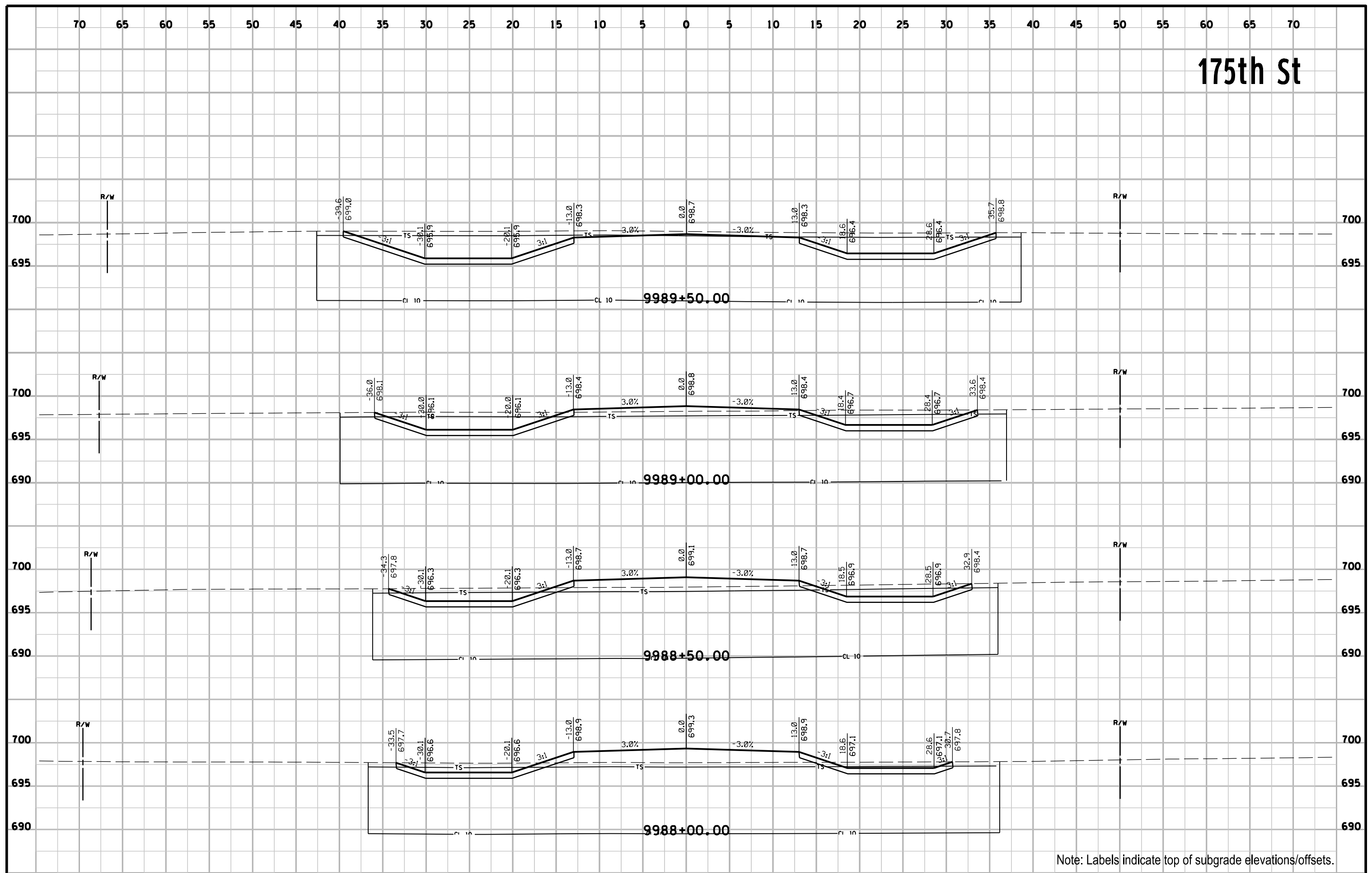
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175th St



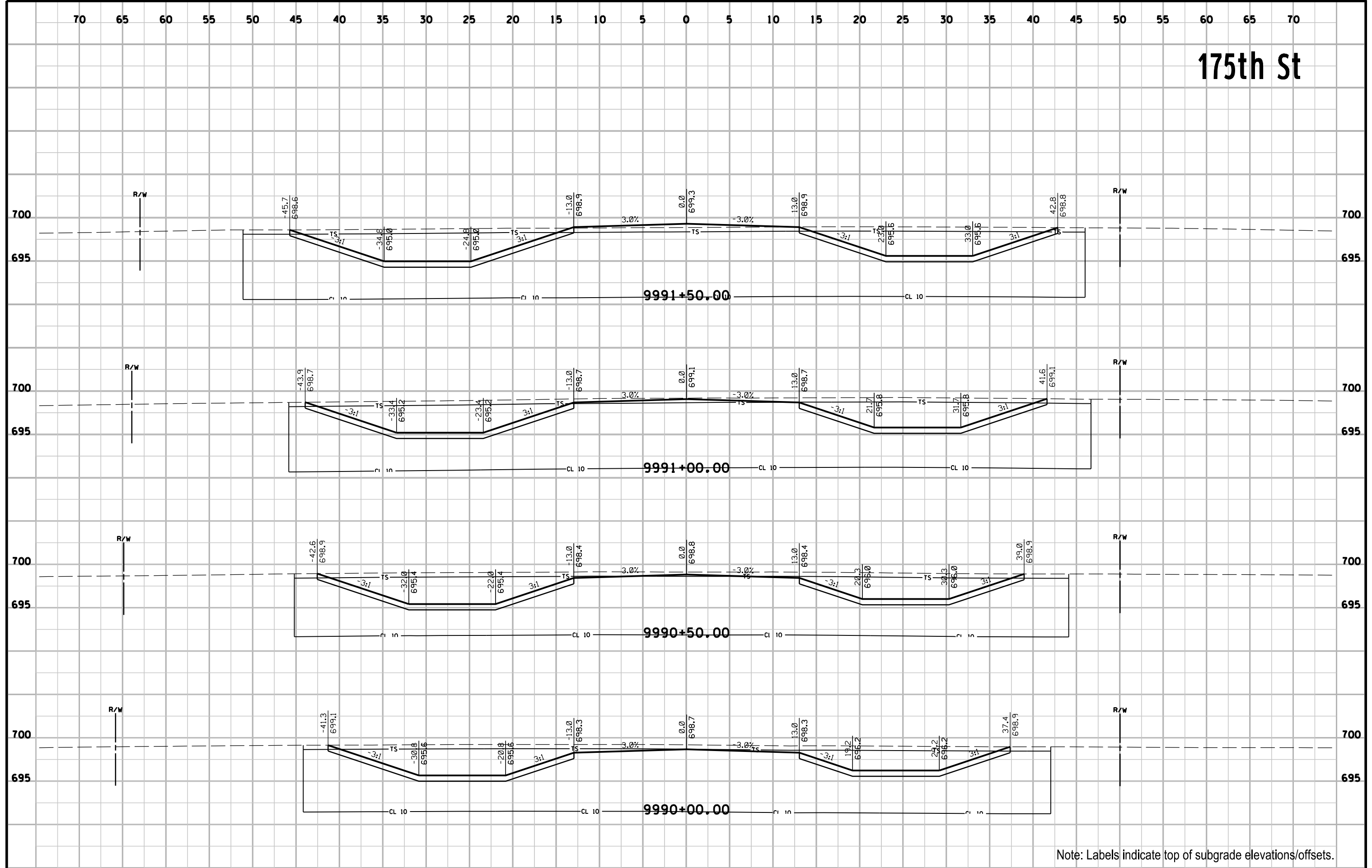
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175th St



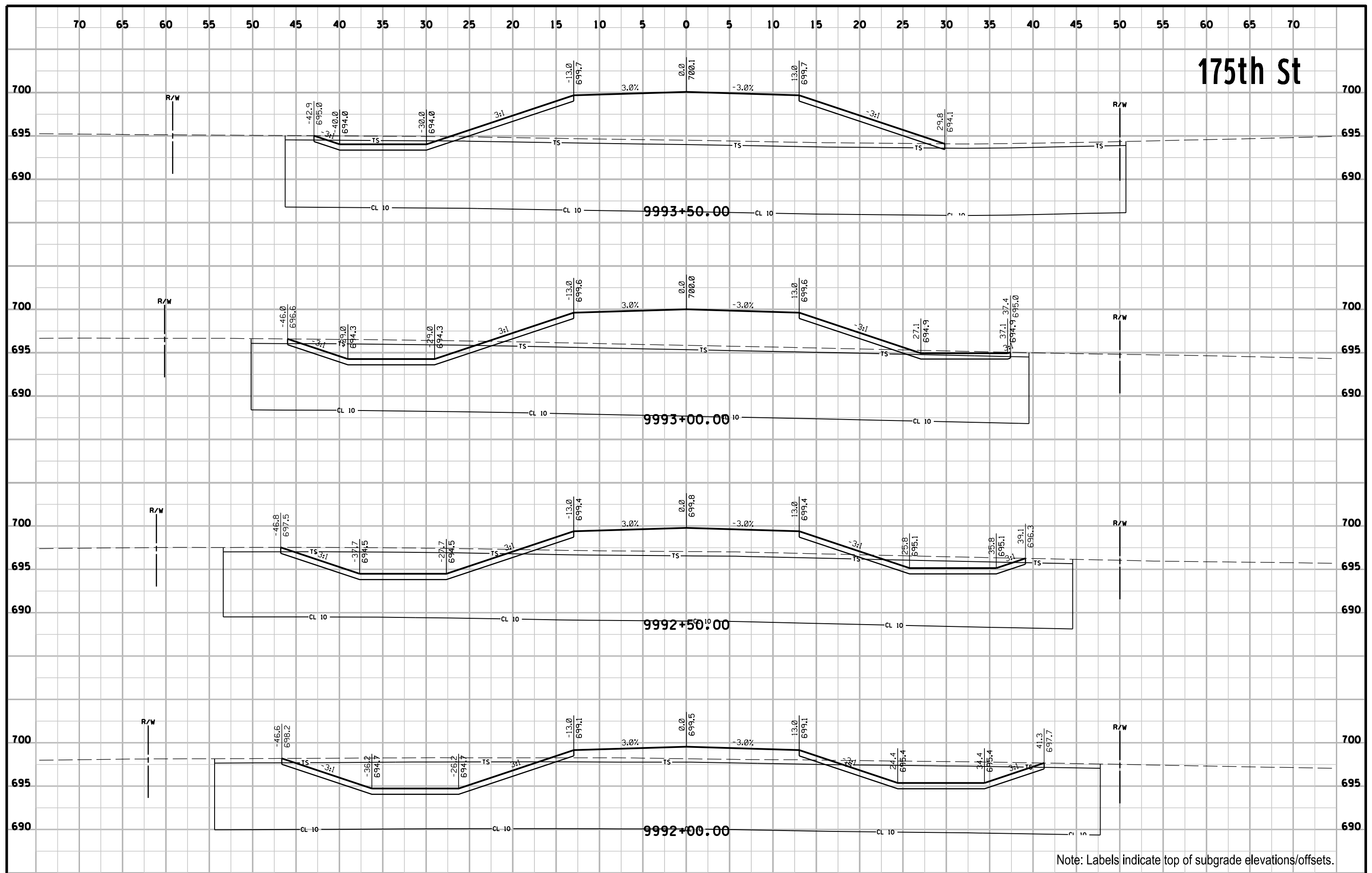
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175th St



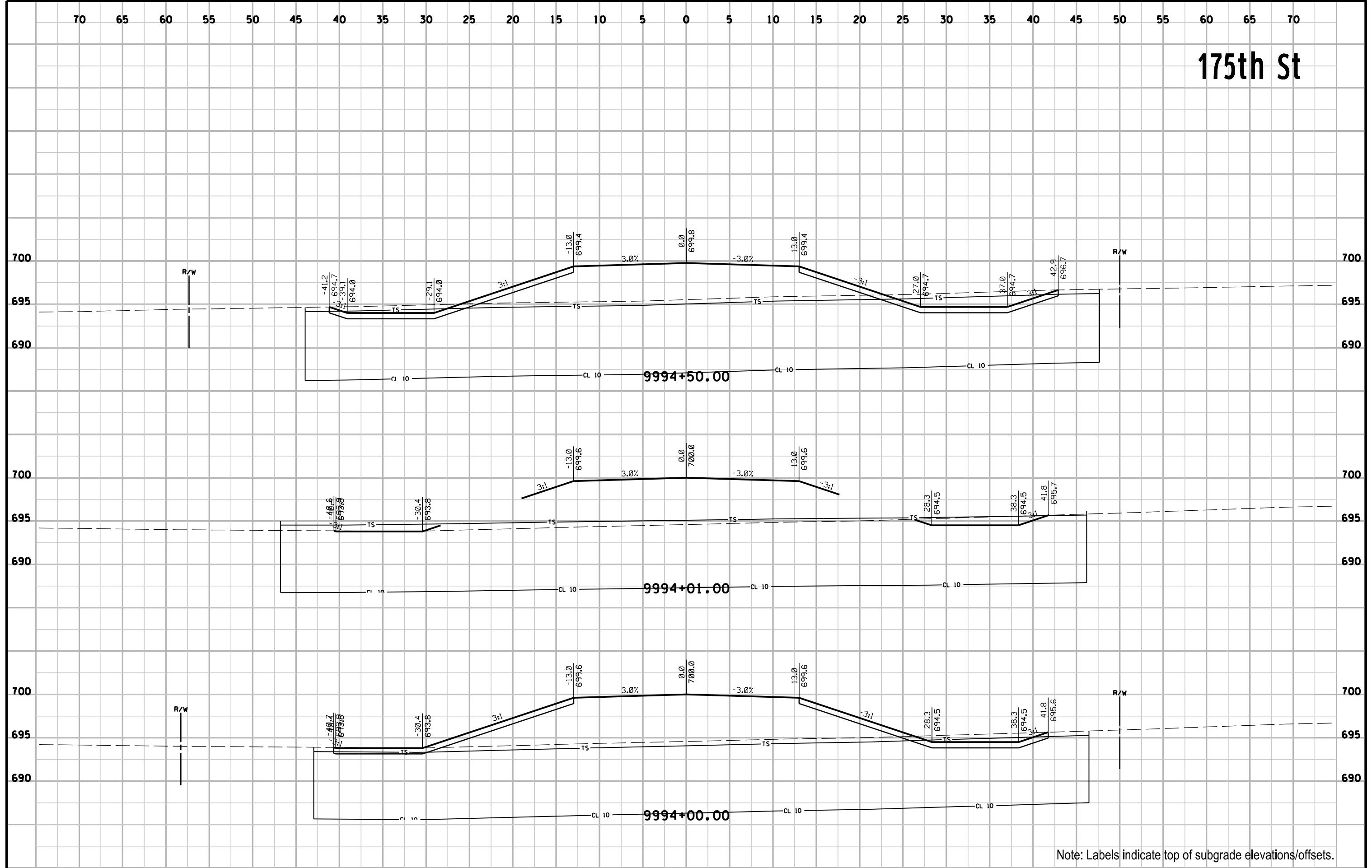
Note: Labels indicate top of subgrade elevations/offsets.

175th St



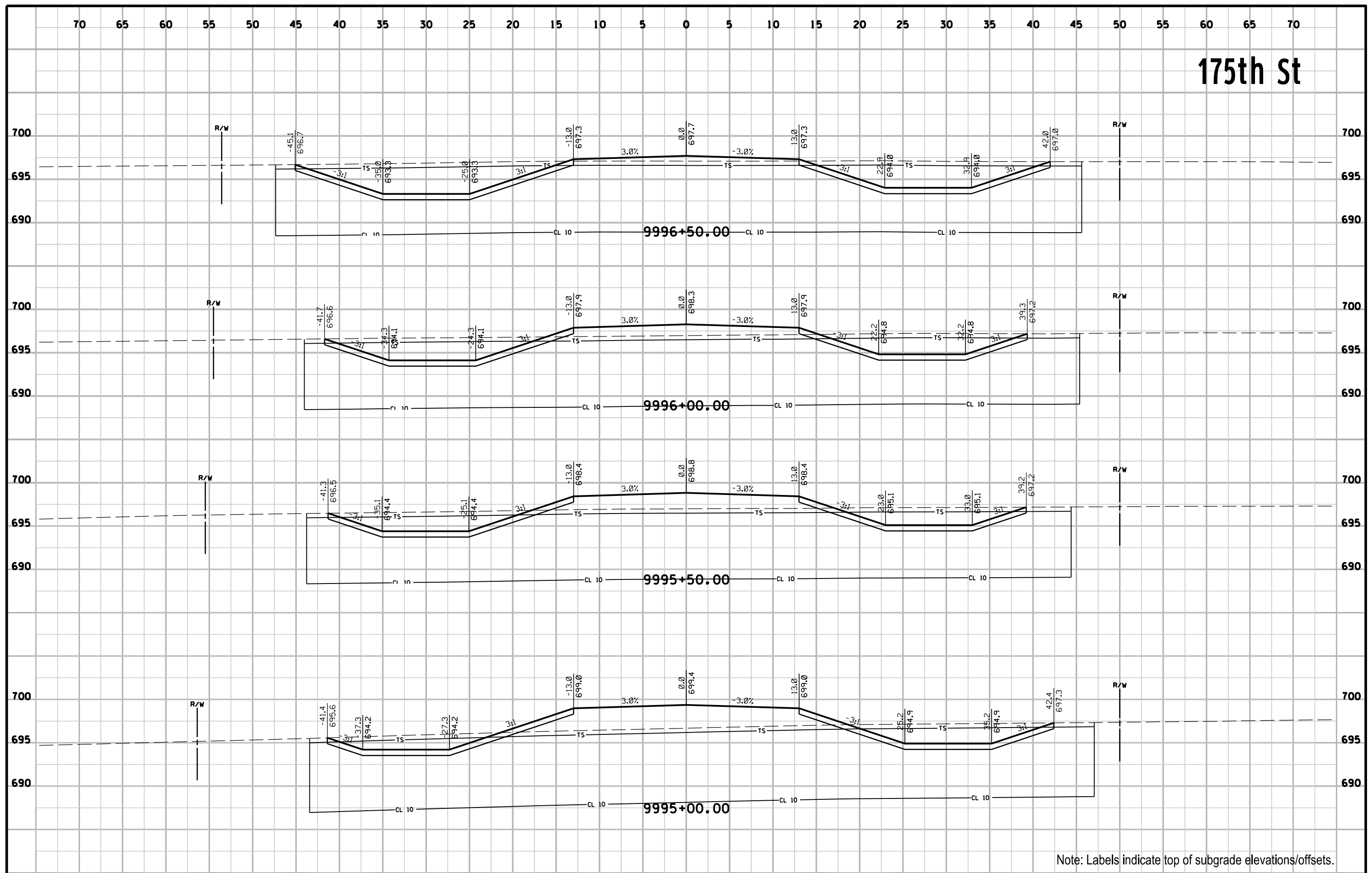
Note: Labels indicate top of subgrade elevations/offsets.

175th St



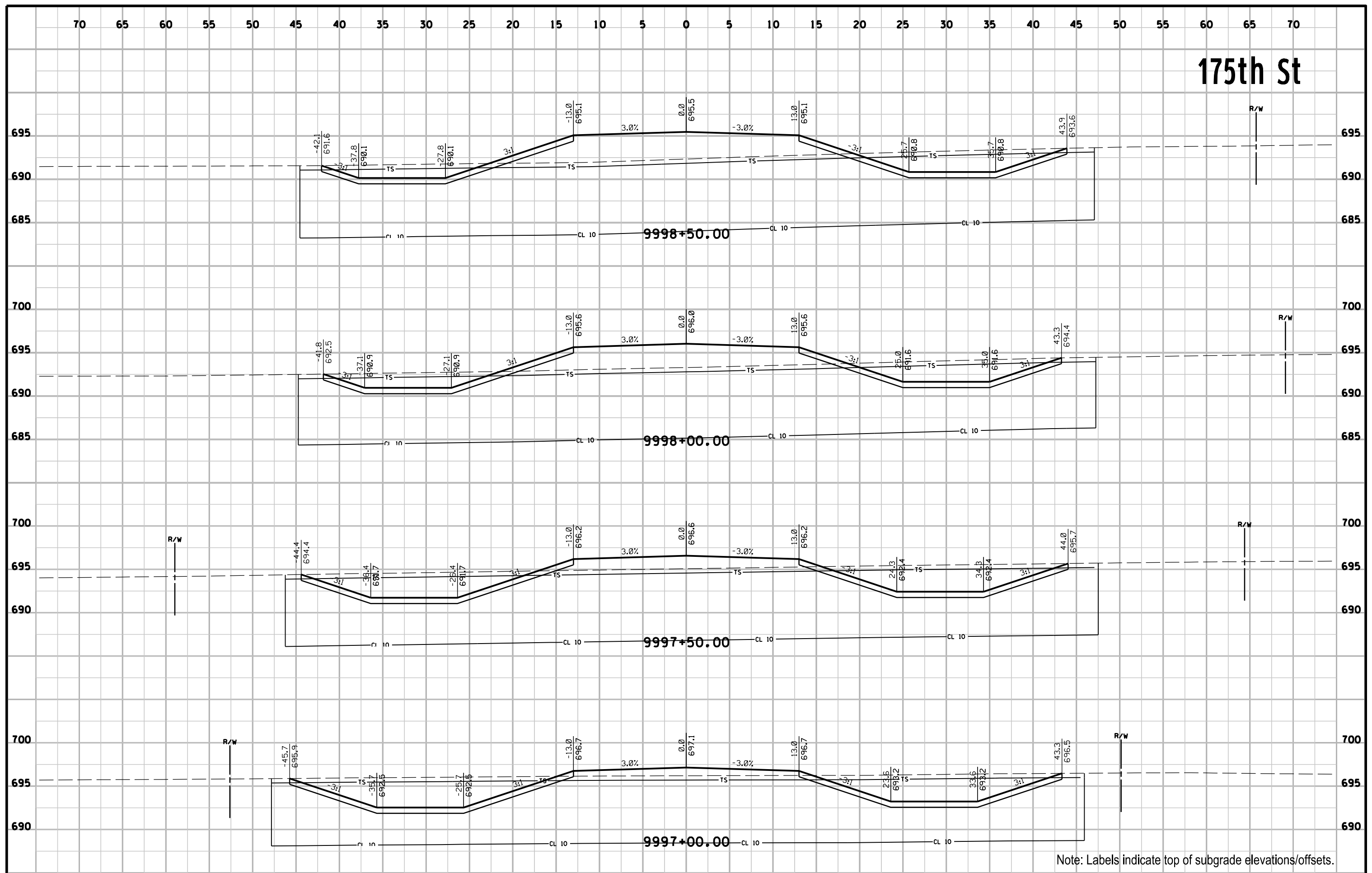
Note: Labels indicate top of subgrade elevations/offsets.

175th St



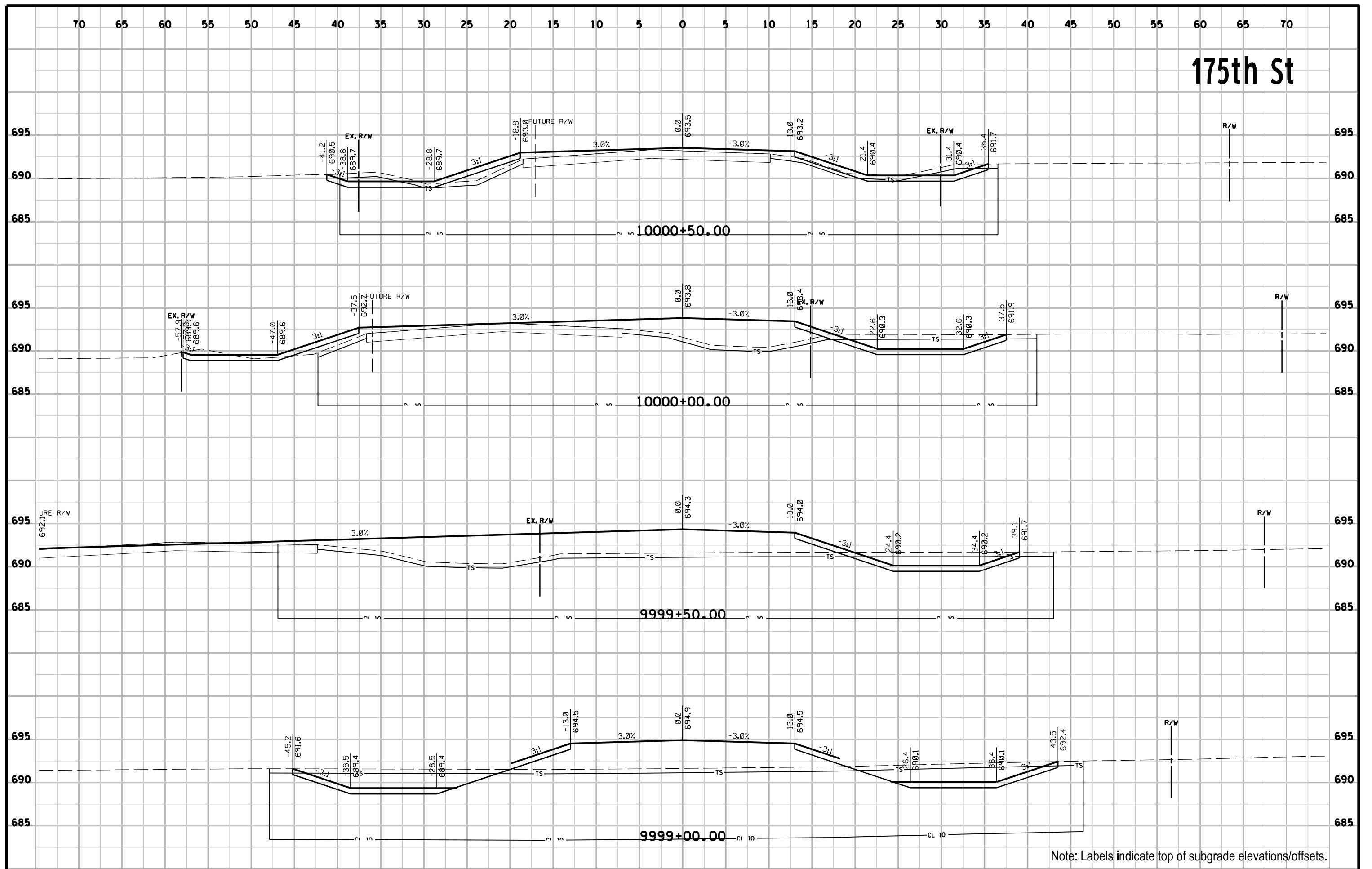
Note: Labels indicate top of subgrade elevations/offsets.

175th St



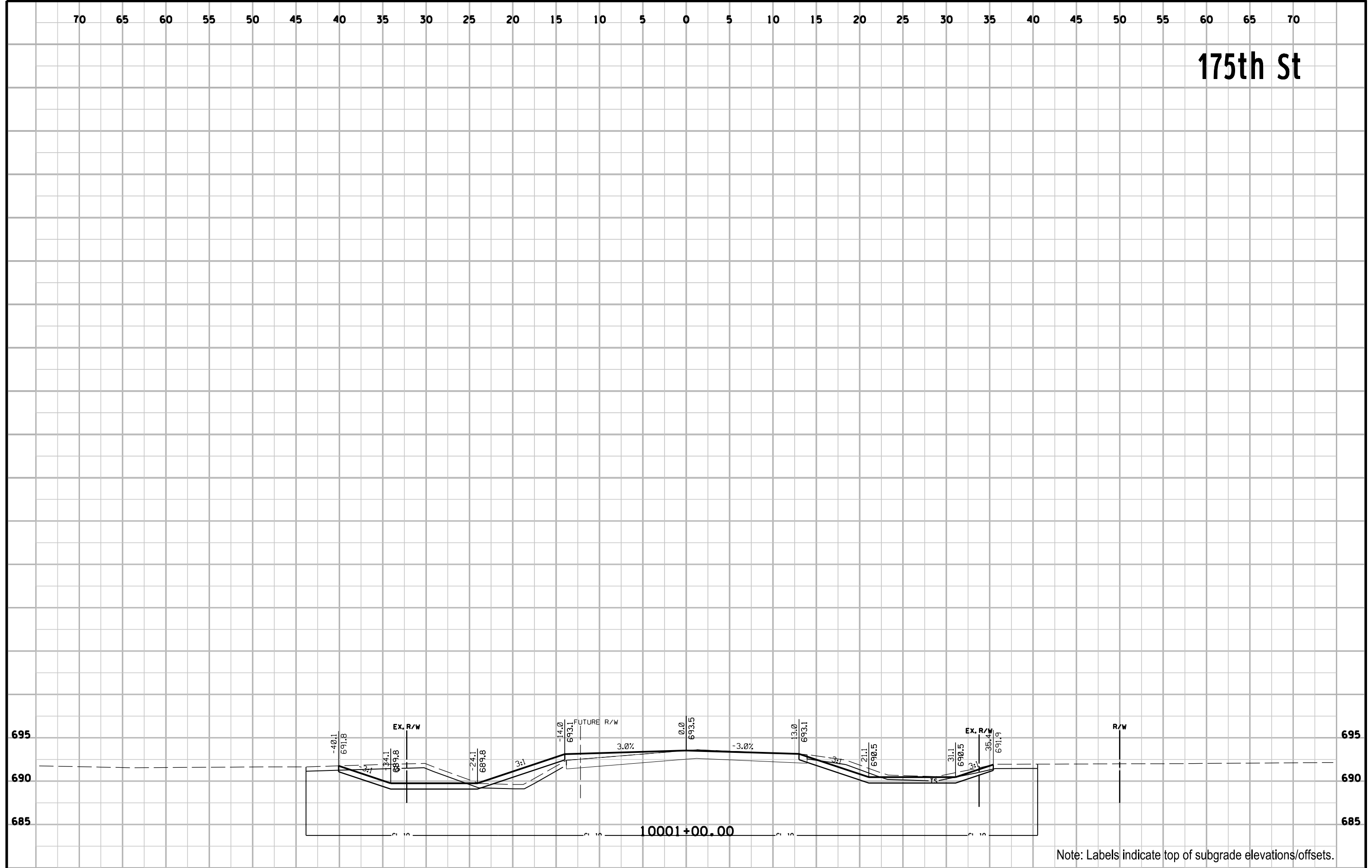
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175th St

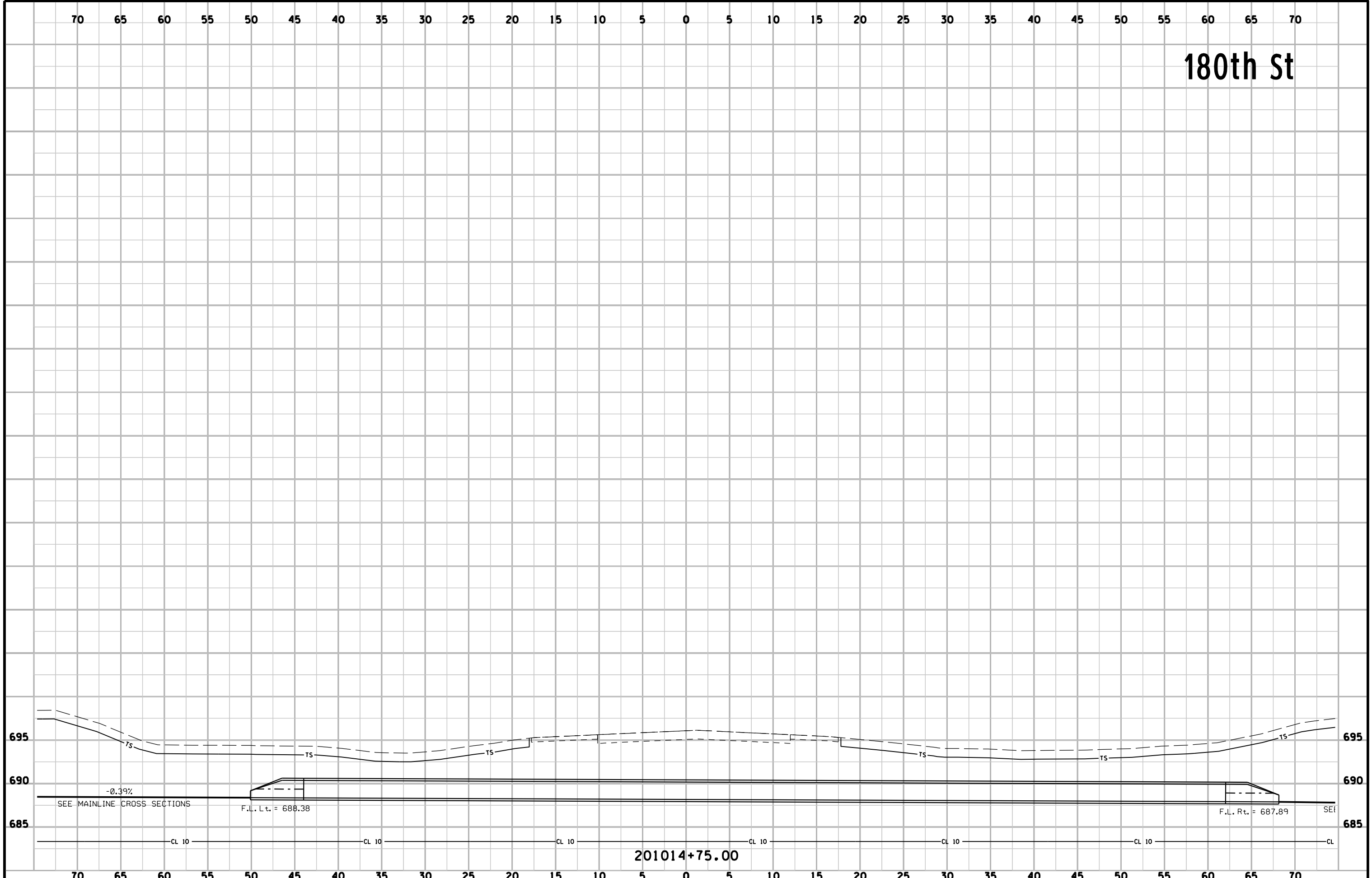


Note: Labels indicate top of subgrade elevations/offsets.

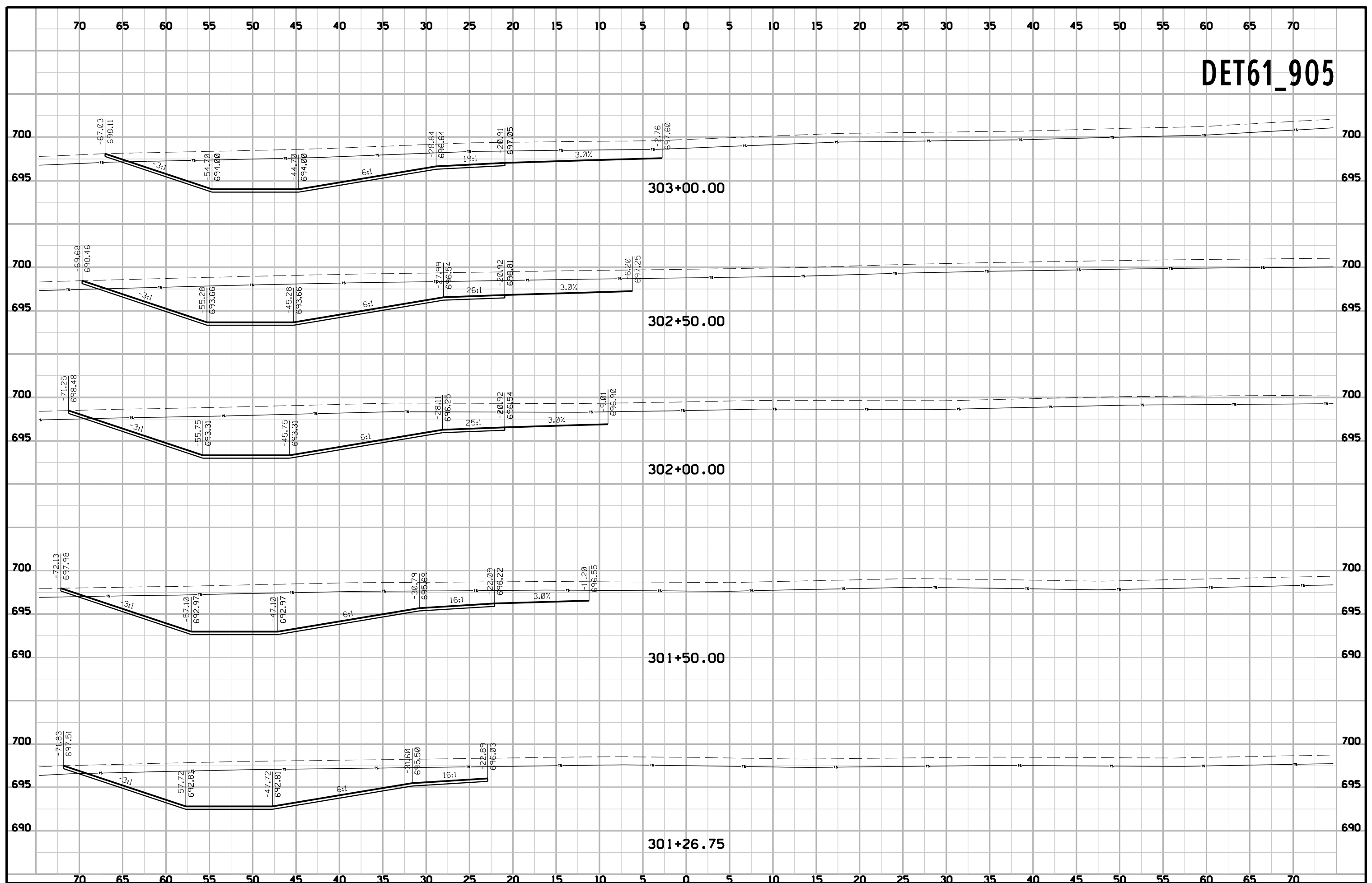
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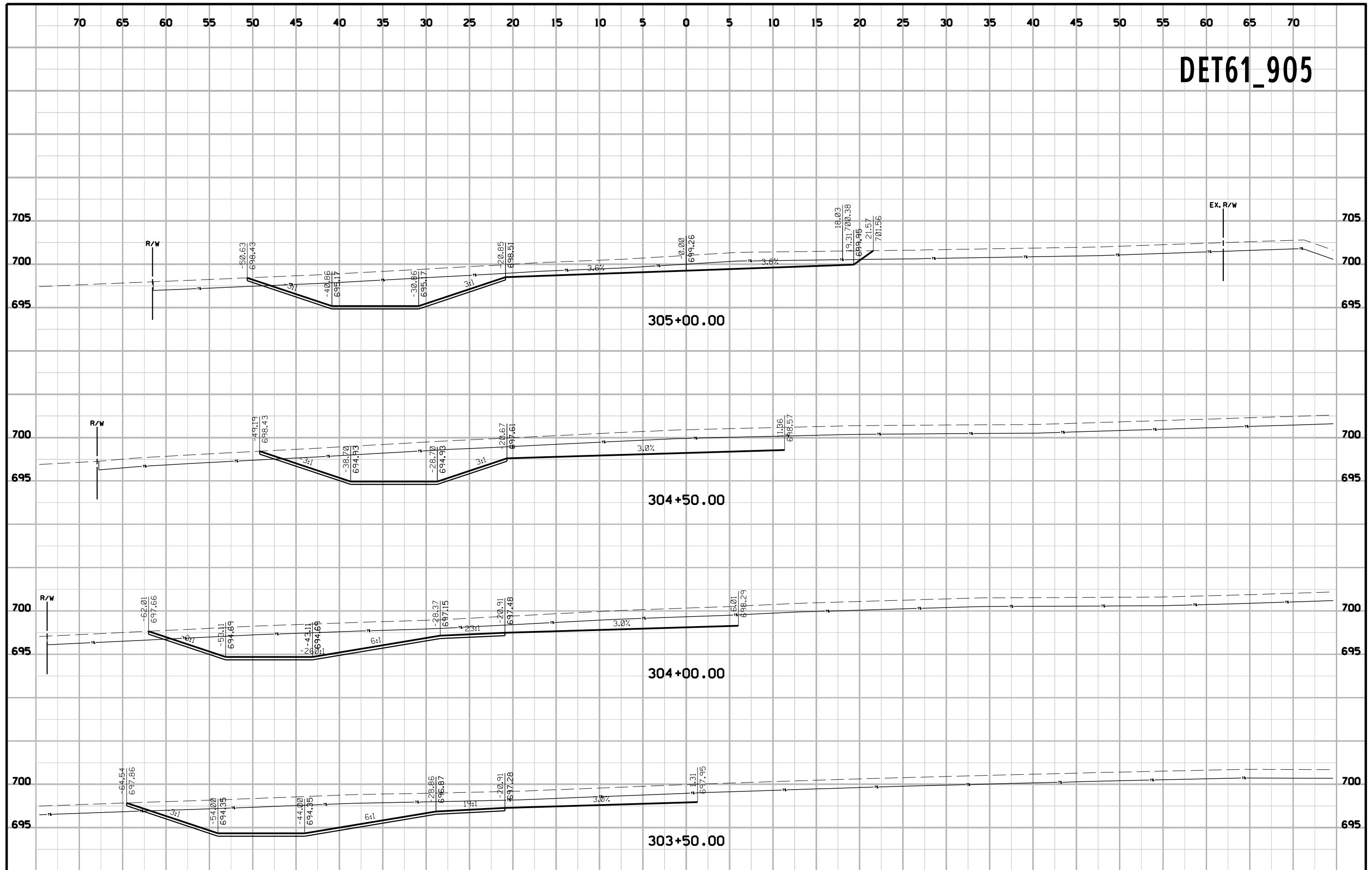
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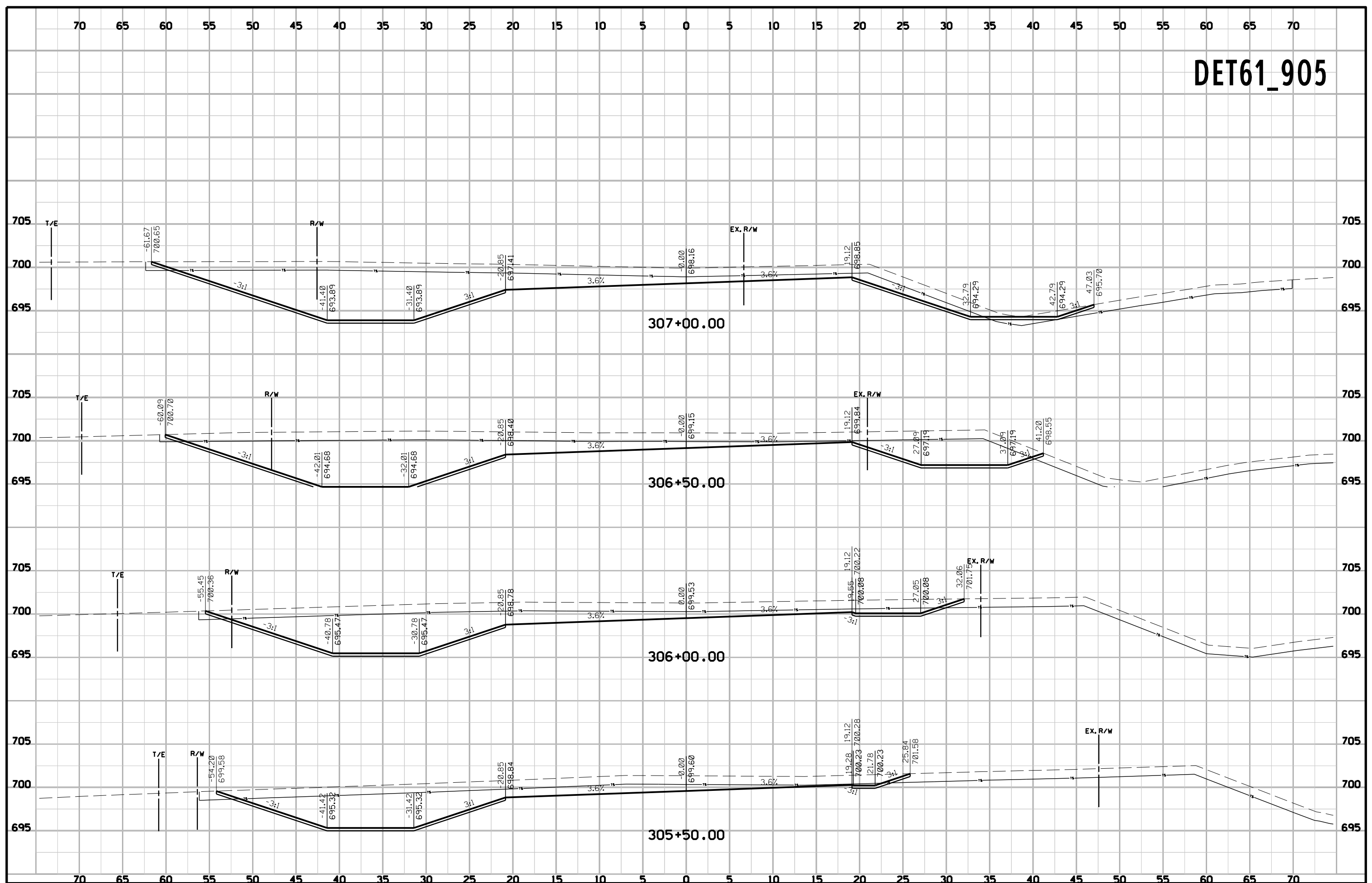
DET61_905



