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Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

FLOYD COUNTY

PCC PAVEMENT - GRADE AND NEW

US 18/US 218/A 27 AT FLOYD COUNTY T44
SOUTH OF FLOYD

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	210
PROJECT IDENTIFICATION NUMBER	06-34-018-010
PROJECT NUMBER	NHSX-018-6(95)--3H-34
R.O.W. PROJECT NUMBER	NHSN-018-6(94)--2R-34
	NHSN-018-6(94)--2R-34
	NHSN-018-6(94)--2R-34

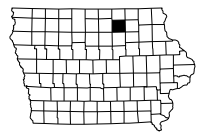
DESIGN DATA RURAL			
2018	AADT	11,600	V.P.D.
2038	AADT	18,700	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	26	%
	Total		
	Design ESALs	--	

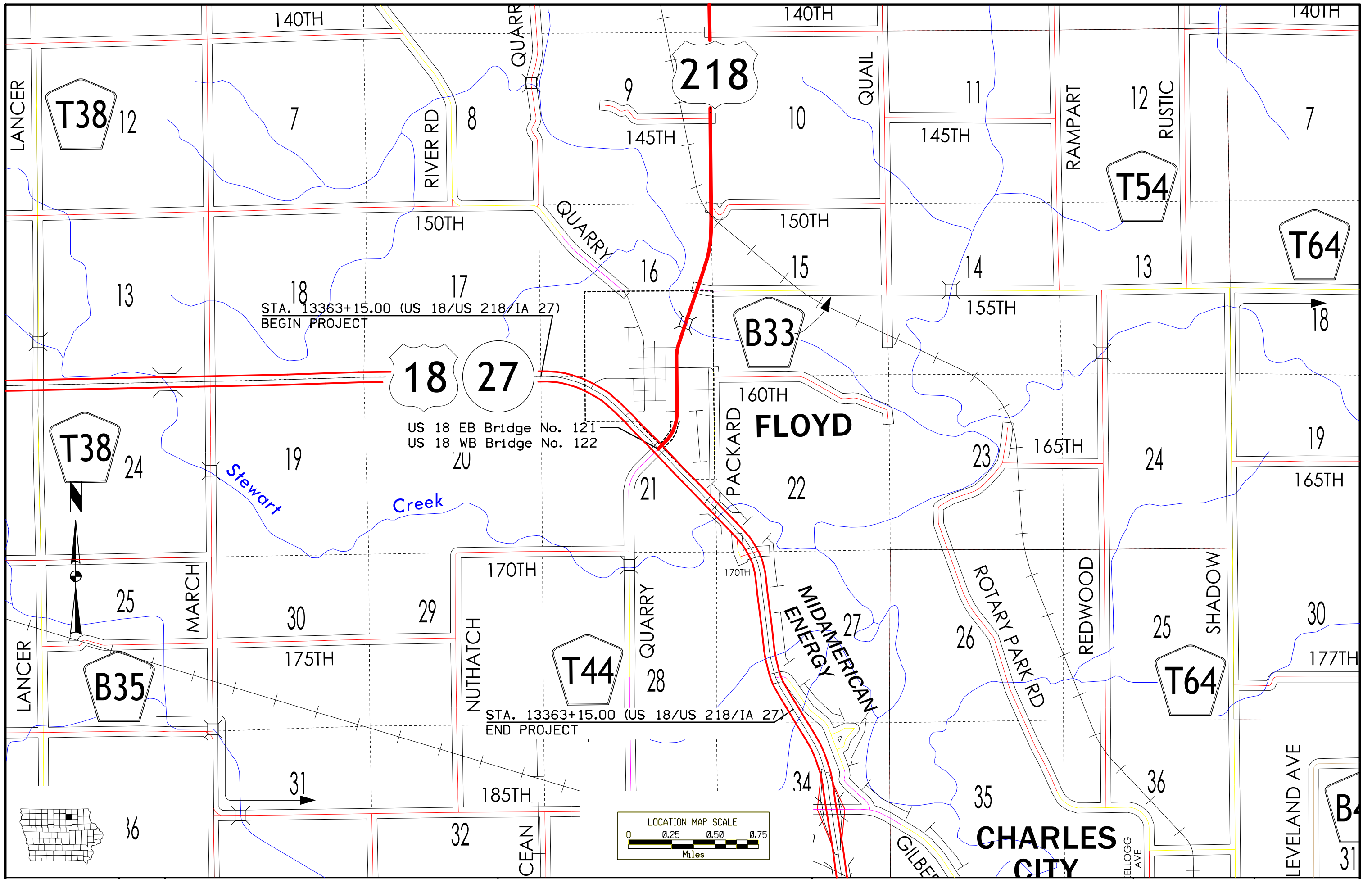
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
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X	X	X

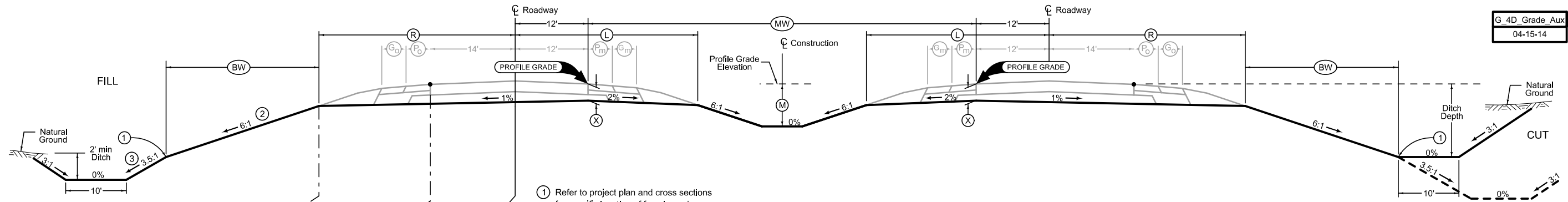
PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: Mar. 1, 2019







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

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

- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② 3:1 slope Sta. 12407+50 to 12409+50
10:1 slope Sta. 12440+50 to 12460+00
- ③ 6:1 slope Sta. 12382+75 to 12390+50
3:1 slope Sta. 12407+50 to 12409+50
6:1 slope Sta. 12425+75 to 12437+50

4 LANE GRADING

LOCATION		DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet
US-18 WB	12362+90.00 - 12365+33.47	31.5	35.3	22	16.4	68	4
US-18 WB	12365+33.47 - 12392+65.05	31.5	35.3	22	16.4	68 - 64	4
US-18 WB	12392+65.05 - 12445+14.91	31.5	35.3	22	16.4	64	4
US-18 WB	12445+14.91 - 12463+06.73	31.5	35.3	22	16.4	64 - 100	4
US-18 WB	12463+06.73 - 12465+85.00	31.5	35.3	22	16.4	100	4

4 LANE GRADING

LOCATION		DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet
US-18 EB	13362+75.00 - 13365+33.46	31.5	35.3	22	16.4	68	4
US-18 EB	13365+33.46 - 13391+90.89	31.5	35.3	22	16.4	68 - 64	4
US-18 EB	13391+90.89 - 13444+40.74	31.5	35.3	22	16.4	64	4
US-18 EB	13444+40.74 - 13461+67.10	31.5	35.3	22	16.4	64 - 100	4
US-18 EB	13461+67.10 - 13463+40.00	31.5	35.3	22	16.4	100	4

Auxiliary Lane Grading

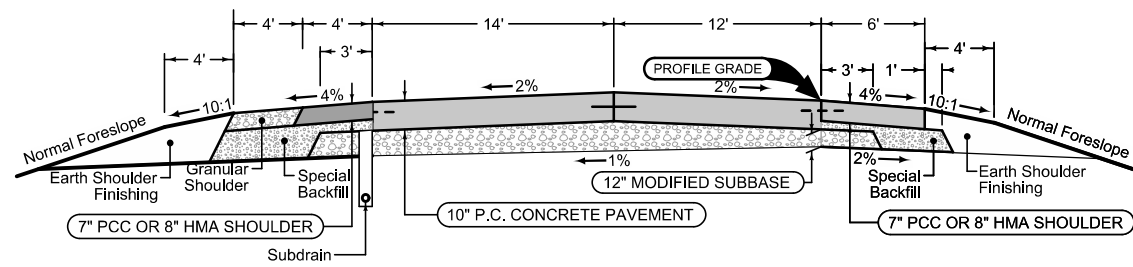
LOCATION		R Feet
ROAD IDENTIFICATION	STATION TO STATION	
US-18 WB	12397+20.00 - 12400+20.00	35.3 - 48.5
US-18 WB	12400+20.00 - 12408+70.00	48.5
US-18 WB	12425+06.91 - 12430+06.91	48.5
US-18 WB	12430+06.91 - 12432+56.91	48.5 - 35.3

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

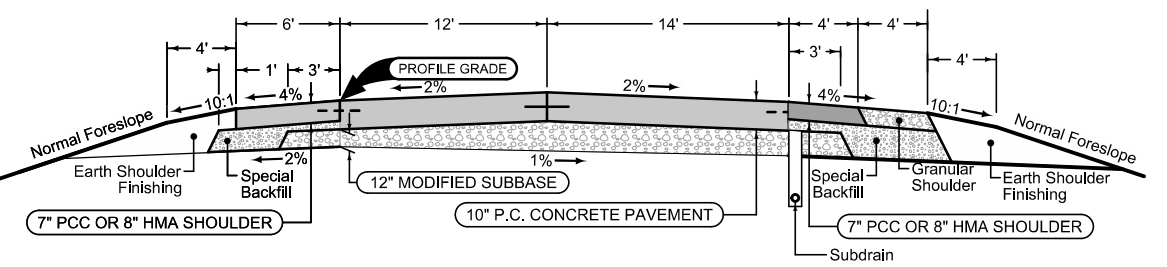
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

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

**US HIGHWAY 18
GRADING**



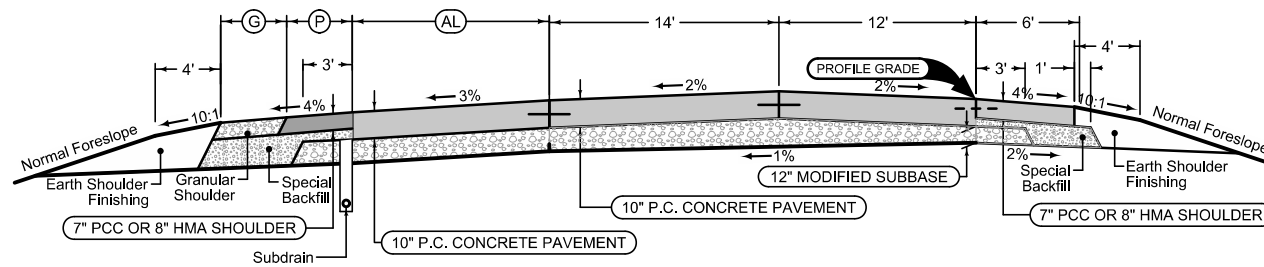
US HIGHWAY 18 - WESTBOUND



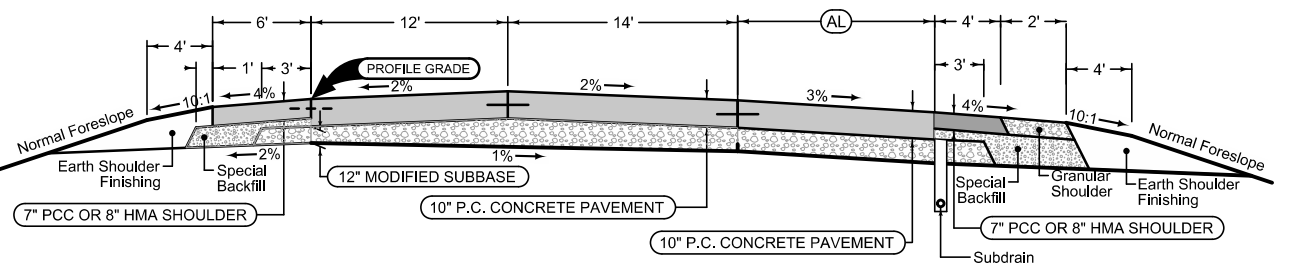
US HIGHWAY 18 - EASTBOUND

Paved Shoulder Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B



US HIGHWAY 18 - WESTBOUND



US HIGHWAY 18 - EASTBOUND

Paved Shoulder Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

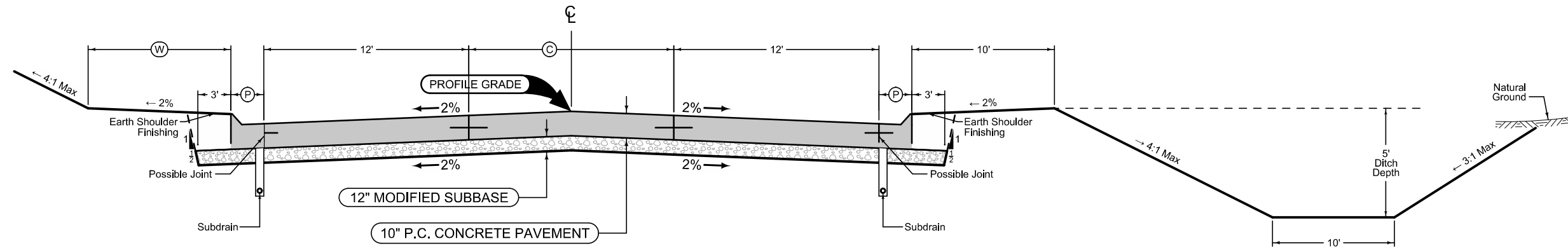
Auxiliary Lane

Longitudinal joint: L or KT
 Transverse joint: Match Mainline

4_AuxLane_PCC_10-18-16				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
WB	12397+20.00	12400+20.00	6	0
WB	12400+20.00	12408+70.00	6	0
WB	12425+06.91	12430+06.91	4	2
WB	12430+06.91	12432+56.91	4	2

4_AuxLane_PCC_10-18-16			
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet
WB	12397+20.00	12400+20.00	0 - 12
WB	12400+20.00	12408+70.00	12
WB	12425+06.91	12430+06.91	12
WB	12430+06.91	12432+56.91	12 - 0

US HIGHWAY 18 PAVING



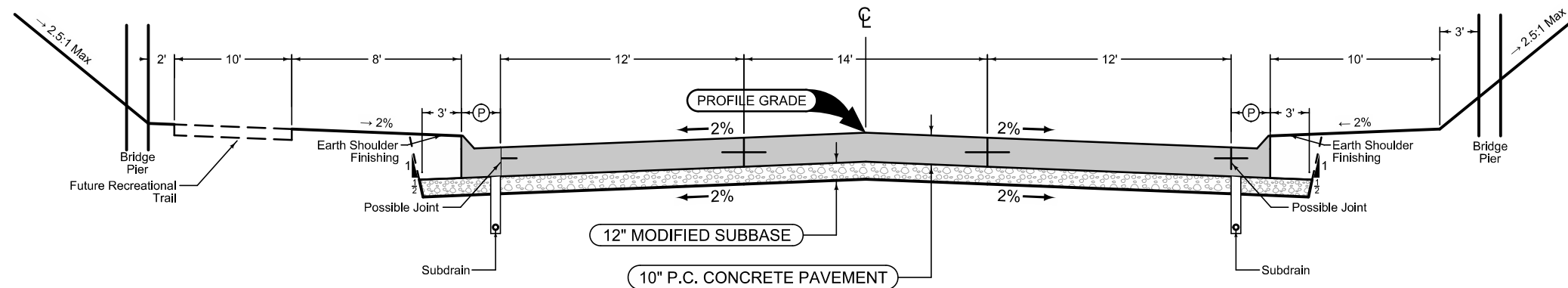
Curbed Shoulder

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

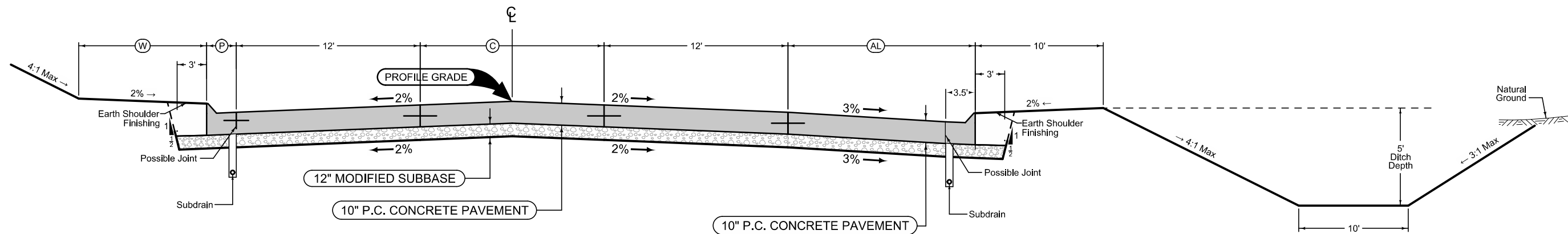
2P_TWLTL_10-19-10			
STATION TO STATION		Ⓒ Feet	Ⓜ Feet
1406+26.82	1408+00.00	14	10
1408+00.00	1408+50.00	14	10-20
1408+50.00	1412+37.65	14	20
1415+73.49	1421+11.22	14	10
1421+11.22	1422+88.58	14-0	10

2_Curb_10-17-17			
STATION TO STATION		Ⓟ Feet	Curb Type See PV-102
1406+26.82	1412+37.65	3.5	6" Standard
1415+73.49	1422+88.58	3.5	6" Standard



US HIGHWAY 218 SECTION AT BRIDGE PIERS

US HIGHWAY 218



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

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

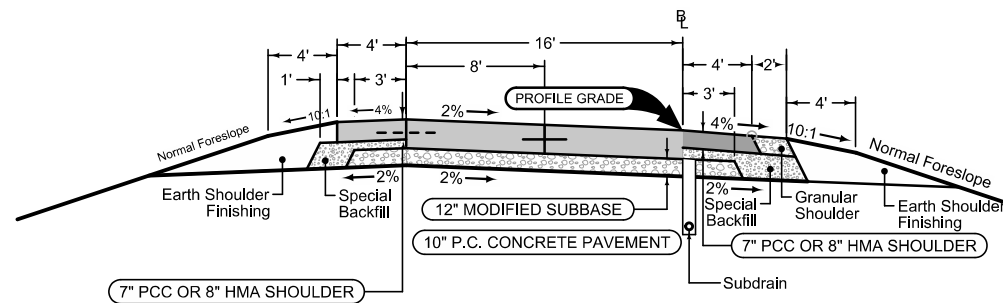
2P_TWLT_L_10-19-10			
STATION TO STATION		(C) Feet	(W) Feet
1412+37.65	1413+50.00	14	20
1413+50.00	1414+00.00	14	20 - 10
1414+00.00	1415+73.49	14	10

Auxiliary Lane

Longitudinal joint: L or KT
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
1412+37.65	1414+17.61	3.5-15.5
1414+17.61	1415+60.00	15.5

US HIGHWAY 218



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 15' spacing.
 Longitudinal joints: L-2

1RP_	
10-17-17	
BEGIN STATION	END STATION
4391+90.34	4409+53.91
5407+30.87	5422+90.17
6409+70.25	6424+03.15

Combination Shoulder

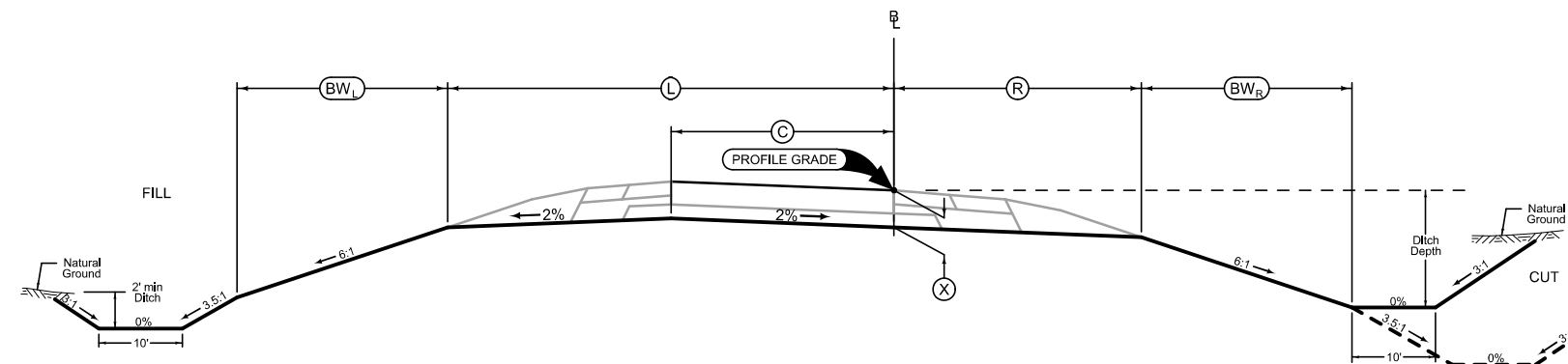
Shoulder Jointing:
 Longitudinal joint: B

Paved Shoulder Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

LOCATION			DIMENSIONS						
INTERCHANGE	RAMP	STATION TO STATION	L	R	C	X	BW _L	BW _R	
			Feet	Feet	Feet	Inches	Feet	Feet	
US-218	A	4391+91.34 4402+25.00	33.8	19.5	16	22	16.9	16.5	
US-218	A	4407+35.00 4409+53.91	33.8	19.5	16	22	16.9	16.5	
US-218	B	5407+30.87 5422+90.17	33.8	19.5	16	22	16.9	16.5	
US-218	C	6409+70.25 6424+03.15	33.8	19.5	16	22	16.9	16.5	

G_1R_Grade
04-15-14



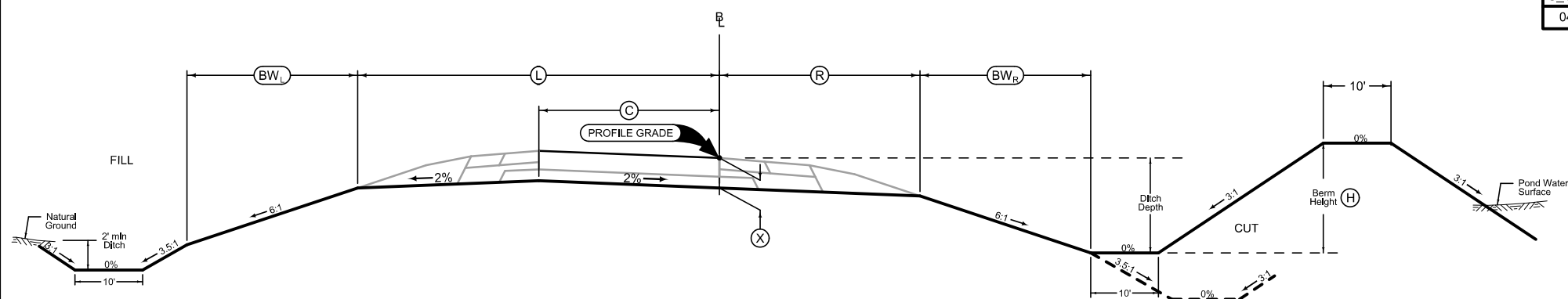
RAMP GRADING

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

LOCATION			DIMENSIONS							
INTERCHANGE	RAMP	STATION TO STATION	L	R	C	X	BW _L	BW _R	H	
			Feet	Feet	Feet	Inches	Feet	Feet	Feet	
US-218	A	4402+00.00 4402+25.00	33.8	19.5	16	22	16.9	16.5	3.6 - 4	
US-218	A	4402+25.00 4406+20.00	33.8	19.5	16	22	16.9	16.5	4	
US-218	A	4406+20.00 4406+40.00	33.8	19.5	16	22	16.9	16.5	4 - 6	
US-218	A	4406+40.00 4407+50.00	33.8	19.5	16	22	16.9	16.5	6	

G_1R_Grade
04-15-14



RAMP GRADING WITH BERM

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

**US HIGHWAY 18 AND US HIGHWAY 218
 RAMP A, RAMP B, AND RAMP C**

SURVEY SYMBOLS

- BM Bench Mark
- PRO Profile Shot
- PIP Pipe Culvert
- PLG Location of General Photo
- > D Centerline Draw or Stream (Down)
- < DU Centerline Draw or Stream (Up)
- SOP Size of Pipe or Culvert
- ⊙ INB Storm Sewer Beehive Intake
- UE Utility Elevation
- ⊕ MH Utility Access (Manhole)
- St.S. — STA Storm Sewer Line Co. 1
- Tile — TIL Tile Line
- OUT Tile Outlet
- E1 — ELA Underground Electric Line Co. 1
- ⊙ WV WW Water Valve
- W — WLA Underground Water Line Co. 1
- G — GLA Underground Gas Line Co. 1
- T1 — TLA Underground Telephone Line Co. 1
- F0 — FOA Underground Fiber Optic Co. 1
- E2 — ELB Underground Electric Line Co. 2
- T2 — TLB Underground Telephone Line Co. 2
- ⊙ TPD Telephone Pedestal
- F02 — FOB Underground Fiber Optic Co. 2
- ⊙ GV Gas Valve
- EB Electrical Box
- CUL Culvert
- ⋈ RIP Rip-Rap
- ⊕ FHD Fire Hydrants
- San. — SAA Sanitary Sewer Line Co. 1
- > D Centerline Draw or Stream (Down)

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 *Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.*

Remark Abbreviations

- QLA Quality Level A Highest guideline quality level
- QLD Quality Level D Lowest guideline quality level

- St.S. — STA City of Floyd Storm Sewer Line (from paint marks)
- E1 — ELA Iowa DOT Luminaire
- W — WLA City of Floyd Water Line
- G — GLA MidAmerican Gas Line
- T1 — TLA Omnitel Telephone Line
- F0 — FOA INS Fiber Optic Line
- E2 — ELB MidAmerican Electric Line
- T2 — TLB CenturyLink Telephone Line
- F02 — FOB Omnitel Fiber Optic Line
- San. — SAA City of Floyd Sanitary Sewer Line (from paint marks)

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

Reference Point

Station

Survey Line

Section Corner

Ground Line Intercept

Saw Cut

Guardrail

Trench Drain

HighTension Cable Guardrail

Sheet Pile

Pavement Removal

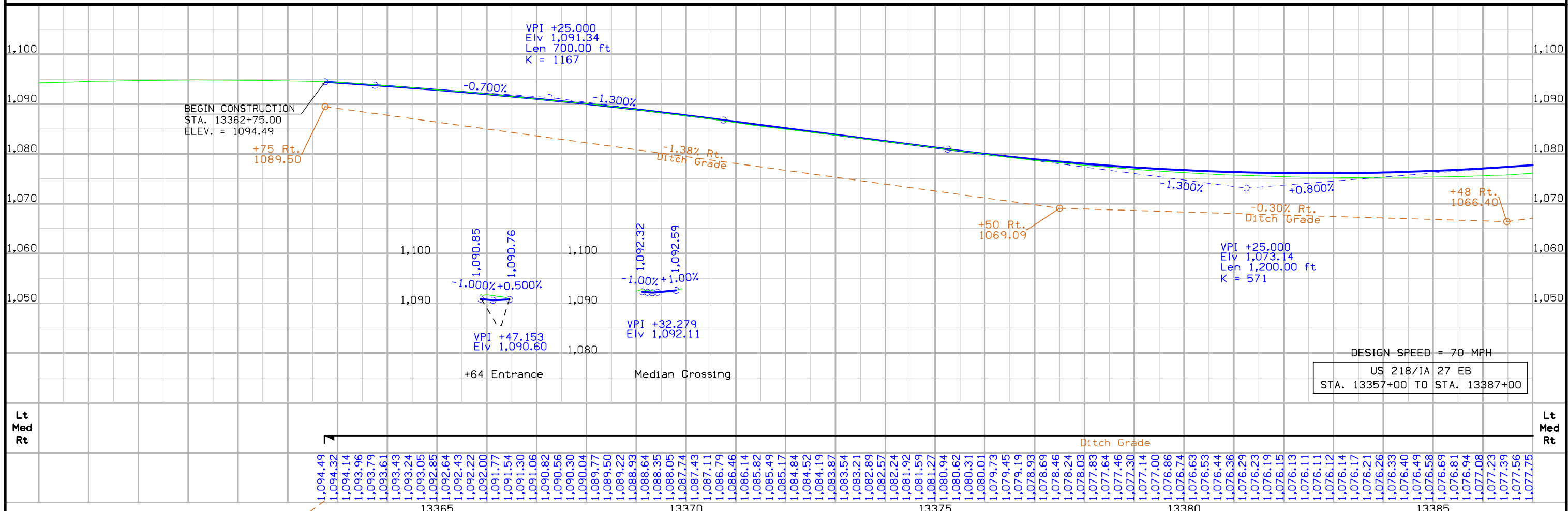
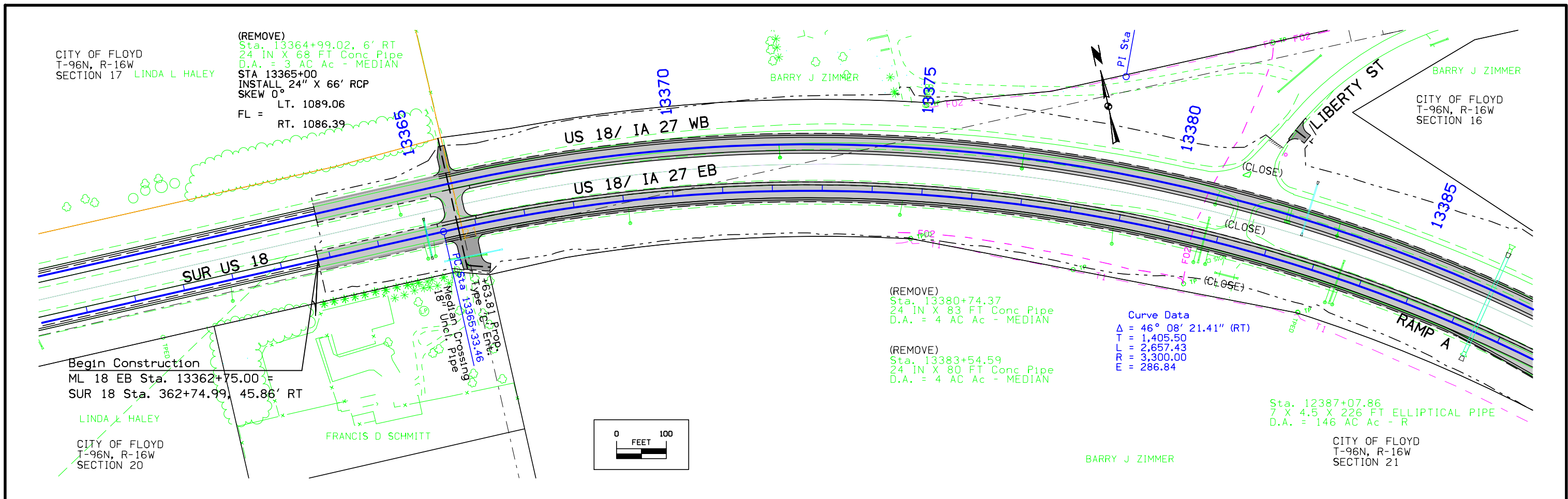
Clearing & Grubbing Area

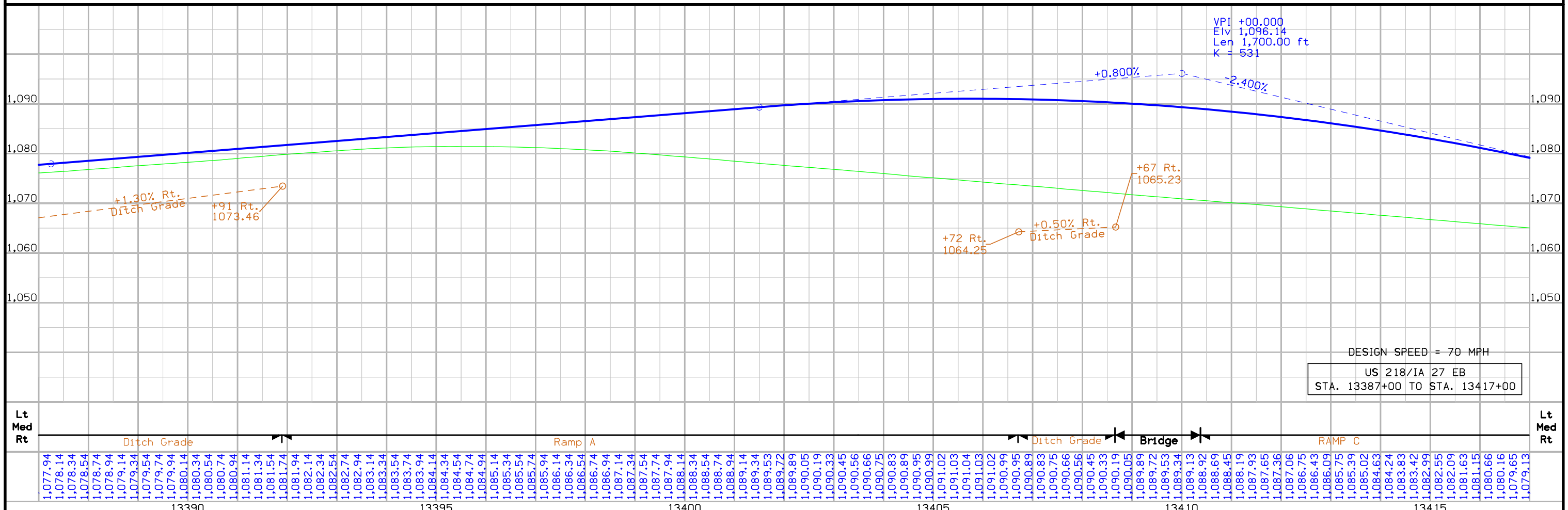
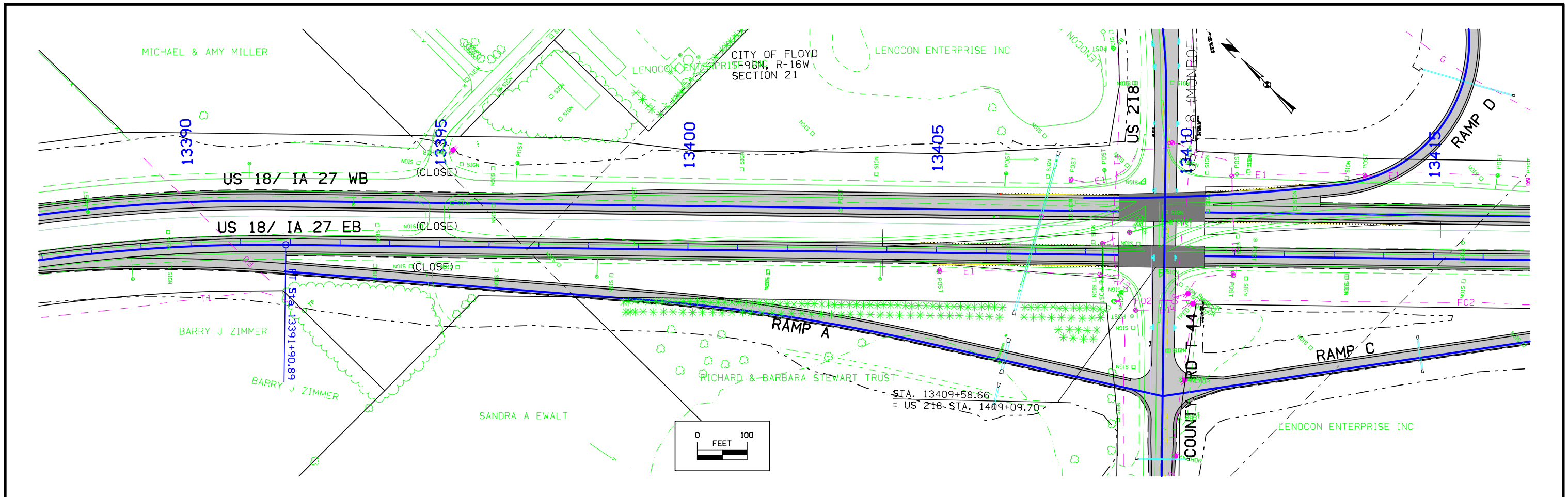
RIGHT-OF-WAY LEGEND

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

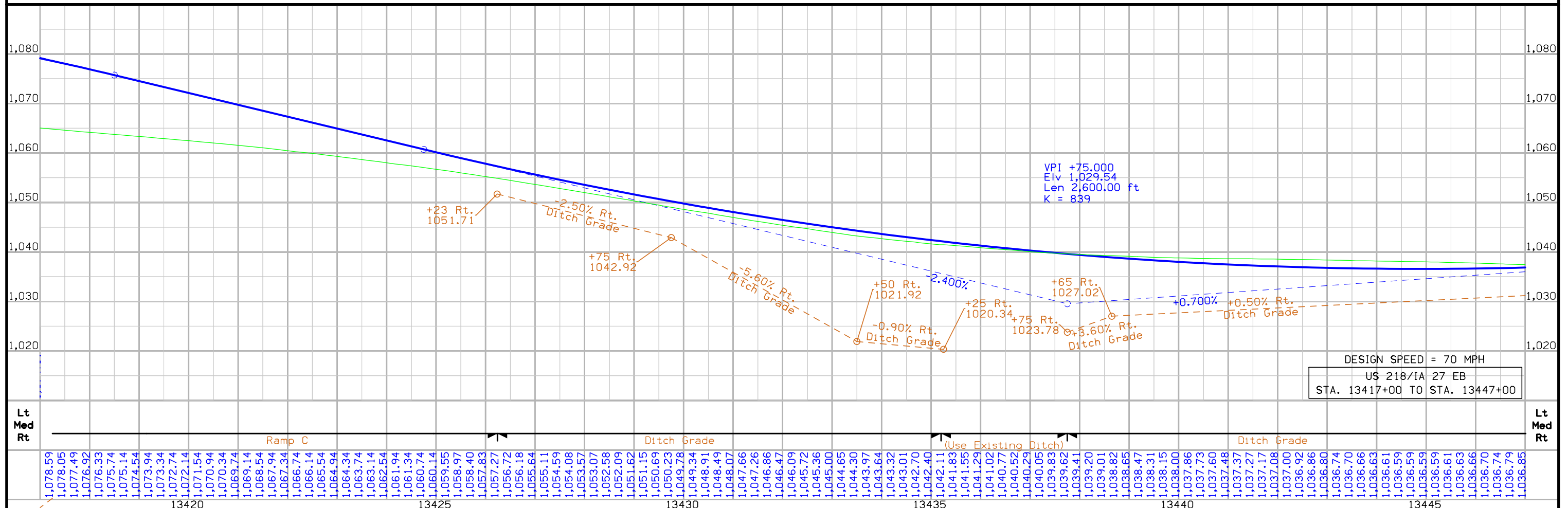
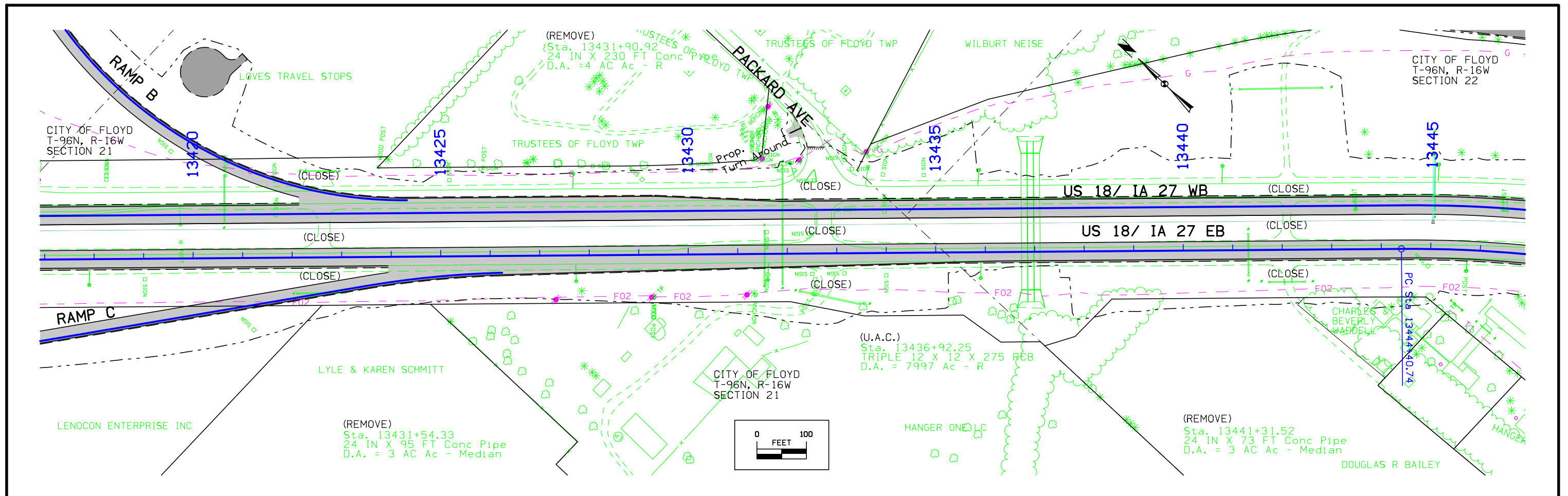
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

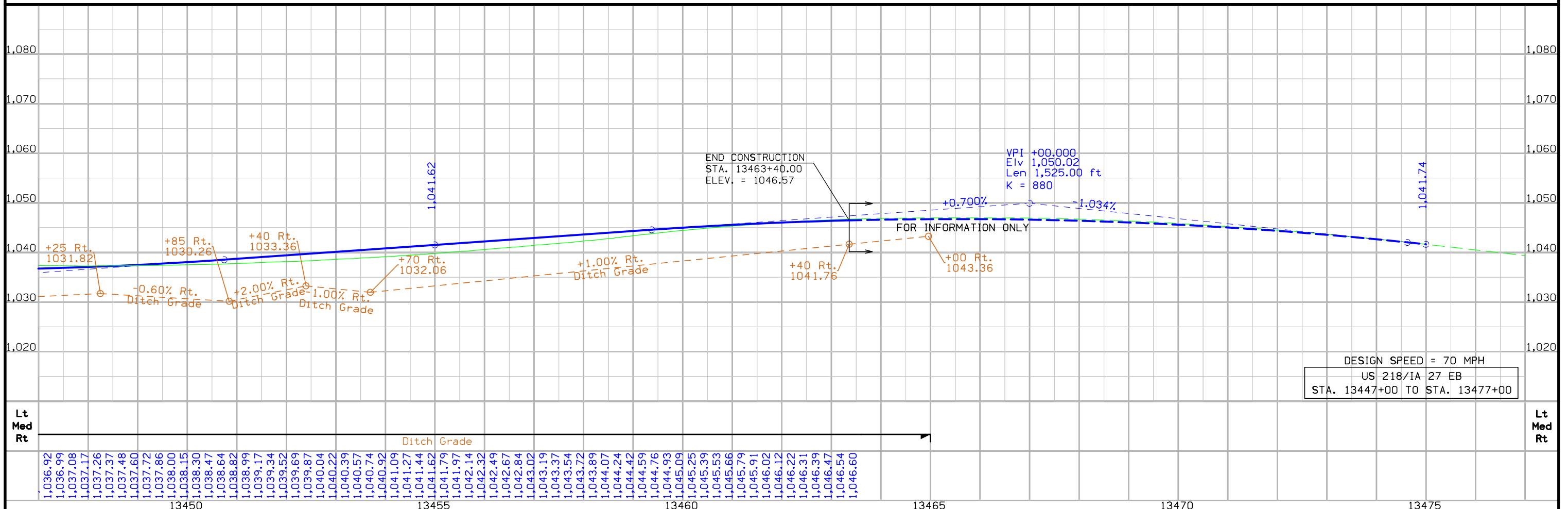
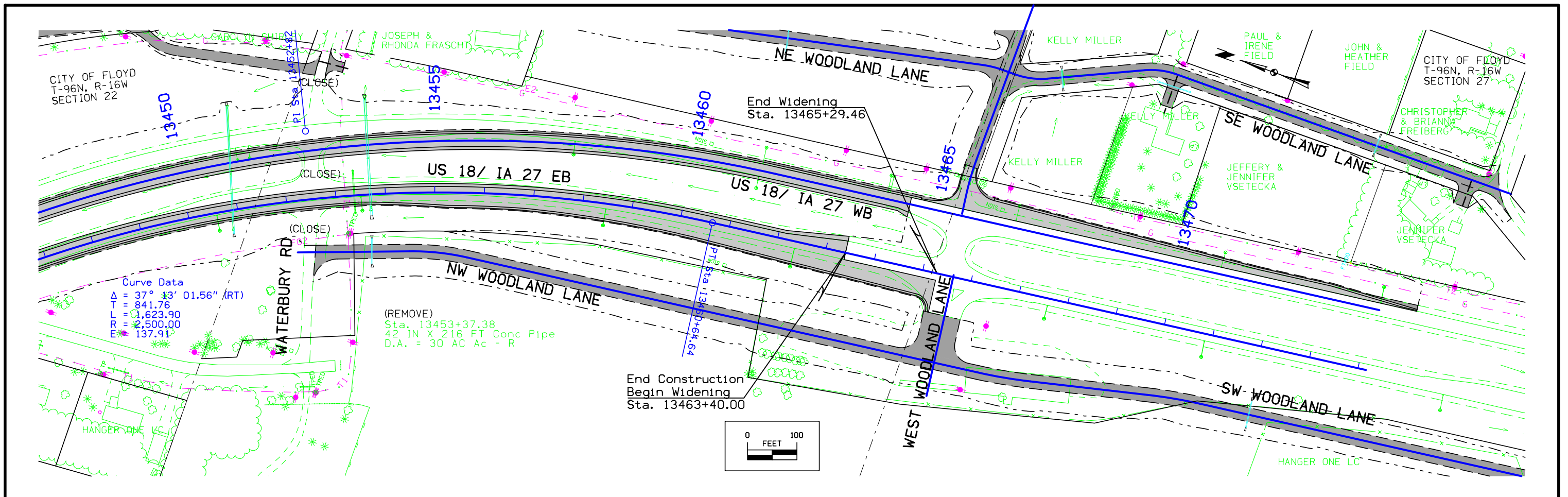
(COVERS SHEET SERIES D, E, F, & K)

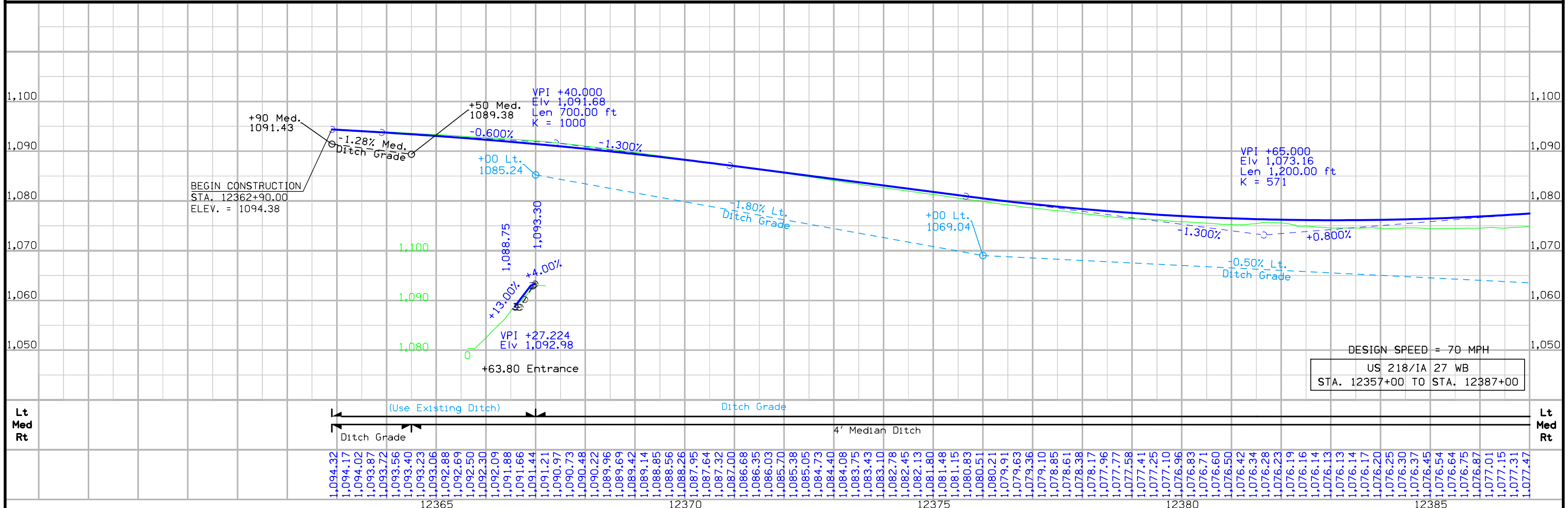
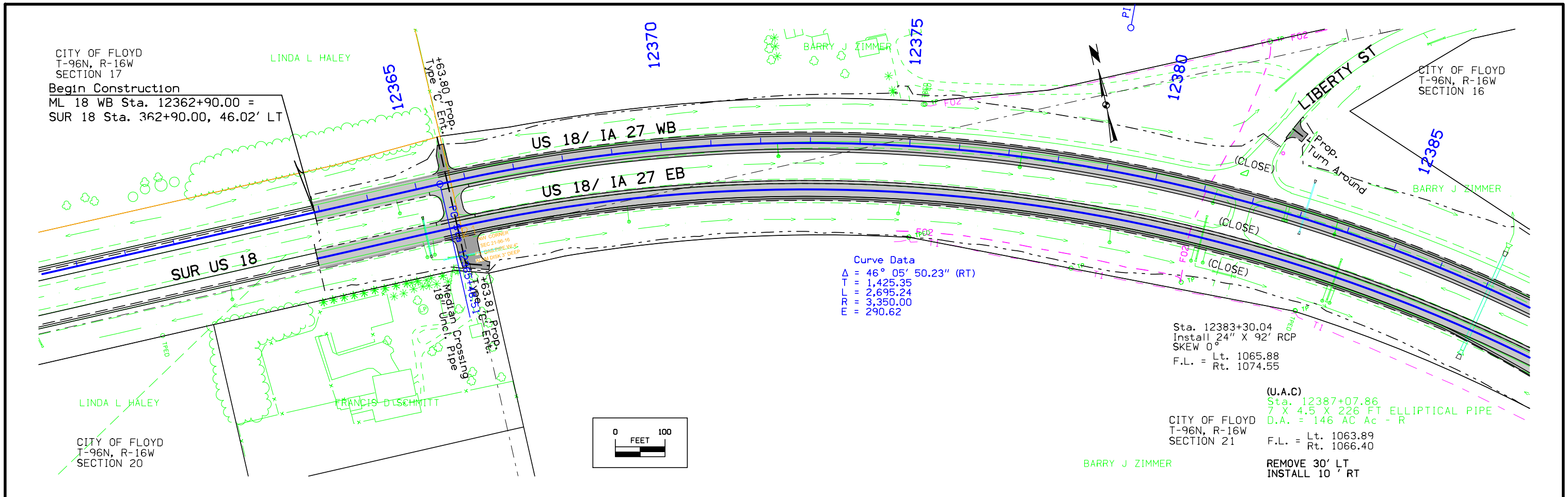


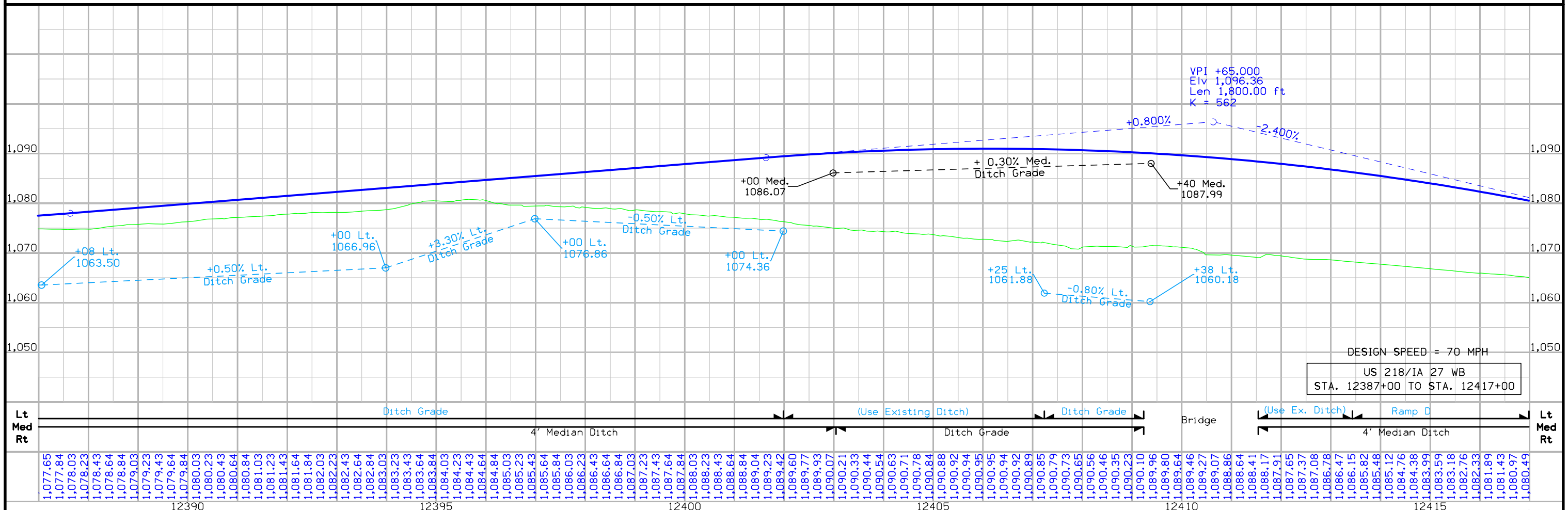
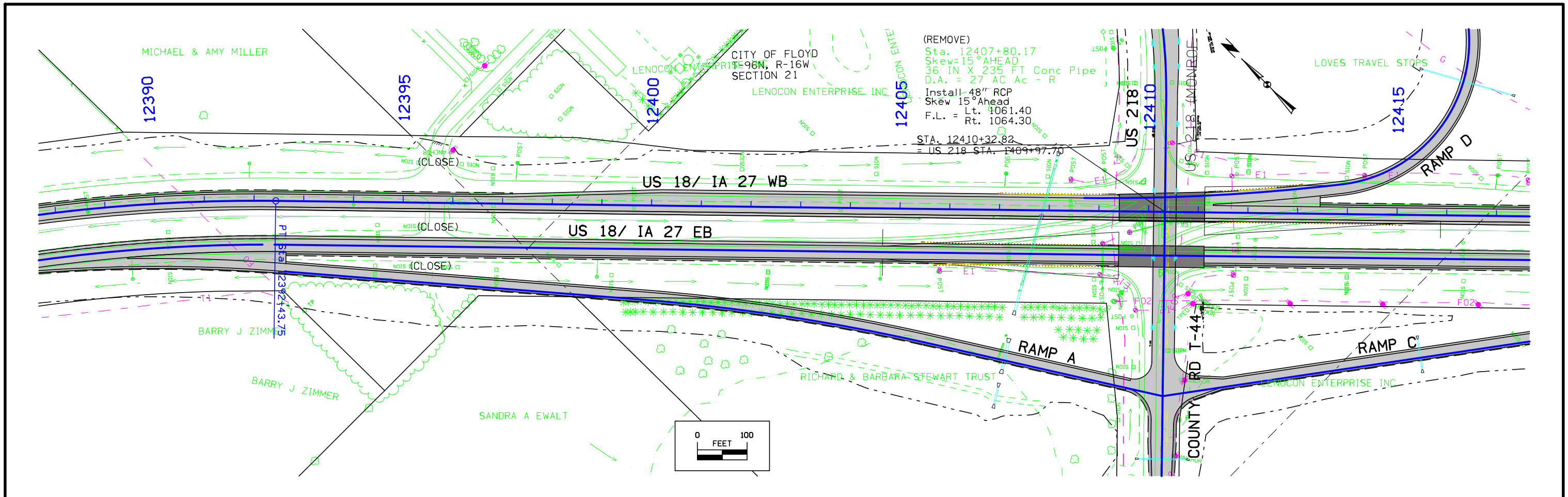


FILE NO. 31558	ENGLISH	DESIGN TEAM FOTH	FLOYD COUNTY	PROJECT NUMBER NHSX-018-6(95)--3H-34	SHEET NUMBER D.3
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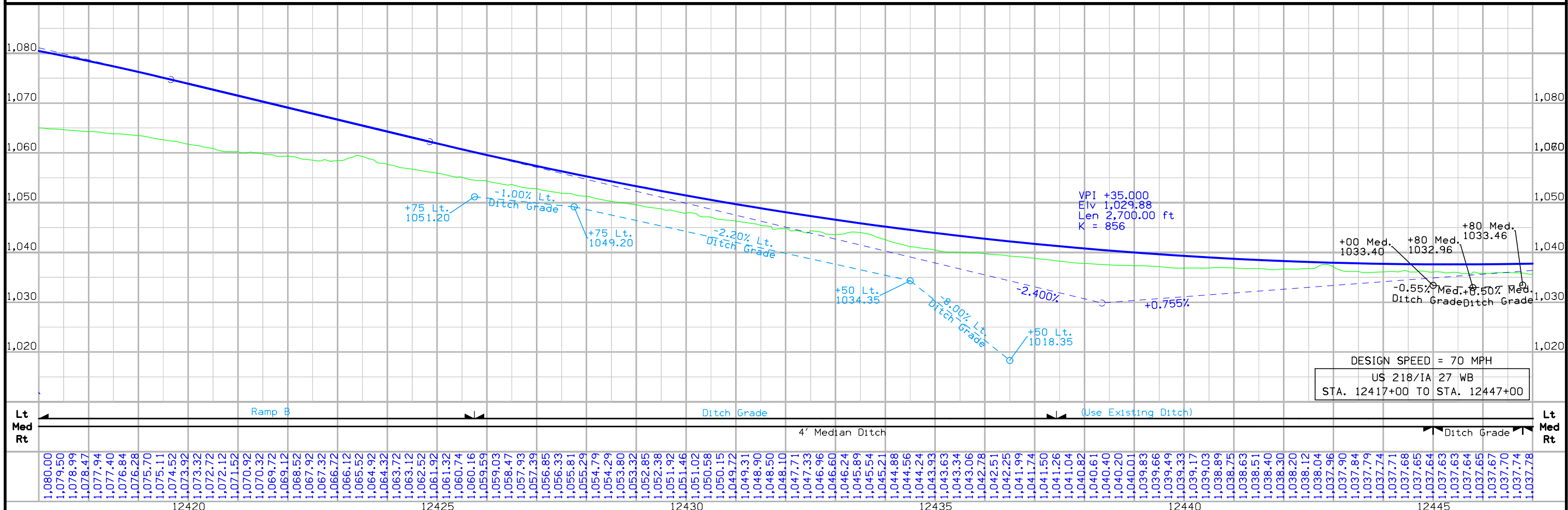
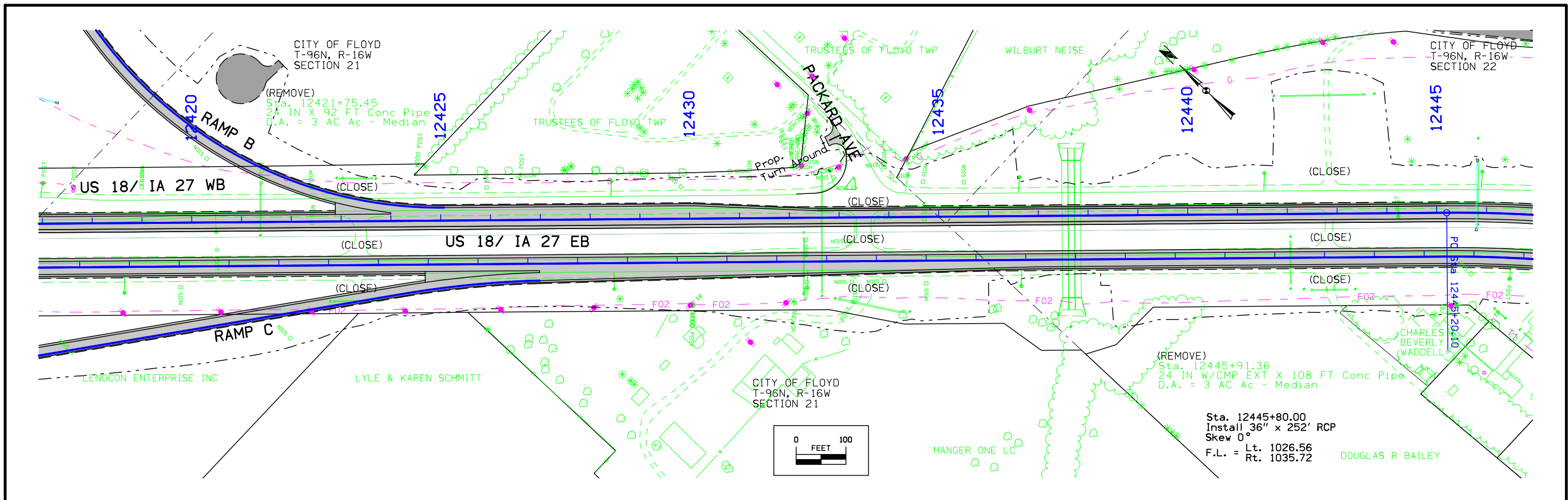


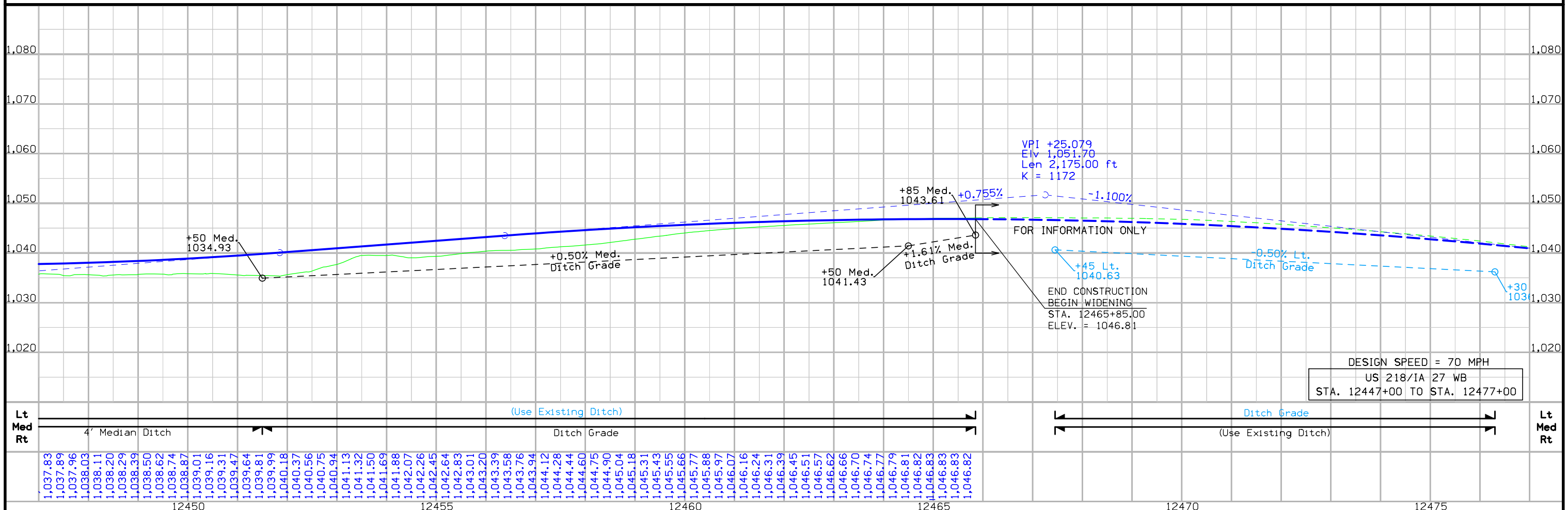
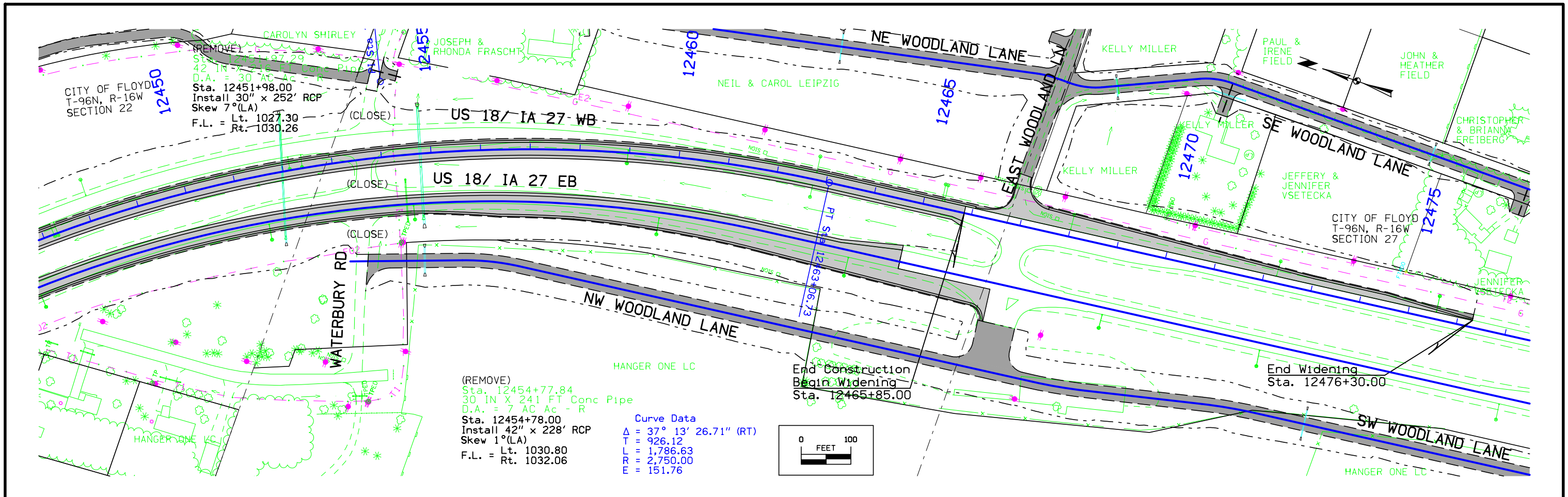


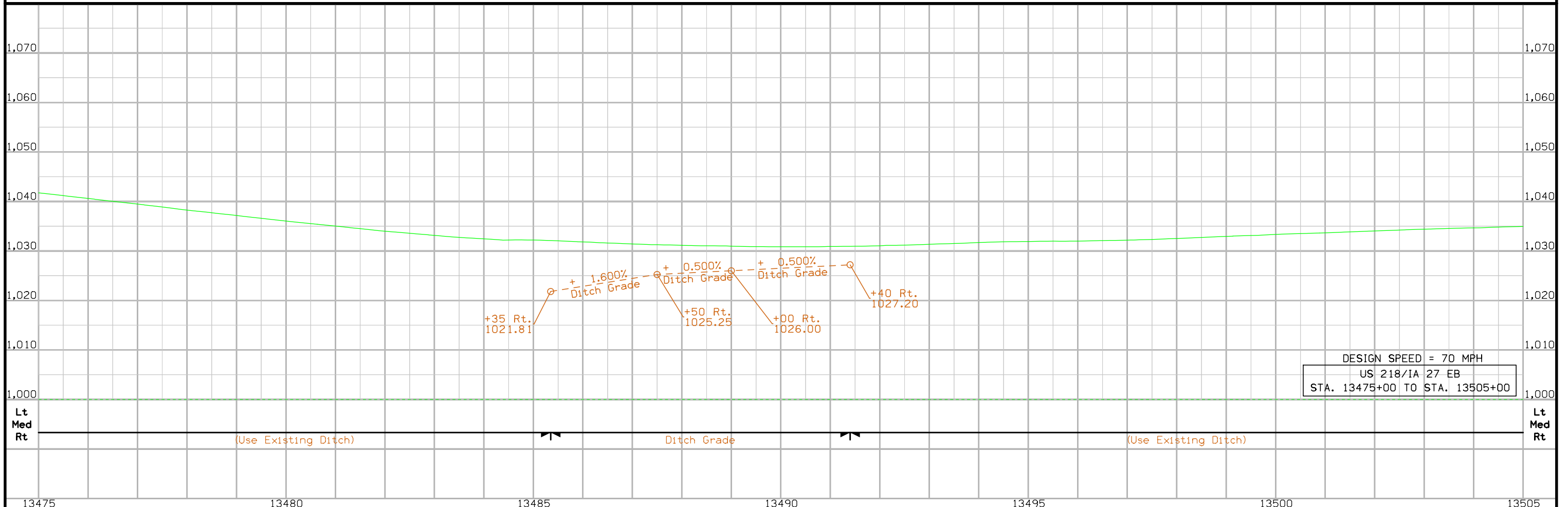
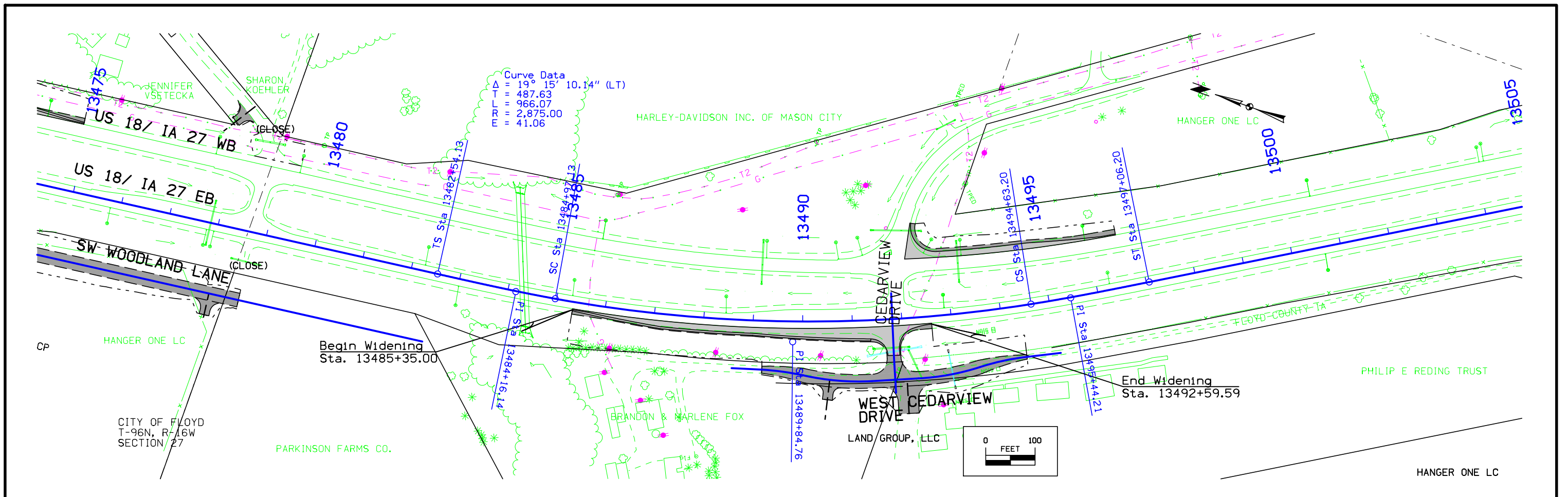


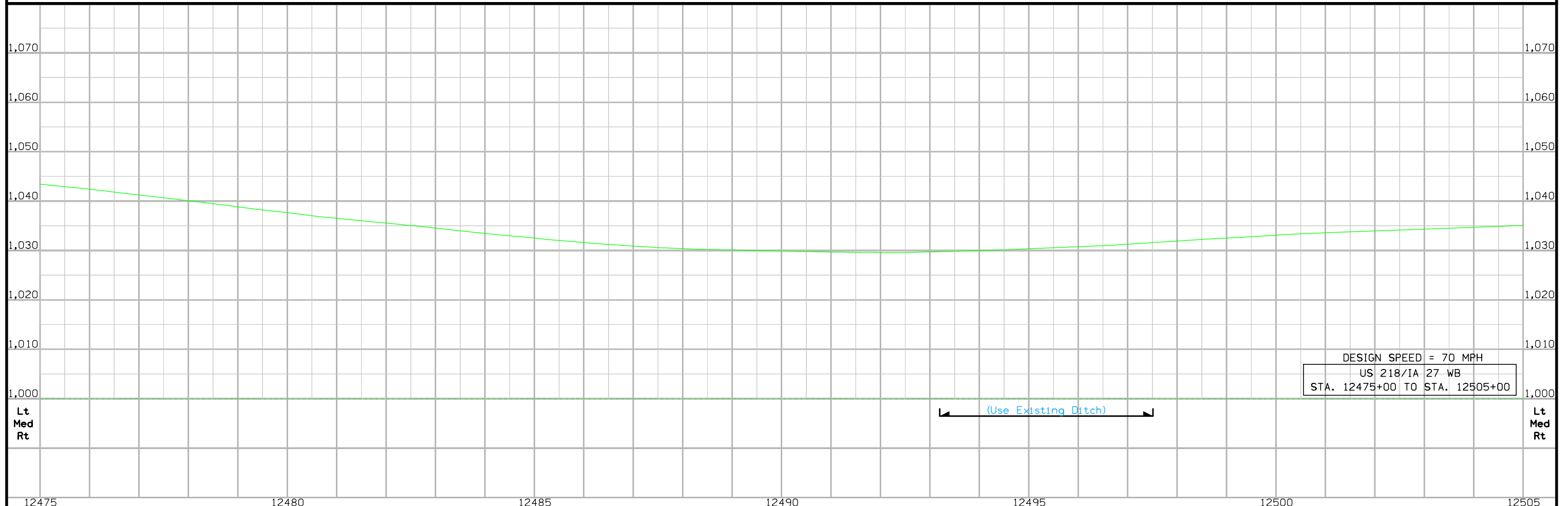
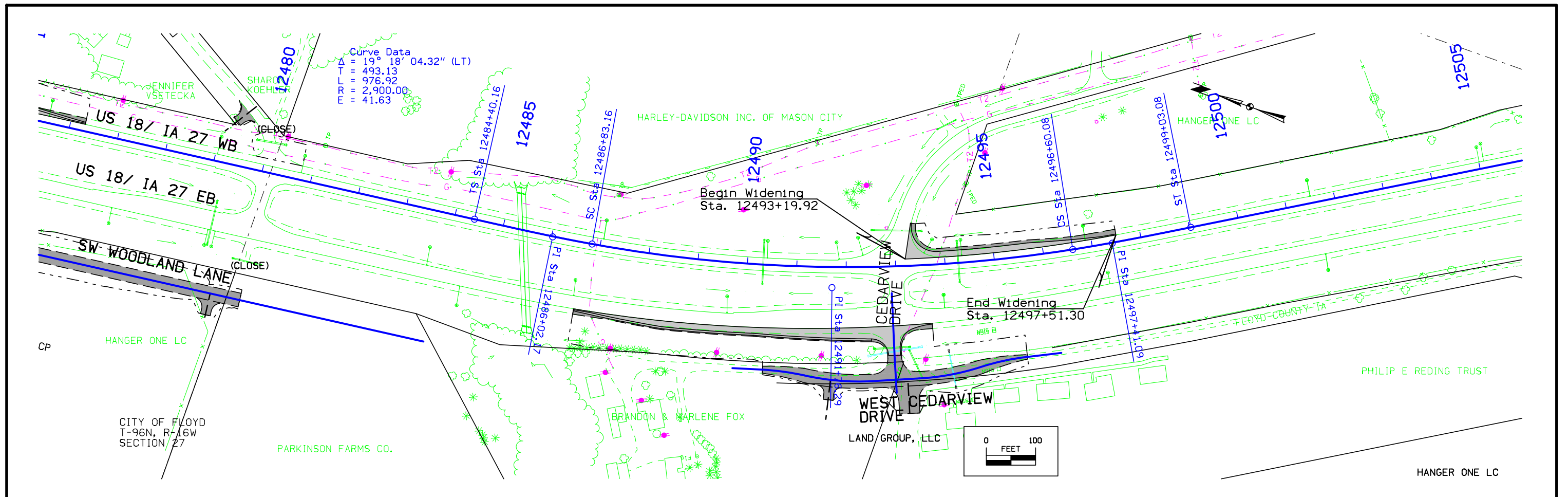


FILE NO. 31558	ENGLISH	DESIGN TEAM FOTH	FLOYD COUNTY	PROJECT NUMBER NHSX-018-6(95)--3H-34	SHEET NUMBER D.7
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CITY OF FLOYD
T-96N, R-16W
SECTION 21

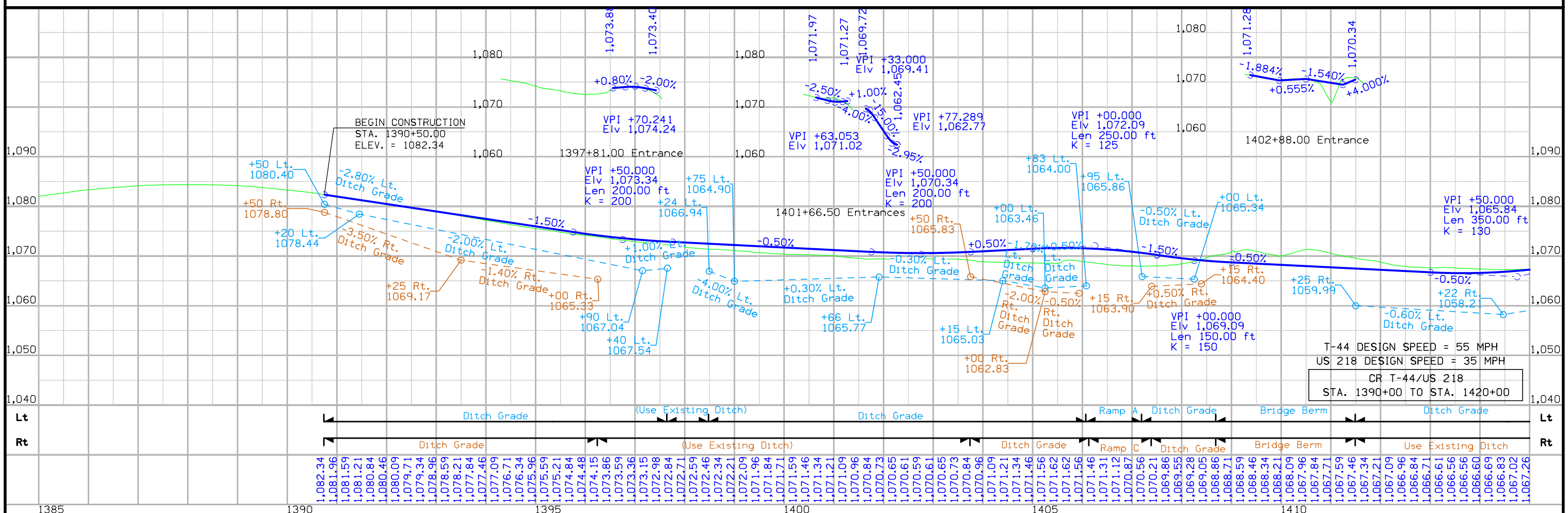
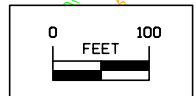
(REMOVE)
Sta. 1396+79.69, 26.71' RT
24" IN X 72" FT Conc Pipe
Sta. 1396+90.00
Install 30" x 92' RCP
SKEW 0°
F.L. = Lt. 1067.04
Rt. 1063.00

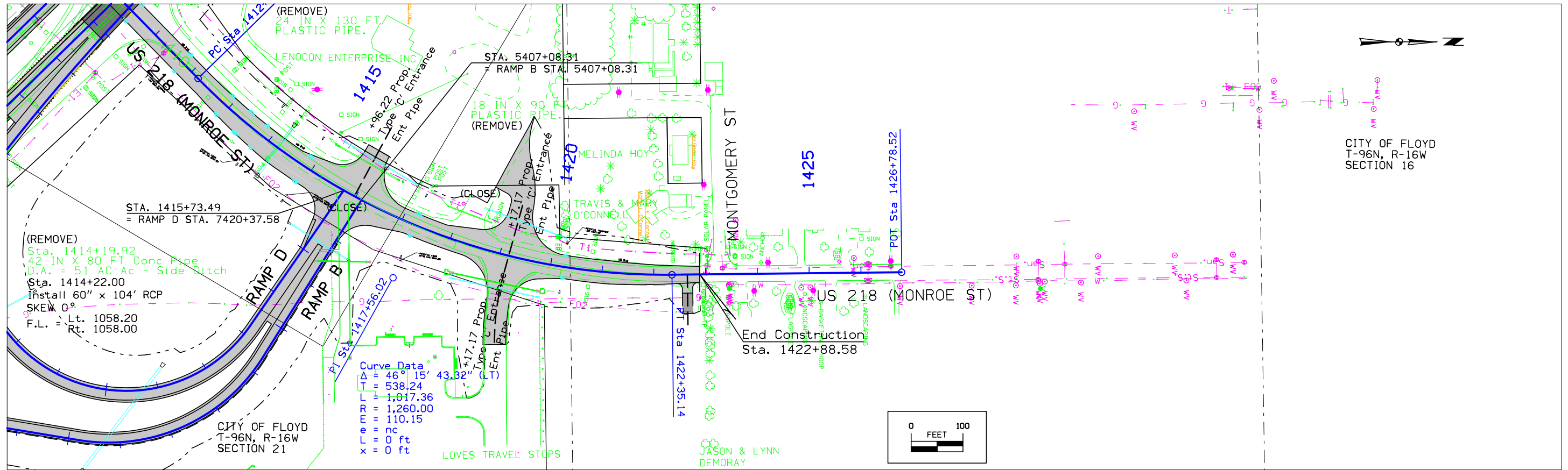
Curve Data
Δ = 46° 12' 20.21" (RT)
T = 489.30
L = 924.99
R = 1,147.00
E = 100.01

Begin Construction
Sta. 1390+50.00

(REMOVE)
Sta. 1398+66.95, 16.24' LT
24" IN X 74" FT Conc Pipe
Sta. 1398+75.00
Install 24" x 94' RCP
SKEW 0°
F.L. = Lt. 1064.90
Rt. 1063.50

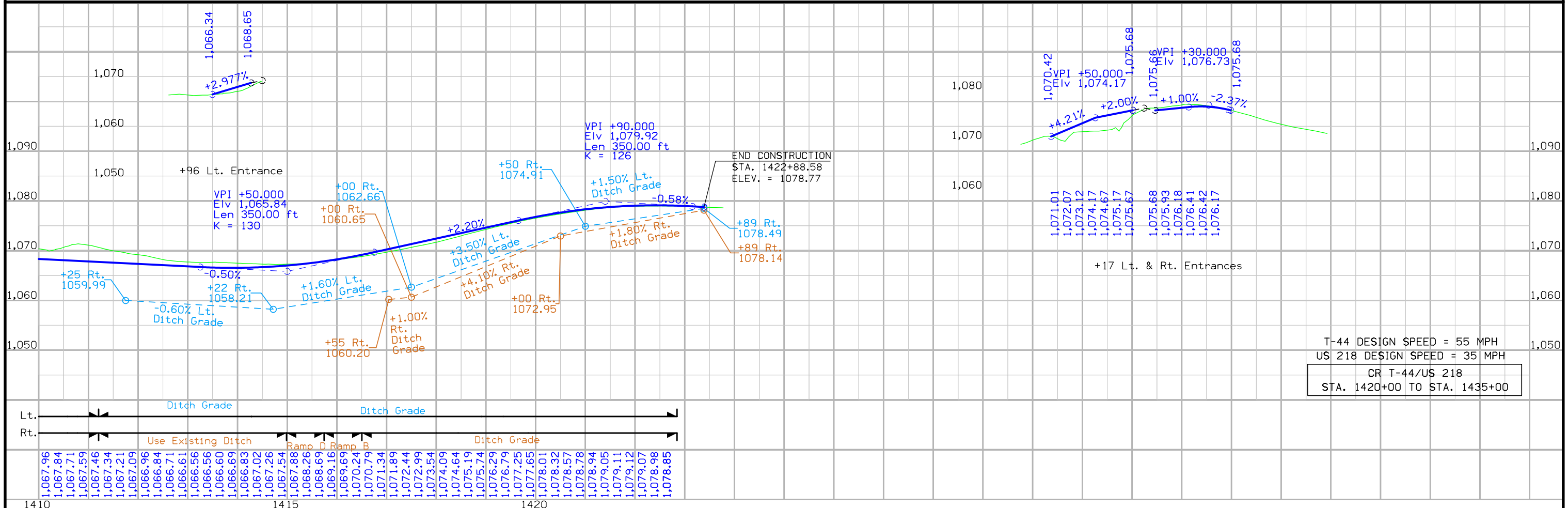
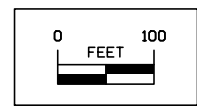
Sta. 1405+00.00
Install 24" x 90' RCP
SKEW 0°
F.L. = Lt. 1063.62
Rt. 1063.07



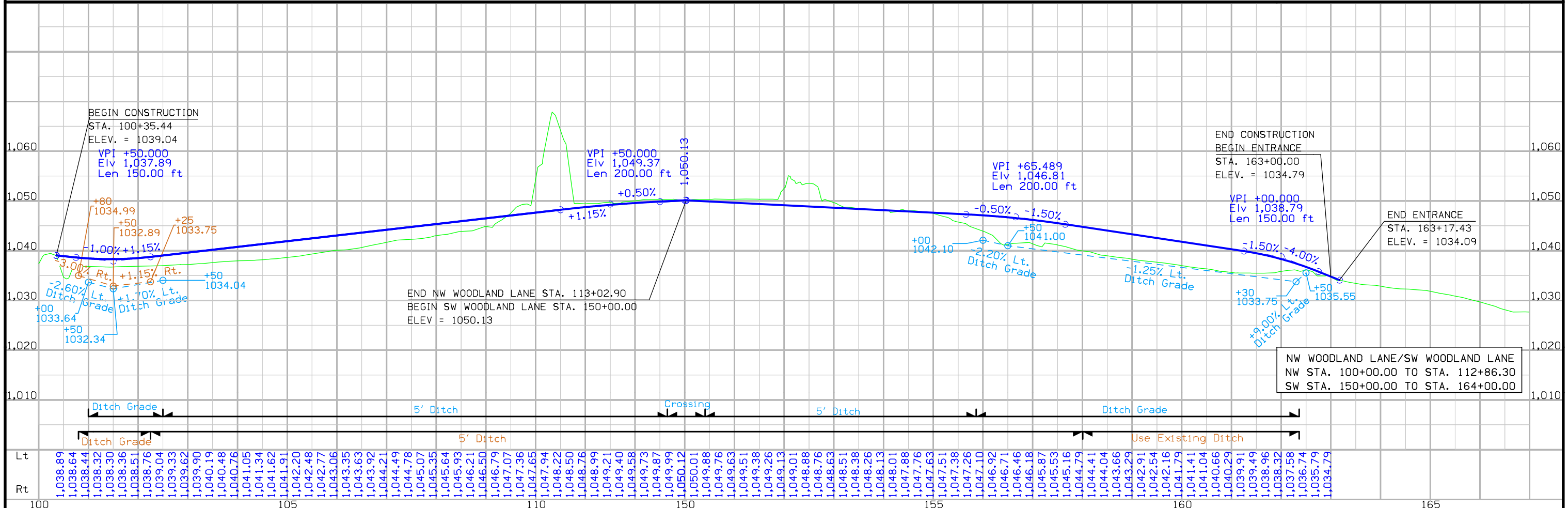
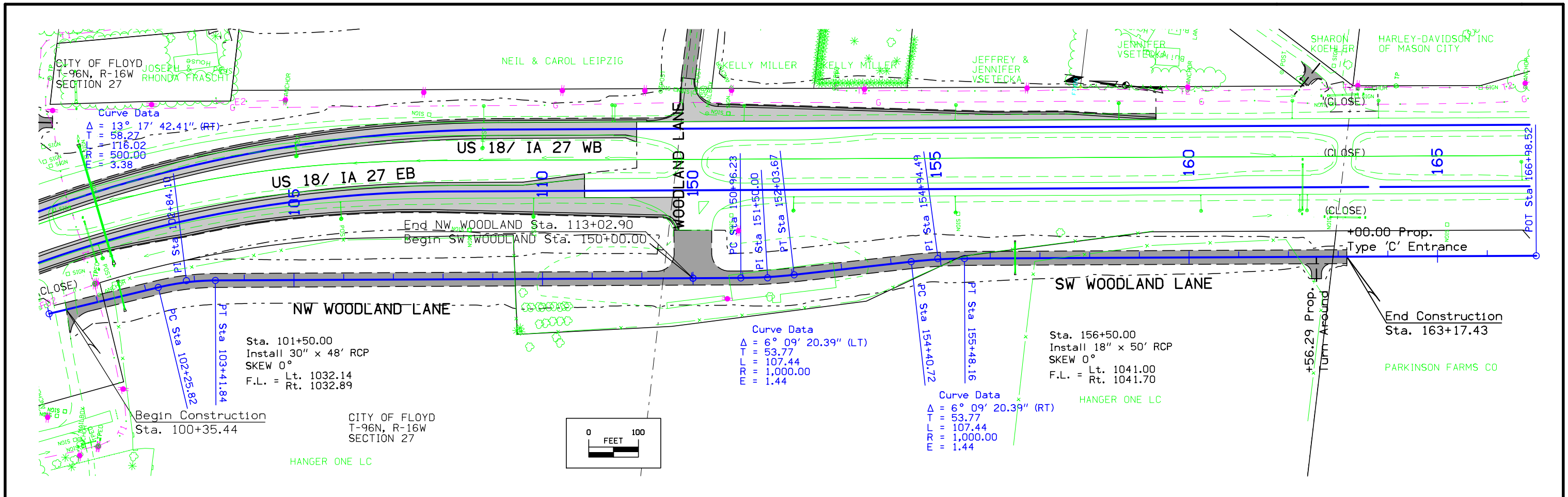


