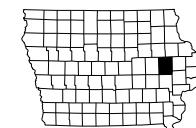


GRADING  
 LETTING DATE  
 JULY 2015  
 NHSX-100-1(106)--3H-57

**LINN CO.**

INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 4	Project Key Maps
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 6	Typical Cross Sections and Details
<b>C Sheets</b>	<b>Typical Cross Sections and Details</b>
C.1	Project Description
C.1 - 2	Estimated Project Quantities
C.3 - 5	Estimate Reference Information
C.6	Standard Road Plans & Index of Tabulations
C.7	Pollution Prevention Plan
C.8	Standard Notes
C.9 - 12	Tabulations
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 15	IA 100
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1 - 2	80th Street NW
* E.3	Existing Ellis Road
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 4	Reference Ties and Bench Marks
G.5 - 6	Horizontal Control Tab. & Super for all Alignments
G.7 - 10	Mainline and Ramp Horizontal Geometric Sheets
G.11	Sideroad Horizontal Geometric Sheets
G.12	Return Horizontal Geometric Sheets
G.13	Super Elevation Data
<b>H Sheets</b>	<b>Right-of-Way Sheets</b>
H.1 - 7	IA 100 Mainline
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Legend & Symbol Information Sheet
* J.2	Staging, Traffic Control, & Project Coordination Notes
* J.3 - 5	Phase II Construction Staging Concept
<b>K Sheets</b>	<b>Interchange Sheets</b>
* K.1	Covington Ramp B
* K.2	Covington Ramp C
K.3 - 6	Project Grading Sheets
<b>L Sheets</b>	<b>Geometric, Staking and Jointing Sheets</b>
L.1 - 3	80th St. NW & Ellis Rd.
<b>M Sheets</b>	<b>Storm Sewer Sheets</b>
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.3 - 5	Storm Sewer Plan and Profile Sheets
<b>O Sheets</b>	<b>Pipe Casing Sheets</b>
O.1	Water Casing (Sta.848+25) Plan & Profile Sheet
O.2	Sanitary Sewer Casing (Sta.852+50) P & P Sheet
O.3	Sanitary Sewer Casing (Sta.876+00) P & P Sheet
<b>U Sheets</b>	<b>500 Series, Mod.Stds. and Detail Sheets</b>
U.1 - 2	Modified Ramp Taper Details
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>
* V.1 - 6	Ellis Bridge Situation Plans
* V.7	Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 209	Mainline Cross Sections
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1 - 29	Side Road Cross Sections
<b>Y Sheets</b>	<b>Ramp Cross Sections</b>
Y.1 - 30	Ramp Cross Sections
	* Color Plan Sheets



## Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM

# LINN COUNTY

## GRADING

IN CEDAR RAPIDS FROM NORTH OF E AVENUE INTERCHANGE  
TO COVINGTON ROAD (CO RD W36)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

MILEAGE SUMMARY			
Div.	Location	Lin. Ft.	Miles
	Sta 811+00.00 to Sta 899+50.00	8850.00	
	Deduct Dual Bridges @ Ellis Rd.	800.00	
	Total Length of Roadway	8850.00	1.676
	Total Length of Bridge	800.00	0.152
	Total Net Length of Project	8050.00	1.524

For Project Location Map  
Refer to Sheet A.2

### DESIGN DATA RURAL

2005 AADT	0	V.P.D.
2040 AADT	11500	V.P.D.
2040 DHV	1155	V.P.H.
TRUCKS	10	%
Total Design ESALs	TBD	

### INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Sirpa Hall	Primary Signature Block

REVISIONS

TOTAL

359

PROJECT IDENTIFICATION NUMBER

99-57-100-020-01

PROJECT NUMBER

NHSX-100-1(106)--3H-57

R.O.W. PROJECT NUMBER

NHSN-100-1(40)--R2-57



### ROADWAY 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 Sirpa H. Hall, P.E. Date \_\_\_\_\_

Printed or Typed Name

My license renewal date is December 31, 2016

Pages or sheets covered by this seal: \_\_\_\_\_

# PRELIMINARY PLANS

Subject to change by final design.

U04 UTILITY SUBMITTAL

Date: Novemeber 25, 2014

FILE NO.

ENGLISH

DESIGN TEAM **Iowa DOT/CH2MHILL**

LINN COUNTY

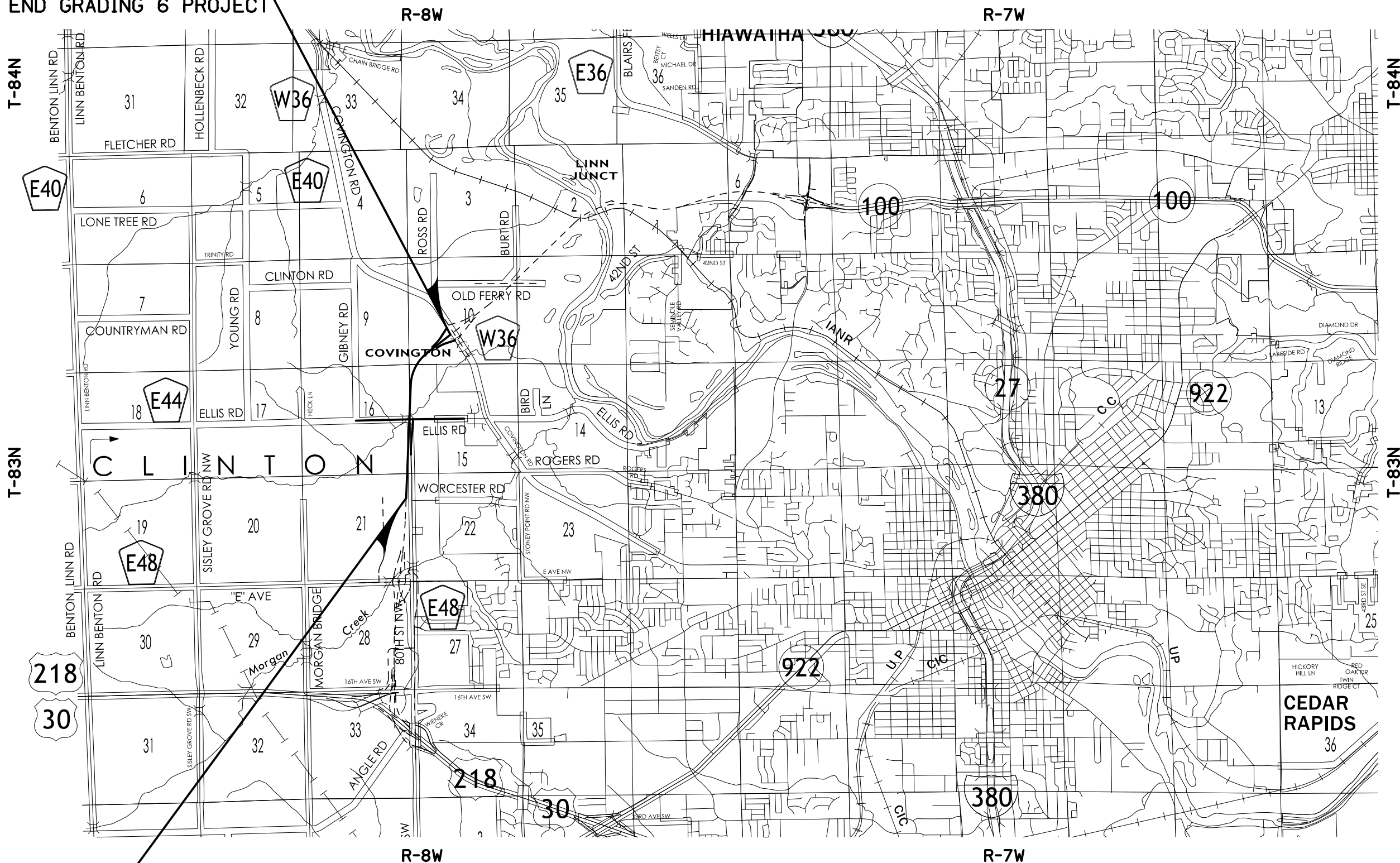
PROJECT NUMBER

**NHSX-100-1(106)--3H-57**

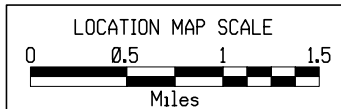
SHEET NUMBER

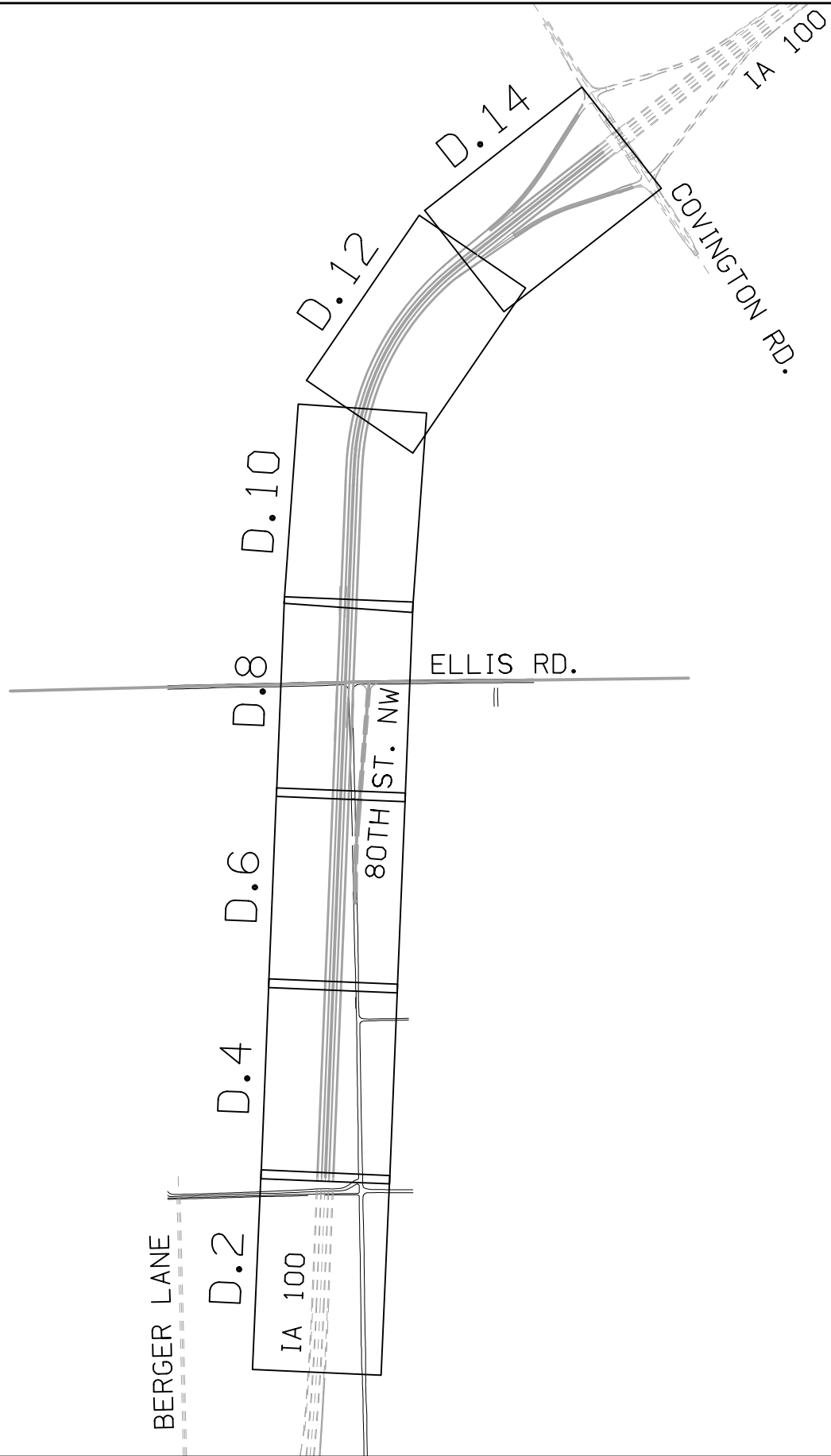
**A.1**

STA. 899+50.00  
END GRADING 6 PROJECT



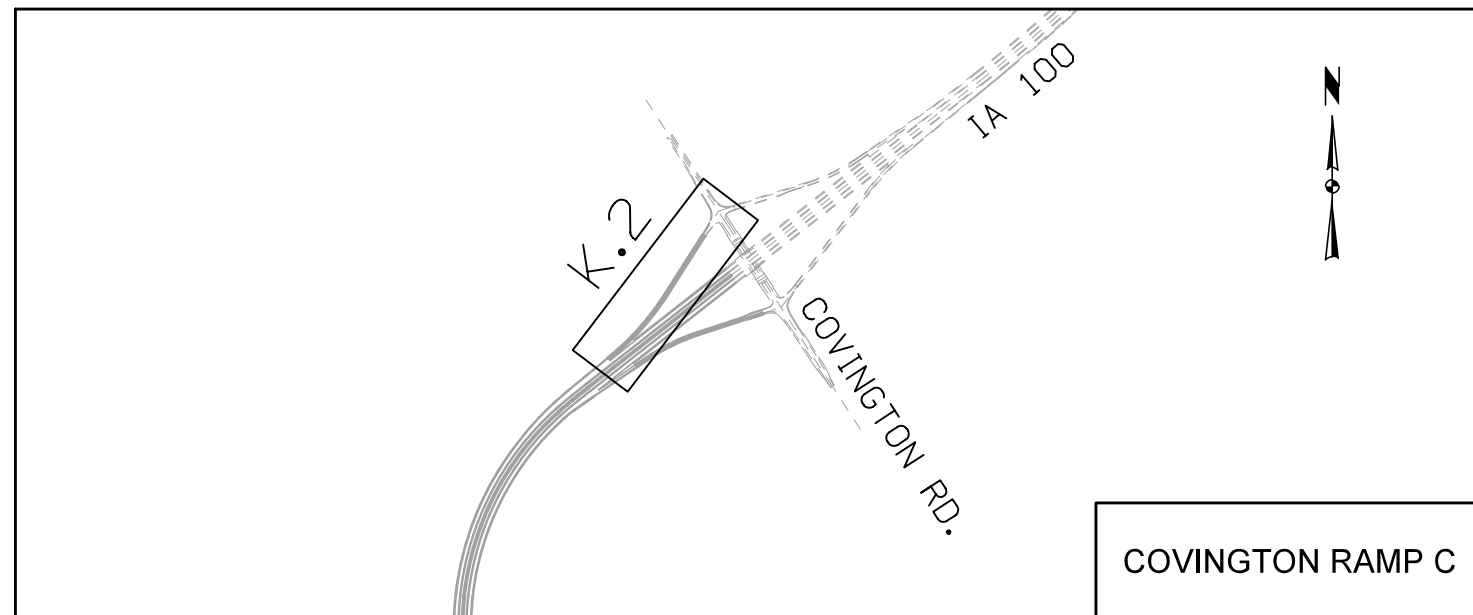
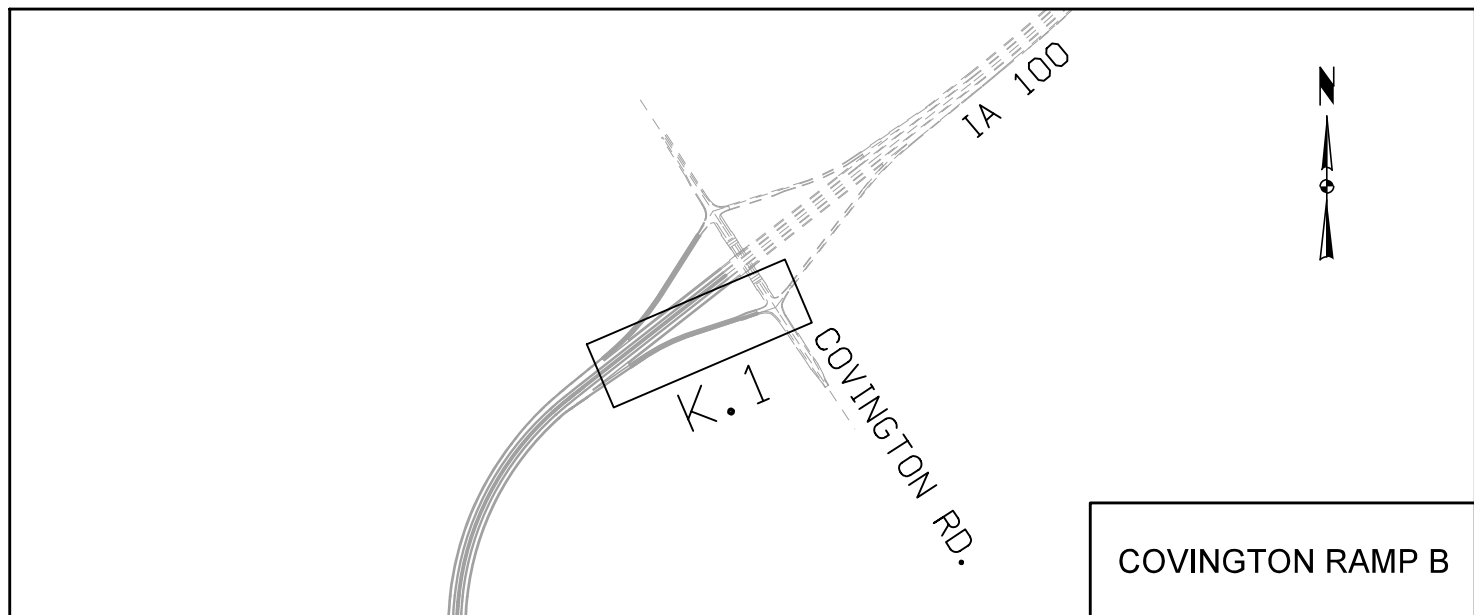
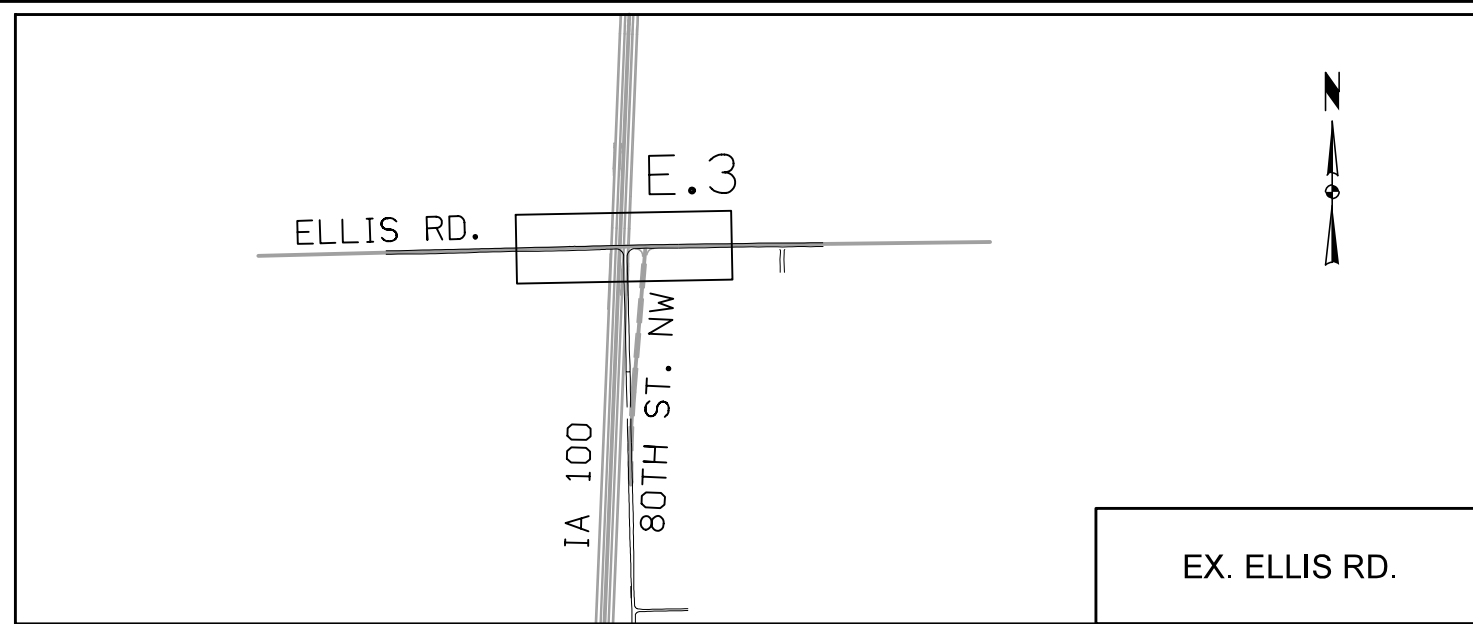
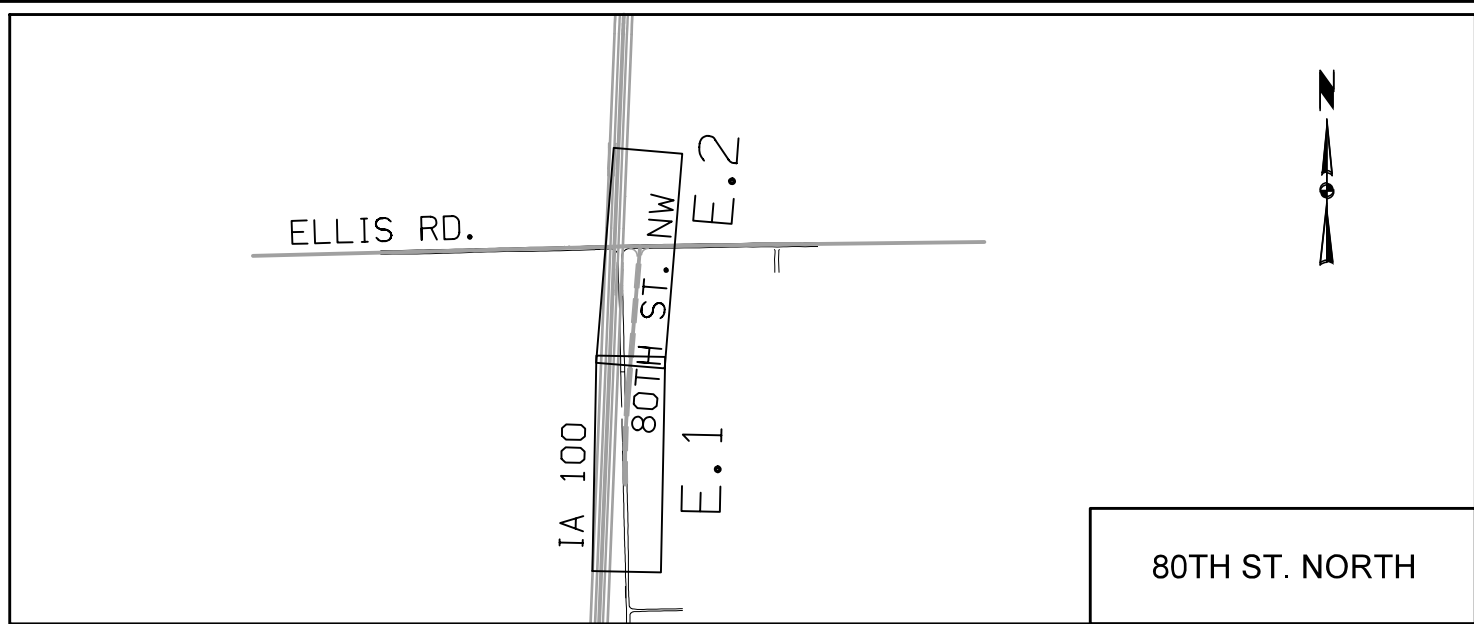
STA. 811+00.00  
END GRADING 5 PROJECT  
BEGIN GRADING 6 PROJECT





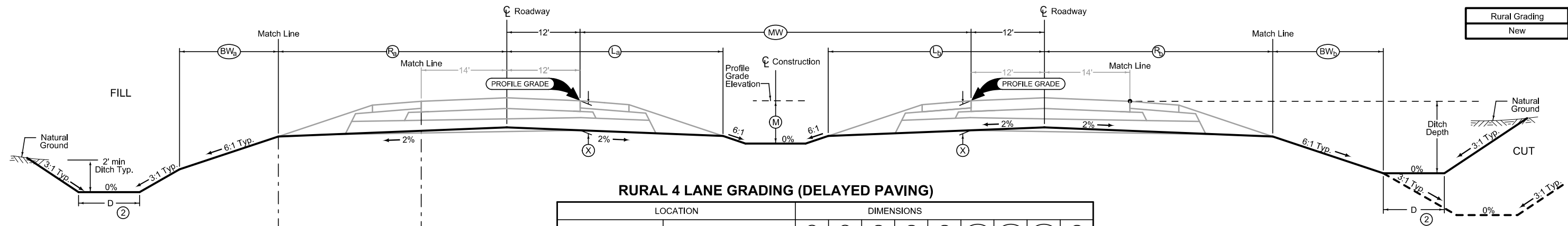
MAINLINE IA 100

**Project Key Maps**



**Project Key Maps**

Rural Grading  
New



**RURAL 4 LANE GRADING (DELAYED PAVING)**

ROAD IDENTIFICATION	LOCATION		DIMENSIONS								
	BEGIN STATION	END STATION	L <sub>a</sub> Feet	L <sub>b</sub> Feet	R <sub>a</sub> Feet	R <sub>b</sub> Feet	X Inches	BW <sub>a</sub> Feet	BW <sub>b</sub> Feet	MW Feet	M Feet
IA100	811+00.00	848+69.50	33.1	33.1	36.8	36.8	28	5.2	5.2	64	4
IA100	854+94.50	865+28.25	33.1	33.1	36.8	36.8	28	5.2	5.2	64	4
IA100	865+28.25	878+75.00	33.1-40	33.1-26.2	36.8-29.5	36.8-40	28	5.2-12.5	5.2-0	64	4
IA100	878+75.00	891+05.00	40-33.1	26.2-33.1	29.5-74	40-77	28	12.5-5.2	0-5.2	64	4
IA100	891+05.00	899+50.00	33.1	33.1	36.8	36.8	28	5.2	5.2	64	4

**Auxiliary Lane Grading**

LOCATION		DIMENSIONS	
BEGIN STATION	END STATION	R Feet	S %
878+75.00	891+05.00	37.9-74.7	-6.0-3.0

Possible Ditch Section  
Refer to Cross Sections  
for Details

Existing Ground

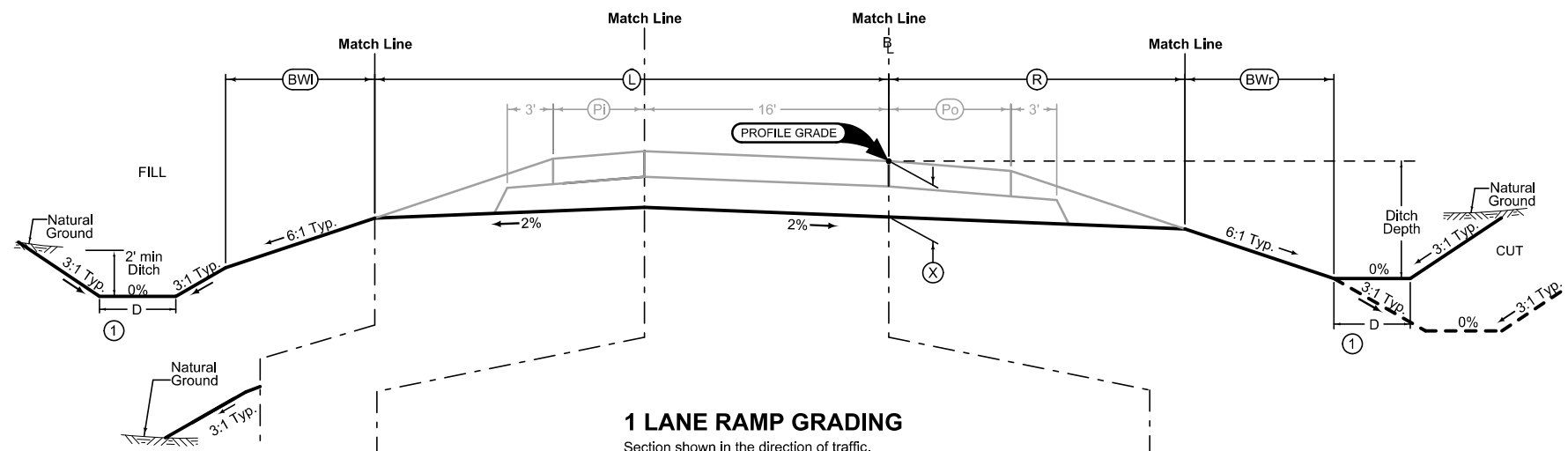
**Full Depth PCC  
Shoulder with Barrier**

LOCATION		DIMS
BEGIN STATION	END STATION	P Feet
845+50.00	848+62.50	8

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, foreslopes, and backslopes.

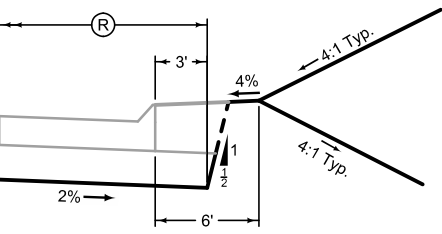
- ① 6" Sloped Curb
- ② Typical 10' Ditch Width. Refer to Cross Sections for ditch width details.



**1 LANE RAMP GRADING**

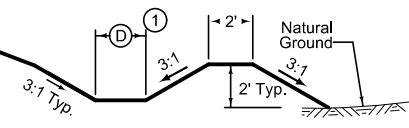
Section shown in the direction of traffic.

LOCATION				DIMENSIONS				
ROAD IDENTIFICATION	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BWi) Feet	(BWl) Feet
Covington	B	32590+00.00	32598+46.00	31.9	17.7	22	14.1	16.6
Covington	C	33591+03.65	33592+75.00	28.6	17.8-10	22	13.4	10.1
Covington	C	33592+75.00	33600+25.00	28.6	10	22	13.4	--



**Curbed Shoulder Grading**

LOCATION				DIMS
ROAD IDENTIFICATION	RAMP	STATION TO STATION		(R) Feet
Covington	C	33592+75.00	33600+25.00	10

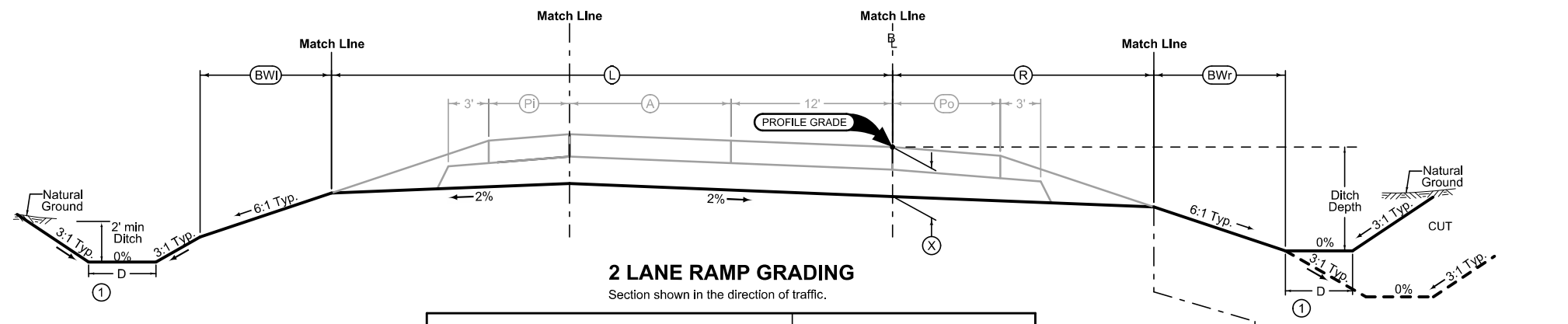


**Toe Berm Locations**

LOCATION			
ROAD IDENTIFICATION	RAMP	STATION TO STATION	
Covington	B	32590+10.00	32598+46.00

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super-elevated curves.  
See Plan & Profile sheets and cross sections for additional details of ditches, foreslopes, and backslopes.

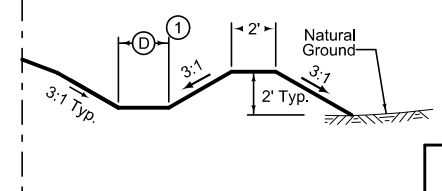
(1) Typical 10' Ditch Width. Refer to Cross Sections for ditch width details.



**2 LANE RAMP GRADING**

Section shown in the direction of traffic.

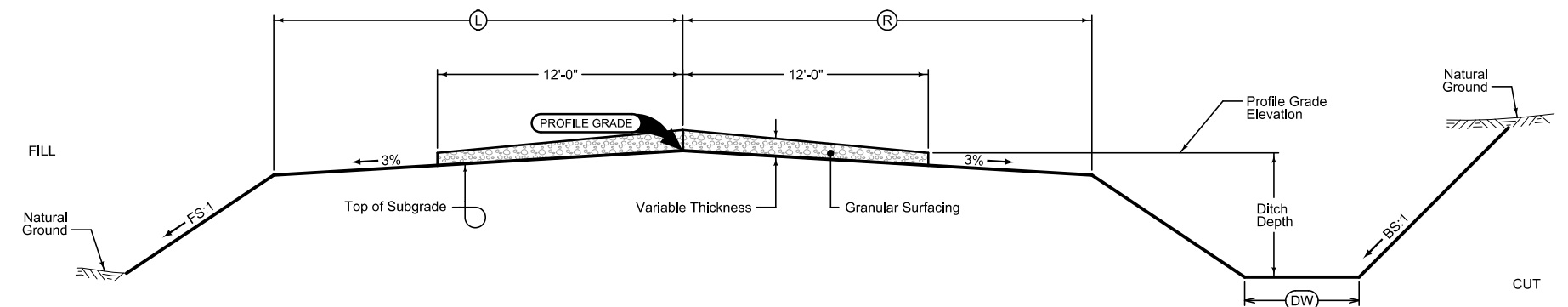
LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	RAMP	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	(BWI) Feet	(BWr) Feet
Covington	B	32598+45.80 32600+04.15	32.3-40	17.7	22	14.1	12.3



**Toe Berm Locations**

LOCATION		
ROAD IDENTIFICATION	RAMP	STATION TO STATION
Covington	B	32597+46.00 32600+00.00

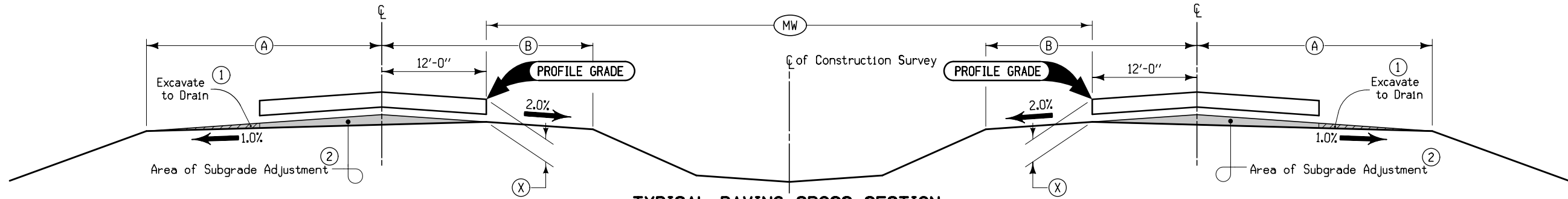
LOCATION		DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	FS	BS	(DW) Feet	
80th Street North	3100+45.32 3117+21.50	15	15	3	3	2	



**GRADING AND GRANULAR SURFACING**

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

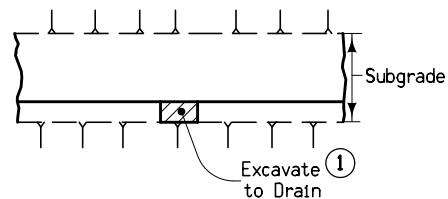
See plan & profile sheets and cross sections for additional details of ditches and backslopes.  
Place Granular Surfacing as follows:  
Grading design application rate is 2220 tons per mile.  
Paving design application rate is 445 tons per mile.



**TYPICAL PAVING CROSS SECTION  
SUBGRADE ADJUSTMENT TO 1% SLOPE  
4-LANE DIVIDED ROADWAY**

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

(X) is the distance between the Profile Grade and the bottom of the 1% grade line at the inside of pavement.

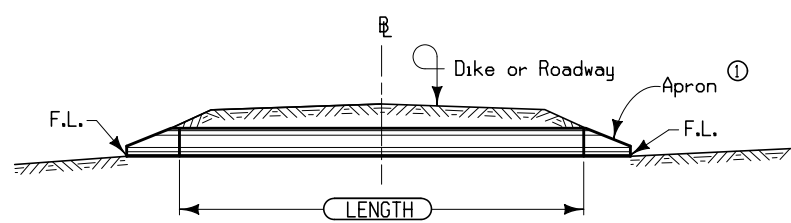


**PLAN VIEW**

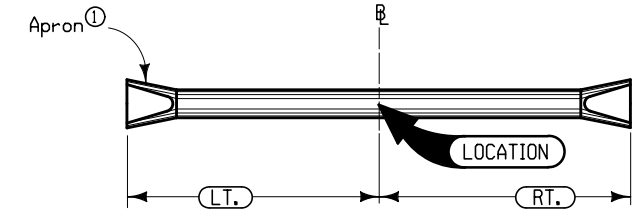
LOCATION		(A)	(B)	(MW)	(X)
ROAD IDENTIFICATION	STATION TO STATION	Feet	Feet	Feet	Inches

① Cut trenches in the outside shoulders to prevent water ponding in the trimmed area. The contractor may backfill the trenches with open graded crushed stone, gravel, or recycled PCC to allow water to drain. The material used to backfill is incidental.

② Trim the roadbed to within 0.05 feet of final subgrade elevation. Exercise extreme care in the trimming operation so that the stability of the subgrade is not damaged. If using trimmed material for shoulder construction, place the material in a windrow on either foreslope. Do not allow stored materials to pond water. Granular surfacing material, if placed over winter, is included in the trimmed volume.



**SECTION**

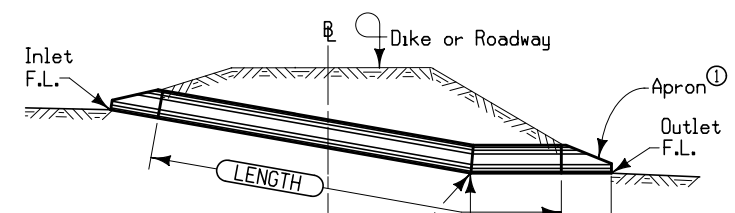


**PLAN**

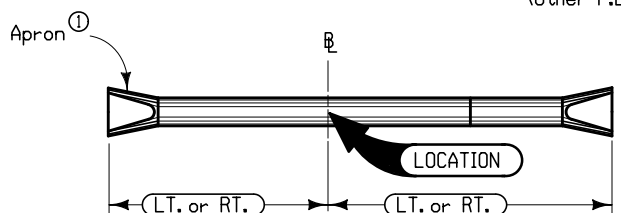
Notes:  
 B shall be CL of roadway, dike, survey, or other; as detailed on plans.  
 Skew angle is the angle which one end of the pipe is ahead (by stationing) of a line perpendicular to the B (example skew Rt. ahead 30°).  
 Refer to tabular listing and other plans for additional information.  
 ① See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

**PIPE CULVERT**

1101  
04-30-02



**Section**



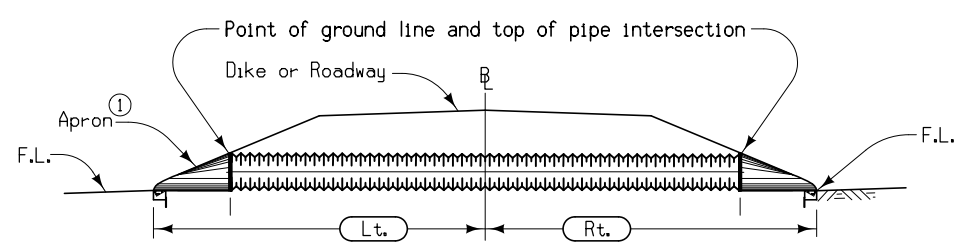
**Plan**

B shall be CL 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.

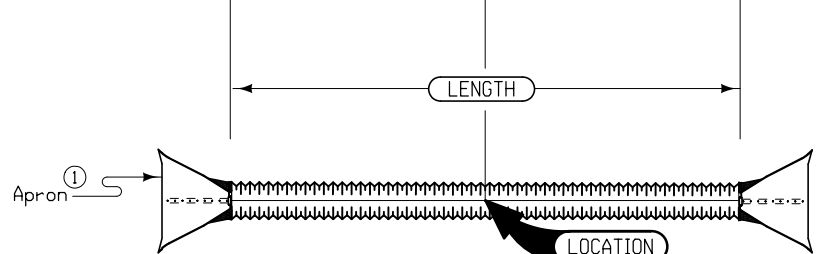
① See Standard Road Plan RF-3 For Conc. or RF-5 for Metal.  
 F is from bend to end of outlet.

**PIPE CULVERT LETDOWN STRUCTURE**

1201  
10-16-12



**SECTION**



**PLAN**

B shall be CL 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 B (example skew Rt. ahead 30 degrees).

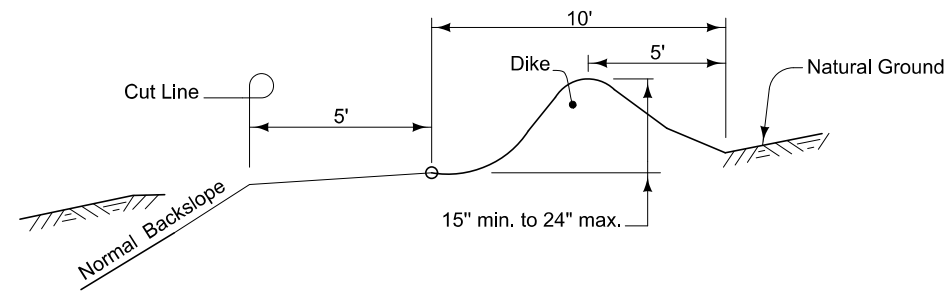
① See Standard Road Plan RF-3 for Concrete or RF-5 for Metal and Polyethylene.

**UNCLASSIFIED PIPE CULVERT**

1601  
10-16-12



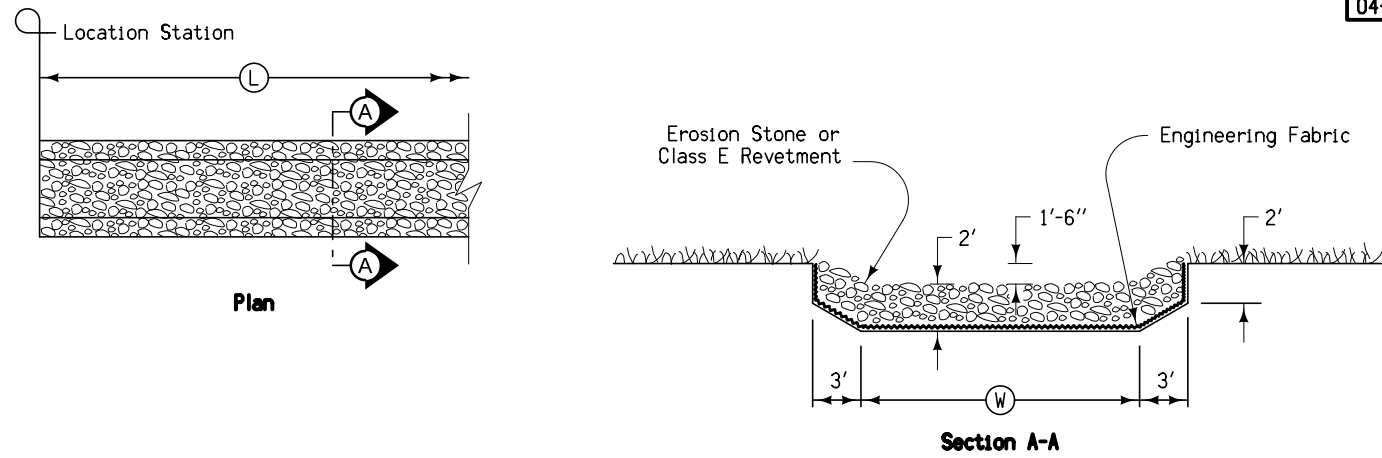
4101  
04-20-10



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.

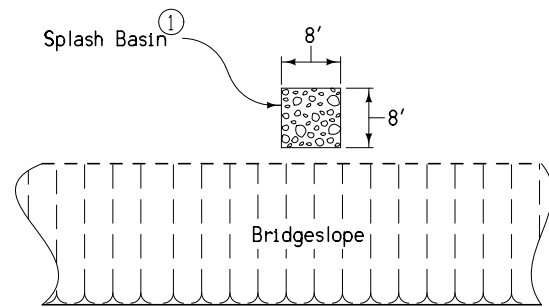
**TYPICAL CROSS SECTION  
INTERCEPTING DITCH**

4402  
04-16-13

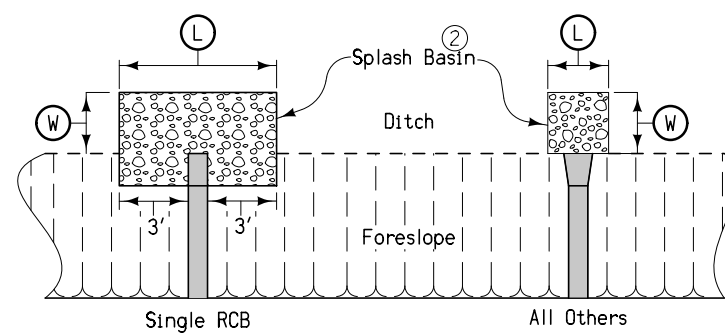


Refer to Tabulation 100-23 for additional information.

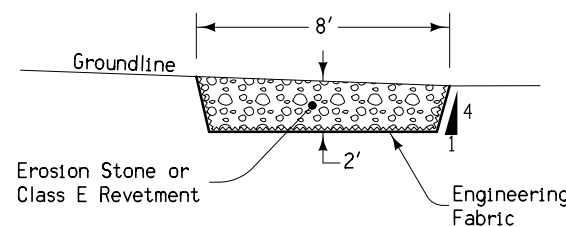
**ROCK DITCH**



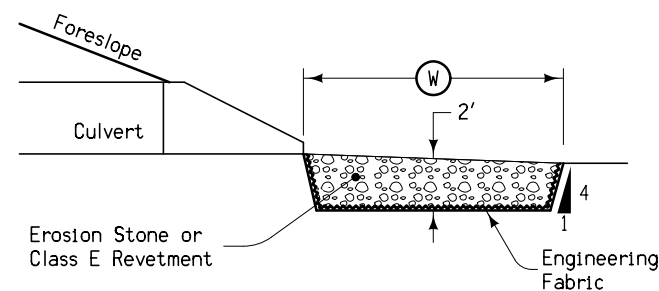
**Splash Basin Under Bridge Drain  
Plan View**



**Splash Basin at Culvert Outlet  
Plan View**



**Splash Basin Under Bridge Drain  
Typical Section**

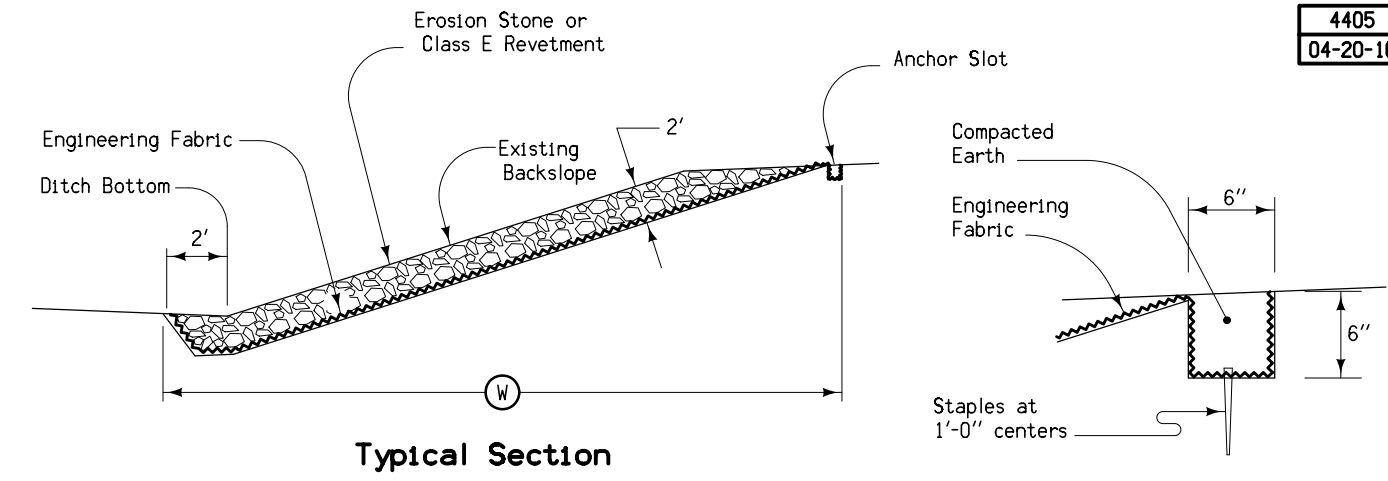


**Splash Basin at Culvert Outlet  
Typical Section**

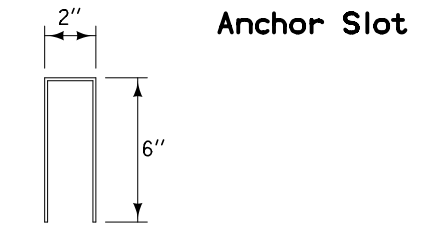
- ① Center splash basin directly under bridge drain.
- ② For single RCB, extend splash basin along the outside of the wings to the face of the parapet. Construct to a width of 3 feet and a depth of 2 feet.

Refer to Tabulation 100-23 for additional information.

**ROCK SPLASH BASIN**

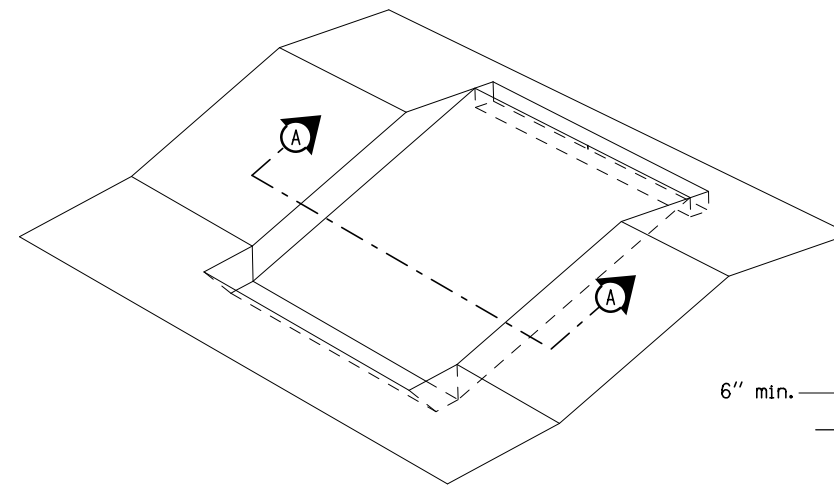


**Typical Section**

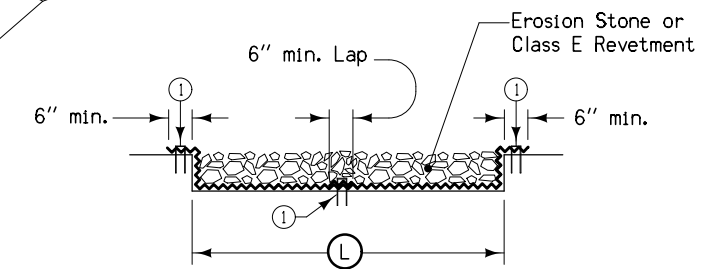


**Anchor Slot**

**Staple  
(No. 11 wire)**



**Isometric View**



**Section A-A**

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

**ROCK SLOPE PROTECTION**

**PROJECT DESCRIPTION**

This project includes the grading of IA 100 from Station 811+00.00 to Station 899+50.00, the grading of Covington Ramps B and C, and the removal, grading, and surfacing of 80th Street North.

Construction of a 12' x 4' RCB under IA 100 is tied to this contract.

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

Item No.	Item Code	Item	Unit	Quantities																
				Estimated					As Built											
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5						
1	2101-0850001	CLEARING AND GRUBBING	ACRE	58																
2	2102-2200000	INTERCEPTING DITCHES AND FLUMES	LF	547																
3	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT	CY																	
4	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY																	
5	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY																	
6	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW	CY																	
7	2102-2712015	EXCAVATION, CLASS 12, BOULDERS AND ROCK FRAGMENTS	CY																	
8	2102-4560000	LOCATING TILE LINES	STA	111																
9	2102-4600000	CRUSHING OF CLASS 12 EXCAVATION	CY																	
10	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY																	
11	2107-0875000	COMPACTION WITH MOISTURE AND DENSITY CONTROL	CY																	
12	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY																	
13	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY																	
14	2112-0000100	WICK DRAIN	LF																	
15	2312-8260201	GRANULAR SURFACING ON ROAD, CLASS C GRAVEL	TON	705																
16	2315-8275030	SURFACING, DRIVEWAY, CLASS C GRAVEL	TON	25																
17	2402-0425030	GRANULAR BACKFILL	CY																	
18	2402-0425040	FLOODED BACKFILL	CY	2616																
19	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	4963																
20	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EA	2																
21	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EA	10																
22	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EA	2																
23	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.	EA	4																
24	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EA	2																
25	2416-0102230	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 30 IN.	EA	2																
26	2416-0102242	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 42 IN.	EA	2																
27	2416-0102248	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 48 IN.	EA	4																
28	2416-0102254	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 54 IN.	EA	2																
29	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	382																
30	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	114																
31	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	176																
32	2416-1200230	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 30 IN.	LF	180																
33	2416-1200242	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 42 IN.	LF	28																
34	2416-1200248	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 48 IN.	LF	234																
35	2416-1200254	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 54 IN.	LF	320																
36	2416-1240042	CULVERT, 3000D CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	168																
37	2416-1240048	CULVERT, 3000D CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	268																
38	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.	EA	1																
39	2435-0250802	INTAKE, SW-508, WELL ONLY	EA	2																
40	2435-0251002	INTAKE, SW-510, WELL ONLY	EA	1																
41	2435-0254602	INTAKE, SW-546, WELL ONLY	EA	2																
42	2502-8212024	SUBDRAIN, LONGITUDINAL, (BACKSLOPE) 4 IN. DIA.	LF																	
43	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF																	
44	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA.	LF																	
45	2502-8220193	SUBDRAIN OUTLET (RF-19C)	EA																	
46	2502-8220196	SUBDRAIN OUTLET, RF-19E	EA																	
47	2502-8220197	SUBDRAIN OUTLET (RF-19F)	EA																	
48	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 15 IN.	LF	935																
49	2503-0500390	BRIDGE END DRAIN, RF-39	EA	7																
50	2504-0136024	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN.	LF	299																
51	2504-0136042	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 42 IN.	LF	343																
52	2506-4984000	FLOWABLE MORTAR	CY	218																
53	2507-3250005	ENGINEERING FABRIC	SY	901																
54	2507-6800061	REVTMENT, CLASS E	TON																	
55	2507-8029000	EROSION STONE	TON	778.1																
56	2510-6745850	REMOVAL OF PAVEMENT	SY	2799																
57	2518-6910000	SAFETY CLOSURE	EA	8																
58	2520-3350010	FIELD LABORATORY	EA	1																
59	2520-3350015	FIELD OFFICE	EA	1																
60	2526-8285000	CONSTRUCTION SURVEY	LS	1																
61	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	746																
62	2528-8445110	TRAFFIC CONTROL	LS	1																
63	2533-4980005	MOBILIZATION	LS	1																
64	2552-0000140	ROCK EXCAVATION	CY																	
65	2554-0112024	WATER MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN.	LF	359																
66	2590-0000020	PROJECT MANAGEMENT	LS	1																
67	2601-2634100	MULCHING	AC	57																

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ESTIMATED PROJECT QUANTITIES  
(UP TO A 5 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Quantities																
				Estimated						As Built										
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5						
68	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	AC	56.8																
69	2602-0000020	SILT FENCE	LF	1123																
70	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	6297																
71	2602-0000050	SILT BASINS	EA	34																
72	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	2817																
73	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	510																
74	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200																
75	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200																
76	2602-0010010	MOBILIZATION, EROSION CONTROL	EA	1																
77	2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL	EA	1																

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
1	2101-0850001	<p><b>CLEARING AND GRUBBING</b> Refer to Standard Specification 2101. Grubbing operations shall include removal of stumps and downed timber in these areas. Clearing of all trees shall be completed in accordance with Standard Notations 232-6 and 232-10 on Sheet C.8.</p> <p>The Contractor may salvage cut and felled timber if desired but the salvaging operations will not be considered for payment.</p> <p>Burning and/or burying of clearing and grubbing spoils will not be allowed unless approval from the Engineer is received prior to operations. Clearing and grubbing spoils shall be removed from the project site and properly disposed of by the contractor.</p>
2	2102-2200000	<p><b>INTERCEPTING DITCHES AND FLUMES</b> See Tabulation 100-16 on Sheet C.9 for locations.</p>
3	2102-2625001	<p><b>CONTRACTOR FURNISHED SELECT TREATMENT</b></p>
4	2102-2625001	<p><b>EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED</b> The Contractor shall provide XXX,XXX cy of suitable material to complete in place roadway template construction. Refer to T Sheet for additional details. Quantity assumes all suitable Class 10 and 12 material excavated within the proposed roadway template cut areas will be used for embankment construction considering a 30% shrinkage and 60% swell factor respectively. Class 10 and Class 12 excavation will be measured and paid for separately.</p> <p>The Contractor shall provide suitable material to complete roadway embankment construction as specified in Standard Specification 2102.02. The Contractor is responsible for finding off-site borrow location(s), obtaining necessary environmental clearances and permits, and all equipment, materials, labor, and operations to excavate and haul material to the project site without additional cost to the Contracting Authority. Overhaul will not be paid for separately.</p> <p>Refer to Q Sheets for possible locations requiring dewatering operations. Provide dewatering elsewhere as necessary. If needed, dewatering is considered incidental to roadway excavation.</p> <p>Refer to Tabulation 103-5 "Settlement Plates" on Sheet CS.X. Settlement plates and piezometers are incidental to this bid item.</p> <p>The Contractor may choose to use automated machine guidance (AMG) for this project. Refer to Standard Specification 1105.17 for details.</p>
5	2102-2710070	<p><b>EXCAVATION, CLASS 10, ROADWAY AND BORROW</b> Item is for excavation and construction of roadway embankments within the project corridor. An estimated XXX,XXX cy of suitable Class 10 material is available for embankment construction within the project corridor. Refer to Standard Specification 2102. Roadway fills consider a shrinkage of 30%.</p> <p>Additional excavation within the available ROW limits for material suitable for roadway embankment construction per Standard Specification 2102.02 will be allowed with prior approval from the Engineer. Refer to Typical Sections 4108 and 4109 on Sheet B.X for additional details. No additional payment will be made for excavation beyond that required for the roadway template as shown in the contract documents.</p> <p>Overhaul will not apply or be paid for.</p> <p>The Contractor may choose to use automated machine guidance (AMG) for this project. Refer to Standard Specification 1105.17 for details.</p>
6	2102-2712070	<p><b>EXCAVATION, CLASS 12, ROADWAY AND BORROW</b> Refer to Standard Specification 2102. Item is a provision for encountering unexpected boulders and rock fragments during roadway Class 10 excavation operations.</p>
7	2102-2712015	<p><b>EXCAVATION, CLASS 12, BOULDERS AND ROCK FRAGMENTS</b> Item is for rock excavation for roadway template construction. Refer to cross-sections and Q sheets for anticipated rock locations. Item includes rock undercut to a minimum depth of one foot below finished subgrade per Standard Specification 2102.03. Backfill for rock undercuts will be considered as part of the roadway embankment fill need and measured and paid for separately.</p> <p>Suitable excavated rock shall be processed and used for roadway embankment construction. Refer to Standard Road Plan EW-102 and Standard Specification 2107.03 for placement of rock in roadway embankment construction. Processed Class 12 material to be used in embankment construction considers a swell factor of 60%. Processing Class 12 Excavation for Embankment Construction will be measured and paid for separately.</p> <p>Production blasting is allowed with approval from the Engineer and if used will be considered incidental to Class 12 excavation. Refer to Standard Specification 2103.</p>
8	2102-4560000	<p><b>LOCATING TILE LINES</b> Refer to Standard Specification 2102. Quantity assumed to be the length of mainline grading through agricultural land use plus 25%.</p>

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
9	2102-4600000	<p><b>CRUSHING OF CLASS 12 EXCAVATION</b> See Standard Specification 2102. Excavated rock suitable for roadway embankment construction shall be processed to a maximum size of 12-18 inches. Quantity assumes crushing is limited to Class 12 Roadway and Borrow excavation spoils.</p>
10	2105-8425015	<p><b>TOPSOIL, STRIP, SALVAGE AND SPREAD</b> Item is for stripping, salvaging, and spreading topsoil for slope dressing as defined in the contract documents. Refer to Tabulation 103-4 "Spreading Topsoil" on Sheet CS.X for details. The quantity considers a shrinkage factor of 40%.</p> <p>Payment for Topsoil, Strip, Salvage and Spread is for the quantity required for slope dressing per contract documents. The Contractor shall spread topsoil at a minimum thickness of 8". Excess topsoil stripped and excavated shall be wasted on the project site as additional dressing. Excess topsoil is not eligible for use in roadway embankment construction.</p> <p>On-Site stockpiling of stripped topsoil is only allowed within proposed and future ROW limits. Stockpiles may not be placed in areas designated as not to be disturbed in the contract documents. The Contractor may stockpile material at an appropriate off-site location if desired. Identifying a suitable off-site stockpile location and hauling operations to and from the project site will not be paid for separately.</p>
11	2107-0875000	<p><b>COMPACTION WITH MOISTURE AND DENSITY CONTROL</b> Refer to Tabulation 103-1 "Embankment with Moisture and Density Control" on Sheet CS.X for details.</p>
12	2107-0875100	<p><b>COMPACTION WITH MOISTURE CONTROL</b> Refer to Notation 103-6 "Embankment with Moisture Control" on Sheet CS.X for details.</p>
13	2107-3825025	<p><b>GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN</b> Refer to Standard Specification 2107.03.K for details. Item includes granular material for granular drainage blankets as noted in the contract document. See Q sheets for blanket locations. Granular material shall meet the requirements of Standard Specification 4133 except that the percent passing the No. 200 sieve shall be less than 5%. Refer to Tabulation 104-5C "List of Subdrain Work" for granular blanket locations on Sheet CS.X.</p> <p>The Contractor is advised working blankets may be necessary depending on ground conditions. Refer to Q sheets for possible locations. Working blankets are considered incidental to embankment in place construction.</p>
14	2112-0000100	<p><b>WICK DRAIN</b></p>
15	2312-8260201	<p><b>GRANULAR SURFACING ON ROAD, CLASS C GRAVEL</b> Item is for surfacing 80th Street North. Item application rate of 2220 tons per mile.</p>
16	2315-8275030	<p><b>SURFACING, DRIVEWAY, CLASS C GRAVEL</b> Item application rate of 40 tons per station. See Tabulation 102-3 "Access Points and Safety Ramps" on Sheet C.11.</p>
17	2402-0425030	<p><b>GRANULAR BACKFILL</b></p>
18	2402-0425040	<p><b>FLOODED BACKFILL</b> Item is for construction of Concrete Roadway Pipes and includes Floodable Backfill and Porous Backfill quantities. See Tabulation 104-3 "Drainage Structures by Road Contractor" on Sheet C.10.</p>
19	2402-2720100	<p><b>EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT</b> Item is for excavation beyond that required for the construction of the roadway template for the purposes of constructing roadway culverts. See Tabulation 104-3 "Drainage Structures by Road Contractor" on Sheet C.10. Excavated material becomes property of the contractor.</p>

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
20	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.
21	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
22	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.
23	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.
24	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.
25	2416-0102230	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 30 IN.
26	2416-0102242	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 42 IN.
27	2416-0102248	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 48 IN.
28	2416-0102254	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 54 IN.
29	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
30	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.
31	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.
32	2416-1200230	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 30 IN.
33	2416-1200242	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 42 IN.
34	2416-1200248	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 48 IN.
35	2416-1200254	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 54 IN.
36	2416-1240042	CULVERT, 3000D CONCRETE ROADWAY PIPE, 42 IN. DIA.
37	2416-1240048	CULVERT, 3000D CONCRETE ROADWAY PIPE, 48 IN. DIA. Items include payment for Apron Guards, Elbows, "D" Sections, and Connected Pipe Joints. See Tabulation 104-3 "Drainage Structure by Road Contractor" on Sheet C.10 for pipe culvert details. Includes 2-15" Dia. aprons for storm sewer outlet locations. Refer to Tabulation 104-5B "Storm Sewer" on Sheet M.1 for storm sewer outlet details.
38	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.
39	2435-0250802	INTAKE, SW-508, WELL ONLY
40	2435-0251002	INTAKE, SW-510, WELL ONLY
41	2435-0254602	INTAKE, SW-546, WELL ONLY See Tabulation 104-5B "Storm Sewer" on Sheet M.1.
42	2502-8212024	SUBDRAIN, LONGITUDINAL, (BACKSLOPE) 4 IN. DIA.
43	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.
44	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA.
45	2502-8220193	SUBDRAIN OUTLET (RF-19C)
46	2502-8220196	SUBDRAIN OUTLET, RF-19E
47	2502-8220197	SUBDRAIN OUTLET (RF-19F) Item includes payment for Porous Backfill and Class A Crushed Stone. See Tabulation 104-9 "Subdrain Shoulder and Backslope" on Sheet CS.X and Tabulation 104-5C "List of Subdrain Work" on Sheet CS.X.
48	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 15 IN. Refer to Standard Specification 2503 and see Tabulation 104-5B "Storm Sewer" on Sheet M.1 for details. Backfill under primary roadways applies to the full pavement width section including the travelway, shoulders, curb, and barrier. Trench excavation, bedding, and backfill for storm sewer placement will be considered incidental to the Storm Sewer Gravity Main Trenched items. Rock Excavation for trench construction will be measured and paid for separately. Refer to project cross-sections for locations of anticipated rock excavation.
49	2503-0500390	BRIDGE END DRAIN, RF-39 See Tabulation 104-8A "Scour Protection or Rock Flume for Bridge End Drain" on Sheet C.12 for additional information. Watering is considered incidental.
50	2504-0136024	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN. Item is for installation of 44" Sanitary Sewer Casing Pipe only. Casing shall meet requirements of Standard Specification 2553. Item includes furnishing and installing casing pipe, trench excavation, dewatering, furnishing and placing bedding and backfill material, and end seals. Refer to Sheet 0.3 for additional design details. Casing pipe to be sealed on each end per Standard Specification 2553. Payment will be for the linear feet of casing pipe satisfactorily installed.
51	2504-0136042	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 42 IN. Item is for installation of 60" Sanitary Sewer Casing Pipe only. Casing shall meet requirements of Standard Specification 2553. Item includes furnishing and installing casing pipe, trench excavation, dewatering, furnishing and placing bedding and backfill material, and end seals. Refer to Sheet 0.2 for additional design details. Casing pipe to be sealed on each end per Standard Specification 2553. Payment will be for the linear feet of casing pipe satisfactorily installed.
52	2506-4984000	FLOWABLE MORTAR Item is for construction of concrete roadway pipe culverts. See Tabulation 104-3 "Drainage Structure by Road Contractor" on Sheet C.10 for details.
53	2507-3250005	ENGINEERING FABRIC Includes XXXX SY for construction of rock slash basins and XXXX SY for construction of rock ditches. See Tabulation 100-23 "Rock Ditch Checks/Ditches/Flumes/Splash Basins/Slope Protection" on Sheet C.10.
54	2507-6800061	REVTMENT, CLASS E Item includes revetment for rock ditch and splash basins. See Tabulation 100-23 "Rock Ditch Checks/Ditches/Flumes/Splash Basins/Slope Protection" on Sheet C.10.
55	2507-8029000	EROSION STONE Includes XXXX tons for construction of rock slash basins and XXXX tons for construction of rock ditches. See Tabulation 100-23 "Rock Ditch Checks/Ditches/Flumes/Splash Basins/Slope Protection" on Sheet C.10.

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
56	2510-6745850	REMOVAL OF PAVEMENT See Tabulation 110-1 "Removal of Pavement" and Tabulation 102-5 "Existing Pavement" on Sheet C.11 for details. Removed pavement shall become the property of the Contractor and removed from the project site.
57	2518-6910000	SAFETY CLOSURE See Tabulation 108-13A "Safety Closure" on Sheet C.10 for locations and details.
58	2520-3350010	FIELD LABORATORY
59	2520-3350015	FIELD OFFICE Refer to Standard Specification 2520.
60	2526-8285000	CONSTRUCTION SURVEY Prior to construction, perform a survey to lay out the proposed grading design per Standard Specification 2526. The contractor may choose to use automated machine guidance construction. Refer to Standard Specification 1105.17.  If automated machine grading is used, after finished grading and prior to seeding, the Contractor shall prepare a topographic survey, using the established baselines to show conformance to the proposed grades. The survey shall include the established baselines and the finished grades shown in 0.5 foot contours. Survey all grading areas, including stockpile areas. The Contractor shall provide the Engineer with the electronic file (TIN file or ASCII file).  Survey right-of-way line between permanent right-of-way corners at 100 foot intervals or less if needed. Mark these points by placement of lath to clearly identify the right-of-way line. Permanent right-of-way corners will be surveyed and marked in the field by the Engineer.
61	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE Item includes furnishing, maintaining, moving, and removal of temporary barrier rail during the grading of IA 100 mainline. Refer to J Sheets for additional details. Refer to Standard Specification 2528.03.F.
62	2528-8445110	TRAFFIC CONTROL Refer to the traffic control plan on Sheet J.X. Payment for traffic control will be the contract unit price. See Standard Specification 2528.
63	2533-4980005	MOBILIZATION Payment will be based on the contract unit price per Standard Specification 2533.
64	2552-0000140	ROCK EXCAVATION Item is for Rock Excavation for storm sewer trench construction. Excavated rock shall become the property of the contractor and removed from the project site. Production Blasting is allowed with prior approval from the Engineer. If used, Production Blasting will be considered incidental to Rock Excavation for trench construction.
65	2554-0132024	WATER MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN. Item is for installation of casing pipe only south of Ellis Road. Item includes furnishing and installing the casing pipe, trench excavation, dewatering, furnishing and placing backfill and bedding material, and end seals. Refer to Sheet 0.1 for additional details.
66	2590-0000020	PROJECT MANAGEMENT Refer to SP-120106, Special Provisions for Project Management, for details.
67	2601-2634100	MULCHING Mulching shall be applied as described in Standard Specification 2601. After seeding, mulch all areas disturbed by clearing and grubbing and grading operations.
68	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING Refer to Standard Specification 2601 for details.
69	2602-0000020	SILT FENCE Refer to Tabulation 100-17 "Tabulation of Silt Fence" on Sheet C.9. 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.
70	2602-0000030	SILT FENCE FOR DITCH CHECKS Refer to Tabulation 100-18 "Tabulation of Silt Fence for Ditch Checks" on Sheet C.9. 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.
71	2602-0000050	SILT BASINS Refer to Tabulation 100-14 "Silt Basins" on Sheet C.9. The tabulation includes estimated locations for placement of "Silt Basins" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 100% additional quantity for field adjustments and maintenance.

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
72	2602-0000071	<p>REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.</p> <p>Includes 269 feet of silt fence previously placed by Others as shown on Sheet U.X. Removed silt fence will become the property of the Contractor.</p>
73	2602-0000101	<p>MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the grading project.</p>
74 75	2602-0000312 2602-0000320	<p>PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. Refer to Standard Specification 2602. These temporary erosion control devices can be used when weather, site conditions, or contractor staging do not lend themselves to silt fence placement. Prior to placement, the Engineer shall approve placement of these devices in lieu of silt fence. All perimeter and slope sediment control devices shall be removed and replaced with silt fence prior to the end of construction unless approved by the Engineer. Quantity estimated using a minimum of 200' or 10% of the silt fence quantity up to a maximum of 1000 feet for each of the 12-inch and 20-inch perimeter and slope sediment control devices. Installation of silt fence in place of these devices will be paid for at the contract unit price for Silt Fence and per Standard Specification 2602.</p>
76 77	2602-0010010 2602-0010020	<p>MOBILIZATION, EROSION CONTROL MOBILIZATION, EMERGENCY EROSION CONTROL See Standard Specification 2602.</p>

**STANDARD ROAD PLANS**

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

Number	Date	Title
EC-201	04-20-10	Silt Fence
EC-204	10-16-12	Perimeter and Slope Sediment Control Devices
EW-102	10-15-13	Allowable Placement of Unsuitable Soil in Embankments
EW-110	10-15-13	Ditch Blocks and Dikes
EW-203	04-17-12	Bridge Berm Grading with Recoverable Slope (Non-Barrnroof Section)
EW-301	04-19-11	Guardrail Grading
EW-401	04-15-14	Temporary Stream Crossing, Causeway, or Equipment Pad
EW-403	10-15-13	Temporary Erosion Control Measures
EW-501	10-15-13	Rural Entrance
EW-502	10-15-13	Safety Ramp
EW-503	04-15-14	Side Road Grading
PV-302	04-17-12	Superelevation Details Four Lane Roadway Depressed Median
PV-303	04-19-11	Superelevation Details Ramps
PV-410	10-18-11	Deceleration Taper for 16' Exit Ramp
PV-411	10-18-11	Acceleration Taper for 16' Entrance Ramp
RF-2	04-15-14	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
RF-3	10-15-13	Concrete Aprons
RF-13	10-18-11	Pipe Bends and Half Pipe
RF-14	04-16-13	Connected Pipe Joints
RF-19C	10-16-12	Subdrains (Longitudinal)
RF-19E	10-16-12	Outlets for Longitudinal, Transverse and Backslope Subdrains
RF-26	10-15-13	Pipe Apron Guard
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-30D	04-15-14	Box Culvert (Backfill)
RF-31	03-28-95	Depth of Cover Tables for Concrete Pipe
RF-42	04-15-14	Low Clearance Concrete Pipe Aprons
SW-101	04-21-09	Trench Bedding and Backfill Zones
SW-102	04-21-09	Rigid Gravity Pipe Trench Bedding
SW-401	04-21-09	Circular Storm Sewer Manhole
SW-508	10-20-09	Single Open-Throat Intake, Large Box
SW-510	10-18-11	Double Open-Throat Curb Intake, Large Box
SW-546	04-19-11	Single Open-Throat Barrier Intake
SW-602	04-15-14	Castings for Storm Sewer Manholes
SW-603	10-15-13	Castings for Grate Intakes
SW-604	10-20-09	Castings for Area Intakes
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-252	04-17-12	Routes Closed to Traffic
TC-273	04-20-10	Construction Site Entrance

**INDEX OF TABULATIONS**

Tabulation	Tabulation Title	Sheet No.
100-1C	ESTIMATED PROJECT QUANTITIES	C.1-C.2
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.3-C.5
100-7	FENCING	C.12
100-14	SILT BASINS	C.9
100-16	TABULATION OF INTERCEPTING DITCHES	C.9
100-17	TABULATION OF SILT FENCES	C.9
100-18	TABULATION OF SILT FENCES FOR DITCH CHECKS	C.9
100-23	ROCK DITCH CHECKS/DITCHES/FLUMES/SPLASH BASINS/SLOPE PROTECTION	C.10
102-3	ACCESS POINTS AND SAFETY RAMPS	C.11
102-5	EXISTING PAVEMENT	C.11
104-3	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.10
104-8A	SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN	C.12
105-4	STANDARD ROAD PLANS	C.6
107-23	GRADING FOR GUARDRAIL INSTALLATIONS	C.11
108-13A	SAFETY CLOSURES	C.10
108-33	TEMPORARY BARRIER RAIL	C.12
110-1	REMOVAL OF PAVEMENT	C.11
111-25	INDEX OF TABULATIONS	C.6
110-12A	POLLUTION PREVENTION PLAN	C.7
213-3	SUBSOIL TILLAGE	C.8
232-6	EROSION CONTROL (SELECTIVE CLEARING)	C.8
232-9	THREATENED/ENDANGERED BATS	C.8
232-10	EMERALD ASH BORER	C.8
254-1	INCIDENT MANAGEMENT	C.8
262-5	UTILITIES (POINT 25 PROJECT)	C.8
281-1	SECTION 404 PERMIT AND CONDITIONS	C.8
282-1	RESTRICTED STREAM ACCESS	C.8
ROW	ROW	C.8



**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 construction of IA 100 Phase II construction packages.
- B. This PPP covers approximately 309 acres with an estimated 219 acres being disturbed. The portion of the PPP covered by this contract has 58 acres disturbed.
- C. The PPP is located in an area of 2 soil associations - (1) Kenyon-Clyde-Floyd and (2) Dinsdale-Klinger. The estimated average SCS runoff curve number for this PPP after completion will be 69.
- 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 Morgan Creek and Silver Creek.

**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.

232-6  
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.

232-10  
Modified

**EMERALD ASH BORER**

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

232-9  
Modified

**THREATENED/ENDANGERED BATS**

Cut down all trees included in Clearing and Grubbing after September 30 and before April 1. These trees may be inhabited by State and Federal listed threatened/endangered bat species. Removing a tree between April 1 and September 30 being used by a listed bat constitutes a "taking" of a protected species, which is punishable by law.

254-1  
10-02-01

**INCIDENT MANAGEMENT**

An incident management plan, provided by the District Office, will be discussed at the pre-construction conference.

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.

NEW

**ROW**

Locations identified as Proposed ROW delineates the limits of the ROW to be purchased by the State. Locations identified as Future ROW delineates the ultimate ROW for the project. The contractor shall not disturb areas beyond the Future ROW limit or beyond construction limits specified in the contract documents.

281-1  
10-15-13

**SECTION 404 PERMIT AND CONDITIONS**

Construct this project according to the requirements of U.S. Army Corps of Engineers \_\_\_\_\_, Permit No. \_\_\_\_\_. 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.

282-1  
10-19-10

**RESTRICTED STREAM ACCESS**

A low water crossing for the Contractor's convenience is not allowed on this project. Stream bank disturbance and access to "Name of Creek, Stream, or River" is not allowed unless specifically designated in the plans. No other access will be allowed.

100-17  
04-20-10

### TABULATION OF SILT FENCES

Refer to EC-201

Location			Length LF	Remarks
Begin Station	End Station	Side		
IA 100				
848+50.00	849+27.30	LT	109.2	J-Hook
854+28.01	854+26.00	RT	69.1	Start, J-Hook
854+26.00	854+95.97	RT	143.3	J-Hook
854+95.97	856+94.93	RT	200.0	End
845+35.00		LT	62.8	Inlet Protection
848+45.00		LT	62.8	Inlet Protection
Covington Ramp C				
33593+00.00		LT	62.8	Inlet Protection
33595+00.00		LT	62.8	Inlet Protection
33597+00.00		LT	62.8	Inlet Protection
33598+00.00		LT	62.8	Inlet Protection

100-16  
10-19-10

### TABULATION OF INTERCEPTING DITCHES

Location			Length LF	Remarks
Station to Station		Side		
Covington Ramp C				
33592+75.00	33598+18.41	LT	546.9	

100-14  
10-15-13

### SILT BASINS

Refer to EW-403

Location Station	Side	Remarks
IA 100		
822+14.00	RT	
822+90.00	LT	
823+55.00	LT	
836+08.00	LT	
836+76.00	LT	
836+78.00	RT	
837+46.00	RT	
848+21.00	LT	
848+21.00	RT	
887+79.00	LT	
888+54.00	LT	
890+12.00	RT	
890+90.00	RT	
Covington B		
32598+18.00	RT	
32598+21.00	LT	
32598+79.00	LT	
32598+82.00	RT	

100-18  
04-20-10

### TABULATION OF SILT FENCES FOR DITCH CHECKS

Refer to EC-201

Location Station	Side	Length LF	Remarks
IA 100			
811+25.00	LT	25.0	
811+25.00	MED	30.9	
811+25.00	RT	25.0	
818+75.00	RT	25.0	
819+00.00	LT	25.0	
819+25.00	MED	30.9	
820+25.00	RT	25.0	
820+50.00	LT	25.0	
820+75.00	MED	30.9	
821+00.00	LT	25.0	
821+00.00	RT	25.0	
821+50.00	MED	30.9	
821+60.00	LT	19.8	
821+75.00	RT	25.0	
822+25.00	MED	30.9	
822+35.00	LT	18.6	
822+45.00	RT	25.0	
823+10.00	LT	25.0	
823+50.00	MED	30.9	
824+25.00	MED	30.9	
824+25.00	RT	25.0	
825+00.00	MED	30.9	
825+00.00	RT	25.0	
825+50.00	LT	25.0	
825+75.00	MED	30.9	
825+75.00	RT	25.0	
826+45.00	MED	30.9	
826+45.00	RT	25.0	
827+00.00	LT	25.0	
827+25.00	RT	25.0	
828+00.00	MED	30.9	
828+00.00	RT	25.0	
828+50.00	LT	25.0	
828+75.00	MED	30.9	
828+75.00	RT	25.0	
829+50.00	MED	30.9	
829+50.00	RT	25.0	
830+00.00	LT	25.0	
830+25.00	MED	30.9	
830+25.00	RT	25.0	
830+75.00	LT	25.0	
831+00.00	MED	30.9	
831+00.00	RT	25.0	
831+50.00	LT	25.0	
831+75.00	MED	30.9	
831+75.00	RT	25.0	
832+25.00	LT	25.0	
832+50.00	MED	30.9	
832+50.00	RT	25.0	
833+00.00	LT	25.0	
833+25.00	MED	30.9	
833+75.00	LT	25.0	
834+00.00	RT	34.9	
834+75.00	LT	25.0	
834+75.00	MED	30.9	
835+50.00	RT	28.0	
836+25.00	LT	25.0	
836+50.00	LT	24.9	
837+00.00	RT	21.7	
838+20.00	MED	31.5	
841+75.00	RT	25.9	
842+50.00	RT	19.8	
842+85.00	LT	25.0	
843+25.00	LT	24.6	
843+25.00	RT	12.6	
844+00.00	LT	25.0	
844+00.00	RT	12.0	
844+75.00	LT	25.0	
844+75.00	RT	12.0	
845+50.00	RT	12.0	
845+70.00	LT	22.0	
846+25.00	RT	12.0	
846+45.00	LT	22.0	
846+85.00	LT	22.0	
847+00.00	RT	15.5	
847+25.00	LT	22.0	
847+70.00	RT	18.8	
848+40.00	LT	22.0	
848+45.00	RT	19.9	

100-18  
04-20-10

### TABULATION OF SILT FENCES FOR DITCH CHECKS

Refer to EC-201

Location Station	Side	Length LF	Remarks
855+25.00	MED	27.9	
856+00.00	MED	26.2	
857+50.00	MED	28.9	
859+00.00	MED	30.9	
860+50.00	MED	30.9	
861+75.00	RT	25.0	
862+00.00	MED	30.9	
862+00.00	RT	25.0	
862+50.00	RT	25.0	
863+25.00	RT	25.0	
863+80.00	LT	25.0	
865+25.00	LT	25.0	
866+00.00	MED	30.9	
866+75.00	LT	25.0	
867+50.00	MED	30.9	
868+25.00	LT	25.0	
869+00.00	MED	30.9	
869+75.00	LT	25.0	
870+50.00	MED	30.9	
872+00.00	LT	25.0	
872+75.00	LT	25.0	
873+50.00	LT	25.2	
874+25.00	LT	25.0	
874+35.00	RT	25.0	
874+60.00	RT	25.0	
874+85.00	RT	25.0	
875+00.00	LT	25.0	
875+10.00	RT	26.7	
875+35.00	RT	25.0	
875+50.00	LT	25.0	
875+60.00	RT	25.0	
876+25.00	RT	25.0	
876+50.00	LT	25.0	
877+00.00	RT	25.0	
877+75.00	RT	25.0	
878+00.00	LT	25.0	
878+50.00	RT	25.0	
878+75.00	LT	25.0	
879+25.00	RT	25.0	
879+40.00	LT	25.0	
879+80.00	LT	25.0	
884+50.00	LT	21.0	
885+25.00	RT	25.0	
886+00.00	LT	25.0	
886+50.00	RT	25.0	
887+25.00	RT	25.0	
887+50.00	LT	25.0	
888+15.00	RT	25.0	
888+50.00	LT	25.0	
894+75.00	LT	54.2	
896+25.00	LT	89.8	
897+70.00	MED	30.5	
897+75.00	RT	116.5	
897+80.00	LT	120.9	
898+45.00	RT	123.5	
898+60.00	RT	126.8	
Covington B			
32590+00.00	RT	25.0	
80th North			
3100+85.00	RT	14.0	
3101+60.00	RT	14.0	
3102+75.00	RT	14.0	
3104+65.00	RT	14.0	
3106+00.00	RT	14.0	
3107+50.00	RT	14.0	
3111+20.00	RT	14.0	
3111+95.00	RT	14.0	
3112+70.00	RT	14.0	
3113+10.00	RT	14.0	
3113+50.00	RT	14.0	
3113+90.00	RT	14.0	
3114+30.00	RT	14.0	
3114+70.00	RT	14.0	
3115+10.00	RT	14.0	
3115+50.00	RT	14.0	
3115+90.00	RT	14.0	
3116+00.00	RT	14.0	

\* 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 Road Identification	Station	Side Lt./Rt.	Mandatory* Location (yes or no)	Type					L FT	W FT	Material			Remarks
				Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection			Erosion Stone	Class E Revetment	Eng. Fabric	
IA 100	822+45.00	Rt.	Yes				X		12.0	26.0	36.7		38.8	
IA 100	823+22.00	Lt.	Yes				X		12.0	14.0	19.4		22.8	
IA 100	836+41.00	Lt.	Yes				X		14.0	20.0	32.8		36.0	
IA 100	837+12.00	Rt.	Yes				X		13.8	11.3	17.9		22.2	
IA 100	842+50.00	Lt.	Yes				X		51.6	10.0	99.1		118.7	
IA 100	845+35.00	Lt.	Yes			X			12.0	15.0	20.9		24.2	
IA 100	861+75.00	Rt.	Yes			X			52.5	10.0	100.8		120.8	
IA 100	874+24.00	Rt.	Yes			X			61.8	10.0	118.7		142.2	
IA 100	875+00.00	Rt.	Yes			X			71.5	10.0	137.2		164.4	
IA 100	888+14.00	Lt.	Yes				X		16.0	26.0	49.0		51.8	
IA 100	890+50.00	Rt.	Yes				X		16.0	26.0	49.0		51.8	
Covington Ramp B	32598+50.00	Rt.	Yes				X		14.0	18.0	29.4		32.9	
Covington Ramp C	33599+85.00	Lt.	Yes				X		14.0	15.0	24.4		28.2	
Covington Ramp C	33599+85.00	Rt.	Yes				X		14.0	26.0	42.8		45.3	

100-23  
10-19-10

### SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
IA 100			
811+00.00		2	Beginning of Project
848+80.00		2	Ellis Road Bridge
854+82.00		2	Ellis Road Bridge
80th St North			
3100+10.00	1		80th Street Road Closure
3117+21.00	1		80th Street Road Closure

108-13A  
08-01-08

### DRAINAGE STRUCTURE BY ROAD CONTRACTOR

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

\* Not a bid item

(1) Diameter or equivalent diameter

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

Drainage Area ACRE	Location	Type	Size ① IN	Kind Of Pipe ②	Length New Const. LF	Bedding Class	Design Cover (H) FT	Camber* (RF-30B) 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) No.	Connected Pipe Joint* (RF-14) No.	4" Perforated Subdrain* No.	Flow Line Elevations				Dimensions Lin. Ft.				Skew Ahead Degrees		Dike				Class 20 CY	Flowable Mortar CY	Floodable* Backfill CY (A)	Porous* Backfill CY (B)	Flooded Backfill CY (A+B)	Remarks						
																			Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Rt.	Location Station							Top Elevation	Type	Flowable Mortar CY	Floodable* Backfill CY (A)	Porous* Backfill CY (B)	Flooded Backfill CY (A+B)
																			FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT							FT	FT	FT	FT	FT	FT
7.9	822+84.62	1201	30	LCP	180	B	4.3		1	1							3		805.00	807.00	805.28		98.0	98.0			21	RT	822+90.00	809.60	M	261.1	23.0	110.4	16.8	127.2	(1)							
2.3	826+50.00	1201	24	RCP	72	B	3.2		1	1	1						3		800.34	798.98	799.24		38.1	46.1				MED	826+80.00	802.00	M	84.9	8.3	30.4	5.9	36.3	(2)							
39.9	836+77.90	1201	48	LCP	182	B	4.3		1	1							3		778.85	779.90	779.28		100.0	98.0			19																	
4.6	838+25.00	1201	24	RCP	72	B	3.0		1	1				1			3		781.92	780.62	781.08		38.1	46.1																				
12.9	848+50.00	1101	48	RCP	268	B	22.2		1	1							3		763.54	765.80			144.0	140.0																				
4.0	863+74.15	1201	24	RCP	74	B	3.6		1	1	1						3		765.49	767.68	766.41		48.1	38.1																				
376.4	875+18.00	RCB	12x4		255		19.3										3		759.90	758.65			131.0	124.0			7																	
2.5	886+00.00	1201	24	RCP	88	B	3.5		1	1	1			2			3		772.94	770.94	771.27		38.1	62.1				MED	886+25.00	774.80	M	107.1	11.8	47.1	7.1	54.2	F=94.13'							
51.5	889+20.51	1101	54	LCP	320	B	5.8		1	1							3		767.60	764.61			150.0	186.0			41																	
3.1	897+75.00	1201	24	RCP	76	B	5.3		1	1	1						3		763.01	766.30	763.24		52.1	36.1																				
30.1	898+50.00	1101	42	RCP	176	B	5.2		1	1							3		762.51	761.40			94.0	98.0																				
34.2	32598+50.00	1101	42	RCP	168	B	20.4		1	1							3		760.91	758.97			98.0	86.0																				
21.5	33599+85.00	1201	36	RCP	122	B	13.2		1	1							3		776.43	766.79	766.83		48.0	90.0																				
28.1	3104+58.00	1101	48	LCP	52	B	2.6		1	1							3		779.98	782.96			34.0	34.0																				
10.4	3115+95.00	1101	42	LCP	28	B	1.7		1	1	2						3		765.80	766.00			22.0	22.0																				

- Notes:  
(1) F=110', 1-1° Elbow  
(2) F=78.13', 1-10° Elbow  
(3) F=146', 1-1° Elbow  
(4) F=80.13', 1-11° Elbow  
(5) F=36.13', 1-3° Elbow  
(6) F=30', 1-3° Elbow

104-3  
04-15-14

**EXISTING PAVEMENT**

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks		
	County	Route	Dir. of Travel	Begin Milepost	End Milepost				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type		Durability Class	Type

**ACCESS POINTS AND SAFETY RAMPS**

Refer to Cross-Sections

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

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

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

Location		Type	Length of Opening ①			Pipe Culvert ③			Aprons		Driveway Surface Area		Driveway Surfacing Material	Remarks				
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1 1/2" Dropped Curb	3" Dropped Curb	W	① PR	② SR	H	Size	Pipe Length	Lt.	Rt.		No.	HMA	PCC	TON
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF			SY	SY	
3108+50.00	RT	C				15.0		15.0										25.200
Across from 80th N? Safety Ramp																		

**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	EB	848+66.25	LT	6:1	27.5	5.4	52.4	7.9	164.9	7.9	215.0	9.5	55.6			
2	EB	848+66.25	RT	6:1/3:1	27.5	5.4	52.4	7.9	164.9	7.9	215.0	9.5	55.6			
3	WB	854+95.75	LT	6:1/3:1	27.5	5.4	52.4	7.9	164.9	7.9	215.0	9.5	55.6			
4	WB	854+95.75	RT	6:1	27.5	5.4	52.4	7.9	164.9	7.9	215.0	9.5	55.6			

**REMOVAL OF PAVEMENT**

Refer to Tabulation 102-5

\* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	
3108+13.66	3117+11.41			2799.3		80th Street North

**SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN**

104-8A  
04-20-10

① Not a Bid Item

Refer to Standard Road Plan RF-39 or RF-40

Location			Shoulder				Rock Flume RF-40			Scour Protection RF-39		Remarks
Bridge Station	Bridge Corner	Distance DI-1 or DI-2	Panels Required				Macadam Stone Base ①	Engineering Fabric ①	Erosion Stone ①	Outlet or Channel Scour Protection	Turf Reinforced Mat (TRM)	
			A	B	C	D						
851+81.00	SE	36.9	A						32.0	1.9	IA 100 Westbound Bridge	
851+81.00	SW	16.9	B						32.0	2.1	IA 100 Eastbound Bridge	
851+81.00	SE	16.9	D						35.2	6.8	IA 100 Eastbound Bridge	
851+81.00	NW	16.9	A						32.0	5.8	IA 100 Westbound Bridge	
851+81.00	NE	16.9	B						32.0	2.0	IA 100 Westbound Bridge	
851+81.00	NW	16.9	A						32.0	1.9	IA 100 Eastbound Bridge	
851+81.00	NE	16.9	B						32.0	6.6	IA 100 Eastbound Bridge	

**FENCING**

100-7  
10-16-12

\* Bid Item

Refer to MI-101, MI-102, MI-103, MI-104, 510-3, and 510-5

Location				Side	Chain Link				Deer				Field				Channel Crossing		Remarks
From		To			Fence		Gate		Fence Length*	Brace Panels*	Gate		Fence Length*	Brace Panels*	Gate		Length*	Type	
Station	Offset	Station	Offset		Length*	Type	No.*	Type			No.*	Type			No.*	Type			
					LF		EACH			LF	EACH	EACH			LF				

**TEMPORARY BARRIER RAIL**

108-33  
04-16-13

Refer to BA-400 and BA-401

\* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

No.	Station to Station	Length LF	(Select One)		Anchored* (Y/N)	Remarks
			Steel BA-400	Concrete BA-401		
1		324.2	X		No	Ellis Rd
2		421.8	X		No	Existing 80th Street

### SURVEY SYMBOLS

- EW Edge of Water
- HDG Hedge Row
- HDG Hedge Row
- INB Storm Sewer Beehive Intake
- BNK Stream Bank
- ENU Edge Unpaved Entrance & Parking
- SNP Unpaved Shoulder
- FCL Chain Link and Security Fence
- FWD Wood Fence
- GDL Guard Rail (Rail and Cable)
- RR Centerline of Railroad Tracks
- RET Retaining Walls
- RIP Rip-Rap
- TEV Evergreen Tree
- TDC Tree Deciduous
- LUM Luminaire
- PPA Power Pole Co. 1
- SI Sign
- TA Tower Anchor
- SWP Swamp or Marsh
- MIS Miscellaneous
- UB Utility Box
- MH Utility Access (Manhole)
- IN Storm Sewer Intake
- TV Satellite TV Dish
- GP Guard Post (Less Than 4 Posts)
- FHD Fire Hydrants
- FLG Flag Poles
- TSG Traffic Signal

### UTILITY LEGEND

- E3 (Overhead) Alliant Energy  
Contact: Jason Hogan  
Phone: 608-458-4871
- E4 (Underground) Alliant Energy  
Contact: Jason Hogan  
Phone: 608-458-4871
- W (48" Dia.) City of Cedar Rapids  
Contact: Ken Russell  
Phone: 319-286-5956
- W2 (24" Dia.) City of Cedar Rapids  
Contact: Ken Russell  
Phone: 319-286-5956
- San. City of Cedar Rapids  
Contact: Dave Wallace  
Phone: 319-286-5910
- F0 Iowa Communications Network  
Contact: Larry Klawitter  
Phone: 515-725-4741
- E1 (Overhead) Linn County REC  
Contact: Len Tow  
Phone: 319-377-5754 (Ext: 275)
- E2 (Underground) Linn County REC  
Contact: Len Tow  
Phone: 319-377-5754 (Ext: 275)
- G MidAmerican Energy Co.  
Contact: Joe Retek  
Phone: 319-341-4457
- F03 (Overhead) Windstream/Paetec  
Contact: Dale Graff  
Phone: 641-269-7725
- F04 (Underground) Windstream/Paetec  
Contact: Dale Graff  
Phone: 641-269-7725
- T2 (Underground) Century Link/Qwest  
Contact: Carroll Wheaton  
Phone: 515-554-9711
- T3 (Underground) Century Link/Qwest  
Contact: Carroll Wheaton  
Phone: 515-554-9711
- F10 (Underground) Century Link/Qwest  
Contact: Carroll Wheaton  
Phone: 515-554-9711
- E5 (Overhead) ITC Midwest  
Contact: Chad Levi  
Phone: 319-297-6765
- F07 Atkins Telephone Coop.  
Contact: Todd Christophersen  
Phone: 319-446-7331

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

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

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

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

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

- ### RIGHT-OF-WAY LEGEND
- Proposed Right-of-Way
  - Existing Right of Way
  - Existing and Proposed Right-of-Way
  - Easement and Existing Right-of-Way
  - Easement (Temporary)
  - Easement
  - Access Control
  - Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

For Profile Details  
Refer to Sheet No. D.3

CLINTON TWP.  
T-83N R-8W  
SEC.21



(REMOVE)  
Sta. 809+56.70, 87.90' Lt.  
20" X 19.70' D.I.P.  
Da = 10.11 a

(REMOVE)  
Sta. 809+86.40, 87.20' Lt.  
15" X 32.30' R.C.P.  
Da = 8.97 a

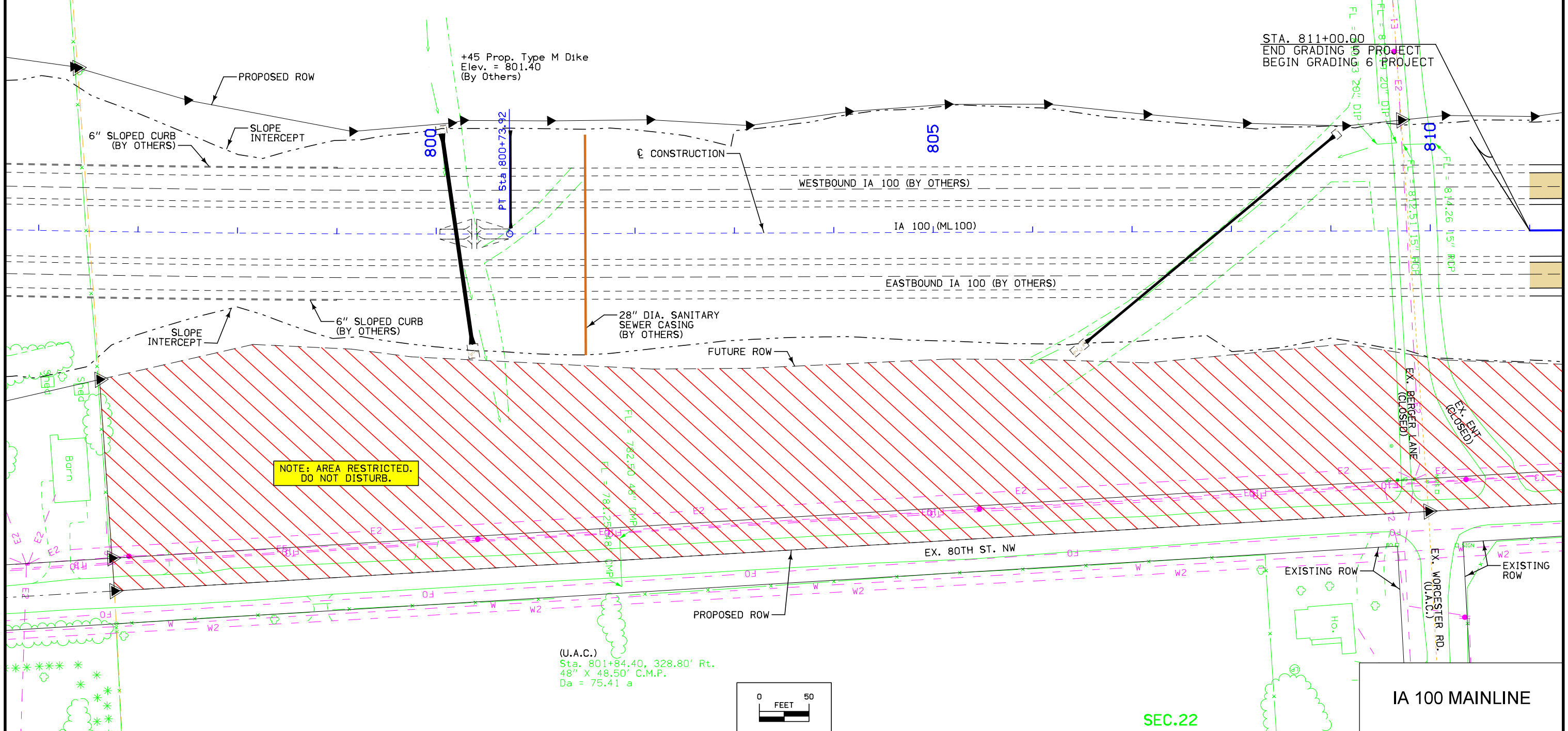
Sta. 800+20.29  
Install 48"x198' DR-601 RCP  
Skew = 8.1° Rt. Ahd.  
F.L. = Lt. 792.14  
Rt. 788.83  
(By Others)

Sta. 800+75.00  
Install 24"x86' DR-611 RCP  
F.L. = Lt. 792.97  
Rt. 799.44  
Other 793.51  
(By Others)

Sta. 807+87.89  
Install 30"x312' DR-601 RCP  
Skew = 50.5° Lt. Ahd.  
F.L. = Lt. 807.60  
Rt. 798.39  
(By Others)

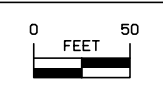
+45 Prop. Type M Dike  
Elev. = 801.40  
(By Others)

STA. 811+00.00  
END GRADING 5 PROJECT  
BEGIN GRADING 6 PROJECT



NOTE: AREA RESTRICTED.  
DO NOT DISTURB.

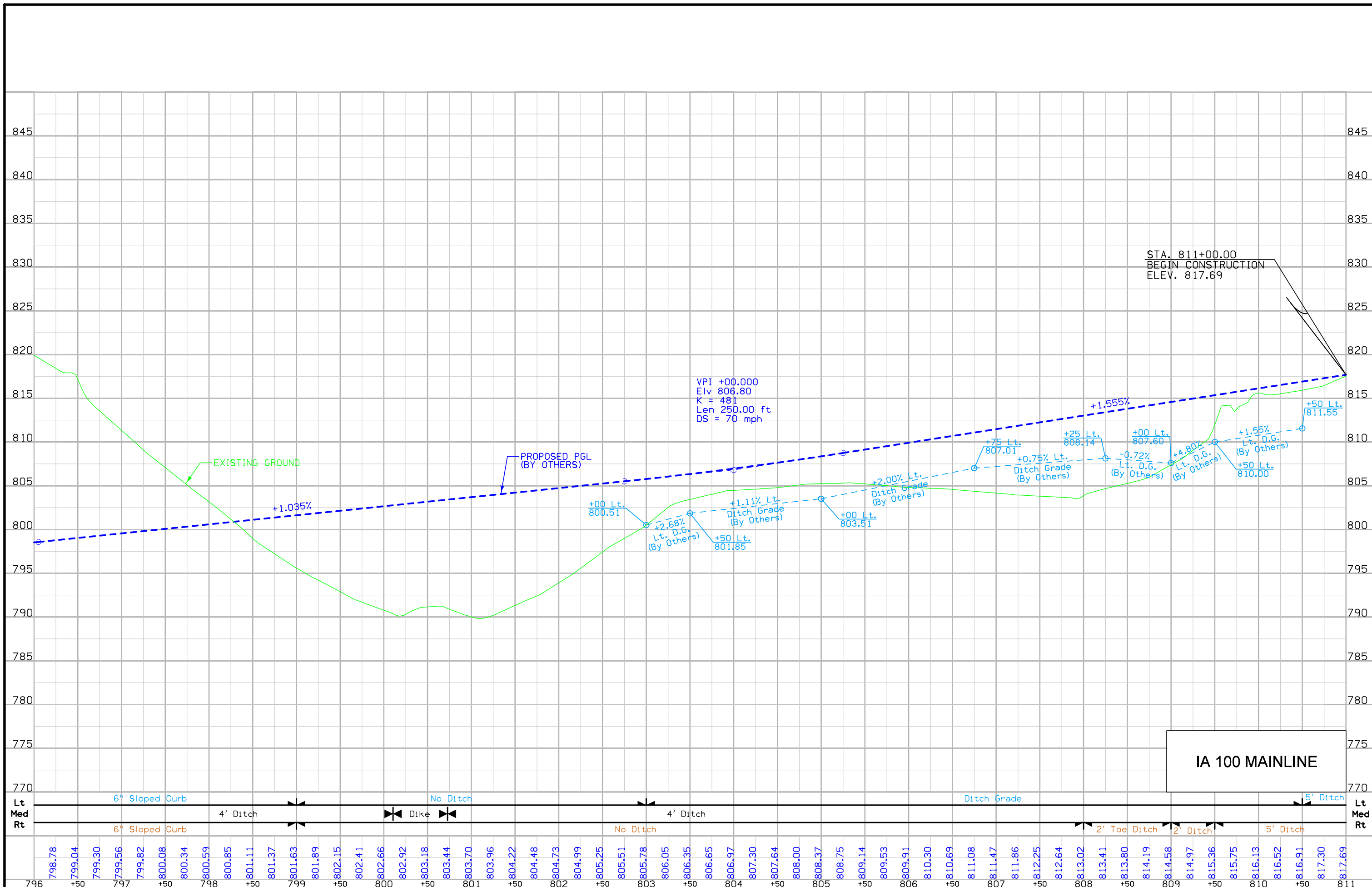
(U.A.C.)  
Sta. 801+84.40, 328.80' Rt.  
48" X 48.50' C.M.P.  
Da = 75.41 a



SEC.22

IA 100 MAINLINE





IA 100 MAINLINE

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER	NHSX-100-1(106)--3H-57	SHEET NUMBER	D.3
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For Profile Details  
Refer to Sheet No. D.5

CLINTON TWP.  
T-83N R-8W  
SEC.21

SEC.16



Sta. 822+84.62  
Install 37"x23"x180' DR-611 LCP  
Skew = 21.04° Lt. Ahd.  
Lt. 805.00  
F.L. = Rt. 807.00  
Other 805.28

+90 Rt. Prop. Type M Dike  
Elev. = 809.60

STA. 811+00.00  
END GRADING 5 PROJECT  
BEGIN GRADING 6 PROJECT

PROPOSED ROW

SLOPE INTERCEPT

815

CONSTRUCTION

820

825

ROCK SPLASH BASIN

WESTBOUND IA 100

IA 100 (ML100)

EASTBOUND IA 100

SLOPE INTERCEPT

NOTE: AREA RESTRICTED.  
DO NOT DISTURB.

FL = 816.28 24" CMP  
FL = 815.75 24" CMP

(U.A.C.)  
Sta. 813+15.60, 264.20' Rt.  
24" X 40.50' C.M.P.  
Da = 3.11 a

ROCK SPLASH BASIN

EX. 80TH ST. NW

EXISTING ROW

PROPOSED ROW

EXISTING ROW

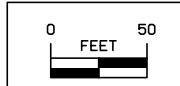
PROPOSED ROW

FL = 819.16 18" CMP

(U.A.C.)  
Sta. 822+68.00, 209.9' Rt.  
18" X 35.60' C.M.P.  
Da = 5.17 Ac

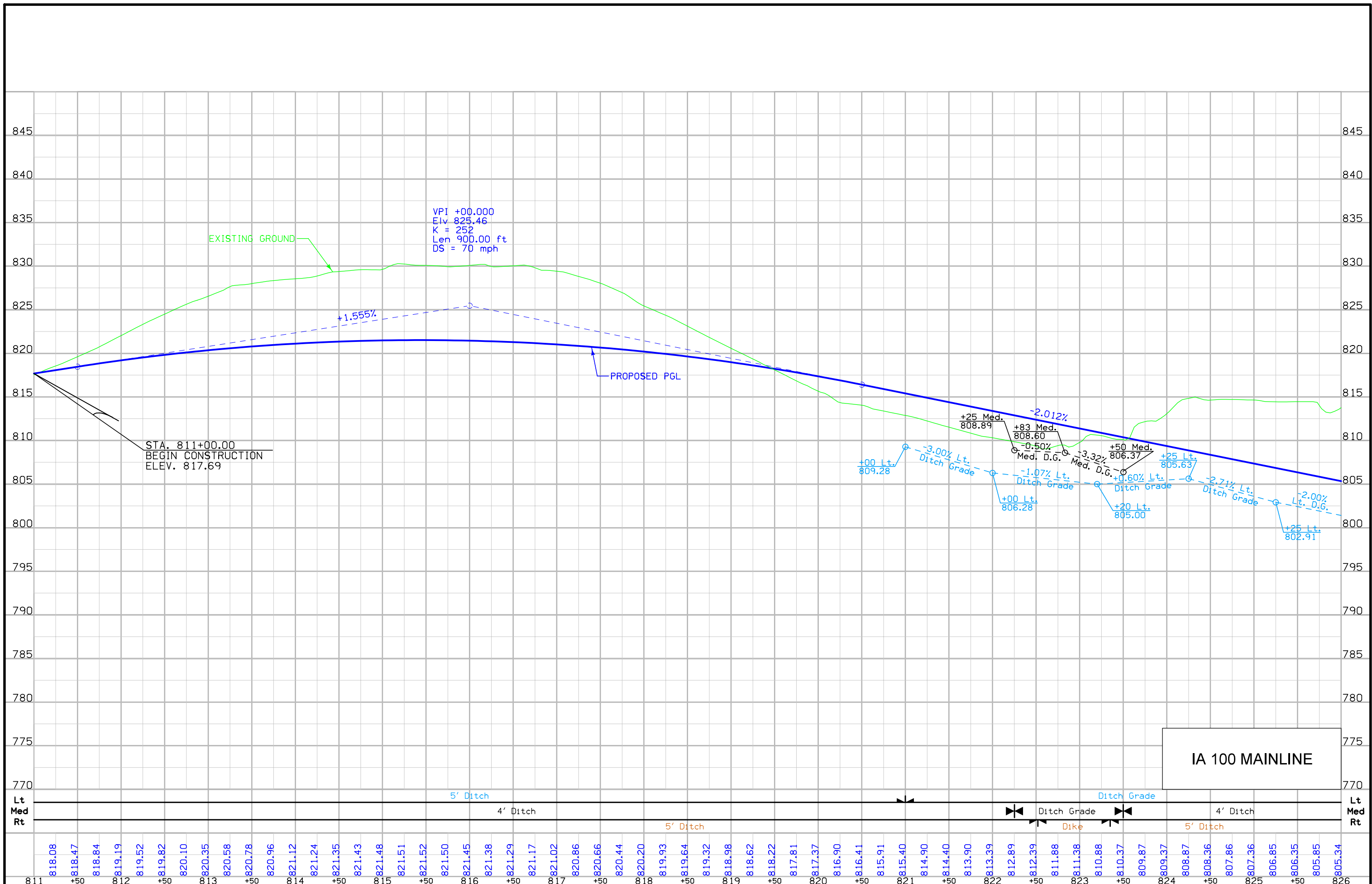
EX. WATERPLANT ENT. (U.A.C.)

EXISTING ROW



SEC.22

IA 100 MAINLINE



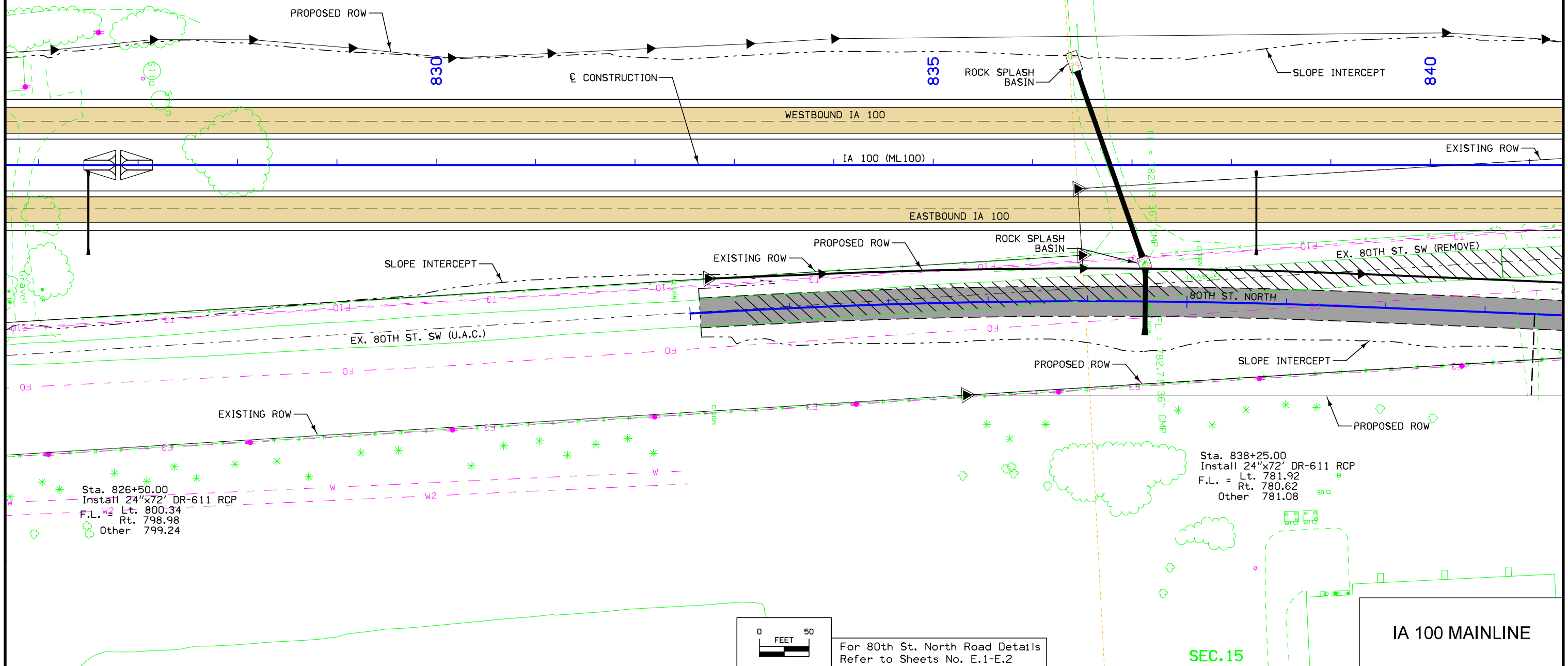
For Profile Details  
Refer to Sheet No. D.7

CLINTON TWP.  
T-83N R-8W  
SEC.16



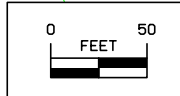
Sta. 836+77.90  
Install 59"x36"x182' DR-611 LCP  
Skew = 19.3° Rt. Ahd.  
Lt. 778.85  
F.L. = Rt. 779.90  
Other 779.28

+80 Prop. Type M Dike  
Elev. = 802.00



Sta. 826+50.00  
Install 24"x72' DR-611 RCP  
F.L. = Lt. 800.34  
Rt. 798.98  
Other 799.24

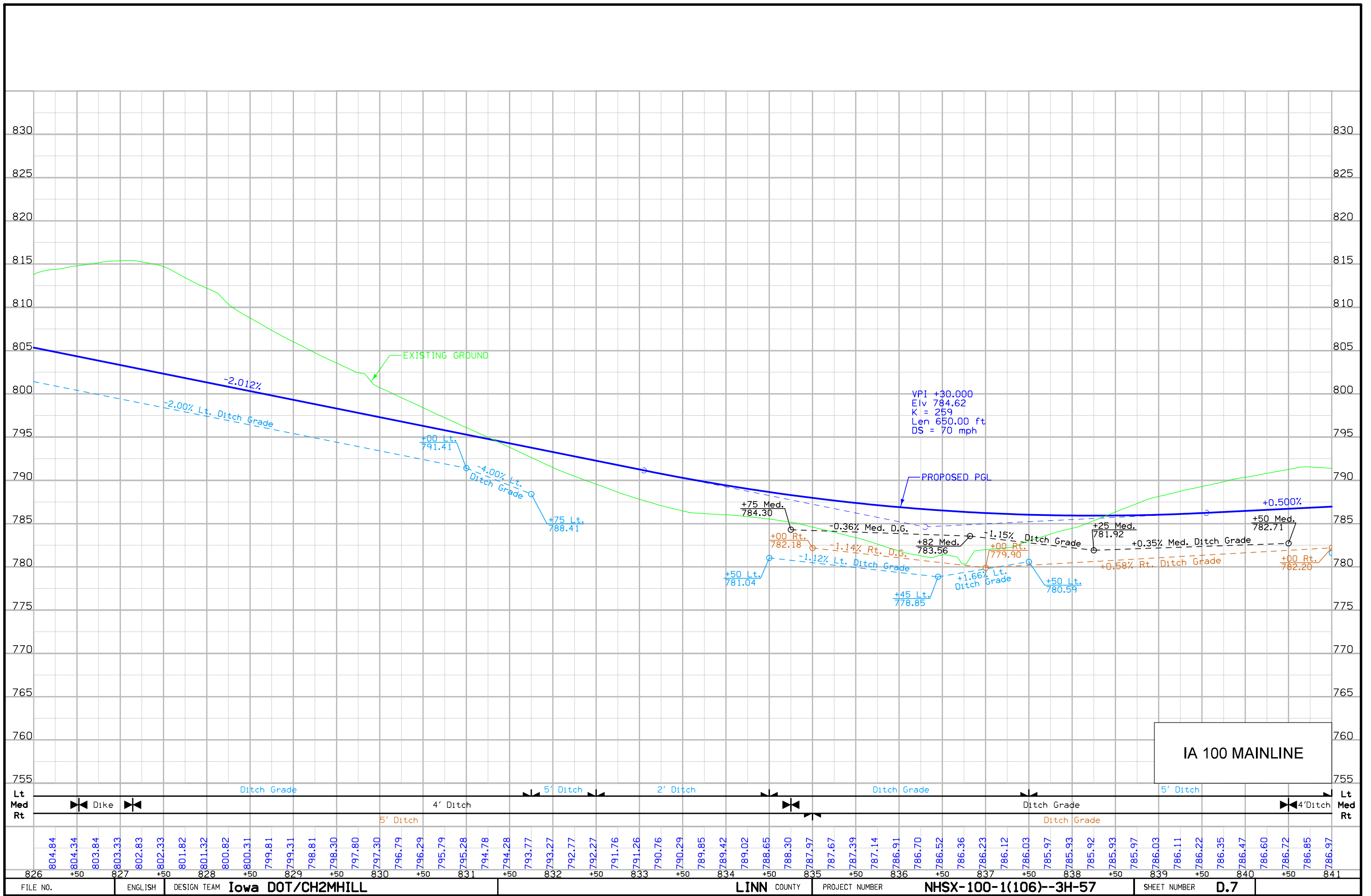
Sta. 838+25.00  
Install 24"x72' DR-611 RCP  
F.L. = Lt. 781.92  
Rt. 780.62  
Other 781.08



For 80th St. North Road Details  
Refer to Sheets No. E.1-E.2

SEC.15

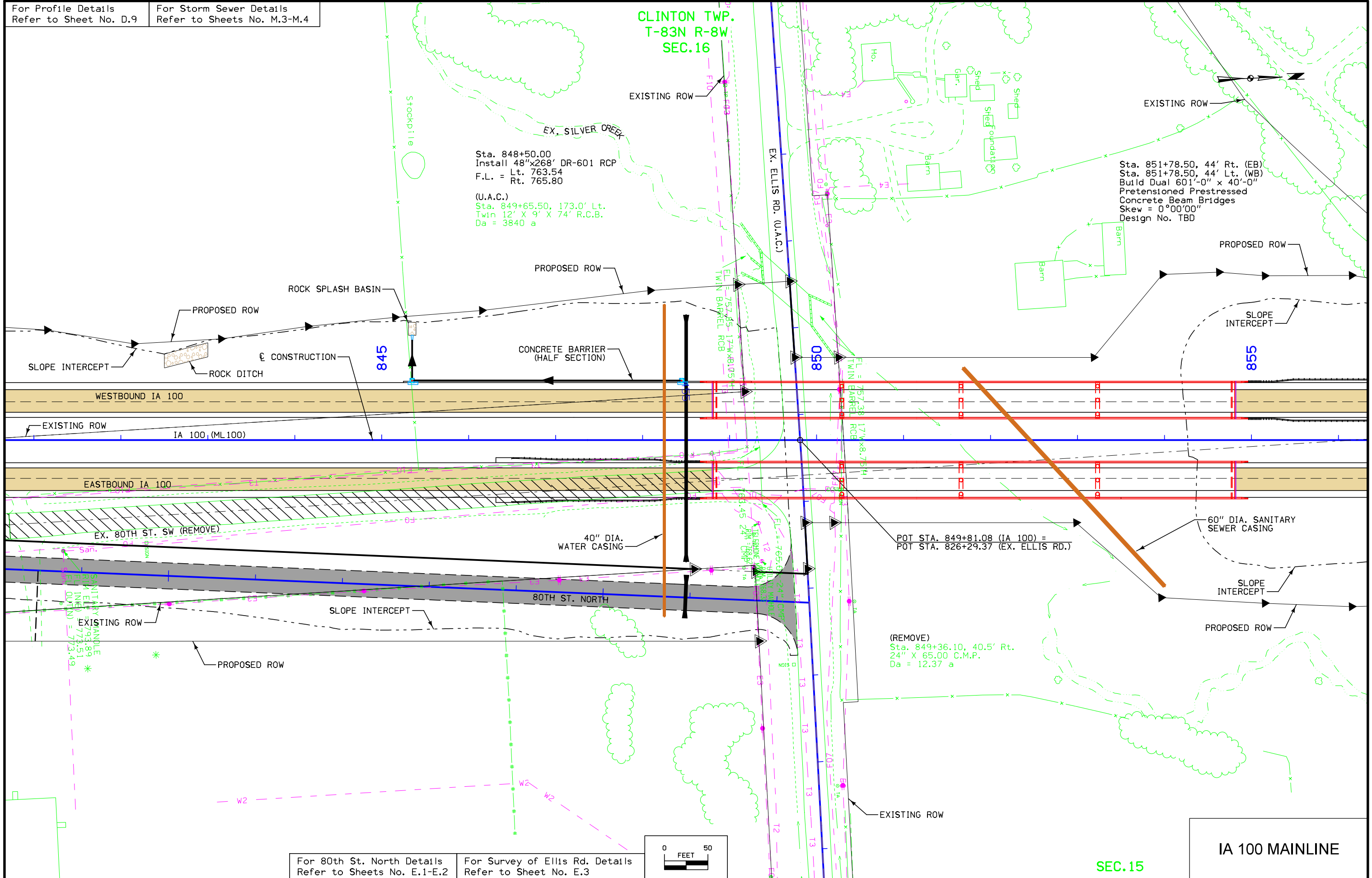
IA 100 MAINLINE



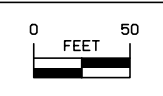
CLINTON TWP.  
 T-83N R-8W  
 SEC.16

Sta. 848+50.00  
 Install 48"x268' DR-601 RCP  
 F.L. = Rt. 763.54  
 (U.A.C.)  
 Sta. 849+65.50, 173.0' Lt.  
 Twin 12' X 9' X 74' R.C.B.  
 Da = 3840 a

Sta. 851+78.50, 44' Rt. (EB)  
 Sta. 851+78.50, 44' Lt. (WB)  
 Build Dual 601'-0" x 40'-0"  
 Prestensioned Prestressed  
 Concrete Beam Bridges  
 Skew = 0°00'00"  
 Design No. TBD

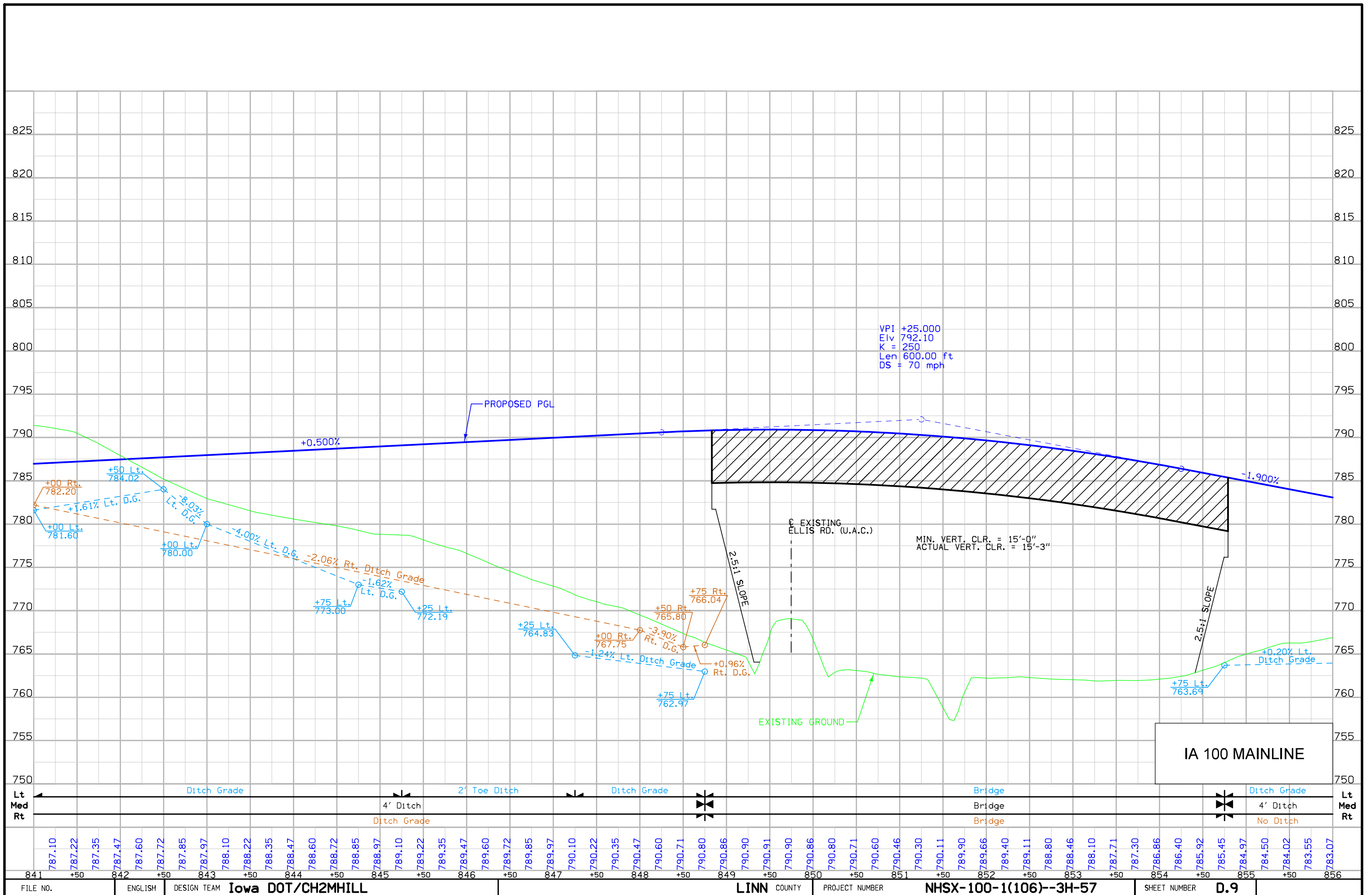


For 80th St. North Details Refer to Sheets No. E.1-E.2  
 For Survey of Ellis Rd. Details Refer to Sheet No. E.3



SEC.15

IA 100 MAINLINE



For Profile Details  
Refer to Sheet No. D.11

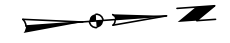
CLINTON TWP.  
T-83N R-8W  
SEC.16

Spiral Data

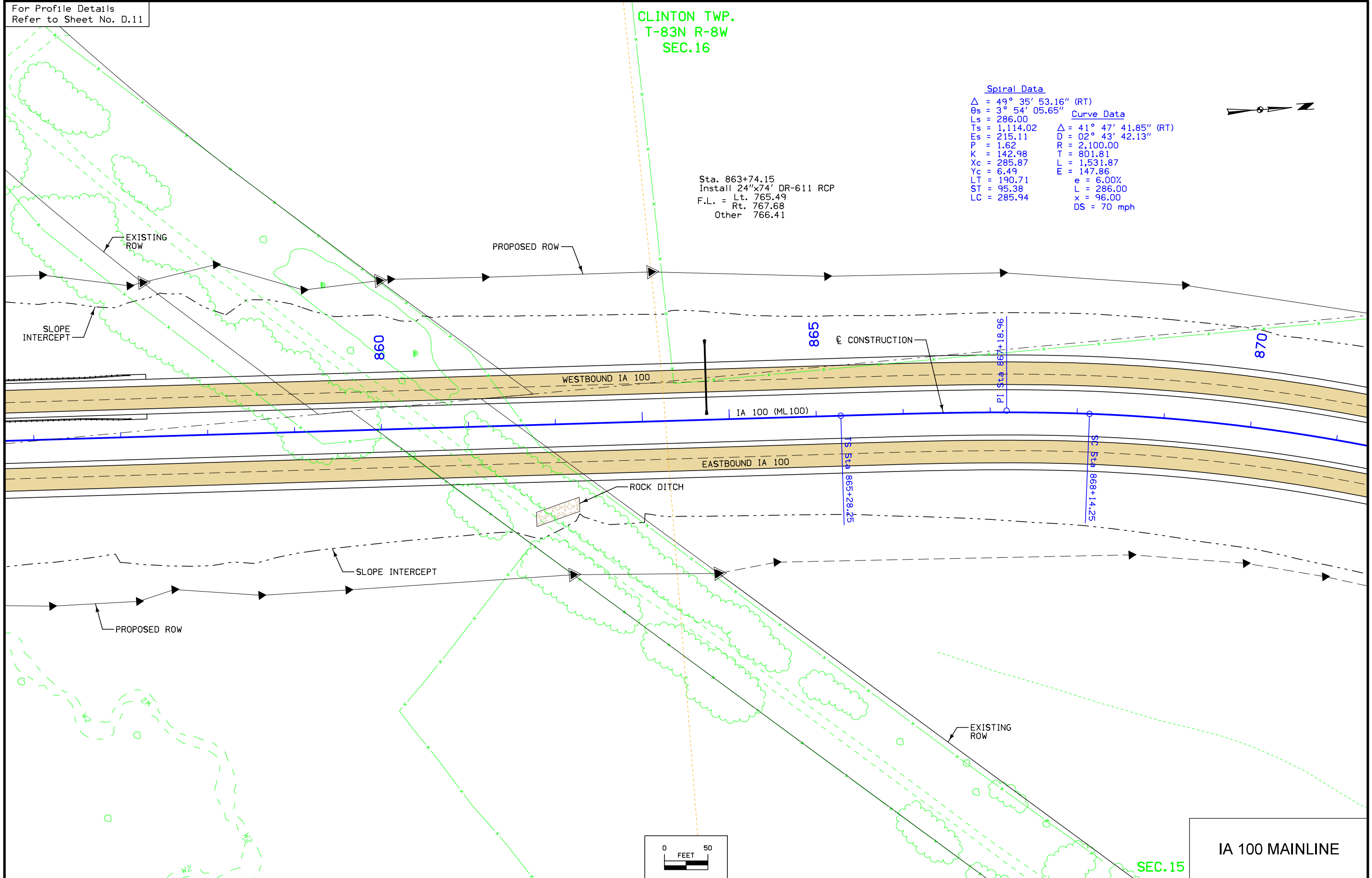
$\Delta = 49^\circ 35' 53.16''$  (RT)  
 $\theta_s = 3^\circ 54' 05.65''$   
 $L_s = 286.00$   
 $T_s = 1,114.02$   
 $E_s = 215.11$   
 $P = 1.62$   
 $K = 142.98$   
 $X_c = 285.87$   
 $Y_c = 6.49$   
 $LT = 190.71$   
 $ST = 95.38$   
 $LC = 285.94$

Curve Data

$\Delta = 41^\circ 47' 41.85''$  (RT)  
 $D = 02^\circ 43' 42.13''$   
 $R = 2,100.00$   
 $T = 801.81$   
 $L = 1,531.87$   
 $E = 147.86$   
 $e = 6.00\%$   
 $L = 286.00$   
 $x = 96.00$   
 $DS = 70$  mph

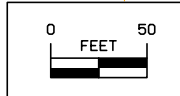


Sta. 863+74.15  
 Install 24"x74' DR-611 RCP  
 F.L. = Lt. 765.49  
       Rt. 767.68  
       Other 766.41

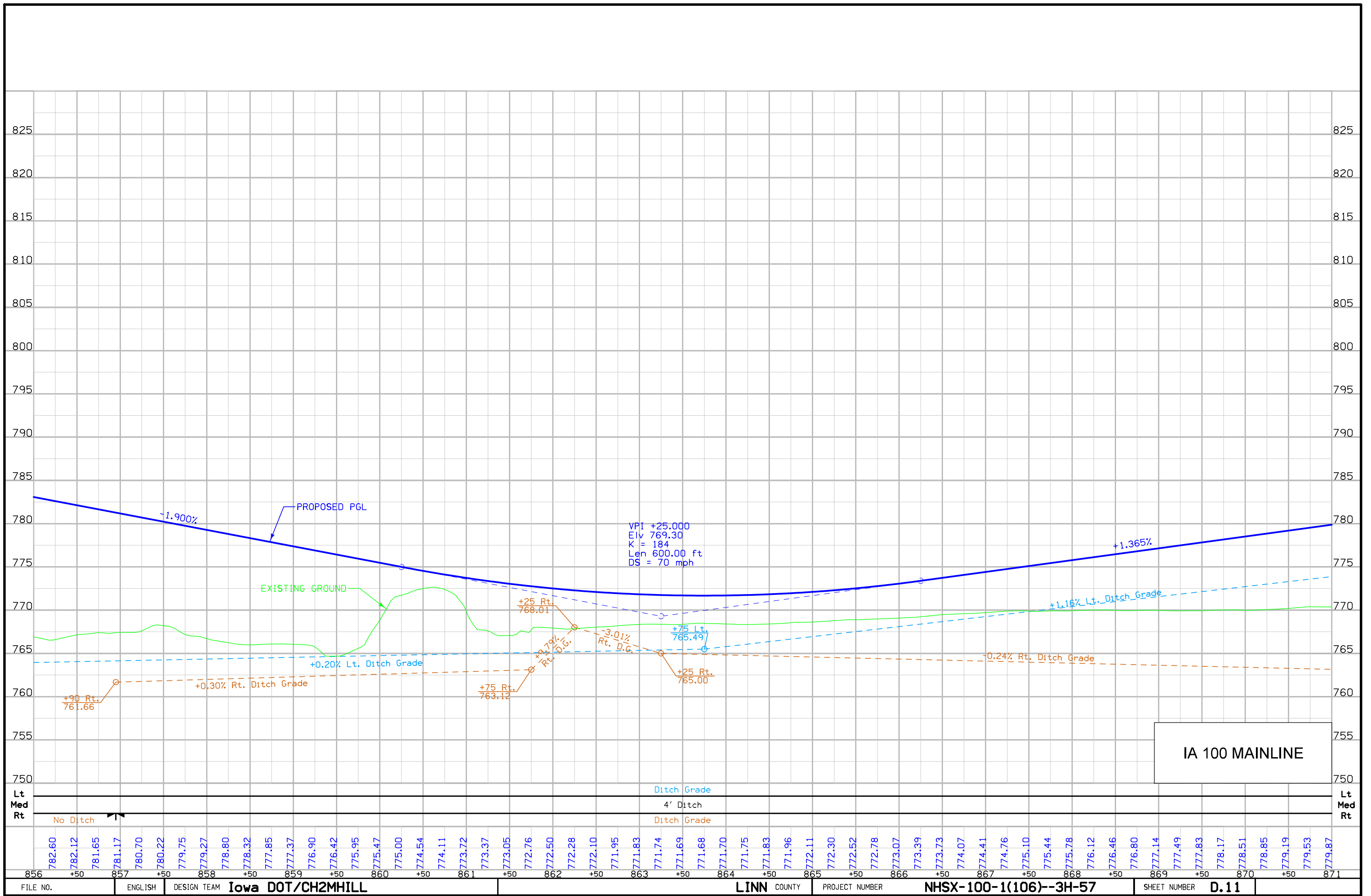


IA 100 MAINLINE

SEC.15







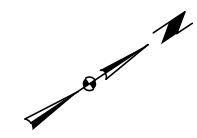
For Profile Details  
Refer to Sheet No. D.13

SEC.16

SEC.9

CLINTON TWP.  
T-83N R-8W  
SEC.10

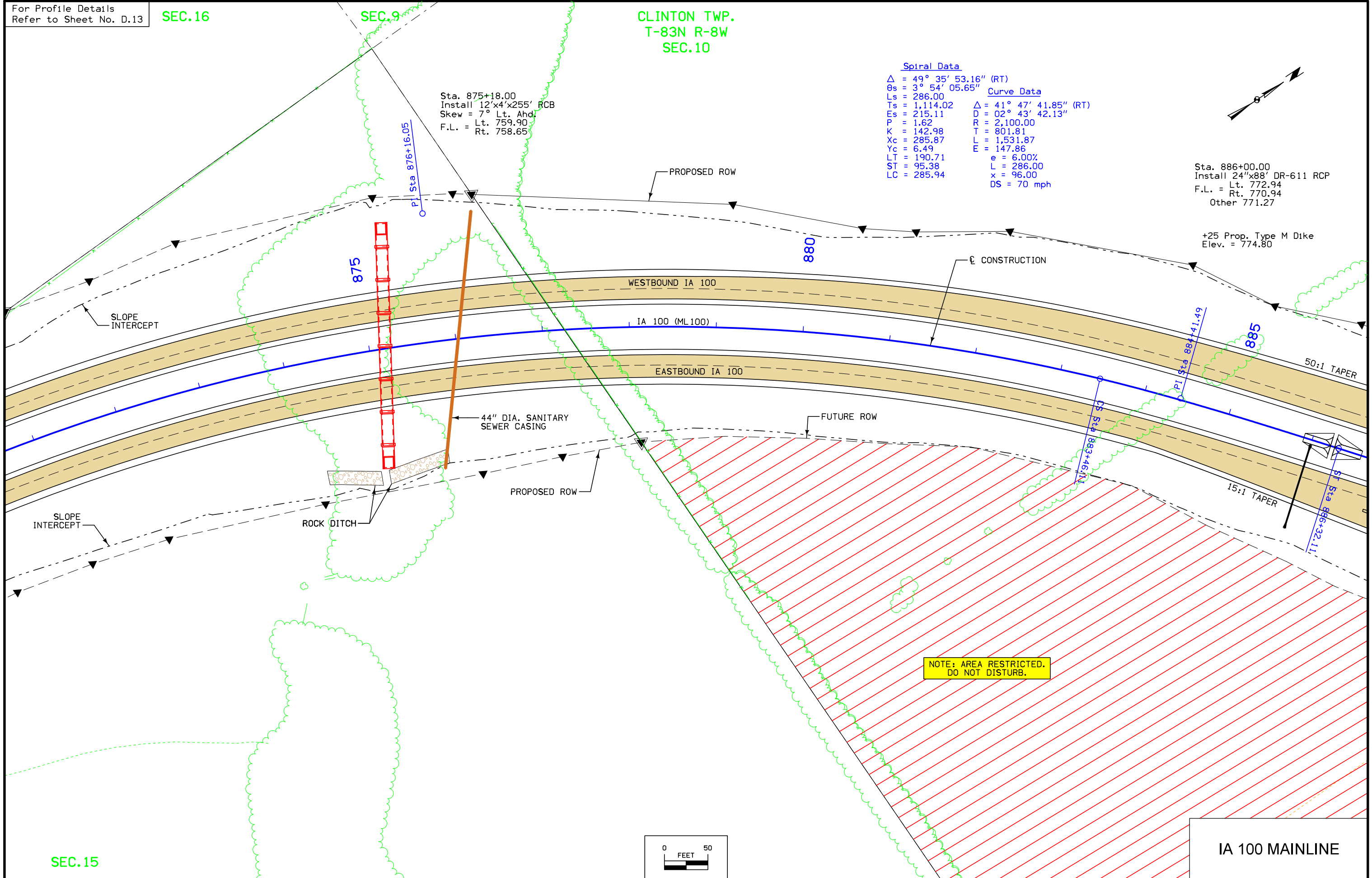
Spiral Data		Curve Data	
$\Delta$ = 49° 35' 53.16" (RT)	$\Delta$ = 41° 47' 41.85" (RT)		
$\theta_s$ = 3° 54' 05.65"	D = 02° 43' 42.13"		
Ls = 286.00	R = 2,100.00		
Ts = 1,114.02	T = 801.81		
Es = 215.11	L = 1,531.87		
P = 1.62	E = 147.86		
K = 142.98	e = 6.00%		
Xc = 285.87	L = 286.00		
Yc = 6.49	x = 96.00		
LT = 190.71	DS = 70 mph		
ST = 95.38			
LC = 285.94			



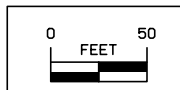
Sta. 875+18.00  
Install 12'x4'x255' RCB  
Skew = 7° Lt. Ahd.  
F.L. = Lt. 759.90  
Rt. 758.65

Sta. 886+00.00  
Install 24"x88' DR-611 RCP  
F.L. = Lt. 772.94  
Rt. 770.94  
Other 771.27

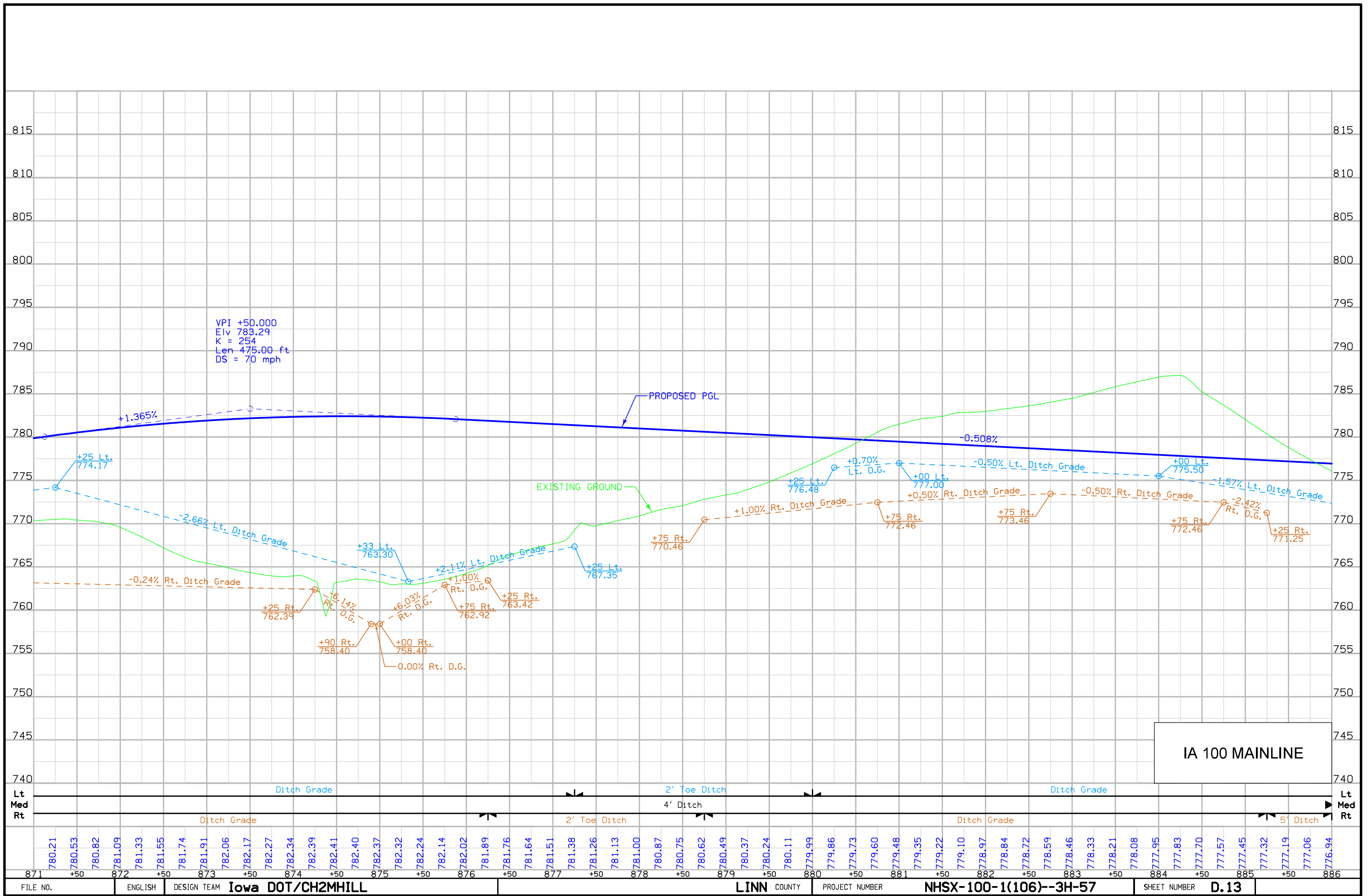
+25 Prop. Type M Dike  
Elev. = 774.80



SEC.15



IA 100 MAINLINE



For Profile Details  
Refer to Sheet No. D.15

For Interchange Grading  
Details Refer to Sheet K.6

For Interchange Geometrics  
Refer to Sheets No. K.1 & K.2

For Storm Sewer Details  
Refer to Sheet No. M.5

CLINTON TWP.  
T-83N R-8W  
SEC.10

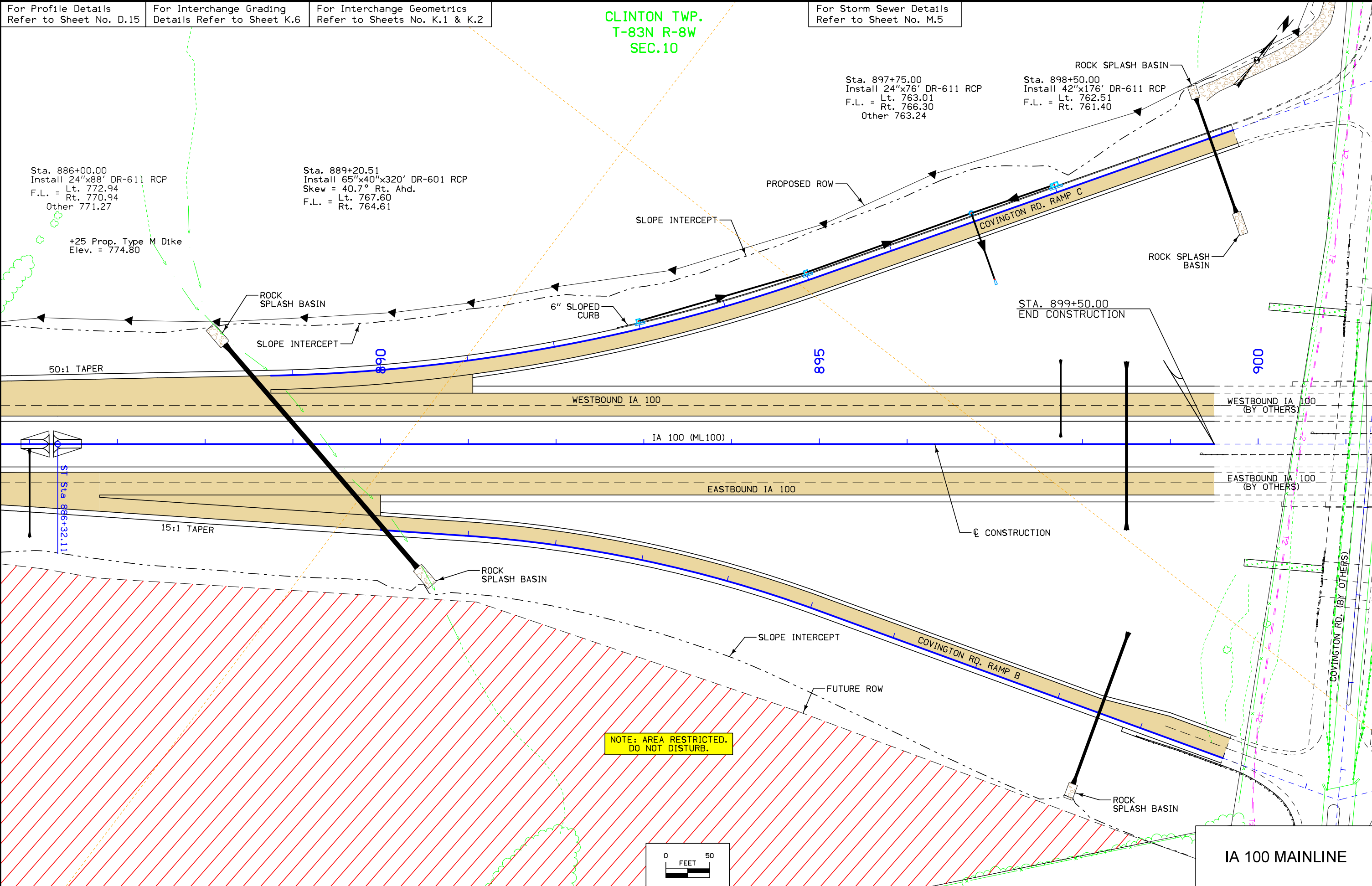
Sta. 886+00.00  
Install 24"x88' DR-611 RCP  
Lt. 772.94  
F.L. = Rt. 770.94  
Other 771.27

Sta. 889+20.51  
Install 65"x40"x320' DR-601 RCP  
Skew = 40.7° Rt. Ahd.  
Lt. 767.60  
F.L. = Rt. 764.61

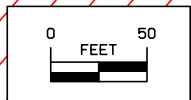
Sta. 897+75.00  
Install 24"x76' DR-611 RCP  
Lt. 763.01  
F.L. = Rt. 766.30  
Other 763.24

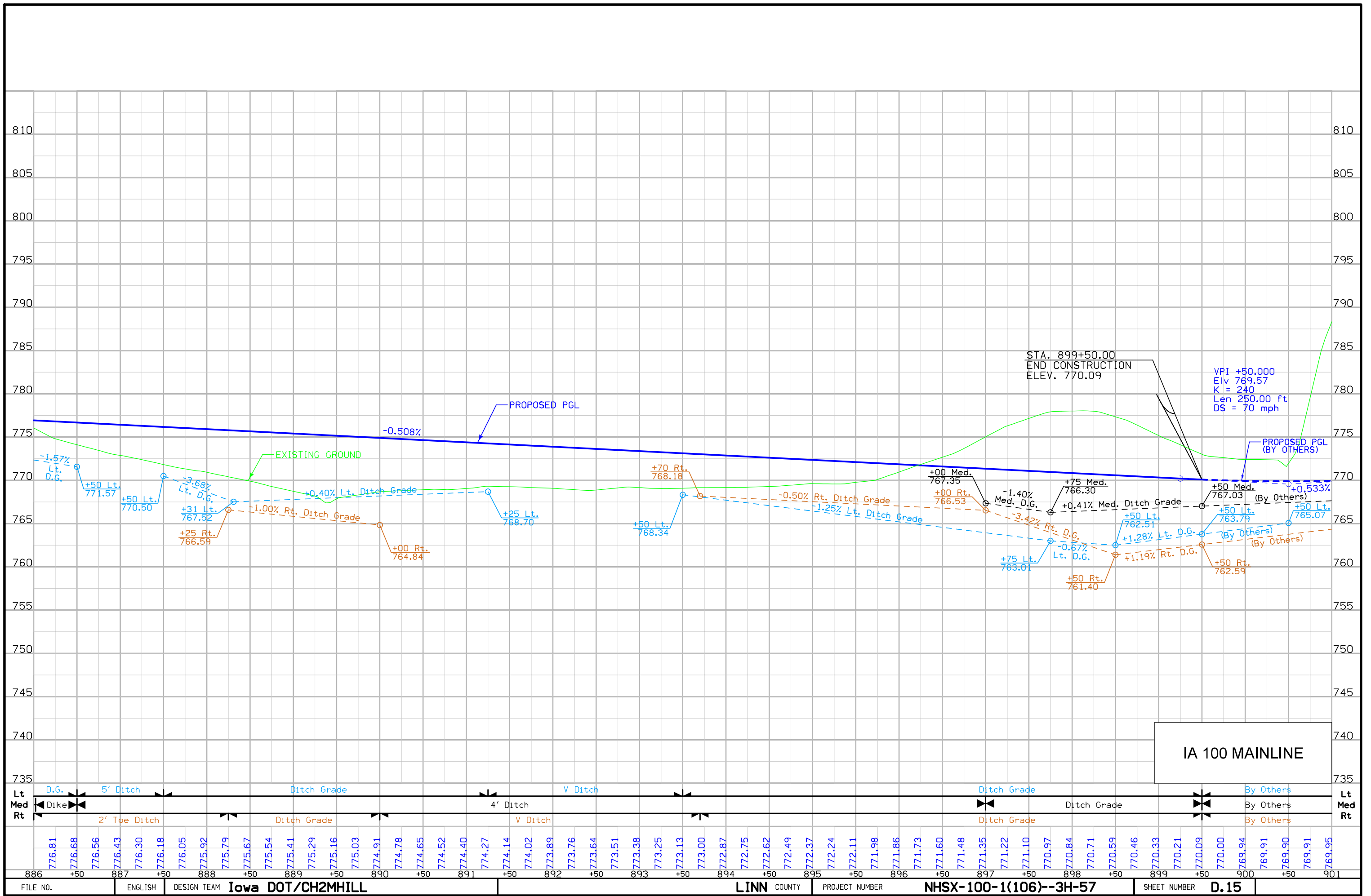
Sta. 898+50.00  
Install 42"x176' DR-611 RCP  
Lt. 762.51  
F.L. = Rt. 761.40

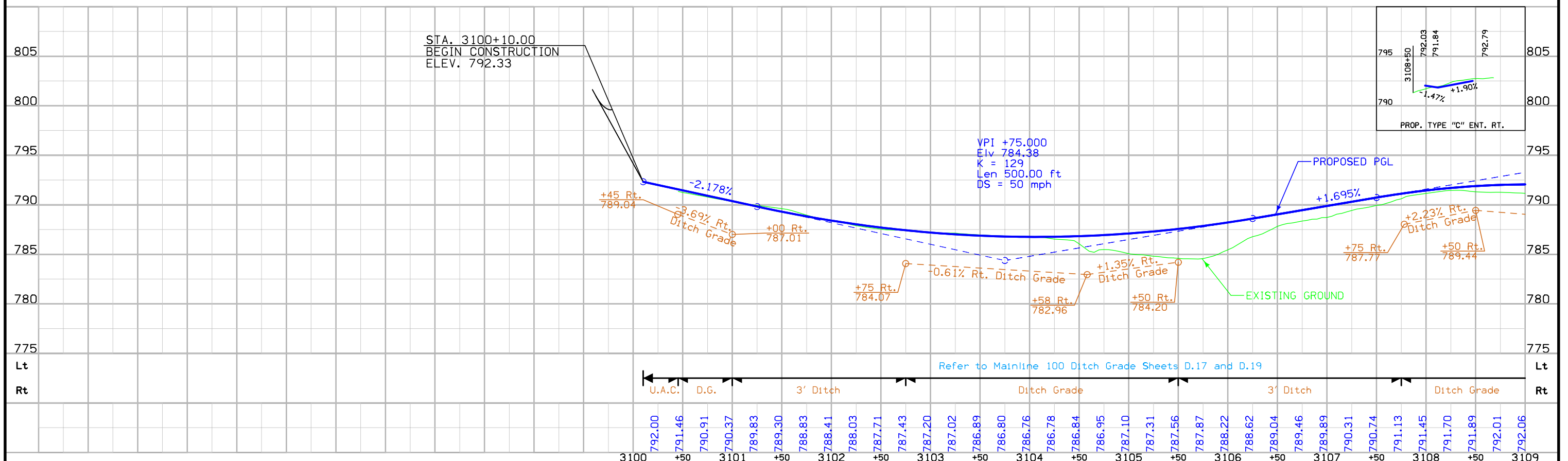
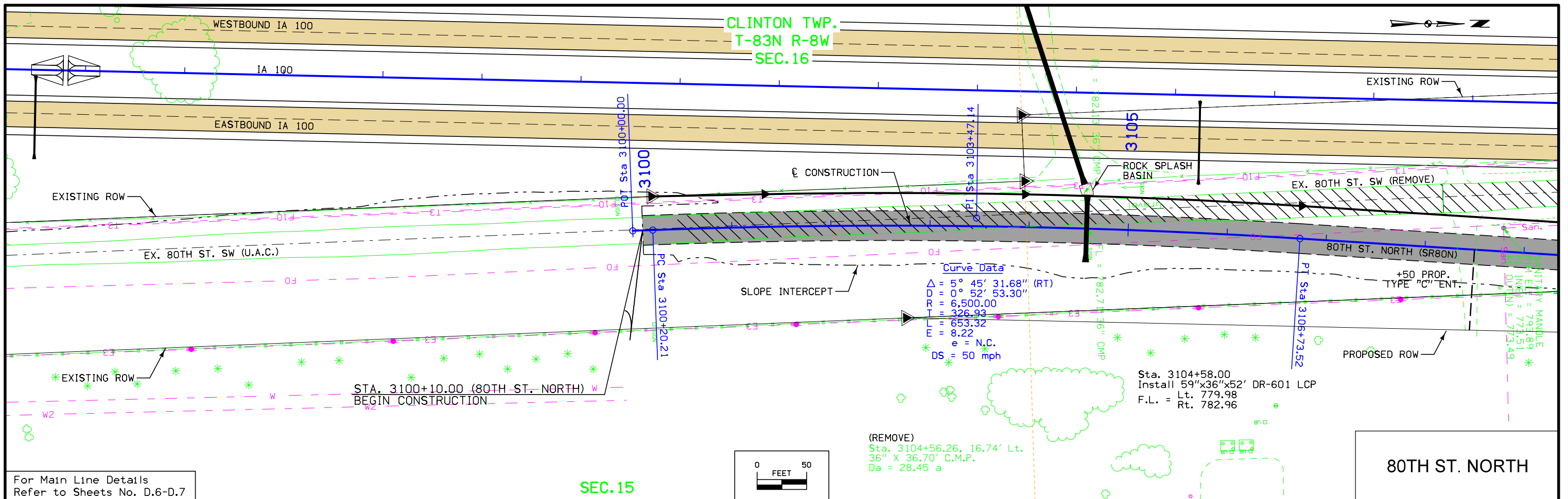
+25 Prop. Type M Dike  
Elev. = 774.80

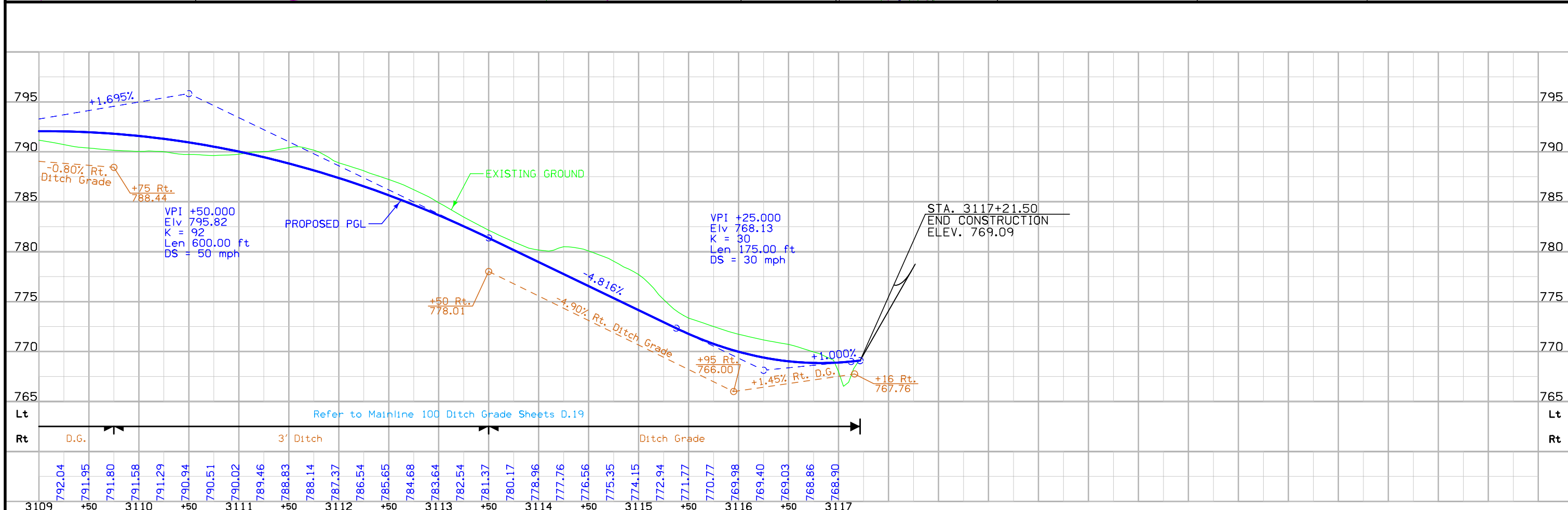
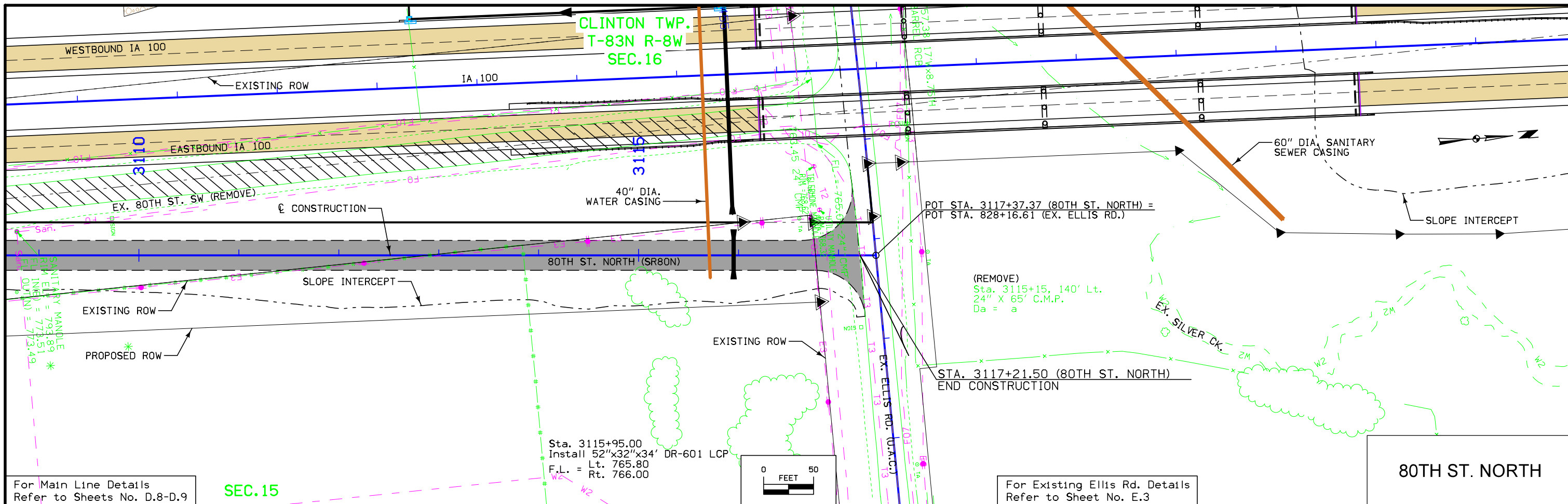


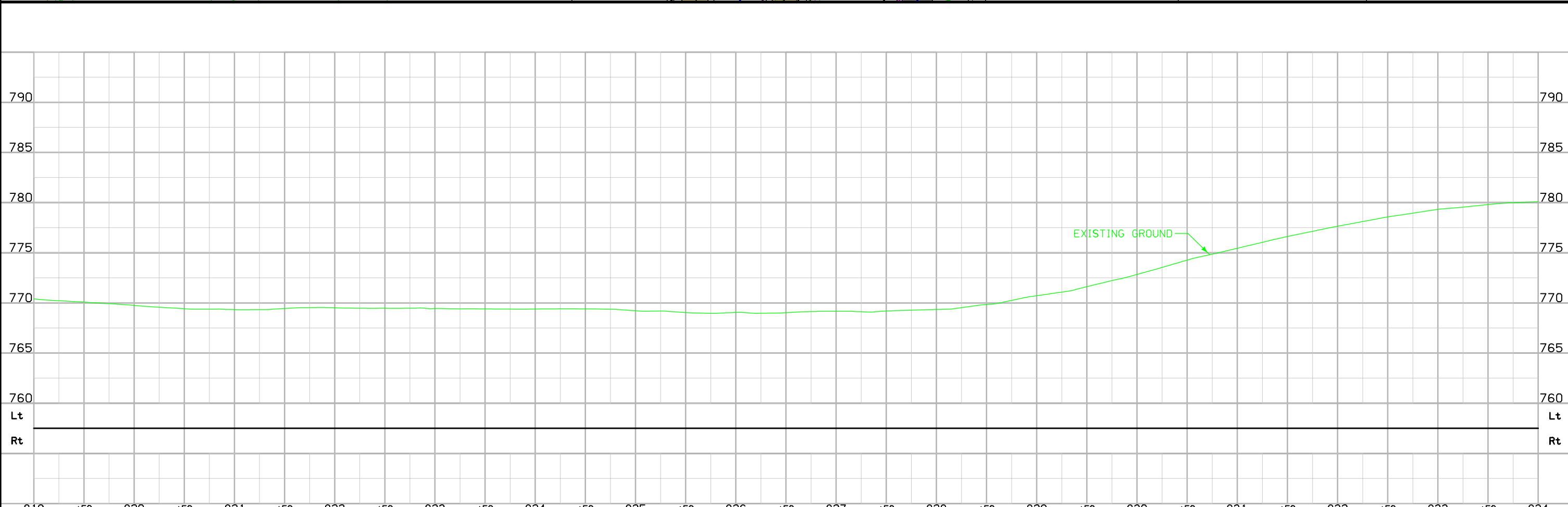
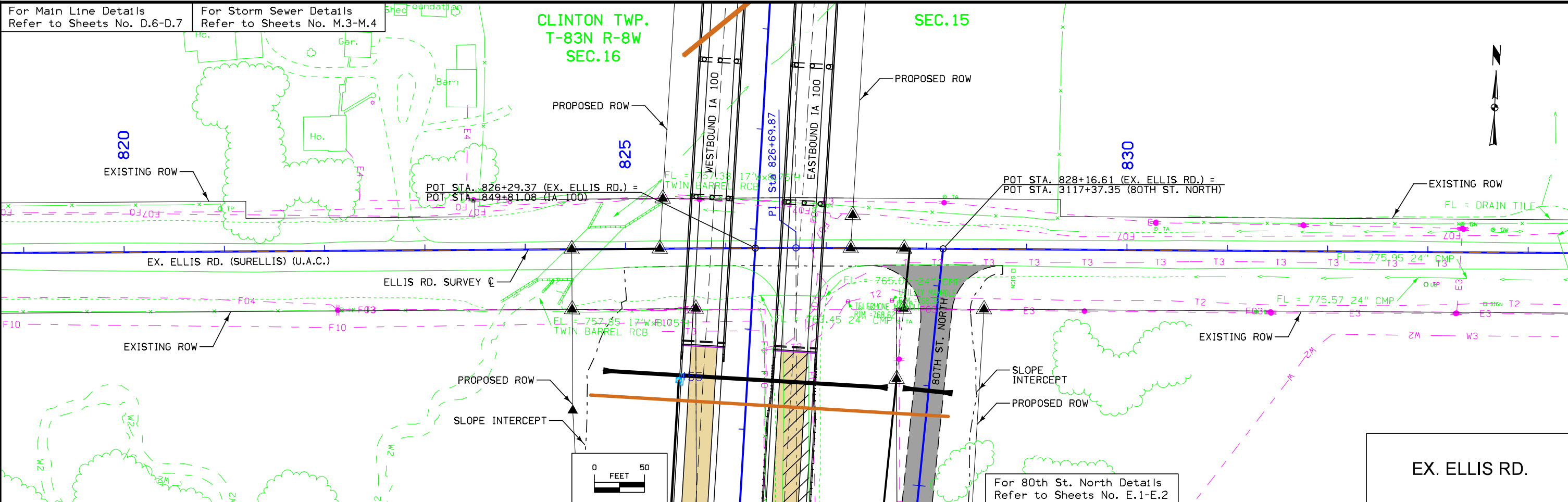
NOTE: AREA RESTRICTED.  
DO NOT DISTURB.













### HORIZONTAL CONTROL INFORMATION:

UTILIZING THE IOWA REAL-TIME-NETWORK GRID IN NAD(83)(1996), GPS OBSERVATIONS WERE MADE ON 14 CONTROL POINTS POSITIONED ALONG THE PROJECT ROUTE. CHECKS WERE MADE TO 9 PUBLISHED CONTROL MONUMENTS. GRID COORDINATES ON THE 14 CONTROL POINTS WERE SCALED TO GROUND AROUND POINT PUBLISHED CONTROL MONUMENT 8B. HORIZONTAL TRAVERSE WAS RUN THROUGH THE POINTS. A LEAST-SQUARES ADJUSTMENT WAS USED ON THE TRAVERSE TO OBTAIN COORDINATES ON A LOCAL PROJECT COORDINATE SYSTEM.

### VERTICAL DATUM INFORMATION:

STANDARD ELEVATIONS BASED ON THE SEA-LEVEL DATUM NAVD 1988 ADJUSTED THROUGH A DIGITAL LEVEL LOOP STARTING AT BM 500 AND TURNING THROUGH ORIGINAL PROJECT BM'S 513, 521, 528, & 564. PROJECT NHS-100-1(36)--19-57

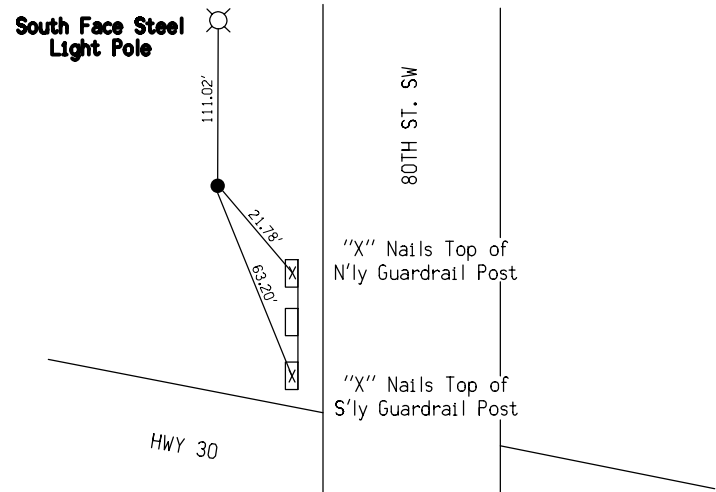
### DETAILS OF REFERENCE INFORMATION

All References are Plumb Distances unless otherwise noted.