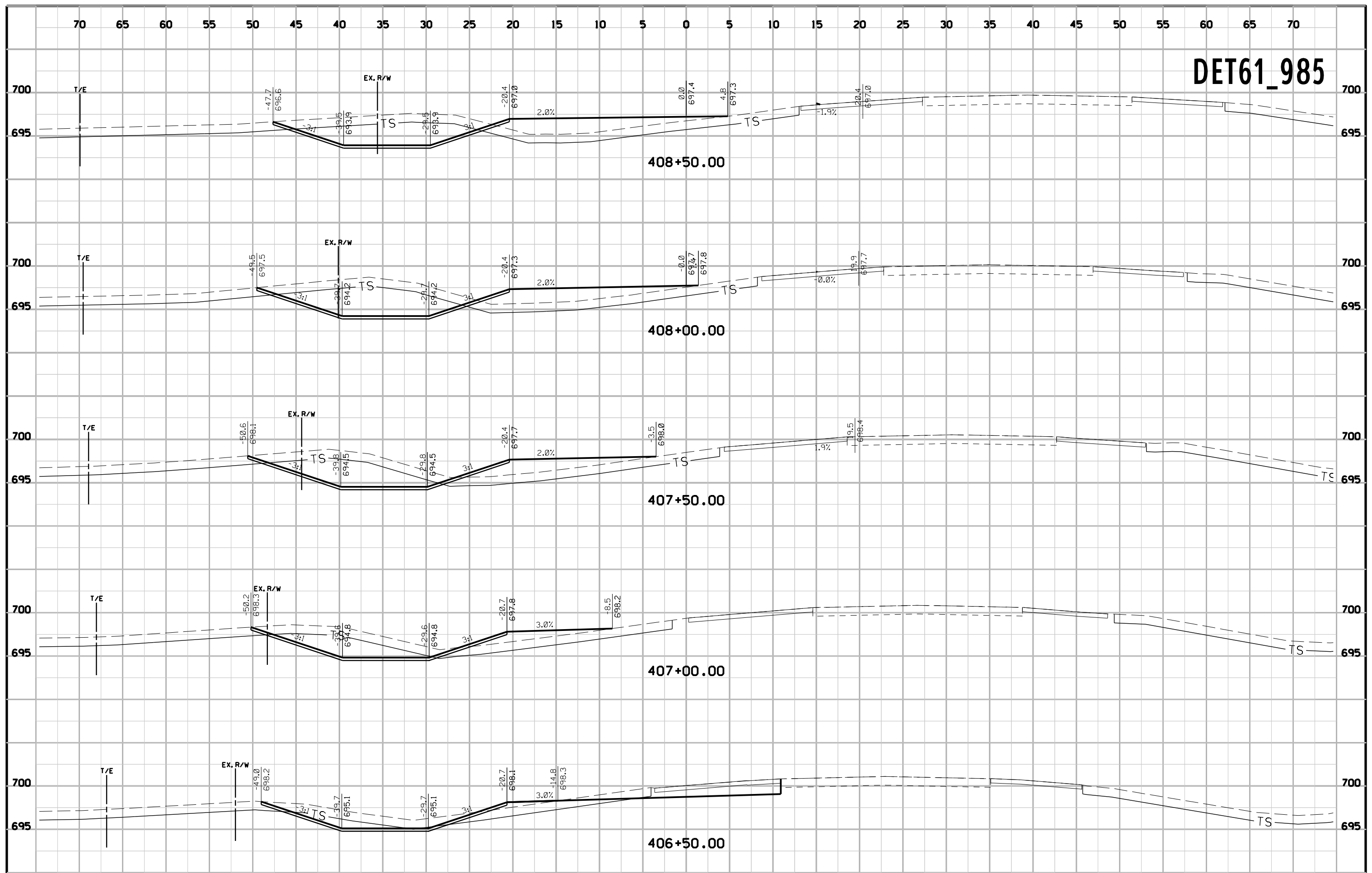
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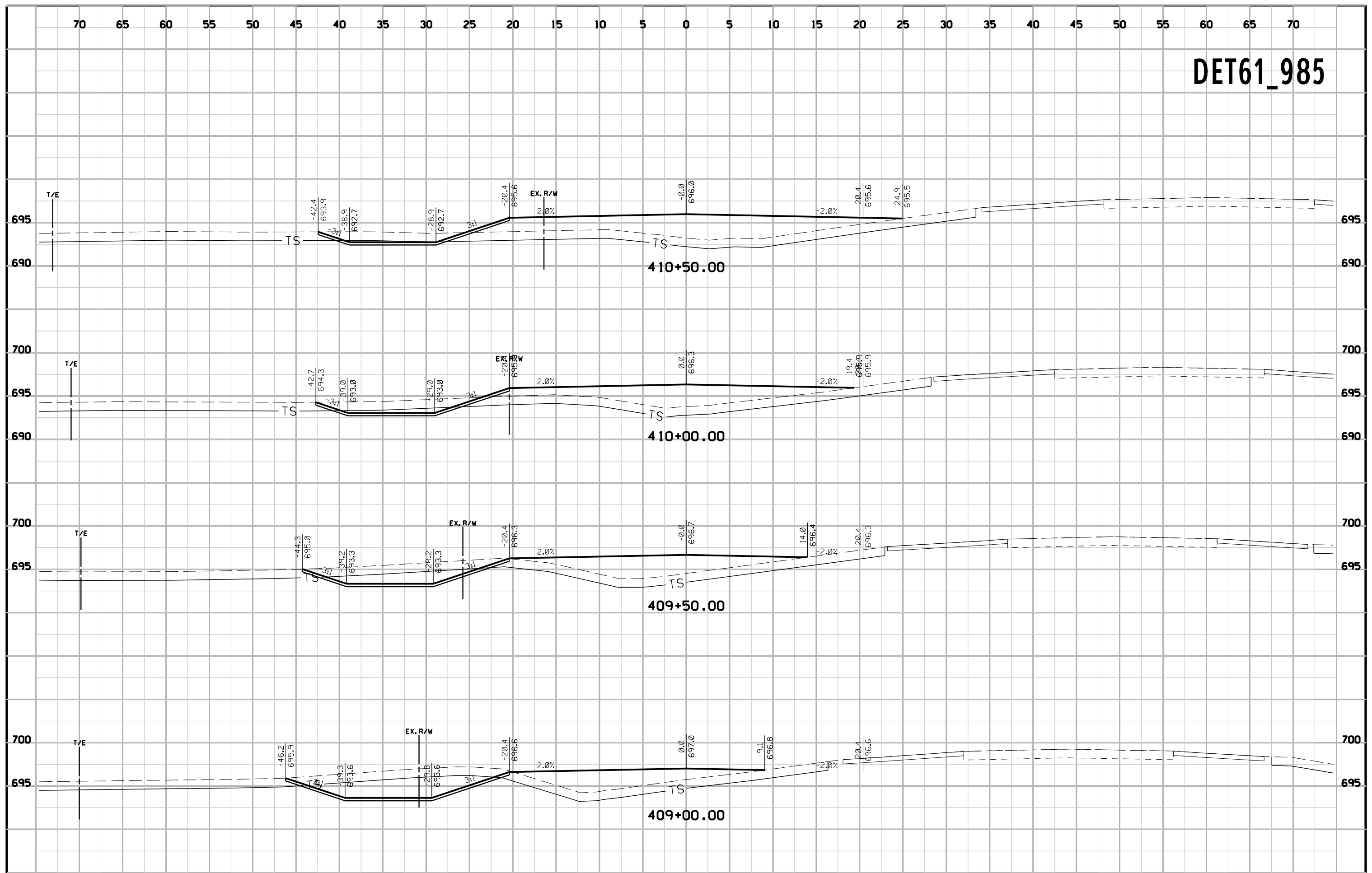
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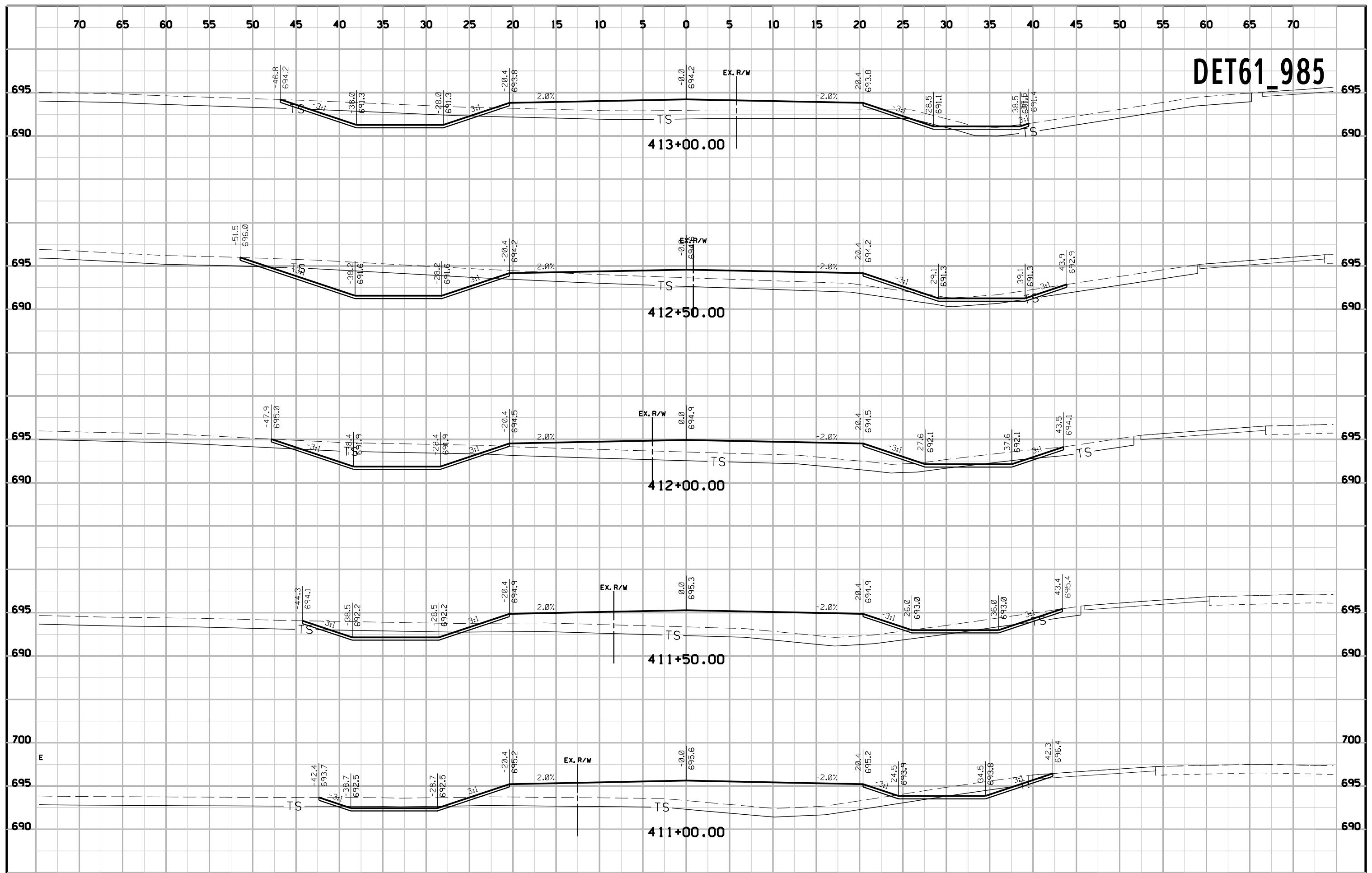
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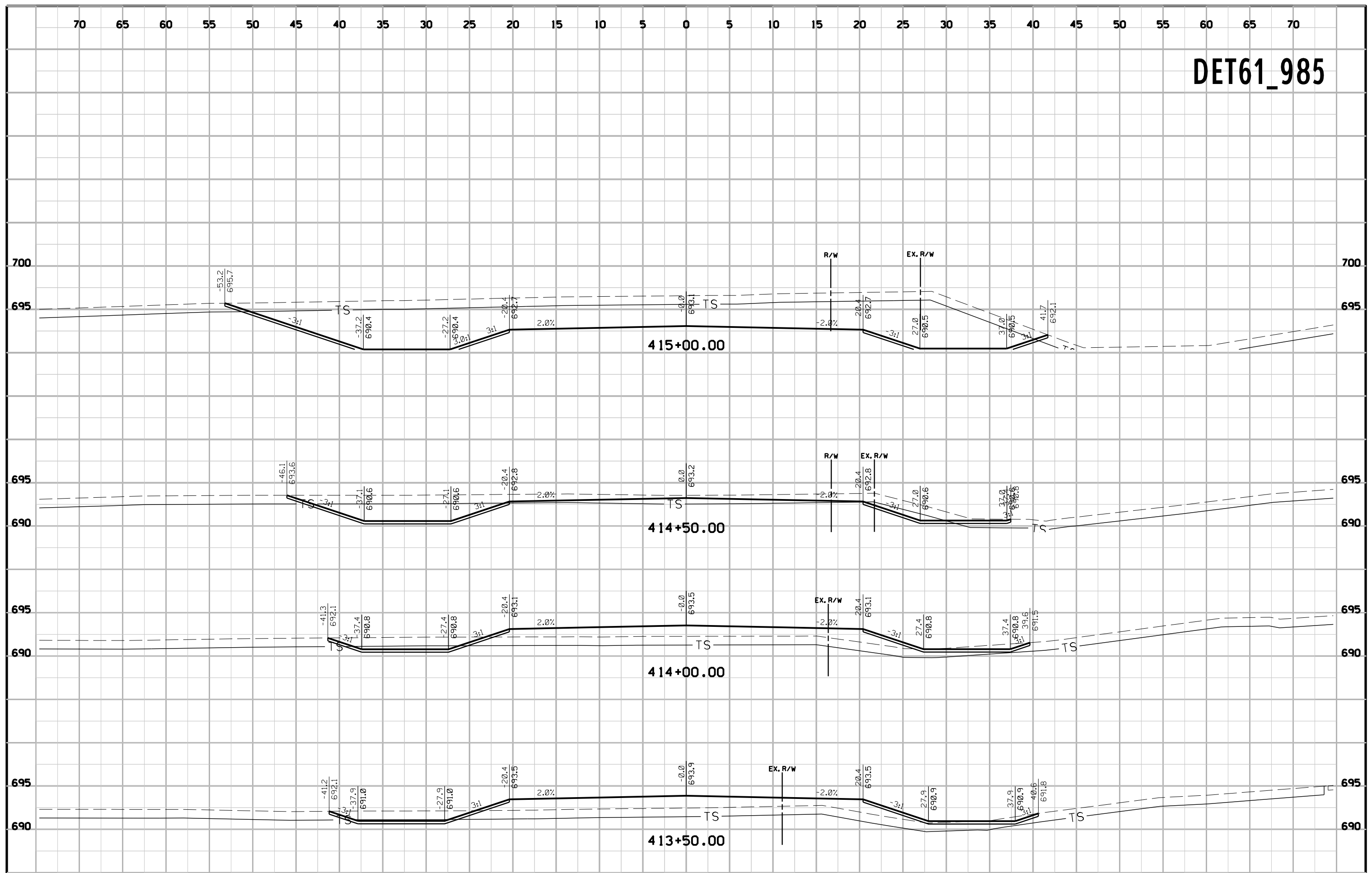
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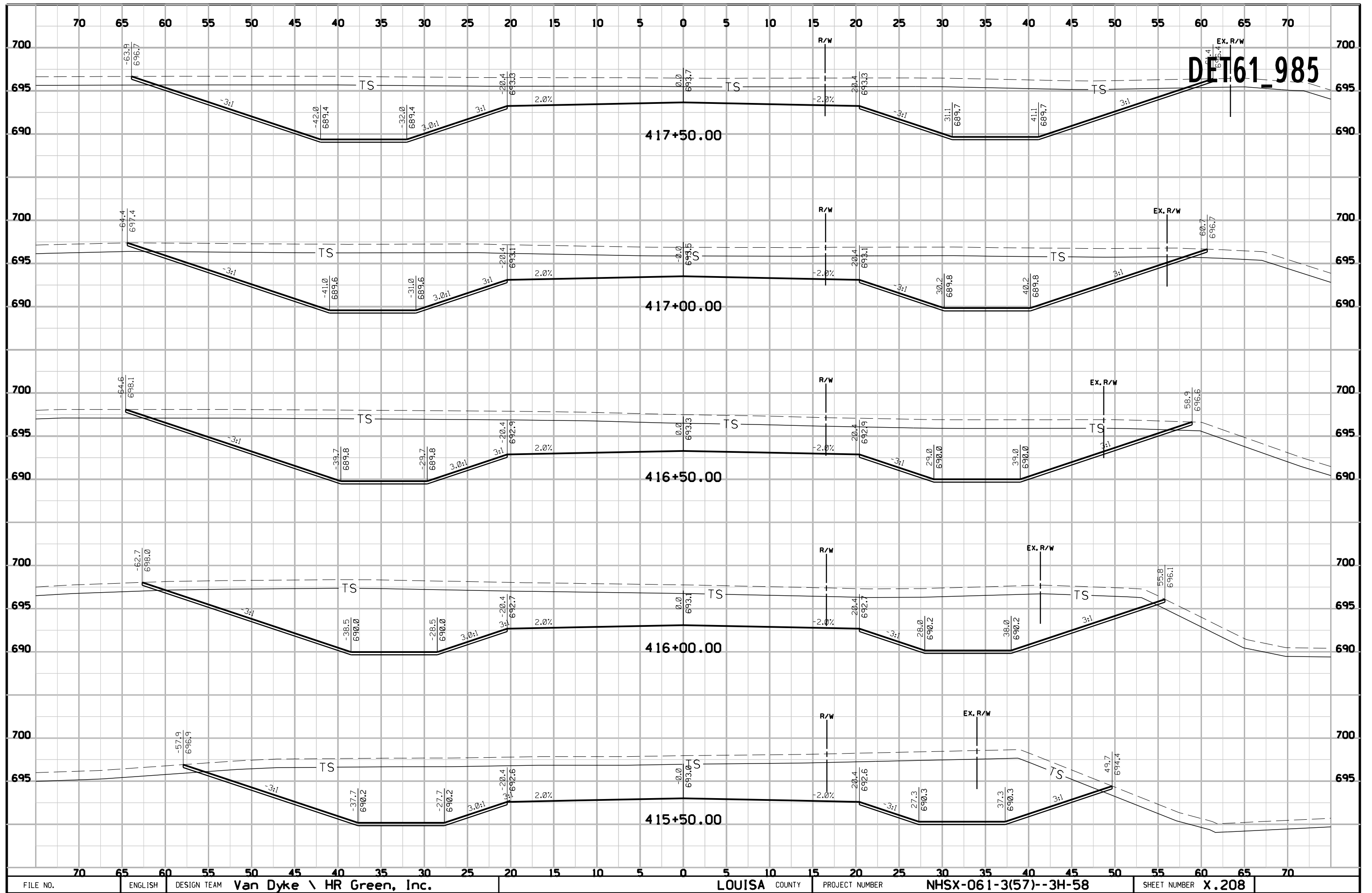


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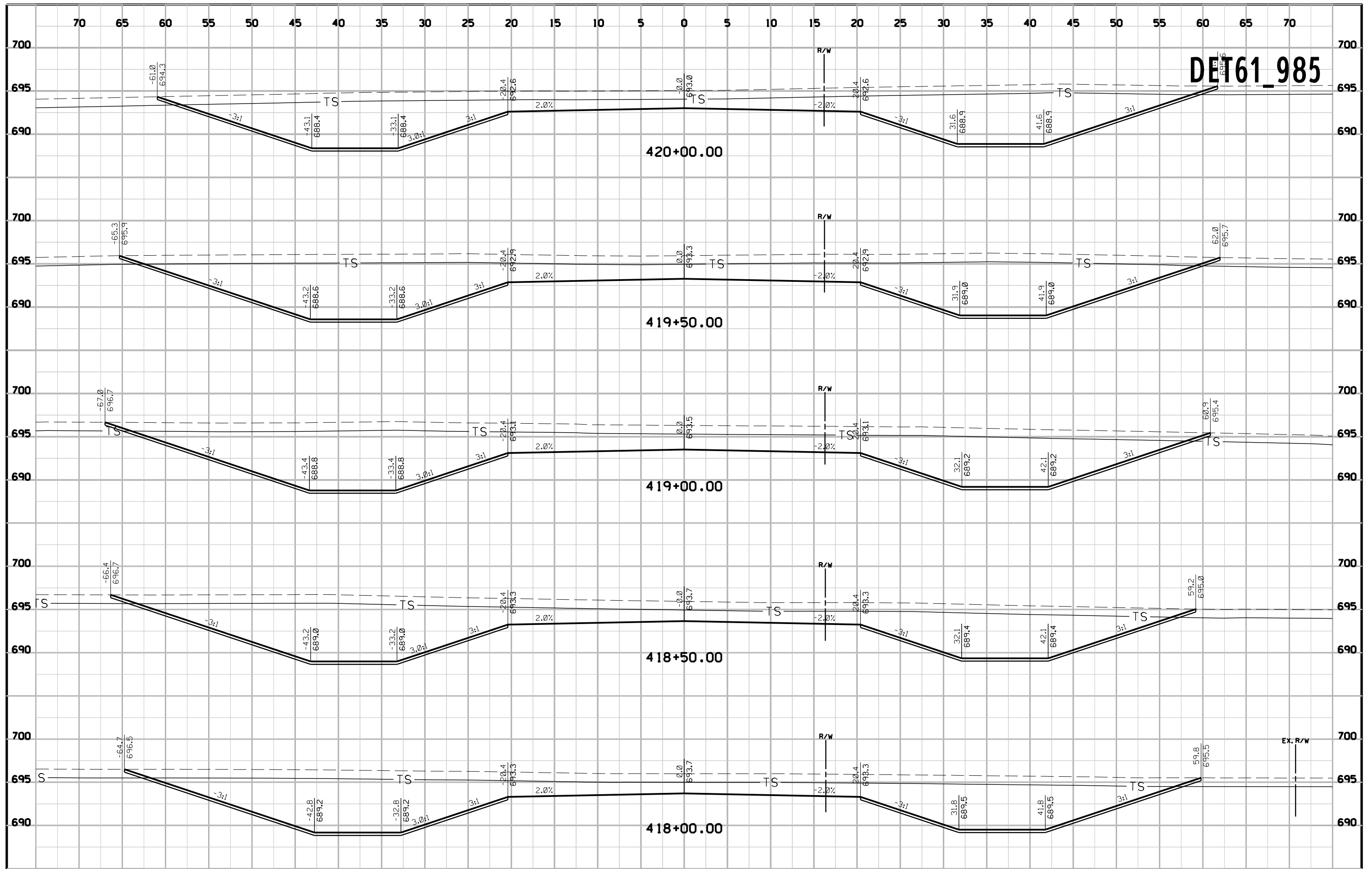


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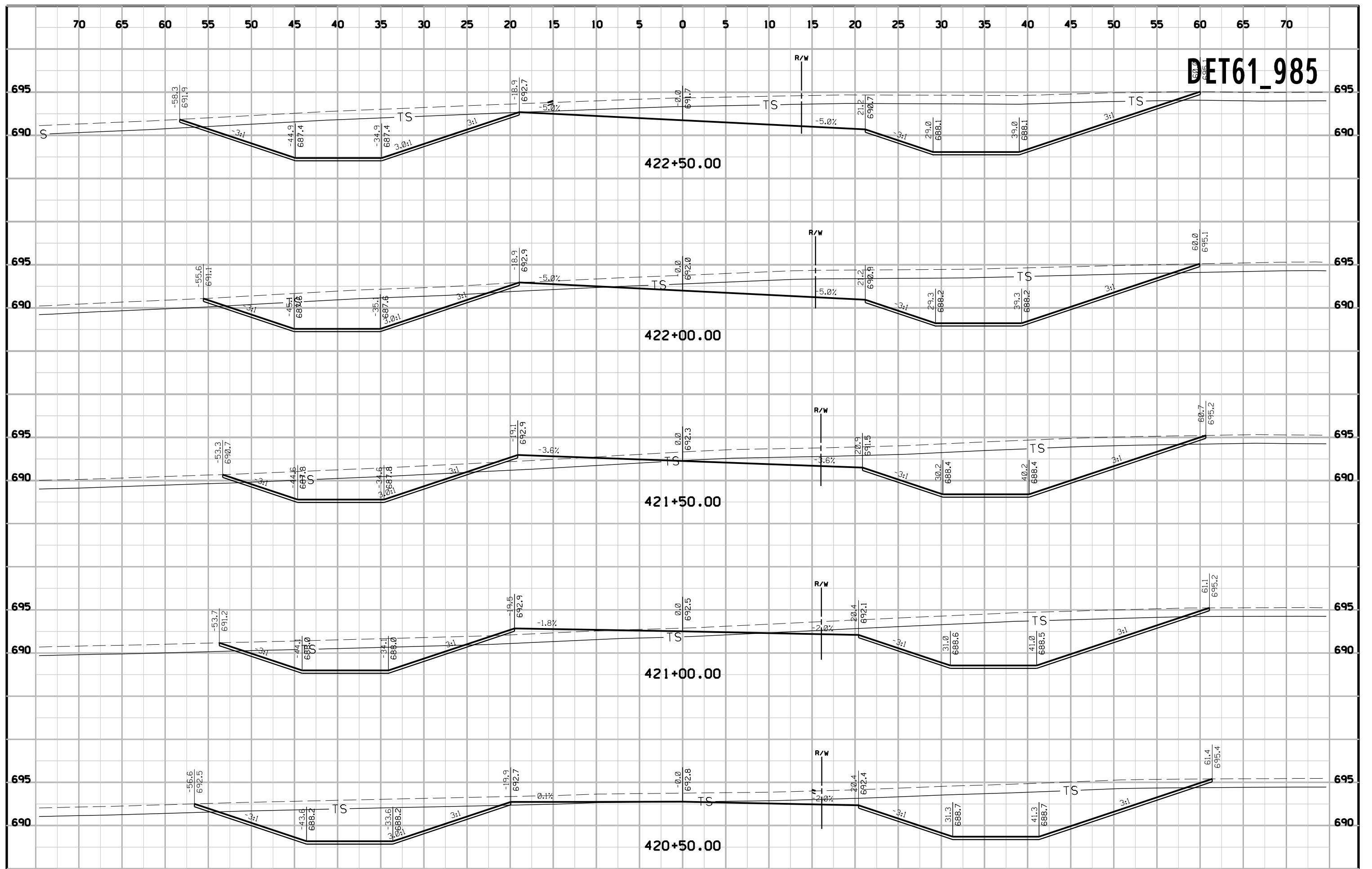