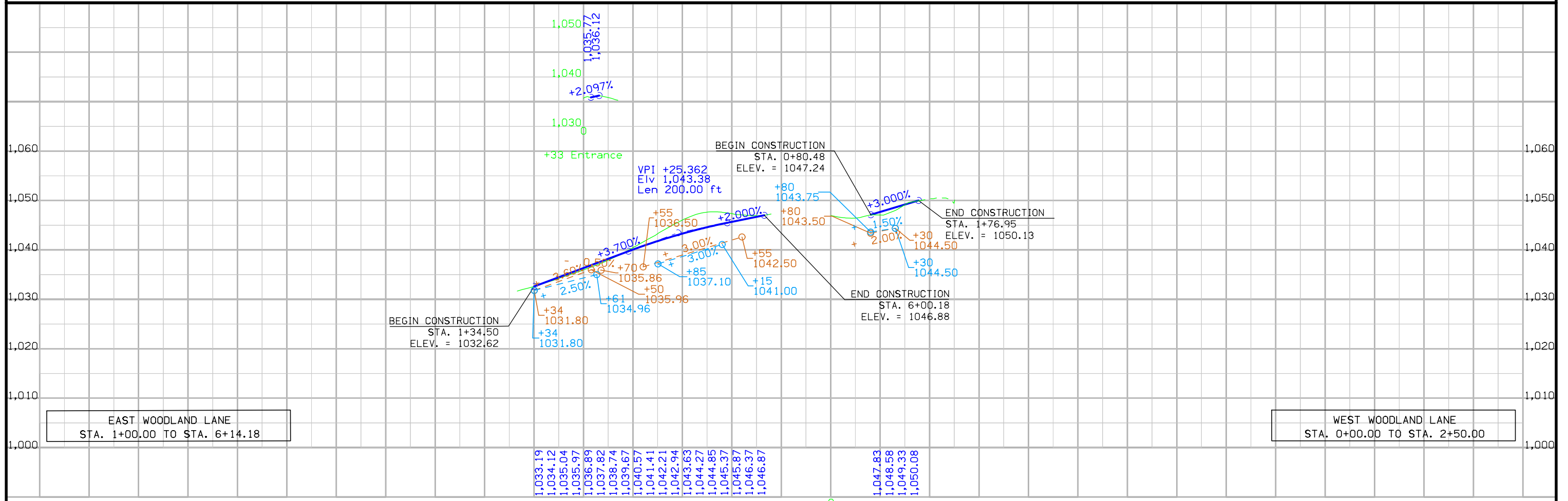
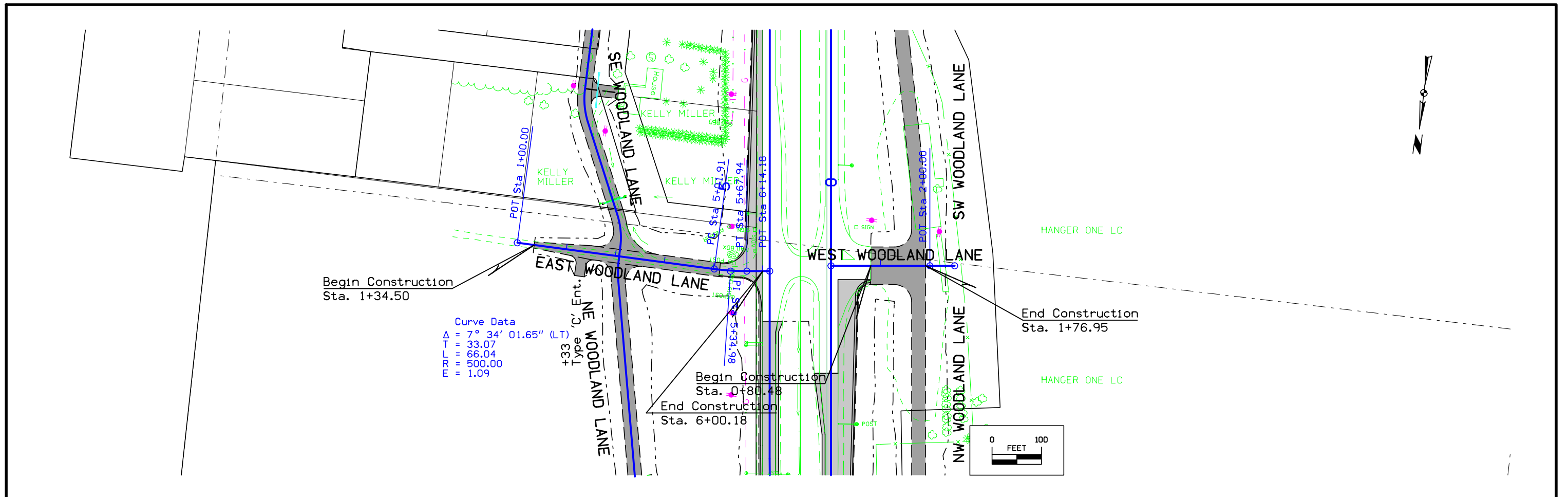
CITY OF FLOYD
T-96N, R-16W
SECTION 16

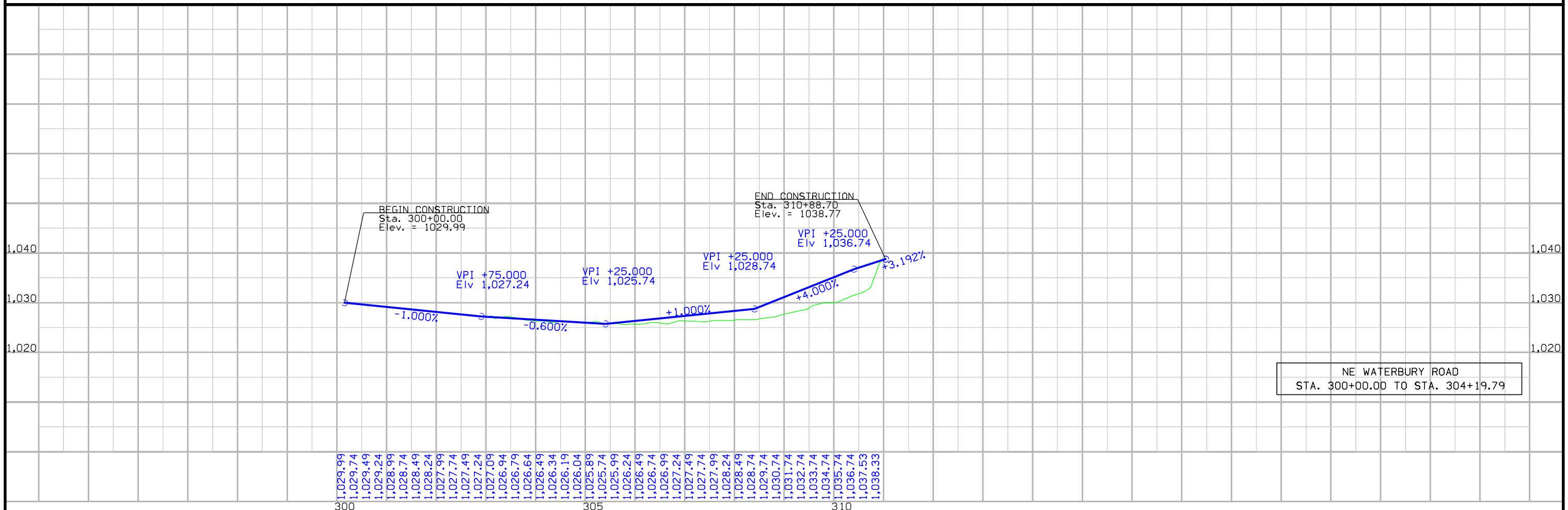
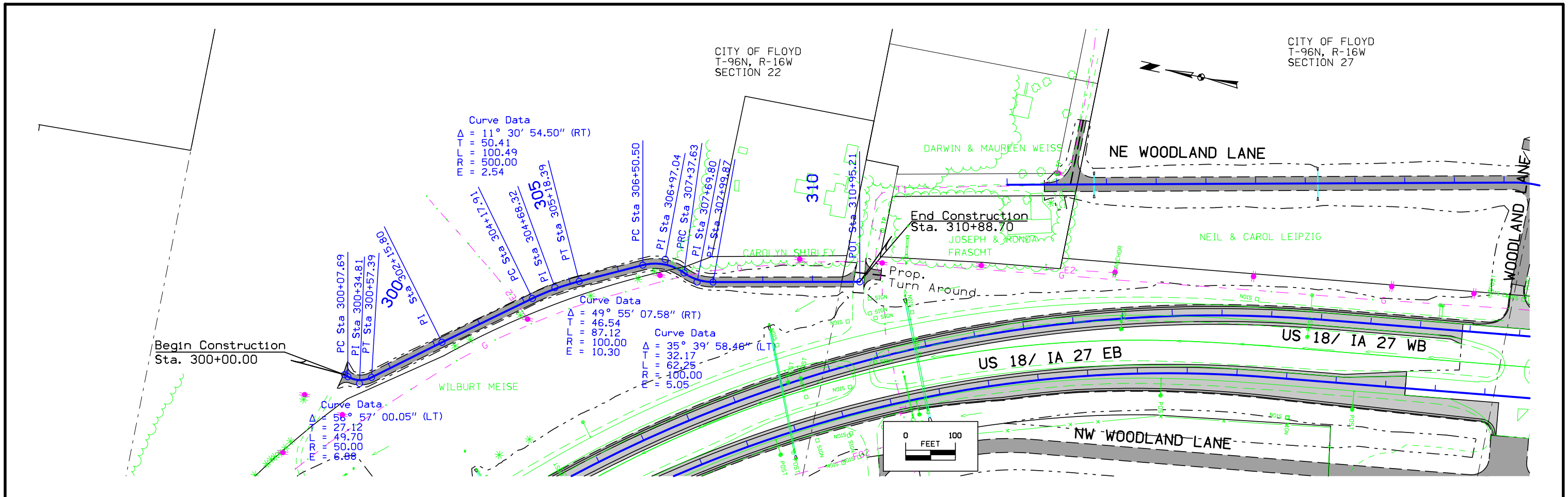
Curve Data
 $\Delta = 46^\circ 15' 43.32"$
 $T = 538.24$
 $L = 1,017.36$
 $R = 1,260.00$
 $E = 110.15$
 $e = nc$
 $L = 0$ ft
 $x = 0$ ft

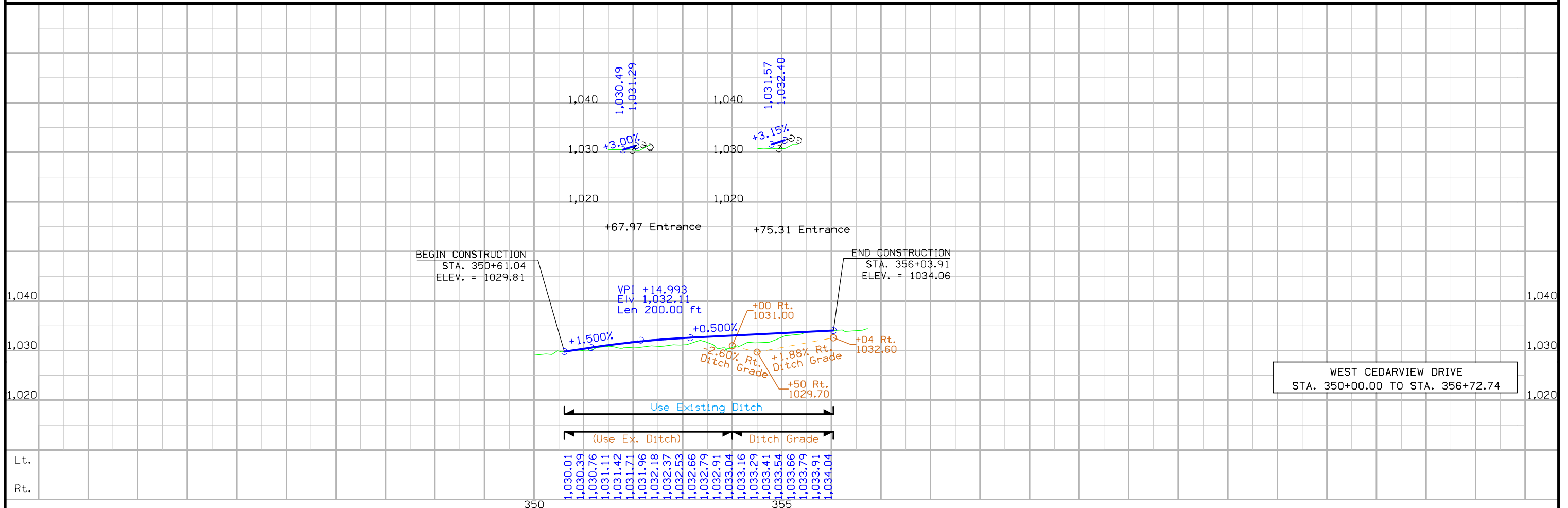
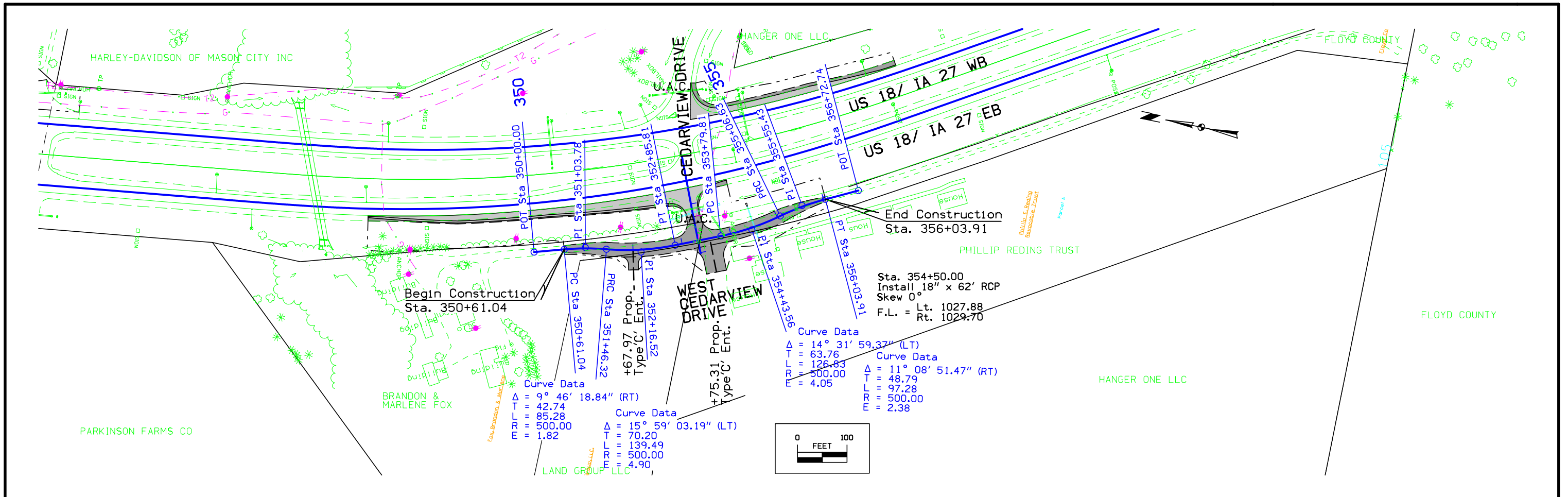


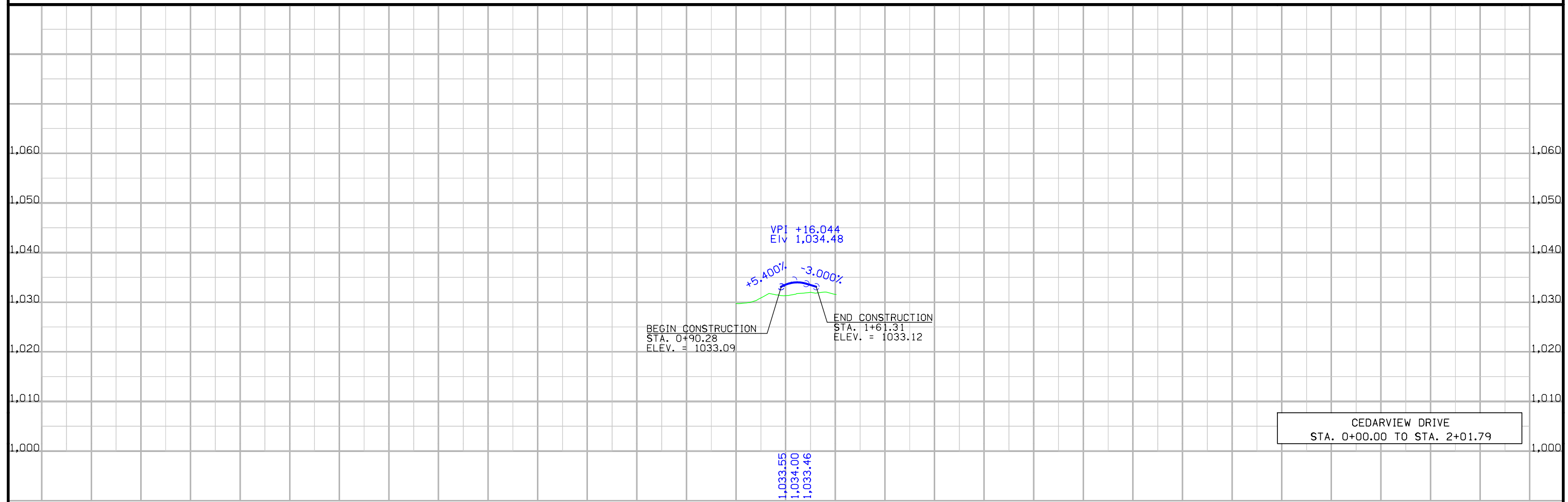
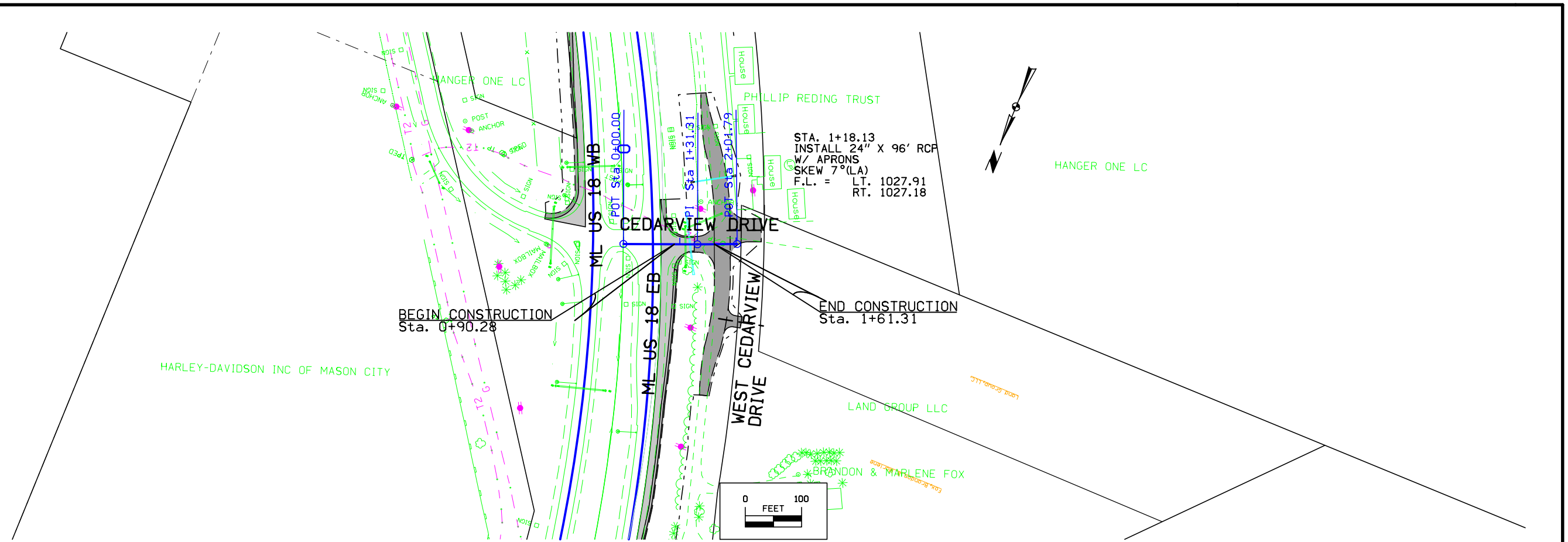
T-44 DESIGN SPEED = 55 MPH
 US 218 DESIGN SPEED = 35 MPH
 CR T-44/US 218
 STA. 1420+00 TO STA. 1435+00











Survey Information

General Information

Measurement units for this survey are US survey feet. This survey is for proposed US 18/218/IA 27 Hwy Improvement & Interchange near the town of Floyd. IDOT Feno monuments were found and used for Horizontal control on this project. Horizontal Coordinate values were established by IDOT. Benchmarks were established in a 26-mile level run between three 2nd order monuments, NGS mark E 36(BM700) to NGS mark M 36(BM648) to NGS mark V 39(BM636).

Vertical Control

This survey is relative to NAVD 88 vertical datum. NGS datasheets show a vertical difference of 0.03' (88 Higher than 29) between NAVD88 to NGVD29.

Vertical Equations:

All NGS 2nd order marks were held fixed vertically in the level run adjustment

BM # 700 this survey Elev. = 1115.231 (NAVD 88 datum)
 =NGS E 36 (2nd Order) Elev. = 1115.231 (NAVD 88 datum)
 =NGS E 36 Elev. = 1115.20 (NAVD 29 datum)

BM # 693 this survey Elev. = 1111.775 (NAVD 88 datum)
 =USGS 6CLC1969 (3rd Order) Elev. = 1115.765 (NAVD 29 datum)

BM # 648 this survey Elev. = 1113.820 (NAVD 88 datum)
 =NGS M 36 (2nd Order) Elev. = 1113.820 (NAVD 88 datum)
 =NGS M 36 Elev. = 1113.790 (NAVD 29 datum)

BM # 636 this survey Elev. = 1113.610 (NAVD 88 datum)
 =NGS V 39 (2nd Order) Elev. = 1113.610 (NAVD 88 datum)
 =NGS V 39 Elev. = 1113.58 (NAVD 29 datum)

Horizontal Control

GENERAL INFORMATION FOR GPS PROJECT :Sap 0747

STATE PLANE COORDINATE ZONE 1401 (IOWA North LAMBERT)

STATE PLANE COORDINATES HELD AT POINT G34002

1 / GRID = 1.000070284

VERTICAL DATUM = NAVD 88 <> HORIZONTAL DATUM = NAD 83 (1996)

Local Project Plane Coordinate Conversion Equation:

a. Local Project Coord y = [(State Plane y - hold point y) 1/grid factor] + hold point y

b. Local Project Coord x = [(State Plane x - hold point x) 1/grid factor] + hold point x

ALL COORDINATES CONVERTED TO ENGLISH UNITS

POINT	STATE PLANE COORD(Y)	STATE PLANE COORD(X)	PROJECT PLANE COORD(Y) (Grid)	PROJECT PLANE COORD(X) (Grid)	Leveled ORTHO HEIGHT	Published Vertical HEIGHT
34001	3874750.165	5110740.479	3874750.341	5110739.573	1100.385	
34002	3872249.003	5123629.121	3872249.003	5123629.121	1082.218	
34003	3861343.308	5129196.368	3861342.542	5129196.759	1043.109	
327	3874072.252	5094935.772	3874072.380	5094933.755	1125.470	(County 327)
361	3842588.877	5158440.705	3842586.792	5158443.152	1040.642	1040.71 (County 361)
509	3855870.559	5140720.335	3855869.408	5140721.536	1010.455	1010.45 (County 509)
636(V39)	3836571.278	5164269.771	3836568.770	5164272.627	1013.610	1013.610 (2nd NGS V 39)
648(M36)	3855769.670	5140087.950	3855768.512	5140089.107	1013.820	1013.820 (2nd NGS M 36)
656(N1)	3863437.808	5129144.219	3863436.989	5129144.607	1036.383	
658(M1)	3864838.137	5128321.627	3864837.616	5128321.957	1032.570	
660(I1)	3866483.891	5128044.521	3866483.486	5128044.831	1029.753	
661(J1)	3868153.345	5127839.575	3868153.057	5127839.871	1046.950	
662(L1)	3869739.329	5126999.304	3869739.153	5126999.541	1039.623	
664(K1)	3871416.802	5125735.640	3871416.744	5125735.788	1050.495	
667(A1)	3873473.203	5123779.587	3873473.289	5123779.598	1084.160	
668(H1)	3874381.640	5122125.477	3874381.790	5122125.371	1078.922	
670(B1)	3874886.354	5118824.557	3874886.539	5118824.219	1088.373	
671(C1)	3874866.368	5117315.176	3874866.552	5117314.732	1094.126	
672(D1)	3874857.007	5115573.919	3874857.190	5115573.353	1088.237	
673(E1)	3874810.697	5113577.057	3874810.877	5113576.350	1078.914	
674(F1)	3874735.790	5111753.772	3874735.965	5111752.937	1101.675	1101.718 (County 335)
693	3877204.191	5079948.242	3877204.539	5079945.172	1111.775	1111.765 (3rd NGVD29)
694	3876428.213	5079868.574	3876428.507	5079865.498	1120.428	1120.440 (County 319)
700(E36)	3877276.797	5069125.302	3877277.150	5069121.471	1115.231	1015.231(2nd NGS E 36)

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. NHS-18-6(71)- 19-34 Survey stationing was equated to the plan PI at STA 379+75.91 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PT Sta. 319+17.80 As-built Plans Project No. NHS-18-6(71) - -19-34
 = Survey POT STA 319+17.56

PI Sta 379+75.91 As-built Plans Project No. NHS-18-6(71) - -19-34
 = Survey PI STA 379+75.91

PI STA 453+53.65 As-built Plans Project No. NHS-18-6(71) - -19-34
 = Survey PI STA 453+53.70

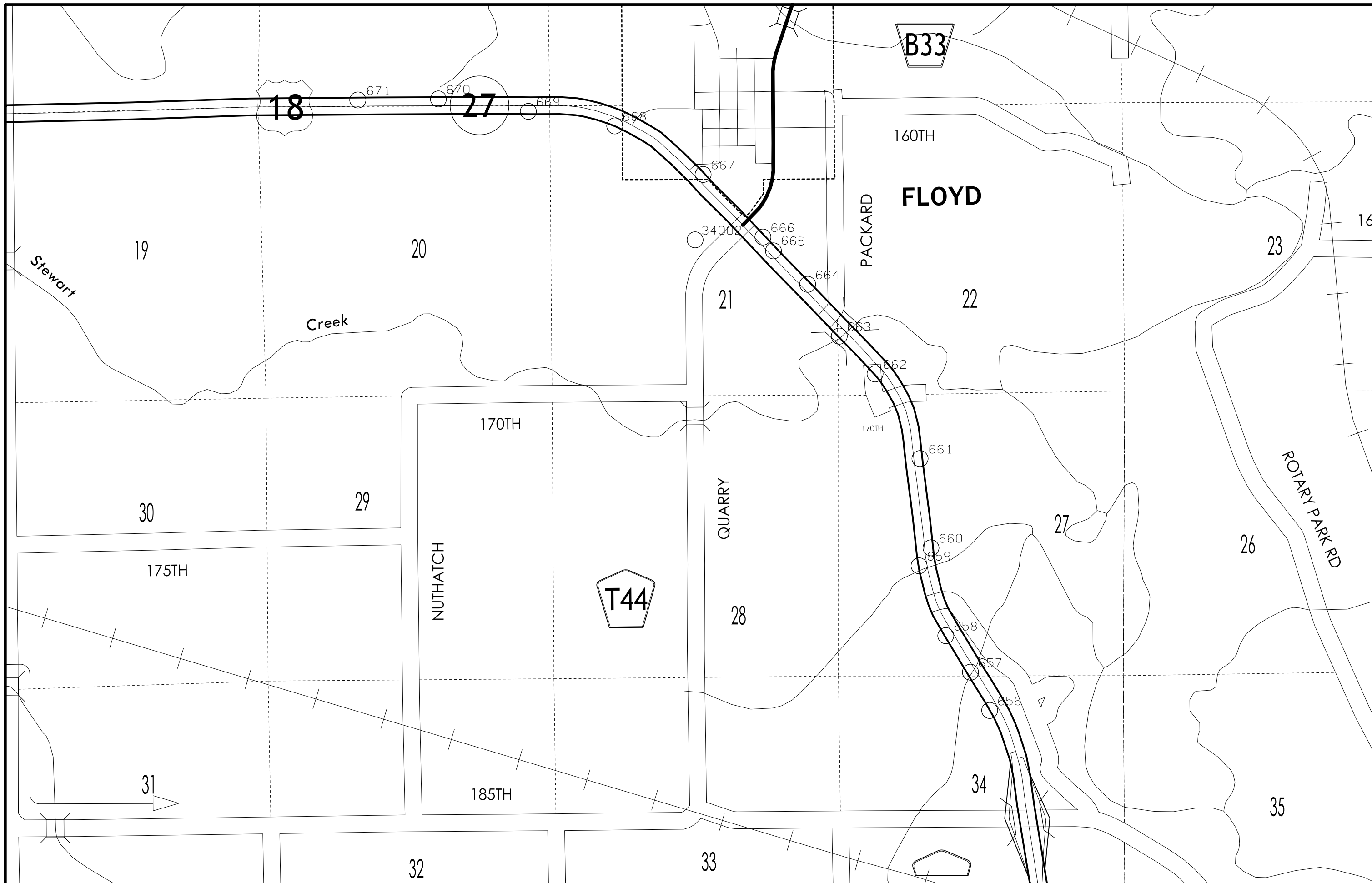
Station equation at As-built Plans Project No. NHS-18-6(71) - -19-34
 ST STA 462+20.24 BK= POT STA 462+86.89 AH. Survey stationing continues through the plan equation station.

PI STA 491+70.94 As-built Plans Project No. NHS-18-6(71) - -19-34
 = Survey PI STA 491+03.79

POT STA 509+32.65 Project No. NHS-18-6(71) - -19-34
 = Survey POT STA 508+65.86

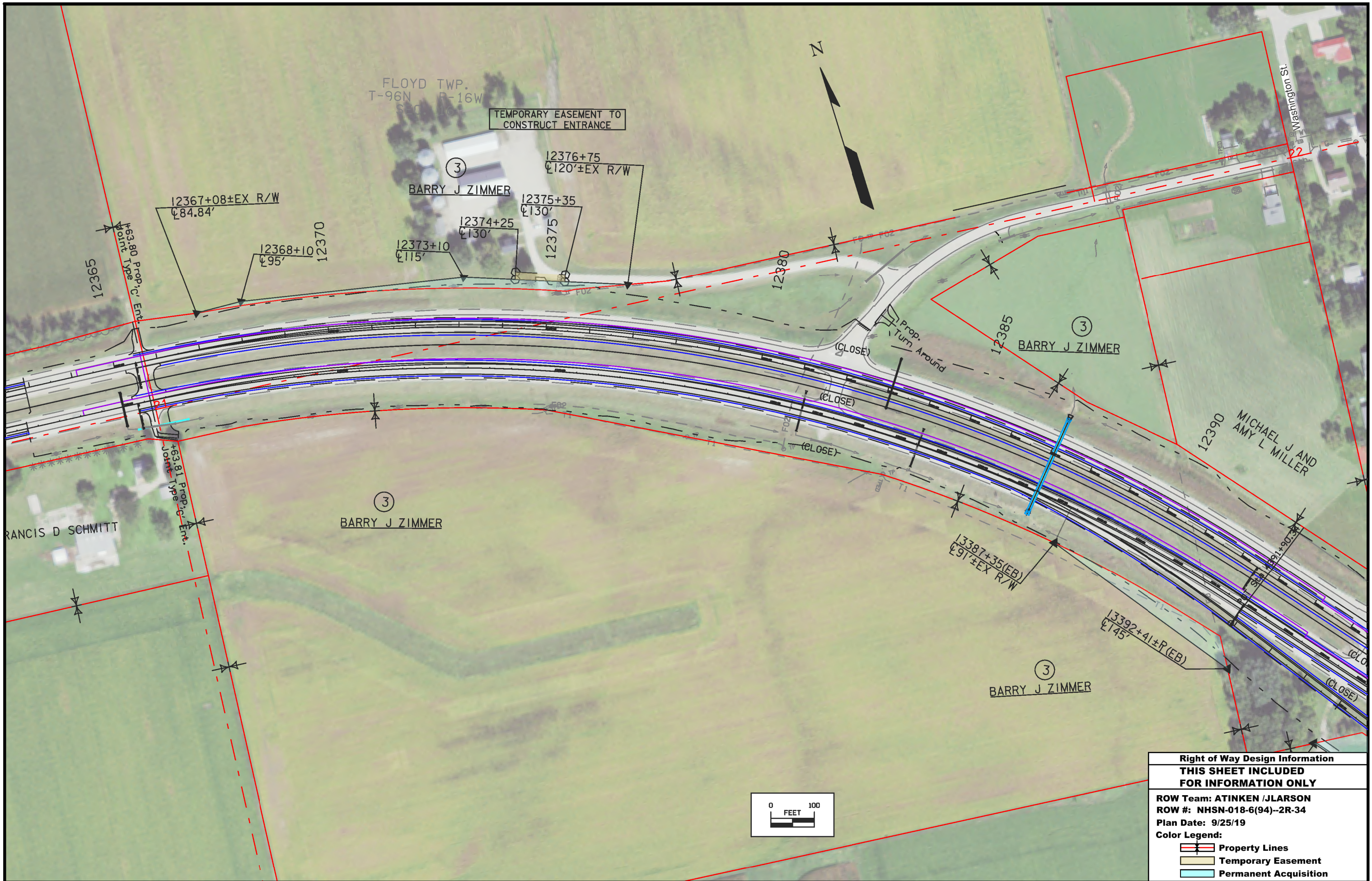
PROJECT CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
657	3864153.3690	5128784.3680	1031.9850	507+23.50	90.0529	BM	FD DOT BRASS BUTTON
658	3864837.6160	5128321.9570	1032.5700	498+98.77	132.7771	BM	FENO MONU=M1 STA152+37
659	3866147.2050	5127821.9680	1022.7960	485+37.24	127.3436	BM	DOT BRASS BUTTON
660	3866483.4860	5128044.8310	1029.7530	482+33.25	-136.0866	BM	FENO MONU=I1 STA147+21
661	3868153.0570	5127839.8710	1046.9500	465+51.15	-135.7274	BM	FENO MONU=J1 STA142+06
662	3869739.1530	5126999.5410	1039.6230	447+19.45	140.8051	BM	FENO MONU STA136+31
663	3870445.4890	5126328.3210	1026.8970	437+36.52	134.8917	BM	DOT BRASS BUTTON INHDDL
664	3871416.7440	5125735.7880	1050.4950	426+27.18	-117.6995	BM	FENO MONU STA129+96
665	3872042.1740	5125095.7080	1064.1110	417+32.56	-95.0564	BM	FD A BOLT ON W BOLT
666	3872300.5780	5124898.6400	1060.9730	414+09.93	-134.0019	BM	FENO MONU STA126+23
34002	3872249.0030	5123629.1210	1082.2180	405+61.61	811.8878	BM	IDOT FENO MONU
667	3873473.2890	5123779.5980	1084.1600	397+89.04	-149.7008	BM	FENO MONU=A1 STA121+26
668	3874381.7900	5122125.3710	1078.9220	378+89.79	148.2508	BM	FENO MONU=H1 STA115+43
669	3874653.2290	5120506.7980	1091.6160	361+80.63	114.3756	BM	FENO MONU STA110+29
670	3874886.5390	5118824.2190	1088.3730	344+99.43	-128.6630	BM	FENO MONU=B1 STA105+15
671	3874866.5520	5117314.7320	1094.1260	329+89.85	-117.4075	BM	FENO MONU=C1 STA100+54



NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED



FLOYD TWP.
T-96N R-16W

TEMPORARY EASEMENT TO
CONSTRUCT ENTRANCE




BARRY J ZIMMER

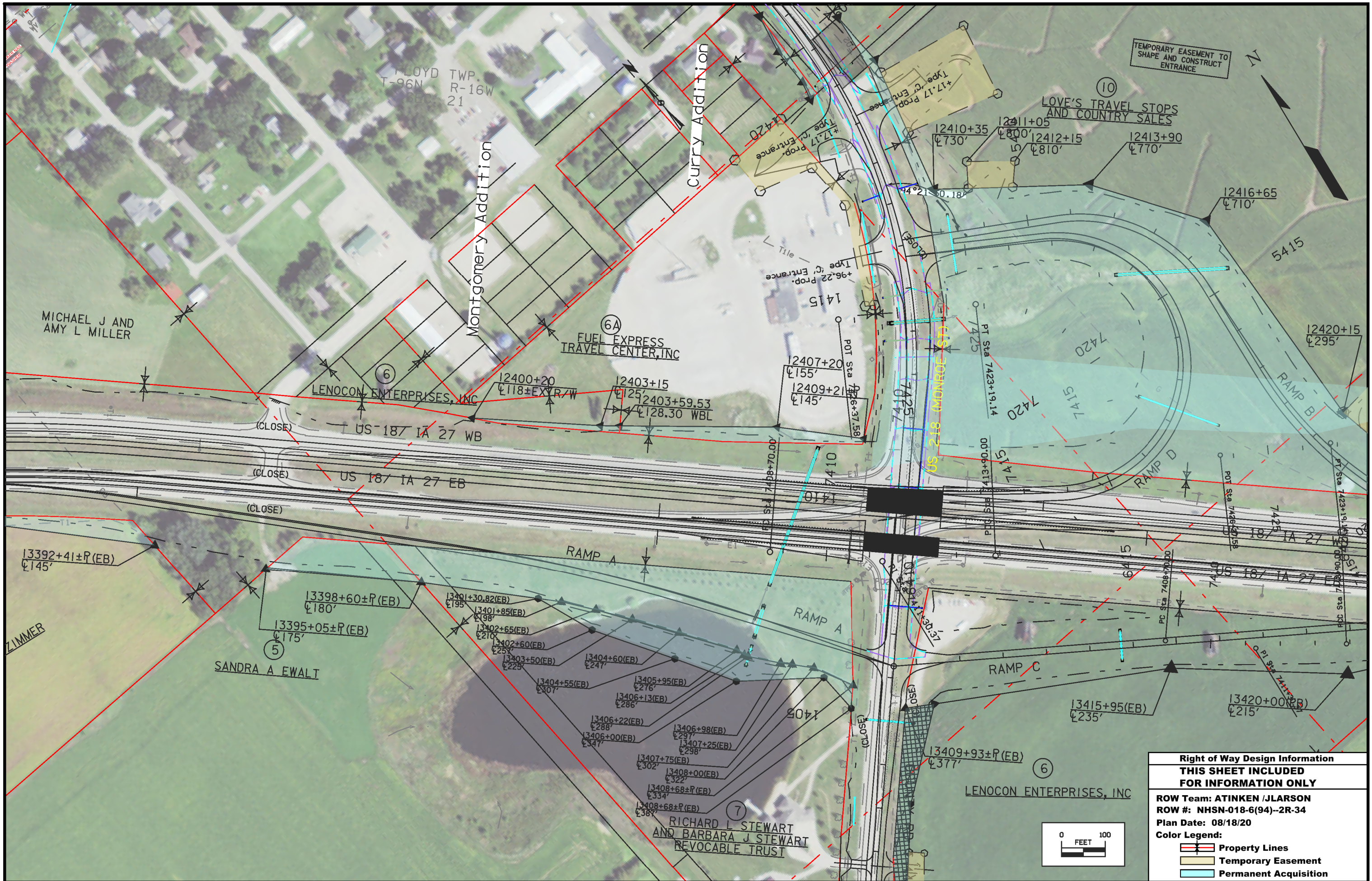
BARRY J ZIMMER

BARRY J ZIMMER

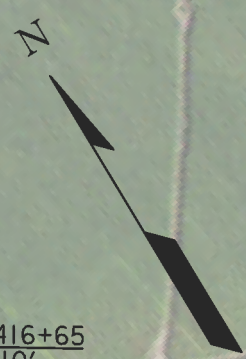
BARRY J ZIMMER

MICHAEL J AND
AMY L MILLER

Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: NHSN-018-6(94)--2R-34	
Plan Date: 9/25/19	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



TEMPORARY EASEMENT TO SHAPE AND CONSTRUCT ENTRANCE



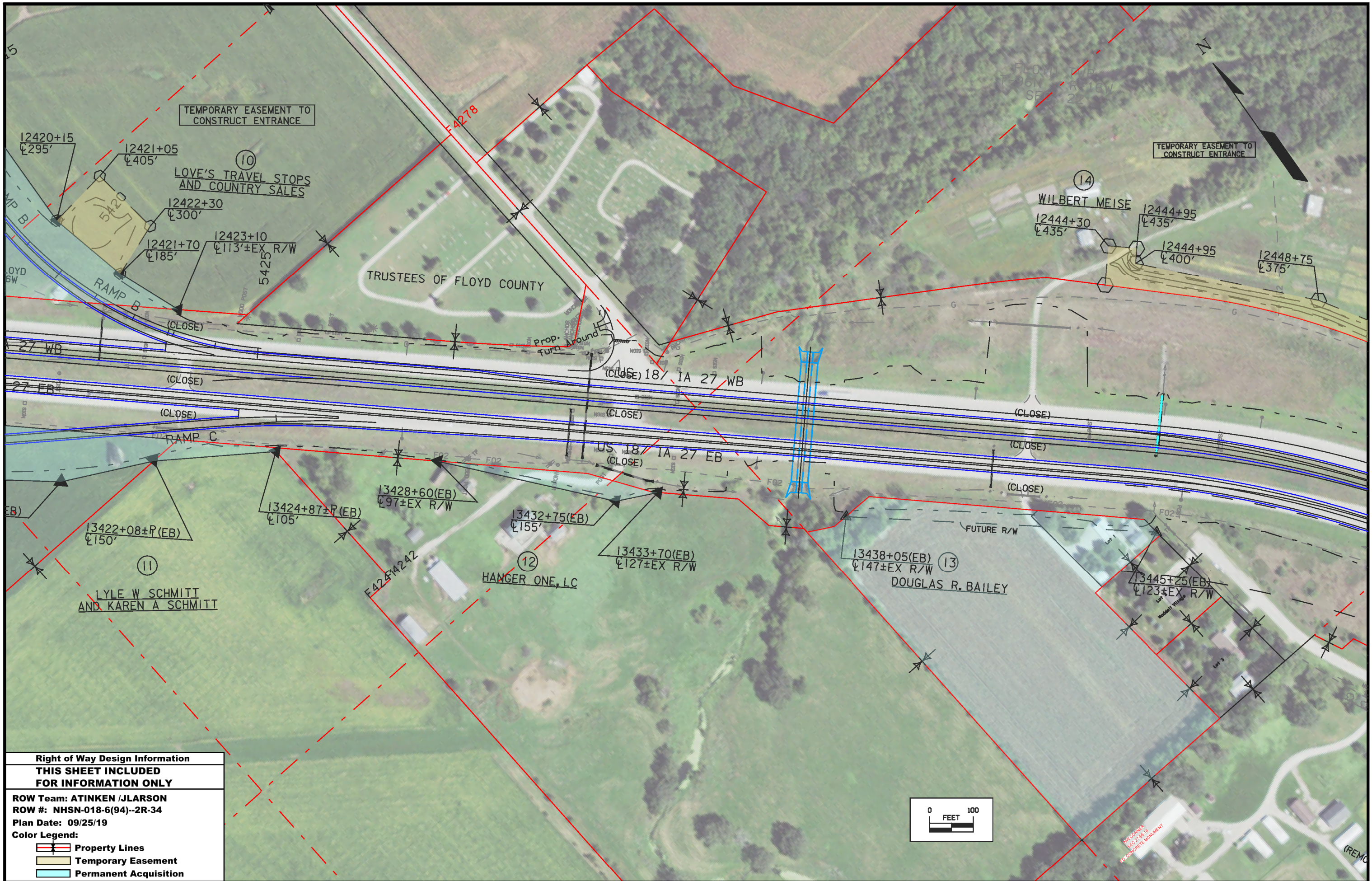
Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: ATINKEN /JLARSON
 ROW #: NHSN-018-6(94)--2R-34

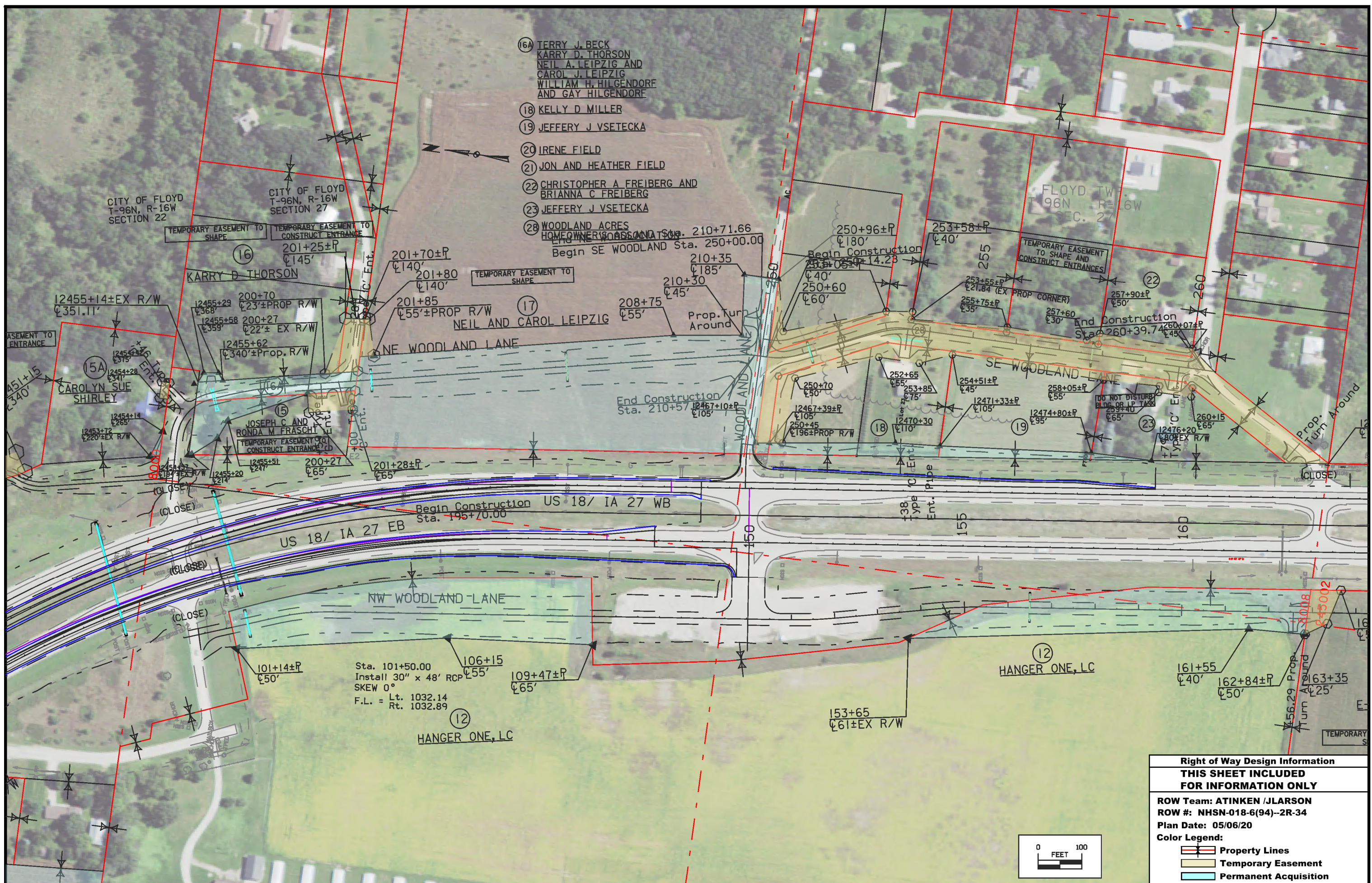
Plan Date: 08/18/20

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



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: NHSN-018-6(94)--2R-34	
Plan Date: 09/25/19	
Color Legend:	
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	Temporary Easement
	Permanent Acquisition

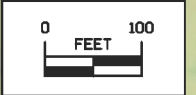
- 16A TERRY J. BECK
KARRY D. THORSON
NEIL A. LEIPZIG AND
CAROL J. LEIPZIG
WILLIAM H. HILGENDORF
AND GAY HILGENDORF
- 18 KELLY D MILLER
- 19 JEFFERY J VSETECKA
- 20 IRENE FIELD
- 21 JON AND HEATHER FIELD
- 22 CHRISTOPHER A FREIBERG AND
BRIANNA C FREIBERG
- 23 JEFFERY J VSETECKA
- 28 WOODLAND ACRES
HOMEOWNERS ASSOCIATION

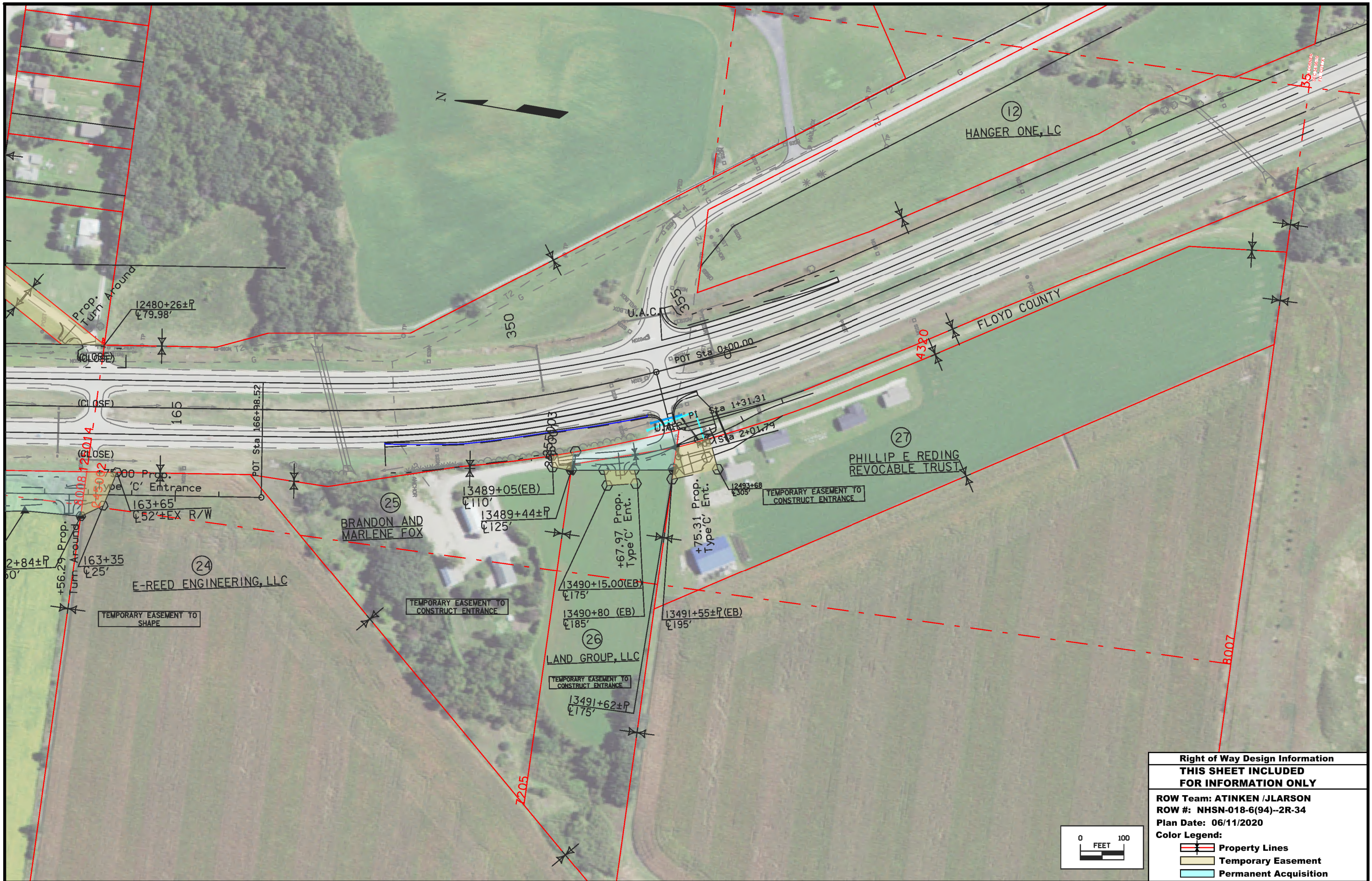





Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

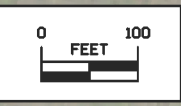
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 ROW #: NHSN-018-6(94)--2R-34
 Plan Date: 05/06/20
 Color Legend:

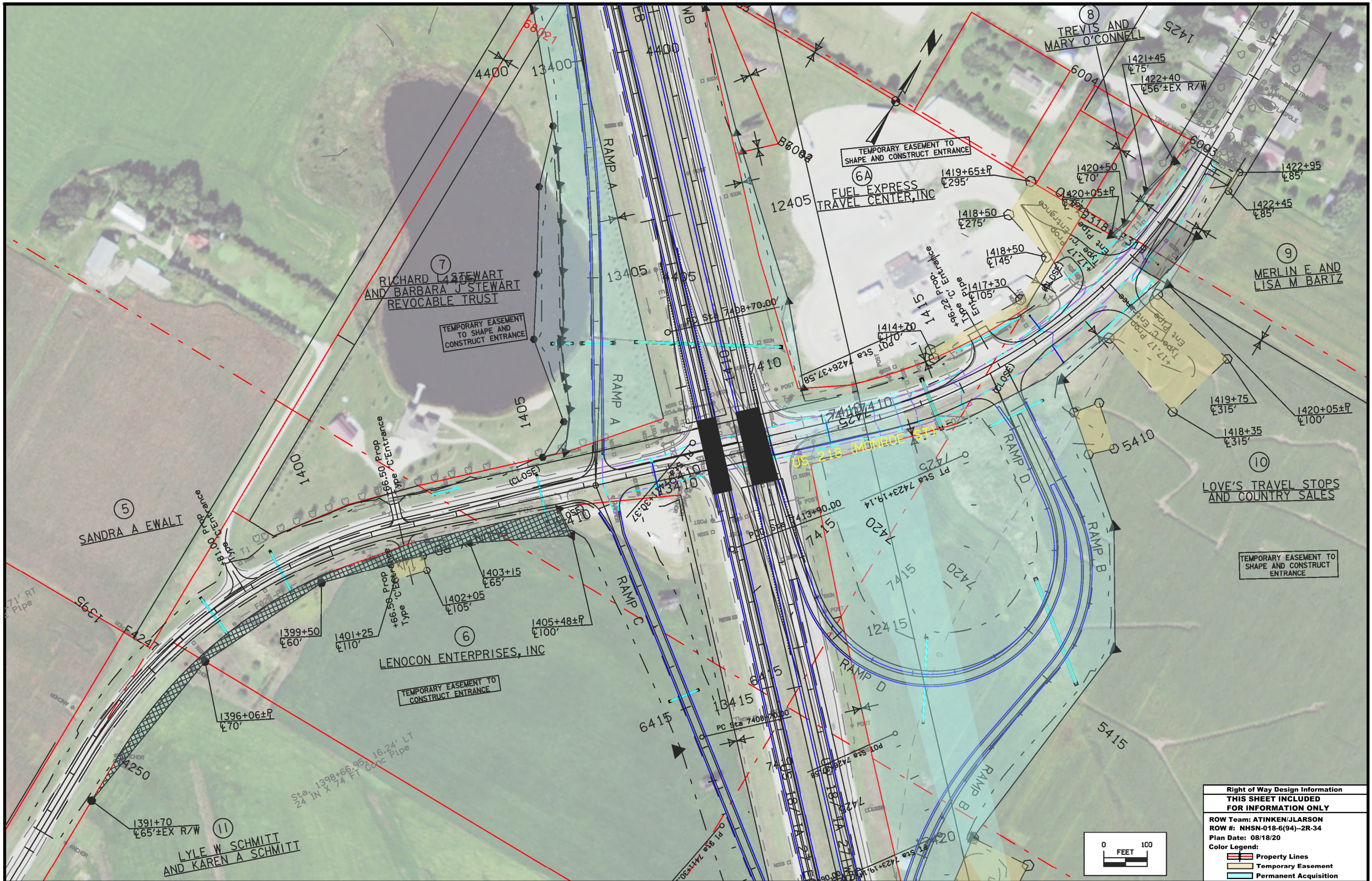
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- Permanent Acquisition



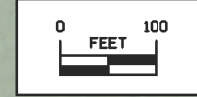


Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: NHSN-018-6(94)--2R-34	
Plan Date: 06/11/2020	
Color Legend:	
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	Temporary Easement
	Permanent Acquisition

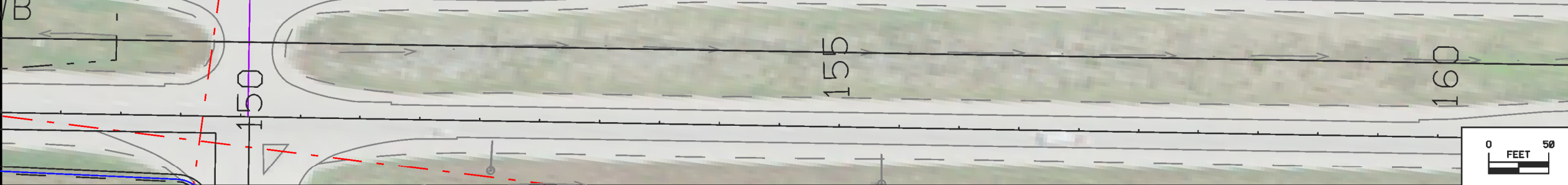




Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN/JLARSON	
ROW #: NHSN-018-6(94)-2R-34	
Plan Date: 08/18/20	
Color Legend:	
—	Property Lines
—	Temporary Easement
—	Permanent Acquisition



- ⑱ KELLY D MILLER
- ⑲ JEFFERY J VSETECKA
- ⑳ IRENE FIELD
- ㉑ JON AND HEATHER FIELD
- ㉒ CHRISTOPHER A FREIBERG AND BRIANNA C FREIBERG
- ㉓ JEFFERY J VSETECKA
- ㉔ WOODLAND ACRES HOMEOWNER'S ASSOCIATION



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: NHSN-018-6(94)--2R-34	
Plan Date: 3/26/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

TRAFFIC CONTROL PLAN

US-18/IA-27
At all times, at least one lane of traffic shall be maintained on US-18/IA-27 in each direction.

T-44
One lane of traffic in each direction shall be maintained on T-44 during Stages 1, 3, and 4. T-44 will be closed to thru traffic during Stage 2. Traffic will be detoured to the interchange at County Road B-35 and US-18 during Stage 2 construction. See sheet J.5 for additional information.

US-218
At all times, at least one lane of traffic shall be maintained on US-218 in each direction. US-18/IA-27 WB exit and entrance ramps will be open to traffic during Stage 4 construction.

STAGING NOTES

It is not the intent to confine the Contractor's activities to the areas of suggested stages alone. It is understood that some of the various steps may occur simultaneously. The Contractor may conduct several operations concurrently, provided that traffic is maintained and that these operations do not conflict with the staging indicated herein.

It is recognized that as the various activities related to the construction progress, certain situations may arise which preclude adhering to the original construction sequence or which would readily lend themselves to more efficient staging operations. Should the Contractor desire to deviate from the original plan, a written alternative plan shall be submitted to the Project Engineer, for approval a minimum of one (1) week prior to the proposed changes.

Coordinate with all public and private projects in the area at all times.

Stage 1 Traffic:
US-18 EB traffic uses crossovers at each end of project to create head-to-head traffic on existing US-18 WB lanes. Traffic maintained on T-44 and US-218 via the use of existing and temporary pavement. Access to Liberty Street, Montgomery Street, and Packard Avenue from US-18 will be restricted to right-in-right-out access only.

Stage 1 Construction:
US-18 EB lanes, including bridge over US-218
Ramps A and C (excluding the terminals at T-44/US-218)
Ramps B and D (excluding the terminals at T-44/US-218 and US 18/IA 27)
Frontage roads at Woodland Lane and Cedar View Drive

Stage 2 Traffic:
US-18 EB traffic remains head-to-head on existing US-18 WB lanes. Traffic on US-218 into Floyd maintained on existing and temporary pavement. Access to east truck stop will be maintained by utilizing temporary pavement. Traffic on T-44 south of US-18 will be detoured to the interchange at US-18 and County Road B-35. Access to the homes along T-44 will be maintained by staging and temporary surfacing.

Stage 2 Construction:
T-44 from beginning of reconstruction to the new US-18 EB bridge (including the Ramp A and C terminals)
US-218 NB lane (including the Ramp B and D terminals)
East truck stop entrance

Stage 3 Traffic:
US-18 traffic switches to head-to-head on the new US-18 EB lanes and on the new Ramp A and Ramp C pavement. Traffic on T-44/US-218 and the intersection of Ramp A/C with T-44/US-218 will be maintained utilizing temporary pavement. Posted speed limit for US-18 EB/WB traffic approaching the intersection of Ramp A/C and T-44/US-218 will be reduced to 25 mph through the intersection. Traffic at the intersection will be controlled via stop signs for NB/SB traffic on T-44/US-218.

Stage 3 Construction:
US-18 WB lanes (including bridge over US-218), Ramp B connection, and Ramp D connection
Remainder of US-218 NB lane










Stage 4 Traffic:
US-18 is open to two-lanes of traffic in each direction on newly constructed EB and WB pavement. Ramps B and D are open to traffic entering and exiting WB US-18. T-44/US-218 traffic uses newly constructed US-218 NB lanes along with temporary pavement widening. Access to west truck stop will be maintained by staging construction of the two entrances.

Stage 4 Construction:
Remainder of US-218 SB lanes
West truck stop entrances (staged to maintain access)

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

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

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





















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

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

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

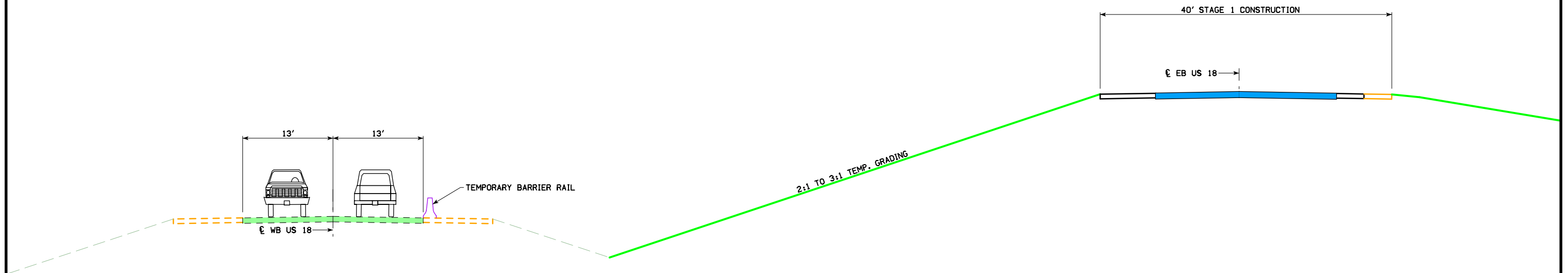
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

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

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

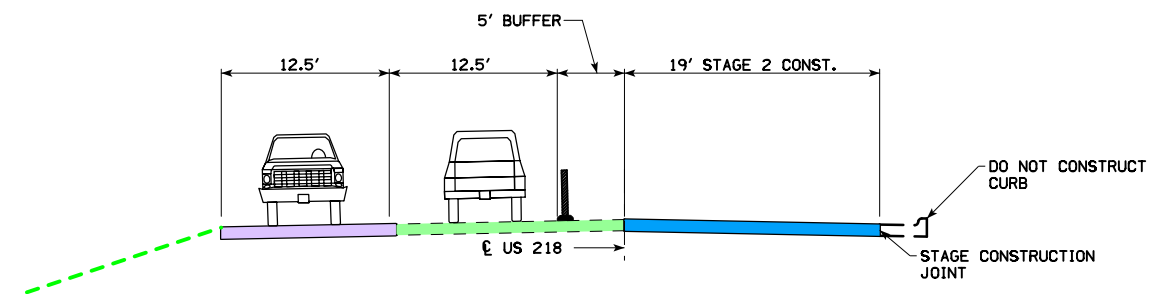
(COVERS SHEET SERIES J)

STAGE 1 TYP ROADWAY CROSS SECTION



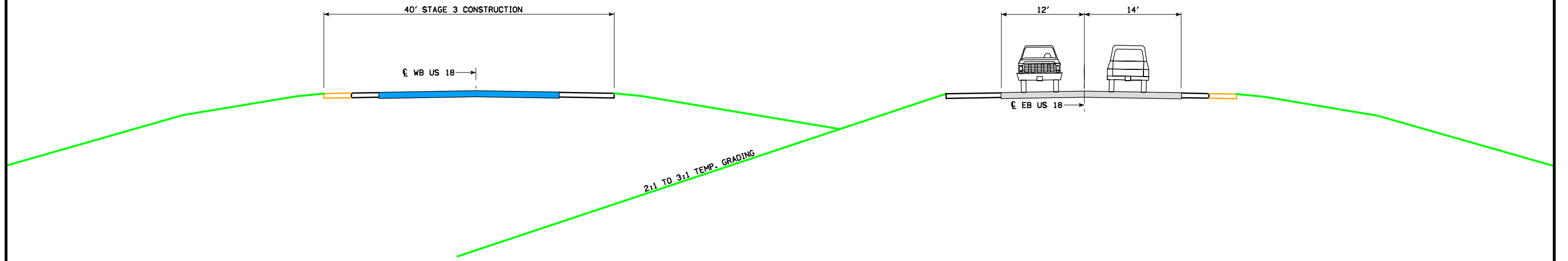
US 18/ IA 27

STAGE 2 TYP ROADWAY CROSS SECTION



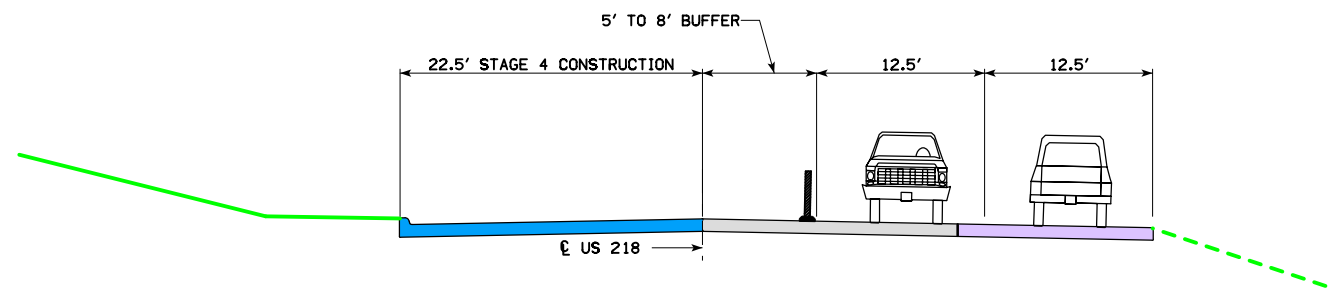
US 218

STAGE 3 TYP ROADWAY CROSS SECTION



US 18/ IA 27

STAGE 4 TYP ROADWAY CROSS SECTION



















US 218

STAGE 2 - PROPOSED DETOUR

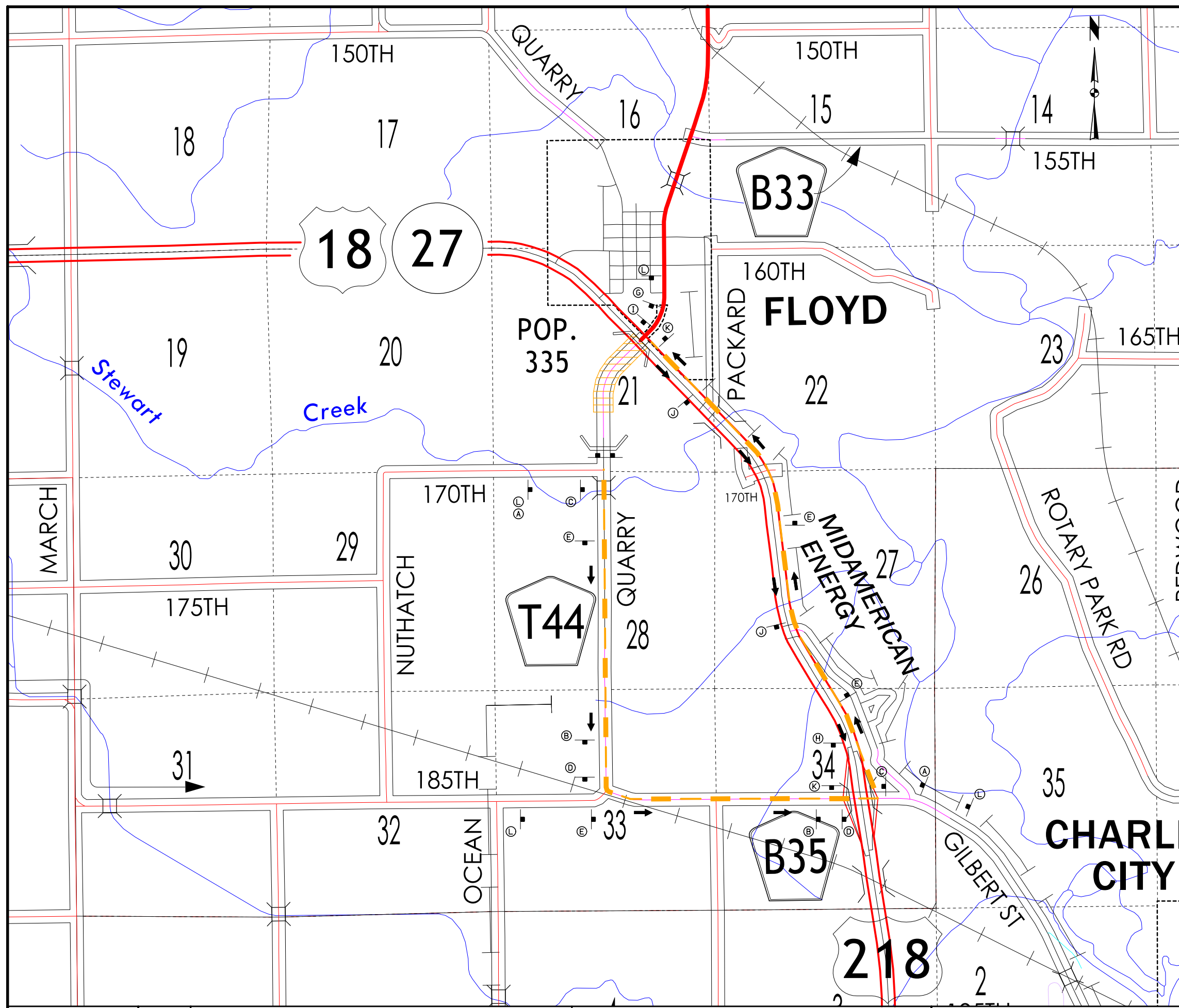
NOTE: DETOUR SIGNING WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR. COORDINATE TRAFFIC CONTROL ITEMS WITH THE DISTRICT 2 OFFICE.

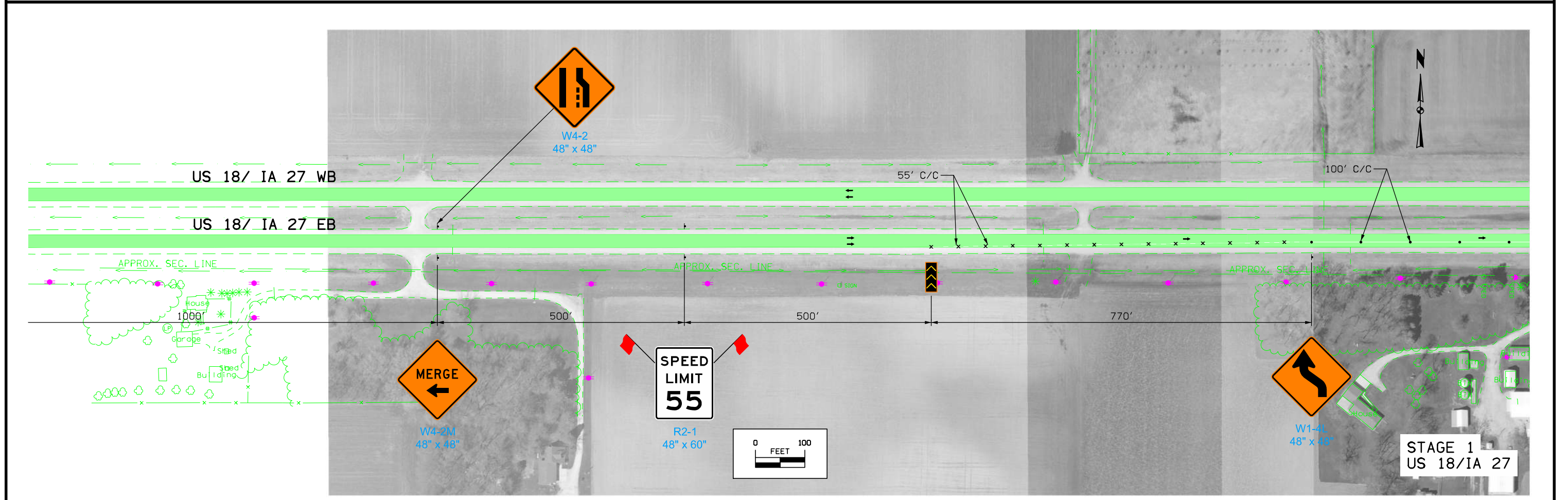
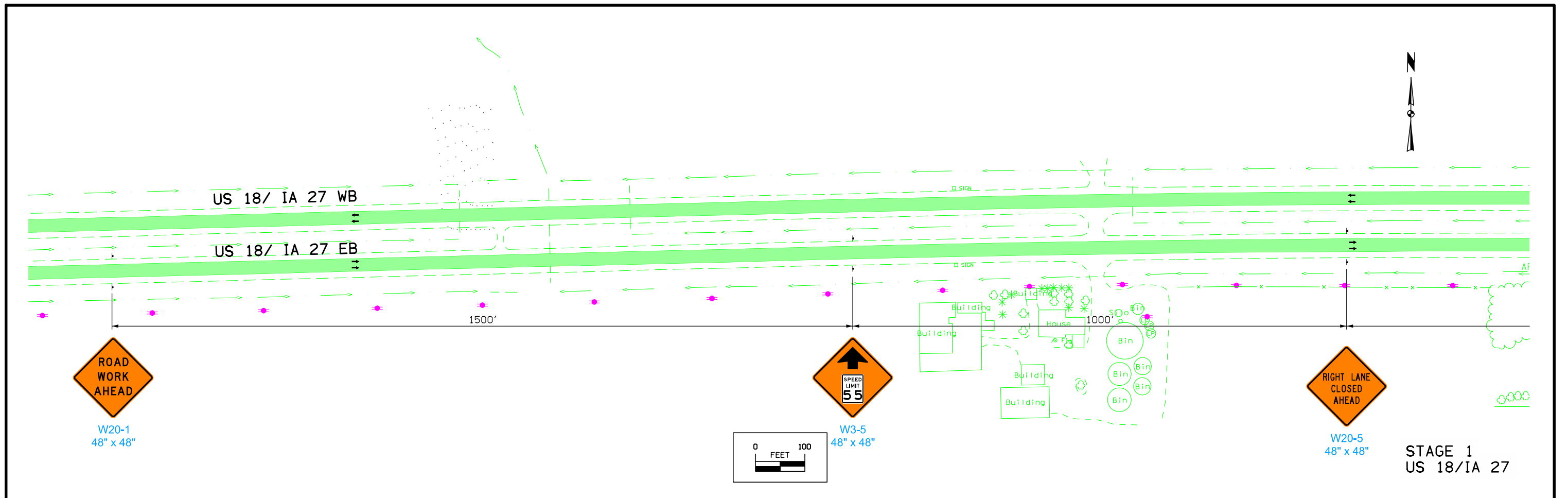
TRAFFIC CONTROL LEGEND

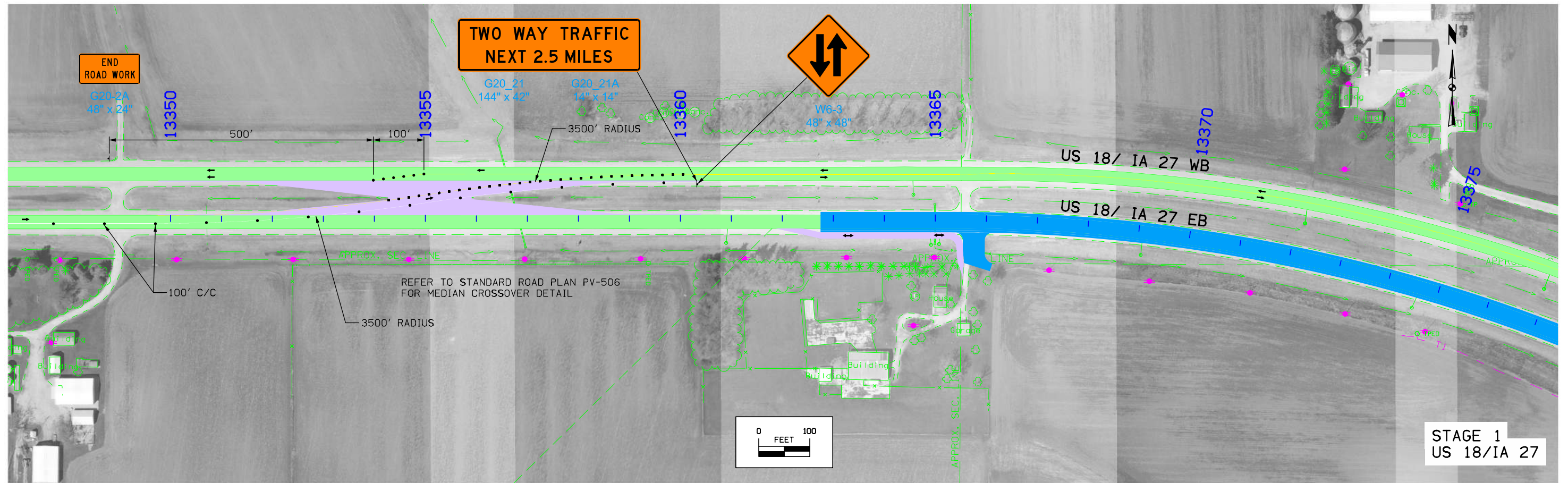
-  TRAFFIC SIGN
-  TYPE III BARRICADE
-  DETOUR ROUTE
-  WORK AREA
-  SAFETY FENCE

<p>A</p>  <p>M4-9 30" x 24"</p>	<p>B</p>  <p>M4-9 30" x 24"</p>	<p>C</p>  <p>M4-9 30" x 24"</p>	<p>D</p>  <p>M4-9 30" x 24"</p>
<p>E</p>  <p>M4-9 30" x 24"</p>	<p>F</p>  <p>M4-9 30" x 24"</p>	<p>G</p>  <p>M4-9 30" x 24"</p>	<p>H</p>  <p>M4-9 30" x 24"</p>
<p>I</p>  <p>M4-9 30" x 24"</p>	<p>J</p>  <p>M4-9 30" x 24"</p>	<p>K</p>  <p>M4-8a 24" x 18"</p>	

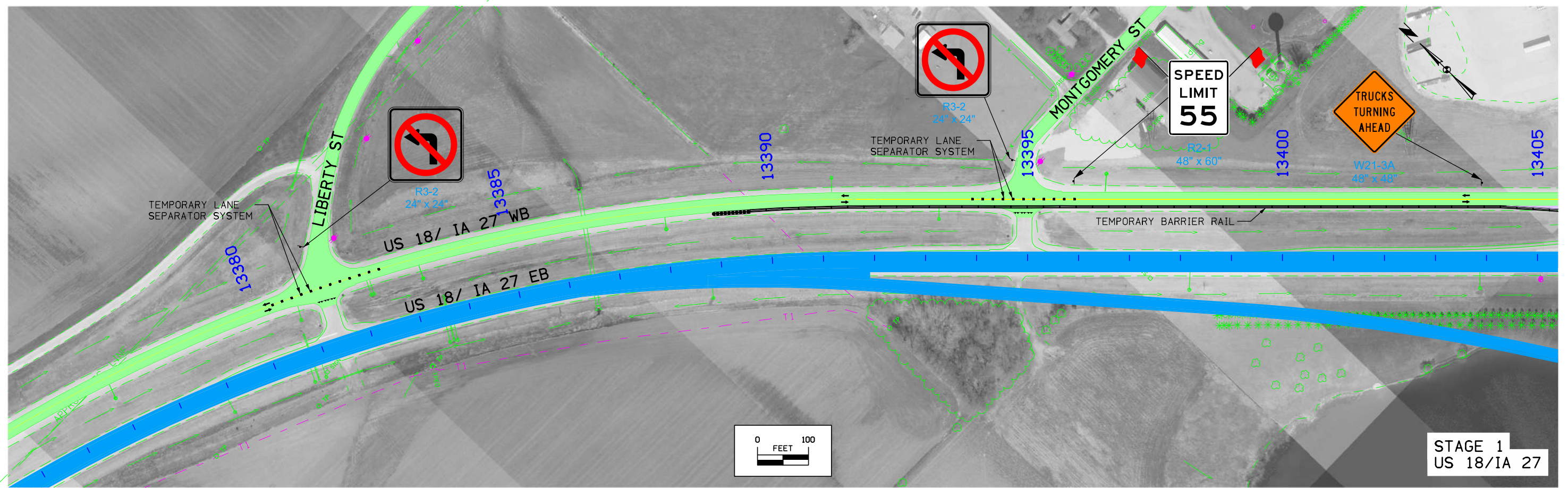
L T-44 CLOSED TO THRU TRAFFIC FOLLOW DETOUR



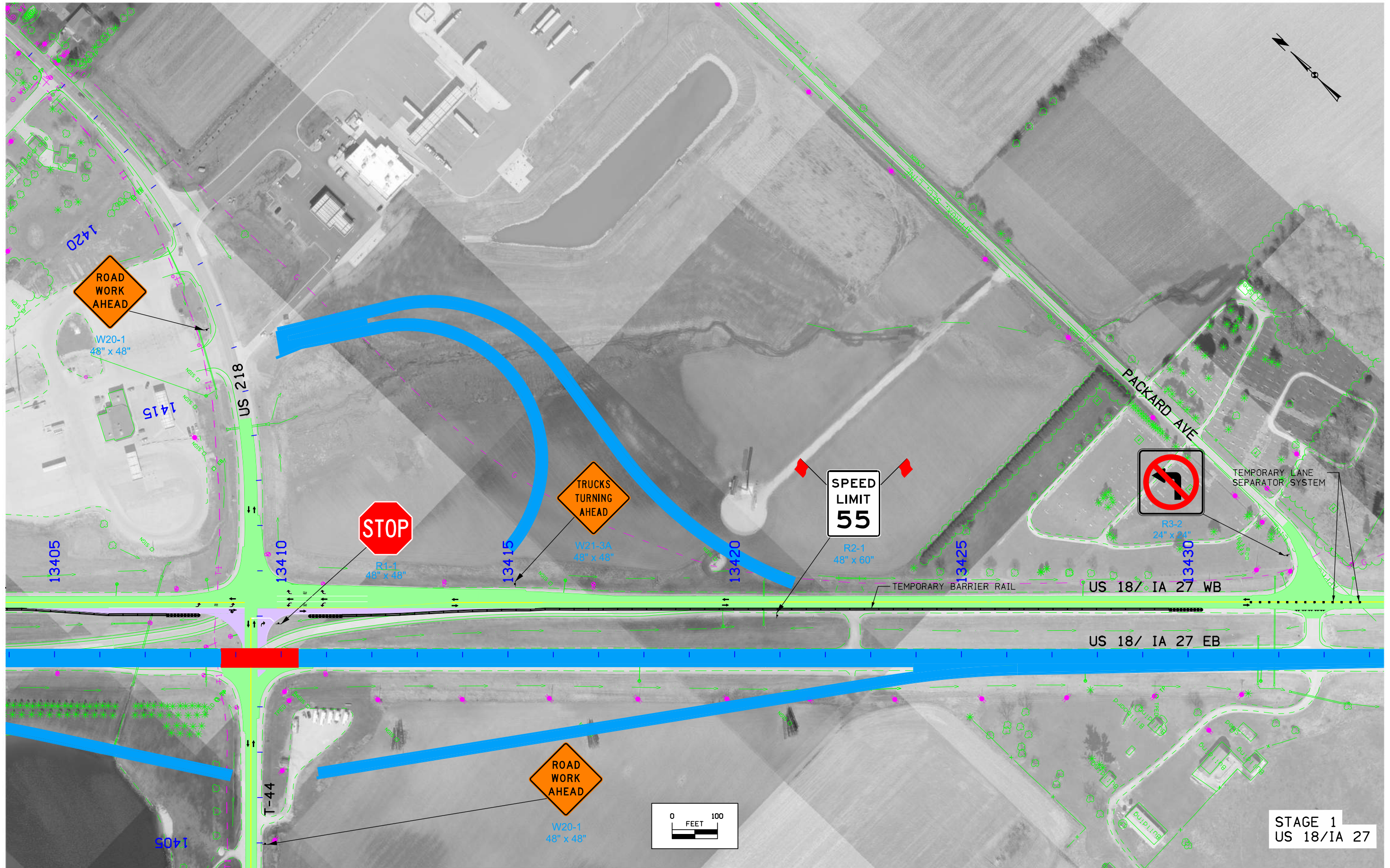




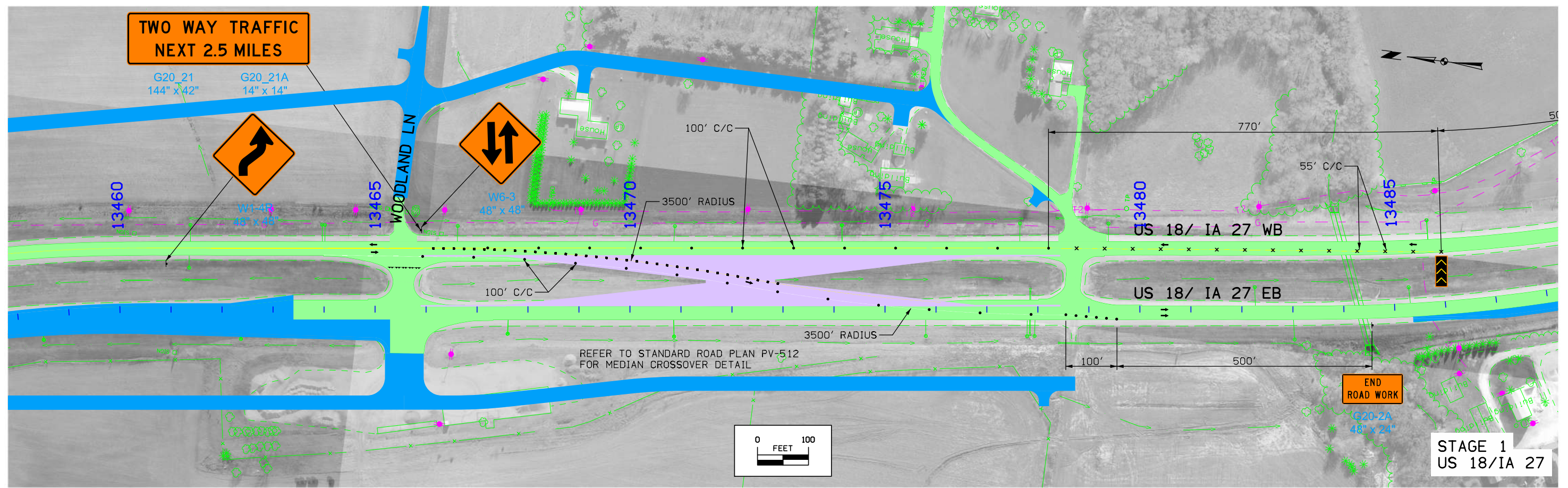
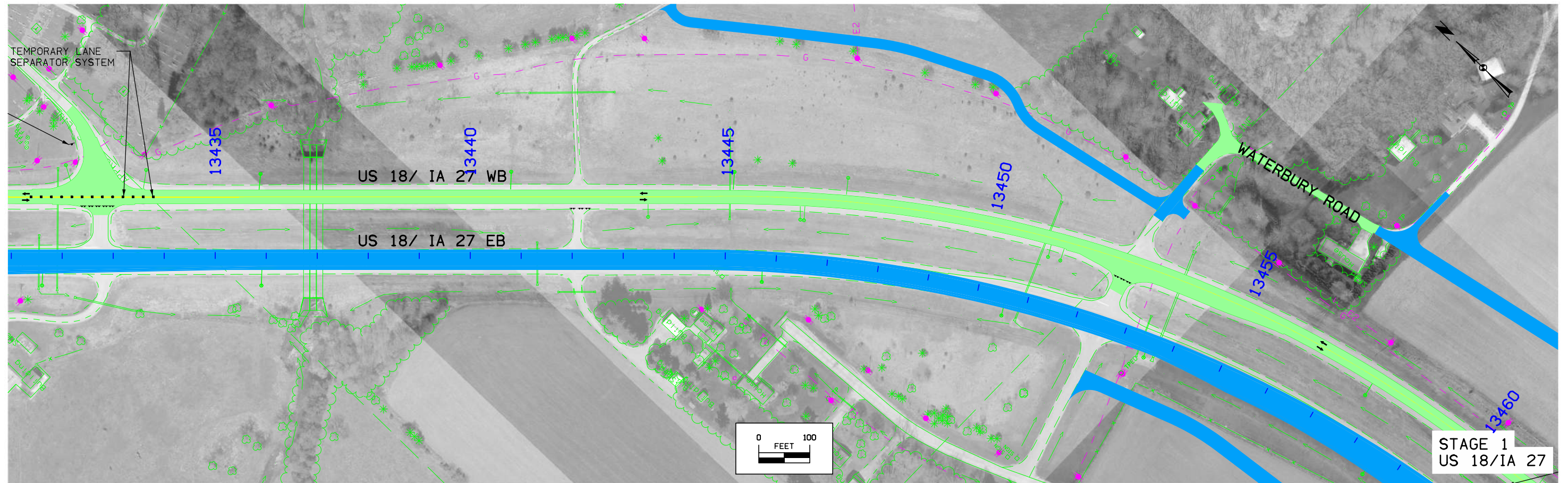
STAGE 1
US 18/IA 27

