

LETTING DATE
12/15/2020

PCC PAVEMENT - GRADE AND REPLACE
NHSX-052-2(119)--3H-31

DUBUQUE CO.



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
DUBUQUE COUNTY

PCC PAVEMENT - GRADE AND REPLACE

From Approx. 0.7 Mile N. Of Boy Scout Rd. N. To E. Jct. Pfeiler Rd.

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

PROJECT IDENTIFICATION NUMBER

10-31-052-020-02

PROJECT NUMBER

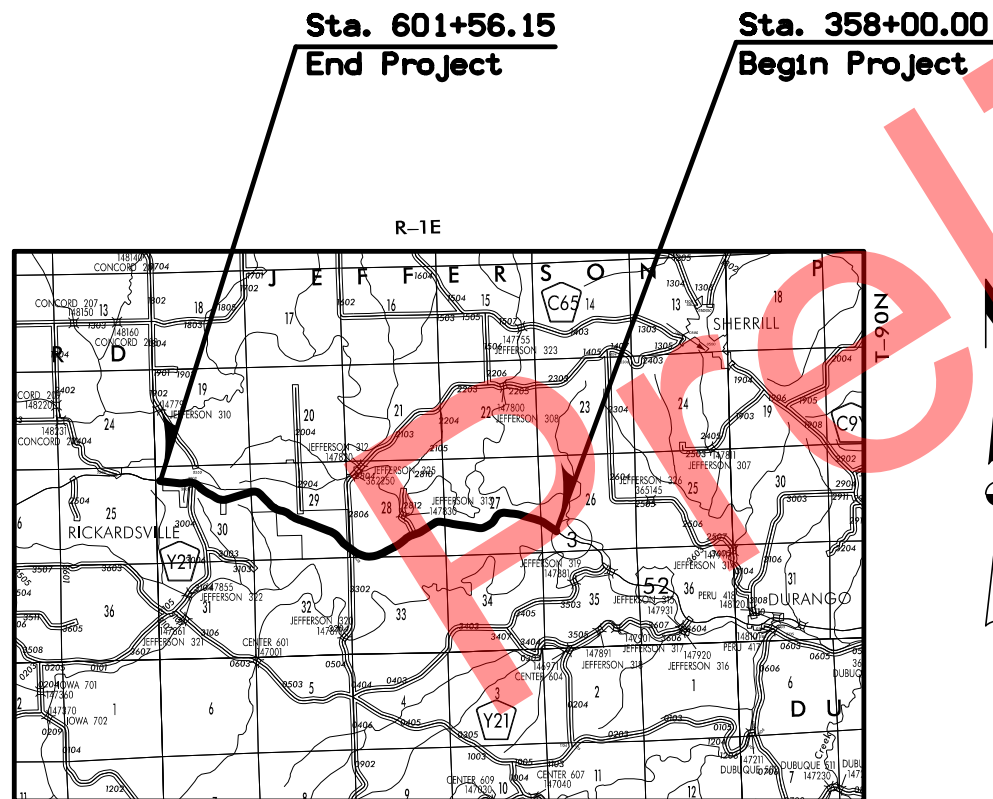
NHSX-052-2(119)--3H-31

R.O.W. PROJECT NUMBER

STPN-052-2(122)--2J-31

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DESIGN DATA RURAL

2020 AADT	2200	V.P.D.
2040 AADT	2400	V.P.D.
2040 DHV	250	V.P.H.
TRUCKS	13	%
Total Design ESALs	--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Yanxiao Jia	Primary Signature Block
CD.1	David R. Claman	Hydraulic Design
CS.1	Steve Megivern or Mark Dell	Geotechnical Design
RC.1	Seana K. Godbold	Landscape Design

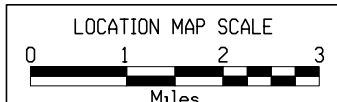
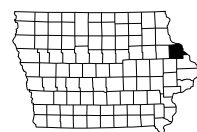
ROADWAY DESIGN



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.

Yanxiao Jia 10-06-2020
Signature Date
Yanxiao Jia
Printed or Typed Name
My license renewal date is December 31, 2020

Pages or sheets covered by this seal: X



PCC Paved Shoulder

Longitudinal joint: BT-1 or BT-5
Transverse joints: Match mainline

2_G Modified	
STATION TO STATION	
358+00.00	395+50.00
399+20.00	404+80.00
406+10.00	412+00.00
416+36.00	421+98.00
425+52.00	481+11.00
482+50.00	502+28.00
505+50.00	509+08.00
513+02.00	527+60.00
530+24.00	573+74.61
591+00.00	601+56.15

PCC Paved Shoulder

Longitudinal joint: BT-1 or BT-5
Transverse joints: Match mainline

2_G Modified	
STATION TO STATION	
358+00.00	390+64.00
394+25.00	404+20.00
410+13.00	481+68.00
484+50.00	518+13.00
519+25.00	555+03.00
584+97.92	601+56.15

Curbed Shoulder

Longitudinal Joint: BT-1 or BT-5
Transverse: Match mainline

2_Curb_ Modified		
STATION TO STATION		Curb Type See PV-102
395+50.00	399+20.00	6" Sloped
404+80.00	406+10.00	6" Sloped
412+00.00	416+36.00	6" Sloped
421+98.00	425+52.00	6" Sloped
481+11.00	482+50.00	6" Sloped
502+28.00	505+50.00	6" Sloped
509+08.00	513+02.00	6" Sloped
527+60.00	530+24.00	6" Sloped
584+97.92	591+00.00	6" Sloped

Curbed Shoulder

Longitudinal Joint: BT-1 or BT-5
Transverse: Match mainline

2_Curb_ Modified		
STATION TO STATION		Curb Type See PV-102
390+64.00	394+25.00	6" Sloped
404+20.00	410+13.00	6" Sloped
481+68.00	484+50.00	6" Sloped
518+13.00	519+25.00	6" Sloped
555+03.00	573+74.61	6" Sloped

① Refer to cross sections

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

US 52

Combination Shoulder

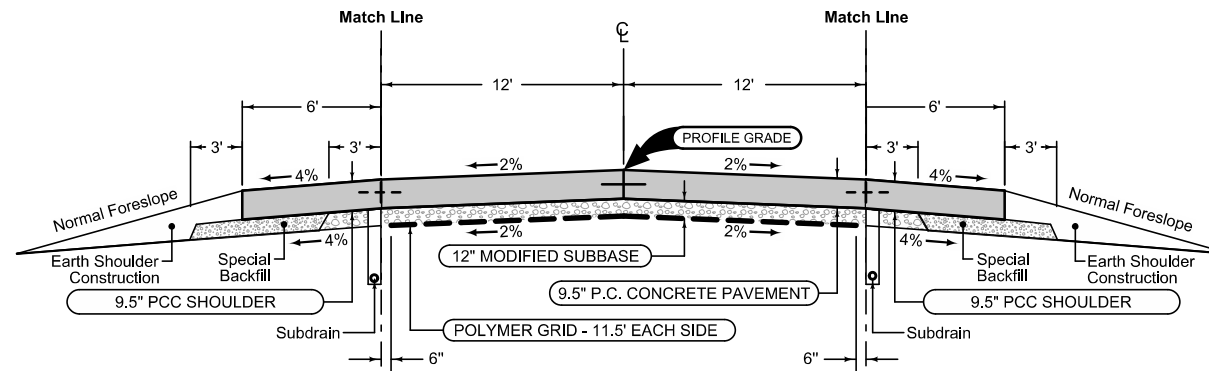
Shoulder Jointing:
Longitudinal joint: B

2_C_ 10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
361+50.00	365+00.00	6	6
430+00.00	434+00.00	6	6
454+50.00	458+50.00	6	6
497+20.00	500+70.00	6	6

Combination Shoulder

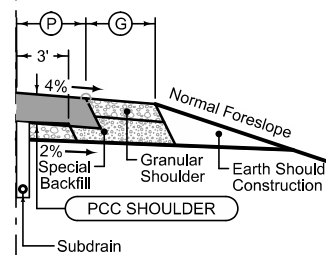
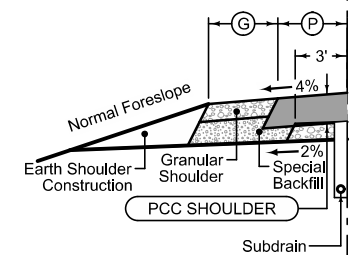
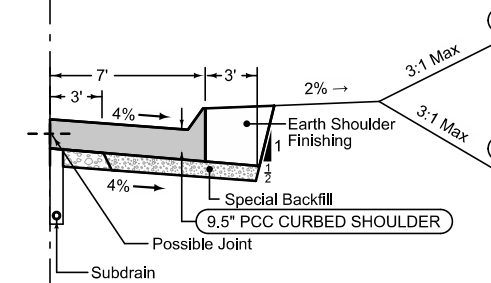
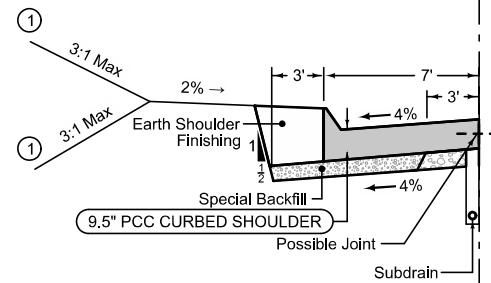
Shoulder Jointing:
Longitudinal joint: B

2_C_ 10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
361+50.00	365+00.00	6	6
430+00.00	434+00.00	6	6
454+50.00	458+50.00	6	6
497+20.00	500+70.00	6	6



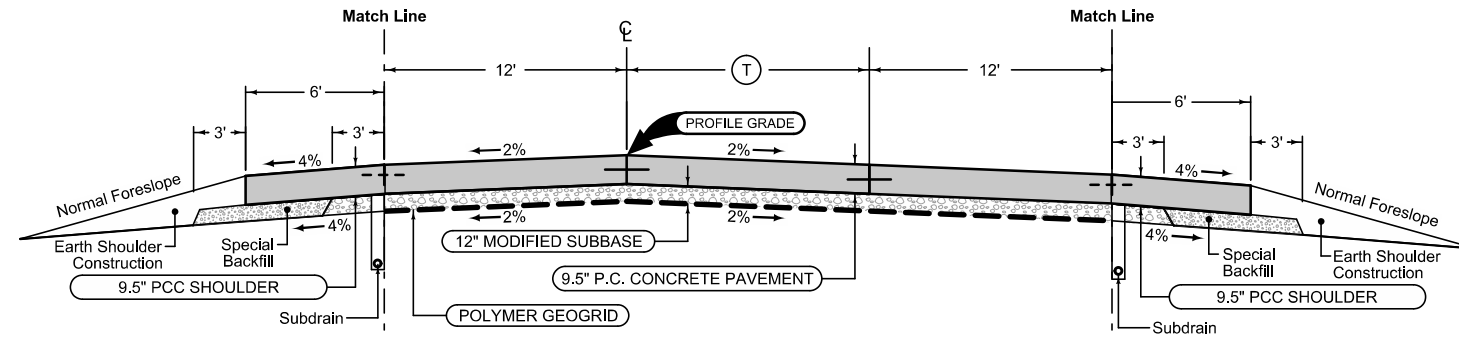
Mainline Jointing:
Transverse joints: CD at 20' spacing
Longitudinal joint: L-2

2P MODIFIED	
STATION TO STATION	
358+00.00	573+74.61
584+97.92	601+56.15



PCC Paved Shoulder

2_P Modified	
STATION TO STATION	
573+74.61	580+18.00



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

2P_ MODIFIED		
STATION TO STATION		(T) Feet
573+74.61	576+68.10	0-12
576+68.10	582+76.58	12
582+76.58	584+97.92	12-0

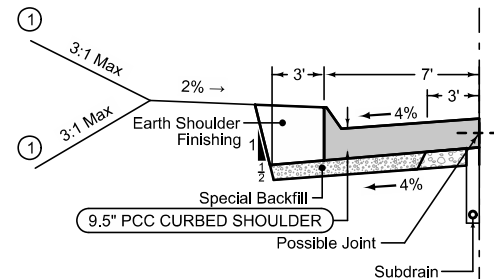
PCC Paved Shoulder

2_P Modified	
STATION TO STATION	
579+00.00	584+97.92

Curbed Shoulder

Longitudinal Joint: BT-1 or BT-5
 Transverse: Match mainline

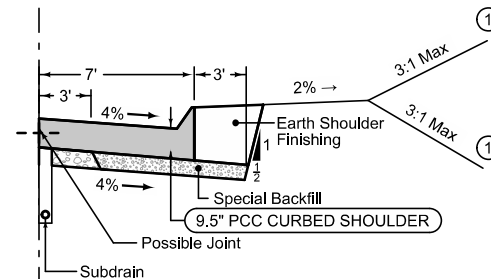
2_Curb Modified		
STATION TO STATION		Curb Type See PV-102
580+18.00	584+97.92	6" Sloped



Curbed Shoulder

Longitudinal Joint: BT-1 or BT-5
 Transverse: Match mainline

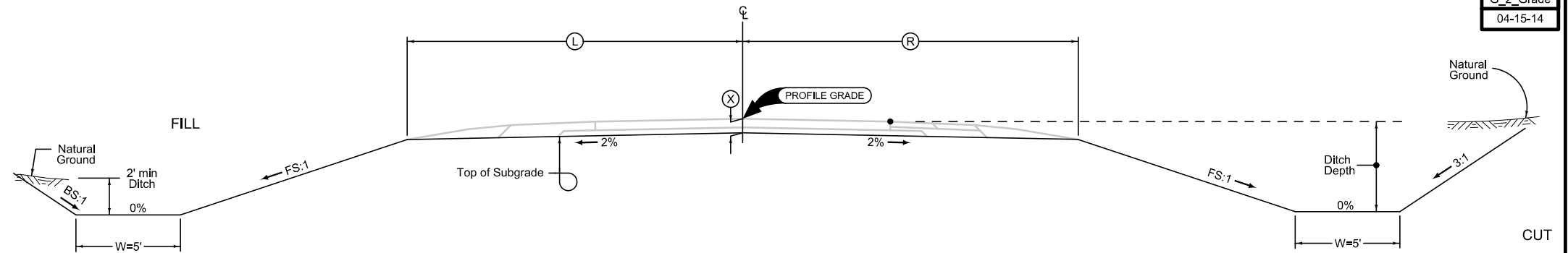
2_Curb Modified		
STATION TO STATION		Curb Type See PV-102
573+74.61	579+00.00	6" Sloped



① Refer to cross sections

US 52 Turn Lane
At James Rd. / Park Hollow Rd.

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	FS	BS
Fettkether Lane	21441+19.06 21441+77.00	**	**	21.5	4	3
5 Points Road North	19481+15.29 19482+43.00	XX	XX	21.5	4	3
Klein Lane	18512+64.09 18513+28.00	XX	XX	21.5	4	3
St. Joseph's Drive (east)	45+00.00 47+30.80	--	--	21.5	4	3
Frontage Road	0+12.16 2+04.10	--	--	21.5	4	3
Wilgenbusch Drive	0+12.00 0+56.30	--	--	21.5	4	3
Park Hollow Road	15578+64.00 15579+43.0	--	--	21.5	4	3
James Road	14579+79.00 14581+25.0	--	--	21.5	4	3
St. Joseph's Dr. (West)	10+12.00 11+10.00	--	--	21.5	4	3
Hilltop Court	13583+00.0 13583+94.92	--	--	21.5	4	3
** See Cross Sections						



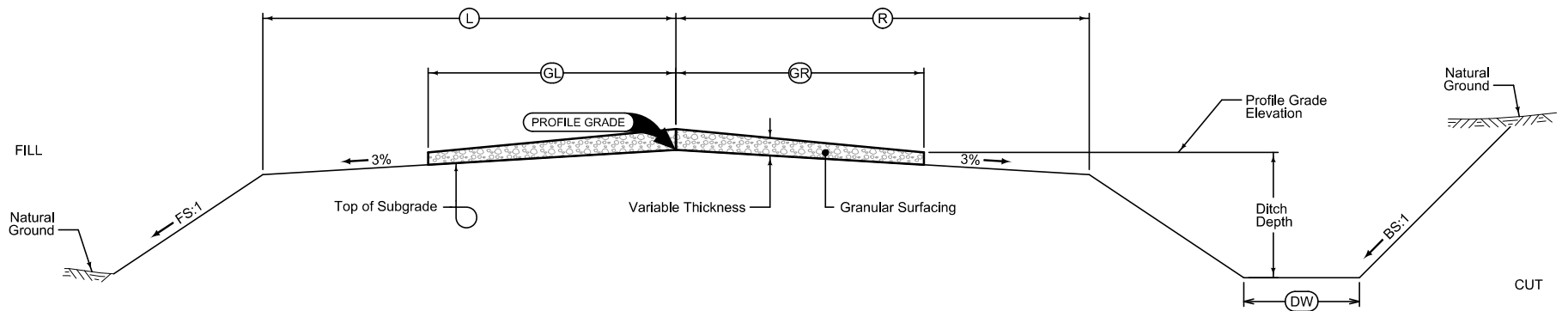
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

Side Road Grading

G_2_Grade
04-15-14

LOCATION		DIMENSIONS						Quantities		
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(GL) Feet	(GR) Feet	FS	BS	(DW) Feet	Length Feet	Granular Surfacing Tons
Fettkether Lane	21441+77.00 21441+87.00	12-7.5	12-7.5	10.5-6	10.5-6	**	3	5	10	5
Klein Lane	18513+28.00 18513+38.00	12.0	12.0	10.0	10.0	**	3	5	10	5
Wilgenbusch Drive	0+56.30 0+66.30	14-9	12-9.7	12-8	10-8	**	3	5	5	3
** See Cross Sections										



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:
Grade-Pave design application rate is 2330 tons per mile.

GRADING AND GRANULAR SURFACING

2_GradeGran
Modified

SIDE ROADS

Granular Shoulder

2_G_SR_10-19-10			
ROAD IDENTIFICATION	STATION TO STATION		Ⓞ Feet
Park Hollow Road	15578+64.00	15578+83.00	2
James Road	14579+79.00	14581+25.00	2

No Shoulder

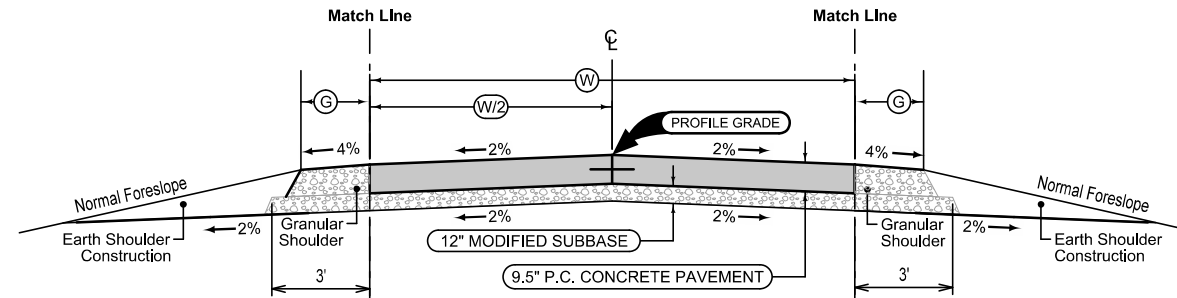
ROAD IDENTIFICATION	STATION TO STATION	
Fettkether Lane	21441+19.06	21441+77.00
5 Points Road (North)	19481+15.29	19482+43.00
Klein Lane	18512+64.09	18513+28.00
St. Joseph's Dr. (East)	45+00.00	47+30.80
Frontage Road	51+12.00	51+78.00
Hilltop Court	13583+00.00	13583+57.69

Curbed Shoulder

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

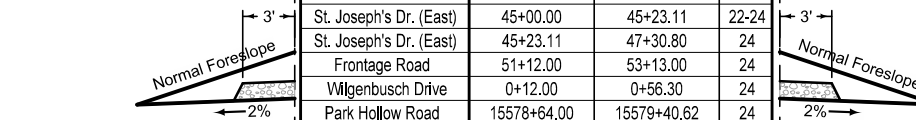
Single pour: L-2
Staged: KT-2
Transverse: C at 20' spacing

2_Curb_10-17-17				
ROAD IDENTIFICATION	STATION TO STATION		Ⓟ Feet	Curb Type See PV-102
Frontage Road	51+78.00	53+13.00	3	6" Std
Wilgenbusch Drive	0+12.00	0+56.30	2	6" Sloped
Park Hollow Road	15578+83.00	15579+42.91	3	6" Sloped
St. Joseph's Dr. (West)	10+12.00	11+10.00	3	6" Std
Hilltop Court	13583+57.69	13583+98.92	3	6" Sloped



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

STATION TO STATION				Ⓜ Feet
Fettkether Lane	21441+19.06	21441+77.00	24	
5 Points Road (North)	19481+15.29	19482+43.00	32	
Klein Lane	18512+64.09	18513+28.00	24	
St. Joseph's Dr. (East)	45+00.00	45+23.11	22-24	
St. Joseph's Dr. (East)	45+23.11	47+30.80	24	
Frontage Road	51+12.00	53+13.00	24	
Wilgenbusch Drive	0+12.00	0+56.30	24	
Park Hollow Road	15578+64.00	15579+40.62	24	
James Road	14579+79.00	14581+25.00	24	
St. Joseph's Dr. (West)	10+12.00	11+10.00	24	
Hilltop Court	13583+00.00	13583+98.92	24	



Granular Shoulder

2_G_SR_10-19-10			
ROAD IDENTIFICATION	STATION TO STATION		Ⓞ Feet
Park Hollow Road	15578+69.00	15579+40.62	2

No Shoulder

ROAD IDENTIFICATION	STATION TO STATION	
Fettkether Lane	21441+19.06	21441+77.00
5 Points Road North	19481+15.29	19482+43.00
Klein Lane	18512+64.09	18513+28.00
St. Joseph's Dr. (East)	45+00.00	47+30.80
Frontage Road	51+12.00	53+13.00
Wilgenbusch Drive	0+12.00	0+56.30
James Road	14579+79.00	14581+03.22
St. Joseph's Dr. (West)	10+12.00	11+10.00
Hilltop Court	13583+00.00	13583+57.69

Curbed Shoulder

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

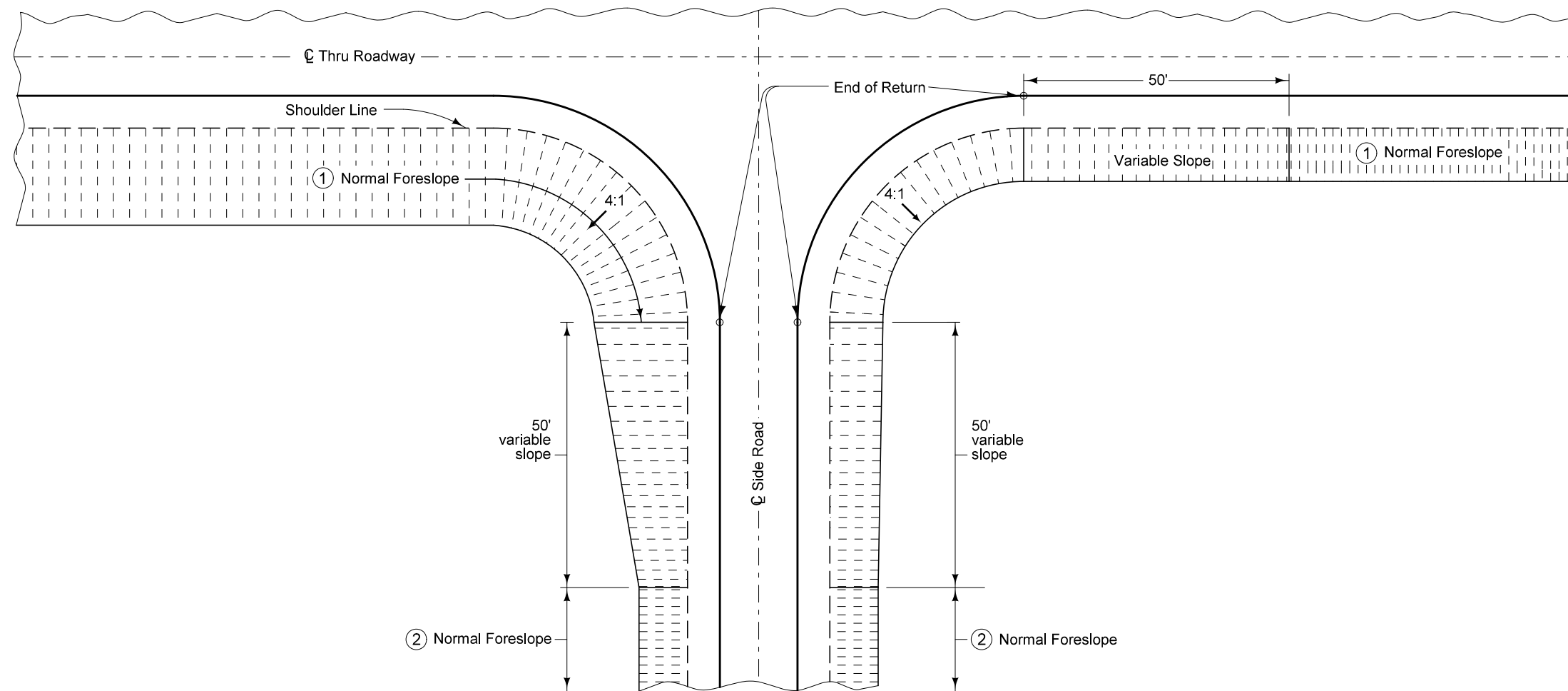
Single pour: L-2
Staged: KT-2
Transverse: C at 20' spacing

2_Curb_10-17-17				
ROAD IDENTIFICATION	STATION TO STATION		Ⓟ Feet	Curb Type See PV-102
James Road	14581+03.22	14581+25.00	3	6" Std
Hilltop Court	13583+57.69	13583+98.92	3	6" Sloped

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

SIDE ROADS

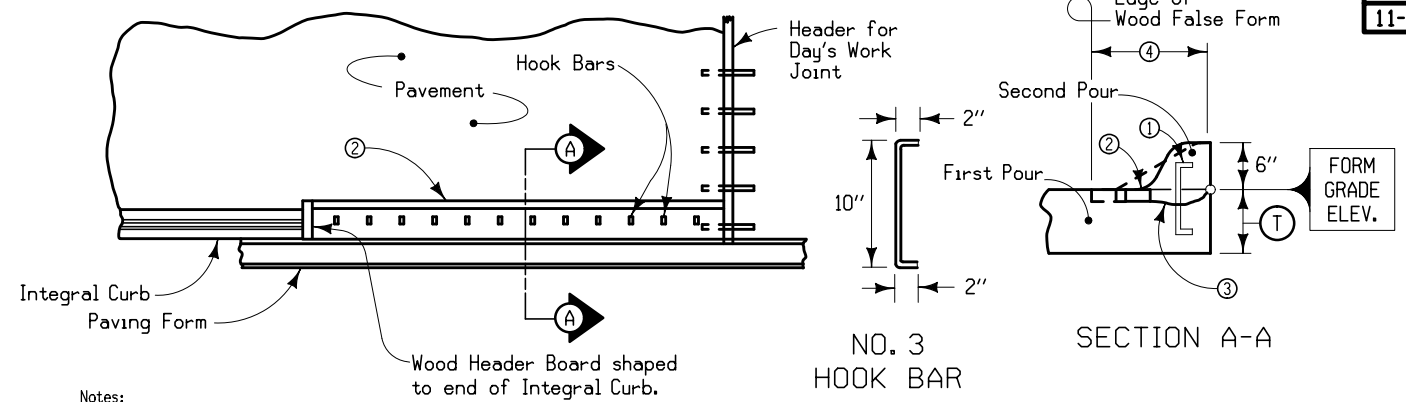
- ① 4:1 foreslope.
- ② Refer to X sheets for foreslopes at each side road.



NORMAL FORESLOPES

SIDE ROAD GRADING

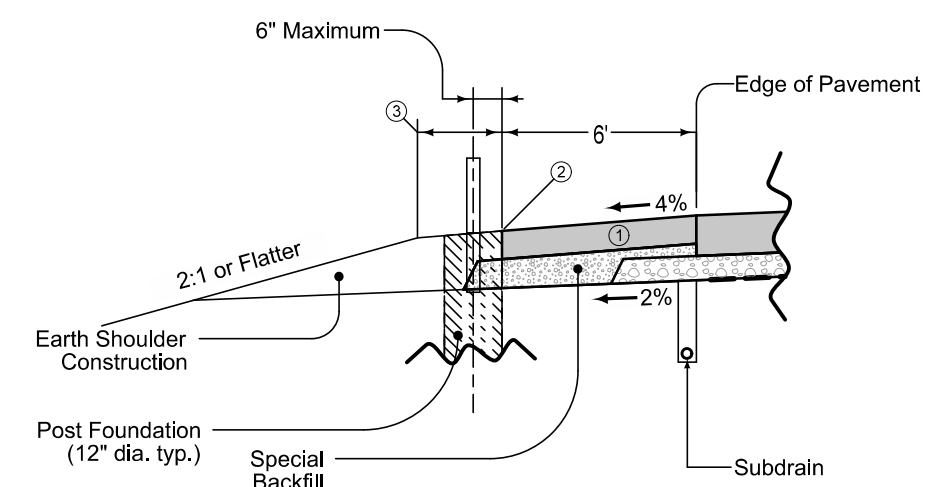
6115
11-10-92



- Notes:
- ① Install hook bar at 12" intervals with top projecting so as to clear the paving equipment and as near the false form board as possible to maintain 2" surface clearance.
 - ② 2" x 4" False Form.
 - ③ Excavate a slight cavity in concrete around each bar.
 - ④ 12" maximum for Standard 6" Curb.
16" maximum for Sloped 6" Curb.

CONSTRUCTION WHERE CURB IS OMITTED AT END OF DAY'S RUN

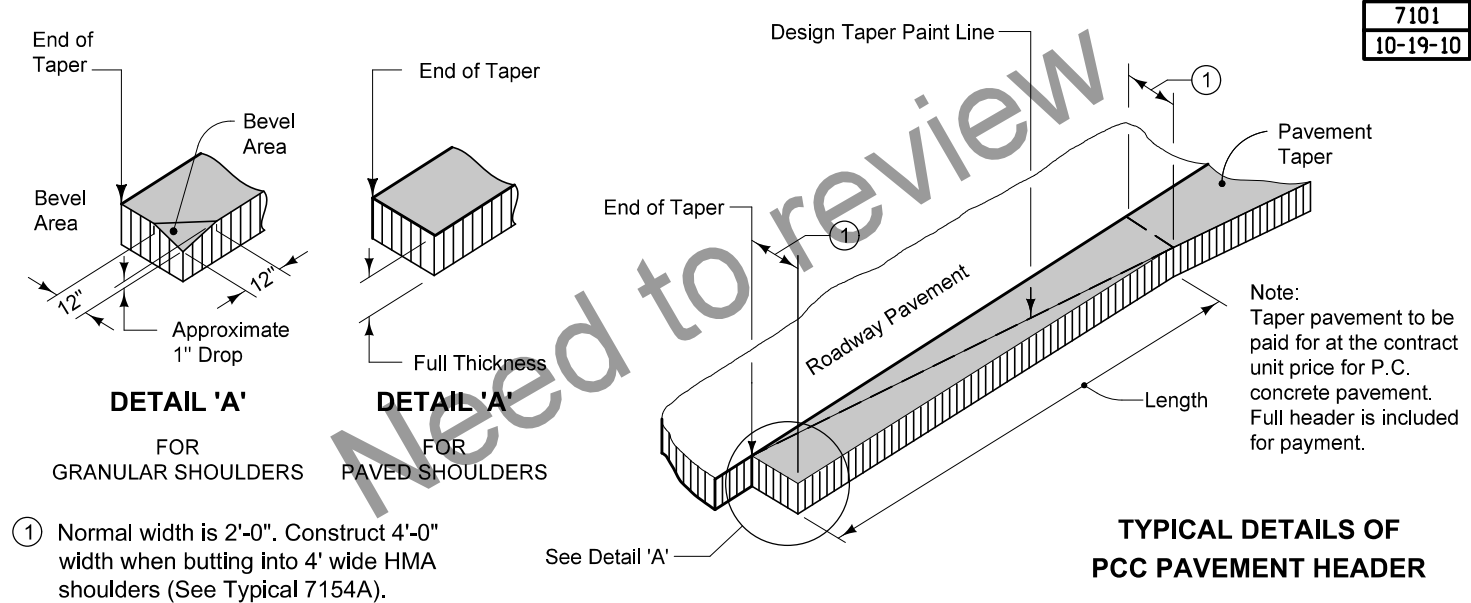
HTCG
Special



- ① 7" PCC Shoulder
- ② Edge of Shoulder
- ③ 2' Minimum, Refer to cross sections

Sta. 559+00 - Sta. 575+95 **High Tension Cable Guardrail**

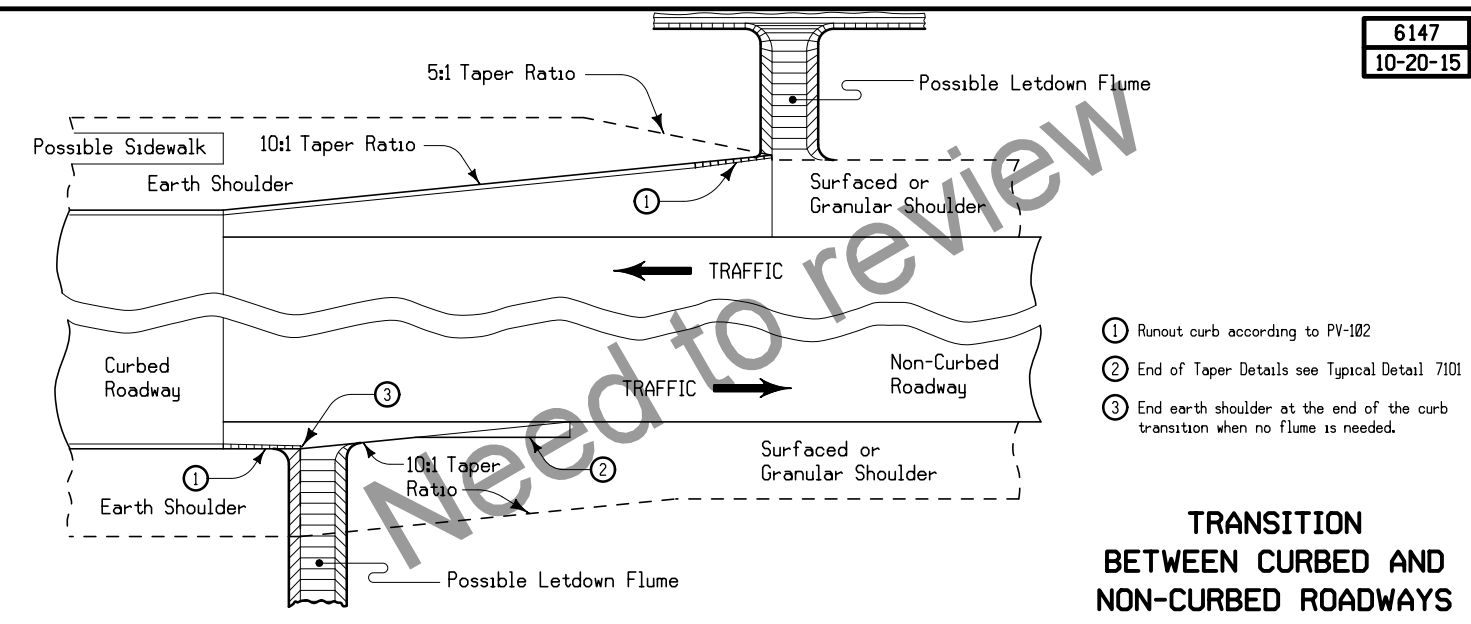
7101
10-19-10



- ① Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).

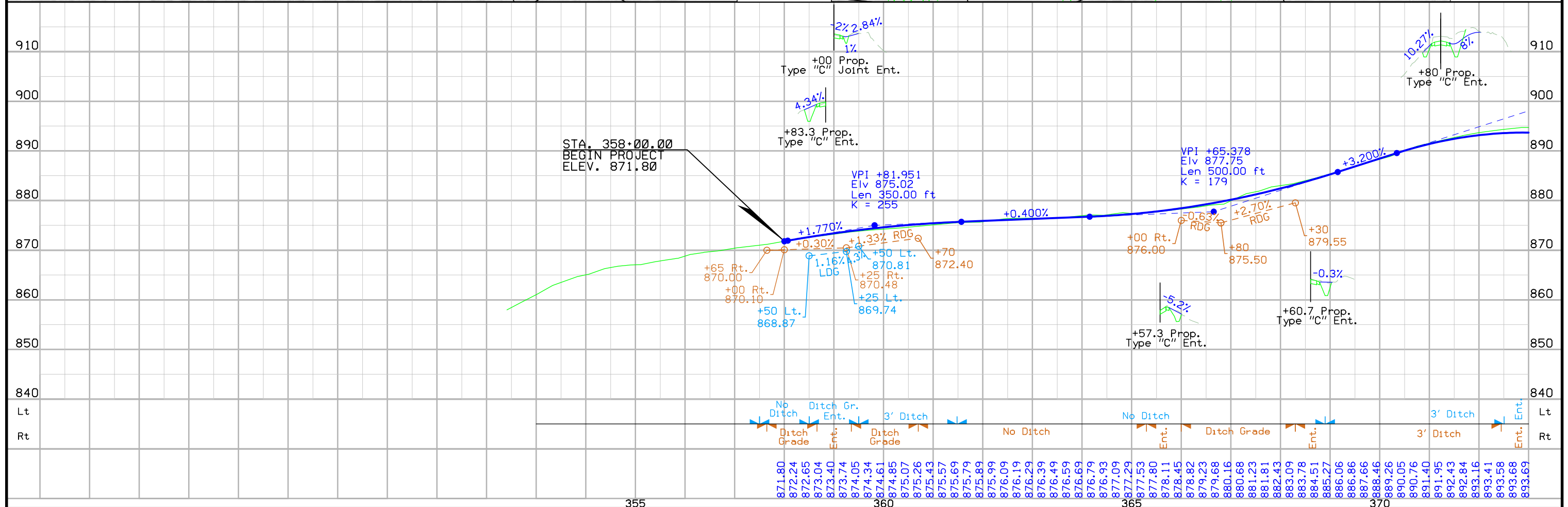
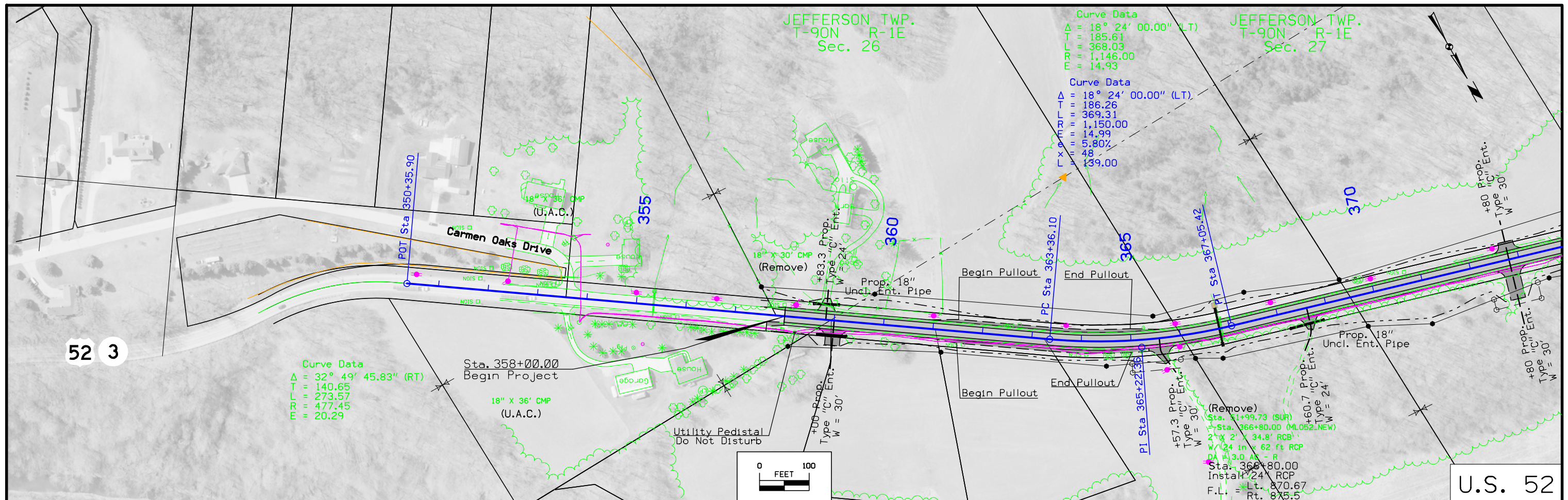
TYPICAL DETAILS OF PCC PAVEMENT HEADER

6147
10-20-15

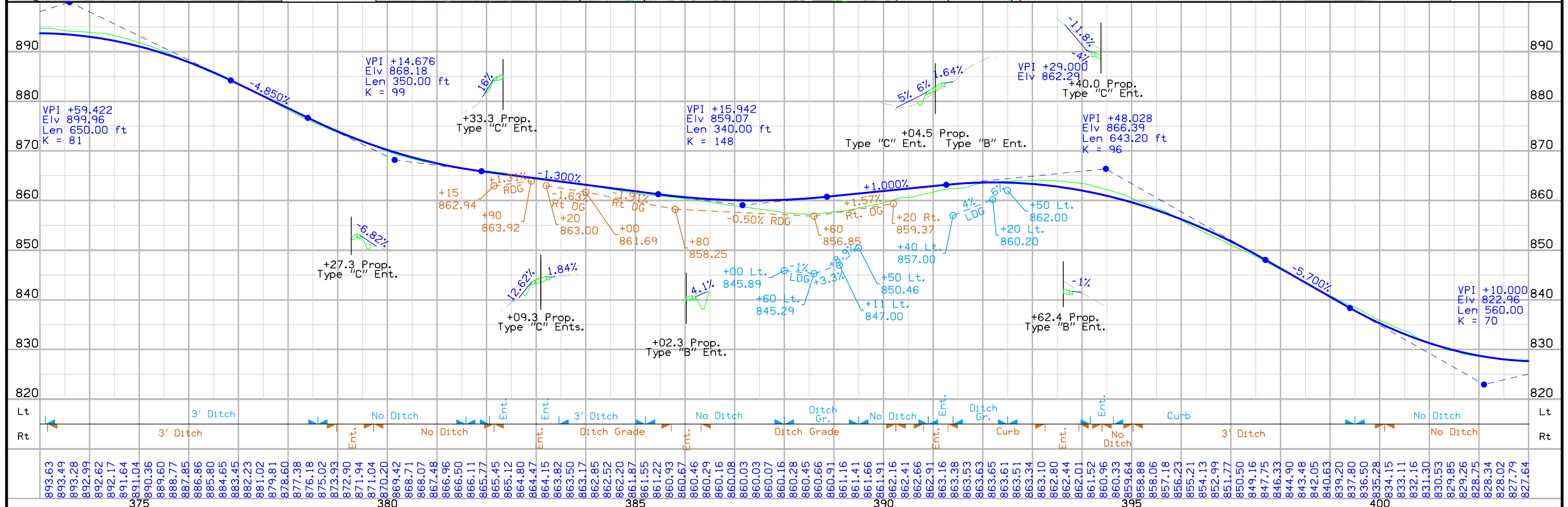
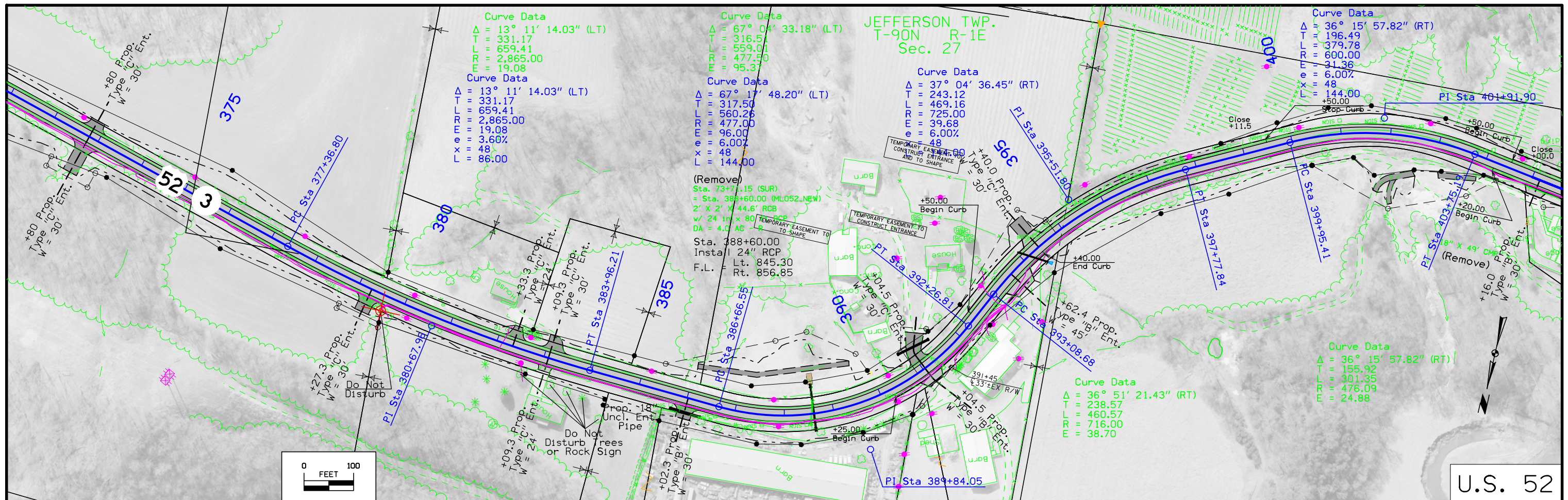


- ① Runout curb according to PV-102
- ② End of Taper Details see Typical Detail 7101
- ③ End earth shoulder at the end of the curb transition when no flume is needed.

TRANSITION BETWEEN CURBED AND NON-CURBED ROADWAYS



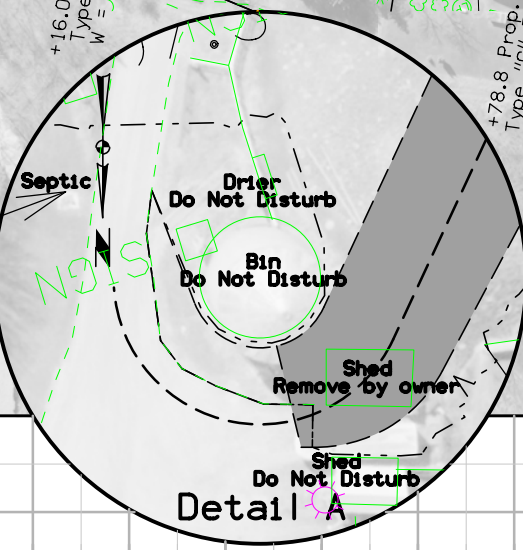
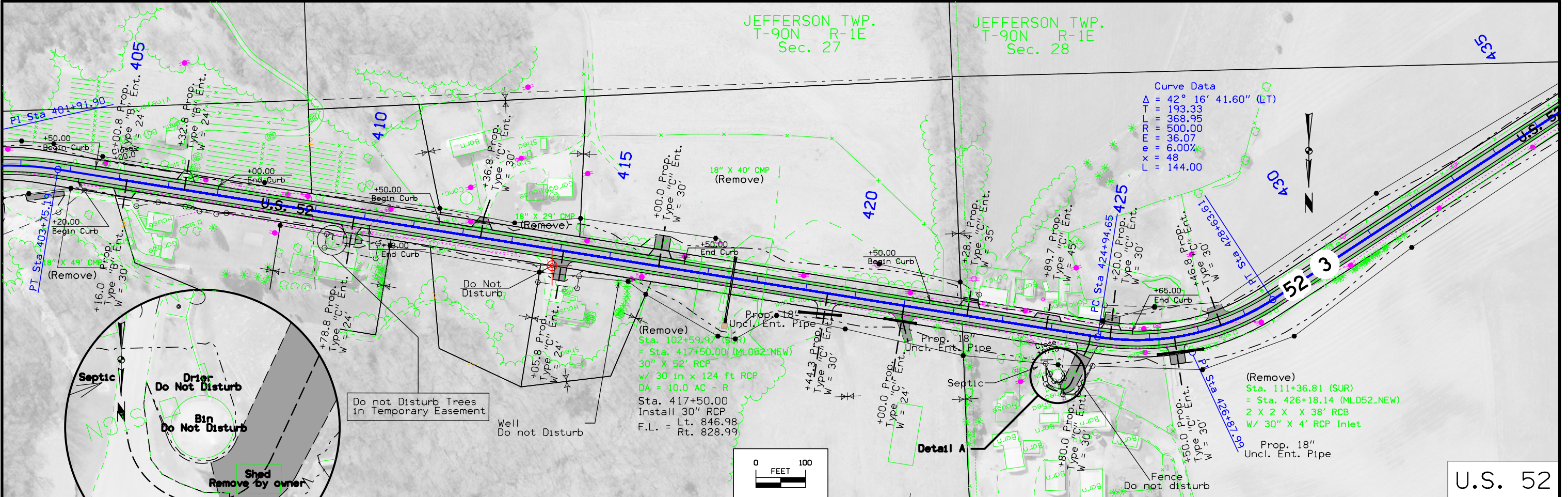
FILE NO.	ENGLISH	DESIGN TEAM	J1a \ Thiel	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-052-2(119)--3H-31	SHEET NUMBER	D.2
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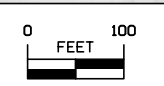
JEFFERSON TWP.
T-90N R-1E
Sec. 27

JEFFERSON TWP.
T-90N R-1E
Sec. 28

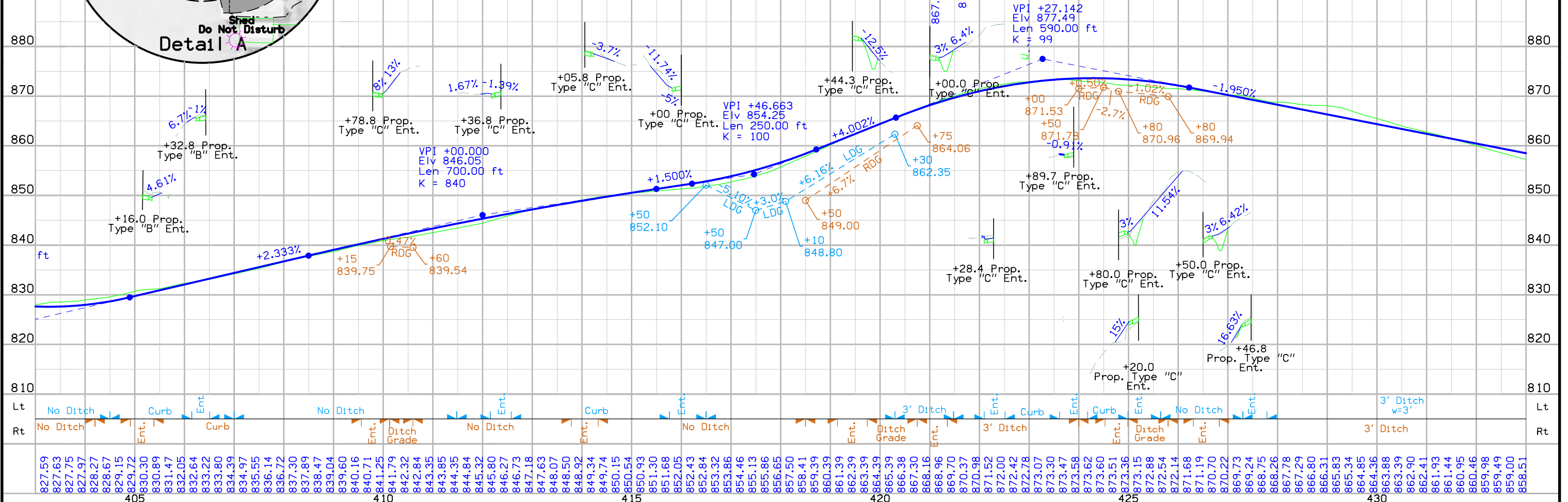
Curve Data
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T = 193.33
R = 368.95
M = 500.00
E = 36.07
e = 6.007
x = 48
L = 144.00



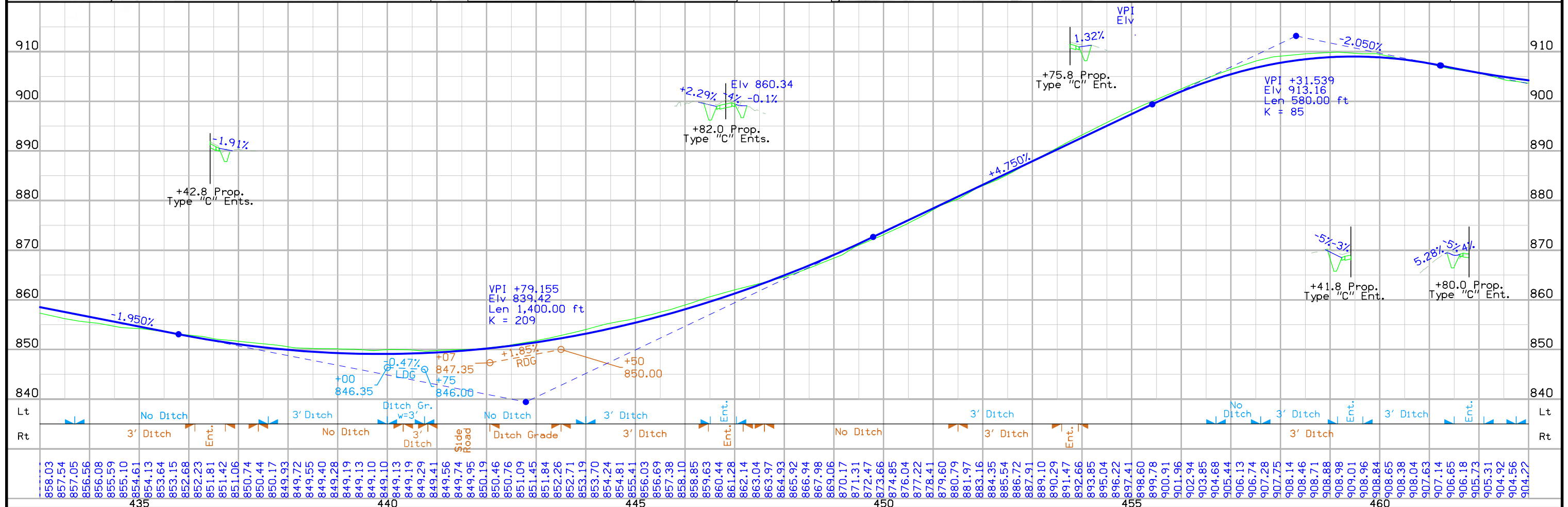
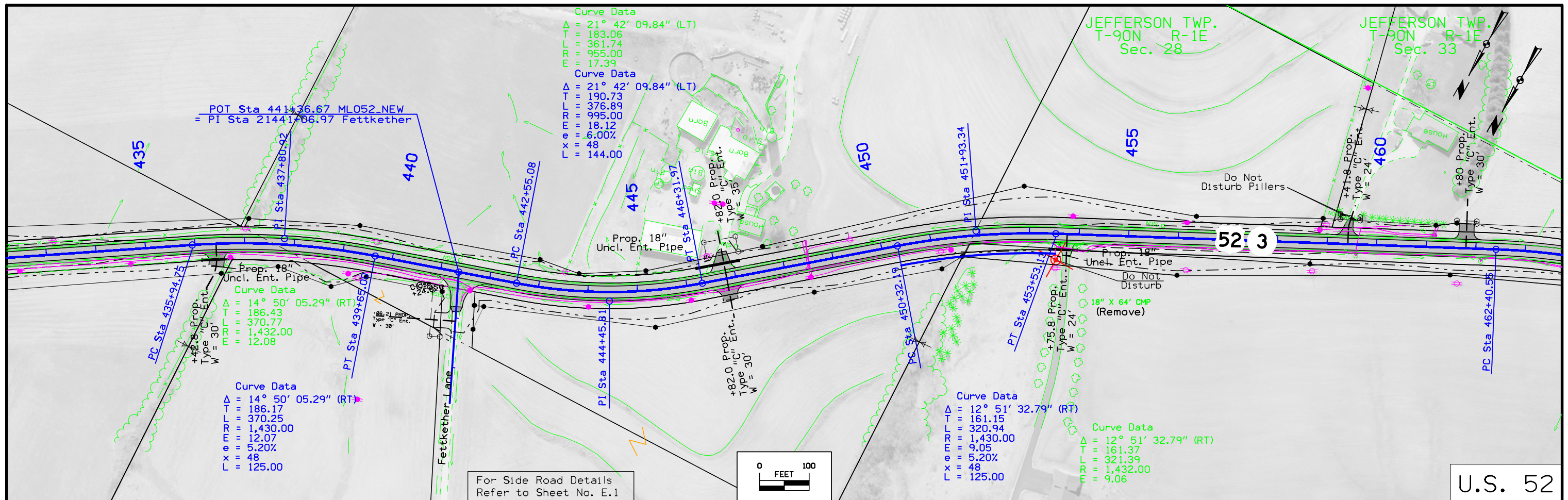
Do not Disturb Trees
in Temporary Easement



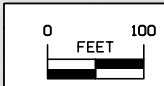
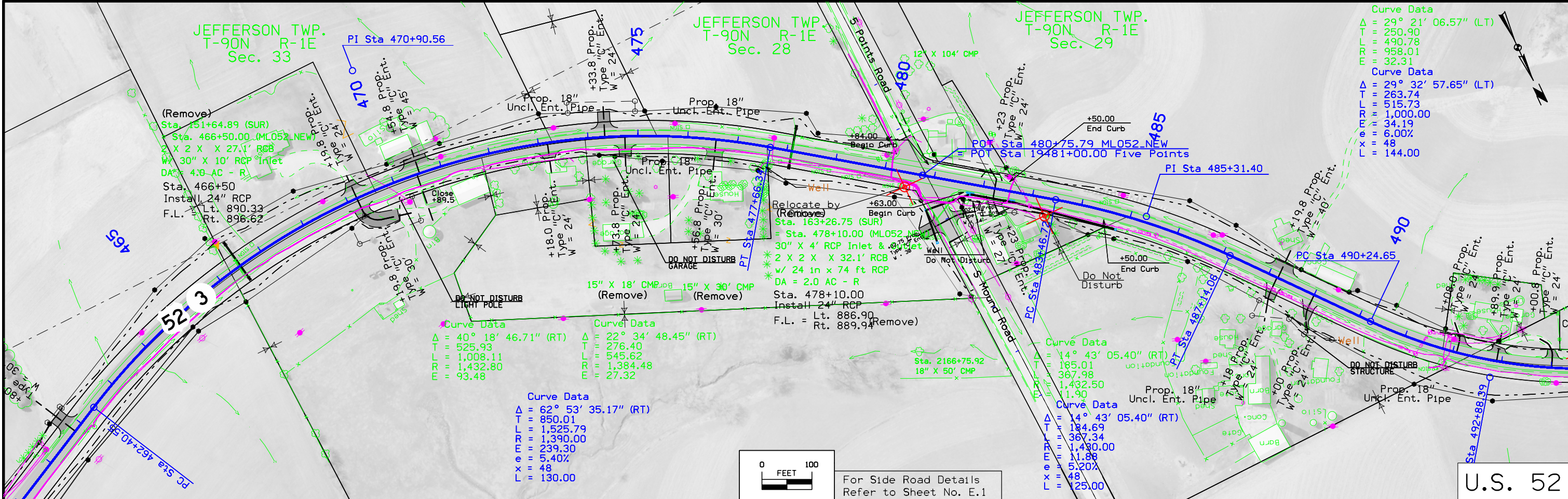
U.S. 52



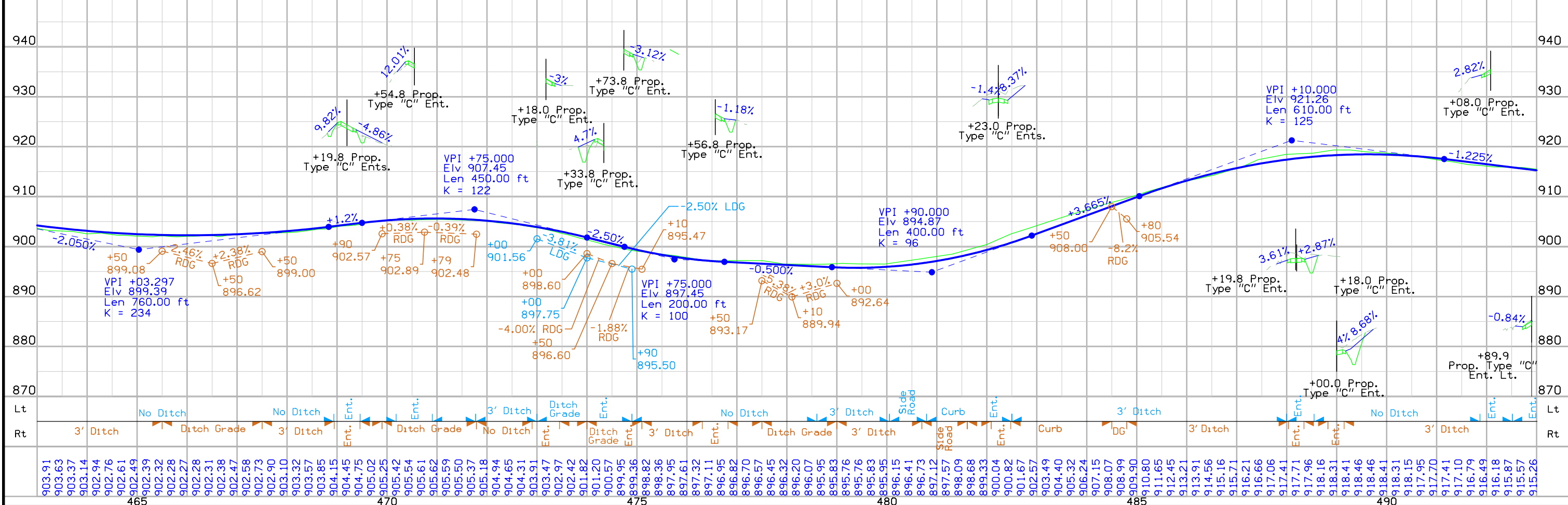
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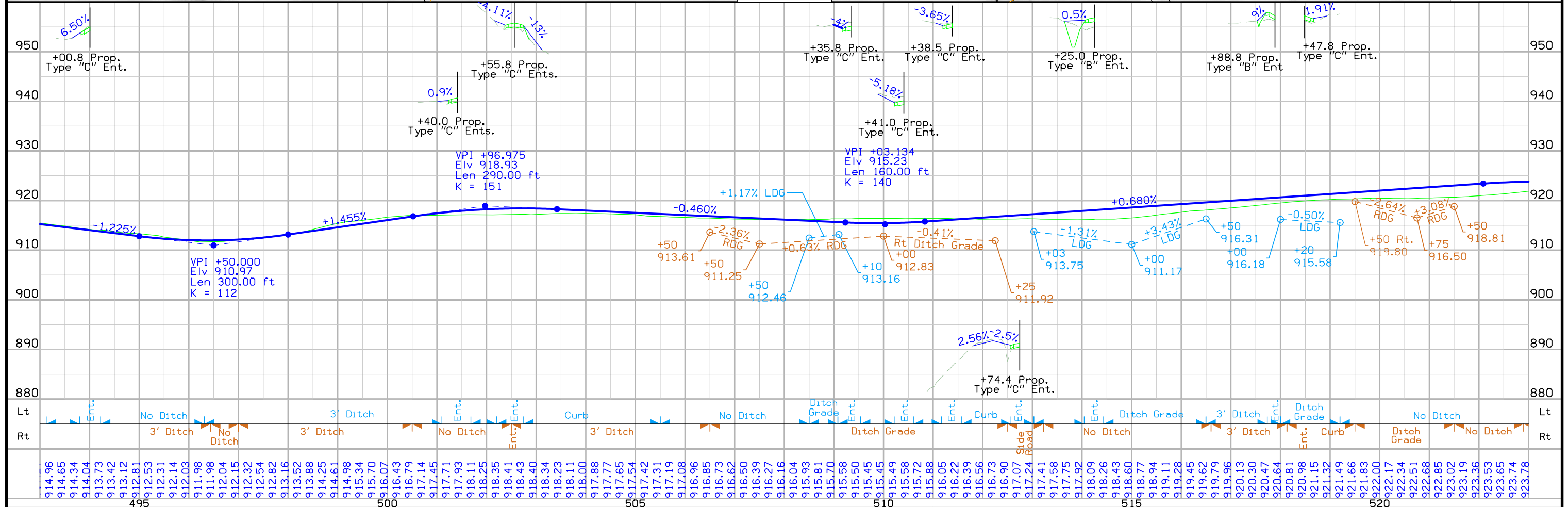
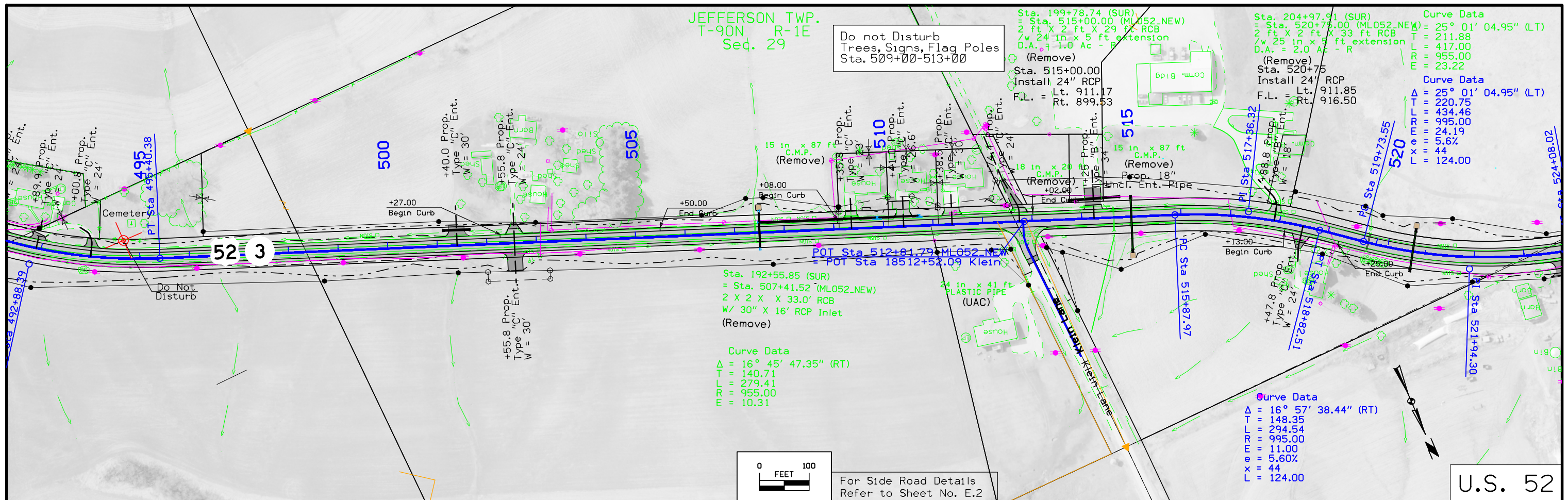
FILE NO.	ENGLISH	DESIGN TEAM	J1a \ Thiel	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-052-2(119)--3H-31	SHEET NUMBER	D.5
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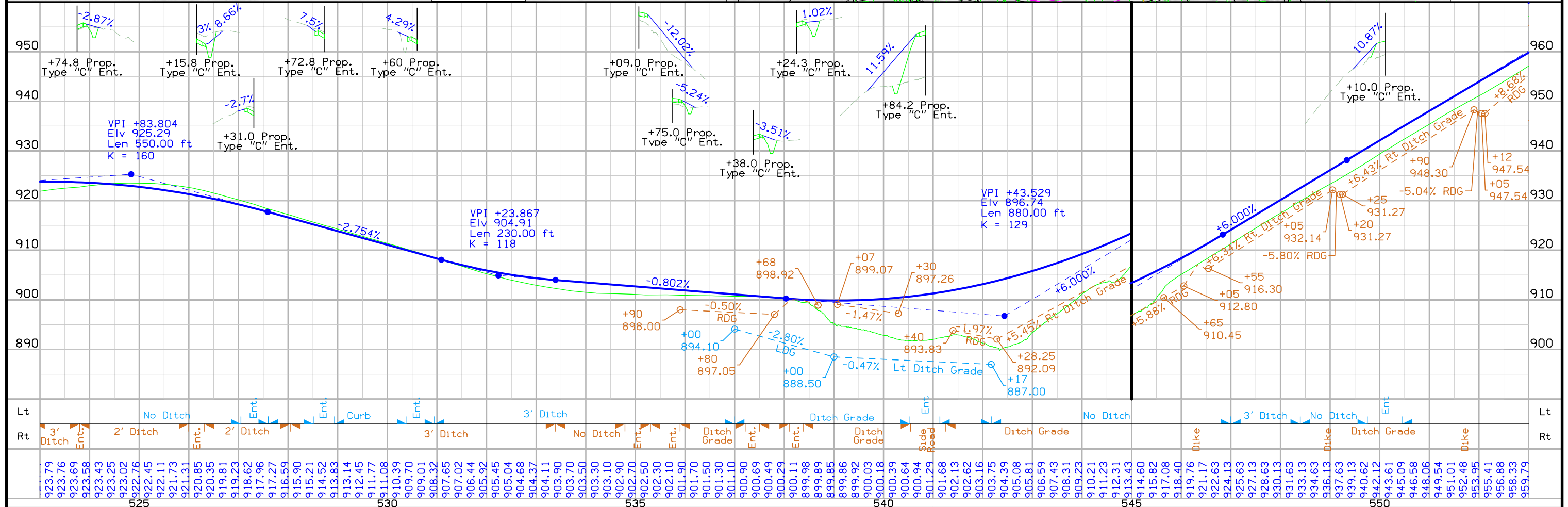
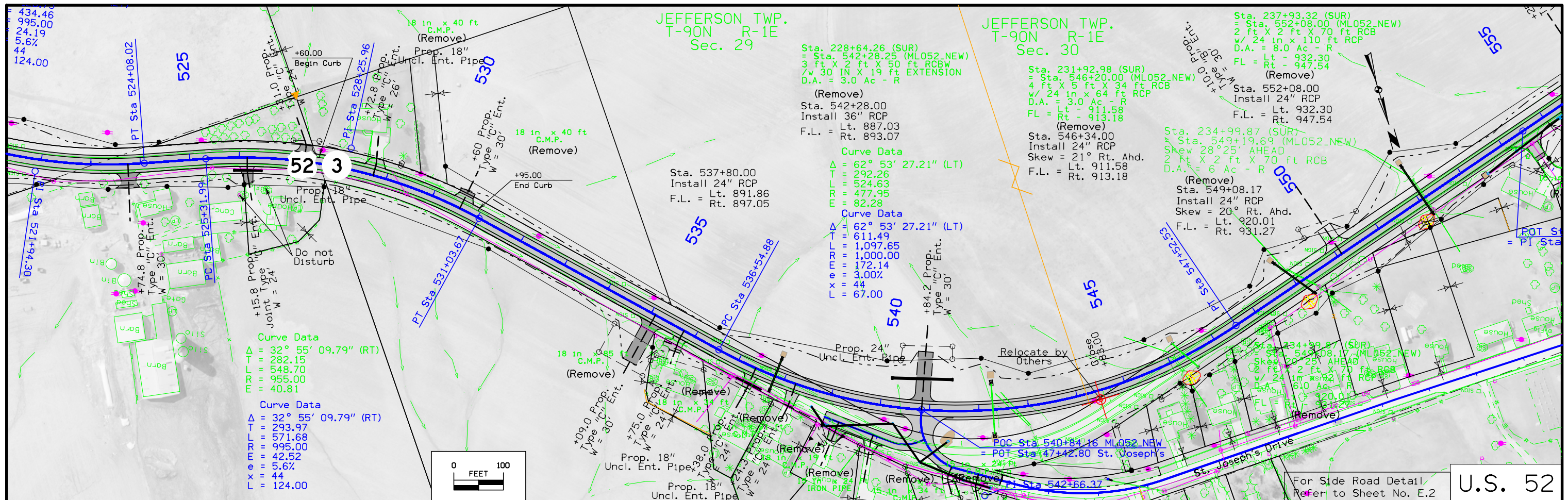
For Side Road Details Refer to Sheet No. E.1

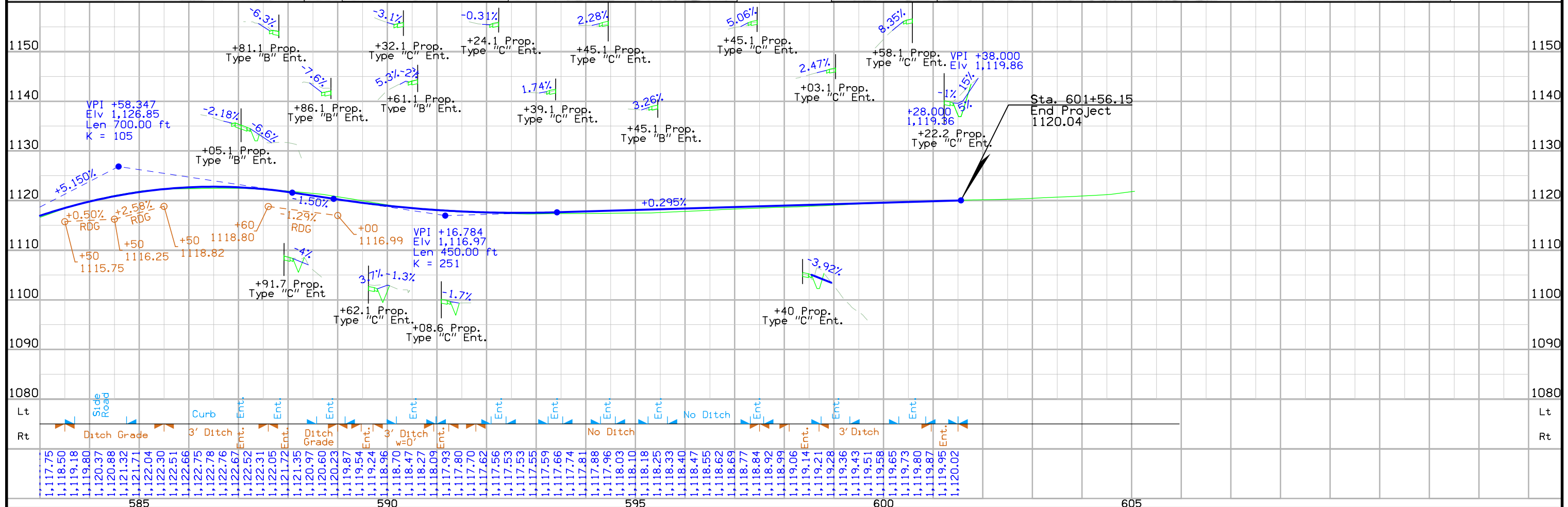
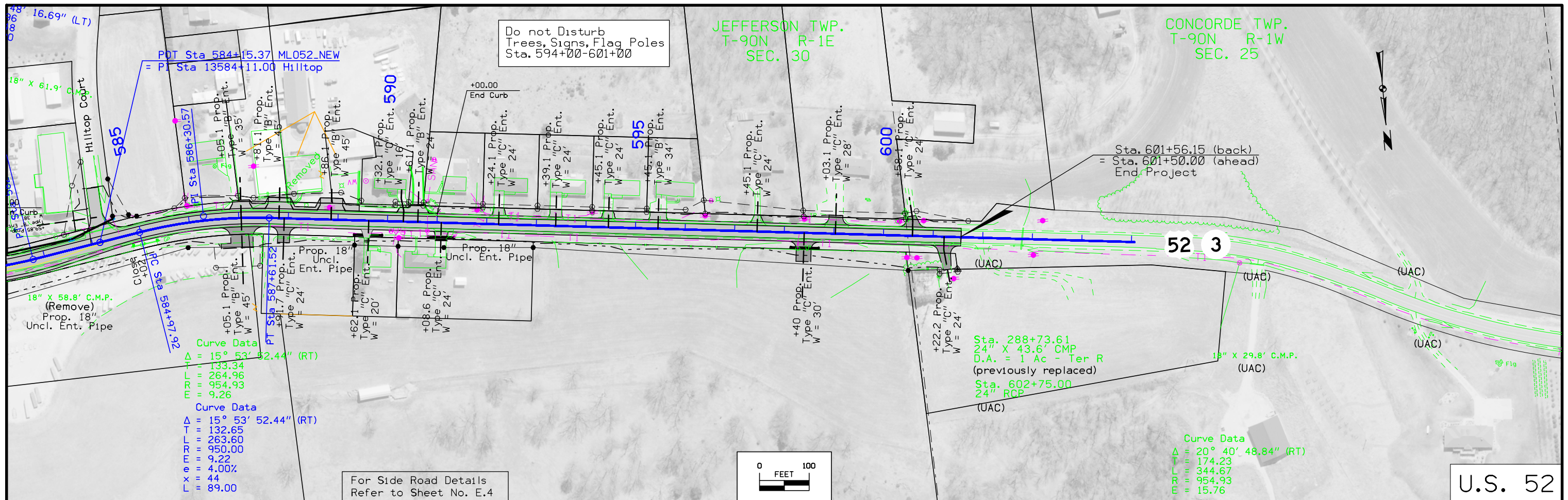


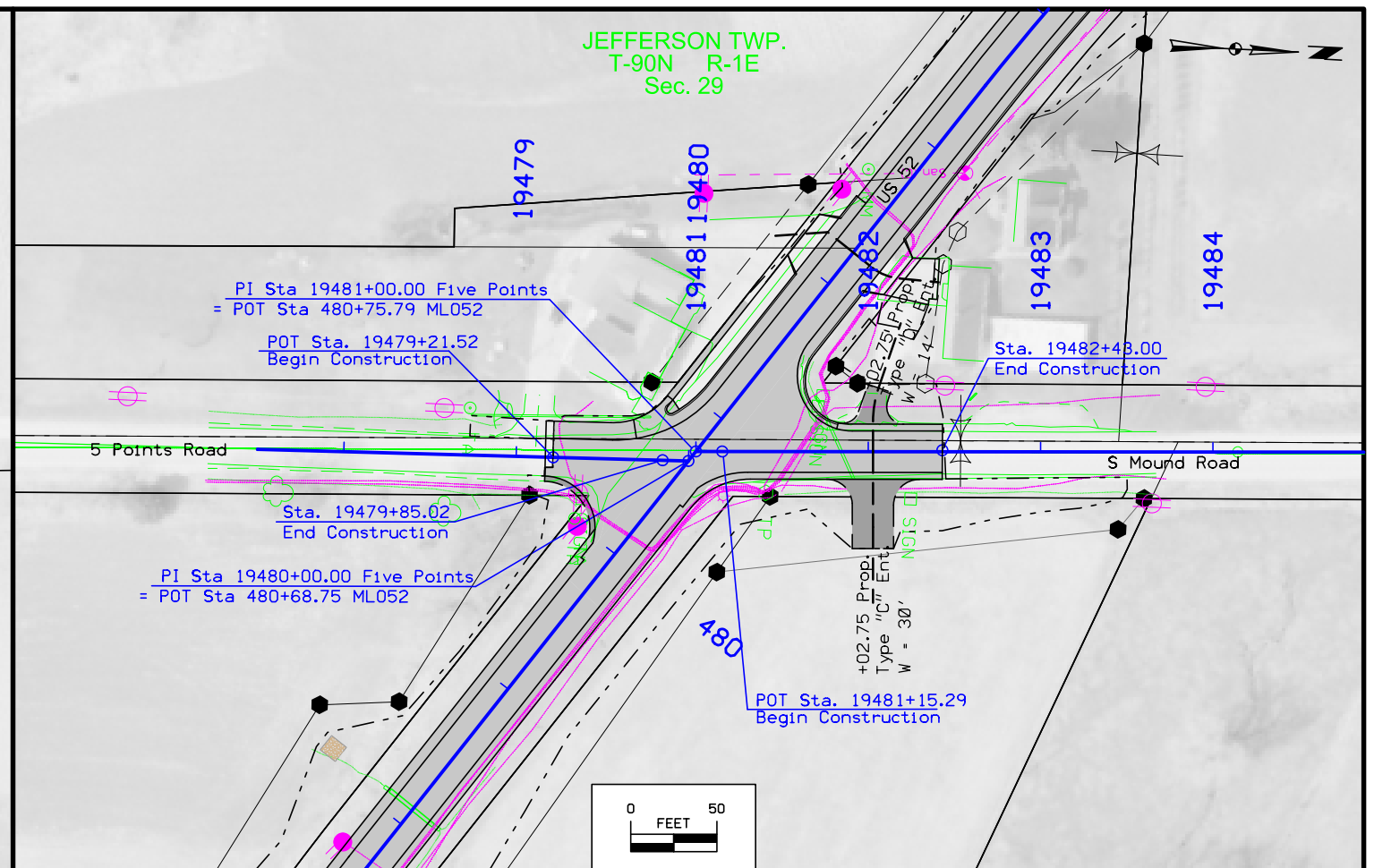
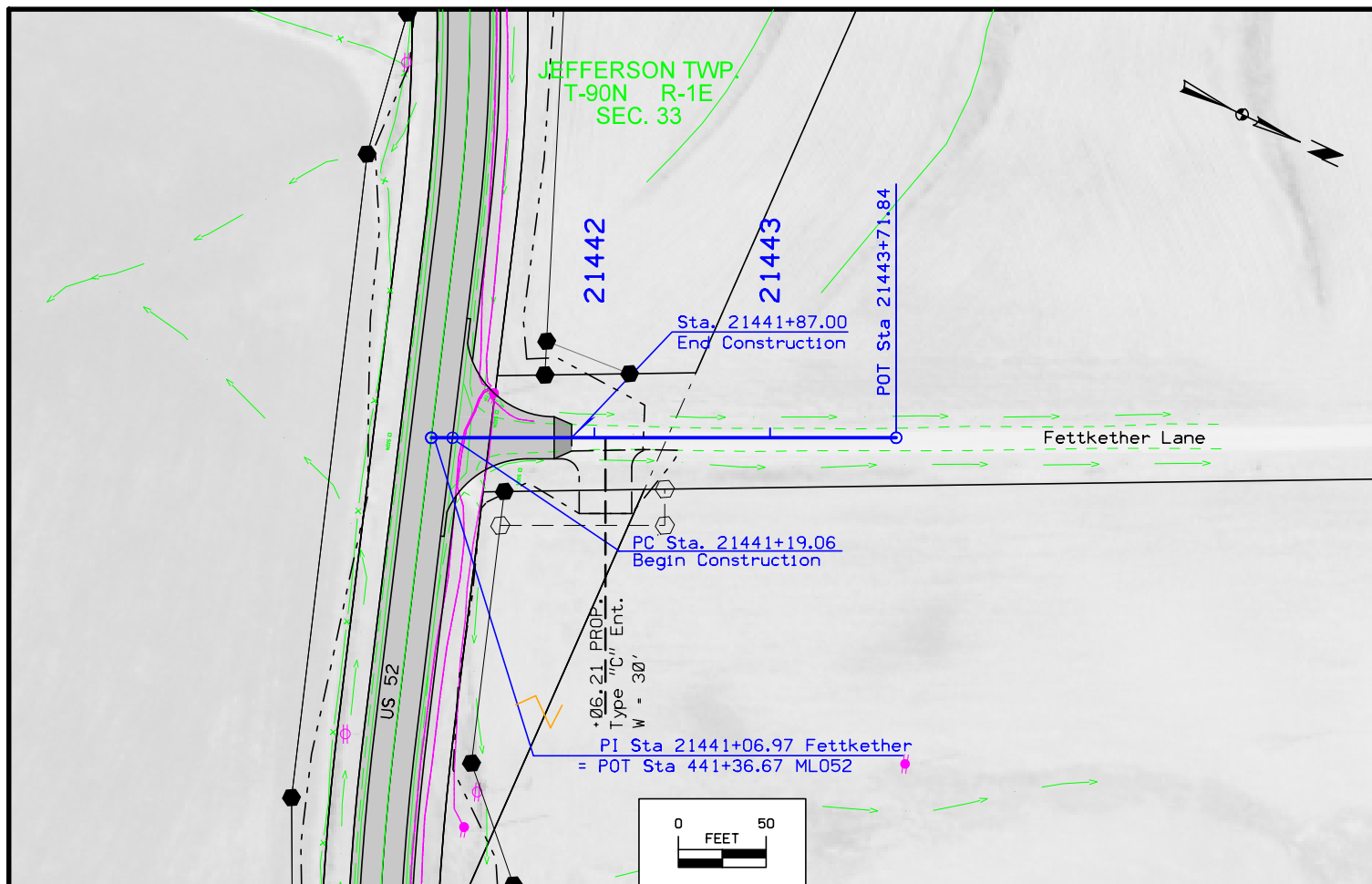
FILE NO.	ENGLISH	DESIGN TEAM	J1a \ Thiel	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-052-2(119)--3H-31	SHEET NUMBER	D.6
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FILE NO.	ENGLISH	DESIGN TEAM	J1a \ Thiel	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-052-2(119)--3H-31	SHEET NUMBER	D.7
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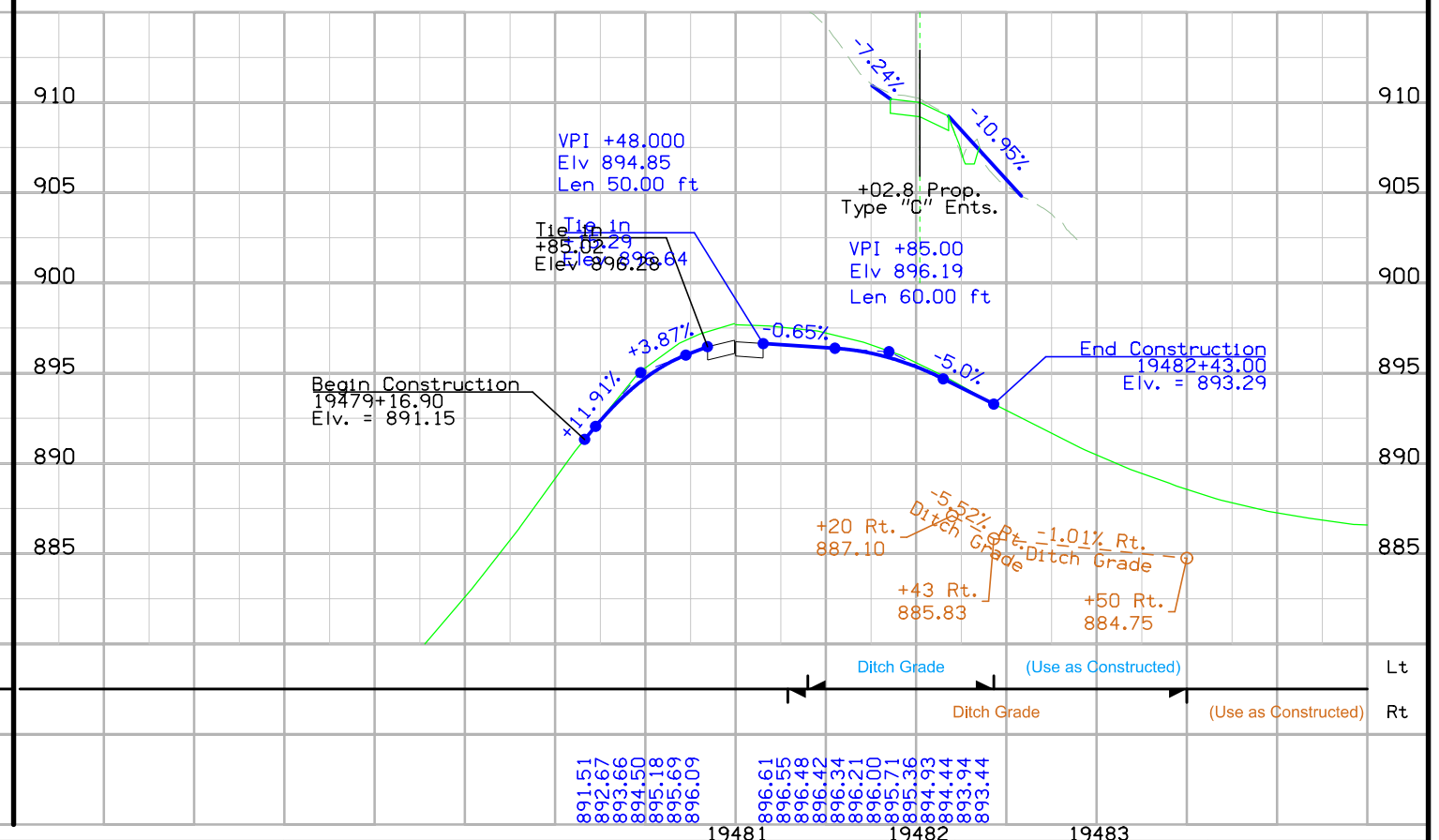
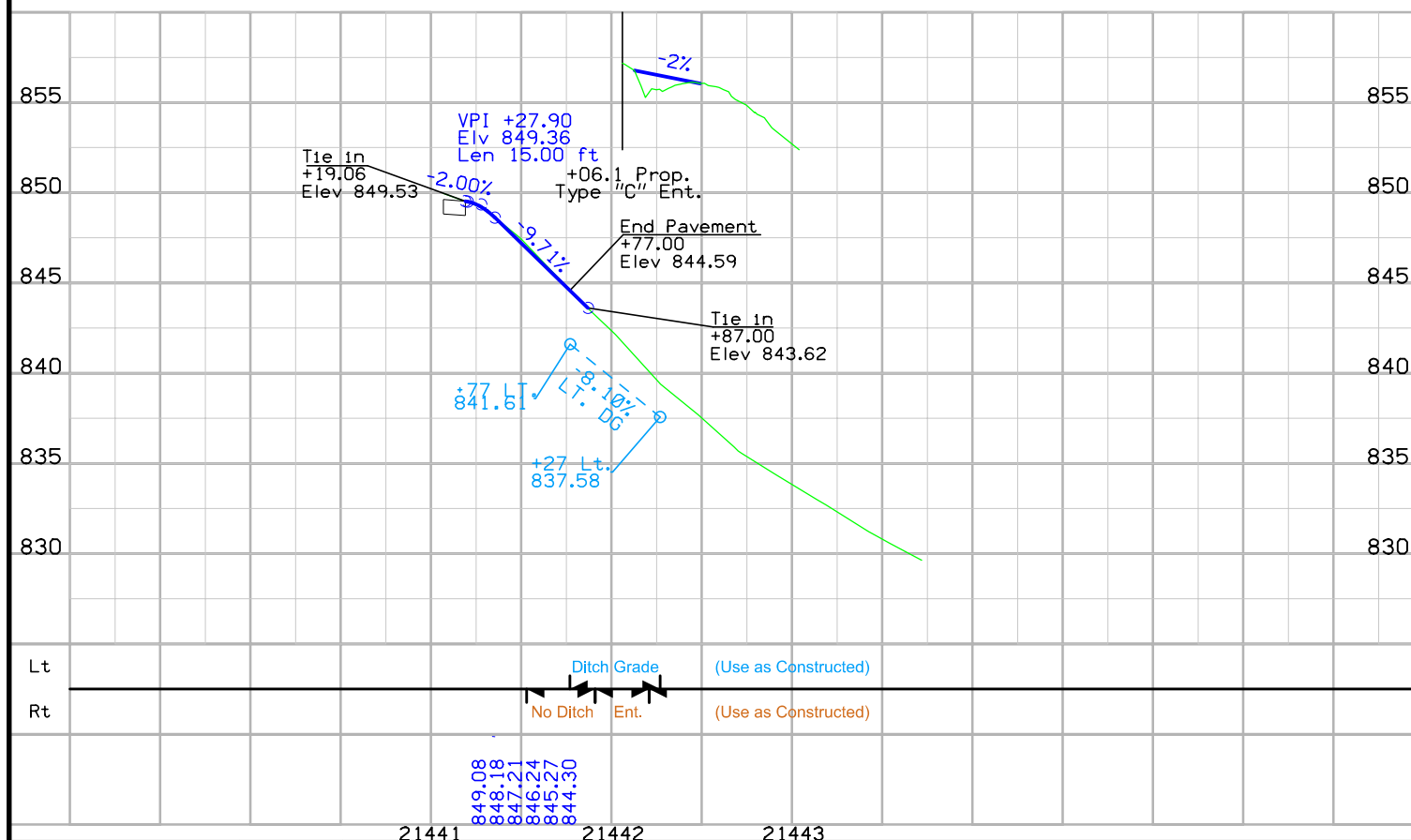


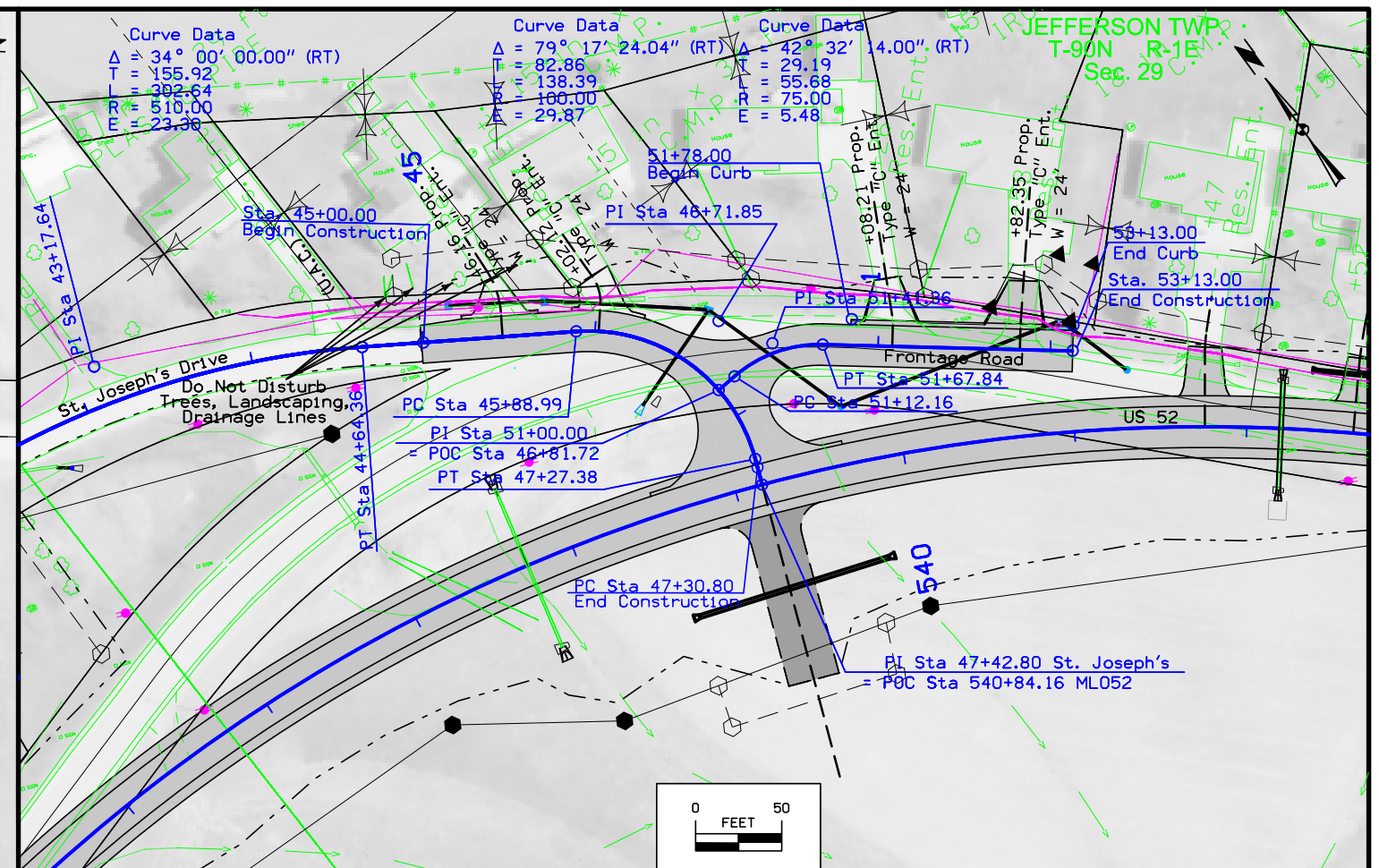
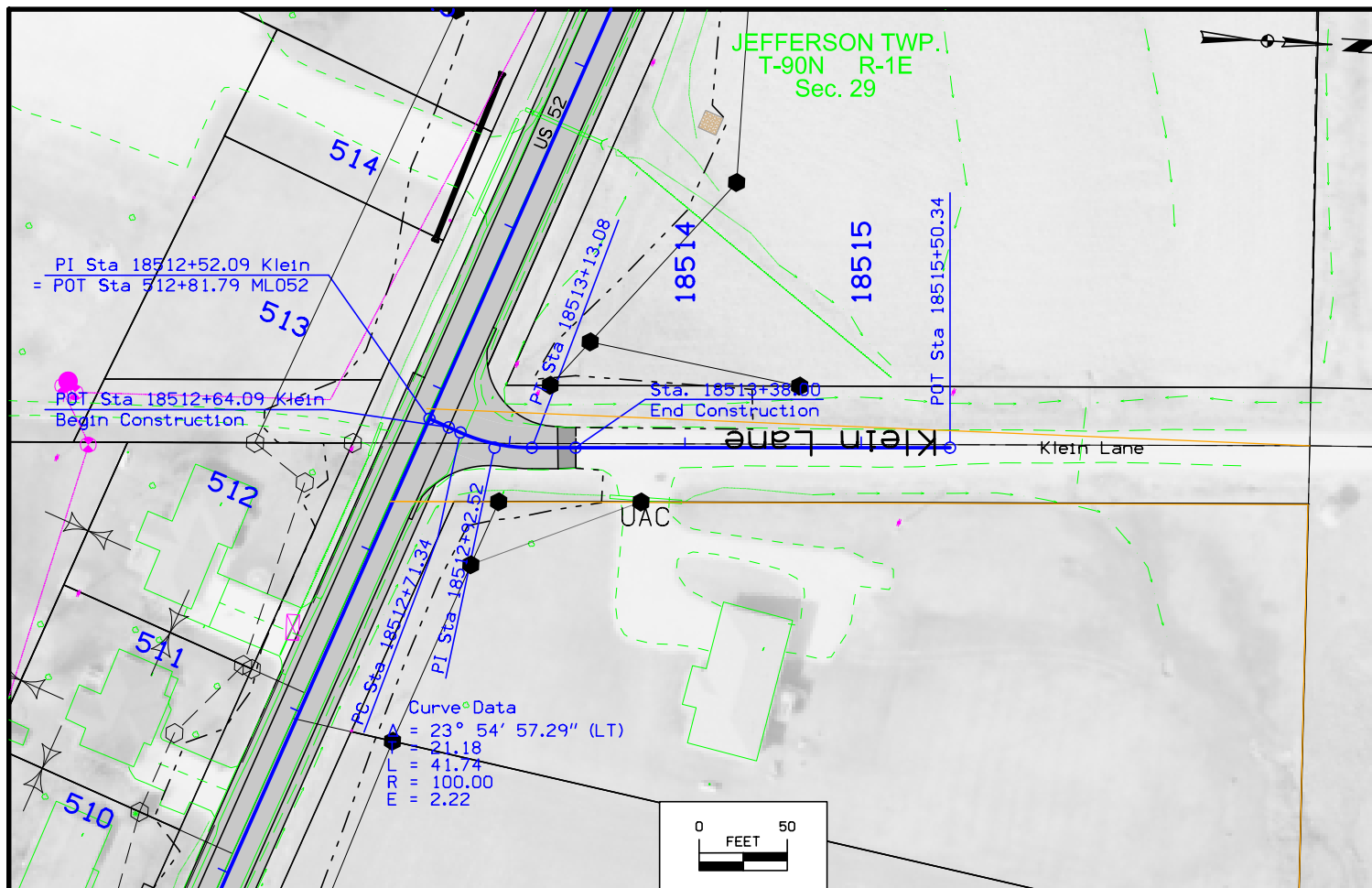


Fettkether Lane

5 Points Road

S Mound Road

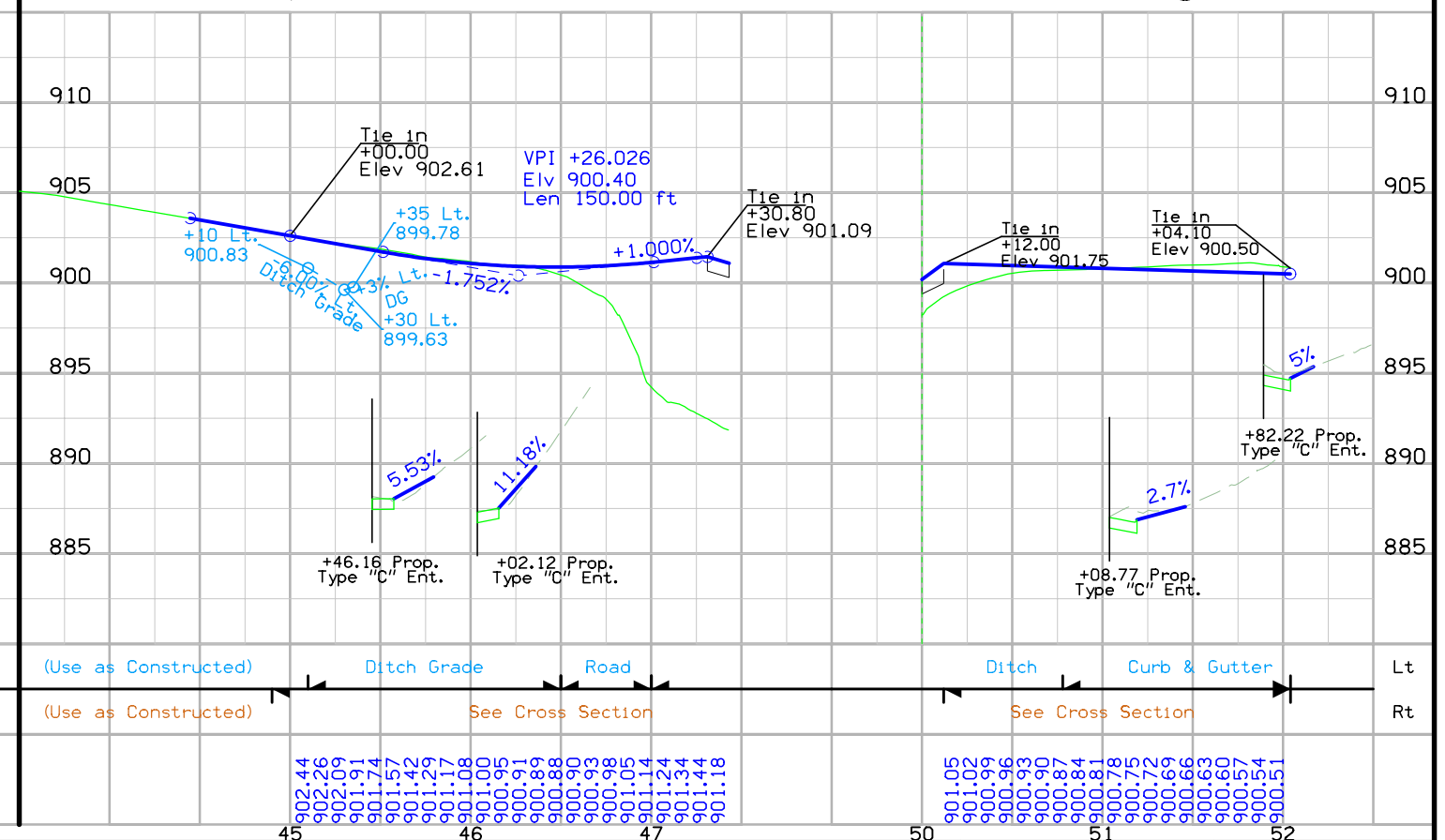
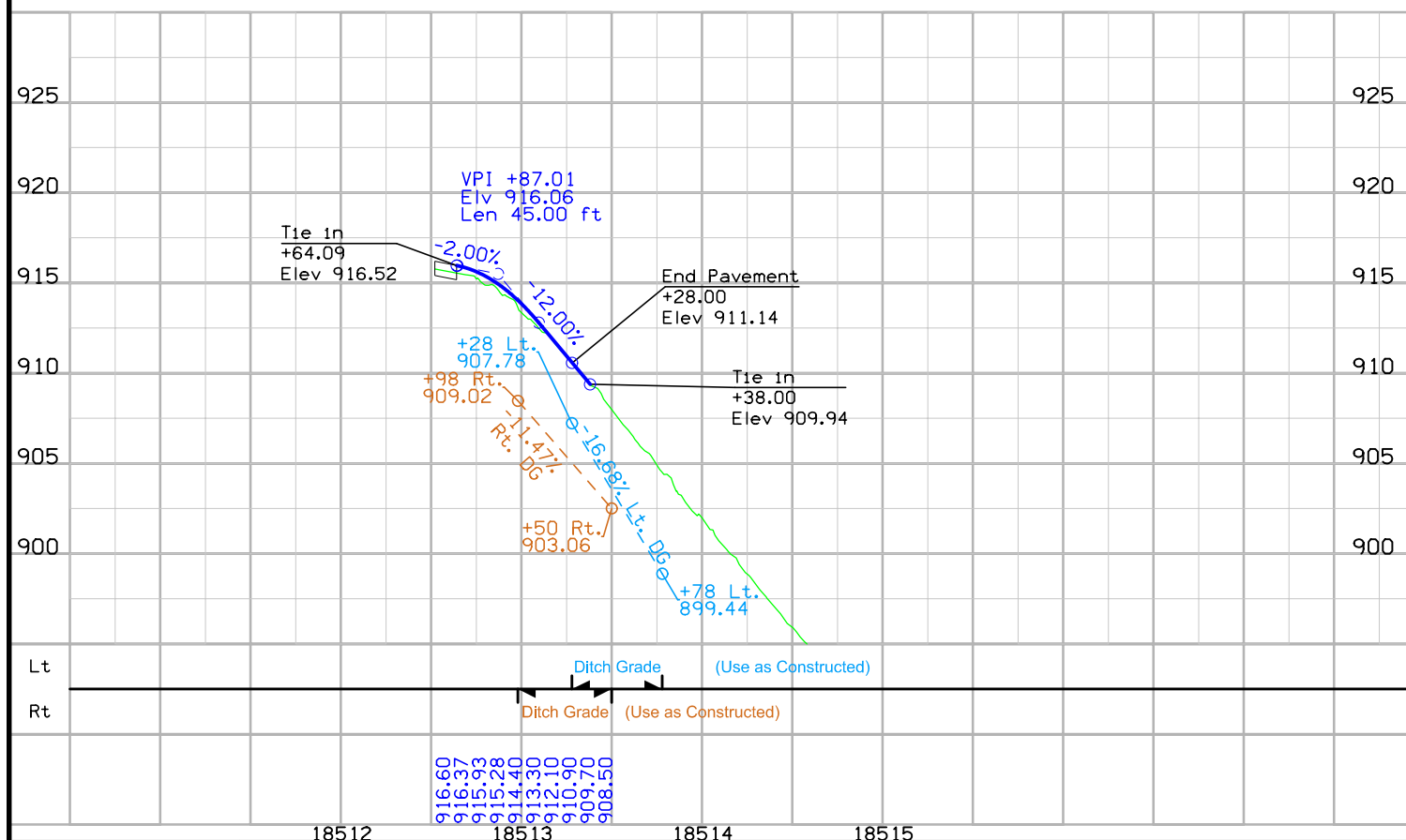


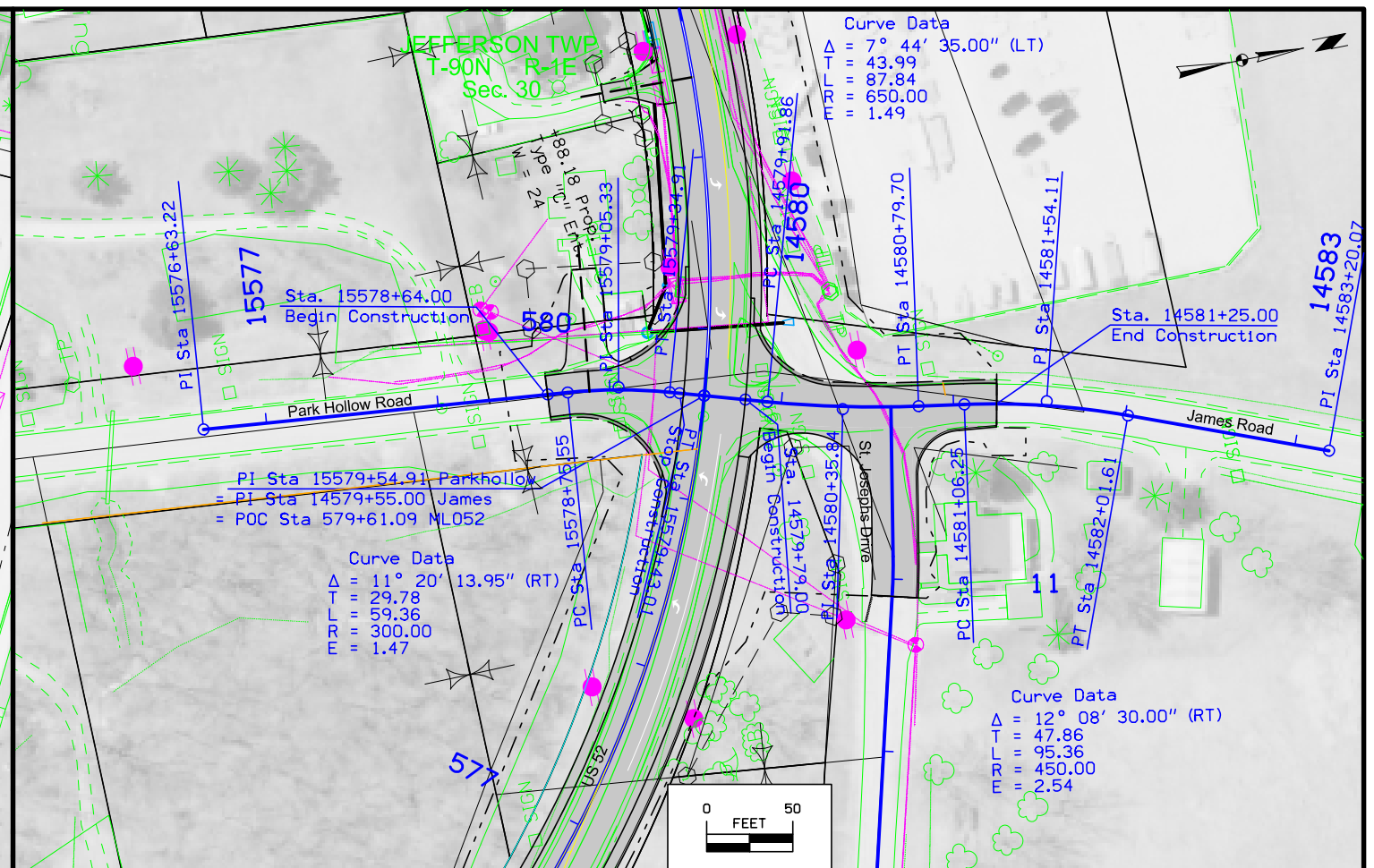
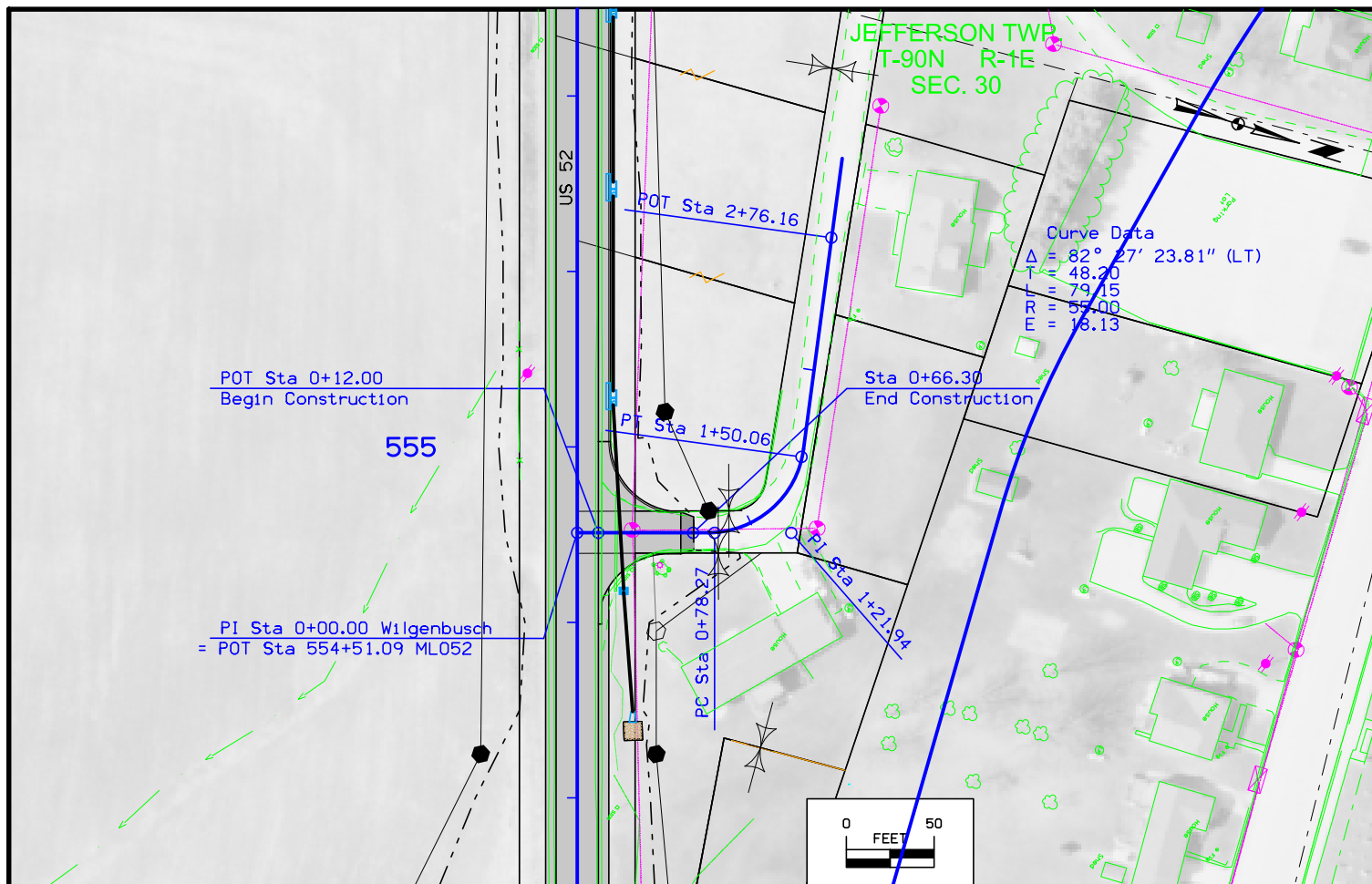


Klein Lane

St. Joseph's Drive (East)

Frontage Road

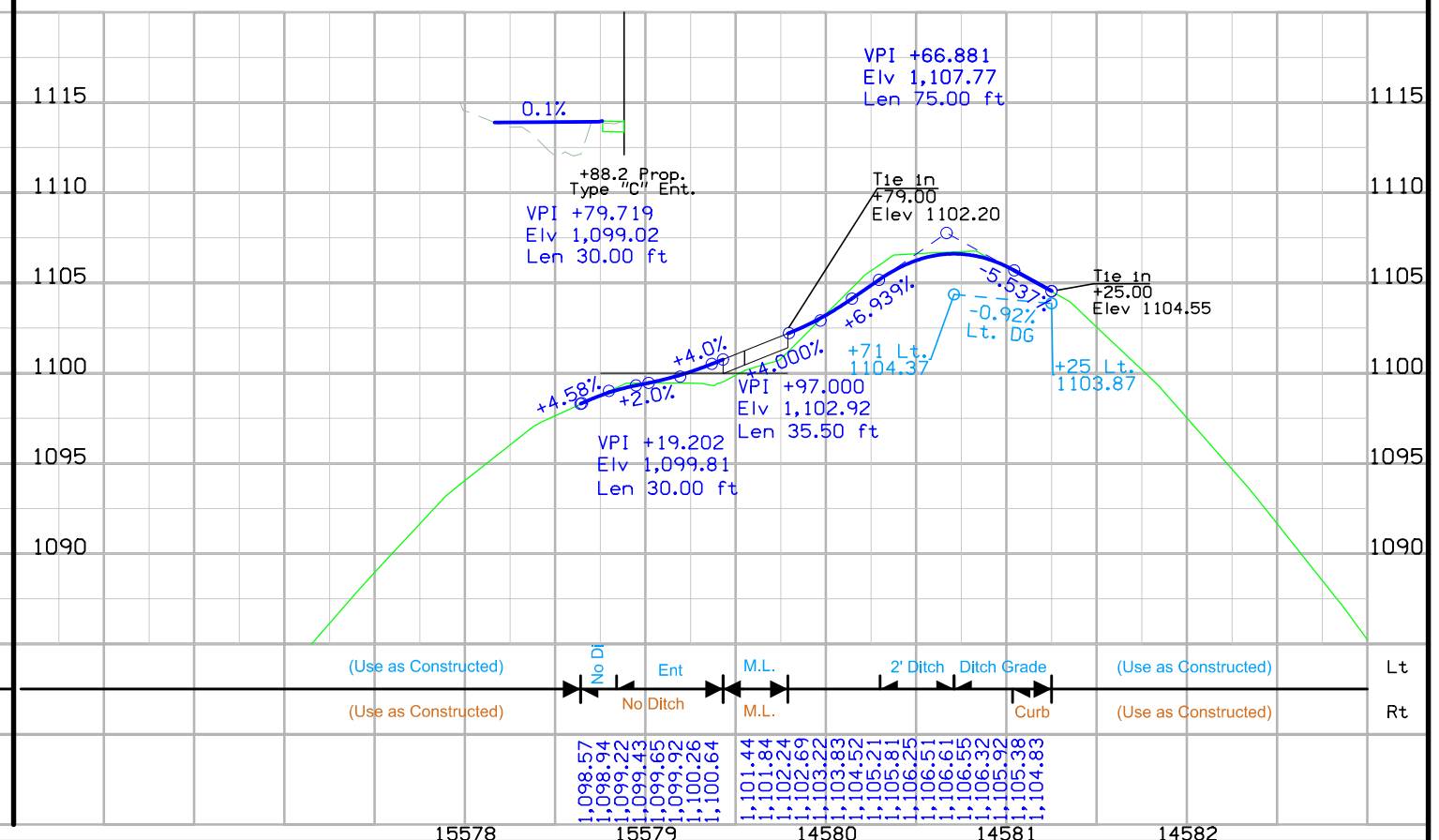
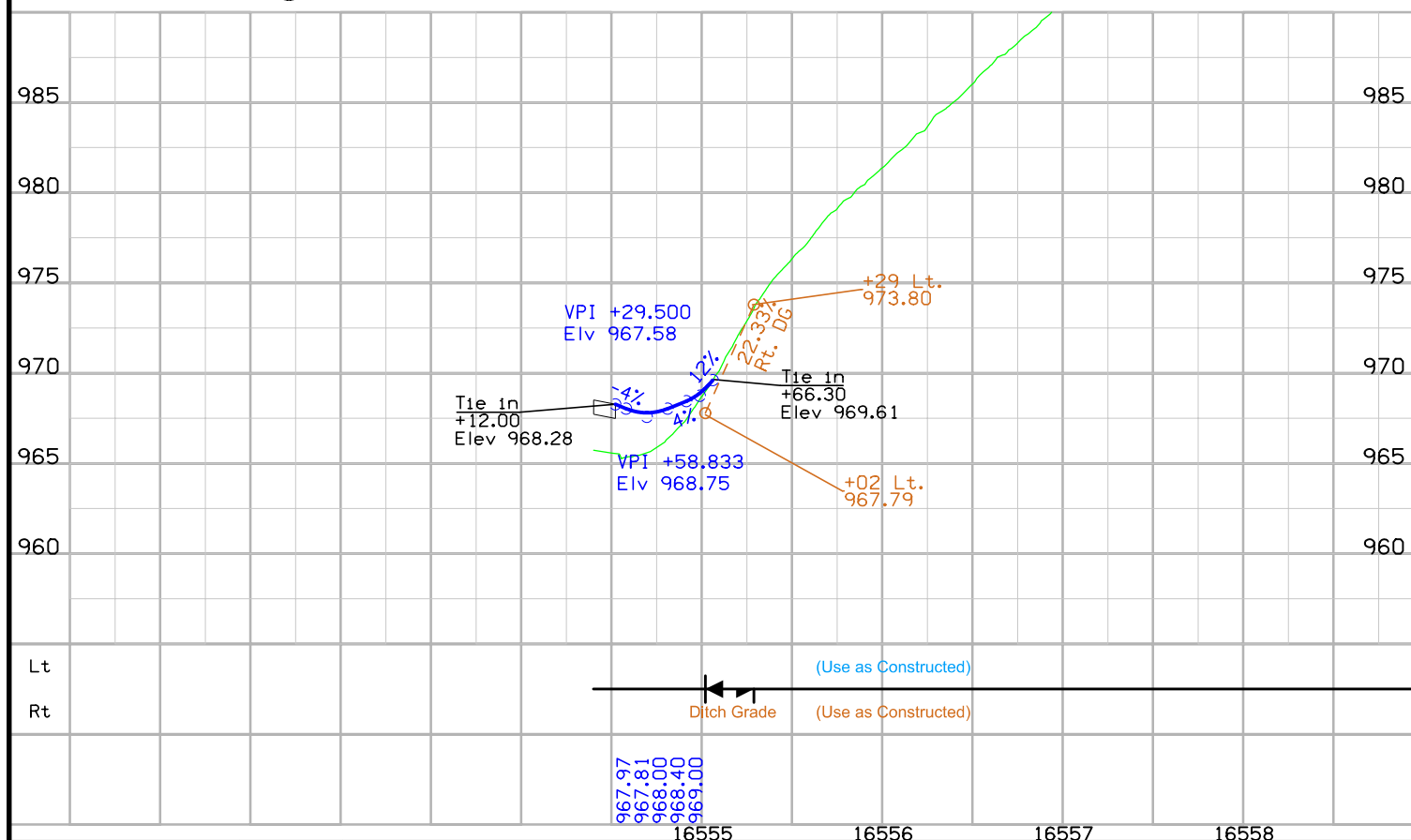




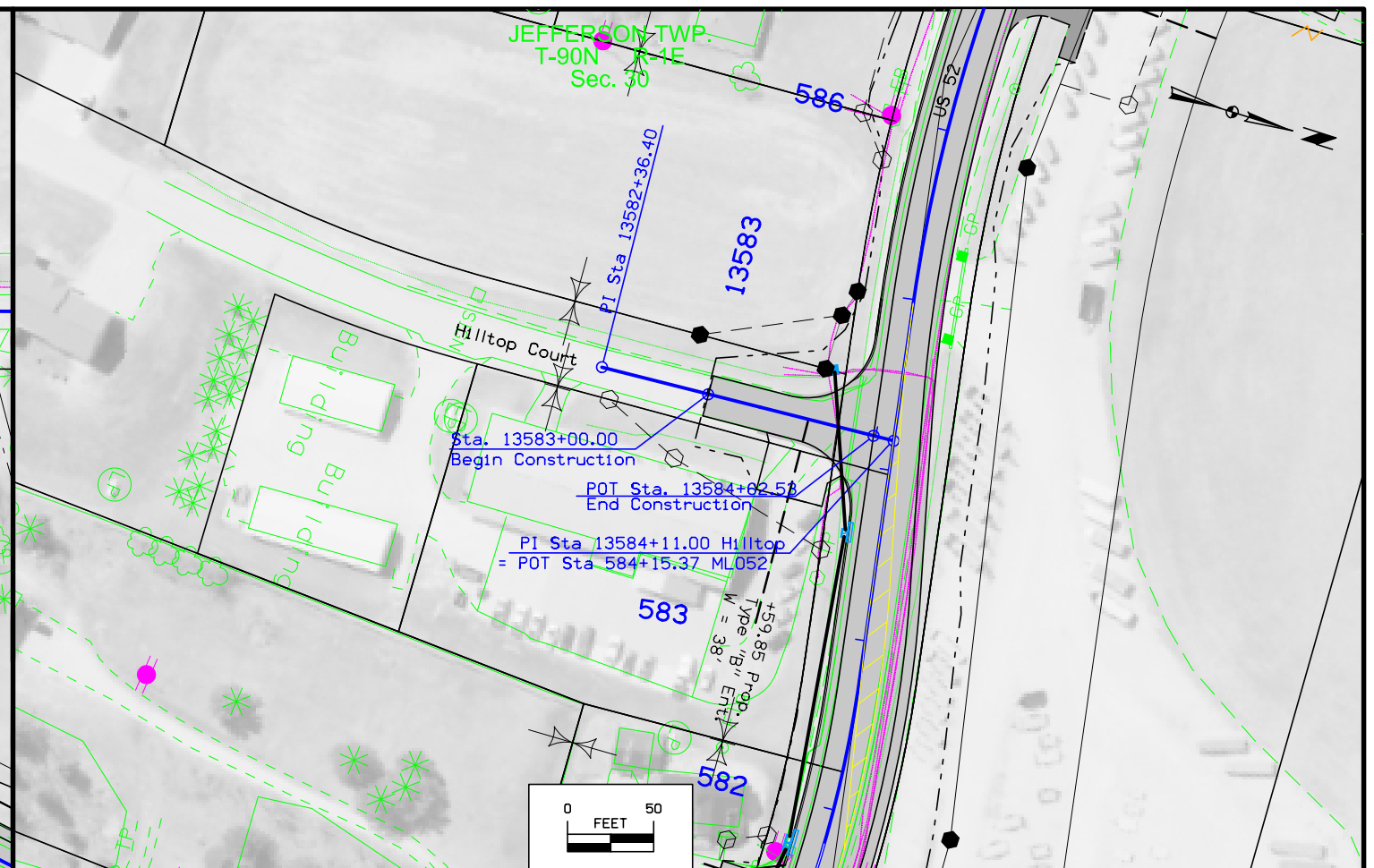
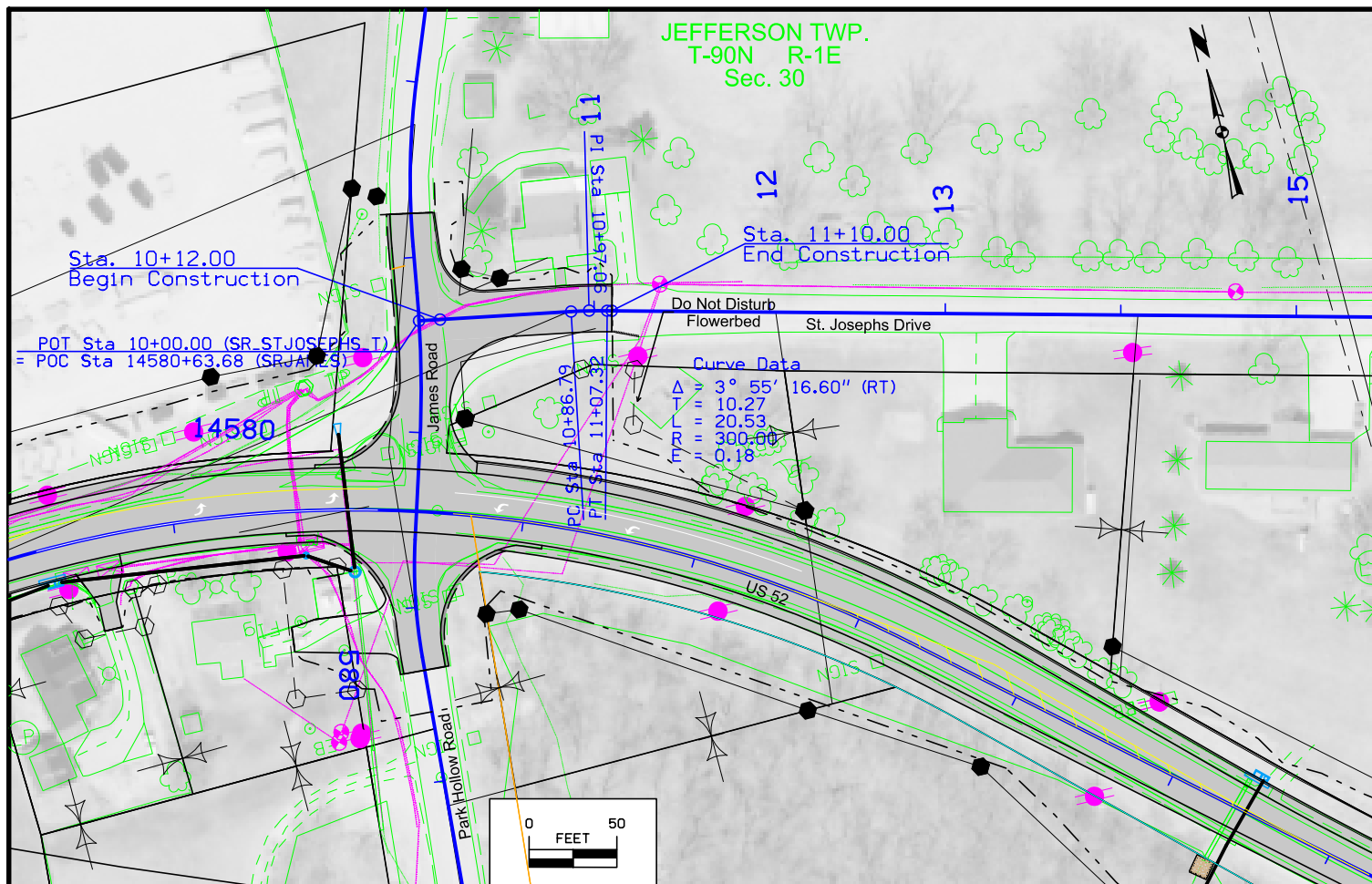
Wilgenbusch

Park Hollow Road

James Road

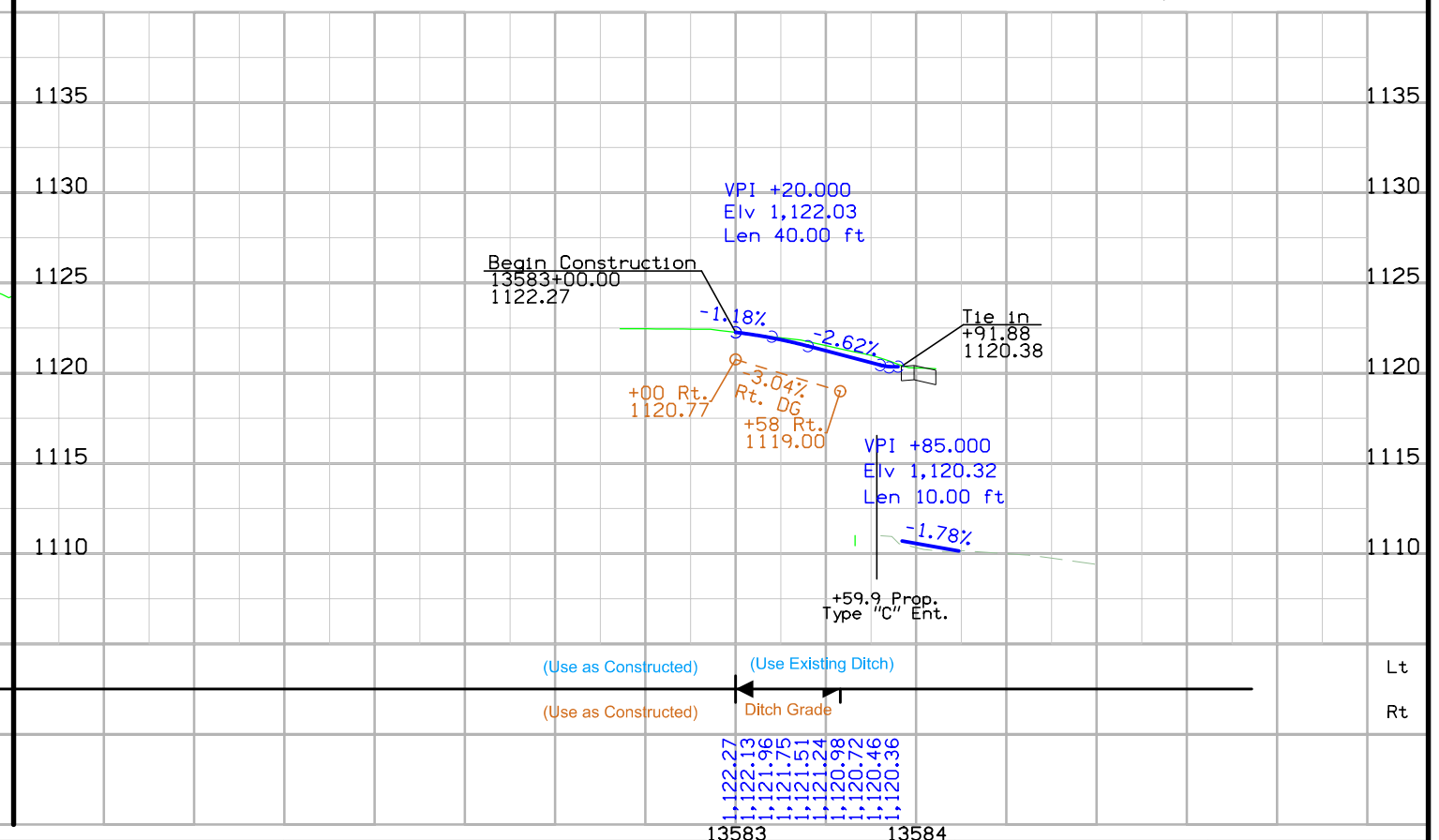
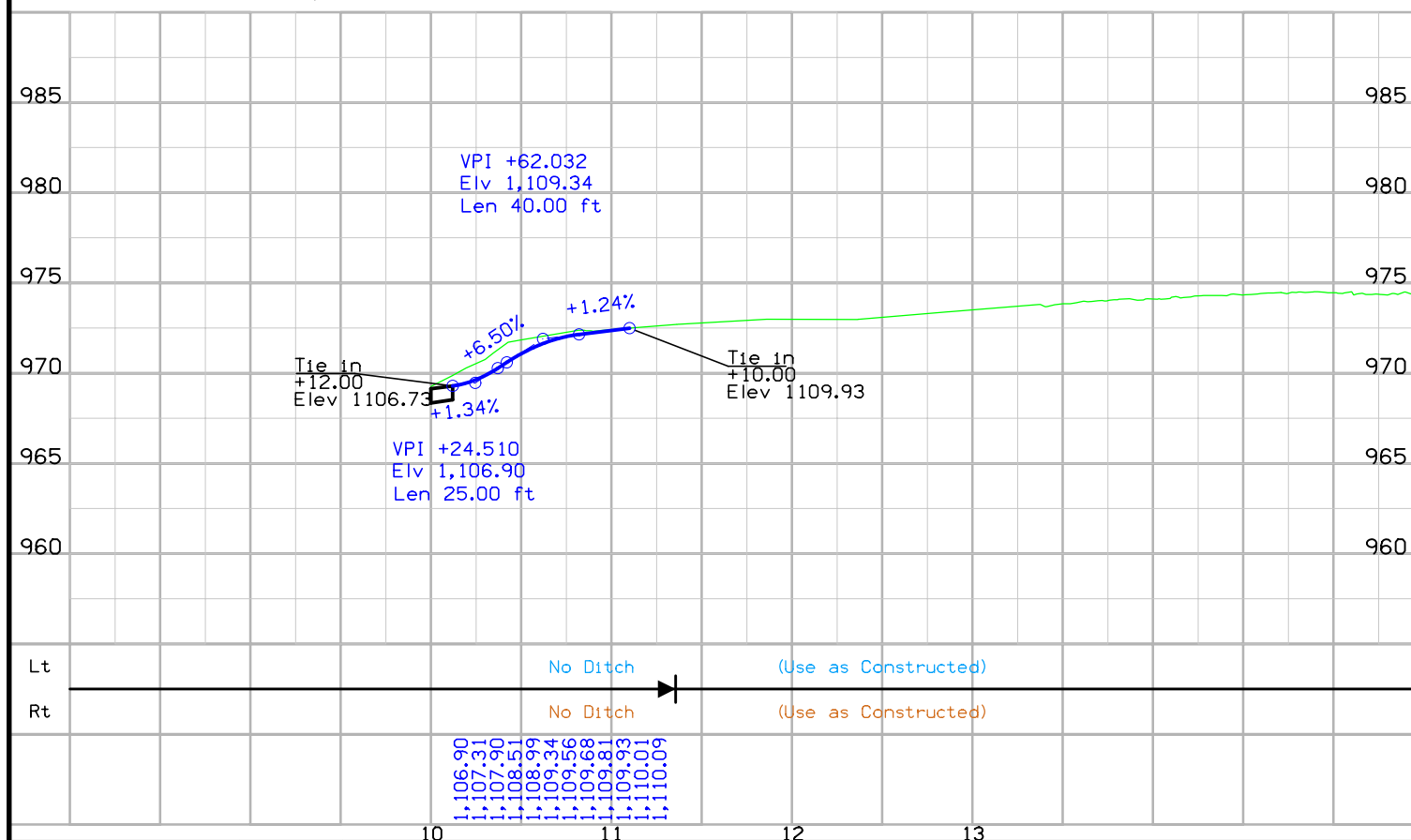


FILE NO.	ENGLISH	DESIGN TEAM J1a \ Thiel	DUBUQUE COUNTY	PROJECT NUMBER NHSX-052-2(119)--3H-31	SHEET NUMBER E.3
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St. Joseph's Drive (West)

Hilltop Court



Survey Information

General Information

Measurement units for this survey are US survey feet. This survey used IDOT Project control found in previous surveys.