Benchmarks		Description	Station (ML100)	Offset (ML100)	Coordinates		Elevation
					Northing	Easting	
IDOT BM	500	FD. IDOT PLUG IN WINGWALL - S. END OF FAIRFAX ROAD BRIDGE OVER HIGHWAY 30	-	-	3452333	5390473	876.25
IDOT BM	501	FD. RR SPIKE EAST SIDE P. POLE - FIRST P. POLE SOUTH OF WIENEKE CIRCLE - WEST SIDE OF ROAD	-	-	3453289	5390414	848.17
IDOT BM	502	FD. RR SPIKE EAST SIDE P. POLE - S.W. QAUD 16TH AVE. S.W. & 80TH ST. S.W.	-	-	3454576	5390394	828.37
IDOT BM	504	FD. RR SPIKE WEST SIDE P. POLE - APPROX. 1750 FT NORTH OF INTERSECTION 80TH ST. S.W. & 16TH AVE. S.W. EAST SIDE OF ROAD ALONG 80TH ST. S.W.	-	-	3456471	5390498	794.67
IDOT BM	505	FD. RR SPIKE EAST SIDE P. POLE - WEST SIDE OF ROAD 1/4 MILE SOUTH OF N.E. COR. 28-83-8W, ALONG 80TH ST. S.W.	-	-	3458662	5390392	783.76
IDOT BM	507	FD. LINN COUNTY DISK S.W. COR. CONC. HANDRAIL - APPX 650 FT NORTH OF N.E. COR. 28-83-8W ALONG, 80TH ST. N.W.	-	-	3460758	5390363	762.90
IDOT BM	508	FD. RR. SPIKE EAST SIDE P. POLE APPROX. 625 FT. SOUTH E. 1/4 COR 21-83-8W - WEST SIDE OF ROAD ALONG 80TH ST. N.W.	-	-	3462008	5390330	793.86
IDOT BM	509	FD. RR. SPIKE EAST SIDE P. POLE APPROX. 275 FT. SOUTH E. 1/4 COR. 21-83-8W - WEST SIDE OF ROAD, ALONG 80TH ST. N.W.	-	-	3462456	5390322	821.36
IDOT BM	510	FD. RR. SPIKE EAST SIDE P. POLE APPROX. 300 FT. NORTH E. 1/4 COR. 21-83-8W - W. SIDE OF ROAD, ALONG 80TH ST. N.W.	-	-	3463109	5390311	789.16
IDOT BM	511	FD. CUT X S.W. BOLT FIRE HYD. N.W. QUAD. OF 80TH ST. N.W. & WORCHESTER ROAD	-	-	3464097	5390361	822.19
IDOT BM	512	FD. RR SPIKE EAST SIDE P. POLE APPROX. 30 FT WEST OF N.E. COR. 21-83-8W ALONG 80TH ST. N.W.	-	-	3465388	5390275	821.57
IDOT BM	513	FD. LINN COUNTY DISK N.HDWL. TWIN 12x8 RCB CULVERT - APPROX. 225 FT WEST OF E. 1/4 COR. 16-83-8W	-	-	3468075	5390056	767.75
IDOT BM	521	FD. RR SPIKE NW. SIDE P. POLE	935+85.74	266.50' LT	3474701	5394859	796.80
IDOT BM	528	FD. CUT X CONC. RR ABUTMENT	1016+77.92	441.43' RT	3478104	5401490	786.05
AMENT BM	564	NE FLANGE BOLT HYD. @ SW COR N. RIVER BLVD. NE & EDGEWOOD ROAD	1100+37.11	973.11' RT	3477804	5409554	853.55
BM	570	SET CHISELED X ON WEST FACE MANHOLE RIM, EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE SOUTH OF ELIS BLVD. & 80TH ST. INTERSECTION	-	-	3467205	5390297	793.46
BM	571	SET RR SPIKE IN WEST FACE 18" DECIDUOUS TREE, APPROX. 1925 FT. S.W. OF CONVINGTON RD. BRIDGE OVER ABANDON RR TRACKS	879+88.52	770.43' RT	3470484	5391330	758.03
BM	572	SET SURVEY NAIL IN S.W. BRIDGE PIER OF BRIDGE OVER ABANDONED RR ON CONVINGTON RD.	900+73.22	495.44' RT	3471902	5392630	762.66
BM	573	SET RR SPIKE IN P. POLE, EAST SIDE BURT RD. APPROX. 215' NORTH OF BEND IN ROAD, APPROX. 20 FT. N.W. OF CP #210	948+20.29	571.36' LT	3475781	5395530	819.08
BM	574	SET RR SPIKE IN SOUTH FACE 24" DECIDUOUS TREE, APPROX. 385 FT. SOUTH RAILROAD TRACKS & APPROX. 600 FT. WEST OF WEST BANK CEDAR RIVER	985+42.69	403.66' RT	3477635	5398854	728.02
BM	577	SET RR SPIKE IN EAST FACE 18" DECIDUOUS TREE APPROX. 40 FT EAST OF EAST BANK CEDAR RIVER & 1000 FT WEST OF CP #217	999+63.80	851.40' RT	3477734	5400079	733.38
BM	578	SET PK NAIL IN SOUTH FACE P. POLE ON NORTH SIDE OF PRIVATE LANE & APPROX. 400' EAST OF EAST BANK CEDAR RIVER & 30 FT WEST OF CP #216	1005+85.86	1003.16' RT	3477648	5400546	779.18
BM	579	SET RR SPIKE IN SOUTH FACE P. POLE ON SOUTH SIDE SWAN POND	1034+74.74	106.12' LT	3478553	5403333	795.19
BM	580	SET CHISELED X ON S.W. BOLT OF OLD CONC RR SIGNAL BASE ALONG ABANDONED RR APPROX. 200 FT NORTH OF HOUSE #5404 OAK CREEK DR. N.E.	1053+83.77	82.11' RT	3478955	5405195	806.65
BM	581	FD. 60d NAIL IN WEST FACE P. POLE ON EAST SIDE OF USHERS FERRY RD. APPROX. 1000 FT NORTH OF INTERSECTION OF USHERS FERRY RD. & N. RIVER BLVD. N.E.	1072+36.35	439.72' LT	3479691	5407021	783.25
BM	582	SET CHISELED X ON NE BOLT OF FIRE HYD. AT N.E. COR. PARKING OF #4700 N. RIVER BLVD. N.E.	1089+46.50	268.67' RT	3478722	5408635	831.41
BM	583	SET RR SPIKE IN EAST FACE P. POLE AT S.W. COR. OF INTERSECTION OF EDGEWOOD RD. & W. BOUND HWY 100 (COLLINS RD.) OFF RAMP	1099+80.12	210.18' LT	3478973	5409746	852.21

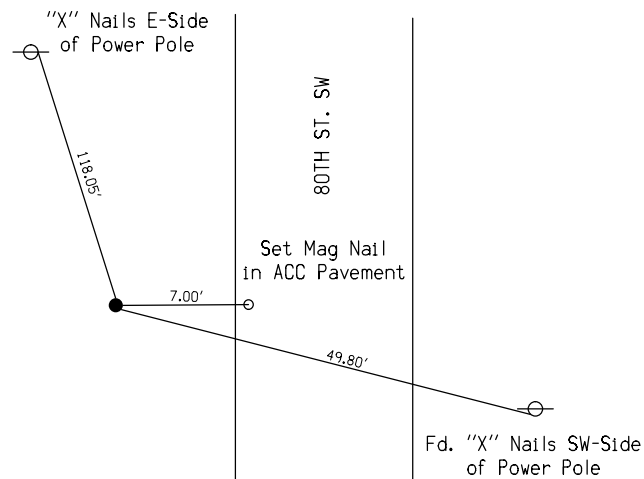
**CONTROL POINT #200**

SET 5/8" REBAR  
Xc=5390453.302, Yc=3452782.589



**CONTROL POINT #201**

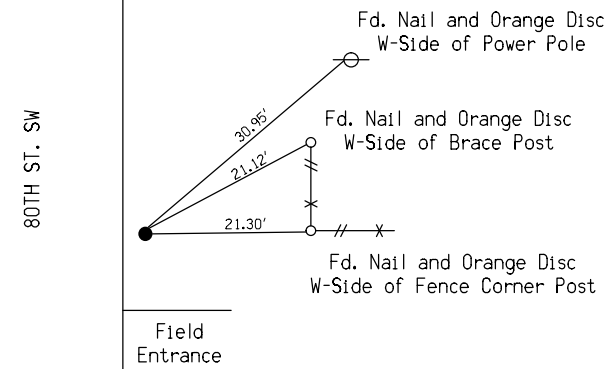
SET 5/8" REBAR  
Xc=5390460.332, Yc=3456088.161



**CONTROL POINT #202**

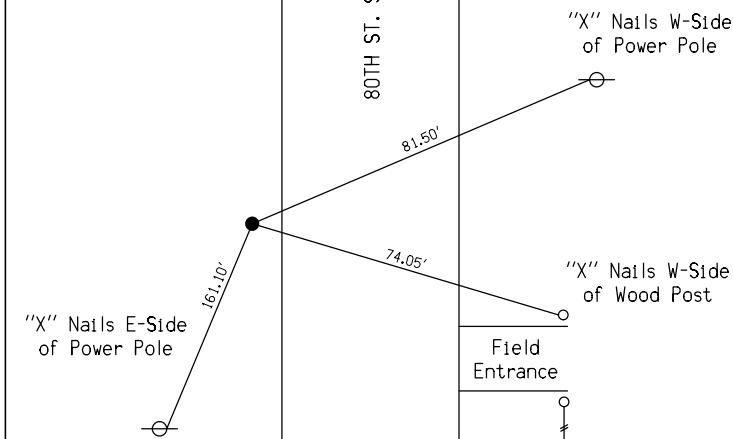
SET 5/8" REBAR  
Xc=5390459.117, Yc=3457455.705

\* Orange Disc = Hart-Frederick



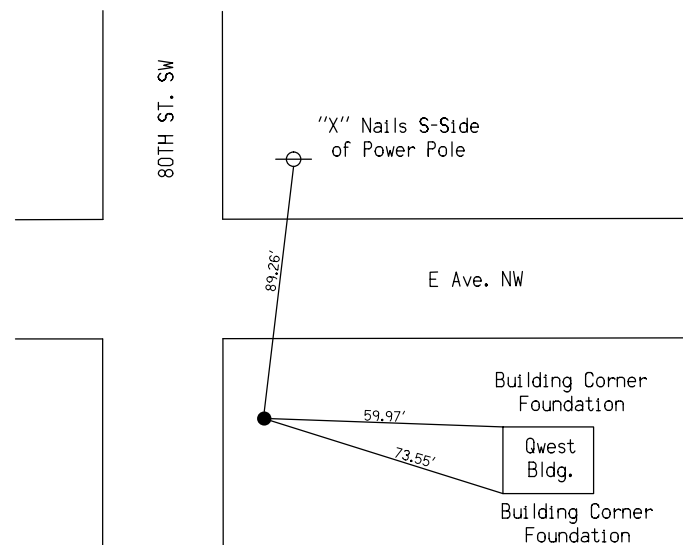
**CONTROL POINT #203**

SET 5/8" REBAR  
Xc=5390404.624, Yc=3458822.274



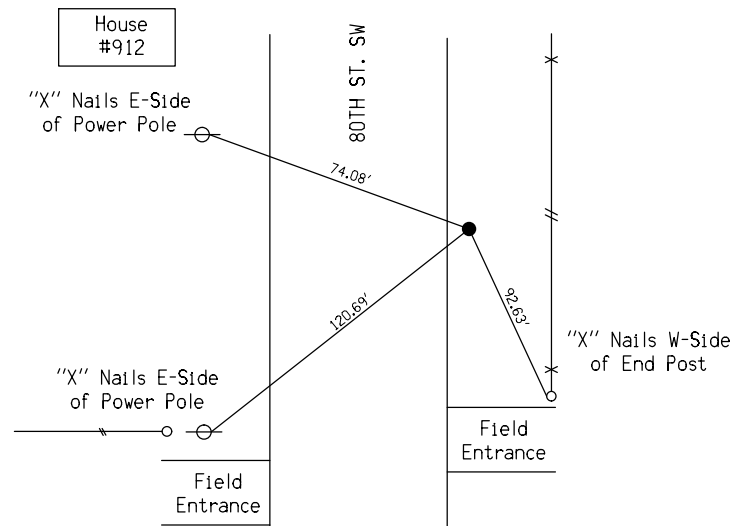
**CONTROL POINT #204**

SET 5/8" REBAR  
Xc=5390423.162, Yc=3460036.475



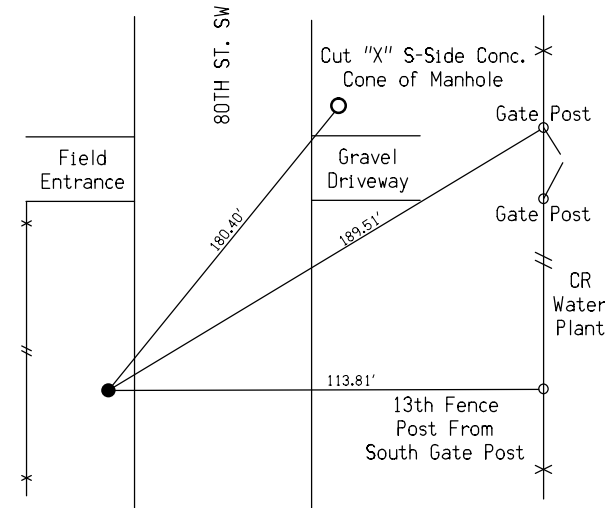
**CONTROL POINT #205**

SET 5/8" REBAR  
Xc=5390387.872, Yc=3461529.234



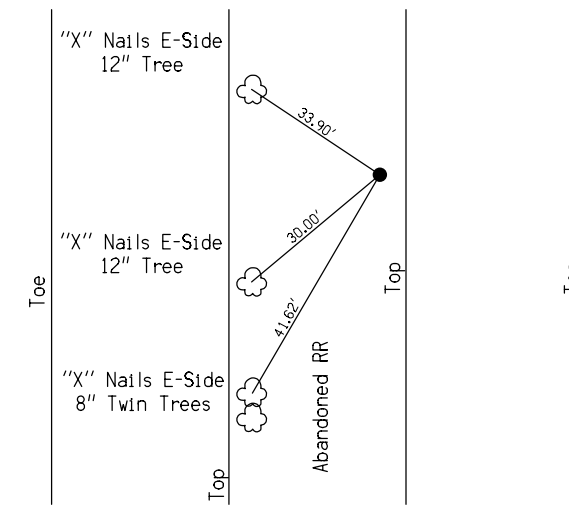
**CONTROL POINT #206**

SET 5/8" REBAR  
Xc=5390253.638, Yc=3467028.096



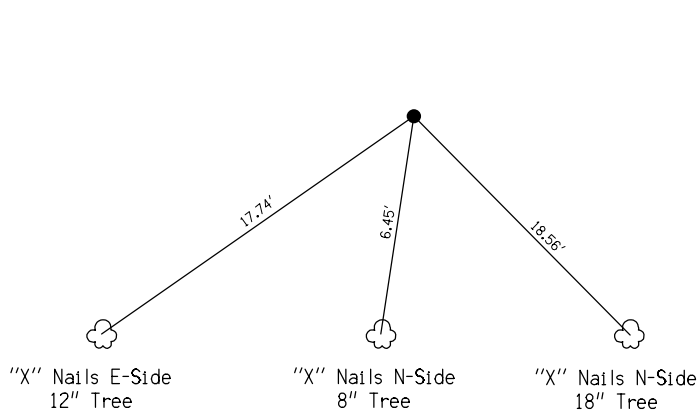
**CONTROL POINT #207**

SET 5/8" REBAR  
Xc=5390507.381, Yc=3469423.415



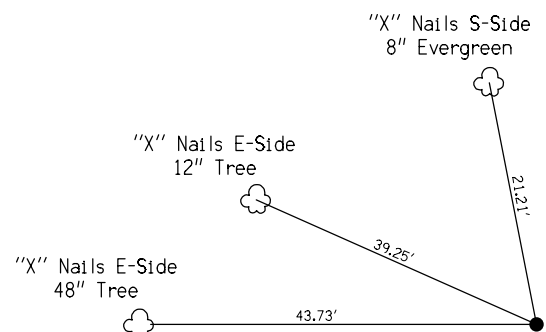
**CONTROL POINT #208**

SET 5/8" REBAR  
Xc=5390759.885, Yc=3470756.782



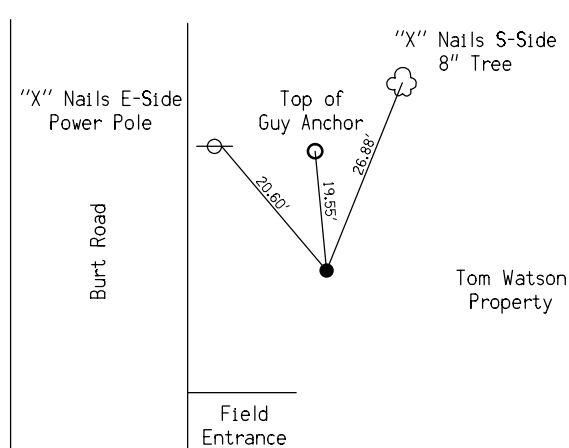
**CONTROL POINT #209**

SET 5/8" REBAR  
Xc=5393566.652, Yc=3473389.196



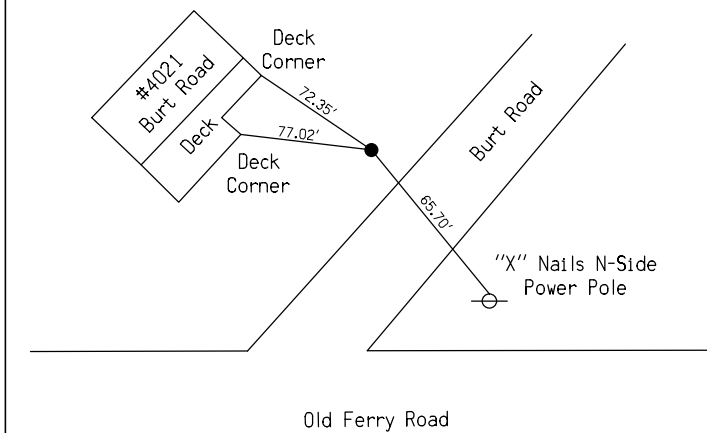
**CONTROL POINT #210**

SET 5/8" REBAR  
Xc=5395536.388, Yc=3475762.267



**CONTROL POINT #211**

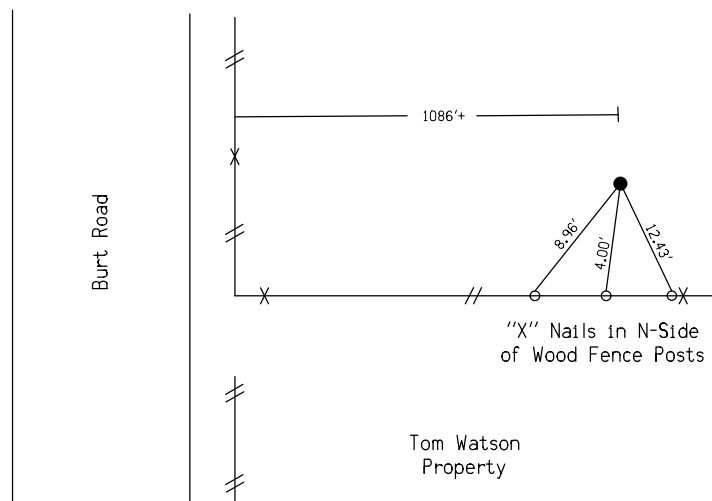
SET 5/8" REBAR  
Xc=5395036.496, Yc=3474978.586



**CONTROL POINT #212**

SET 5/8" REBAR

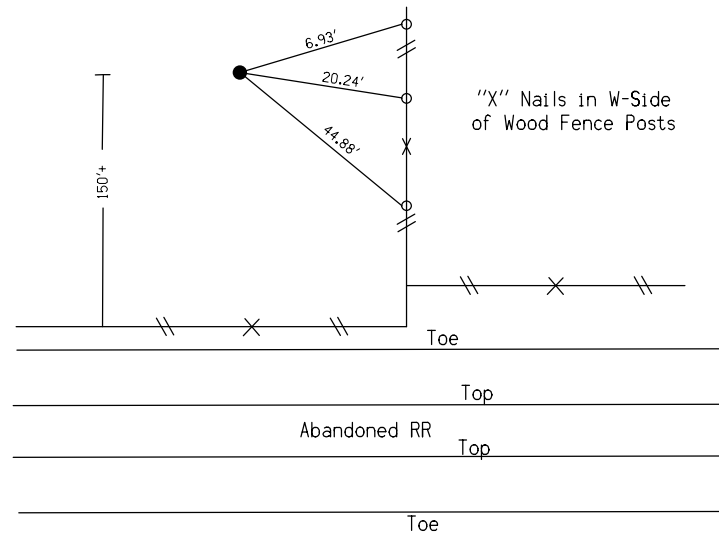
Xc=5396578.459, Yc=3477115.968



**CONTROL POINT #213**

SET 5/8" REBAR

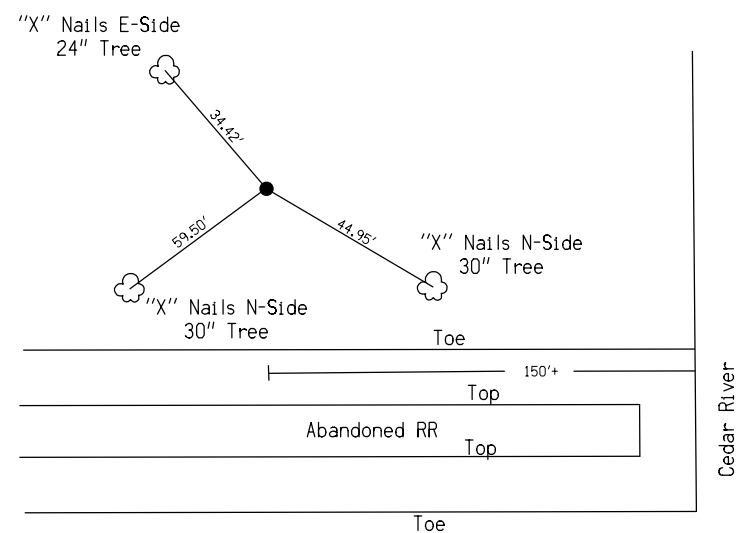
Xc=5397976.081, Yc=3477644.189



**CONTROL POINT #214**

SET 5/8" REBAR

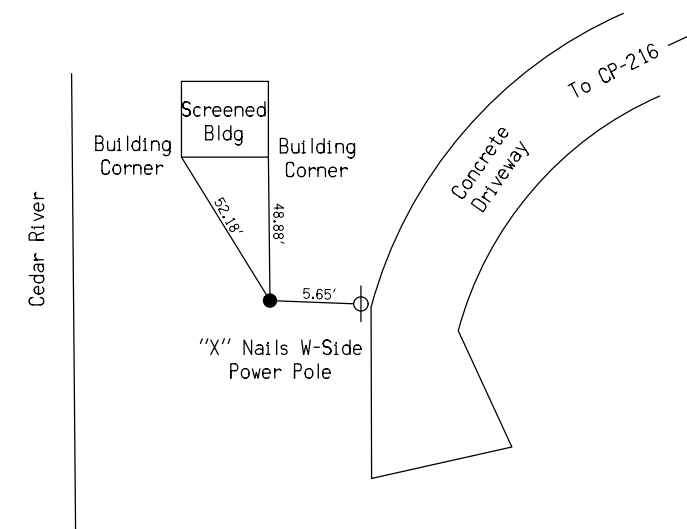
Xc=5398998.050, Yc=3477668.551



**CONTROL POINT #215**

SET 5/8" REBAR

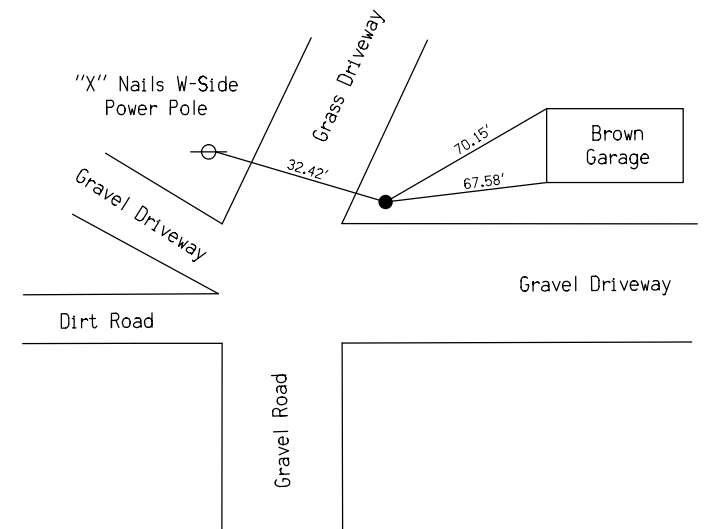
Xc=5400225.952, Yc=3477615.353



**CONTROL POINT #216**

SET 5/8" REBAR

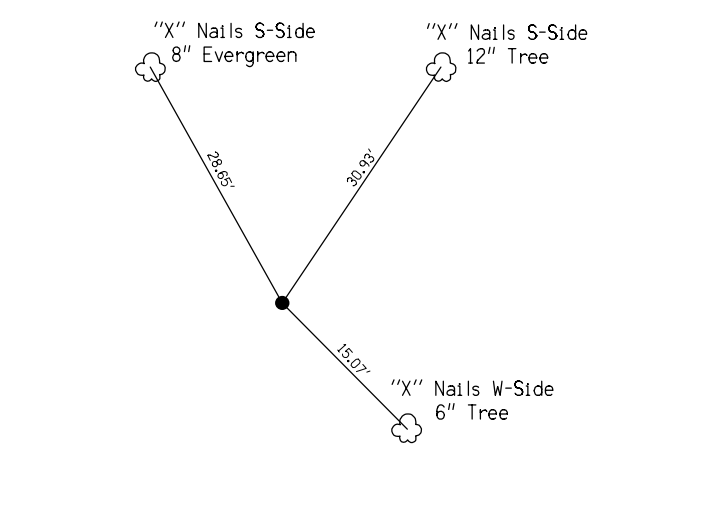
Xc=5400574.857, Yc=3477663.984



**CONTROL POINT #217**

SET 5/8" REBAR

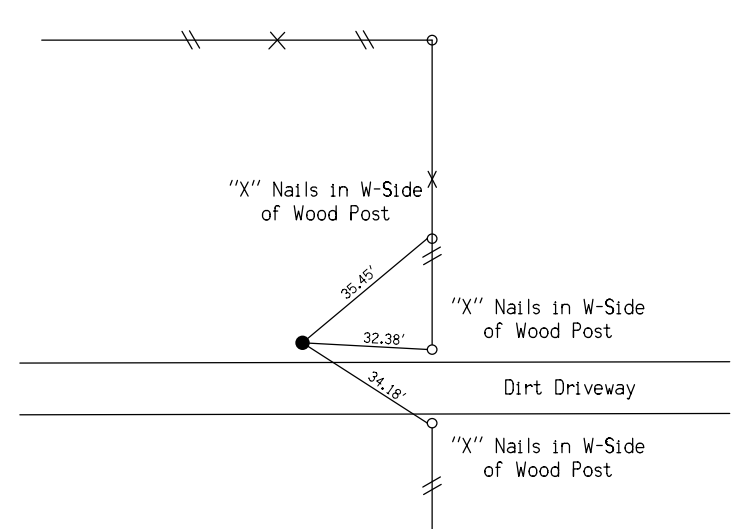
Xc=5400963.863, Yc=3477963.765



**CONTROL POINT #218**

SET 5/8" REBAR

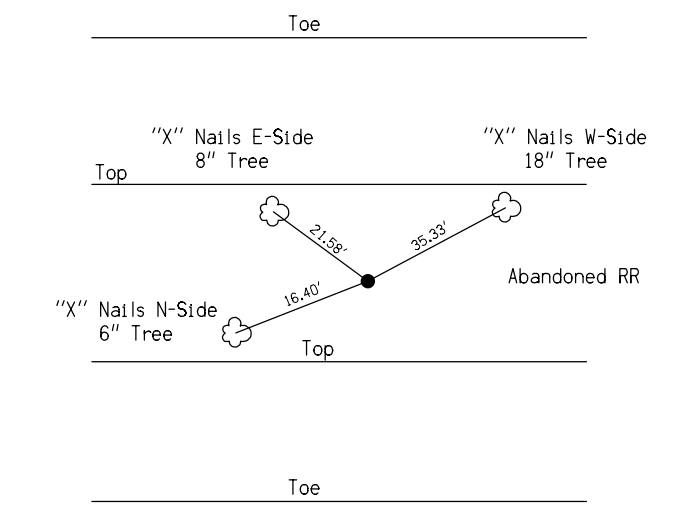
Xc=5403021.252, Yc=3478441.174



**CONTROL POINT #219**

SET 5/8" REBAR

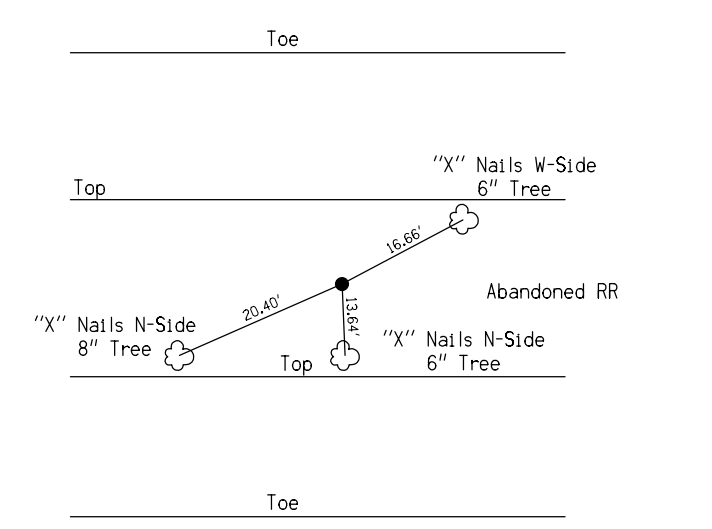
Xc=5403911.638, Yc=3478637.706



**CONTROL POINT #220**

SET 5/8" REBAR

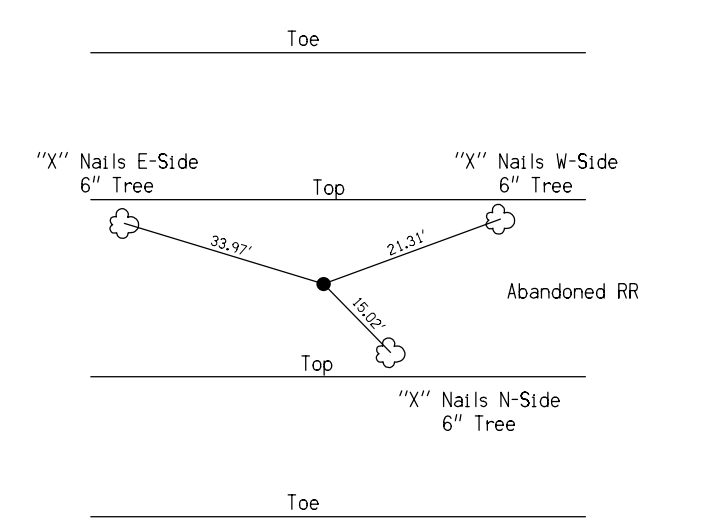
Xc=5404721.715, Yc=3478825.490



**CONTROL POINT #221**

SET 5/8" REBAR

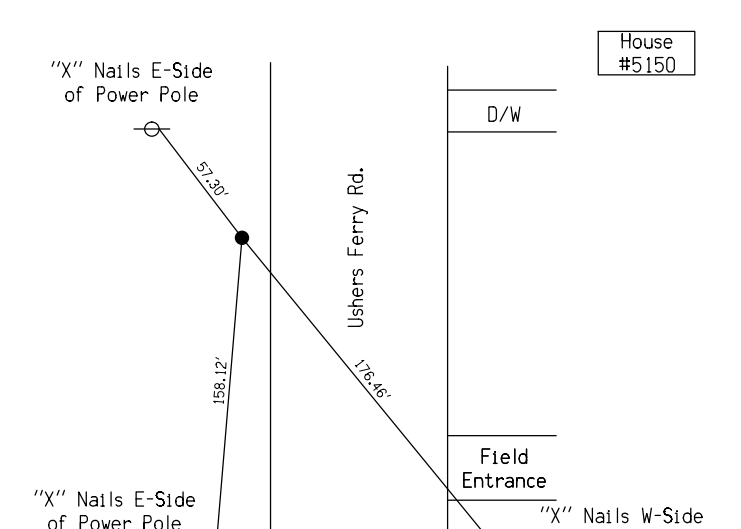
Xc=5405574.711, Yc=3479020.396



**CONTROL POINT #224**

SET 5/8" REBAR

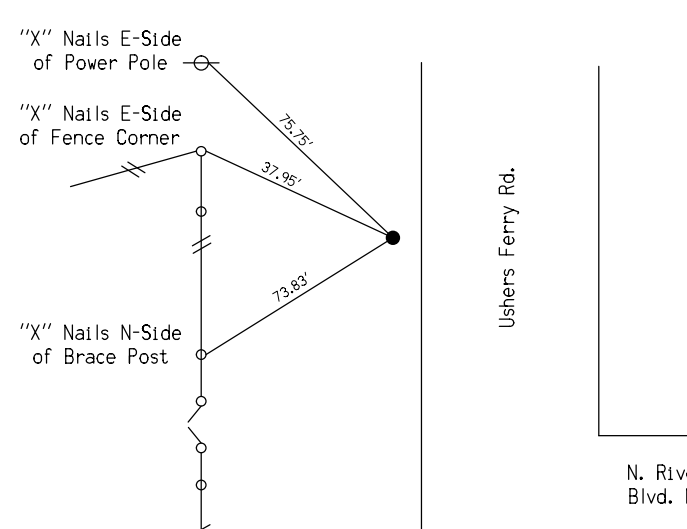
Xc=5407061.832, Yc=3479862.893



**CONTROL POINT #225**

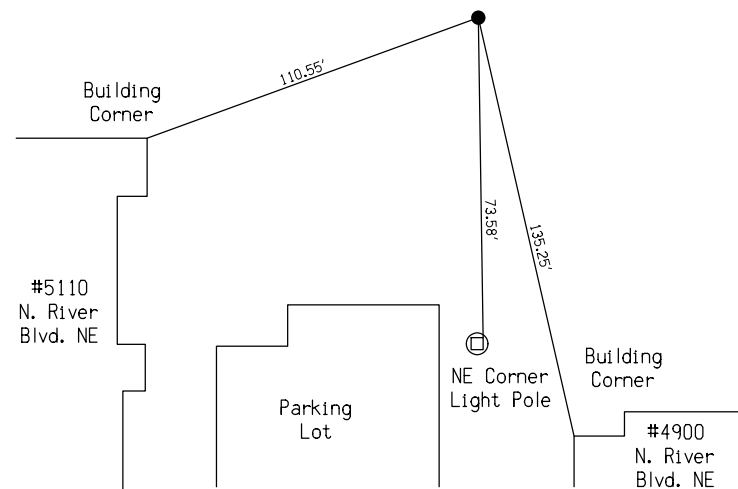
SET 5/8" REBAR

Xc=5406626.270, Yc=3479048.819



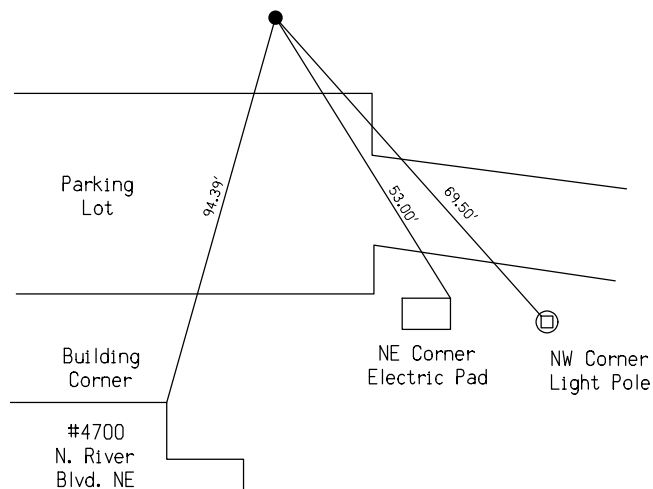
**CONTROL POINT #226**

SET 5/8" REBAR  
Xc=5407715.302, Yc=3479096.455



**CONTROL POINT #227**

SET 5/8" REBAR  
Xc=5408584.907, Yc=3478830.311



ALIGNMENT COORDINATES

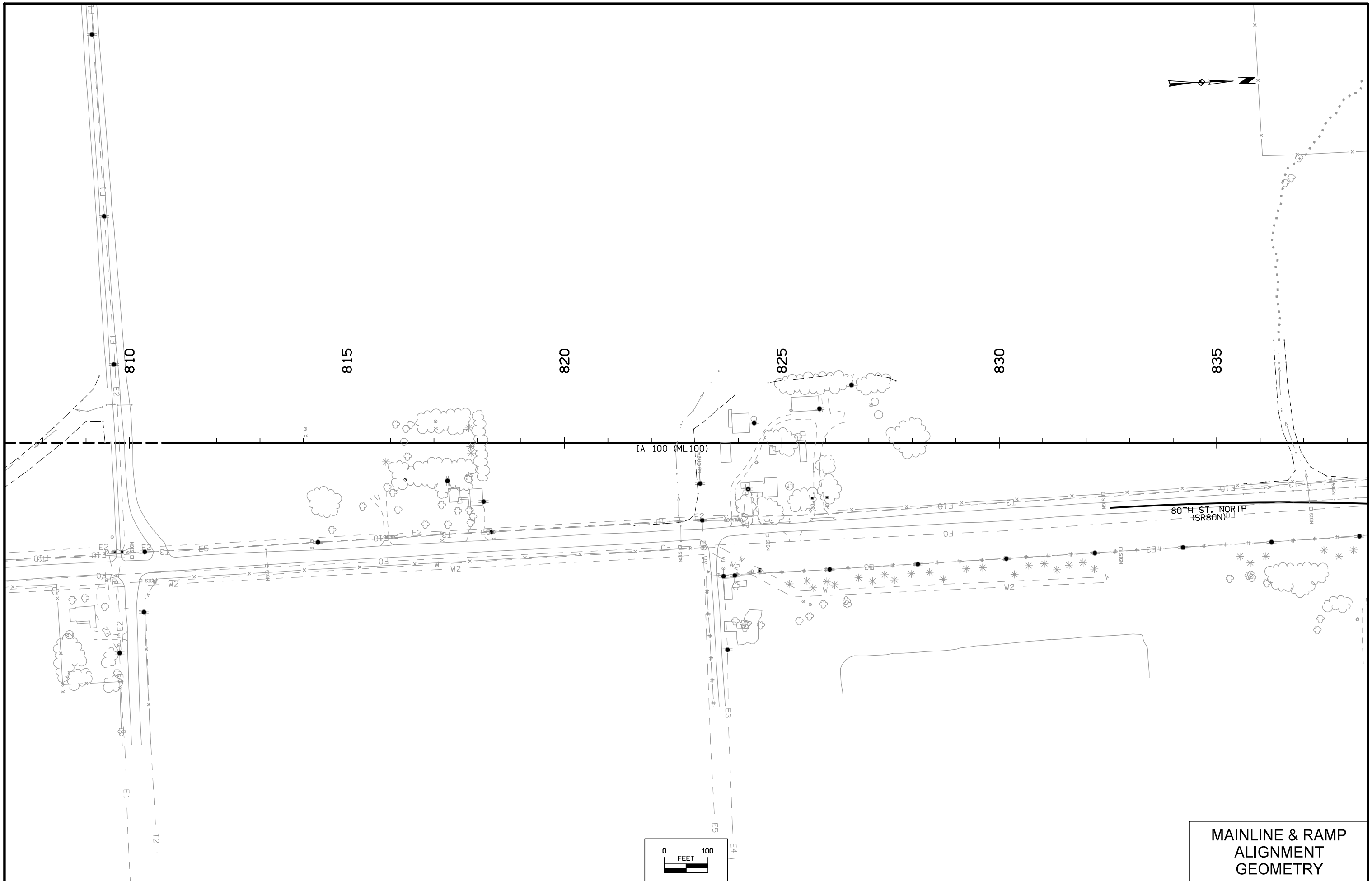
101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
ML100	MAINLINE 100																		
20023					865+28.25	3,469,602.7265	5,390,267.8303	868+14.25	3,469,888.0953	5,390,285.9116	876+16.05	3,470,685.1714	5,390,372.8761	883+46.11	3,471,221.4603	5,390,968.9359	886+32.11	3,471,402.8685	5,391,189.9639
20024								922+43.67	3,473,630.1856	5,394,032.9283	928+57.77	3,474,008.9110	5,394,516.3363	934+70.71	3,474,436.9637	5,394,956.6625			
SR80N	80TH ST. NORTH																		
42000		3100+00.00	3,466,326.5650	5,390,284.2928															
42001								3100+20.21	3,466,346.7690	5,390,283.9246	3103+47.14	3,466,673.6477	5,390,277.9673	3106+73.52	3,466,999.4743	5,390,304.8394			
42003		3117+37.37	3,468,059.7174	5,390,392.2812															
COVRDB	RAMP B																		
65001		32590+00.00	3,471,552.6092	5,391,539.9997															
65003								32590+96.64	3,471,607.0144	5,391,619.8660	32593+03.37	3,471,723.4039	5,391,790.7248	32595+07.34	3,471,787.4058	5,391,987.3030			
65005		32601+39.92	3,471,983.2451	5,392,588.8117															
COVRDC	RAMP C																		
66001		33588+75.00	3,471,614.0638	5,391,333.0593															
66002								33588+75.00	3,471,614.0638	5,391,333.0593	33591+97.23	3,471,817.8195	5,391,582.6869	33595+13.96	3,472,089.6665	5,391,755.6885			
66003		33602+17.34	3,472,683.0740	5,392,133.3291															
SR80N_RET_1	80TH ST.																		
42021								10+00.00	3,467,987.5557	5,390,371.2789	10+57.62	3,468,044.9787	5,390,376.0148	10+85.61	3,468,041.5783	5,390,318.4972			
SR80N_RET_2	80TH ST.																		
42031								20+00.00	3,467,998.1321	5,390,402.2530	20+46.07	3,468,044.0469	5,390,406.0398	20+74.45	3,468,044.0224	5,390,452.1104			

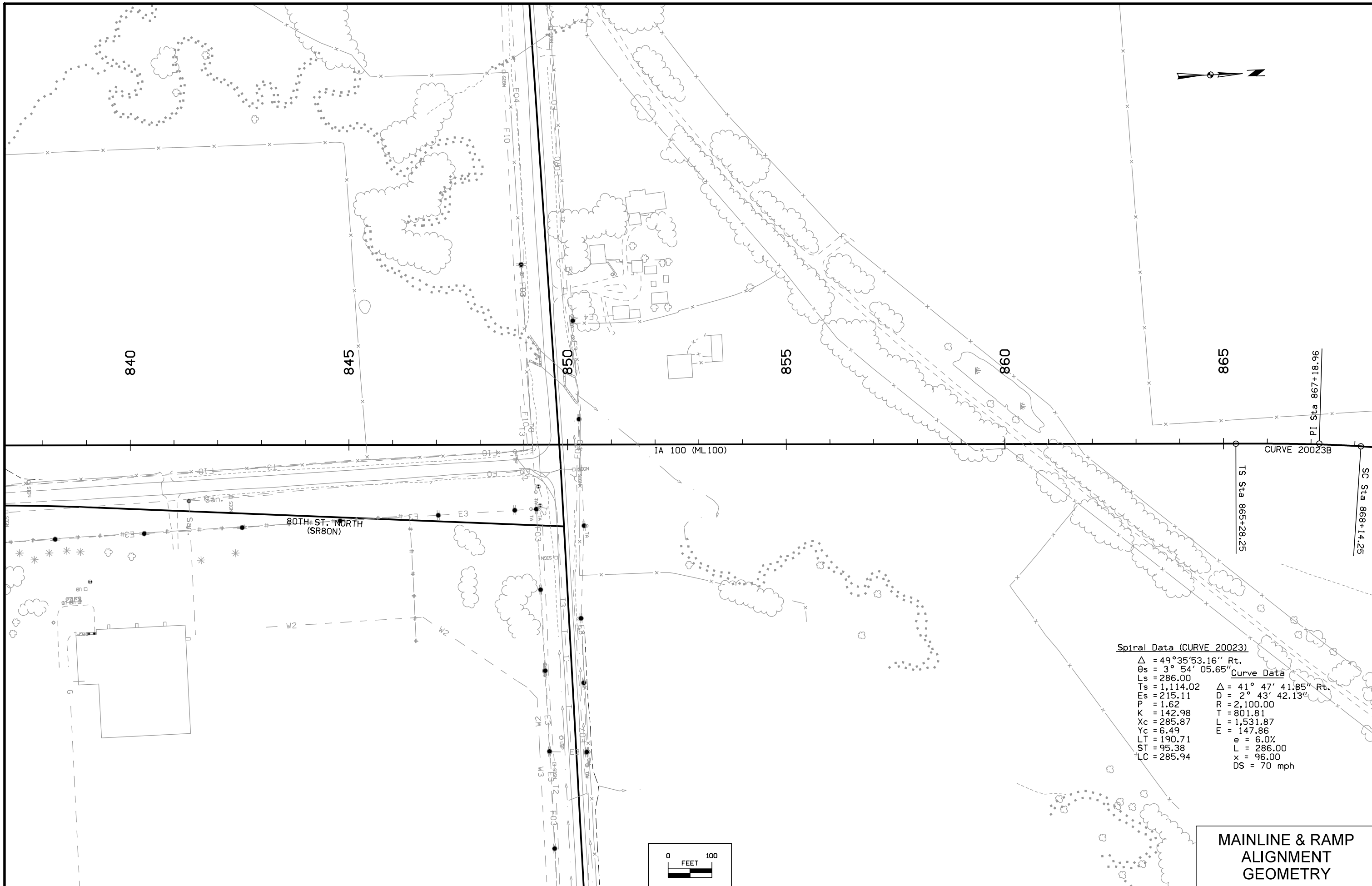
## SPIRAL OR CIRCULAR CURVE DATA

101-17  
04-19-11

Name	Location	Δ <sub>scs</sub>	Horizontal Alignment Data													Remarks		
			Spiral Data							Curve Data								
			θ <sub>s</sub>	L <sub>s</sub>	T <sub>s</sub>	E <sub>s</sub>	X <sub>c</sub>	Y <sub>c</sub>	L.T.	S.T.	Δ <sub>c</sub>	T	L	R	E			
ML100 20023	MAINLINE 100																	
20023A		49° 35' 53.16" RT	3° 54' 05.65"	286.0000'	1,114.0216	215.1120	285.8674'	6.4896'	190.7130'	95.3755'	41° 47' 41.85" RT	801.8062'	1,531.8653'	2,100.0000'	147.8641'			
20023B		49° 35' 53.16" RT	3° 54' 05.65"	286.0000'	1,114.0216	215.1120	285.8674'	6.4896'	190.7130'	95.3755'								
20024											6° 06' 48.10" LT	614.0979'	1,227.0303'	11,500.0000'	16.3847'			
SR80N 42001	80TH ST. NORTH										5° 45' 31.68" RT	326.9329'	653.3153'	6,500.0000'	8.2167'			
COVRDB 65003	RAMP B										16° 13' 42.93" RT	206.7347'	410.7014'	1,450.0000'	14.6635'			
COVRDC 66002	RAMP C										18° 18' 17.84" LT	322.2272'	638.9634'	2,000.0000'	25.7913'			
SR80N_RET_1 42021	80TH ST.										98° 05' 53.10" LT	57.6180'	85.6067'	50.0000'	26.2878'			
SR80N_RET_2 42031	80TH ST.										85° 18' 56.59" RT	46.0706'	74.4520'	50.0000'	17.9890'			



MAINLINE & RAMP  
ALIGNMENT  
GEOMETRY



**Spiral Data (CURVE 20023)**

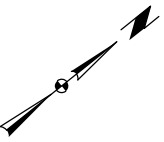
$\Delta = 49^\circ 35' 53.16''$ Rt.	
$\theta_s = 3^\circ 54' 05.65''$	
Ls = 286.00	
Ts = 1,114.02	
Es = 215.11	
P = 1.62	
K = 142.98	
Xc = 285.87	
Yc = 6.49	
LT = 190.71	
ST = 95.38	
LC = 285.94	

**Curve Data**

$\Delta = 41^\circ 47' 41.85''$ Rt.	
D = $2^\circ 43' 42.13''$	
R = 2,100.00	
T = 801.81	
L = 1,531.87	
E = 147.86	
e = 6.0%	
L = 286.00	
x = 96.00	
DS = 70 mph	

**MAINLINE & RAMP  
ALIGNMENT  
GEOMETRY**





Curve Data (CURVE 66002)

$\Delta = 18^\circ 18' 17.84''$  (LT)  
D = 2,000.00  
R = 2,000.00  
T = 322.23  
L = 638.96  
E = 25.79  
e = 5.4%  
L = 168.00  
x = 62.00  
m = 50.40  
DS = 60 mph

Spiral Data (CURVE 20023)

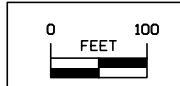
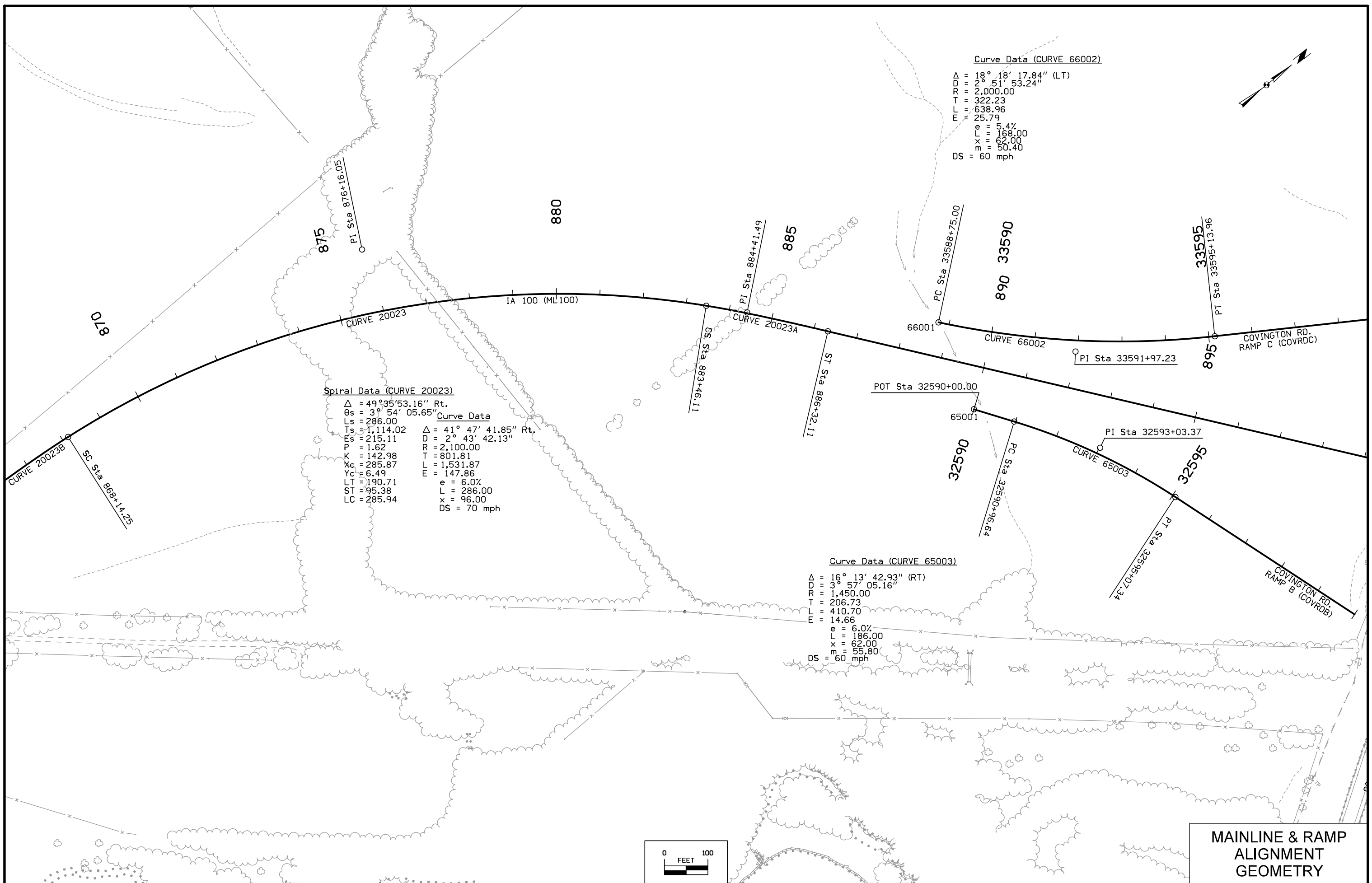
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 $\theta_s = 3^\circ 54' 05.65''$   
Ls = 286.00  
Ts = 1,114.02  
Es = 215.11  
P = 1.62  
K = 142.98  
Xc = 285.87  
Yc = 6.49  
LT = 190.71  
ST = 95.38  
LC = 285.94

Curve Data

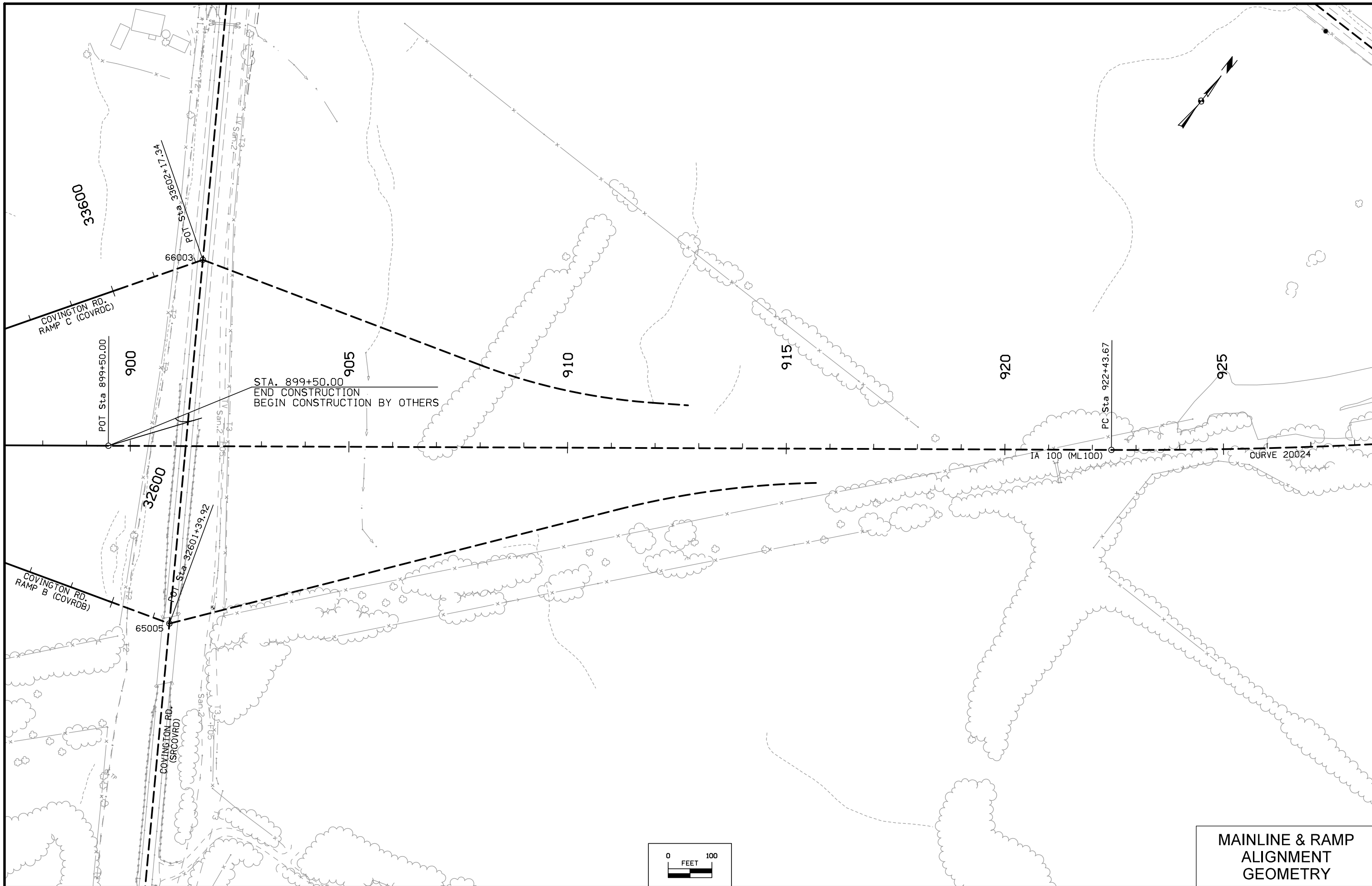
$\Delta = 41^\circ 47' 41.85''$  Rt.  
D = 2,100.00  
R = 2,100.00  
T = 801.81  
L = 1,531.87  
E = 147.86  
e = 6.0%  
L = 286.00  
x = 96.00  
DS = 70 mph

Curve Data (CURVE 65003)

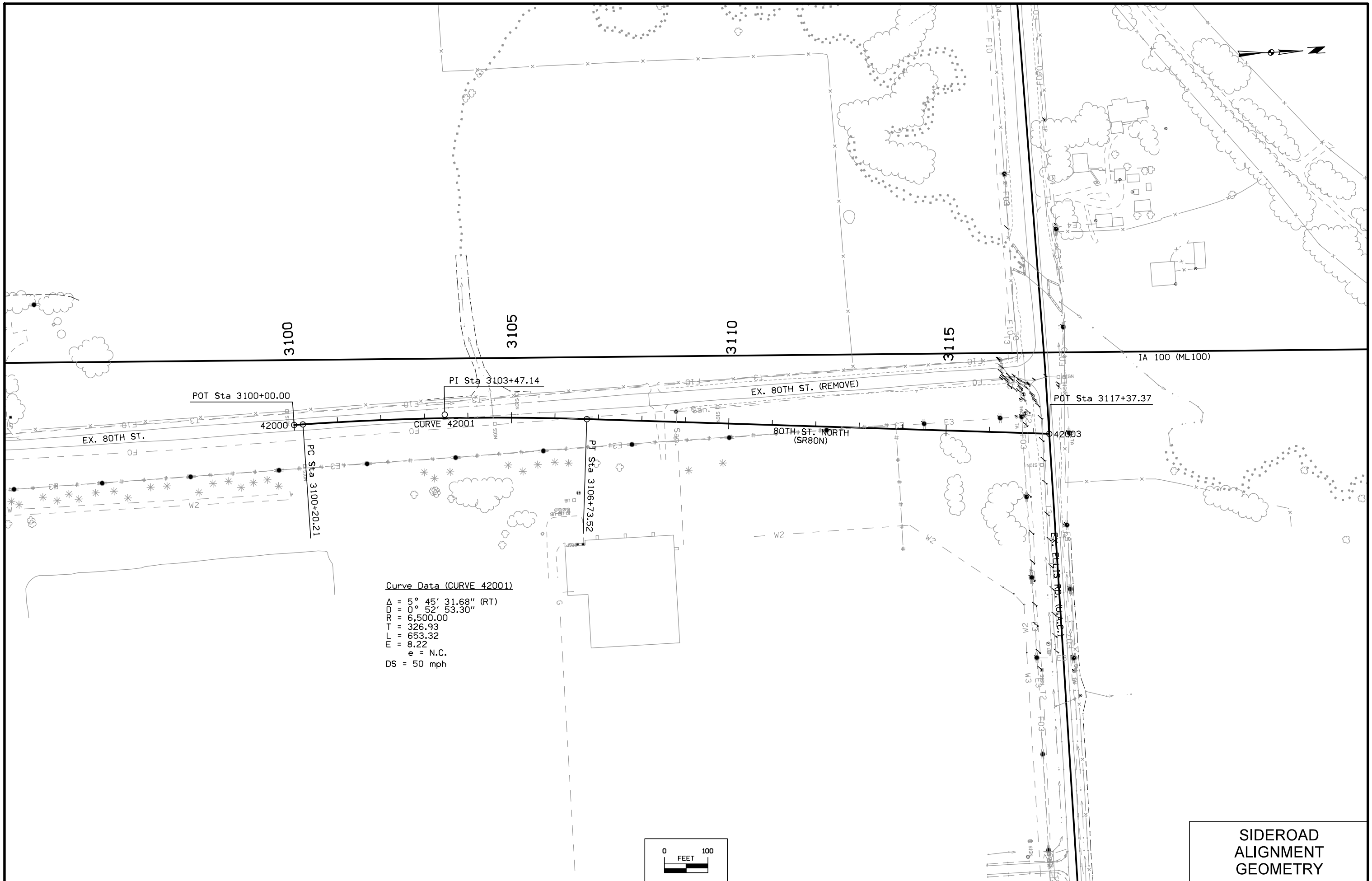
$\Delta = 16^\circ 13' 42.93''$  (RT)  
D = 3,570.16  
R = 1,450.00  
T = 206.73  
L = 410.70  
E = 14.66  
e = 6.0%  
L = 186.00  
x = 62.00  
m = 55.80  
DS = 60 mph



MAINLINE & RAMP  
ALIGNMENT  
GEOMETRY

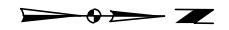


**MAINLINE & RAMP  
ALIGNMENT  
GEOMETRY**



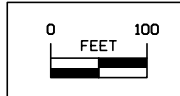
Curve Data (CURVE 42001)  
 $\Delta = 5^\circ 45' 31.68''$  (RT)  
 $D = 0^\circ 52' 53.30''$   
 $R = 6,500.00$   
 $T = 326.93$   
 $L = 653.32$   
 $E = 8.22$   
 $e = \text{N.C.}$   
 $DS = 50 \text{ mph}$

**SIDEROAD  
ALIGNMENT  
GEOMETRY**

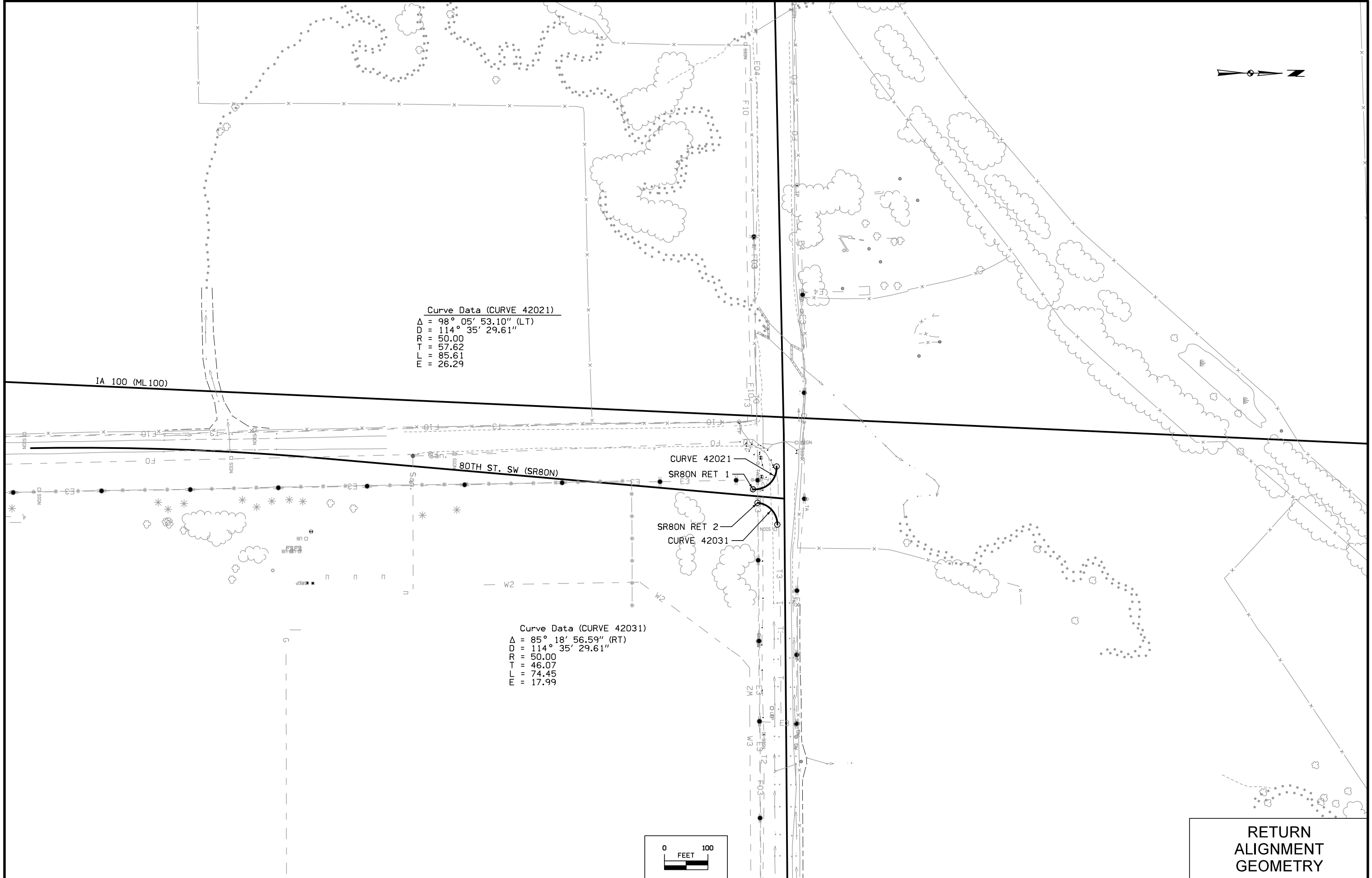


Curve Data (CURVE 42021)  
 $\Delta = 98^\circ 05' 53.10''$  (LT)  
 $D = 114^\circ 35' 29.61''$   
 $R = 50.00$   
 $T = 57.62$   
 $L = 85.61$   
 $E = 26.29$

Curve Data (CURVE 42031)  
 $\Delta = 85^\circ 18' 56.59''$  (RT)  
 $D = 114^\circ 35' 29.61''$   
 $R = 50.00$   
 $T = 46.07$   
 $L = 74.45$   
 $E = 17.99$



RETURN  
ALIGNMENT  
GEOMETRY



**SUPERELEVATION DATA**  
See PV-300 Series

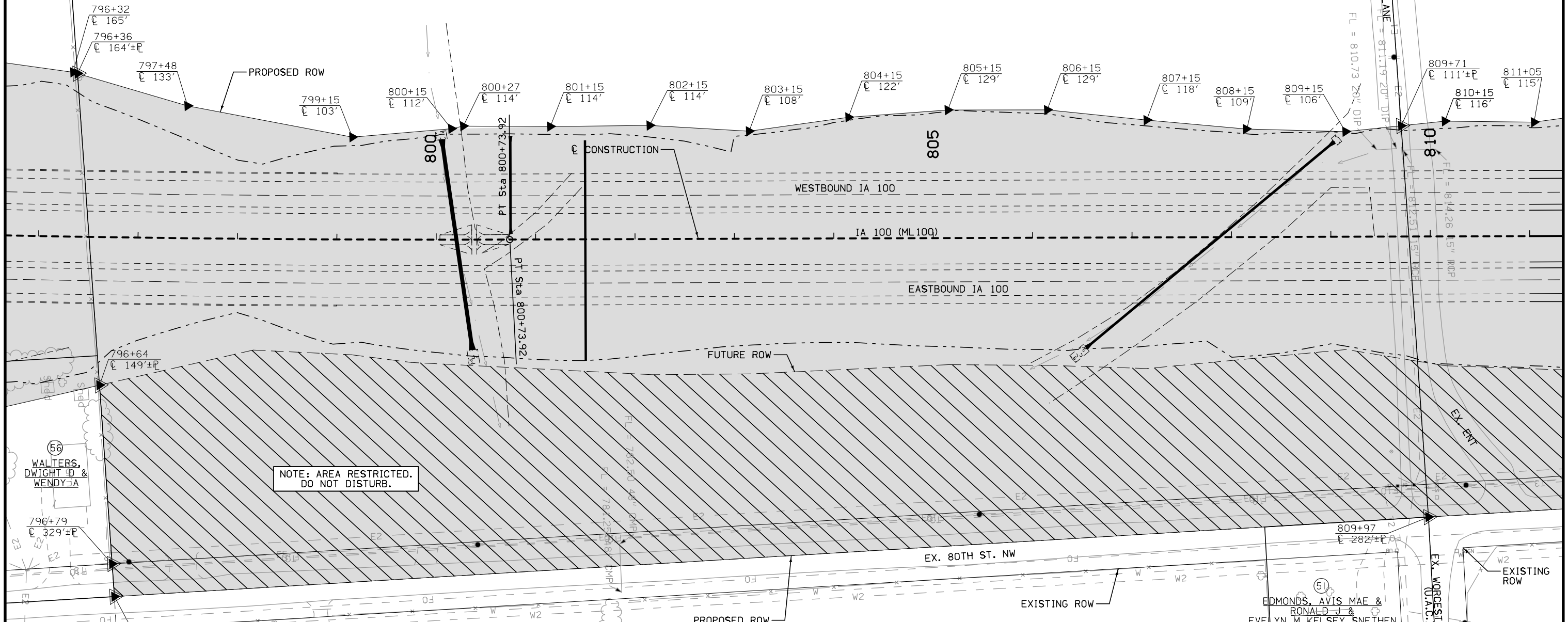
Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks		
			e %	L FT	x FT																
ML100	20023	2100	6.0	286	96	PV-302	864+32.25 887+28.11	865+28.25 886+32.11	866+24.25 885+36.11	868+14.25 883+46.11			868+14.25 883+46.11			867+18.92 884+41.44	867+18.92 884+41.44				
COVRDB	65003	1450	6.0	186	62	PV-303	32590+28.44 32595+75.54		32590+96.64 32595+07.34	32591+52.44 32594+51.54						32590+90.44 32595+13.54	32590+90.44 32595+13.54		Superelevation begins at 3% at 32590+		
COVRDC	66002	2000	5.4	168	62	PV-303	33588+19.40 33595+69.56		33588+75.00 33595+13.96	33589+25.40 33594+63.56						33588+81.84 33595+07.12	33588+81.84 33595+07.12				



54  
MCCAMMON MARY F  
MCCAMMON MARY F TRUST

55  
COONRAD,  
DONALD & SHIRLEY

44  
SCHRADER,  
LONNIE D



NOTE: AREA RESTRICTED.  
DO NOT DISTURB.

56  
WALTERS,  
DWIGHT D &  
WENDY A

796+79  
± 329'±P

42  
HOWARD,  
WESLEY P & ANN E

51  
EDMONDS, AVIS MAE &  
RONALD J &  
EVELYN M KELSEY SNETHEN

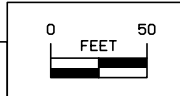
**Right of Way Design Information**

ROW Team: Iowa DOT/CH2MHILL  
 ROW #: NHSN-100-1(40)-R2-57  
 Plan Date: X/XX/2014

**Color Legend:**

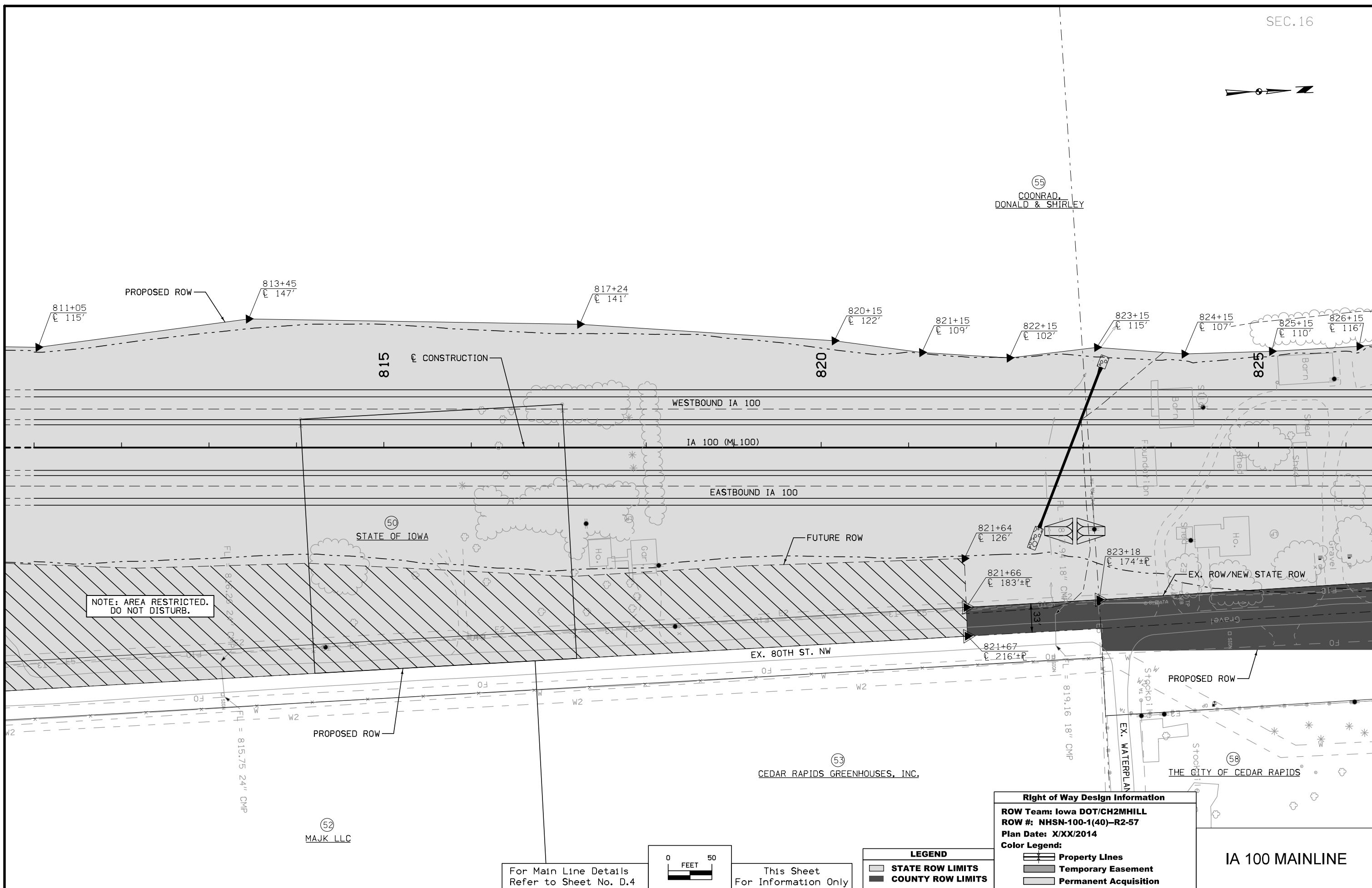
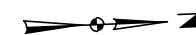
- Property Lines
- Temporary Easement
- Permanent Acquisition

IA 100 MAINLINE



For Main Line Details  
Refer to Sheet No. D.2

This Sheet  
For Information Only



NOTE: AREA RESTRICTED.  
DO NOT DISTURB.

59  
COONRAD,  
DONALD & SHIRLEY

50  
STATE OF IOWA

53  
CEDAR RAPIDS GREENHOUSES, INC.

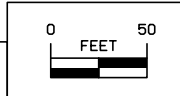
52  
MAJK LLC

56  
THE CITY OF CEDAR RAPIDS

**Right of Way Design Information**  
 ROW Team: Iowa DOT/CH2MHILL  
 ROW #: NHSN-100-1(40)-R2-57  
 Plan Date: X/XX/2014  
 Color Legend:  
 [Hatched] Property Lines  
 [Dashed] Temporary Easement  
 [Solid] Permanent Acquisition

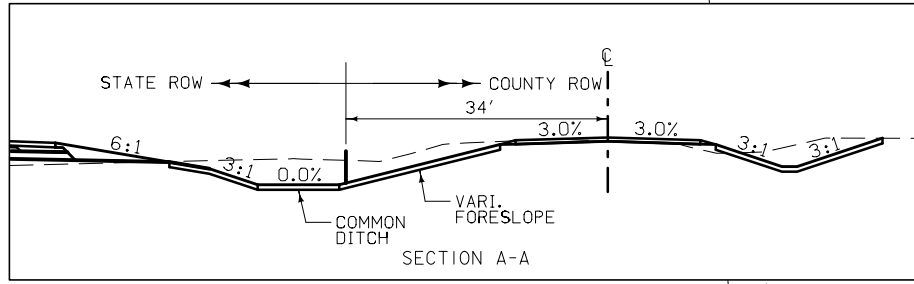
**IA 100 MAINLINE**

**LEGEND**  
 [Dashed] STATE ROW LIMITS  
 [Solid] COUNTY ROW LIMITS



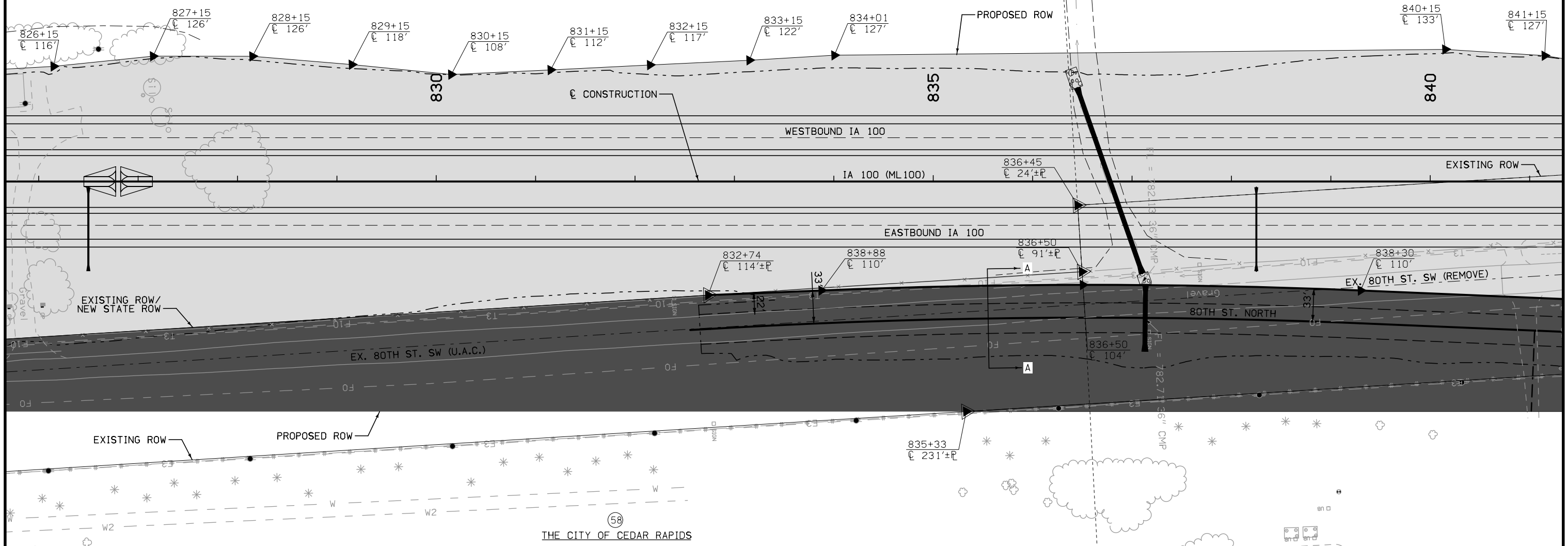
For Main Line Details  
Refer to Sheet No. D.4

This Sheet  
For Information Only



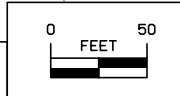
55  
COONRAD,  
DONALD & SHIRLEY

58  
THE CITY OF CEDAR RAPIDS



**Right of Way Design Information**  
 ROW Team: Iowa DOT/CH2MHILL  
 ROW #: NHSN-100-1(40)-R2-57  
 Plan Date: X/XX/2014  
 Color Legend:  
 [Symbol] Property Lines  
 [Symbol] Temporary Easement  
 [Symbol] Permanent Acquisition

**LEGEND**  
 [Symbol] STATE ROW LIMITS  
 [Symbol] COUNTY ROW LIMITS

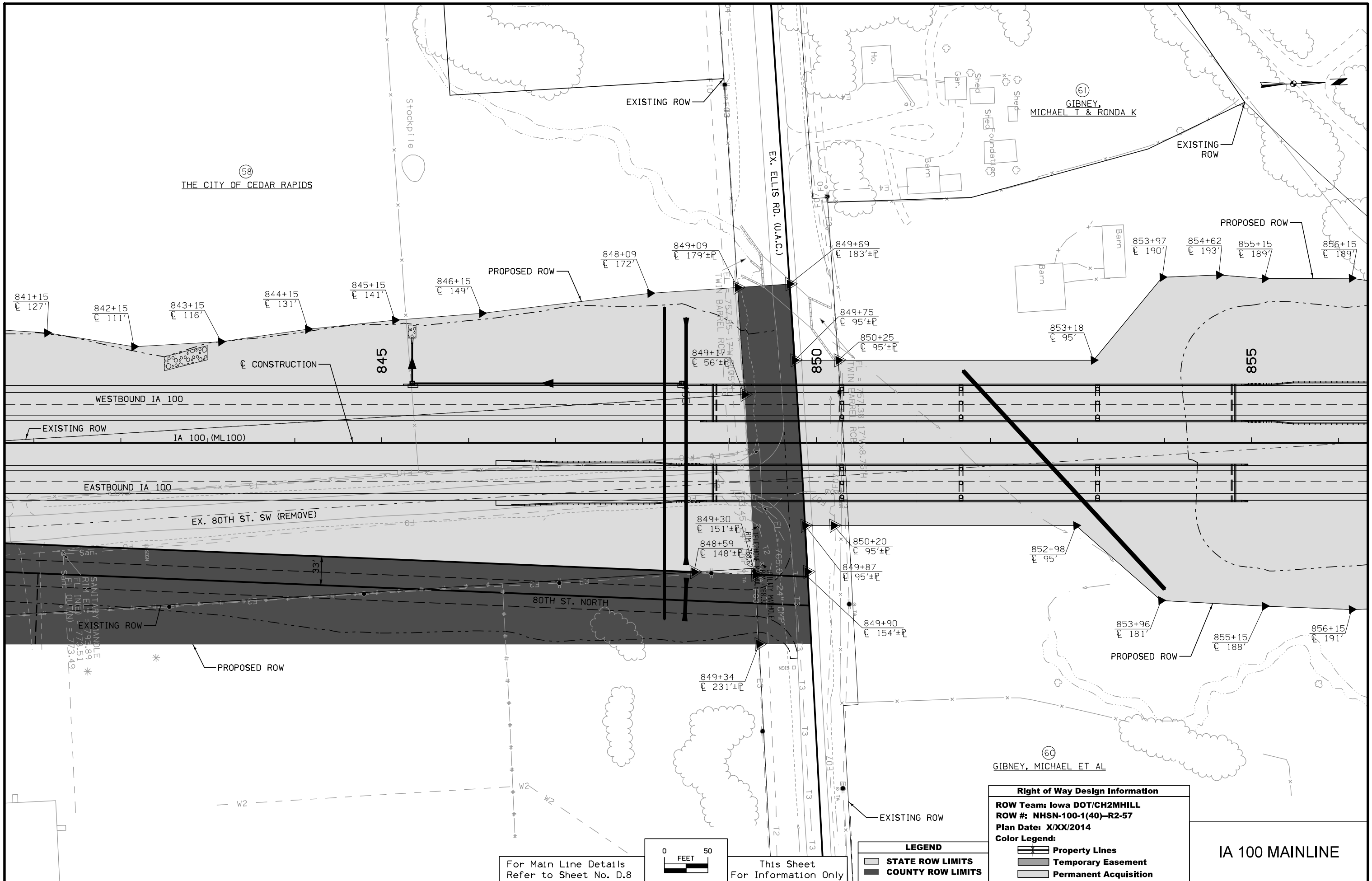


For Main Line Details  
Refer to Sheet No. D.6

This Sheet  
For Information Only

IA 100 MAINLINE





58 THE CITY OF CEDAR RAPIDS

61 GIBNEY, MICHAEL T & RONDA K

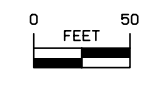
60 GIBNEY, MICHAEL ET AL

Right of Way Design Information	
ROW Team: Iowa DOT/CH2MHILL	
ROW #: NHSN-100-1(40)-R2-57	
Plan Date: X/XX/2014	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

LEGEND	
	STATE ROW LIMITS
	COUNTY ROW LIMITS

IA 100 MAINLINE

For Main Line Details Refer to Sheet No. D.8



This Sheet For Information Only

**Spiral Data**  
 $\Delta = 49^\circ 35' 53.16''$  (RT)  
 $\theta_s = 3^\circ 54' 05.65''$   
 $L_s = 286.00$   
 $T_s = 1,194.02$   
 $E_s = 215.11$   
 $K = 142.98$   
 $X_c = 285.87$   
 $Y_c = 6.49$   
 $LT = 190.71$   
 $ST = 95.38$   
 $LC = 285.94$

**Curve Data**  
 $\Delta = 41^\circ 47' 41.85''$  (RT)  
 $D = 02^\circ 43' 42.13''$   
 $R = 2,100.00$   
 $T = 801.81$   
 $L = 1,531.87$   
 $E = 147.86$   
 $e = 6.00\%$   
 $L = 286.00$   
 $x = 96.00$   
 $DS = 70$  mph

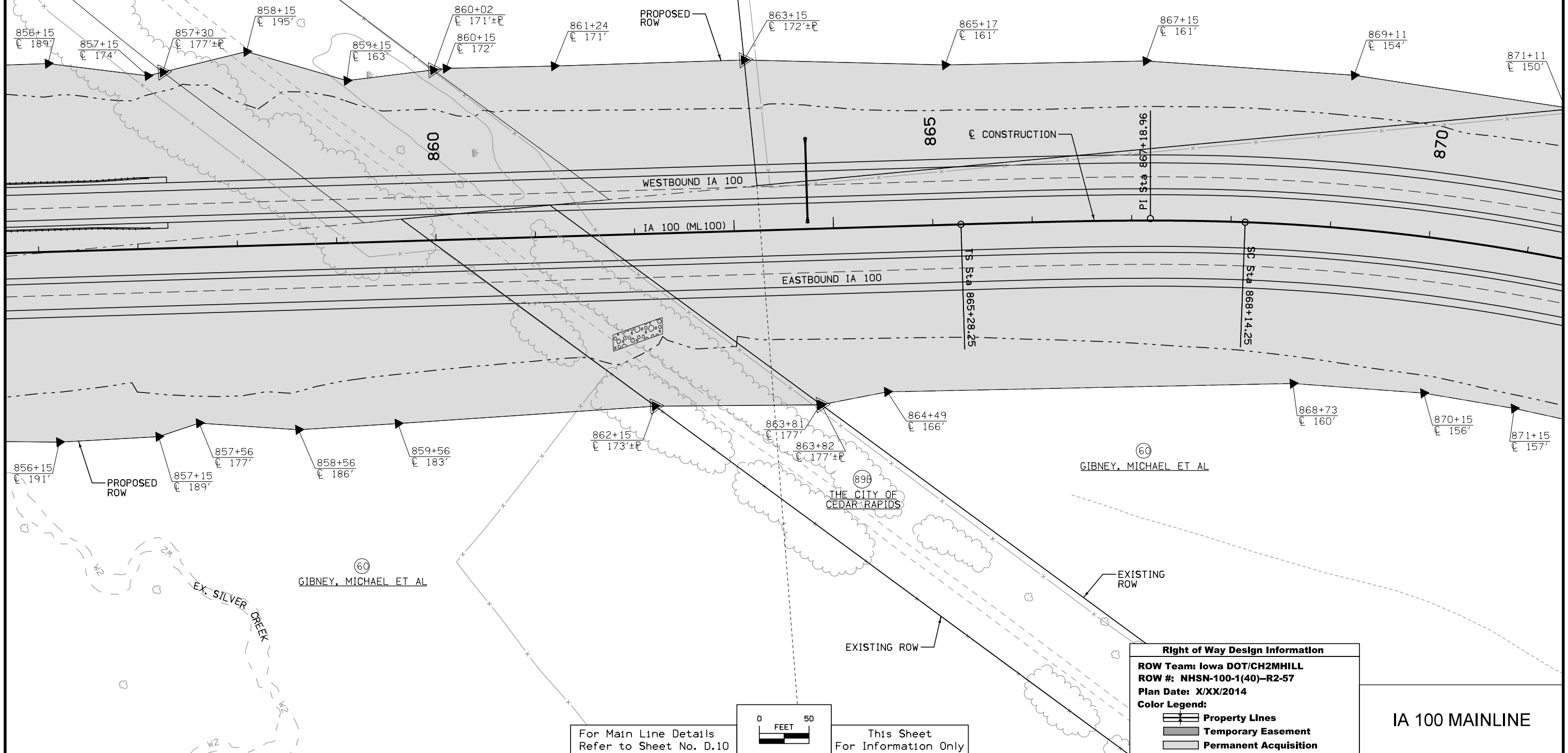


60  
 GIBNEY, MICHAEL ET AL

60  
 GIBNEY, MICHAEL ET AL

60  
 THE CITY OF CEDAR RAPIDS

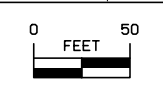
60  
 GIBNEY, MICHAEL ET AL



Right of Way Design Information	
ROW Team:	Iowa DOT/CH2MHILL
ROW #:	NHSN-100-1(40)-R2-57
Plan Date:	X/XX/2014
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

**IA 100 MAINLINE**

For Main Line Details Refer to Sheet No. D.10

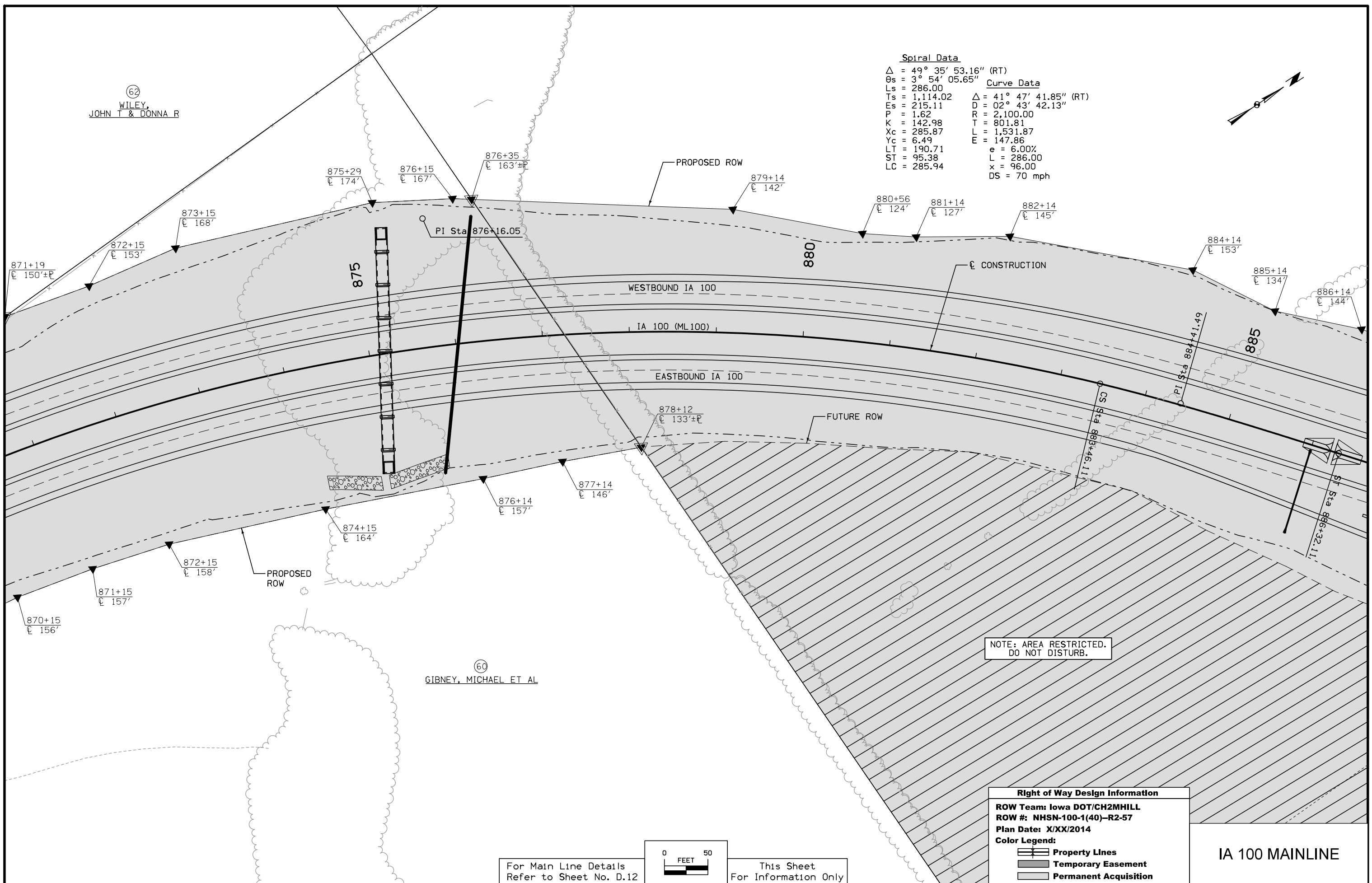
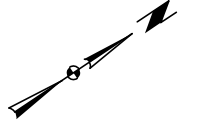


This Sheet For Information Only

62  
WILEY,  
JOHN T & DONNA R

**Spiral Data**  
 $\Delta = 49^\circ 35' 53.16''$  (RT)  
 $\theta_s = 3^\circ 54' 05.65''$   
 $L_s = 286.00$   
 $T_s = 1,114.02$   
 $E_s = 215.11$   
 $P = 1.62$   
 $K = 142.98$   
 $X_c = 285.87$   
 $Y_c = 6.49$   
 $LT = 190.71$   
 $ST = 95.38$   
 $LC = 285.94$

**Curve Data**  
 $\Delta = 41^\circ 47' 41.85''$  (RT)  
 $D = 02^\circ 43' 42.13''$   
 $R = 2,100.00$   
 $T = 801.81$   
 $L = 1,531.87$   
 $E = 147.86$   
 $e = 6.00\%$   
 $L = 286.00$   
 $x = 96.00$   
 $DS = 70$  mph

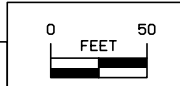


60  
GIBNEY, MICHAEL ET AL

NOTE: AREA RESTRICTED.  
DO NOT DISTURB.

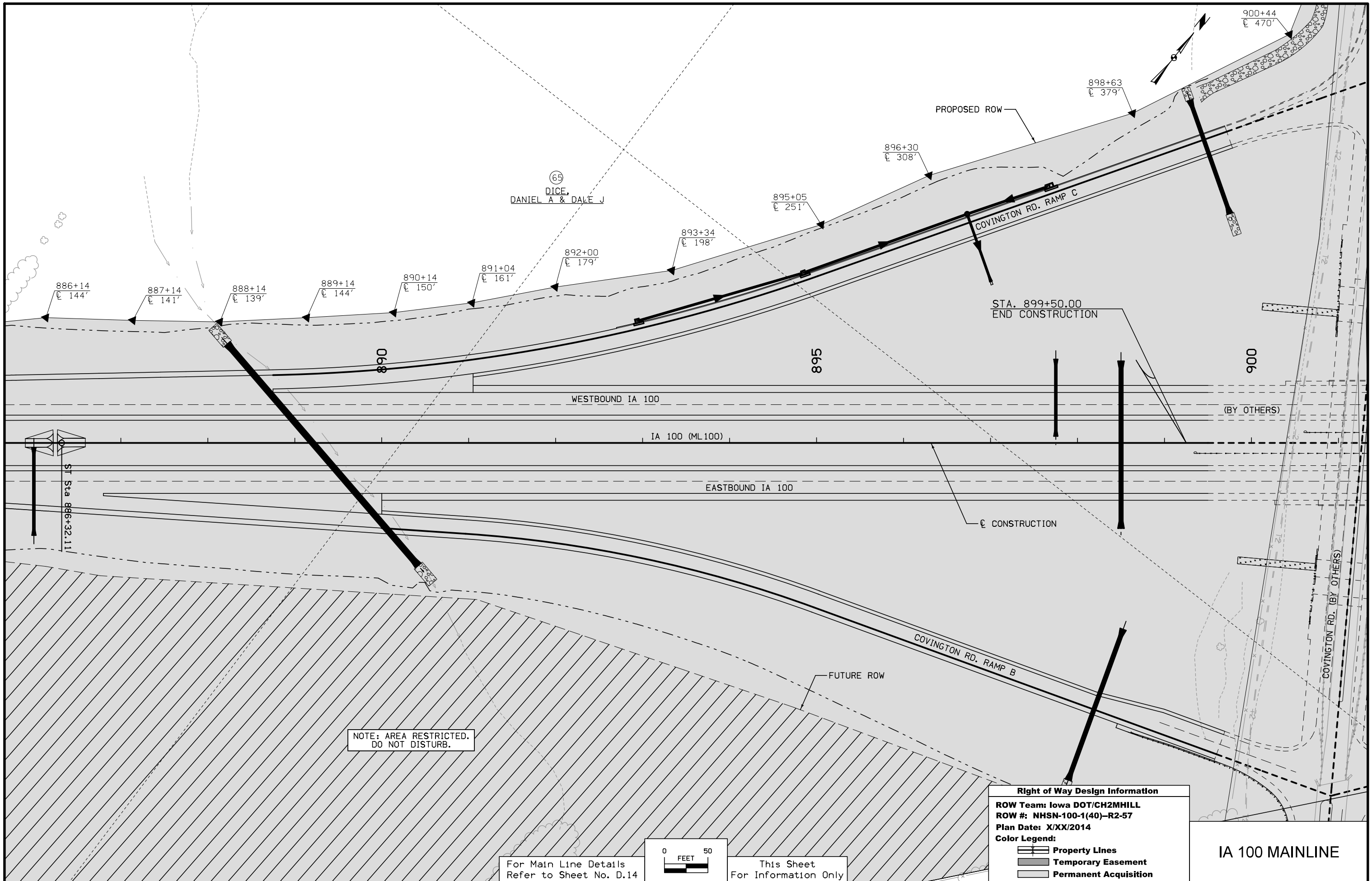
**Right of Way Design Information**  
**ROW Team:** Iowa DOT/CH2MHILL  
**ROW #:** NHSN-100-1(40)-R2-57  
**Plan Date:** X/XX/2014  
**Color Legend:**  
  
 Property Lines  
 Temporary Easement  
 Permanent Acquisition

IA 100 MAINLINE



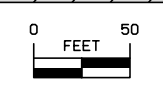
For Main Line Details  
Refer to Sheet No. D.12

This Sheet  
For Information Only



NOTE: AREA RESTRICTED.  
DO NOT DISTURB.

For Main Line Details  
Refer to Sheet No. D.14



This Sheet  
For Information Only










**Right of Way Design Information**  
 ROW Team: Iowa DOT/CH2MHILL  
 ROW #: NHSN-100-1(40)-R2-57  
 Plan Date: X/XX/2014  
 Color Legend:  
 [Symbol] Property Lines  
 [Symbol] Temporary Easement  
 [Symbol] Permanent Acquisition

**IA 100 MAINLINE**

### 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)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Grade & Pave Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure
Gray, Light	(48)	Construction by Others
Gray, Light	(48)	Previously Constructed Grading Limits

### 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
	Pavement Removal		Road Closure

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

## LEGEND AND SYMBOL INFORMATION SHEET

**STAGING NOTES**

GENERAL NOTES:

1. Contractor furnished borrows will be used for this project.
2. The Contractor shall take precautions to avoid disturbing areas outside of the projects proposed right-of-way limits.
3. Grading IA 100 mainline from near Covington Road and points north will be constructed as part of a separate project by others. It is anticipated that grading operations will be completed prior to/or during this grading project. Paving operations from Covington Road north will also occur during grading operations. The grading Contractor shall tie to the previously graded roadways south of Covington Road and coordinate with the projects north of Covington Road.
4. 80th Street SW will be closed during reconstruction of the side road. Once 80th Street construction is complete, the roadway will open to traffic.
5. The contractor shall maintain local access to residences and farm fields along Ellis Road and 80th Street SW outside the reconstructed area of 80th Street just south of Ellis Road.
6. The designated detour route for 80th Street SW will be identified, marked, and maintained by the contractor.
7. Acces to the project corridor will be available at 80th Street SW at Ellis Road and from Covington Road. Contractor may coordinate with Project NHSX-100-1(105)--3H57 for access from existing Berger Lane.

STAGE 1

- Grade and rock relocated 80th Street SW south of Ellis Road. A short closure of 80th Street SW between Ellis Road and near local access point to the City of Cedar Rapids Water Treatment Facility may be required to connect the relocated roadway to the existing alignment. This work can occur concurrently with construction of Mainline IA 100 and Covington Interchange Ramps.
- Begin bridge abutment grading for dual mainline bridges over Ellis Road/Silver Creek.
- Construct the IA 100 mainline RCB culvert south of Covington Road interchange.
- Grade IA 100 mainline from just north of exiting Berger lane to previously constructed IA 100 mainline near Covington Road. Tie to previously completed grading project.
- Grade Covington Road Ramps B and C. Tie to previously completed grading project.

**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
NHSX-100-1(42)--3H-57	GRADING
NHXS-100-1(105)--3H-57	GRADING
NHXS-100-1(XXX)--3H-57	BRIDGE OVER ELLIS RD.

**TRAFFIC CONTROL PLAN**

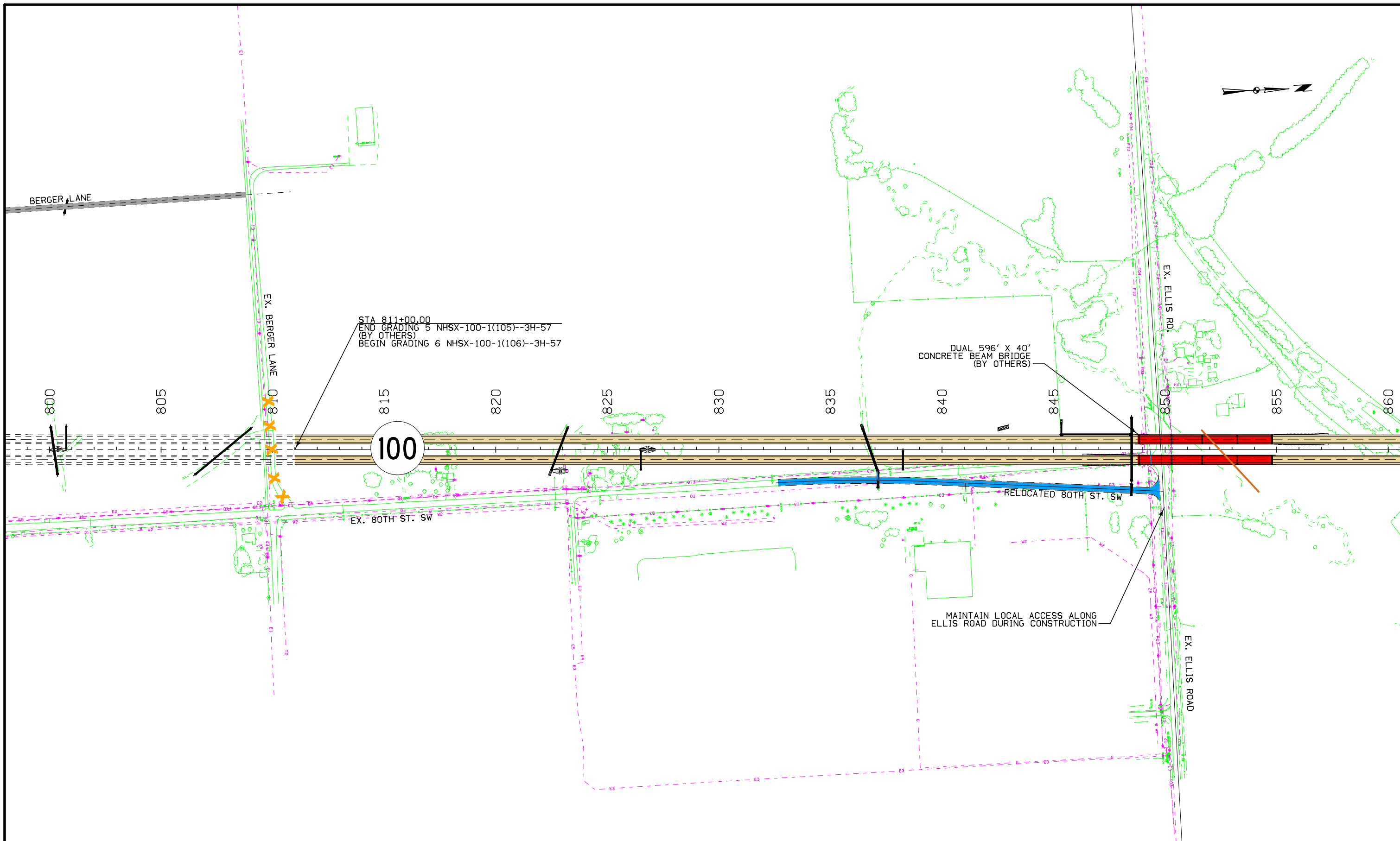
80th Street SW at Ellis Road will be closed to traffic for a period of time during the construction of the relocated 80th Street SW and IA 100. Refer to Tabulation 108-26 "Staging Notes" for possible detour routes.

Traffic shall be maintained on all other local roadways. Access to local residences and field entrances are to be maintained at all times.

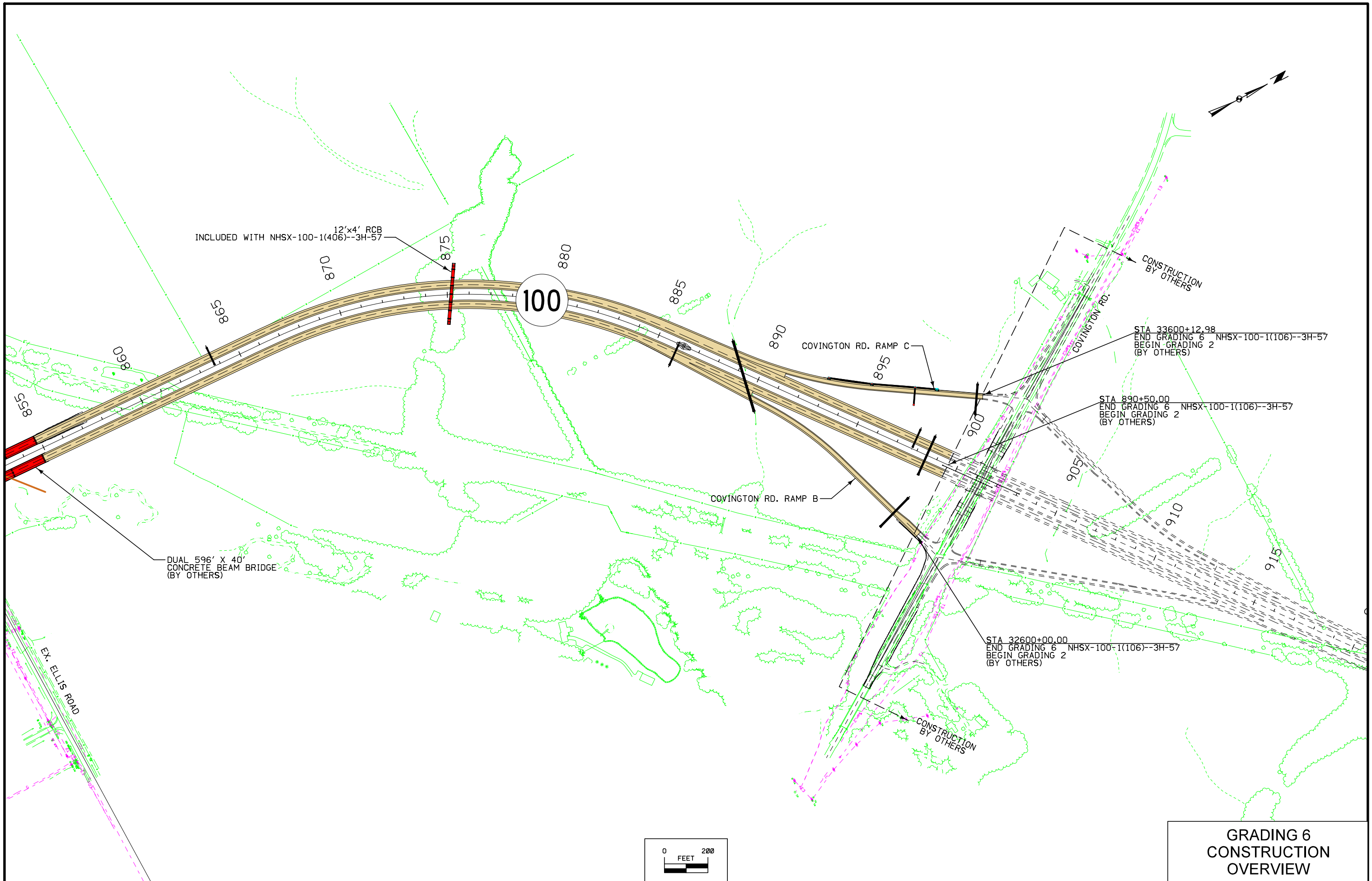
Traffic control for this project shall be in accordance with Iowa DOT Standard Road Plans.

For additional traffic control information refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the current standard specifications.

The Contractor shall coordinate traffic control needs with other projects in the area. Refer to Tabulation 111-01 "Coordinated Operations" for other projects within the area.

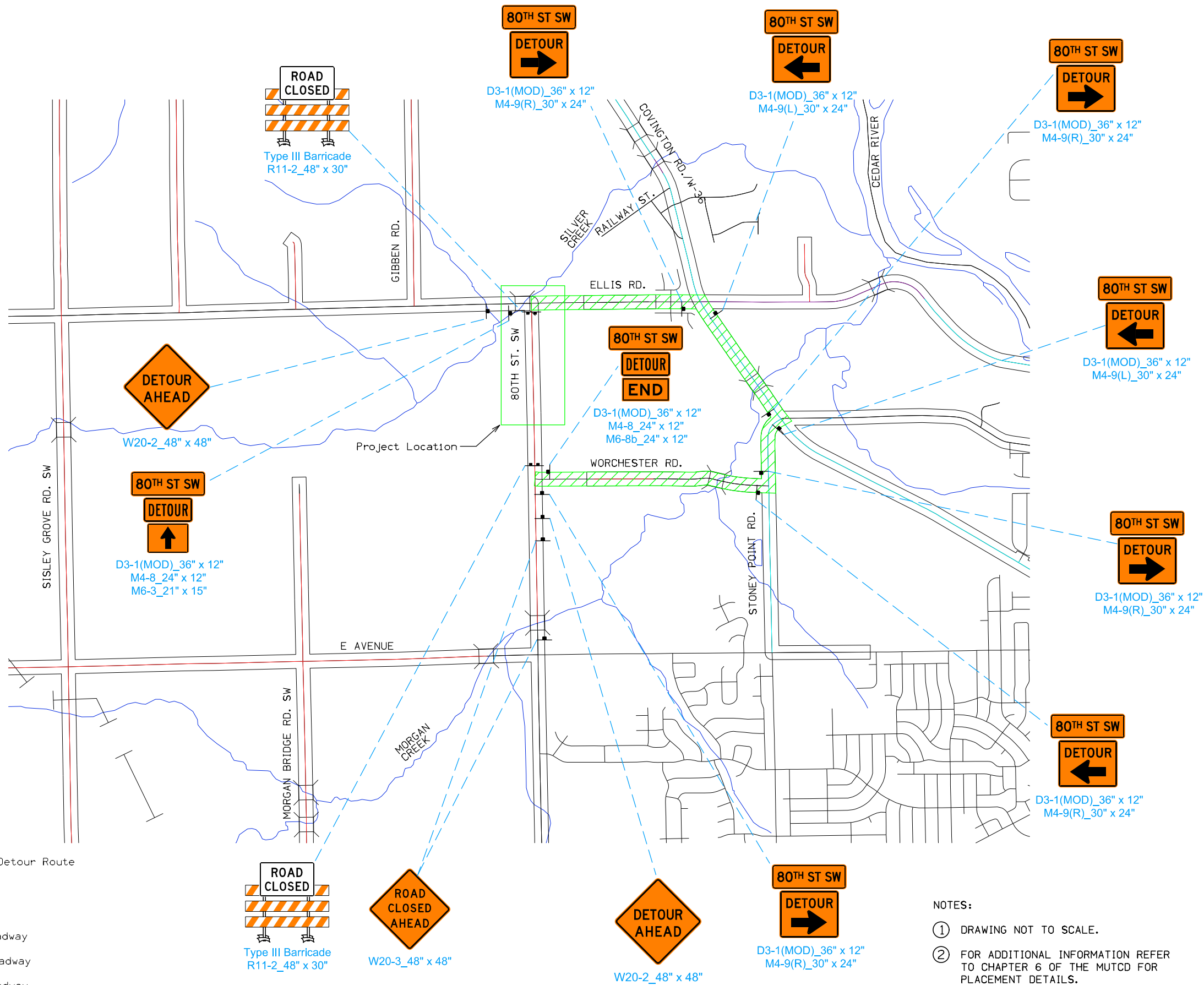


**GRADING 6  
CONSTRUCTION  
OVERVIEW**









**GRADING 6  
CONSTRUCTION  
OVERVIEW**





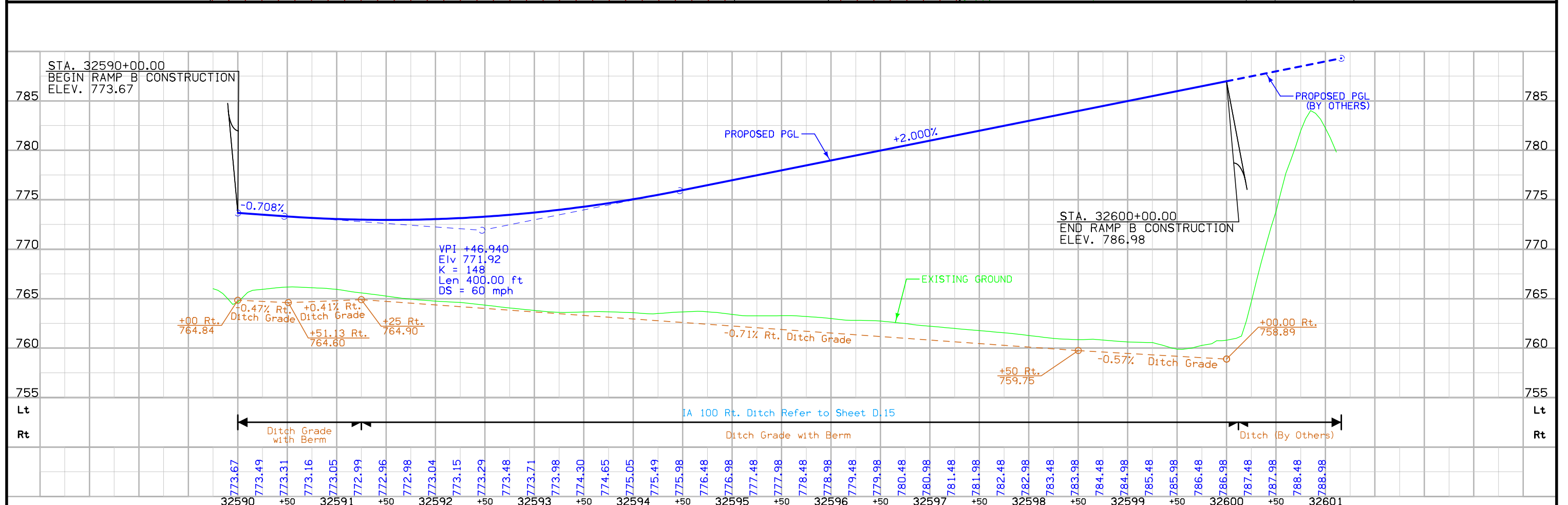
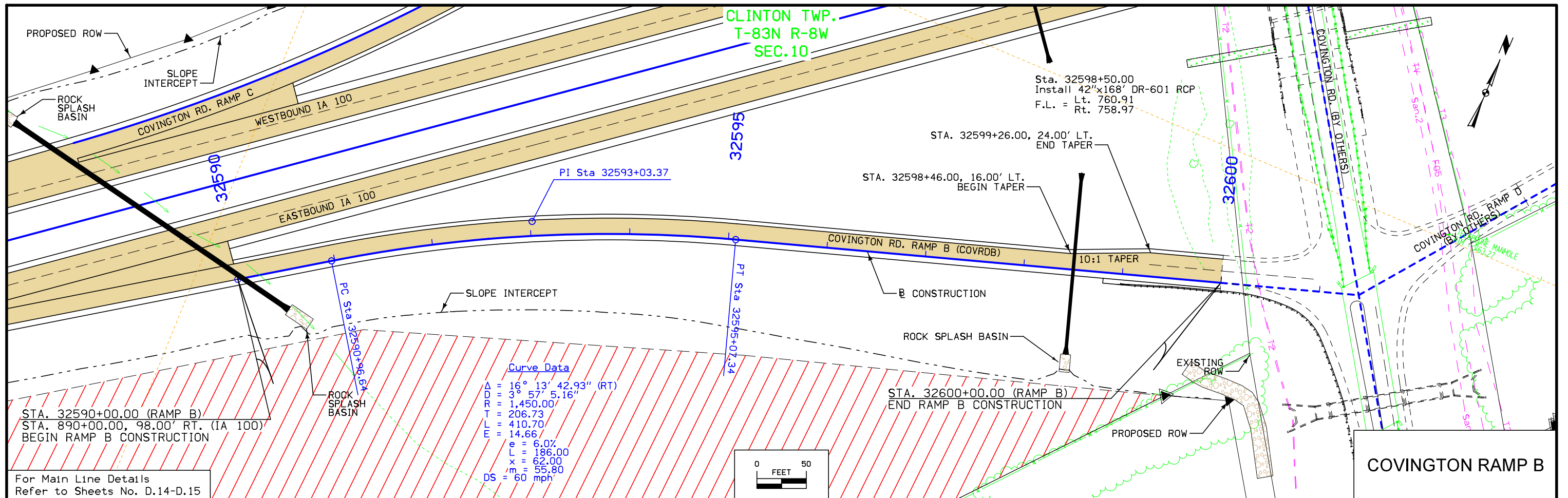
LEGEND

-  Designated Detour Route
-  Sign
-  Barricade
-  Asphalt Roadway
-  Concrete Roadway
-  Granular Roadway

NOTES:

- ① DRAWING NOT TO SCALE.
- ② FOR ADDITIONAL INFORMATION REFER TO CHAPTER 6 OF THE MUTCD FOR PLACEMENT DETAILS.

**80TH ST. SW  
ROAD DETOUR  
SIGNING SCHEMATIC**

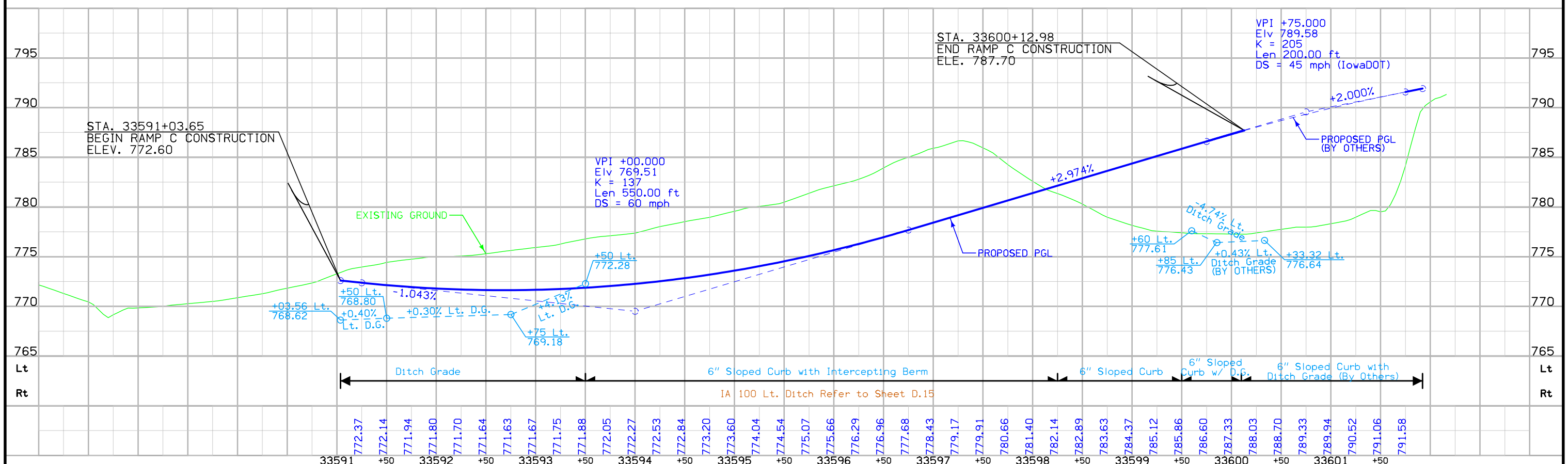
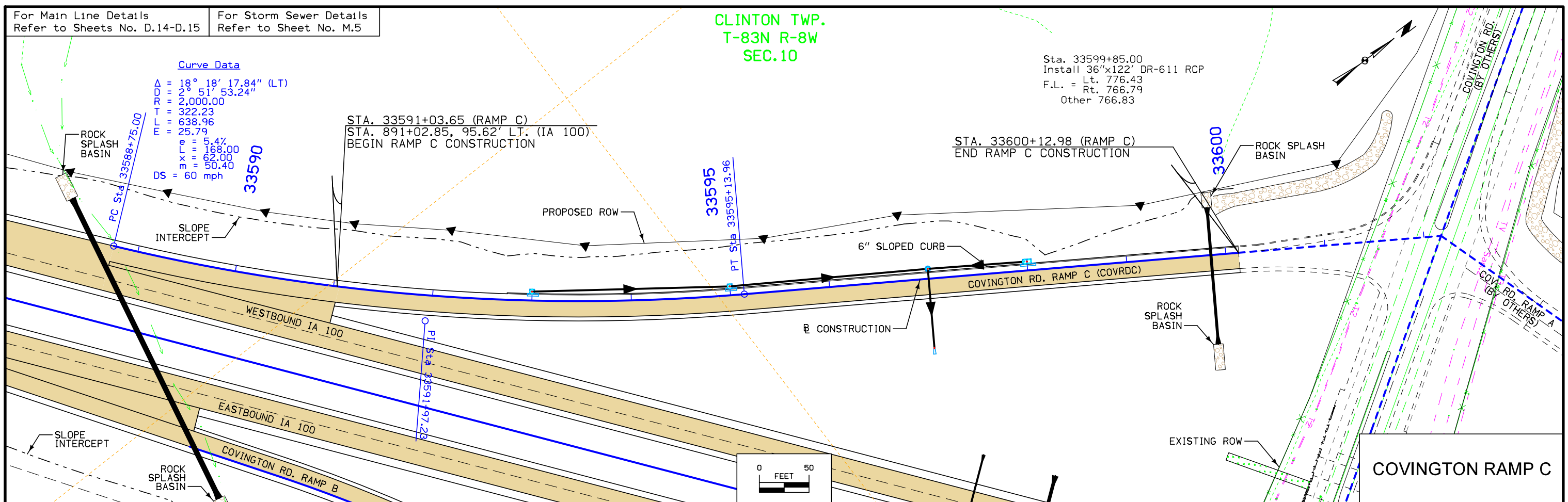


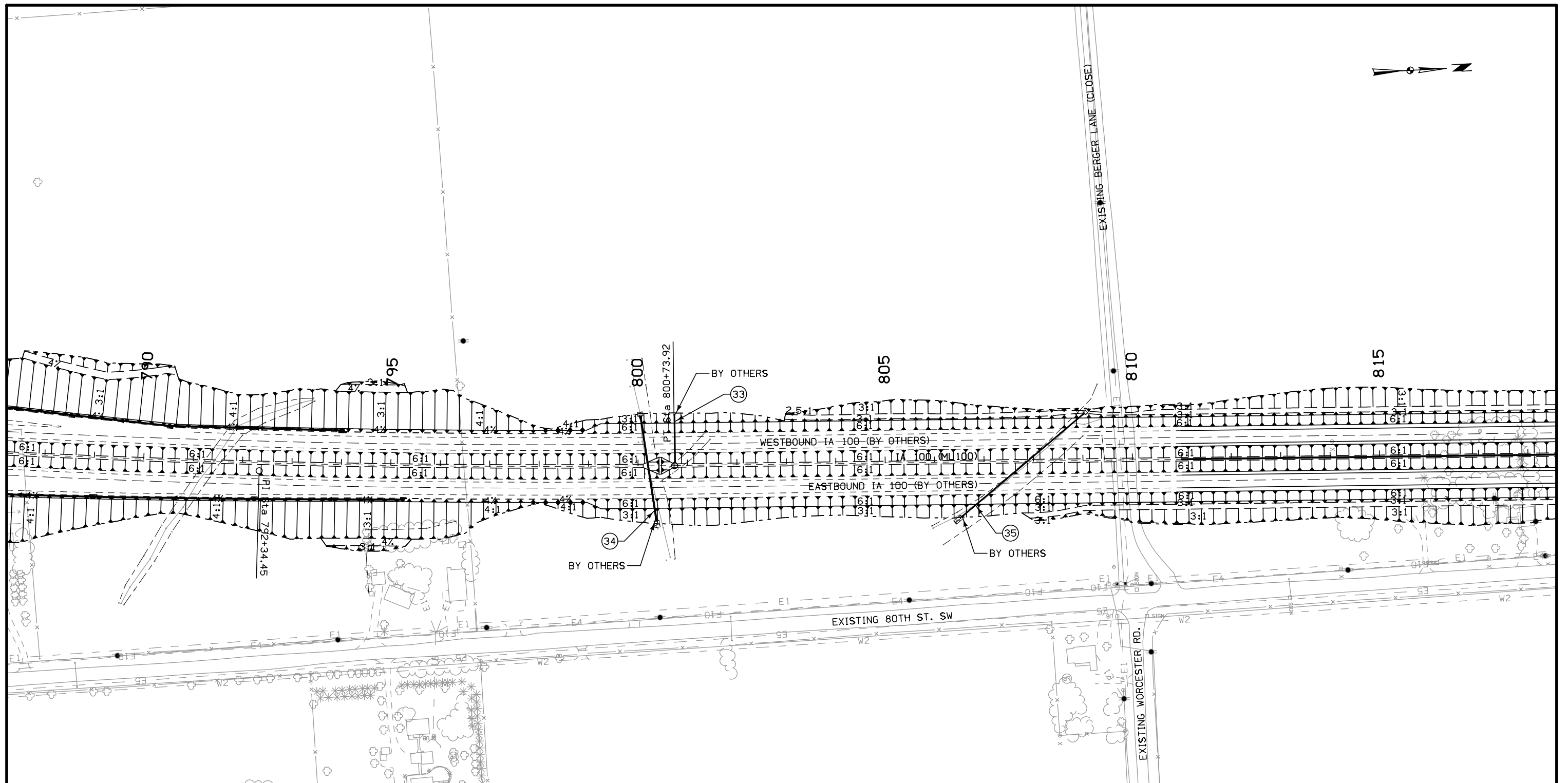
For Main Line Details Refer to Sheets No. D.14-D.15  
 For Storm Sewer Details Refer to Sheet No. M.5

CLINTON TWP.  
 T-83N R-8W  
 SEC.10

Sta. 33599+85.00  
 Install 36"x122' DR-611 RCP  
 F.L. = Lt. 776.43  
 Other 766.83

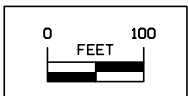
**Curve Data**  
 Δ = 18° 18' 17.84" (LT)  
 ΔR = 2° 51' 53.24"  
 T = 2,000.00  
 L = 322.23  
 E = 638.96  
 F = 25.79  
 e = 5.4%  
 x = 168.00  
 m = 62.00  
 n = 50.40  
 DS = 60 mph





TABULATION OF PROPOSED DRAINAGE STRUCTURES

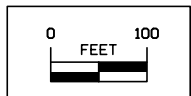
NO.	STATION	SIZE	TYPE	FLOWLINES		
				Left	Right	Other
33	800+75.00	24"x86'	DR-611 RCP	792.97	799.44	793.51
34	800+20.29	48"x198'	DR-601 RCP	792.14	788.83	
35	807+87.89	30"x312'	DR-601 RCP	807.60	798.39	

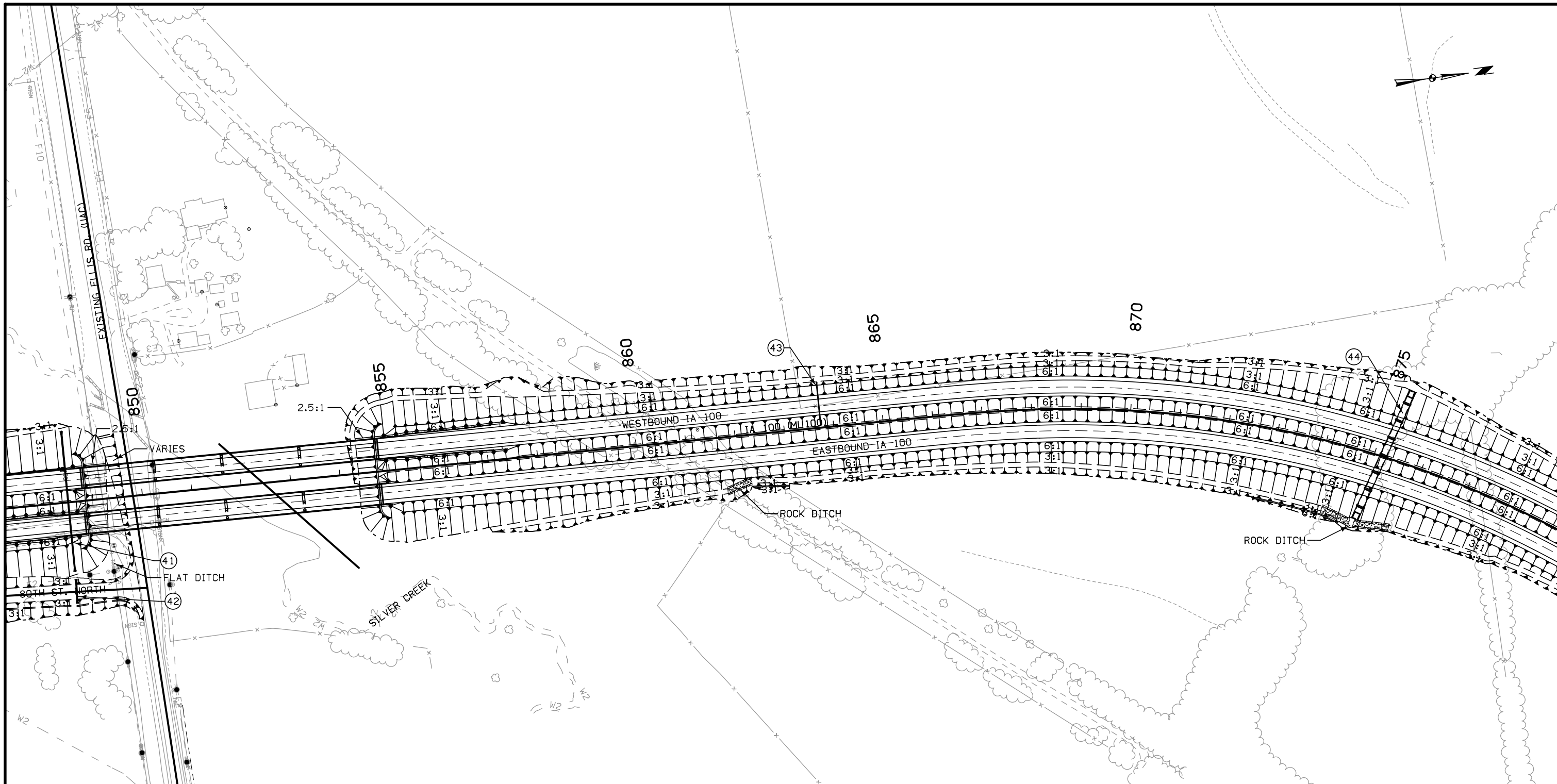




TABULATION OF PROPOSED DRAINAGE STRUCTURES

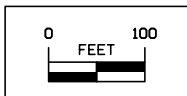
NO.	STATION	SIZE	TYPE	FLOWLINES		
				Left	Right	Other
36	822+84.62	37"x23"x180'	DR-611 LCP	805.00	807.00	805.28
37	826+50.00	24"x72'	DR-611 RCP	800.34	798.98	799.24
38	836+77.90	59"x36"x182'	DR-611 LCP	778.85	779.90	779.28
39	3104+58.00	59"x36"x52'	DR-601 LCP	779.98	782.96	
40	838+25.00	24"x72'	DR-611 RCP	781.92	780.62	781.08
41	848+50.00	48"x268'	DR-601 RCP	763.54	765.80	
42	3115+95.00	52"x32"x34'	DR-601 LCP	765.80	766.00	

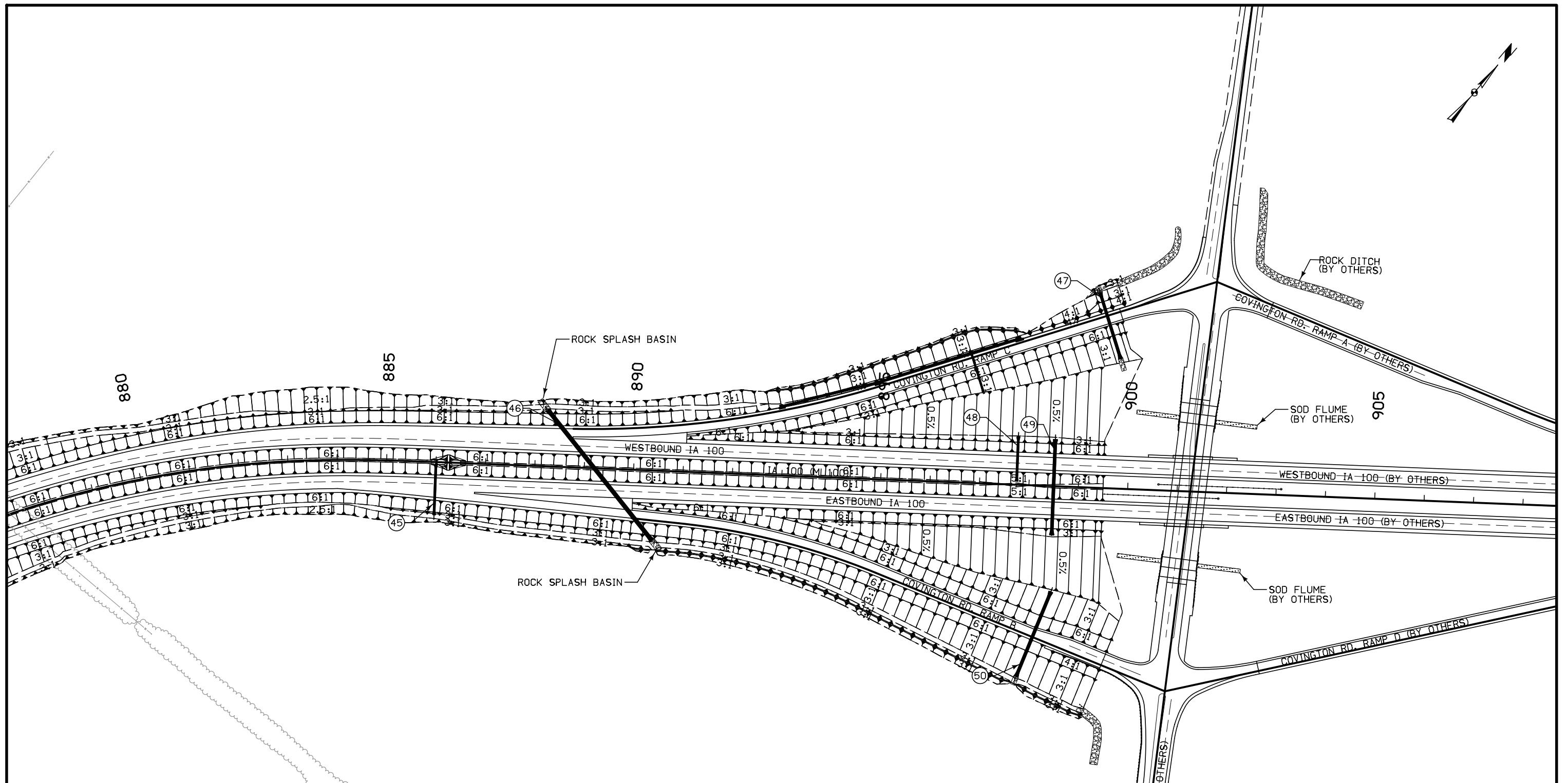




TABULATION OF PROPOSED DRAINAGE STRUCTURES

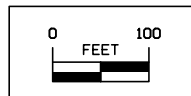
NO.	STATION	SIZE	TYPE	FLOWLINES		
				Left	Right	Other
41	848+50.00	48"x268'	DR-601 RCP	763.54	765.80	
42	3115+95.00	52"x32"x34'	DR-601 LCP	765.80	766.00	
43	863+74.15	24"x74'	DR-611 RCP	765.49	767.68	766.41
44	875+18.00	12'x4'x255'	R.C.B.	759.90	758.65	



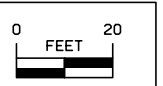
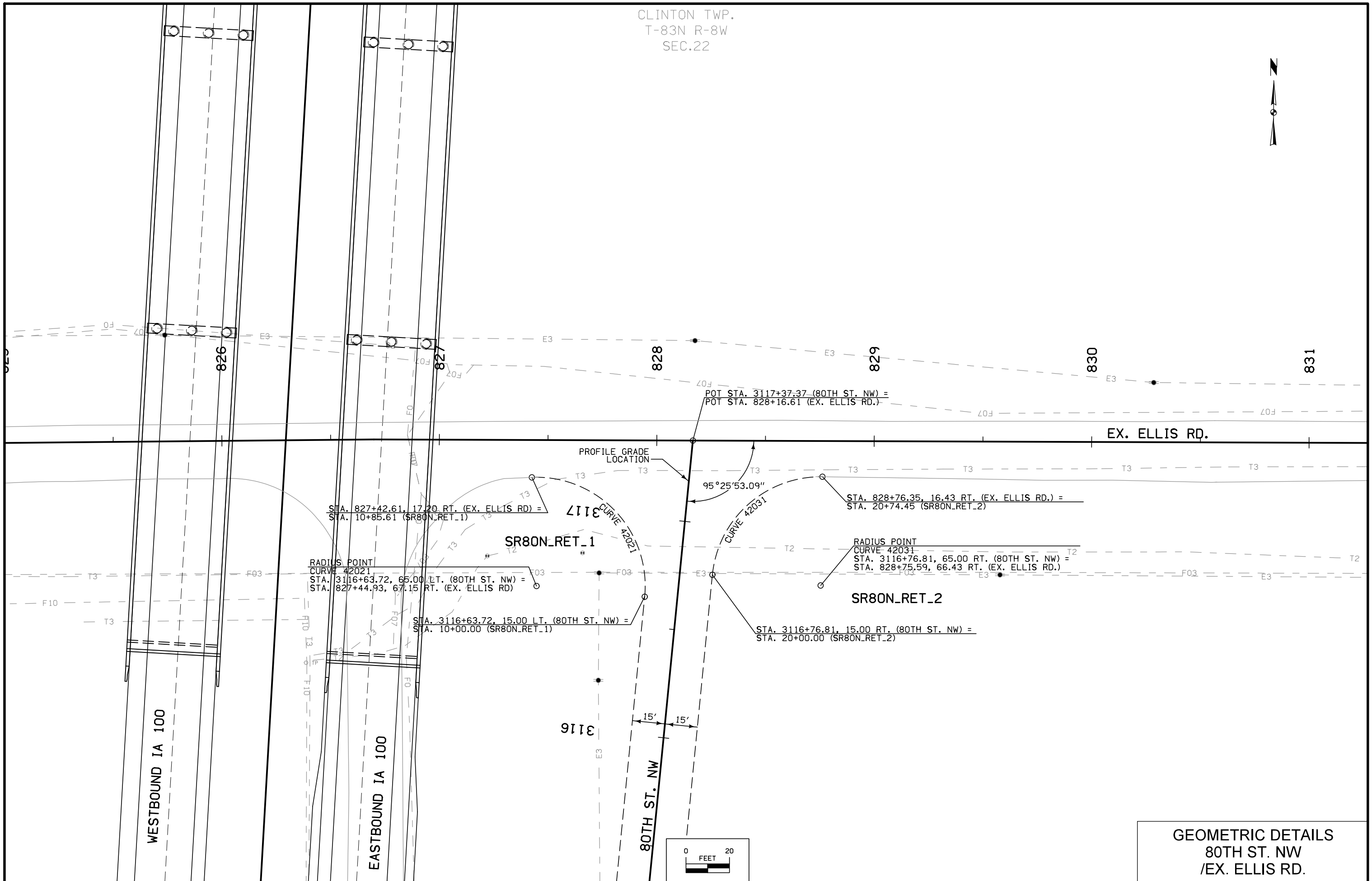


TABULATION OF PROPOSED DRAINAGE STRUCTURES

NO.	STATION	SIZE	TYPE	FLOWLINES				
				Left	Right	Other		
45	886+00.00	24"x88'	DR-611 RCP	772.94	770.94	771.27		
46	889+20.51	65"x40"x320'	DR-601 LCP	767.60	764.61			
47	33599+85.00	36"x122'	DR-611 RCP	776.43	766.79	766.83		
48	897+75.00	24"x76'	DR-611 RCP	763.01	766.30	763.24		
49	898+50.00	42"x176'	DR-601 RCP	762.51	761.40			
50	32598+50.00	42"x168'	DR-601 RCP	760.91	758.97			



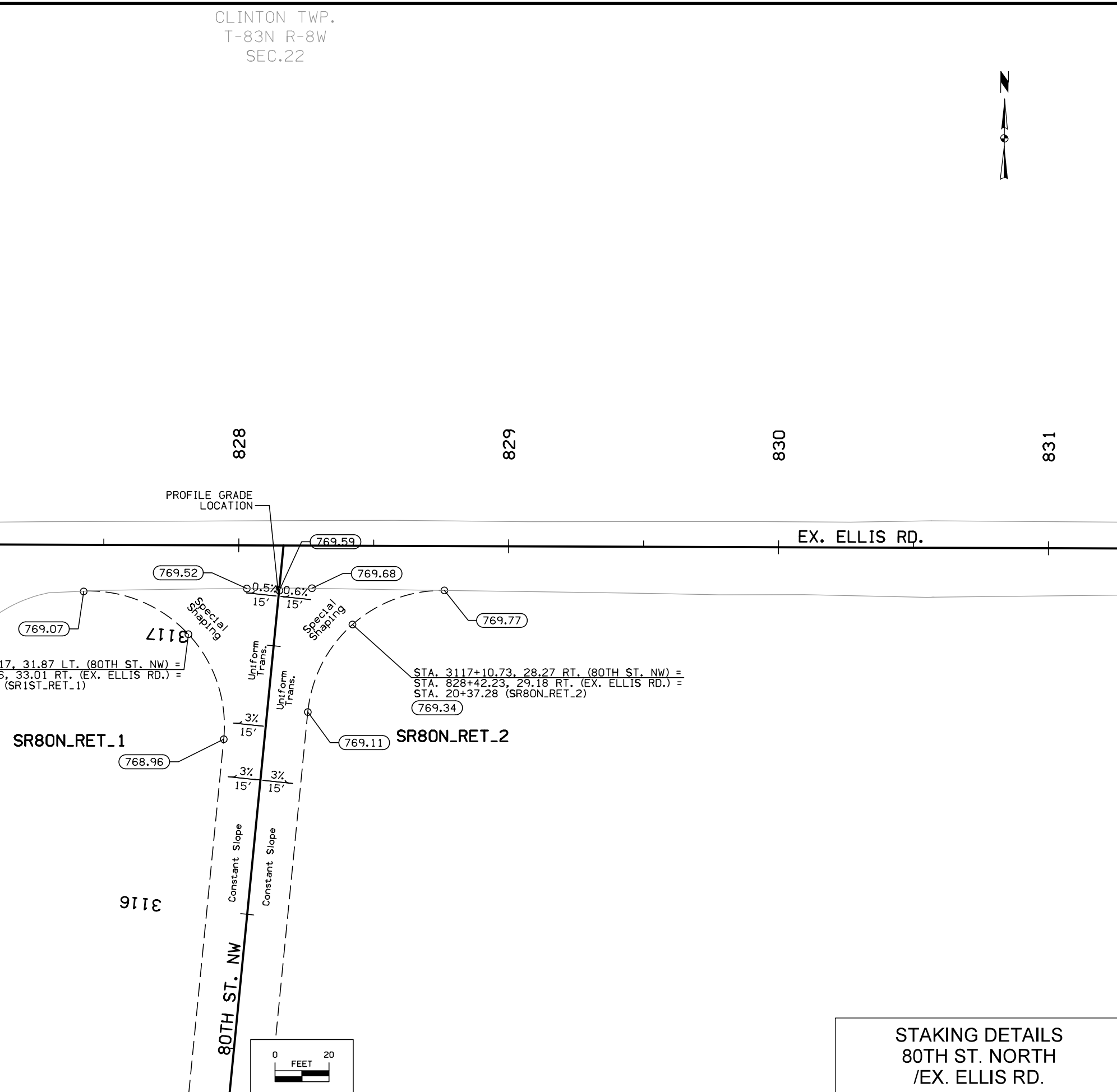
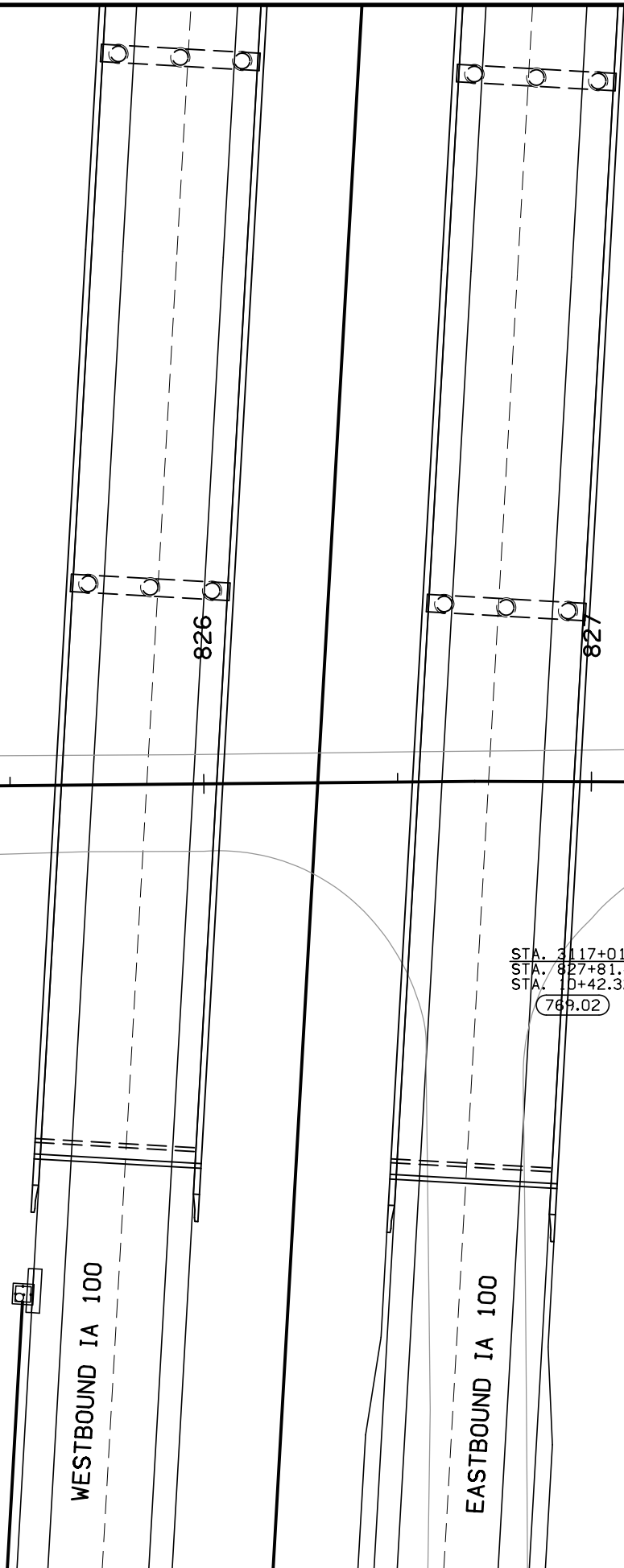
CLINTON TWP.  
T-83N R-8W  
SEC.22



GEOMETRIC DETAILS  
80TH ST. NW  
/EX. ELLIS RD.

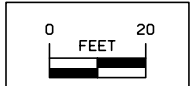


CLINTON TWP.  
T-83N R-8W  
SEC.22



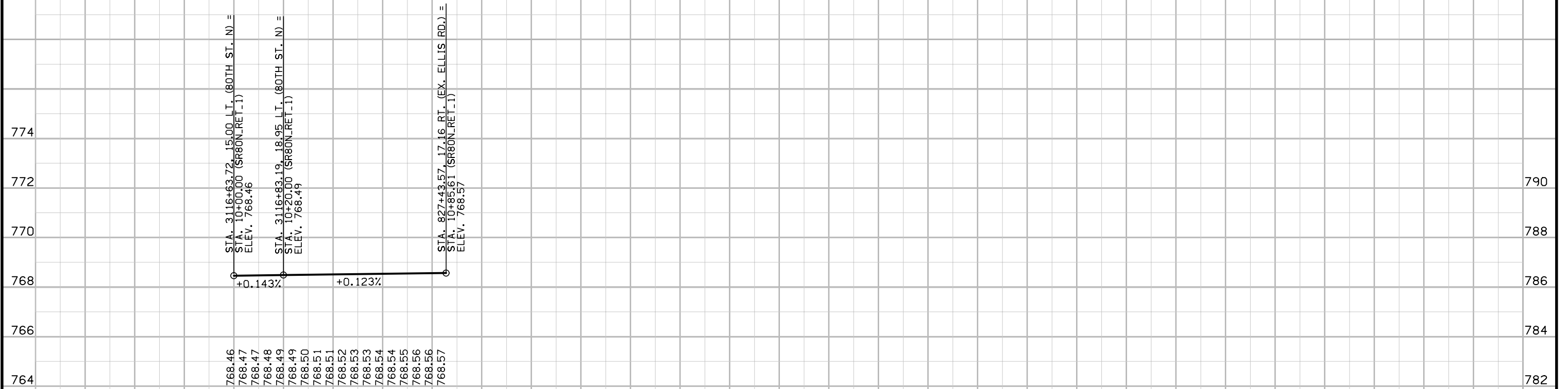
STA. 3117+01.17, 31.87 LT. (80TH ST. NW) =  
STA. 827+81.46, 33.01 RT. (EX. ELLIS RD.) =  
STA. 10+42.32 (SR1ST\_RET.1)

STA. 3117+10.73, 28.27 RT. (80TH ST. NW) =  
STA. 828+42.23, 29.18 RT. (EX. ELLIS RD.) =  
STA. 20+37.28 (SR80N\_RET.2)

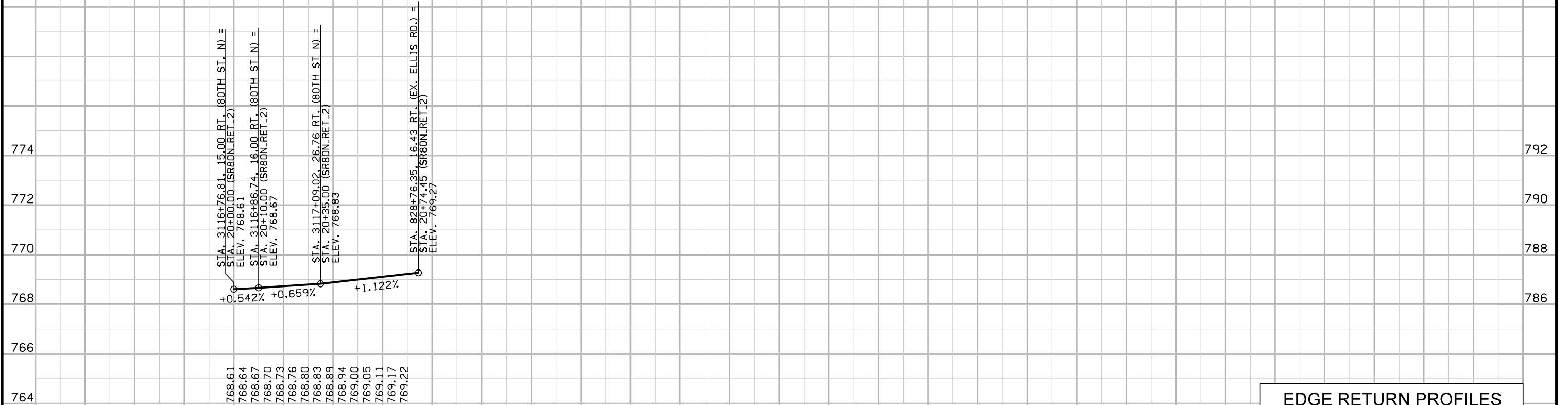


STAKING DETAILS  
80TH ST. NORTH  
/EX. ELLIS RD.

SR80N\_RET\_1



SR80N\_RET\_2



EDGE RETURN PROFILES  
80TH ST. NORTH  
/ELLIS RD.

### STORM SEWER

\* 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. Bid Length is measured horizontally from center of structure to center of structure													
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 Diameter	Bid* Length	Design Length	Slope %	Flow Lines			Pipe Profile Sheet No.	Notes
			Elev.	Elev.	FT			From	To		IN	FT	FT		Inlet Elevation	Outlet Elevation	Other Elevation		
455	848+45.00, -66.42	SW-546	790.31	782.60			P-455	455	450	2000	15	310.00	306.00	2.00	783.10	776.98		M.4	
450	845+35.00, -66.42	SW-546	788.77	774.47			P-450	450	0450	2000	15	46.00	44.00	6.00	774.97	771.97		M.4	
0450	845+35.00, -120.5	RF-3 (15")				Outlet FL=771.97													
500	33598+00.00, -7	SW-510	781.12	771.26			P-500	500	502	2000	15	100.01	94.01	4.00	771.76	768.00		M.5	
502	33597+00.00, -10	SW-401 (48")	778.77	764.23			P-502	502	0502	2000	15	80.00	78.00	0.45	764.73	764.35		M.5	
505	33595+00.00, -7	SW-508	773.30	765.11			P-505	505	502	2000	15	199.94	195.94	0.40	765.61	764.83		M.5	
510	33593+00.00, -7	SW-508	771.29	766.48			P-510	510	505	2000	15	199.02	195.02	0.65	766.98	765.71		M.5	
0502	33597+00.00, 76.08	RF-3 (15")				Outlet FL=764.35													

**SURVEY SYMBOLS**

- EW Edge of Water
- HDG Hedge Row
- HDG Hedge Row
- INB Storm Sewer Beehive Intake
- BNK Stream Bank
- ENU Edge Unpaved Entrance & Parking
- SNP Unpaved Shoulder
- FCL Chain Link and Security Fence
- FWD Wood Fence
- GDL Guard Rail (Rail and Cable)
- RR Centerline of Railroad Tracks
- RET Retaining Walls
- RIP Rip-Rap
- TEV Evergreen Tree
- TDC Tree Deciduous
- LUM Luminaire
- PPA Power Pole Co. 1
- SI Sign
- TA Tower Anchor
- SWP Swamp or Marsh
- MIS Miscellaneous
- UB Utility Box
- MH Utility Access (Manhole)
- IN Storm Sewer Intake
- TV Satellite TV Dish
- GP Guard Post (Less Than 4 Posts)
- FHD Fire Hydrants
- FLG Flag Poles
- TSG Traffic Signal

**UTILITY LEGEND**

- E3 (Overhead) Alliant Energy  
Contact: Jason Hogan  
Phone: 608-458-4871
- E4 (Underground) Alliant Energy  
Contact: Jason Hogan  
Phone: 608-458-4871
- W (48" Dia.) City of Cedar Rapids  
Contact: Ken Russell  
Phone: 319-286-5956
- W2 (24" Dia.) City of Cedar Rapids  
Contact: Ken Russell  
Phone: 319-286-5956
- San. City of Cedar Rapids  
Contact: Dave Wallace  
Phone: 319-286-5910
- F0 Iowa Communications Network  
Contact: Larry Klawitter  
Phone: 515-725-4741
- E1 (Overhead) Linn County REC  
Contact: Len Tow  
Phone: 319-377-5754 (Ext: 275)
- E2 (Underground) Linn County REC  
Contact: Len Tow  
Phone: 319-377-5754 (Ext: 275)
- G MidAmerican Energy Co.  
Contact: Joe Retek  
Phone: 319-341-4457
- F03 (Overhead) Windstream/Paetec  
Contact: Dale Graff  
Phone: 641-269-7725
- F04 (Underground) Windstream/Paetec  
Contact: Dale Graff  
Phone: 641-269-7725
- T2 (Underground) Century Link/Qwest  
Contact: Carroll Wheaton  
Phone: 515-554-9711
- T3 (Underground) Century Link/Qwest  
Contact: Carroll Wheaton  
Phone: 515-554-9711
- F10 (Underground) Century Link/Qwest  
Contact: Carroll Wheaton  
Phone: 515-554-9711
- E5 (Overhead) ITC Midwest  
Contact: Chad Levi  
Phone: 319-297-6765
- F07 (Underground) Atkins Telephone Coop.  
Contact: Todd Christophersen  
Phone: 319-446-7331

**PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS**

LINEWORK	Design Color No.	Description
Gray, Dark	(112)	Existing Topographic Features, Utilities, and Labels
Black	(17)	Proposed Storm Sewer Details, Alignment, Stationing, T1c Marks, and Alignment Annotation
SHADING	Design Color No.	Description
Gray, Light	(48)	Proposed Pavement Shading

**PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS**

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

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

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

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

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

**Reference Point**

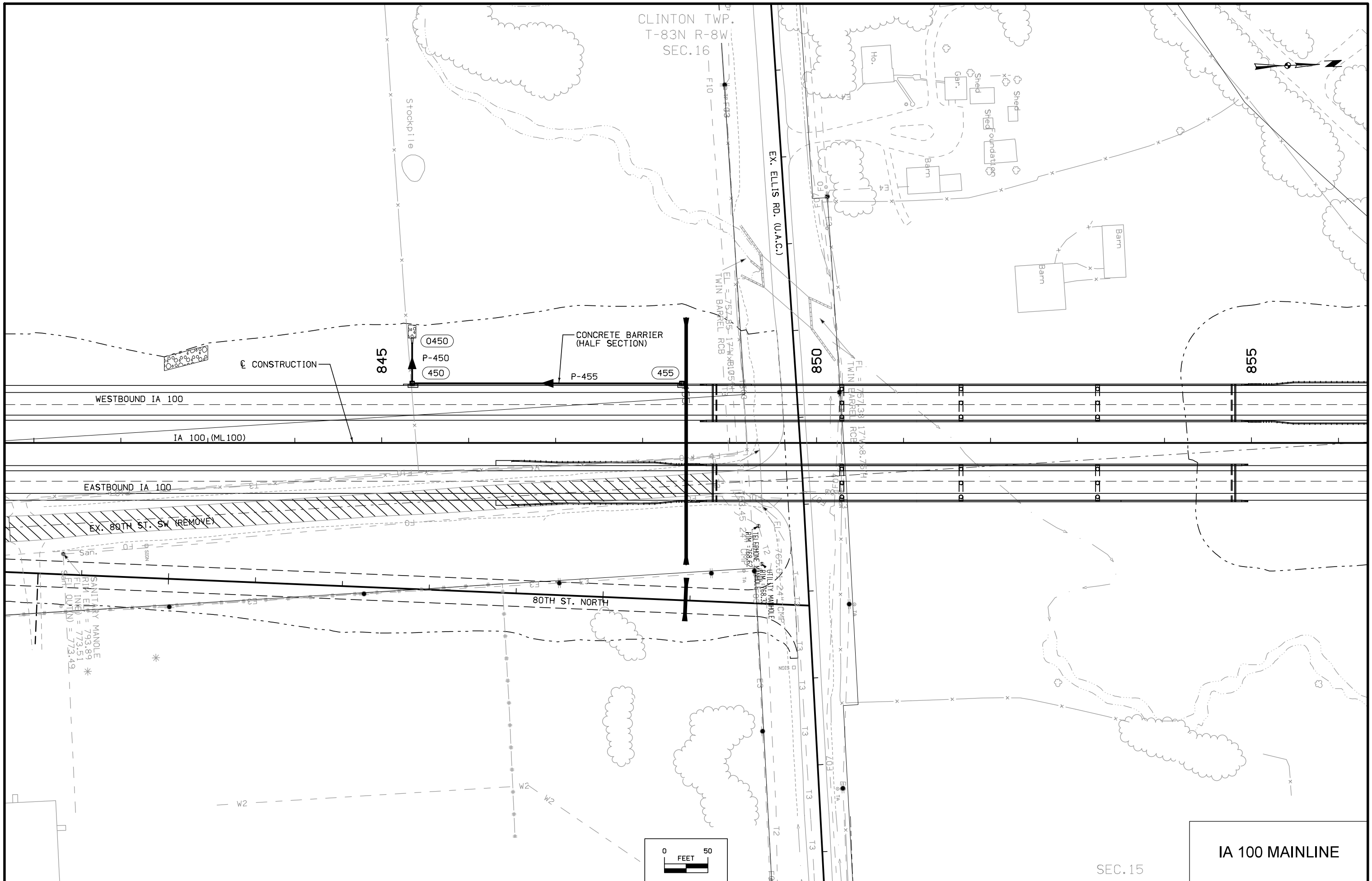
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal

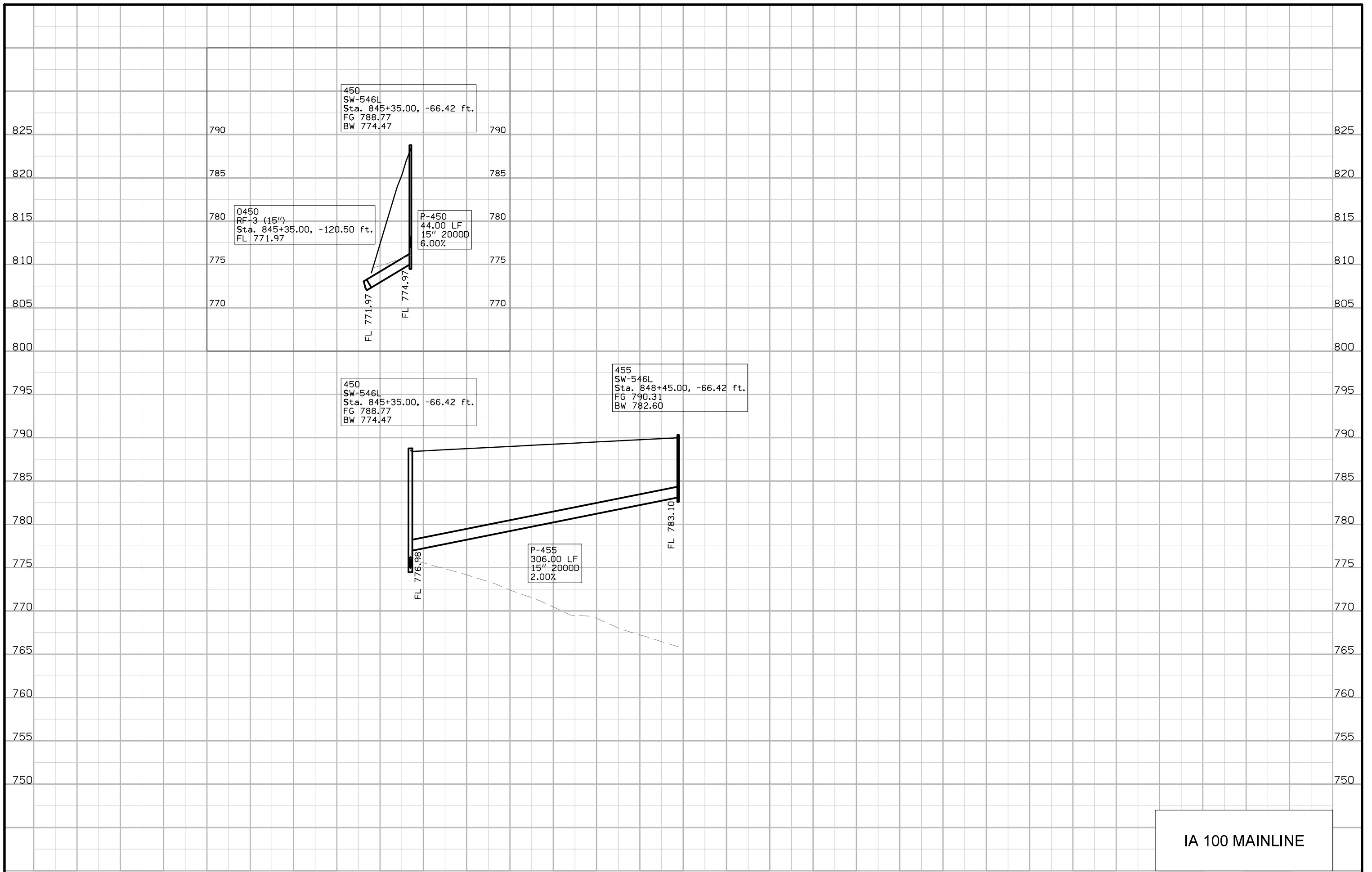
**RIGHT-OF-WAY LEGEND**

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

**STORM SEWER  
LEGEND AND SYMBOL  
INFORMATION SHEET**

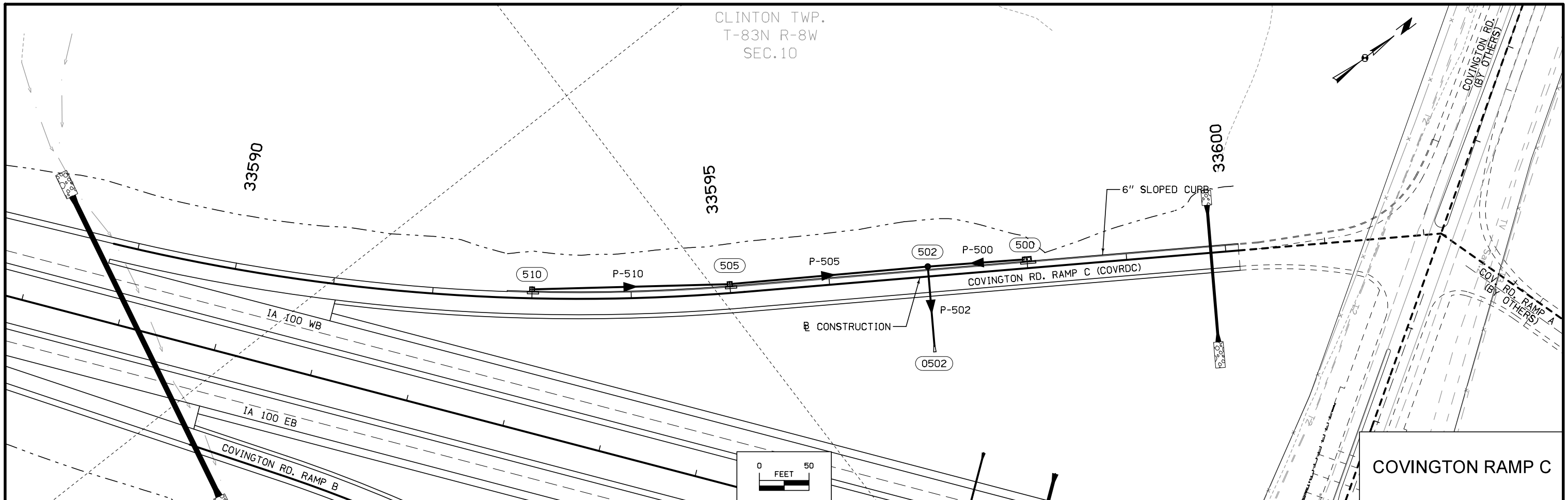
(COVERS SHEET SERIES M)



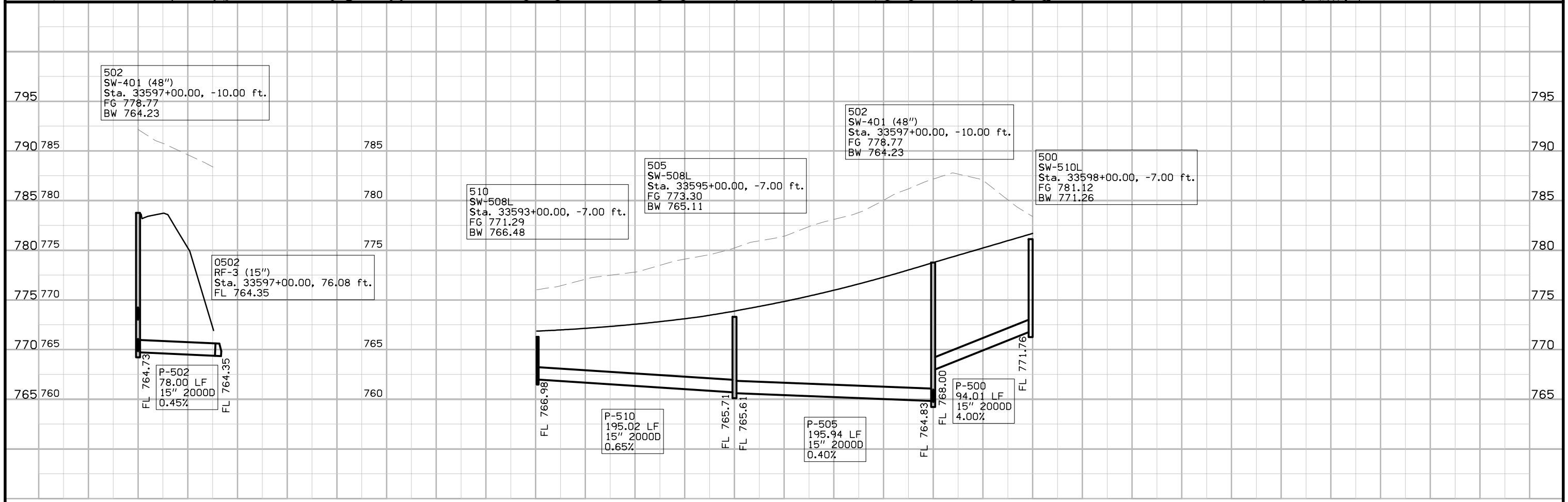


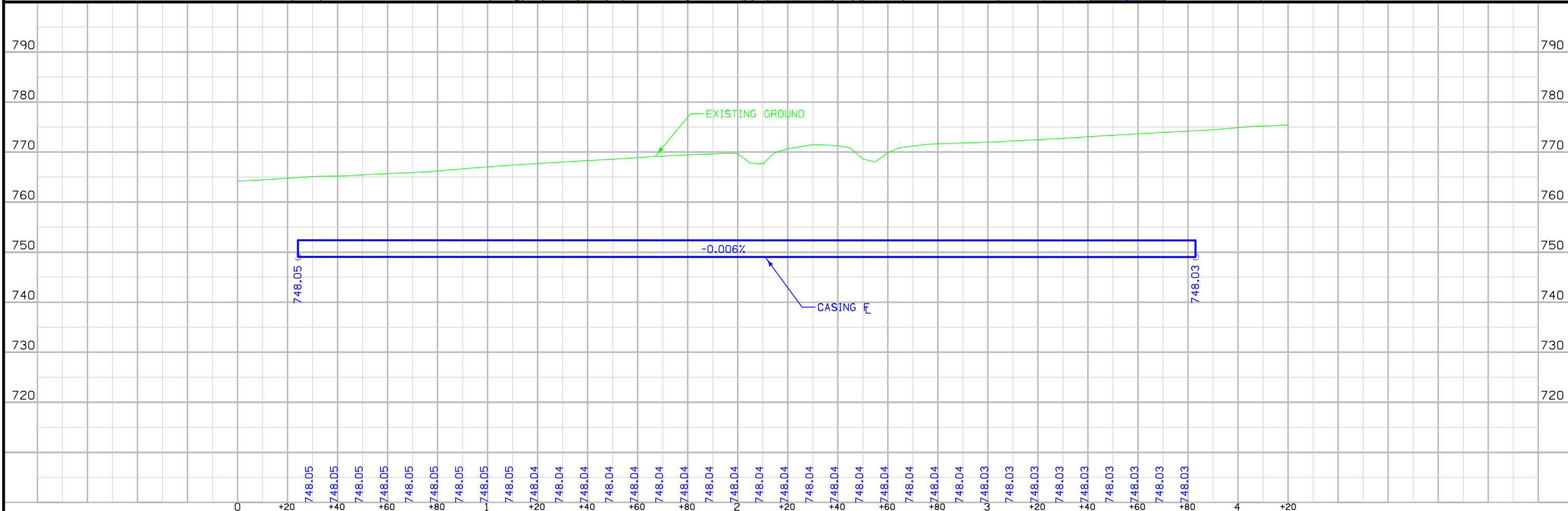
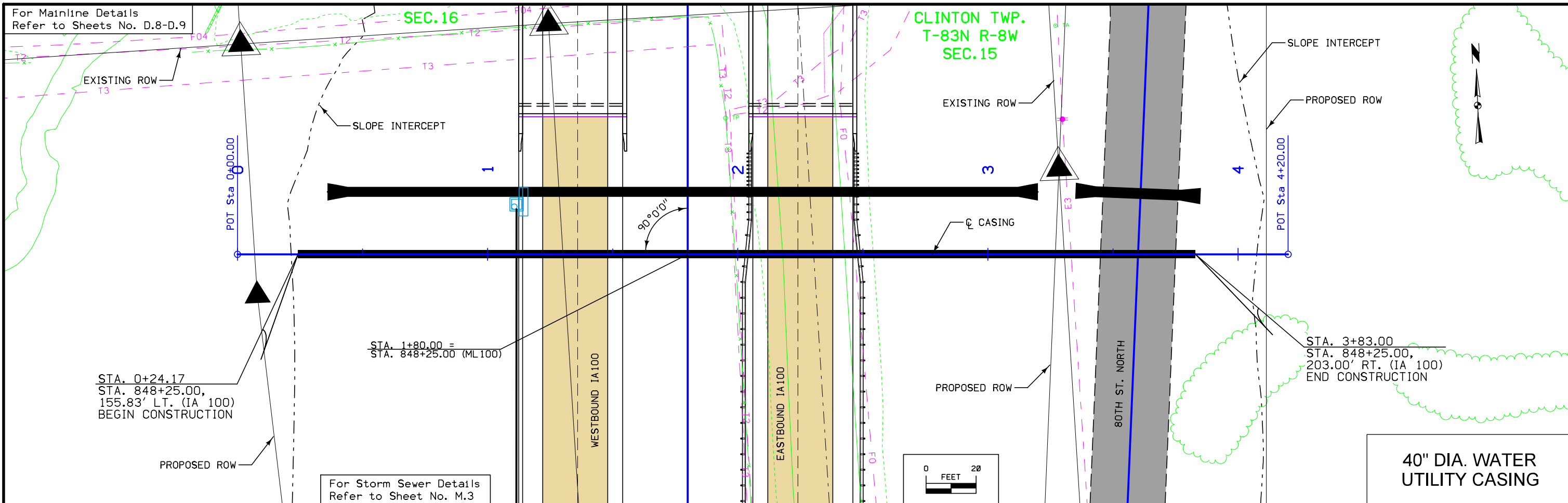
IA 100 MAINLINE

CLINTON TWP.  
T-83N R-8W  
SEC.10



COVINGTON RAMP C





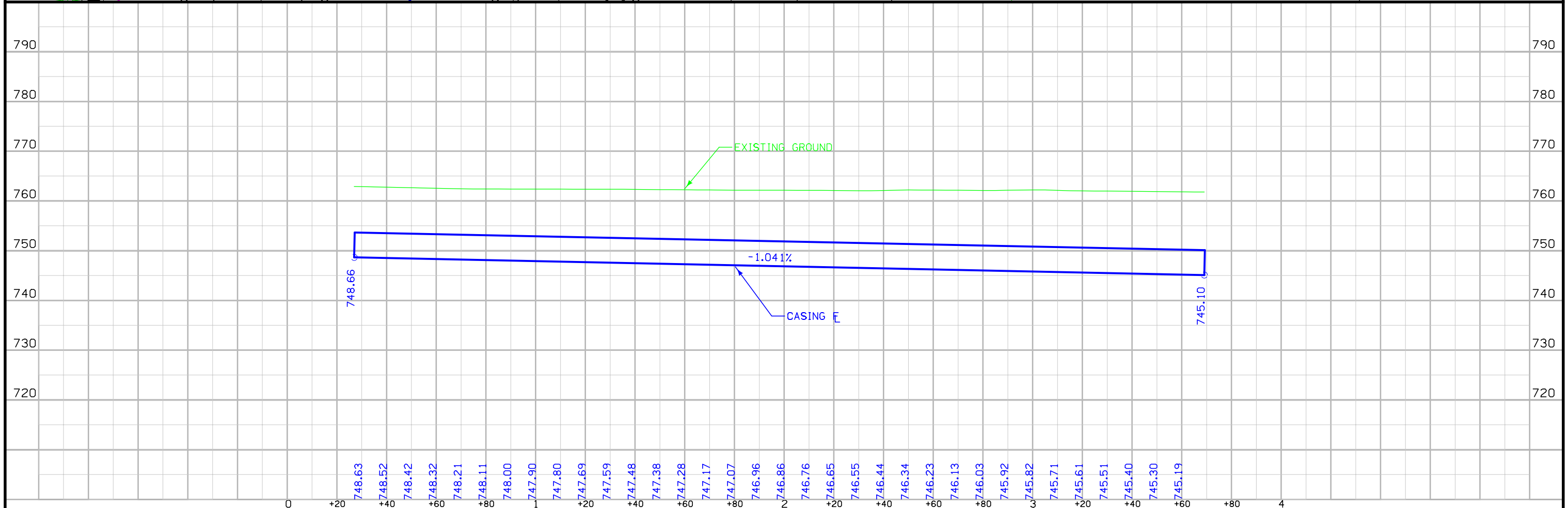
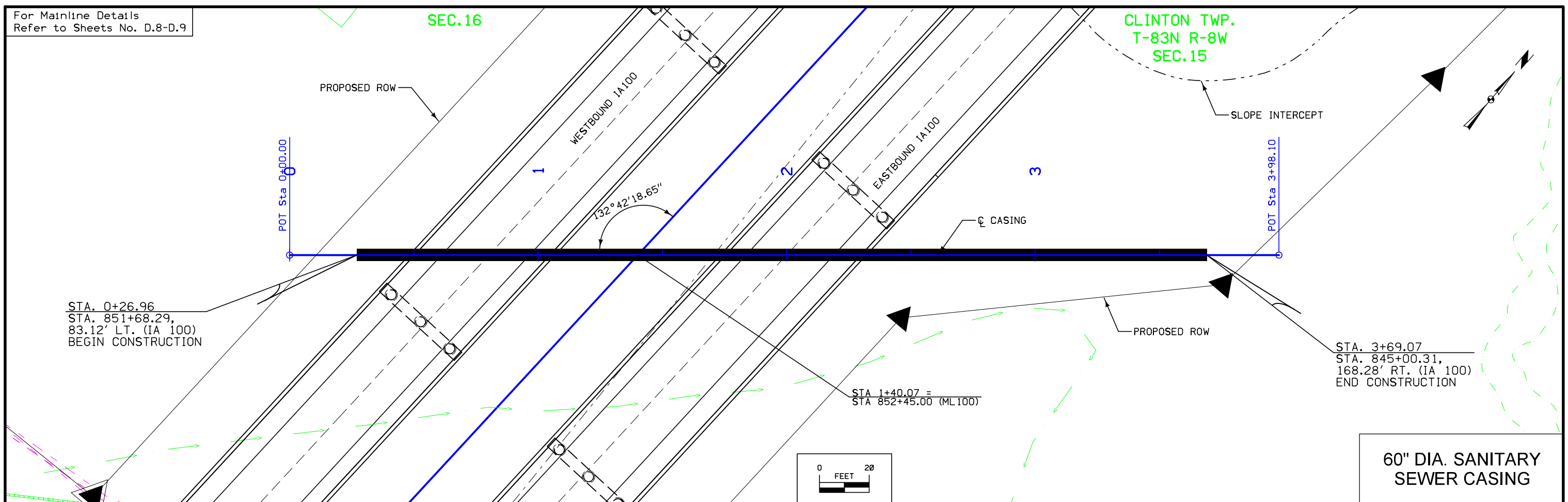
FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER	NHSX-100-1(106)--3H-57	SHEET NUMBER	0.1
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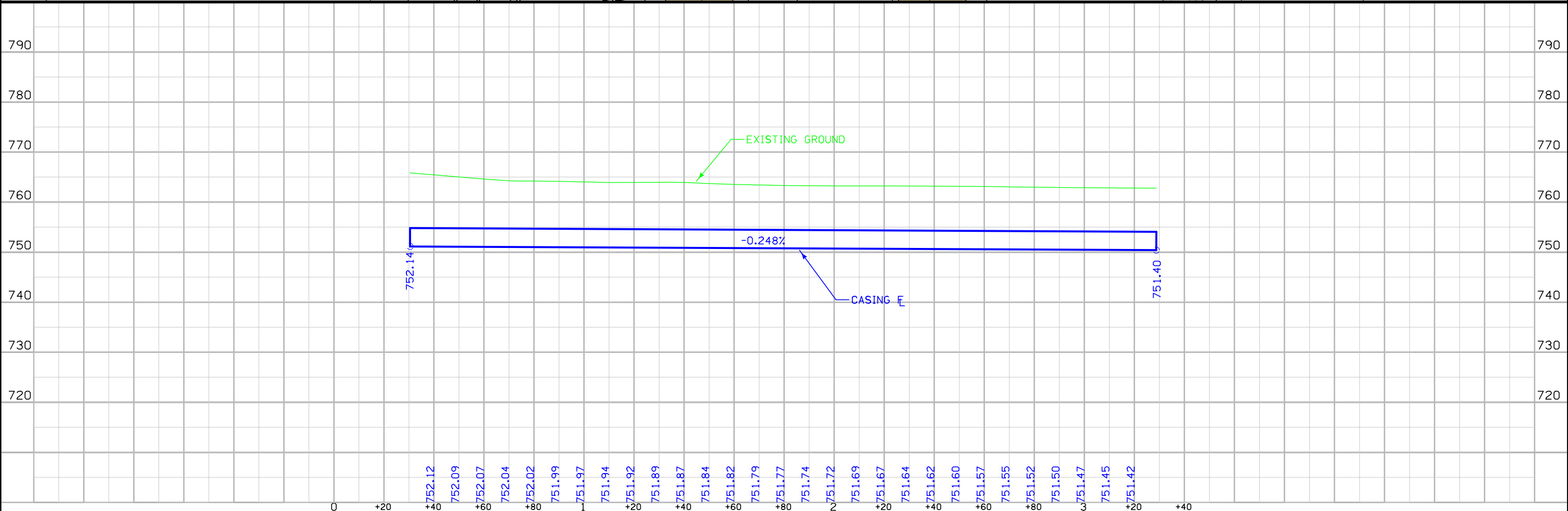
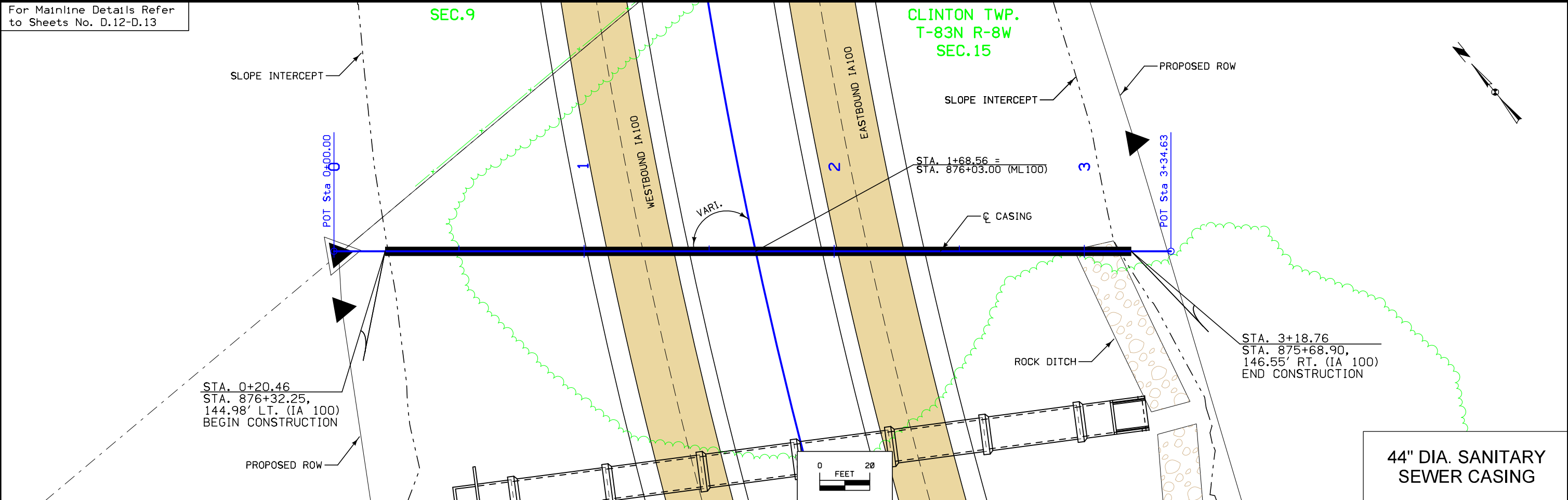
For Mainline Details  
Refer to Sheets No. D.8-D.9

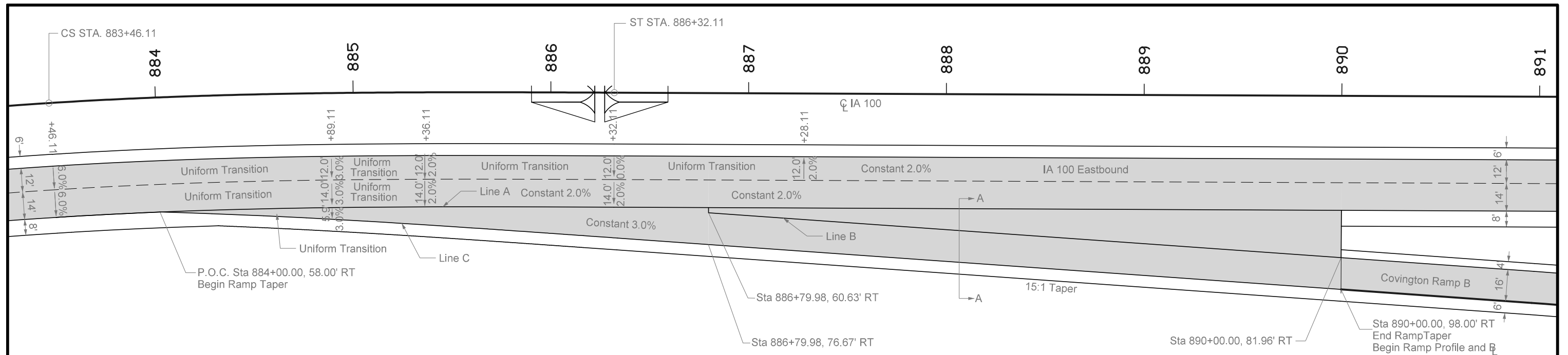
SEC. 16

CLINTON TWP.  
T-83N R-8W  
SEC. 15



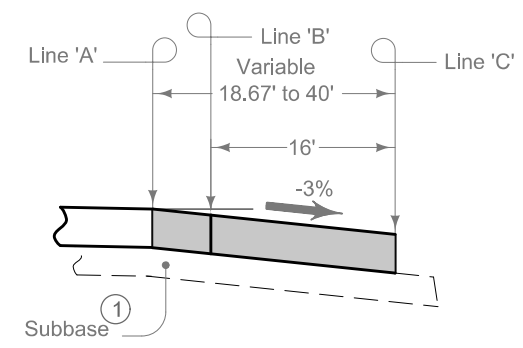
For Mainline Details Refer to Sheets No. D.12-D.13





IA 100 STATIONING		884+00	884+25	884+50	884+75	884+89.11	885+00	885+25	885+36.11	885+50	885+75	886+00	886+25	886+32.11	886+50	886+75	
From Line 'A' To Line 'C'	OFFSET (Ft.)	0'	1.68'	3.34'	5.00'	5.95'	6.67'	8.34'	9.09'	10.0'	11.67'	13.34'	15.0'	15.47'	16.67'	18.33'	
	SLOPE (%)	-4.88%	-4.35%	-3.82%	-3.29%	-3.0%	Constant -3.0%										-3.0%
	ELEVATION	776.69	776.63	776.58	776.55	776.54	776.53	776.49	776.47	776.41	776.29	776.18	776.06	776.03	775.95	775.83	

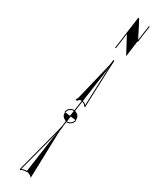
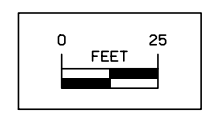
IA 100 STATIONING		886+79.98	887+00	887+25	887+50	887+75	888+00	888+25	888+50	888+75	889+00	889+25	889+50	889+75	890+00
From Line 'A' To Line 'B'	OFFSET (FT.)	2.63	3.96'	5.63'	7.30'	8.96'	10.63'	12.30'	13.96'	15.63'	17.30'	18.96'	20.63'	22.30'	23.96'
	SLOPE (%)	-3.0%	Constant -3.0%												
	ELEVATION 'B'	776.29	776.20	776.09	775.92	775.74	775.56	775.39	775.21	775.03	774.85	774.68	774.50	774.32	774.15
From Line 'A' To Line 'C'	OFFSET (FT.)	18.67'	20.0'	21.67'	23.33'	25.00'	26.67'	28.33'	30.00'	31.67'	33.33'	35.00'	36.67'	38.33'	40.00'
	SLOPE (%)	-3.0%	Constant -3.0%												
	ELEVATION 'C'	775.81	775.72	775.61	775.44	775.26	775.08	774.91	774.73	774.55	774.37	774.20	774.02	773.84	773.67



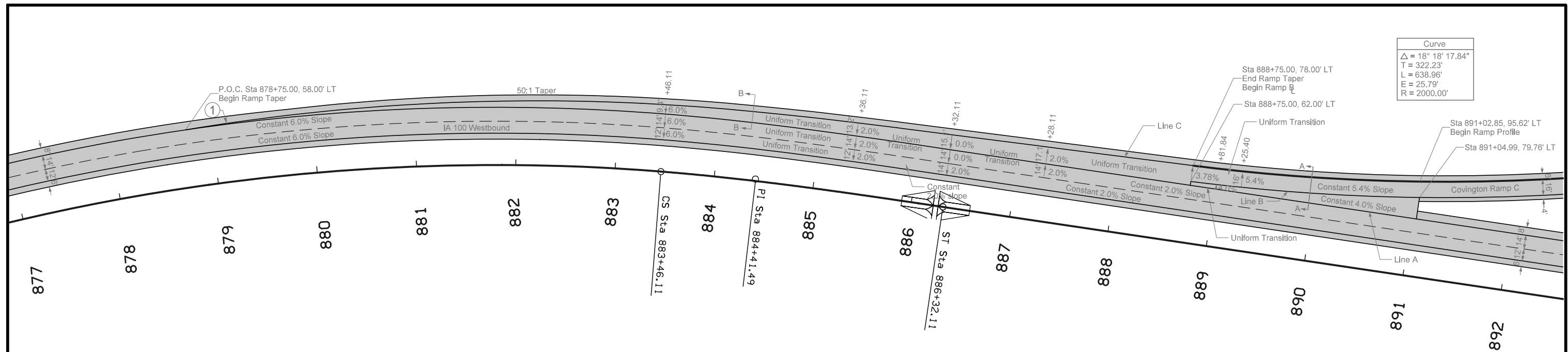
SECTION A-A

Construct ramp exit pavement the same thickness as mainline pavement.