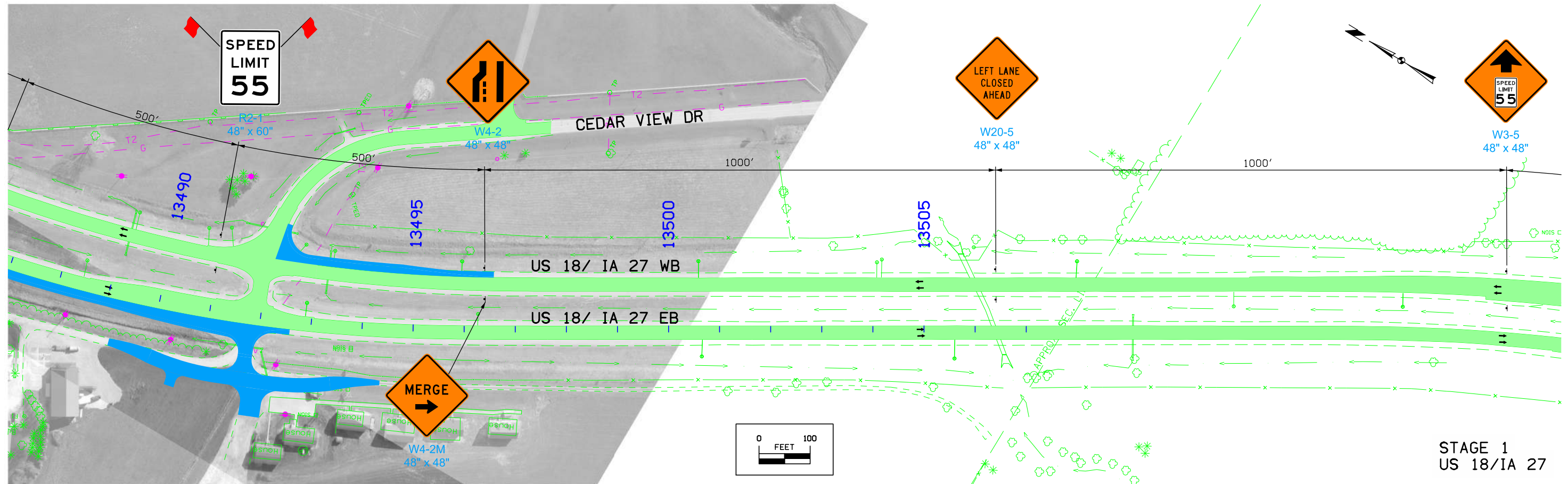


STAGE 1
US 18/IA 27

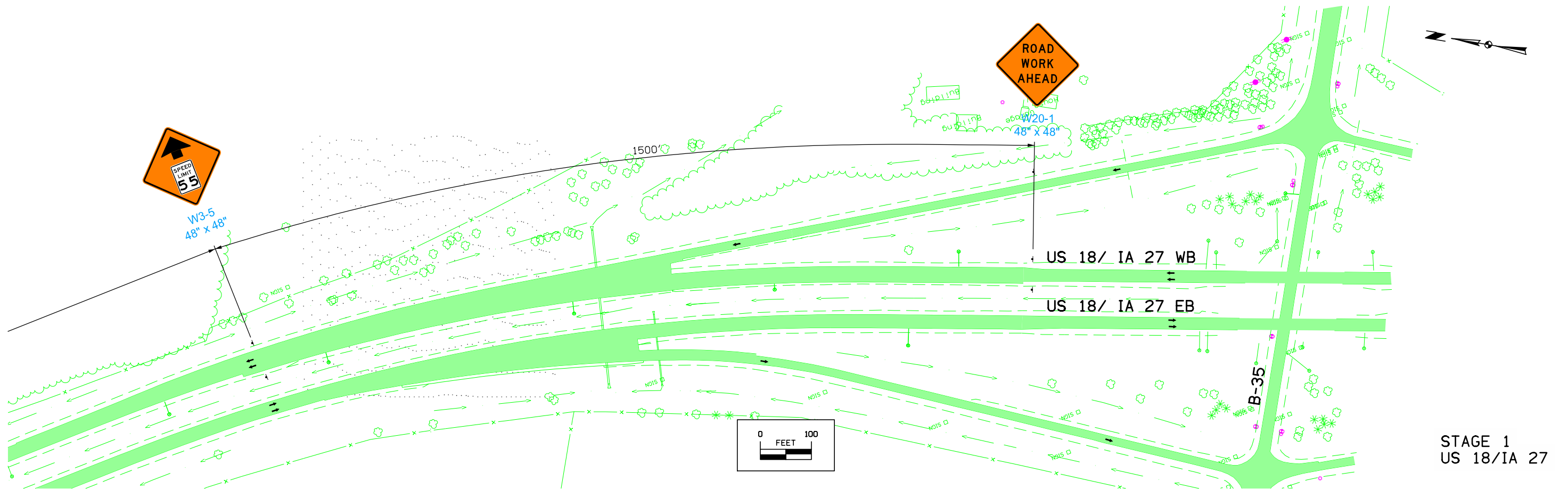


STAGE 1
US 18/IA 27

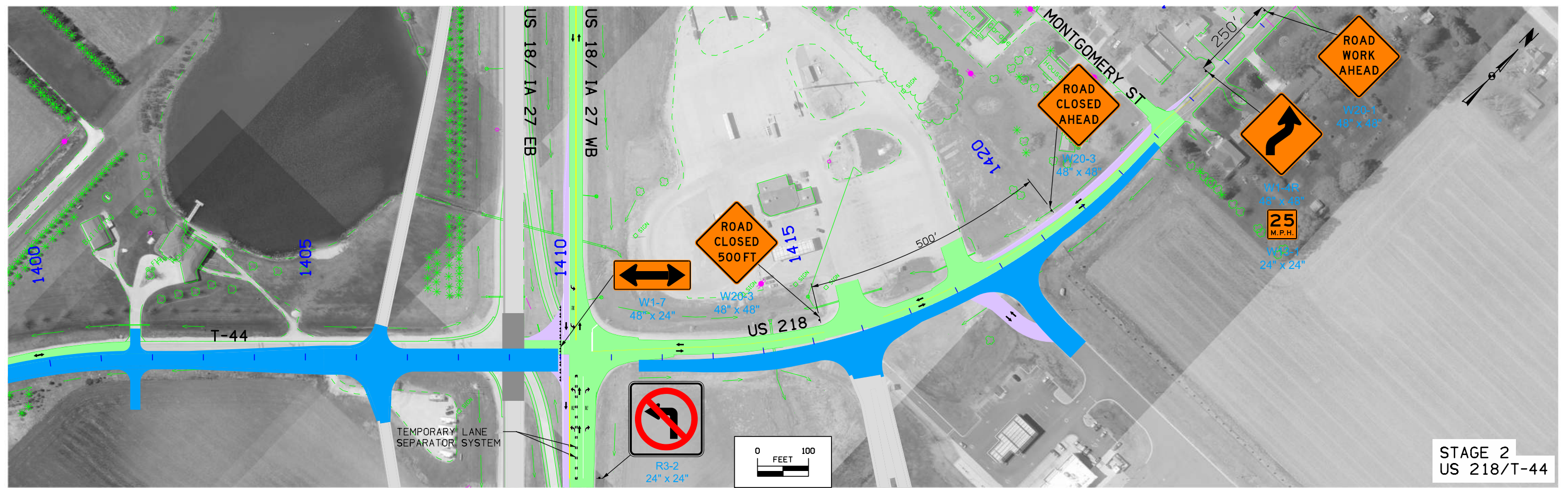
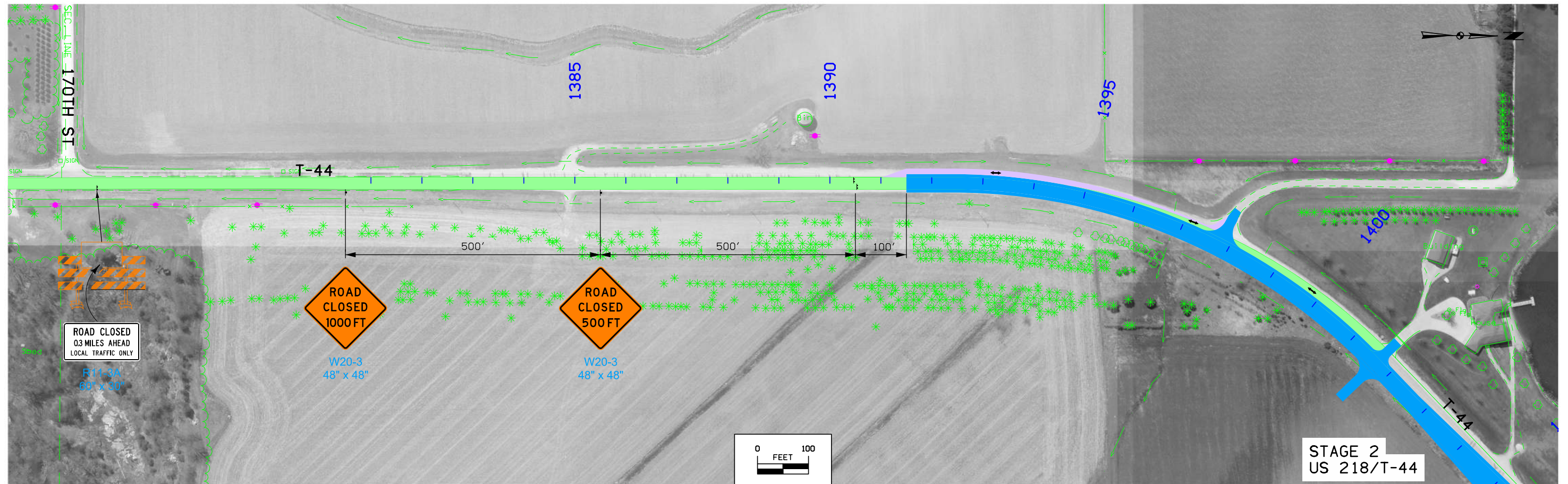


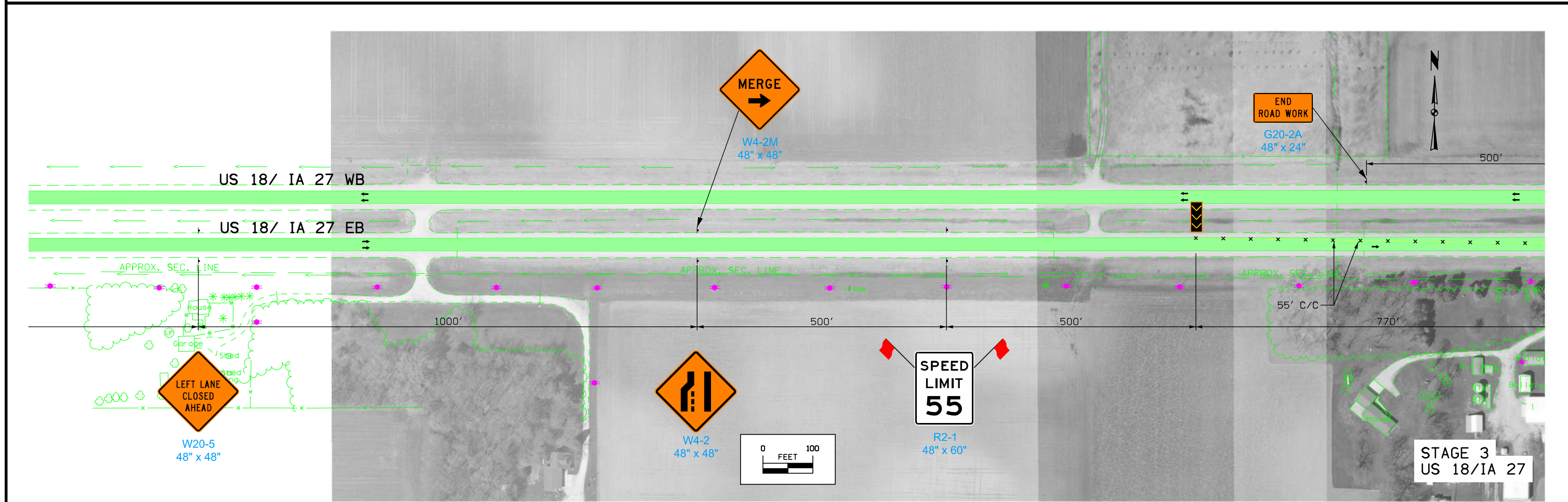
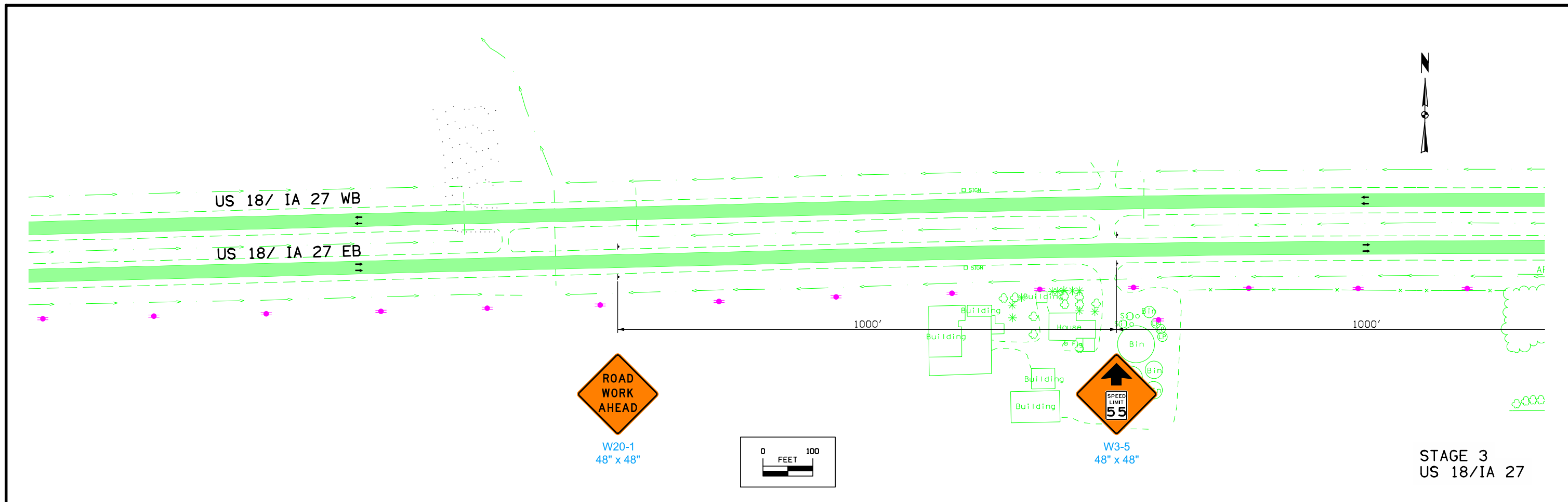


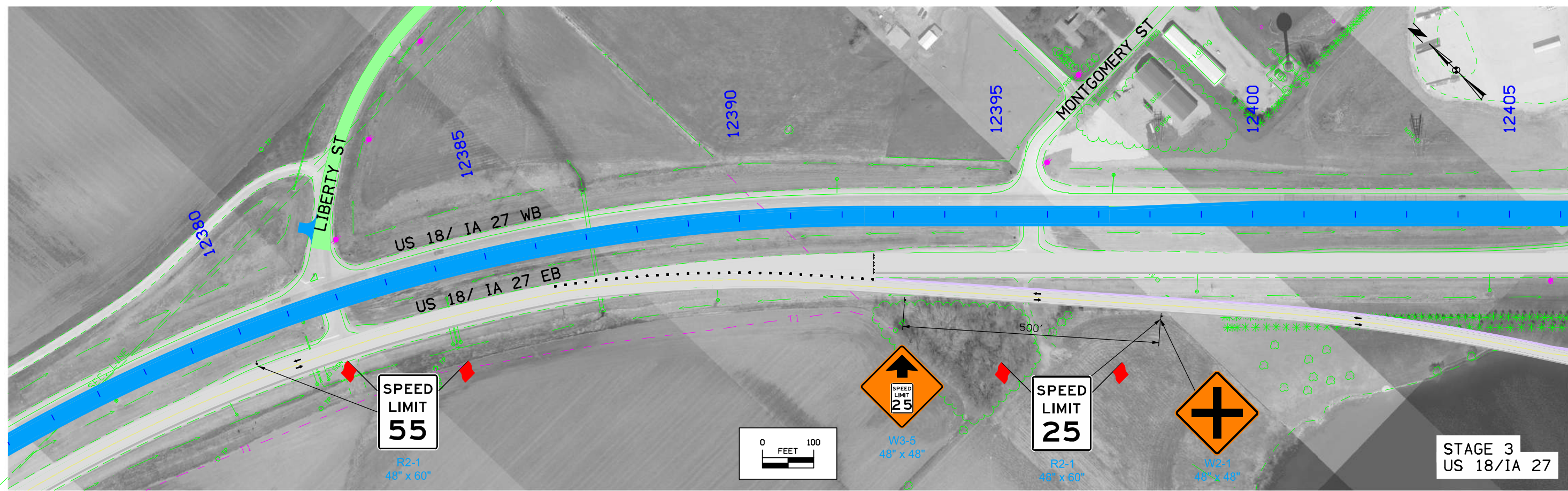
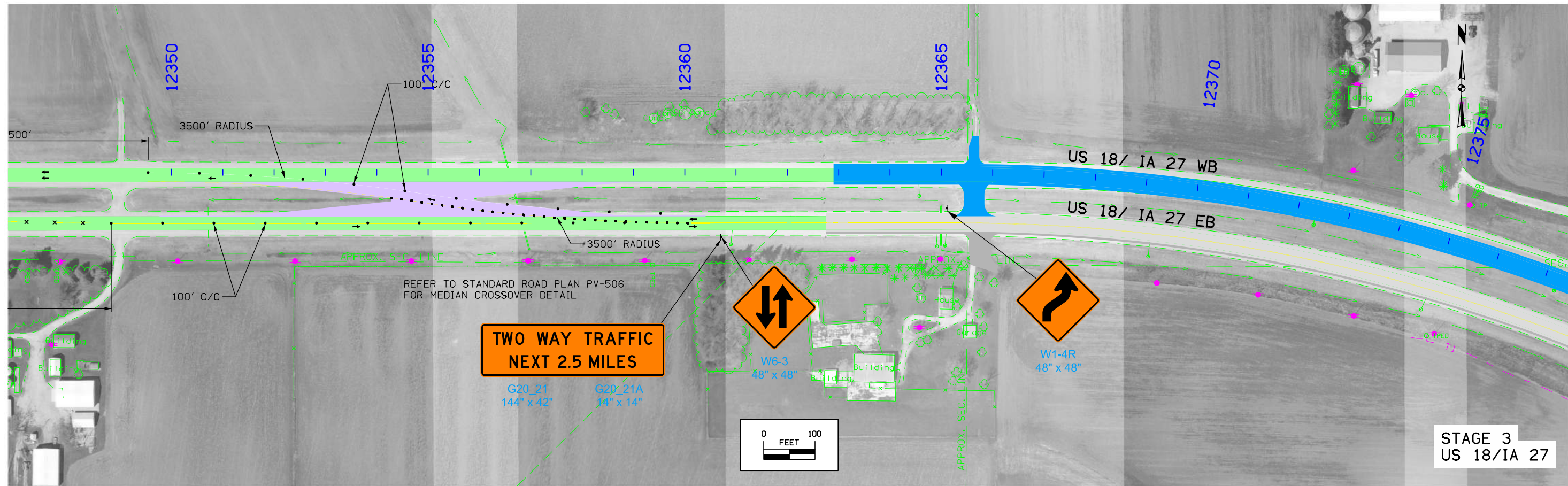
STAGE 1
US 18/IA 27

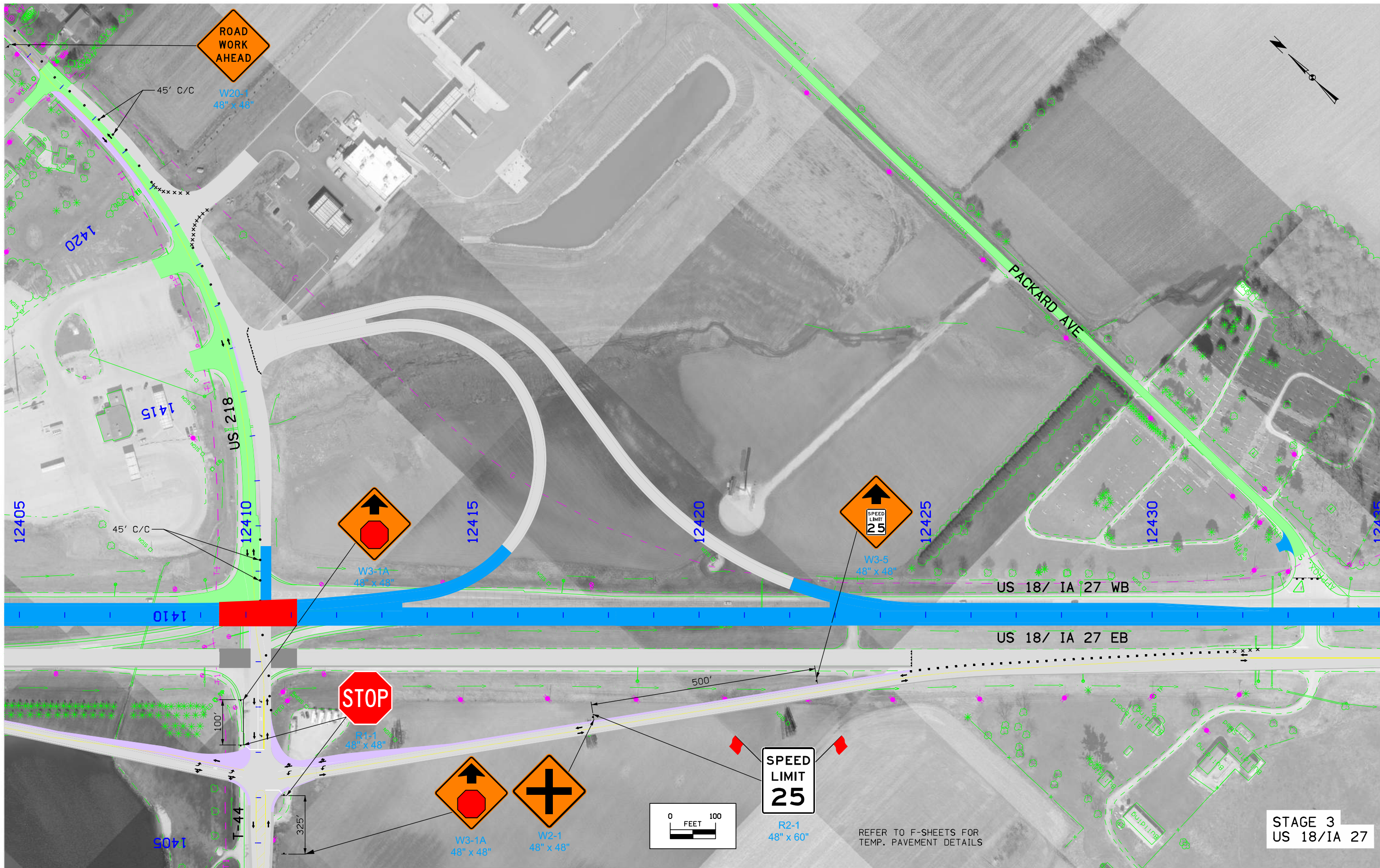


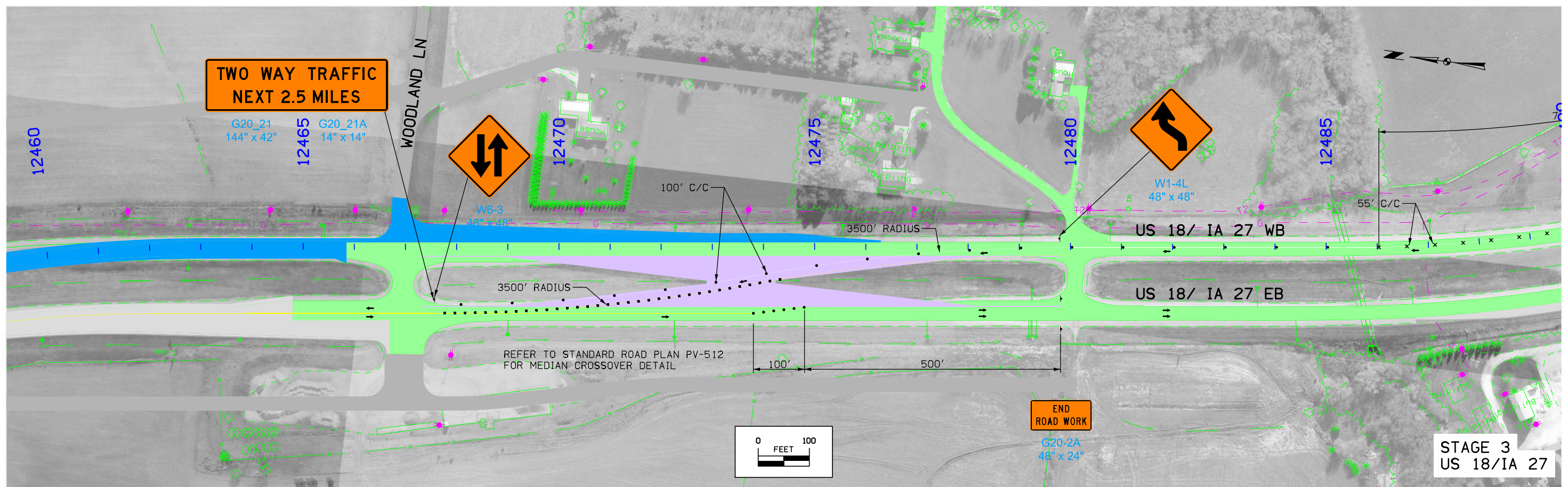
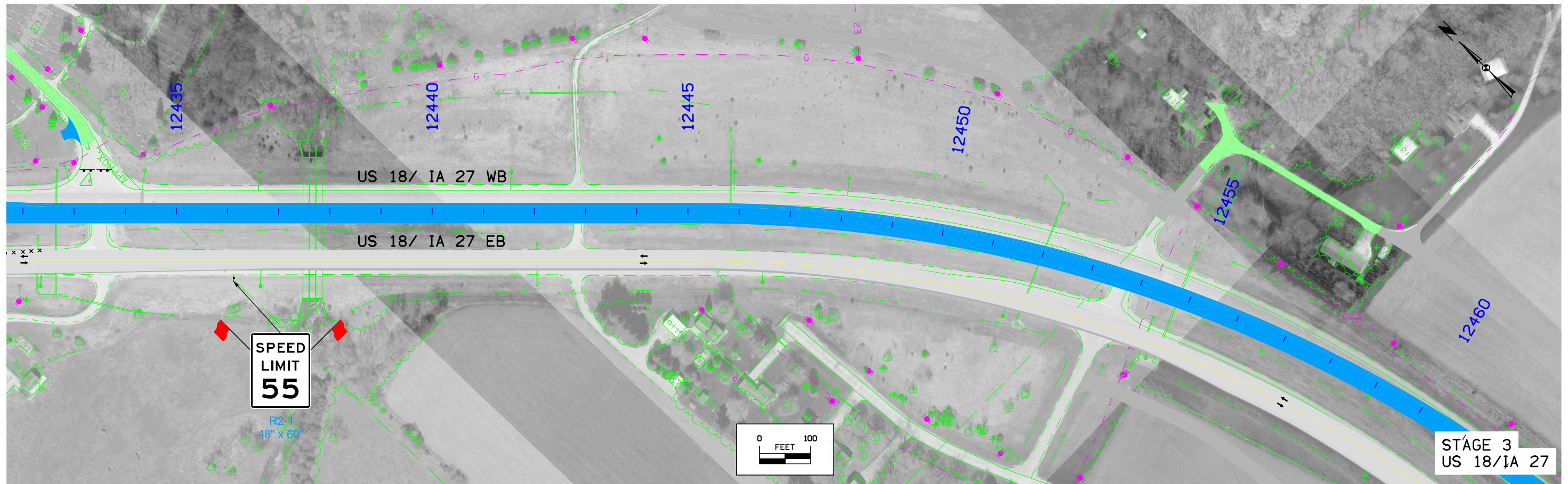
STAGE 1
US 18/IA 27

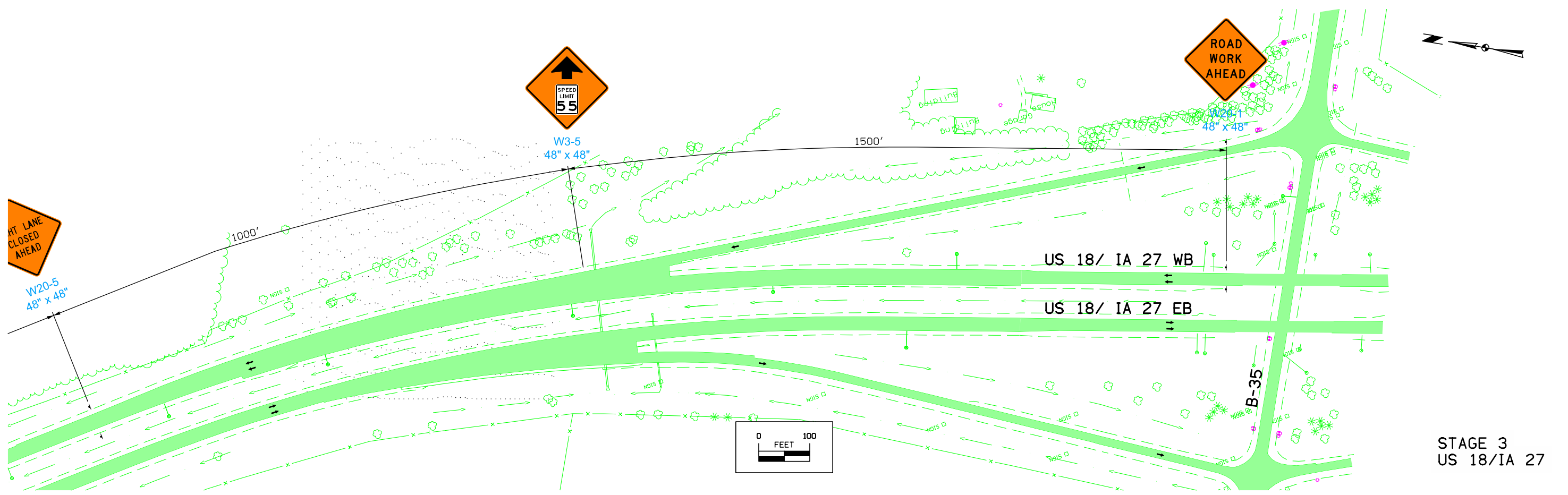
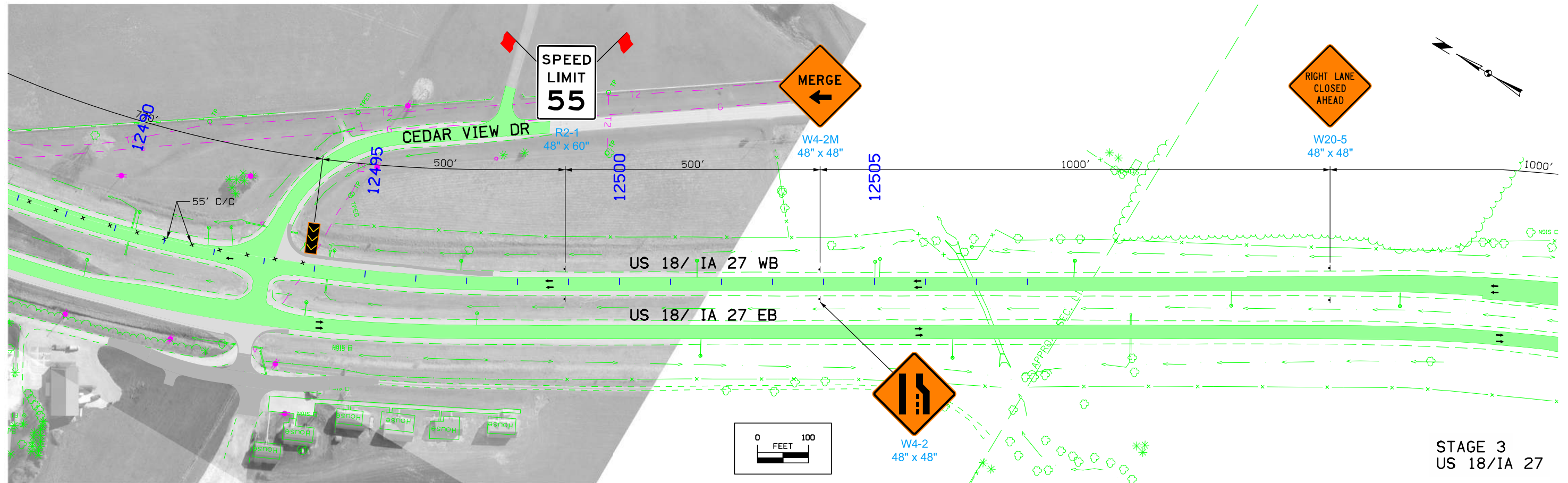


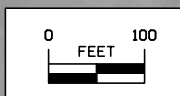
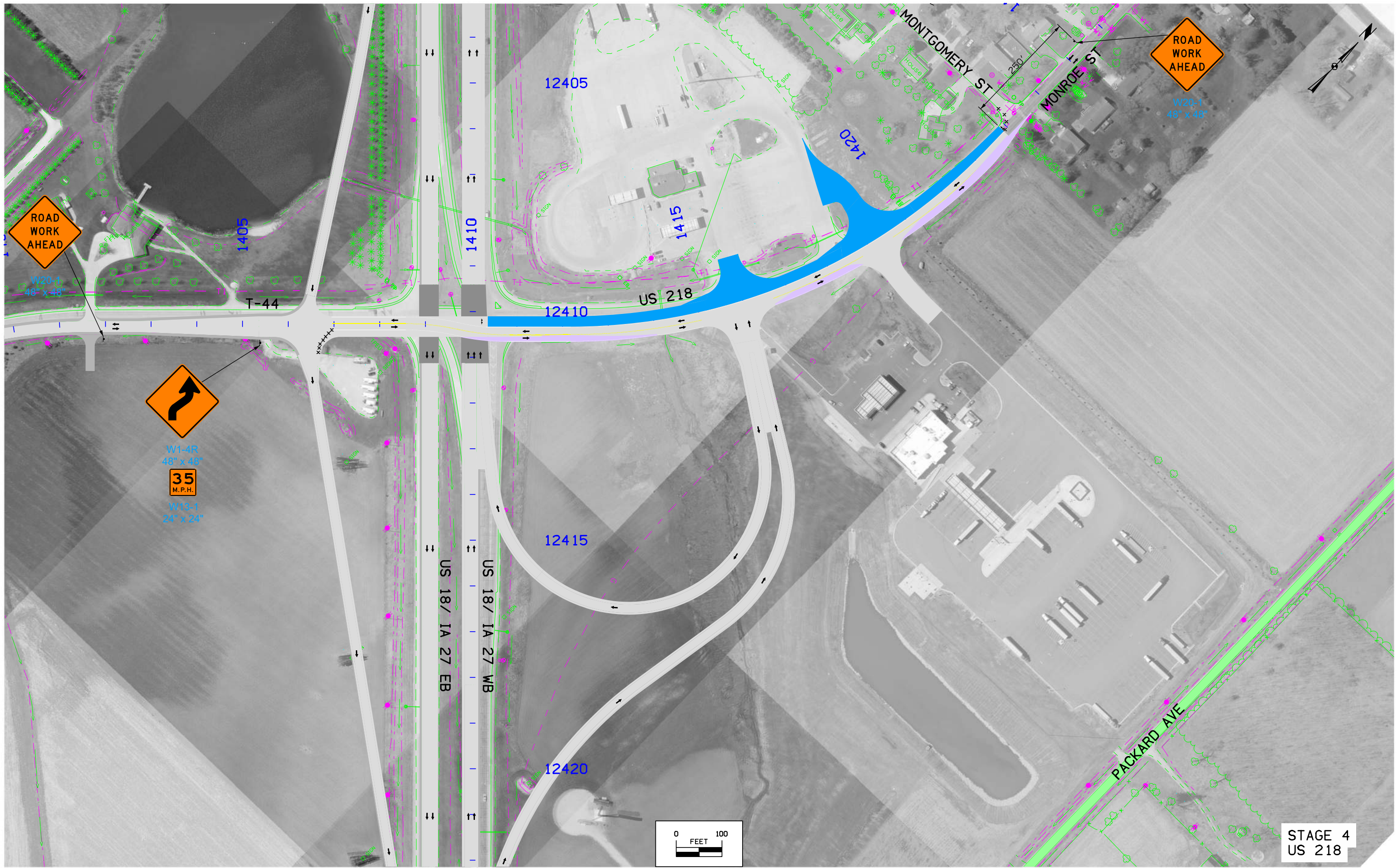




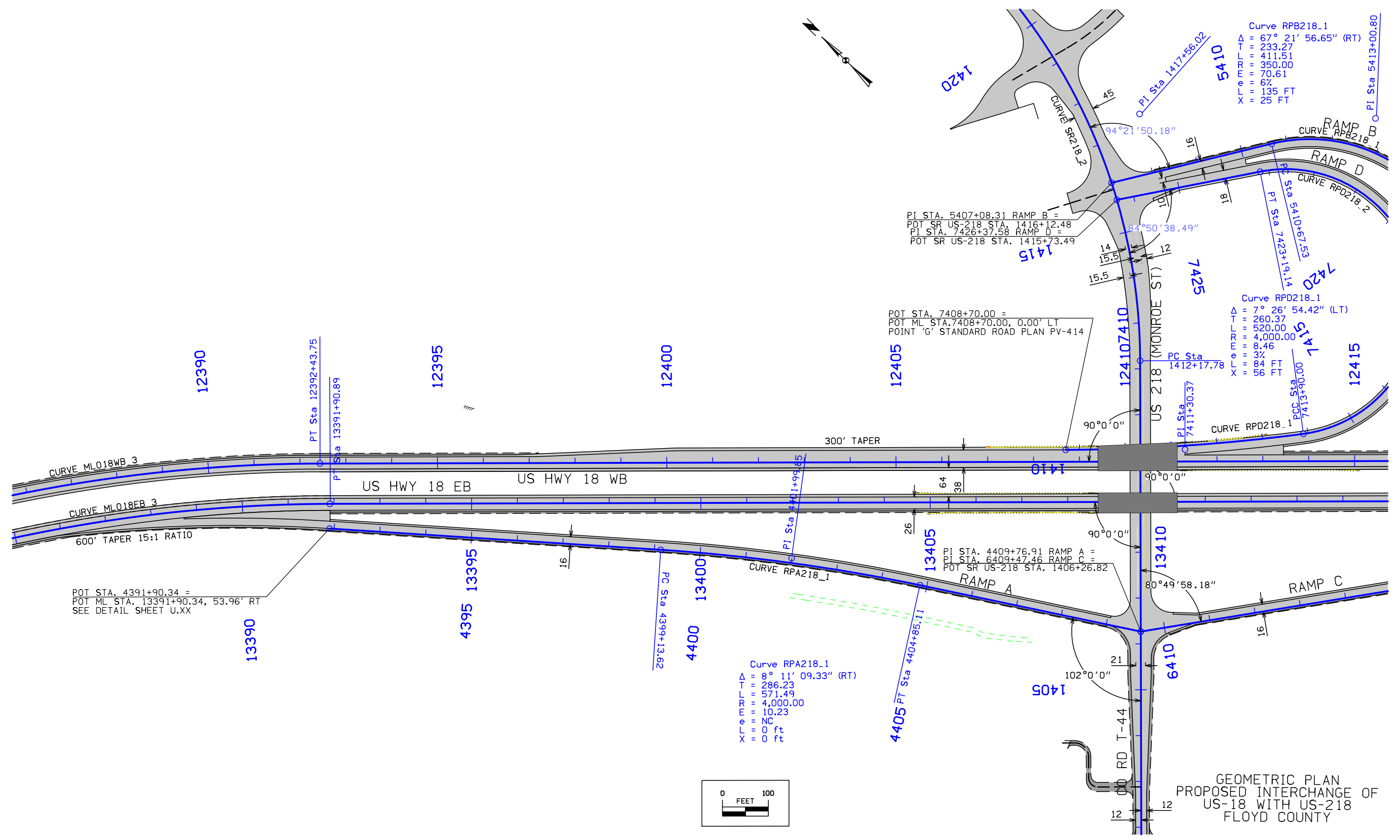
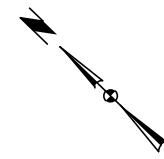








STAGE 4
US 218



Curve RPB218.1
 $\Delta = 67^\circ 21' 56.65''$ (RT)
 T = 233.27
 L = 411.51
 R = 350.00
 E = 70.61
 e = 6%
 L = 135 FT
 X = 25 FT

PI STA. 5407+08.31 RAMP B =
 POT SR US-218 STA. 1416+12.48
 PI STA. 7426+37.58 RAMP D =
 POT SR US-218 STA. 1415+73.49

POT STA. 7408+70.00 =
 POT ML STA. 7408+70.00, 0.00' LT
 POINT 'G' STANDARD ROAD PLAN PV-414

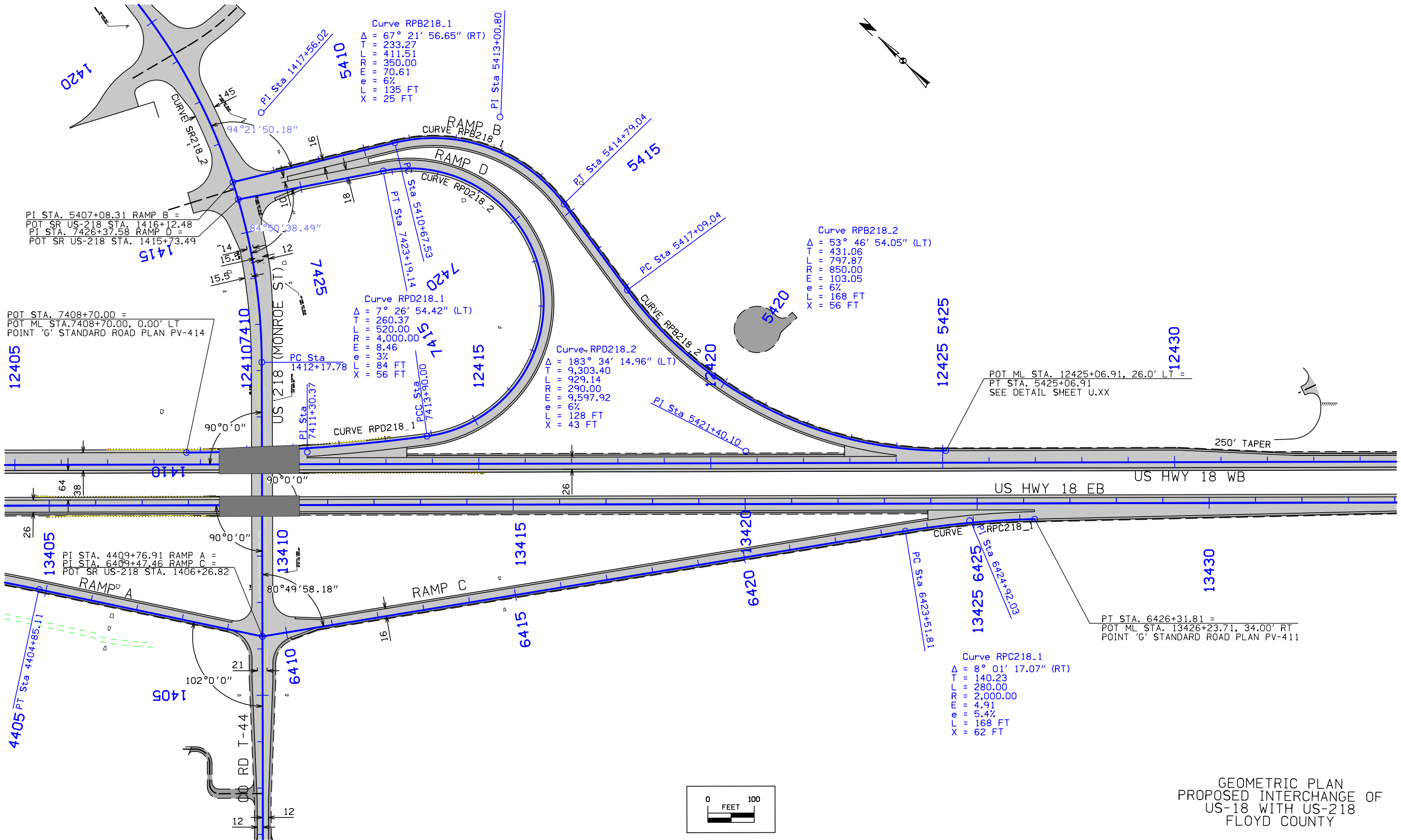
Curve RPD218.1
 $\Delta = 7^\circ 26' 54.42''$ (LT)
 T = 260.37
 L = 520.00
 R = 4,000.00
 E = 8.46
 e = 3%
 L = 84 FT
 X = 56 FT

PI STA. 4409+76.91 RAMP A =
 PI STA. 6409+47.46 RAMP C =
 POT SR US-218 STA. 1406+26.82

Curve RPA218.1
 $\Delta = 8^\circ 11' 09.33''$ (RT)
 T = 286.23
 L = 571.49
 R = 4,000.00
 E = 10.23
 e = NC
 L = 0 ft
 X = 0 ft

POT STA. 4391+90.34 =
 POT ML STA. 13391+90.34, 53.96' RT
 SEE DETAIL SHEET U.XX

GEOMETRIC PLAN
 PROPOSED INTERCHANGE OF
 US-18 WITH US-218
 FLOYD COUNTY



Curve RPB218.1
 $\Delta = 67^\circ 21' 56.65''$ (RT)
 T = 233.27
 L = 411.51
 R = 350.00
 E = 70.61
 e = 6%
 L = 135 FT
 X = 25 FT

Curve RPB218.2
 $\Delta = 53^\circ 46' 54.05''$ (LT)
 T = 431.06
 L = 797.87
 R = 850.00
 E = 103.05
 e = 6%
 L = 168 FT
 X = 56 FT

Curve RPD218.1
 $\Delta = 7^\circ 26' 54.42''$ (LT)
 T = 260.37
 L = 520.00
 R = 4,000.00
 E = 8.46
 e = 3%
 L = 84 FT
 X = 56 FT

Curve RPD218.2
 $\Delta = 183^\circ 34' 14.96''$ (LT)
 T = 9,303.40
 L = 929.14
 R = 290.00
 E = 9,597.92
 e = 6%
 L = 128 FT
 X = 43 FT

Curve RPC218.1
 $\Delta = 8^\circ 01' 17.07''$ (RT)
 T = 140.23
 L = 280.00
 R = 2,000.00
 E = 4.91
 e = 5.4%
 L = 168 FT
 X = 62 FT

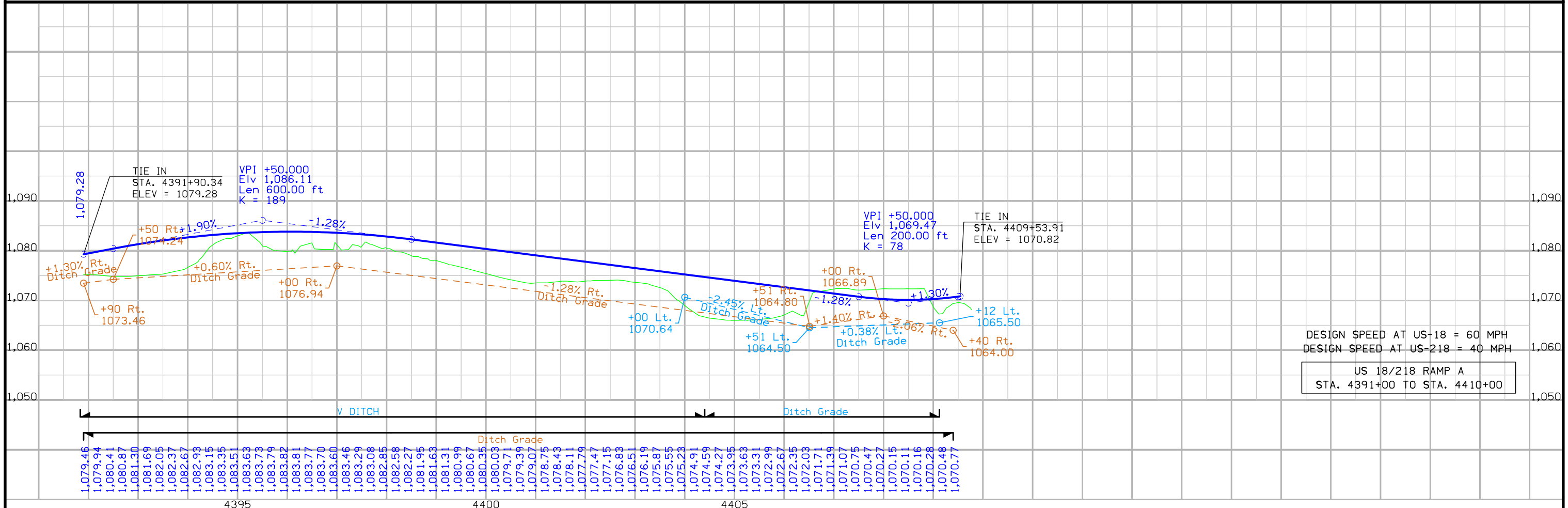
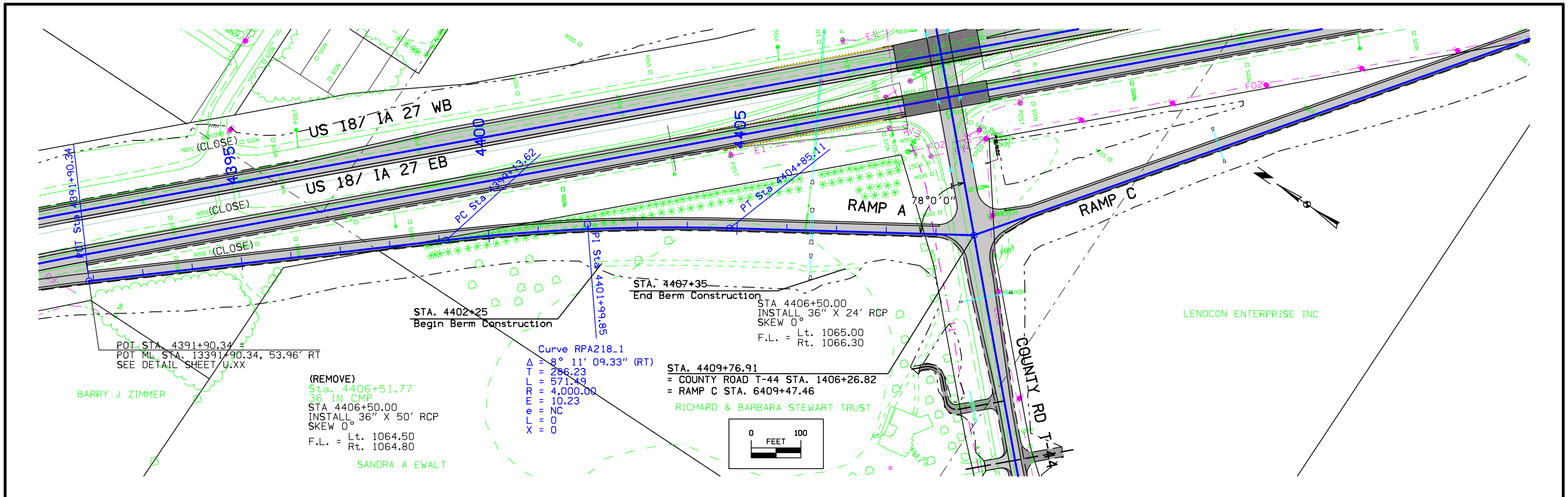
PI STA. 5407+08.31 RAMP B =
 POT SR US-218 STA. 1416+12.48
 PI STA. 7426+37.58 RAMP D =
 POT SR US-218 STA. 1415+73.49

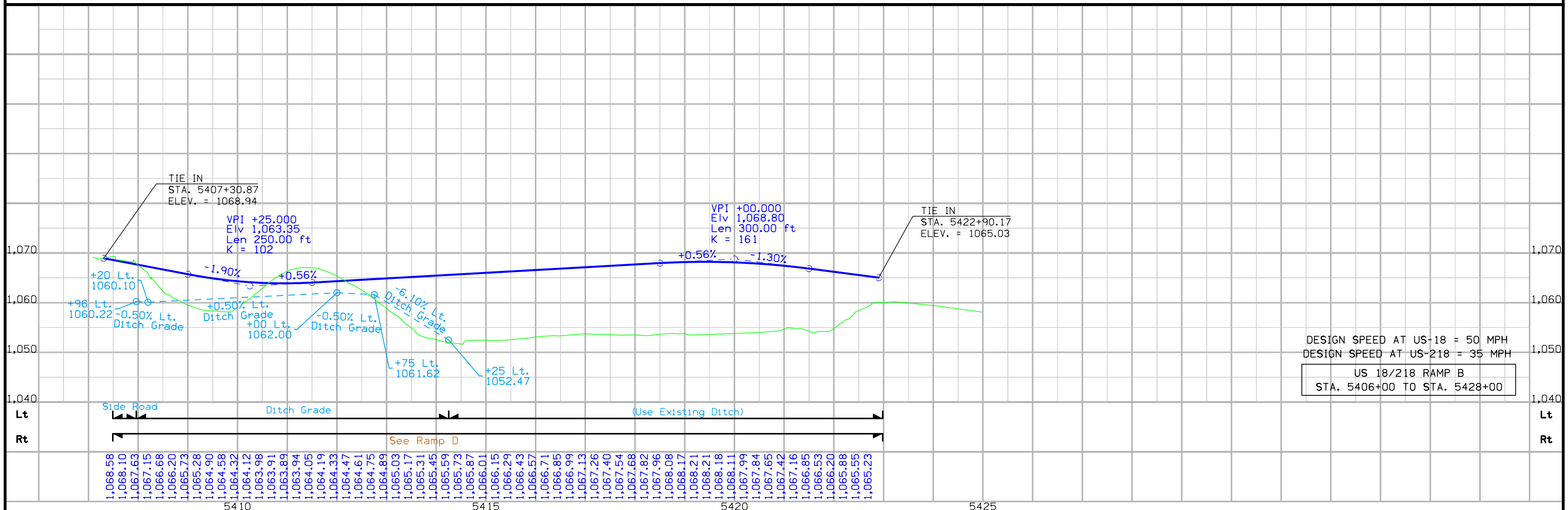
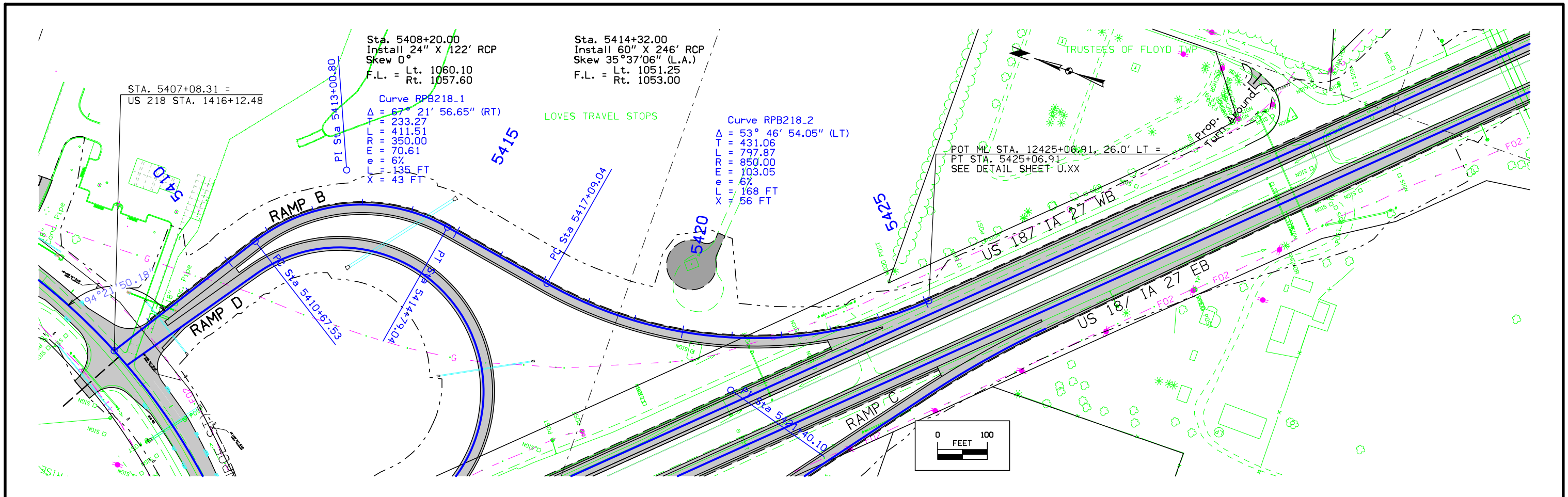
POT STA. 7408+70.00 =
 POT ML STA. 7408+70.00, 0.00' LT
 POINT 'G' STANDARD ROAD PLAN PV-414

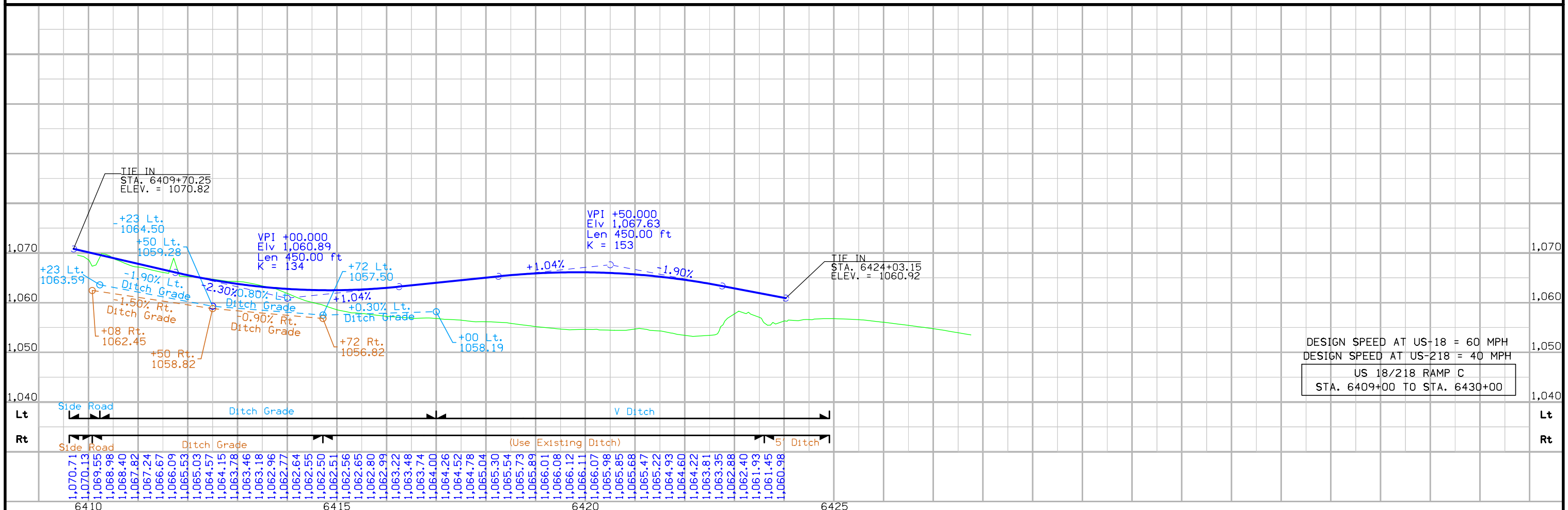
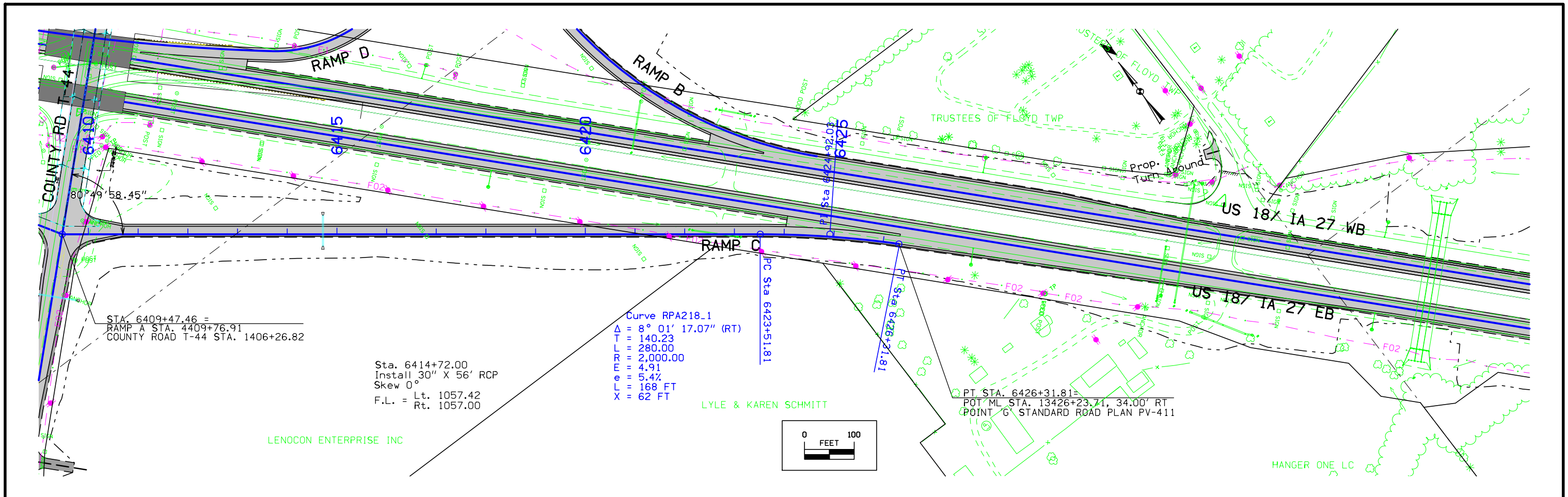
POT ML STA. 12425+06.91, 26.0' LT =
 PT STA. 5425+06.91
 SEE DETAIL SHEET U.XX

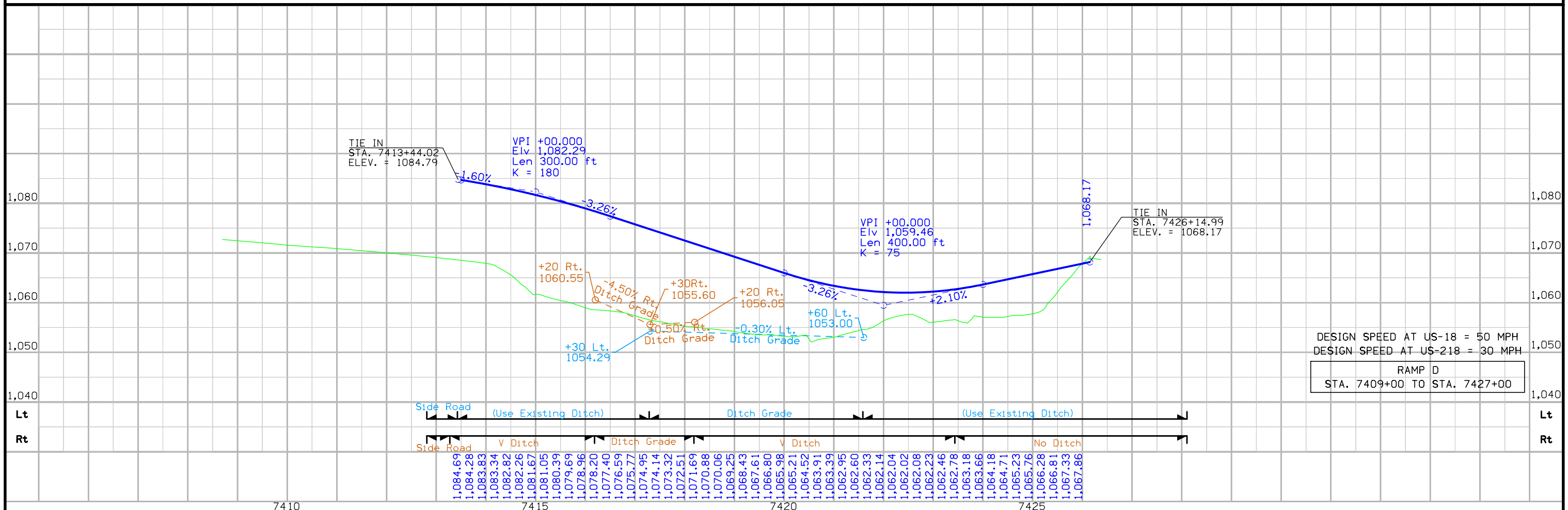
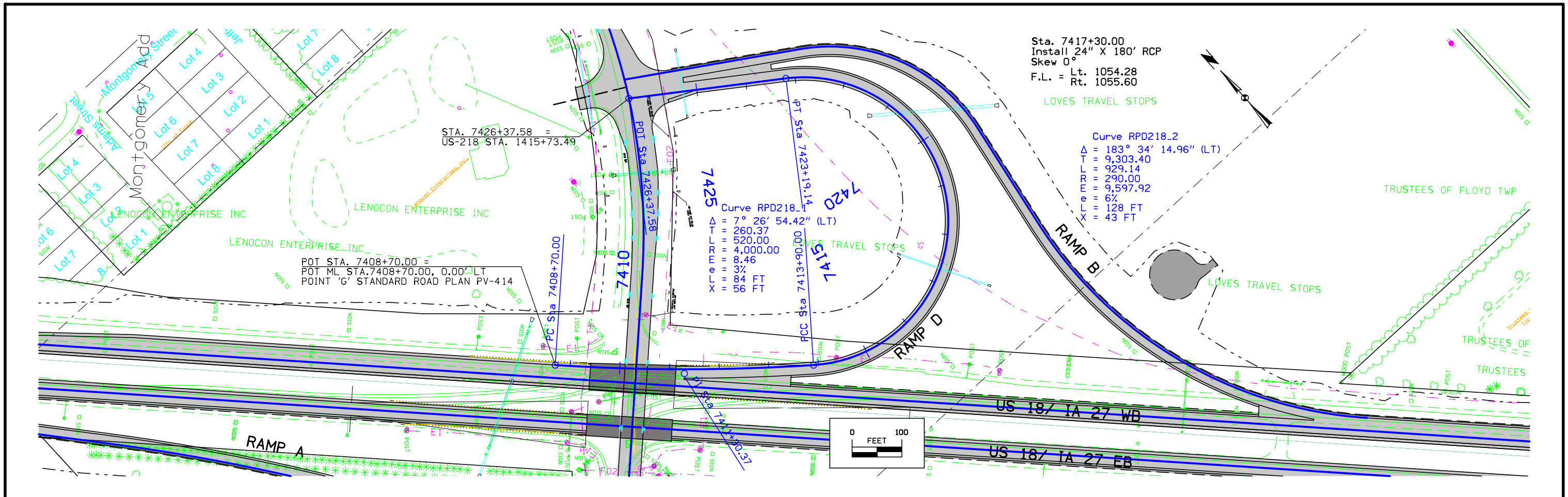
PT STA. 6426+31.81 =
 POT ML STA. 13426+23.71, 34.00' RT
 POINT 'G' STANDARD ROAD PLAN PV-411

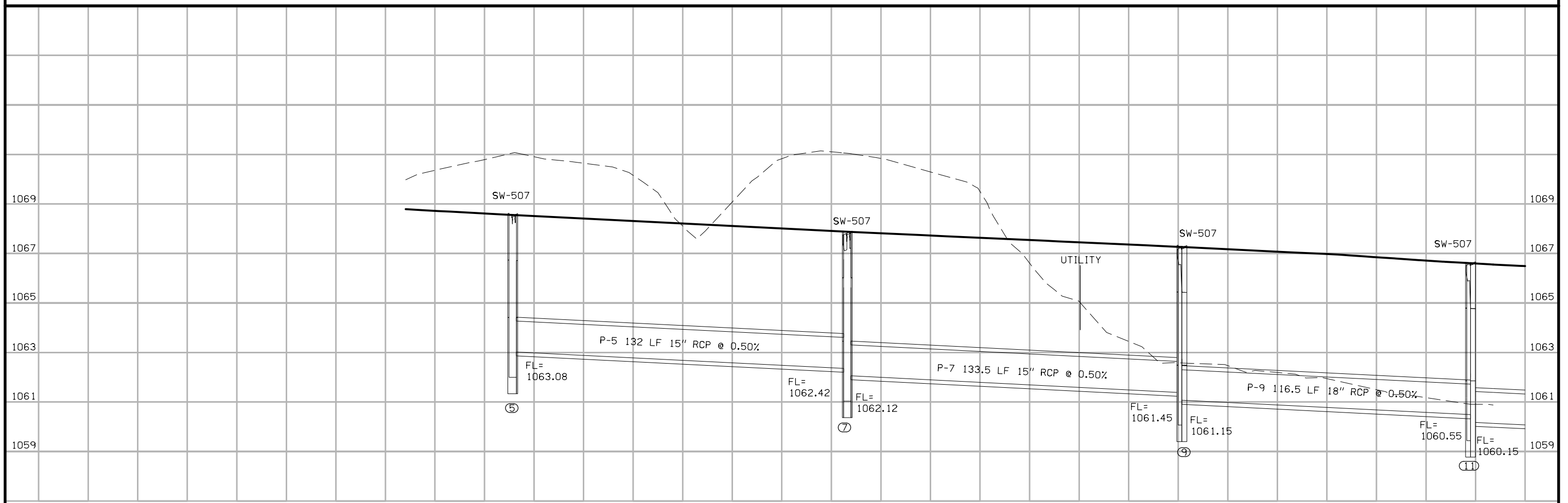
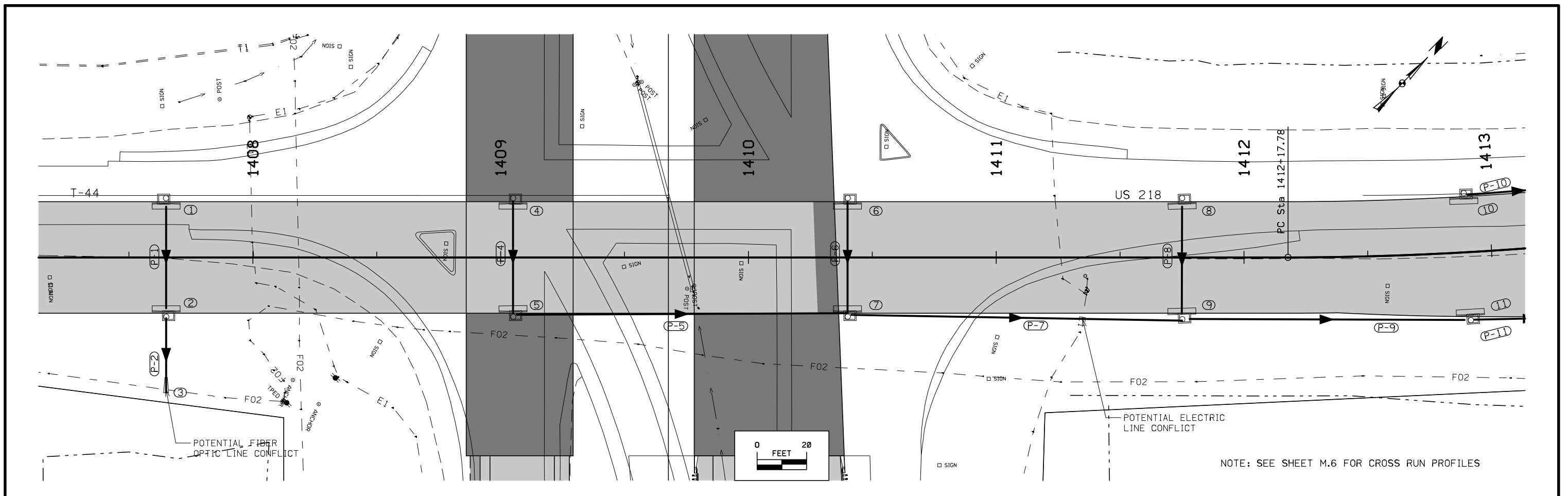
GEOMETRIC PLAN
 PROPOSED INTERCHANGE OF
 US-18 WITH US-218
 FLOYD COUNTY

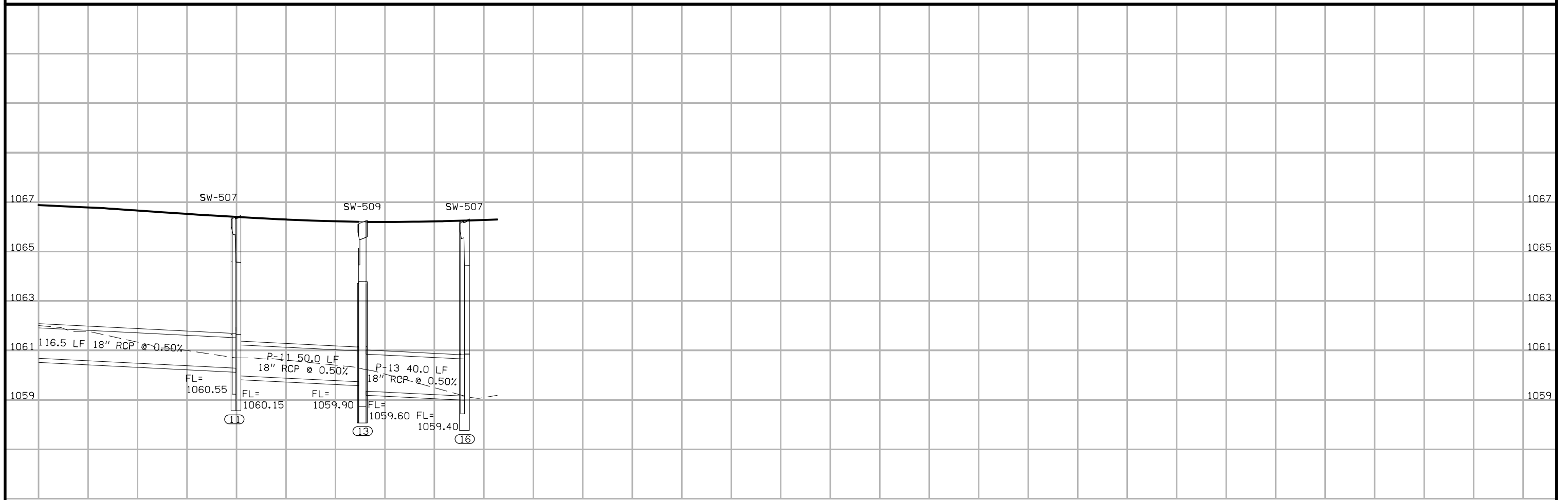
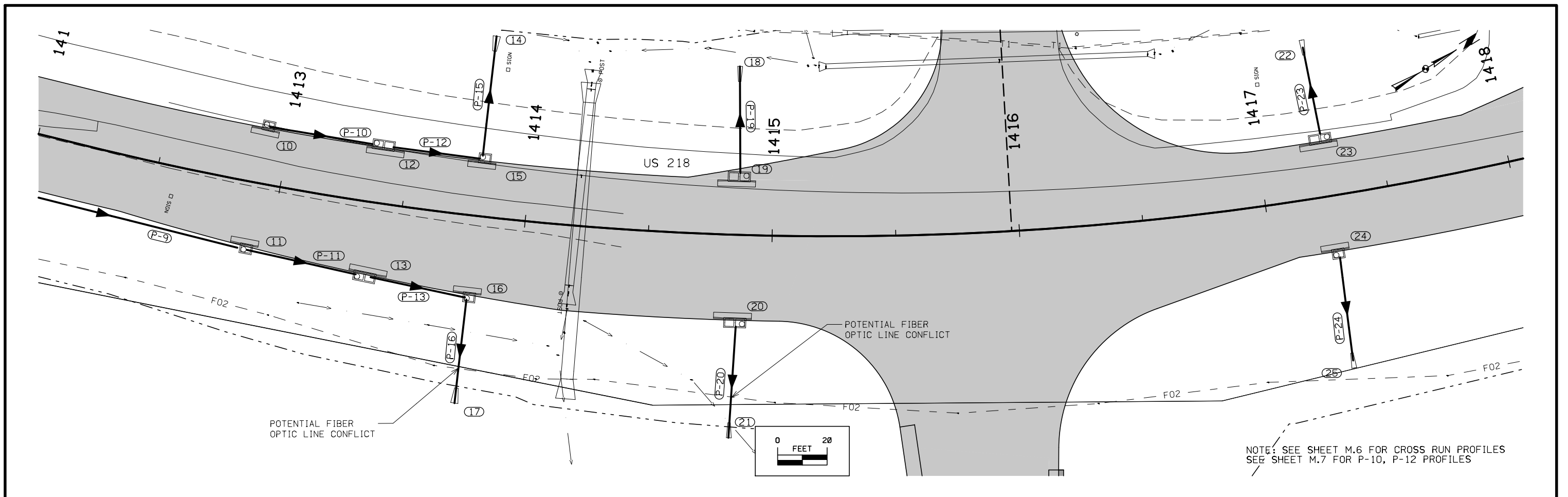


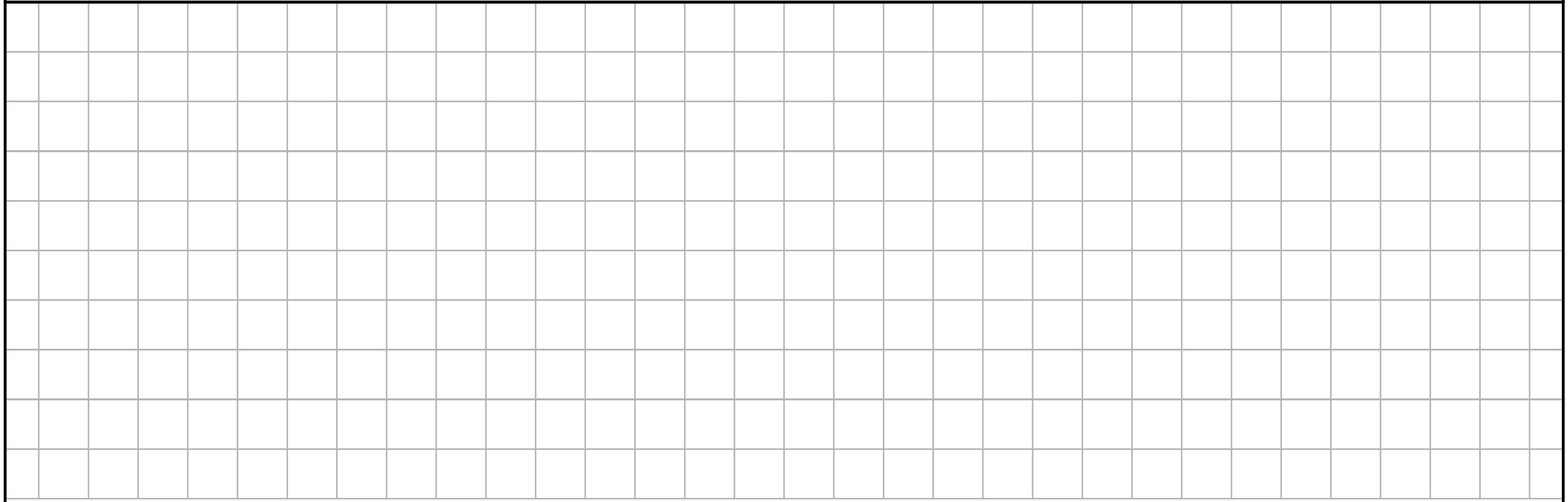
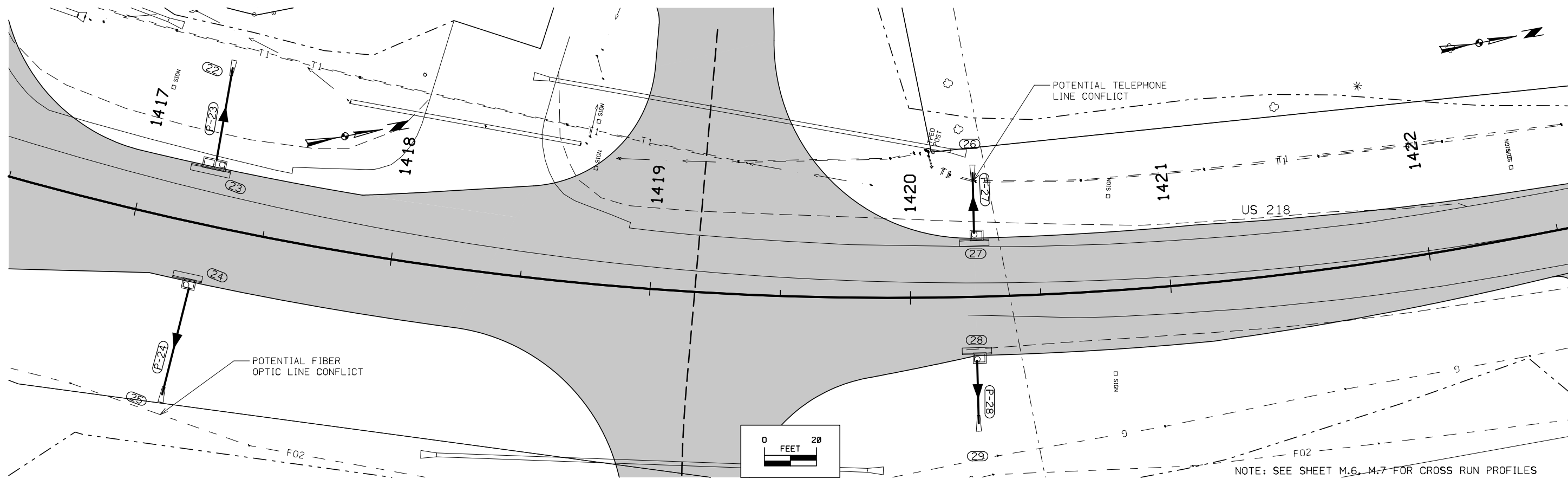


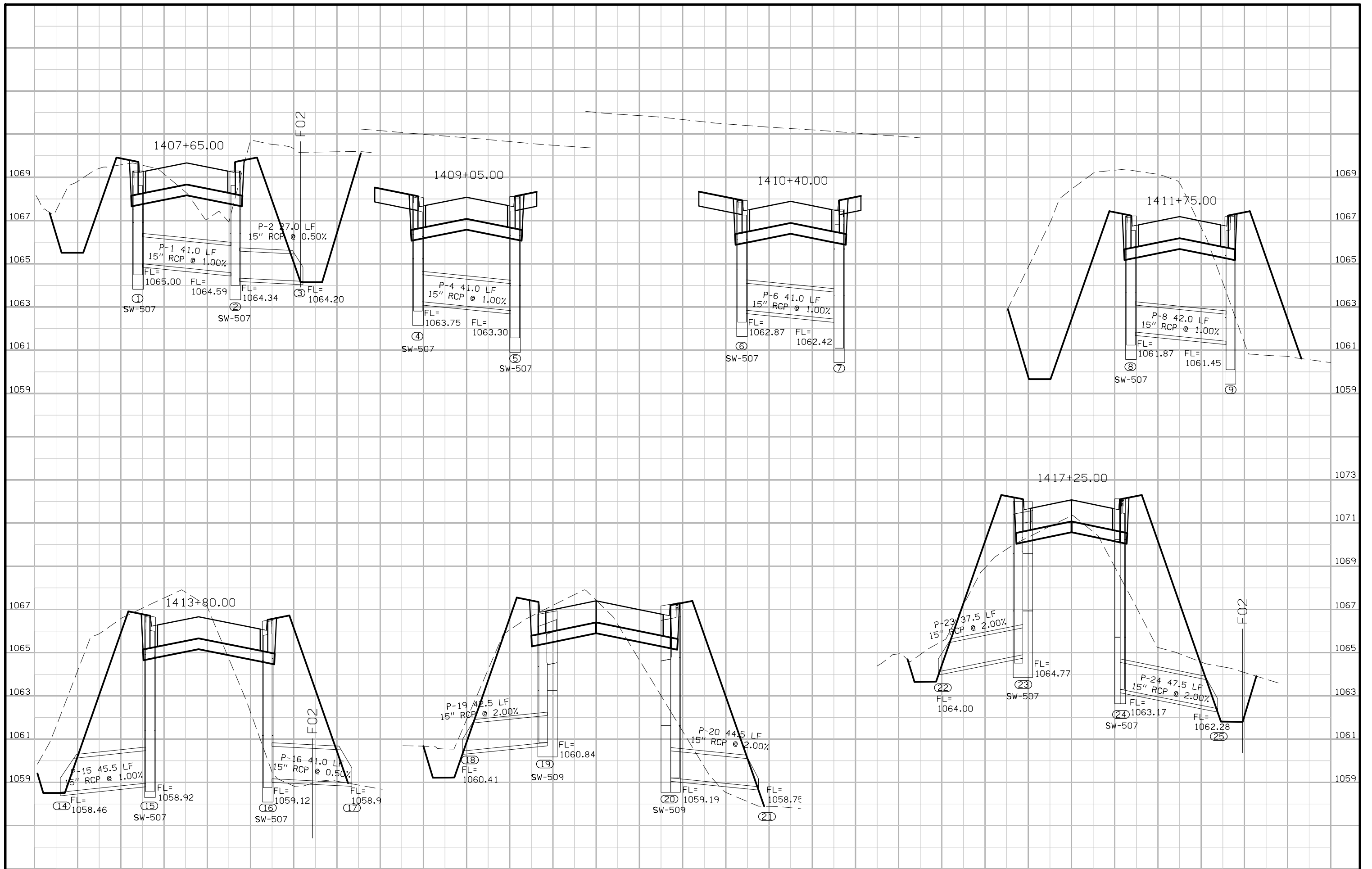


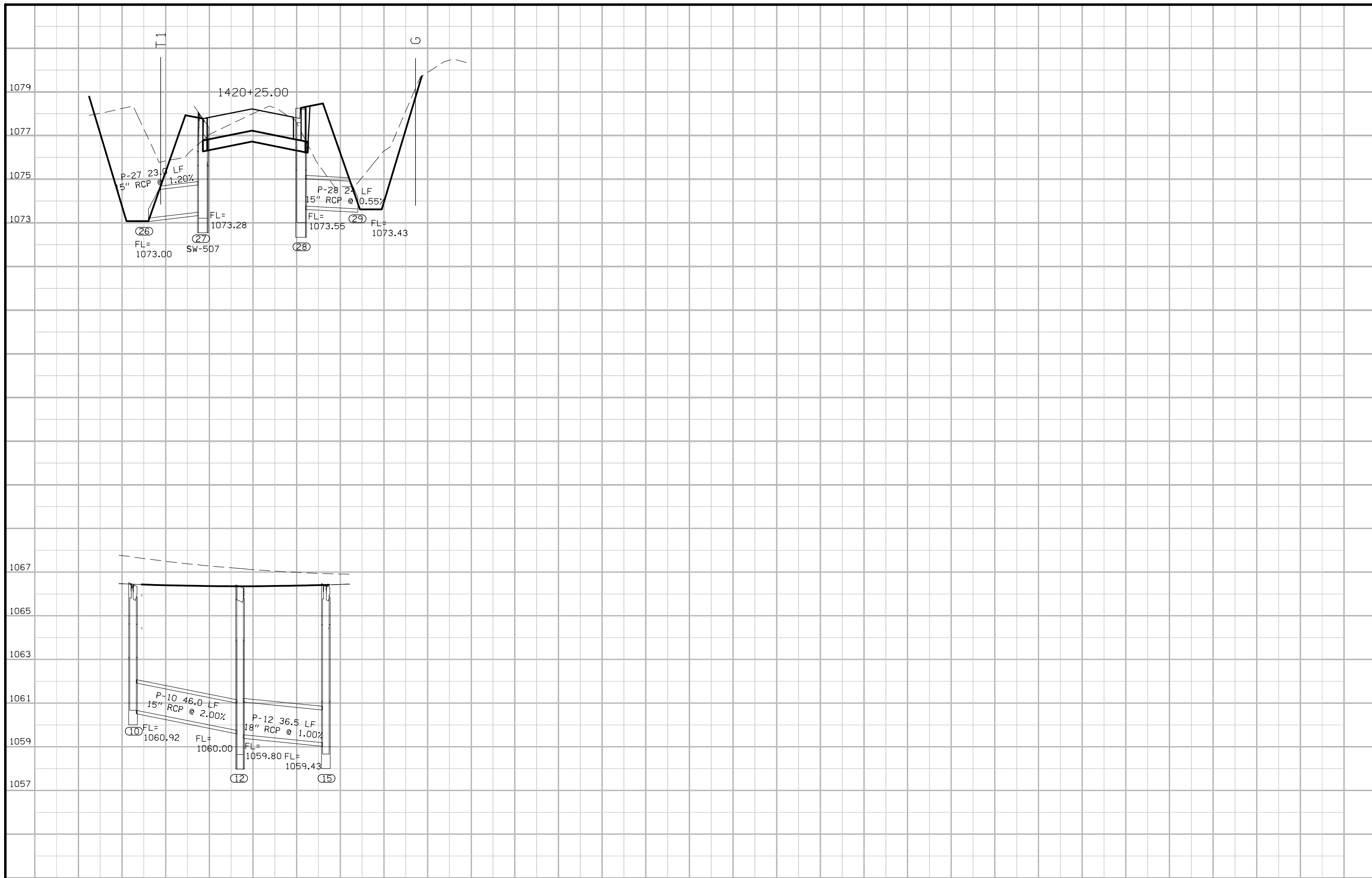


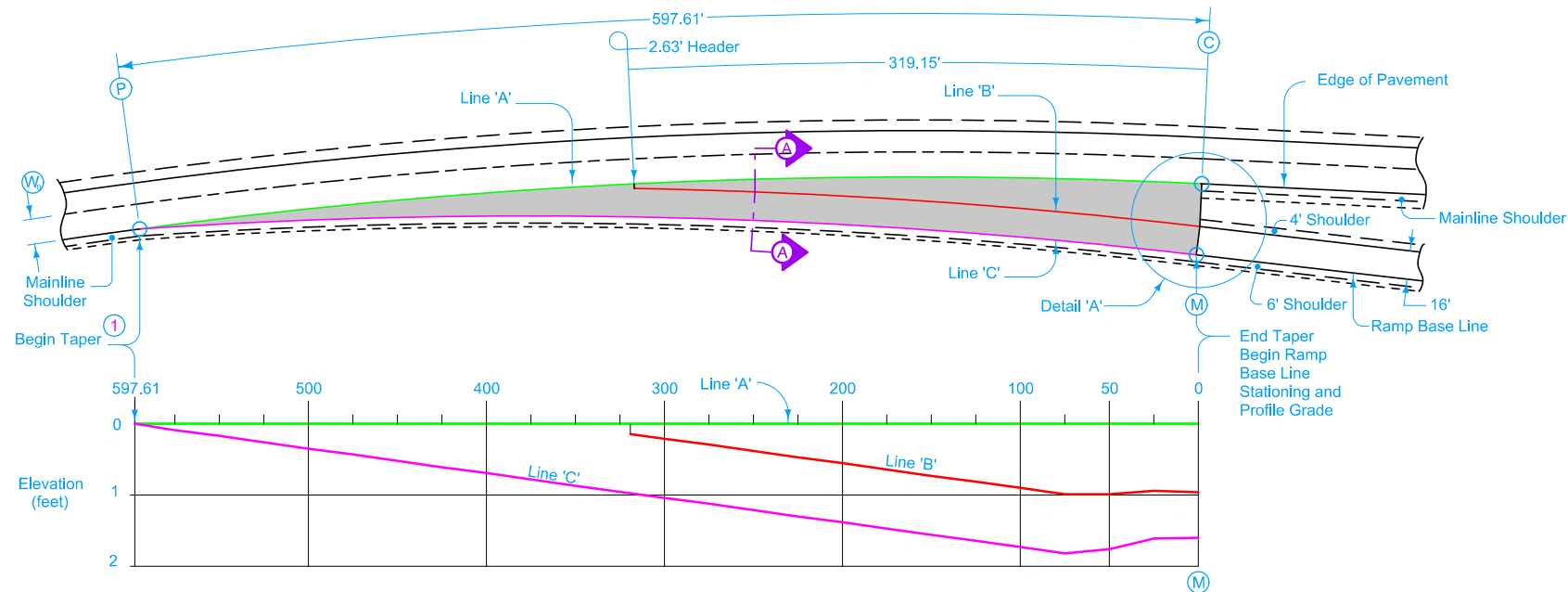












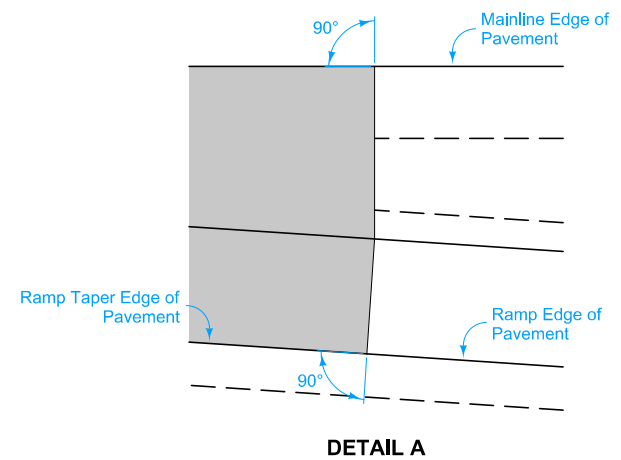
NOTE: The algebraic difference between profile grade for Ramp Base Line at (M) and relative profile grade of Mainline at (C) is 0.5%.