Vertical Control

Vertical datum for this survey is NAVD 88 relative to National Geodetic Survey marks located throughout the project.

NGS 1st. Order Class I mark designated A178 has a published Elev. Of 1121.97
Survey Elev. = 1121.97

NGS 1st. Order Class I mark designated F178 has a published Elev. Of 1101.50
Survey Elev. = 1101.50

NGS 1st. Order Class I mark designated H178 has a published Elev. Of 1133.84
Survey Elev. = 1133.84

Horizontal Control

A National Geodetic Survey marker was used to transfer NAD 83 (2011) Iowa State Plane North Zone (US Survey Feet) coordinates to Project Control. Redundant RTK observations were used to verify the published values. The project coordinates are scaled around NGS Pt. A178 at 3687343.14 N, 5619919.96 E, 1121.97 EL. Additional control points were placed throughout the project using a GNSS Base-Rover setup relative to Pt. A178. A minimum of three observations with appropriate time spans between were averaged. The horizontal standard deviation of these observations was less than 0.03 ft. at 95% confidence level (2 sigma).

Alignment Information

The horizontal alignment for this survey is a retrace of the FN-3-9(21)—21-31 1966 As-built Plan. Stationing was backed up and carried forward from PI Sta 50+38.1 without equation to EOP at Sta 255+49.877. A number of Reference Ties to Conc. Monuments were found in the IDOT Reference recovery notes, these points as well as others were located and used to create an assortment of PC, PT and PI points along the corridor. Of the Ref Ties that were found, a number of these ties have been damaged, damage included extreme leaning and or the tops were broken off. Every attempt was made to duplicate and match the AB plan curve deltas, tangents and radius lengths as closely as possible. When no other option was available, we had to rely upon roadway splits to generate the tangents. The final alignment differs from AB Plan stationing in a range of zero and six feet along this 4-½ mile alignment. This alignment has nineteen curves.

The highway appears to be a little different than the AB Plan and the AB Plan equations found between Sta 32+41.08 to Sta 35+80.

Station Equations are as follows:

CP Sta 32+41.080 This Survey =
CP Sta 32+36.3 FN-3-9(21)—21-31 1966 As-built Plan

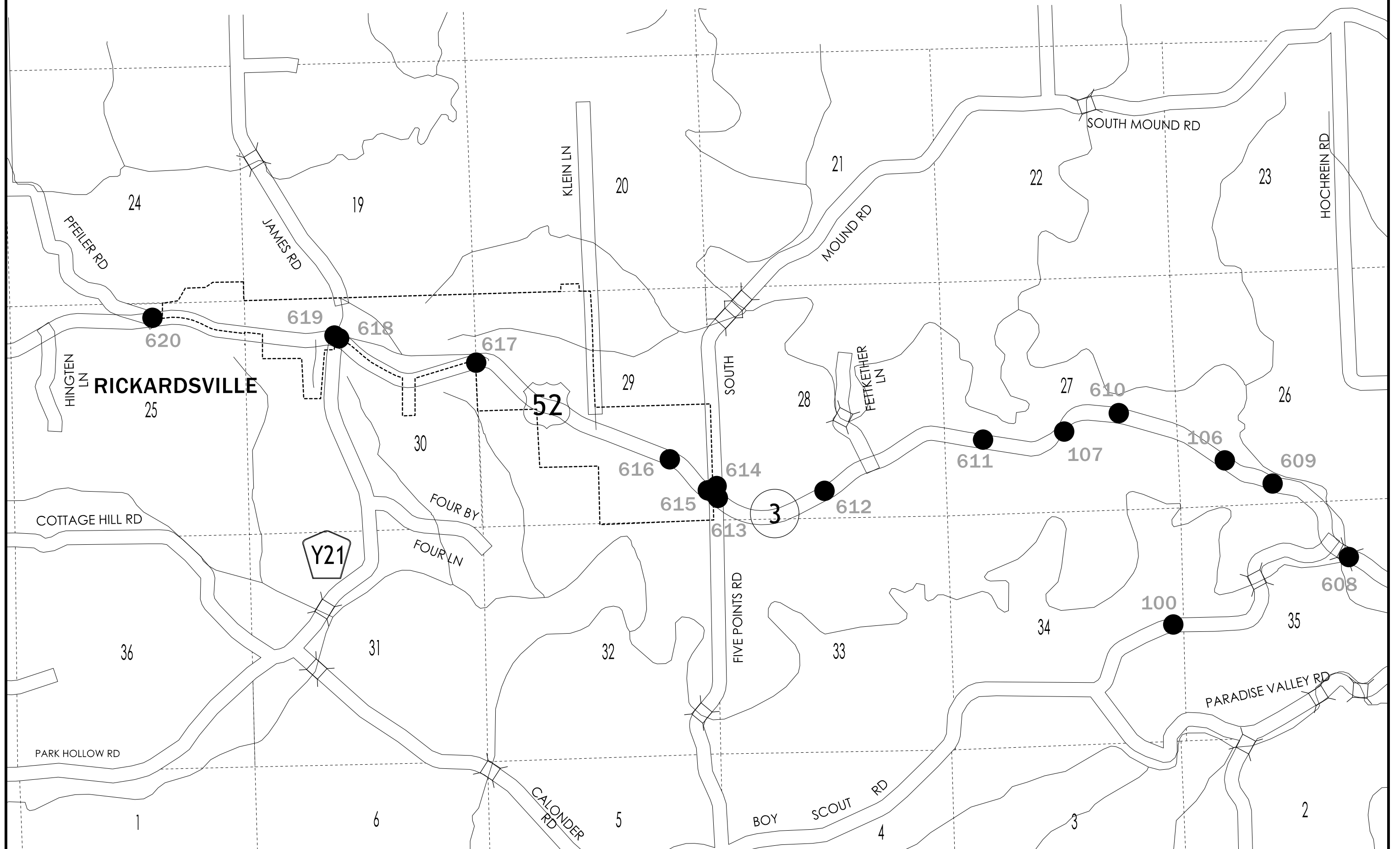
PI Sta 50+38.1 this survey =
PI Sta 50+38.1 FN-3-9(21)—21-31 1966 As-built Plan.

PC Sta 255+49.877 Back =
PC Sta 255+59.5 FN-3-9(21)—21-31 1966 As-built Plan. Ahead

VERTICAL CONTROL

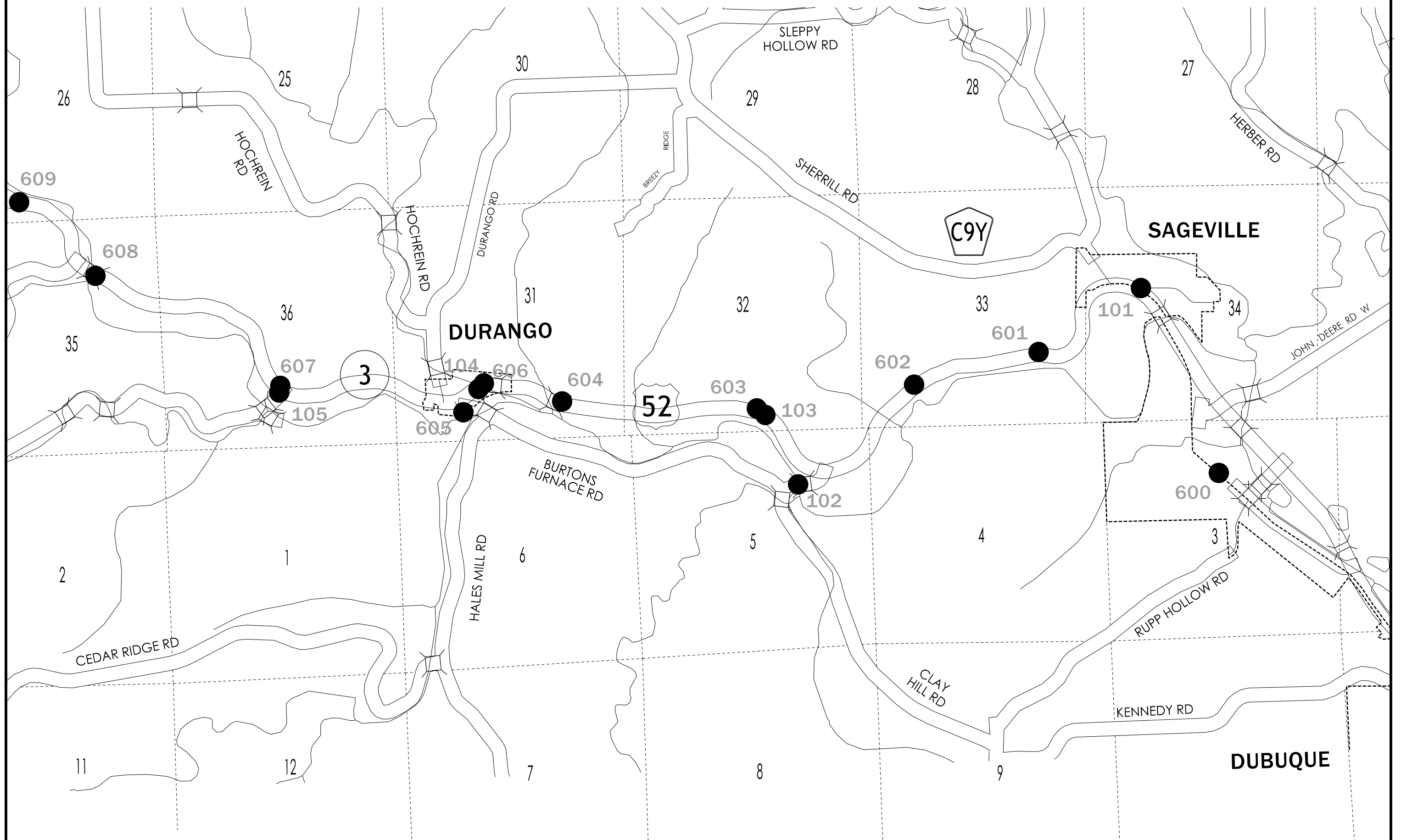
BENCHMARKS	ELEVATION	MISCELLANEOUS LOCATIONS	ELEVATION
No. 610 Sta. 64+76.806 32.114 Rt. Y:3685182.029 X:5641832.351 Fd NGS Monument Stamped T177 EL=869.267-----	869.267	No. 600 Sta. ----- Y:3677455.242 X:5672479.783 Fd NGS Monument Stamped H177 Observed with total station Published EL=660.412 Obstructions No GPS-----	660.412
No. 611 Sta. 99+05.491 33.089 Rt. Y:3684579.903 X:5638755.711 Fd NGS Monument Stamped U177 EL=847.761-----	847.761	No. 601 Sta. ----- Y:3680192.691 X:5668399.994 Fd NGS Monument Stamped K 177 EL=652.328 Obstructions No GPS-----	652.328
No. 612 Sta. 138+72.295 52.738 Rt. Y:3683420.011 X:5635160.658 Fd NGS Monument Data sheet removed from NGS database Monu has been moved Stamped V177 Observed ZC891.420 Published 893.09 -----	891.420	No. 602 Sta. ----- Y:3679453.606 X:5665582.614 Fd NGS Monument Set in the top of ledge at rock outcrop Stamped L177 EL=654.133 Obstructions No GPS-----	654.133
No. 613 Sta. 165+58.752 29.197 Rt. Y:3683259.875 X:5632741.460 Fd Conc Monument with unnamed USGS Disk-----	899.065	No. 603 Sta. ----- Y:3678916.369 X:5662020.845 Fd Brass Disk in Face Cliff Stamped M177 EL=669.129 CP404 near this point Obstructions No GPS-----	669.129
No. 614 Sta. 167+36.614 230.834 Rt. Y:3683527.385 X:5632714.431 Fd Conc Monu Exposed by 1 Foot Stamped TT31T Published NGVD29 Datum Elevation 884.715 Obstructions No GPS-----	884.776	No. 604 Sta. ----- Y:3679073.204 X:5657613.734 Fd NGS Monu Set in Top of Ledge at Foot of Cliff Stamped N177 EL=667.167 Obstructions No GPS-----	667.167
No. 615 Sta. 168+44.434 35.825 Rt. Y:3683431.748 X:5632513.167 Fd NGS Monument Stamped 31 118 EL=907.003-----	907.003	No. 605 Sta. ----- Y:3678827.997 X:5655379.224 Fd NGS Monument Stamped Q72 EL=643.775----	643.775
No. 616 Sta. 179+79.523 30.721 Lt. Y:3684135.842 X:5631651.490 Fd NGS Monument Stamped W177 Published EL=909.660 (unstable do not use) observed was 909.647-----	909.660	No. 606 Sta. ----- Y:3679483.801 X:5655842.955 Fd NGS Monument Stamped P177 EL=646.787 Obstructions No GPS-----	646.787
No. 617 Sta. 230+21.985 29.309 Lt. Y:3686325.824 X:5627261.498 Fd NGS Monument Stamped X177 EL=905.894-----	905.894	No. 607 Sta. ----- Y:3679427.579 X:5651233.742 Fd NGS Monu Set Vertically in Rock Outcropping Stamped Q 177 EL=655.163 Obstructions No GPS-----	655.163
No. 619 Sta. 265+97.31 84.079 Rt. Y:3686941.205 X:5624047.811 Fd Conc Monument Stamped 31 422 EL=1109.387-----	1109.387	No. 608 Sta. ----- Y:3681918.874 X:5647049.006 Fd NGS Monument SE Corner Brg on Top Conc Barrier Rail Stamped R 177 Reset-----	669.813
No. 620 Sta. 307+75.26 44.167 Rt. Y:3687343.140 X:5619919.960 Fd NGS Monument Stamped A178 EL=1121.973-----	1121.973	No. 609 Sta. ----- Y:3683584.840 X:5645322.220 Fd NGS Monu Set Vertically in Rock Wall Stamped S177 EL=792.587 Obstructions No GPS-----	792.587
		No. 618 Sta. ----- Y:3686878.307 X:5624153.013 Fd top of CM Severly Damaged Disk (Y177) missing central pin is bent easterly Published EL=1101.277-----	1100.799

GPS Project Control Map



FILE NO.	ENGLISH	DESIGN TEAM J1a \ Thiel	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-052-2(119)--3H-31	SHEET NUMBER	G.2
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GPS Project Control Map



ALIGNMENT COORDINATES

101-16
10-20-09

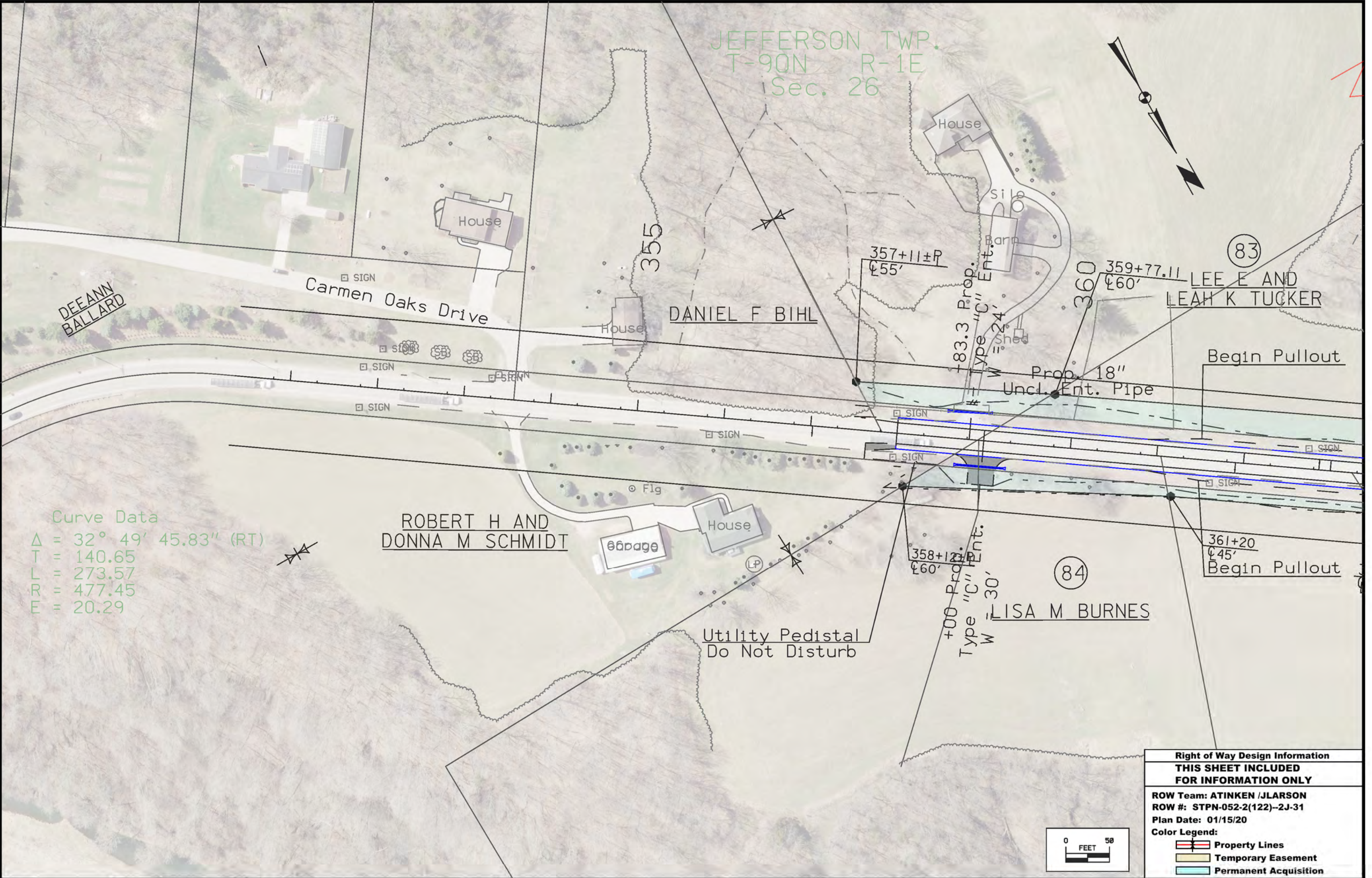
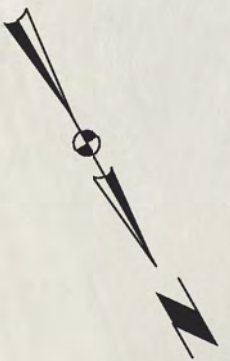
Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral			
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)	
ML52																				
986		350+35.90	3,683,913.5876	5,644,436.6924																
ML052_NEW_3								363+36.10	3,684,651.5420	5,643,366.2006	365+22.36	5,643,212.8484	5,643,212.8484	367+05.42	3,684,809.1618	5,643,033.9673				
ML052_NEW_6								377+36.80	3,685,096.5764	5,642,043.4432	380+67.96	5,641,725.3935	5,641,725.3935	383+96.21	3,685,206.1581	5,641,394.6771				
ML052_NEW_9								386+66.55	3,685,220.2766	5,641,124.7028	389+84.05	5,640,807.6373	5,640,807.6373	392+26.81	3,684,950.7595	5,640,669.9667				
ML052_NEW_12								393+08.68	3,684,876.9857	5,640,634.4668	395+51.80	5,640,529.0466	5,640,529.0466	397+77.84	3,684,546.6785	5,640,312.8611				
ML052_NEW_15								399+95.41	3,684,447.1369	5,640,119.3929	401+91.90	5,639,944.6700	5,639,944.6700	403+75.19	3,684,388.1129	5,639,750.6174				
ML052_NEW_18								424+94.65	3,684,721.1219	5,637,657.4761	426+87.98	5,637,466.5511	5,637,466.5511	428+63.60	3,684,645.5302	5,637,304.8538				
ML052_NEW_21								435+94.74	3,684,244.7724	5,636,693.3287	437+80.91	5,636,537.6200	5,636,537.6200	439+64.99	3,684,083.9554	5,636,360.9751				
ML052_NEW_24								442+55.07	3,683,992.3760	5,636,085.7362	444+45.80	5,635,904.7600	5,635,904.7600	446+31.96	3,683,809.2895	5,635,758.8795				
ML052_NEW_27								450+32.18	3,683,551.4595	5,635,452.7662	451+93.33	5,635,329.5129	5,635,329.5129	453+53.13	3,683,373.8687	5,635,186.2469				
ML052_NEW_30								462+40.55	3,682,967.5792	5,634,397.2963	470+90.56	5,633,641.6042	5,633,641.6042	477+66.34	3,683,073.7798	5,632,950.8556				
ML052_NEW_33								483+46.71	3,683,412.0058	5,632,479.2233	485+31.40	5,632,329.1407	5,632,329.1407	487+14.05	3,683,661.8650	5,632,211.3278				
ML052_NEW_36								490+24.64	3,683,901.0561	5,632,013.1981	492+88.38	5,631,844.9570	5,631,844.9570	495+40.38	3,684,197.8826	5,631,598.4313				
ML052_NEW_39								515+87.96	3,684,925.4812	5,629,684.4844	517+36.31	5,629,545.8121	5,629,545.8121	518+82.50	3,685,069.0754	5,629,428.5496				
ML052_NEW_42								519+73.54	3,685,124.8471	5,629,356.5852	521+94.29	5,629,182.0997	5,629,182.0997	524+08.01	3,685,308.8177	5,628,966.7985				
ML052_NEW_45								525+31.99	3,685,336.1947	5,628,845.8807	528+25.96	5,628,559.1664	5,628,559.1664	531+03.66	3,685,611.4189	5,628,353.7666				
ML052_NEW_48								536+54.87	3,686,005.7559	5,627,968.6350	542+66.36	5,627,541.3813	5,627,541.3813	547+52.52	3,686,262.2534	5,626,957.2814				
ML052_NEW_51								558+15.45	3,685,947.6833	5,625,941.9644	561+23.88	5,625,647.3505	5,625,647.3505	563+98.26	3,686,006.7057	5,625,378.0204				
ML052_NEW_54								569+74.73	3,686,287.6265	5,624,874.6274	571+75.35	5,624,699.4447	5,624,699.4447	573+74.60	3,686,516.3013	5,624,547.4315				
ML052_NEW_57								576+68.09	3,686,707.8220	5,624,325.0423	579+93.05	5,624,078.8054	5,624,078.8054	582+76.57	3,686,868.6542	5,623,757.9047				
ML052_NEW_60								584+97.91	3,686,833.7619	5,623,539.3249	586+30.57	5,623,408.3327	5,623,408.3327	587+61.51	3,686,828.6224	5,623,276.6228				
987		605+06.14	3,687,036.0447	5,621,544.3720																
Fetkether																				
SRFETKETHER1		21441+06.97	3,684,029.7582	5,636,198.0874																
SRFETKETHER2		21443+71.84	3,684,269.2054	5,636,084.8629																
5 Points																				
I2345		19481+00.00	3,683,254.1152	5,632,699.3906																
I2346		19486+78.32	3,683,831.8289	5,632,672.8267																
Klein																				
SRKLEINI		18512+52.09	3,684,816.6832	5,629,970.6773																
SRKLEIN_3								18512+71.34	3,684,834.6751	5,629,977.5170	18512+92.52	5,629,985.0429	5,629,985.0429	18513+13.08	3,684,875.6198	5,629,983.8971				
SRKLEIN5		18515+50.34	3,685,112.5294	5,629,971.0611																
St. Josephs (East)																				
30		40+00.00	3,686,511.0324	5,627,021.9549																
SR_JOSE_B2_3								41+61.72	3,686,517.2669	5,627,183.5510	43+17.64	5,627,339.3577	5,627,339.3577	44+64.36	3,686,441.1355	5,627,471.8888				
SR_JOSE_B2_6								45+88.99	3,686,375.4751	5,627,577.8271	46+71.85	5,627,648.2560	5,627,648.2560	47+27.38	3,686,254.5091	5,627,618.4530				
31		47+42.80	3,686,240.1242	5,627,612.9079																
Frontage																				
25		0+00.00	3,686,299.3280	5,627,624.7530																
ST_JOSEPHS2_3								0+12.16	3,686,300.4045	5,627,636.8675	0+41.36	5,627,665.9468	5,627,665.9468	0+67.84	3,686,285.2327	5,627,689.1205				
26		2+04.10	3,686,202.3617	5,627,797.2788																
Wilgenbusch																				
I020		0+00.00	3,686,055.5183	5,626,290.0162																
SR_WIL_3								0+78.27	3,686,130.2789	5,626,266.8536	1+21.94	5,626,253.9297	5,626,253.9297	1+50.06	3,686,164.7985	5,626,210.8565				
I021		2+76.16	3,686,144.0258	5,626,086.4826																
Park hollow																				
SRPARKHOLLOW1		15576+63.22	3,686,558.3987	5,624,039.1133																
SRPARKHOLLOW_3								15578+71.58	3,686,766.2753	5,624,053.3415	15579+05.33	5,624,055.6461	5,624,055.6461	15579+38.79	3,686,832.2622	5,624,065.3741				
SRPARKHOLLOW5		15579+54.91	3,686,847.6963	5,624,070.0200																
James																				
SRJAMES1		14579+55.00	3,686,847.6963	5,624,070.0200																
SRJAMES_3								14579+91.86	3,686,882.9878	5,624,080.6434	14580+35.84	5,624,093.3226	5,624,093.3226	14580+79.70	3,686,968.5542	5,624,100.2112				
SRJAMES_6								14581+06.25	3,686,994.7827	5,624,104.3700	14581+54.11	5,624,111.8649	5,624,111.8649	14582+01.61	3,687,086.6868	5,624,129.1342				
SRJAMES8		14583+20.07	3,687,197.1627	5,624,171.8771																

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

Name	Location	Δ _{scs}	Horizontal Alignment Data													Remarks	
			Spiral Data					Curve Data									
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ _c	T	L	R	E		
ML052_NEW_3												18° 24' 00" LT	186.26'	369.31'	1,150.00'	14.99	
ML052_NEW_6												13° 11' 14" LT	331.17'	659.41'	2,865.00'	19.08	
ML052_NEW_9												67° 17' 48" LT	317.50'	560.26'	477.00'	96.00	
ML052_NEW_12												37° 04' 36" RT	243.12'	469.16'	725.00'	39.68	
ML052_NEW_15												36° 15' 58" RT	196.49'	379.78'	600.00'	31.36	
ML052_NEW_18												42° 16' 42" LT	193.33'	368.95'	500.00'	36.07	
ML052_NEW_21												14° 50' 05" RT	186.17'	370.25'	1,430.00'	12.07	
ML052_NEW_24												21° 42' 10" LT	190.73'	376.89'	995.00'	18.12	
ML052_NEW_27												12° 51' 33" RT	161.15'	320.94'	1,430.00'	9.05	
ML052_NEW_30												62° 53' 35" RT	850.01'	1,525.79'	1,390.00'	239.30	
ML052_NEW_33												14° 43' 05" RT	184.69'	367.34'	1,430.00'	11.88	
ML052_NEW_36												29° 32' 58" LT	263.74'	515.73'	1,000.00'	34.19	
ML052_NEW_39												16° 57' 38" RT	148.35'	294.54'	995.00'	11.00	
ML052_NEW_42												25° 01' 05" LT	220.75'	434.46'	995.00'	24.19	
ML052_NEW_45												32° 55' 10" RT	293.97'	571.68'	995.00'	42.52	
ML052_NEW_48												62° 53' 27" LT	611.49'	1,097.65'	1,000.00'	172.14	
ML052_NEW_51												46° 22' 41" RT	308.43'	582.81'	720.00'	63.28	
ML052_NEW_54												11° 34' 16" RT	200.61'	399.86'	1,980.00'	10.14	
ML052_NEW_57												49° 48' 17" LT	324.96'	608.48'	700.00'	71.75	
ML052_NEW_60												15° 53' 52" RT	132.65'	263.60'	950.00'	9.22	
SRKLEIN_3												23° 54' 57" LT	21.18'	41.74'	100.00'	2.22	
SR_JOSE_B2_3												34° 00' 00" RT	155.92'	302.64'	510.00'	23.30	
SR_JOSE_B2_6												79° 17' 24" RT	82.86'	138.39'	100.00'	29.87	
ST_JOSEPHS2_3												42° 32' 14" RT	29.19'	55.68'	75.00'	5.48	
SR_WIL_3												82° 27' 24" LT	48.20'	79.15'	55.00'	18.13	
SRPARKHOLLOW_3												12° 50' 14" RT	33.75'	67.22'	300.00'		
SRJAMES_3												7° 44' 35" LT	43.99'	87.84'	650.00'	1.49	
SRJAMES_6												12° 08' 30" RT	47.86'	95.36'	450.00'	2.54	
SR_STJOSEPHS__3												3° 55' 17" RT	10.27'	20.53'	300.00'	0.18	
SR_STJOSEPHS__6												13° 49' 53" RT	72.77'	144.84'	600.00'		

JEFFERSON TWP.
T-90N R-1E
Sec. 26



Curve Data
 $\Delta = 32^\circ 49' 45.83''$ (RT)
 $T = 140.65$
 $L = 273.57$
 $R = 477.45$
 $E = 20.29$

ROBERT H AND
DONNA M SCHMIDT

DANIEL F BIHL

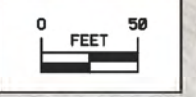
(84)
LISA M BURNES

(83)
LEE E AND
LEAH K TUCKER

Utility Pedestal
Do Not Disturb

Begin Pullout

361+20
Begin Pullout



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 01/15/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

JEFFERSON TWP.
T-90N R-1E
Sec. 26

(82)
GALEN P AND
JOANNE C GARNER

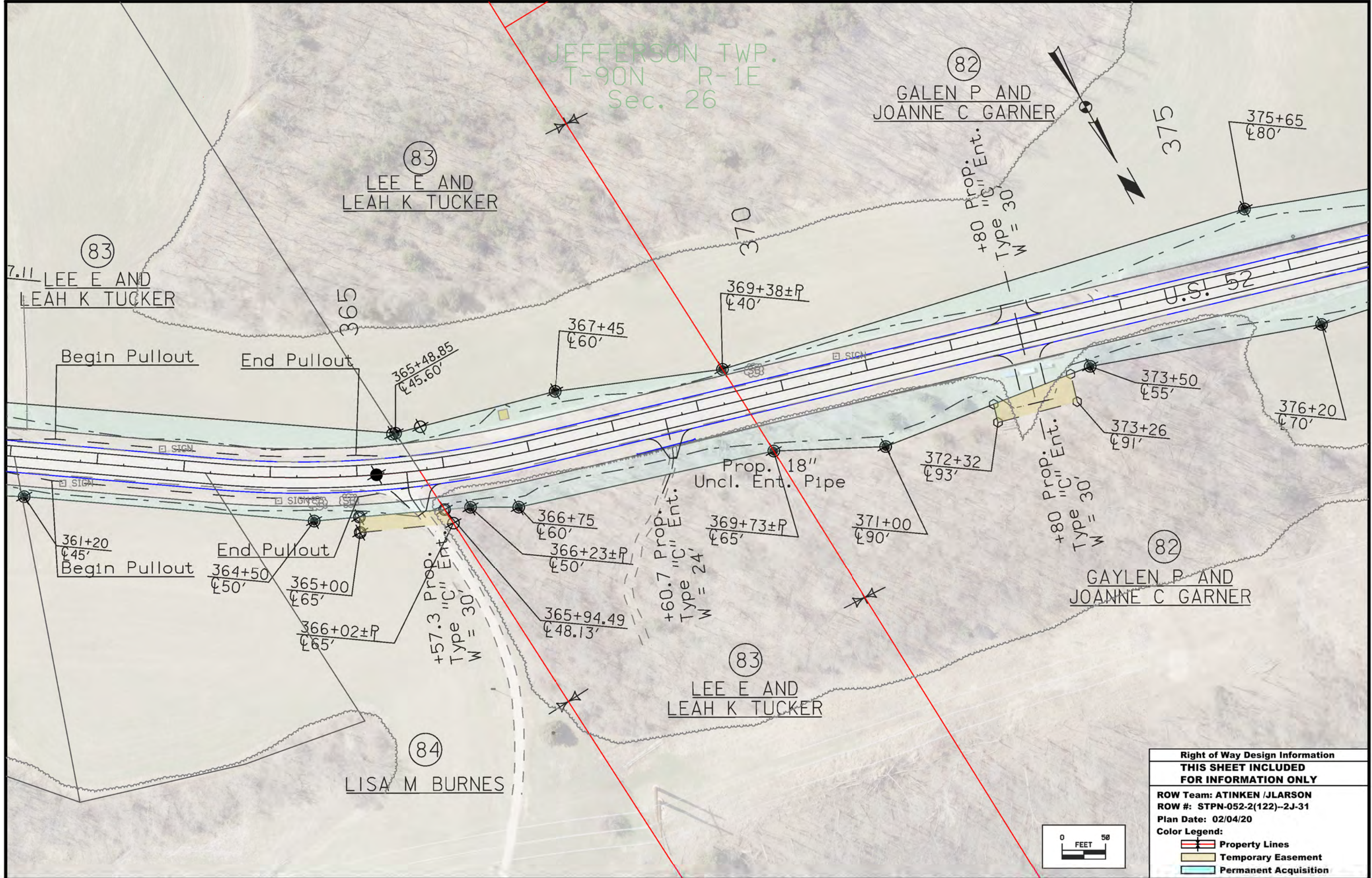
(83)
LEE E AND
LEAH K TUCKER

(83)
LEE E AND
LEAH K TUCKER

(82)
GAYLEN P AND
JOANNE C GARNER

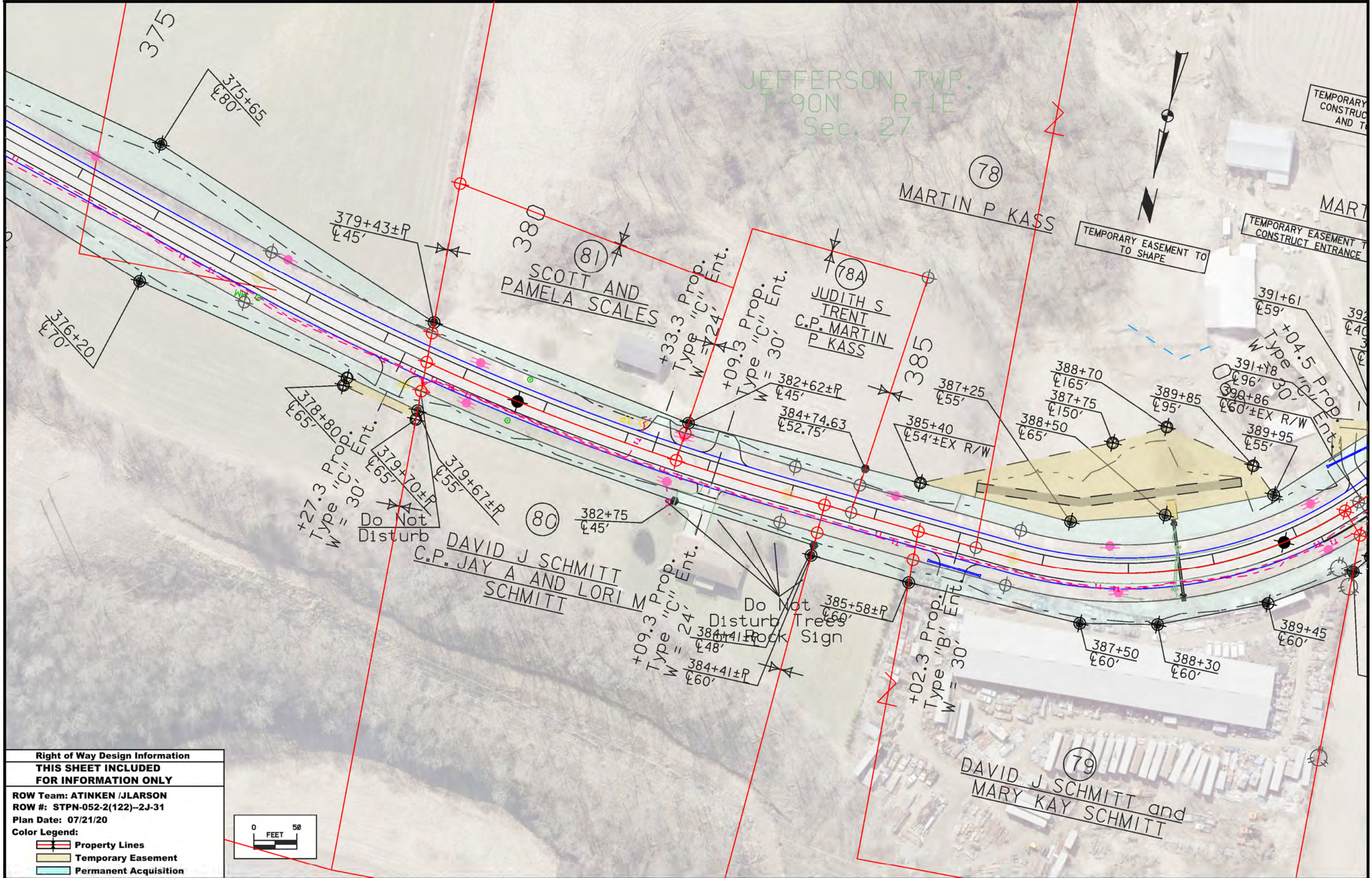
(83)
LEE E AND
LEAH K TUCKER

(84)
LISA M BURNES



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)--2J-31	
Plan Date: 02/04/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

JEFFERSON TWP.
T-90N R-1E
Sec. 27

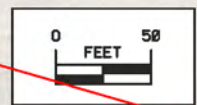


Right of Way Design Information
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ROW Team: ATINKEN /JLARSON
 ROW #: STPN-052-2(122)--2J-31
 Plan Date: 07/21/20

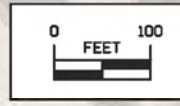
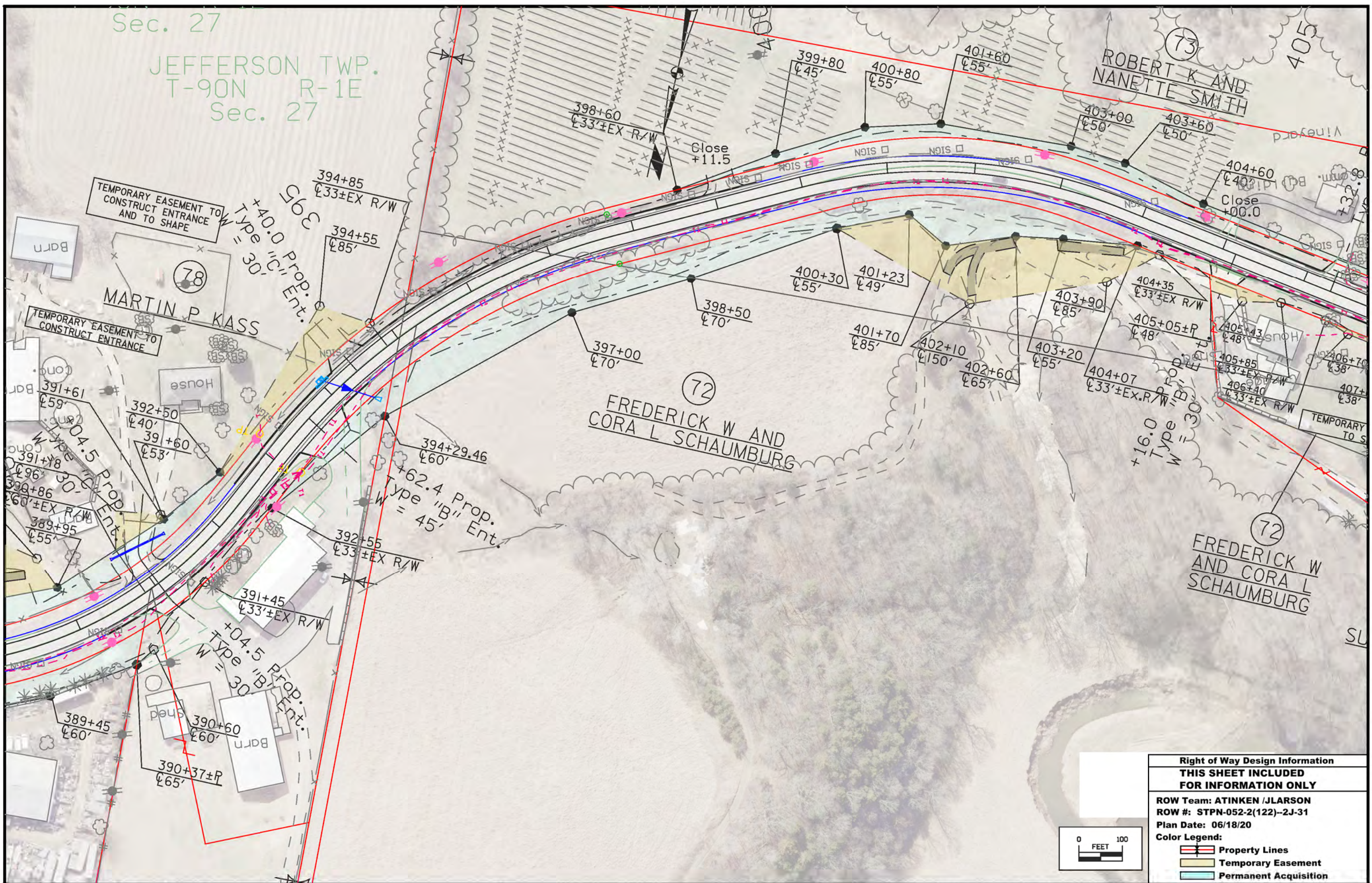
Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

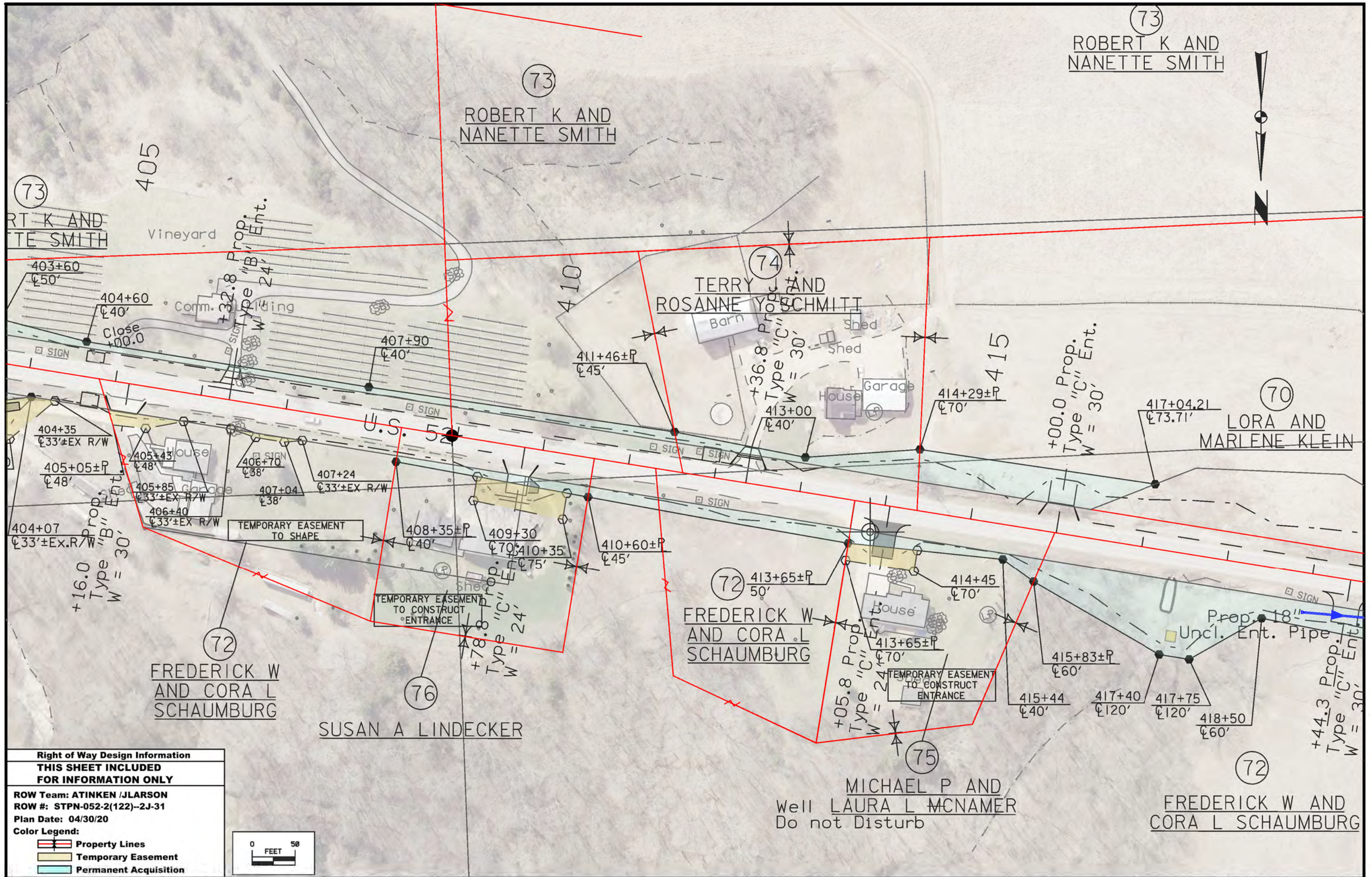


Sec. 27

JEFFERSON TWP.
T-90N R-1E
Sec. 27



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 06/18/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

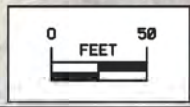


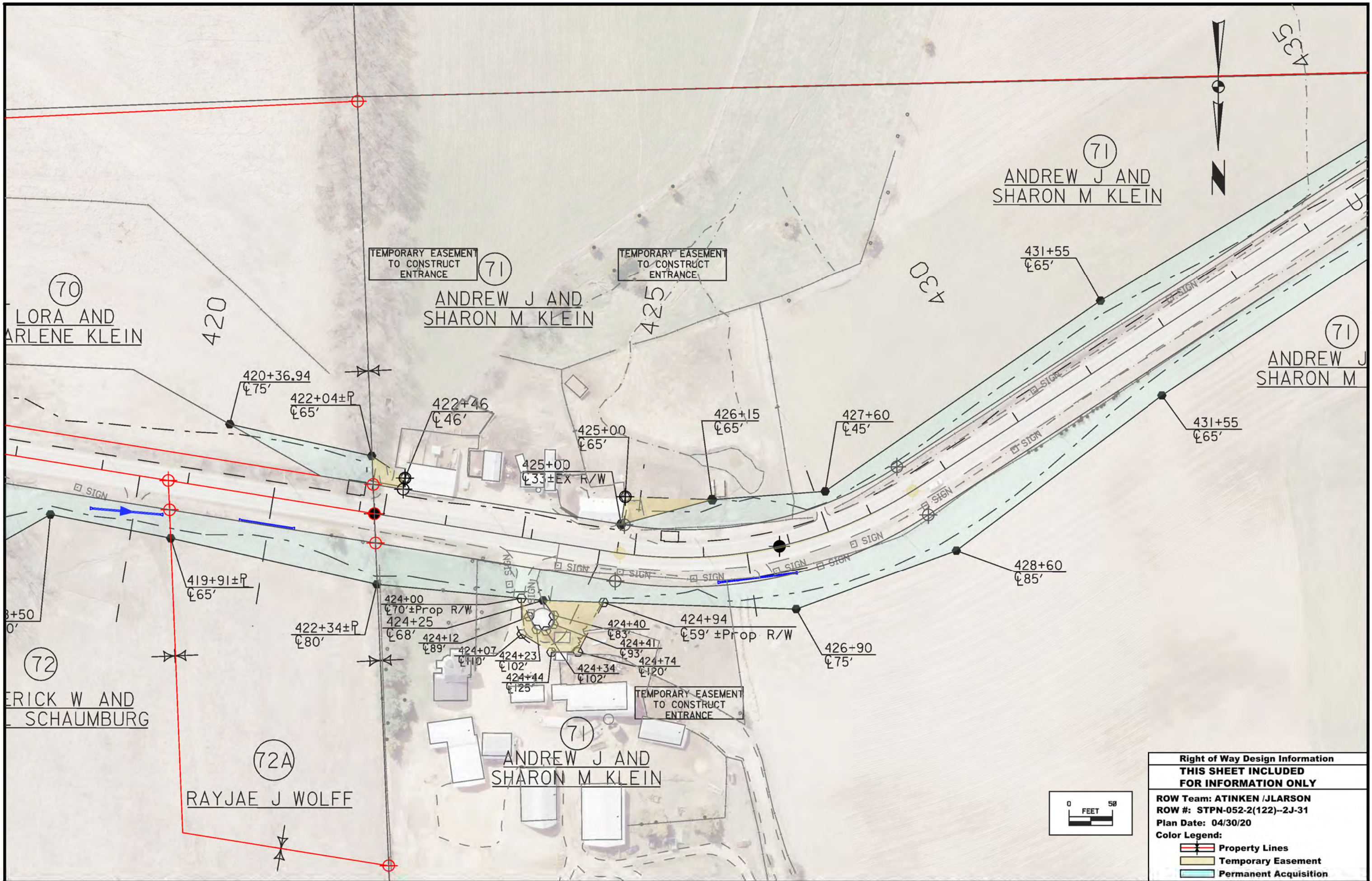
Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: ATINKEN / JLARSON
 ROW #: STPN-052-2(122)--2J-31
 Plan Date: 04/30/20

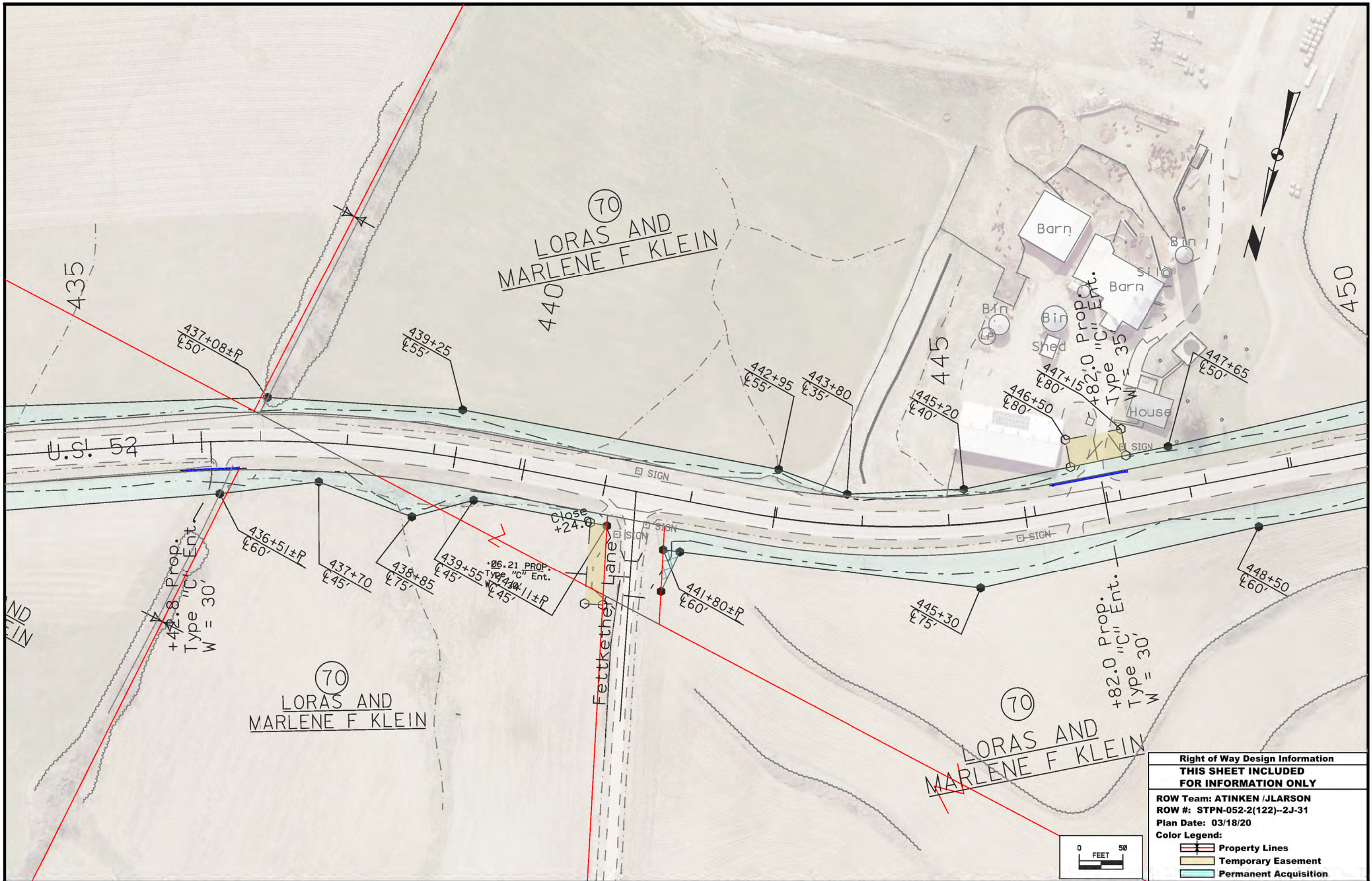
Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

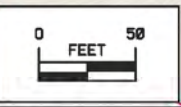


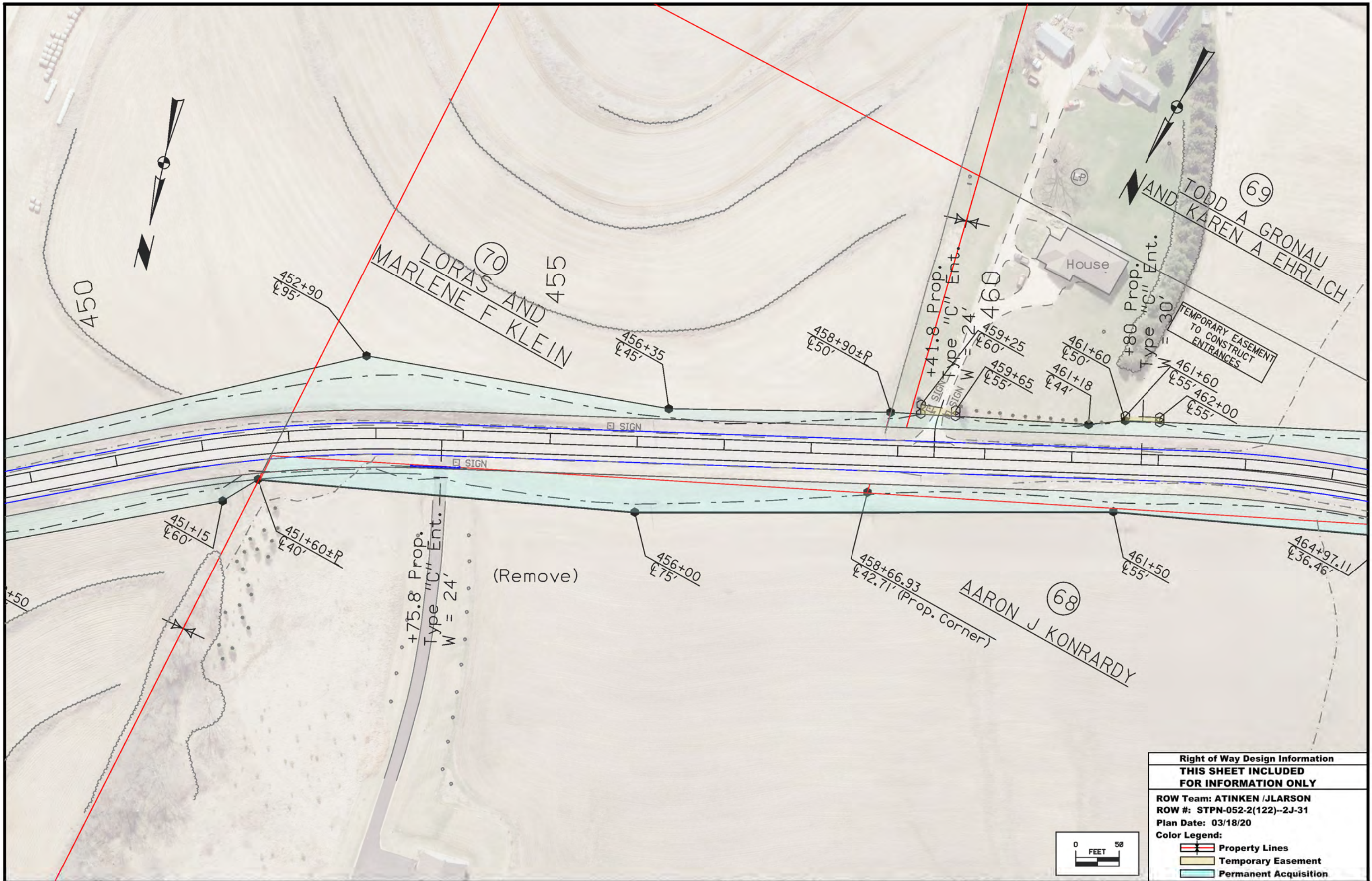


Right of Way Design Information	
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)--2J-31	
Plan Date: 04/30/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



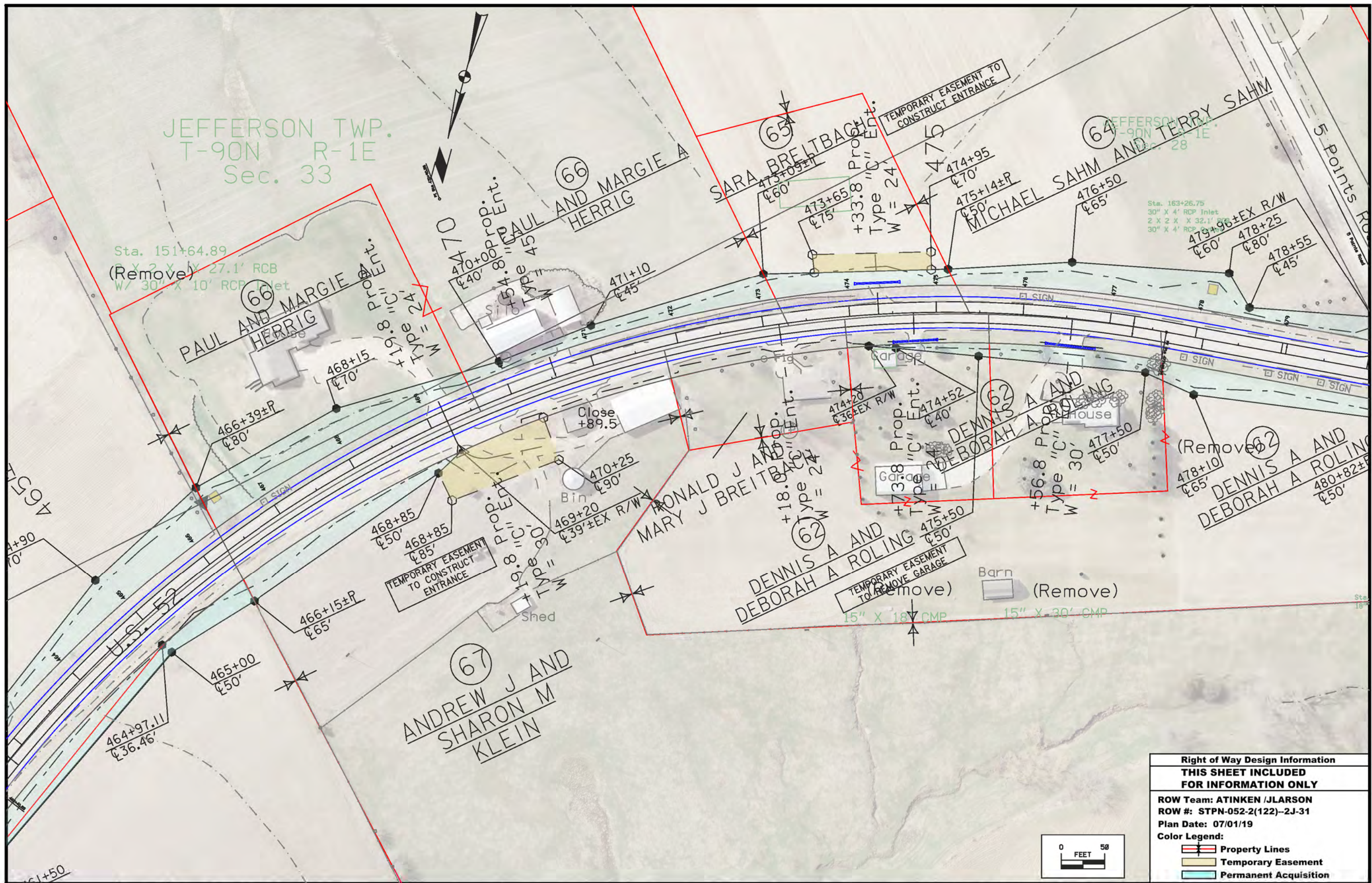
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 03/18/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



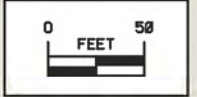


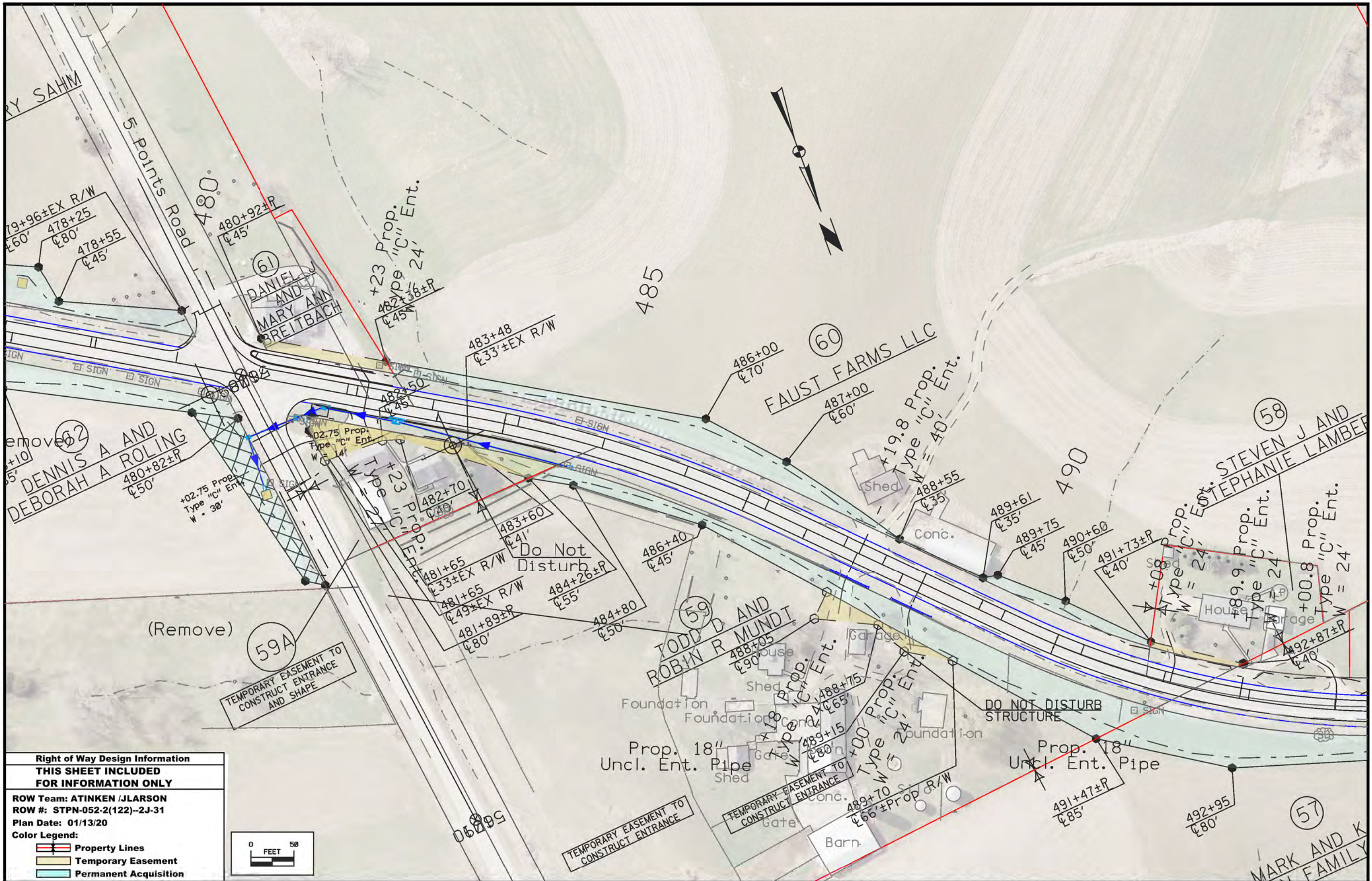
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)--2J-31	
Plan Date: 03/18/20	
Color Legend:	
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	Temporary Easement
	Permanent Acquisition

JEFFERSON TWP.
T-90N R-1E
Sec. 33



Right of Way Design Information	
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ROW #: STPN-052-2(122)--2J-31	
Plan Date: 07/01/19	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



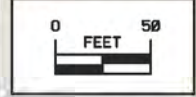


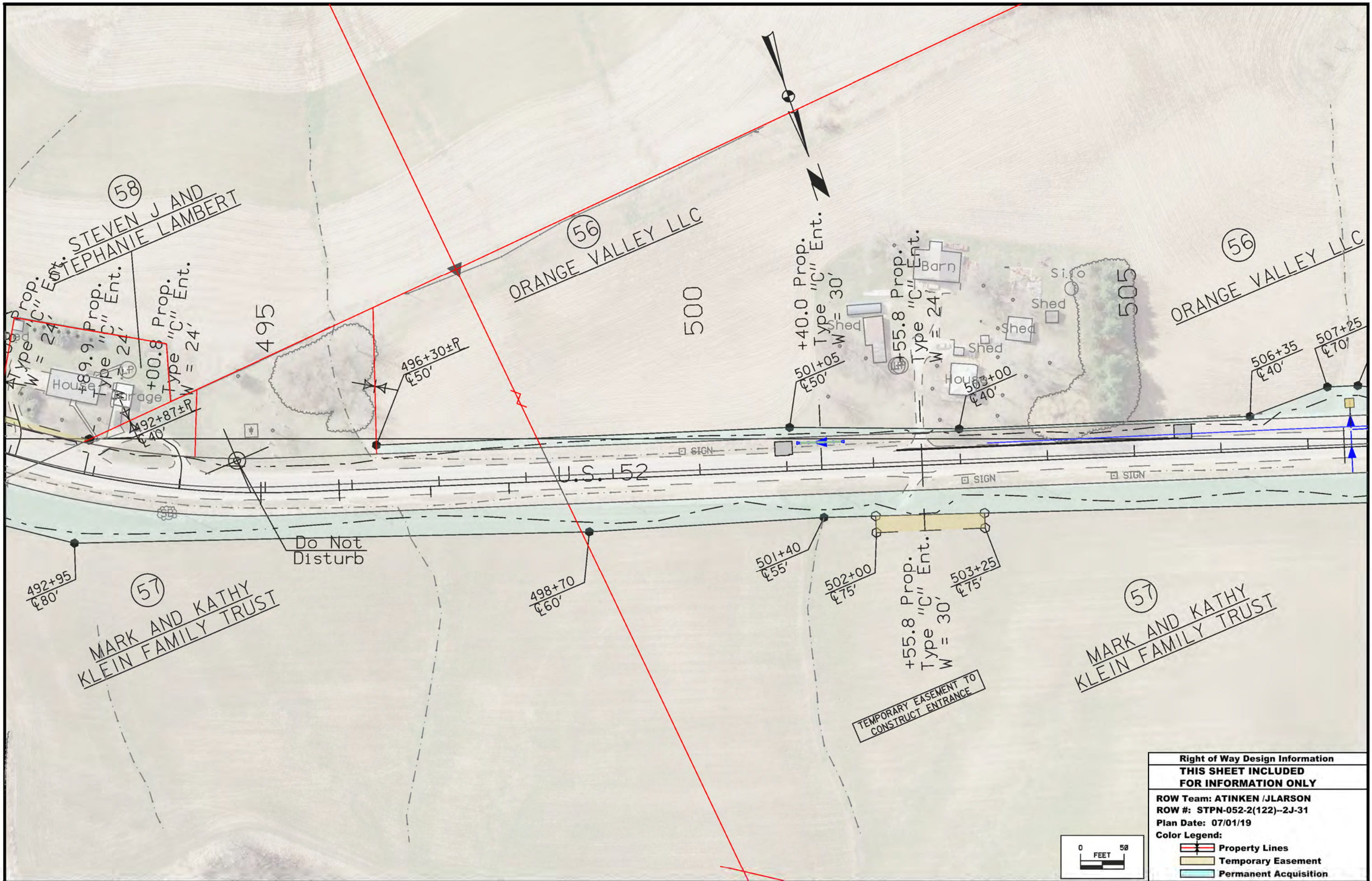
Right of Way Design Information
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ROW Team: ATINKEN / JLARSON
 ROW #: STPN-052-2(122)--2J-31
 Plan Date: 01/13/20

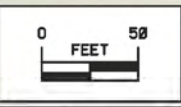
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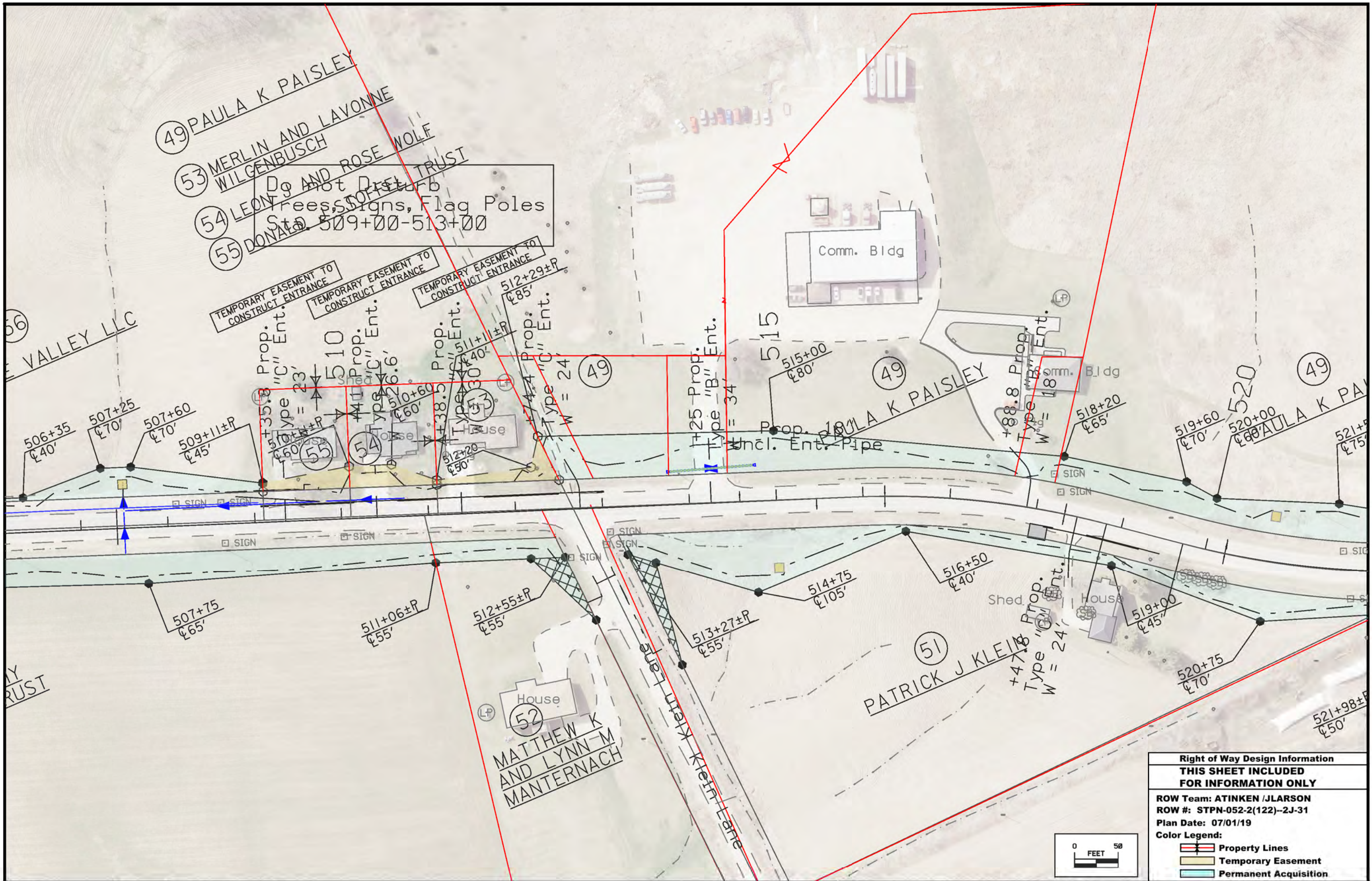
- Property Lines
- Temporary Easement
- Permanent Acquisition





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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 07/01/19	
Color Legend:	
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	Temporary Easement
	Permanent Acquisition





49 PAULA K PAISLEY

53 MERLIN AND LAVONNE WILGENBUSCH

54 LEONARD AND ROSE WOLF
Do not Disturb
Trees, Signs, Flag Poles
Sta. 509+00-513+00

55 DONALD

56 VALLEY LLC

Comm. Bldg

PAULA K PAISLEY

51 PATRICK J KLEIN

52 MATTHEW K AND LYNN-M MANTERNACH

TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

Prop. "C" Ent.

Prop. "C" Ent.

Prop. "C" Ent.

Prop. "C" Ent.

Prop. "B" Ent.

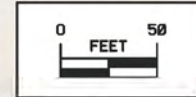
Prop. "B" Ent.

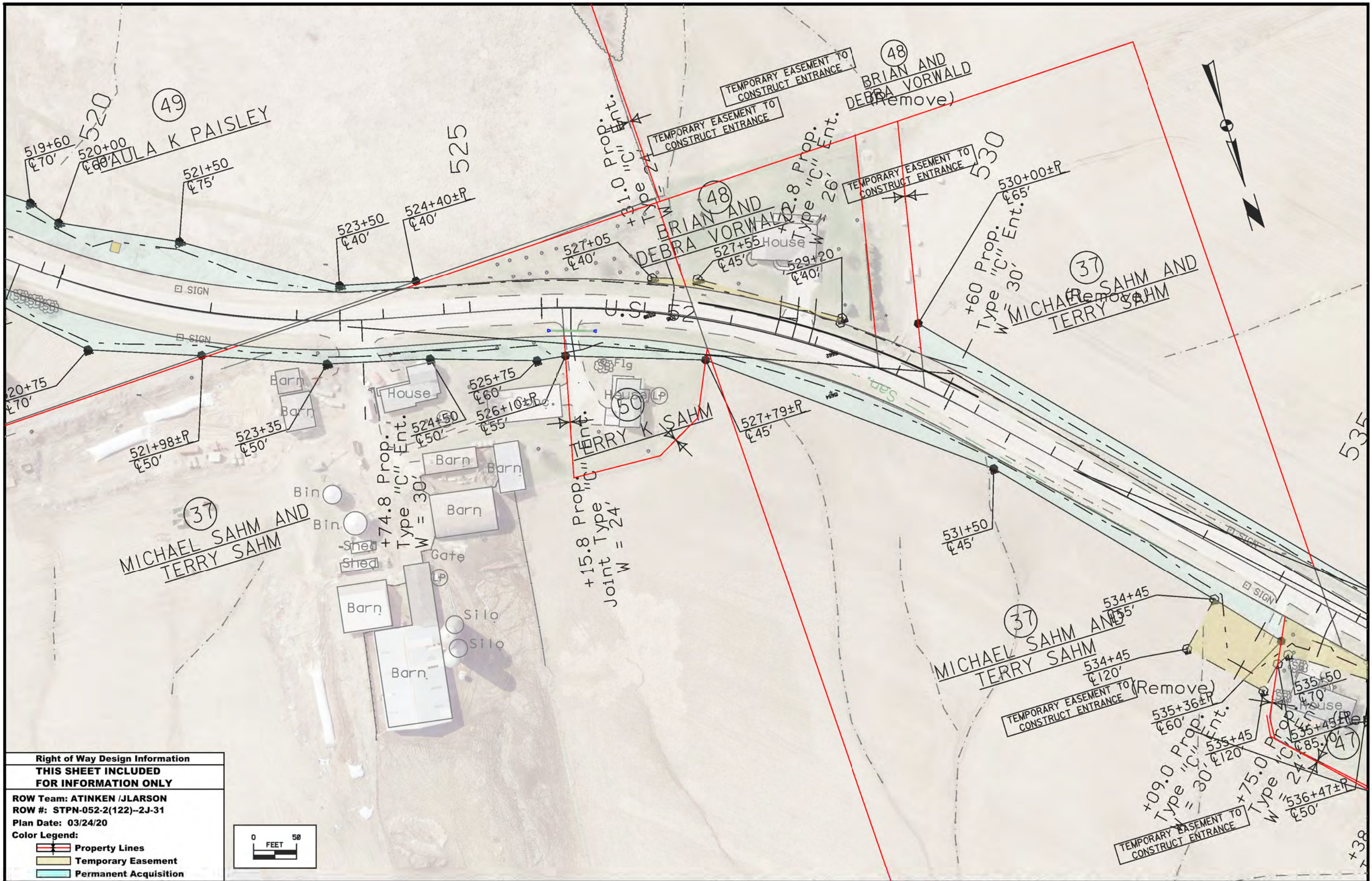
Prop. "C" Ent.

Uncl. Ent. Pipe

Klein Lane

Right of Way Design Information	
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 07/01/19	
Color Legend:	
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	Temporary Easement
	Permanent Acquisition



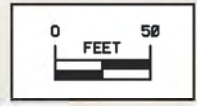


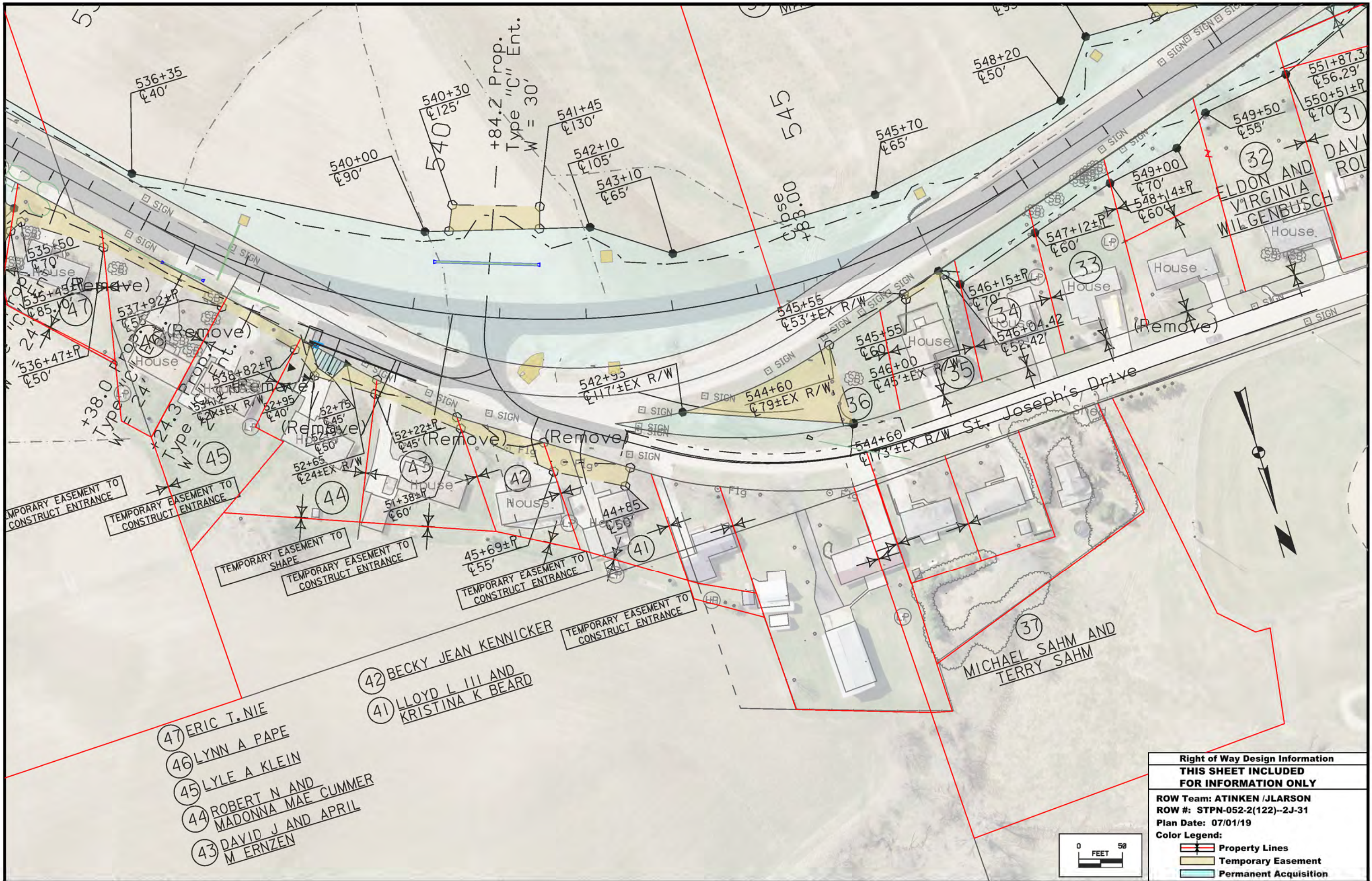
Right of Way Design Information
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ROW Team: ATINKEN / JLARSON
 ROW #: STPN-052-2(122)--2J-31
 Plan Date: 03/24/20

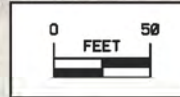
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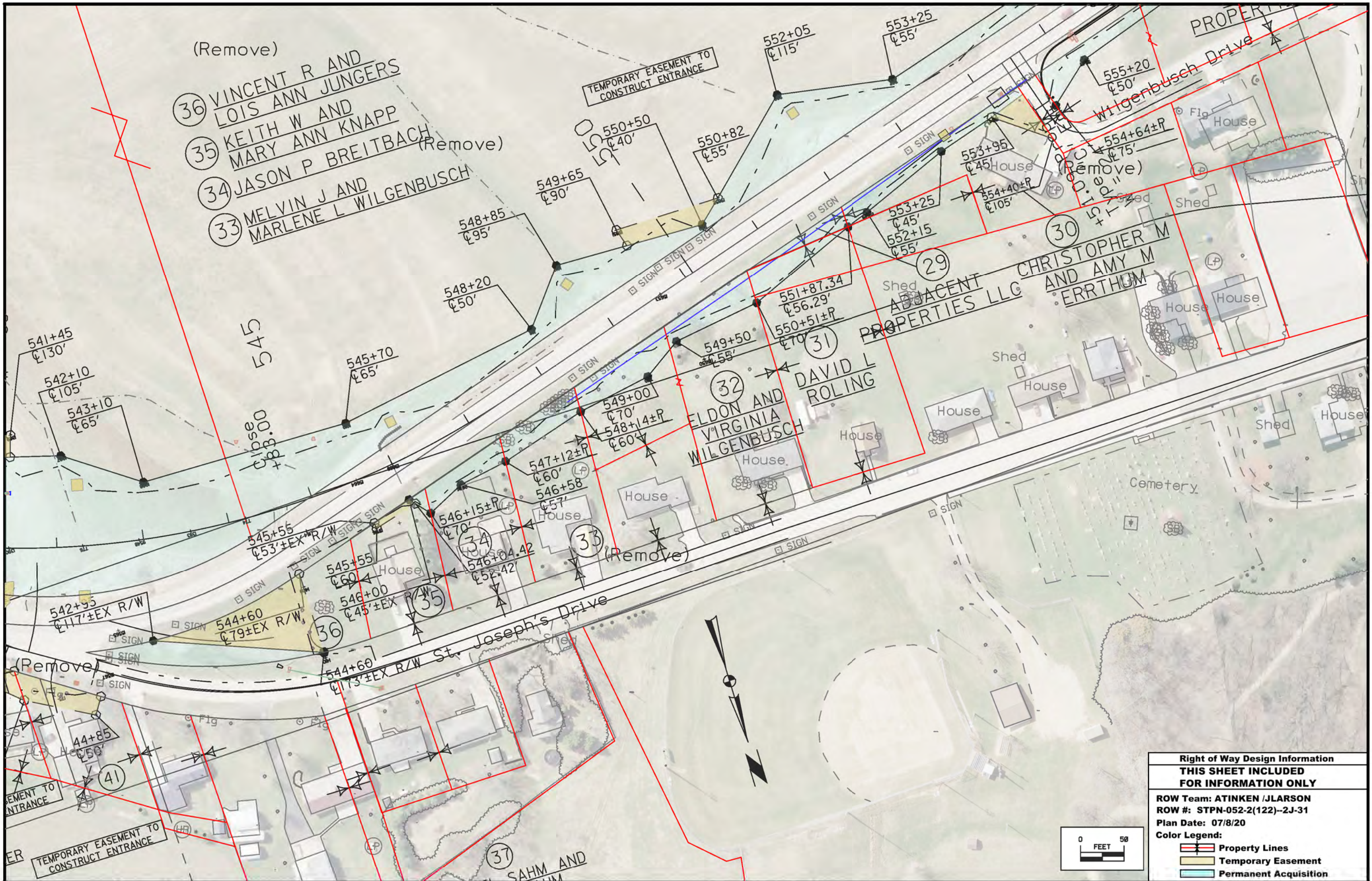
- Property Lines
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- Permanent Acquisition





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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)--2J-31	
Plan Date: 07/01/19	
Color Legend:	
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	Temporary Easement
	Permanent Acquisition





(Remove)

36 VINCENT R AND
LOIS ANN JUNGERS

35 KEITH W AND
MARY ANN KNAPP

34 JASON P BREITBACH (Remove)

33 MELVIN J AND
MARLENE L WILGENBUSCH

29 ADJACENT
PROPERTIES LLC

30 CHRISTOPHER M
AND AMY M
ERRTHUM

31 DAVID L
ROLING

32 ELDON AND
VIRGINIA
WILGENBUSCH

34 (Remove)

33 (Remove)

36

St. Joseph's Drive

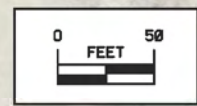
37 SAHM AND

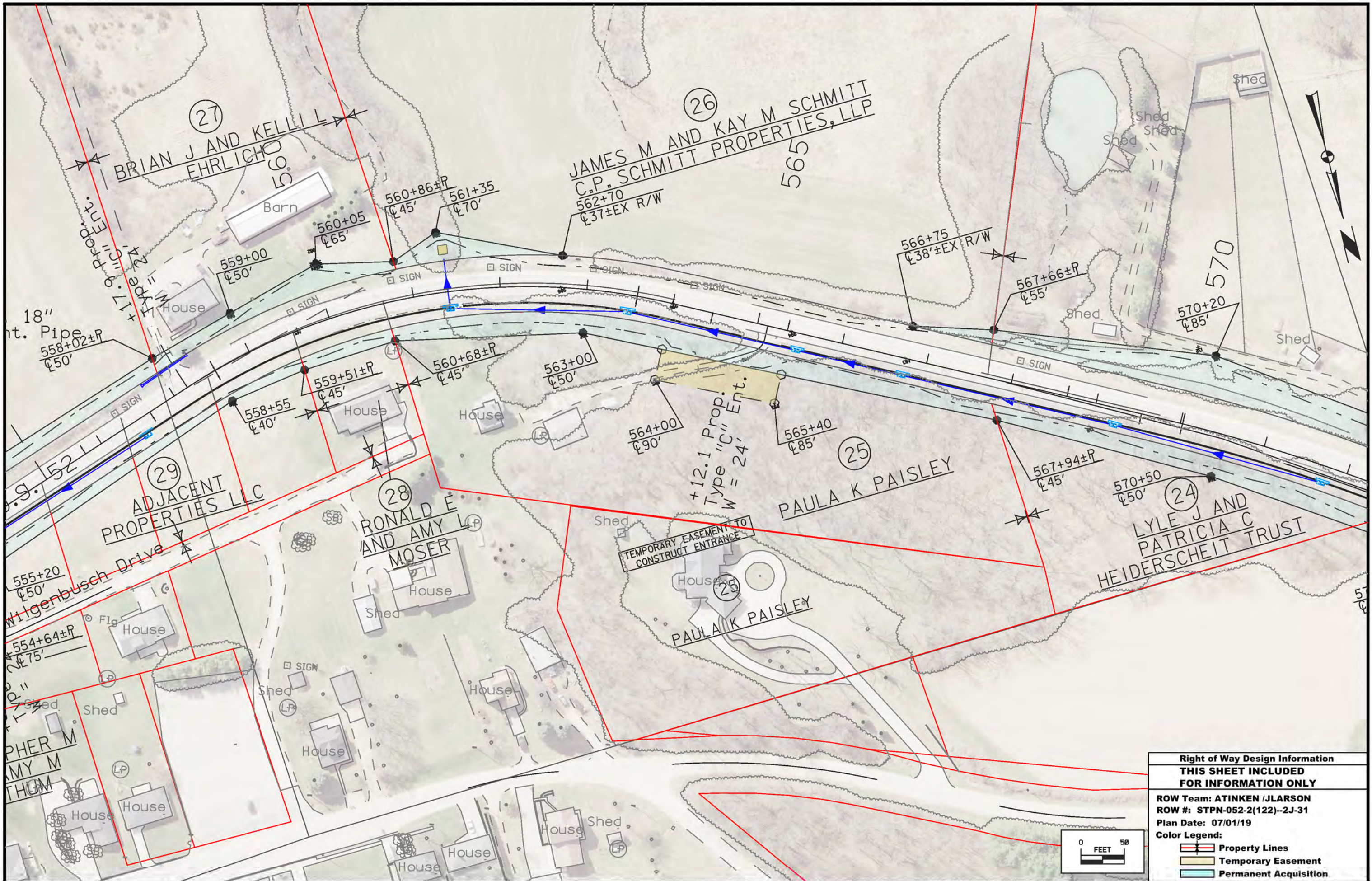
Right of Way Design Information
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ROW Team: ATINKEN /JLARSON
 ROW #: STPN-052-2(122)-2J-31
 Plan Date: 07/8/20

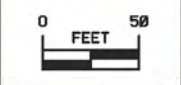
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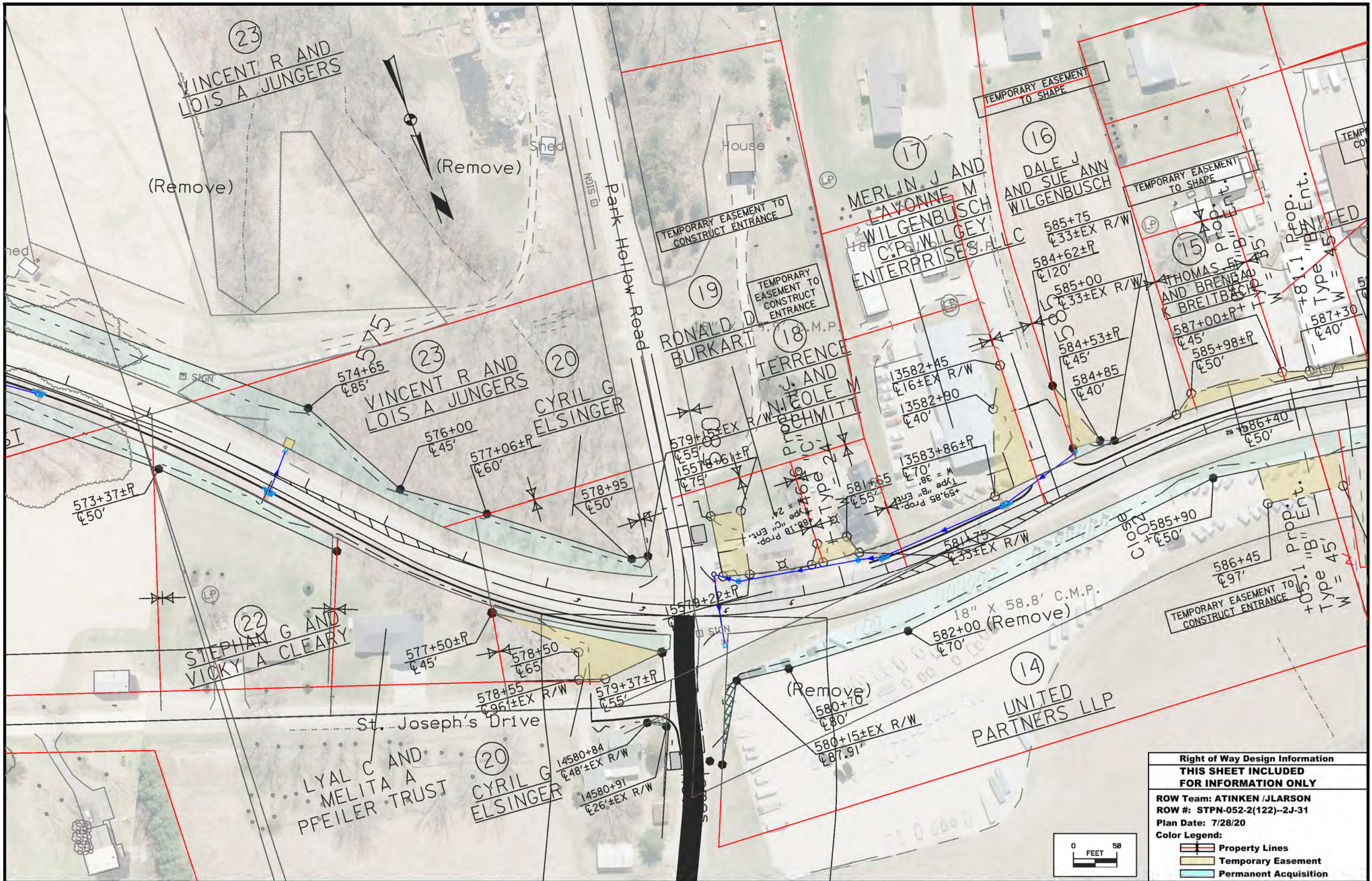
- Property Lines
- Temporary Easement
- Permanent Acquisition






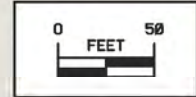


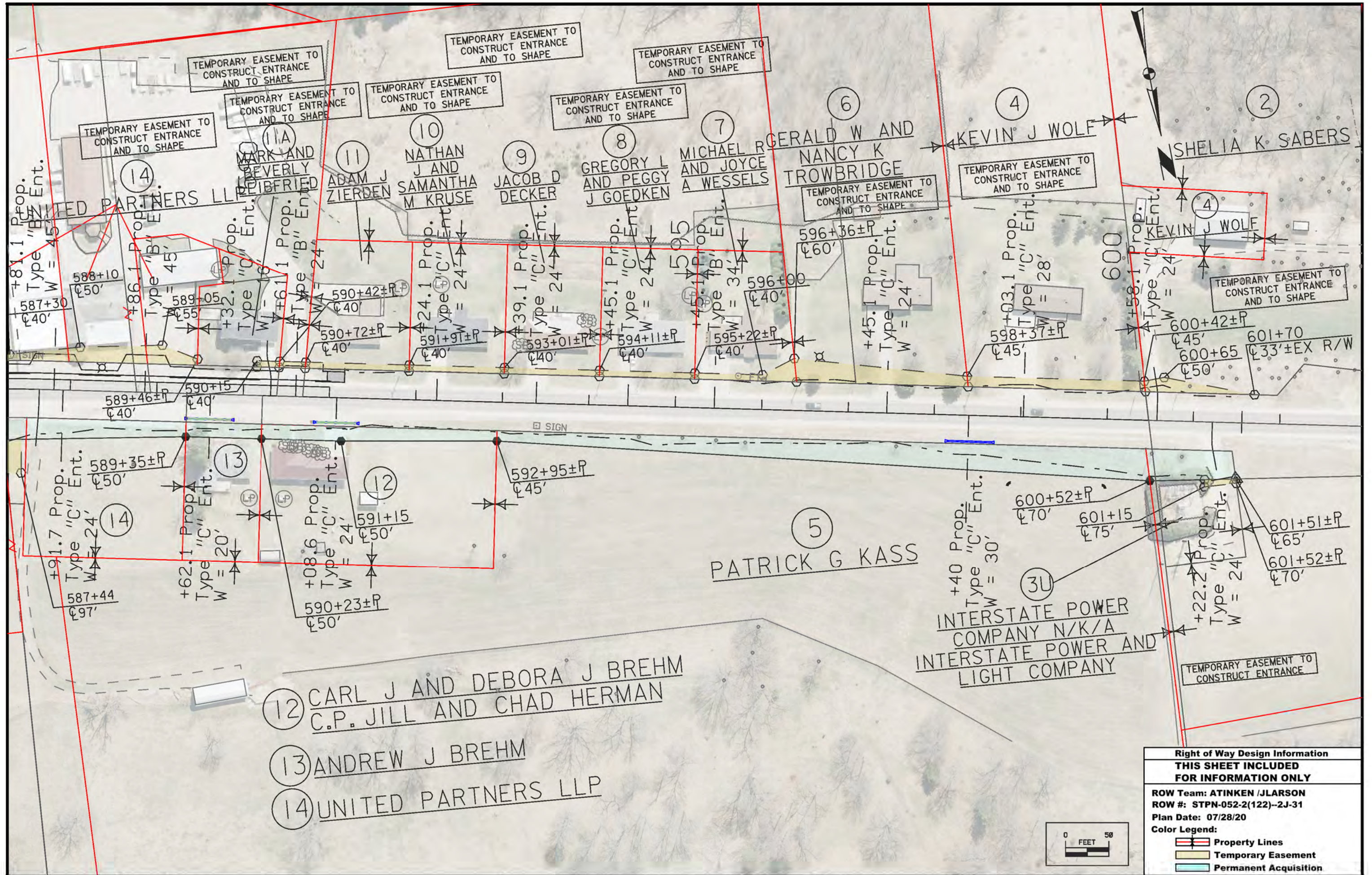
Right of Way Design Information	
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 07/01/19	
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	Permanent Acquisition



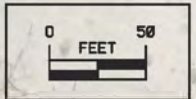


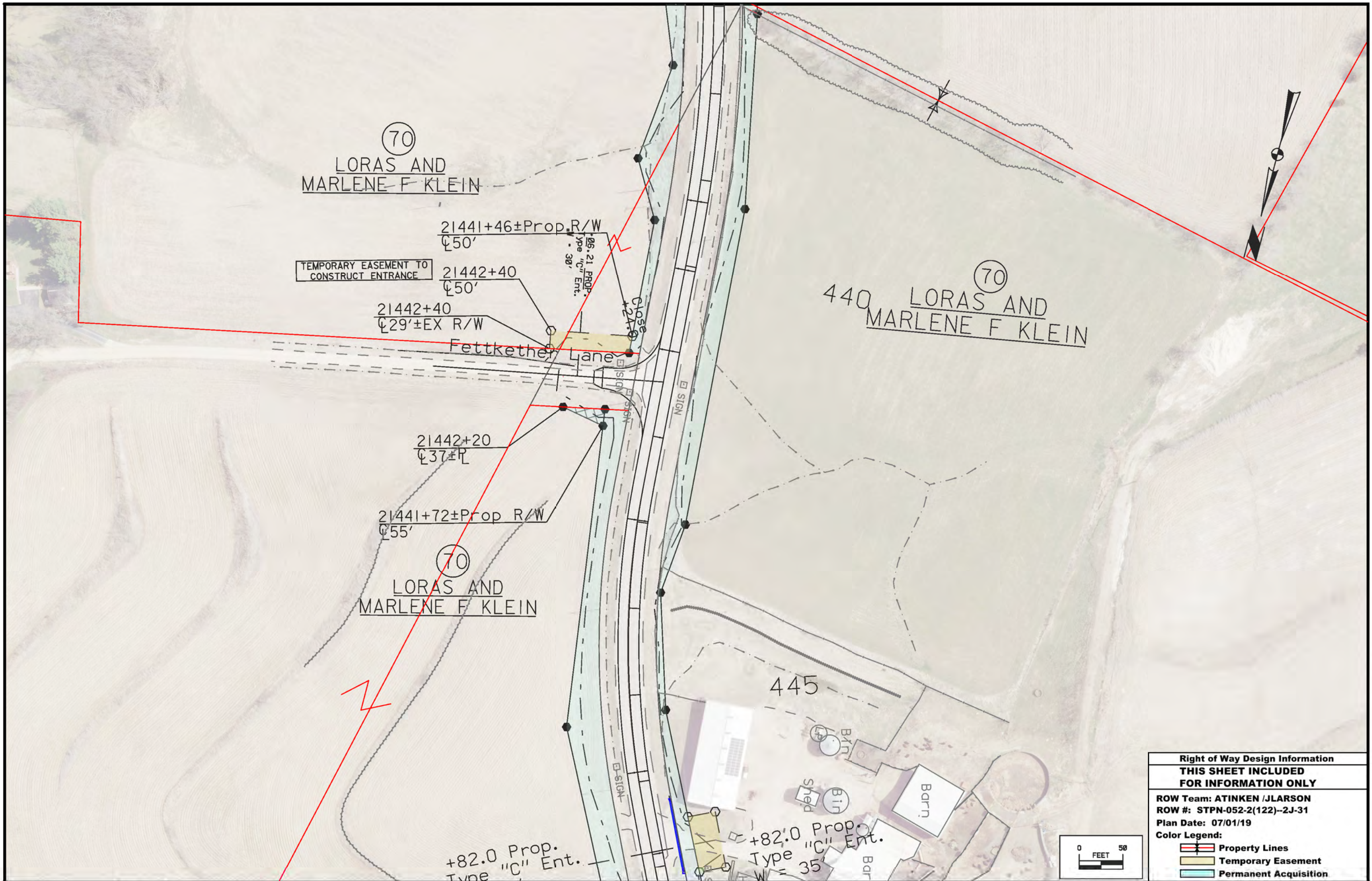
Right of Way Design Information	
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 7/28/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition





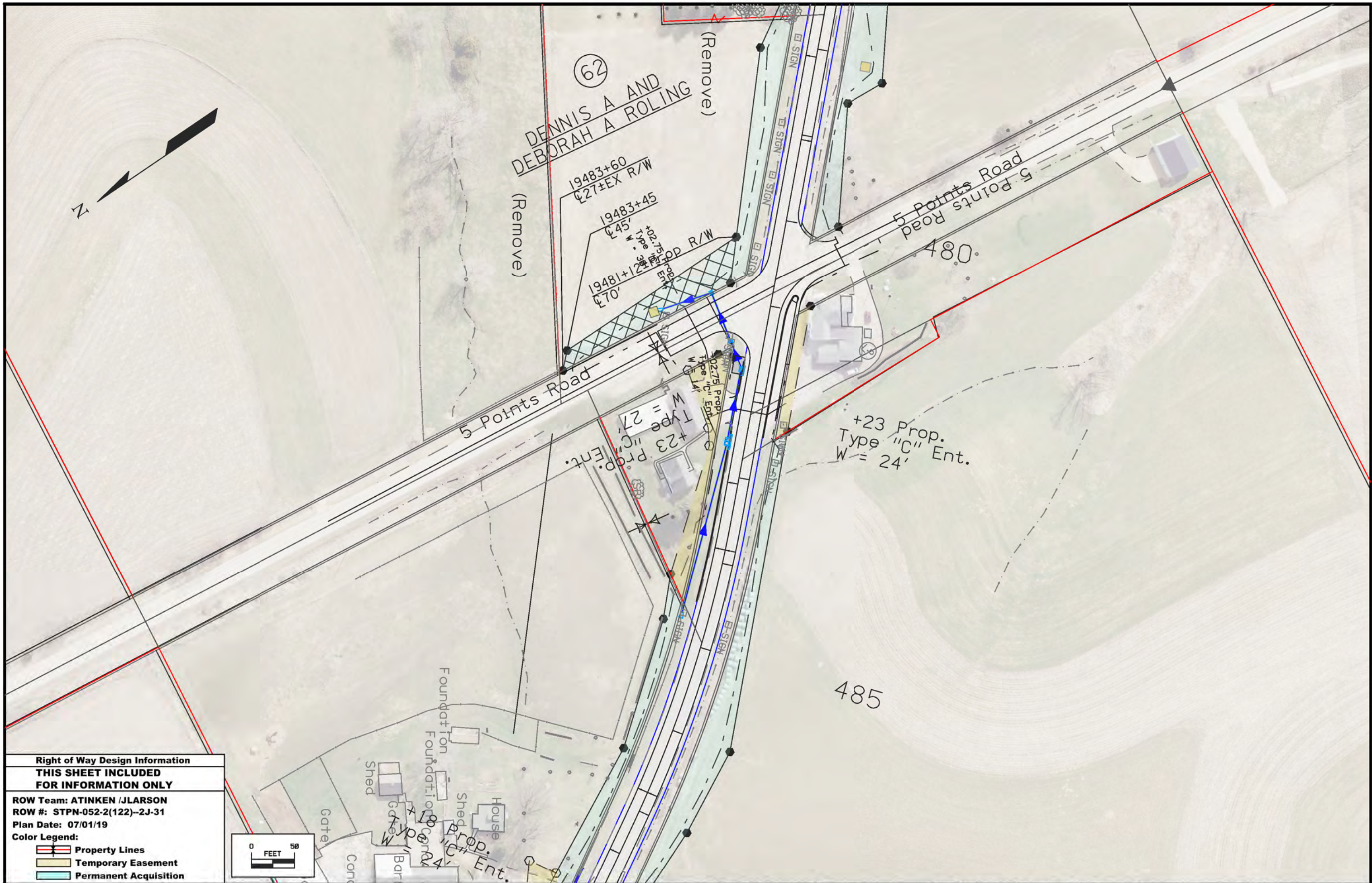
Right of Way Design Information	
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TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