① Construct subbase for ramp exit pavement the same thickness as mainline subbase.



**Geometric and Staking Detail  
IA 100 / Covington Road  
Interchange  
Eastbound Exit Taper  
(Ramp B)**



IA 100 STATIONING		878+75	879+25	879+75	880+25	880+75	881+25	881+75	882+25	882+75	883+25	883+46.11	883+75	884+25	884+75	885+25	885+36.11	885+75	886+25	886+32.11	886+75	
FROM LINE 'A' TO LINE 'C'	OFFSET (Ft.)	0'	1.00'	2.00'	3.00'	4.00'	5.00'	6.00'	7.00'	8.00'	9.00'	9.37'	10.00'	11.00'	12.00'	13.00'	13.15'	14.00'	15.00'	15.13'	16.00'	
	SLOPE (%)	6.0%	Constant 6.0%										6.0%	5.40%	4.36%	3.31%	2.27%	2.0%	1.23%	0.19%	0.00%	-0.85%
	ELEVATION	783.70	781.99	781.79	781.60	781.40	781.21	781.02	780.82	780.63	780.43	780.35	780.02	779.44	778.83	778.20	778.04	777.65	777.11	777.01	776.54	

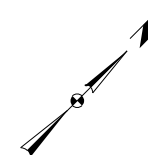
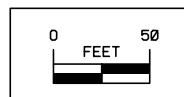
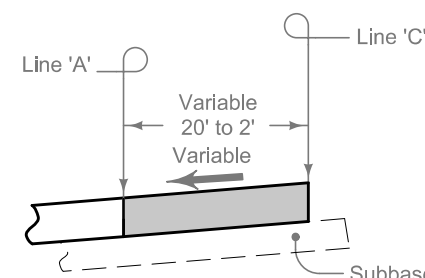
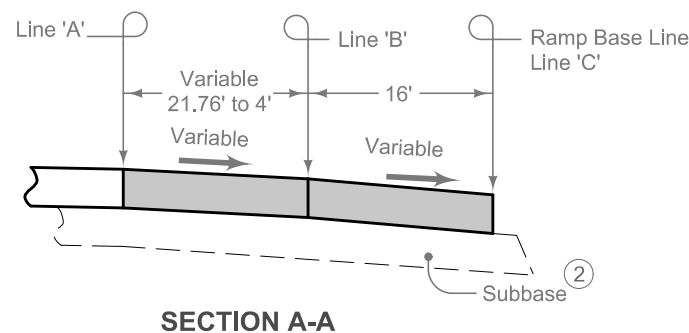
IA 100 STATIONING		887+00	887+25	887+28.11	887+50	887+75	888+00	888+25	888+50	888+75	888+81.84	889+00	889+25	889+25.40	889+50	889+75	890+00	890+25	890+50	890+75	891+00	891+04.99	
RAMP C STATIONING										33588+75.00	33588+81.47	33588+99.49	33589+24.31	33589+25.40	33589+49.15	33589+74.00	33589+98.87	33590+23.77	33590+48.70	33590+73.66	33590+98.66	33591+03.65	
From Line 'A' To Line 'B'	OFFSET (FT.)									4.00'	4.14'	4.66'	5.62'	5.66'	6.90'	8.48'	10.38'	12.59'	15.11'	17.95'	21.10'	21.76'	
	SLOPE (%)									-3.78%	-4.0%	Constant -4.0%										-4.0%	
	ELEVATION 'B'									775.35	775.29	775.19	775.02	775.01	774.84	774.65	774.45	774.23	774.01	773.77	773.51	773.46	
From Line 'B' To Line 'C'	OFFSET (FT.)									16.0'	Constant 16.0' Width											16.0'	
	SLOPE (%)									-3.78%	-4.00%	-4.58%	-5.37%	-5.4%	Constant -5.4%						-5.4%		
	ELEVATION 'C'									774.74	774.65	774.45	774.16	774.15	773.98	773.79	773.59	773.37	773.14	772.90	772.65	772.60	
From Line 'A' To Line 'C'	OFFSET (FT.)	16.5'	17.0'	17.07'	17.5'	18.0'	18.5'	19.0'	19.5'														
	SLOPE (%)	-1.28%	-1.71%	-2.0%	-2.14%	-2.57%	-2.87%	-3.17%	-3.48%														
	ELEVATION 'C'	776.28	776.01	775.90	775.66	775.55	775.35	775.16	774.95														

Construct ramp entrance pavement the same thickness as mainline pavement.

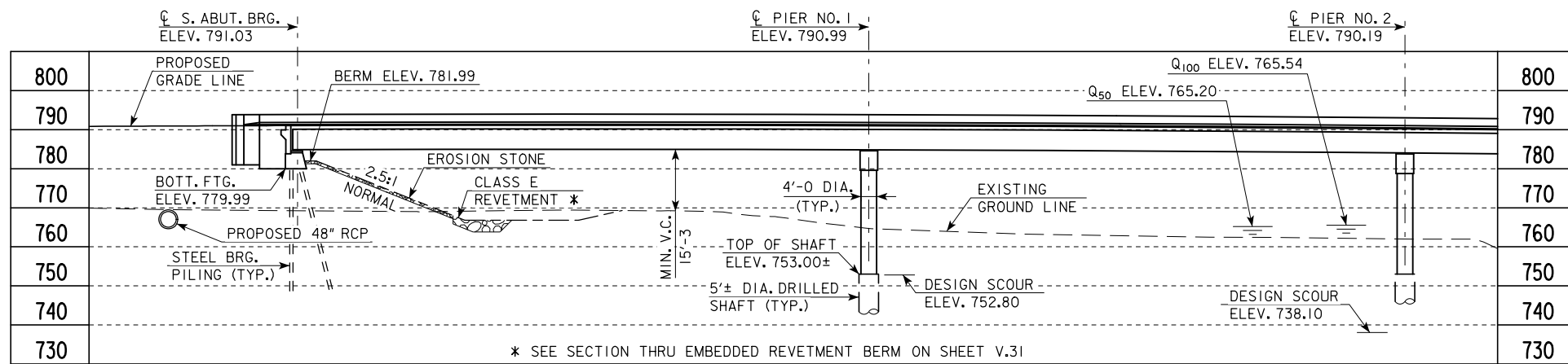
For joint details, see PV-101

① For header construction details at the end of taper, see Typical 7101.

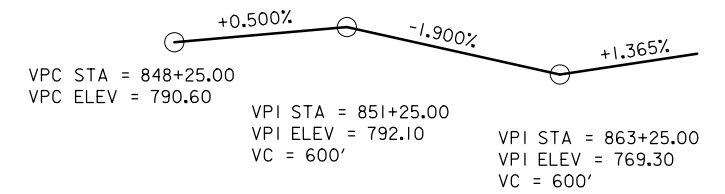
② Construct subbase for ramp entrance pavement the same thickness as mainline subbase.



**Geometric and Staking Detail  
IA 100 / Covington Road  
Interchange  
Westbound Entrance Taper  
(Ramp C)**



BENCH MARK NO.: #570, SET CHISELED X ON WEST FACE MANHOLE RIM, EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE SOUTH OF ELLIS BLVD. & 80TH ST. INTERSECTION, ELEV. 793.46, N.3467205, E.5390297

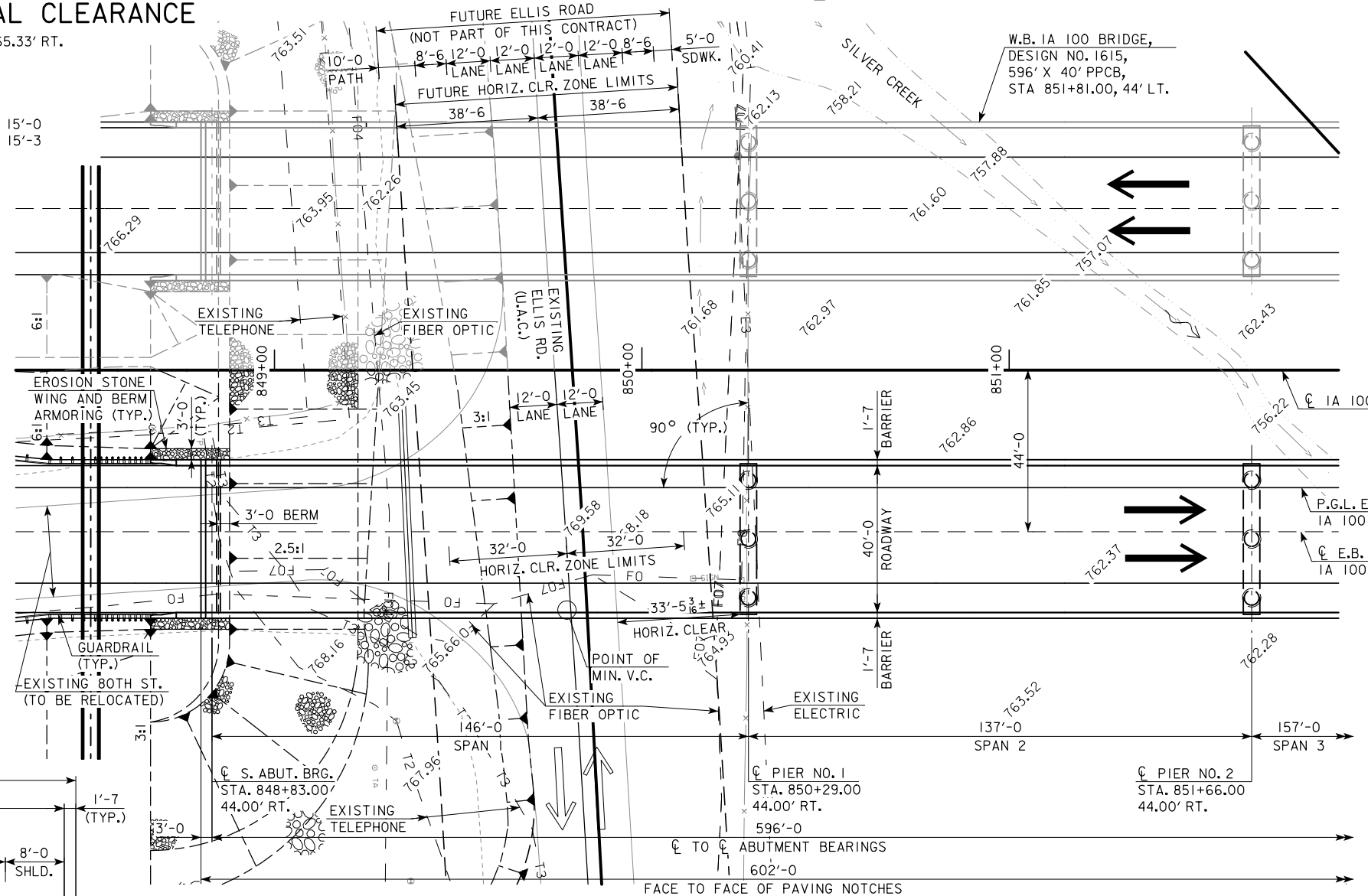


### IA 100 PROPOSED PROFILE GRADE

### MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 849+79.60, 65.33' RT.  
 OVERHEAD ELEVATION = 790.73  
 DEPTH OF SUPERSTRUCTURE = 6'-1  
 UNDERPASS STATION = --  
 UNDERPASS ELEVATION = 769.32  
 REQUIRED MIN. VERT. CLEARANCE = 15'-0  
 PROVIDED MIN. VERT. CLEARANCE = 15'-3

### LONGITUDINAL SECTION ALONG C E.B. IA 100



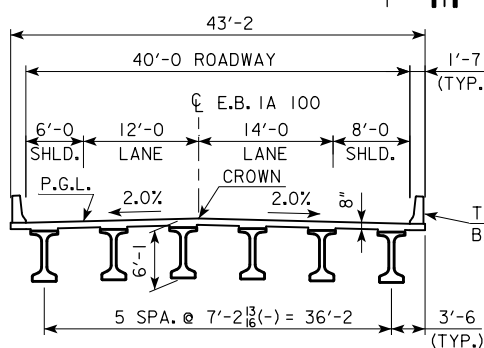
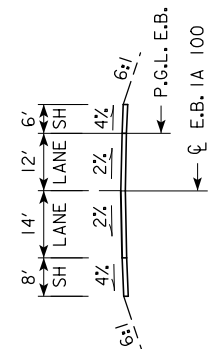
NOTES:  
 ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 TL-4 BRIDGE RAILING PROPOSED.  
 TOP OF BRIDGE DECK AT C E.B. IA 100 IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.  
 PIER TYPE - MULTI-COLUMN FRAME PIERS.  
 BEAM TYPE - BTE BEAMS.  
 ABUTMENT TYPE - STUB  
 SEE SHEETS V.32 - V.34 FOR W.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
 SEE SHEET V.31 FOR OVERALL SITE PLAN OF E.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
 CLASS E REVETMENT STONE IS EMBEDDED.

NOTES TO DESIGNER:  
 ABUTMENT SLOPES AND FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

### UTILITIES LEGEND:

- E3 - ELECTRIC - ALLIANT ENERGY
- F0 - FIBER OPTIC - IOWA COMMUNICATIONS NETWORK
- F04 - FIBER OPTIC - WINDSTREAM
- F07 - FIBER OPTIC - ATKINS TELEPHONE COOP.
- T2 - TELEPHONE - CENTURYLINK
- T3 - TELEPHONE - CENTURYLINK

### TYPICAL APPROACH SECTION



### PROPOSED BRIDGE CROSS SECTION

### SITUATION PLAN



### LOCATION

E.B. IA 100 OVER SILVER CREEK  
 T-83N R-8W  
 SECTION 15 & 16  
 CLINTON TOWNSHIP  
 LINN COUNTY  
 FHWA NO. 700635  
 LATITUDE 42.001159°  
 LONGITUDE -91.774427°

PRELIMINARY

DESIGN FOR 0° SKEW

## 596'-0 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM E.B. BRIDGE

146'-0 & 156'-0 END SPANS    137'-0 & 157'-0 INTERIOR SPANS

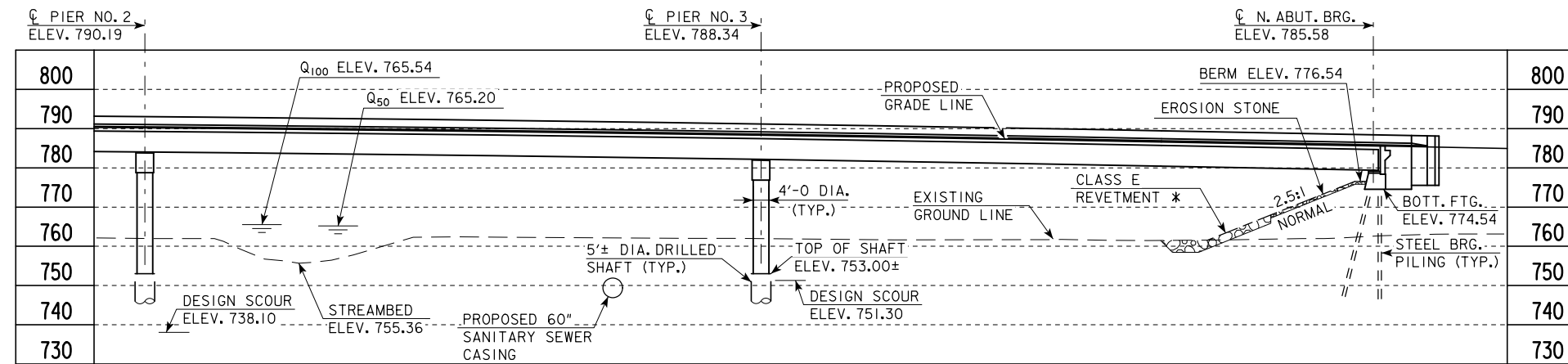
### SITUATION PLAN

STATION 851+81.00, 44.00' RIGHT    SEPTEMBER 2014

## LINN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3    FILE NO. 29912    DESIGN NO. 1515



**LONGITUDINAL SECTION ALONG CL E.B. IA 100**  
 \* SEE SECTION THRU EMBEDDED REVETMENT BERM ON SHEET V.31

BENCH MARK NO.: #570, SET CHISELED X ON WEST FACE MANHOLE RIM, EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE SOUTH OF ELLIS BLVD. & 80TH ST. INTERSECTION, ELEV. 793.46, N.3467205, E.5390297

**HYDRAULIC DATA**

DRAINAGE AREA = 5.91 SQ. MI.  
 STREAM SLOPE = 12 FT./MI.  
 AVG. LOW WATER STAGE = 755.86

Q<sub>50</sub> = 2,880 CFS  
 STAGE = 765.20  
 BACKWATER = 0.33 FT.  
 AVG. BRIDGE VELOCITY = 3.9 FPS  
 AVG. FREEBOARD = 16.6 FT.

Q<sub>100</sub> = 3,420 CFS  
 STAGE = 765.54  
 BACKWATER = 0.30 FT.  
 AVG. BRIDGE VELOCITY = 4.2 FPS

Q<sub>200</sub> = 4,460 CFS  
 STAGE = 766.12  
 CALCULATED DESIGN SCOUR = PIER 1: 752.80  
 PIER 2: 738.10  
 PIER 3: 751.30

Q<sub>500</sub> = 4,920 CFS  
 STAGE = 766.35  
 AVG. BRIDGE VELOCITY = 4.9 FPS  
 CALCULATED CHECK SCOUR = PIER 1: 752.60  
 PIER 2: 738.00  
 PIER 3: 750.90

ROADWAY OVERTOP: GREATER THAN Q<sub>500</sub>

EXTREME HW STAGE = UNKNOWN

**NOTES:**

- ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
- TL-4 BRIDGE RAILING PROPOSED.
- TOP OF BRIDGE DECK AT CL E.B. IA 100 IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.
- PIER TYPE - MULTI-COLUMN FRAME PIERS.
- BEAM TYPE - BTE BEAMS.
- ABUTMENT TYPE - STUB
- SEE SHEETS V.32 - V.34 FOR W.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.
- SEE SHEET V.31 FOR OVERALL SITE PLAN OF E.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.
- CLASS E REVETMENT STONE IS EMBEDDED.

**NOTES TO DESIGNER:**

- ABUTMENT SLOPES AND FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

**UTILITIES LEGEND:**

- E3 - ELECTRIC - ALLIANT ENERGY
- FO - FIBER OPTIC - IOWA COMMUNICATIONS NETWORK
- FO4 - FIBER OPTIC - WINDSTREAM
- FO7 - FIBER OPTIC - ATKINS TELEPHONE COOP.
- T2 - TELEPHONE - CENTURYLINK
- T3 - TELEPHONE - CENTURYLINK

**LOCATION**

E.B. IA 100 OVER SILVER CREEK  
 T-83N R-8W  
 SECTION 15 & 16  
 CLINTON TOWNSHIP  
 LINN COUNTY  
 FHWA NO. 700635  
 LATITUDE 42.001159°  
 LONGITUDE -91.774427°

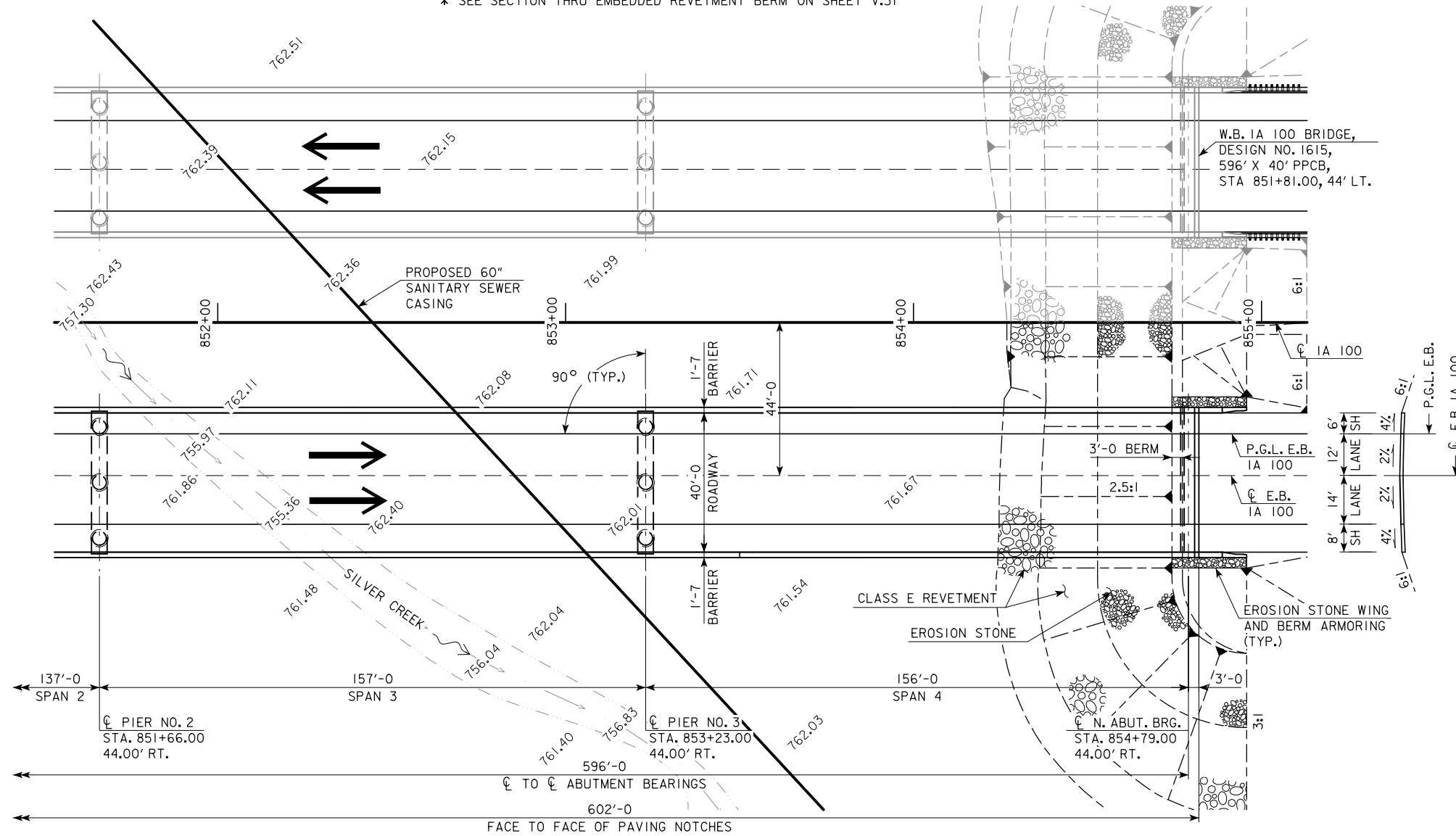
**TRAFFIC ESTIMATE**

2005 AADT	0	V.P.D.
2040 AADT	5980	V.P.D.
2040 DHV	960	V.P.H.
TRUCKS	10	%
TOTAL DESIGN ESALs	TBD	

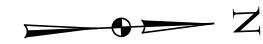
PRELIMINARY

DESIGN FOR 0° SKEW  
**596'-0 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM E.B. BRIDGE**  
 146'-0 & 156'-0 END SPANS 137'-0 & 157'-0 INTERIOR SPANS  
**SITUATION PLAN**  
 STATION 851+81.00, 44.00' RIGHT SEPTEMBER 2014  
**LINN COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 2 OF 3 FILE NO. 29912 DESIGN NO. 1515

**TYPICAL APPROACH SECTION**



**SITUATION PLAN**



BENCH MARK NO.: #570, SET CHISELED X ON WEST FACE MANHOLE RIM,  
EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE  
SOUTH OF ELLIS BLVD. & 80TH ST. INTERSECTION,  
ELEV. 793.46, N.3467205, E.5390297

END OF BRIDGE WING TABLE						
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET*	ELEV	STATION	OFFSET*	ELEV
W1	848+66.25	21.42' RT.	790.50	854+95.75	21.42' RT.	784.78
W2	848+66.25	70.58' RT.	790.42	854+95.75	70.58' RT.	784.70

BERM SLOPE LOCATION TABLE						
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET*	ELEV	STATION	OFFSET*	ELEV
A1	849+27.12	21.42' RT.	766.24	854+38.05	21.42' RT.	762.06
A2	849+25.71	44.00' RT.	766.80	854+36.80	44.00' RT.	761.56
A3	849+24.51	70.58' RT.	767.29	854+36.22	70.58' RT.	761.32
B1	848+87.75	21.42' RT.	781.99	854+74.25	21.42' RT.	776.54
B2	848+87.75	44.00' RT.	781.99	854+74.25	44.00' RT.	776.54
B3	848+87.75	70.58' RT.	781.99	854+74.25	70.58' RT.	776.54

\* MEASURED FROM C IA 100.

ESTIMATED REVETMENT QUANTITIES	
CLASS 'E' REVETMENT	1,005 TON
ENGINEERING FABRIC	1,985 SQ. YD.
EROSION STONE	310 TON
CLASS 10 EXCAVATION (INCLUDES EXCAVATION FOR CLASS 'E' REVETMENT ONLY)	745 CU. YD.

NOTES:  
ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
SEE SHEETS V.32 - V.34 FOR W.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
SEE SHEETS V.29 AND V.30 FOR DETAILED PLAN OF E.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.

**UTILITIES LEGEND:**

- E3 - ELECTRIC - ALLIANT ENERGY
- F0 - FIBER OPTIC - IOWA COMMUNICATIONS NETWORK
- F04 - FIBER OPTIC - WINDSTREAM
- F07 - FIBER OPTIC - ATKINS TELEPHONE COOP.
- T2 - TELEPHONE - CENTURYLINK
- T3 - TELEPHONE - CENTURYLINK

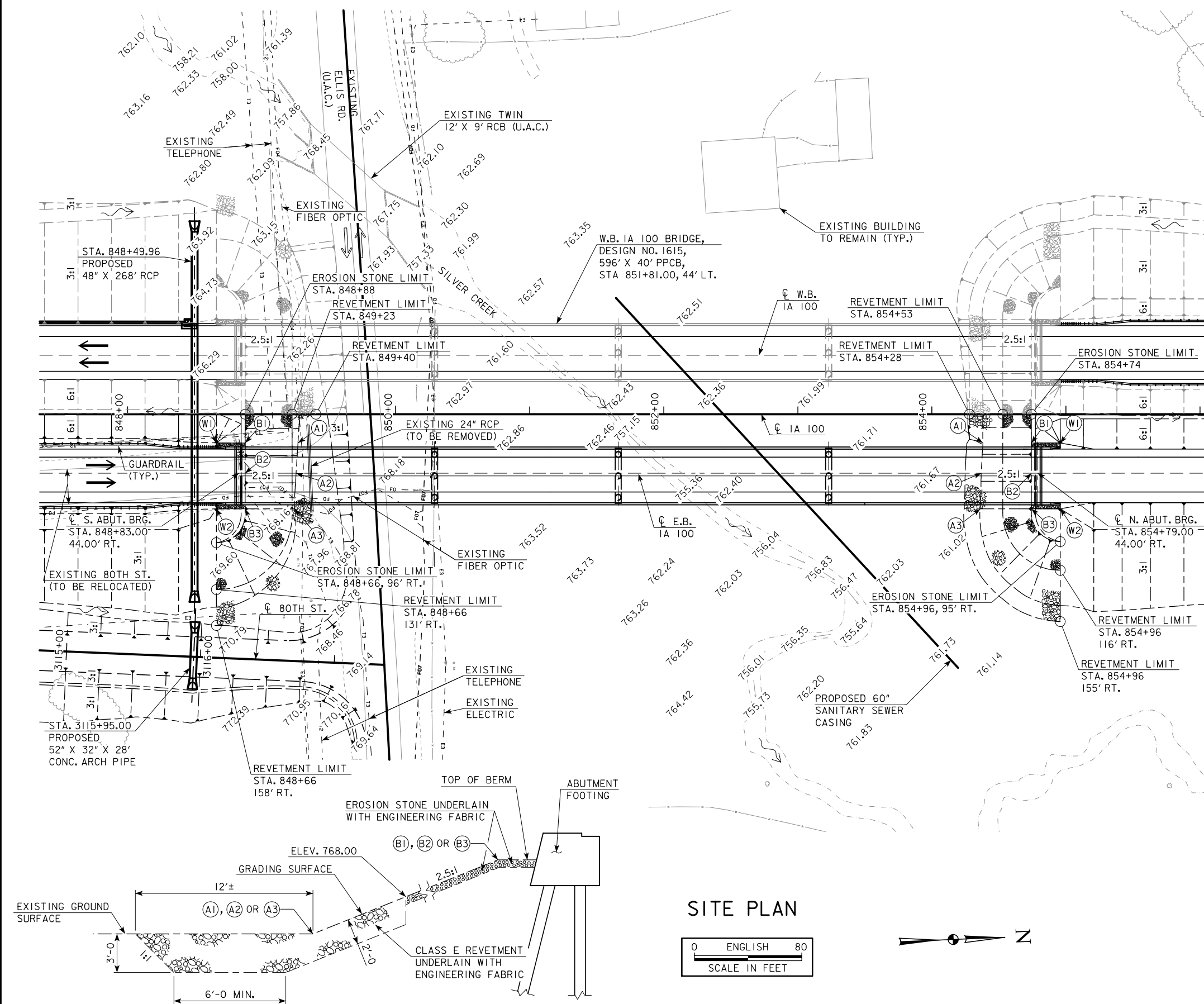
**LOCATION**

E.B. IA 100 OVER SILVER CREEK  
T-83N R-8W  
SECTION 15 & 16  
CLINTON TOWNSHIP  
LINN COUNTY  
FHWA NO. 700635  
LATITUDE 42.001159°  
LONGITUDE -91.774427°

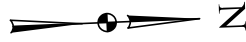
PRELIMINARY

DESIGN FOR 0° SKEW  
**596'-0 X 40'-0 PRETENSIONED  
PRESTRESSED CONCRETE BEAM E.B. BRIDGE**  
146'-0 & 156'-0 END SPANS 137'-0 & 157'-0 INTERIOR SPANS  
**SITUATION PLAN - SITE**  
STATION 851+81.00, 44.00' RIGHT SEPTEMBER 2014  
**LINN COUNTY**

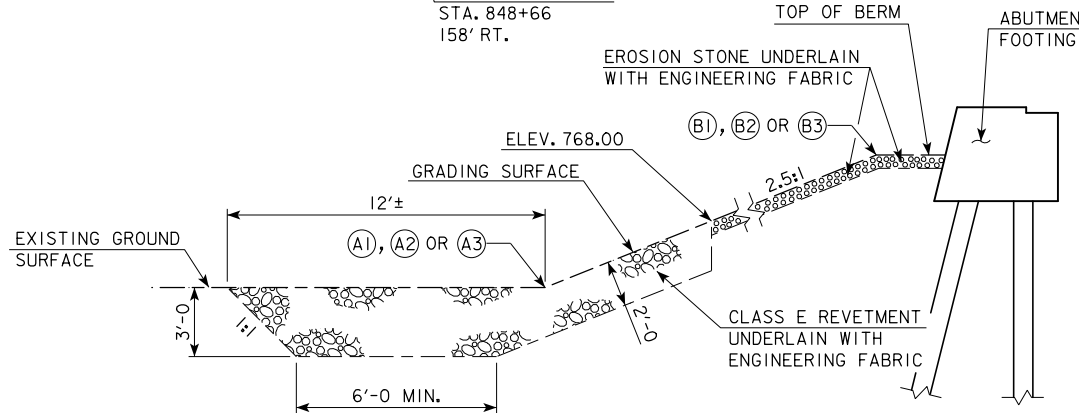
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. 3 OF 3 FILE NO. 29912 DESIGN NO. 1515

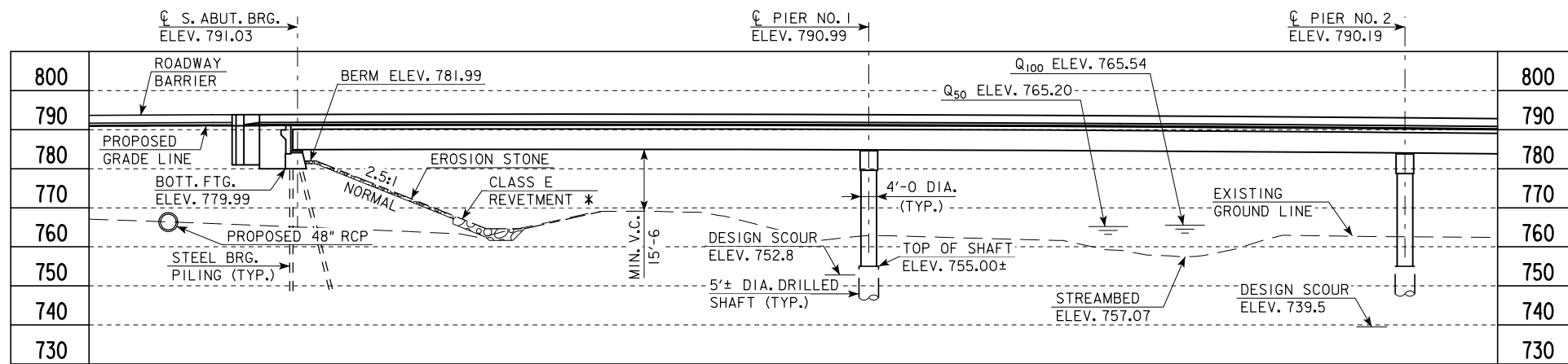


**SITE PLAN**

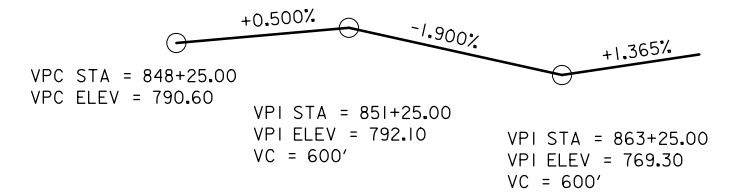


**SECTION THRU EMBEDDED REVETMENT BERM**





BENCH MARK NO.: #570, SET CHISELED X ON WEST FACE MANHOLE RIM, EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE SOUTH OF ELLIS BLVD. & 80TH ST. INTERSECTION, ELEV. 793.46, N.3467205, E.5390297

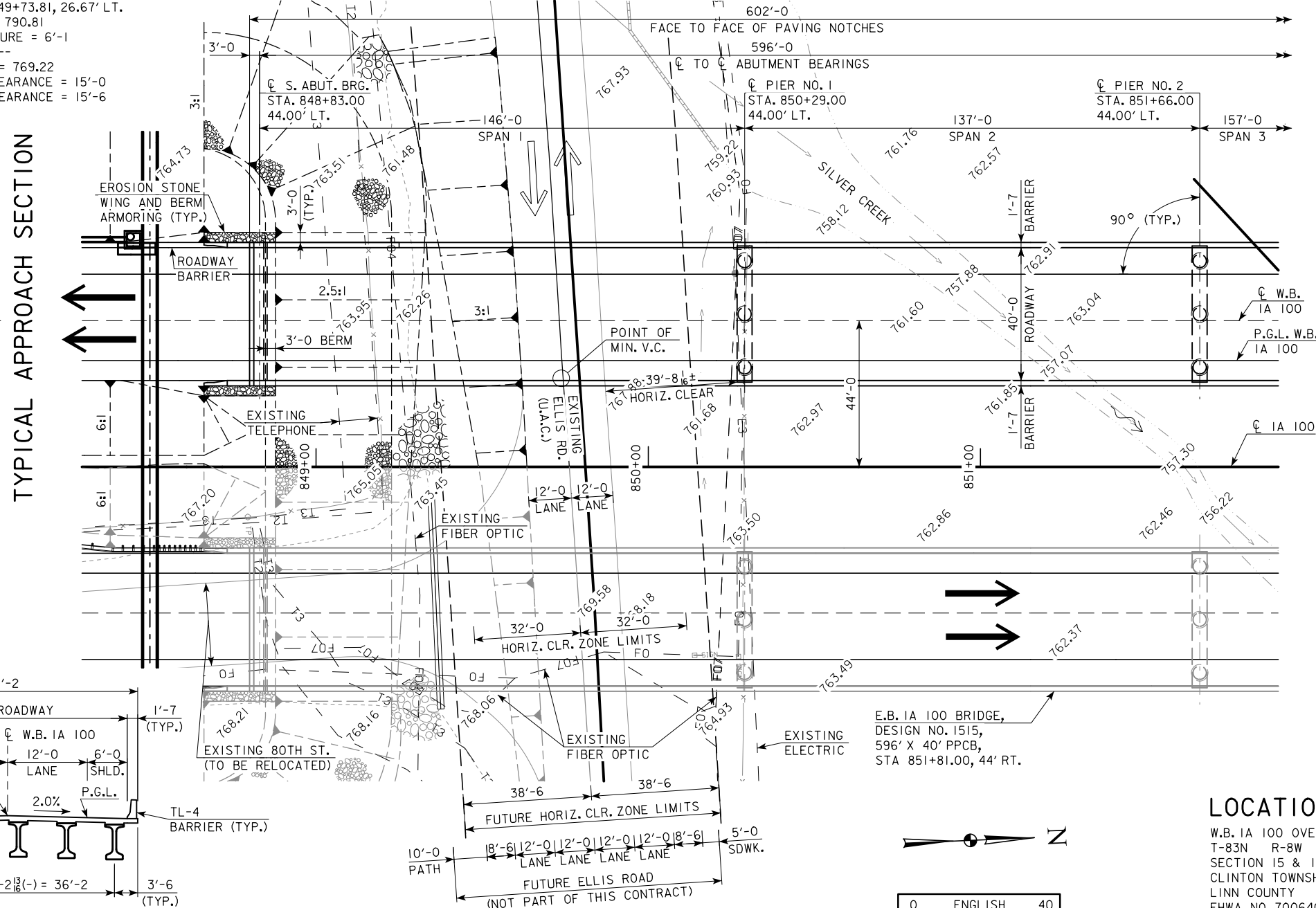


**MINIMUM VERTICAL CLEARANCE**

OVERHEAD STATION = 849+73.81, 26.67' LT.  
 OVERHEAD ELEVATION = 790.81  
 DEPTH OF SUPERSTRUCTURE = 6'-1  
 UNDERPASS STATION = --  
 UNDERPASS ELEVATION = 769.22  
 REQUIRED MIN. VERT. CLEARANCE = 15'-0  
 PROVIDED MIN. VERT. CLEARANCE = 15'-6

**LONGITUDINAL SECTION ALONG C W.B. IA 100**

\* SEE SECTION THRU EMBEDDED REVETMENT BERM ON SHEET V.34

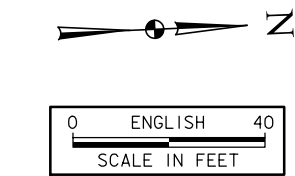
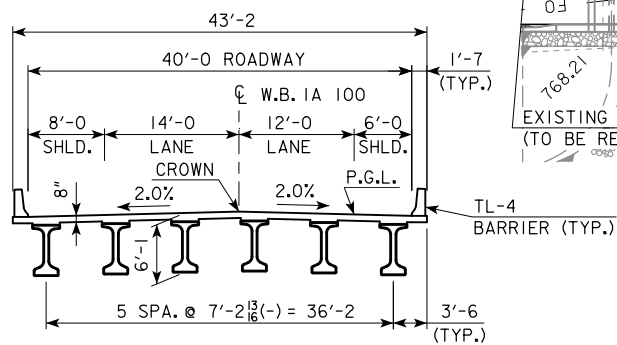
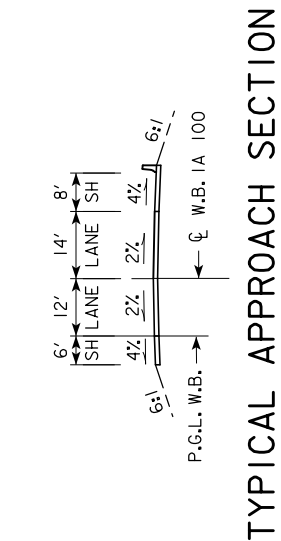


NOTES:  
 ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 TL-4 BRIDGE RAILING PROPOSED.  
 TOP OF BRIDGE DECK AT C W.B. IA 100 IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.  
 PIER TYPE - MULTI-COLUMN FRAME PIERS.  
 BEAM TYPE - BTE BEAMS.  
 ABUTMENT TYPE - STUB  
 SEE SHEETS V.29 - V.31 FOR E.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
 SEE SHEET V.34 FOR OVERALL SITE PLAN OF W.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
 CLASS E REVETMENT STONE IS EMBEDDED.

NOTES TO DESIGNER:  
 ABUTMENT SLOPES AND FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

**UTILITIES LEGEND:**

- E3 - ELECTRIC - ALLIANT ENERGY
- F0 - FIBER OPTIC - IOWA COMMUNICATIONS NETWORK
- F04 - FIBER OPTIC - WINDSTREAM
- F07 - FIBER OPTIC - ATKINS TELEPHONE COOP.
- T2 - TELEPHONE - CENTURYLINK
- T3 - TELEPHONE - CENTURYLINK



**LOCATION**

W.B. IA 100 OVER SILVER CREEK  
 T-83N R-8W  
 SECTION 15 & 16  
 CLINTON TOWNSHIP  
 LINN COUNTY  
 FHWA NO. 700640  
 LATITUDE 42.001174°  
 LONGITUDE -91.774765°

PRELIMINARY

DESIGN FOR 0° SKEW

**596'-0 X 40'-0 PRETENSIONED  
 PRESTRESSED CONCRETE BEAM W.B. BRIDGE**

146'-0 & 156'-0 END SPANS    137'-0 & 157'-0 INTERIOR SPANS

**SITUATION PLAN**

STATION 851+81.00, 44.00' LEFT    SEPTEMBER 2014

**LINN COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3    FILE NO. 29912    DESIGN NO. 1615



BENCH MARK NO.: #570, SET CHISELED X ON WEST FACE MANHOLE RIM, EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE SOUTH OF ELLIS BLVD. & 80TH ST. INTERSECTION, ELEV. 793.46, N.3467205, E.5390297

### HYDRAULIC DATA

DRAINAGE AREA = 5.91 SQ. MI.  
 STREAM SLOPE = 12 FT./MI.  
 AVG. LOW WATER STAGE = 757.57

Q<sub>50</sub> = 2,880 CFS  
 STAGE = 765.20  
 BACKWATER = 0.33 FT.  
 AVG. BRIDGE VELOCITY = 3.9 FPS  
 AVG. FREEBOARD = 16.6 FT.

Q<sub>100</sub> = 3,420 CFS  
 STAGE = 765.54  
 BACKWATER = 0.30 FT.  
 AVG. BRIDGE VELOCITY = 4.2 FPS

Q<sub>200</sub> = 4,460 CFS  
 STAGE = 766.12  
 CALCULATED DESIGN SCOUR = PIER 1: 752.80  
 PIER 2: 739.50  
 PIER 3: 750.50

Q<sub>500</sub> = 4,920 CFS  
 STAGE = 766.35  
 AVG. BRIDGE VELOCITY = 4.9 FPS  
 CALCULATED CHECK SCOUR = PIER 1: 752.50  
 PIER 2: 739.30  
 PIER 3: 750.20

ROADWAY OVERTOP: GREATER THAN Q<sub>500</sub>  
 EXTREME HW STAGE = UNKNOWN

NOTES:  
 ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 TL-4 BRIDGE RAILING PROPOSED.  
 TOP OF BRIDGE DECK AT  $\bar{C}$  W.B. IA 100 IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.  
 PIER TYPE - MULTI-COLUMN FRAME PIERS.  
 BEAM TYPE - BTE BEAMS.  
 ABUTMENT TYPE - STUB  
 SEE SHEETS V.29 - V.31 FOR E.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
 SEE SHEET V.34 FOR OVERALL SITE PLAN OF W.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
 CLASS E REVETMENT STONE IS EMBEDDED.

NOTES TO DESIGNER:  
 ABUTMENT SLOPES AND FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

### UTILITIES LEGEND:

- E3 - ELECTRIC - ALLIANT ENERGY
- F0 - FIBER OPTIC - IOWA COMMUNICATIONS NETWORK
- F04 - FIBER OPTIC - WINDSTREAM
- F07 - FIBER OPTIC - ATKINS TELEPHONE COOP.
- T2 - TELEPHONE - CENTURYLINK
- T3 - TELEPHONE - CENTURYLINK

### LOCATION

W.B. IA 100 OVER SILVER CREEK  
 T-83N R-8W  
 SECTION 15 & 16  
 CLINTON TOWNSHIP  
 LINN COUNTY  
 FHWA NO. 700640  
 LATITUDE 42.001174°  
 LONGITUDE -91.774765°

### TRAFFIC ESTIMATE

Year	AADT	V.P.D.
2005	0	
2040	5550	
2040	DHV	715 V.P.H.
		TRUCKS 10 %
TOTAL		
DESIGN	ESALs	TBD

PRELIMINARY

DESIGN FOR 0° SKEW  
**596'-0" X 40'-0" PRETENSIONED  
 PRESTRESSED CONCRETE BEAM W.B. BRIDGE**

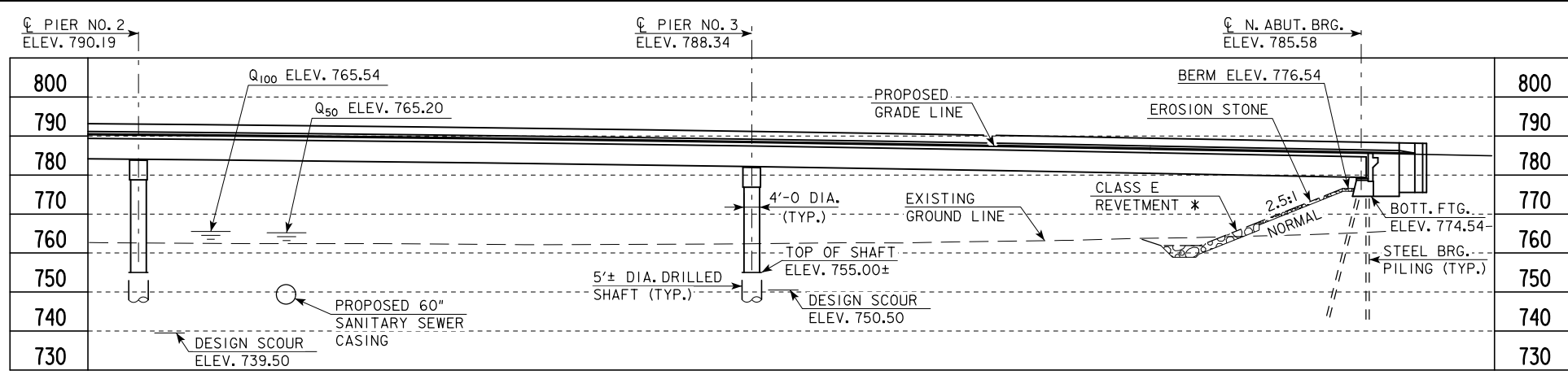
146'-0" & 156'-0" END SPANS 137'-0" & 157'-0" INTERIOR SPANS

### SITUATION PLAN

STATION 851+81.00, 44.00' LEFT SEPTEMBER 2014

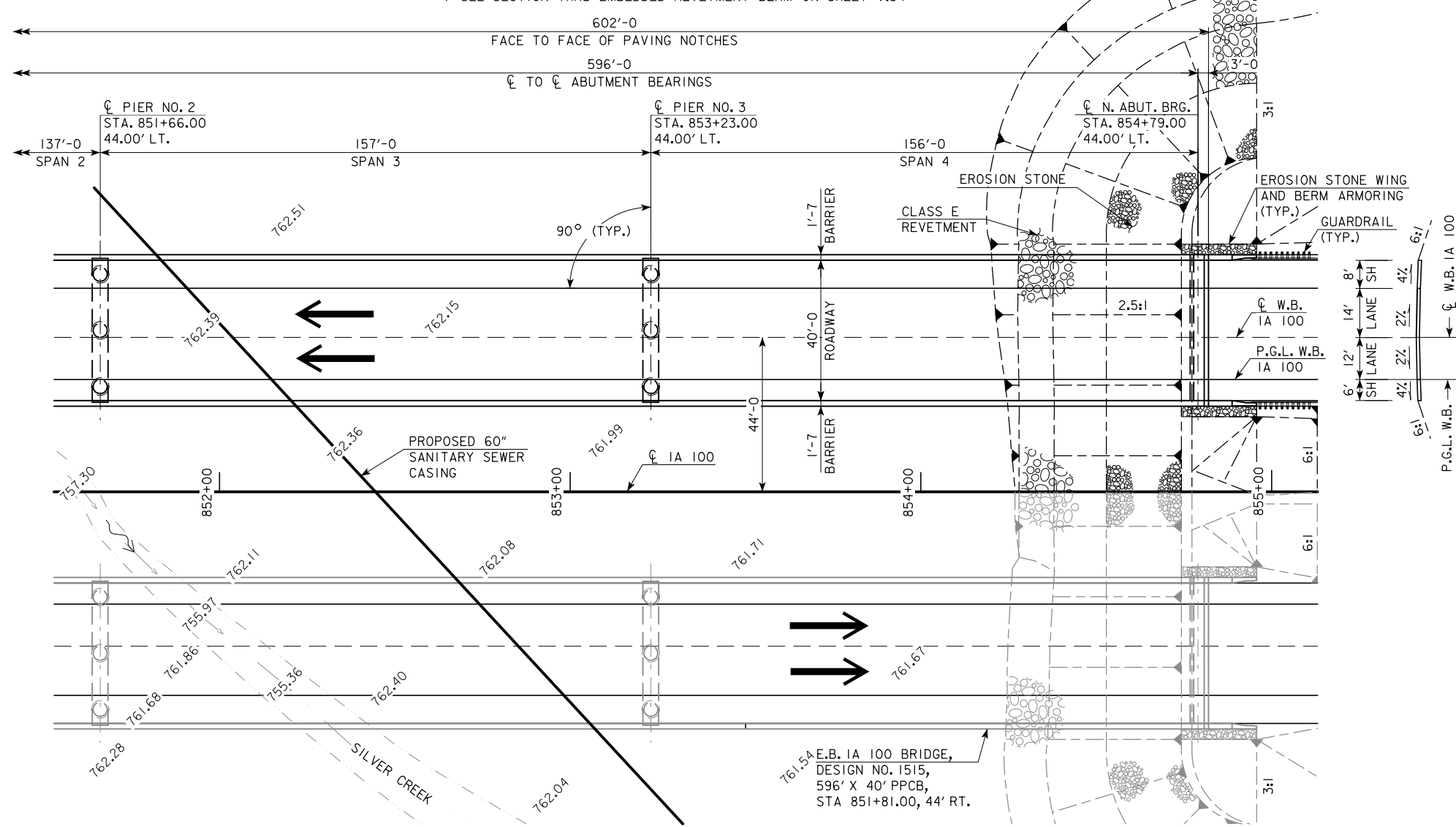
### LINN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 2 OF 3 FILE NO. 29912 DESIGN NO. 1615



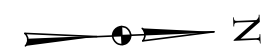
### LONGITUDINAL SECTION ALONG $\bar{C}$ W.B. IA 100

\* SEE SECTION THRU EMBEDDED REVETMENT BERM ON SHEET V.34



TYPICAL APPROACH SECTION

### SITUATION PLAN



BENCH MARK NO.: #570, SET CHISELED X ON WEST FACE MANHOLE RIM,  
EAST SIDE OF 80TH ST., 100 FT. SOUTH OF 4TH P. POLE  
SOUTH OF ELLIS BLVD. & 80TH ST. INTERSECTION,  
ELEV. 793.46, N.3467205, E.5390297

END OF BRIDGE WING TABLE						
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET*	ELEV	STATION	OFFSET*	ELEV
W1	848+66.25	70.58' LT.	790.42	854+95.75	70.58' LT.	784.70
W2	848+66.25	21.42' LT.	790.50	854+95.75	21.42' LT.	784.78

BERM SLOPE LOCATION TABLE						
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET*	ELEV	STATION	OFFSET*	ELEV
A1	849+32.83	70.58' LT.	763.96	854+37.91	70.58' LT.	762.00
A2	849+31.19	44.00' LT.	764.61	854+37.70	44.00' LT.	761.92
A3	849+29.79	21.42' LT.	765.17	854+38.01	21.42' LT.	762.04
B1	848+87.75	70.58' LT.	781.99	854+74.25	70.58' LT.	776.54
B2	848+87.75	44.00' LT.	781.99	854+74.25	44.00' LT.	776.54
B3	848+87.75	21.42' LT.	781.99	854+74.25	21.42' LT.	776.54

\* MEASURED FROM C IA 100.

ESTIMATED REVETMENT QUANTITIES	
CLASS 'E' REVETMENT	1,065 TON
ENGINEERING FABRIC	2,055 SQ. YD.
EROSION STONE	310 TON
CLASS 10 EXCAVATION (INCLUDES EXCAVATION FOR CLASS 'E' REVETMENT ONLY)	790 CU. YD.

**NOTES:**

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
SEE SHEETS V.29 - V.31 FOR E.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.  
SEE SHEETS V.32 AND V.33 FOR DETAILED PLAN OF W.B. IA 100 BRIDGE OVER SILVER CREEK AND ELLIS ROAD.

**UTILITIES LEGEND:**

E3 - ELECTRIC - ALLIANT ENERGY  
FO - FIBER OPTIC - IOWA COMMUNICATIONS NETWORK  
FO4 - FIBER OPTIC - WINDSTREAM  
FO7 - FIBER OPTIC - ATKINS TELEPHONE COOP.  
T2 - TELEPHONE - CENTURYLINK  
T3 - TELEPHONE - CENTURYLINK

**LOCATION**

W.B. IA 100 OVER SILVER CREEK  
T-83N R-8W  
SECTION 15 & 16  
CLINTON TOWNSHIP  
LINN COUNTY  
FHWA NO. 700640  
LATITUDE 42.001174°  
LONGITUDE -91.774765°

PRELIMINARY

DESIGN FOR 0° SKEW

**596'-0 X 40'-0 PRETENSIONED  
PRESTRESSED CONCRETE BEAM W.B. BRIDGE**

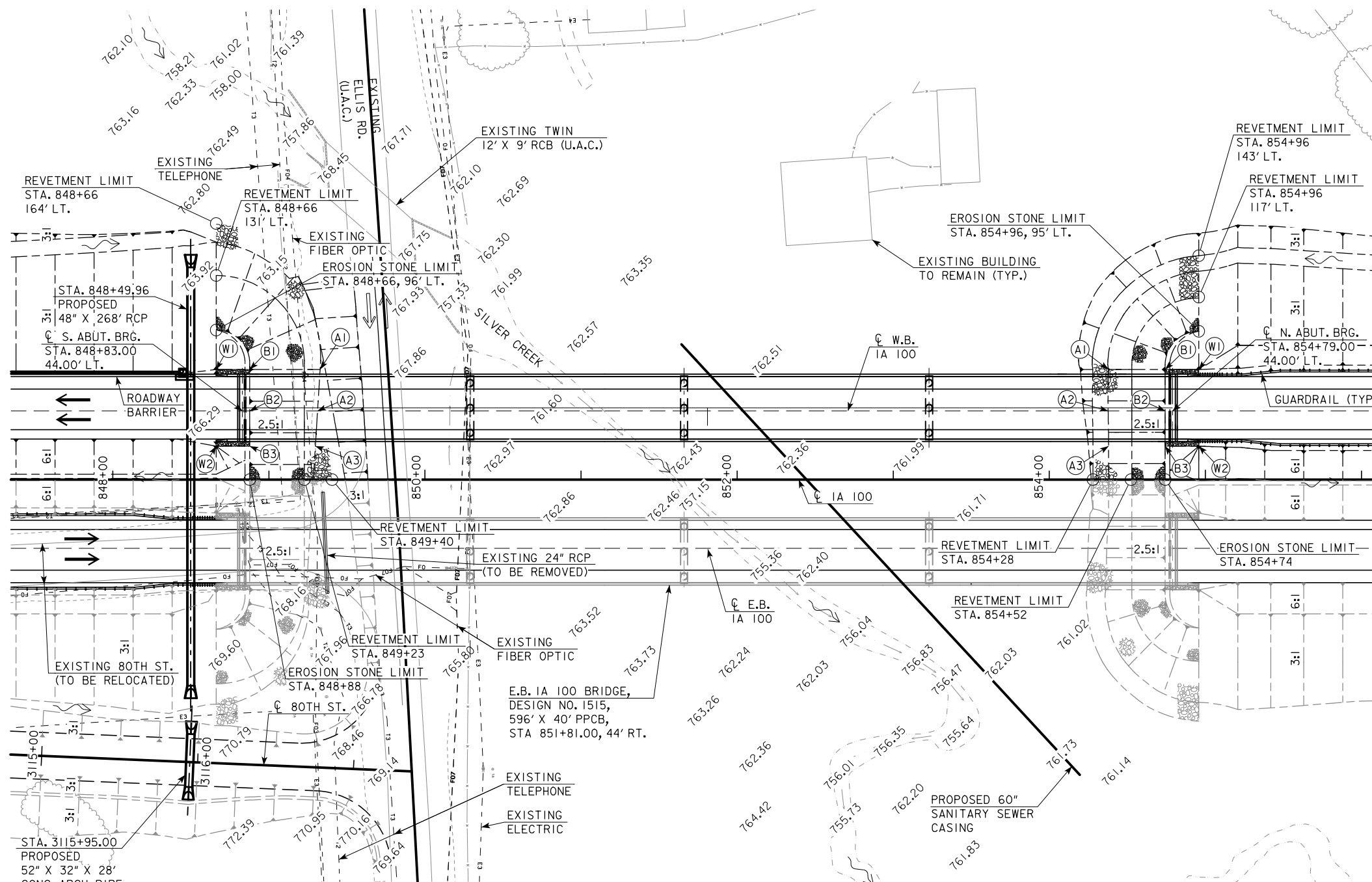
146'-0 & 156'-0 END SPANS 137'-0 & 157'-0 INTERIOR SPANS

**SITUATION PLAN - SITE**

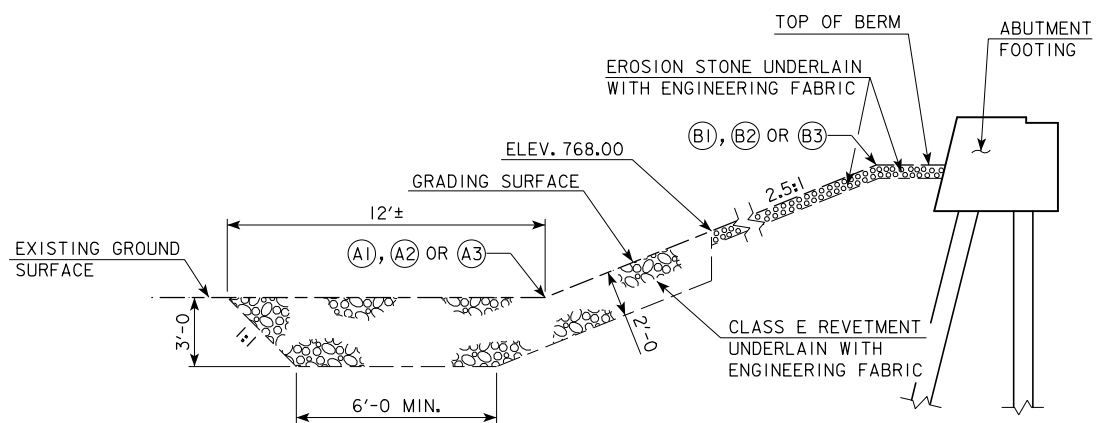
STATION 851+81.00, 44.00' LEFT SEPTEMBER 2014

**LINN COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. 3 OF 3 FILE NO. 29912 DESIGN NO. 1615



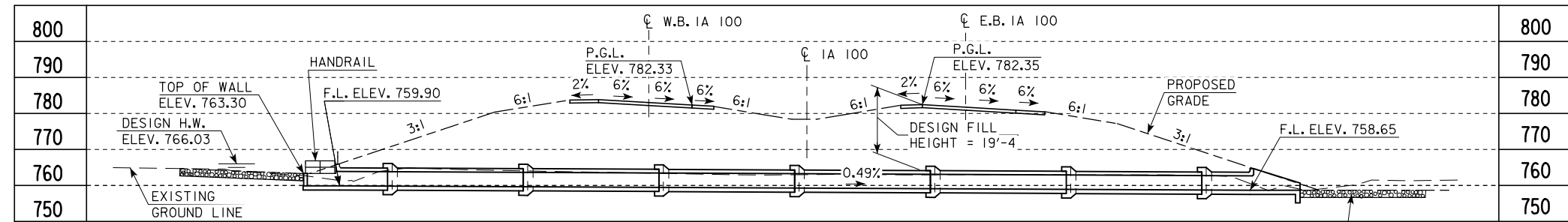
**SITE PLAN**



**SECTION THRU EMBEDDED REVETMENT BERM**

BENCH MARK NO.: #571, SET RR SPIKE IN WEST FACE 18" DECIDUOUS TREE, APPROX. 1925 FT. S.W. OF COVINGTON RD. BRIDGE OVER ABANDON RR TRACKS, STA 879+88.52, 770.43' RT., ELEV. 758.03, N.3470484, E.5391330

VPC STA = 871+12.50 ELEV = 780.05  
 +1.365%  
 -0.508%  
 VPT STA = 875+87.50 ELEV = 782.08  
 VPI STA = 873+50.00 VC = 475'  
 VPI ELEV = 783.29



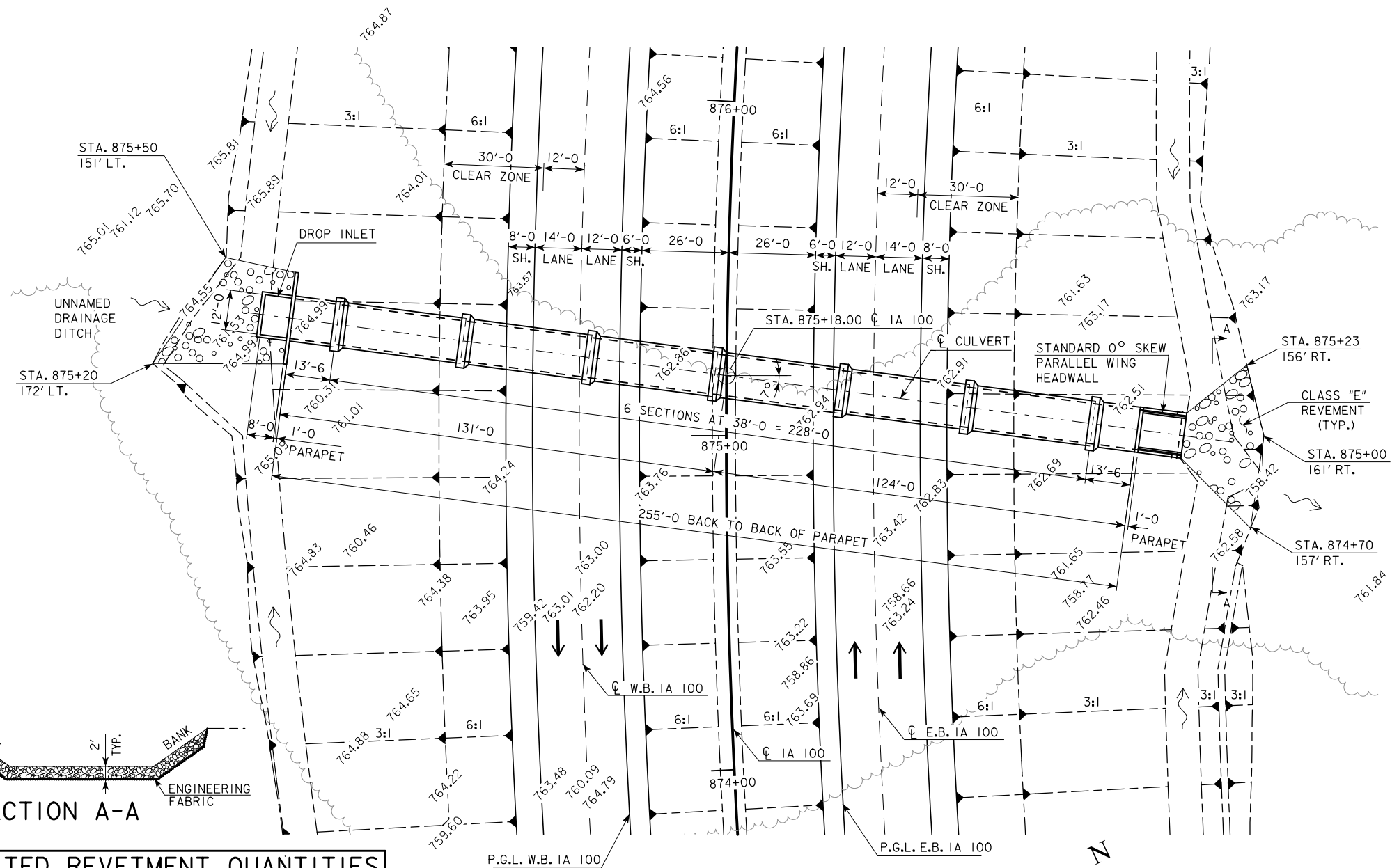
### IA 100 PROPOSED PROFILE GRADE

### IA 100 SPIRAL DATA

SCS PI STA. 867+18.96  
 $\Delta = 49^\circ 35' 53.16''$  (RT)  
 $\theta_s = 3^\circ 54' 05.65''$   
 $L_s = 286.00$   
 $T_s = 1,114.02$   
 $E_s = 215.11$   
 $P = 1.62$   
 $K = 142.98$   
 $X_c = 285.87$   
 $Y_c = 6.49$   
 $LT = 190.71$   
 $ST = 95.38$   
 $LC = 285.94$   
 $TS STA. 865+28.25$   
 $SC STA. 868+14.25$

### IA 100 CURVE DATA

PI STA. 876+16.05  
 $\Delta = 41^\circ 47' 41.85''$  (RT)  
 $D = 02^\circ 43' 42.13''$   
 $T = 801.81$   
 $L = 1,531.87$   
 $E = 147.86$   
 $R = 2,100.00$   
 $e = 6.00\%$   
 $I = 286.00$   
 $x = 96.00$   
 $PC STA. 868+14.25$   
 $PT STA. 883+46.11$



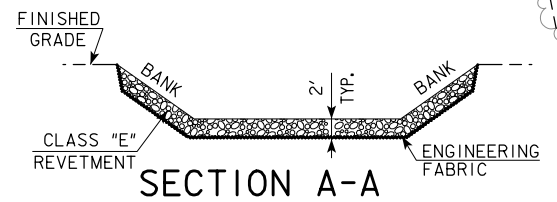
### LOCATION

IA 100 OVER UNNAMED DRAINAGE DITCH  
 T-83N R-8W  
 SECTION 15  
 CLINTON TOWNSHIP  
 LINN COUNTY  
 LATITUDE 42.007477°  
 LONGITUDE -91.773453°

### TRAFFIC ESTIMATE

2005 AADT	N/A	V.P.D.
2040 AADT	11530	V.P.D.
2040 DHV	1675	V.P.H.
TRUCKS	10	%
TOTAL DESIGN ESALs	TBD	

NOTES:  
 ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 CLASS E REVETMENT STONE IS EMBEDDED.  
 NOTES TO DESIGNER:  
 SOIL SETTLEMENT IS ANTICIPATED TO BE GREATER THAN 6 INCHES. BELL JOINTS AND CAMBERING OF THE CULVERT WILL BE REQUIRED. CAMBER ELEVATIONS AND DETAILS TO BE PROVIDED DURING FINAL DESIGN.



### ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	94	104	70
OUTLET	73	81	54
TOTALS	167	185	124

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

### HYDRAULIC DATA

DRAINAGE AREA = 376.40 ACRES  
 $Q_{50} = 391.0$  CFS  
 HW ELEV. = 766.03

### UTILITIES LEGEND:

NO KNOWN UTILITIES



PRELIMINARY  
 DESIGN FOR 7° SKEW (L.A.)  
**12' X 4' X 255'-0" REINFORCED CONCRETE BOX CULVERT**  
 SITUATION PLAN  
 STATION 875+18.00  
 LINN COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 1 FILE NO. 29912 DESIGN NO. 1915

**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.

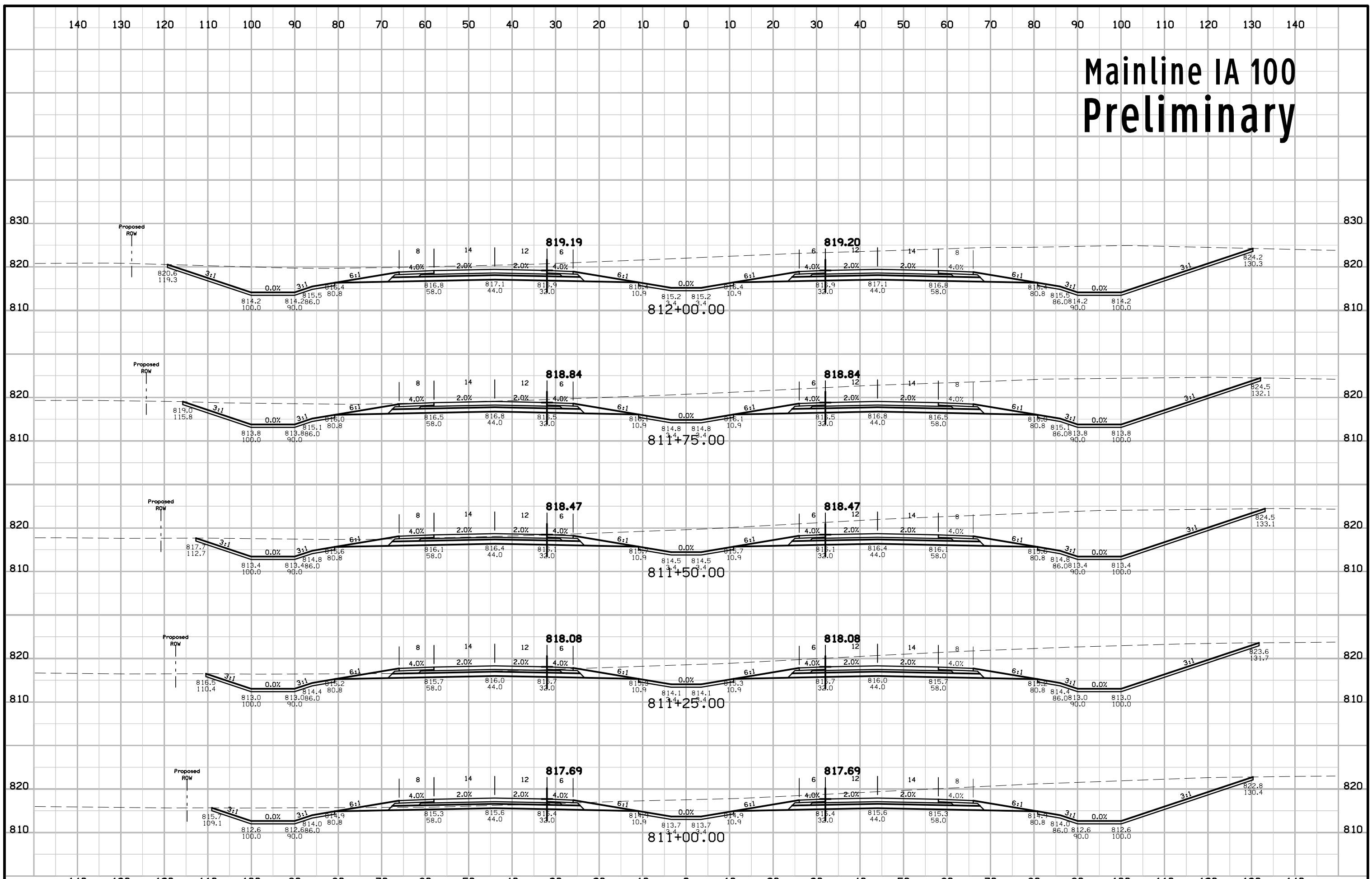
**SYMBOL LEGEND OF CROSS SECTION SHEETS**

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

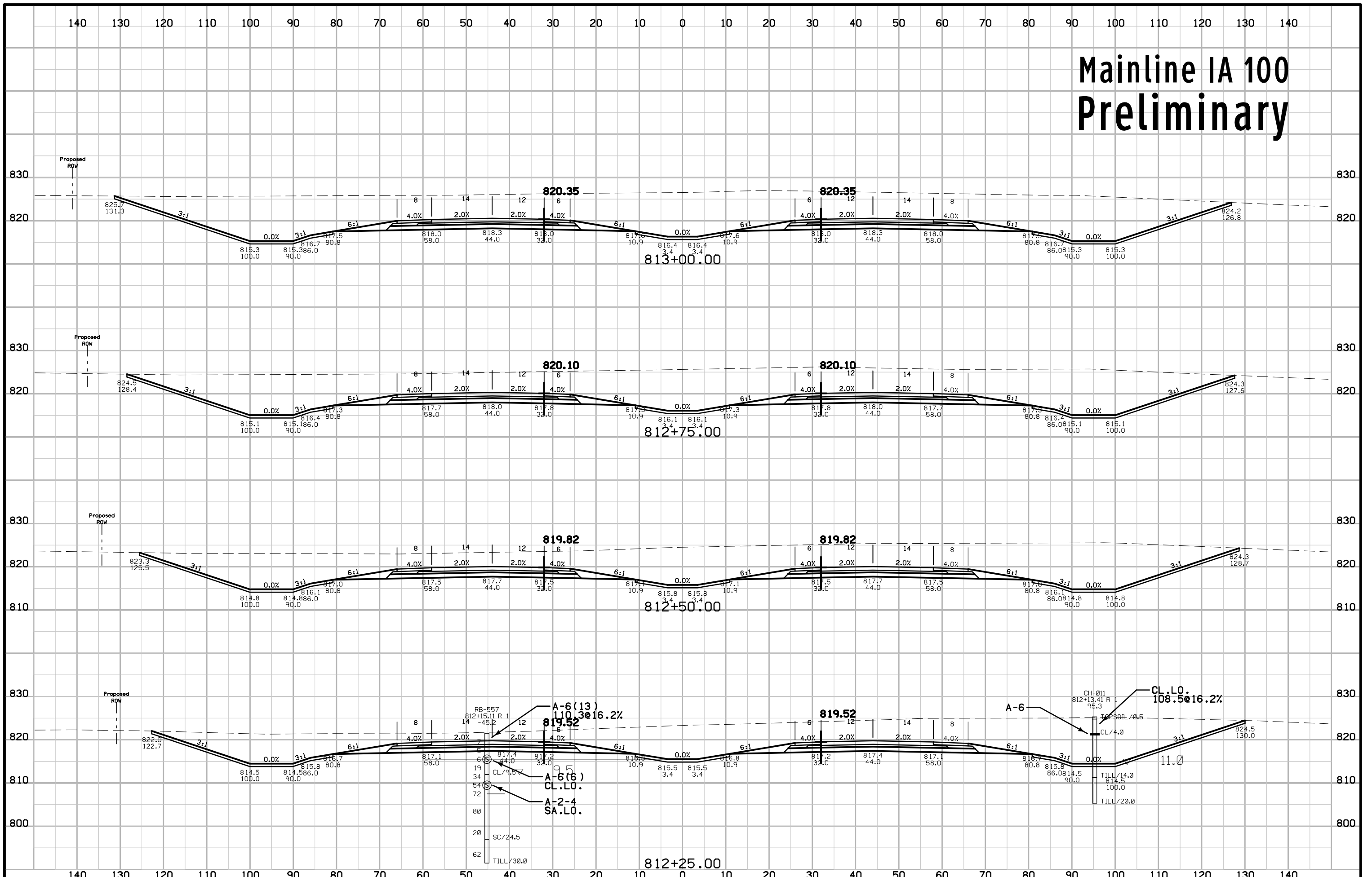
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

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

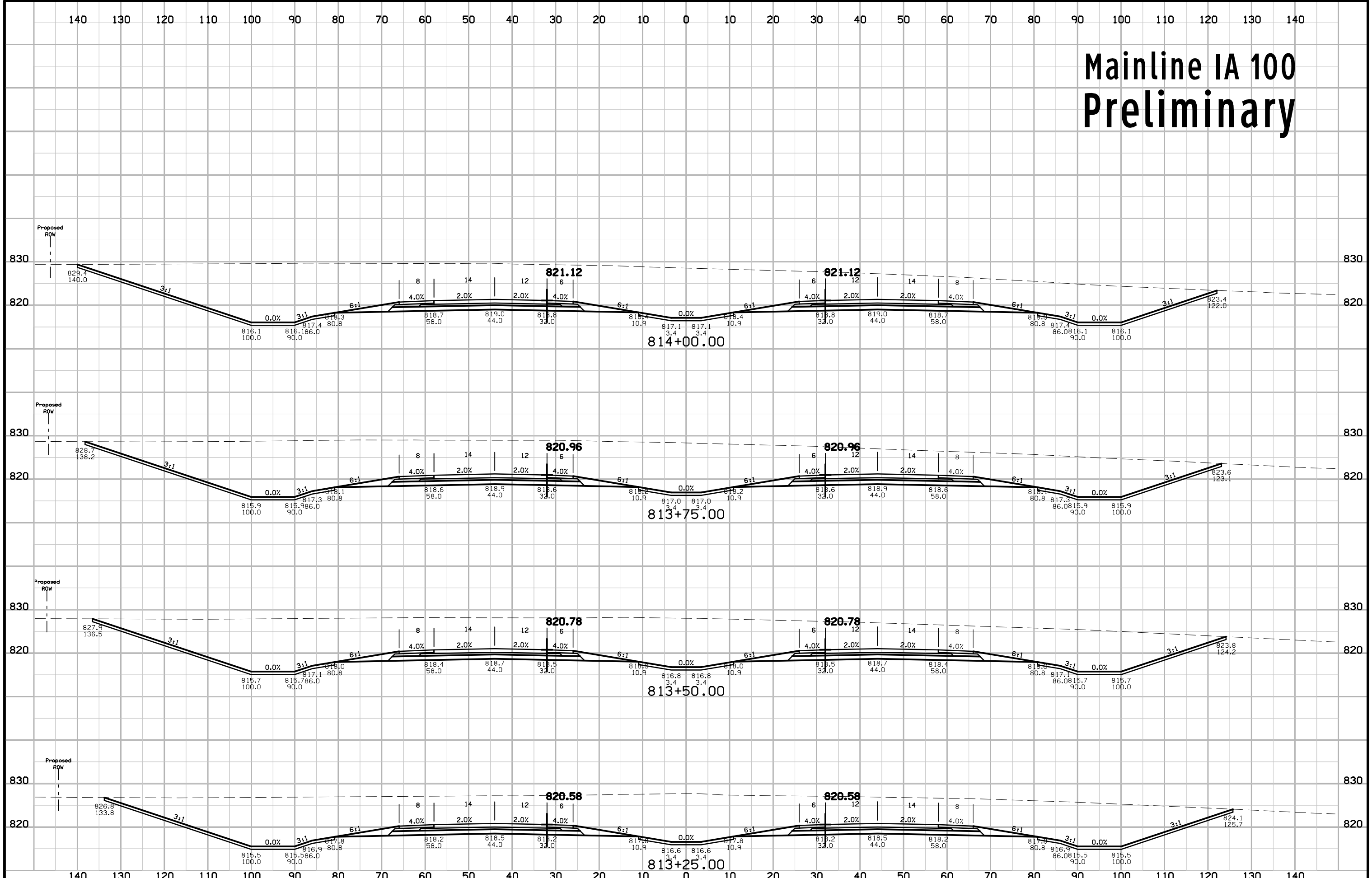
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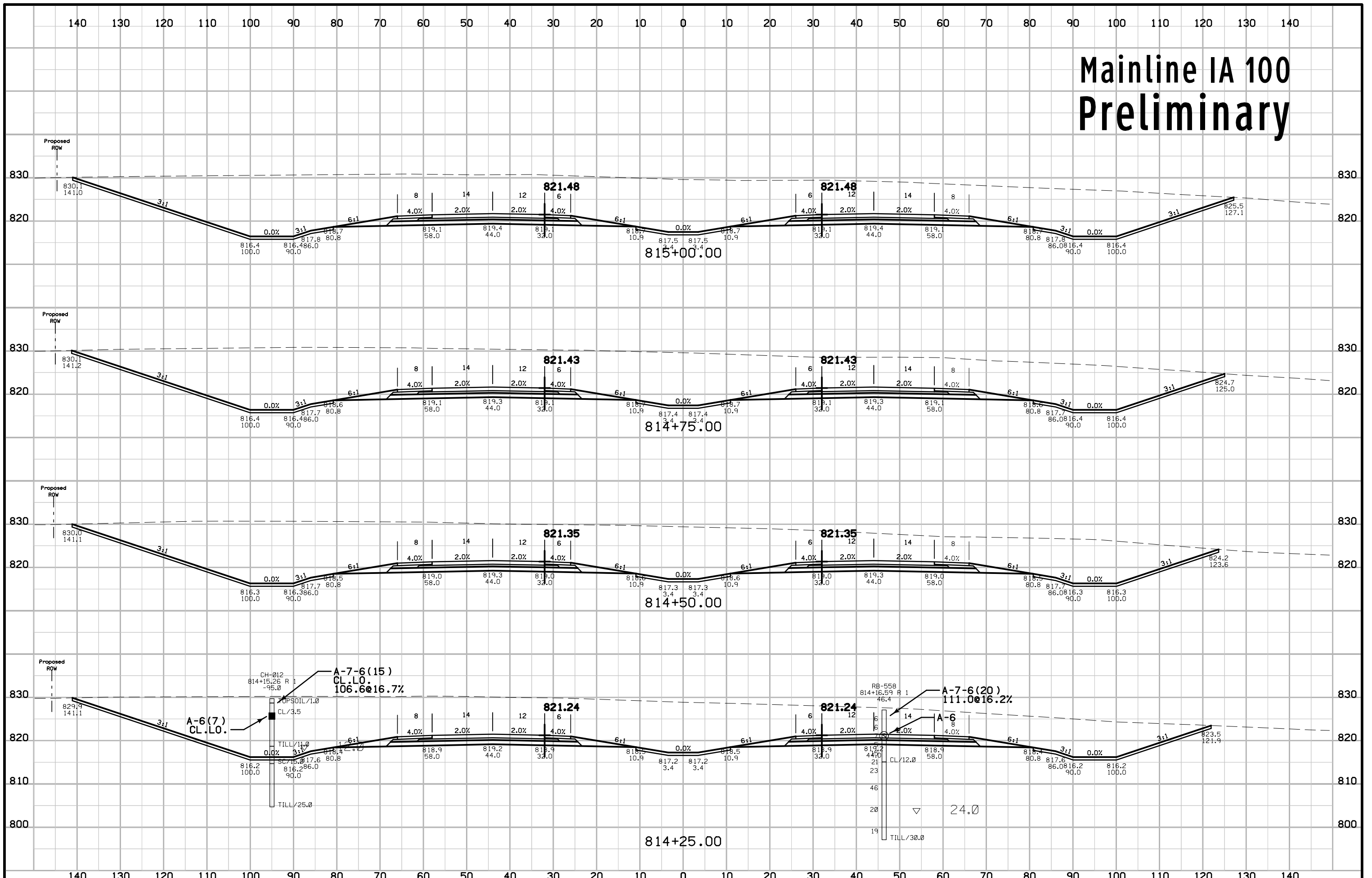
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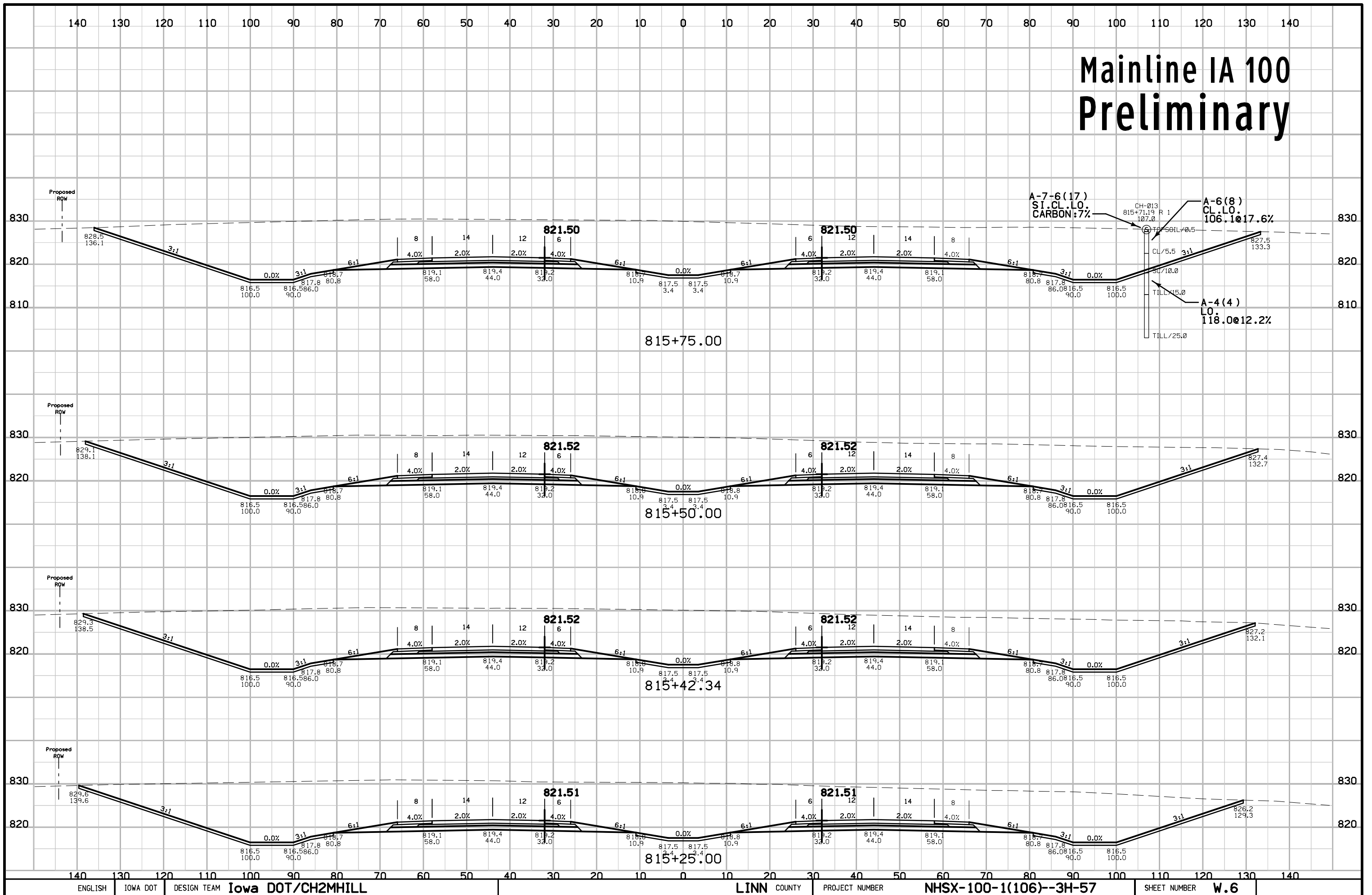


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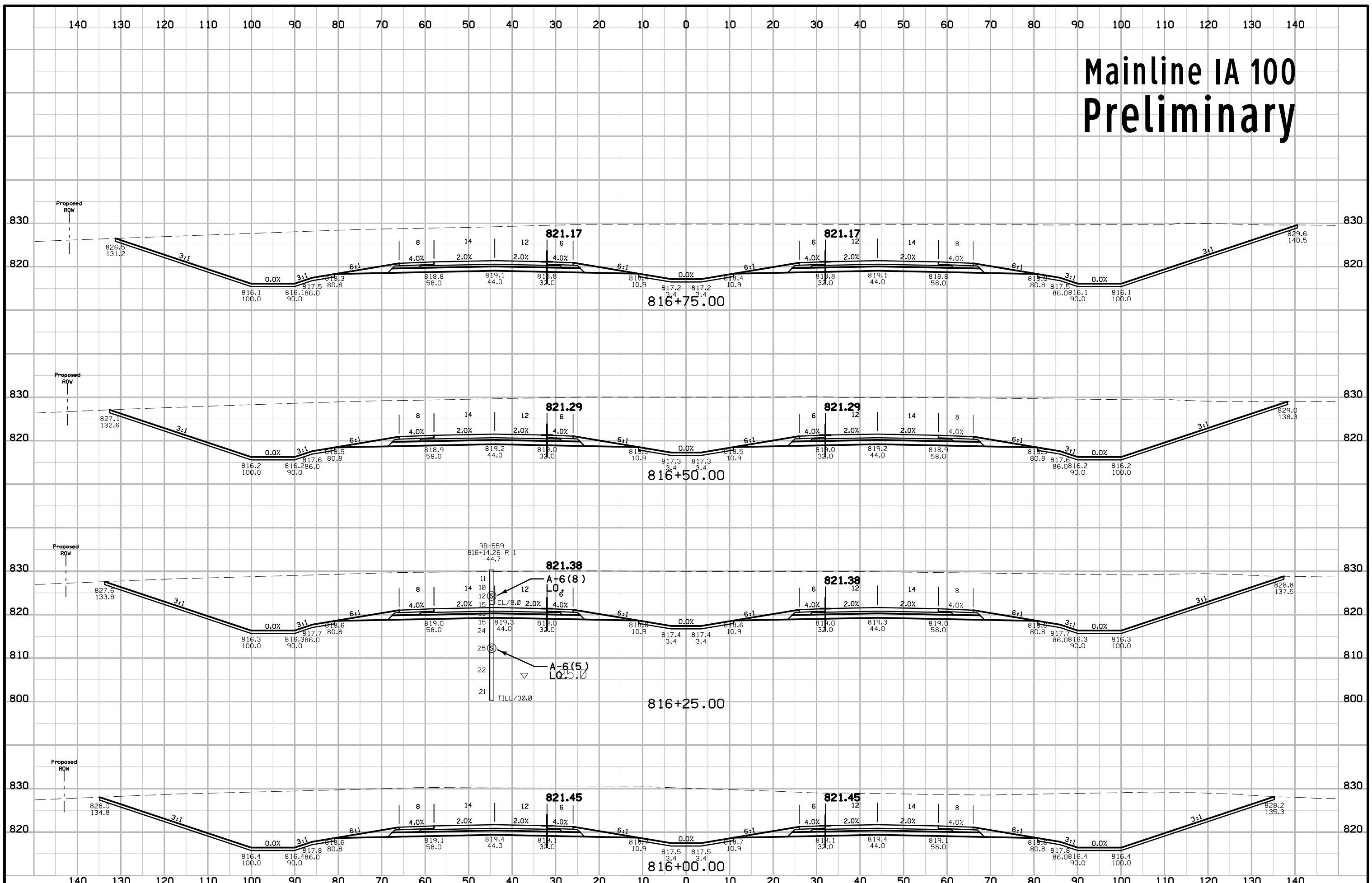




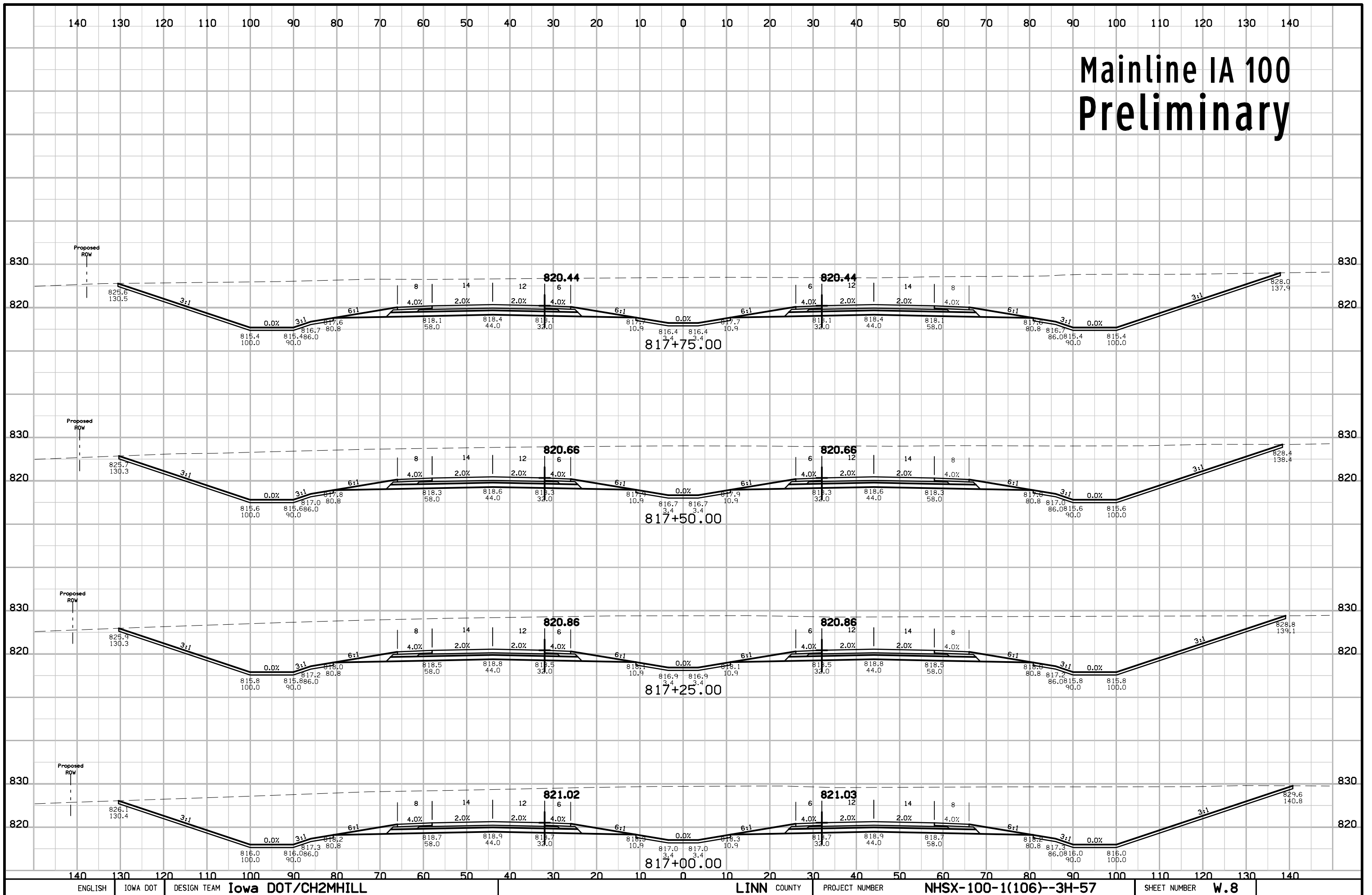
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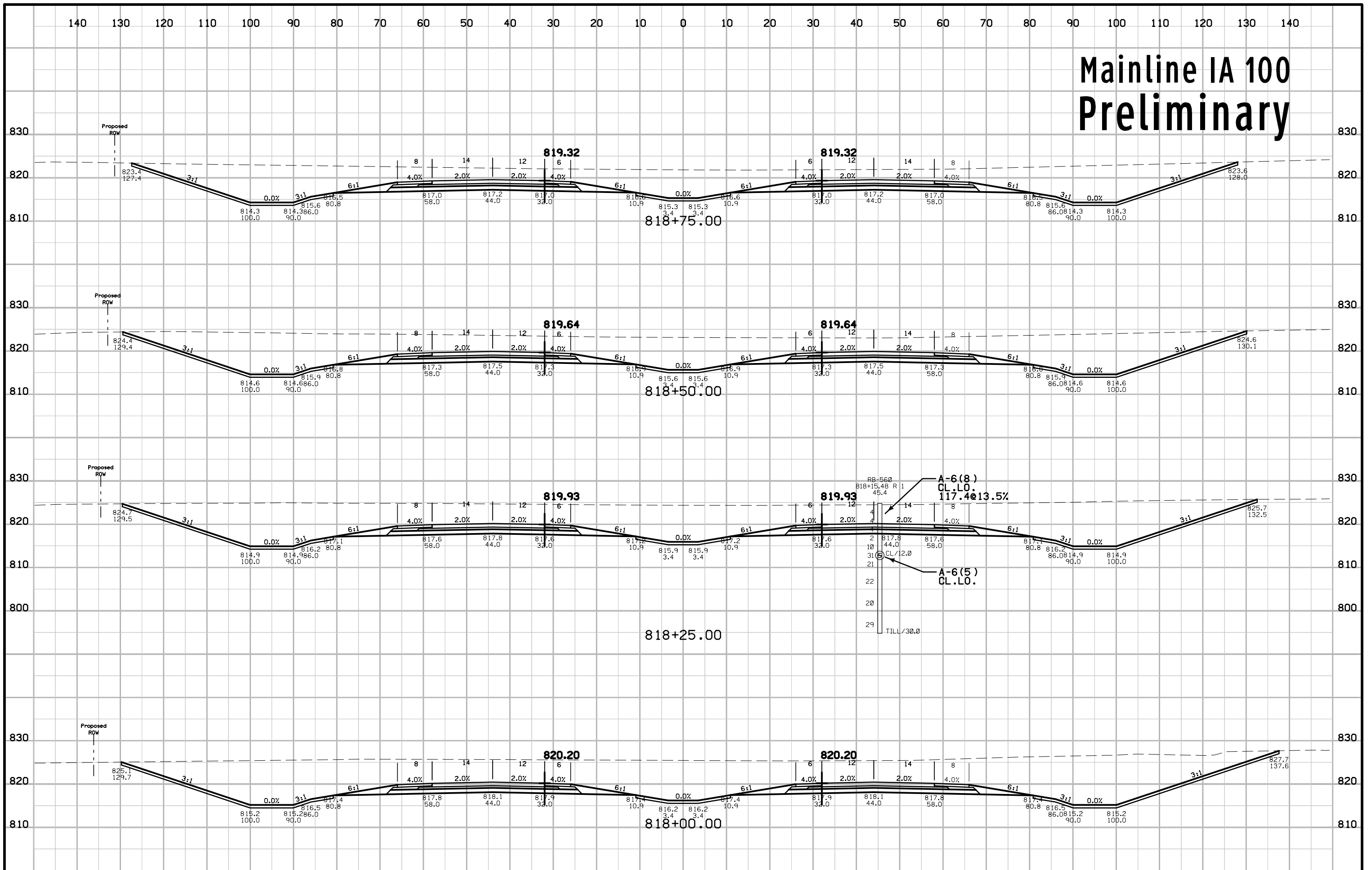
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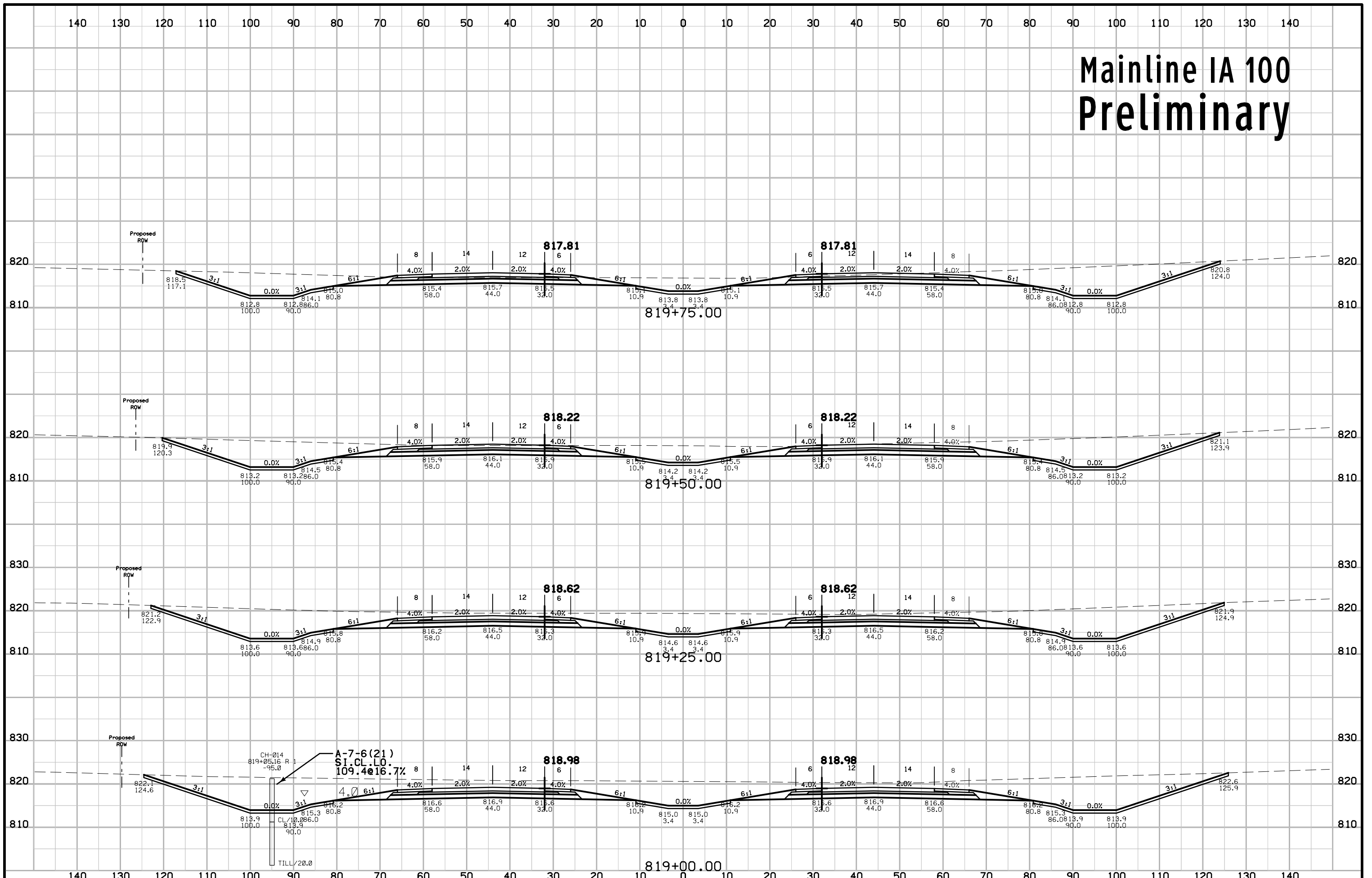
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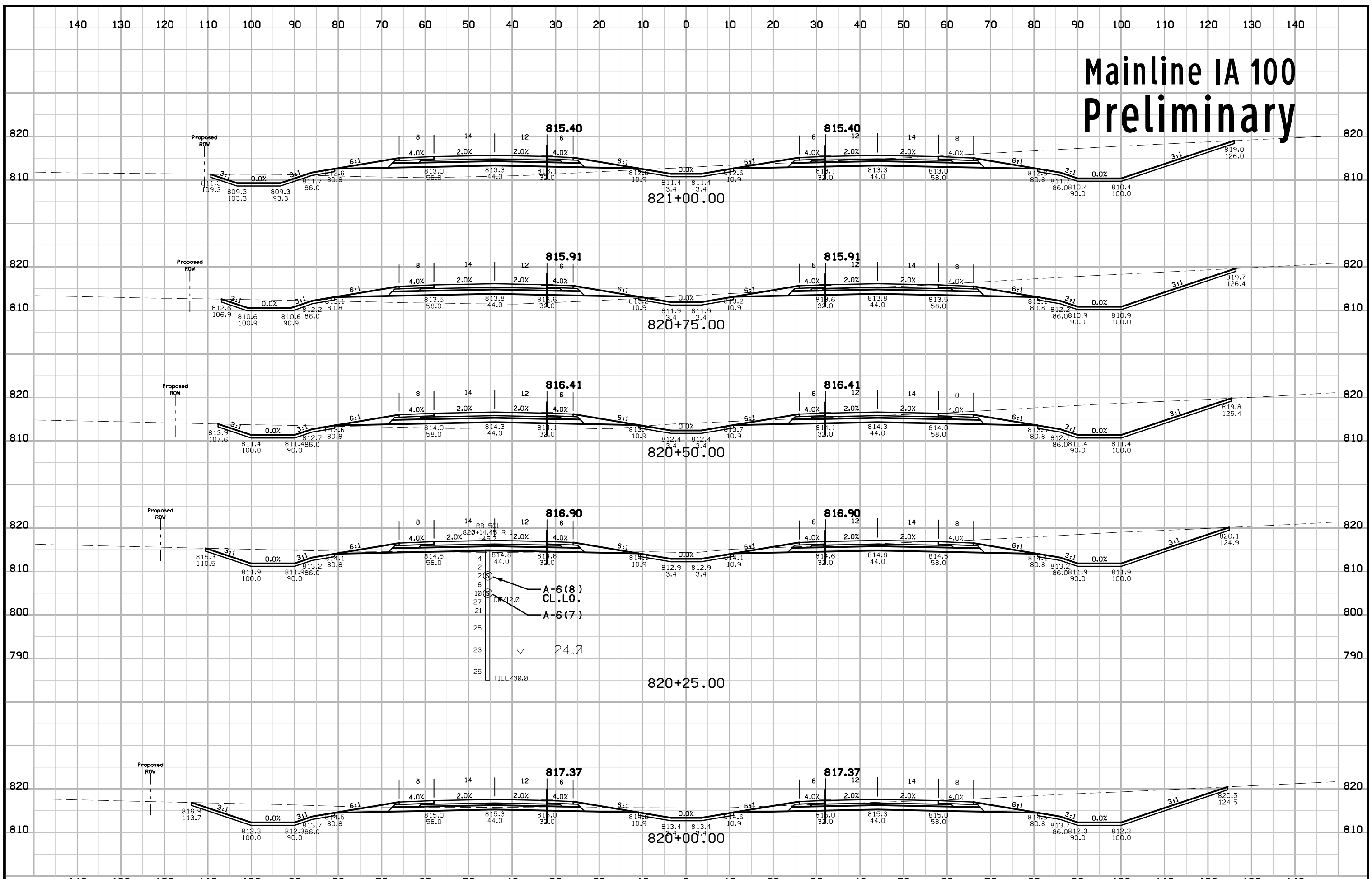
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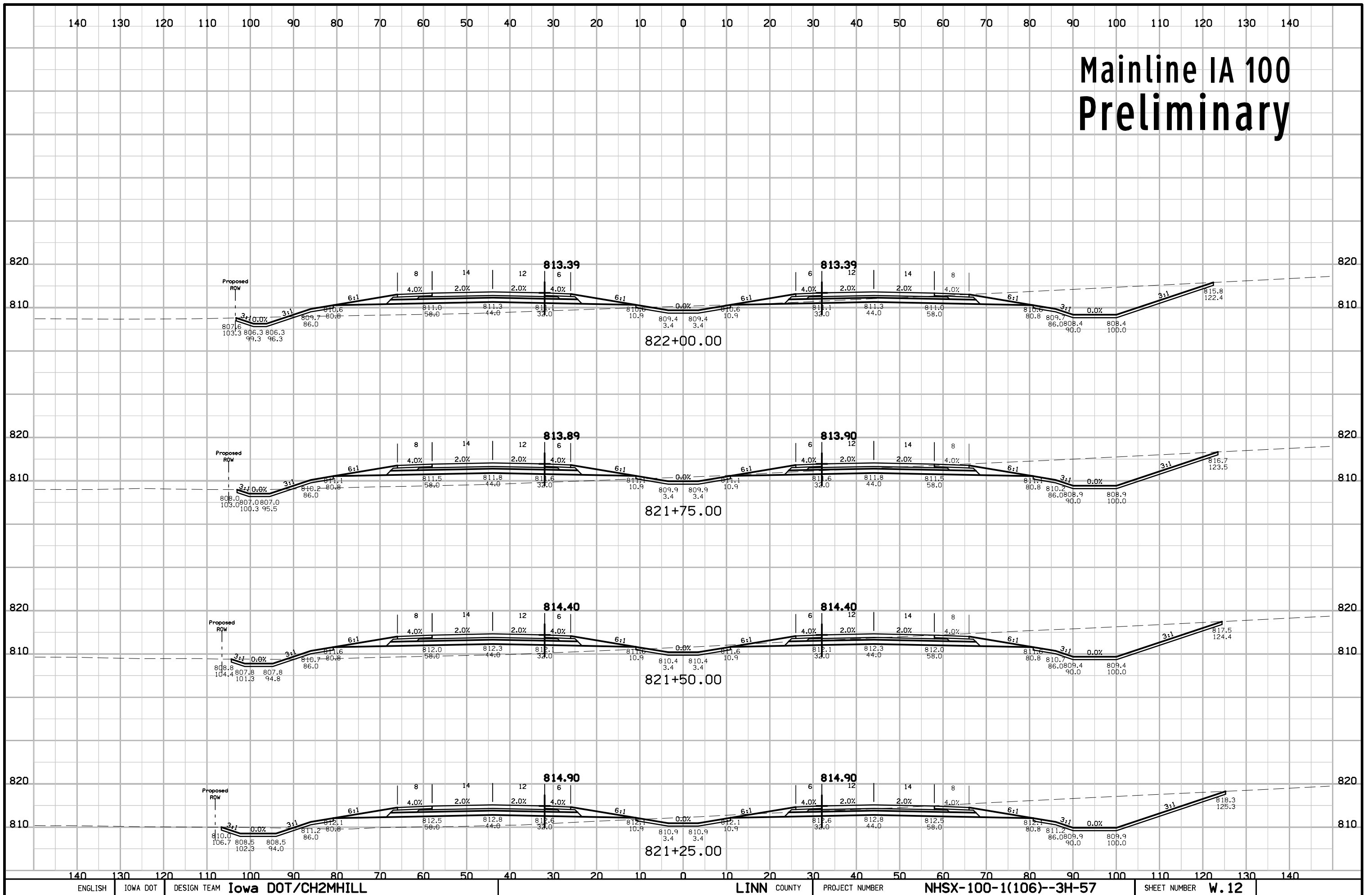
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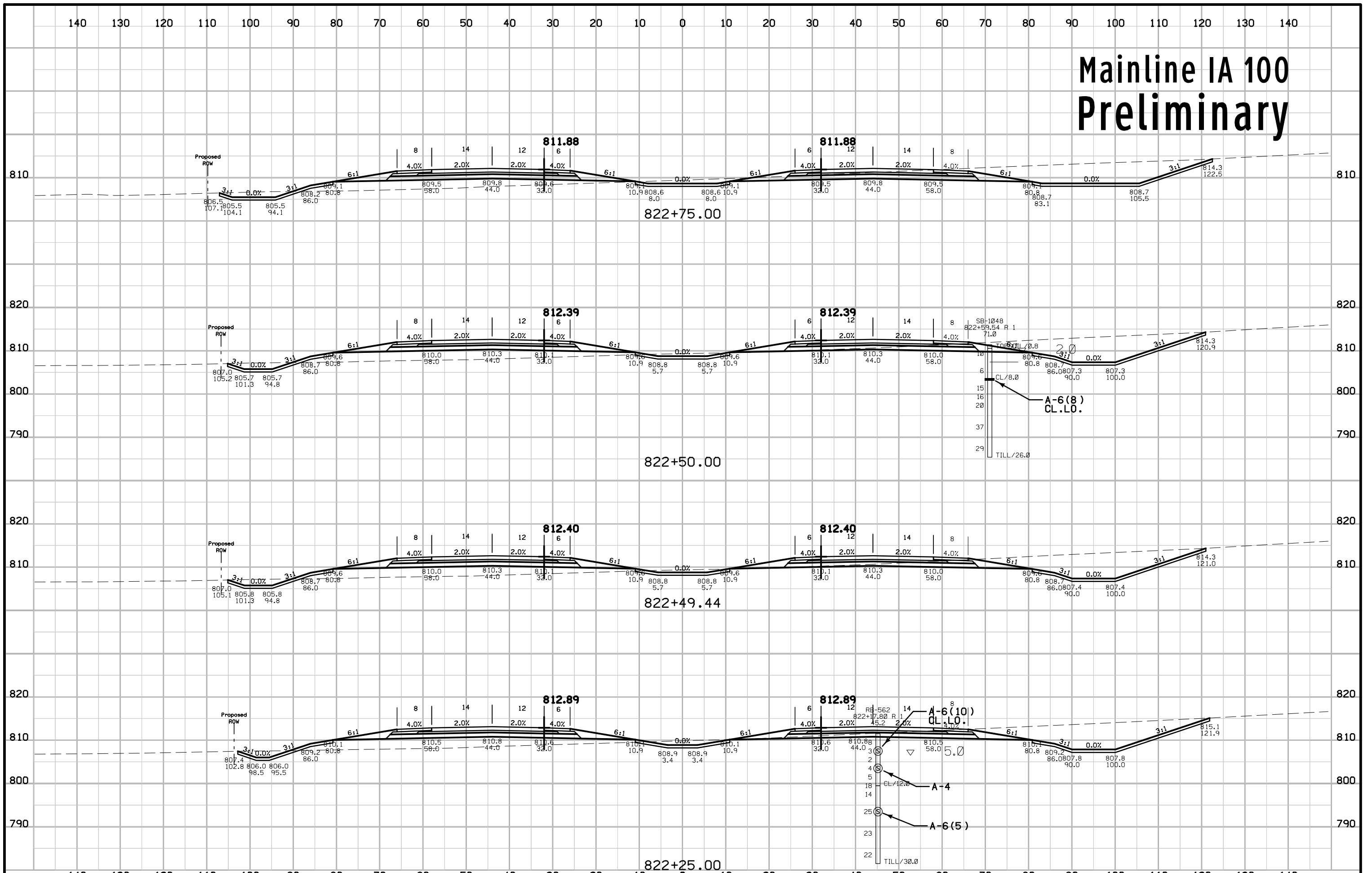
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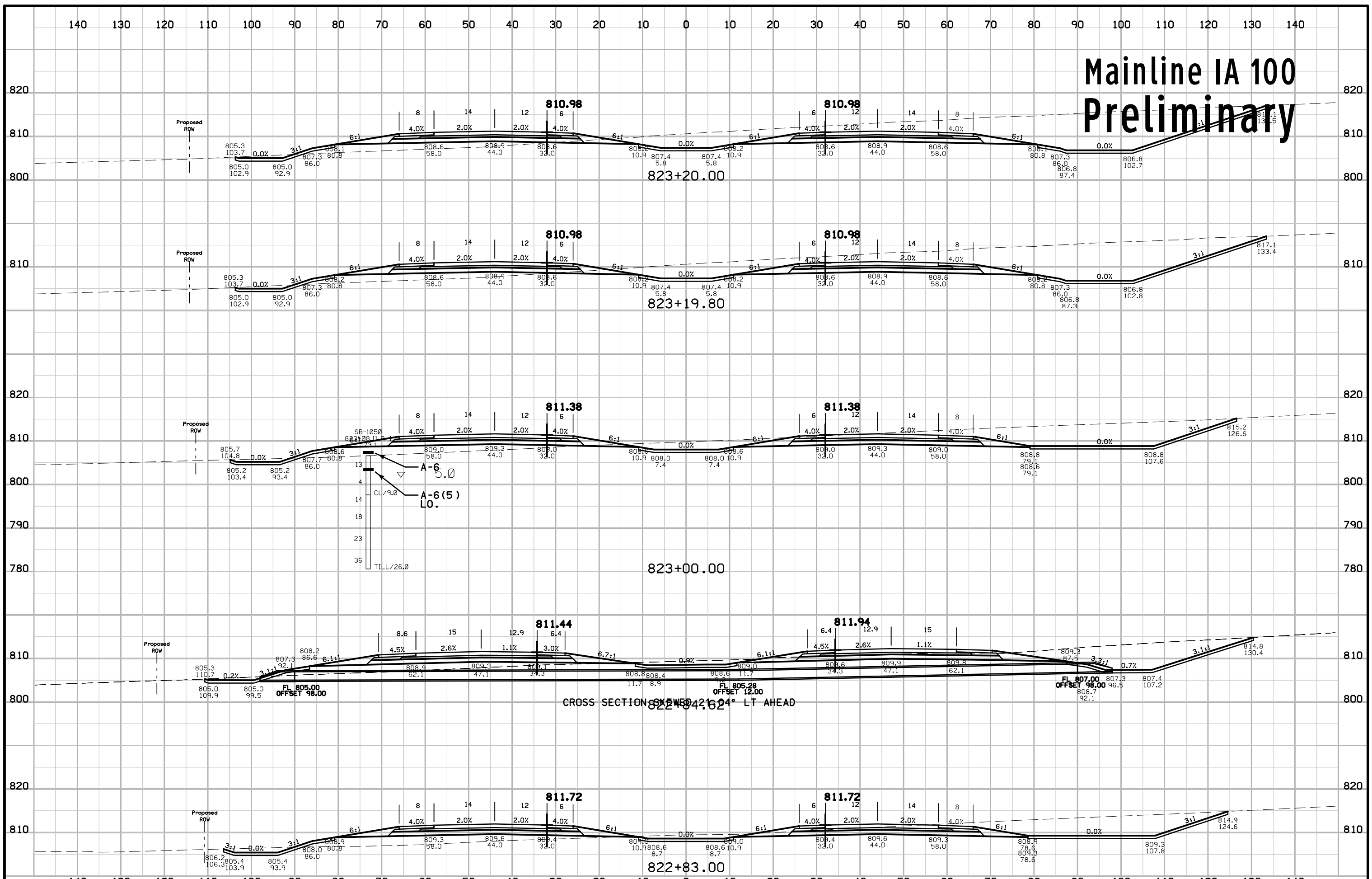


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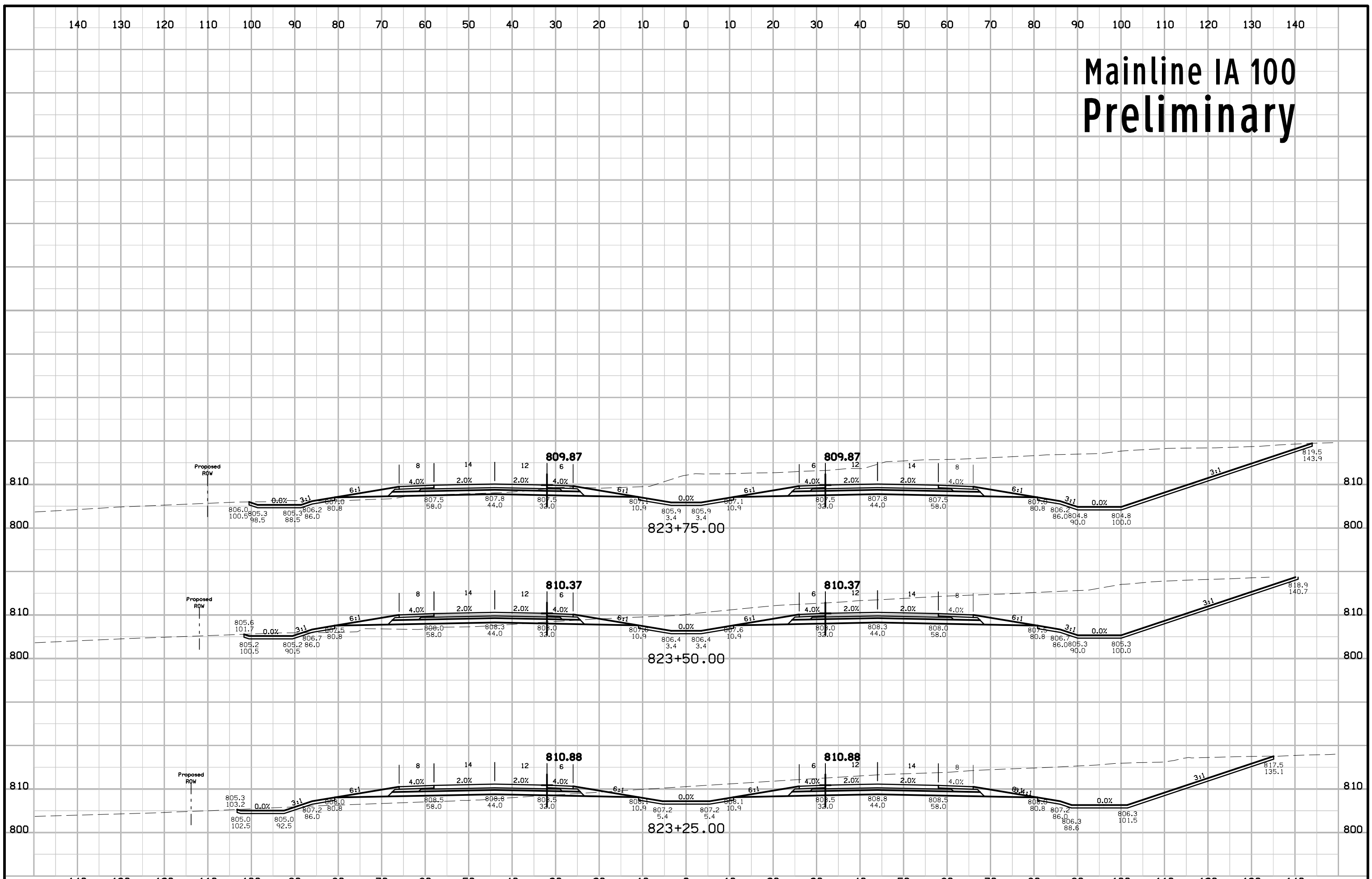




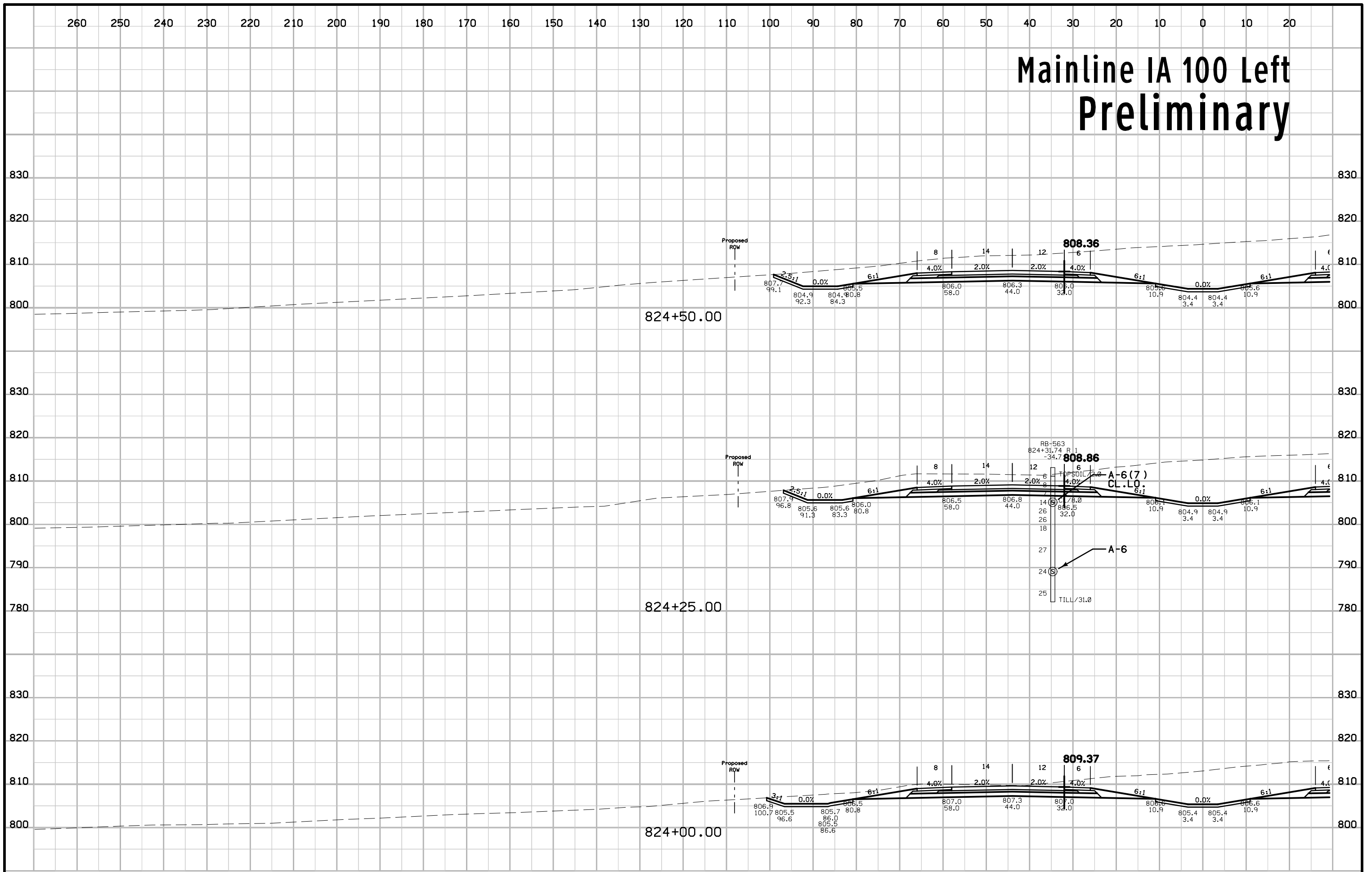
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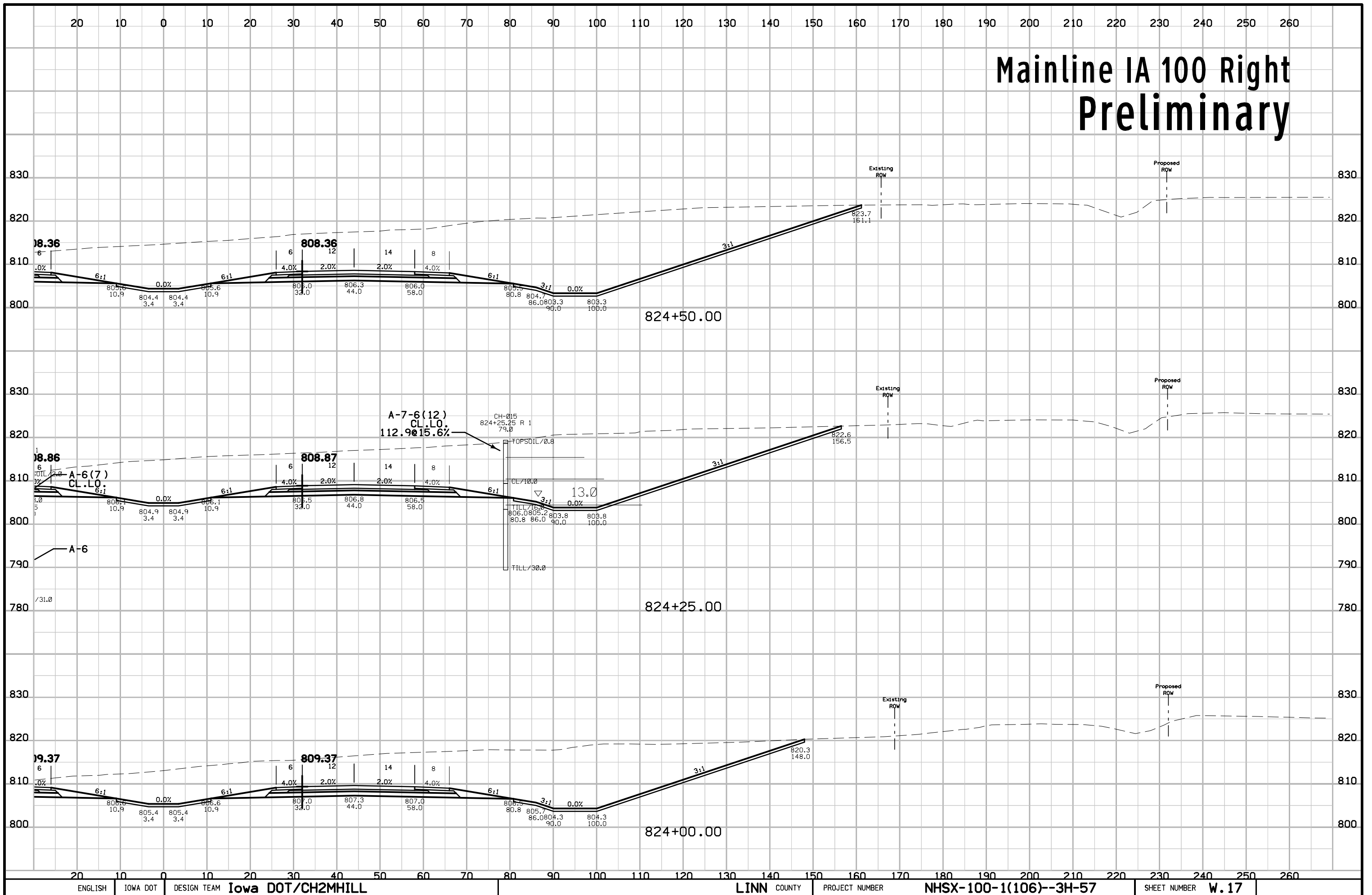
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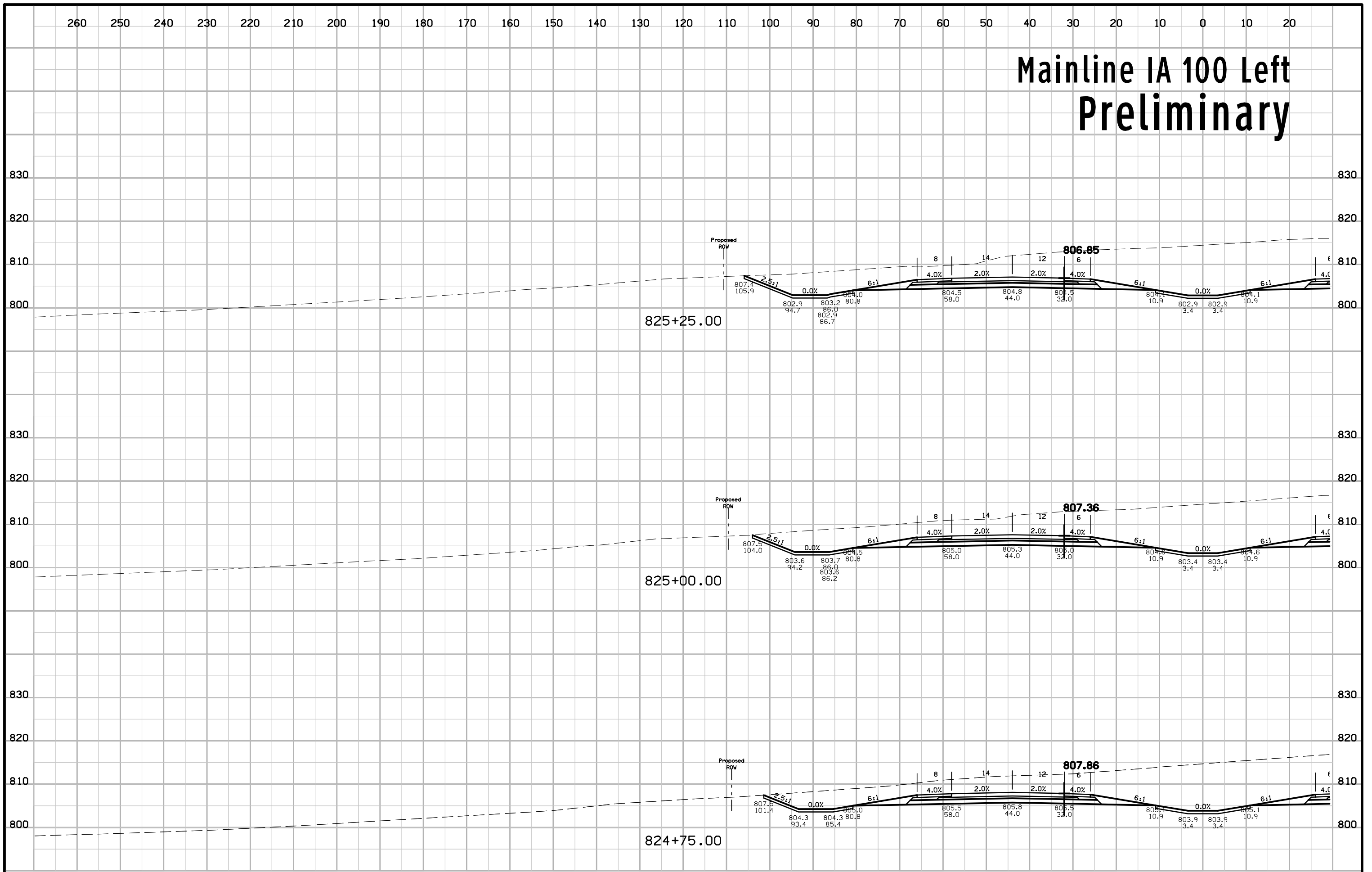
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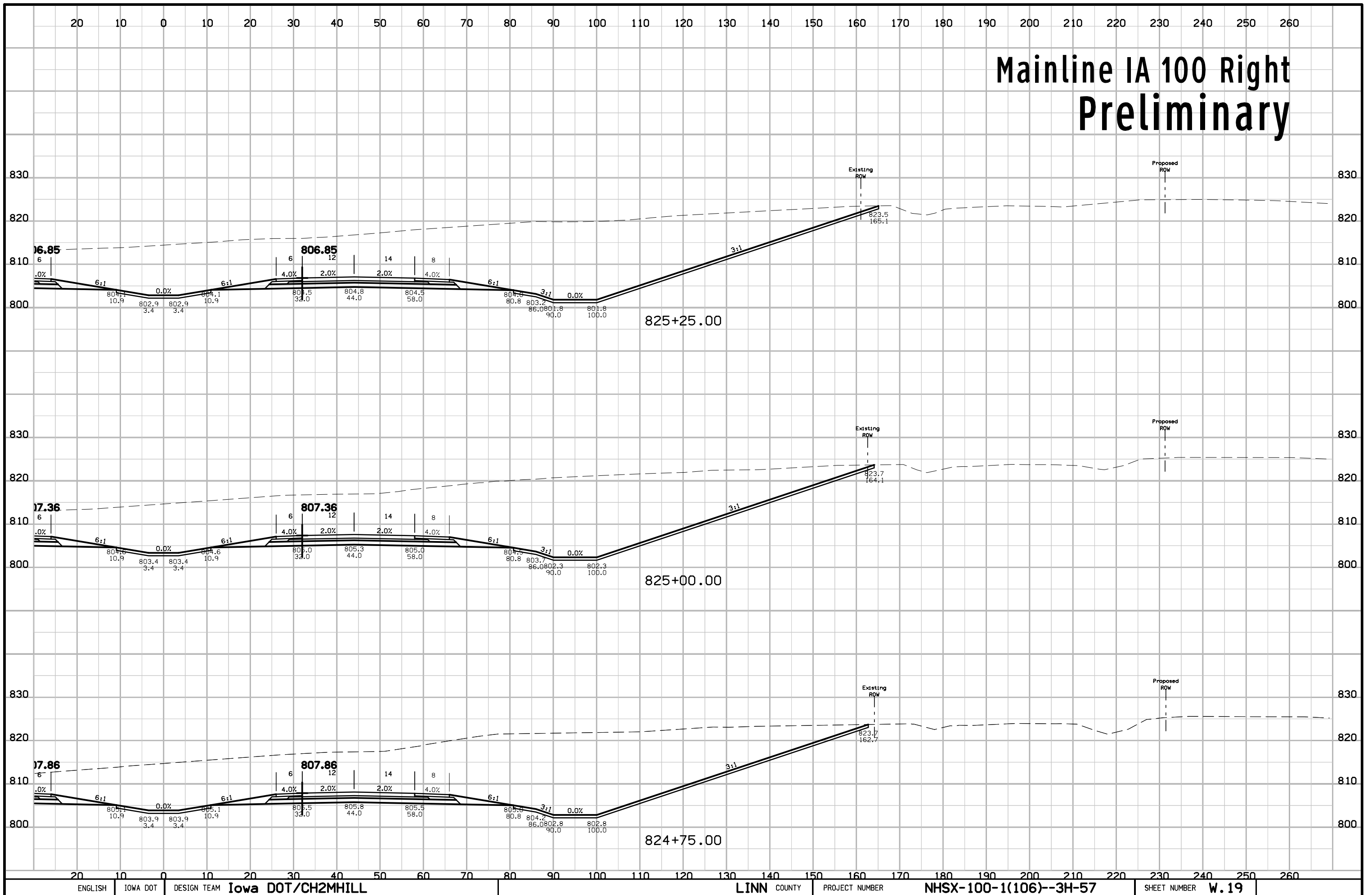
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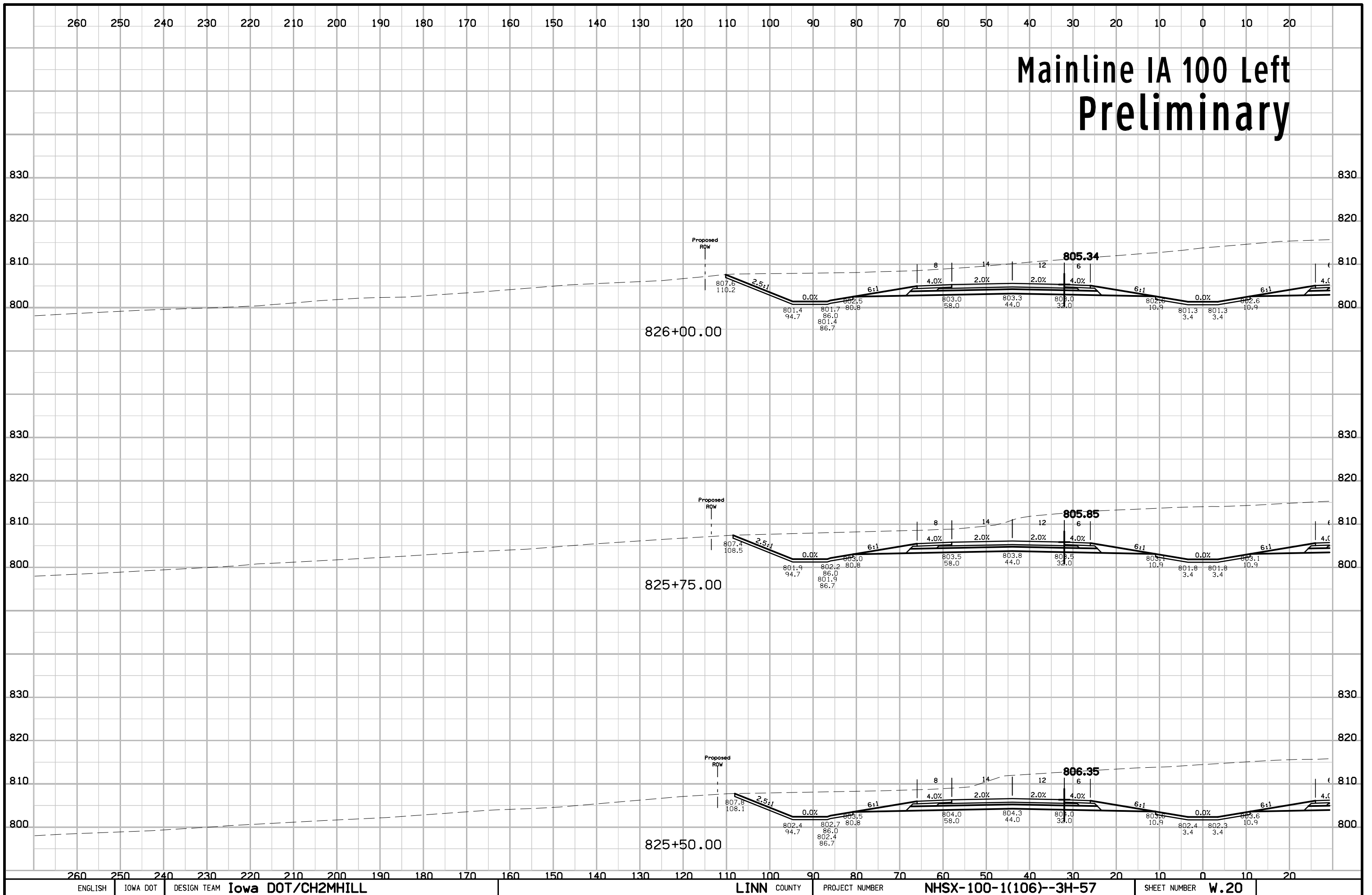
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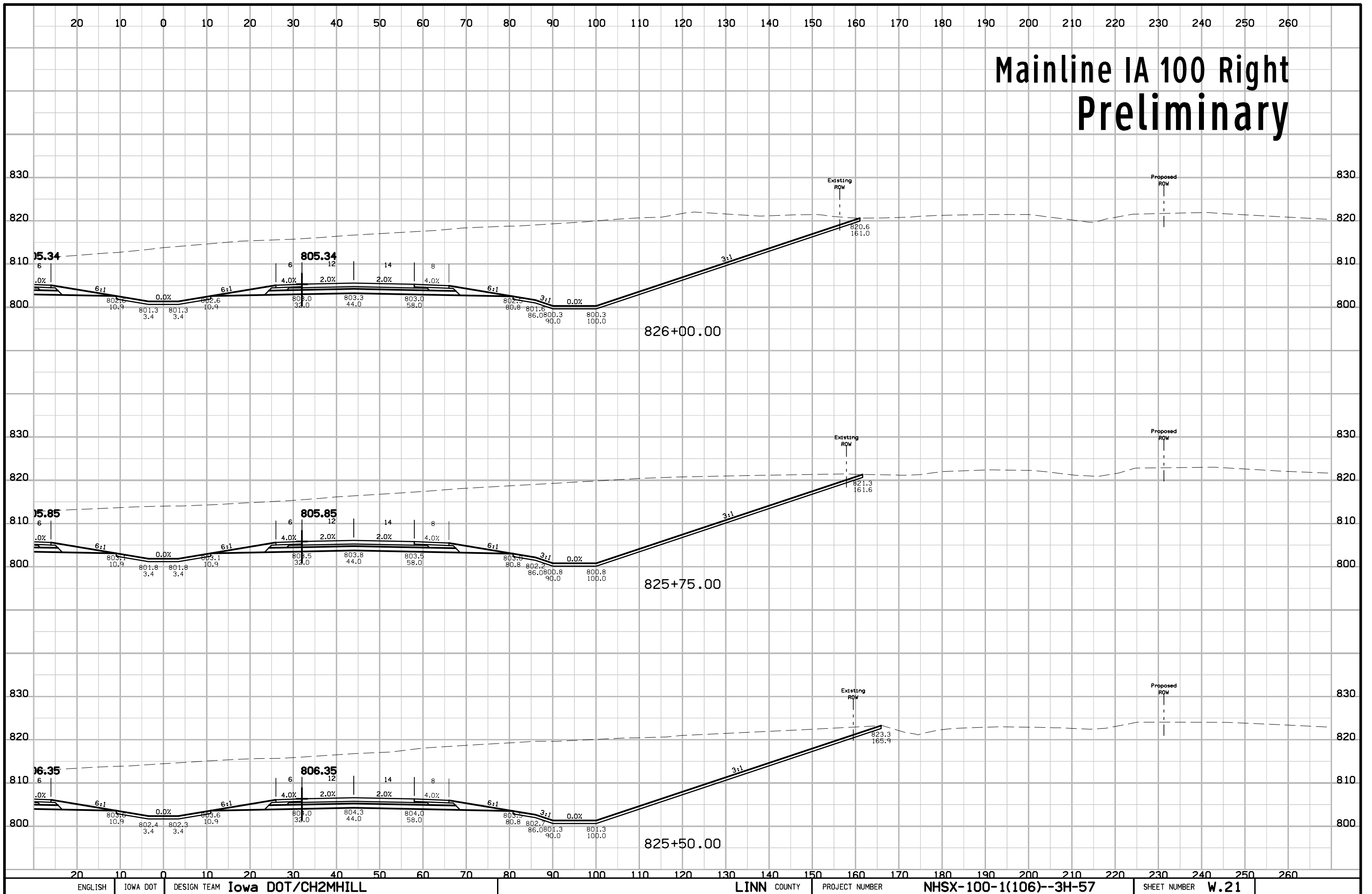
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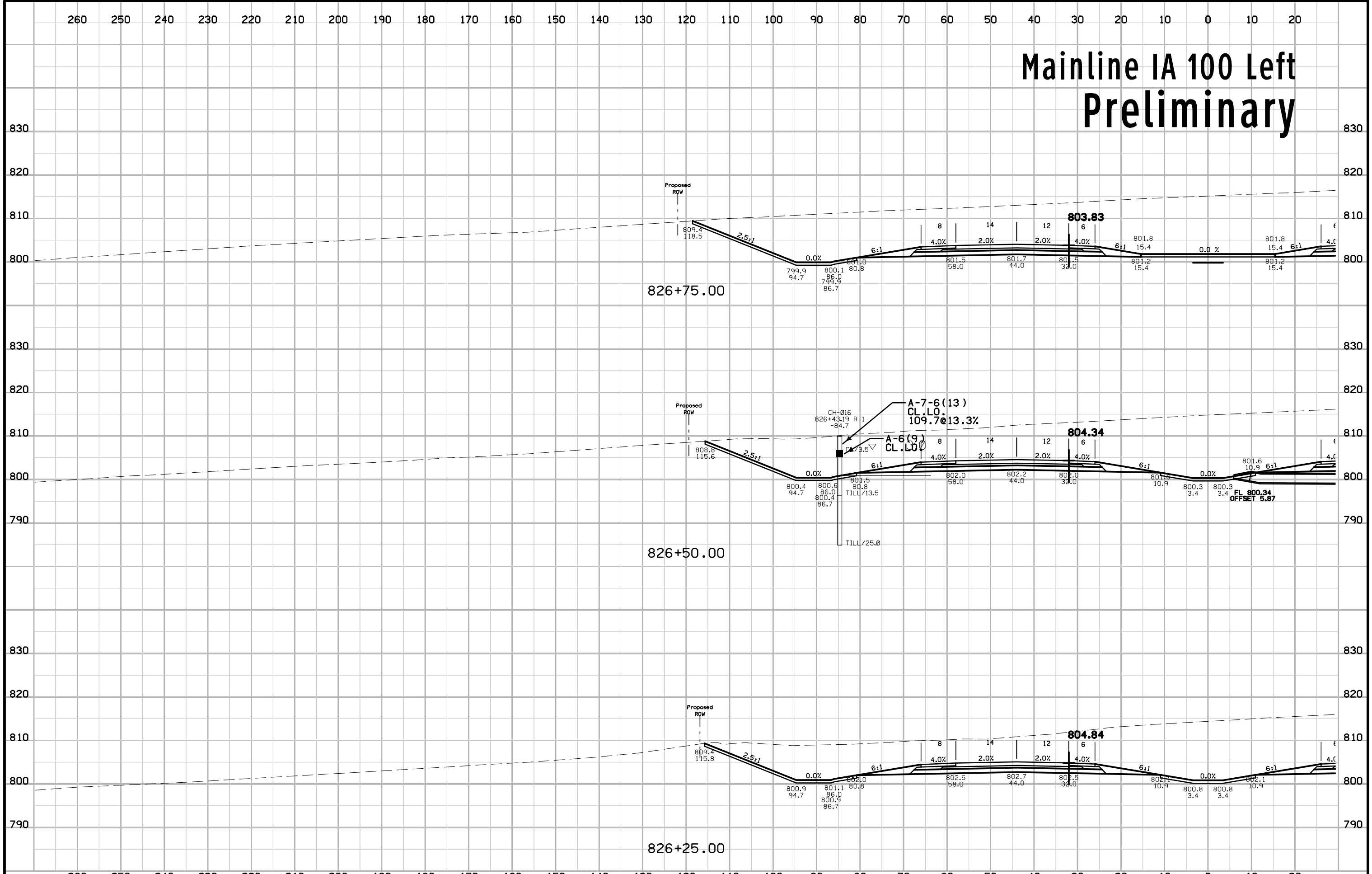


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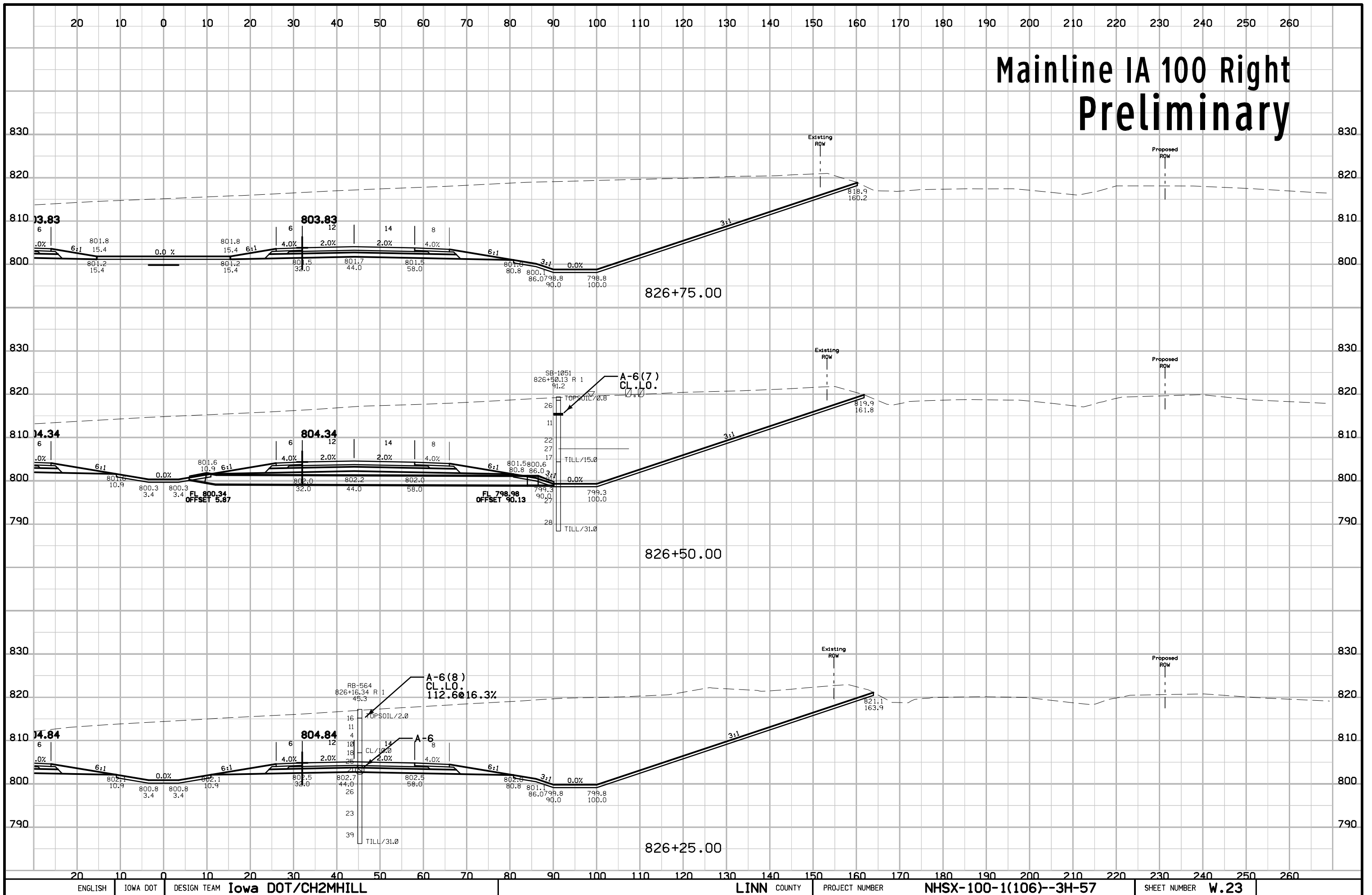




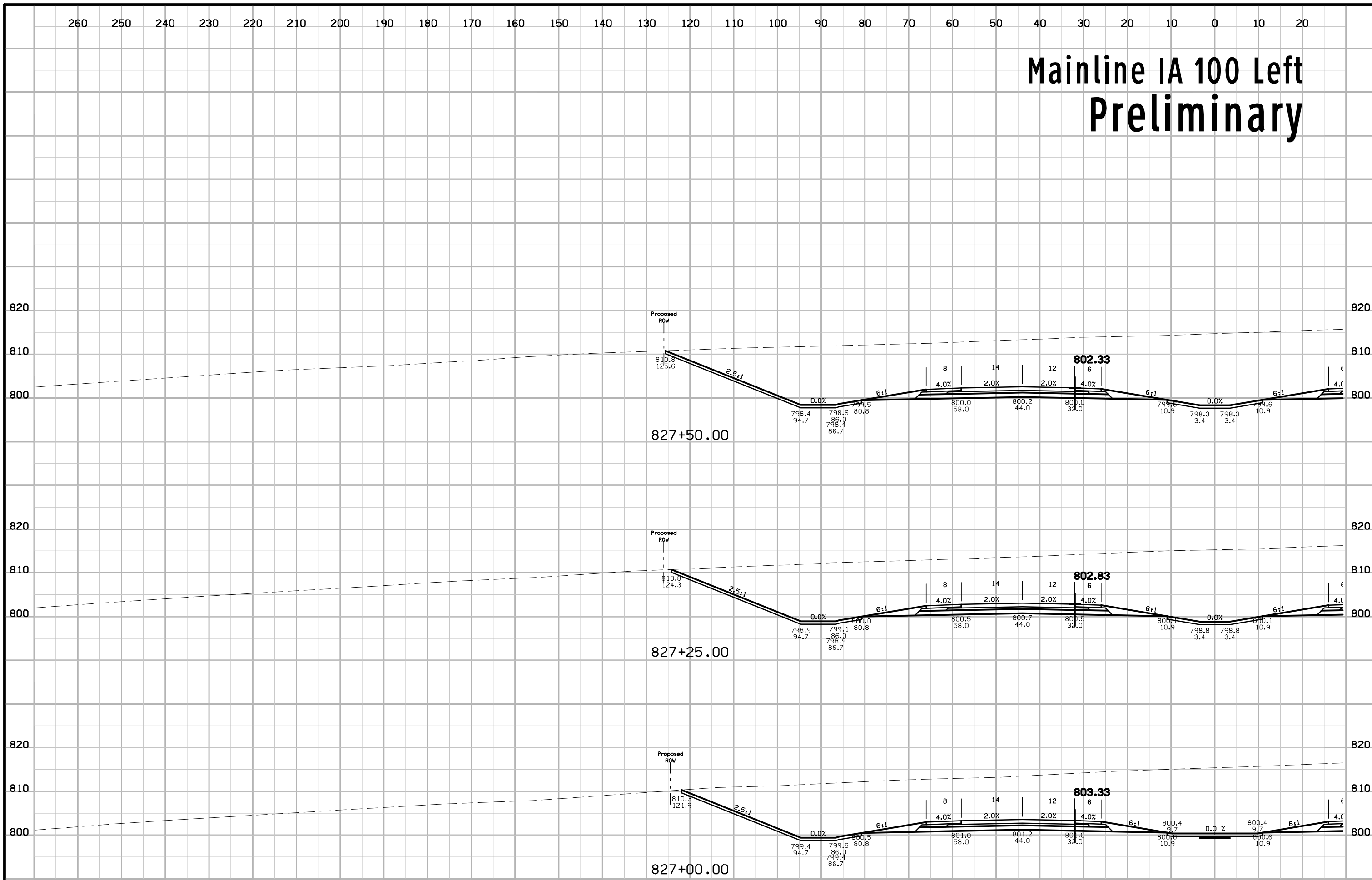
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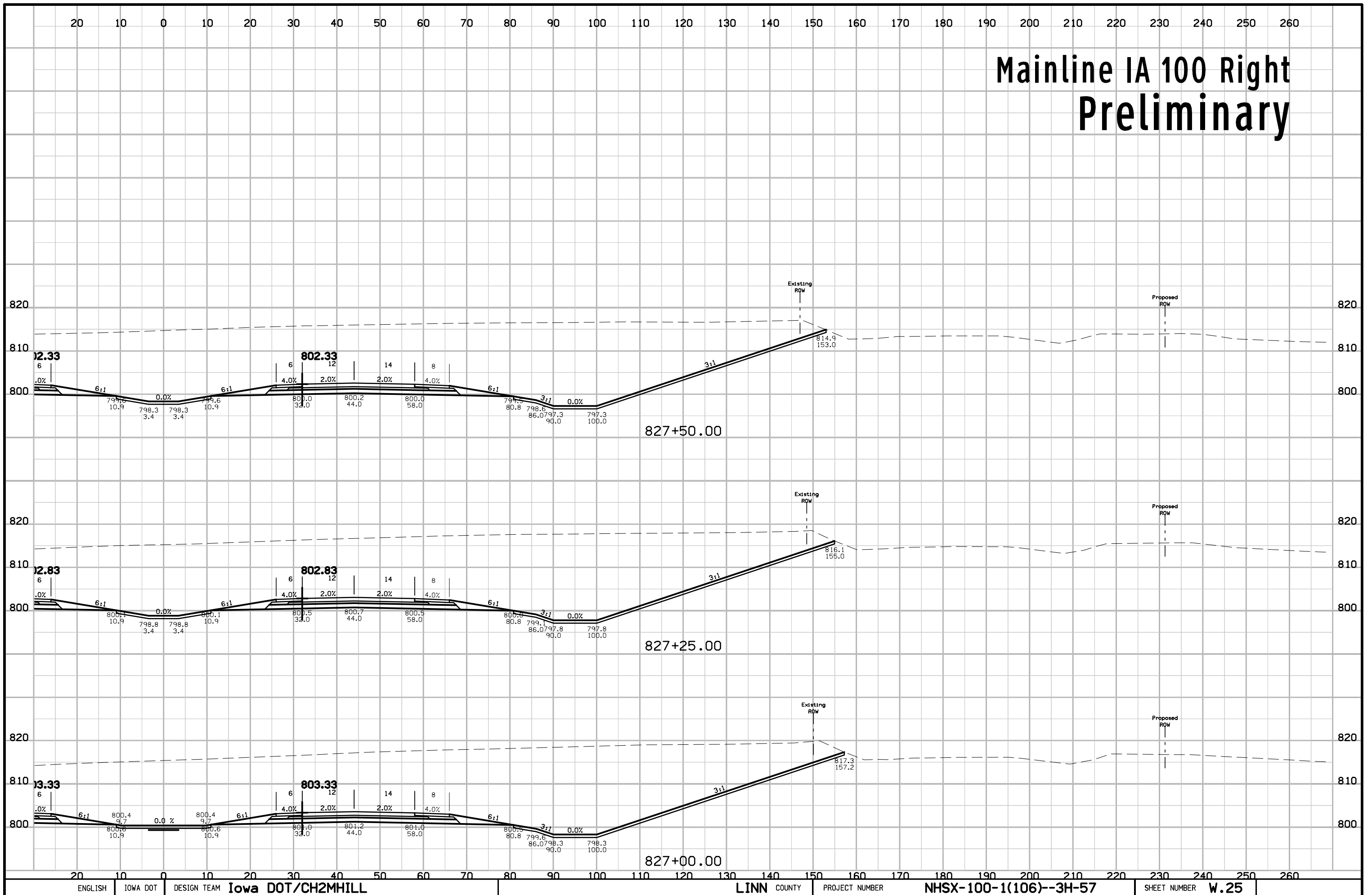
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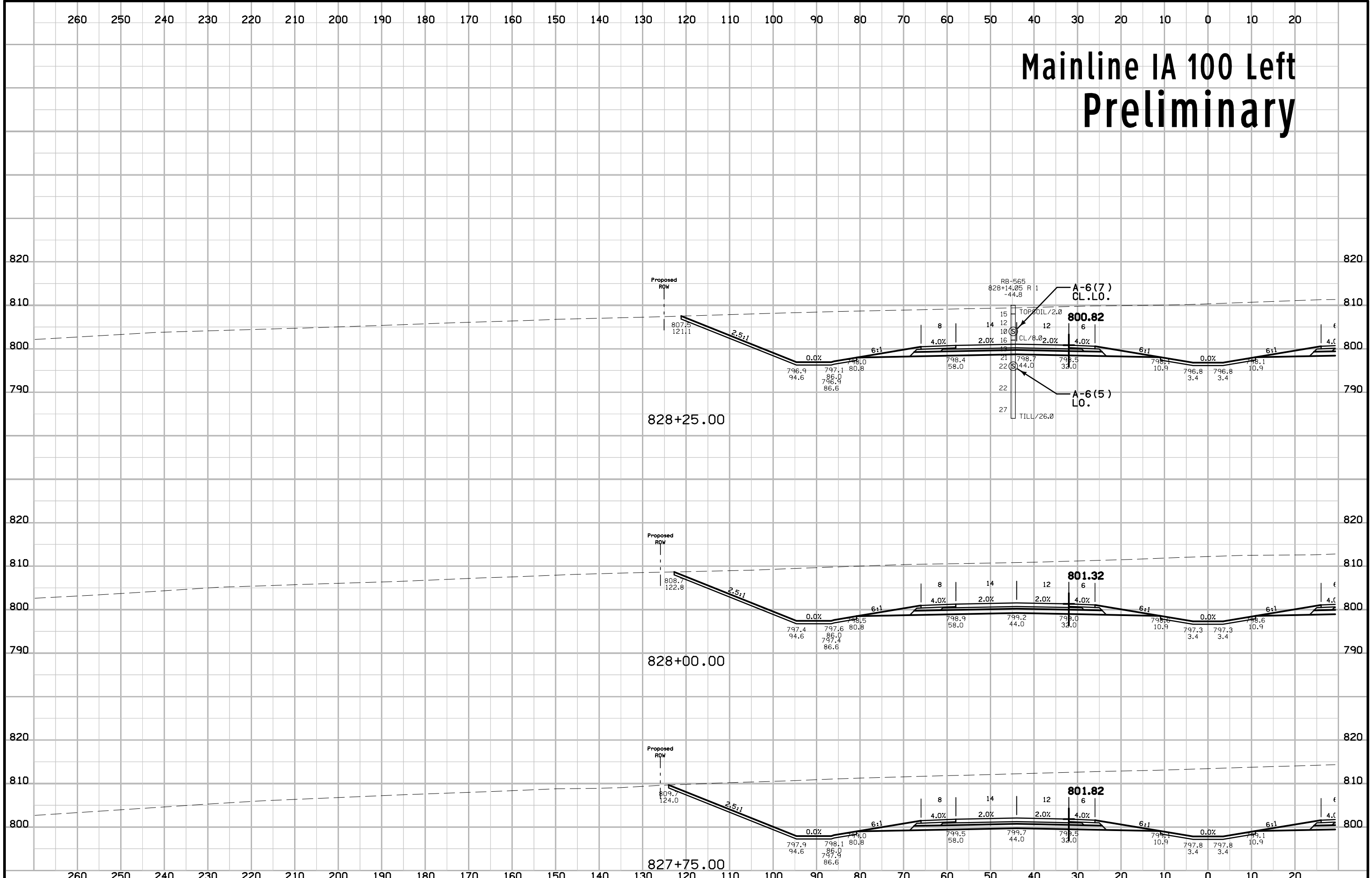
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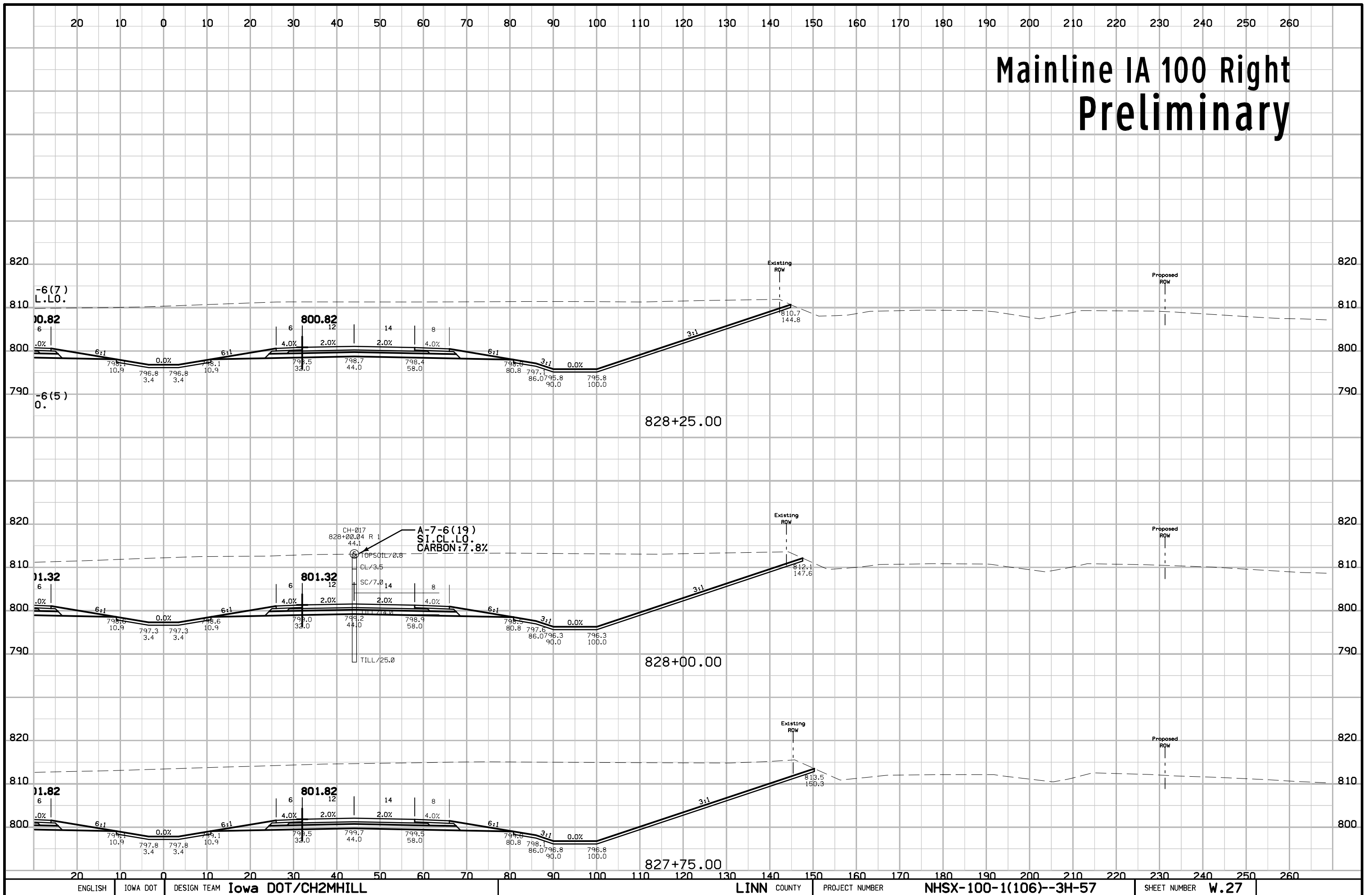
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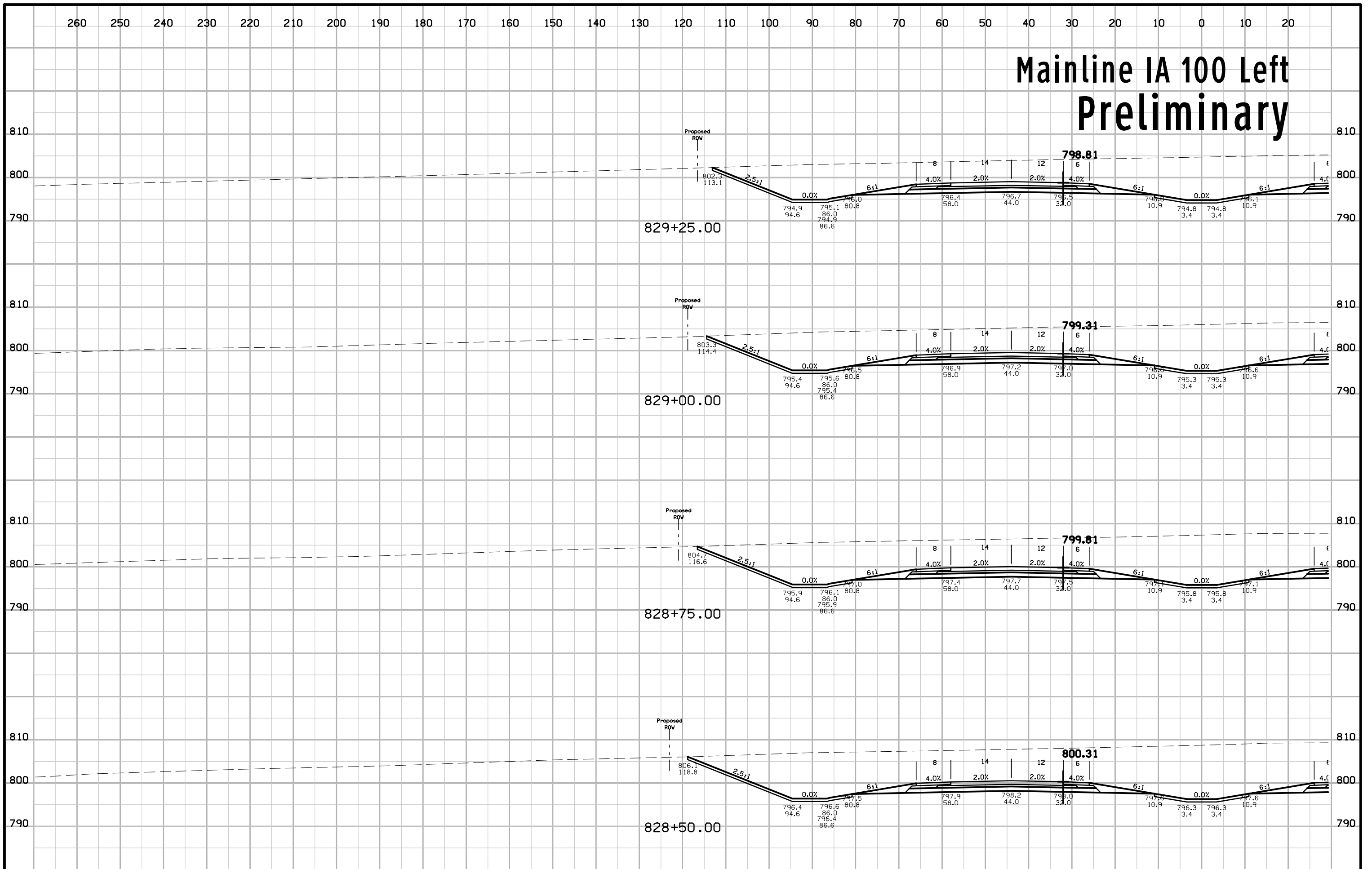
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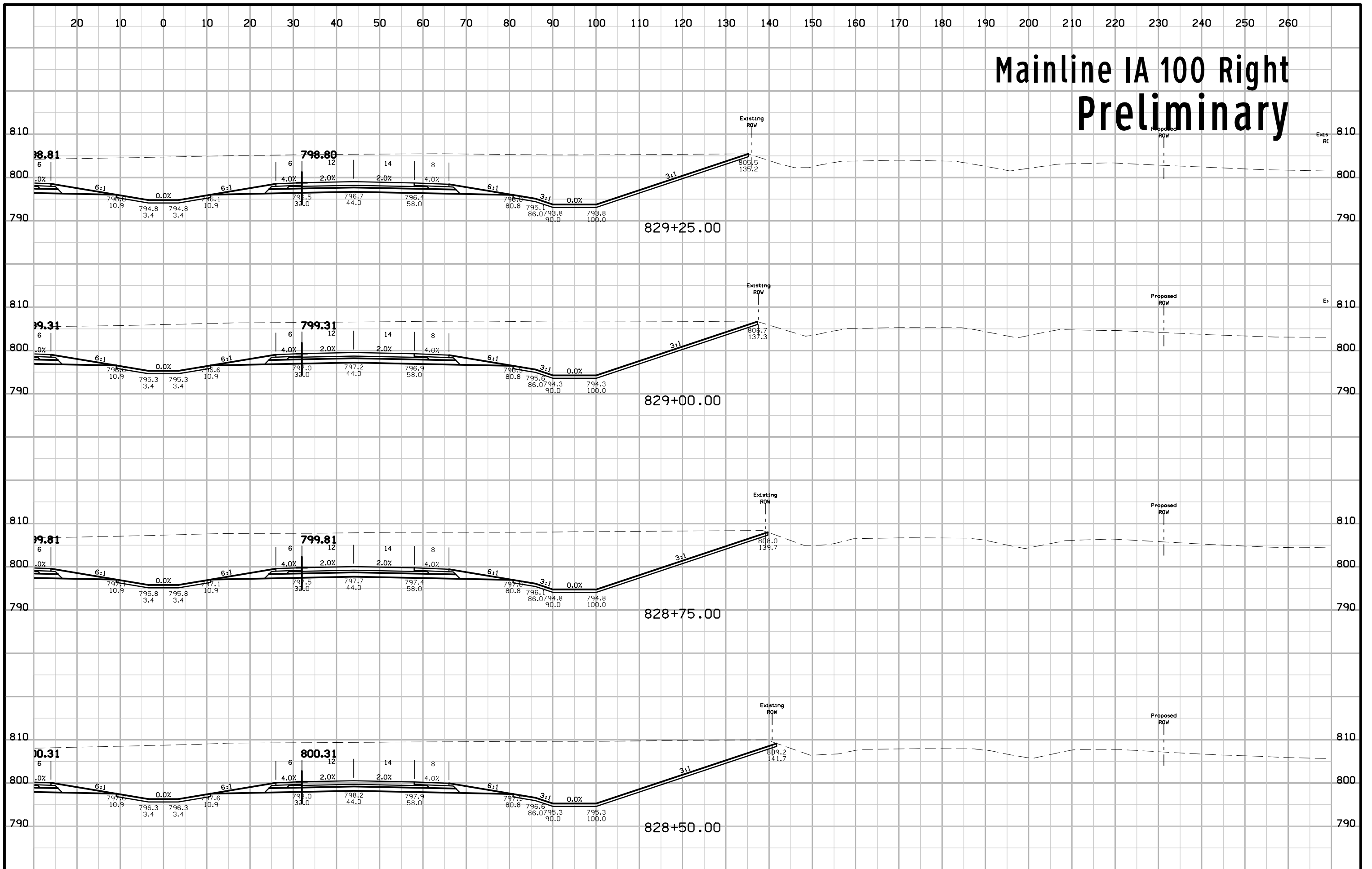
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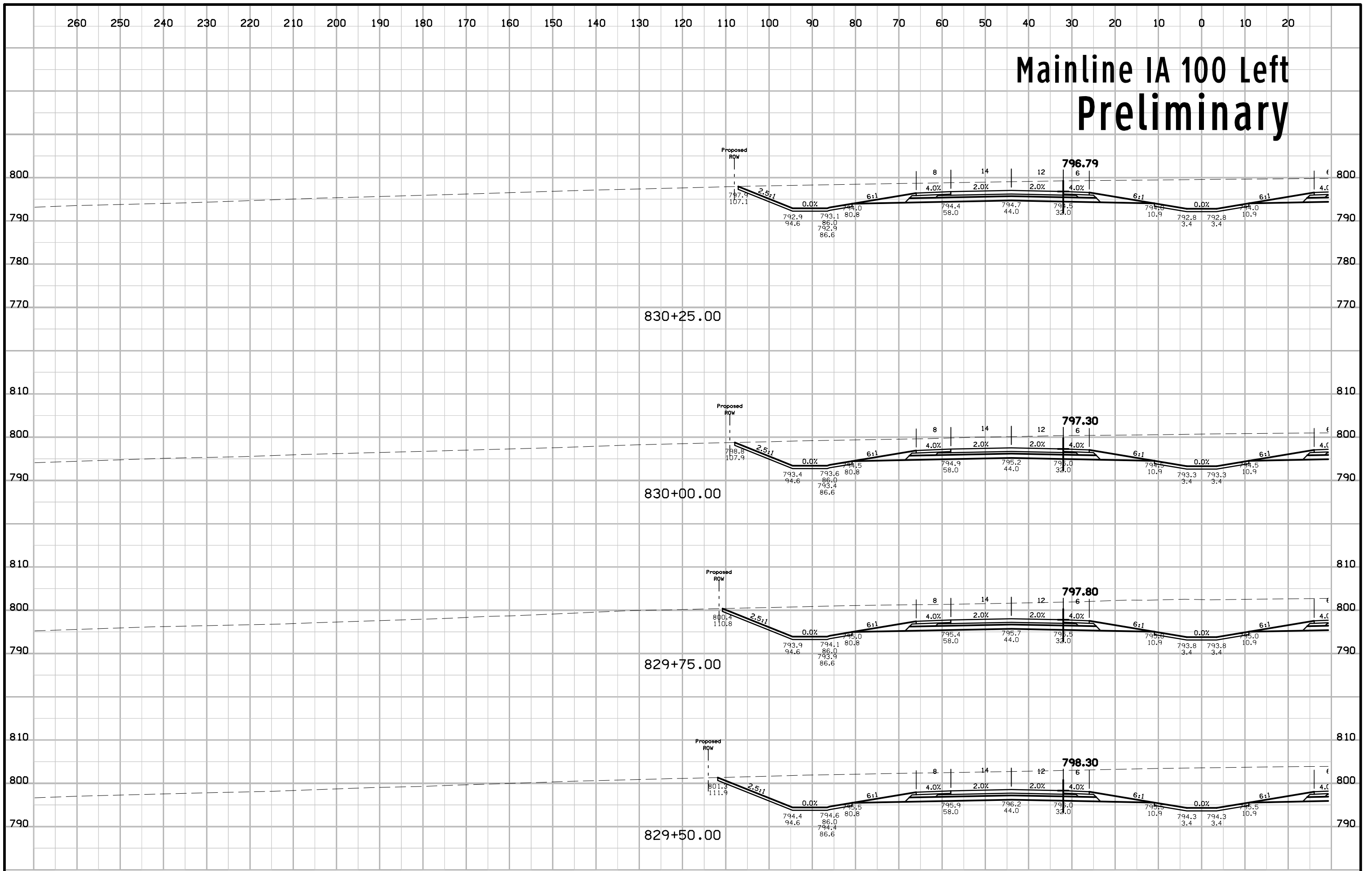