PROFILE

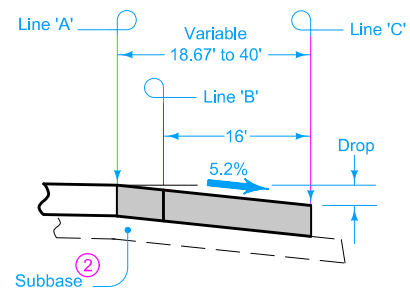
		TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																										
DISTANCE FROM POINT (C) ALONG LINE 'A' (Ft.)		597.61	575	550	525	500	475	450	425	400	375	350	319.15	300	275	250	225	200	175	150	125	100	75	50	25	0		
From Line 'A' To Line 'B'	OFFSET (Ft.)												2.63	4.00	5.67	7.33	9.00	10.67	12.33	14.00	15.67	17.3	18.98	20.65	22.32	24.00		
	SLOPE (%)												5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	4.77%	4.1%	3.64%	
	DROP (Ft.)												0.14	0.21	0.29	0.38	0.47	0.55	0.64	0.73	0.81	0.89	0.99	0.98	0.92	0.87		
From Line 'B' To Line 'C'	OFFSET (Ft.)												Constant 16' Offset															
	SLOPE (%)												5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	4.77%	4.1%	3.64%	
	DROP (Ft.)												0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.76	0.66	0.58	
From Line 'A' To Line 'C'	OFFSET (Ft.)	0	1.67	3.33	5.00	6.67	8.33	10.00	11.67	13.33	15.00	16.67																
	SLOPE (%)	Constant 5.2% Slope																										
	DROP (Ft.)	0	0.09	0.17	0.26	0.35	0.43	0.52	0.61	0.69	0.78	0.87	0.97	1.04	1.12	1.21	1.30	1.38	1.47	1.56	1.64	1.73	1.82	1.74	1.58	1.45		

(C)

(M)



DETAIL A



SECTION A-A

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

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

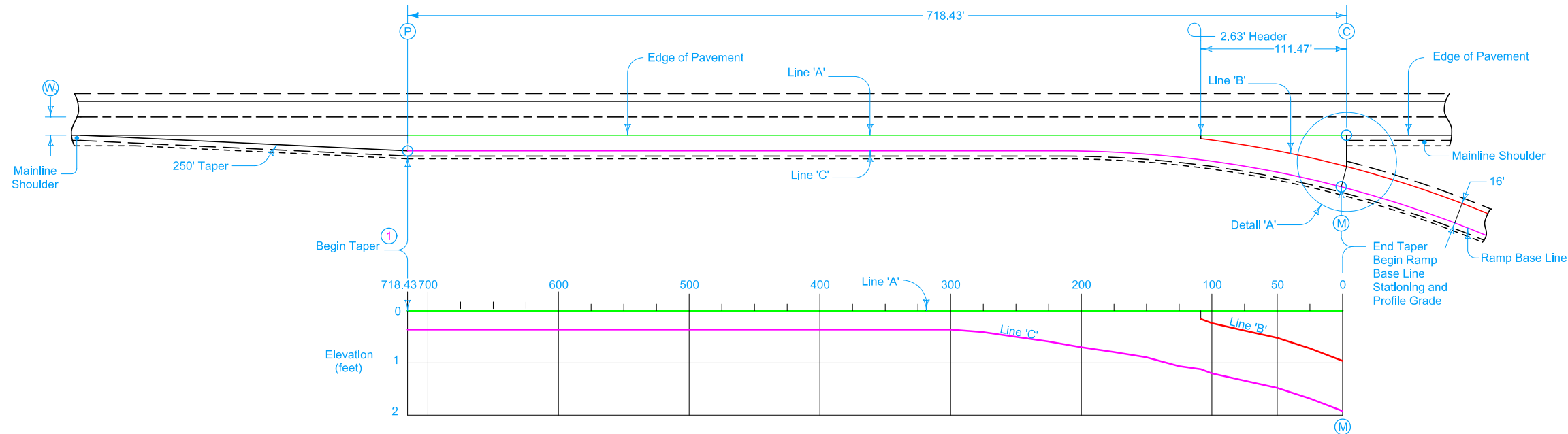
Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 1332 square yards.

For joint details, see PV-101.

① For header construction details at the beginning of taper, see Typical 7101 or Typical 7102.

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



Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 1332 square yards.

For joint details, see PV-101.

① For header construction details at the beginning of taper, see Typical 7101 or Typical 7102.

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

NOTE: The algebraic difference between profile grade for Ramp Base Line at (M) and relative profile grade of Mainline at (C) is 1.1%.

PROFILE

		TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																																			
DISTANCE FROM POINT (C) ALONG LINE 'A' (Ft.)		718.43	700	675	650	625	600	575	550	525	500	475	450	425	400	375	350	300	275	250	225	200	175	150	125	111.47	100	75	50	25	0						
From Line 'A' To Line 'B'	OFFSET (Ft.)																									2.63	4.15	7.98	12.55	17.90	24.00						
	SLOPE (%)																										6.0%	5.69%	4.82%	4.13%	4.0%	4.0%					
	DROP (Ft.)																										0.16	0.24	0.38	0.52	0.72	0.96					
From Line 'B' To Line 'C'	OFFSET (Ft.)																											← Constant 16' Offset →									
	SLOPE (%)																											← Constant 6.0% Slope →									
	DROP (Ft.)																											0.96	0.96	0.96	0.96	0.96	0.96				
From Line 'A' To Line 'C'	OFFSET (Ft.)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.2	13.12	14.77	17.7												
	SLOPE (%)	← Constant 3.0% Slope →																																			
	DROP (Ft.)	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.41	0.50	0.59	0.70	0.79	0.89	1.06	1.12	1.20	1.34	1.48	1.68	1.92		

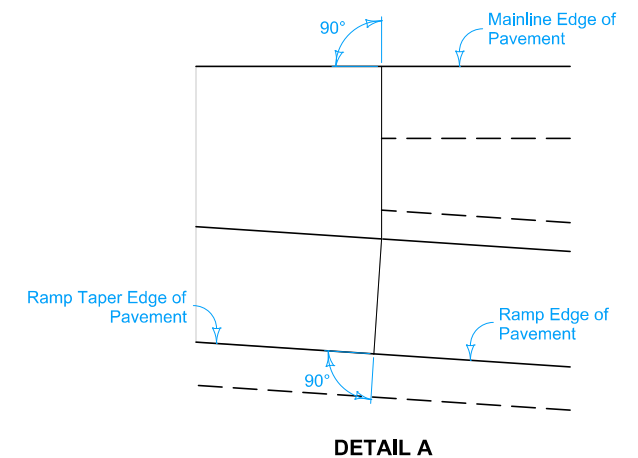
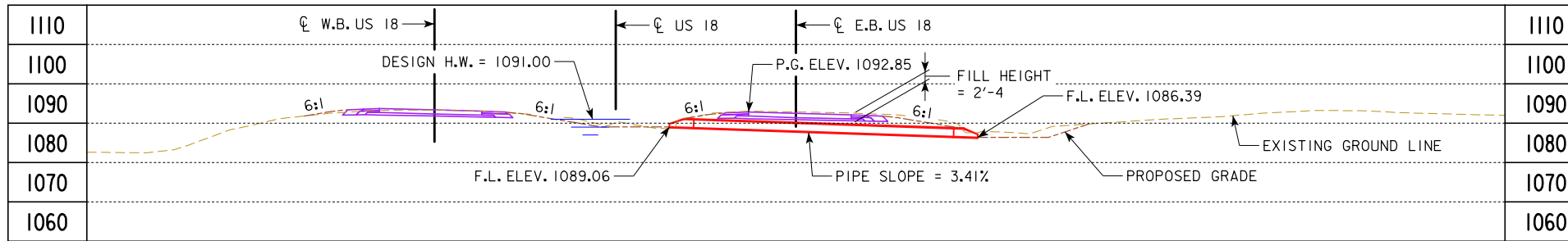


TABLE OF SHOULDER TRANSITION LENGTHS			
(W)	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	60'	90'
14'	30'	60'	NA

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



BENCH MARK NO. 669 - FENO MONUMENT, 3874653.229 N, 5120506.798 E, STA. 361+80.63, 114.38' RT. - ELEV. 1091.62

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 3 ACRES
 $Q_{50} = 13$ CFS
 HW ELEV. = 1091.00

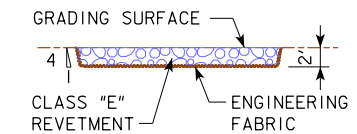
LOCATION

US 18
 T-96N R-16W
 SECTION 17
 FLOYD TOWNSHIP
 FLOYD COUNTY

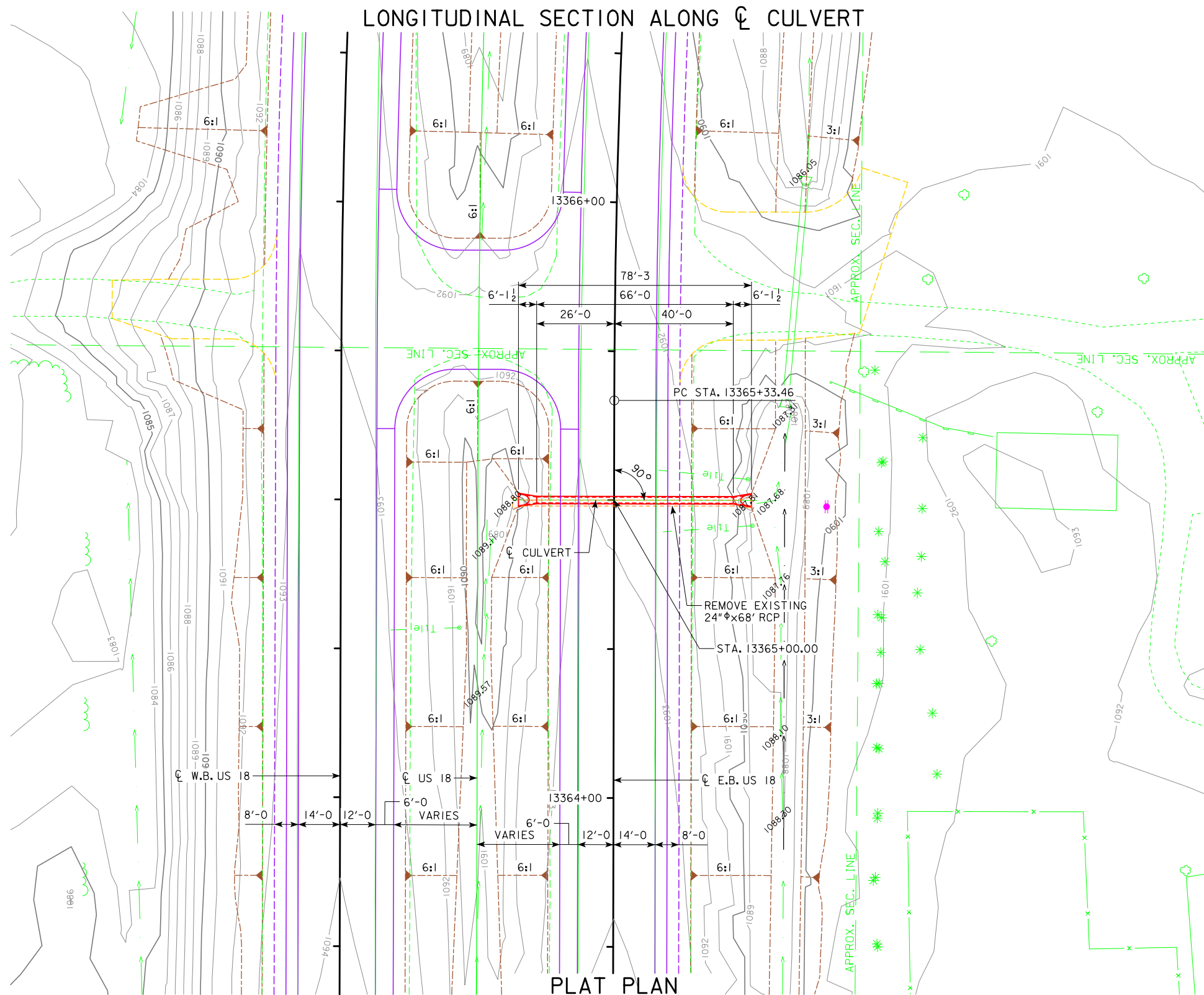
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	13	12	8
TOTALS	13	12	8

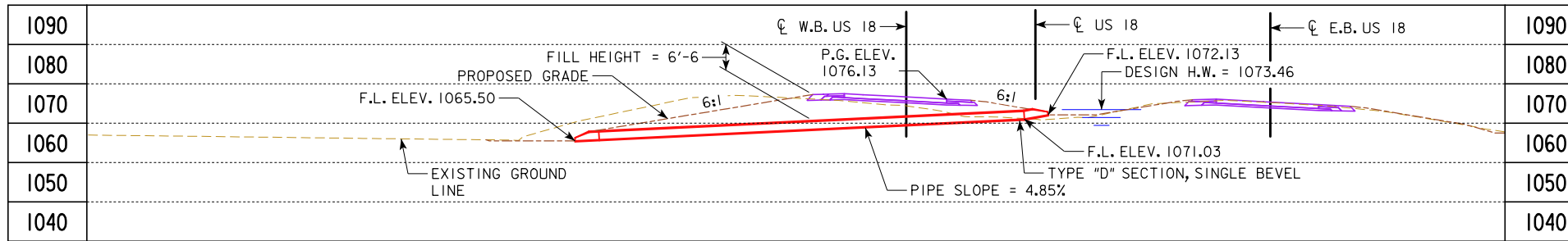
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
24" ϕ X 66'
REINFORCED CONCRETE PIPE
 PLAT PLAN
 STATION: 13365+00.00 (E.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 668 - FENO MONUMENT "H1", 3874381.790 N, 5122125.371 E, STA. 378+89.79, 148.25' RT. - ELEV. 1078.92

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 9 ACRES
 $Q_{50} = 17$ CFS
 HW ELEV. = 1073.46

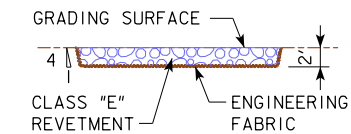
LOCATION

US 18
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	13	12	8
TOTALS	13	12	8

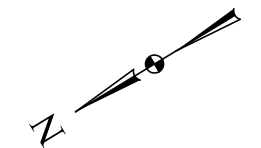
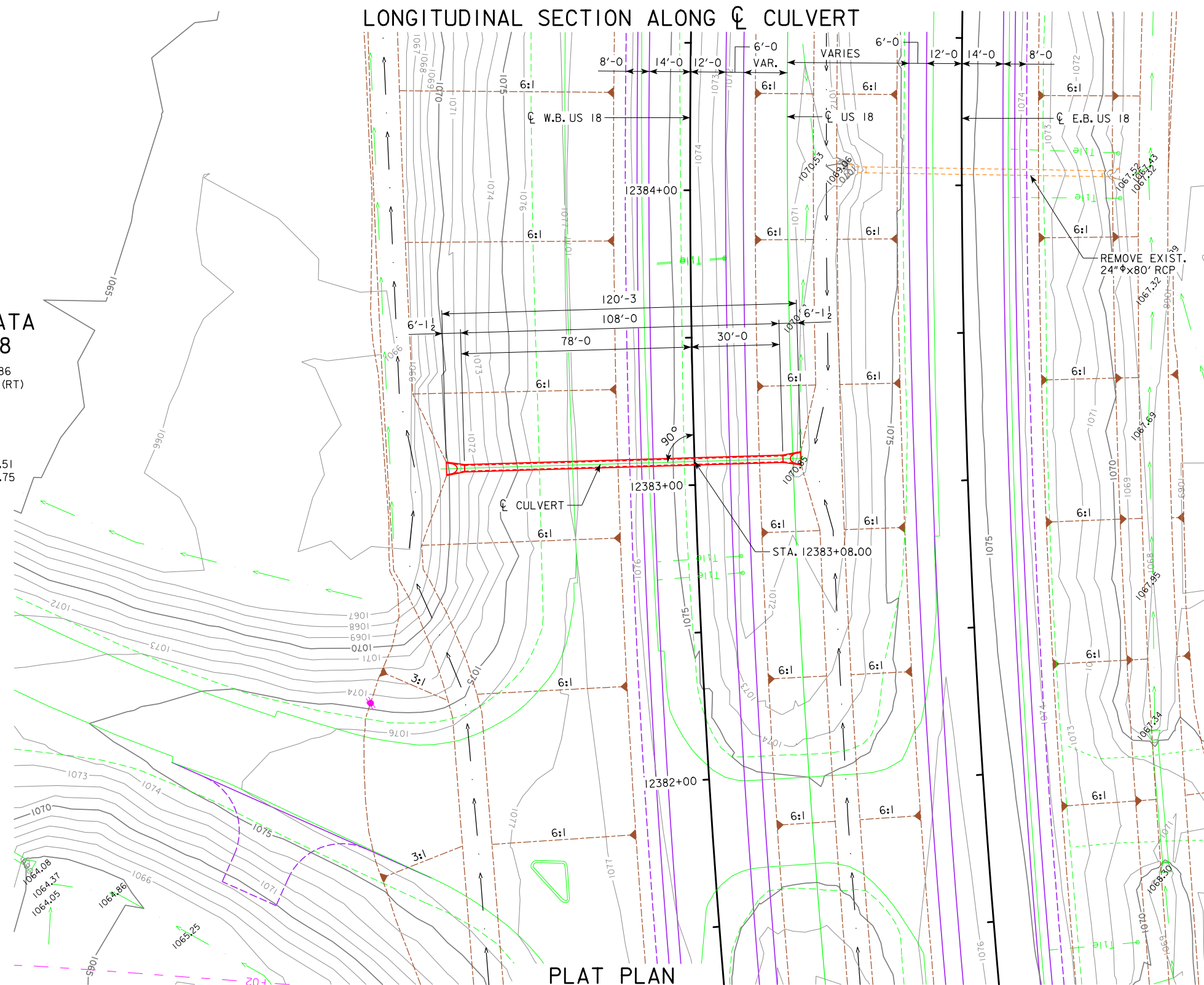
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.

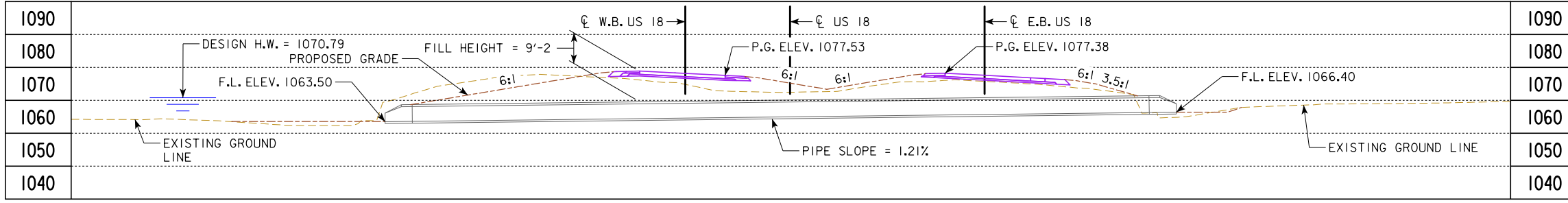
CURVE DATA W.B. US 18

PI STA. 12379+73.86
 $\Delta = 46^\circ 05' 50.23''$ (RT)
 $D = 1^\circ 42' 37.16''$
 $T = 1425.35'$
 $L = 2695.24'$
 $E = 290.62'$
 $R = 3350.00'$
 PC STA. 12365+48.51
 PT STA. 12392+43.75



PRELIMINARY
 DESIGN FOR 0° SKEW
24" ϕ X 108'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 12383+08.00 (W.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 668 - FENO MONUMENT "H1", 3874381.790 N, 5122125.371 E, STA. 378+89.79, 148.25' RT. - ELEV. 1078.92
 NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 146 ACRES
 Q₅₀ = 161 CFS
 HW ELEV. = 1070.79

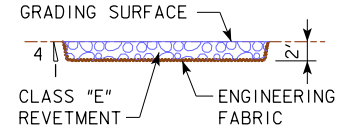
LOCATION

US 18
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

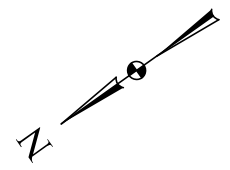
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	35	32	21
TOTALS	35	32	21

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.

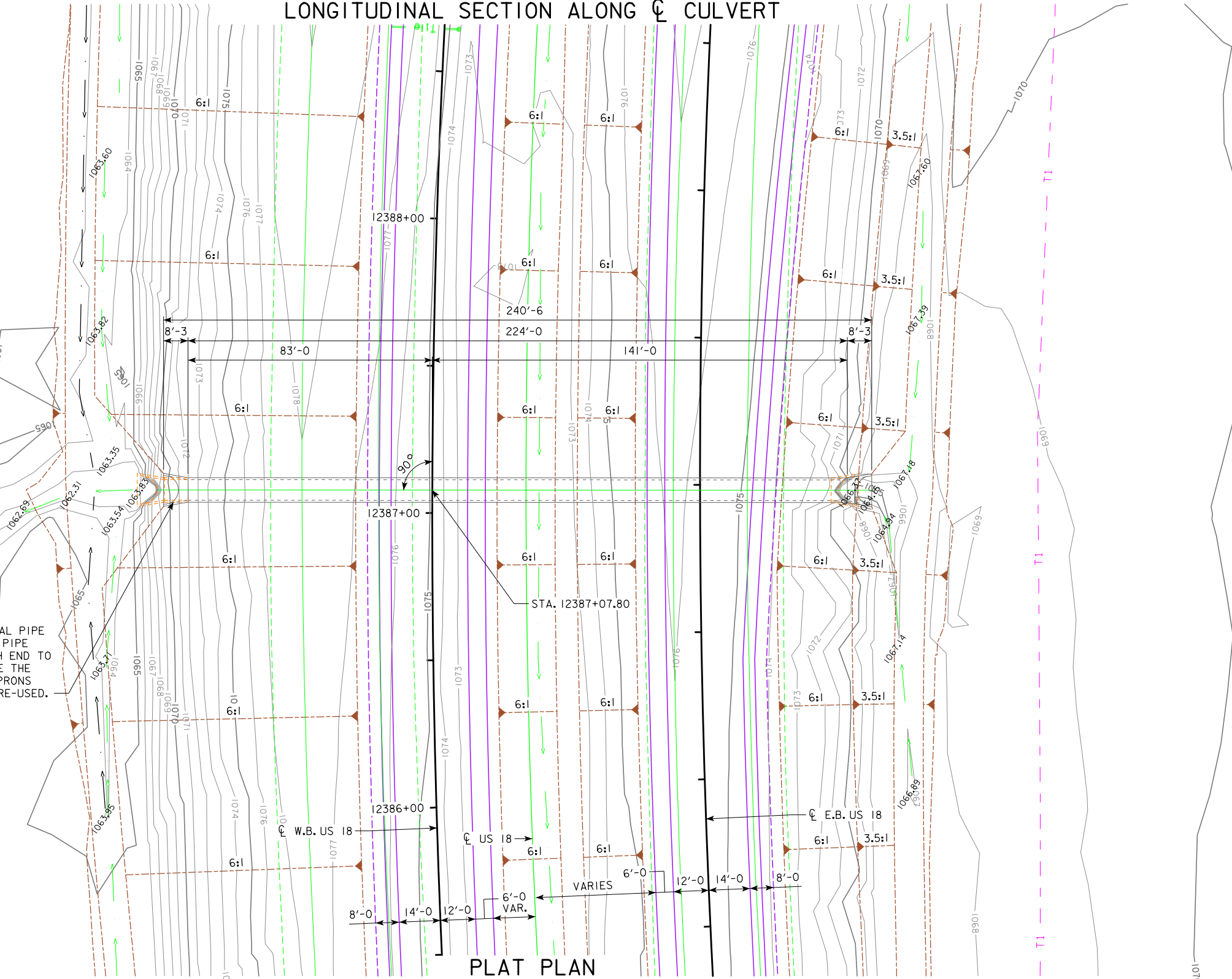


CURVE DATA W.B. US 18

PI STA. 12379+73.86
 $\Delta = 46^\circ 05' 50.23''$ (RT)
 $D = 1^\circ 42' 37.16''$
 $T = 1425.35'$
 $L = 2695.24'$
 $E = 290.62'$
 $R = 3350.00'$
 PC STA. 12365+48.51
 PT STA. 12392+43.75

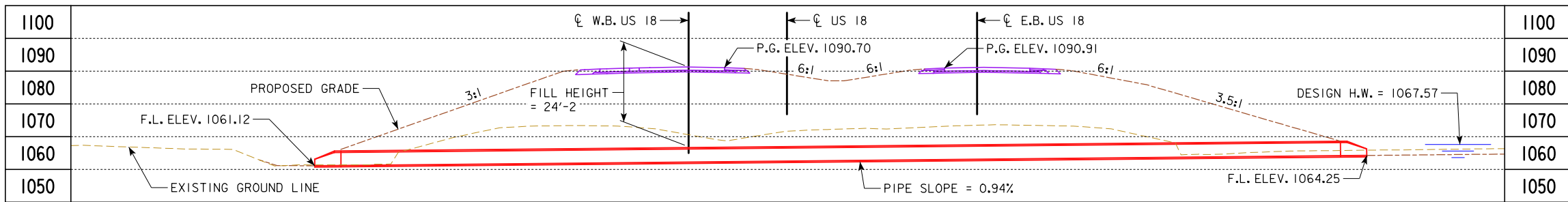
EXIST. 88"x54" ELLIPTICAL PIPE TO BE RE-USED. SHIFT PIPE SECTION(S) FROM NORTH END TO SOUTH END TO ACHIEVE THE LENGTH SHOWN. PIPE APRONS SHALL BE SAVED AND RE-USED.

LONGITUDINAL SECTION ALONG CULVERT



PLAT PLAN

PRELIMINARY
 DESIGN FOR 0° SKEW
88" X 54" X 224" ELLIPTICAL CONCRETE PIPE
PLAT PLAN
 STATION: 12387+07.80 (W.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134.00' LT. - ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 23 ACRES
 Q_{50} = 55 CFS
 HW ELEV. = 1067.57

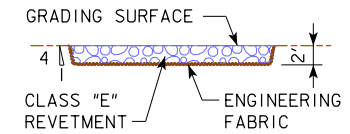
LOCATION

US 18
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

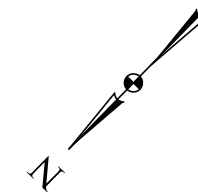
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	35	33	22
TOTALS	35	33	22

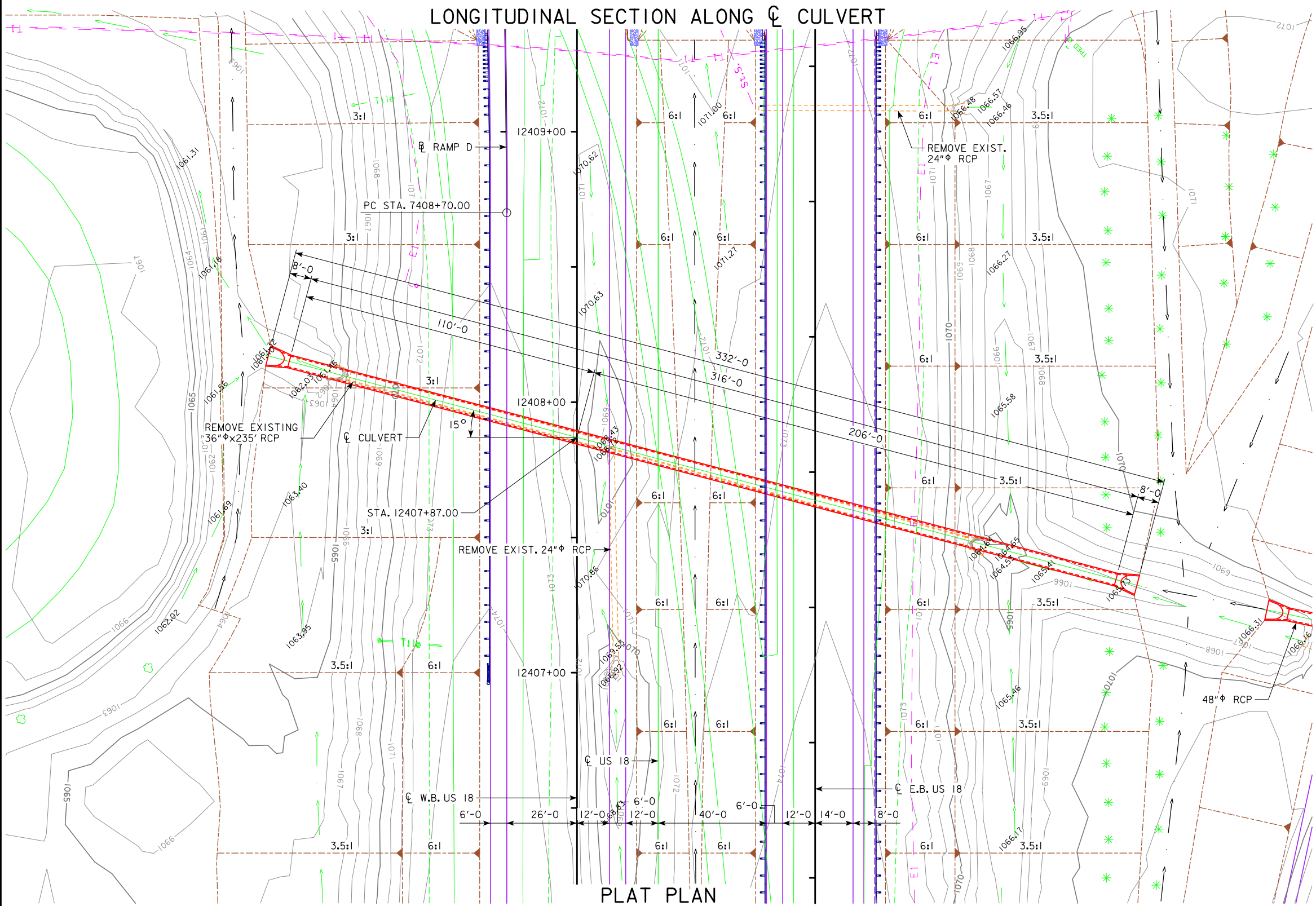
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



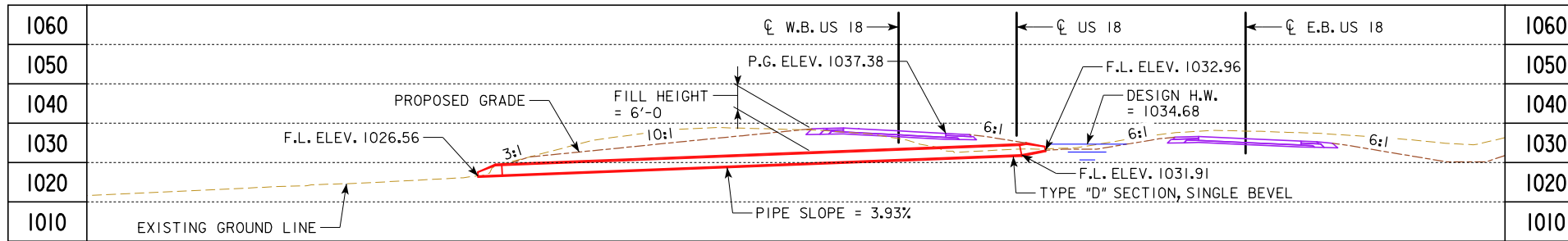
NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 15° SKEW (L.A.)
48" ϕ X 316'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STATION: 12407+87.00 (W.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



PLAT PLAN



BENCH MARK NO. 662 - FENO MONUMENT, 3869739.153 N, 5126999.541 E, STA. 447+19.45, 140.81' RT. - ELEV. 1039.62

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 13 ACRES
 $Q_{50} = 26$ CFS
 HW ELEV. = 1034.68

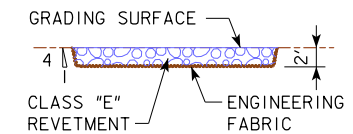
LOCATION

US 18
 T-96N R-16W
 SECTION 22
 FLOYD TOWNSHIP
 FLOYD COUNTY

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	16	15	10
TOTALS	16	15	10

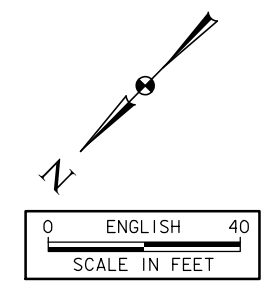
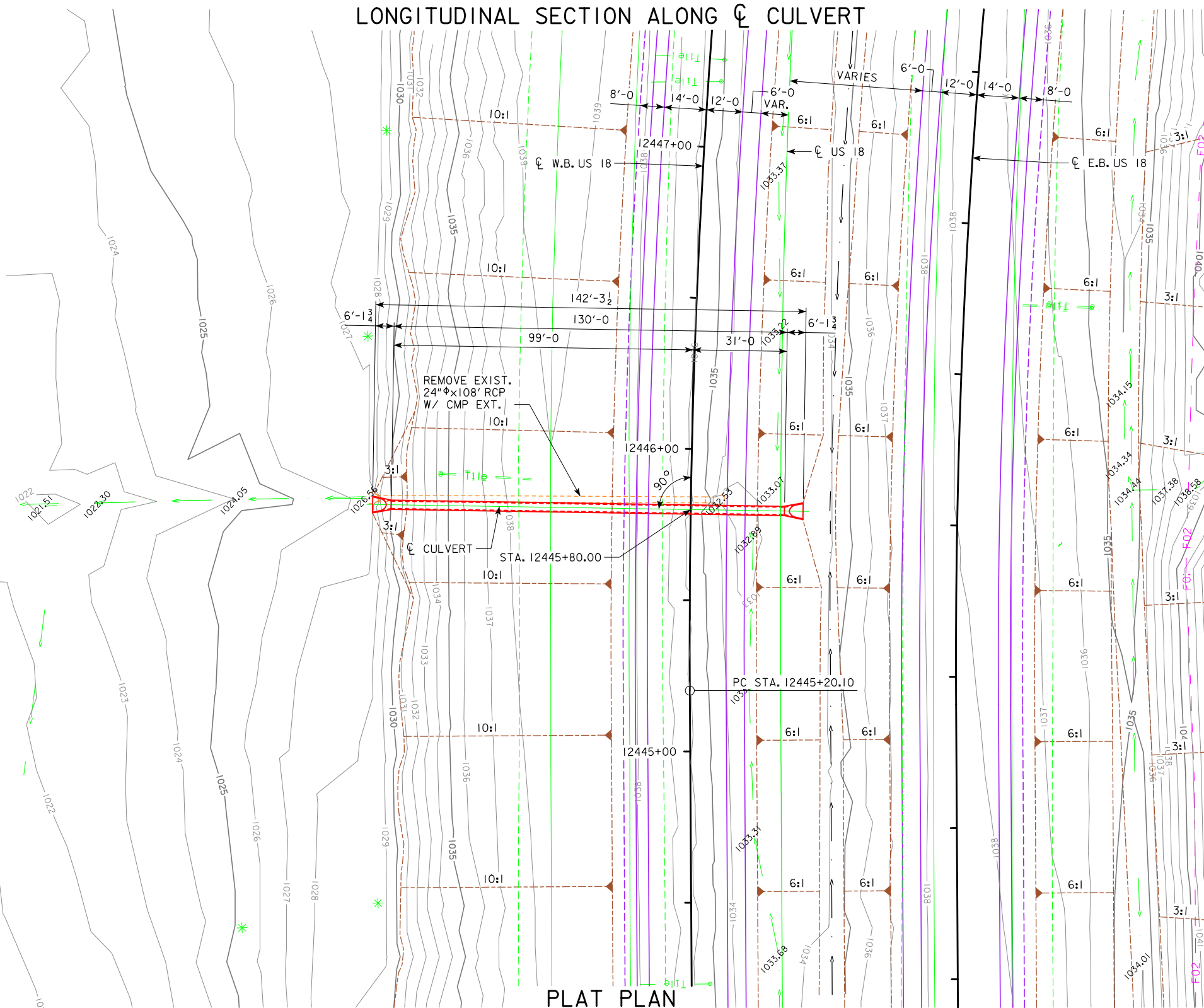
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



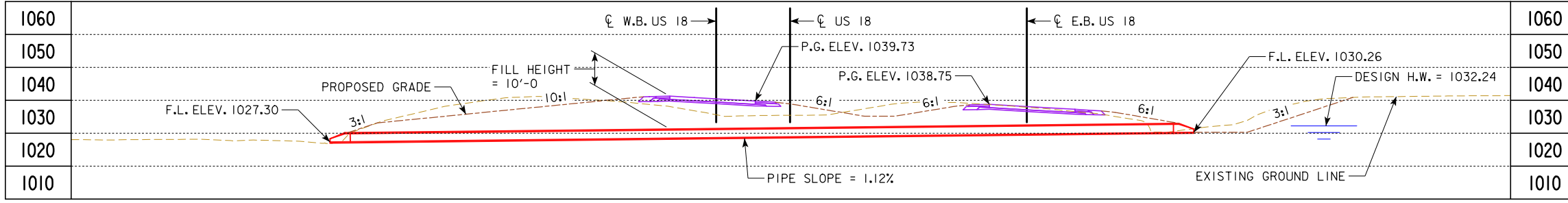
NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.

CURVE DATA W.B. US 18

PI STA. 12454+46.22
 $\Delta = 37^\circ 13' 26.71''$ (RT)
 $D = 2^\circ 05' 00.54''$
 $T = 926.12'$
 $L = 1786.63'$
 $E = 151.76'$
 $R = 2750.00'$
 PC STA. 12445+20.10
 PT STA. 12463+06.73



PRELIMINARY
 DESIGN FOR 0° SKEW
30" ϕ X 130'
REINFORCED CONCRETE PIPE
 PLAT PLAN
 STATION: 12445+80.00 (W.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 662 - FENO MONUMENT, 3869739.153 N, 5126999.541 E, STA. 447+19.45, 140.81' RT. - ELEV. 1039.92

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 7 ACRES
 $Q_{50} = 16$ CFS
 HW ELEV. = 1032.24

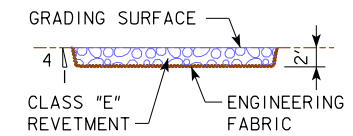
LOCATION

US 18
 T-96N R-16W
 SECTION 22
 FLOYD TOWNSHIP
 FLOYD COUNTY

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	16	15	10
TOTALS	16	15	10

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



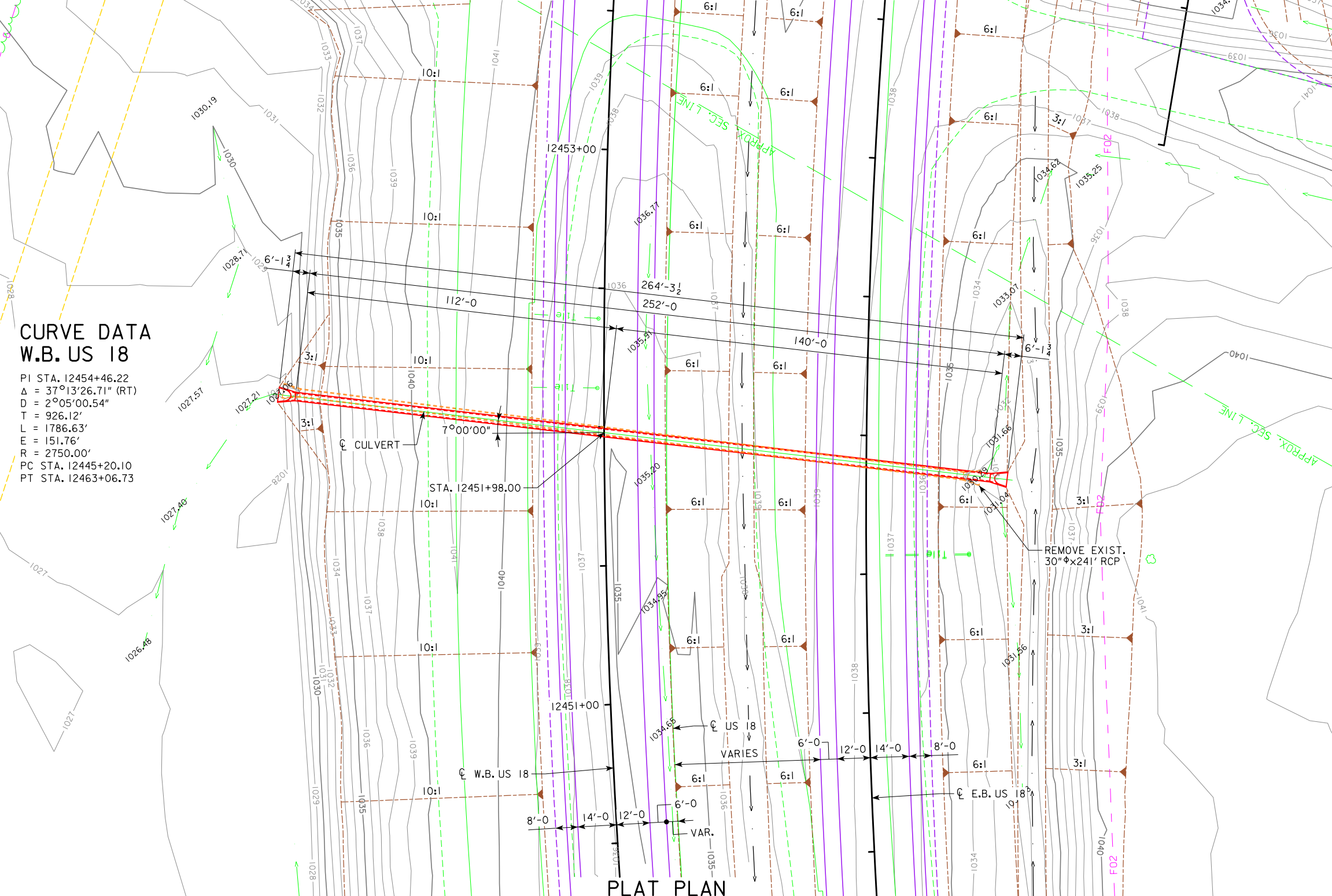
NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



CURVE DATA W.B. US 18

PI STA. 12454+46.22
 $\Delta = 37^\circ 13' 26.71''$ (RT)
 $D = 2^\circ 05' 00.54''$
 $T = 926.12'$
 $L = 1786.63'$
 $E = 151.76'$
 $R = 2750.00'$
 PC STA. 12445+20.10
 PT STA. 12463+06.73

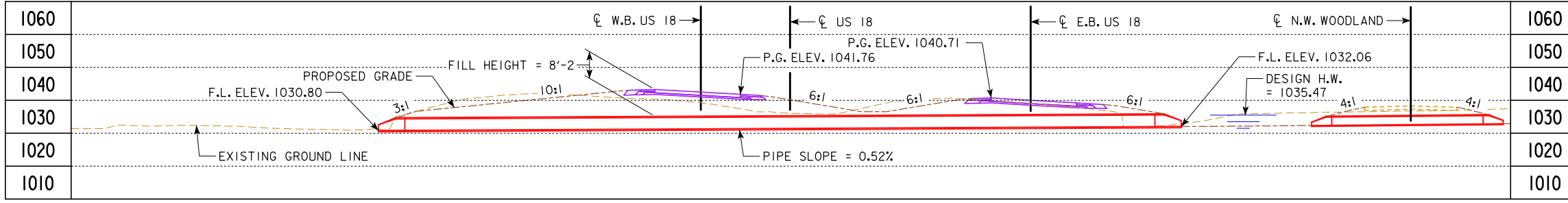
LONGITUDINAL SECTION ALONG ϕ CULVERT



PLAT PLAN

PRELIMINARY
 DESIGN FOR $7^\circ 00' 00''$ (L.A.) SKEW
30" ϕ X 252'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 12451+98.00 (W.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 662 - FENO MONUMENT, 3869739.153 N, 5126999.541 E, STA. 447+19.45, 140.81' RT. - ELEV. 1039.62
 NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 30 ACRES
 Q₅₀ = 50 CFS
 HW ELEV. = 1035.47

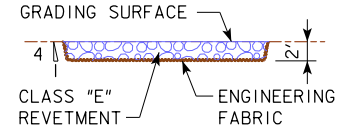
LOCATION

US 18
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	22	20	14
TOTALS	22	20	14

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



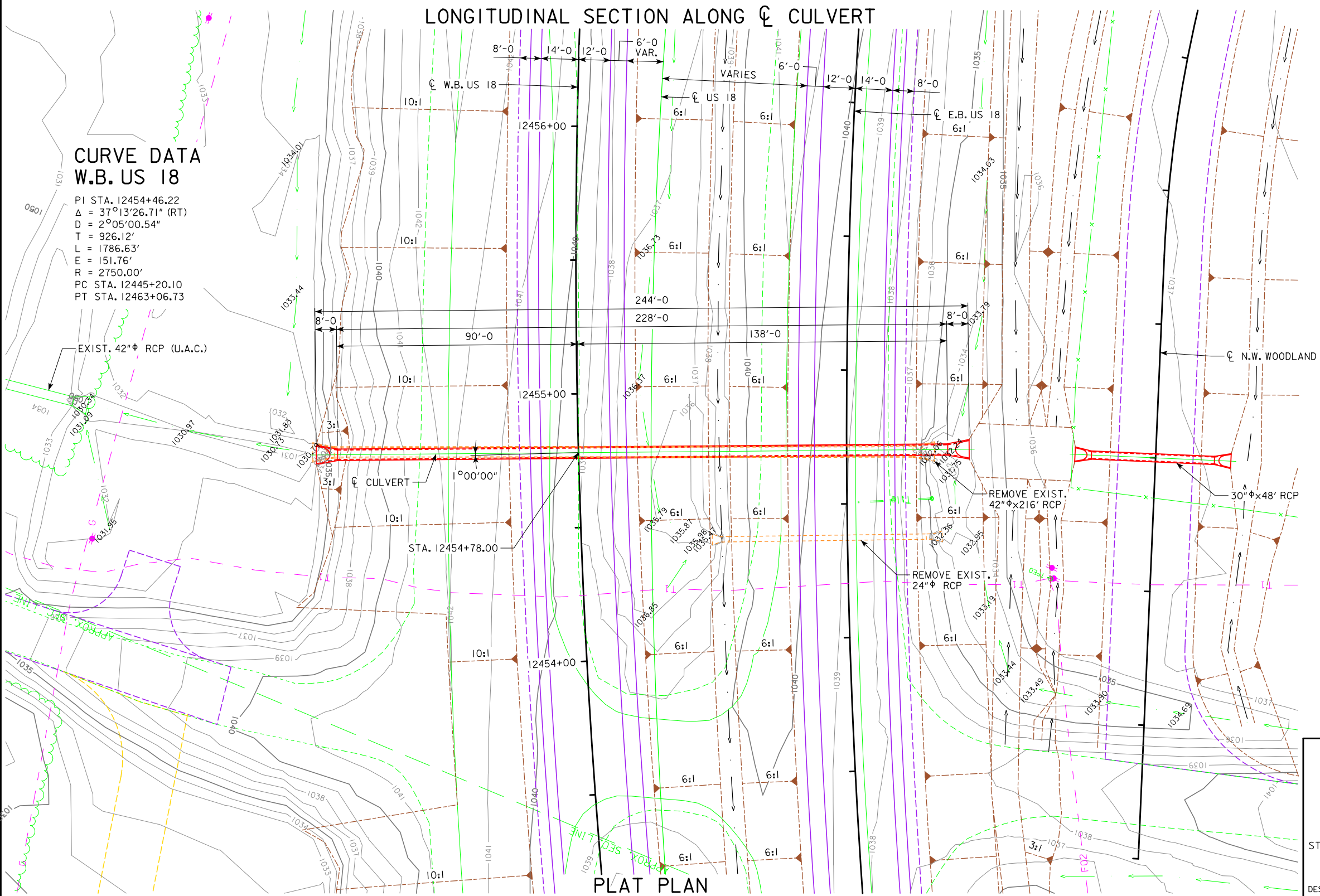
NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



CURVE DATA W.B. US 18

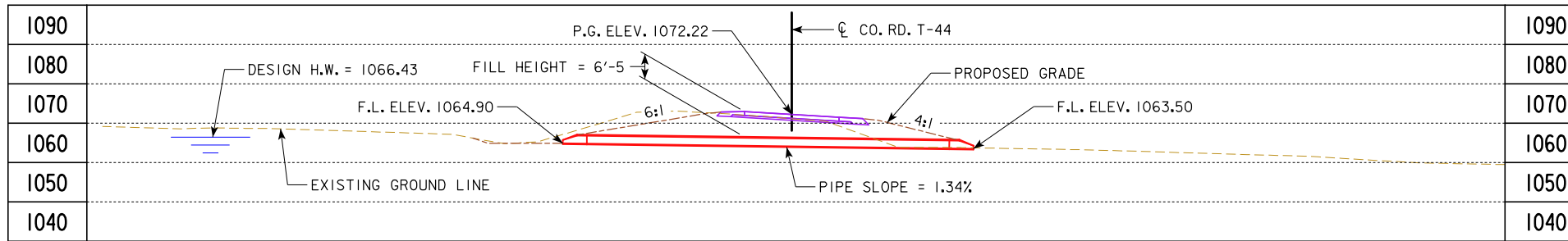
PI STA. 12454+46.22
 $\Delta = 37^\circ 13' 26.71''$ (RT)
 $D = 2^\circ 05' 00.54''$
 $T = 926.12'$
 $L = 1786.63'$
 $E = 151.76'$
 $R = 2750.00'$
 PC STA. 12445+20.10
 PT STA. 12463+06.73

LONGITUDINAL SECTION ALONG ϕ CULVERT



PLAT PLAN

PRELIMINARY
 DESIGN FOR 1°00'00" (L.A.) SKEW
42" ϕ X 228'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STATION: 12454+78.00 (W.B. US 18) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 34002 - FENO MONUMENT, 3872249.003 N, 5123629.121 E, STA. 405+61.61, 811.89' RT. - ELEV. 1082.22

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 3 ACRES
 $Q_{50} = 9$ CFS
 HW ELEV. = 1066.43

LOCATION

CO. RD. T-44
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

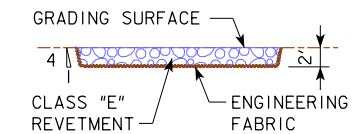
CURVE DATA

PI STA. 1397+30.15
 $\Delta = 46^{\circ}12'20.21''$ (RT)
 $D = 4^{\circ}59'42.98''$
 $T = 489.30'$
 $L = 924.99'$
 $E = 100.01'$
 $R = 1147.00'$
 PC STA. 1392+40.85
 PT STA. 1401+65.83

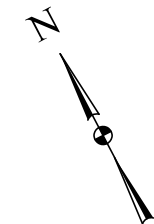
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	13	12	8
TOTALS	13	12	8

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

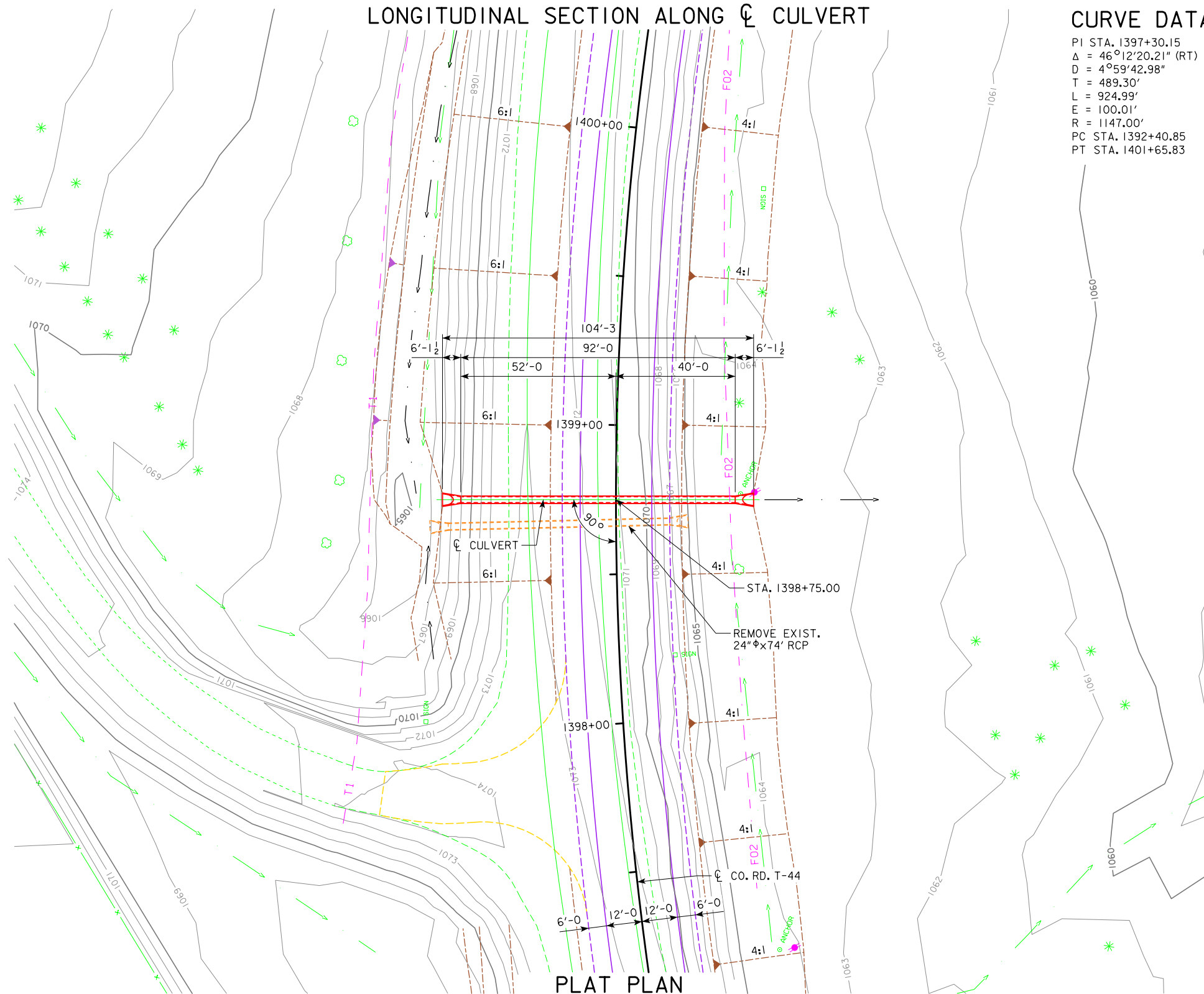


NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



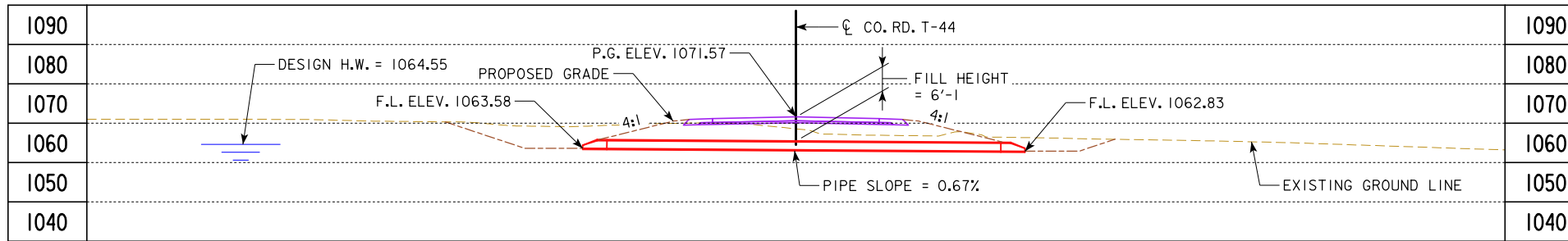
PRELIMINARY
 DESIGN FOR 0° SKEW
24" ϕ X 92'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 1398+75.00 (CO. RD. T-44) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



LONGITUDINAL SECTION ALONG ϕ CULVERT

PLAT PLAN



BENCH MARK NO. 34002 - FENO MONUMENT, 3872249.003 N, 5123629.121 E, STA. 405+61.61, 811.89' RT., ELEV. 1082.22

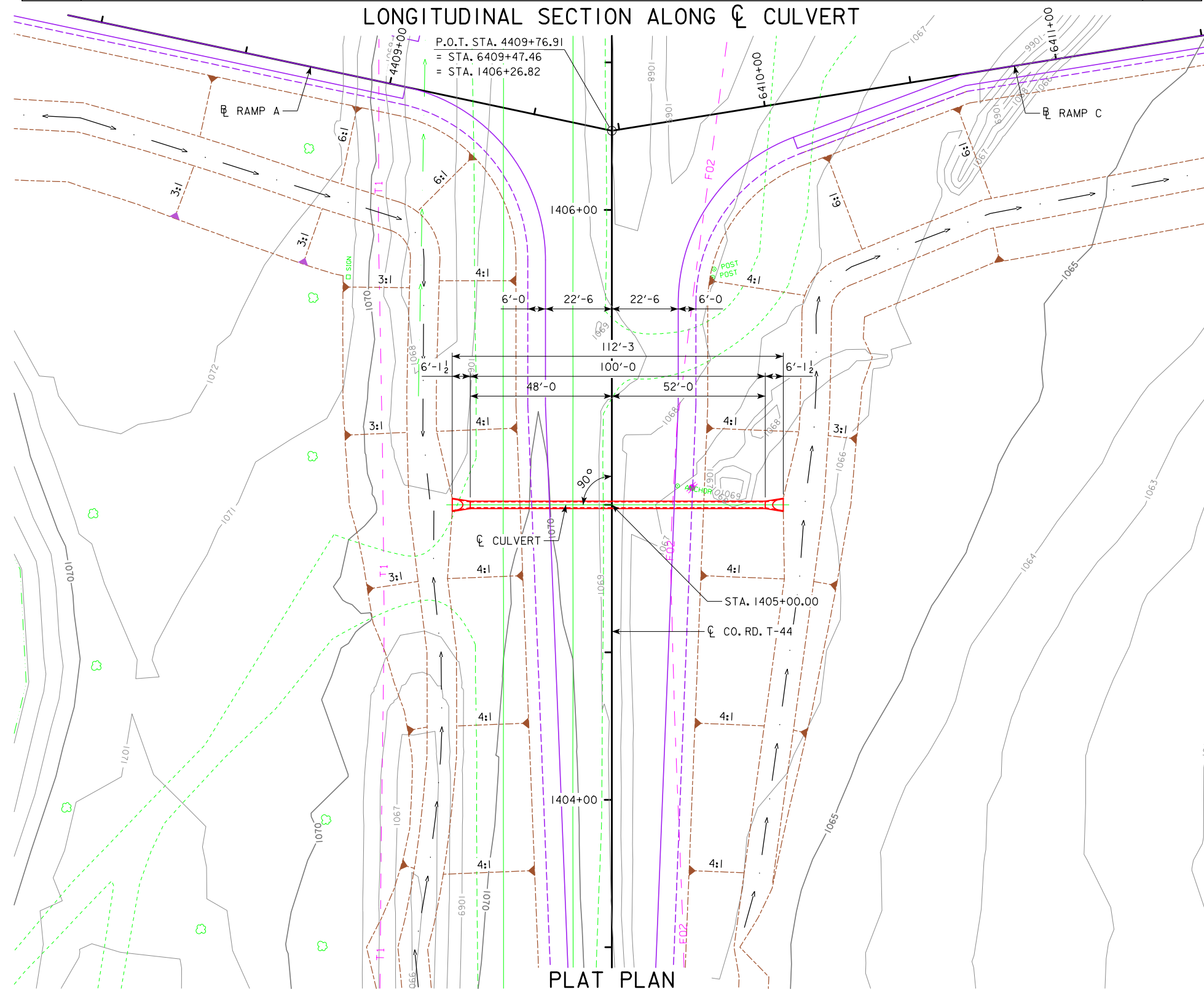
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 1 ACRE
 $Q_{50} = 4$ CFS
 HW ELEV. = 1064.55

LOCATION

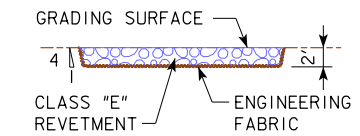
CO. RD. T-44
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY



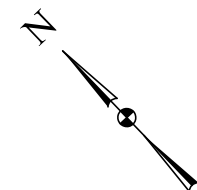
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	13	12	8
TOTALS	13	12	8

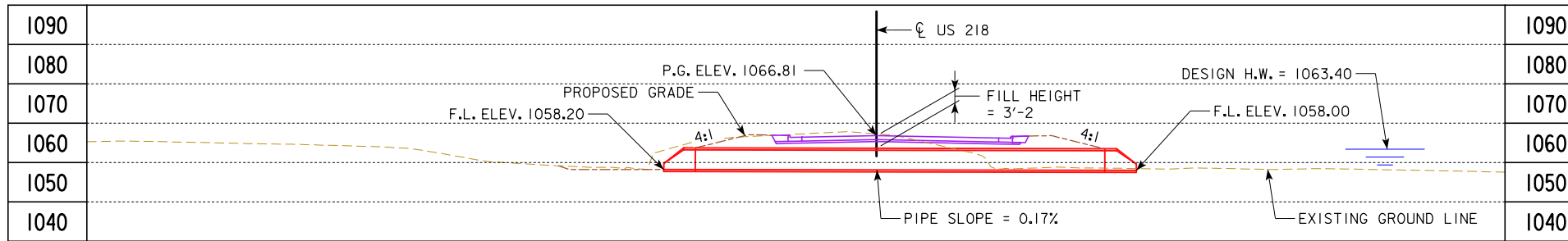
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
24" ϕ X 100'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STATION: 1405+00.00 (CO. RD. T-44) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134.00' LT. - ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 46 ACRES
 $Q_{50} = 130$ CFS
 HW ELEV. = 1063.40

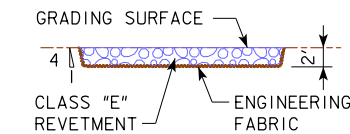
LOCATION

US 218
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

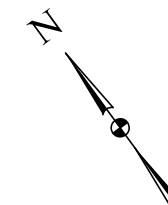
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	54	50	33
TOTALS	54	50	33

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

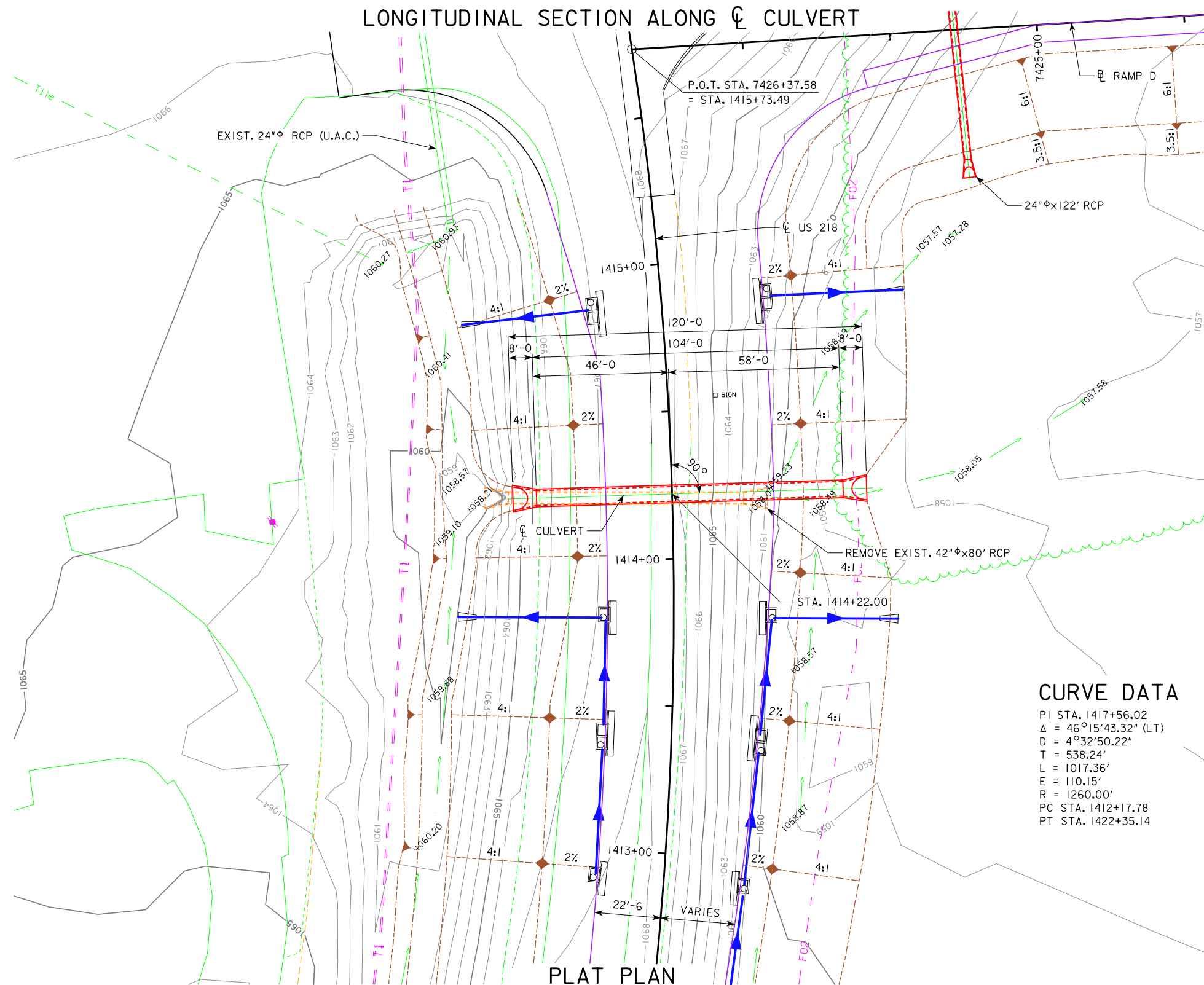


NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



CURVE DATA

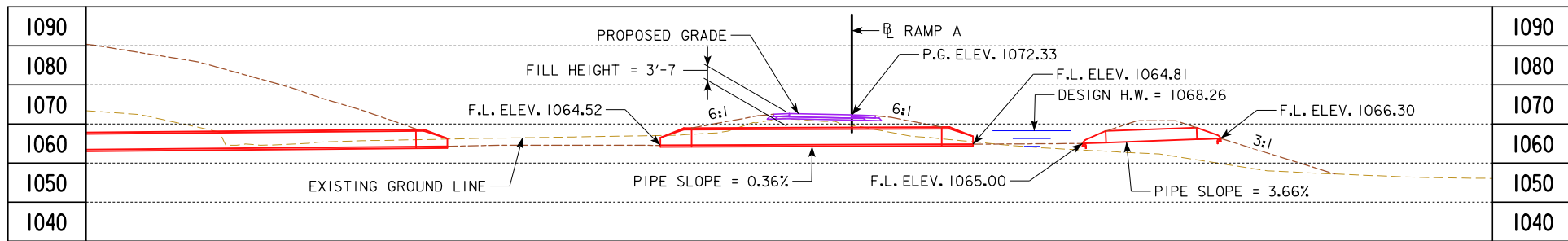
PI STA. 1417+56.02
 $\Delta = 46^\circ 15' 43.32''$ (LT)
 $D = 4^\circ 32' 50.22''$
 $T = 538.24'$
 $L = 1017.36'$
 $E = 110.15'$
 $R = 1260.00'$
 PC STA. 1412+17.78
 PT STA. 1422+35.14



PLAT PLAN

PRELIMINARY
 DESIGN FOR 0° SKEW
60" ϕ X 104'-0
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 1414+22.00 (US 218) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124894.640 E, STA. 414+09.93, 134.00' LT. - ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 18 ACRES
 $Q_{50} = 49$ CFS
 HW ELEV. = 1068.26

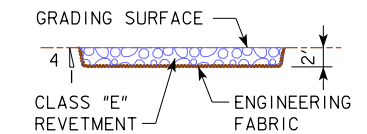
LOCATION

RAMP A
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

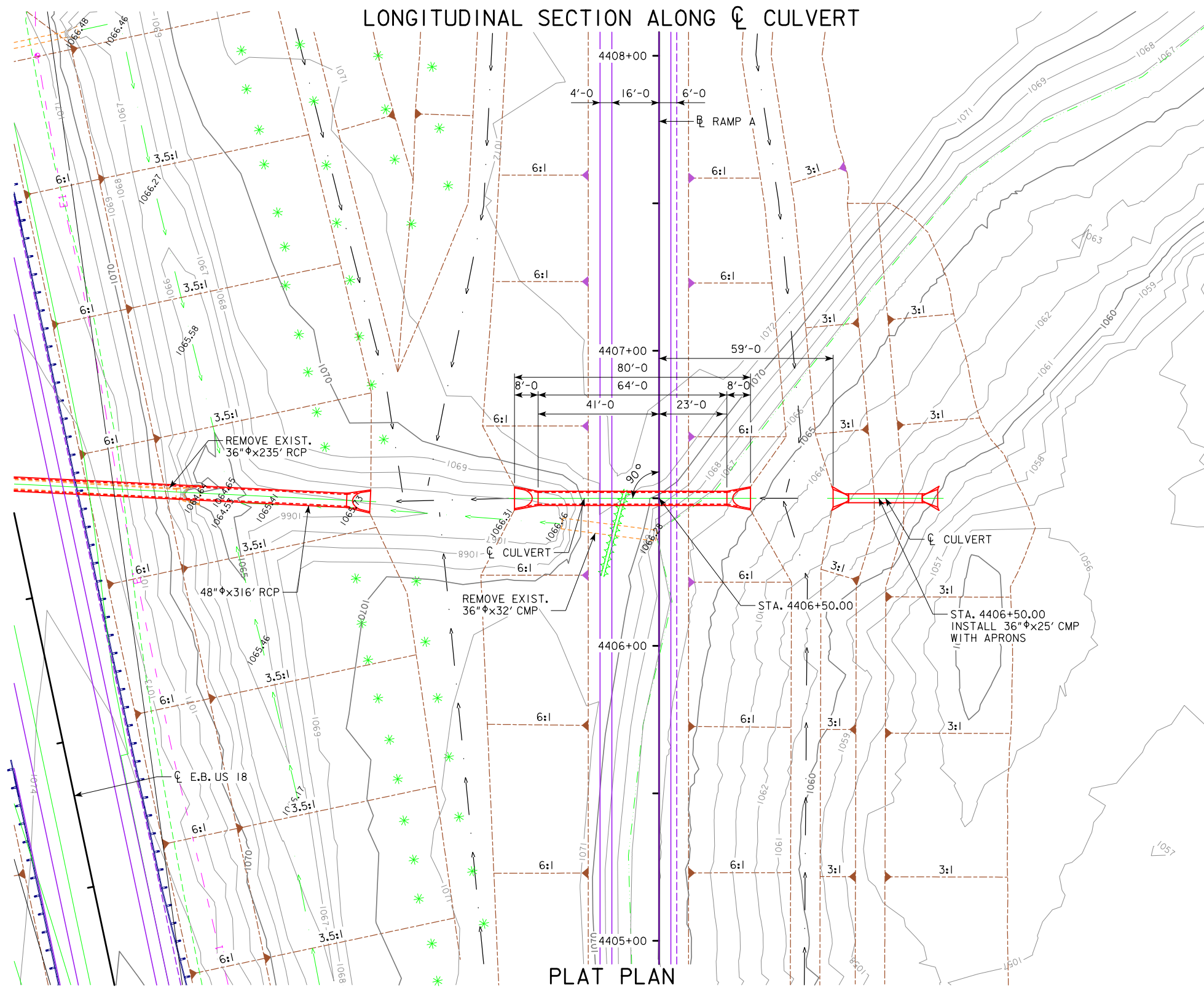
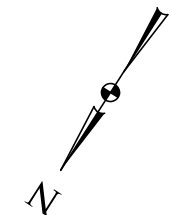
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	19	17	12
TOTALS	19	17	12

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



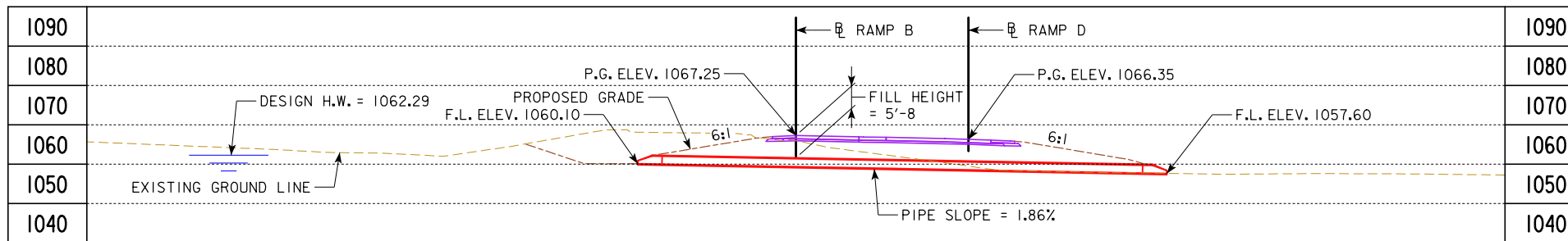
NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



PLAT PLAN

PRELIMINARY
 DESIGN FOR 0° SKEW
48" ϕ X 64'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 4406+50.00 (RAMP A) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134.00' LT. - ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 3 ACRES
 $Q_{50} = 15$ CFS
 HW ELEV. = 1062.29

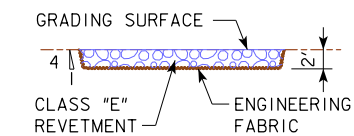
LOCATION

RAMP B
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

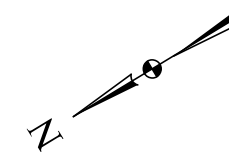
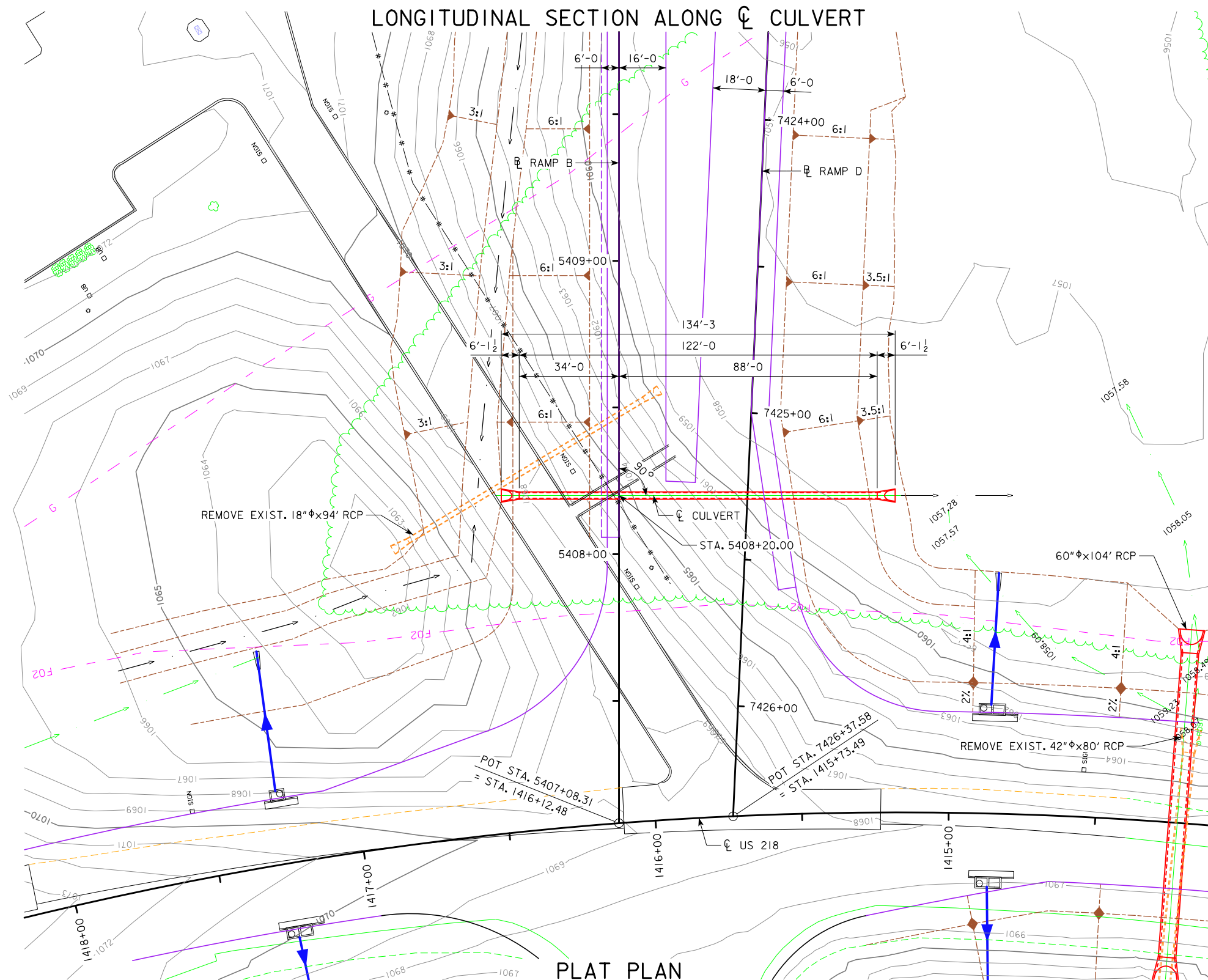
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	13	12	8
TOTALS	13	12	8

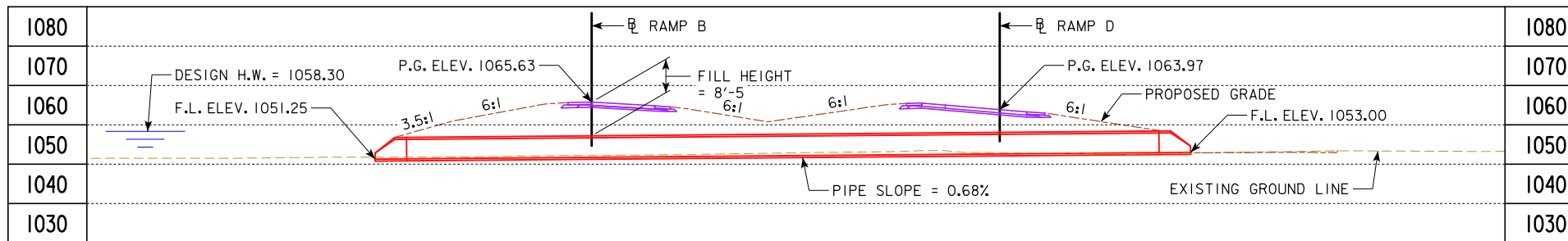
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
24" ϕ X 122'
REINFORCED CONCRETE PIPE
 SITUATION PLAN
 STATION: 5408+20.00 (RAMP B) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134.00' LT., ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 62 ACRES
 $Q_{50} = 137$ CFS
 HW ELEV. = 1058.30

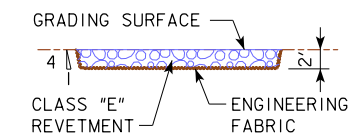
LOCATION

RAMP B
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	54	50	33
TOTALS	54	50	33

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.

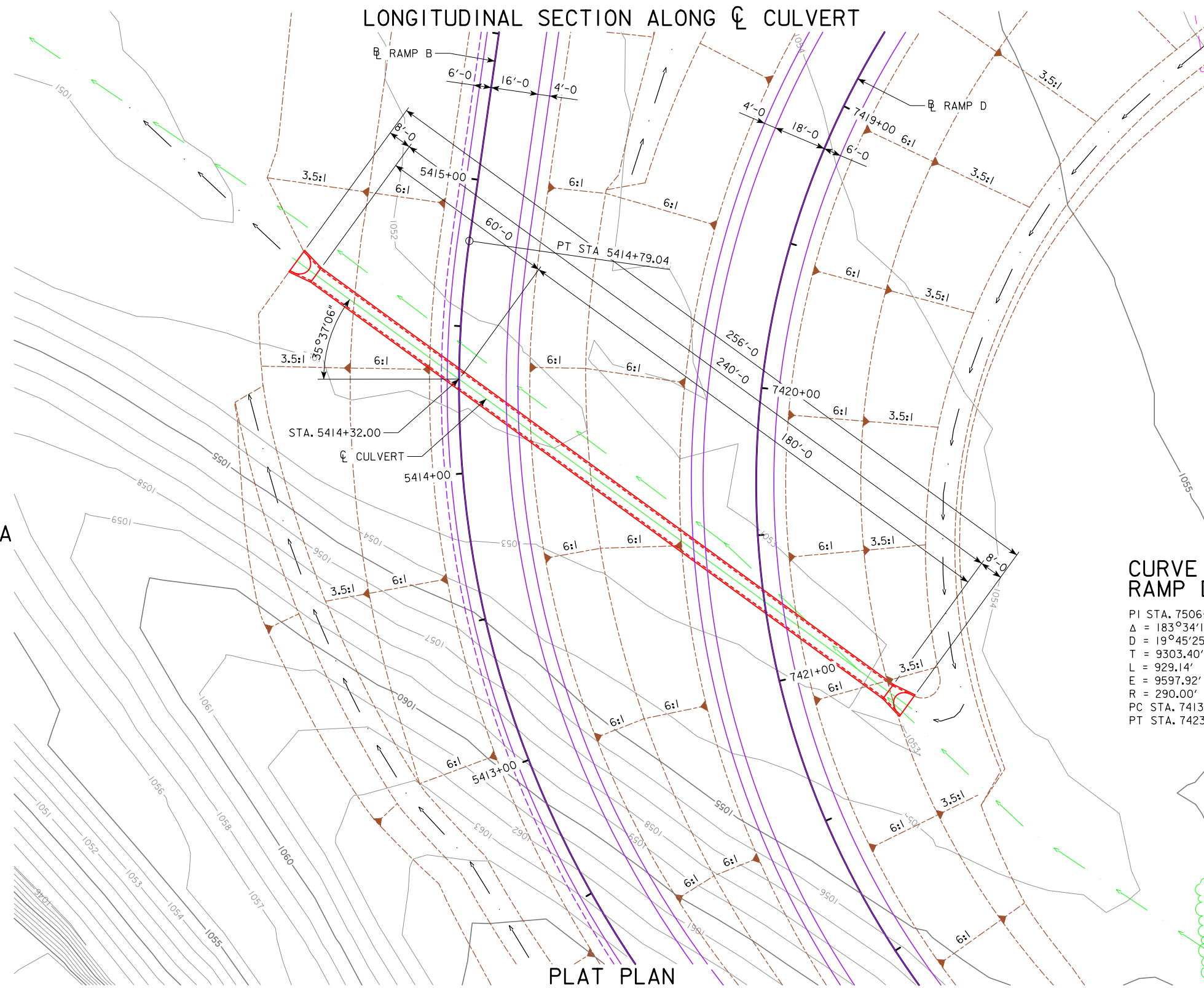


PRELIMINARY

DESIGN FOR 35°37'06" (L.A.) SKEW
60" ϕ X 240'
REINFORCED CONCRETE PIPE

PLAT PLAN

STATION: 5414+32.00 (RAMP B) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



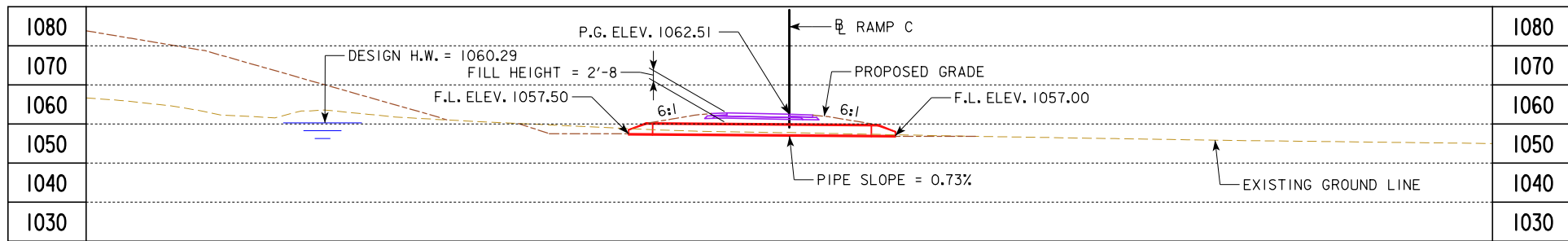
CURVE DATA RAMP B

PI STA. 5413+00.80
 $\Delta = 67^\circ 21' 56.65''$ (RT)
 $D = 16^\circ 22' 12.80''$
 $T = 233.27'$
 $L = 411.51'$
 $E = 70.61'$
 $R = 350.00'$
 PC STA. 5410+67.53
 PT STA. 5414+79.04

CURVE DATA RAMP D

PI STA. 7506+93.40
 $\Delta = 183^\circ 34' 14.96''$ (LT)
 $D = 19^\circ 45' 25.80''$
 $T = 9303.40'$
 $L = 929.14'$
 $E = 9597.92'$
 $R = 290.00'$
 PC STA. 7413+90.00
 PT STA. 7423+19.14

PLAT PLAN



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134.00' LT. - ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 6 ACRES
 $Q_{50} = 26$ CFS
 HW ELEV. = 1060.29

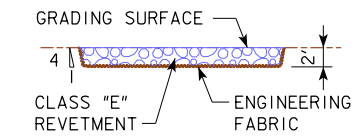
LOCATION

RAMP C
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

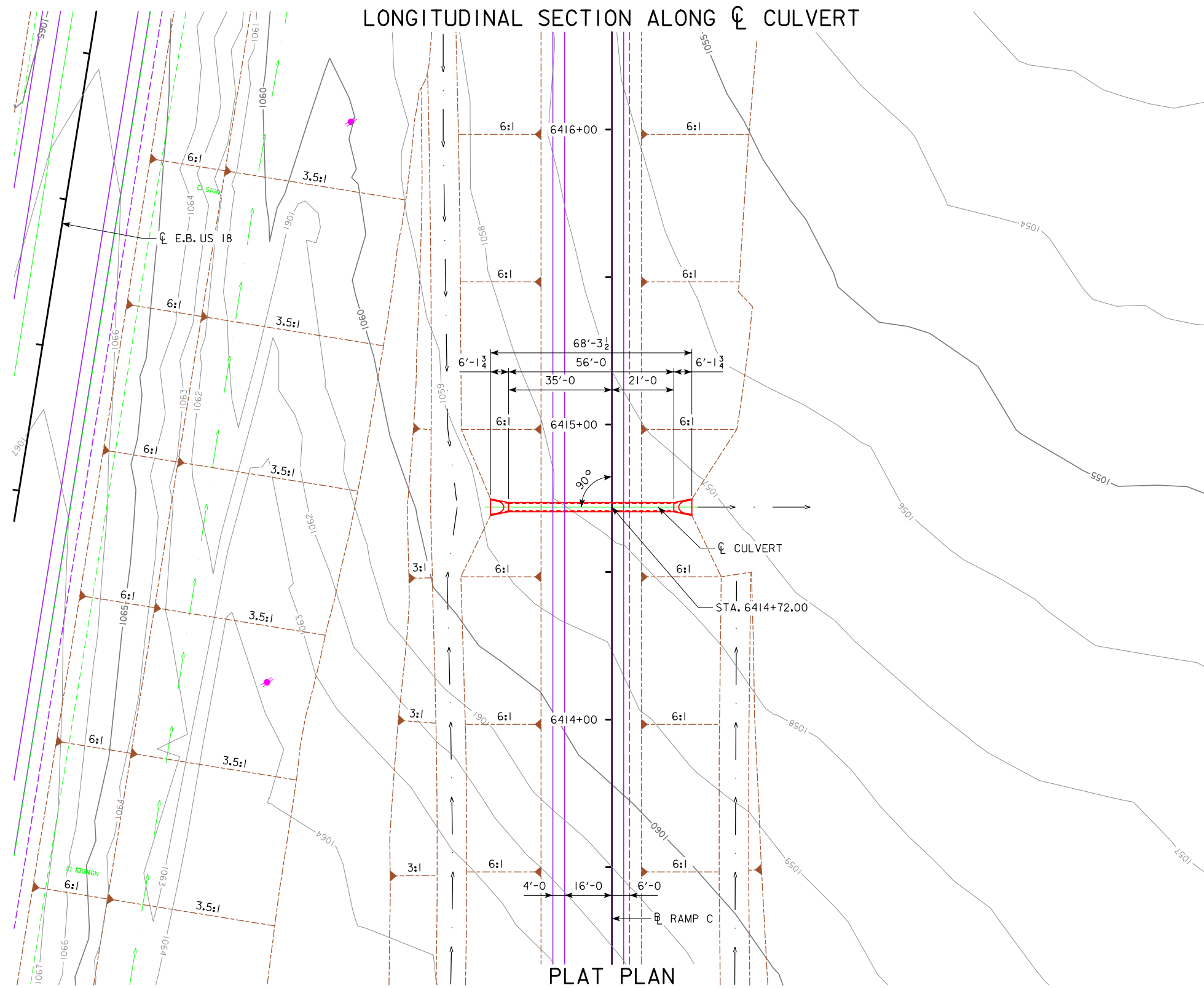
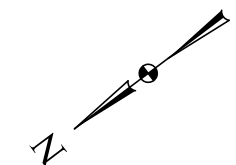
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	16	15	10
TOTALS	16	15	10

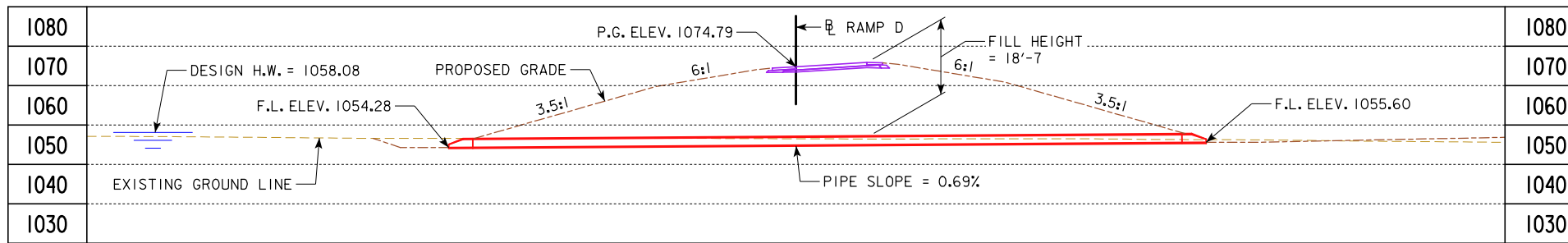
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
30"φ X 56'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STATION: 6414+72.00 (RAMP C) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134.00' LT. - ELEV. 1060.97

NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 5 ACRES
 $Q_{50} = 17$ CFS
 HW ELEV. = 1058.08

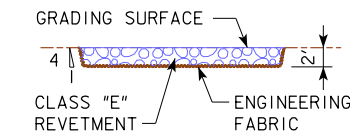
LOCATION

RAMP D
 T-96N R-16W
 SECTION 21
 FLOYD TOWNSHIP
 FLOYD COUNTY

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
OUTLET	13	12	8
TOTALS	13	12	8

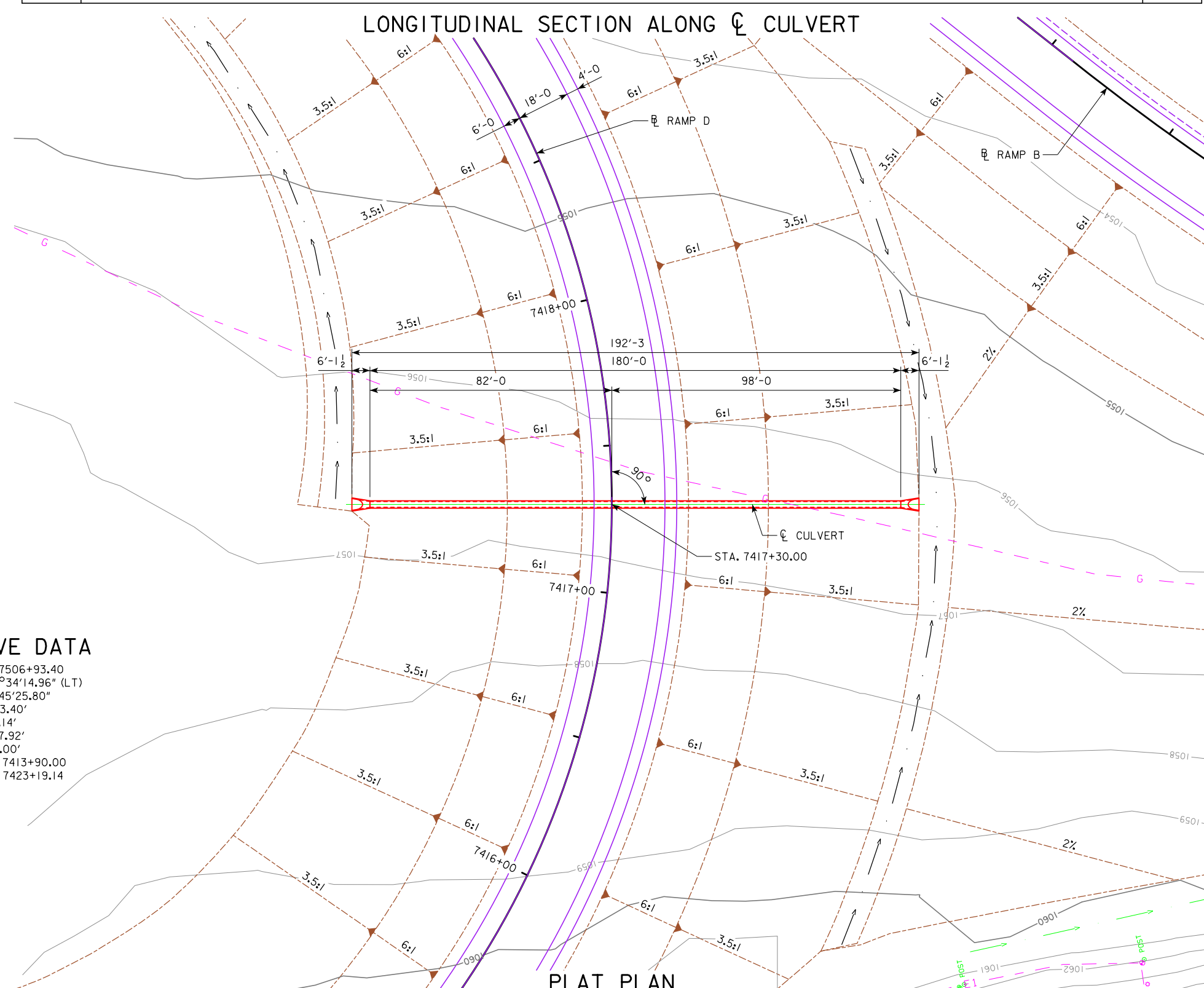
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.