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ROW #: STPN-052-2(122)-2J-31	
Plan Date: 07/01/19	
Color Legend:	
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	Permanent Acquisition

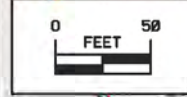


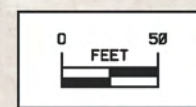
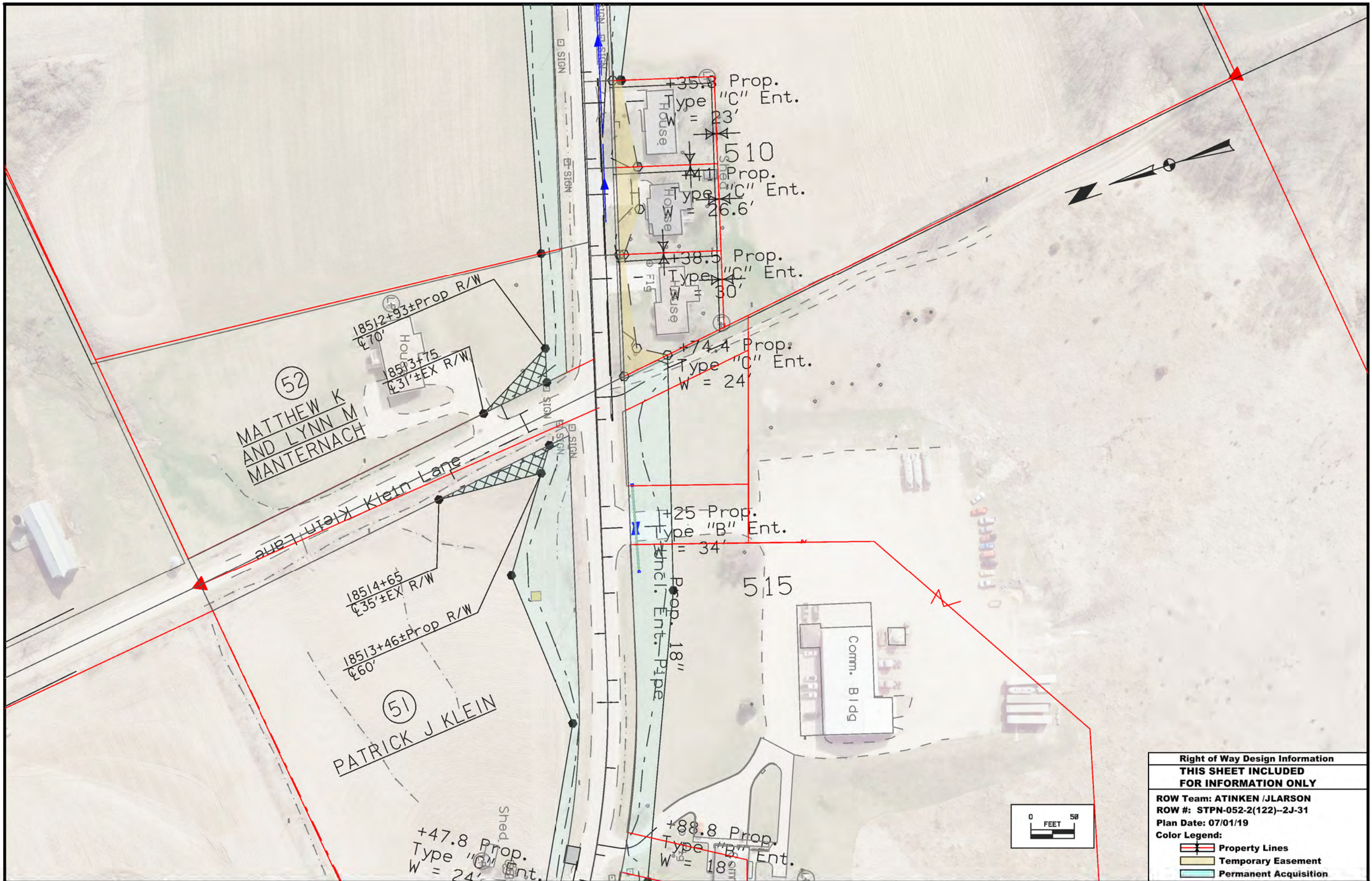
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ROW Team: ATINKEN /JLARSON
 ROW #: STPN-052-2(122)--2J-31
 Plan Date: 07/01/19

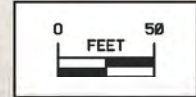
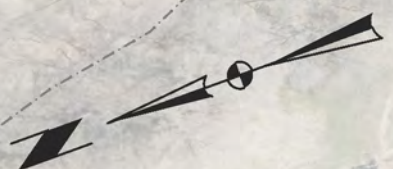
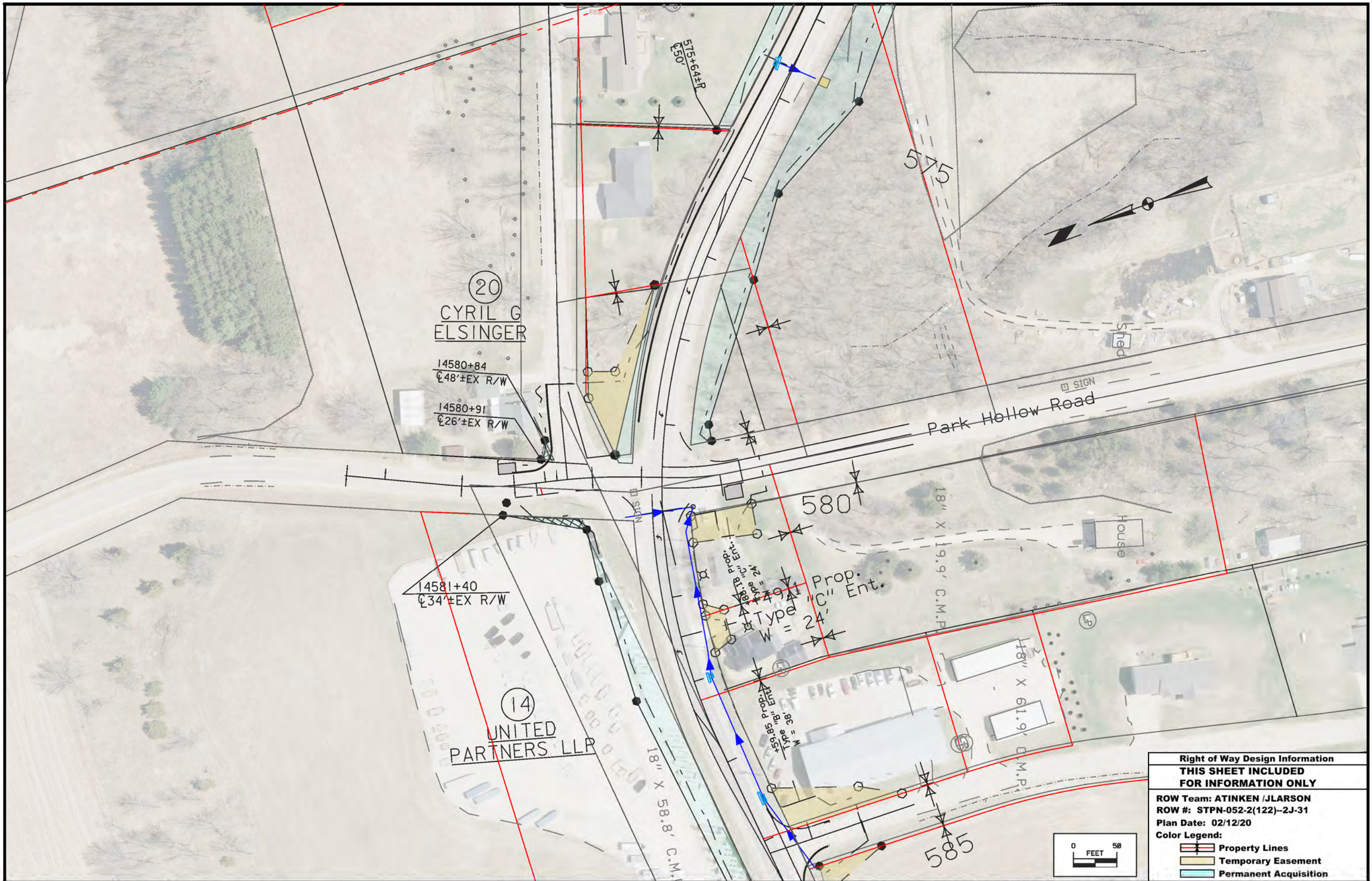
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	Permanent Acquisition



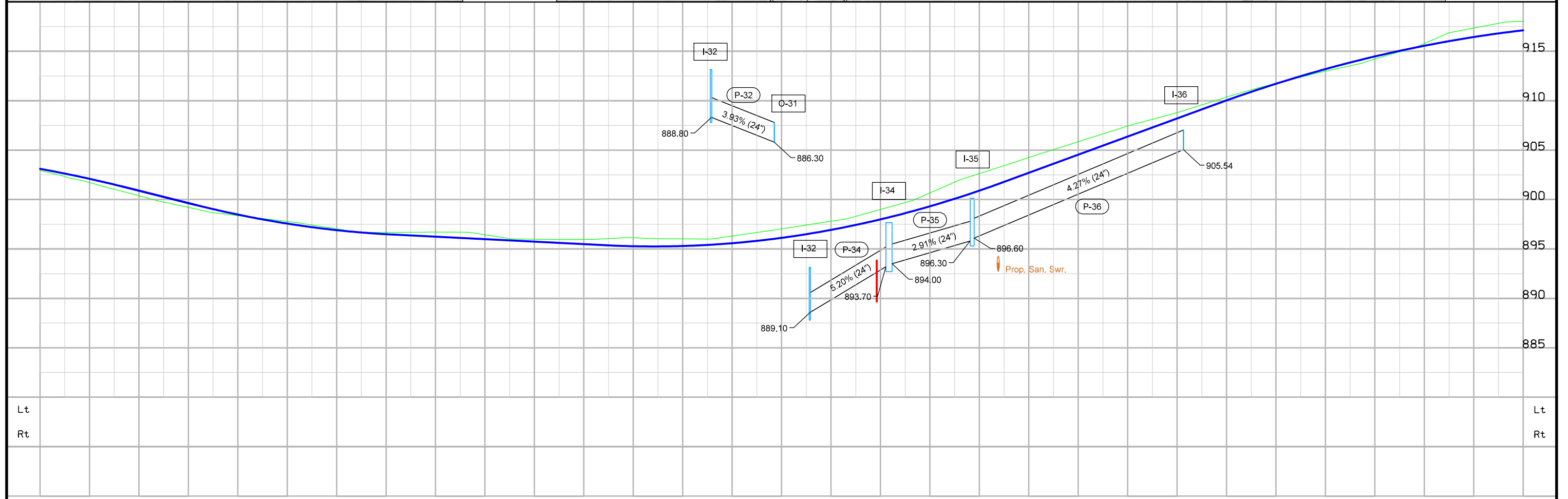
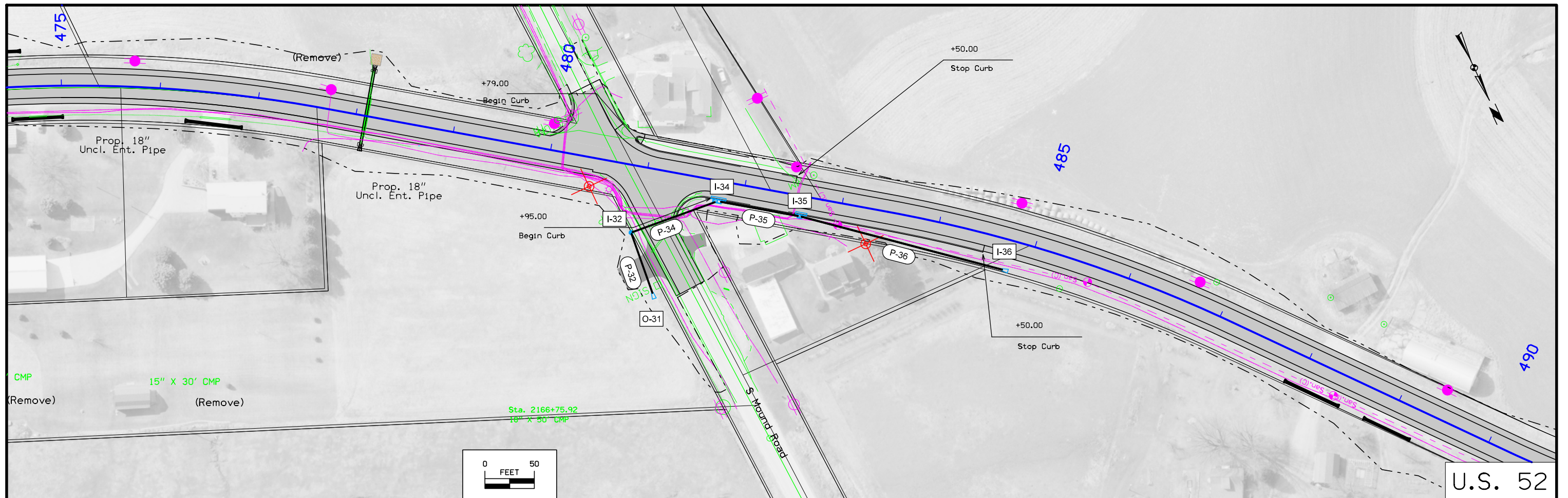
Right of Way Design Information	
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ROW Team: ATINKEN /JLARSON	
ROW #: STPN-052-2(122)-2J-31	
Plan Date: 02/12/20	
Color Legend:	
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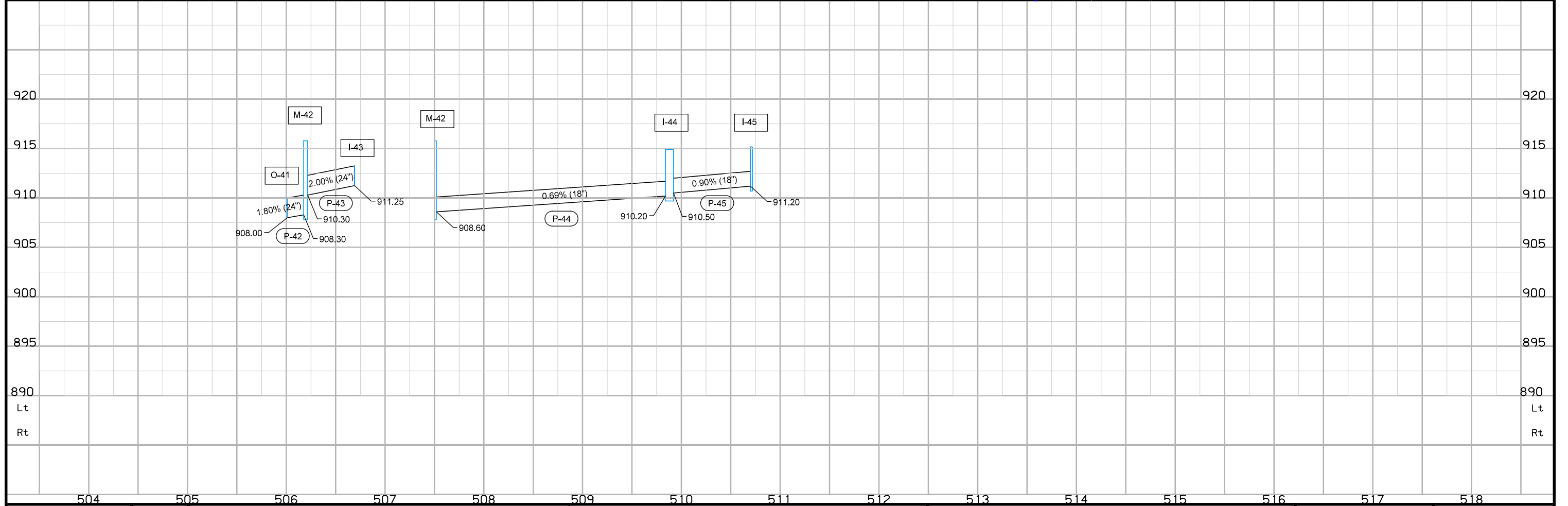
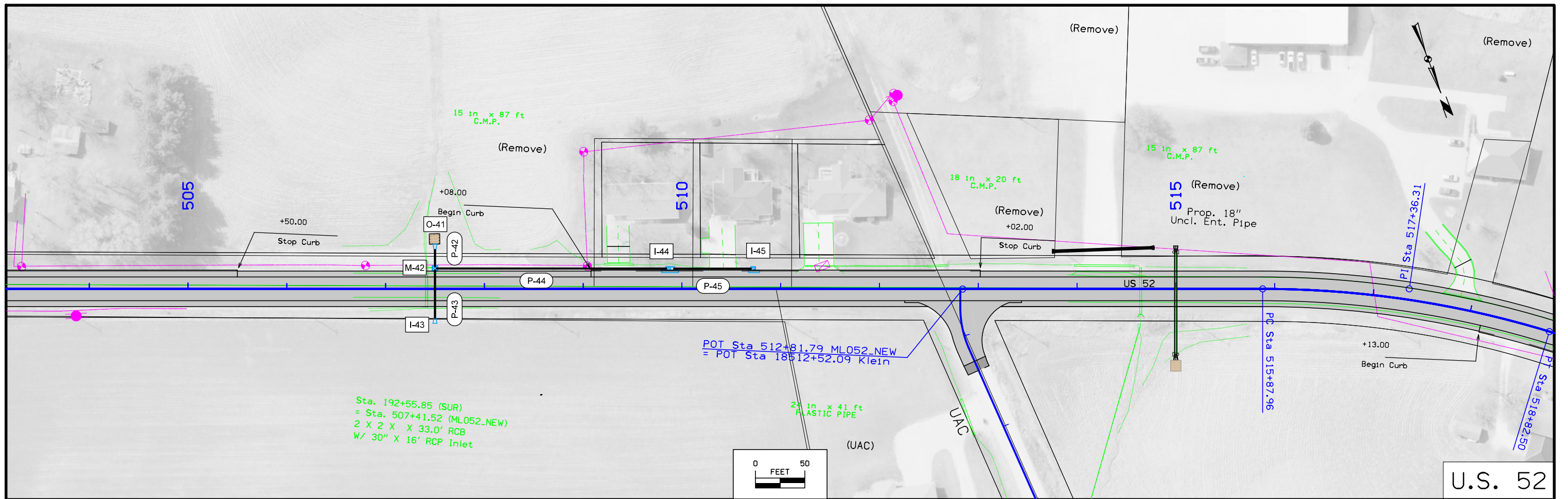
STORM SEWER

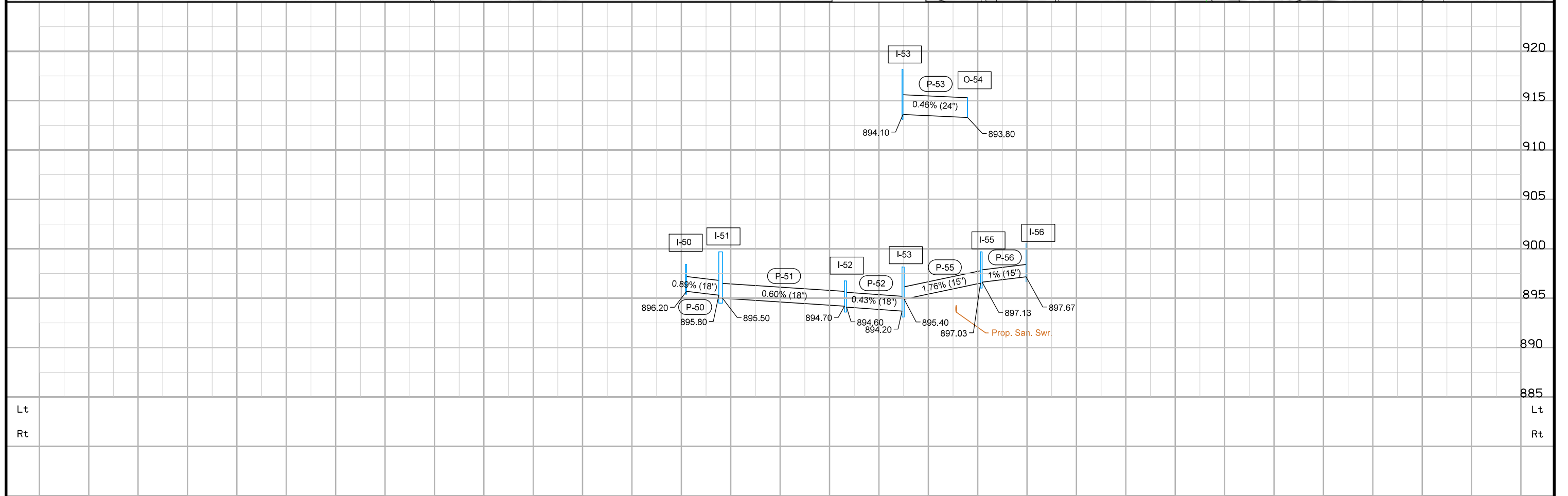
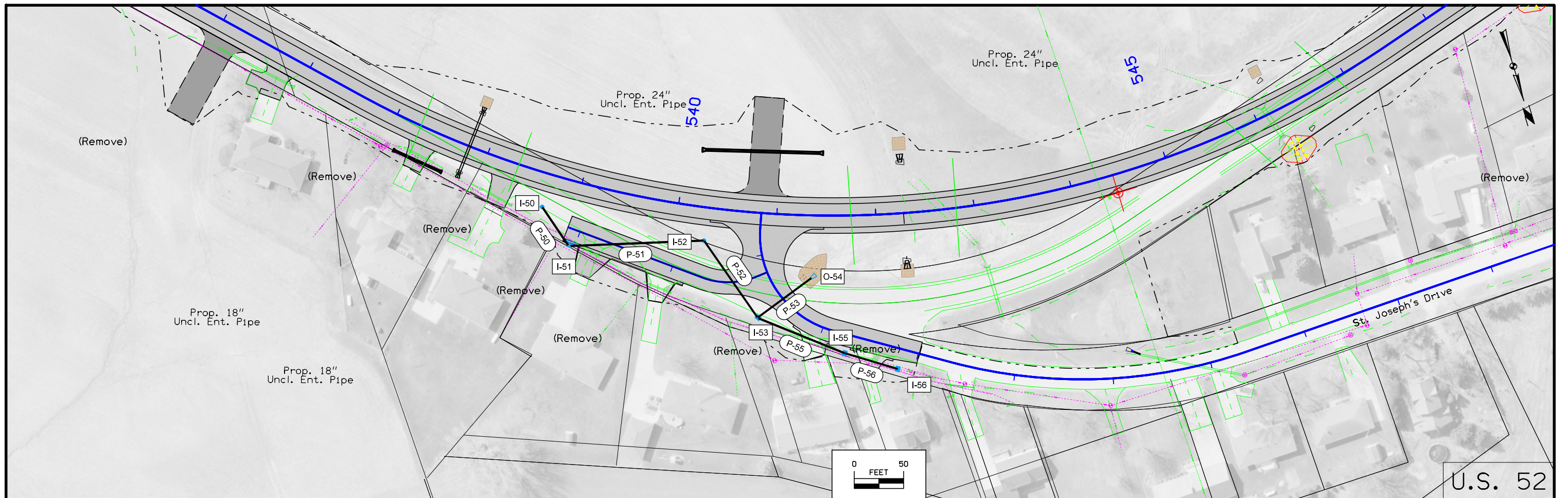
① Diameter or equivalent diameter

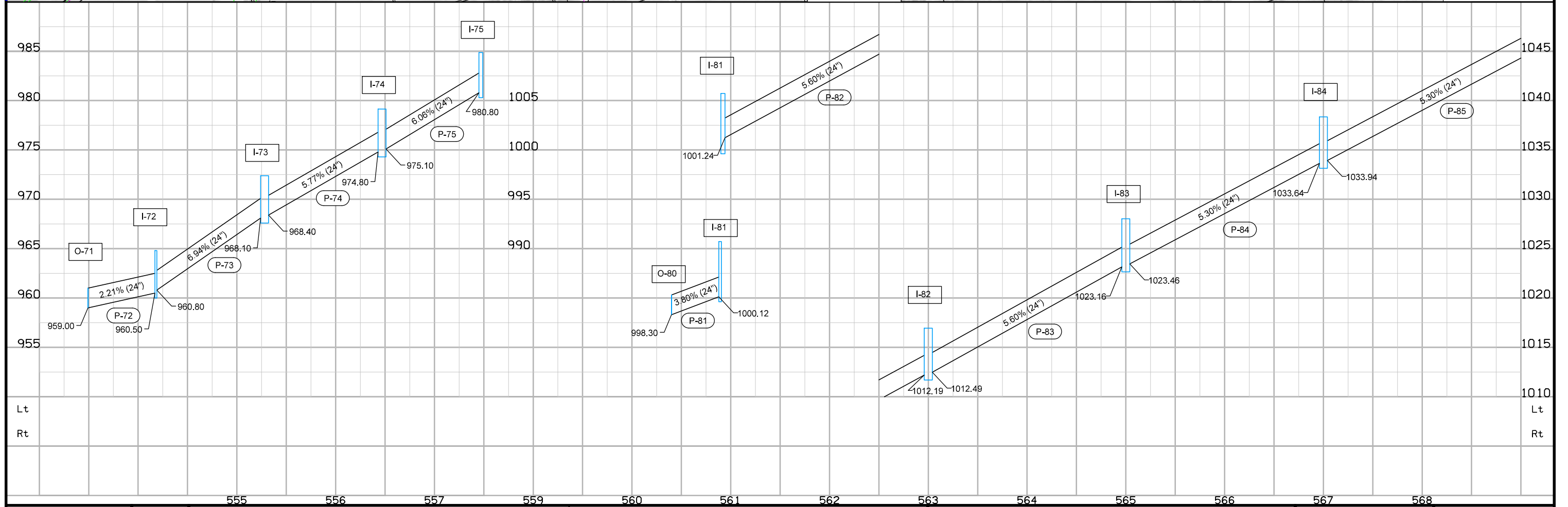
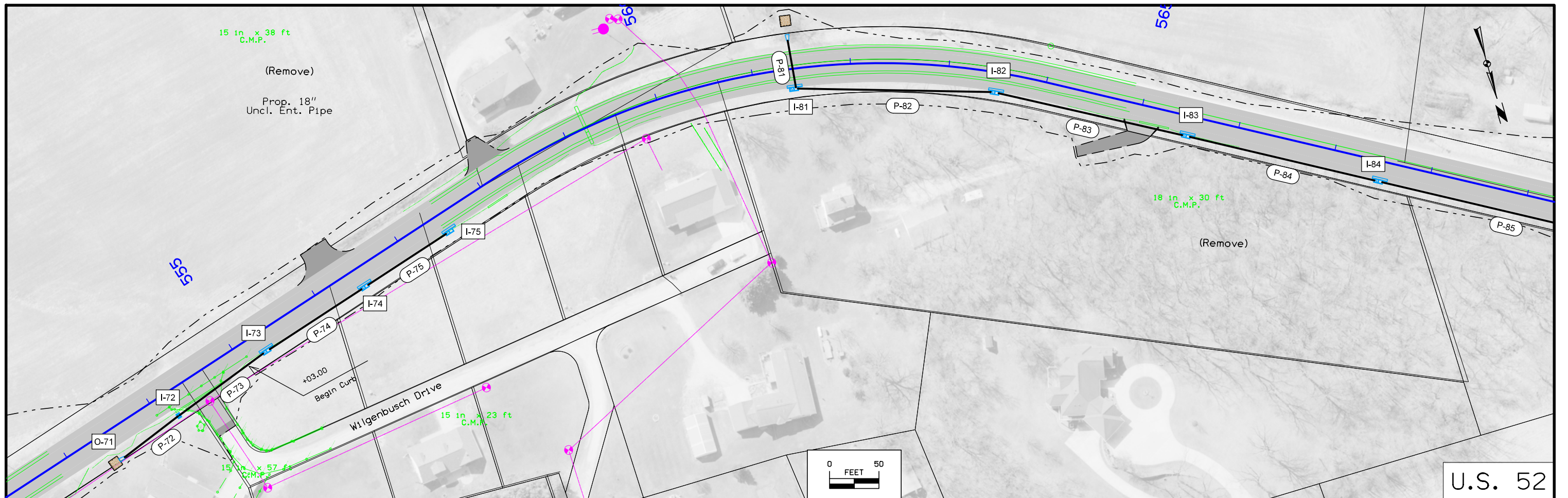
* Bid Item
** For SW-545

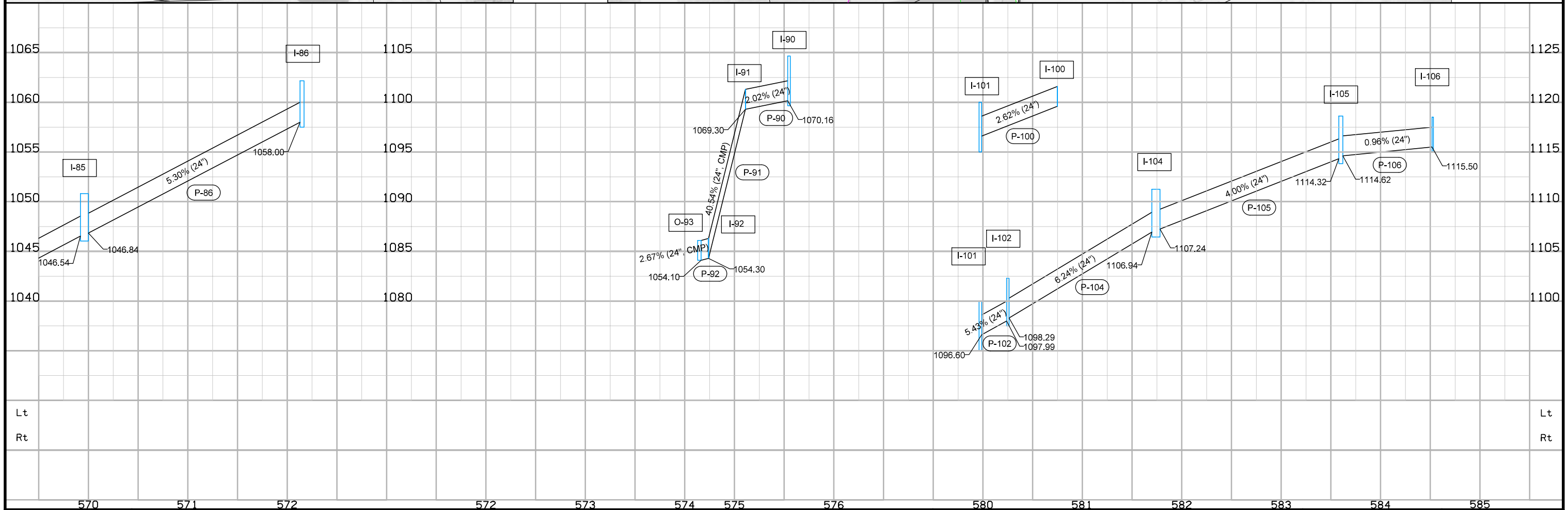
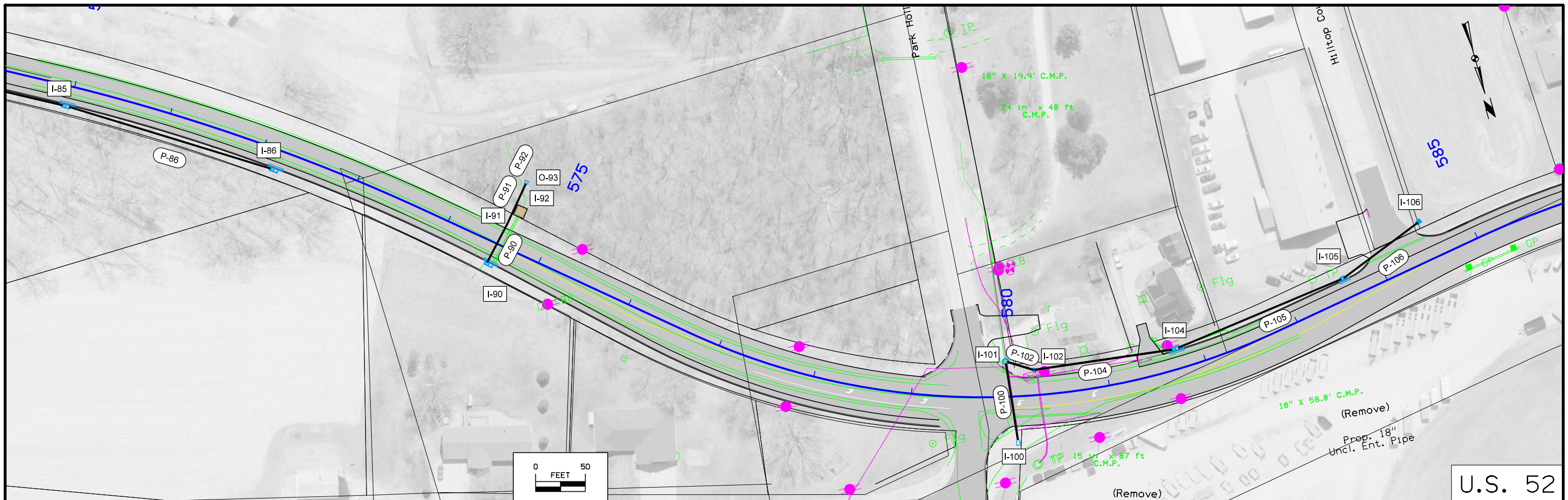
INTAKES AND UTILITY ACCESSES							PIPES													
							Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.													
No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade	Bottom Well	Extension Length**	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe Size	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121)	Flow Lines			Pipe Profile Sheet No.	Notes
			Elev.	Elev.	FT			From	To							Inlet Elevation	Outlet Elevation	Other Elevation		
															Type					
O-31	19482+35.00, 37	DR-201 (24")	888.3	886.3			P-32	I-32	O-31	2000	24	66	63.2	3.93		888.8	886.3			
I-32	19481+65.00, 26.5	SW-512 (36" Type 4D Casting)	893.65	888.3			P-34	I-34	I-32	2000	24	93	88.4	5.2		893.7	889.1			
I-34	481+75.00, 19	SW-509	898.16	893.2			P-35	I-35	I-34	2000	24	83	79.0	2.91		896.3	894			
I-35	482+60.00, 19	SW-507	900.63	895.8			P-36	I-36	I-35	2000	24	212	209.4	4.27		905.54	896.6			
I-36	484+80.00, 31	DR-201 24"	907.54	905.54																
O-41	507+50.00, -45.53	DR-201 (24")	910	908			P-42	M-42	O-41	2000	24	19	16.7	1.8		908.3	908			
M-42	507+50.00, -20.7	SW-402 (4' x 4')	915.8	907.8			P-43	I-43	M-42	2000	24	50	47.4	2		911.25	910.3			
I-43	507+50.00, 34.87	DR-201 24"	913.25	911.25			P-44	I-44	M-42	2000	18	236	232.0	0.69		910.2	908.6			
I-44	509+88.00, -19	SW-509	914.92	909.7			P-45	I-45	I-44	2000	18	82	78.0	0.9		911.2	910.5			
I-45	510+72.00, -19	SW-507	915.18	910.7																
I-50	538+68.00, 34	SW-512 (30" Type 5 Casting)	898.93	895.9			P-50	I-50	I-51	2000	18	49	44.8	0.89		896.2	895.8			
I-51	53+05.10, -15	SW-507	900.2	895			P-51	I-51	I-52	2000	18	137	133.0	0.6		895.5	894.7			
I-52	540+30.00, 33.6	SW-512 (30" Type 4C Casting)	897.25	894.1			P-52	I-52	I-53	2000	18	97	92.6	0.43		894.6	894.2			
I-53	51+21.00, -39.8	SW-511	898.66	893.6			P-53	I-53	O-54	2000	24	68	65.4	0.46		894.1	893.8			
O-54	541+40.00, 60	DR-201 (24")	895.8	893.8			P-55	I-55	I-53	2000	18	97	92.5	1.76		897.03	895.4			
I-55	45+72.00, -18.9	SW-511	900.2	894.83			P-56	I-56	I-55	2000	18	58	54.0	1		897.67	897.13			
I-56	45+16.07, -20.5	SW-511	901	895.67																
O-71	553+43.12, 31.63	DR-201 (24")	961	958.5			P-72	I-72	O-71	2000	24	70	67.9	2.21		960.5	959			
I-72	554+18.00, 26.5	SW-511	964.8	960			P-73	I-73	I-72	2000	24	110	105.2	6.94		968.1	960.8			
I-73	555+28.00, 19	SW-509	972.4	967.6			P-74	I-74	I-73	2000	24	115	111.0	5.77		974.8	968.4			
I-74	556+47.00, 19	SW-509	979.15	974.3			P-75	I-75	I-74	2000	24	98	94.0	6.06		980.8	975.1			
I-75	557+49.00, 19	SW-509	984.88	980.3																
O-80	561+40.00, -35	DR-201 (24")	1000.3	998.3			P-81	I-81	O-80	2000	24	50	47.9	3.8		1000.12	998.3			
I-81	561+40.00, 19	SW-509	1005.7	999.62			P-82	I-82	I-81	2000	24	200	195.4	5.6		1012.19	1001.24			
I-82	563+50.00, 19	SW-509	1016.9	1011.69			P-83	I-83	I-82	2000	24	195	190.6	5.6		1023.16	1012.49			
I-83	565+50.00, 19	SW-509	1028	1022.66			P-84	I-84	I-83	2000	24	196	192.0	5.3		1033.64	1023.46			
I-84	567+50.00, 19	SW-509	1038.4	1033.14			P-85	I-85	I-84	2000	24	242	237.8	5.3		1046.54	1033.94			
I-85	569+96.00, 19	SW-509	1050.8	1046.04			P-86	I-86	I-85	2000	24	215	210.6	5.3		1058	1046.84			
I-86	572+17.00, 19	SW-509	1062.2	1057.5																
I-90	574+55.00, 20.68	SW-509	1074.7	1069.66			P-90	I-90	I-91	2000	24	45	42.7	2.02		1070.16	1069.3			
I-91	574+55.00, -22	DR-122	1071.3	1069.3			P-91	I-91	I-92	CMP	2	37	37.0	40.54		1069.3	1054.3			
I-92	574+55.00, -59	CMP Elbow	1056.3	1054.3			P-92	I-92	O-93	CMP	2	10	7.5	2.67		1054.3	1054.1			
O-93	574+55.00, -70	DR-203 (24")	1056.1	1054.1																
I-100	580+05.64, 49.01	DR-201 24"	1101.6	1099.6			P-100	I-100	I-101	2000	24	79	76.3	3.93		1099.6	1096.6			
I-101	579+96.11, -35.41	SW-401 (60")	1100	1095			P-102	I-102	I-101	2000	24	30	25.6	5.43		1097.99	1096.6			
I-102	580+25.00, -25.55	SW-512 (30" Type 4C Casting)	1102.3	1097.49			P-104	I-104	I-102	2000	24	143	138.7	6.24		1106.94	1098.29			
I-104	581+74.00, -19	SW-509	1111.2	1106.44			P-105	I-105	I-104	2000	24	181	176.8	4		1114.32	1107.24			
I-105	583+60.00, -19	SW-507	1118.6	1113.82			P-106	I-106	I-105	2000	24	96	91.7	0.96		1115.5	1114.62			
I-106	584+53.20, -39.77	SW-511	1118.5	1115																











ABBREVIATIONS

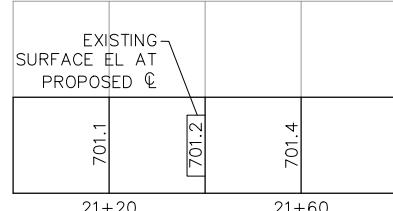
<p>Δ CENTRAL ANGLE A/C AIR CONDITIONING(ER) AC ACRES A.F.F. ABOVE FINISHED FLOOR AGG AGGREGATE AOH ARROW ON HYDRANT ARCH ARCHITECTURAL ASPH ASPHALT AVG AVERAGE</p> <p>B-B B/C - B/C B/C, BOC BACK OF CURB B/DITCH BOTTOM OF DITCH BFP BACKFLOW PREVENTOR B/L BASE LINE B/S BOTTOM OF SLOPE BLDG BUILDING B.M. BENCH MARK BOP BEGINNING OF PROJECT BOT BOTTOM BSMT BASEMENT BV BUTTERFLY VALVE</p> <p>C&G CURB AND GUTTER CATV CABLE TELEVISION CB CATCH BASIN C-C CENTER TO CENTER CF CUBIC FEET CH CHORD CH BRG CHORD BEARING CIP CAST IRON PIPE C-I-P CAST-IN-PLACE CISP CAST IRON SOIL PIPE CJ CONTROL JOINT CL OR CL CENTERLINE CLR CLEAR CMP CORRUGATED METAL PIPE CMU CONCRETE MASONRY UNIT CO CLEAN OUT COL COLUMN COMP COMPACTED CONC CONCRETE CONN CONNECTION CONST CONSTRUCTION CONT CONTINUOUS COR CORNER CP CONTROL POINT CPE CORRUGATED POLYETHYLENE PIPE CRST CRUSHED STONE CSP CORRUGATED STEEL PIPE CTRD CENTERED CTR CENTER CULT CULTIVATED CV CHECK VALVE CY CUBIC YARD</p> <p>D DEGREE OF CURVE DIA (φ) DIAMETER DIP DUCTILE IRON PIPE DN DOWN DRWY DRIVEWAY DS DOWNSPOUT DWG(S) DRAWING(S) DWL(S) DOWEL(S)</p> <p>E EAST E'LY EASTERLY EA EACH EJ EXPANSION JOINT EL ELEVATION ELEC ELECTRICAL ELEV ELEVATOR EMBED EMBEDMENT ENGR ENGINEER ENTR ENTRANCE EOP END OF PROJECT EOR END OF RADIUS E/P EDGE OF PAVEMENT EQ EQUAL E/S EDGE OF SHOULDER ESMT EASEMENT EST ESTIMATE EX EXISTING EXC EXCAVATE/EXCAVATION EXP EXPANSION EXT EXTERIOR EXTD EXTEND EW EACH WAY</p> <p>FD FLOOR DRAIN FDN FOUNDATION F.E. FIELD ENTRANCE FES FLARED END SECTION F-F FACE TO FACE FFE FINISH FLOOR ELEVATION FG FORM GRADE FIN GR FINISHED GRADE FL FLOWLINE FLG FLANGE FLR FLOOR FM FORCE MAIN FND FOUND FT FOOT/FEET FTG FOOTING FUT FUTURE FV FIELD VERIFY</p> <p>G GUTTER GC GENERAL CONTRACTOR GALV GALVANIZED GND GROUND GRAN GRANULAR GRD GRADE GV GATE VALVE</p> <p>HMA HOT MIX ASPHALT HORIZ HORIZONTAL HPT HIGH POINT HSD HEADLIGHT STOPPING DISTANCE HYD HYDRANT</p> <p>ID INSIDE DIA/INSIDE DIM IE INVERT ELEVATION IMP IMPROVEMENTS IN INCHES INV INVERT IP IRON PIPE</p> <p>JB JUNCTION BOX JT JOINT/JOINT LENGTH</p> <p>K RATE OF VERT CURVATURE</p> <p>L LENGTH OF CURVE LAT LATERAL LF LINEAL FOOT LONG LONGITUDINAL LP LIGHT POLE LPT LOW POINT LT LEFT</p> <p>MAX MAXIMUM ME MATCH EXISTING MH MANHOLE MIN MINIMUM MISC MISCELLANEOUS MON MONUMENT MP MILE POST</p> <p>N NORTH N/A NOT APPLICABLE NE'LY NORTHEASTERLY N'LY NORTHERLY NO/# NUMBER NIC NOT IN CONTRACT NTS NOT TO SCALE NW'LY NORTHWESTERLY</p> <p>OC ON CENTER OD OUTSIDE DIAMETER</p> <p>PC POINT OF CURVE PERF PERFORATED PI POINT OF INTERSECTION P/L PROPERTY LINE PM PRINCIPAL MERIDIAN POB POINT OF BEGINNING POC POINT OF CURVE POT POINT OF TANGENT PRC POINT OF REVERSE CURVE PRELIM PRELIMINARY PROP PROPOSED PRV PRESSURE REDUCING VALVE PT POINT OF TANGENCY PVC POLYVINYL CHLORIDE PVMT PAVEMENT</p> <p>QTY QUANTITY</p>	<p>R RADIUS R&R REMOVE & REPLACE R&S REMOVE & SALVAGE RCB REINFORCED CONCRETE BOX RCAP REINFORCED CONCRETE ARCH PIPE RCP REINFORCED CONCRETE PIPE RD ROAD REBAR REINFORCING BAR REF REFERENCE REINF REINFORCING/REINFORCED REV REVISION RIM RIM ELEVATION ROW RIGHT OF WAY RP RADIUS POINT RS RESILIENT SEAT RT RIGHT</p> <p>S SOUTH S= SUPERELEVATION SAN SANITARY SANS SANITARY SEWER SB SOIL BORING SCH SCHEDULE SD SUB DRAIN SEC SECTION SE'LY SOUTHEASTERLY SF SQUARE FOOT S.F.D. STEP FOOTING DOWN SHT SHEET SIG. SIGNAL SIM. SIMILAR S'LY SOUTHERLY SOG SLAB ON GRADE SPEC SPECIFICATION SS STAINLESS STEEL SSD STOPPING SIGHT DISTANCE ST STREET STA STATION STD STANDARD STL STEEL STM STORM STMS STORM SEWER SW'LY SOUTHWESTERLY SY SQUARE YARD</p> <p>T TANGENT LENGTH T/B TOP OF BANK T/DITCH TOP OF DITCH T/C, TC TOP OF CURB T/GRAV TOP OF GRAVEL T/WALL TOP OF WALL T/P, TP TOP OF PAVEMENT T/S TOP OF SLOPE T/SUB TOP OF SUBGRADE T/W, TW TOP OF WALK T/WM TOP OF WATER MAIN T & B TOP AND BOTTOM TOP OF BEAM T.O.B. TOP OF BRICK LEDGE T.O.C. TOP OF CONCRETE T.O.E.F. TOP OF EXISTING FOOTING T.O.F. TOP OF FOOTING T.O.M. TOP OF MASONRY T.O.P. TOP OF PIER T.O.S. TOP OF STEEL TCE TEMP CONSTRUCTION EASEMENT TEL TELEPHONE TEMP TEMPORARY THK THICK / THICKNESS TWP TOWNSHIP TYP TYPICAL</p> <p>U UTILITY UAC USE AS CONSTRUCTED UE UTILITY EASEMENT UL UNDERWRITERS LABORATORIES, INC. ULFM UNDERWRITERS LABORATORIES FACTORY MUTUAL UNO UNLESS NOTED OTHERWISE</p> <p>VAR VARIES VC VERTICAL CURVE VCP VITRIFIED CLAY PIPE VER VERIFY VERT VERTICAL VOL VOLUME VPC VERT POINT OF CURVE VPI VERT POINT OF INTERSECTION VPT VERT POINT OF TANGENCY</p> <p>W WEST W/ WITH W'LY WESTERLY WM WATER MAIN W/O WITHOUT W.P. WORKING POINT WD WOOD WSO WATER SHUT OFF WV WATER VALVE WWF WELDED WIRE FABRIC</p> <p>YD YARD</p>
--	--