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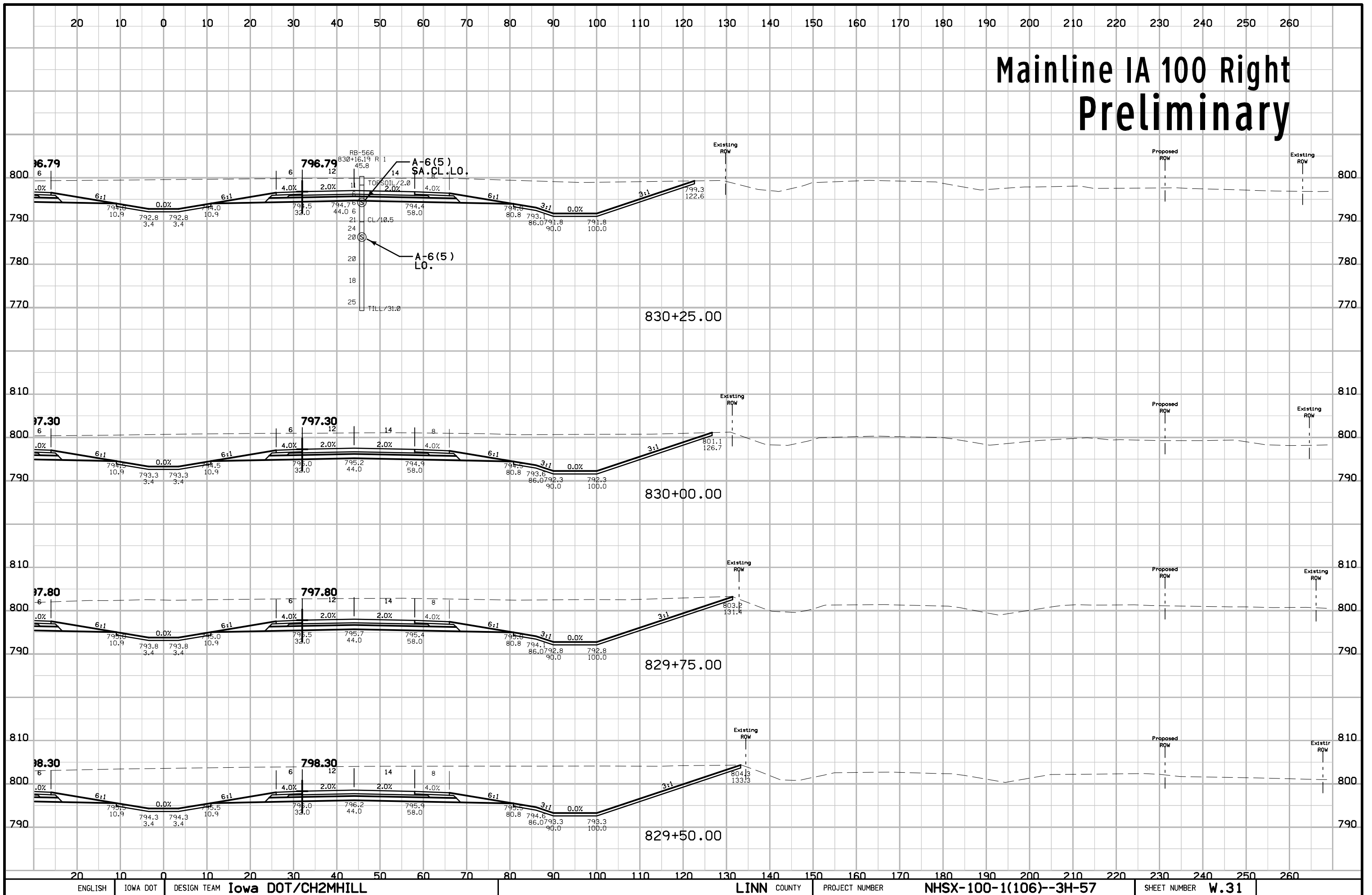




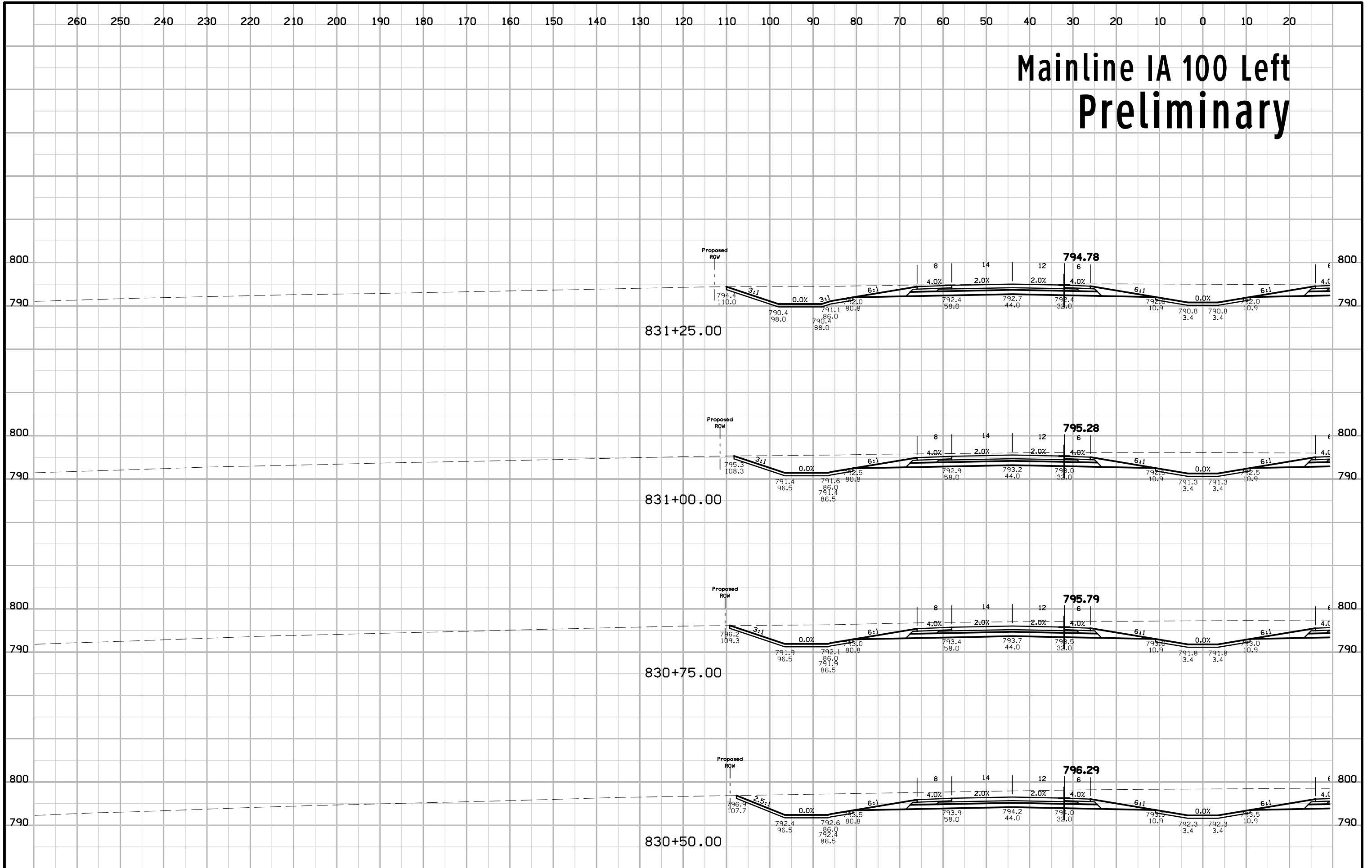
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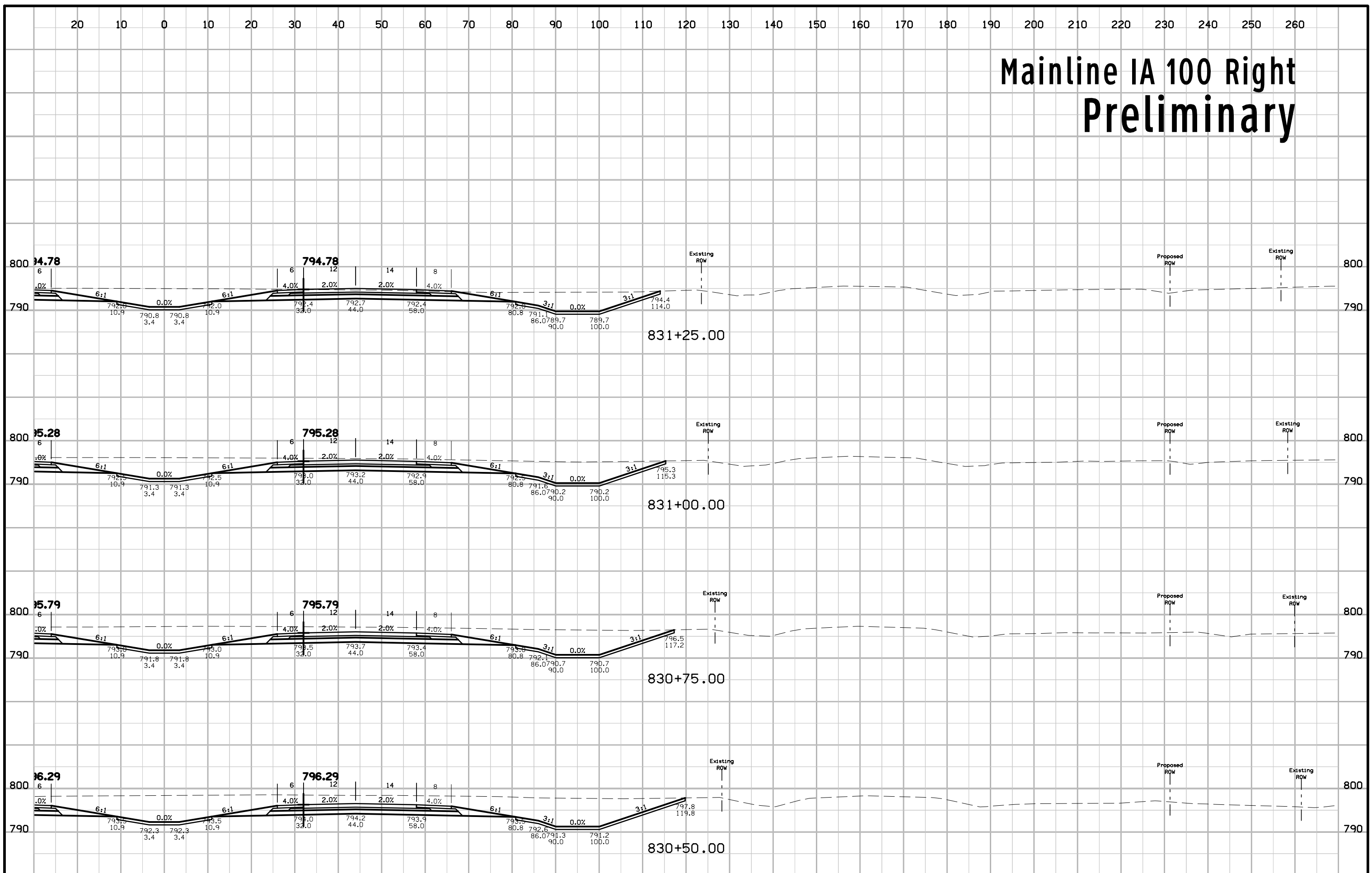
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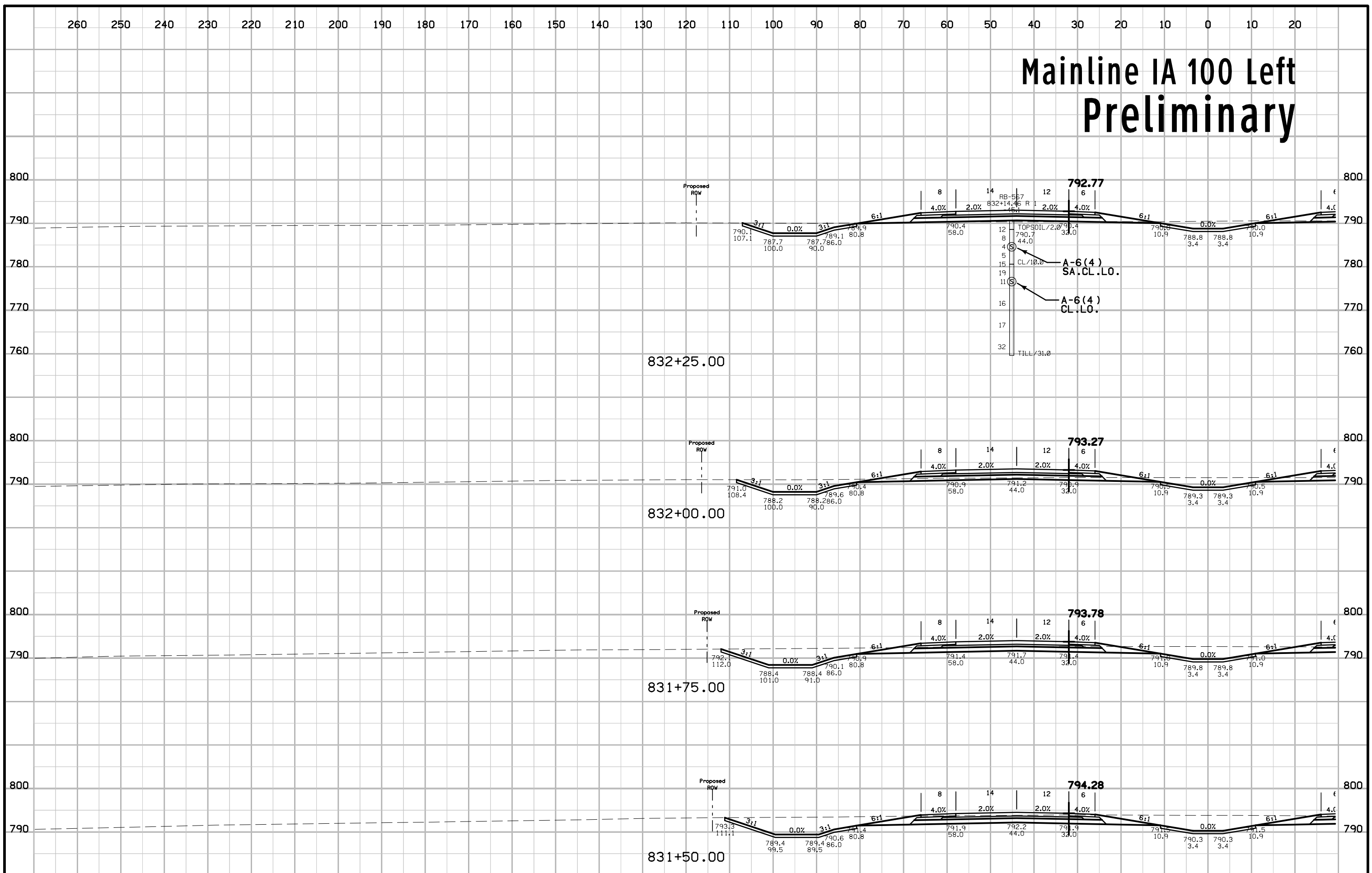
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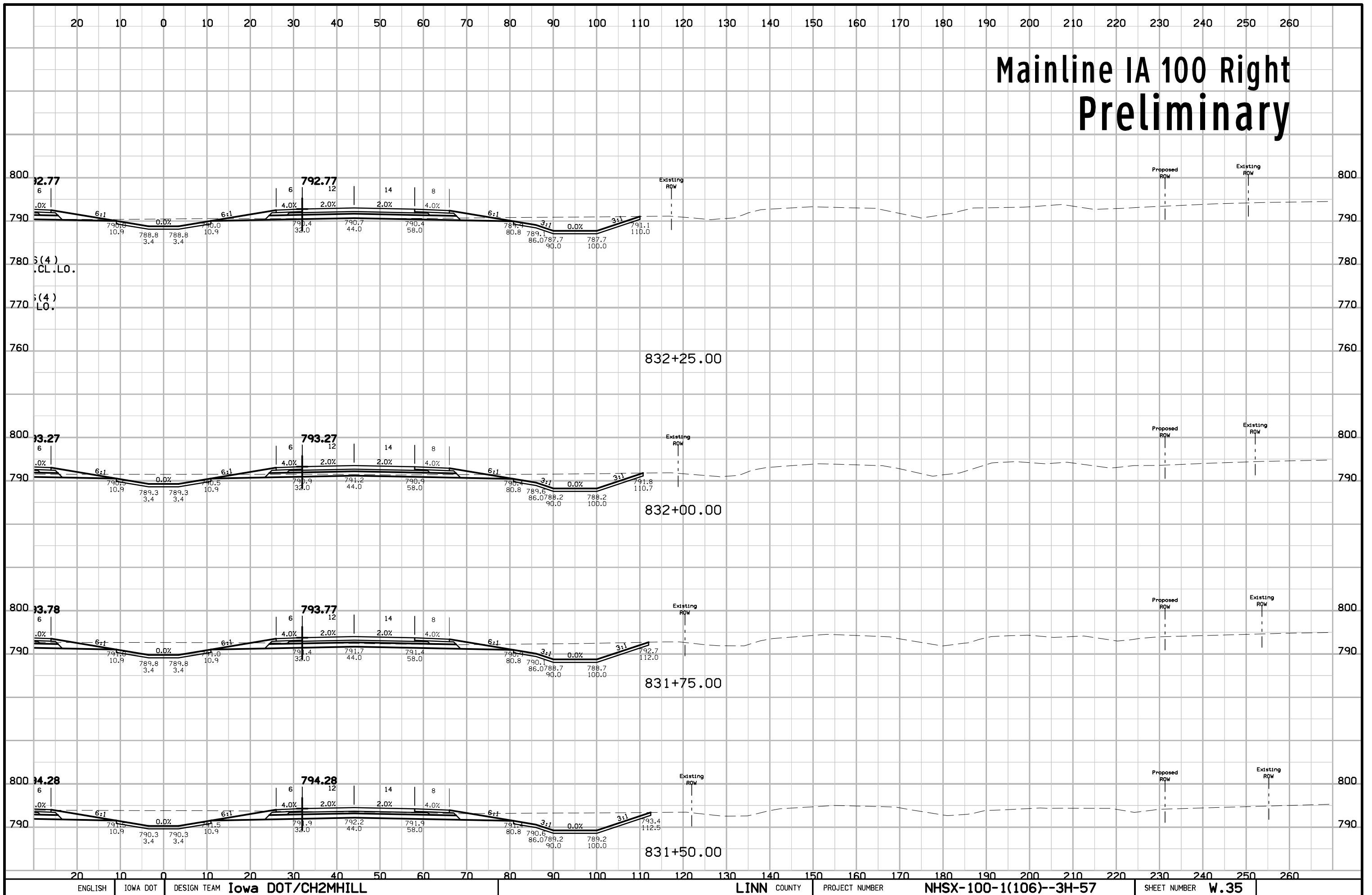
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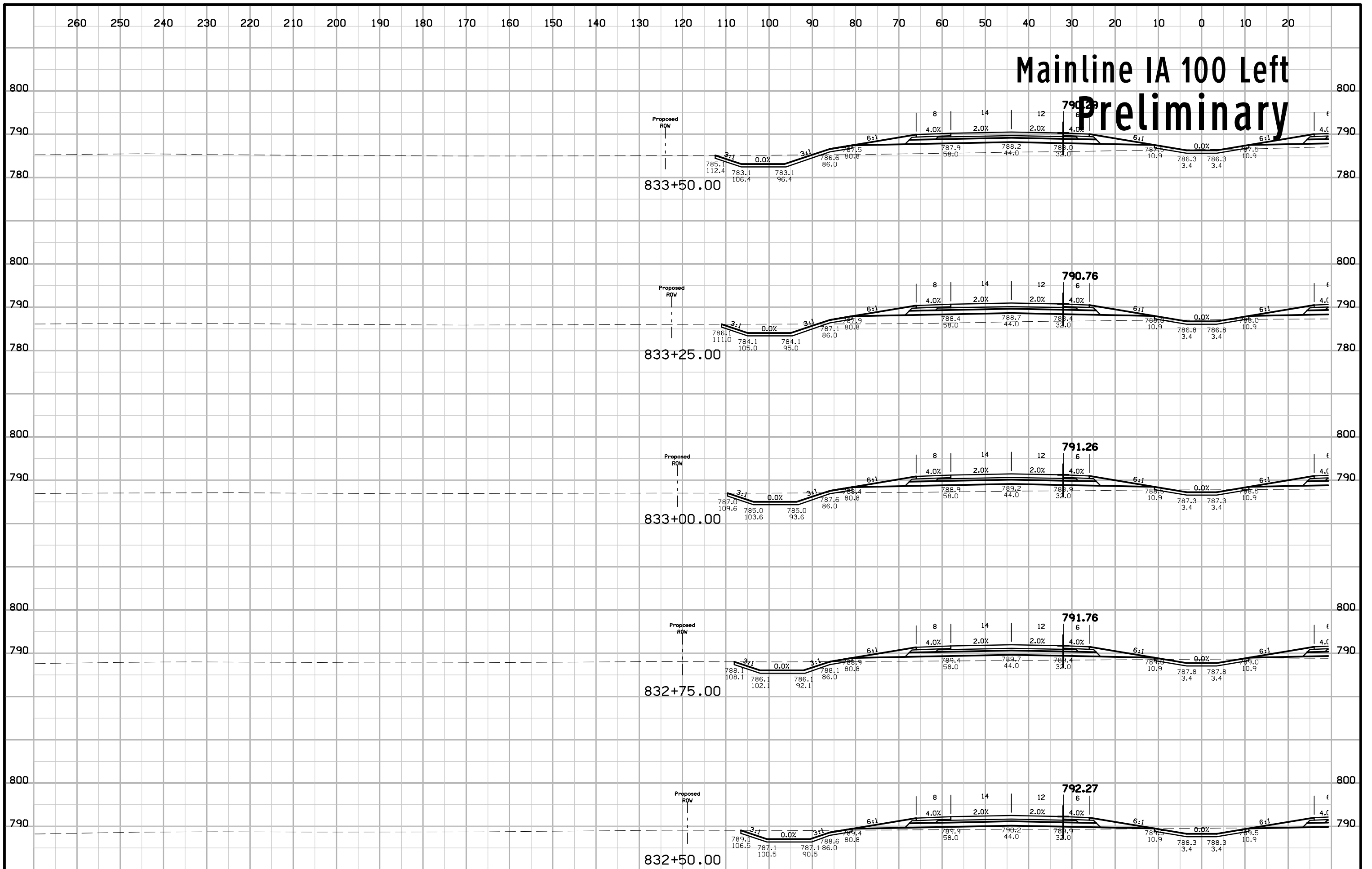
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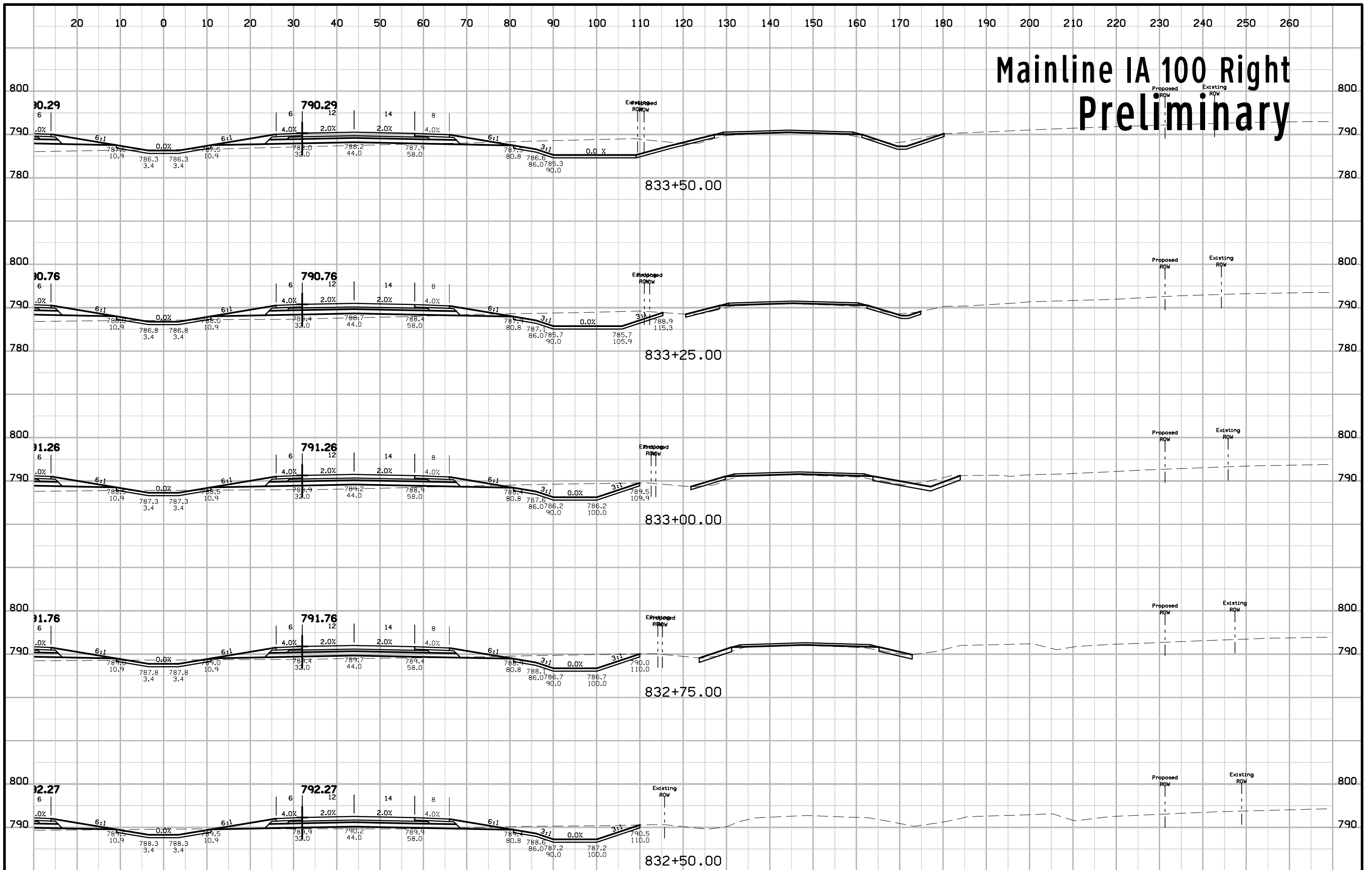
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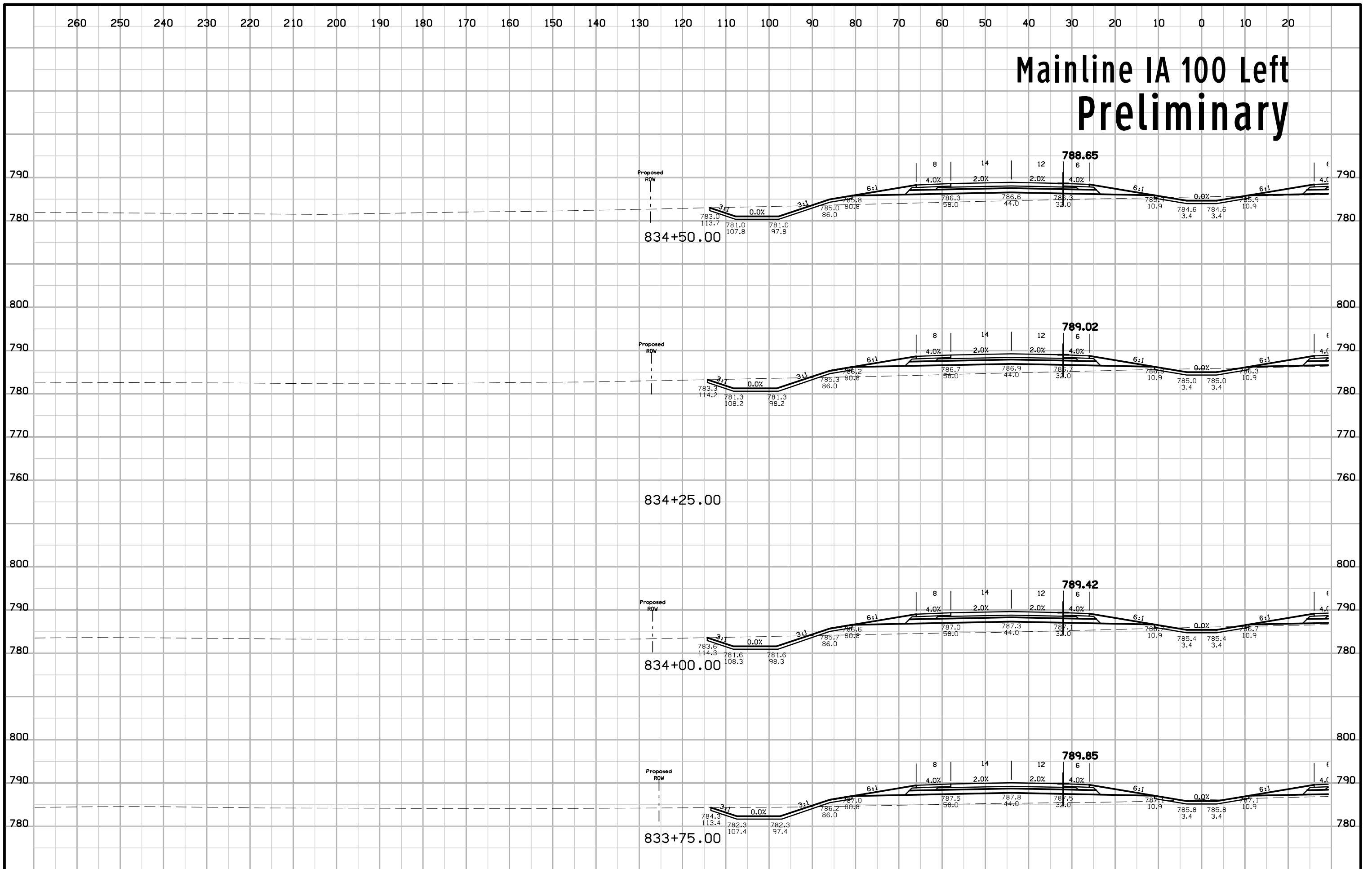


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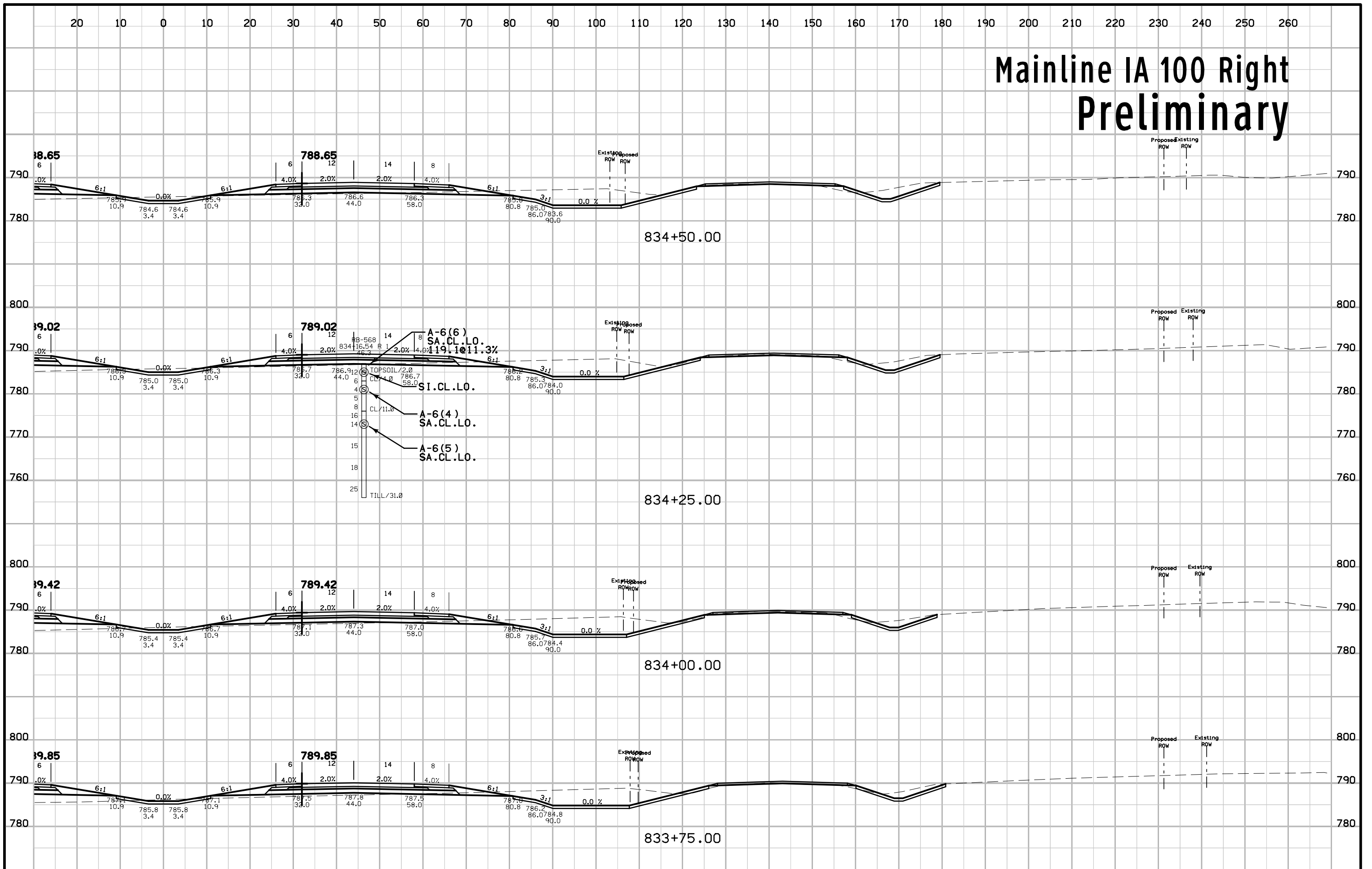




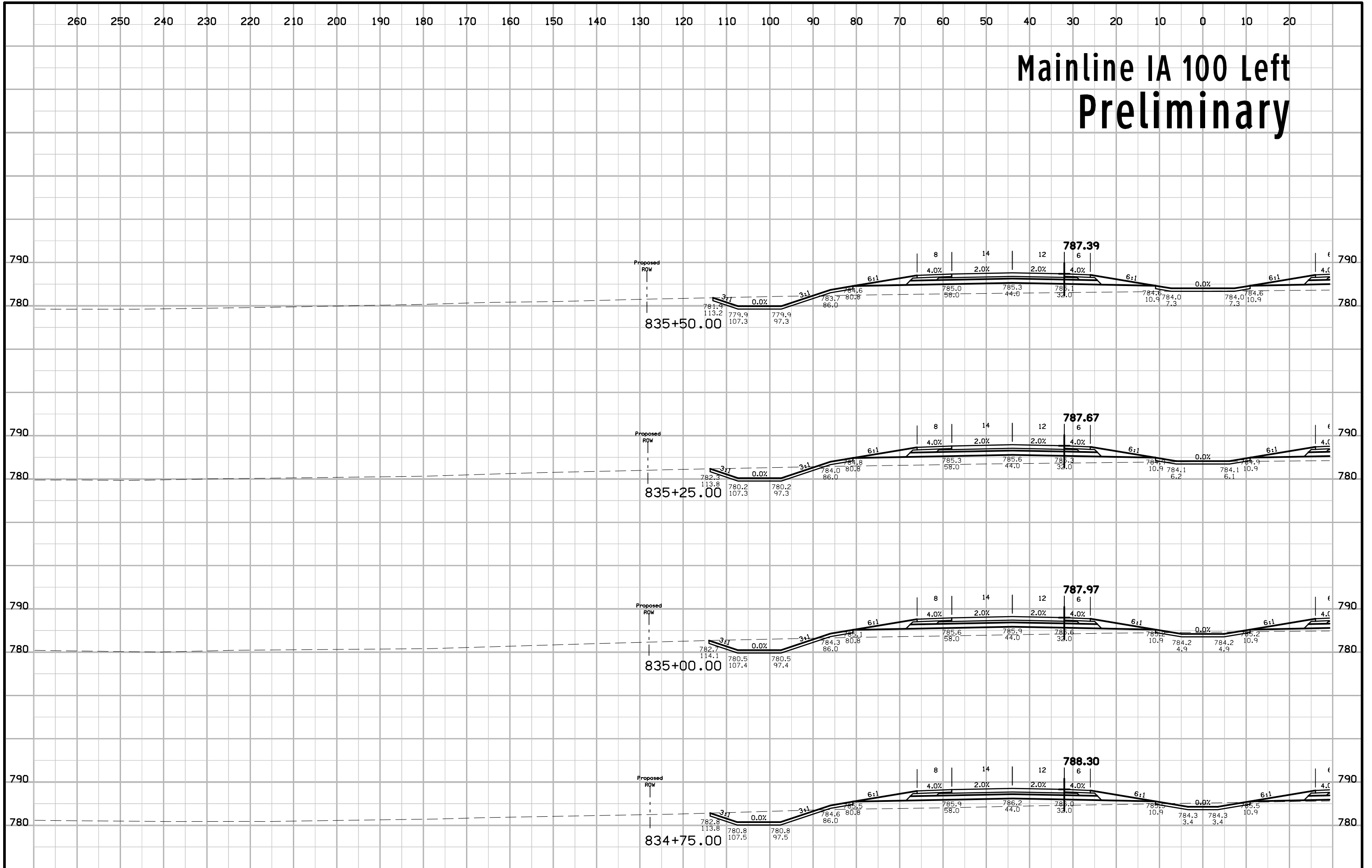
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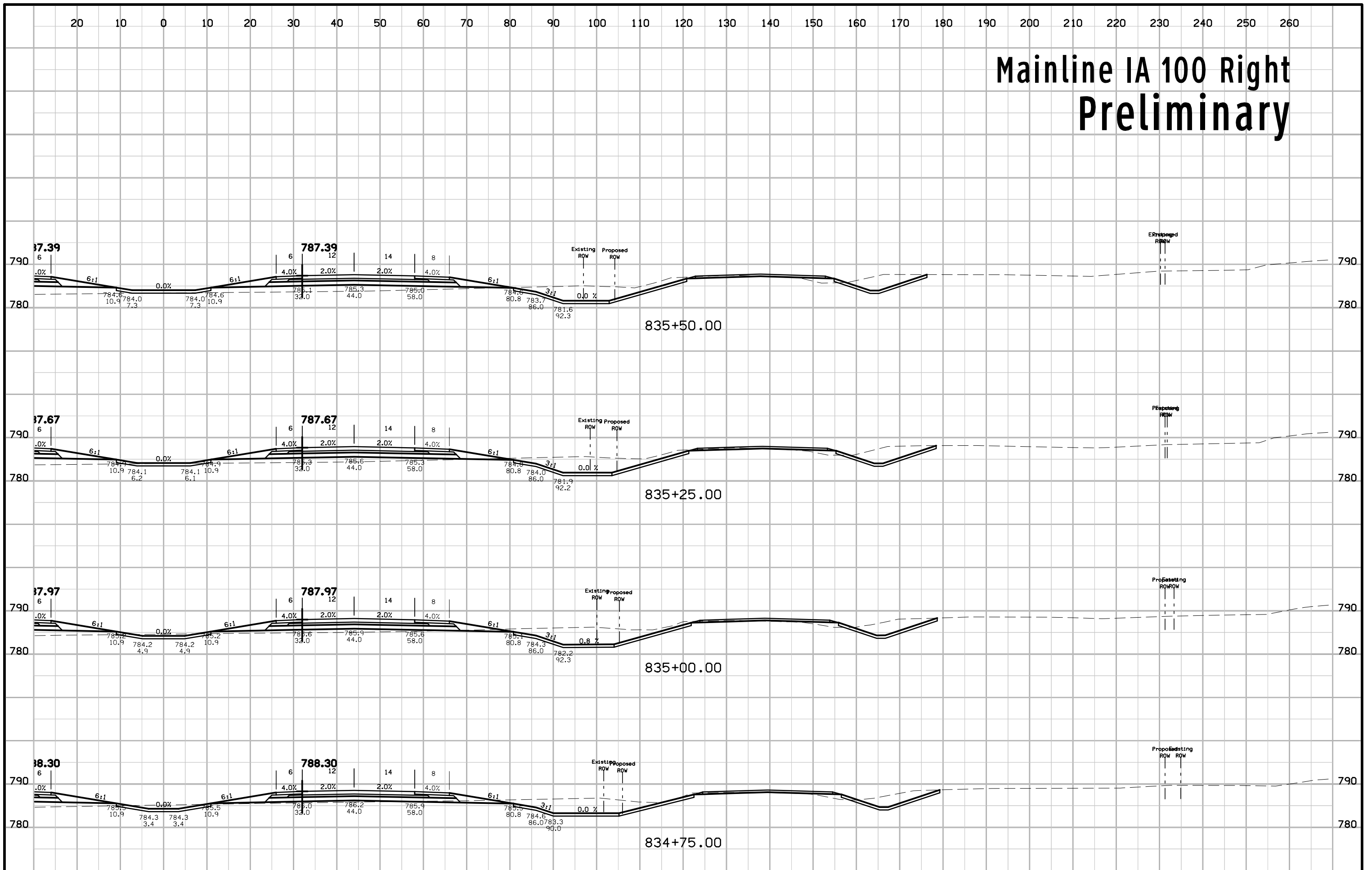
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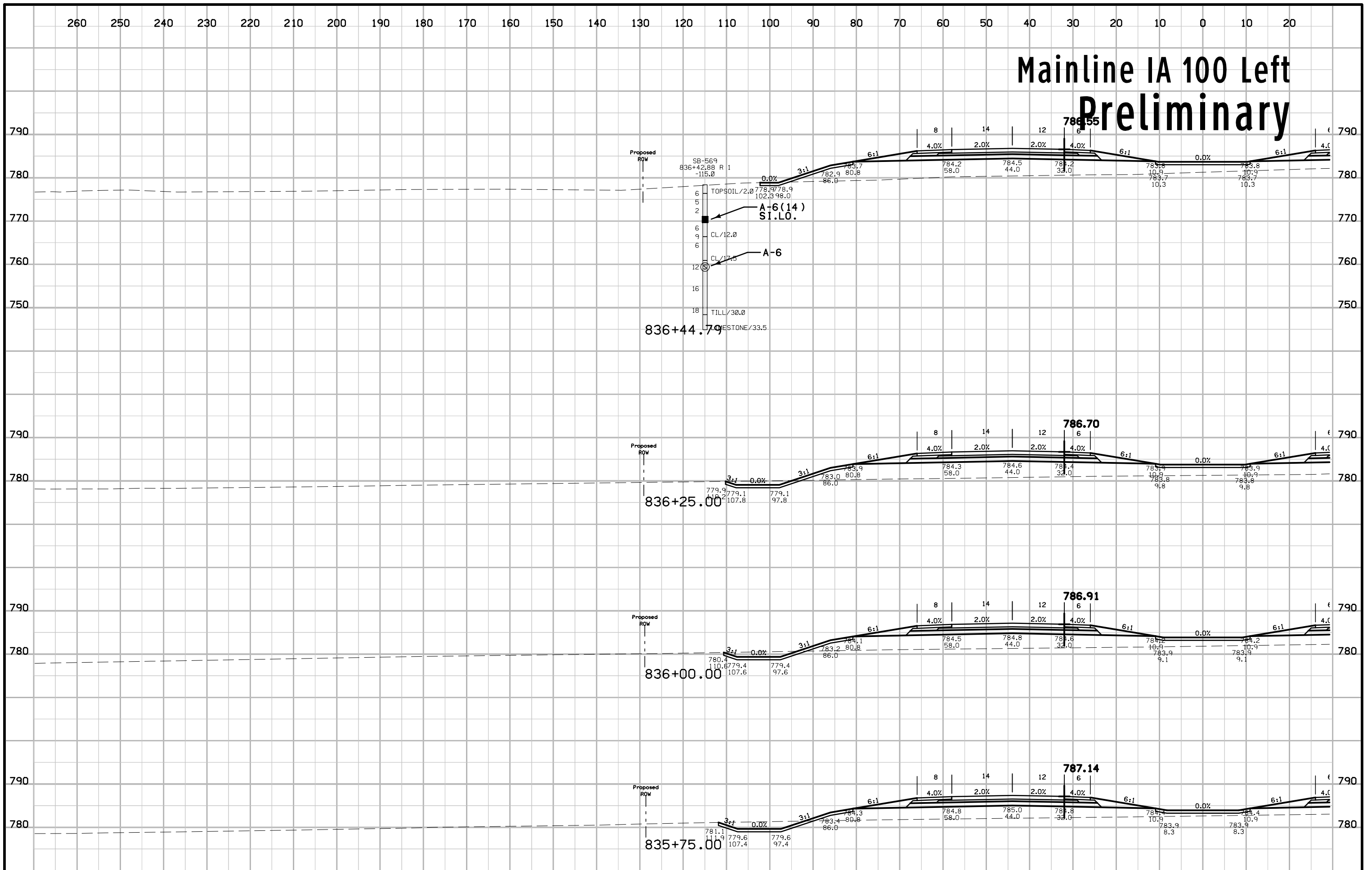
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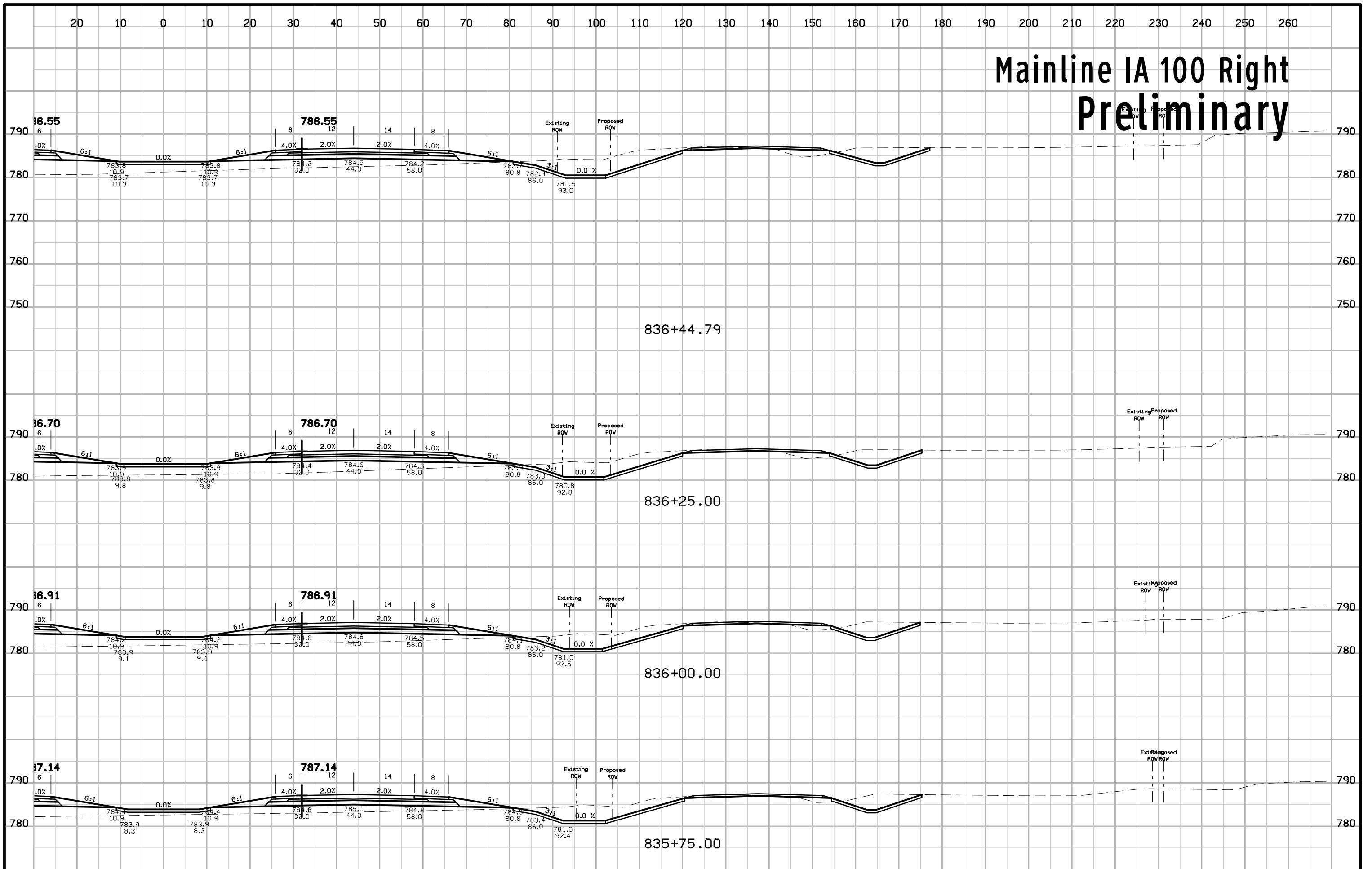
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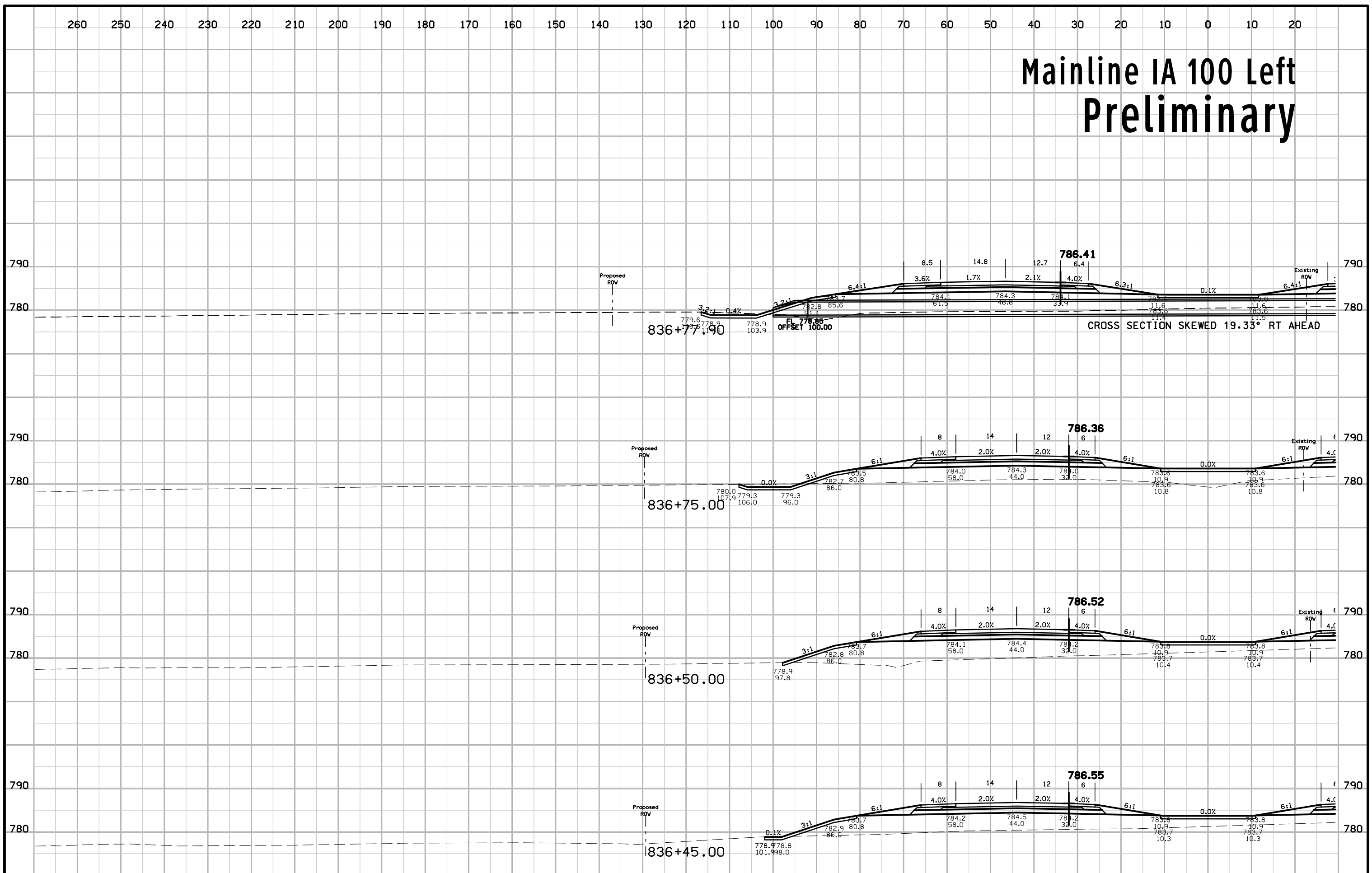
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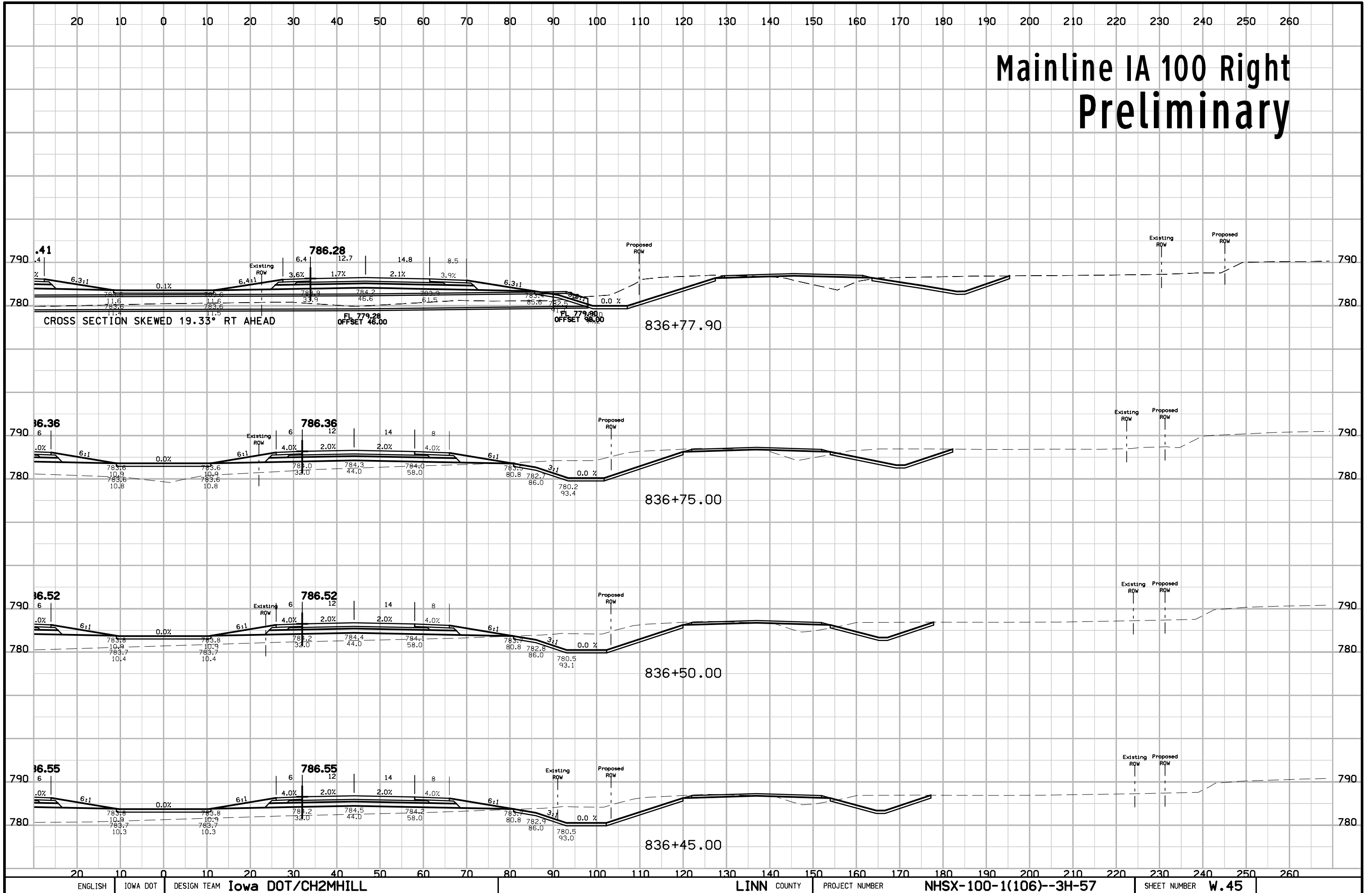
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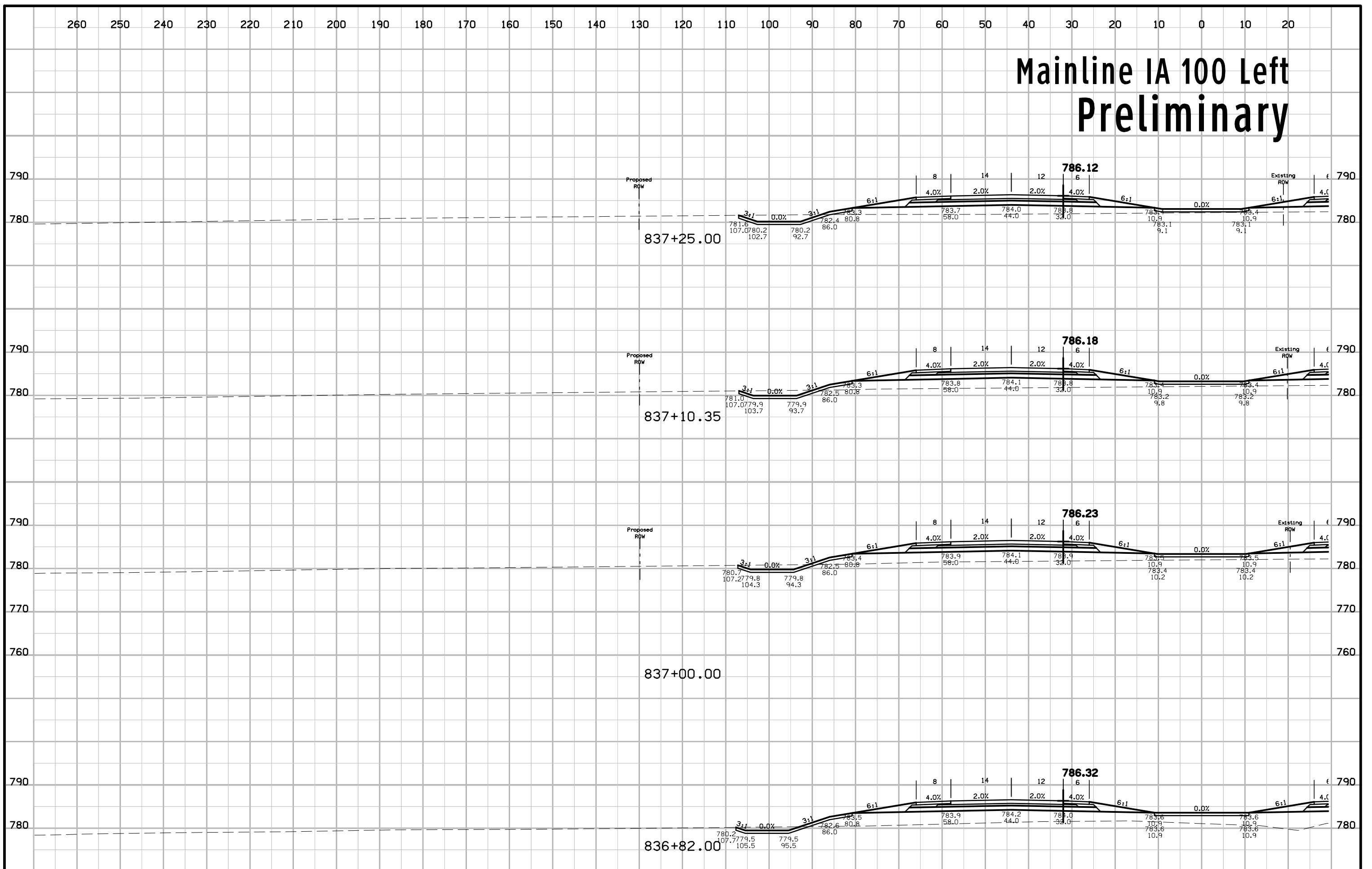


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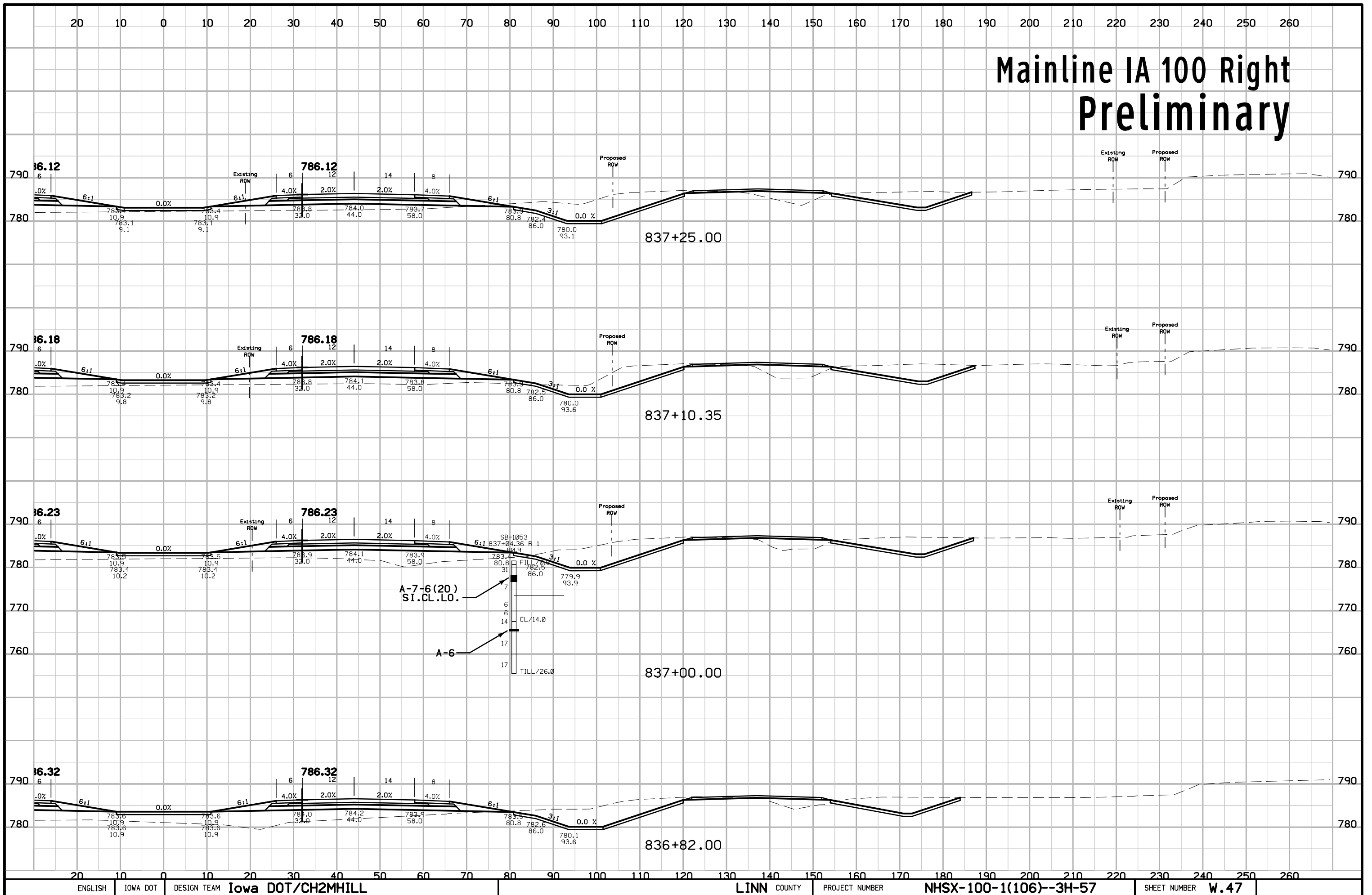




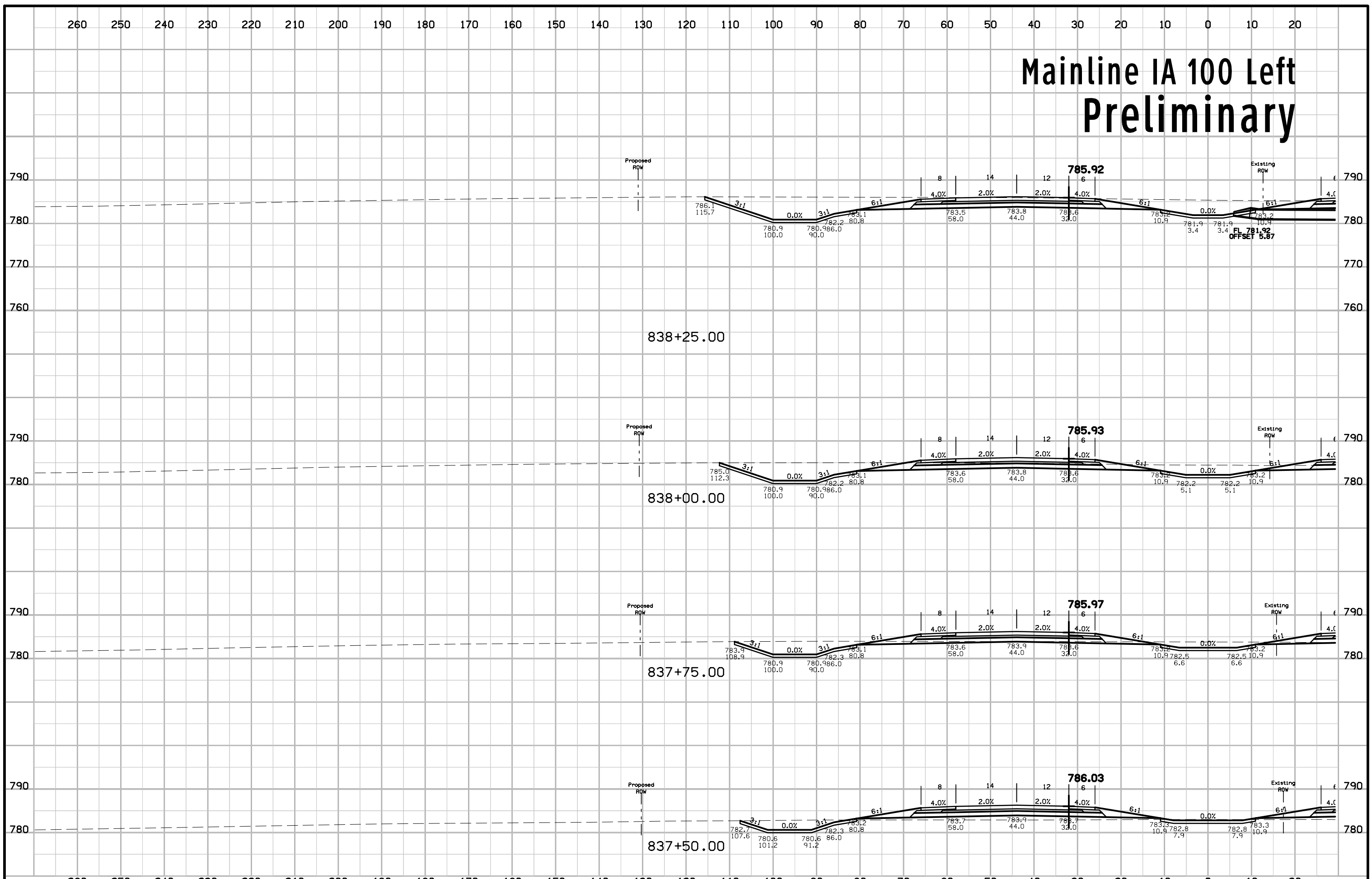
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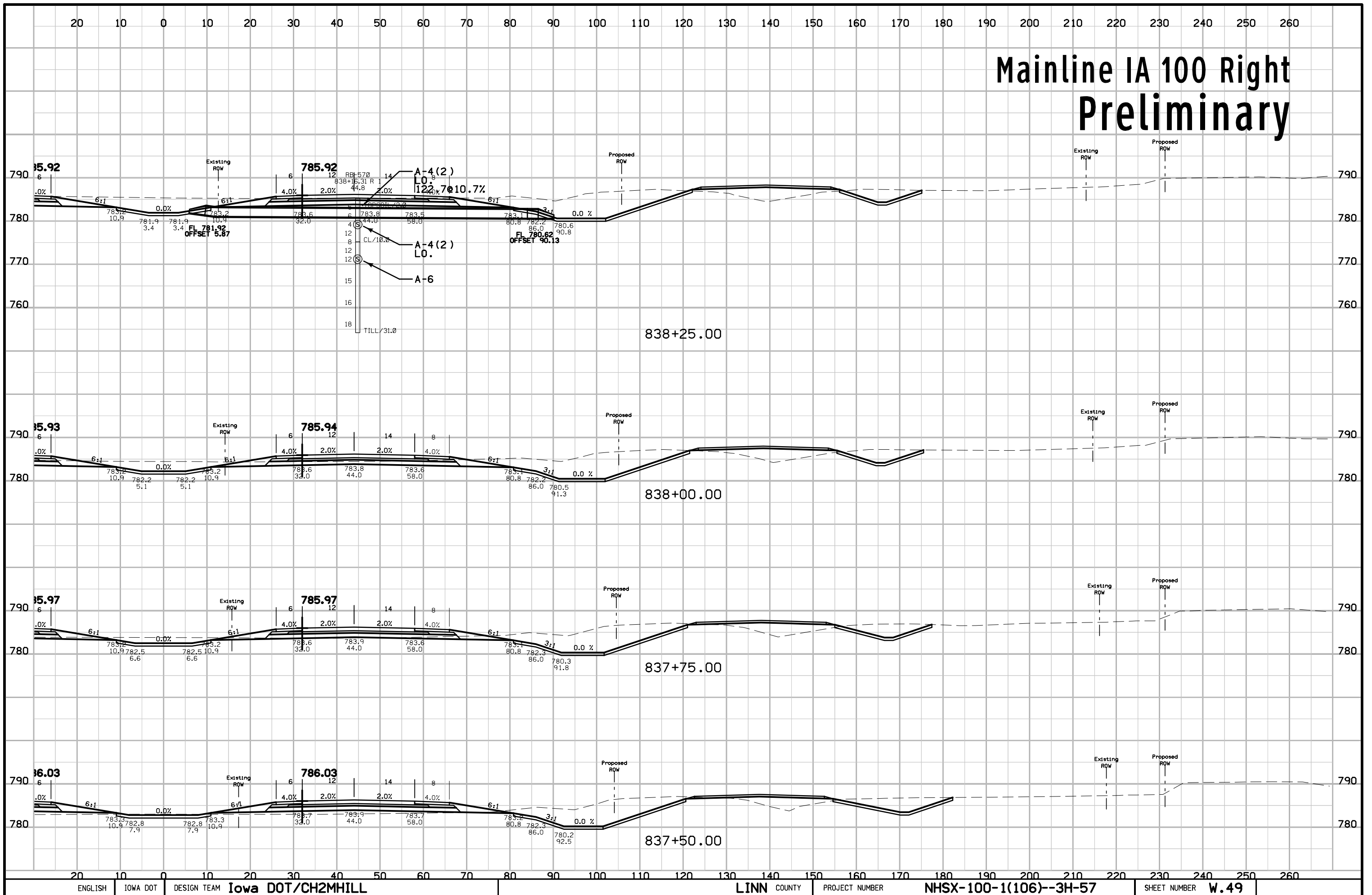
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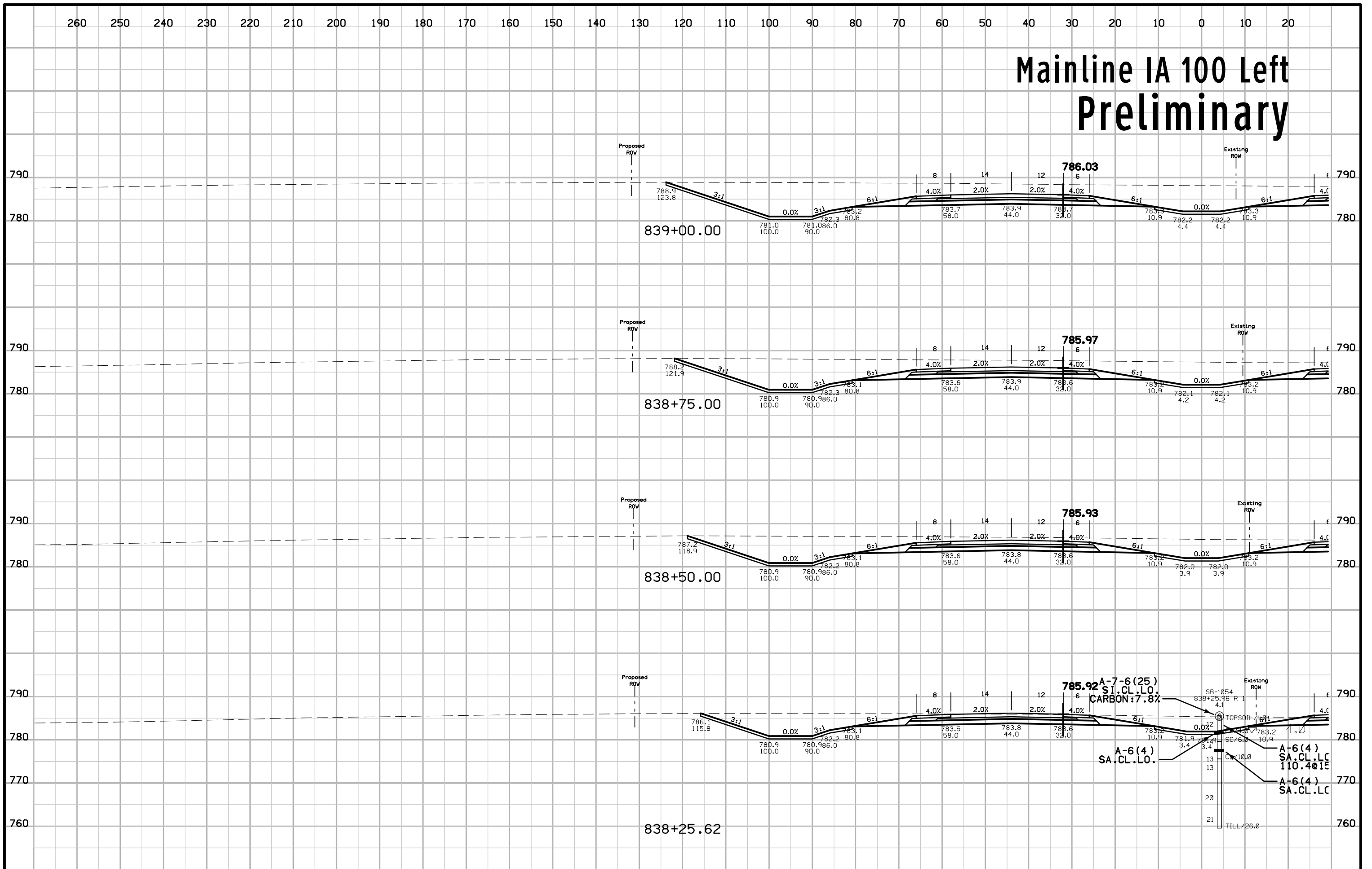
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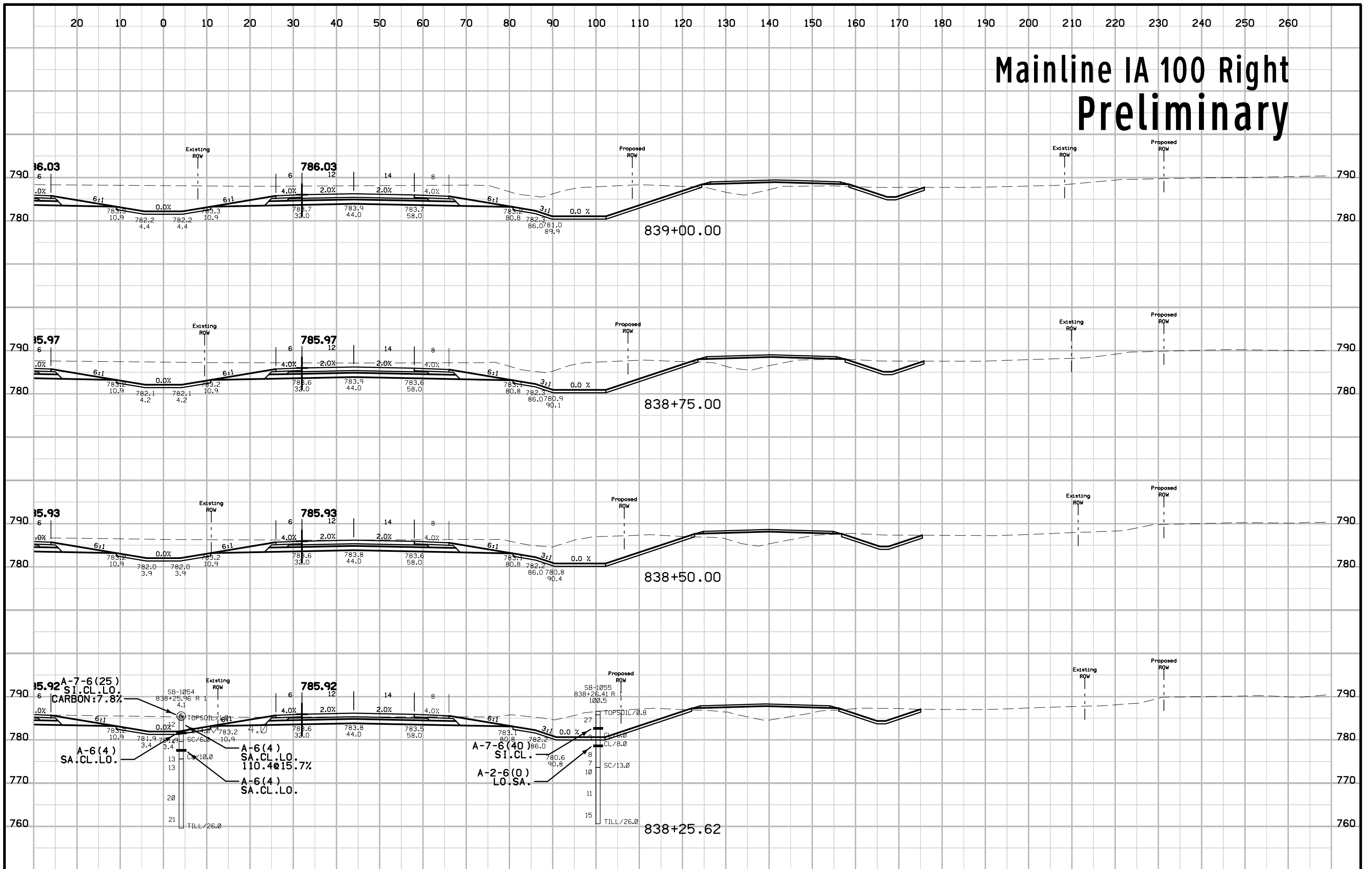
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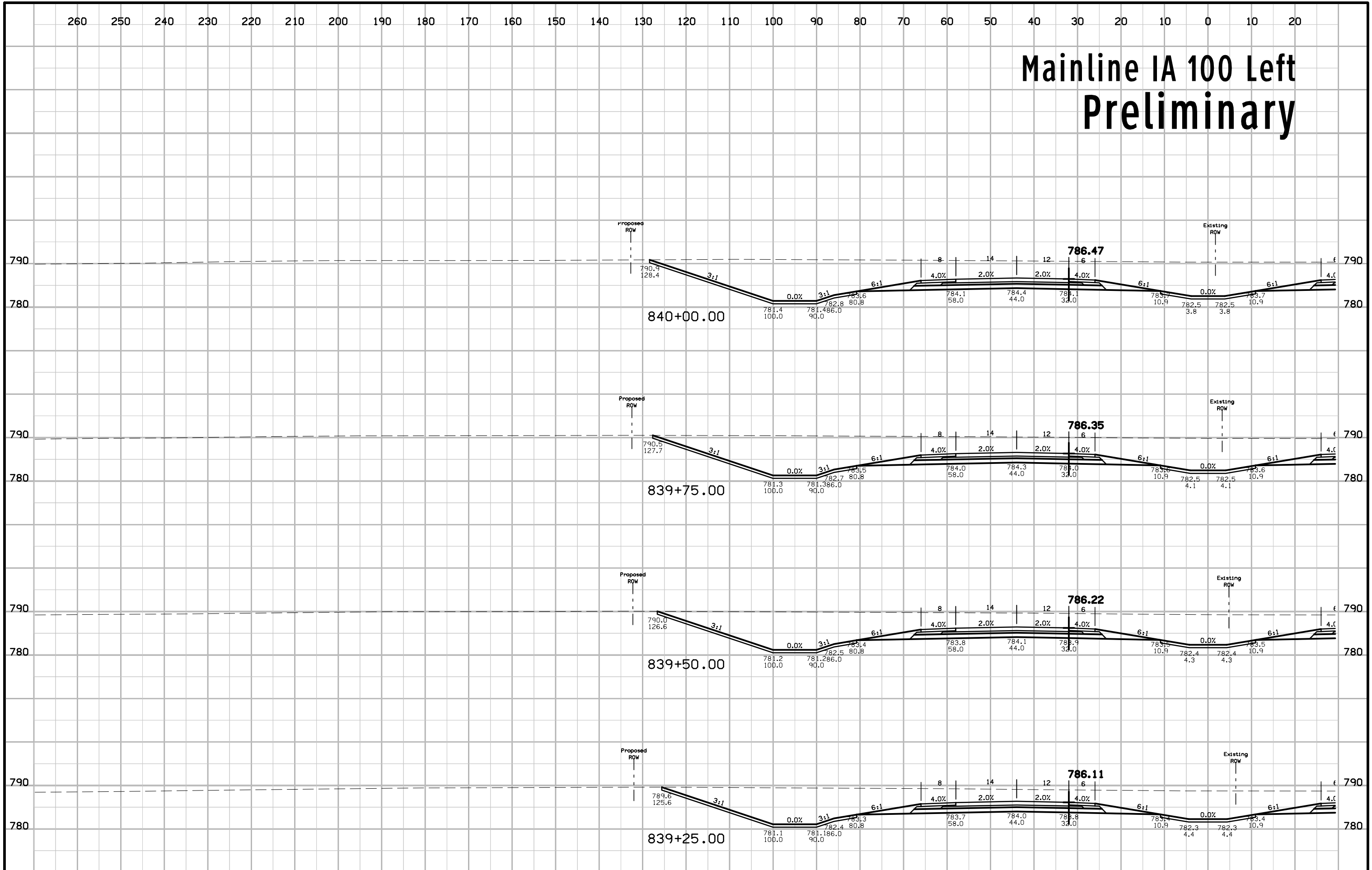
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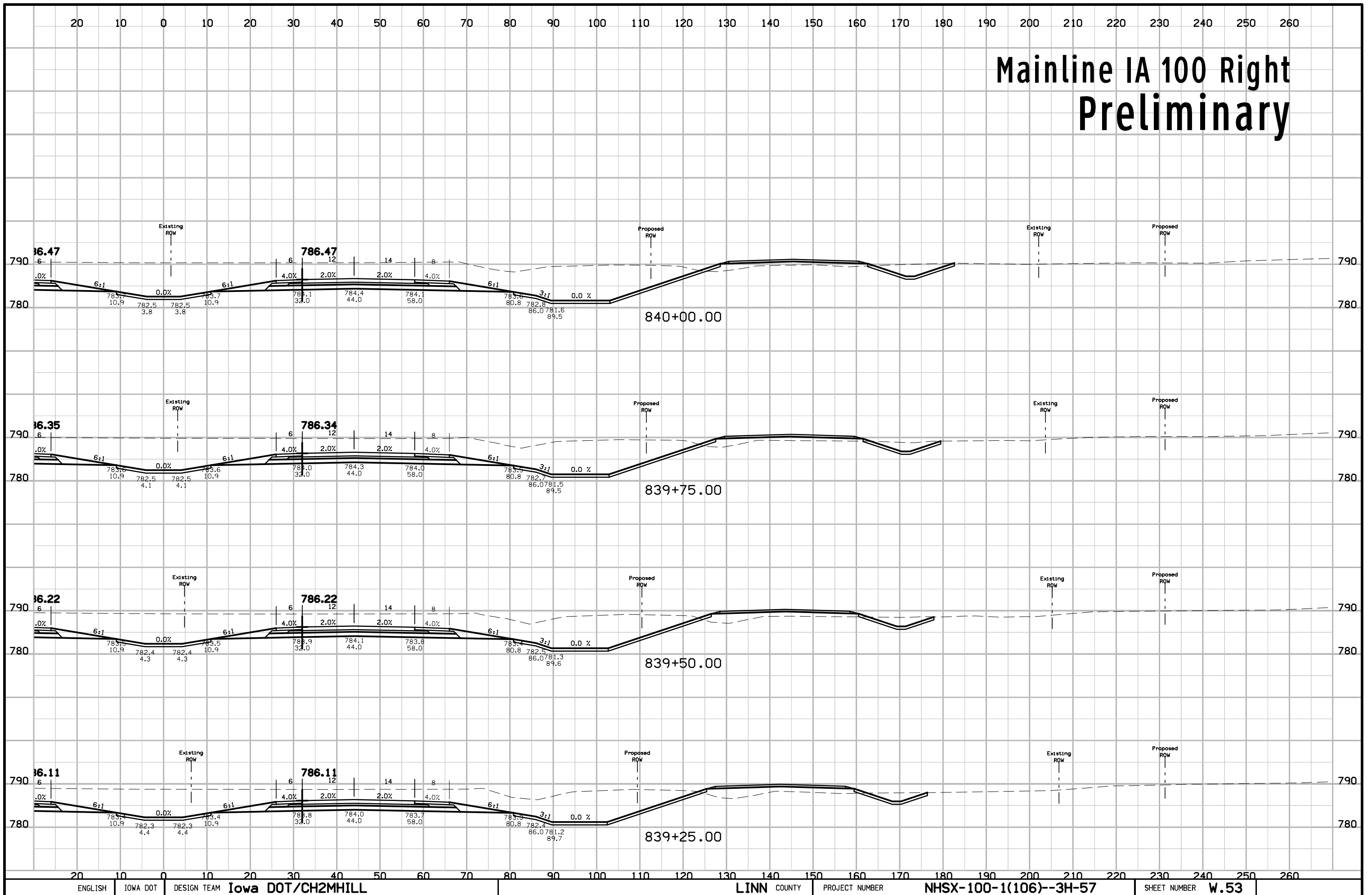
# Mainline IA 100 Right Preliminary



# Mainline IA 100 Left Preliminary

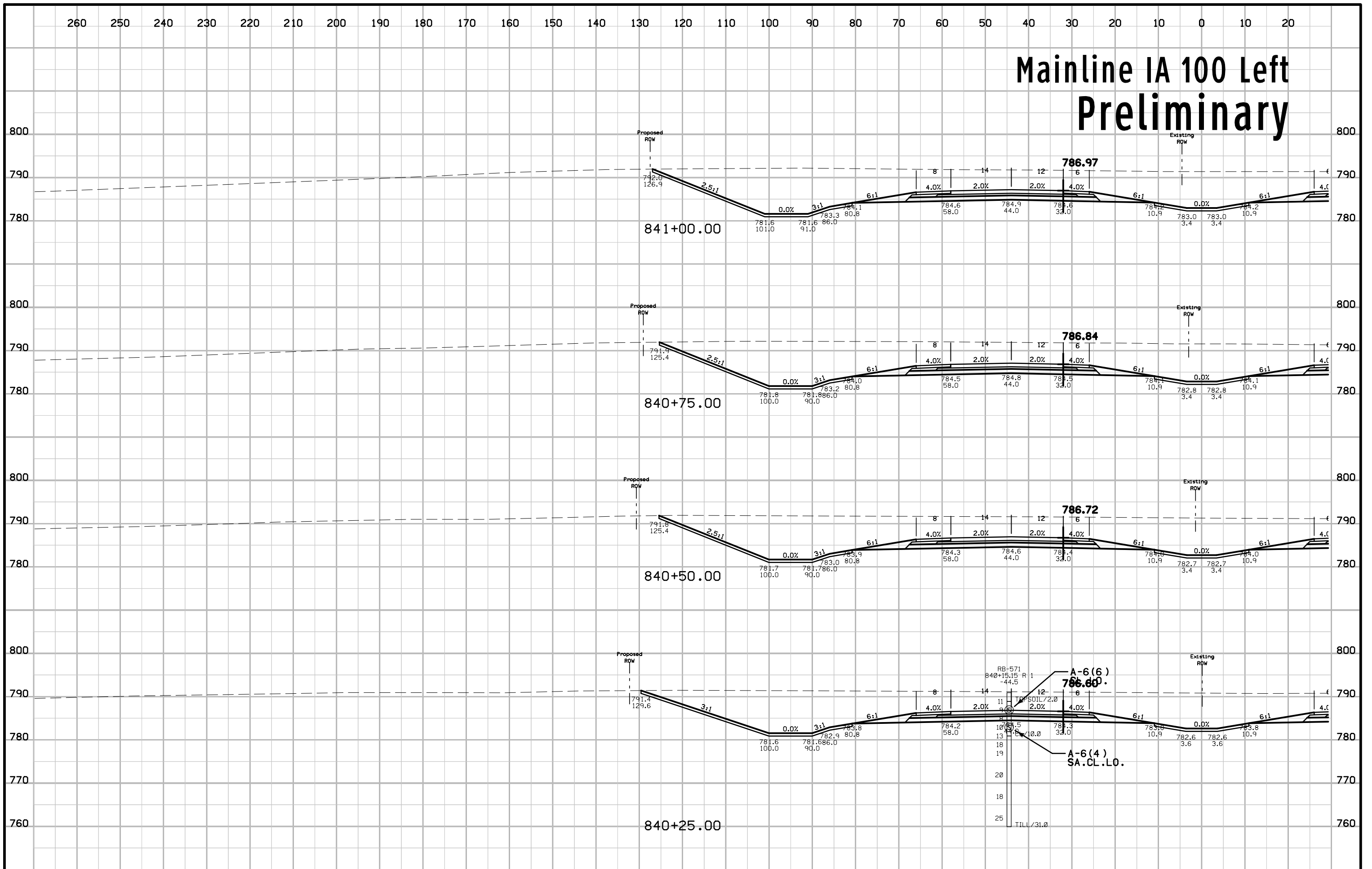


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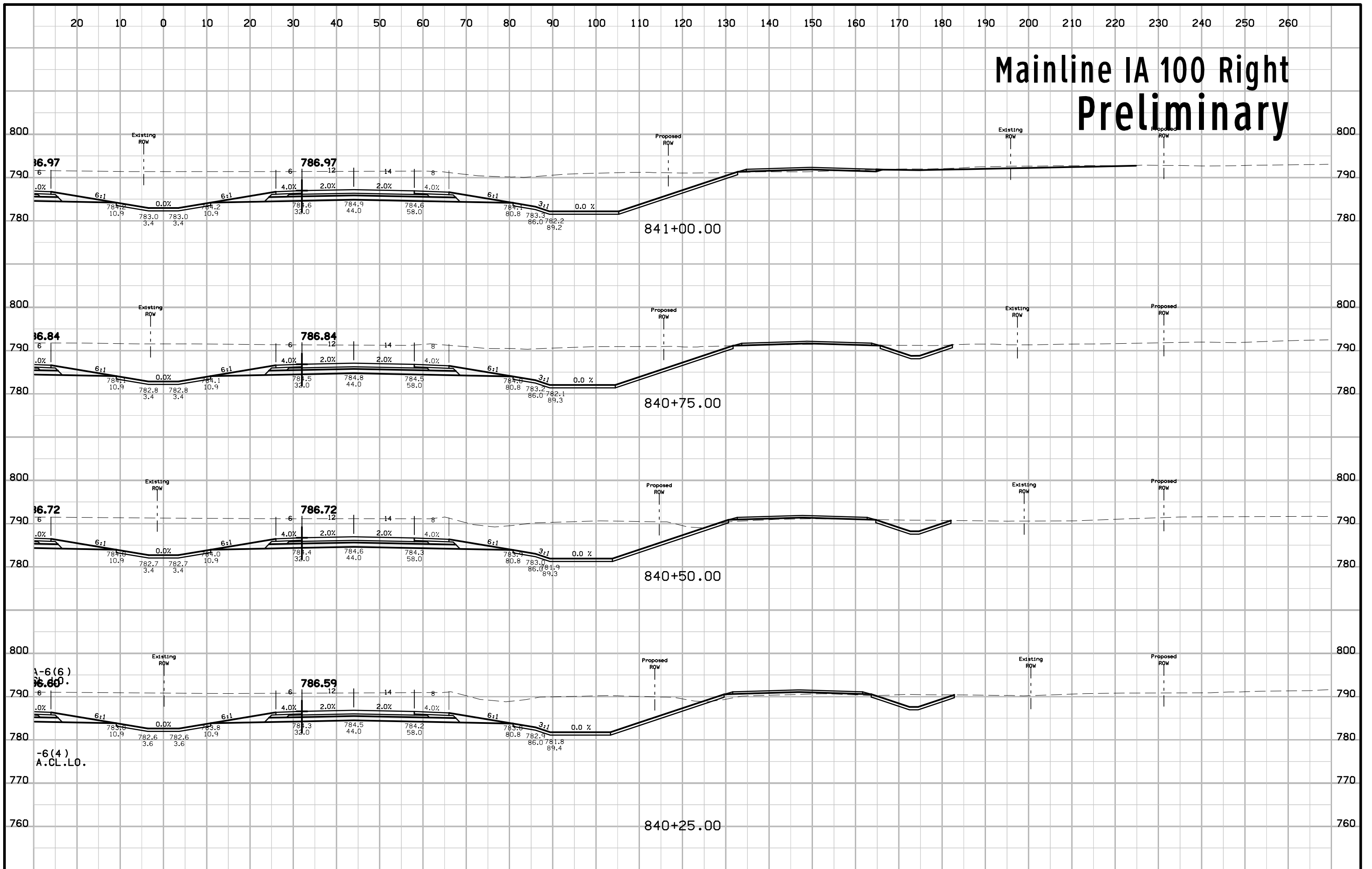




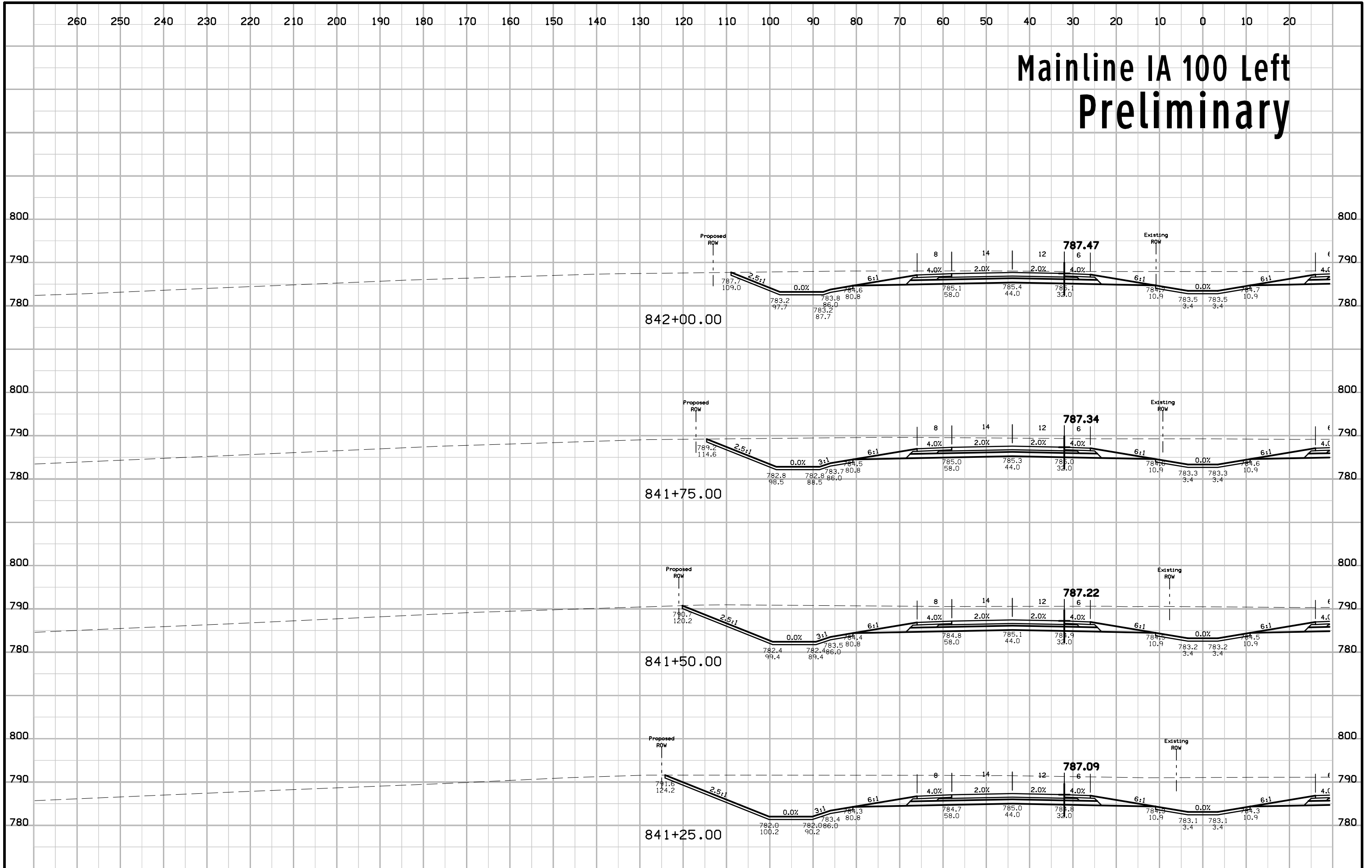
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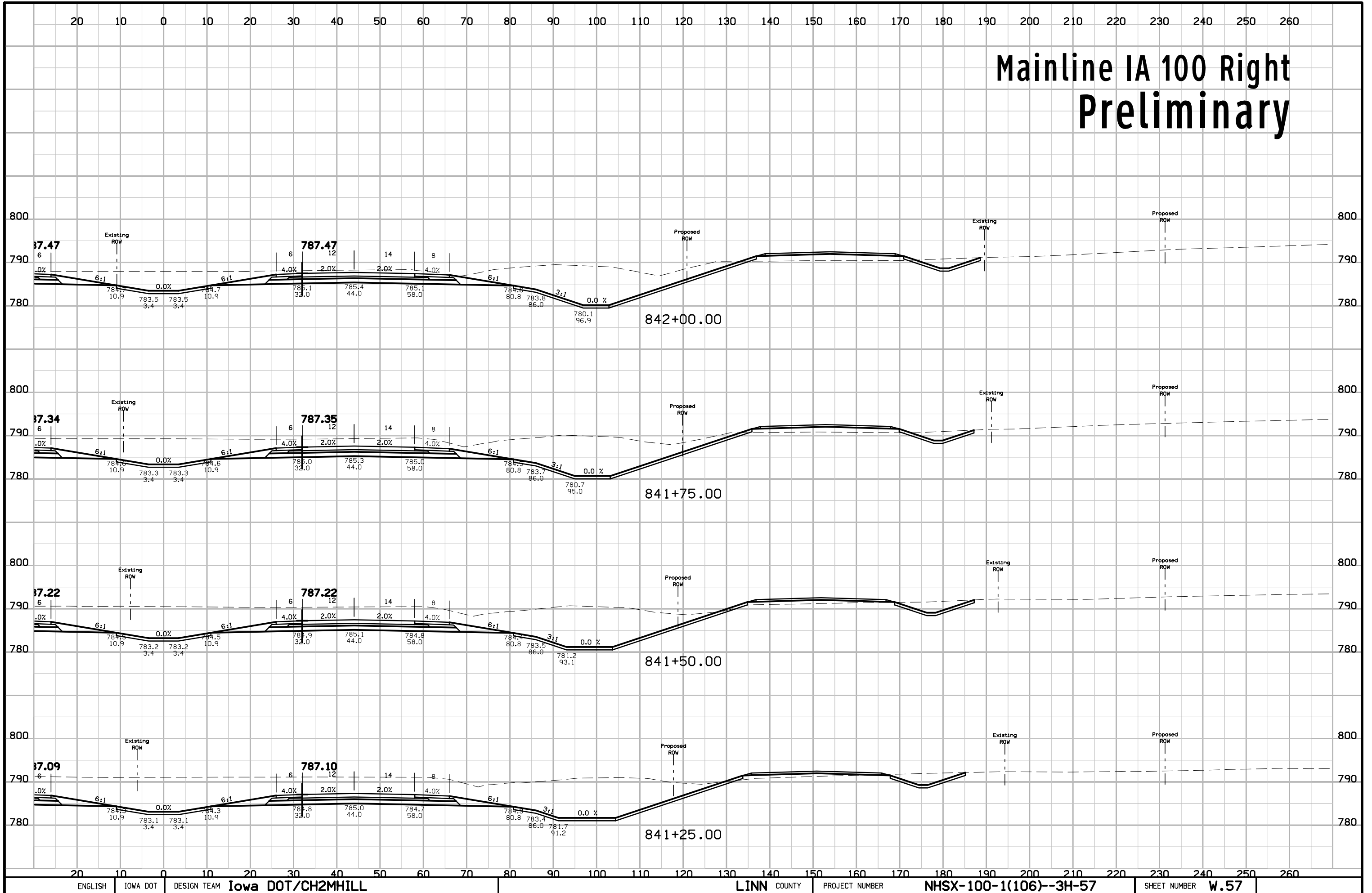
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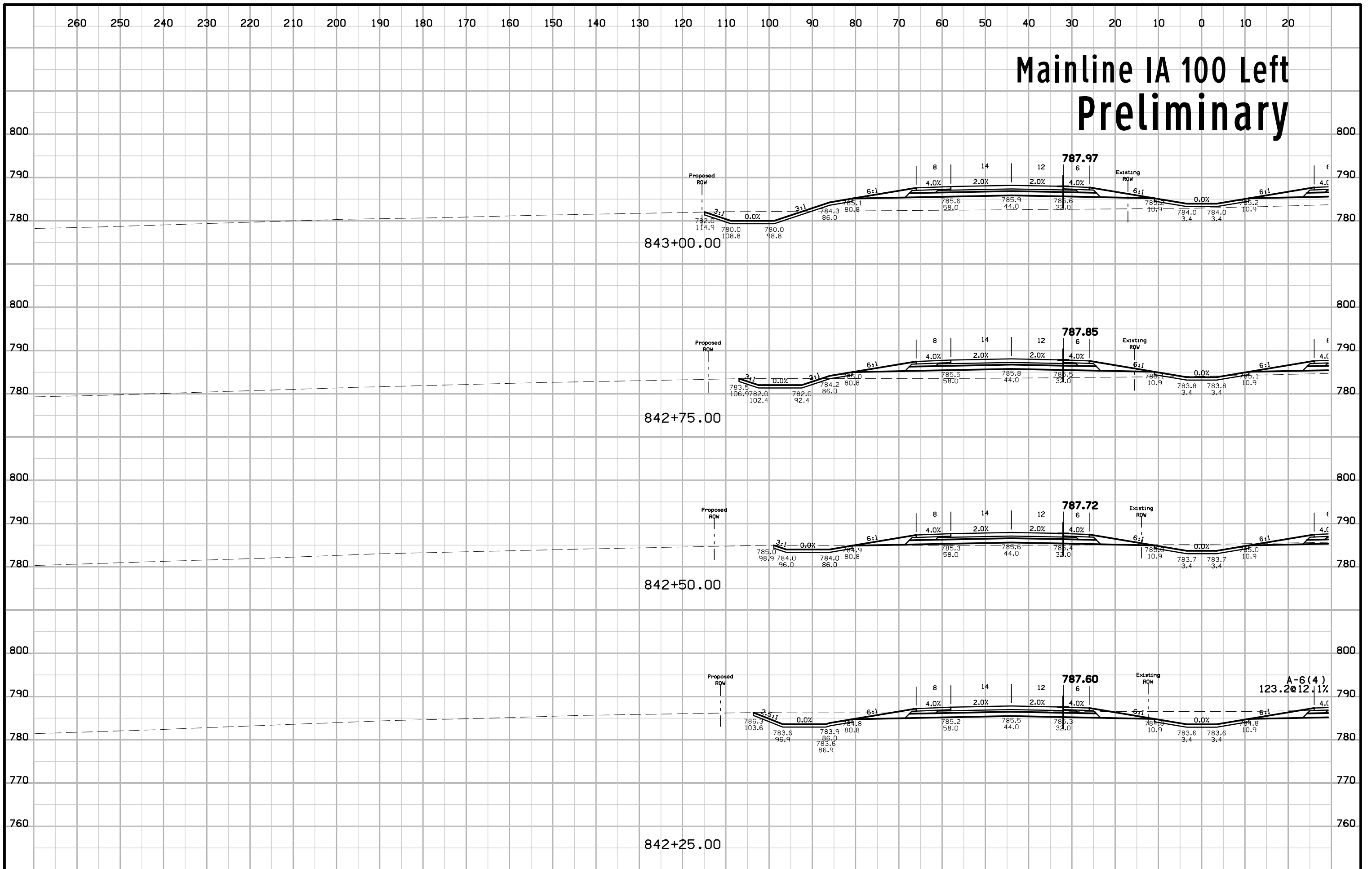
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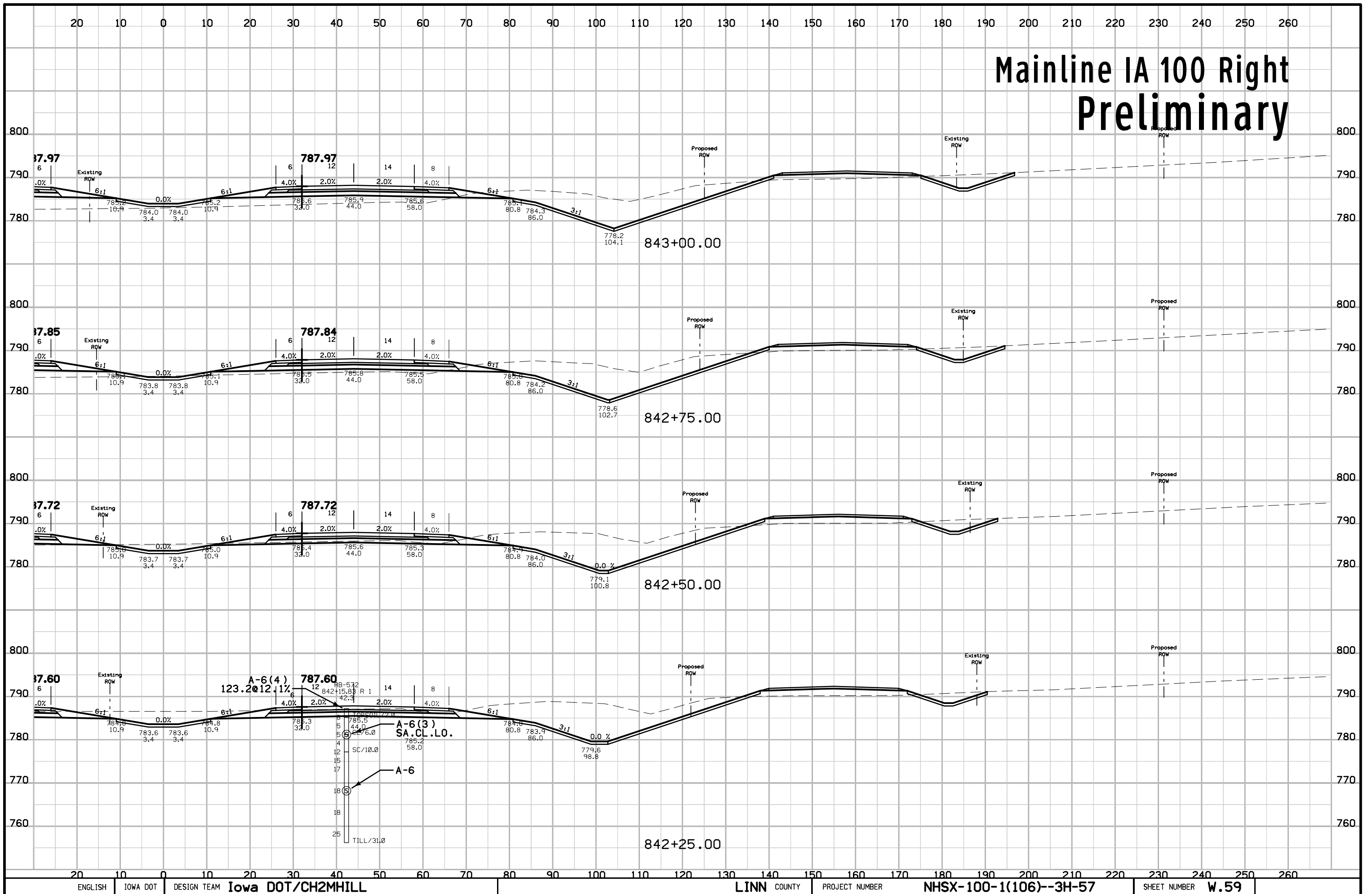
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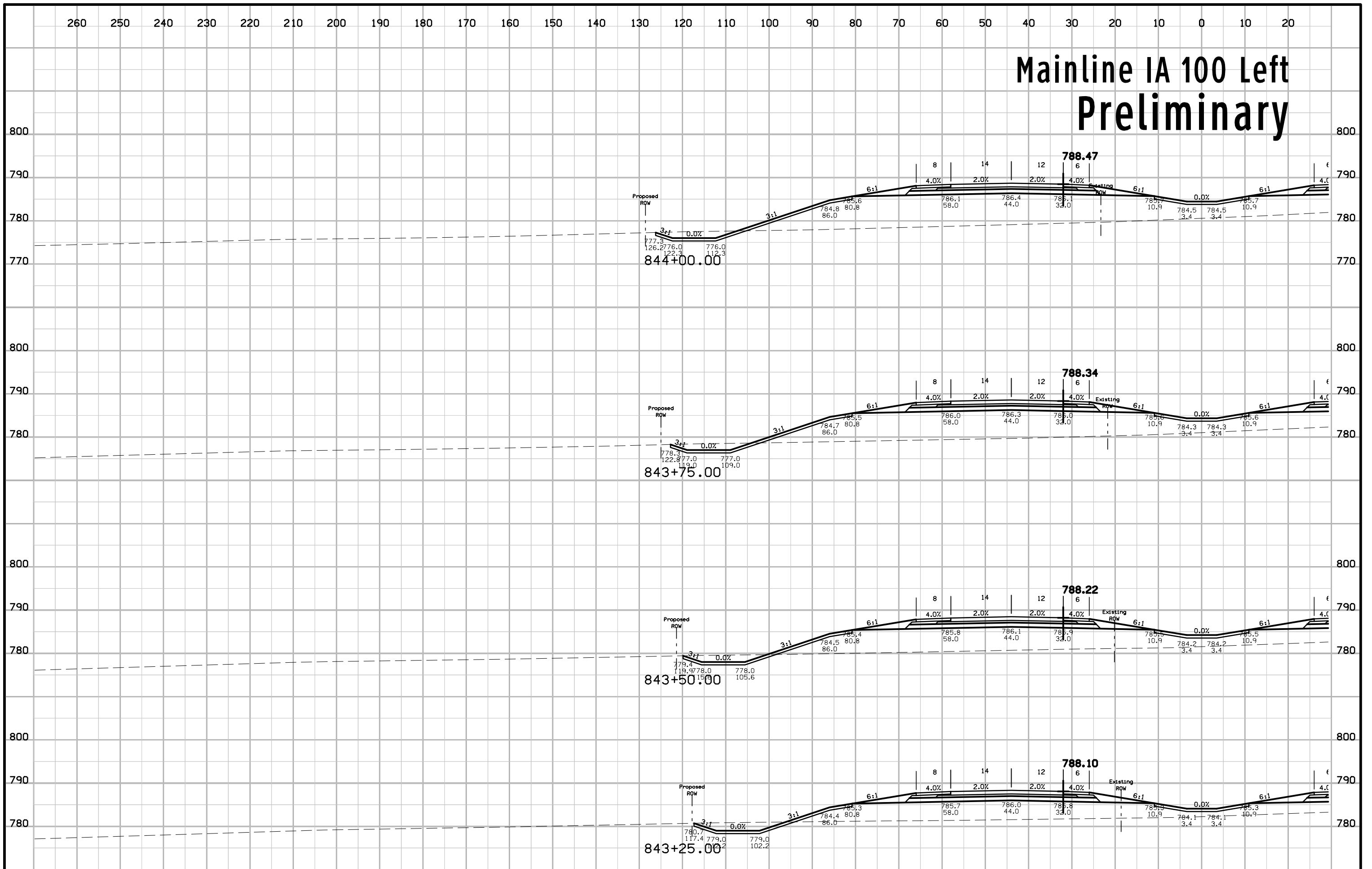
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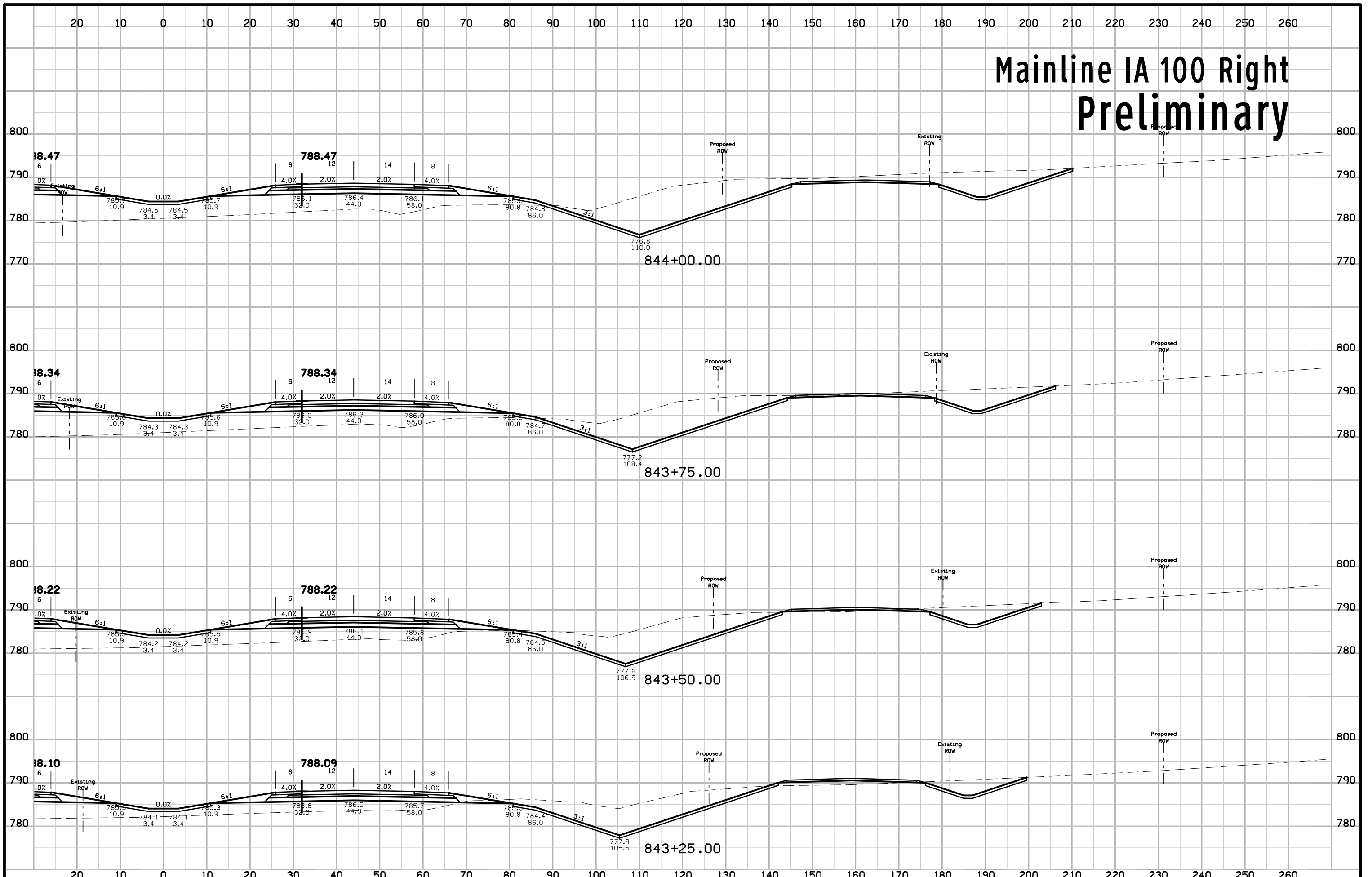
# Mainline IA 100 Right Preliminary



# Mainline IA 100 Left Preliminary

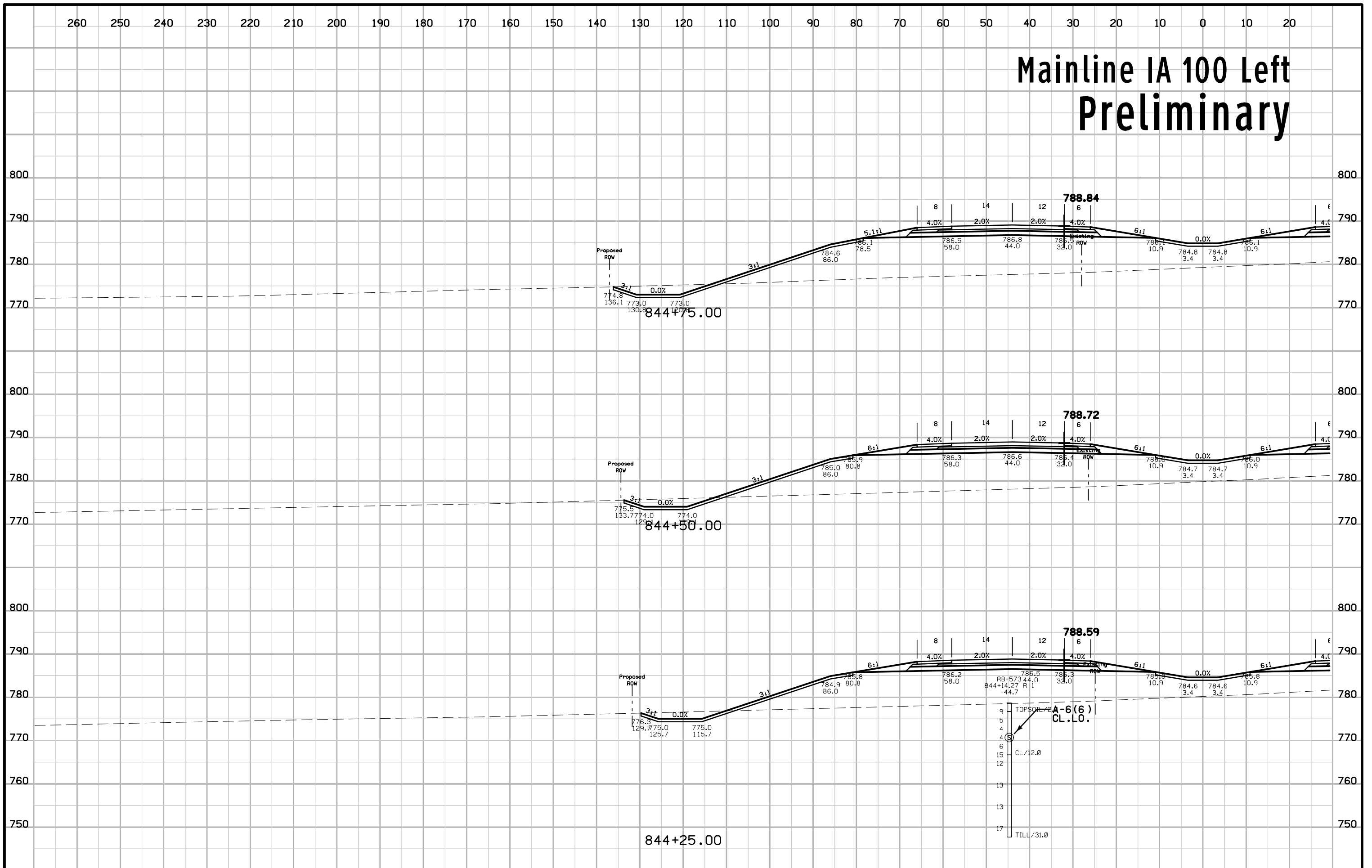


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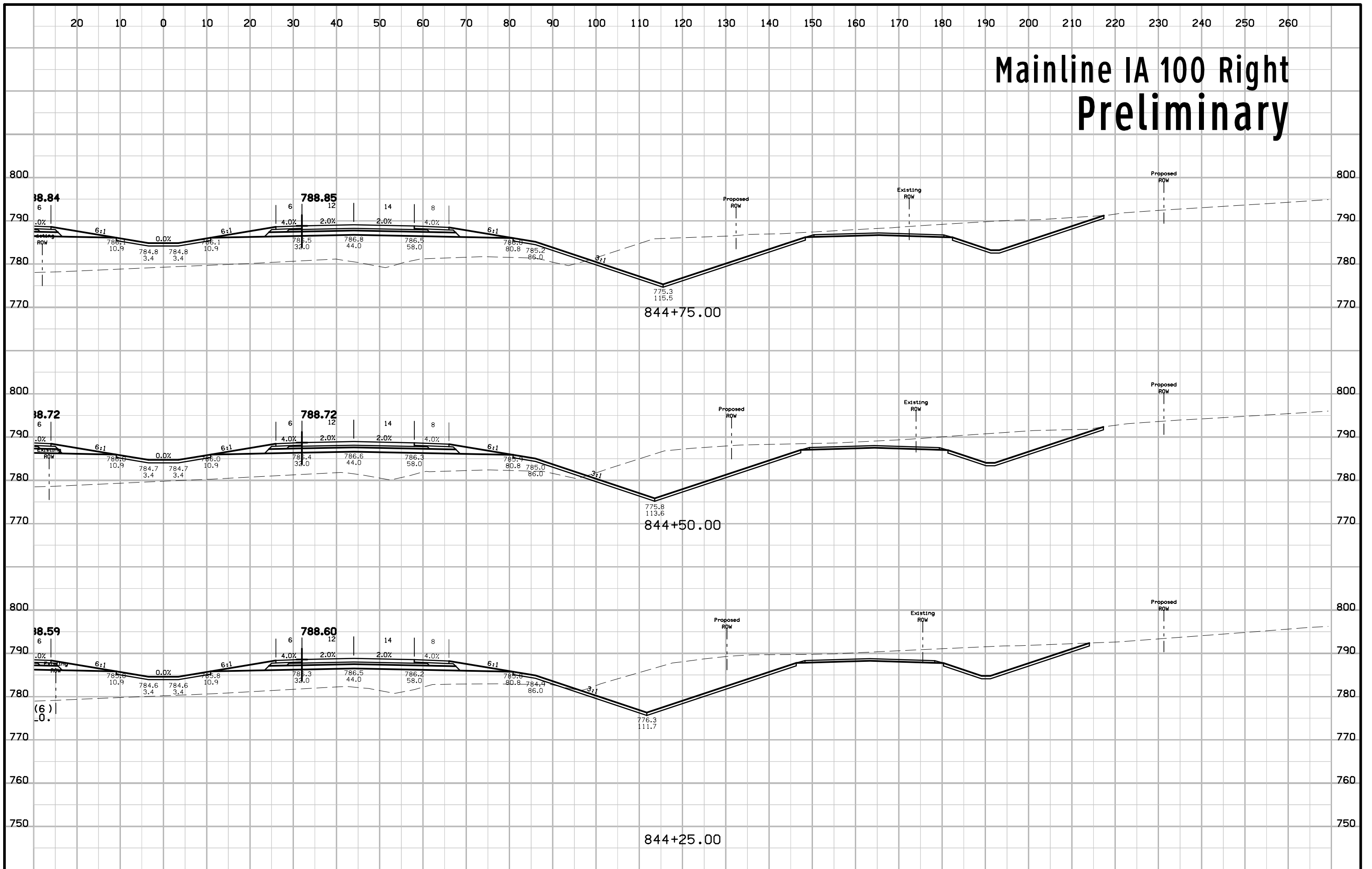




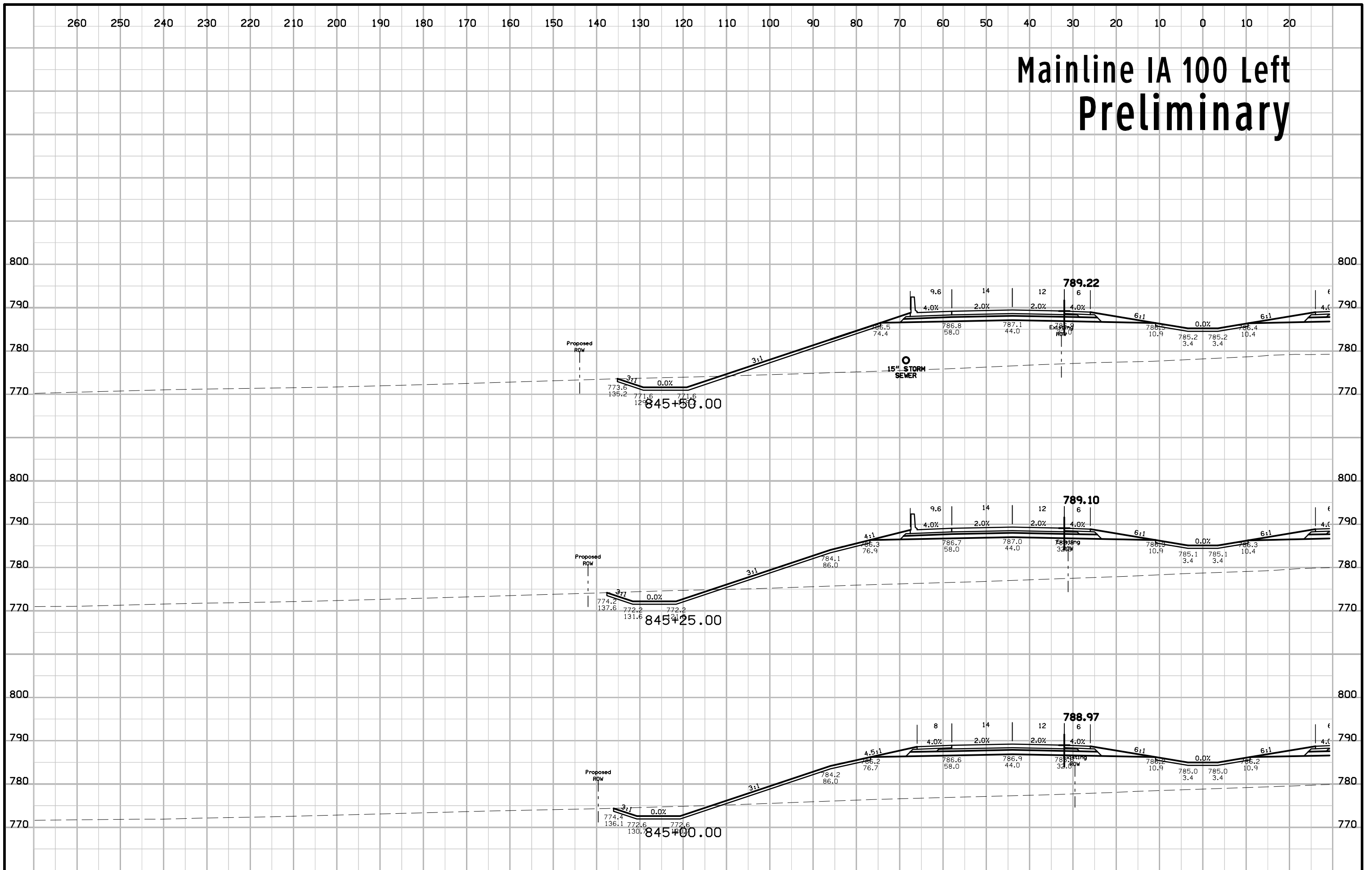
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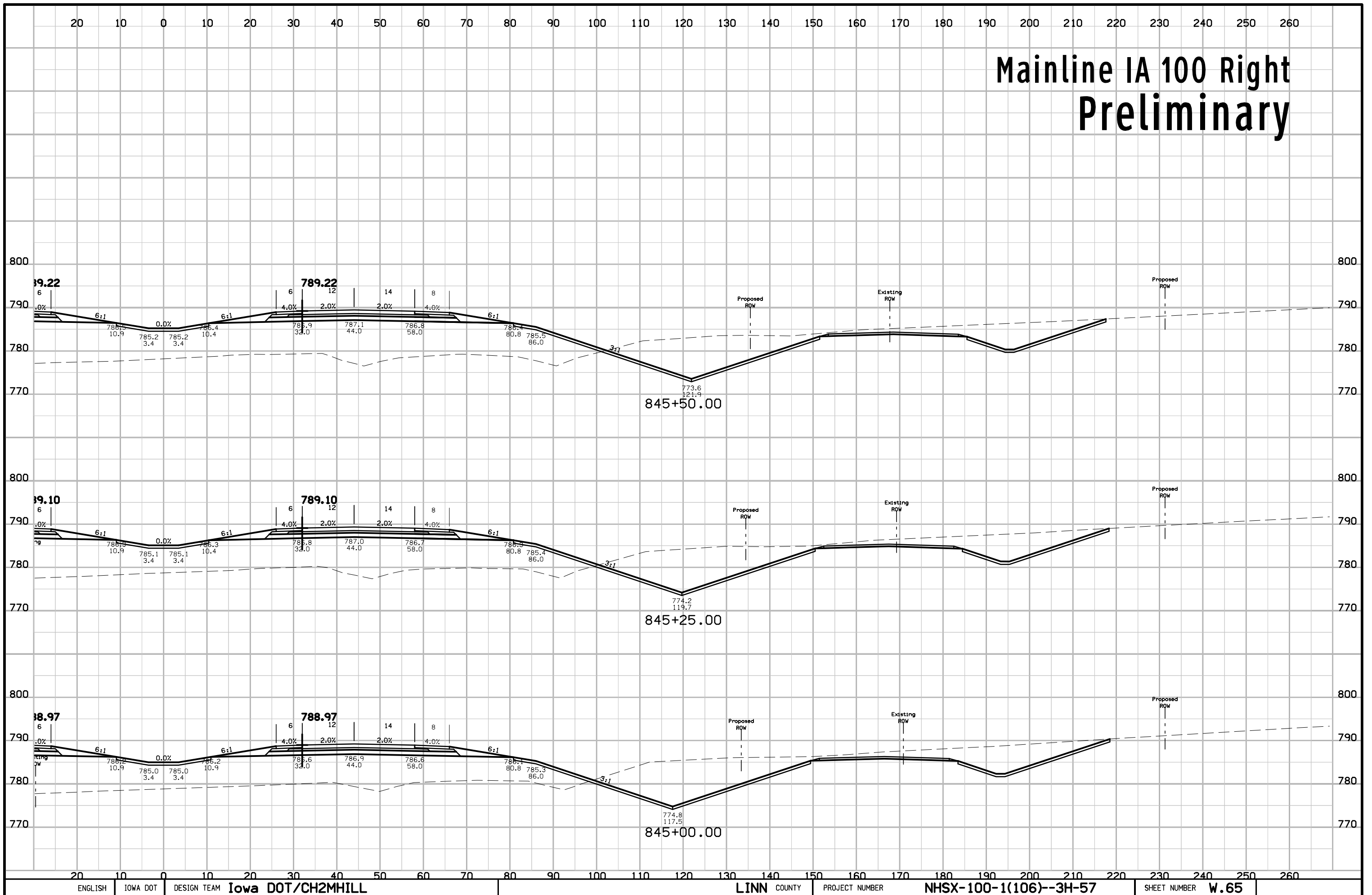
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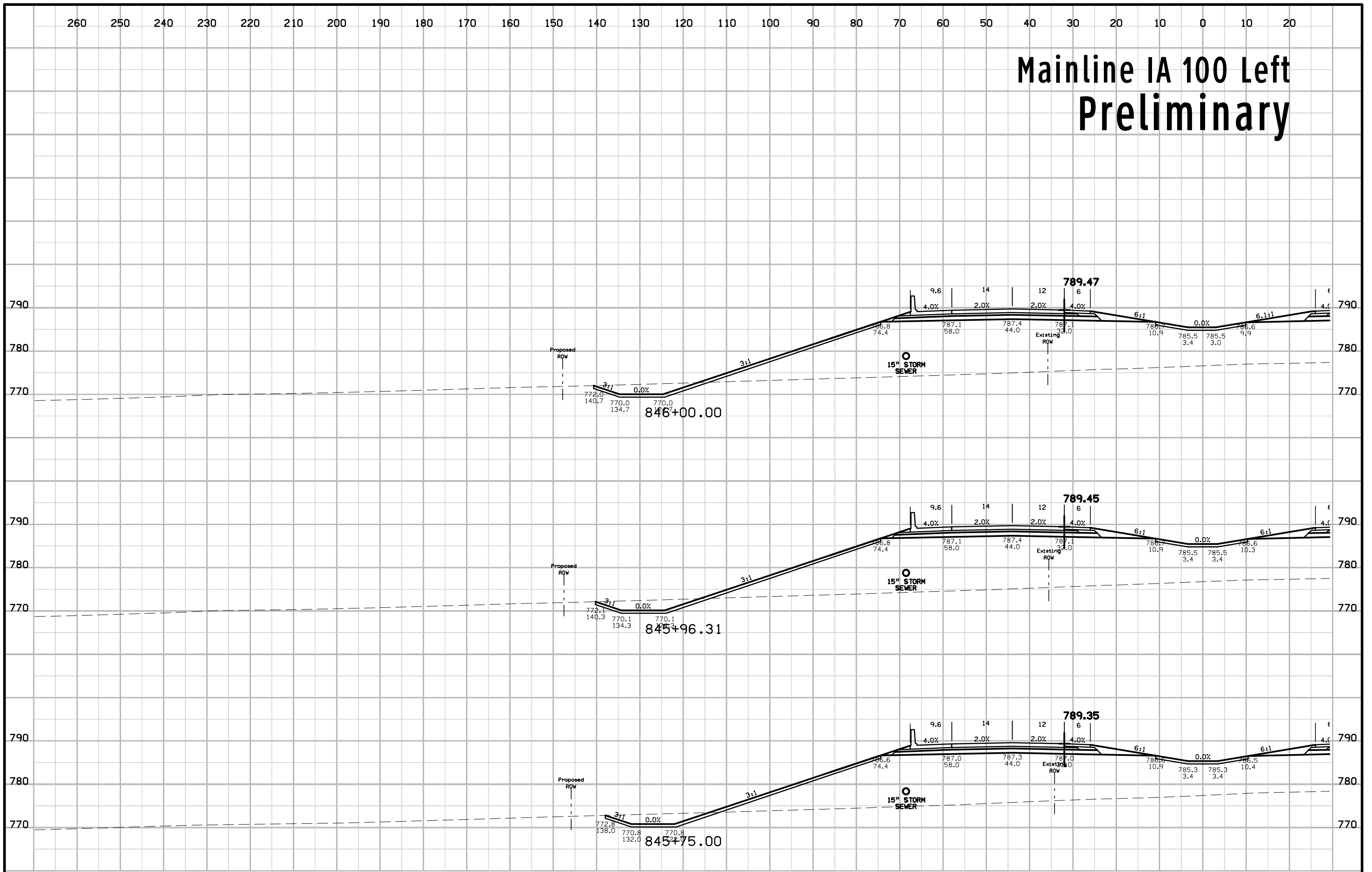
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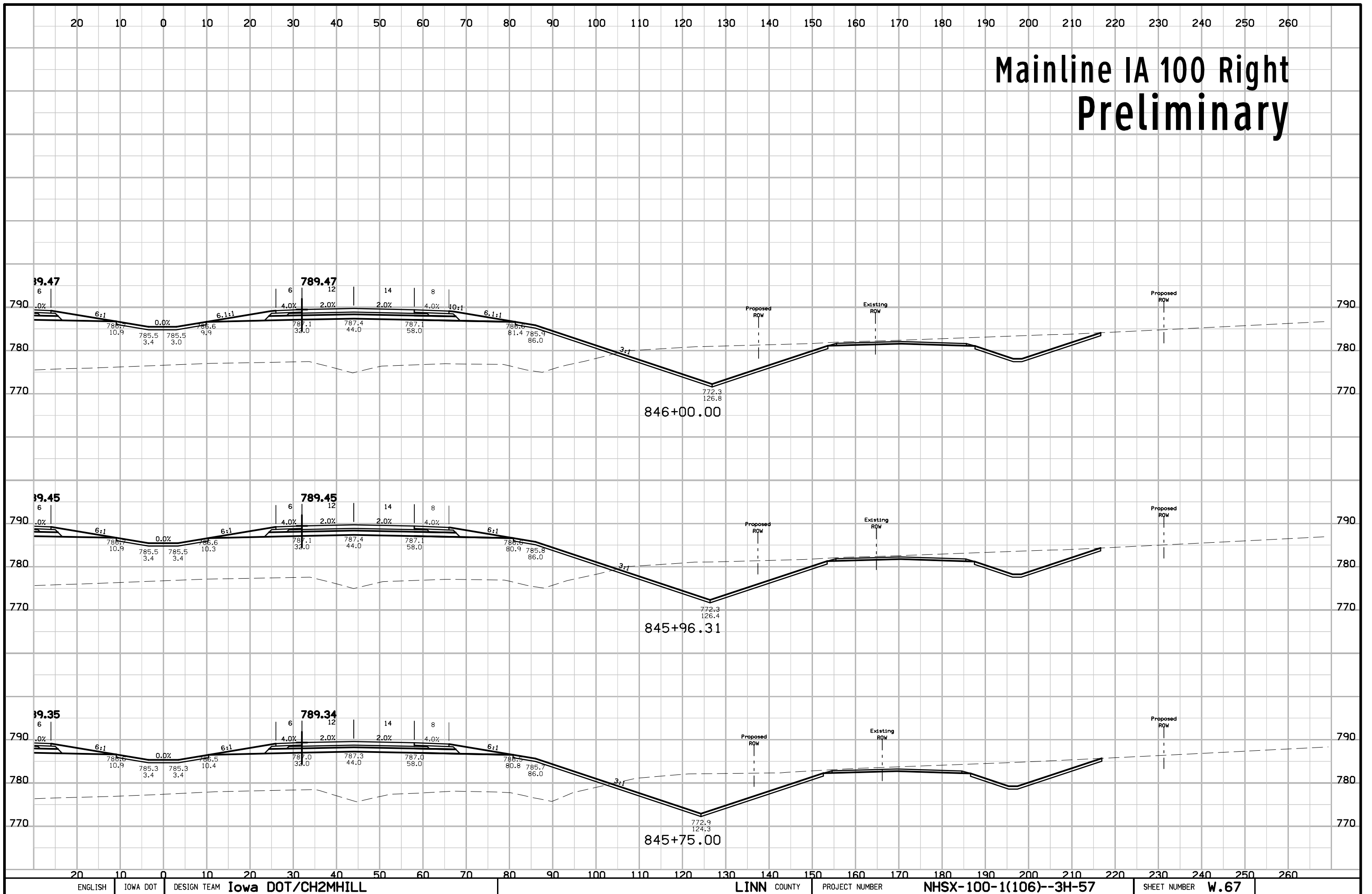
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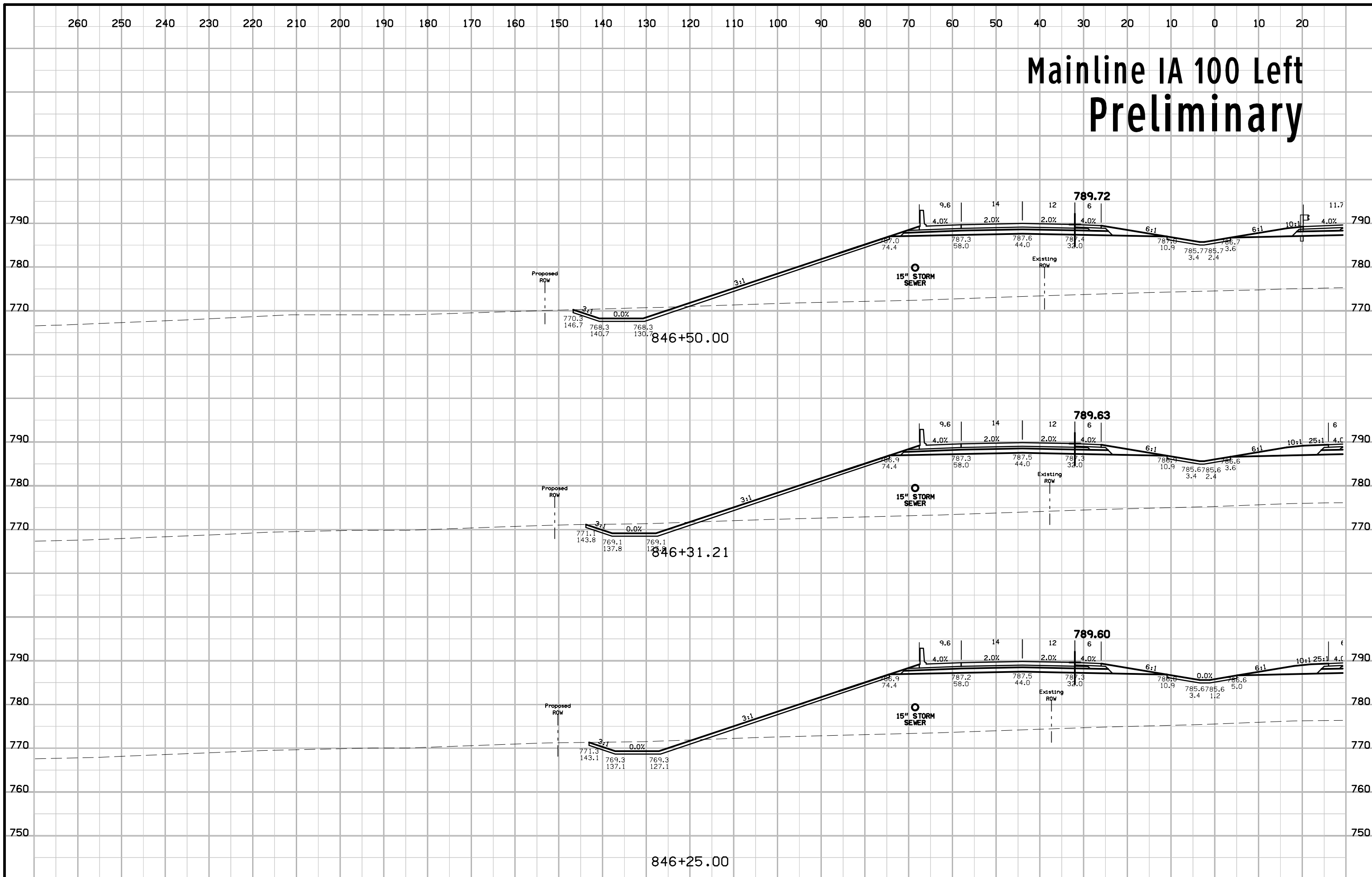
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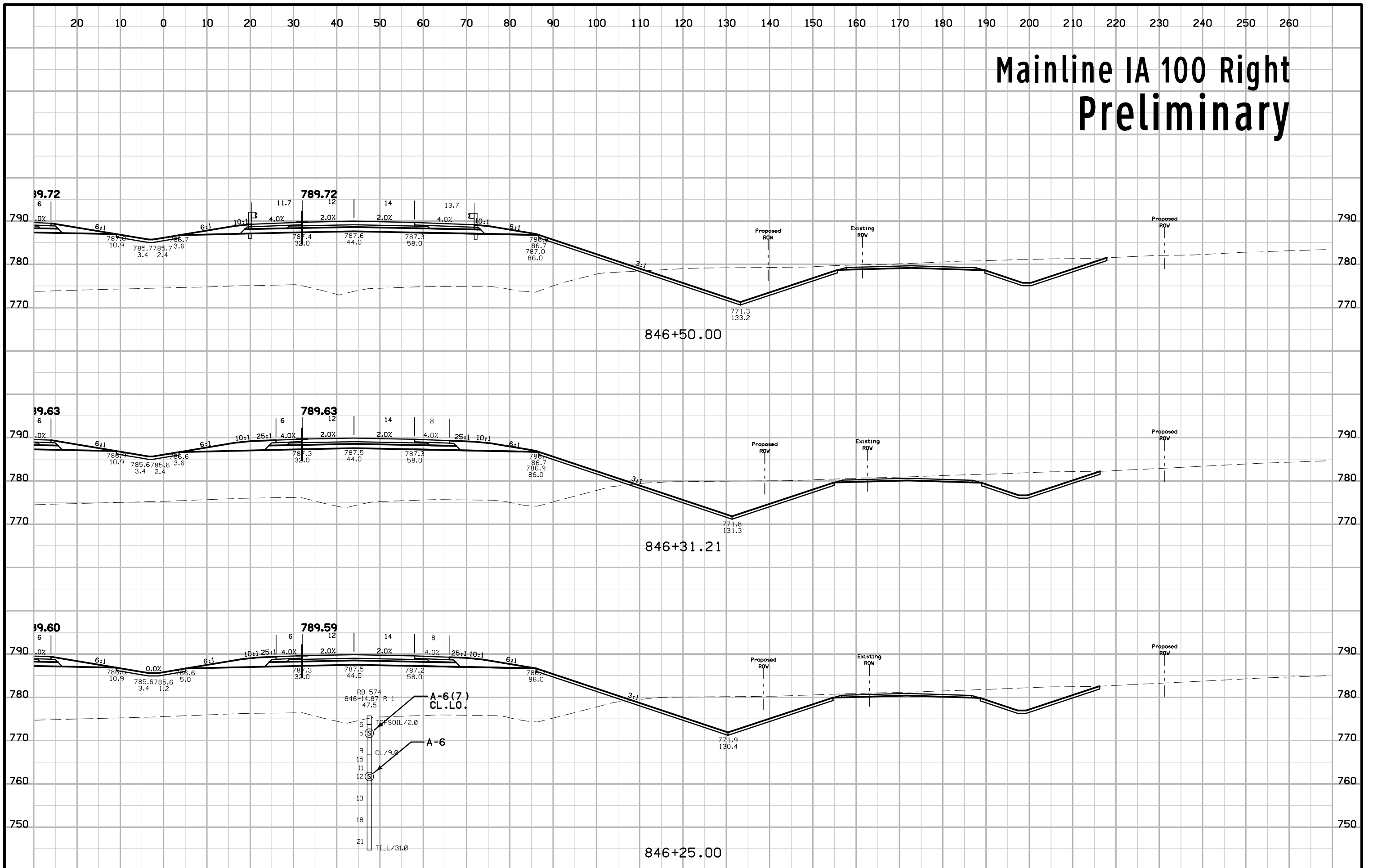
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# Mainline IA 100 Left Preliminary

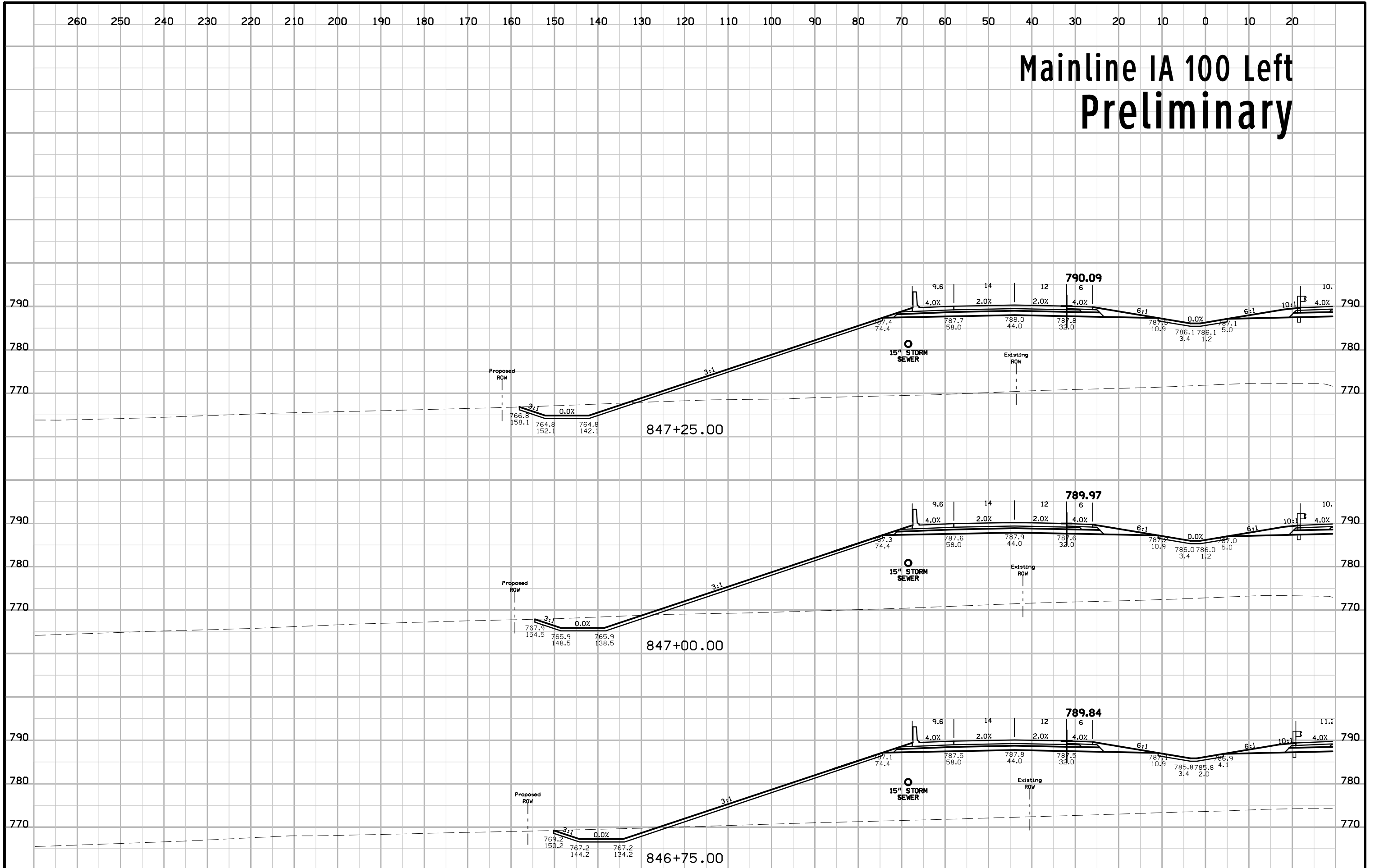


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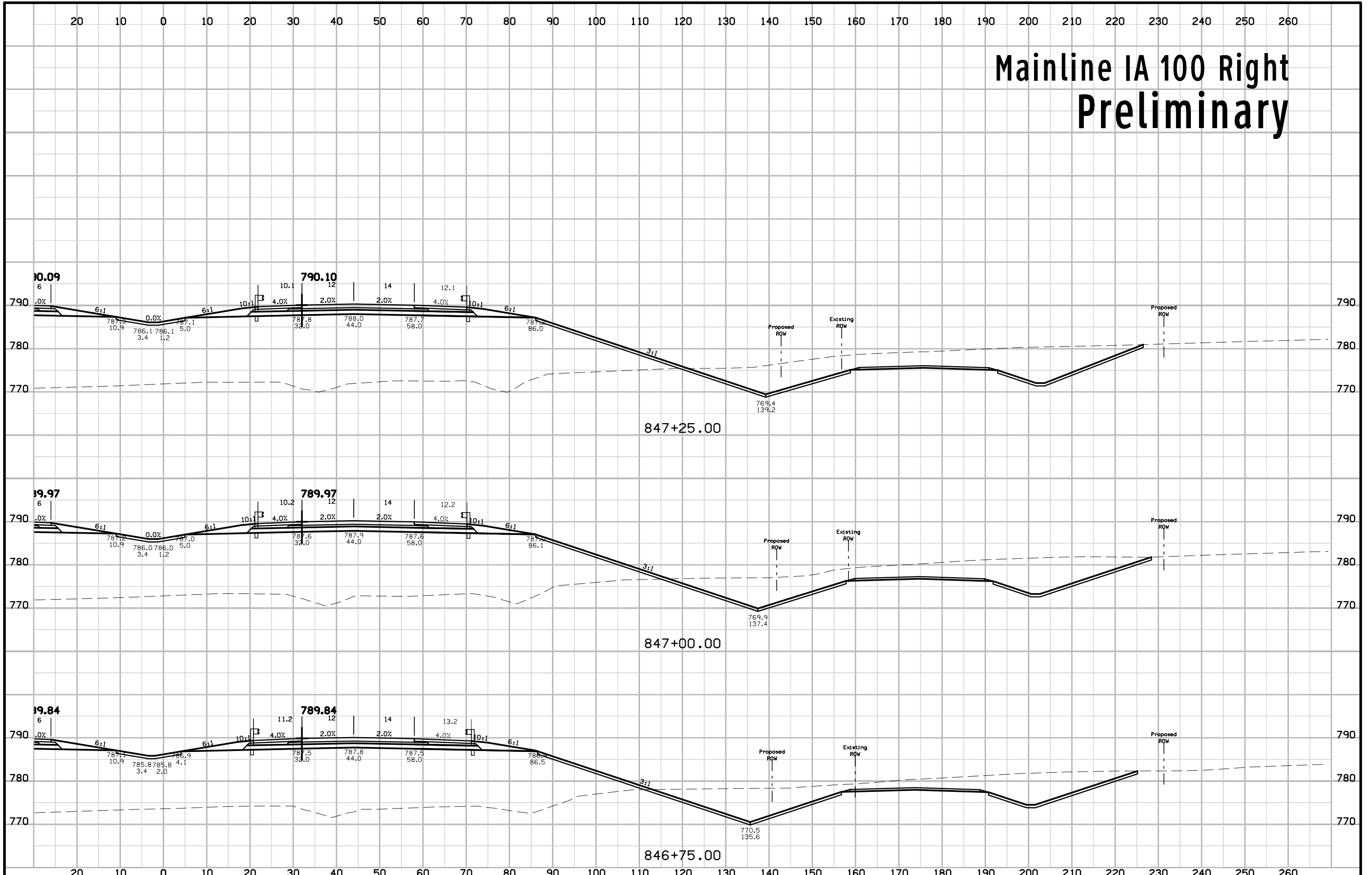




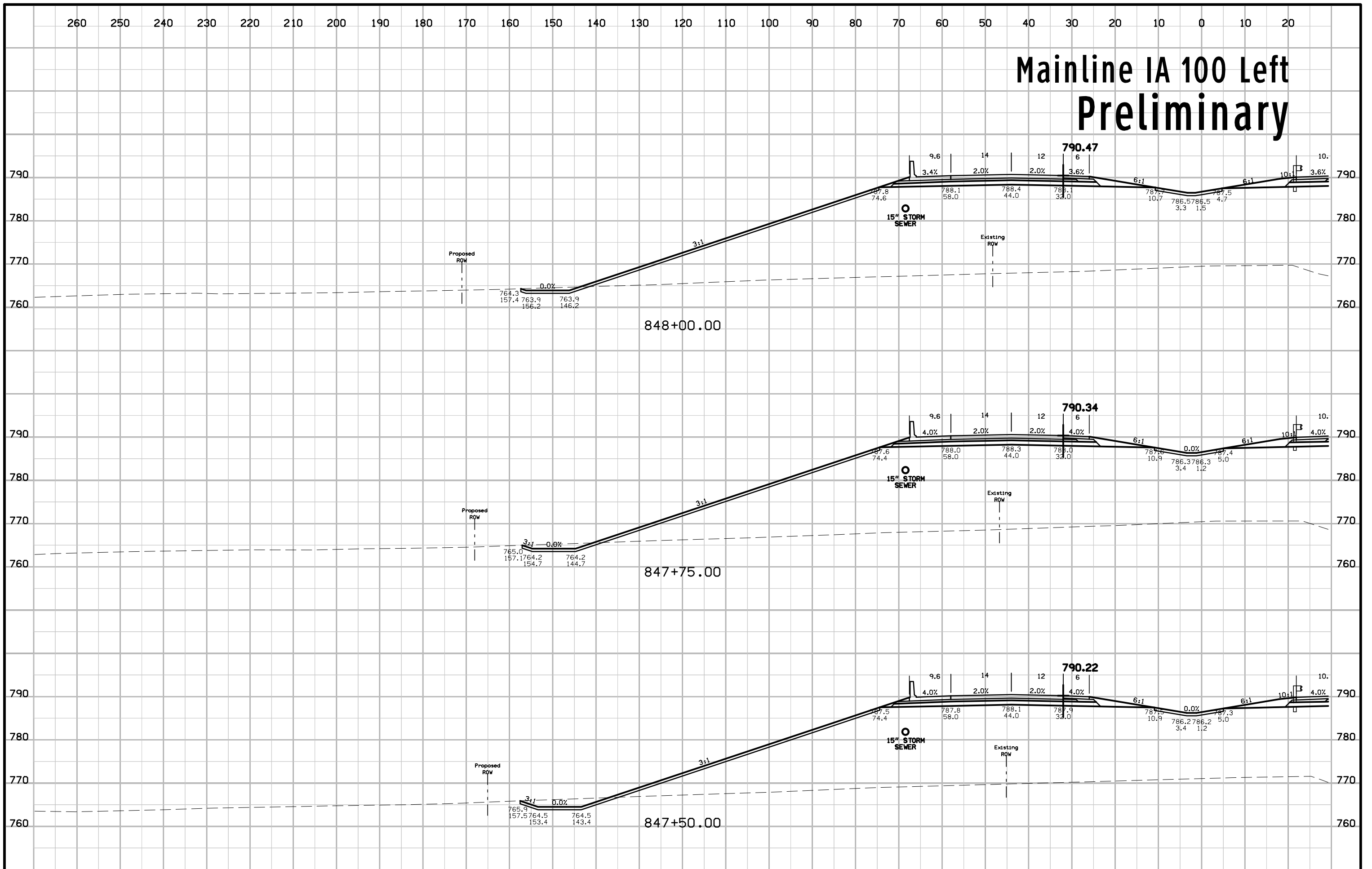
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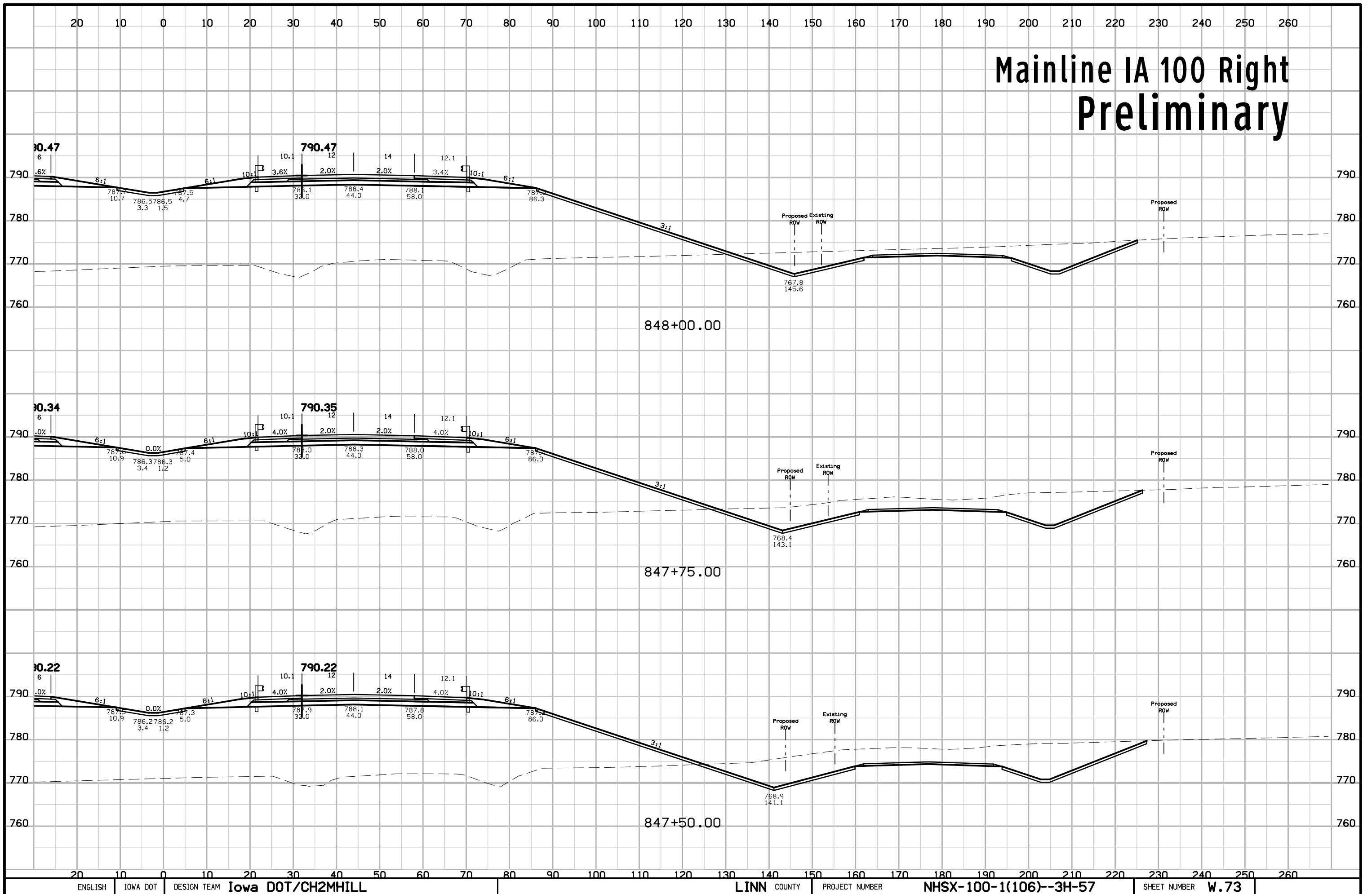
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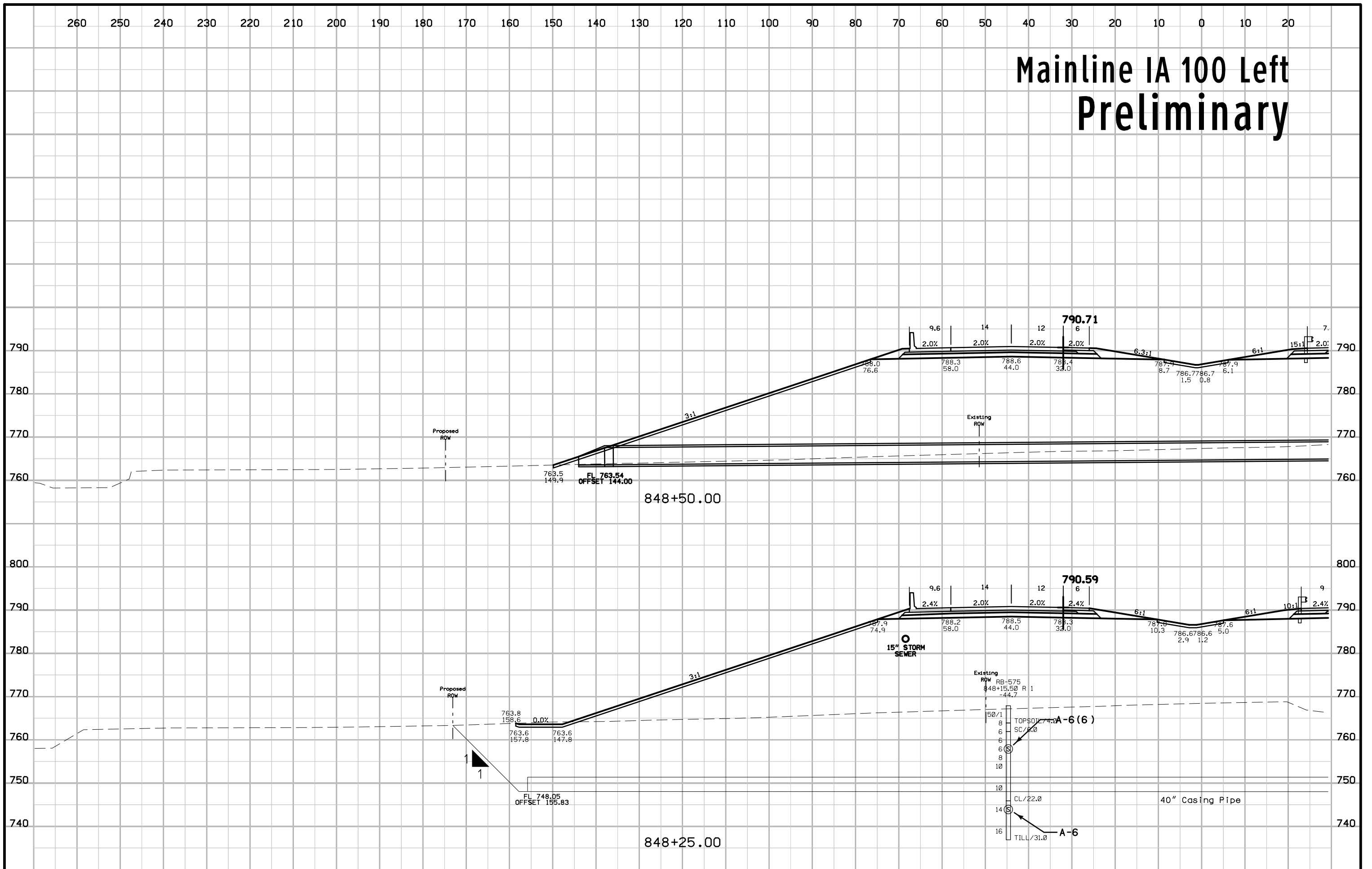
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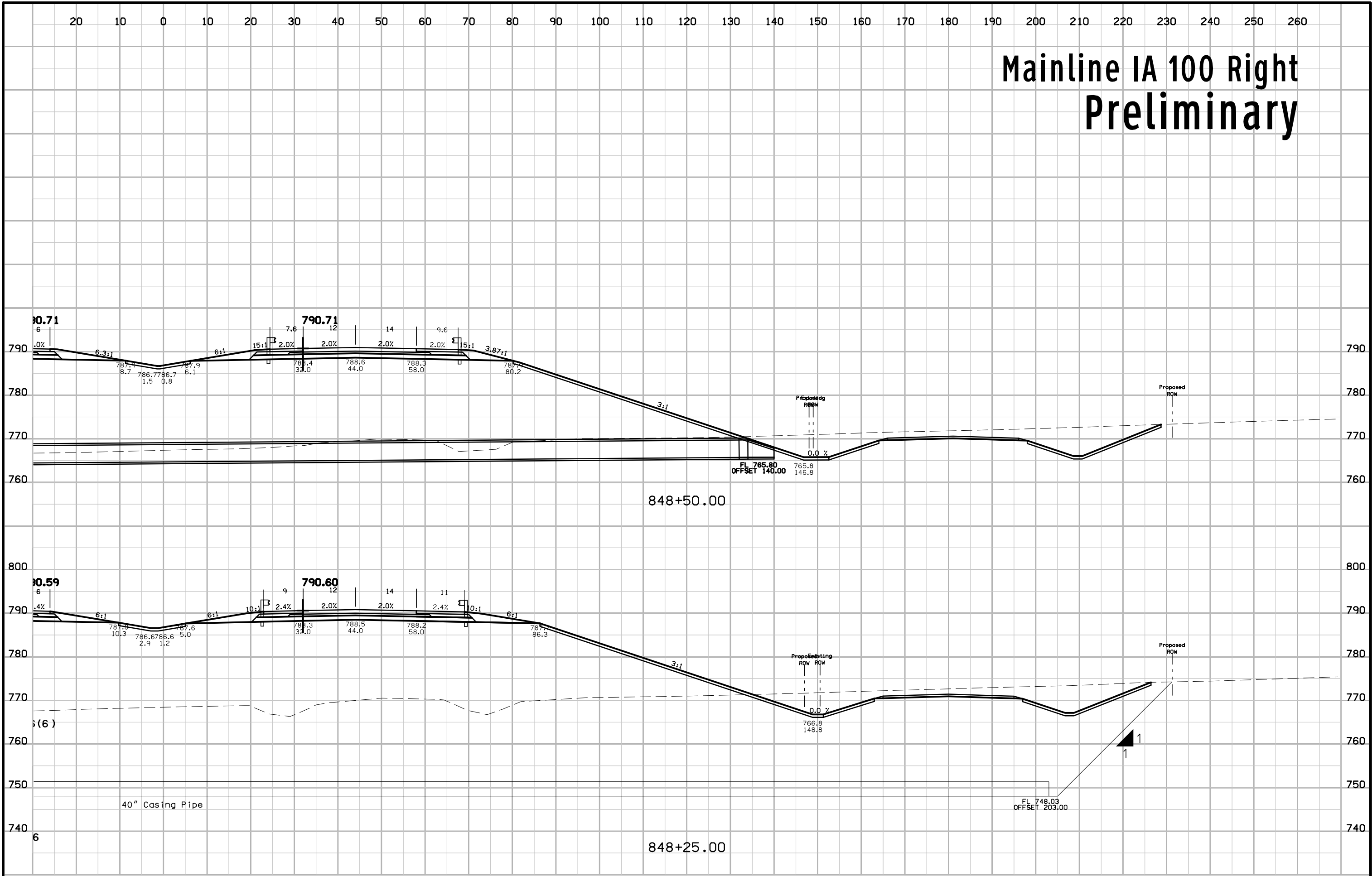
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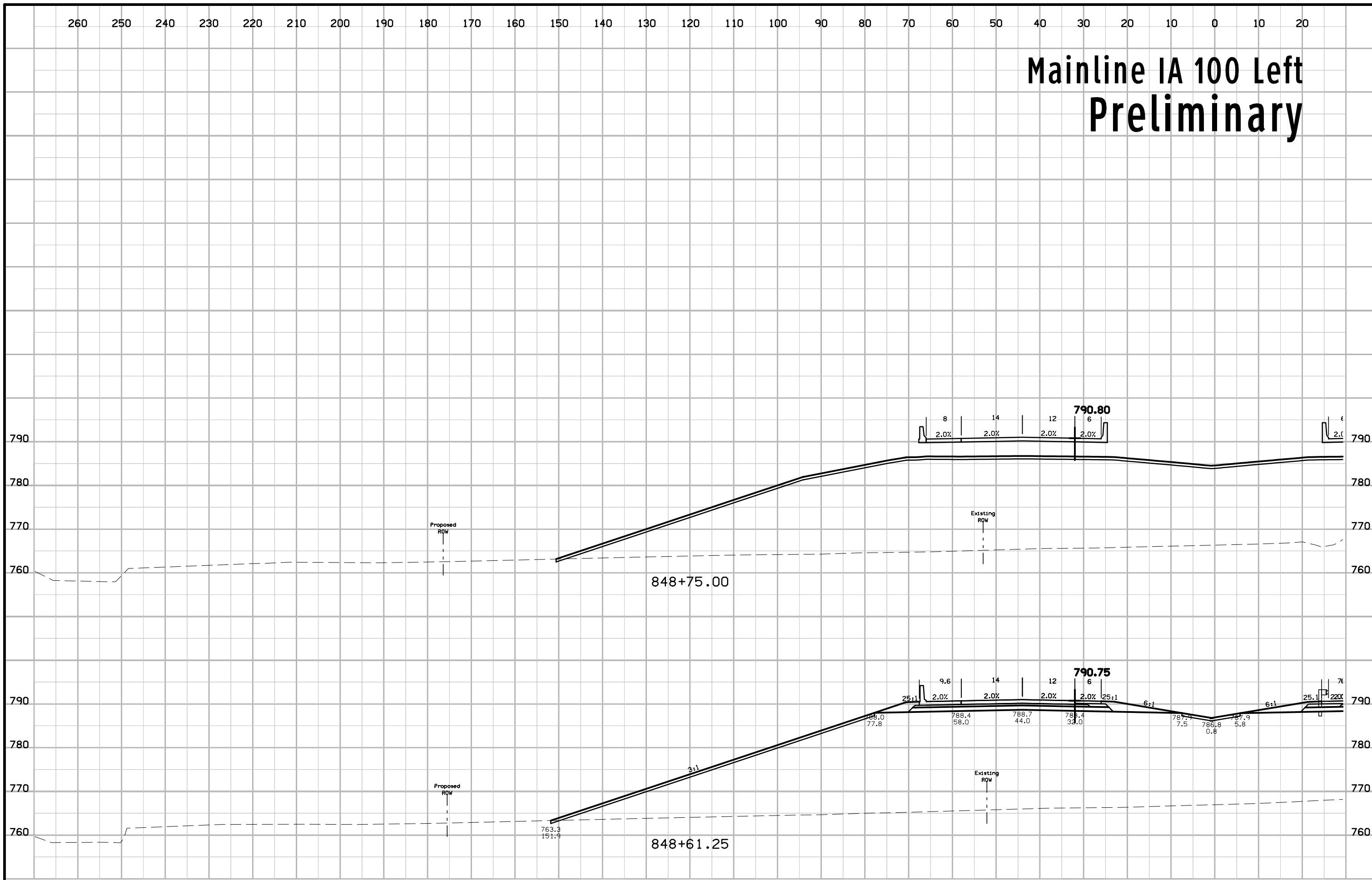
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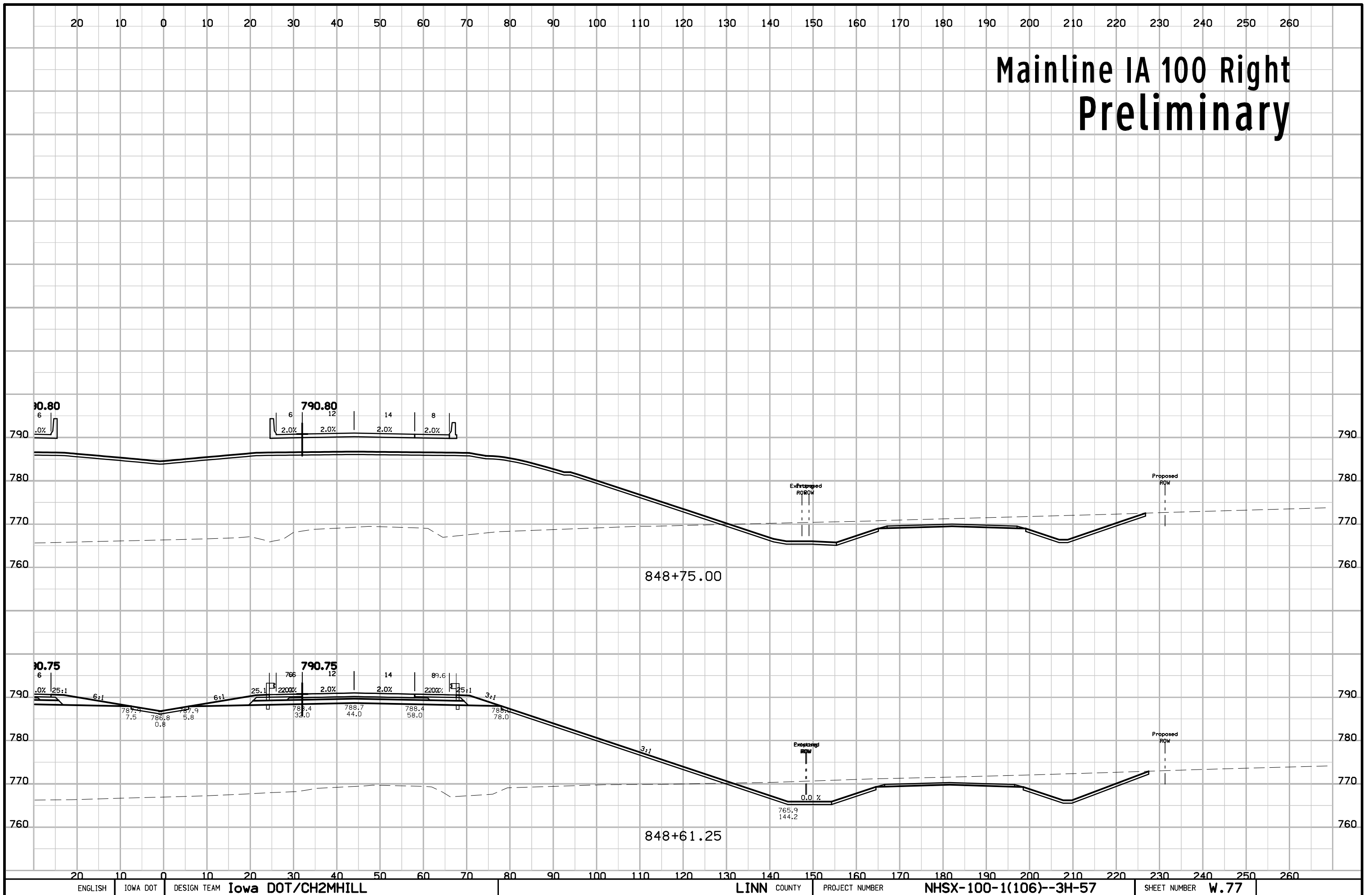
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# Mainline IA 100 Left Preliminary