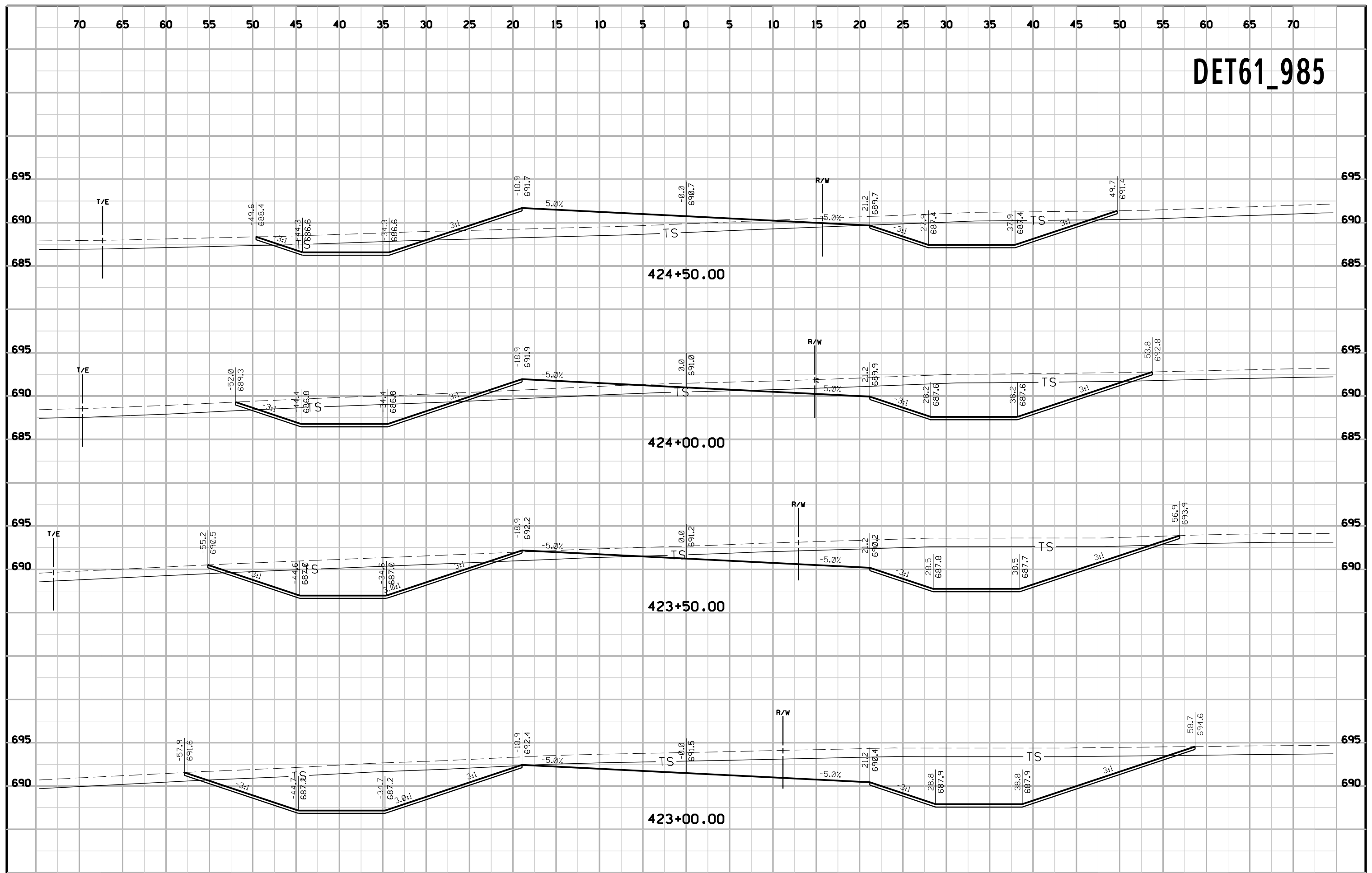
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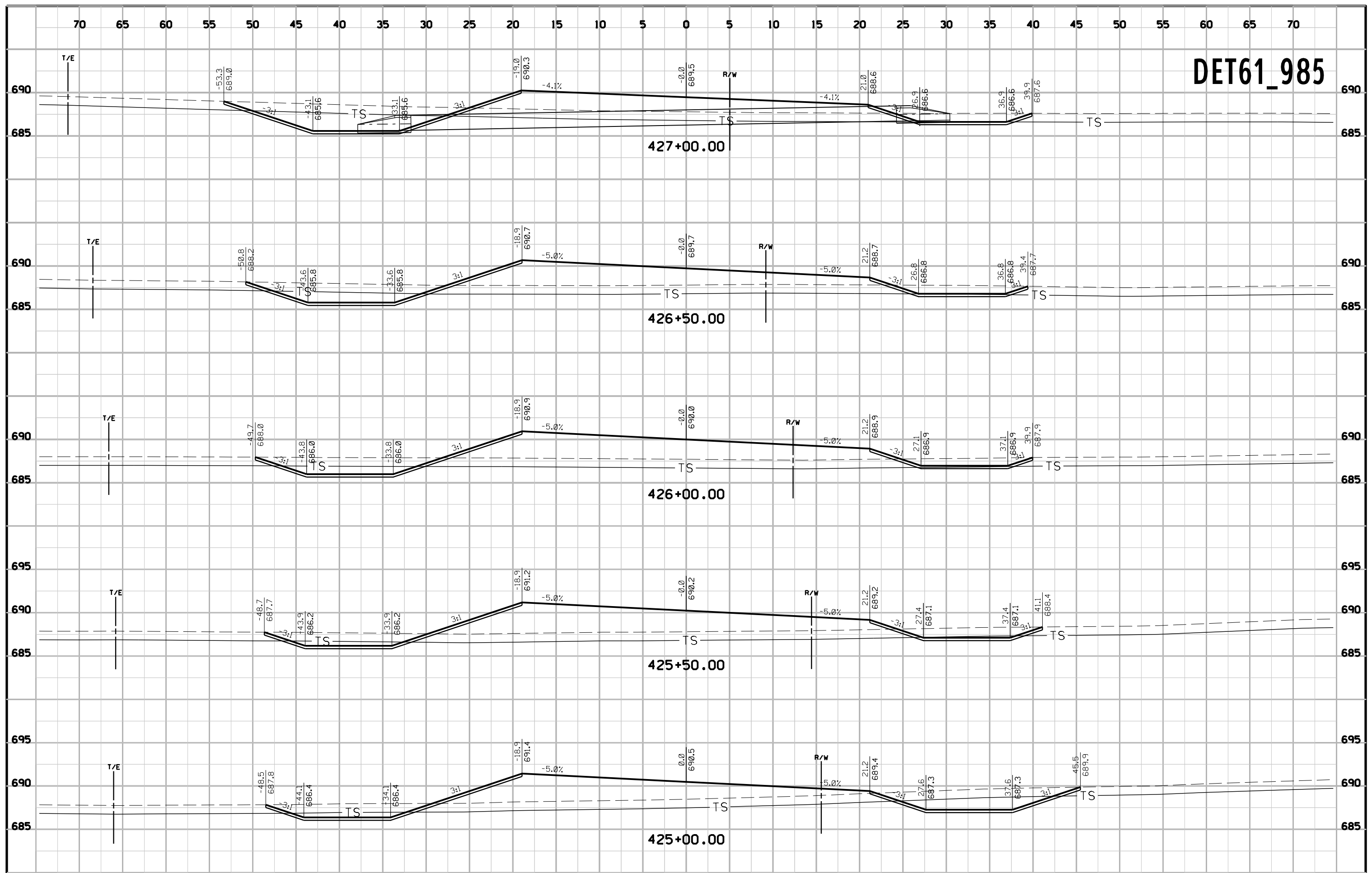
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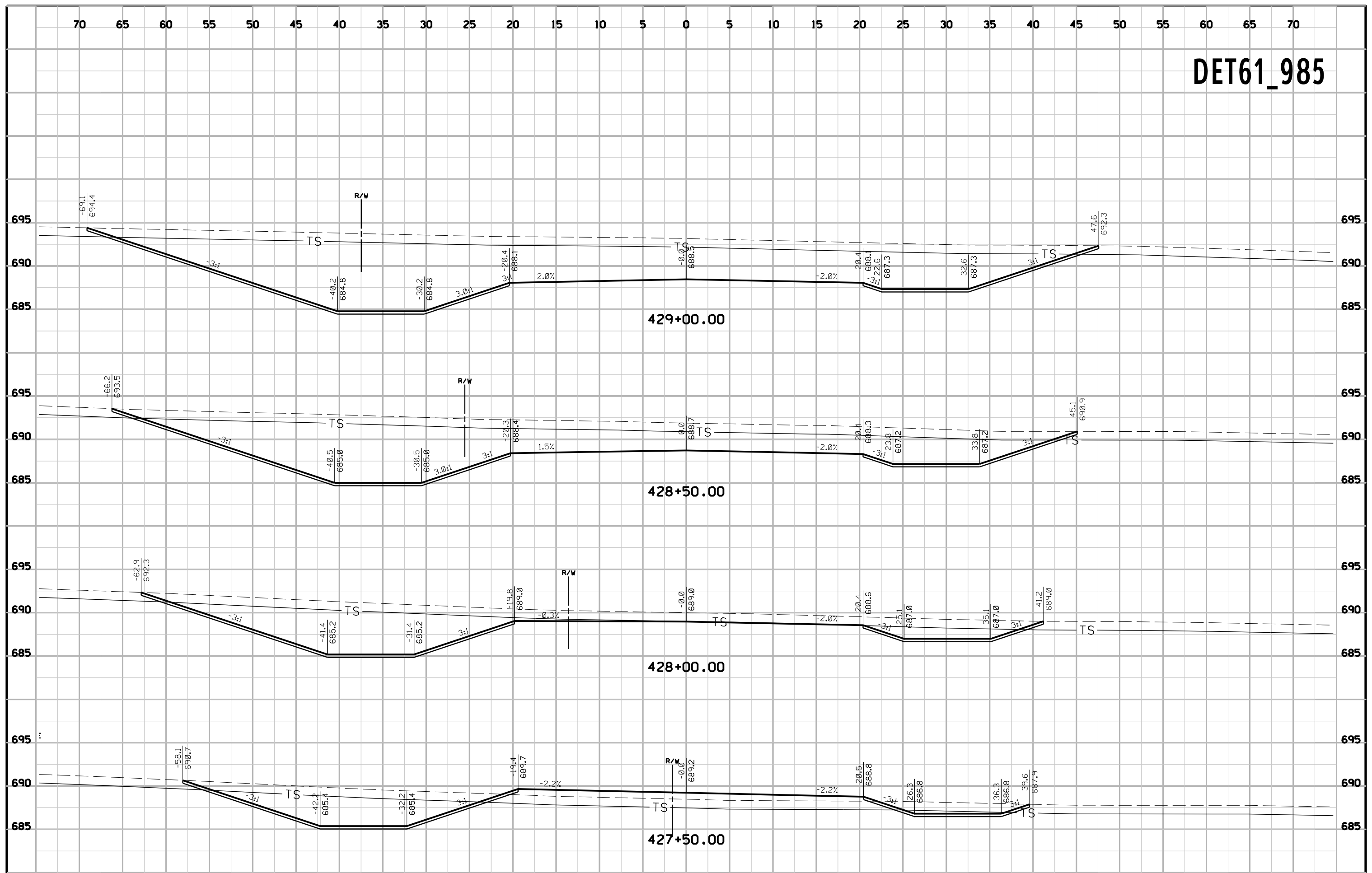
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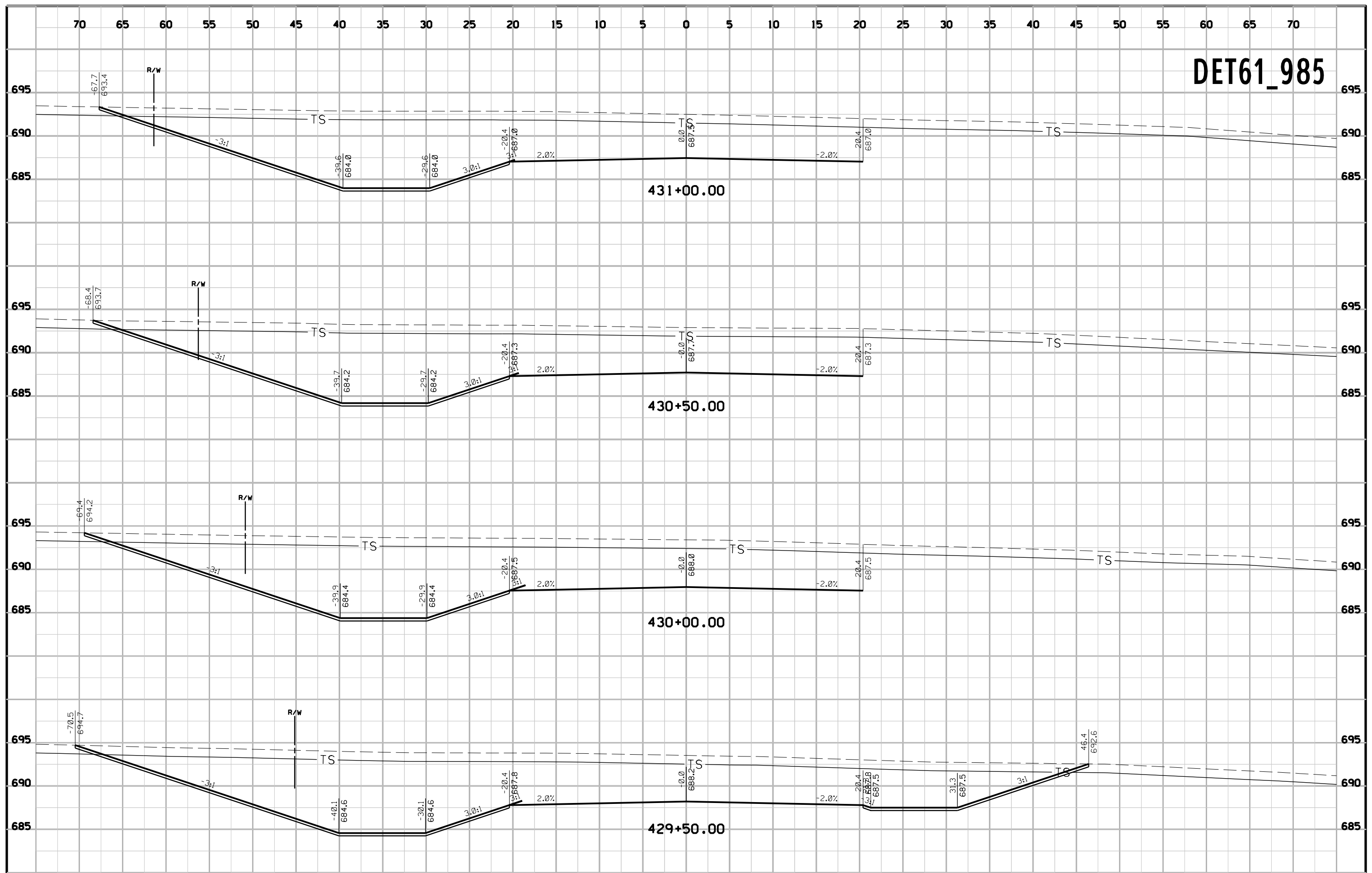
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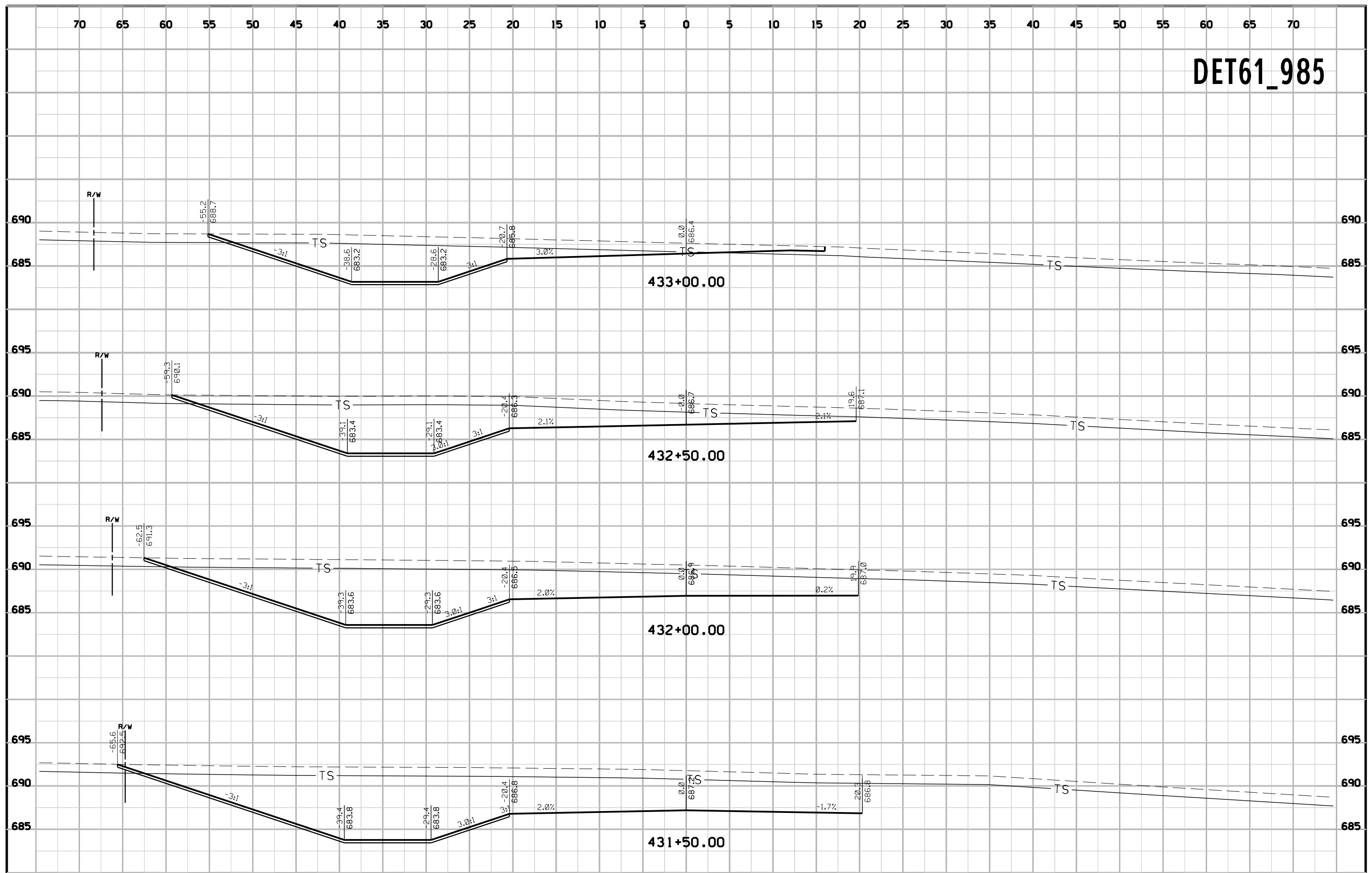
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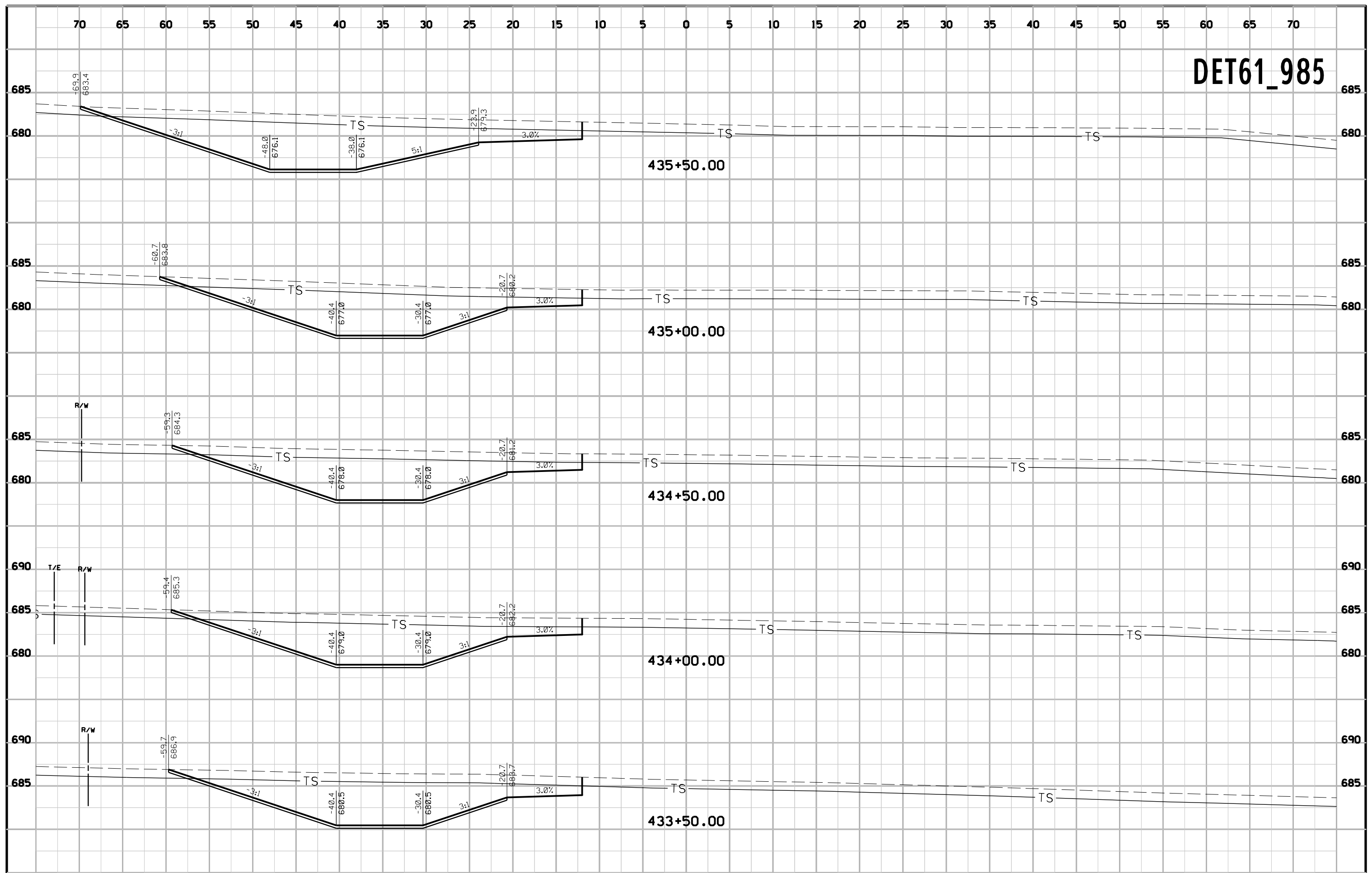
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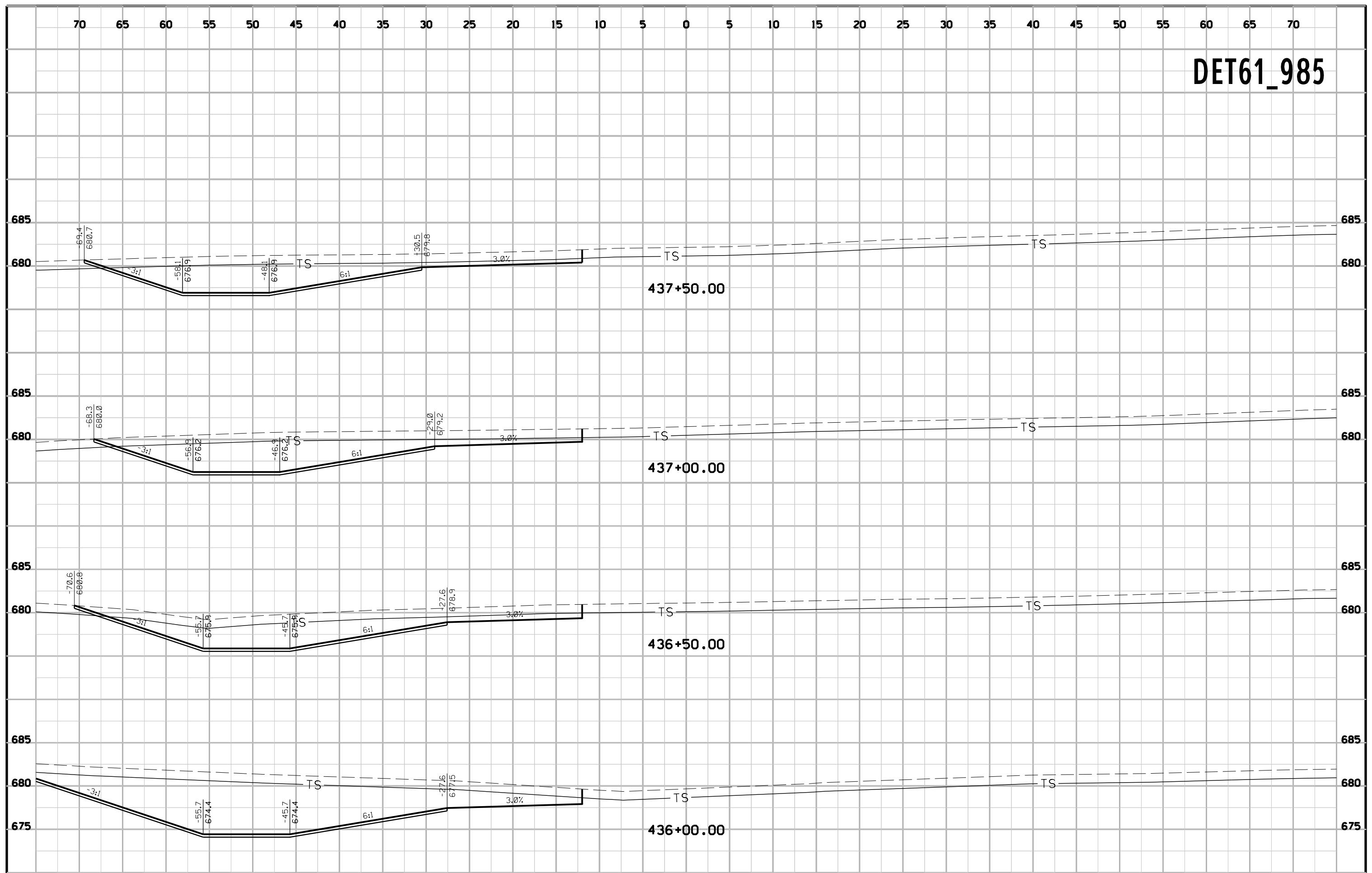
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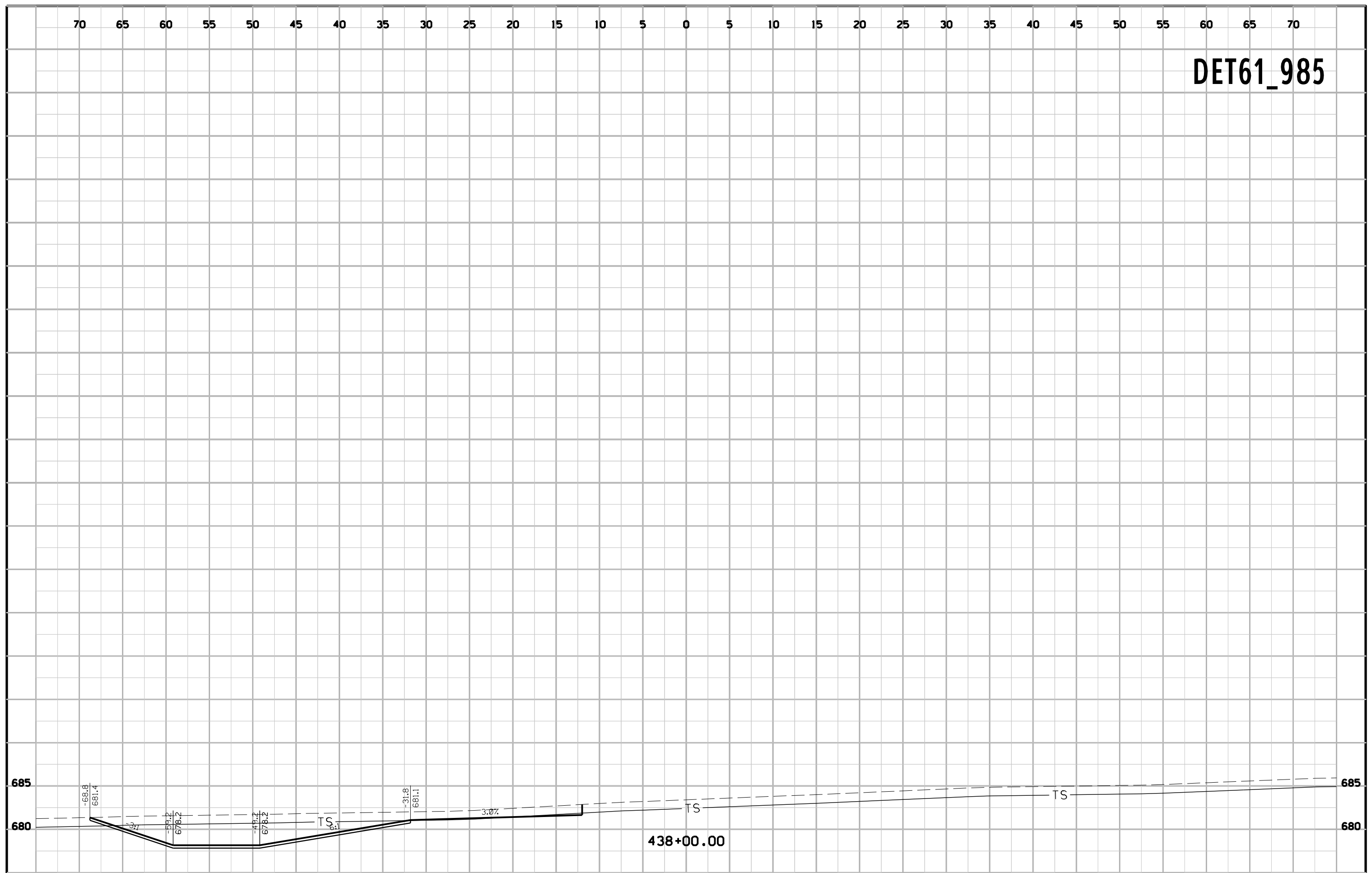
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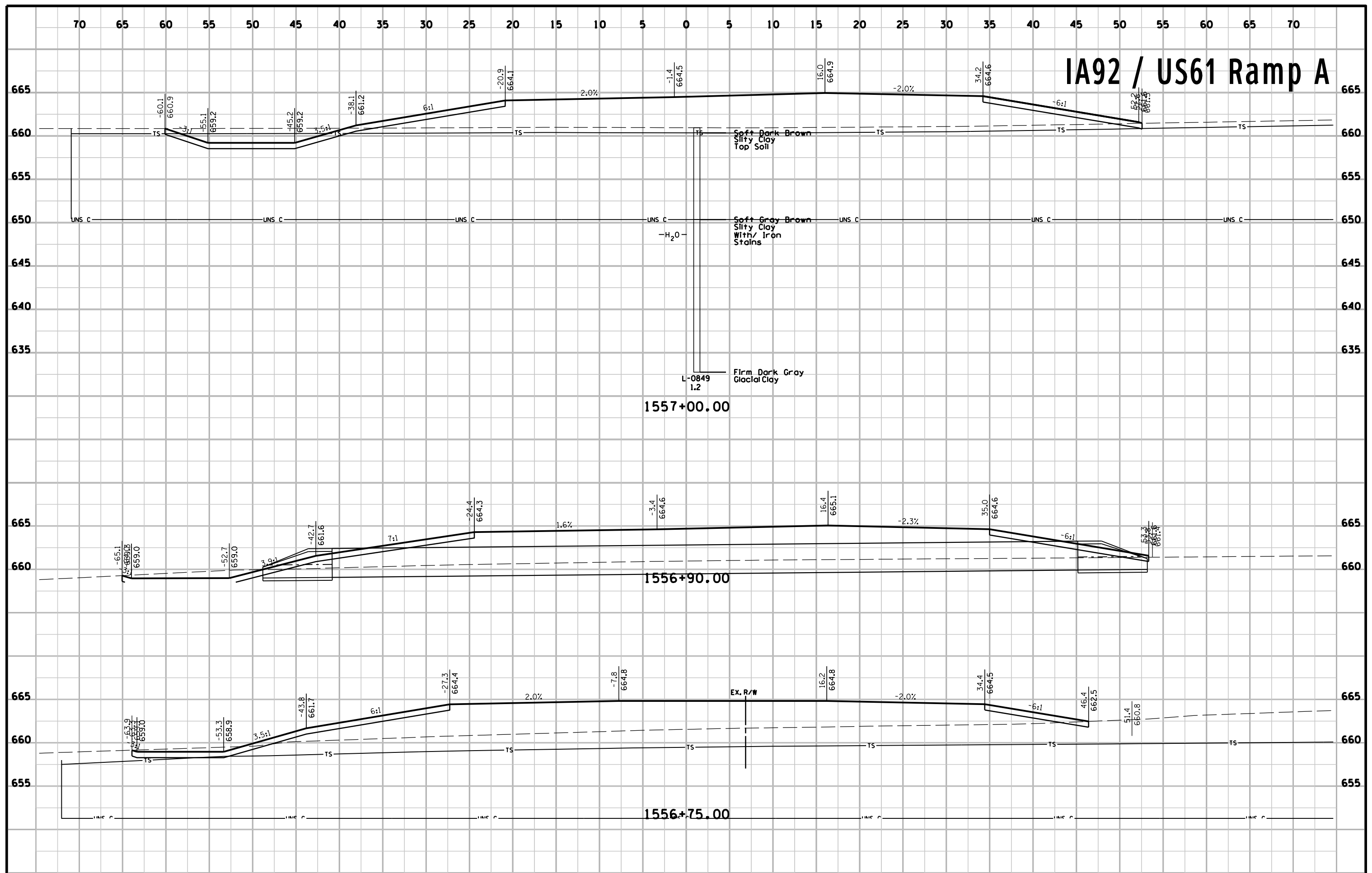
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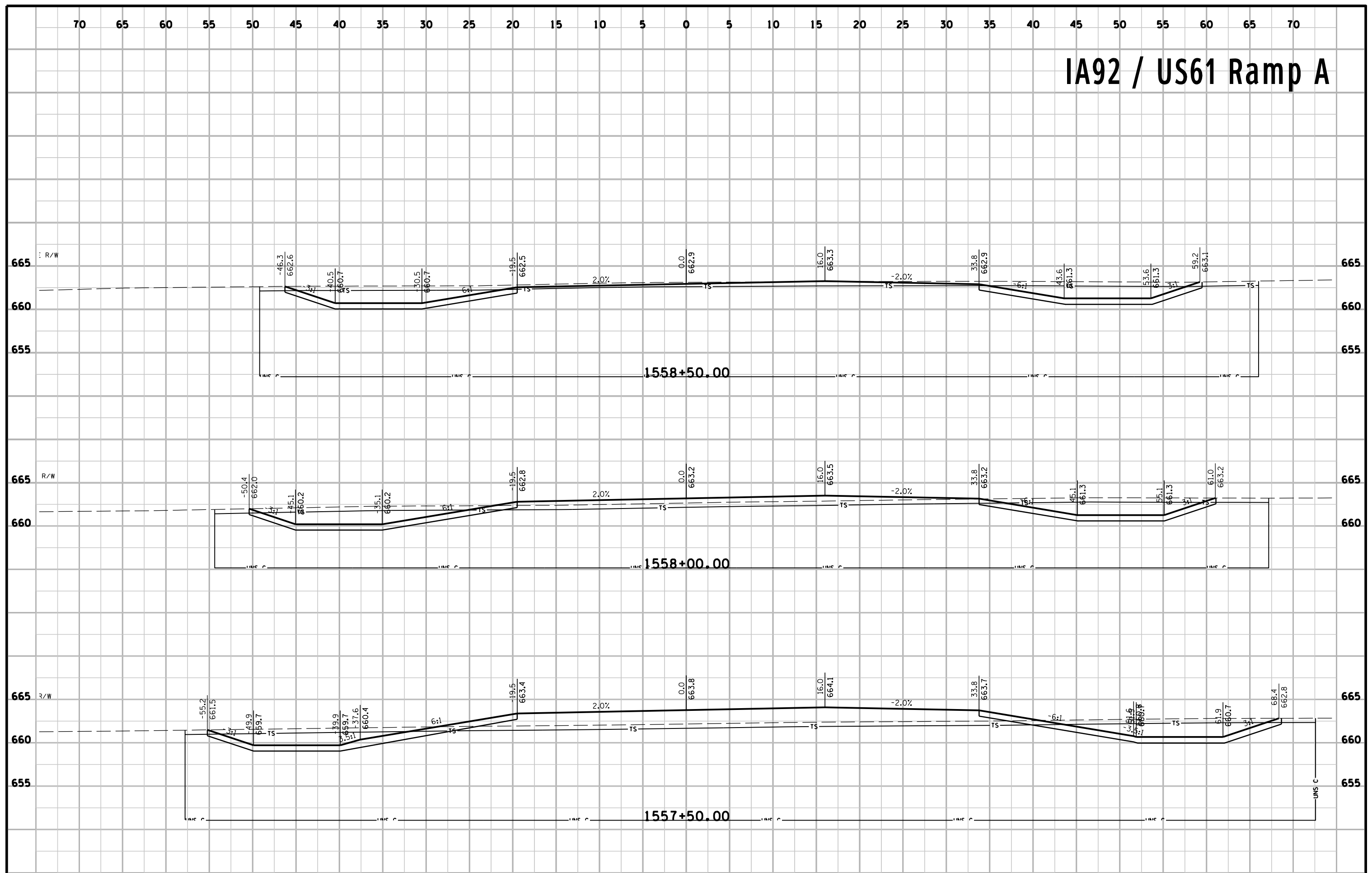
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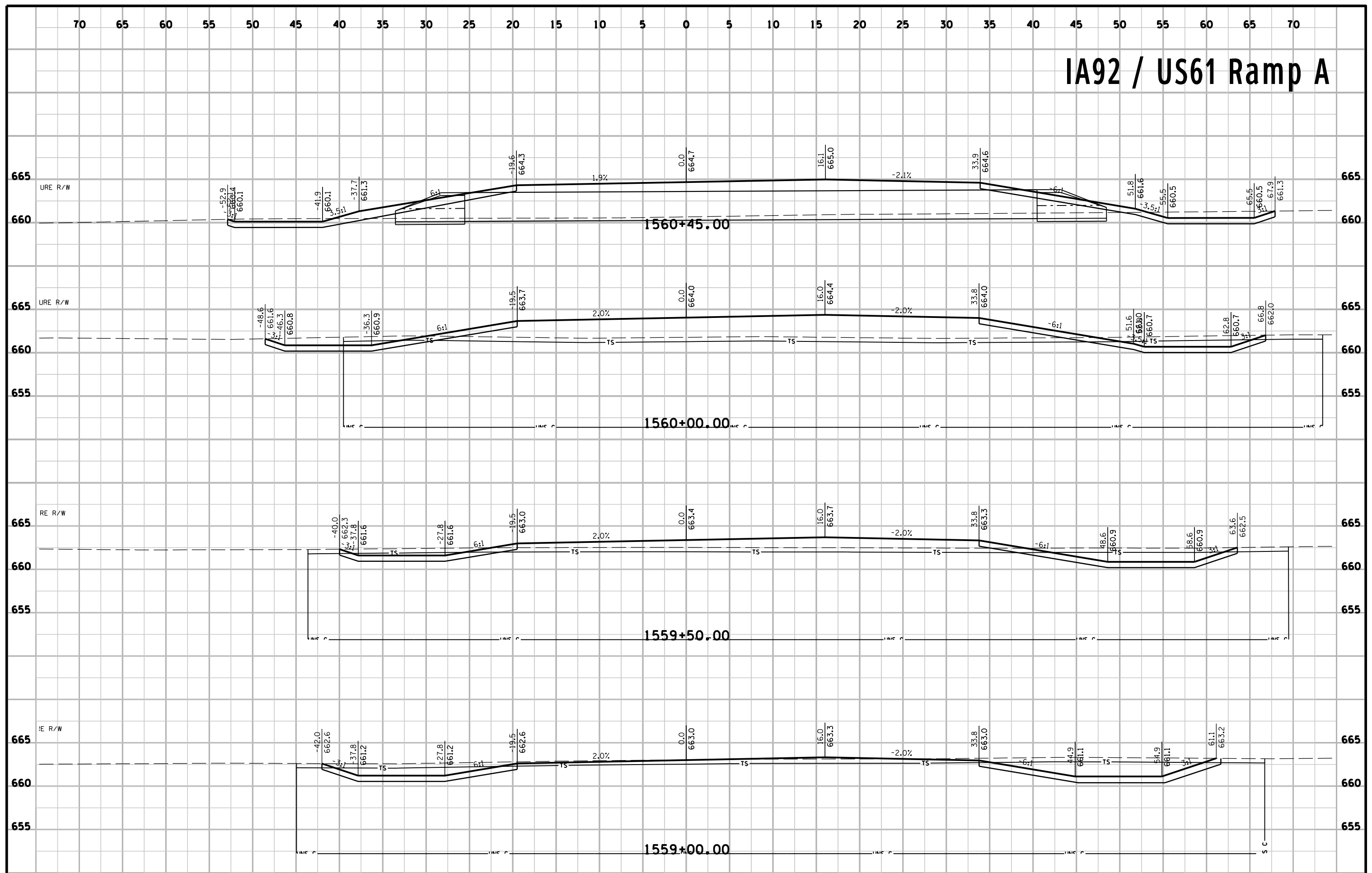
IA92 / US61 Ramp A



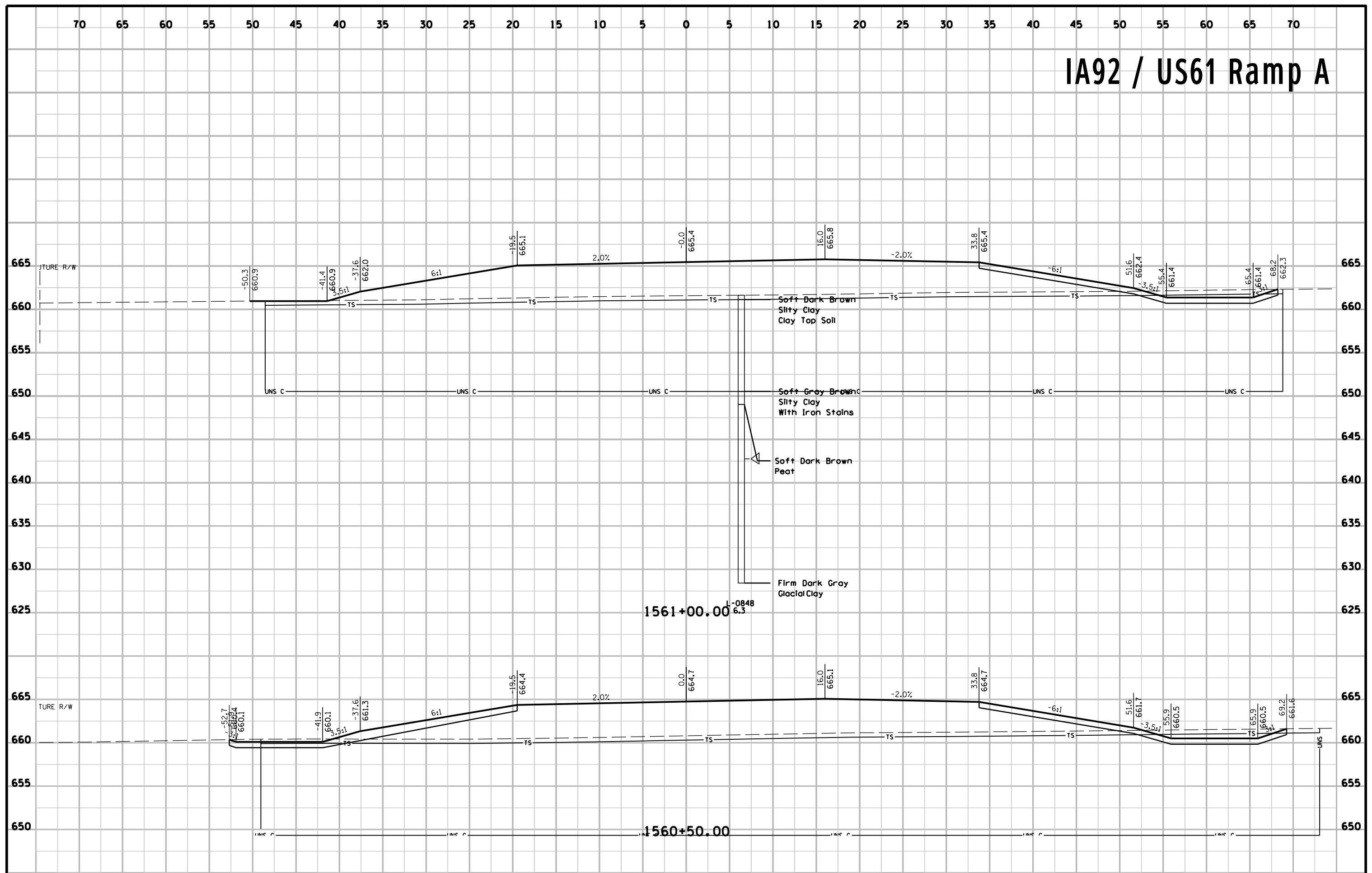
IA92 / US61 Ramp A



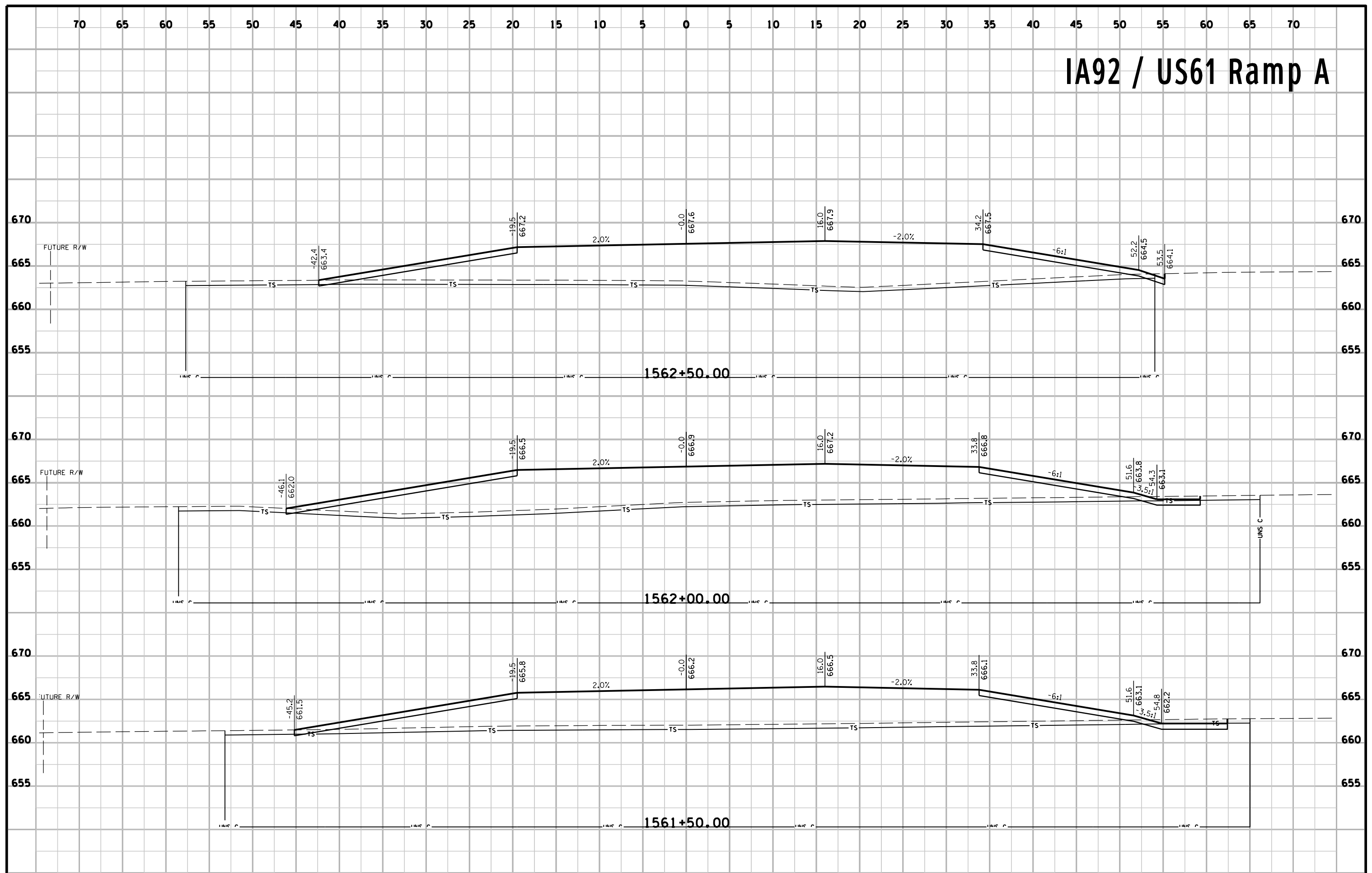
IA92 / US61 Ramp A



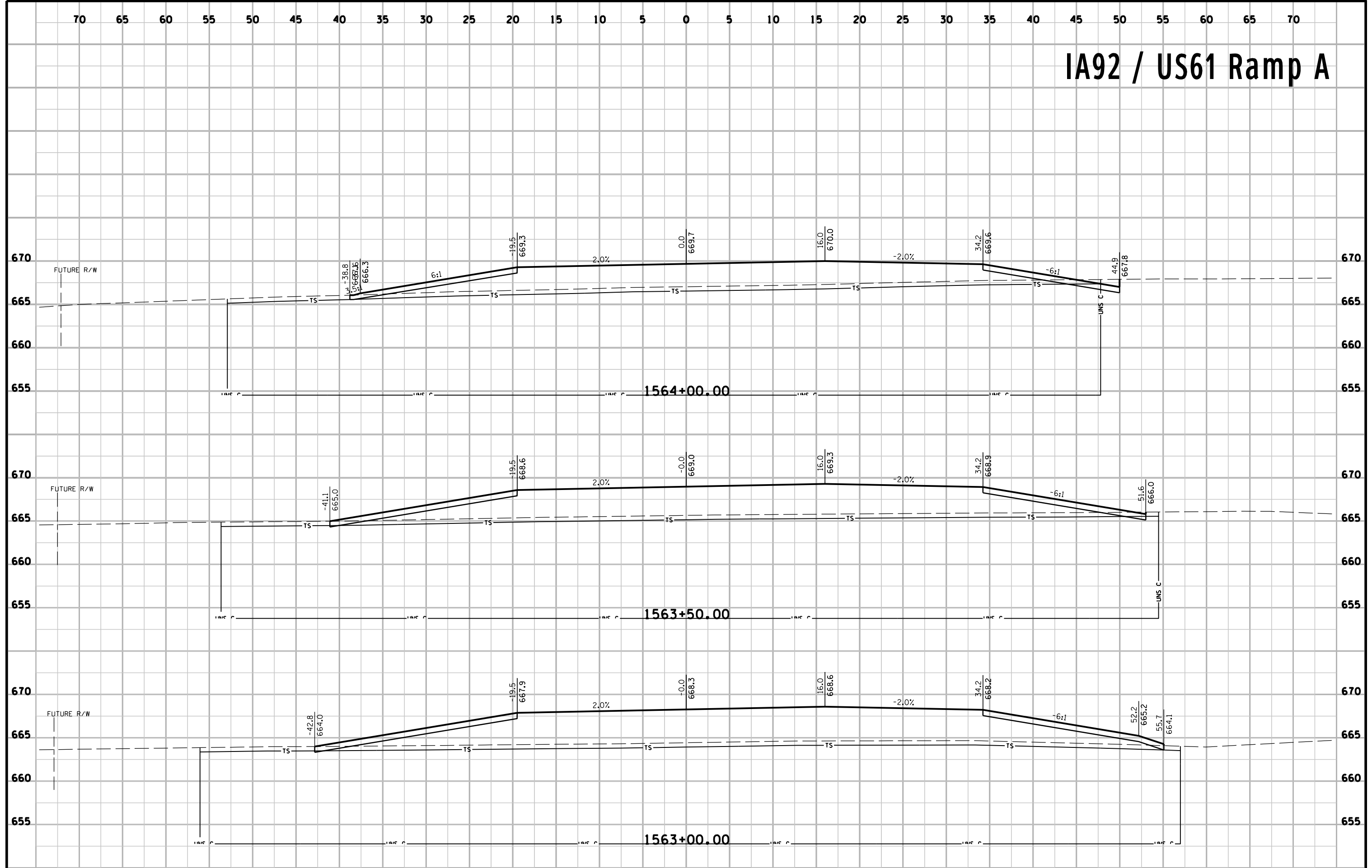
IA92 / US61 Ramp A

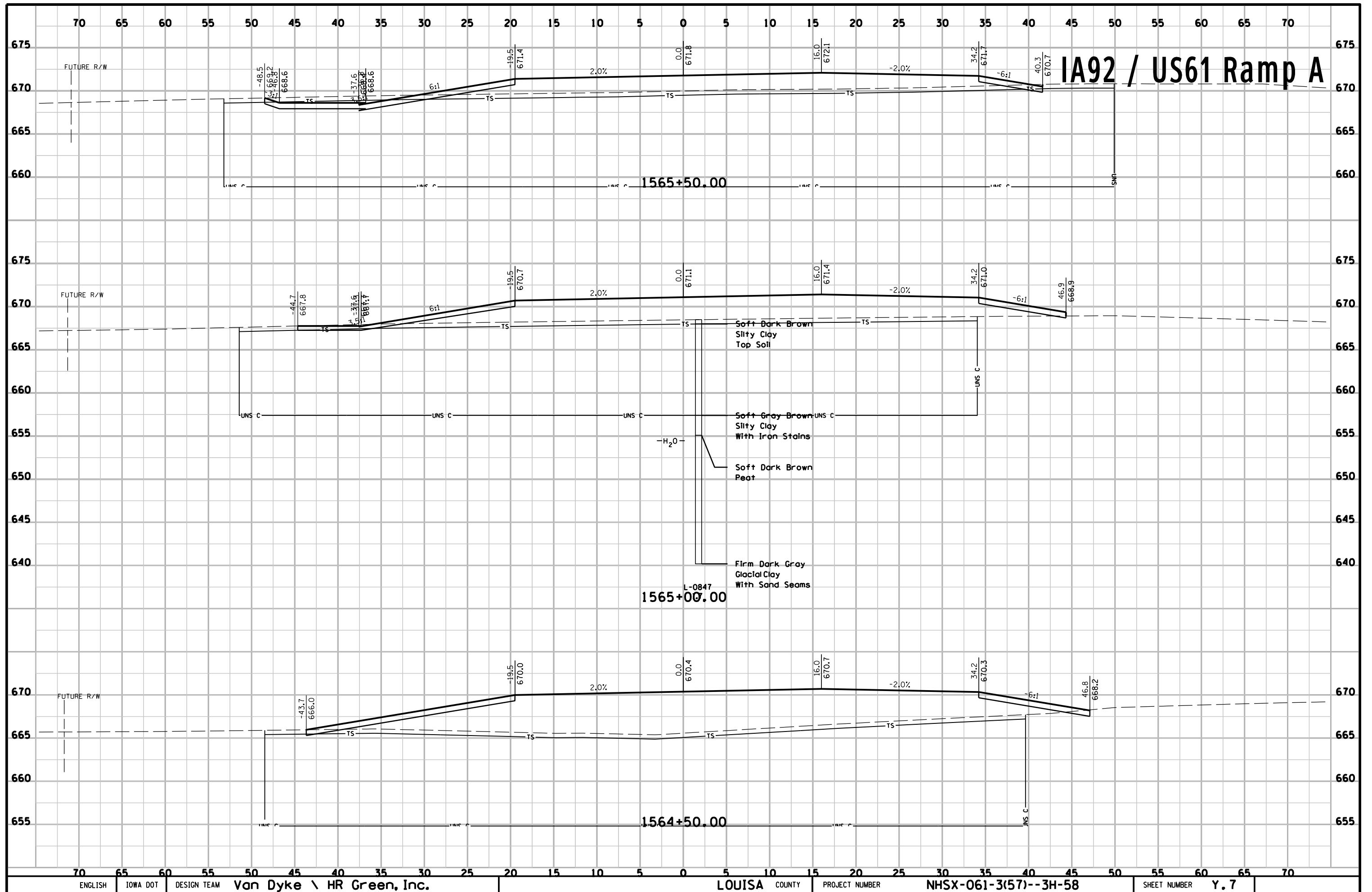


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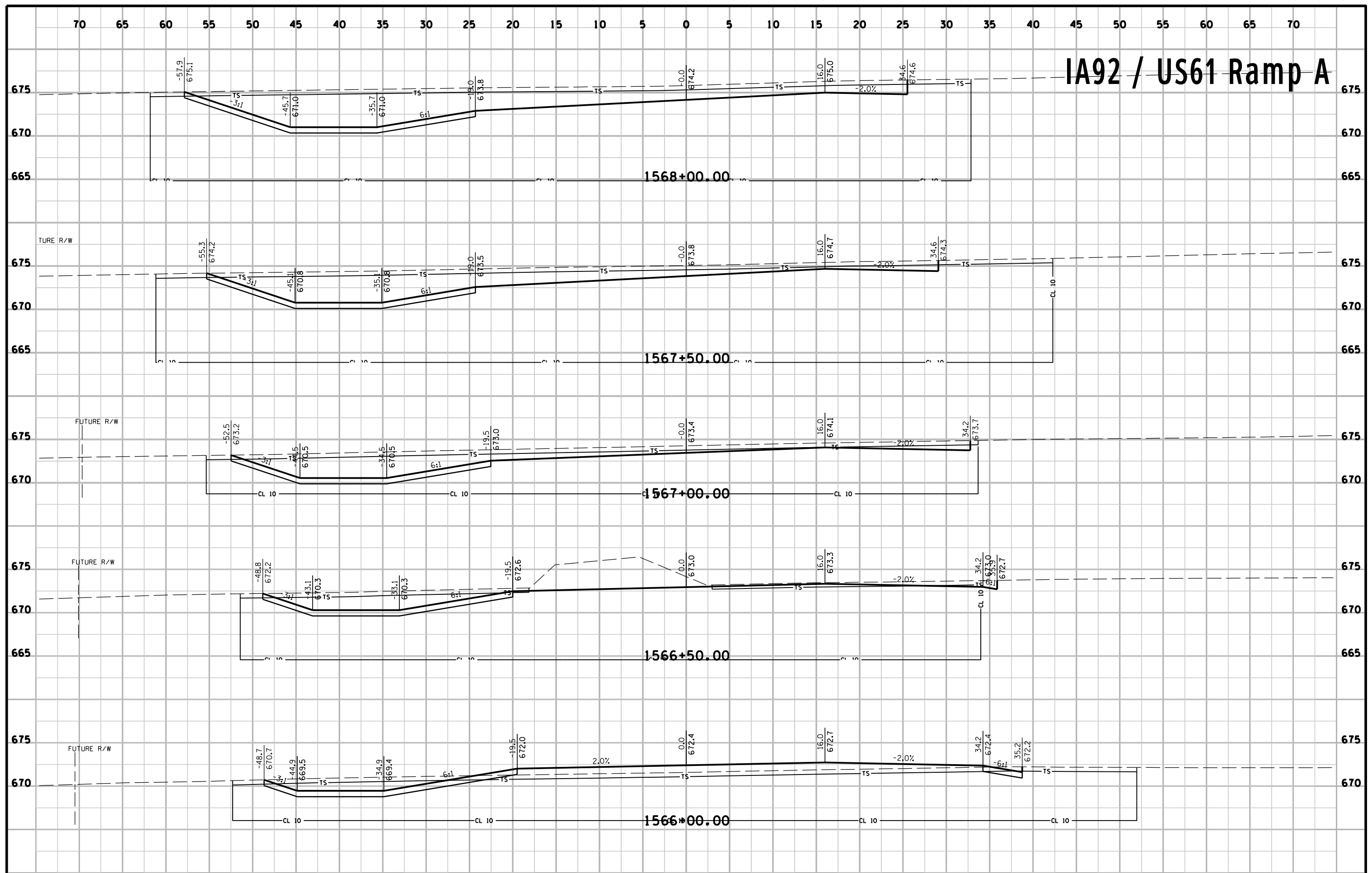