NOTE: PIPE DIMENSIONS SHOWN IN PLAN VIEW ARE BASED ON LAYING LENGTH.

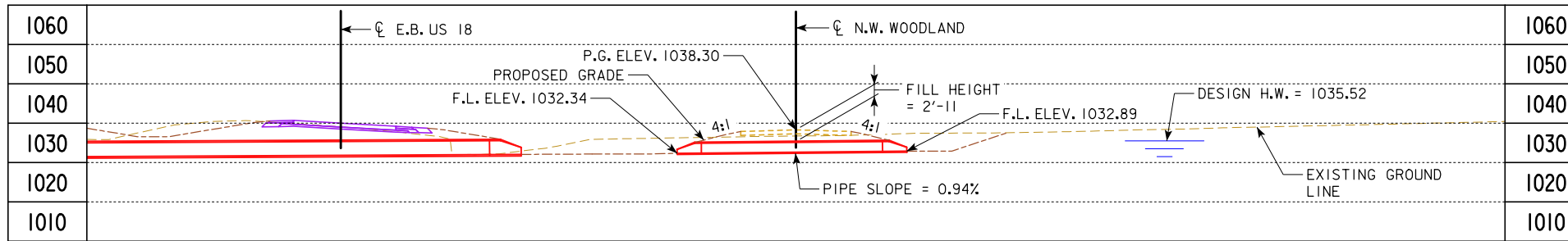
CURVE DATA

PI STA. 7506+93.40
 $\Delta = 183^\circ 34' 14.96''$ (LT)
 $D = 19^\circ 45' 25.80''$
 $T = 9303.40'$
 $L = 929.14'$
 $E = 9597.92'$
 $R = 290.00'$
 PC STA. 7413+90.00
 PT STA. 7423+19.14



PRELIMINARY
 DESIGN FOR 0° SKEW
24" ϕ X 180'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 7417+30.00 (RAMP D) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 662 - FENO MONUMENT, 3869739.153 N, 5126999.541 E, STA. 447+19.45, 140.81' RT. - ELEV. 1039.62

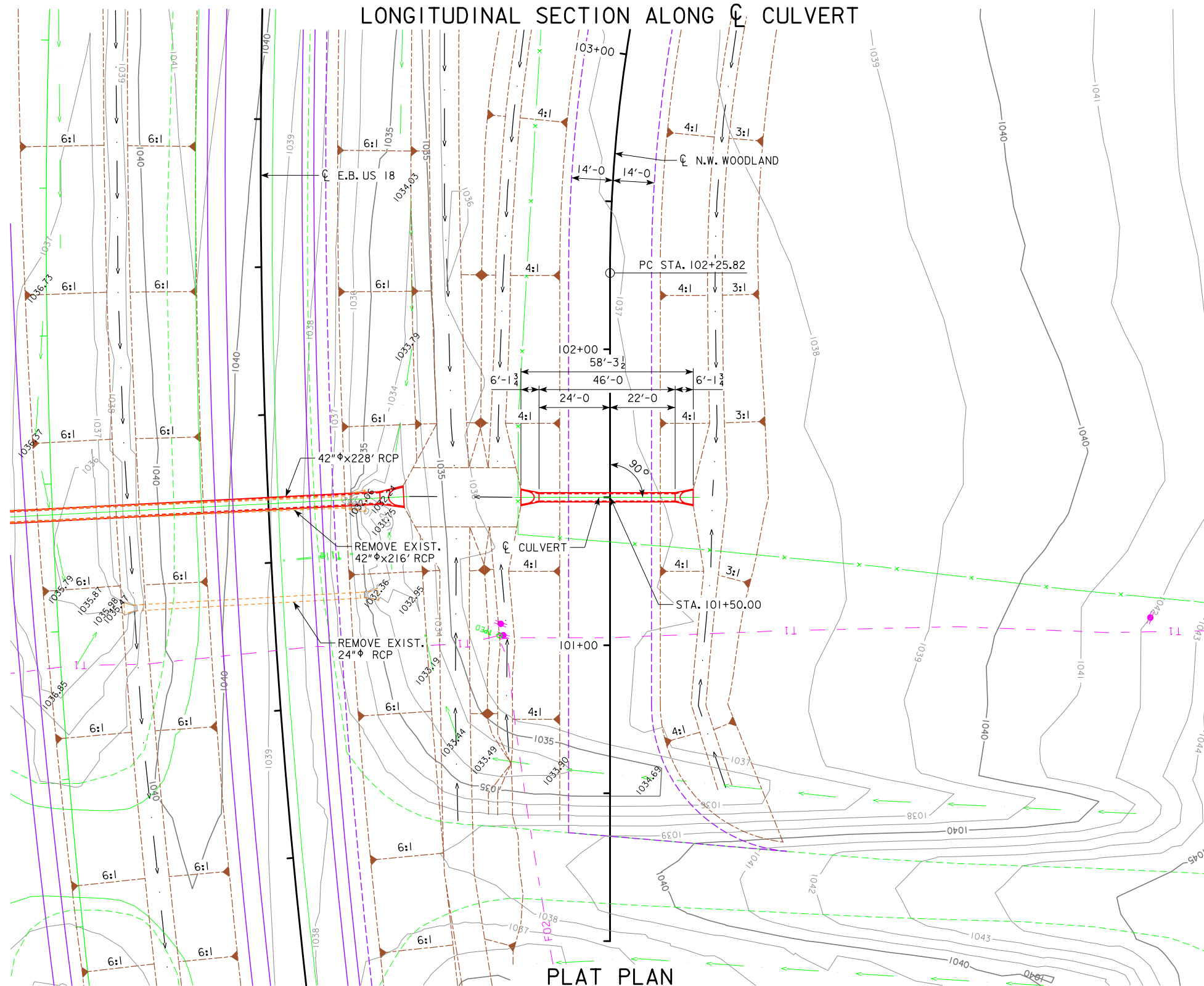
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 25 ACRES
 $Q_{10} = 24$ CFS
 HW ELEV. = 1035.52

LOCATION

N.W. WOODLAND
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY

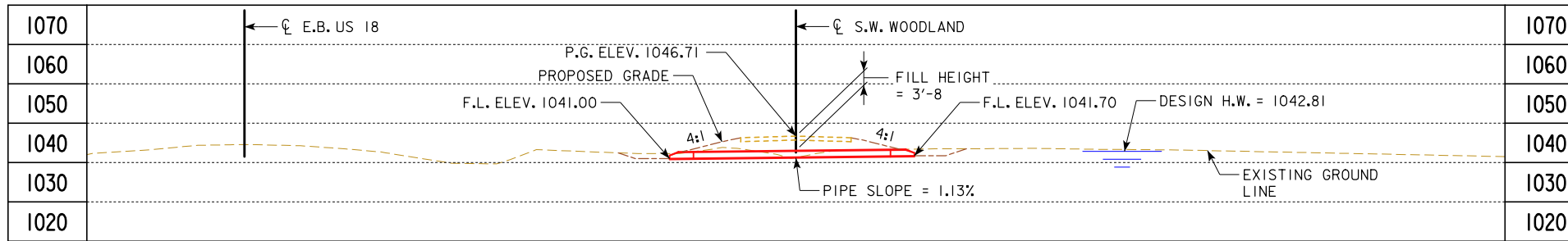


NOTE:
 PIPE DIMENSIONS SHOWN IN PLAN
 VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
30" ϕ X 46'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 101+50.00 (N.W. WOODLAND) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 661 - FENO MONUMENT, 3868153.057 N, 5127839.871 E, STA. 465+51.15, 135.73' LT. - ELEV. 1046.95

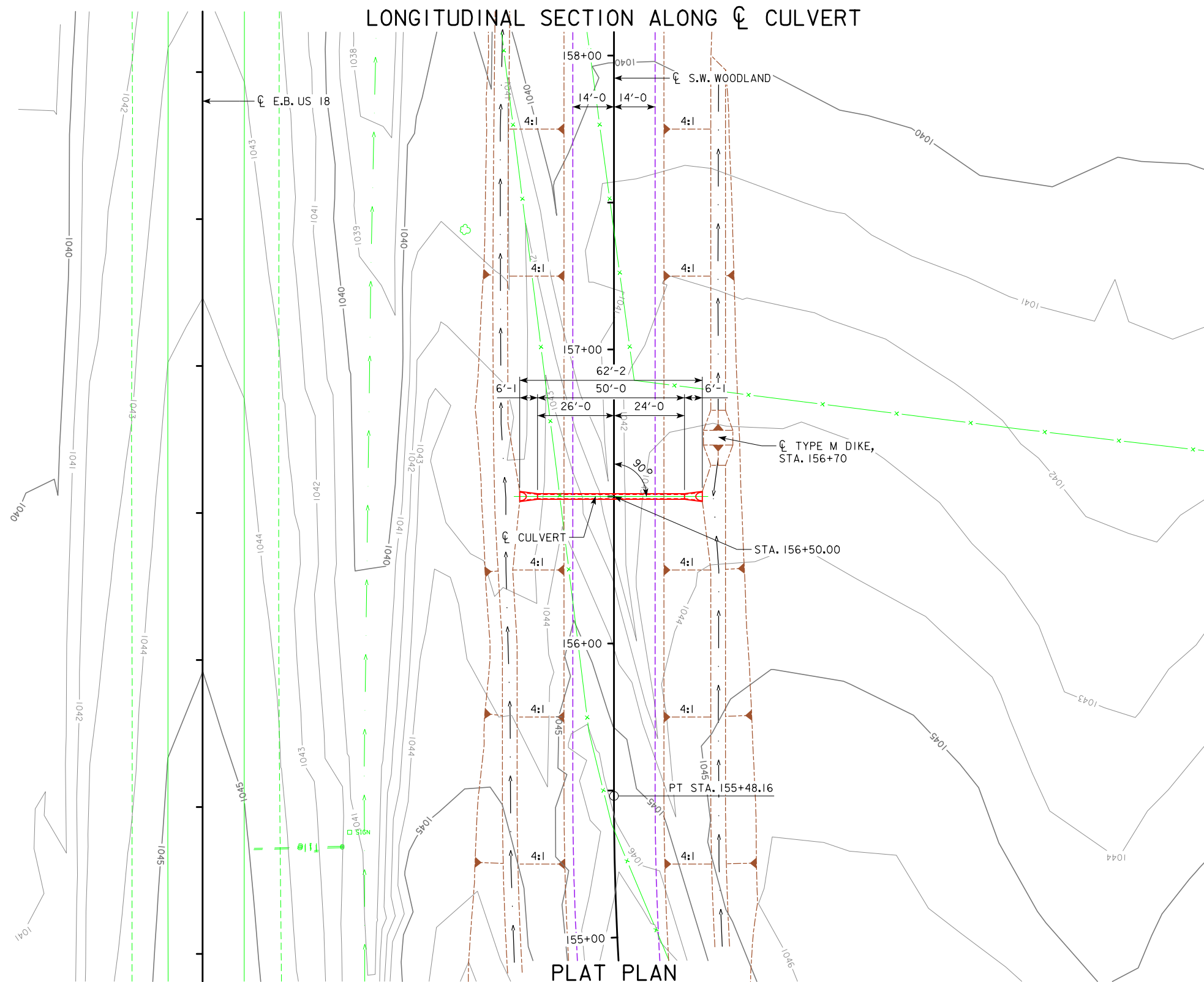
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 3 ACRES
 $Q_{10} = 4$ CFS
 HW ELEV. = 1042.81

LOCATION

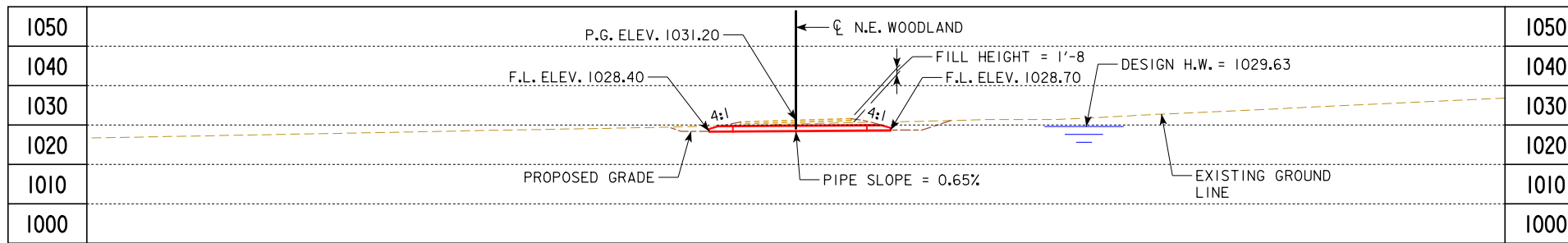
S.W. WOODLAND
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY



NOTE:
 PIPE DIMENSIONS SHOWN IN PLAN
 VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
18" ϕ X 50'
REINFORCED CONCRETE PIPE
 PLAT PLAN
 STATION: 156+50.00 (S.W. WOODLAND) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 661 - FENO MONUMENT, 3868153.057 N,
5127839.871 E, STA. 465+51.15, 135.73' LT. - ELEV. 1046.95

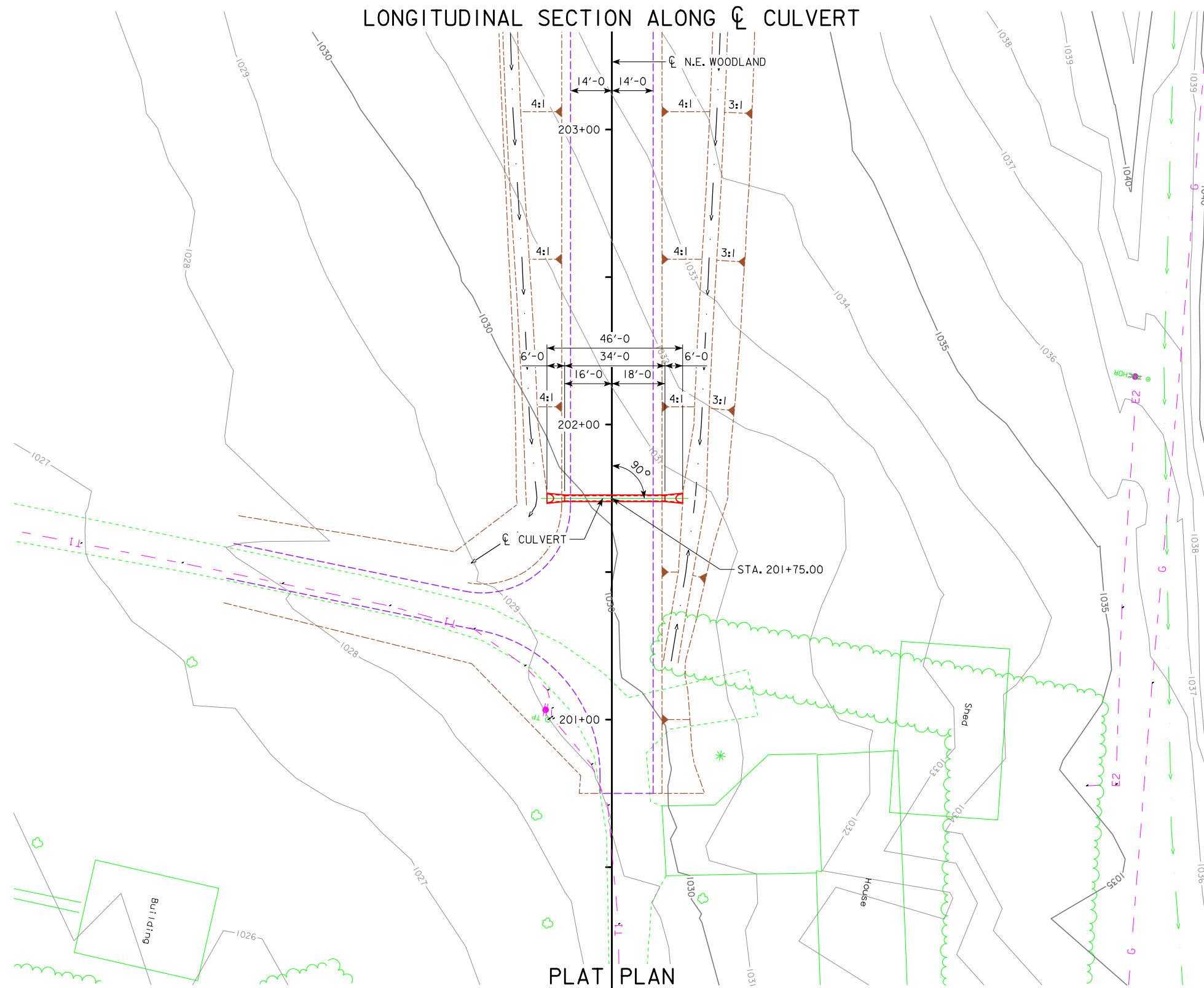
NOTE: BENCH MARK STATION AND OFFSET BASED ON
US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 2 ACRES
Q₁₀ = 3 CFS
HW ELEV. = 1029.63

LOCATION

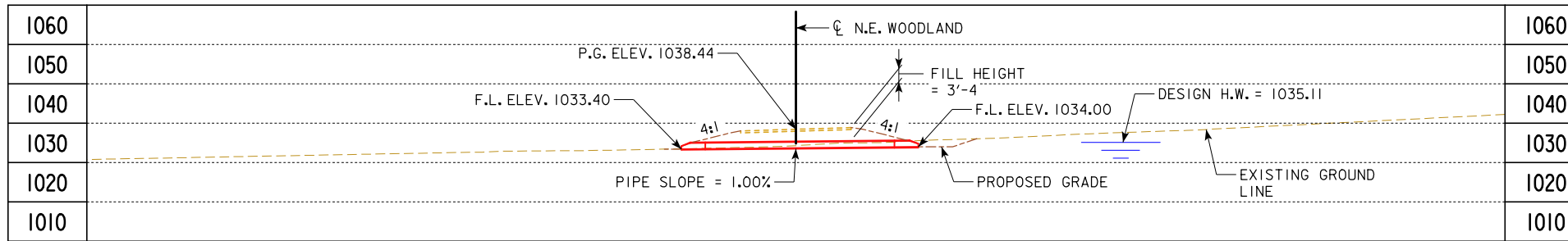
N.E. WOODLAND
T-96N R-16W
SECTION 27
FLOYD TOWNSHIP
FLOYD COUNTY



NOTE:
PIPE DIMENSIONS SHOWN IN PLAN
VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
DESIGN FOR 0° SKEW
**22" X 14" X 34' ARCH
REINFORCED CONCRETE PIPE**
PLAT PLAN
STATION: 201+75.00 (N.E. WOODLAND) FEBRUARY, 2018
FLOYD COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



BENCH MARK NO. 661 - FENO MONUMENT, 3868153.057 N, 5127839.871 E, STA. 465+51.15, 135.73' LT. - ELEV. 1046.95

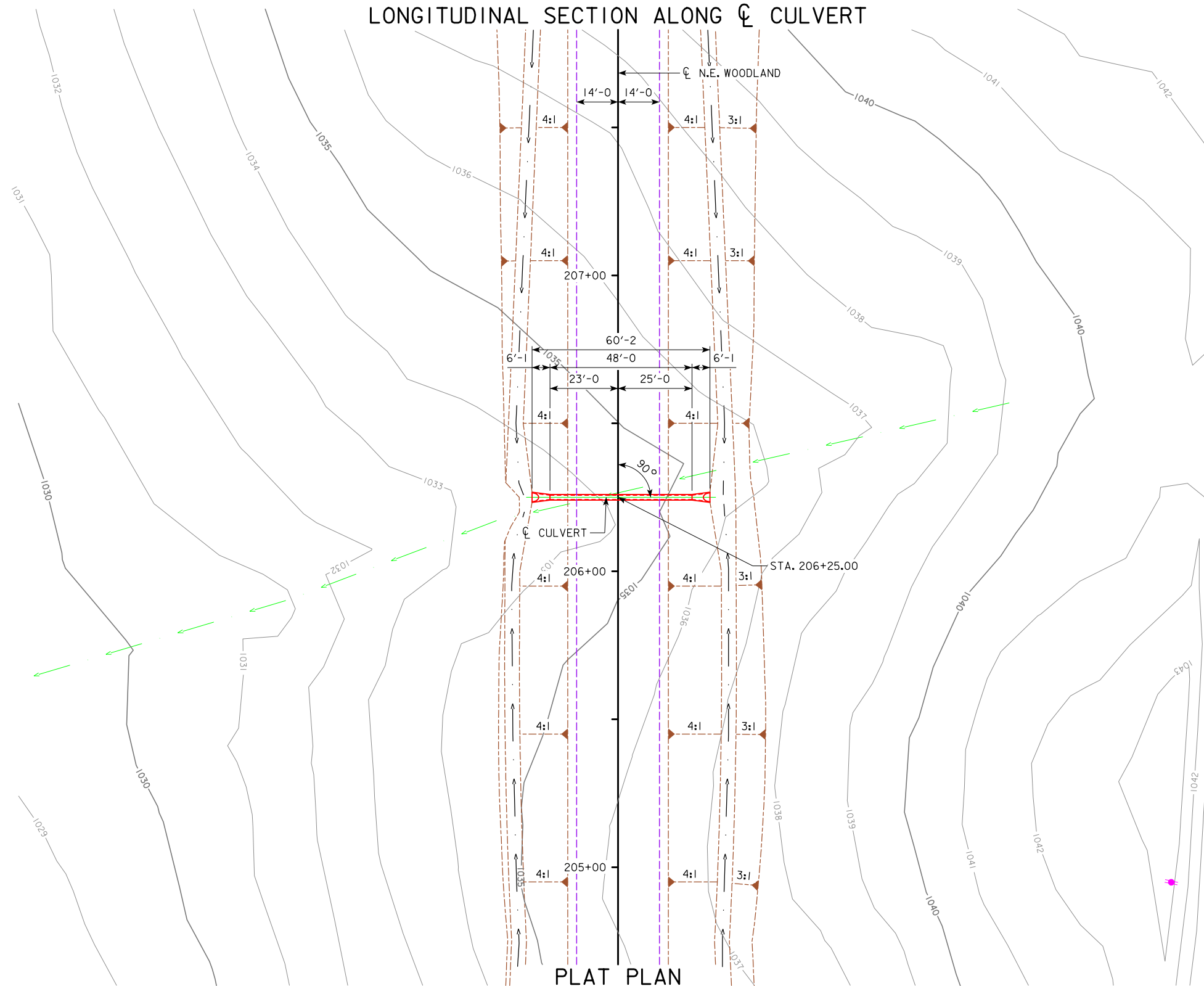
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 3 ACRES
 $Q_{10} = 4$ CFS
 HW ELEV. = 1035.11

LOCATION

N.E. WOODLAND
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY

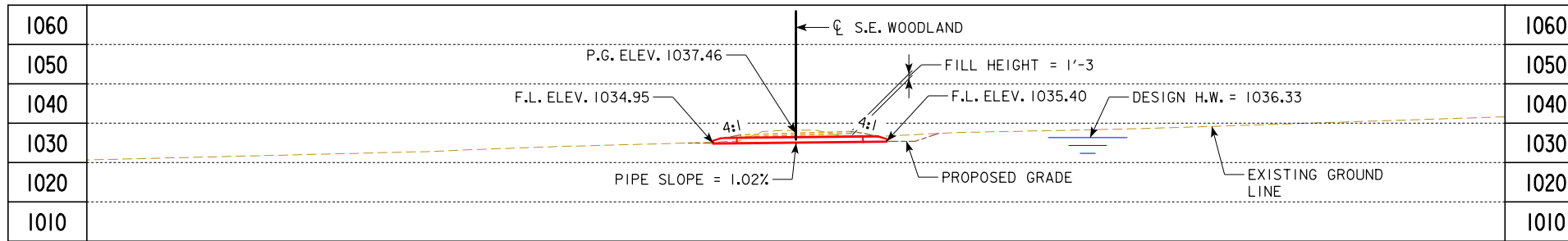


NOTE:
 PIPE DIMENSIONS SHOWN IN PLAN
 VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
18" ϕ X 48'
REINFORCED CONCRETE PIPE

PLAT PLAN
 STATION: 206+25.00 (N.E. WOODLAND) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 661 - FENO MONUMENT, 3868153.057 N, 5127839.871 E, STA. 465+51.15, 135.73' LT. - ELEV. 1046.95

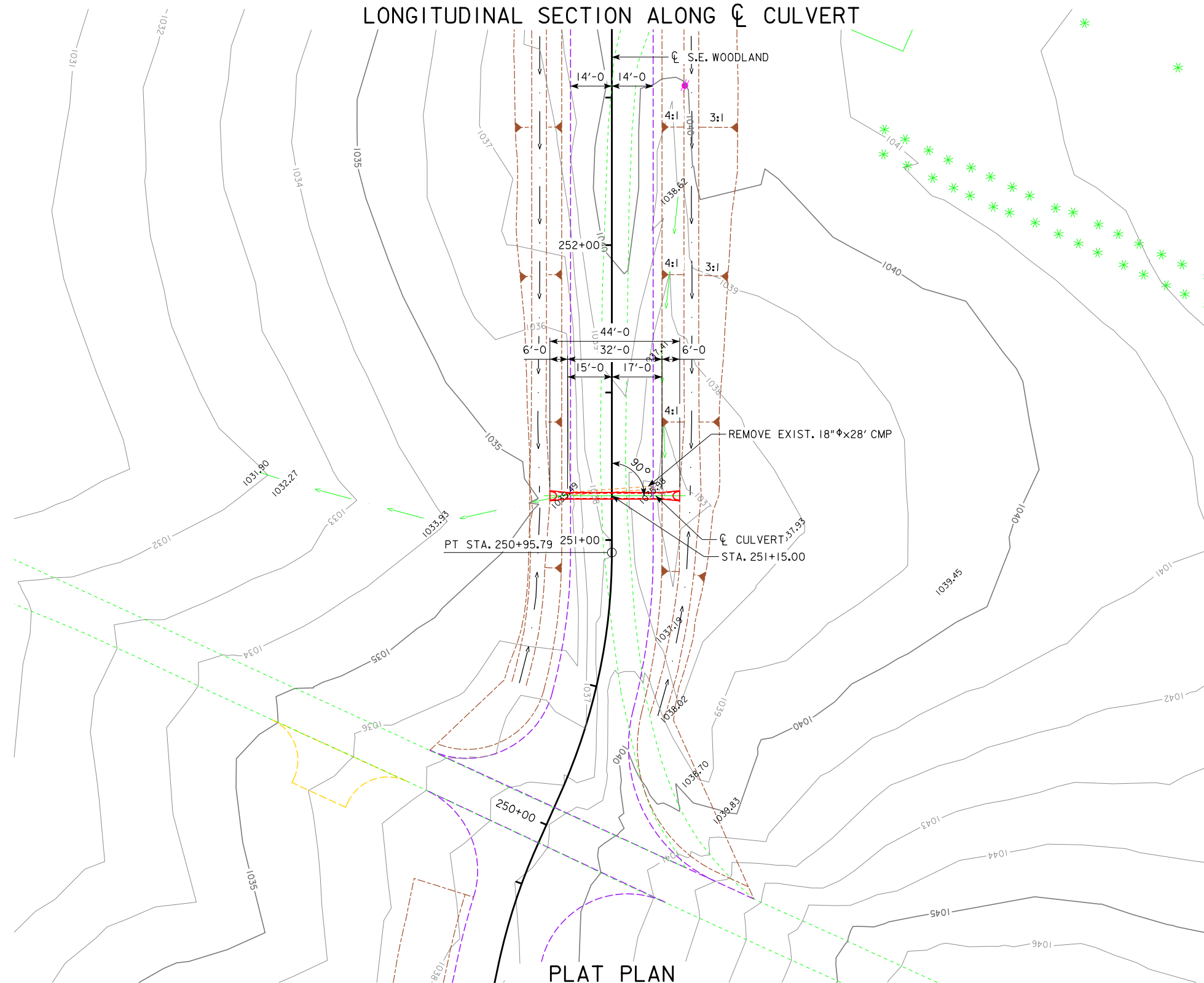
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 2 ACRES
 $Q_{10} = 3$ CFS
 HW ELEV. = 1036.33

LOCATION

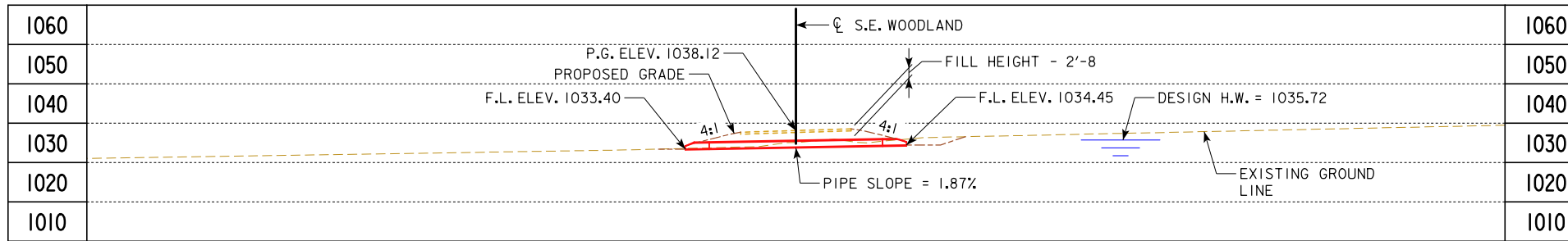
S.E. WOODLAND
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY



NOTE:
 PIPE DIMENSIONS SHOWN IN PLAN
 VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
**22" X 14" X 32' ARCH
 REINFORCED CONCRETE PIPE**
 PLAT PLAN
 STATION: 251+15.00 (S.E. WOODLAND) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 661 - FENO MONUMENT, 3868153.057 N, 5127839.871 E, STA. 465+51.15, 135.73' LT. - ELEV. 1046.95

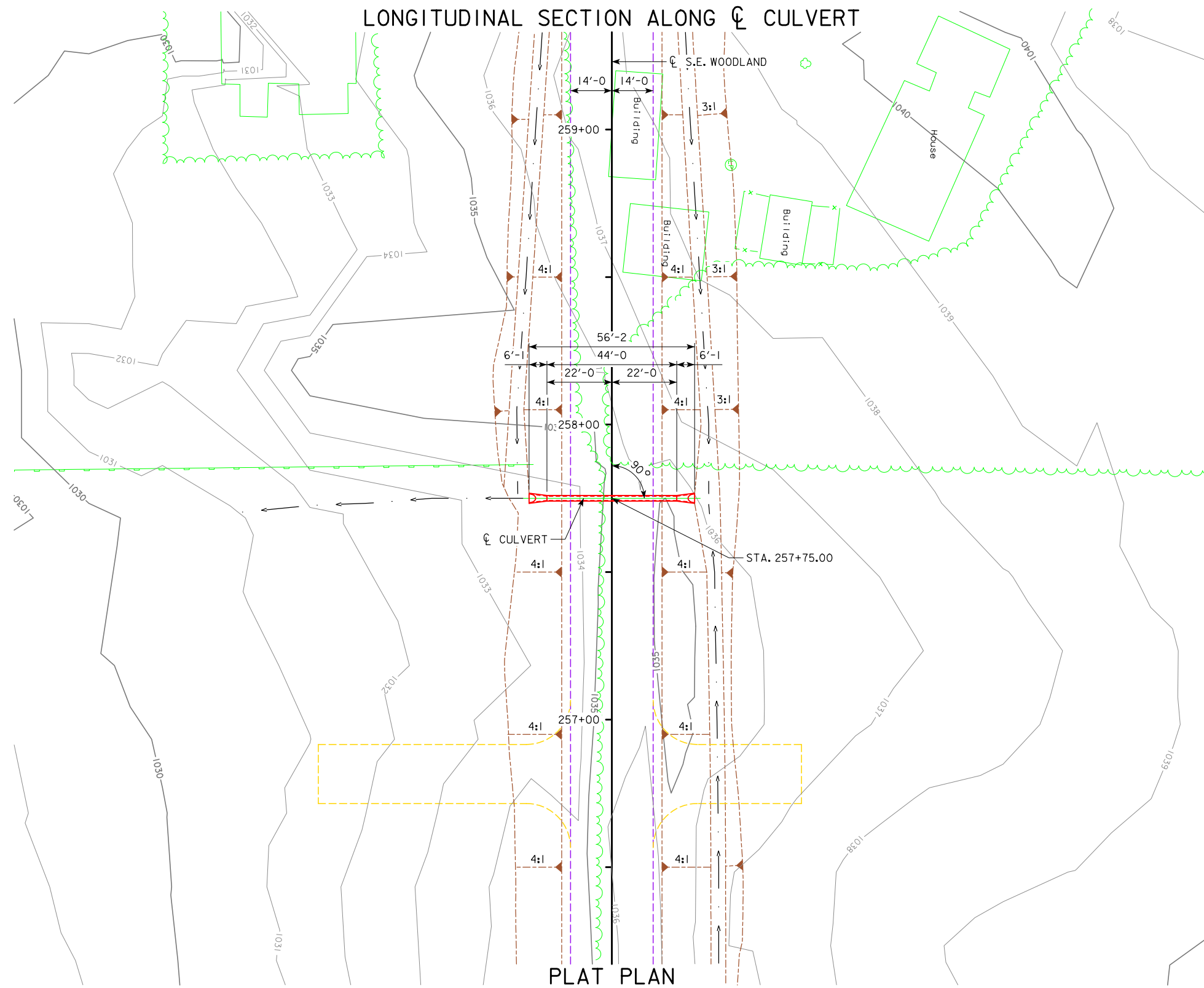
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 3 ACRES
 $Q_{10} = 5$ CFS
 HW ELEV. = 1035.72

LOCATION

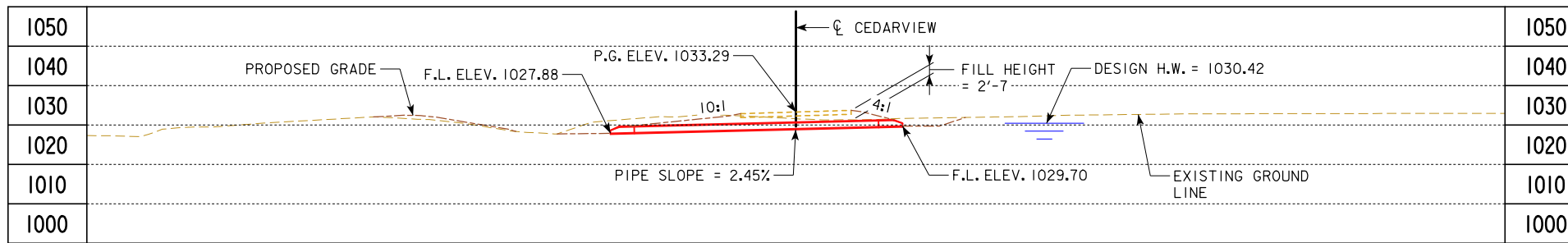
S.E. WOODLAND
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY



NOTE:
 PIPE DIMENSIONS SHOWN IN PLAN
 VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
18" ϕ X 44'
REINFORCED CONCRETE PIPE
 PLAT PLAN
 STATION: 257+75.00 (S.E. WOODLAND) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___



BENCH MARK NO. 658 - FENO MONUMENT, 3864837.616 N, 5128321.957 E, STA. 498+98.77, 132.78' RT. - ELEV. 1032.57

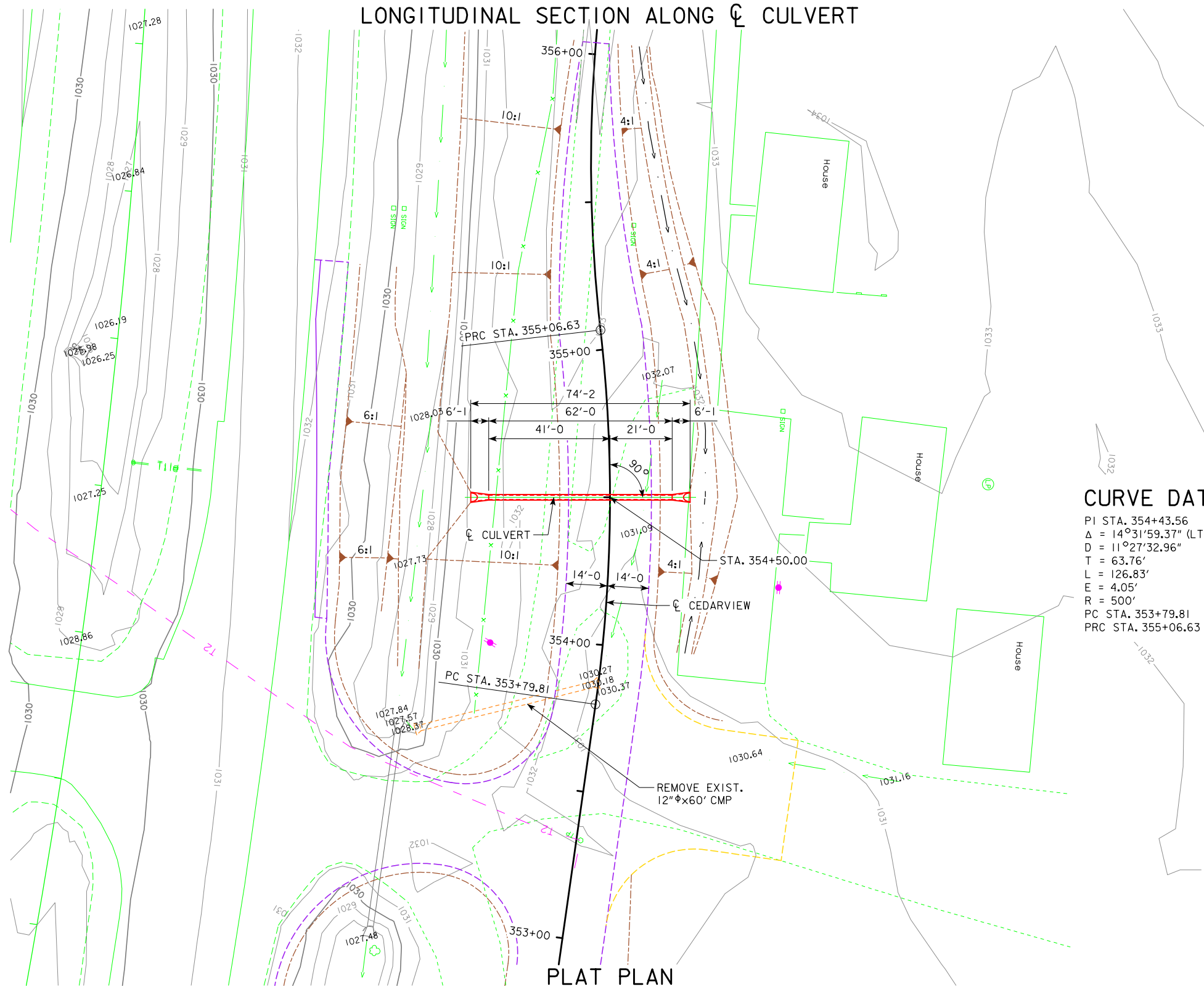
NOTE: BENCH MARK STATION AND OFFSET BASED ON US 18 SURVEY CENTERLINE.

HYDRAULIC DATA

DRAINAGE AREA = 2 ACRES
 $Q_{10} = 2$ CFS
 HW ELEV. = 1030.42

LOCATION

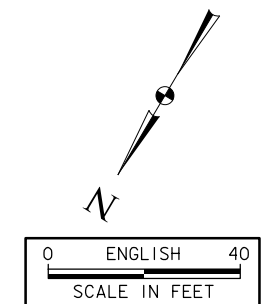
CEDARVIEW
 T-96N R-16W
 SECTION 27
 FLOYD TOWNSHIP
 FLOYD COUNTY



CURVE DATA

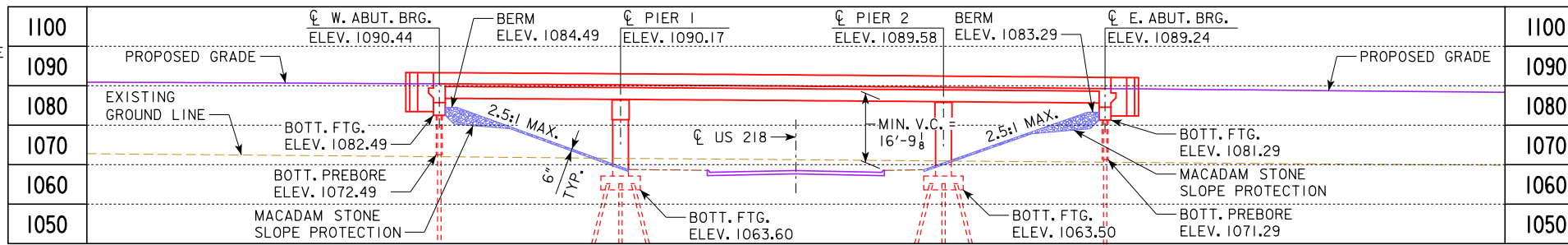
PI STA. 354+43.56
 $\Delta = 14^{\circ}31'59.37''$ (LT)
 $D = 11^{\circ}27'32.96''$
 $T = 63.76'$
 $L = 126.83'$
 $E = 4.05'$
 $R = 500'$
 PC STA. 353+79.81
 PRC STA. 355+06.63

NOTE:
 PIPE DIMENSIONS SHOWN IN PLAN
 VIEW ARE BASED ON LAYING LENGTH.



PRELIMINARY
 DESIGN FOR 0° SKEW
18" φ X 62'
REINFORCED CONCRETE PIPE
 PLAT PLAN
 STATION: 354+50.00 (CEDARVIEW) FEBRUARY, 2018
FLOYD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___

- NOTES TO FINAL DESIGNER:
1. TL-4 BRIDGE RAILING PROPOSED.
 2. TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.
 3. PIER TYPE - COLUMN FRAME.
 4. BEAM TYPE - BTB. PROPOSED TO REDUCE ROW IMPACTS.
 5. PIERS DESIGNED FOR VEHICULAR COLLISION FORCE.
 6. BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.
 7. ABUTMENT SLOPES TO BE CONFIRMED DURING FINAL DESIGN.
 8. BRIDGE LAYOUT PROVIDES FOR FUTURE 10' TRAIL. CURRENTLY THERE ARE NO PLANS FOR FUTURE TRAIL.



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134' LT. - ELEV. 1060.97

VPI STA. 1414+50.00
VPI ELEV. = 1065.84
VC = 350'

VPT STA. 1408+75.00
VPT ELEV. = 1068.72

VPC STA. 1419+15.00
VPC ELEV. = 1076.07

PROPOSED PROFILE GRADE ON US 218

VPI STA. 13410+00.00
VPI ELEV. = 1096.14
VC = 1700'

VPT STA. 13387+25.00
VPT ELEV. = 1077.94

VPC STA. 13424+75.00
VPC ELEV. = 1060.74

PROPOSED PROFILE GRADE ON E.B. US 18

UTILITIES LEGEND:

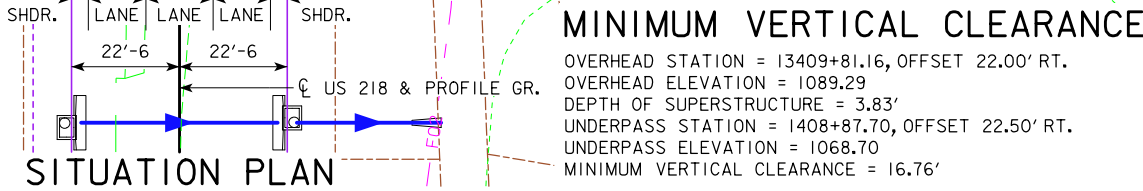
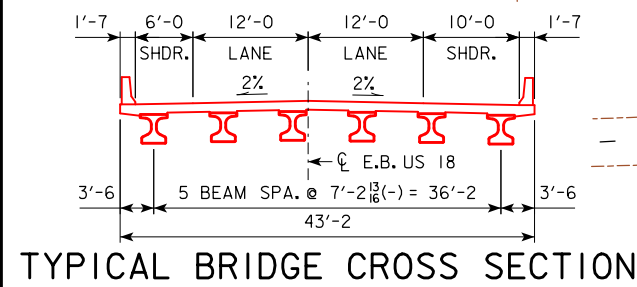
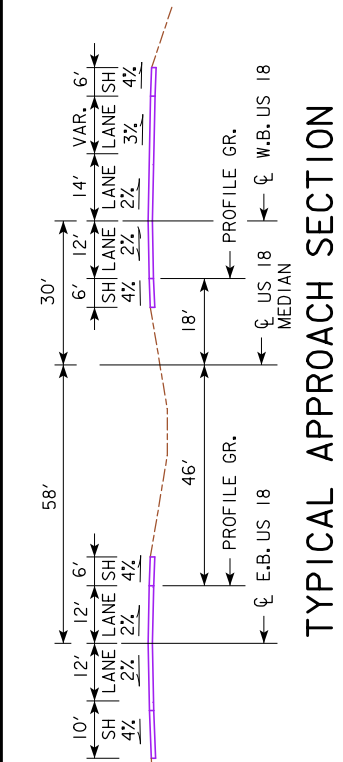
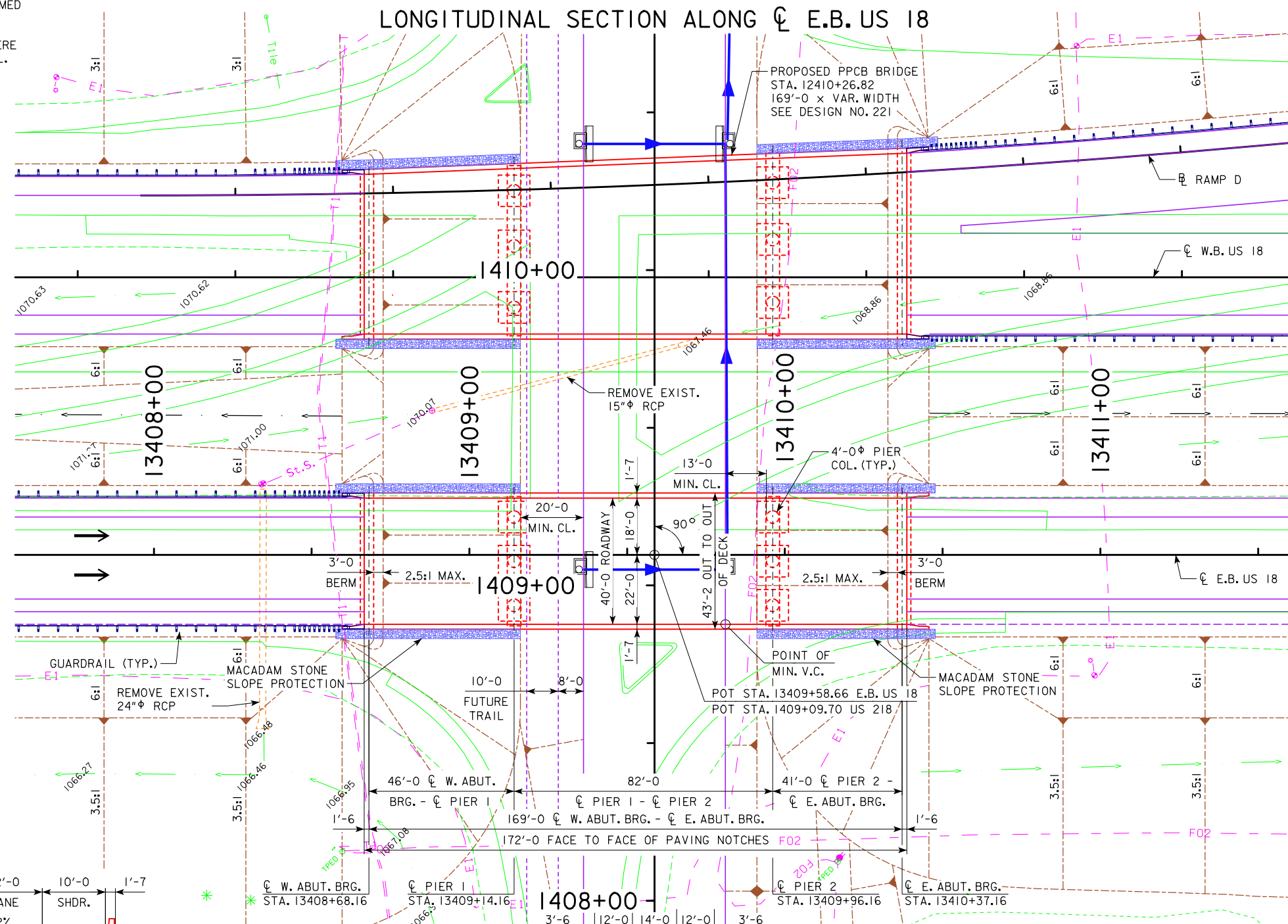
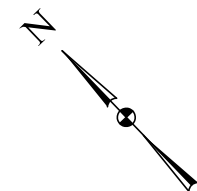
- TI - OMNITEL
- F02 - OMNITEL
- EI - IOWA DOT LUMINAIRE
- ST. S. - CITY OF FLOYD

TRAFFIC ESTIMATE

2018 AADT	11,600	V.P.D.
2038 AADT	18,700	V.P.D.
202_ DHV		V.P.H.
TRUCKS	26	%
TOTAL DESIGN ESALS		

LOCATION

E.B. US 18 OVER US 218
T-96N R-16W
SECTION 21
FLOYD TOWNSHIP
FLOYD COUNTY
FHWA NO. 701035
BRIDGE MAINT. NO. ?
LATITUDE 43.120932°
LONGITUDE -92.738774°



MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 13409+81.16, OFFSET 22.00' RT.
OVERHEAD ELEVATION = 1089.29
DEPTH OF SUPERSTRUCTURE = 3.83'
UNDERPASS STATION = 1408+87.70, OFFSET 22.50' RT.
UNDERPASS ELEVATION = 1068.70
MINIMUM VERTICAL CLEARANCE = 16.76'

PRELIMINARY
DESIGN FOR 0° SKEW

169'-0 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

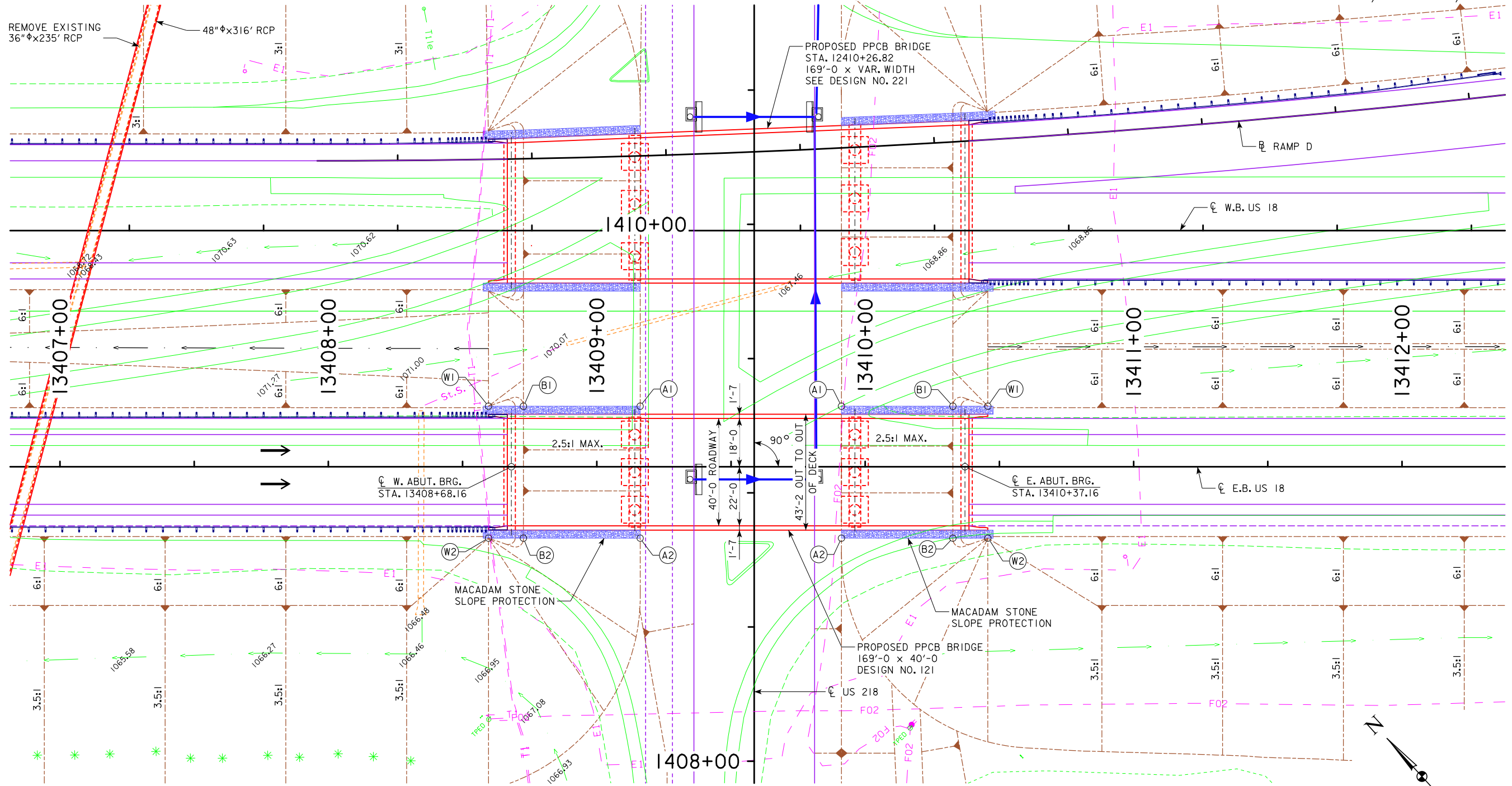
46'-0, 41'-0 END SPANS 82'-0 INTERIOR SPAN

SITUATION PLAN

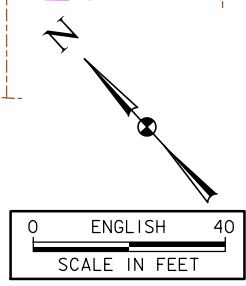
STATION: 13409+52.66 (E.B. US 18) FEBRUARY, 2018

FLOYD COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 2 FILE NO. 31600 DESIGN NO. 121



SITE PLAN



POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	13409+16.16	22.58' LT.	1068.83	13409+91.16	22.58' LT.	1068.68
A2	13409+16.16	26.58' RT.	1069.07	13409+91.16	26.58' RT.	1068.92
B1	13408+72.66	22.58' LT.	1084.49	13410+32.66	22.58' LT.	1083.29
B2	13408+72.66	26.58' RT.	1084.49	13410+32.66	26.58' RT.	1083.29
W1	13408+59.66	22.58' LT.	1090.01	13410+45.66	22.58' LT.	1088.69
W2	13408+59.66	26.58' RT.	1089.93	13410+45.66	26.58' RT.	1088.61

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

PRELIMINARY
DESIGN FOR 0° SKEW

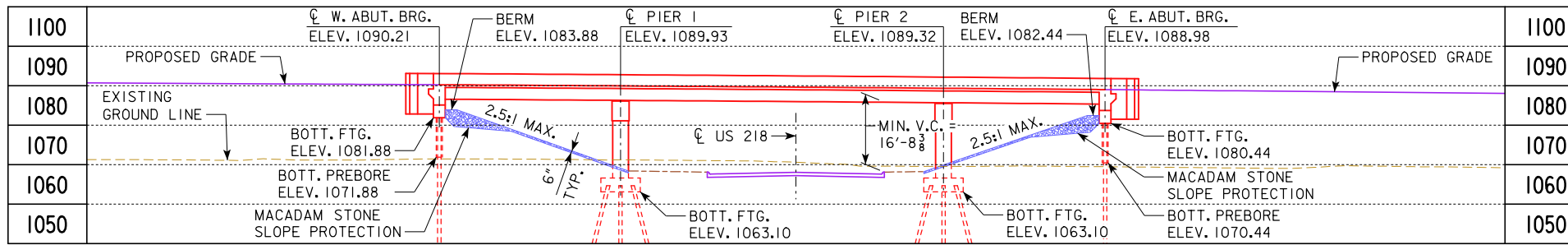
**169'-0 X 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**

46'-0, 41'-0 END SPANS 82'-0 INTERIOR SPAN

SITUATION PLAN - SITE
STATION: 13409+52.66 (E.B. US 18) FEBRUARY, 2018

FLOYD COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 2 FILE NO. 31600 DESIGN NO. 121

- NOTES TO FINAL DESIGNER:
- TL-4 BRIDGE RAILING PROPOSED.
 - TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.
 - PIER TYPE - COLUMN FRAME.
 - BEAM TYPE - BTB. PROPOSED TO REDUCE ROW IMPACTS.
 - NORTH GUTTER LINE IS TANGENT BETWEEN POINTS WHERE FACE OF PAVING NOTCH INTERSECTS 6' OFFSET OF RAMP D.
 - PIERS DESIGNED FOR VEHICULAR COLLISION FORCE.
 - BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.
 - ABUTMENT SLOPES TO BE CONFIRMED DURING FINAL DESIGN.
 - BRIDGE LAYOUT PROVIDES FOR FUTURE 10' TRAIL. CURRENTLY THERE ARE NO PLANS FOR FUTURE TRAIL.



BENCH MARK NO. 666 - FENO MONUMENT, 3872300.578 N, 5124898.640 E, STA. 414+09.93, 134' LT. - ELEV. 1060.97

VPI STA. 1414+50.00
VPI ELEV. = 1065.84
VC = 350'
VPT STA. 1408+75.00
VPT ELEV. = 1068.72
VPC STA. 1419+15.00
VPC ELEV. = 1076.07

PROPOSED PROFILE GRADE ON US 218

CURVE DATA RAMP D
PI STA. 7411+30.37
 $\Delta = 7^{\circ}26'54.42''$ (LT)
T = 260.37'
L = 520.00'
R = 4,000.00'
E = 8.46'
VPI STA. 12410+65.00
VPI ELEV. = 1096.36
VC = 1800'
VPT STA. 12387+65.00
VPT ELEV. = 1077.96
VPC STA. 12424+85.00
VPC ELEV. = 1062.28

PROPOSED PROFILE GRADE ON W.B. US 18

UTILITIES LEGEND:

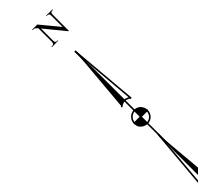
- TI - OMNITEL
- F02 - OMNITEL
- EI - IOWA DOT LUMINAIRE
- ST. S. - CITY OF FLOYD

TRAFFIC ESTIMATE

2018 AADT	11,600	V.P.D.
2038 AADT	18,700	V.P.D.
202_ DHV		V.P.H.
TRUCKS	26	%
TOTAL DESIGN ESALS		

LOCATION

W.B. US 18 OVER US 218
T-96N R-16W
SECTION 21
FLOYD TOWNSHIP
FLOYD COUNTY
FHWA NO. 701040
BRIDGE MAINT. NO. ?
LATITUDE 43.121099°
LONGITUDE -92.738536°



PRELIMINARY
DESIGN FOR 0° SKEW

169'-0 X VAR. WIDTH PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

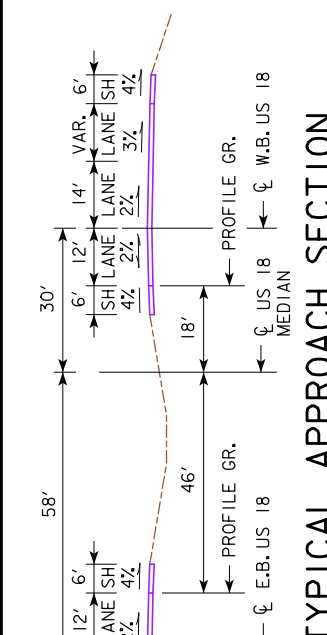
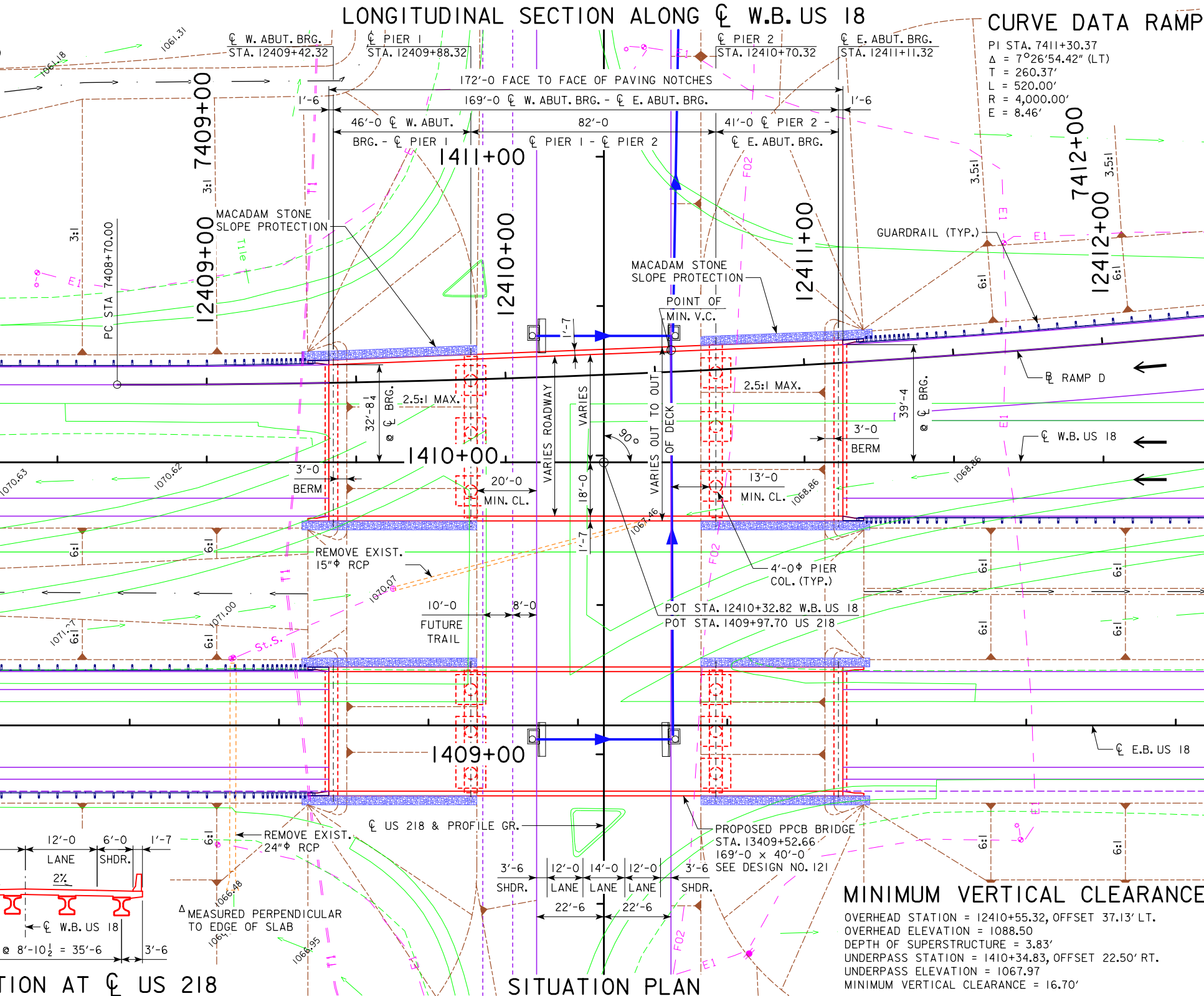
46'-0, 41'-0 END SPANS 82'-0 INTERIOR SPAN

SITUATION PLAN

STATION: 12410+26.82 (W.B. US 18) FEBRUARY, 2018

FLOYD COUNTY

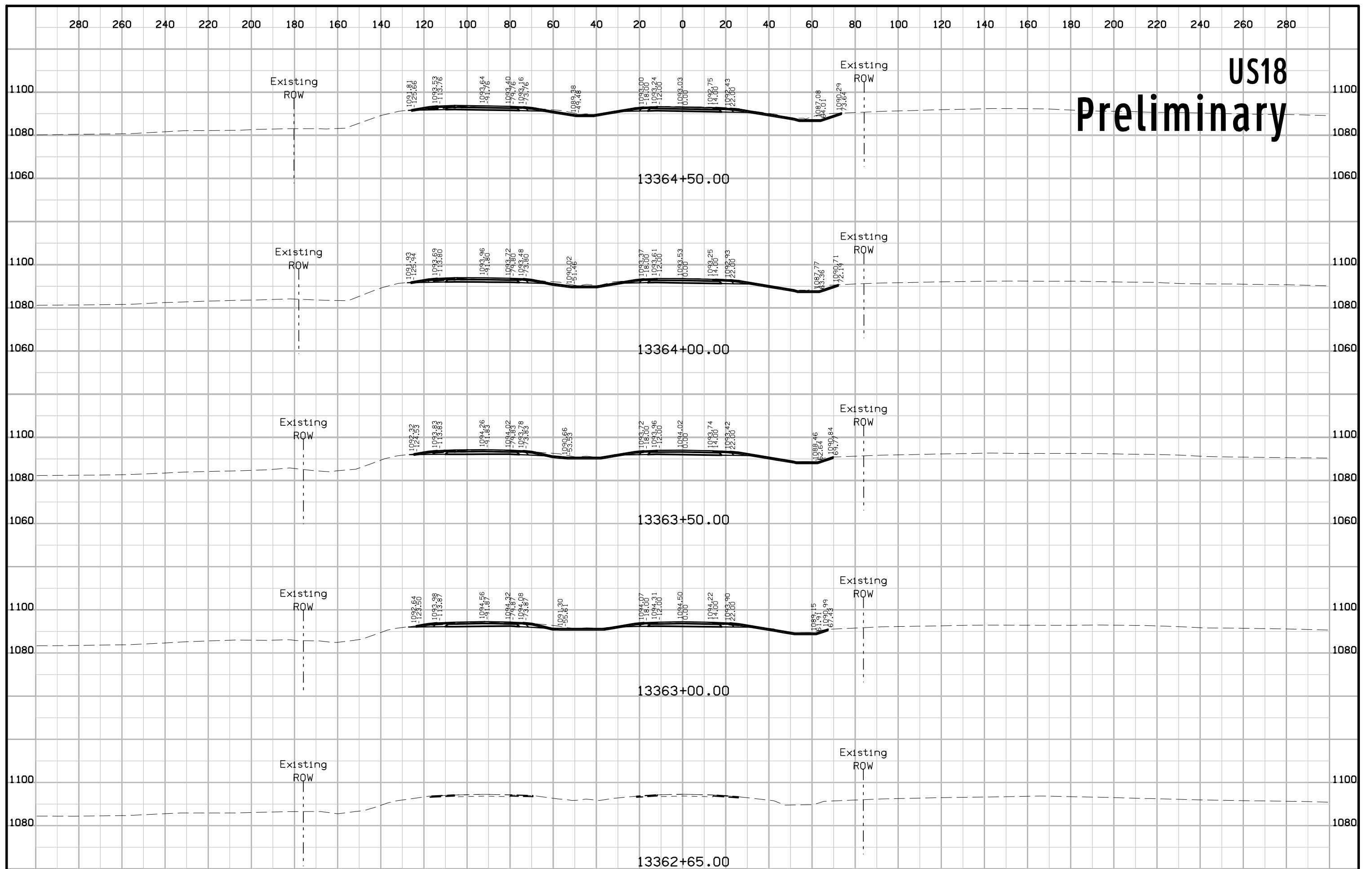
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 2 FILE NO. 31600 DESIGN NO. 221



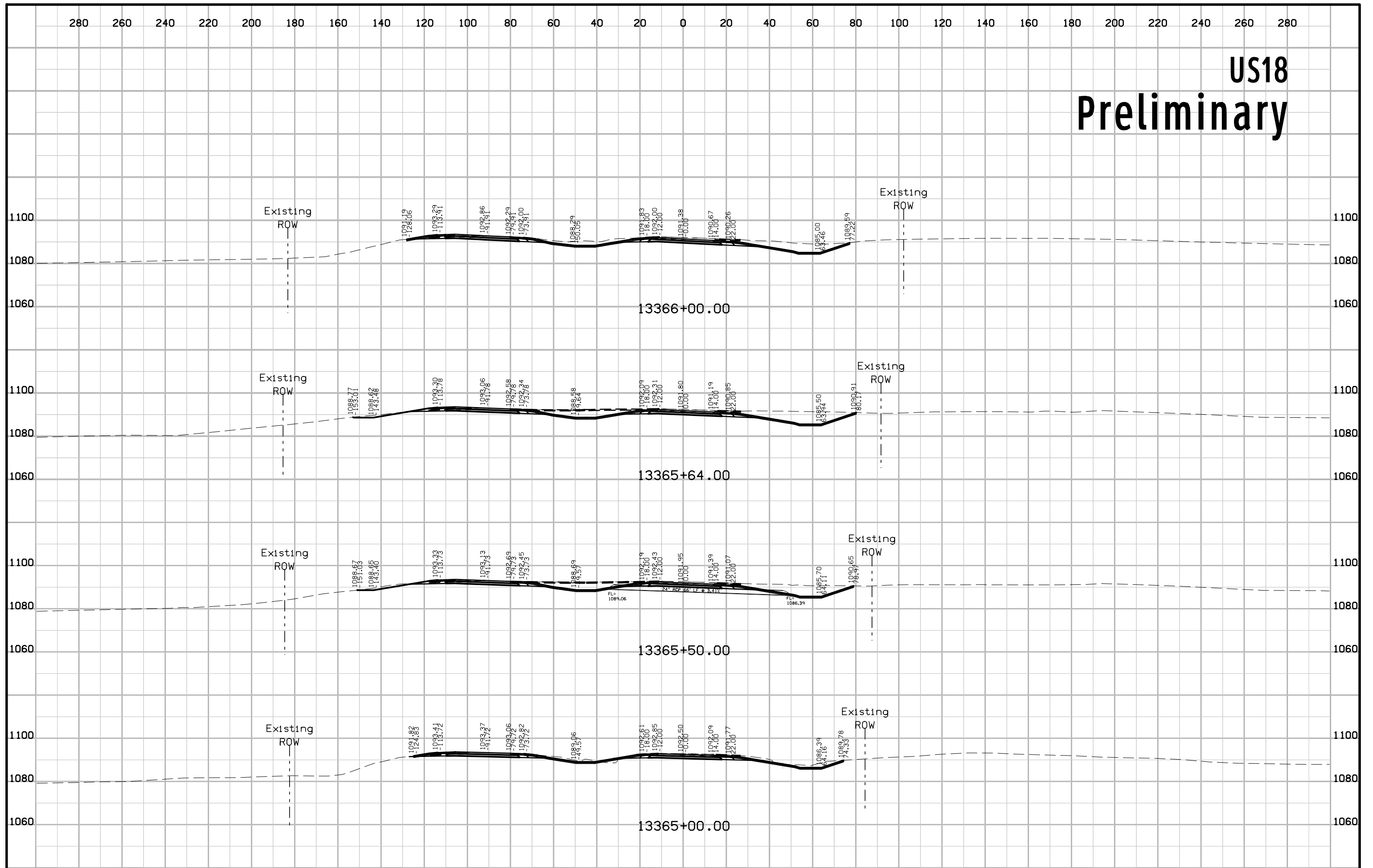
BRIDGE CROSS SECTION AT C US 218

MINIMUM VERTICAL CLEARANCE
OVERHEAD STATION = 12410+55.32, OFFSET 37.13' LT.
OVERHEAD ELEVATION = 1088.50
DEPTH OF SUPERSTRUCTURE = 3.83'
UNDERPASS STATION = 1410+34.83, OFFSET 22.50' RT.
UNDERPASS ELEVATION = 1067.97
MINIMUM VERTICAL CLEARANCE = 16.70'

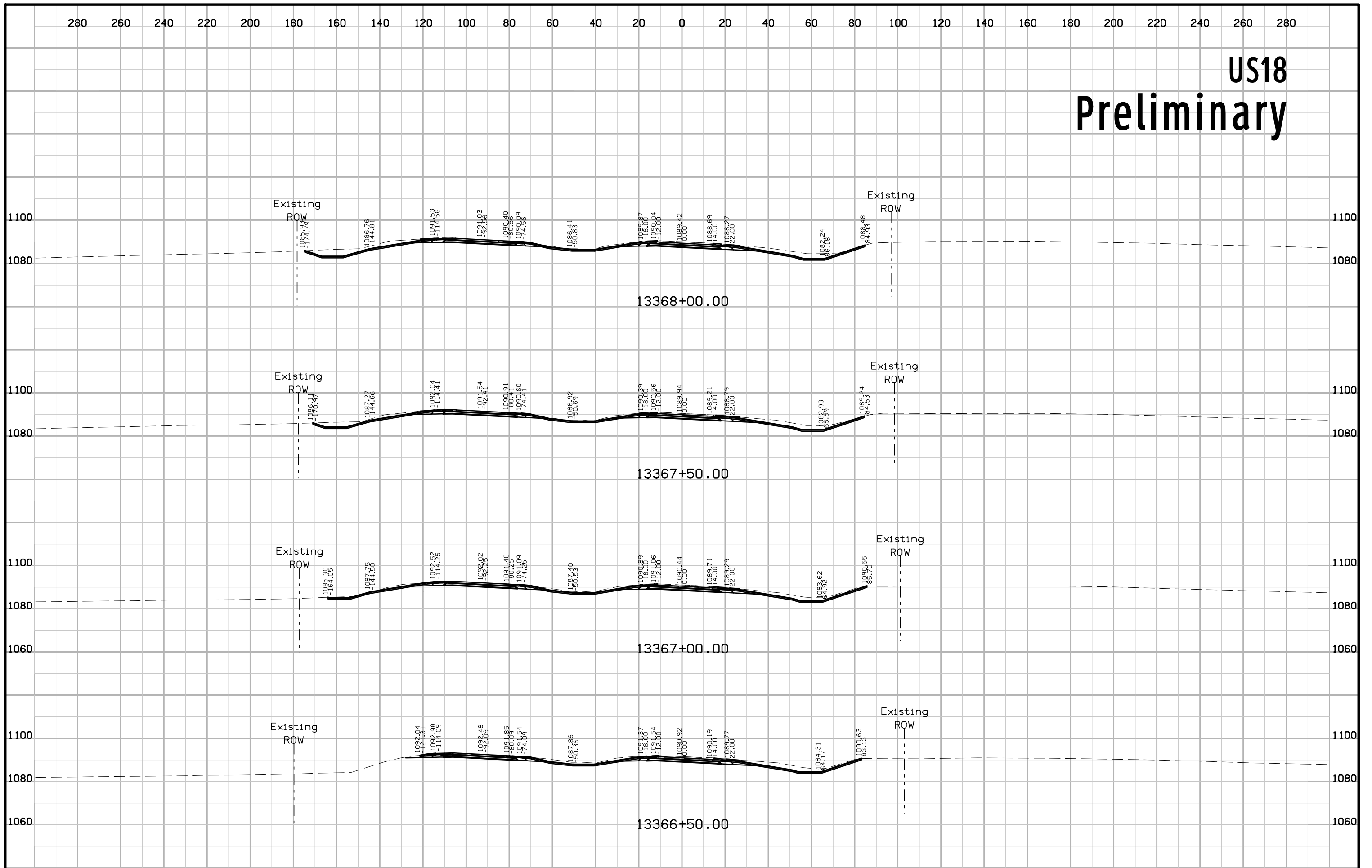
US18 Preliminary



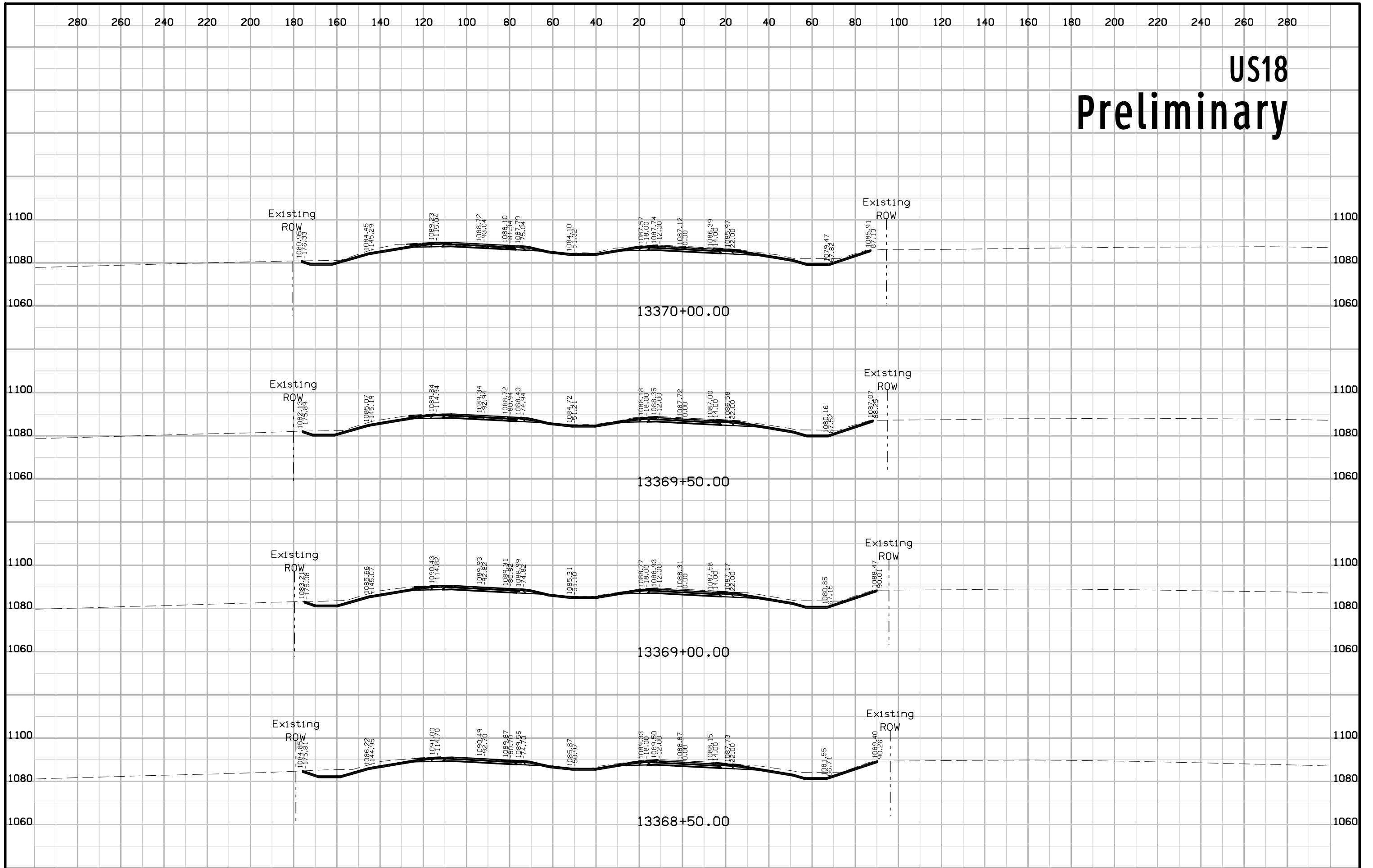
US18 Preliminary

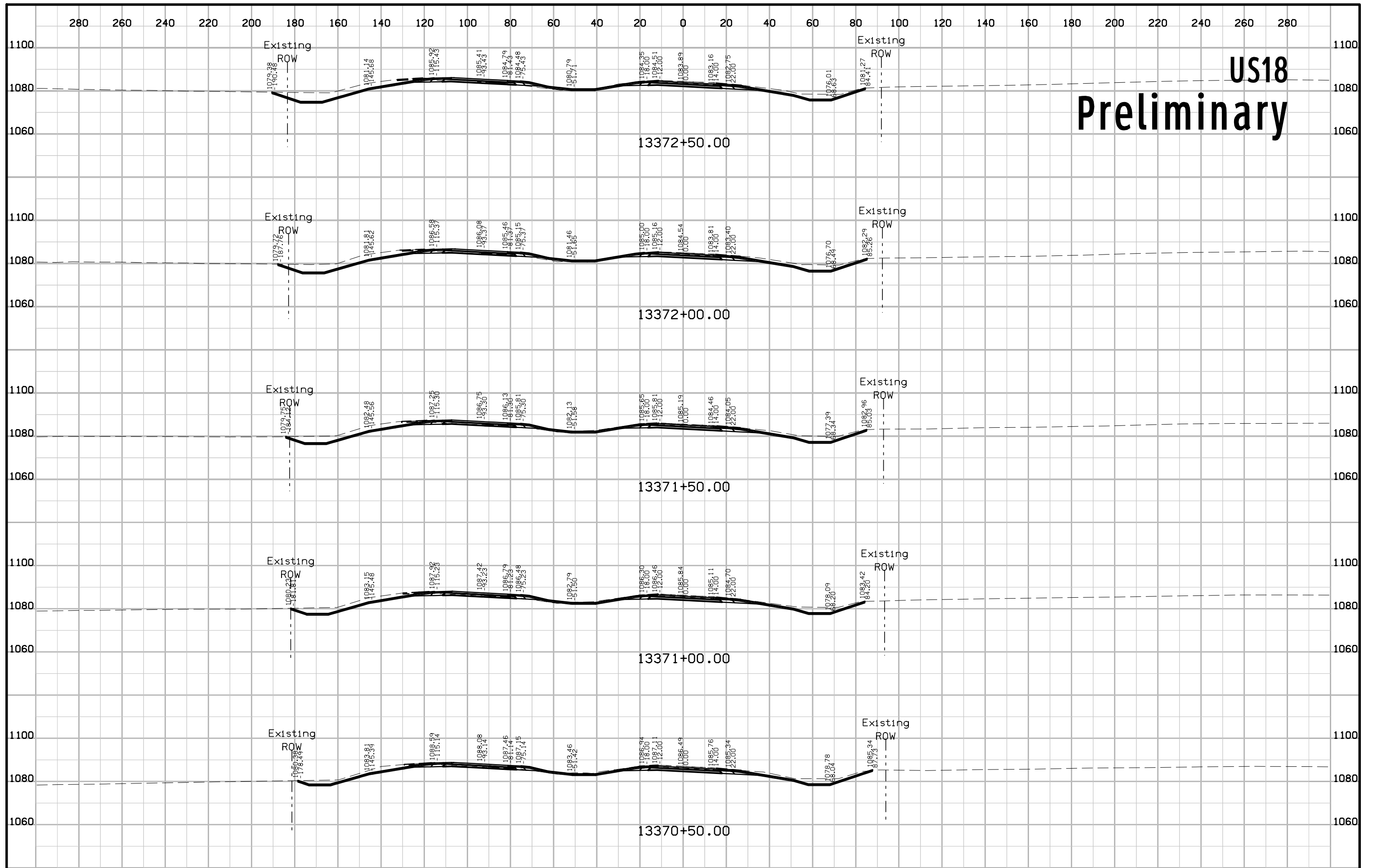


US18 Preliminary

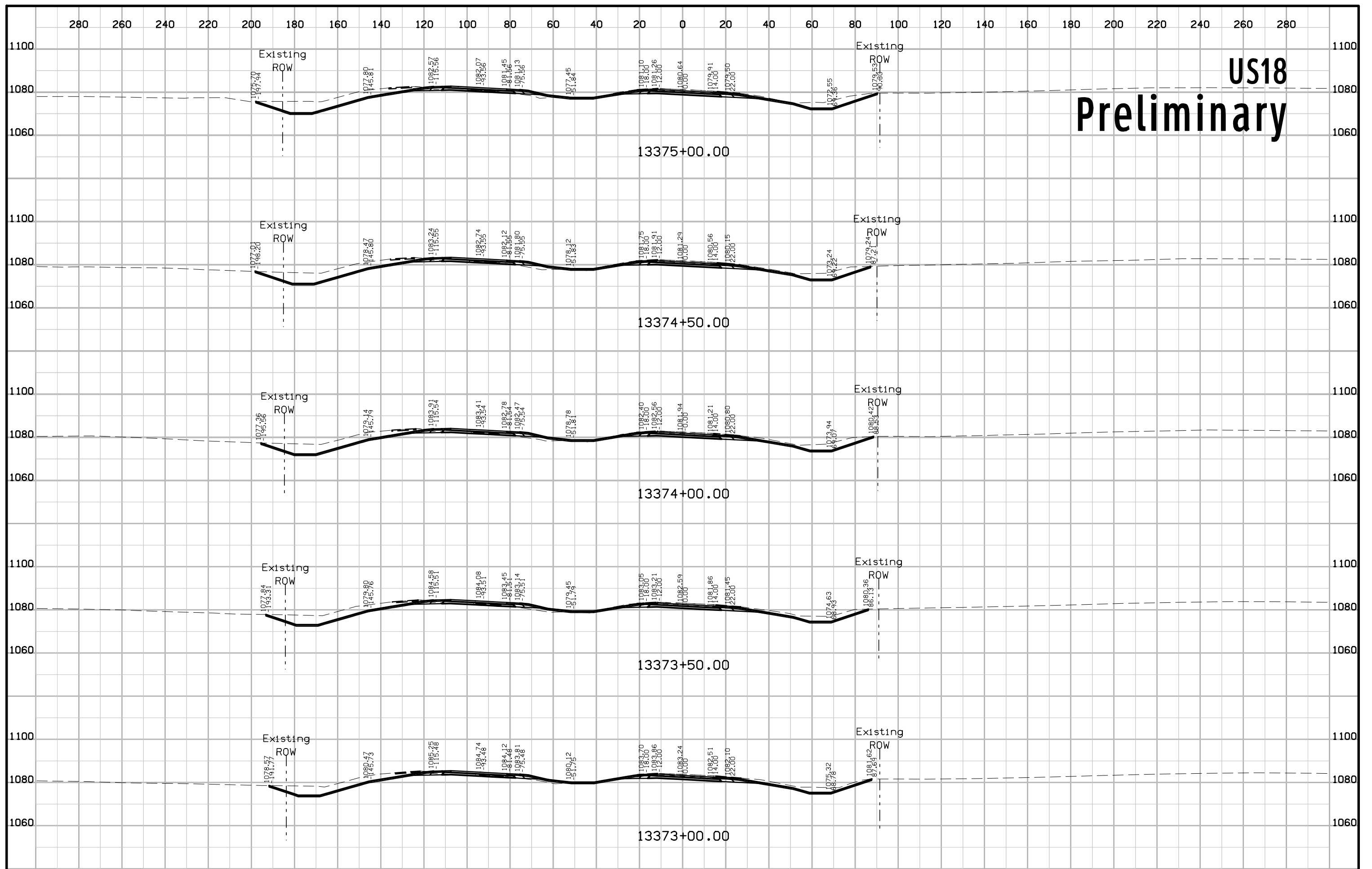


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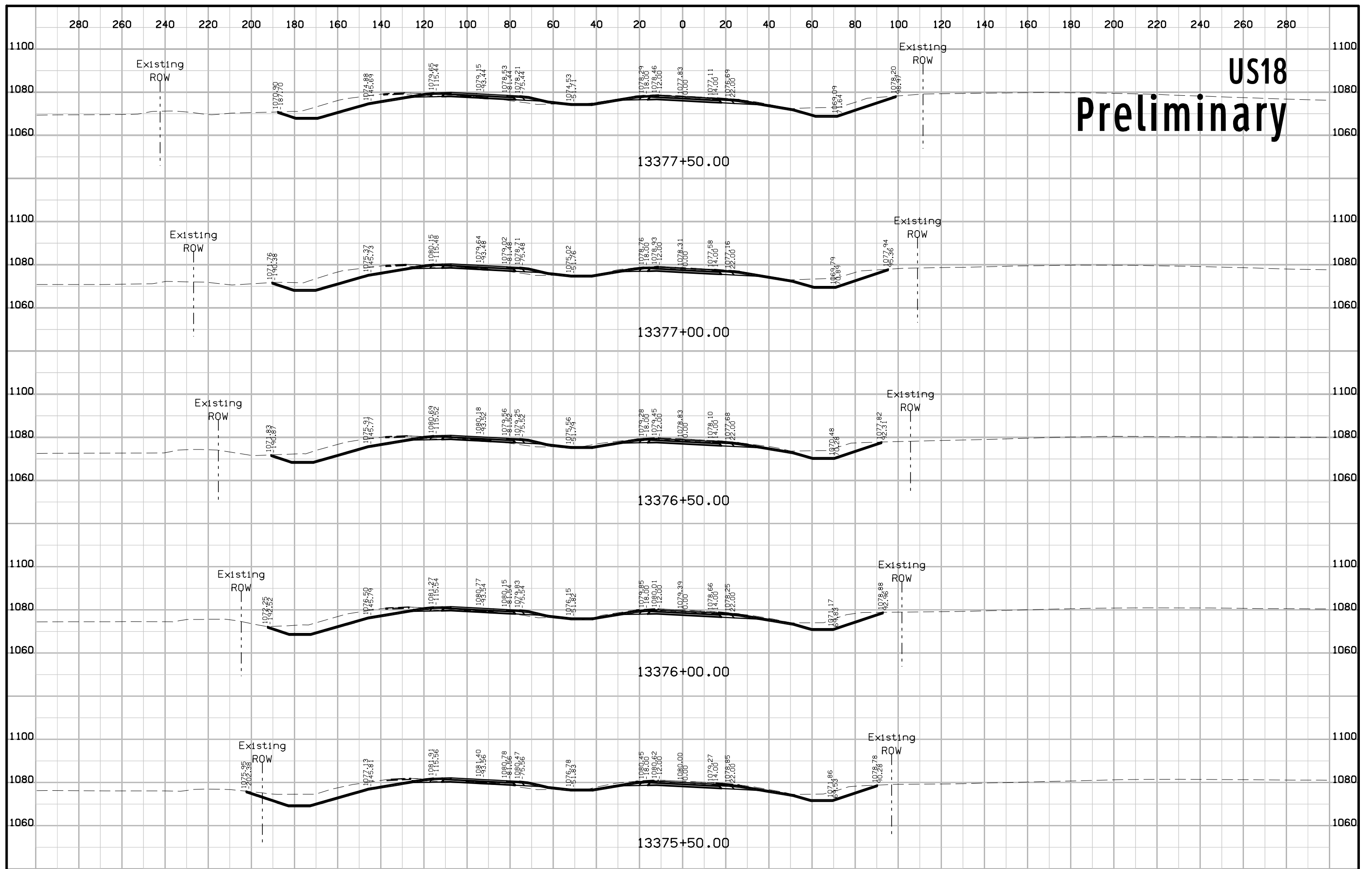