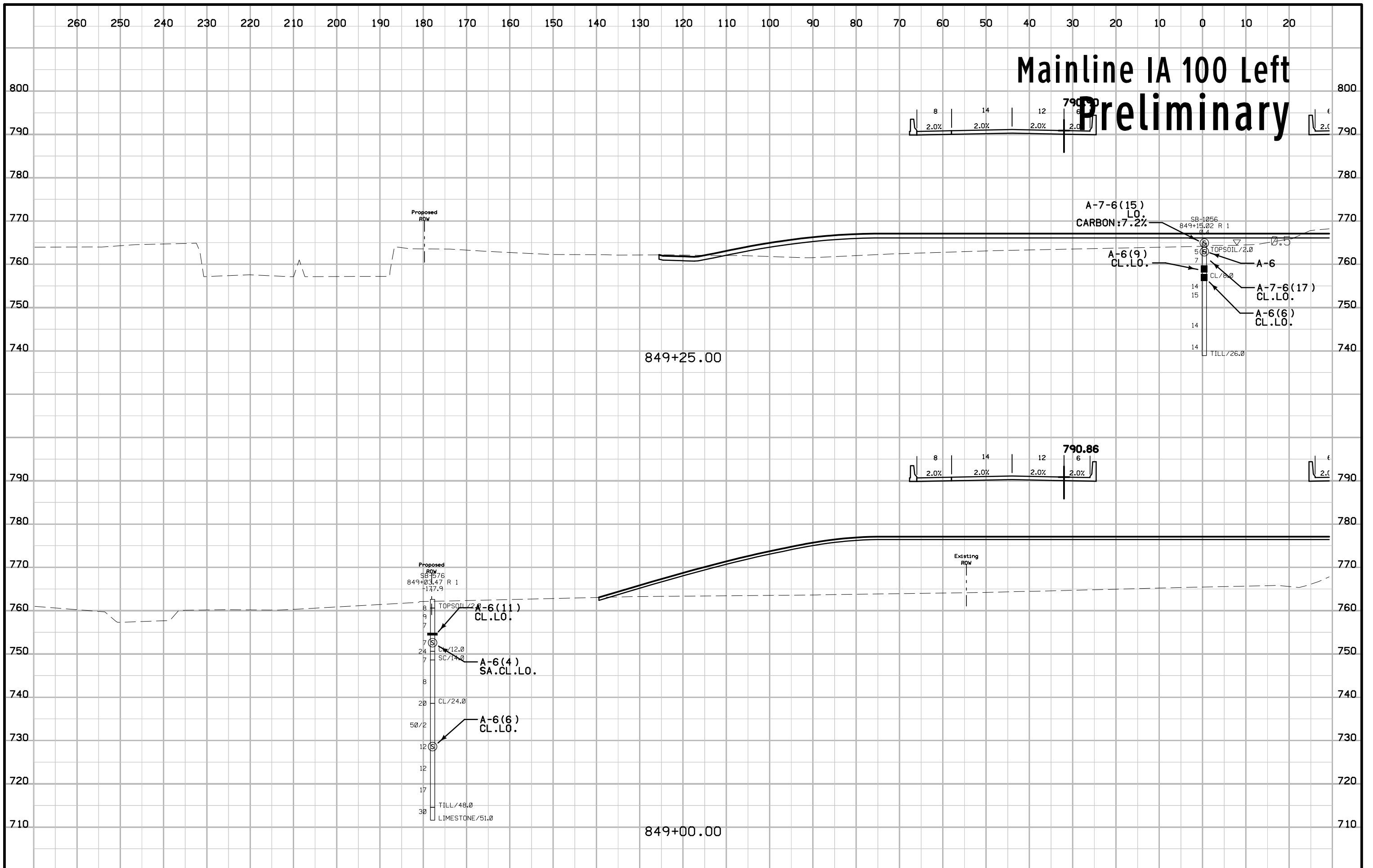


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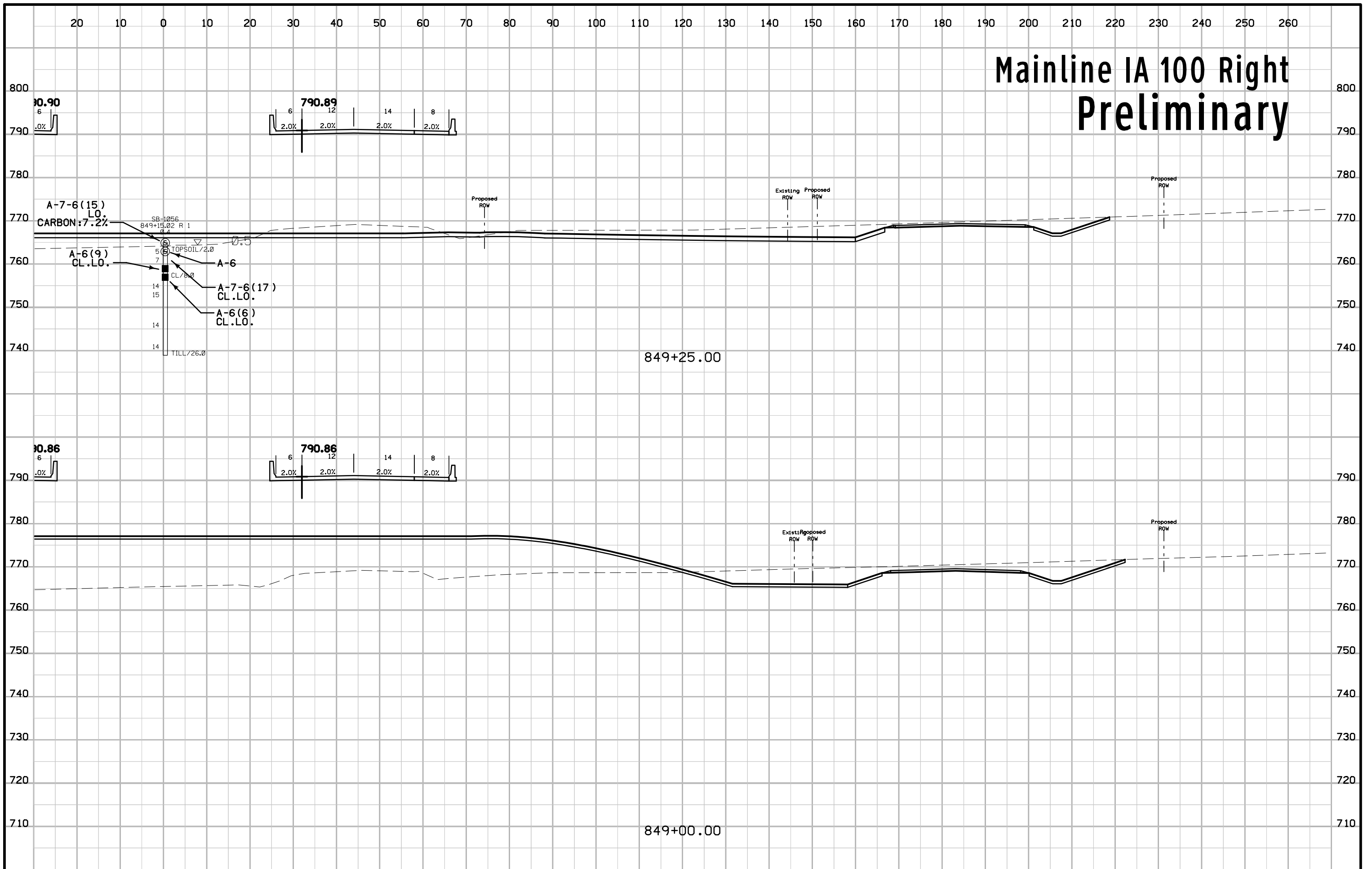




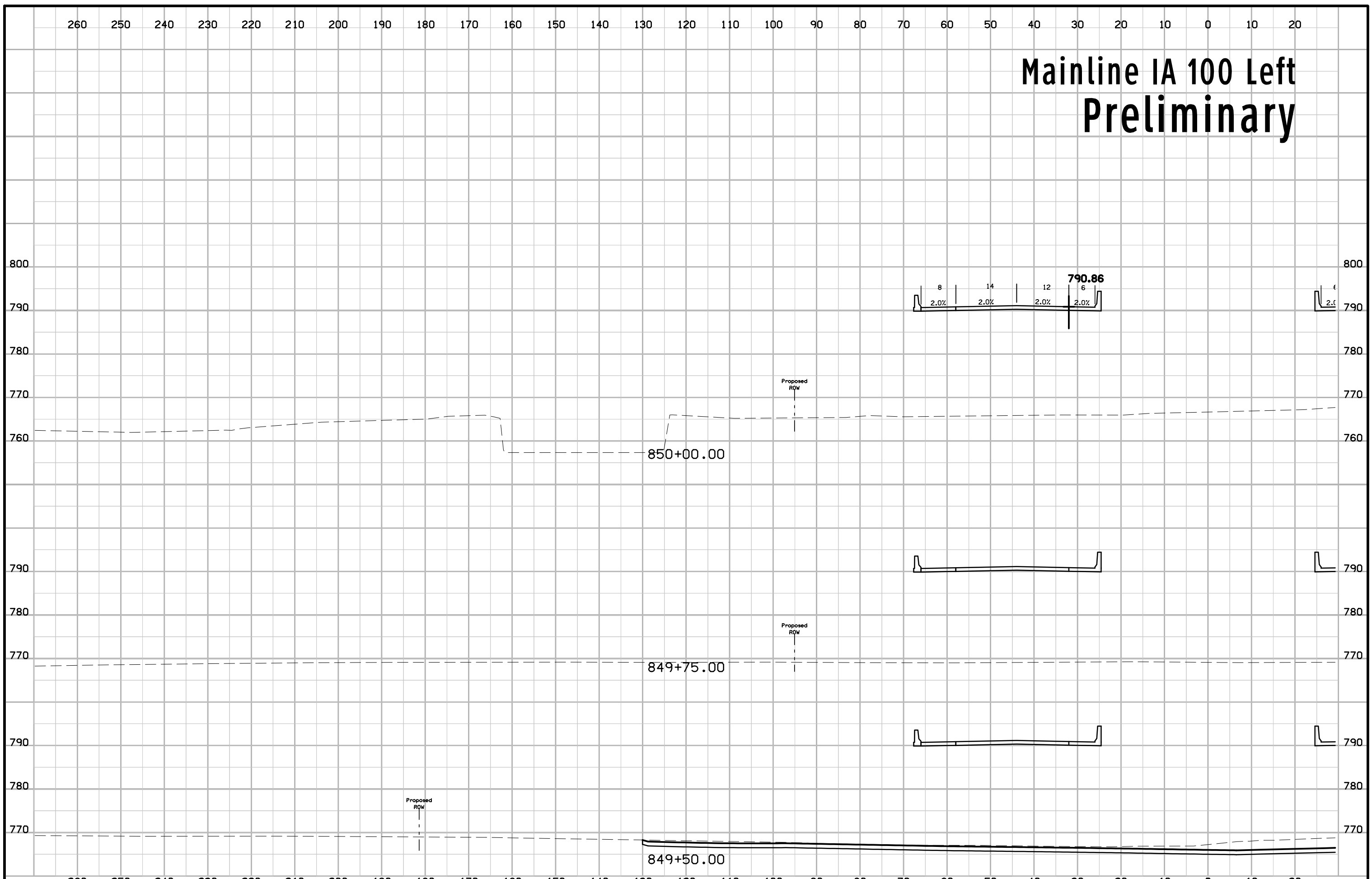
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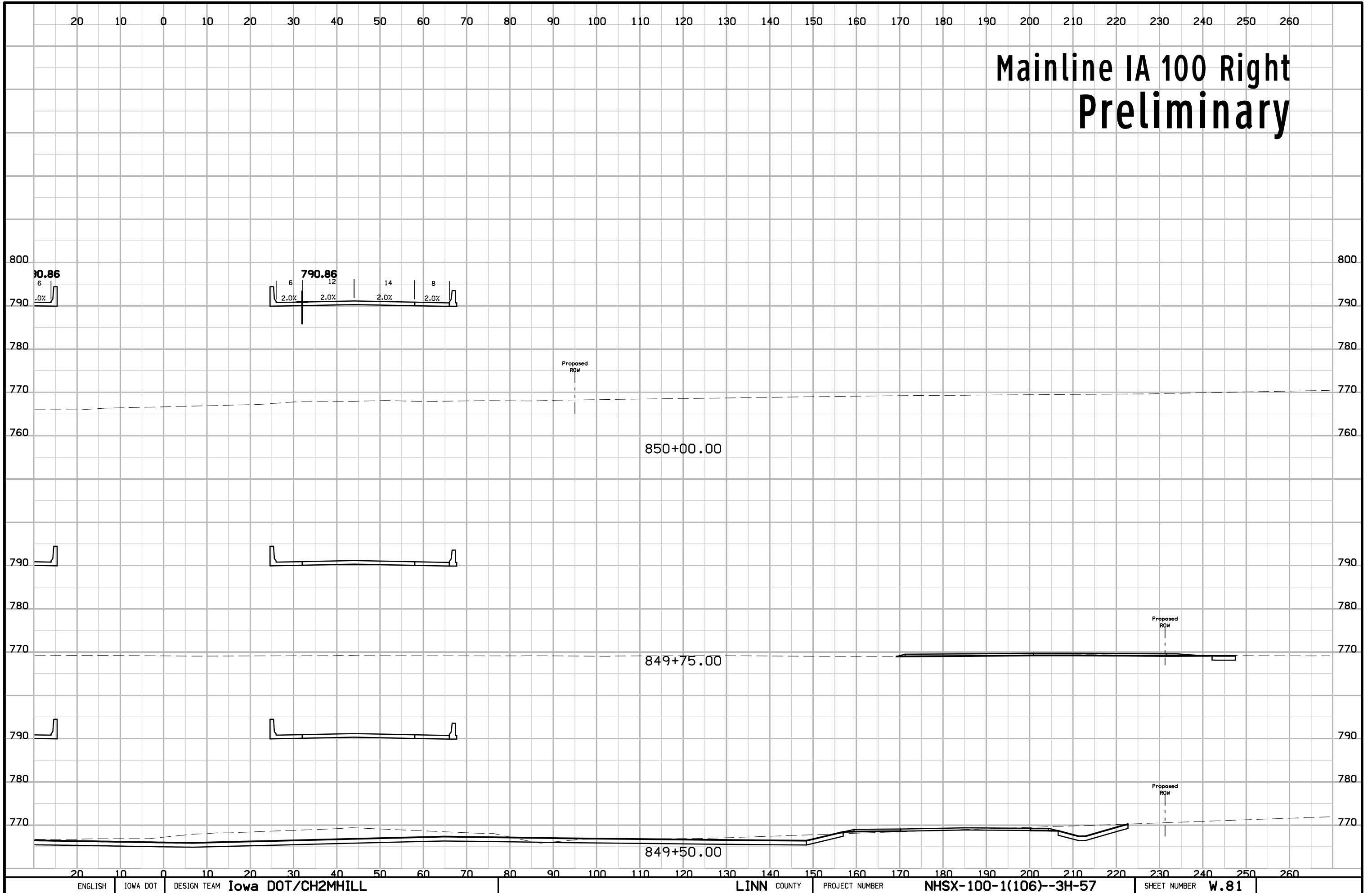
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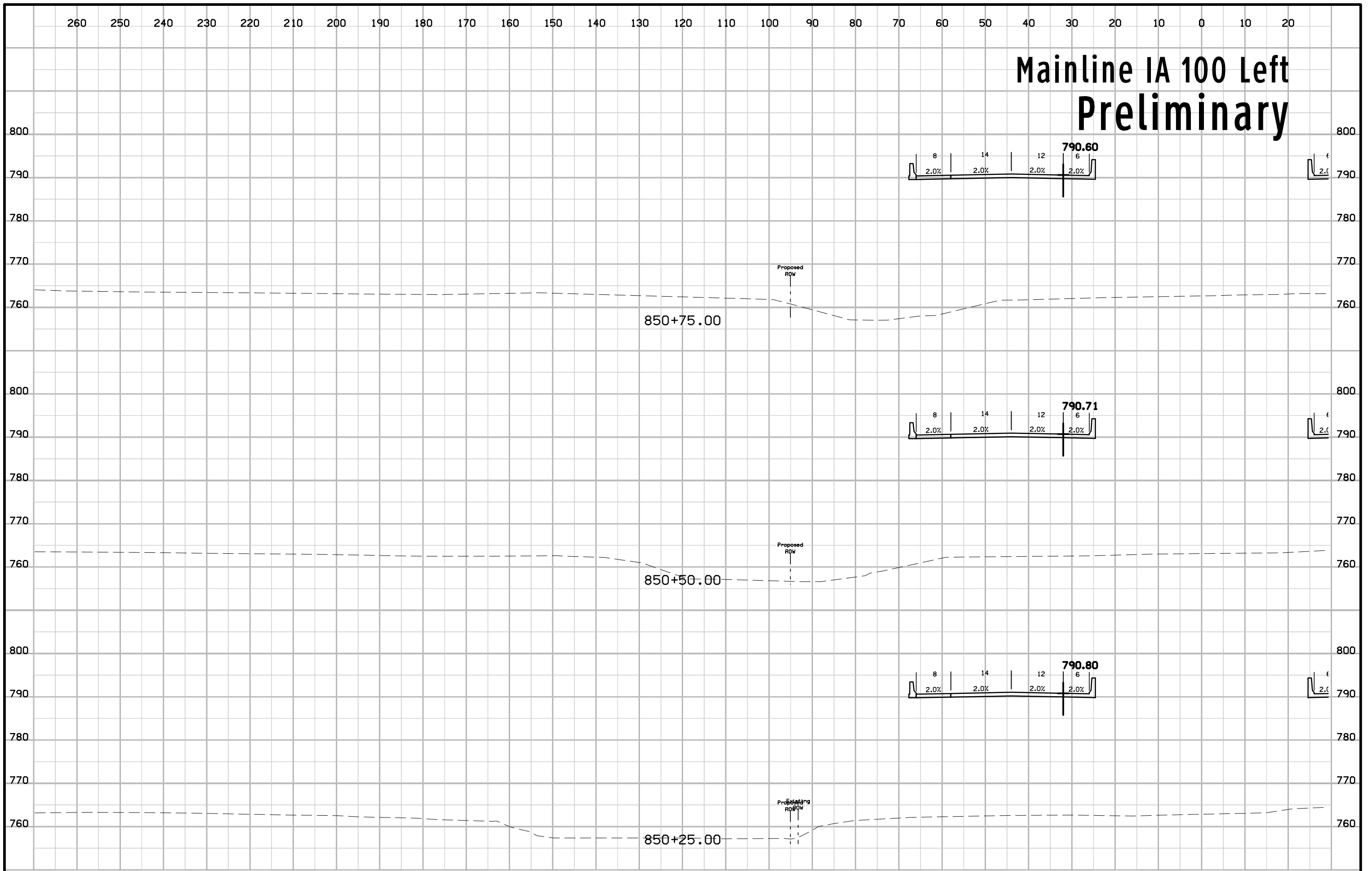
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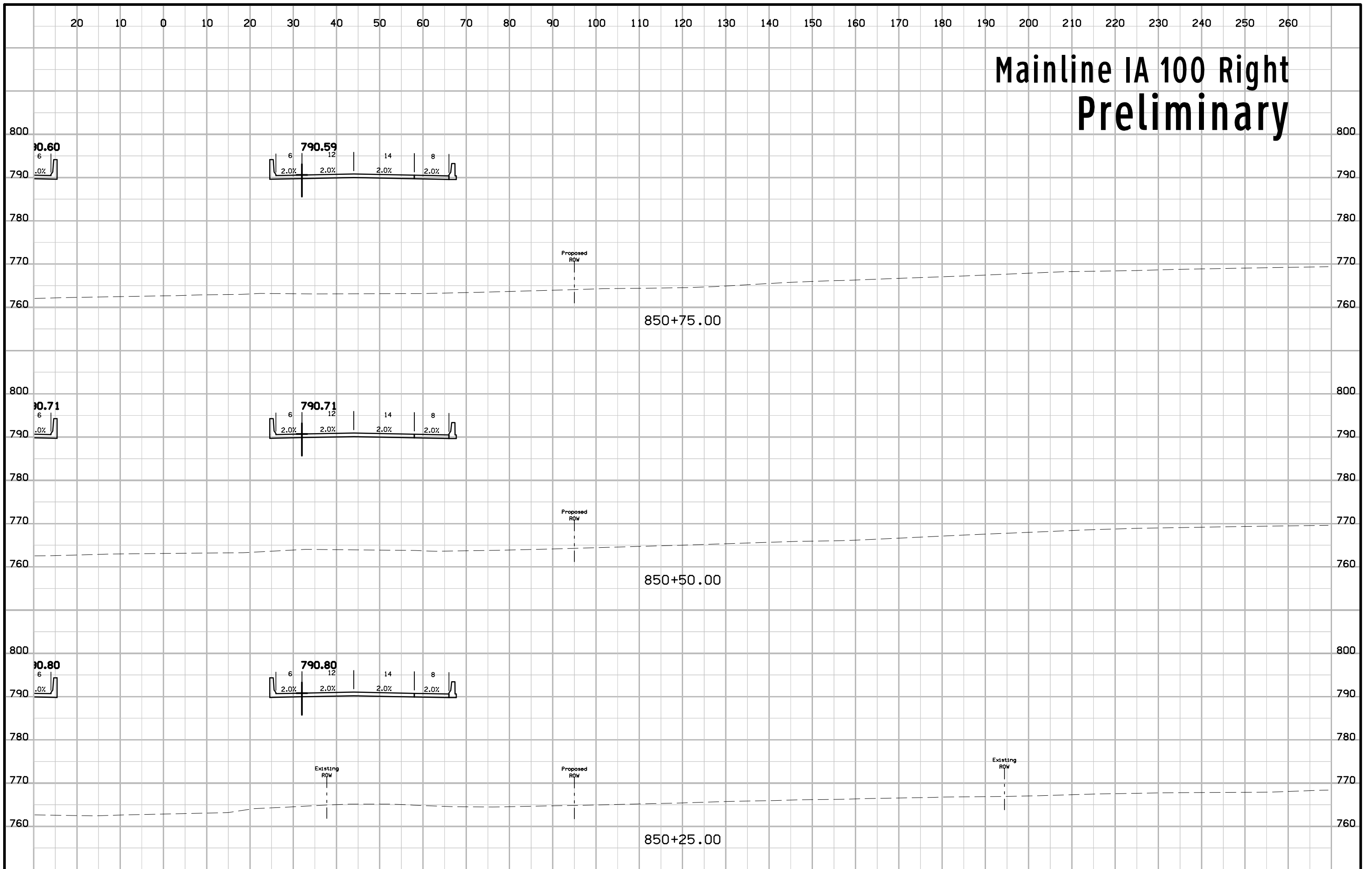
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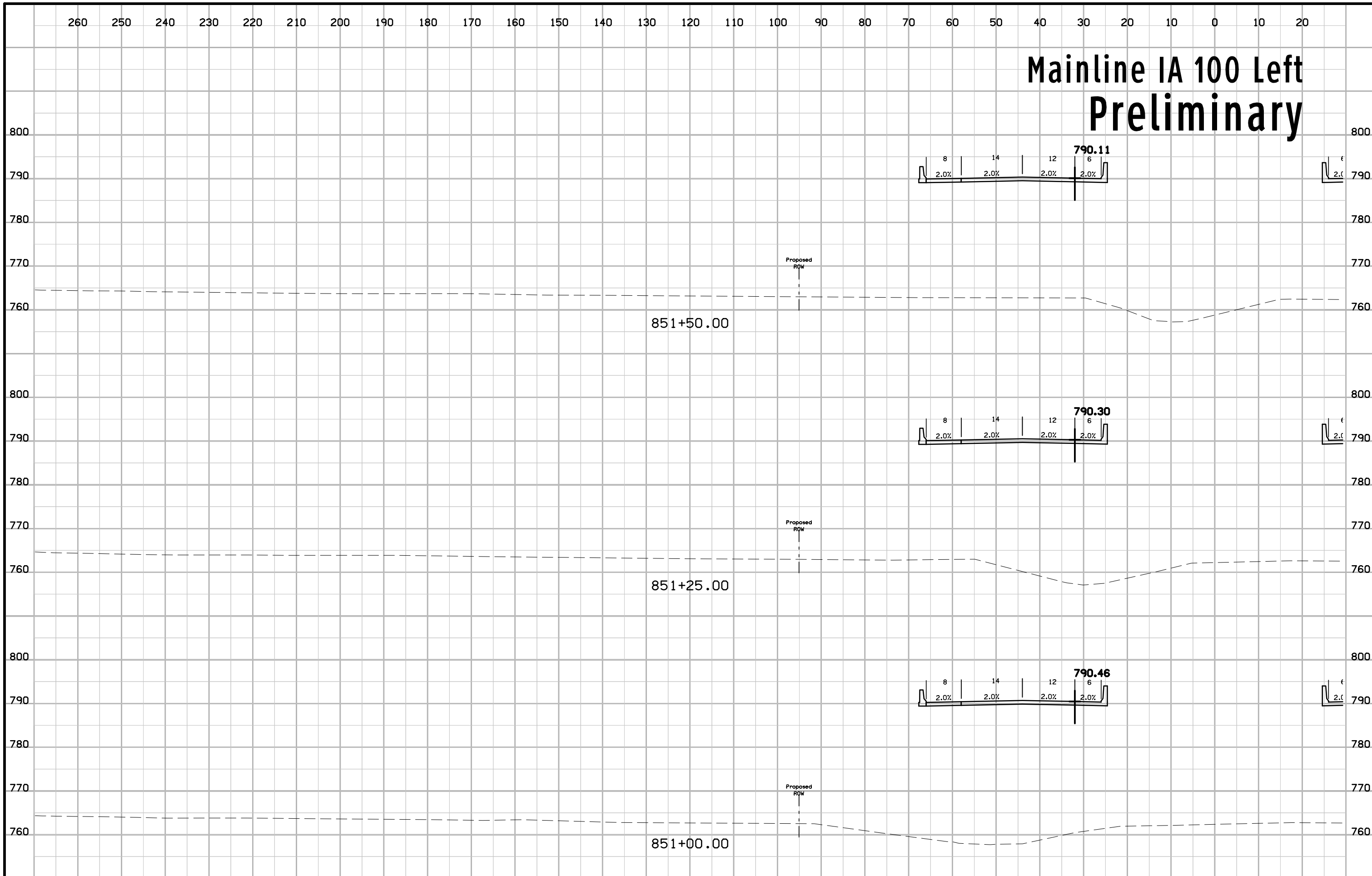
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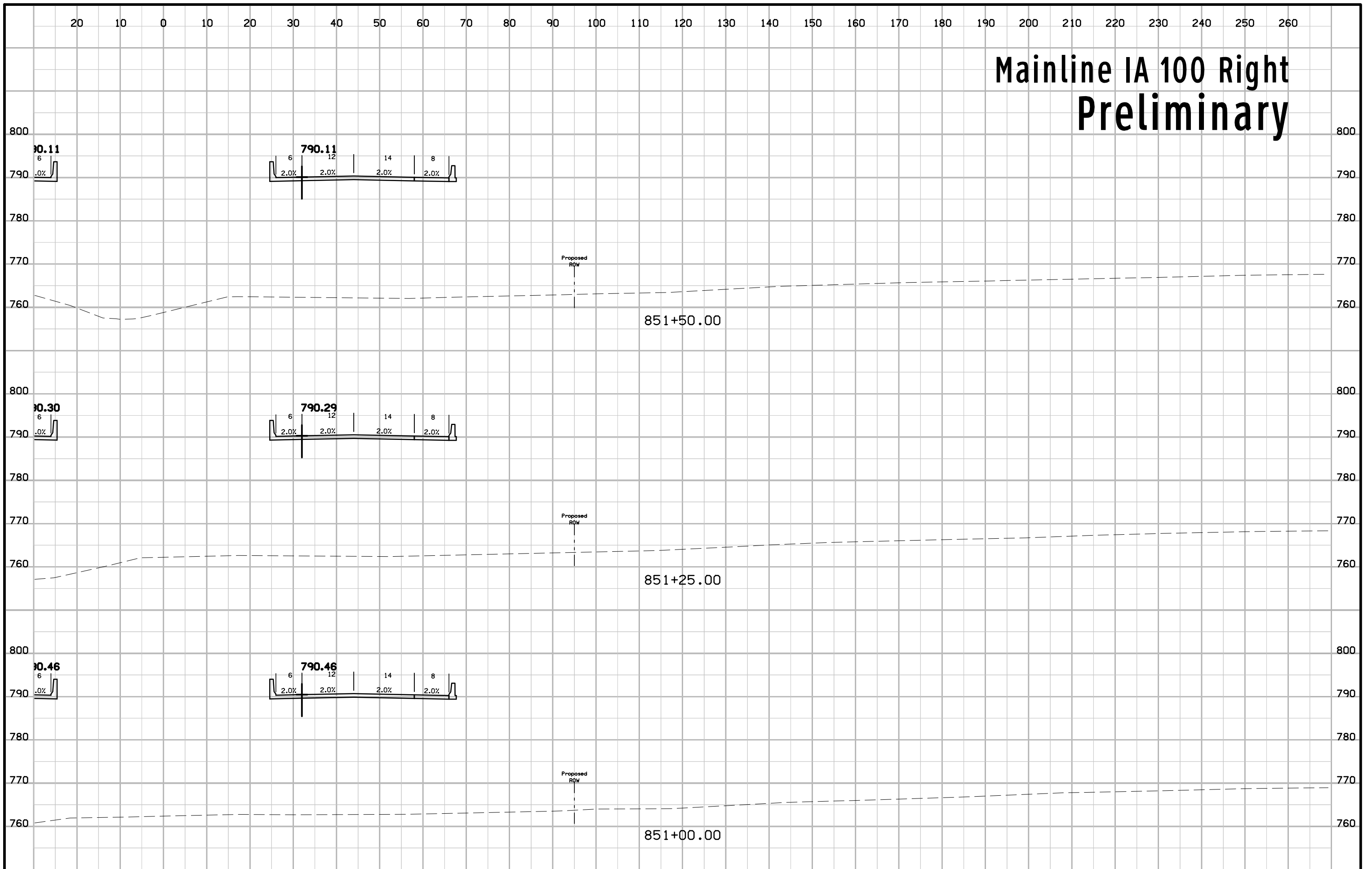
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# Mainline IA 100 Left Preliminary

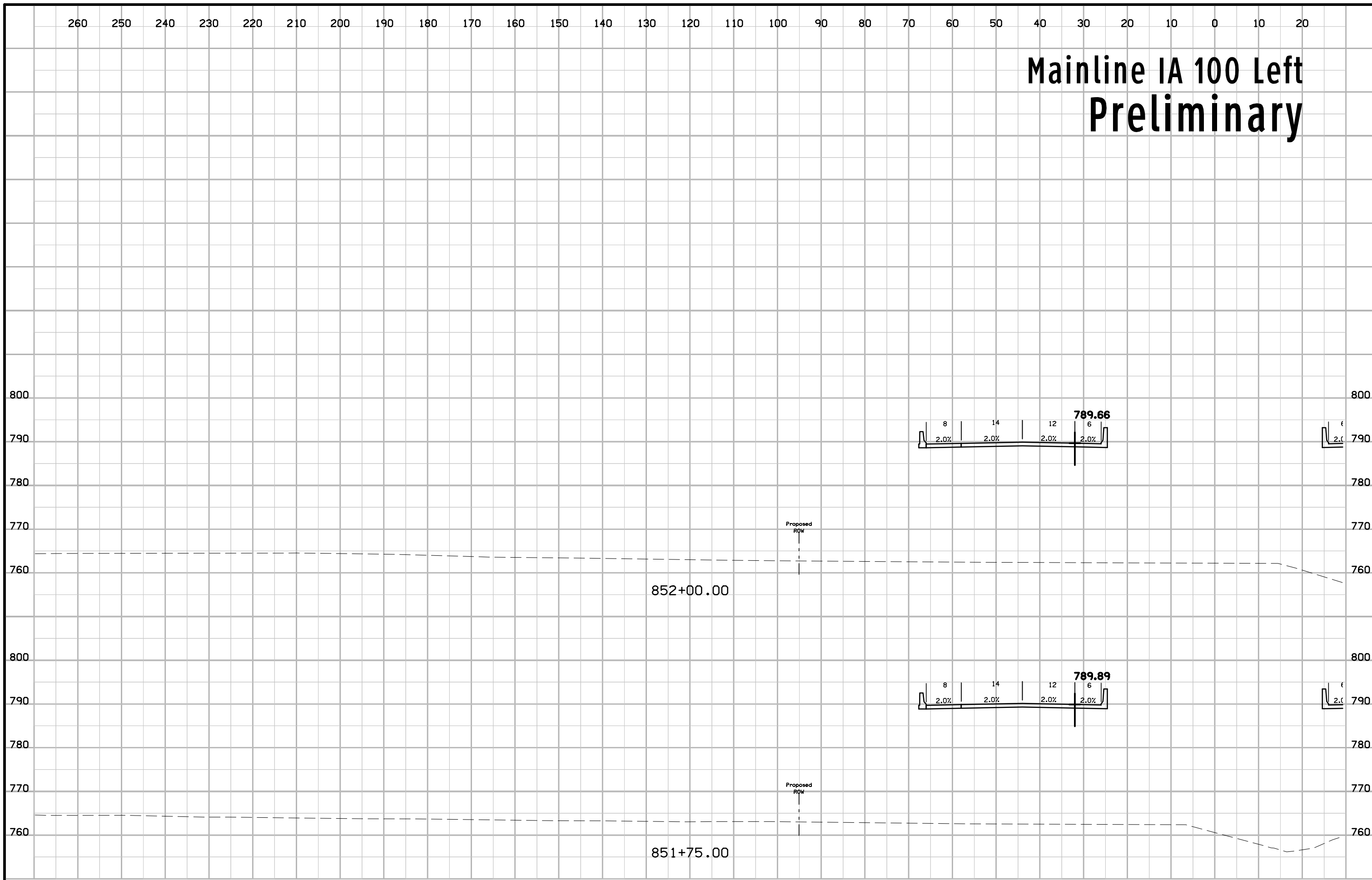


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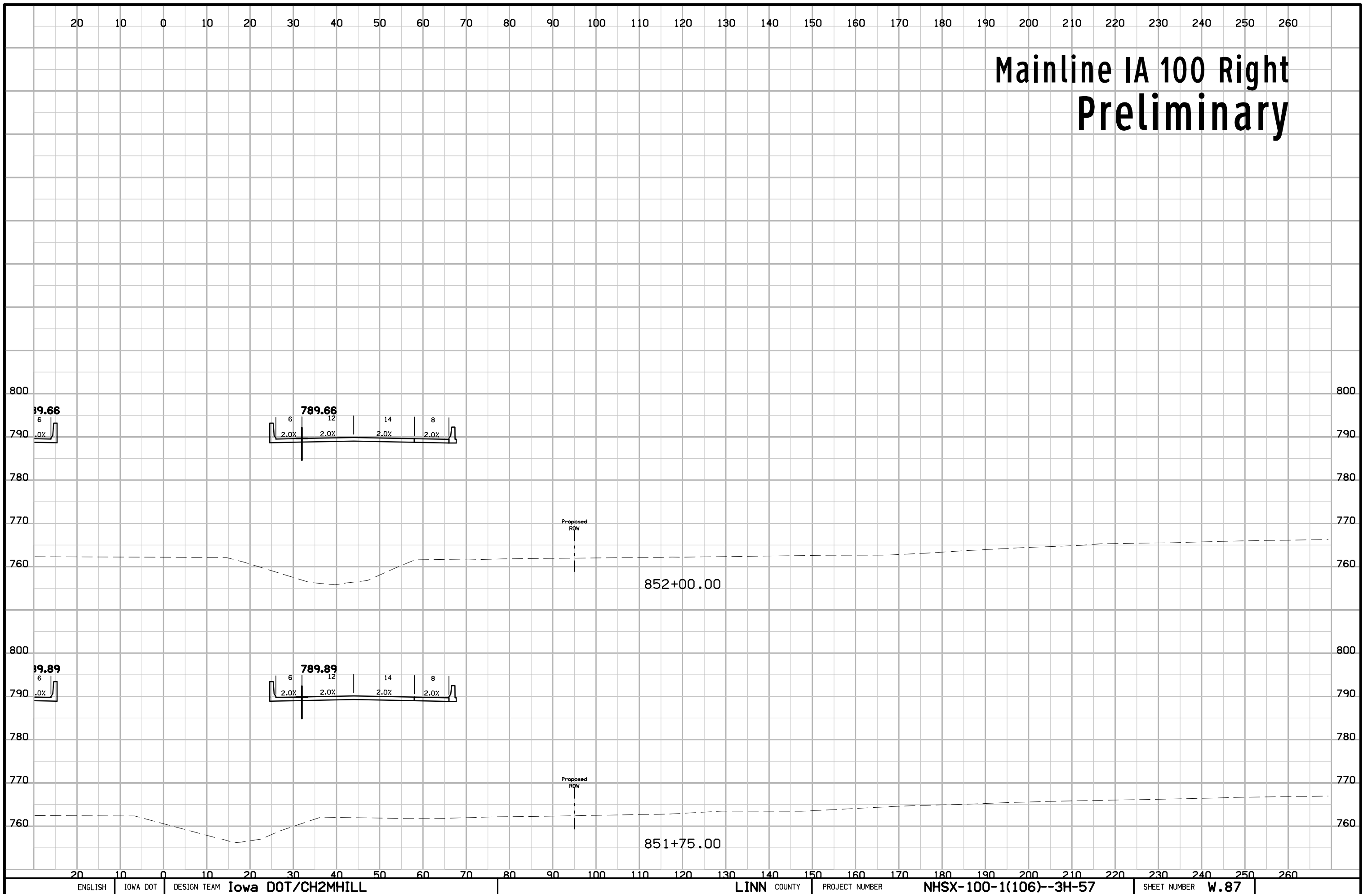




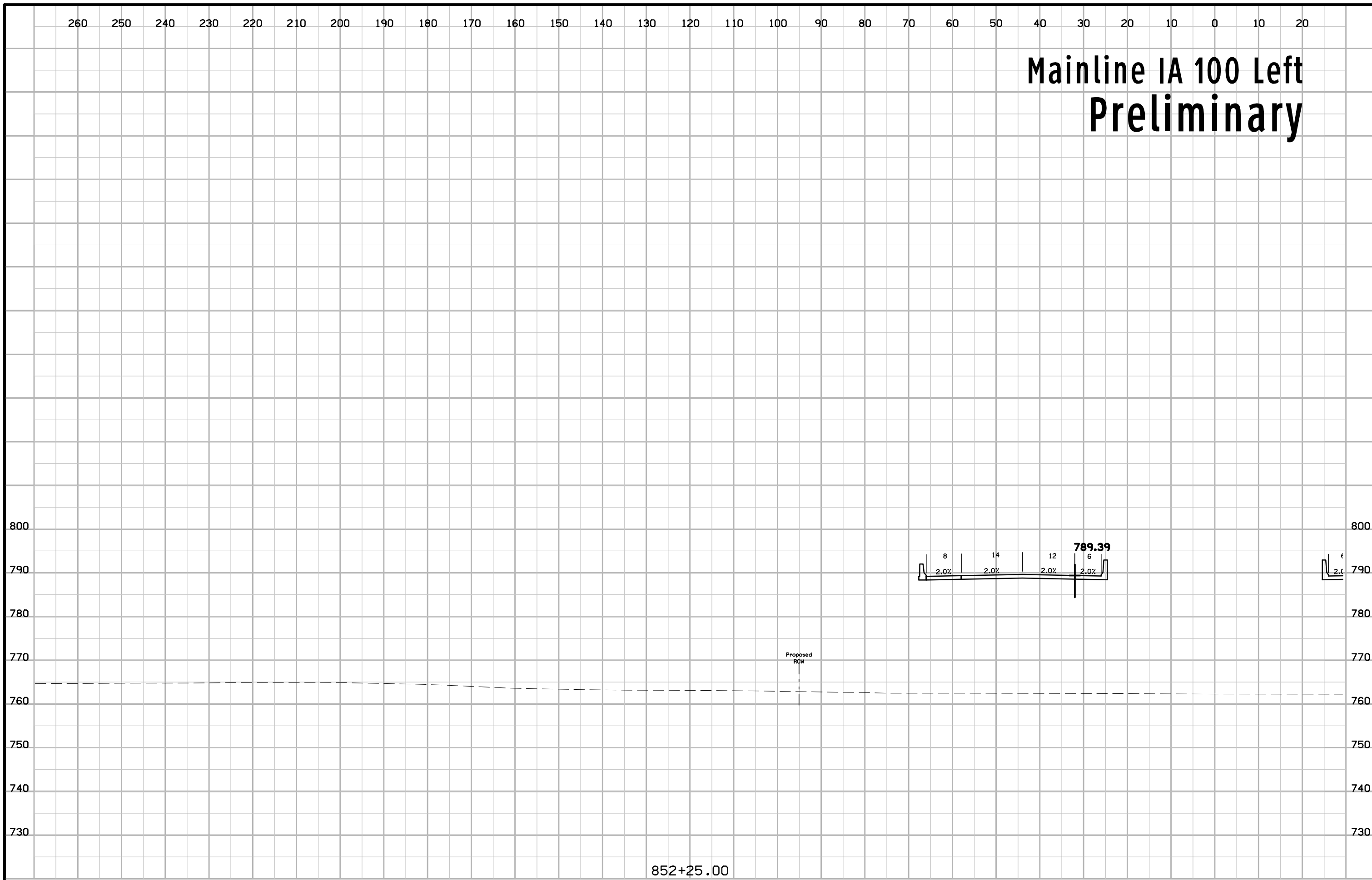
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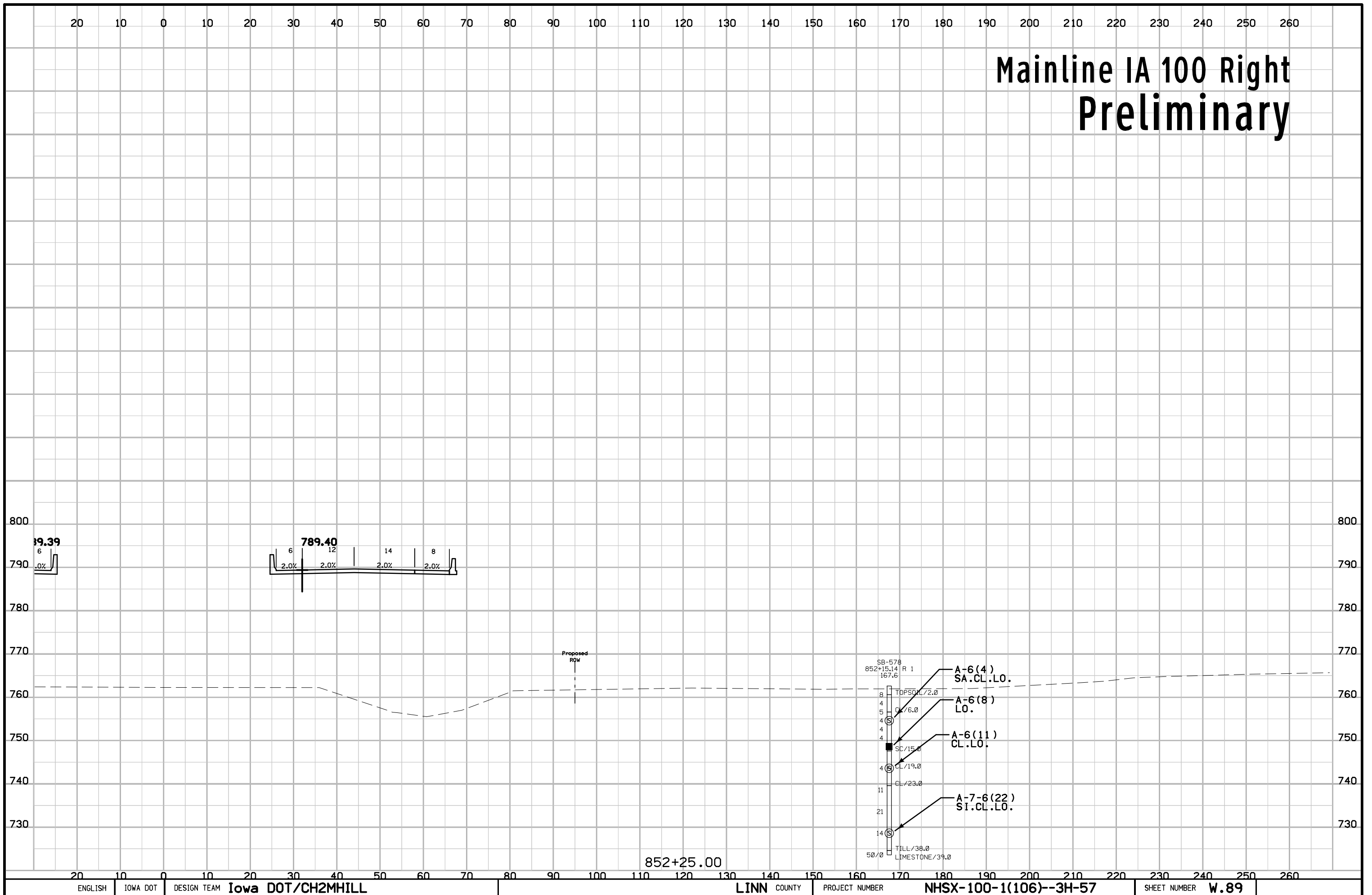
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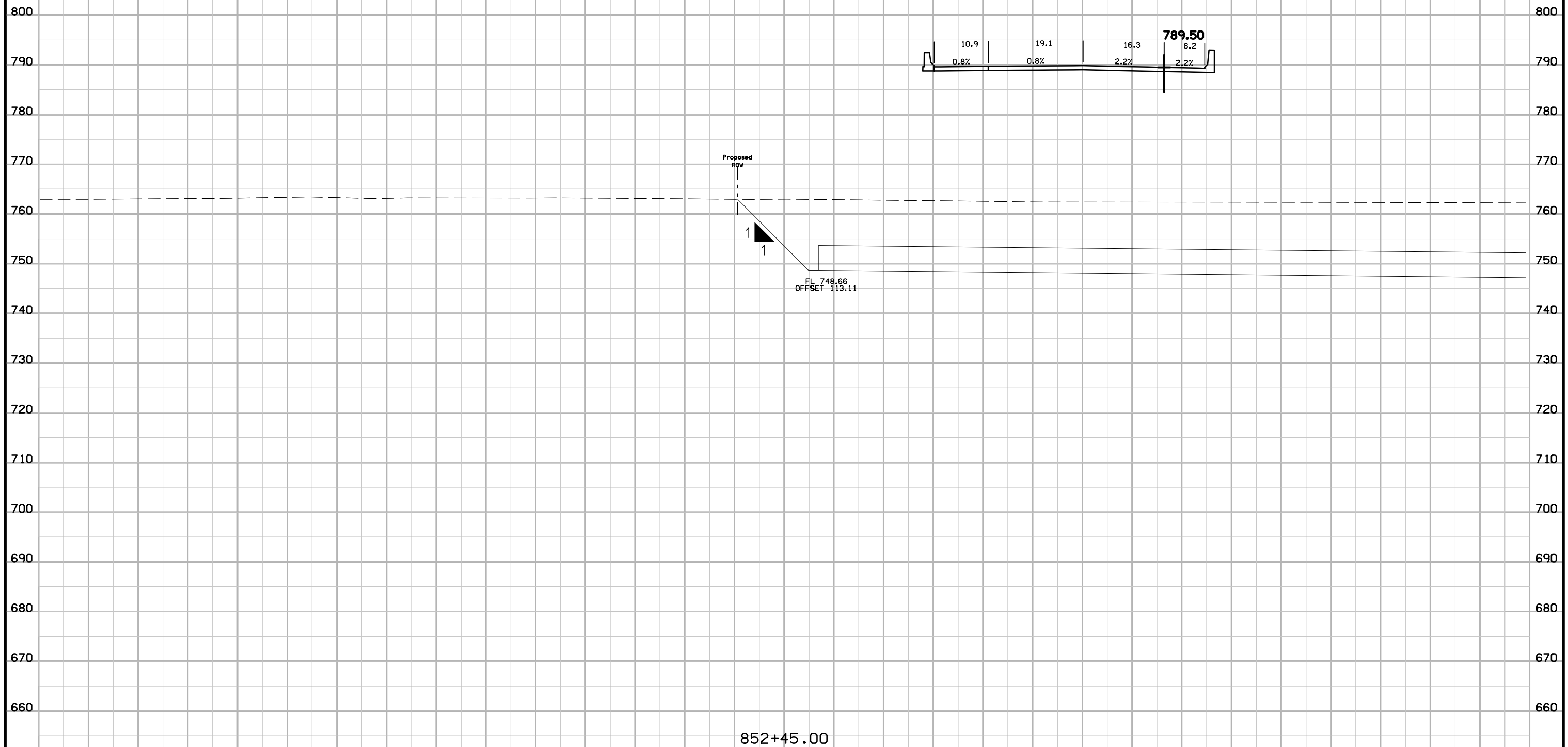
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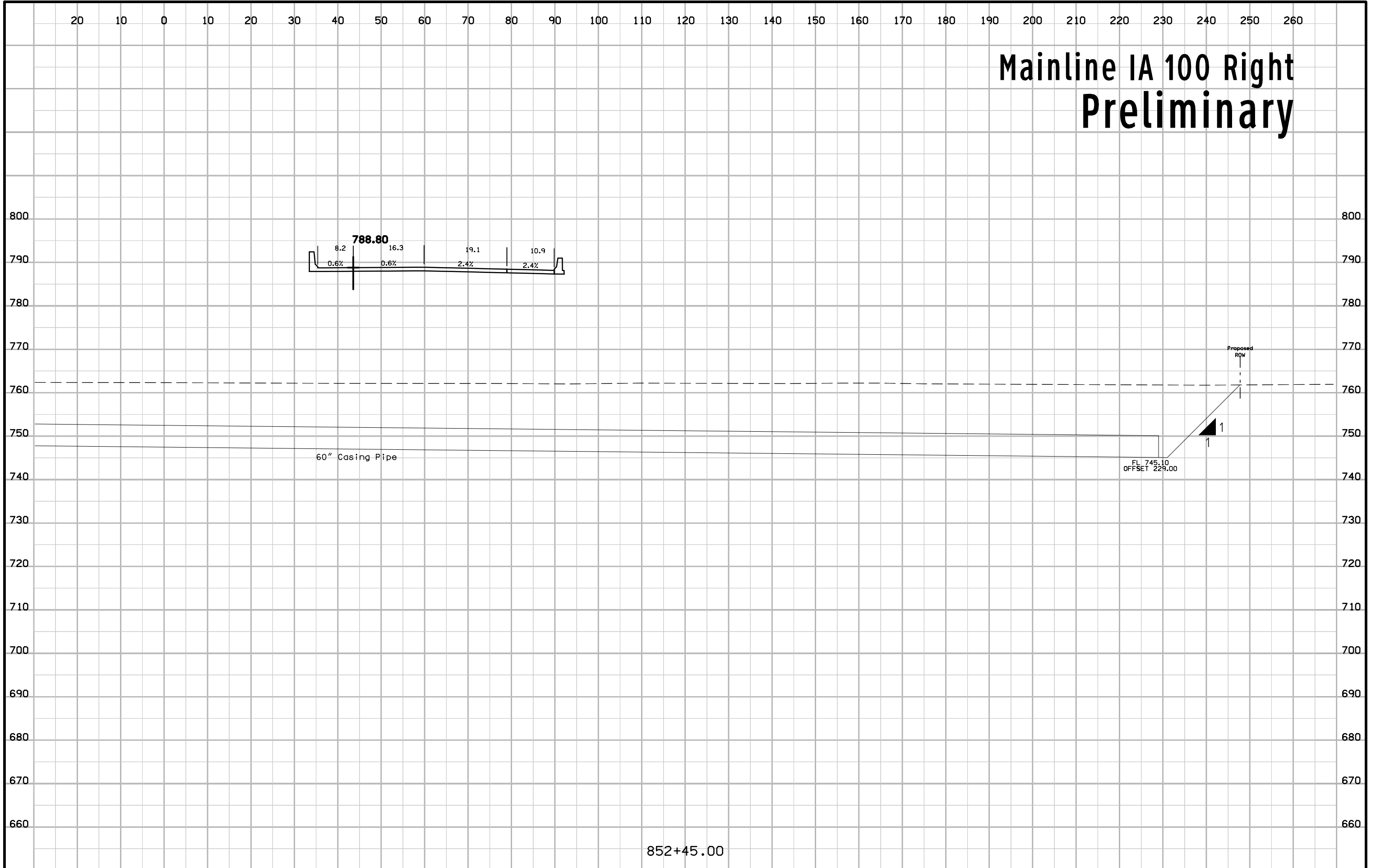
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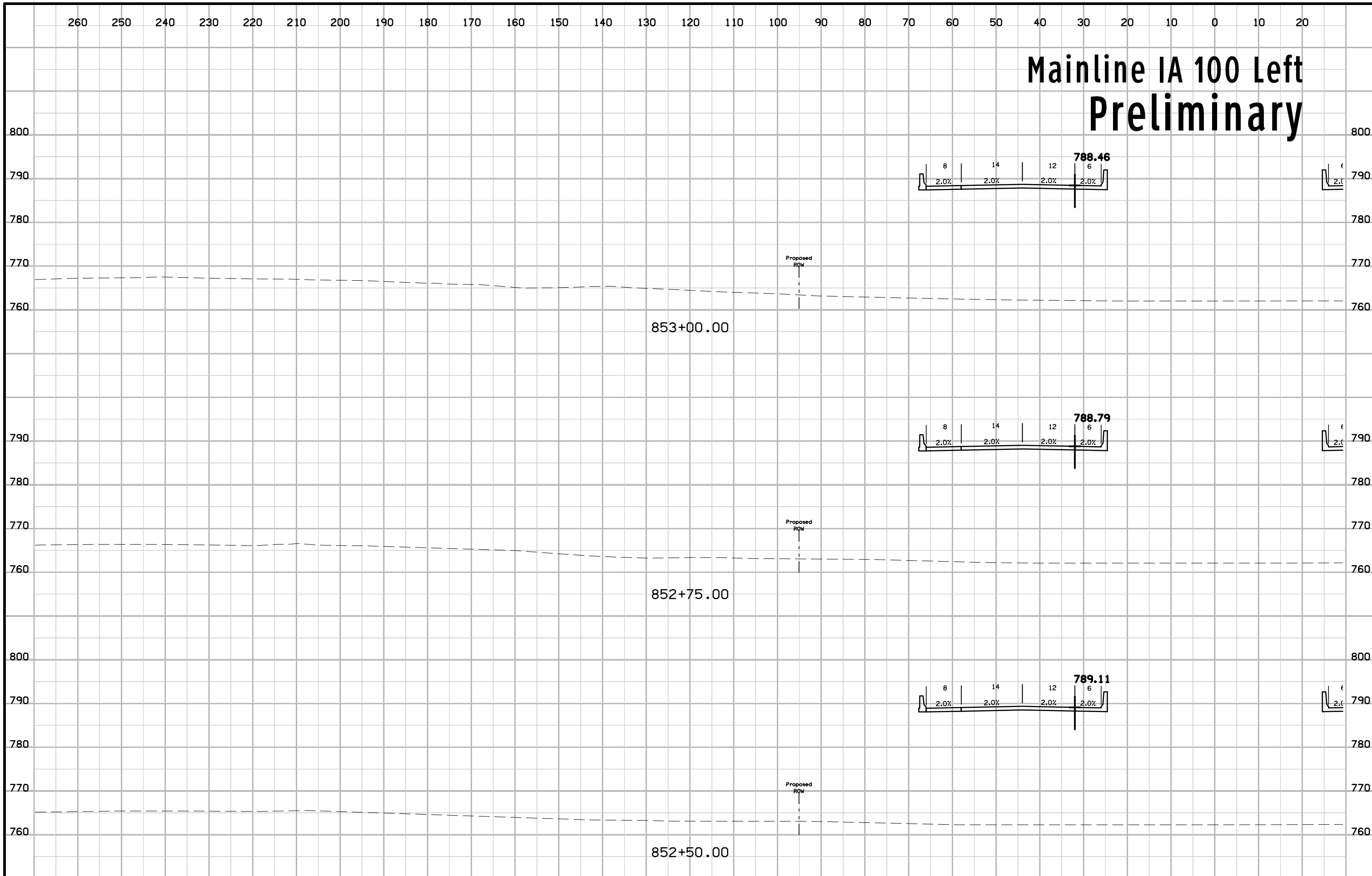
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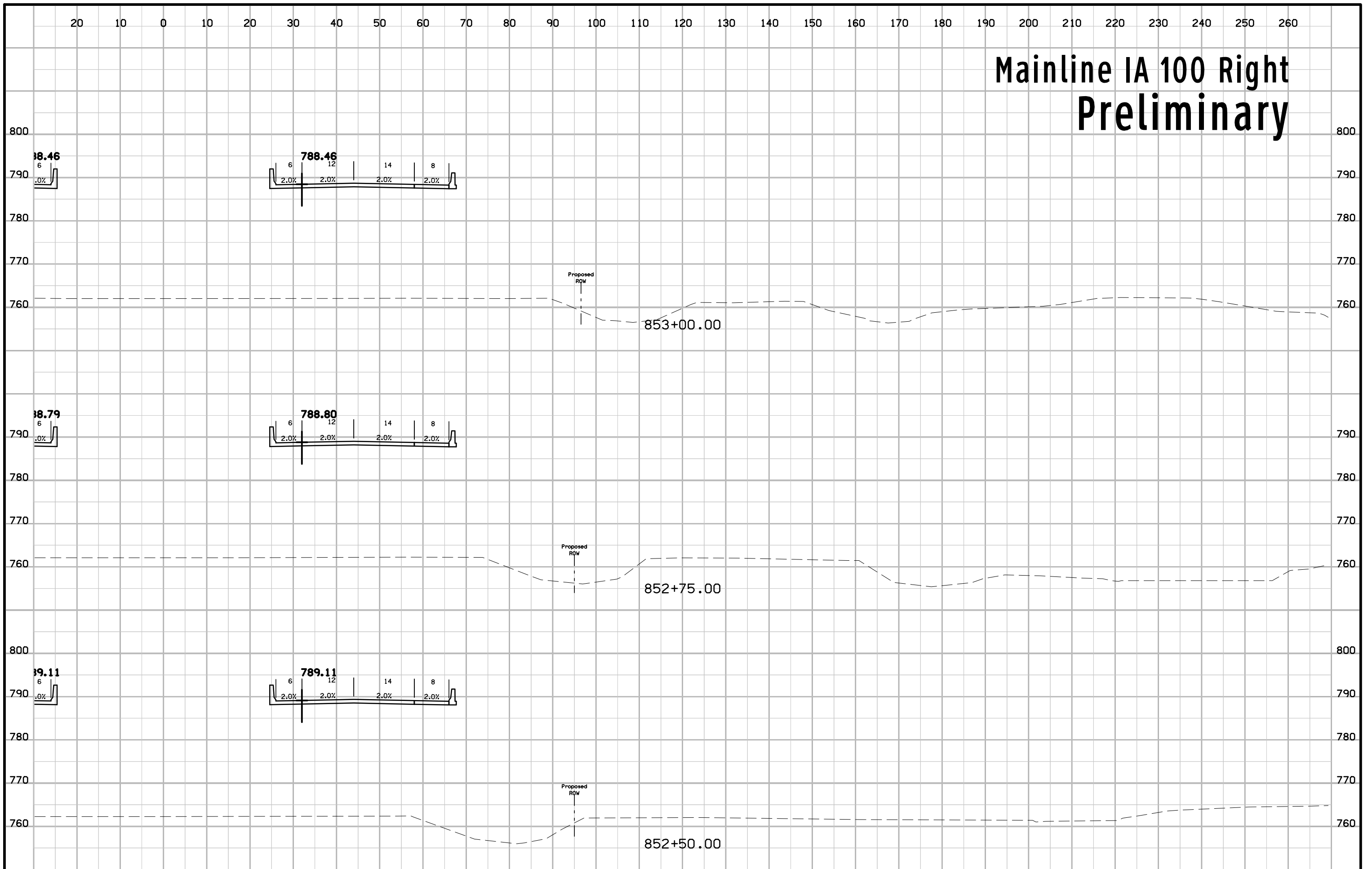
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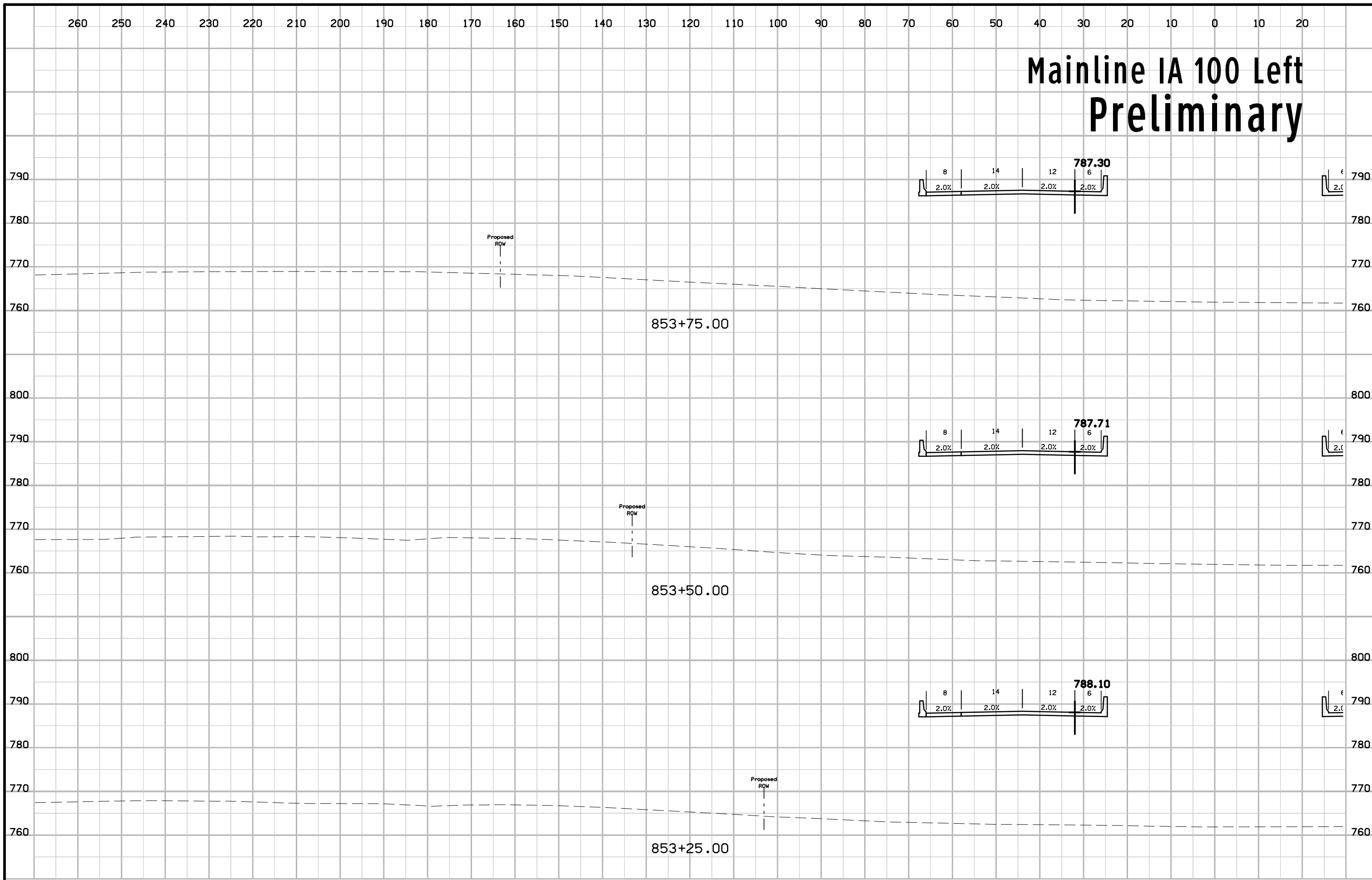


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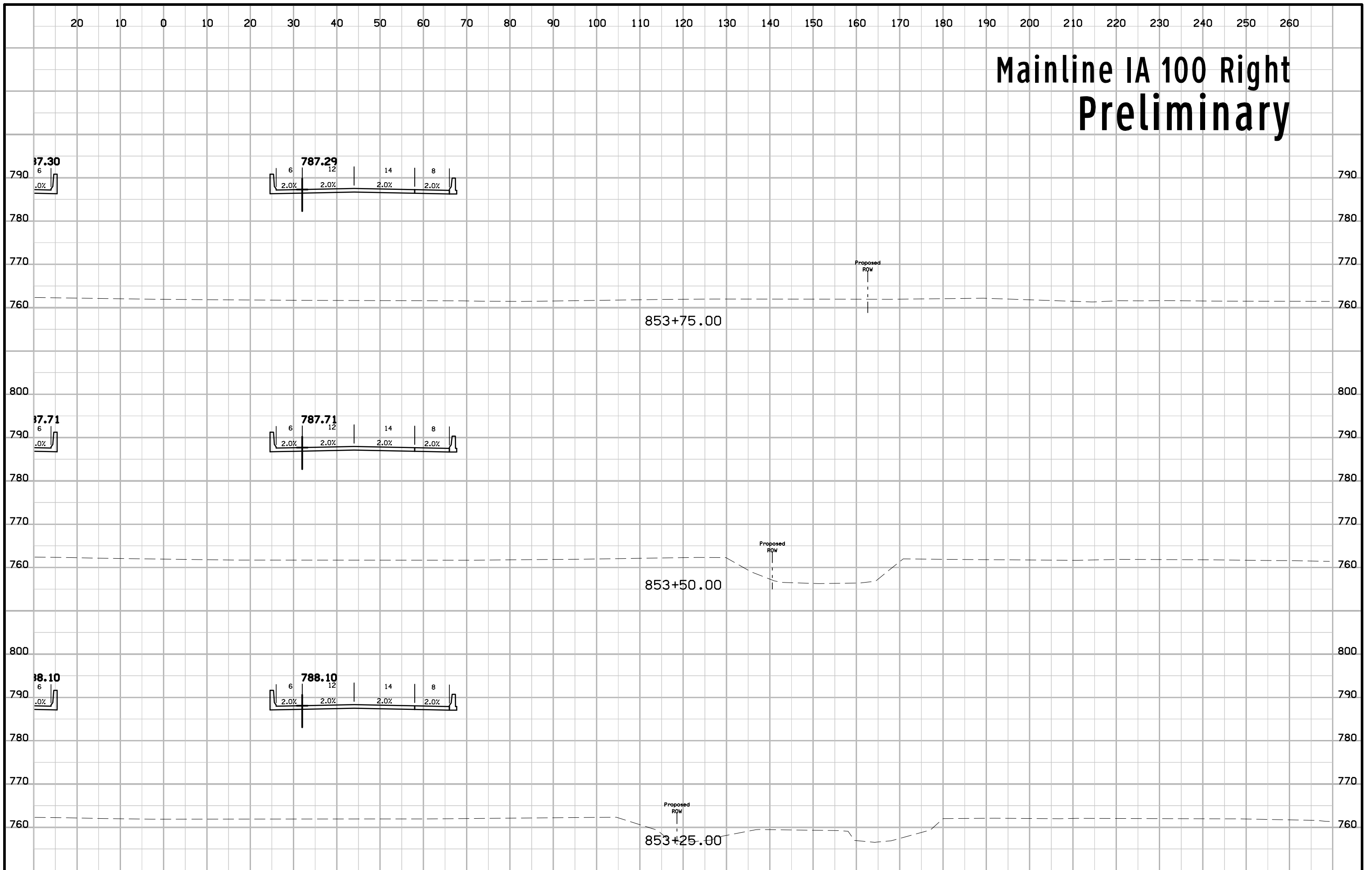




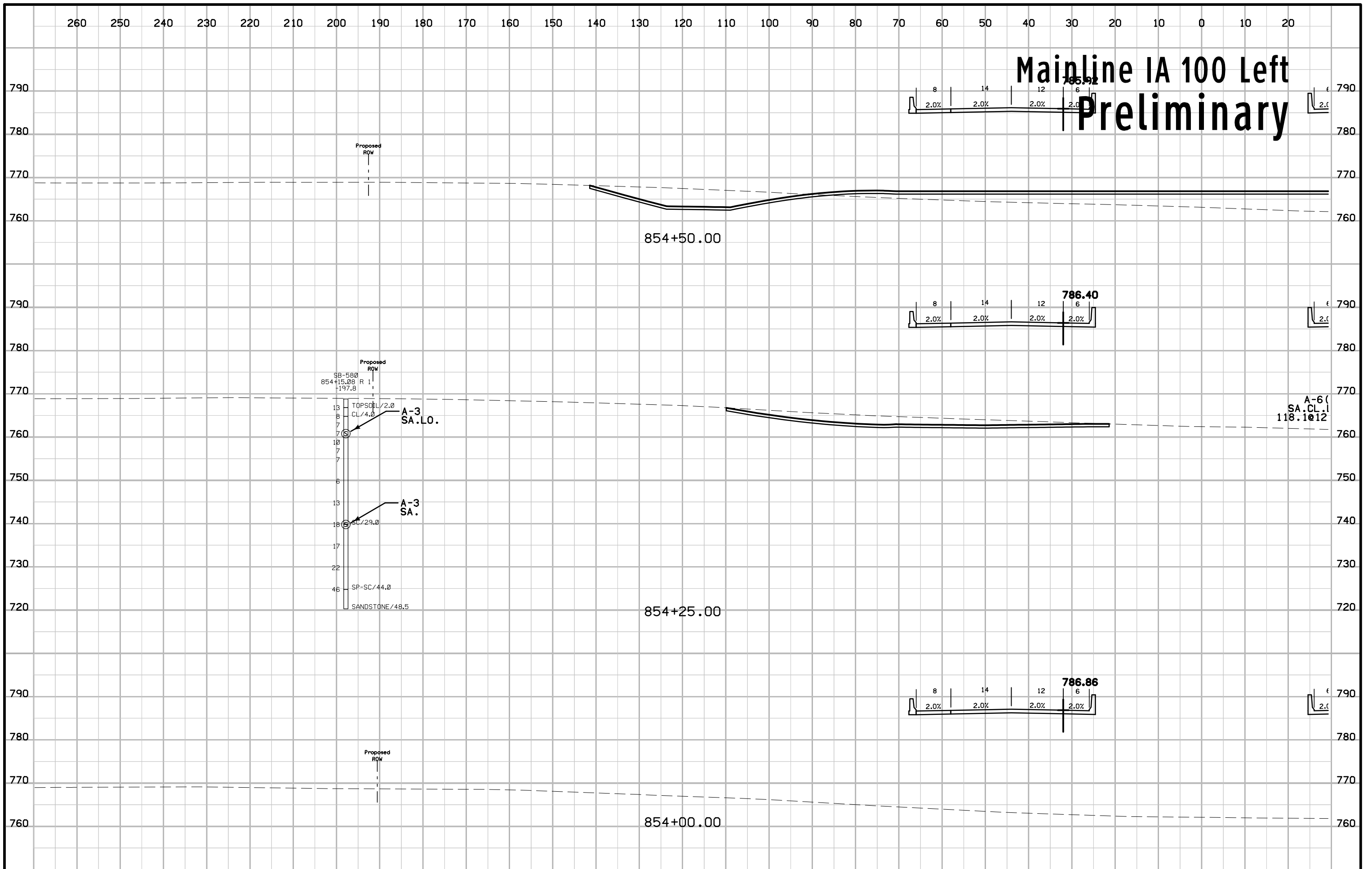
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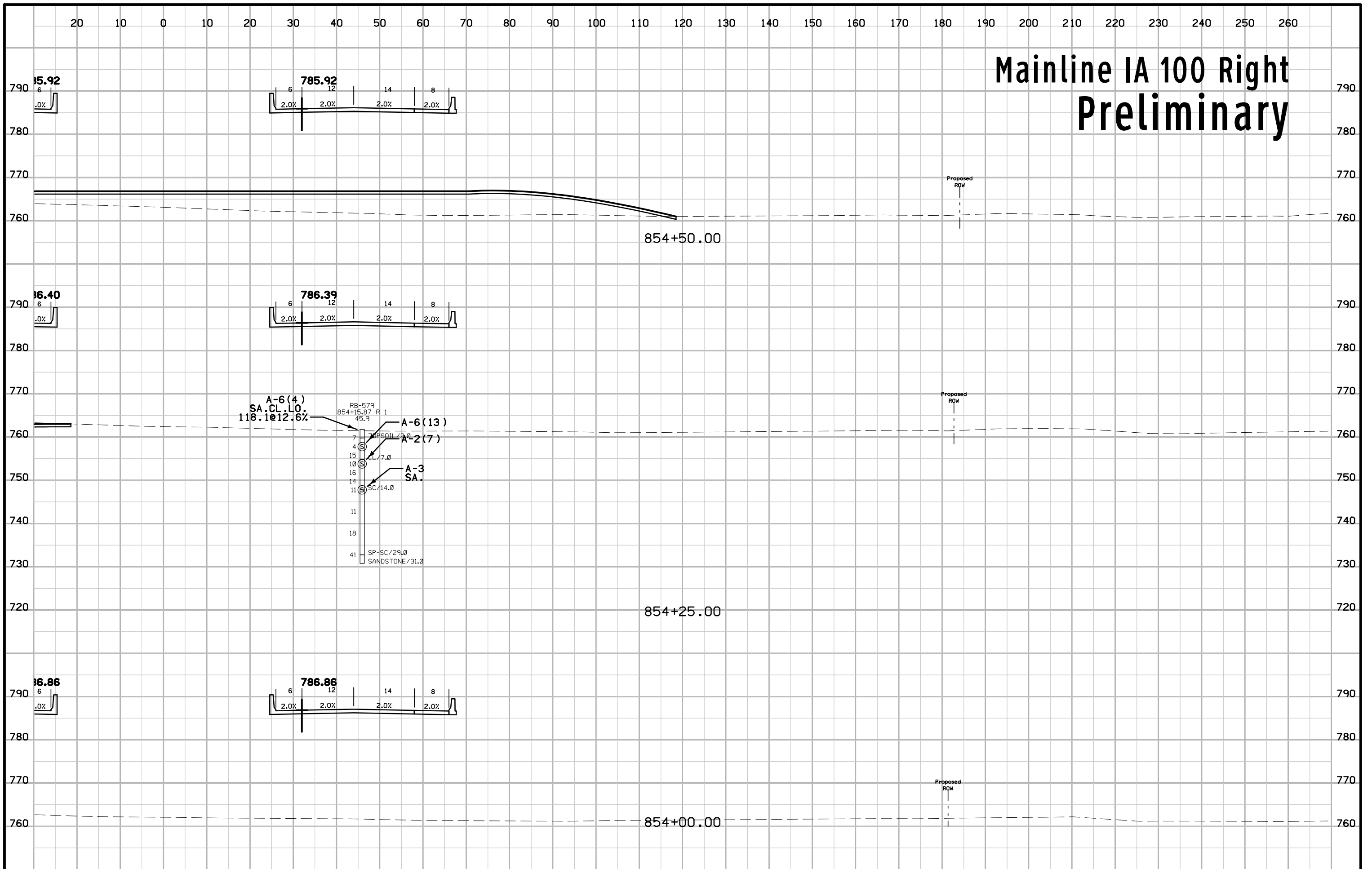
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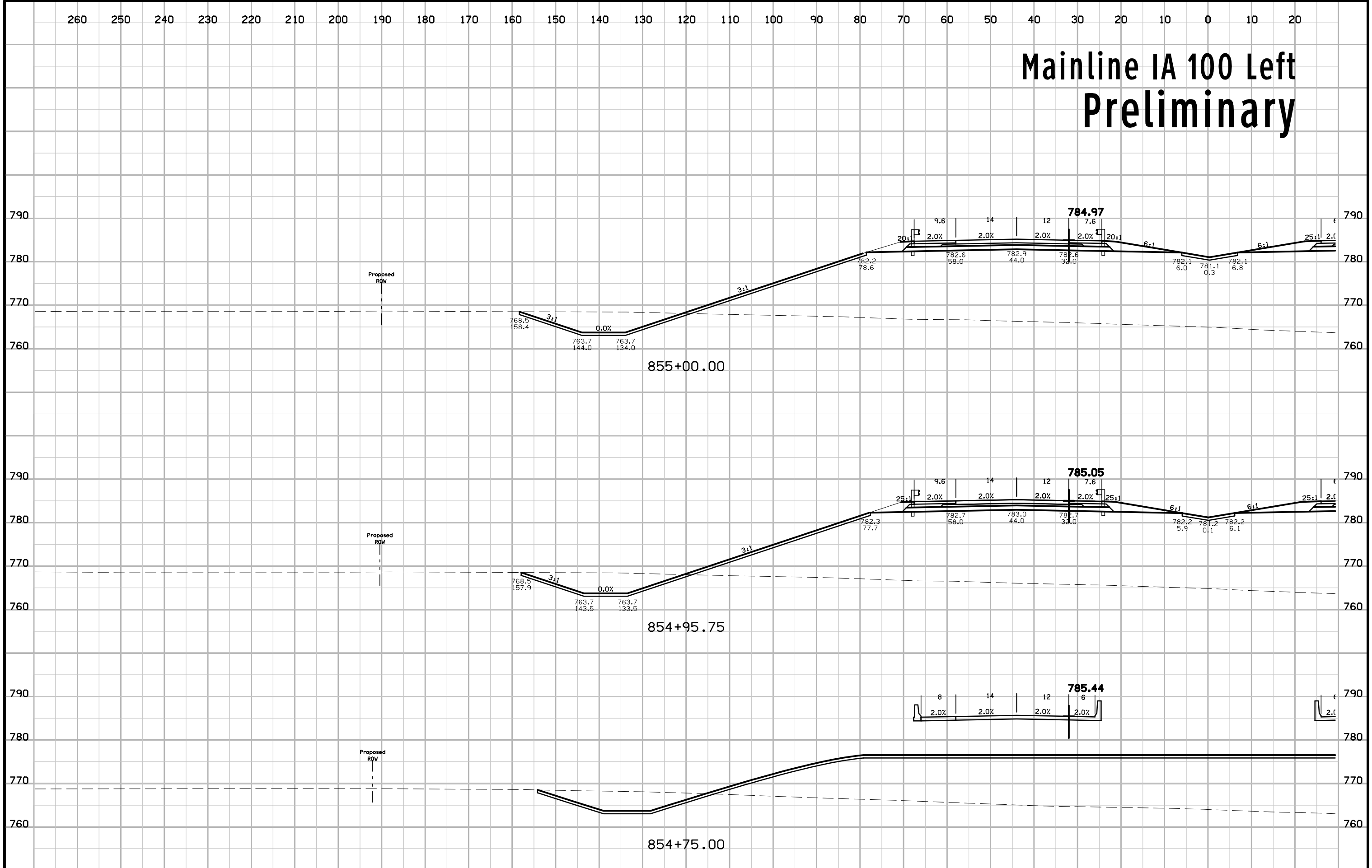
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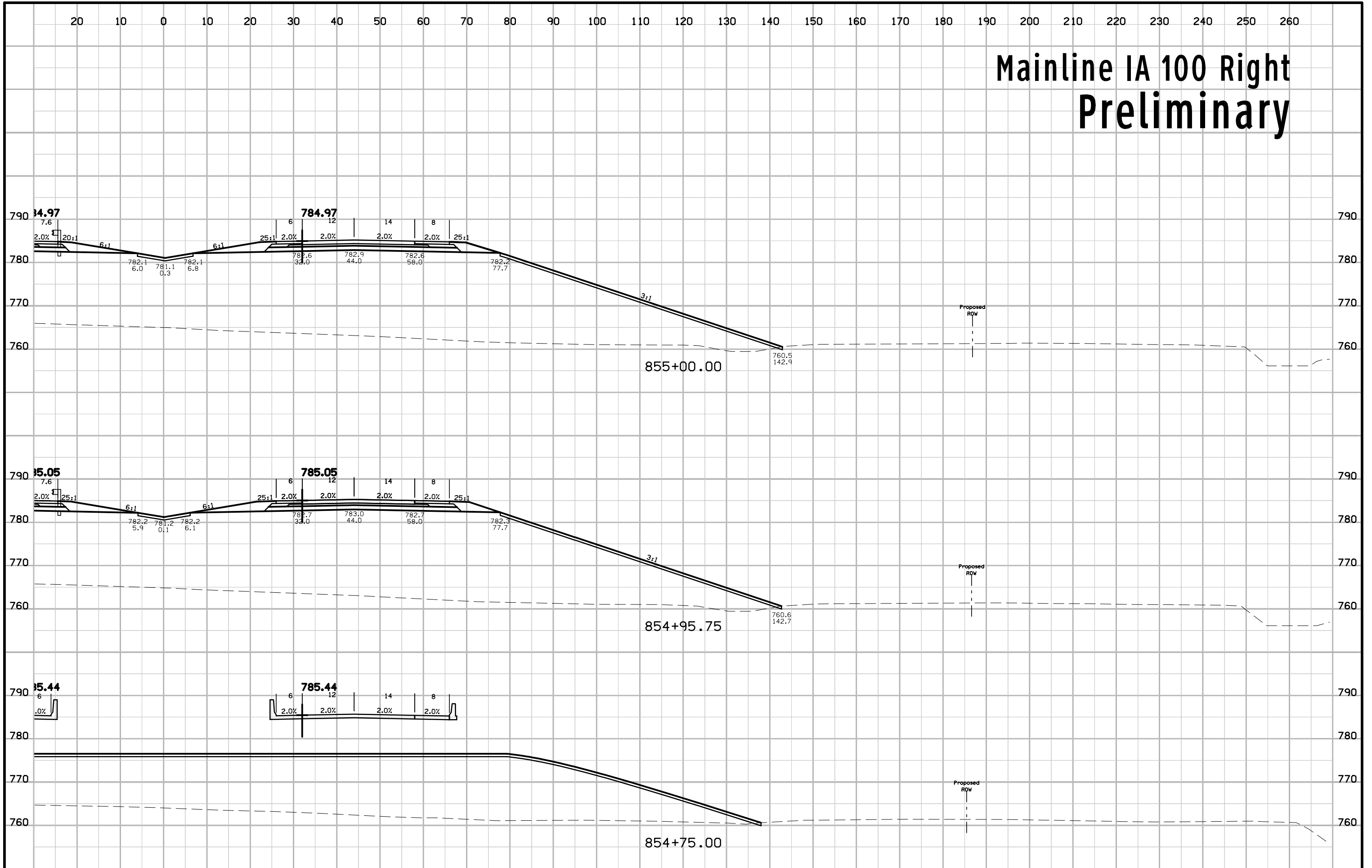
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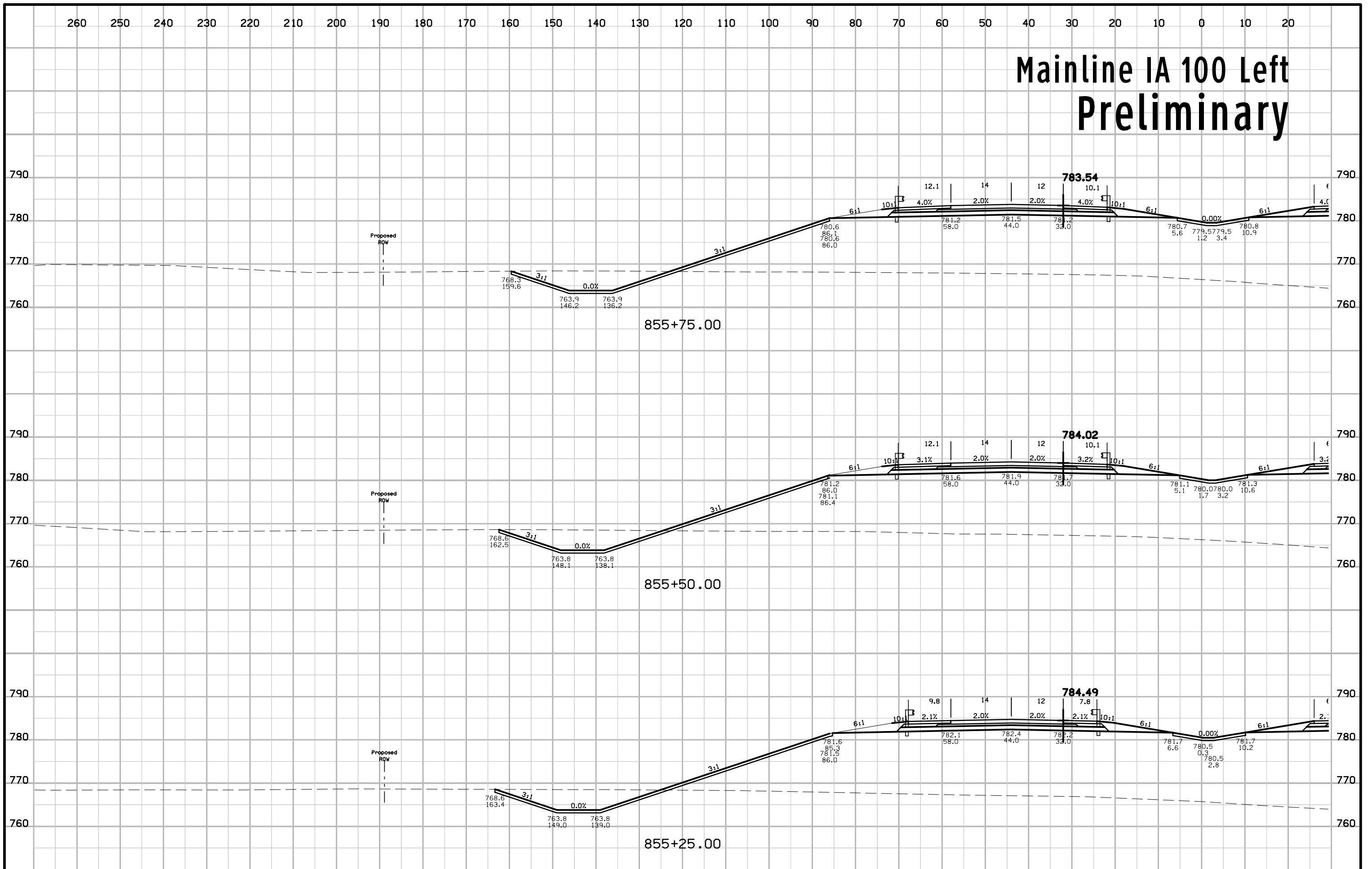
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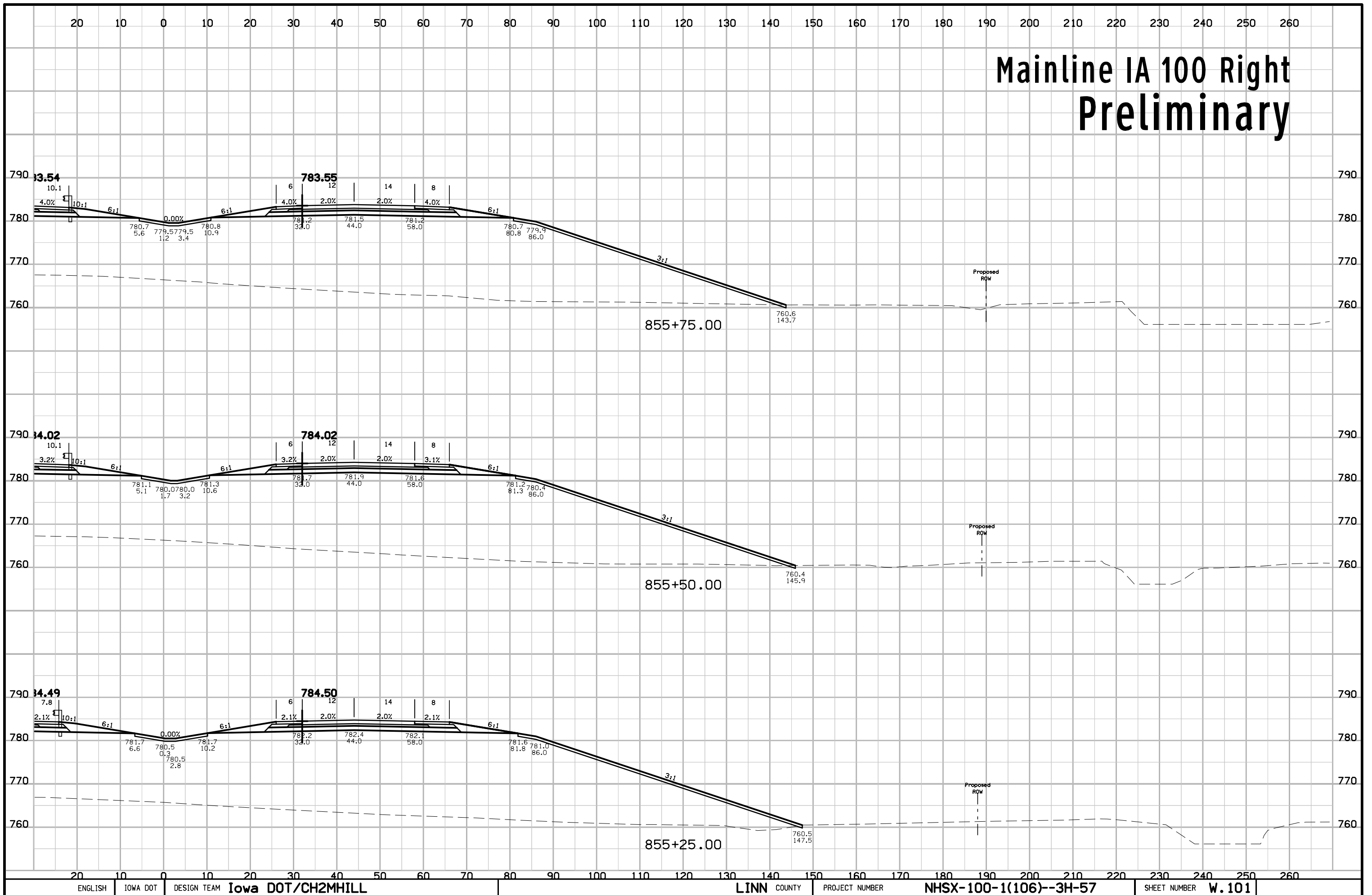
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# Mainline IA 100 Left Preliminary

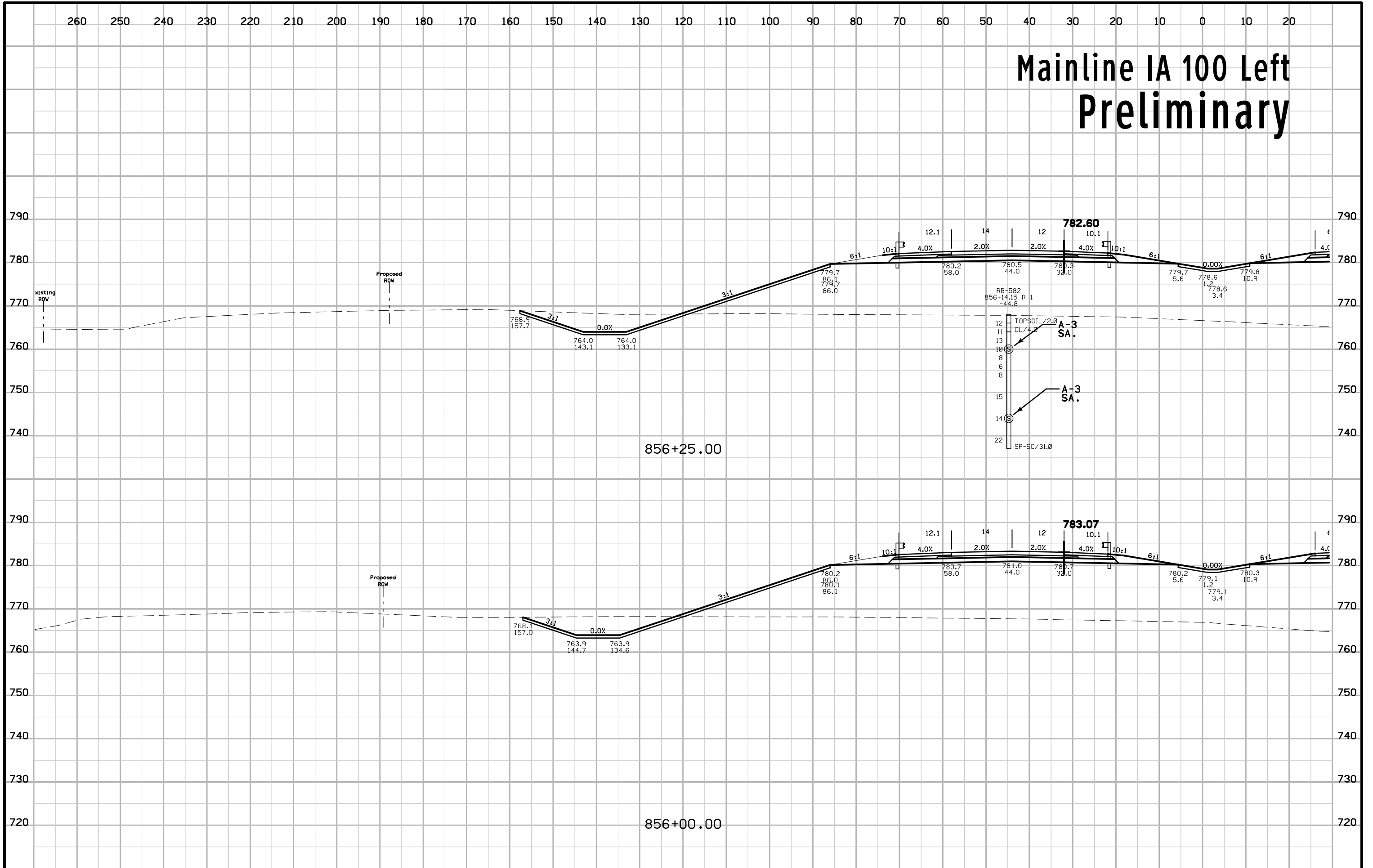


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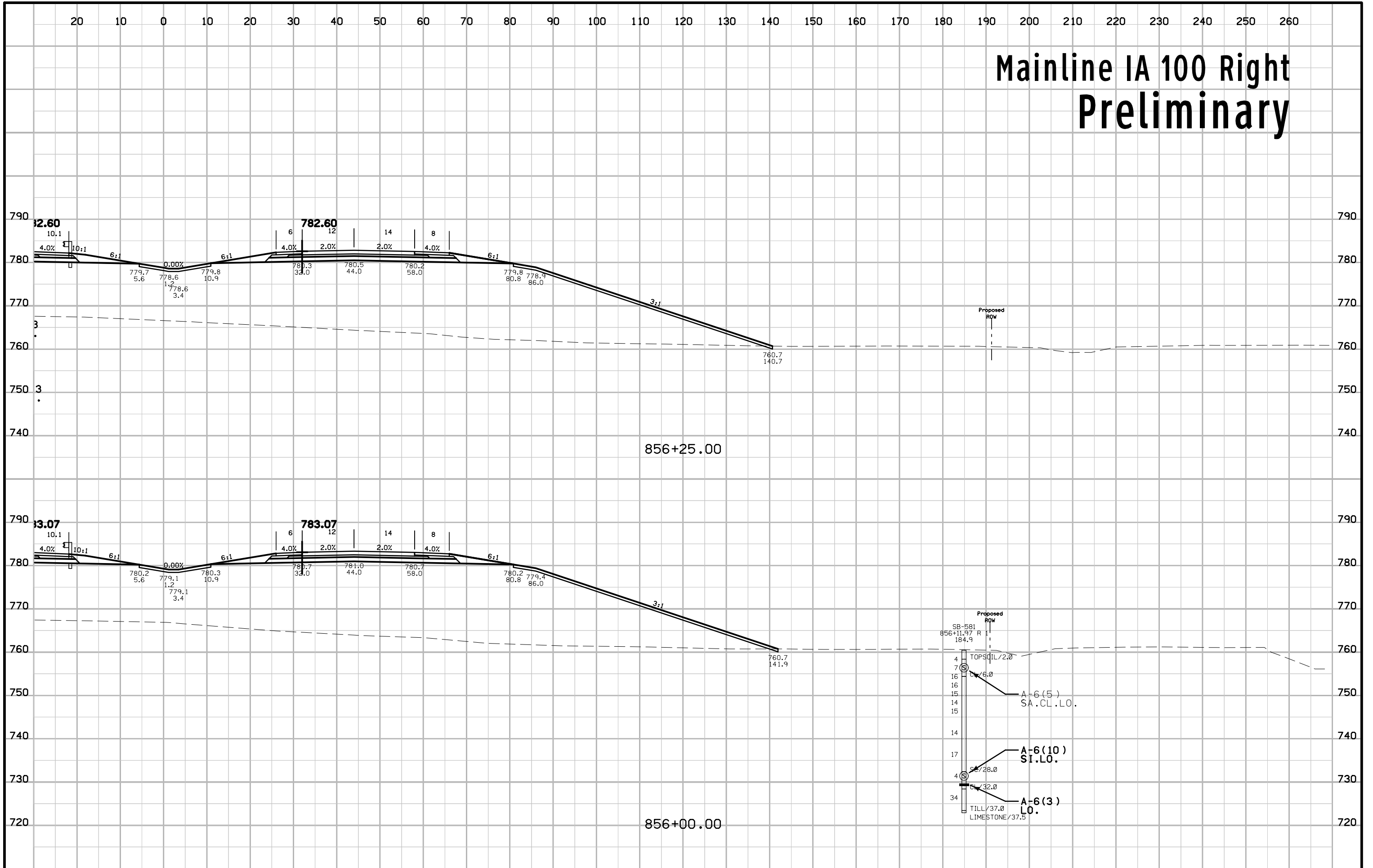




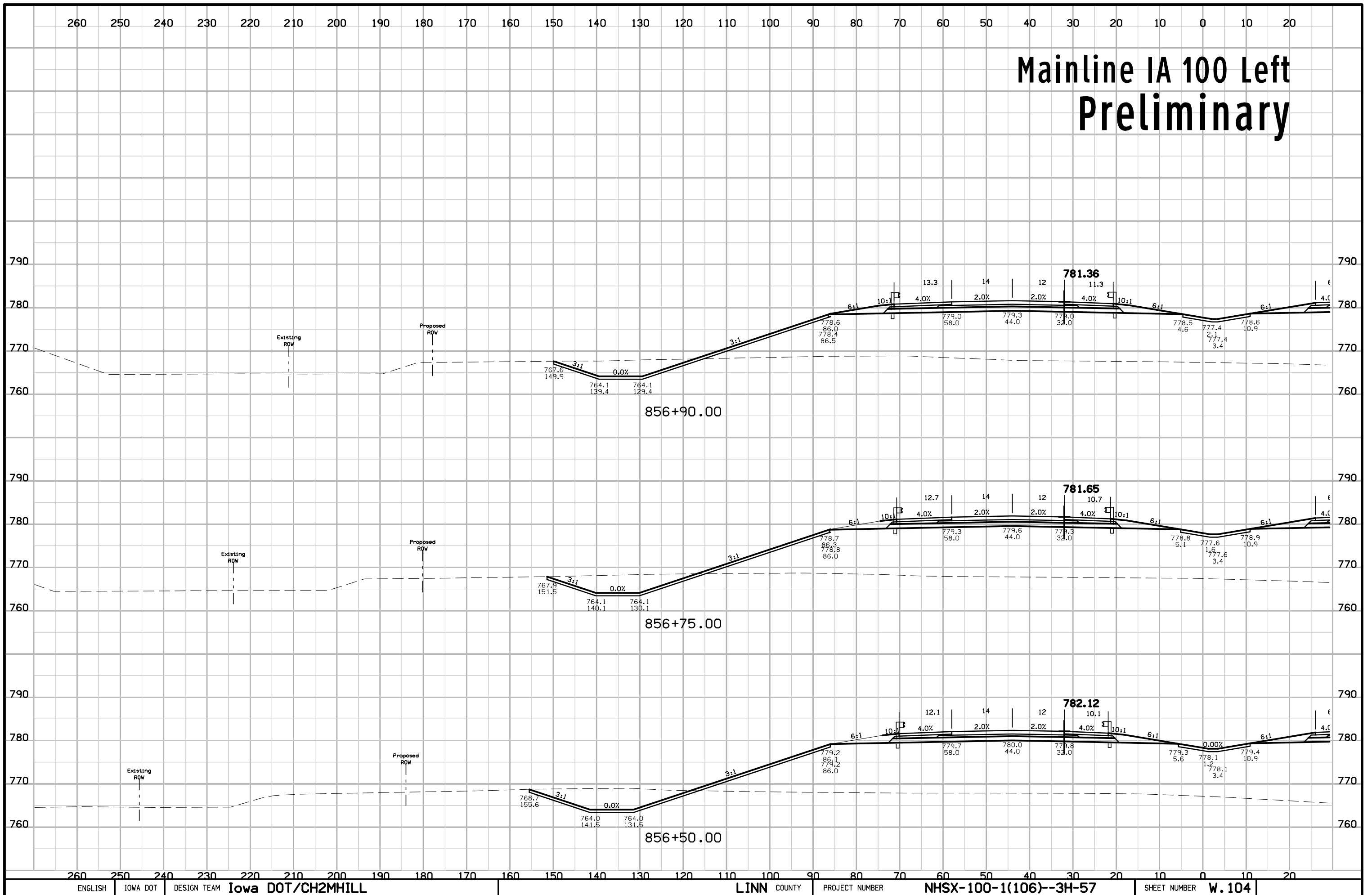
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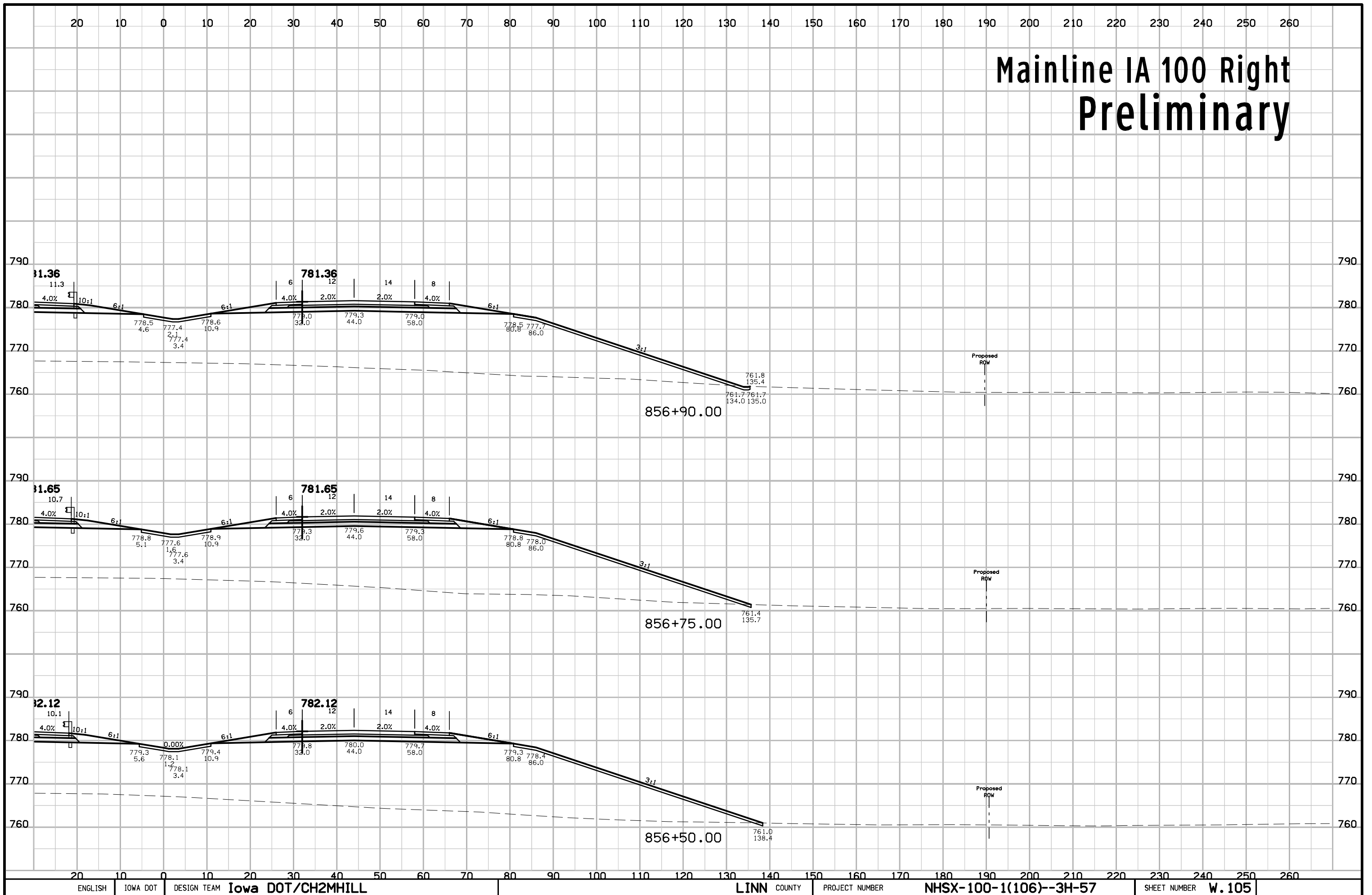
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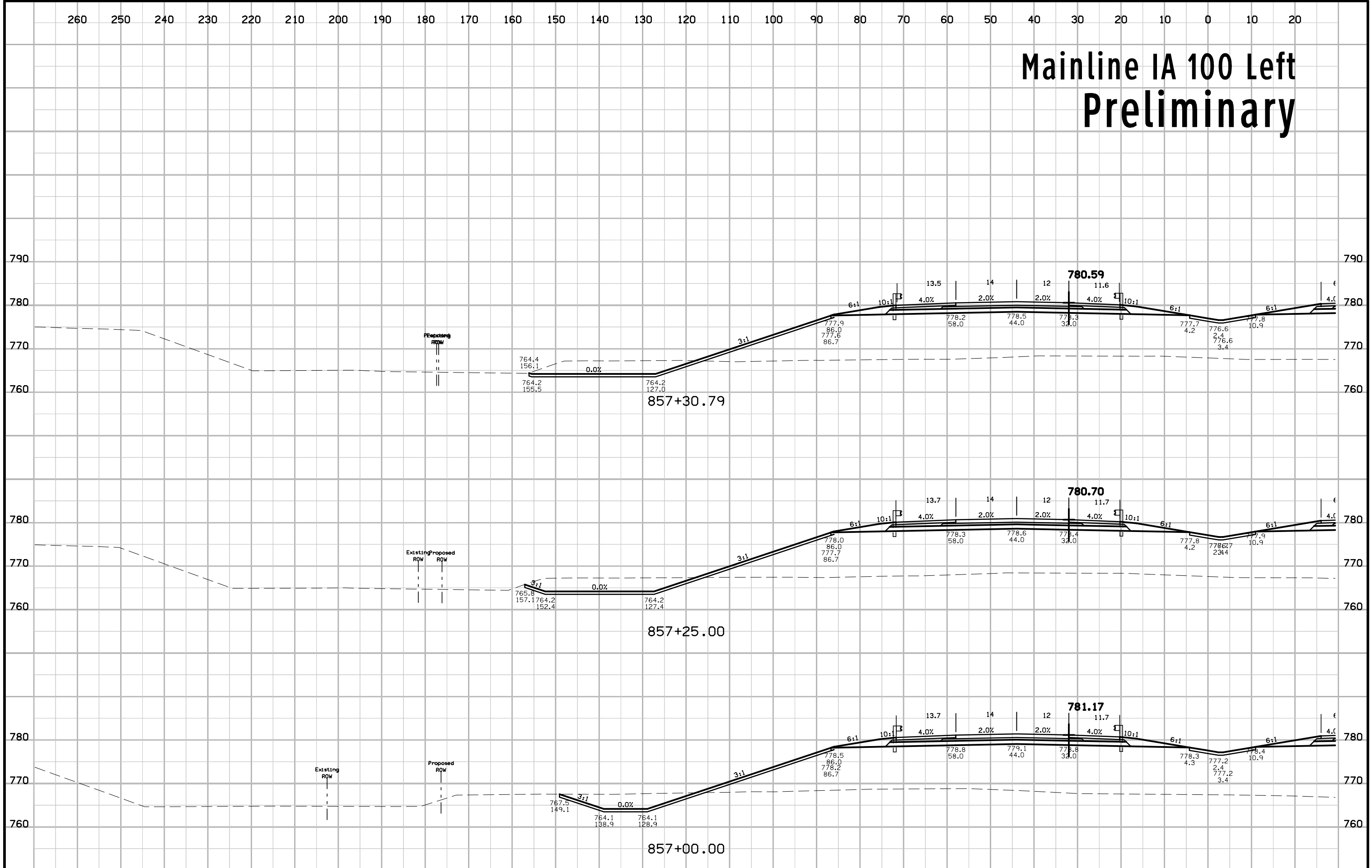
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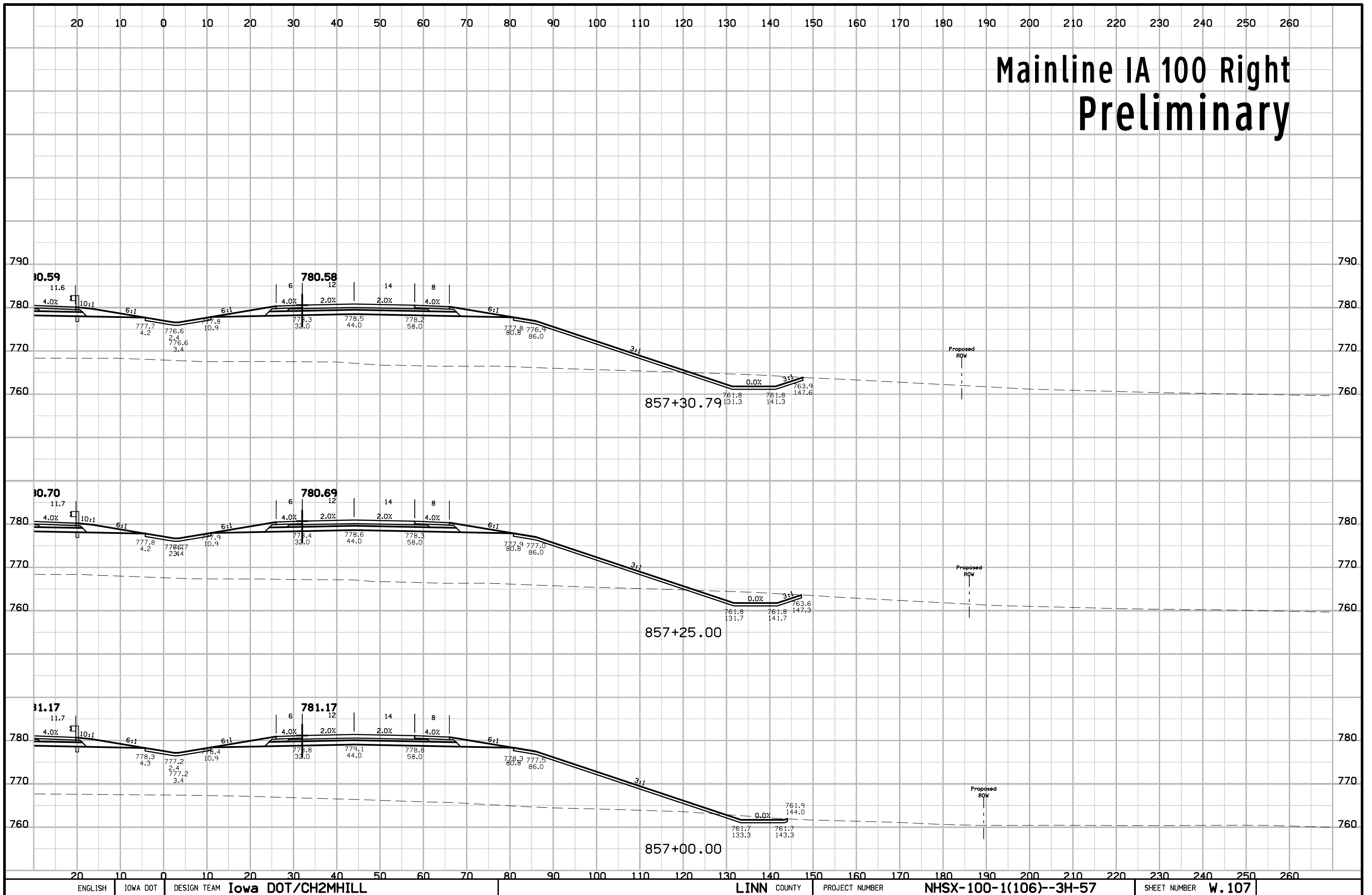
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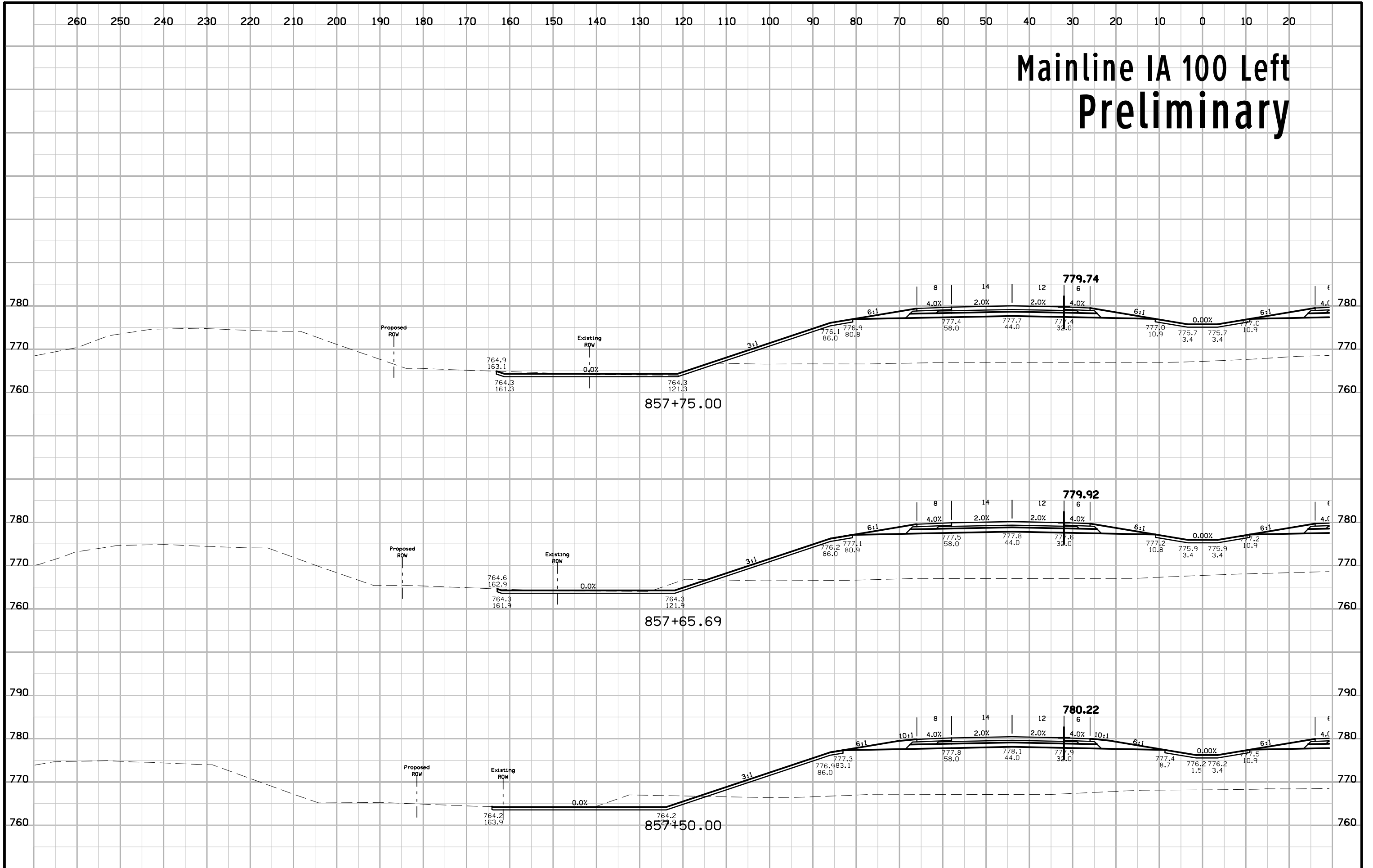
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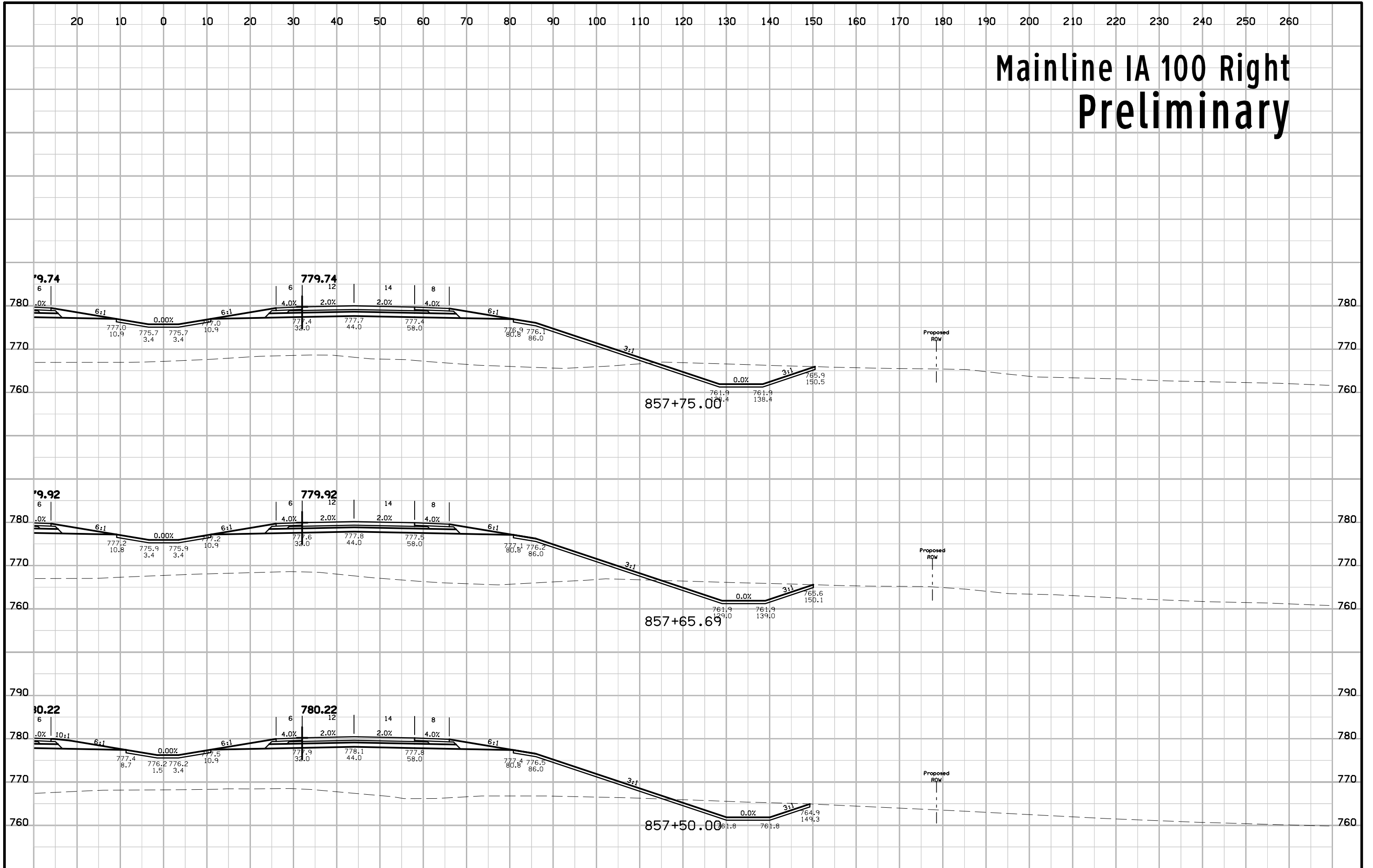
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# Mainline IA 100 Left Preliminary

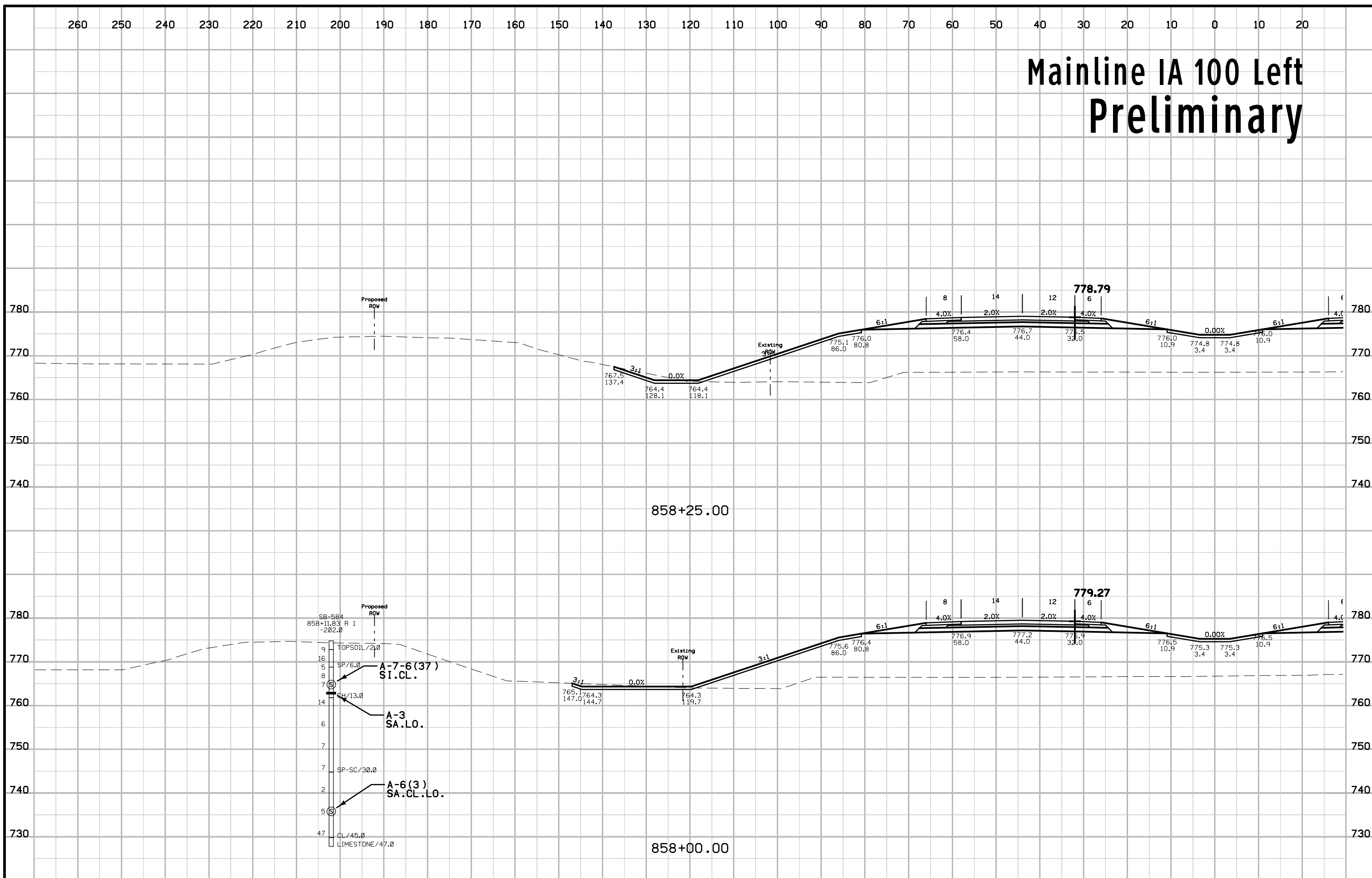


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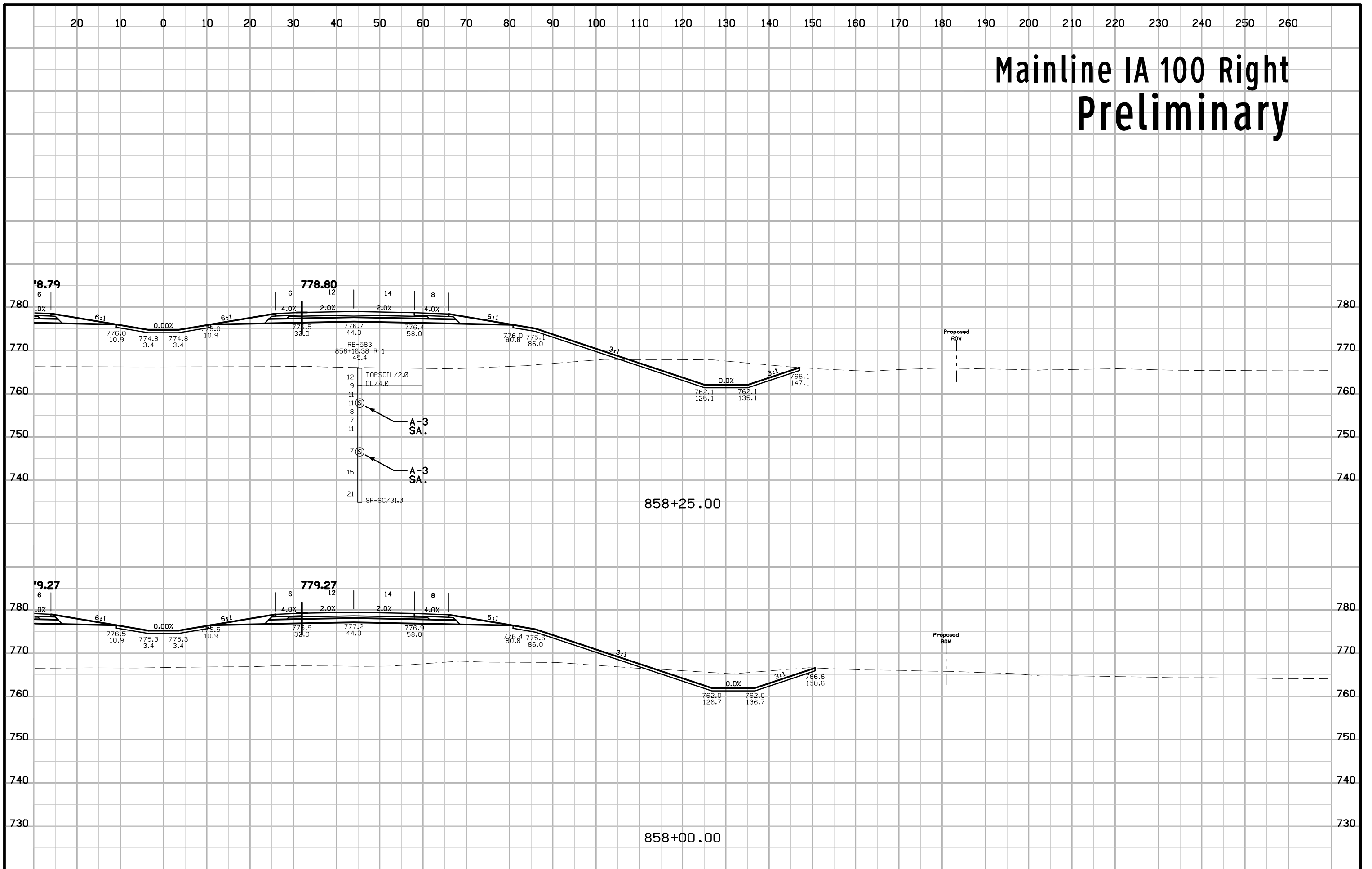




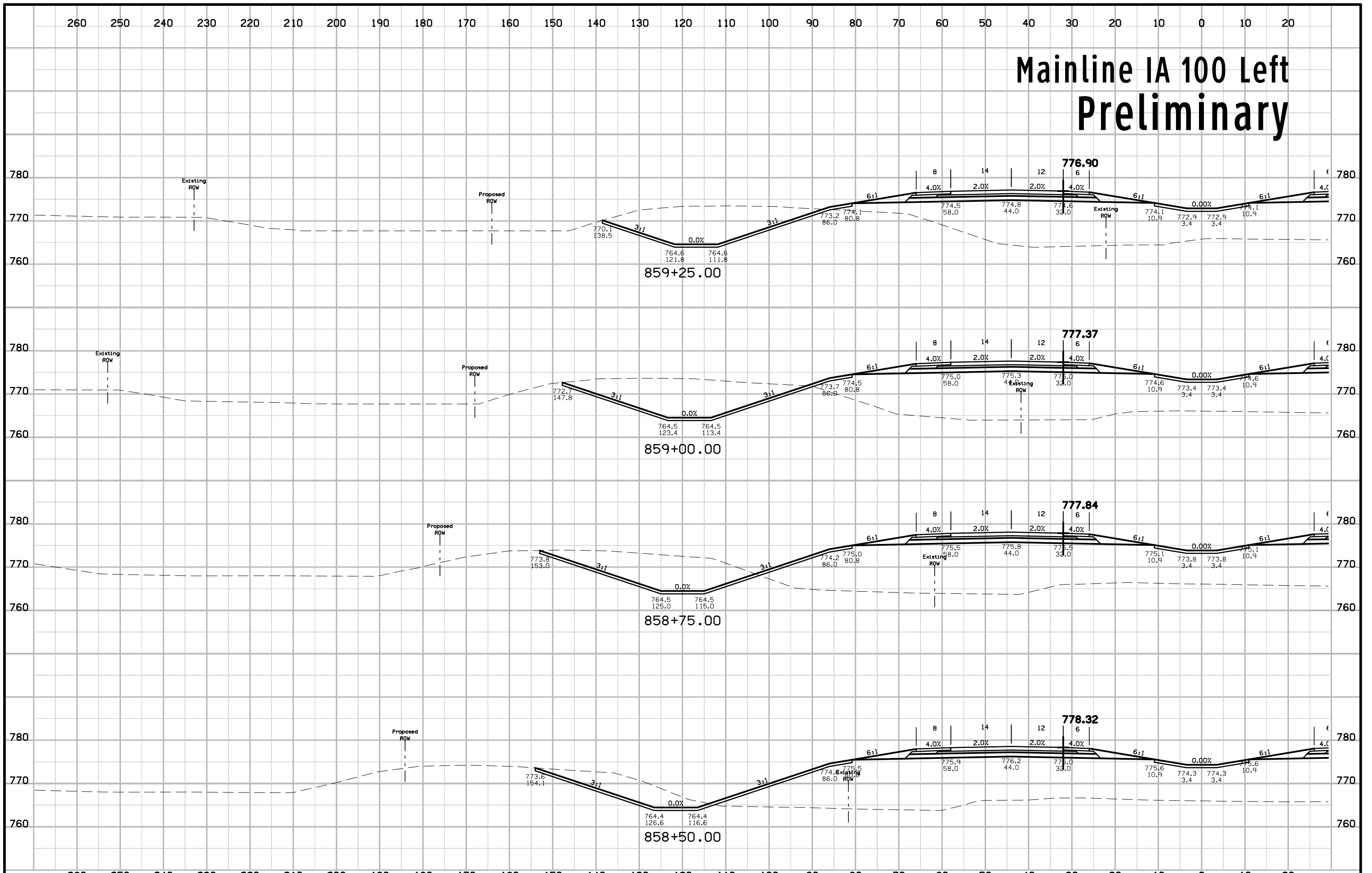
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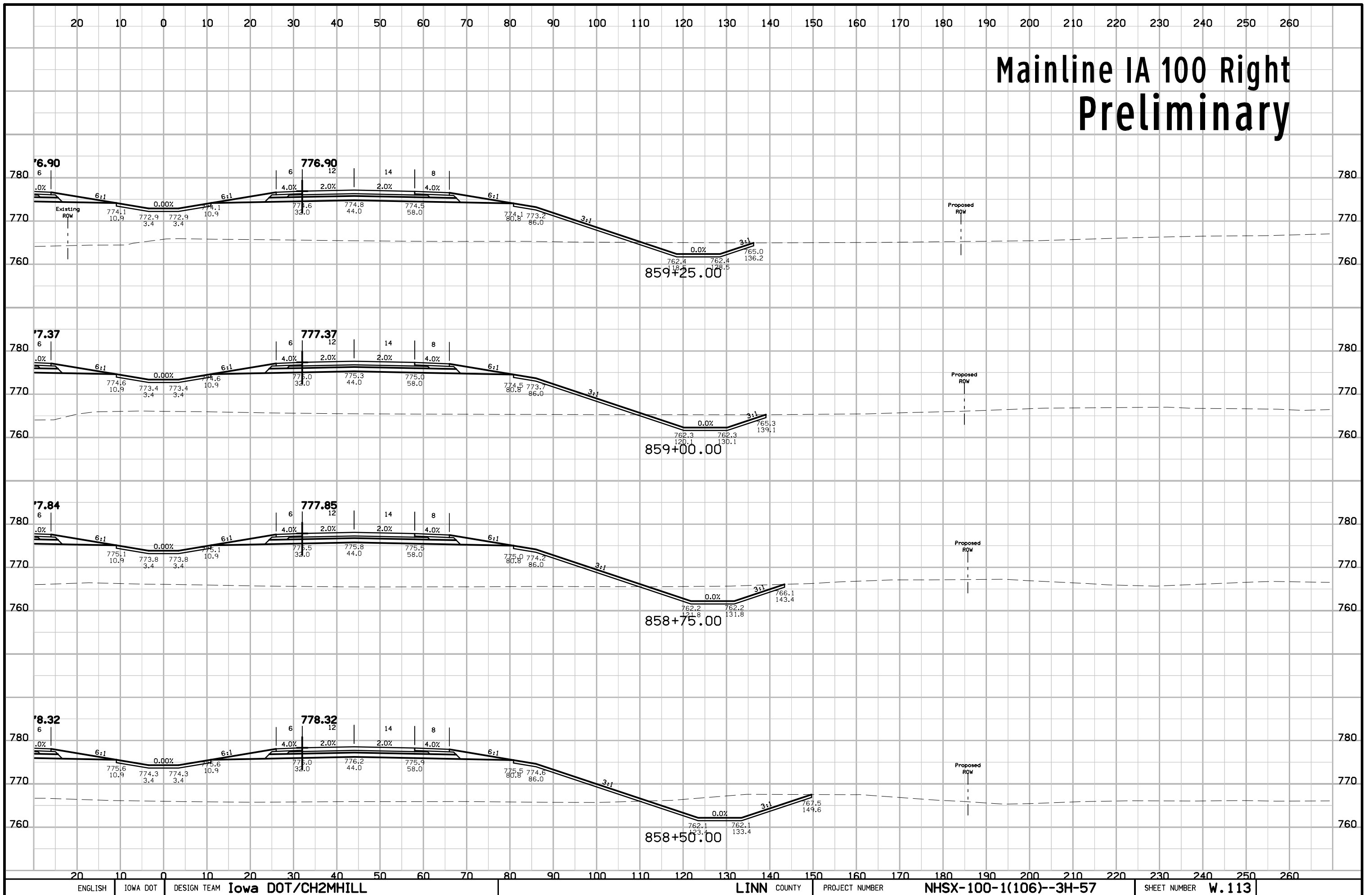
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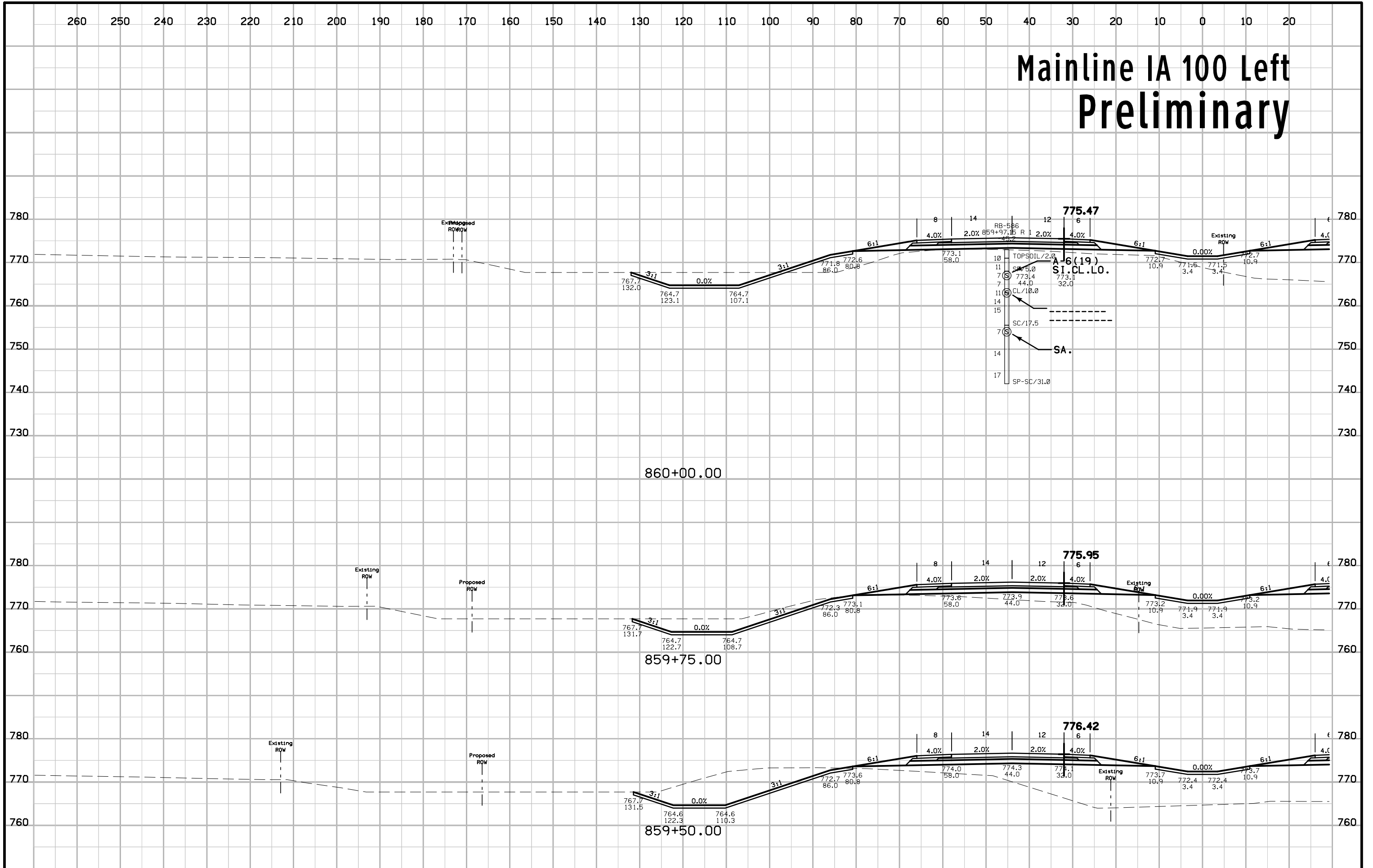
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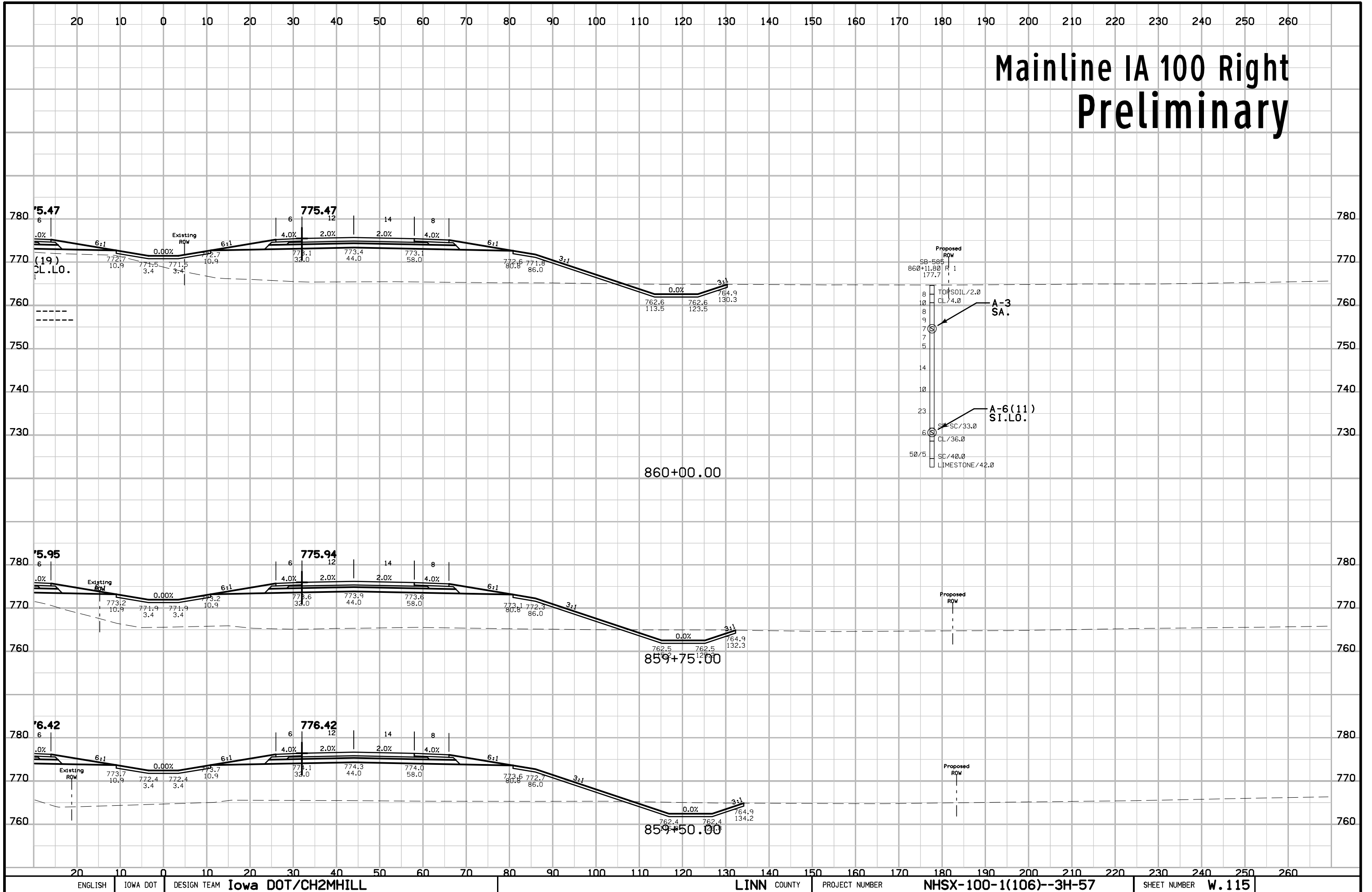
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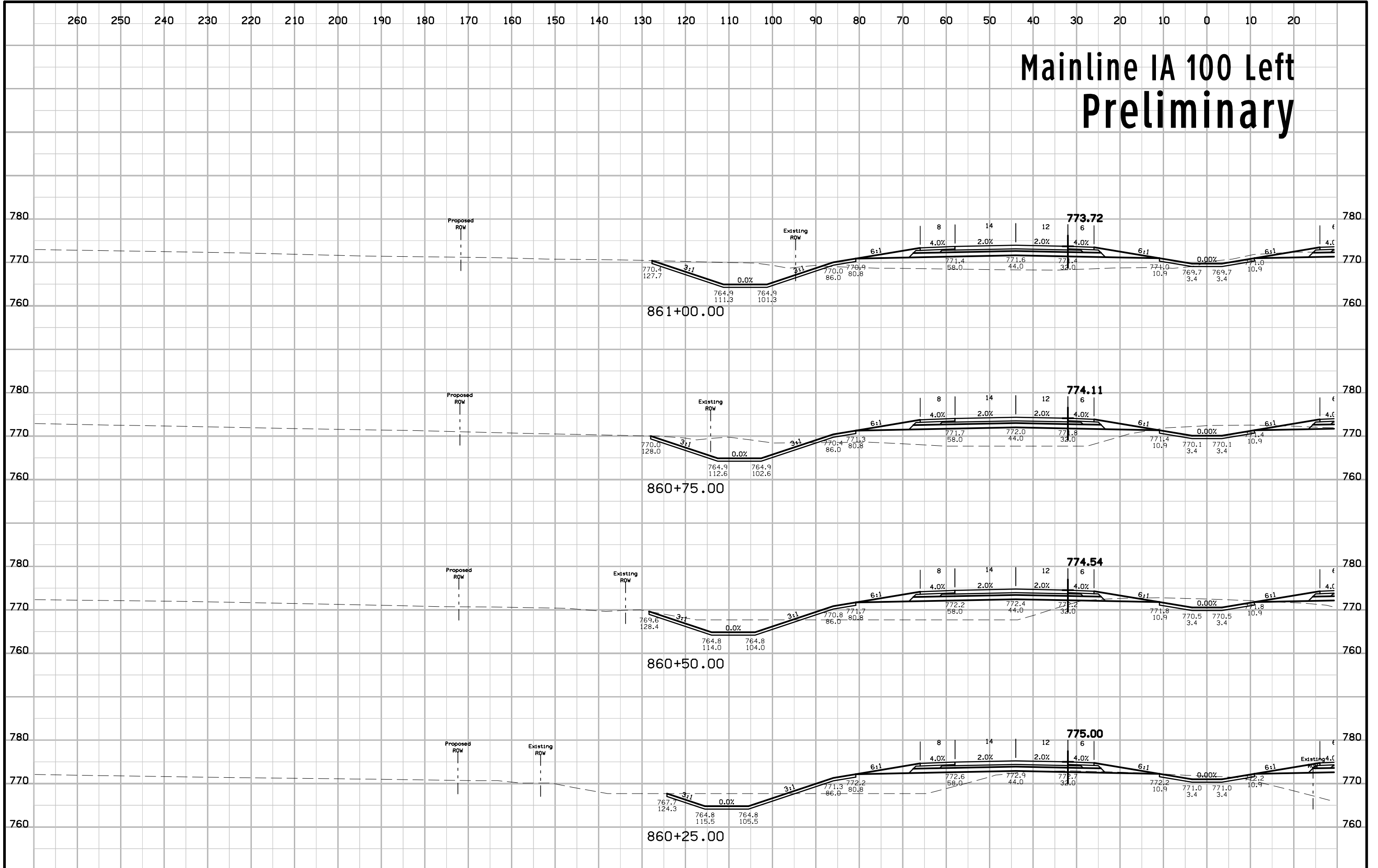
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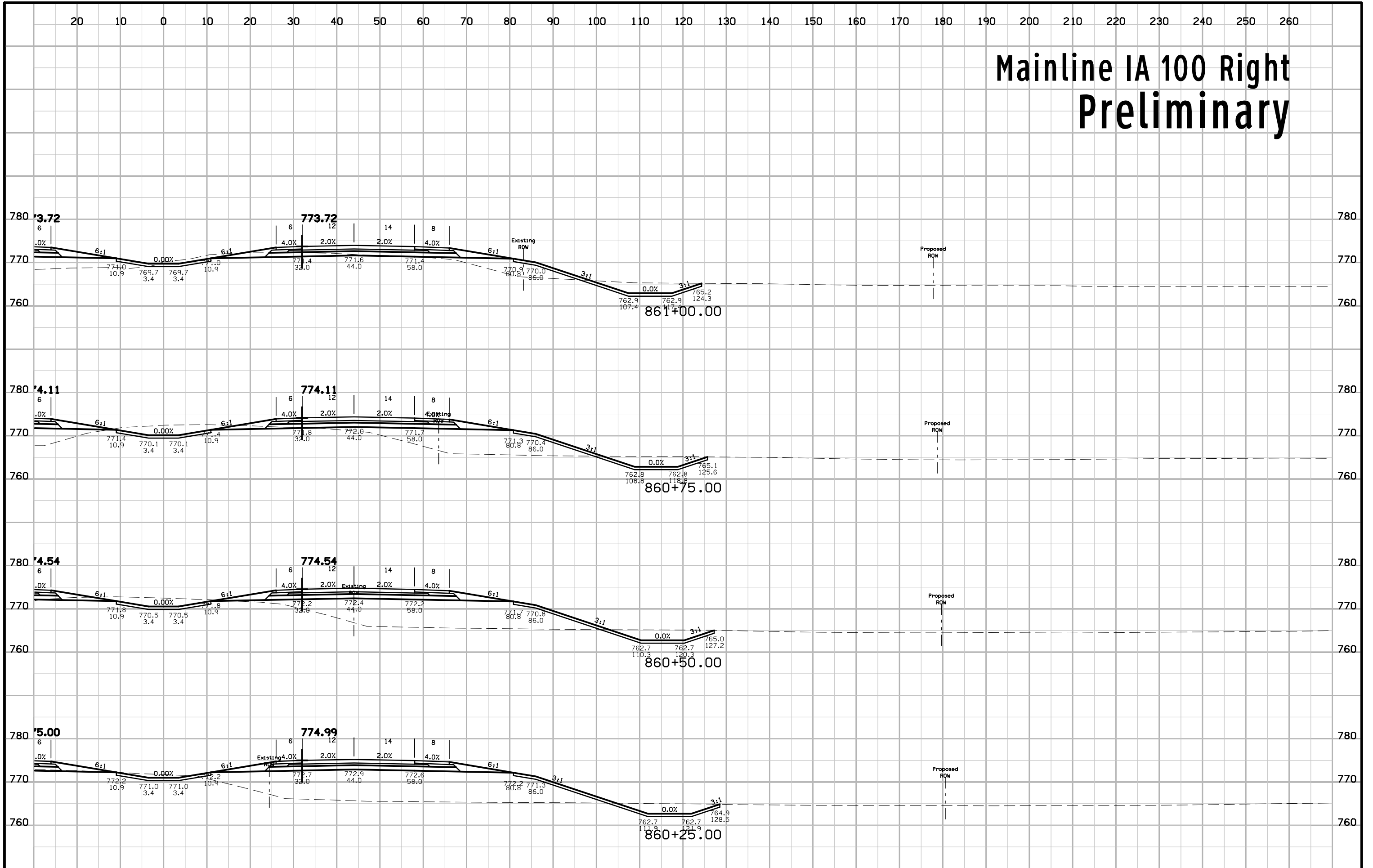
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# Mainline IA 100 Left Preliminary

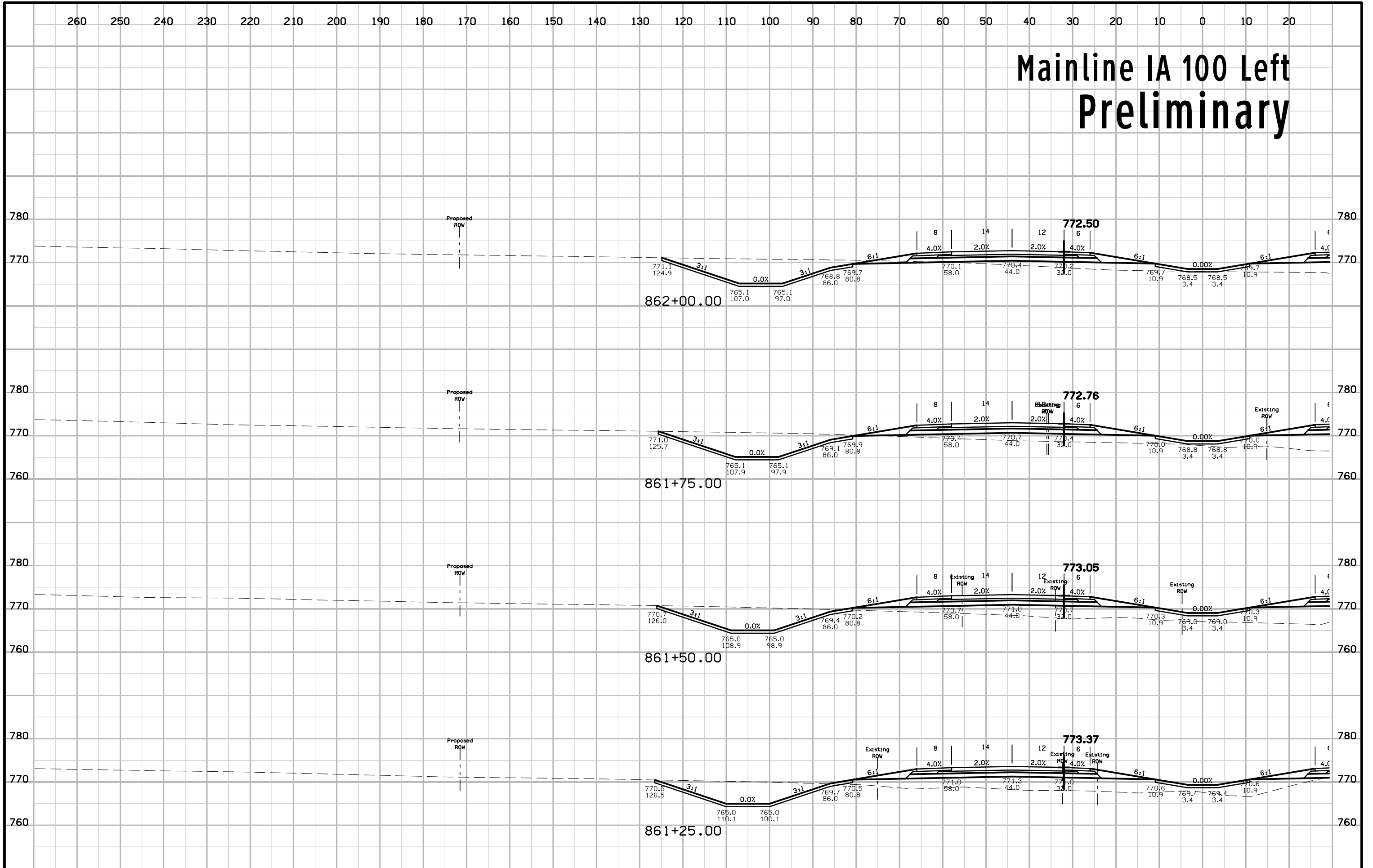


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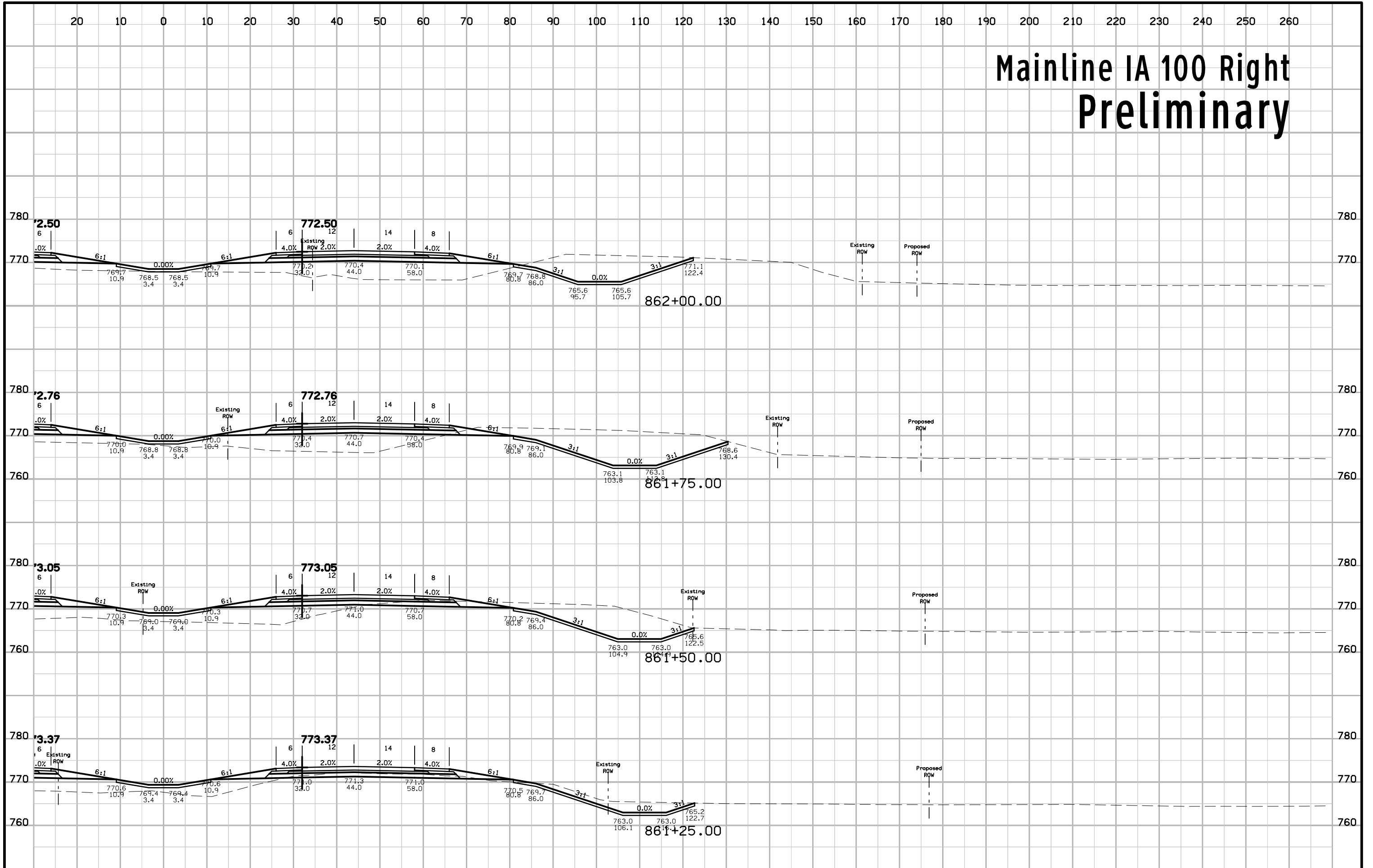




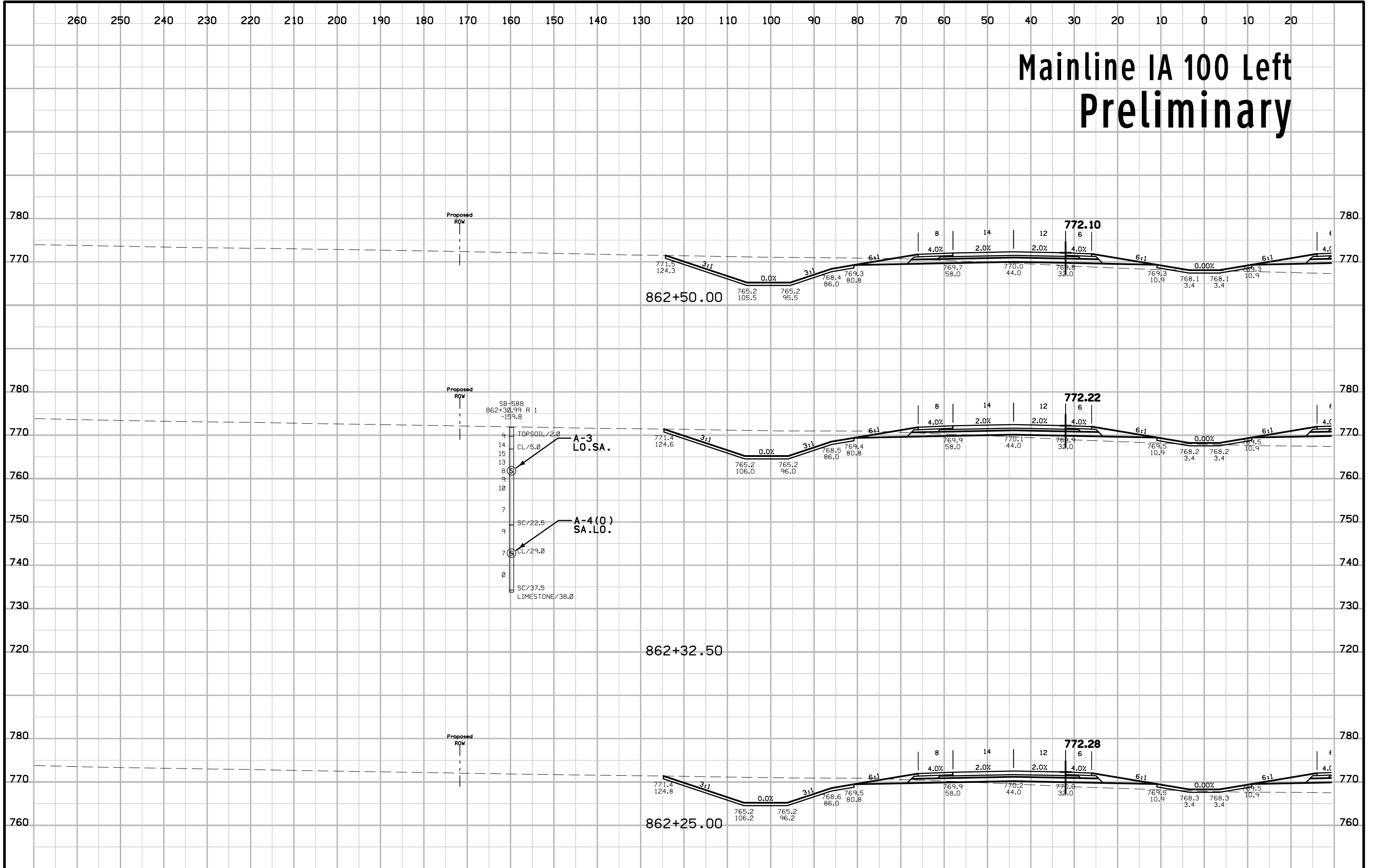
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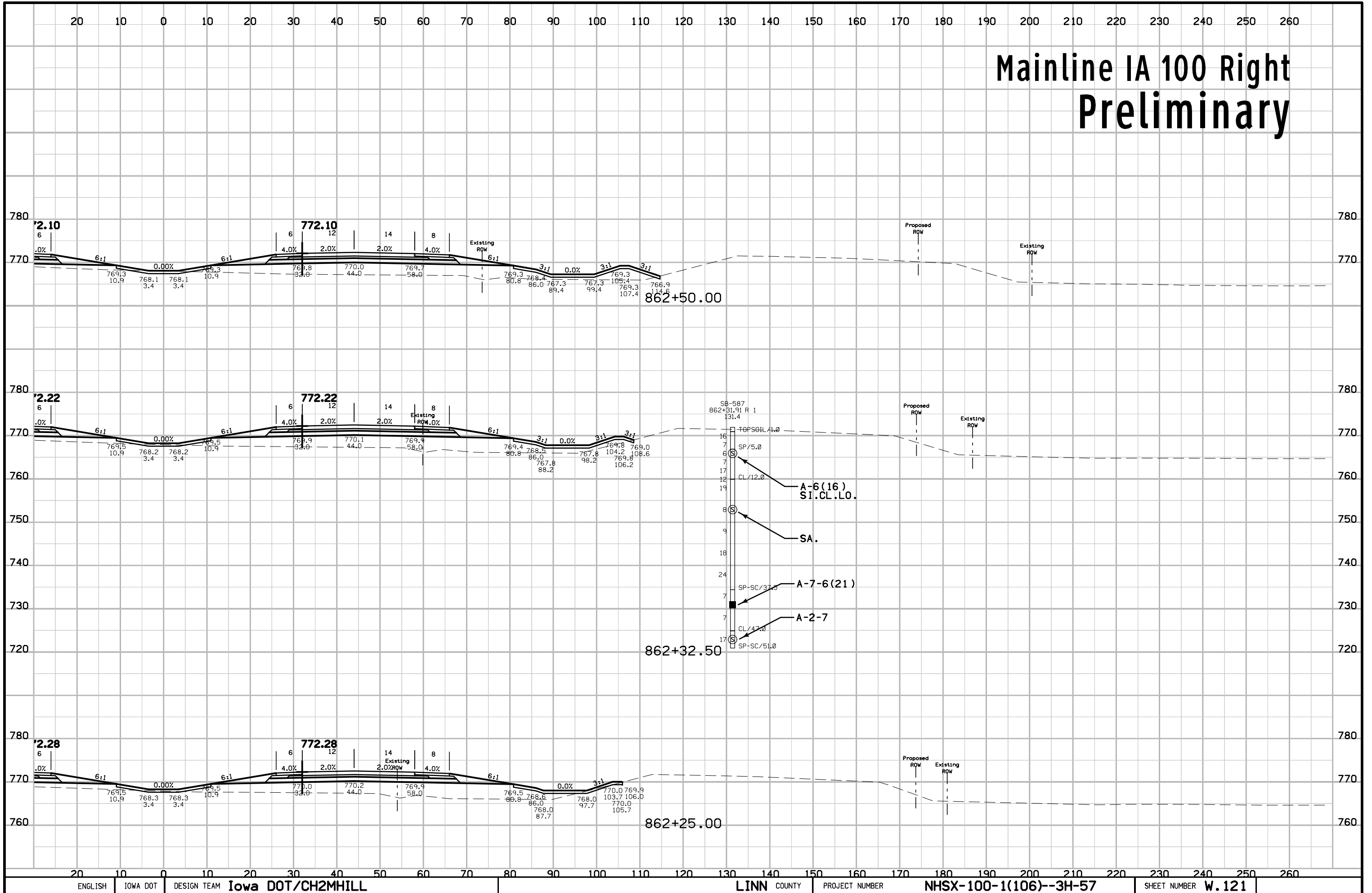
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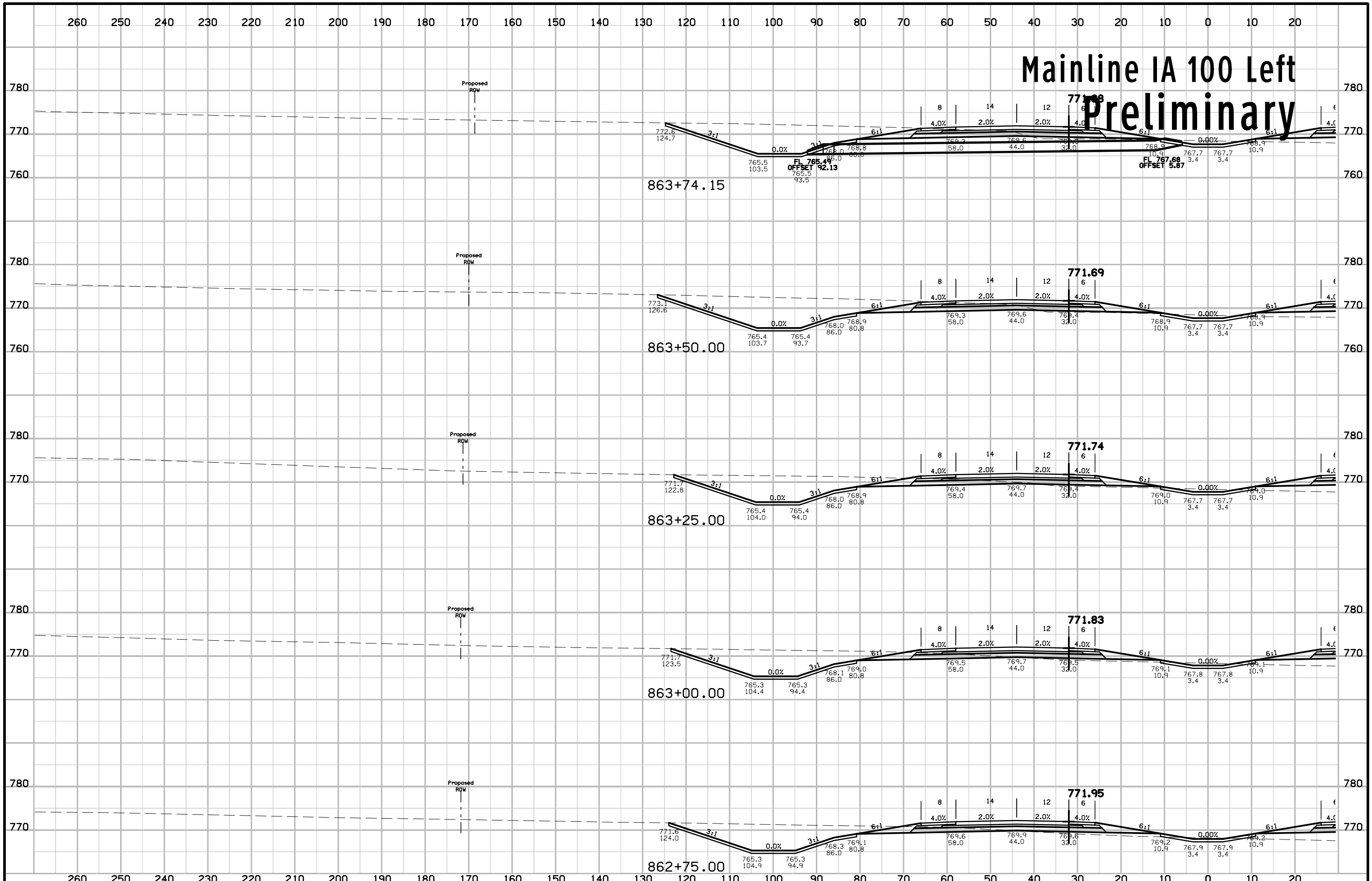
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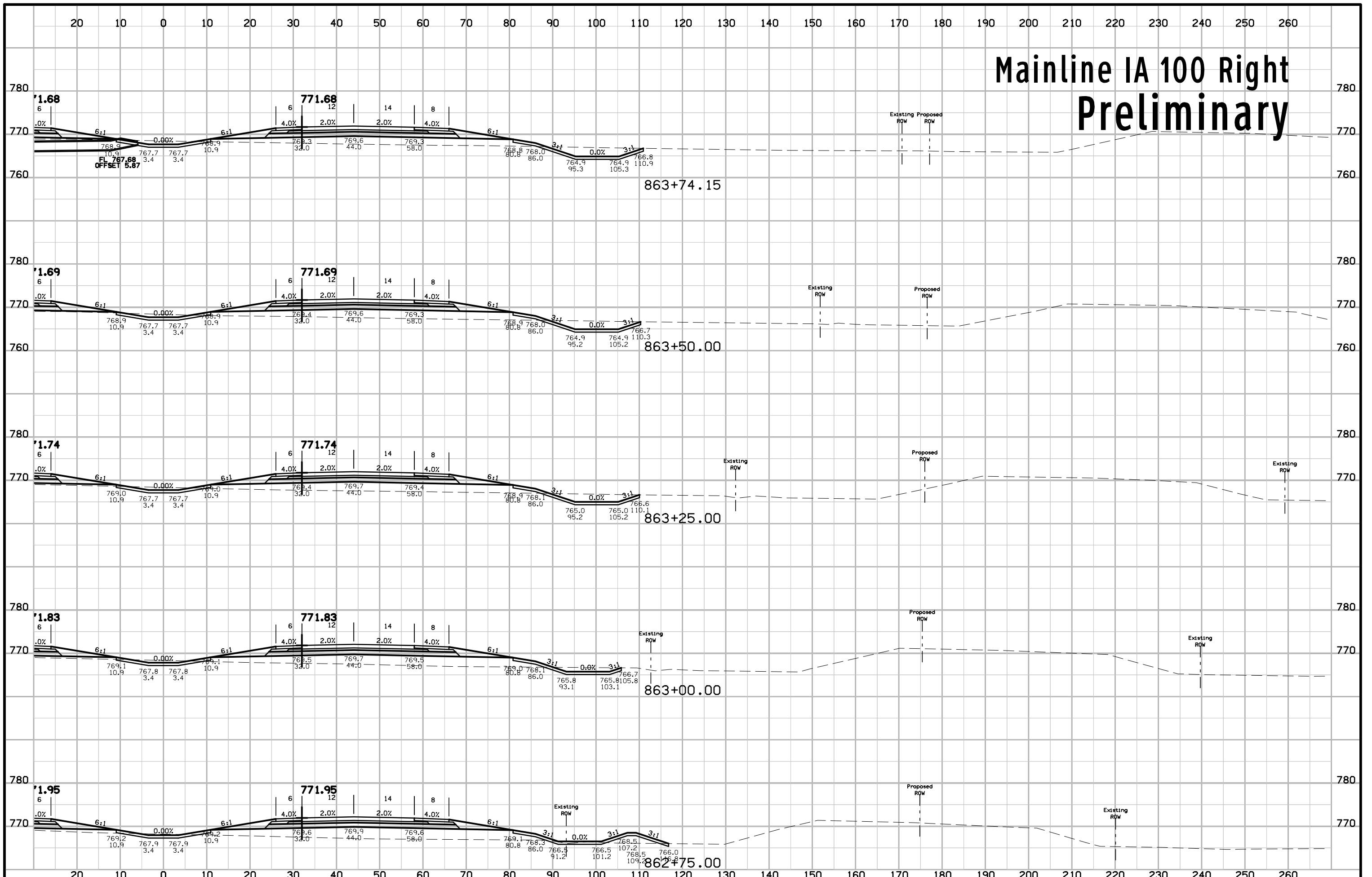
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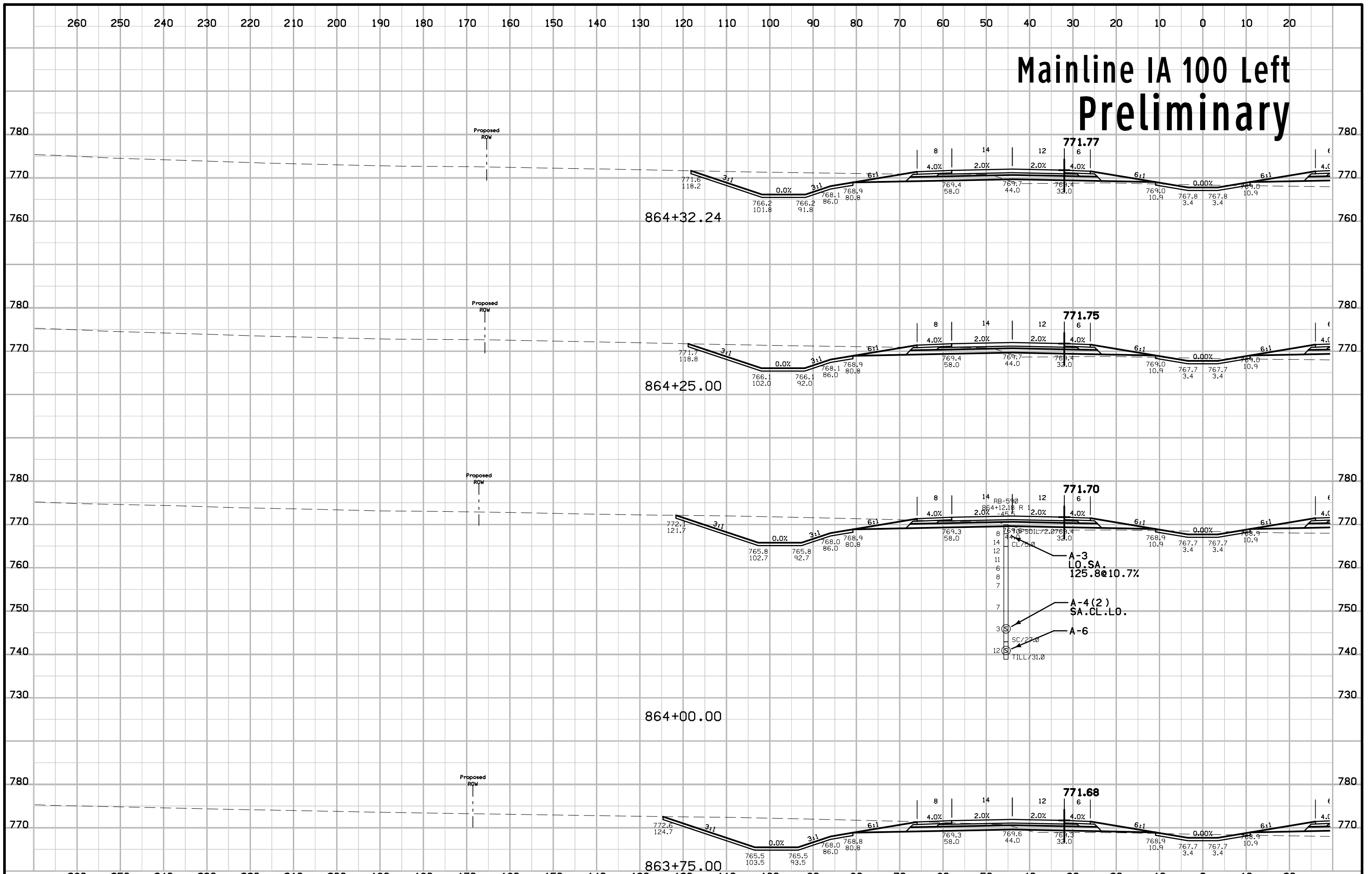
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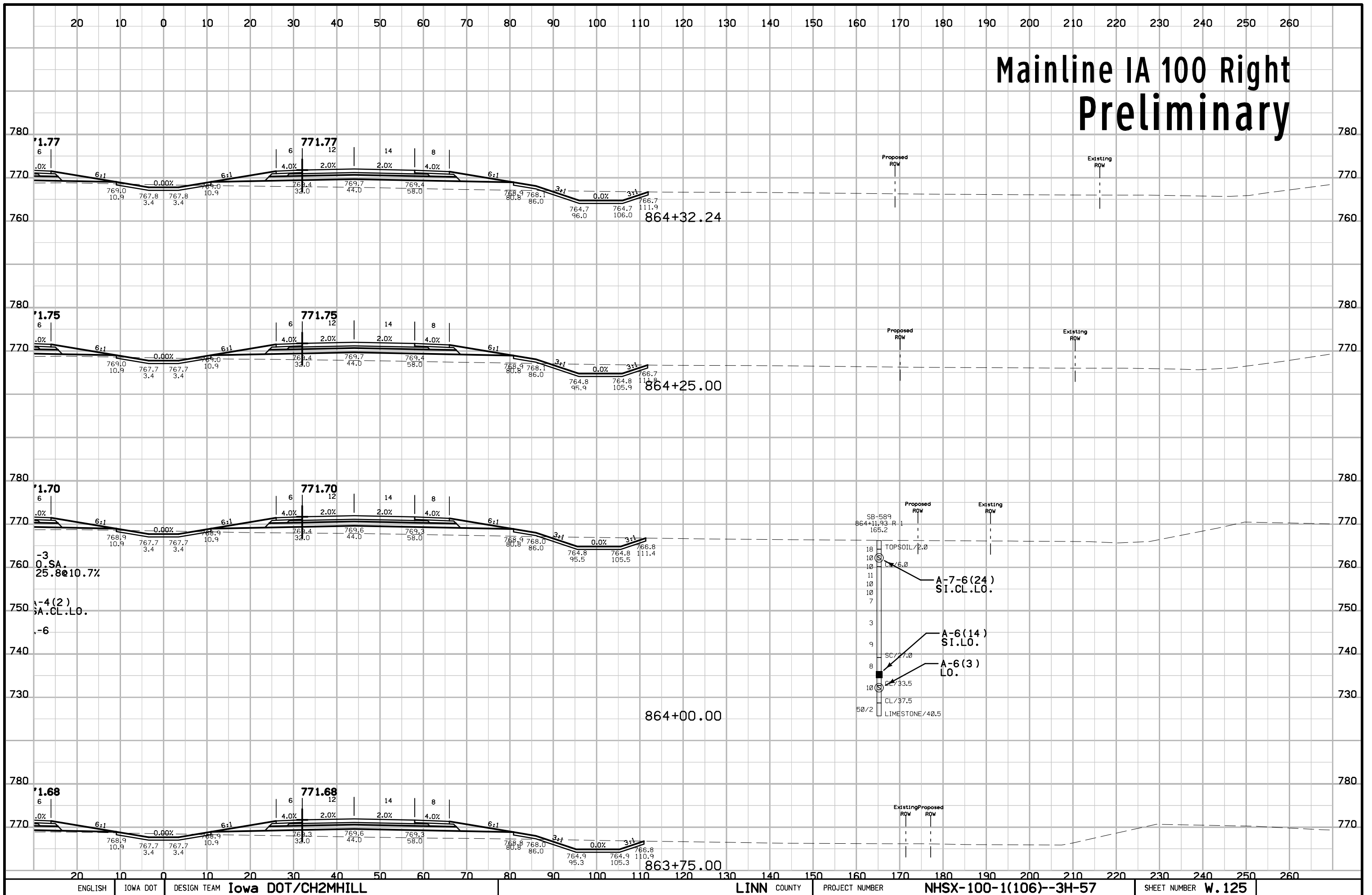
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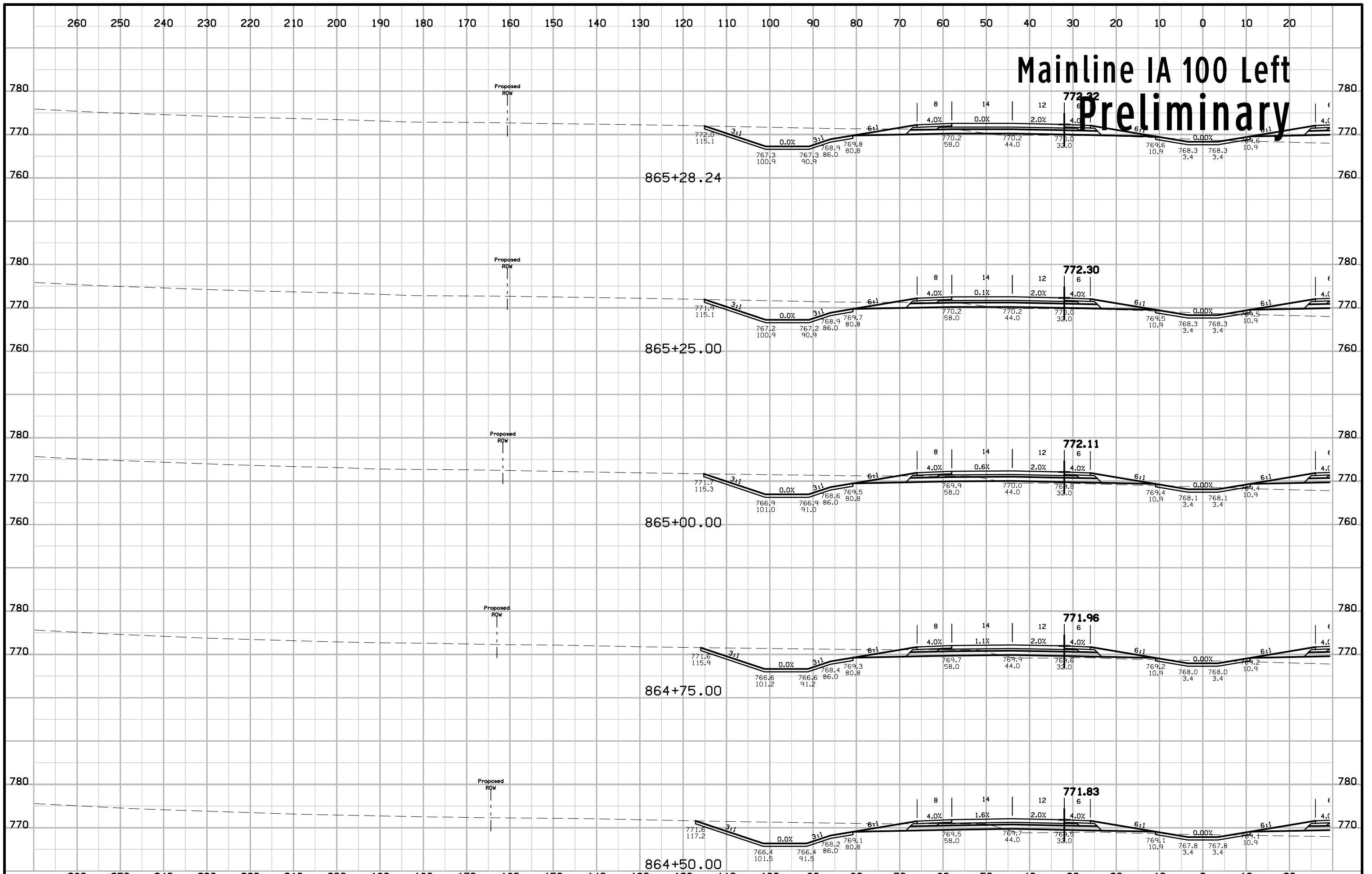