IA92 / US61 Ramp A

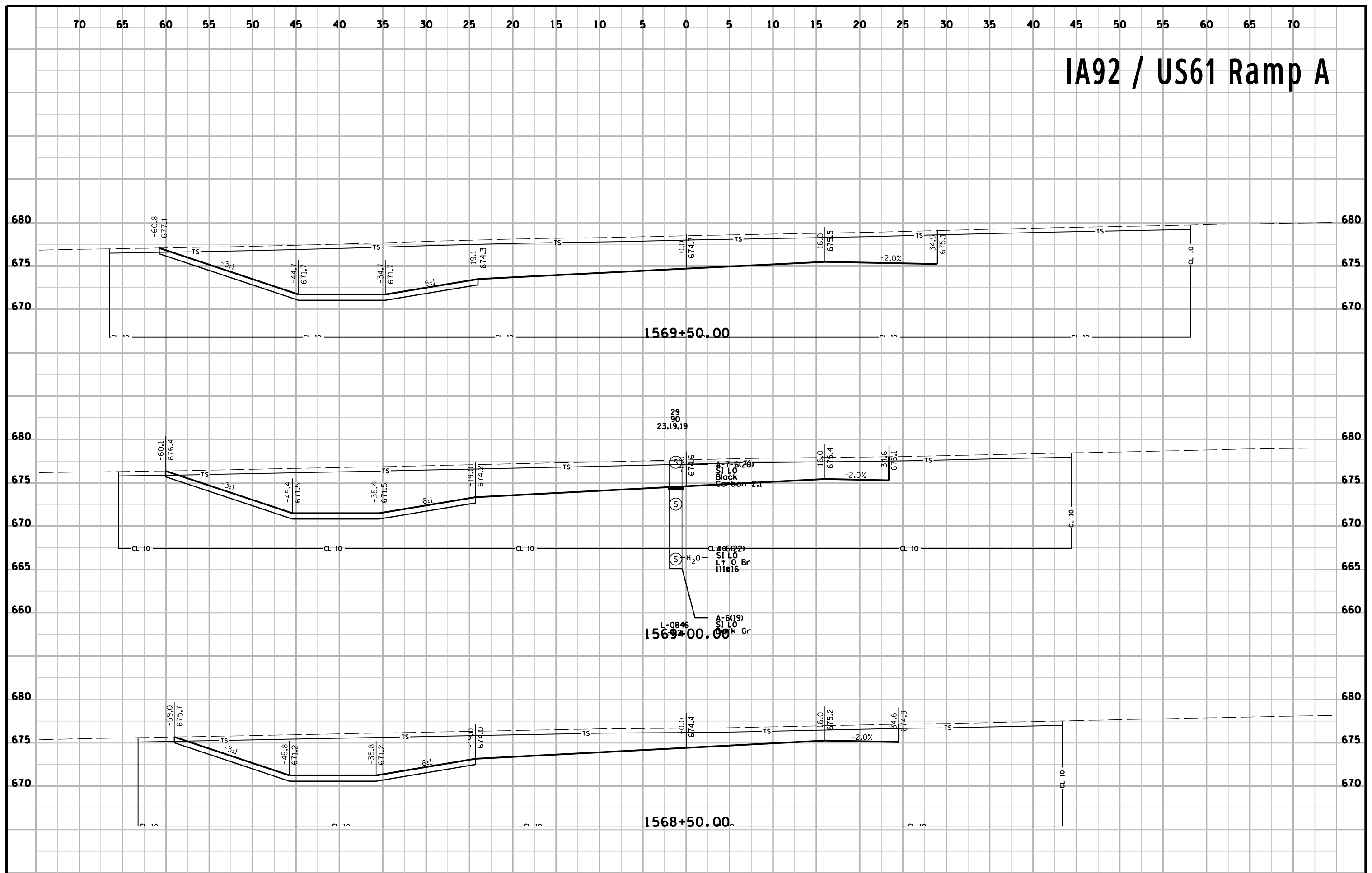




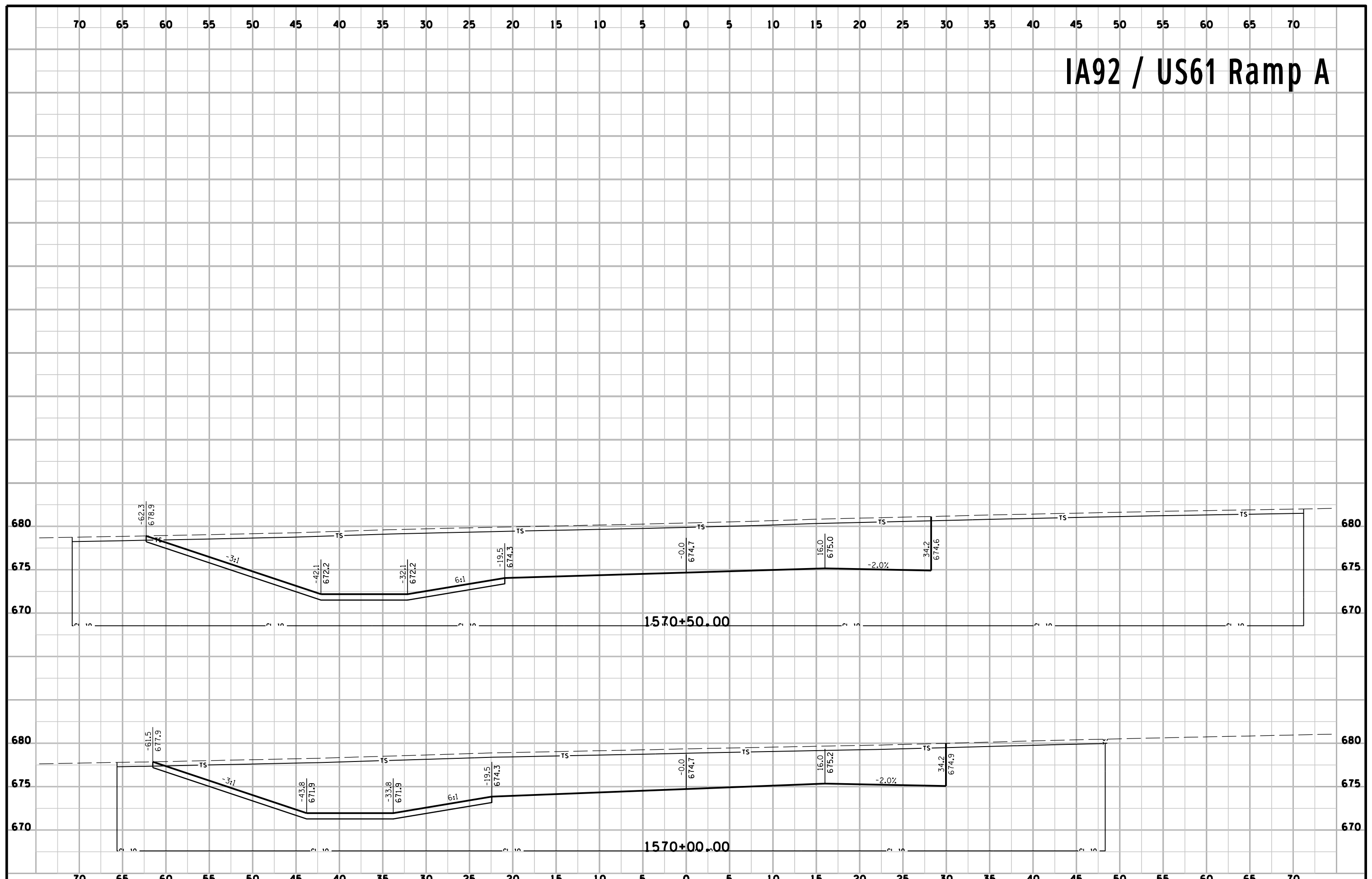
IA92 / US61 Ramp A



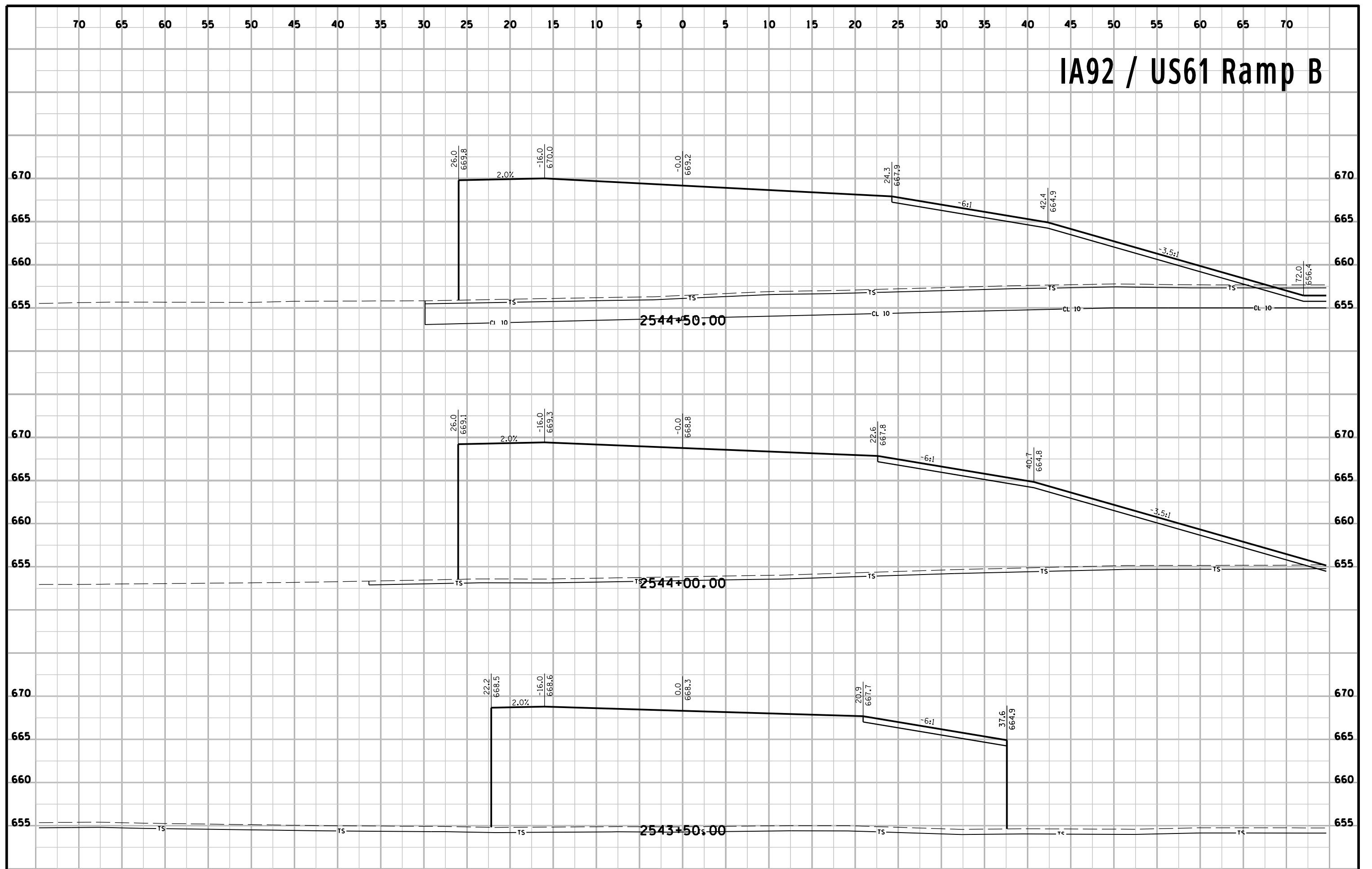
IA92 / US61 Ramp A



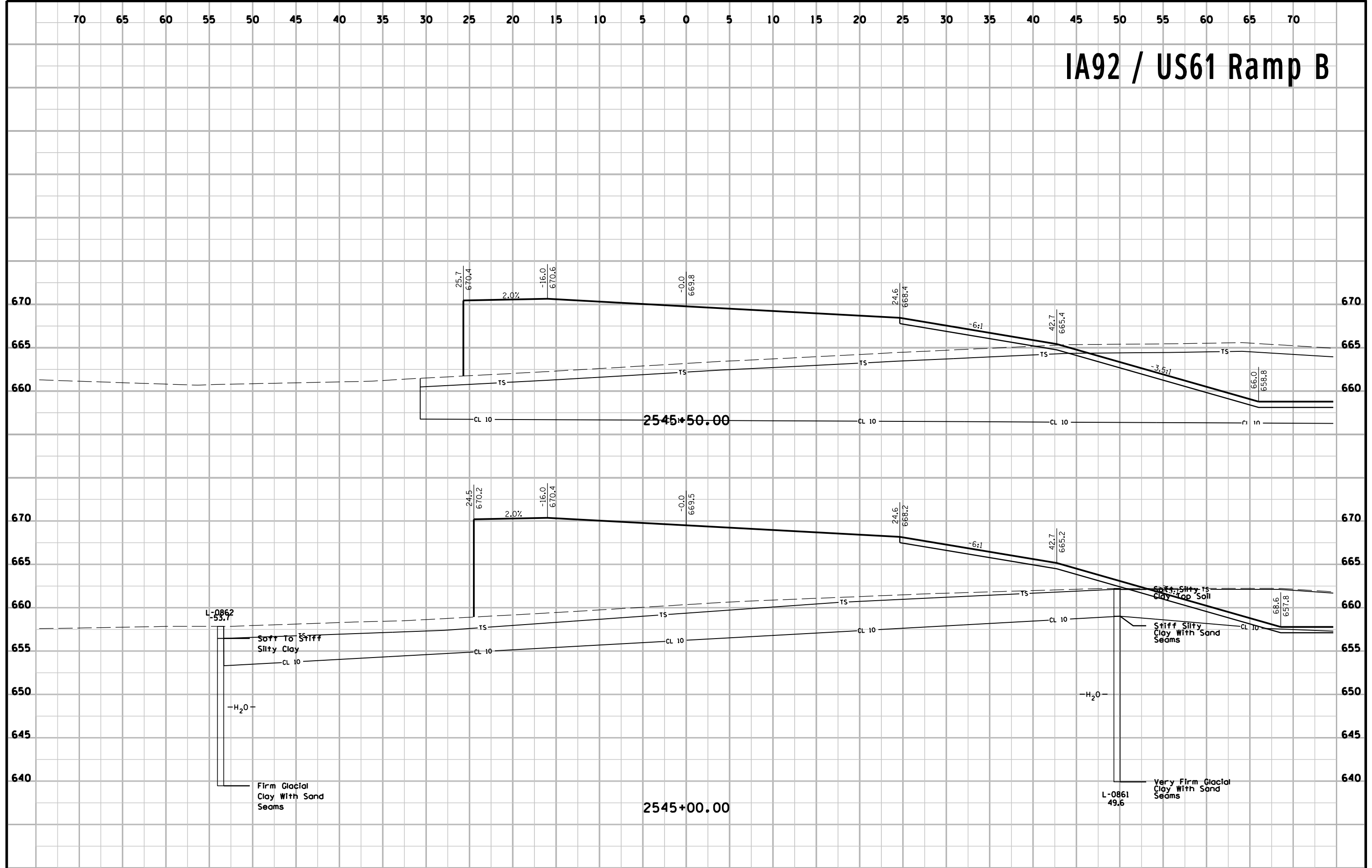
IA92 / US61 Ramp A



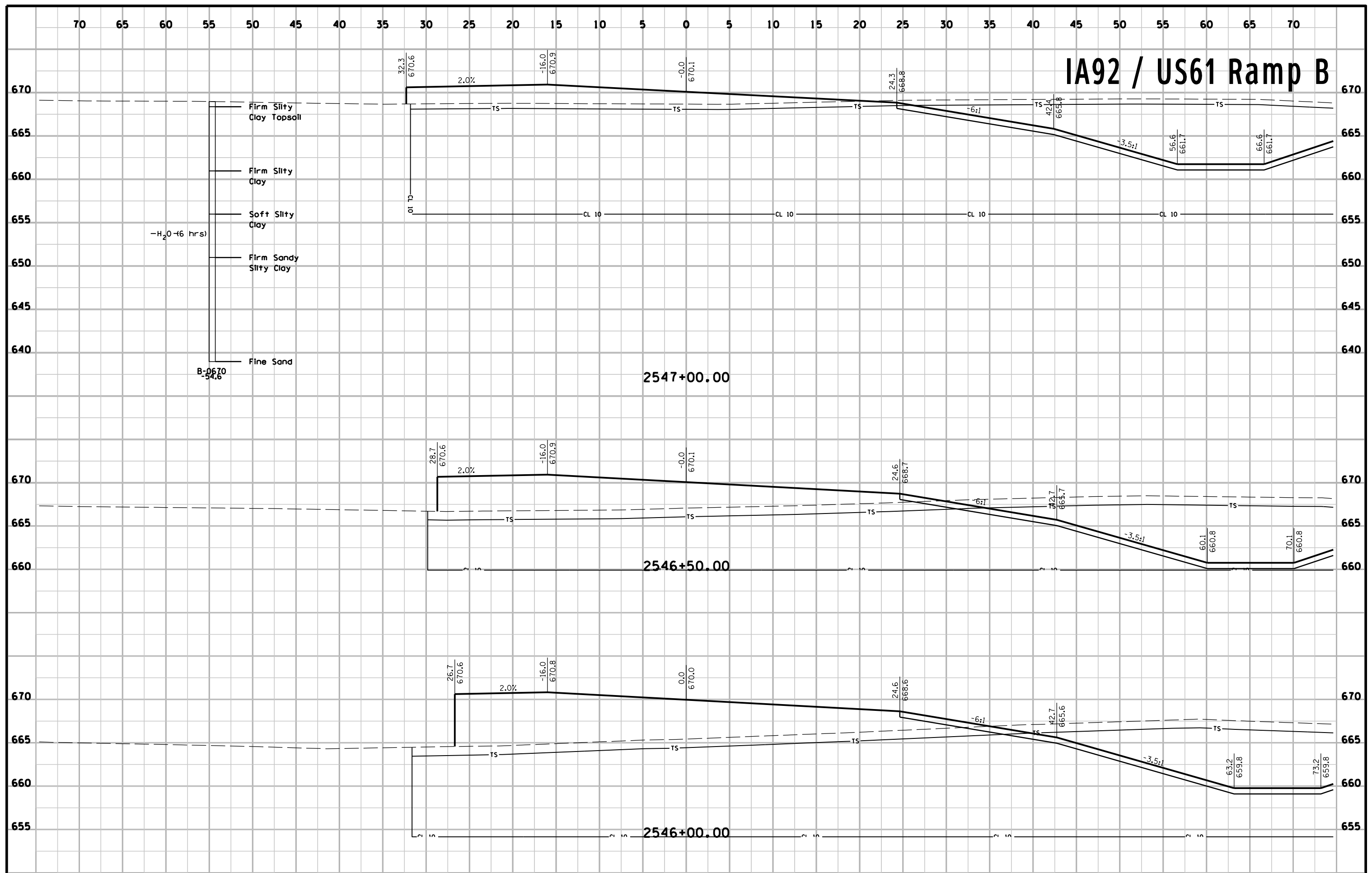
IA92 / US61 Ramp B



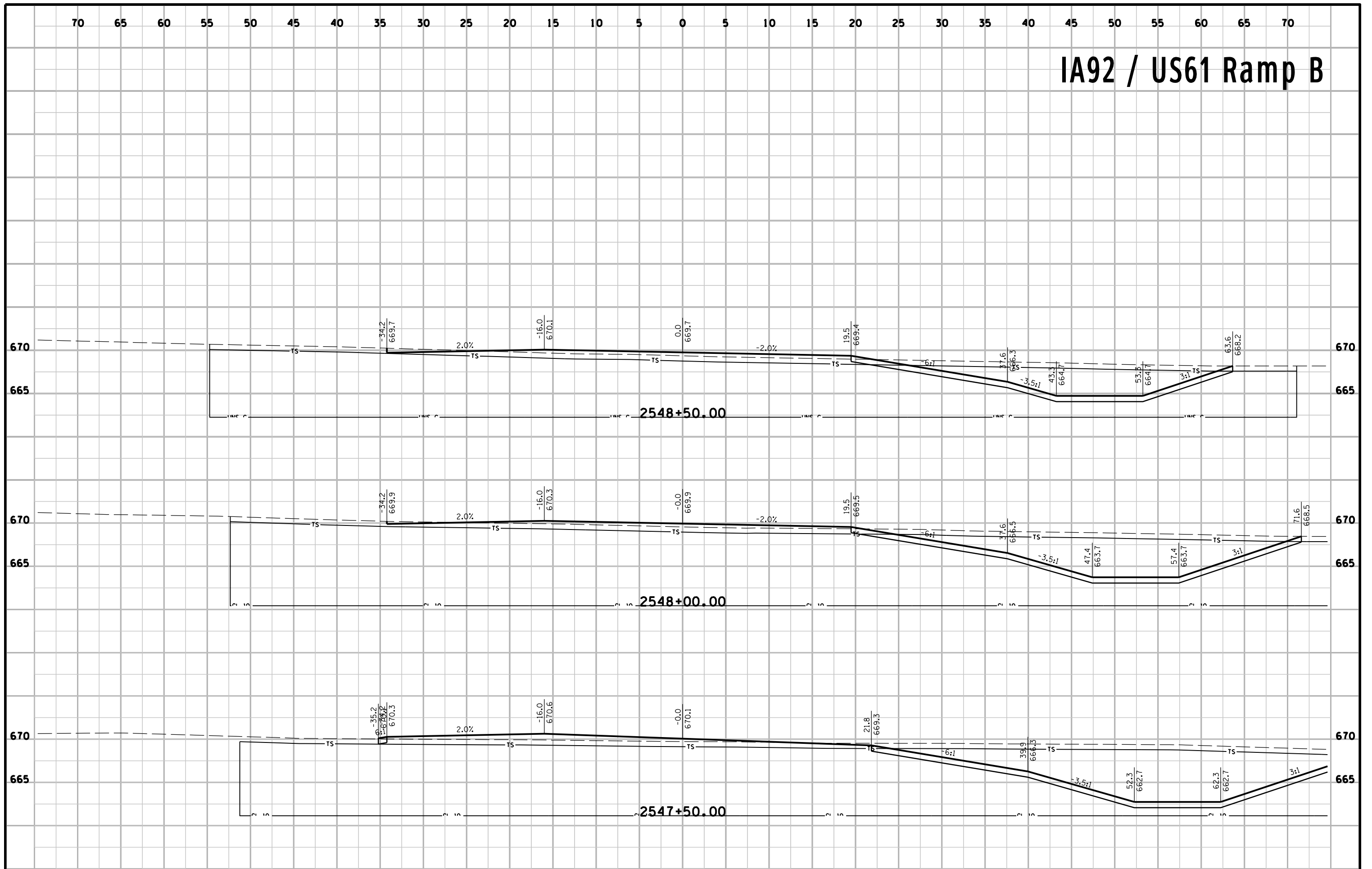
IA92 / US61 Ramp B



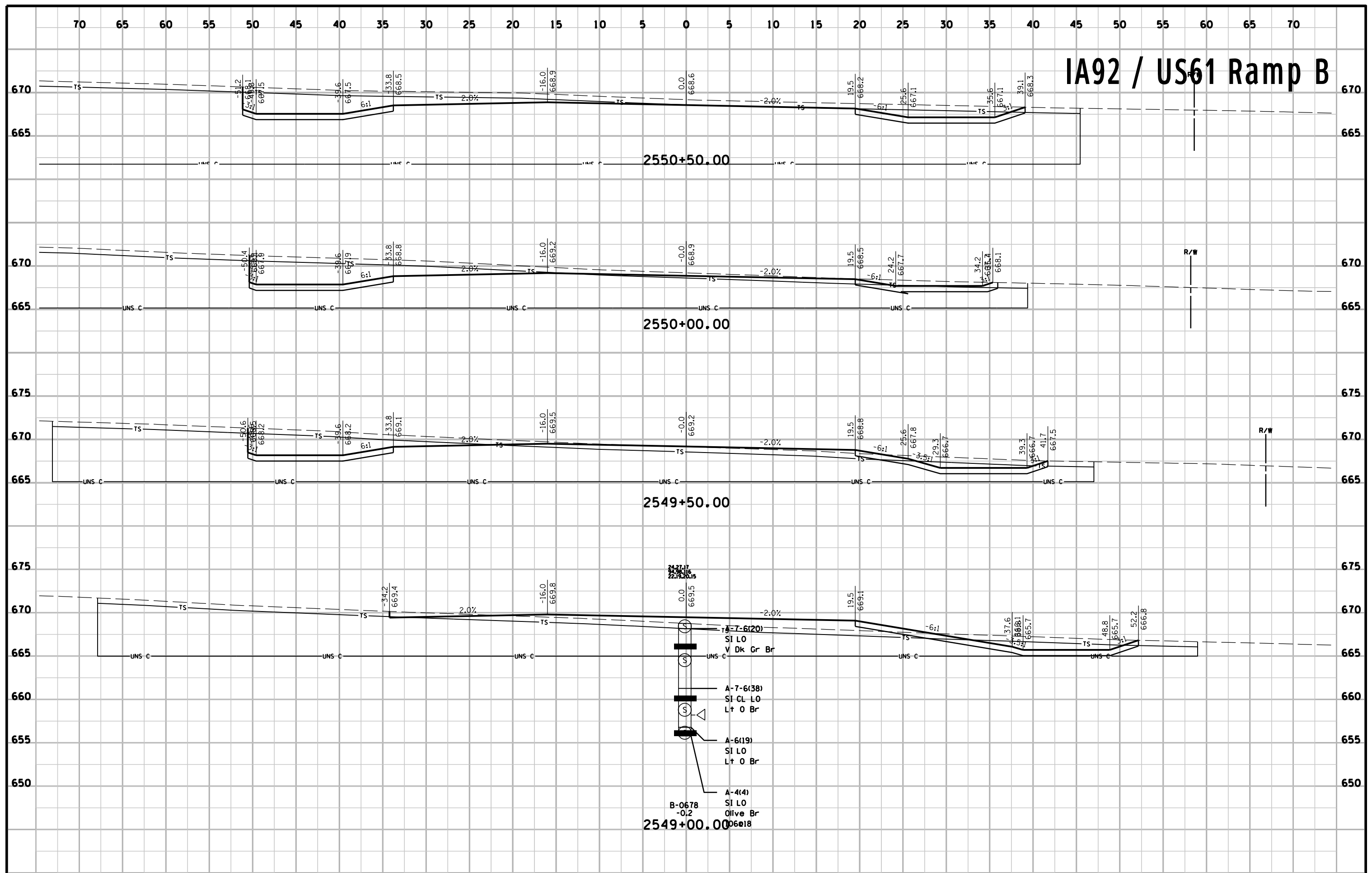
IA92 / US61 Ramp B



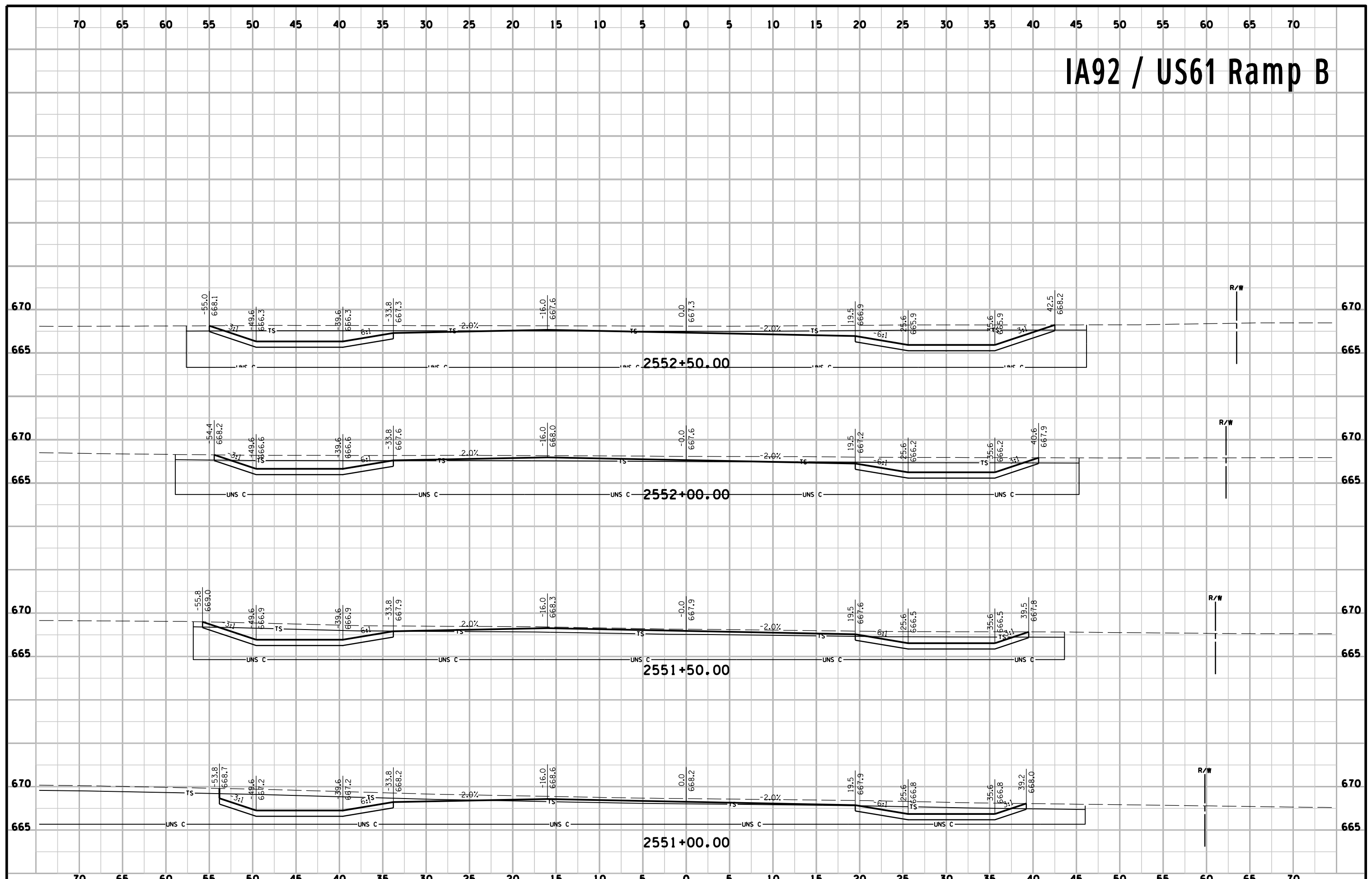
IA92 / US61 Ramp B



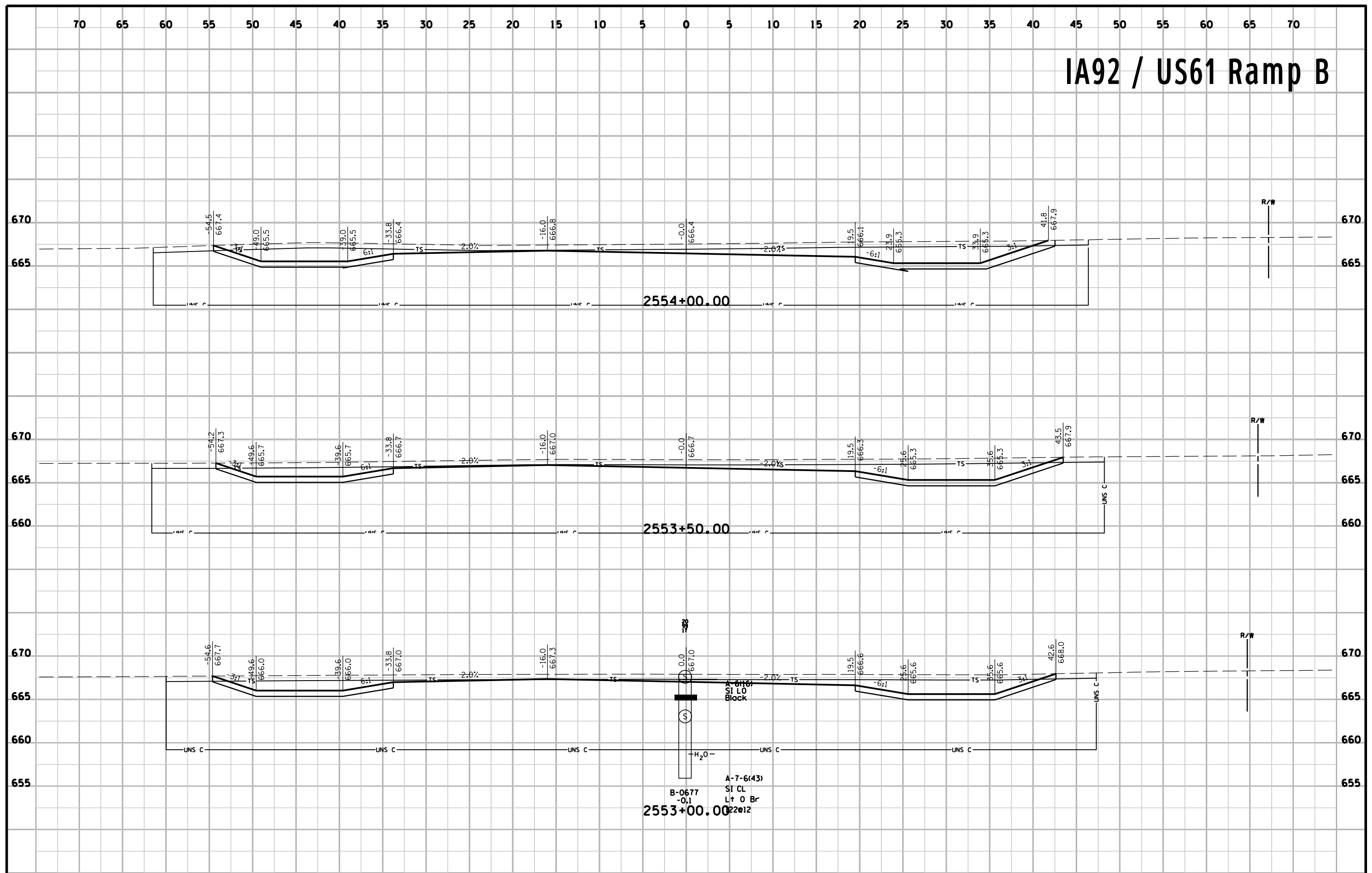
IA92 / US61 Ramp B



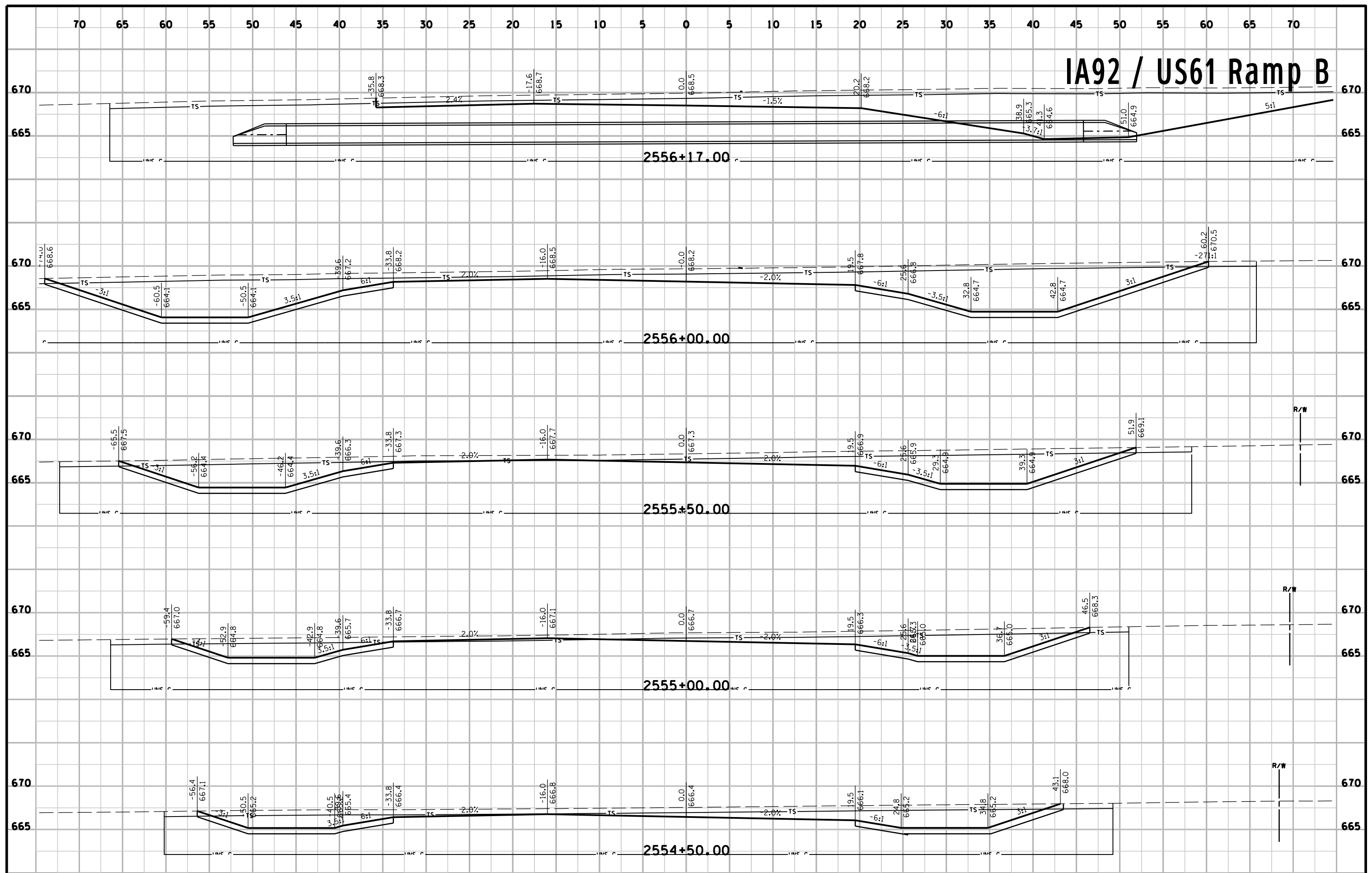
IA92 / US61 Ramp B



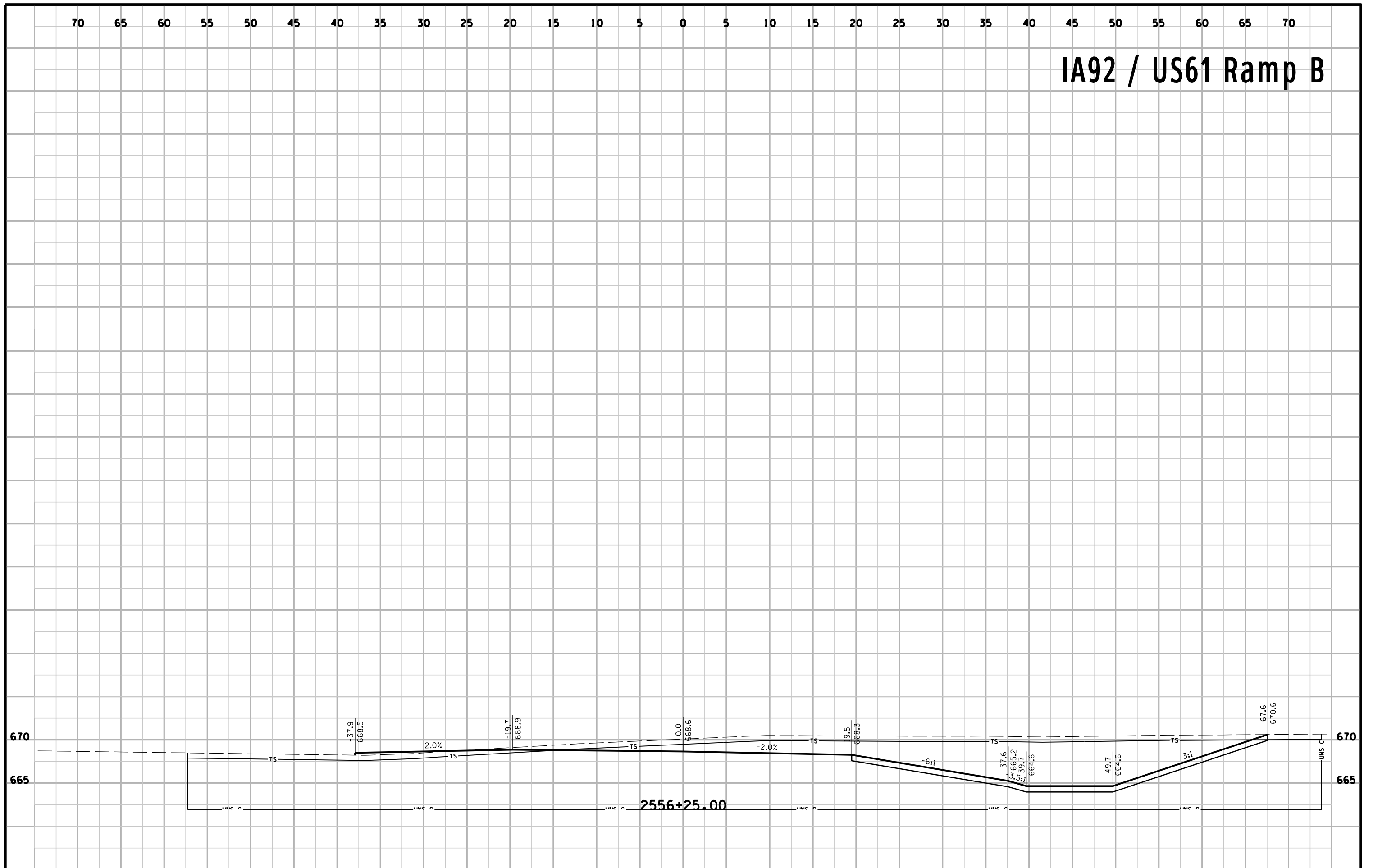
IA92 / US61 Ramp B



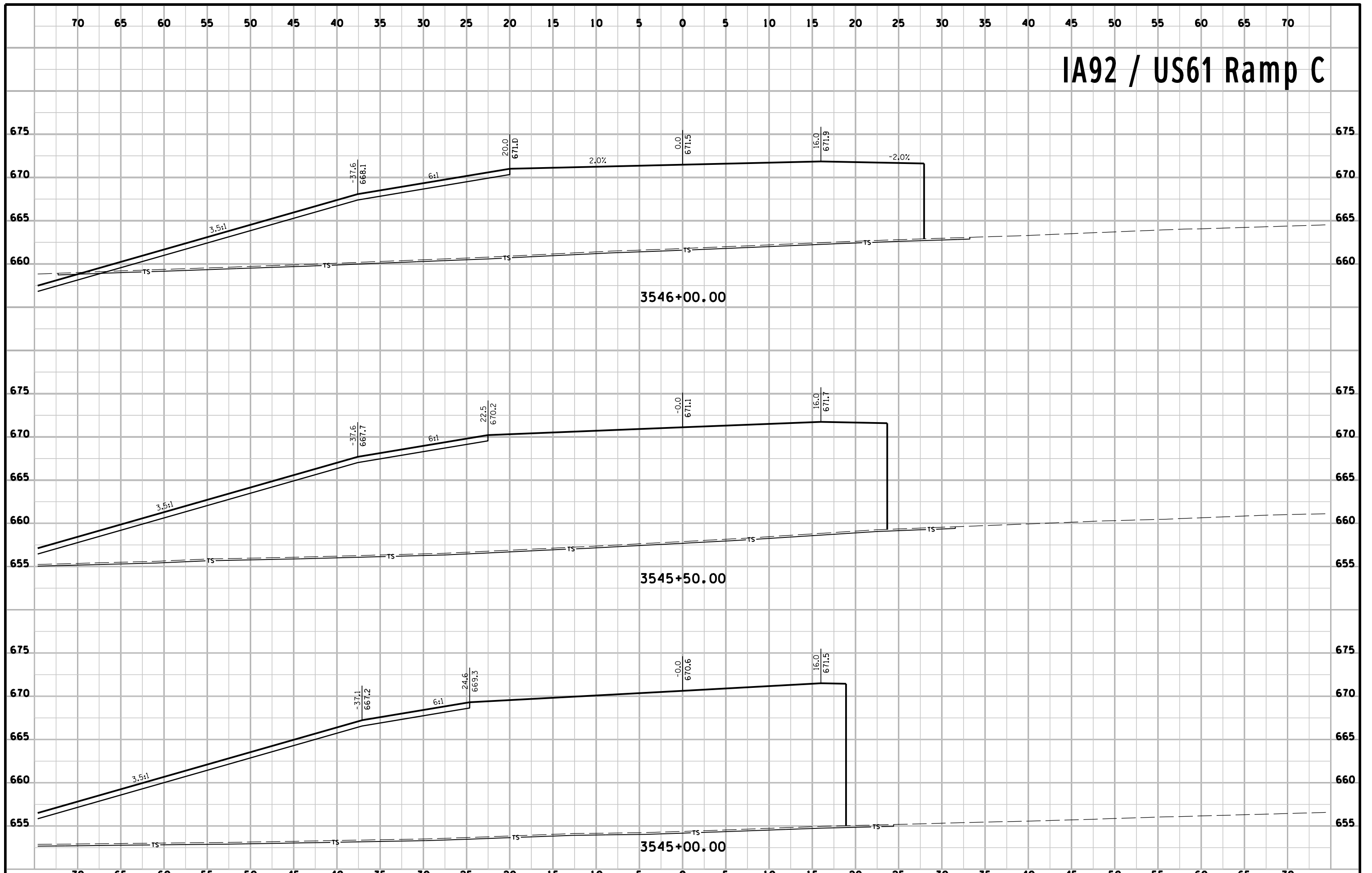
IA92 / US61 Ramp B



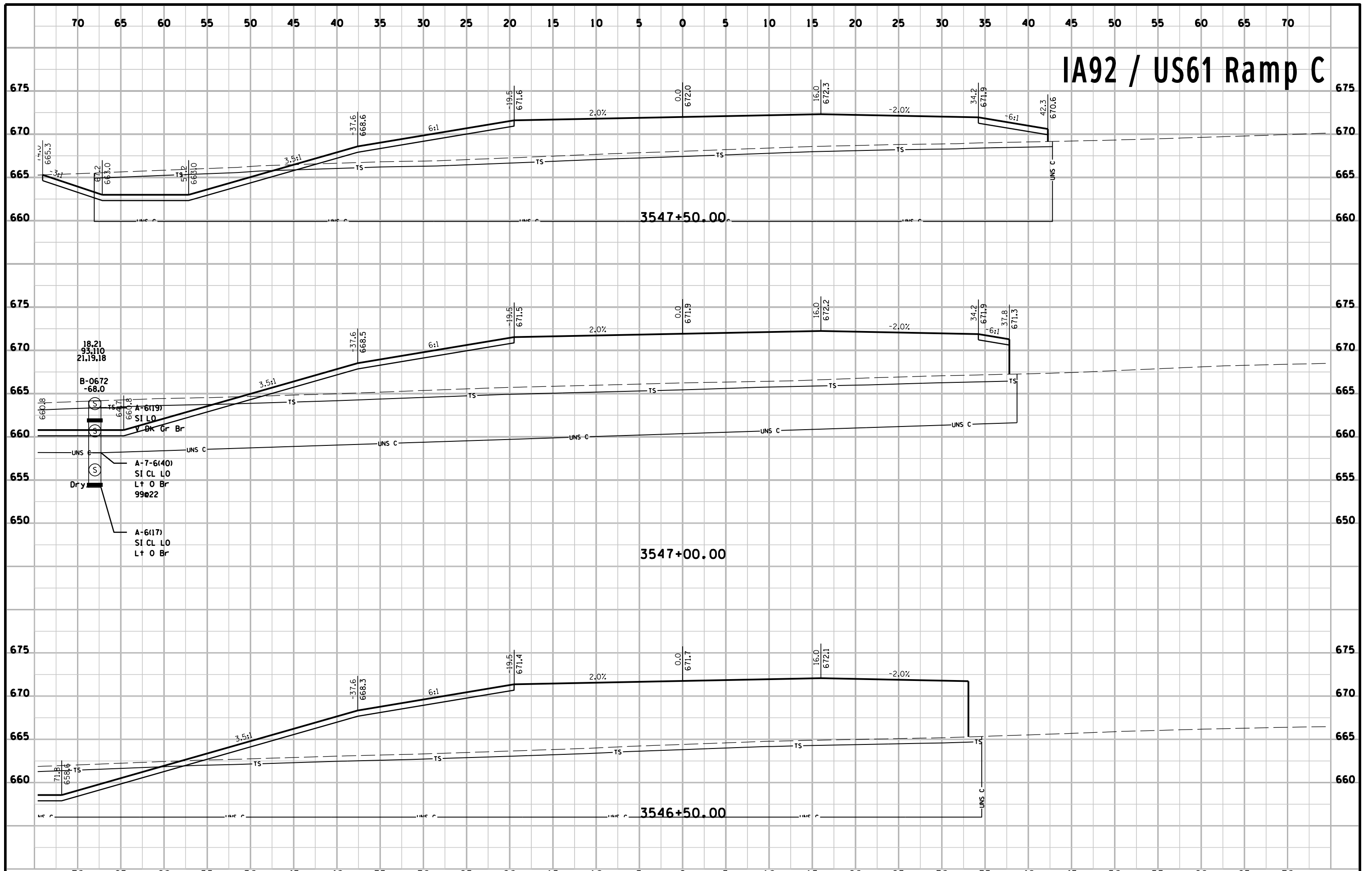
IA92 / US61 Ramp B



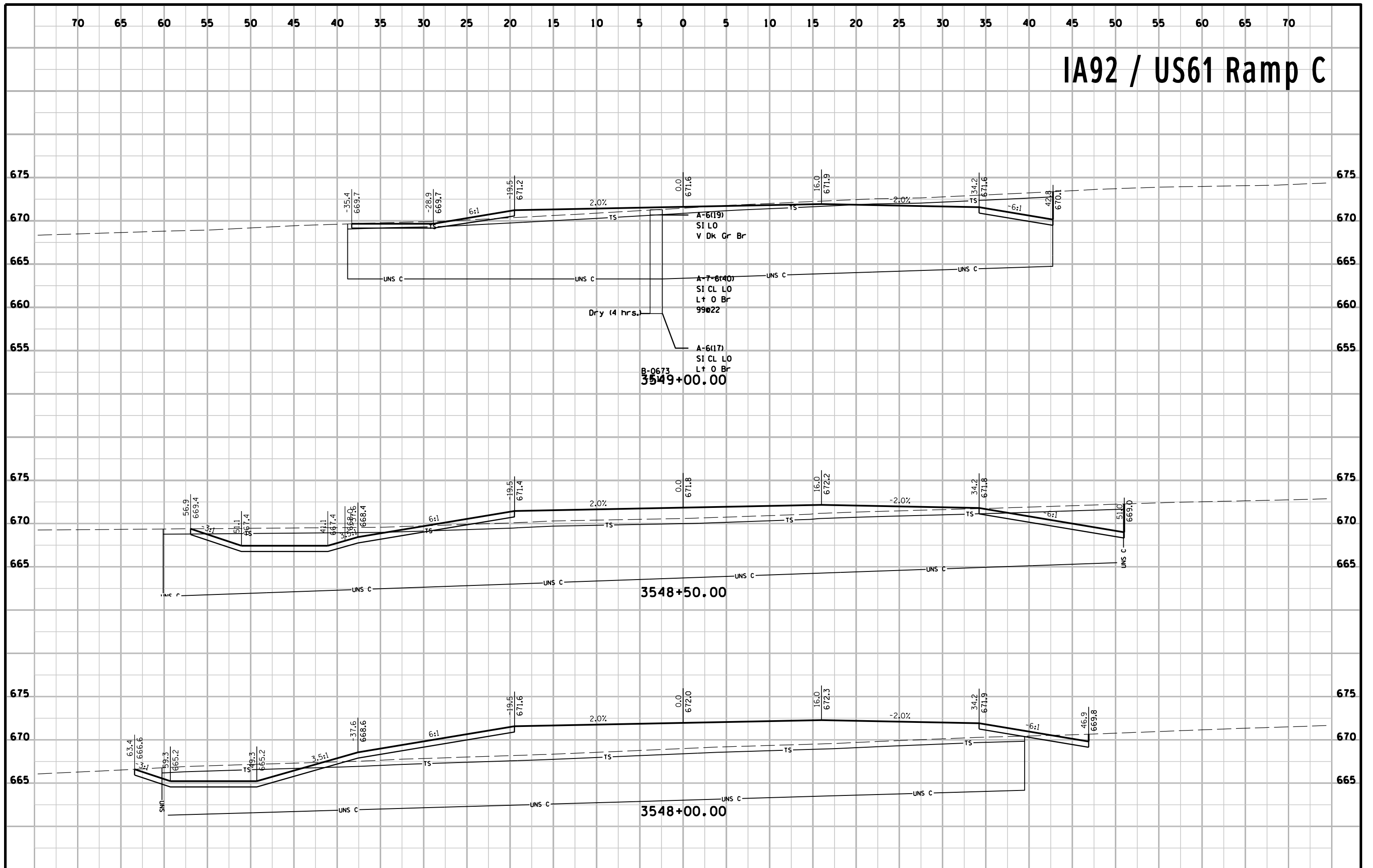