LEGEND

EXISTING		PROPOSED
---	PROPERTY LINE	---
---	EASEMENT	---
---	SECTION LINE	---
---	QUARTER SECTION LINE	---
---	QUARTER QUARTER SECTION LINE	---
---	CENTERLINE	---
D	STORM SEWER	D
SD	SUB DRAIN	SD
S	SANITARY SEWER	S
FM	FORCE MAIN	FM
W	WATER LINE	W
G	GAS LINE	G
OHE	OVERHEAD ELECTRIC	OHE
E	UNDERGROUND ELECTRIC	E
OHT	OVERHEAD TELEPHONE	OHT
T	UNDERGROUND TELEPHONE	T
OHTV	OVERHEAD TELEVISION	OHTV
TV	UNDERGROUND TELEVISION	TV
FIB	FIBER OPTIC	FIB
X	WIRE FENCE	X
O	CHAINLINK FENCE	O
□	WOOD FENCE	□
---000---	CONTOUR LINE	---000---
	RAILROAD TRACKS	
—+—+—+—	GUARD RAIL	—+—+—+—
+ 0.00	SPOT ELEVATION	+ 0.00
→	DIRECTION OF FLOW	→
~~~~~	TREE LINE	~~~~~
⊠	CATCH BASIN	⊠
⊙	AREA INTAKE	⊙
⊕	STORM MANHOLE	⊕
⊗	SANITARY MANHOLE	⊗
⊖	UTILITY MANHOLE	⊖
⊙	WATER VALVE MANHOLE	⊙
⊗	FIRE HYDRANT	⊗
⊗	WATER SHUT OFF	⊗
⊗	WATER VALVE	⊗
⊗	YARD HYDRANT	⊗
⊗	GAS VALVE	⊗
+	SIGN	+
⊙	UTILITY POLE	⊙
⊙	UTILITY POLE WITH LIGHT	⊙
⊙	TRAFFIC SIGNAL POLE	⊙
⊙	GUY ANCHOR	⊙
☆	LIGHT POLE	☆
□	UTILITY PEDESTAL	□
⊗	WELL	⊗
⊠	MAILBOX	⊠
≡	WATER LEVEL	≡
⊙	BOLLARD	⊙
⊙	SOIL BORING	⊙
⊙	POST INDICATOR VALVE	⊙
⊙	DECIDUOUS TREE W/ TRUNK DIA.	⊙
⊙	CONIFEROUS TREE W/ TRUNK DIA.	⊙
⊙	SHRUB OR BUSH	⊙

**NOTES**

ABBREVIATIONS AND LEGEND ONLY APPLIES TO S SHEETS.



LICENSED PROFESSIONAL ENGINEER  
CHRISTOPHER A. BECKLIN  
23624  
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

FOR IOWA, P.C.

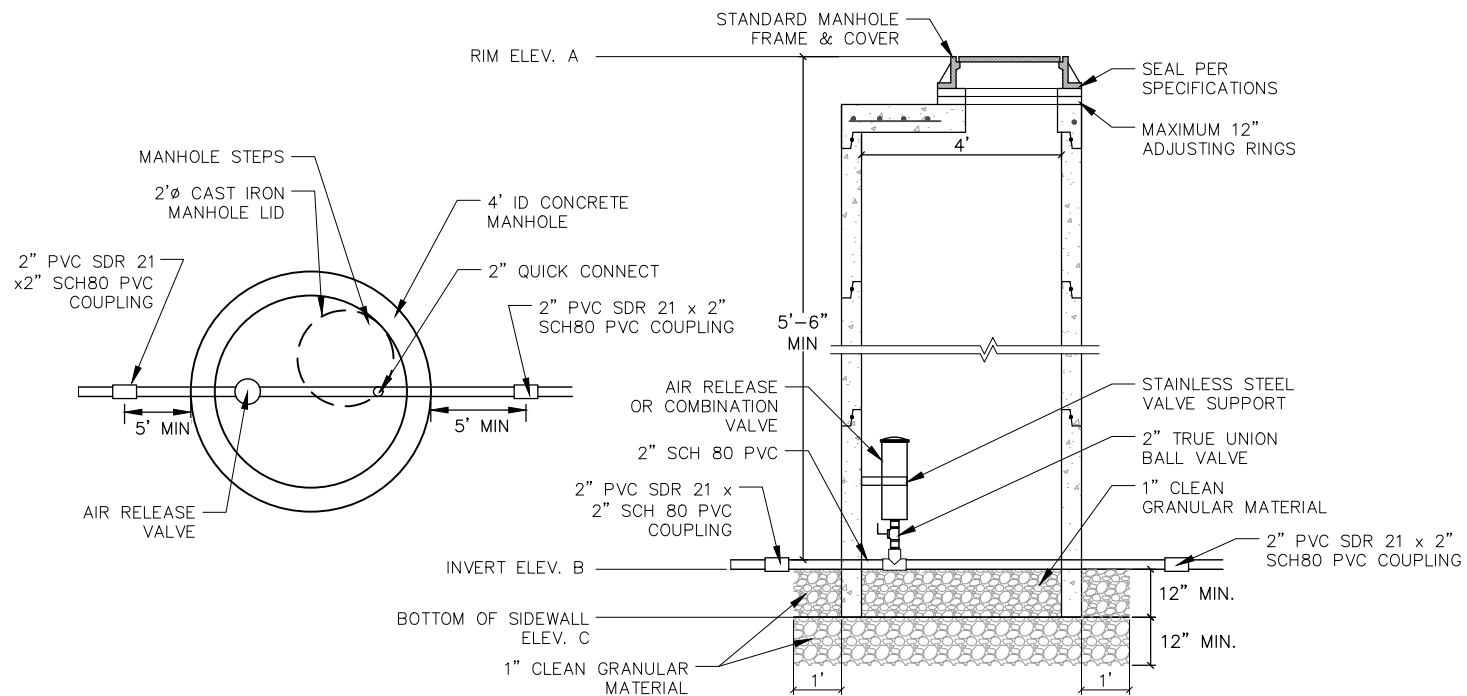
CHRISTOPHER A. BECKLIN DATE _____

12/31/2020 RENEWAL DATE

PAGES OR SHEETS COVERED BY THIS CERTIFICATION: S SHEETS

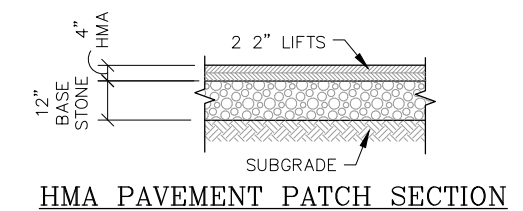
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	ELEVATIONS (FT)			VALVE SCHEDULE
	A	B	C	
AIR RELEASE/VACUUM STATION NO. 1	920.65	914.81	913.81	2" COMBINATION AIR RELEASE/VACUUM VALVE
AIR RELEASE STATION NO. 2	914.78	909.11	908.11	2" AIR RELEASE VALVE
AIR RELEASE STATION NO. 3	919.83	913.98	912.98	2" AIR RELEASE VALVE

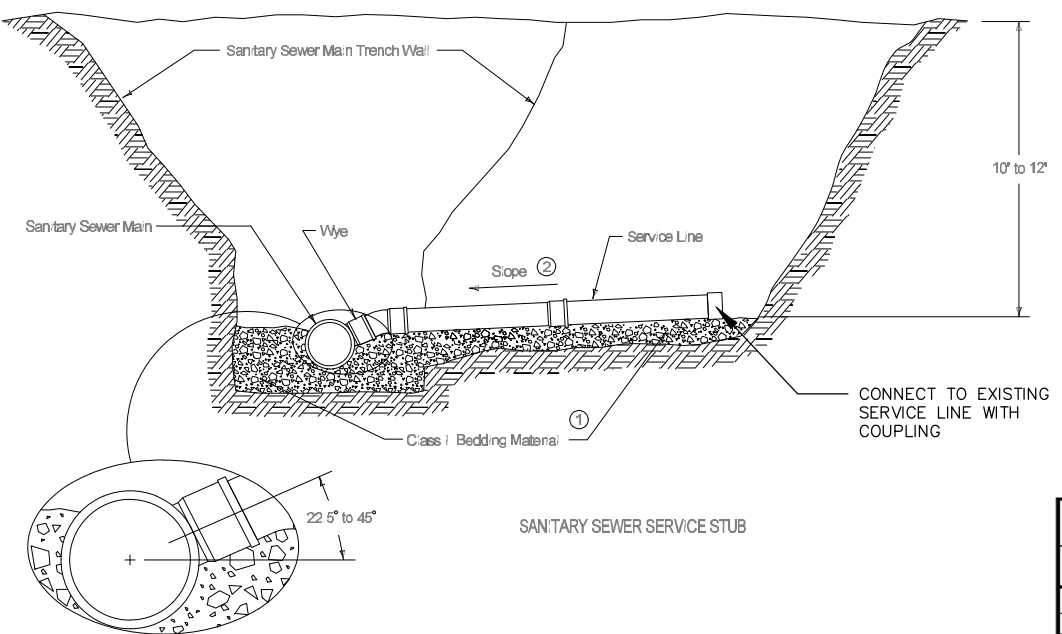
**7**  
S.2  
**AIR RELEASE STRUCTURE**  
NOT TO SCALE



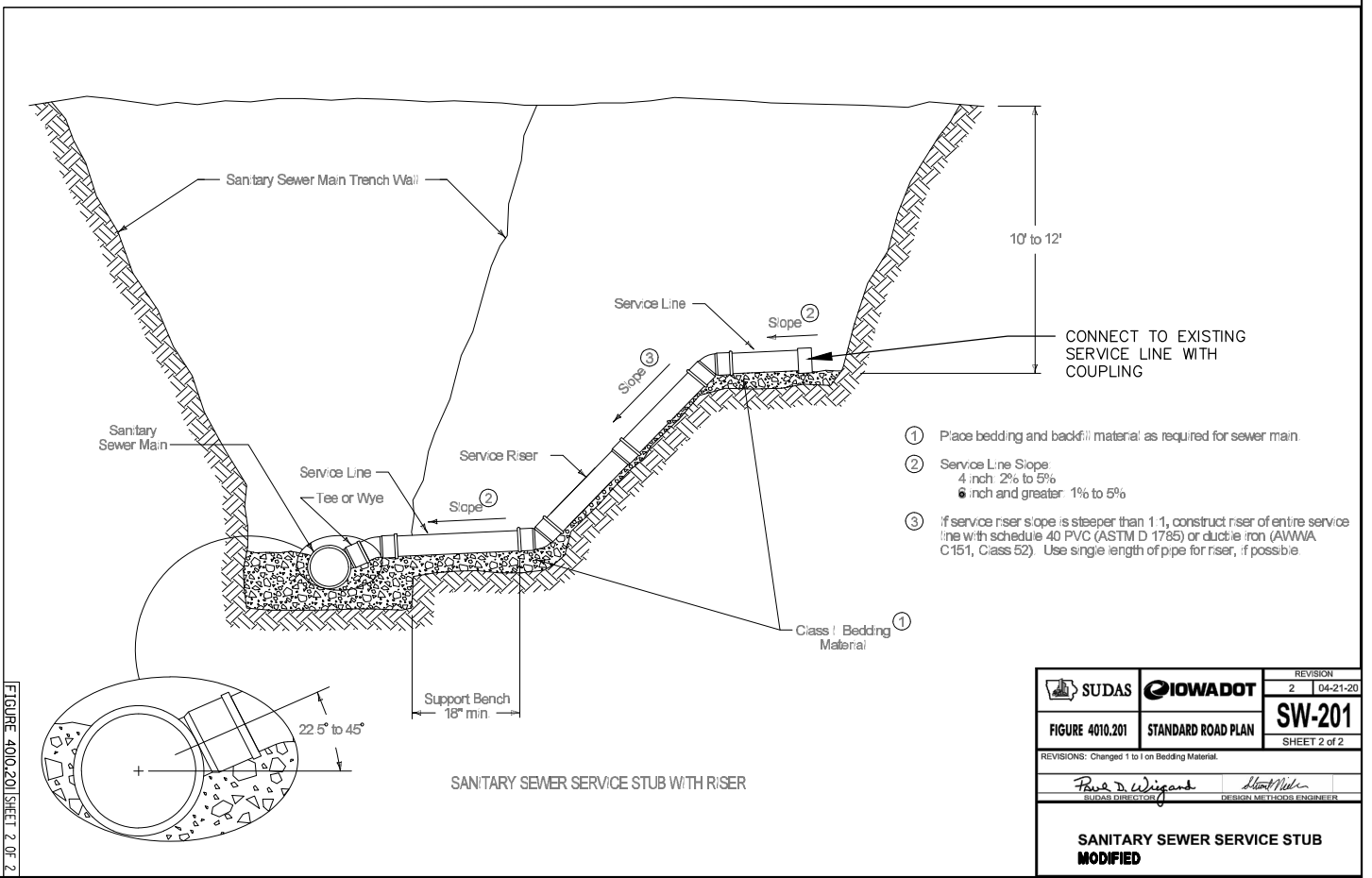
**5**  
S.2  
**PAVING SECTIONS**  
NOT TO SCALE

STANDARD ROAD PLANS		
THE FOLLOWING STANDARD ROAD PLANS APPLY TO CONSTRUCTION WORK FOR THE S-SHEETS		
PV-101	4/21/2020	JOINTS
PV-102	4/21/2020	PCC CURB DETAILS
SW-101	4/16/2019	TRENCH BEDDING AND BACKFILL ZONES
SW-103	4/21/2020	FLEXIBLE GRAVITY PIPE TRENCH BEDDING
SW-104	4/21/2020	PRESSURE PIPE TRENCH BEDDING
SW-301	4/21/2020	CIRCULAR SANITARY SEWER MANHOLE
SW-306	4/21/2015	CHIMNEY SEALS FOR SANITARY SEWER MANHOLES
SW-601	4/21/2020	CASTINGS FOR SANITARY SEWER MANHOLES

- ① Place bedding and backfill material as required for sewer main.
- ② Service Line Slope:  
4 inch 2% to 5%  
6 inch and greater 1% to 5%



SUDAS	IOWADOT	REVISION 2 04-21-20
FIGURE 4010.201	STANDARD ROAD PLAN	<b>SW-201</b>
REVISIONS: Changed 1 to 1 on Bedding Material.		SHEET 1 of 2
<i>Paul D. Wigand</i> SUDAS PROJECT ENGINEER		<i>Scott Miller</i> DESIGN METHODS ENGINEER
<b>SANITARY SEWER SERVICE STUB MODIFIED</b>		



- ① Place bedding and backfill material as required for sewer main.
- ② Service Line Slope:  
4 inch 2% to 5%  
6 inch and greater 1% to 5%
- ③ if service riser slope is steeper than 1:1, construct riser of entire service line with schedule 40 PVC (ASTM D 1785) or ductile iron (AWWA C151, Class 52). Use single length of pipe for riser, if possible.

SUDAS	IOWADOT	REVISION 2 04-21-20
FIGURE 4010.201	STANDARD ROAD PLAN	<b>SW-201</b>
REVISIONS: Changed 1 to 1 on Bedding Material.		SHEET 2 of 2
<i>Paul D. Wigand</i> SUDAS PROJECT ENGINEER		<i>Scott Miller</i> DESIGN METHODS ENGINEER
<b>SANITARY SEWER SERVICE STUB MODIFIED</b>		

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DESIGNED BY: _____ TRACED BY: _____  
 DETAILED BY: _____ CHECKED BY: _____

**iiw** 563.556.2464 ♦ 800.556.4491  
 IIV, P.C. ♦ www.iivengr.com

CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM PROJECT NUMBER N5X-003-9(22)--3H-52 STATE IOWA FED. ROAD DIST. NO. FISCAL YEAR SHEET NO. S.2 TOTAL SHEETS



ESTIMATED PROJECT QUANTITIES					
IDOT PROJECT NO. NHSX-052-2(119)-3H-31					
CONSTRUCTION	REF.	ITEM CODE	BID ITEM DESCRIPTION	UNITS	QUANTITY
USE ONLY	NO.				DIV 2 SRF/CDBG
	1	2105-8425015	TOPSOIL, STRIP, SALVAGE, AND SPREAD	CY	1,034
	2	2115-0100000	MODIFIED SUBBASE	CY	8.7
	3	2212-5070310	PATCH FULL-DEPTH REPAIR	SY	20.7
	4	2435-0130148	MANHOLE, SANITARY SEWER, SW-301, 48 IN.	EACH	28
	5	2435-0600010	MANHOLE ADJUSTMENT, MINOR	EACH	1
	6	2504-0114008	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 8 IN.	LF	3,449
	7	2504-0134008	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, PVC, 8 IN.	LF	51
	8	2504-0200404	SANITARY SEWER SERVICE STUB, PVC, 4 IN.	LF	138
	9	2504-0230000	SEWAGE AIR RELEASE VALVE AND PIT	EACH	3
	10	2504-0240036	REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	675
	11	2504-0240235	SANITARY SEWER ABANDONMENT, PLUG	EACH	10
	12	2504-0240236	SANITARY SEWER ABANDONMENT, FILL AND PLUG, LESS THAN OR EQUAL TO 36 IN. DIA.	LF	3251
	13	2510-6745850	REMOVAL OF PAVEMENT	SY	6
	14	2512-1725256	CURB+GUTTER PCC 2.5	LF	21
	15	2525-8285000	SURVEY CONSTRUCTION	LS	1
	16	2533-4980005	MOBILIZATION	LS	1
	17	2552-0000140	ROCK EXCAVATION	CY	252
	18	2599-9999009	SANITARY SEWER FORCE MAIN, TRENCHED, PVC, 1.5 IN.	LF	158
	19	2599-9999009	SANITARY SEWER FORCE MAIN, TRENCHED, PVC, 2 IN.	LF	3,604
	20	2599-9999009	SANITARY SEWER FORCE MAIN WITH CASING PIPE, TRENCHED, PVC, 1.5 IN. AND 2 IN.	LF	62
	21	2599-9999009	SANITARY SEWER FORCE MAIN WITH CASING PIPE, TRENCHED, PVC, 2 IN.	LF	61
	22	2599-9999009	SANITARY SEWER GRAVITY MAIN AND FORCE MAIN WITH CASING PIPE, TRENCHED, PVC, 8 IN., PVC, 2 IN.	LF	130
	23	2601-2634100	MULCHING	ACRE	1.31
	24	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.46
	25	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	0.85

IDOT PROJECT NO. NHSX-052-2(119)-3H-31		
REF. NO.	ITEM CODE	DATA BELOW IS FOR INFORMATION ONLY AND DOES NOT CONSTITUTE A BASIS FOR EXTRA WORK ORDER REQUESTS
ESTIMATE REFERENCE INFORMATION		
1	2105-8425015	TO BE PLACED AS NEEDED AND AS AUTHORIZED BY THE ENGINEER IN ALL AREAS WHERE GRASS IS TO BE THE FINAL SURFACE IN LOCATIONS WHERE THE DISTURBANCE ASSOCIATED WITH THE DIVISION 2 CONSTRUCTION, STRIP TO A DEPTH OF 6 INCHES AND PLACE AT A DEPTH OF 6 INCHES. QUANTITY PAID SHALL BE PLAN QUANTITY UNLESS ADJUSTED DUE TO GRADING OPERATIONS WHICH REQUIRE ADDITIONAL TOPSOIL TO BE STRIPPED AS APPROVED BY THE ENGINEER.
2	2115-0100000	THE LOCATIONS WHERE MODIFIED SUBBASE IS REQUIRED IS FOR THE PCC CURB AND GUTTER REPLACEMENT AND PATCH FULL-DEPTH REPAIR FOR THE AREA THAT IS LOCATED AT STATION STA 590+66.5 LT. MODIFIED SUBBASE THICKNESS FOR THE PCC CURB AND GUTTER SHALL BE 6 INCHES AND MODIFIED SUBBASE THICKNESS FOR PATCH FULL-DEPTH REPAIR SHALL BE 12 INCHES.
3	2212-5070310	PATCH THICKNESS SHALL BE 4 INCHES. MODIFIED SUBBASE SHALL BE PAID FOR UNDER THE MODIFIED SUBBASE BID ITEM.
4	2435-0130148	AT LOCATIONS AS INDICATED ON THE S SHEETS. INTERNAL CHIMNEY SEAL ONLY, TYPE A FRAME AND COVER, UNLESS NOTED BELOW. ITEM SHALL BE PRECAST AND INCLUDES CONNECTIONS TO EXISTING PIPE, O-RINGS AND MANHOLE STEPS. THE FOLLOWING MANHOLES SHALL HAVE TYPE C FRAME AND COVER: SAN MH 4, SAN MH 6, SAN MH 7, SAN MH 10, SAN MH 11, SAN MH 12, SAN MH 14, SAN MH 16, SAN MH 17, AND SAN MH 20.
5	2435-0600010	FOR ADJUSTMENT OF EXISTING SANITARY SEWER MANHOLE LOCATED AT STATION 559+76.52, 33.72' RT. INTERNAL CHIMNEY SEAL ONLY FOR ENTIRETY OF MANHOLE ADJUSTING RINGS (INCLUDING EXISTING). UTILIZE THE EXISTING FRAME AND COVER. CONTRACTOR TO ADD MANHOLE RIM SPACERS TO RAISE MANHOLE RIM 1 FT TO MATCH THE PROPOSED GRADING ELEVATION.
6	2504-0114008	REFER TO S PLAN SHEETS AND ROAD STANDARDS SW-103. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING TYPE II BEDDING ONLY WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING. IN LOCATIONS NOT WITHIN 5 FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING, THE FINAL BACKFILL MAY BE DONE USING TYPE III, IVA, OR IVB. THE APPROXIMATE LOCATIONS WHERE TYPE II BACKFILL WILL BE REQUIRED ARE AS FOLLOWS TOTALING 339 FEET, STATIONS LISTED ARE IDOT ROADWAY STATIONS: STA 488+06 TO 488+36; STA 488+91 TO 489+19; STA 523+55 TO 523+94; STA 526+01 TO 526+35; STA 534+89 TO 535+29; STA 541+42 TO 542+33; STA 554+29 TO 554+60; STA 590+69 TO 590+79. CONNECTIONS TO EXISTING PIPE SHALL BE WITH A FLEXIBLE COUPLING WITH STAINLESS STEEL SHEAR BANDS. CONNECTION SHALL BE INCIDENTAL TO THIS BID ITEM AND SHALL NOT BE PAID FOR SEPARATELY. ONLY SOLID WALL PVC SHALL BE ACCEPTED. SHALL BE PAVC SDR 35 PER ASTM D3034 WITH ELASTOMERIC GASKETS.
7	2504-0134008	REFER TO S PLAN SHEETS AND ROAD STANDARDS SW-103. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING GRADATION 30 OR GRADATION 32 MATERIAL IN ALL AREAS WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT. THE STEEL CASING PIPE SHALL BE 16-INCH. THE CASING SHALL HAVE A MINIMUM 0.188 INCH (MINIMUM) WALL THICKNESS FOR THE CASING PIPE. CASING SPACERS ARE TO BE INCLUDED AND AT A MINIMUM OF THREE CASING SPACERS. CASING SPACERS SHALL BE STAINLESS STEEL WITH POLYMERIC GUIDES. ALL BOLTS AND NUTS USED TO ASSEMBLE THE CASING SPACERS SHALL BE STAINLESS STEEL. THE CASING SPACERS SHALL CENTER THE SANITARY SEWER IN THE STEEL CASING ONLY SOLID WALL PVC SHALL BE ACCEPTED. GRAVITY SEWER SHALL BE PVC SDR 35 PER ASTM D3034 WITH ELASTOMERIC GASKETS.

8	2504-0200404	REFER TO S PLAN SHEETS AND ROAD STANDARDS SW-201. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING GRADATION 30 OR GRADATION 32 MATERIAL IN ALL AREAS WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF THE PROPOSED PAVEMENT OR GRANULAR SURFACING. IN LOCATIONS NOT WITHIN FIVE FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING THE FINAL BACKFILL MAY BE DONE USING TYPE III, IVA, IVB. CONNECTIONS TO EXISTING PIPES SHALL CONSIST OF APPROPRIATELY SIZED FLEXIBLE COUPLING WITH STAINLESS STEEL SHEAR BAND. SANITARY SEWER STUBS SHALL BE PVC SDR 26 PER ASTM D3034 WITH ELASTOMERIC GASKETS.
9	2504-0230000	THE STRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH MODIFIED DETAIL SW-301 AS SHOWN ON S.2, INCLUDING A FLAT TOP MANHOLE. THE STRUCTURES SHALL HAVE TYPE A FRAME AND COVERS AND SHALL HAVE MANHOLE STEPS. PVC SCH. 80 PIPING SHALL HAVE SOLVENT WELDED JOINTS. COMBINATION AIR RELEASE AND VACUUM VALVE SHALL BE AN A.R.I. MODEL D-025, VAL-MATIC VMC-301AS, OR APPROVED EQUIVALENT. THE AIR RELEASE VALVES SHALL BE AN A.R.I. MODEL S-025, VAL-MATIC VMC-48AS, OR APPROVED EQUIVALENT. THE COMBINATION AIR RELEASE AND VACUUM VALVE AND AIR RELEASE VALVES SHALL BE MADE OF PLASTIC OR STAINLESS STEEL. THE CONNECTIONS BETWEEN THE PVC AND PVC FORCE MAIN AND ALSO THE PVC PIPING ON THE EXTERIOR OF THE STRUCTURE SHALL BE CONSIDERED INCIDENTAL OF THE SEWAGE AIR RELEASE VALVE AND PIT.
10	2504-0240036	LOCATIONS WHERE EXISTING SANITARY SEWER IS REQUIRED TO BE REMOVED TO MAKE THE PROPOSED IMPROVEMENTS. REMOVAL OF SANITARY SEWER MANHOLES SHALL BE CONSIDERED INCIDENTAL TO THE SANITARY SEWER REMOVAL. SEE THE TABULATION ON PLAN SHEET S.4.
11	2504-0240235	TO BE USED FOR THE EXISTING CASING ABANDONMENTS. THE CONTRACTOR SHALL EXPOSE THE ENDS OF THE EXISTING CASINGS AND FILL THE FIRST 2 FEET OF THE ANNULAR SPACE WITH NON-SHRINK GROUT. THE CONTRACTOR WILL BE PAID FOR EACH PLUG LOCATION OF THE EXISTING CASINGS. THE FOLLOWING EXISTING CASINGS SHALL BE PLUGGED (IDOT STATIONING IS THE CENTER OF THE EXISTING CASING, CONTRACTOR TO FIELD VERIFY LOCATIONS): STA 482+82; STA 491+39; STA 517+02; STA 578+70; AND STA 590+81.
12	2504-0240236	FOR EXISTING GRAVITY SANITARY SEWER THAT IS NOT NECESSARY TO BE REMOVED TO MAKE THE PROPOSED IMPROVEMENTS, THE EXISTING SANITARY SEWER SHALL BE FILLED WITH FLOWABLE FILL. THE EXISTING STRUCTURES THAT ARE TO BE ABANDONED SHALL BE REMOVED TO A MINIMUM OF 4 FEET BELOW THE PROPOSED FINISHED GRADE. THE REMAINING STRUCTURE SHALL BE FILLED WITH FLOWABLE FILL. ABANDONMENT OF EXISTING STRUCTURES SHALL BE CONSIDERED INCIDENTAL TO THE SANITARY SEWER ABANDONMENT. SEE THE TABULATION ON PLAN SHEET S.4.
13	2510-6745850	SEE S SHEETS. FOR PCC CURB AND GUTTER REMOVAL ASSOCIATED WITH DIVISION 2 WORK.
14	2512-1725256	CONTRACTOR TO SUPPLY CERTIFIED PLANT INSPECTION METHOD OF MEASUREMENT. THE QUANTITY OF CURB AND GUTTER CONSTRUCTED SHALL BE QUANTITY MEASURED BY THE ENGINEER TO THE NEAREST 0.1 LF. 2.5' PCC CURB AND GUTTER FOR PAVEMENT REMOVAL AND REPLACEMENT ASSOCIATED WITH DIVISION 2 WORK. LOCATED AT IDOT STA 590+72 LT.
15	2525-8285000	
16	2533-4980005	