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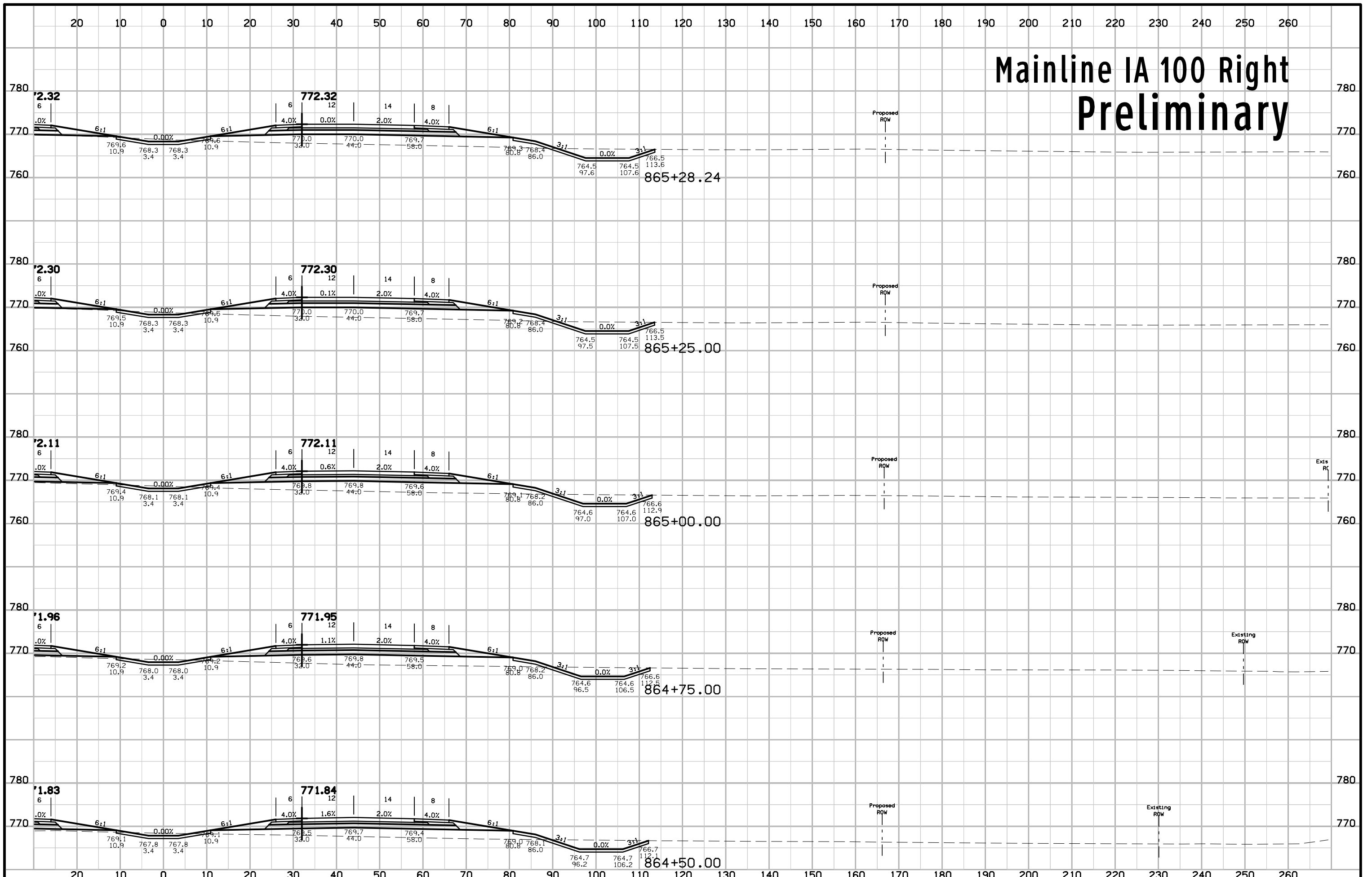




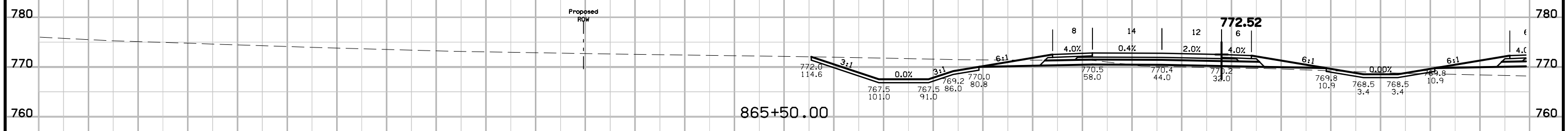
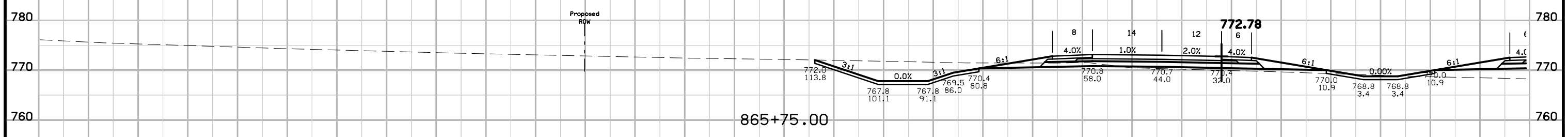
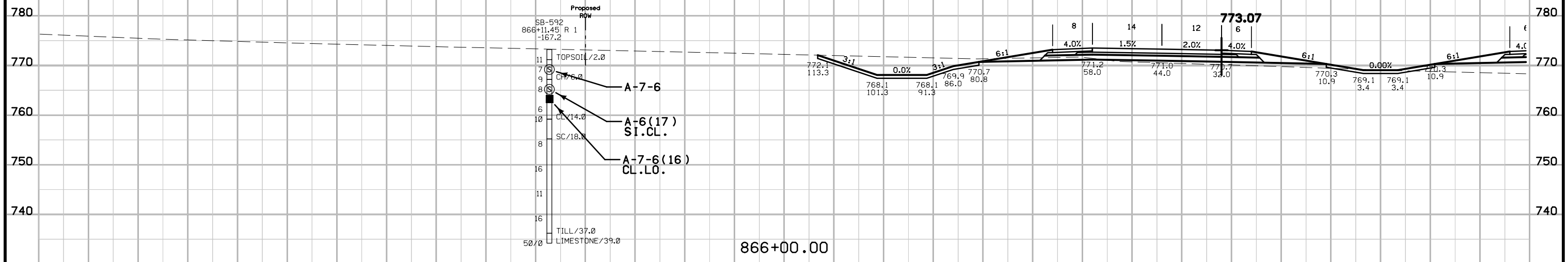
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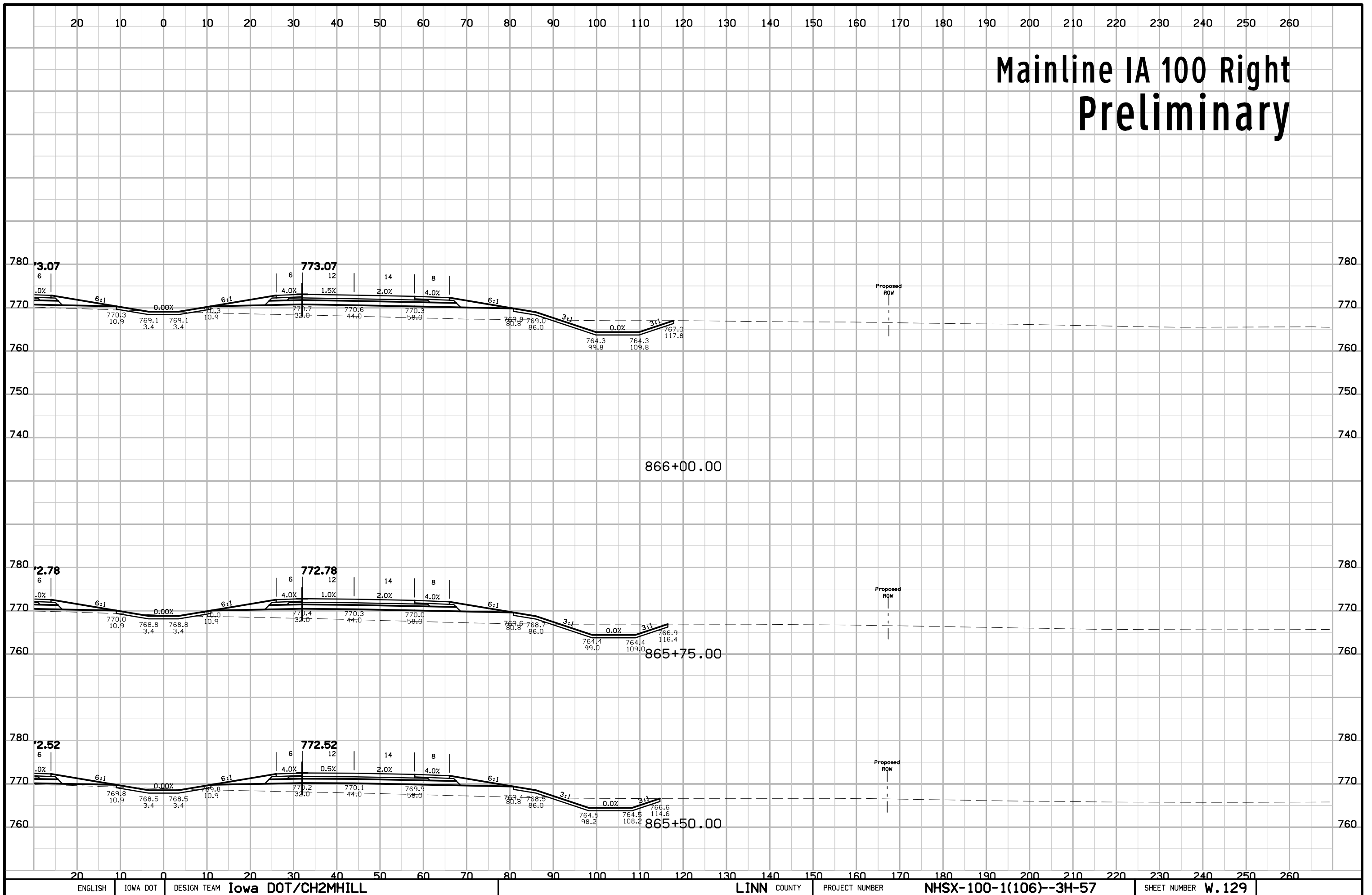
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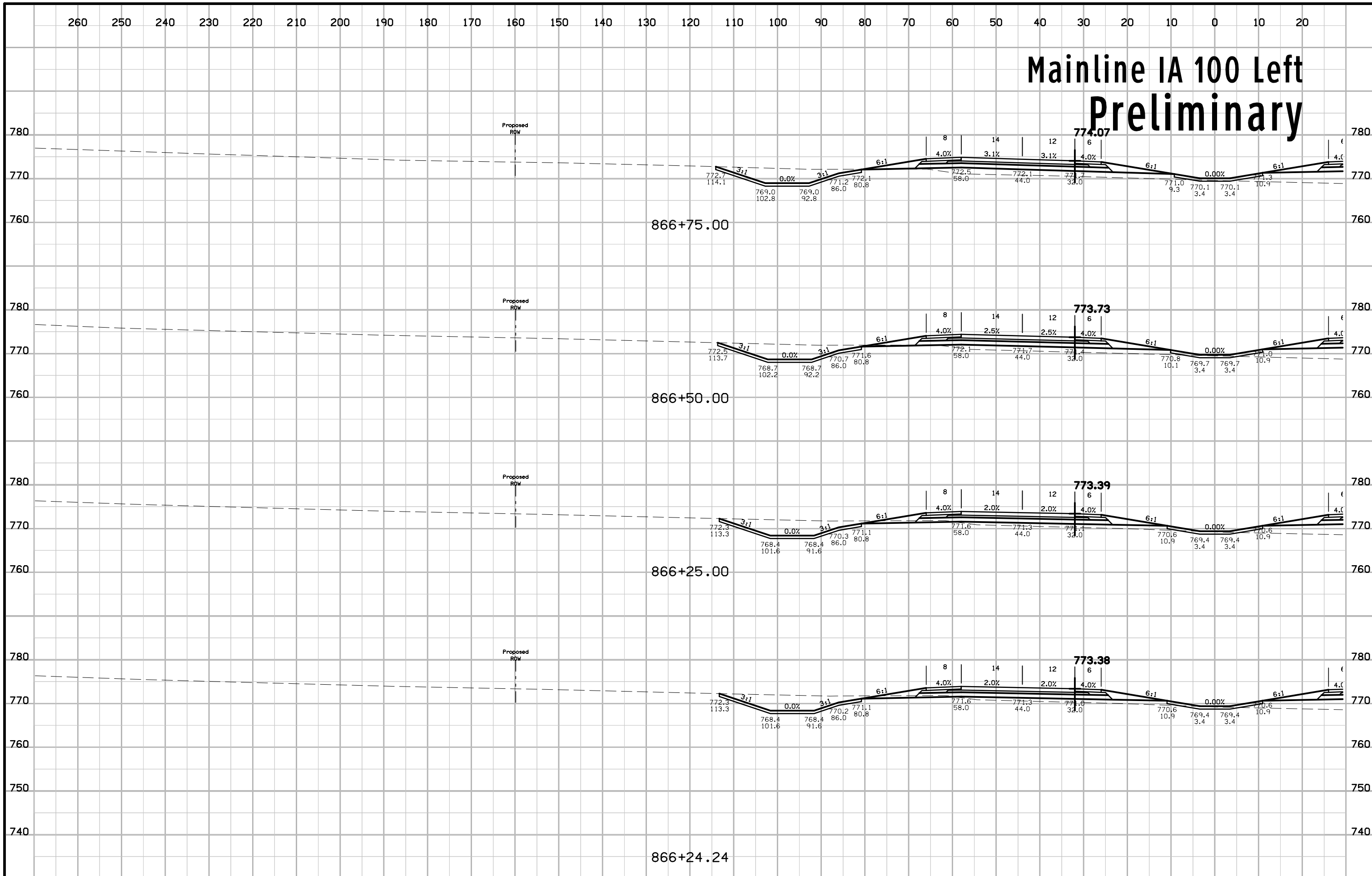
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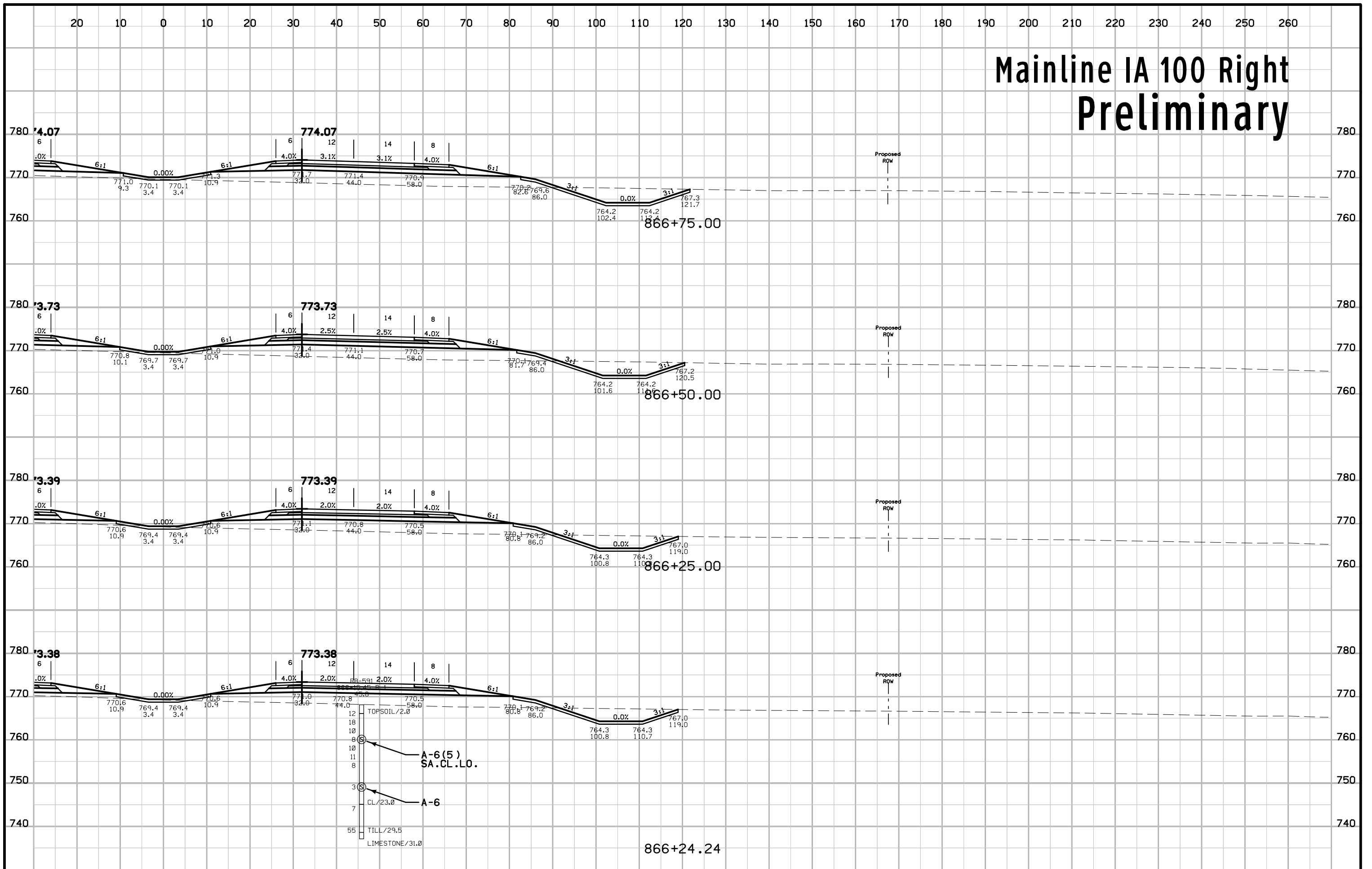
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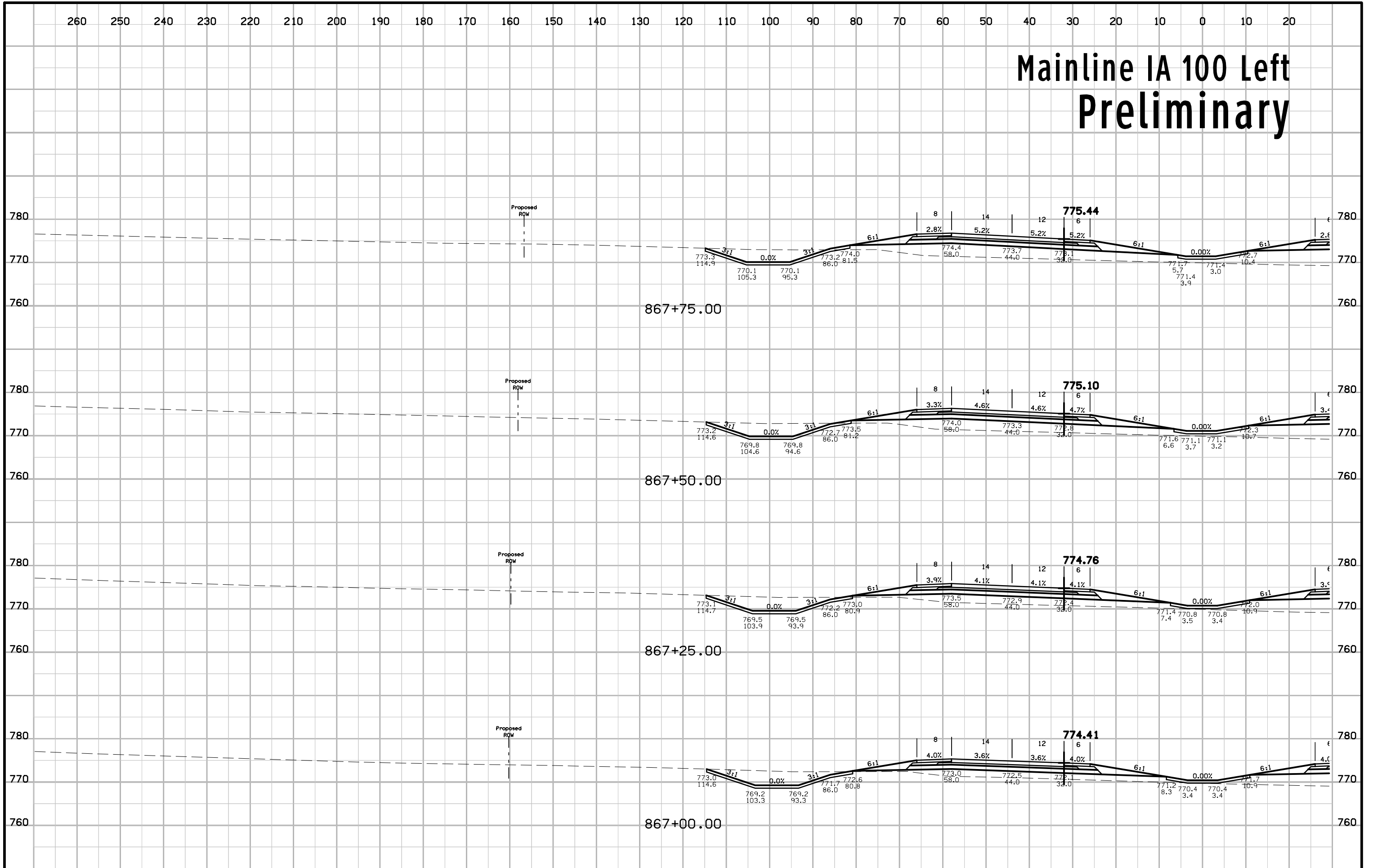
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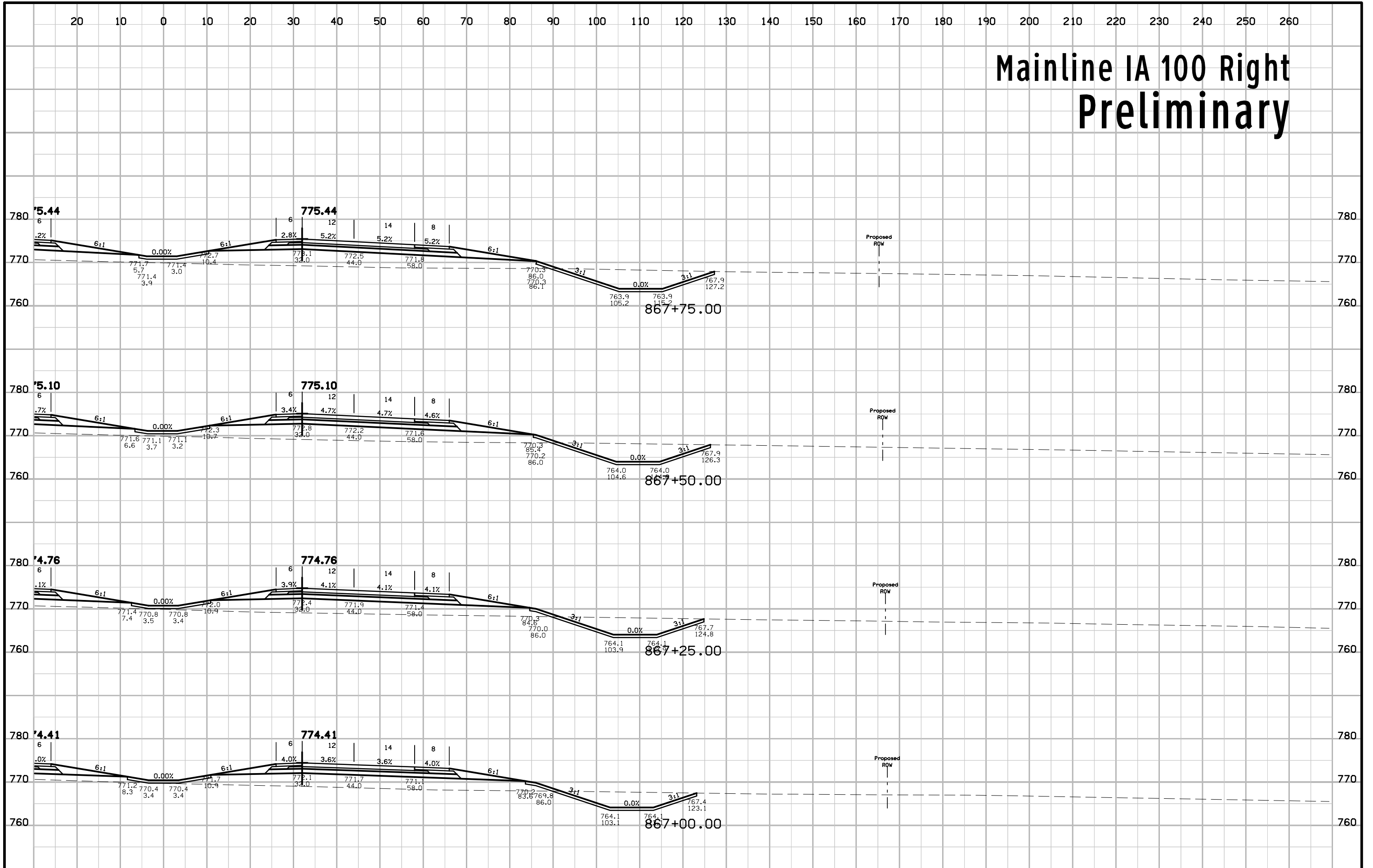
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# Mainline IA 100 Left Preliminary

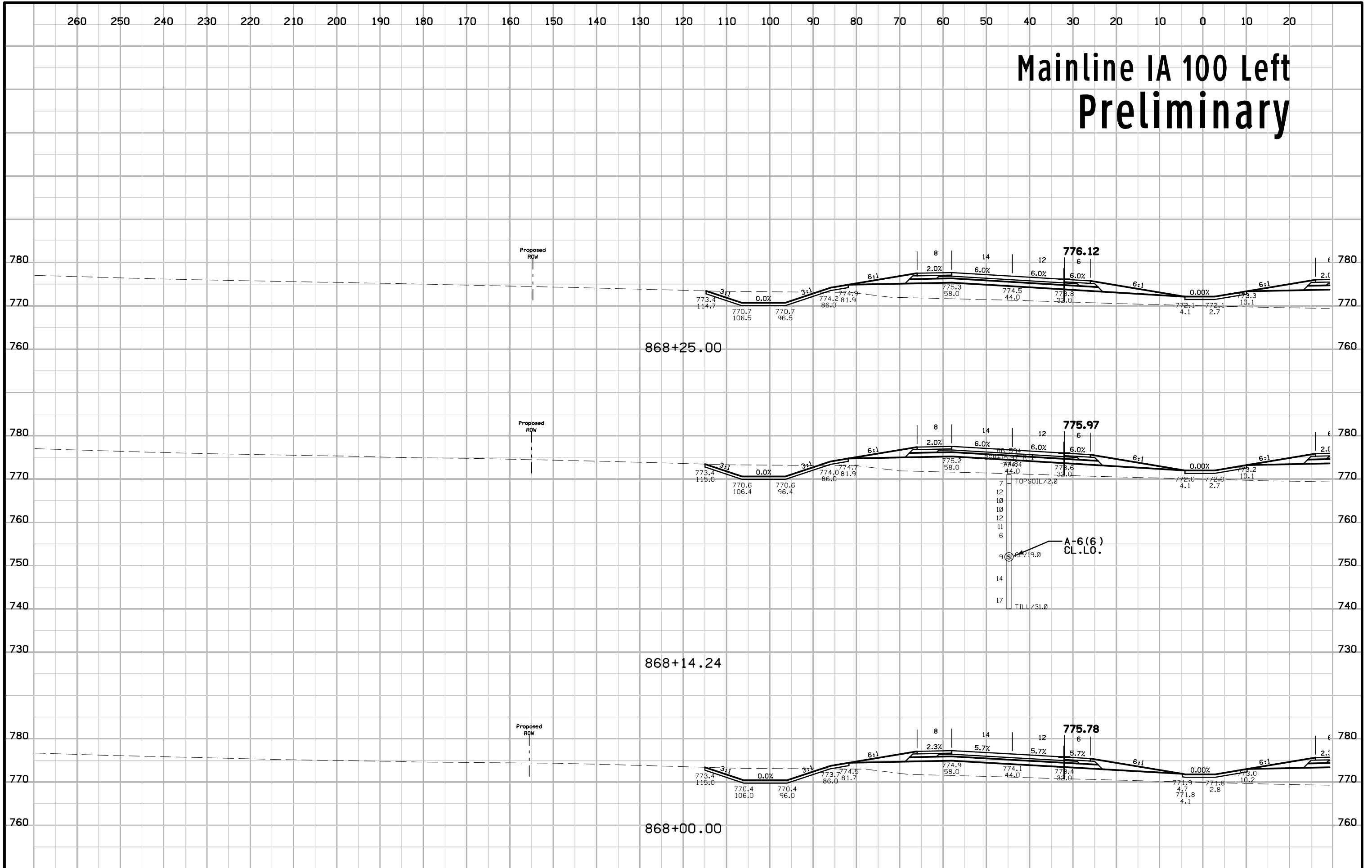


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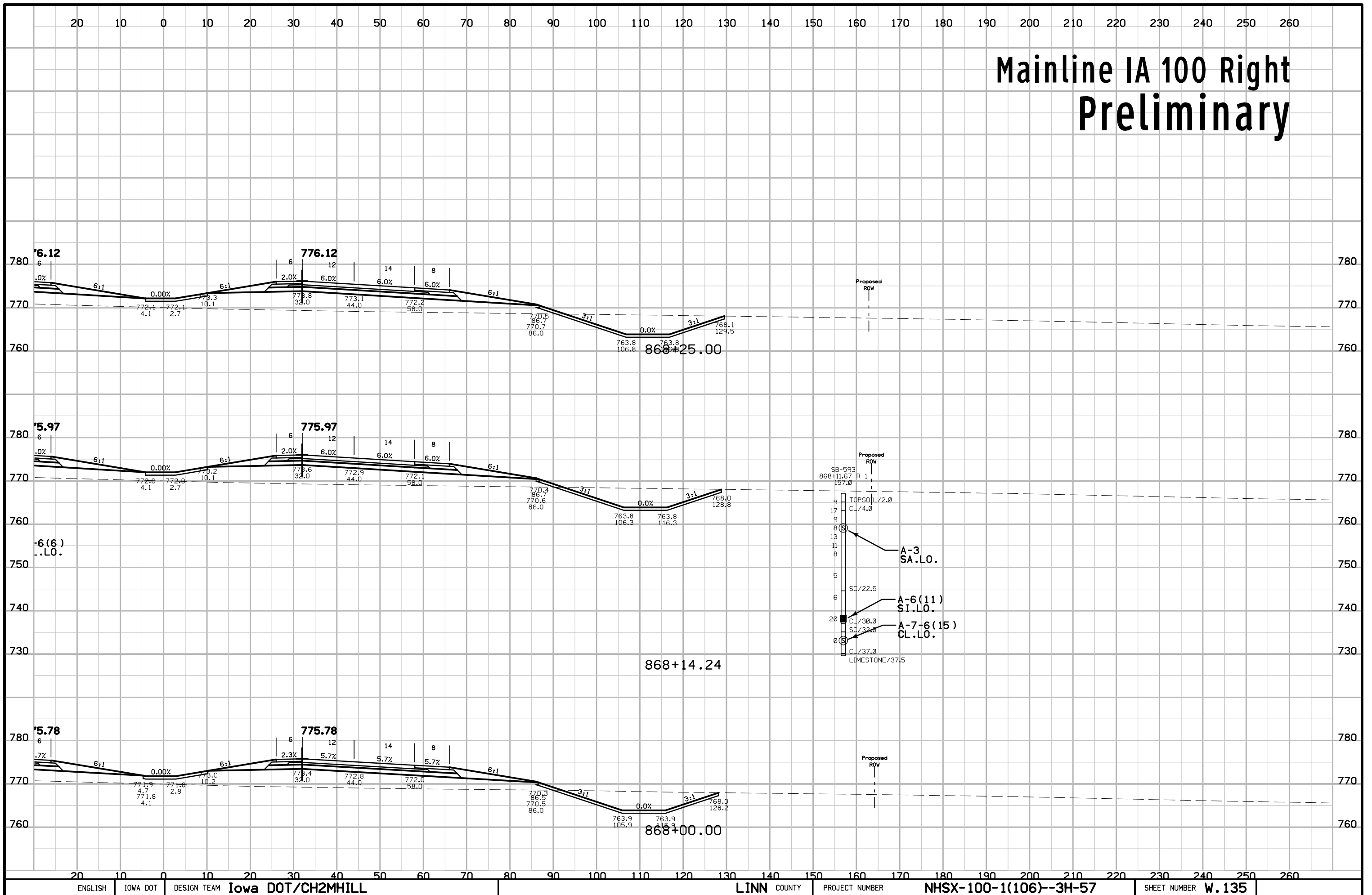




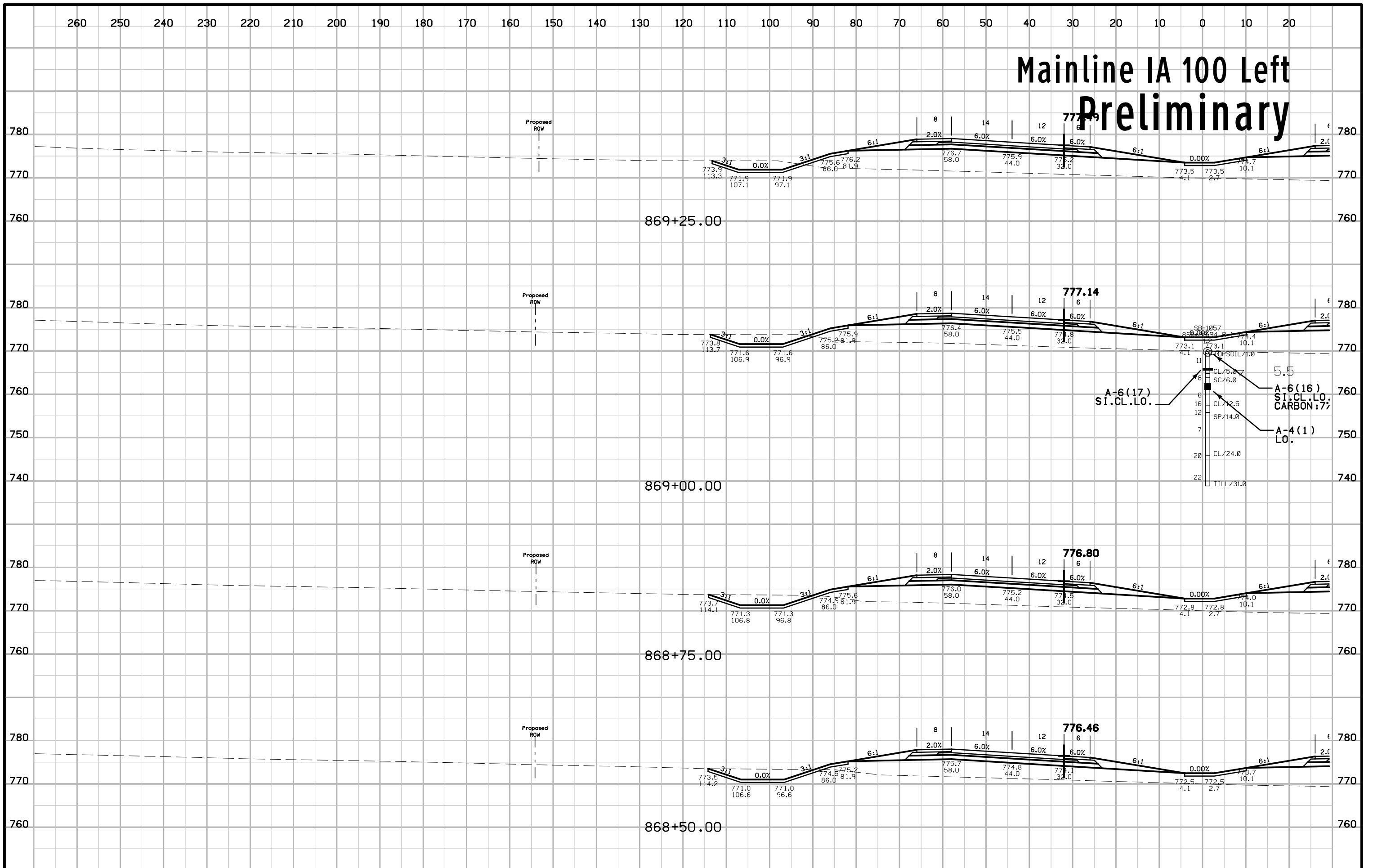
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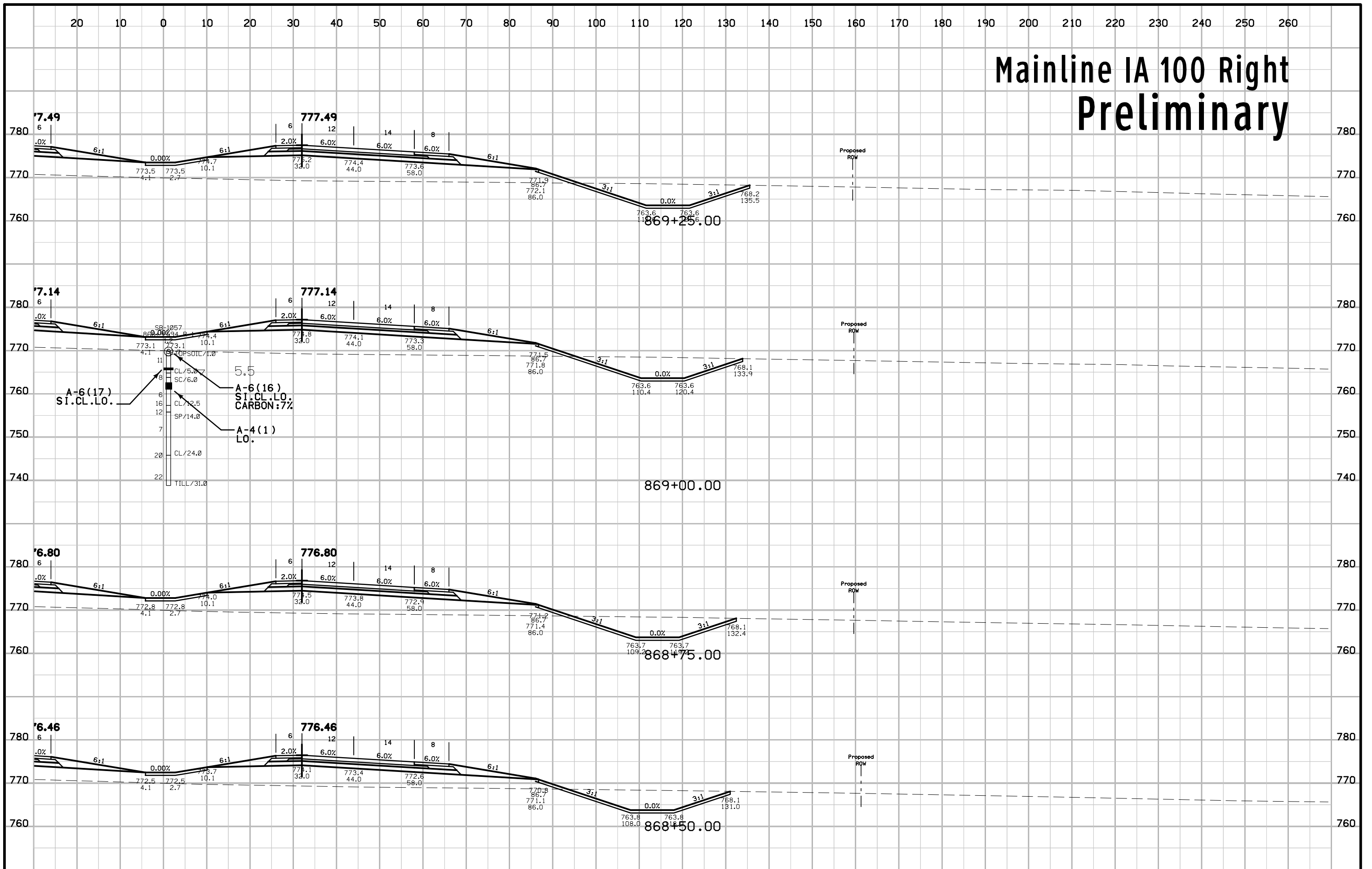
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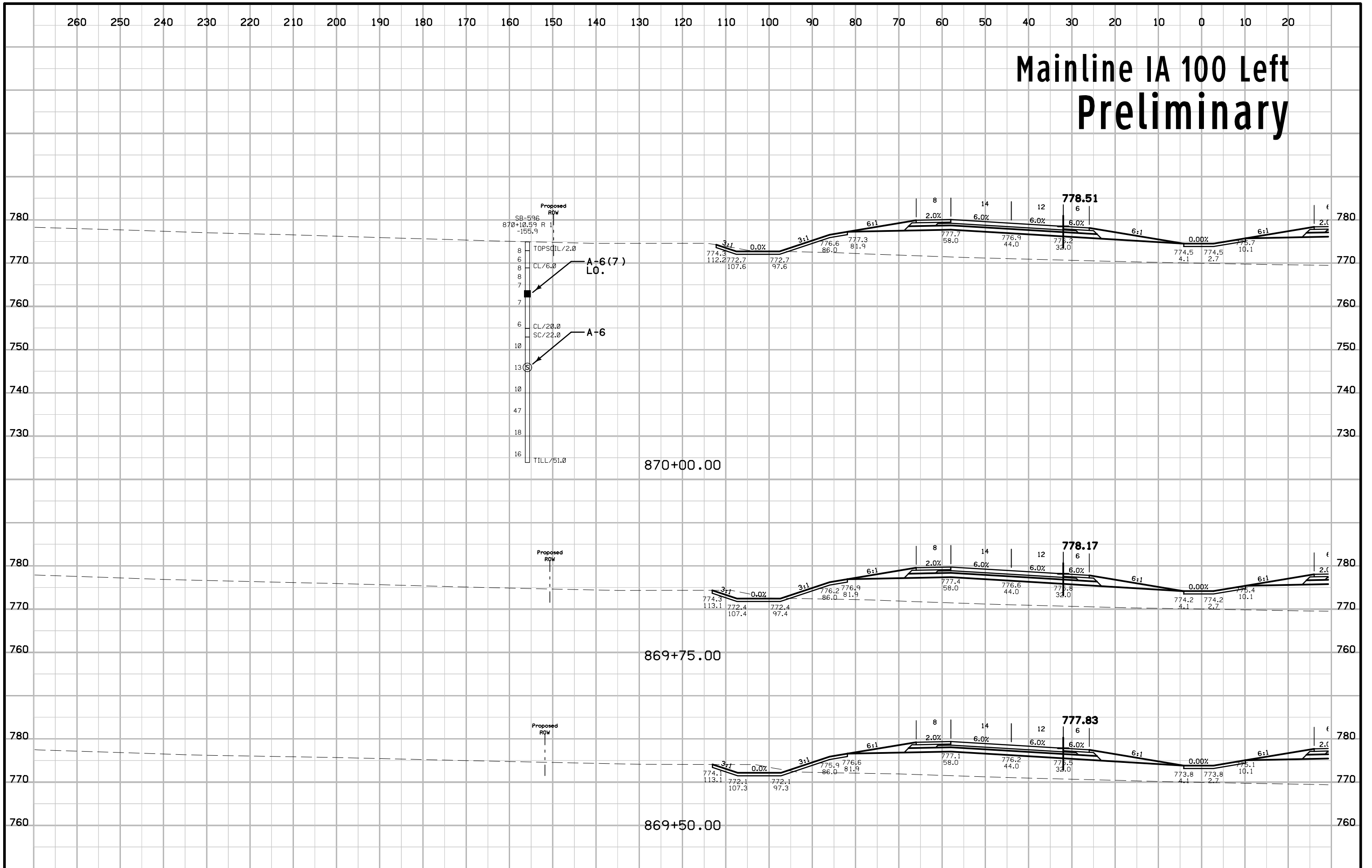
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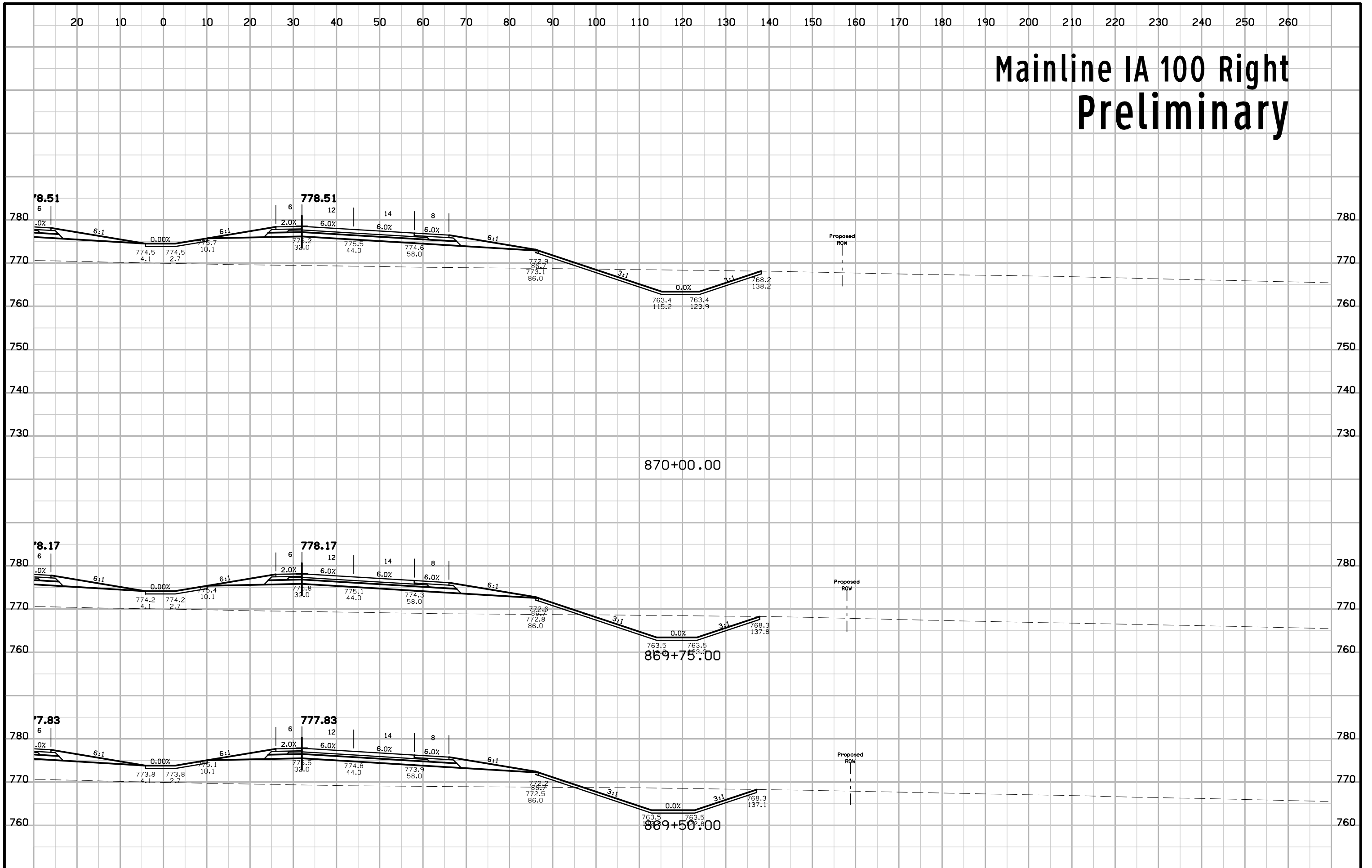
# Mainline IA 100 Right Preliminary



# Mainline IA 100 Left Preliminary



# Mainline IA 100 Right Preliminary

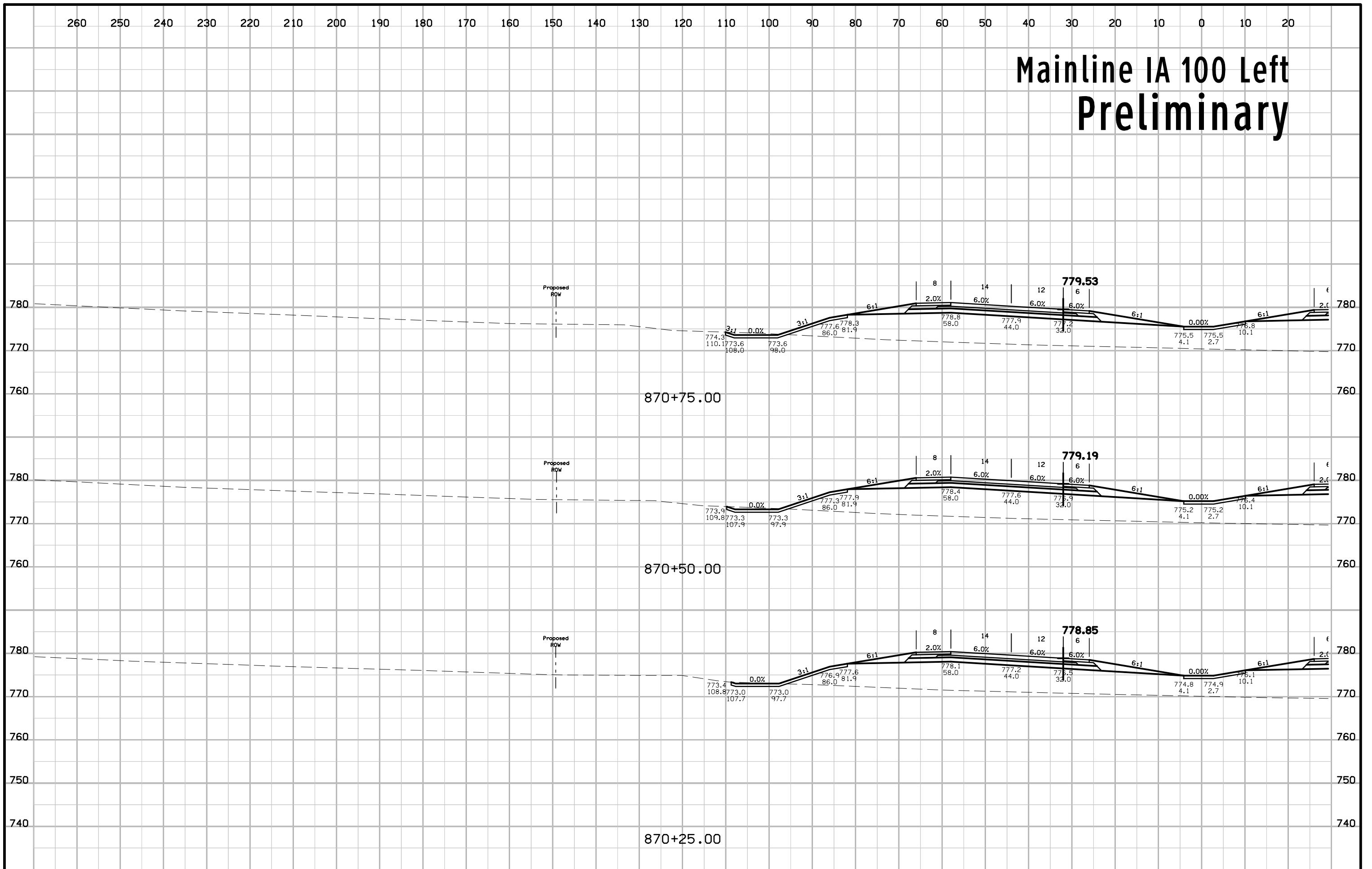


870+00.00

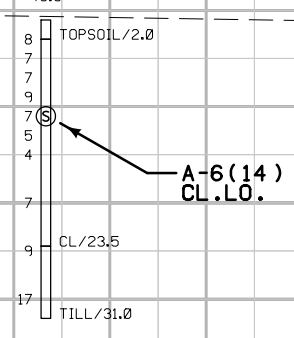
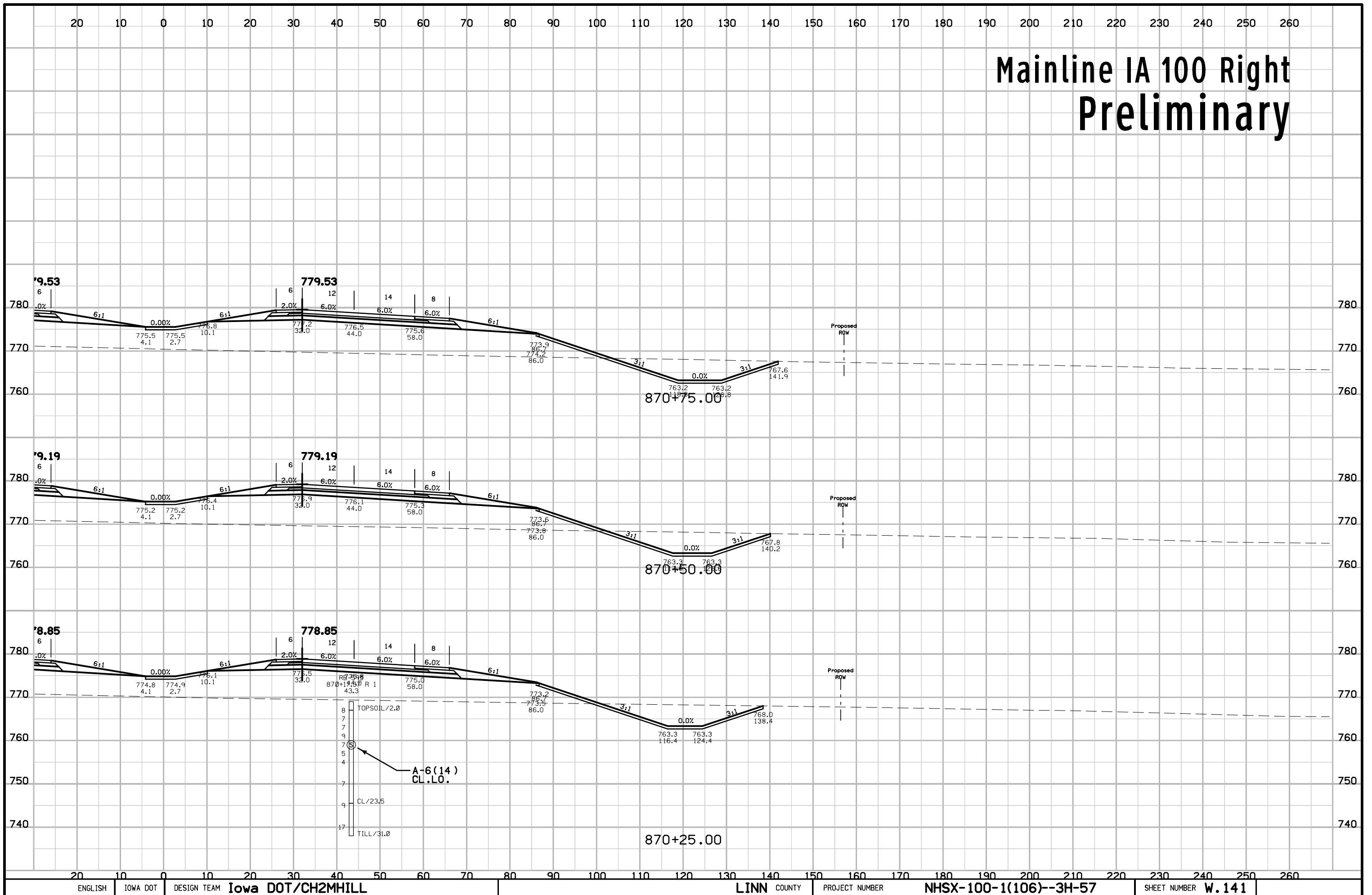
869+75.00

869+50.00

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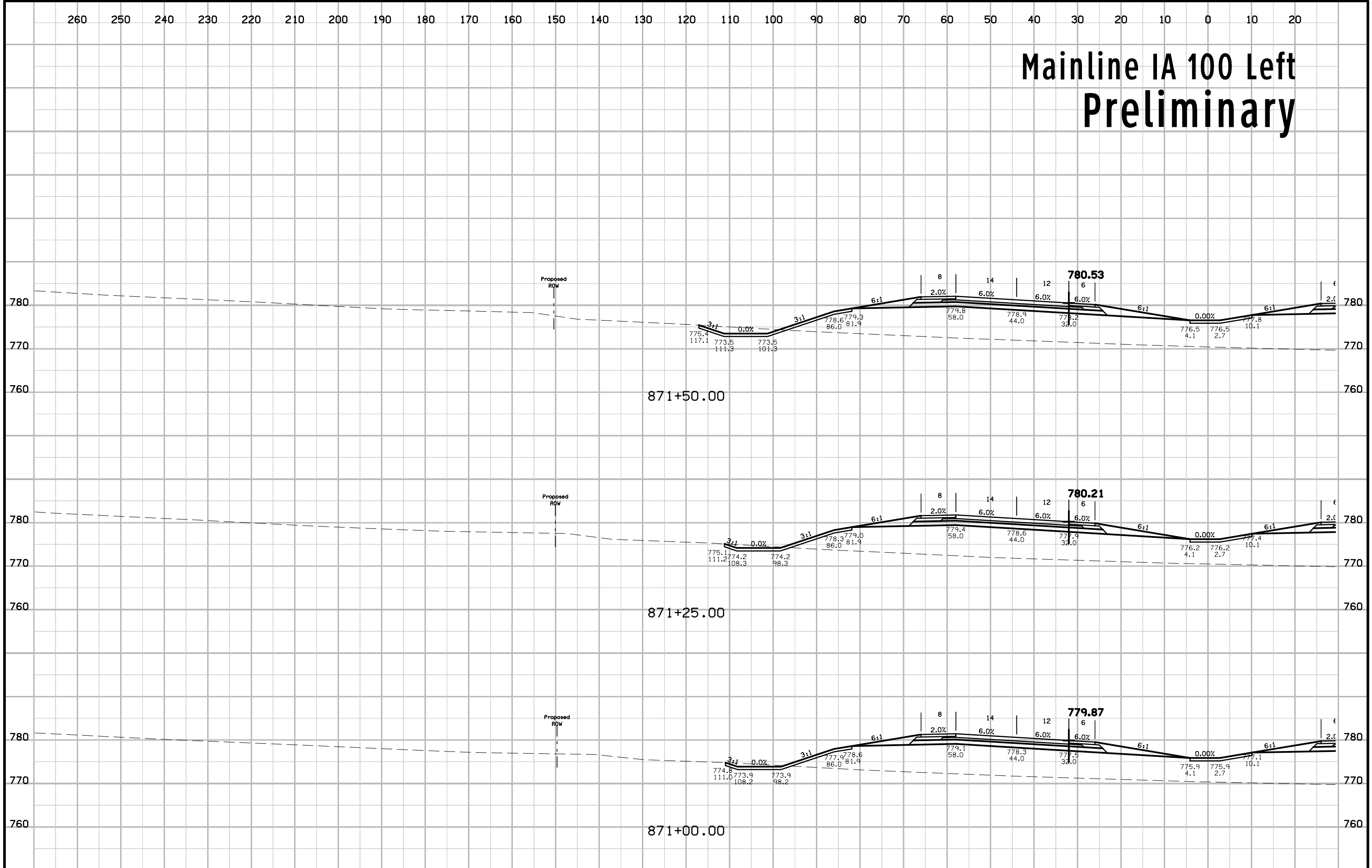


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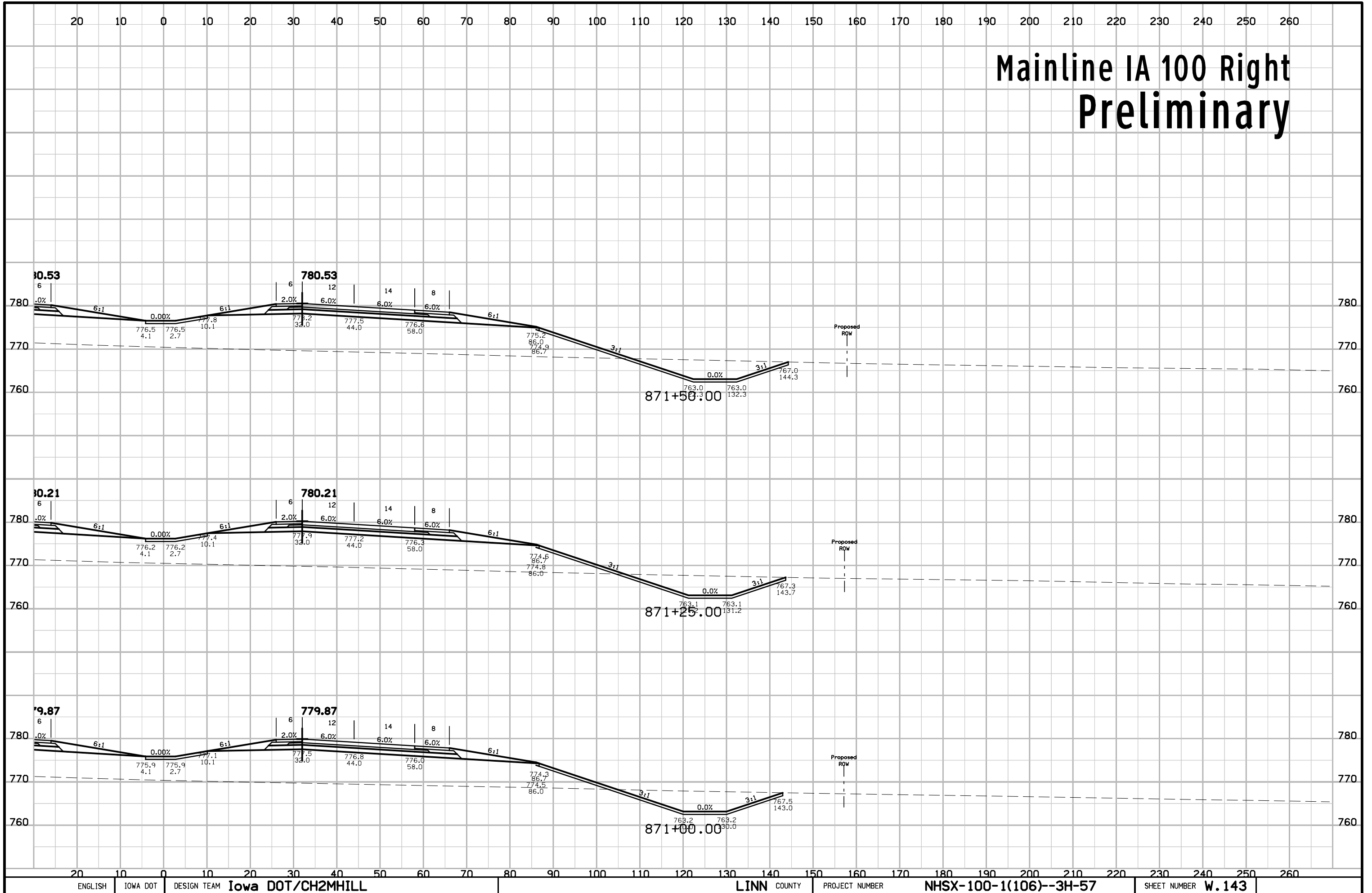




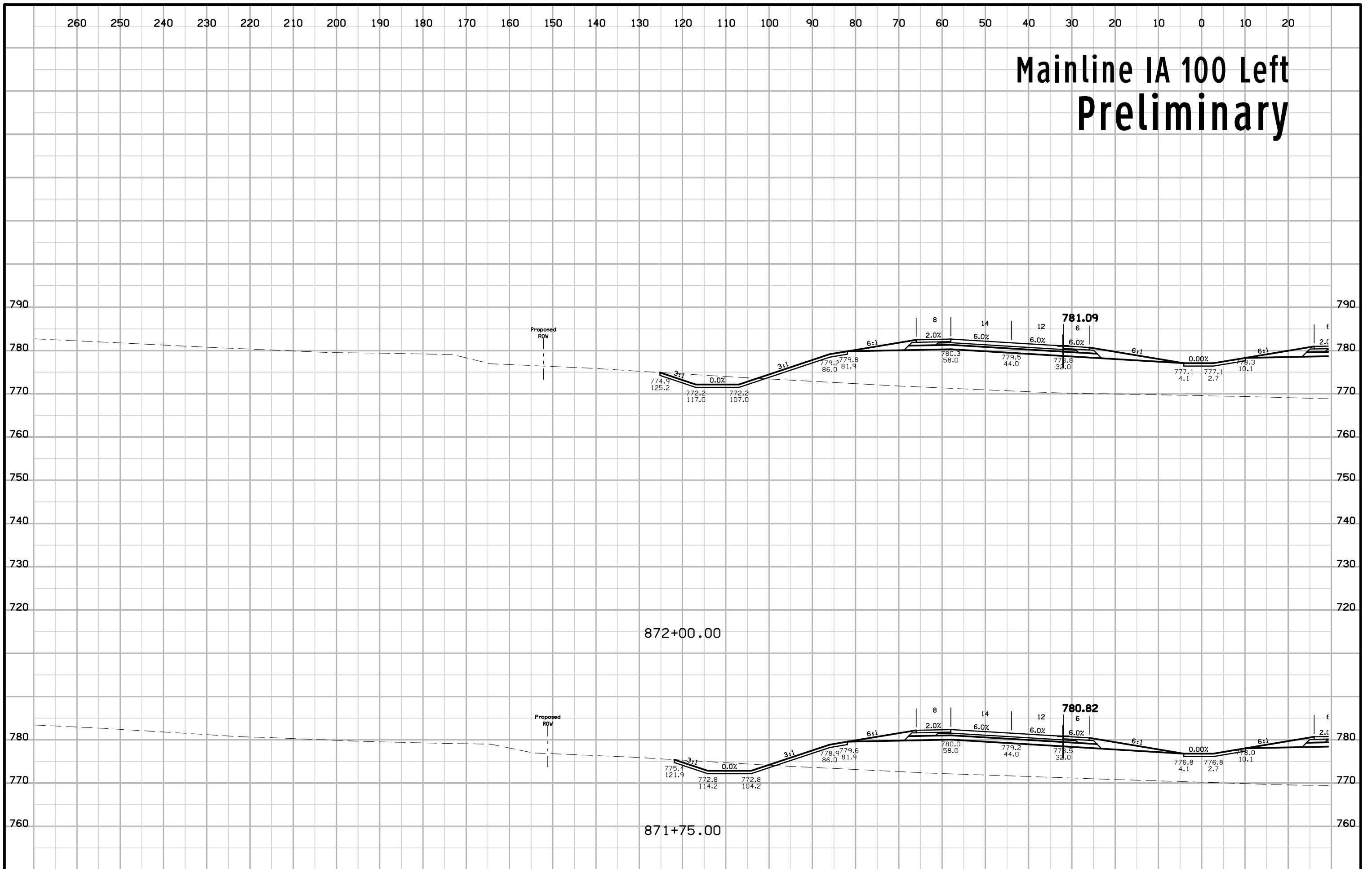
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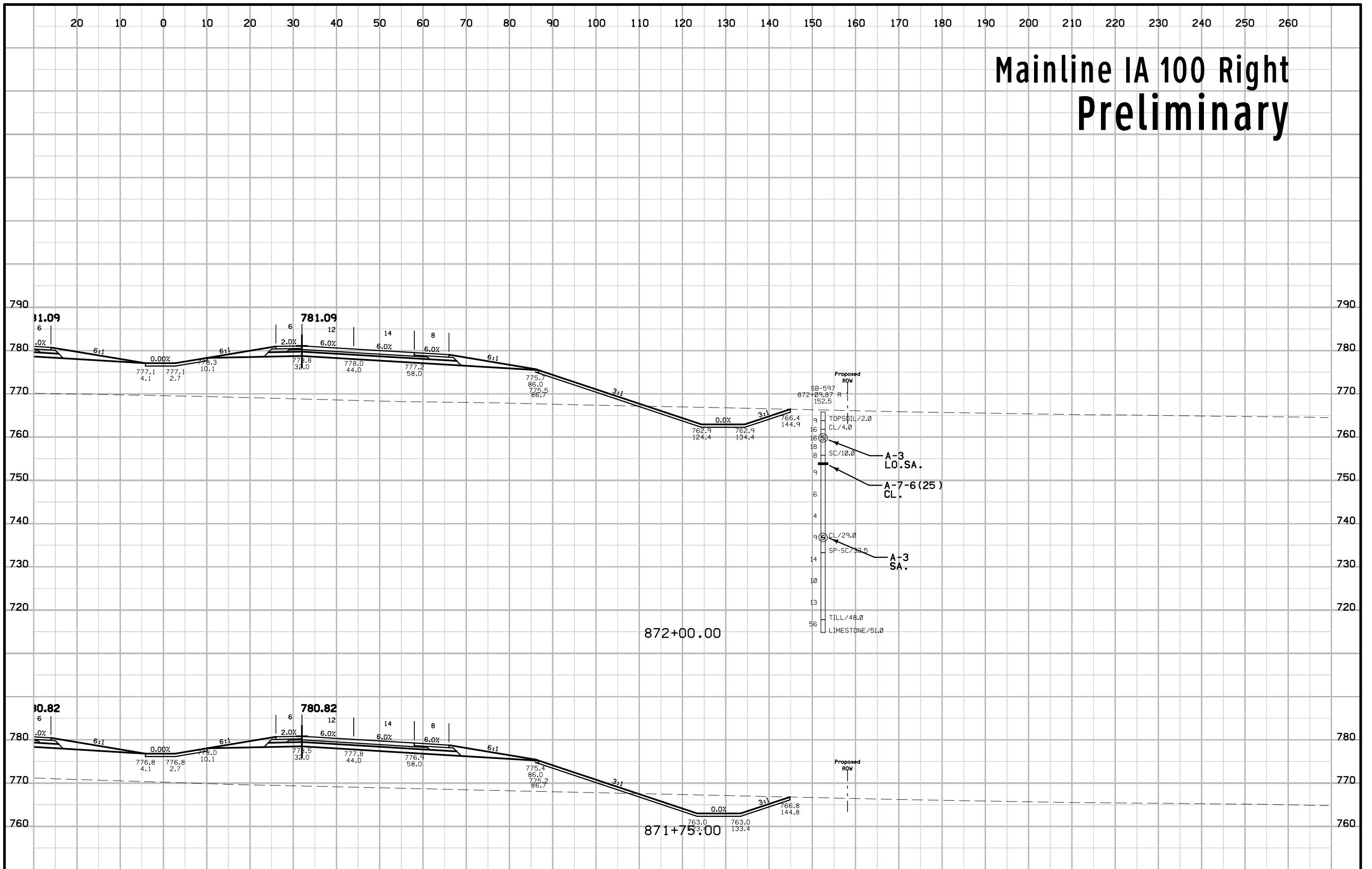
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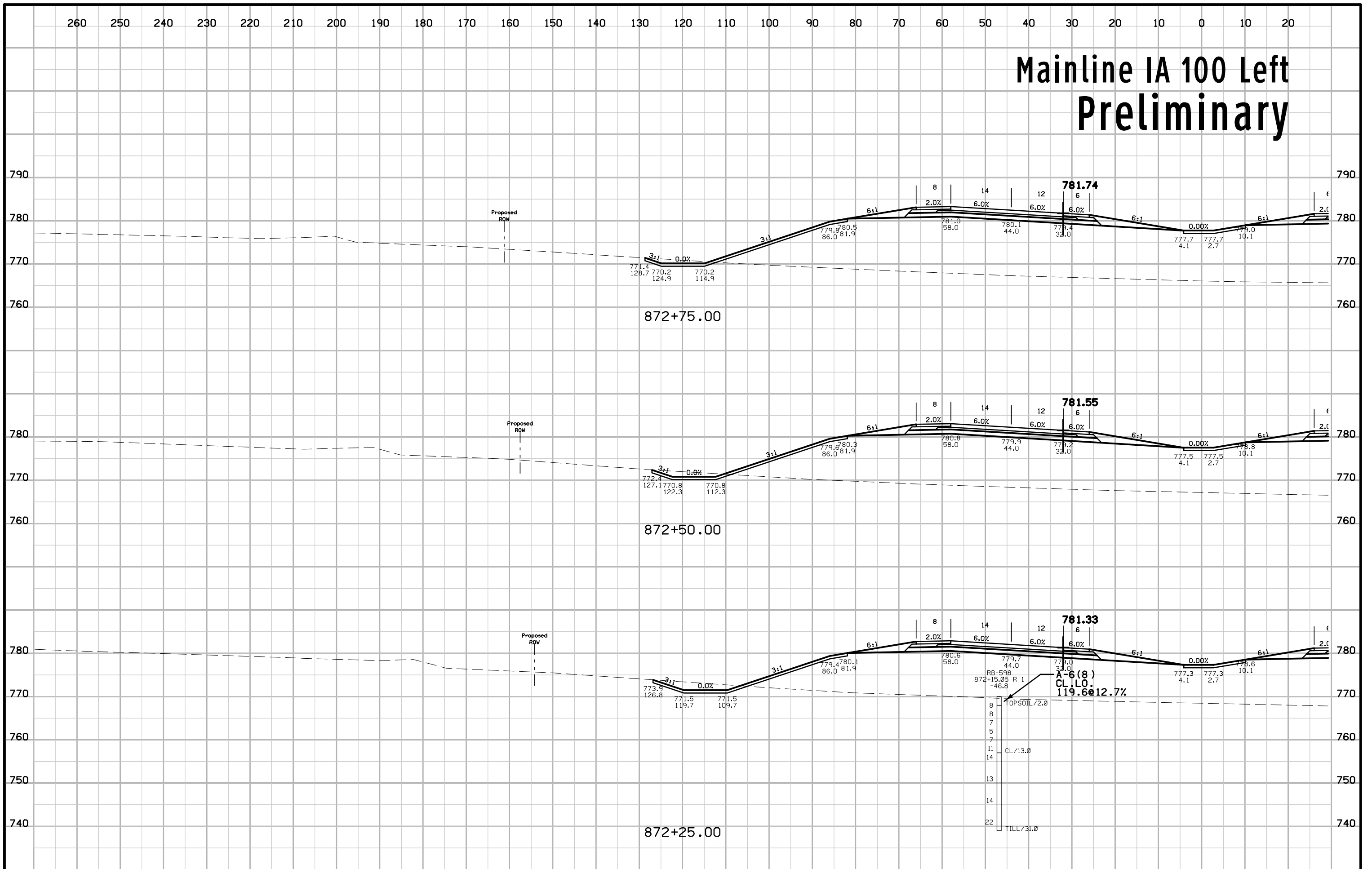
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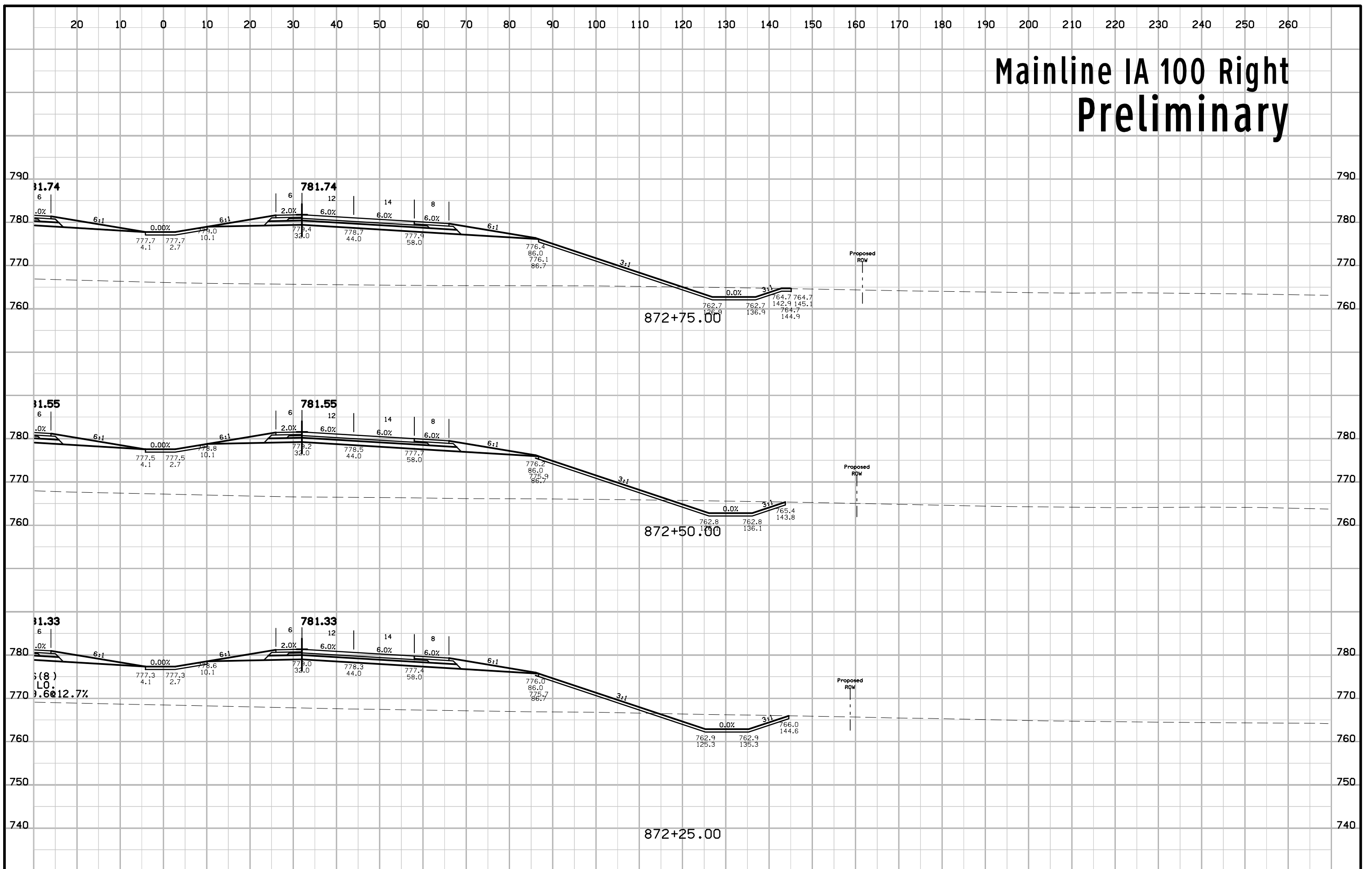
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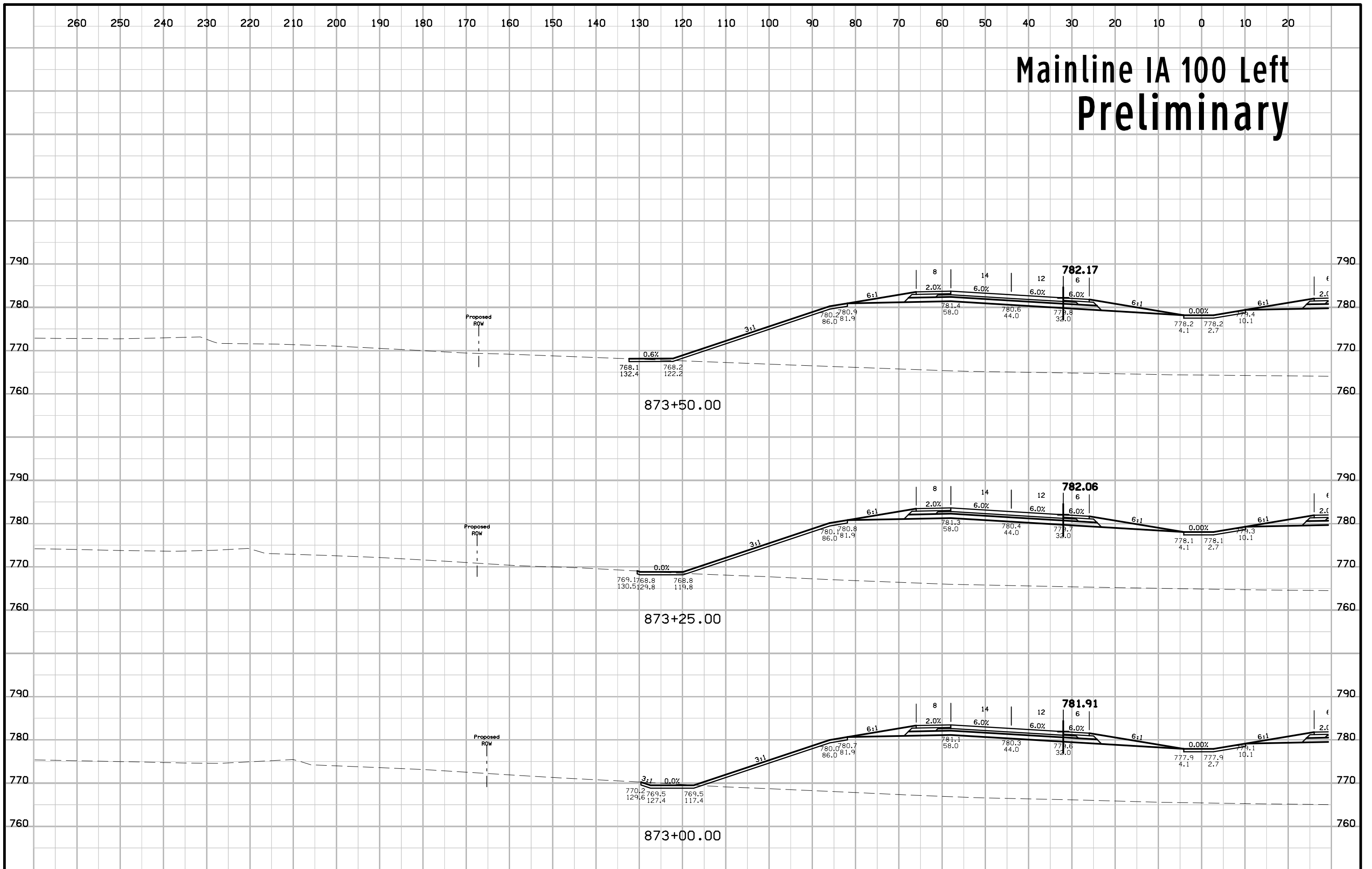
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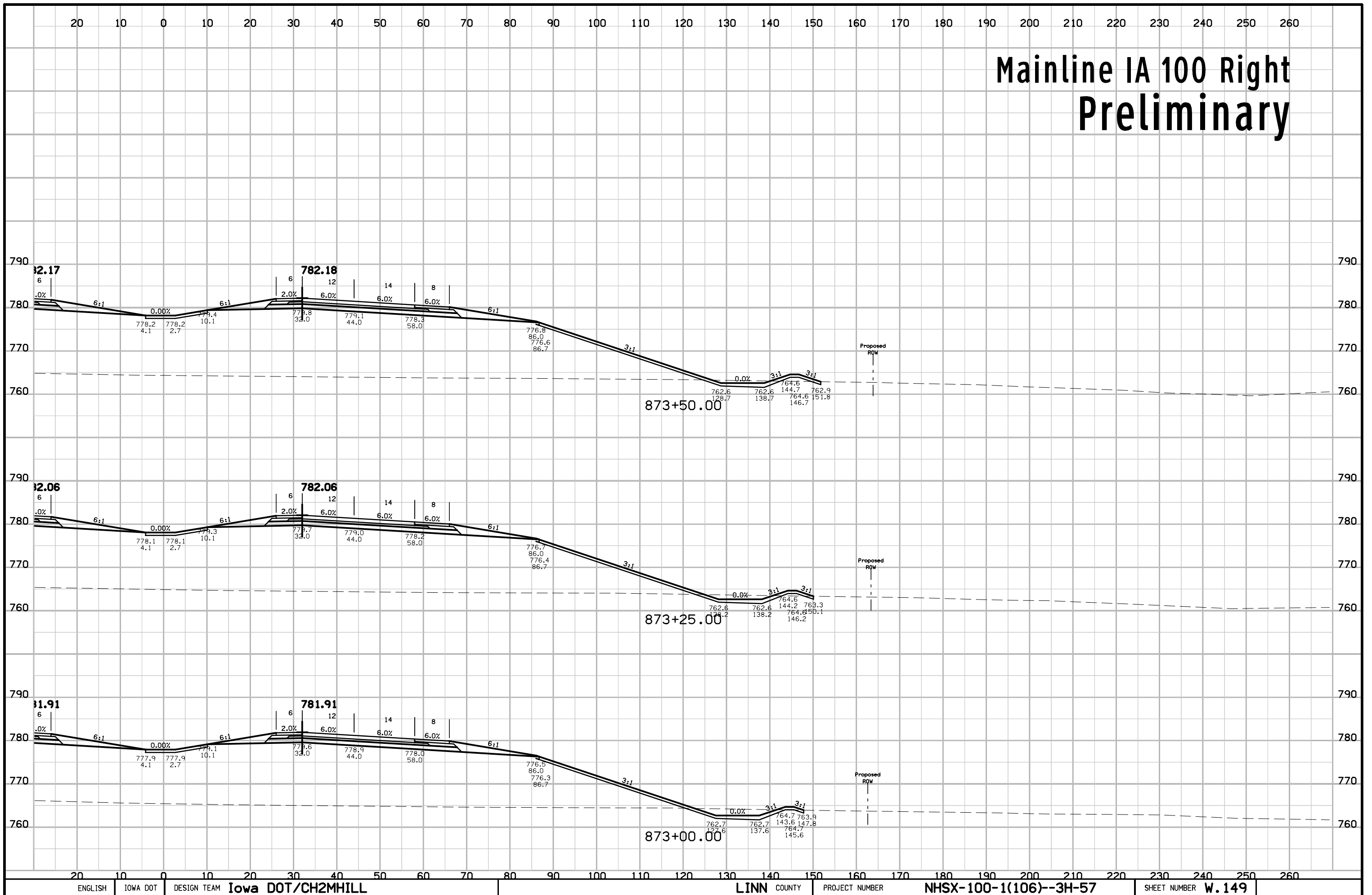
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# Mainline IA 100 Left Preliminary

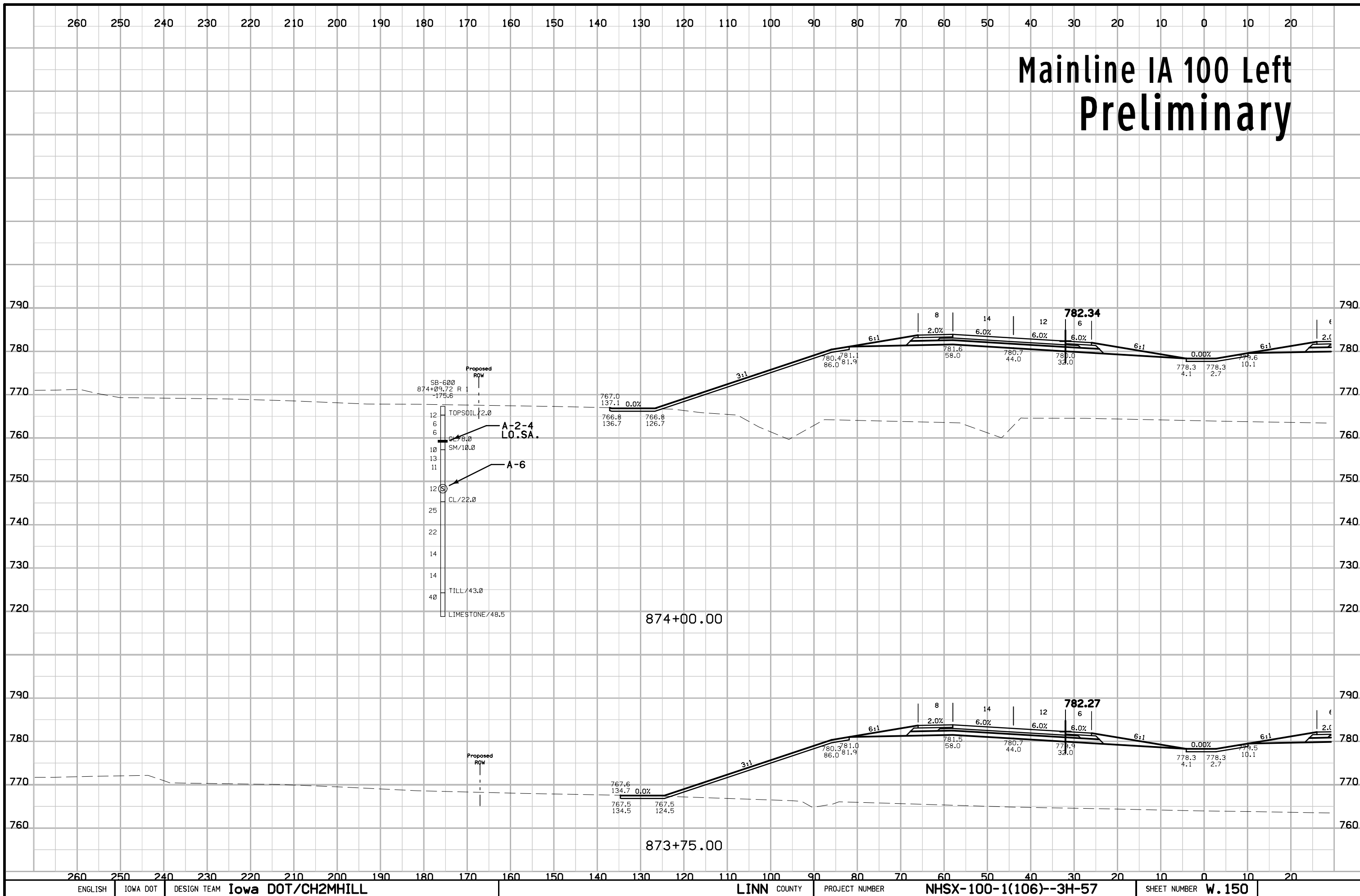


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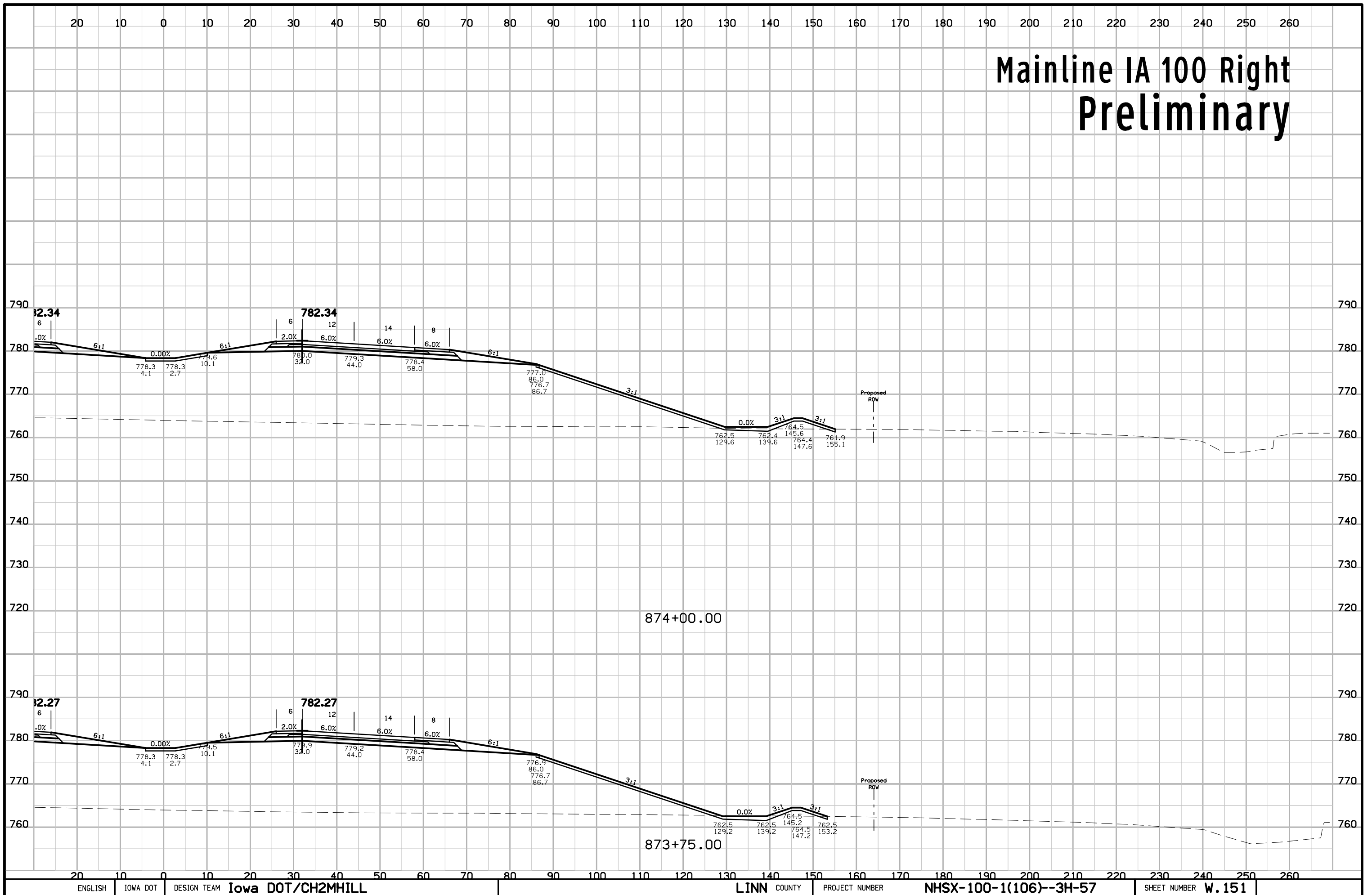




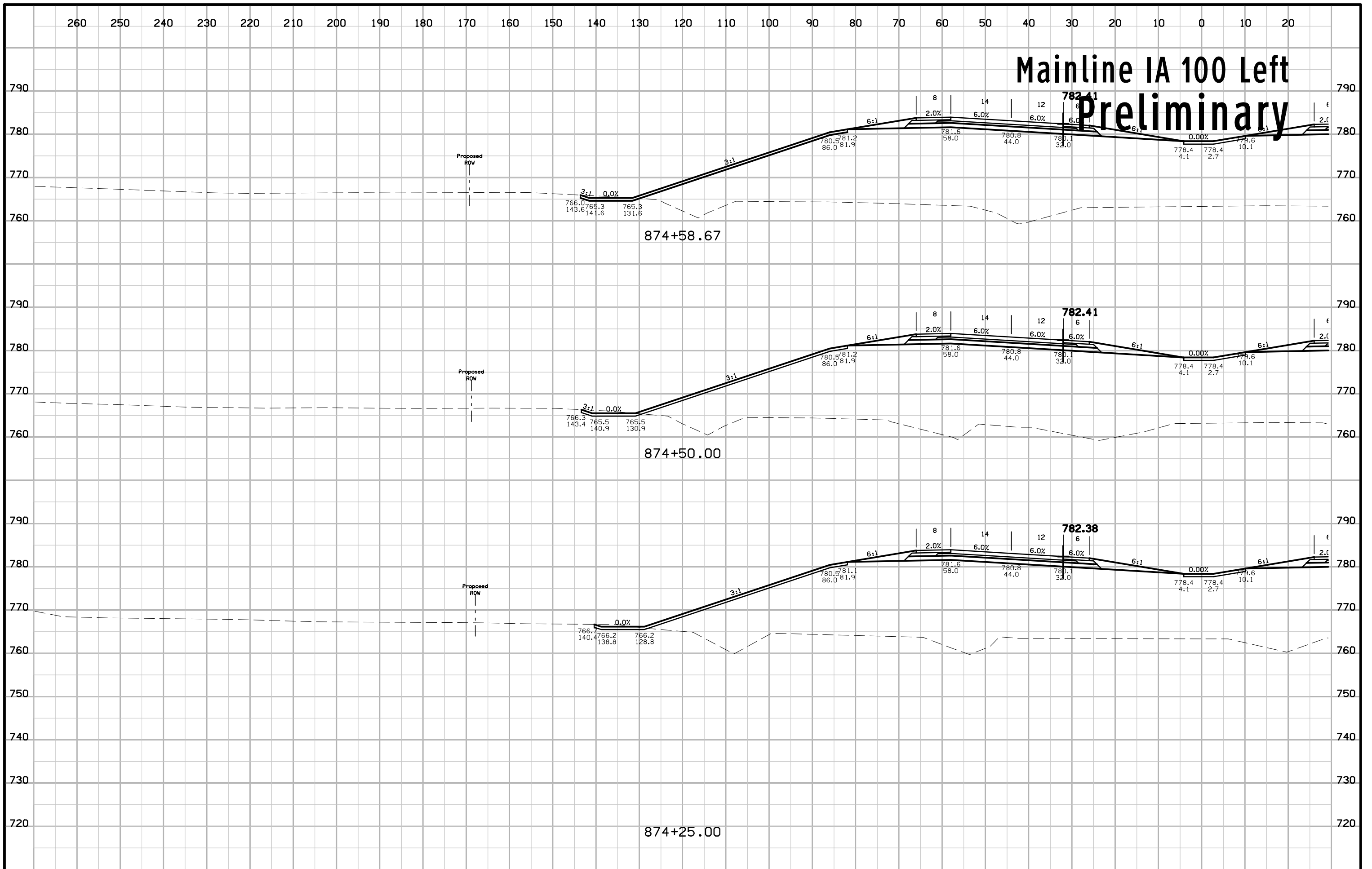
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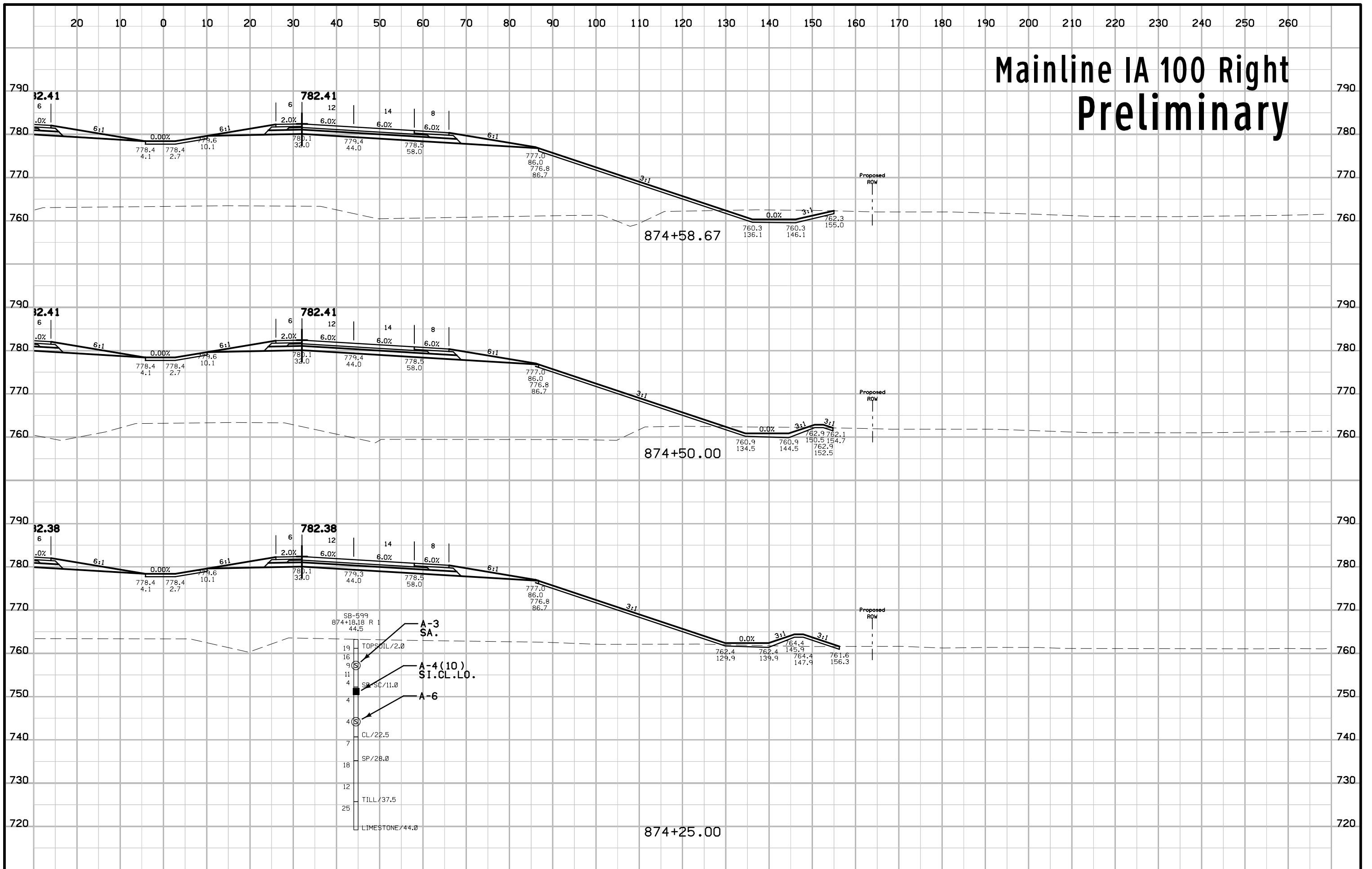
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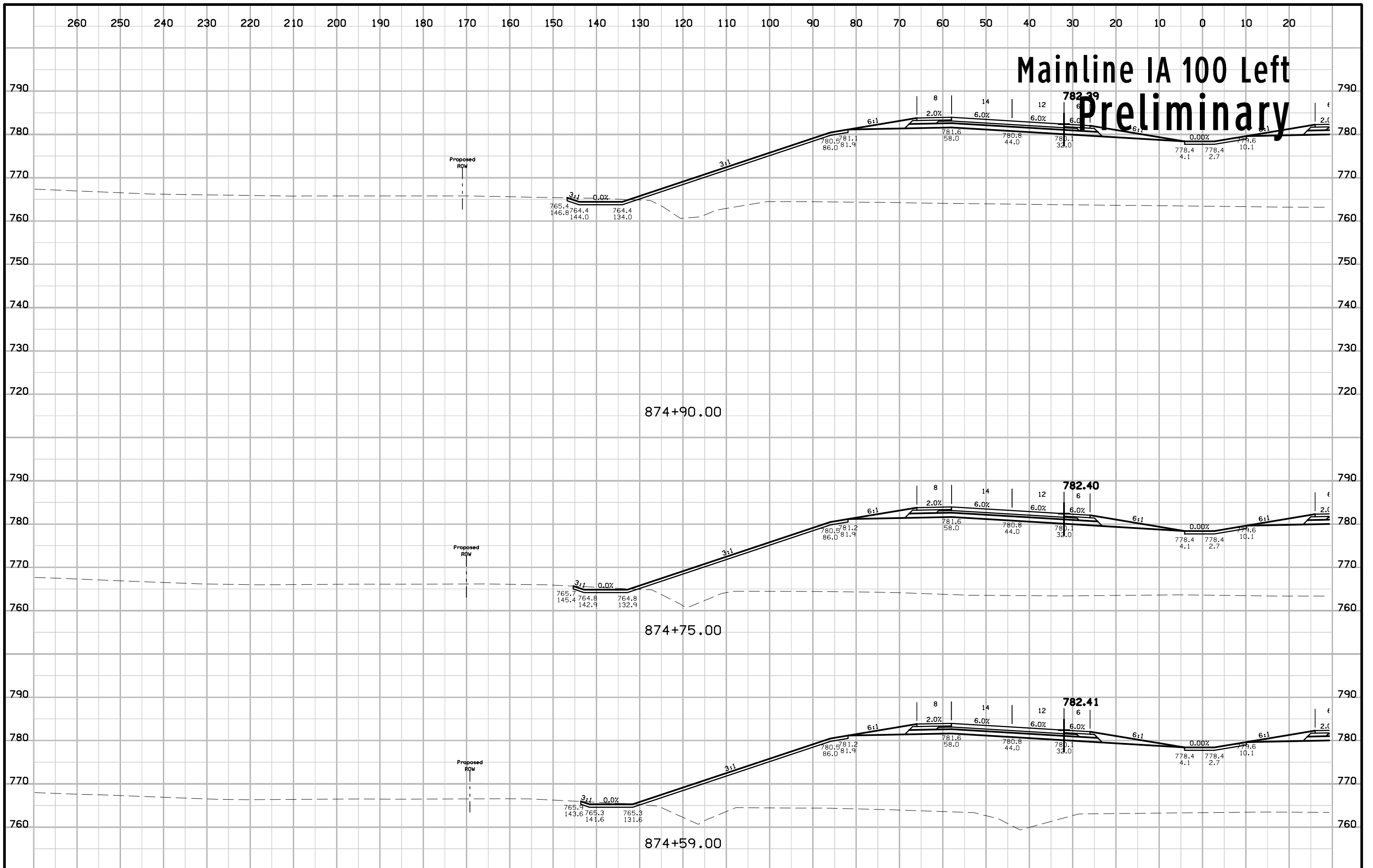
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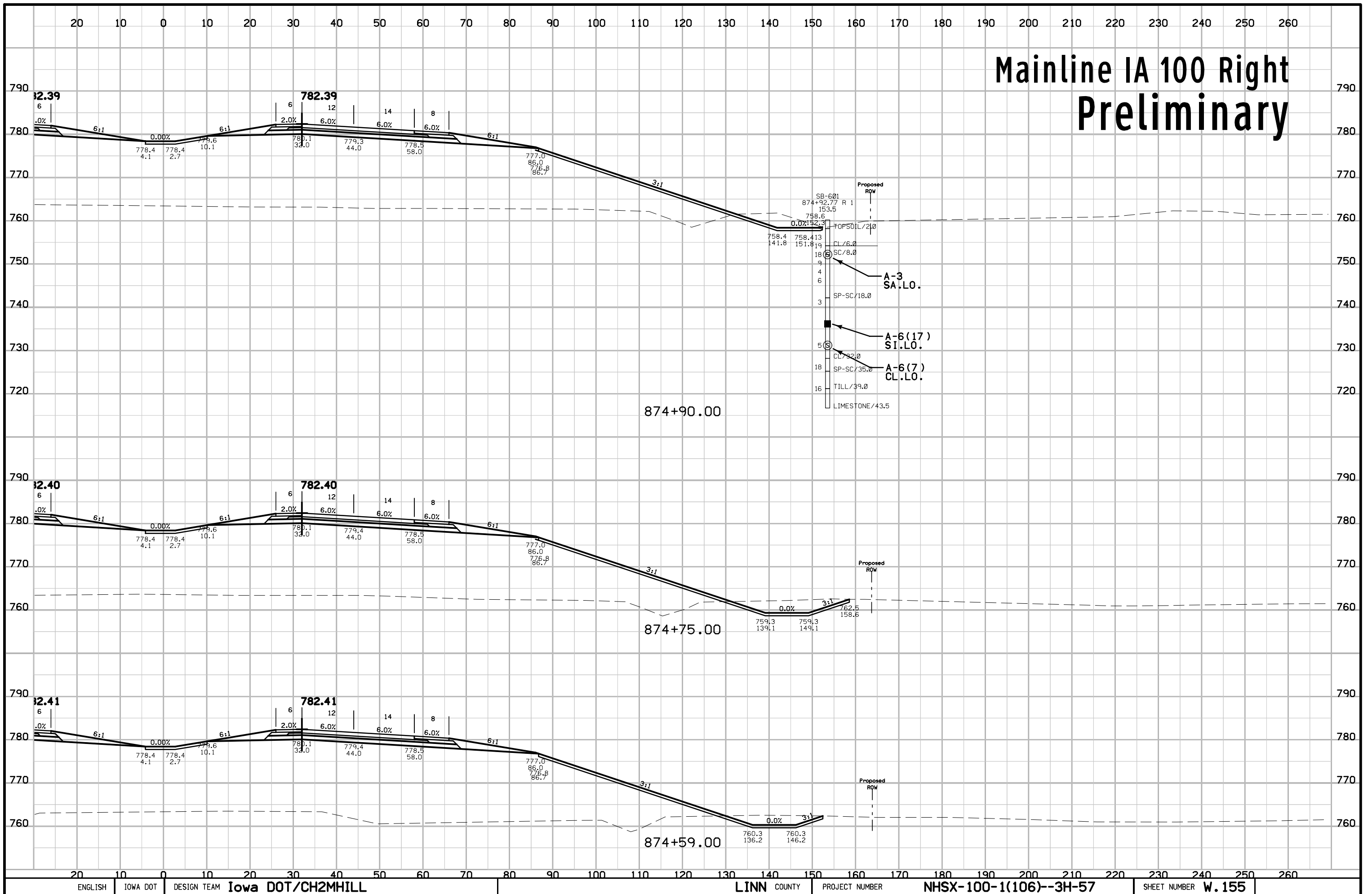
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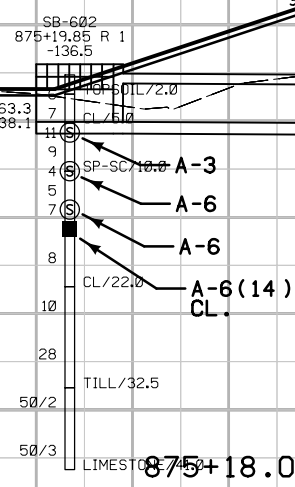
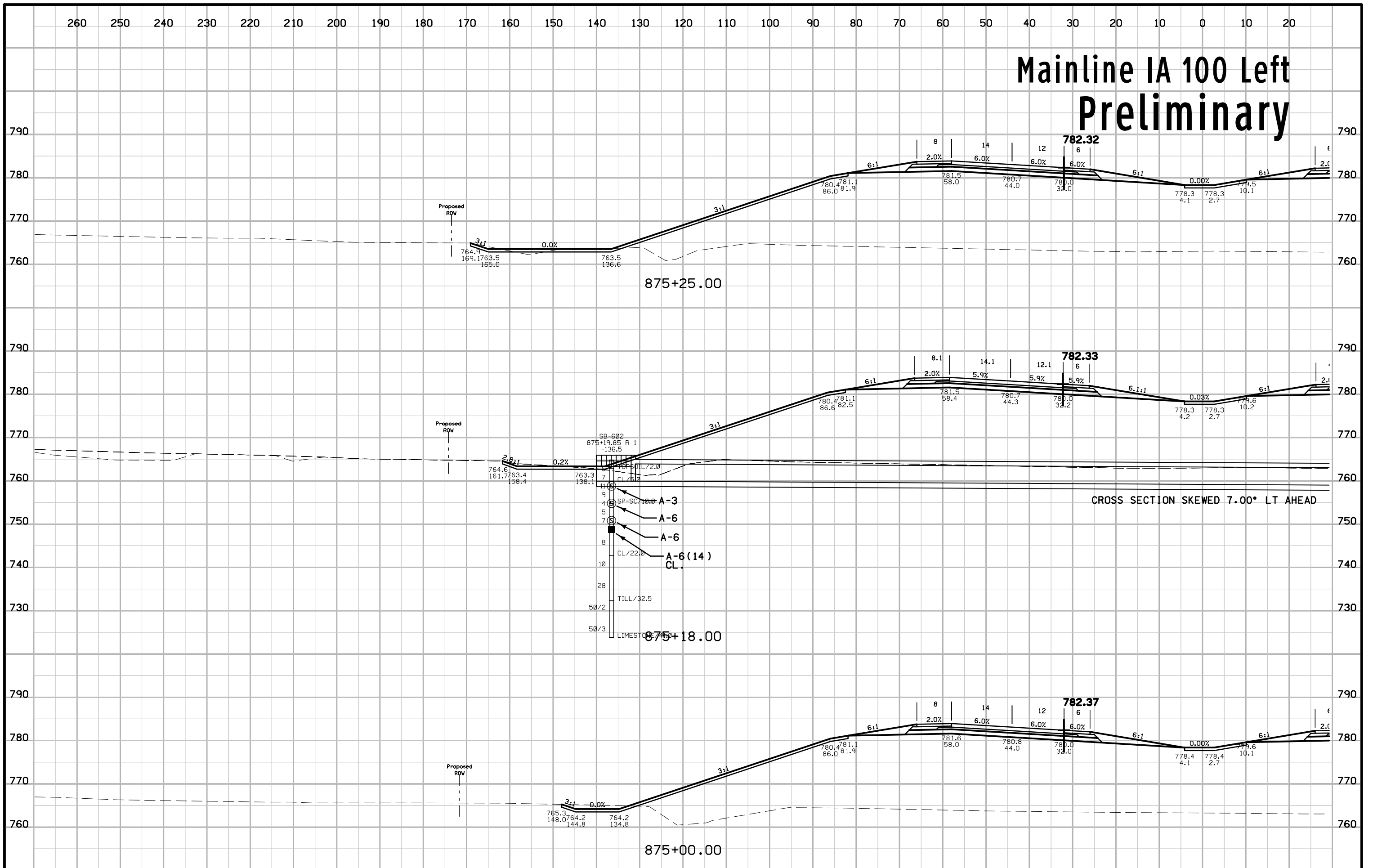
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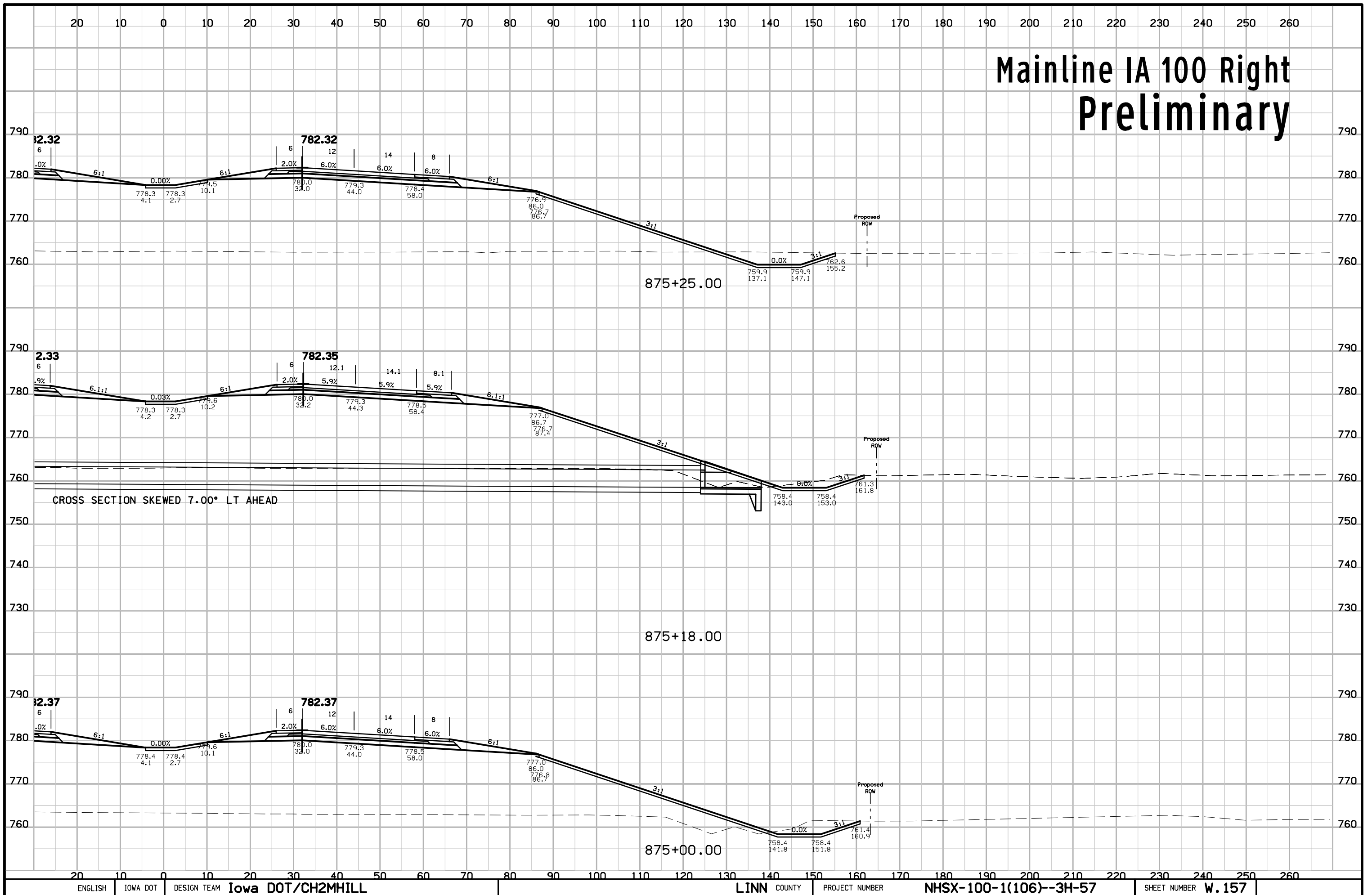


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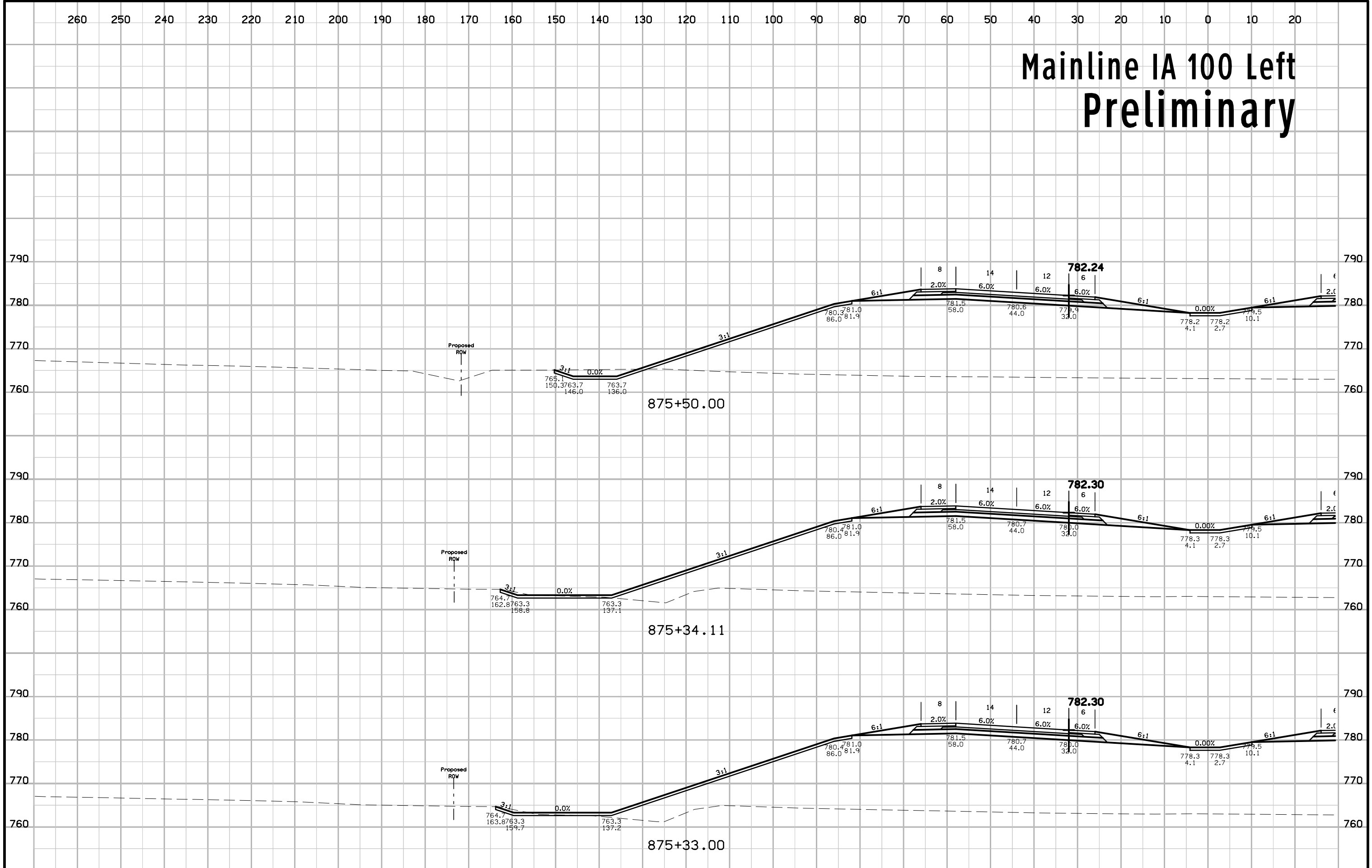
CROSS SECTION SKEWED 7.00° LT AHEAD

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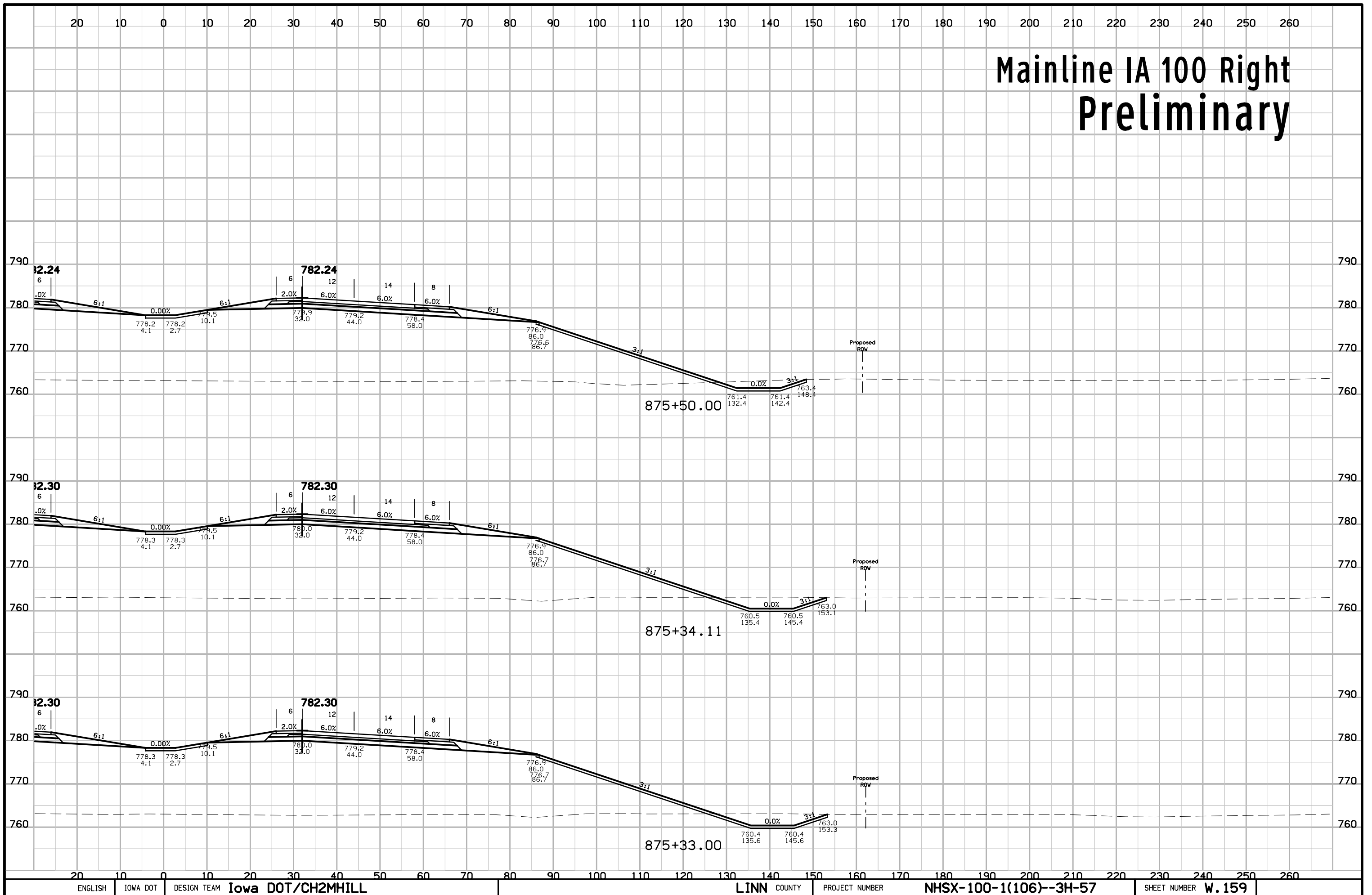




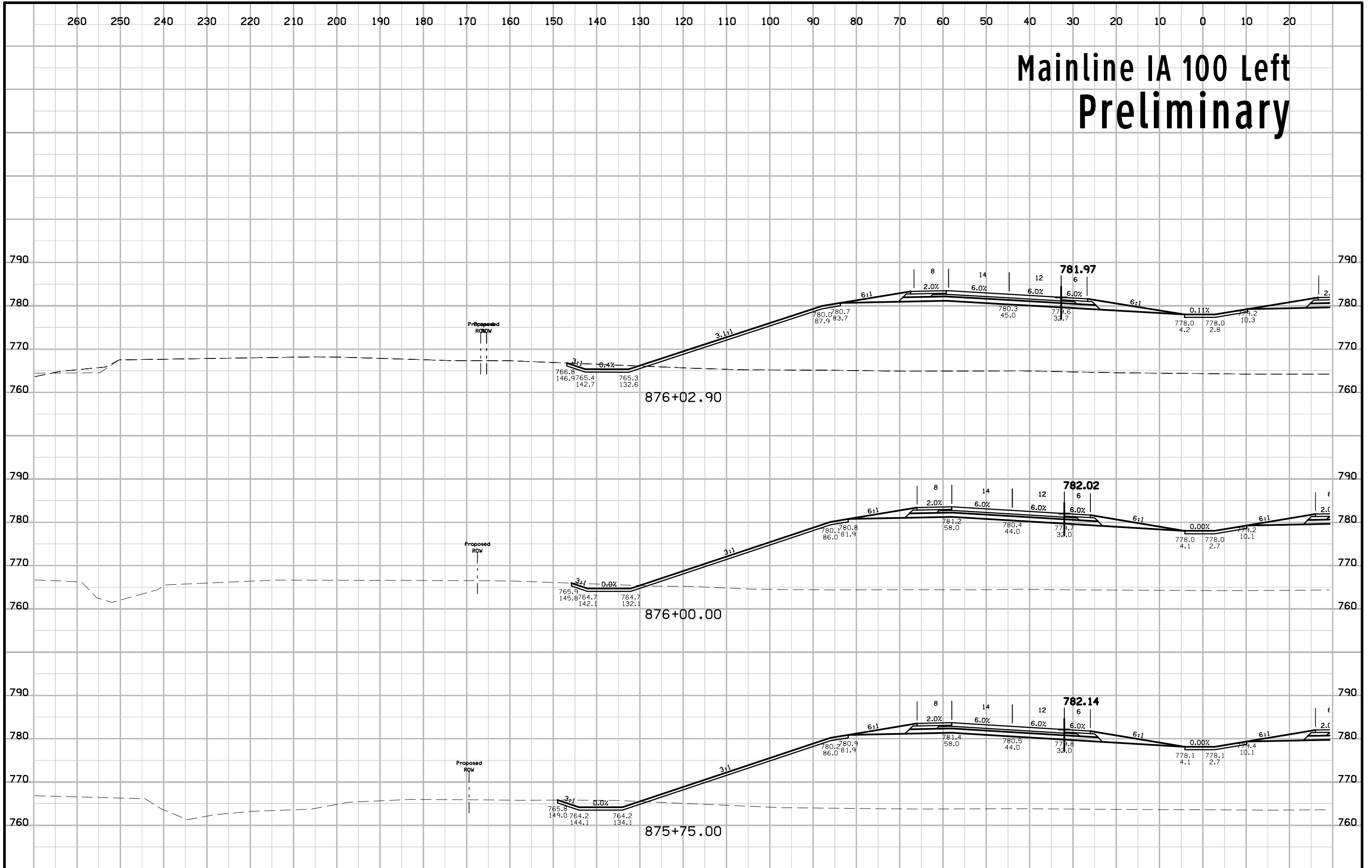
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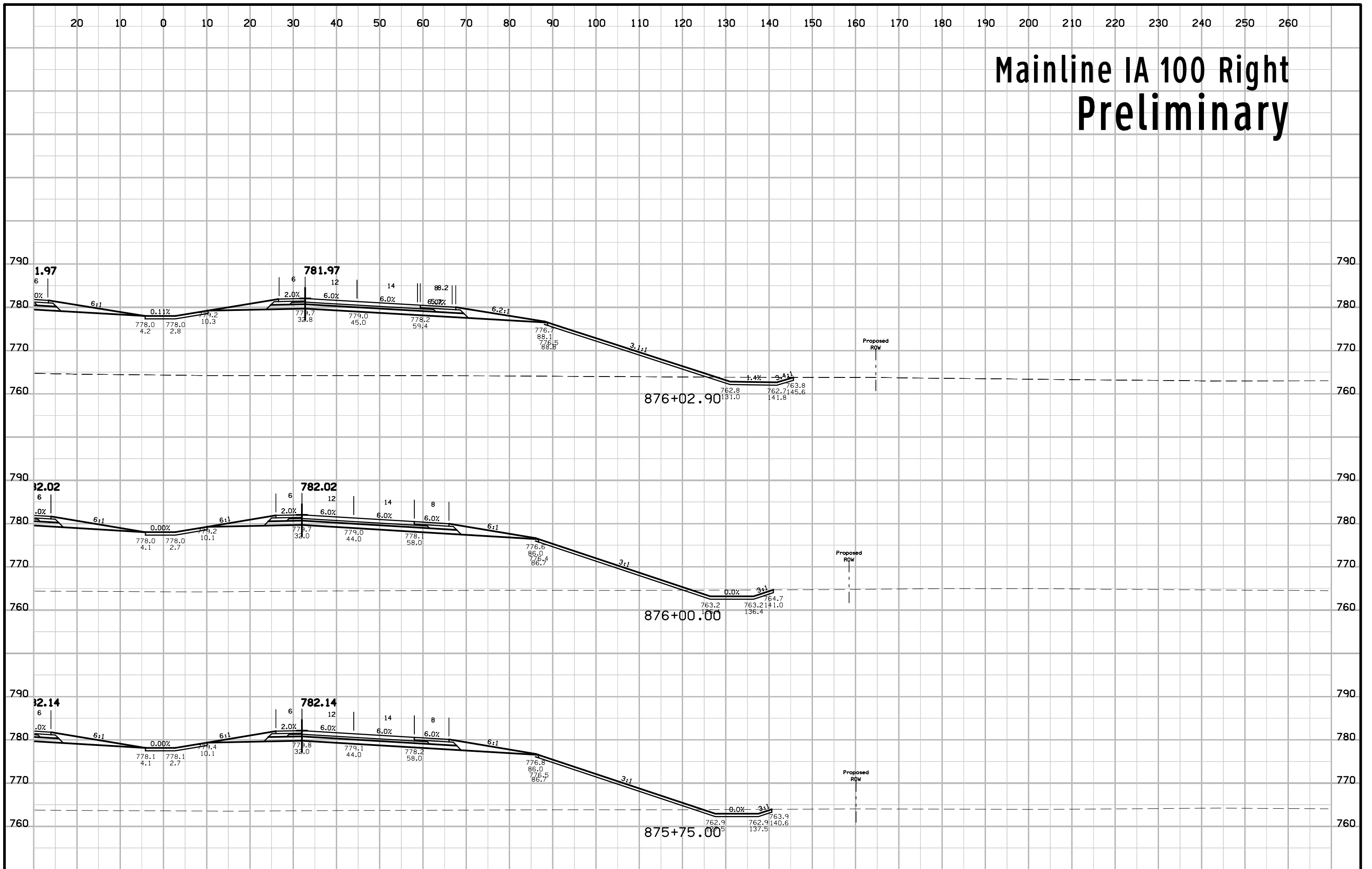
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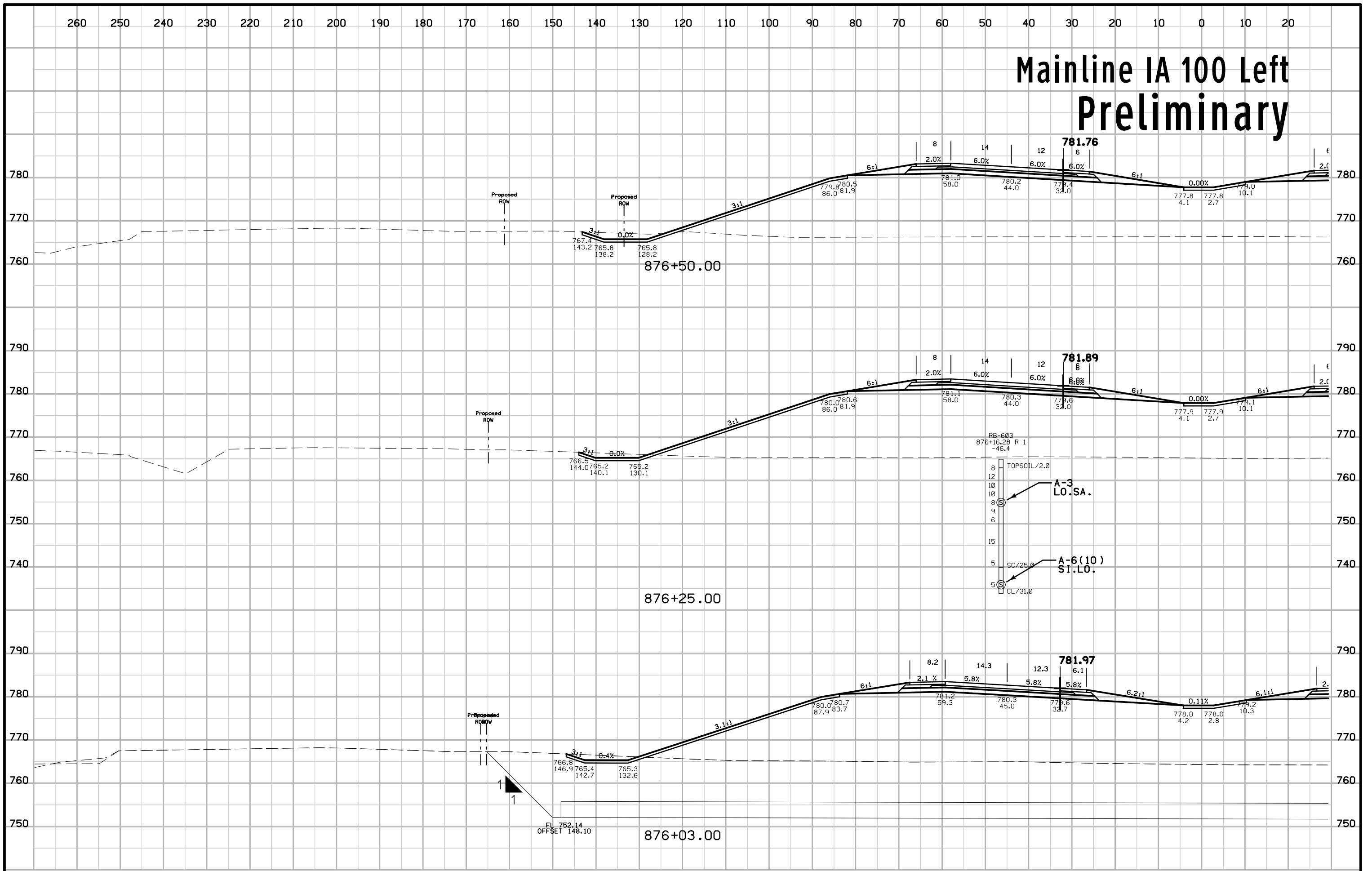
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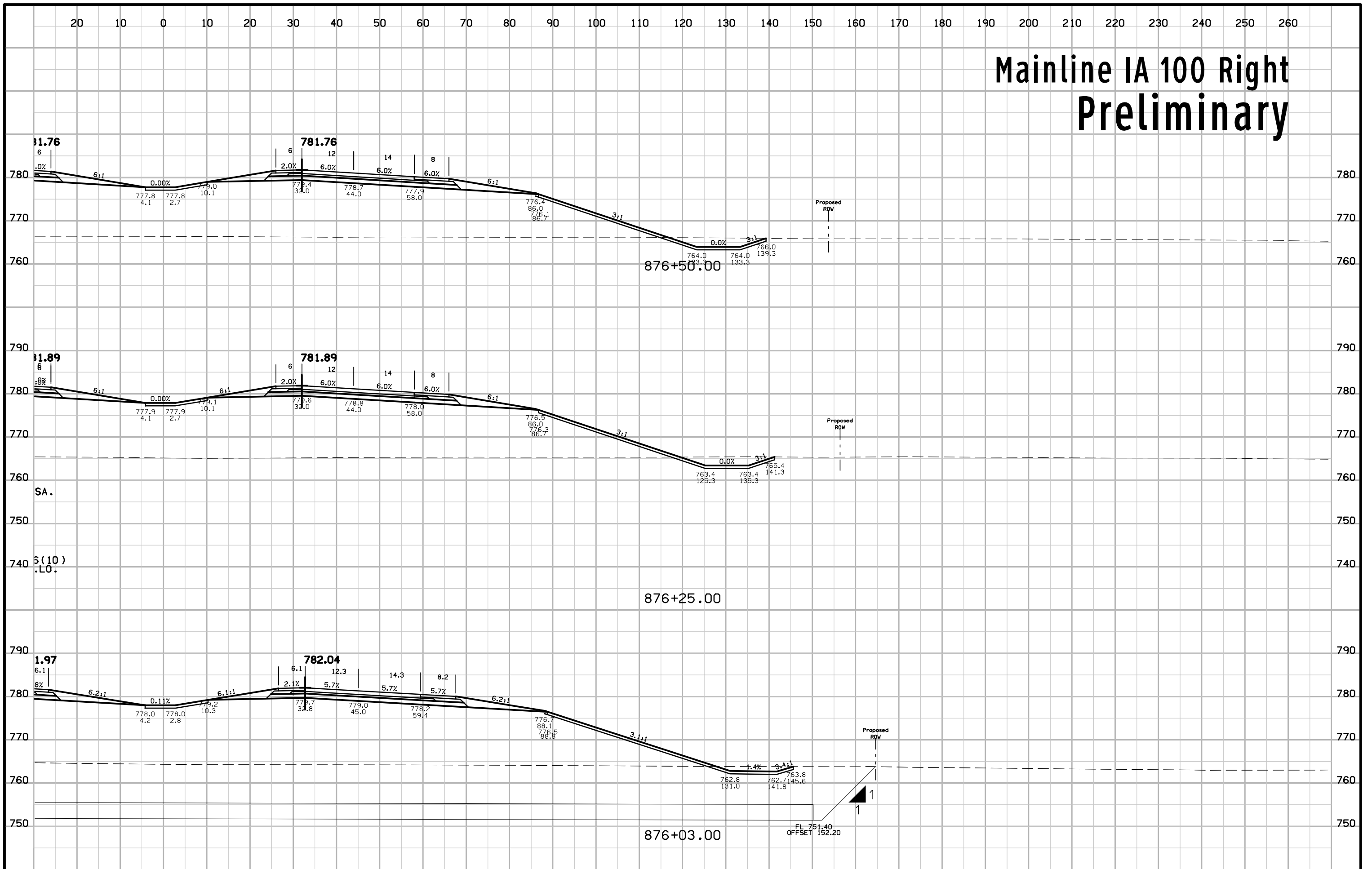
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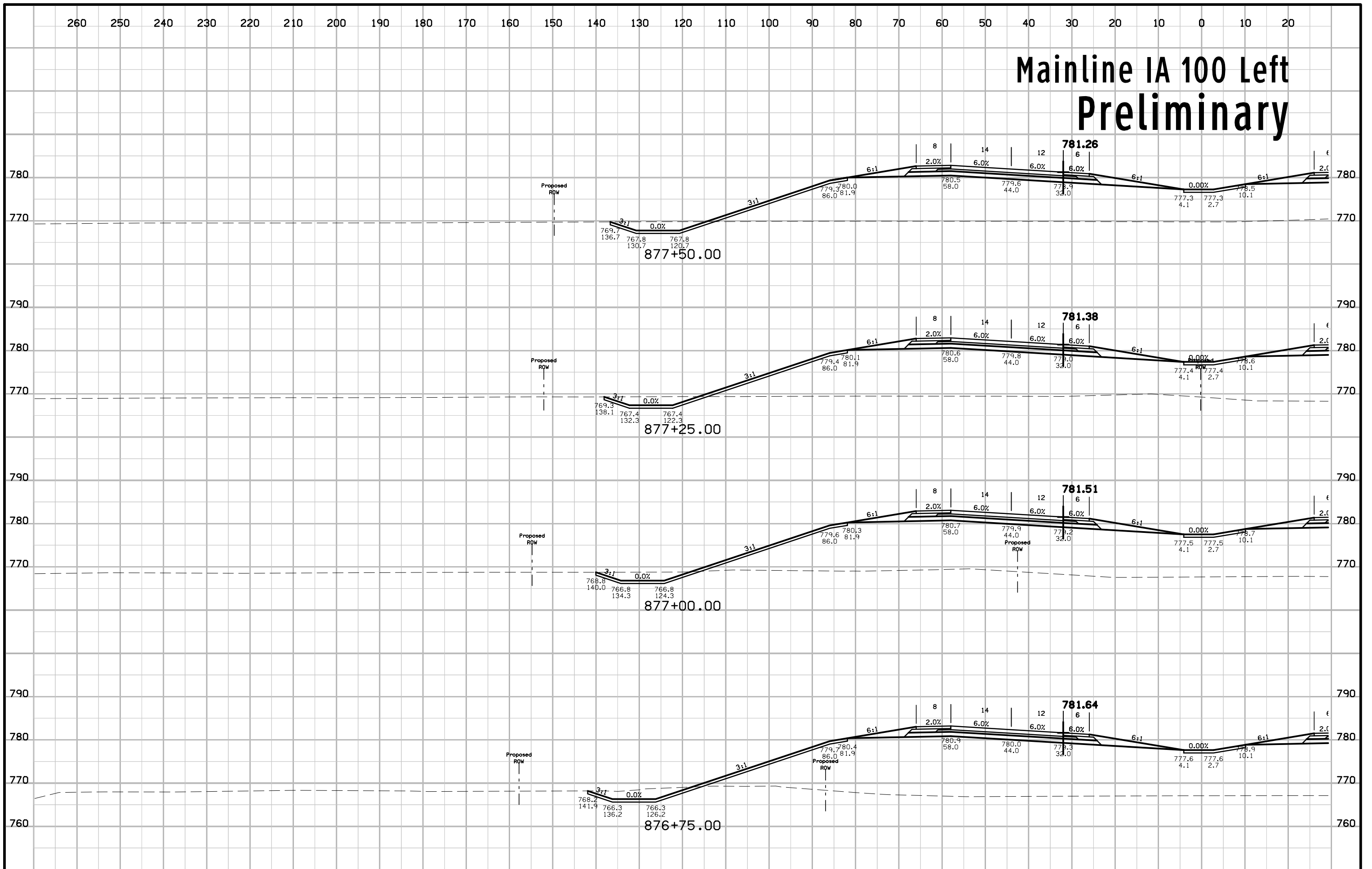
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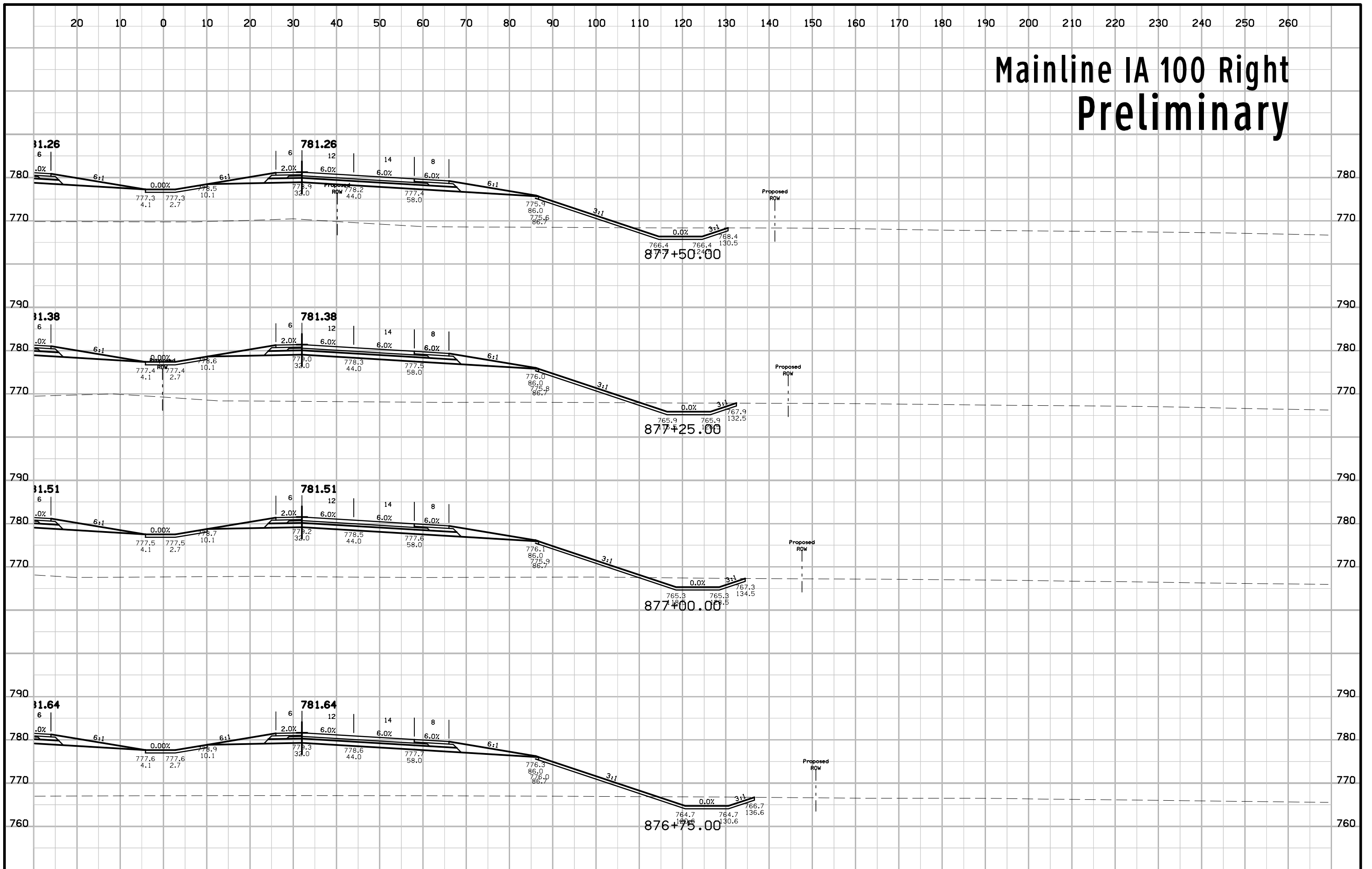
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# Mainline IA 100 Left Preliminary

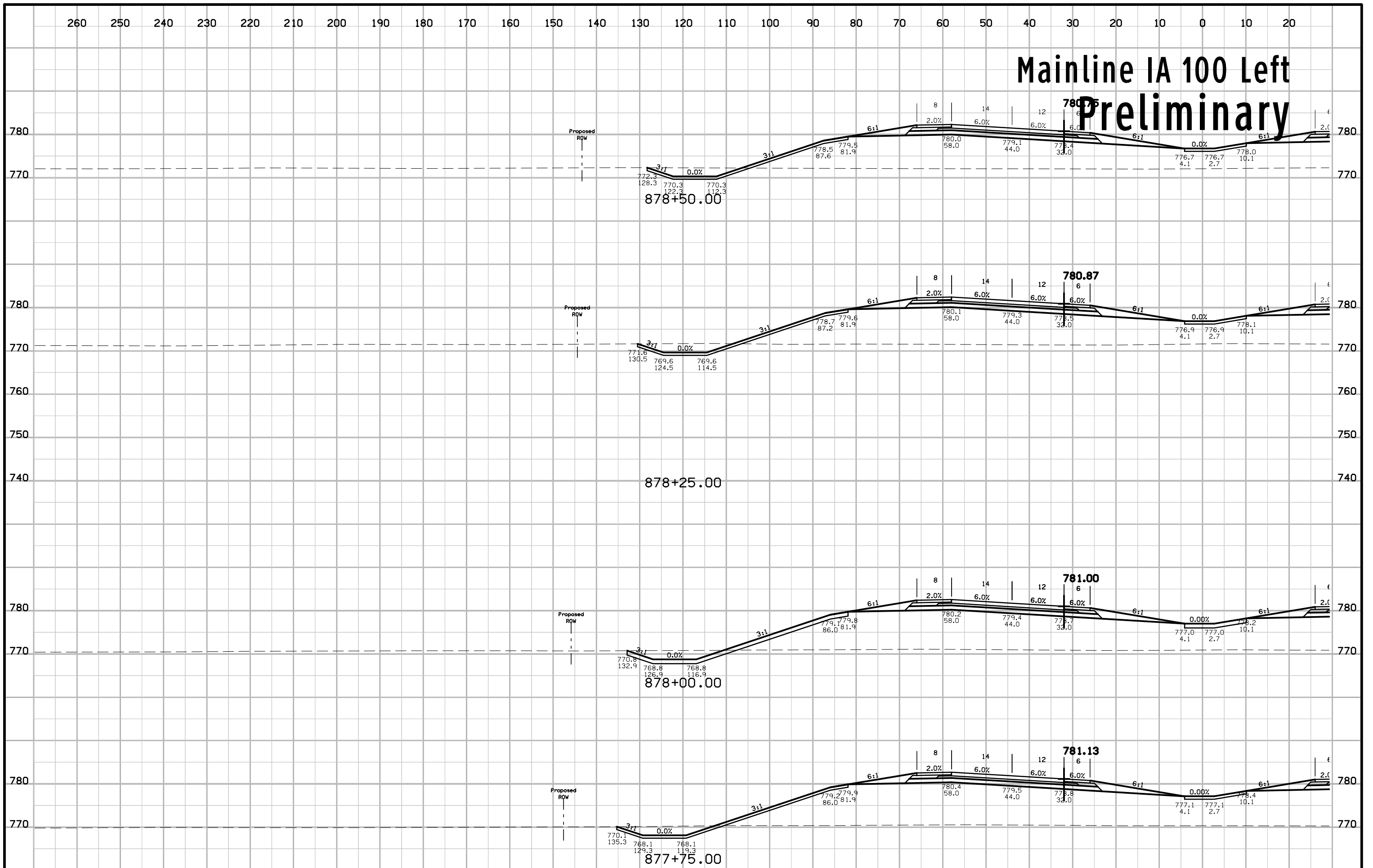


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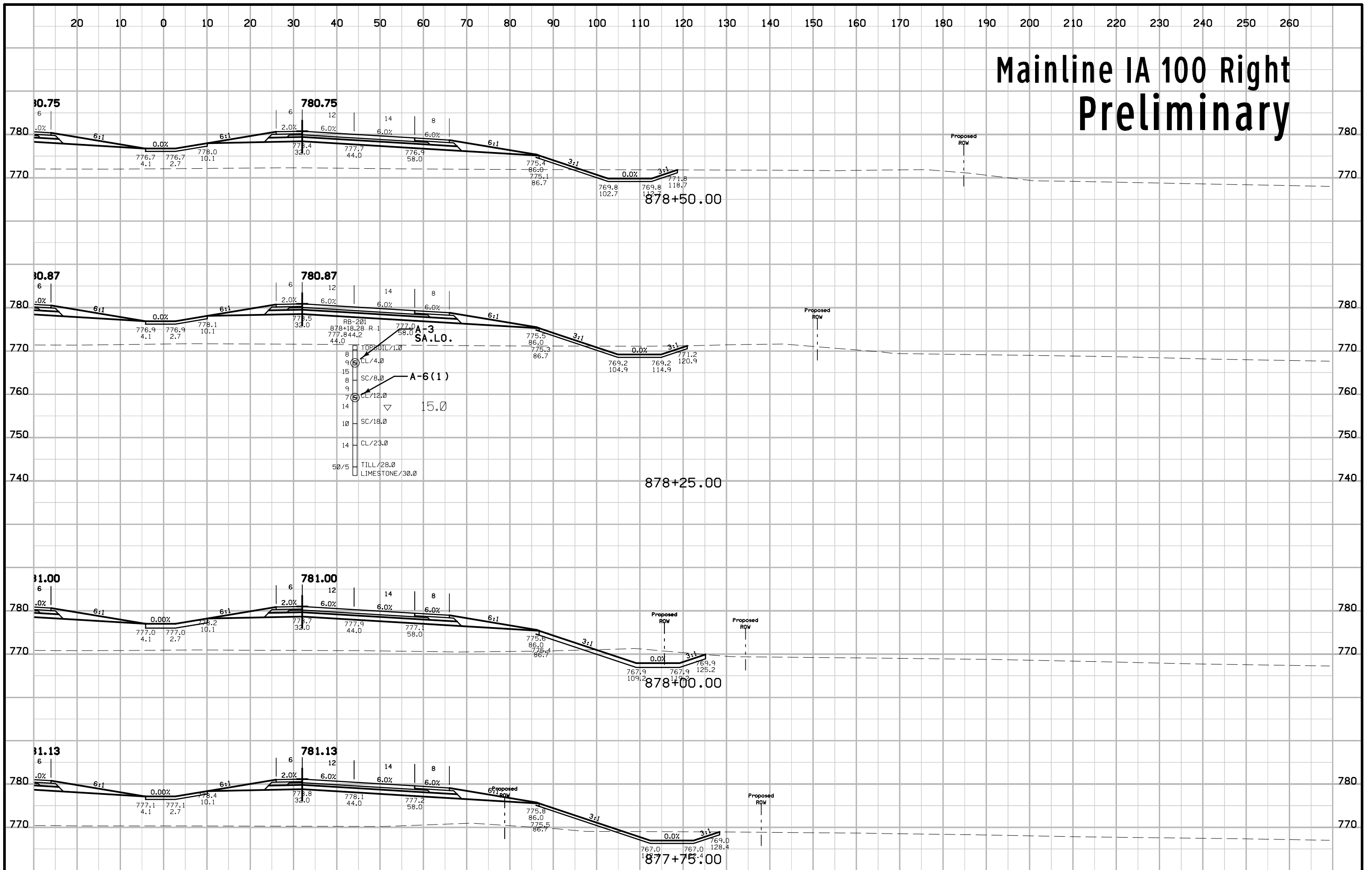




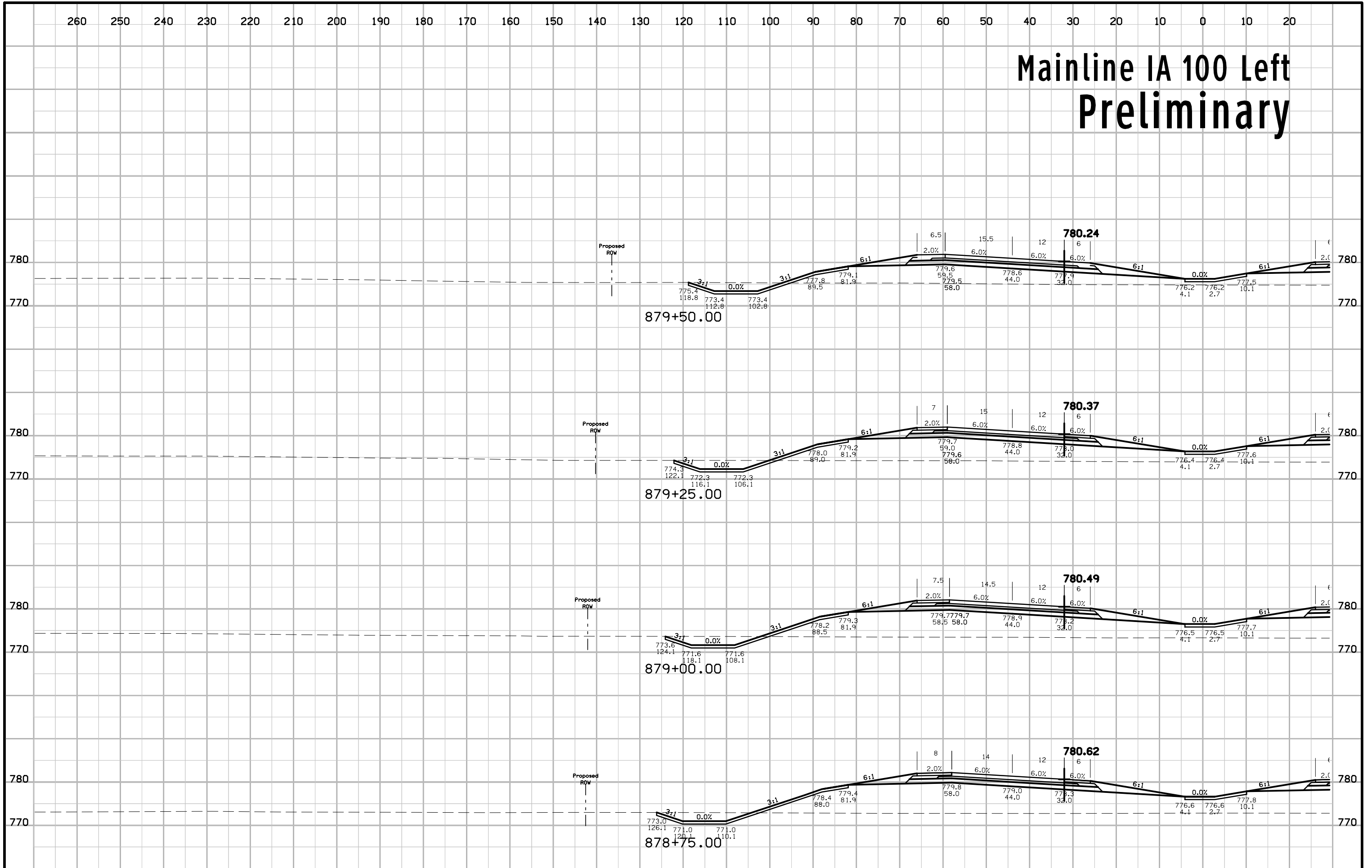
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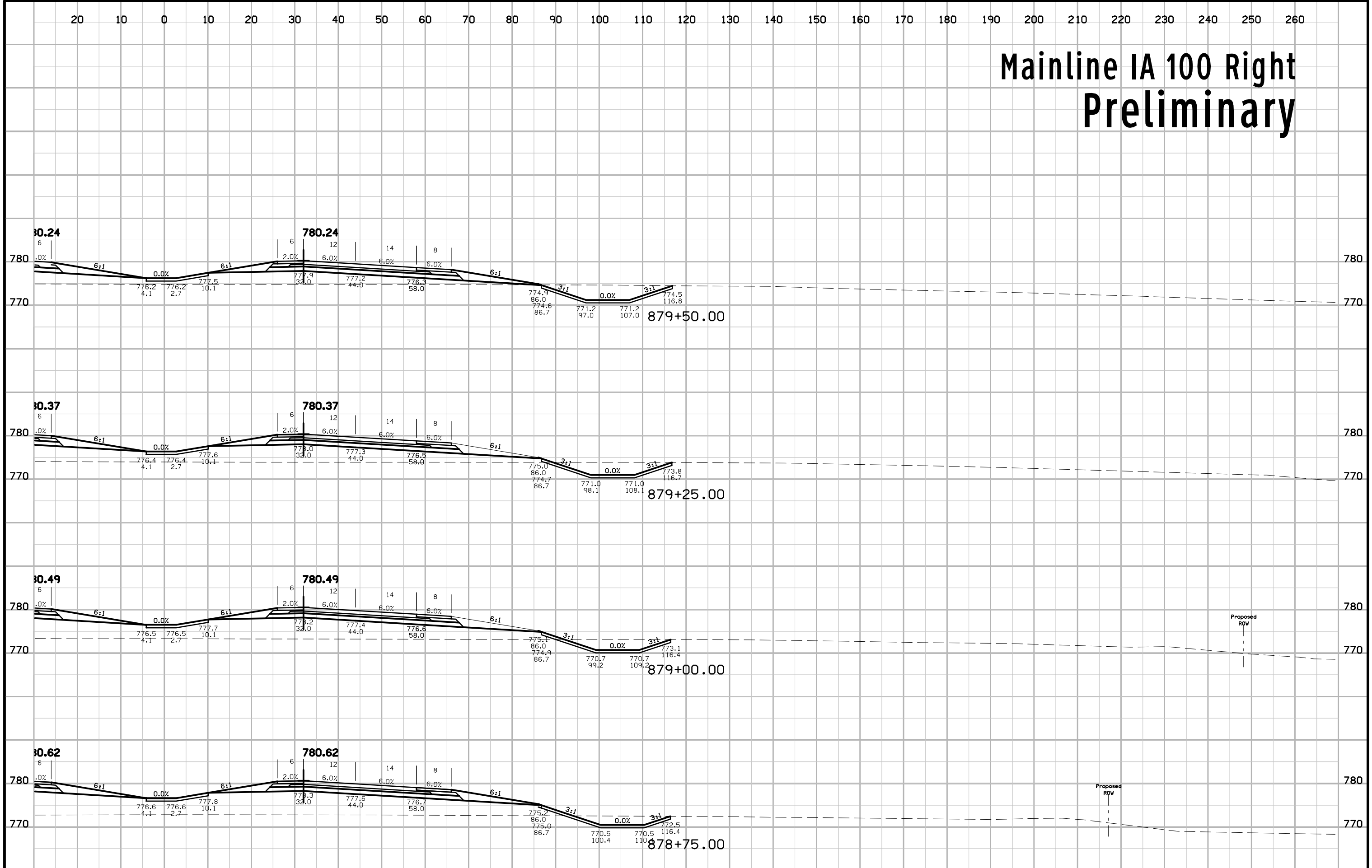
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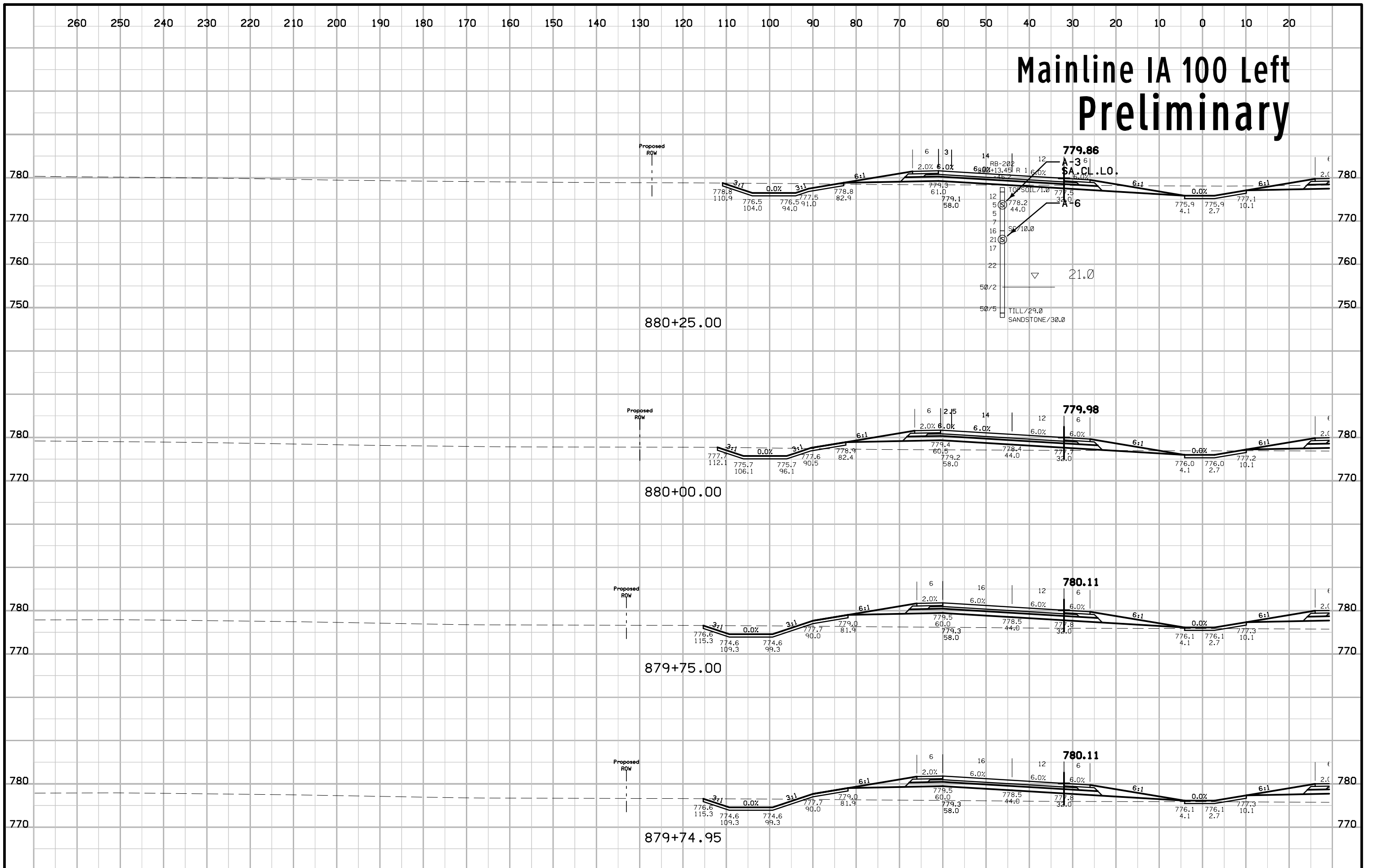
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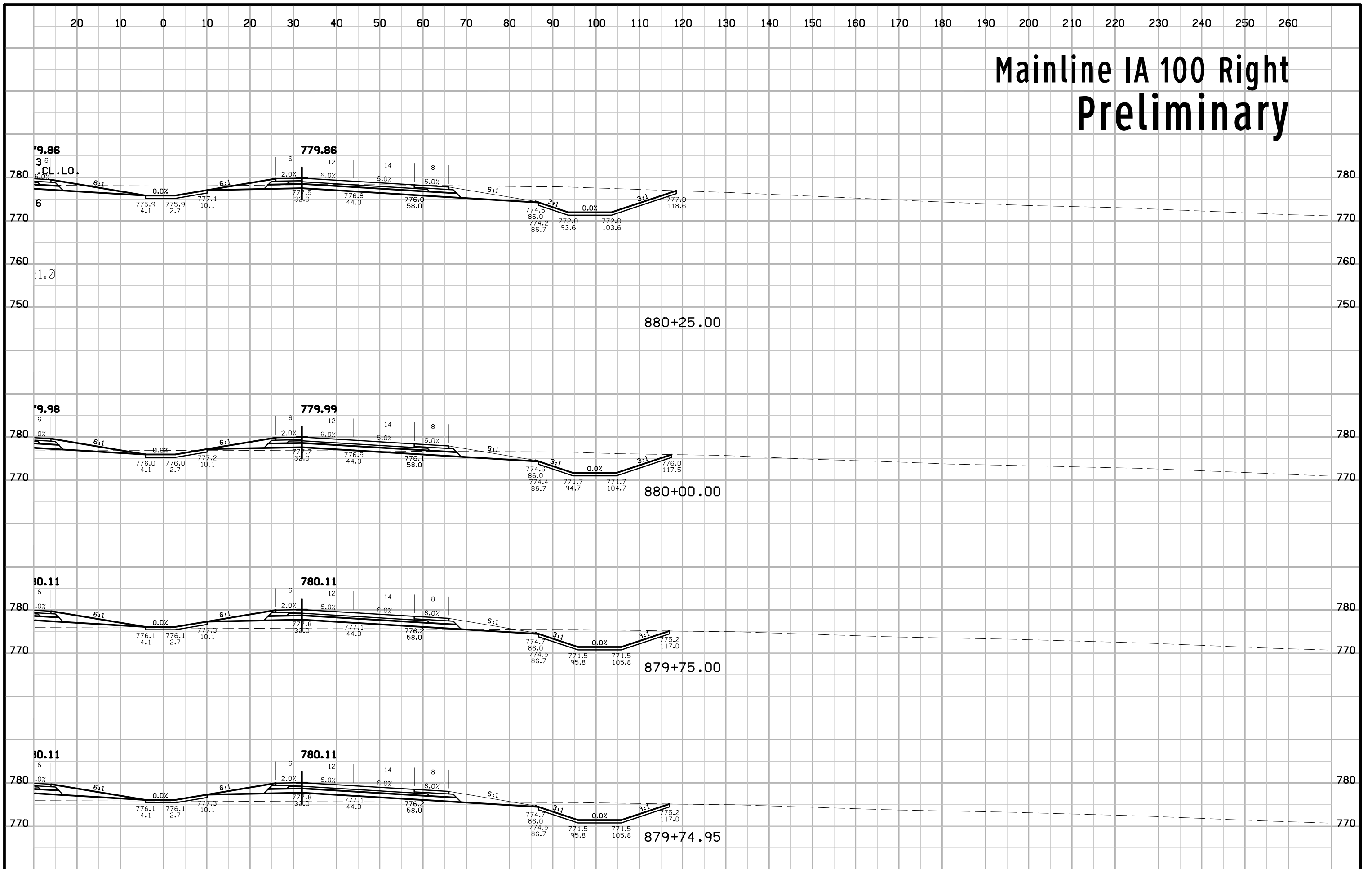
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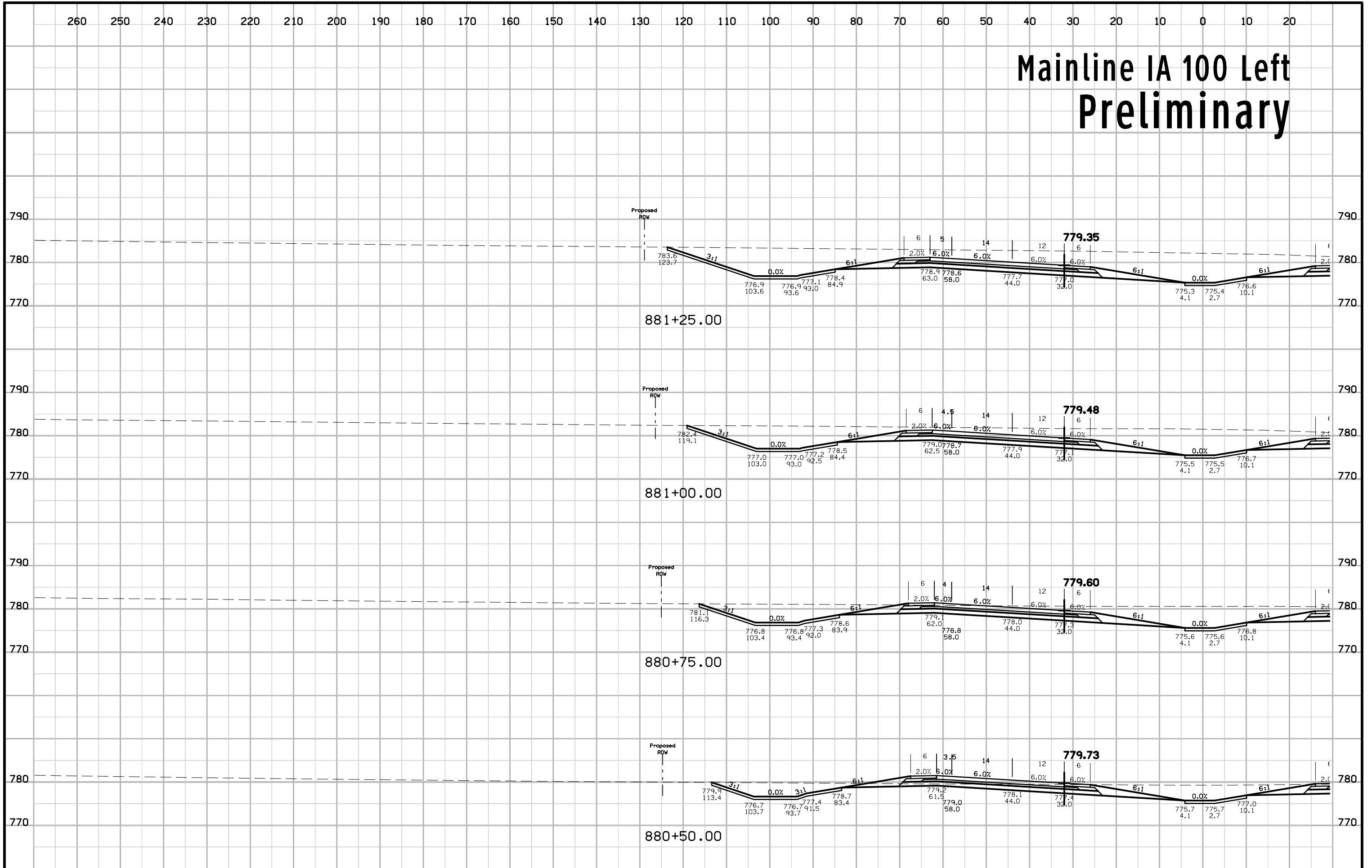
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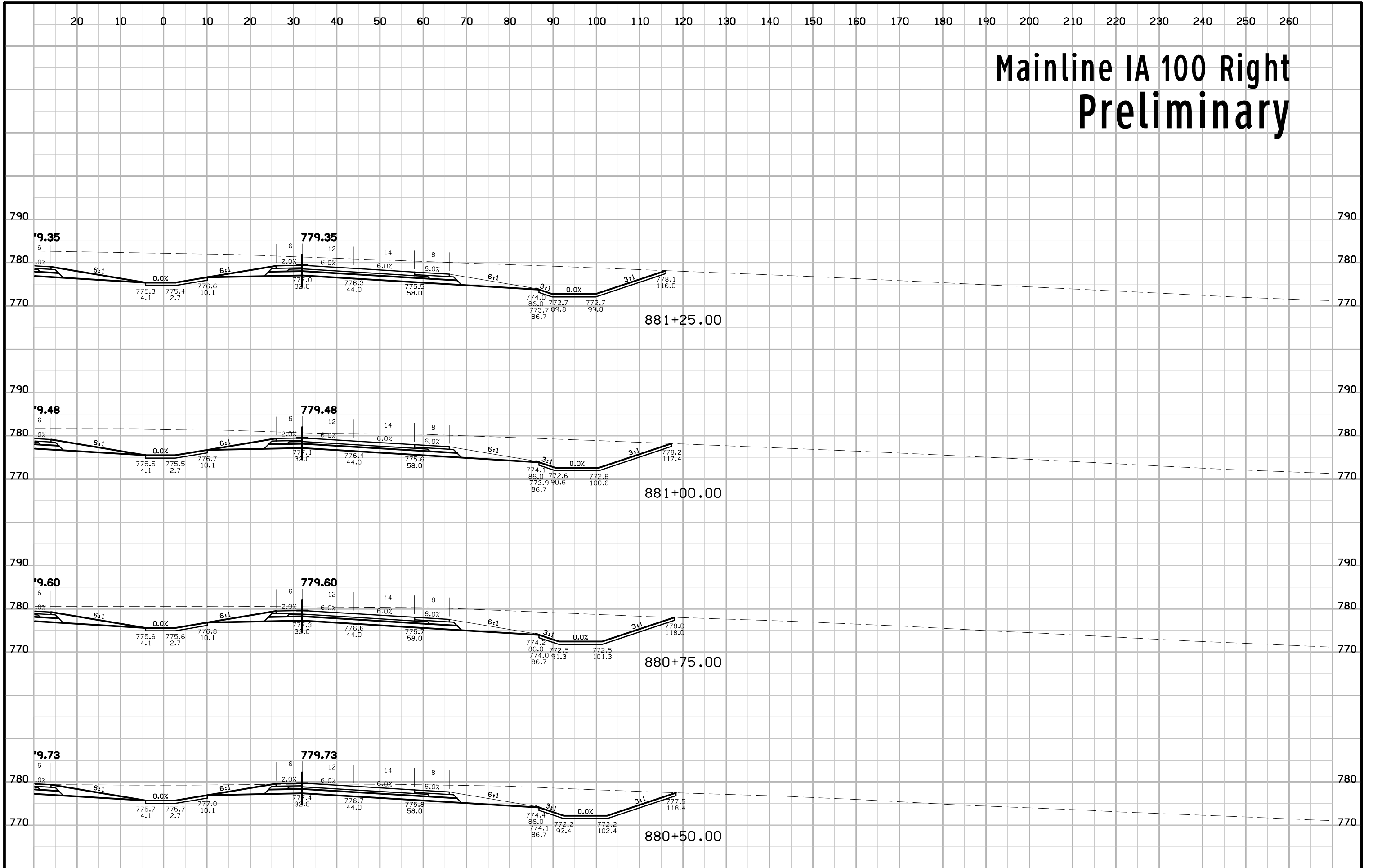
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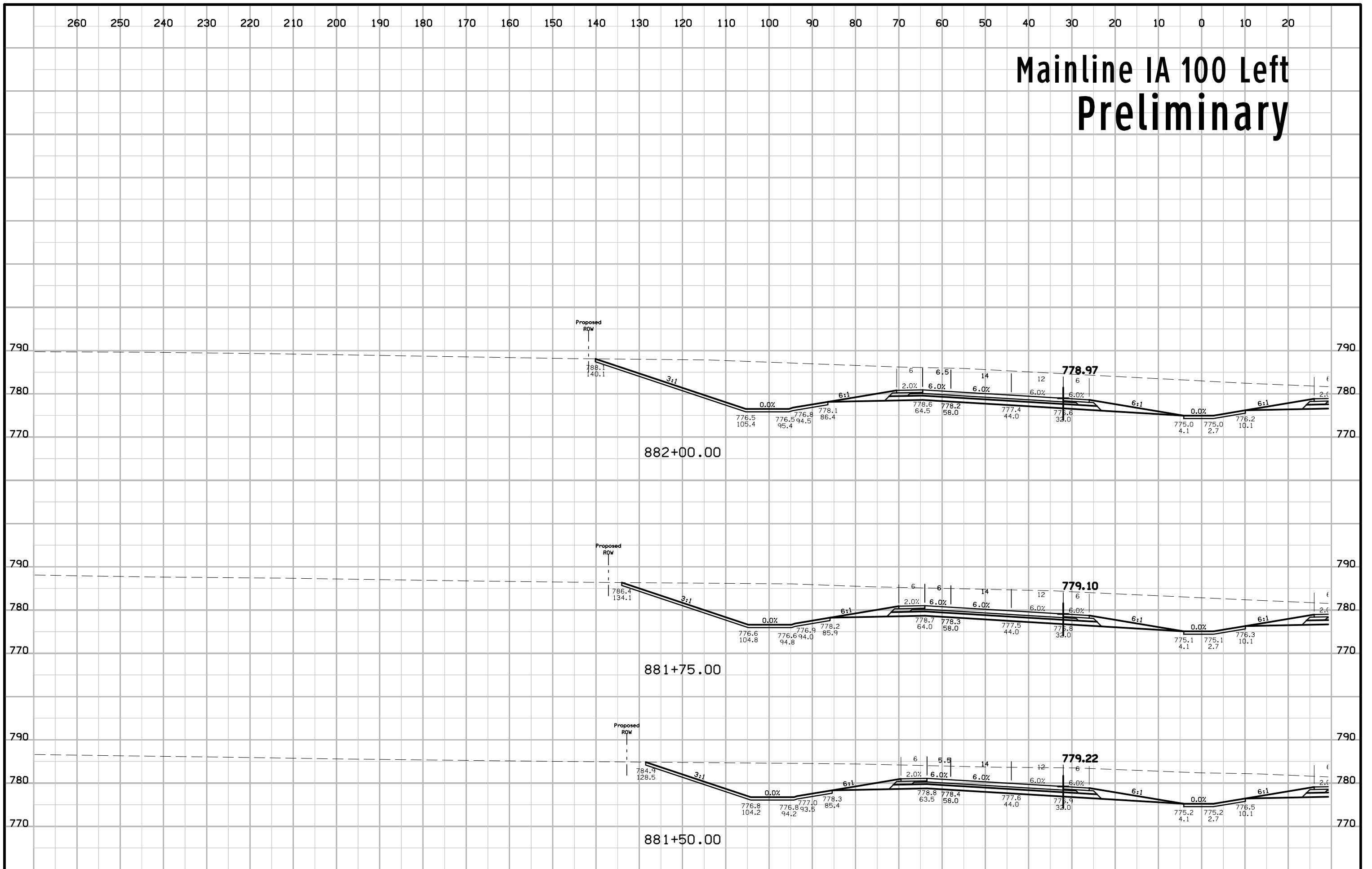