IA92 / US61 Ramp C



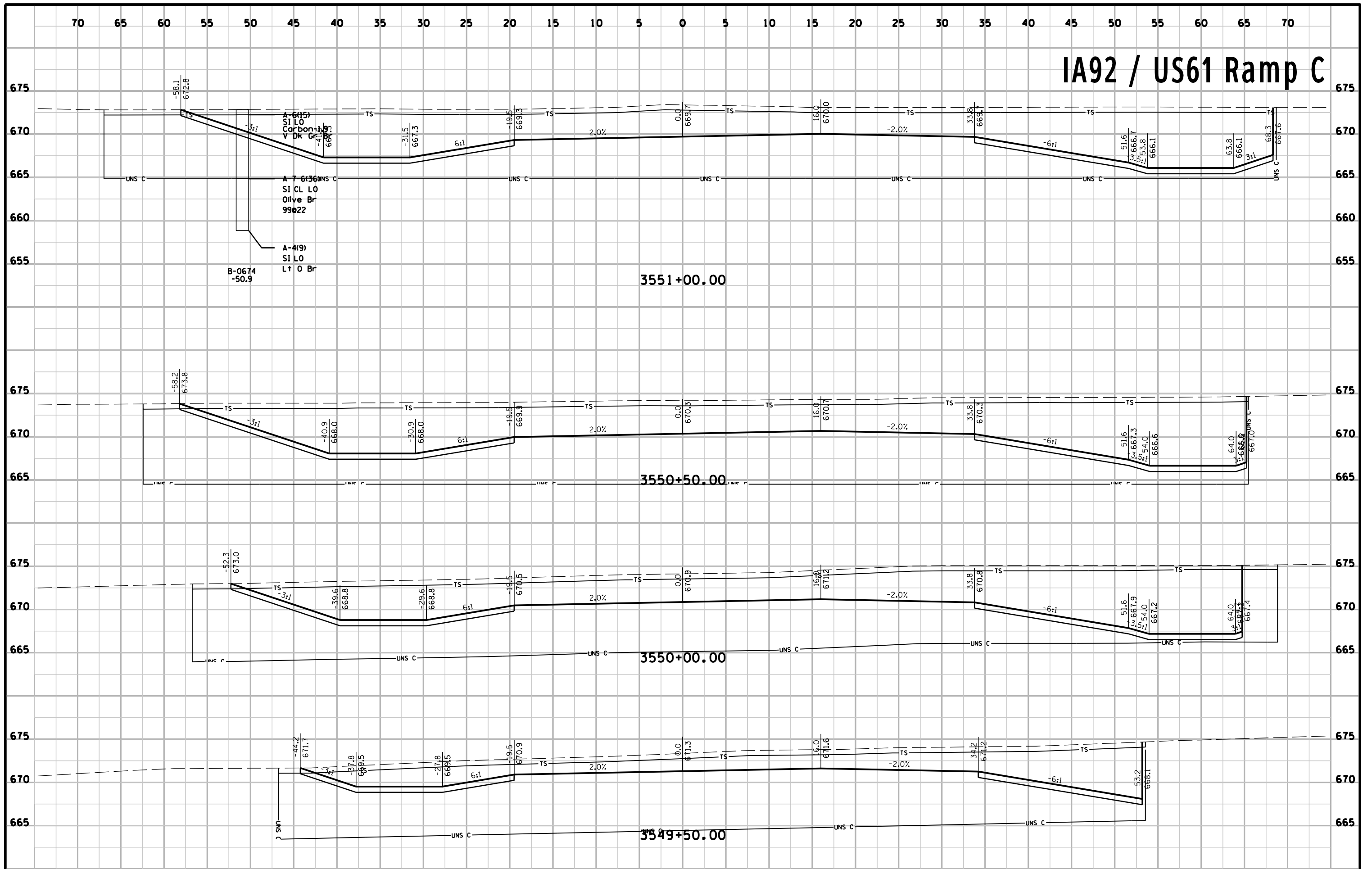
IA92 / US61 Ramp C



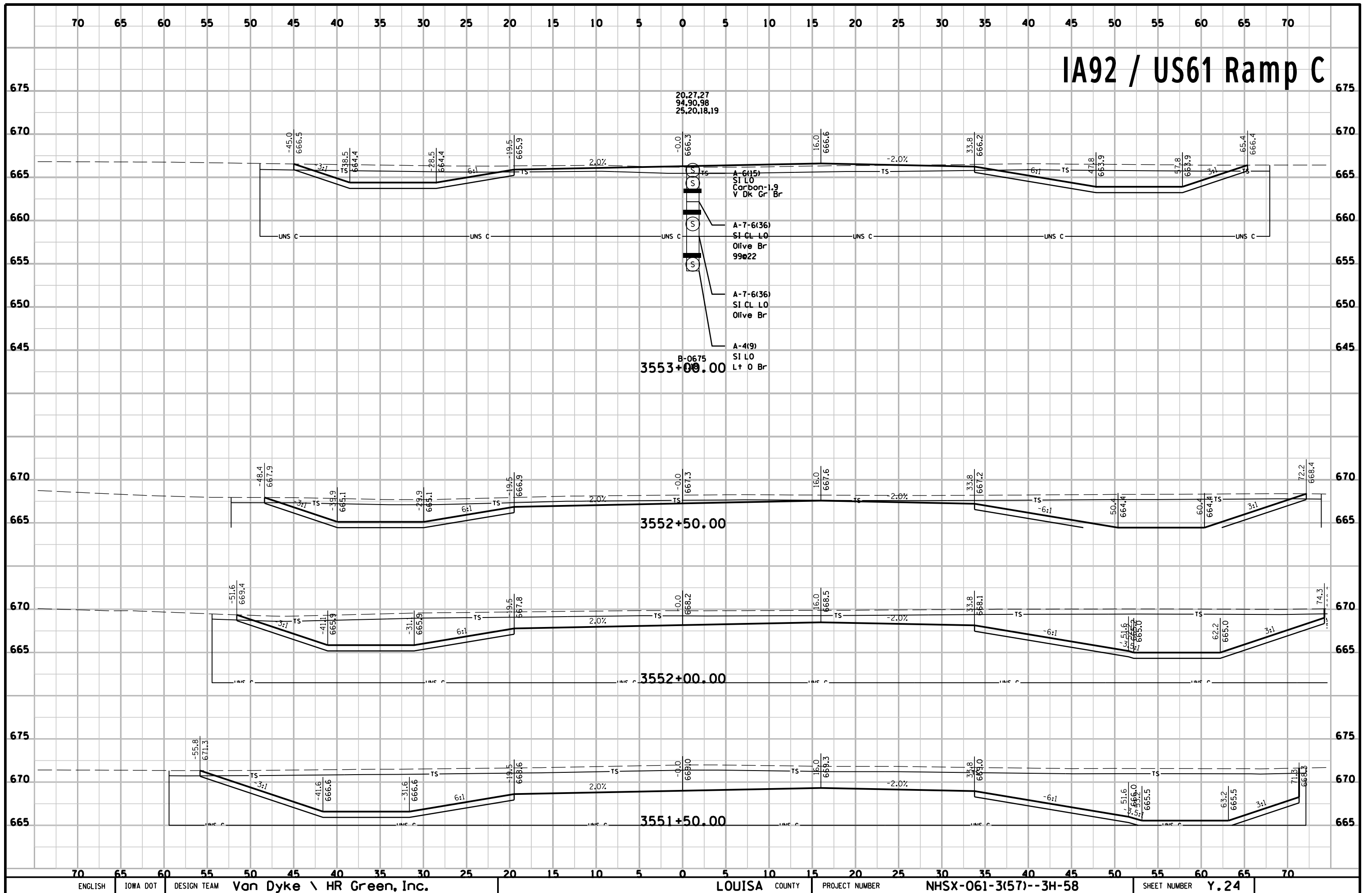
IA92 / US61 Ramp C



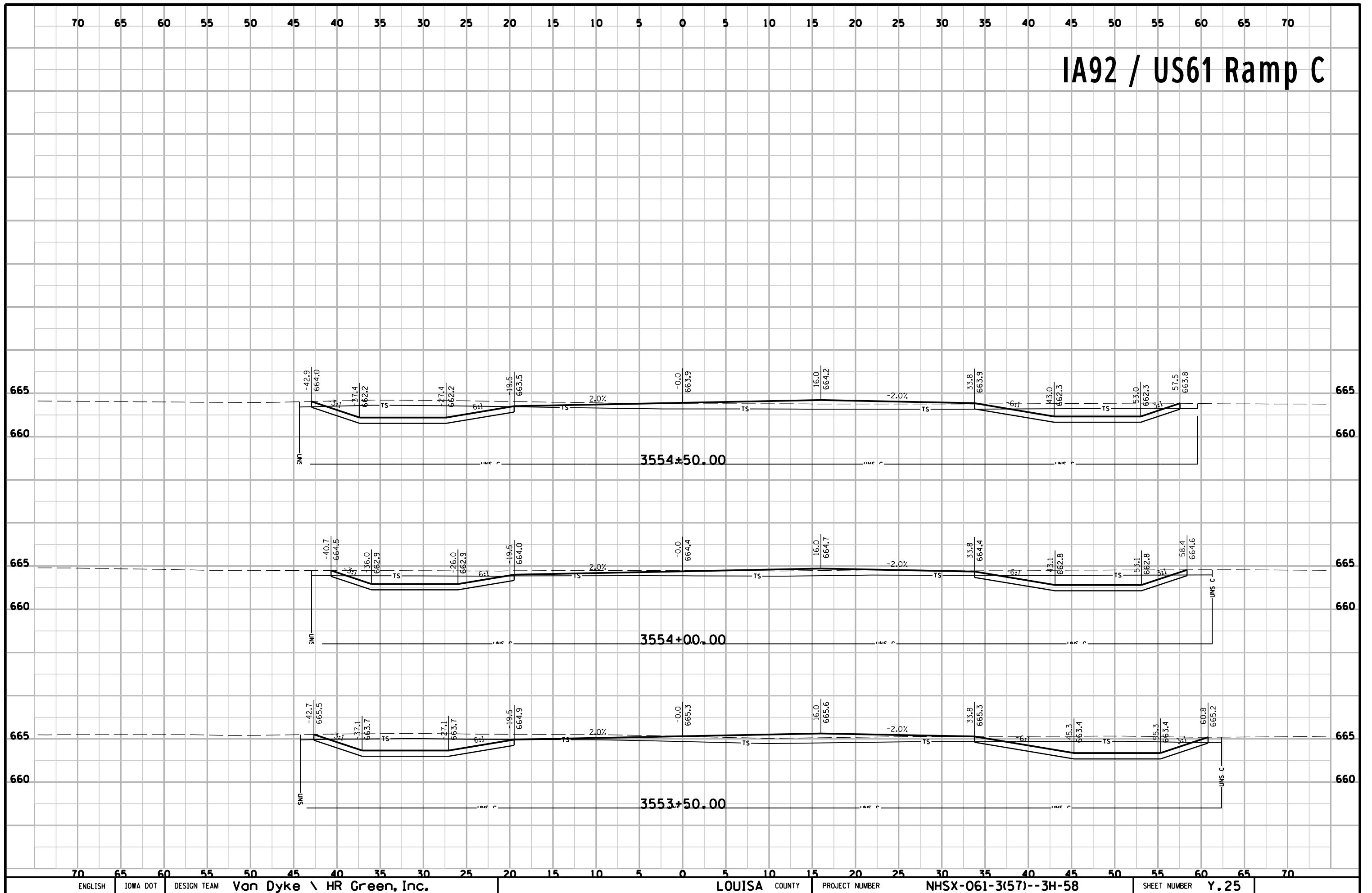
IA92 / US61 Ramp C



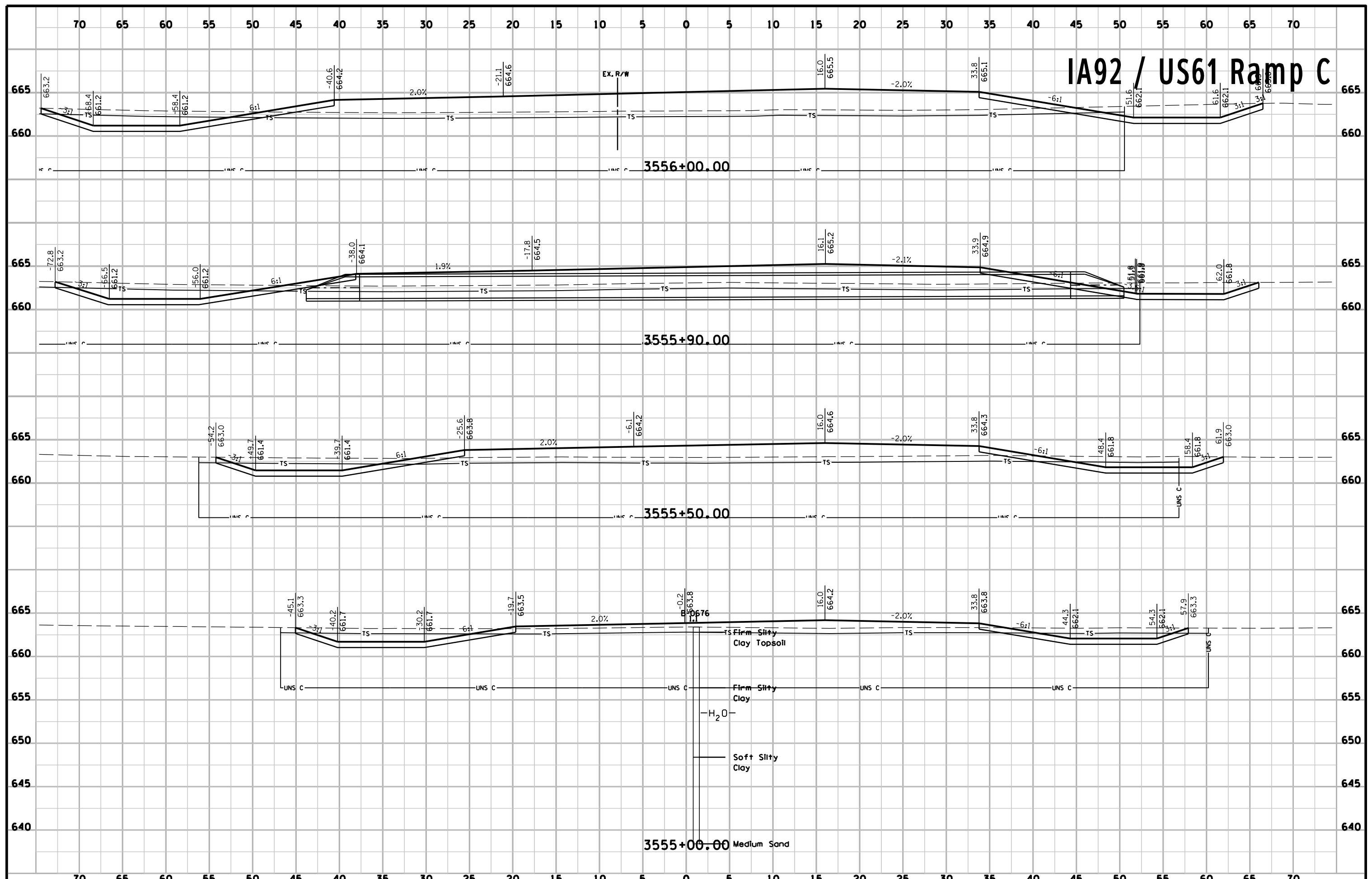
IA92 / US61 Ramp C

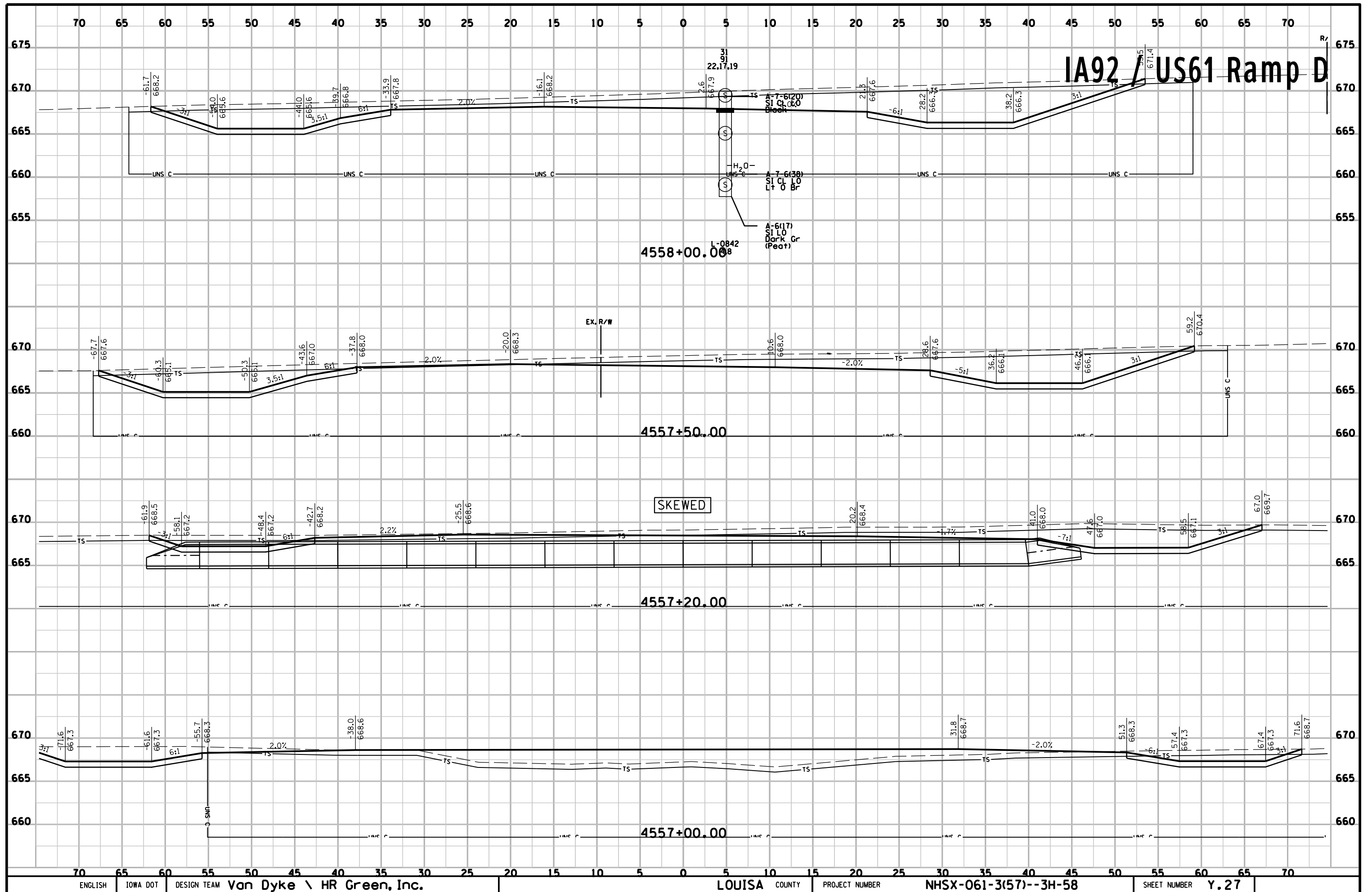


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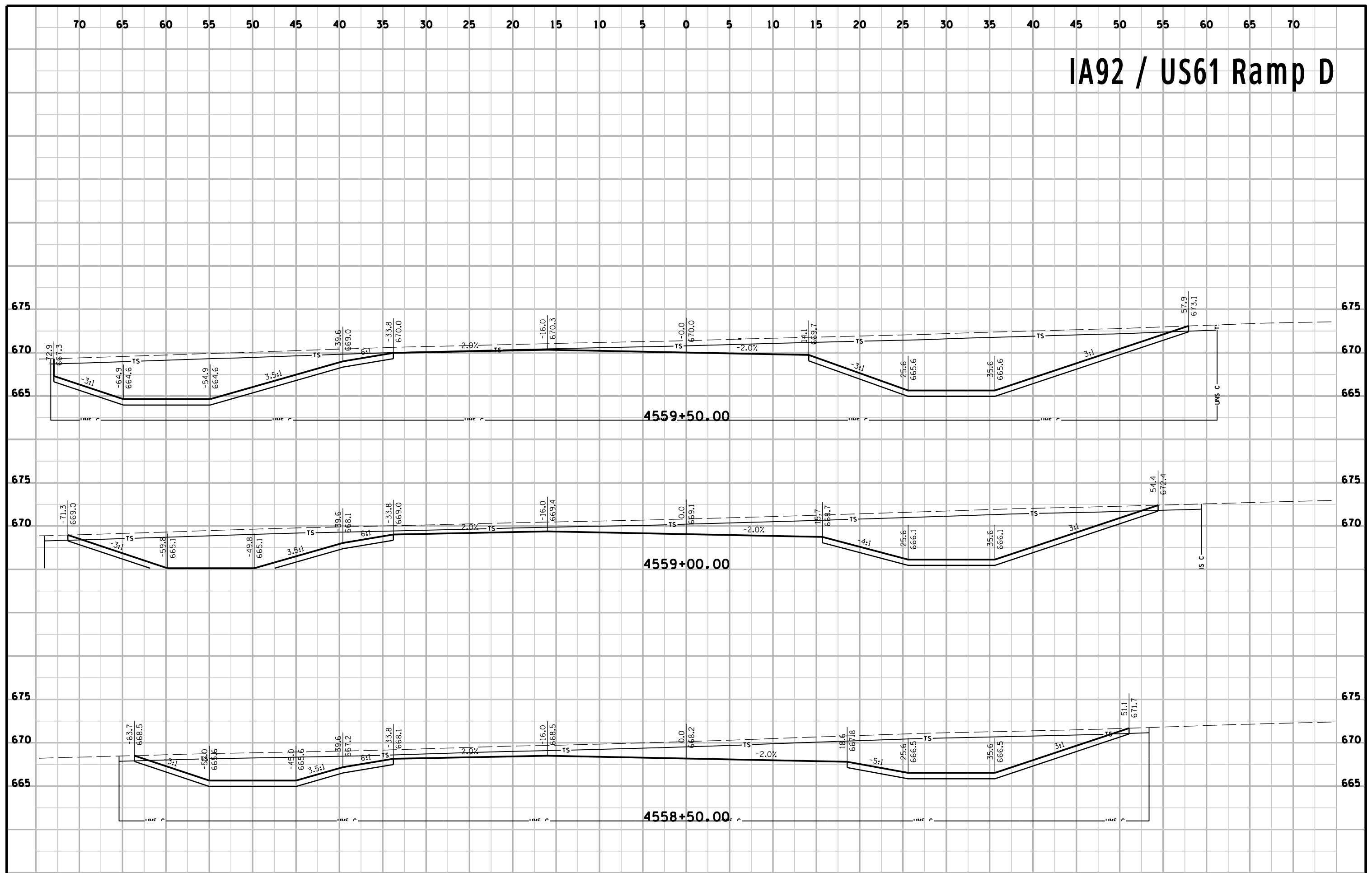


IA92 / US61 Ramp C

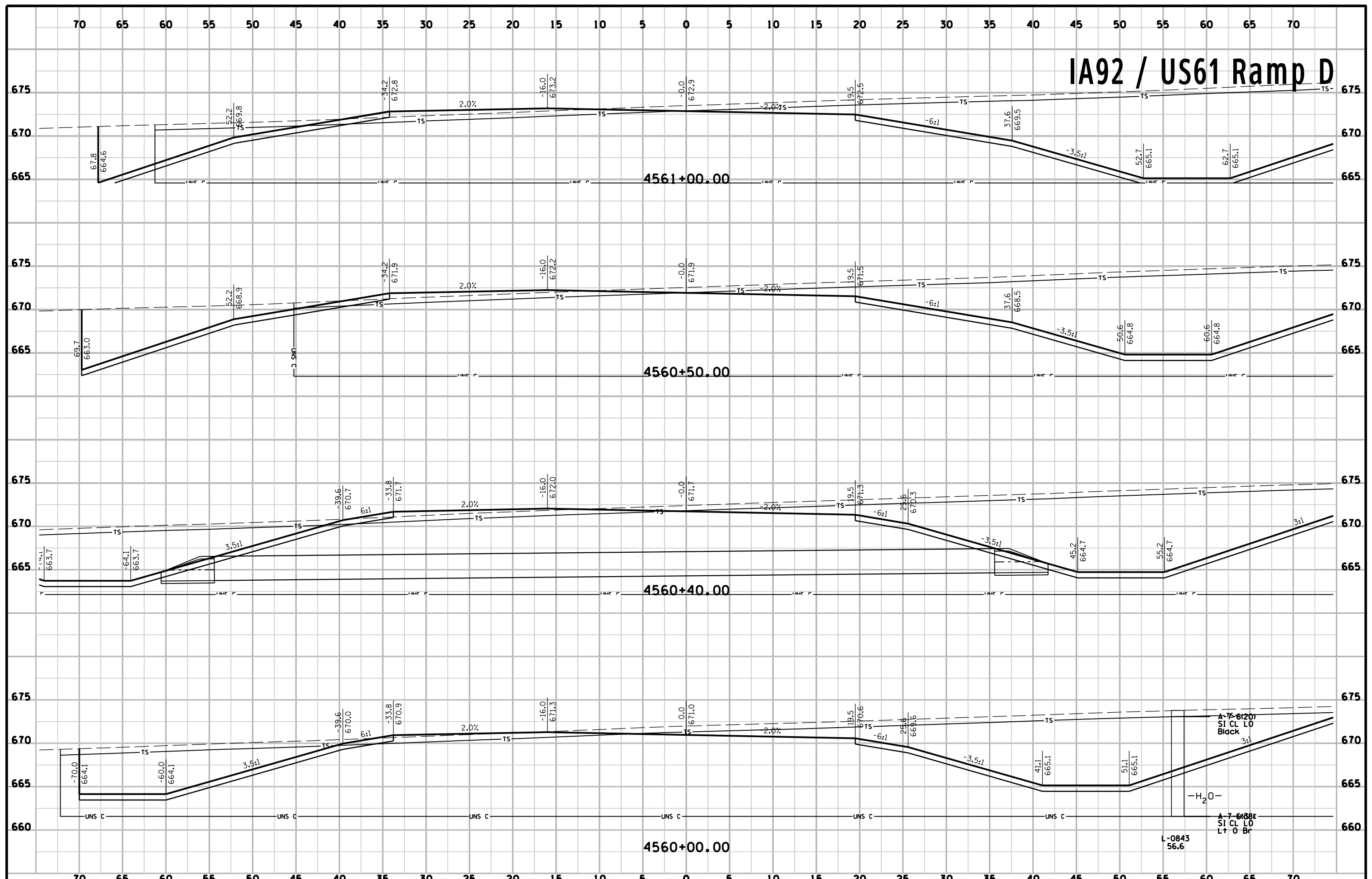




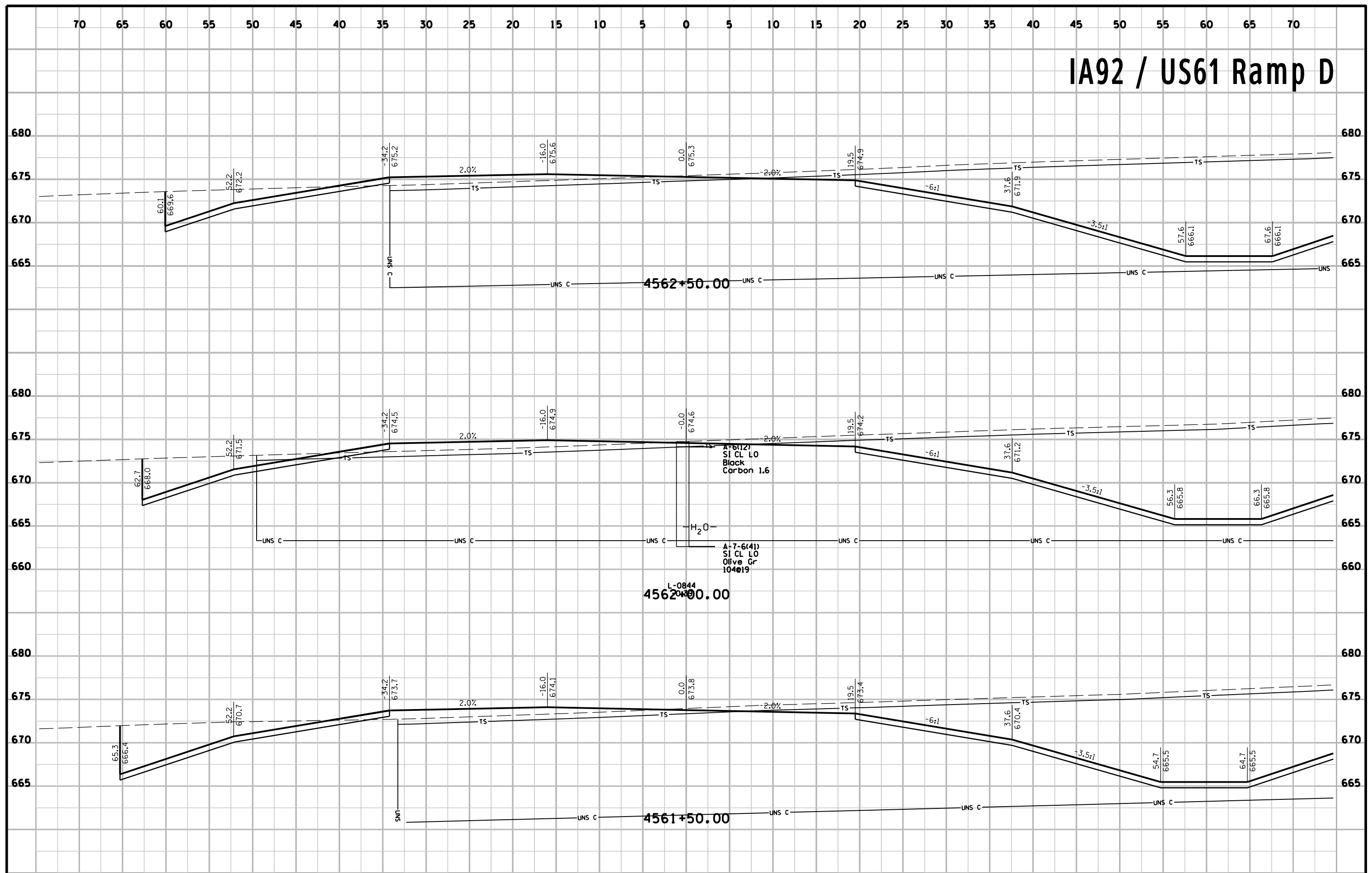
IA92 / US61 Ramp D



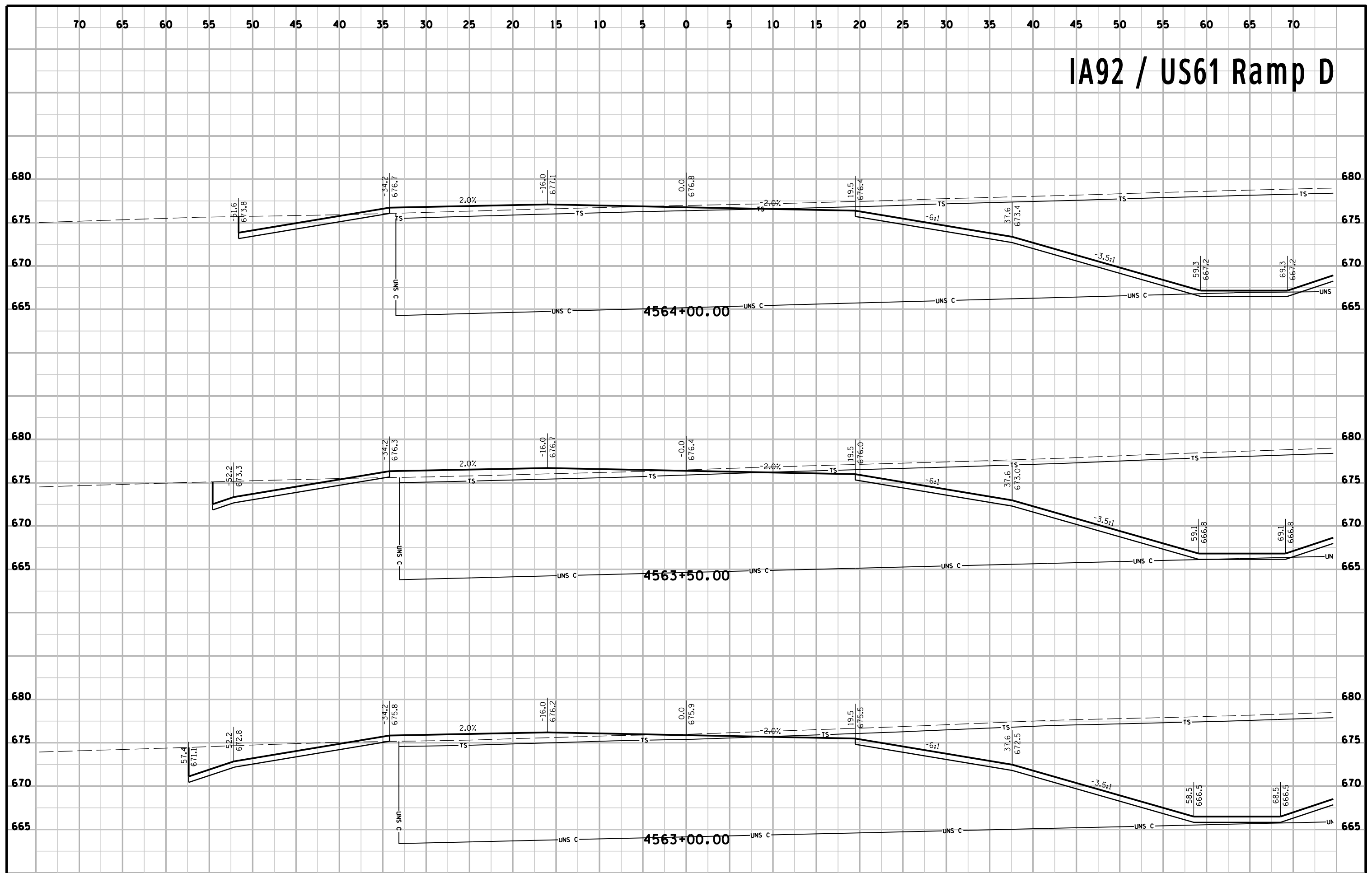
IA92 / US61 Ramp D



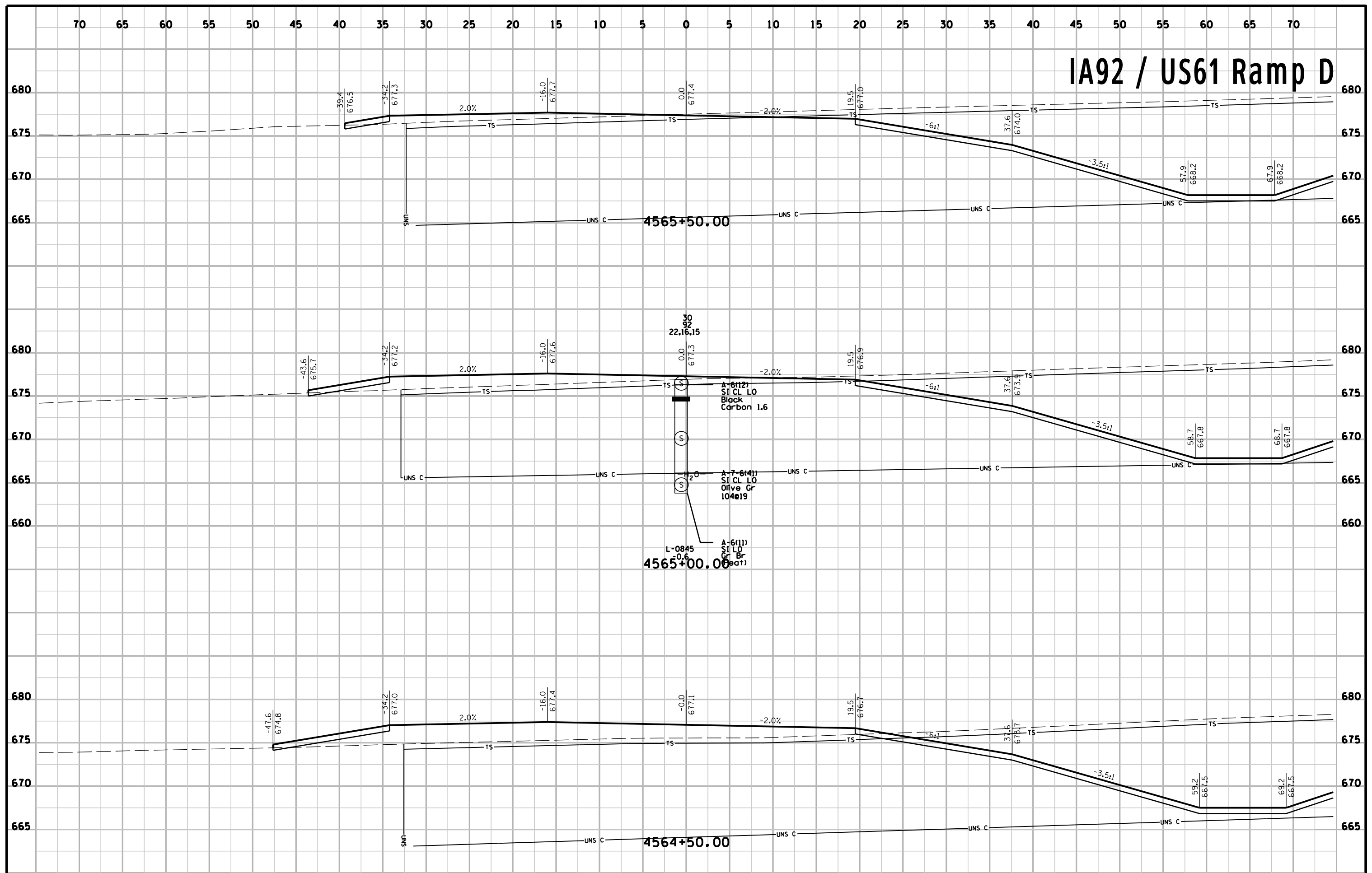
IA92 / US61 Ramp D



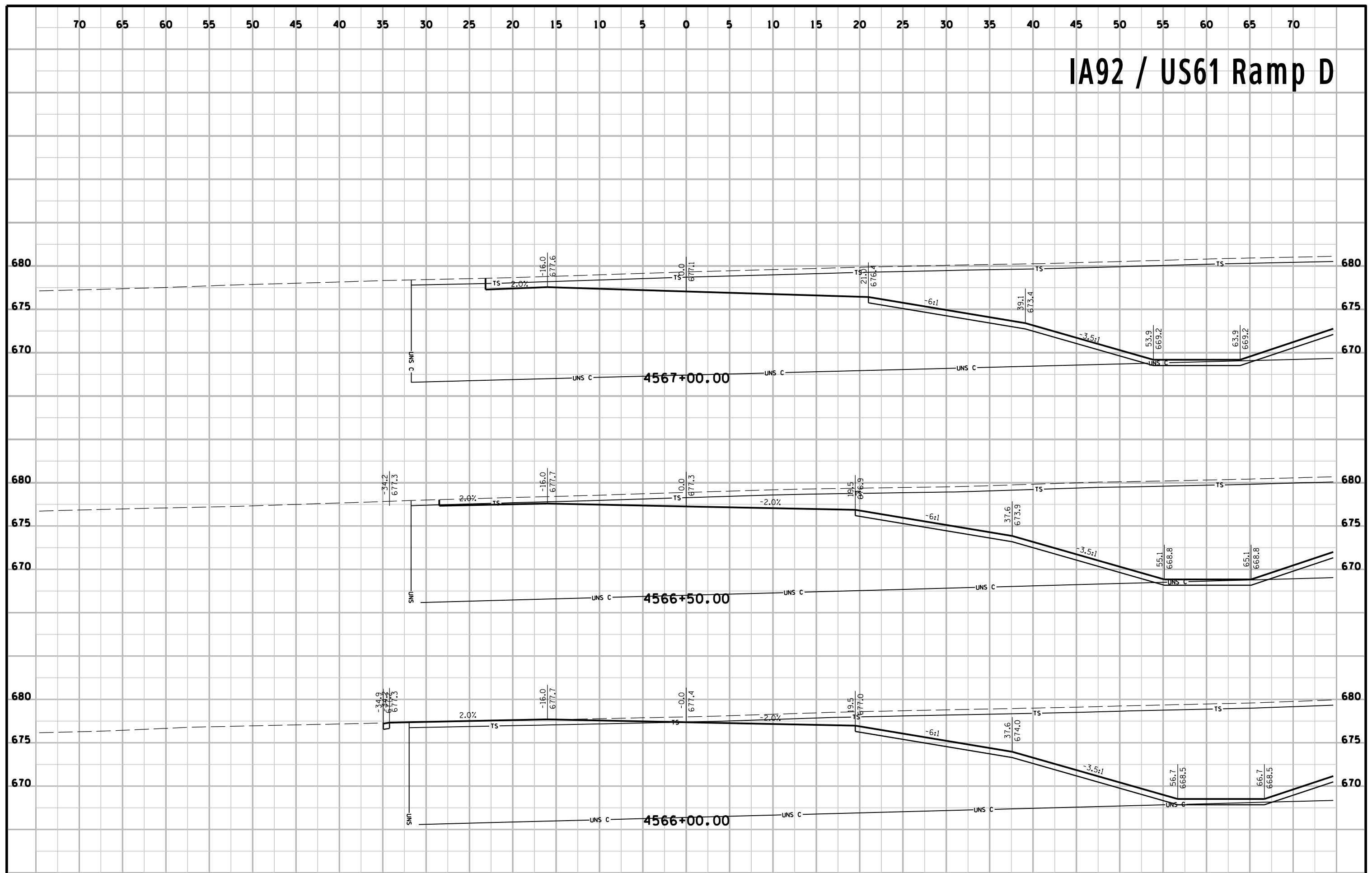
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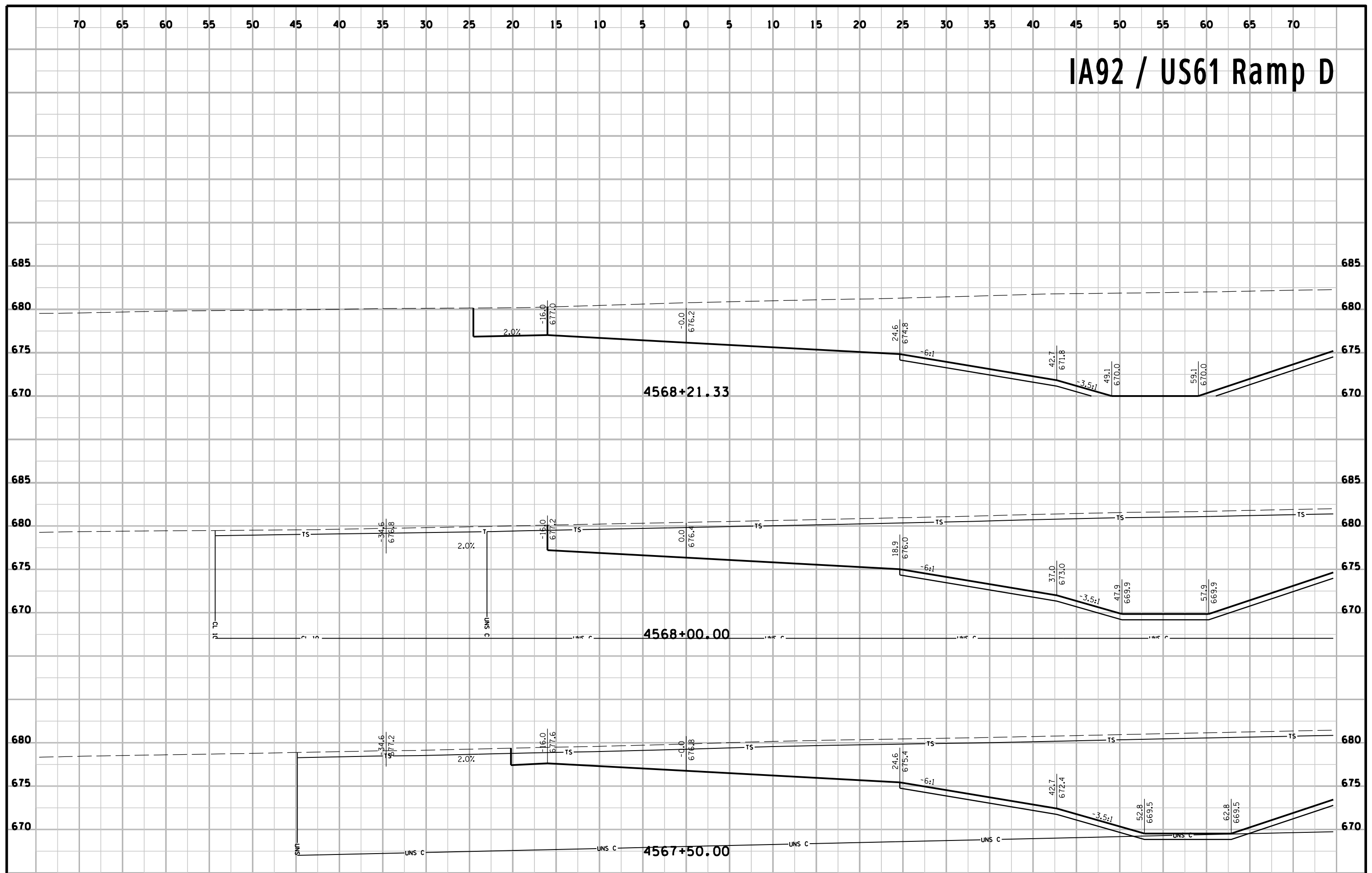
IA92 / US61 Ramp D