17	2552-0000140	ROCK EXCAVATION IS ANTICIPATED TO OCCUR AT STA 578+67 RT TO 579+91 LT AND 590+09 RT TO 590+81 LT. ROCK EXCAVATION WILL BE PAID FOR TO A MAXIMUM BOTTOM TRENCH WIDTH OF 4 FEET. IN LOCATIONS THAT ARE NOT WITHIN FIVE FEET OF PROPOSED PAVEMENT THE CONTRACTOR SHALL BACKFILL THE PIPE WITH CLASS II MATERIAL TO THE ELEVATIONS OF THE ROCK REMOVAL. THE BACKFILLING OF CLASS II MATERIAL NOT WITHIN 5 FEET OF PROPOSED PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE ROCK EXCAVATION.
18	2599-9999009	FOLLOW SECTION 2504. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING TYPE II BEDDING ONLY WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING. IN LOCATIONS NOT WITHIN 5 FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING, THE FINAL BACKFILL MAY BE DONE USING TYPE III, IVA, OR IVB. THE APPROXIMATE LOCATIONS WHERE TYPE II BACKFILL WILL BE REQUIRED ARE AS FOLLOWS TOTALING 325 FEET, STATIONS LISTED ARE IDOT ROADWAY STATIONS: STA 578+58 TO 578+62; STA 579+40 TO 579+88. FORCE MAIN PIPING TO BE PVC SDR 21 IRON PIPE SIZE O.D. CONTROL PER ASTM D2241. JOINTS IN THE PVC FORCE MAIN SHALL BE GASKETED PUSH-ON OR COMPRESSION TYPE JOINTS. FITTINGS SHALL BE OF PVC MATERIAL CONFORMING TO ASTM D1784 AND SHALL HAVE GASKET JOINTS CONFORMING TO ASTM D3139 USING GASKETS THAT COMPLY WITH ASTM F477. GASKETED PVC FITTINGS SHALL BE FOR IRON PIPE SIZE PVC THAT CONFORMS TO ASTM D2241 AND SHALL HAVE A 200 PSI PRESSURE RATING (SDR 21). THRUST RESTRAINT FOR ALL FITTINGS SHALL BE BY CONCRETE THRUST BLOCKS BEARING AGAINST UNDISTURBED SOIL. THE MINIMUM THRUST BLOCK BEARING AREA IS 12"x12" WITH A MINIMUM THICKNESS OF 4" FOR ALL FITTINGS. THE CONTRACTOR SHALL USE A COMPRESSION TYPE CONNECTION/FITTING TO THE EXISTING FORCE MAIN. CONNECTION TO THE EXISTING FORCE MAIN AND THRUST BLOCKS SHALL BE CONSIDERED INCIDENTAL TO THE FORCE MAIN INSTALLATION. COORDINATE WITH OWNER ON TRACER WIRE STATION LOCATIONS. MAXIMUM TRACER WIRE STATION SPACING IS 500 FEET. TRACER WIRE INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO THE FORCE MAIN INSTALLATION.
19	2599-9999009	FOLLOW SECTION 2504. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING TYPE II BEDDING ONLY WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING. IN LOCATIONS NOT WITHIN 5 FEET OF PROPOSED PAVEMENT OR GRANULAR SURFACING, THE FINAL BACKFILL MAY BE DONE USING TYPE III, IVA, OR IVB. THE APPROXIMATE LOCATIONS WHERE TYPE II BACKFILL WILL BE REQUIRED ARE AS FOLLOWS TOTALING 342 FEET, STATIONS LISTED ARE IDOT ROADWAY STATIONS: STA 488+07 TO 488+37; STA 488+92 TO 489+20; STA 491+86 TO 492+23; STA 492+78 TO 493+08; STA 493+83 TO 494+14; STA 501+20 TO 501+60; STA 502+40 TO 502+71; STA 514+02 TO 514+47; STA 518+34 TO 518+61; STA 578+58 TO 578+62; STA 579+40 TO 579+81. FORCE MAIN PIPING TO BE PVC SDR 21 IRON PIPE SIZE O.D. CONTROL PER ASTM D2241. JOINTS IN THE PVC FORCE MAIN SHALL BE GASKETED PUSH-ON OR COMPRESSION TYPE JOINTS. FITTINGS SHALL BE OF PVC MATERIAL CONFORMING TO ASTM D1784 AND SHALL HAVE GASKET JOINTS CONFORMING TO ASTM D3139 USING GASKETS THAT COMPLY WITH ASTM F477. GASKETED PVC FITTINGS SHALL BE FOR IRON PIPE SIZE PVC THAT CONFORMS TO ASTM D2241 AND SHALL HAVE A 200 PSI PRESSURE RATING (SDR 21). THRUST RESTRAINT FOR ALL FITTINGS SHALL BE BY CONCRETE THRUST BLOCKS BEARING AGAINST UNDISTURBED SOIL. THE MINIMUM THRUST BLOCK BEARING AREA IS 12"x12" WITH A MINIMUM THICKNESS OF 4" FOR ALL FITTINGS. THE CONTRACTOR SHALL USE A COMPRESSION TYPE CONNECTION/FITTING TO THE EXISTING FORCE MAIN. CONNECTION TO THE EXISTING FORCE MAIN AND THRUST BLOCKS SHALL BE CONSIDERED INCIDENTAL TO THE FORCE MAIN INSTALLATION. COORDINATE WITH OWNER ON TRACER WIRE STATION LOCATIONS. MAXIMUM TRACER WIRE STATION SPACING IS 500 FEET. TRACER WIRE INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO THE FORCE MAIN INSTALLATION.
20	2599-9999009	REFER TO S PLAN SHEETS AND ROAD STANDARDS SW-104. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING GRADATION 30 OR GRADATION 32 MATERIAL IN ALL AREAS WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT. THE STEEL CASING PIPE SHALL BE 10-INCH. THE STEEL CASING SHALL HAVE A MINIMUM 0.188 INCH (MINIMUM) WALL THICKNESS. CASING SPACERS ARE TO BE INCLUDED AND A MAXIMUM SPACING OF 6 FEET. CASING SPACERS SHALL BE STAINLESS STEEL WITH POLYMERIC GUIDES. ALL BOLTS AND NUTS USED TO ASSEMBLE THE CASING SPACERS SHALL BE STAINLESS STEEL. THE CASING SPACERS SHALL CENTER THE SANITARY SEWER AND FORCE MAIN IN THE STEEL CASING AND SHALL PROVIDE INDEPENDENT SUPPORT FOR THE GRAVITY SEWER AND FORCE MAIN RESPECTIVELY. CASING END SEALS SHALL BE PROVIDED AND SECURED TO THE CASING PIPE AND CARRIER PIPES. FOLLOW SECTION 2504. FORCE MAIN PIPING TO BE PVC SDR 21 IRON PIPE SIZE O.D. CONTROL PER ASTM D2241. JOINTS IN THE PVC FORCE MAIN SHALL BE GASKETED PUSH-ON OR COMPRESSION TYPE JOINTS. COORDINATE WITH OWNER ON TRACER WIRE STATION LOCATIONS. MAXIMUM TRACER WIRE STATION SPACING IS 500 FEET.

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DESIGNED BY: _____  
 CHECKED BY: _____

TRACED BY: _____  
 CHECKED BY: _____



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CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

PROJECT NUMBER

NHSX-003-9(22)--3H-52

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	.	.	S.3	.



21	2599-9999009	REFER TO S PLAN SHEETS AND ROAD STANDARD SW-104. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING GRADATION 30 OR GRADATION 32 MATERIAL IN ALL AREAS WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT. THE STEEL CASING PIPE SHALL BE 6-INCH. THE STEEL CASING SHALL HAVE A MINIMUM 0.188 INCH (MINIMUM) WALL THICKNESS. CASING SPACERS ARE TO BE INCLUDED AND A MAXIMUM SPACING OF 6 FEET. CASING SPACERS SHALL BE STAINLESS STEEL WITH POLYMERIC GUIDES. ALL BOLTS AND NUTS USED TO ASSEMBLE THE CASING SPACERS SHALL BE STAINLESS STEEL. THE CASING SPACERS SHALL CENTER THE SANITARY SEWER FORCE MAIN IN THE STEEL CASING THROUGH THE CASING. CASING END SEALS SHALL BE PROVIDED AND SECURED TO THE CASING PIPE AND CARRIER PIPE. FOLLOW SECTION 2504. FORCE MAIN PIPING TO BE PVC SDR 21 IRON PIPE SIZE O.D. CONTROL PER ASTM D2241. JOINTS IN THE PVC FORCE MAIN SHALL BE GASKETED PUSH-ON OR COMPRESSION TYPE JOINTS. COORDINATE WITH OWNER ON TRACER WIRE STATION LOCATIONS. MAXIMUM TRACER WIRE STATION SPACING IS 500 FEET.
22	2599-9999009	REFER TO S PLAN SHEETS AND ROAD STANDARDS SW-103 AND SW-104. INCLUDES COST OF BEDDING, HAUNCH SUPPORT, AND PRIMARY, SECONDARY AND FINAL TRENCH BACKFILL USING GRADATION 30 OR GRADATION 32 MATERIAL IN ALL AREAS WHERE PIPE IS PLACED UNDER OR WITHIN FIVE FEET OF PROPOSED PAVEMENT. THE STEEL CASING PIPE SHALL BE 18-INCH. THE CASING SHALL HAVE A MINIMUM 0.188 INCH (MINIMUM) WALL THICKNESS FOR THE CASING PIPE. CASING SPACERS ARE TO BE INCLUDED AND AT A MINIMUM OF THREE CASING SPACERS PER PIPE OF GRAVITY SEWER. CASING SPACERS SHALL BE STAINLESS STEEL WITH POLYMERIC GUIDES. ALL BOLTS AND NUTS USED TO ASSEMBLE THE CASING SPACERS SHALL BE STAINLESS STEEL. THE CASING SPACERS SHALL CENTER THE SANITARY SEWER AND FORCE MAIN IN THE STEEL CASING AND SHALL PROVIDE INDEPENDENT SUPPORT FOR THE GRAVITY SEWER AND FORCE MAIN RESPECTIVELY. CASING END SEALS SHALL BE PROVIDED AND SECURED TO THE CASING PIPE AND CARRIER PIPES. FOLLOW SECTION 2504. ONLY SOLID WALL PVC SHALL BE ACCEPTED. GRAVITY SEWER SHALL BE PVC SDR 35 PER ASTM D3034 WITH ELASTOMERIC GASKETS. FOLLOW SECTION 2504. FORCE MAIN PIPING TO BE PVC SDR 21 IRON PIPE SIZE O.D. CONTROL PER ASTM D2241. JOINTS IN THE PVC FORCE MAIN SHALL BE GASKETED PUSH-ON OR COMPRESSION TYPE JOINTS. COORDINATE WITH OWNER ON TRACER WIRE STATION LOCATIONS. MAXIMUM TRACER WIRE STATION SPACING IS 500 FEET.
23	2601-2634100	ALL DISTURBED AREAS OUTSIDE OF THE DIVISION 1 DISTURBED AREAS. AREAS ONLY DISTURBED BY DIVISION 2 QUANTITY PAID SHALL BE PLAN QUANTITY UNLESS ADJUSTED DUE TO GRADING OPERATIONS WHICH REQUIRE ADDITIONAL SEEDING AS APPROVED BY THE ENGINEER.
24	2601-2636043	ALL DISTURBED AREAS OUTSIDE OF THE DIVISION 1 DISTURBED AREAS. AREAS ONLY DISTURBED BY DIVISION 2 SEE TABULATION ON PLAN SHEET S.4 FOR THE ANTICIPATED RURAL SEEDING LOCATION ASSOCIATED WITH DIVISION 2 WORK.
25	2601-2636044	ALL DISTURBED AREAS OUTSIDE OF THE DIVISION 1 DISTURBED AREAS. AREAS ONLY DISTURBED BY DIVISION 2 SEE TABULATION ON PLAN SHEET S.4 FOR THE ANTICIPATED URBAN SEEDING LOCATION ASSOCIATED WITH DIVISION 2 WORK.

### INTAKES AND UTILITY ACCESSES

* Bid Item  
** For SW-545

No.	Location Station	Type or Standard Road Plan*	Form Grade	Bottom Well	Extension Length**	Notes
			Elev.	Elev.	FT	
	482+40.43	SW-301	895.5	885.1		SAN MH 27
	482+35.12	SW-301	896.9	887.6		SAN MH 26
	482+90.32	SW-301	903.3	893.8		SAN MH 21
	486+41.98	SW-301	911.7	901.1		SAN MH 20
	488+40.00	SW-301	917.4	902.2		SAN MH 19
	491+02.50		SEE PLAN	SEE PLAN		AIR RELEASE STATION NO. 3
	491+16.18	SW-301	918.8	904.4		SAN MH 18
	491+38.42	SW-301	913.4	904.9		SAN MH 17
	491+85.87	SW-301	915.0	905.1		SAN MH 30
	492+53.00		SEE PLAN	SEE PLAN		AIR RELEASE STATION NO. 2
	503+21.30		SEE PLAN	SEE PLAN		AIR RELEASE STATION NO. 1
	509+03.89	SW-301	914.6	905.7		SAN MH 16
	519+11.55	SW-301	921.4	911.8		SAN MH 15
	520+77.00	SW-301	919.0	910.8		SAN MH 14
	523+34.97	SW-301	921.5	909.6		SAN MH 13
	525+43.79	SW-301	922.2	908.4		SAN MH 12
	527+80.00	SW-301	917.0	904.9		SAN MH 11
	531+49.32	SW-301	902.7	896.5		SAN MH 10
	533+99.47	SW-301	897.4	892.7		SAN MH 9
	535+47.99	SW-301	899.4	892.0		SAN MH 8
	541+55.84	SW-301	901.2	894.3		SAN MH 25
	542+28.97	SW-301	901.5	896.2		SAN MH 24
	548+03.71	SW-301	927.8	921.8		SAN MH 7
	549+49.09	SW-301	933.3	925.4		SAN MH 6
	550+48.18	SW-301	945.6	938.2		SAN MH 5
	552+53.28	SW-301	952.0	945.6		SAN MH 4
	554+52.70	SW-301	967.9	960.4		SAN MH 22
	590+08.47	SW-301	1117.7	1107.3		SAN MH 2
	590+69.22	SW-301	1117.0	1107.0		SAN MH 1
	590+68.47	SW-301	1117.8	1106.2		SAN MH 30
	590+80.29	SW-301	1117.1	1105.8		SAN MH 29

### REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO 36 INCH

Station	Offset	Description	Length (ft)
590+81.00	-47.155'	8" SANITARY	15
590+68.07	18.000'	8" SANITARY	10
579+90.96	-88.707'	1.5" FM	5
579+79.94	-83.146'	2" FM	10
578+64.64	41.865'	1.5" FM	5
578+62.88	39.233'	2" FM	10
554+11.47	32.618'	8" SANITARY	90
548+03.74	52.385'	8" SANITARY	15
542+22.92	155.281'	8" SANITARY	25
541+46.35	125.421'	8" SANITARY	15
535+80.31	29.467'	8" SANITARY	210
529+49.67	15.477'	8" SANITARY	15
522+63.76	33.461'	8" SANITARY	40
522+10.12	35.894'	8" SANITARY	20
519+21.70	23.206'	8" SANITARY	15
512+60.13	-77.046'	8" SANITARY	5
509+03.91	-35.388'	8" SANITARY	15
493+83.07	-30.655'	2" FM	30
491+65.43	-26.576'	8" SANITARY	40
491+64.26	-29.369'	2" FM	40
491+21.53	25.546'	8" SANITARY	10
482+41.59	-50.943'	2" FM	15
482+40.19	-50.924'	8" SANITARY	15
482+32.84	-62.934'	2" FM	5

### SANITARY SEWER ABANDONMENT FILLING EXISTING PIPE WITH FLOWABLE FILL

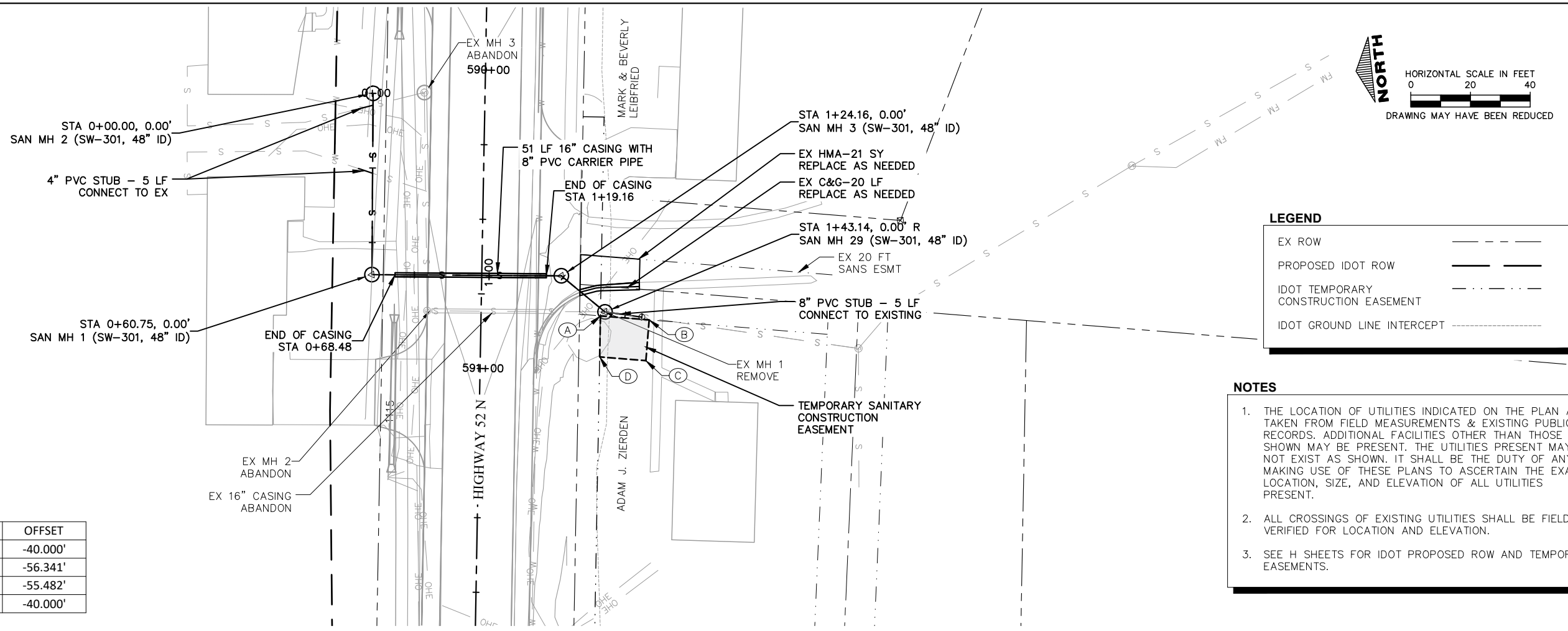
START		END		ABANDON (LF)
STATION	OFFSET	STATION	OFFSET	
590+80.34	-36.217'	590+74.07	18.200'	61.2
590+64.01	18.543'	590+07.83	20.337'	56.2
553+70.23	33.707'	548+06.23	45.310'	566.1
542+12.77	150.854'	541+52.73	127.595'	72.2
535+05.59	25.372'	529+57.07	16.398'	654.8
529+41.93	16.243'	522+82.92	30.523'	26.6
522+44.71	36.778'	522+19.60	37.756'	277.6
522+00.61	34.125'	519+29.20	23.069'	578.1
509+04.14	-28.492'	503+31.62	-22.485'	57.6
491+45.06	-24.162'	482+44.93	-45.120'	900.9
<b>TOTAL</b>				<b>3251.3</b>

### SEEDING

Start Station	End Station	Side	Acre	Type
482+04.28	482+54.79	L	0.03	URBAN
482+71.30	488+64.26	R	0.15	URBAN
491+26.72	495+99.80	L	0.11	URBAN
495+99.80	509+13.98	L	0.25	RURAL
512+50.20	517+32.57	L	0.16	URBAN
517+12.96	526+08.53	R	0.14	URBAN
526+16.42	534+25.60	R	0.03	URBAN
534+25.60	534+25.60	R	0.19	RURAL
534+80.52	534+92.54	R	0.01	RURAL
535+27.79	535+53.30	R	0.01	RURAL
536+33.87	537+09.47	R	0.01	URBAN
547+90.48	554+22.93	R	0.17	URBAN
578+57.24	579+31.26	L	0.03	URBAN
579+67.78	580+00.90	L	0.01	URBAN
589+98.59	590+79.50	R	0.02	URBAN
590+72.59	590+91.77	L	0.01	URBAN
<b>TOTAL</b>				<b>1.31</b>
<b>TOTAL URBAN</b>				<b>0.85</b>
<b>TOTAL RURAL</b>				<b>0.46</b>

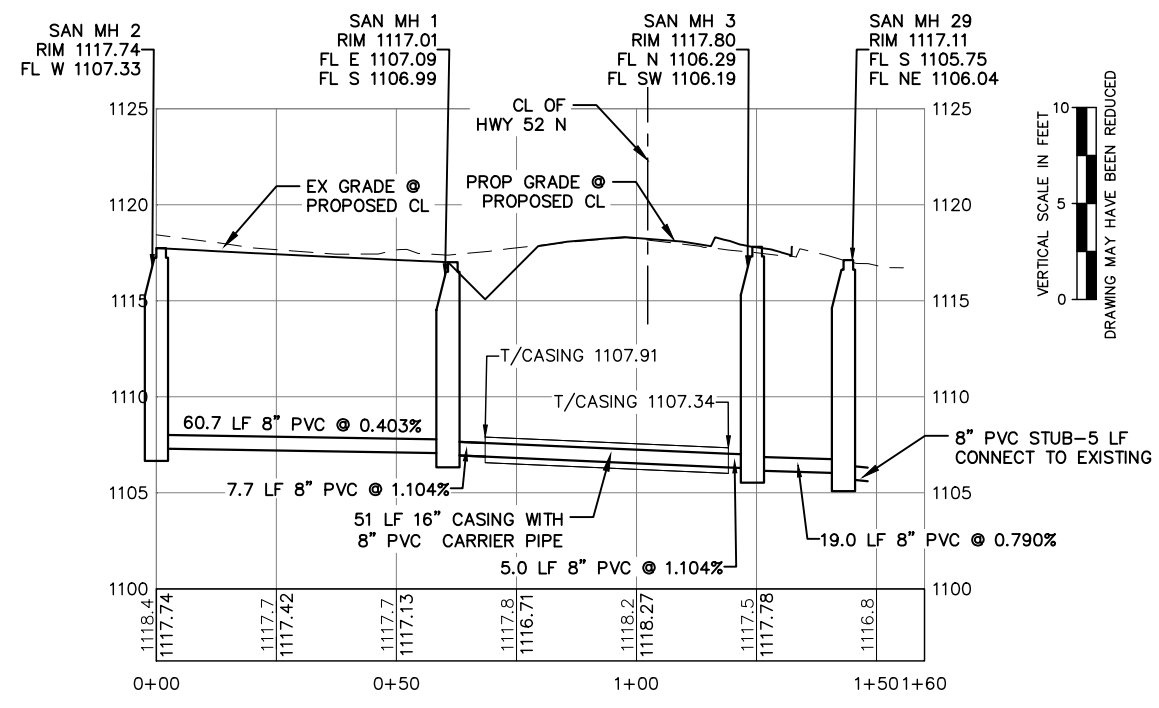
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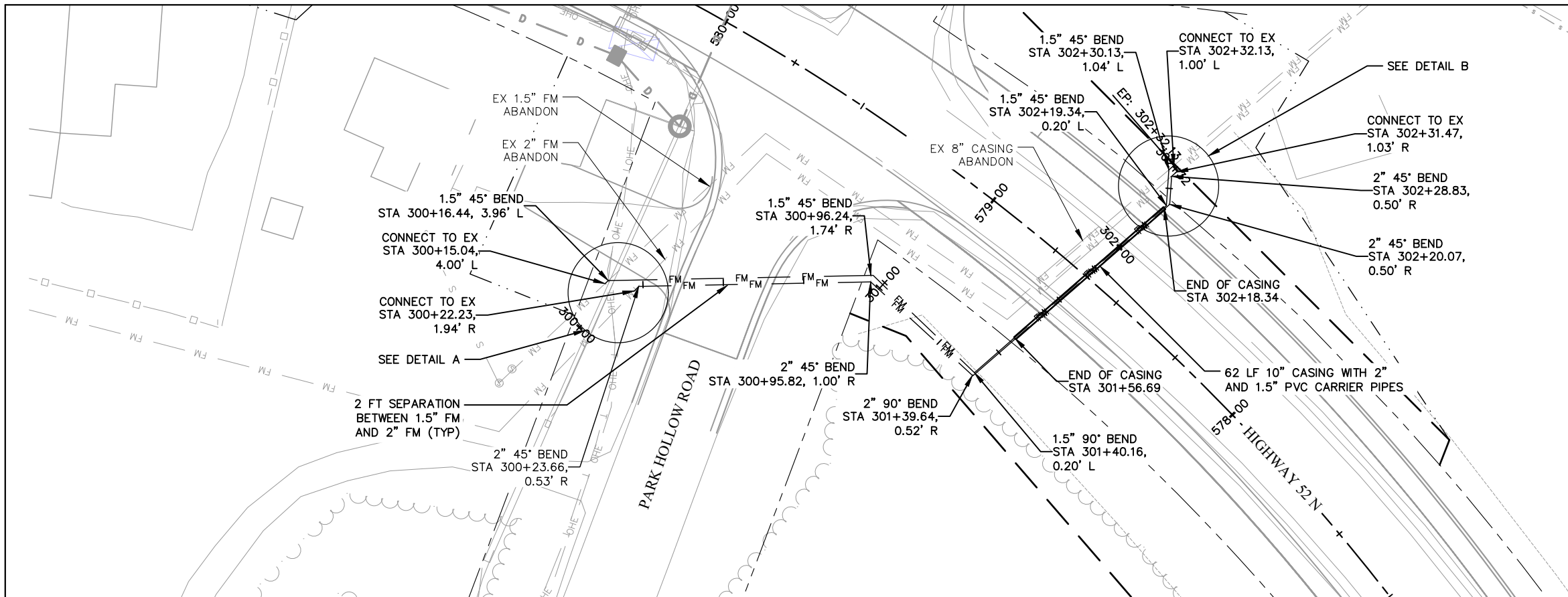
TAG	STATION	OFFSET
A	590+81.66	-40.000'
B	590+82.69	-56.341'
C	590+96.36	-55.482'
D	590+95.39	-40.000'

- NOTES**
1. THE LOCATION OF UTILITIES INDICATED ON THE PLAN ARE TAKEN FROM FIELD MEASUREMENTS & EXISTING PUBLIC RECORDS. ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT. THE UTILITIES PRESENT MAY NOT EXIST AS SHOWN. IT SHALL BE THE DUTY OF ANYONE MAKING USE OF THESE PLANS TO ASCERTAIN THE EXACT LOCATION, SIZE, AND ELEVATION OF ALL UTILITIES PRESENT.
  2. ALL CROSSINGS OF EXISTING UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION.
  3. SEE H SHEETS FOR IDOT PROPOSED ROW AND TEMPORARY EASEMENTS.