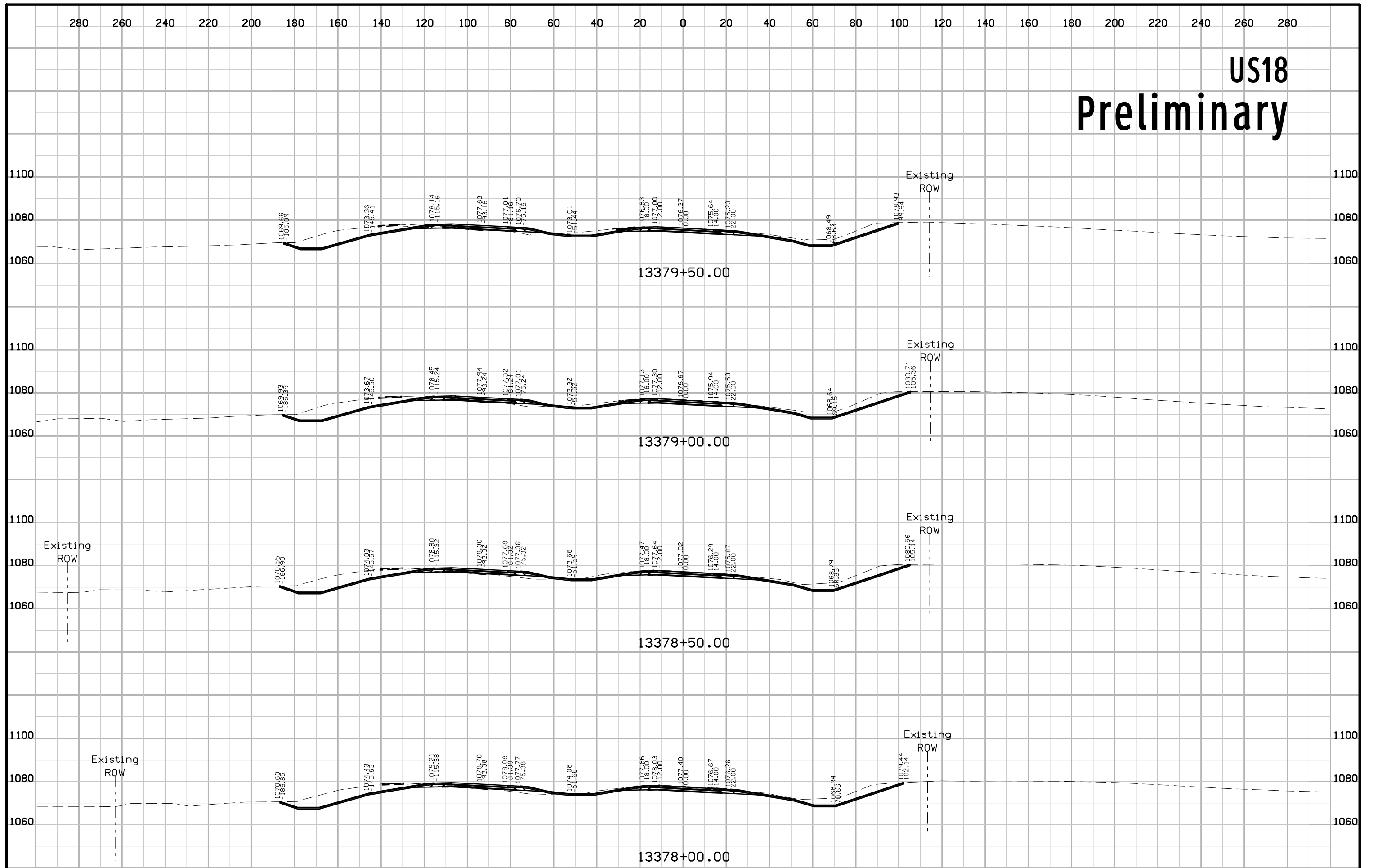
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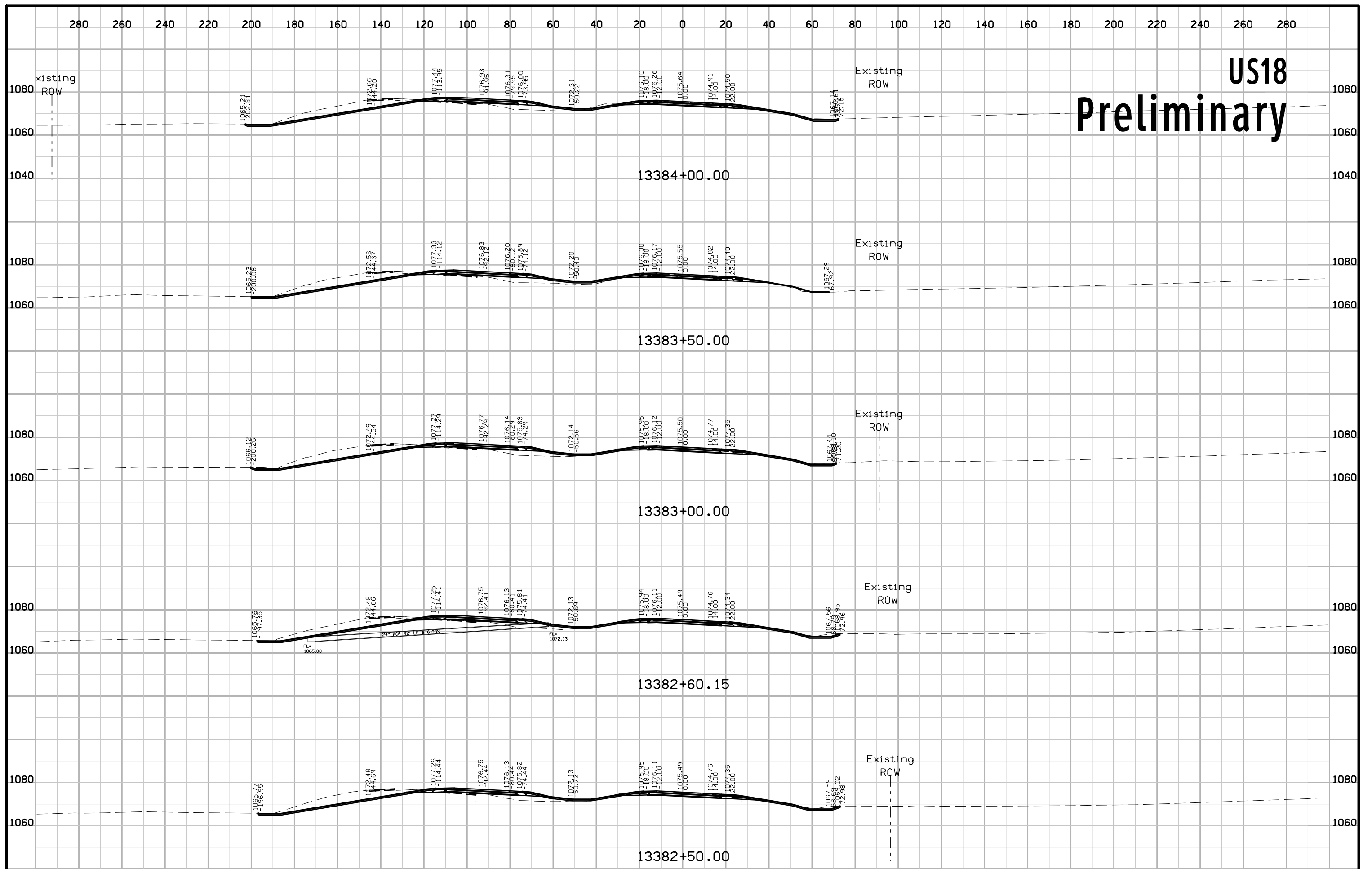
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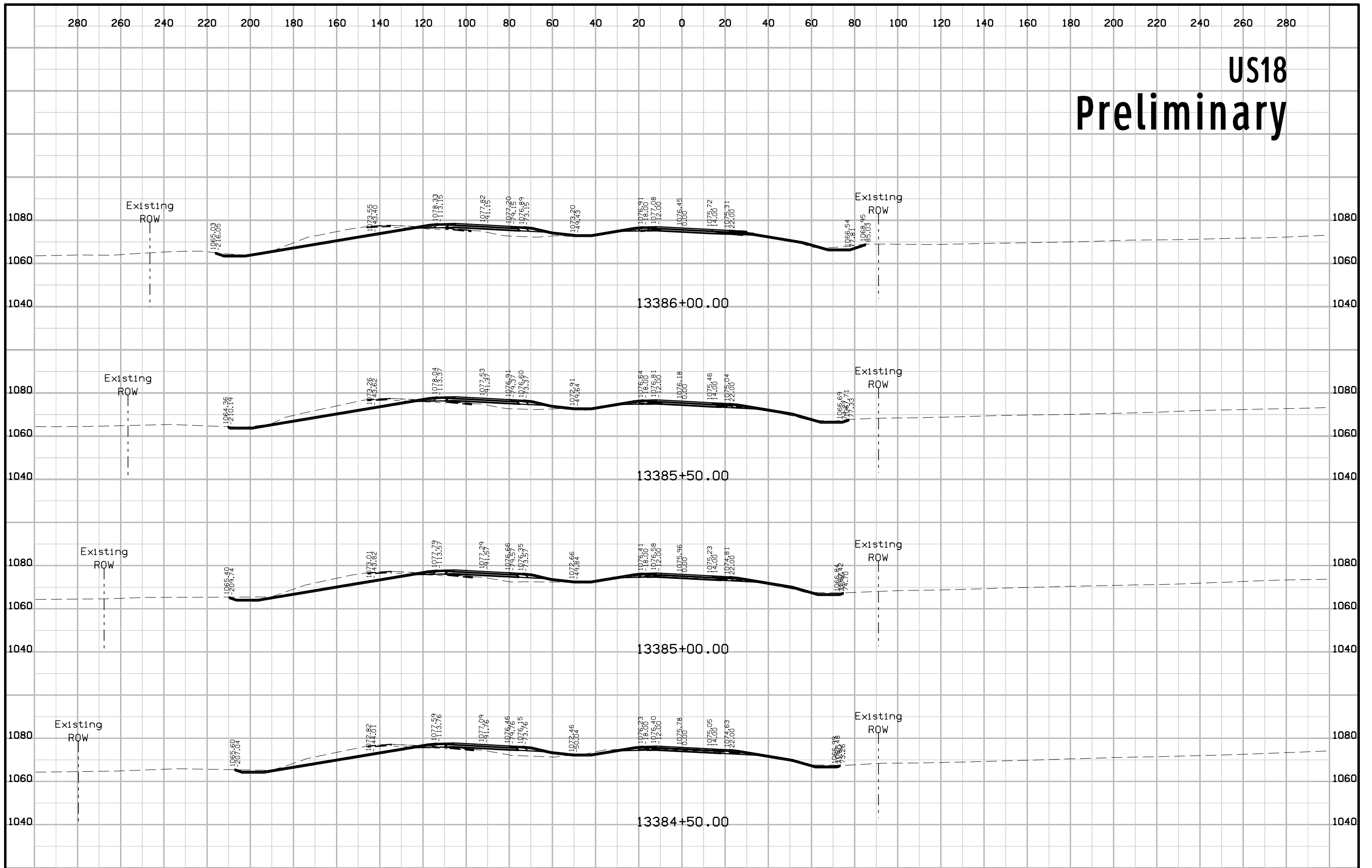
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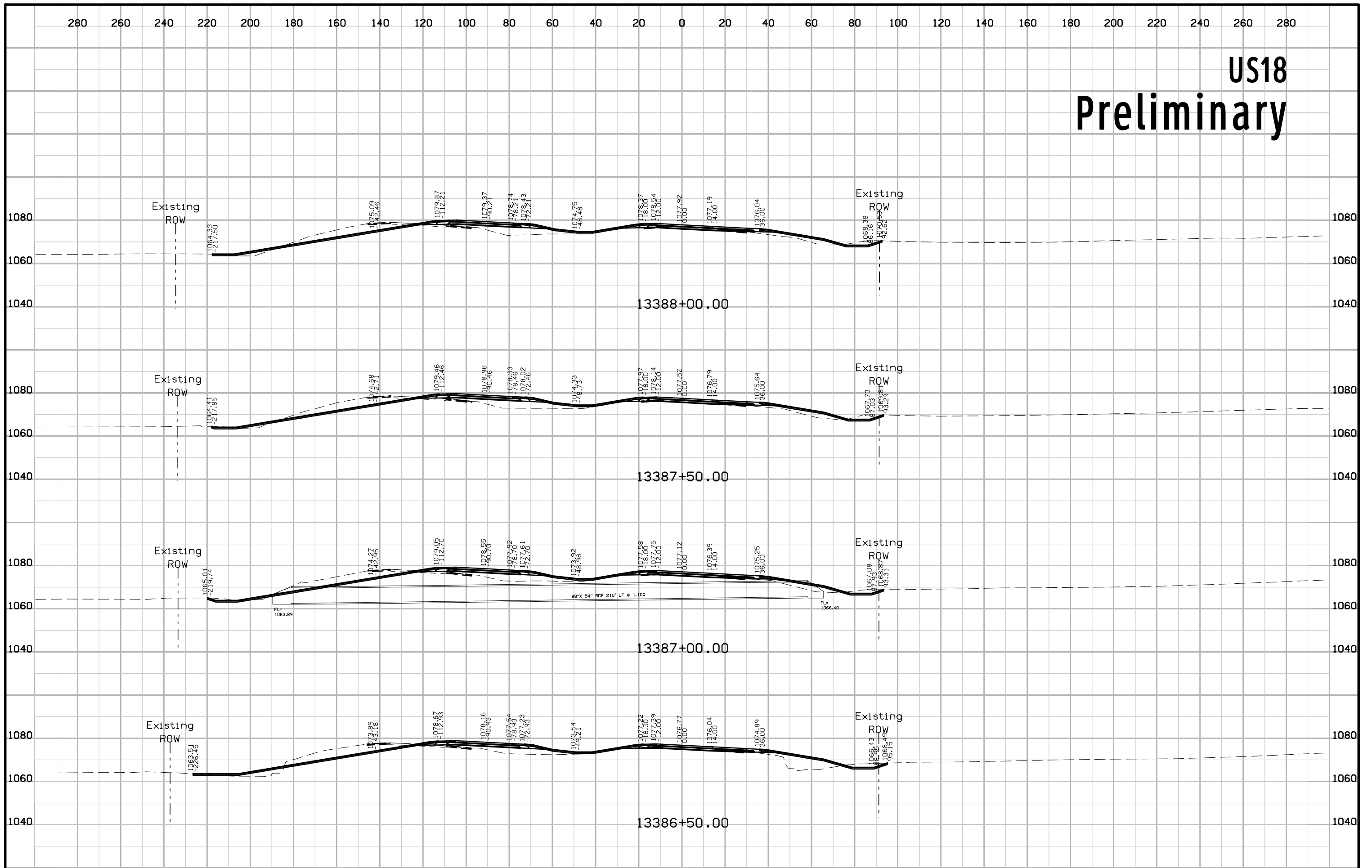
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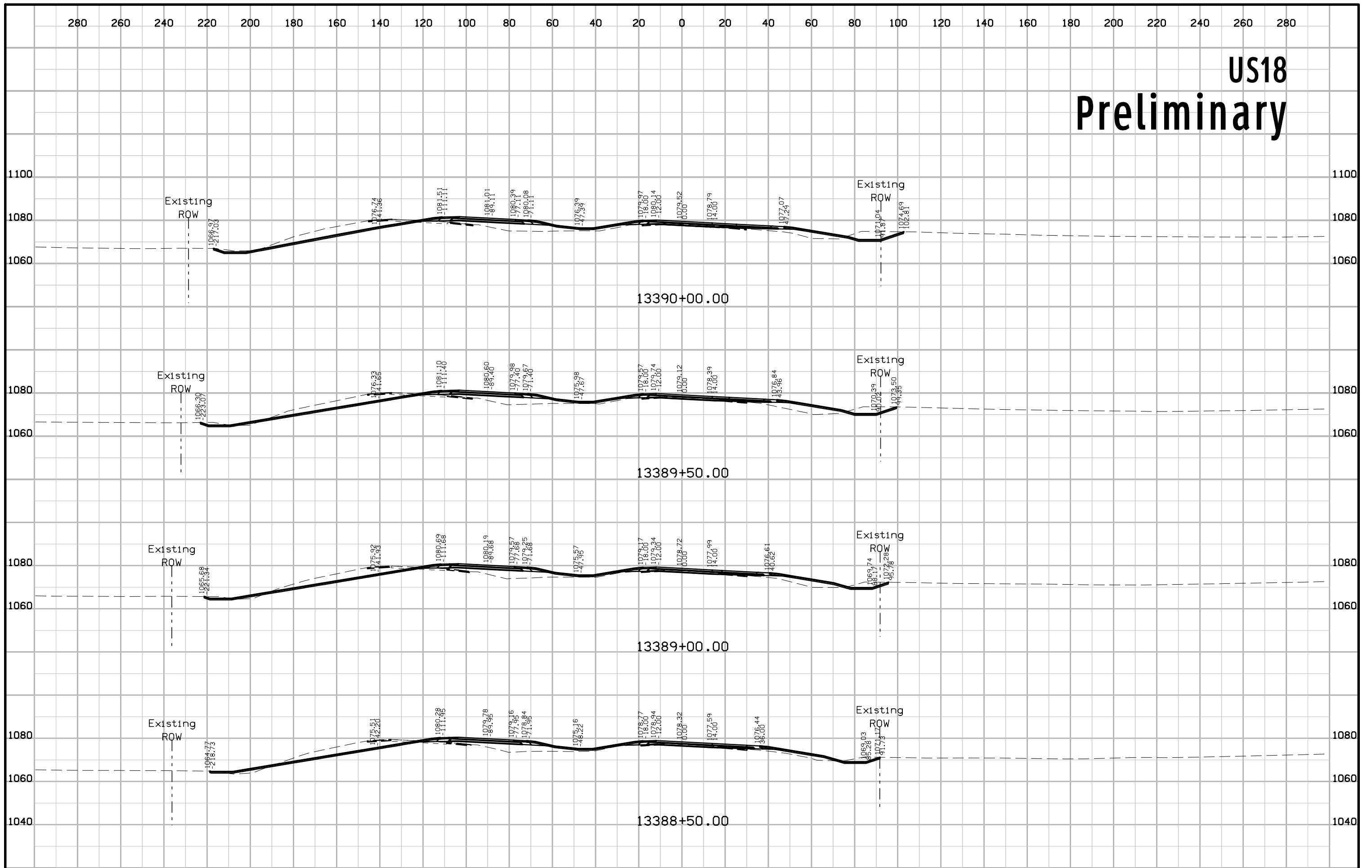
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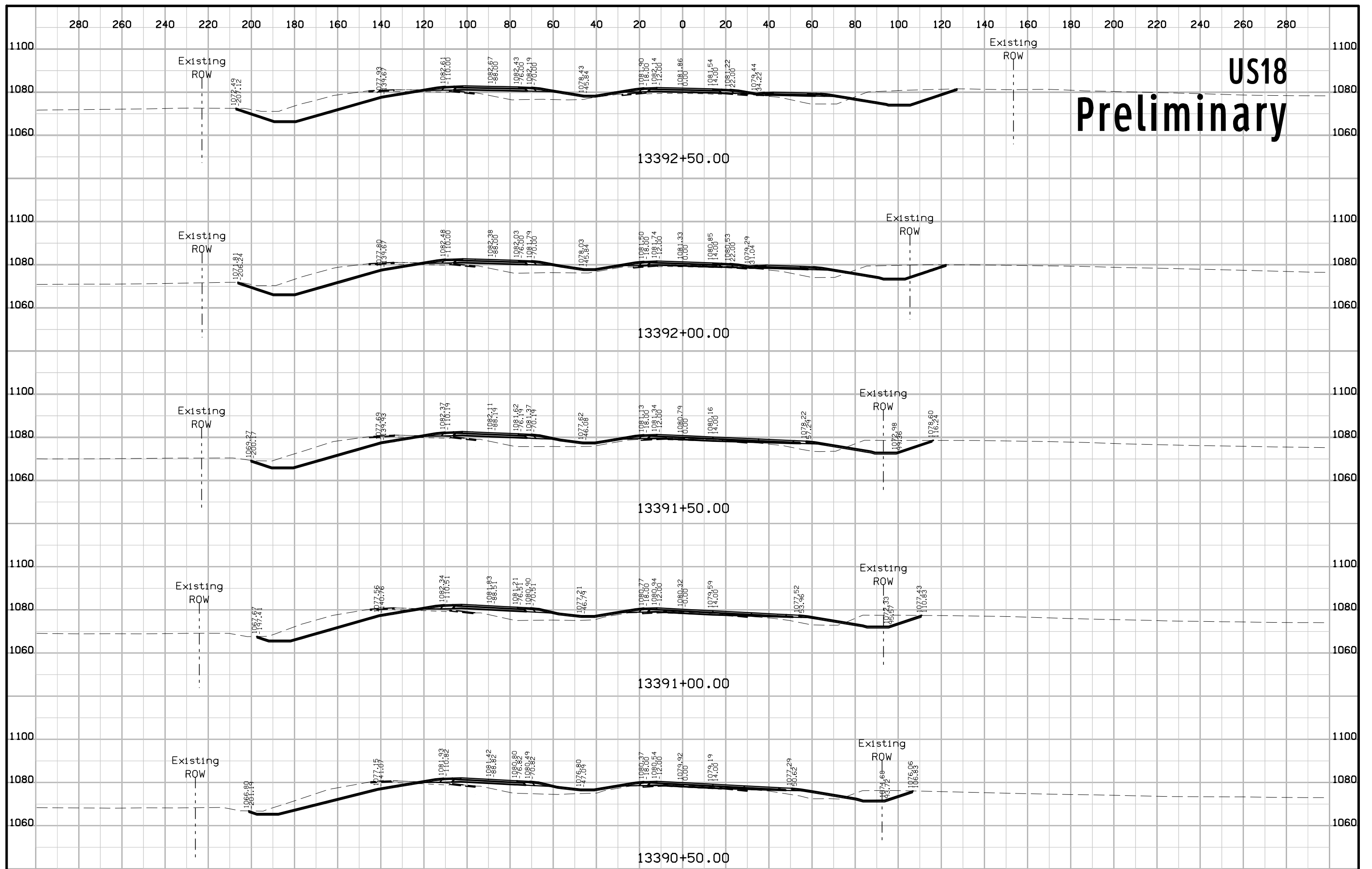


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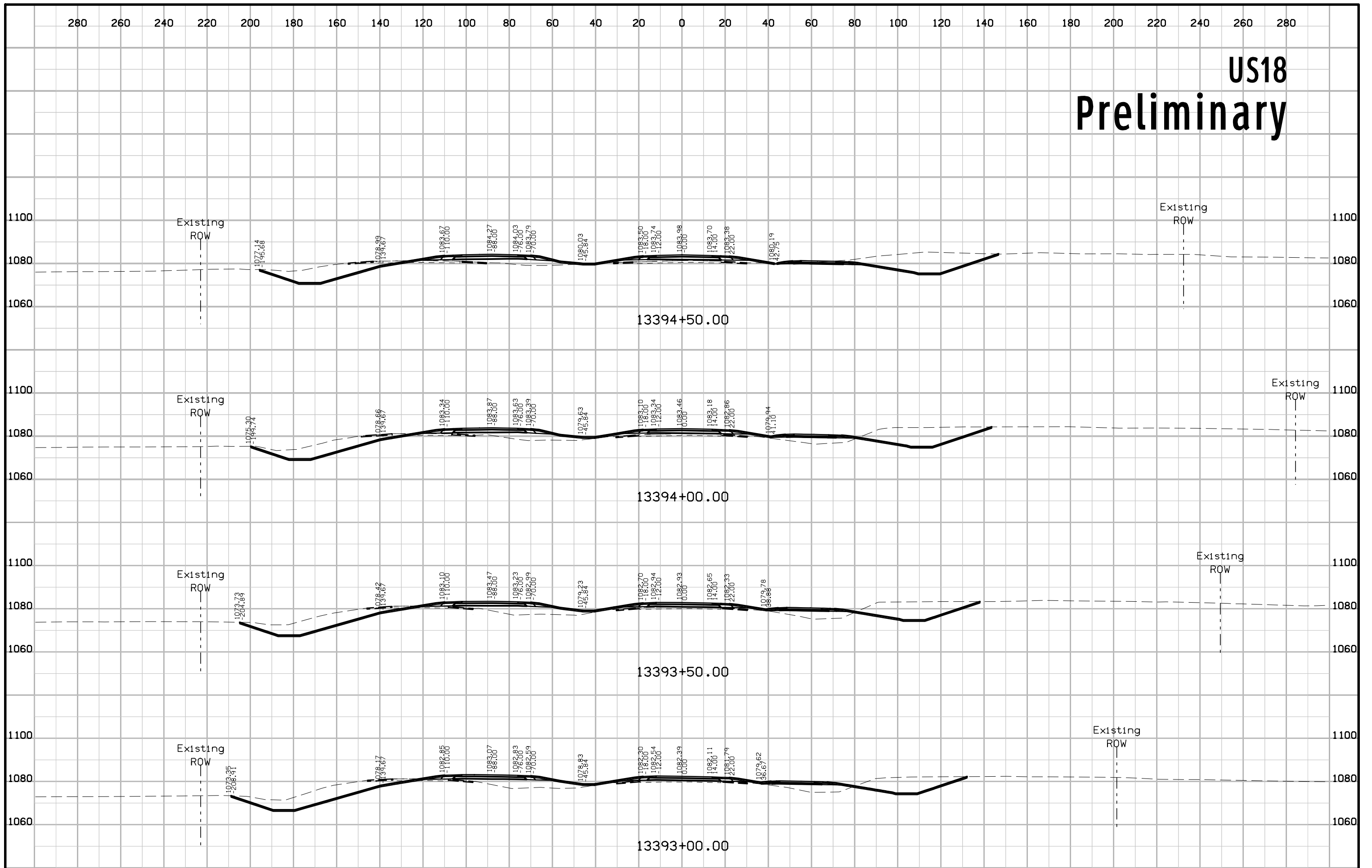


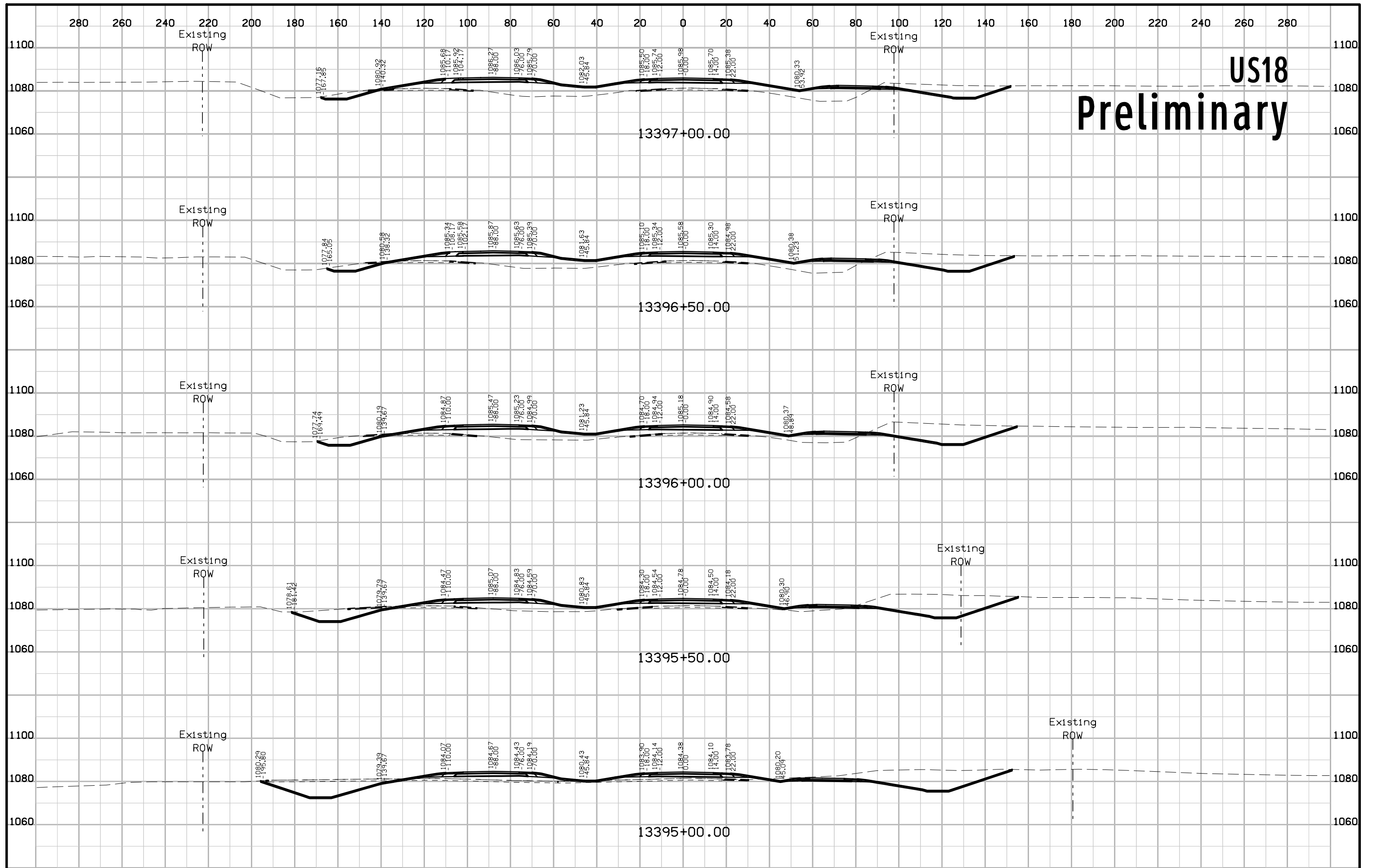
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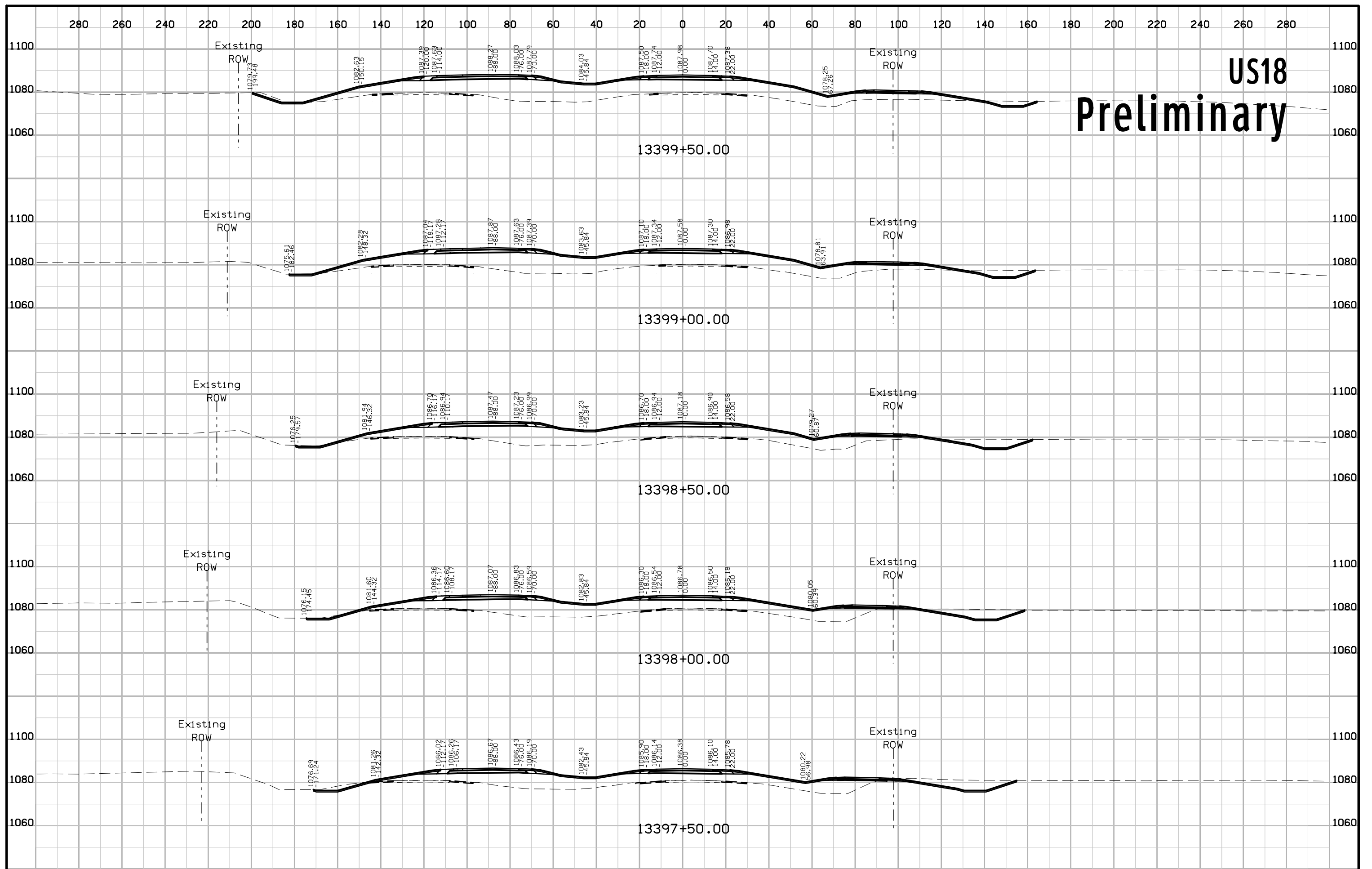


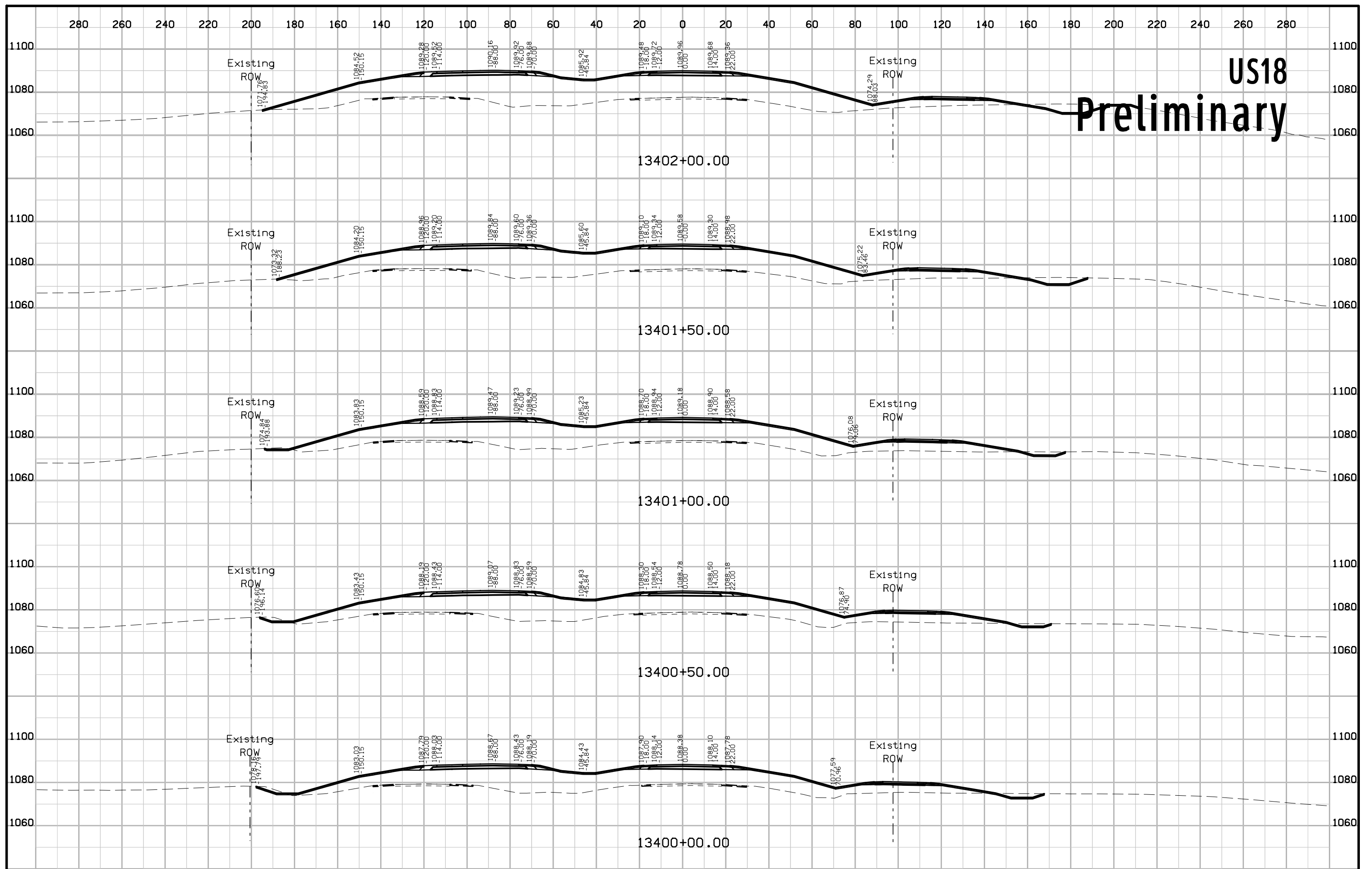


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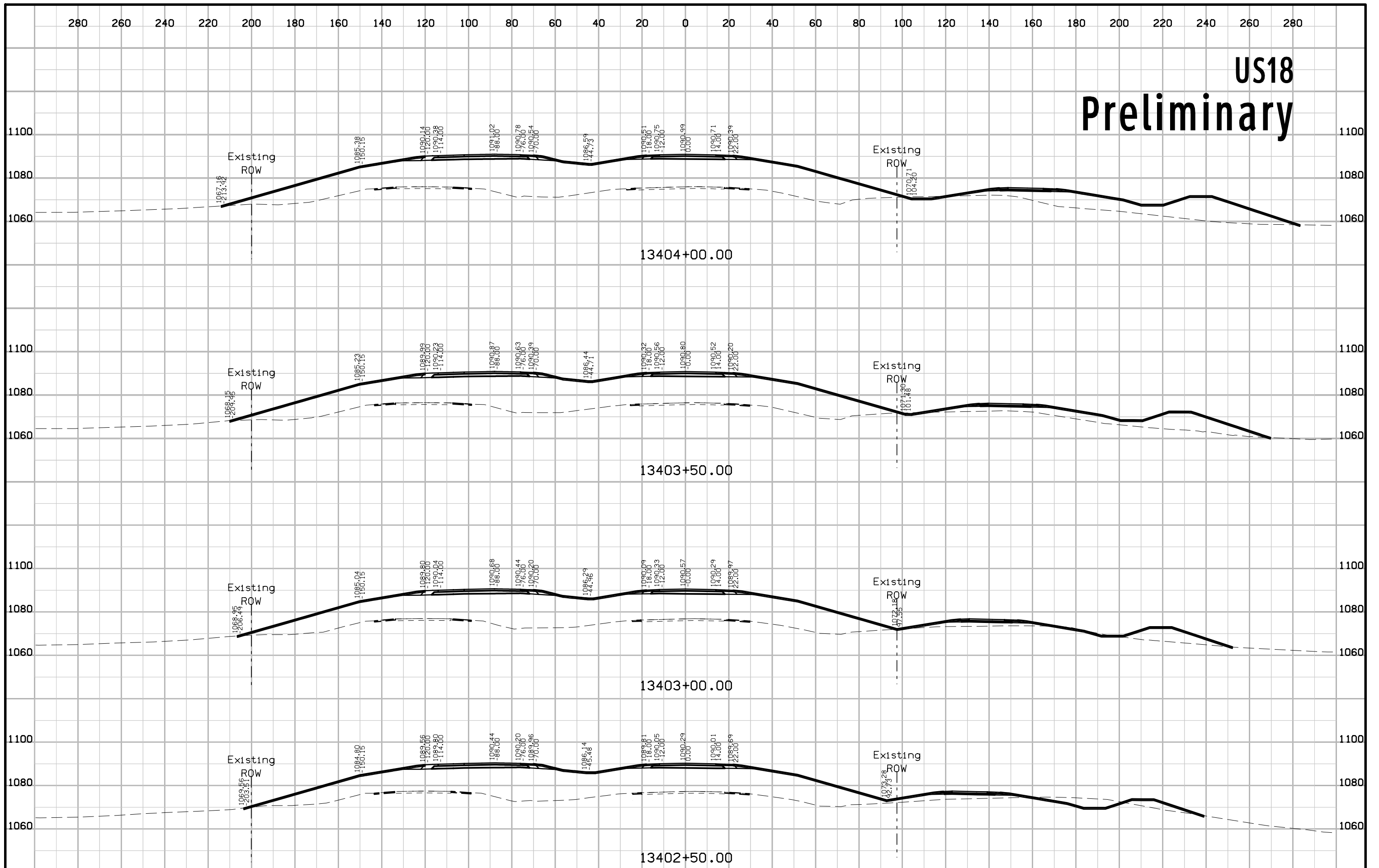




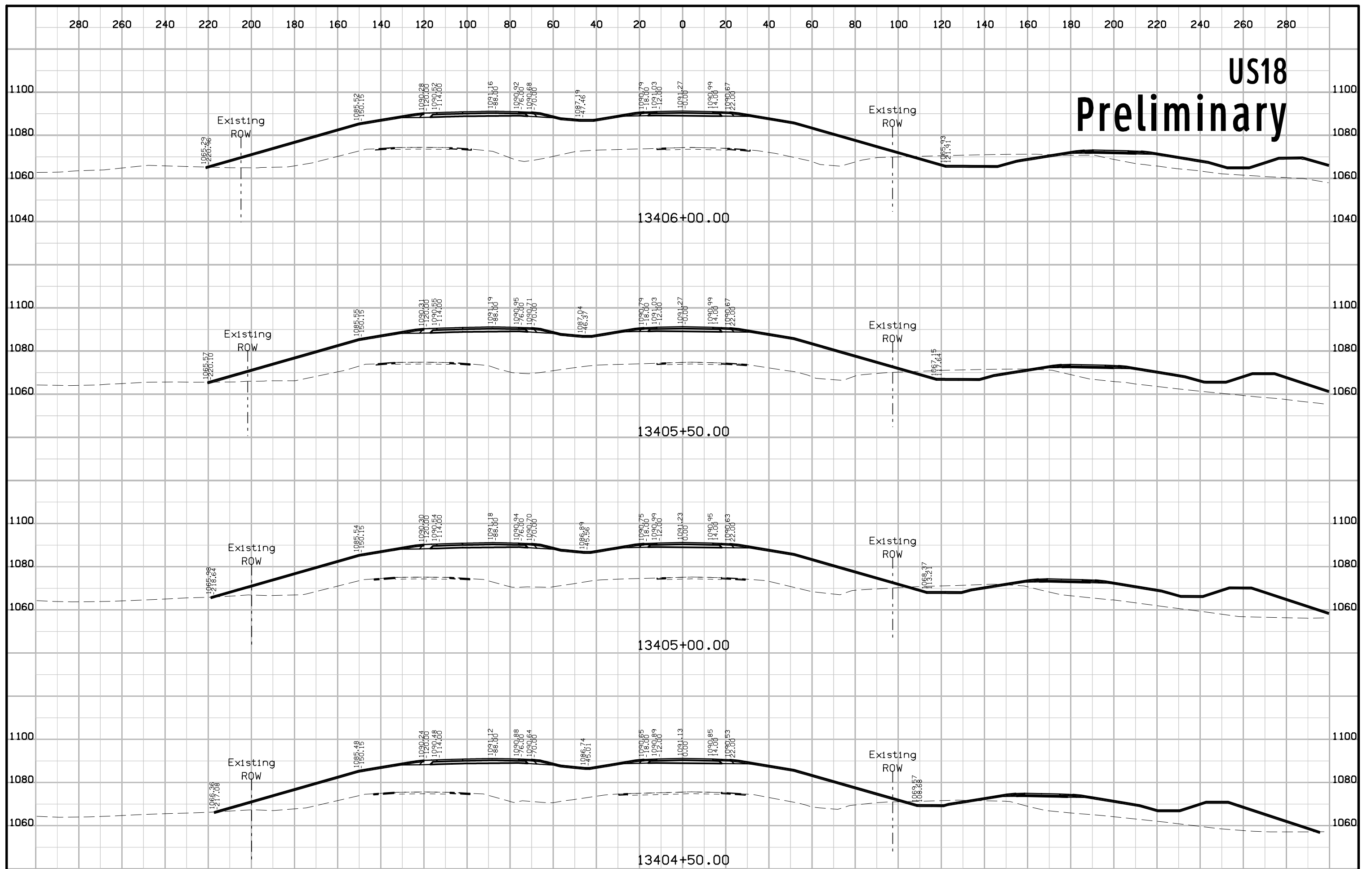


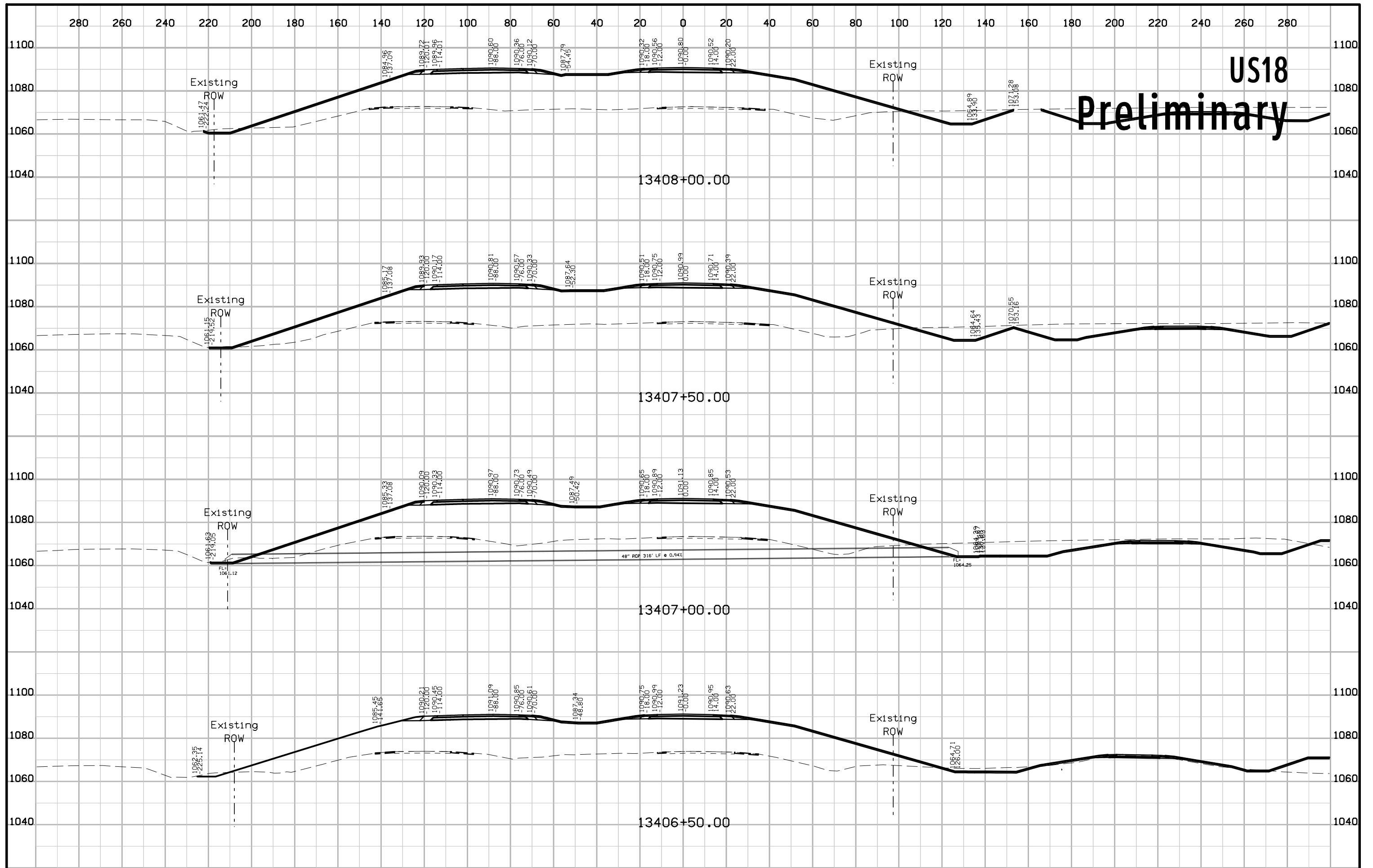


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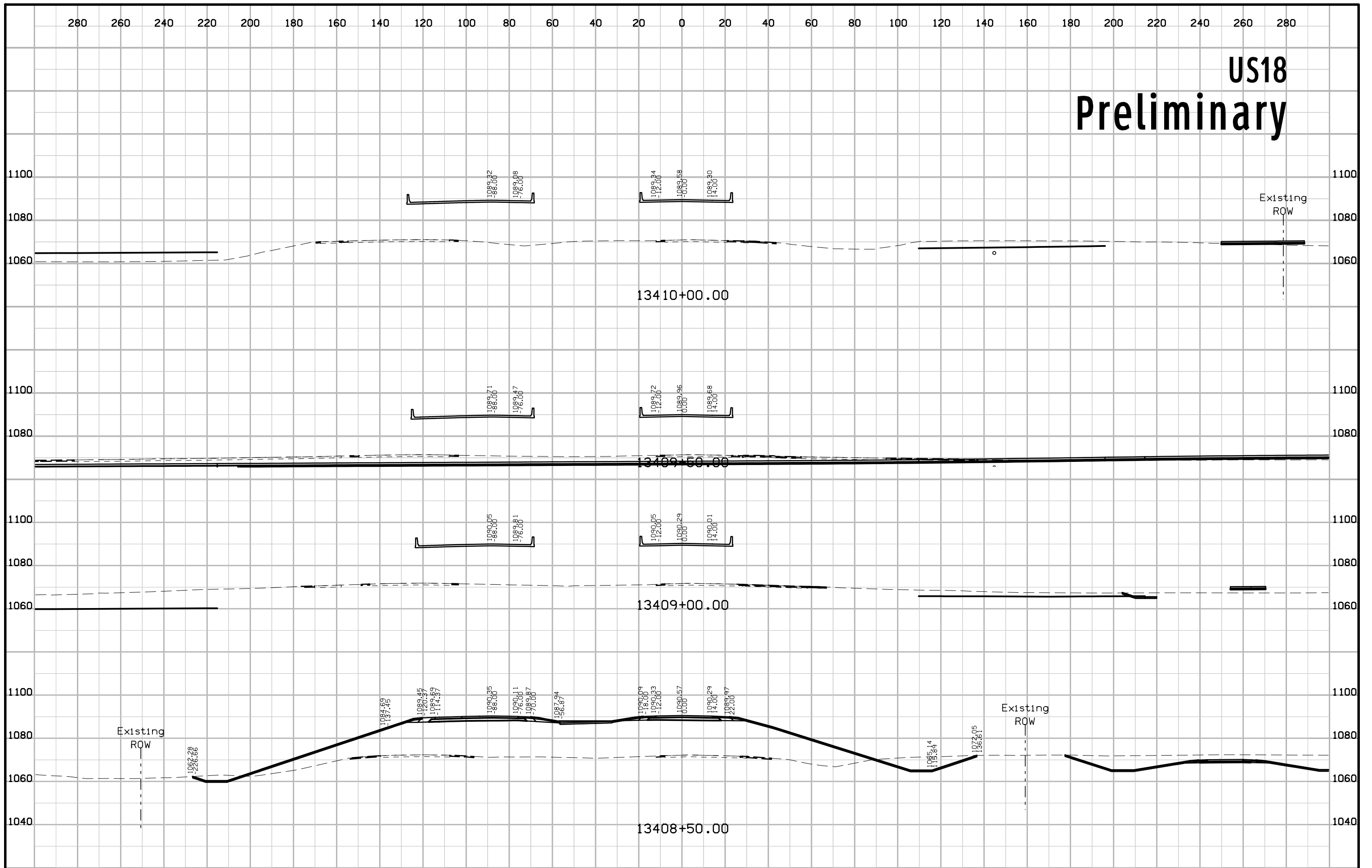
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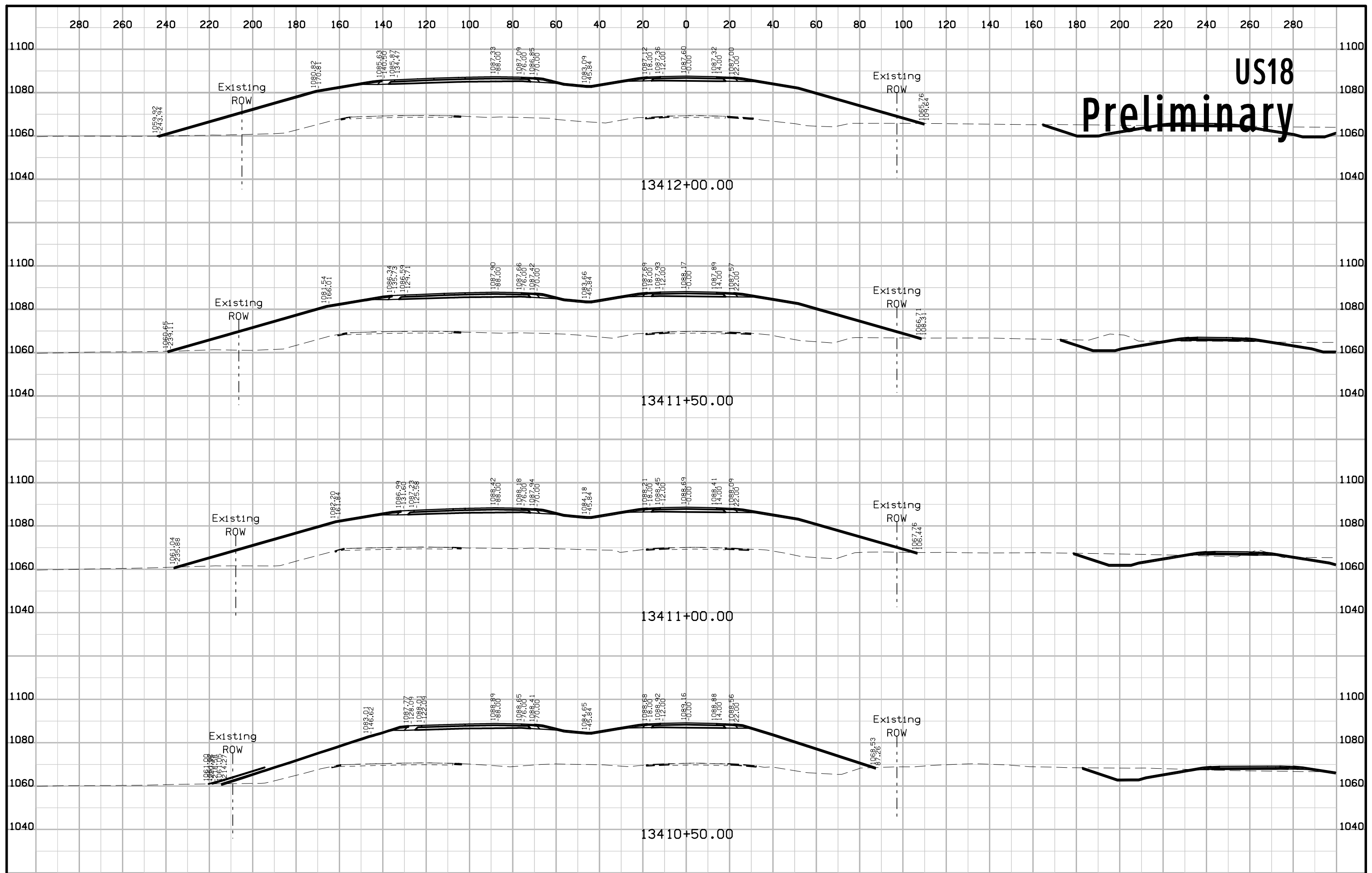


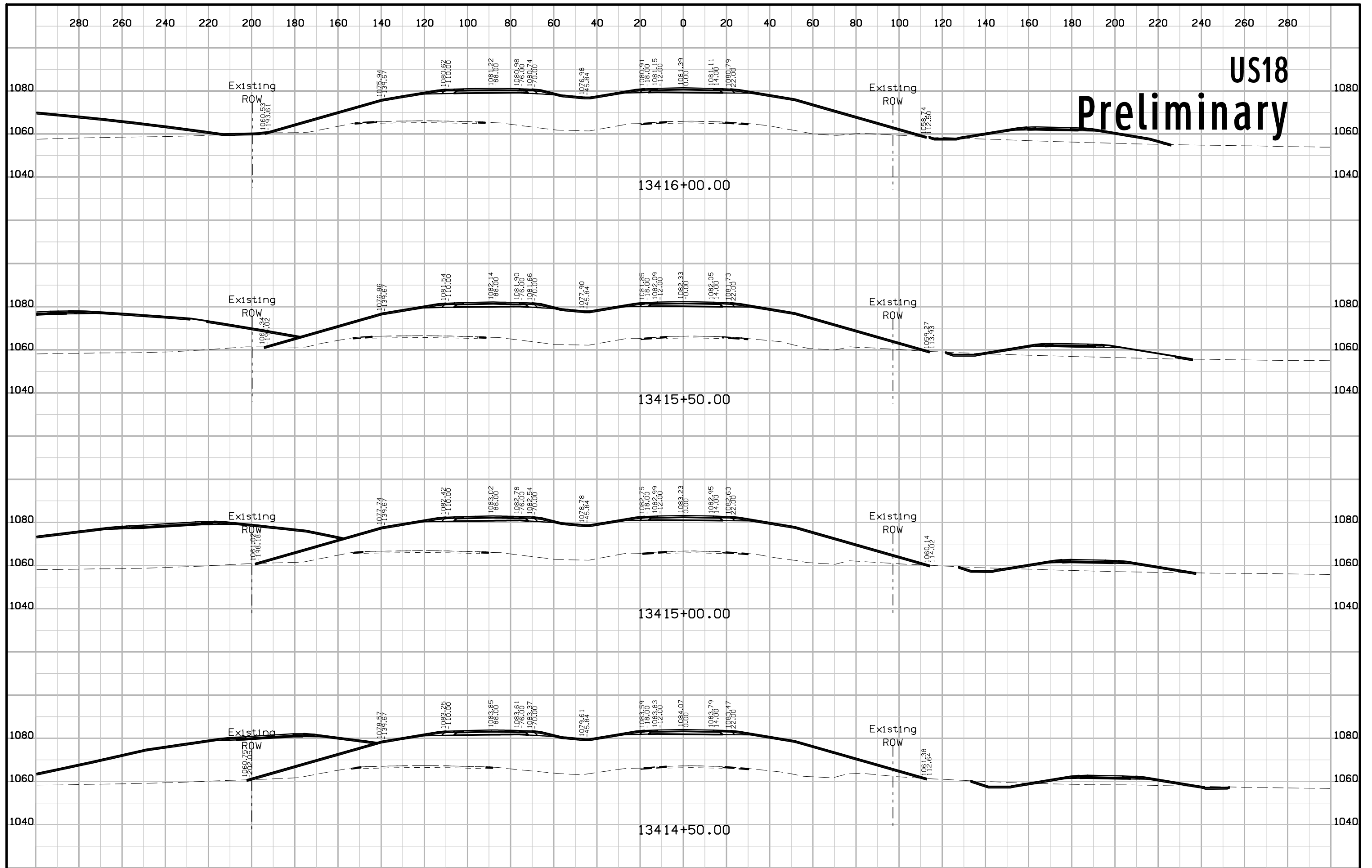


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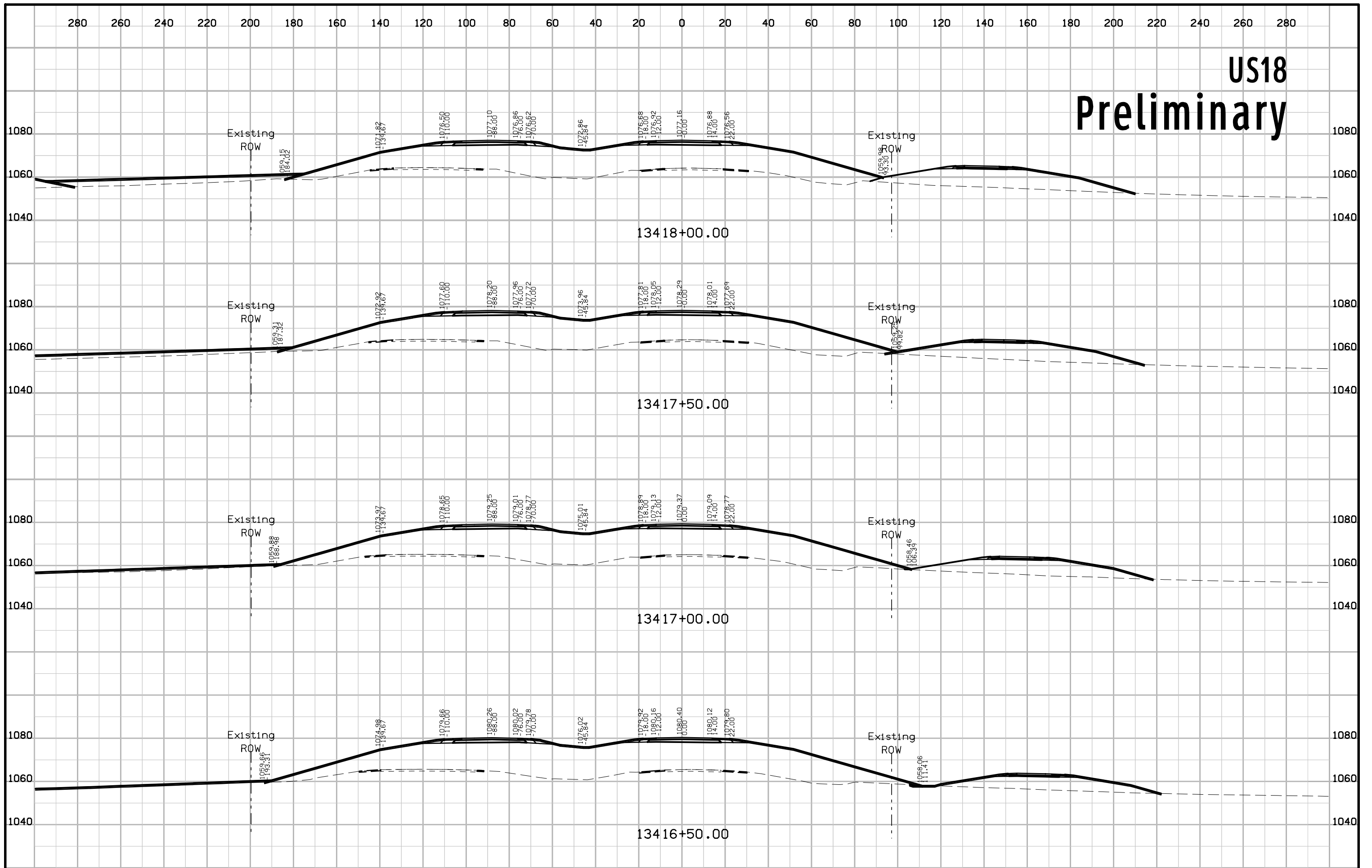
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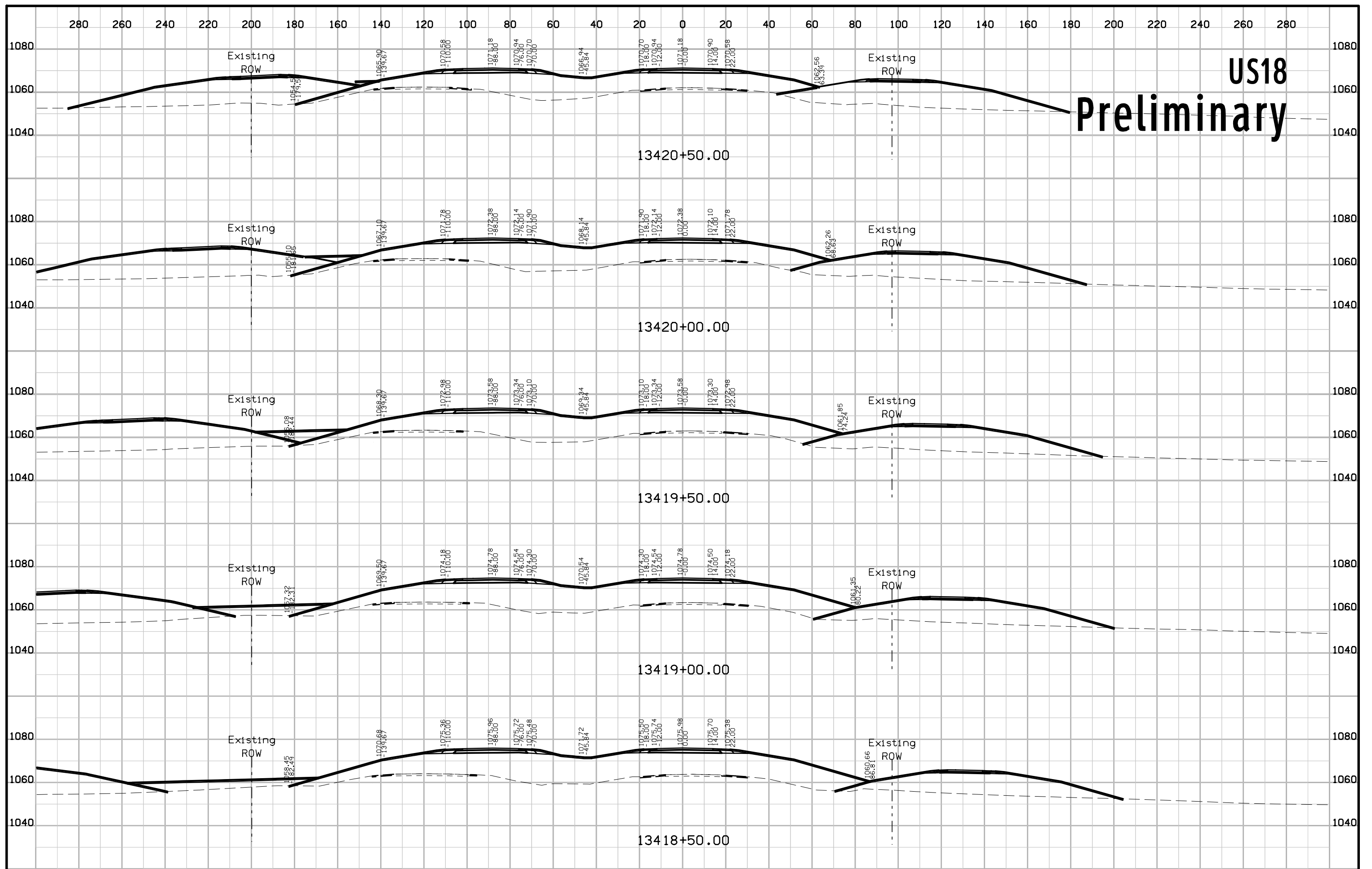




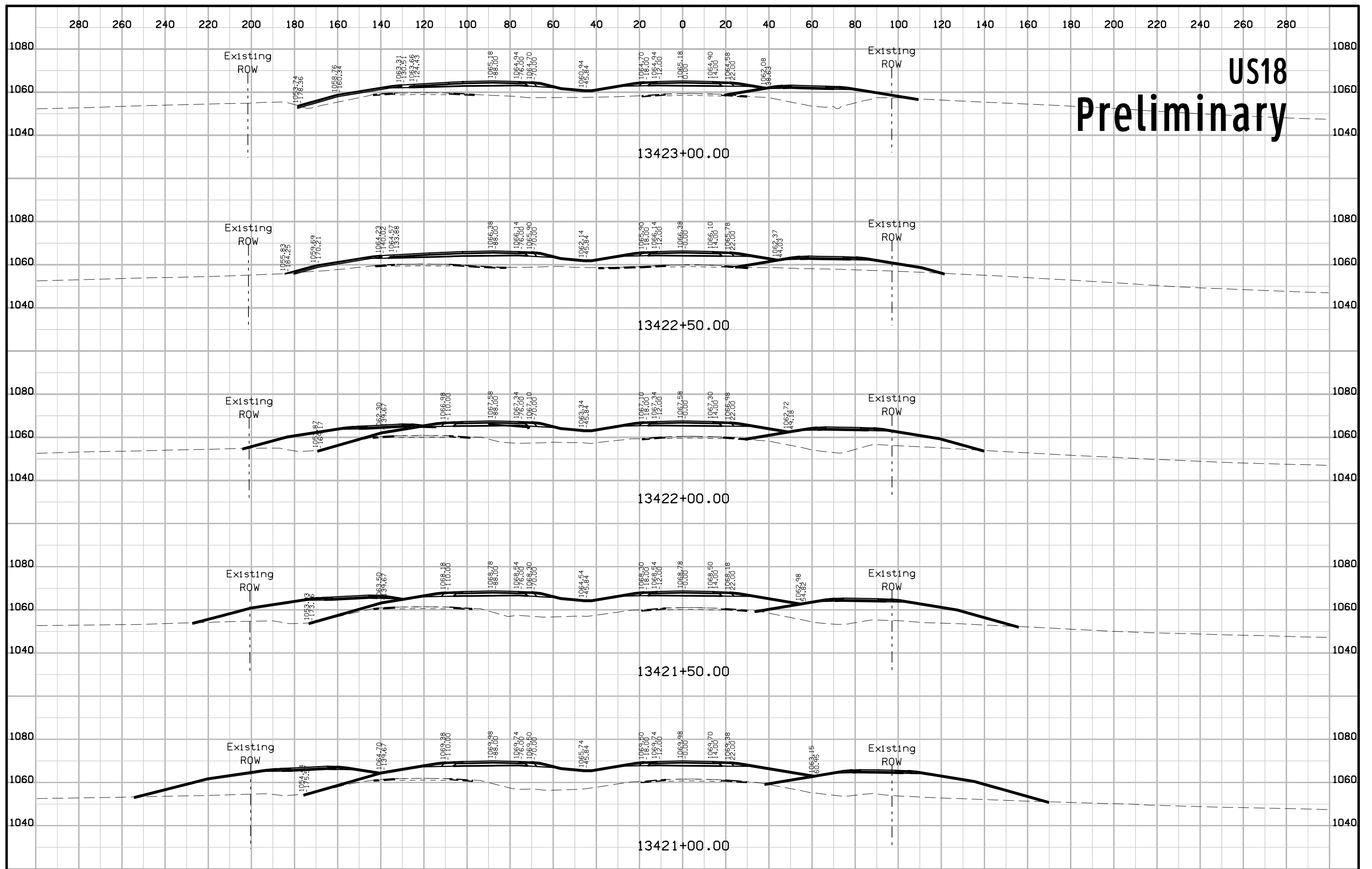
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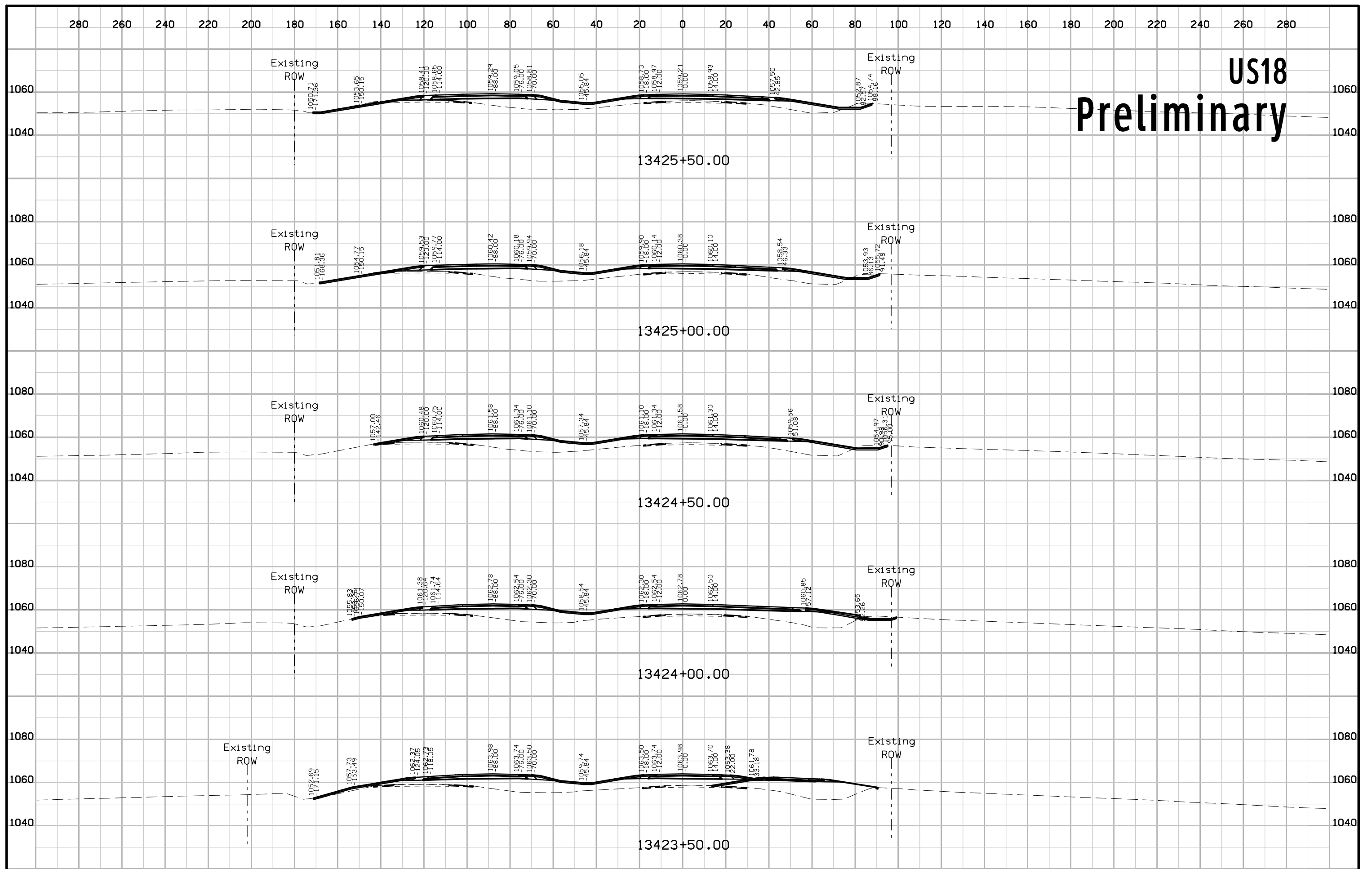
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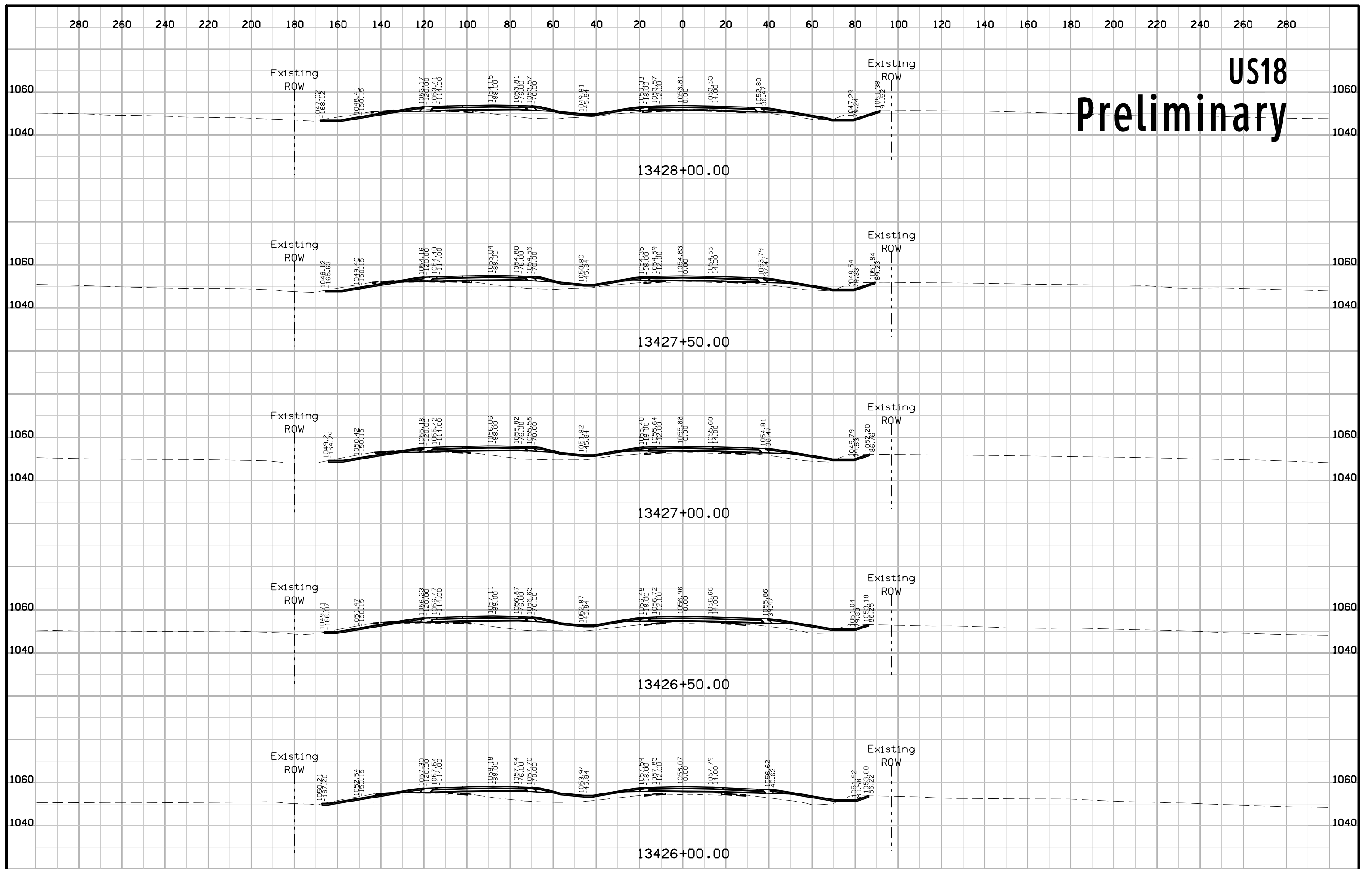
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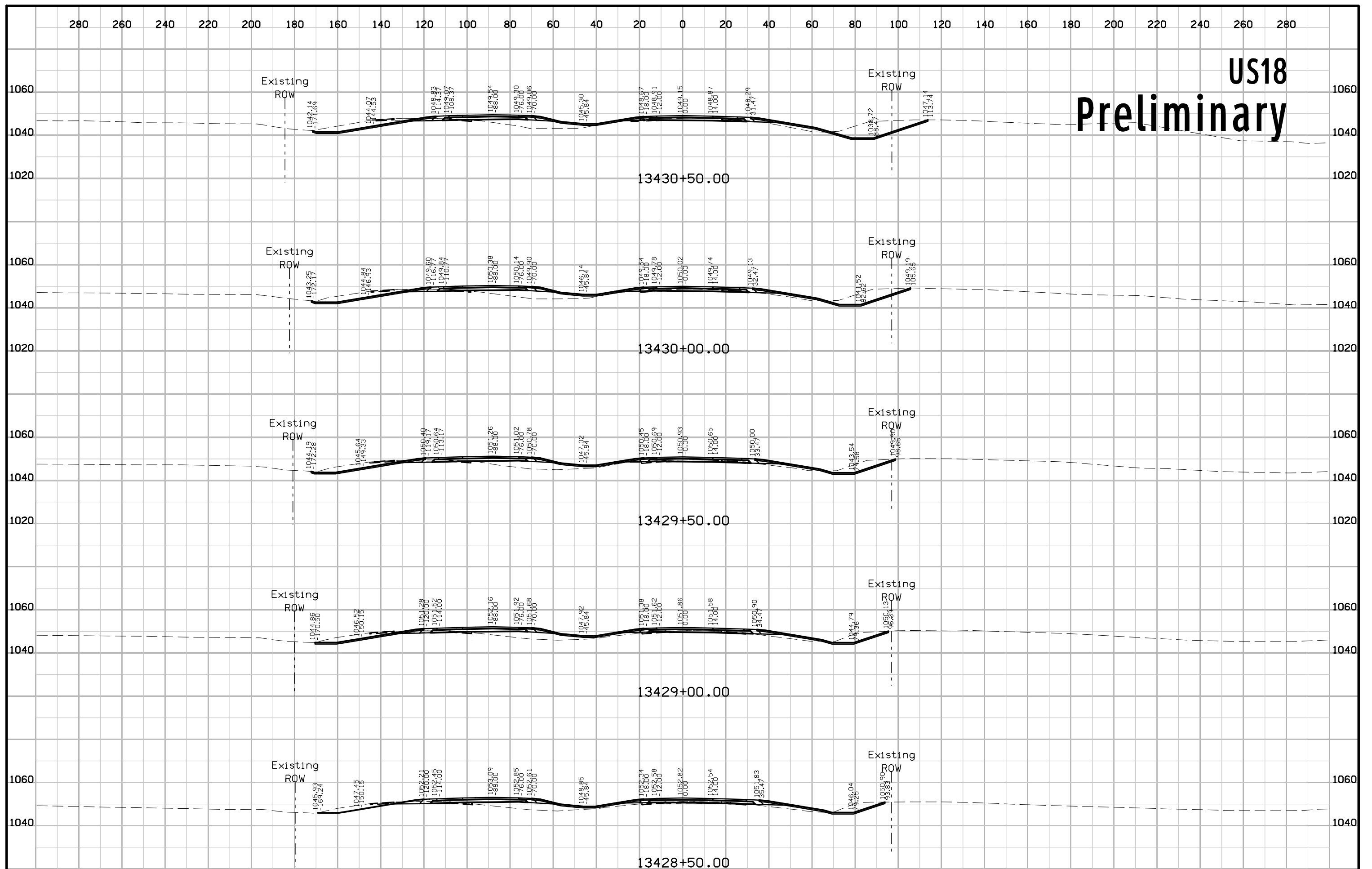
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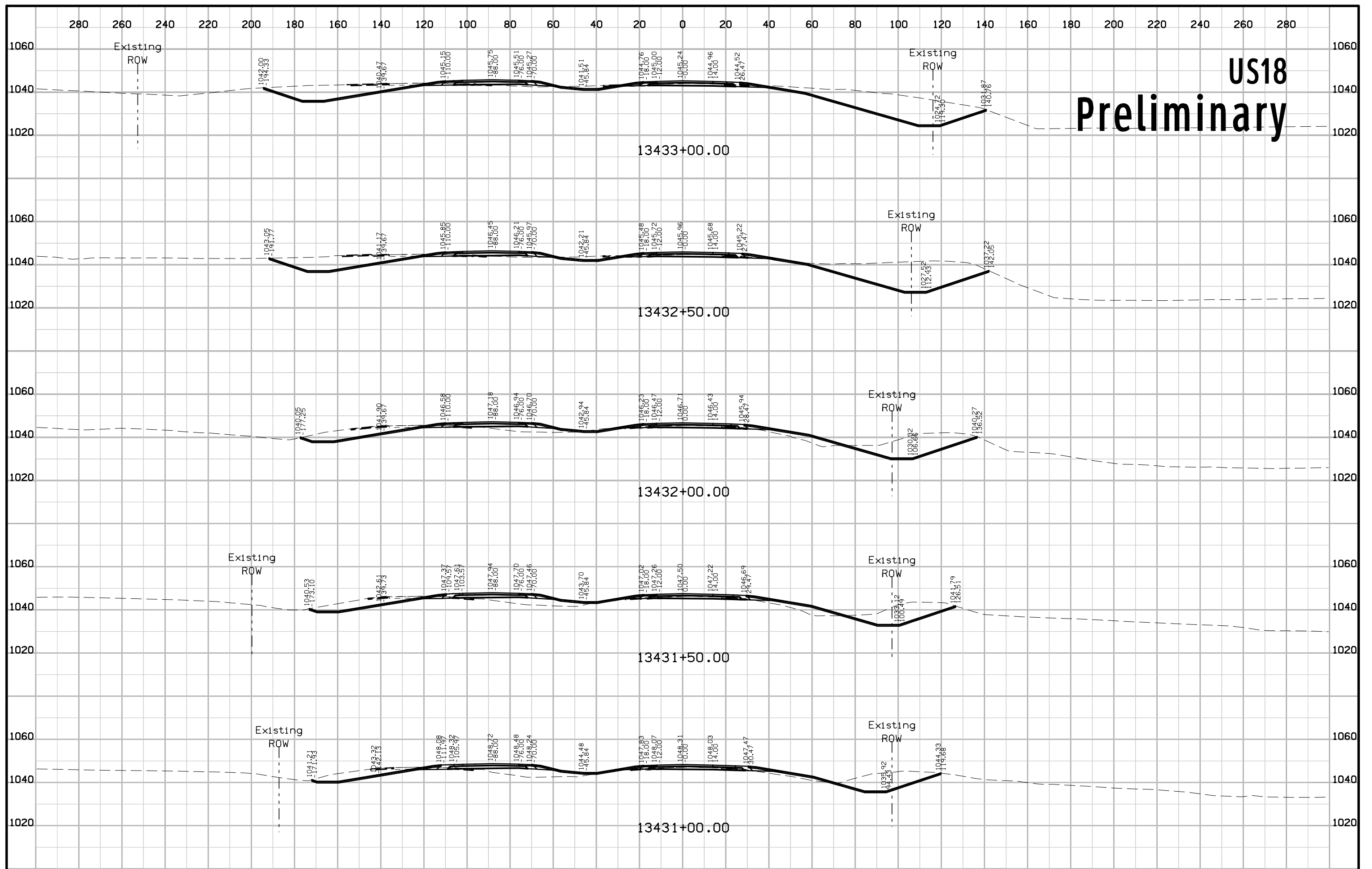
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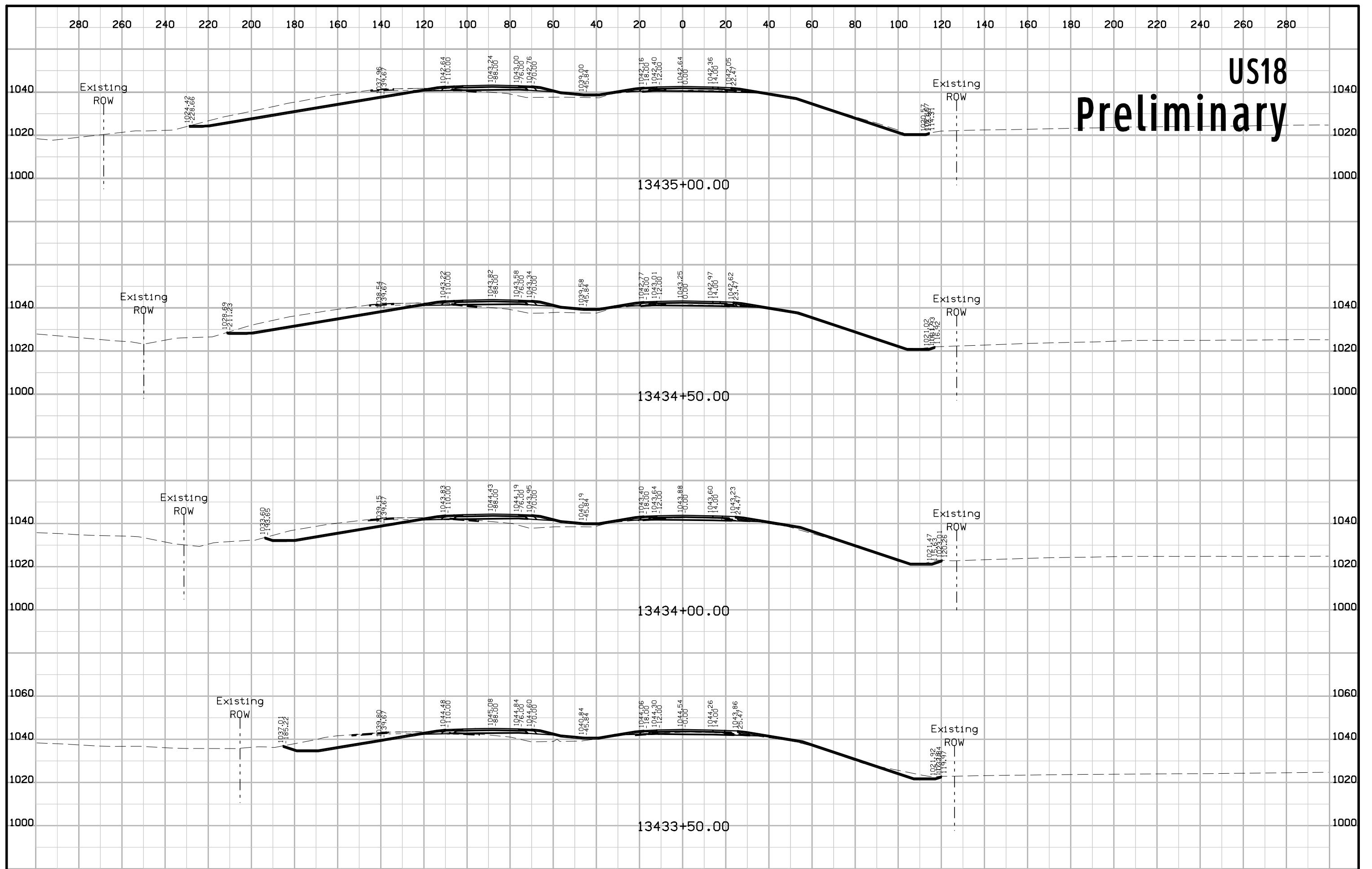
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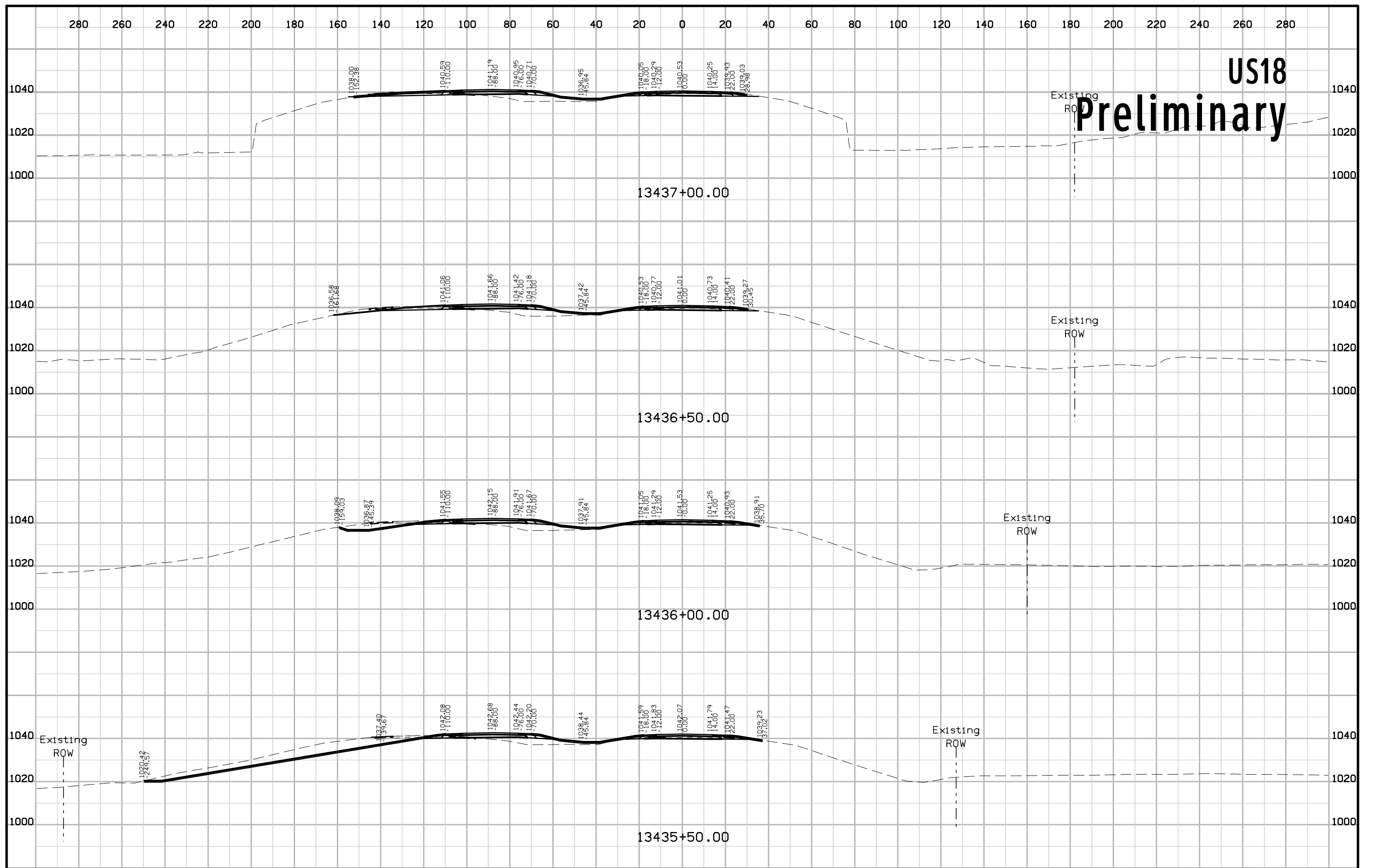