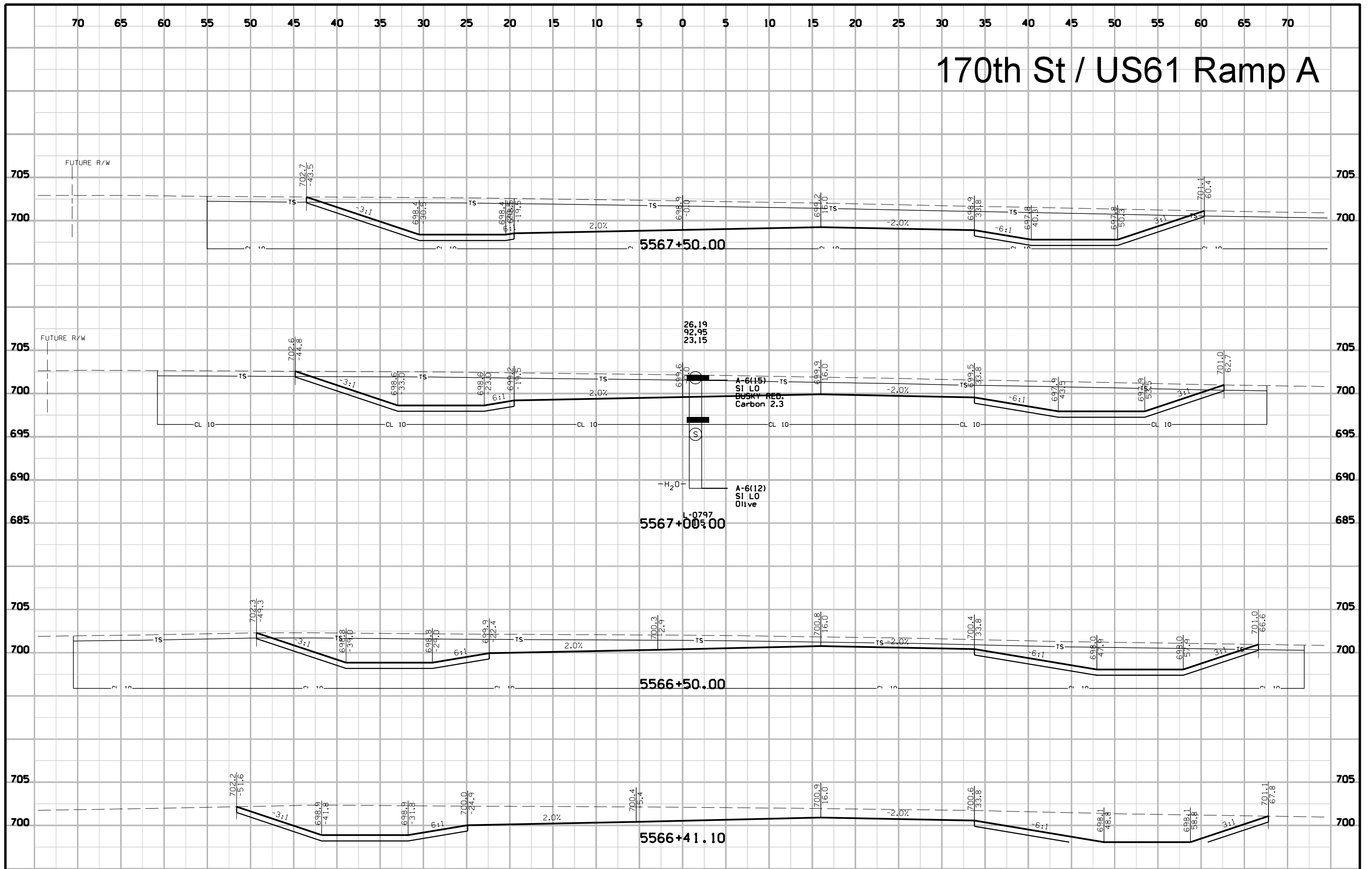
IA92 / US61 Ramp D



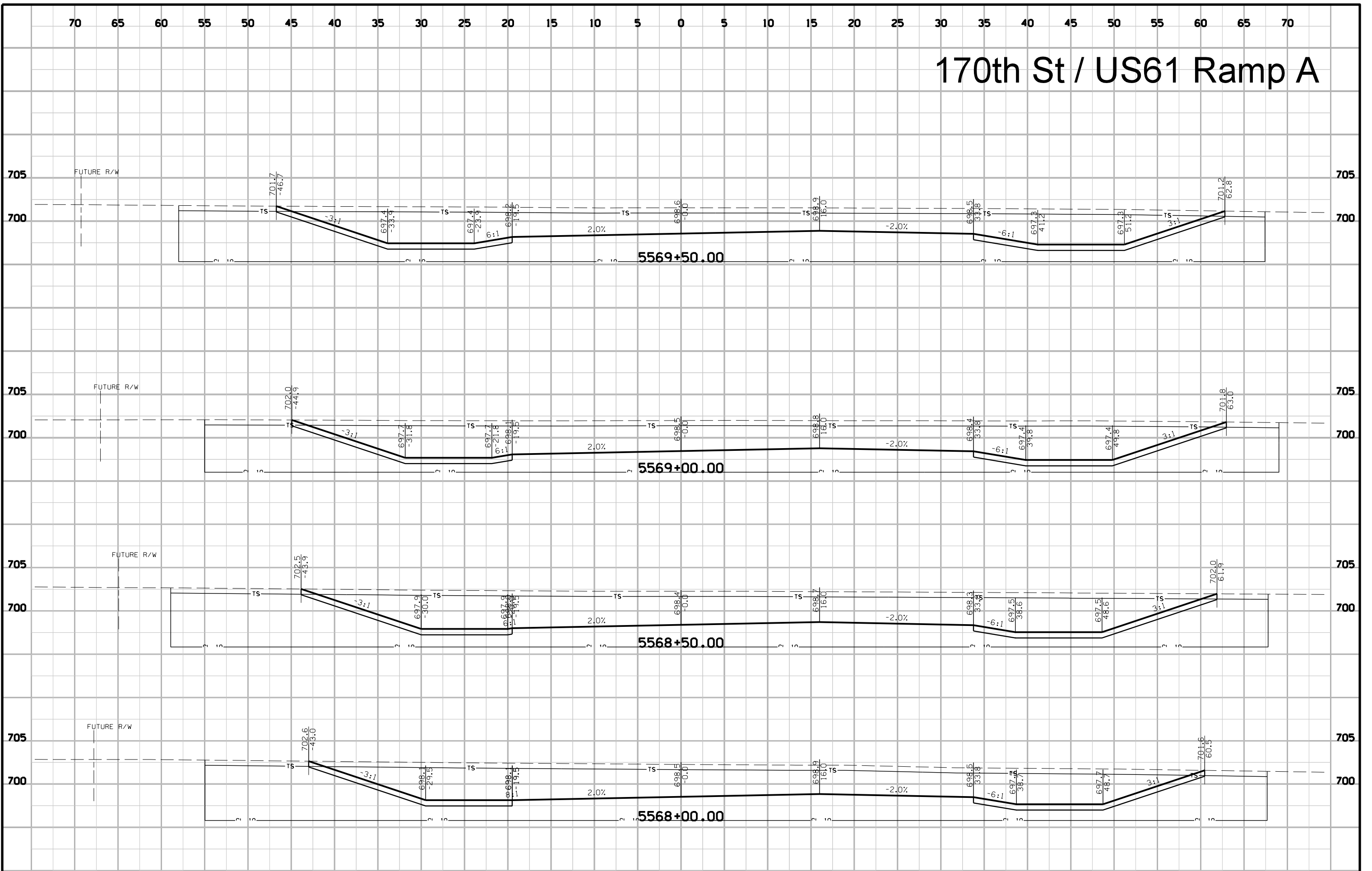
IA92 / US61 Ramp D



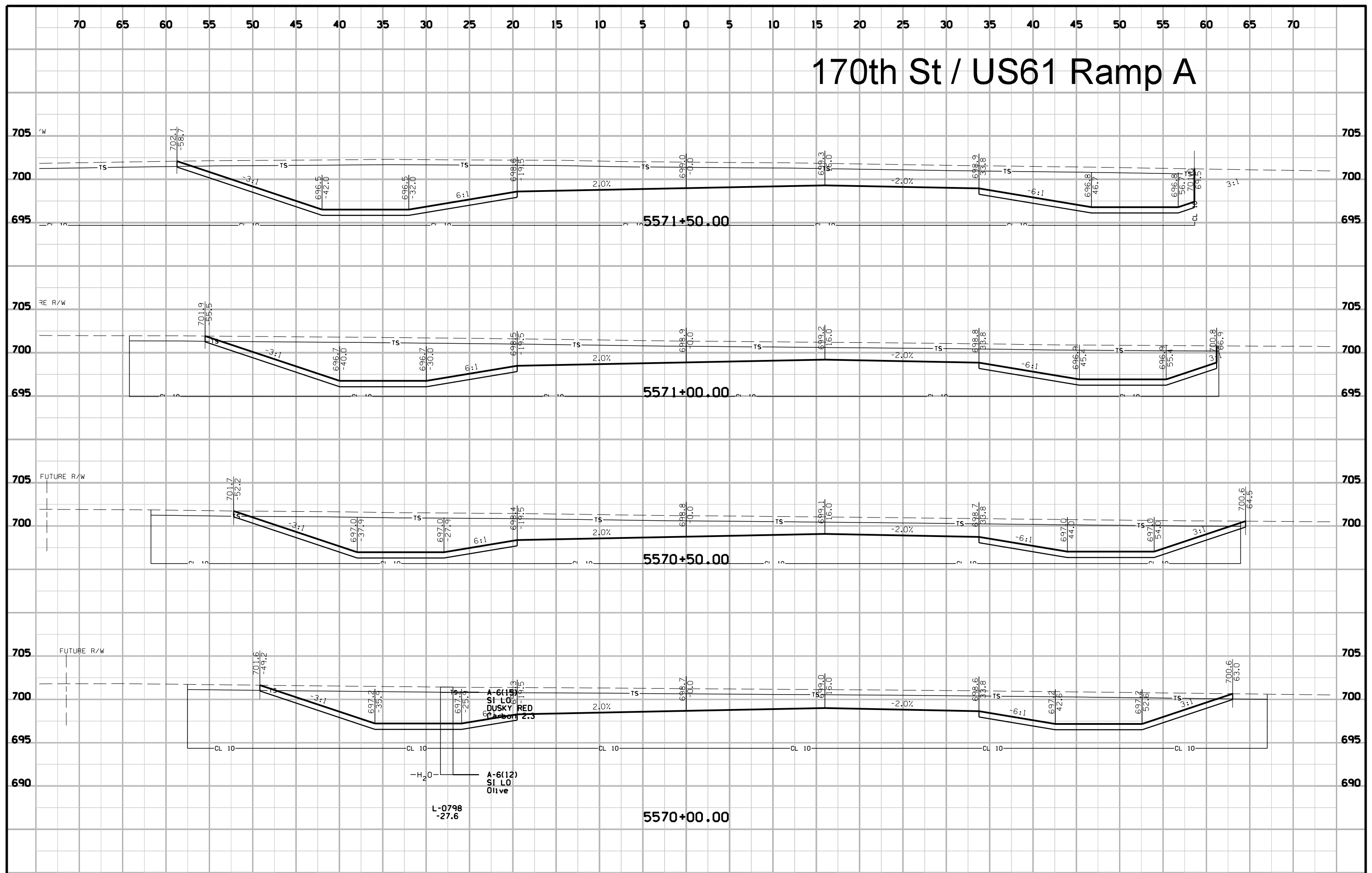
170th St / US61 Ramp A



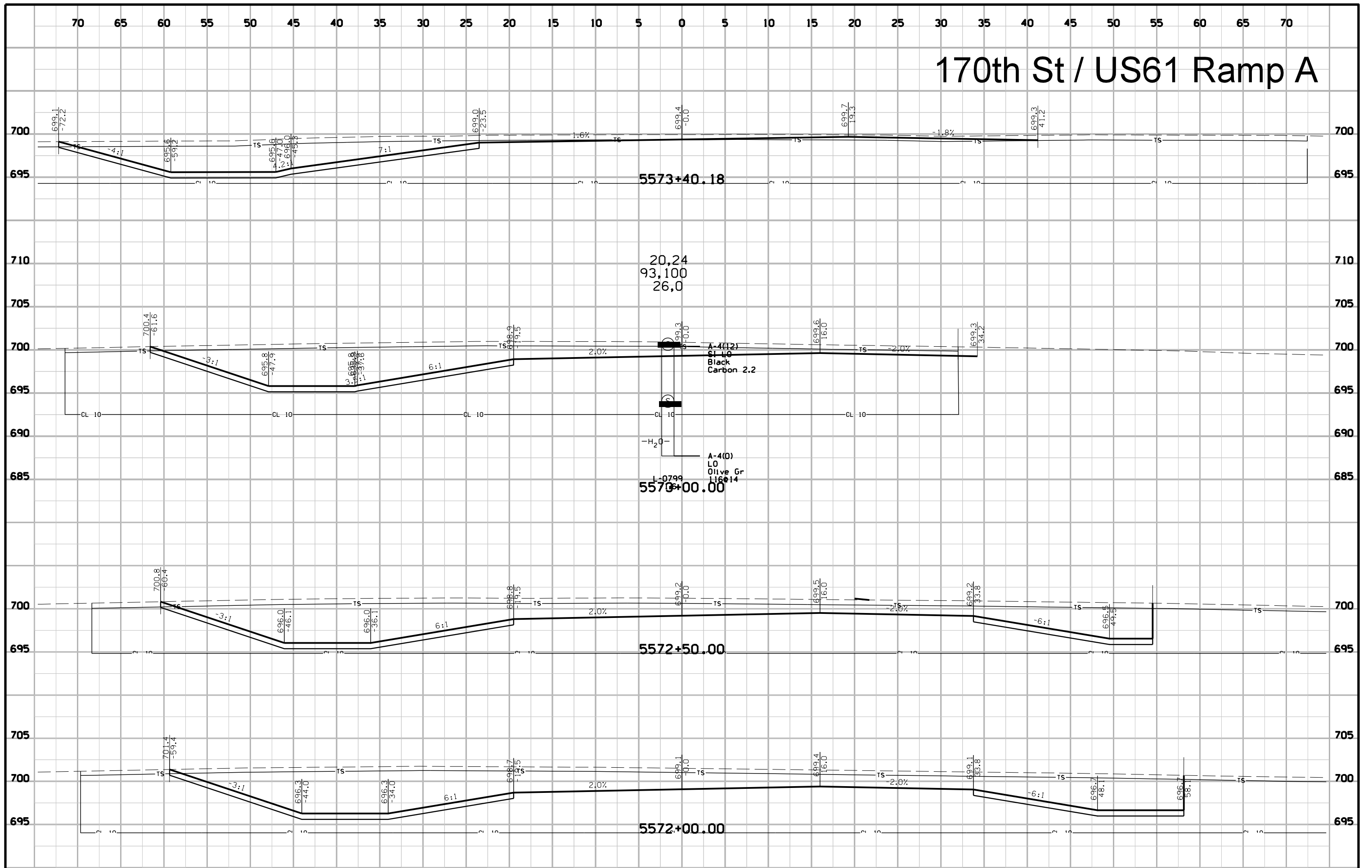
170th St / US61 Ramp A



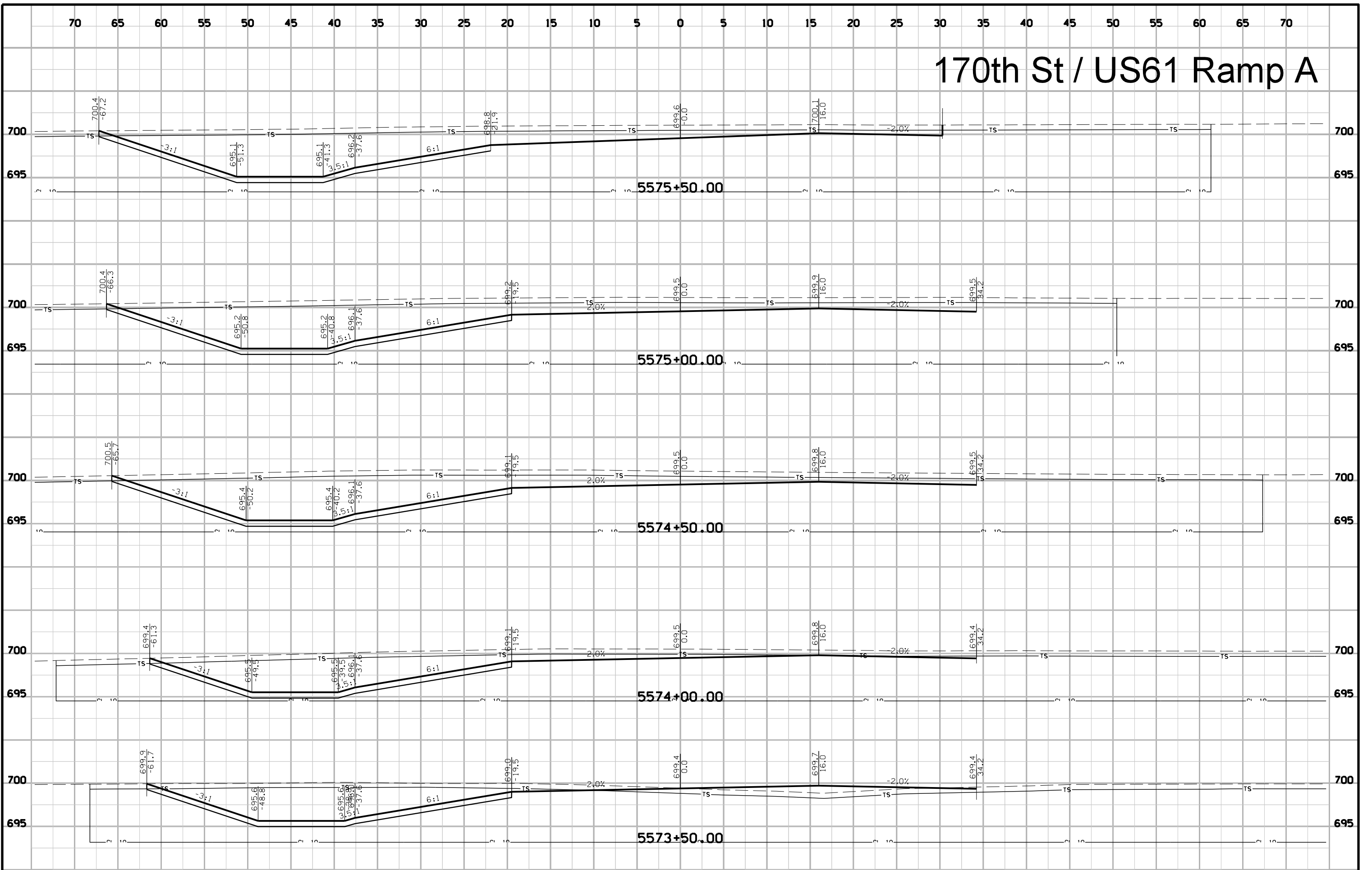
170th St / US61 Ramp A



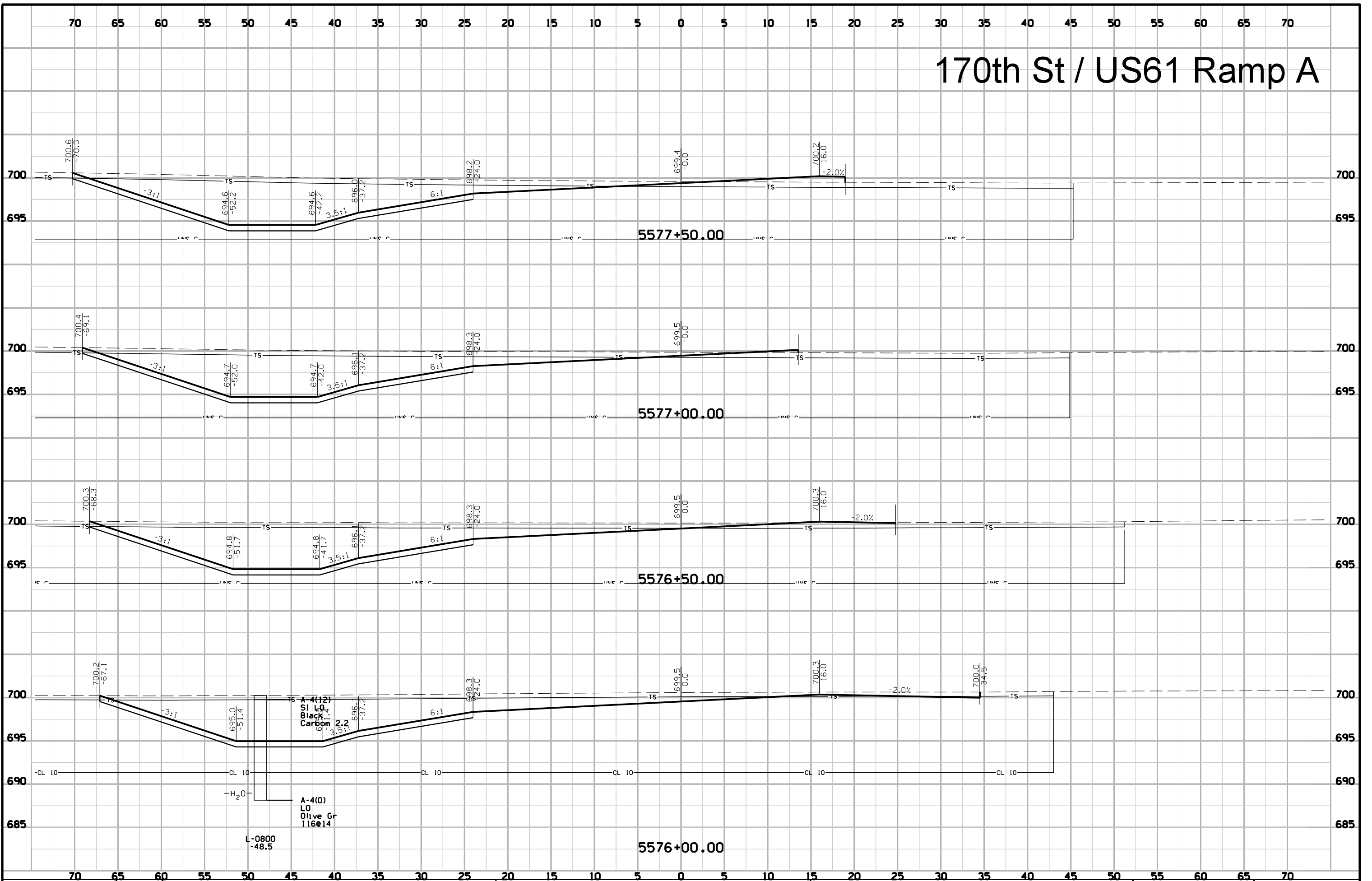
170th St / US61 Ramp A



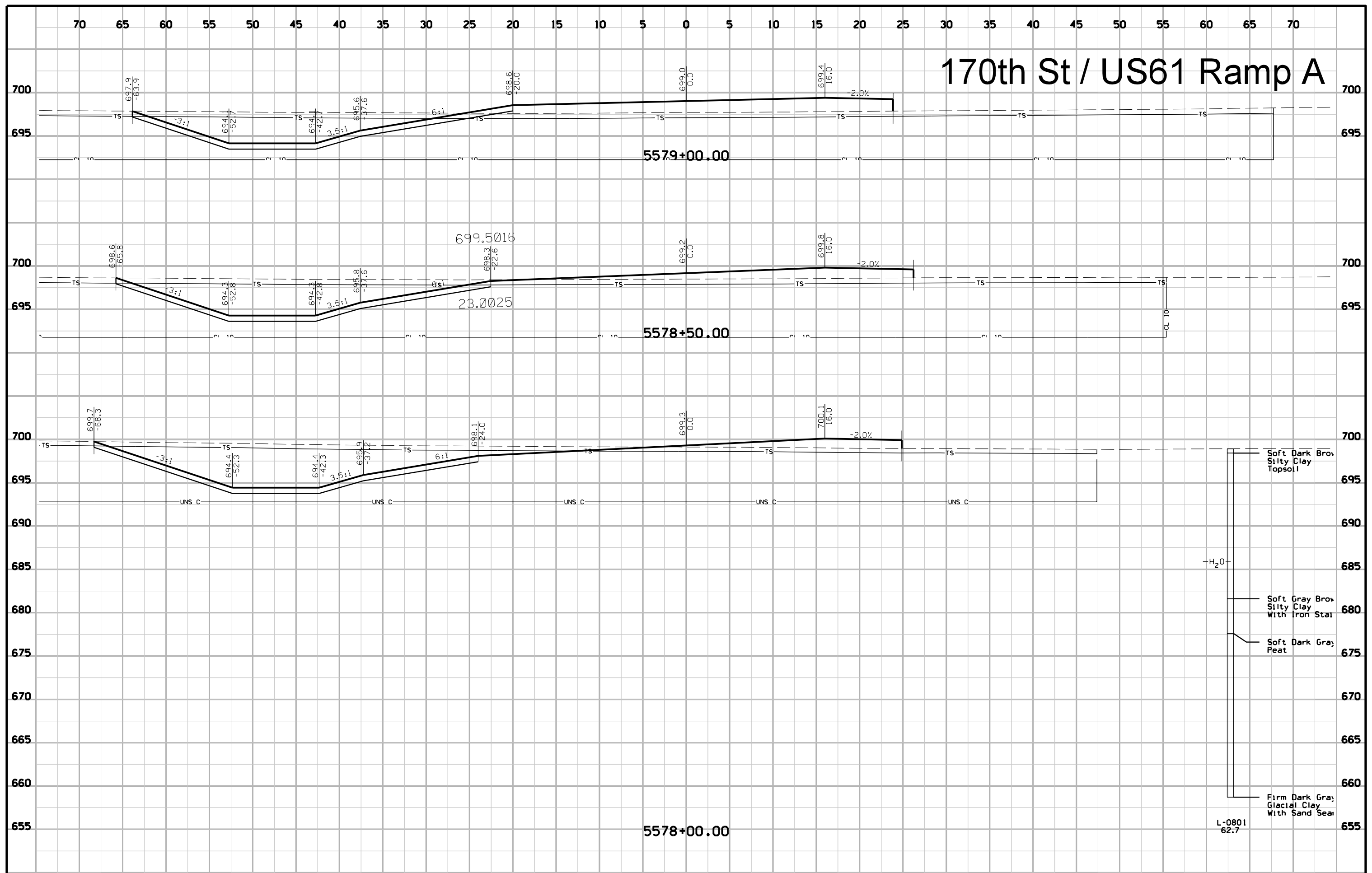
170th St / US61 Ramp A



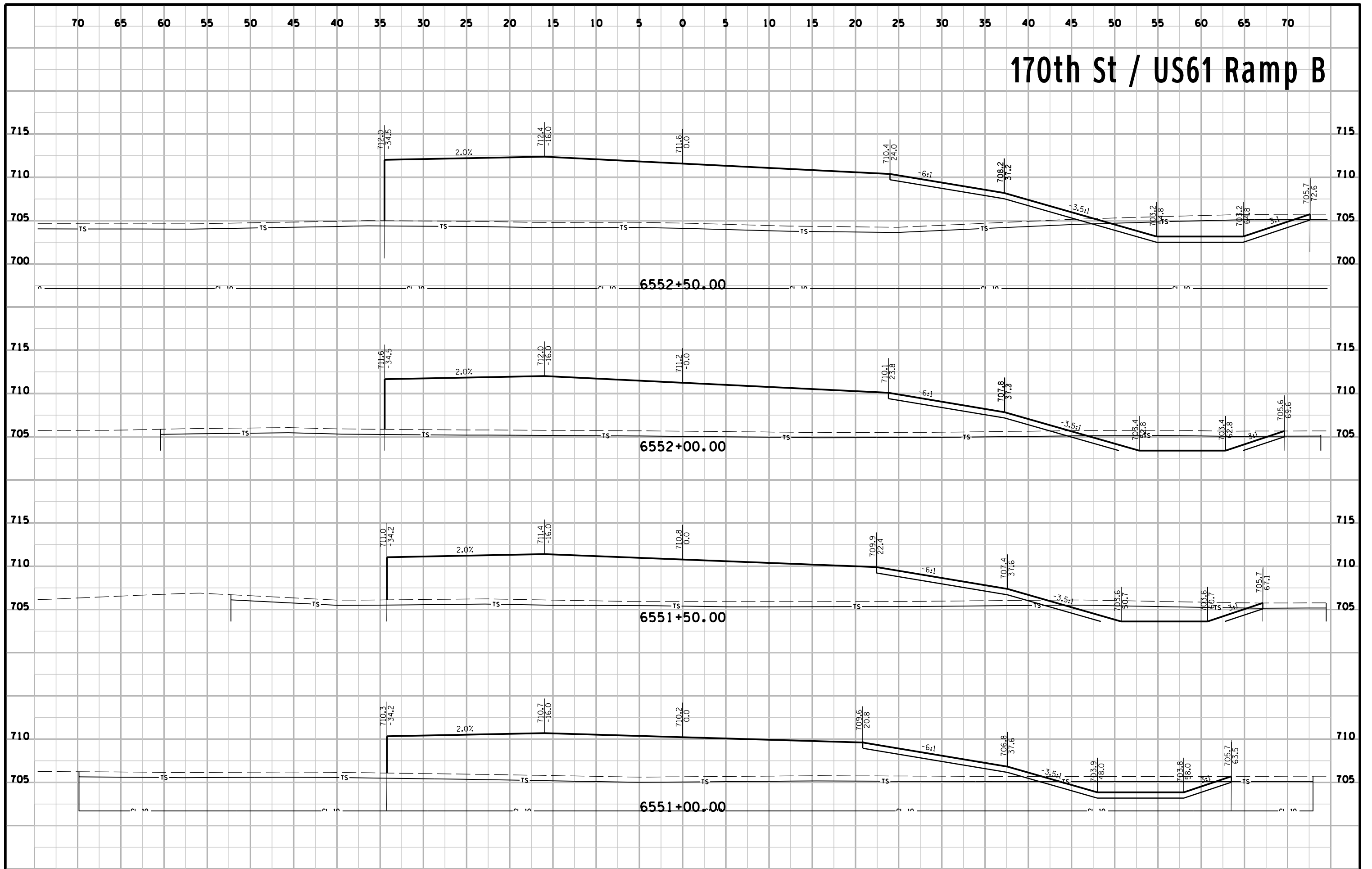
170th St / US61 Ramp A



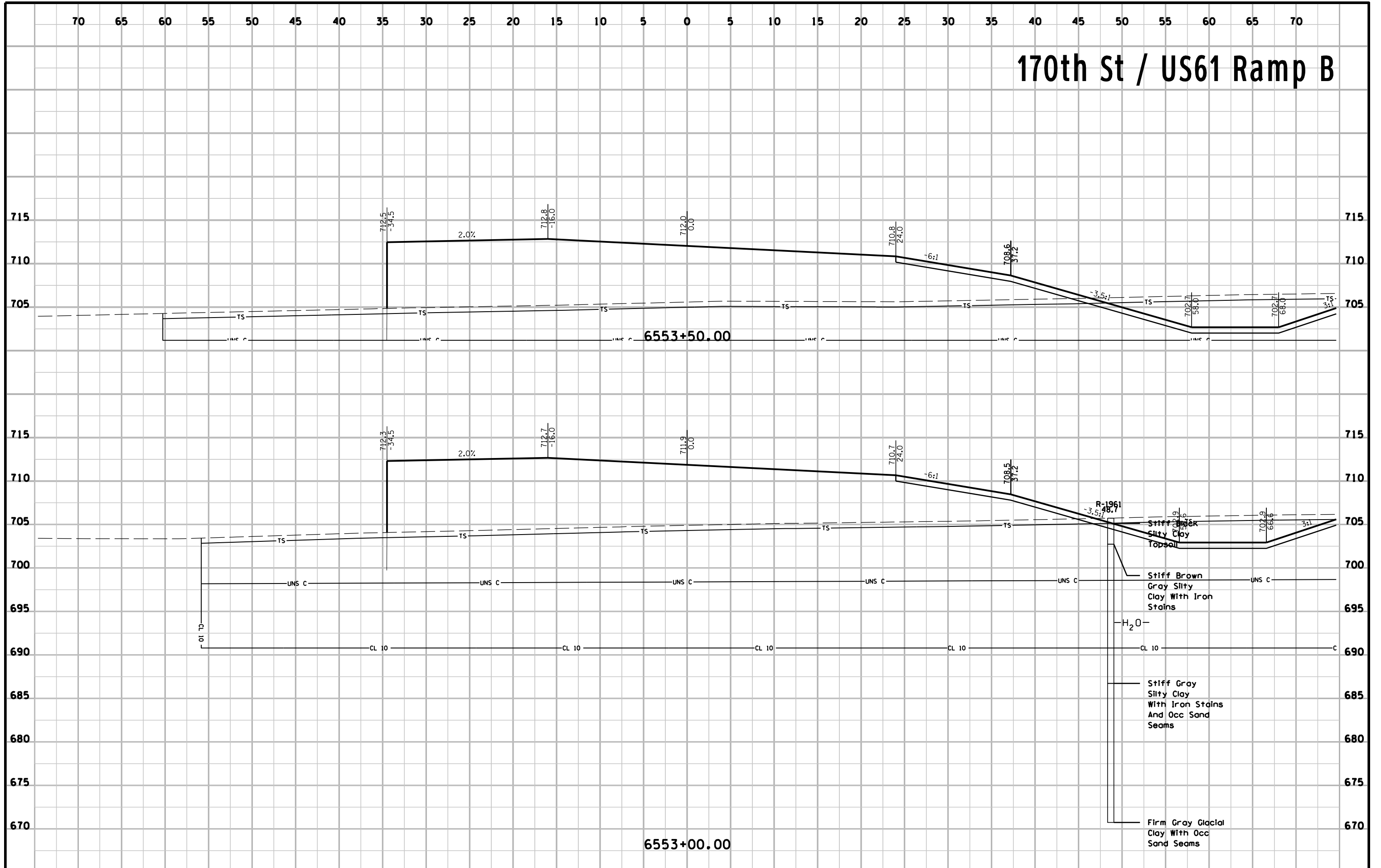
170th St / US61 Ramp A



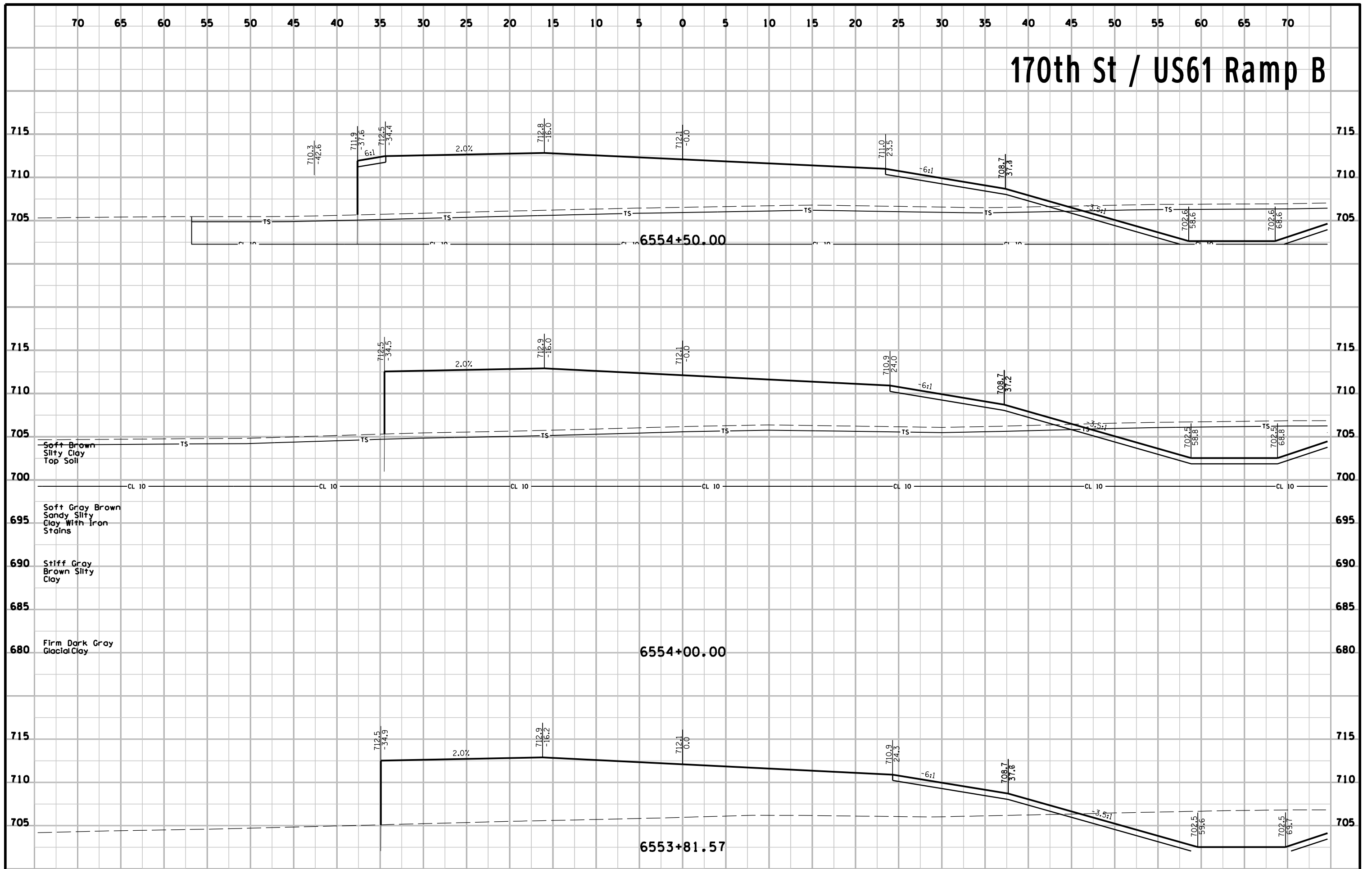
170th St / US61 Ramp B



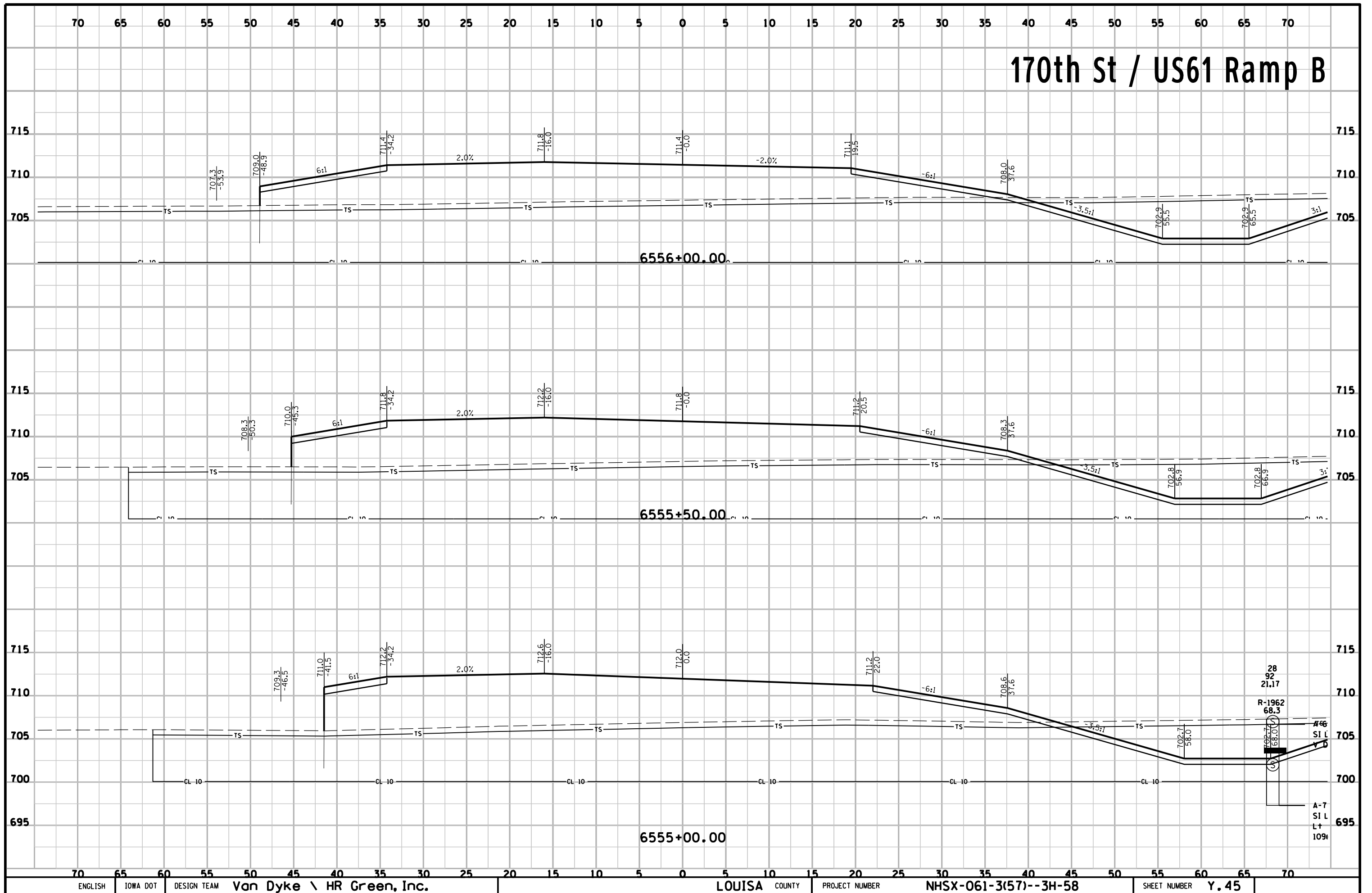
170th St / US61 Ramp B



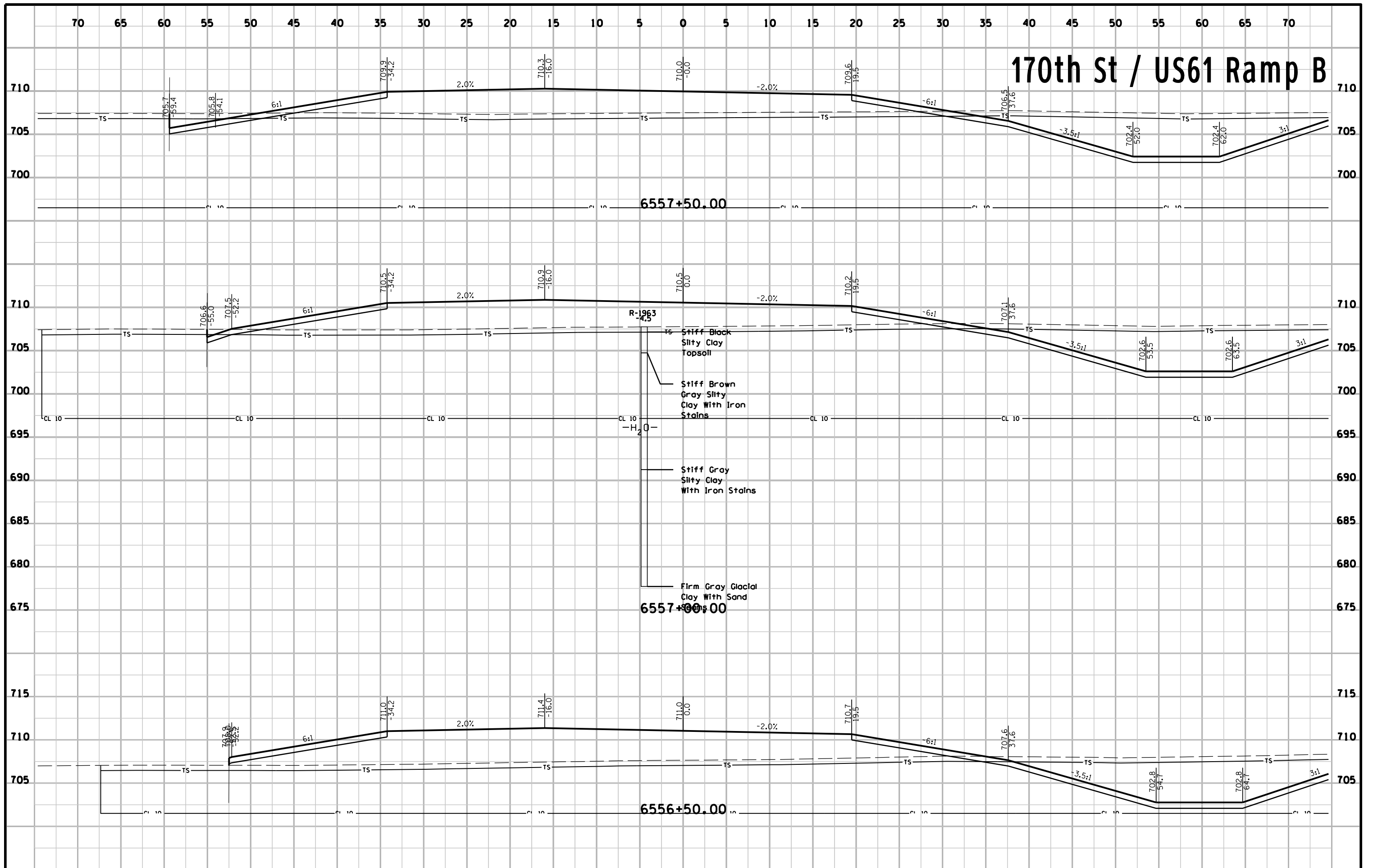
170th St / US61 Ramp B



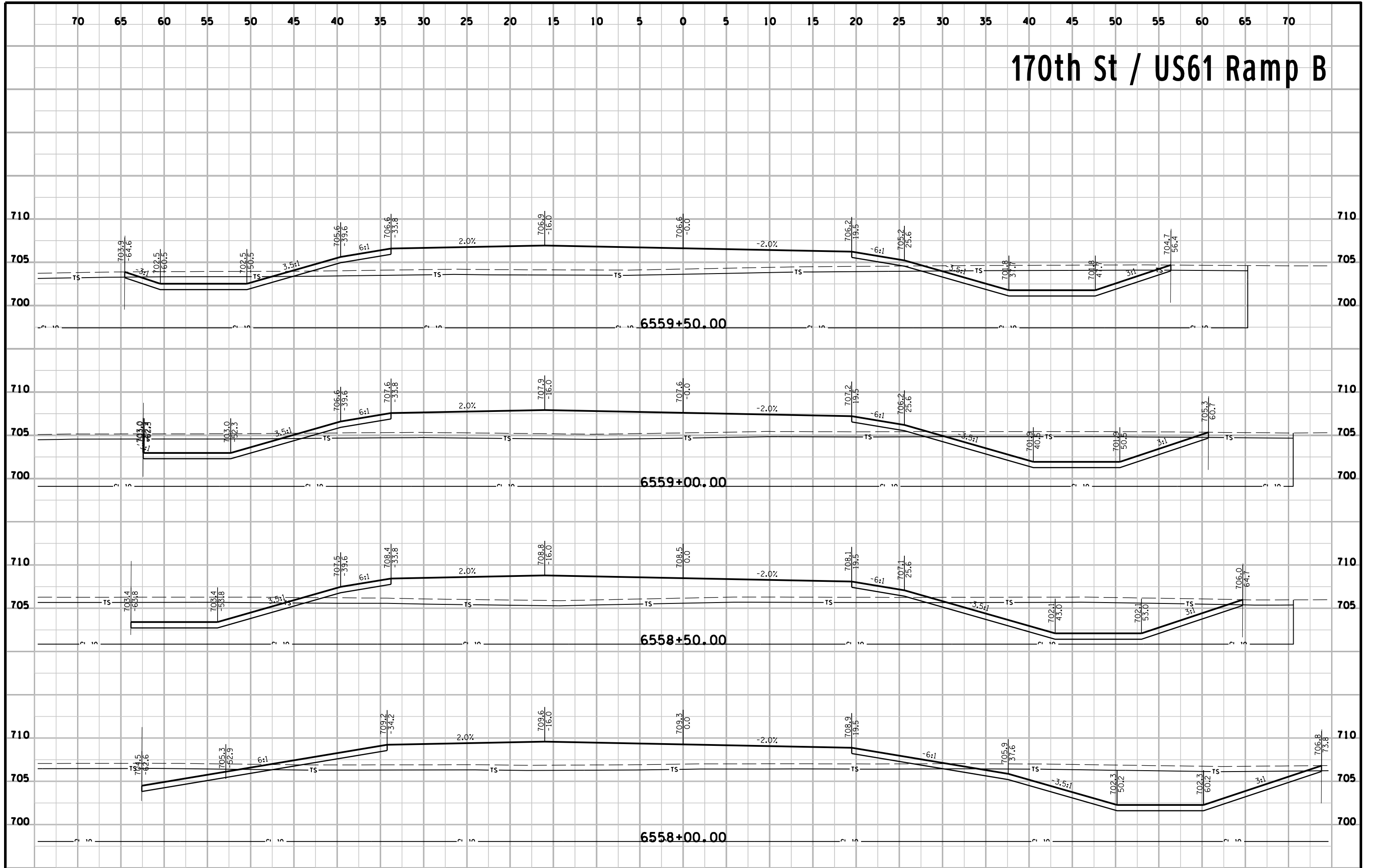
170th St / US61 Ramp B