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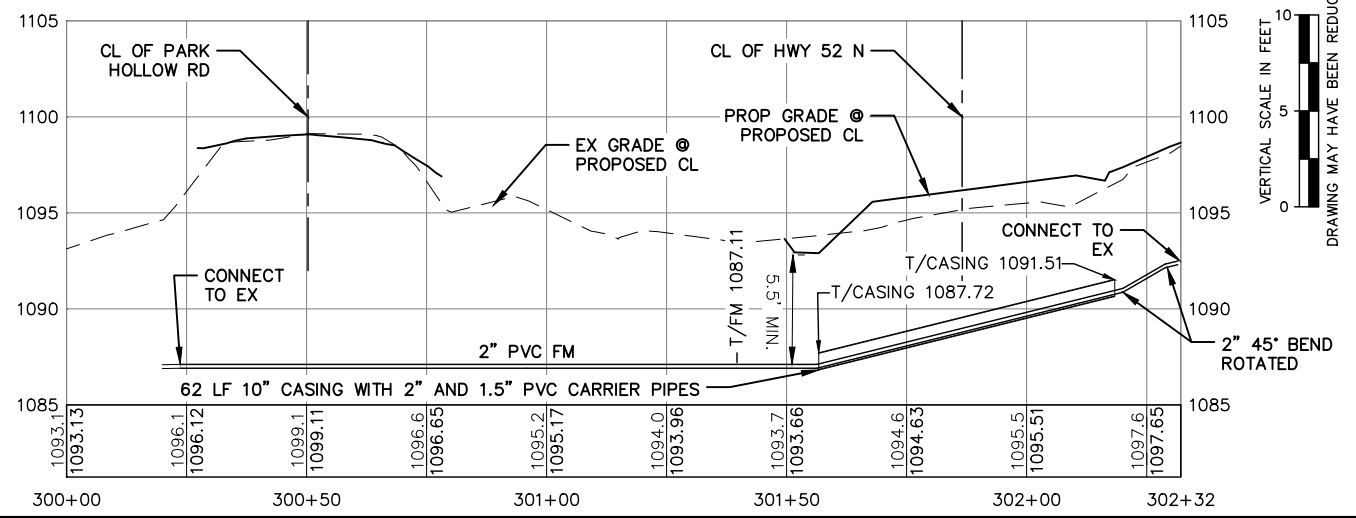
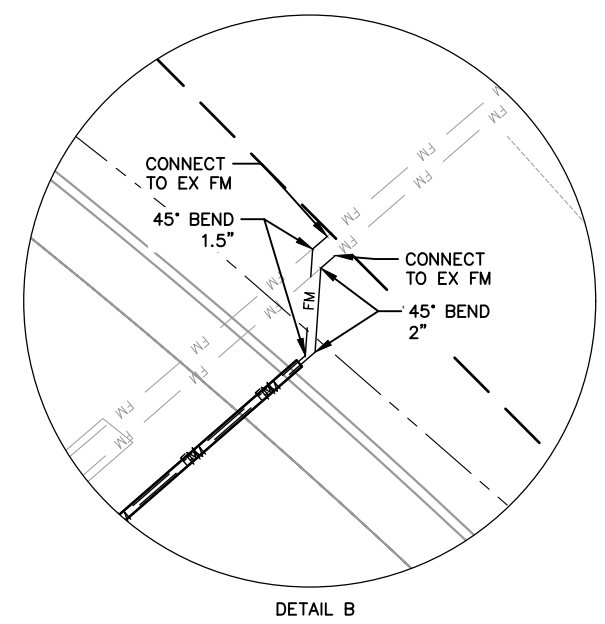
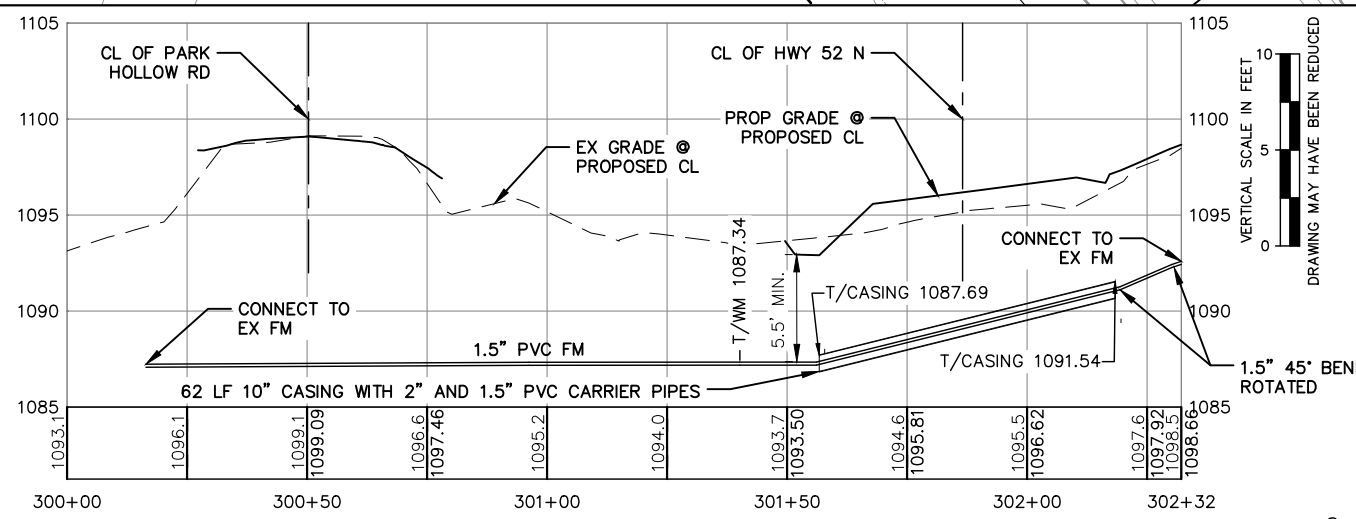
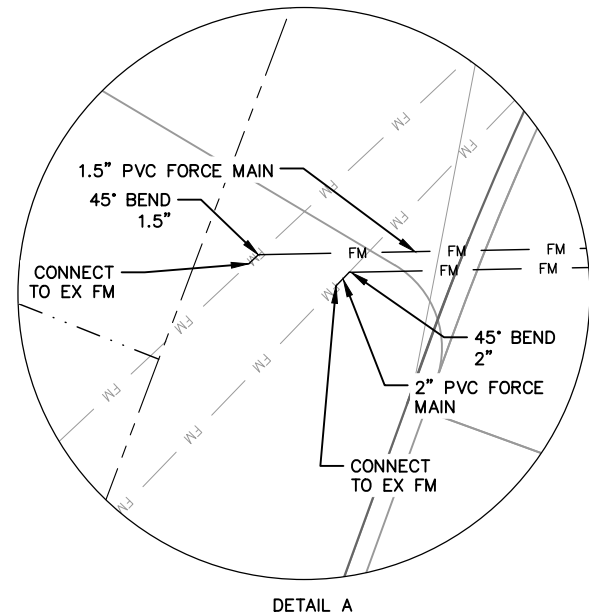




**LEGEND**

EX ROW	---
PROPOSED IDOT ROW	----
IDOT TEMPORARY CONSTRUCTION EASEMENT	----
IDOT GROUND LINE INTERCEPT	----

- NOTES**
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  2. ALL CROSSINGS OF EXISTING UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION.
  3. SEE H SHEETS FOR IDOT PROPOSED ROW AND TEMPORARY EASEMENTS.
  4. NO INTERMEDIATE HIGH SPOTS BETWEEN CONNECTIONS TO EX FM.
  5. CONTRACTOR TO FIELD VERIFY LOCATION OF EX FM. LOCATIONS SHOWN ARE BASED ON AS-BUILT DRAWINGS WHEN INSTALLED.



\\VSDTA2\DRIVER\18\192\DRAWINGS\CIVIL\18192.ZZ_09_PP5.DWG 11/5/2020 3:21:21 PM LYNN NEAL



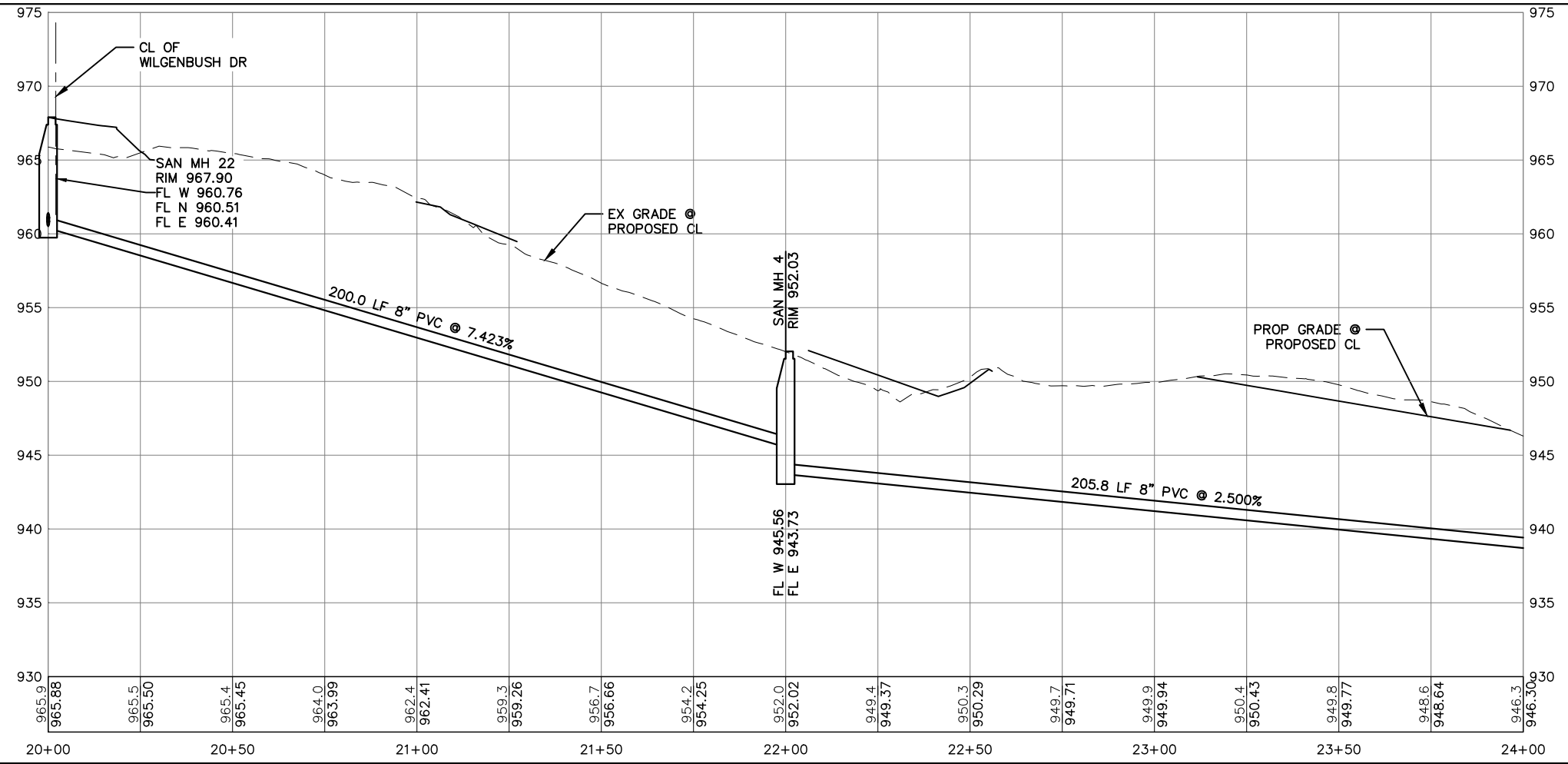
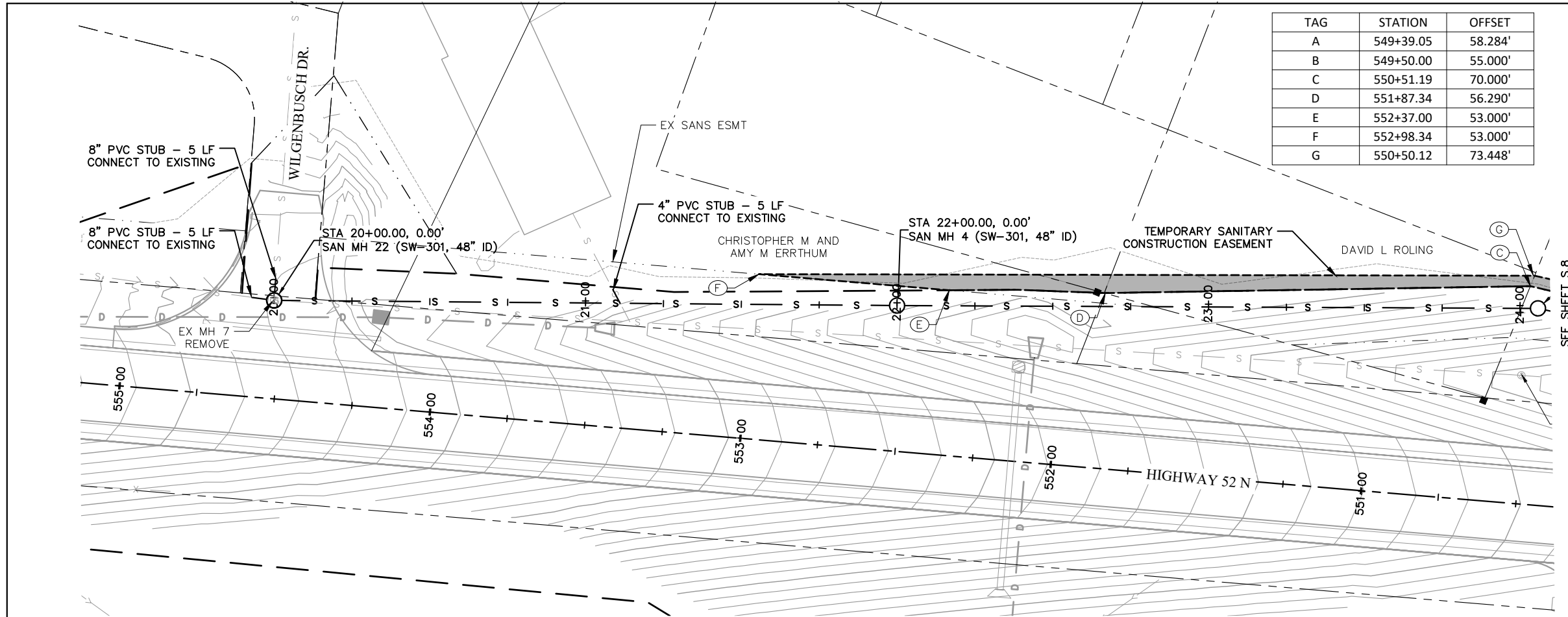
TAG	STATION	OFFSET
A	549+39.05	58.284'
B	549+50.00	55.000'
C	550+51.19	70.000'
D	551+87.34	56.290'
E	552+37.00	53.000'
F	552+98.34	53.000'
G	550+50.12	73.448'



**LEGEND**

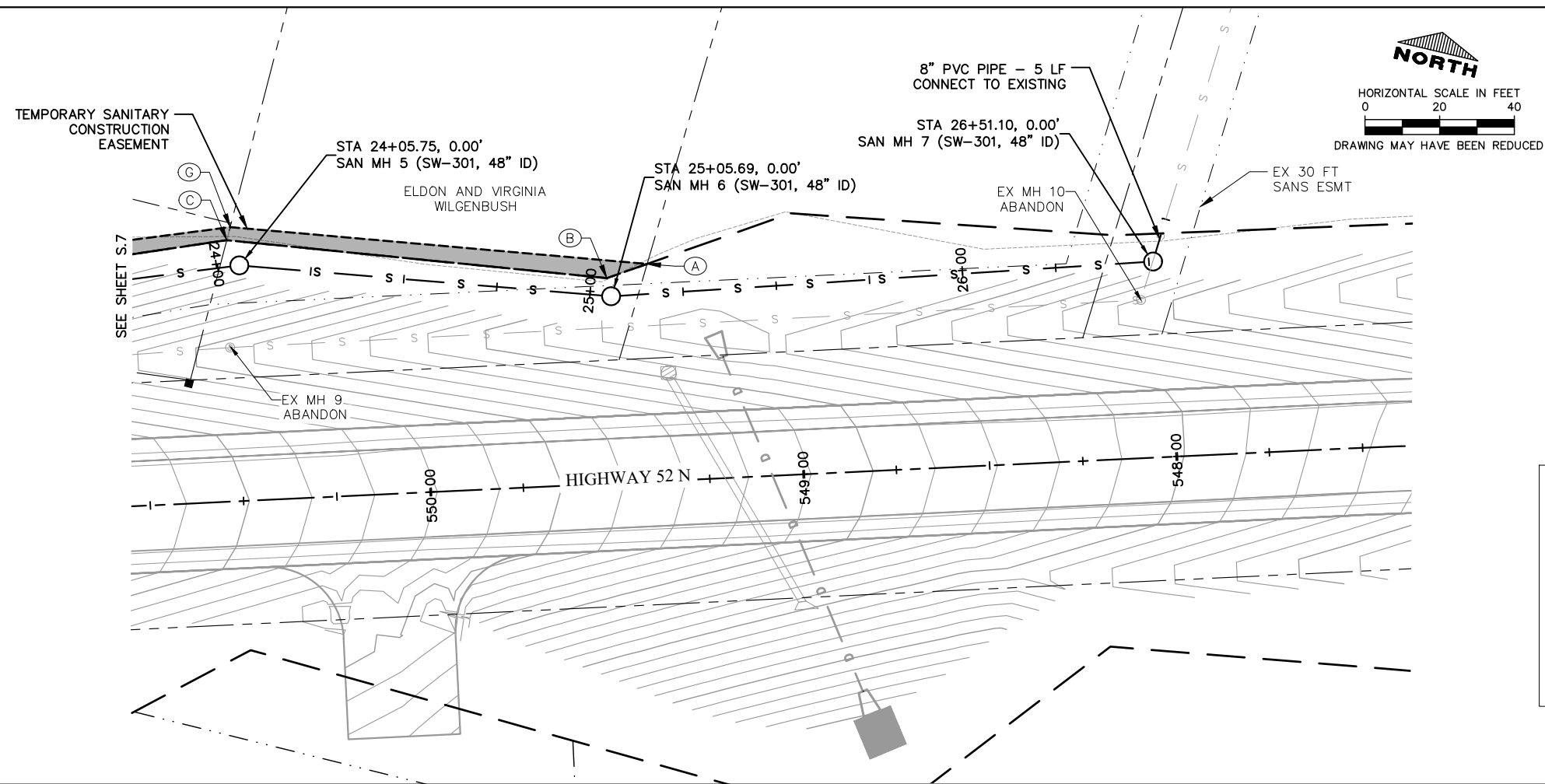
EX ROW	---
PROPOSED IDOT ROW	—
IDOT TEMPORARY CONSTRUCTION EASEMENT	- - - -
IDOT GROUND LINE INTERCEPT	.....

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\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ_09_PP2.DWG 11/5/2020 3:21:39 PM LYNN NEAL



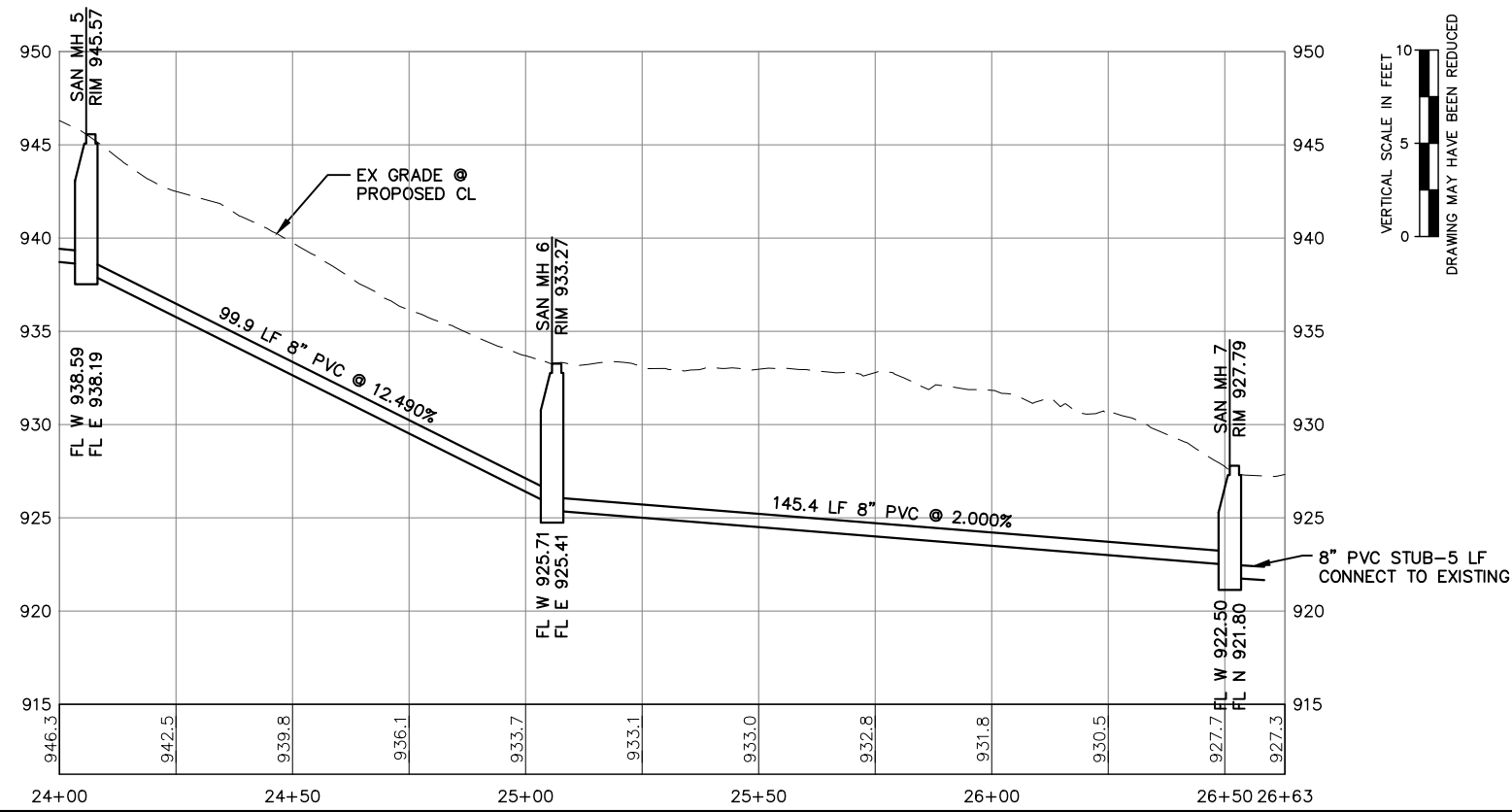


TAG	STATION	OFFSET
A	549+39.05	58.284'
B	549+50.00	55.000'
C	550+51.19	70.000'
D	551+87.34	56.290'
E	552+37.00	53.000'
F	552+98.34	53.000'
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**LEGEND**

EX ROW	---
PROPOSED IDOT ROW	---
IDOT TEMPORARY CONSTRUCTION EASEMENT	---
IDOT GROUND LINE INTERCEPT	---

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\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ_09_PP2.DWG 11/5/2020 3:21:48 PM LYNN NEAL

DESIGNED BY: _____  
 TRACED BY: _____  
 DETAILED BY: _____  
 CHECKED BY: _____

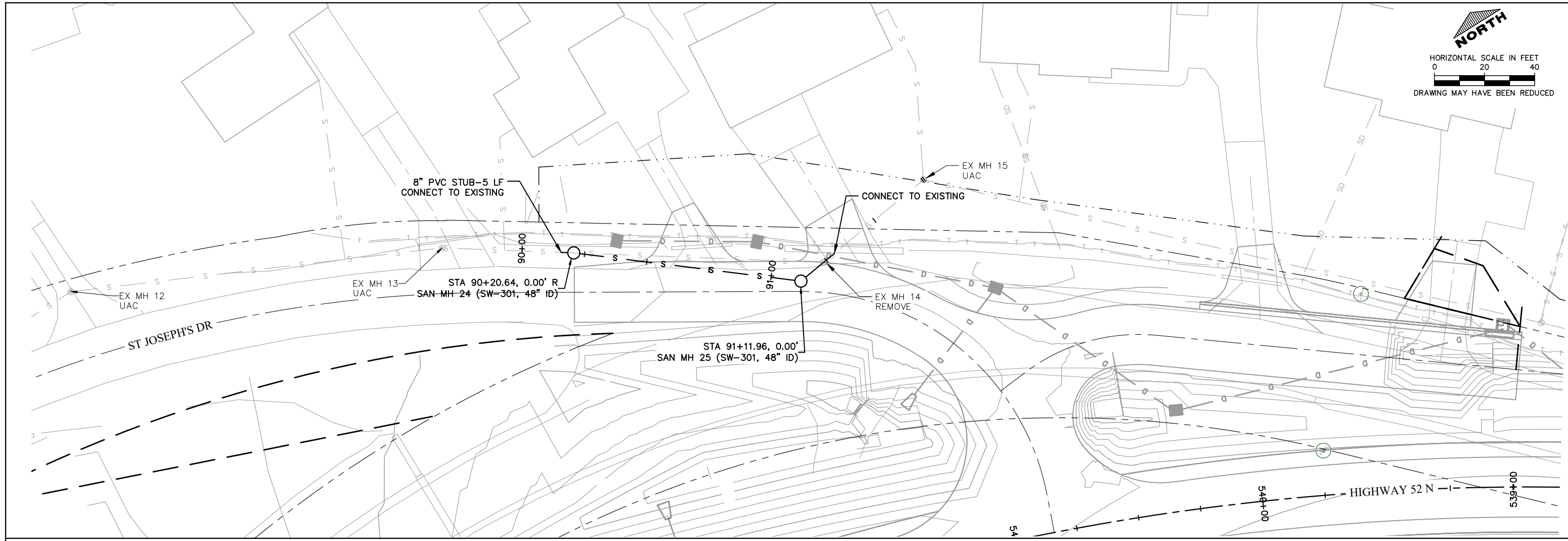
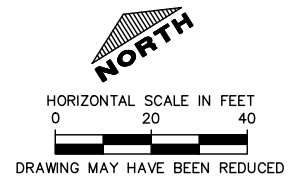
**iiw** 563.556.2464 ♦ 800.556.4491  
 iiw, P.C. ♦ www.iiwengr.com

CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

PROJECT NUMBER N5X-003-9(22)--3H-52

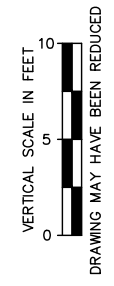
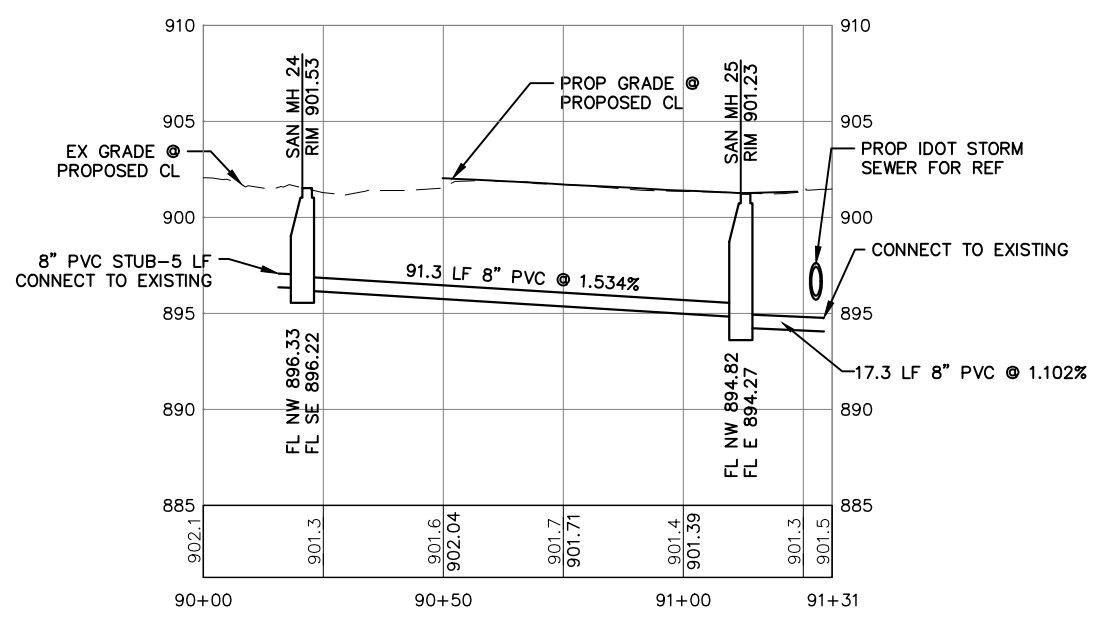
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IOWA			S.8	





**LEGEND**

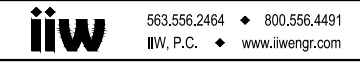
EX ROW	---
PROPOSED IDOT ROW	---
IDOT TEMPORARY CONSTRUCTION EASEMENT	---
IDOT GROUND LINE INTERCEPT	---



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\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ_09.PPG.DWG 11/5/2020 3:22:03 PM LYNN NEAL

DESIGNED BY: _____  
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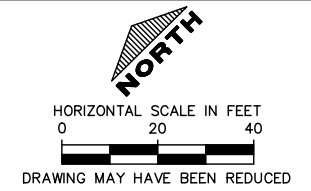
CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

PROJECT NUMBER

NHSX-003-9(22)--3H-52

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IOWA			S.9	

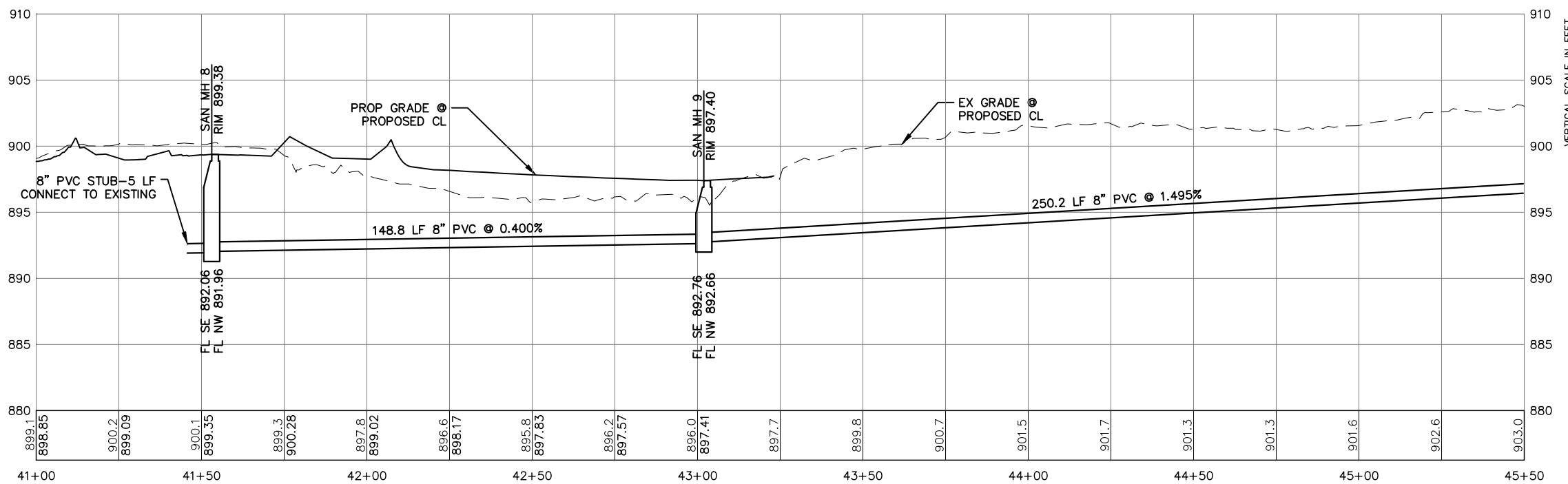
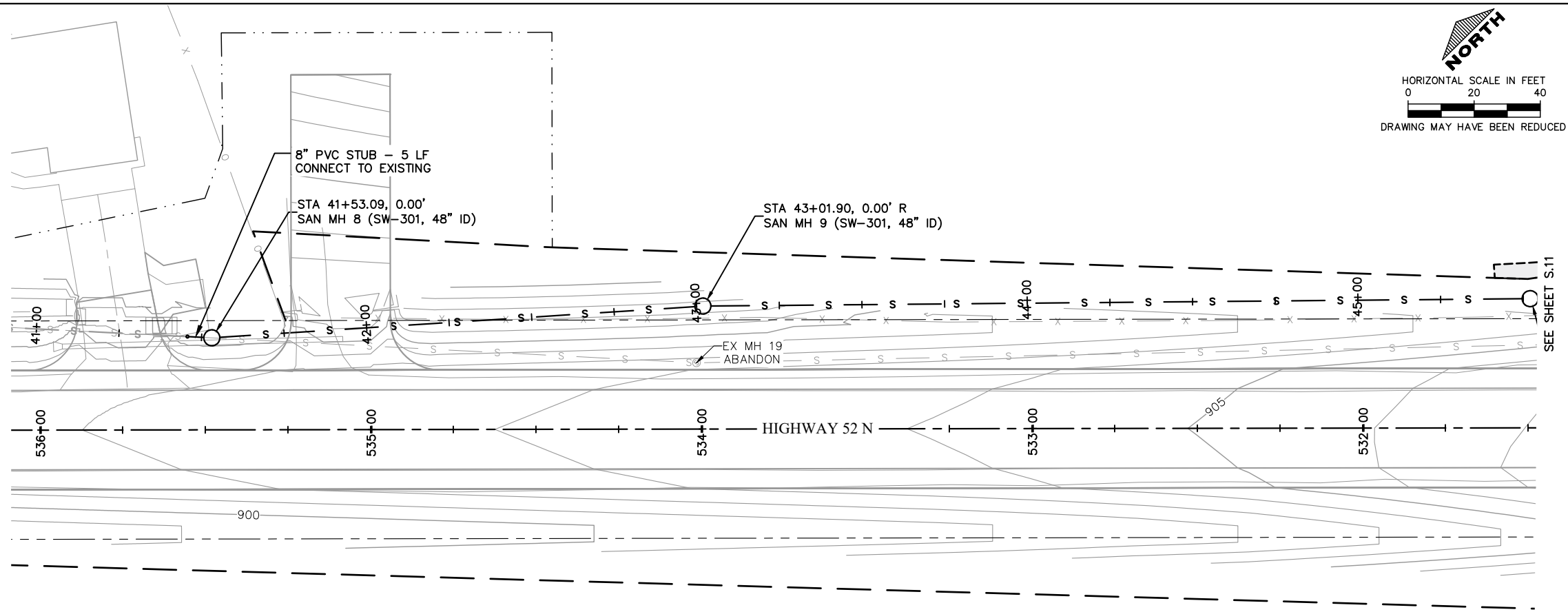




**LEGEND**

EX ROW	---
PROPOSED IDOT ROW	---
IDOT TEMPORARY CONSTRUCTION EASEMENT	---
IDOT GROUND LINE INTERCEPT	---

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\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192_ZZ_09_PP3.DWG 11/5/2020 3:22:21 PM LYNN NEAL

DESIGNED BY: _____  
 DETAILED BY: _____

TRACED BY: _____  
 CHECKED BY: _____

**iiw** 563.556.2464 ♦ 800.556.4491  
 IIV, P.C. ♦ www.iivengr.com

CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

PROJECT NUMBER: _____  
 NHSX-003-9(22)--3H-52

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA			S.10	

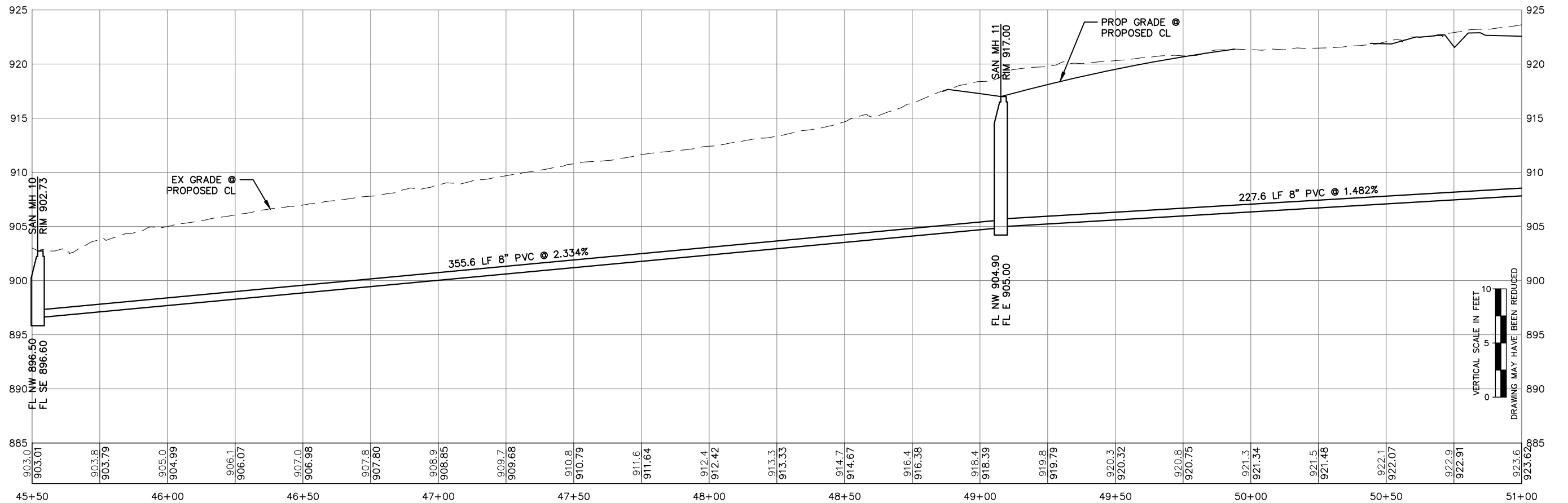
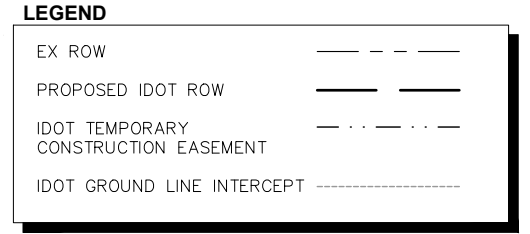
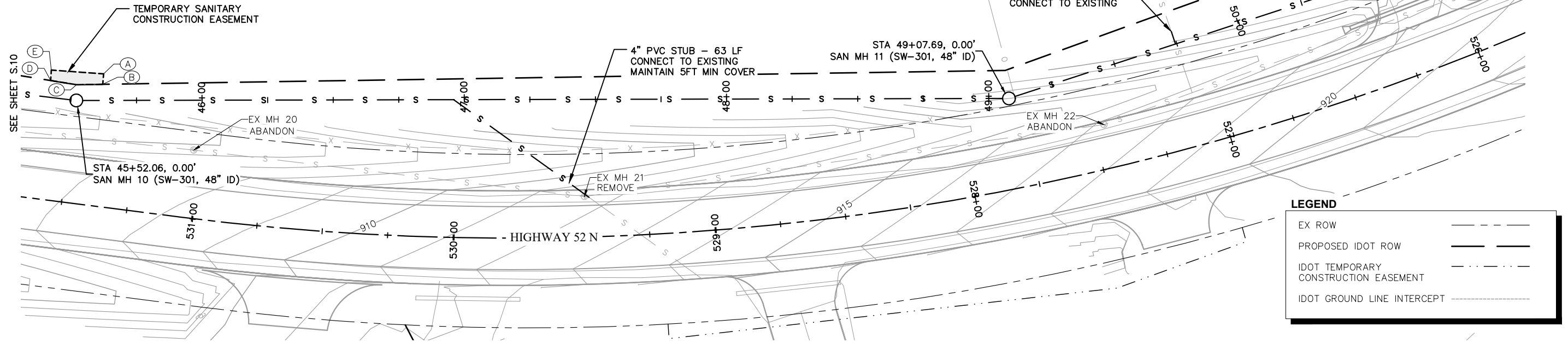
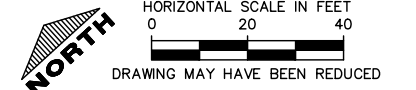


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TAG	STATION	OFFSET
A	531+40.28	50.409'
B	531+40.10	46.413'
C	531+50.00	45.000'
D	531+59.99	45.339'
E	531+60.25	49.331'

MICHAEL SAHM  
AND  
TERRY SAHM

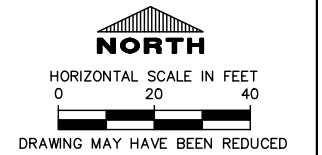


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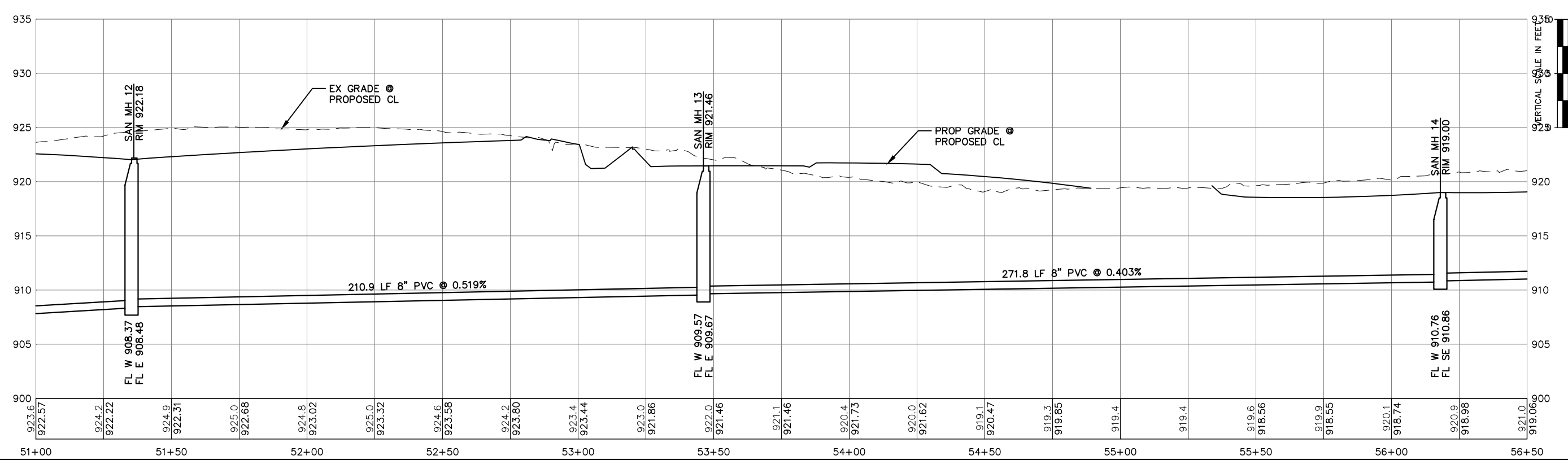
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**LEGEND**

EX ROW	---
PROPOSED IDOT ROW	---
IDOT TEMPORARY CONSTRUCTION EASEMENT	---
IDOT GROUND LINE INTERCEPT	---

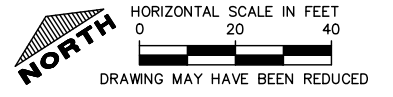


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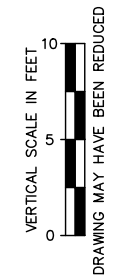
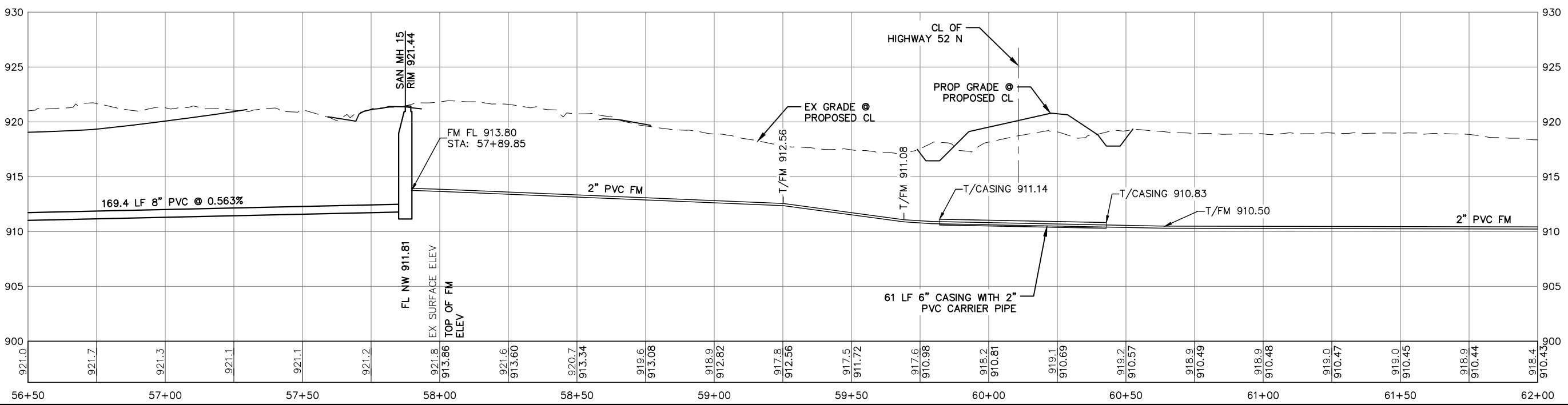
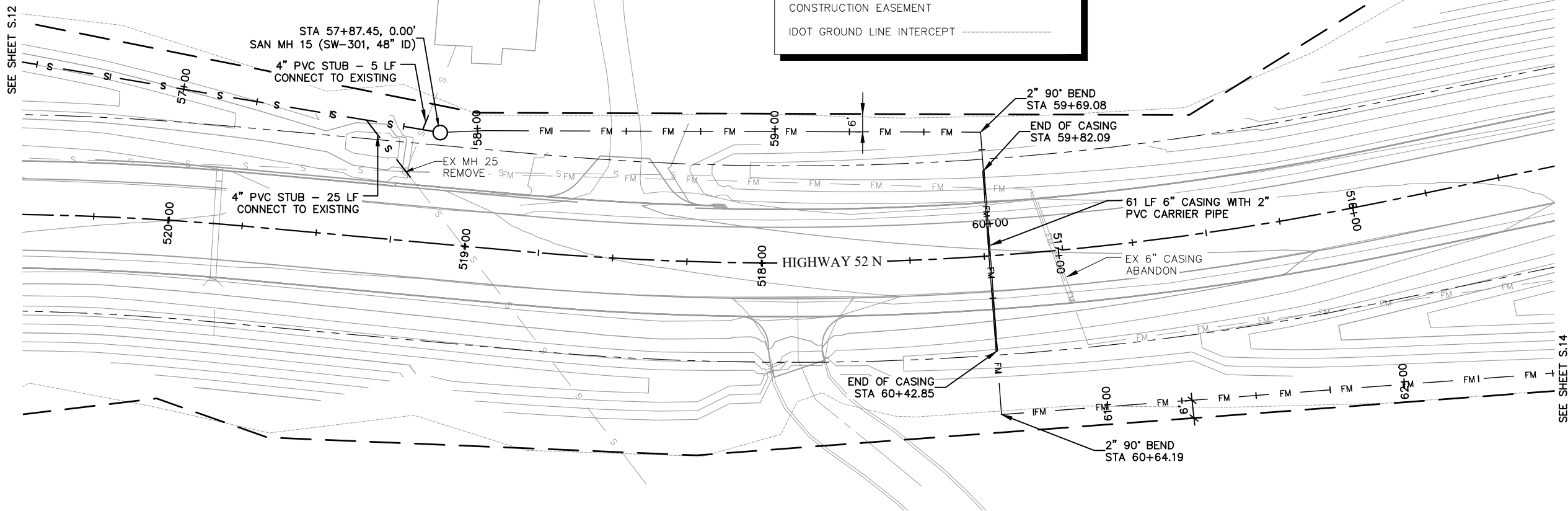


**LEGEND**

- EX ROW
- PROPOSED IDOT ROW
- IDOT TEMPORARY CONSTRUCTION EASEMENT
- IDOT GROUND LINE INTERCEPT

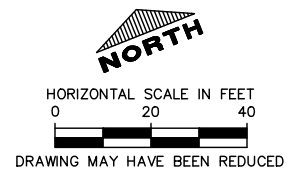


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\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ_09_PP3.DWG 11/5/2020 3:22:51 PM LYNN NEAL

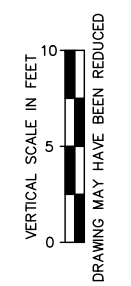
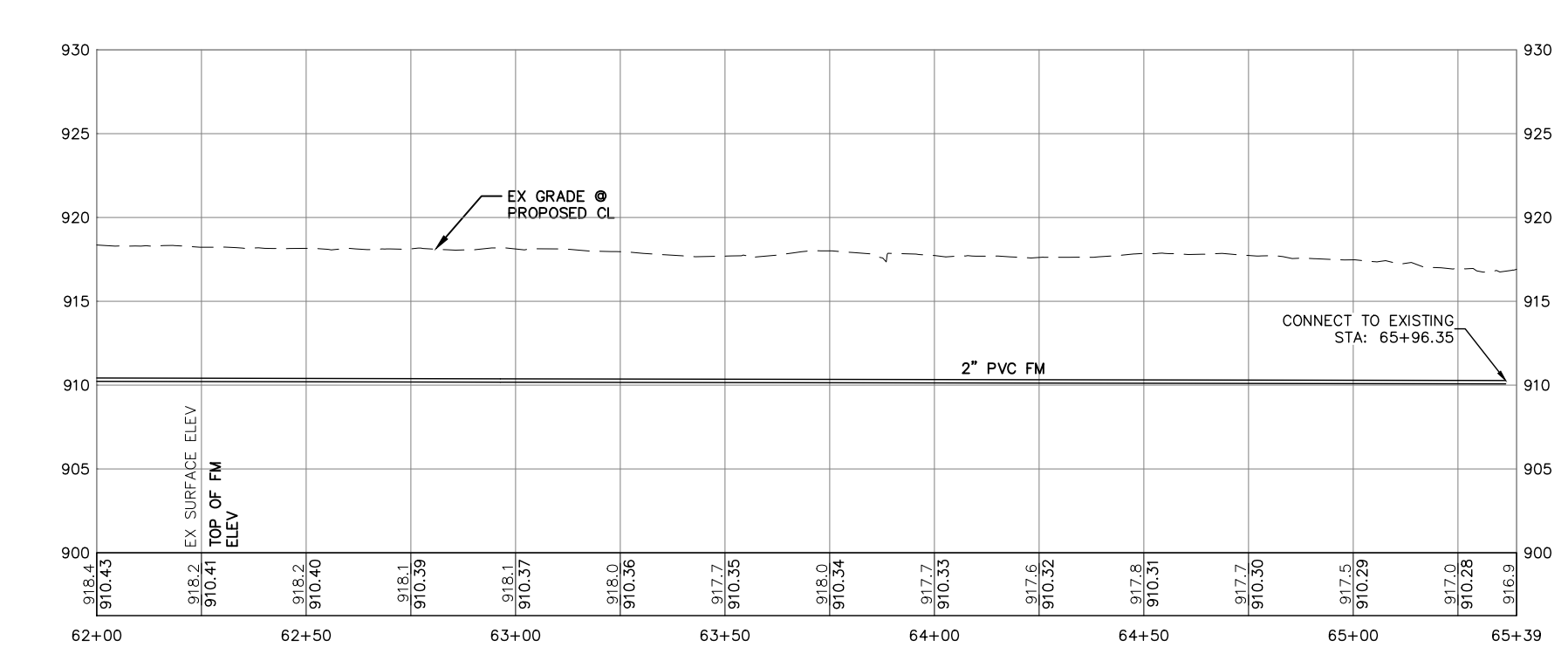
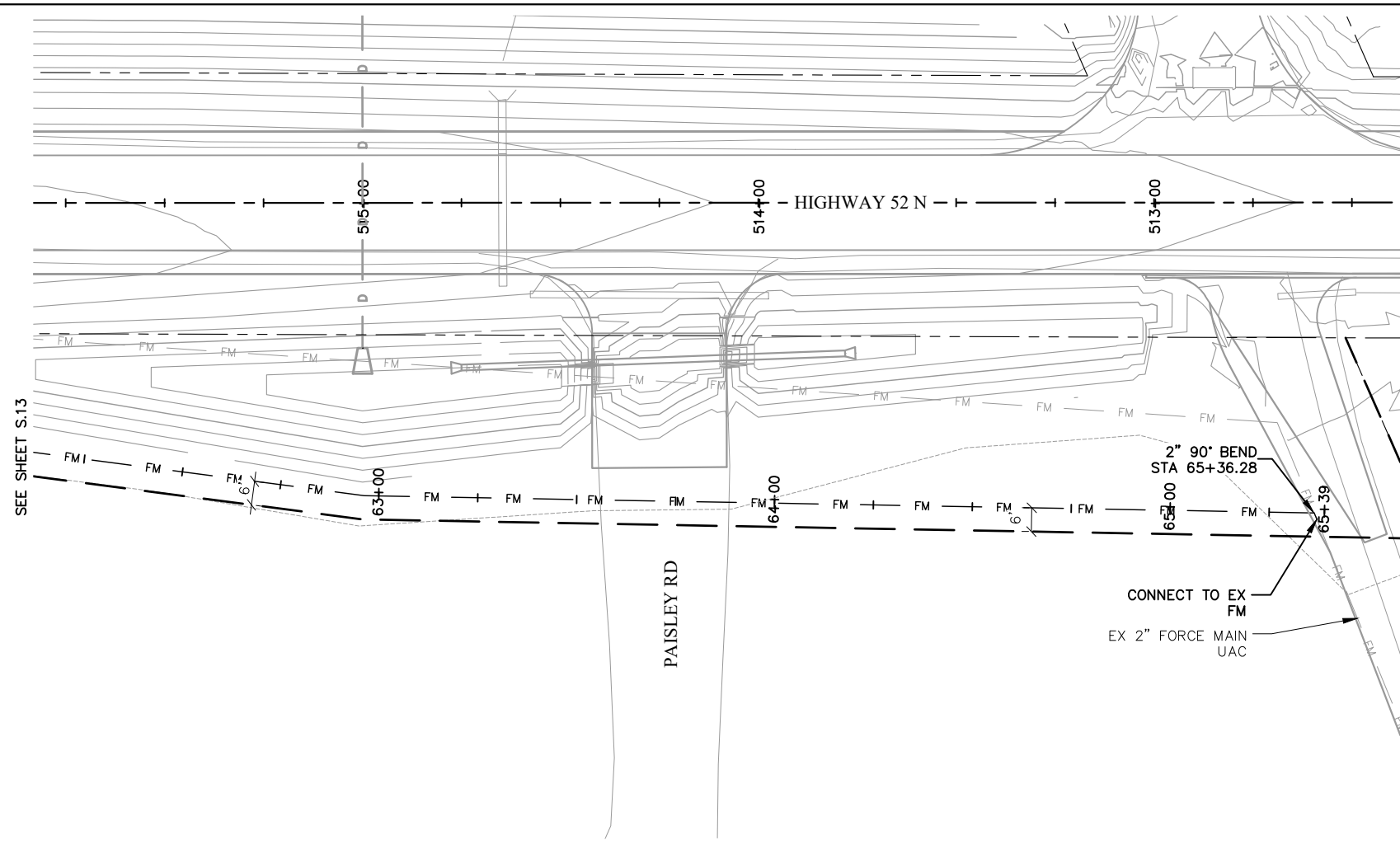




**LEGEND**

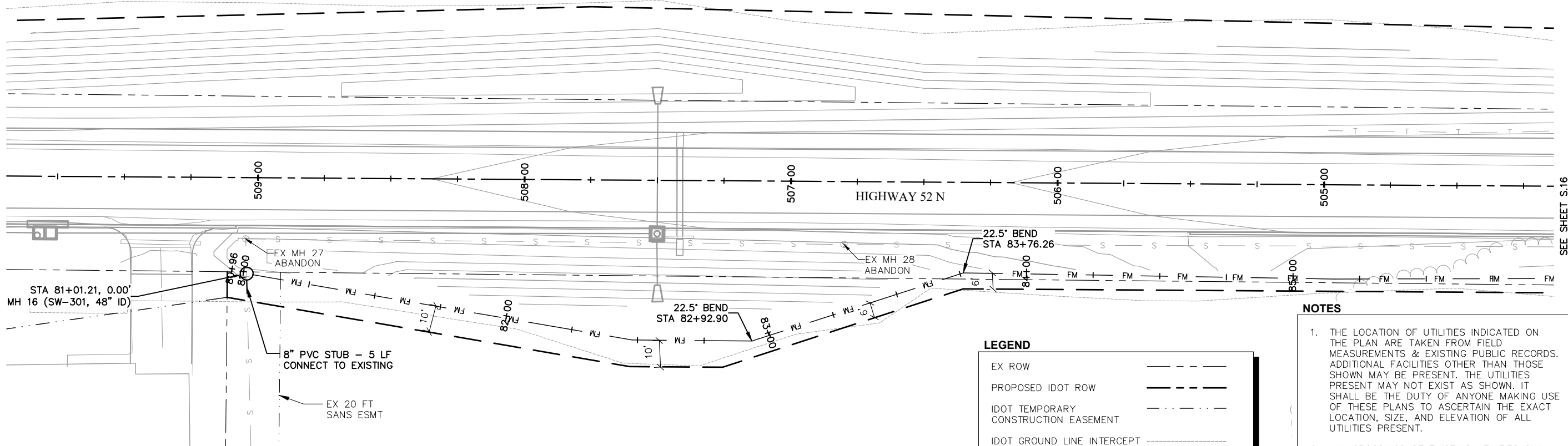
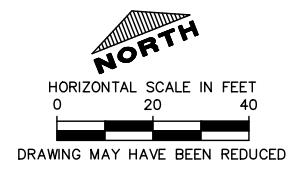
EX ROW	---
PROPOSED IDOT ROW	— — — —
IDOT TEMPORARY CONSTRUCTION EASEMENT	- · - · - · -
IDOT GROUND LINE INTERCEPT	-----

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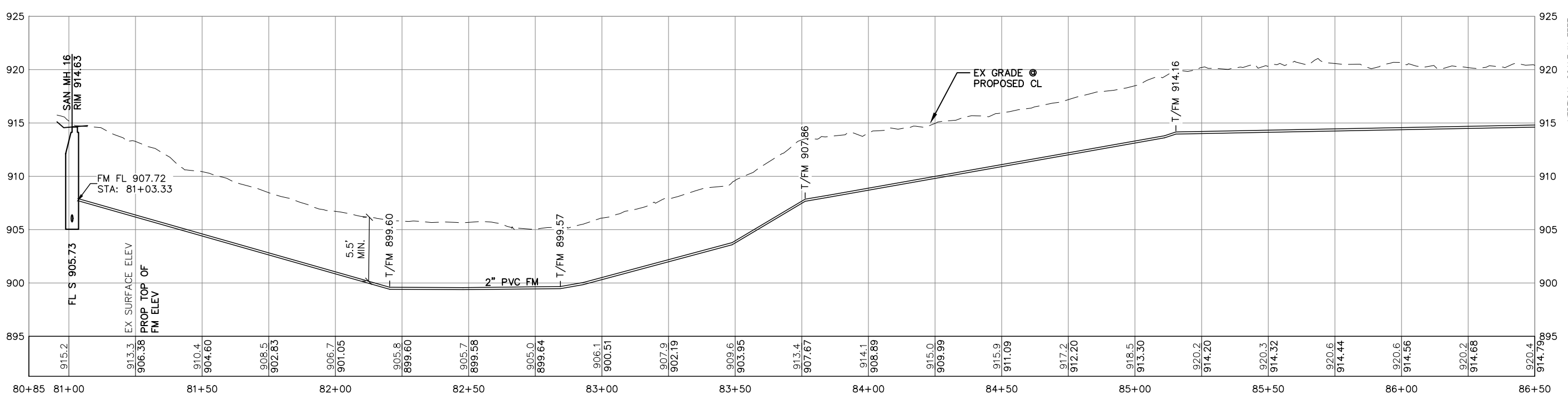


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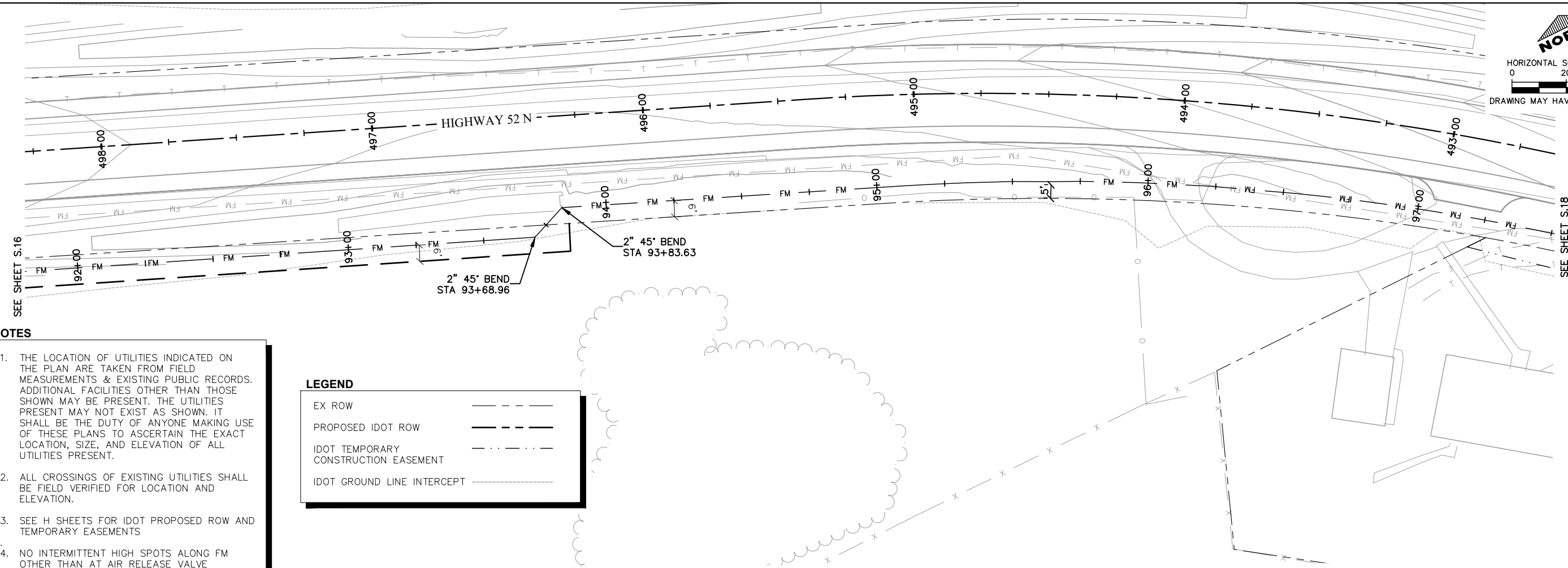
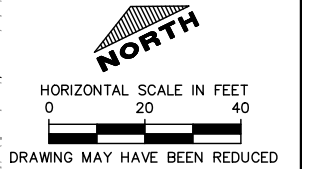


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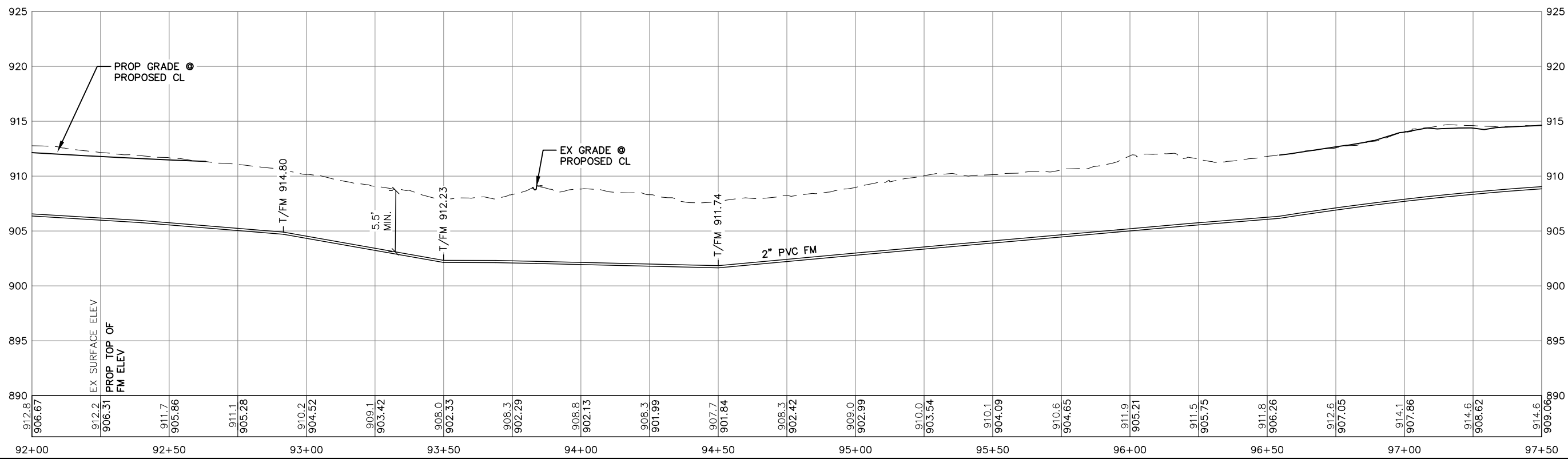




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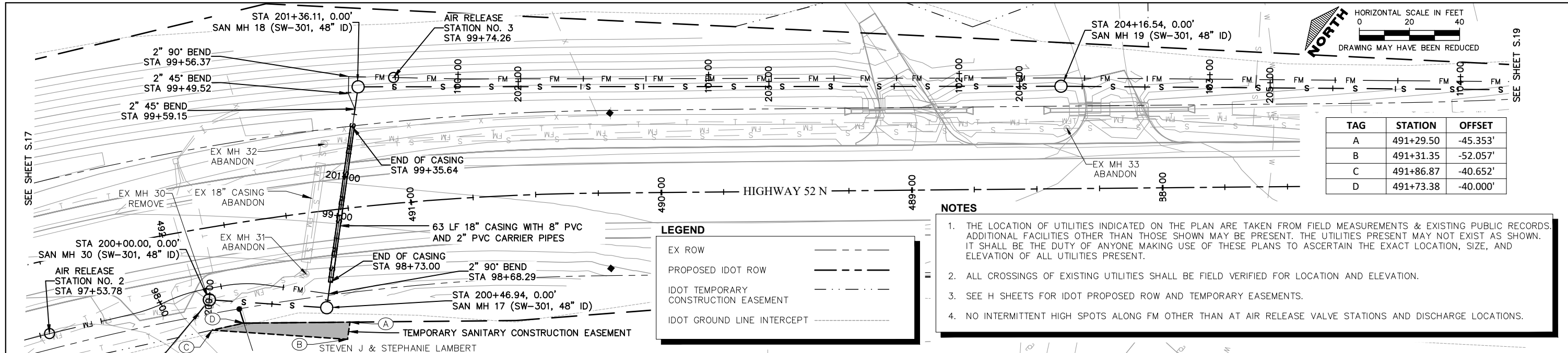
**LEGEND**

EX ROW	---
PROPOSED IDOT ROW	----
IDOT TEMPORARY CONSTRUCTION EASEMENT	-.-.-.-
IDOT GROUND LINE INTERCEPT	.....



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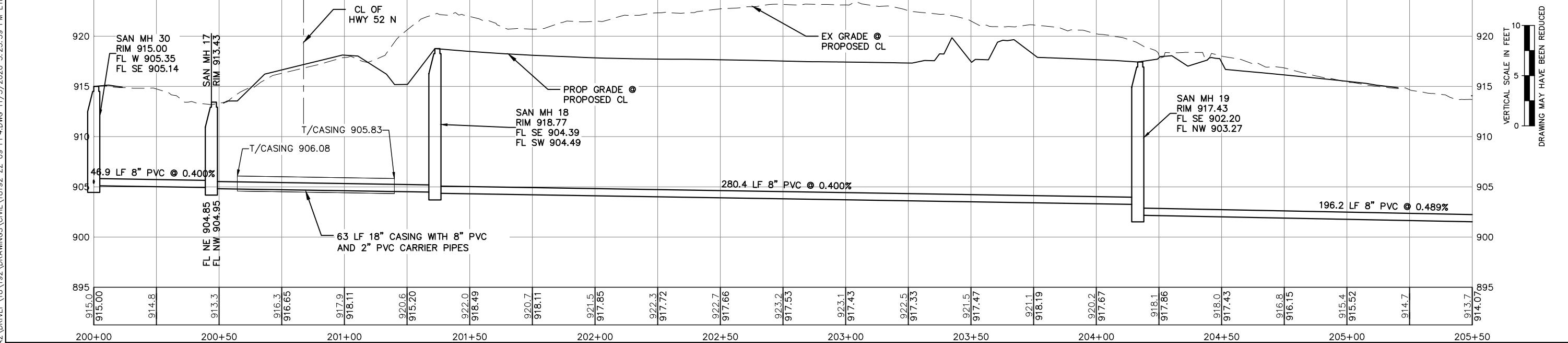
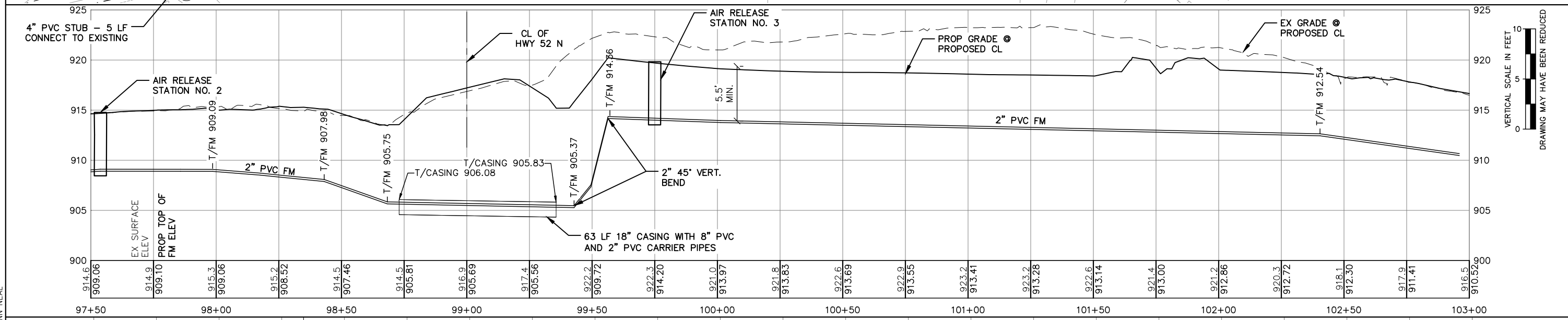


TAG	STATION	OFFSET
A	491+29.50	-45.353'
B	491+31.35	-52.057'
C	491+86.87	-40.652'
D	491+73.38	-40.000'

**LEGEND**

- EX ROW
- PROPOSED IDOT ROW
- IDOT TEMPORARY CONSTRUCTION EASEMENT
- IDOT GROUND LINE INTERCEPT

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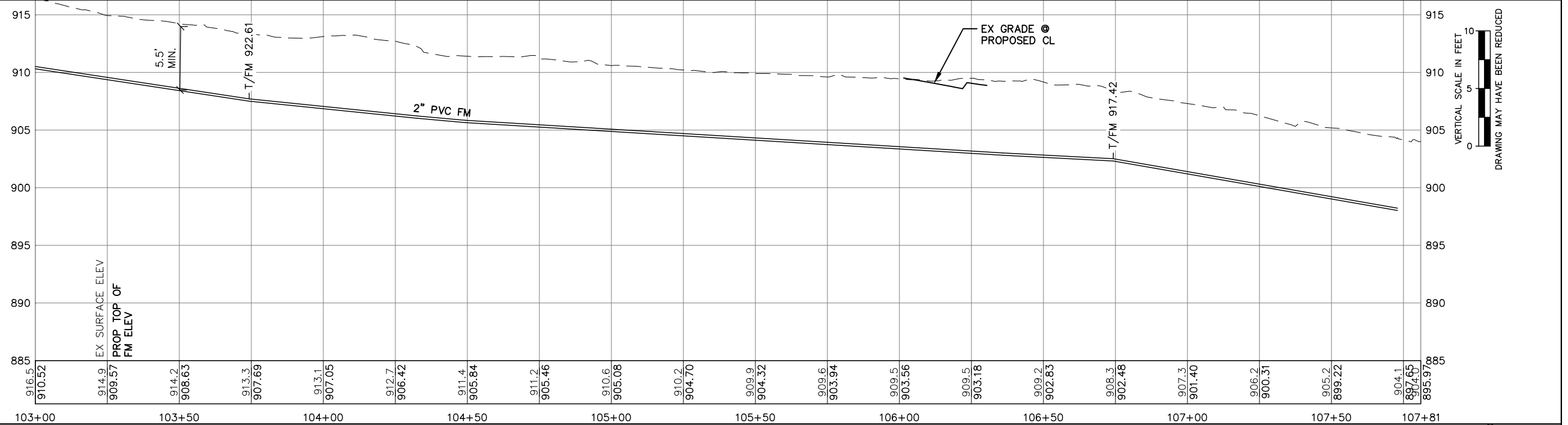
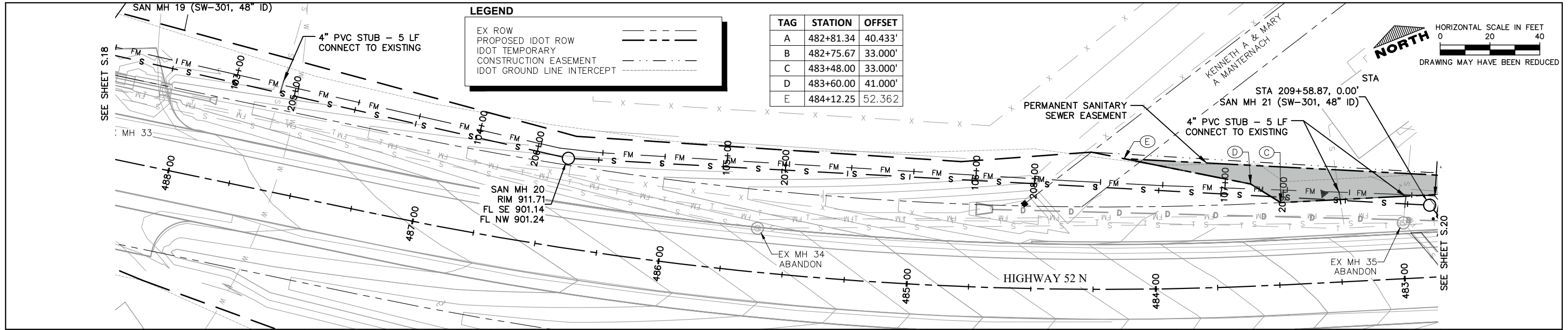
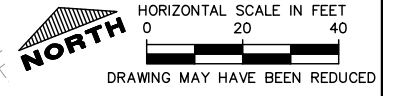
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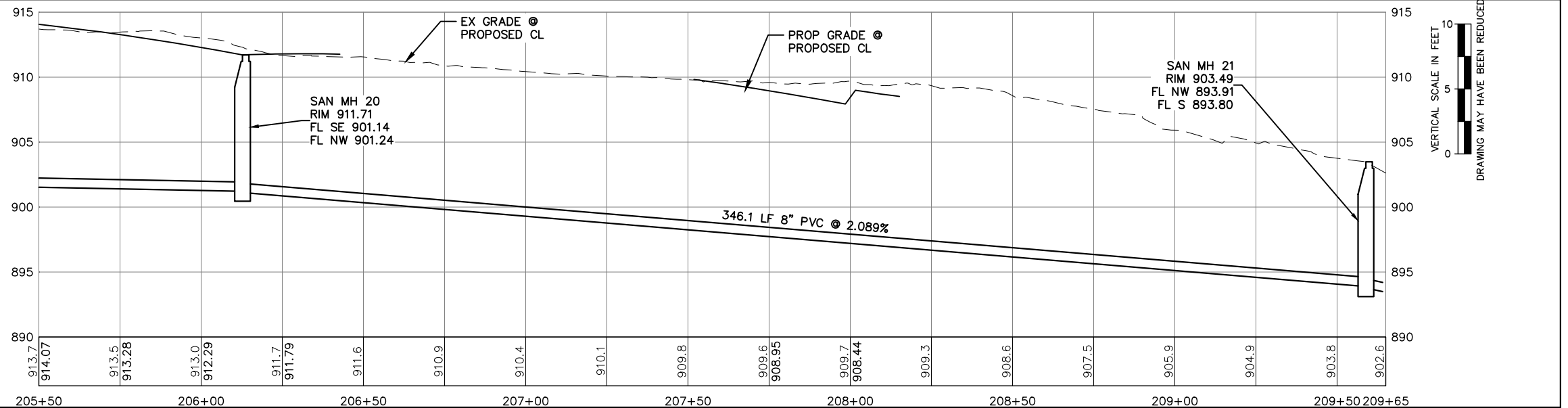
**LEGEND**

- EX ROW
- PROPOSED IDOT ROW
- IDOT TEMPORARY CONSTRUCTION EASEMENT
- IDOT GROUND LINE INTERCEPT

TAG	STATION	OFFSET
A	482+81.34	40.433'
B	482+75.67	33.000'
C	483+48.00	33.000'
D	483+60.00	41.000'
E	484+12.25	52.362'

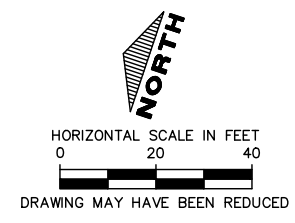
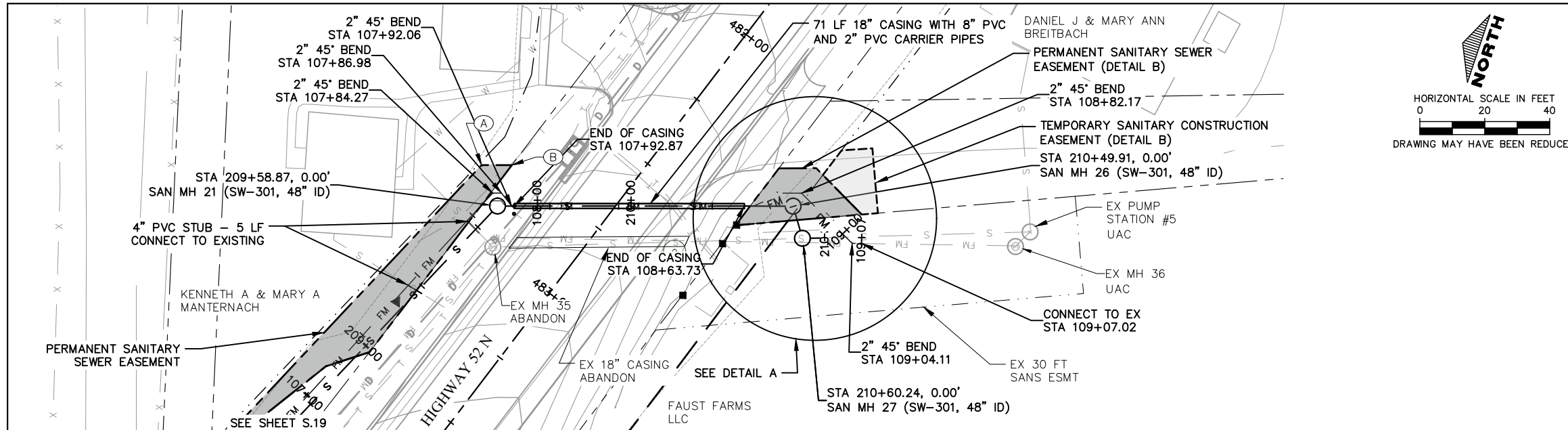


- NOTES**
1. THE LOCATION OF UTILITIES INDICATED ON THE PLAN ARE TAKEN FROM FIELD MEASUREMENTS & EXISTING PUBLIC RECORDS. ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT. THE UTILITIES PRESENT MAY NOT EXIST AS SHOWN. IT SHALL BE THE DUTY OF ANYONE MAKING USE OF THESE PLANS TO ASCERTAIN THE EXACT LOCATION, SIZE, AND ELEVATION OF ALL UTILITIES PRESENT.
  2. ALL CROSSINGS OF EXISTING UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION.
  3. SEE H SHEETS FOR IDOT PROPOSED ROW AND TEMPORARY EASEMENTS.
  4. NO INTERMITTENT HIGH SPOTS ALONG FM OTHER THAN AT AIR RELEASE VALVE STATIONS AND DISCHARGE LOCATIONS.



\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ_09_PP4.DWG 11/5/2020 3:24:14 PM LYNN NEAL

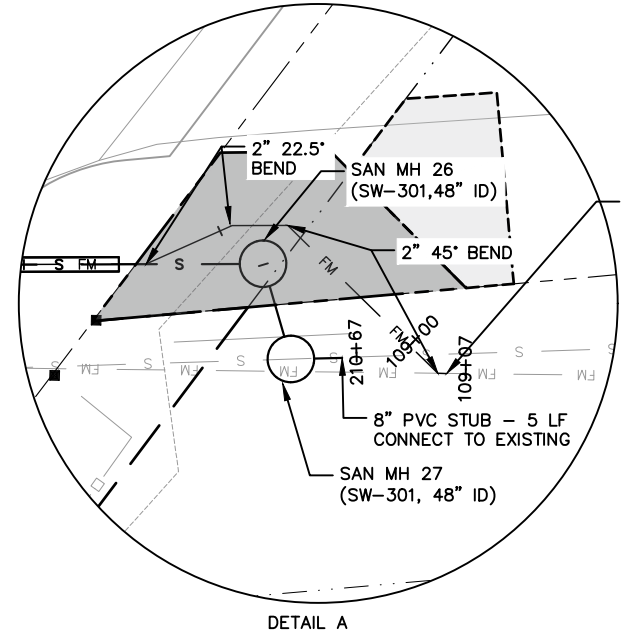
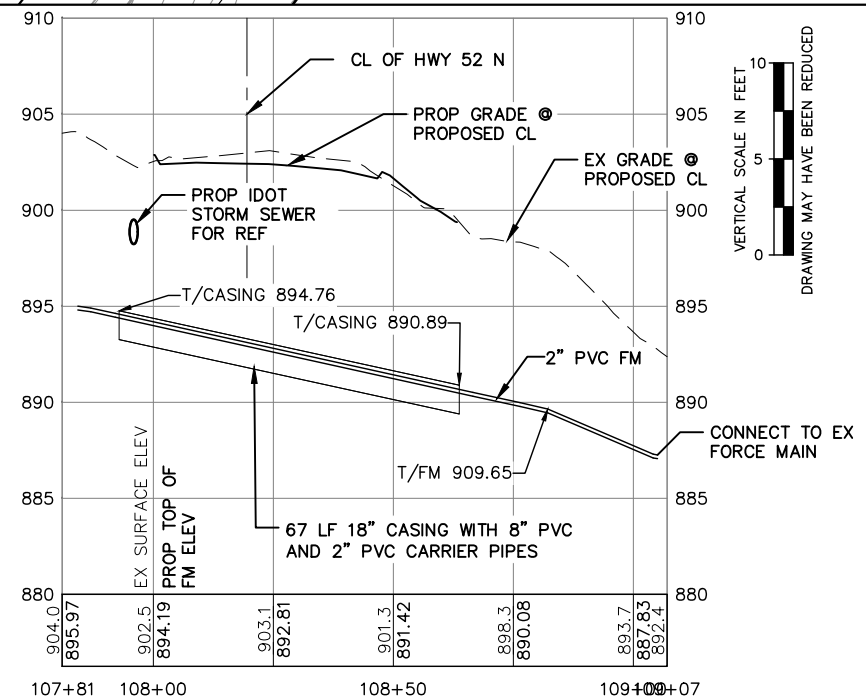




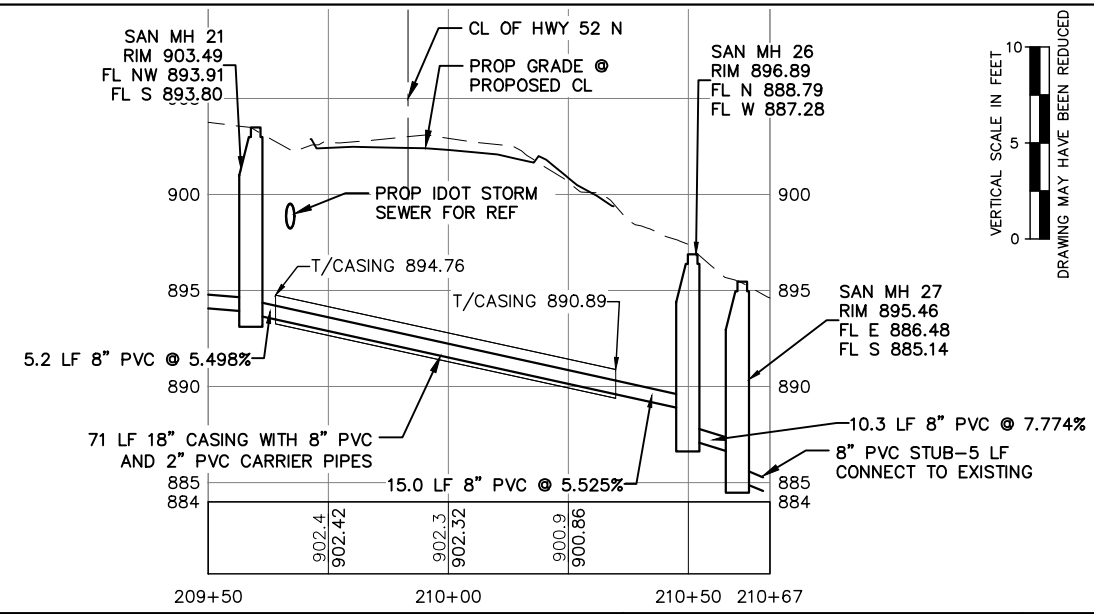
**LEGEND**

EX ROW	---
PROPOSED IDOT ROW	----
IDOT TEMPORARY CONSTRUCTION EASEMENT	-.-.-.-
IDOT GROUND LINE INTERCEPT	.....

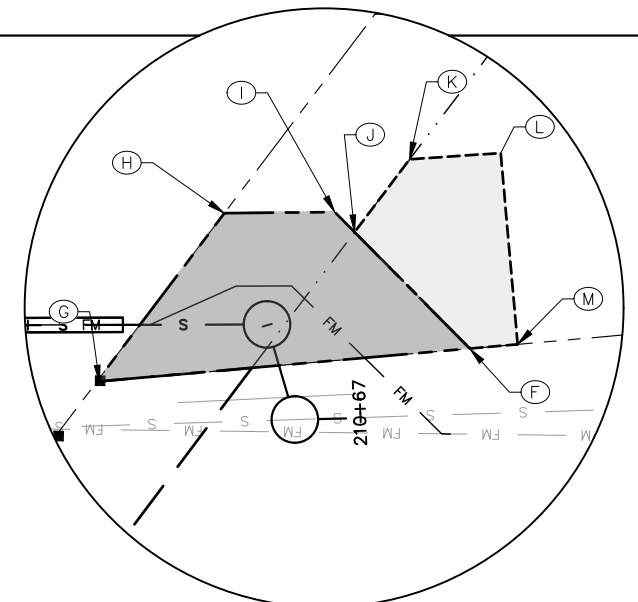
- NOTES**
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  3. SEE H SHEETS FOR IDOT PROPOSED ROW AND TEMPORARY EASEMENTS.
  4. NO INTERMITTENT HIGH SPOTS ALONG FM OTHER THAN AT AIR RELEASE VALVE STATIONS AND DISCHARGE LOCATIONS.



DETAIL A



TAG	STATION	OFFSET
A	482+81.34	40.433'
B	482+75.67	33.000'
C	483+48.00	33.000'
D	483+60.00	41.000'
E	484+12.25	52.362'
F	482+22.45	-61.894'
G	482+48.64	-32.995'
H	482+26.64	-32.995'
I	482+19.61	-42.096'
J	482+20.03	-45.000'
K	482+10.52	-45.000'
L	482+04.28	-52.168'
M	482+19.10	-65.598'



DETAIL B

\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ_09_PP4.DWG 11/6/2020 6:55:41 AM BRYSON WINSKY



\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192_ZZ_09.DWG 11/5/2020 3:24:38 PM LYNN NEAL

SAN SEWER HWY 52 STA. 591+00 to 590+00				
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	0+00.000	3686895.201	5623035.873	
End:	0+60.750	3686901.715	5622975.473	
Parameter				
Value	Parameter	Value		
Length:	60.75	Course:	N 83° 50' 39.8748" W	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	0+60.750	3686901.715	5622975.473	
End:	1+24.162	3686838.669	5622968.674	
Parameter				
Value	Parameter	Value		
Length:	63.412	Course:	S 06° 09' 20.1252" W	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	1+24.162	3686838.669	5622968.674	
End:	1+43.143	3686825.328	5622955.171	
Parameter				
Value	Parameter	Value		
Length:	18.982	Course:	S 45° 20' 40.8643" W	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	1+43.143	3686825.328	5622955.171	
End:	1+55.622	3686813.211	5622952.192	
Parameter				
Value	Parameter	Value		
Length:	12.478	Course:	S 13° 48' 47.4325" W	

SAN SEWER HWY 52 STA. 554+53 to 548+00				
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	20+00.000	3686085.154	5626279.135	
End:	22+00.000	3686158.661	5626465.137	
Parameter				
Value	Parameter	Value		
Length:	200	Course:	N 68° 26' 11.2827" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	22+00.000	3686158.661	5626465.137	
End:	24+05.755	3686235.02	5626656.198	
Parameter				
Value	Parameter	Value		
Length:	205.755	Course:	N 68° 12' 55.8326" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	24+05.755	3686235.02	5626656.198	
End:	25+05.689	3686251.918	5626754.694	
Parameter				
Value	Parameter	Value		
Length:	99.934	Course:	N 80° 15' 53.0898" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	25+05.689	3686251.918	5626754.694	
End:	26+51.095	3686297.242	5626892.855	
Parameter				
Value	Parameter	Value		
Length:	145.406	Course:	N 71° 50' 16.1933" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	26+51.095	3686297.242	5626892.855	
End:	26+62.922	3686309.057	5626893.401	
Parameter				
Value	Parameter	Value		
Length:	11.827	Course:	N 02° 38' 37.2528" E	

SAN SEWER HWY 52 STA. 535+50 to 519+12				
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	40+00.000	3686063.709	5627962.144	
End:	41+53.088	3685948.722	5628063.208	
Parameter				
Value	Parameter	Value		
Length:	153.088	Course:	S 41° 18' 46.5820" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	41+53.088	3685948.722	5628063.208	
End:	43+01.902	3685849.016	5628173.681	
Parameter				
Value	Parameter	Value		
Length:	148.814	Course:	S 47° 55' 57.2762" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	43+01.902	3685849.016	5628173.681	
End:	45+52.058	3685671.357	5628349.793	
Parameter				
Value	Parameter	Value		
Length:	250.156	Course:	S 44° 44' 57.5588" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	45+52.058	3685671.357	5628349.793	
End:	49+07.688	3685450.906	5628628.852	
Parameter				
Value	Parameter	Value		
Length:	355.63	Course:	S 51° 41' 31.1282" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	49+07.688	3685450.906	5628628.852	
End:	51+35.288	3685371.693	5628842.223	
Parameter				
Value	Parameter	Value		
Length:	227.6	Course:	S 69° 37' 57.8237" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	51+35.288	3685371.693	5628842.223	
End:	53+46.206	3685323.431	5629047.545	
Parameter				
Value	Parameter	Value		
Length:	210.918	Course:	S 76° 46' 21.7197" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	53+46.206	3685323.431	5629047.545	
End:	56+18.011	3685230.029	5629302.798	
Parameter				
Value	Parameter	Value		
Length:	271.805	Course:	S 69° 54' 05.0535" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	56+18.011	3685230.029	5629302.798	
End:	57+87.445	3685116.323	5629428.412	
Parameter				
Value	Parameter	Value		
Length:	169.434	Course:	S 47° 50' 55.4287" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	57+87.445	3685116.323	5629428.412	
End:	58+02.482	3685108.777	5629441.419	
Parameter				
Value	Parameter	Value		
Length:	15.037	Course:	S 59° 52' 41.9383" E	

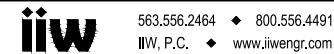
SAN SEWER HWY 52 STA. 535+50 to 519+12				
Parameter				
Description	PT Station	Northing	Easting	
Start:	58+02.482	3685108.777	5629441.419	
End:	59+69.082	3685018.64	5629581.528	
Parameter				
Value	Parameter	Value		