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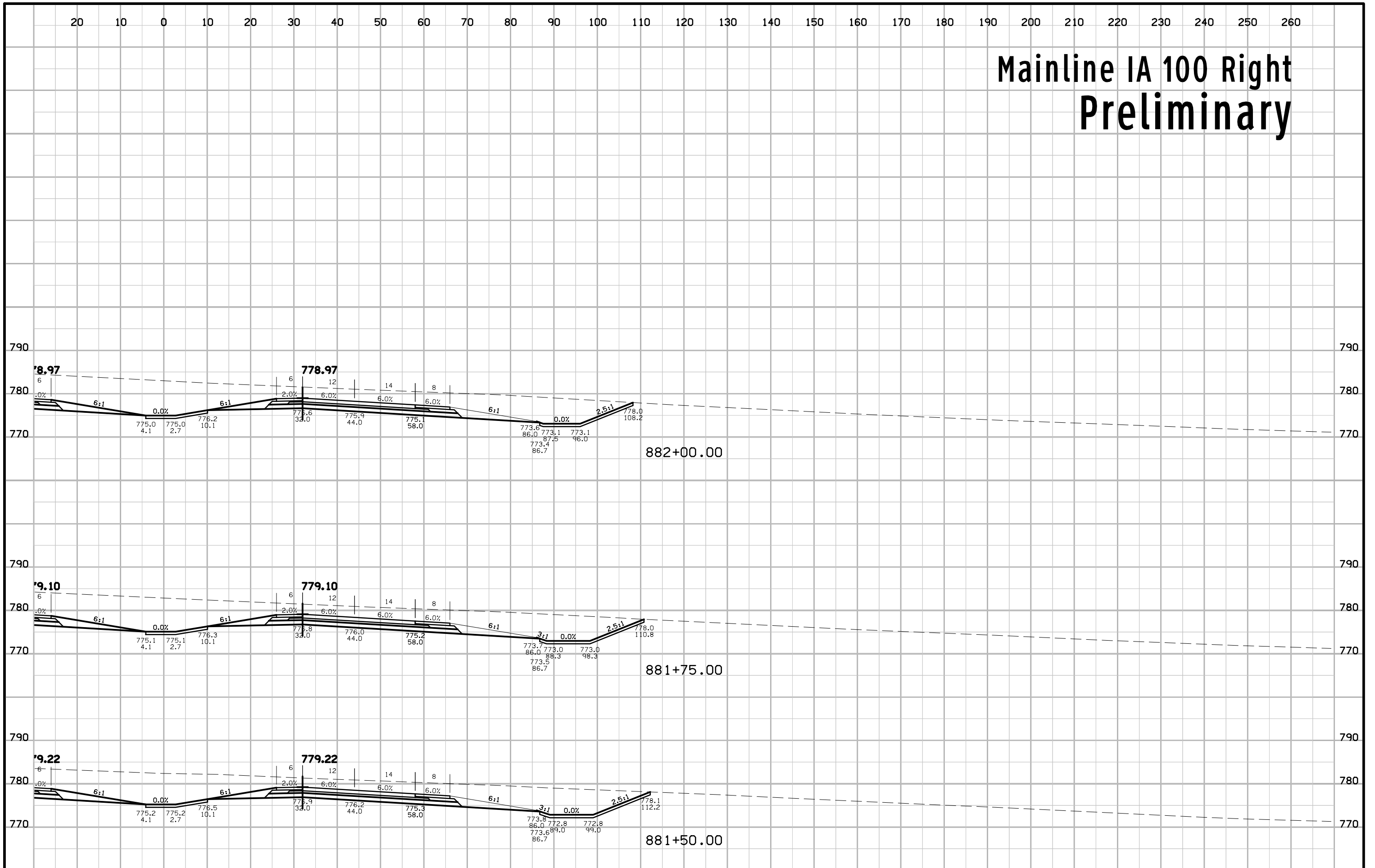




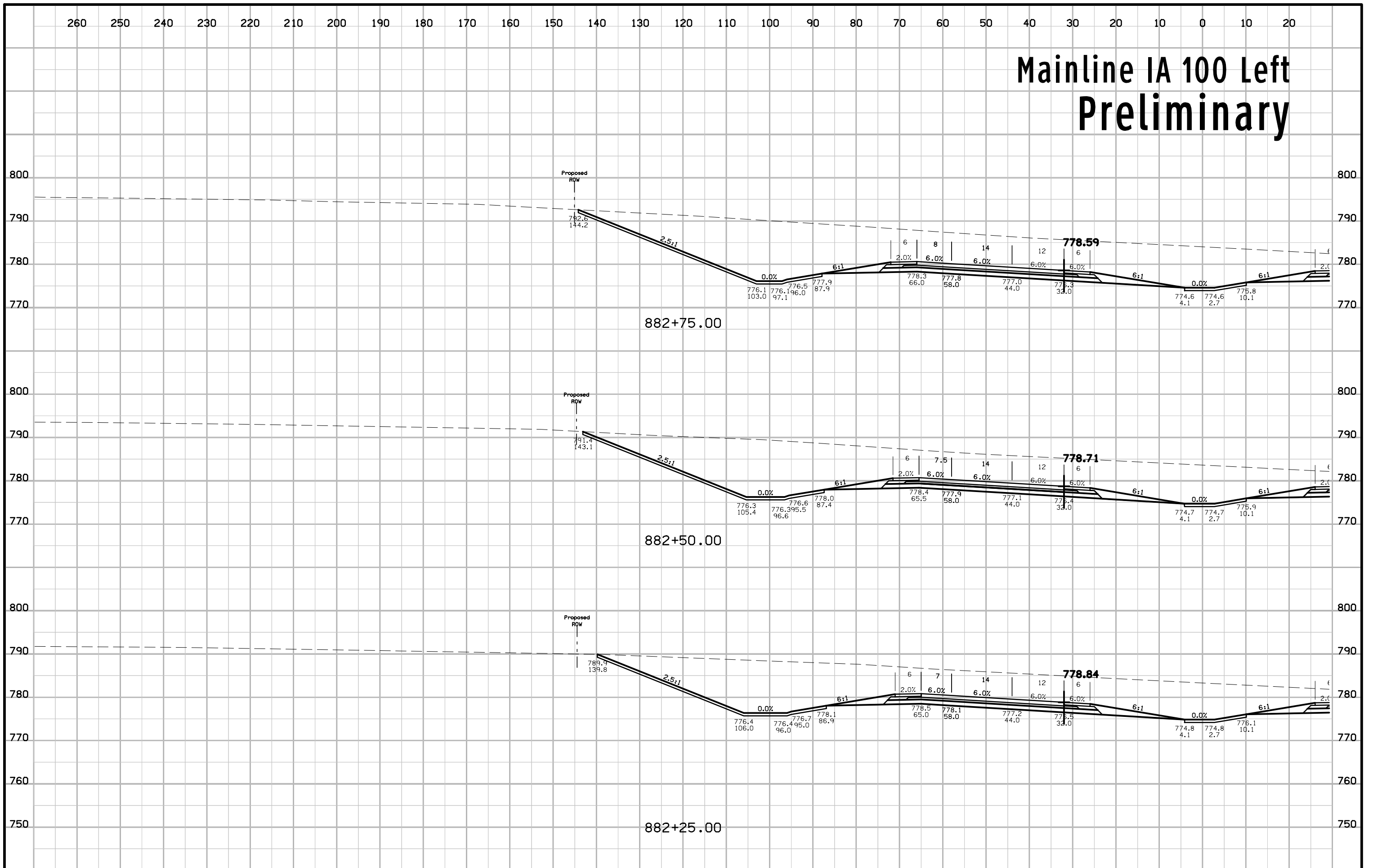
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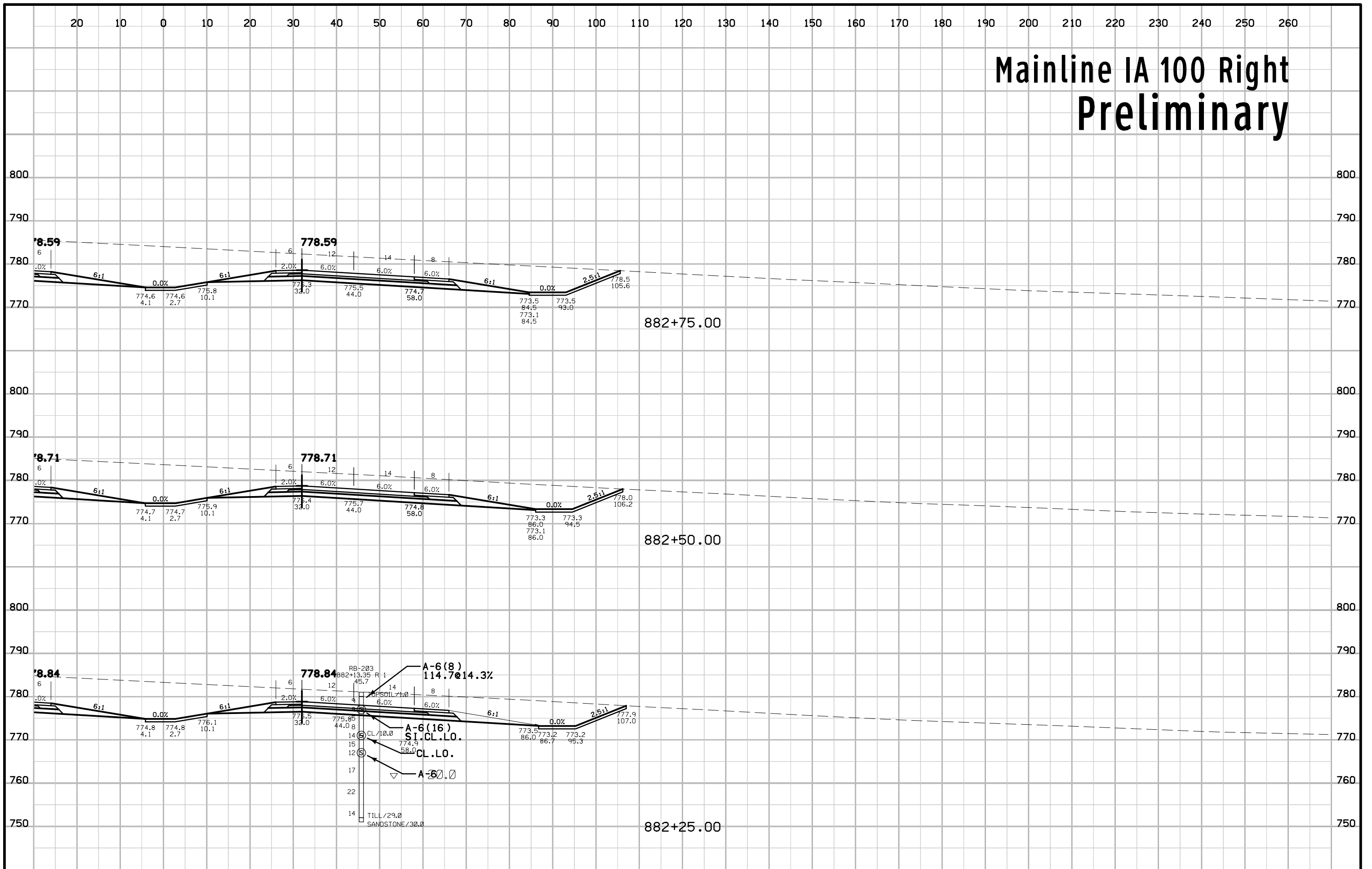
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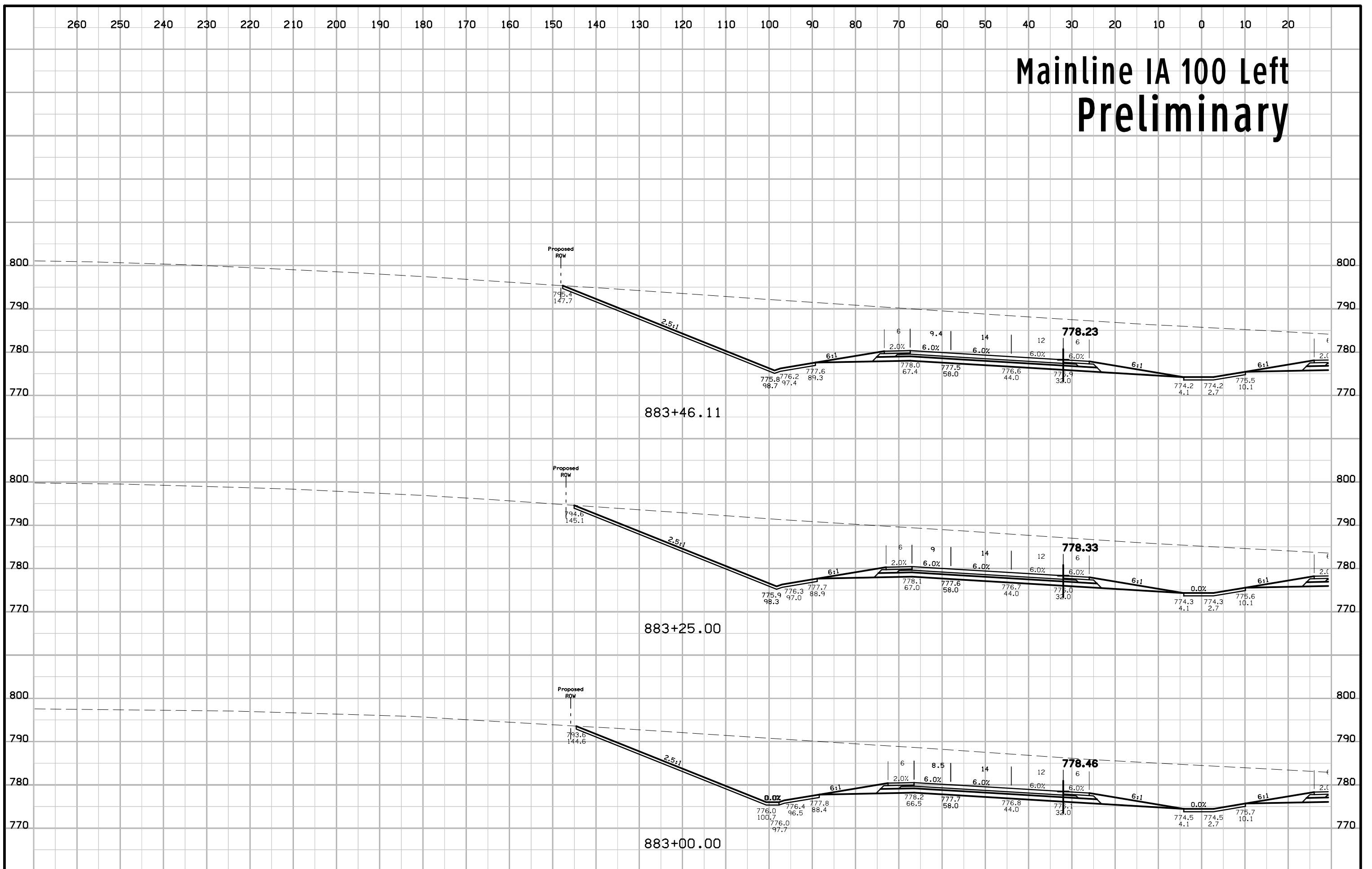
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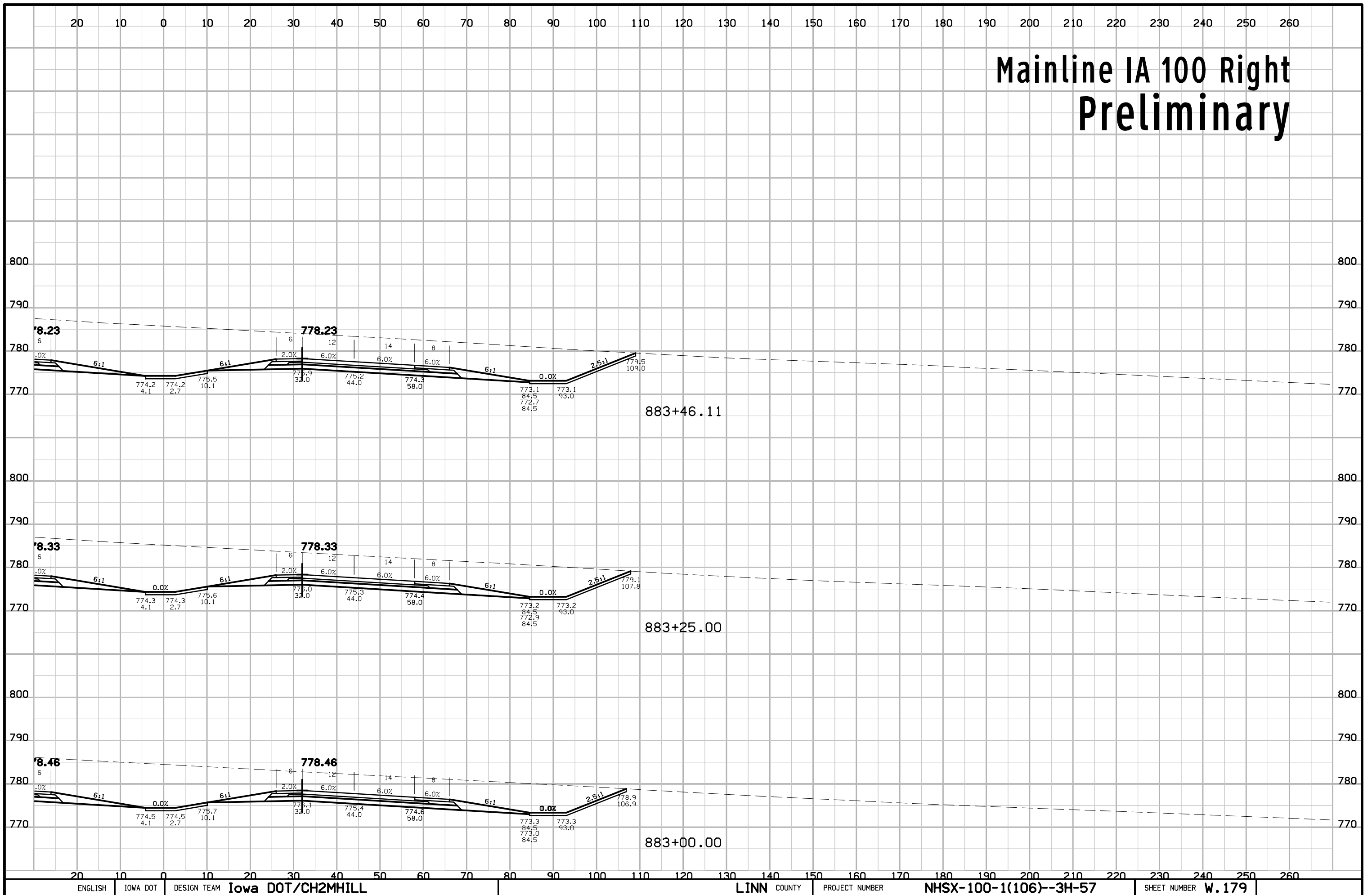
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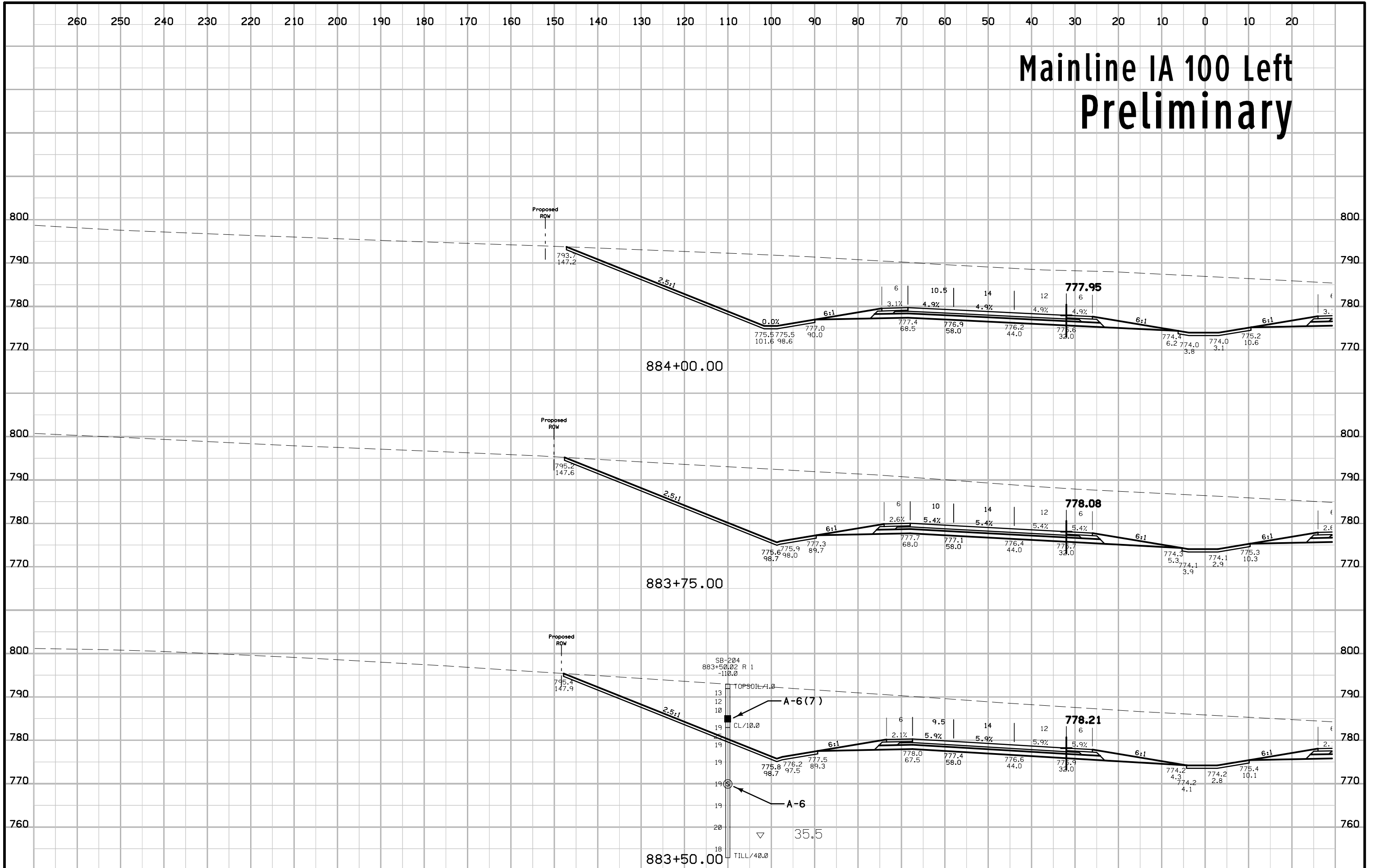
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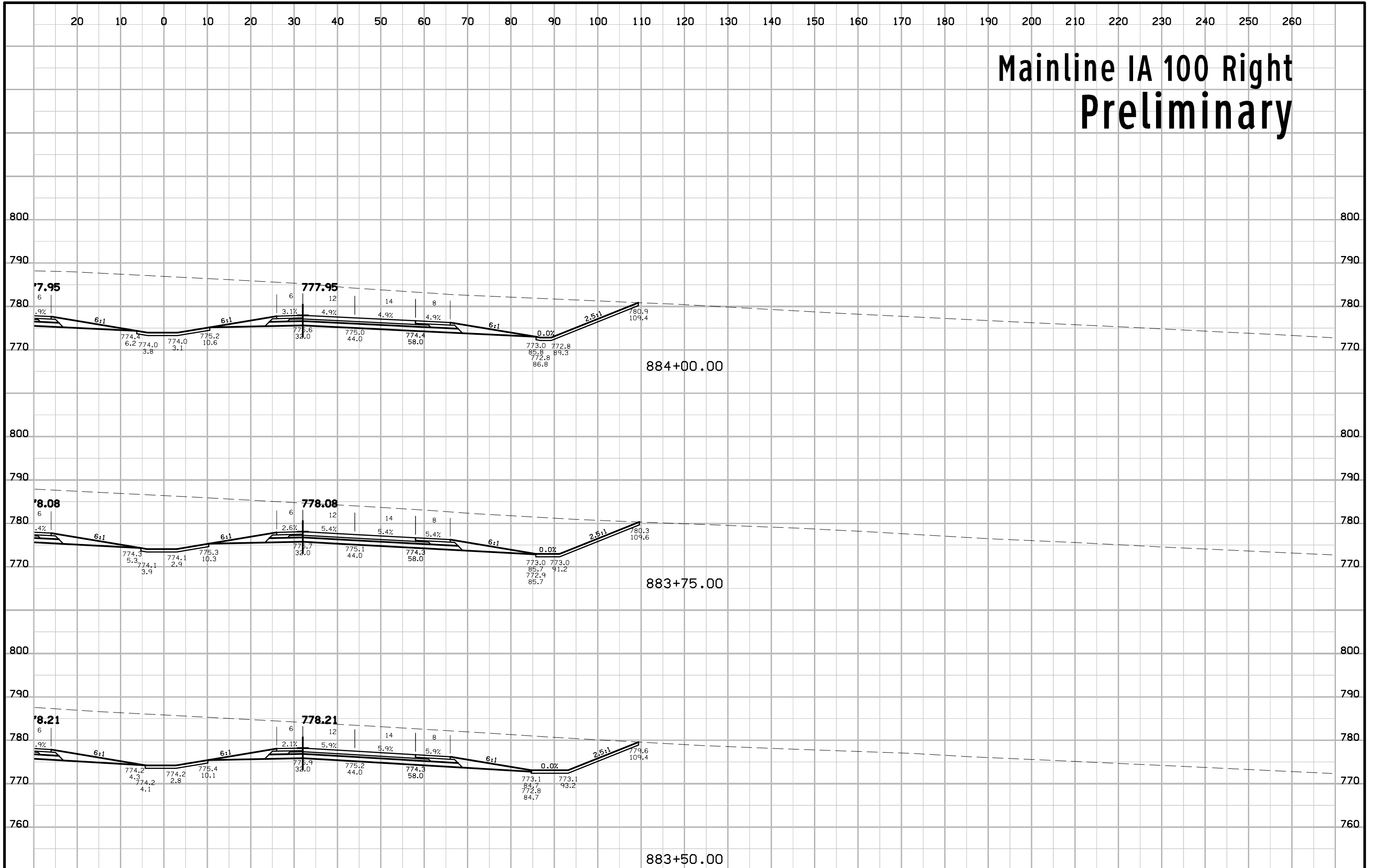
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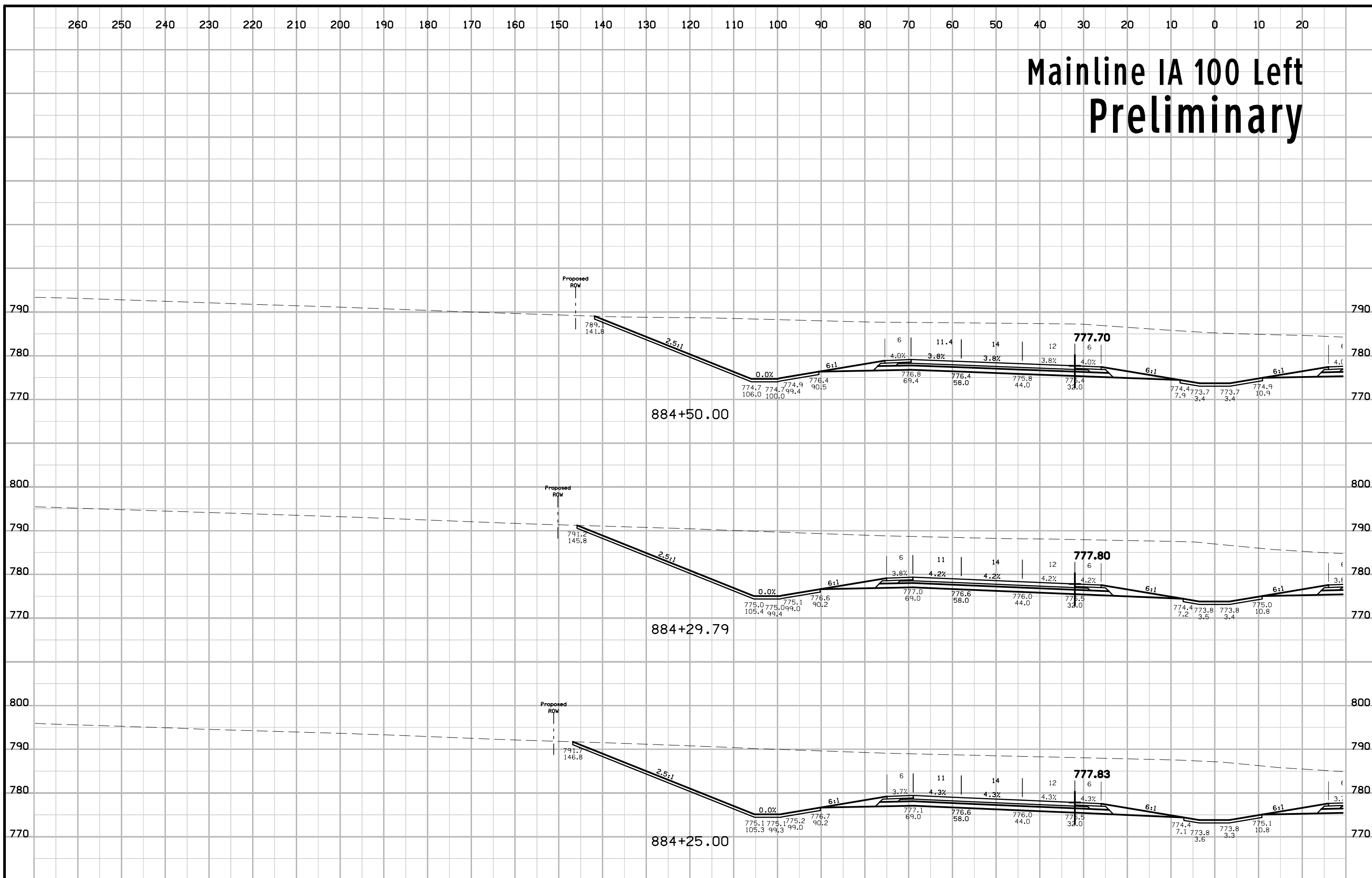


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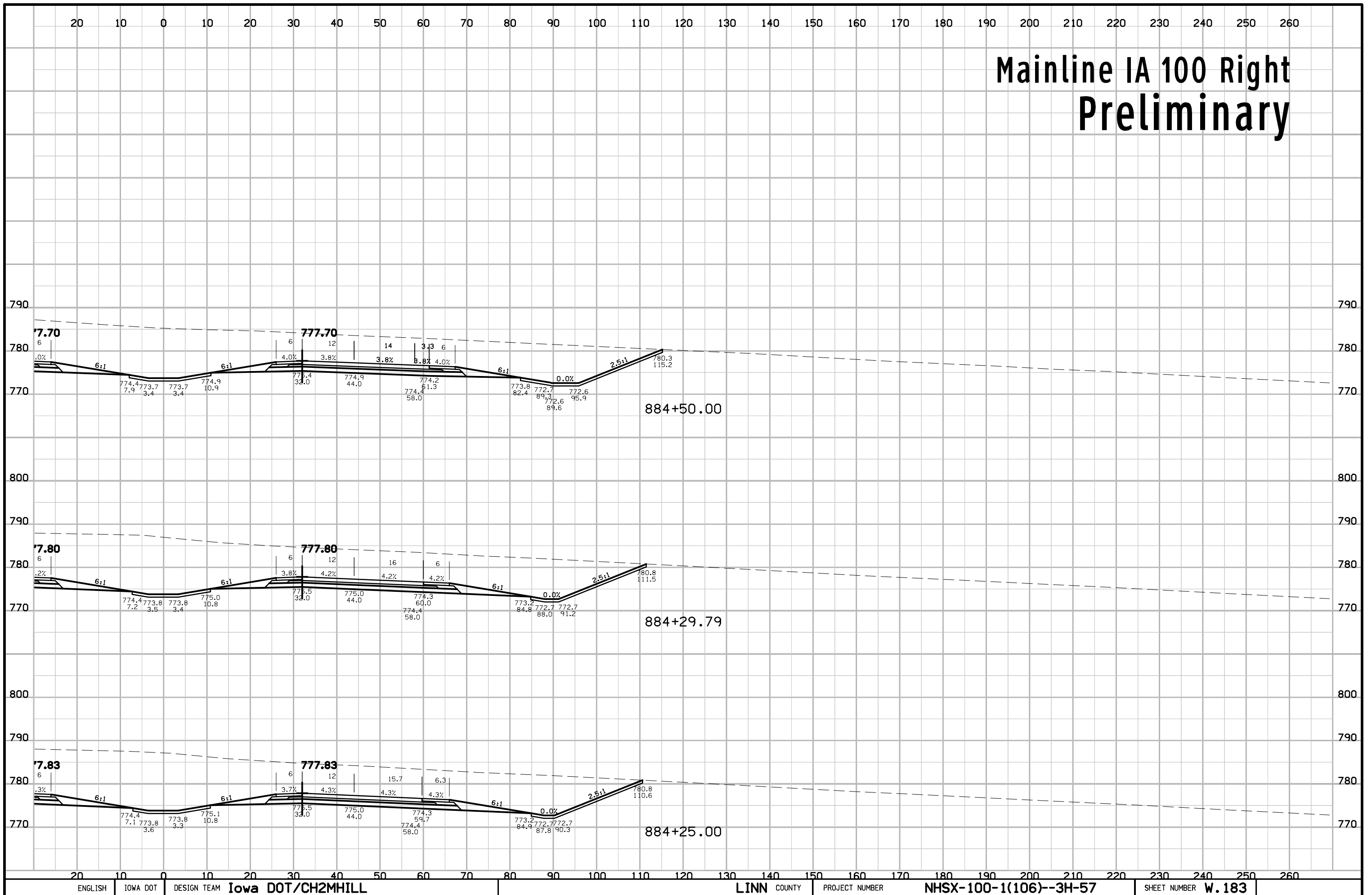




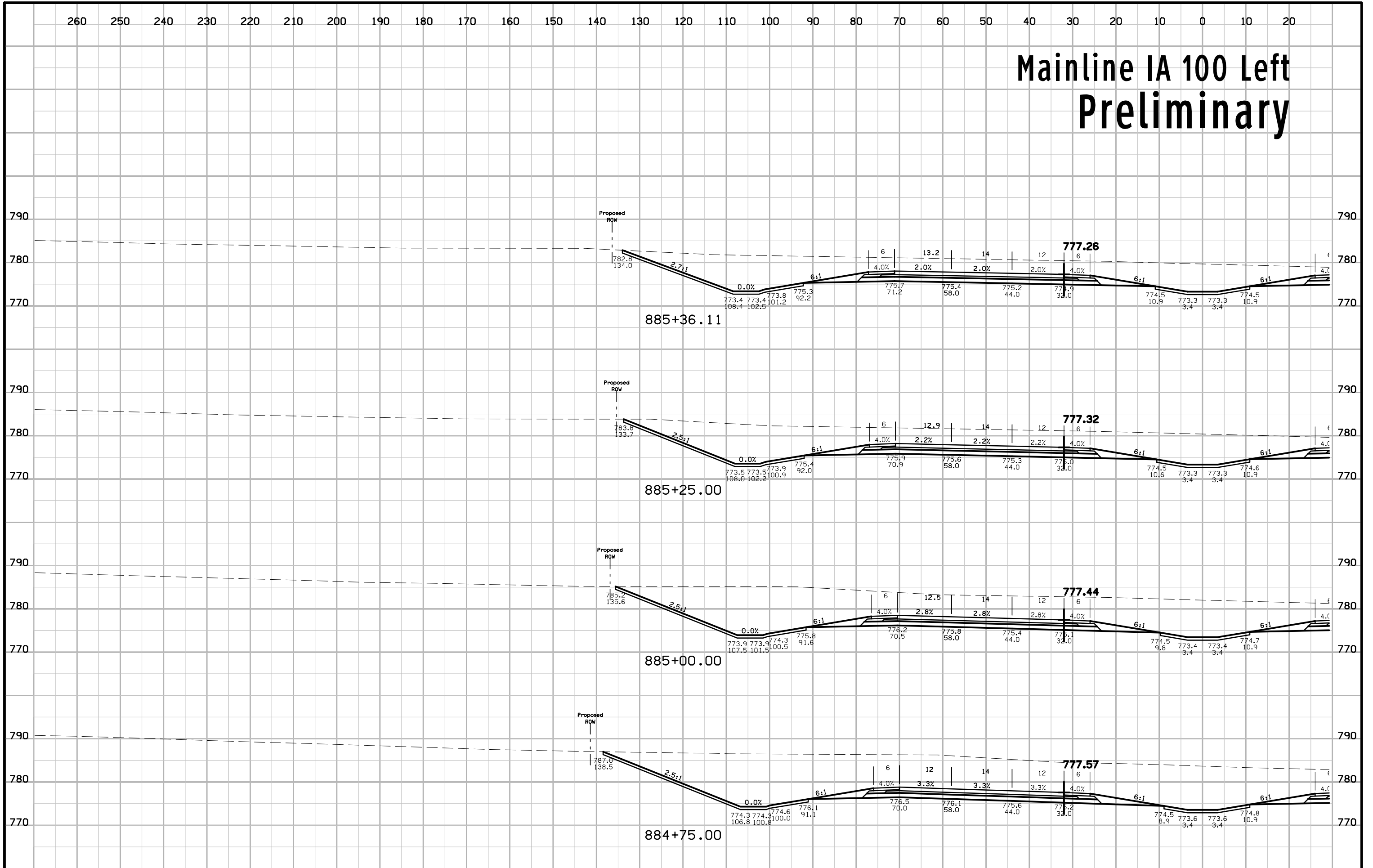
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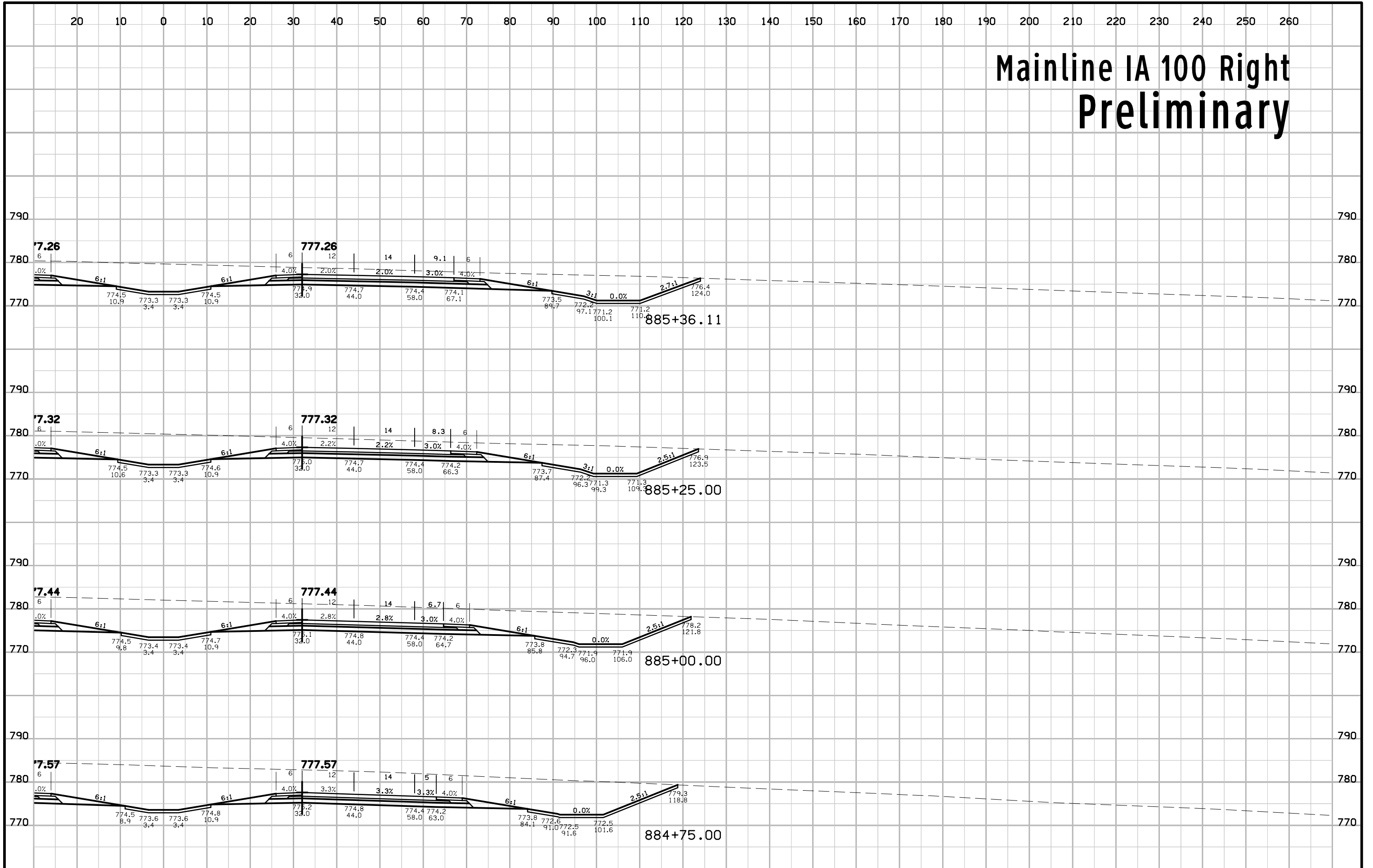
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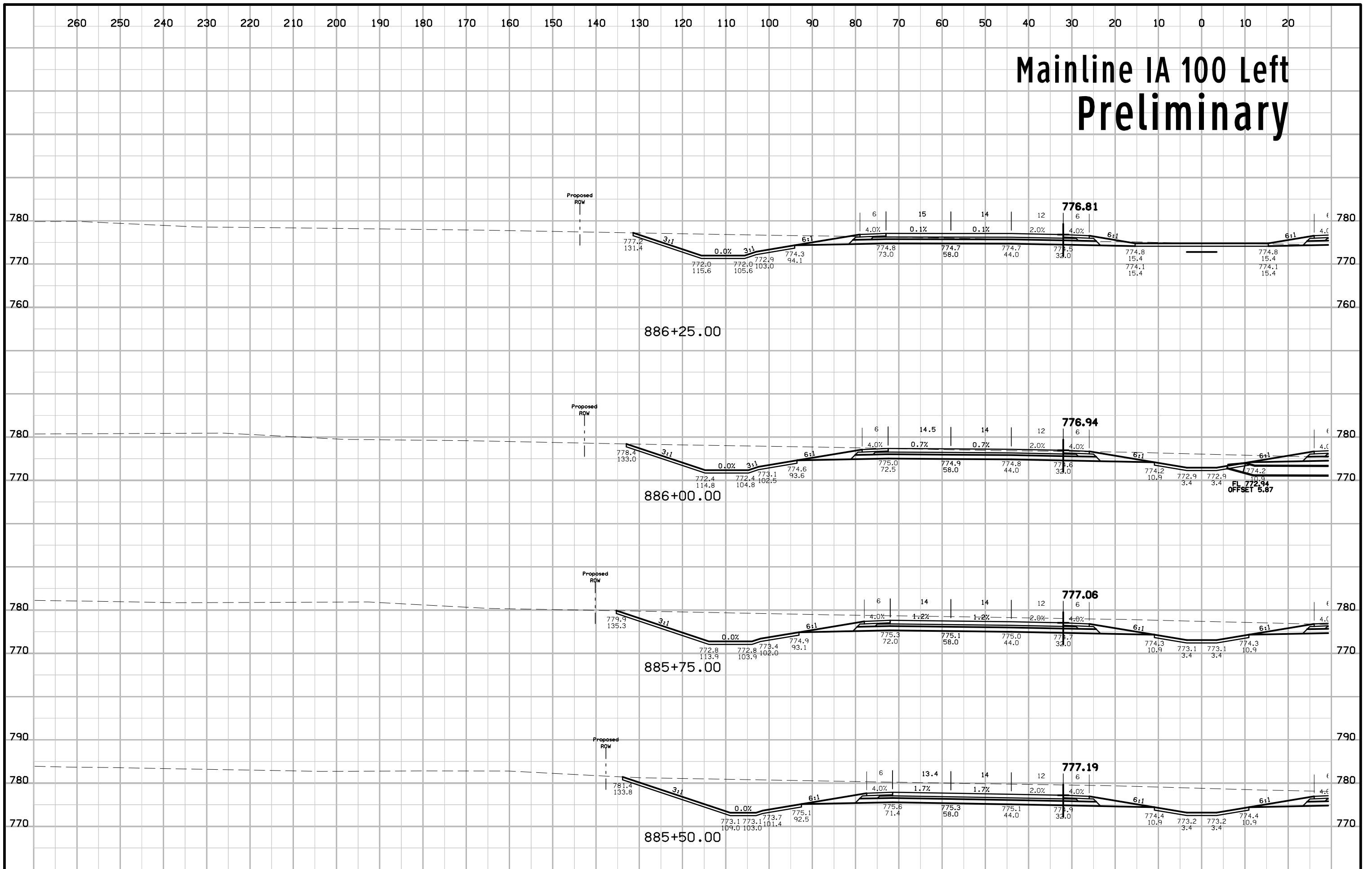
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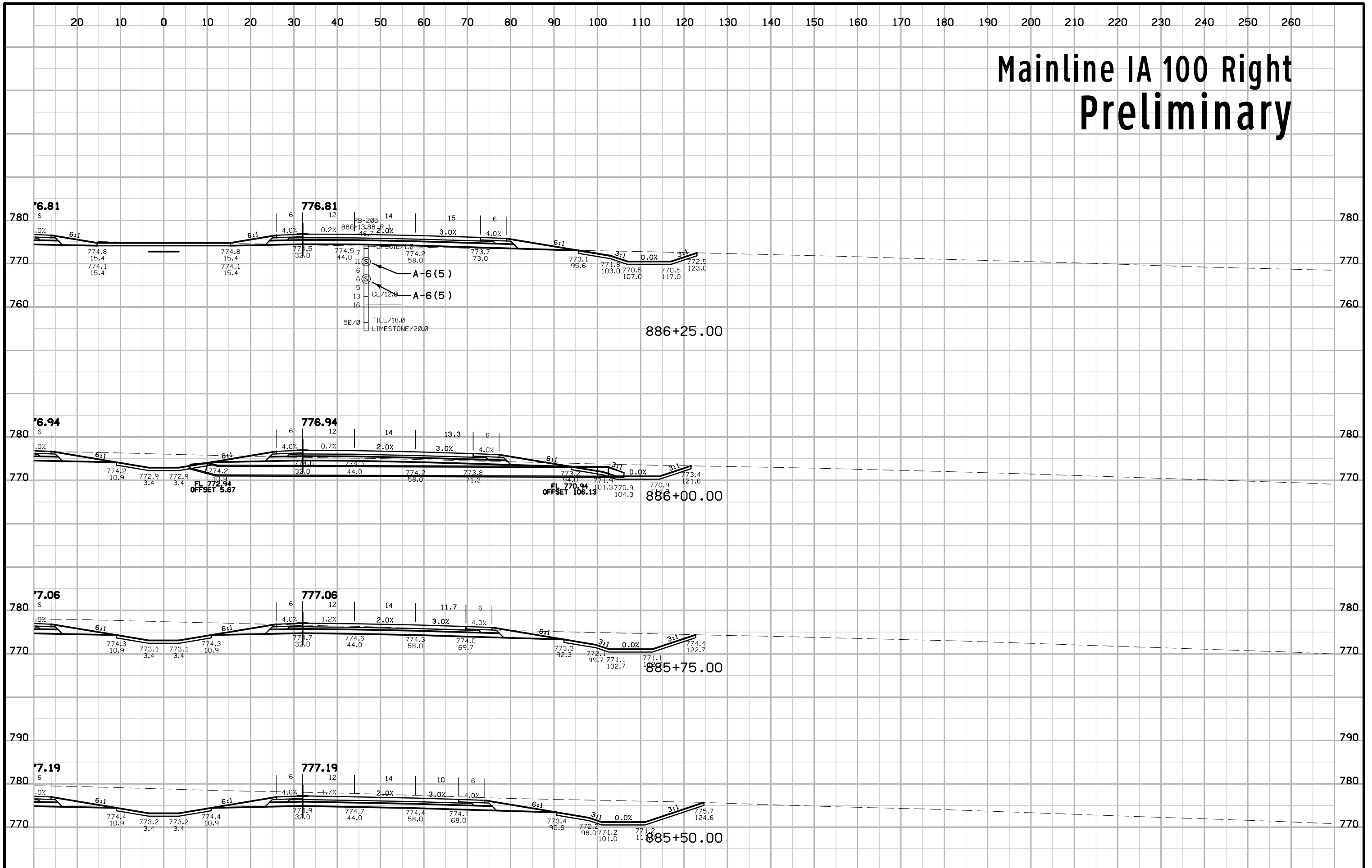
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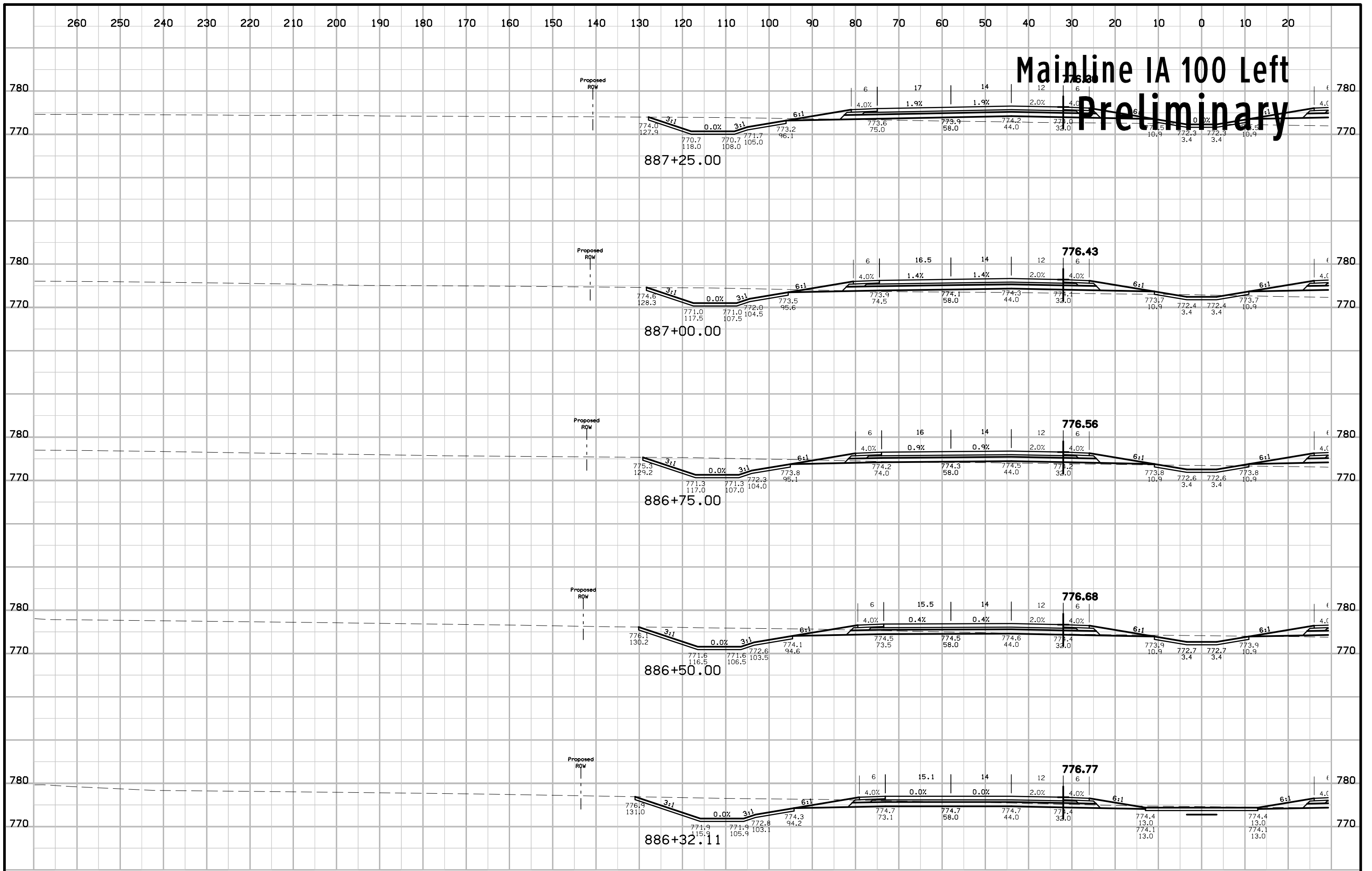
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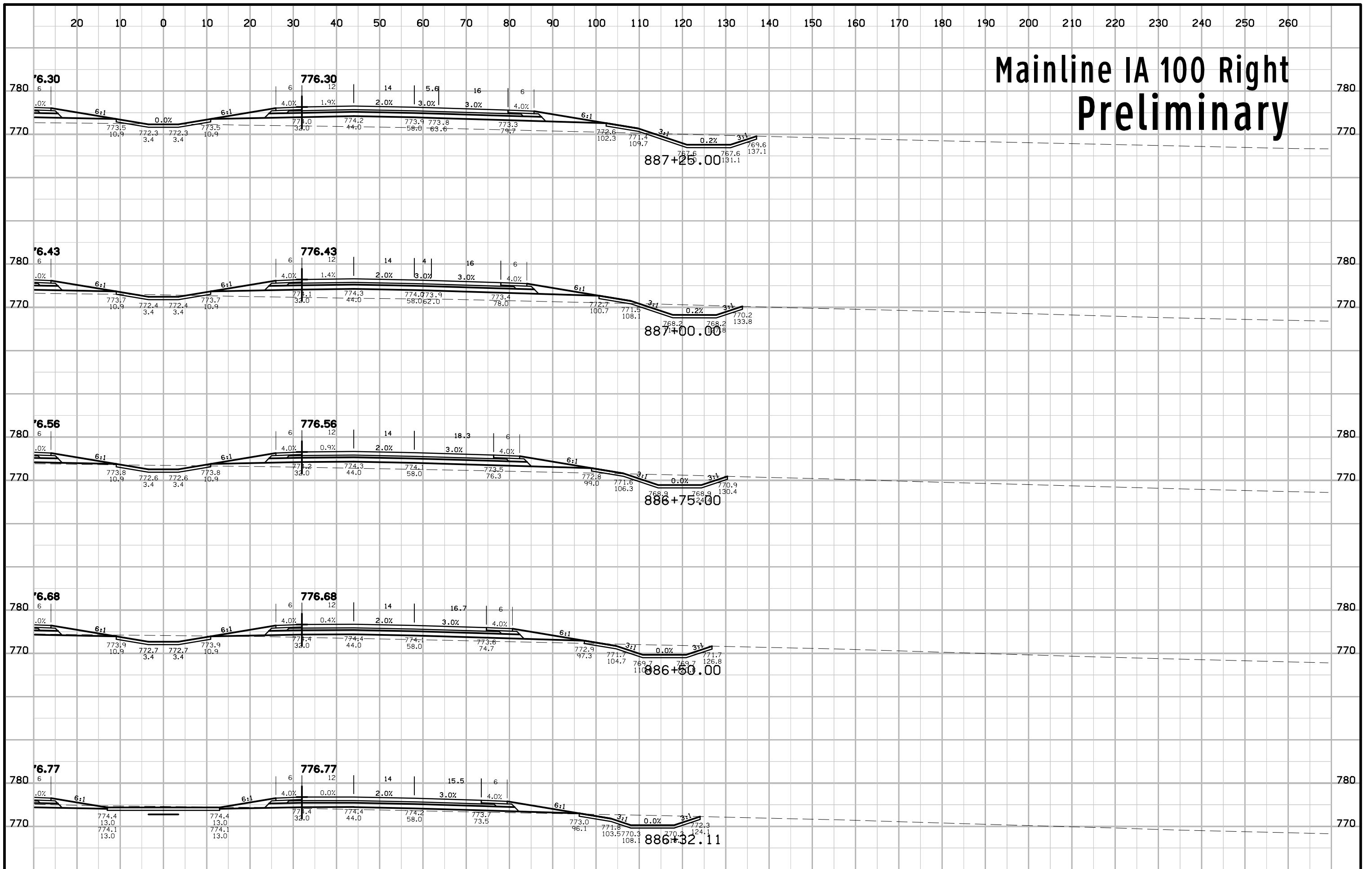
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# Mainline IA 100 Left Preliminary

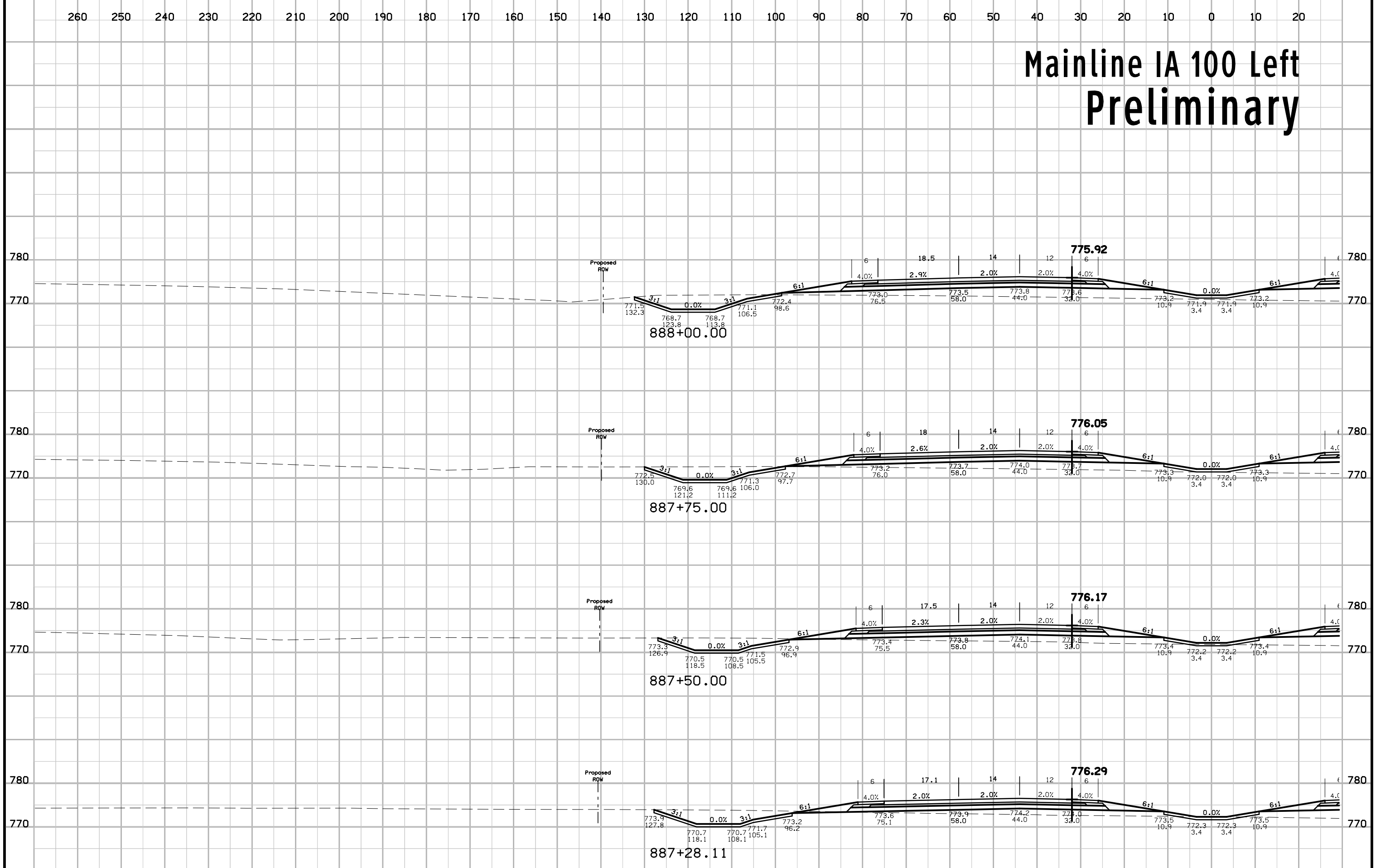


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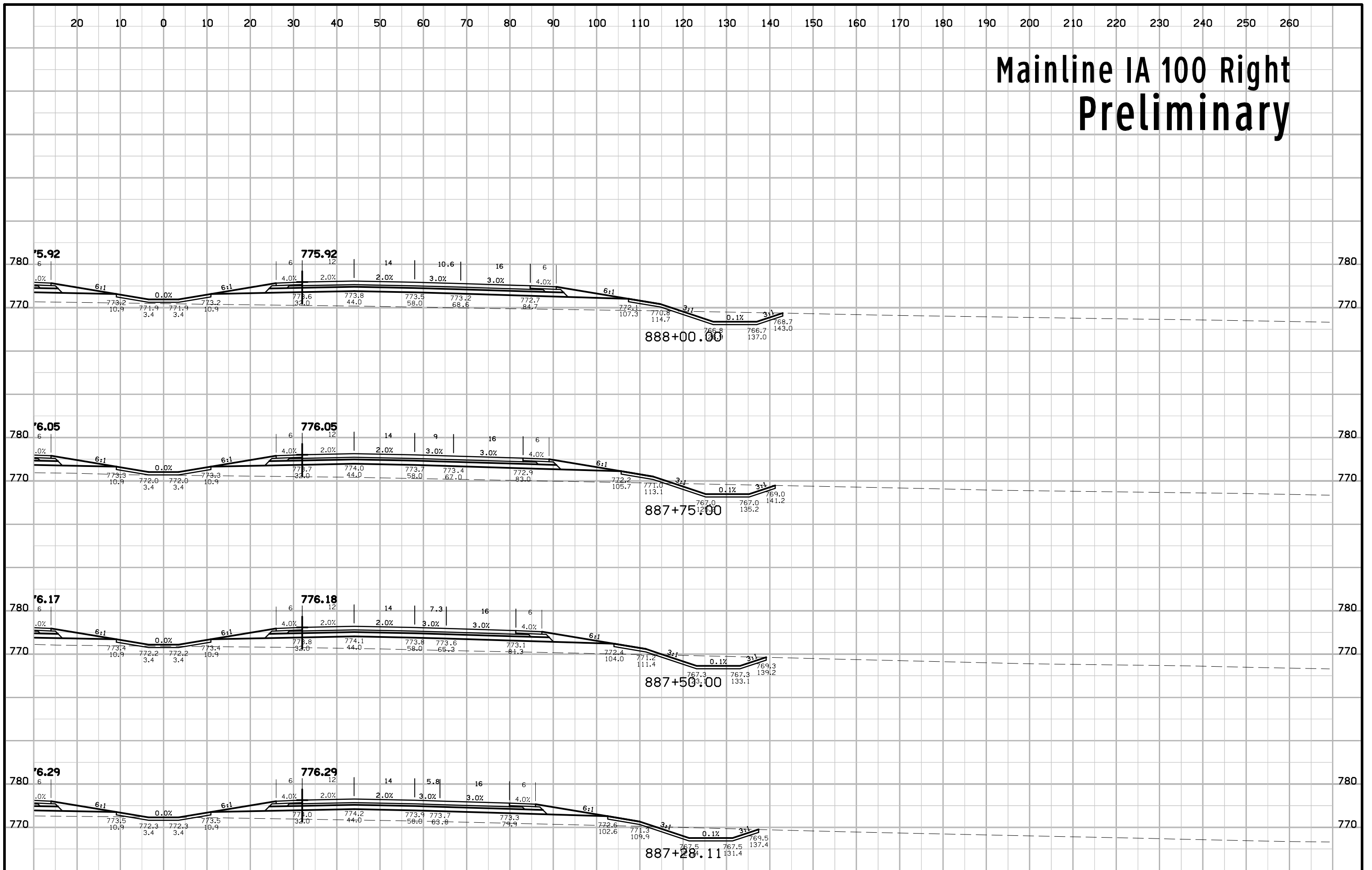




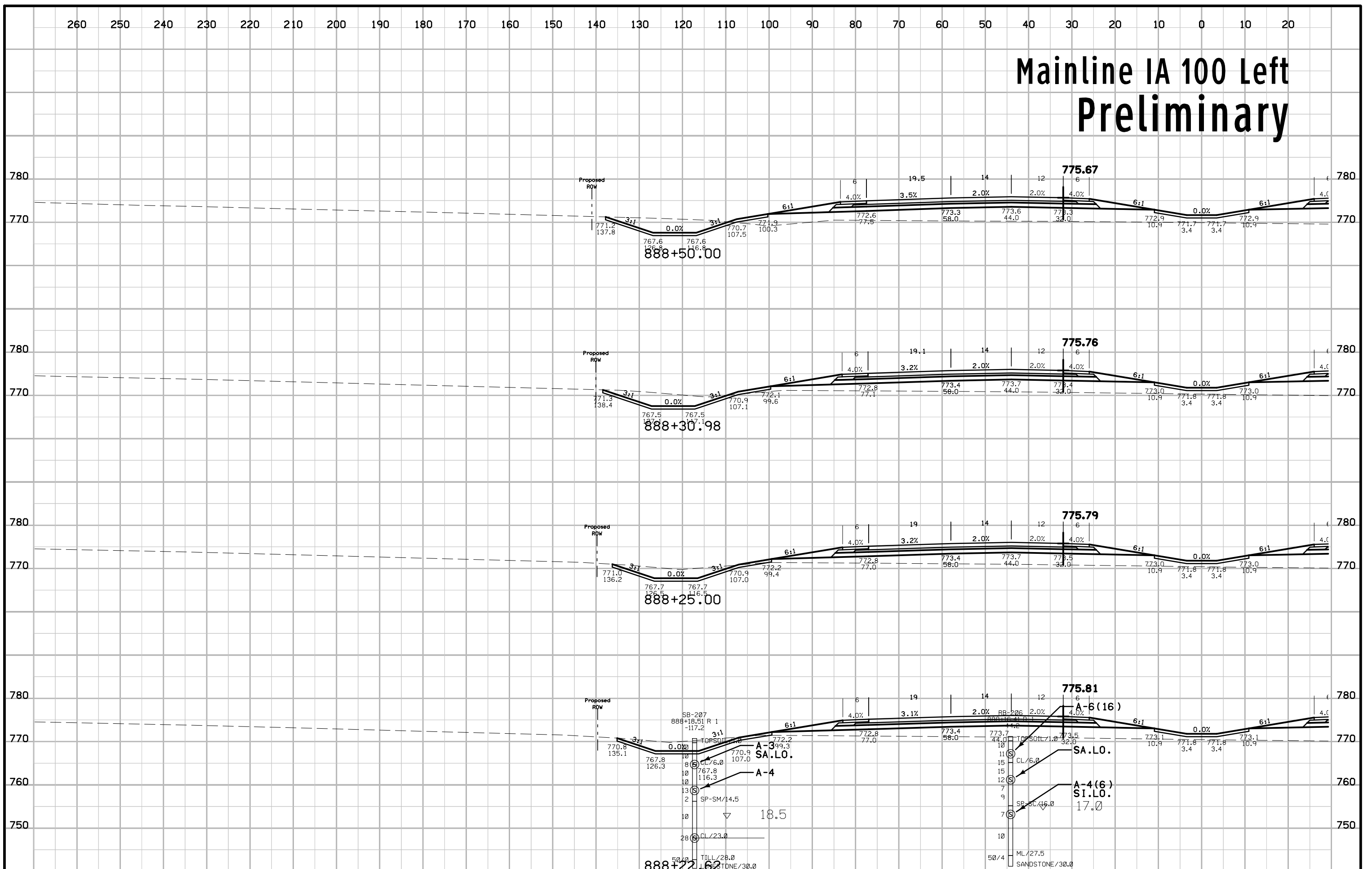
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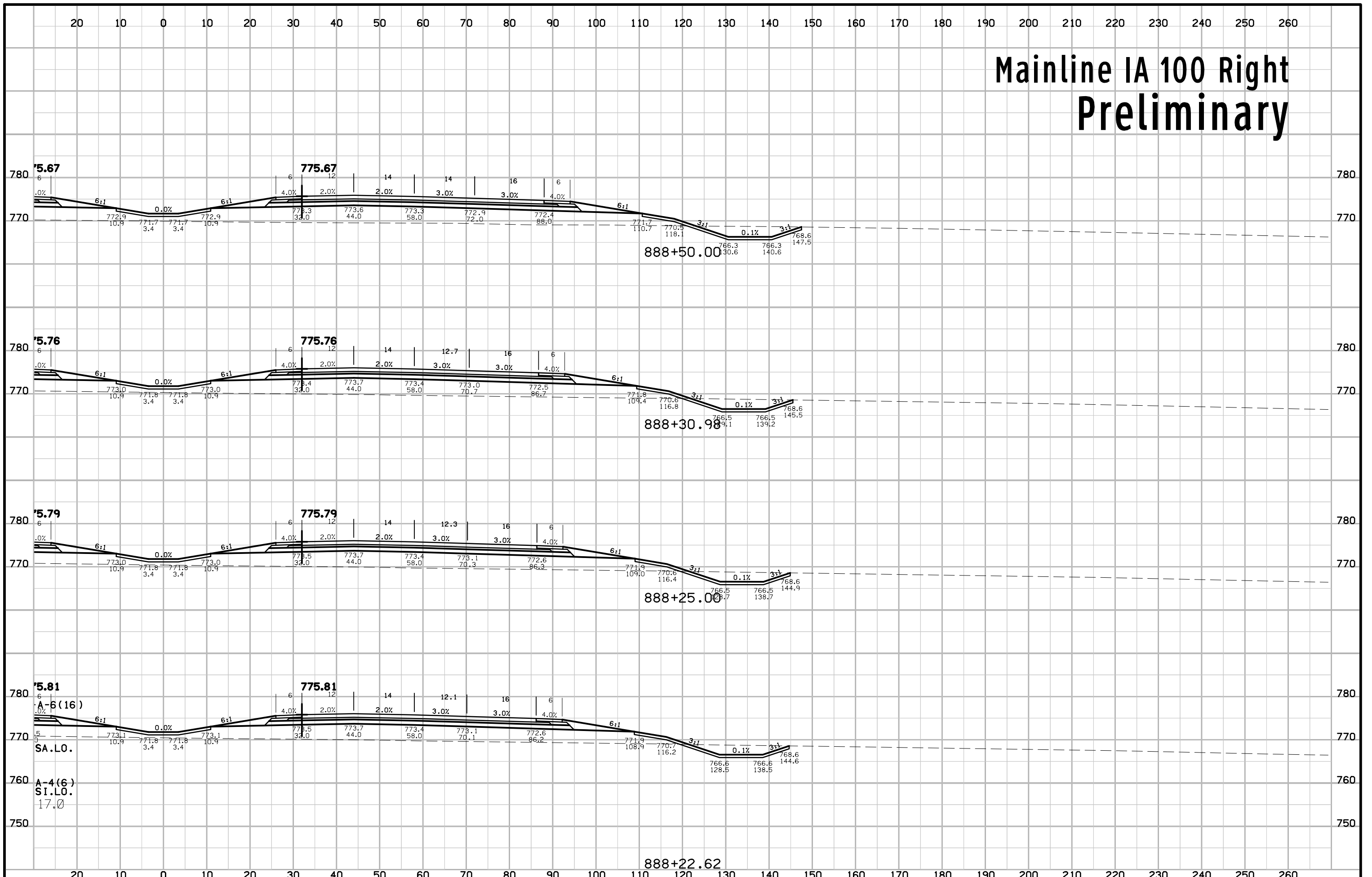
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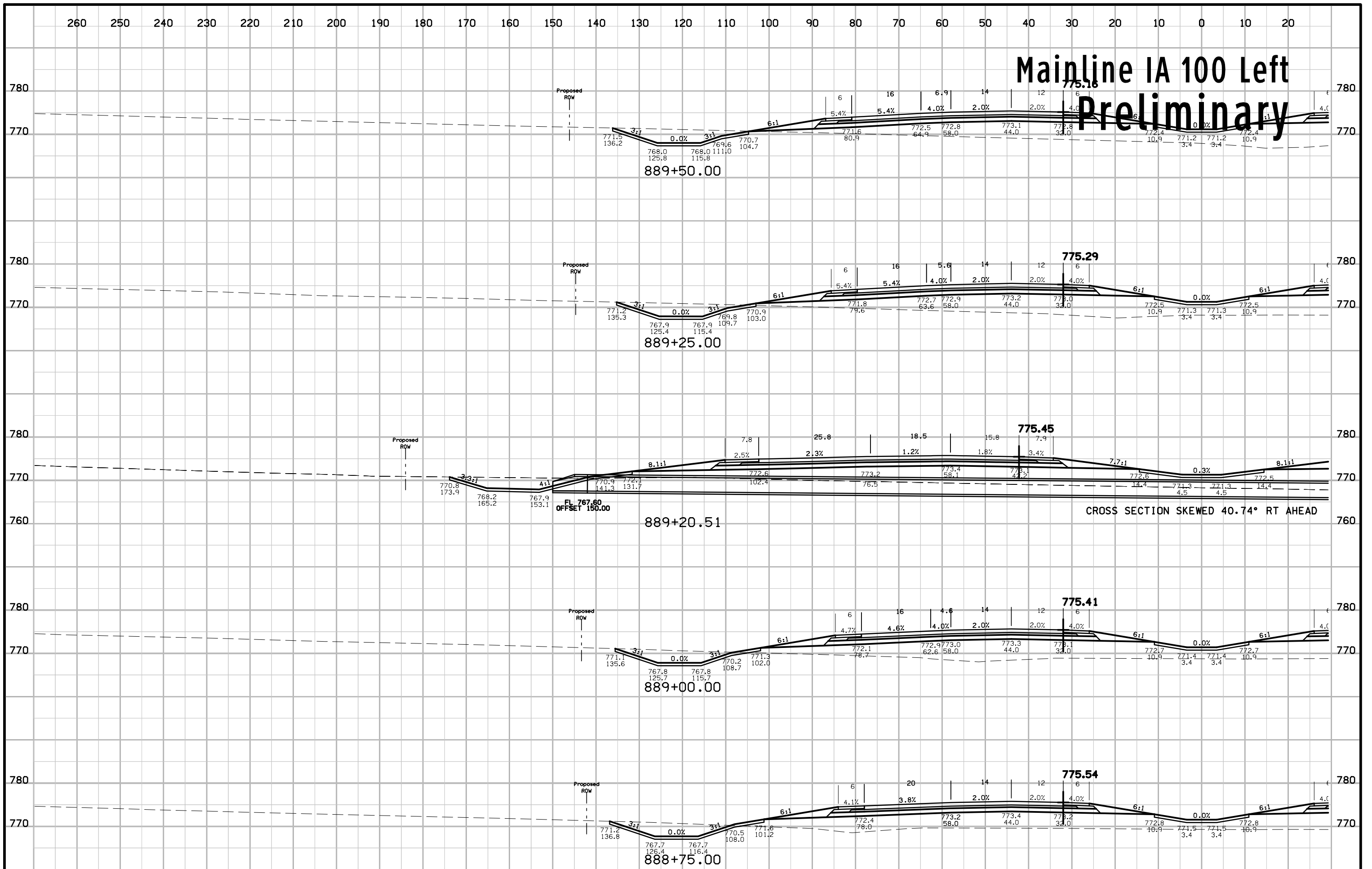
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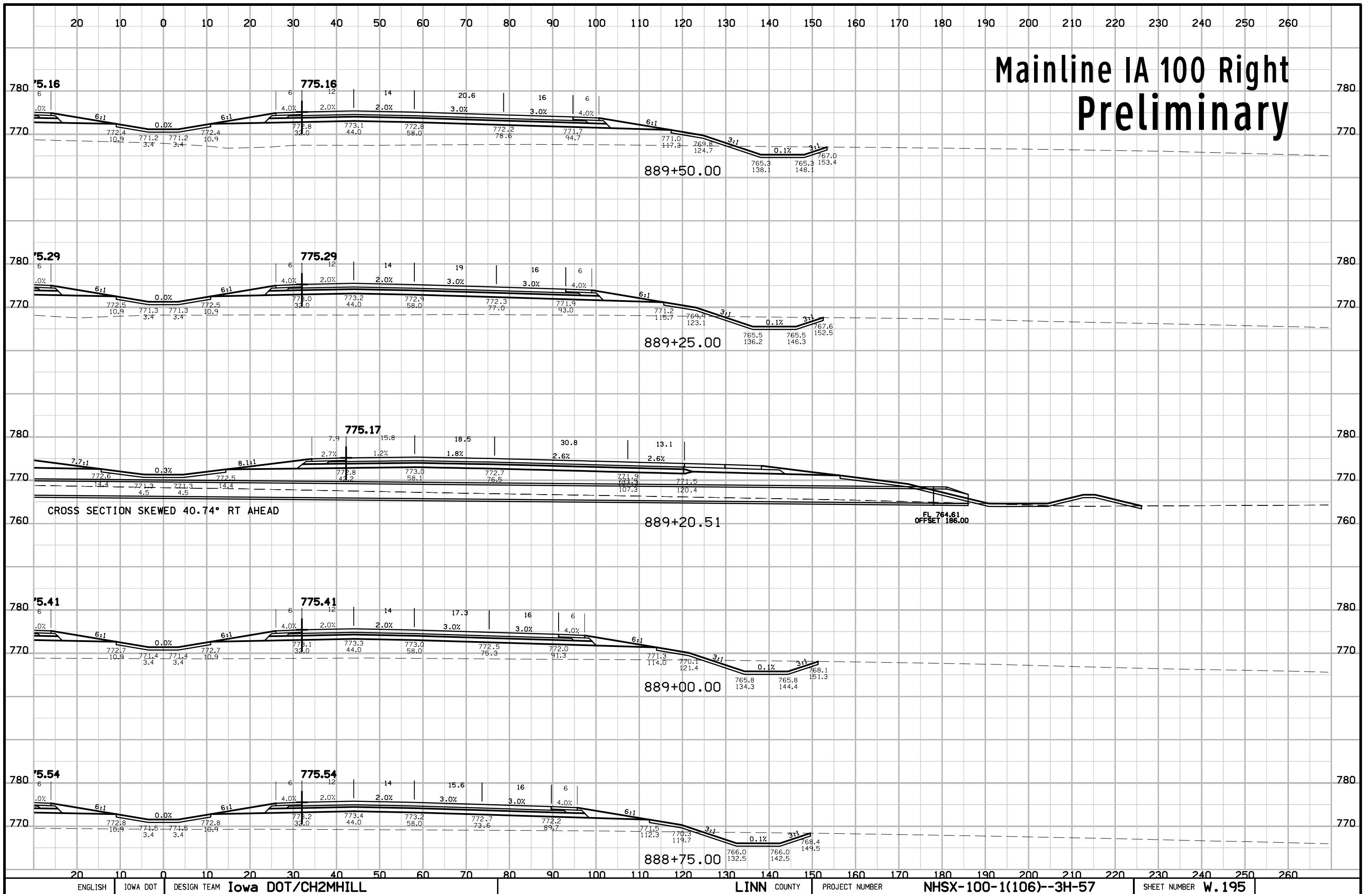
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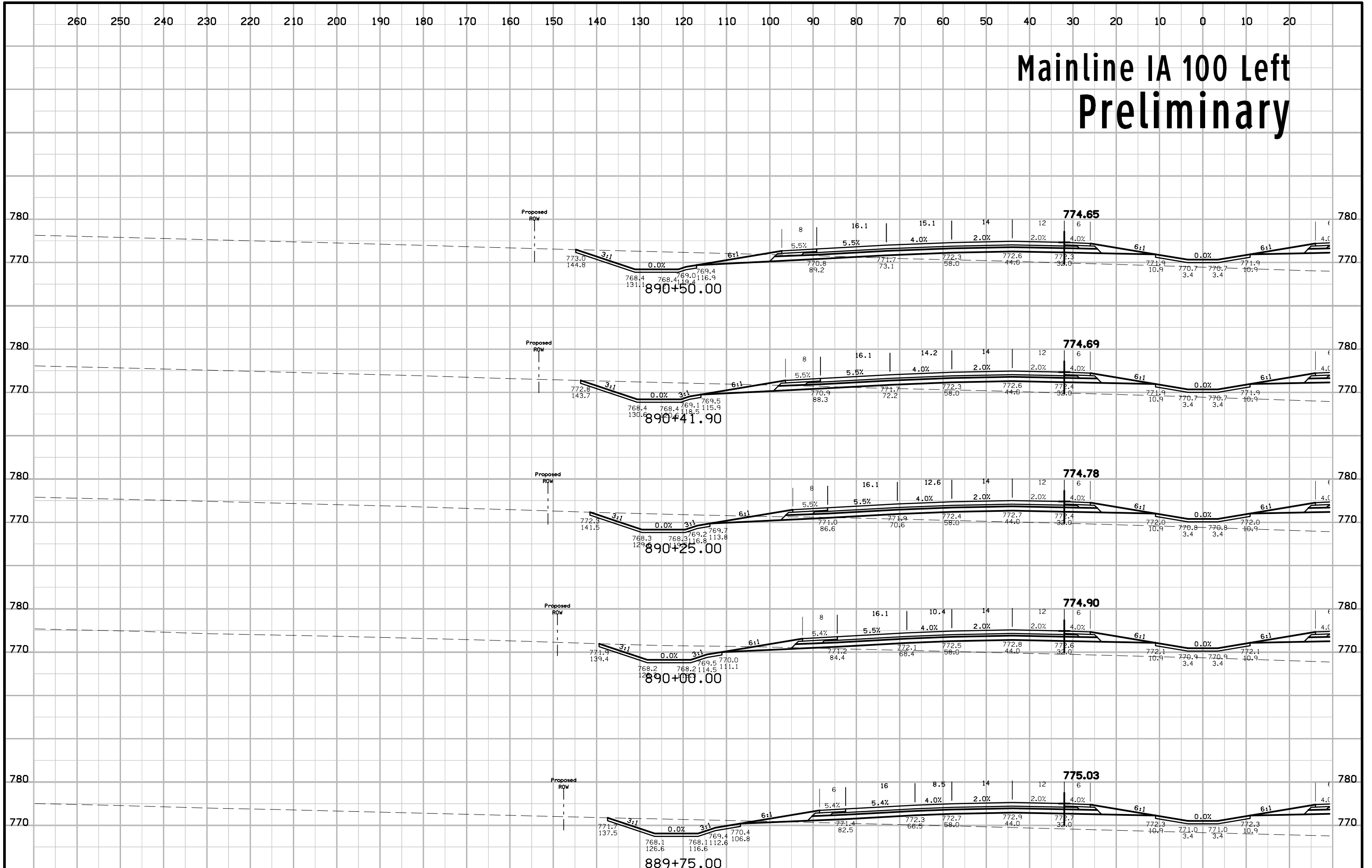
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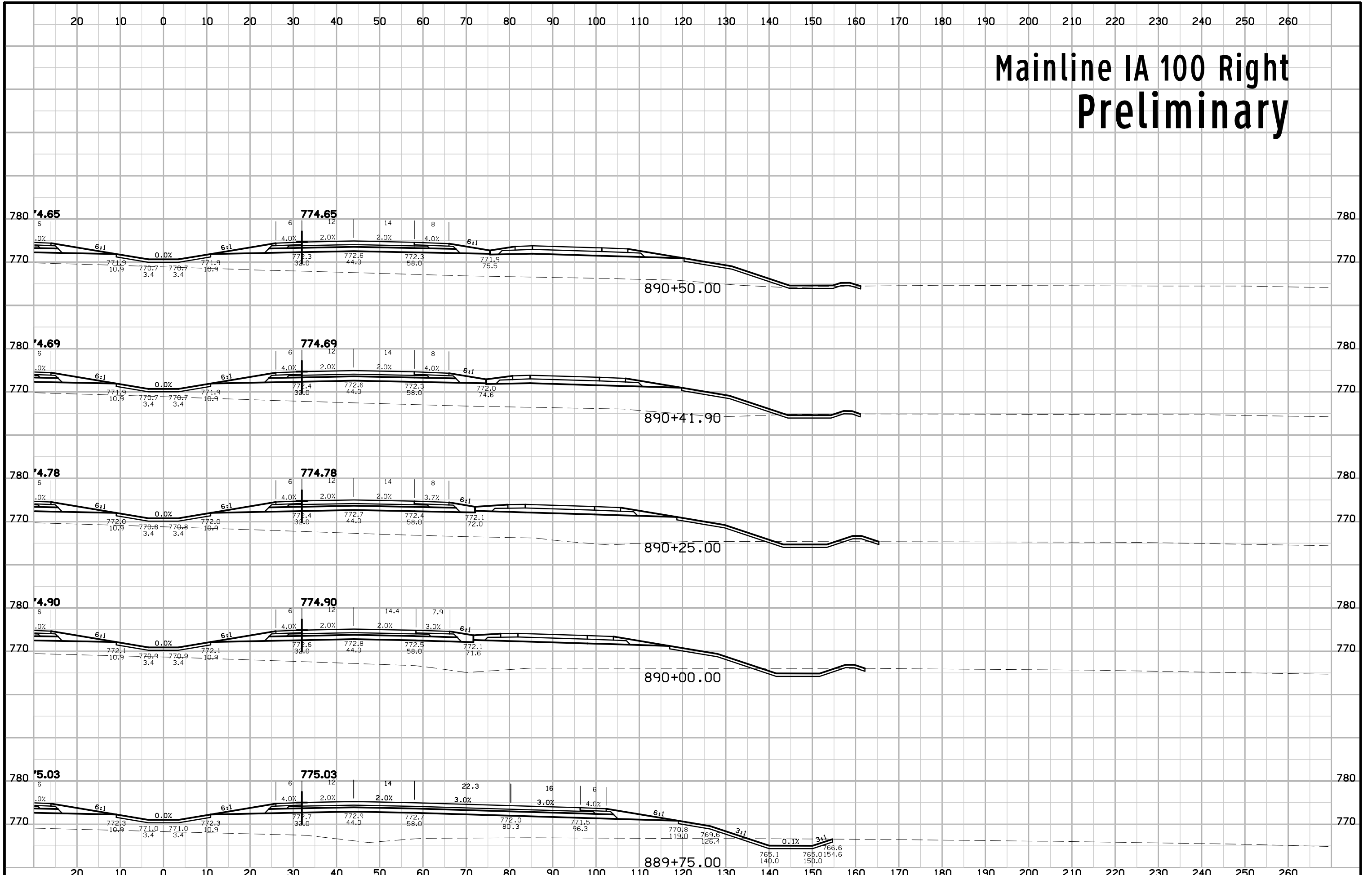
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# Mainline IA 100 Left Preliminary

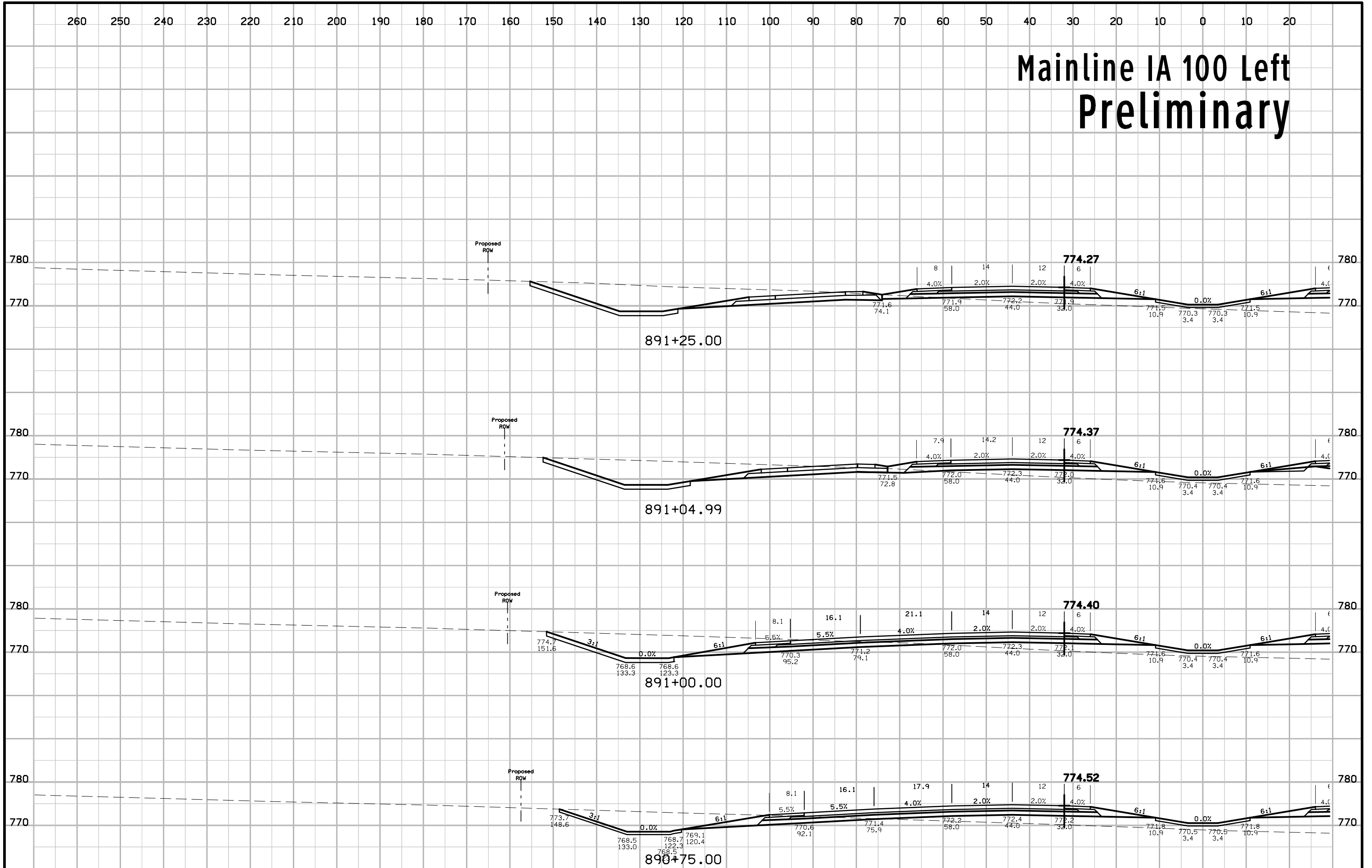


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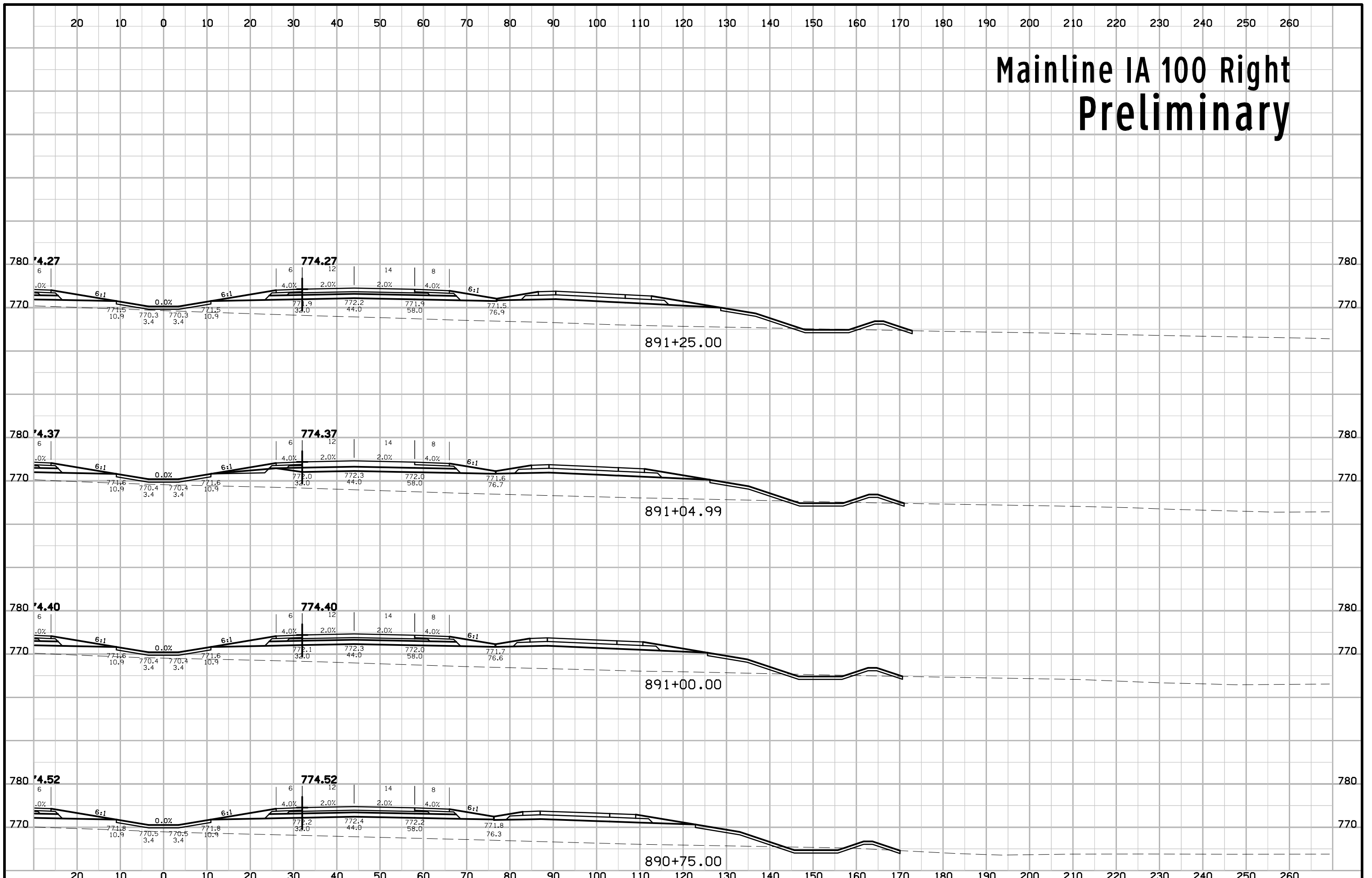




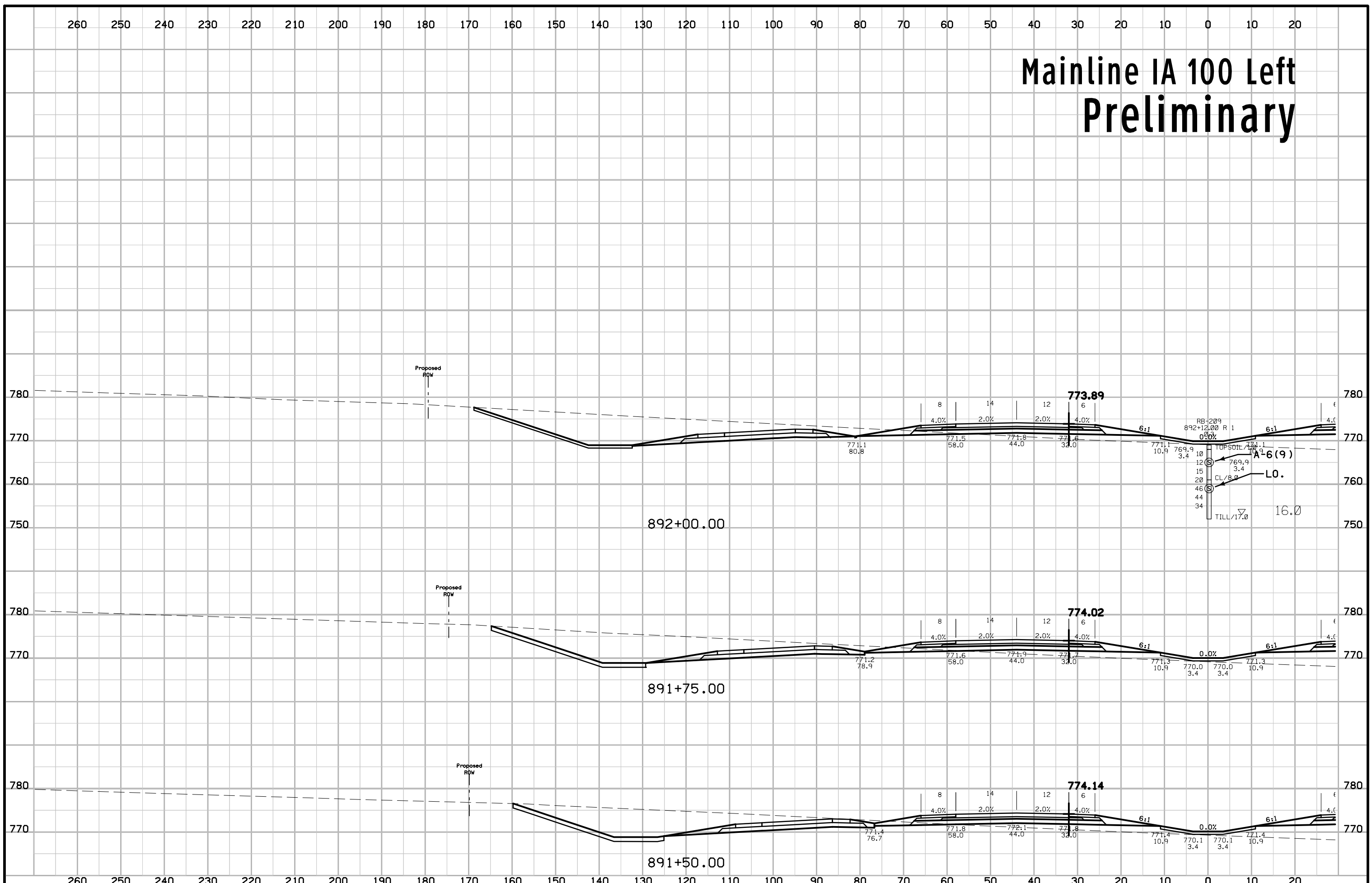
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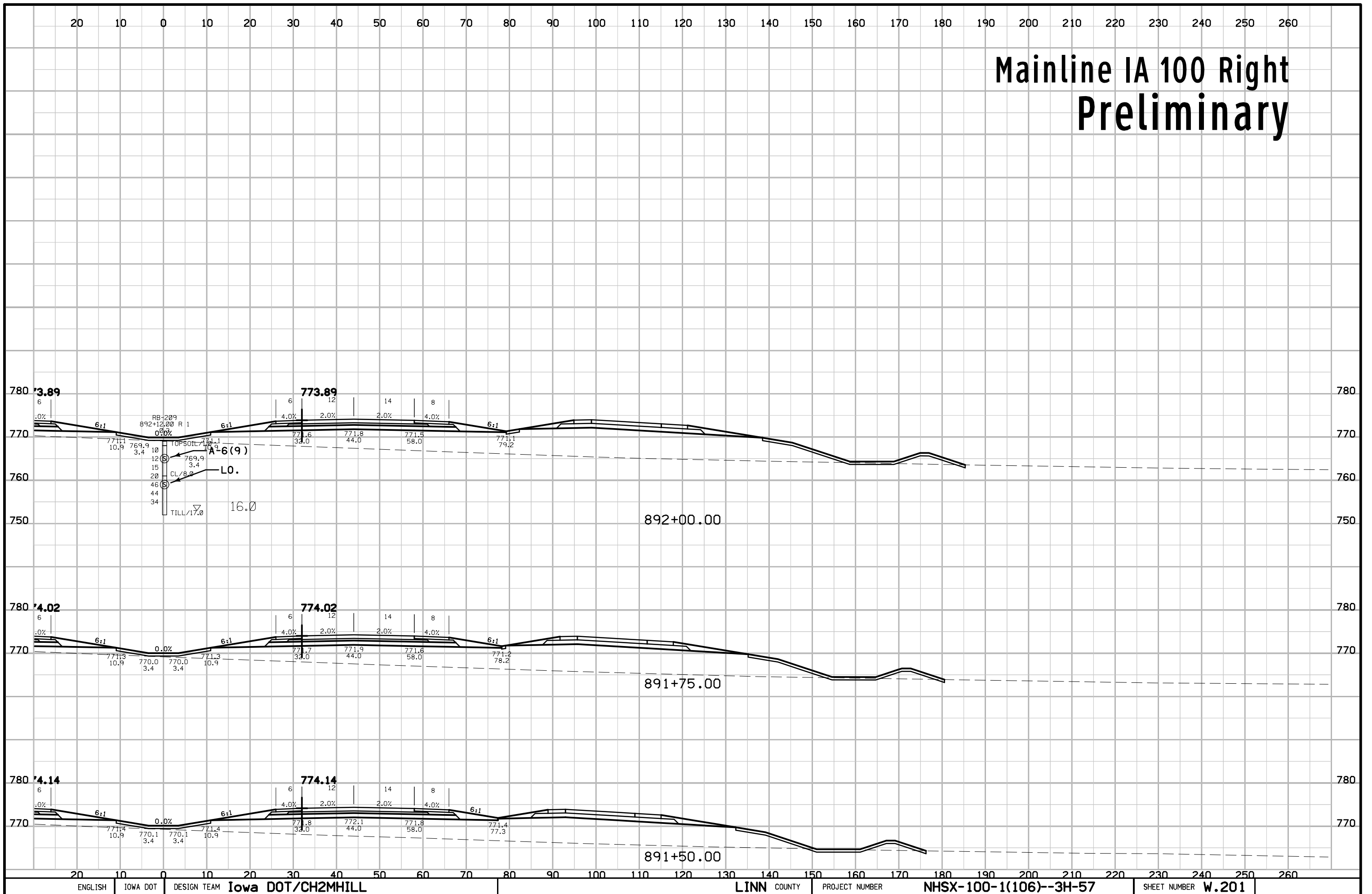
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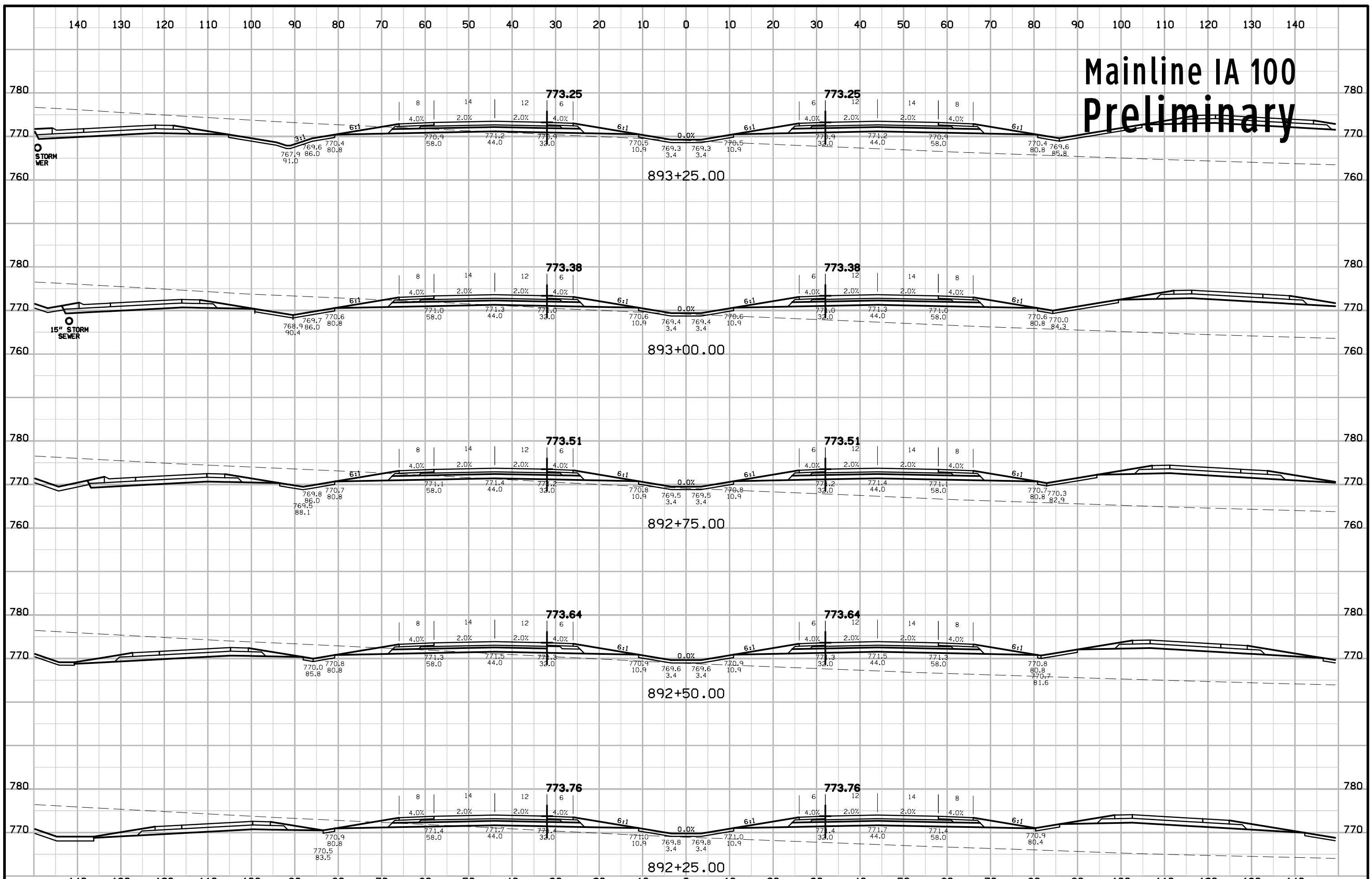
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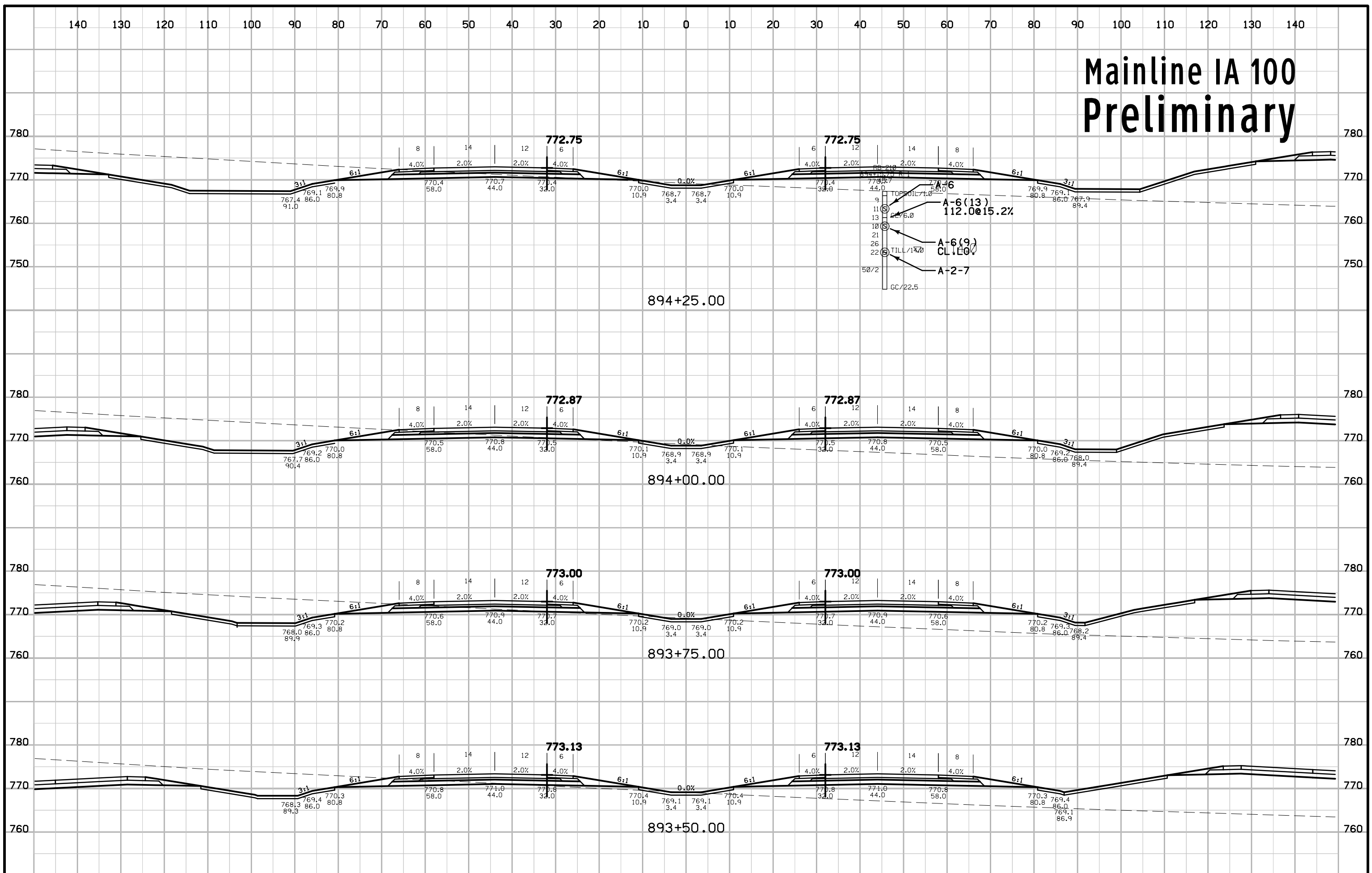
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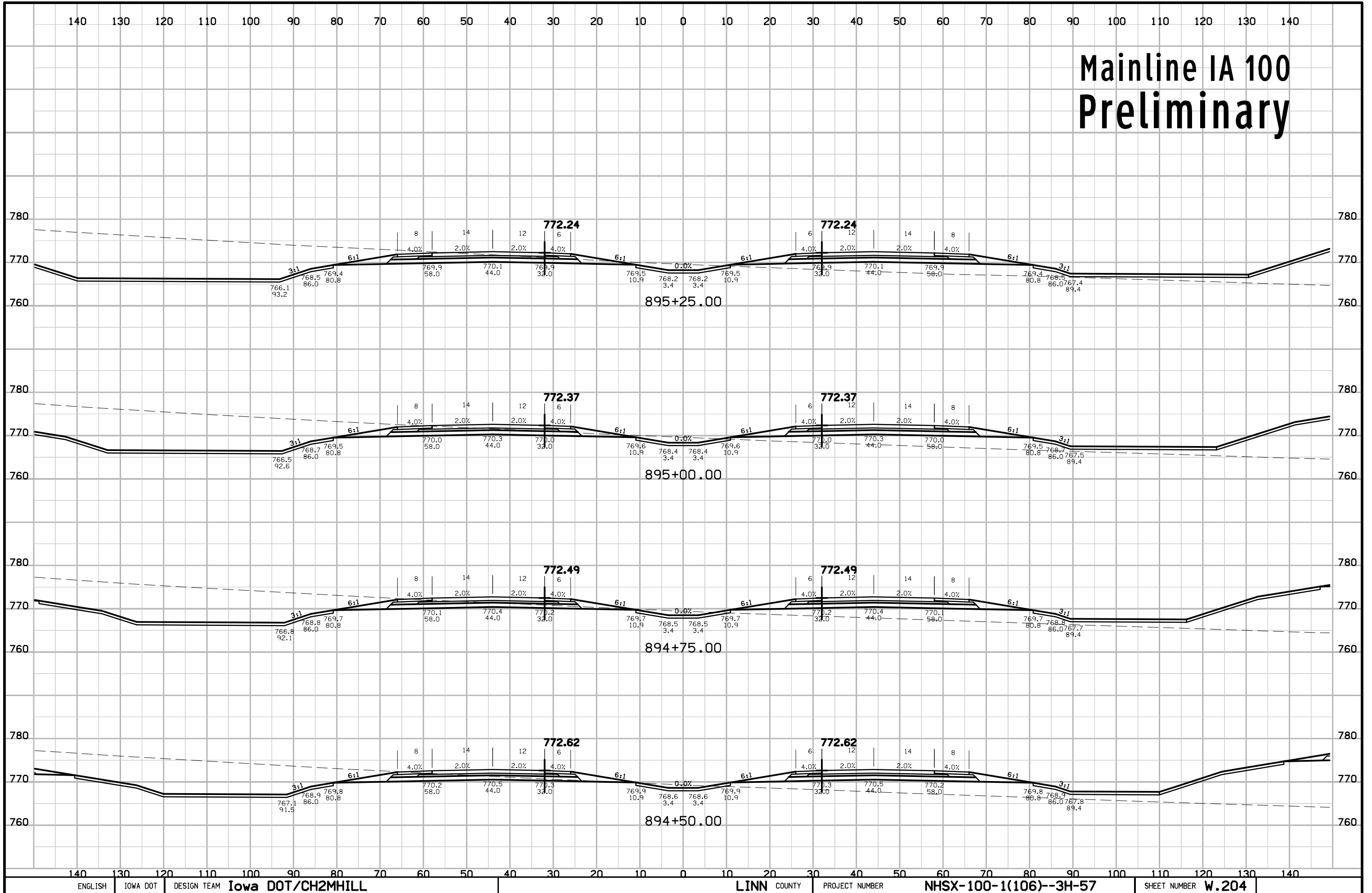
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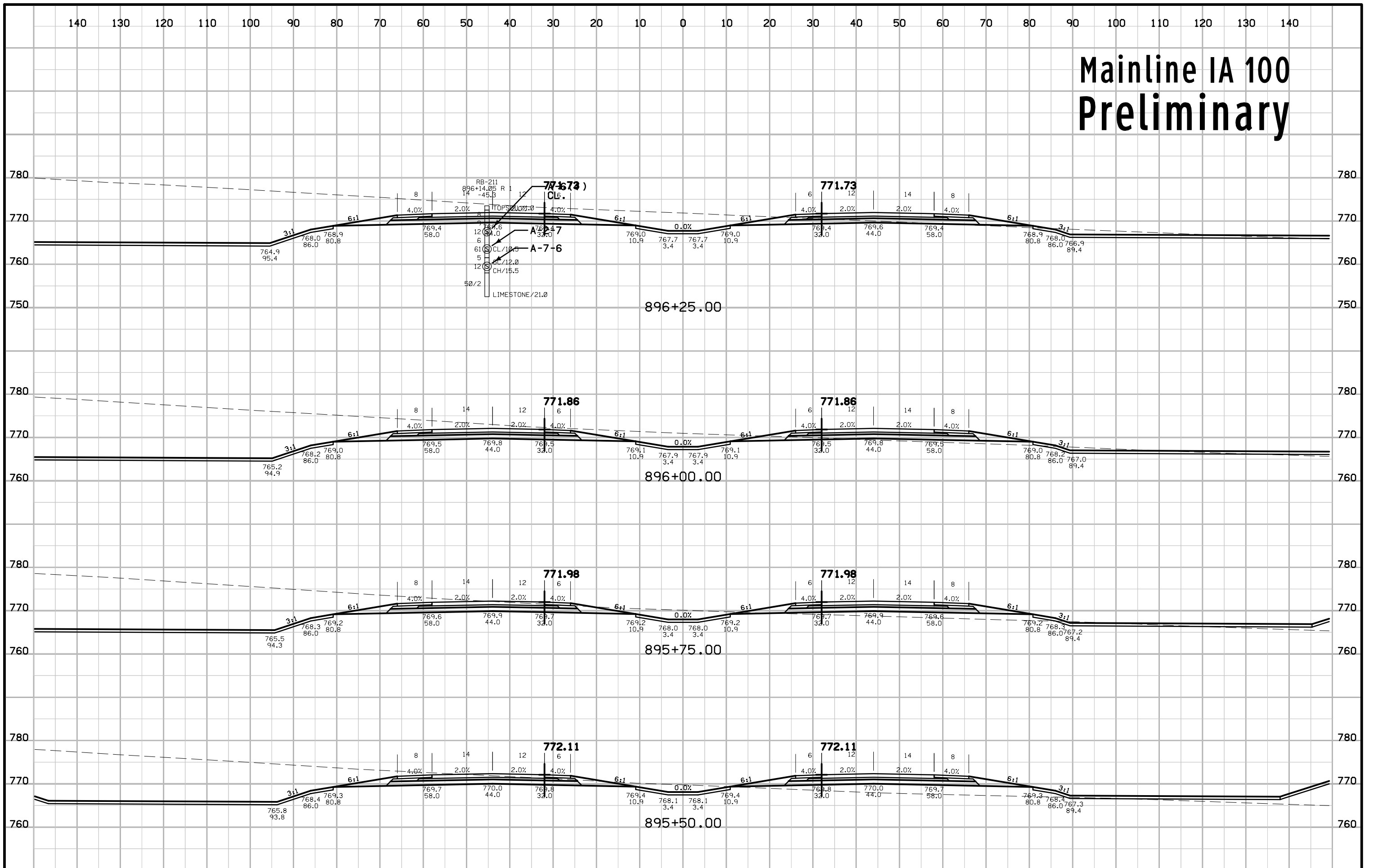
# Mainline IA 100 Preliminary



# Mainline IA 100 Preliminary

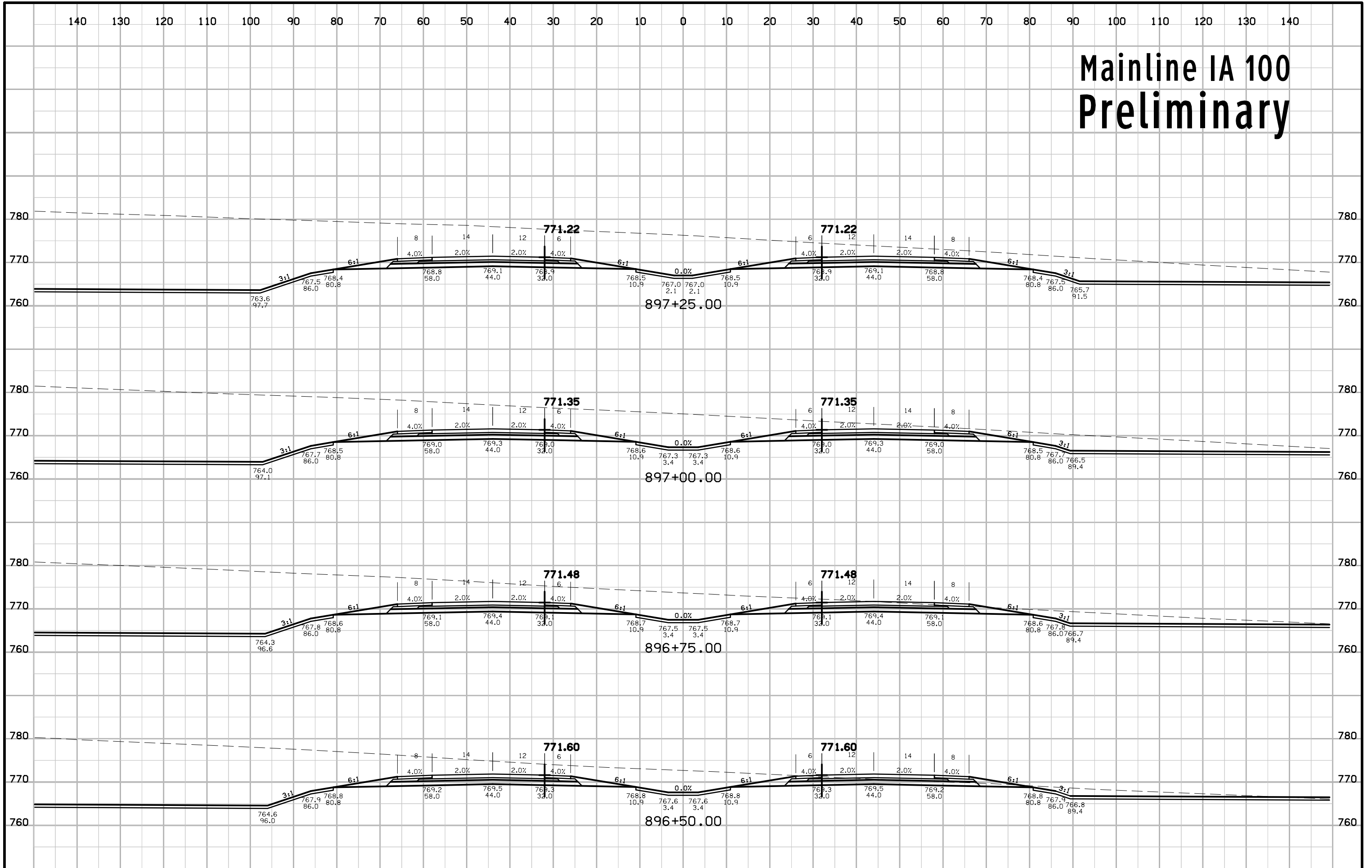


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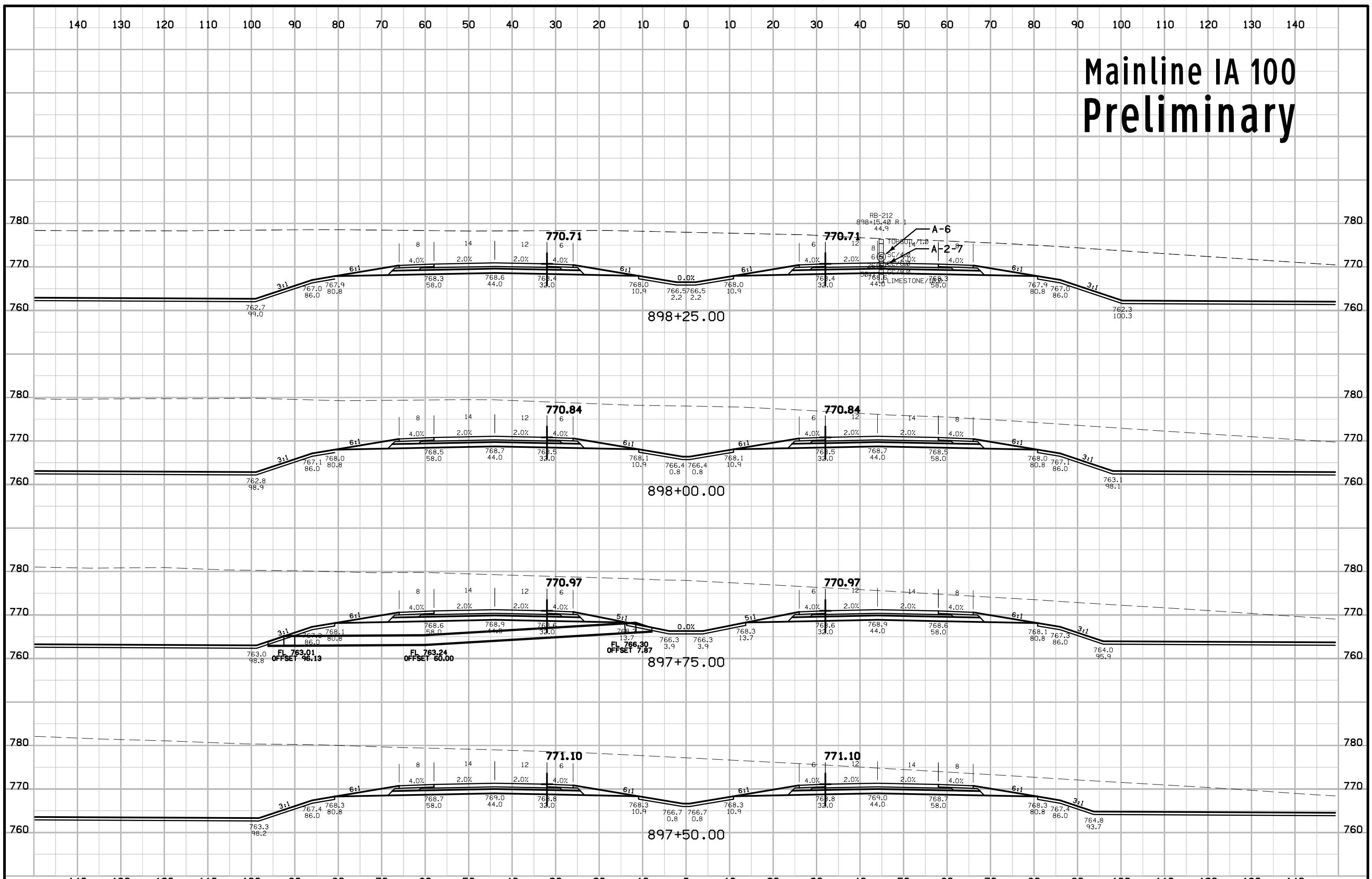




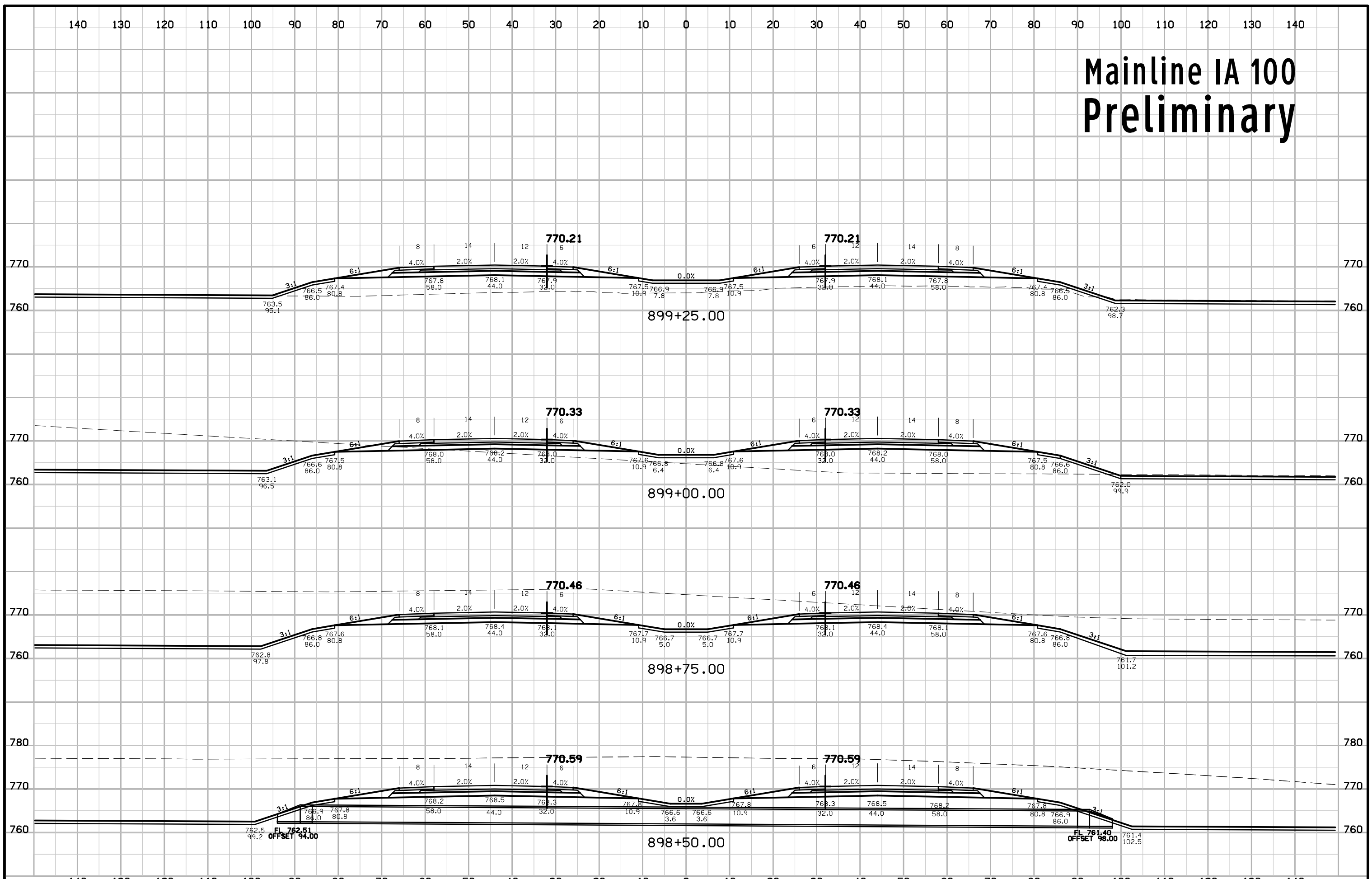
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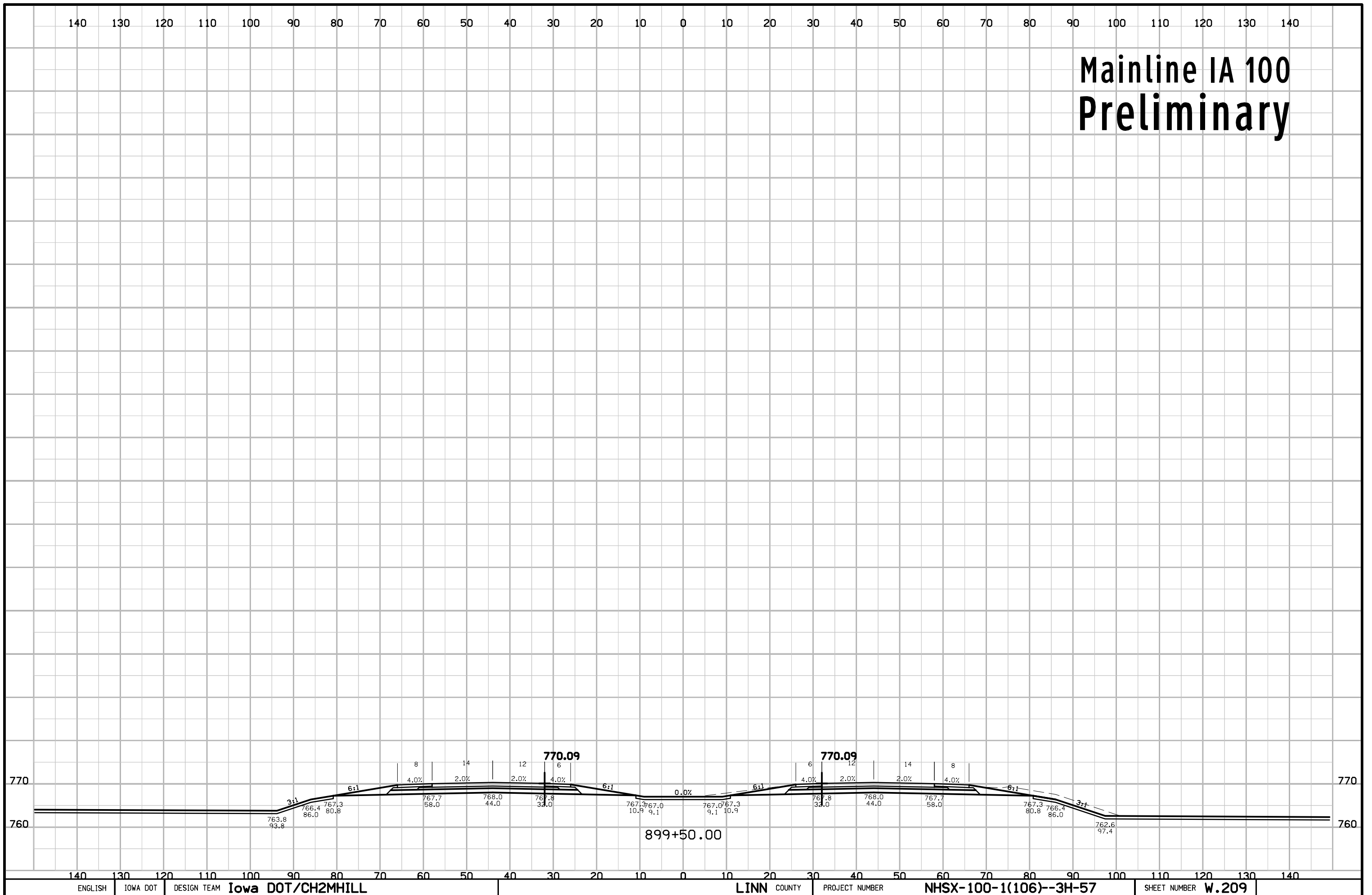
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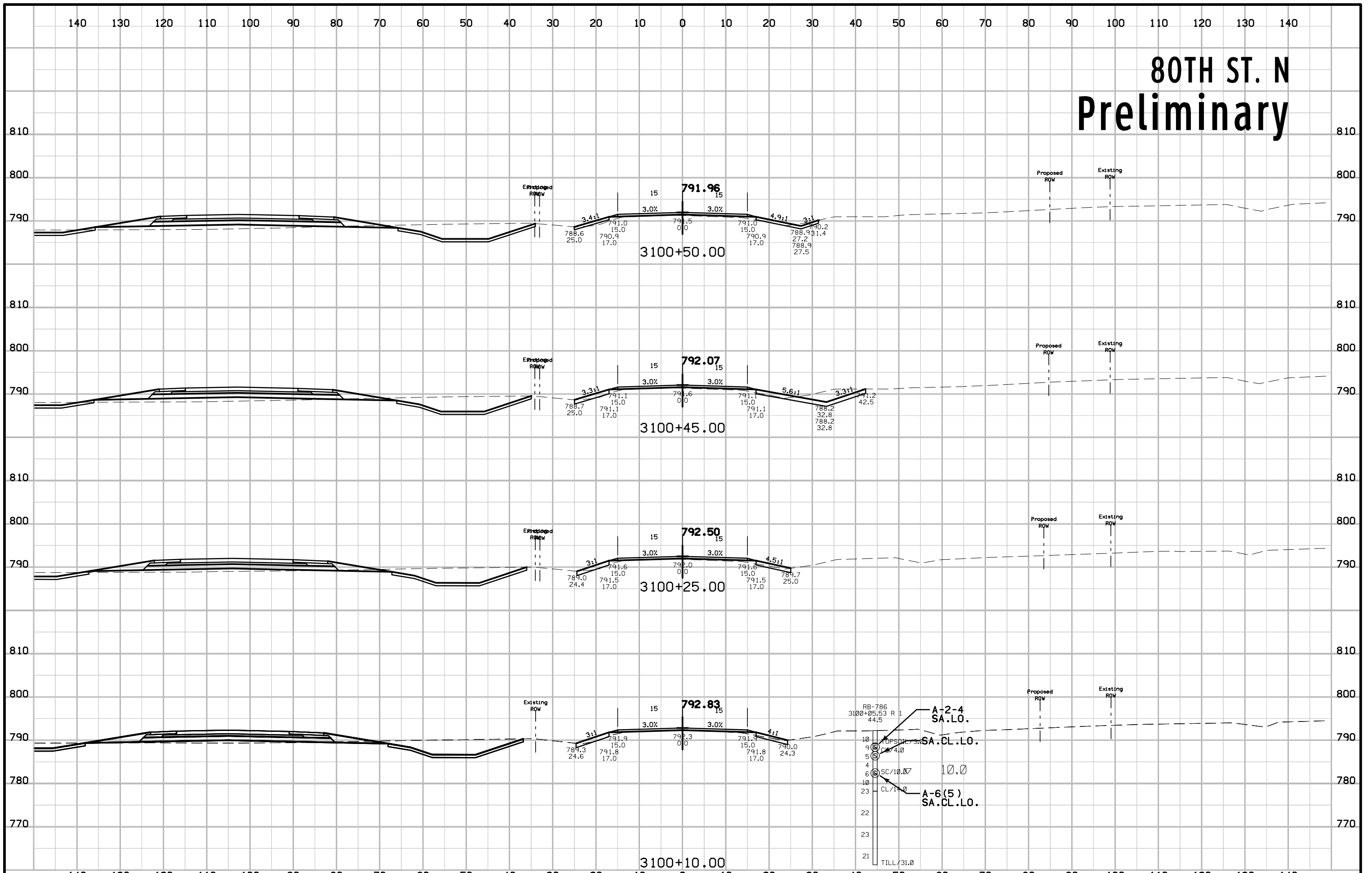
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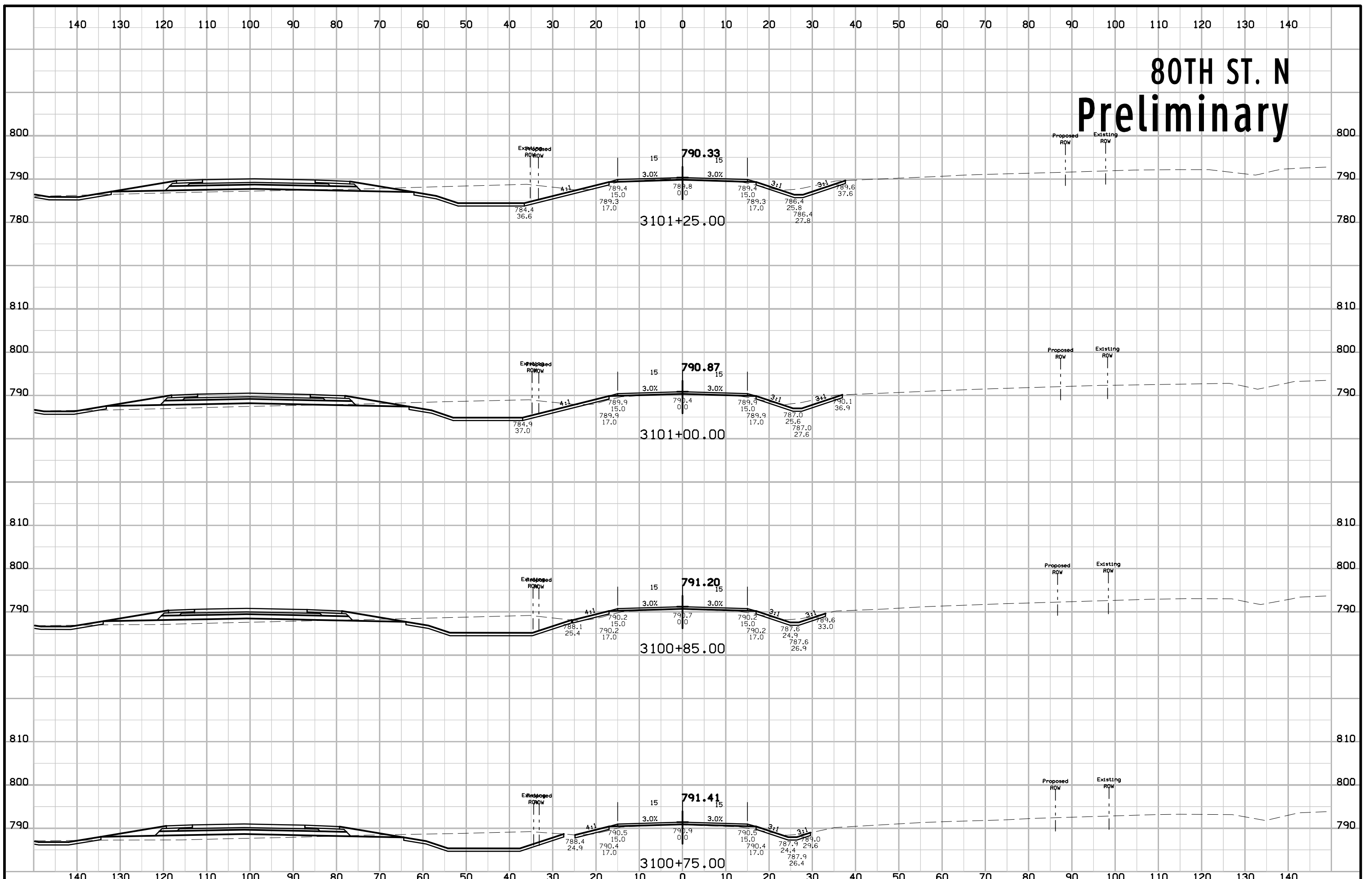
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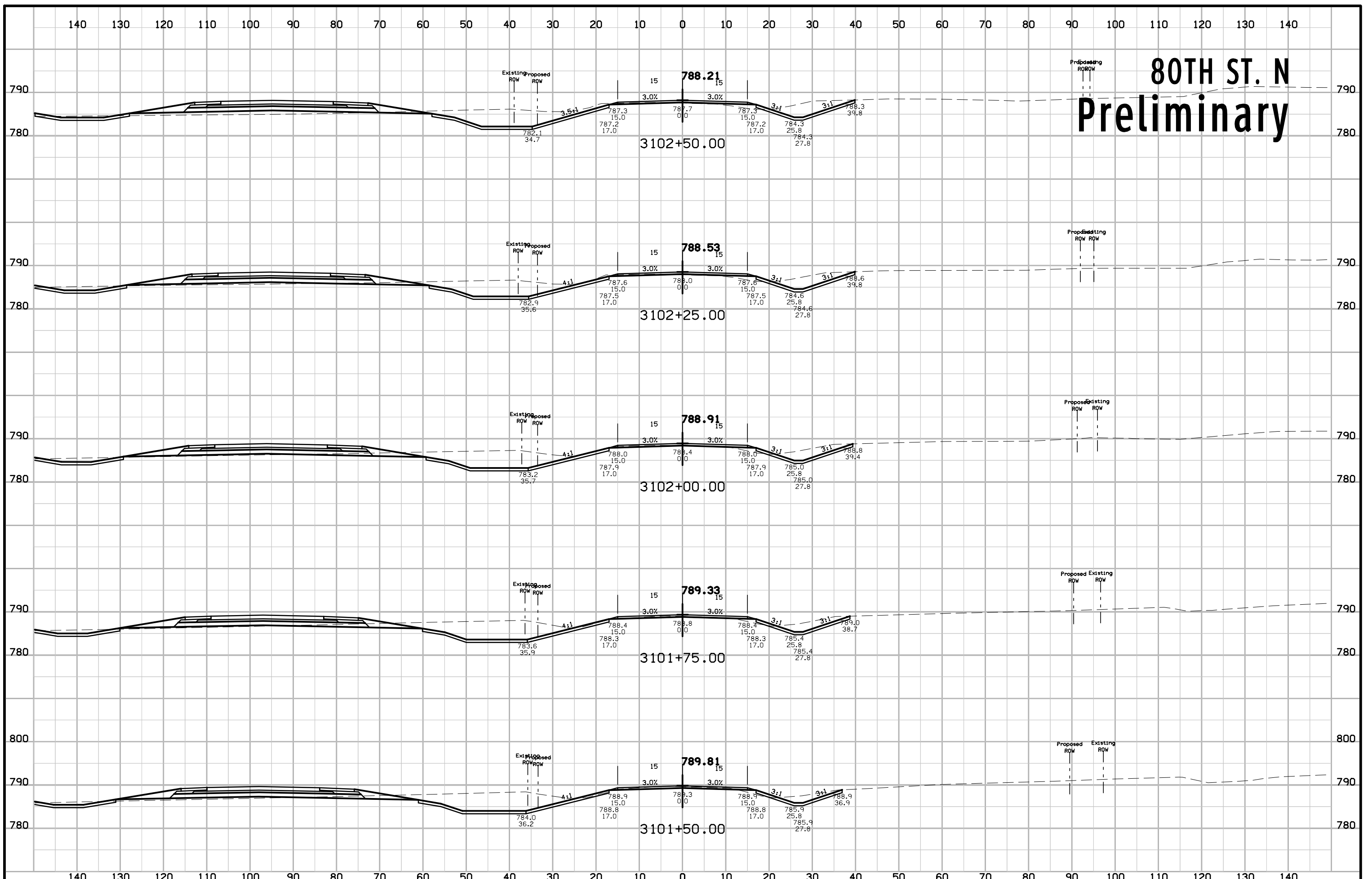
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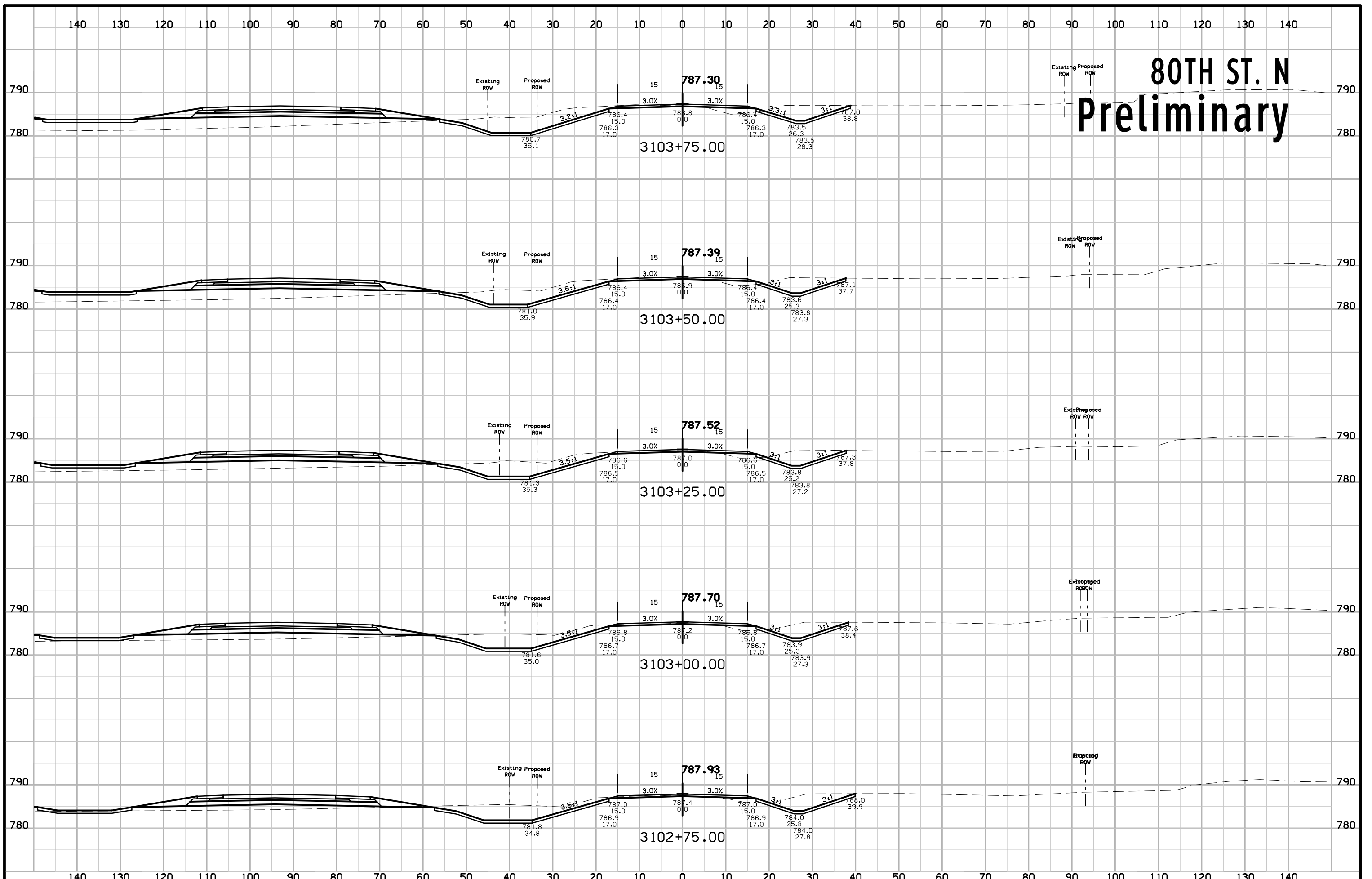
# 80TH ST. N Preliminary



# 80TH ST. N Preliminary

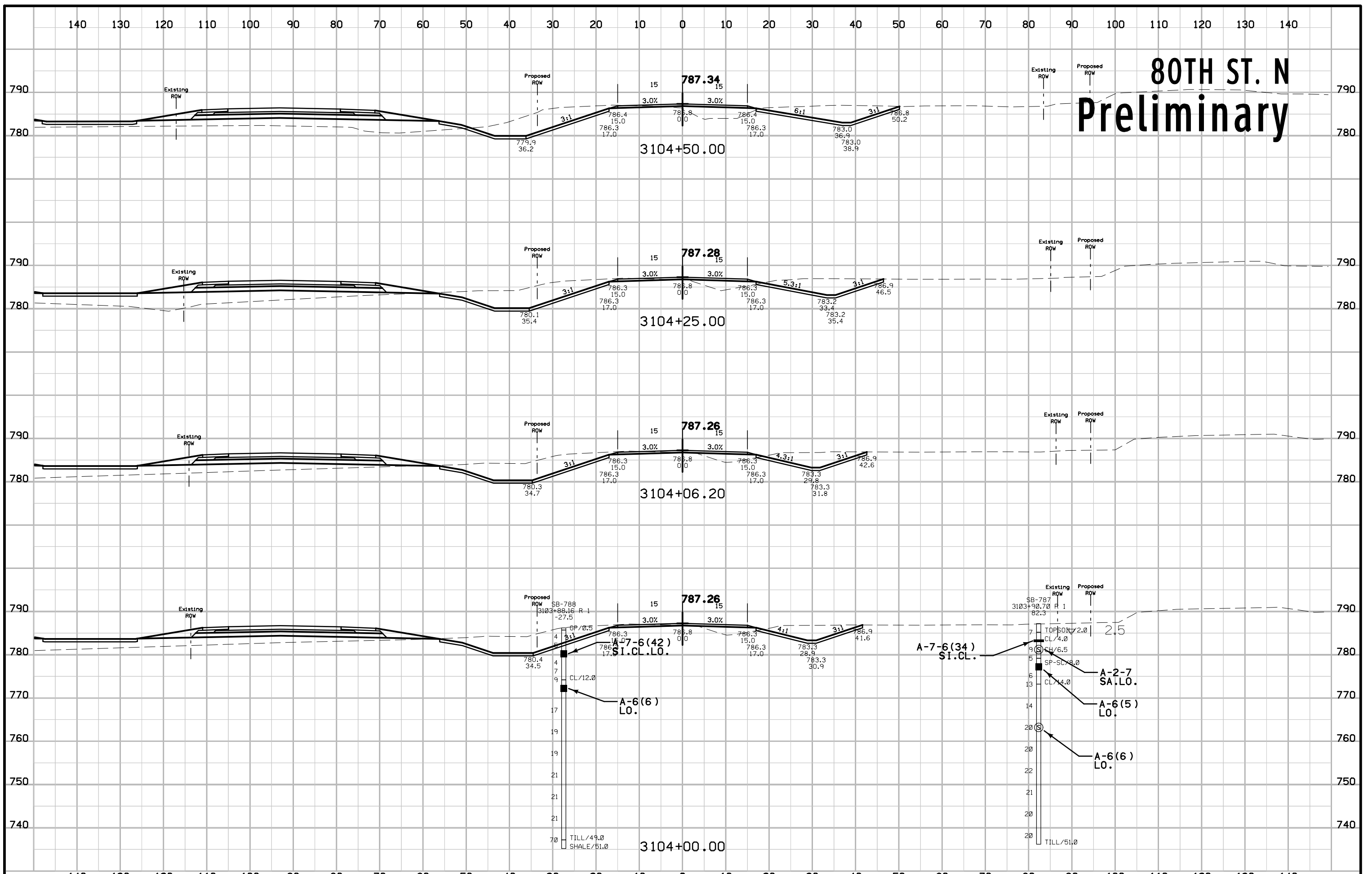


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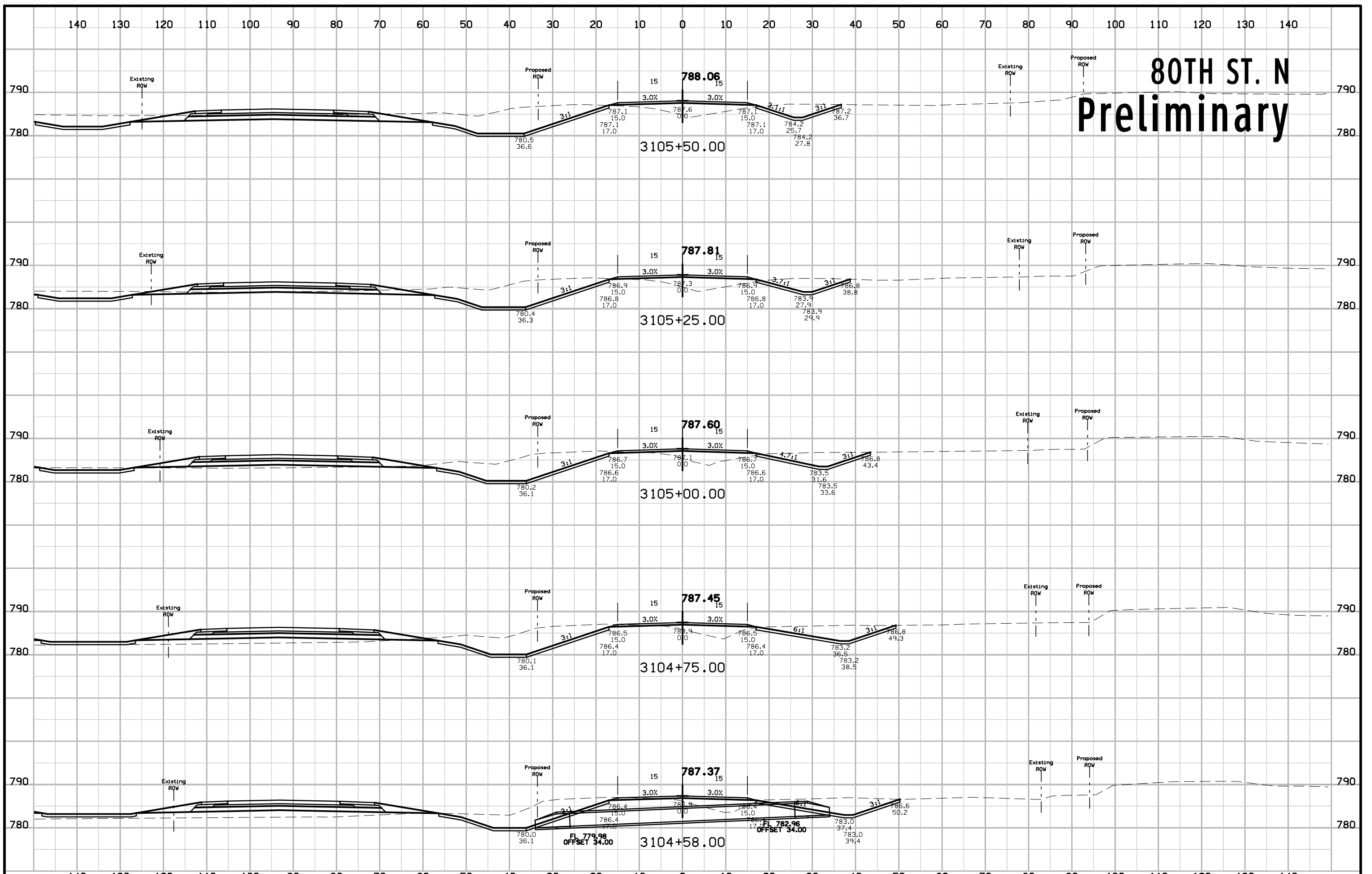




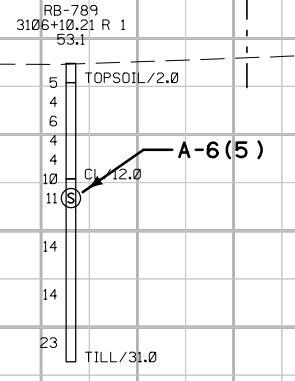
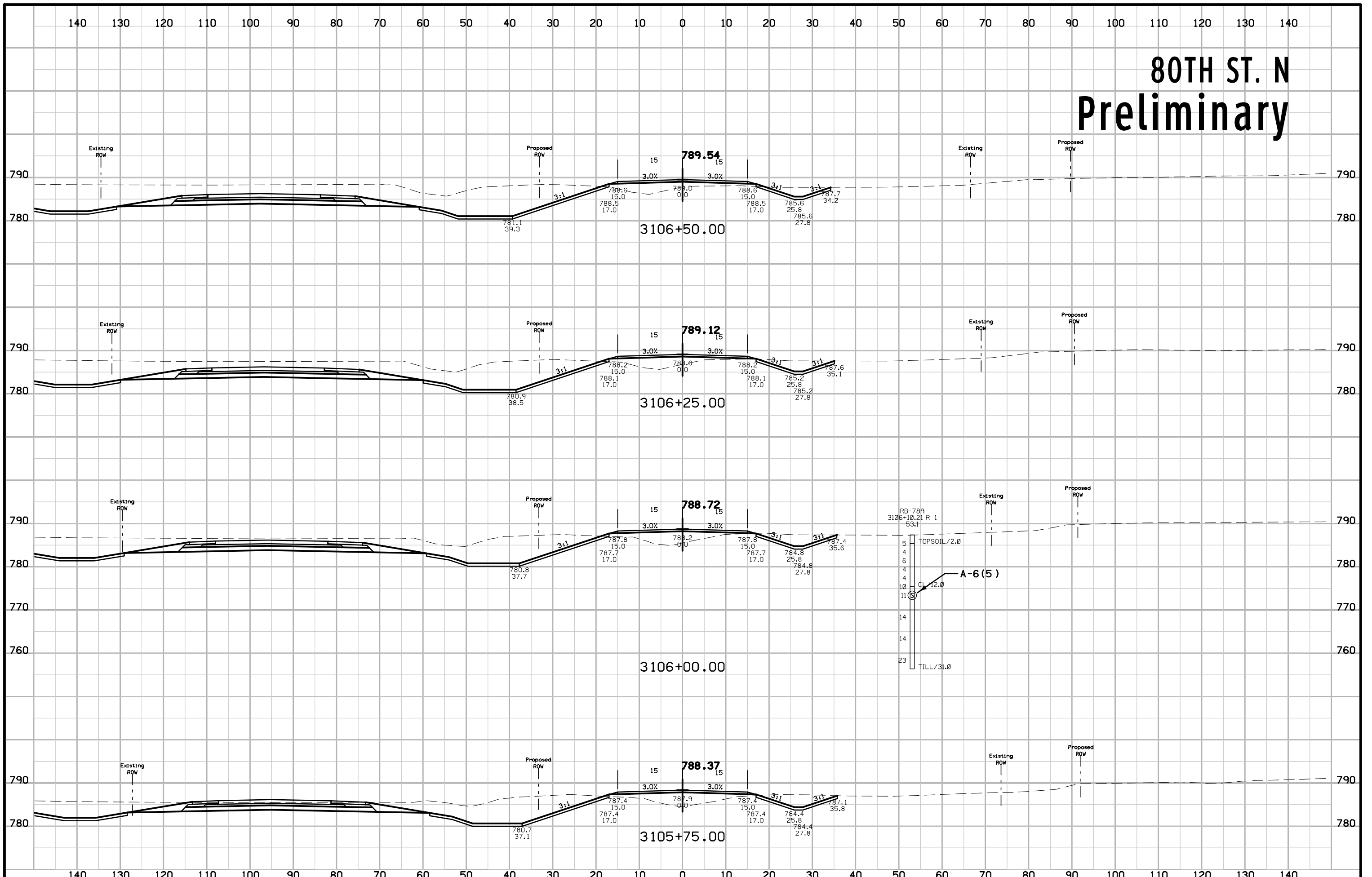
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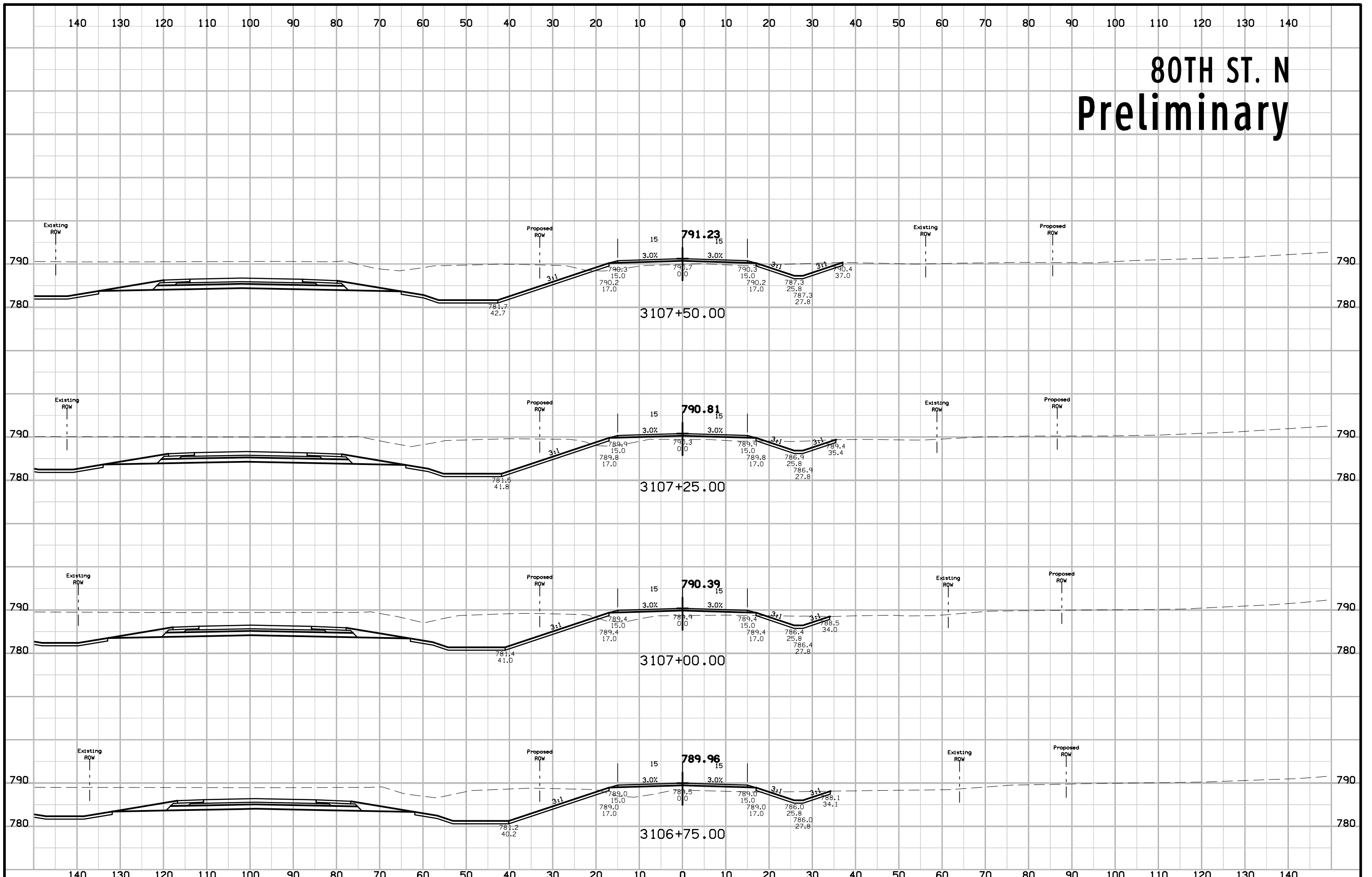
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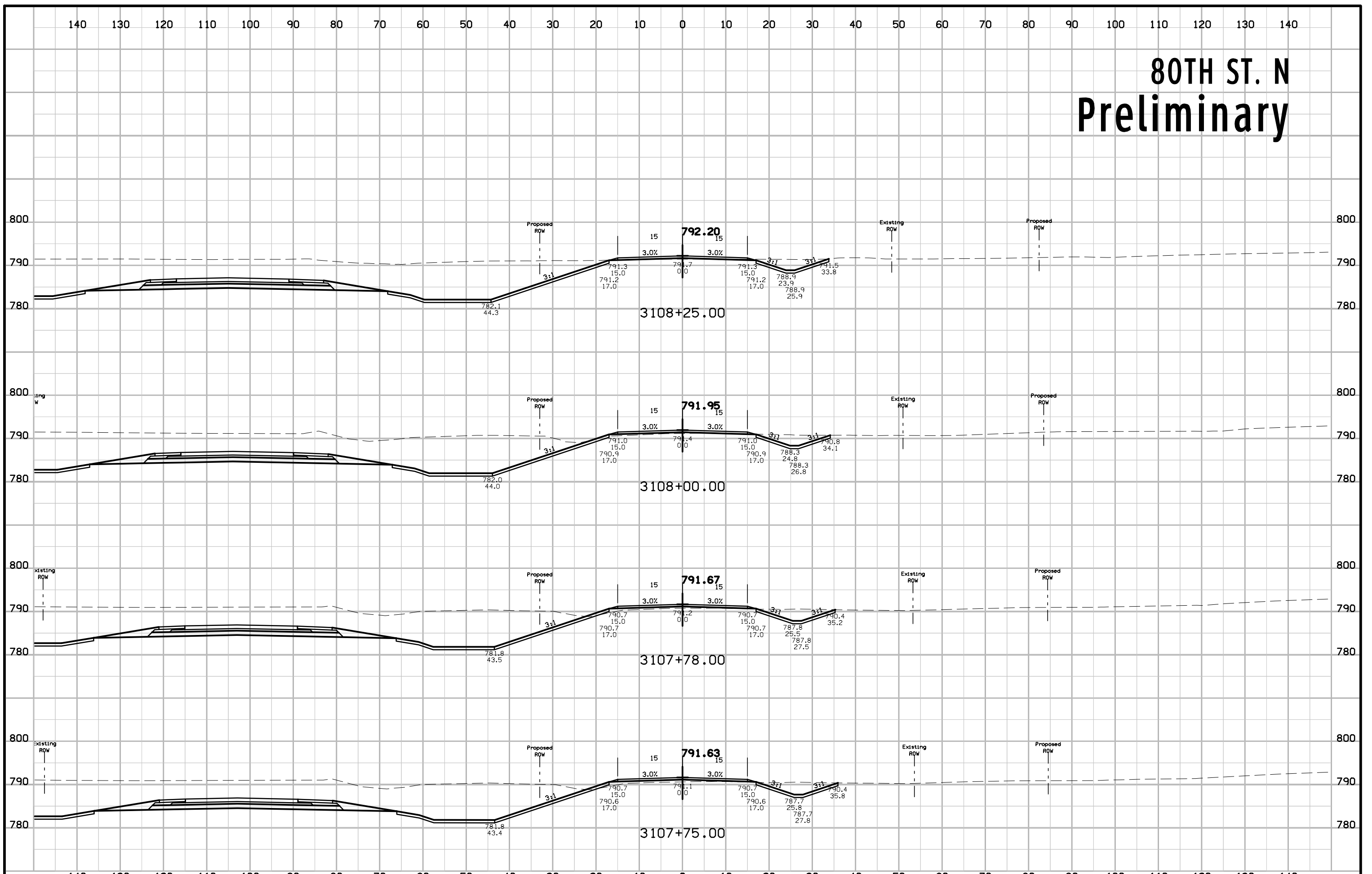
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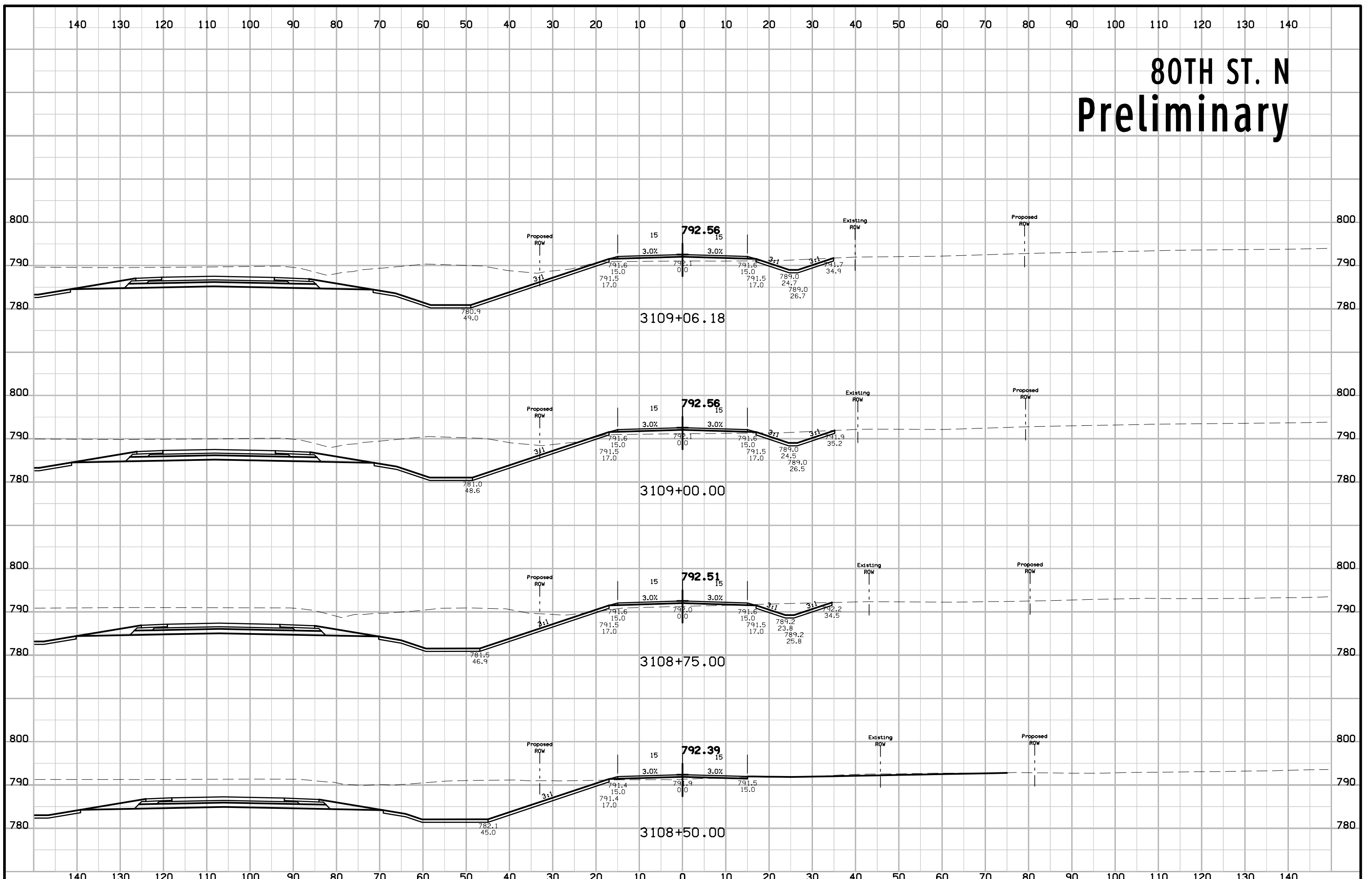
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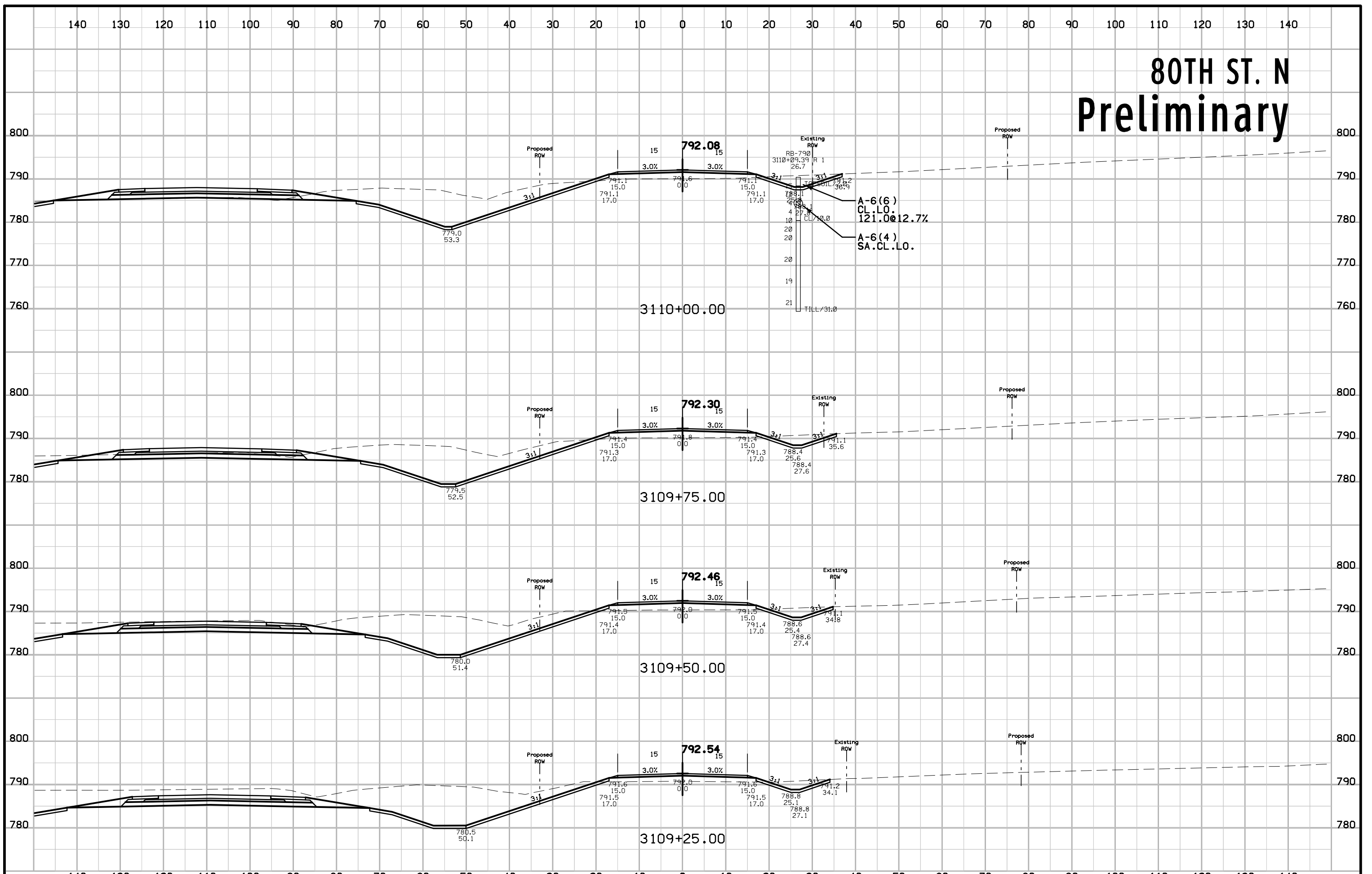
# 80TH ST. N Preliminary