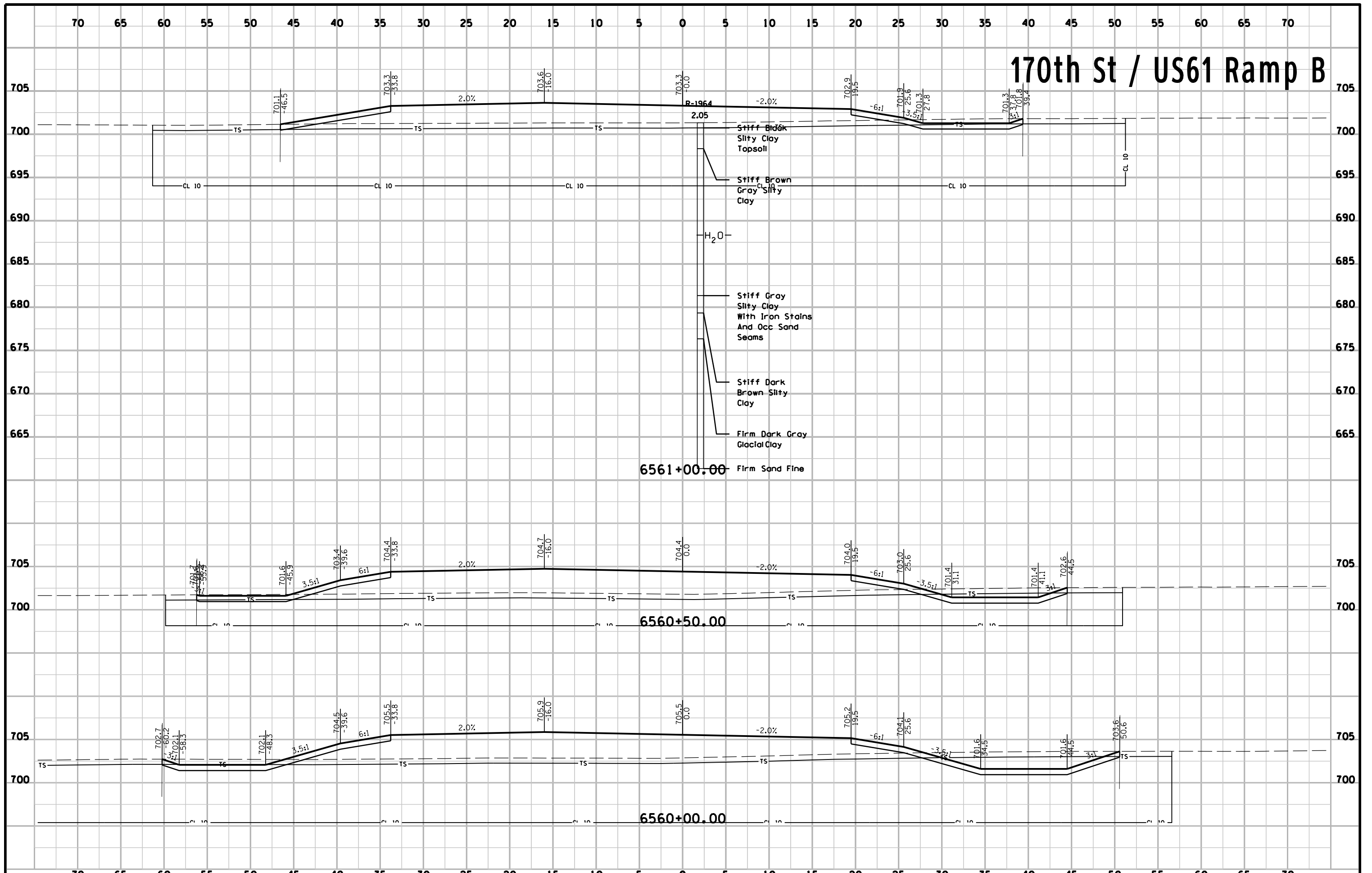
170th St / US61 Ramp B



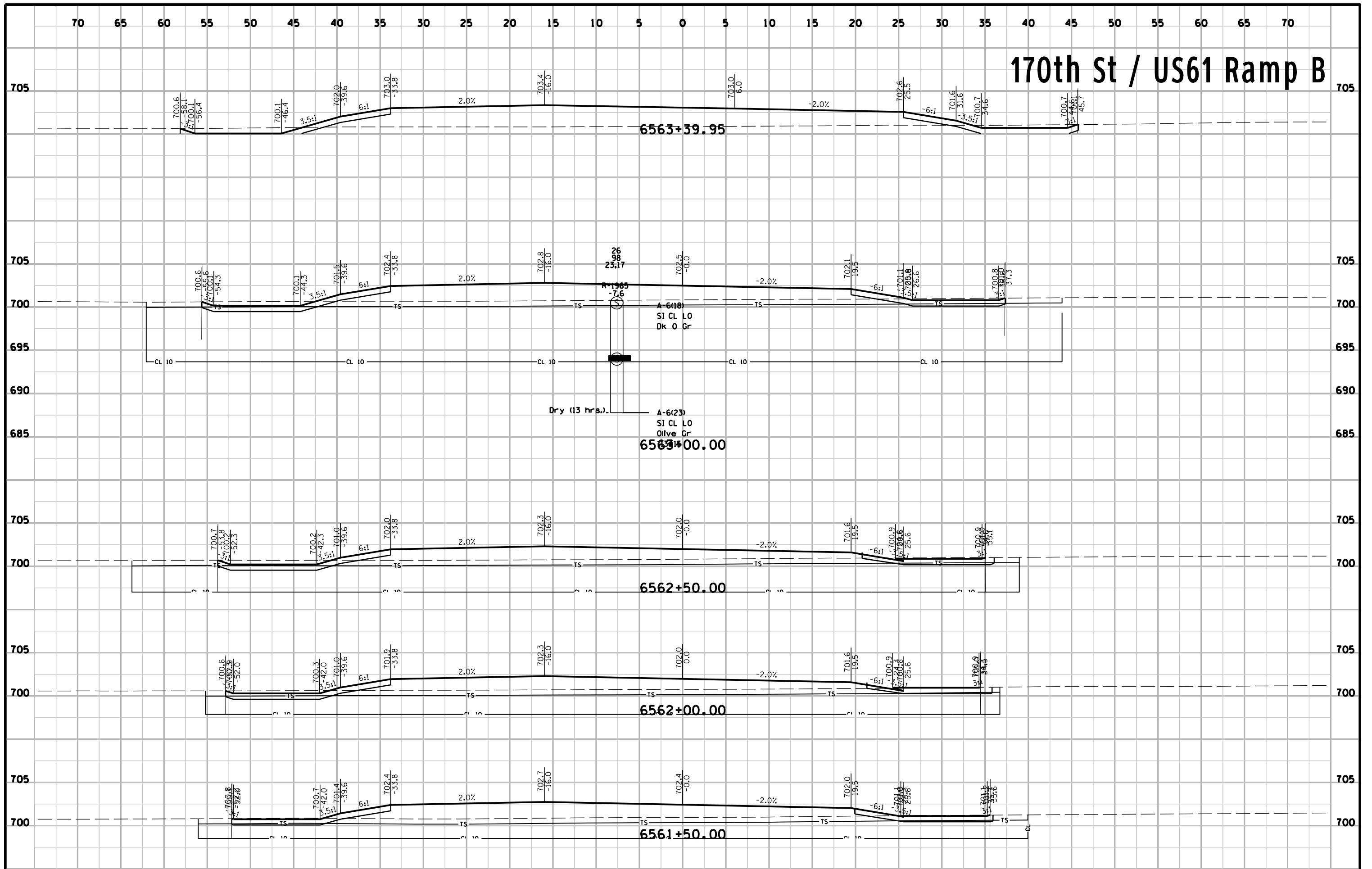
170th St / US61 Ramp B



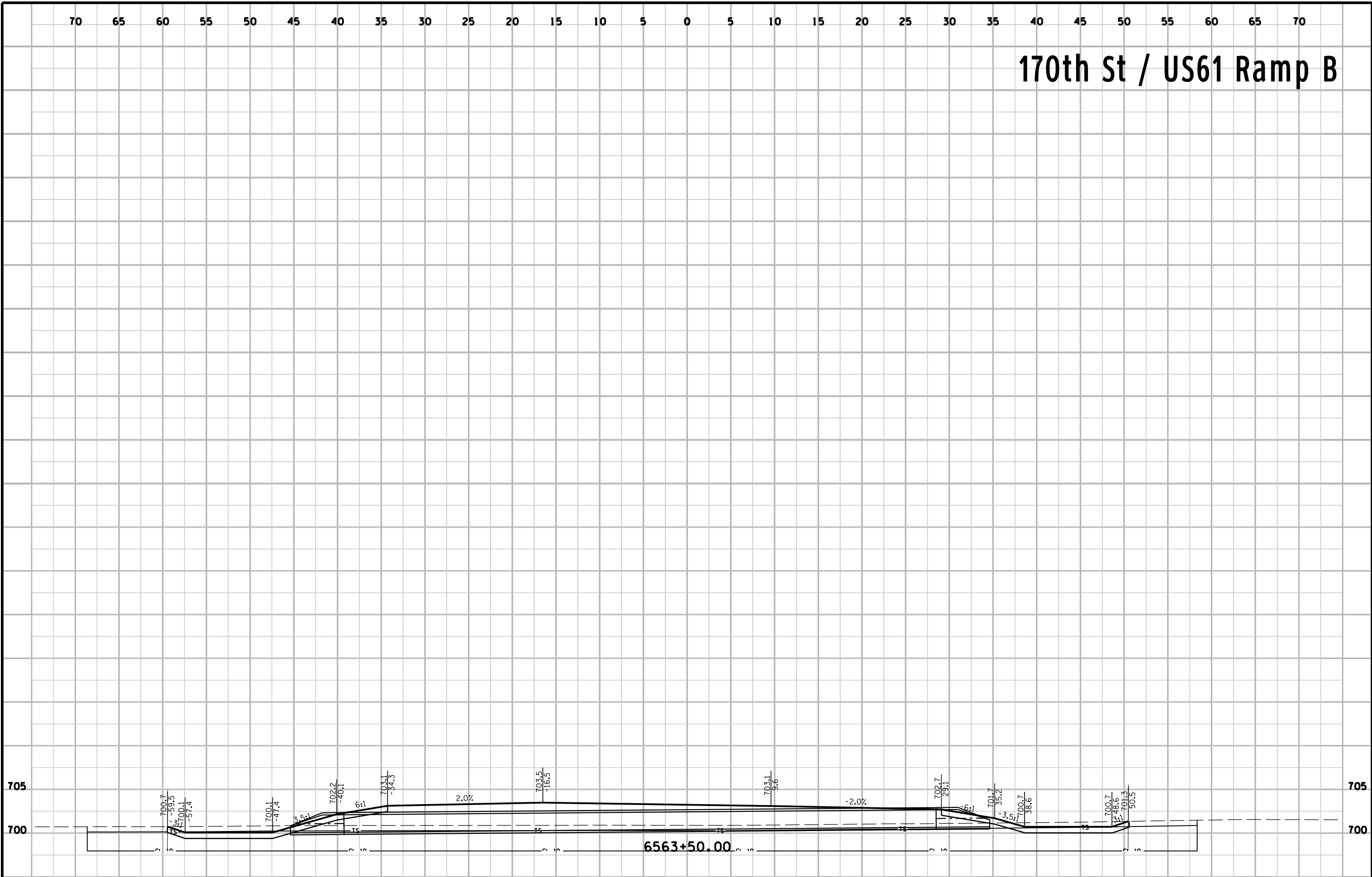
170th St / US61 Ramp B



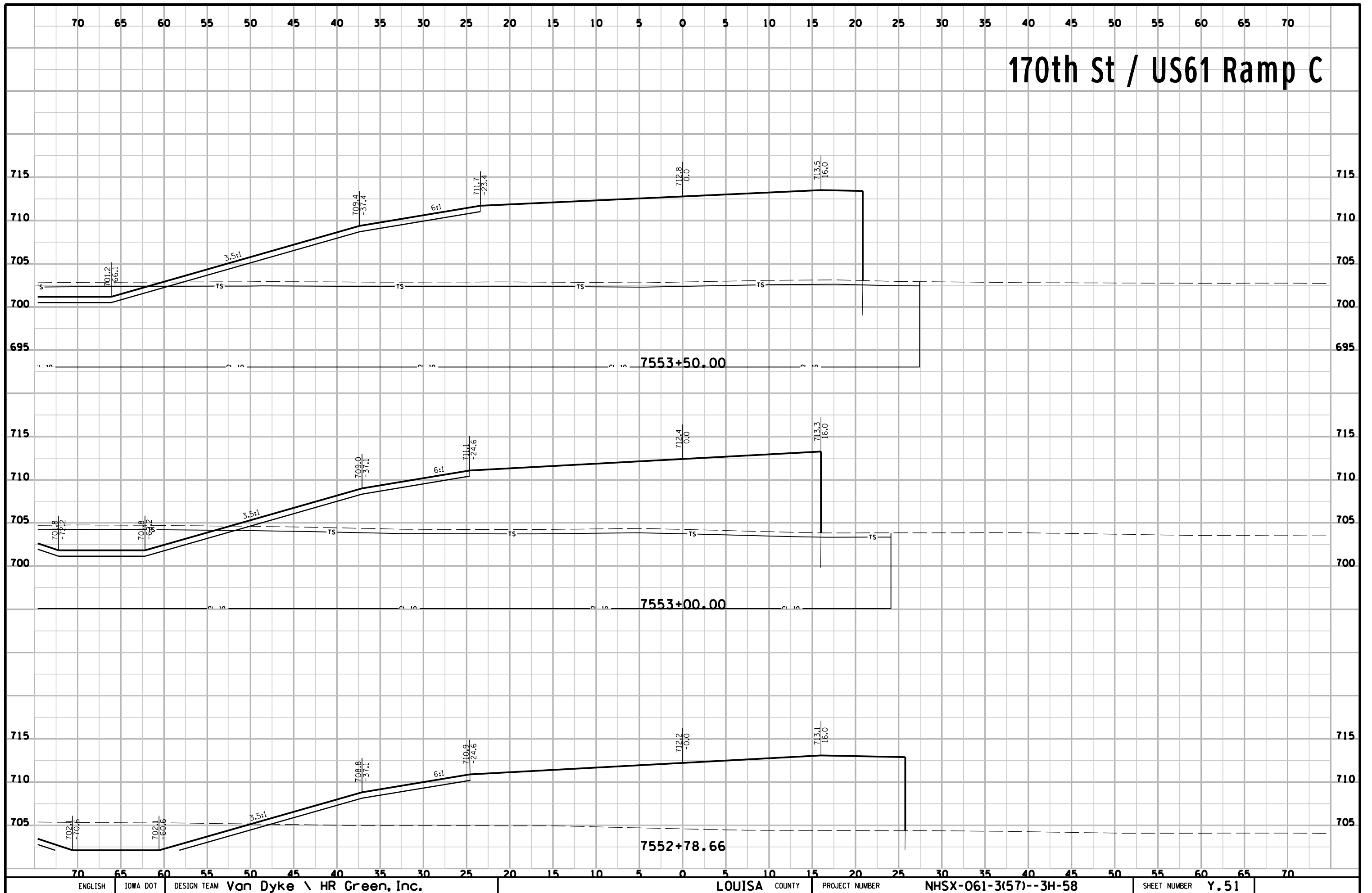
170th St / US61 Ramp B



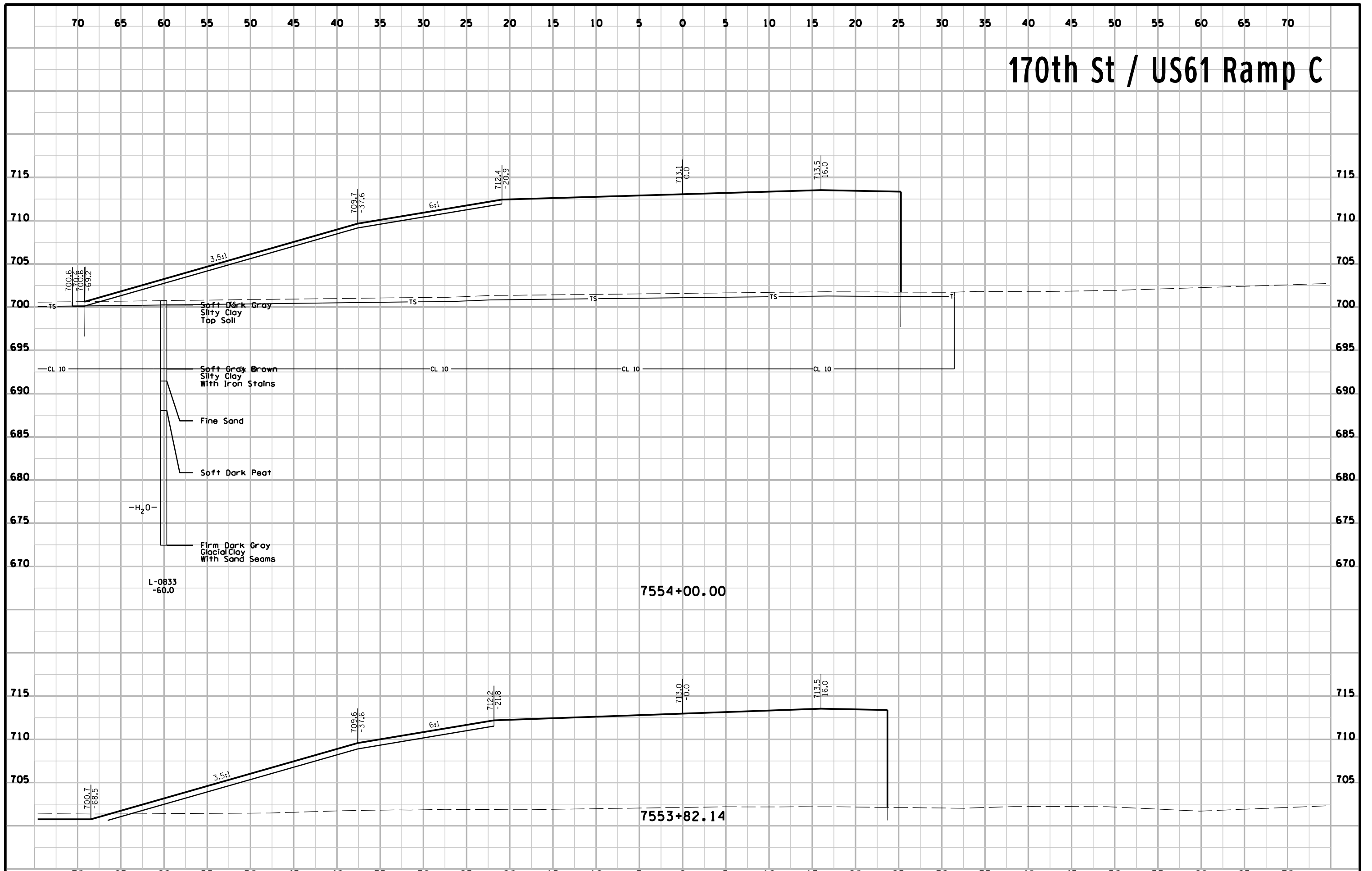
170th St / US61 Ramp B



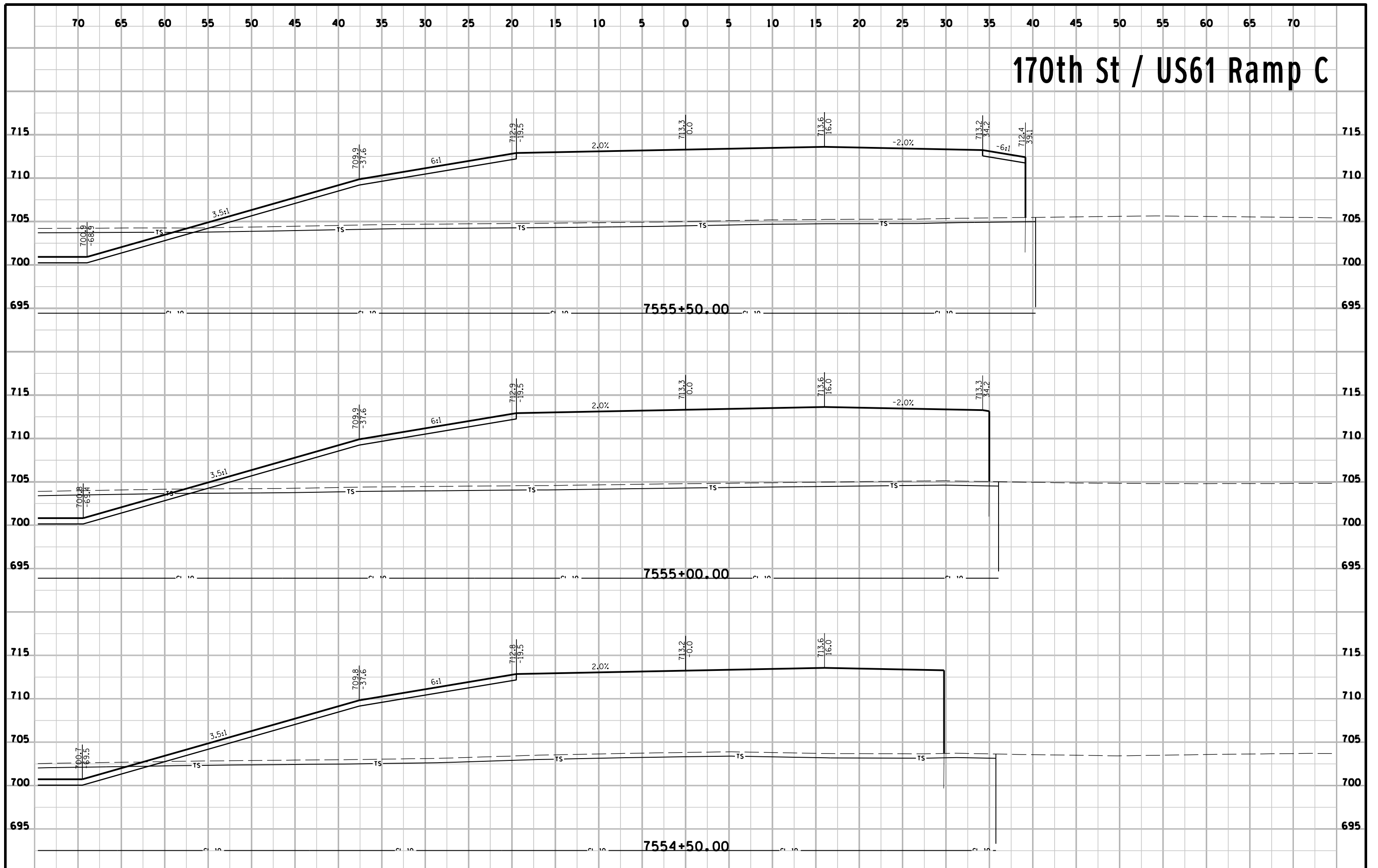
170th St / US61 Ramp C



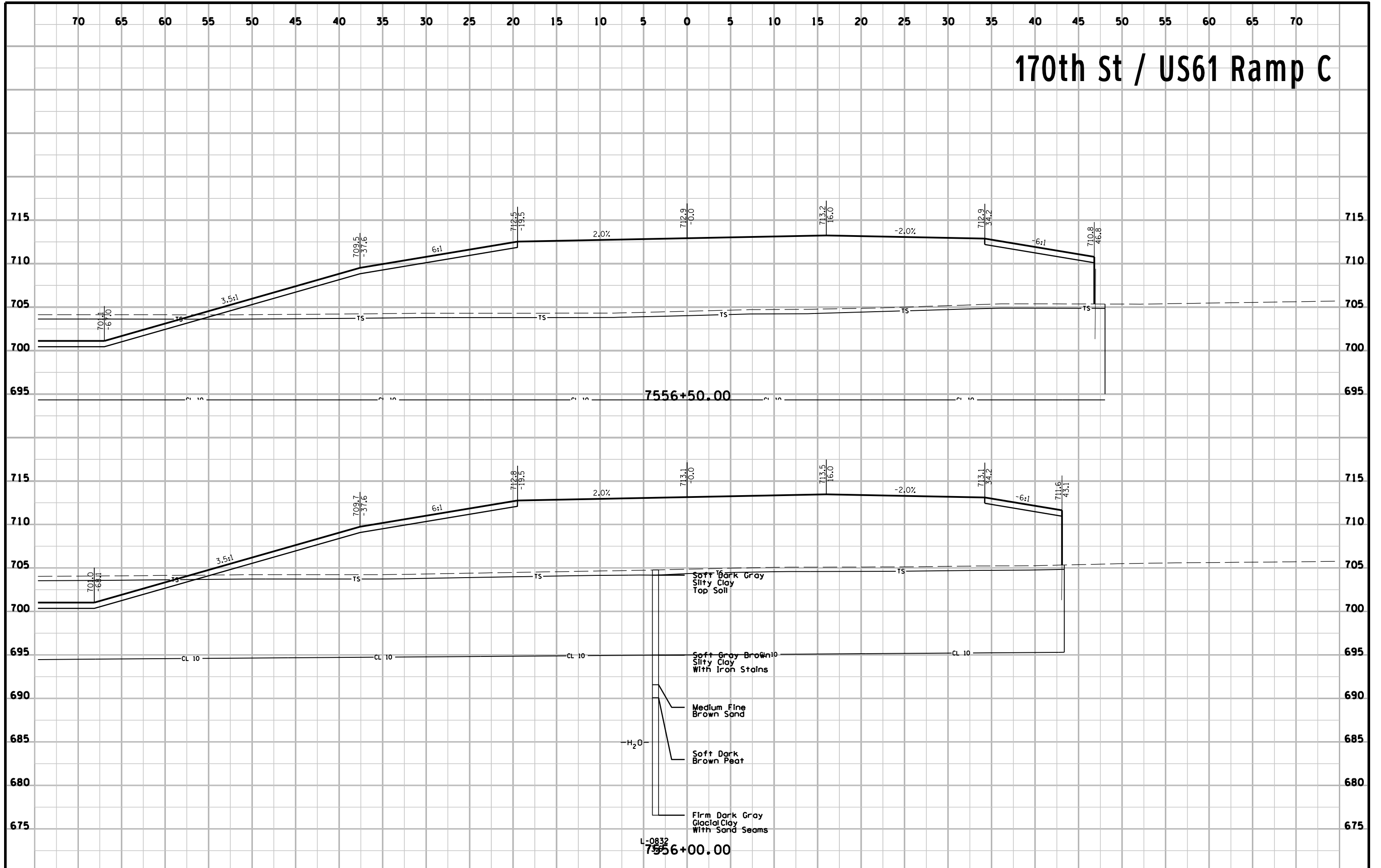
170th St / US61 Ramp C



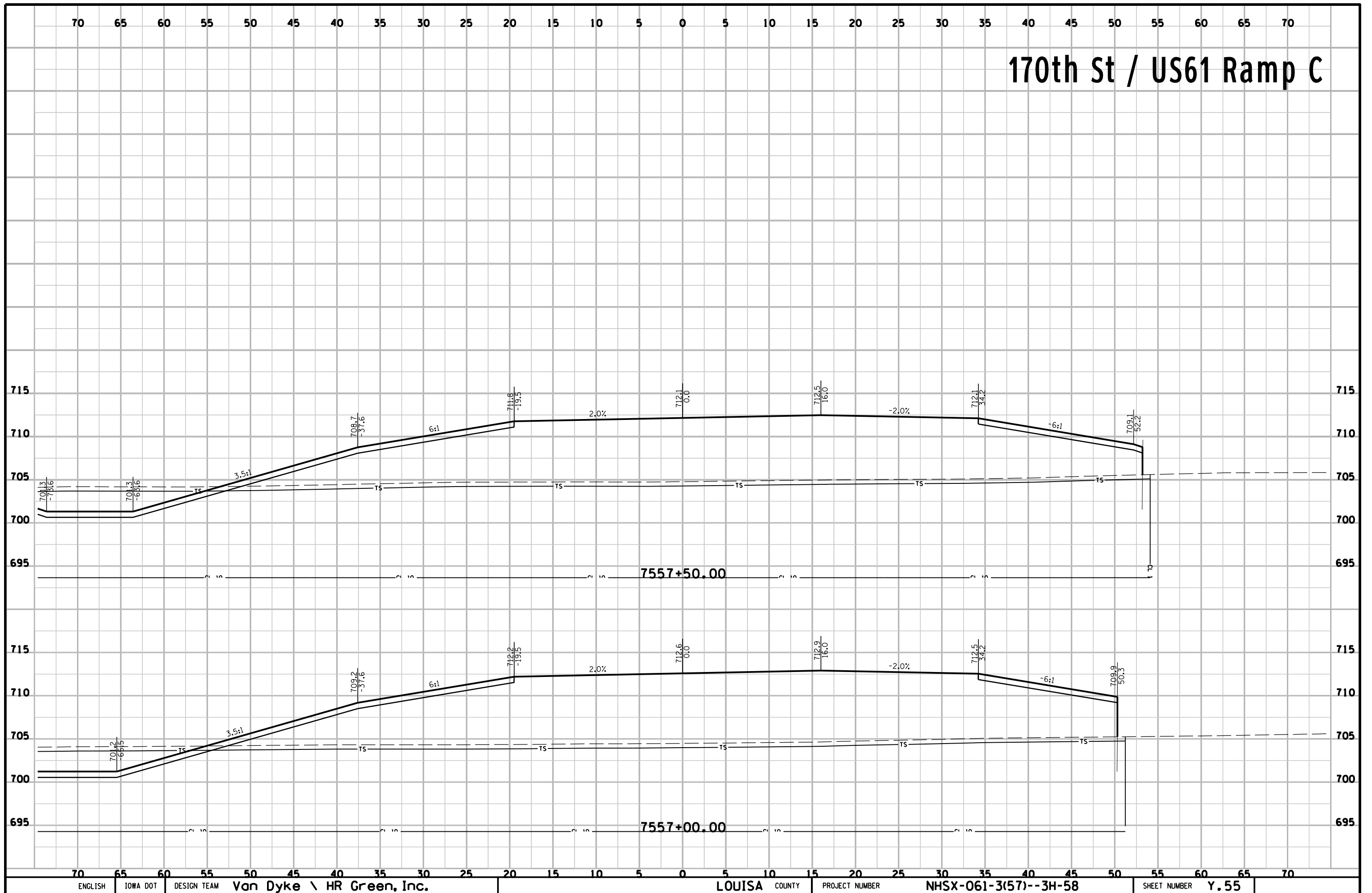
170th St / US61 Ramp C



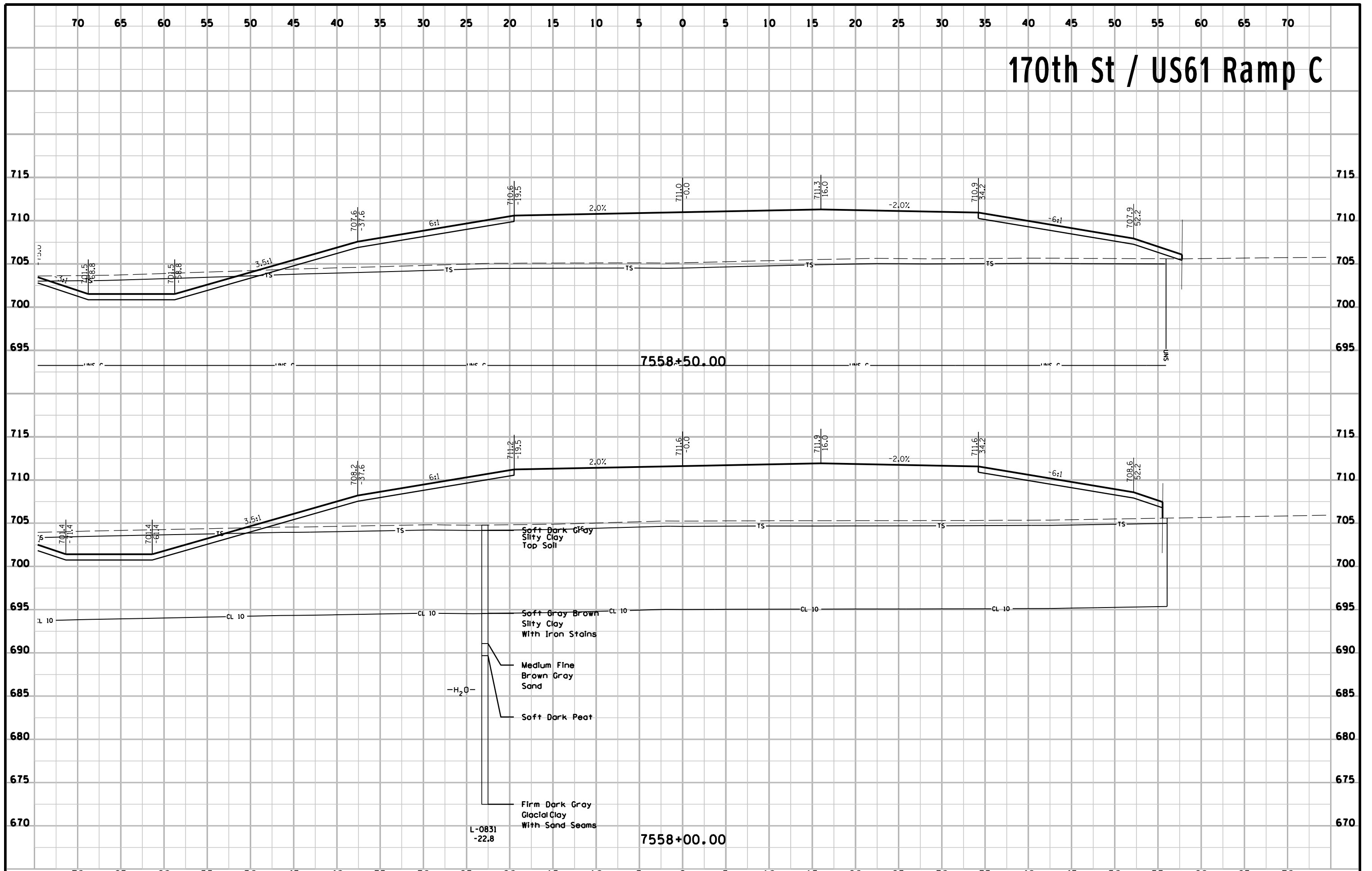
170th St / US61 Ramp C



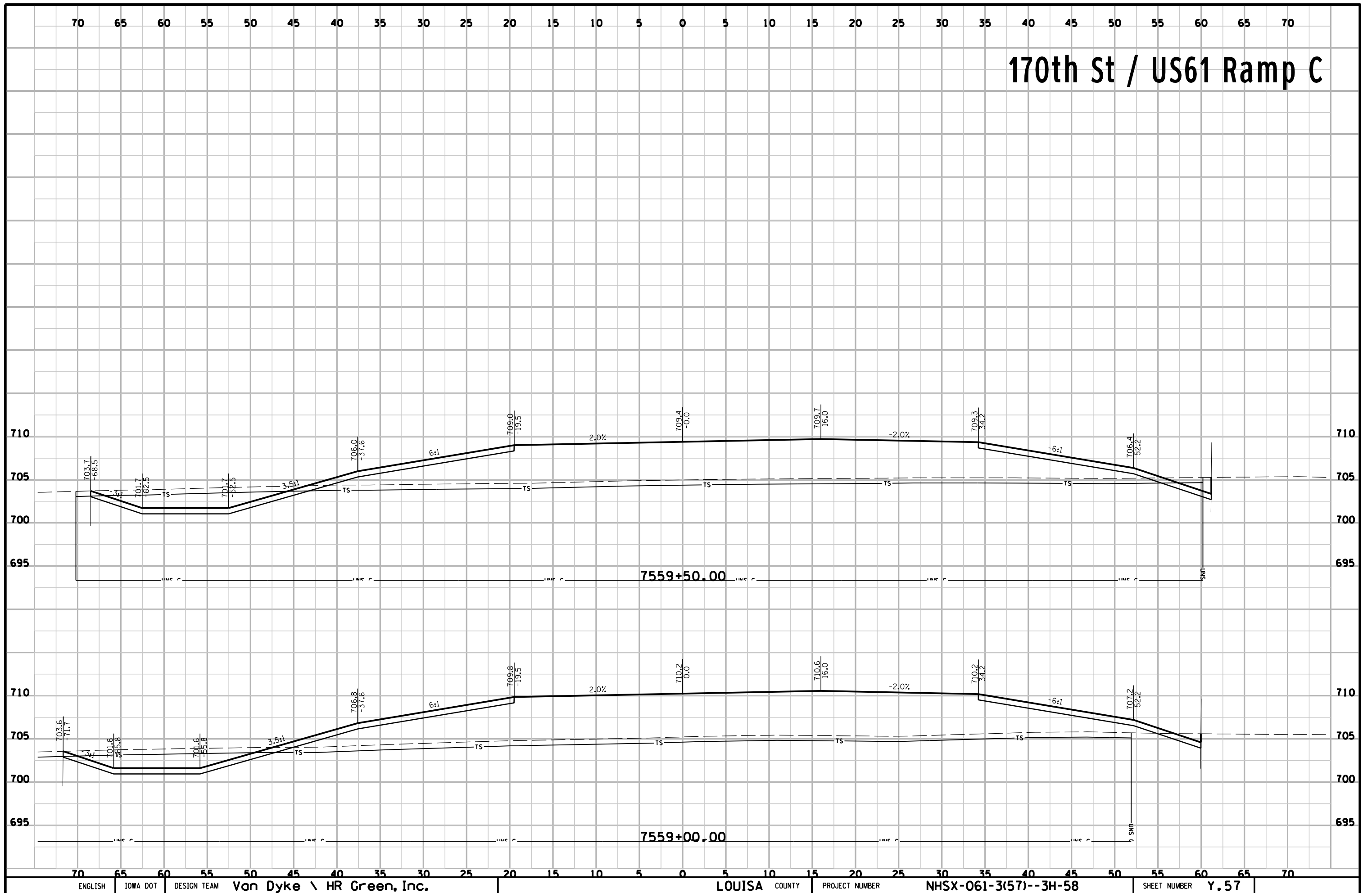
170th St / US61 Ramp C



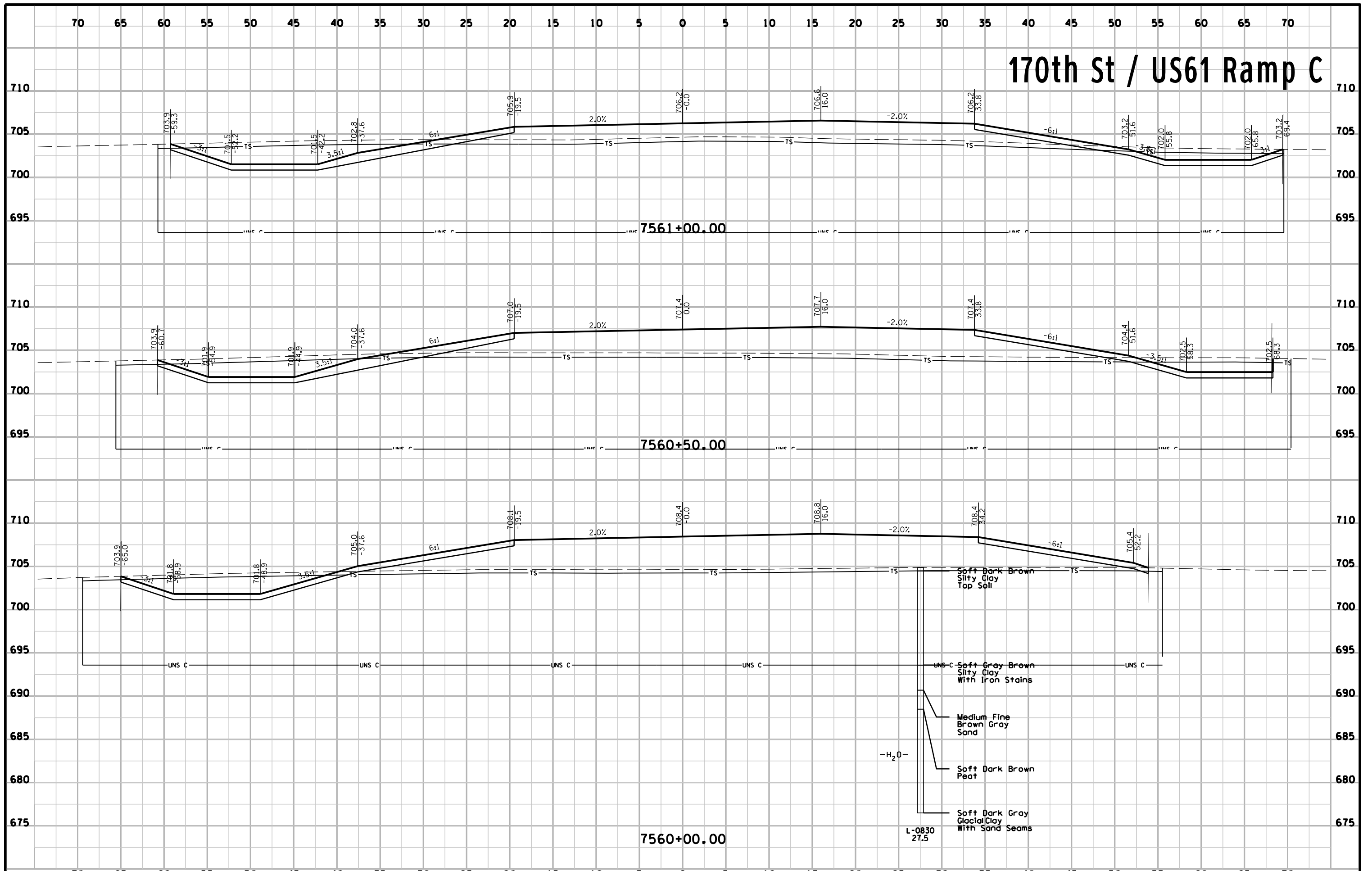
170th St / US61 Ramp C



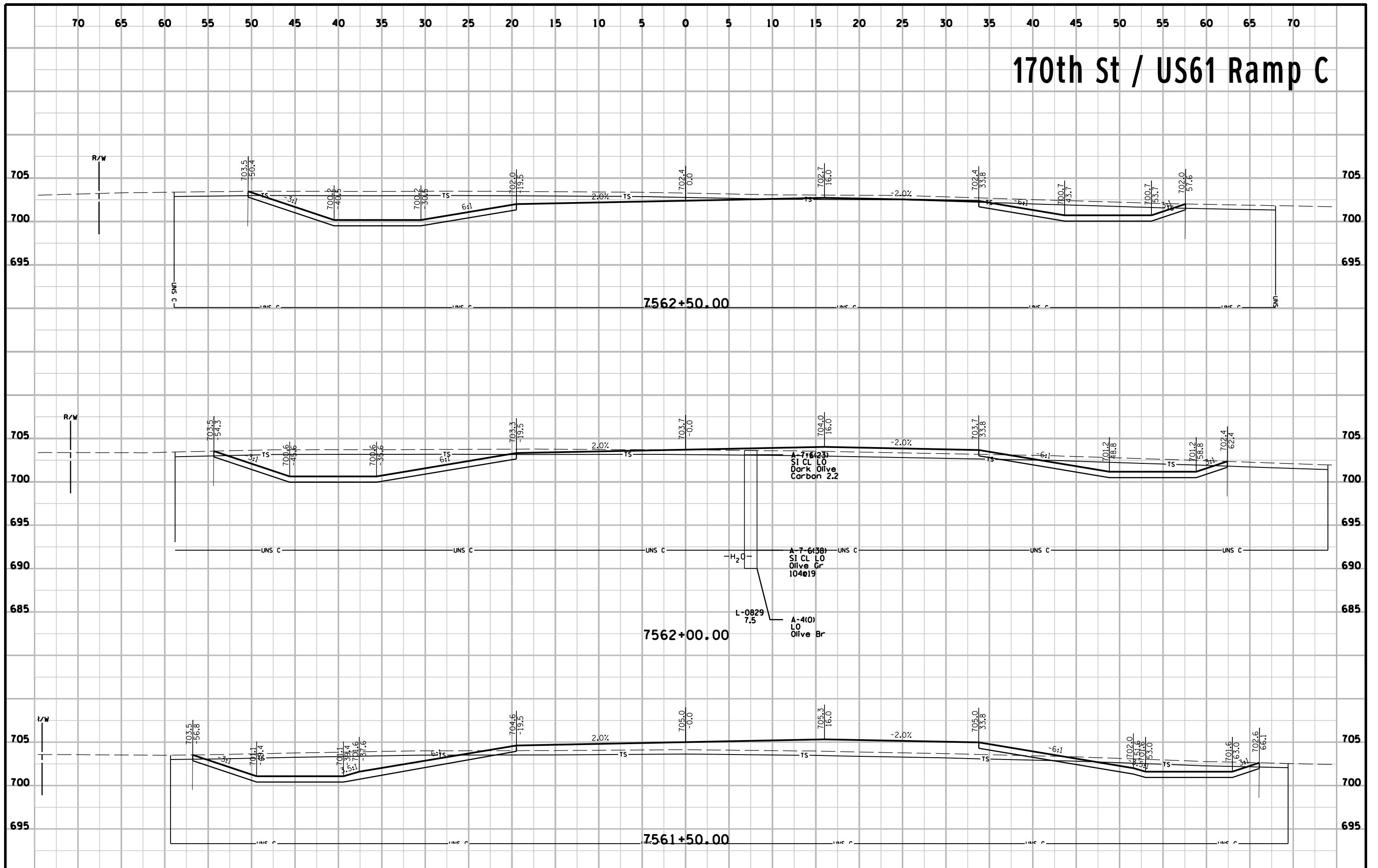
170th St / US61 Ramp C



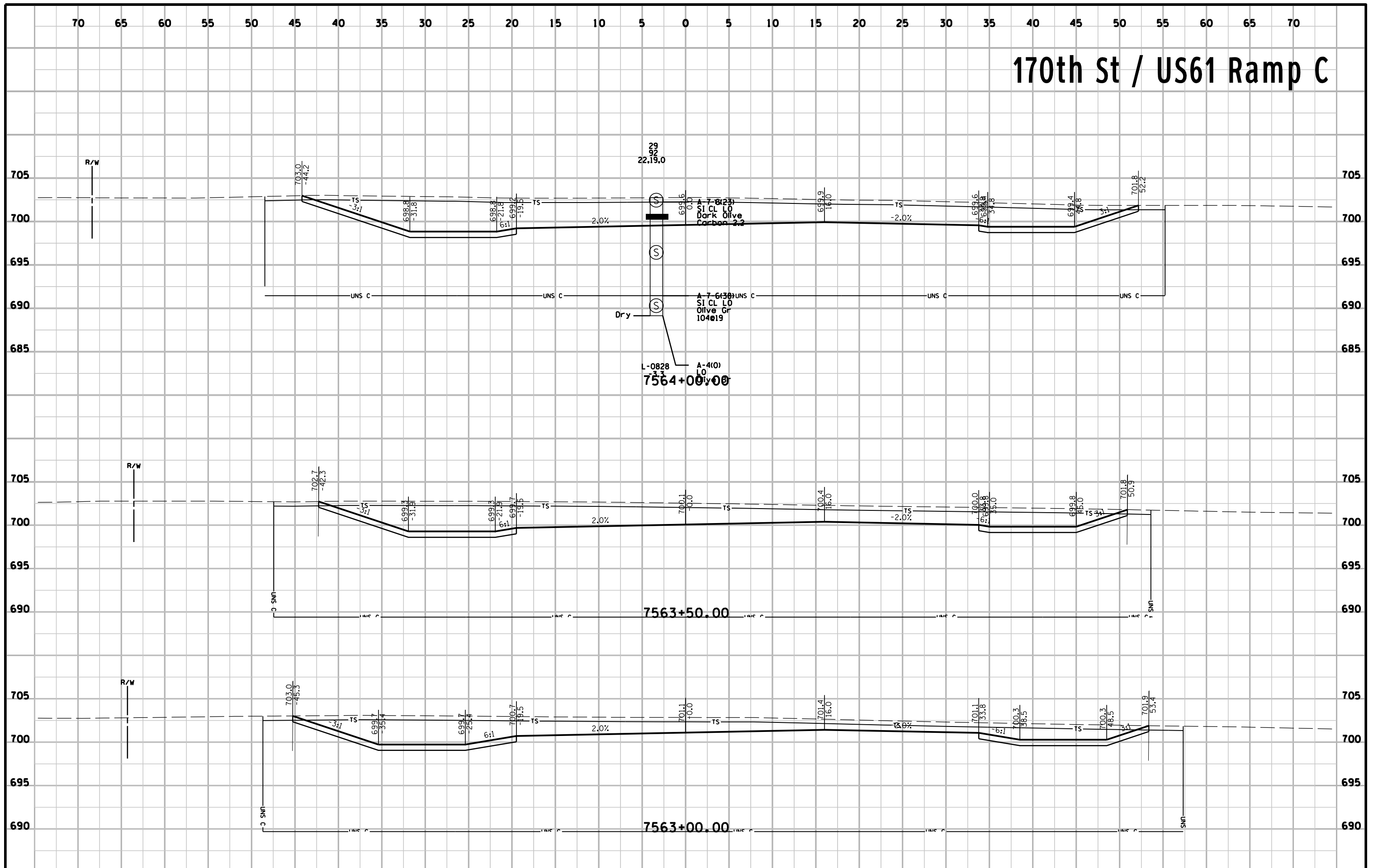
170th St / US61 Ramp C