Length:	166.6	Course:	S 57° 14' 42.6719" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	59+69.082	3685018.64	5629581.528	
End:	60+64.189	3684934.923	5629536.396	
Parameter				
Value	Parameter	Value		
Length:	95.107	Course:	S 28° 19' 45.5830" W	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	60+64.189	3684934.923	5629536.396	
End:	62+96.346	3684824.89	5629740.821	
Parameter				
Value	Parameter	Value		
Length:	232.157	Course:	S 61° 42' 30.2405" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	62+96.346	3684824.89	5629740.821	
End:	65+38.981	3684734.498	5629965.99	
Parameter				
Value	Parameter	Value		
Length:	242.634	Course:	S 68° 07' 38.8913" E	

SAN SEWER HWY 52 STA. 542+33 to 541+45				
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	90+00.000	3686447.917	5627492.375	
End:	90+20.644	3686436.331	5627509.46	
Parameter				
Value	Parameter	Value		
Length:	20.644	Course:	S 55° 51' 29.3312" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	90+20.644	3686436.331	5627509.46	
End:	91+11.961	3686378.745	5627580.331	
Parameter				
Value	Parameter	Value		
Length:	91.317	Course:	S 50° 54' 16.0341" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	91+11.961	3686378.745	5627580.331	
End:	91+75.761	3686387.148	5627643.576	
Parameter				
Value	Parameter	Value		
Length:	63.8	Course:	N 82° 25' 55.3018" E	

SAN SEWER HWY 52 STA. 491+18 to 483+00				
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	200+00.000	3683994.914	5631882.038	
End:	200+46.937	3683956.554	5631909.086	
Parameter				
Value	Parameter	Value		
Length:	46.937	Course:	S 35° 11' 16.0128" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	200+46.937	3683956.554	5631909.086	
End:	201+36.109	3684002.492	5631985.514	
Parameter				
Value	Parameter	Value		
Length:	89.172	Course:	N 58° 59' 28.0474" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	201+36.109	3684002.492	5631985.514	
End:	204+16.539	3683784.971	5632162.504	
Parameter				
Value	Parameter	Value		
Length:	280.43	Course:	S 39° 08' 03.0137" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	204+16.539	3683784.971	5632162.504	
End:	206+12.756	3683631.736	5632285.061	
Parameter				
Value	Parameter	Value		
Length:	196.217	Course:	S 38° 39' 09.8527" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	206+12.756	3683631.736	5632285.061	
End:	209+58.874	3683401.475	5632543.475	
Parameter				
Value	Parameter	Value		
Length:	346.118	Course:	S 48° 17' 50.0807" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	209+58.874	3683401.475	5632543.475	
End:	210+49.908	3683310.48	5632546.096	
Parameter				
Value	Parameter	Value		
Length:	91.034	Course:	S 01° 39' 00.6737" E	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	210+49.908	3683310.48	5632546.096	
End:	210+60.235	3683307.323	5632536.263	
Parameter				
Value	Parameter	Value		
Length:	10.328	Course:	S 72° 12' 01.9112" W	
Tangent Data				
Description	PT Station	Northing	Easting	
Start:	210+60.235	3683307.323	5632536.263	
End:	210+67.079	3683300.49	5632536.656	
Parameter				
Value	Parameter	Value		
Length:	6.844	Course:	S 03° 17' 28.1909" E	

SANITARY SEWER ALIGNMENTS

DESIGNED BY: _____ TRACED BY: _____  
 DETAILED BY: _____ CHECKED BY: _____



CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

PROJECT NUMBER

NHSX-003-9(22)--3H-52

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA			S.21	



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FM HWY 52 STA. 580+00 to 578+50			
Tangent Data			
Description	PT Station	Northing	Easting
Start:	300+00.000	3686754.044	5624015.156
End:	300+18.396	3686770.126	5624024.089
Tangent Data			
Parameter	Value	Parameter	Value
Length:	18.396	Course:	N 29° 03' 06.0910" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	300+18.396	3686770.126	5624024.089
End:	300+96.236	3686793.606	5624098.303
Tangent Data			
Parameter	Value	Parameter	Value
Length:	77.84	Course:	N 72° 26' 36.1809" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	300+96.236	3686793.606	5624098.303
End:	301+39.654	3686773.776	5624136.928
Tangent Data			
Parameter	Value	Parameter	Value
Length:	43.418	Course:	S 62° 49' 24.1332" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	301+39.654	3686773.776	5624136.928
End:	302+19.848	3686841.128	5624180.456
Tangent Data			
Parameter	Value	Parameter	Value
Length:	80.194	Course:	N 32° 52' 26.1445" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	302+19.848	3686841.128	5624180.456
End:	302+29.801	3686850.859	5624178.366
Tangent Data			
Parameter	Value	Parameter	Value
Length:	9.953	Course:	N 12° 07' 33.8555" W
Tangent Data			
Description	PT Station	Northing	Easting

FM HWY 52 STA. 509+00 to 482+36			
Tangent Data			
Description	PT Station	Northing	Easting
Start:	80+95.510	3684651.558	5630306.166
End:	82+47.899	3684574.888	5630437.863
Tangent Data			
Parameter	Value	Parameter	Value
Length:	152.389	Course:	S 59° 47' 36.4363" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	82+47.899	3684574.888	5630437.863
End:	82+92.895	3684558.798	5630479.884
Tangent Data			
Parameter	Value	Parameter	Value
Length:	44.996	Course:	S 69° 02' 52.6416" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	82+92.895	3684558.798	5630479.884
End:	83+76.257	3684555.073	5630563.162
Tangent Data			
Parameter	Value	Parameter	Value
Length:	83.361	Course:	S 87° 26' 18.1602" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	83+76.257	3684555.073	5630563.162
End:	85+11.092	3684505.907	5630688.714
Tangent Data			
Parameter	Value	Parameter	Value
Length:	134.835	Course:	S 68° 36' 53.7503" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	85+11.092	3684505.907	5630688.714
End:	86+76.595	3684448.336	5630843.881
Tangent Data			
Parameter	Value	Parameter	Value
Length:	165.503	Course:	S 69° 38' 37.4978" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	86+76.595	3684448.336	5630843.881
End:	87+20.900	3684432.171	5630885.132
Tangent Data			
Parameter	Value	Parameter	Value
Length:	44.305	Course:	S 68° 36' 06.8315" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	87+20.900	3684432.171	5630885.132
End:	87+70.693	3684411.865	5630930.597
Tangent Data			
Parameter	Value	Parameter	Value
Length:	49.793	Course:	S 65° 55' 59.6040" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	87+70.693	3684411.865	5630930.597
End:	89+06.863	3684357.25	5631055.334
Tangent Data			
Parameter	Value	Parameter	Value
Length:	136.17	Course:	S 66° 21' 14.9388" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	89+06.863	3684357.25	5631055.334
End:	93+68.963	3684193.082	5631487.29
Tangent Data			
Parameter	Value	Parameter	Value
Length:	462.1	Course:	S 69° 11' 25.0085" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	93+68.963	3684193.082	5631487.29
End:	93+83.629	3684198.87	5631500.765
Tangent Data			
Parameter	Value	Parameter	Value
Length:	14.665	Course:	N 66° 45' 19.1084" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	93+83.629	3684198.87	5631500.765
End:	95+09.189	3684153.857	5631617.98

FM HWY 52 STA. 509+00 to 482+36			
Tangent Data			
Parameter	Value	Parameter	Value
Length:	125.561	Course:	S 68° 59' 32.7306" E
Curve Point Data			
Description	Station	Northing	Easting
PC:	95+09.189	3684153.857	5631617.98
RP:		3683326.179	5631300.138
PCC:	97+85.679	3684016.416	5631856.598
Circular Curve Data			
Parameter	Value	Parameter	Value
Delta:	17° 52' 03.8916"	Type:	RIGHT
Radius:	886.609		
Length:	276.49	Tangent:	139.376
Mid-Ord:	10.756	External:	10.888
Chord:	275.371	Course:	S 60° 03' 30.7849" E
Curve Point Data			
Description	Station	Northing	Easting
PCC:	97+85.679	3684016.416	5631856.598
RP:		3684070.76	5631900.41
PCC:	98+03.198	3684007.238	5631871.467
Circular Curve Data			
Parameter	Value	Parameter	Value
Delta:	14° 22' 45.6177"	Type:	LEFT
Radius:	69.805		
Length:	17.519	Tangent:	8.806
Mid-Ord:	0.549	External:	0.553
Chord:	17.473	Course:	S 58° 18' 51.6479" E
Curve Point Data			
Description	Station	Northing	Easting
PCC:	98+03.198	3684007.238	5631871.467
RP:		3683961.738	5631850.735
PT:	98+17.221	3683999.722	5631883.251
Circular Curve Data			
Parameter	Value	Parameter	Value
Delta:	16° 04' 08.5424"	Type:	RIGHT
Radius:	50		
Length:	14.023	Tangent:	7.058
Mid-Ord:	0.491	External:	0.496
Chord:	13.977	Course:	S 57° 28' 10.1856" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	98+17.221	3683999.722	5631883.251
End:	98+26.634	3683993.601	5631890.401
Tangent Data			
Parameter	Value	Parameter	Value
Length:	9.413	Course:	S 49° 26' 05.9144" E
Curve Point Data			
Description	Station	Northing	Easting
PC:	98+26.634	3683993.601	5631890.401
RP:		3683955.613	5631857.882
PT:	98+42.715	3683981.374	5631900.741
Circular Curve Data			
Parameter	Value	Parameter	Value
Delta:	18° 25' 33.9351"	Type:	RIGHT
Radius:	50.006		
Length:	16.082	Tangent:	8.111
Mid-Ord:	0.645	External:	0.654
Chord:	16.013	Course:	S 40° 13' 18.9469" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	98+42.715	3683981.374	5631900.741
End:	98+68.288	3683959.456	5631913.916
Tangent Data			
Parameter	Value	Parameter	Value
Length:	25.572	Course:	S 31° 00' 31.9793" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	98+68.288	3683959.456	5631913.916
End:	99+42.806	3683997.847	5631977.784
Tangent Data			
Parameter	Value	Parameter	Value
Length:	74.518	Course:	N 58° 59' 25.7489" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	99+42.806	3683997.847	5631977.784
End:	99+49.524	3684003.768	5631980.957

FM HWY 52 STA. 509+00 to 482+36			
End			
Parameter	Value	Parameter	Value
Length:	6.718	Course:	N 28° 11' 22.8530" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	99+49.524	3684003.768	5631980.957
End:	99+56.371	3684008.009	5631986.333
Tangent Data			
Parameter	Value	Parameter	Value
Length:	6.847	Course:	N 51° 43' 54.6104" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	99+56.371	3684008.009	5631986.333
End:	100+01.255	3683972.568	5632013.875
Tangent Data			
Parameter	Value	Parameter	Value
Length:	44.884	Course:	S 37° 51' 08.0790" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	100+01.255	3683972.568	5632013.875
End:	102+40.460	3683787.169	5632165.024
Tangent Data			
Parameter	Value	Parameter	Value
Length:	239.204	Course:	S 39° 11' 20.2505" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	102+40.460	3683787.169	5632165.024
End:	104+32.572	3683637.074	5632284.934
Tangent Data			
Parameter	Value	Parameter	Value
Length:	192.112	Course:	S 38° 37' 16.2433" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	104+32.572	3683637.074	5632284.934
End:	104+49.261	3683625.273	5632296.735
Tangent Data			
Parameter	Value	Parameter	Value
Length:	16.69	Course:	S 44° 59' 59.1715" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	104+49.261	3683625.273	5632296.735
End:	106+35.851	3683500.38	5632435.363
Tangent Data			
Parameter	Value	Parameter	Value
Length:	186.59	Course:	S 47° 59' 01.2299" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	106+35.851	3683500.38	5632435.363
End:	107+84.273	3683403.066	5632547.431
Tangent Data			
Parameter	Value	Parameter	Value
Length:	148.422	Course:	S 49° 01' 50.4162" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	107+84.273	3683403.066	5632547.431
End:	107+86.977	3683400.364	5632547.508
Tangent Data			
Parameter	Value	Parameter	Value
Length:	2.703	Course:	S 01° 38' 58.4144" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	107+86.977	3683400.364	5632547.508
End:	107+92.051	3683397.136	5632543.593
Tangent Data			
Parameter	Value	Parameter	Value
Length:	5.074	Course:	S 50° 29' 37.6041" W
Tangent Data			
Description	PT Station	Northing	Easting
Start:	107+92.051	3683397.136	5632543.593
End:	108+66.542	3683322.676	5632545.745

FORCE MAIN ALIGNMENTS

DESIGNED BY: _____  
 DETAILED BY: _____

TRACED BY: _____  
 CHECKED BY: _____

**iiw** 563.556.2464 ♦ 800.556.4491  
 Iiw, P.C. ♦ www.iwengr.com

CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

PROJECT NUMBER

NHSX-003-9(22)--3H-52

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA			S.22	



FM HWY 52 STA. 509+00 to 482+36

Tangent Data			
Parameter	Value	Parameter	Value
Length:	74.491	Course:	S 01° 39' 18.6127" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	108+66.542	3683322.676	5632545.745
End:	108+76.385	3683313.802	5632550.002
Tangent Data			
Parameter	Value	Parameter	Value
Length:	9.842	Course:	S 25° 37' 42.5248" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	108+76.385	3683313.802	5632550.002
End:	108+82.167	3683308.022	5632550.169
Tangent Data			
Parameter	Value	Parameter	Value
Length:	5.782	Course:	S 01° 39' 03.6990" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	108+82.167	3683308.022	5632550.169
End:	109+04.108	3683291.998	5632535.18
Tangent Data			
Parameter	Value	Parameter	Value