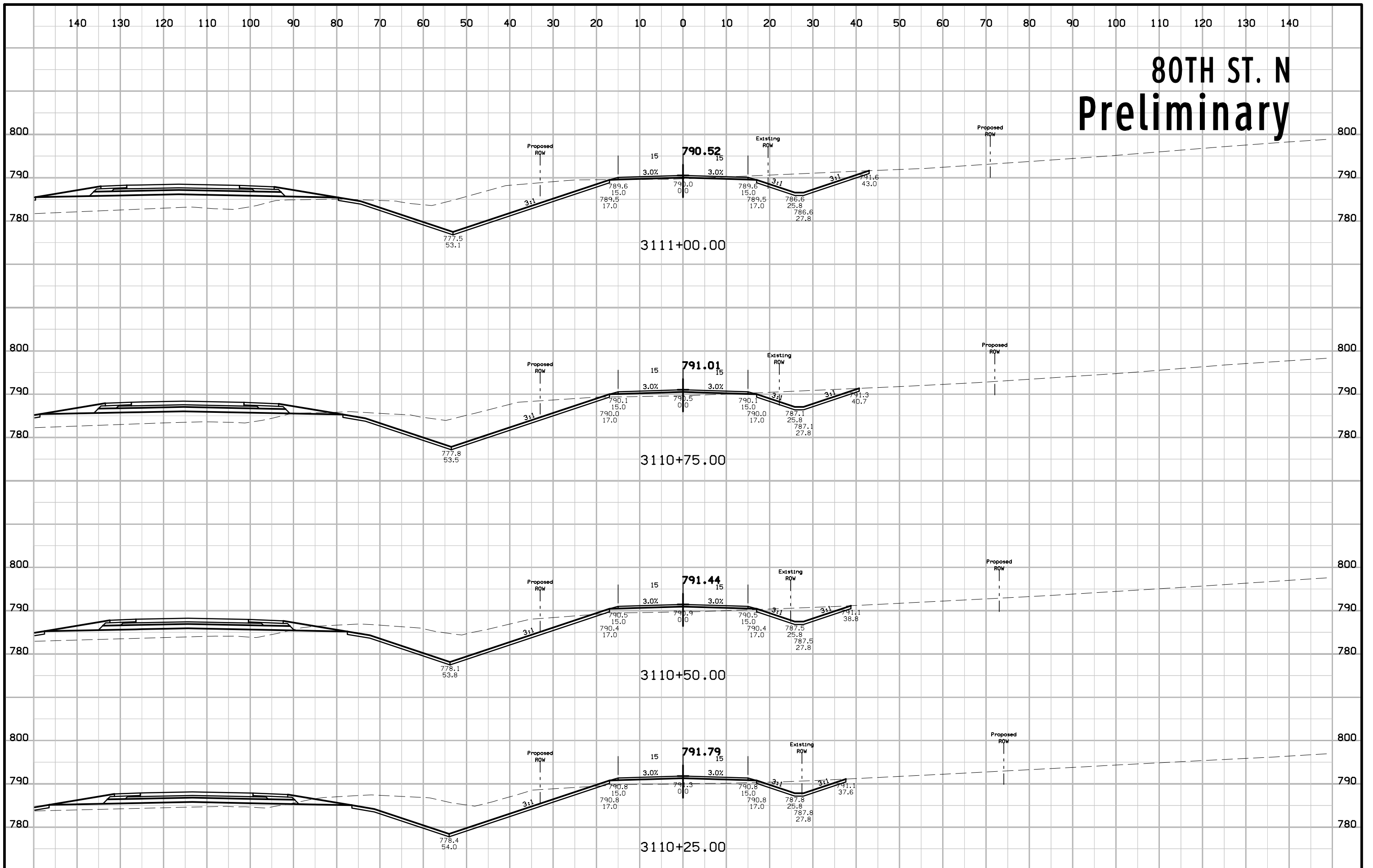
# 80TH ST. N Preliminary



# 80TH ST. N Preliminary

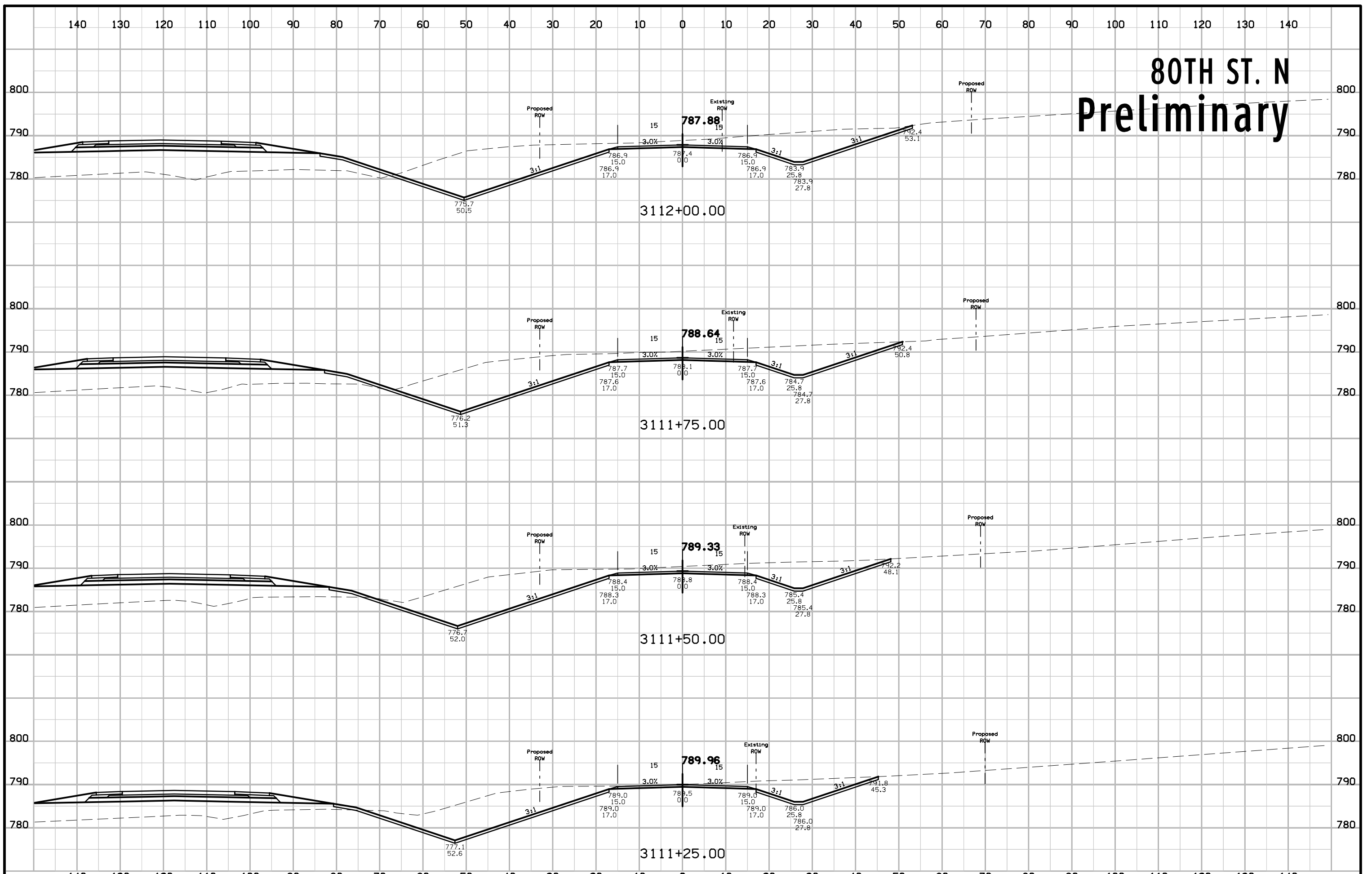


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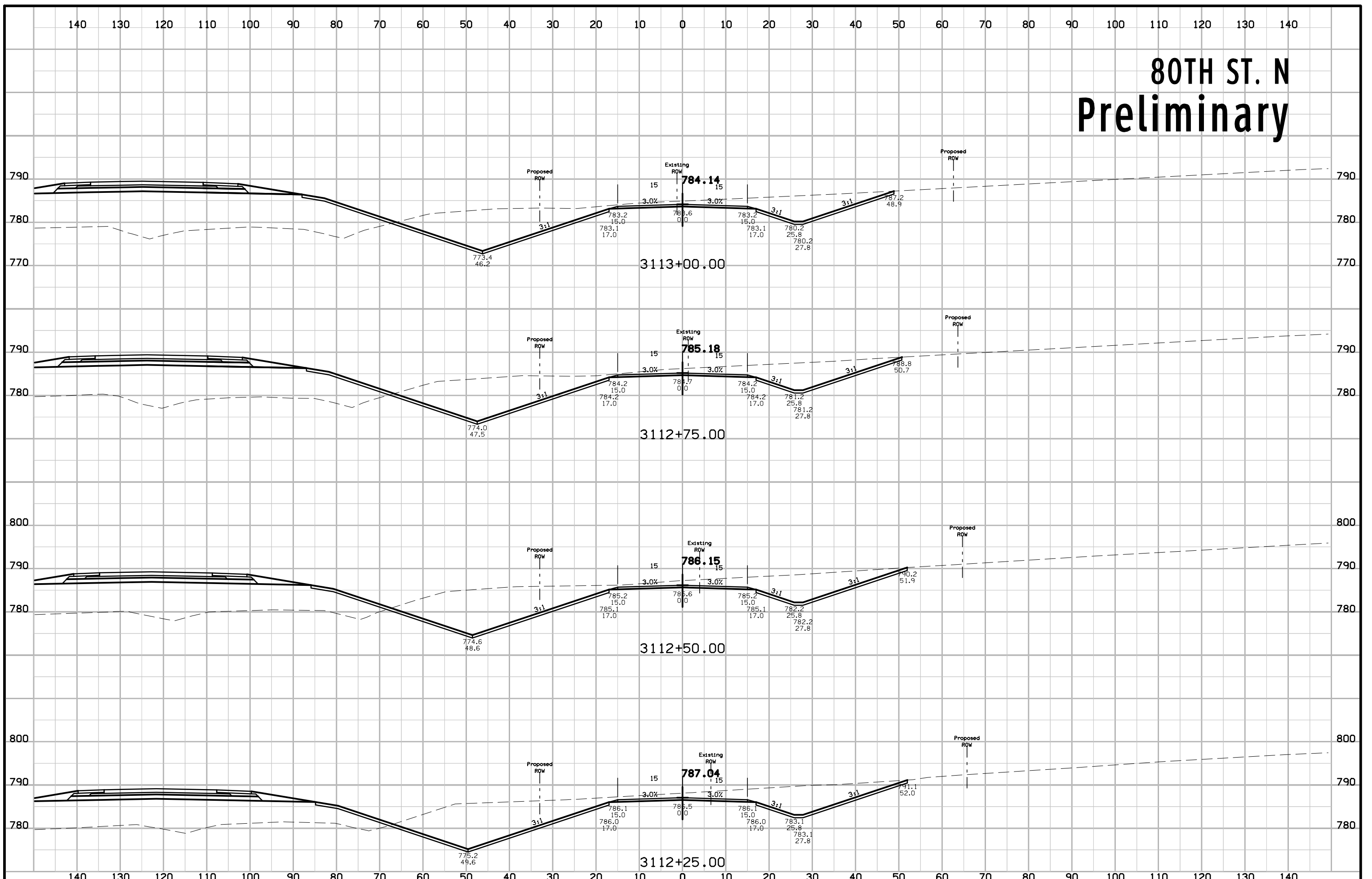




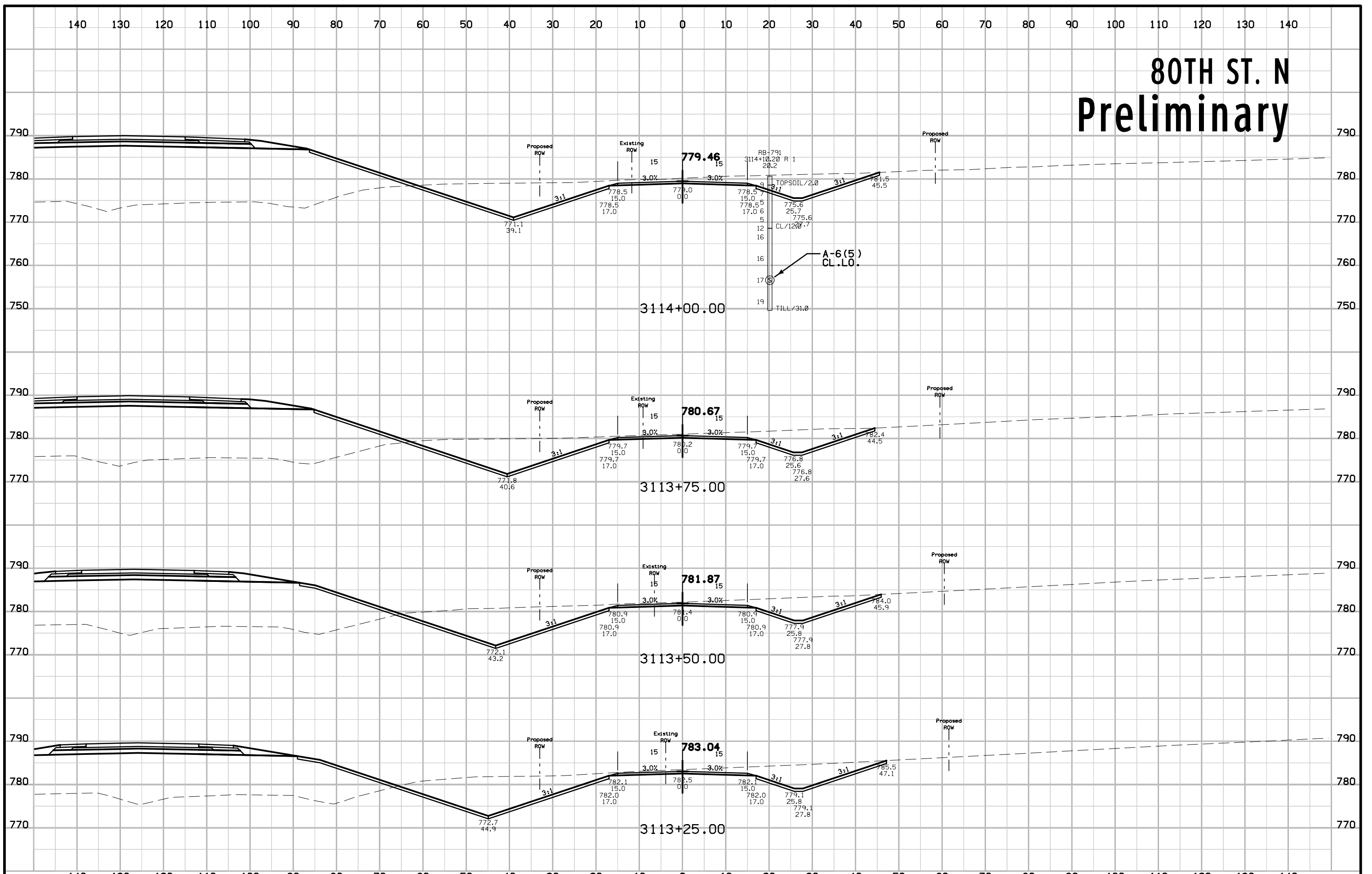
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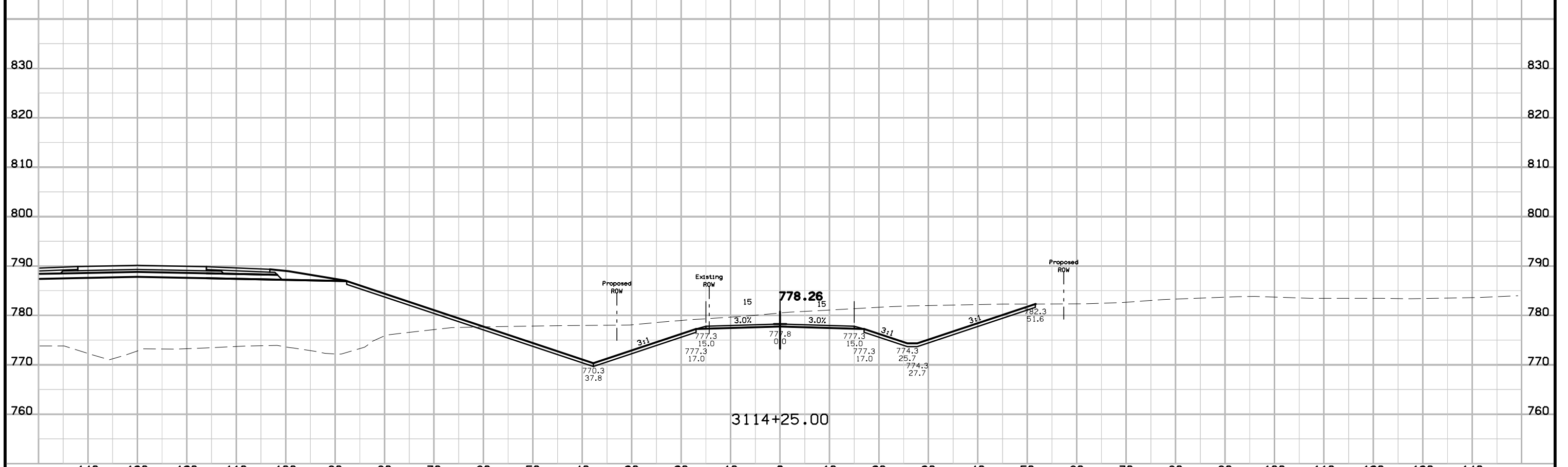
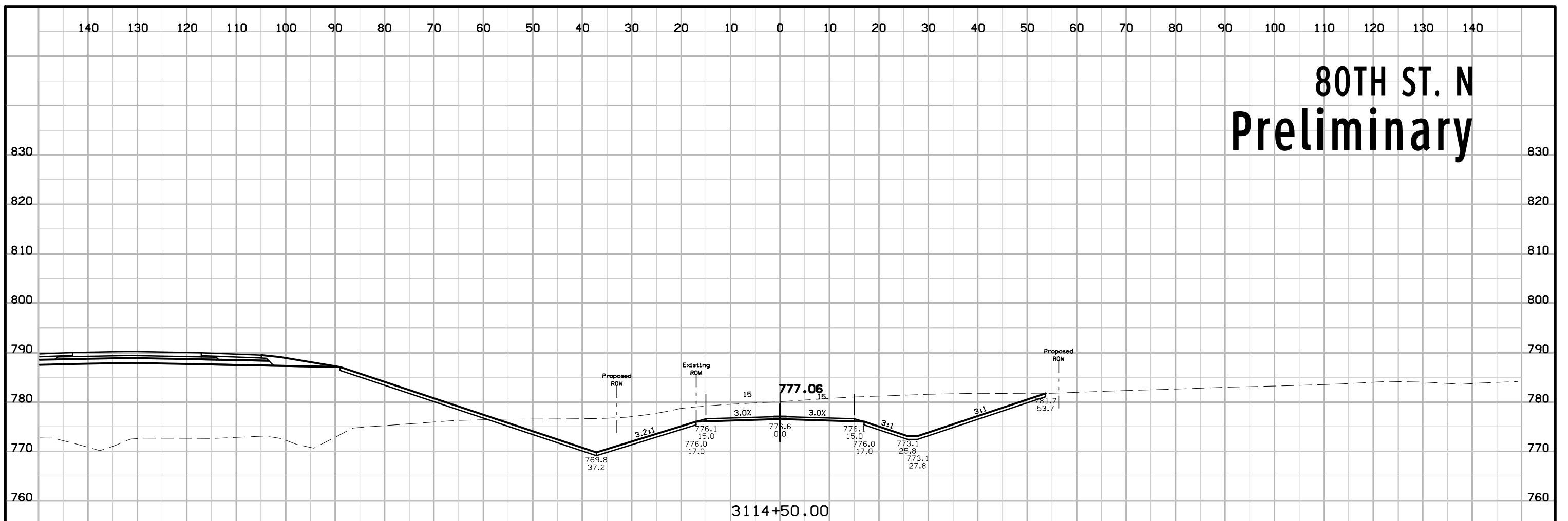
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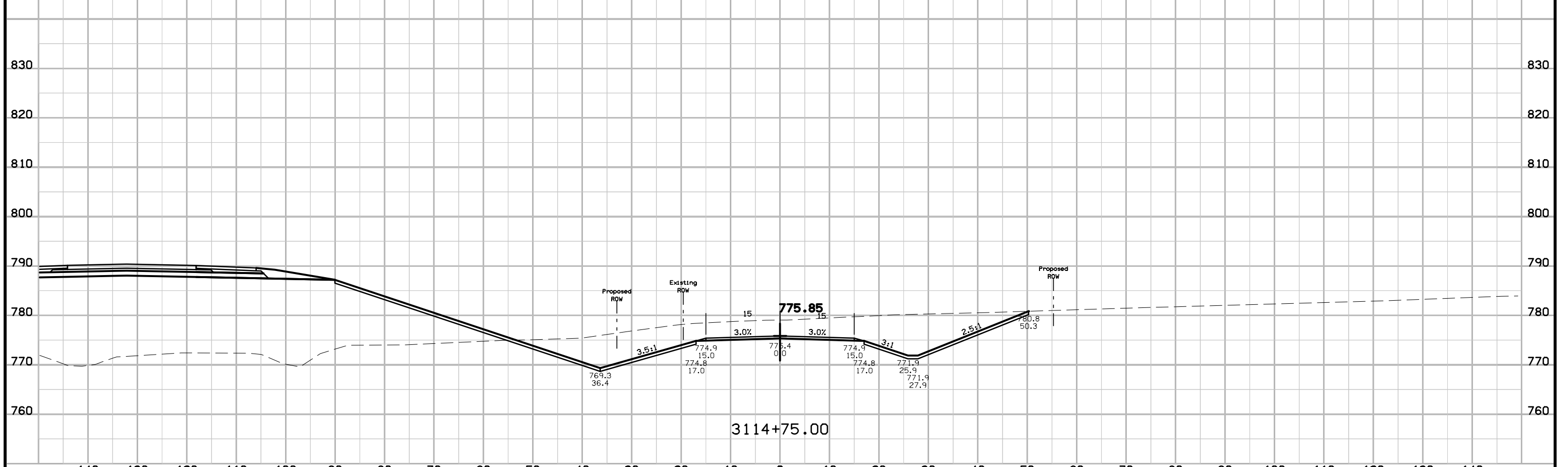
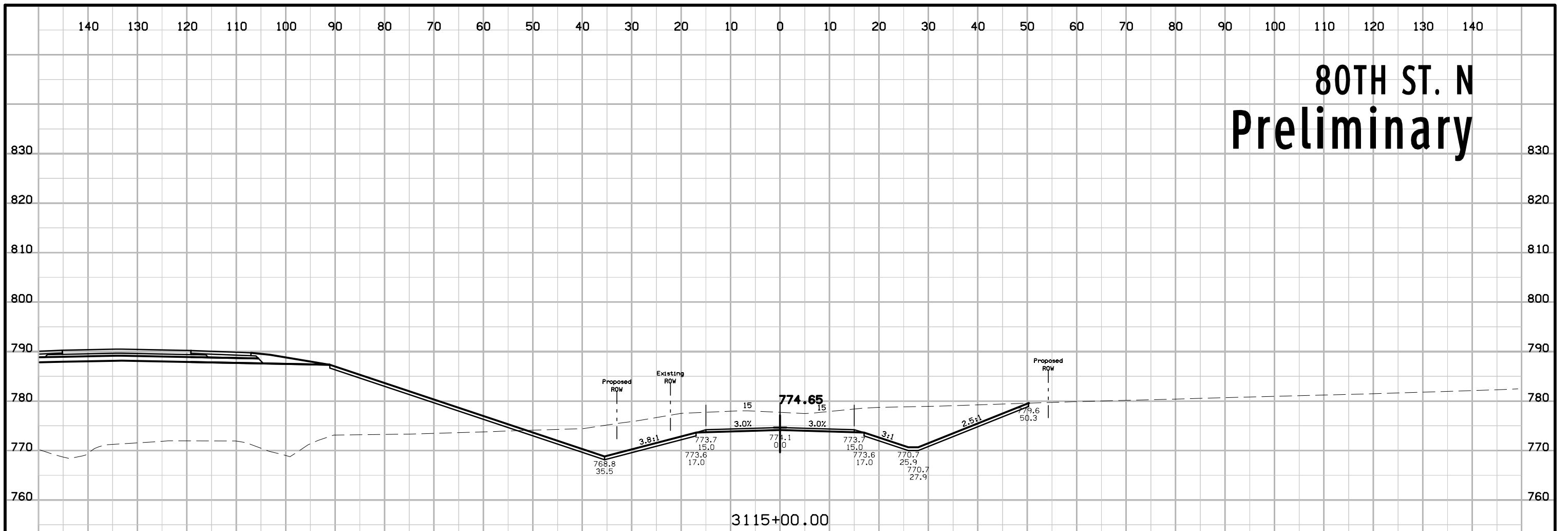
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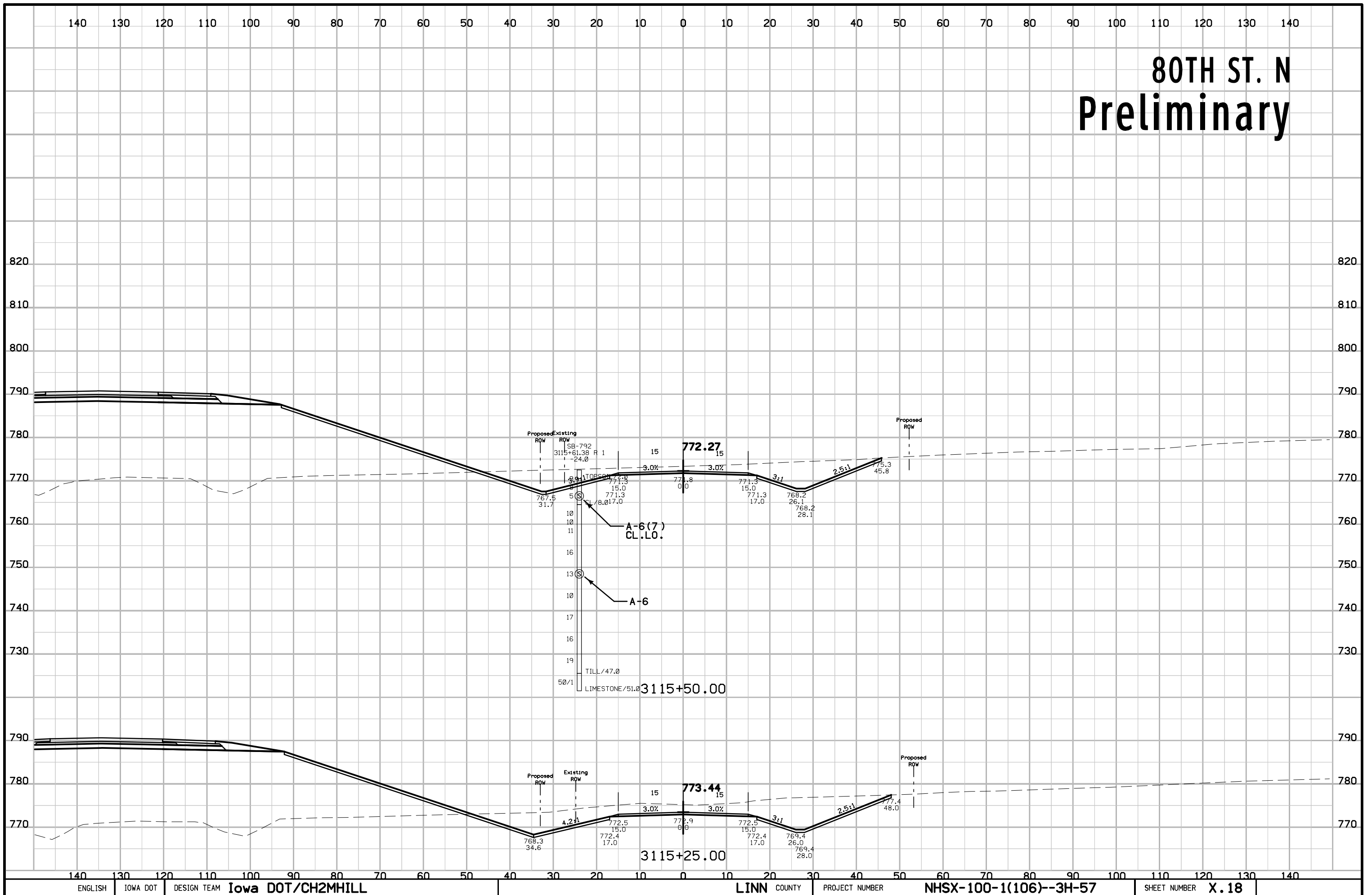
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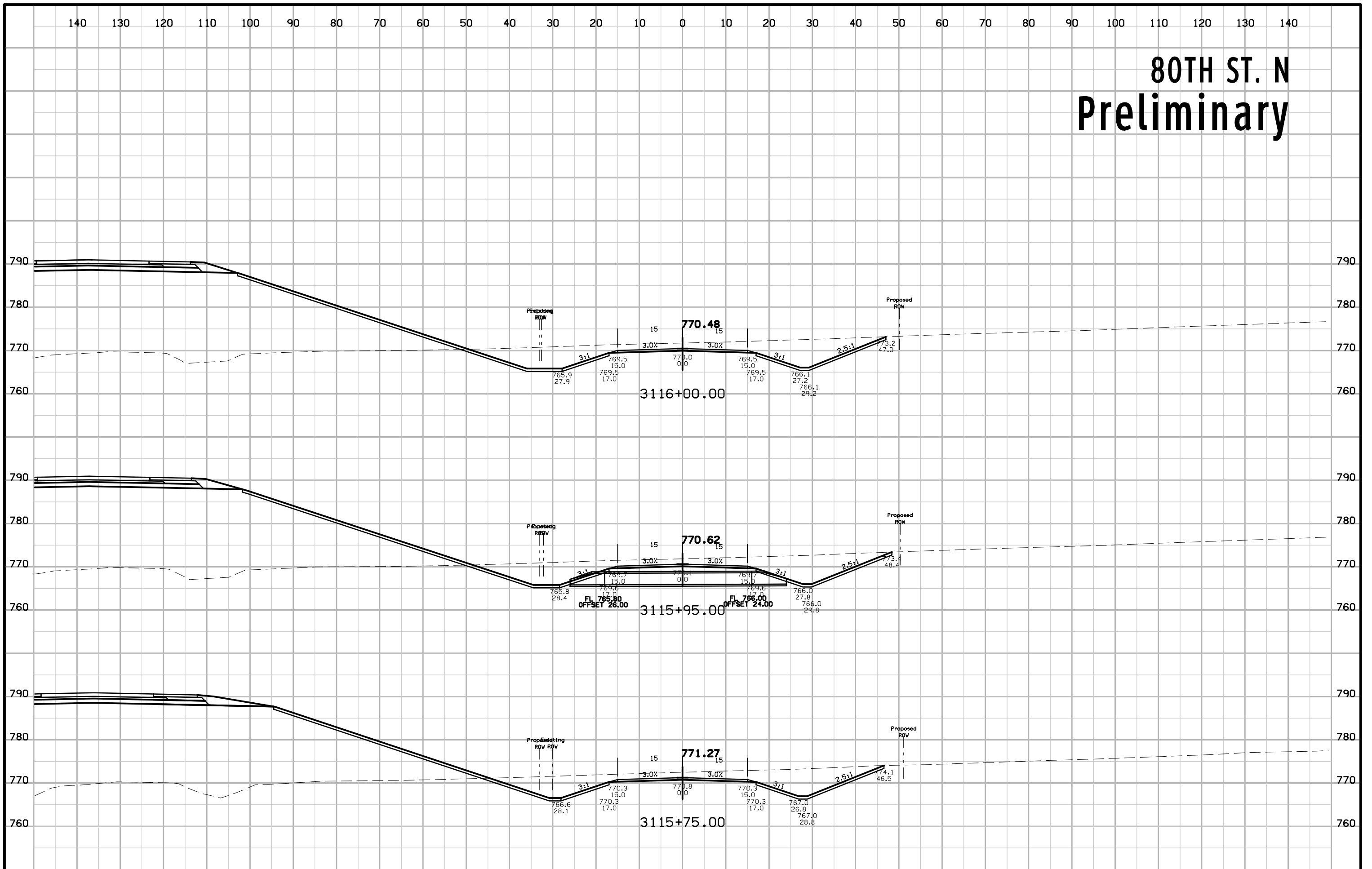
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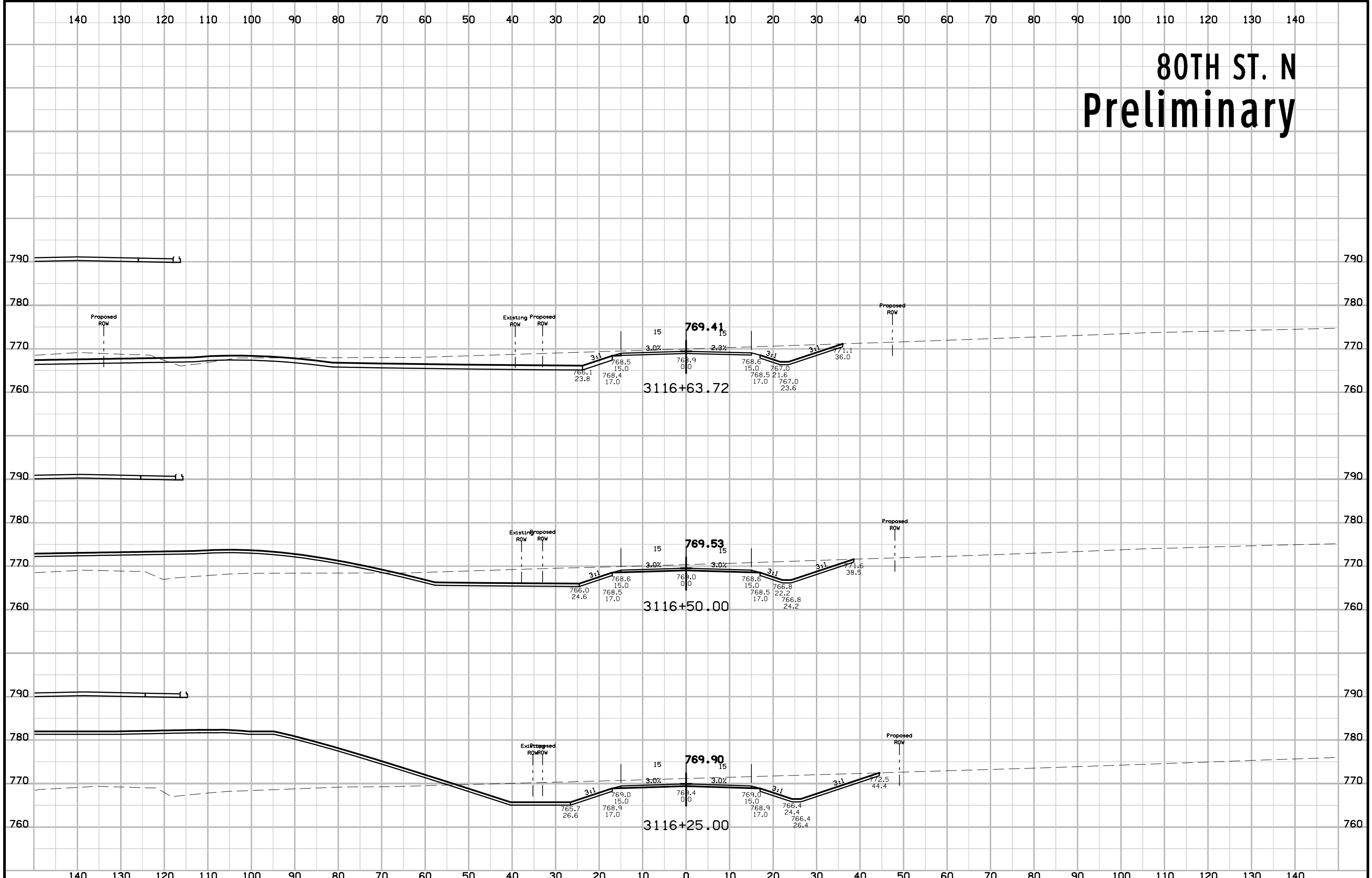
# 80TH ST. N Preliminary



# 80TH ST. N Preliminary

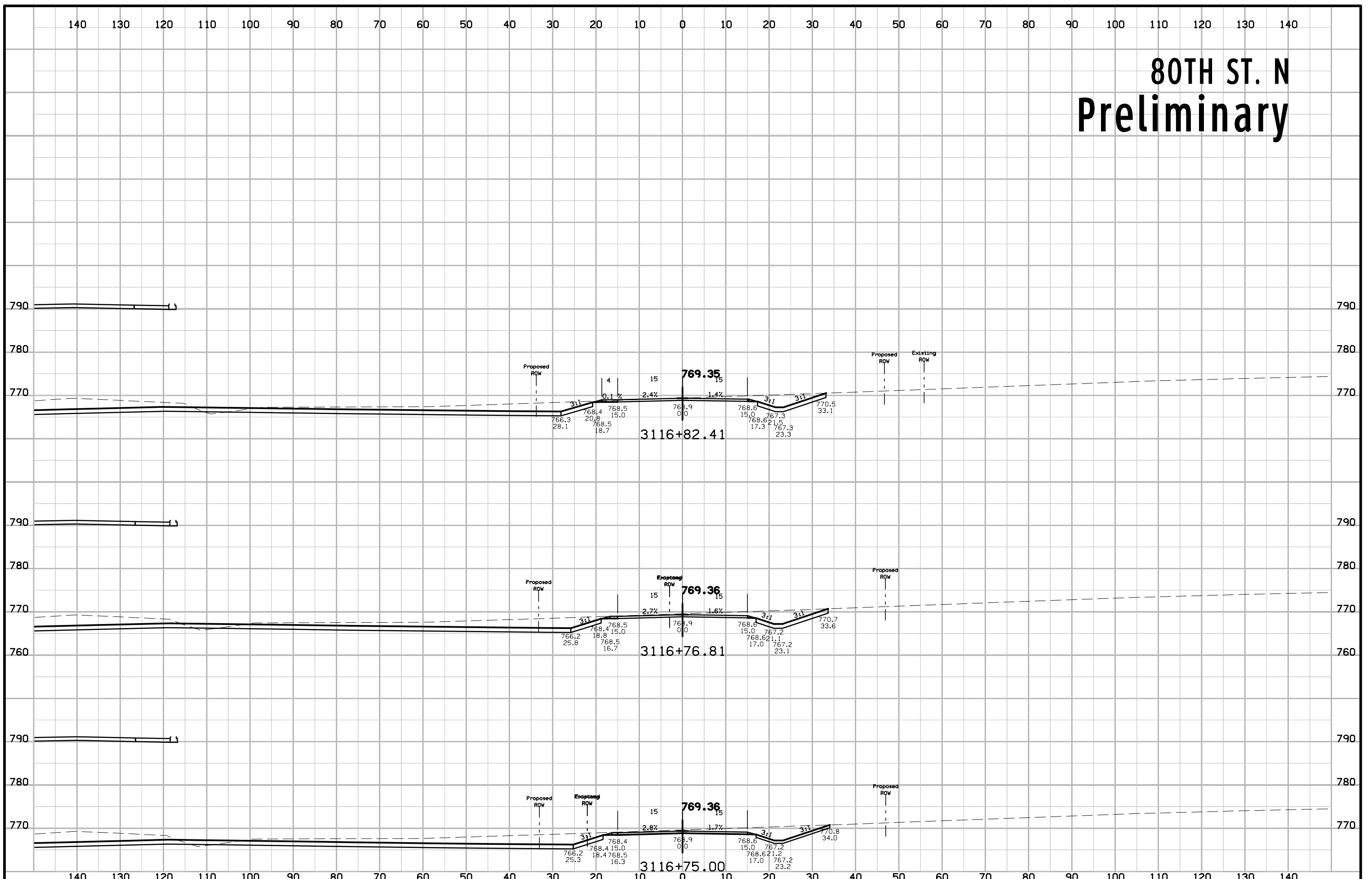


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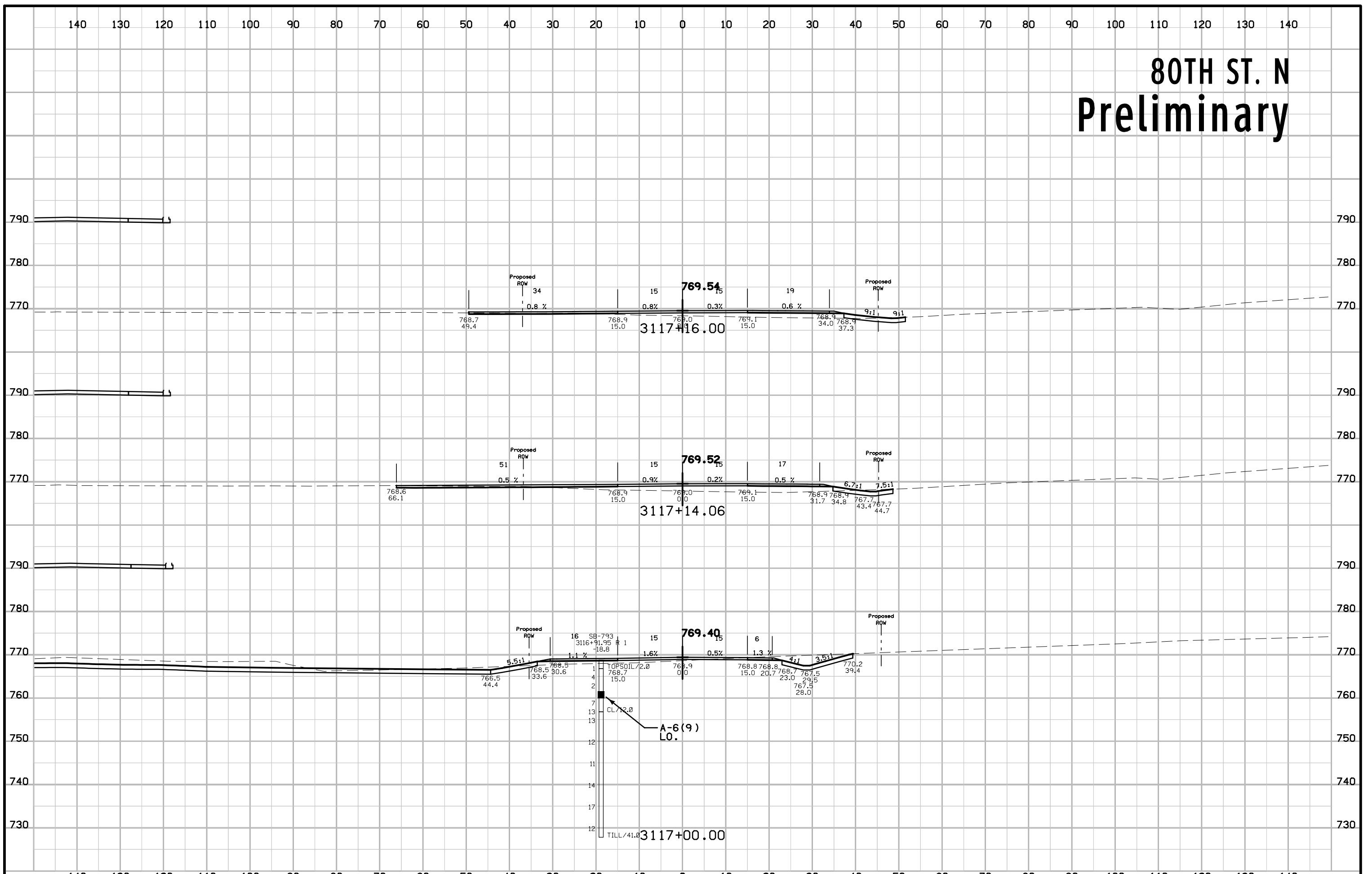




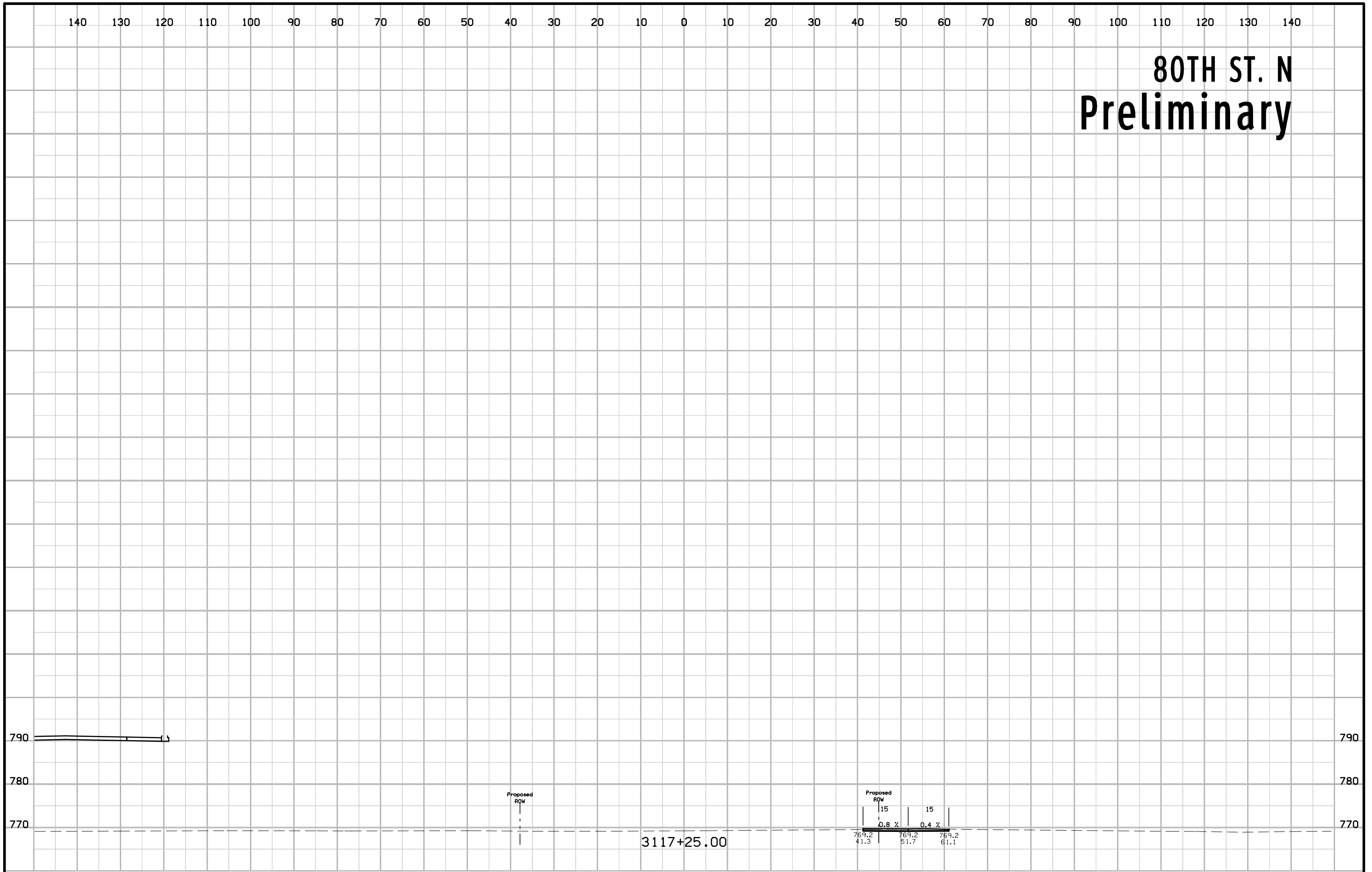
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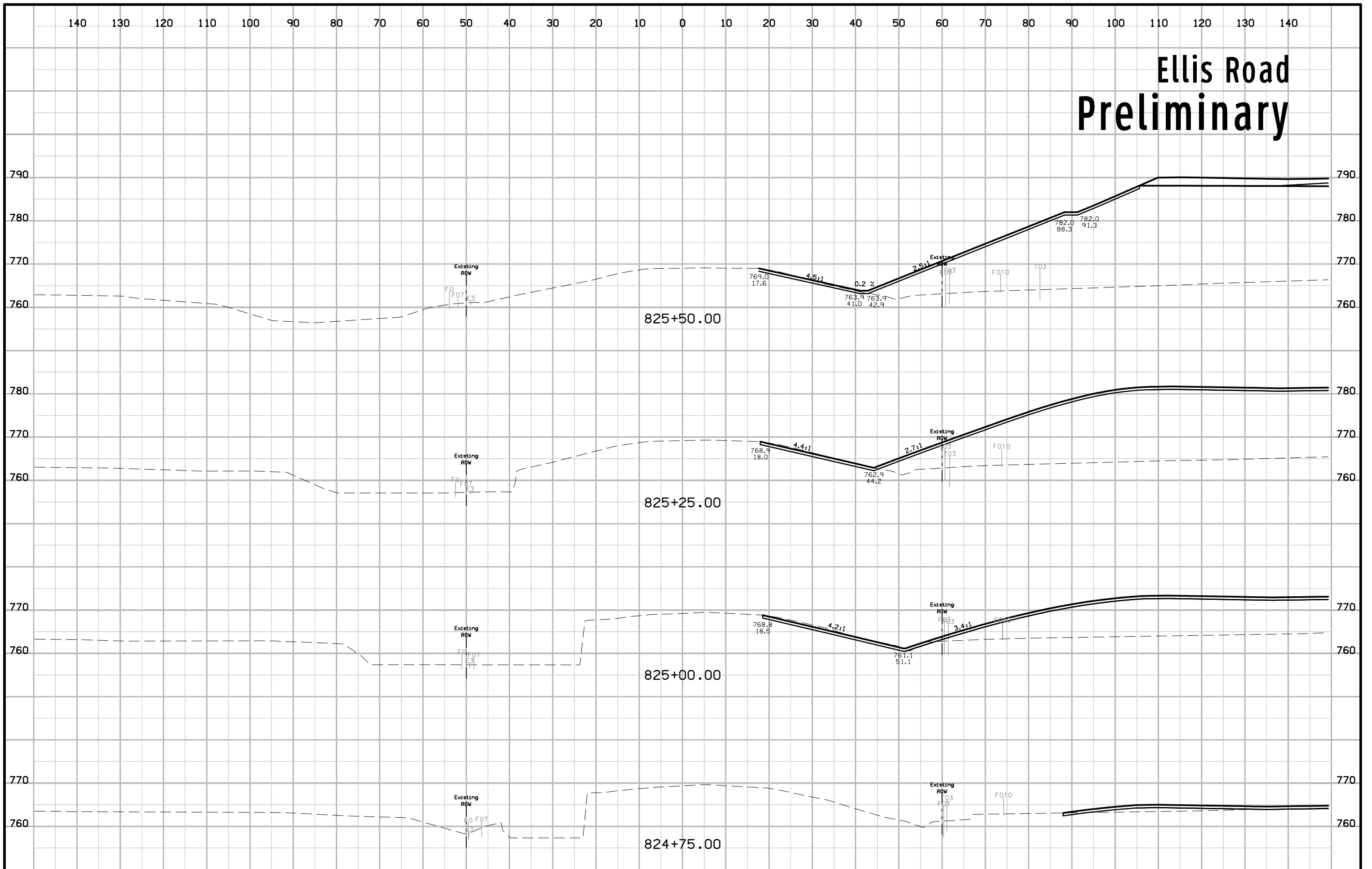
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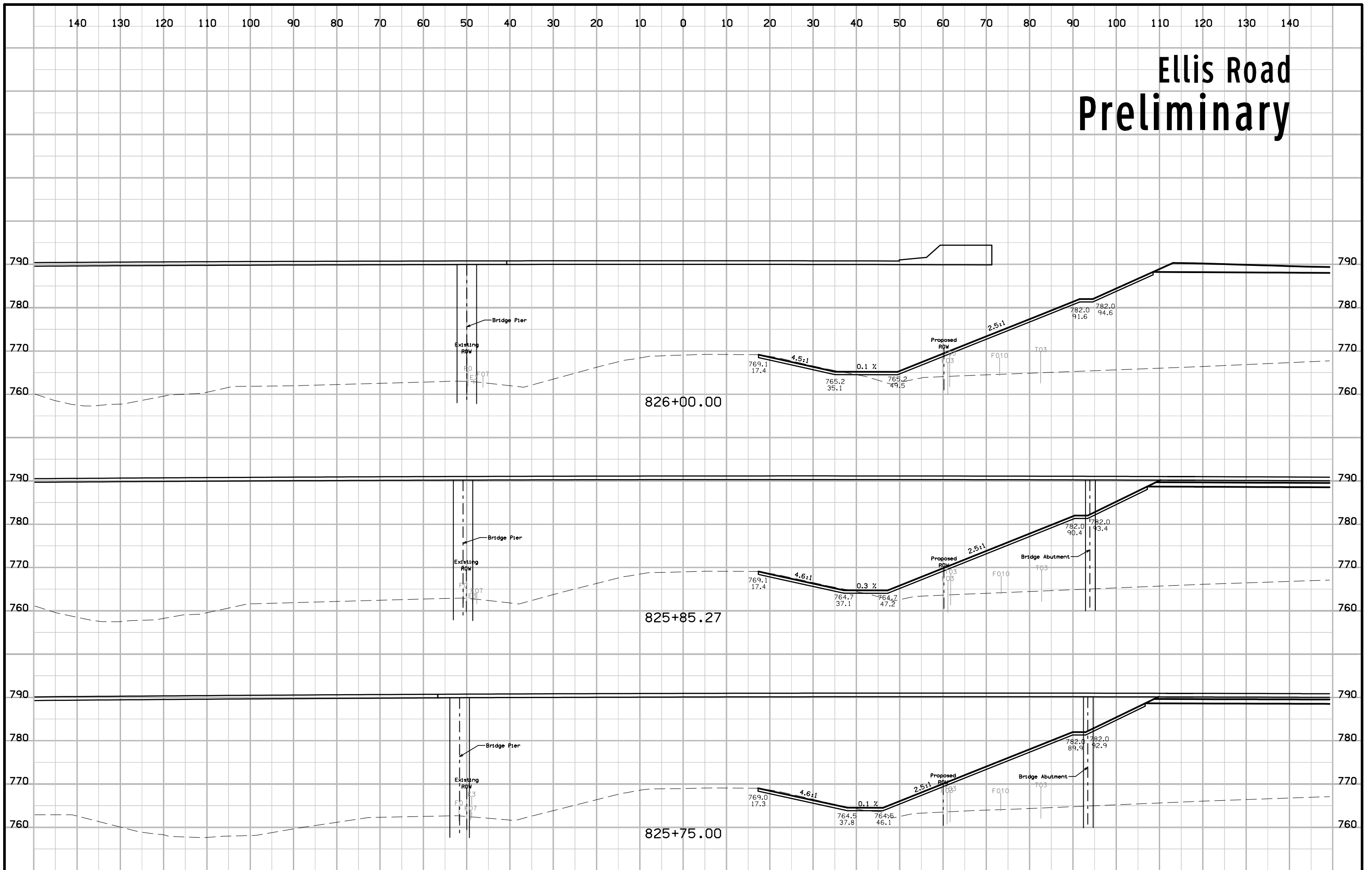
# 80TH ST. N Preliminary



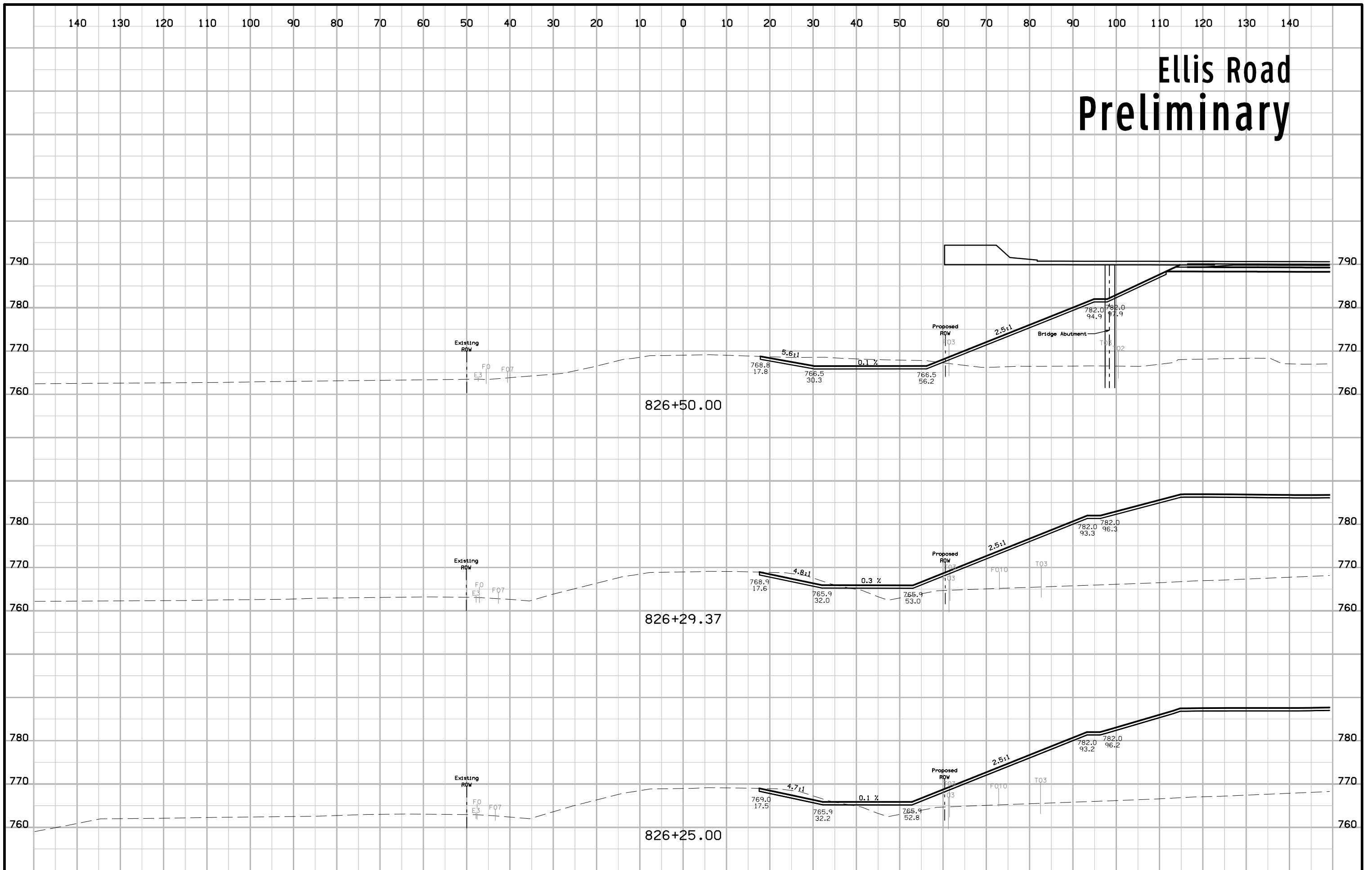
# Ellis Road Preliminary



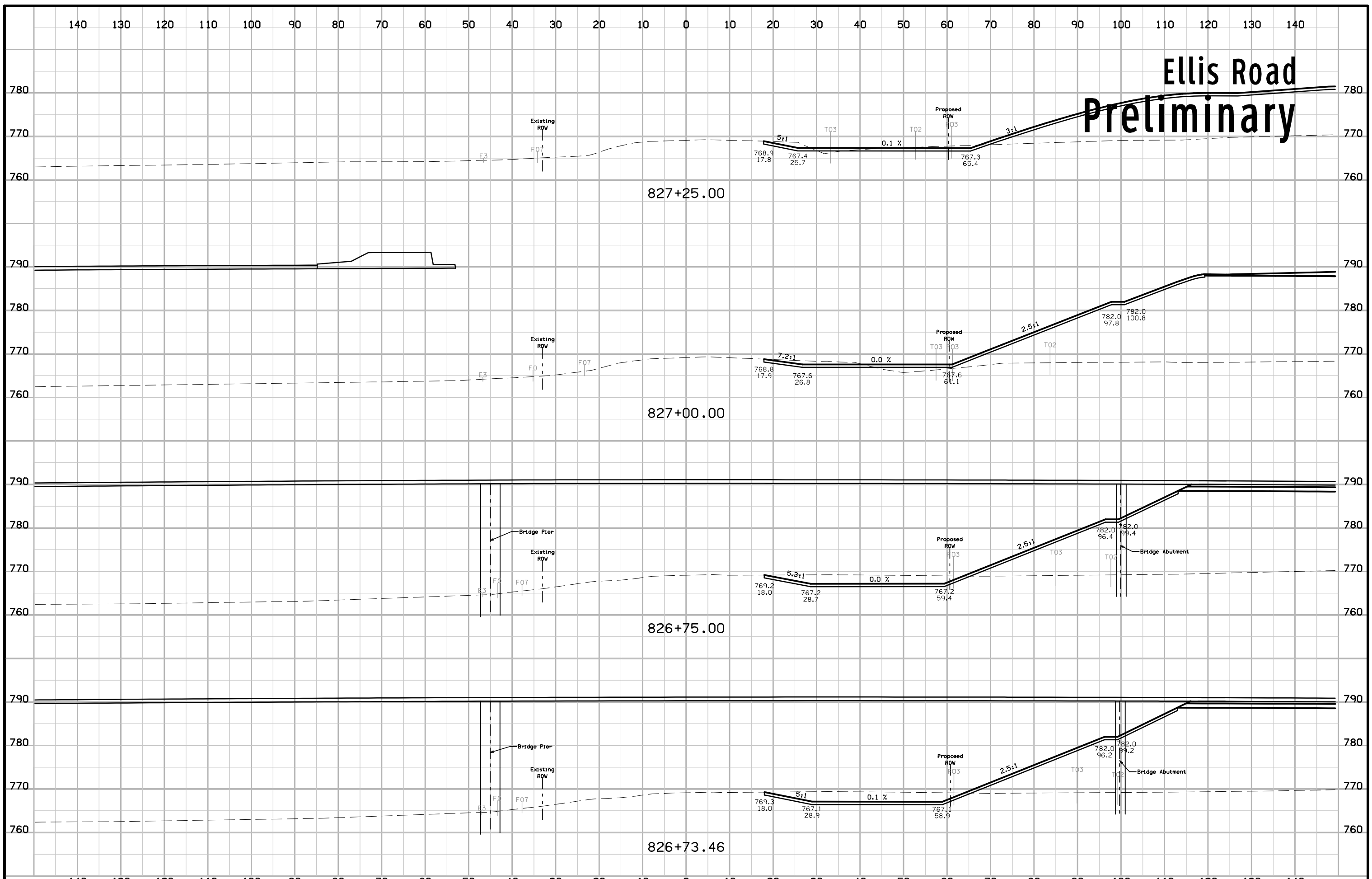
# Ellis Road Preliminary



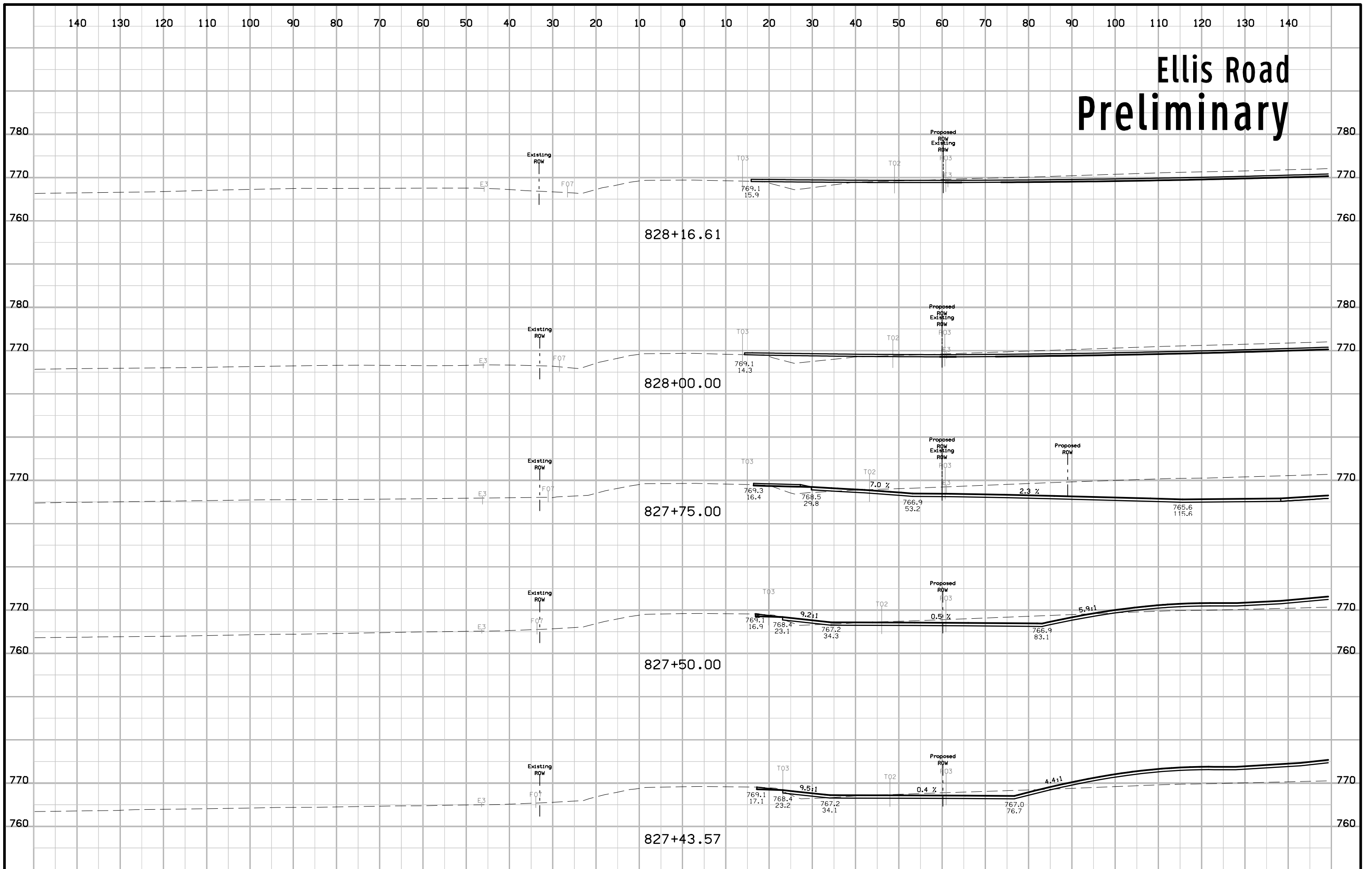
# Ellis Road Preliminary



# Ellis Road Preliminary

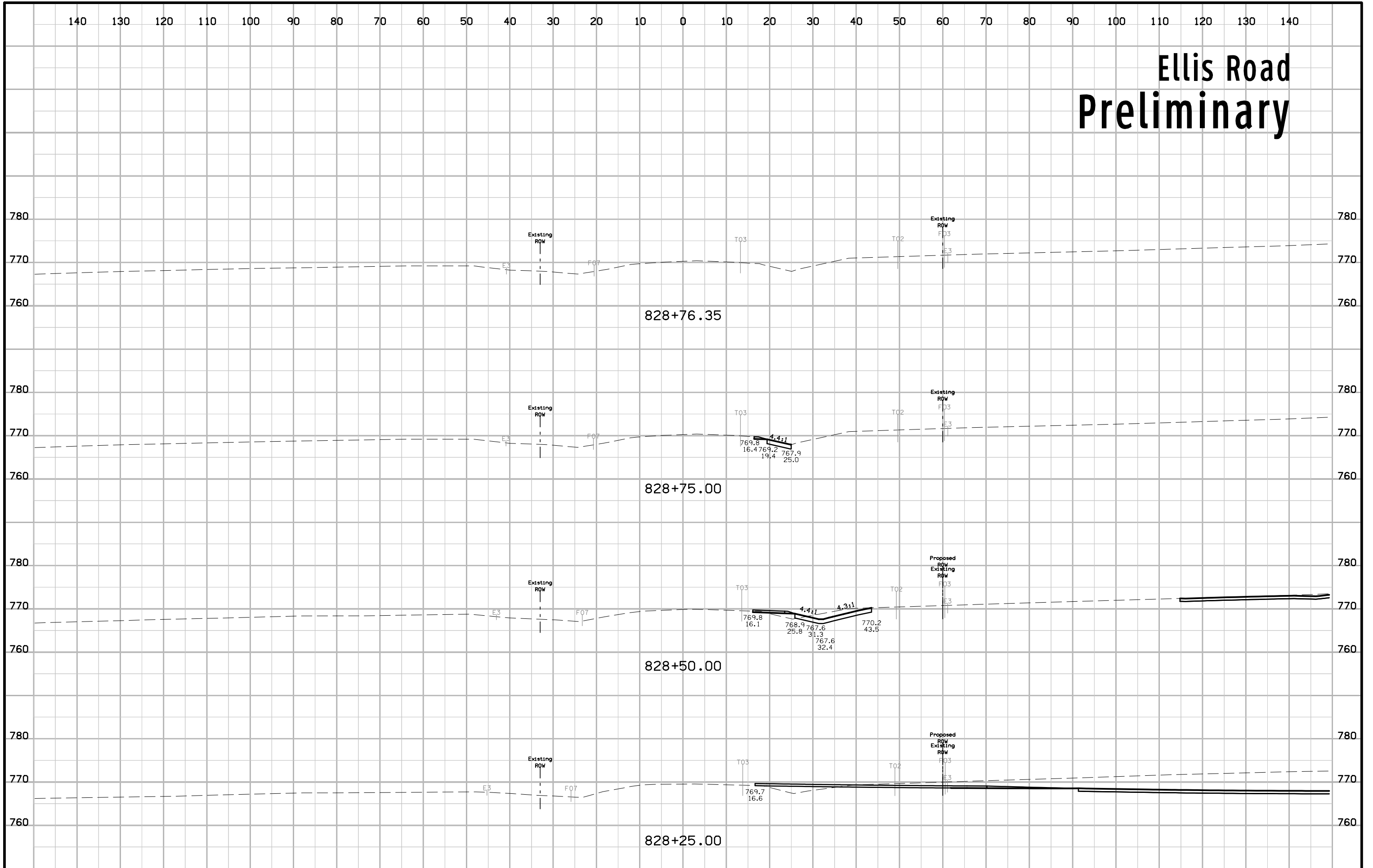


# Ellis Road Preliminary

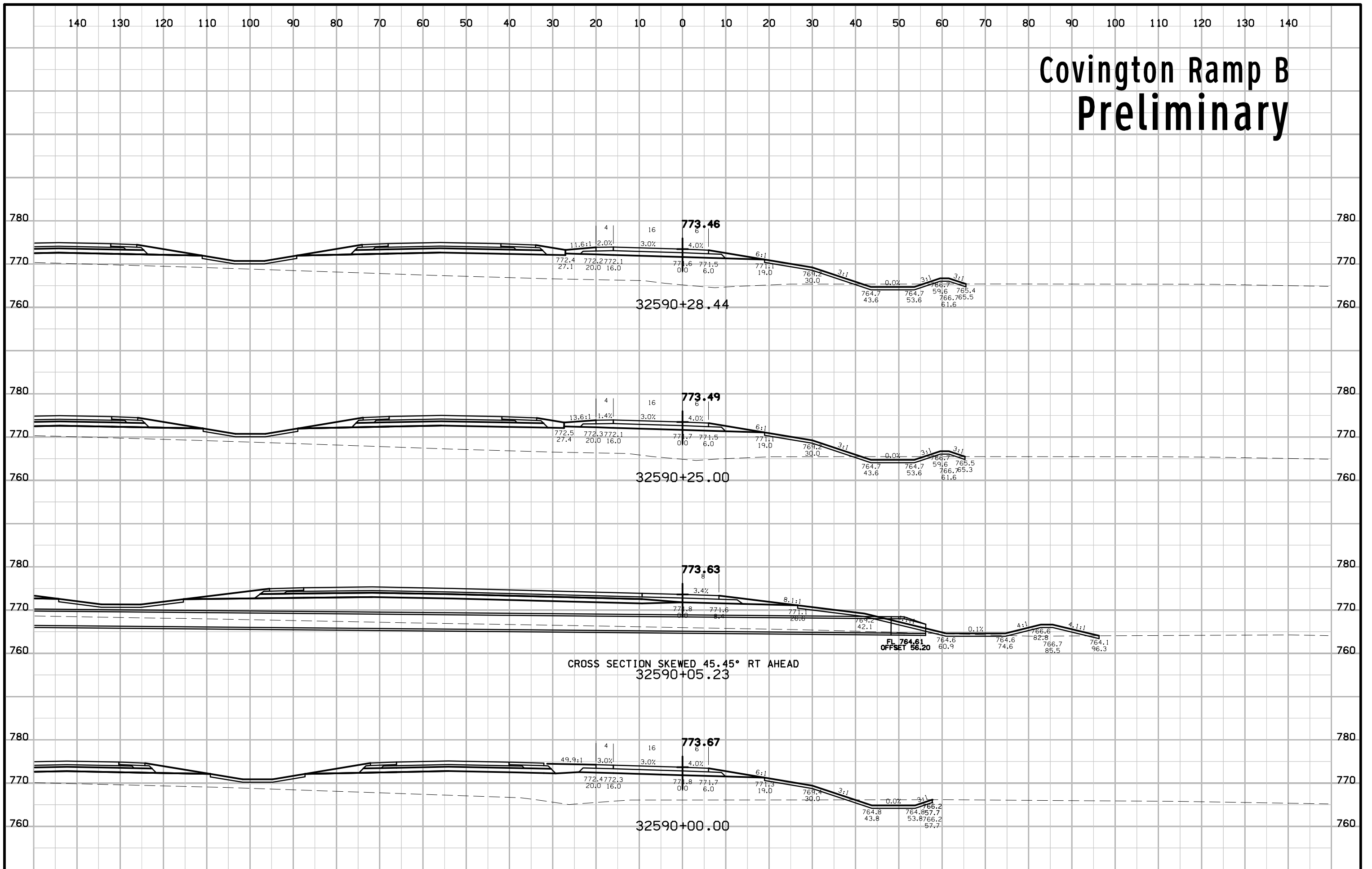




# Ellis Road Preliminary



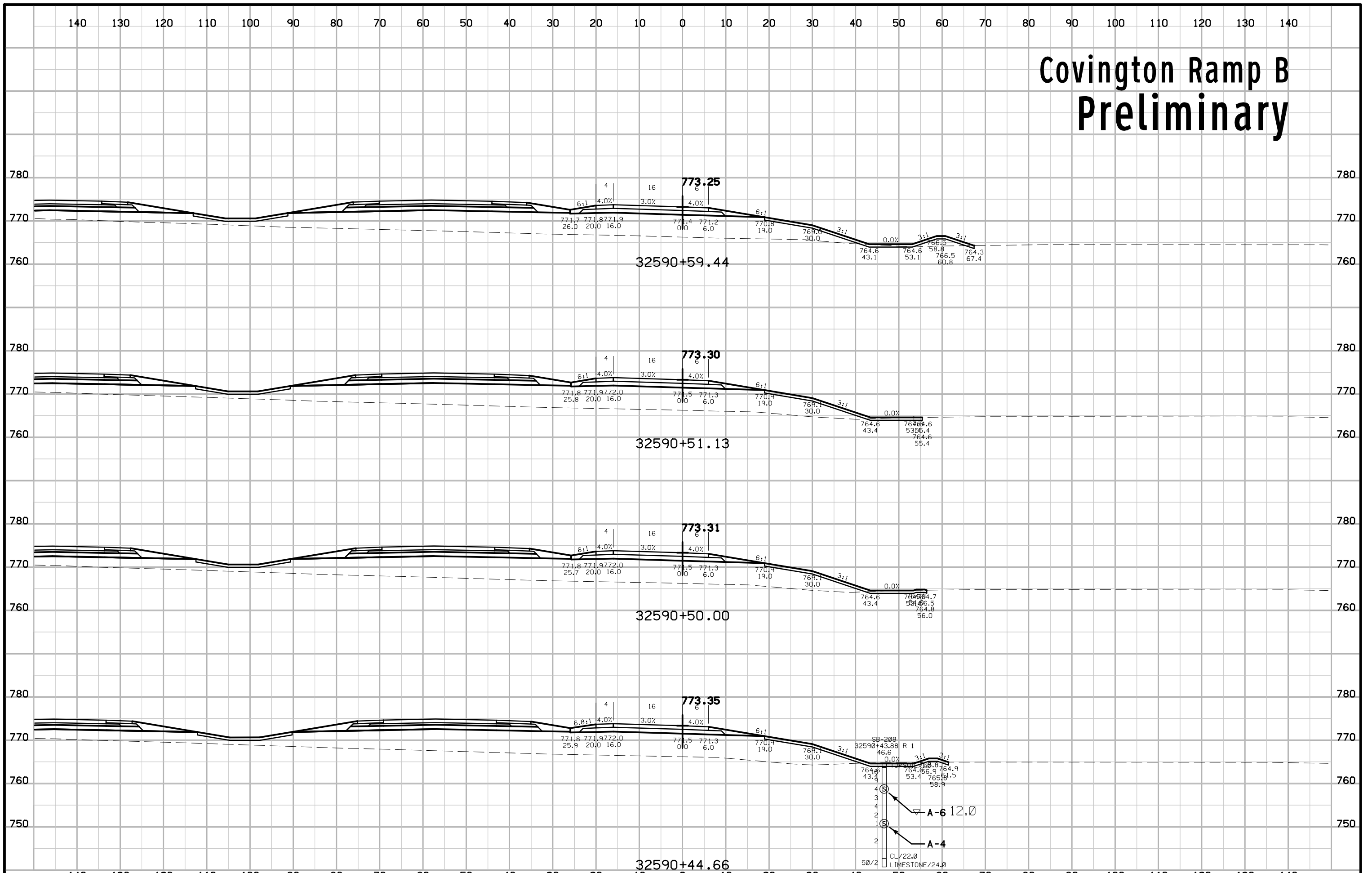
# Covington Ramp B Preliminary



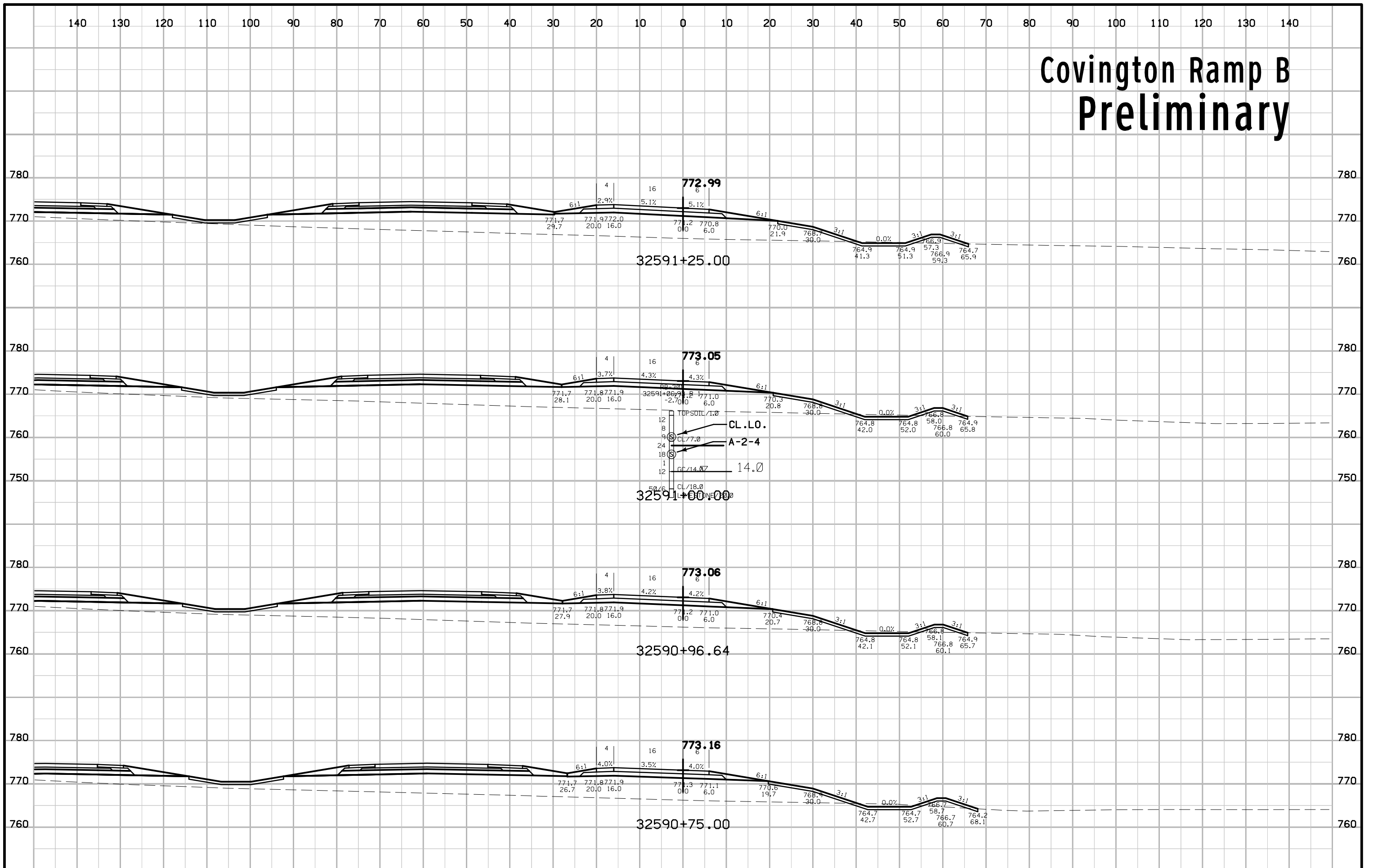
CROSS SECTION SKEWED 45.45° RT AHEAD  
32590+05.23

FL 764.61  
OFFSET 56.20

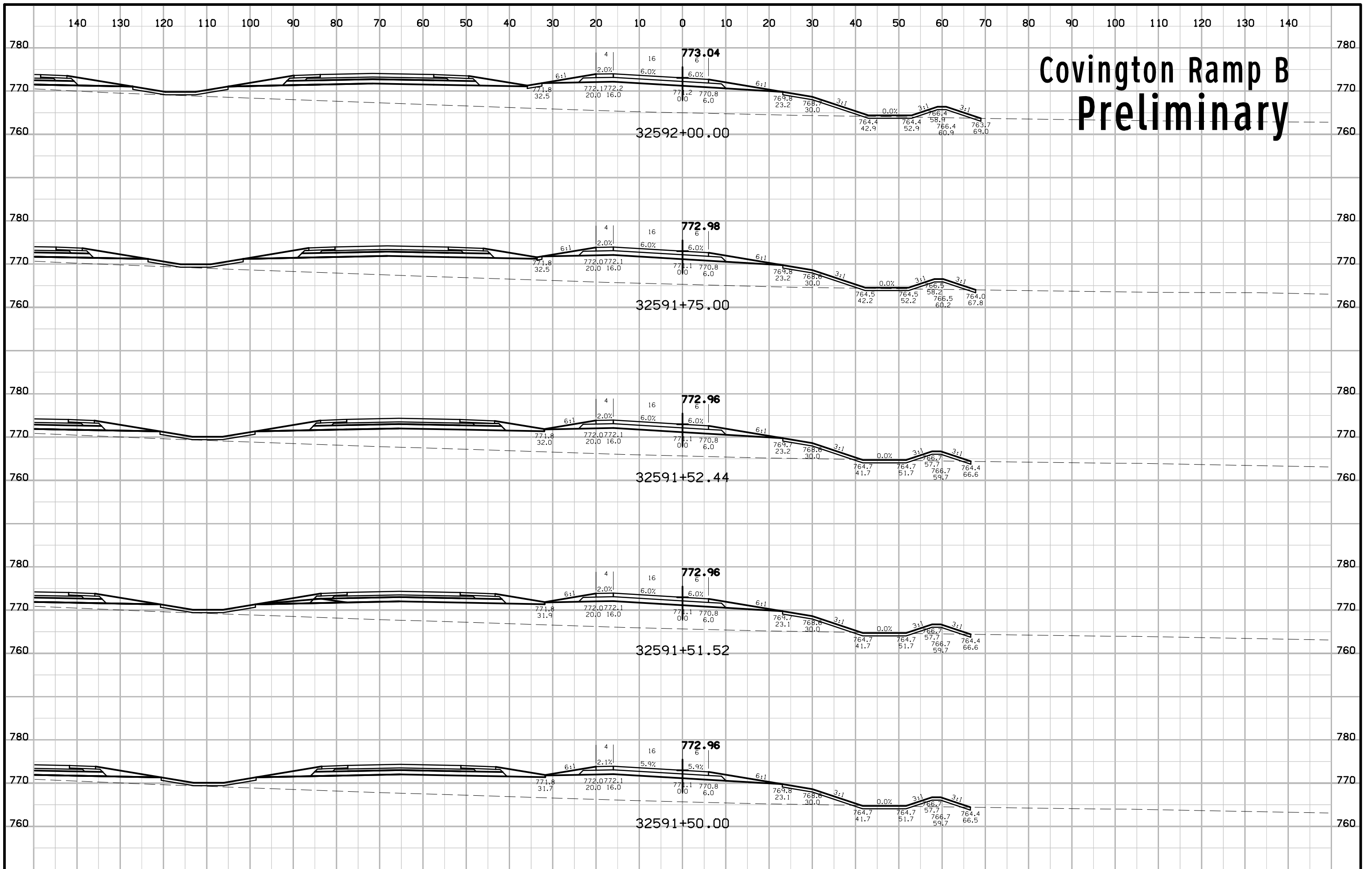
# Covington Ramp B Preliminary



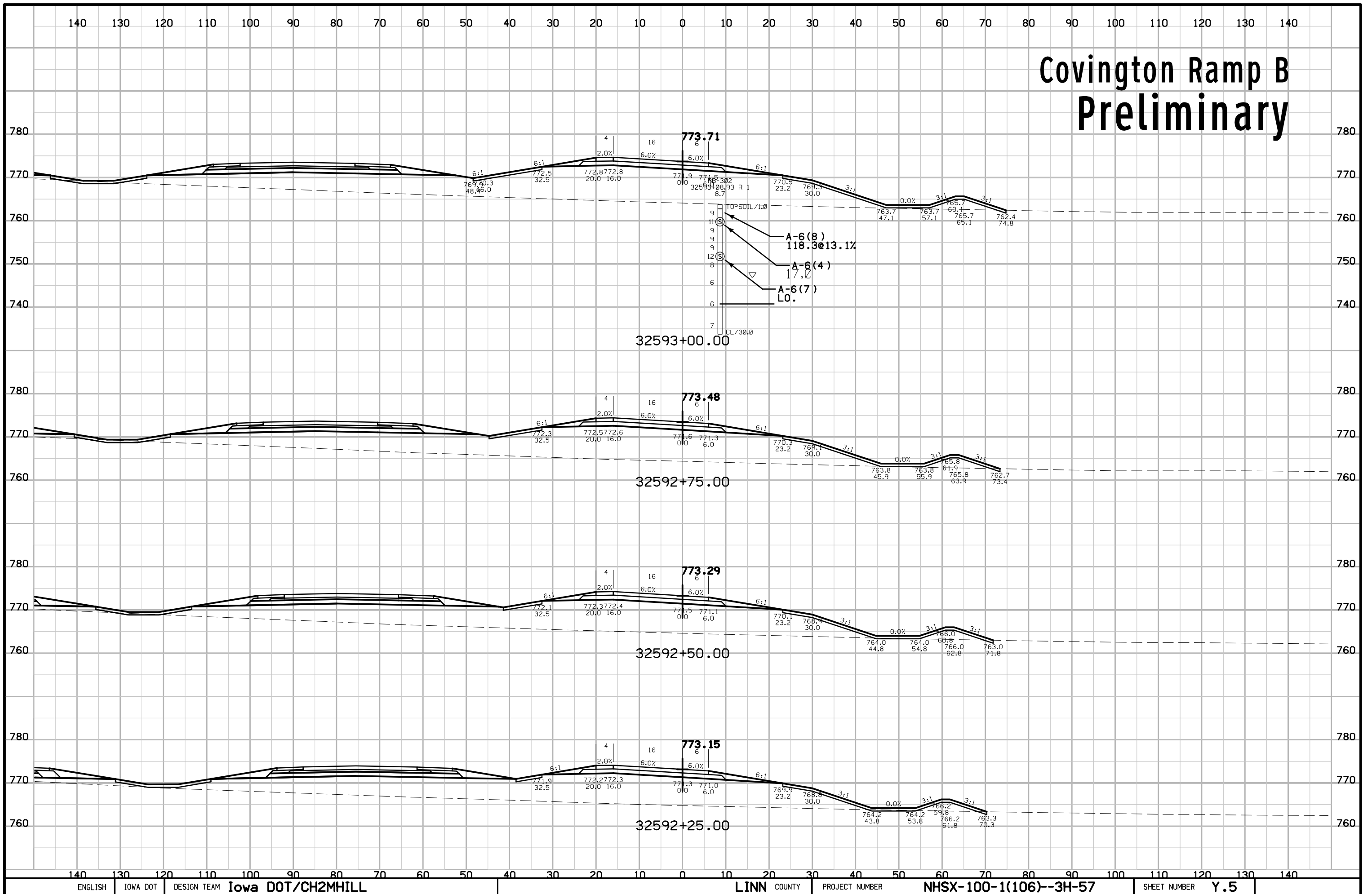
# Covington Ramp B Preliminary



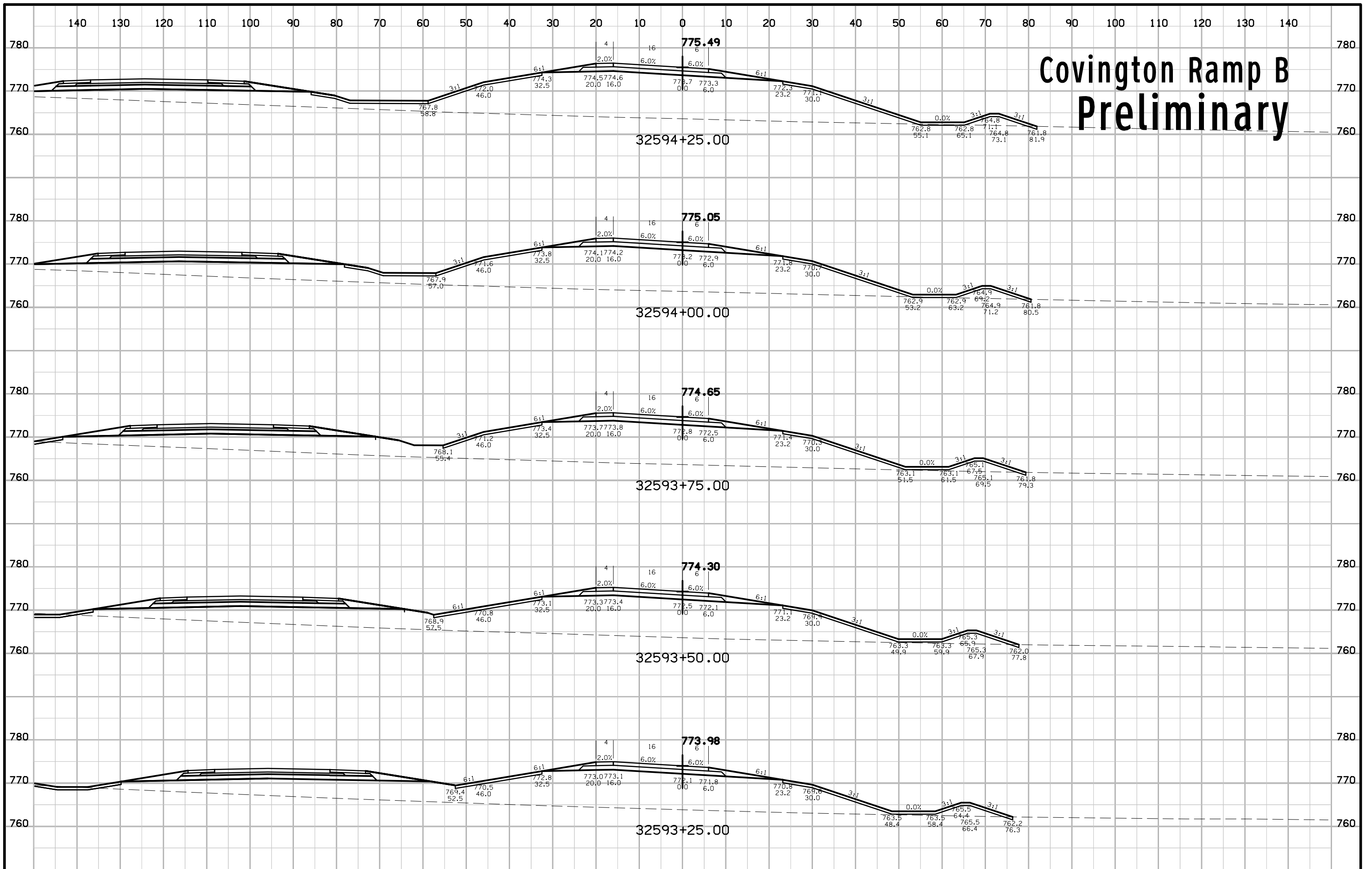
# Covington Ramp B Preliminary



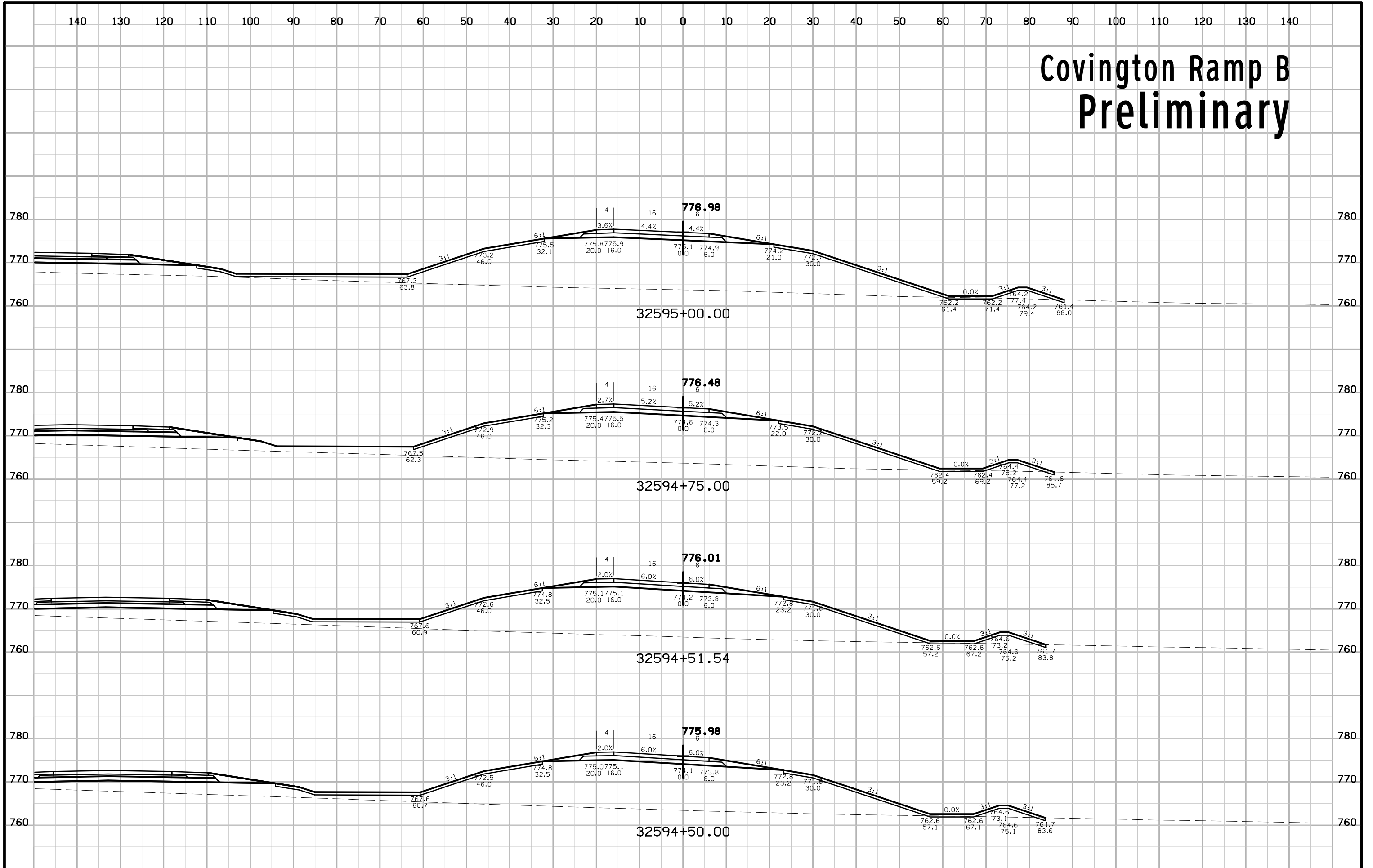
# Covington Ramp B Preliminary



# Covington Ramp B Preliminary

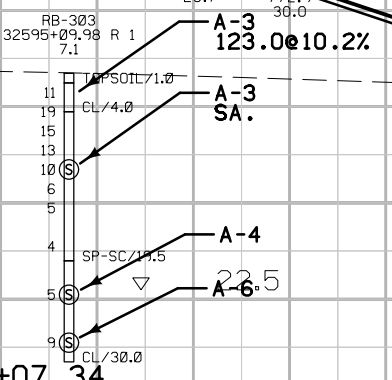
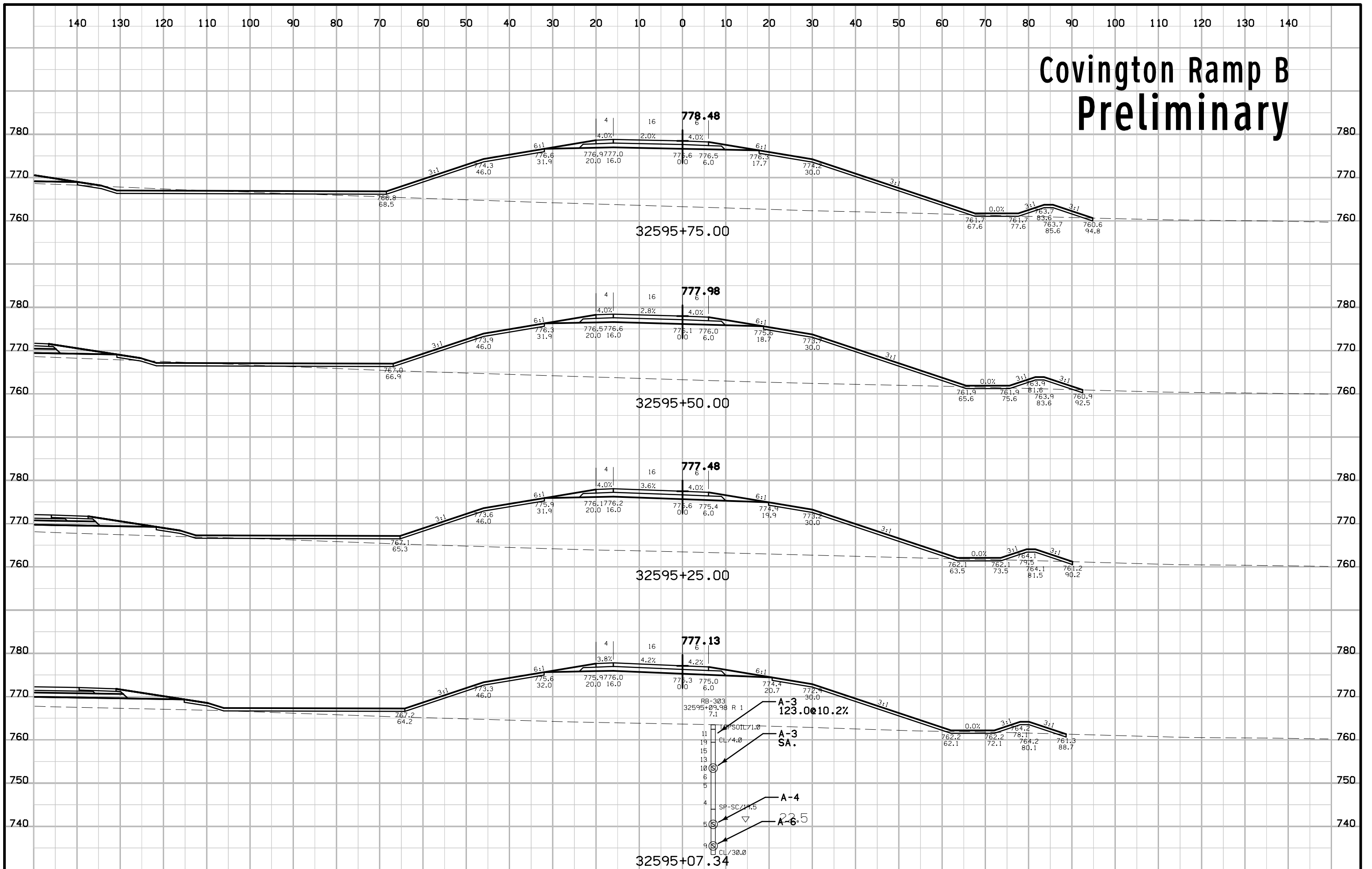


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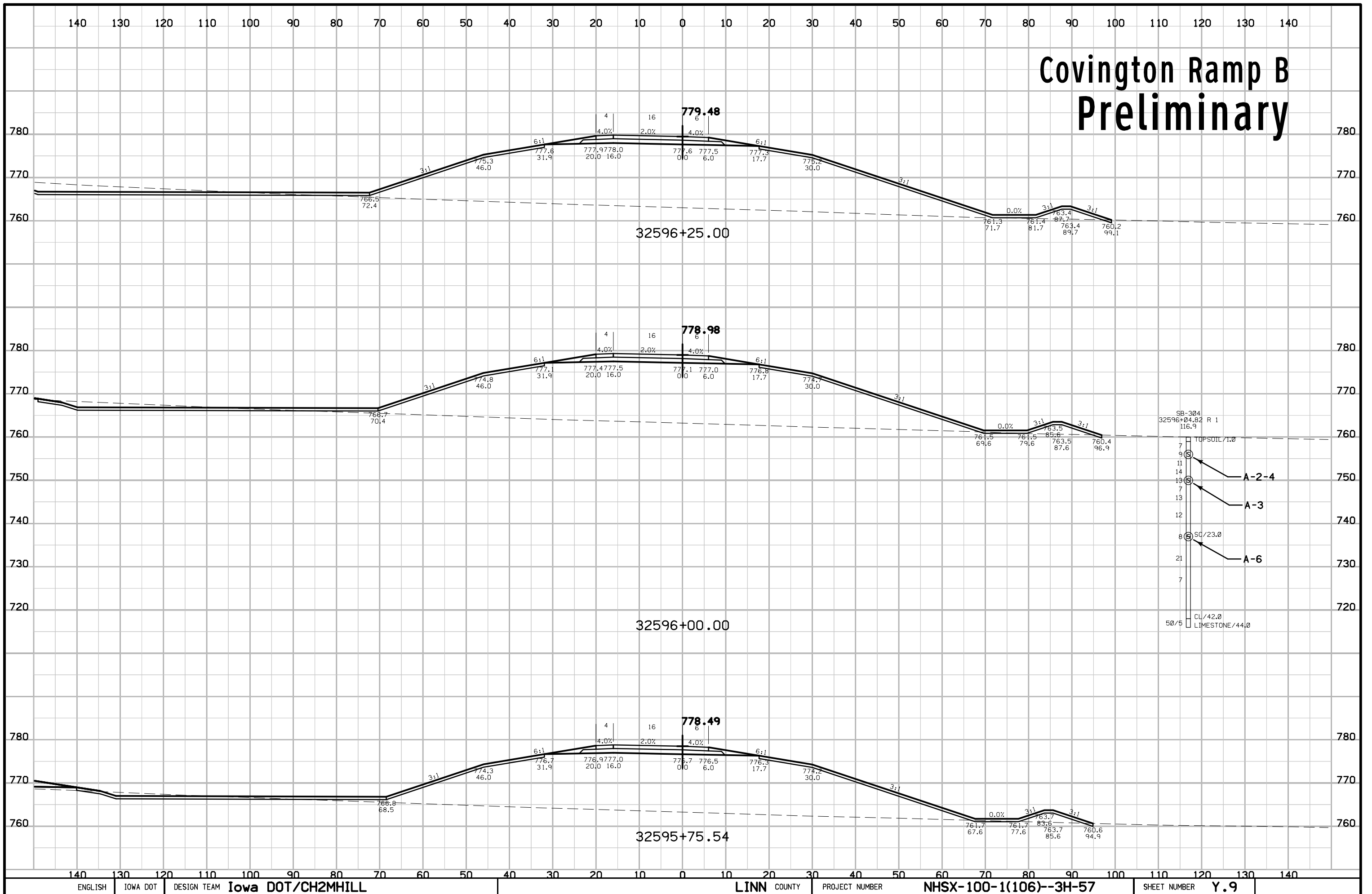




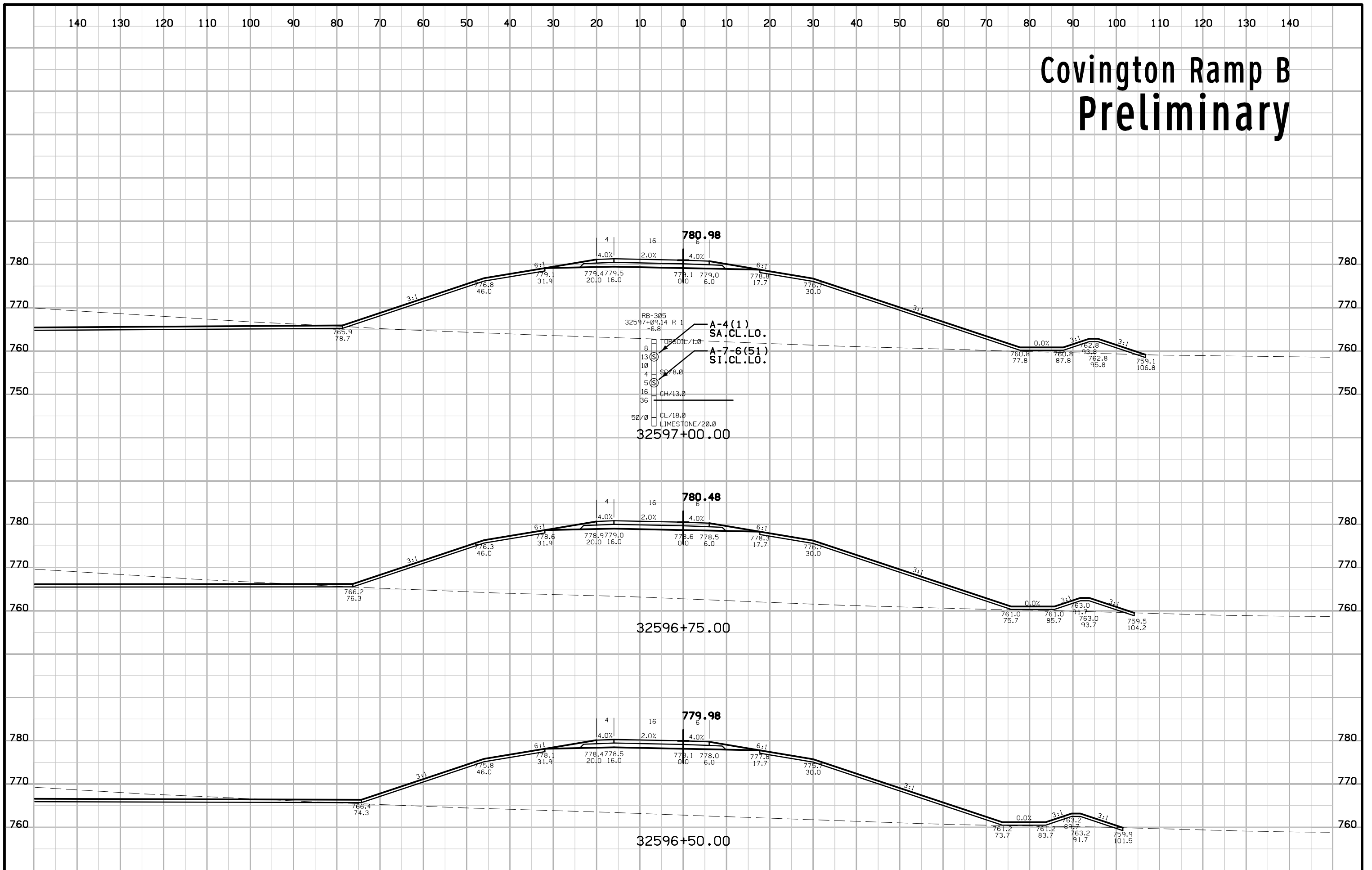
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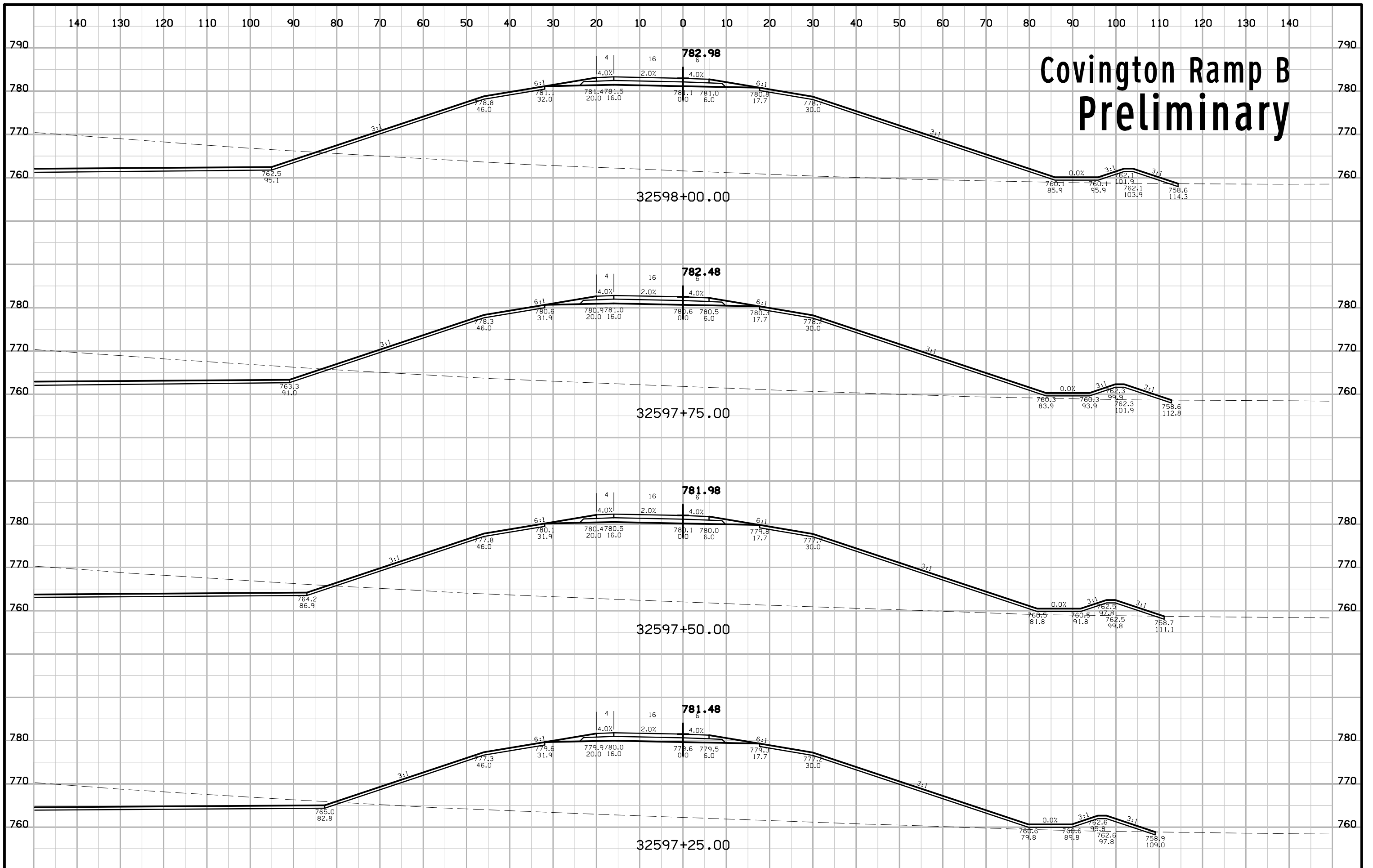
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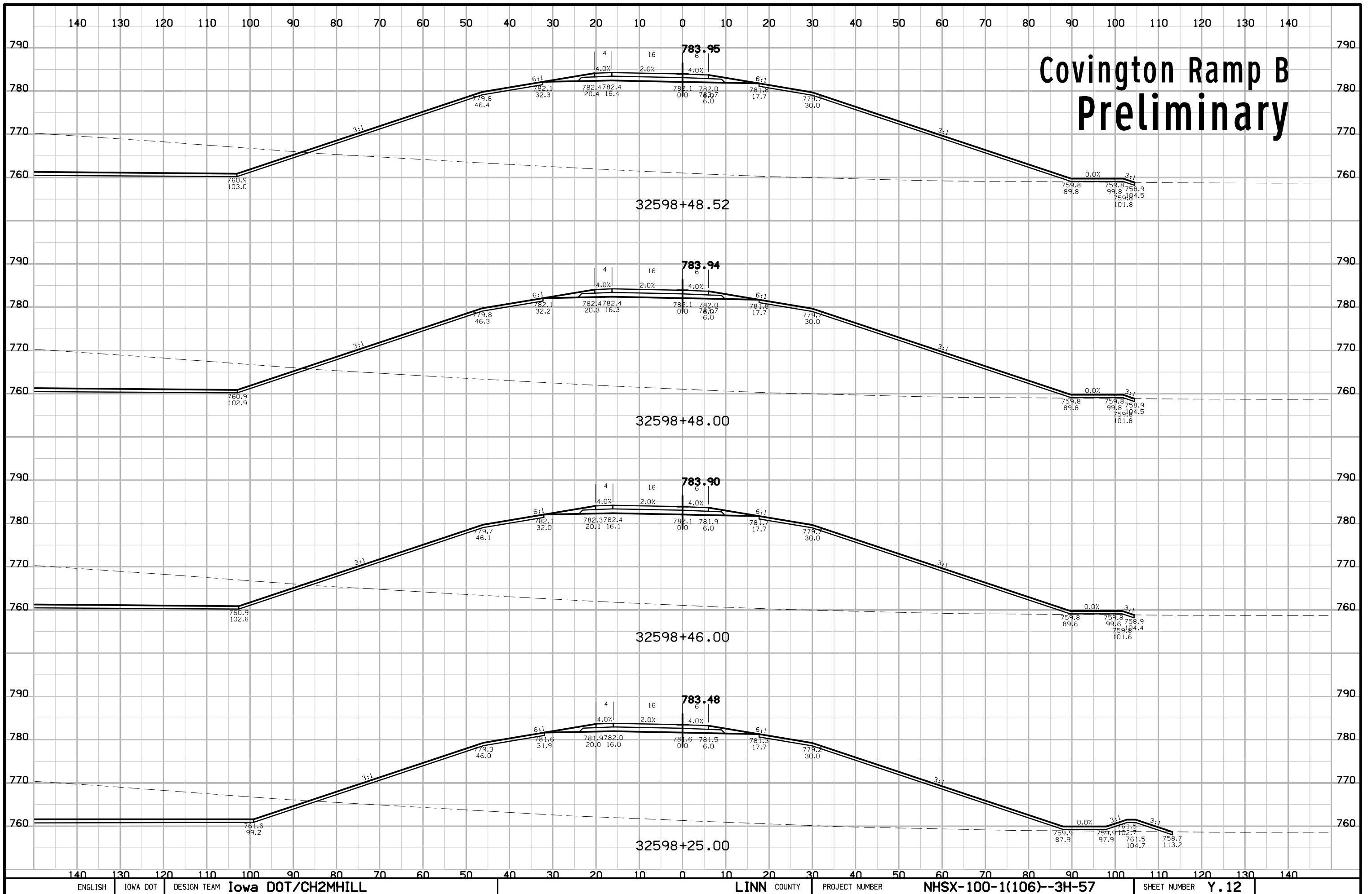
# Covington Ramp B Preliminary



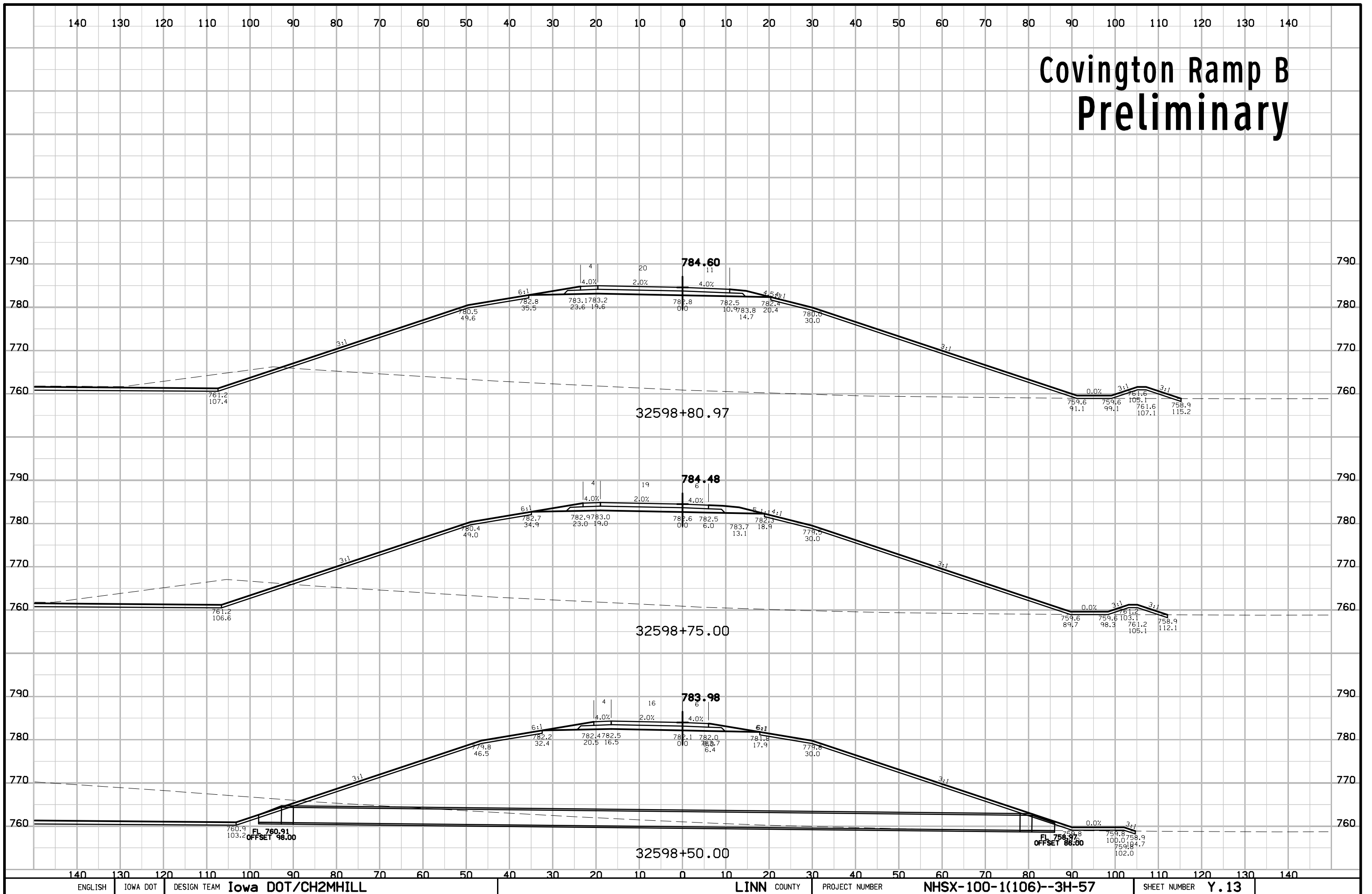
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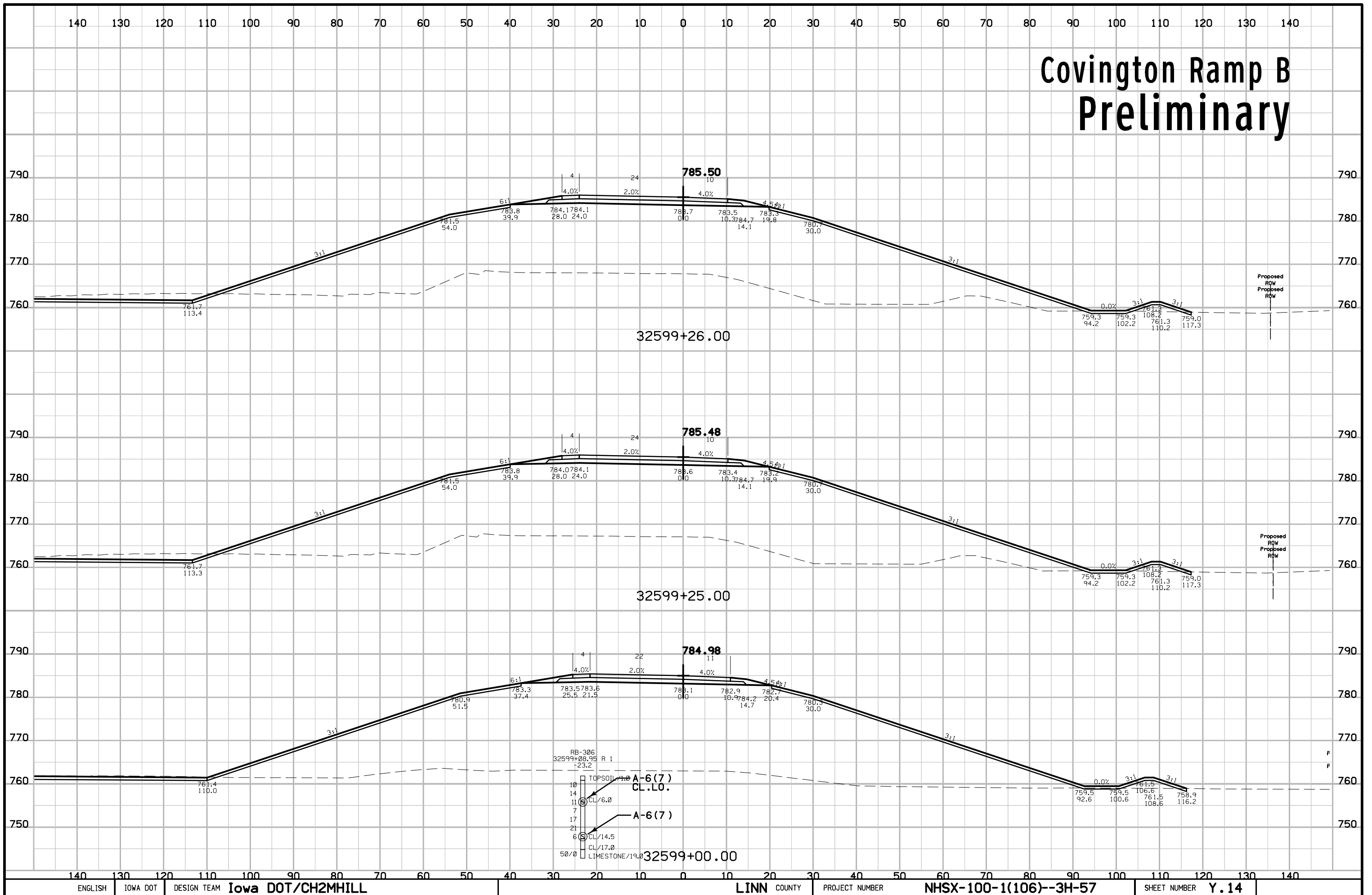
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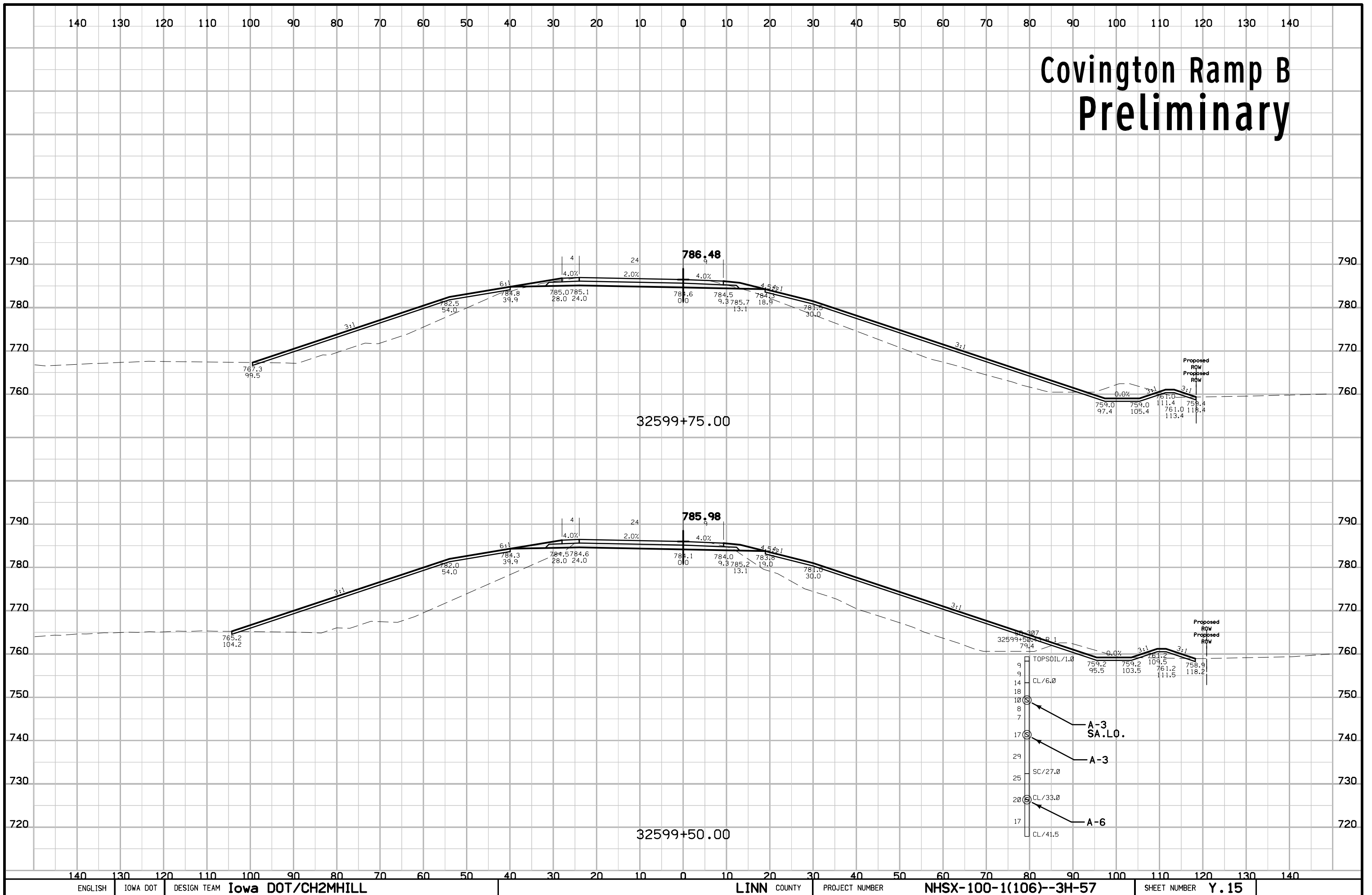
# Covington Ramp B Preliminary



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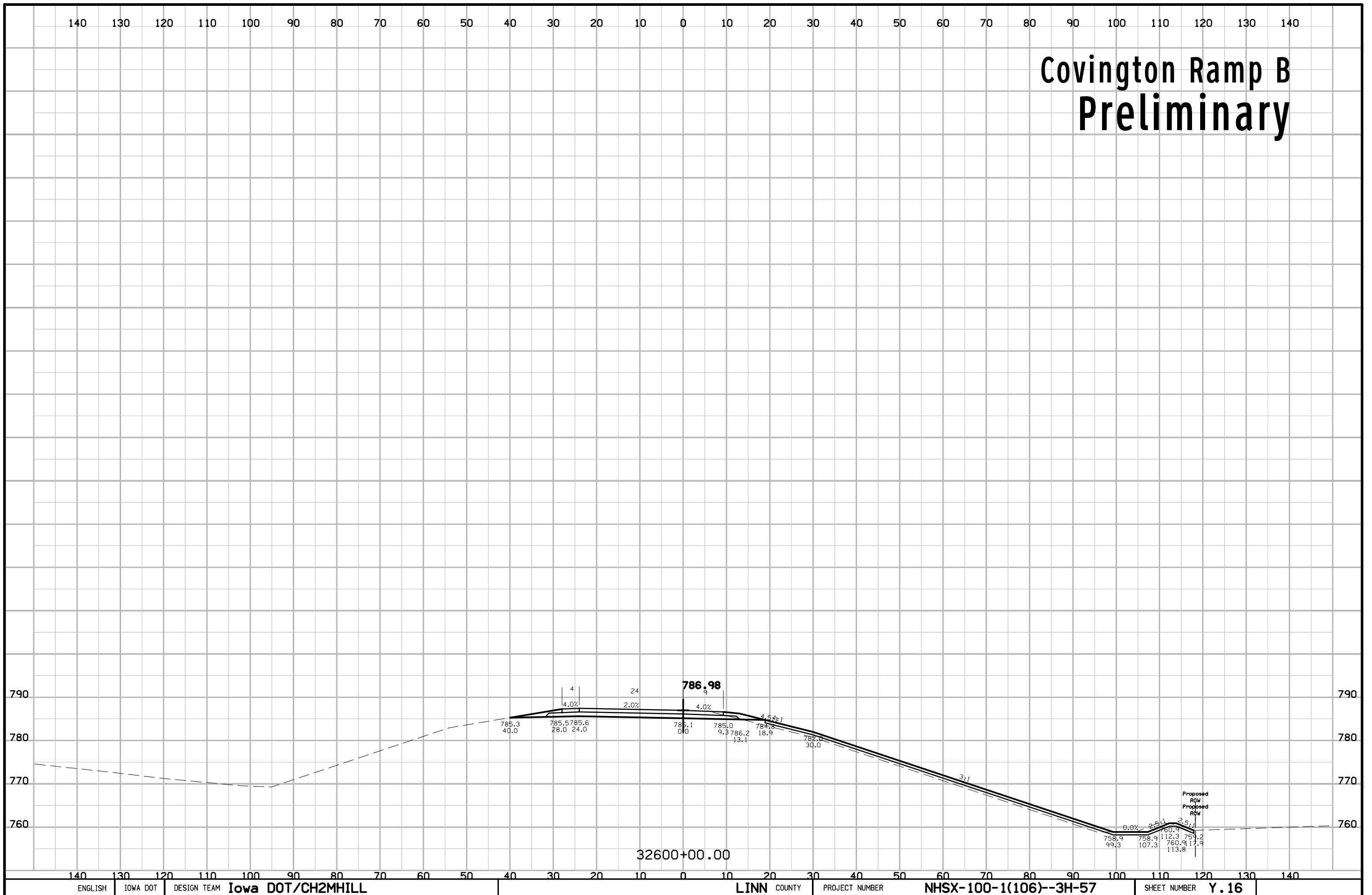


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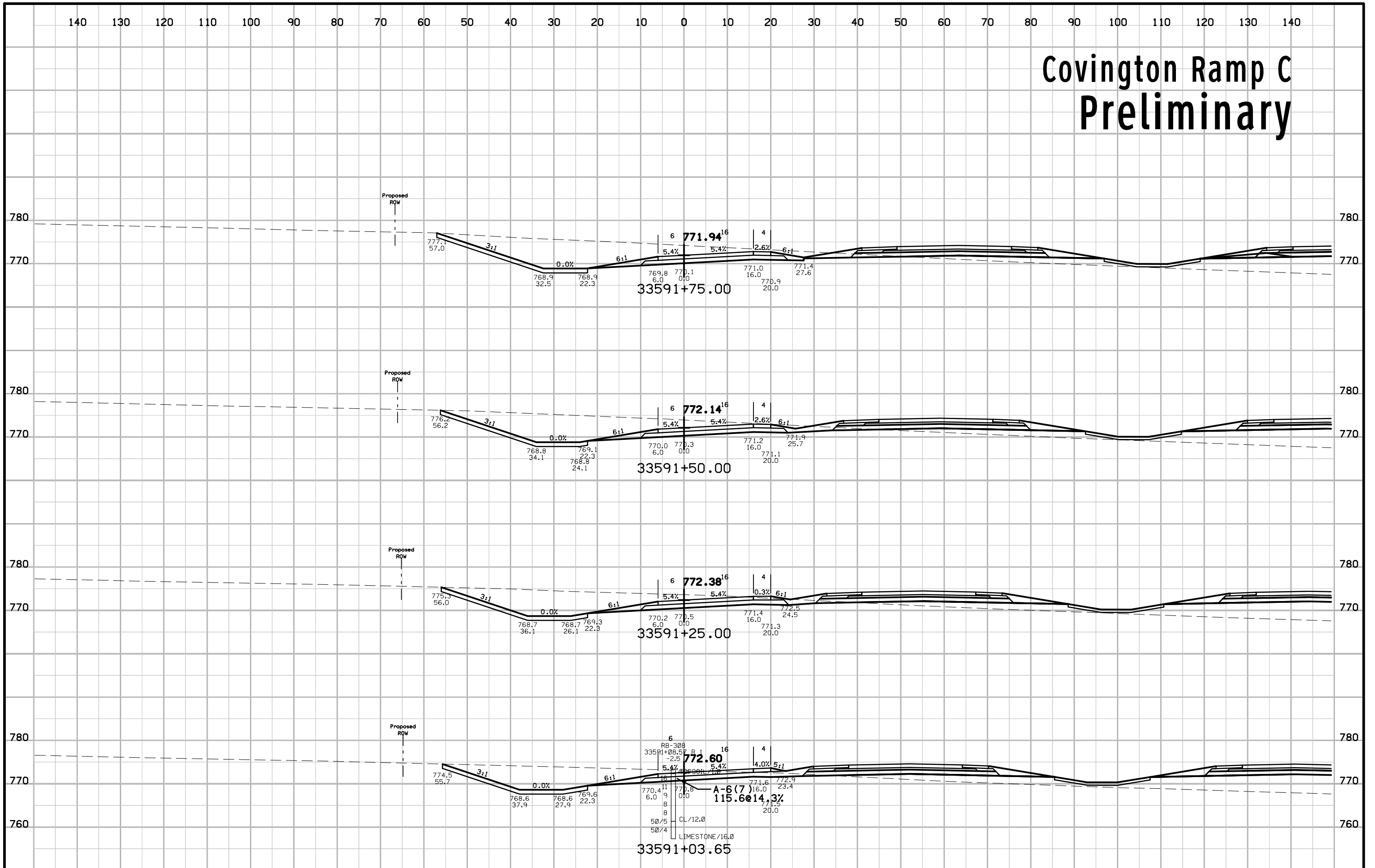




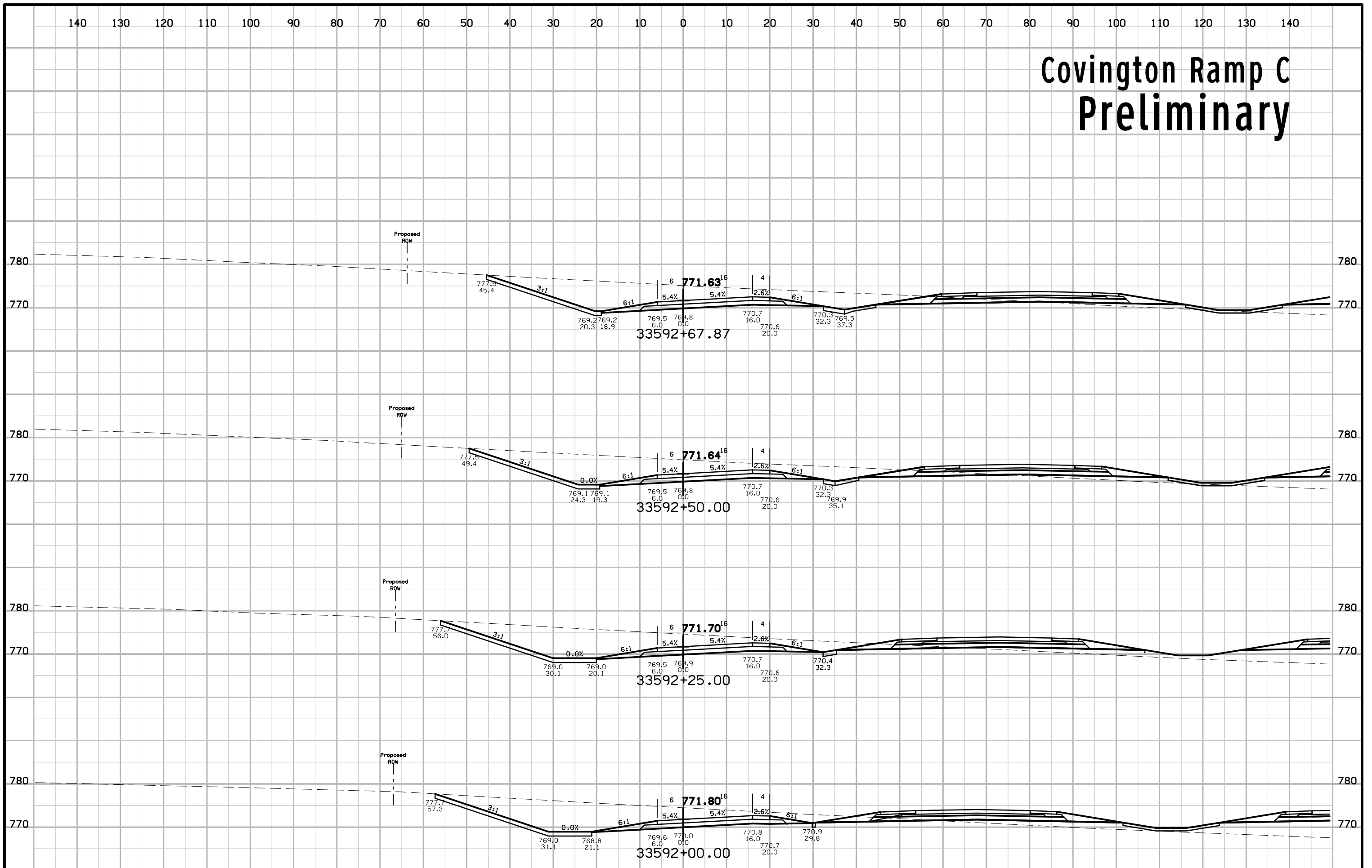
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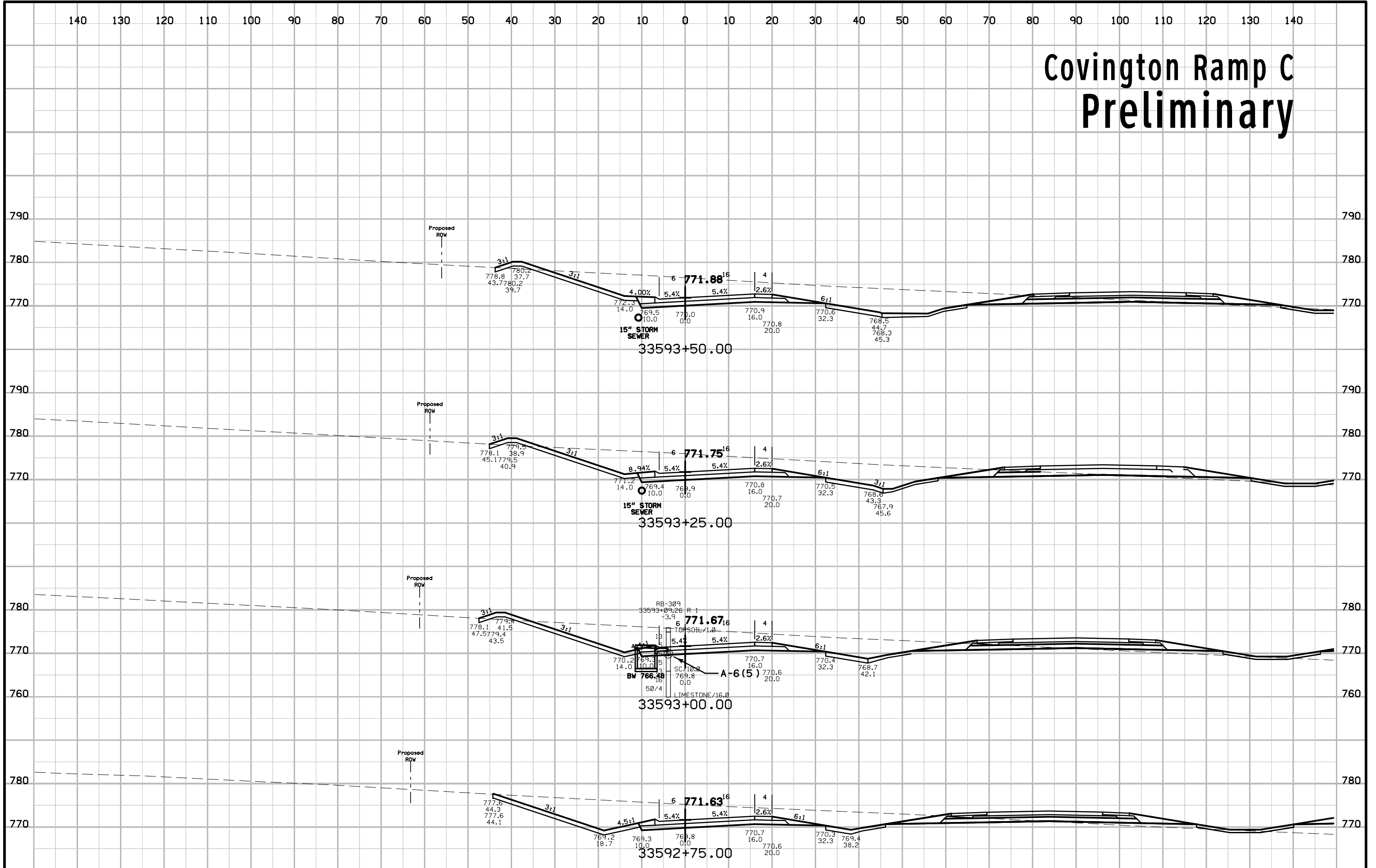
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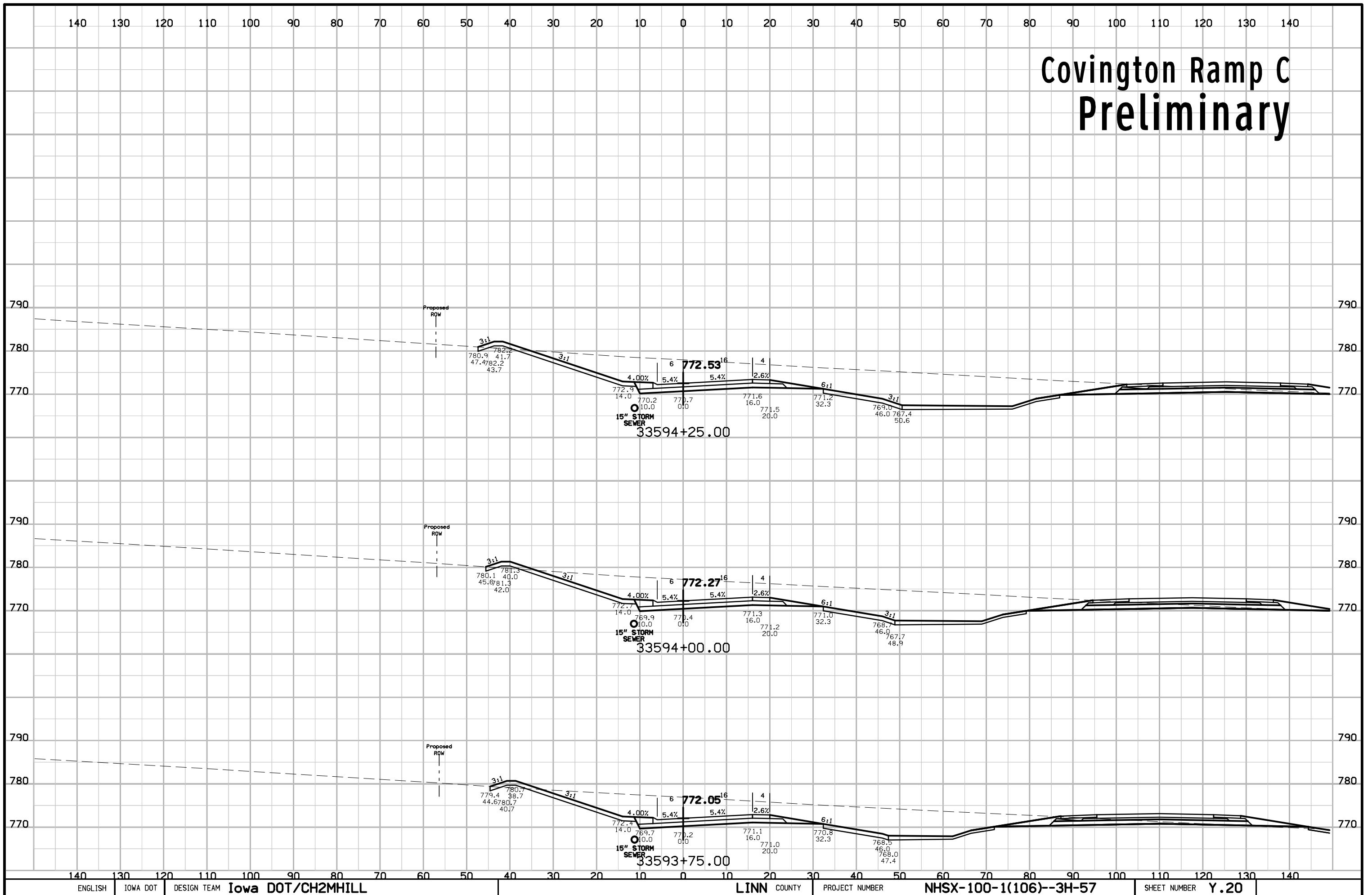
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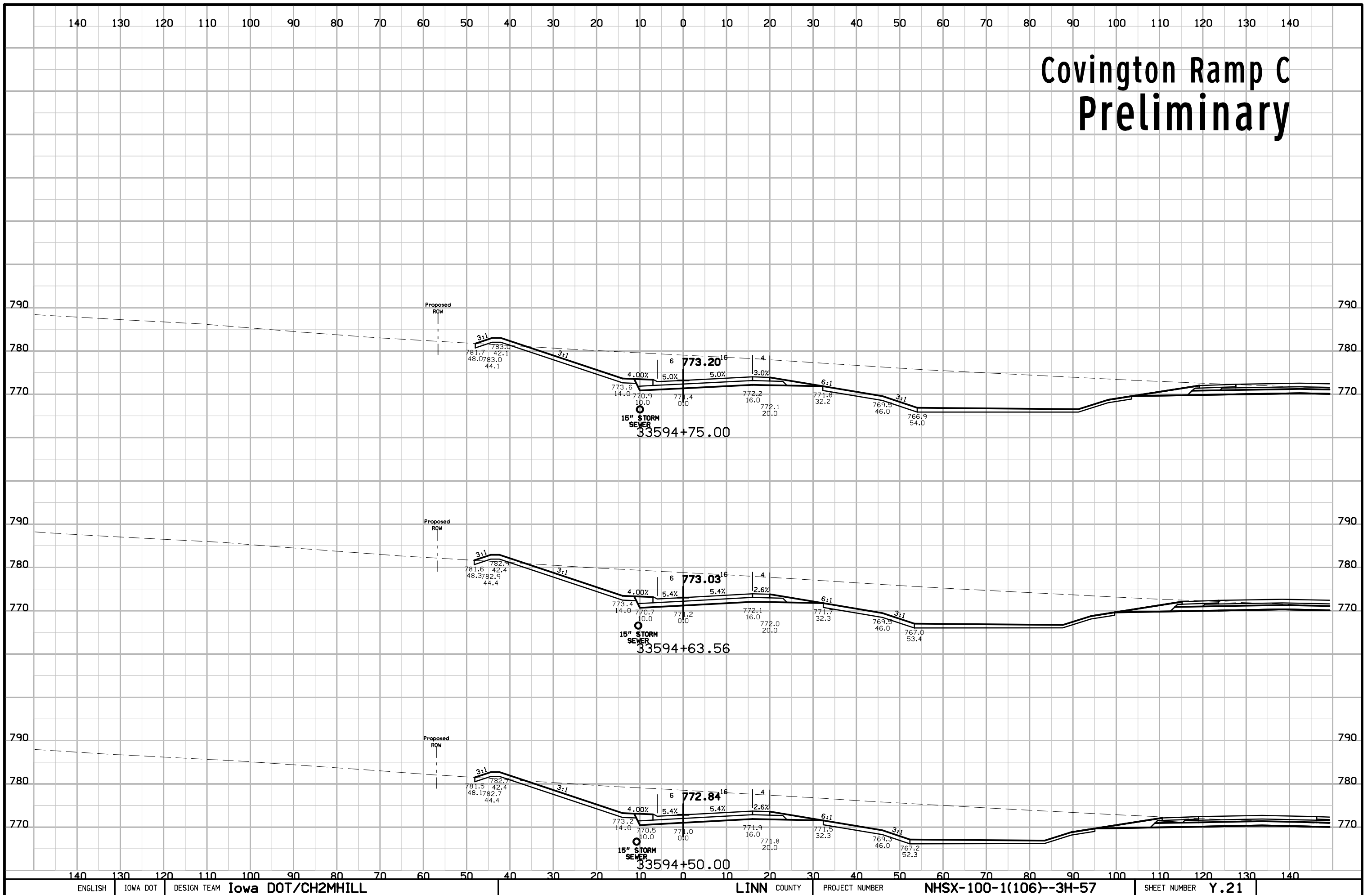
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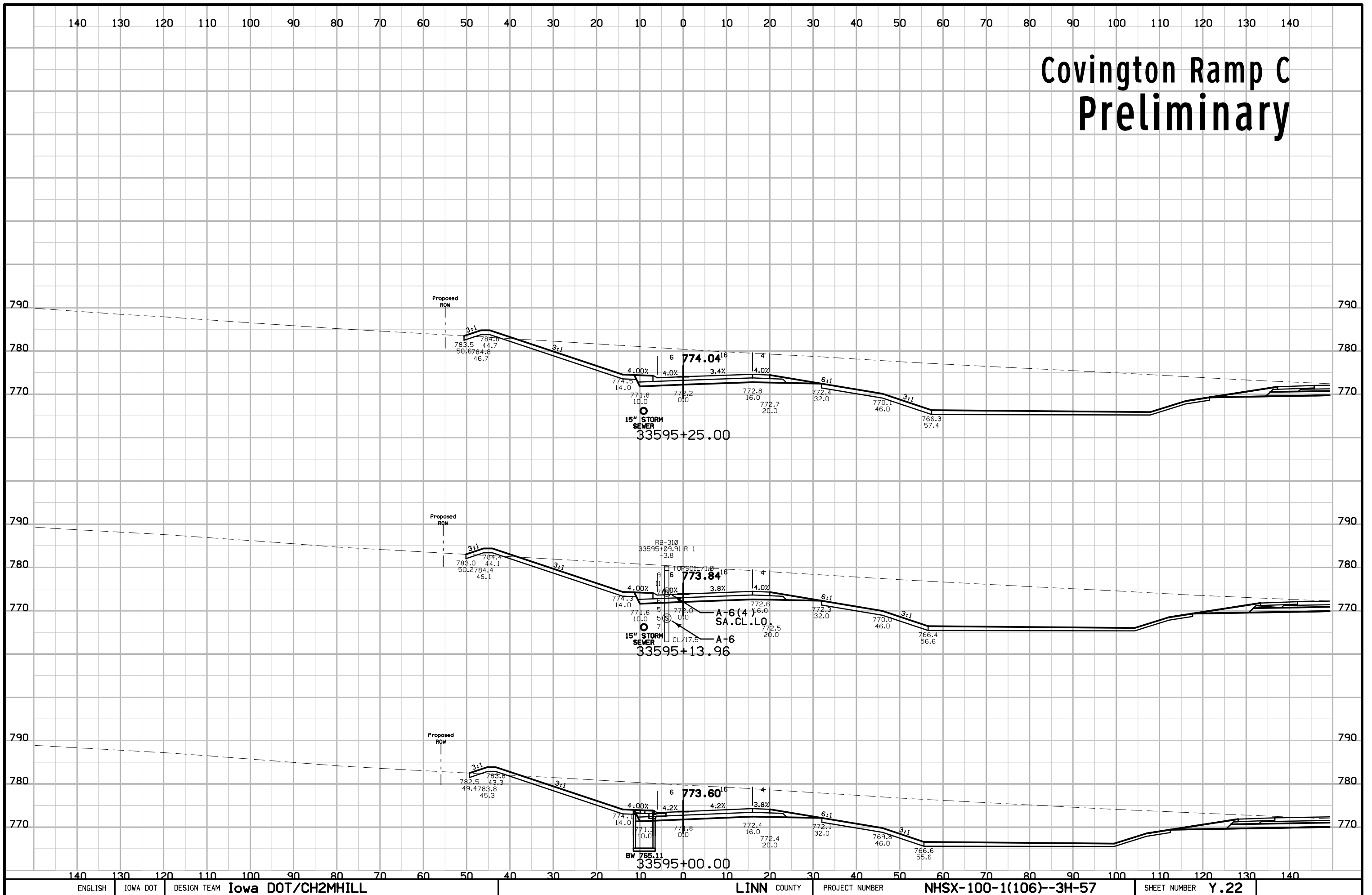
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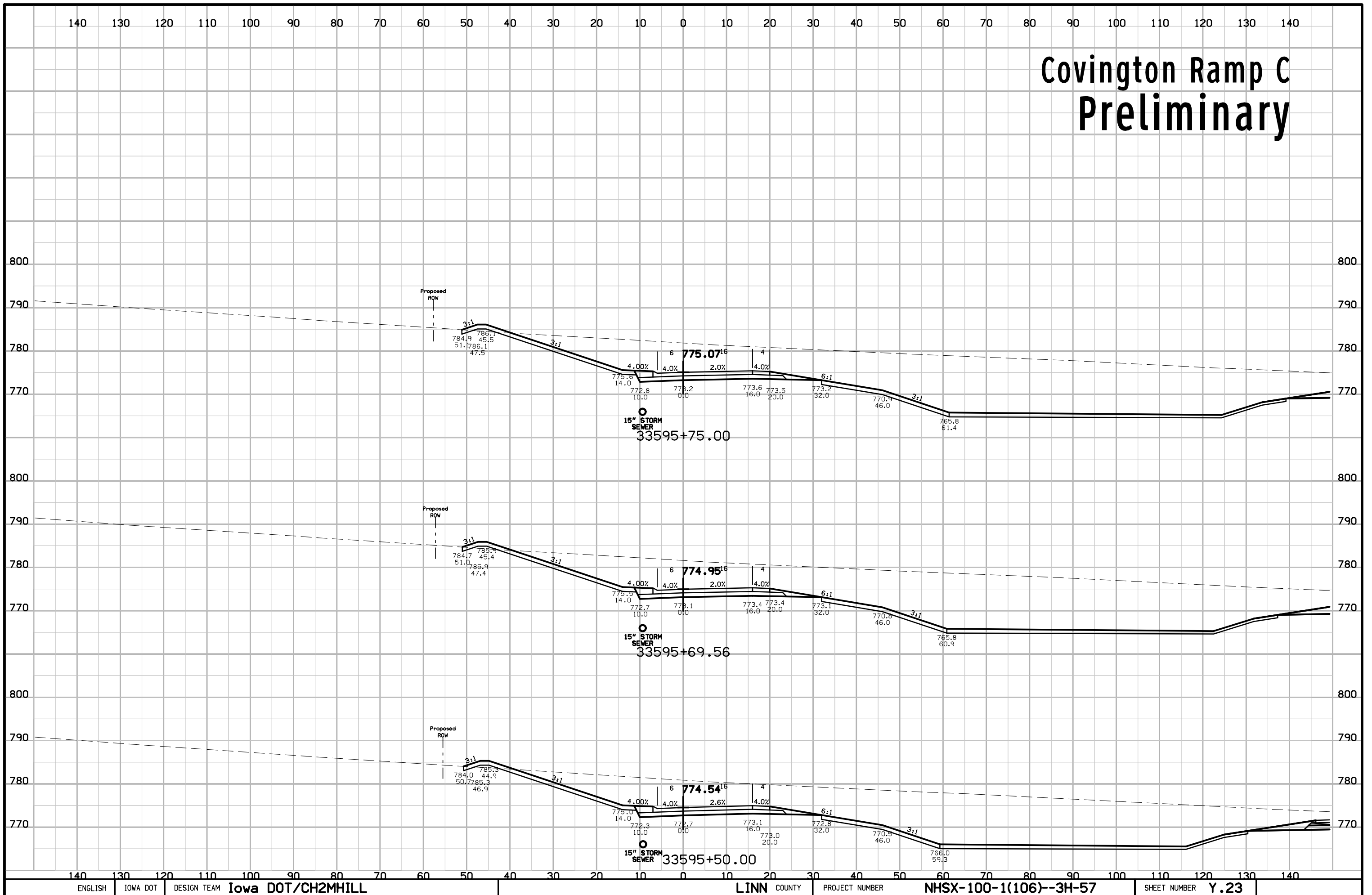
# Covington Ramp C Preliminary



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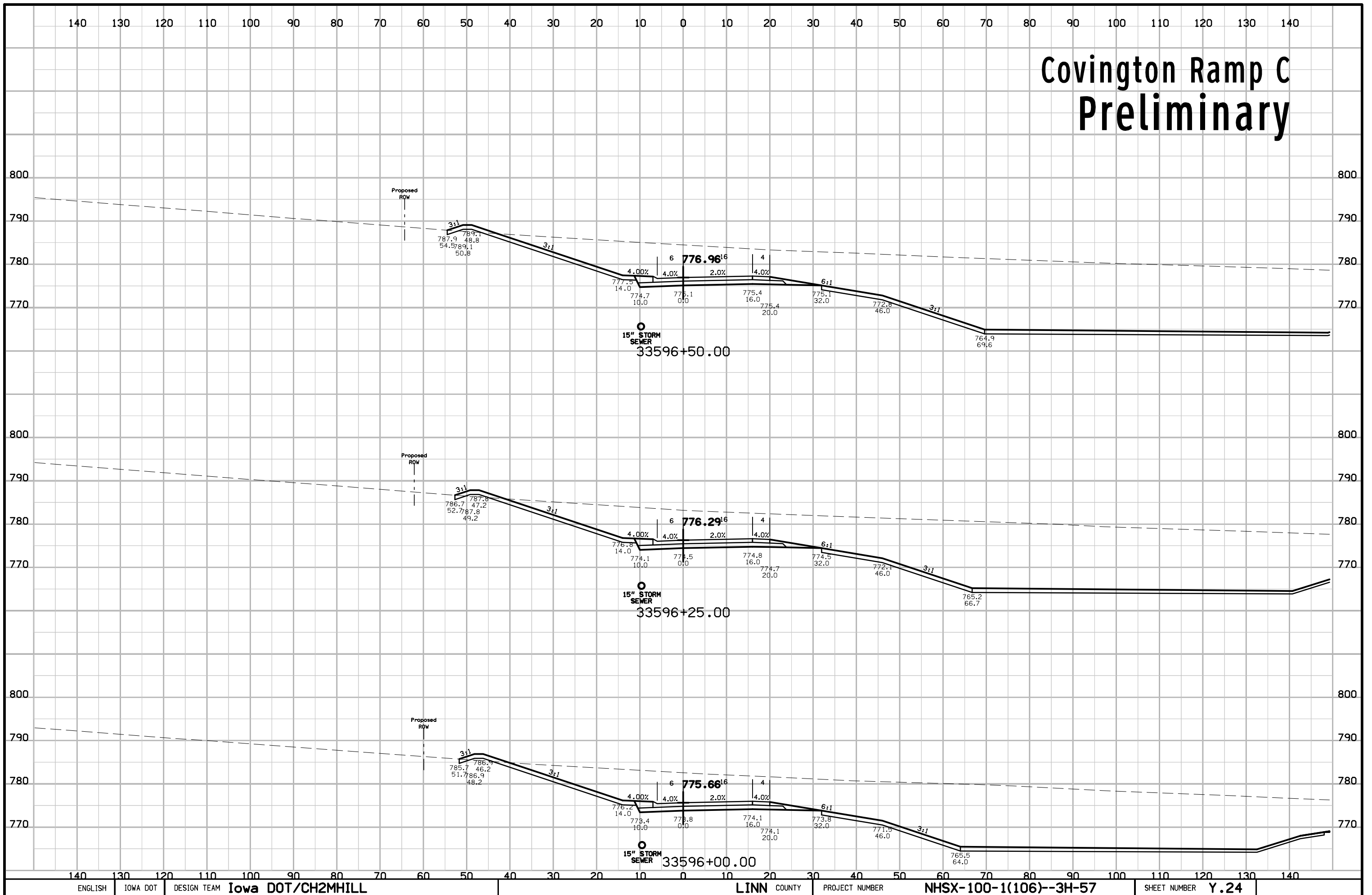


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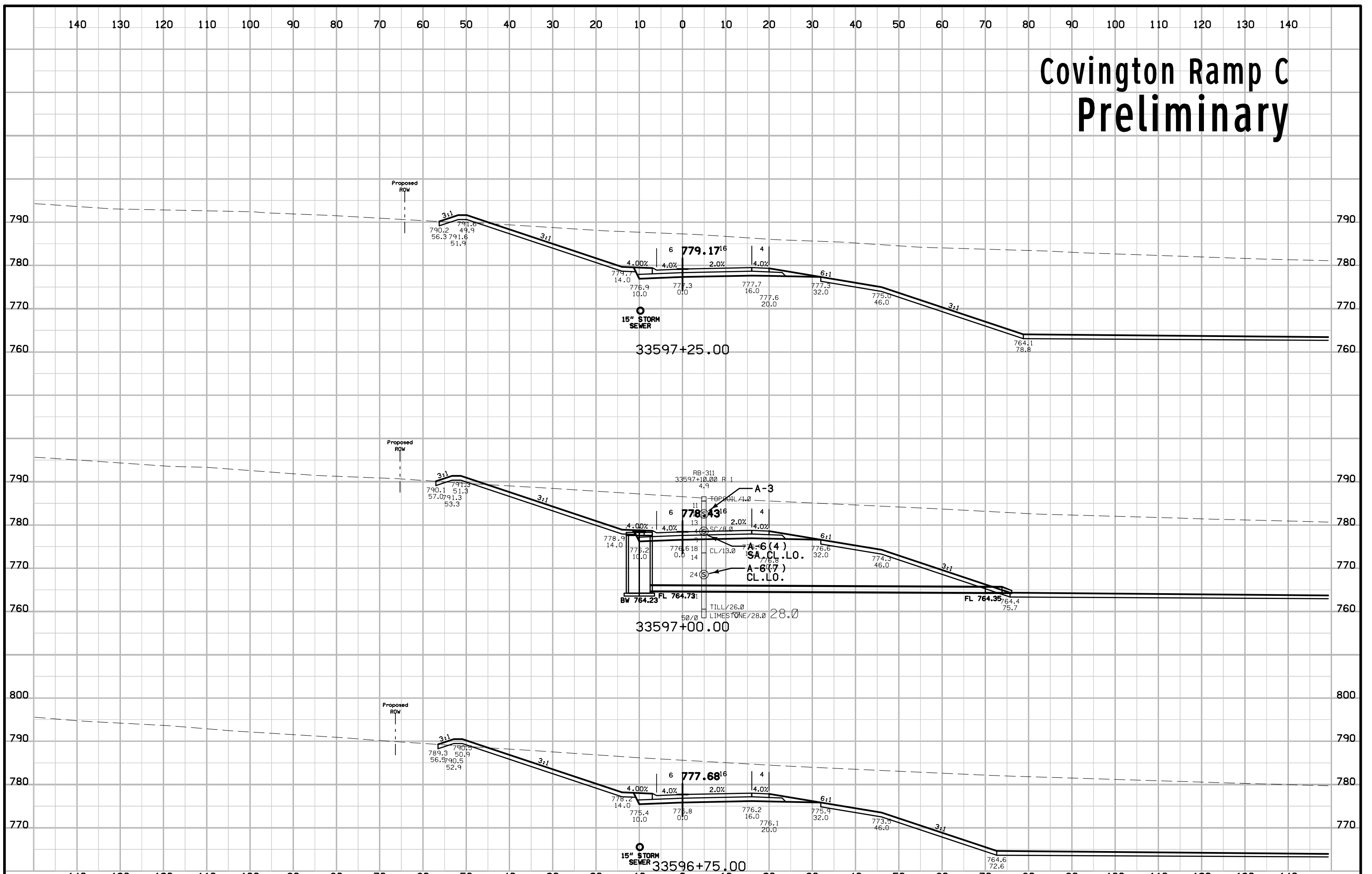




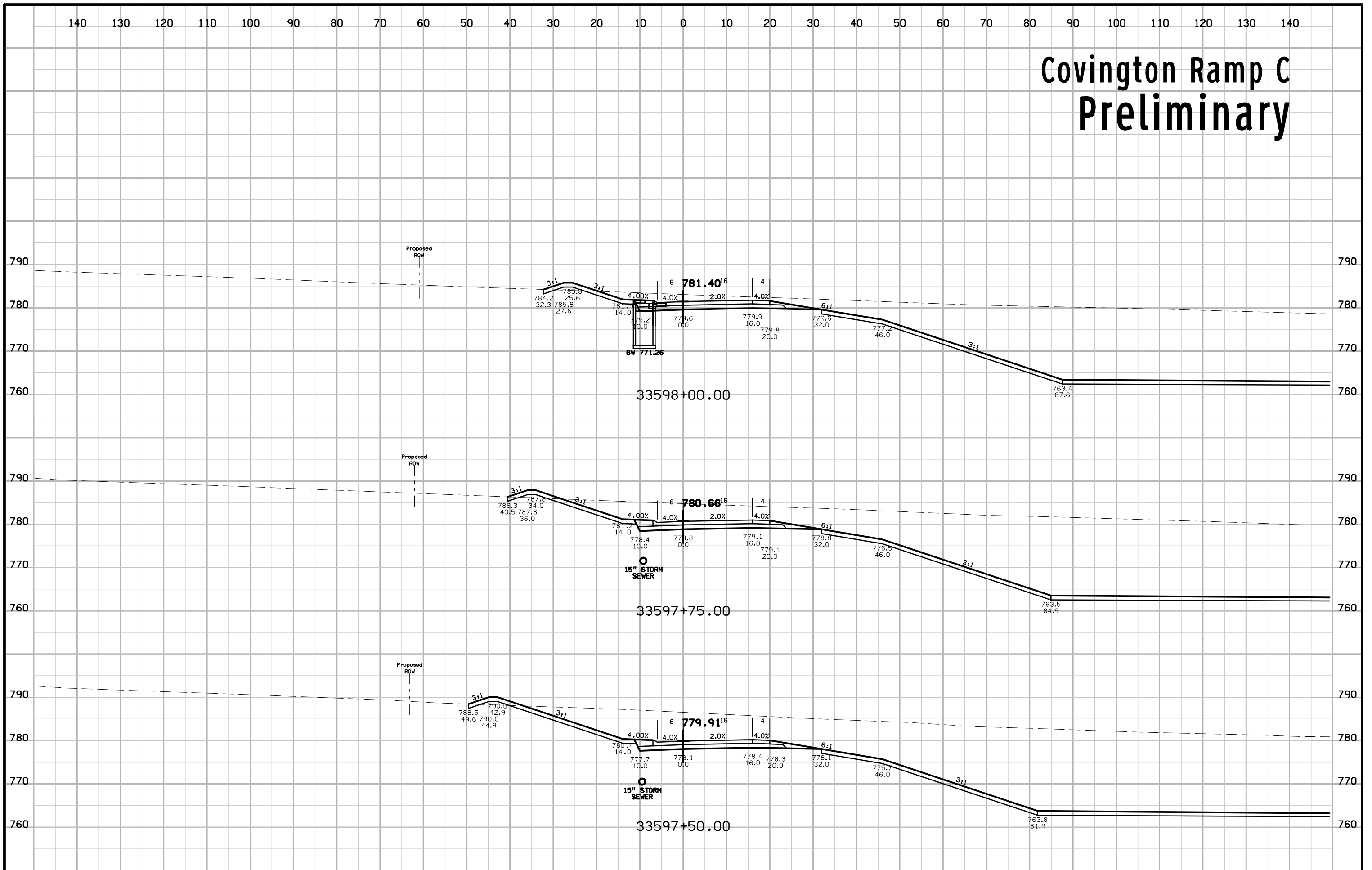
# Covington Ramp C Preliminary



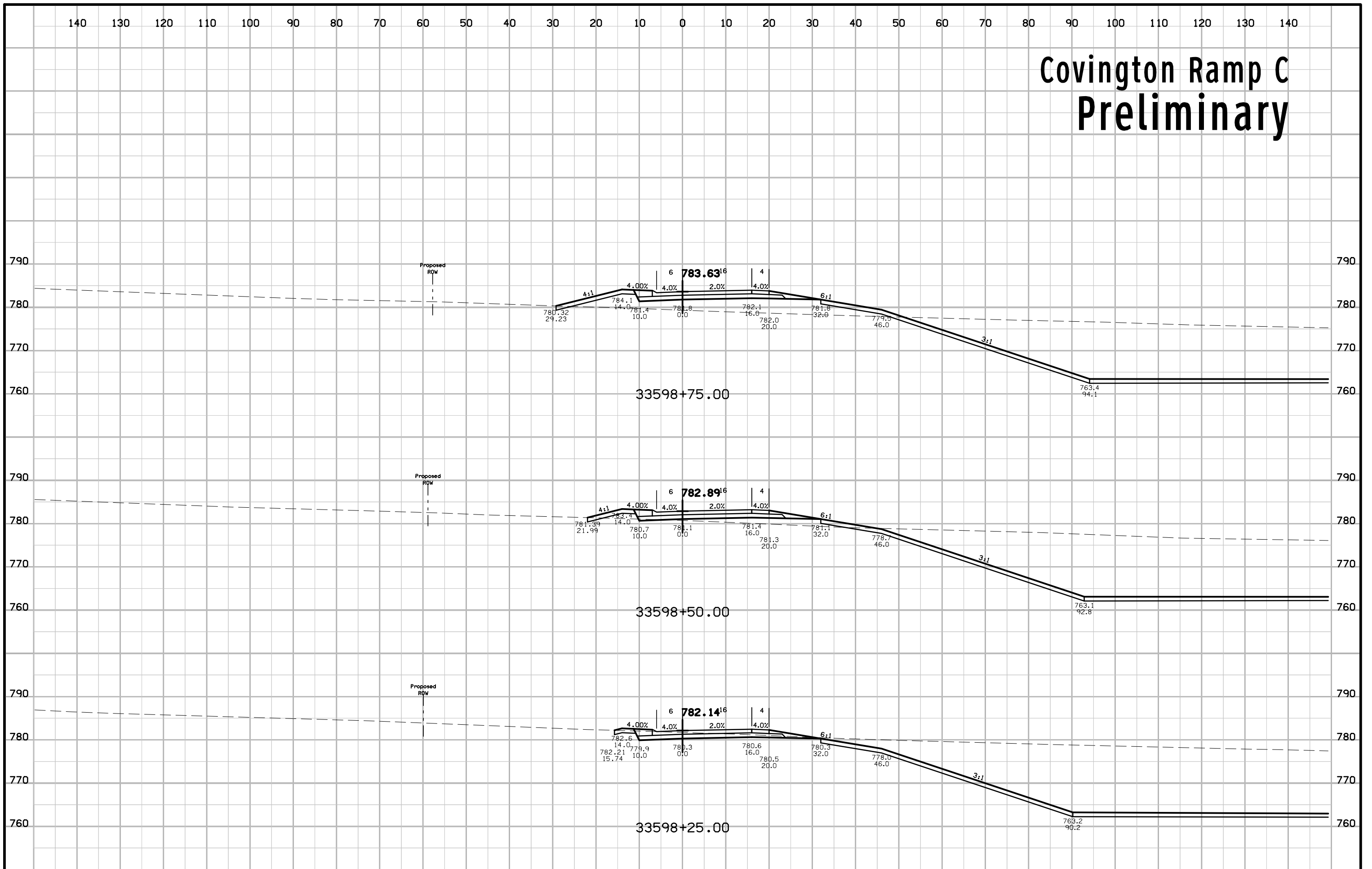
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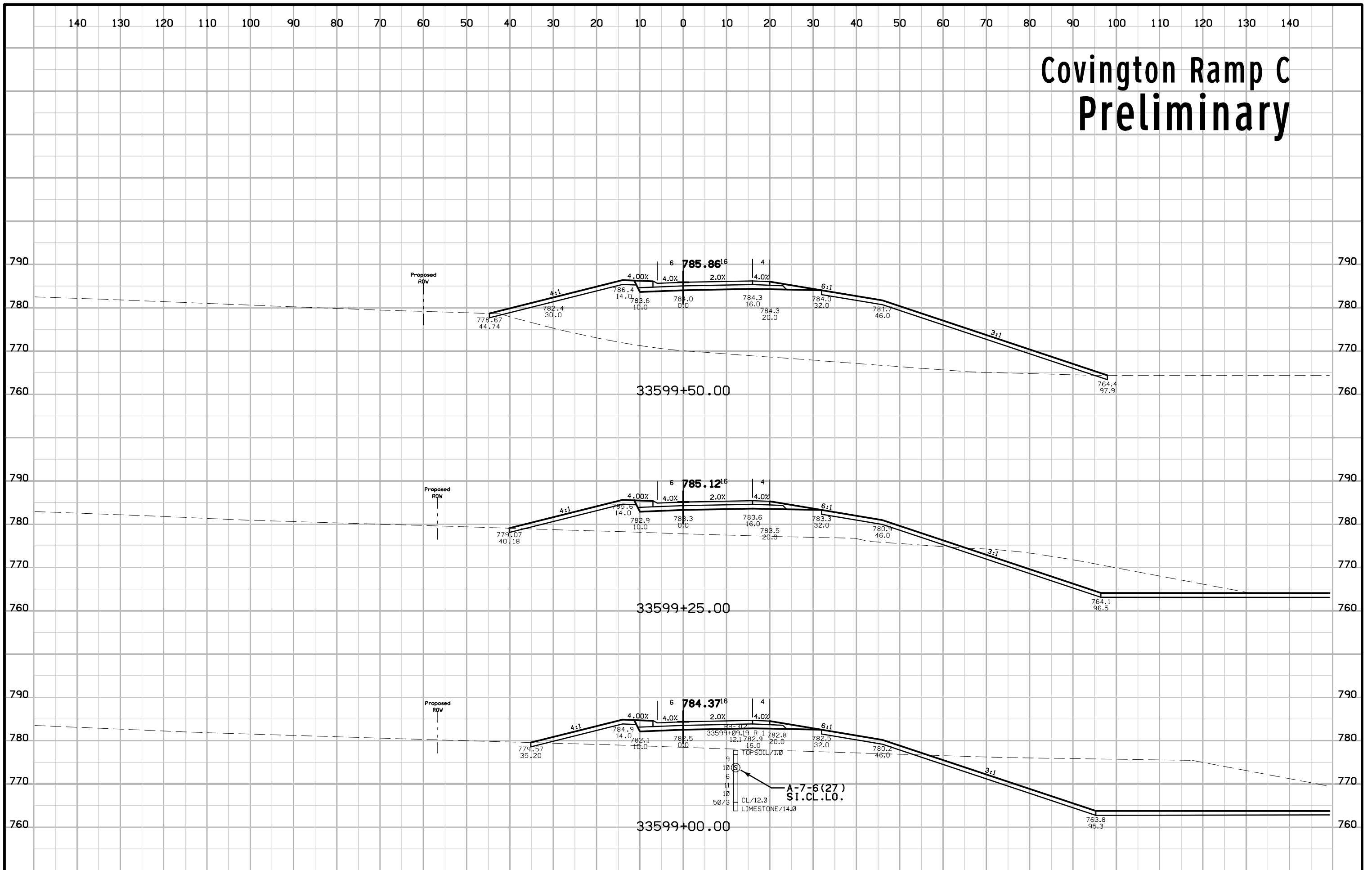
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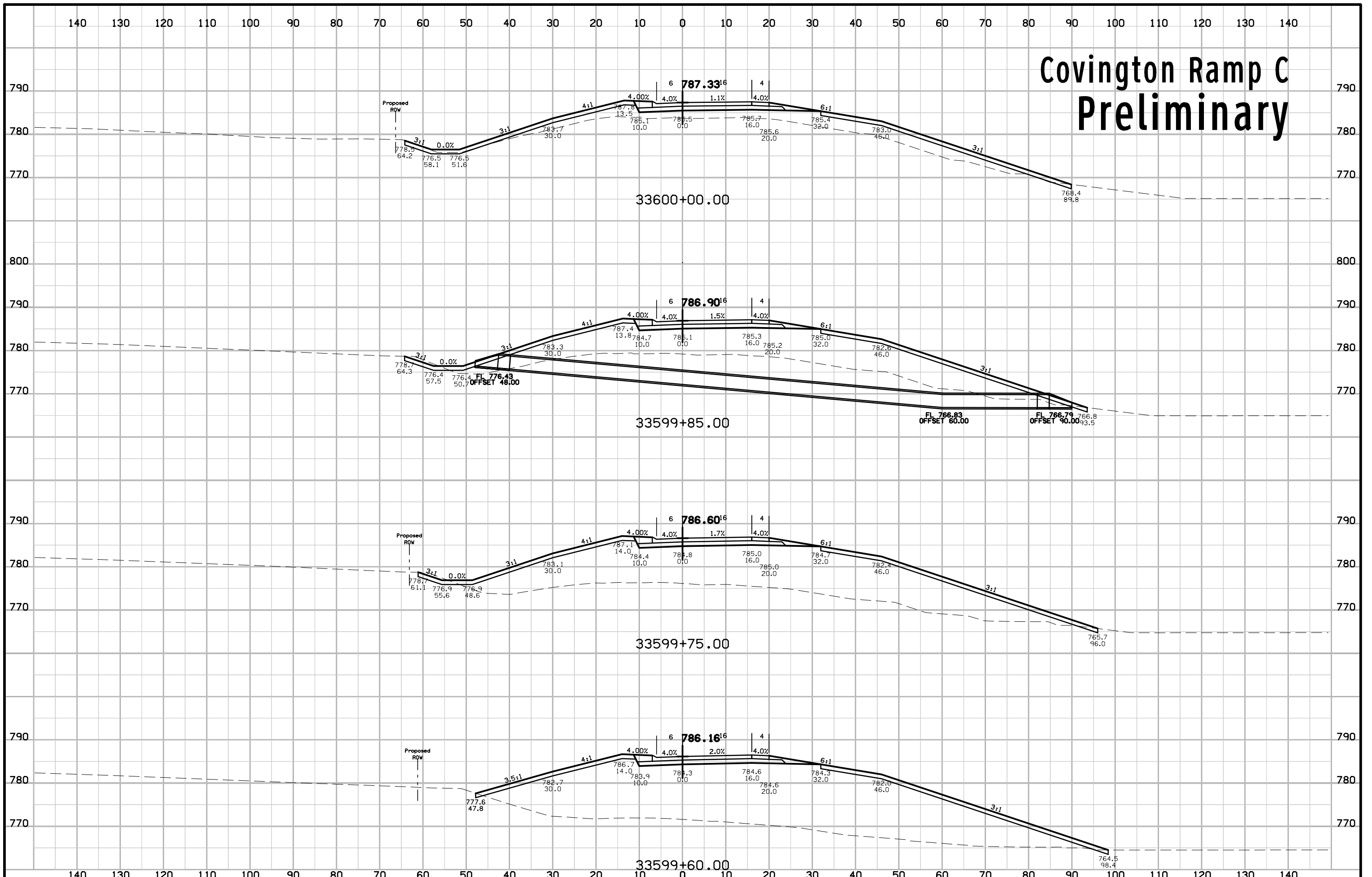
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