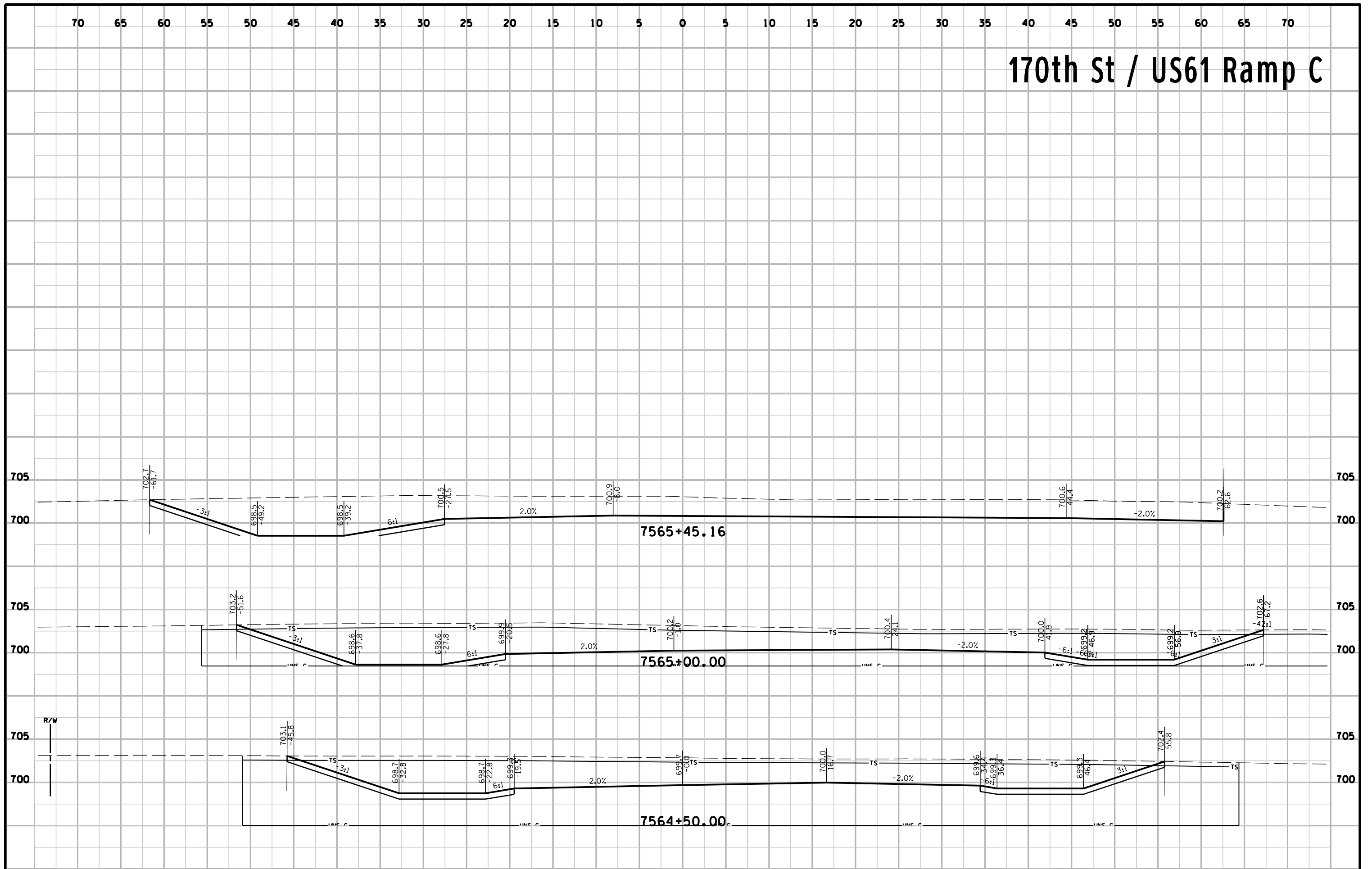
170th St / US61 Ramp C



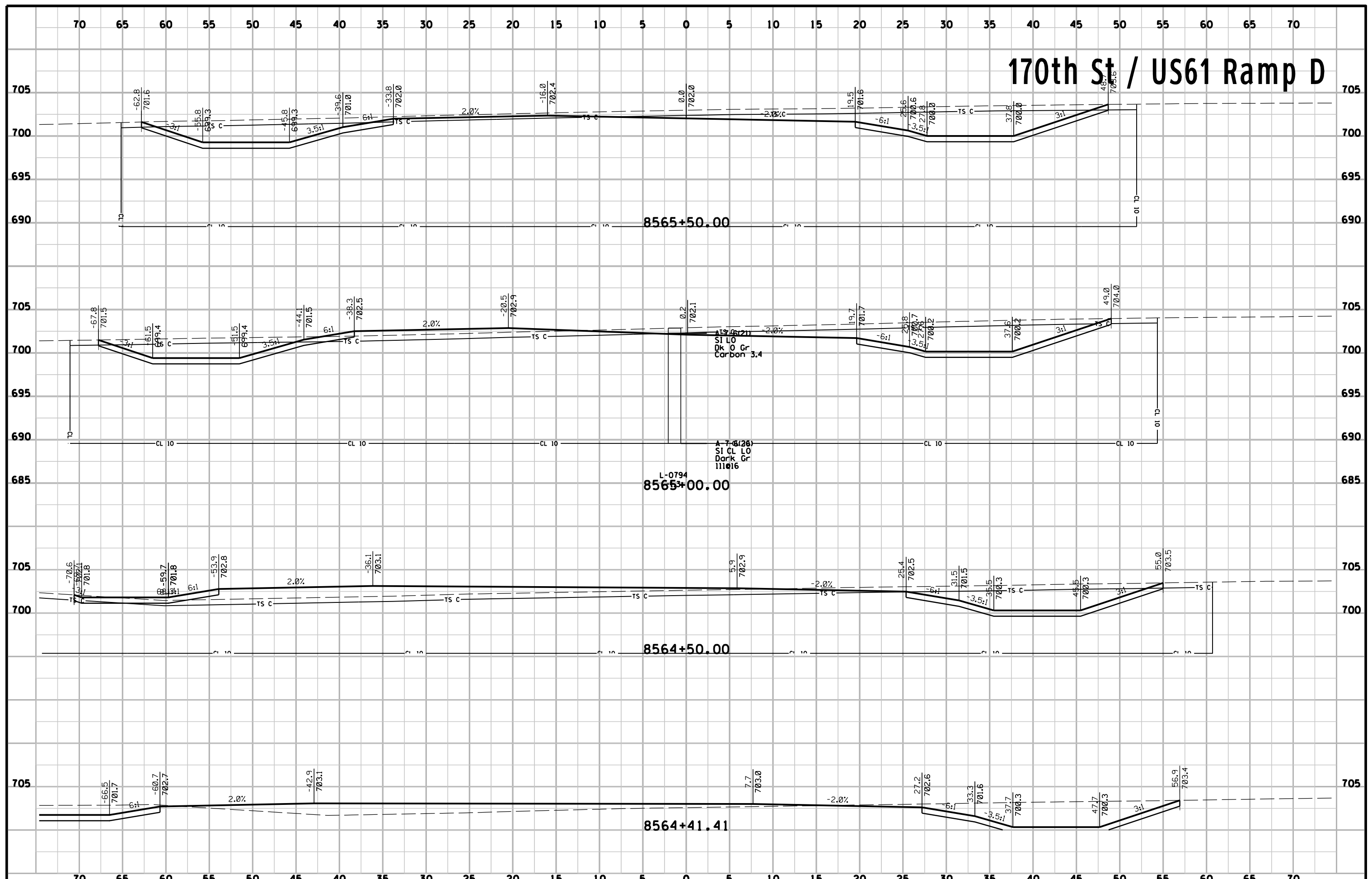
170th St / US61 Ramp C



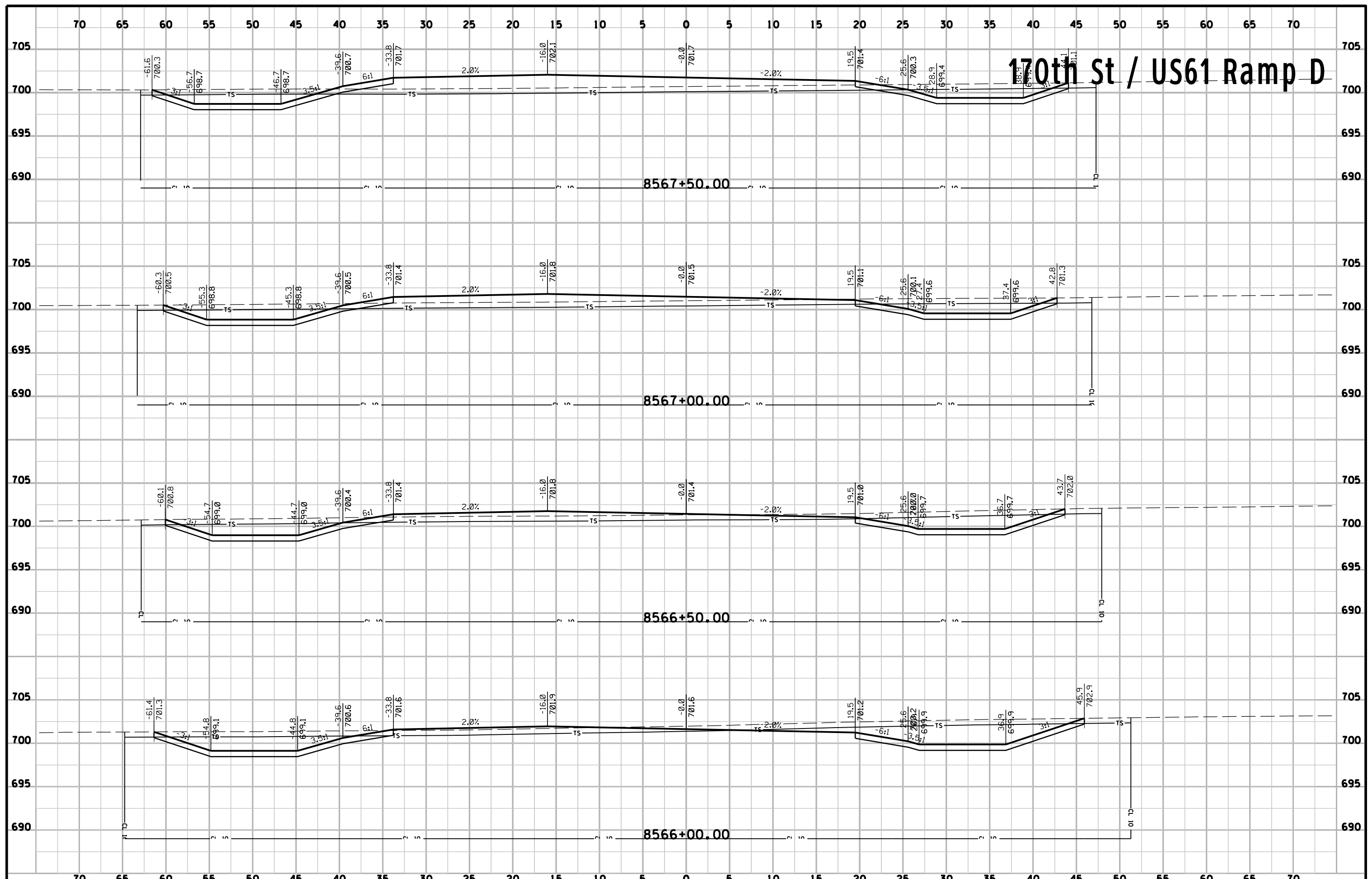
170th St / US61 Ramp C



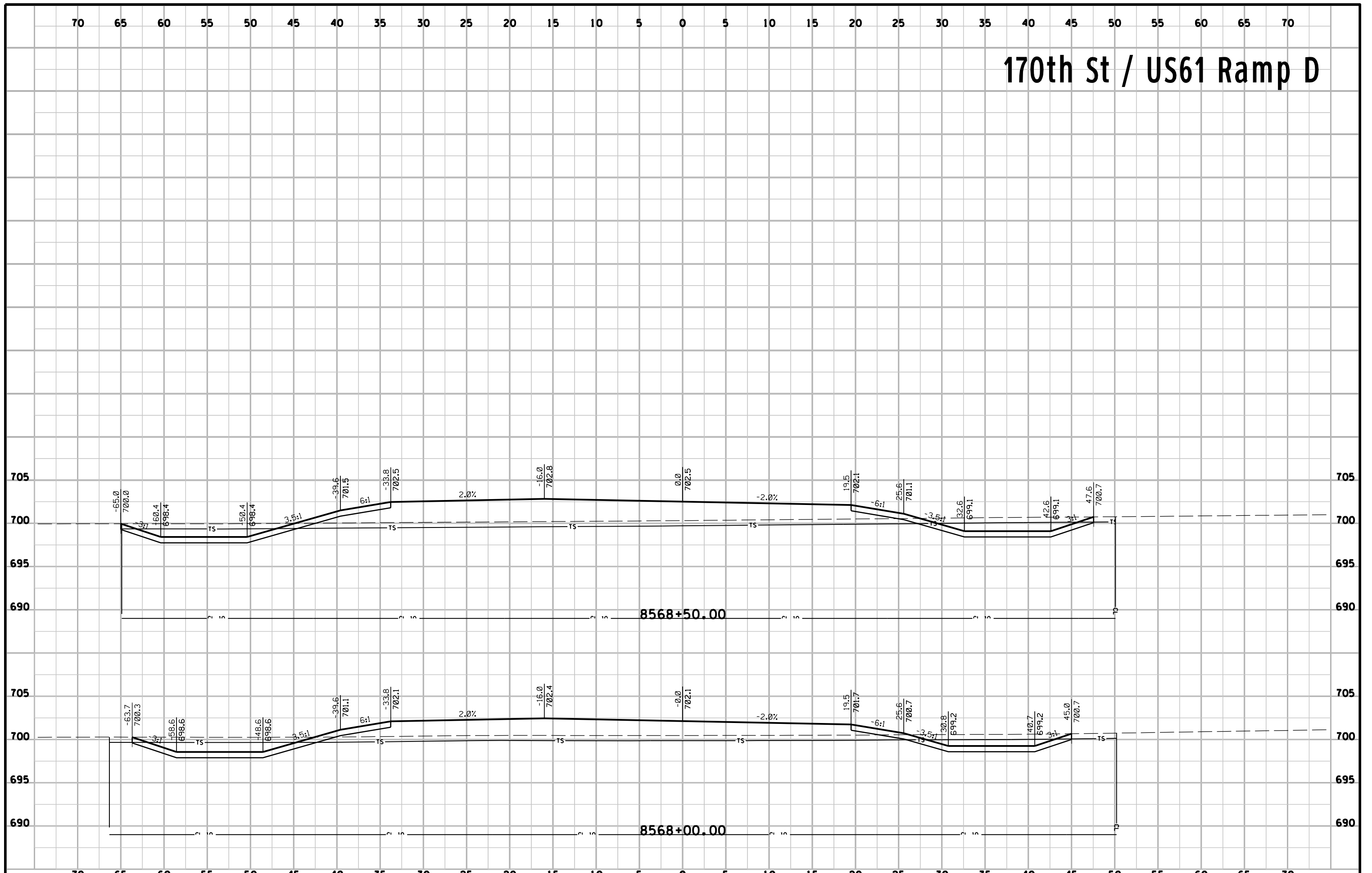
170th St / US61 Ramp D



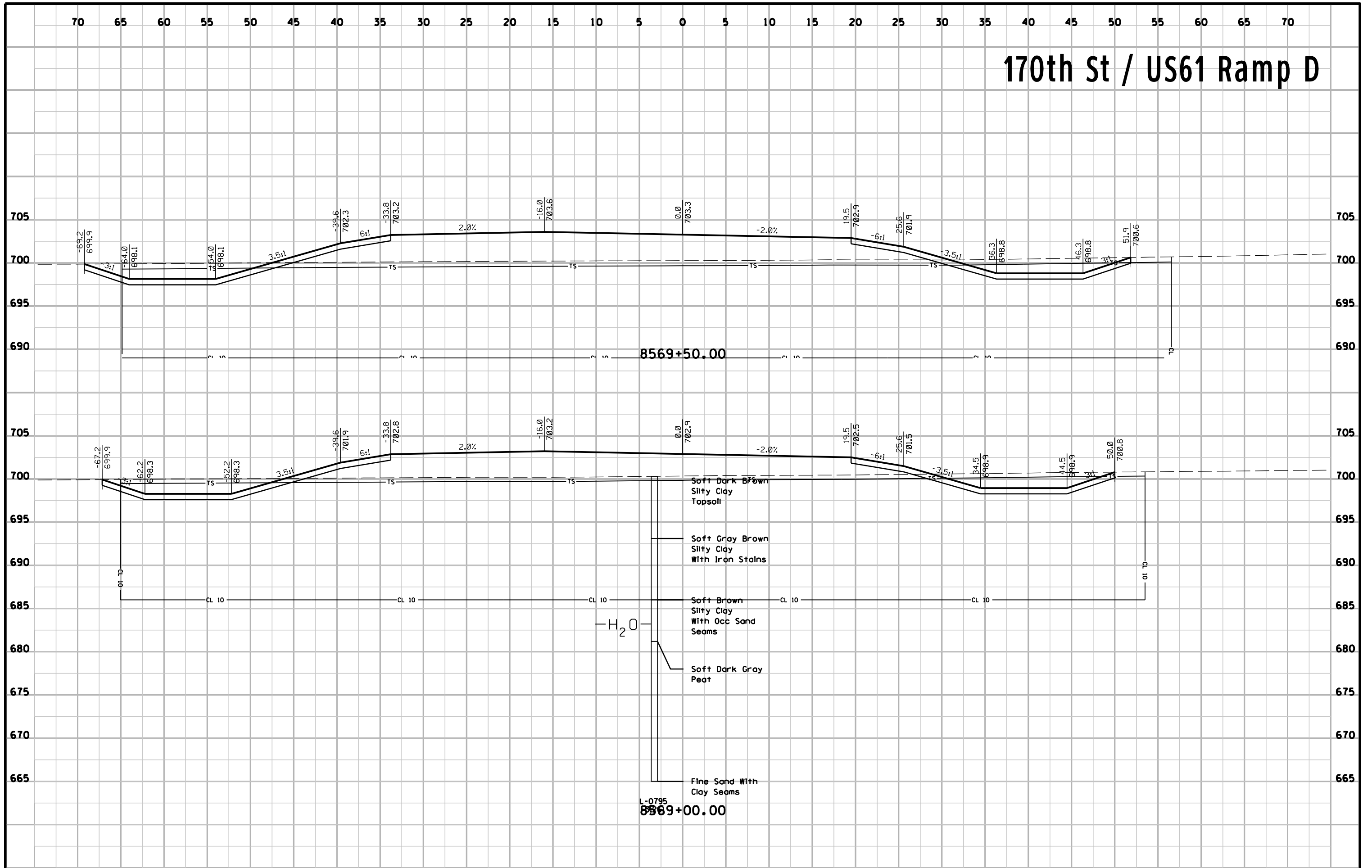
170th St / US61 Ramp D



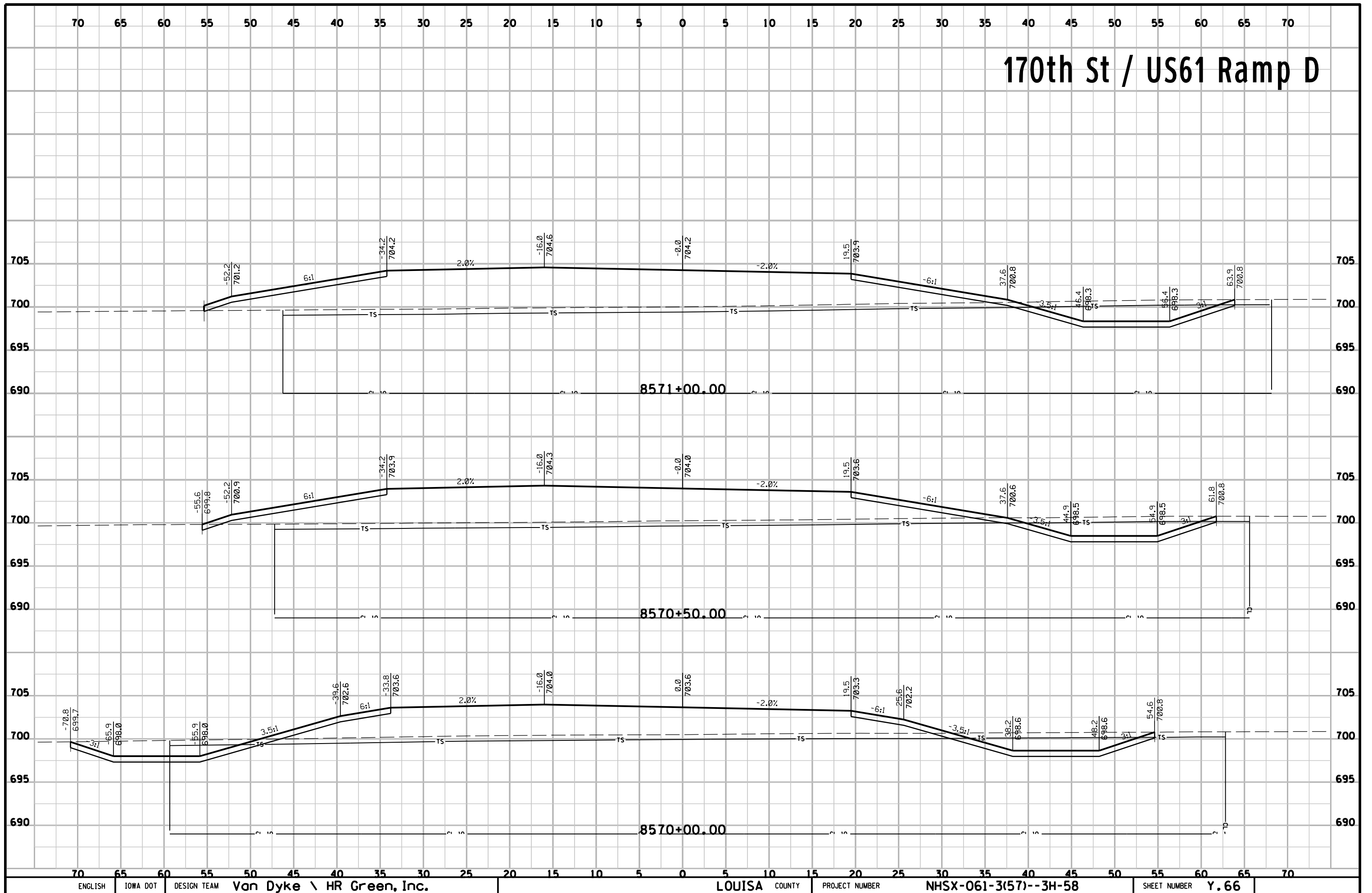
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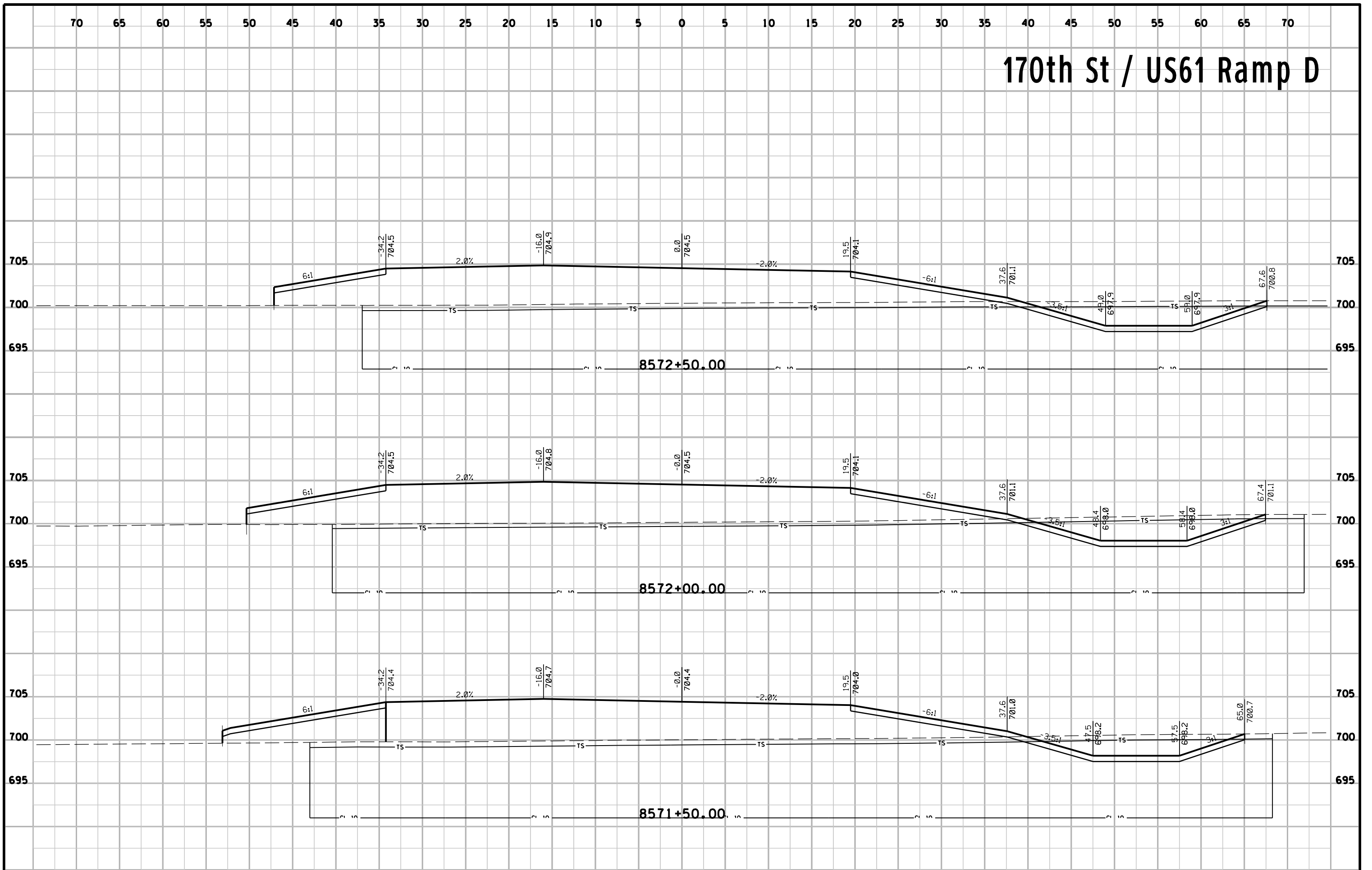
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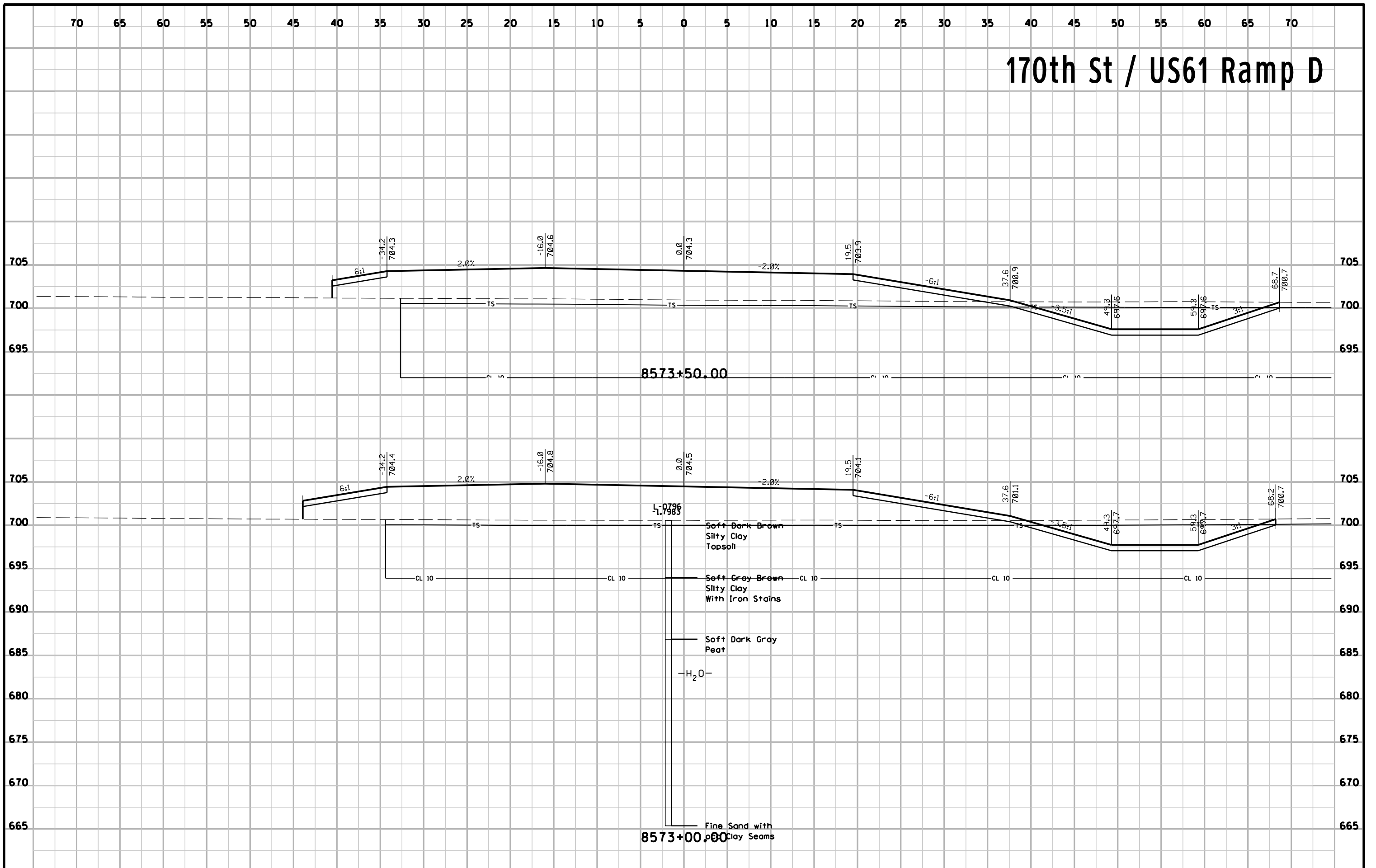
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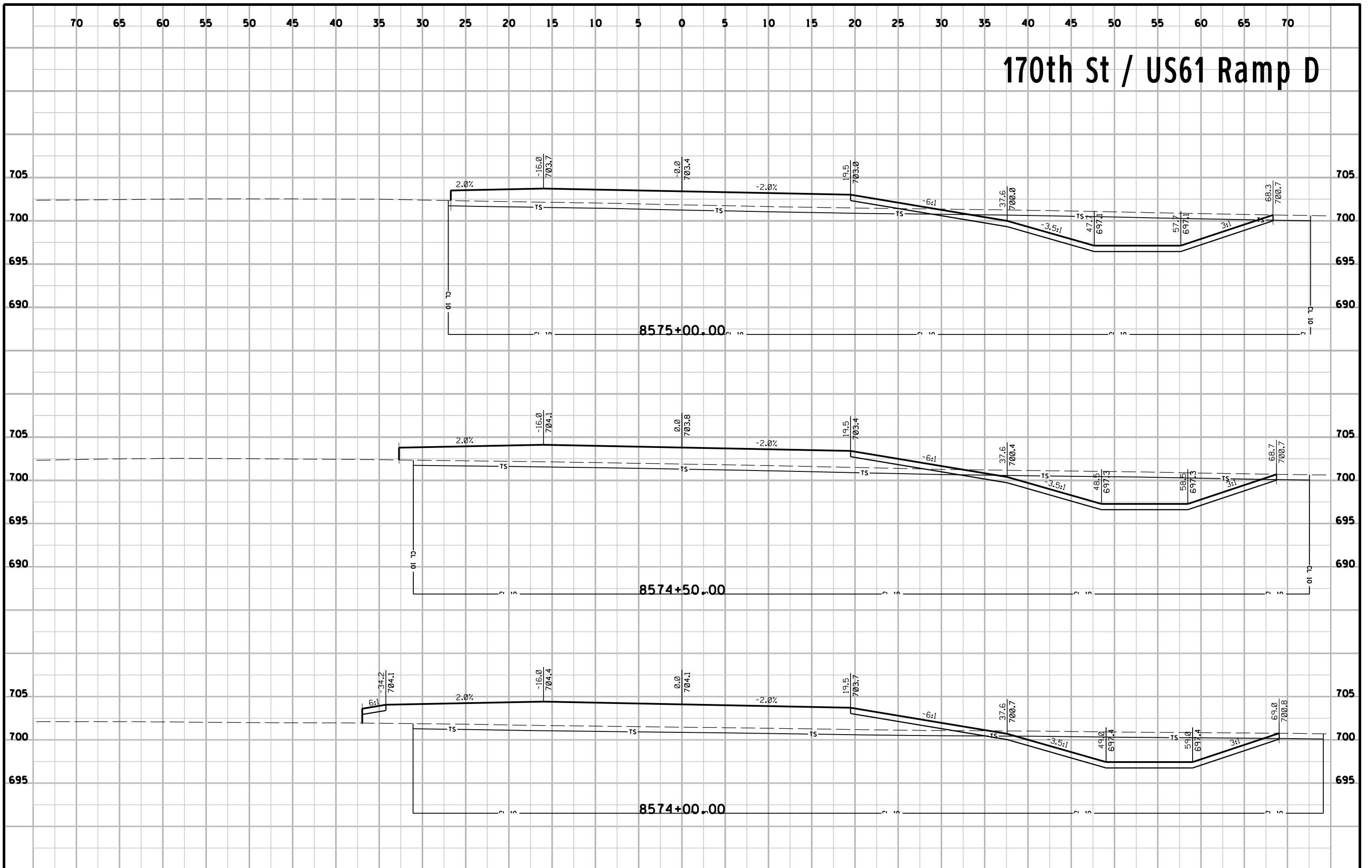
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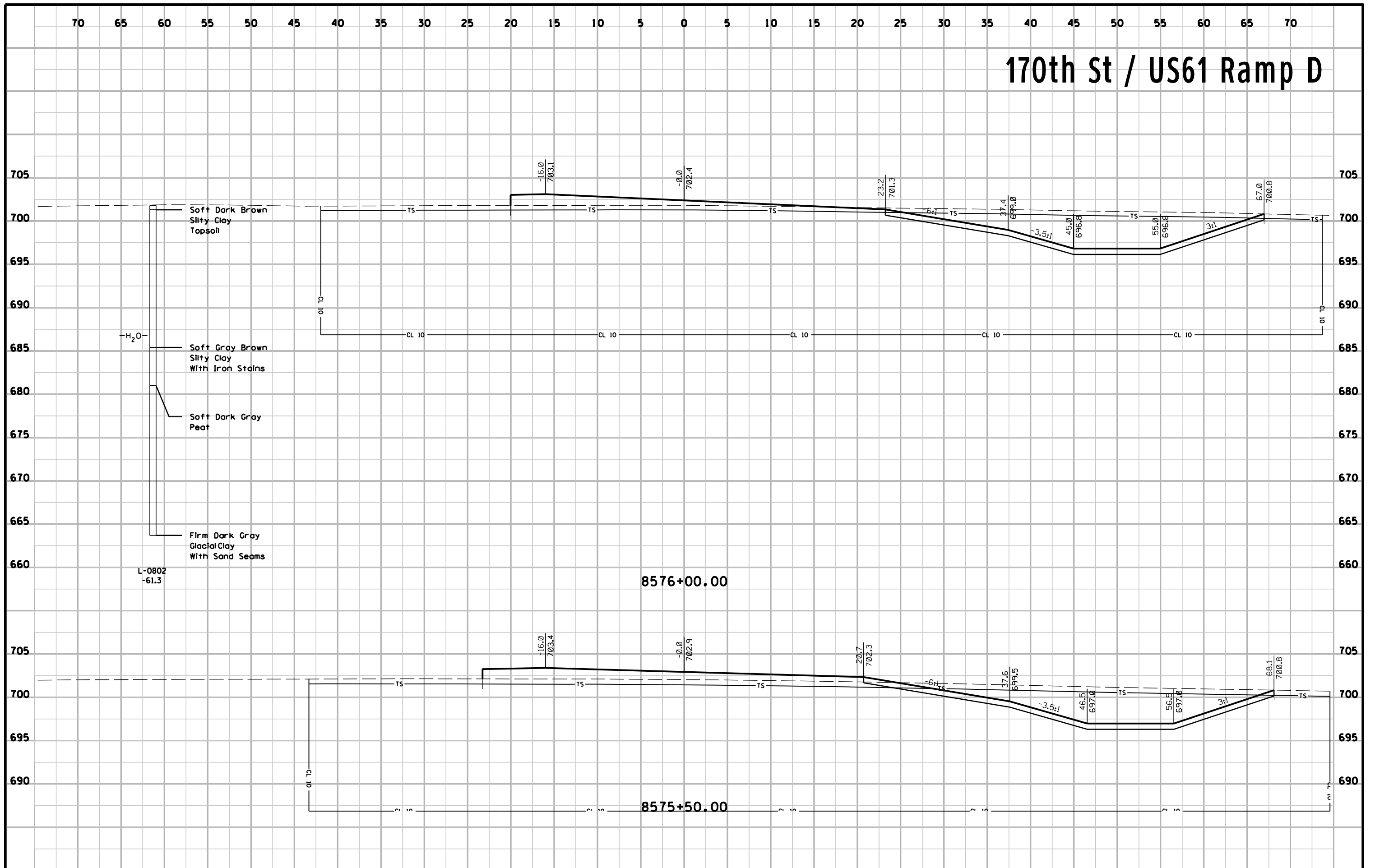
170th St / US61 Ramp D



170th St / US61 Ramp D



170th St / US61 Ramp D



170th St / US61 Ramp D