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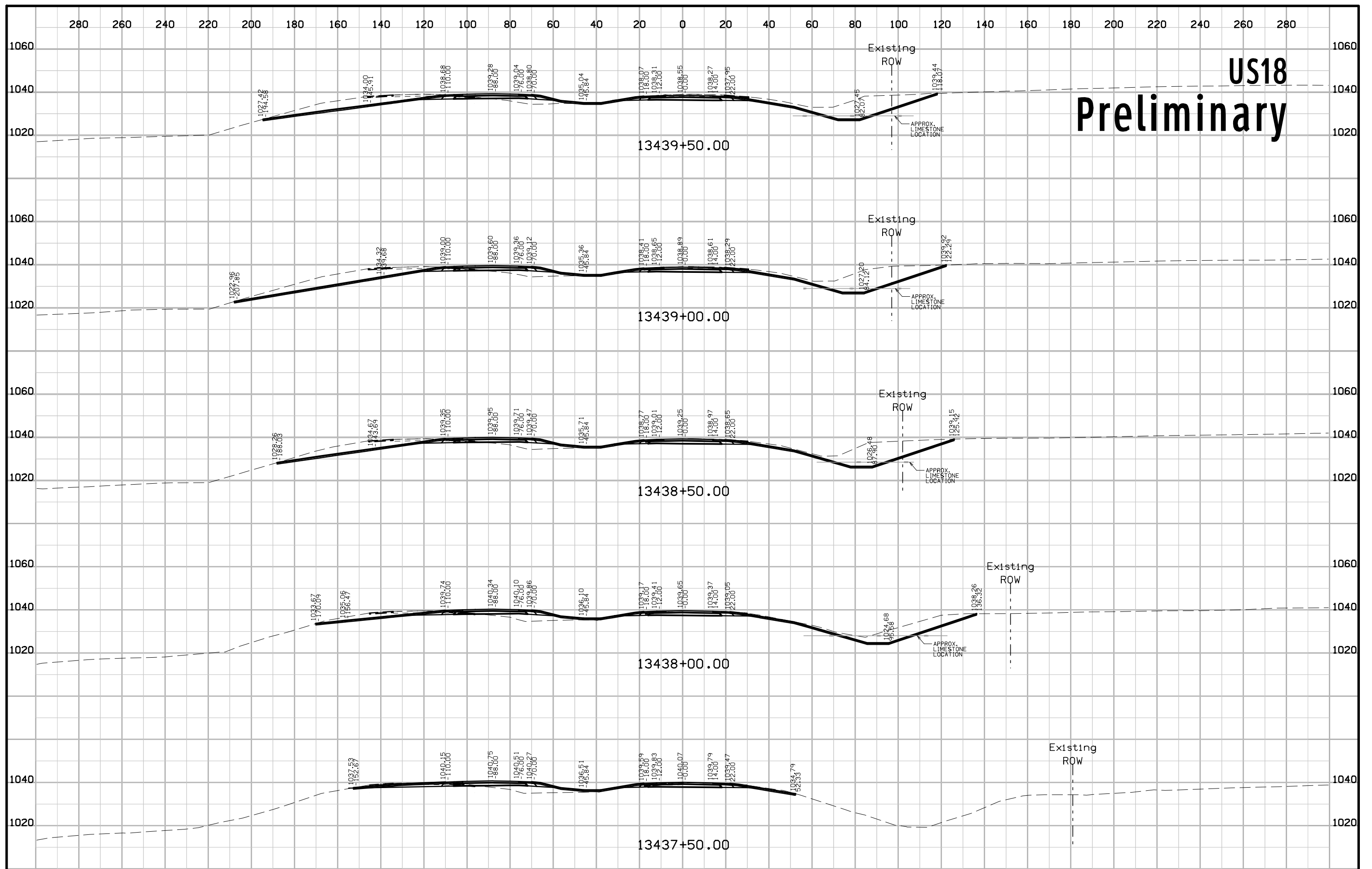


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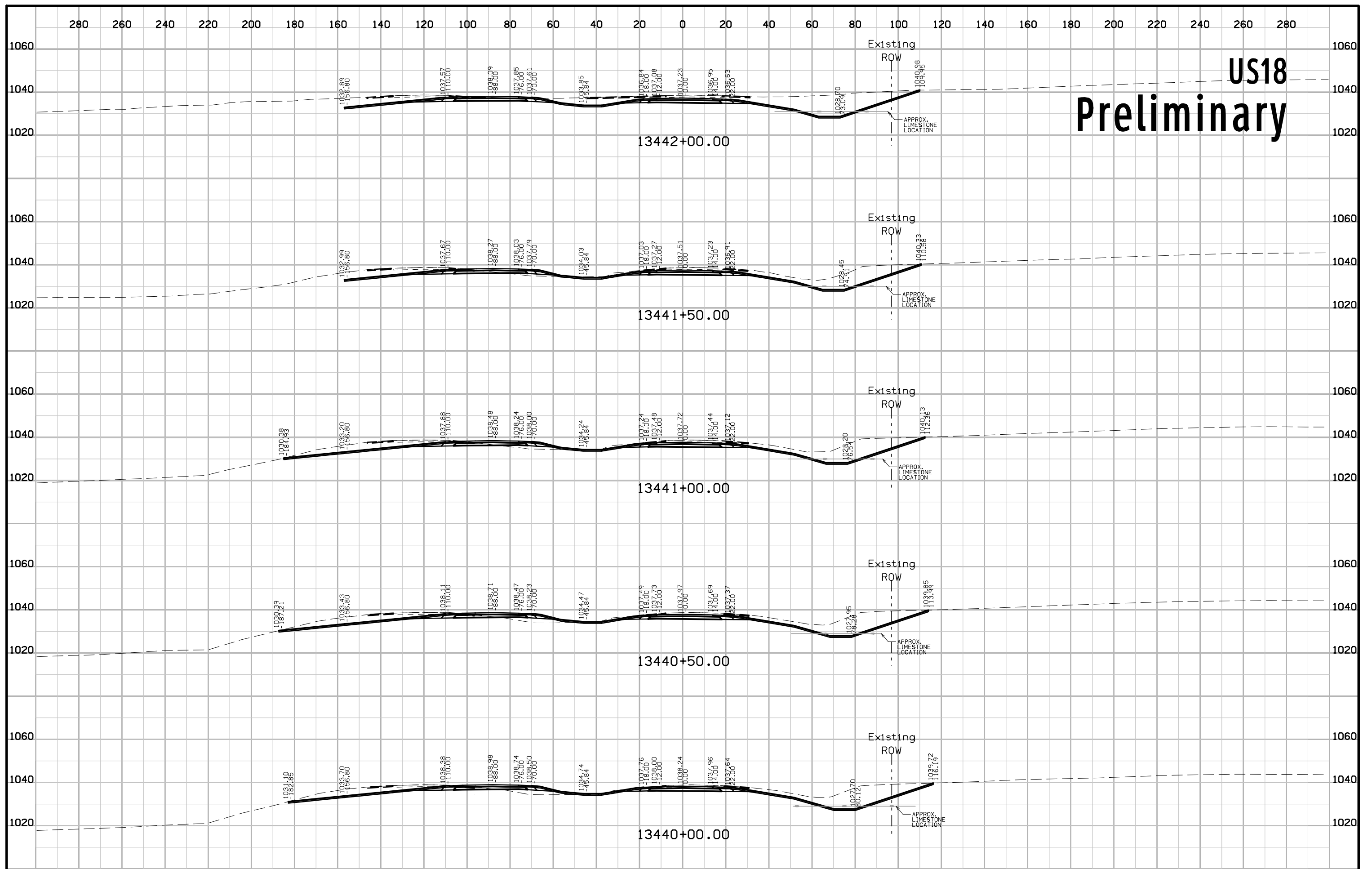
Preliminary



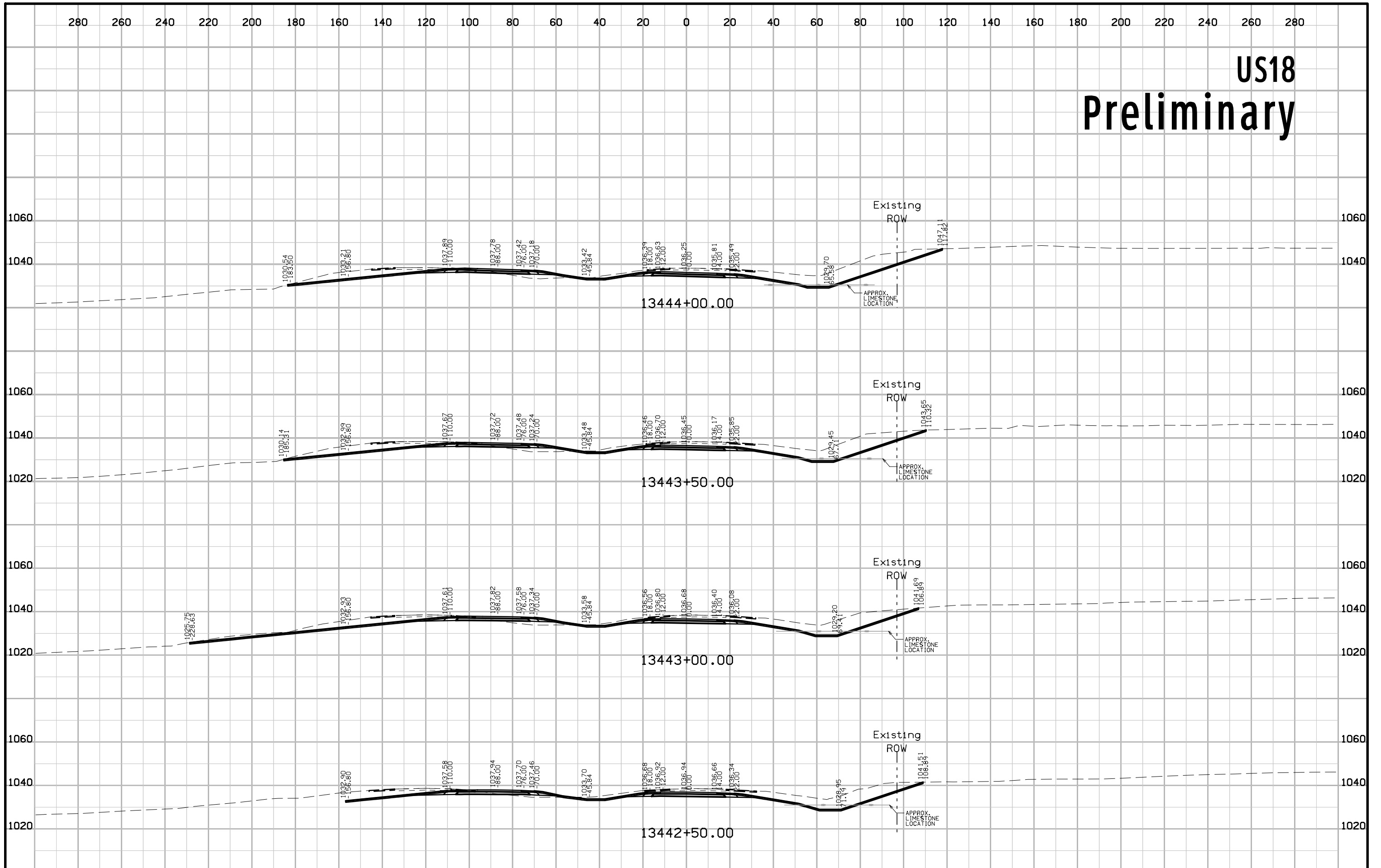
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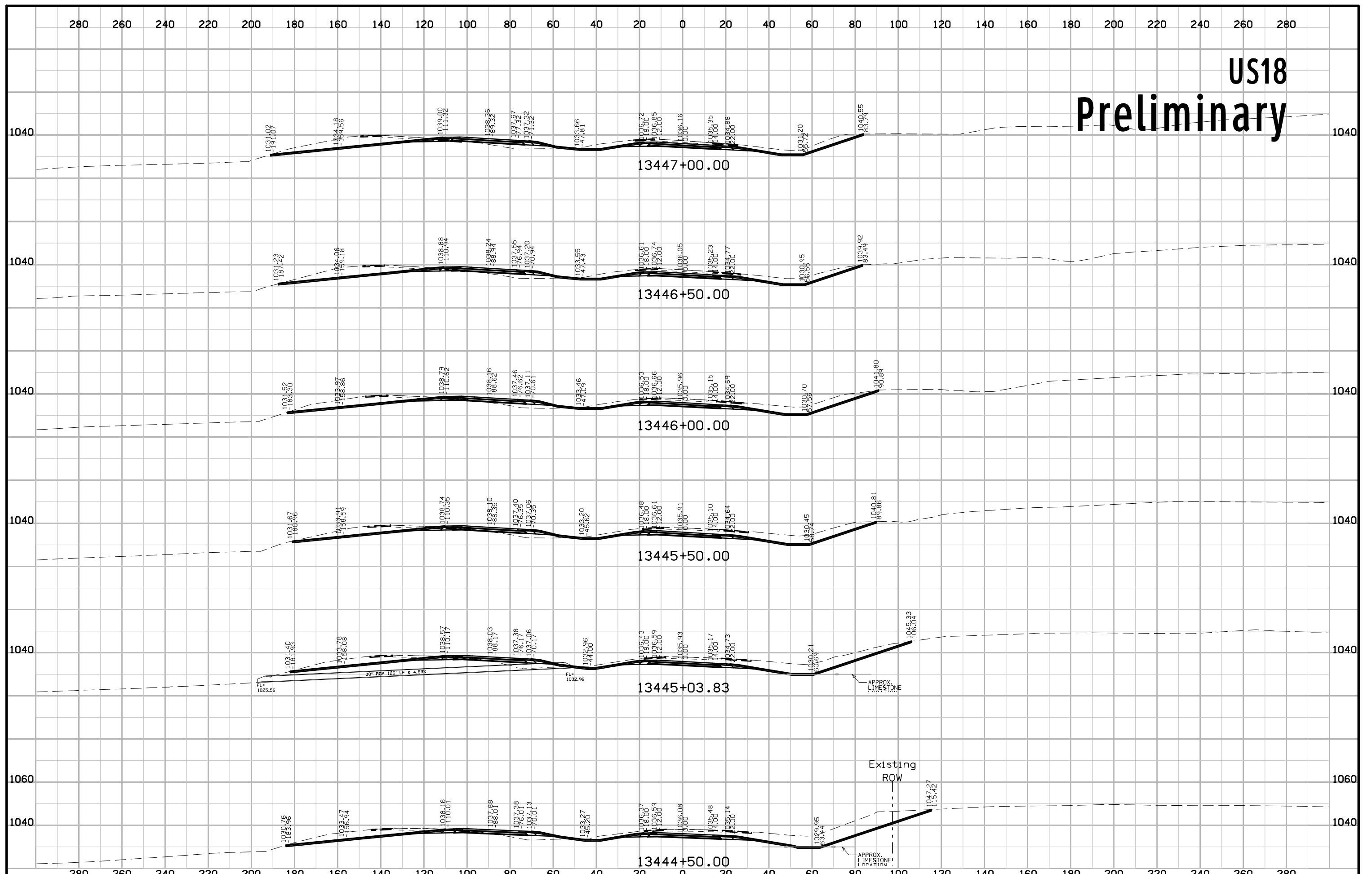
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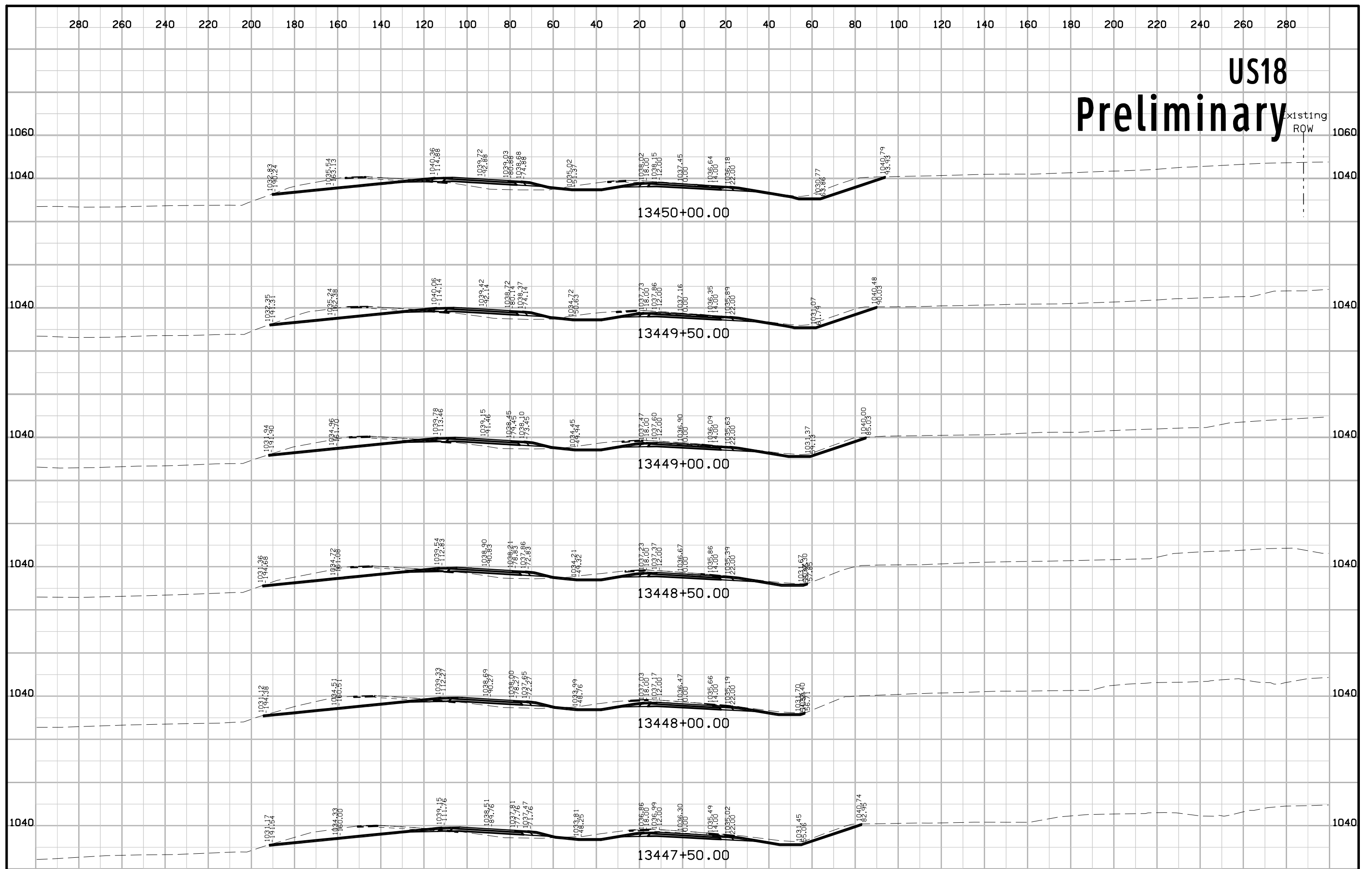
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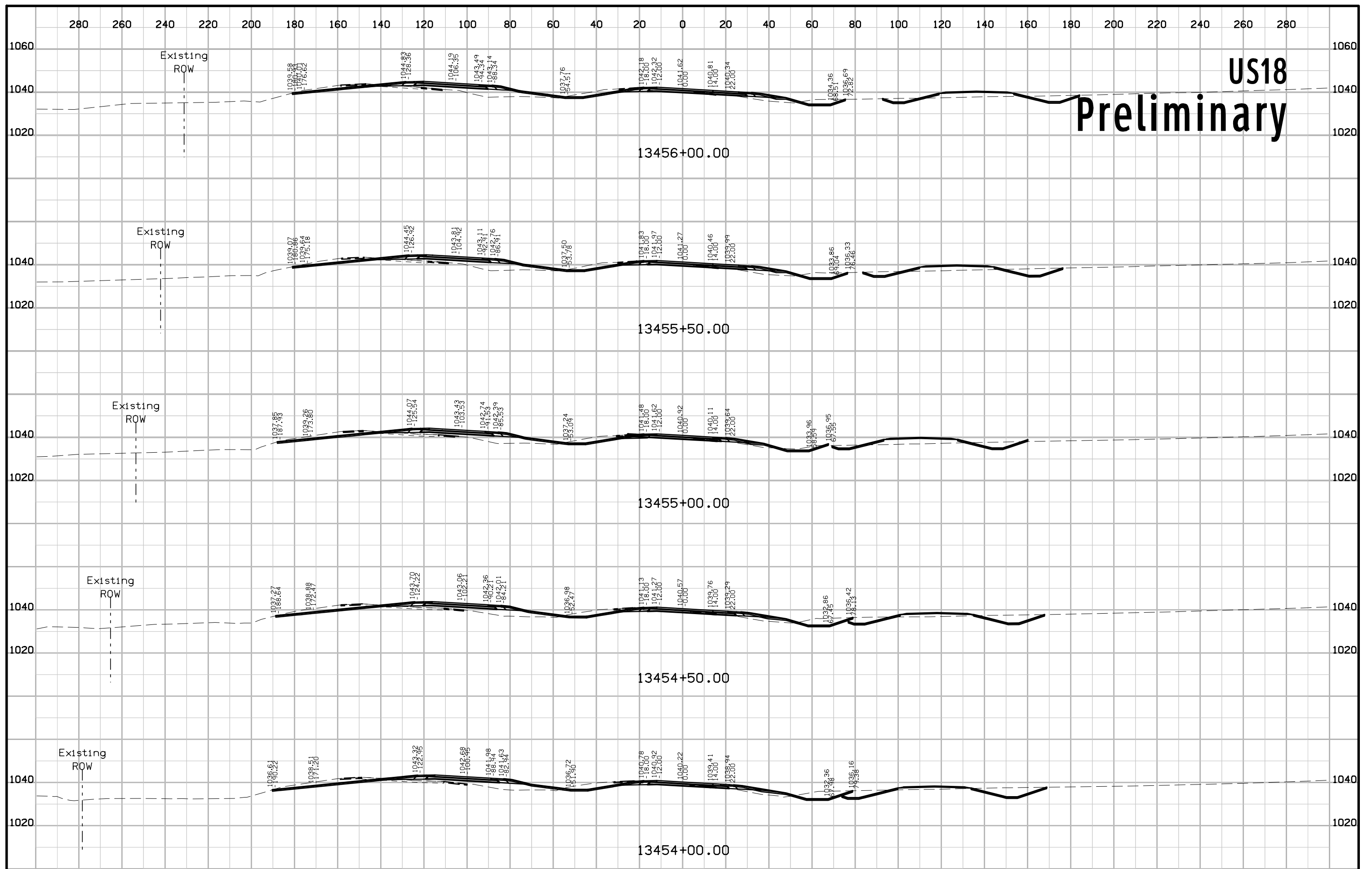


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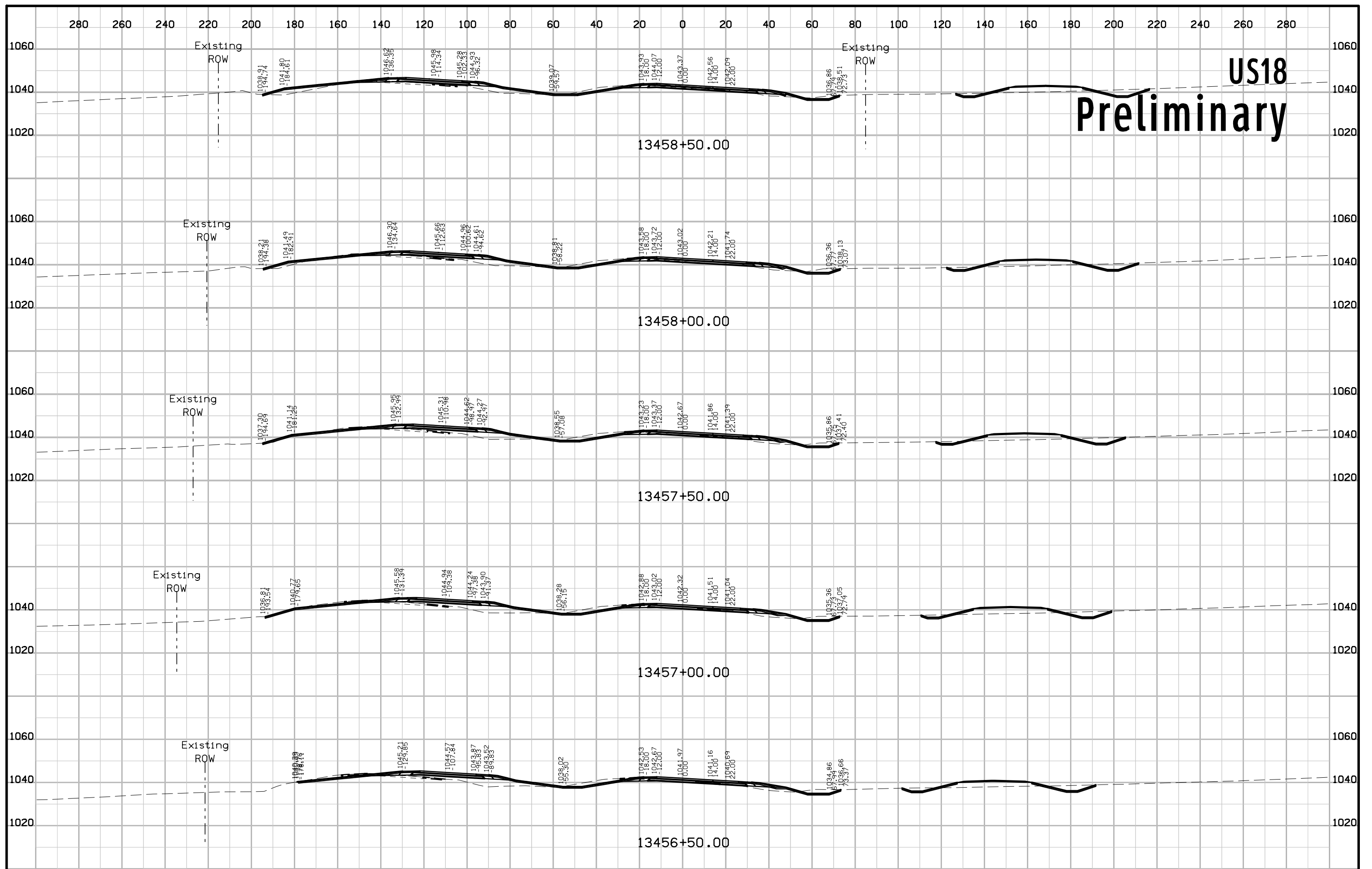


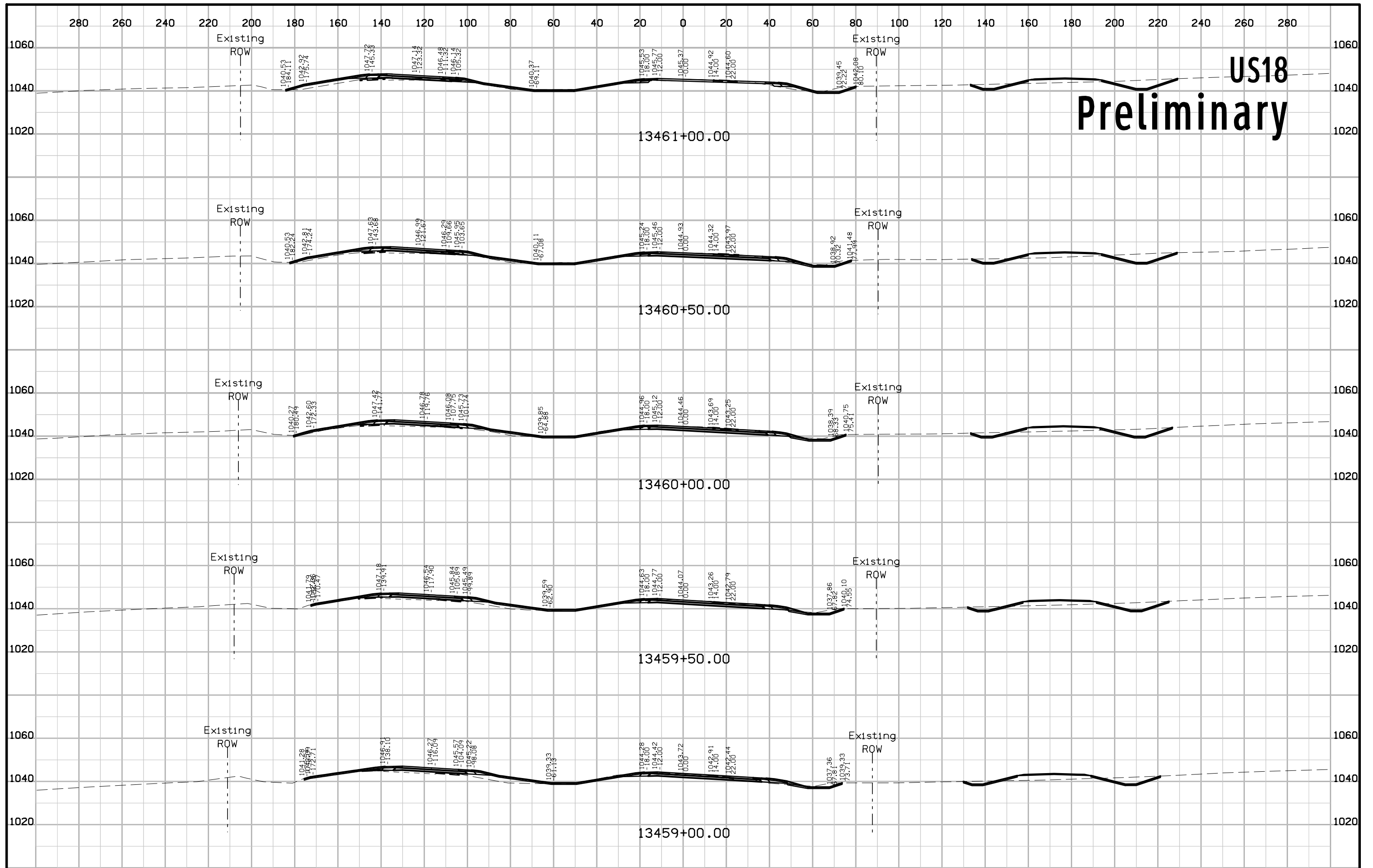
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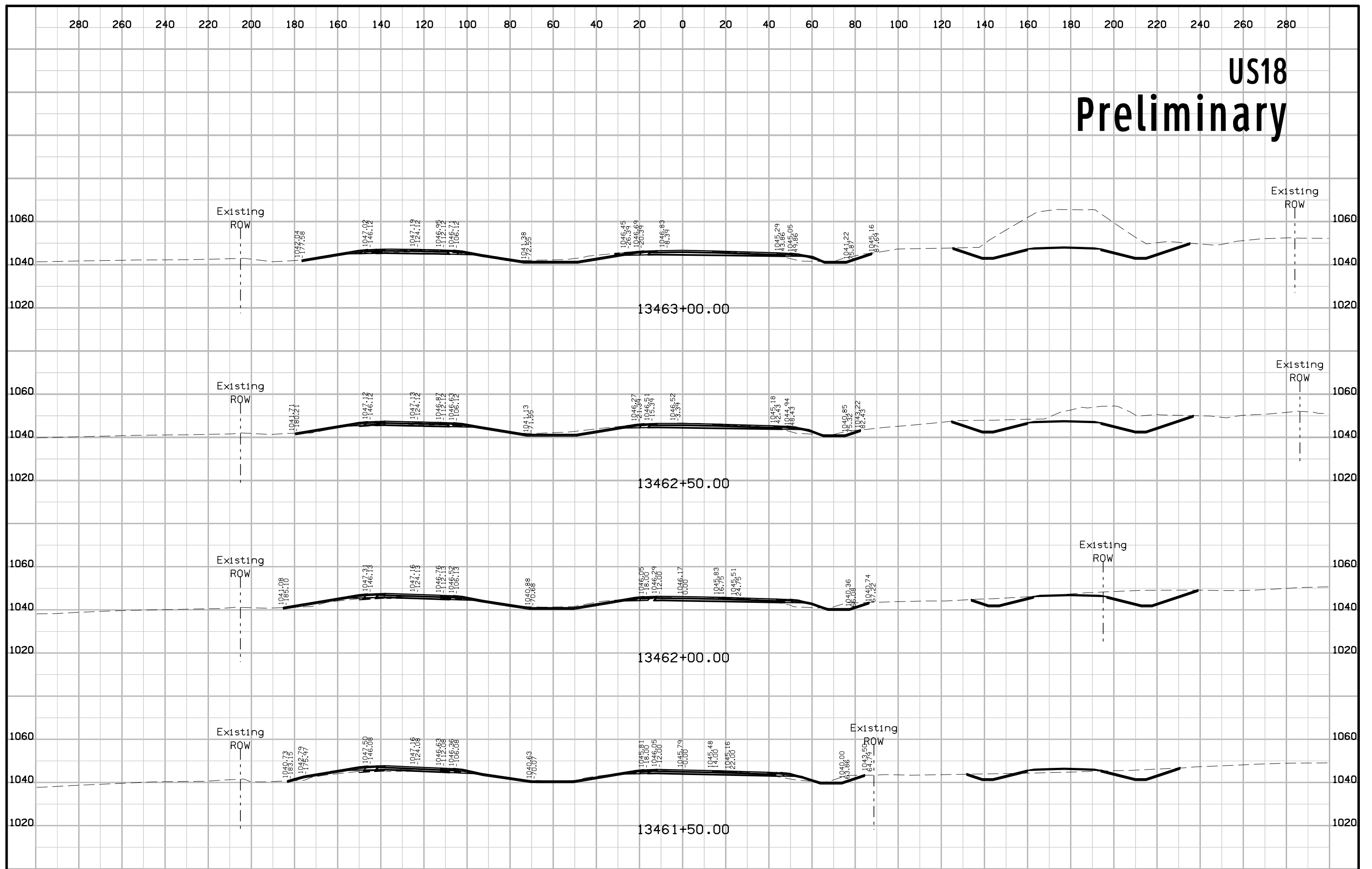


FILE NO.	31558	ENGLISH	DESIGN TEAM	FOTH	FLOYD COUNTY	PROJECT NUMBER	NHSX-018-6(95)--3H-34	SHEET NUMBER	W.42
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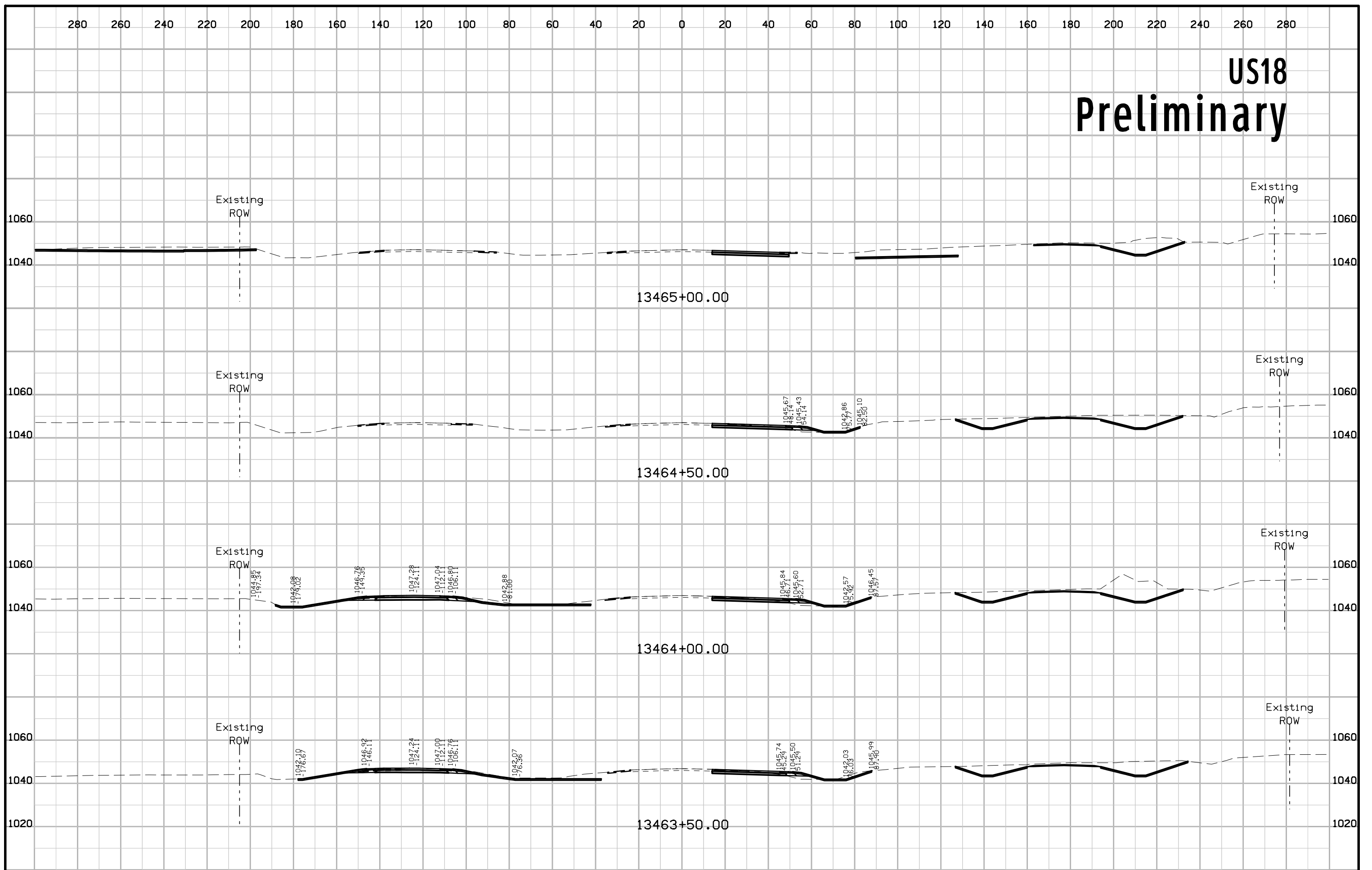




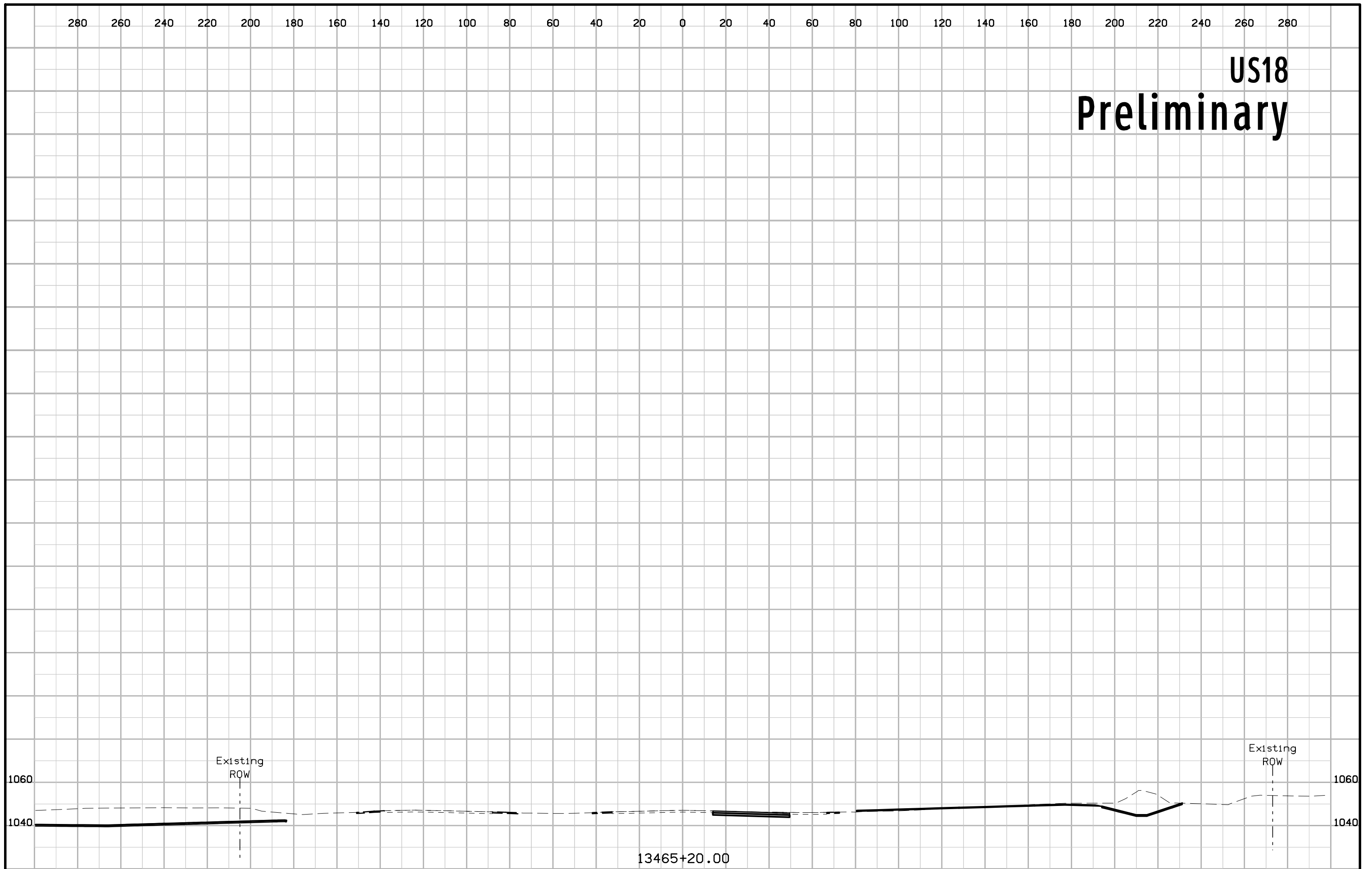
US18 Preliminary



US18 Preliminary

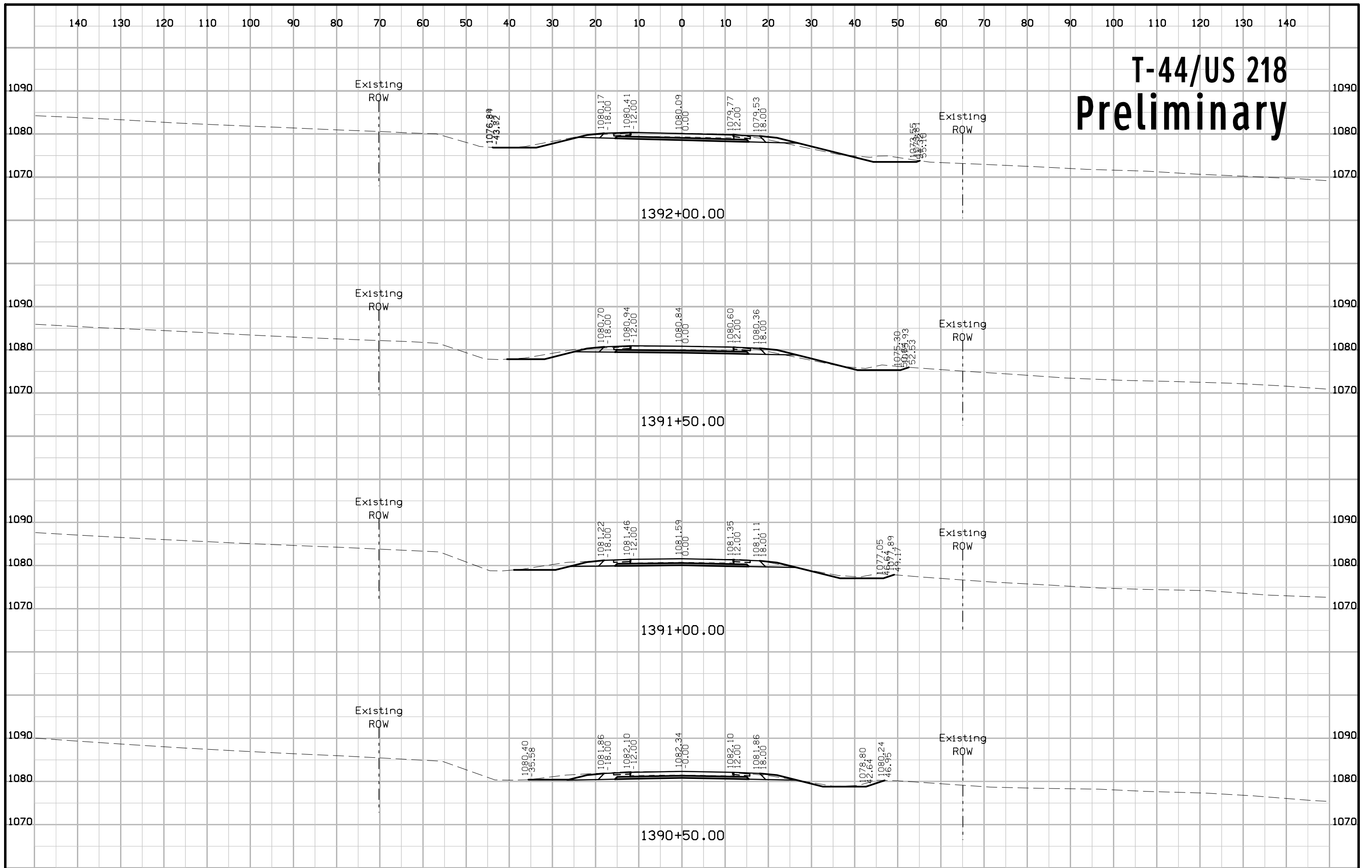


US18 Preliminary

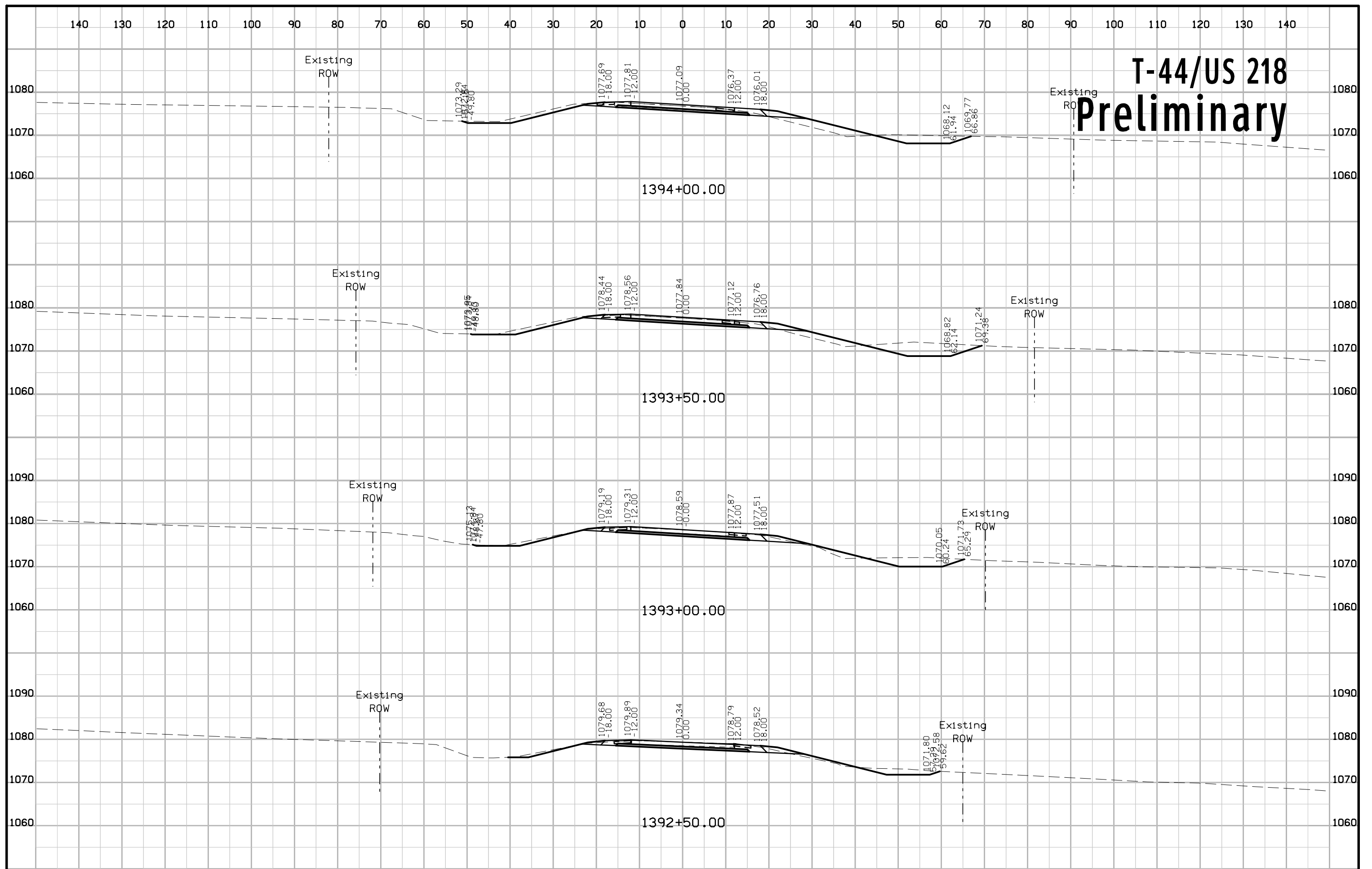


FILE NO.	31558	ENGLISH	DESIGN TEAM	FOTH	FLOYD COUNTY	PROJECT NUMBER	NHSX-018-6(95)--3H-34	SHEET NUMBER	W.47
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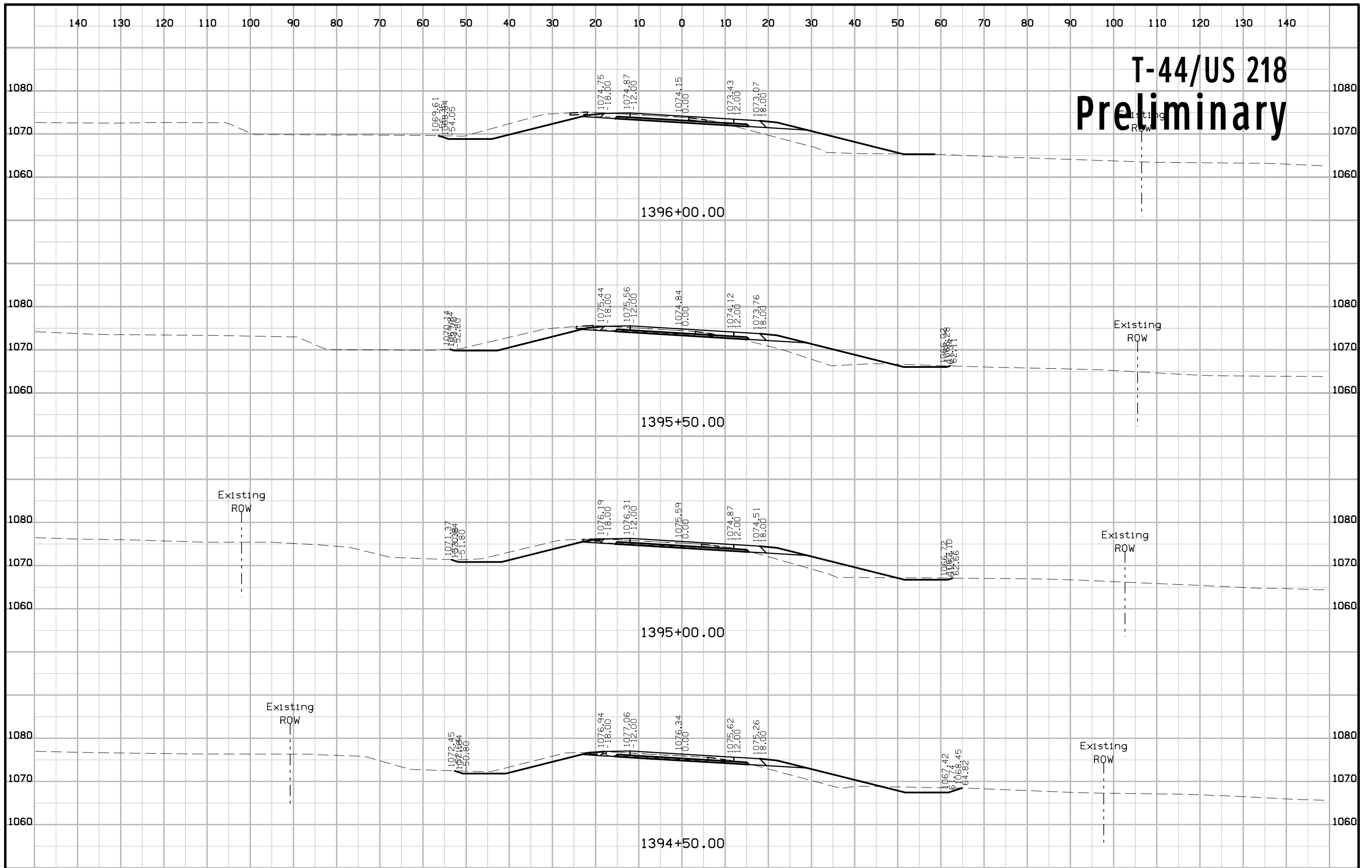
T-44/US 218 Preliminary



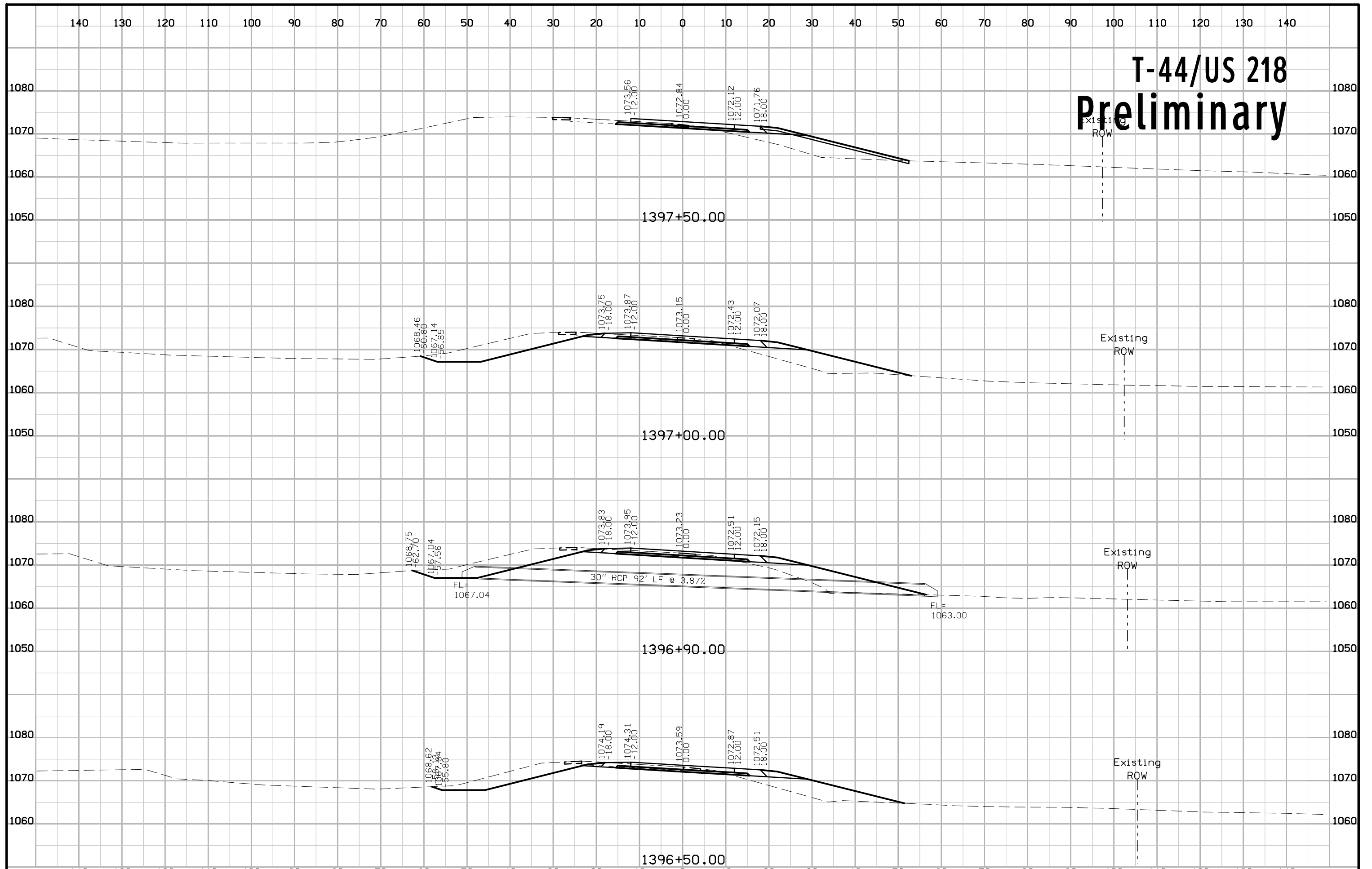
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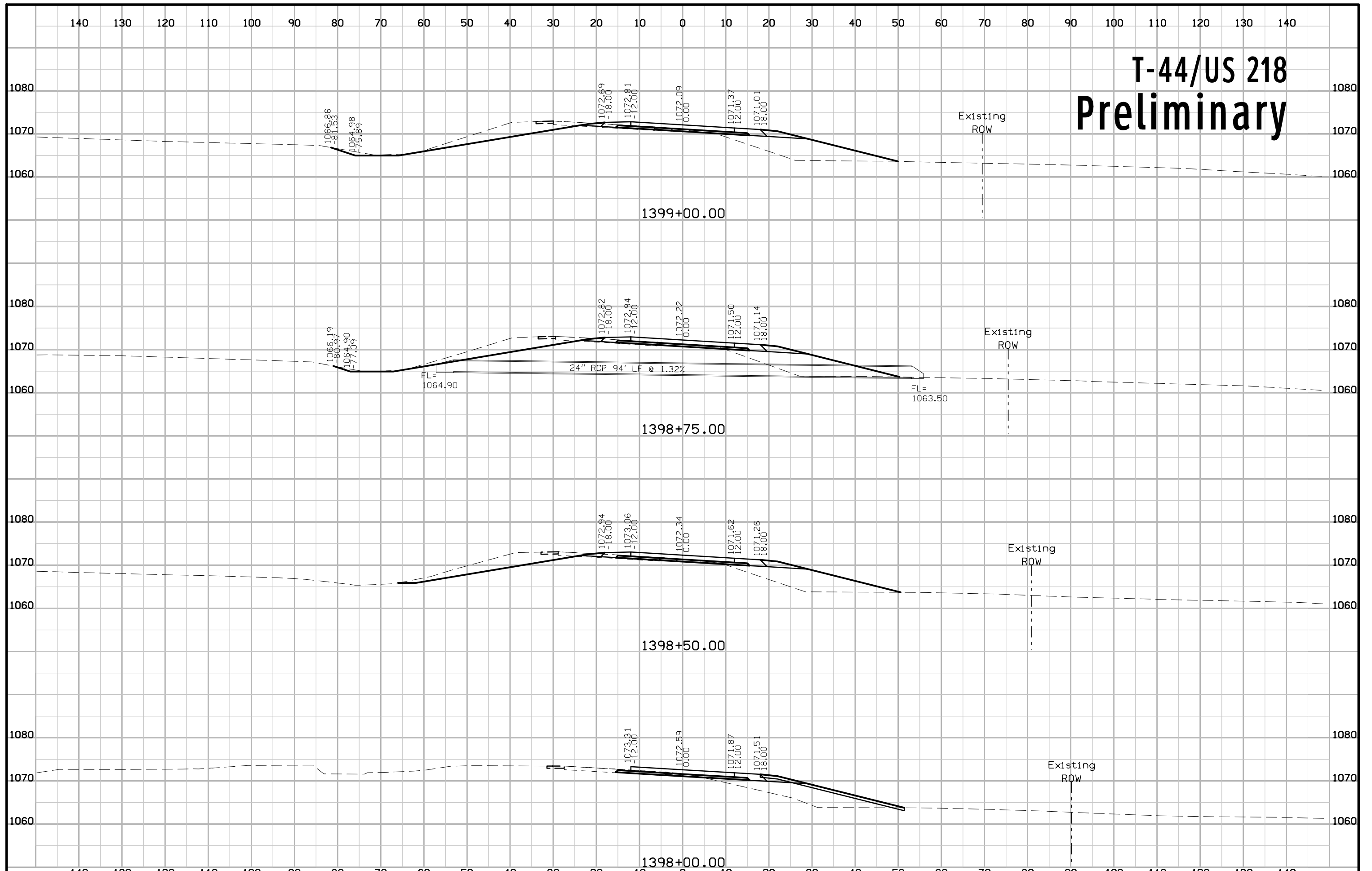
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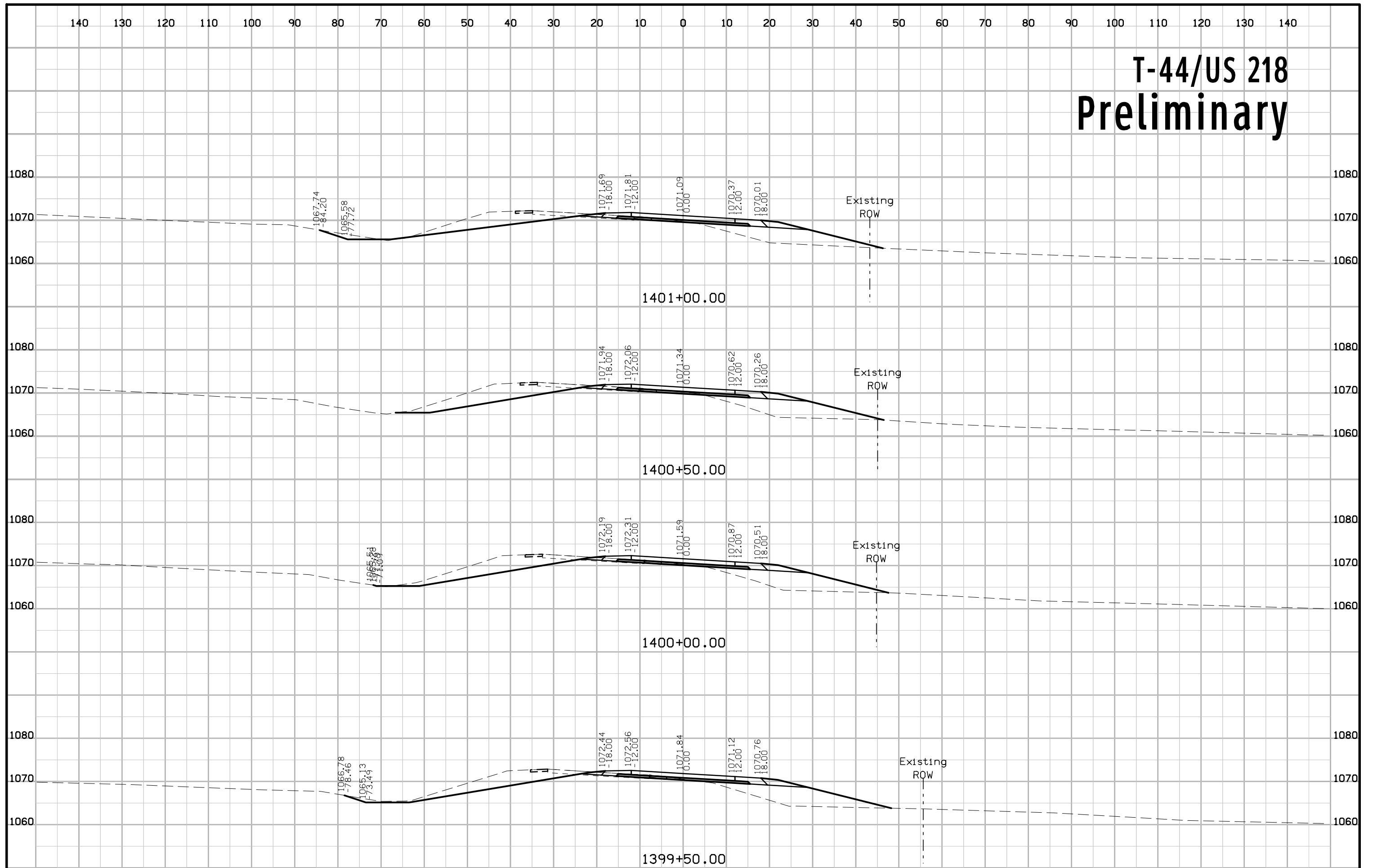
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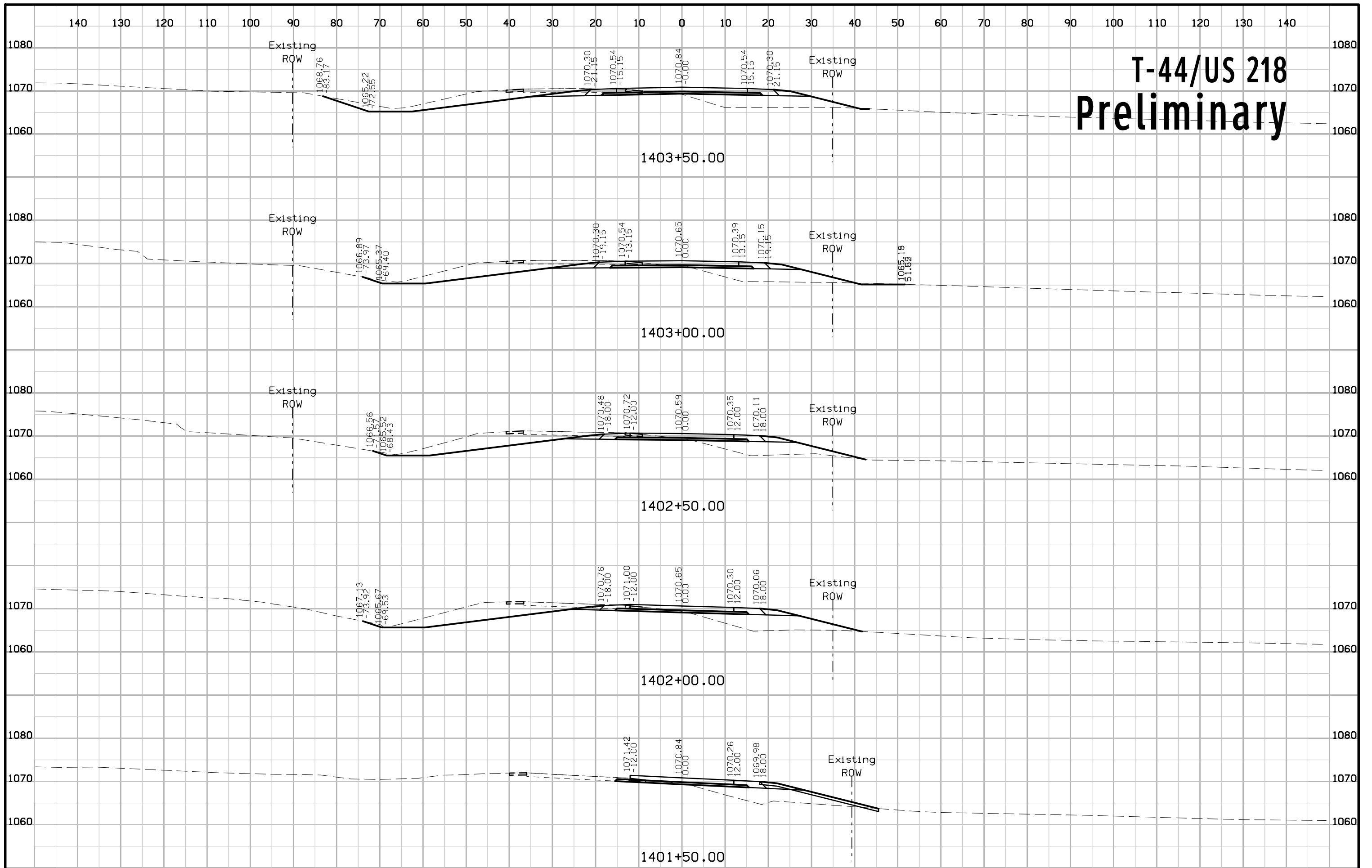
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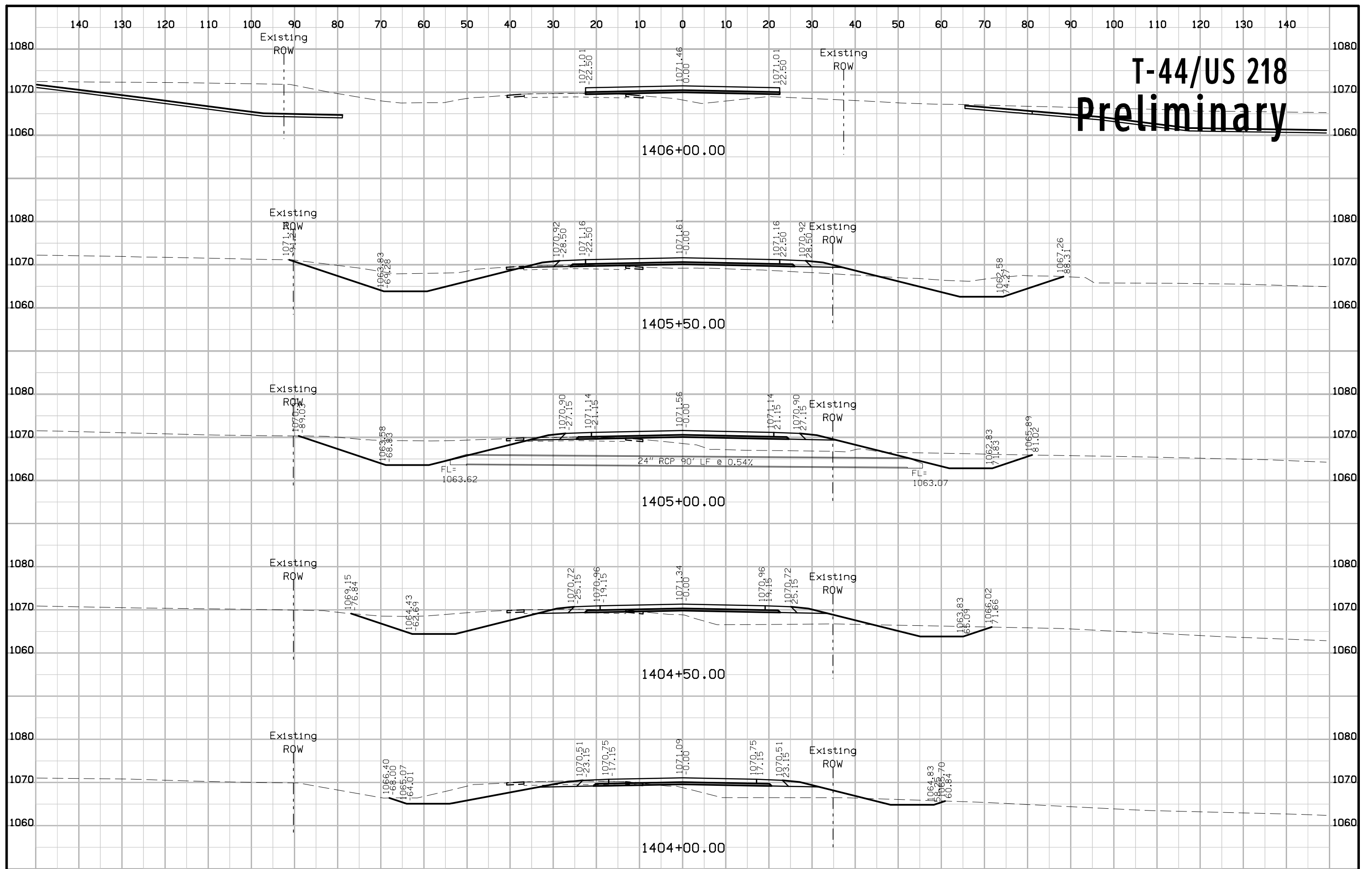
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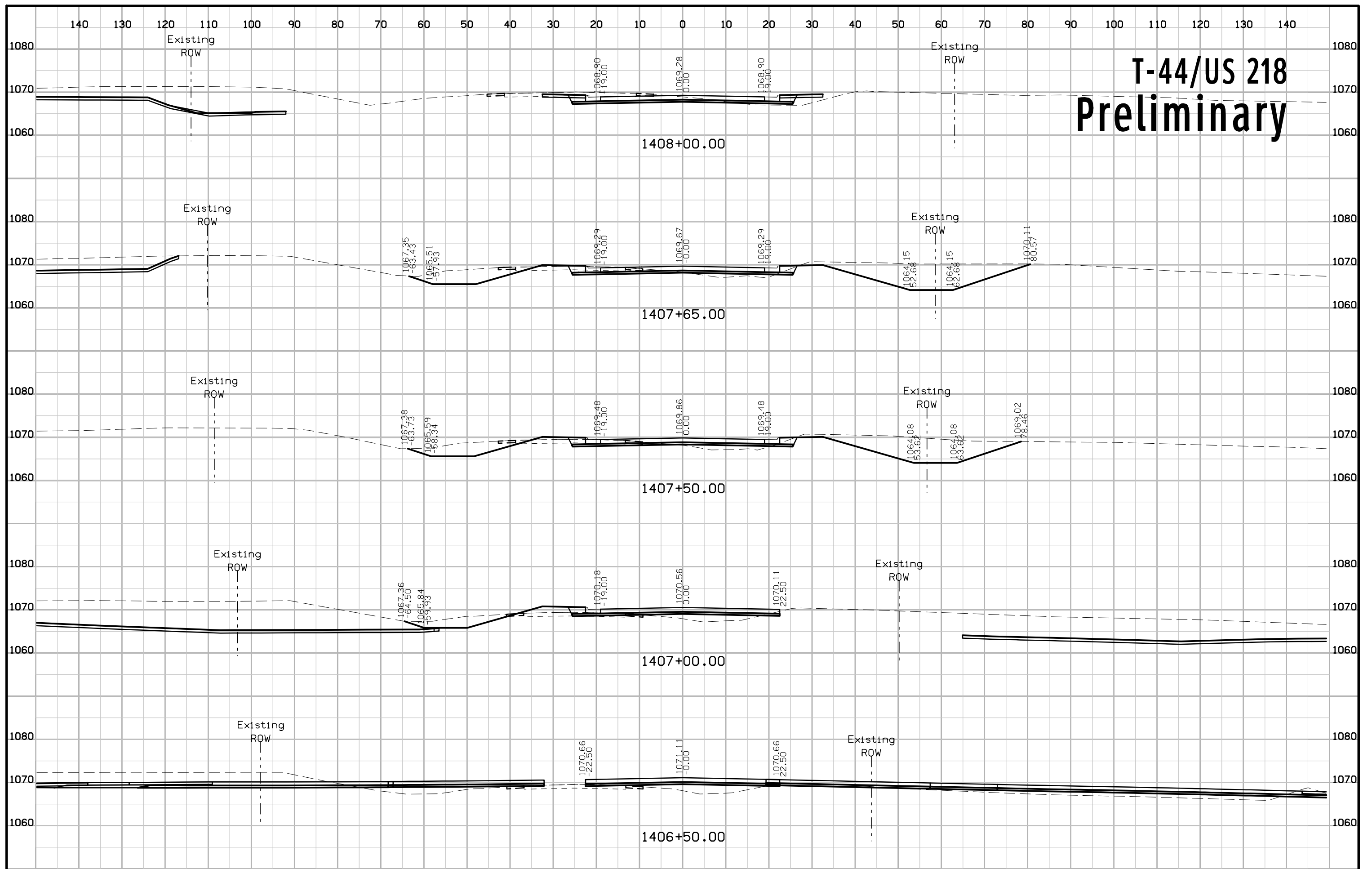
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T-44/US 218 Preliminary

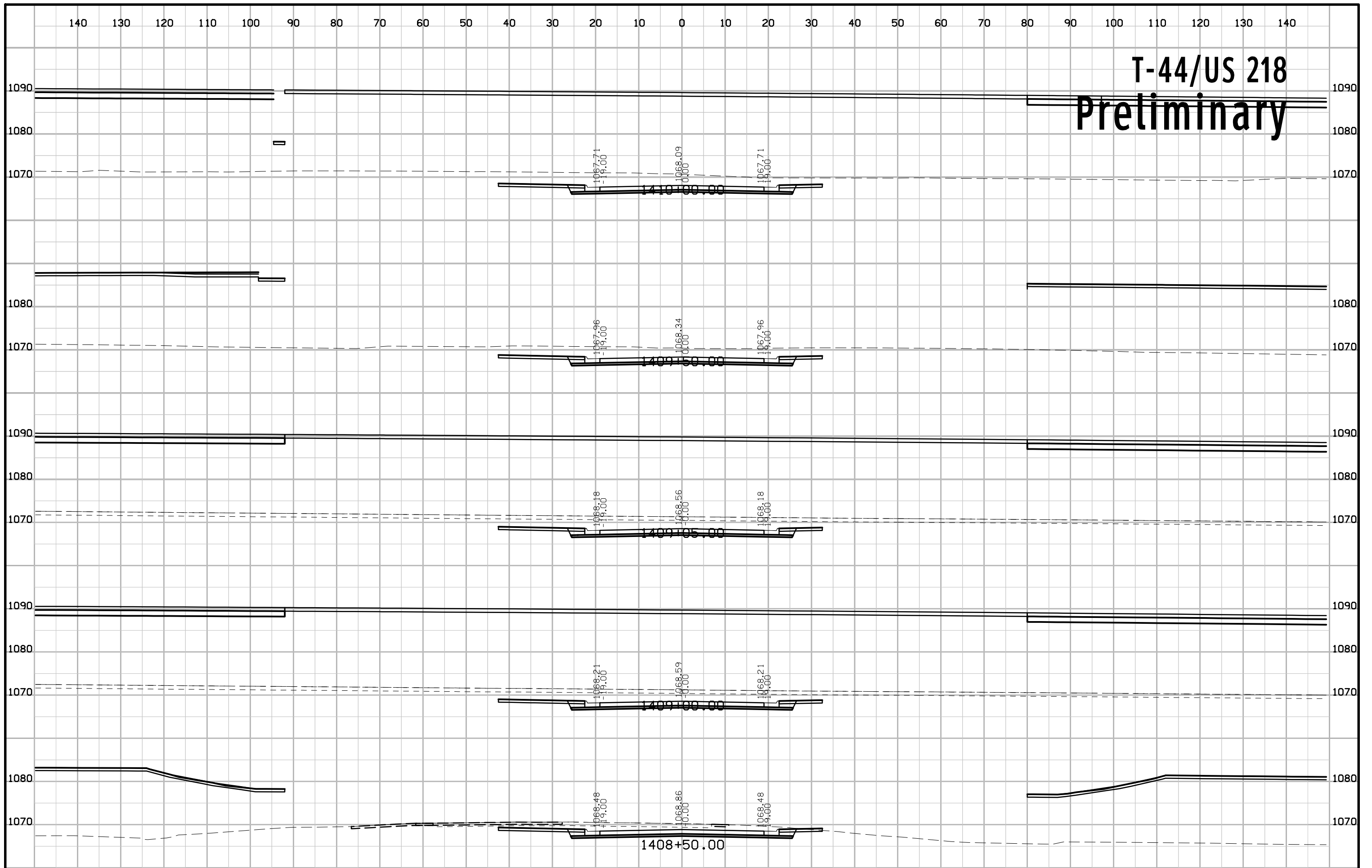


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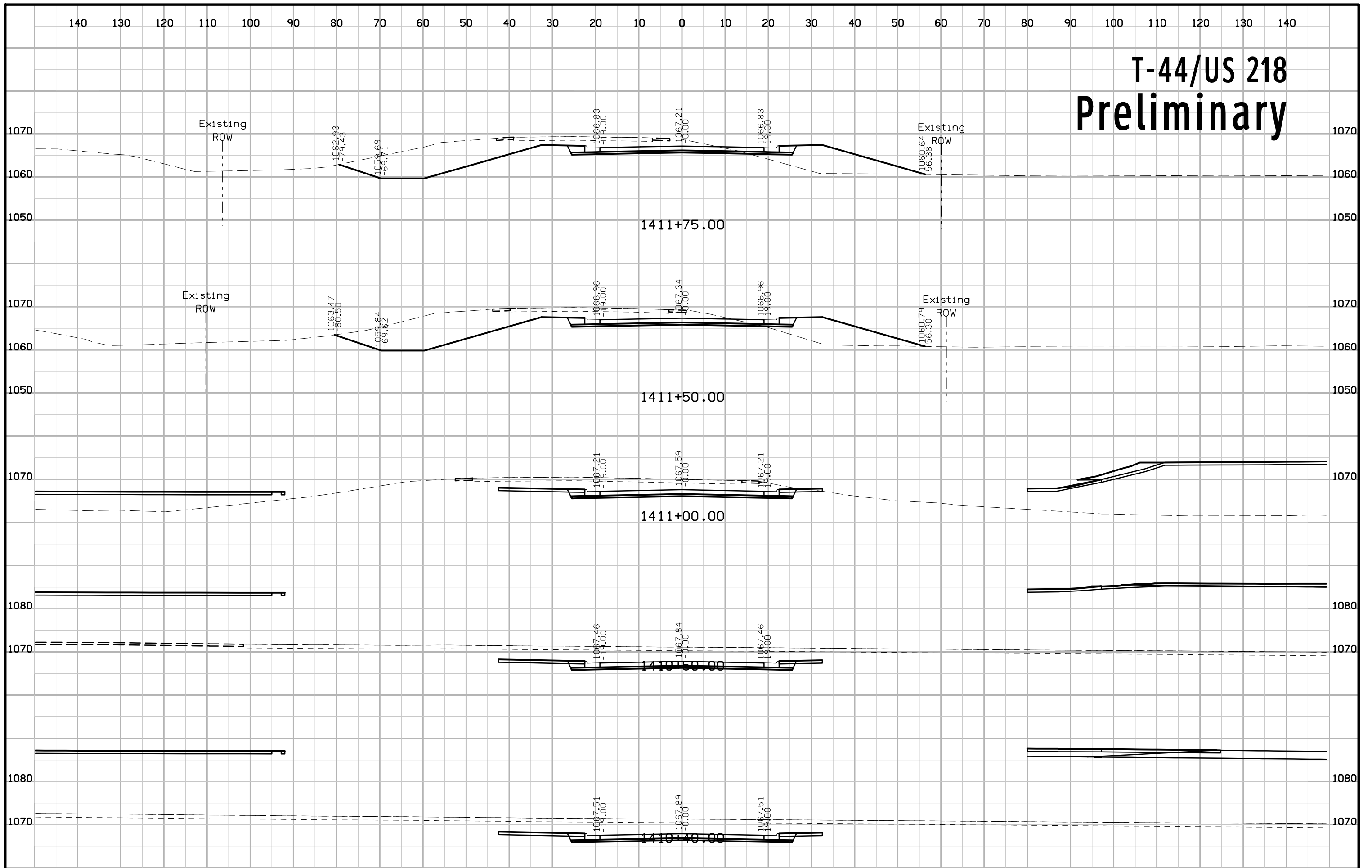