Length:	21.941	Course:	S 43° 05' 18.0630" W

\\VSDTA2\DRIVEP\18\192\DRAWINGS\CIVIL\18192.ZZ 09 D.DWG 11/5/2020 3:24:49 PM LYNN NEAL

FORCE MAIN ALIGNMENTS

DESIGNED BY: _____  
 DETAILED BY: _____

TRACED BY: _____  
 CHECKED BY: _____



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 IIW, P.C. ♦ www.iiwengr.com

CITY OF RICKARDSVILLE SANITARY COLLECTION SYSTEM

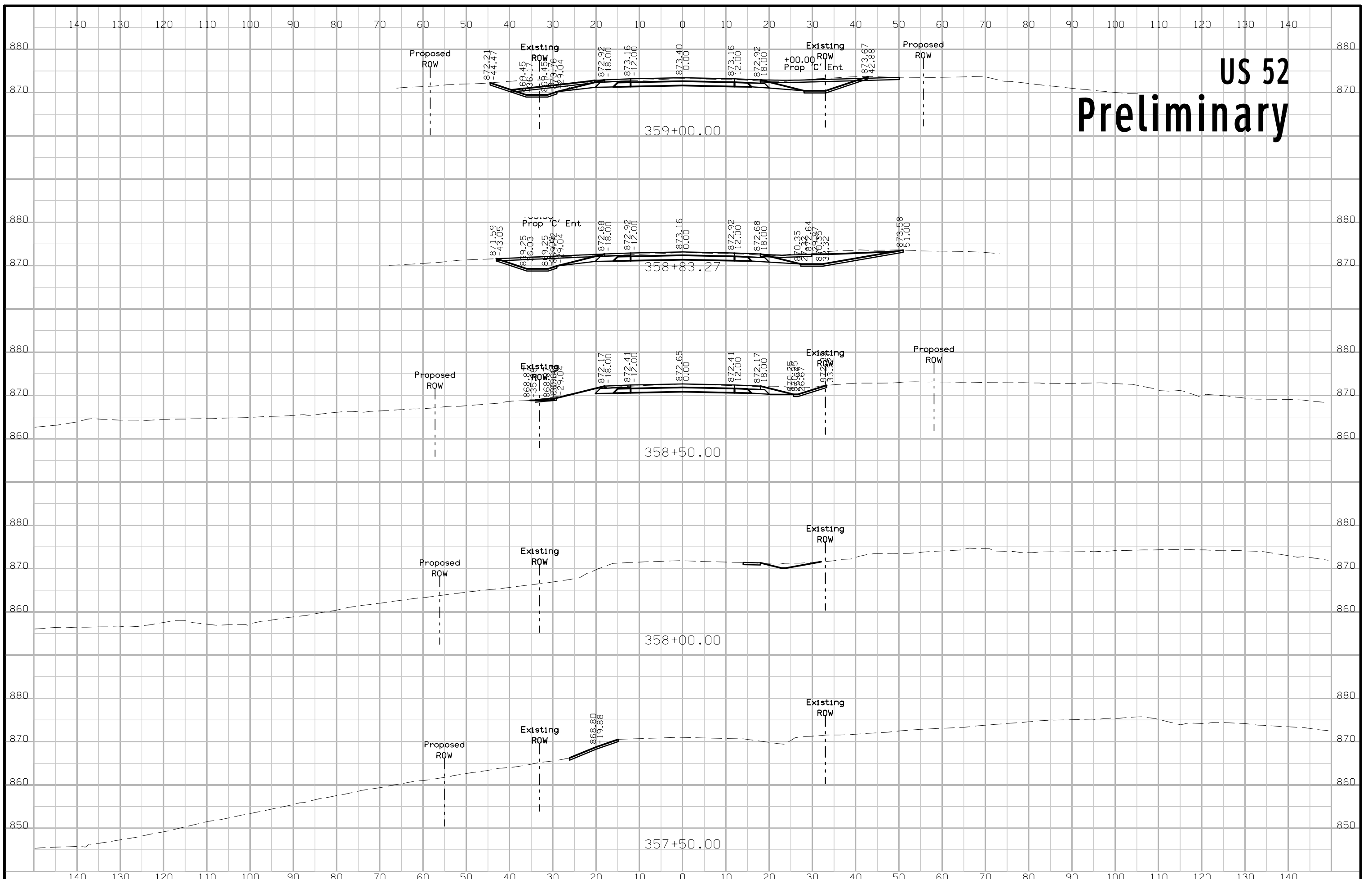
PROJECT NUMBER

NHSX-003-9(22)--3H-52

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	.	.	S.23	.

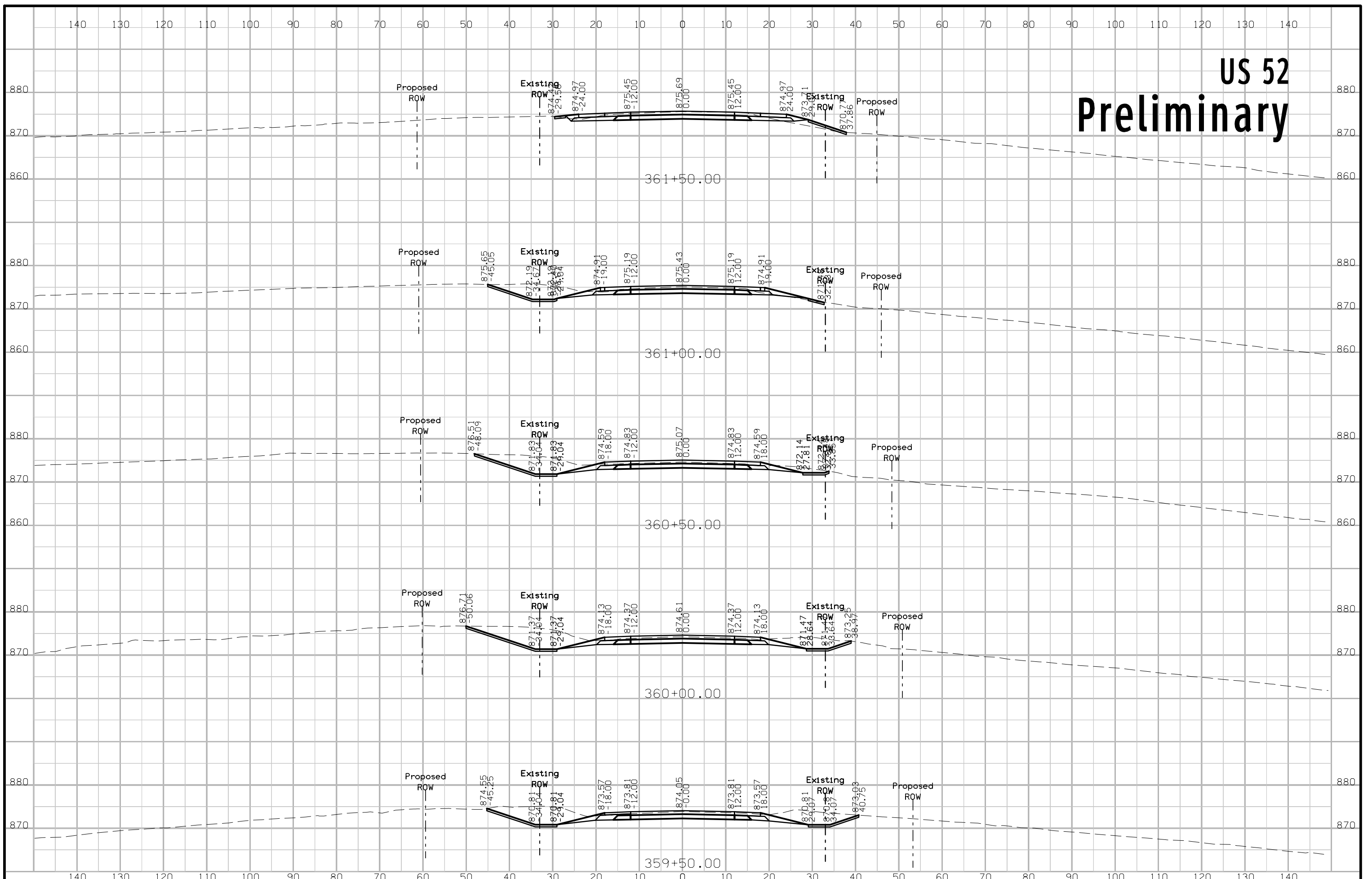


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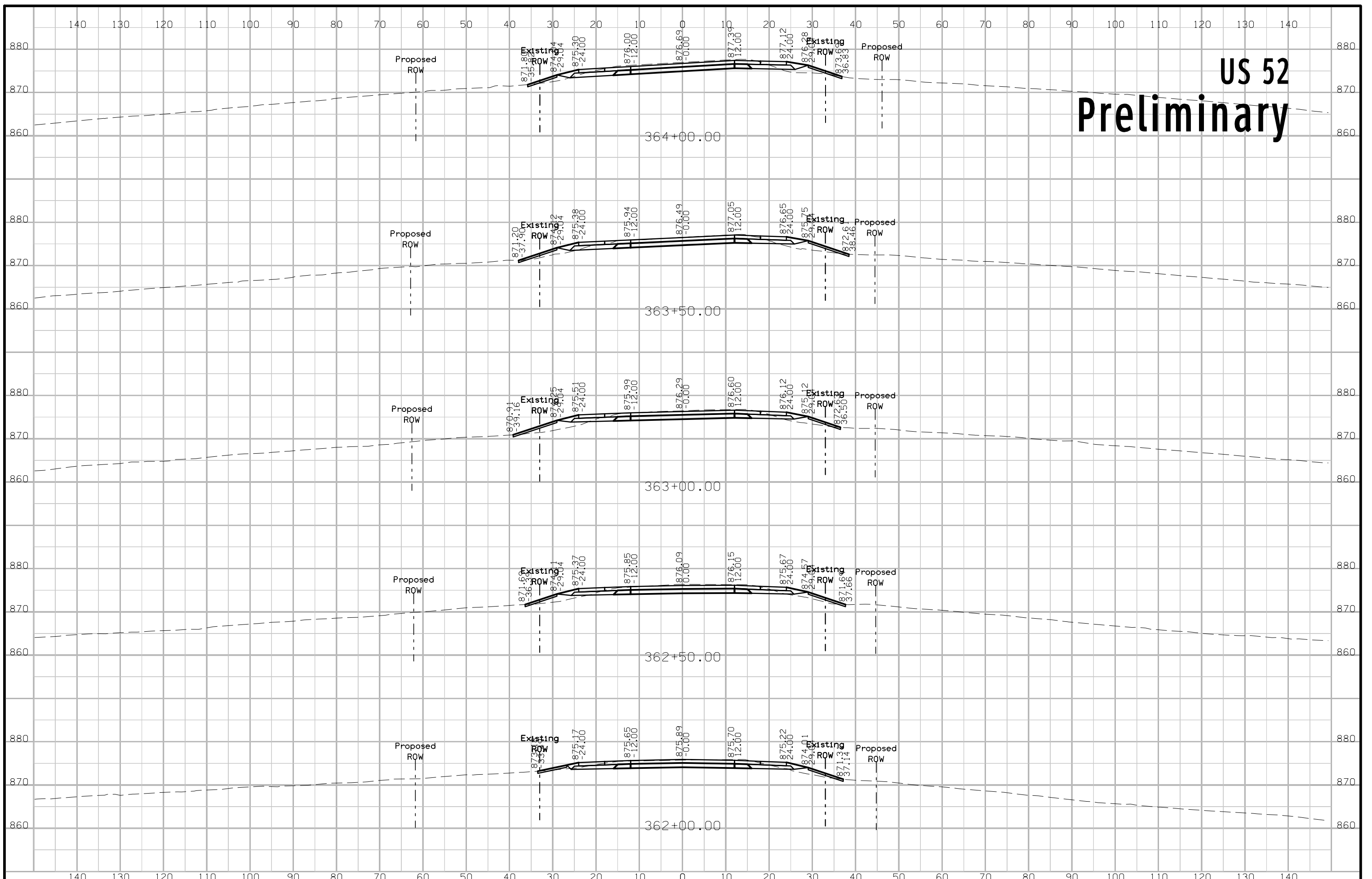


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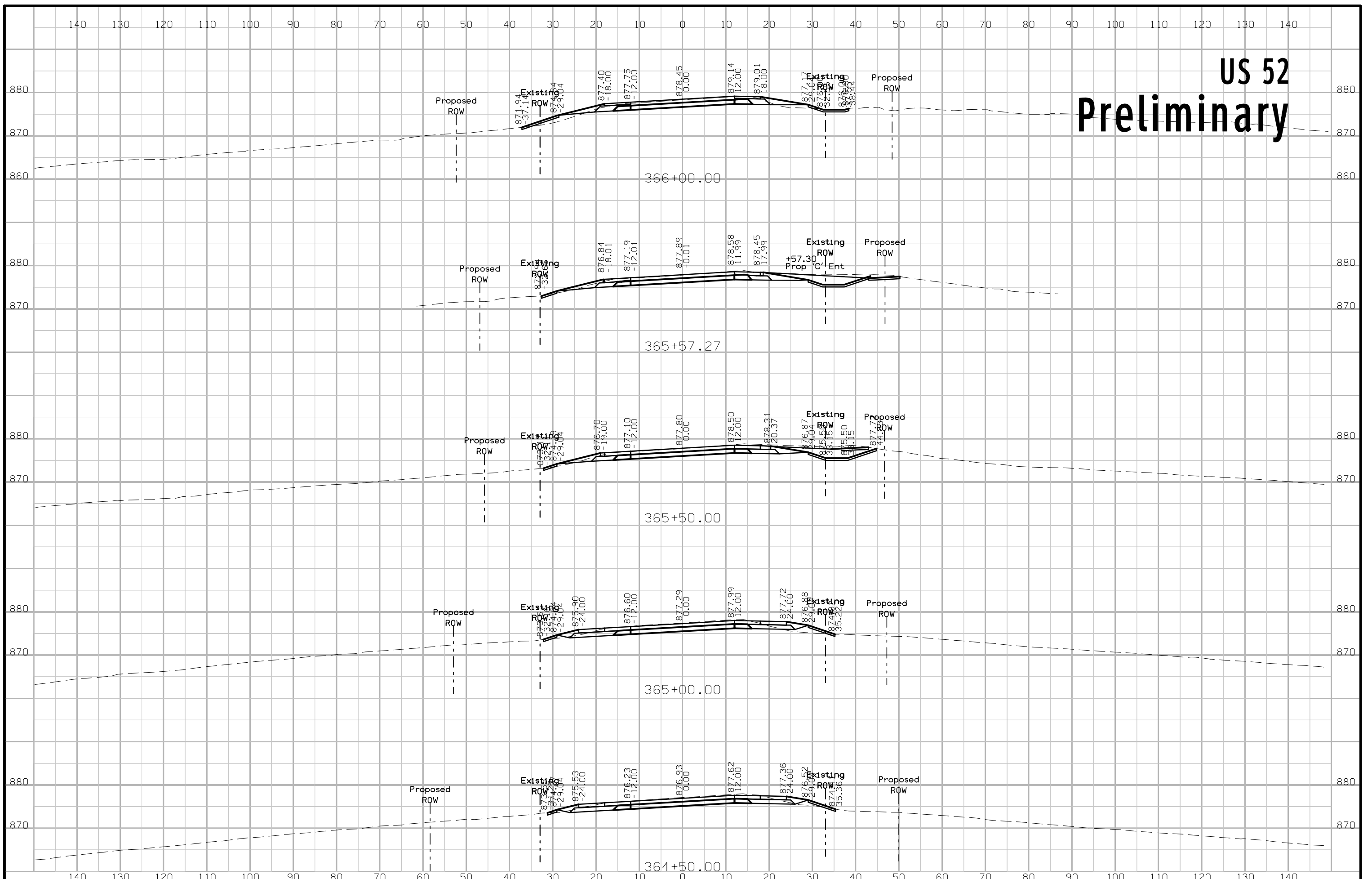


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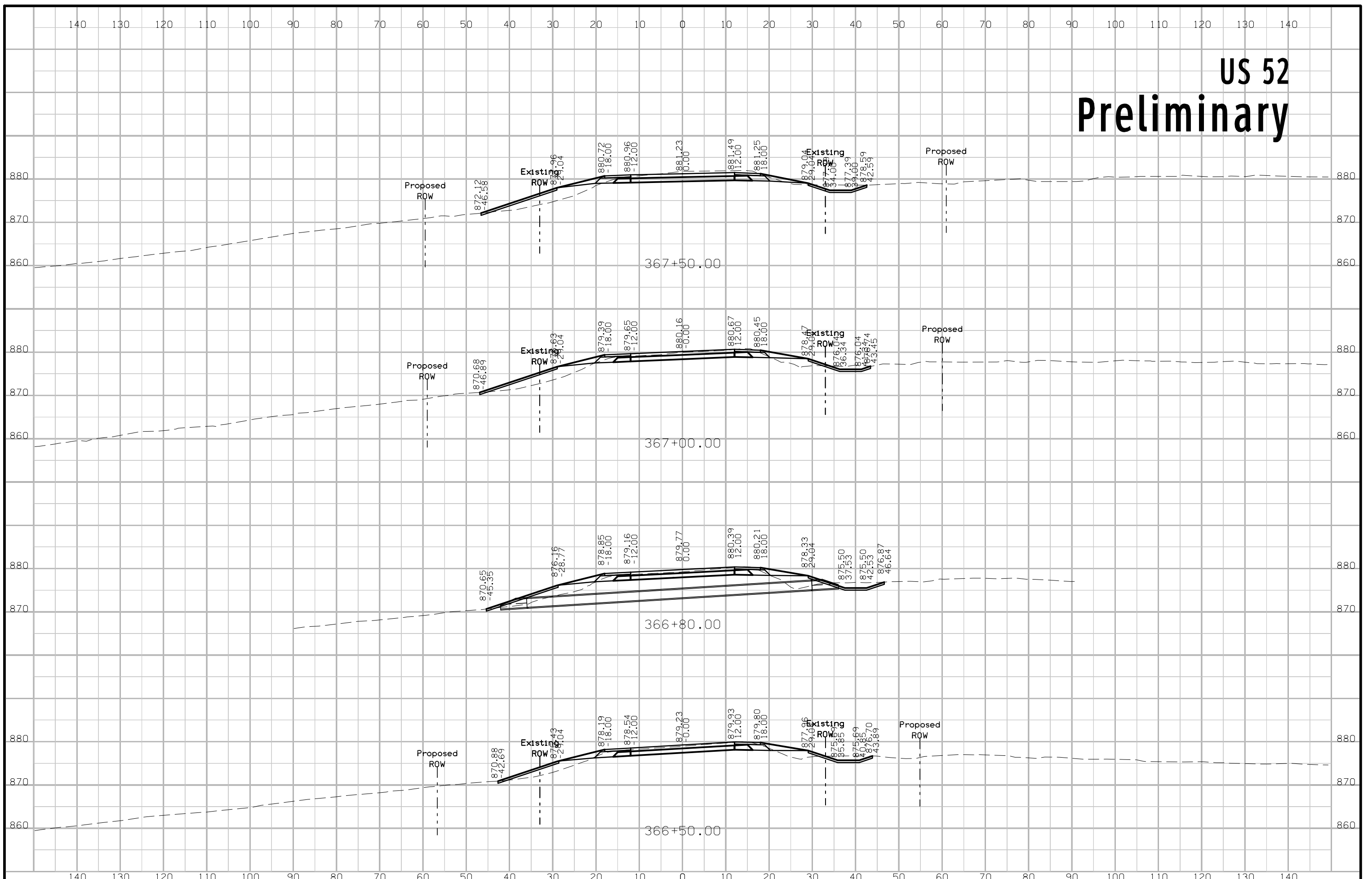


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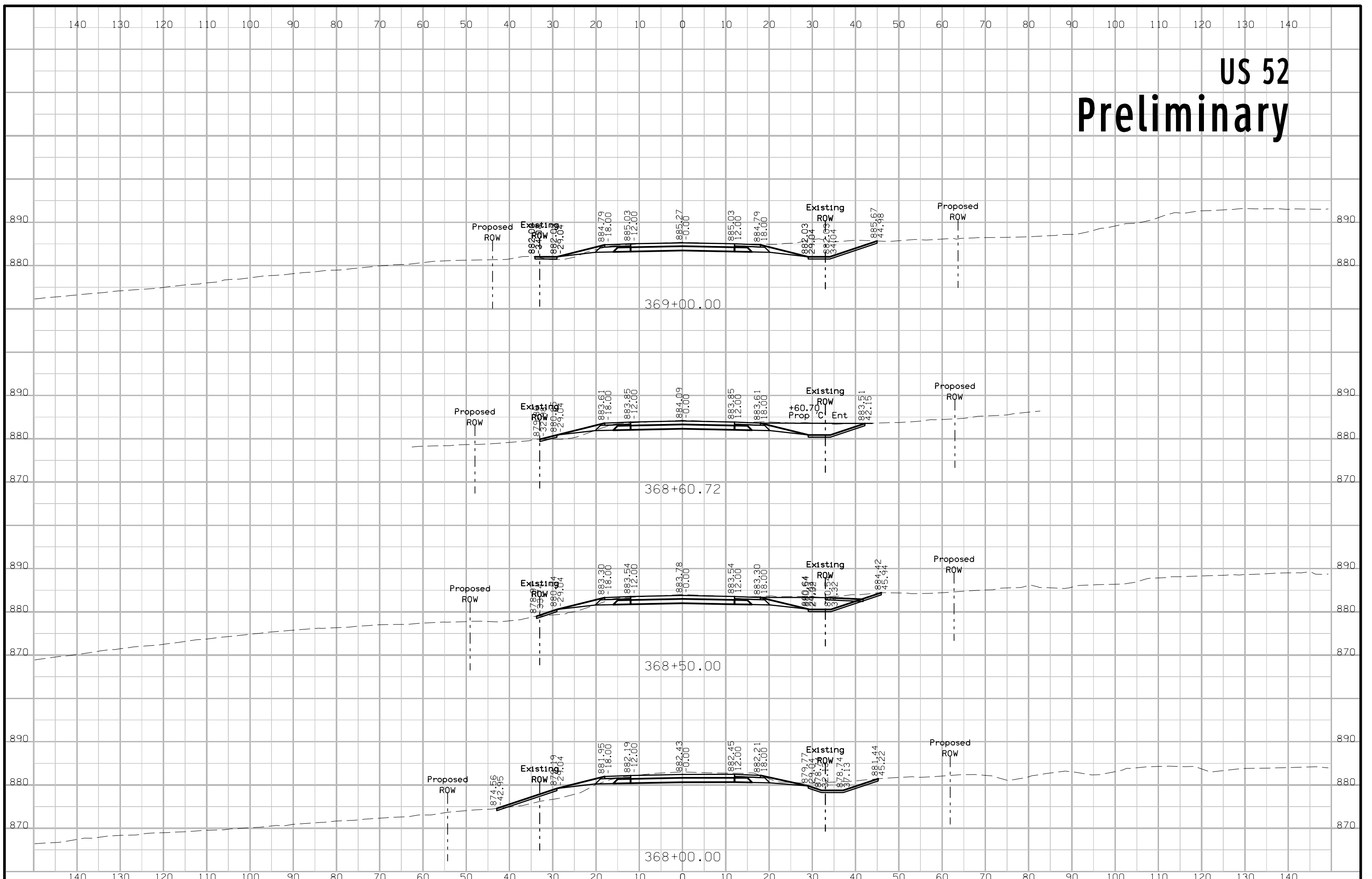


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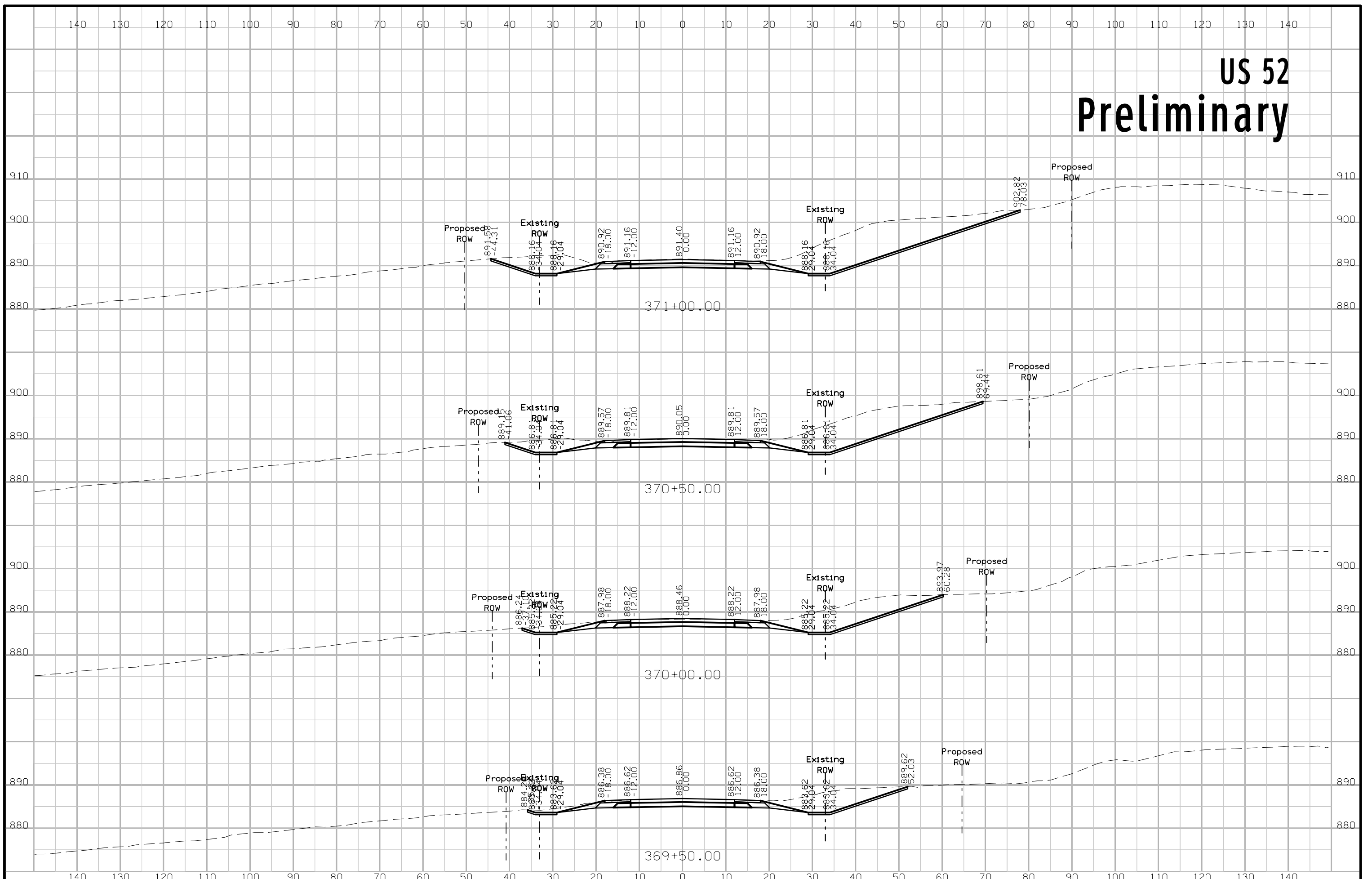


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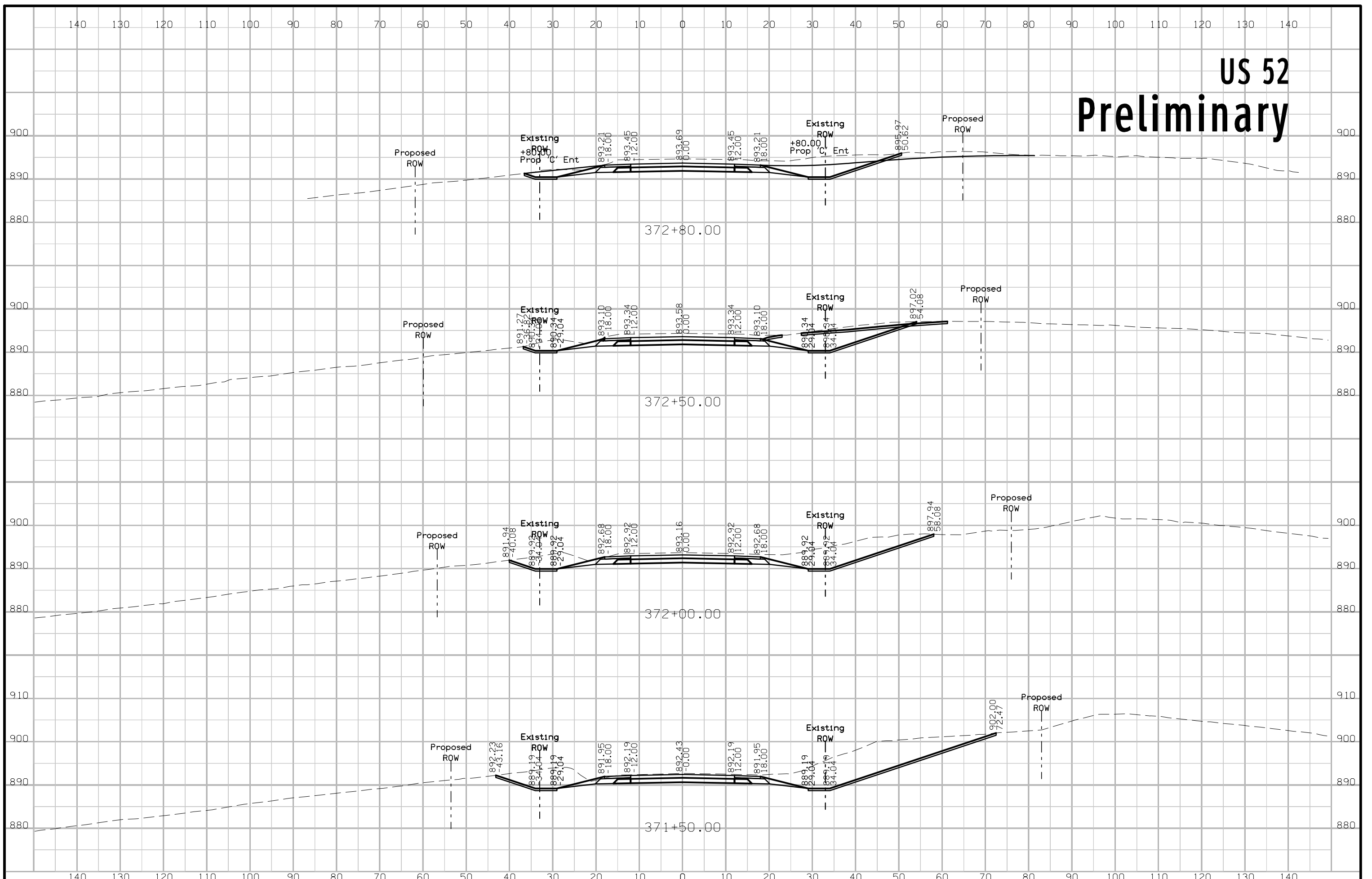


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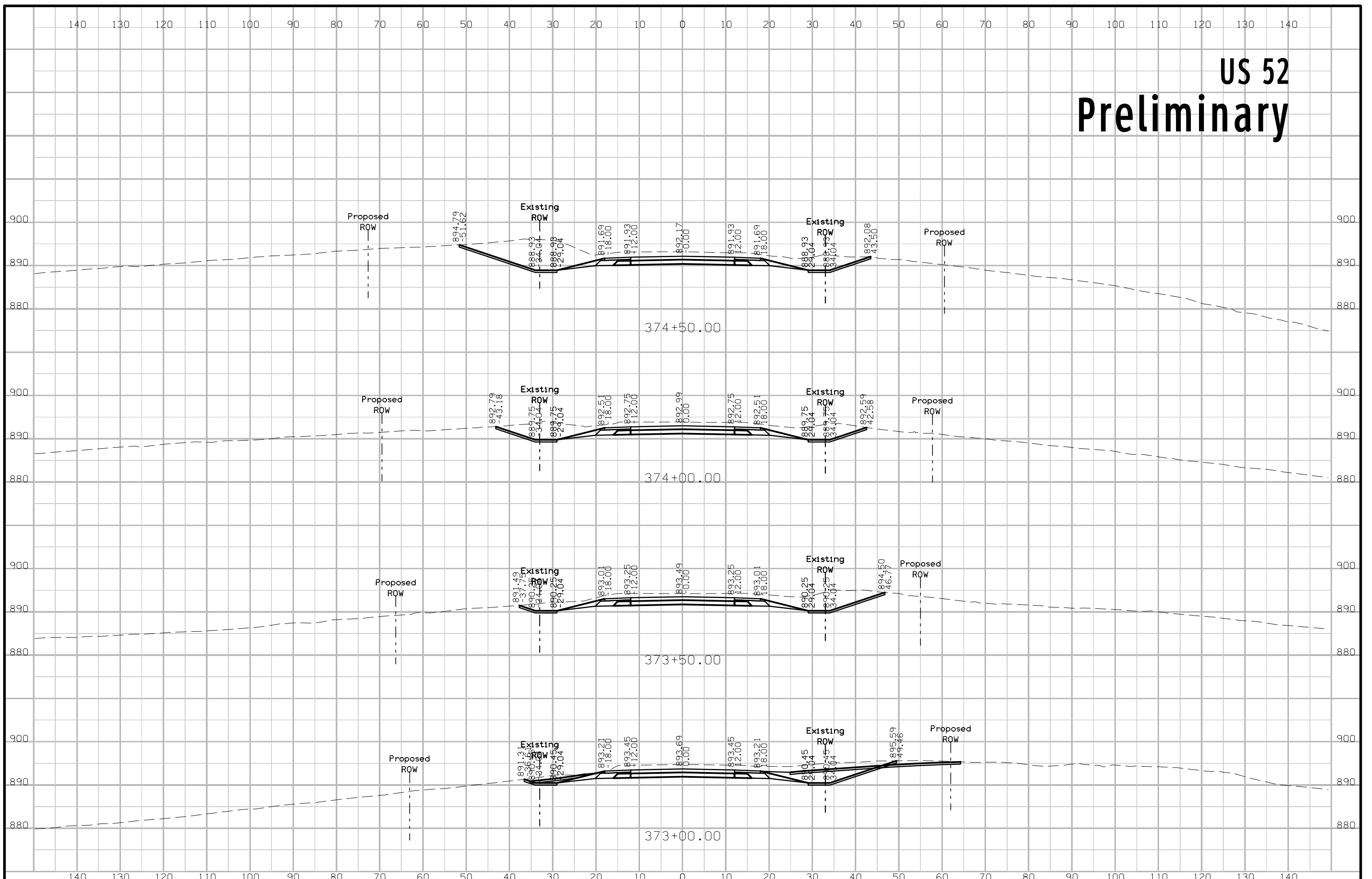


# US 52 Preliminary





# US 52 Preliminary

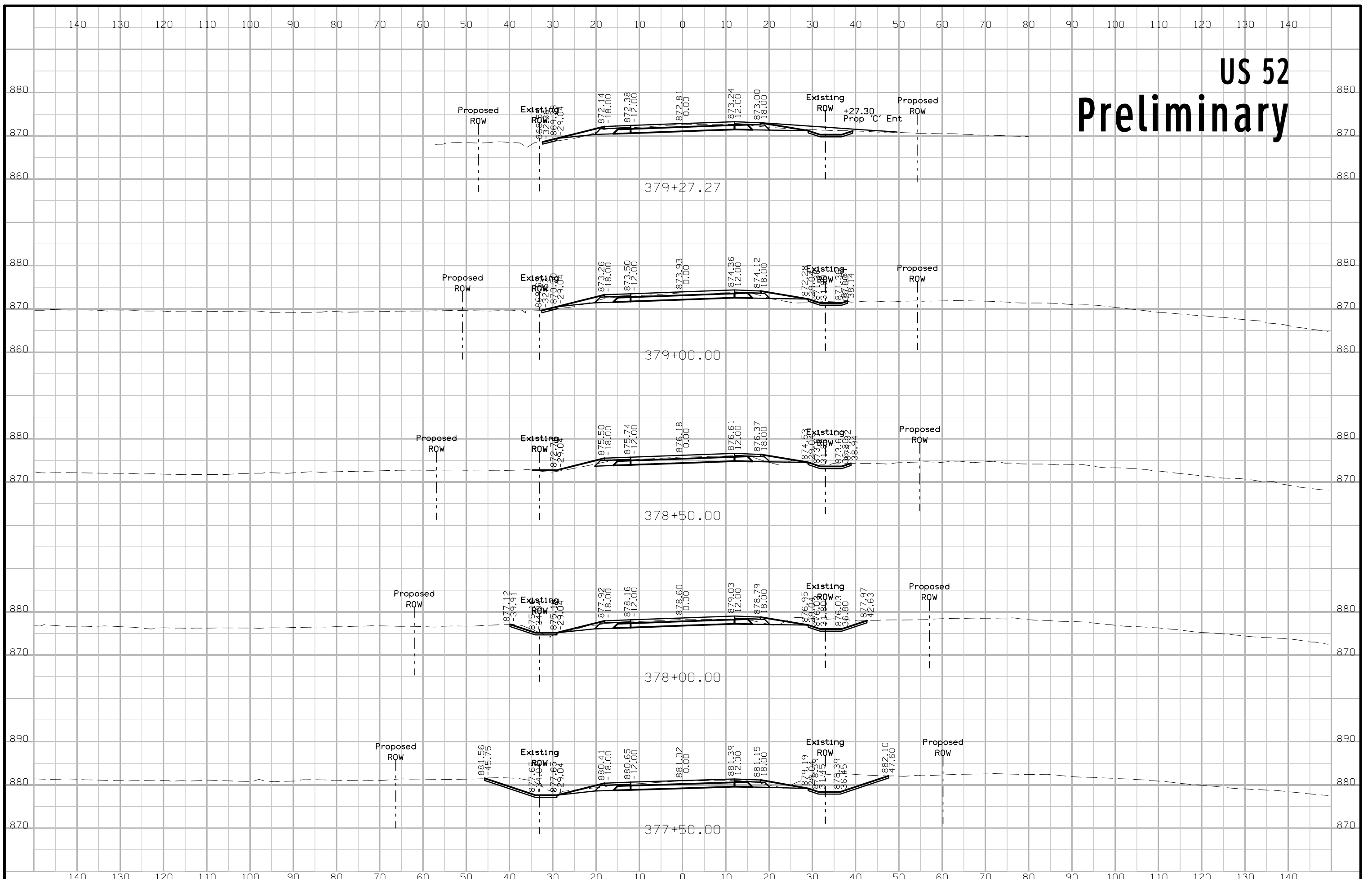






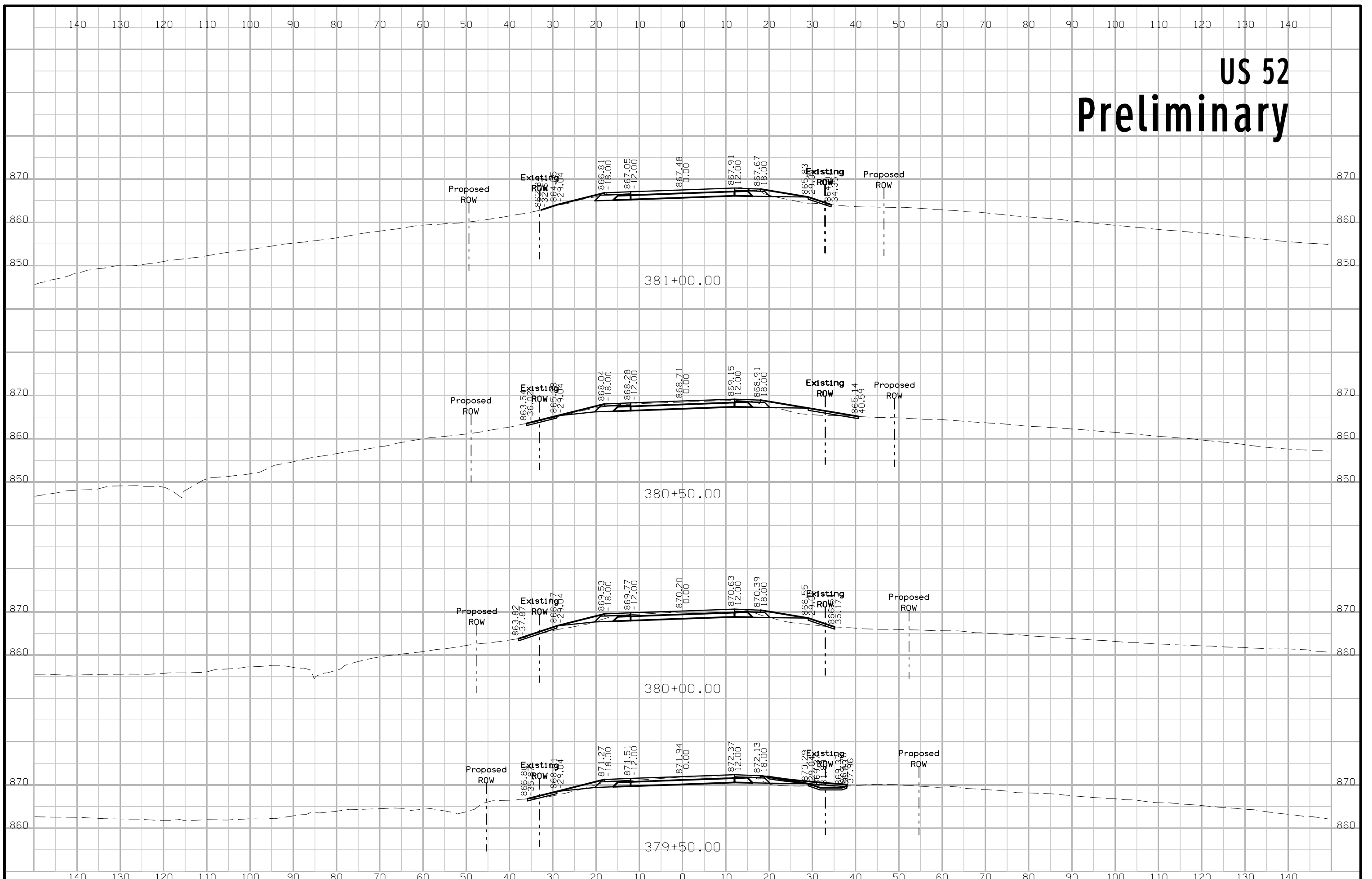


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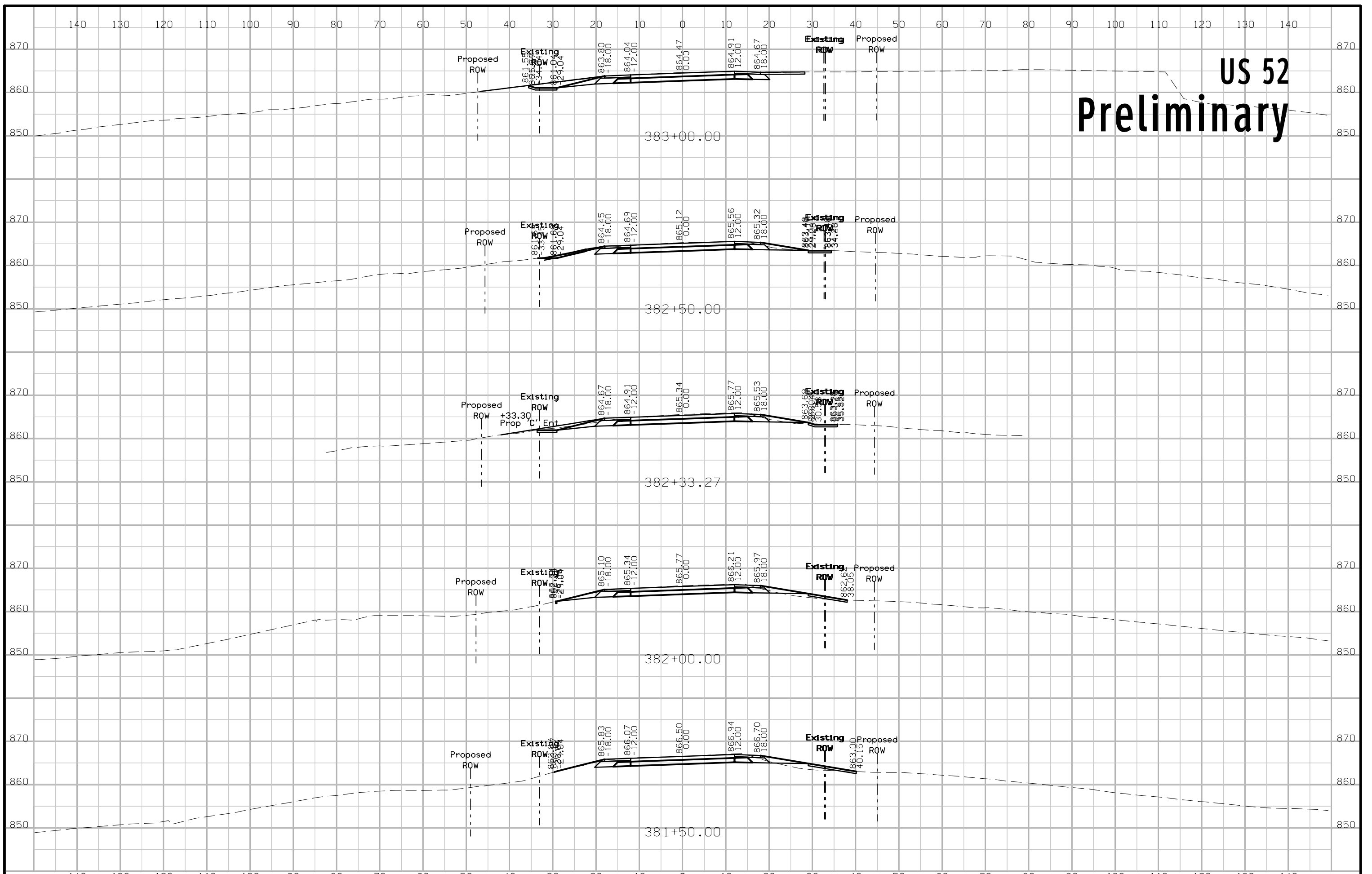


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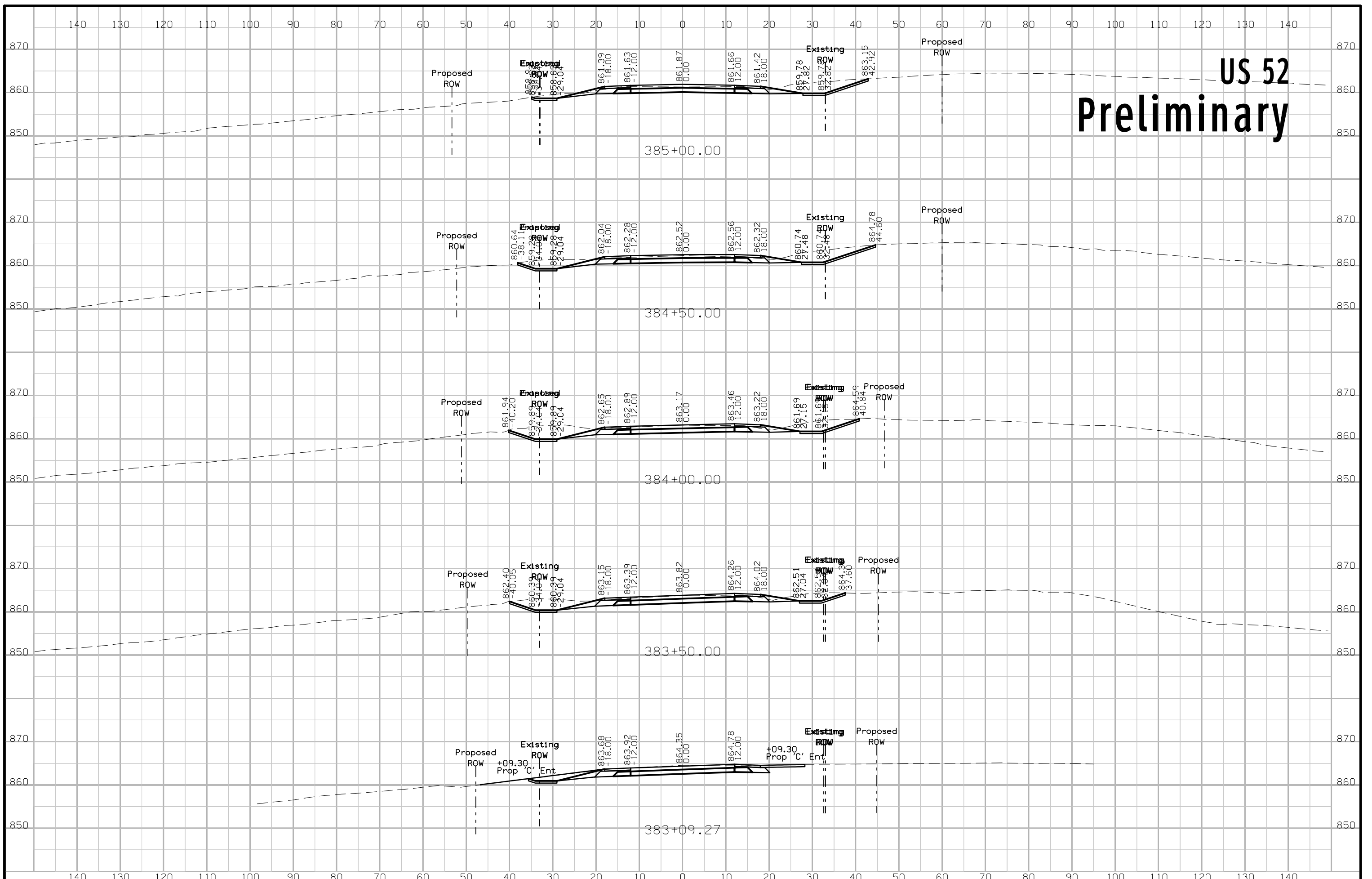


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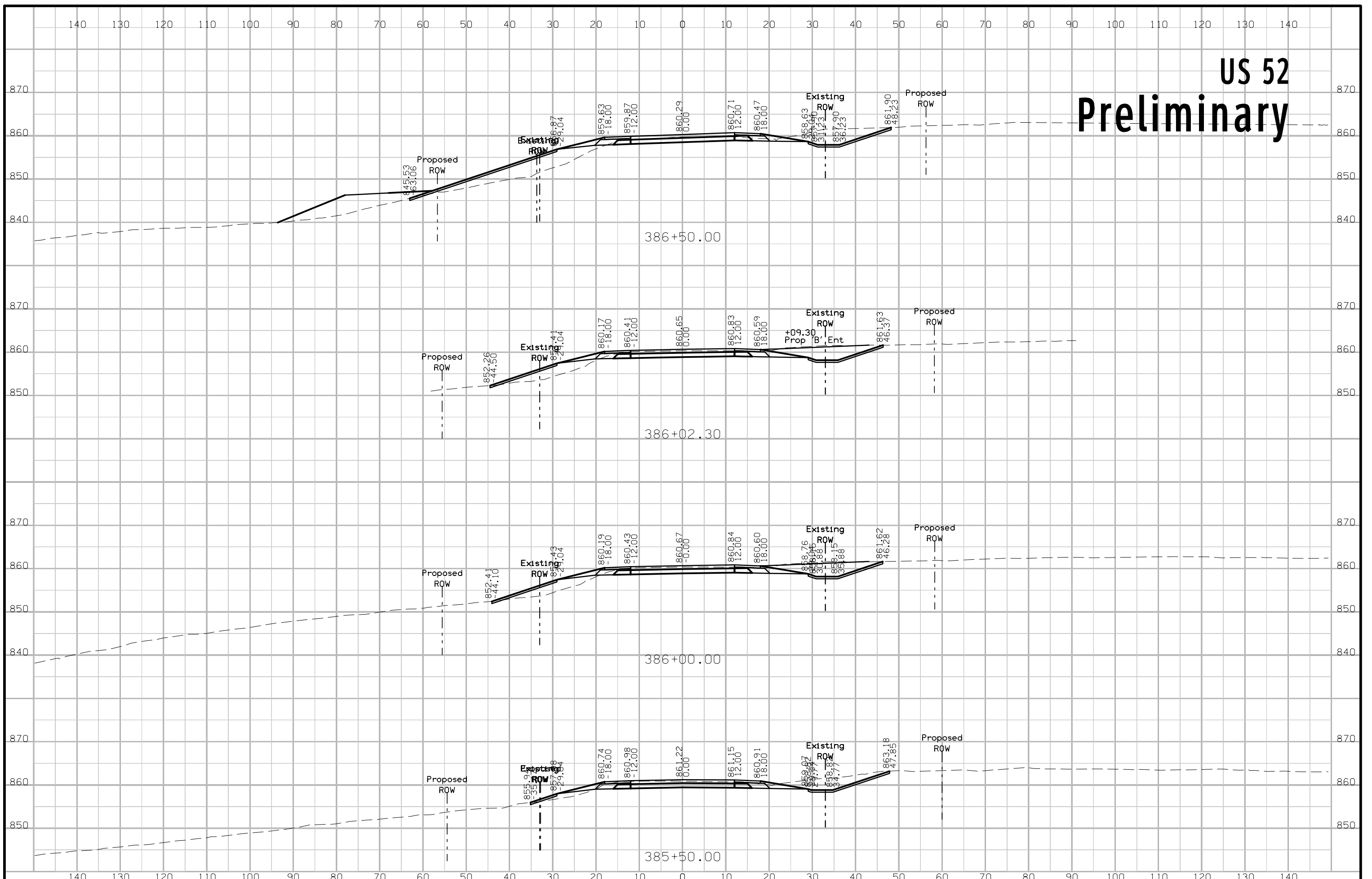


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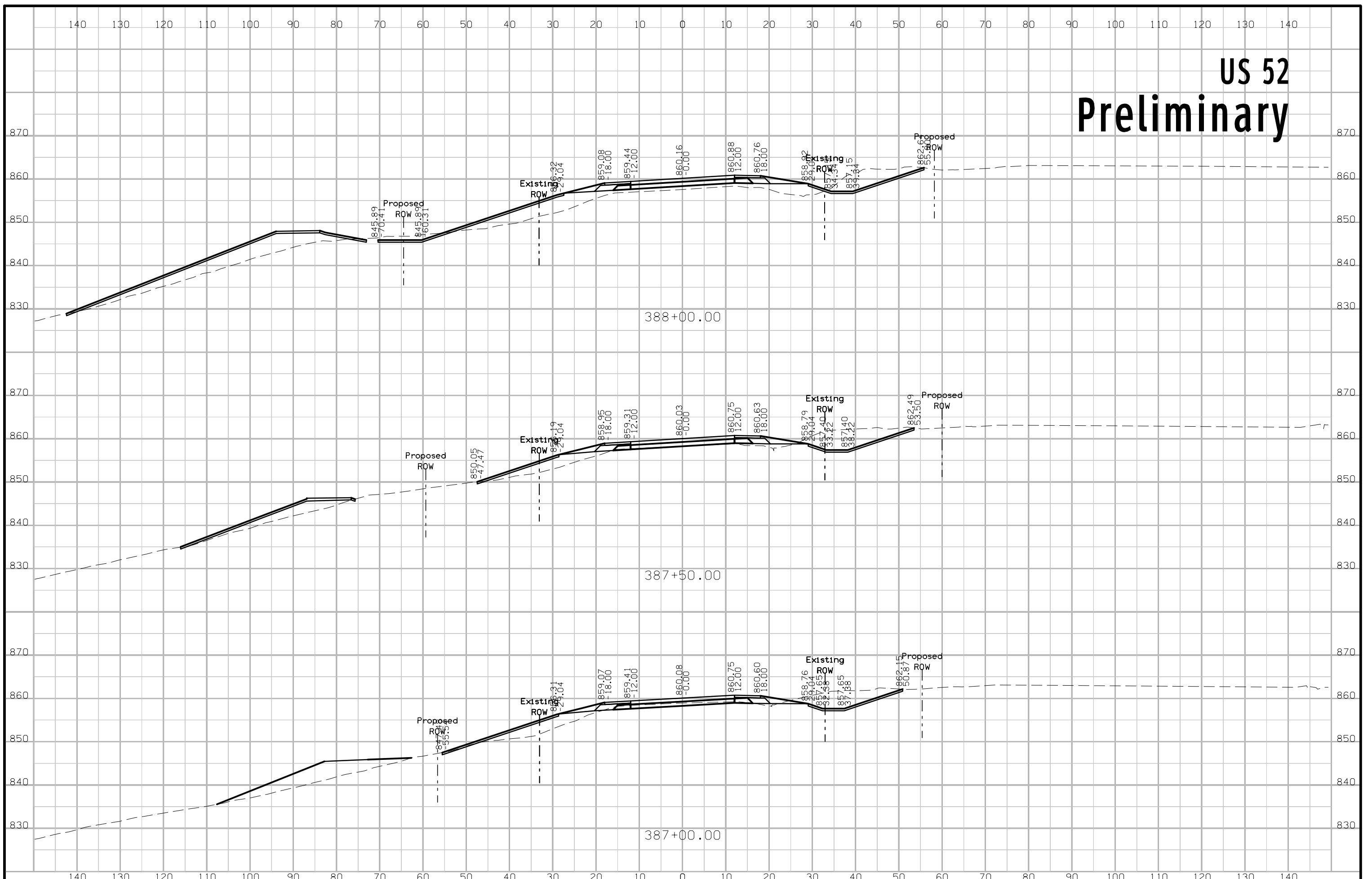


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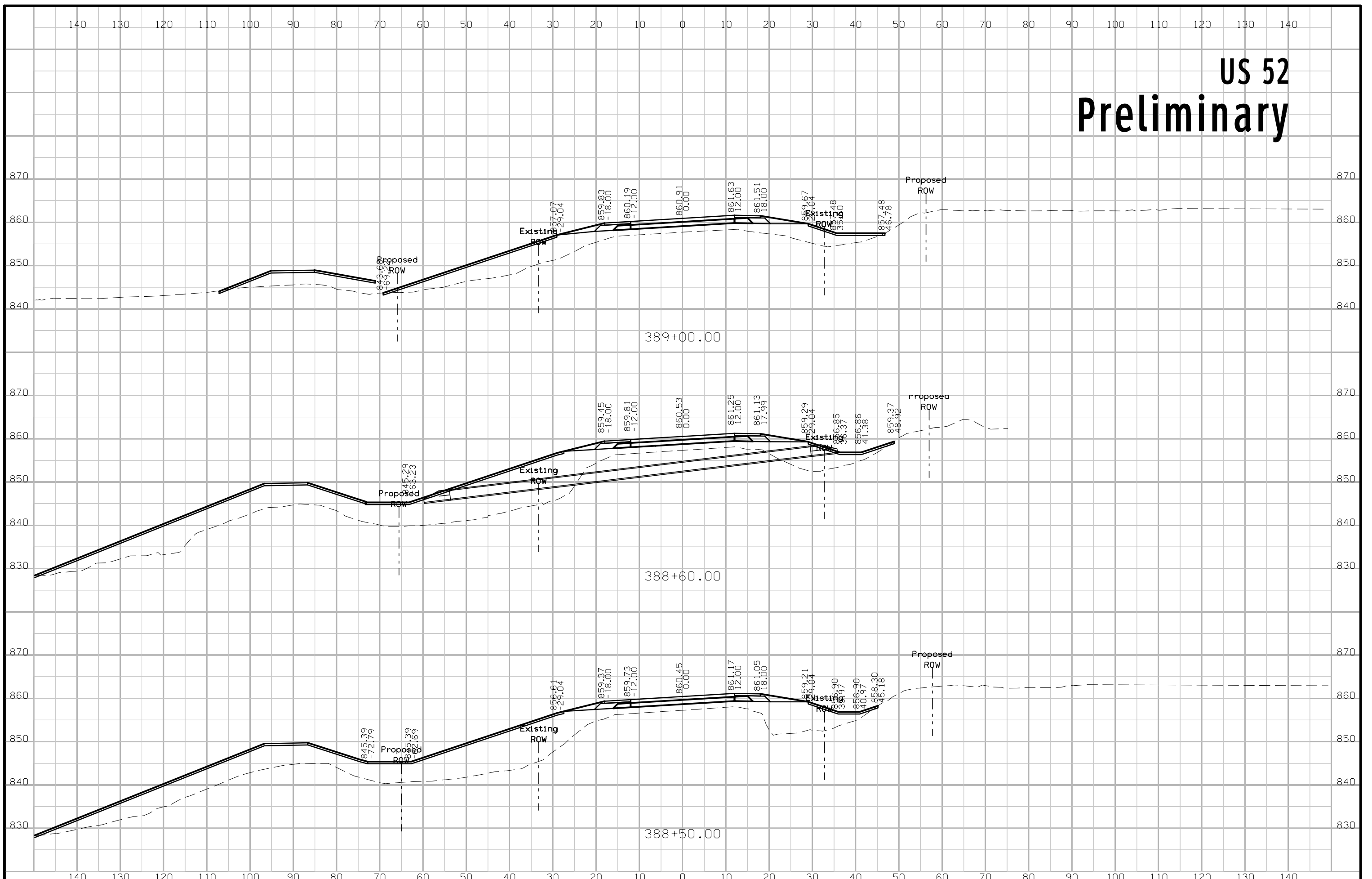


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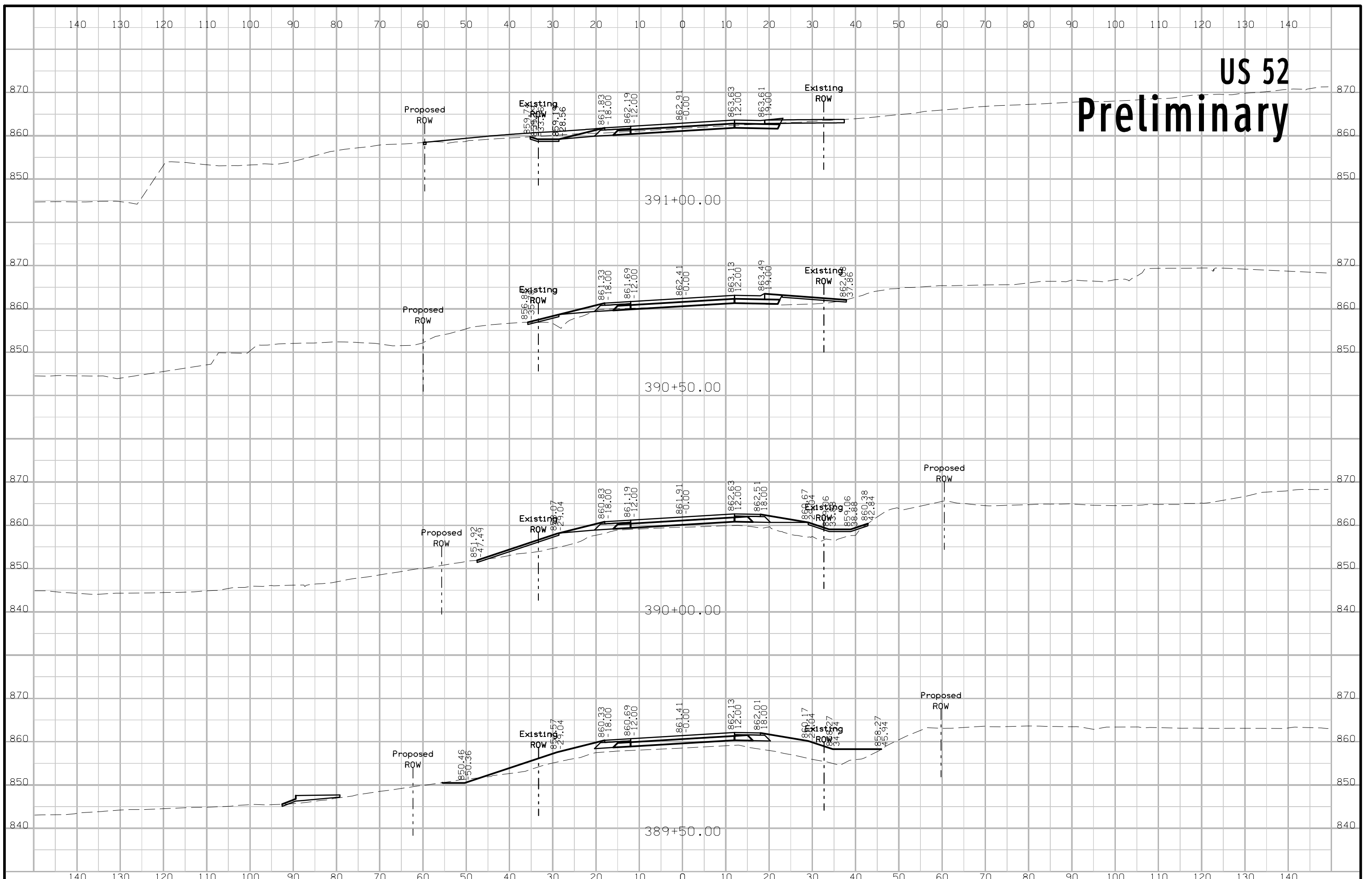


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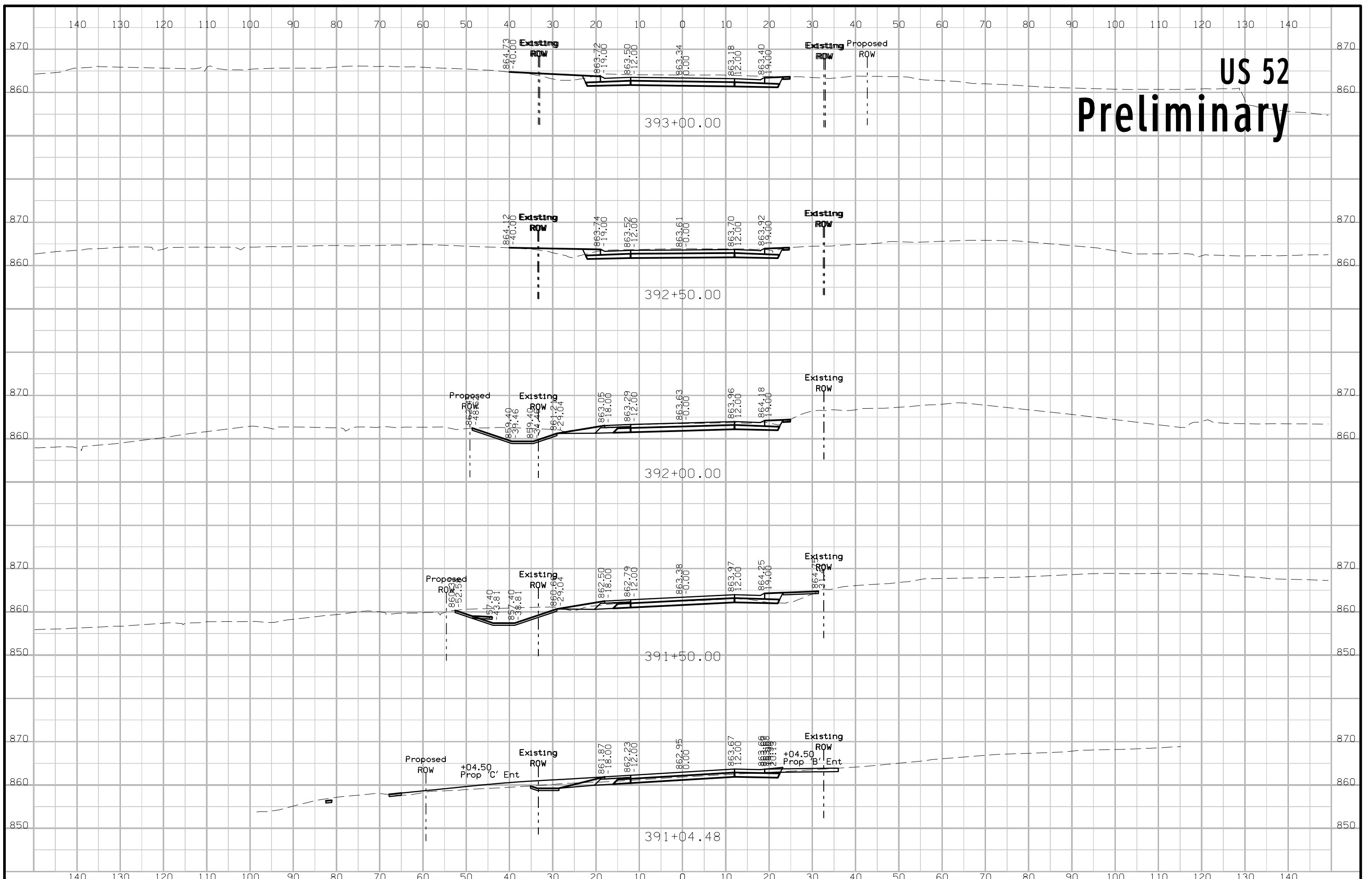


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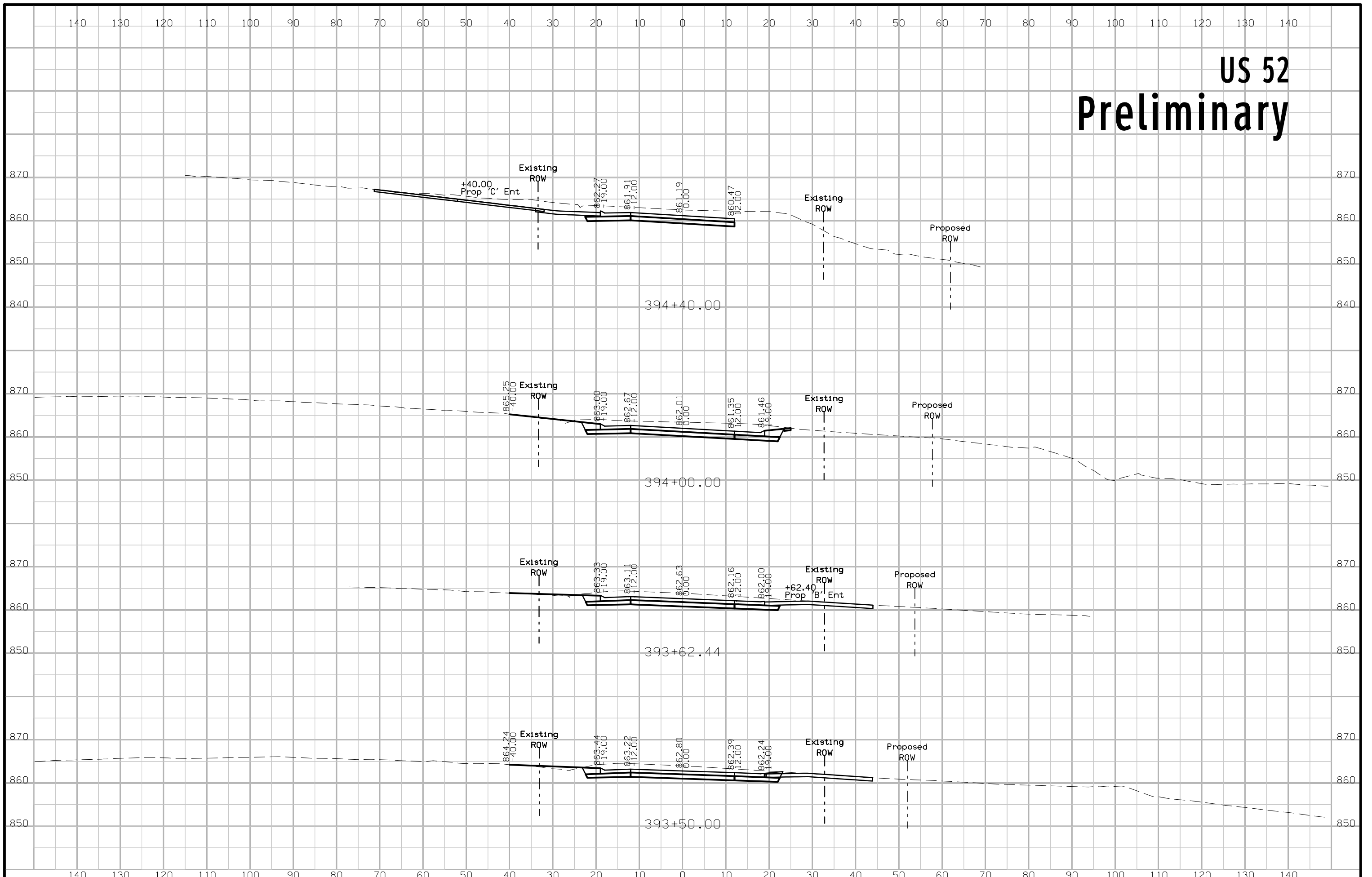


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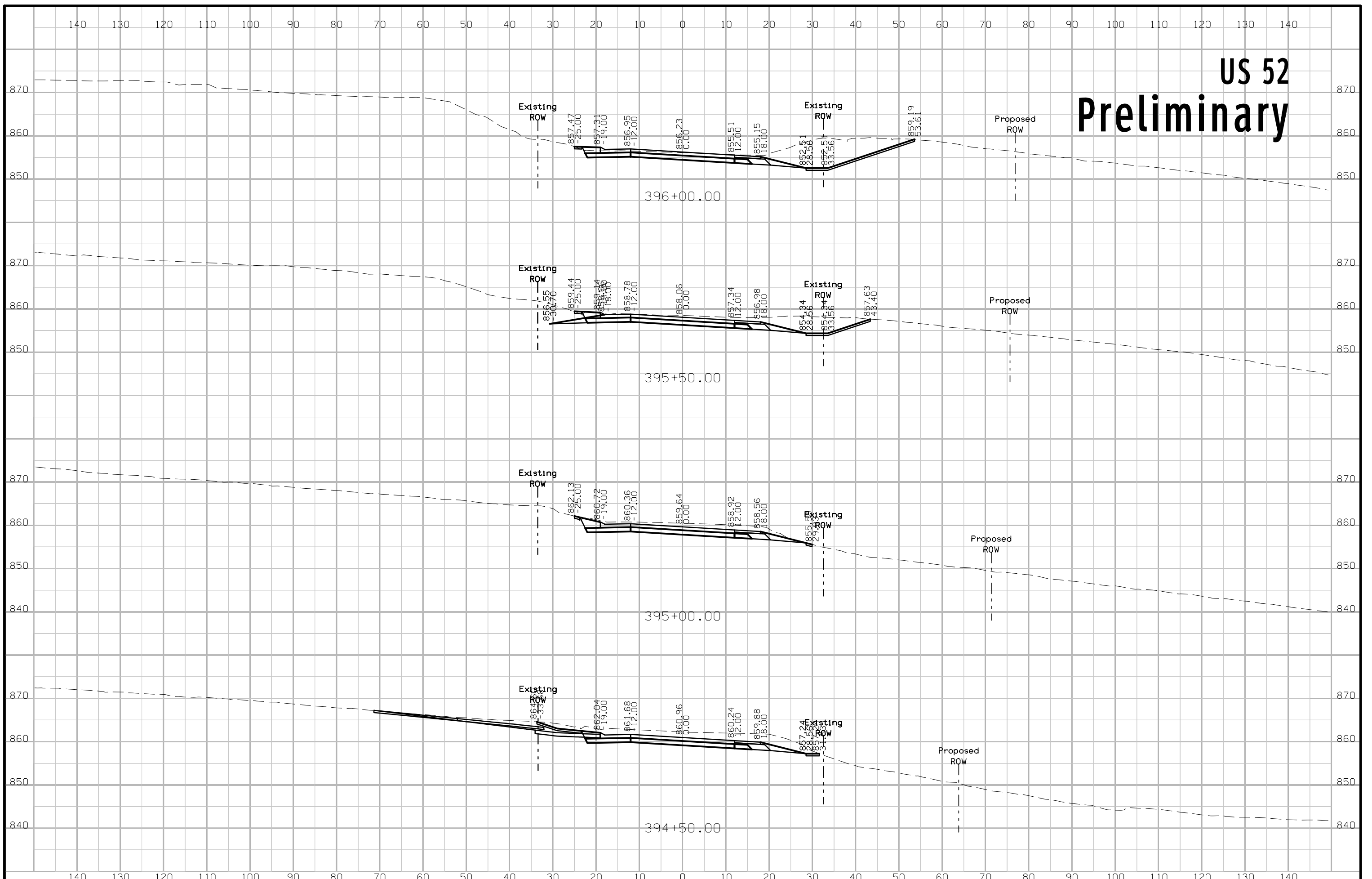


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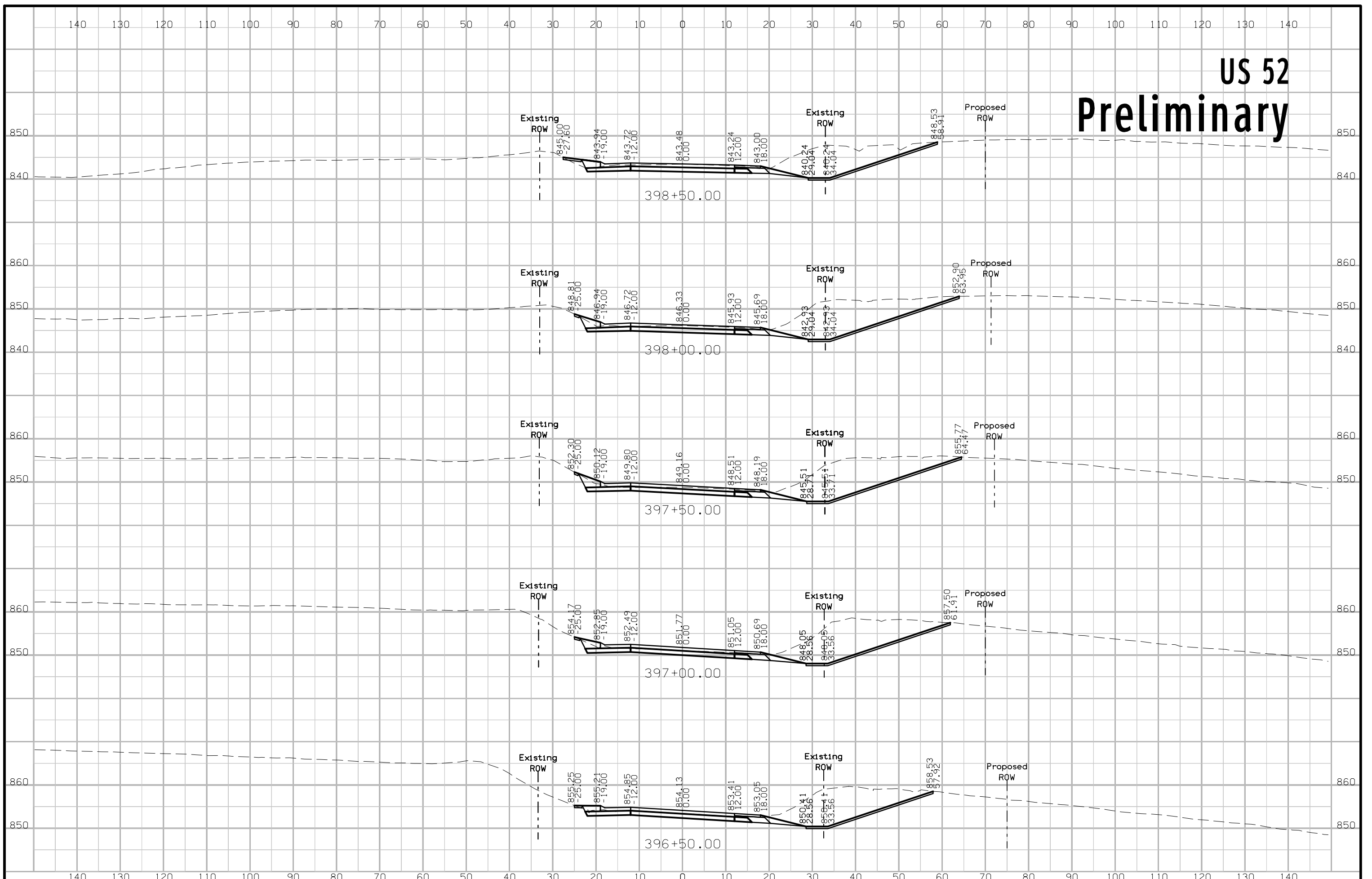




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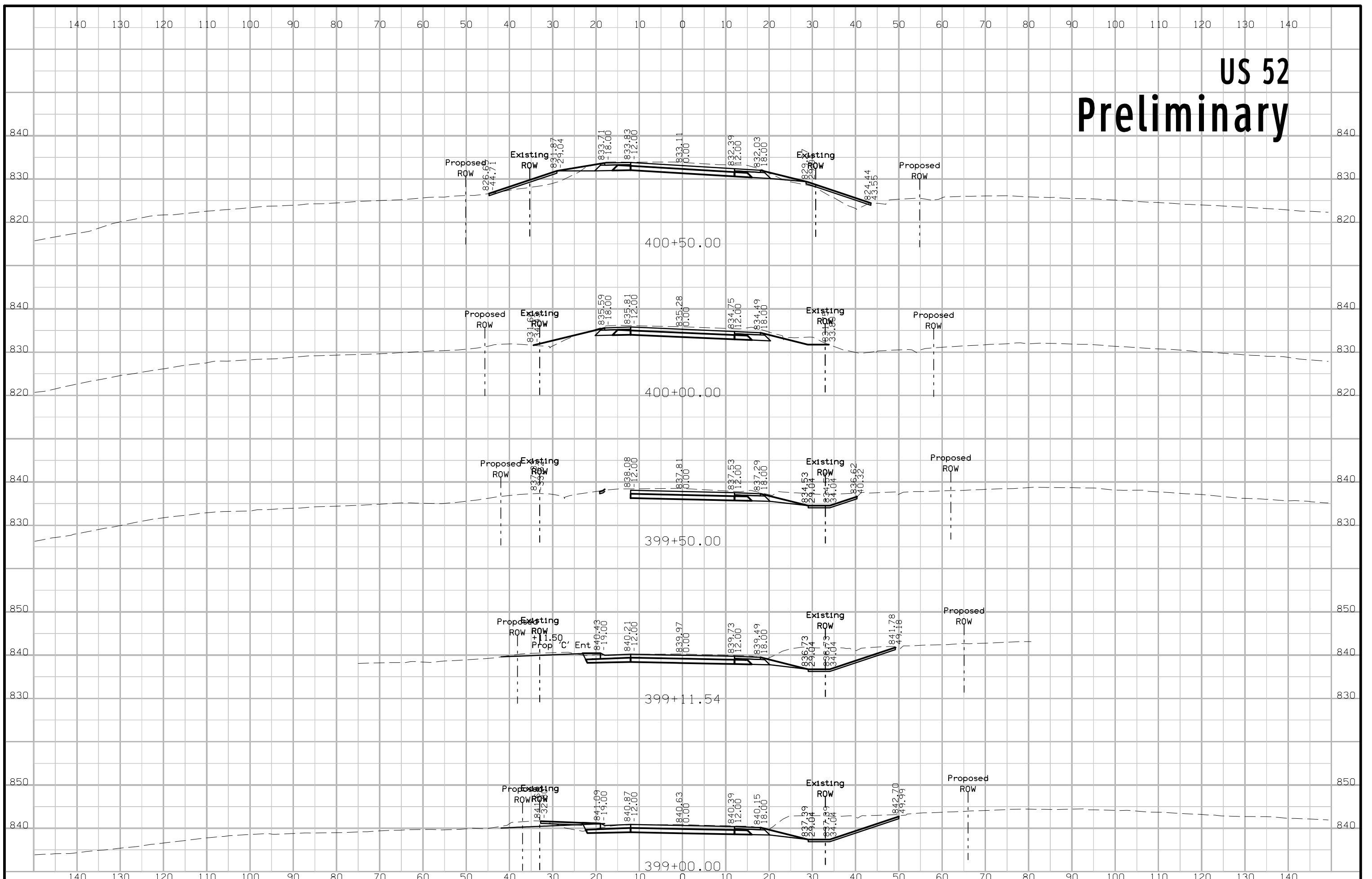


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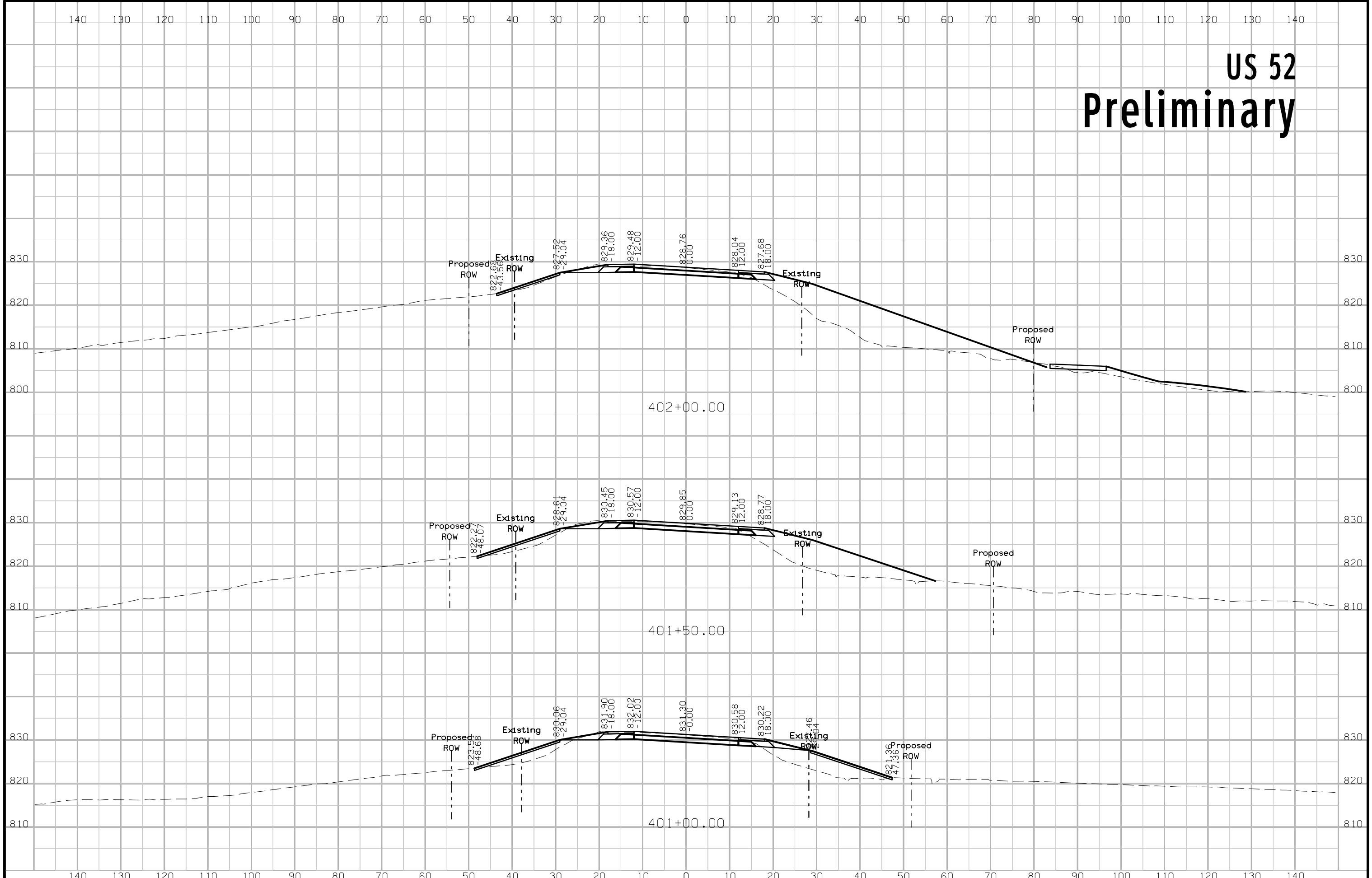




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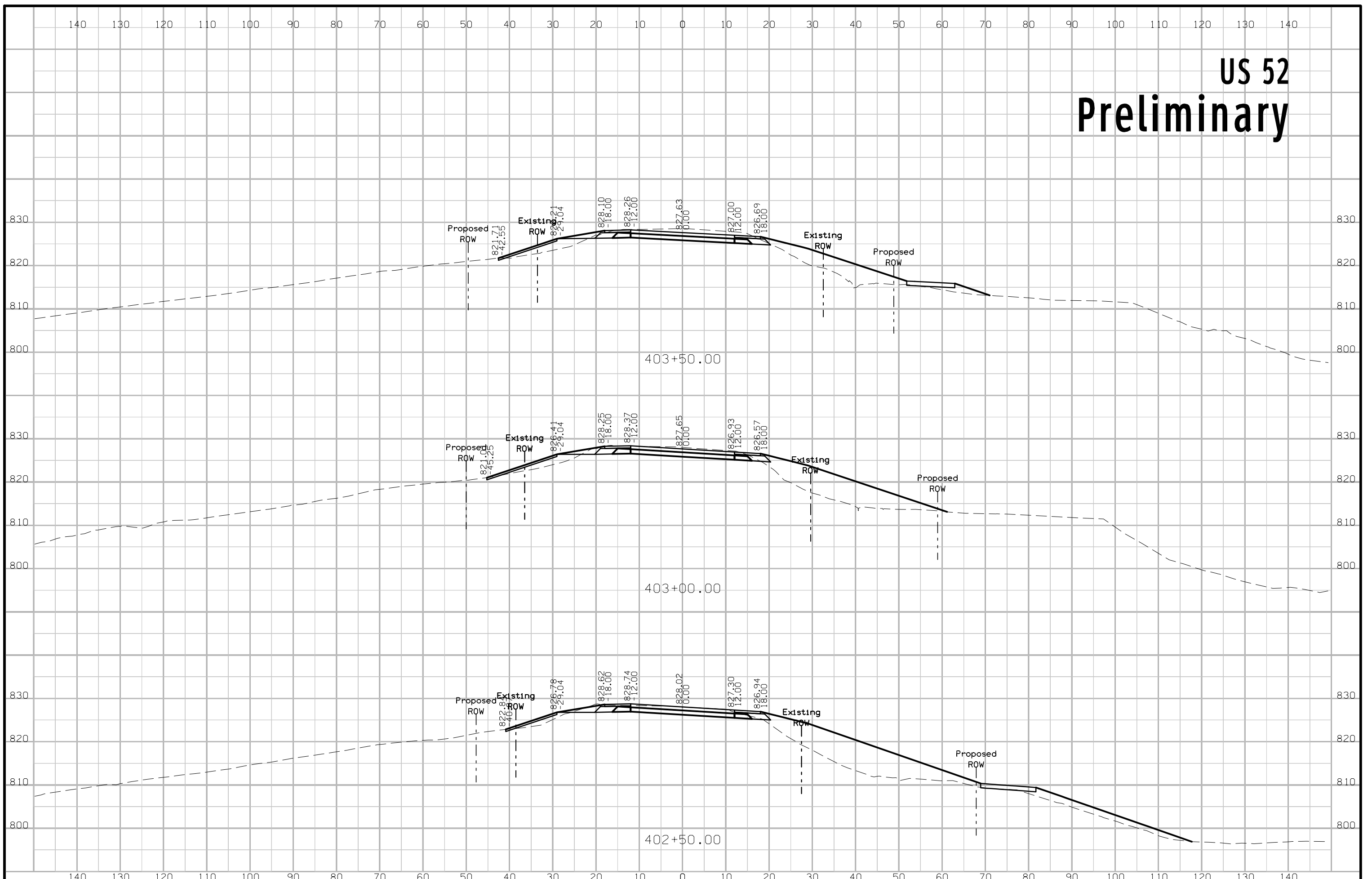


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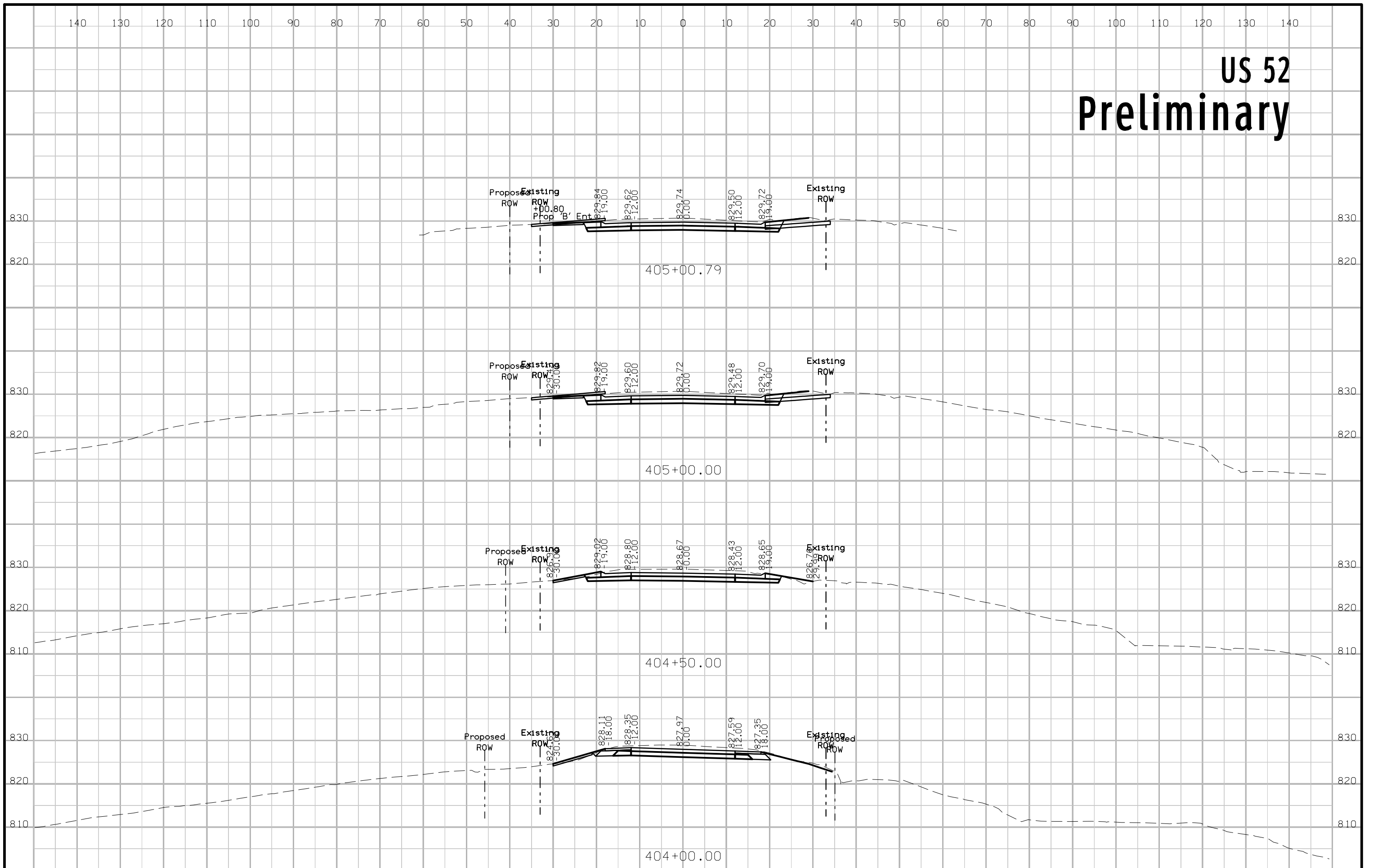




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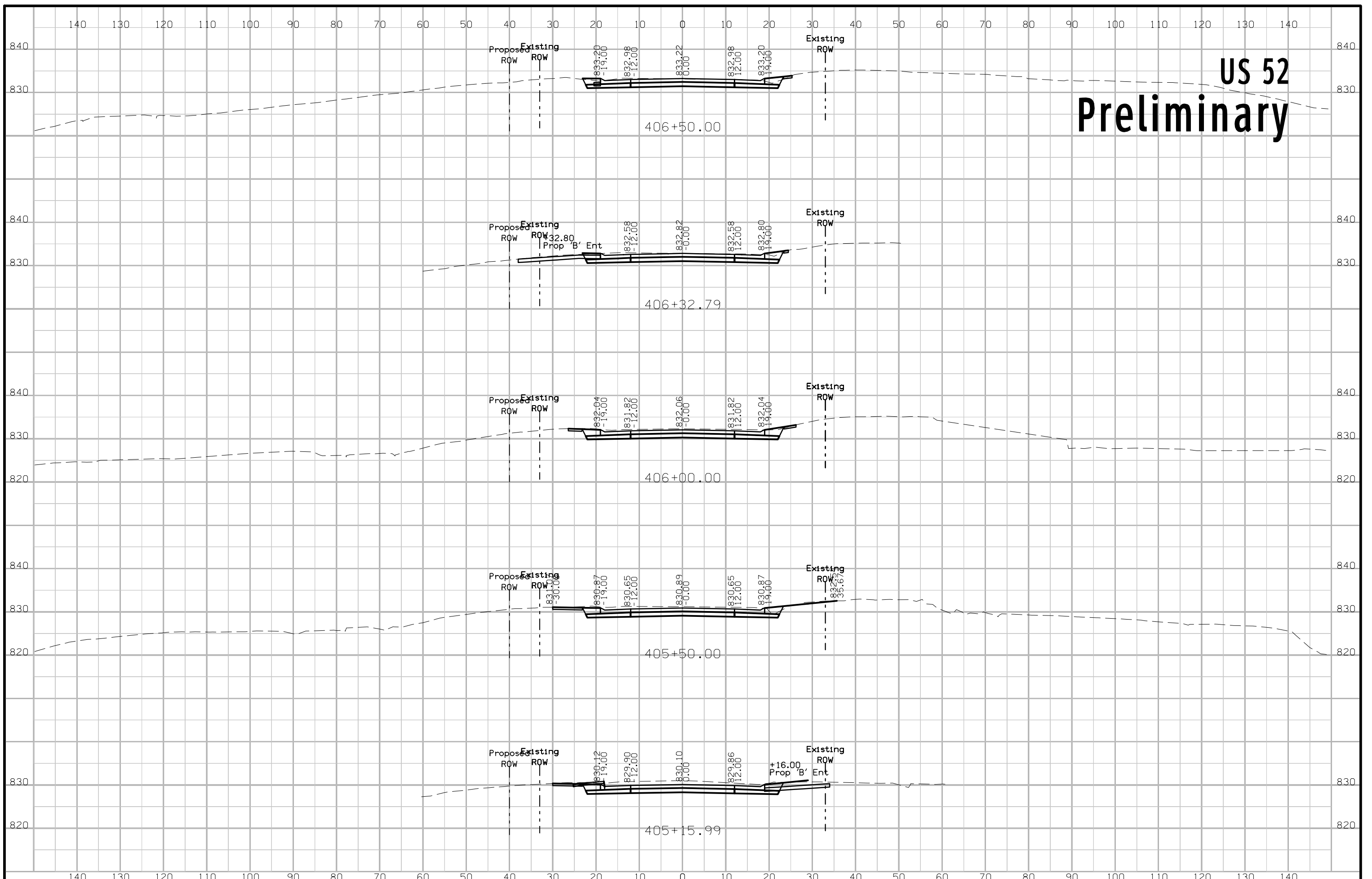


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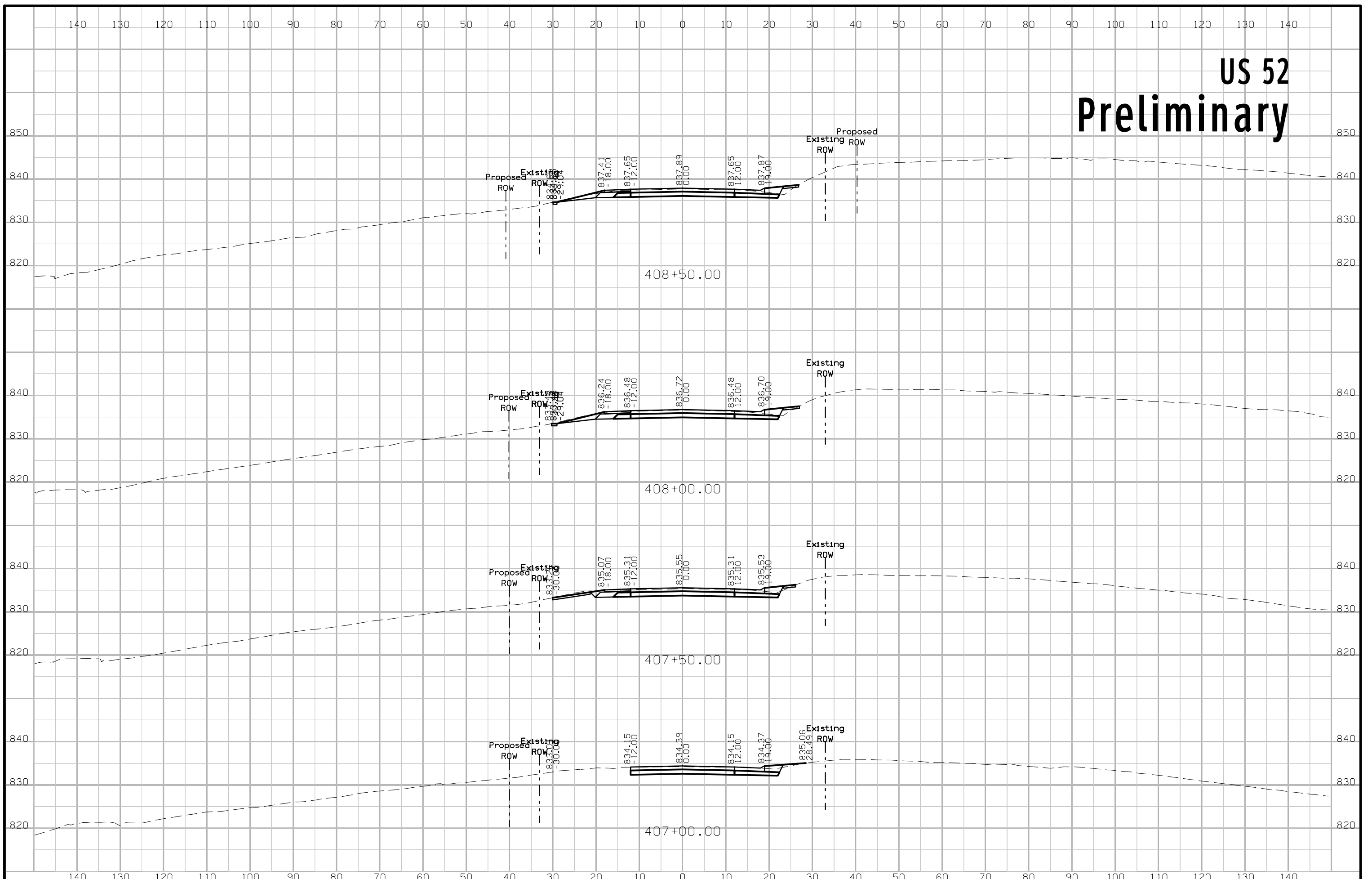




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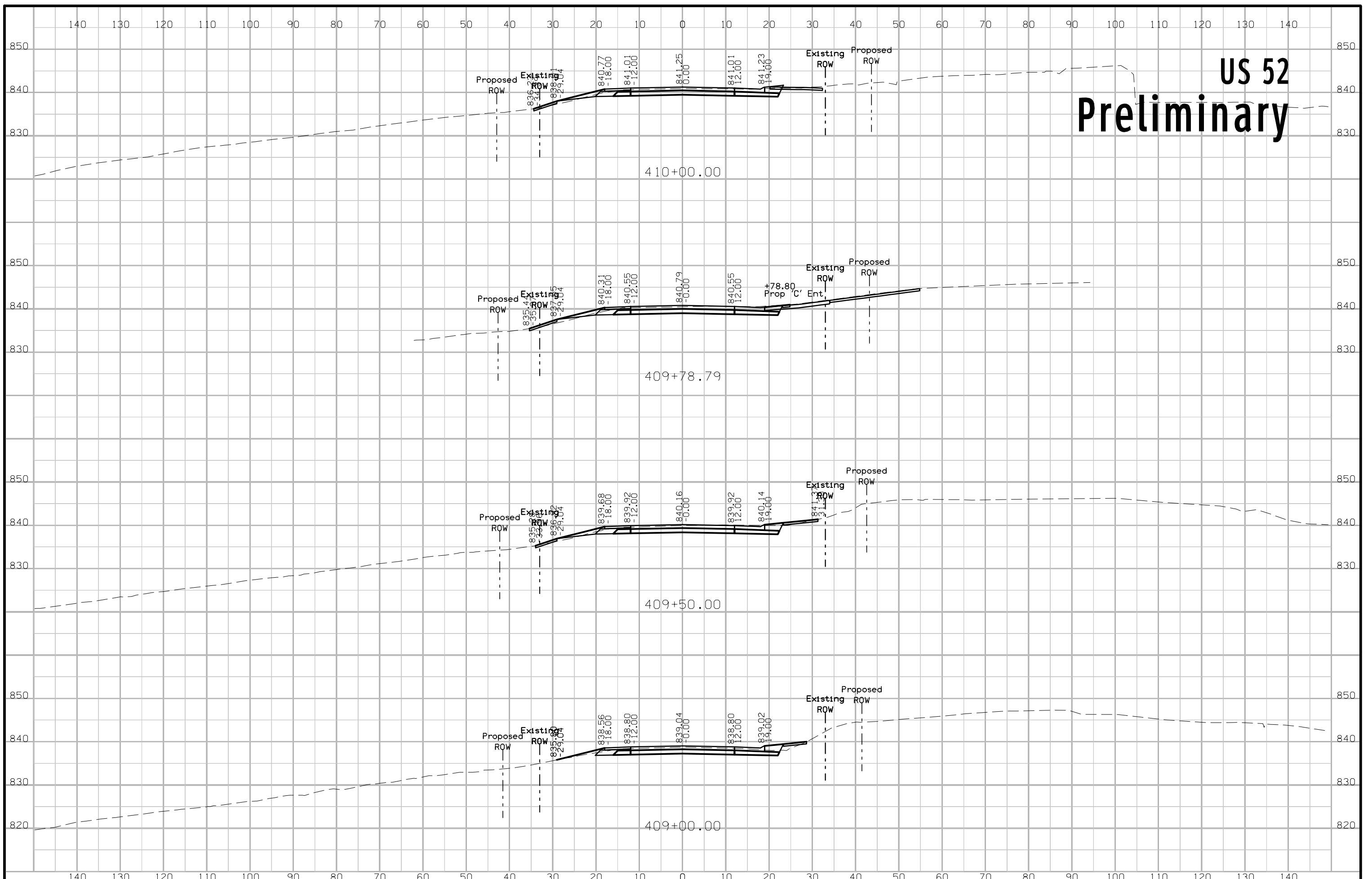


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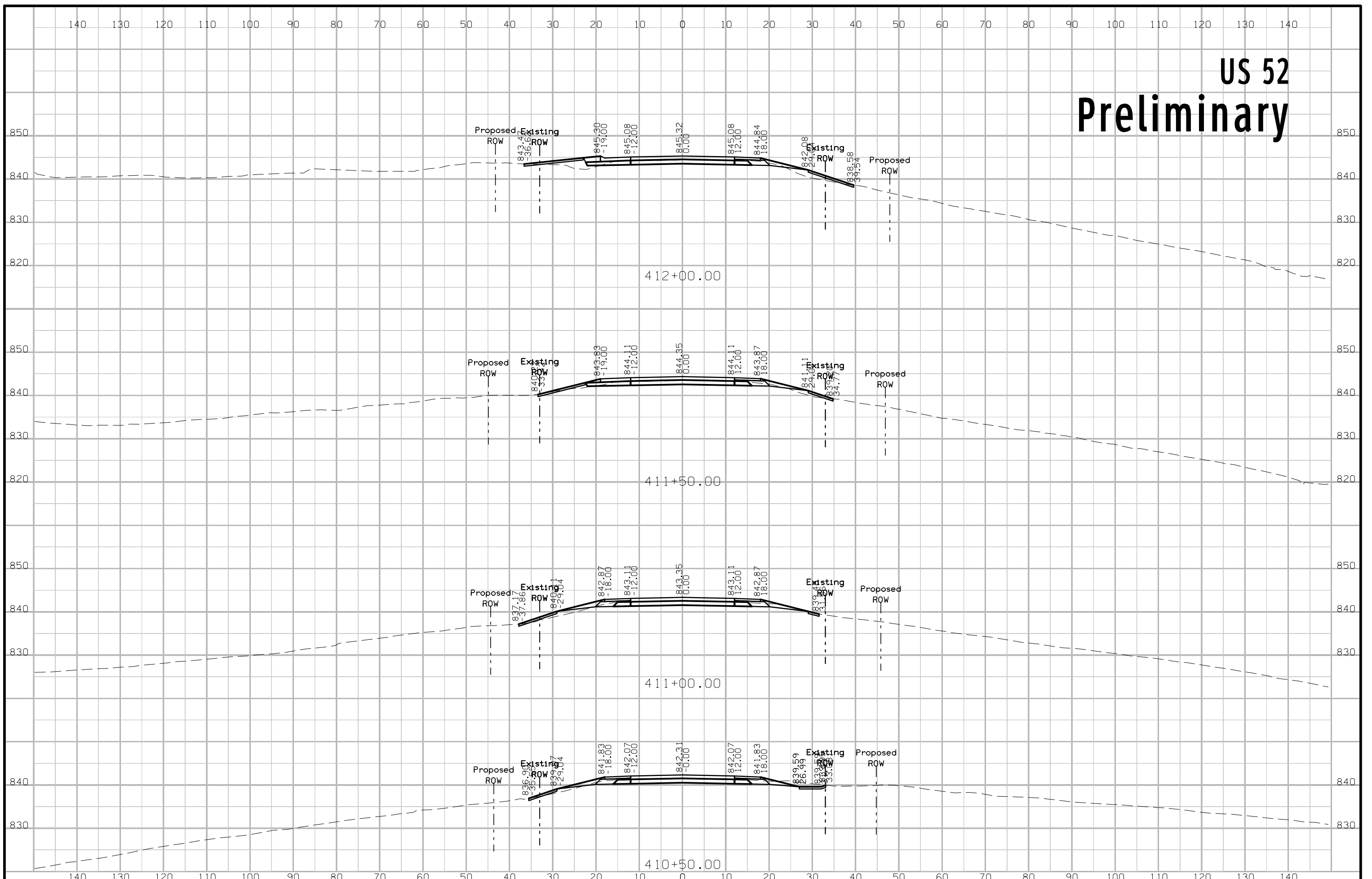




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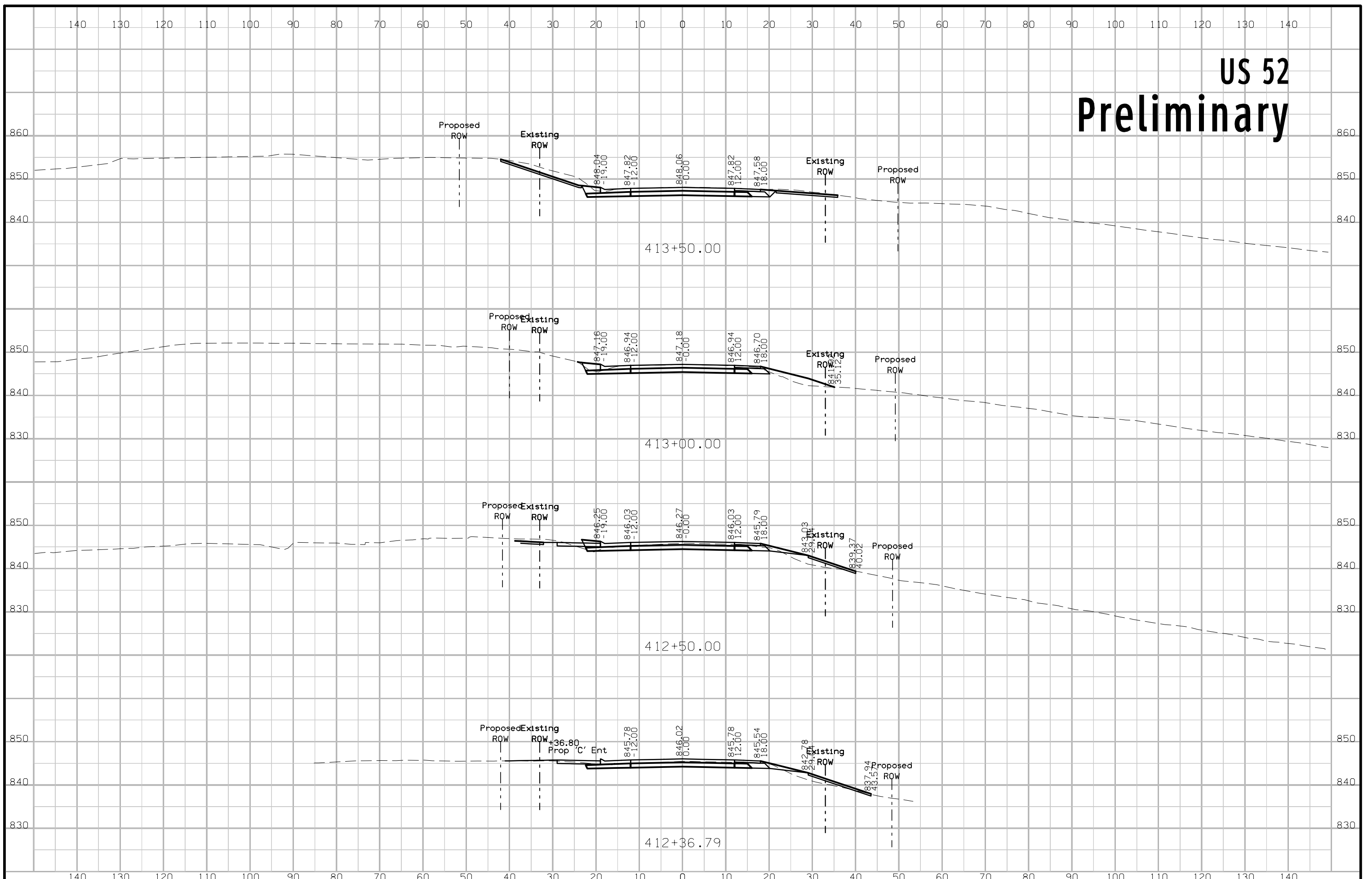


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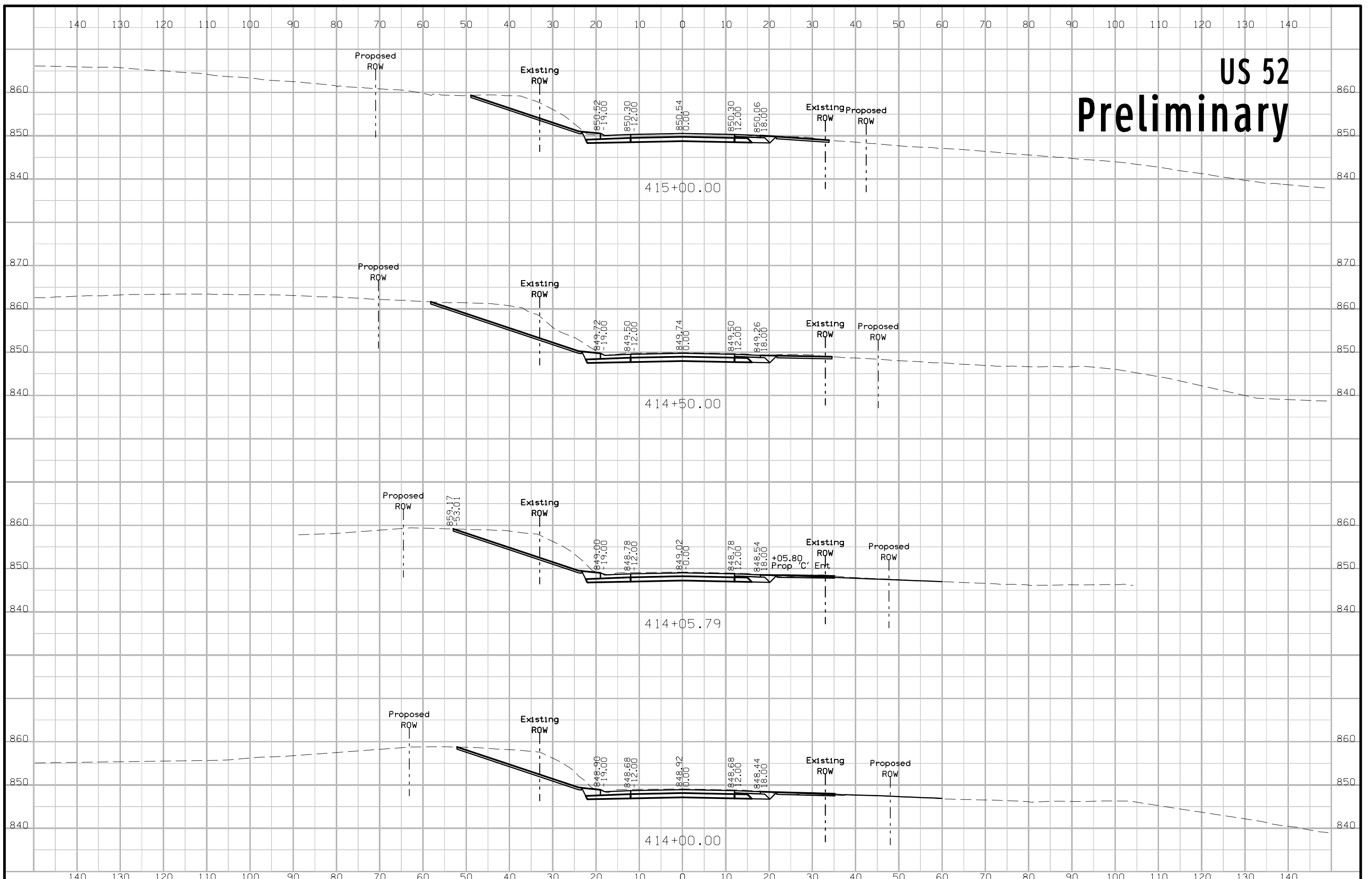




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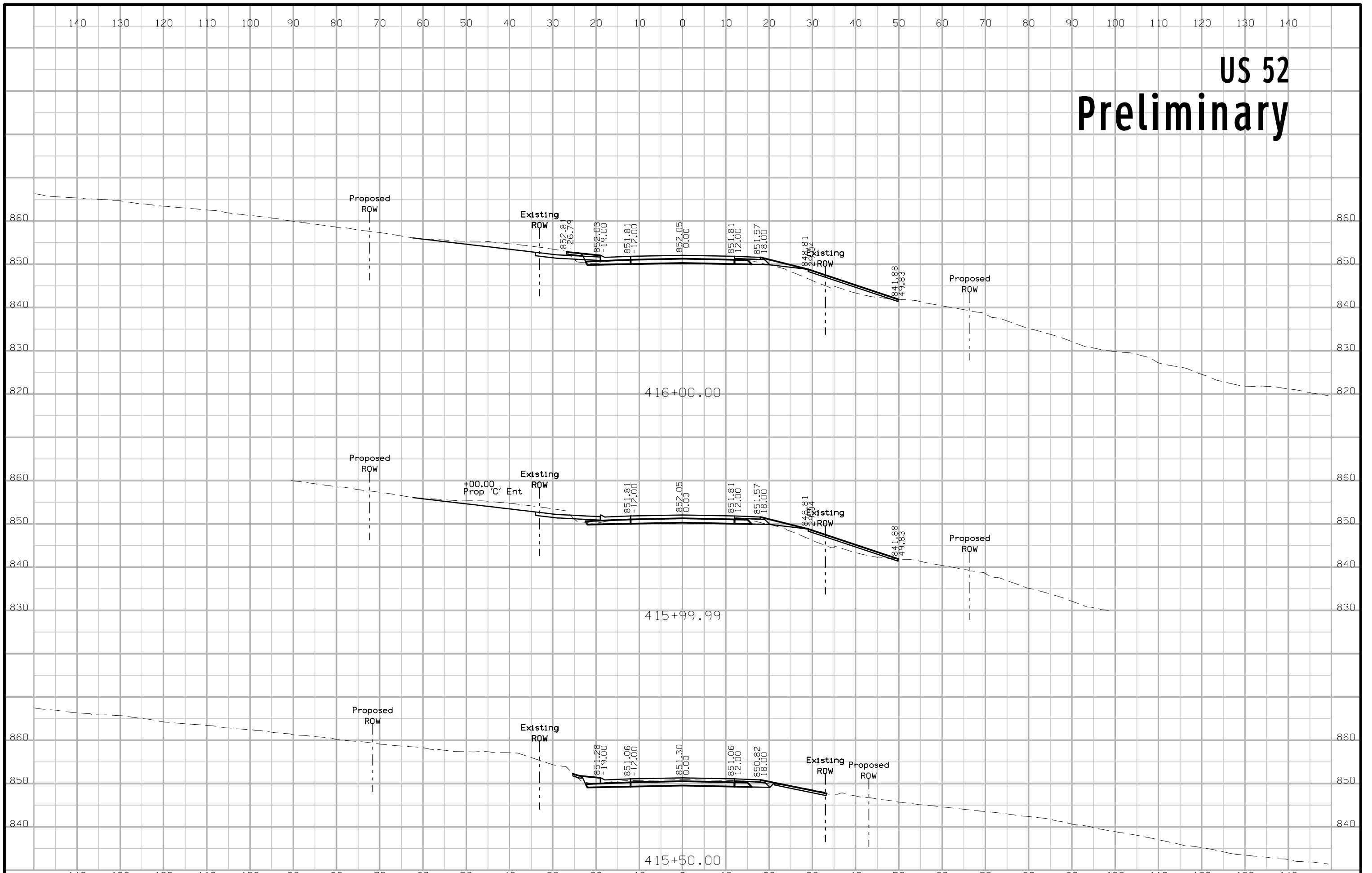


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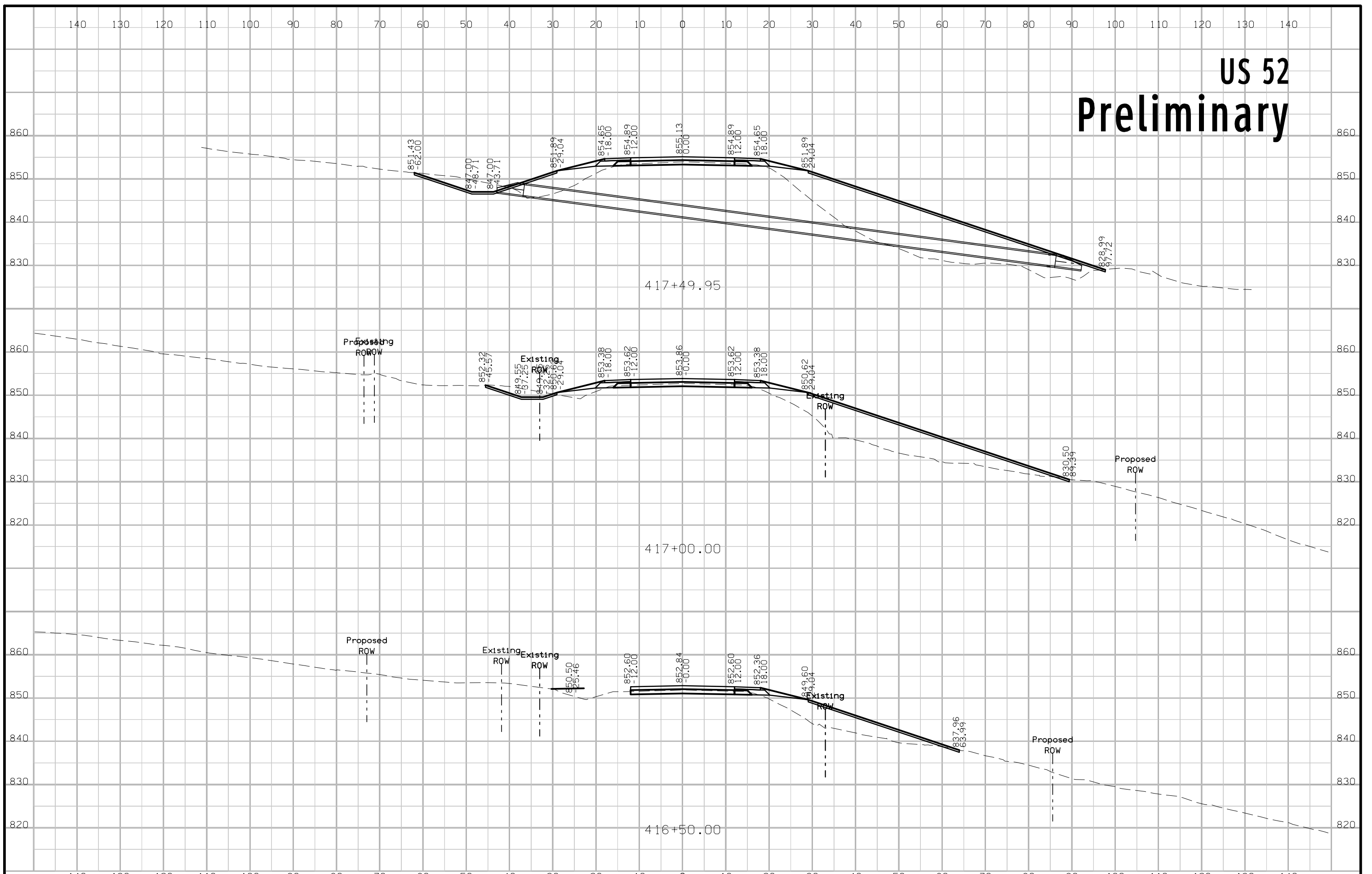




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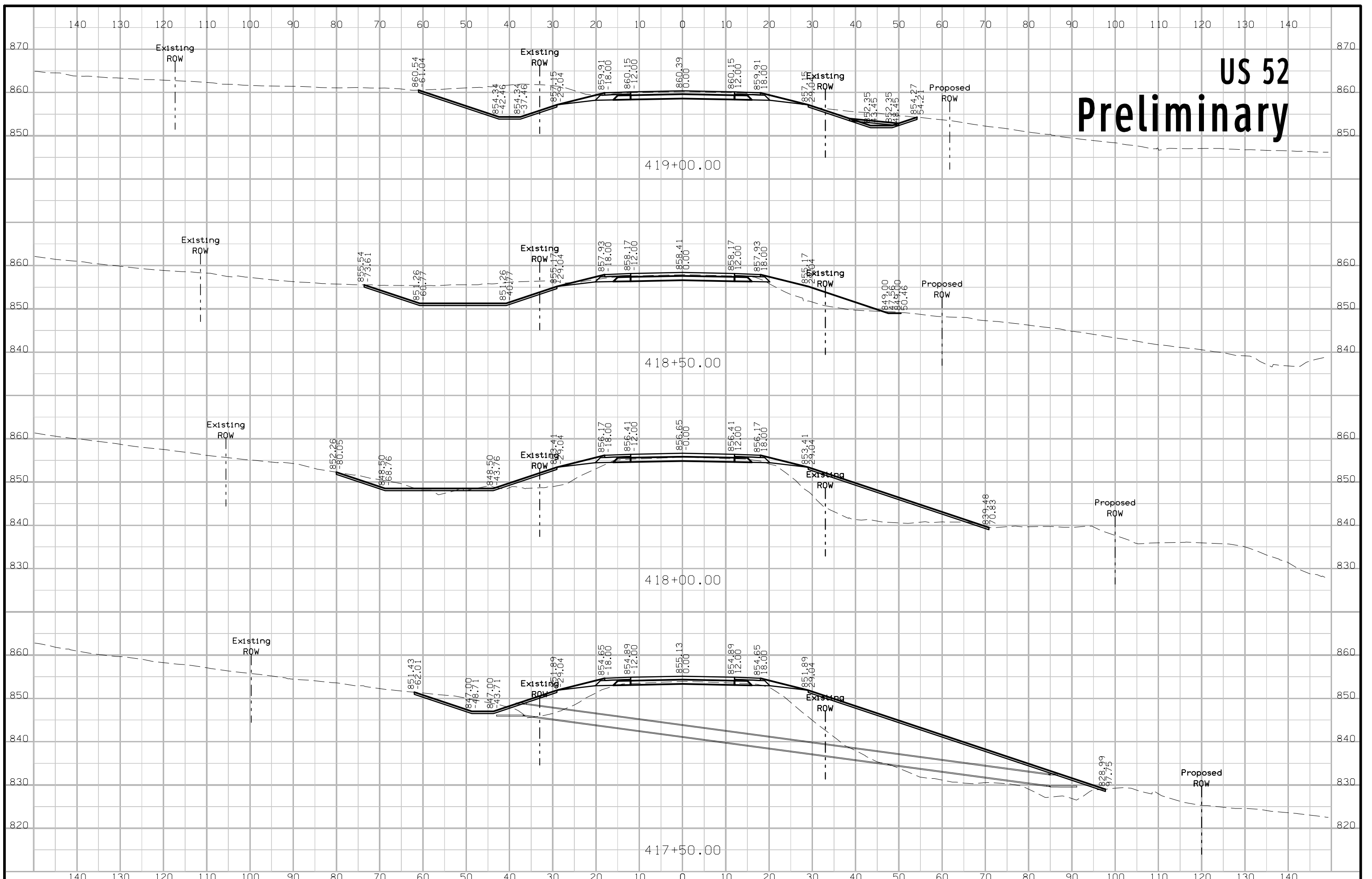


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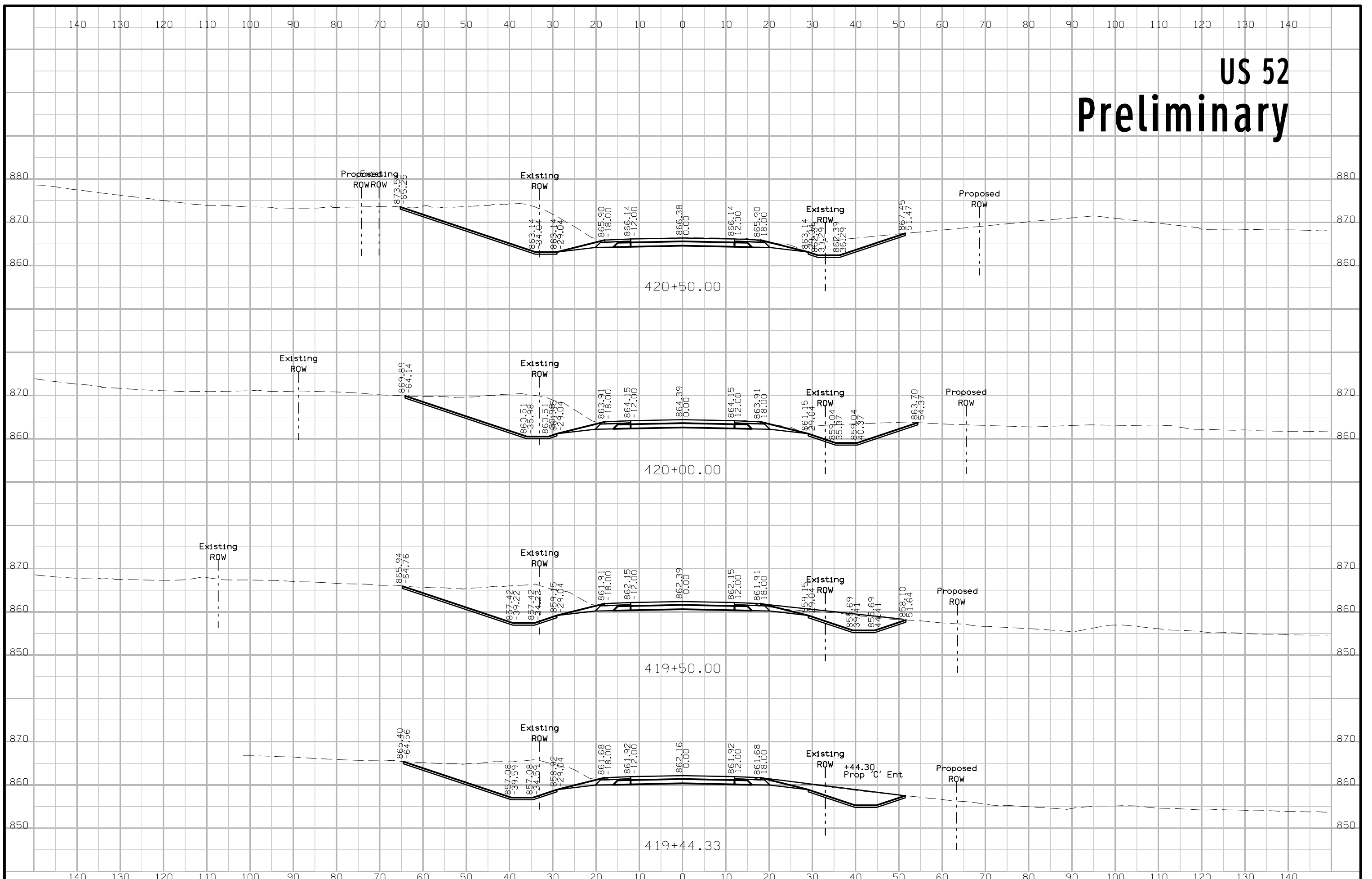




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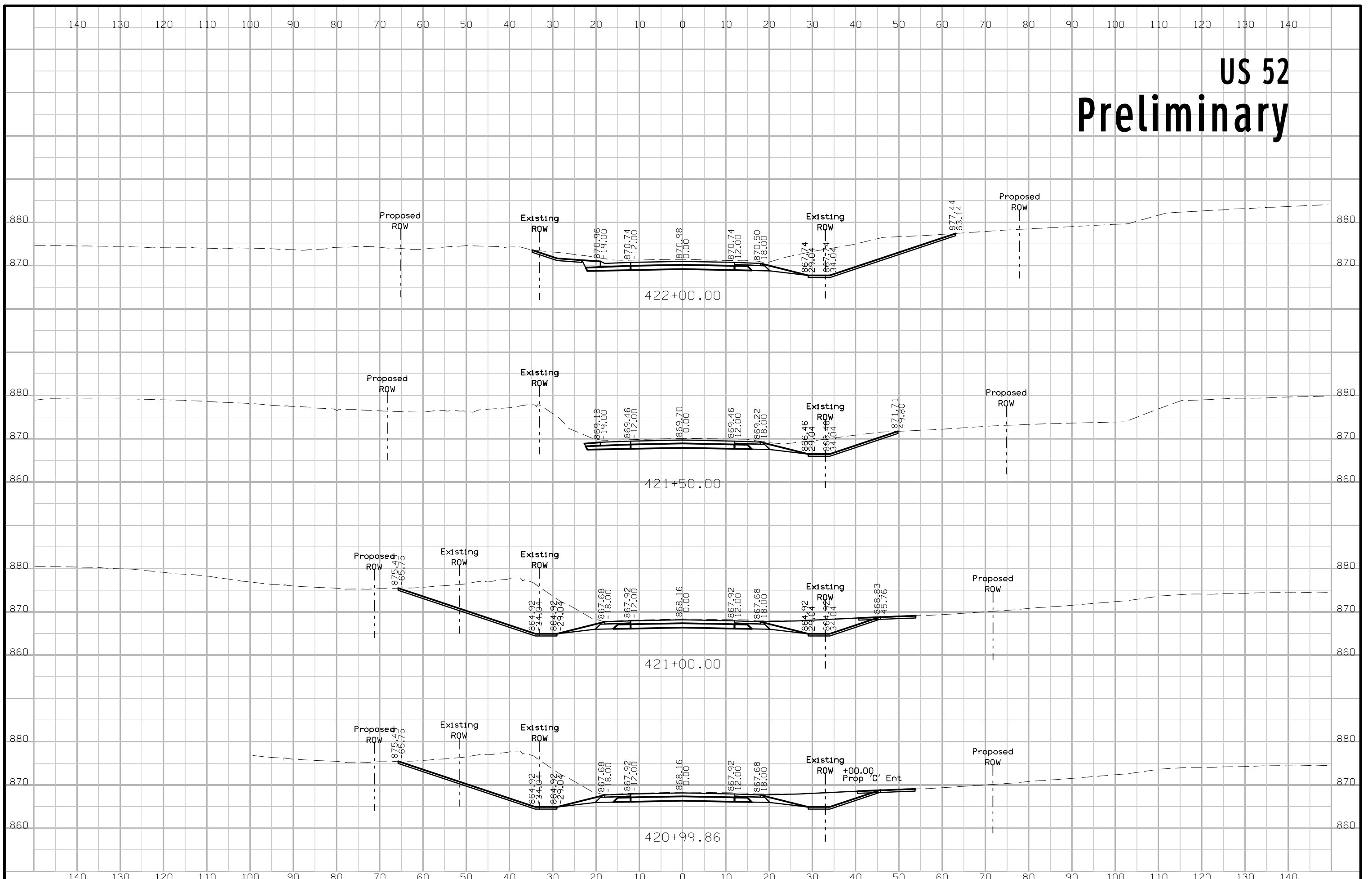


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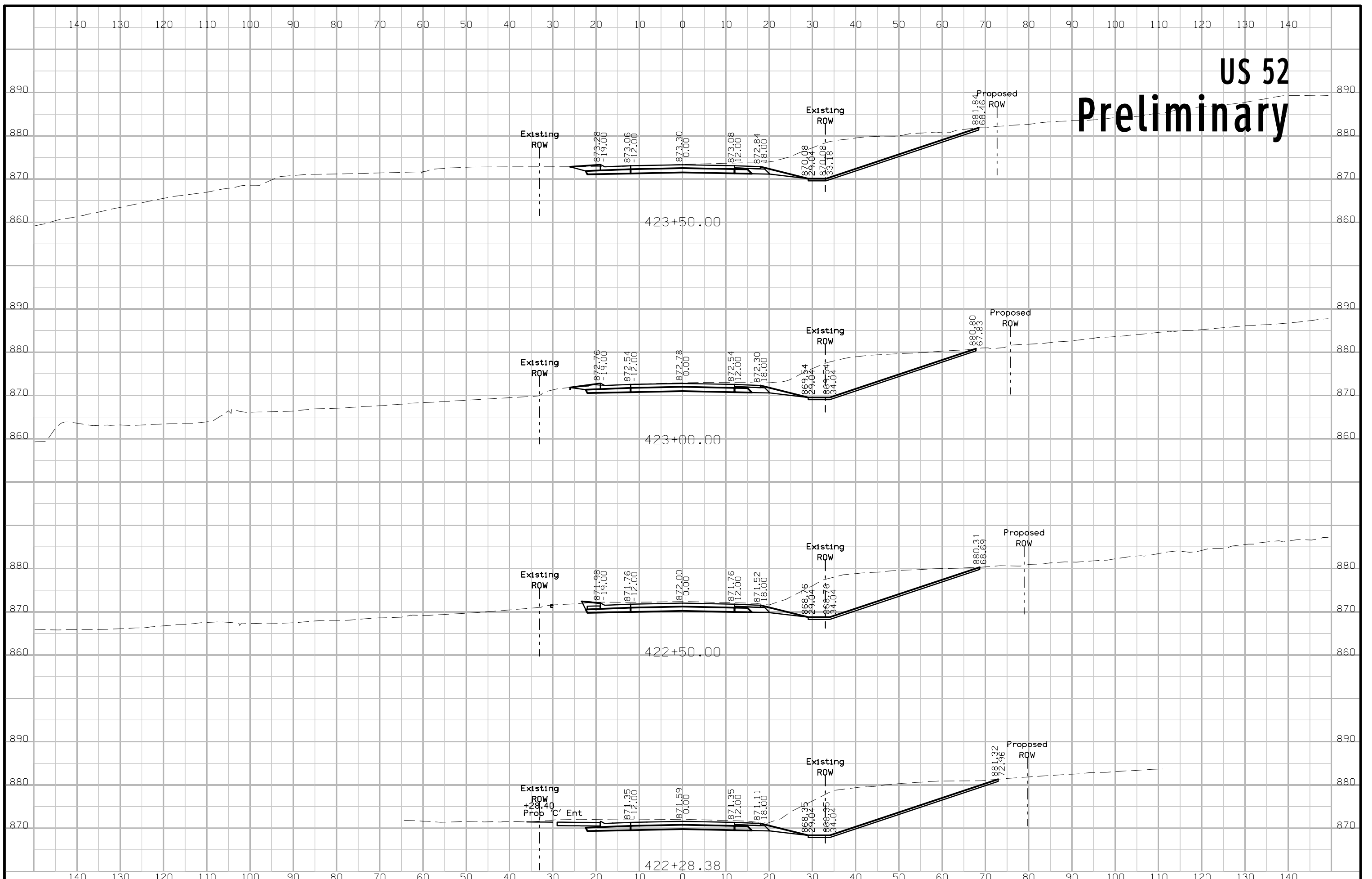




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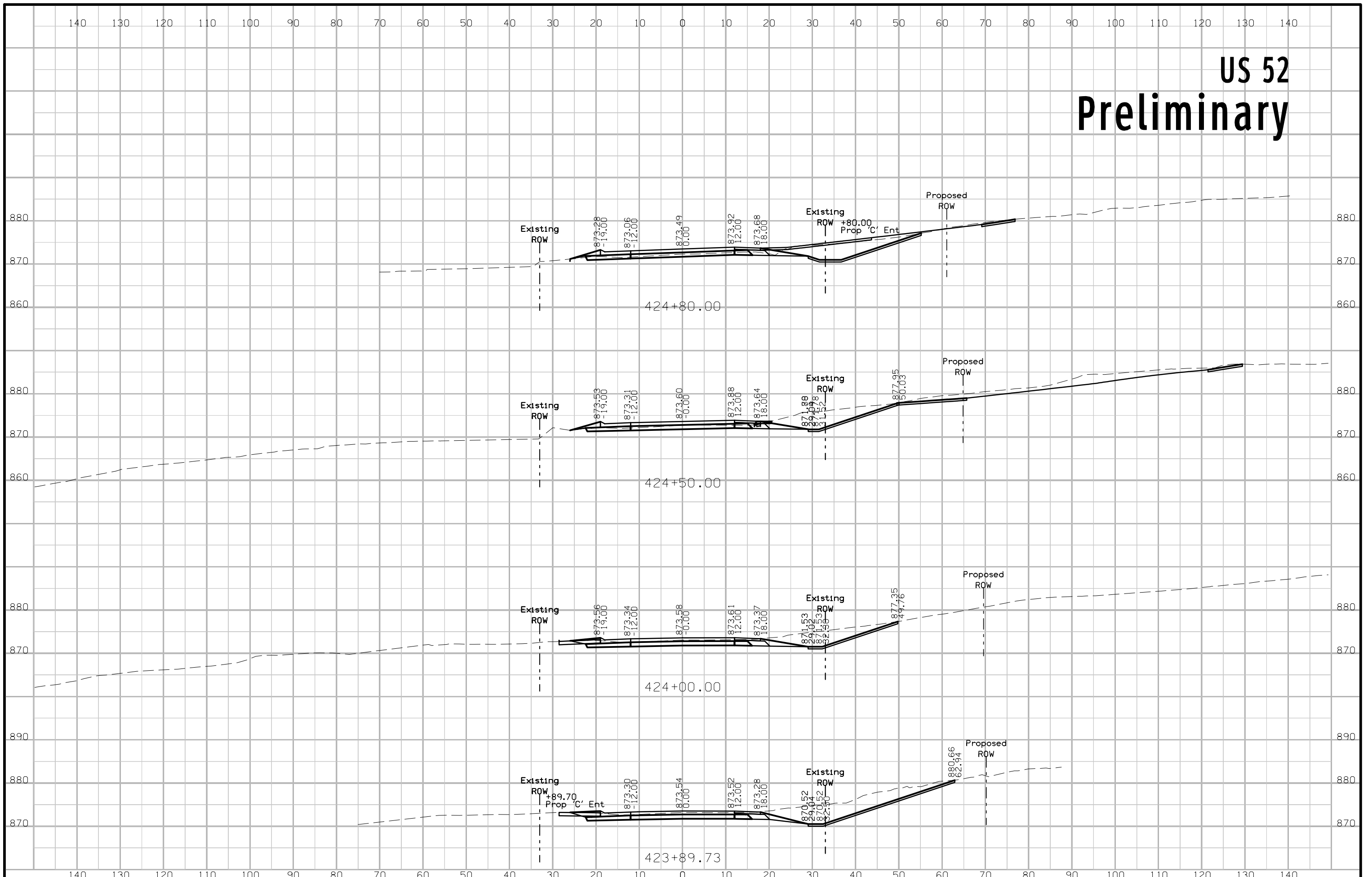


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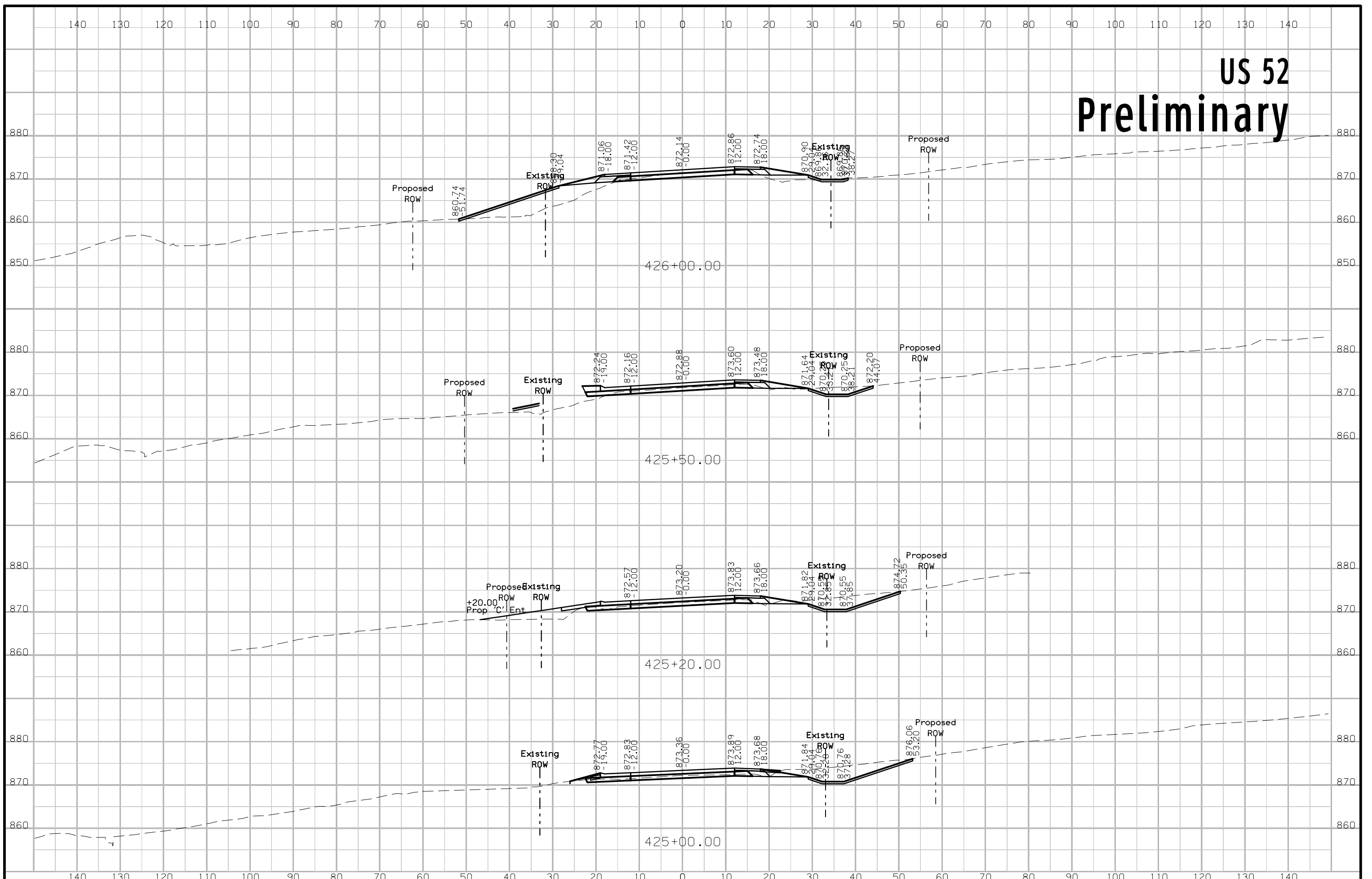




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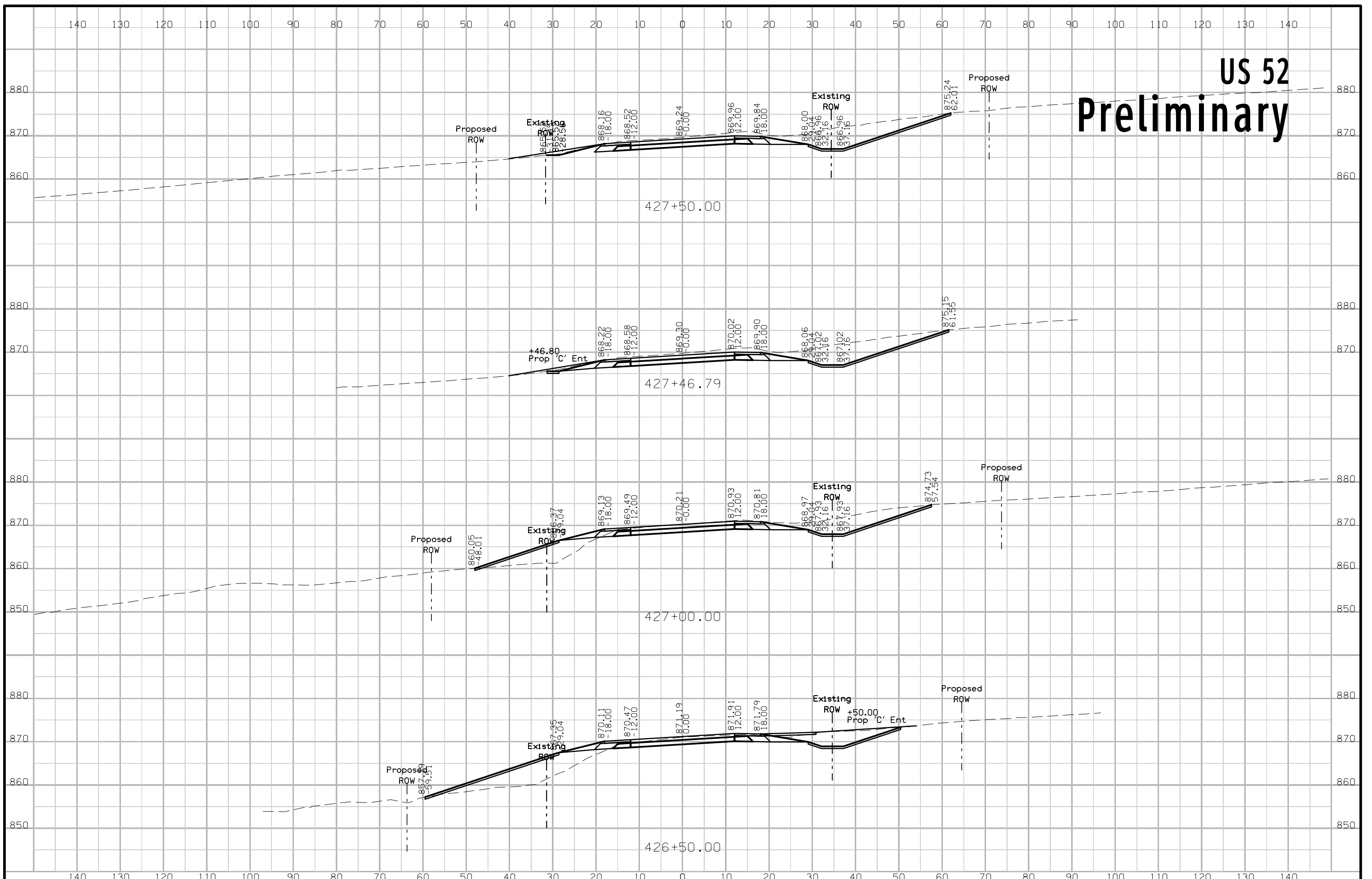


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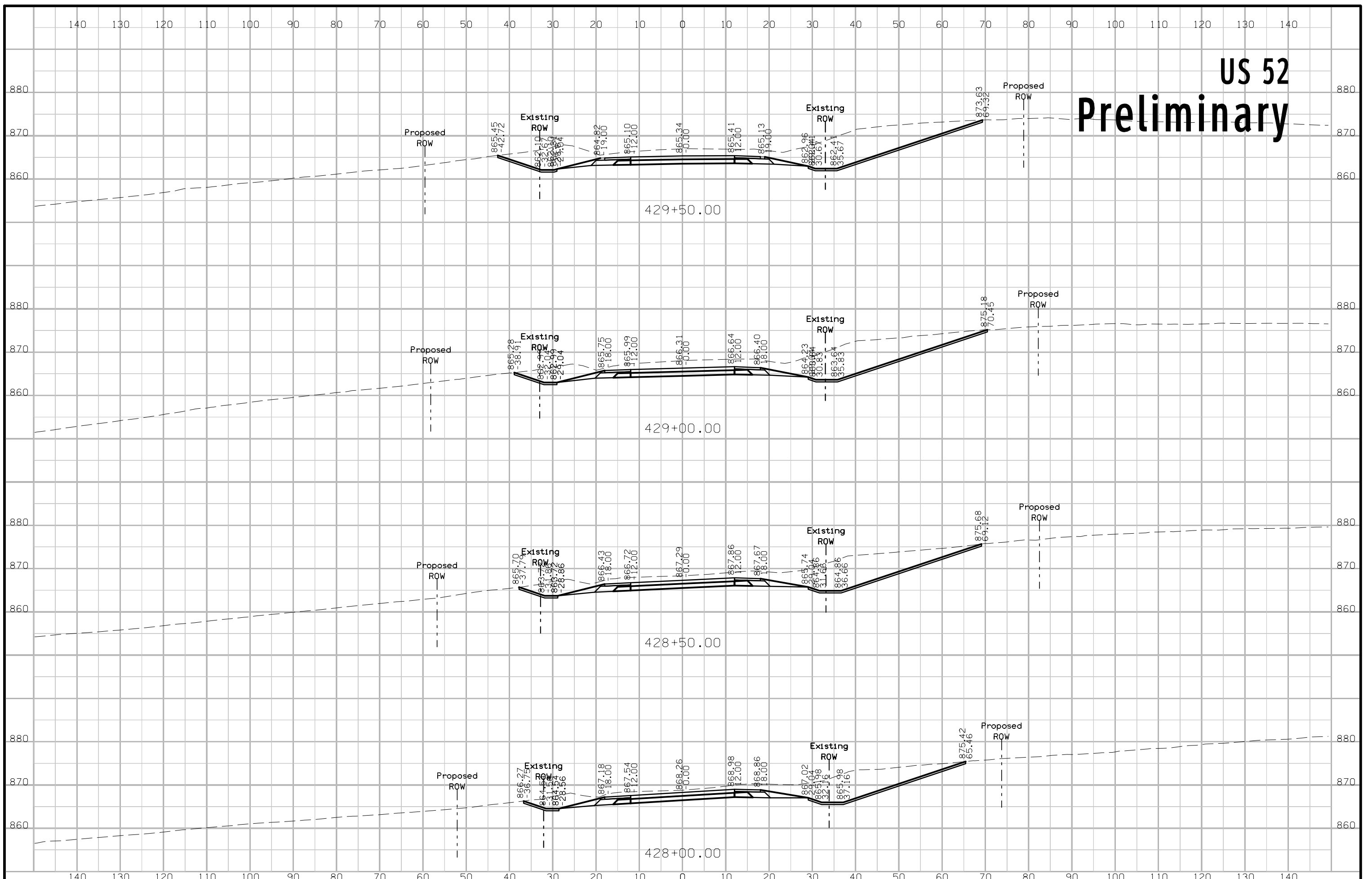




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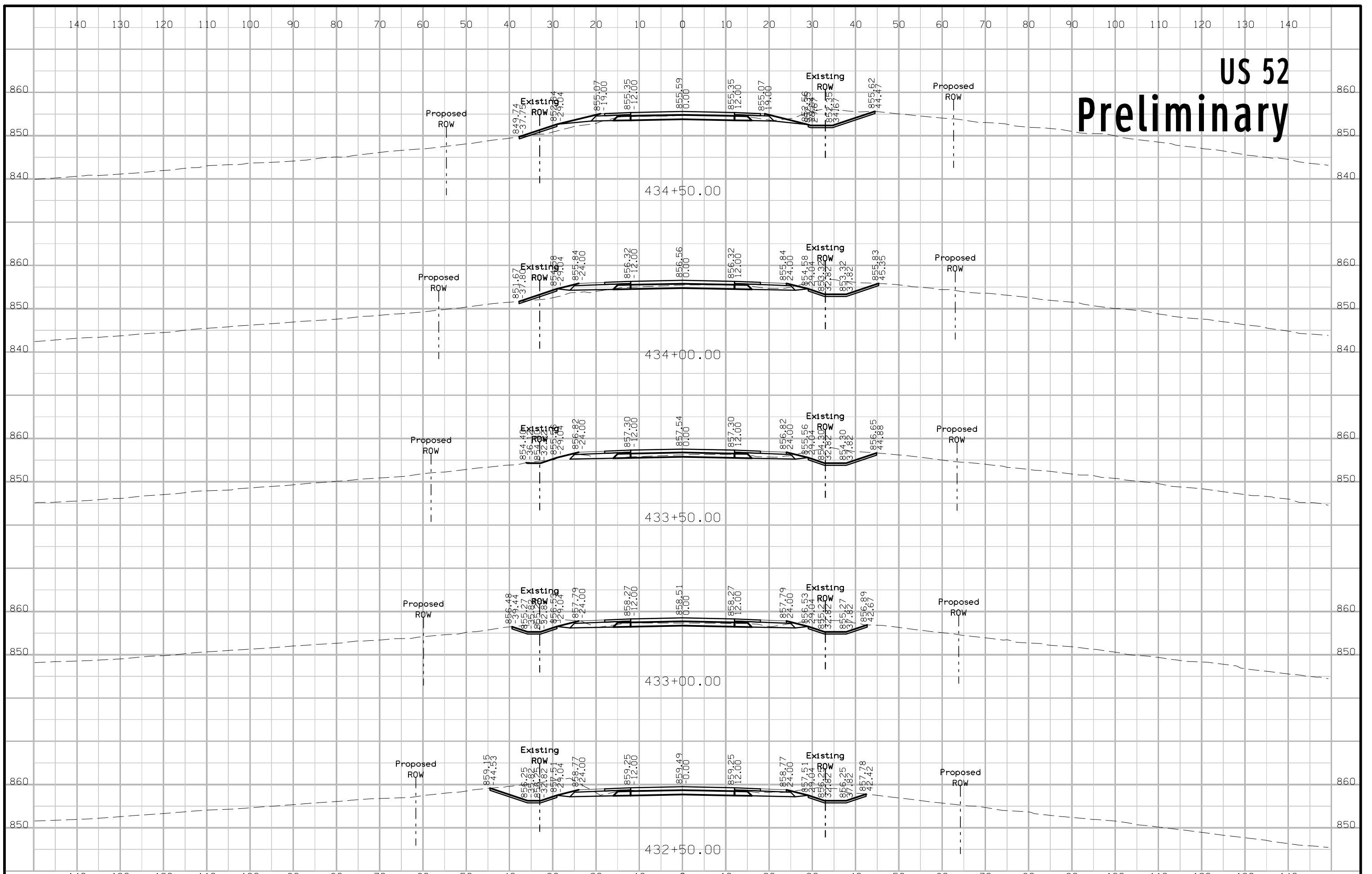
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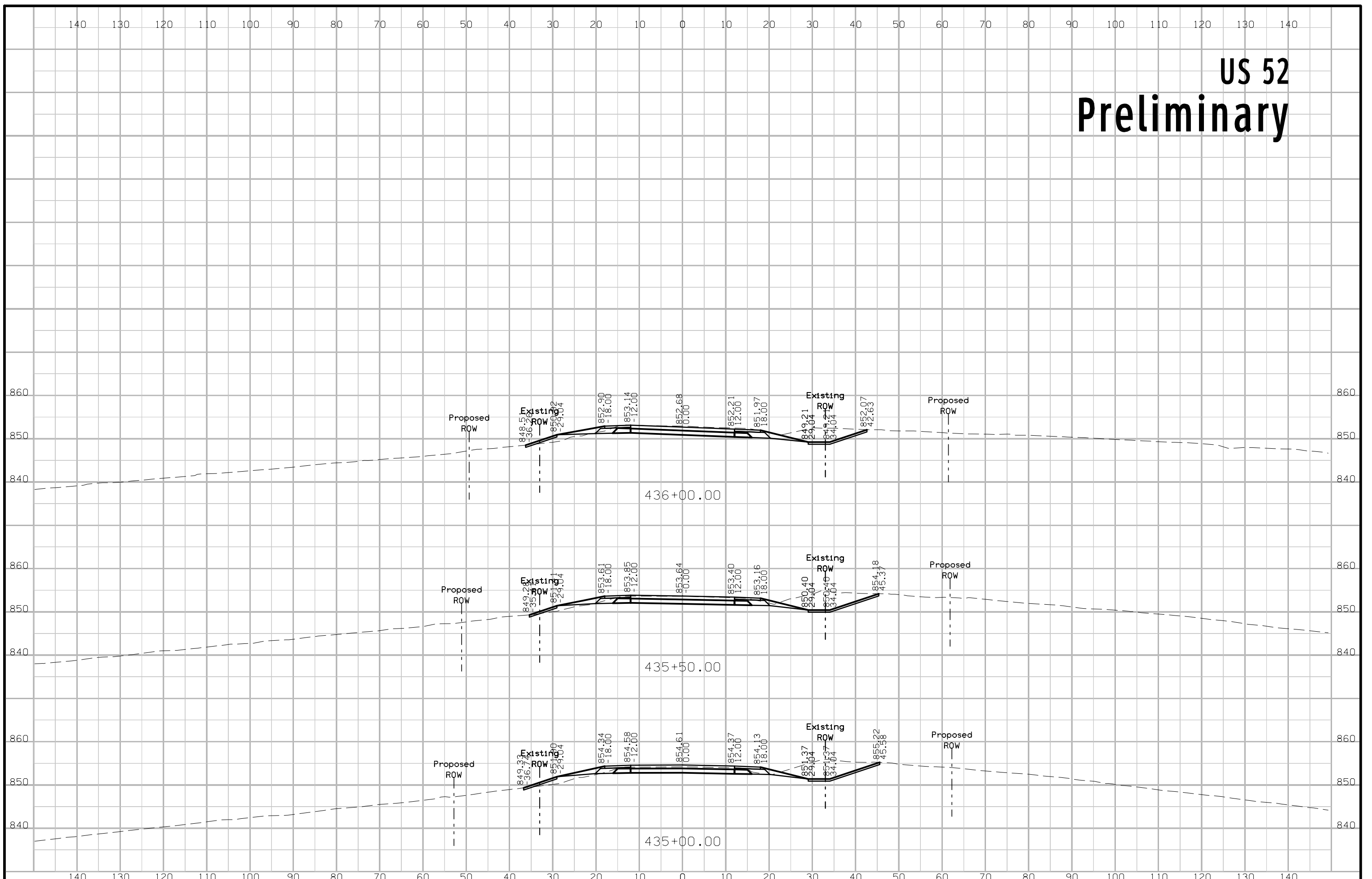


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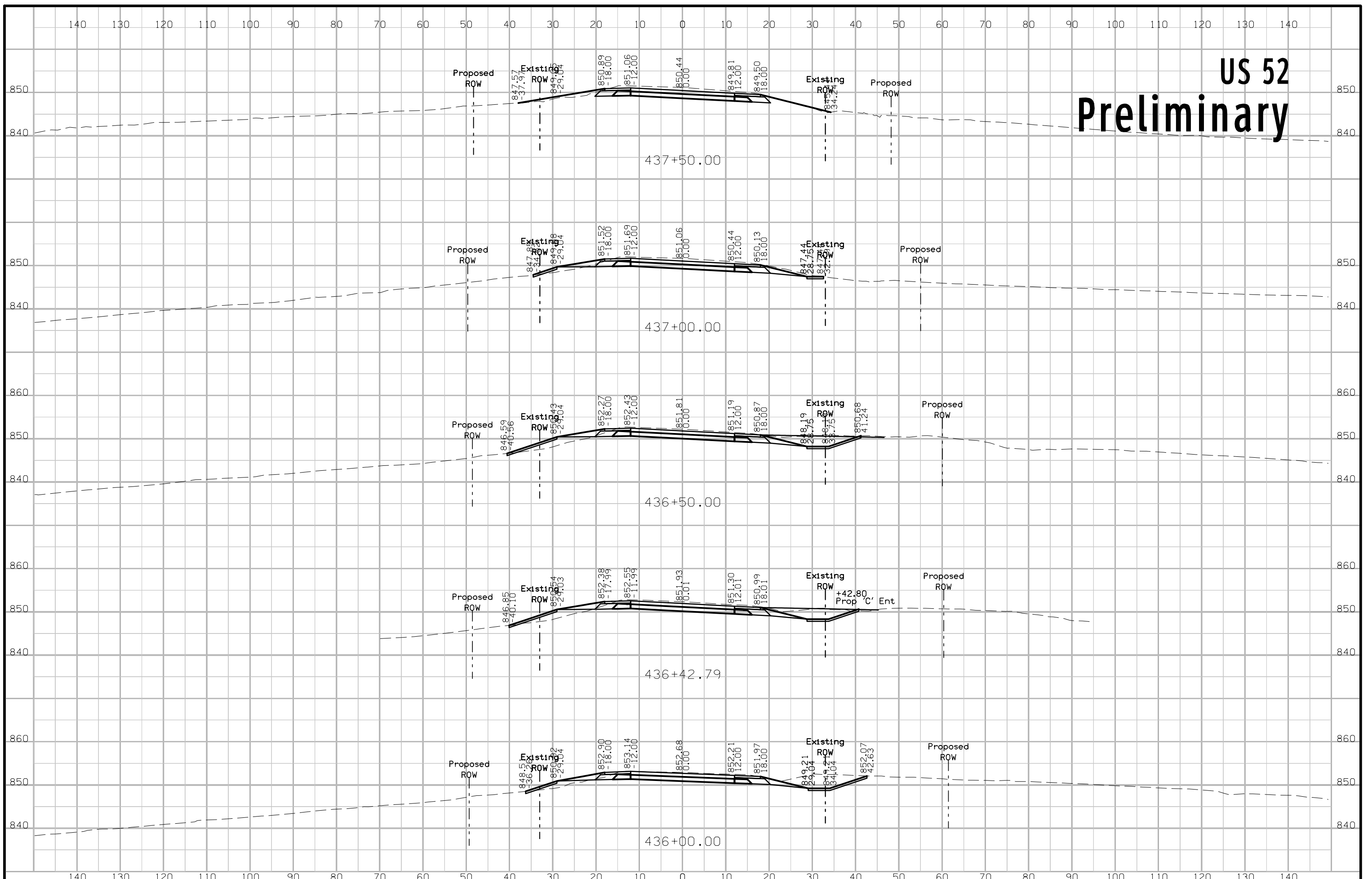




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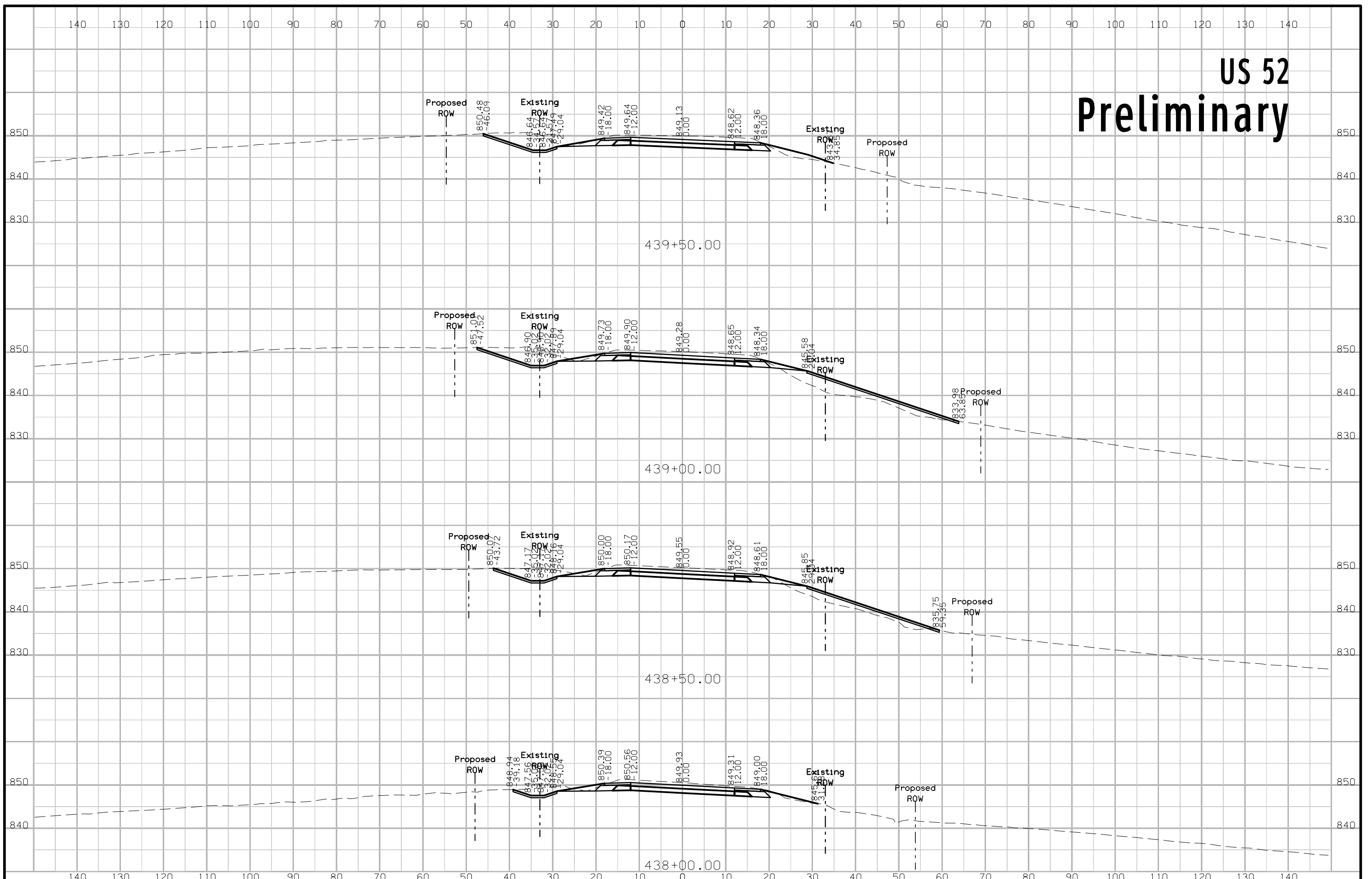


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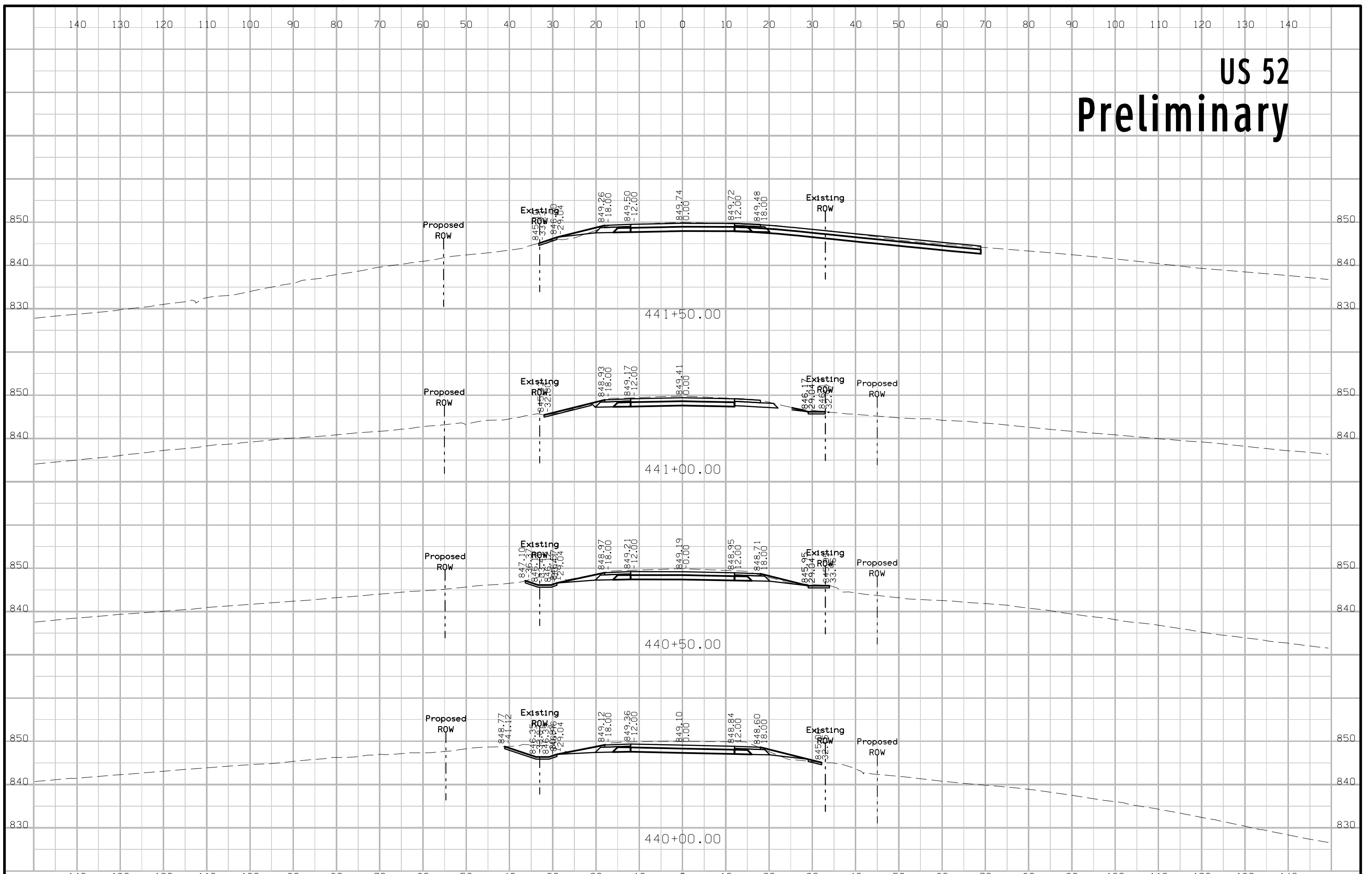




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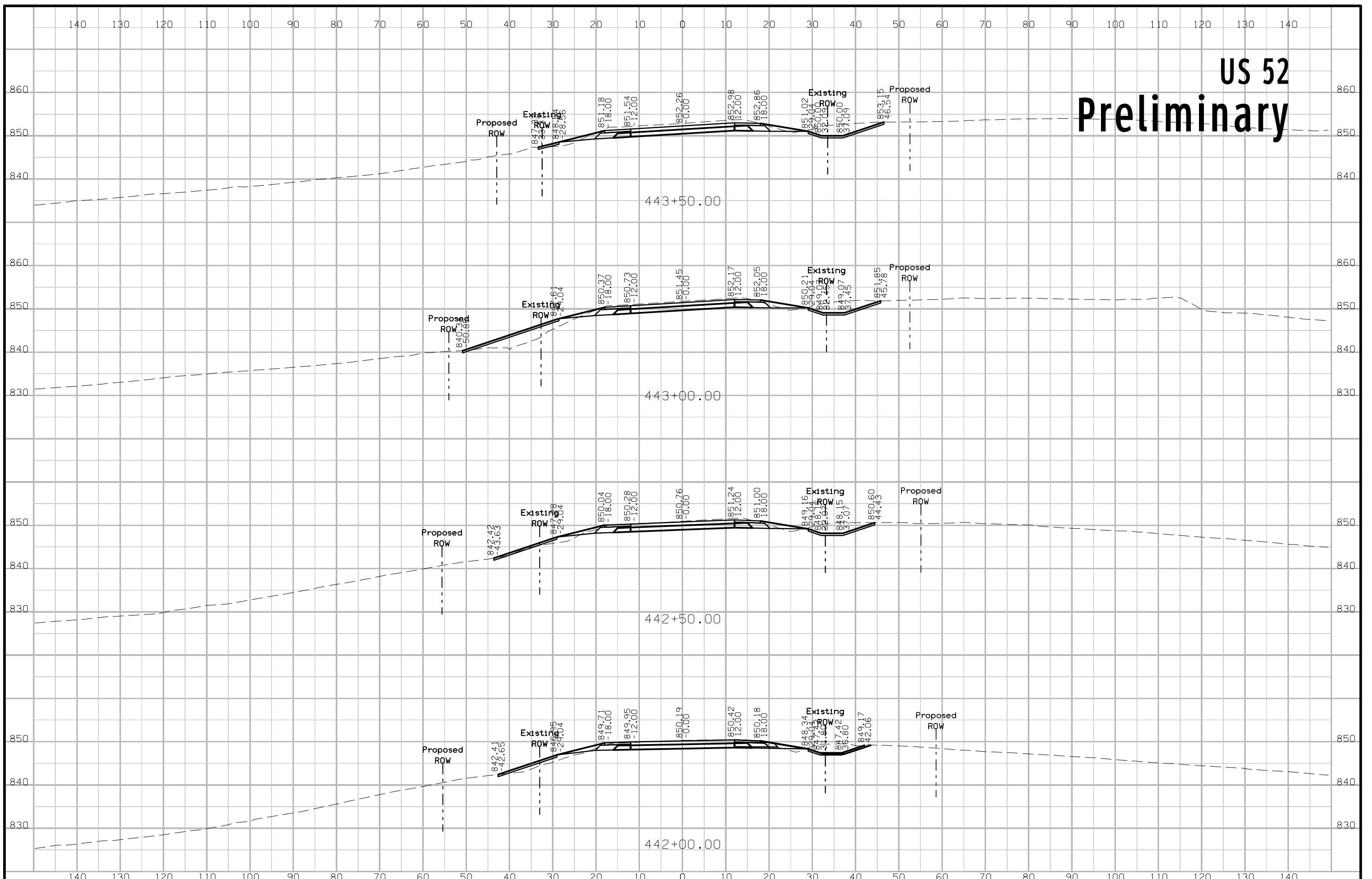


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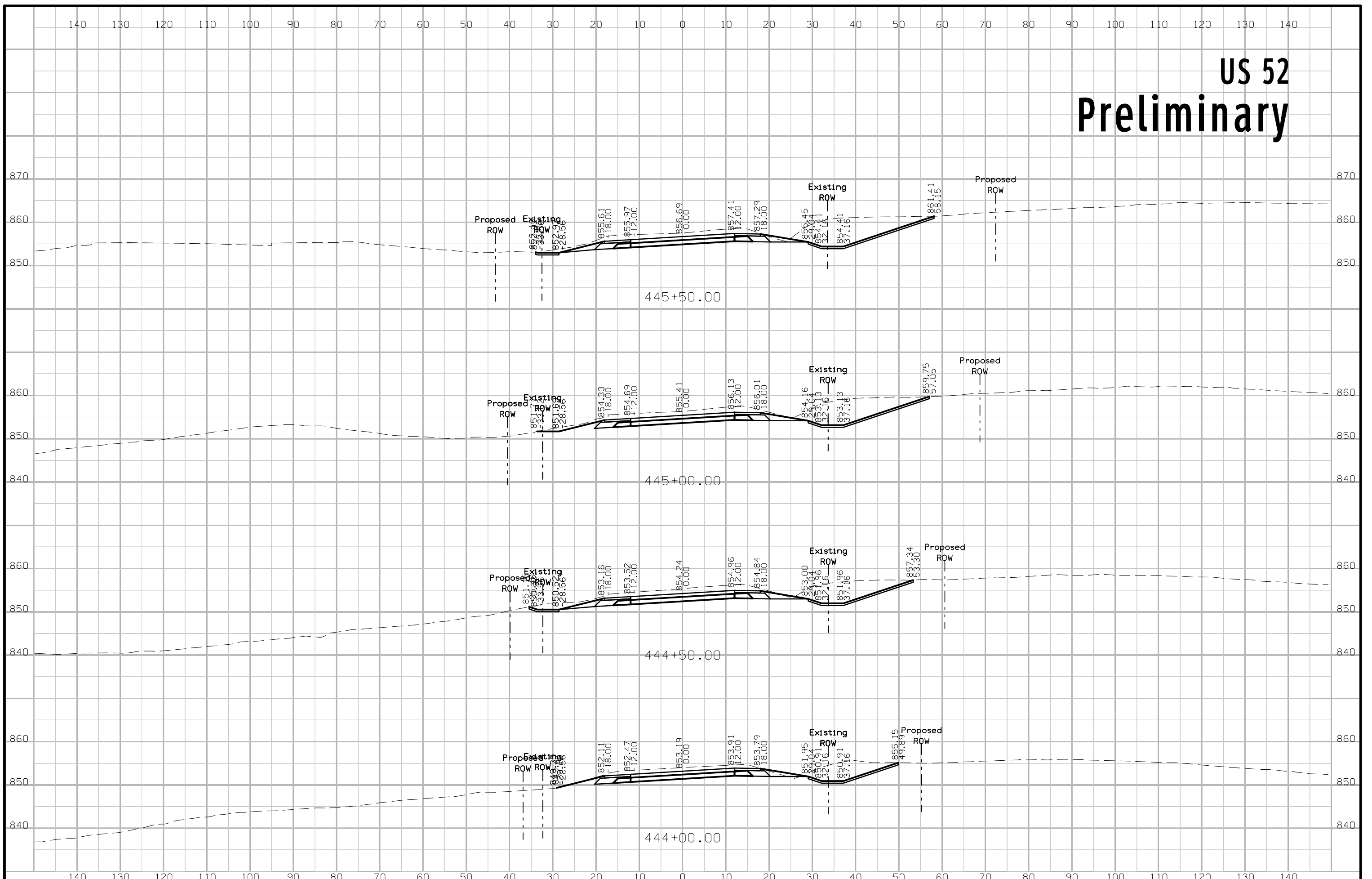




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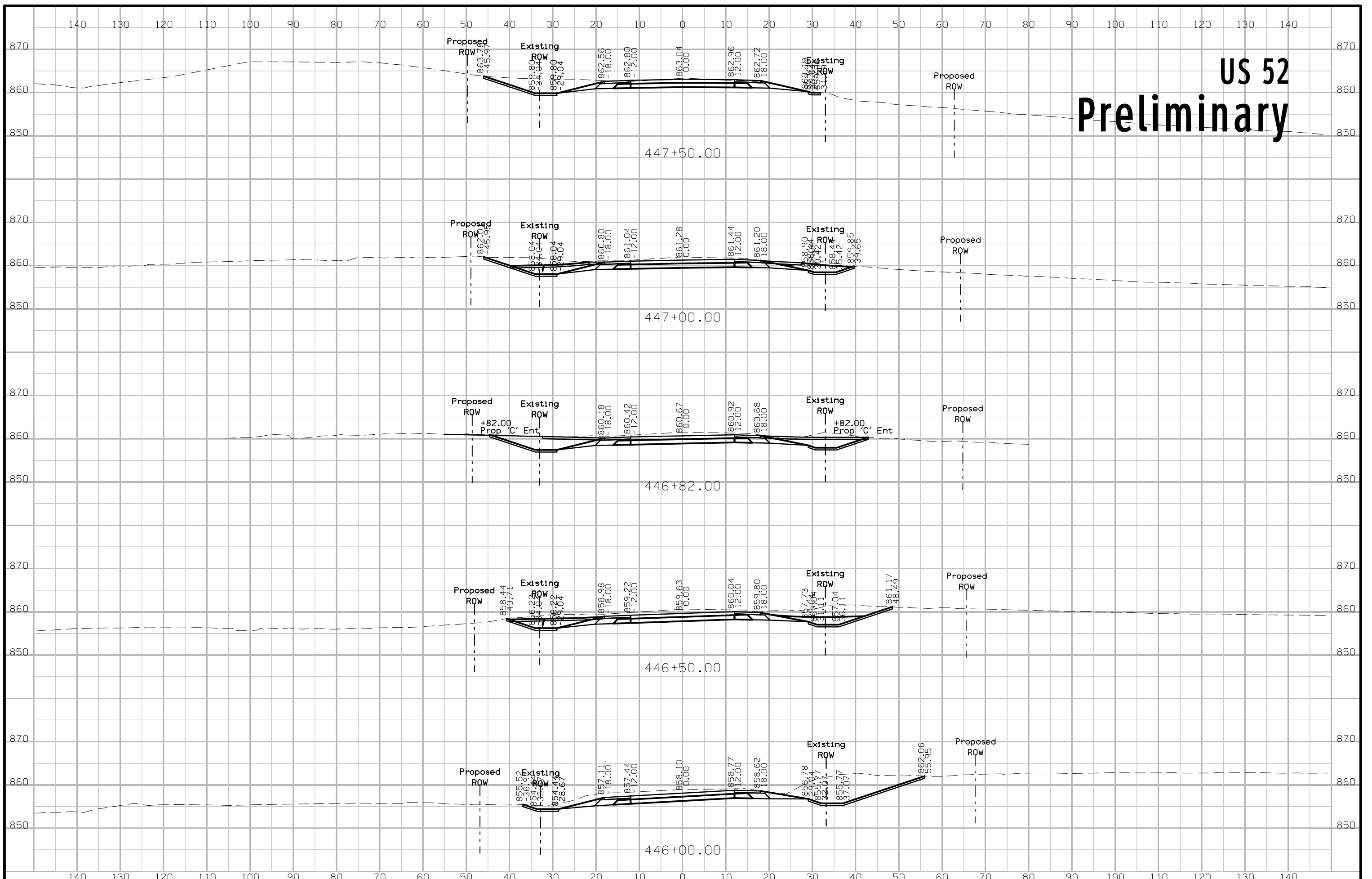


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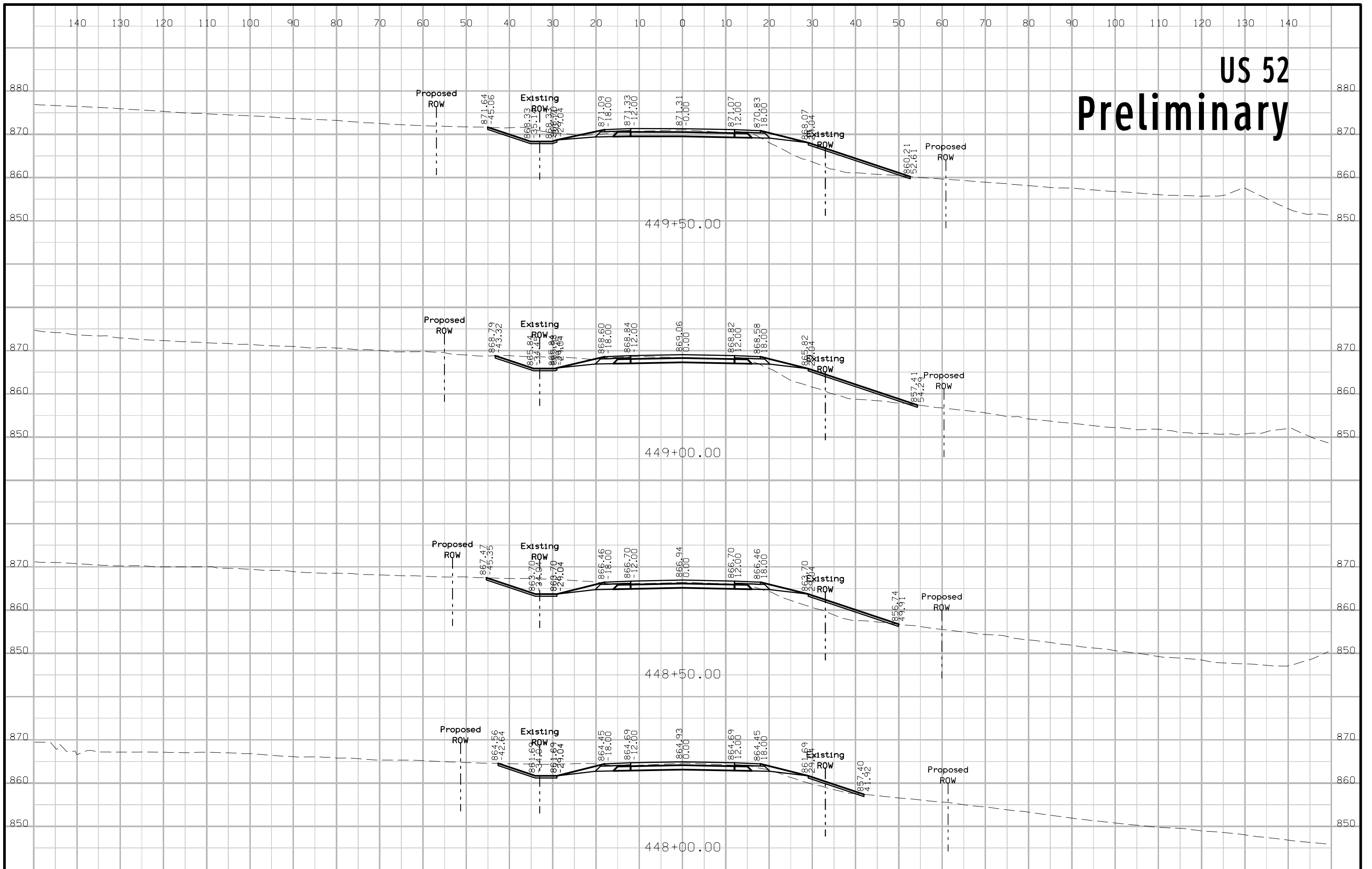




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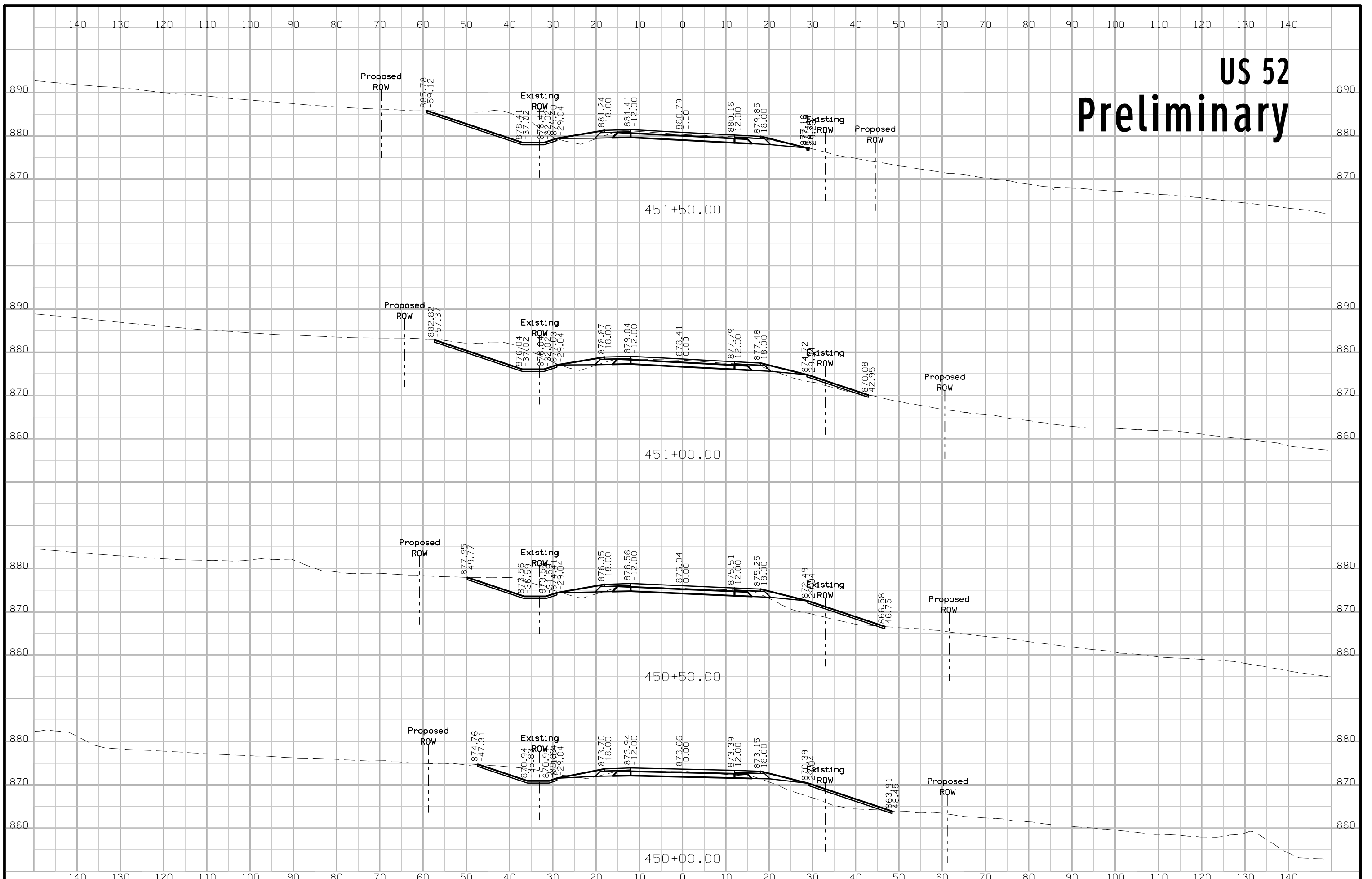


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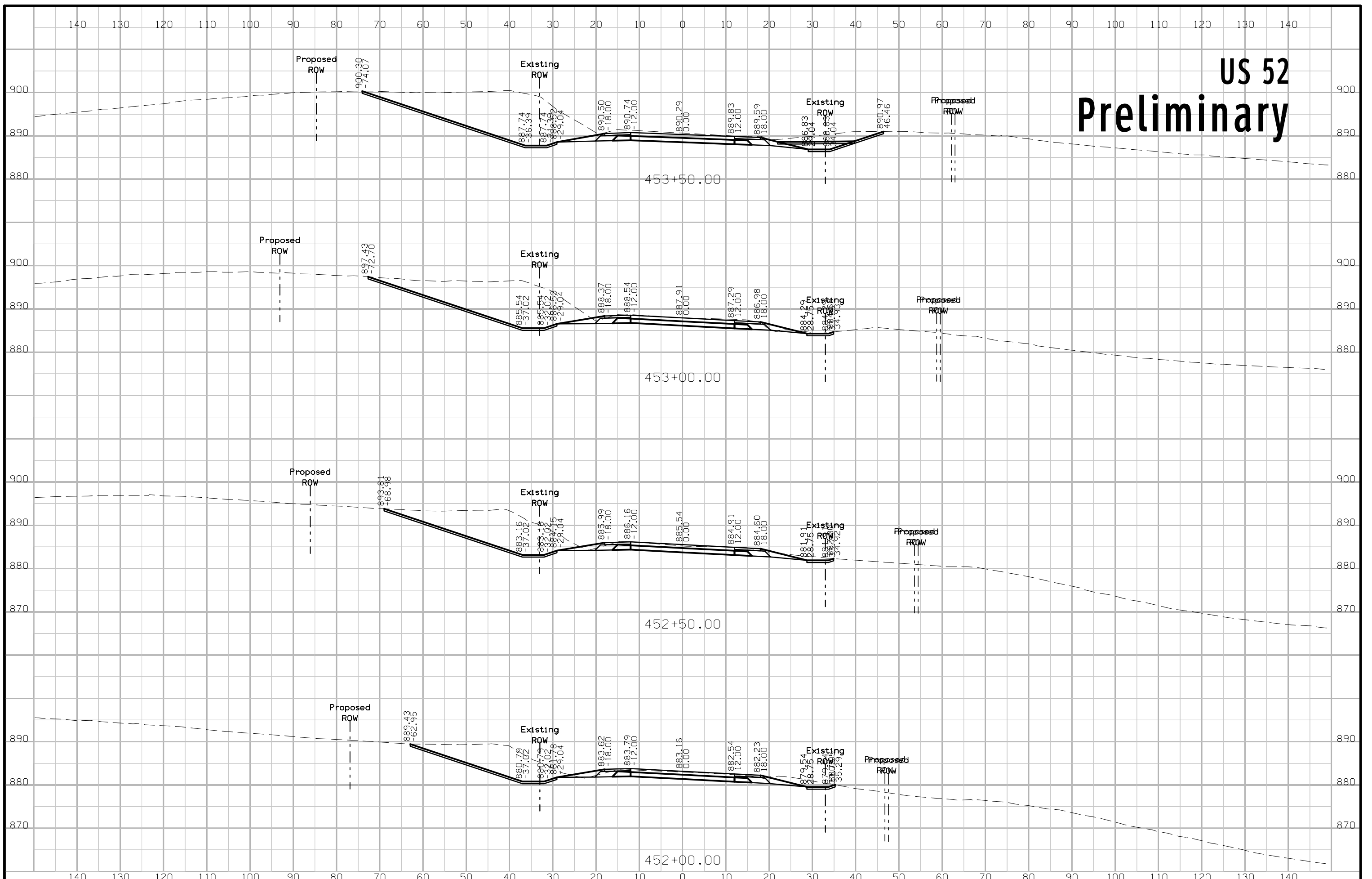




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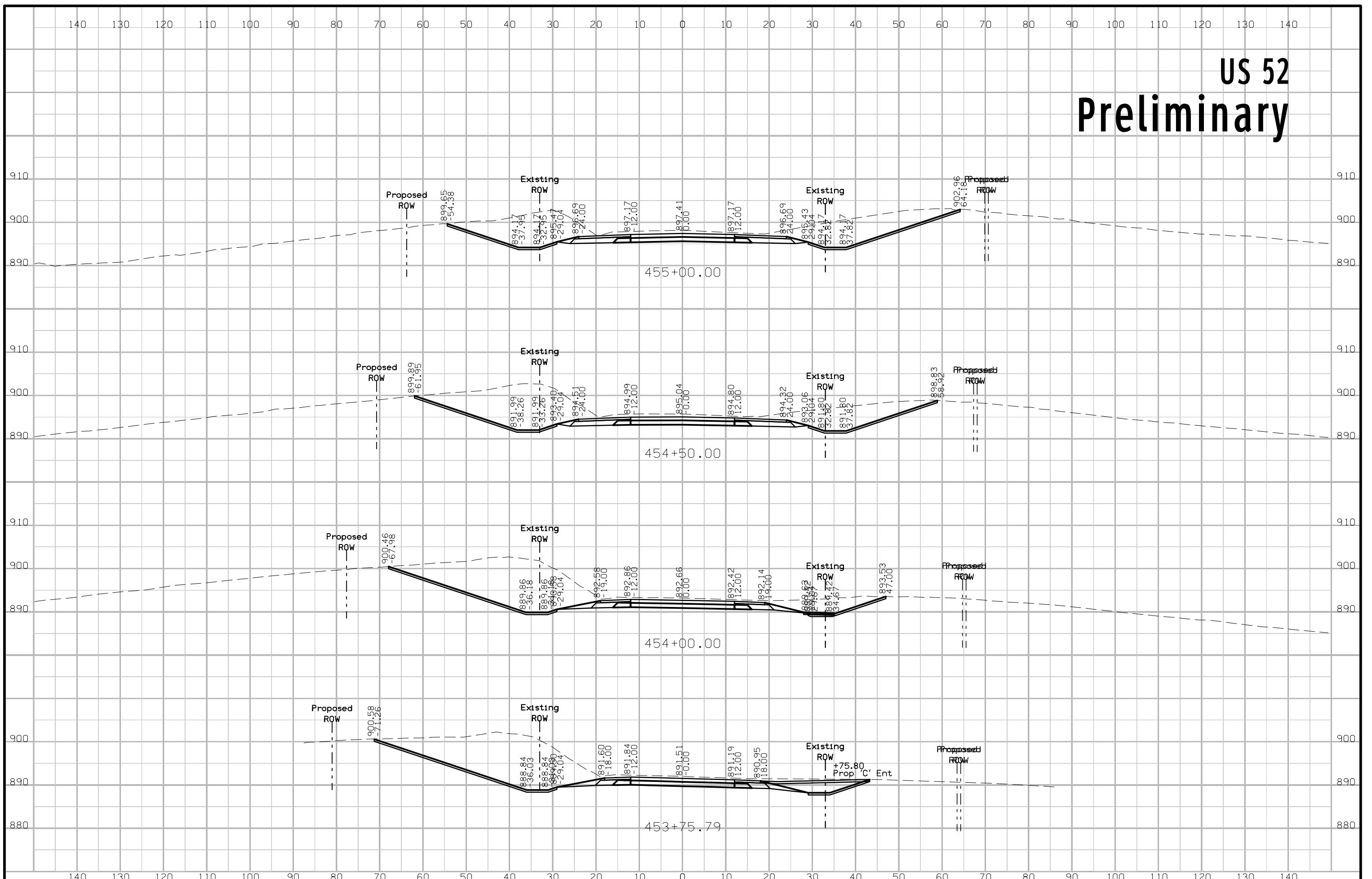


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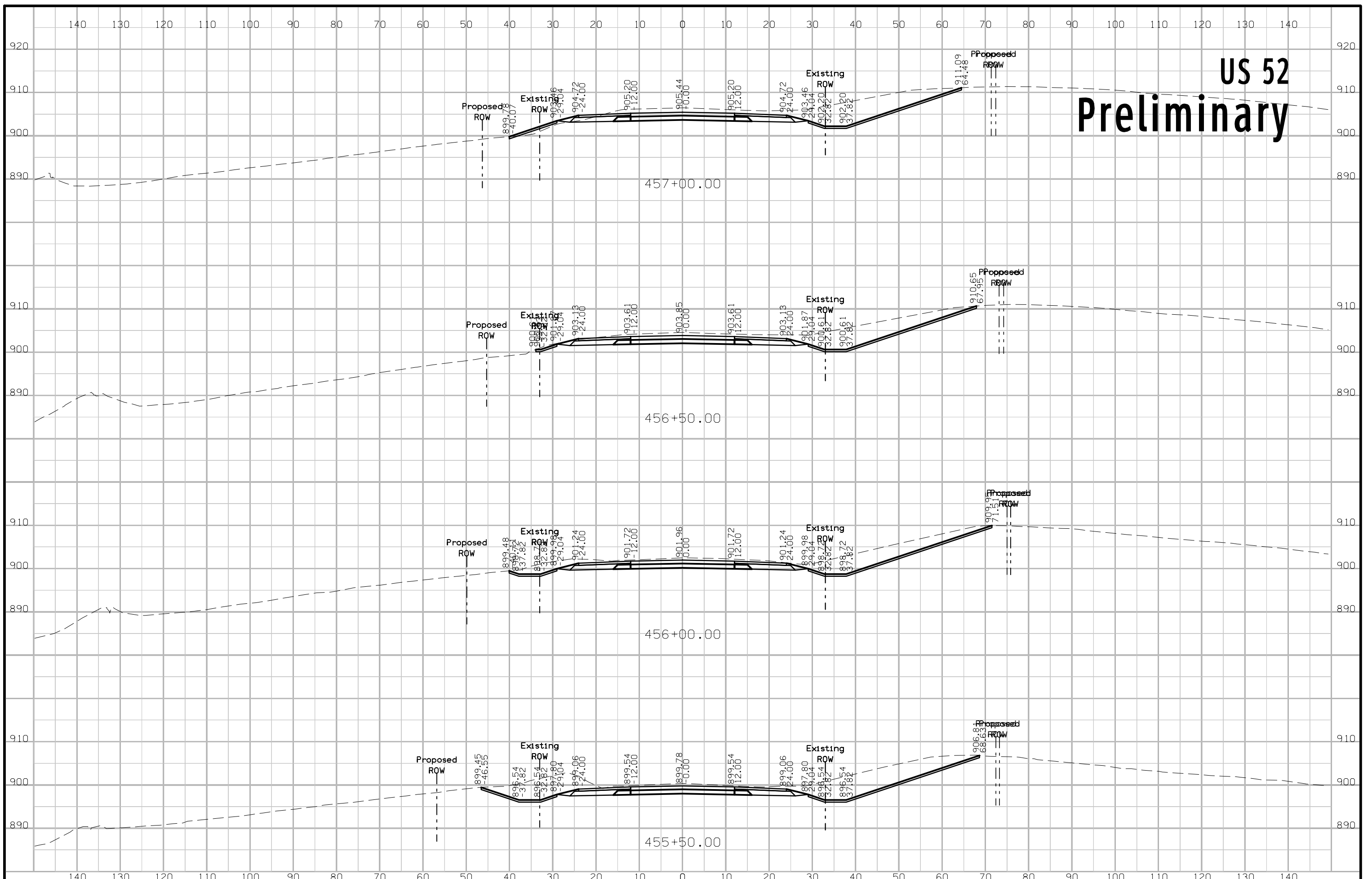




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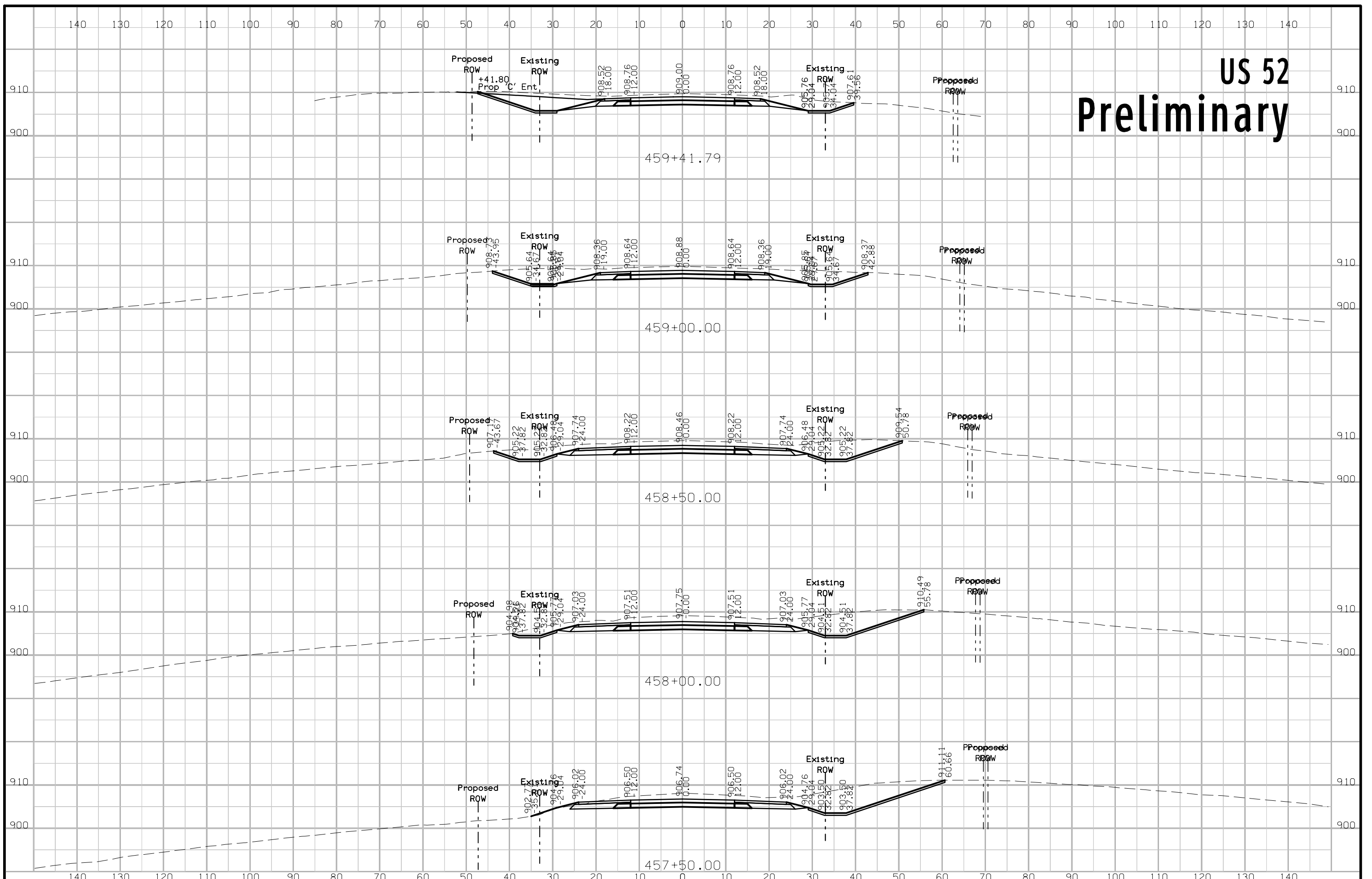


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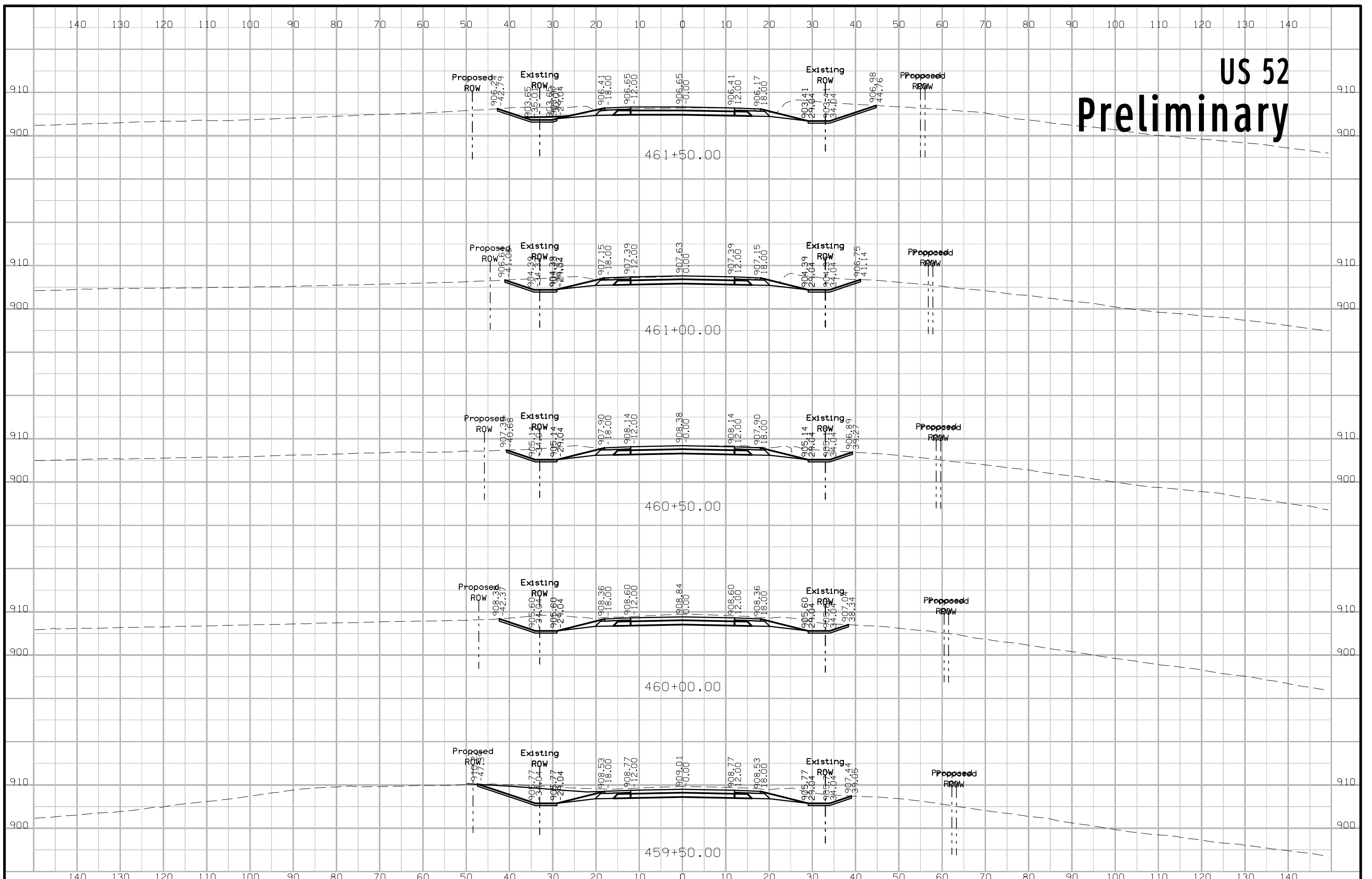




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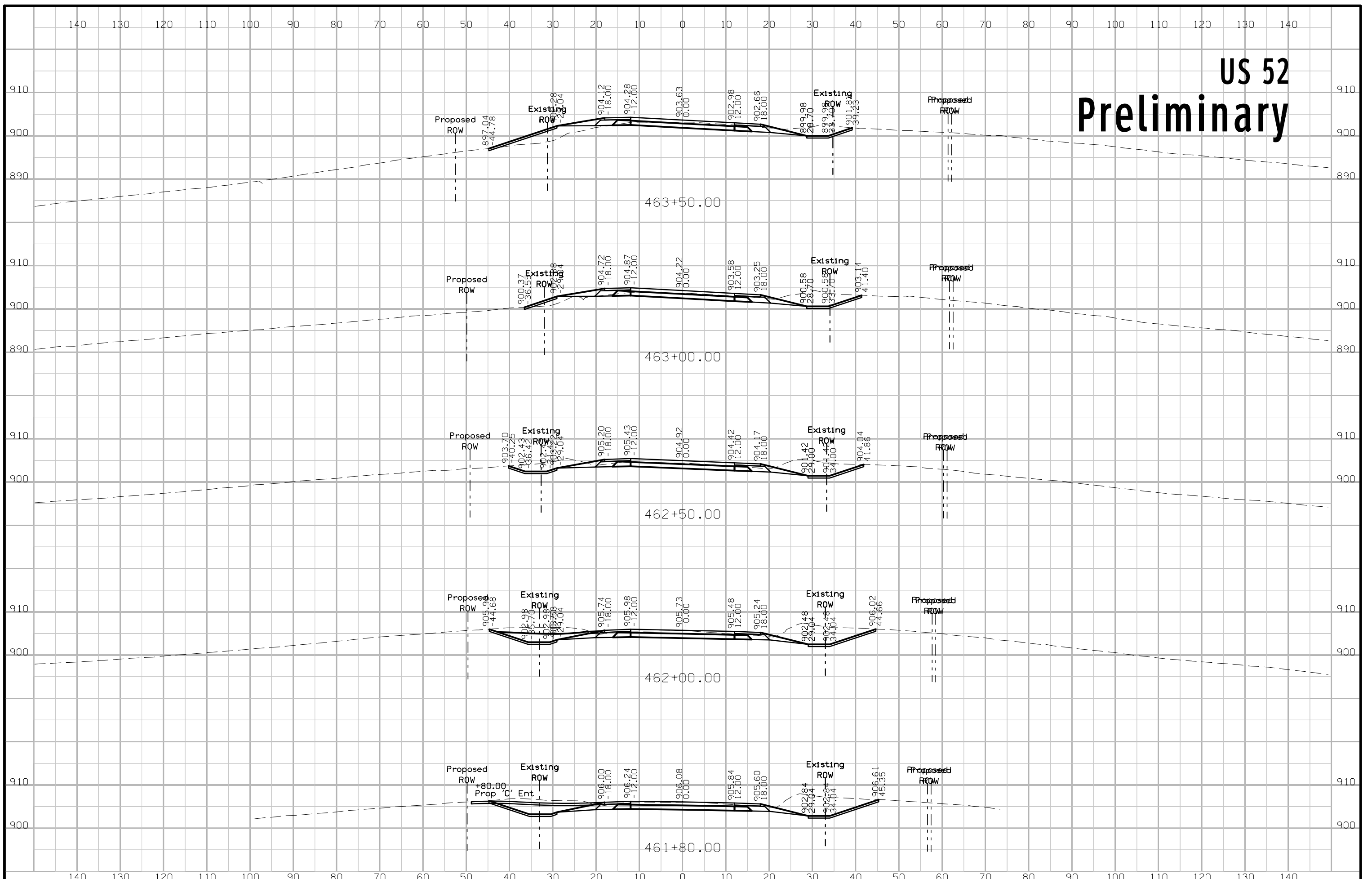


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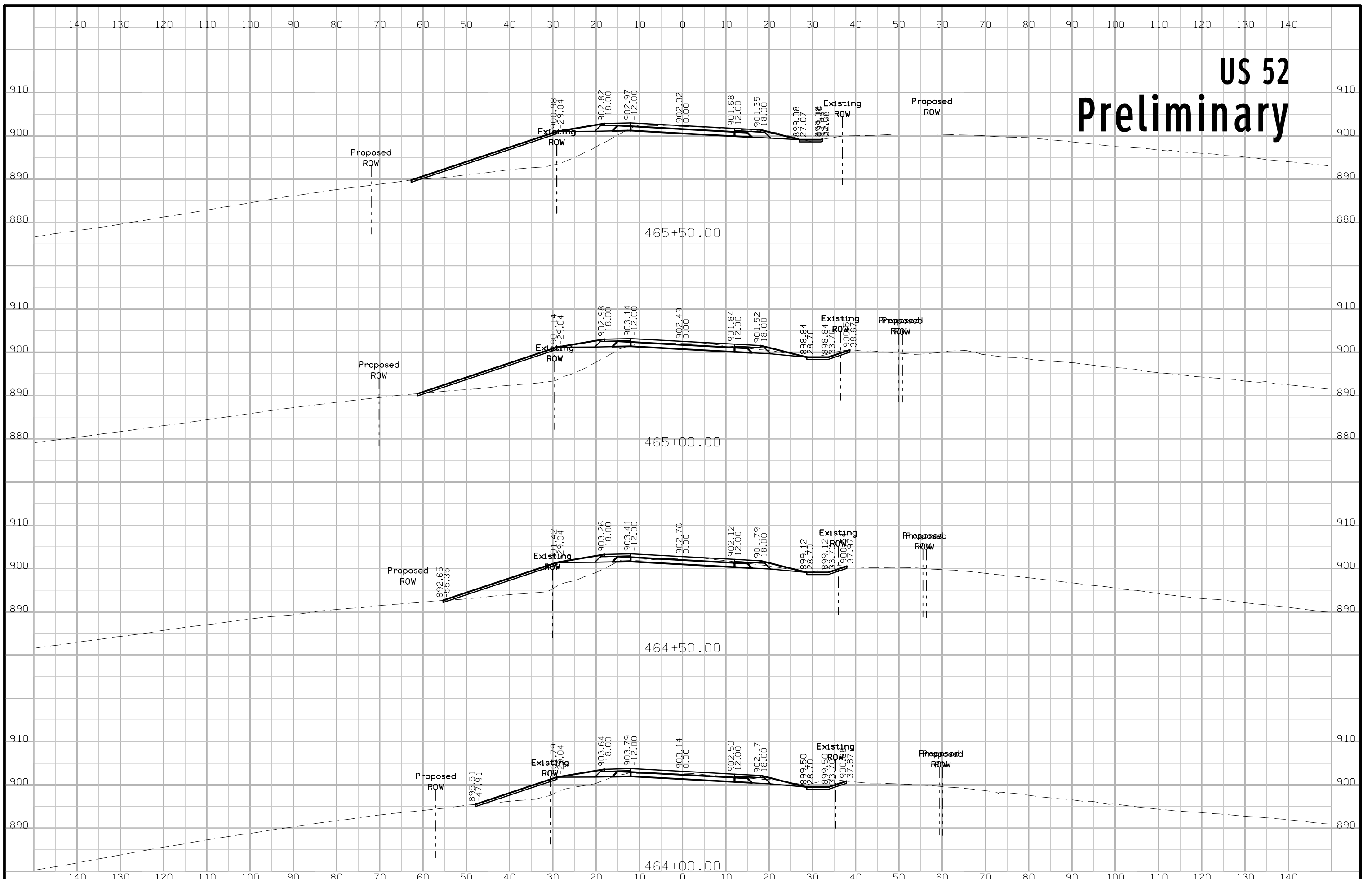




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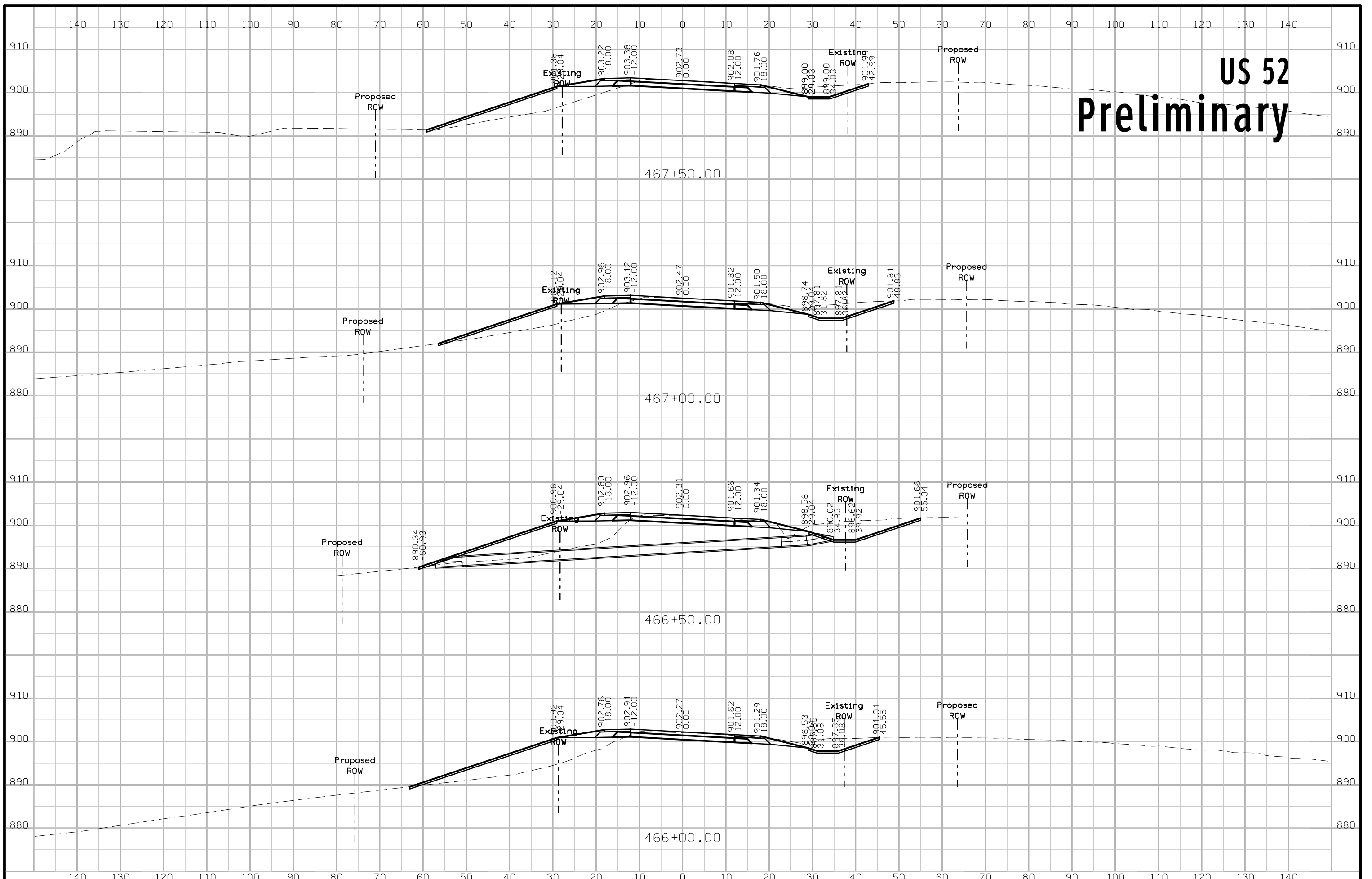


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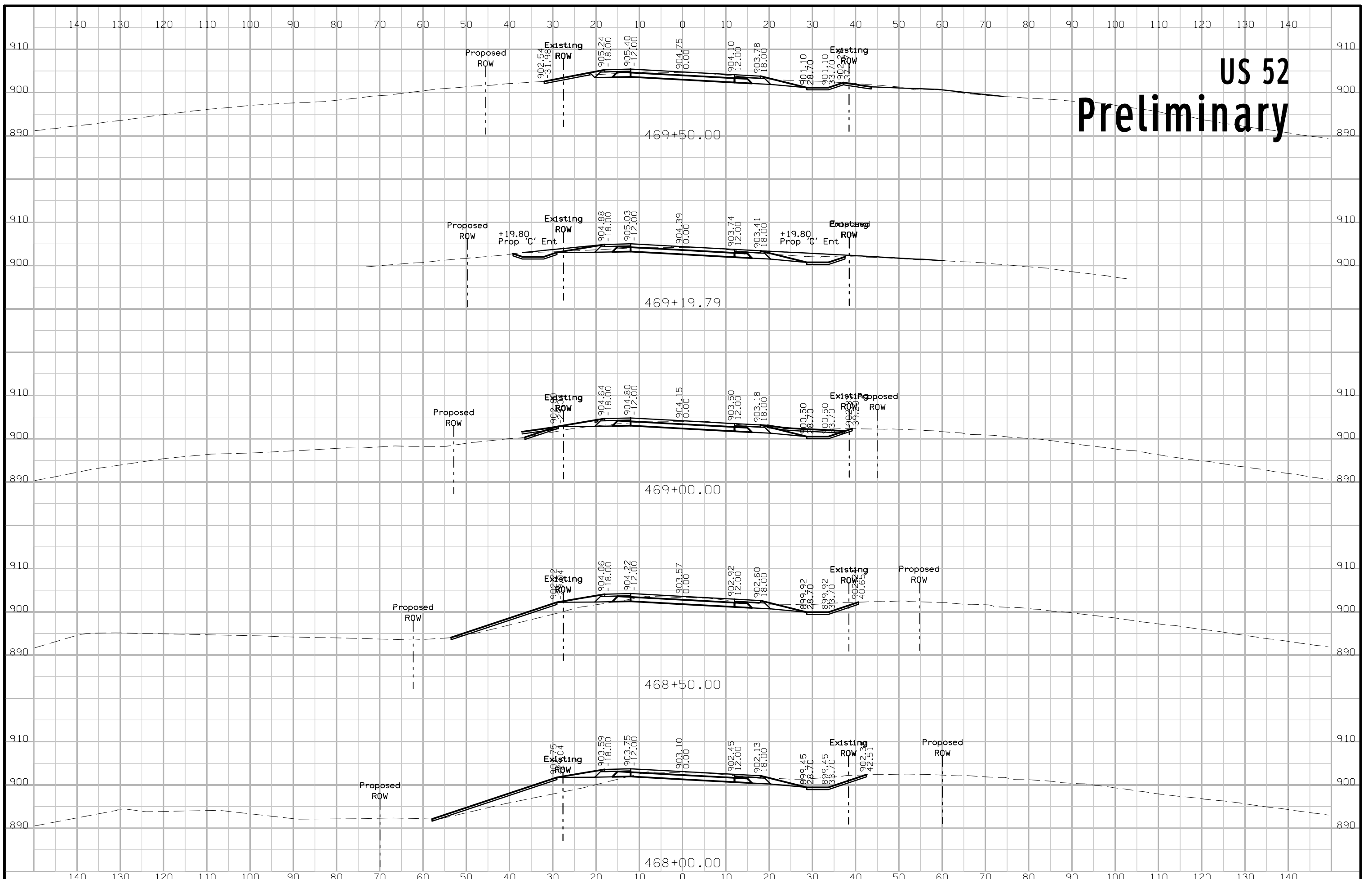




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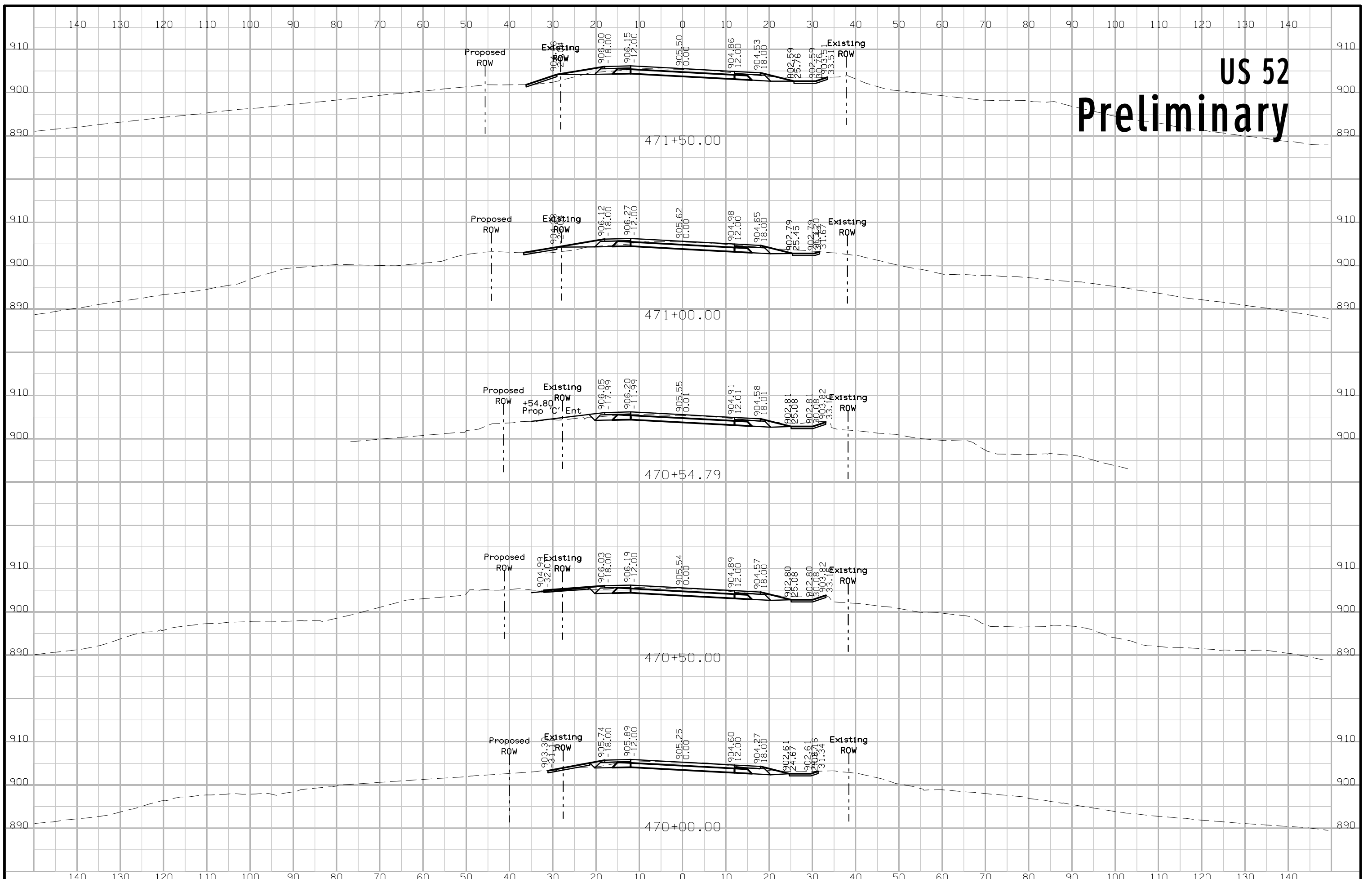


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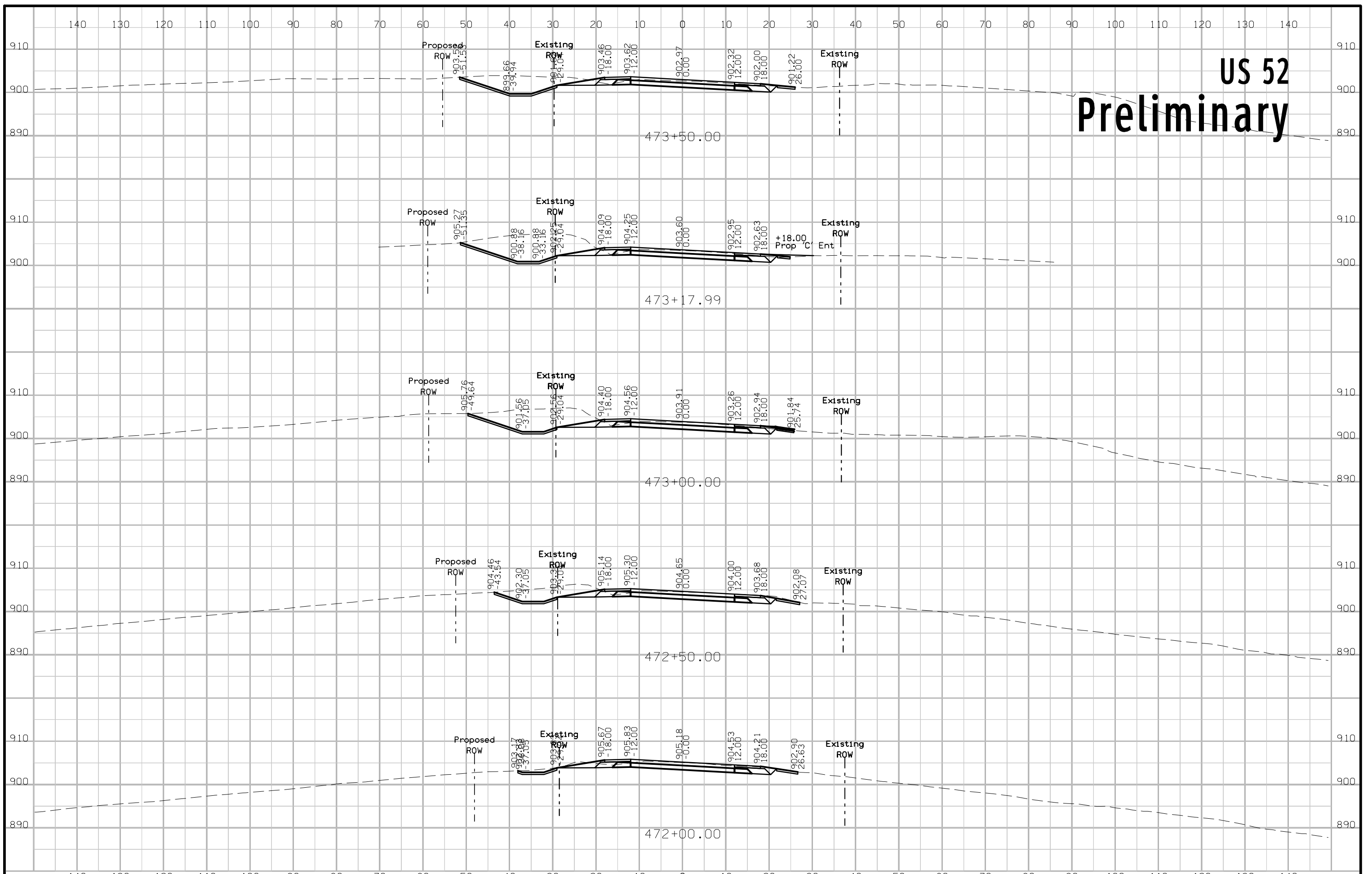




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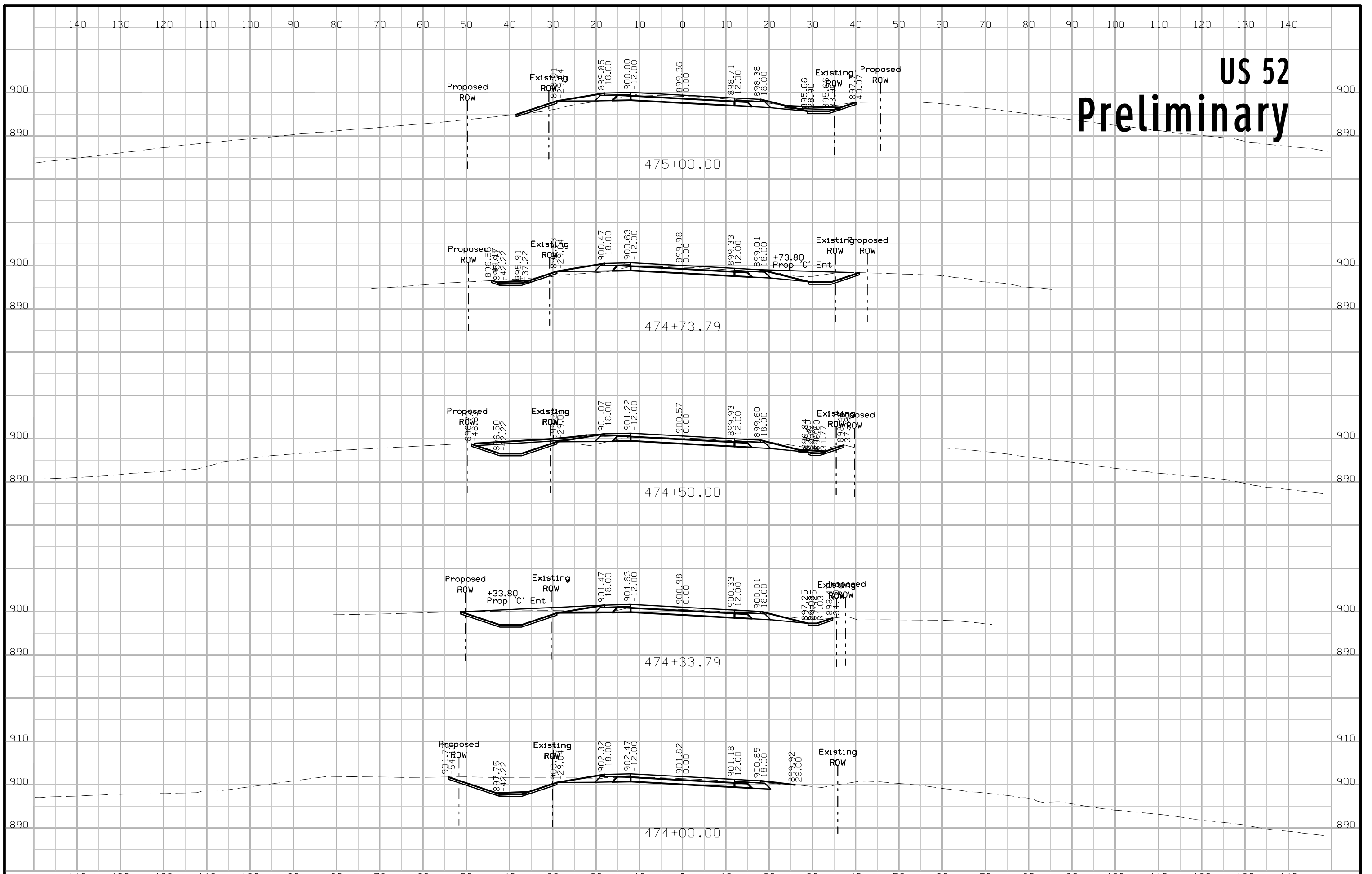


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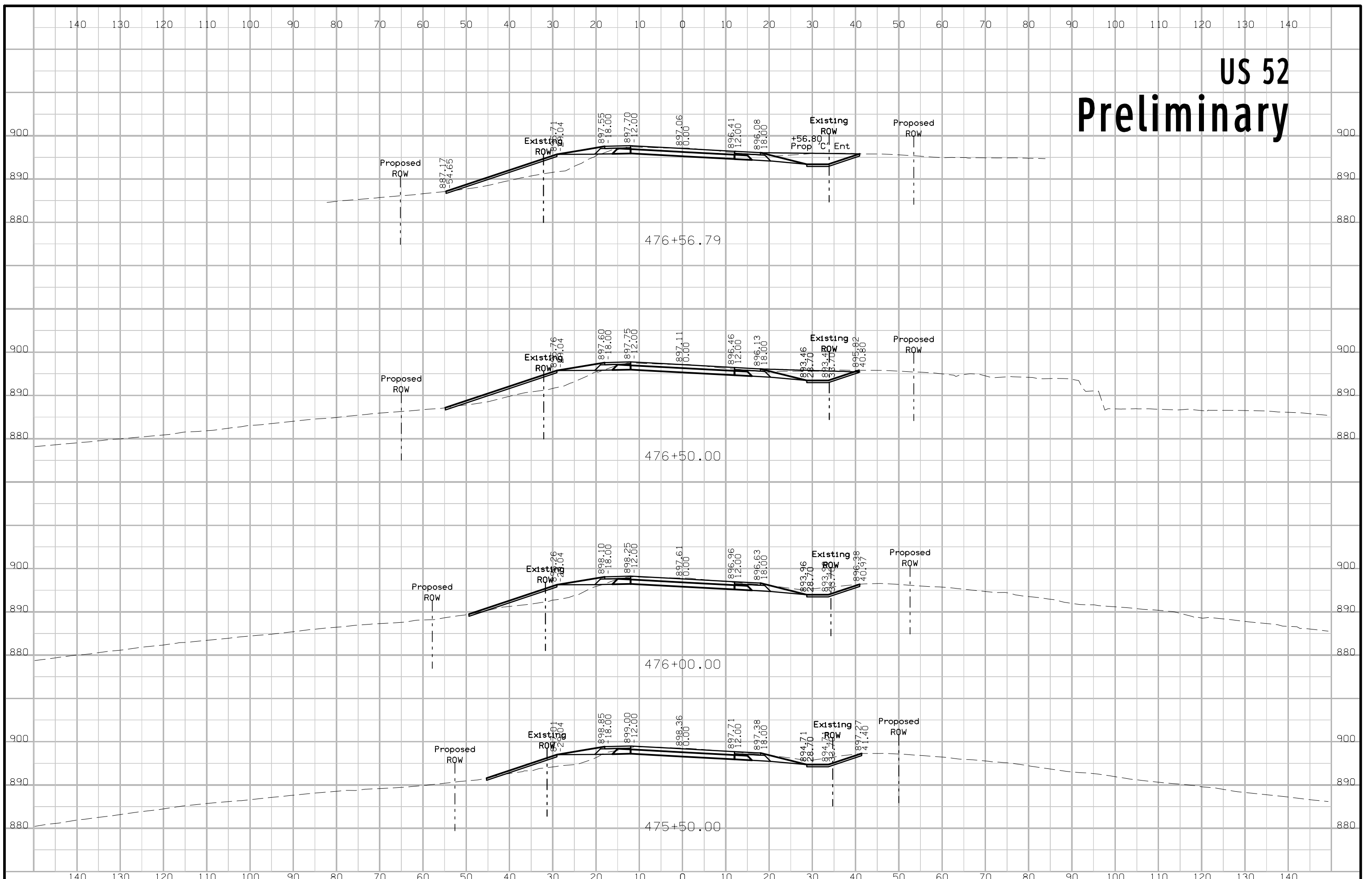




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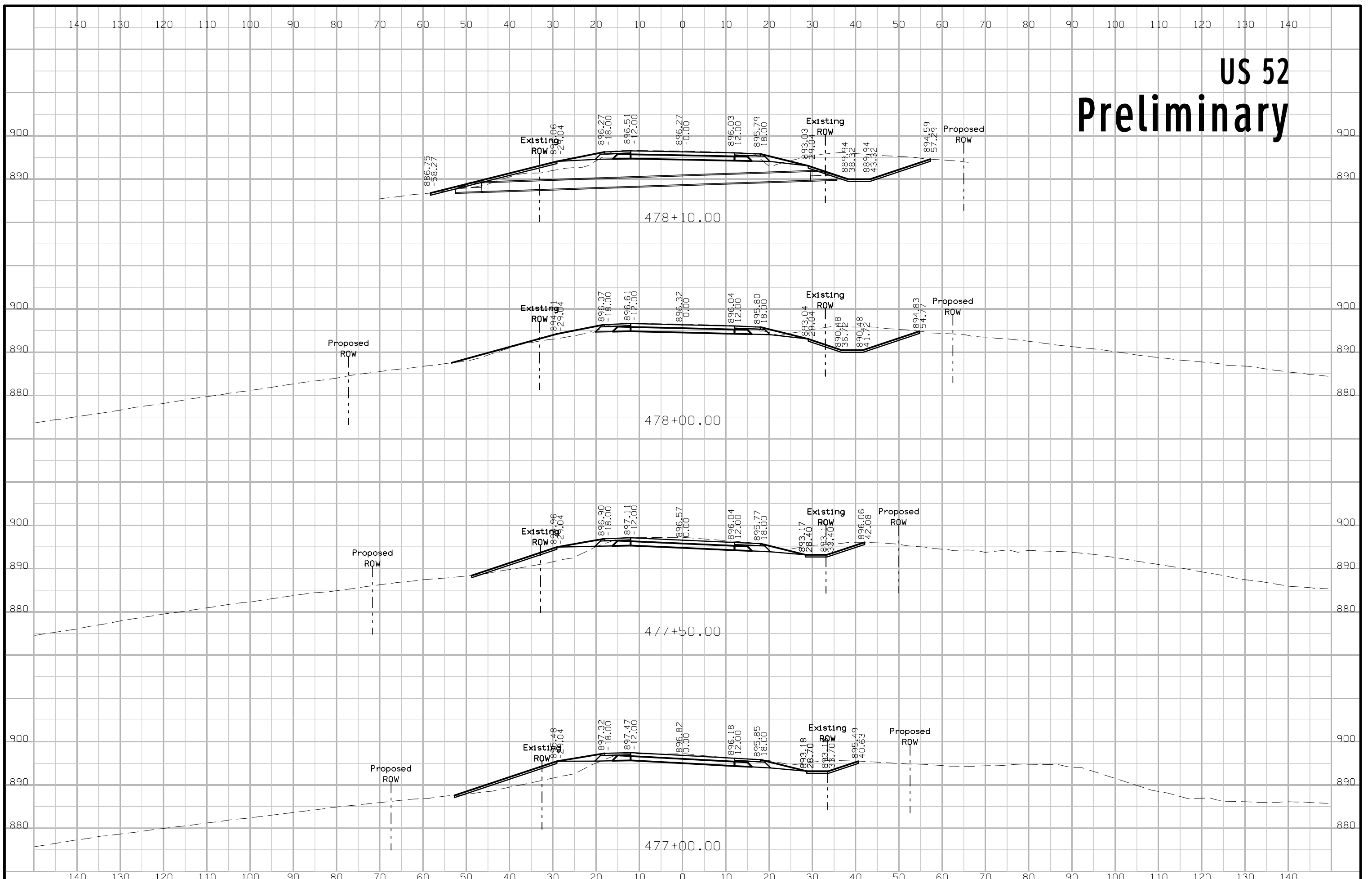


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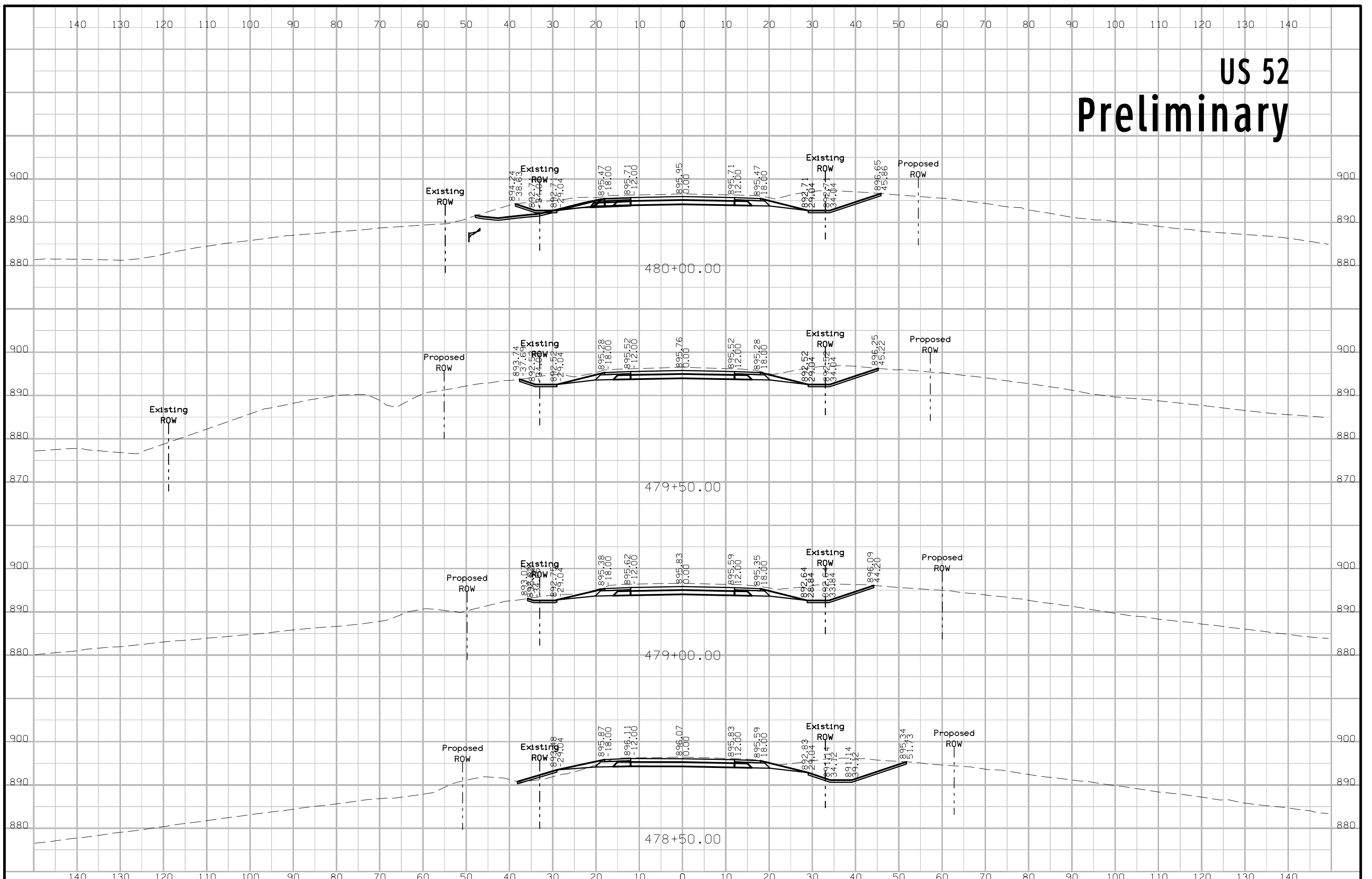




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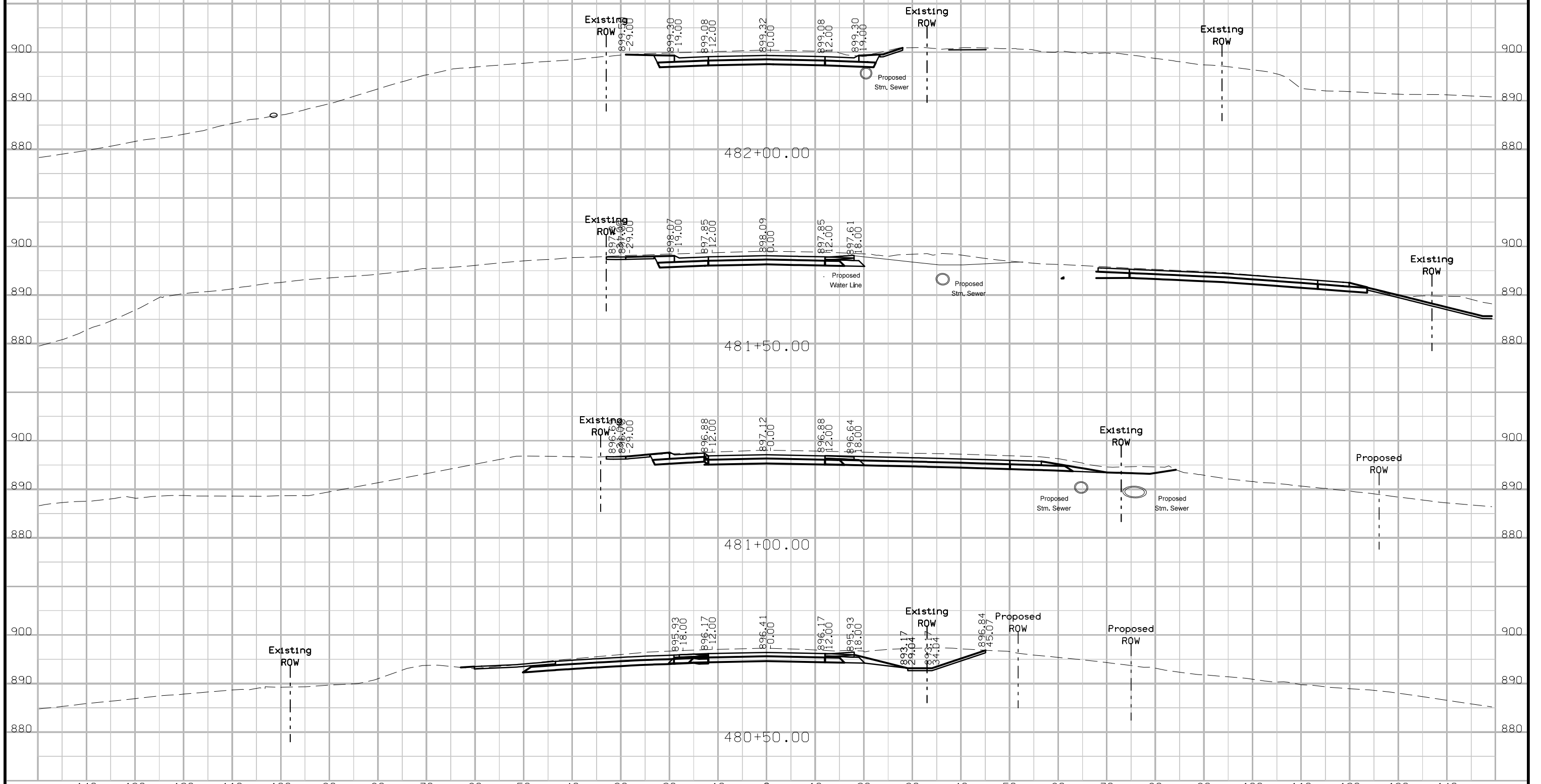
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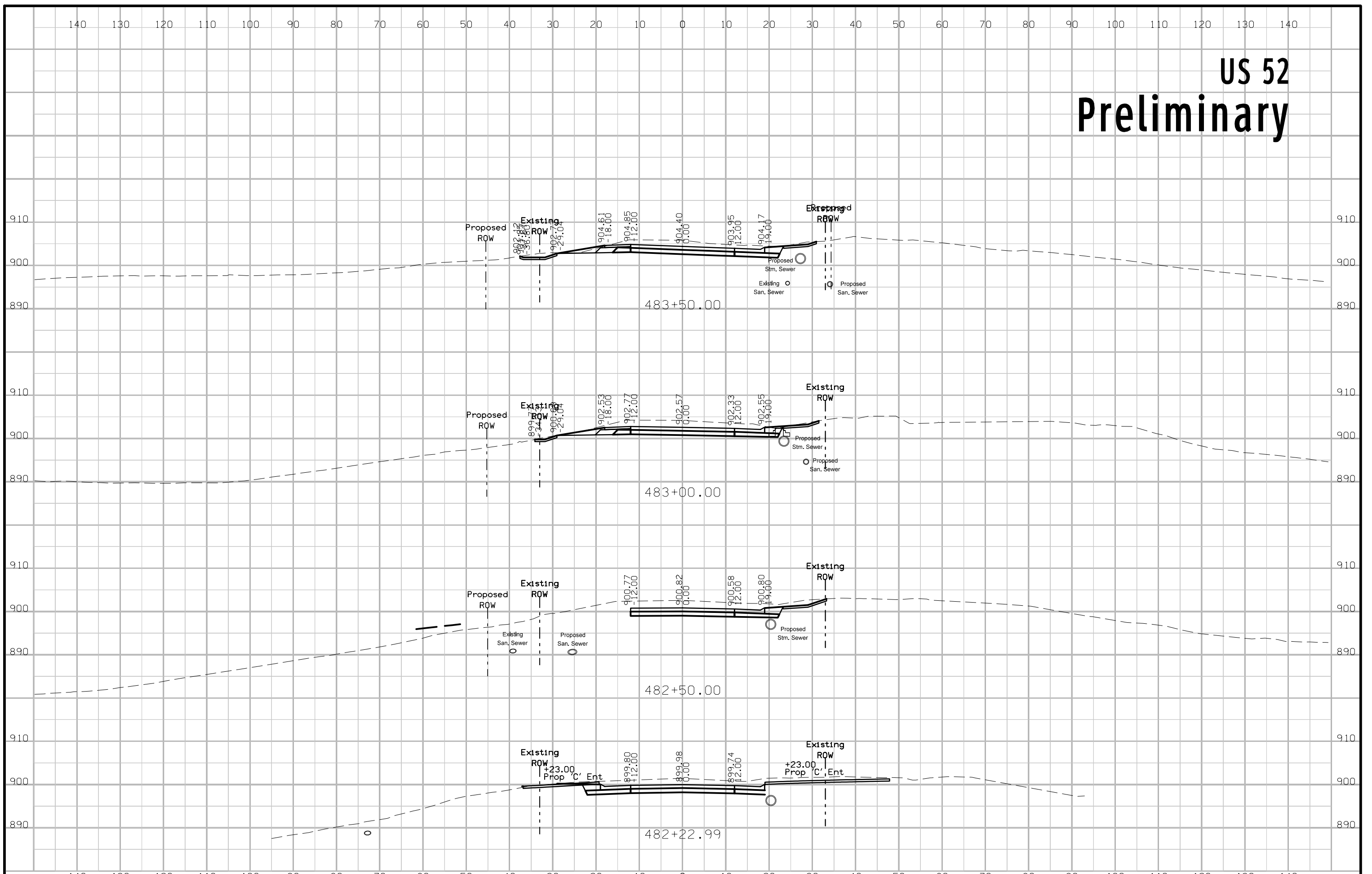


# US 52 Preliminary

Proposed Sanitary Sewer Force Mains  
not shown on Cross Sections.

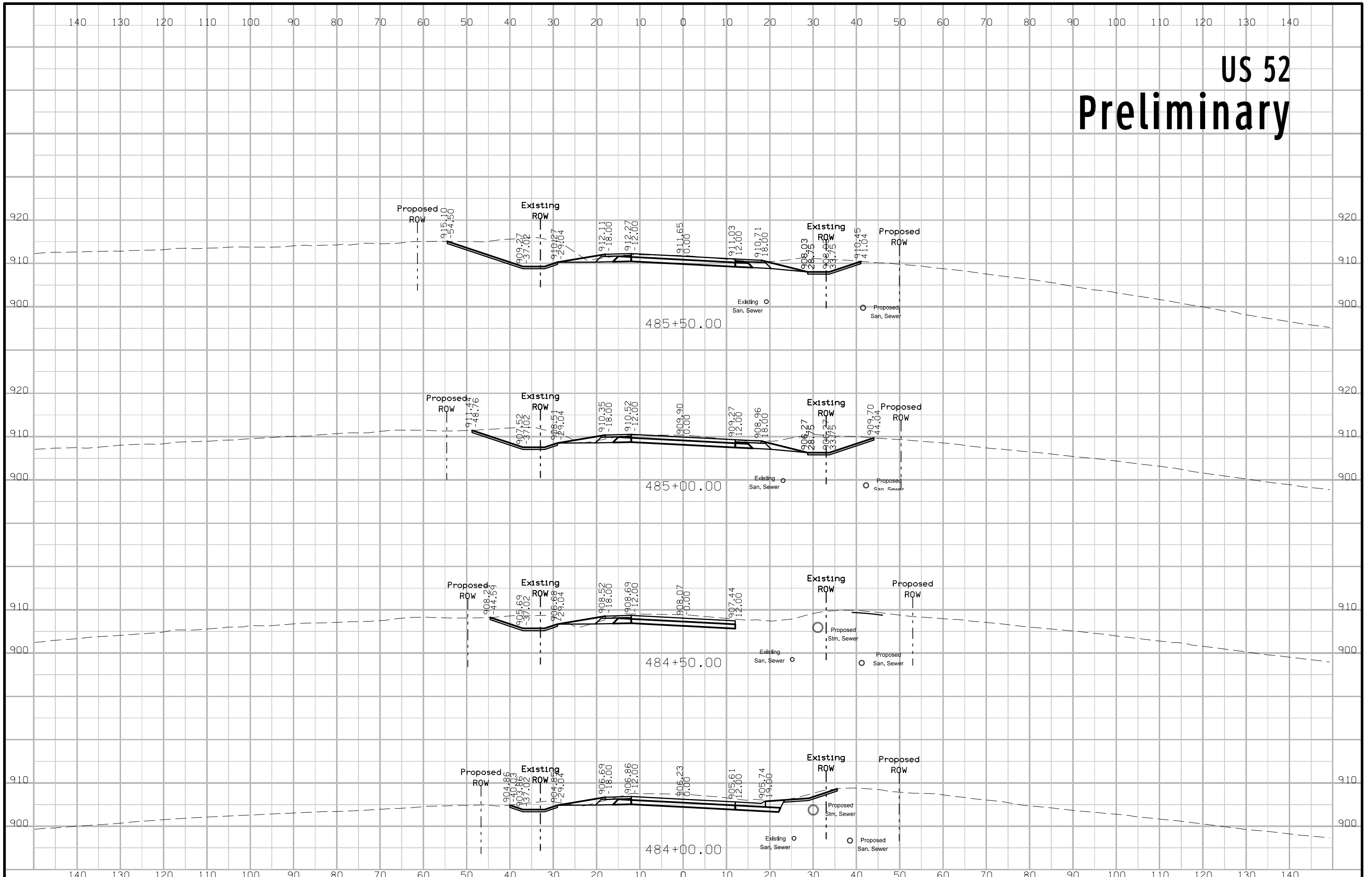


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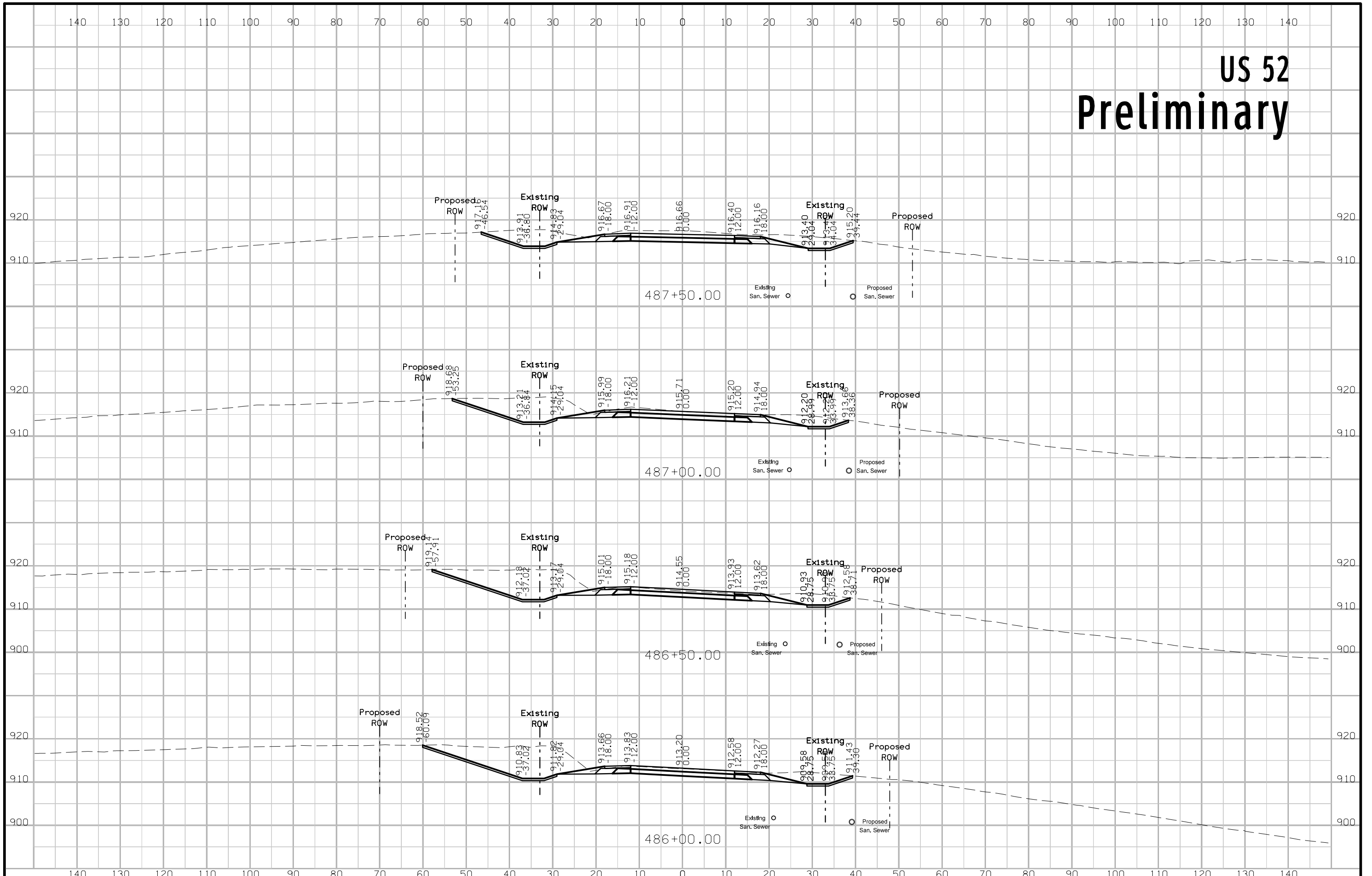




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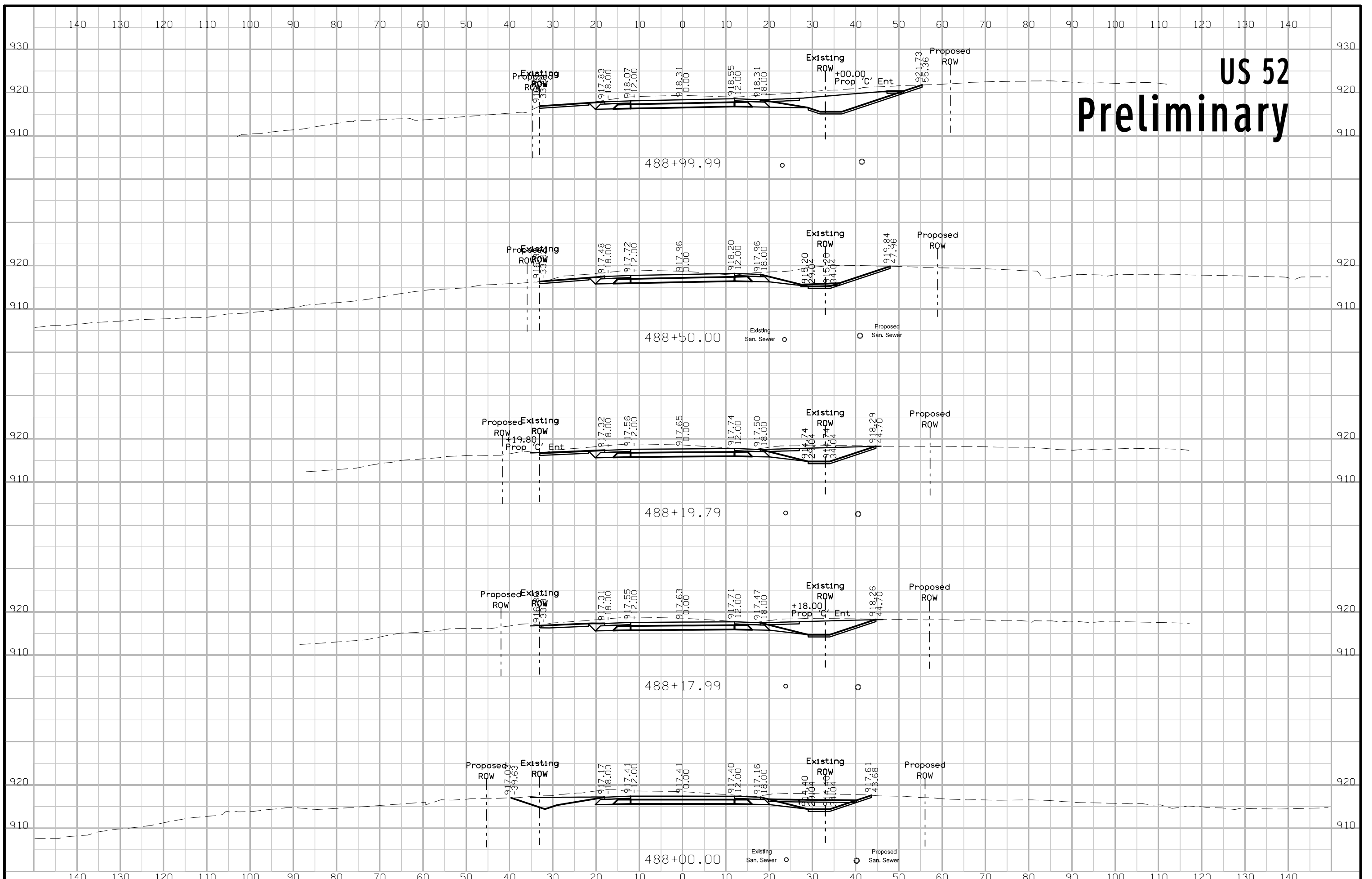


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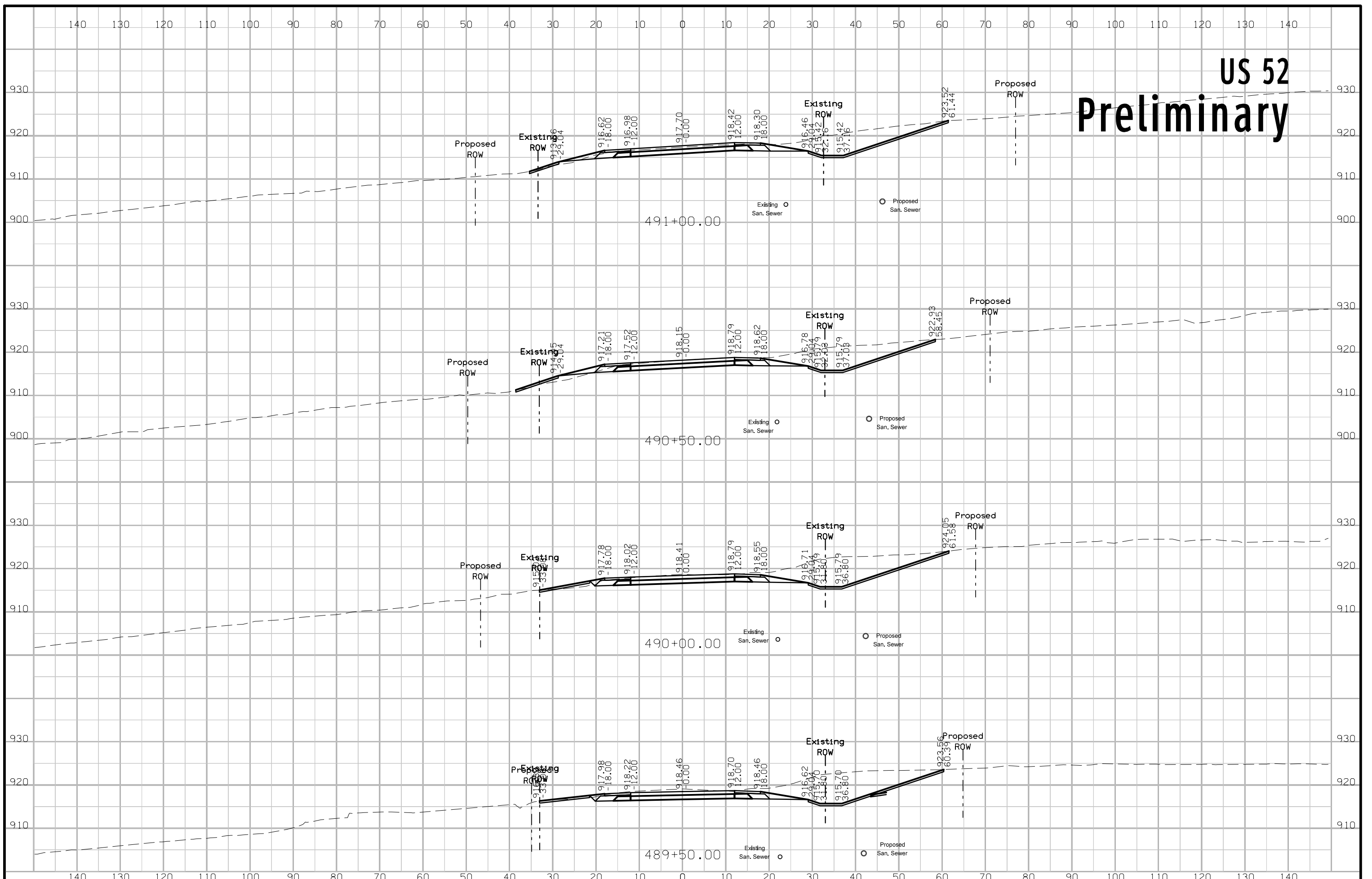




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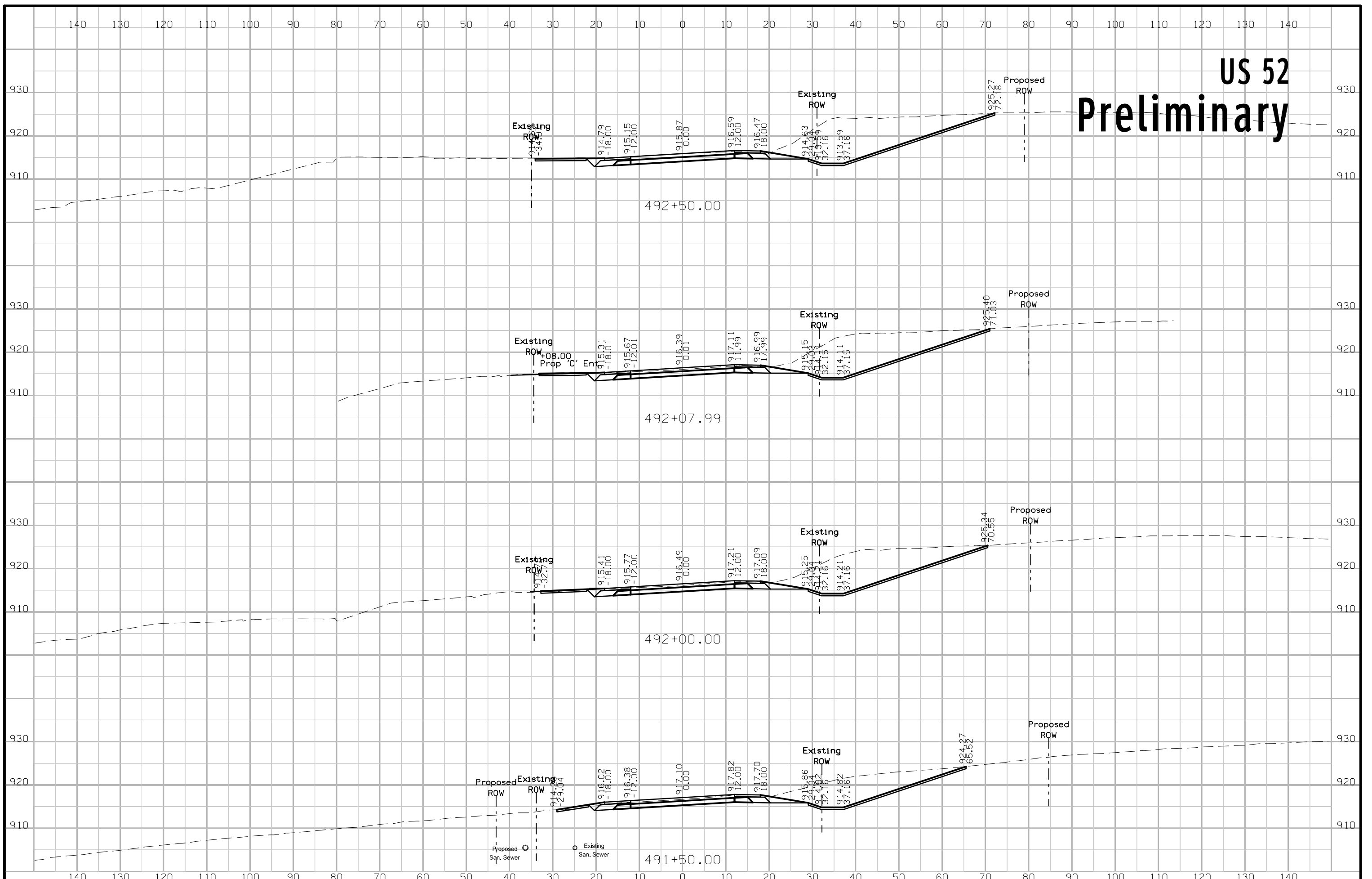


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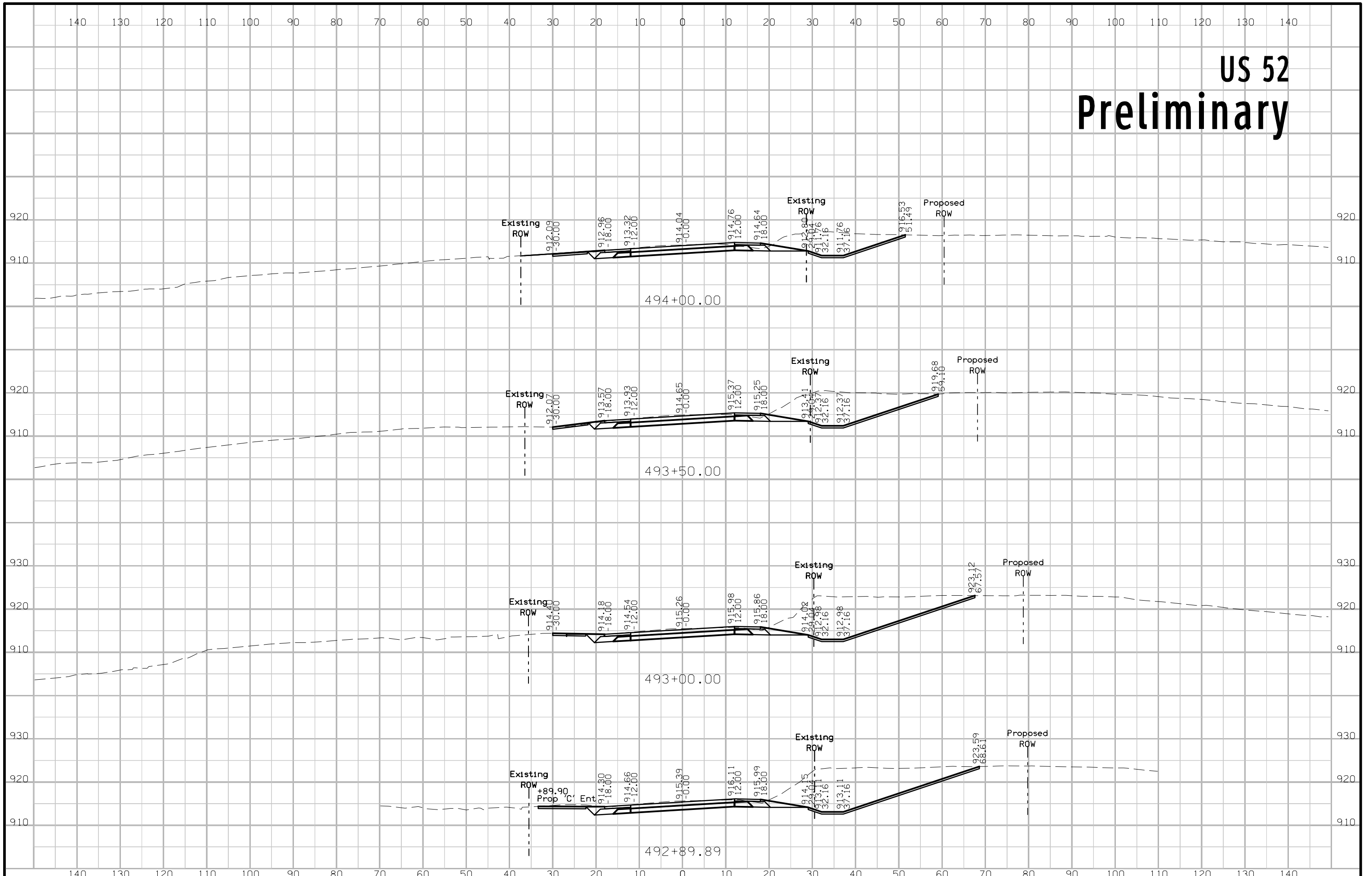




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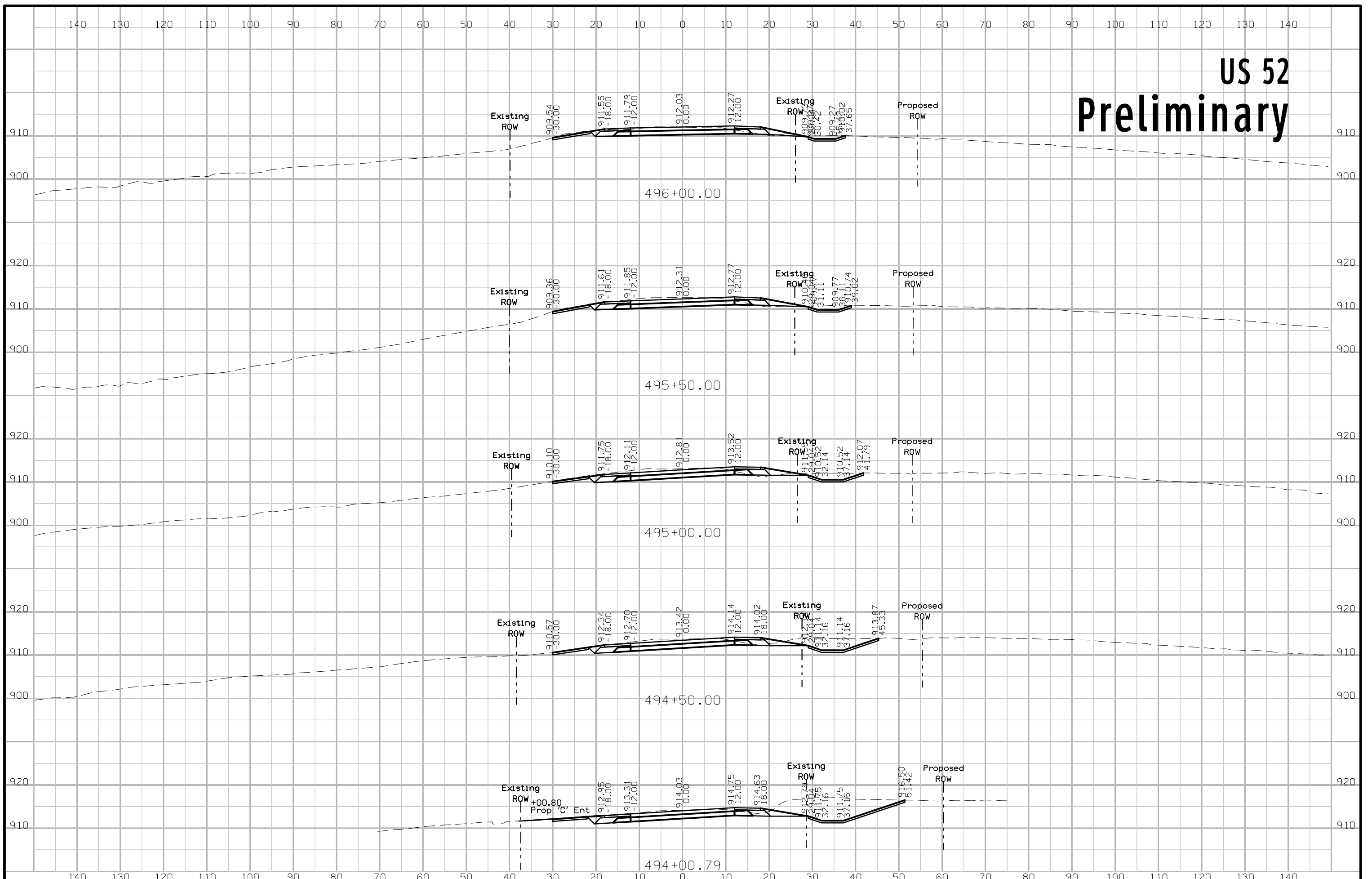


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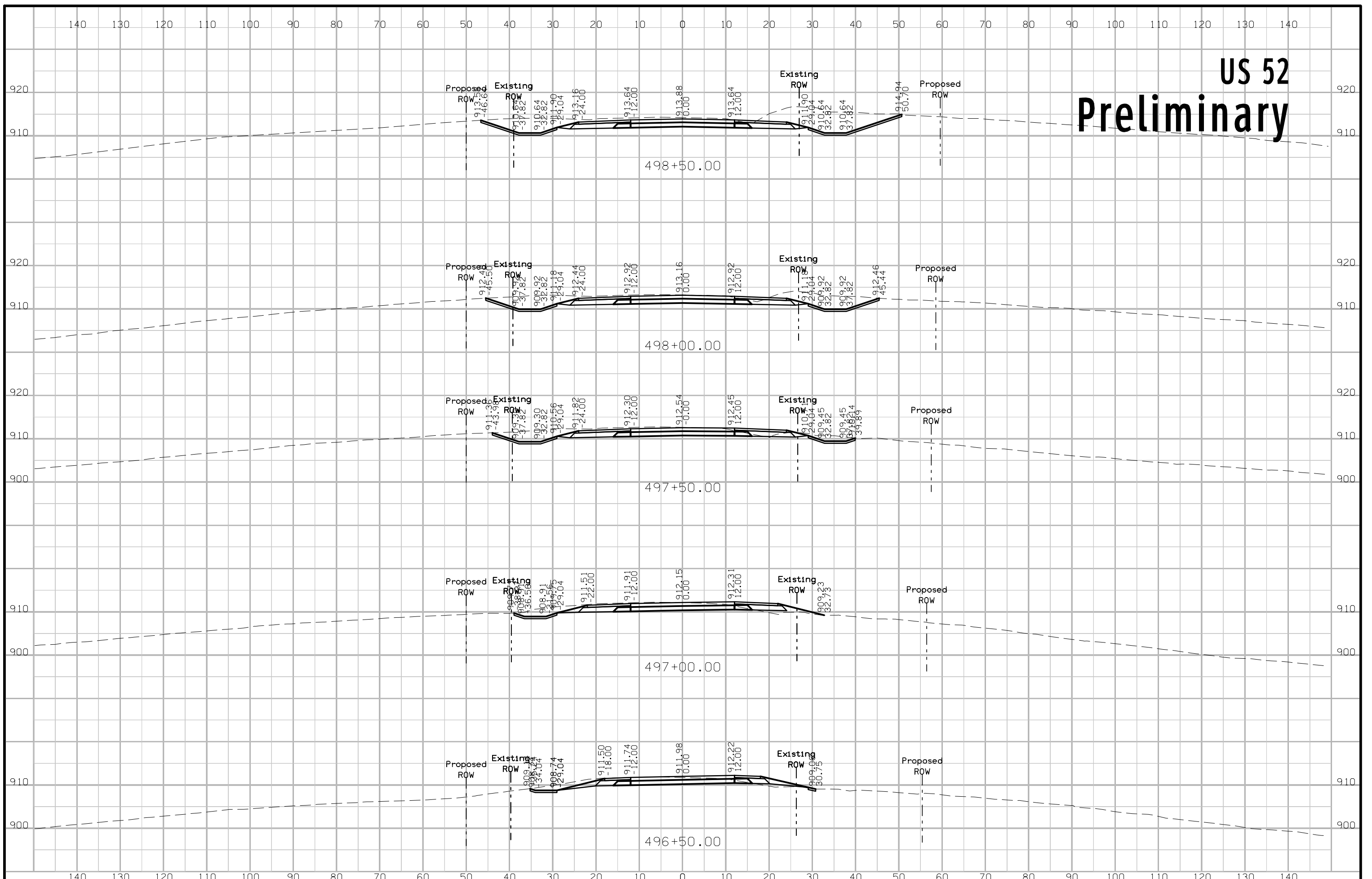




# US 52 Preliminary

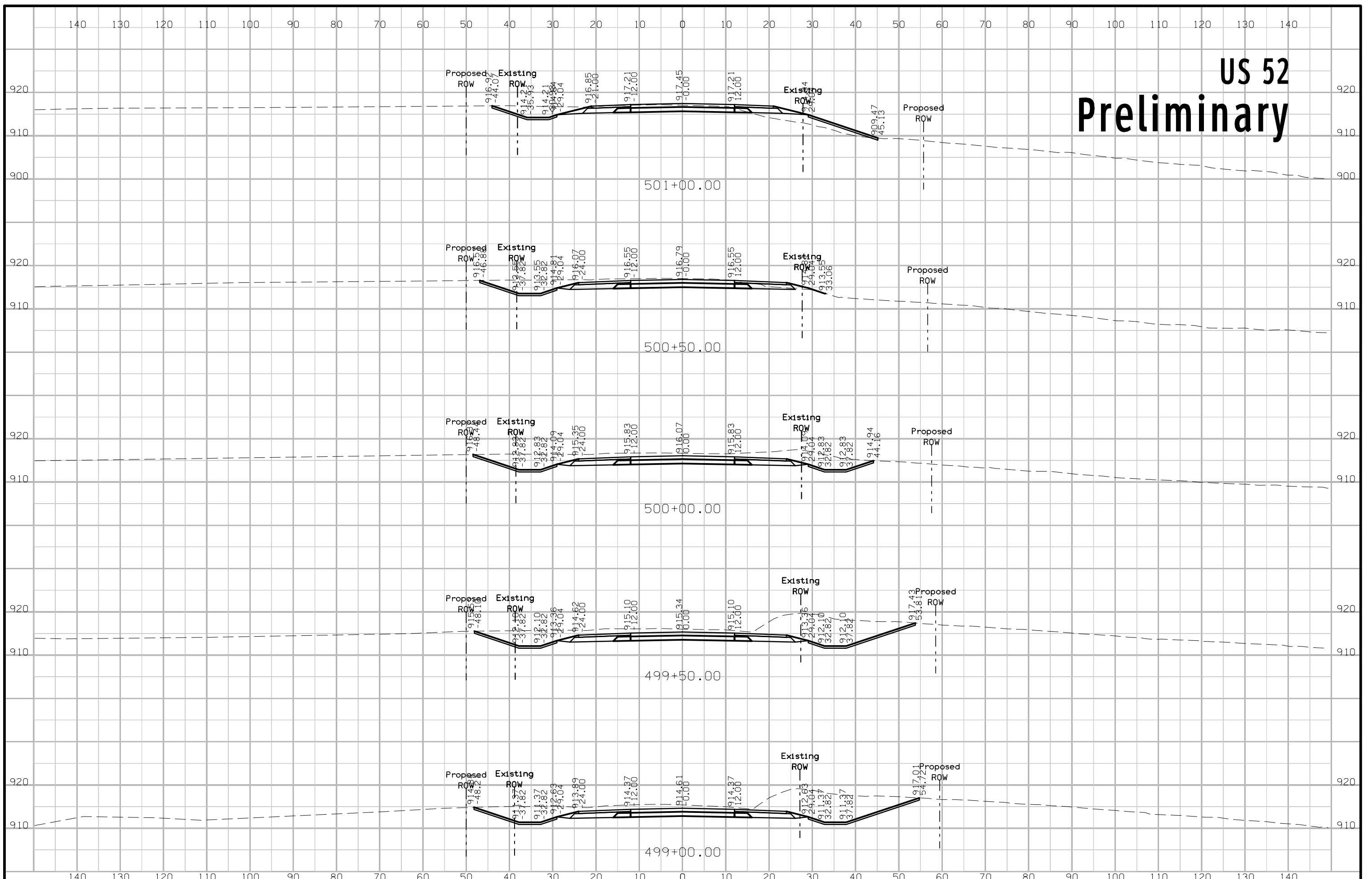


# US 52 Preliminary

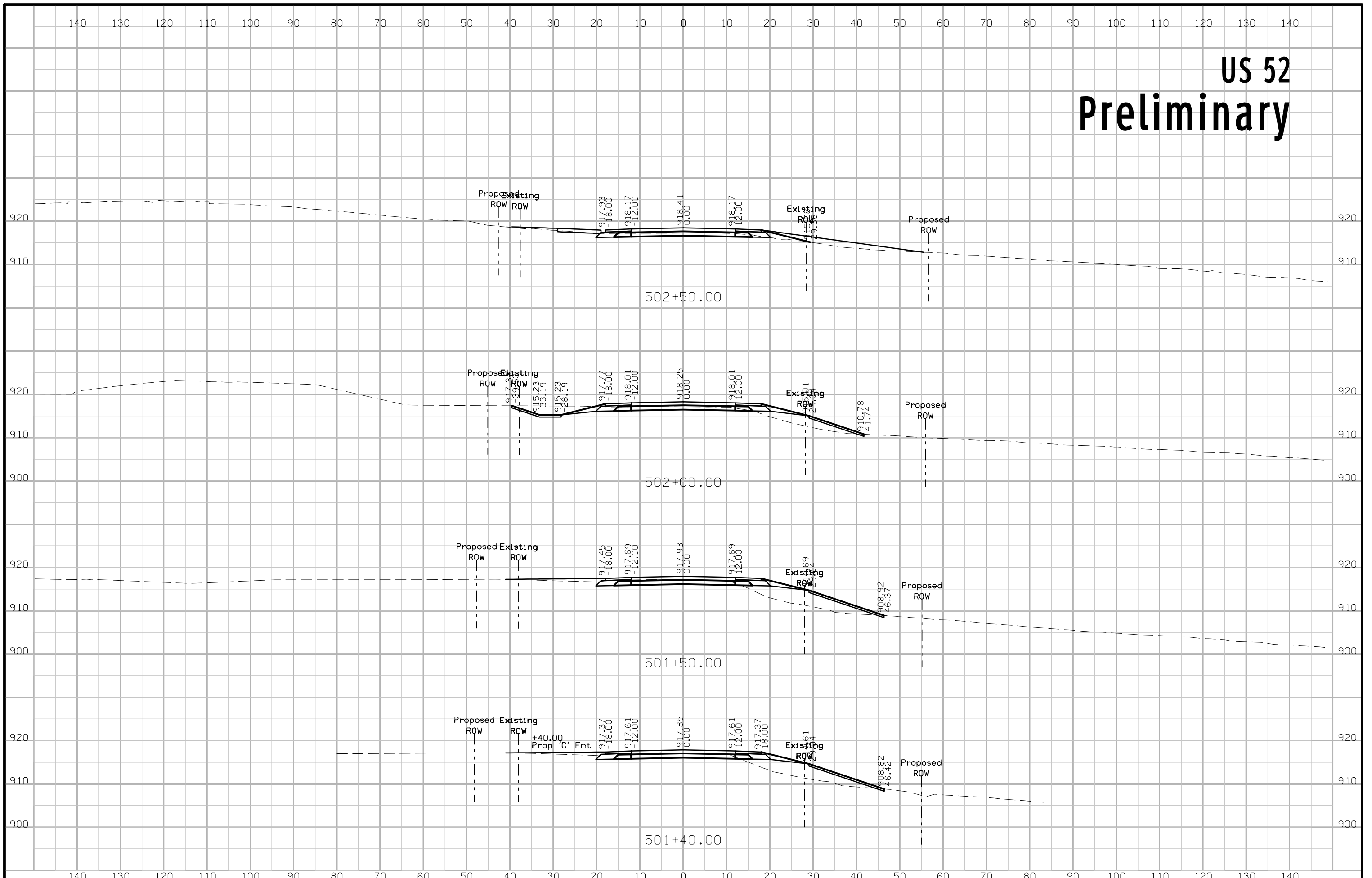




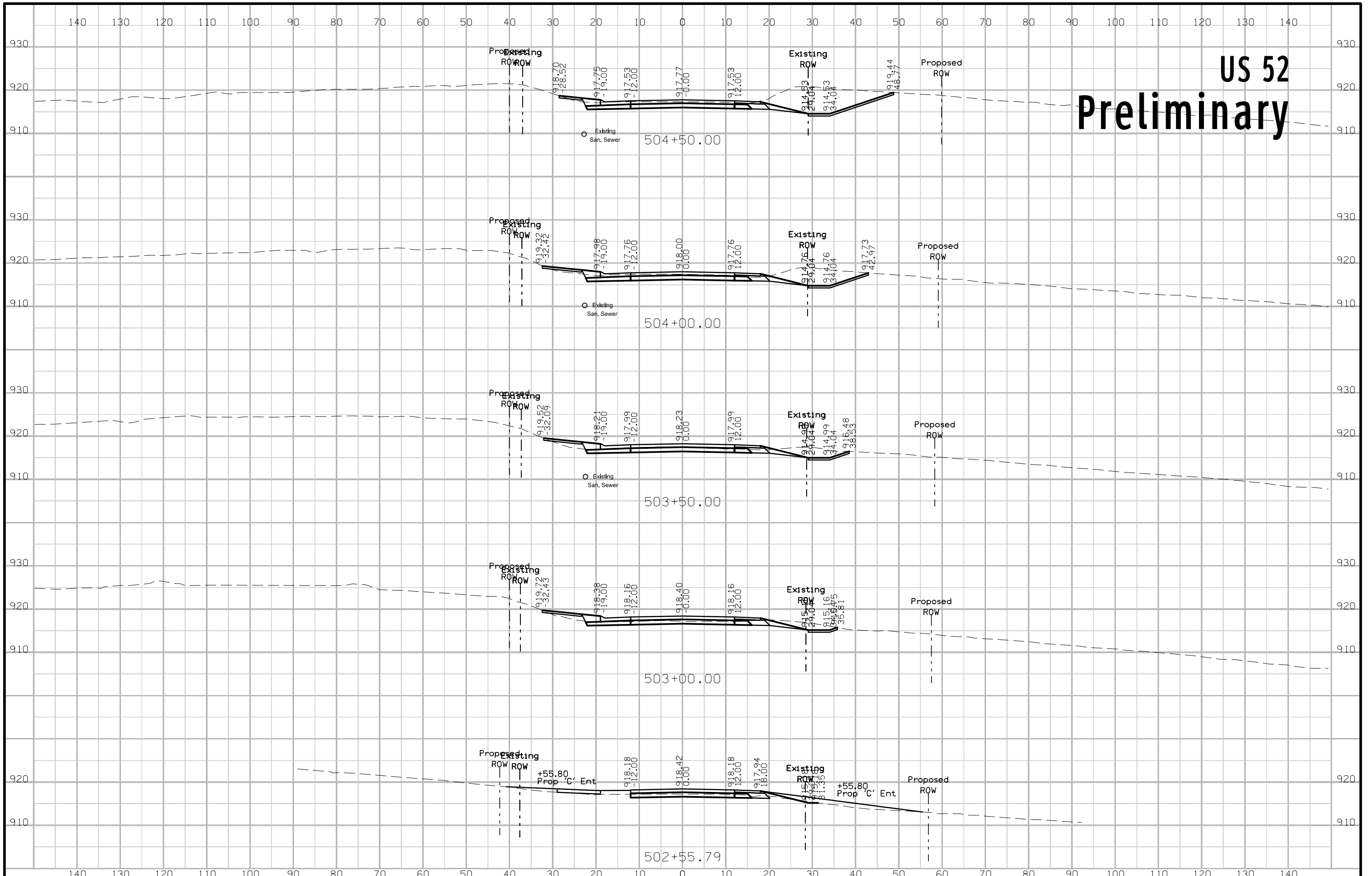
# US 52 Preliminary



# US 52 Preliminary

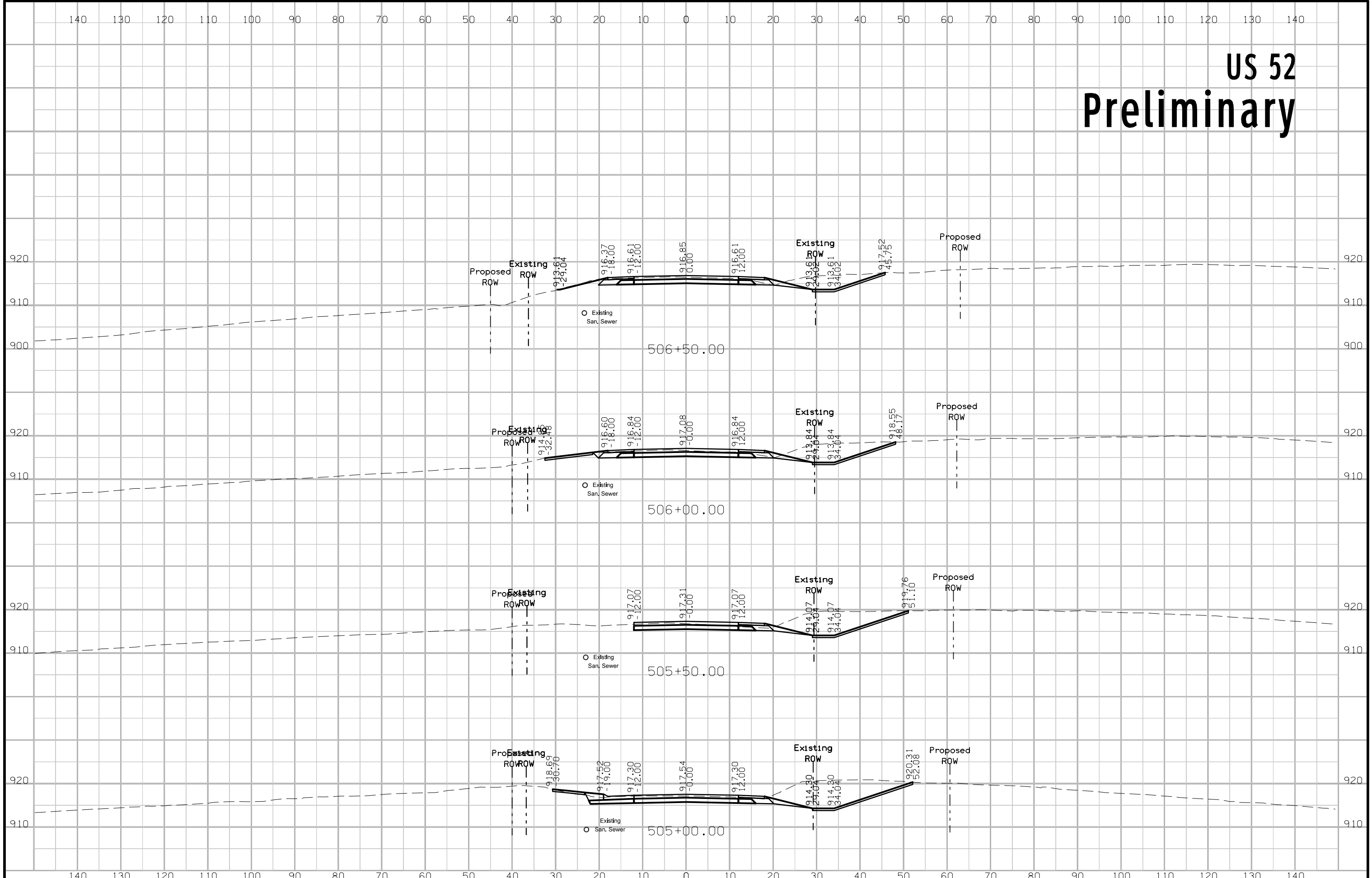


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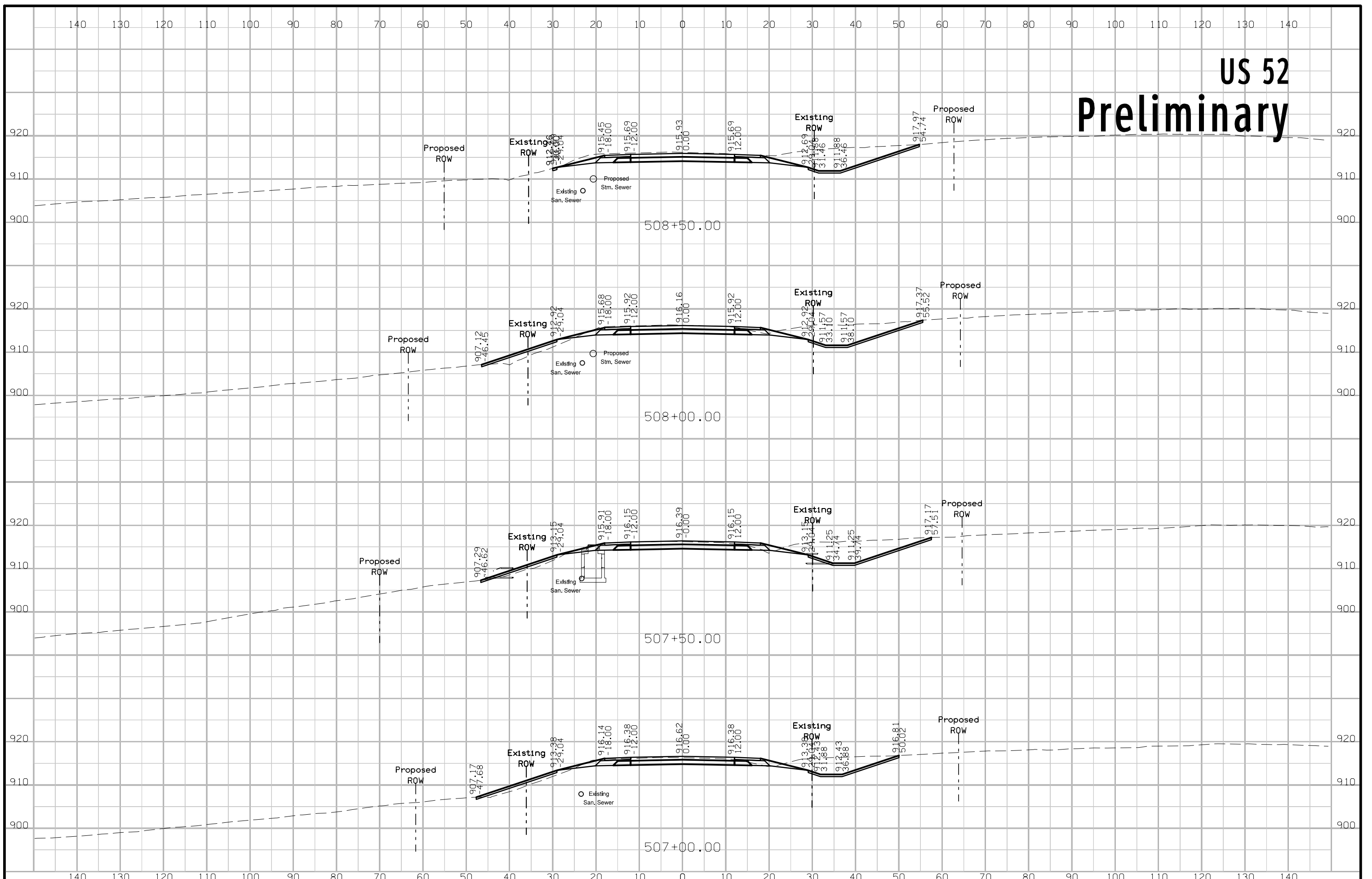




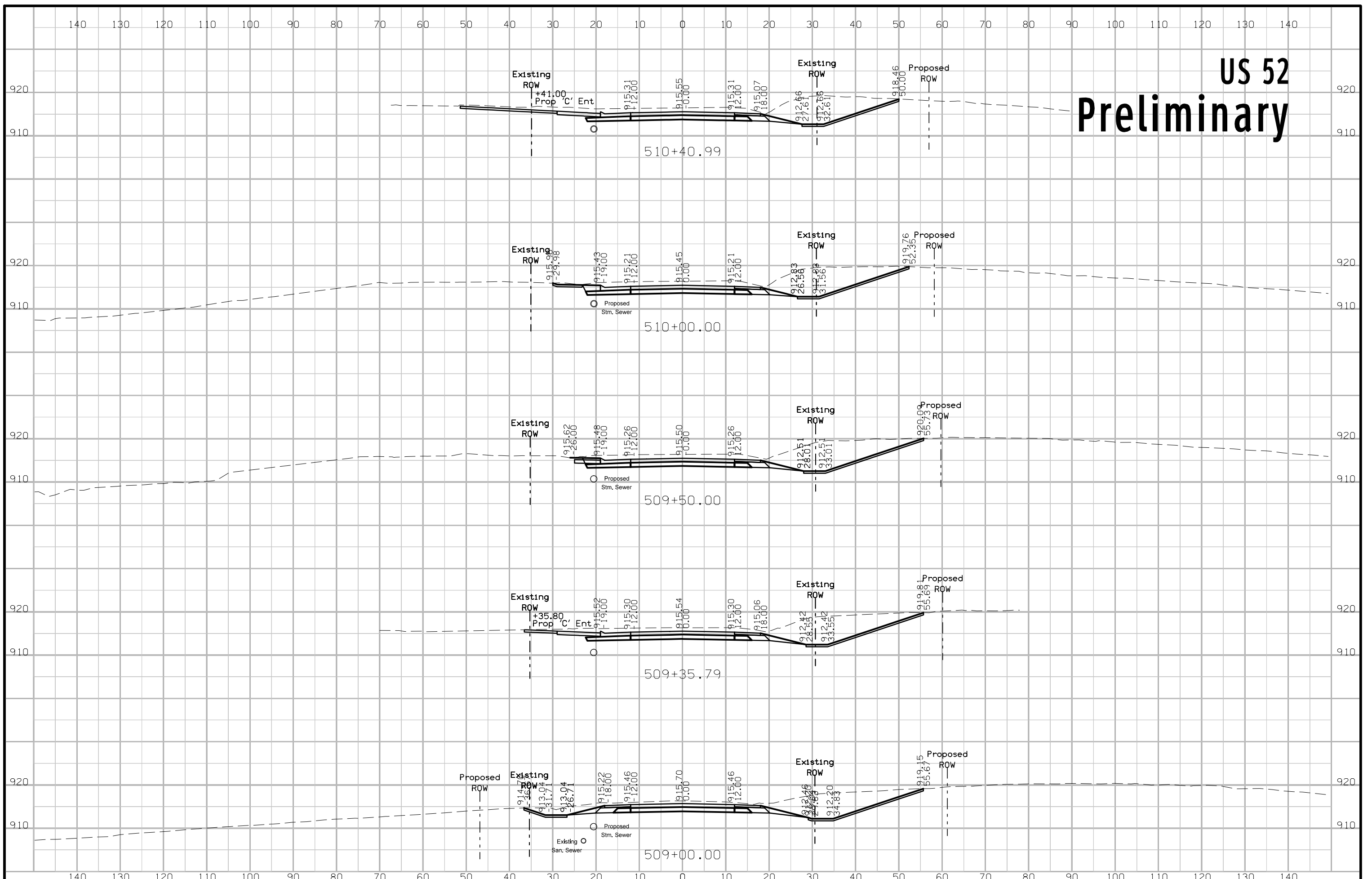
# US 52 Preliminary



# US 52 Preliminary

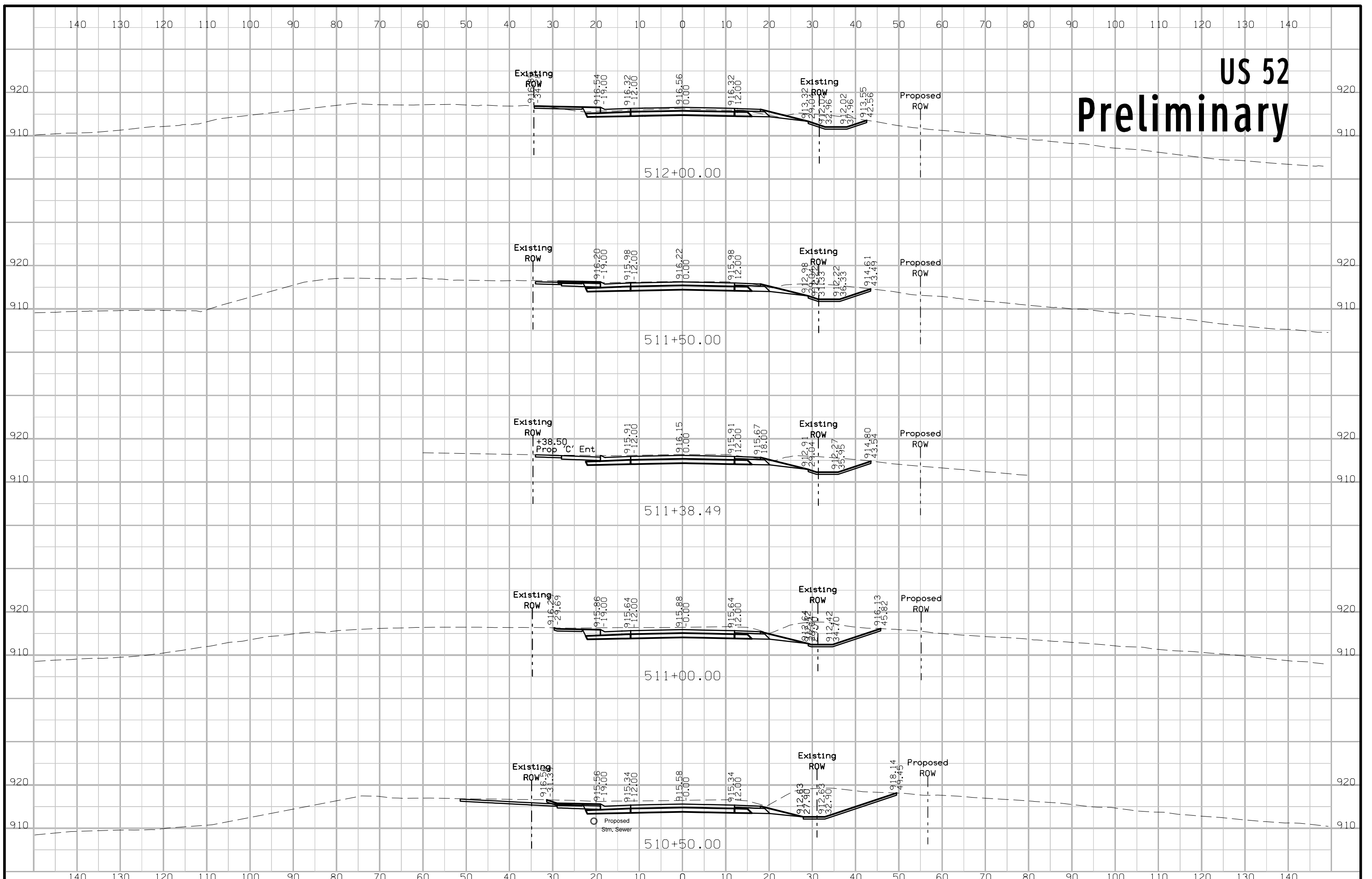


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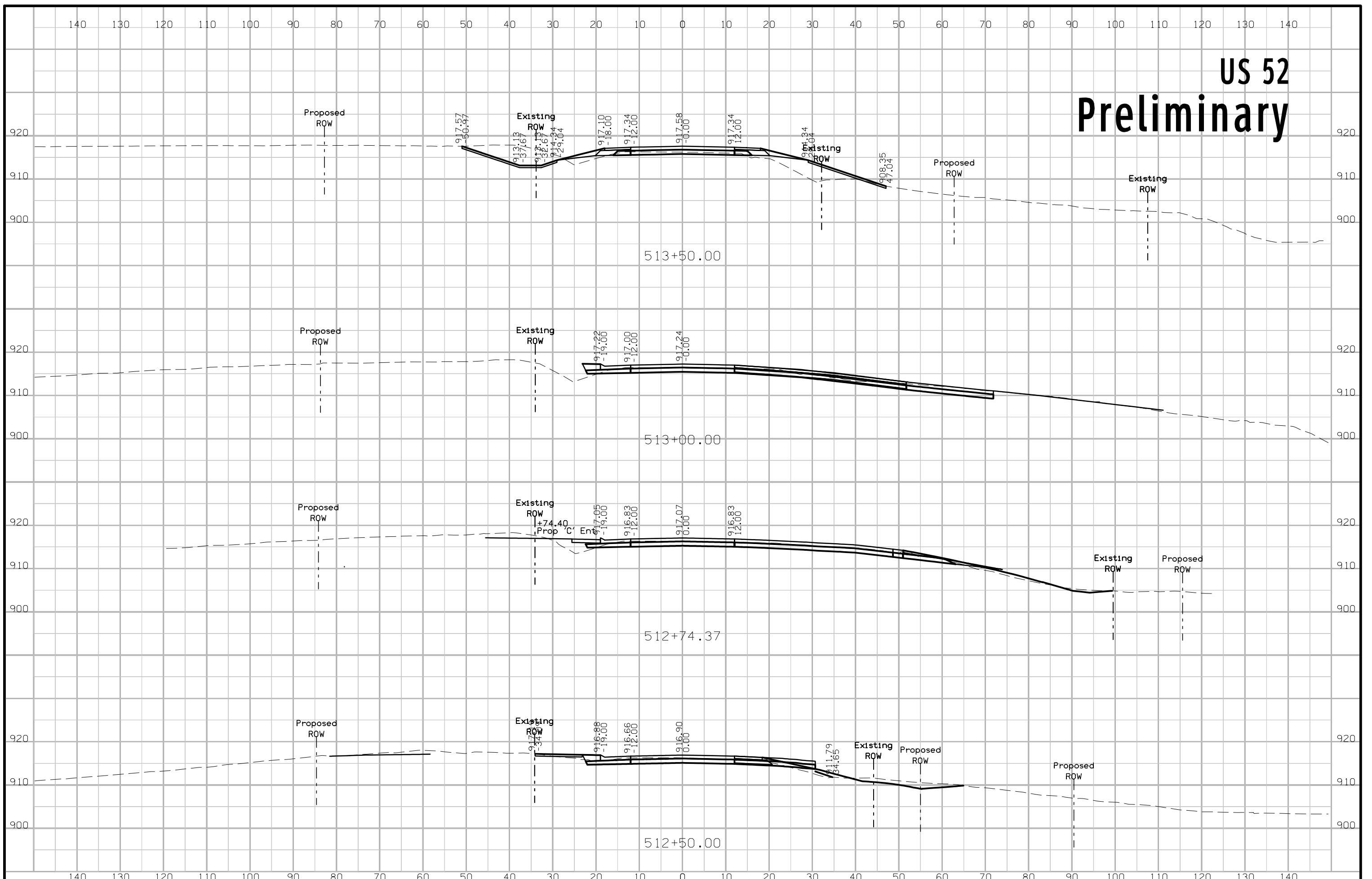




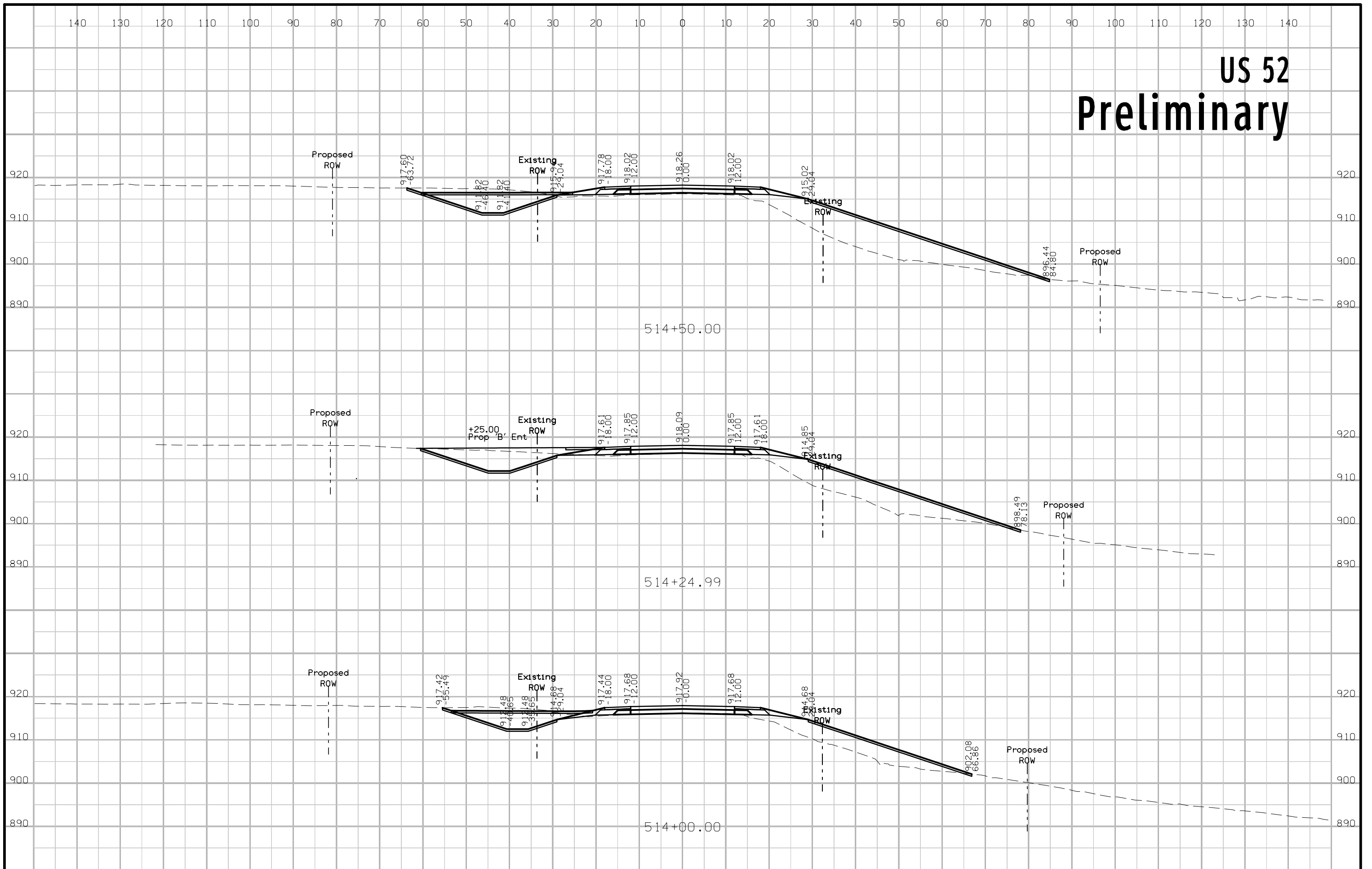
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# US 52 Preliminary

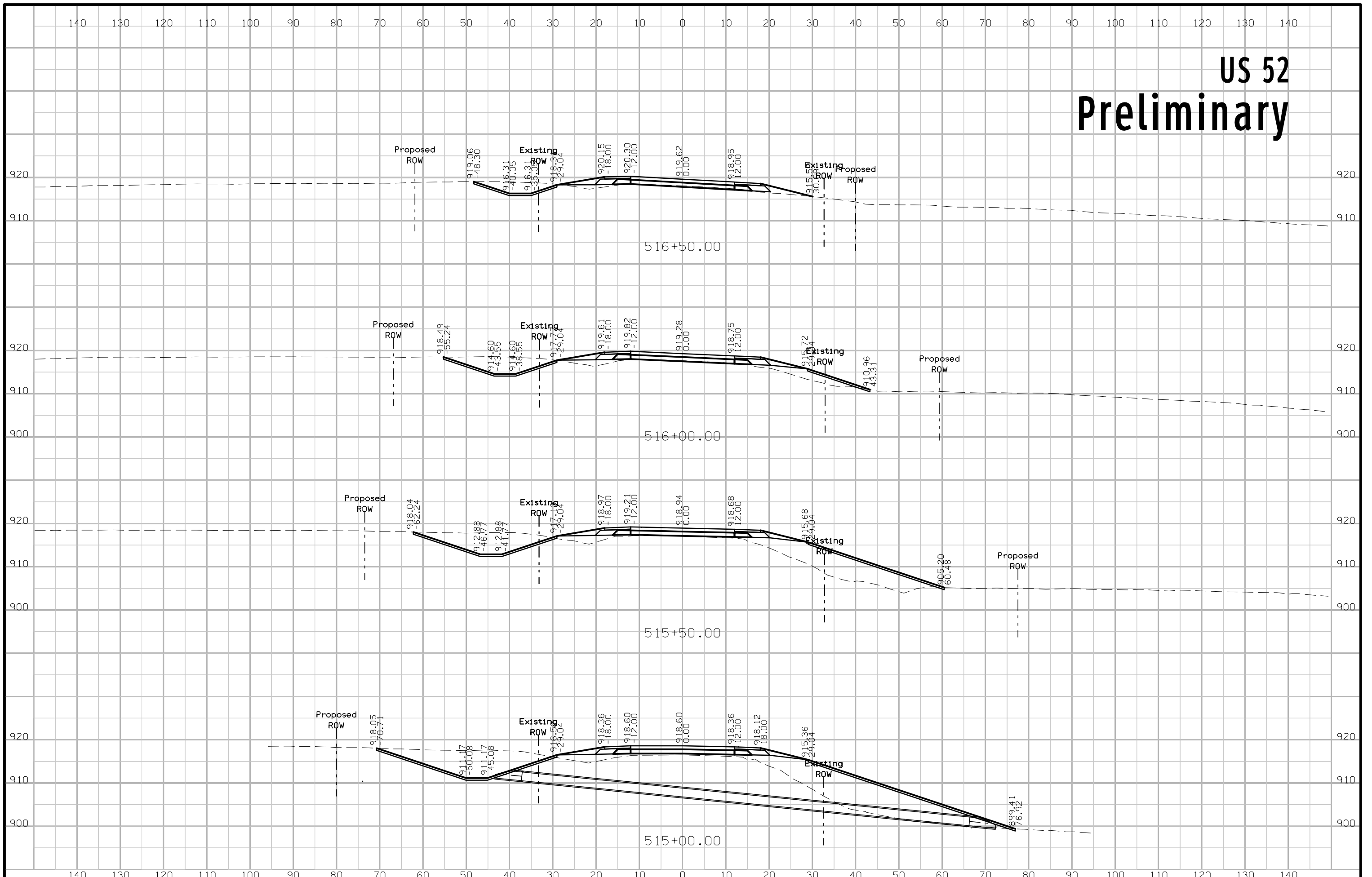


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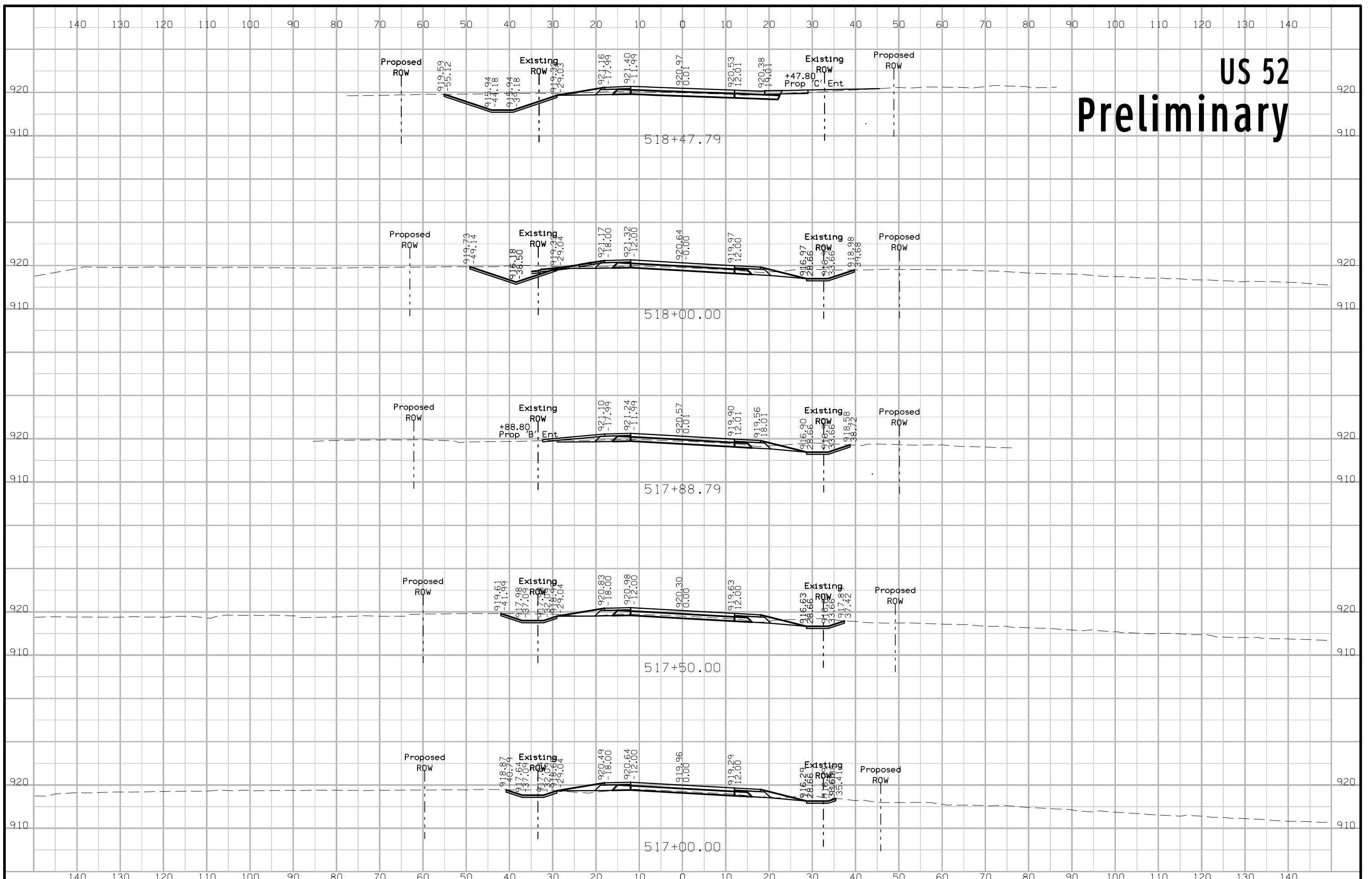




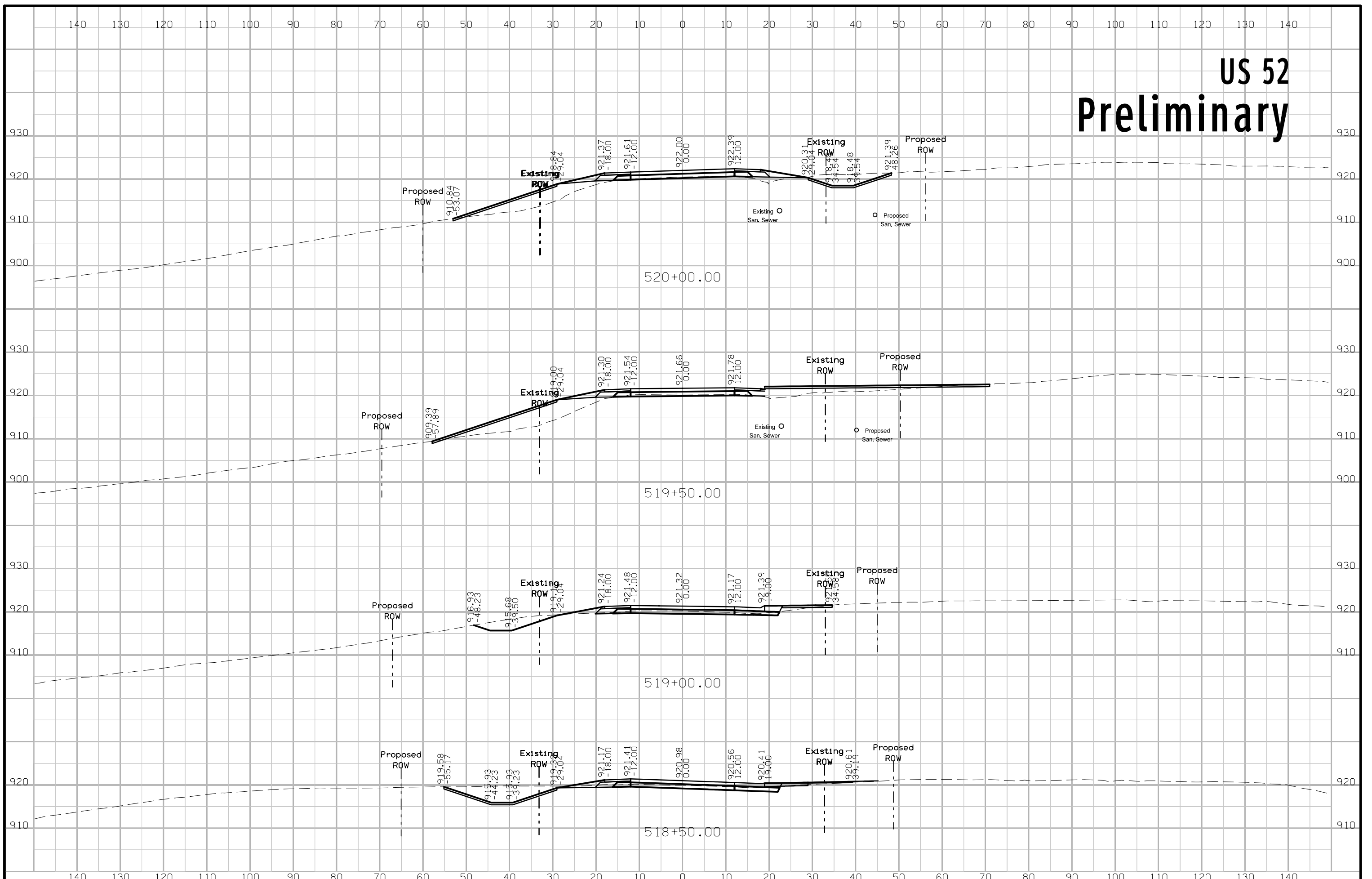
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# US 52 Preliminary

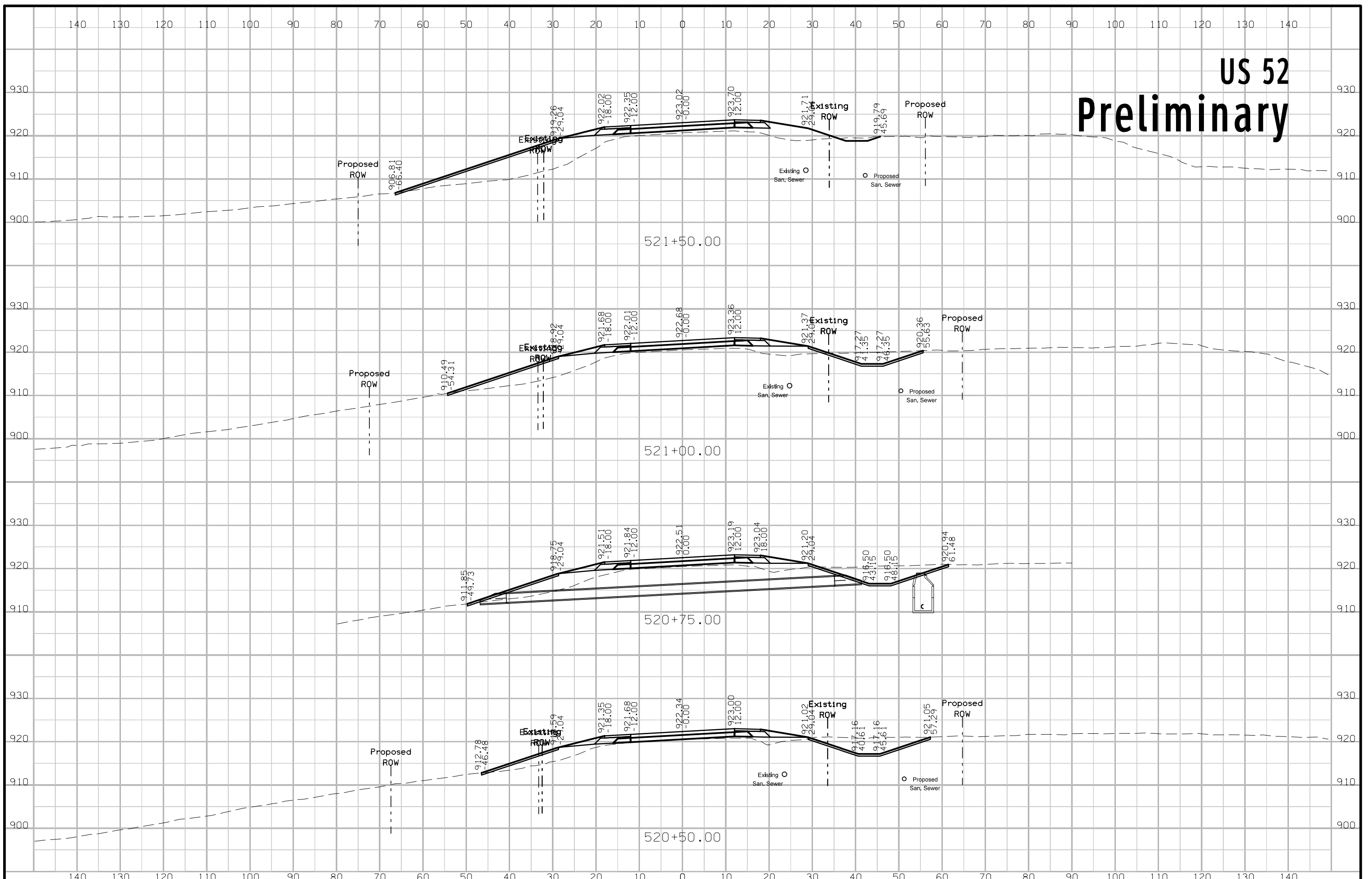


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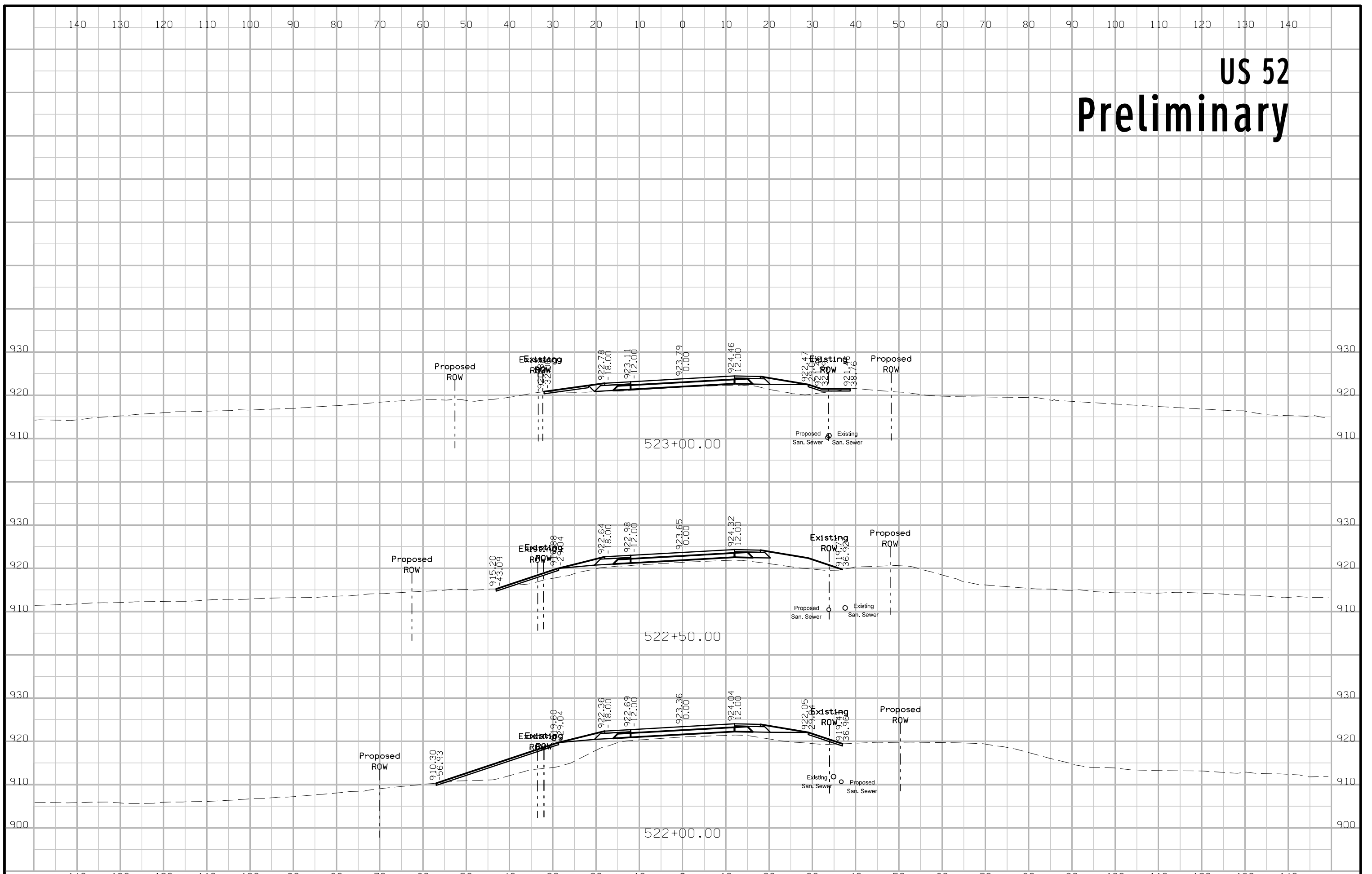




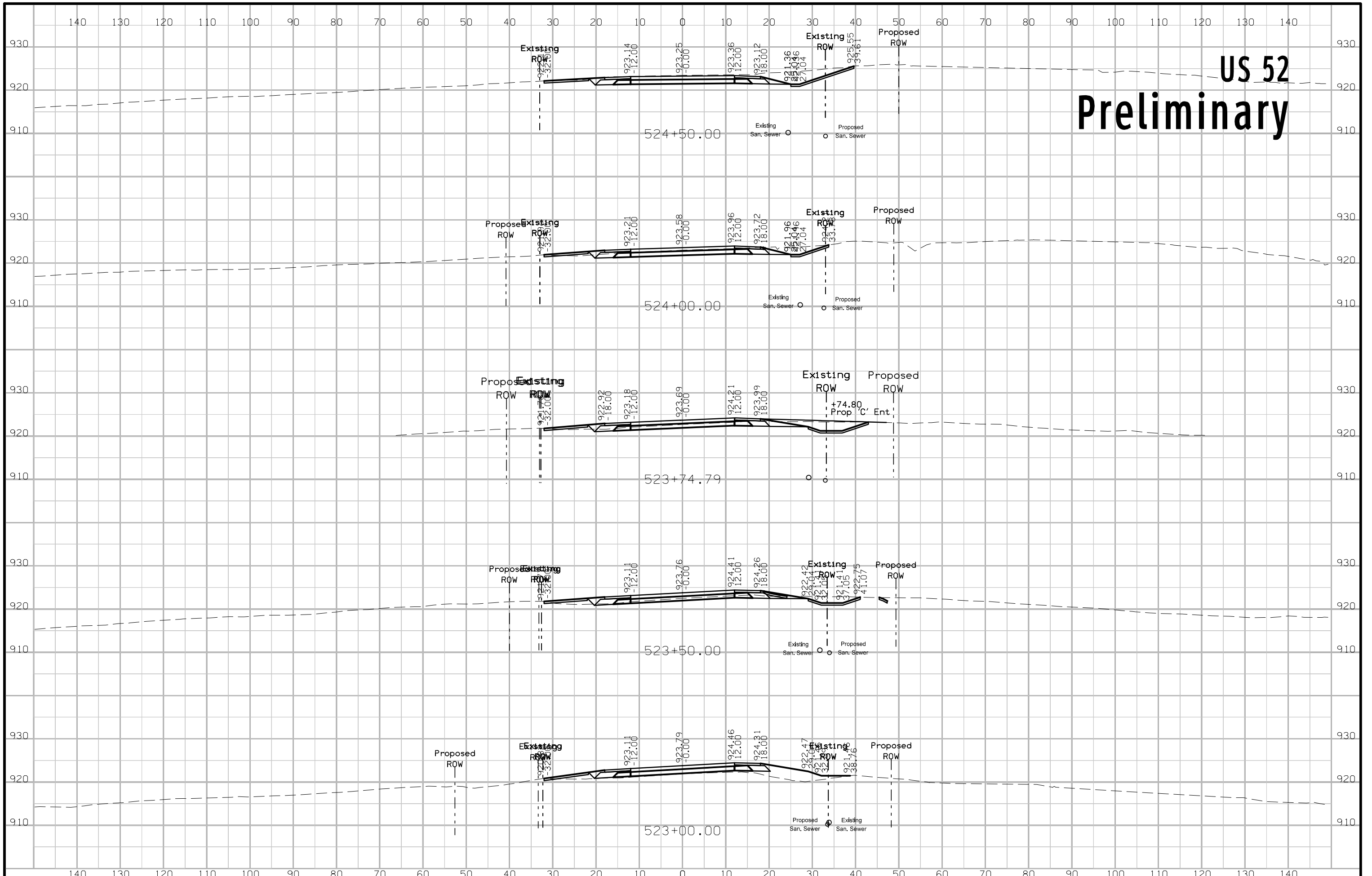
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# US 52 Preliminary

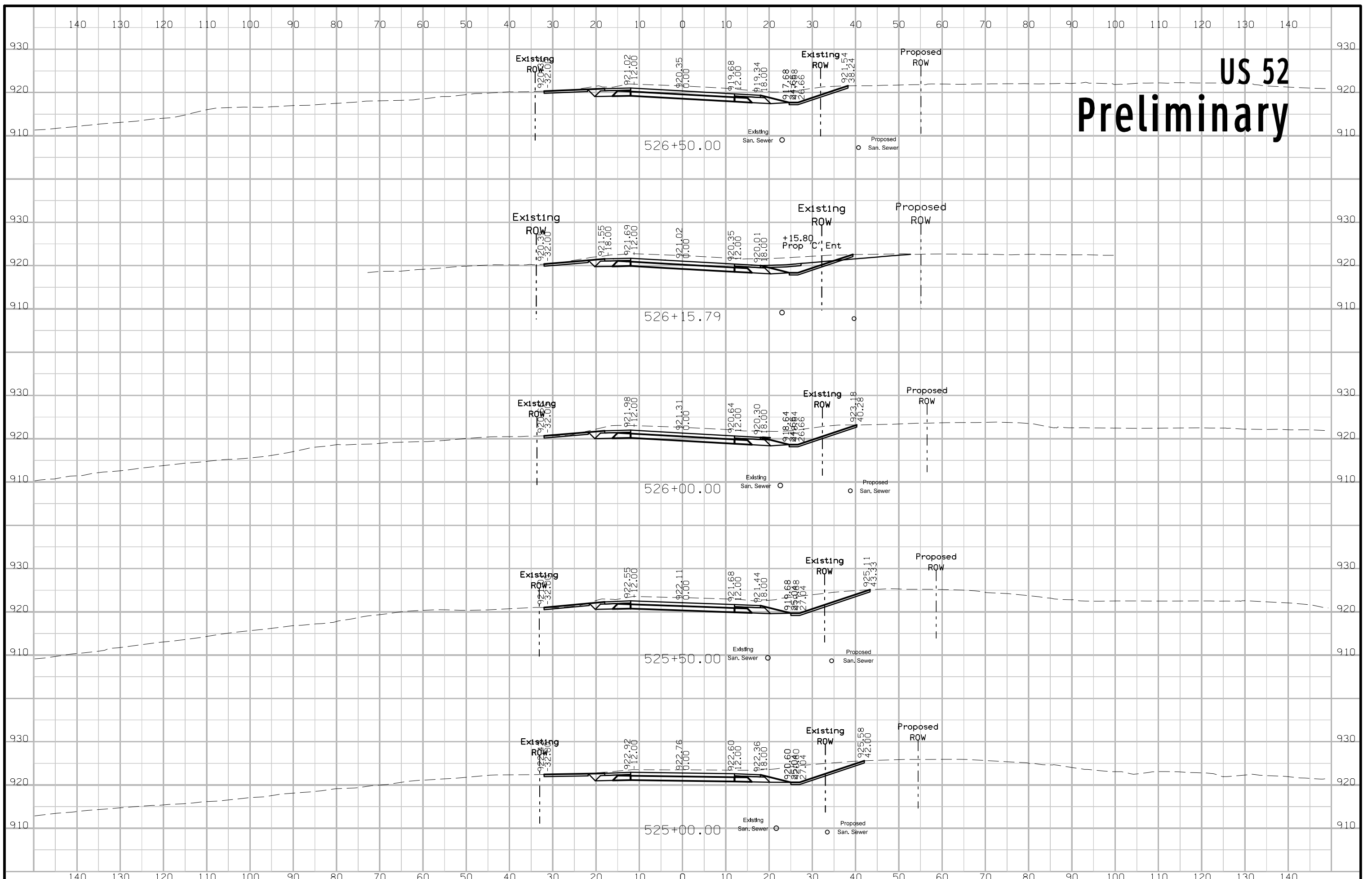


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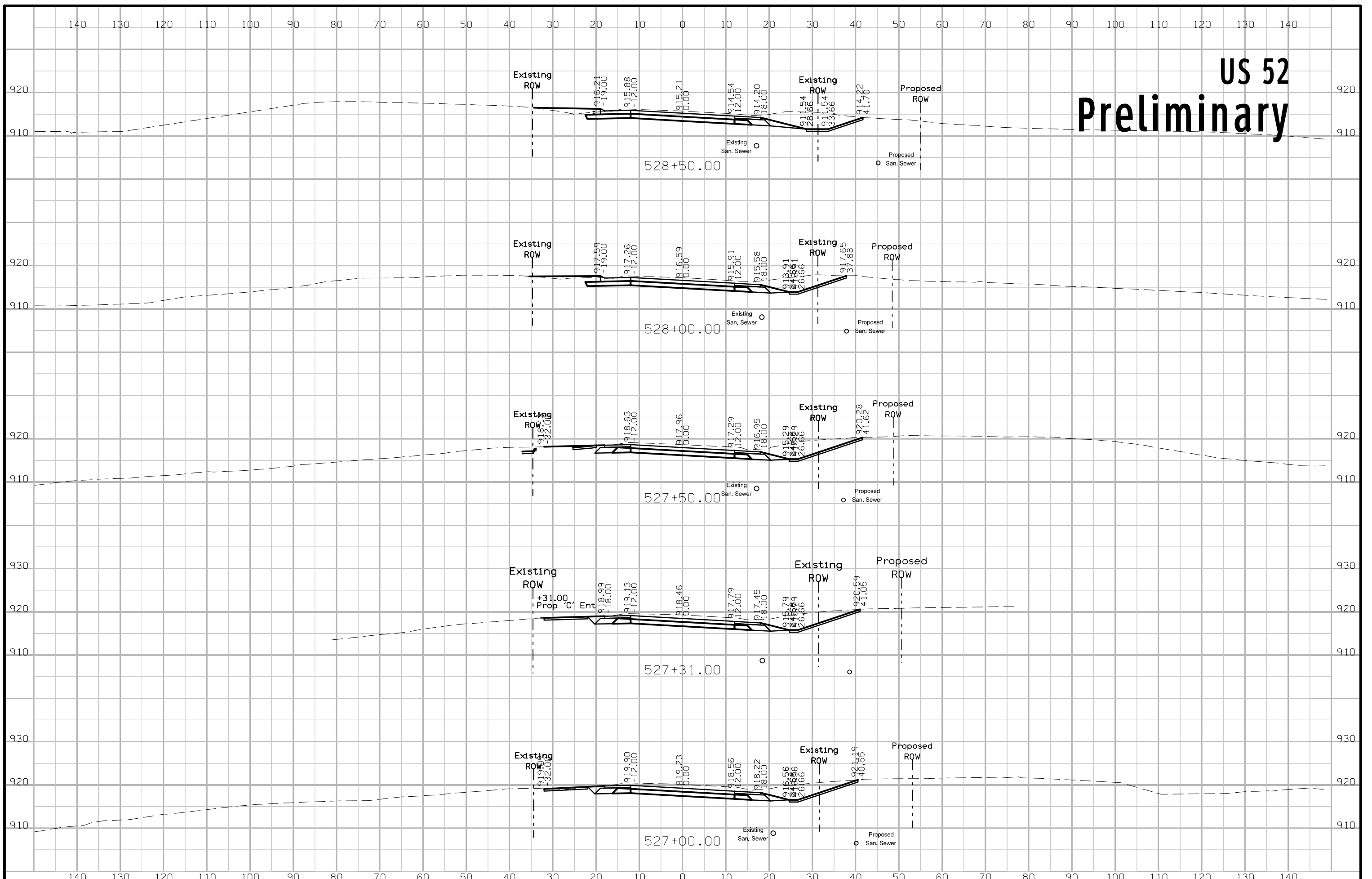




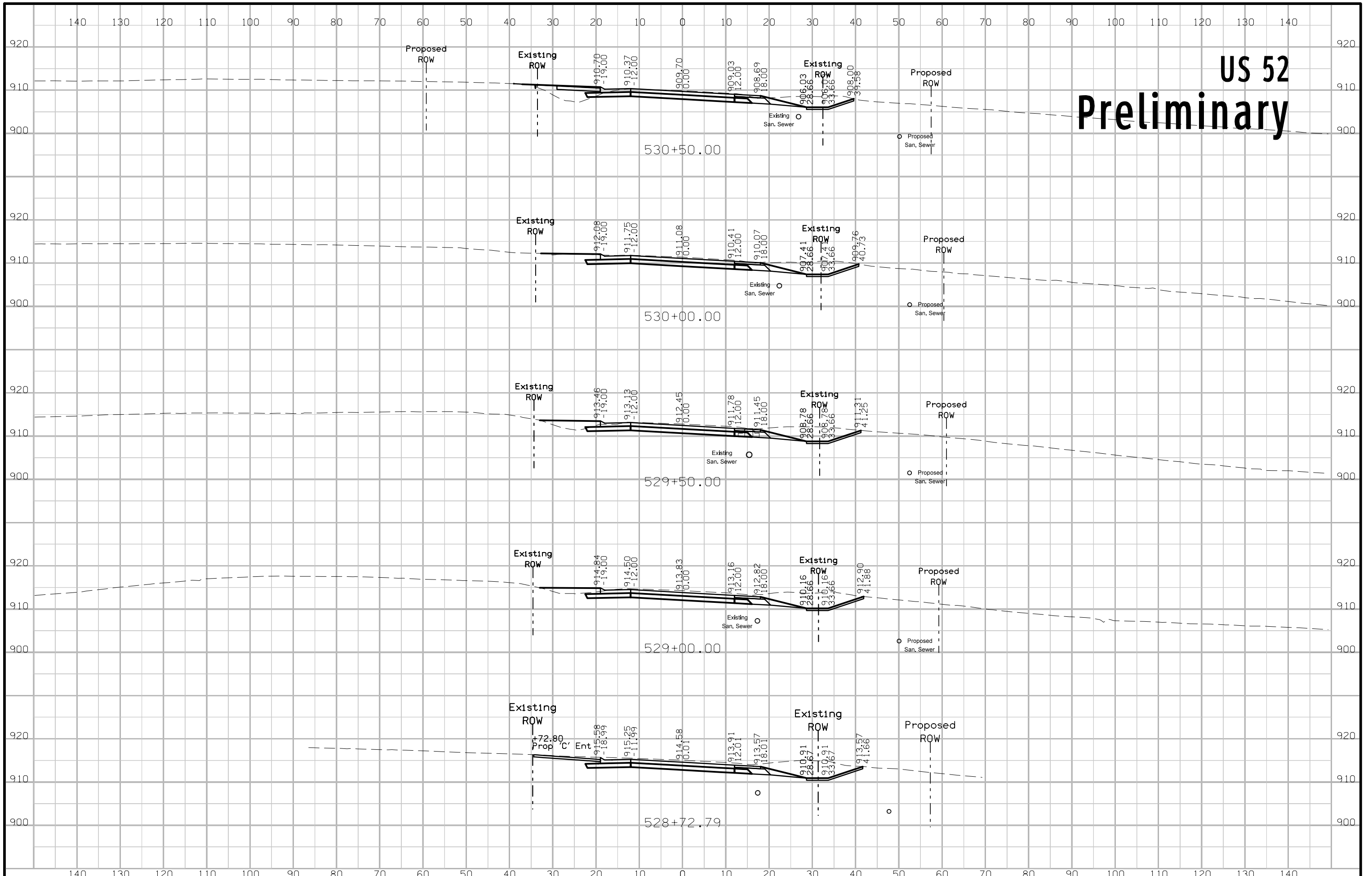
# US 52 Preliminary



# US 52 Preliminary

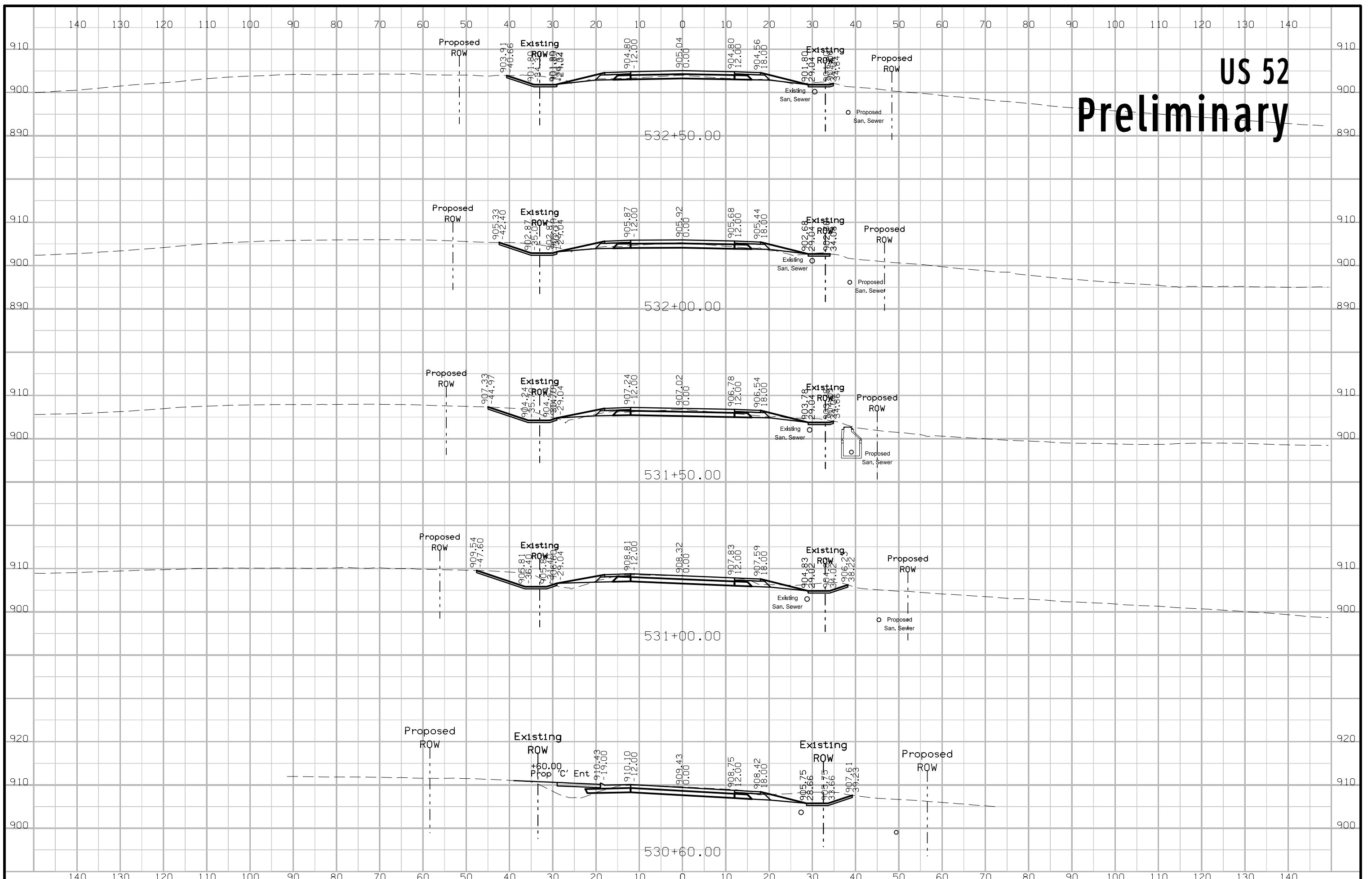


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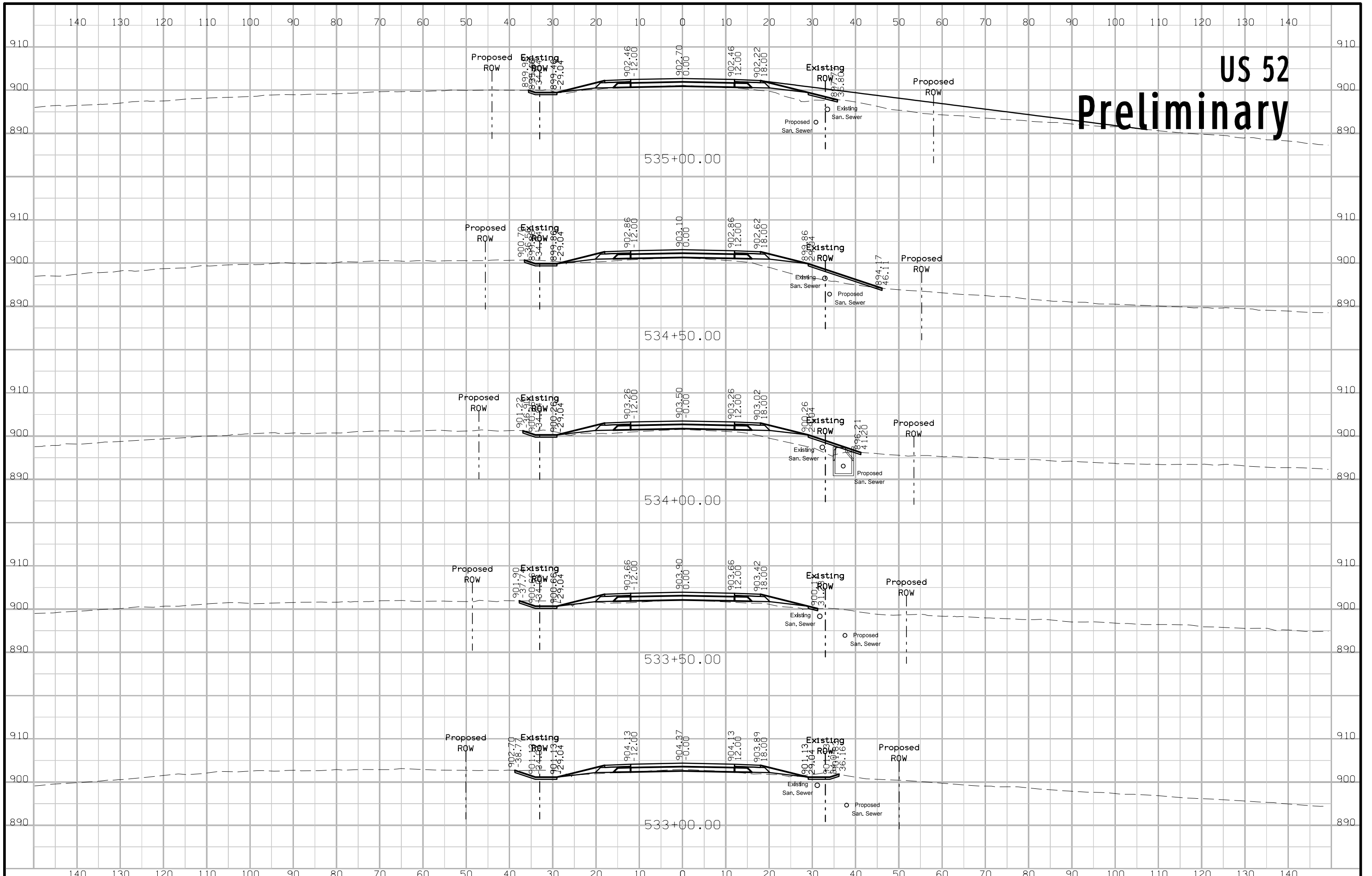




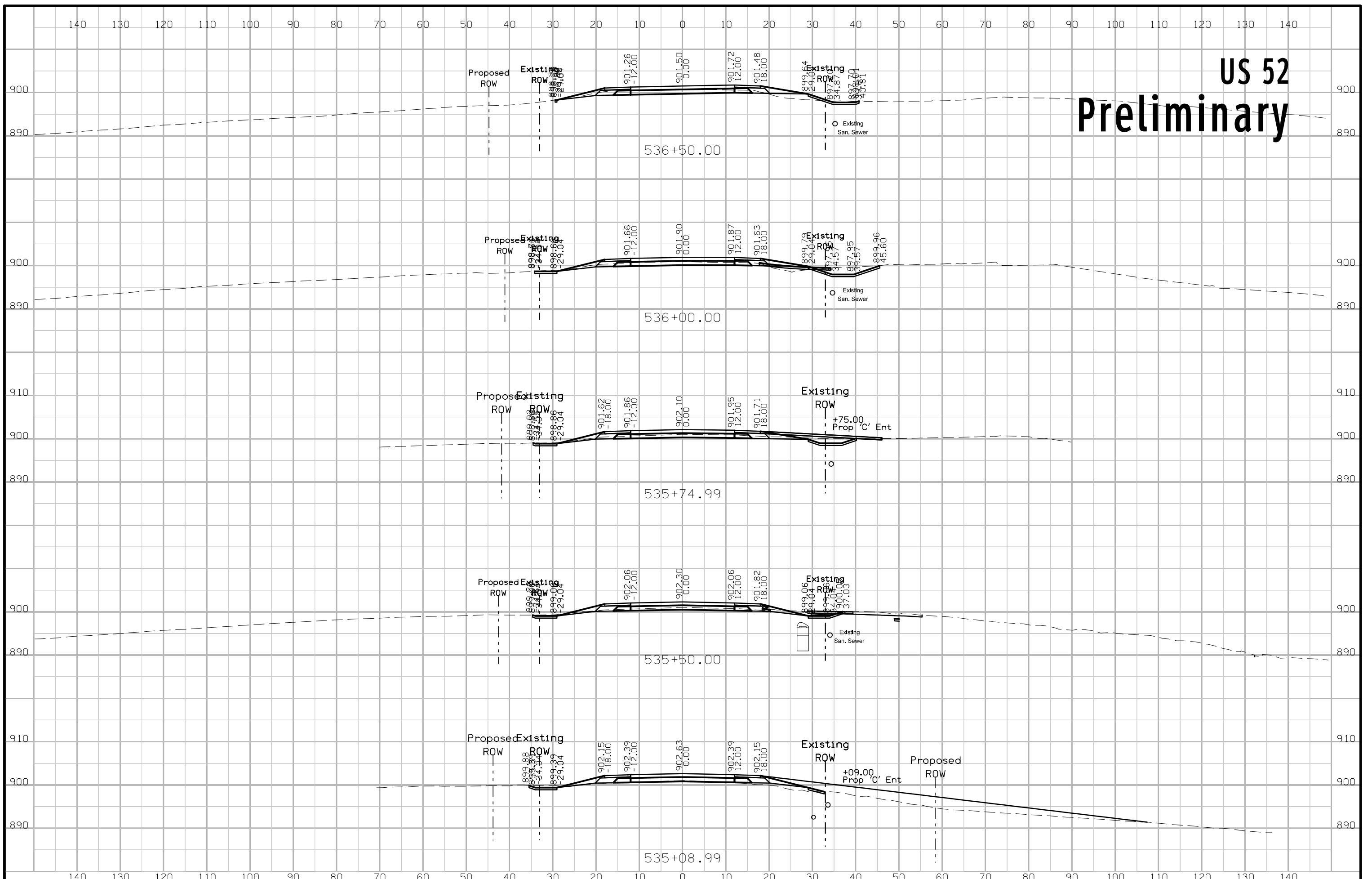
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# US 52 Preliminary

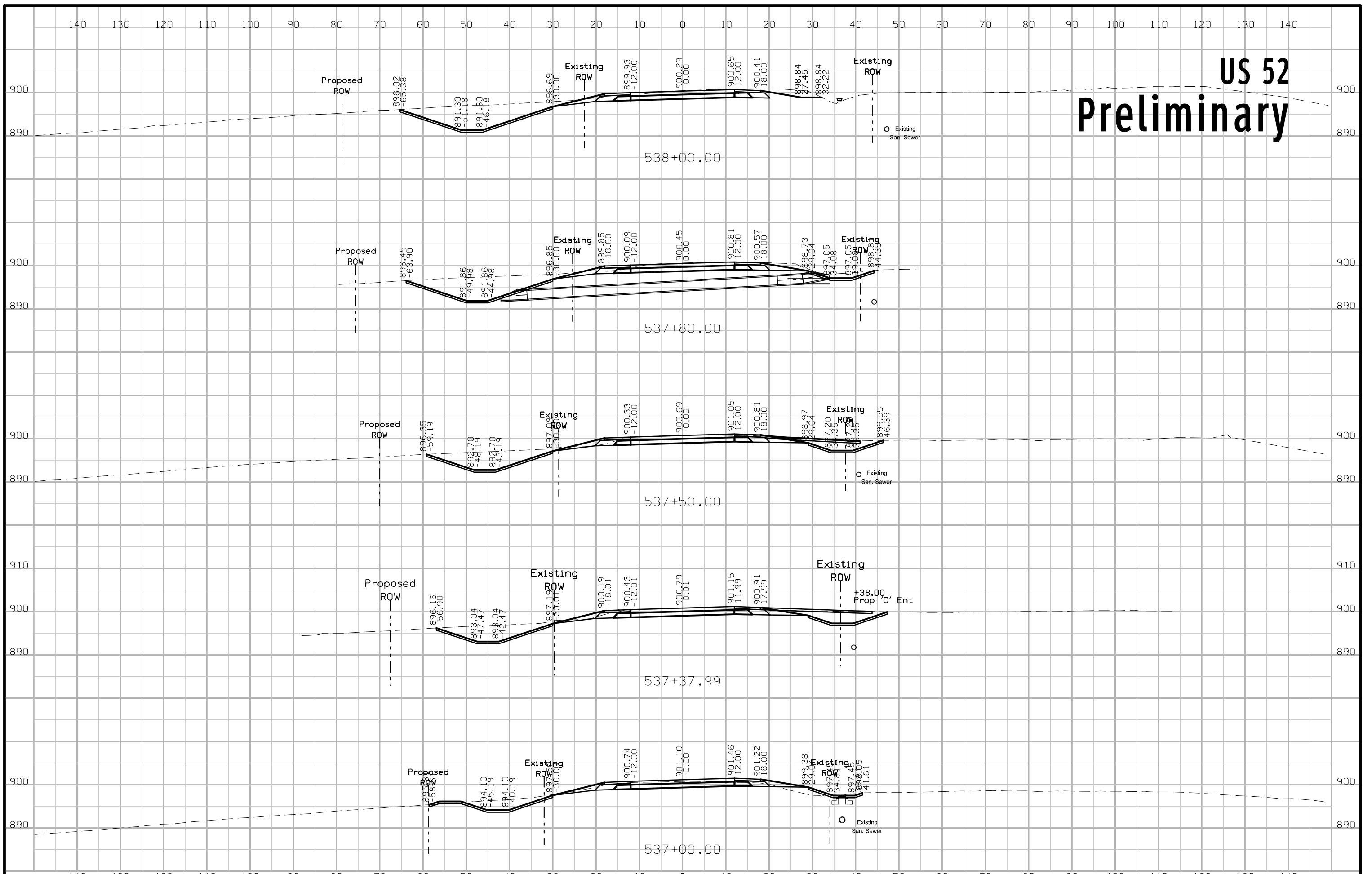


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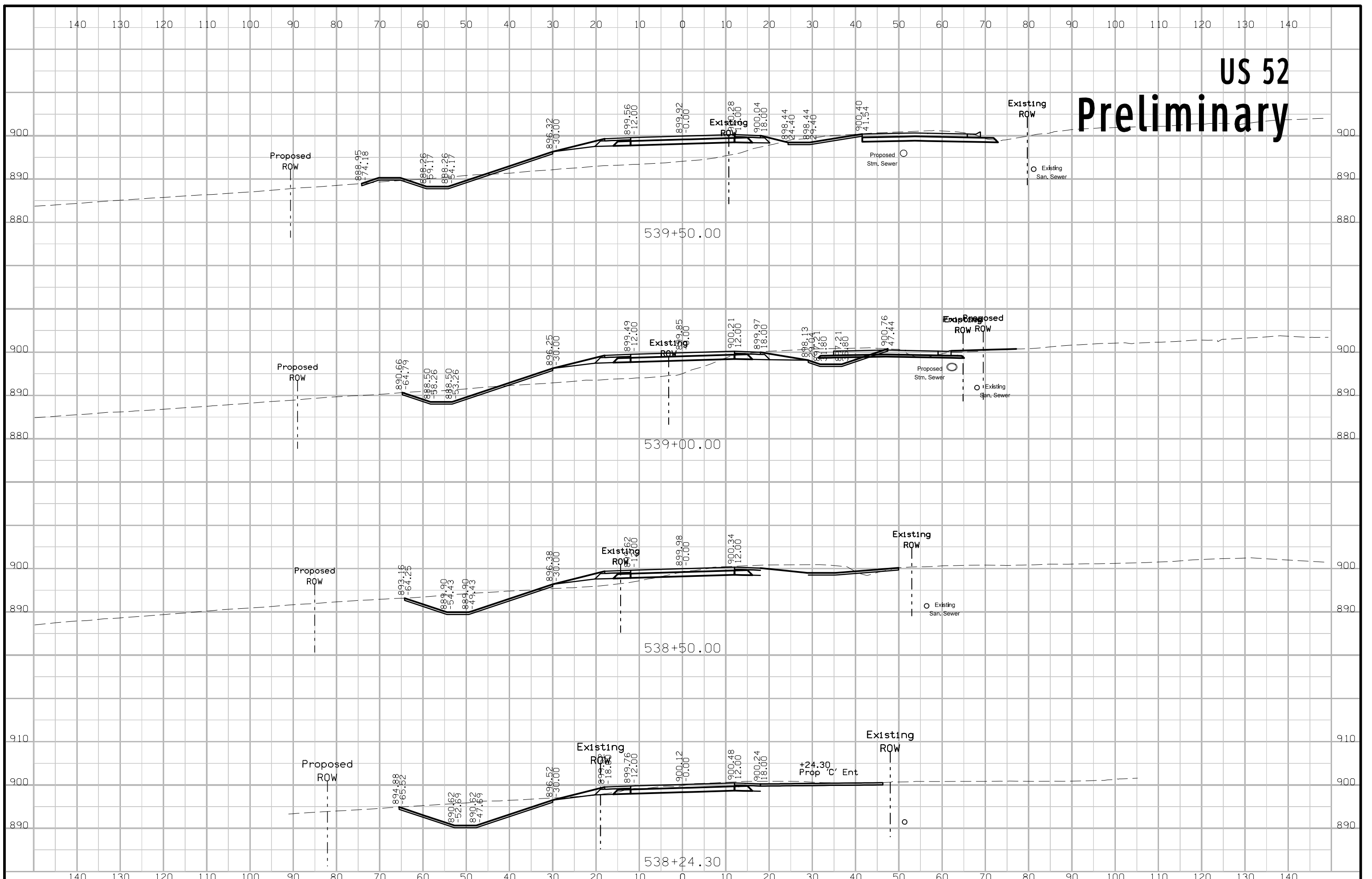


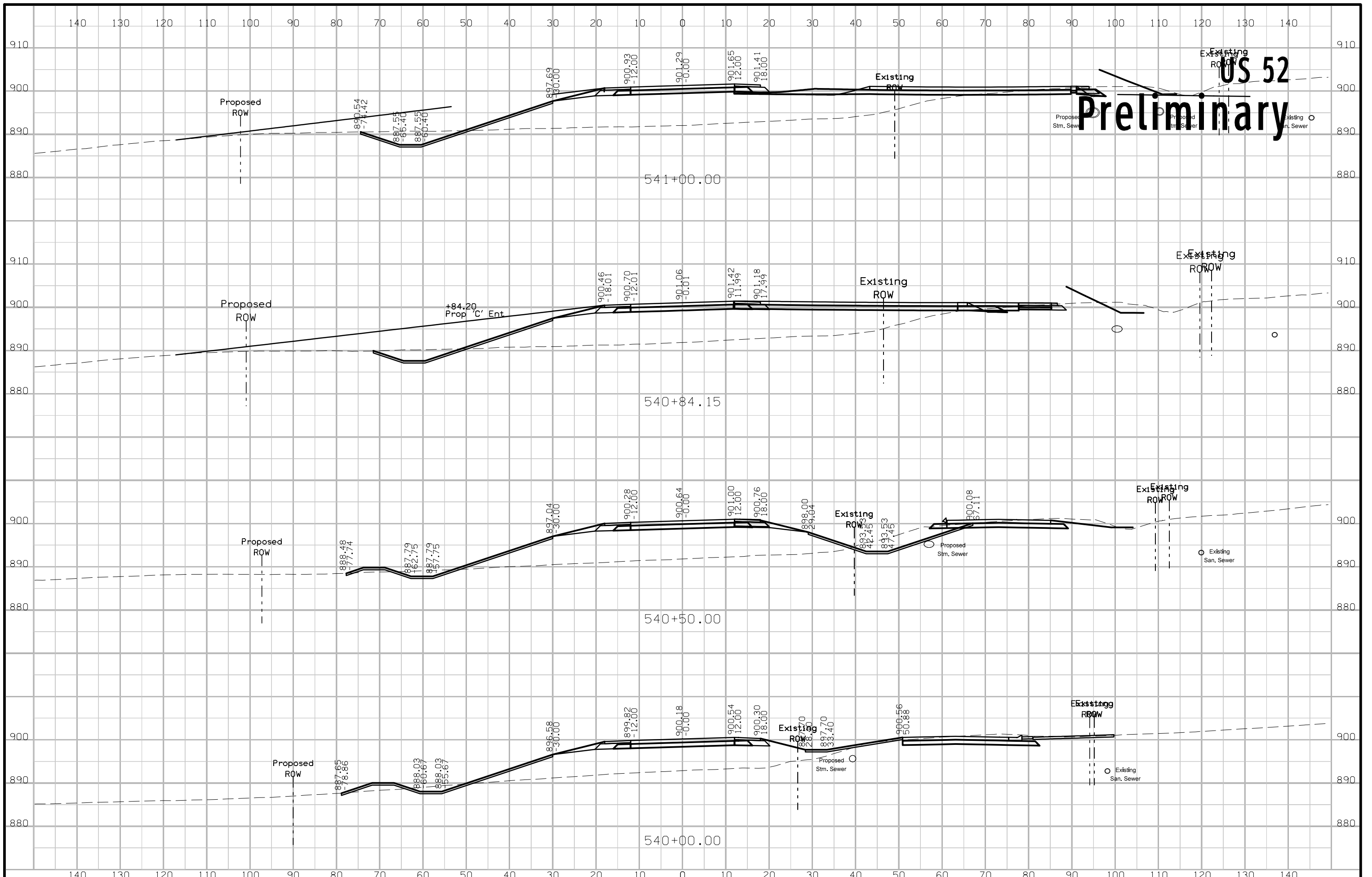


# US 52 Preliminary



# US 52 Preliminary

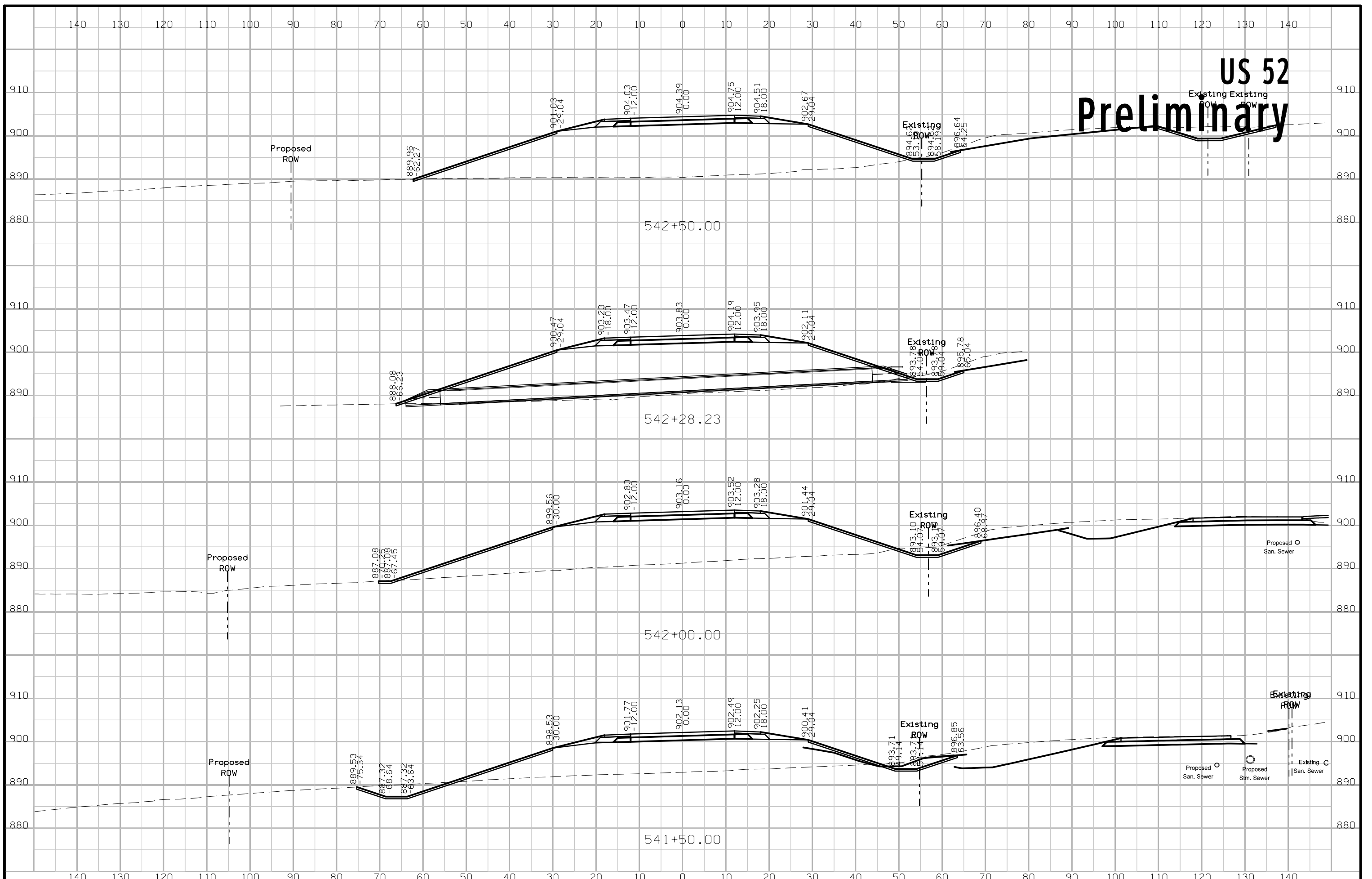




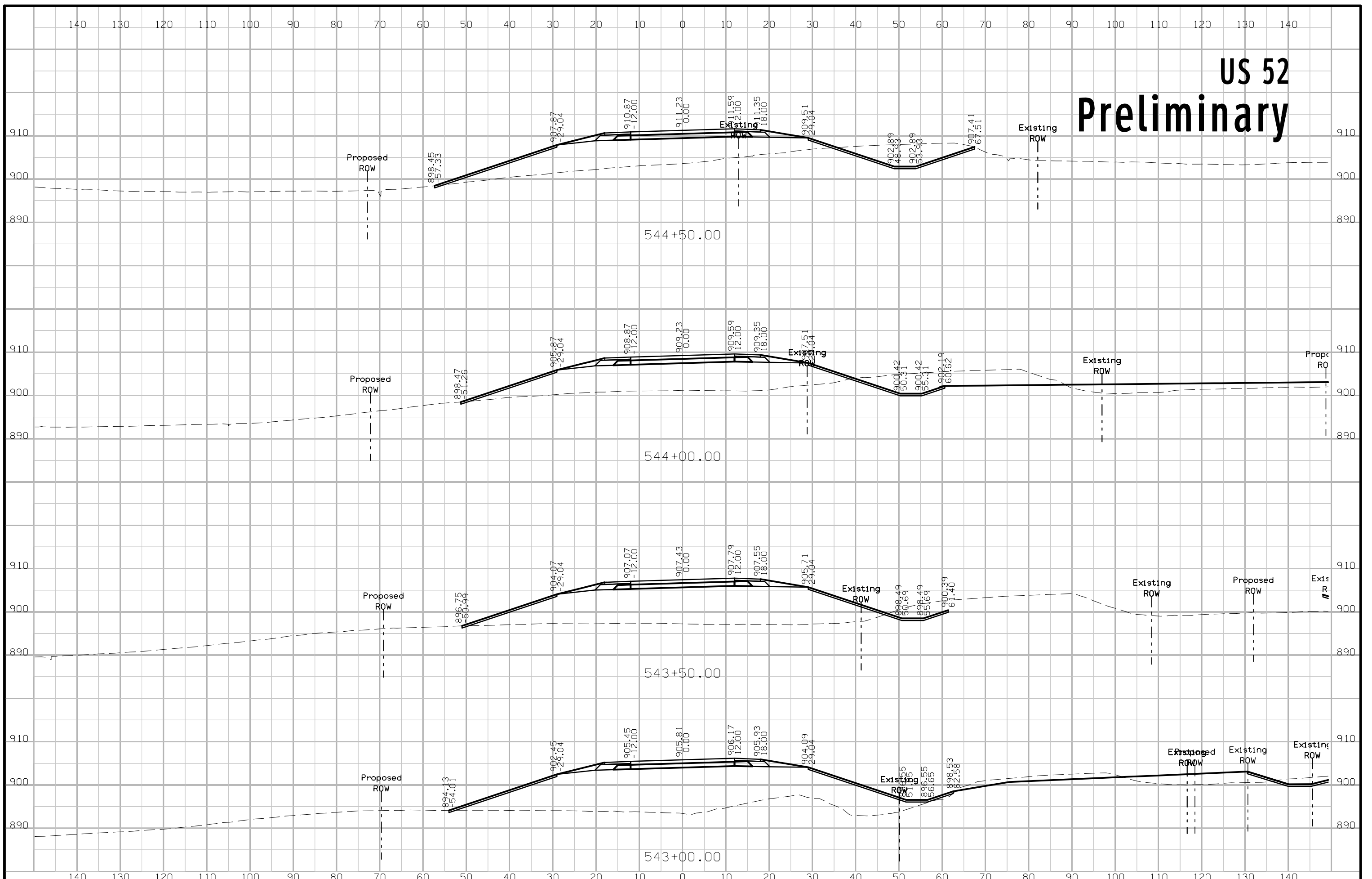
**US 52**  
**Preliminary**



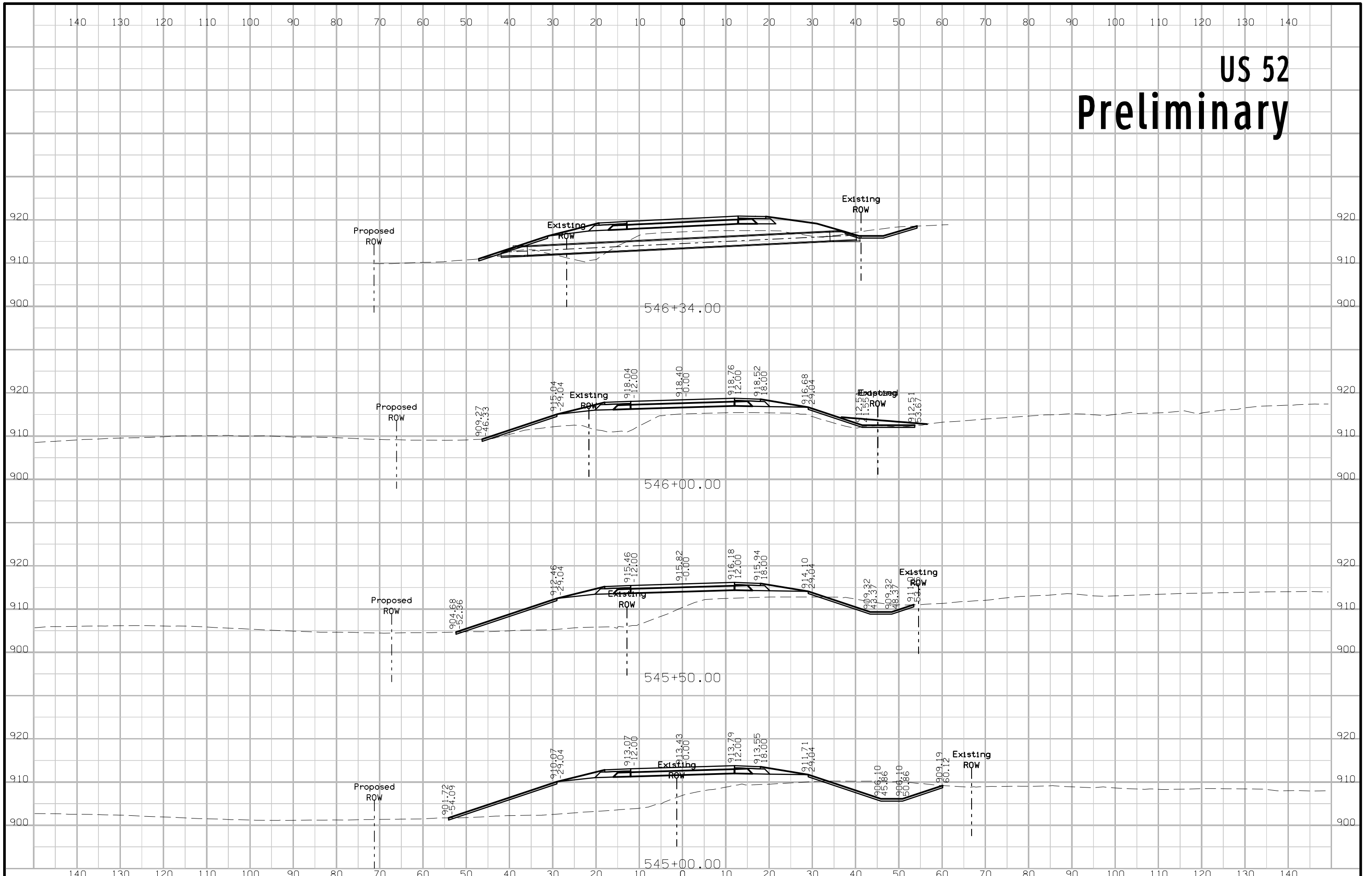
# US 52 Preliminary



# US 52 Preliminary

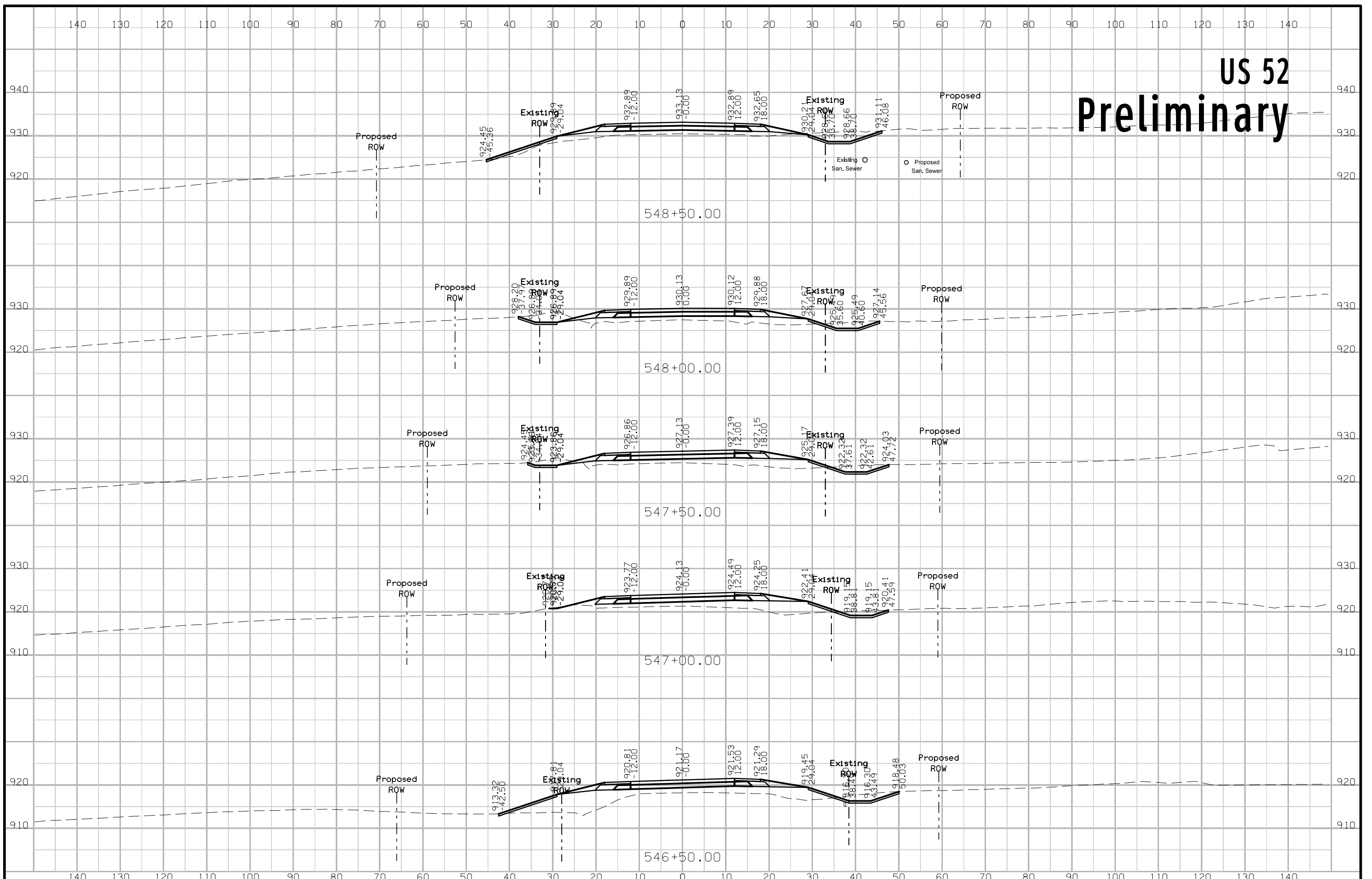


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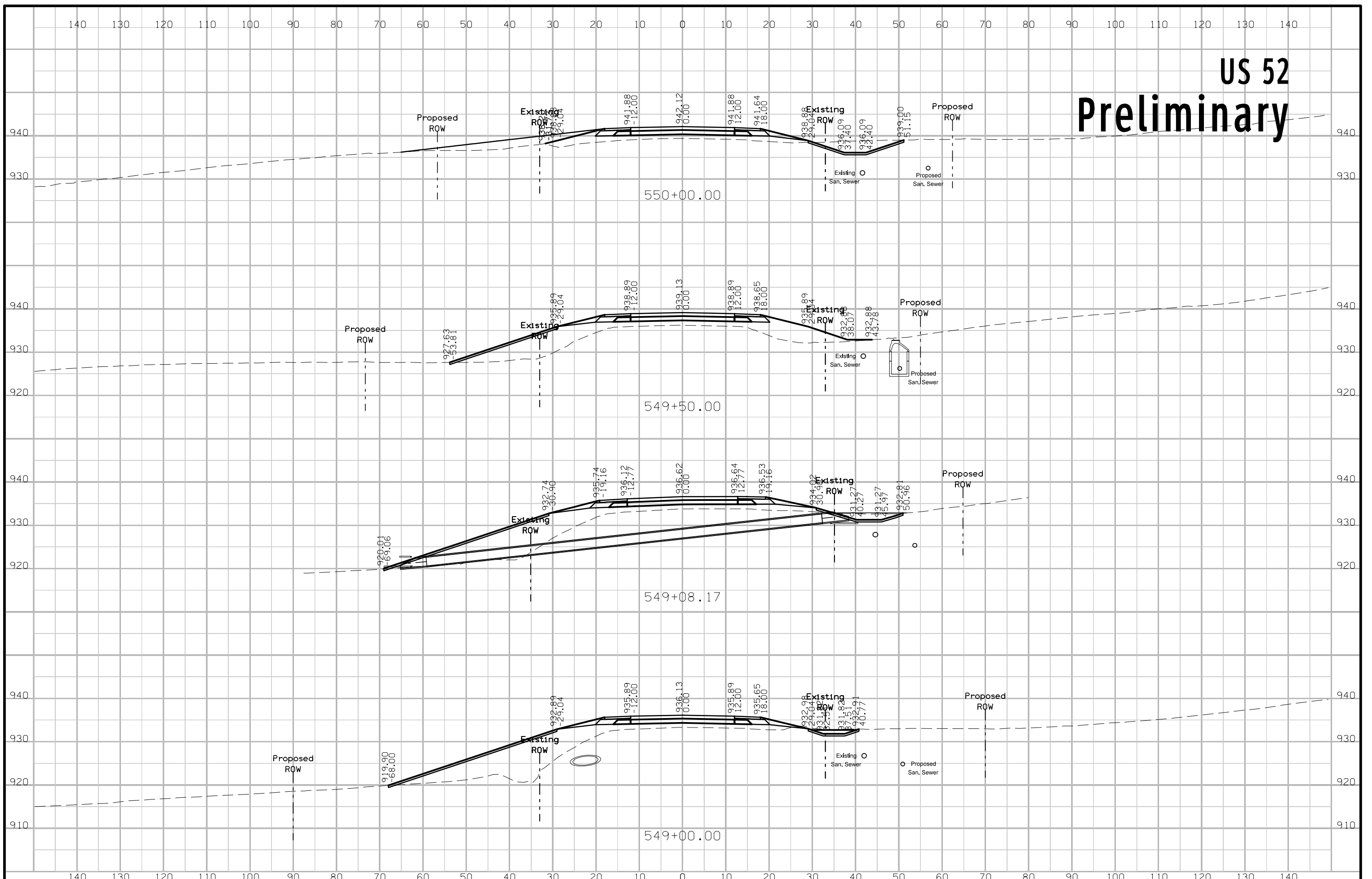




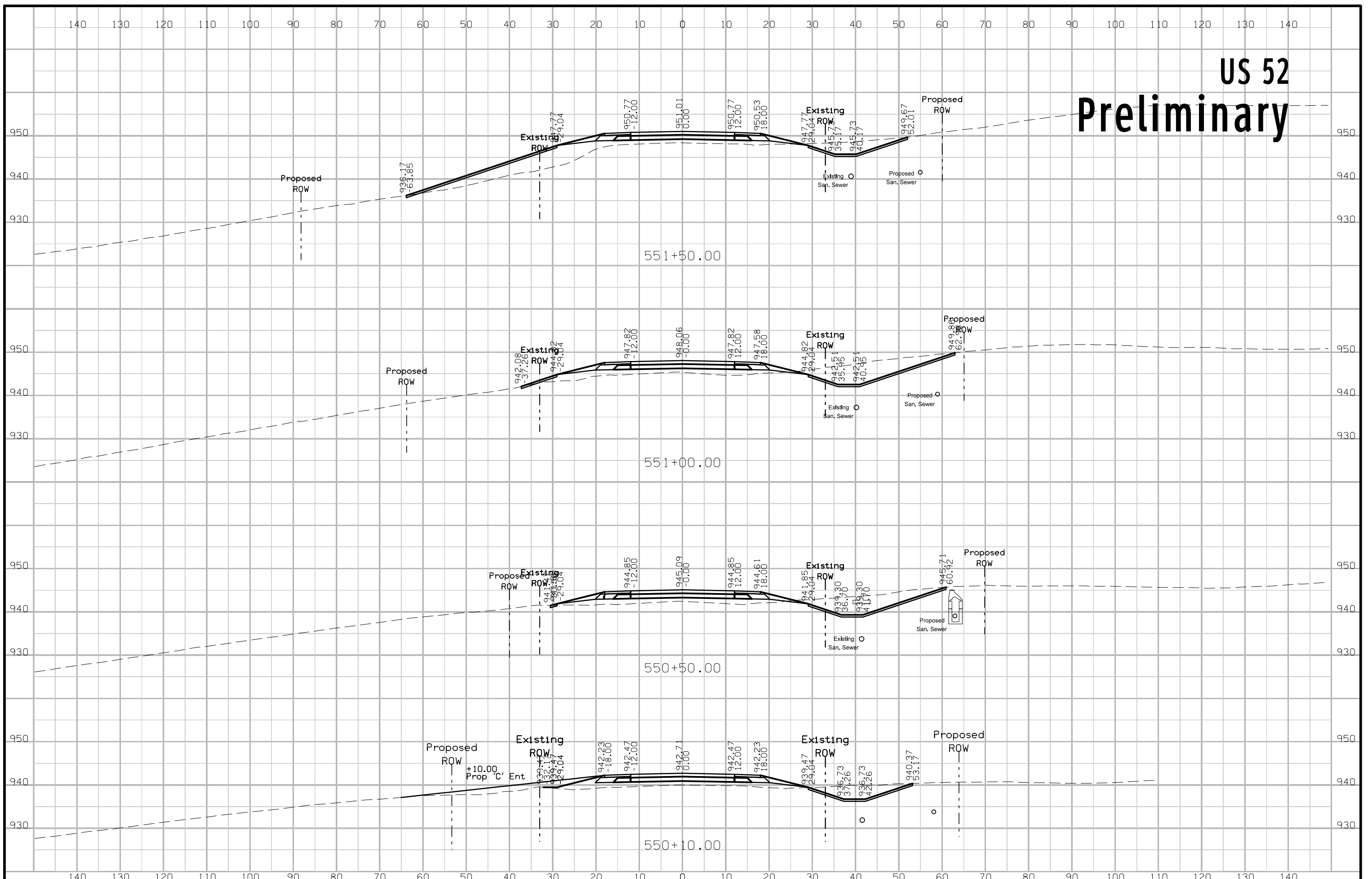
# US 52 Preliminary



# US 52 Preliminary

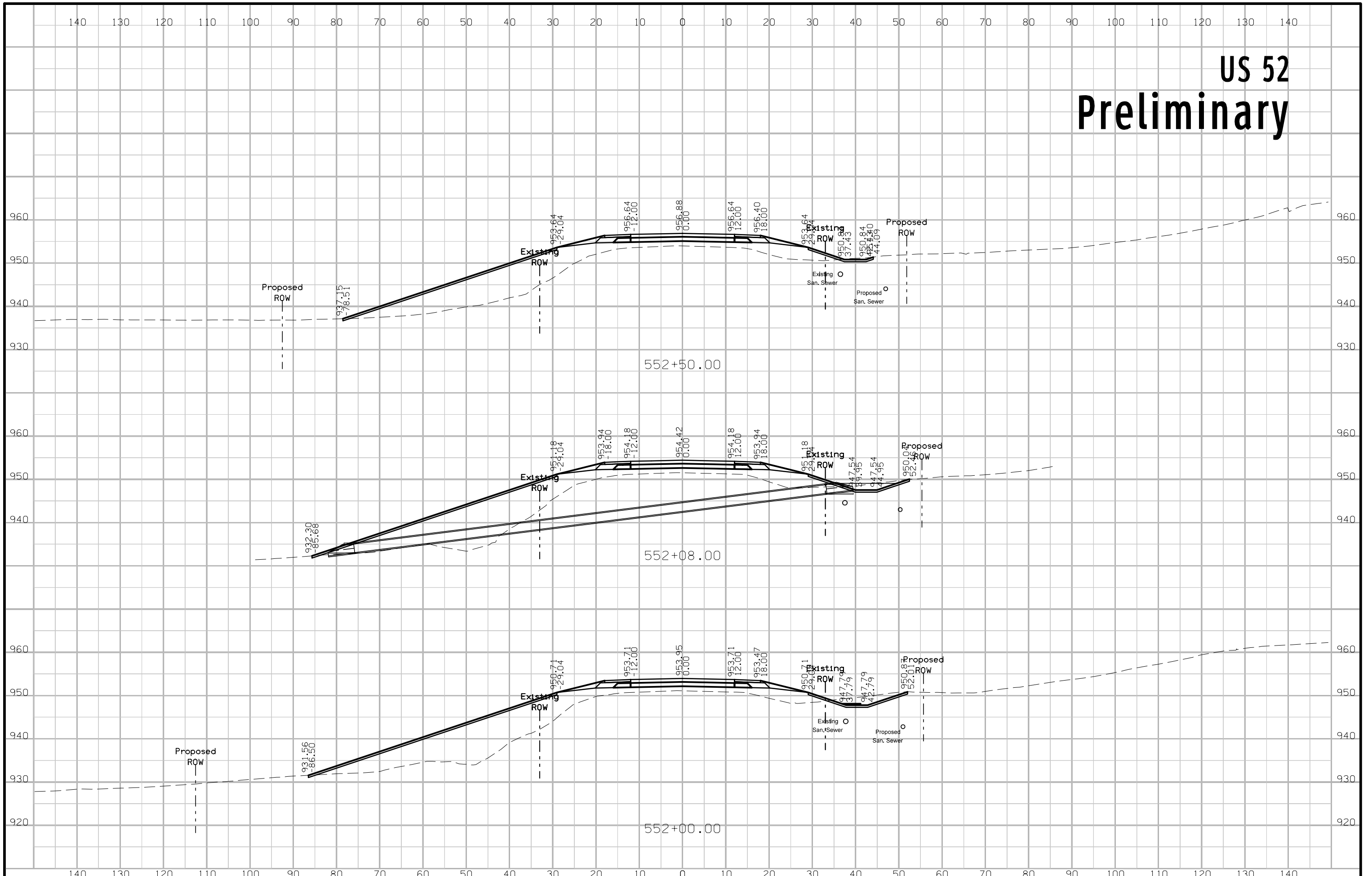


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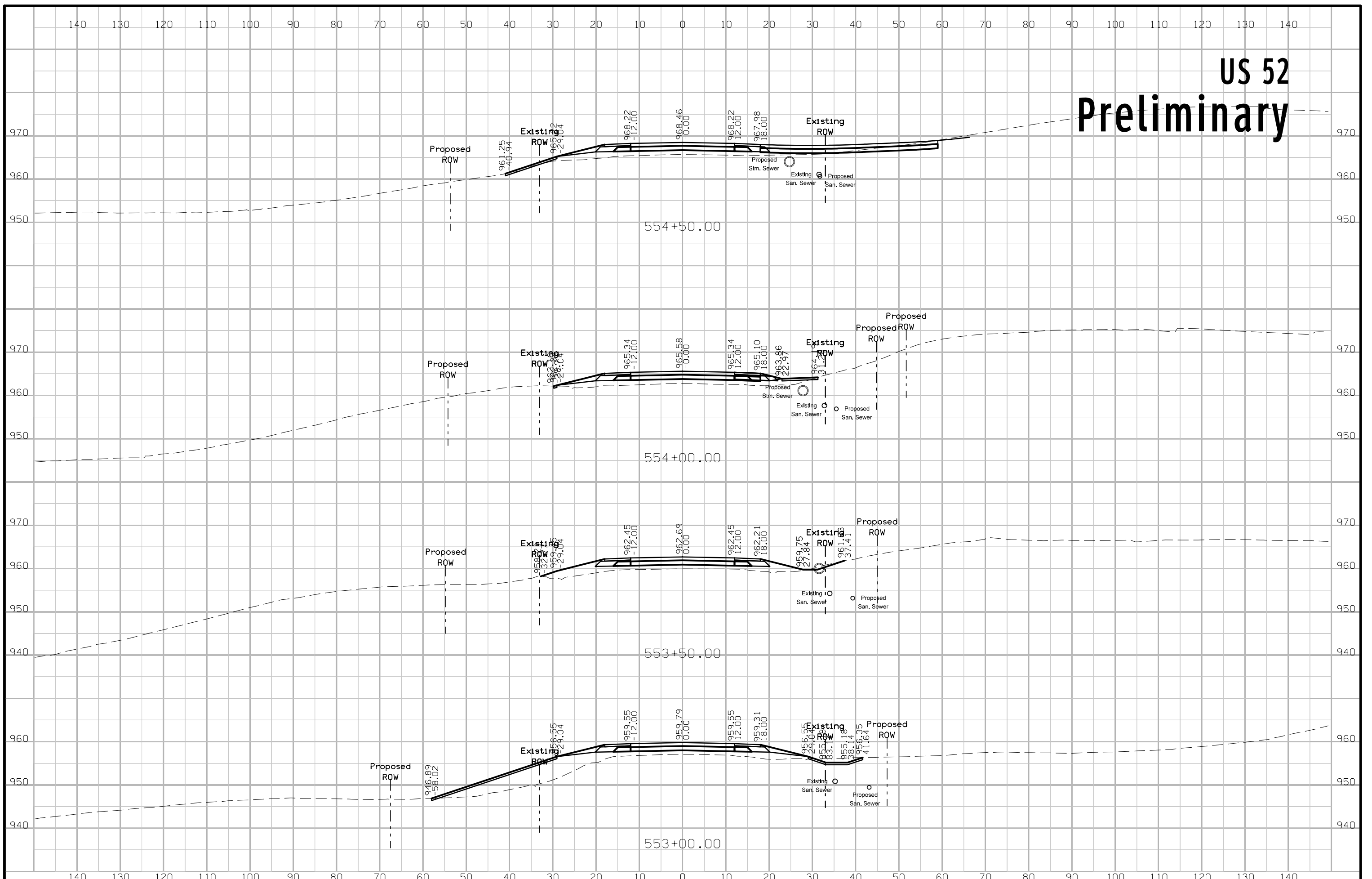




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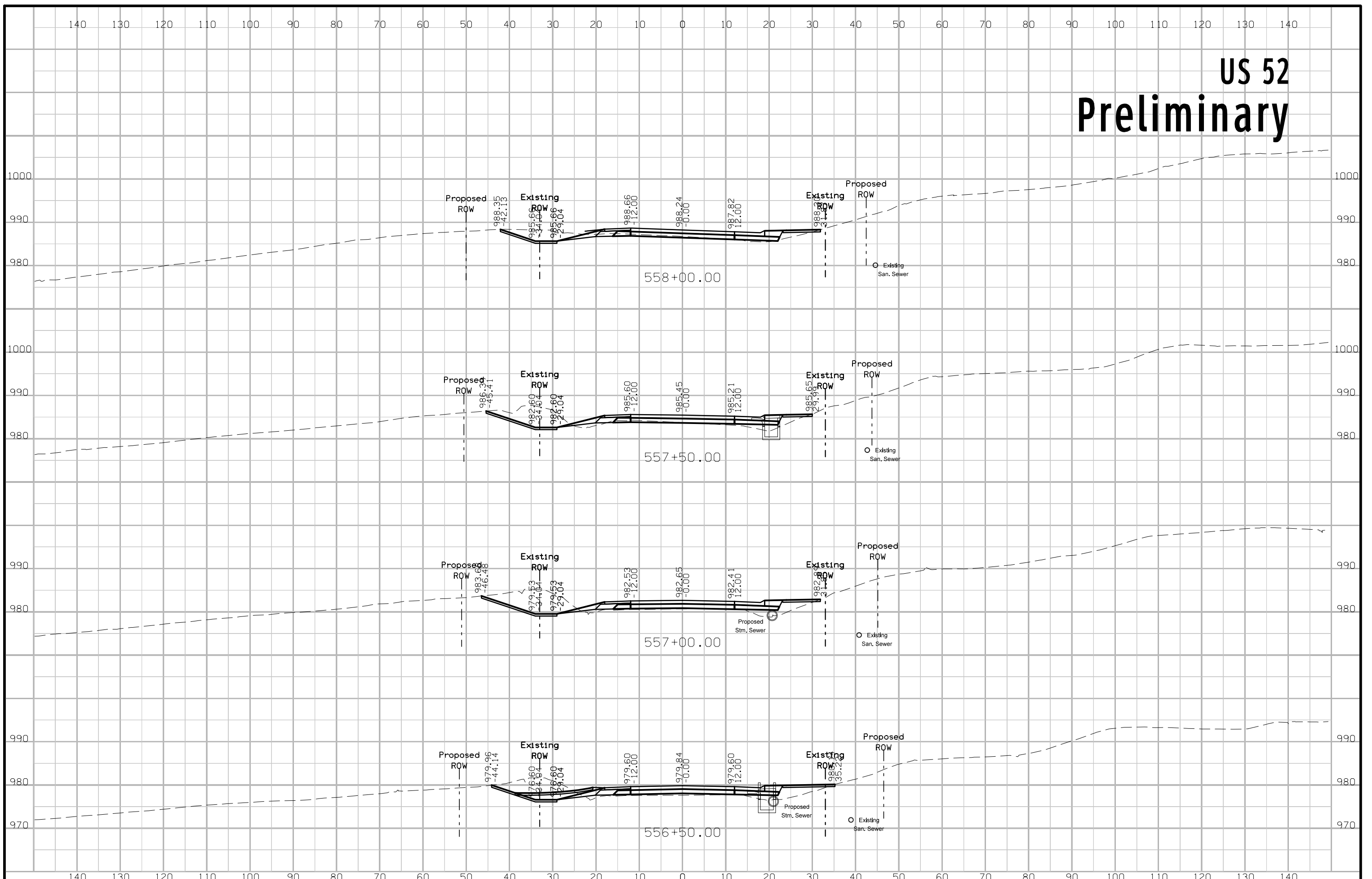
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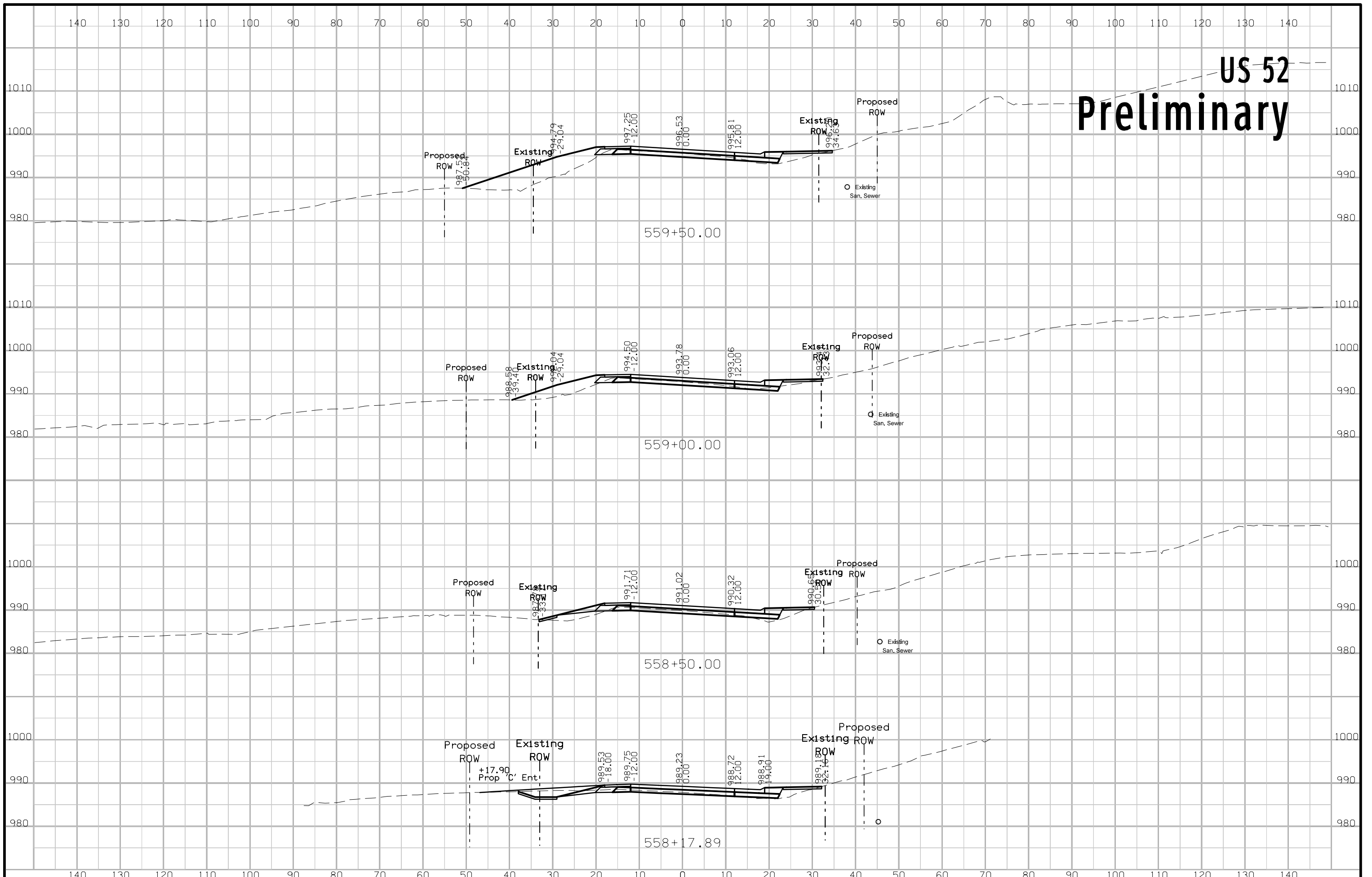




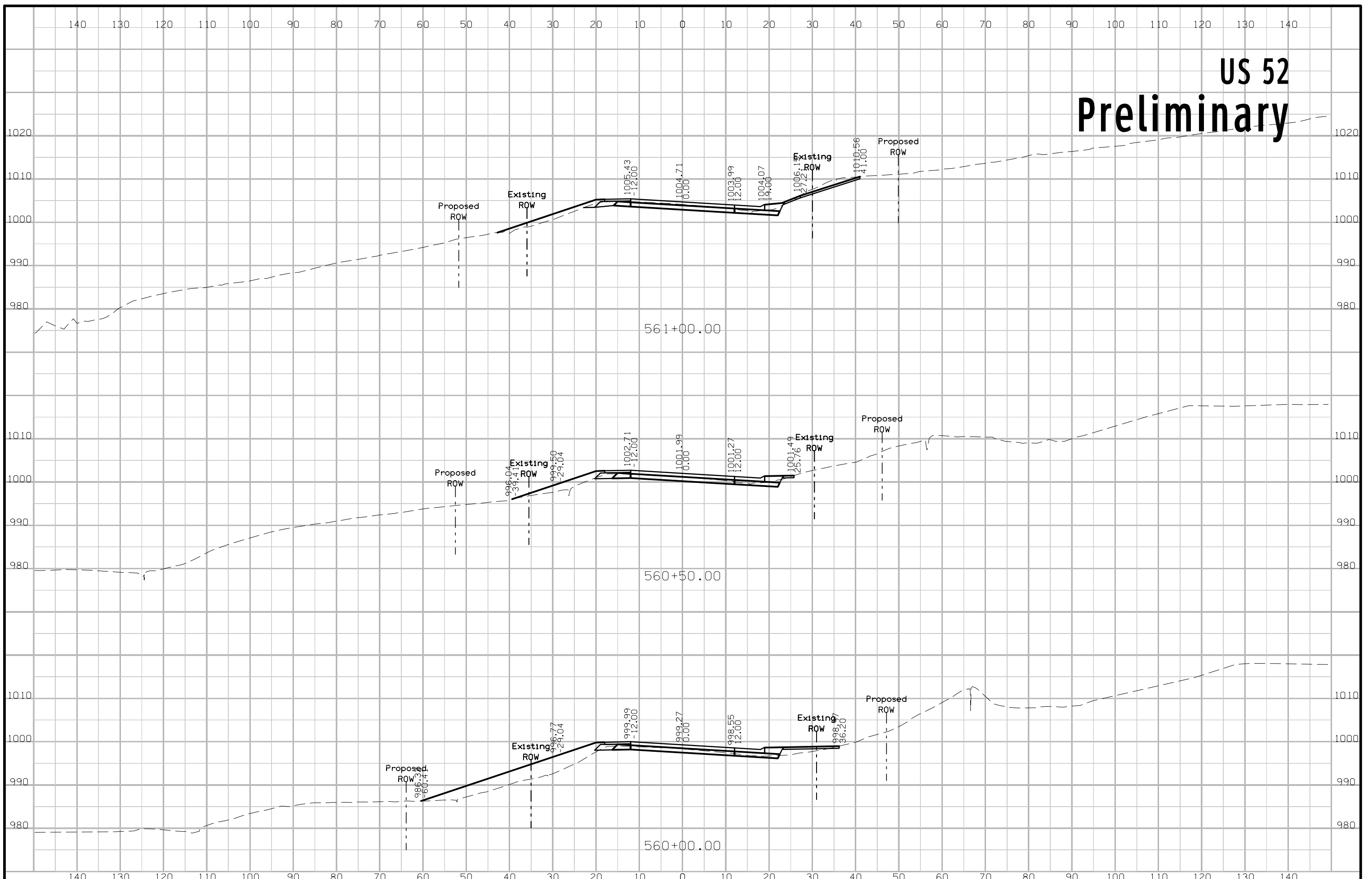


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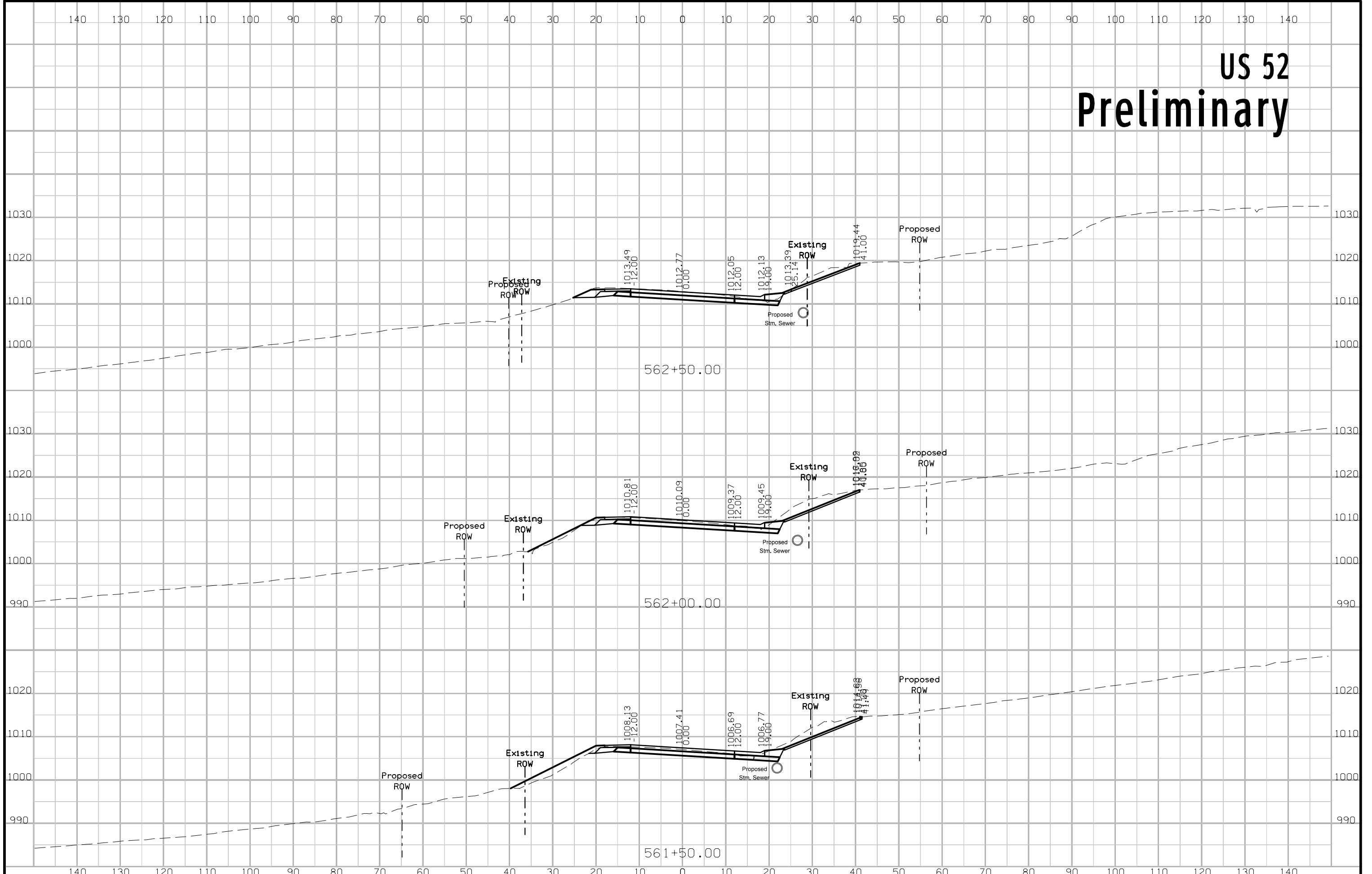


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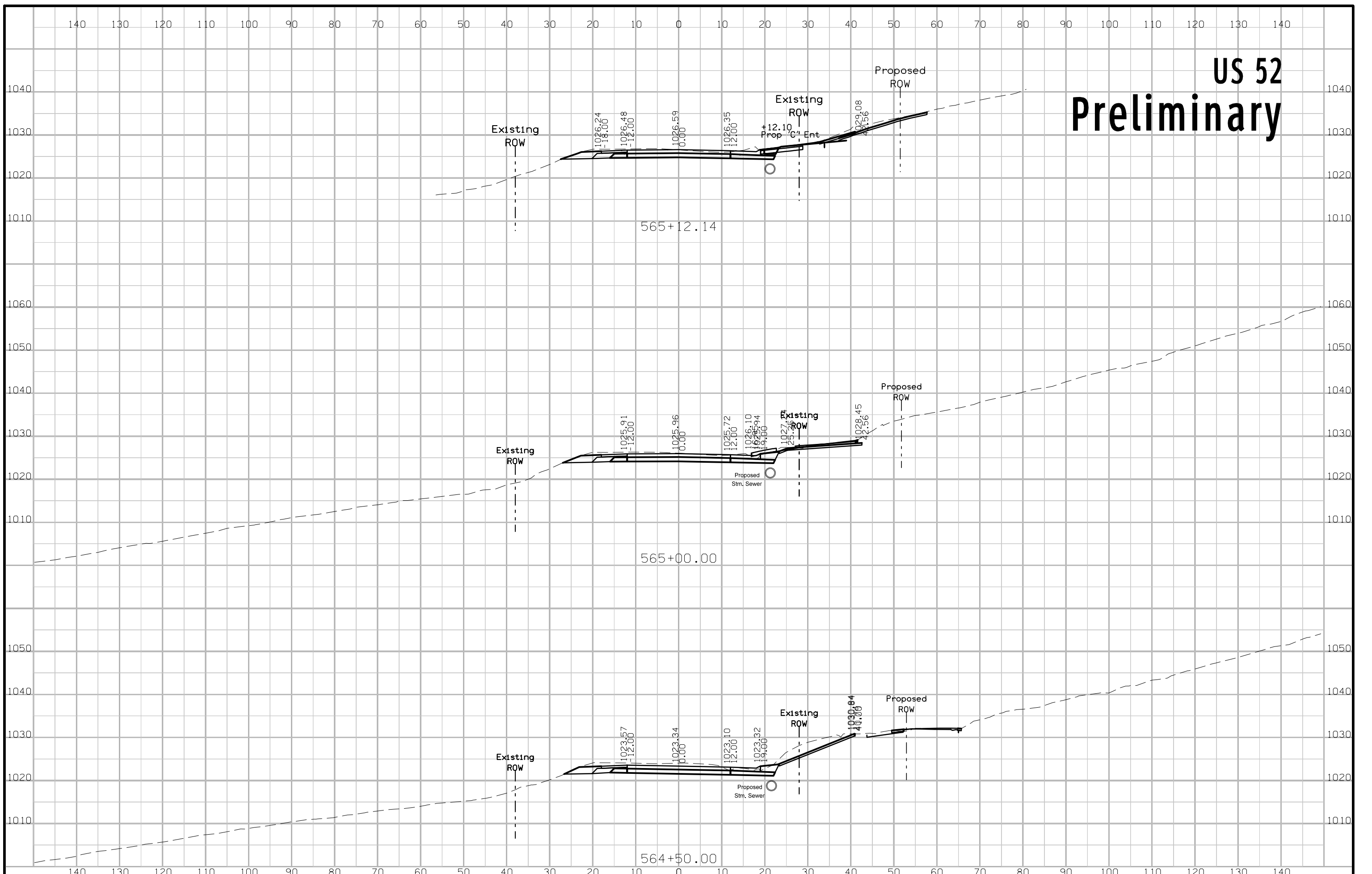


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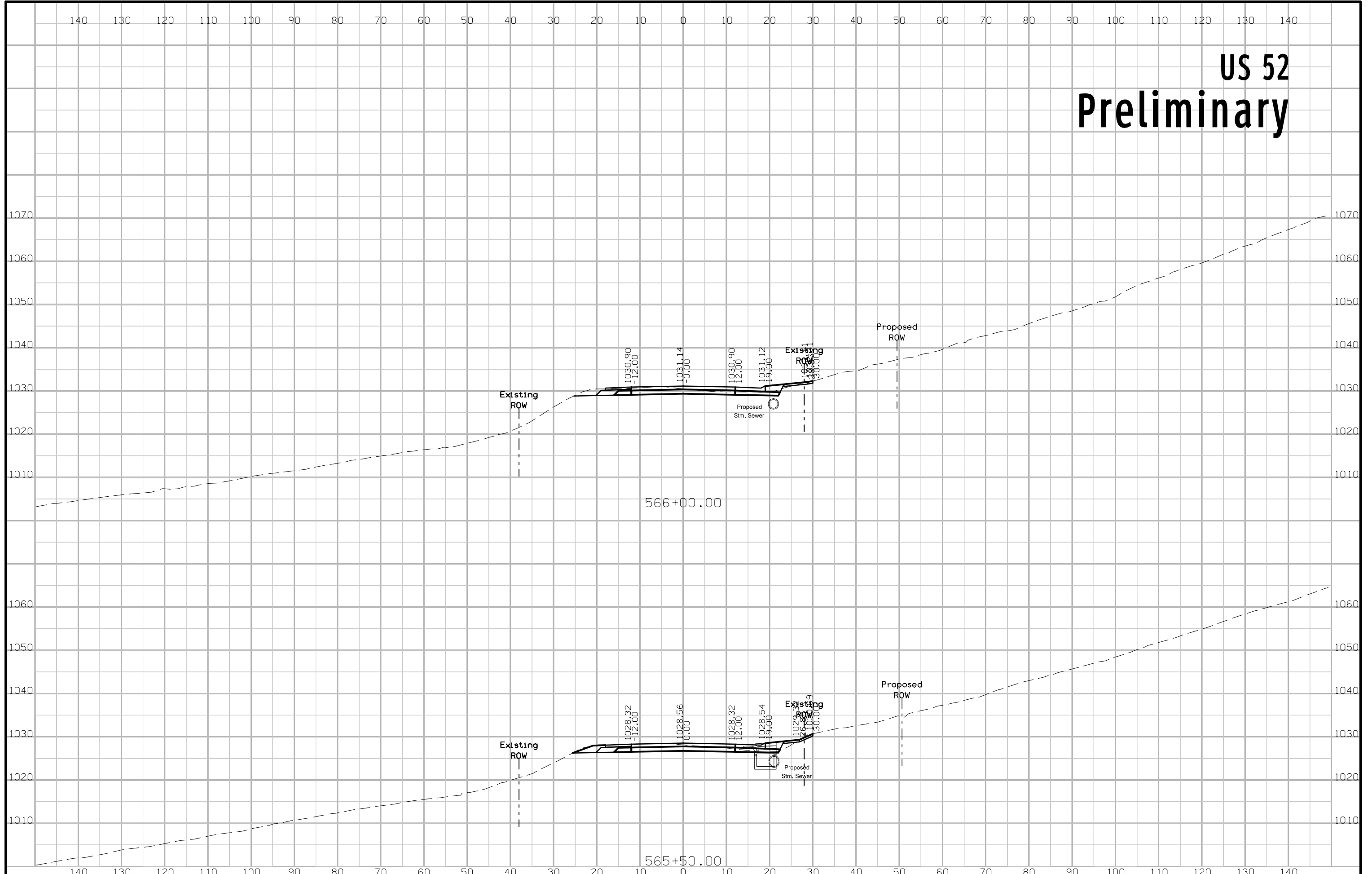


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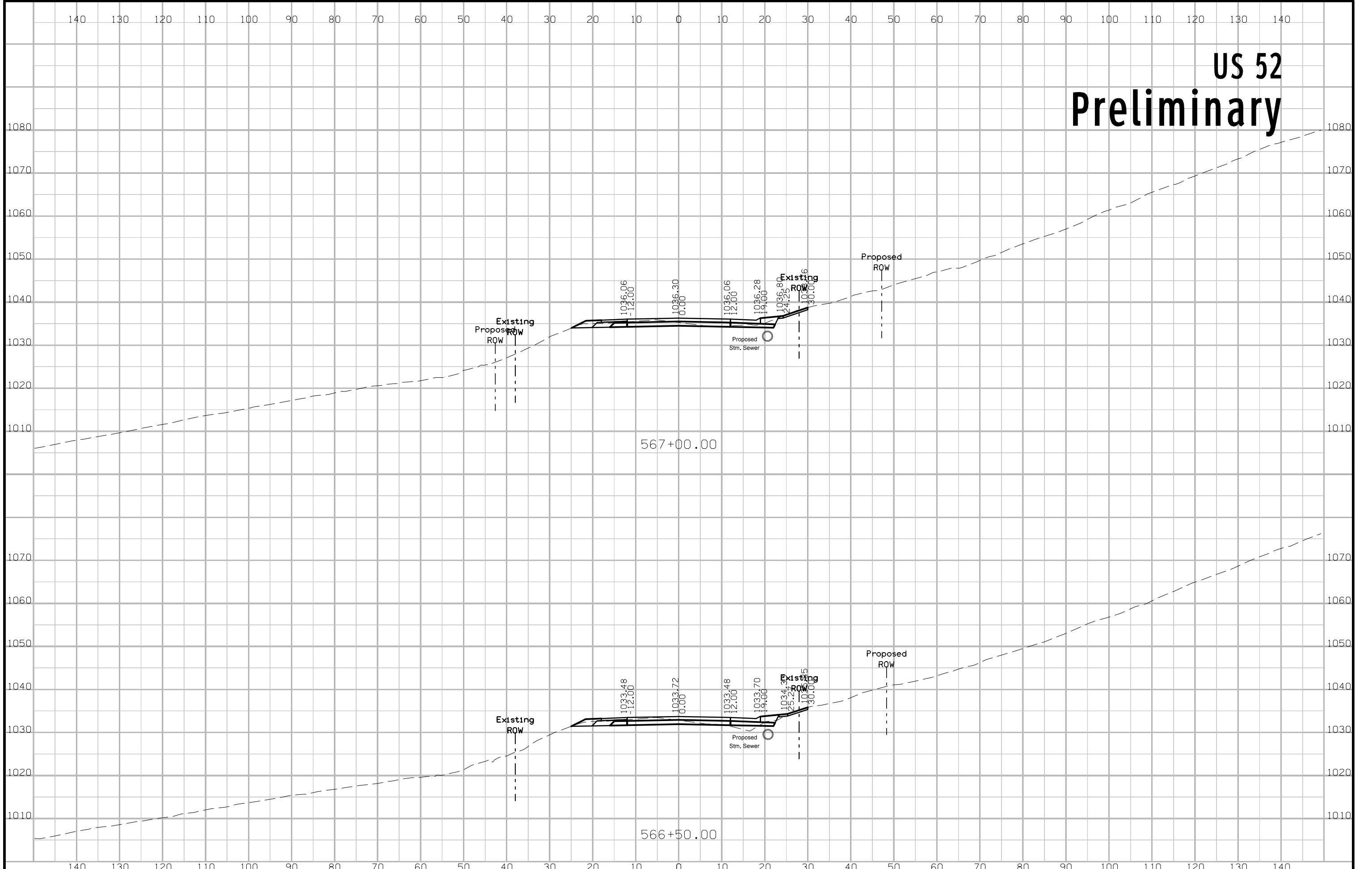




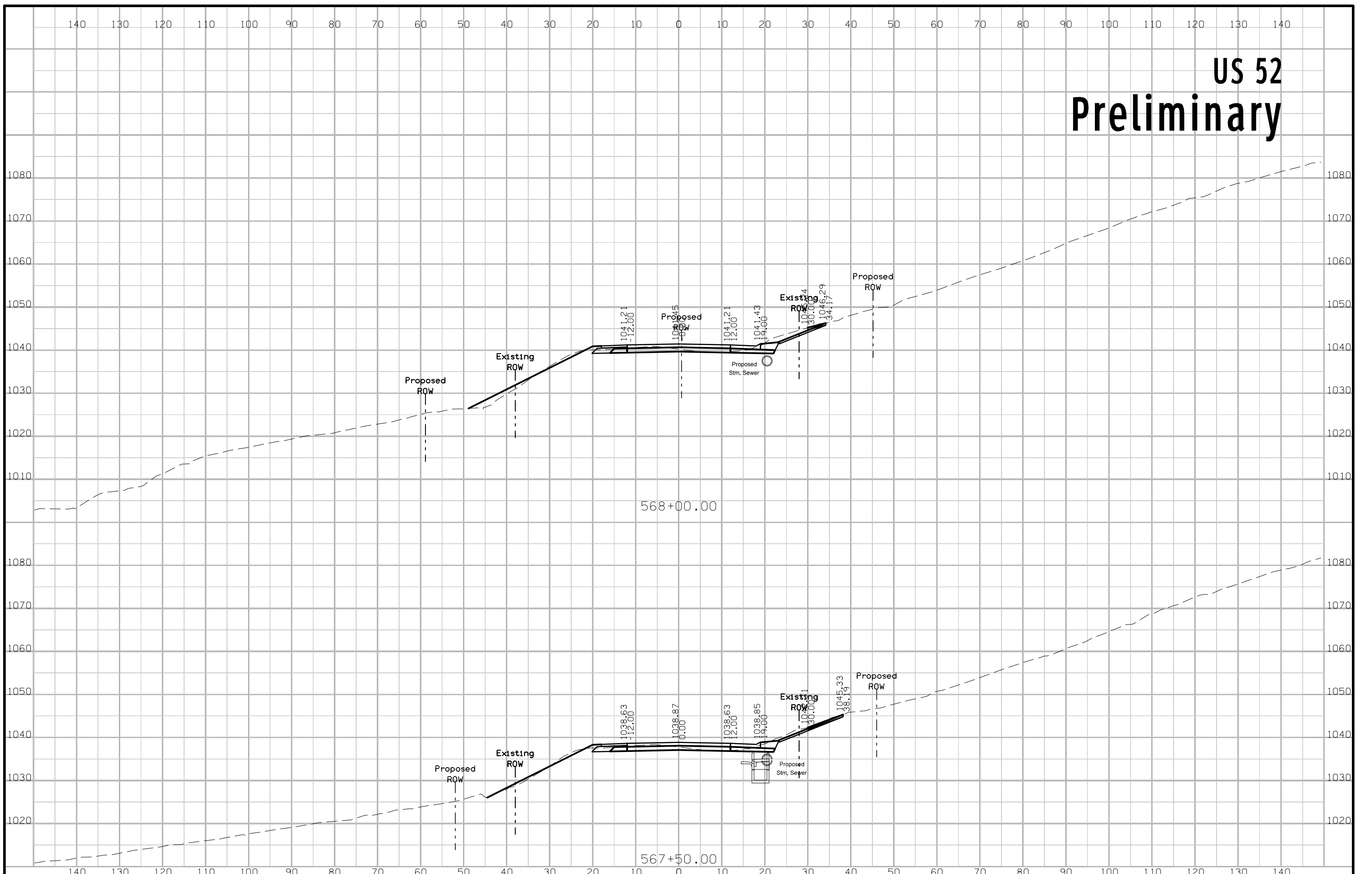
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# US 52 Preliminary

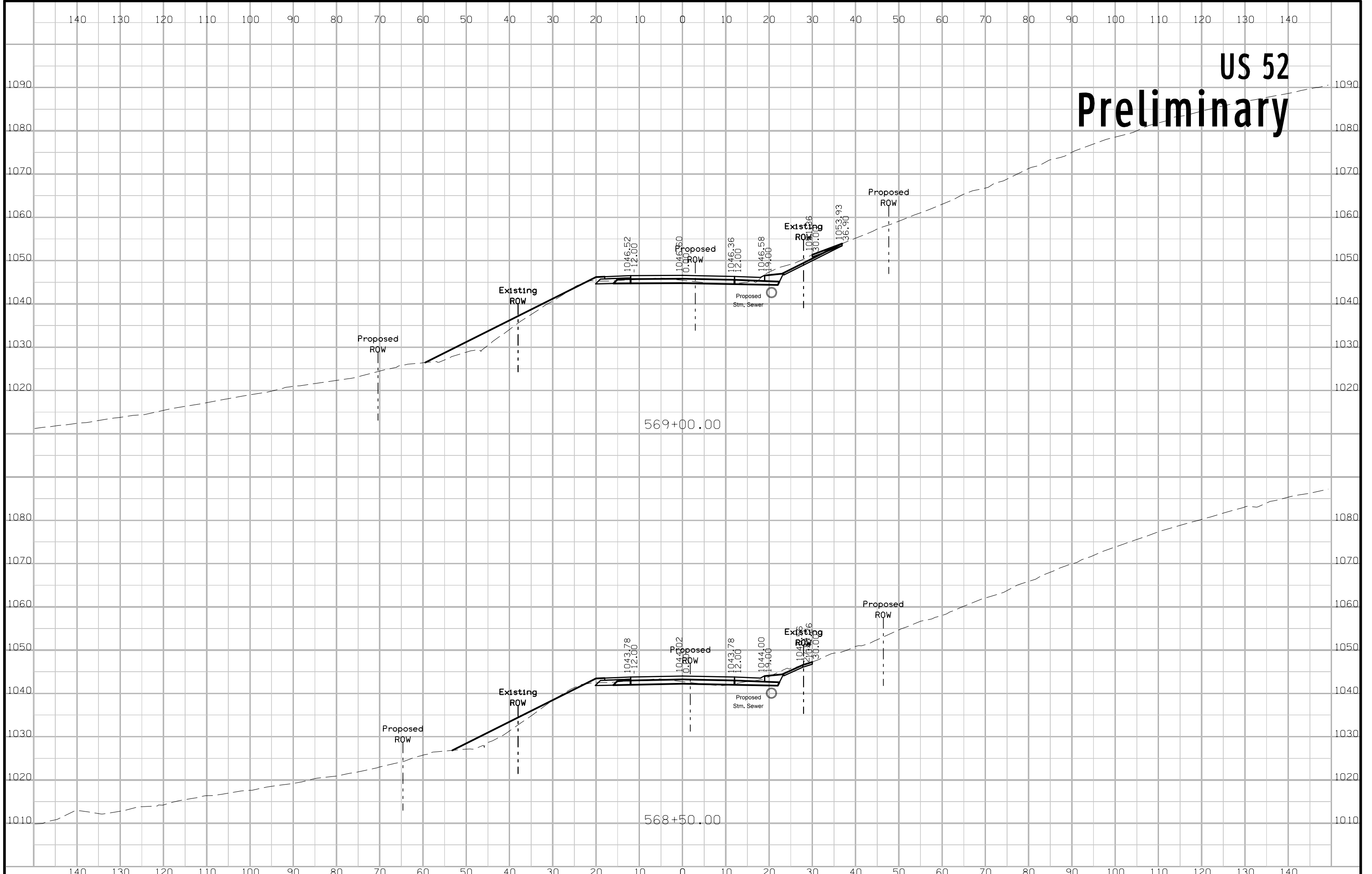


# US 52 Preliminary





# US 52 Preliminary

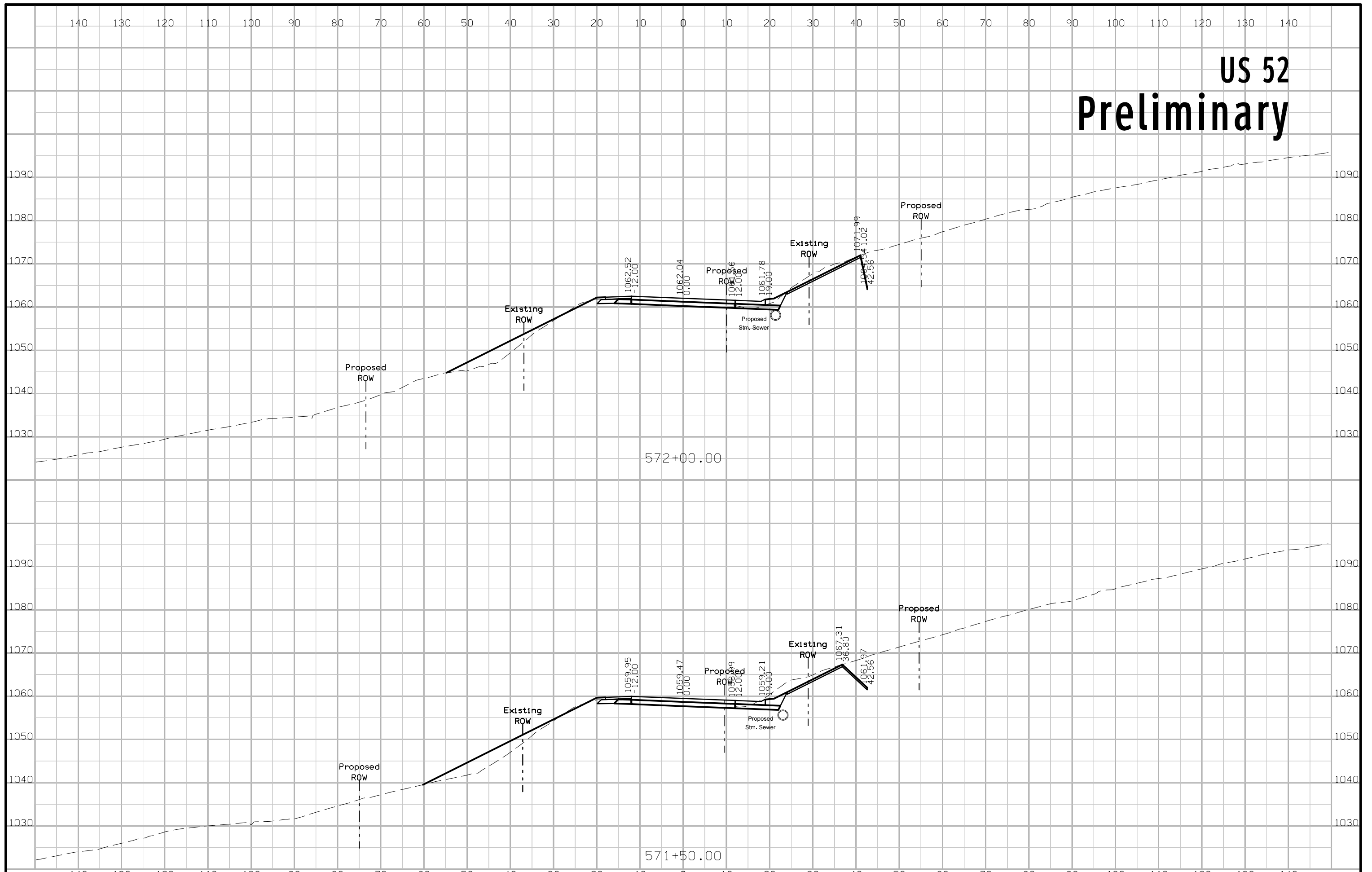




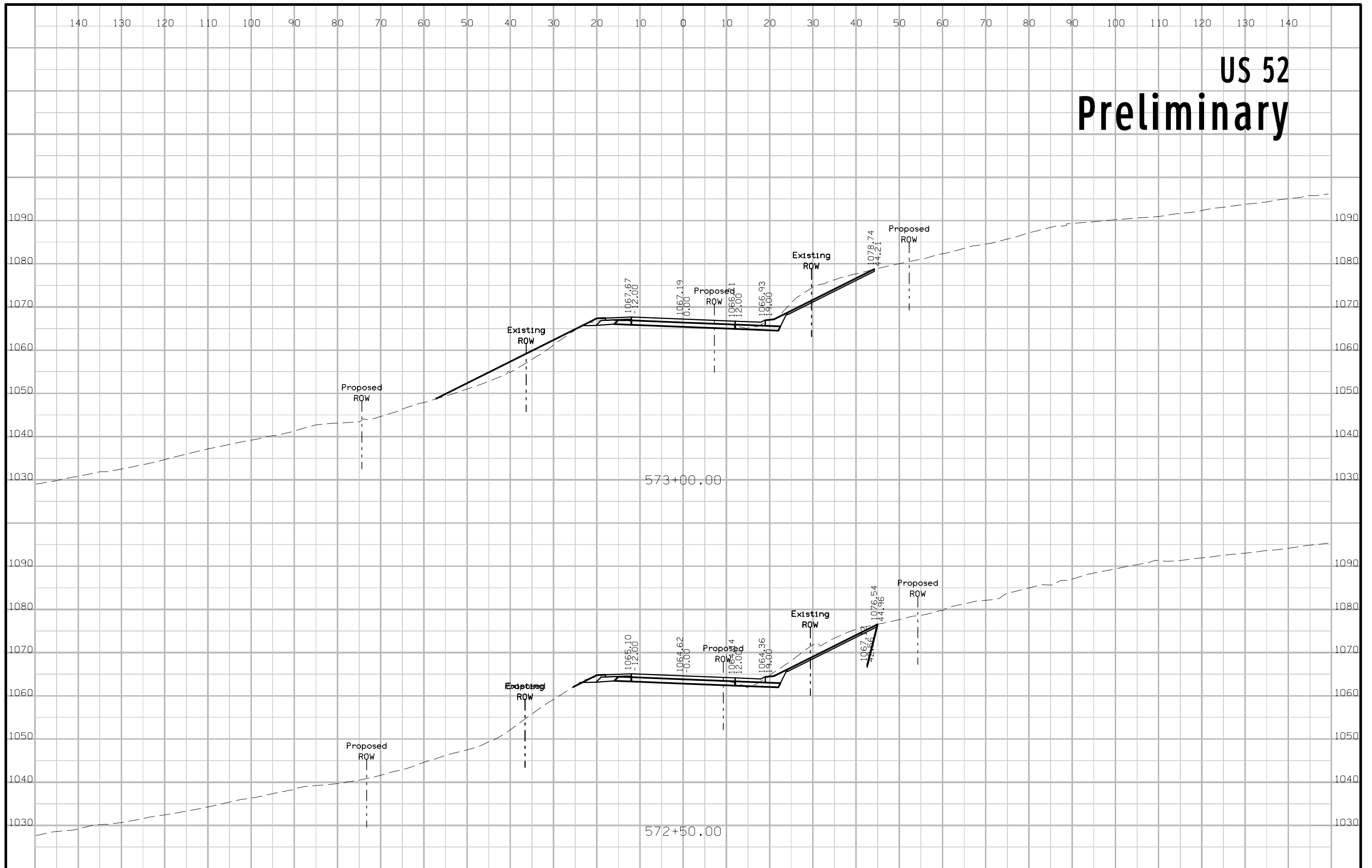




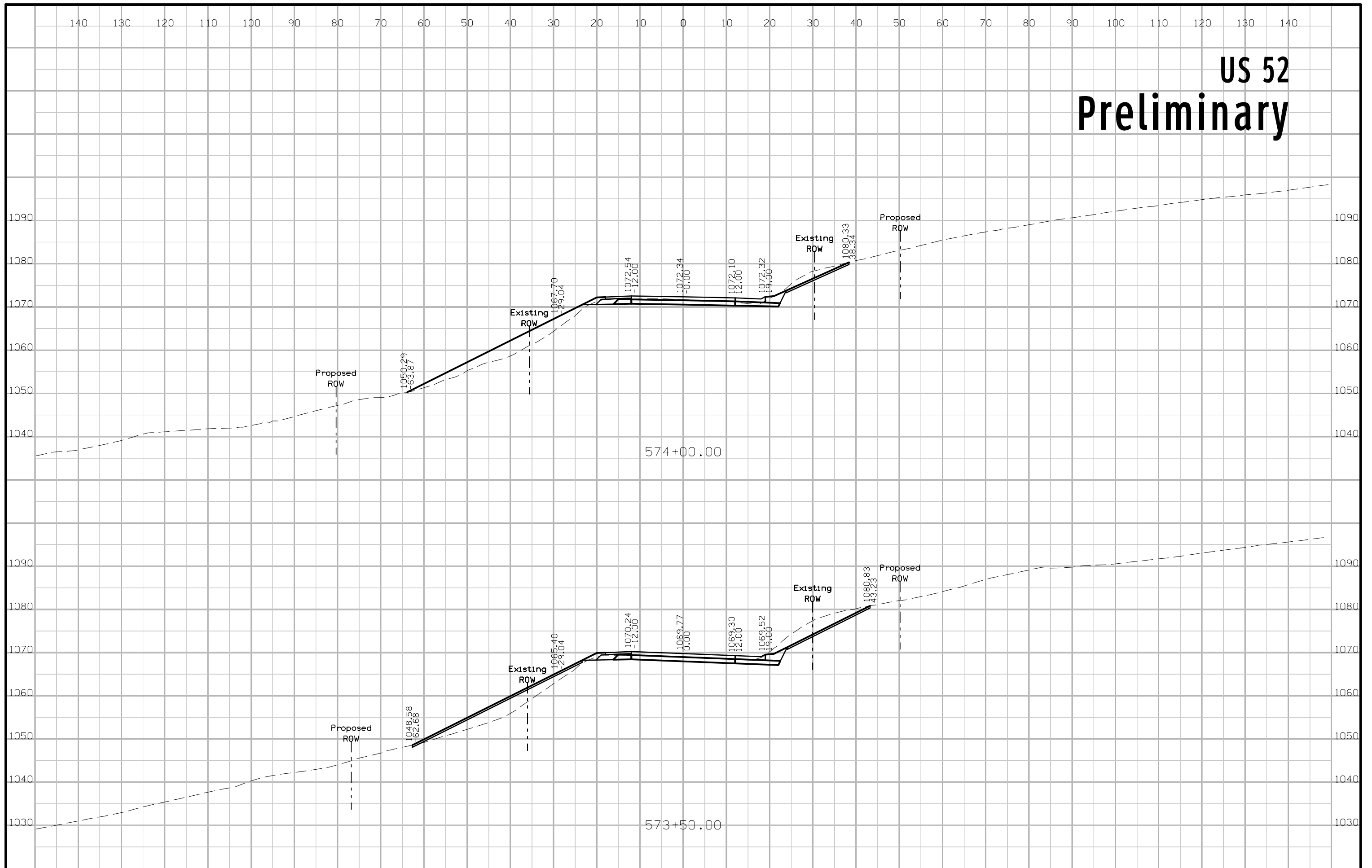
# US 52 Preliminary



# US 52 Preliminary

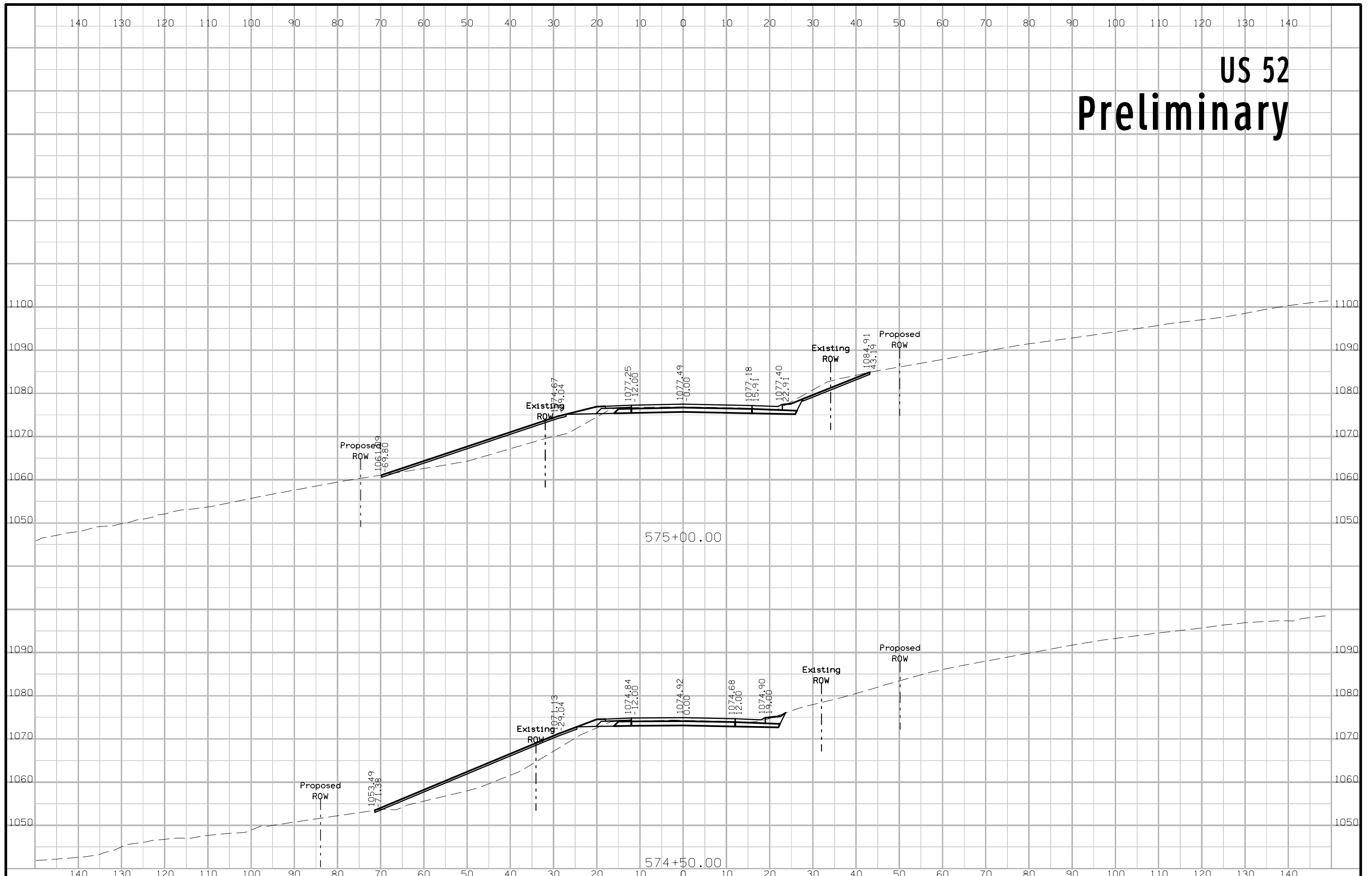


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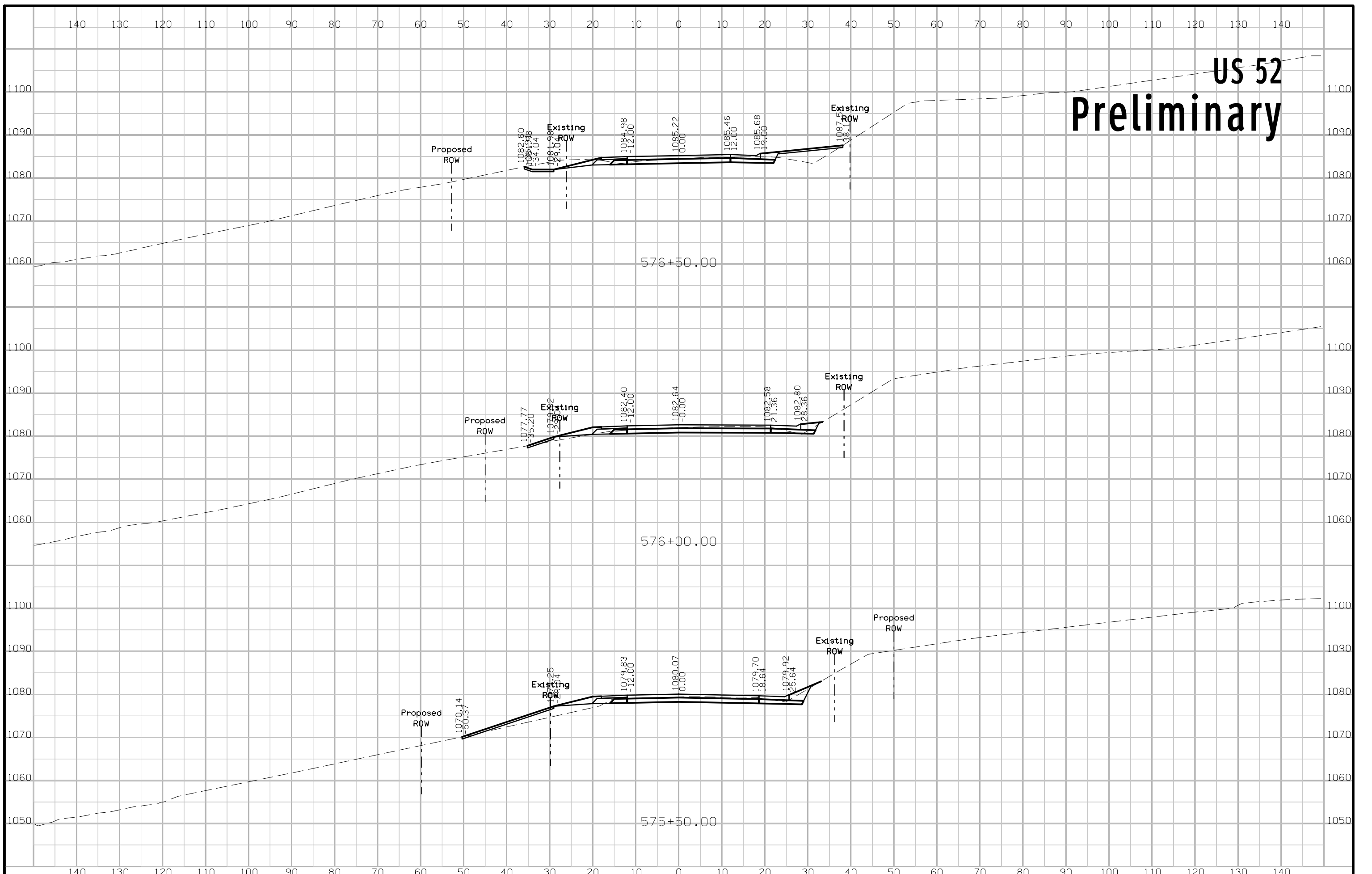




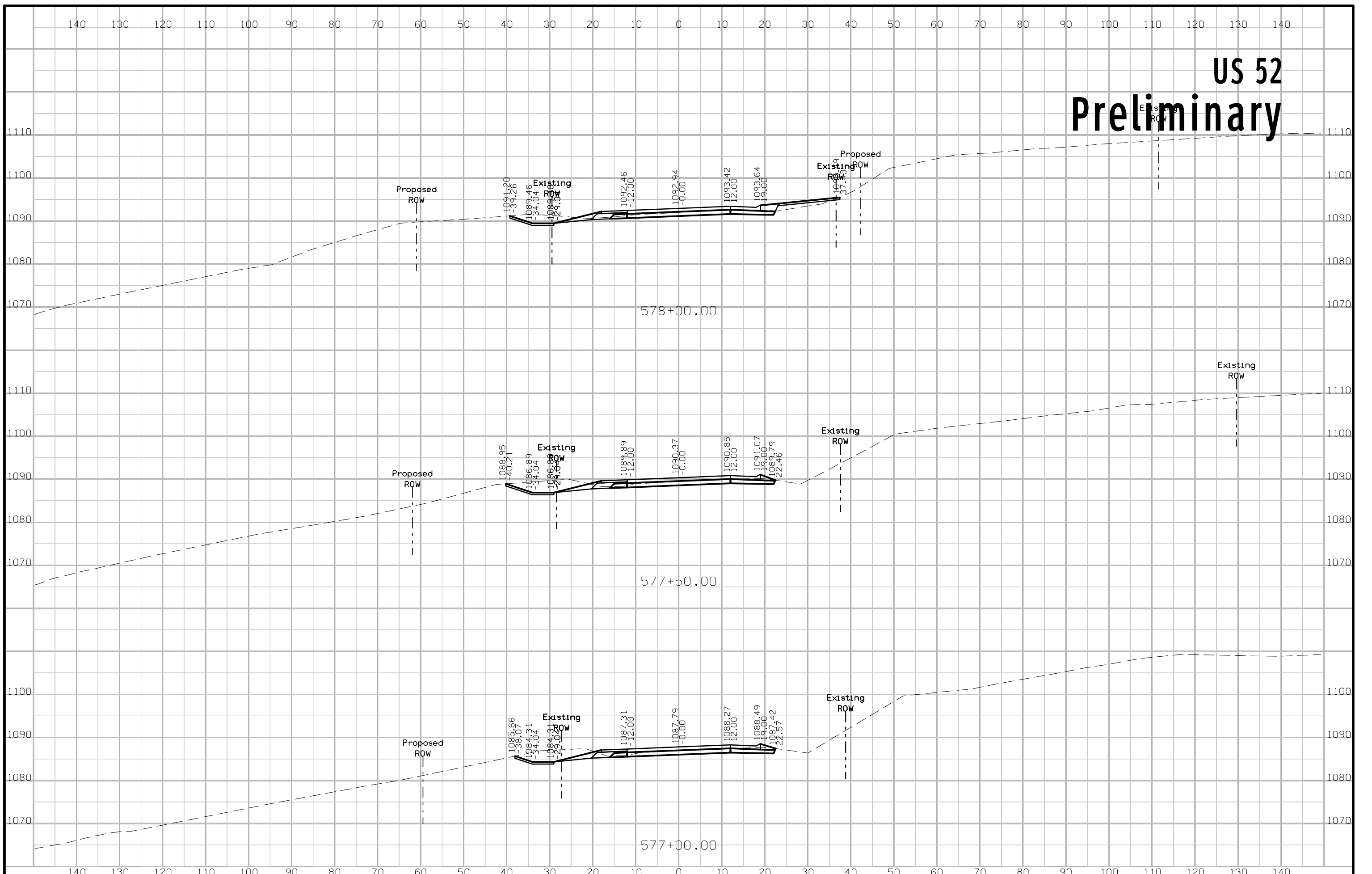
# US 52 Preliminary



# US 52 Preliminary

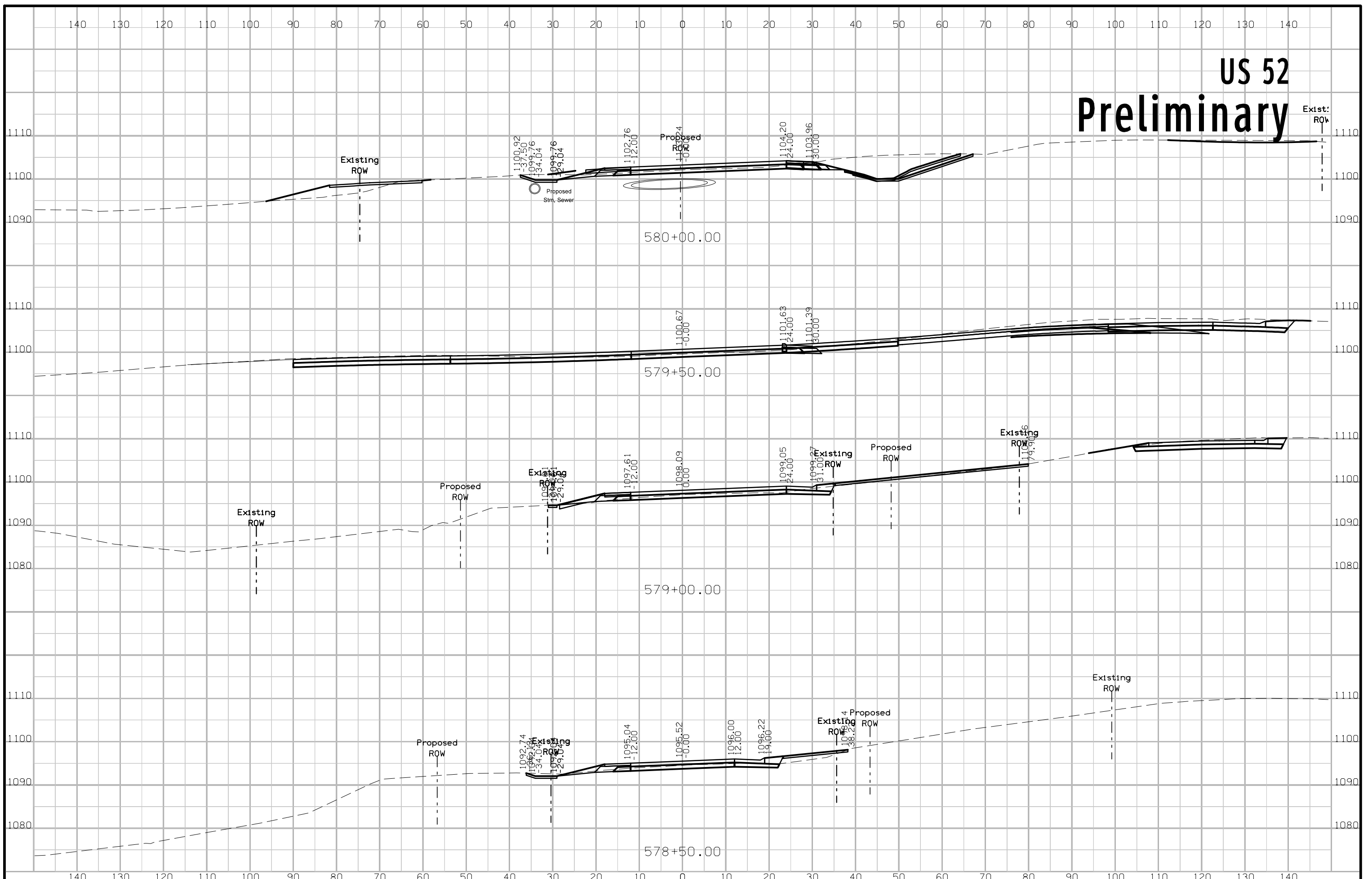


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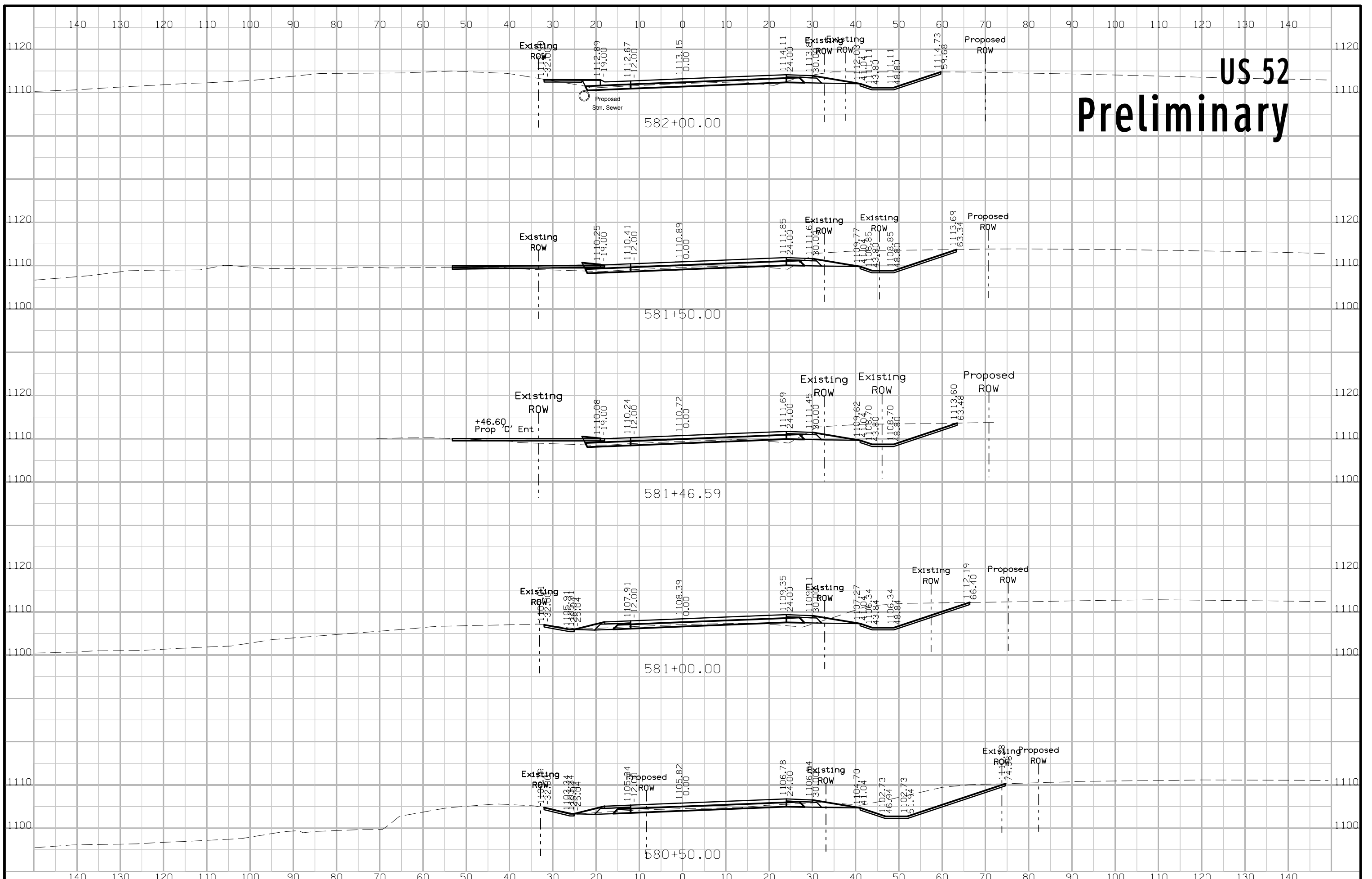




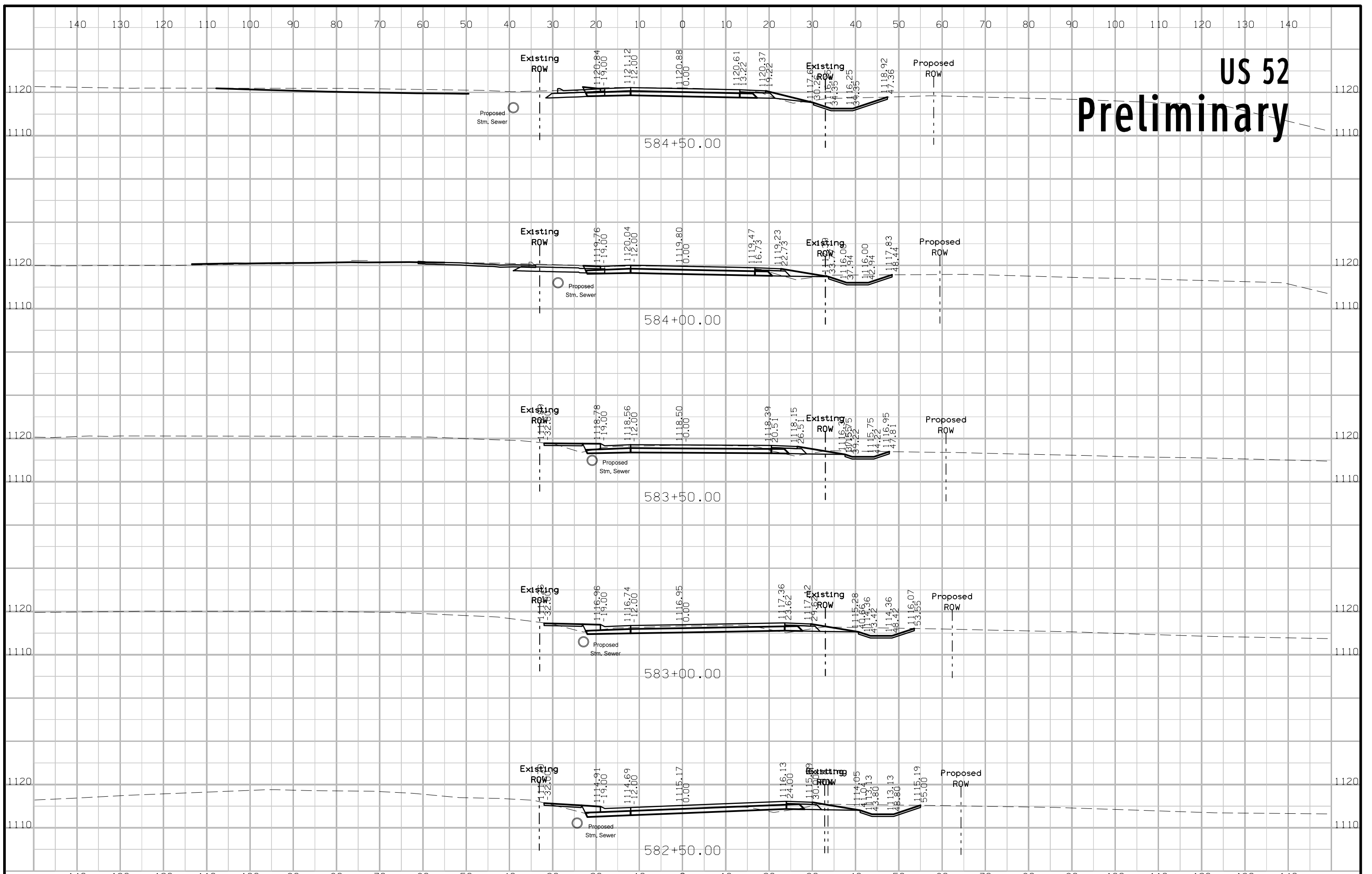
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# US 52 Preliminary

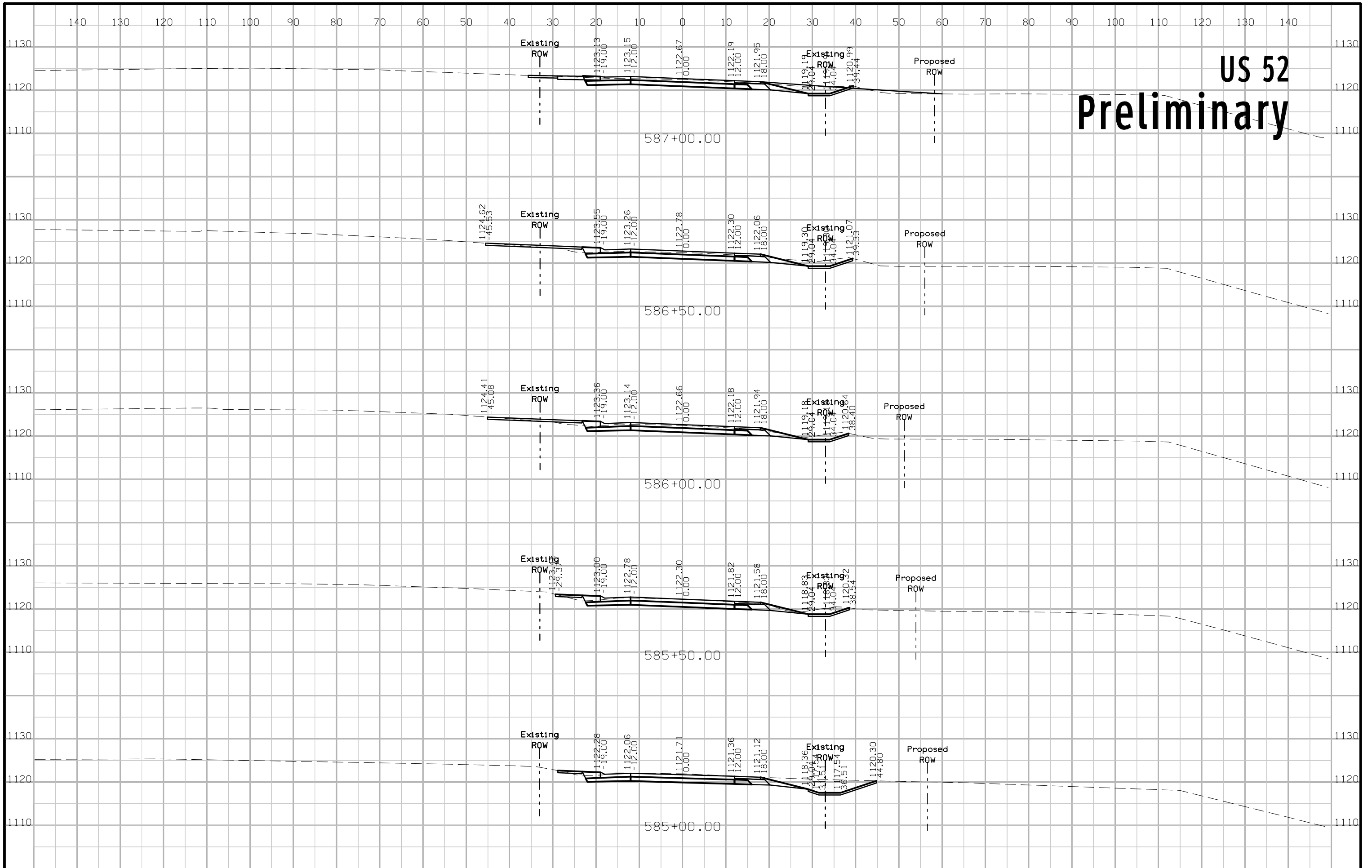


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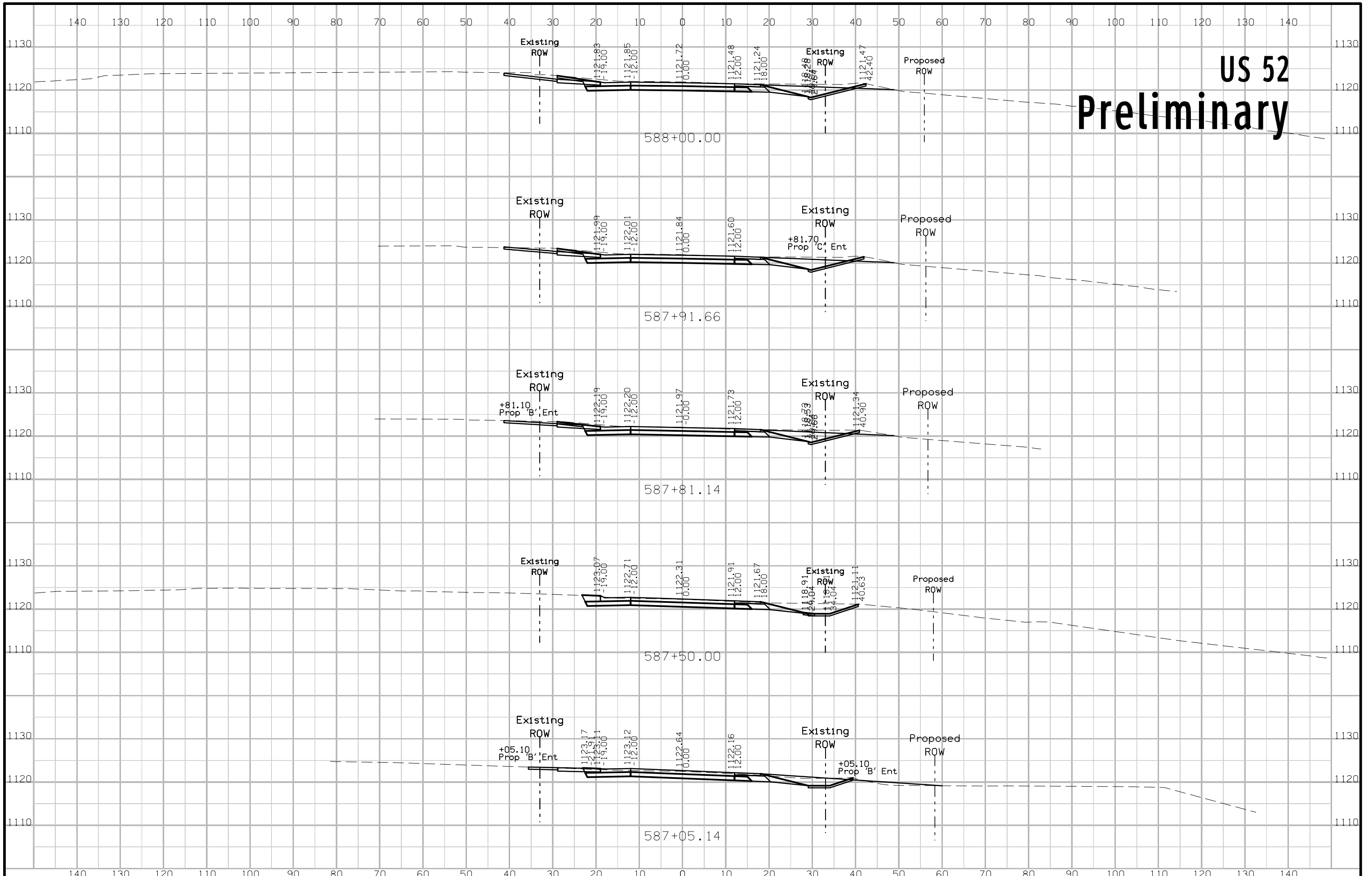




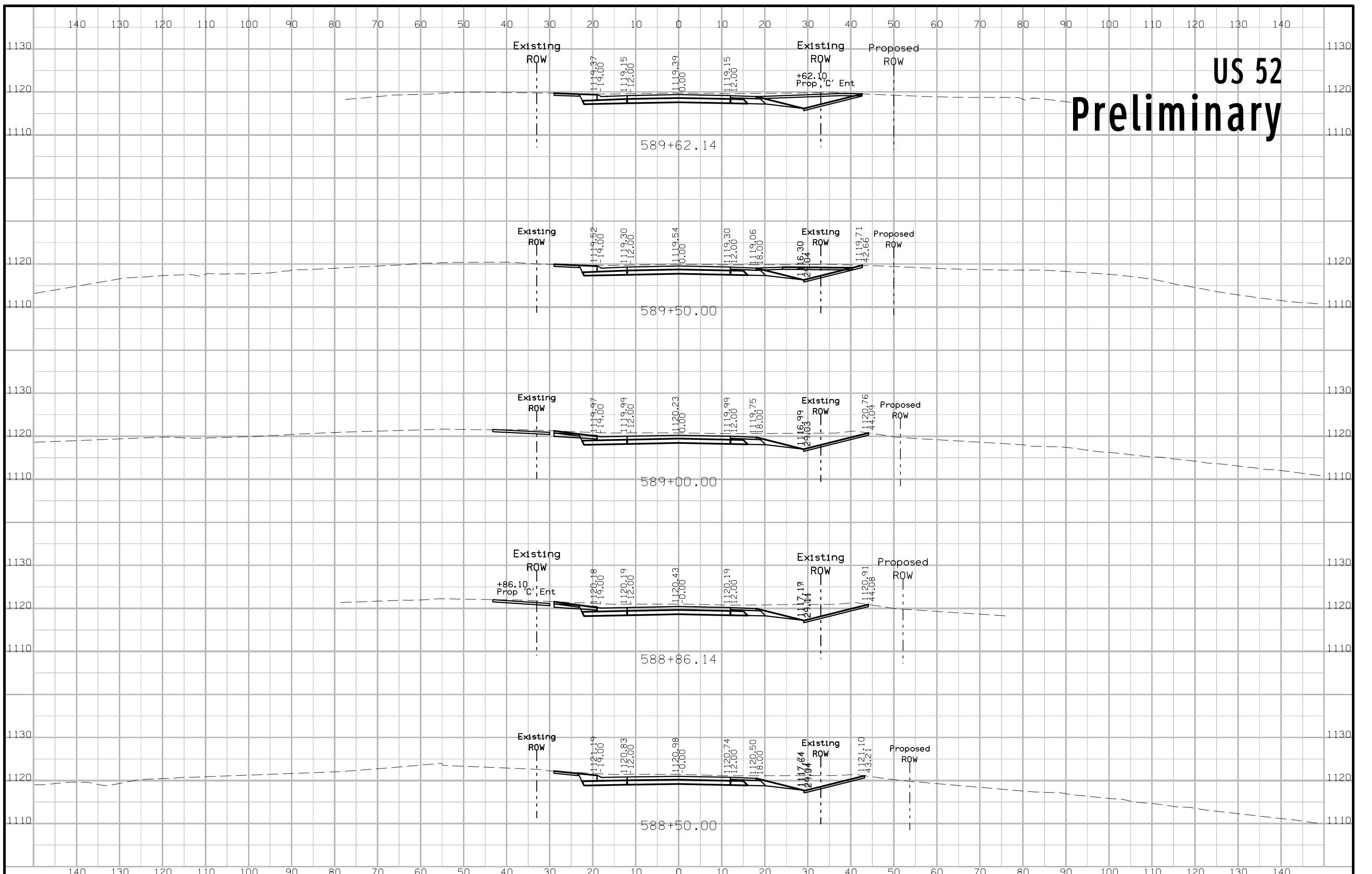
# US 52 Preliminary



# US 52 Preliminary

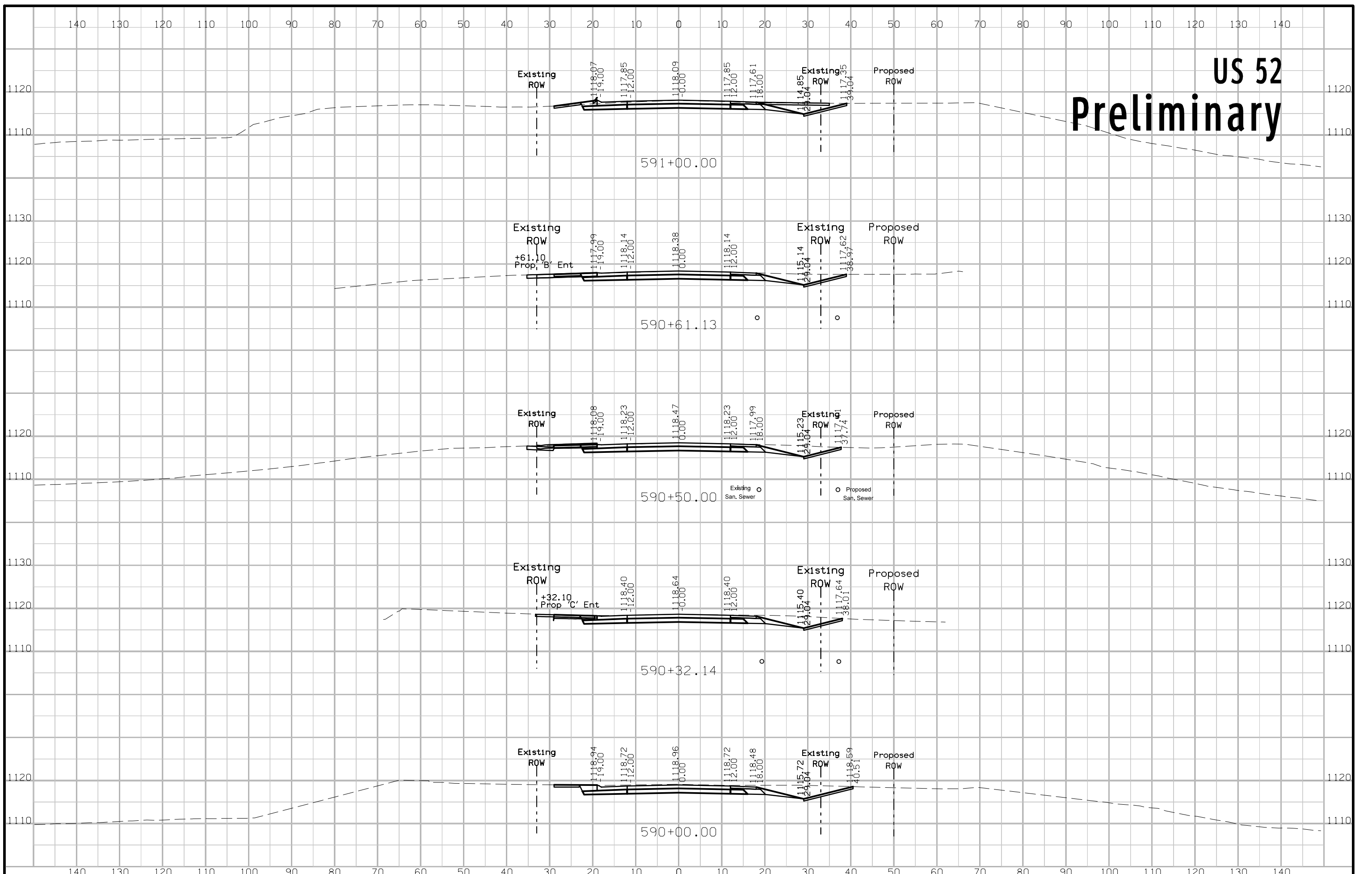


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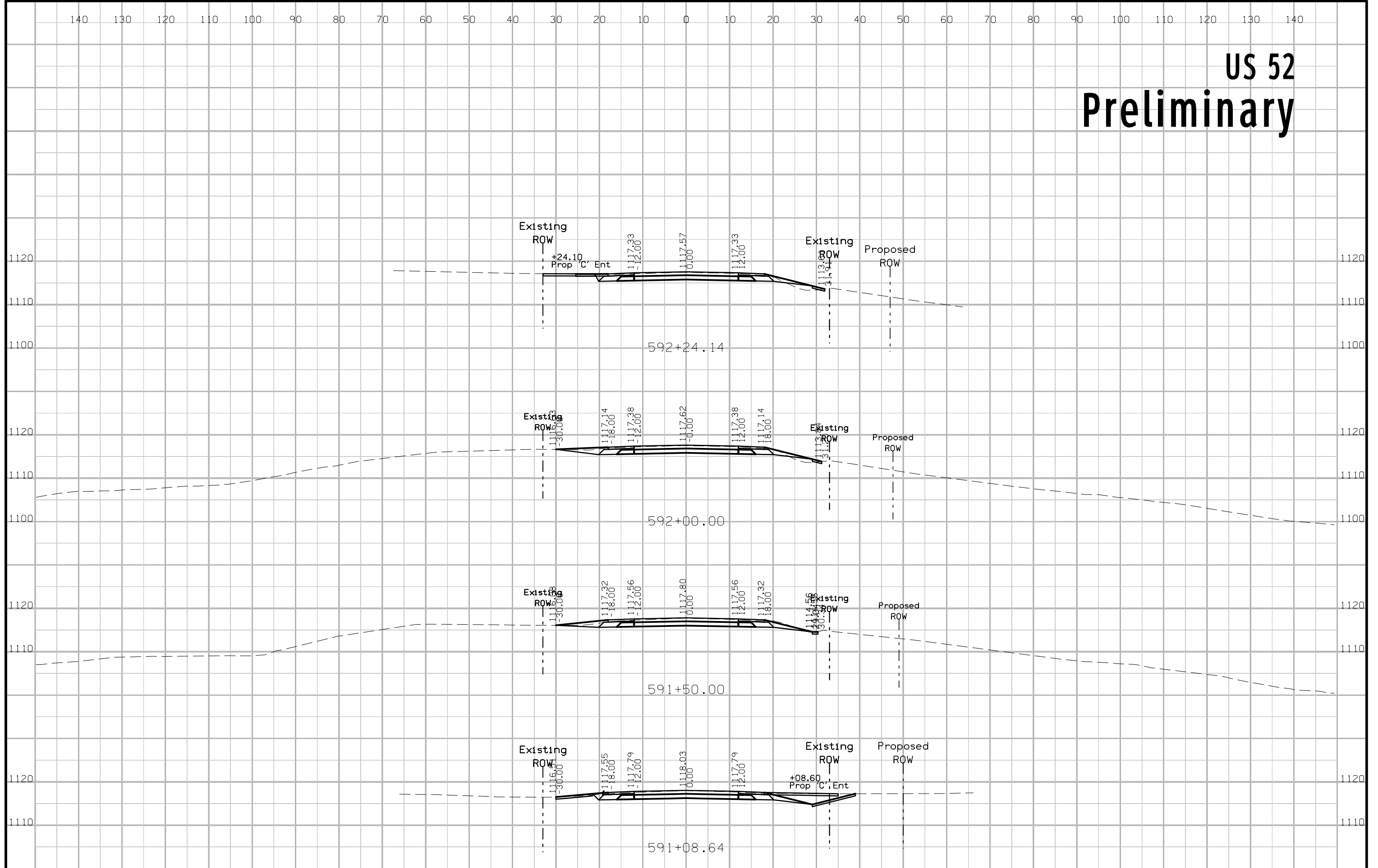




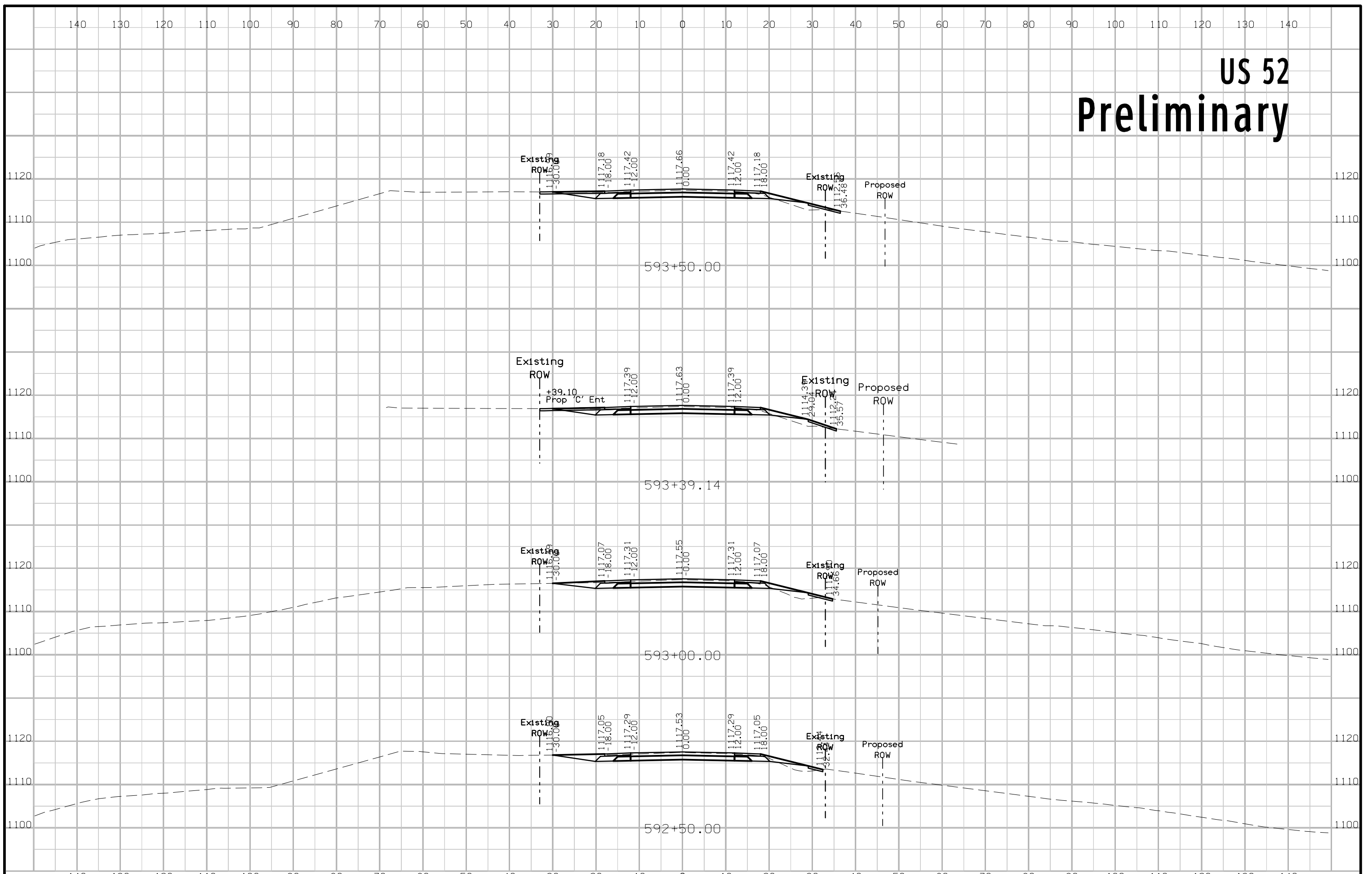
# US 52 Preliminary



# US 52 Preliminary

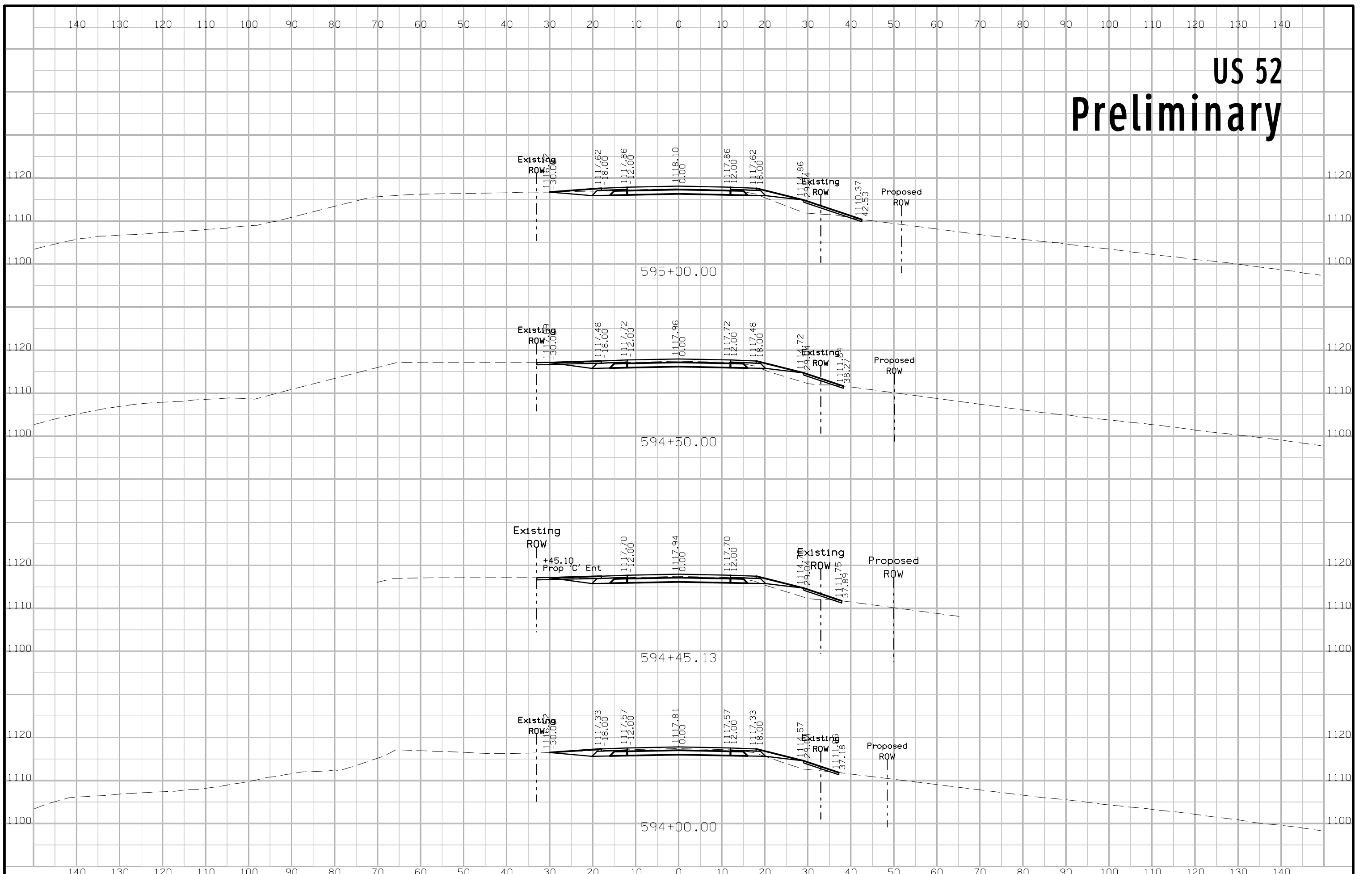


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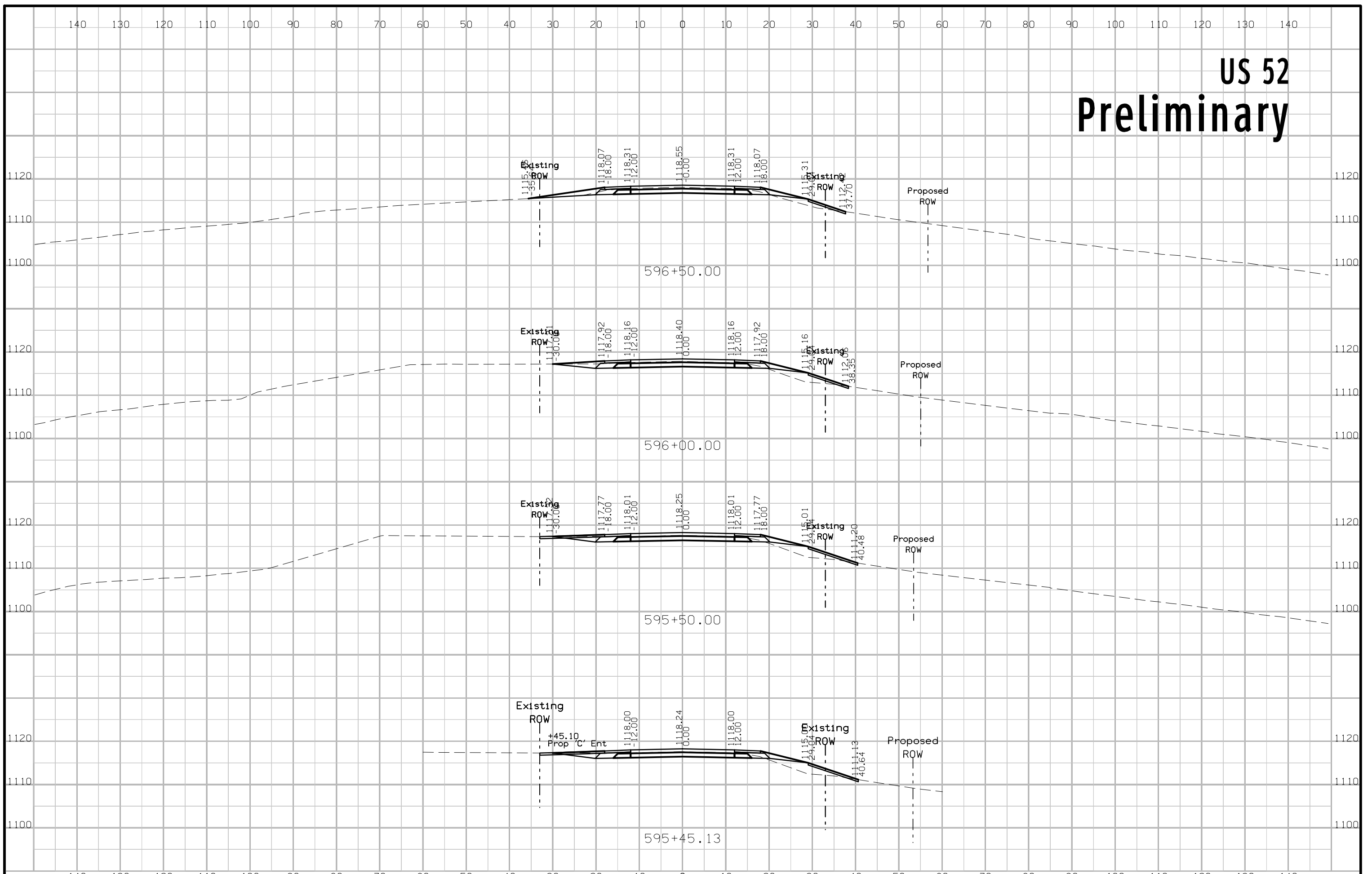




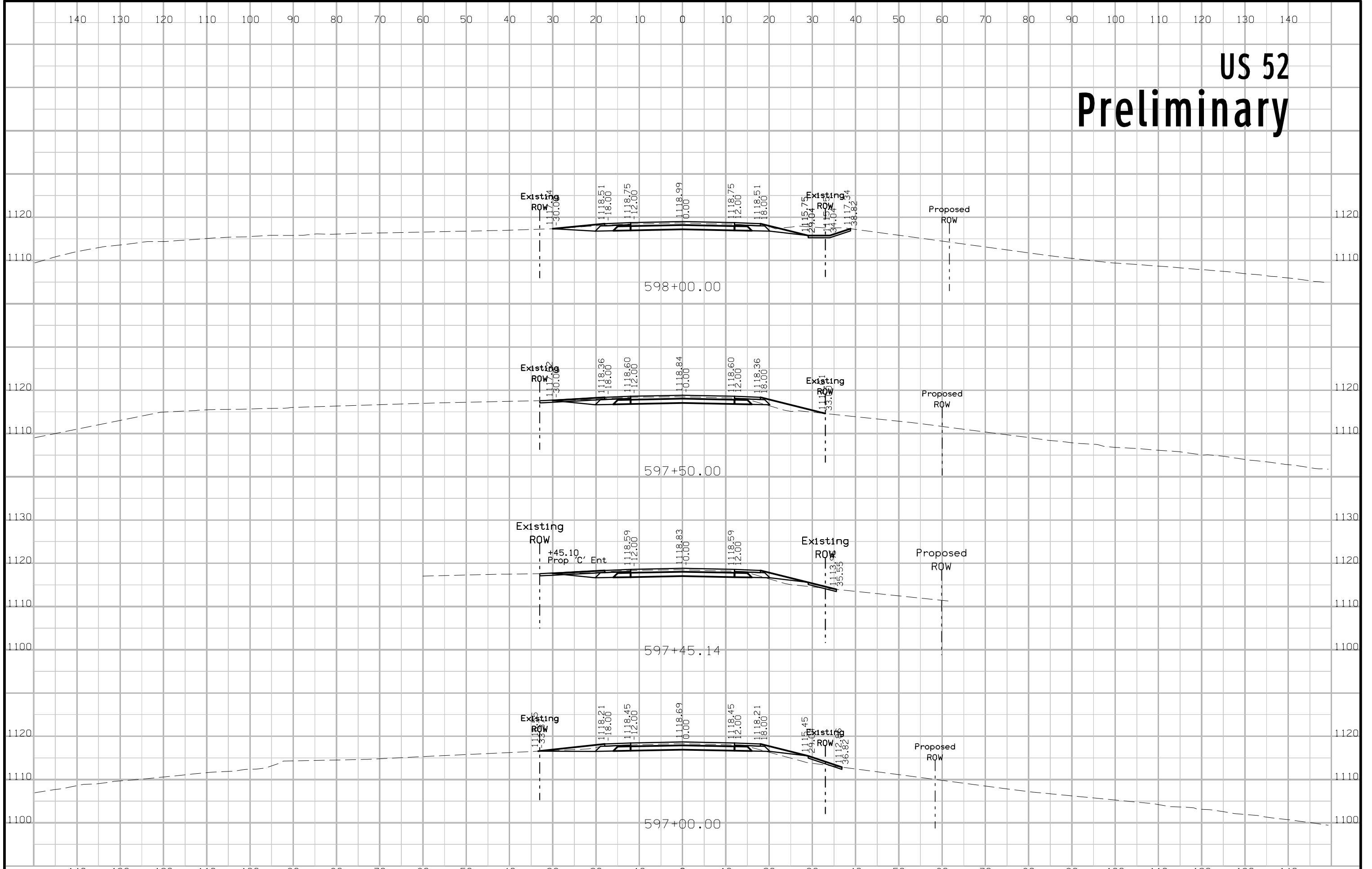
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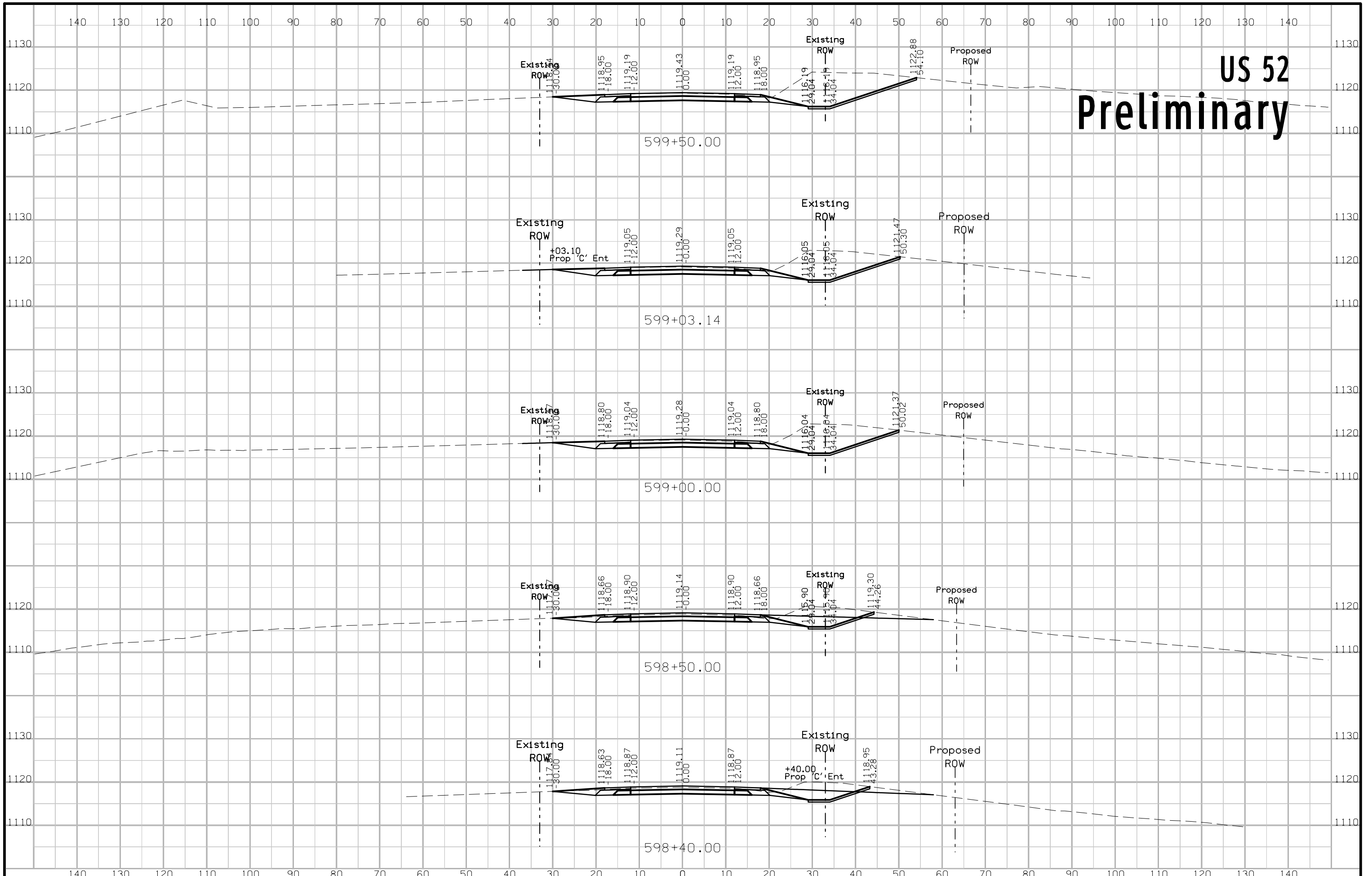


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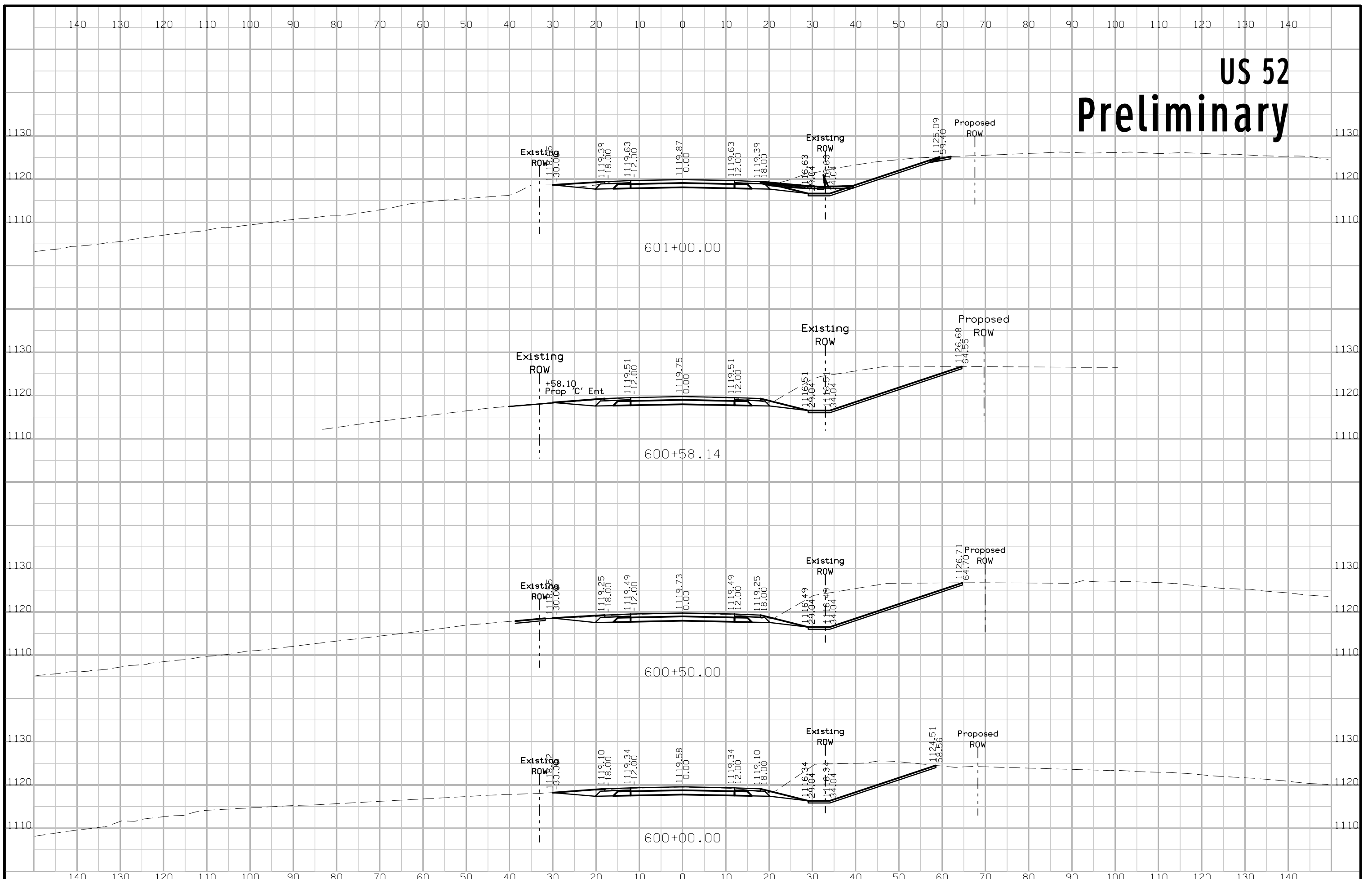




# US 52 Preliminary



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