T-44/US 218

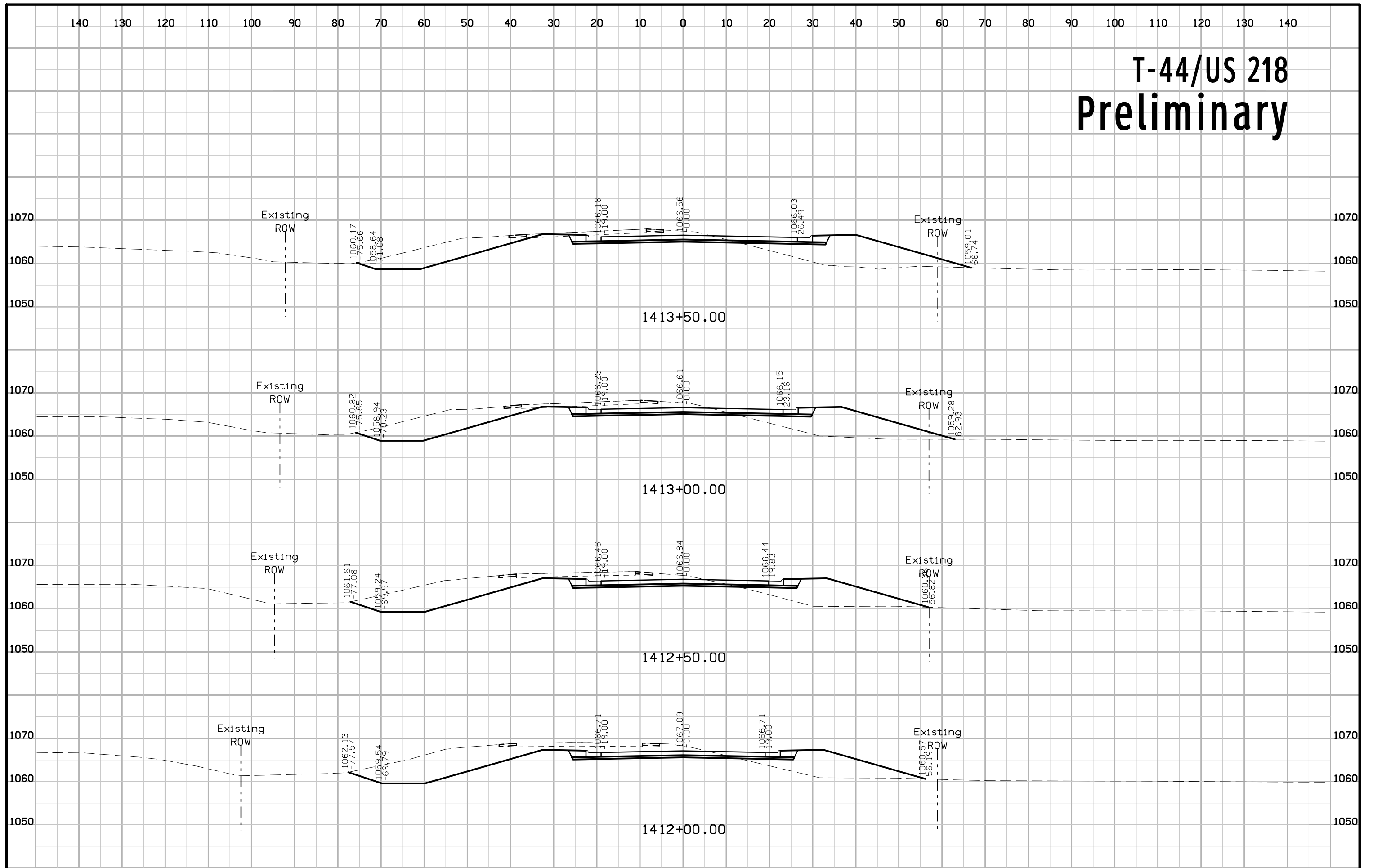
Preliminary



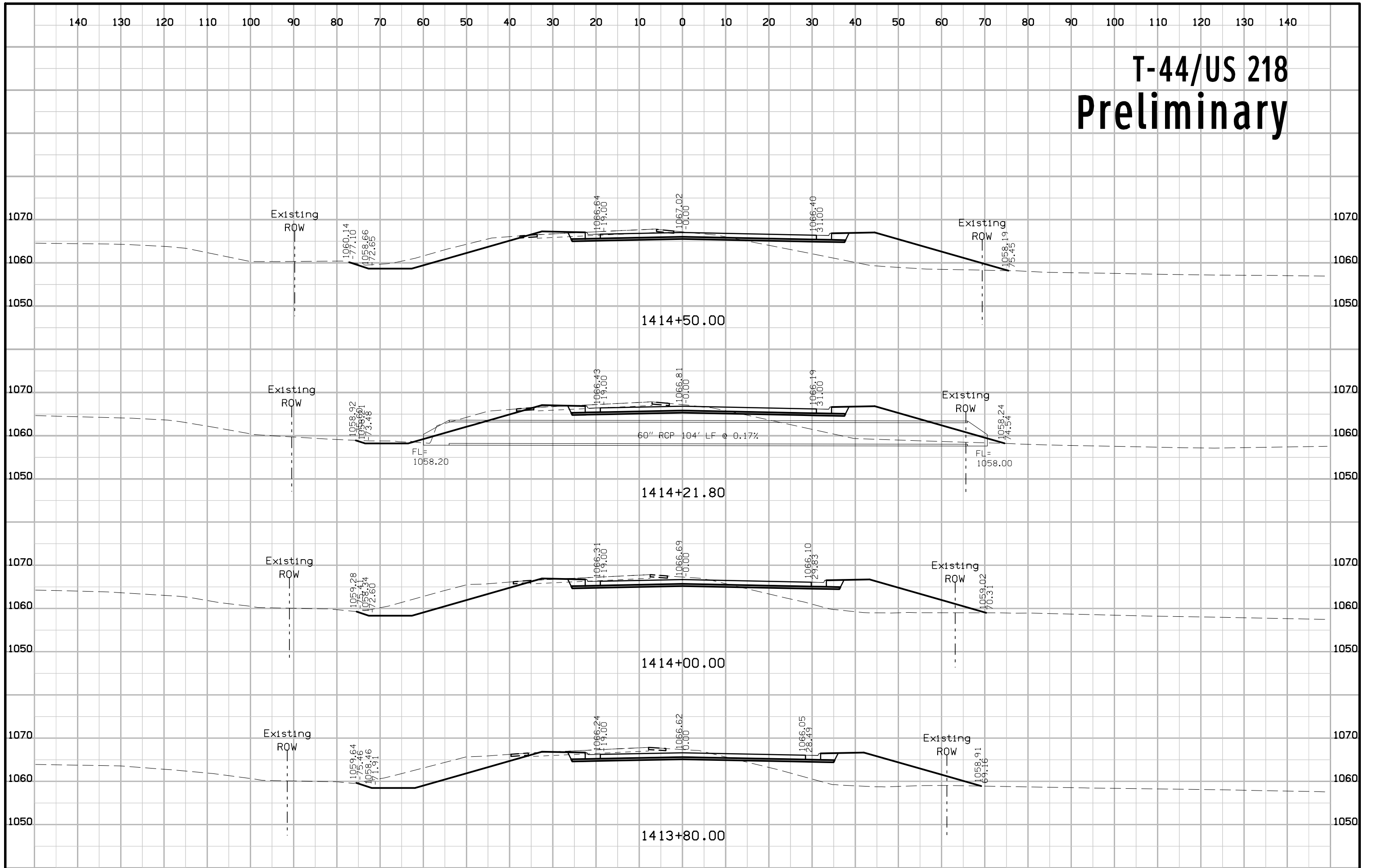
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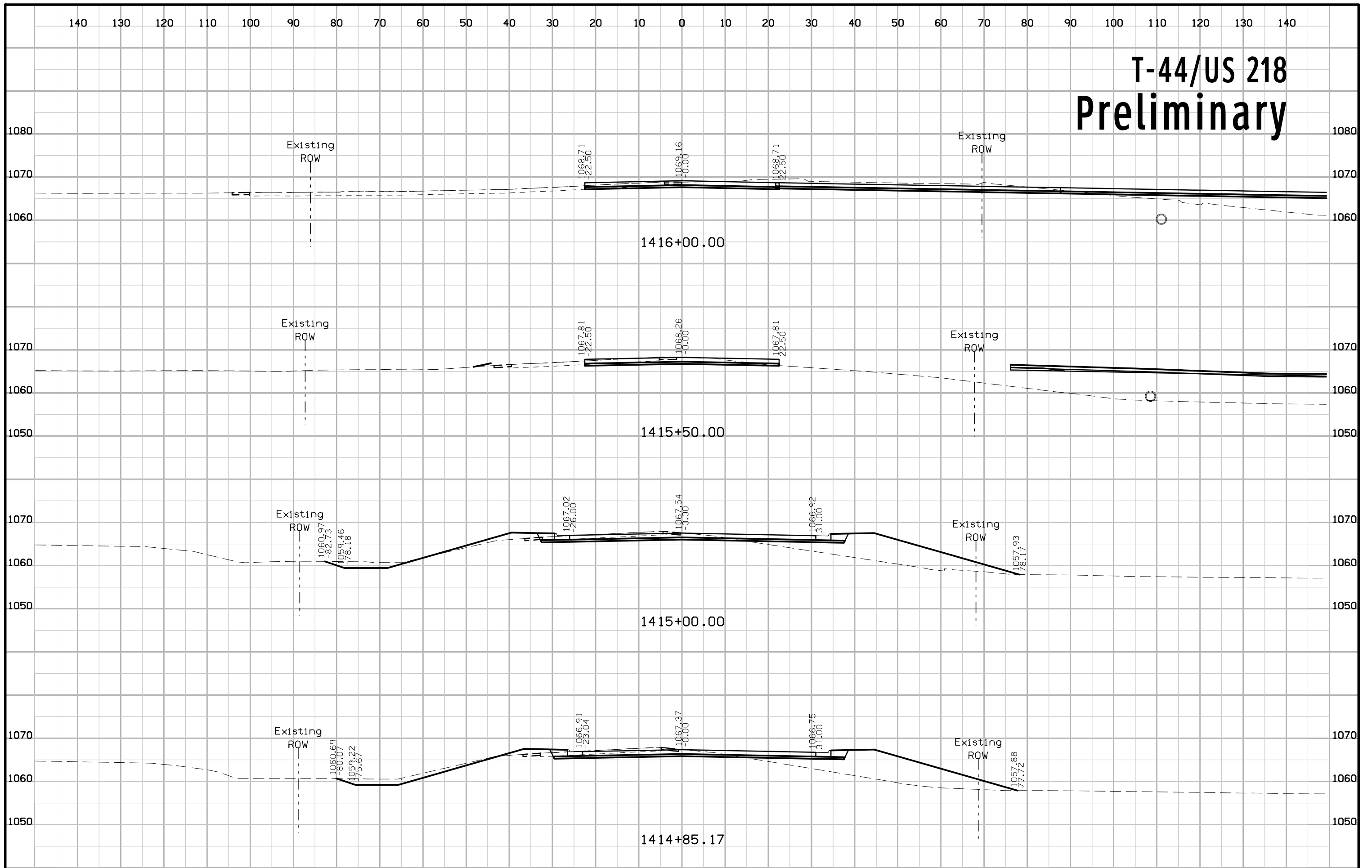
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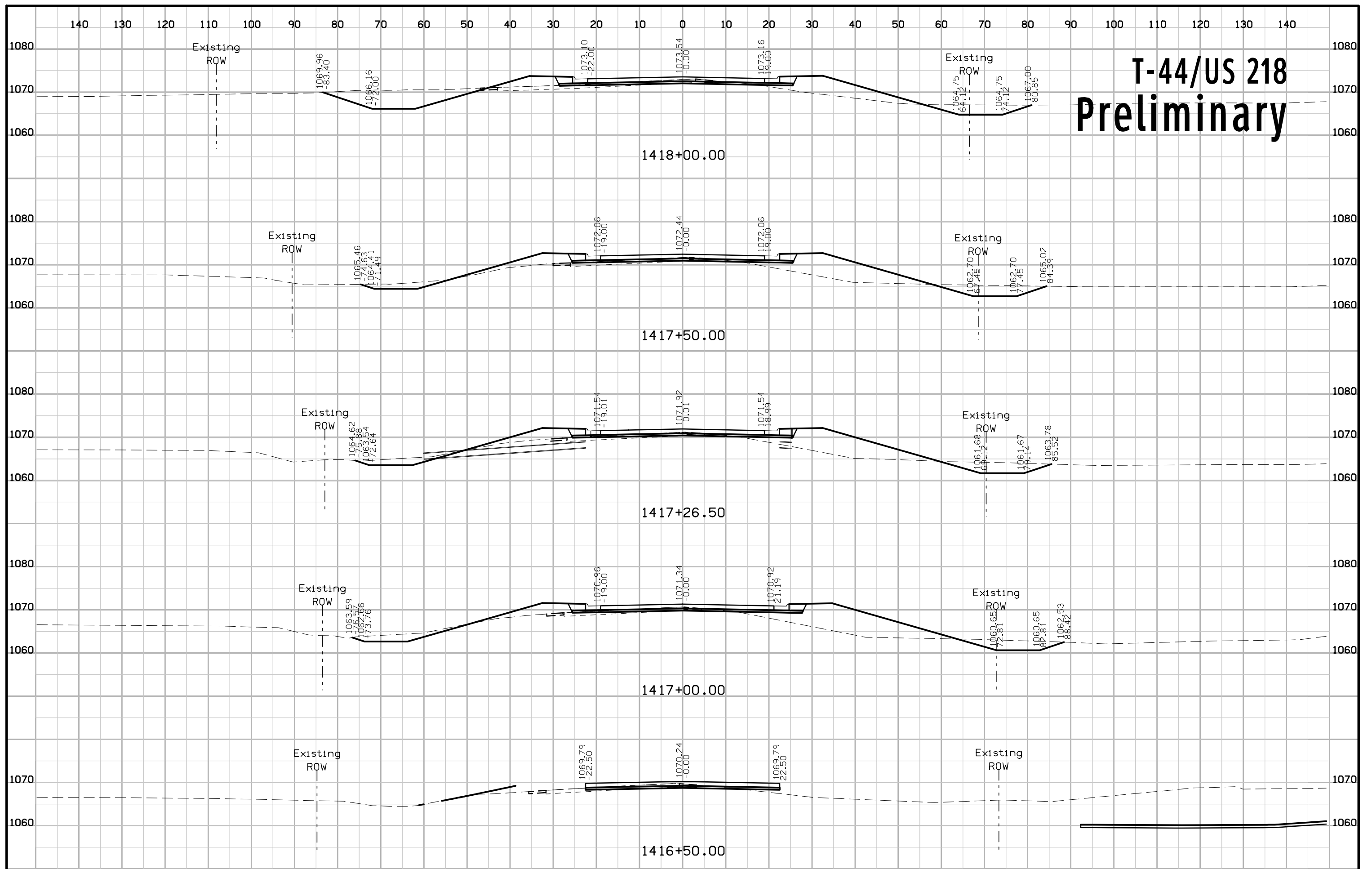
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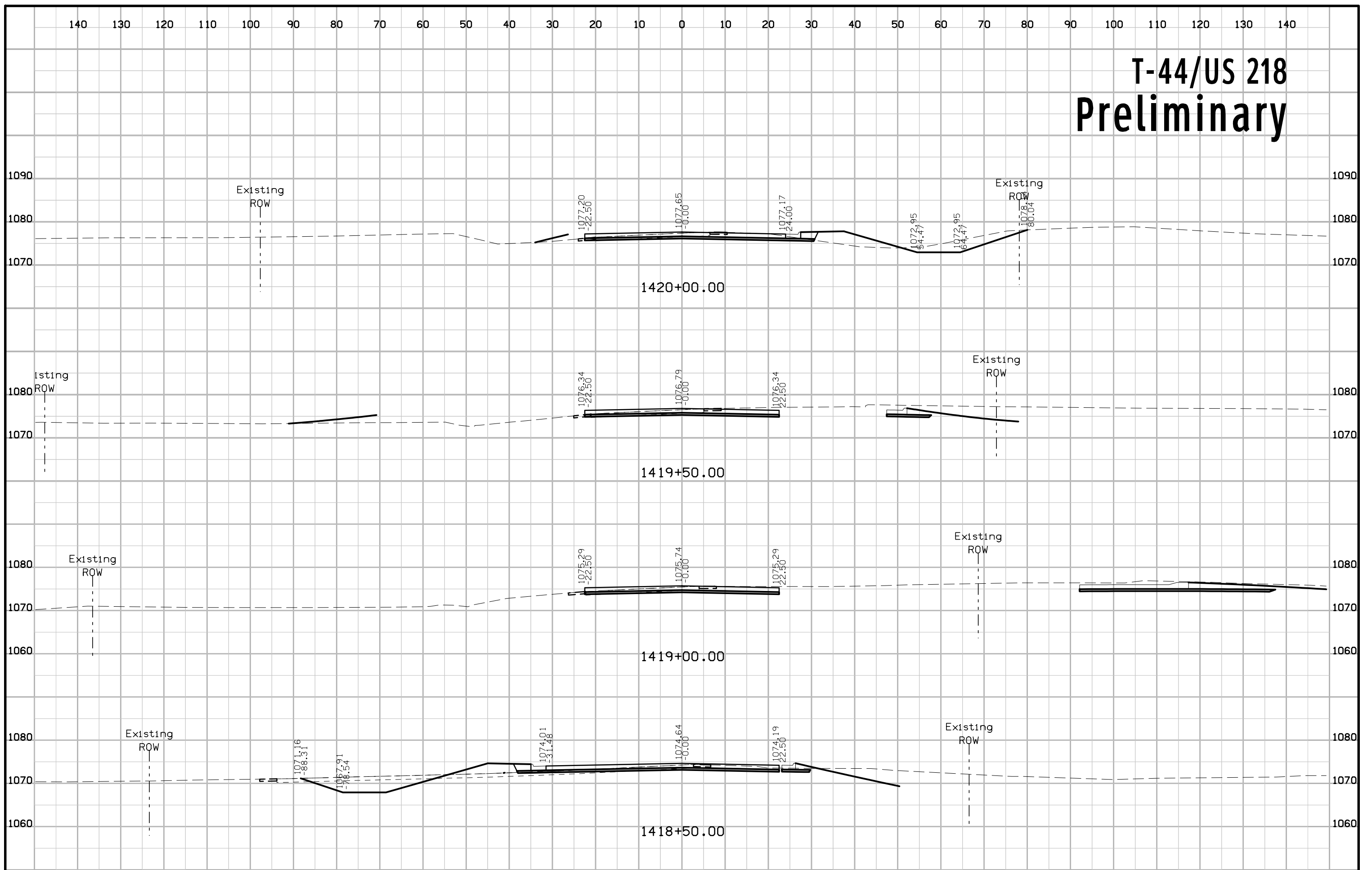
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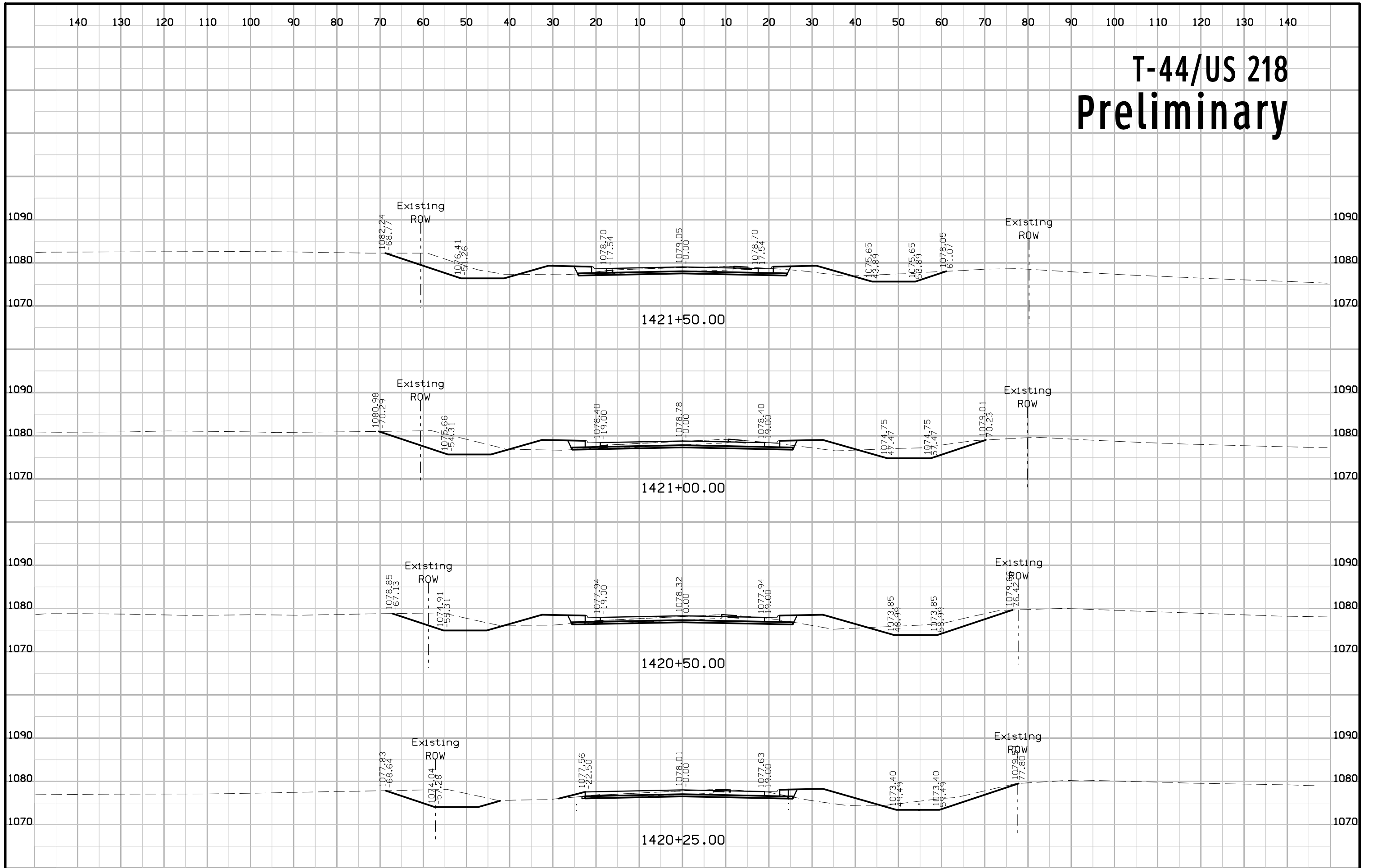
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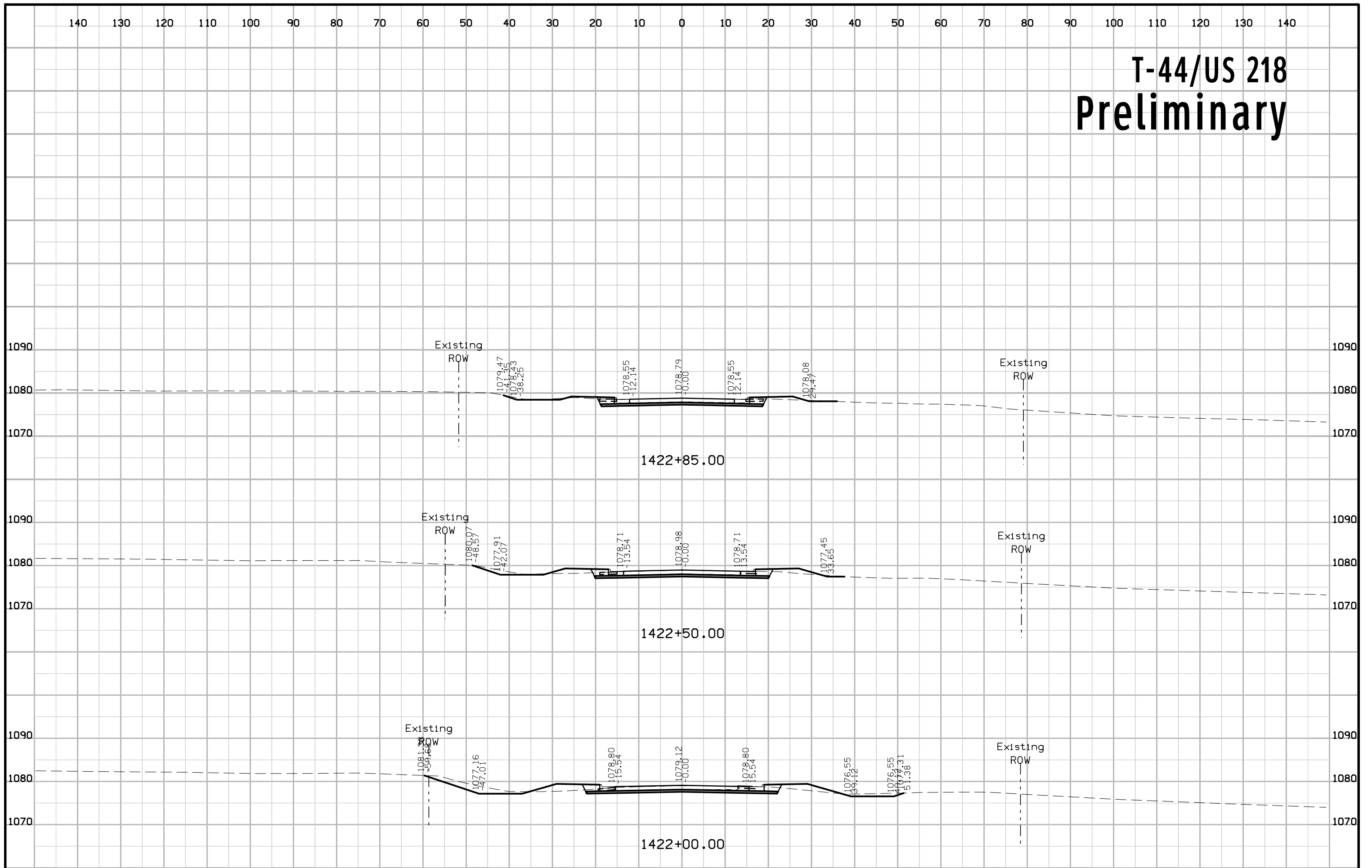
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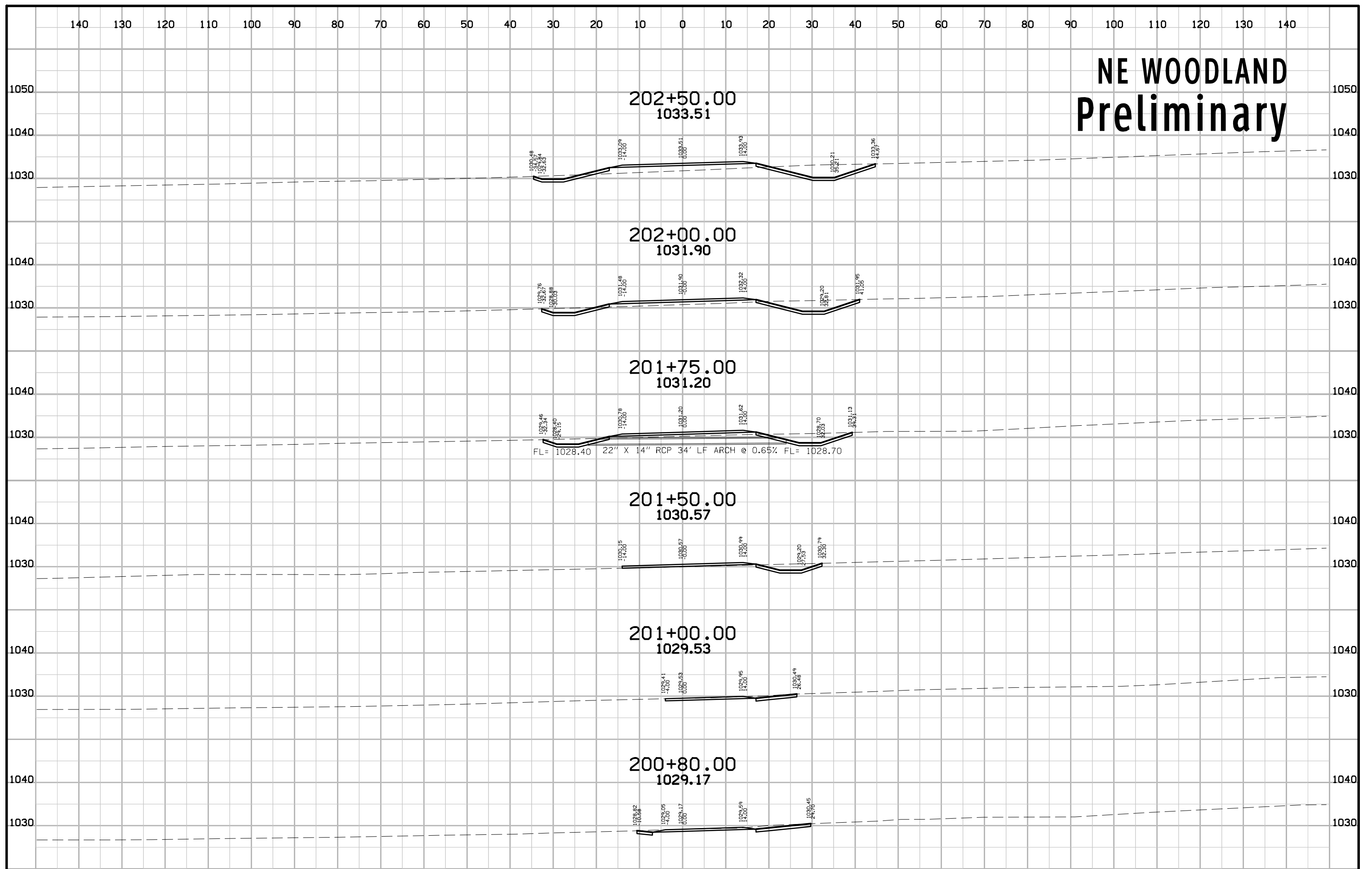
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T-44/US 218 Preliminary

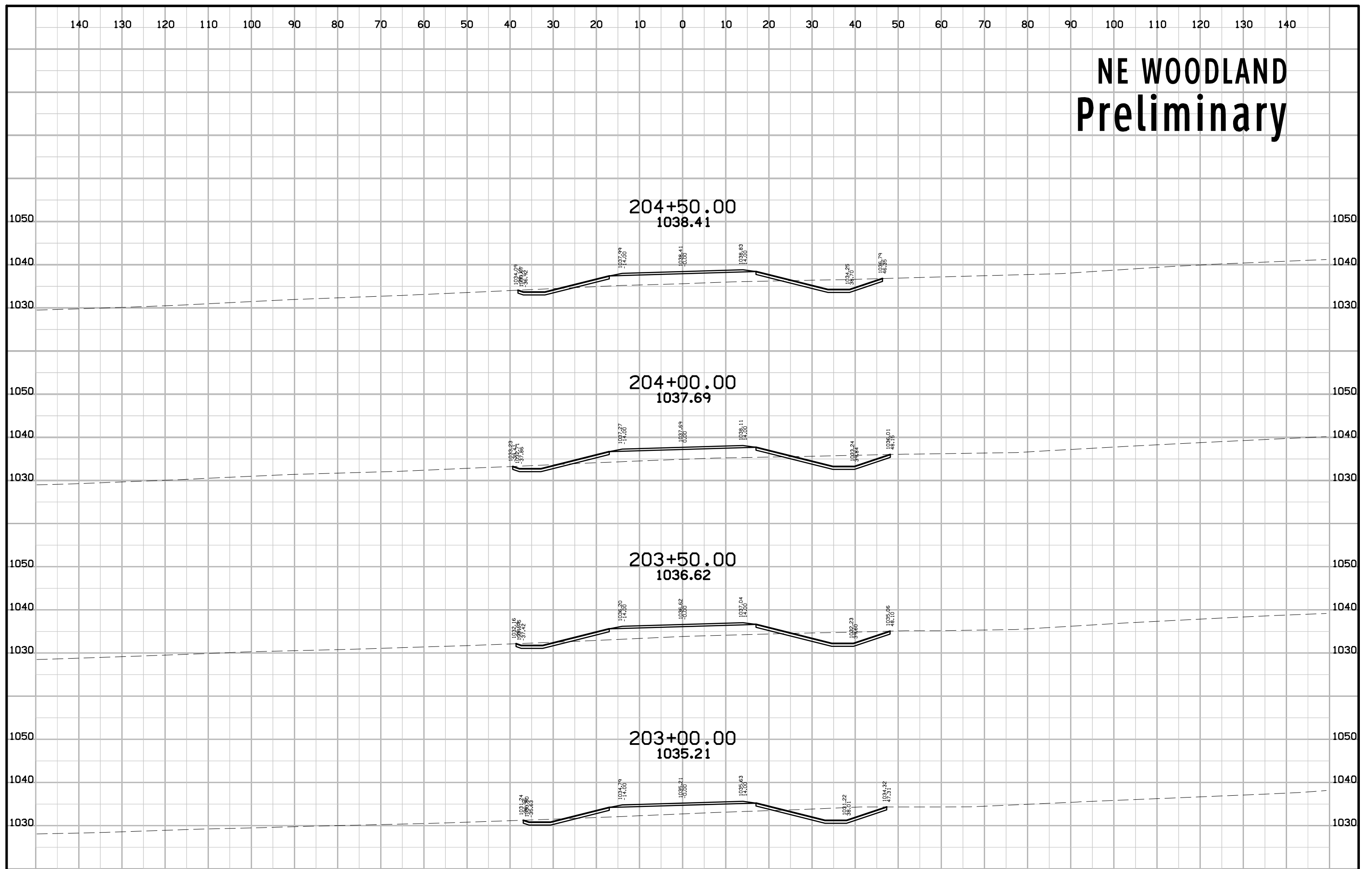


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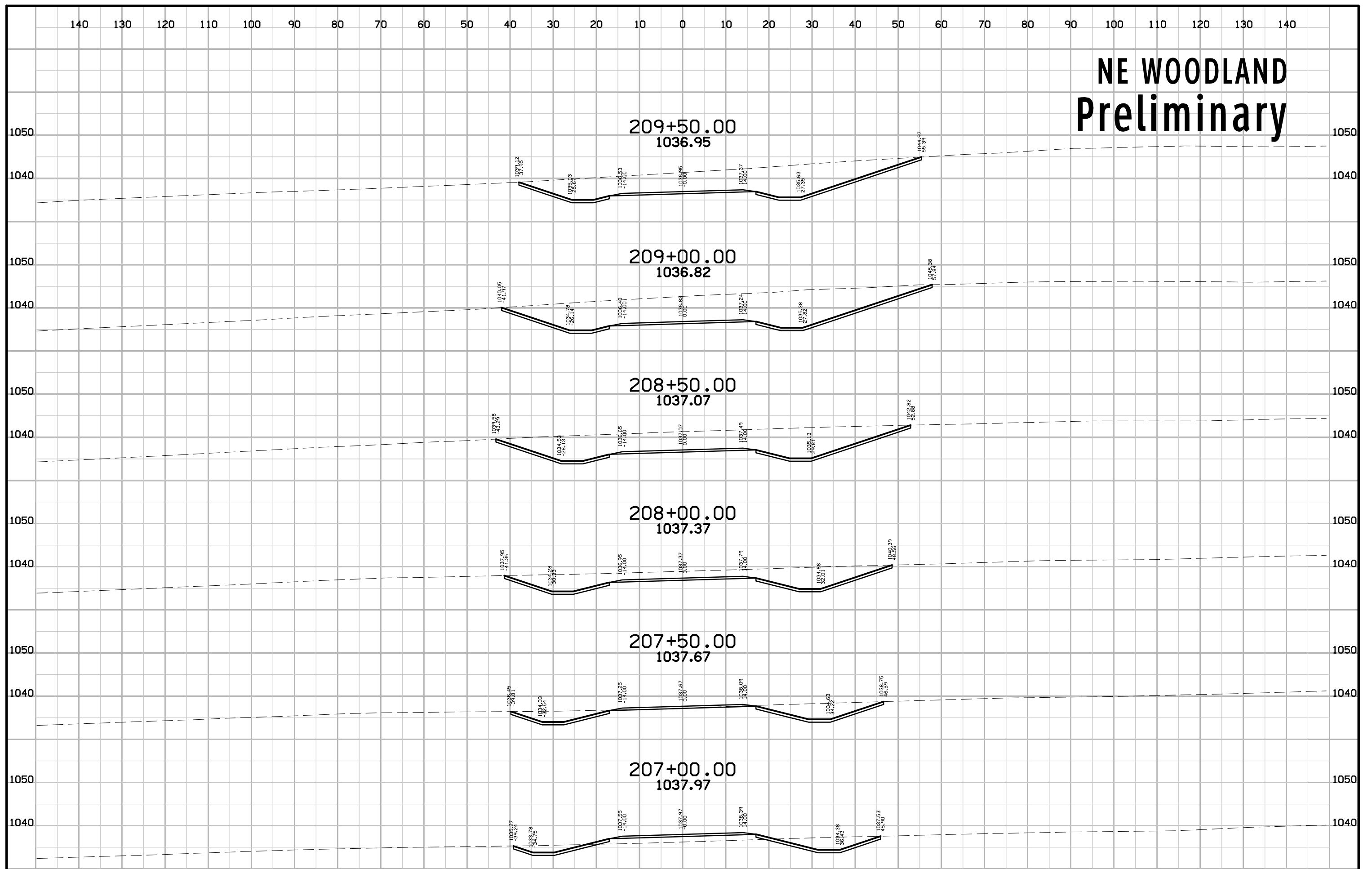


FL= 1028.40 22" X 14" RCP 34' LF ARCH @ 0.65% FL= 1028.70

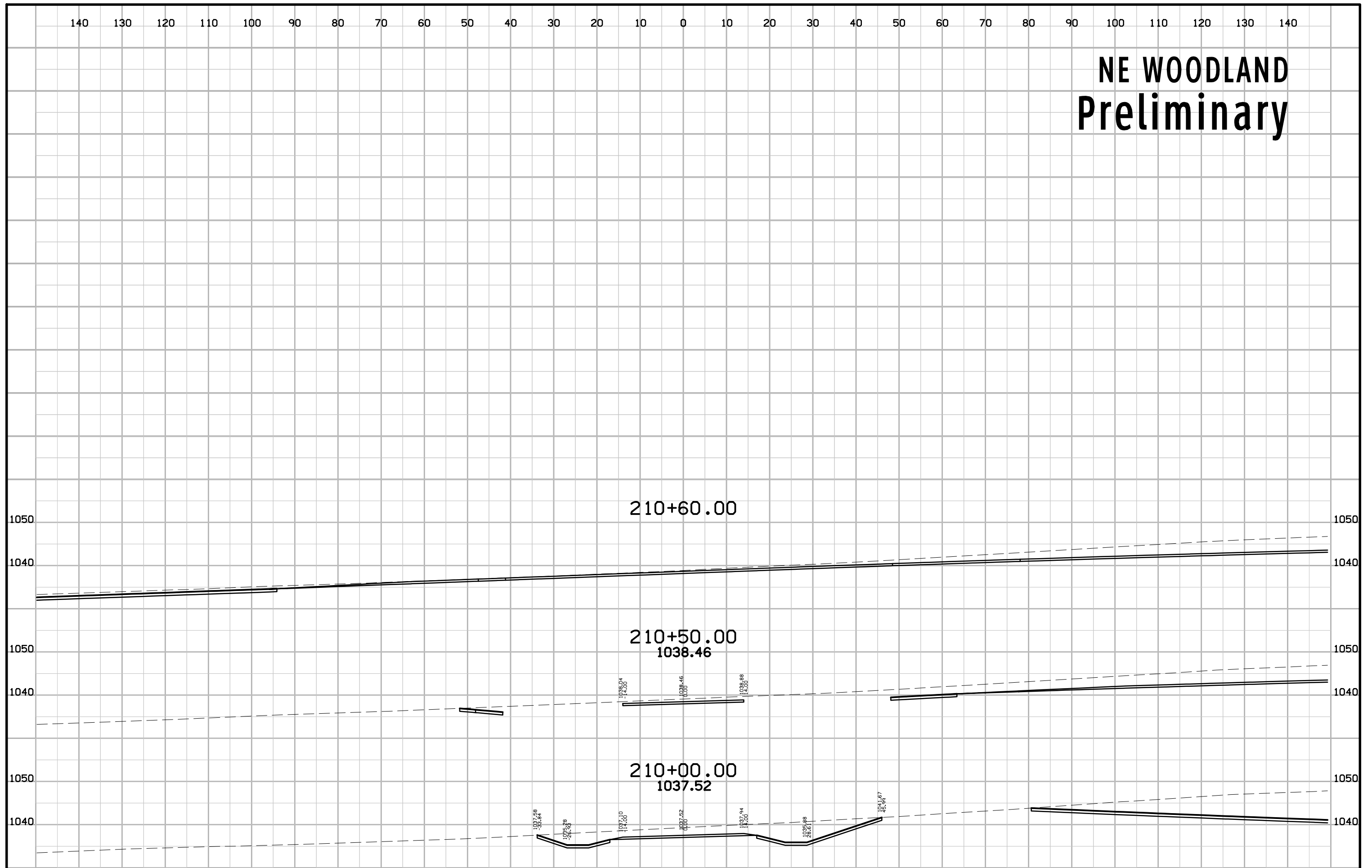
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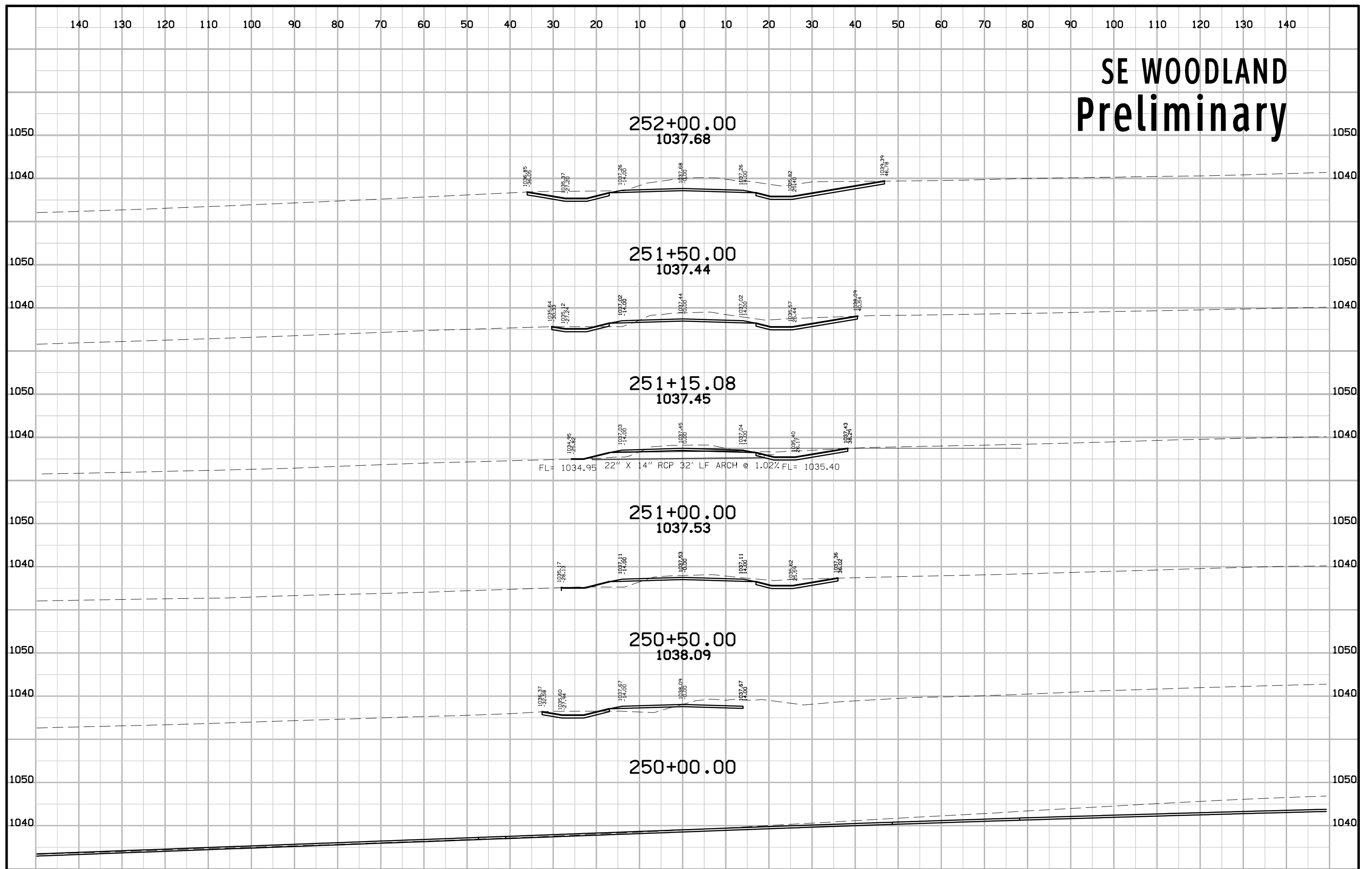
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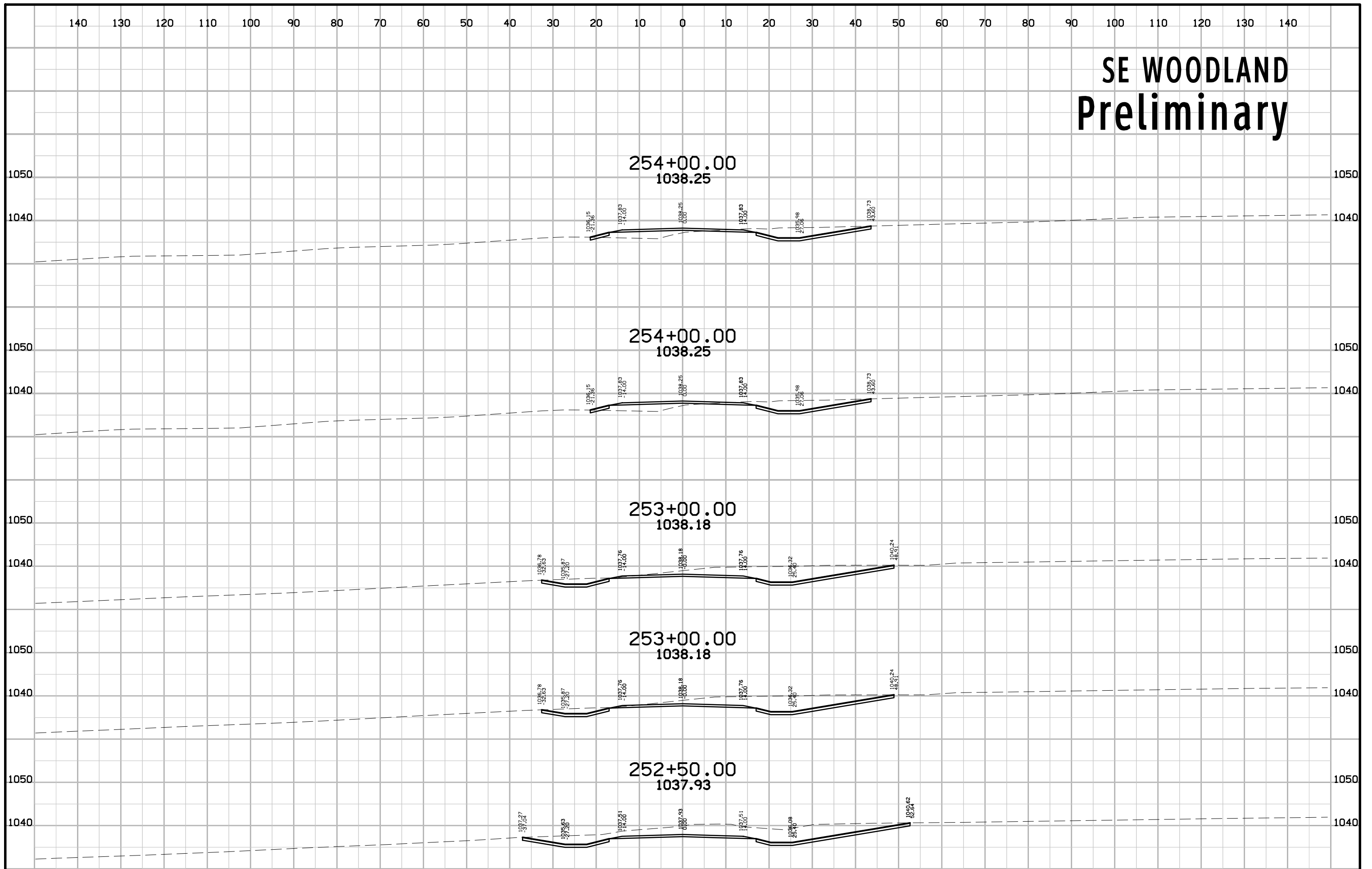
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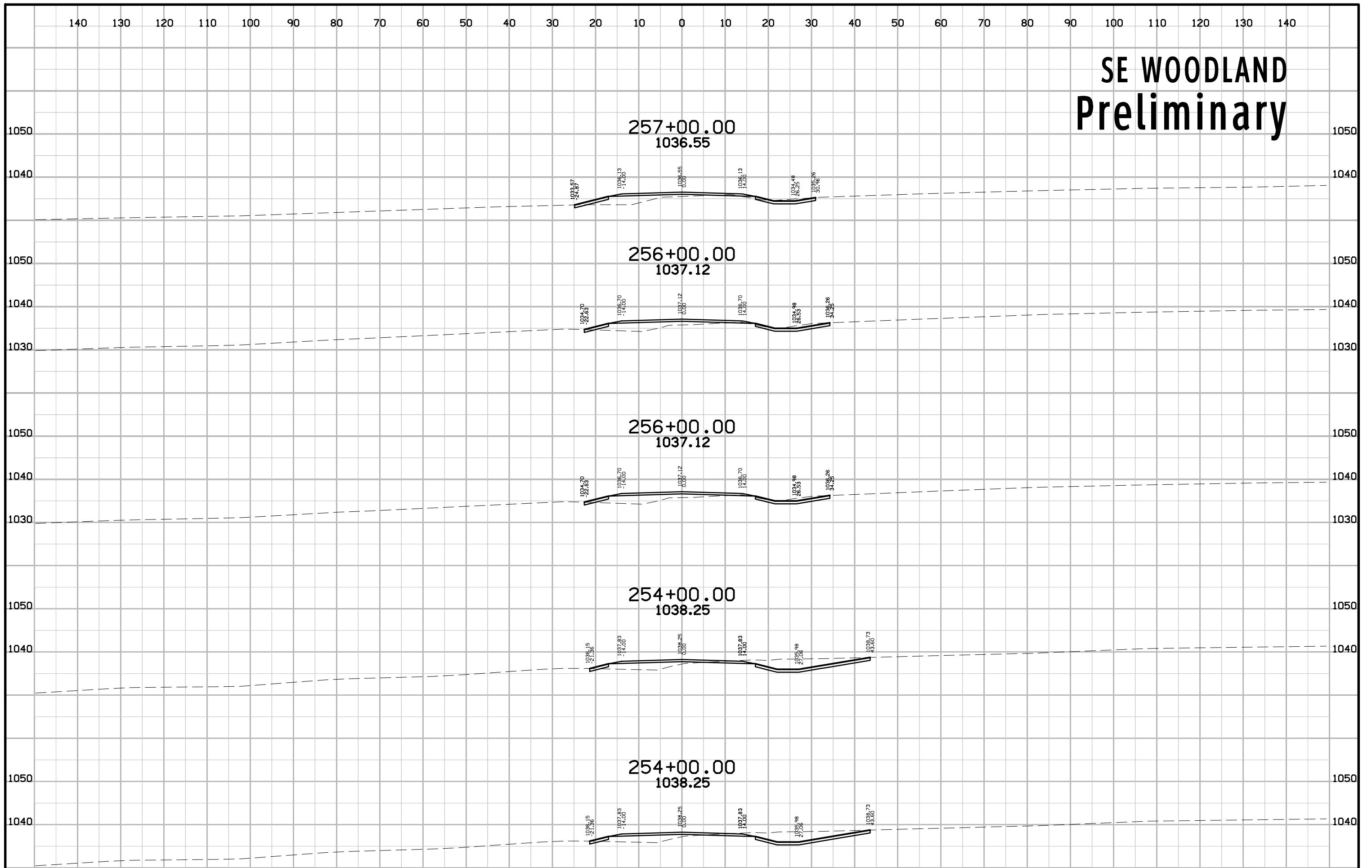
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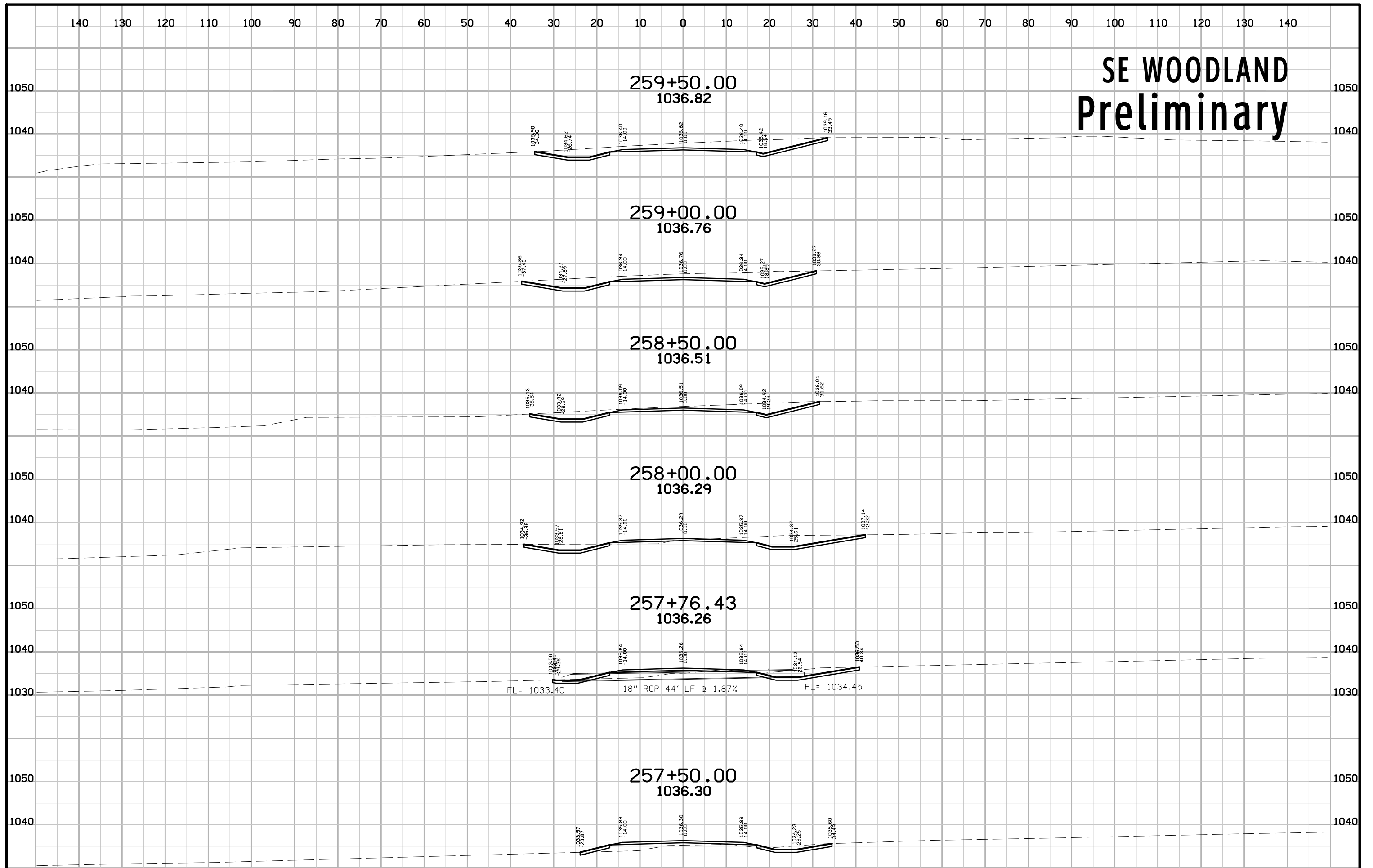
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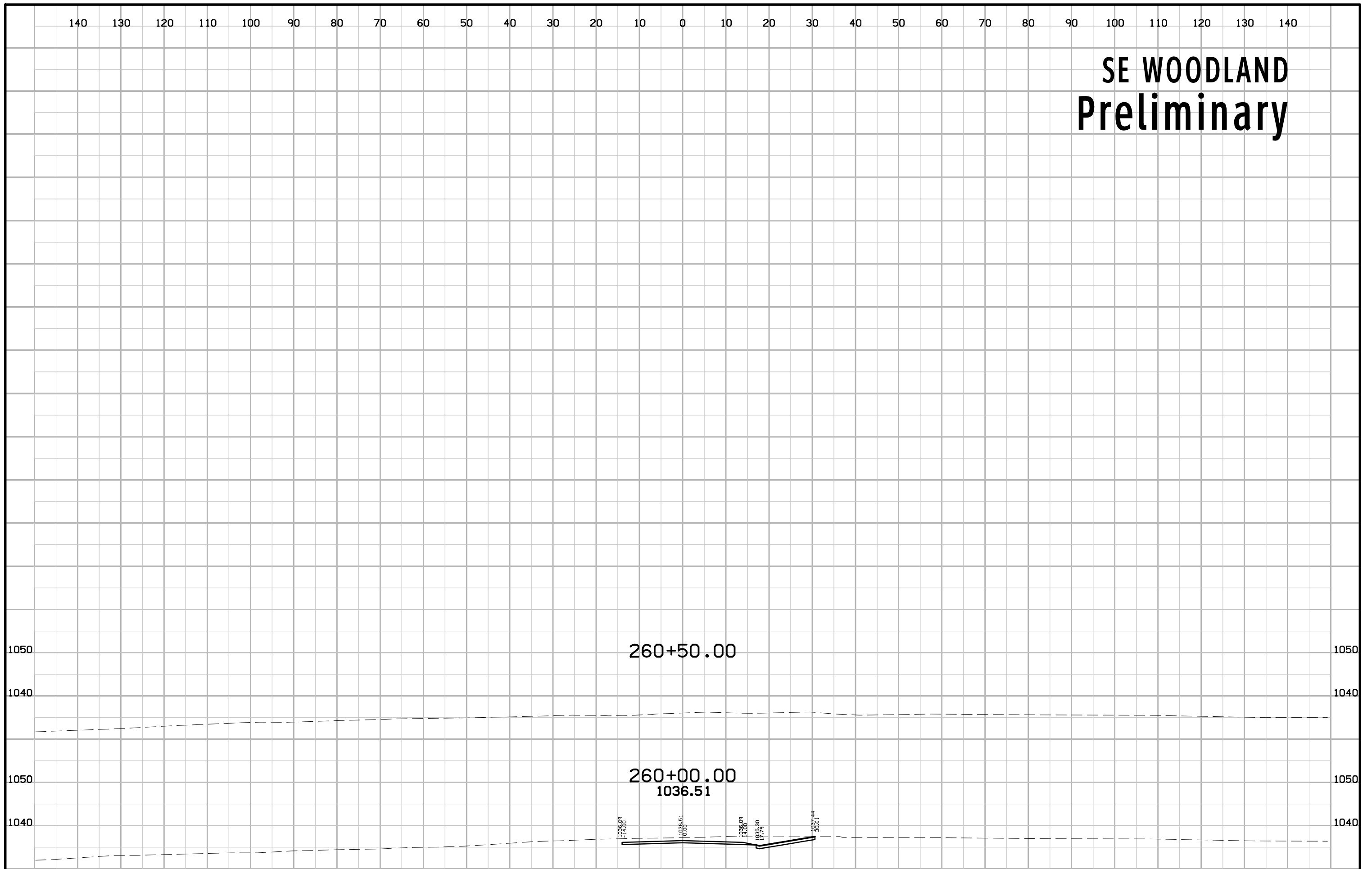
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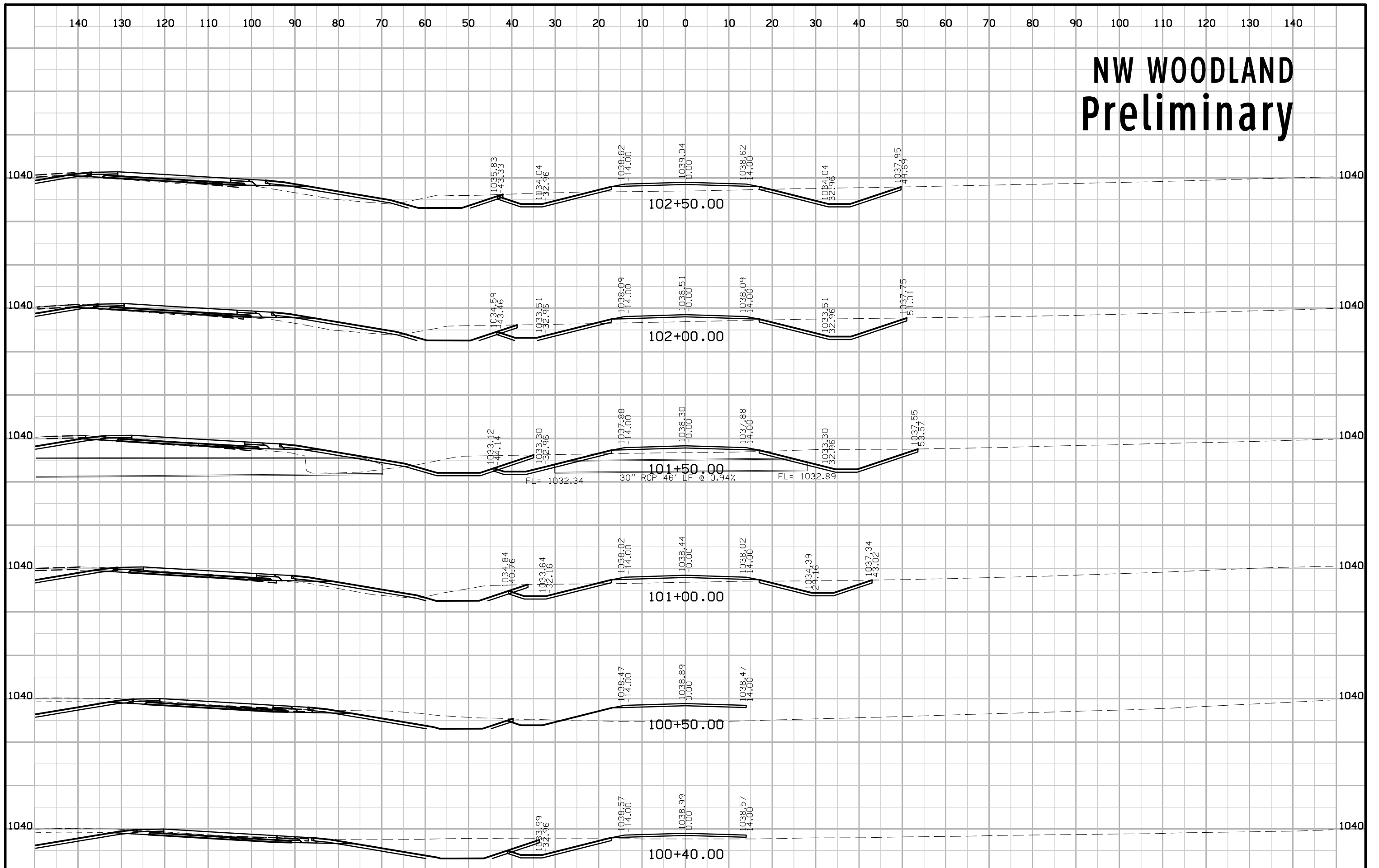
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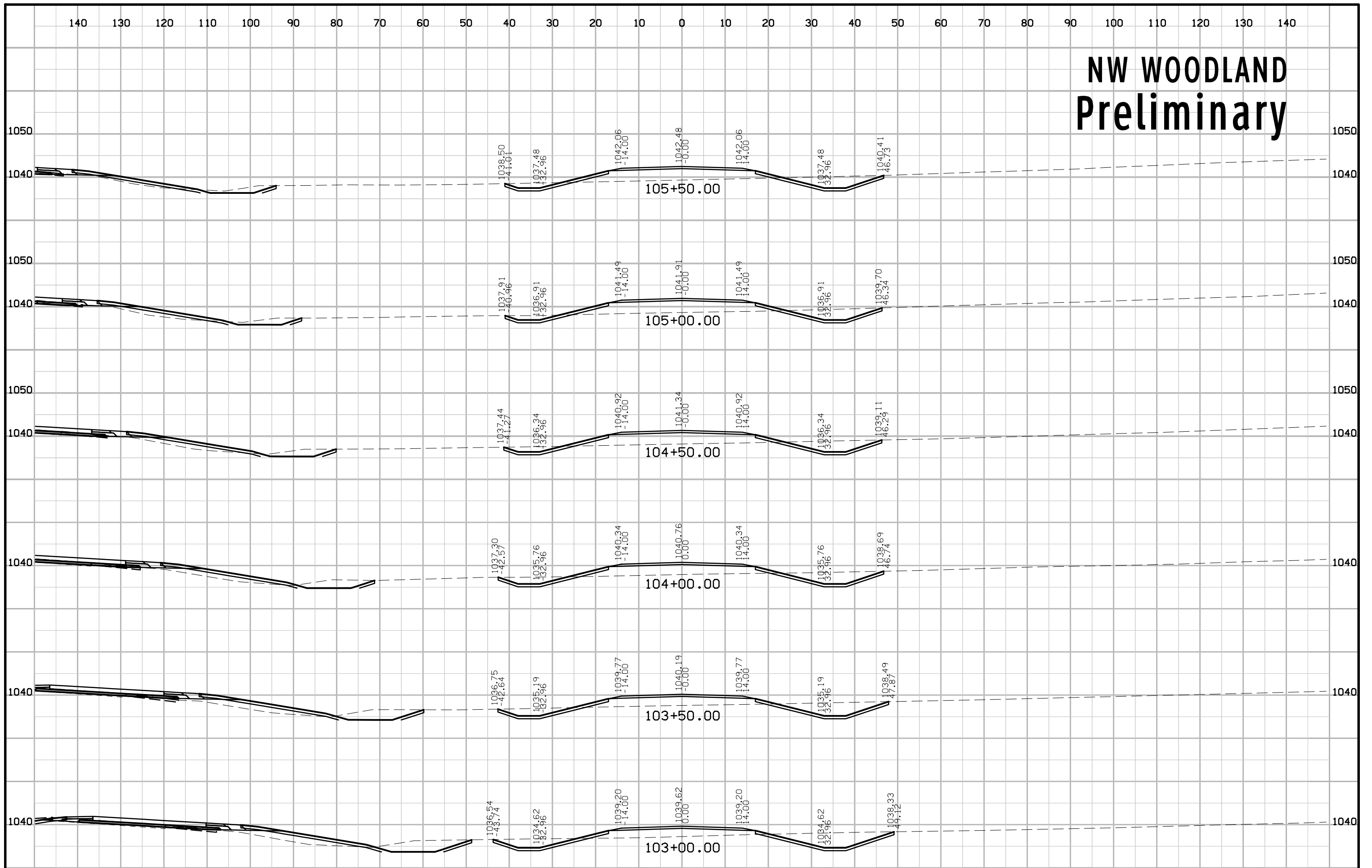
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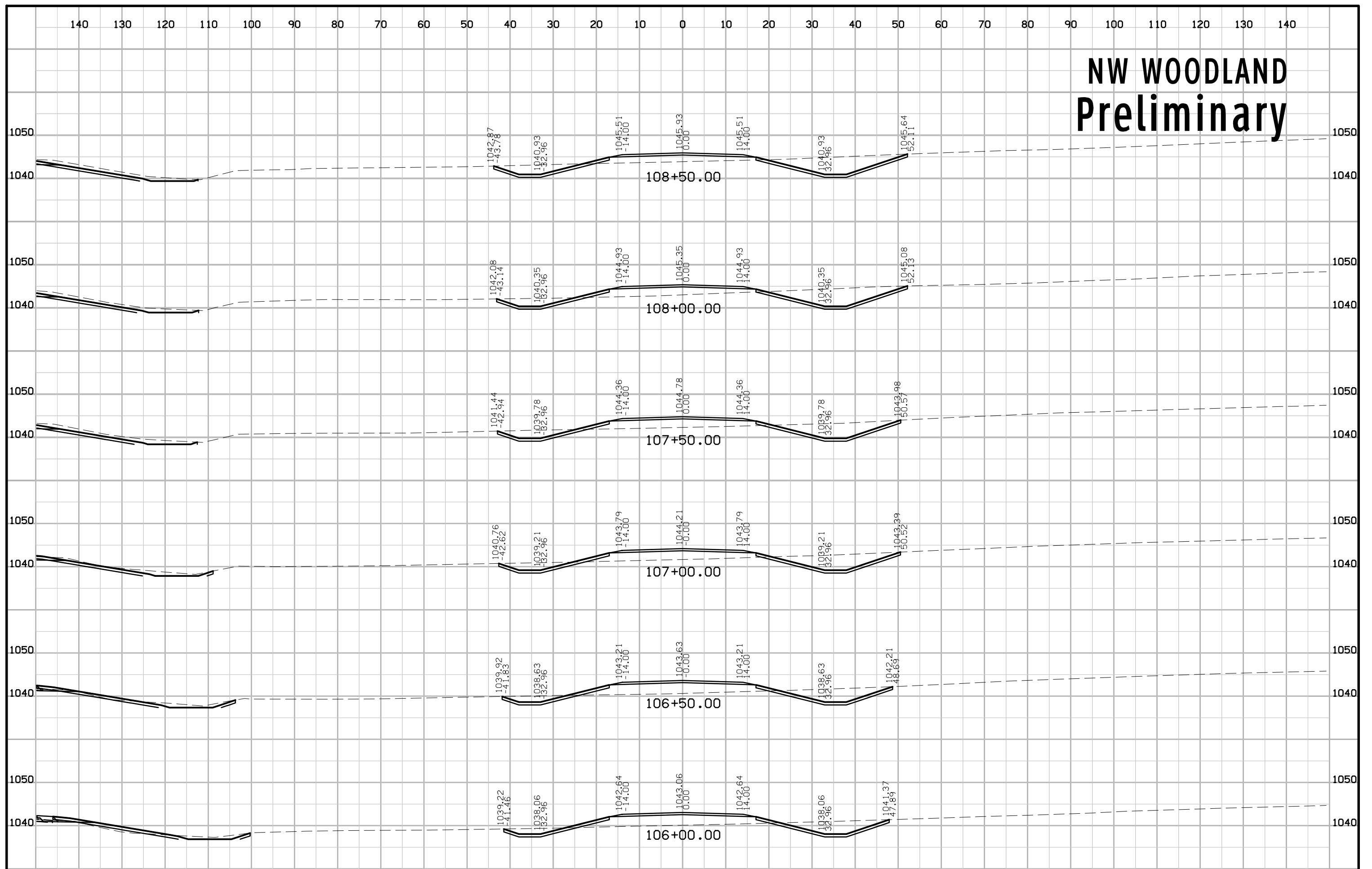
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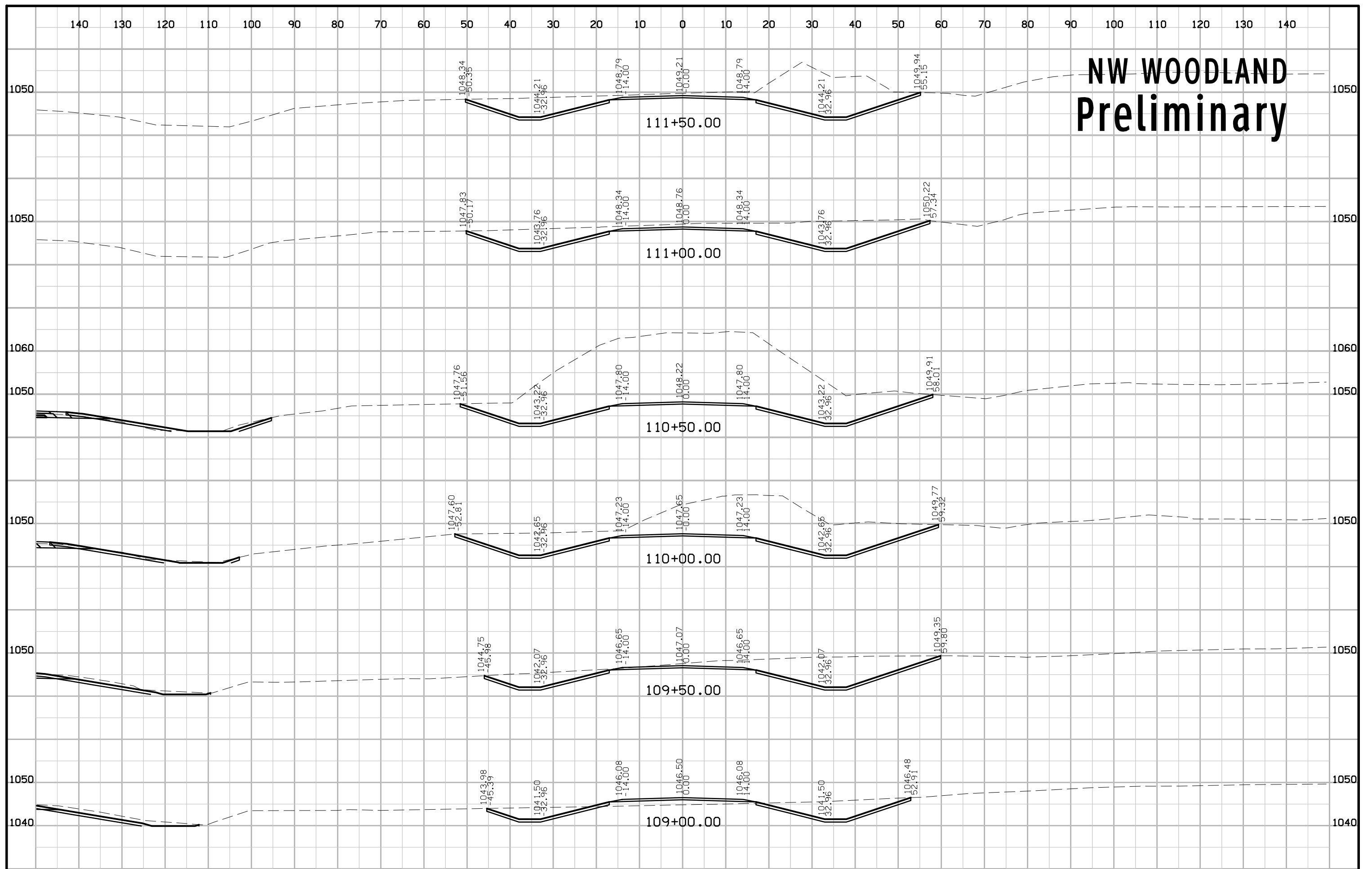
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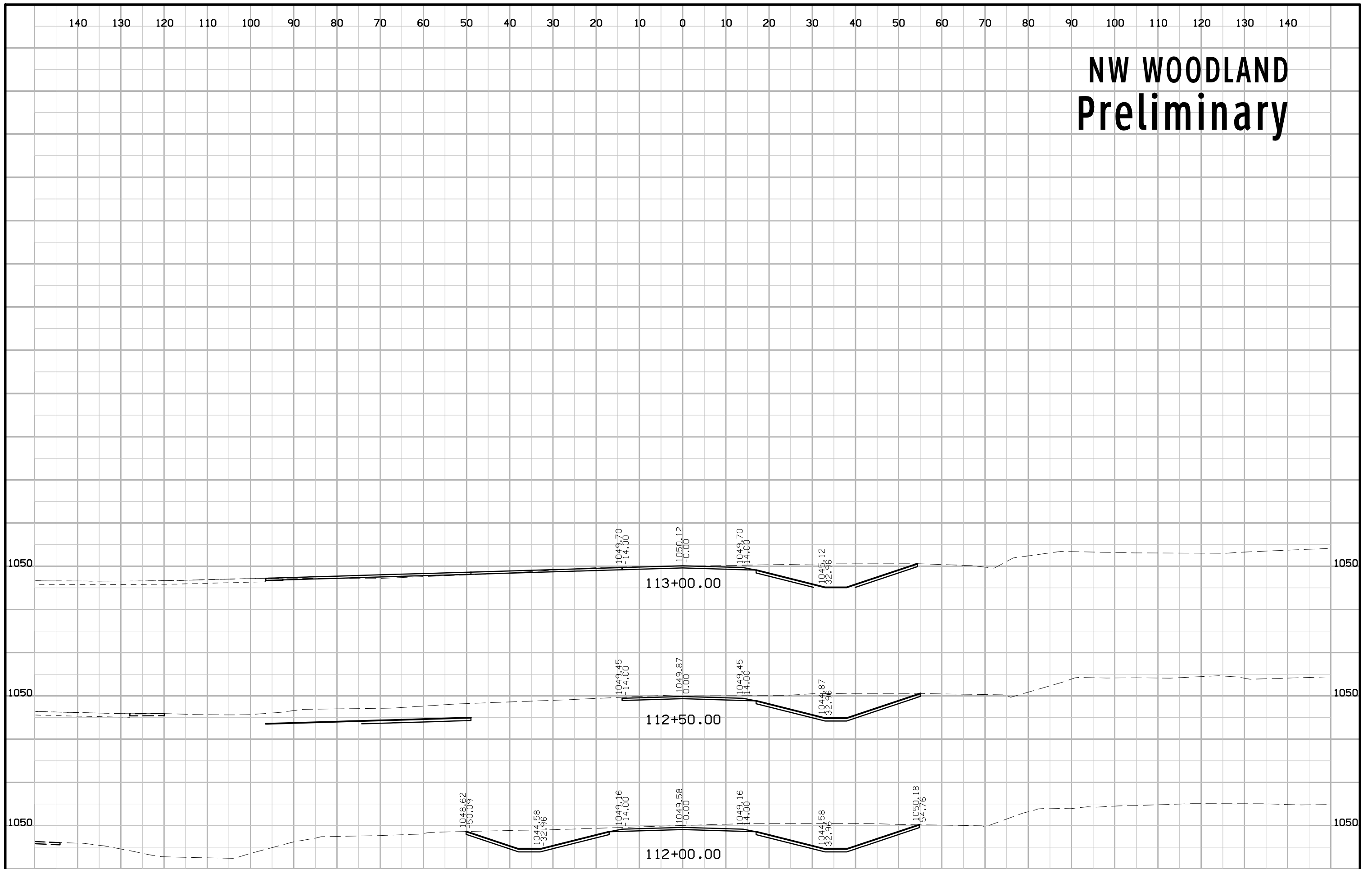
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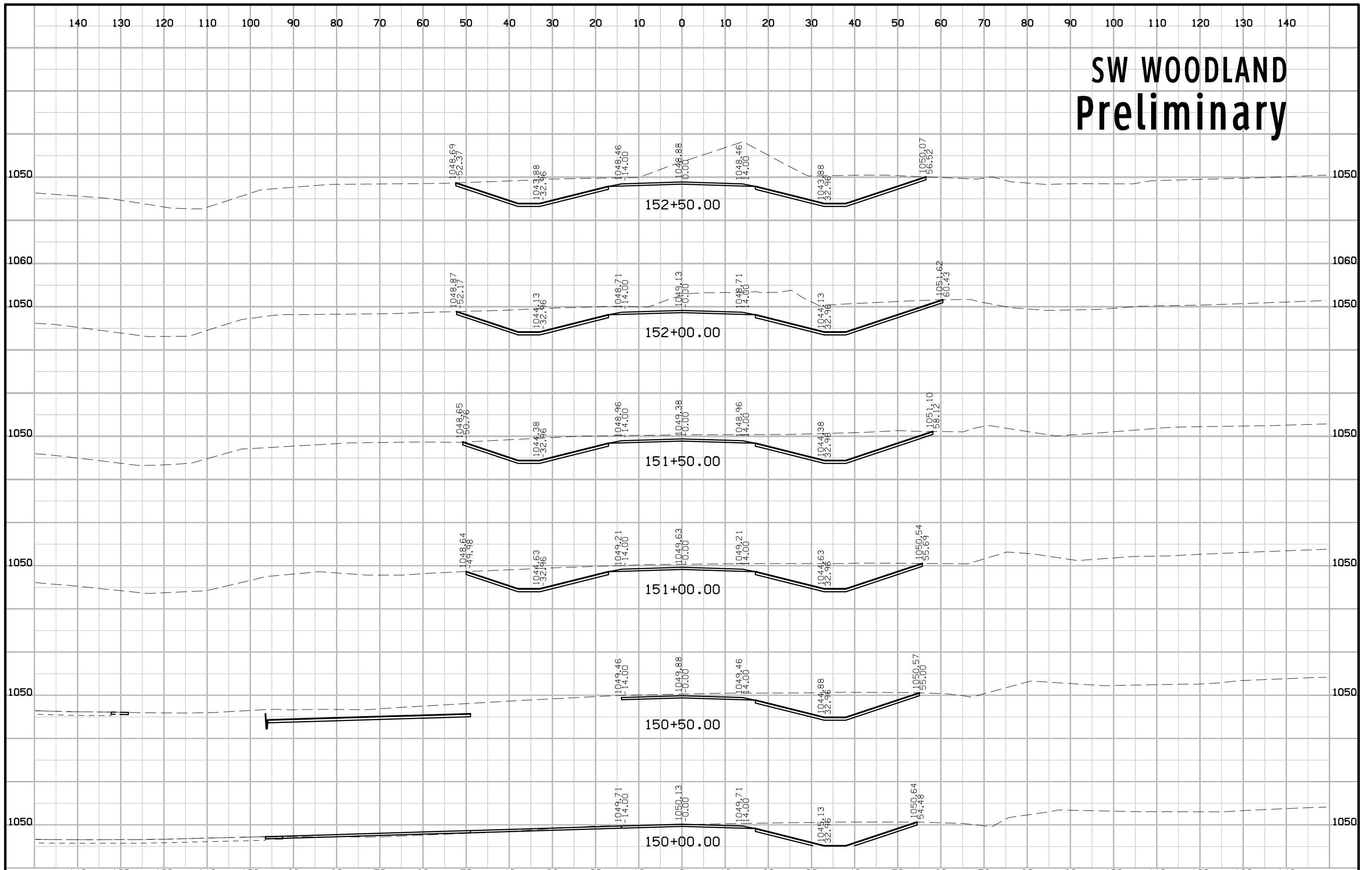
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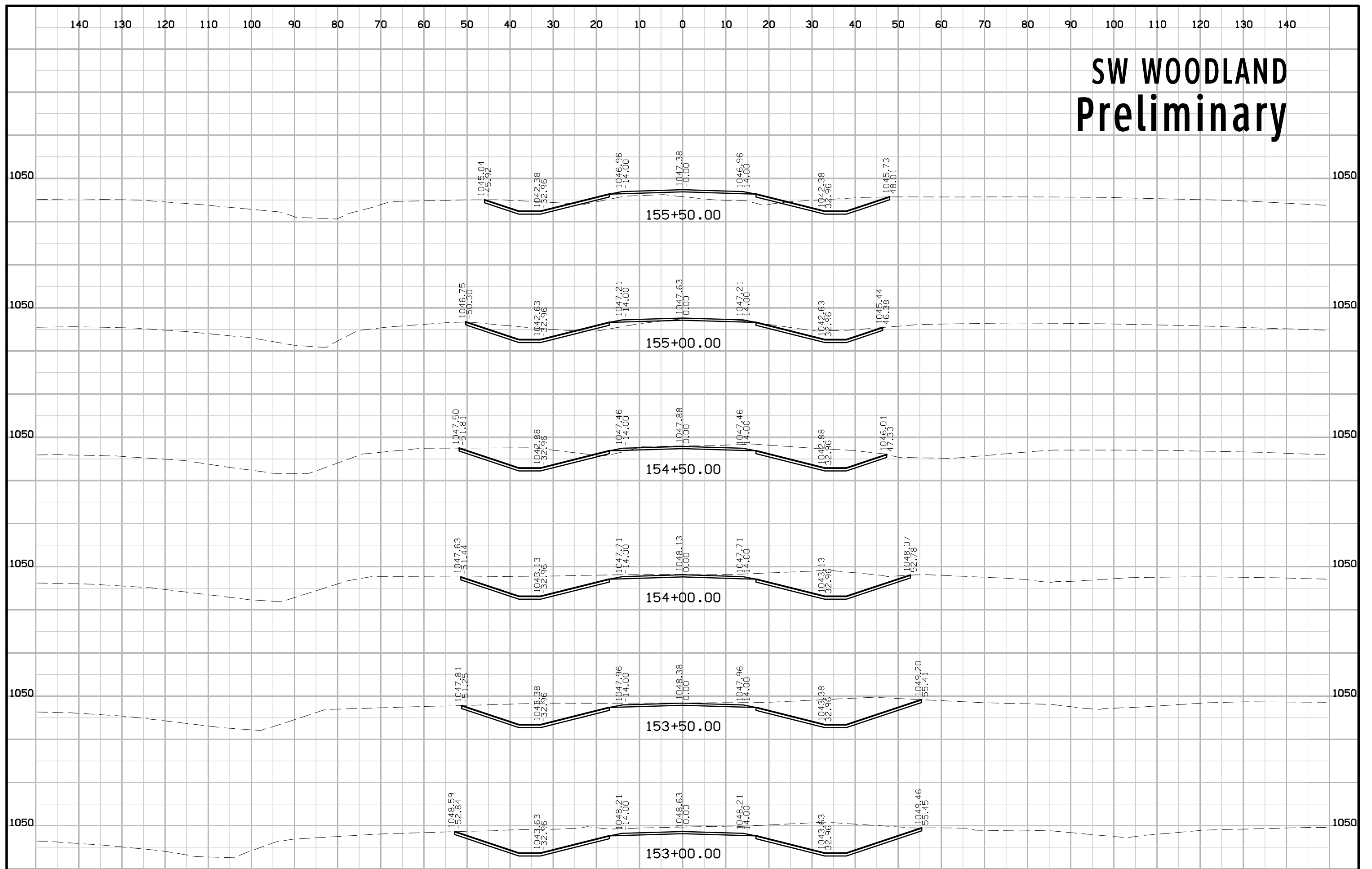
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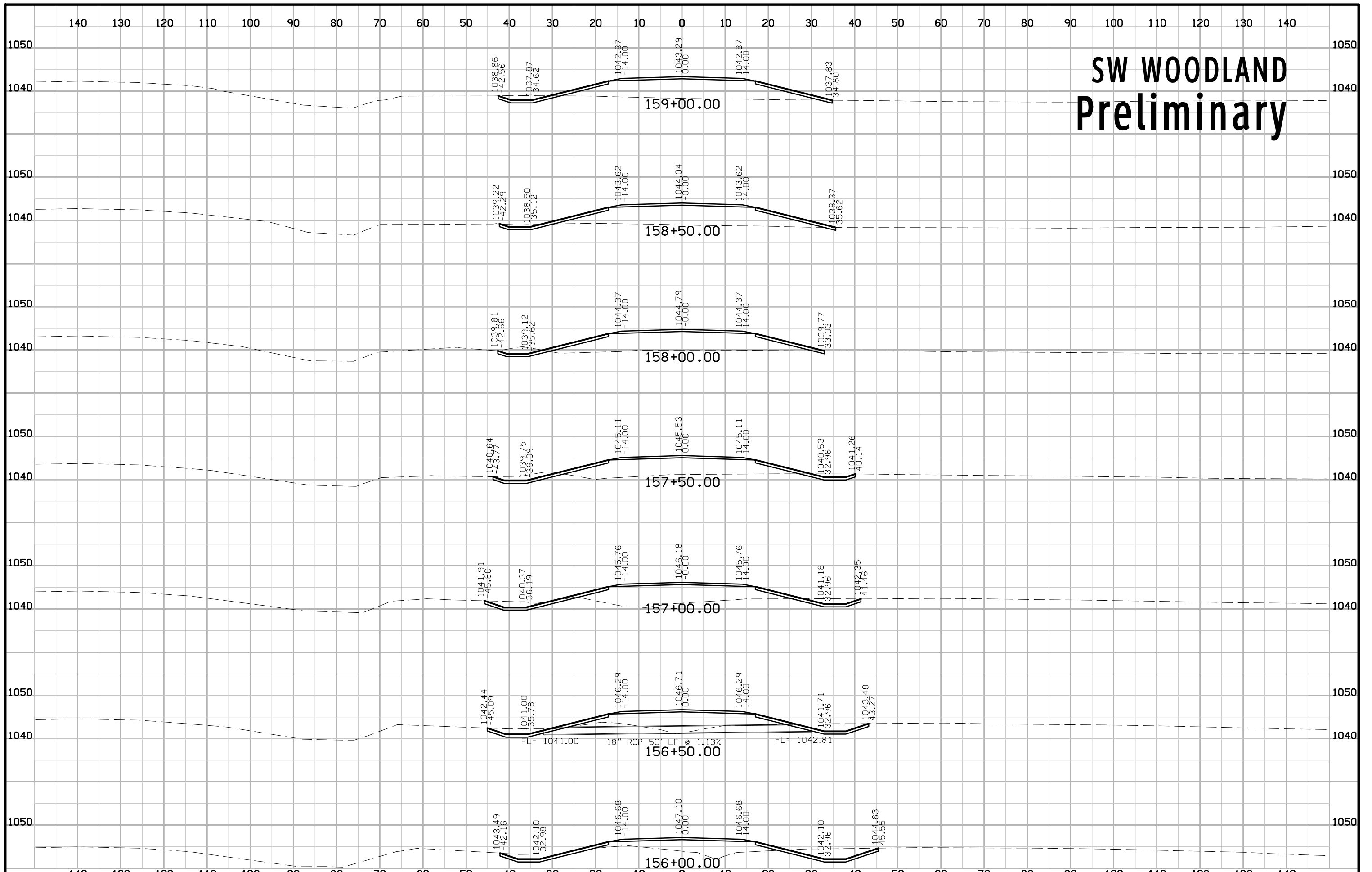
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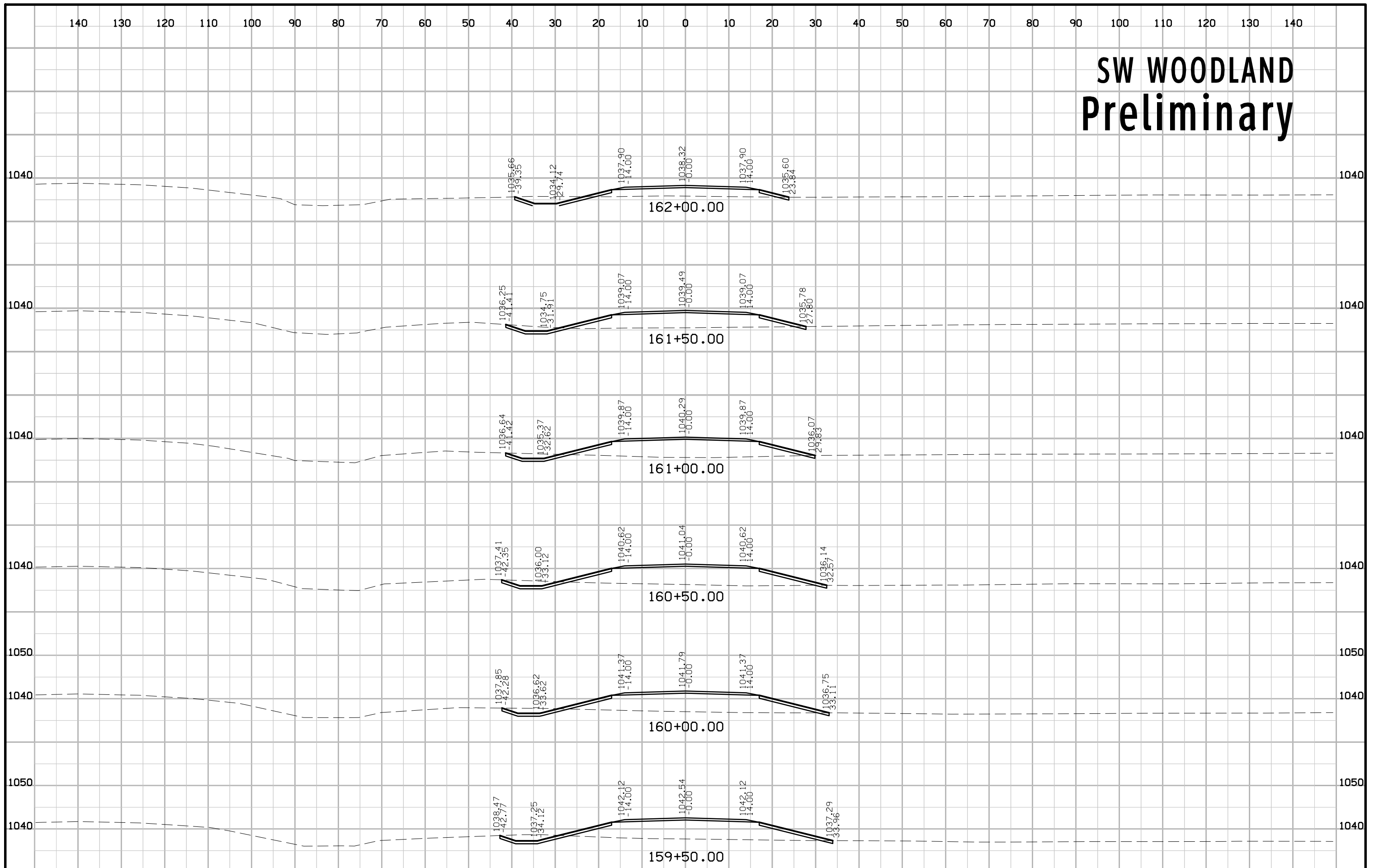
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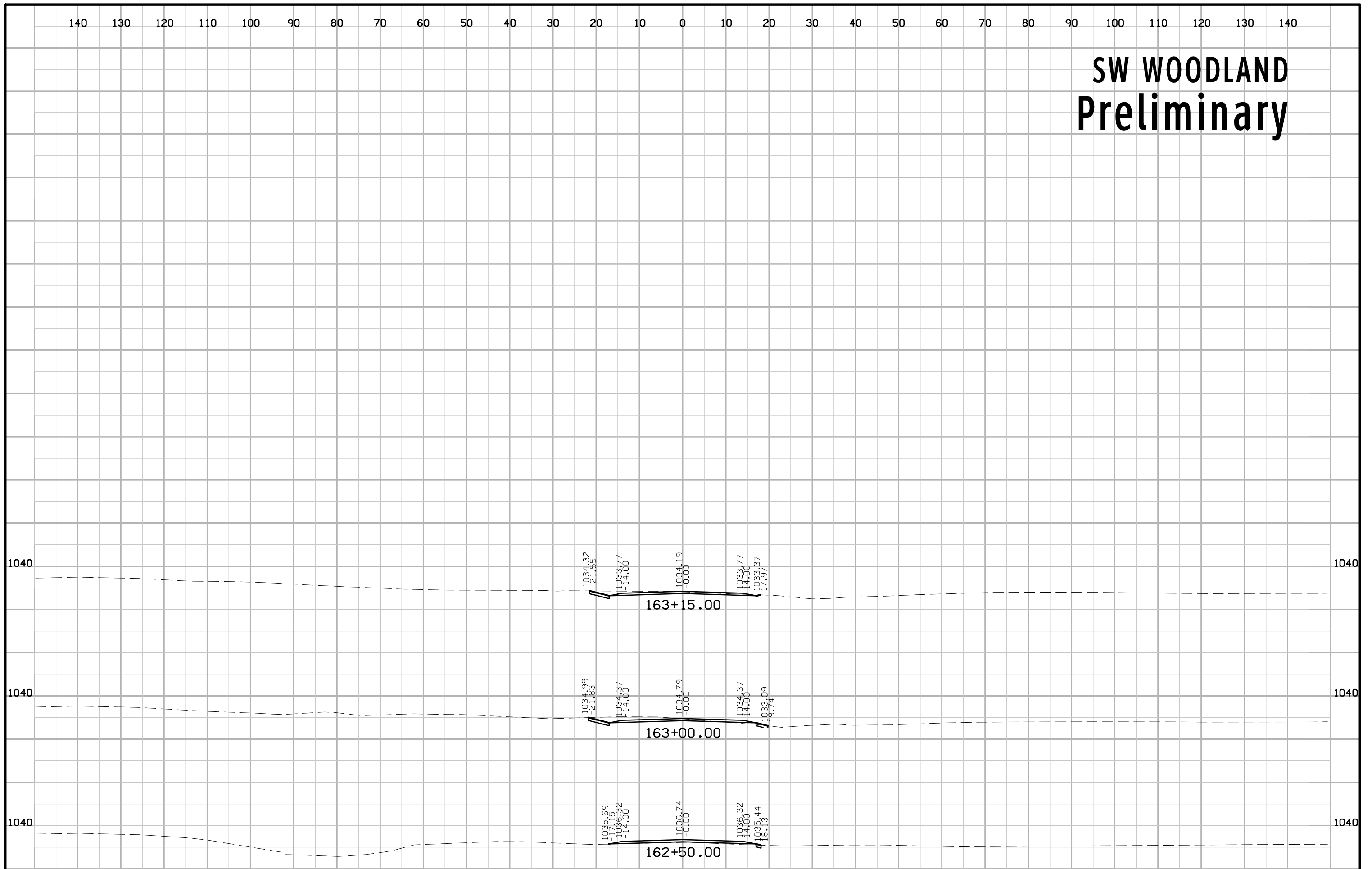
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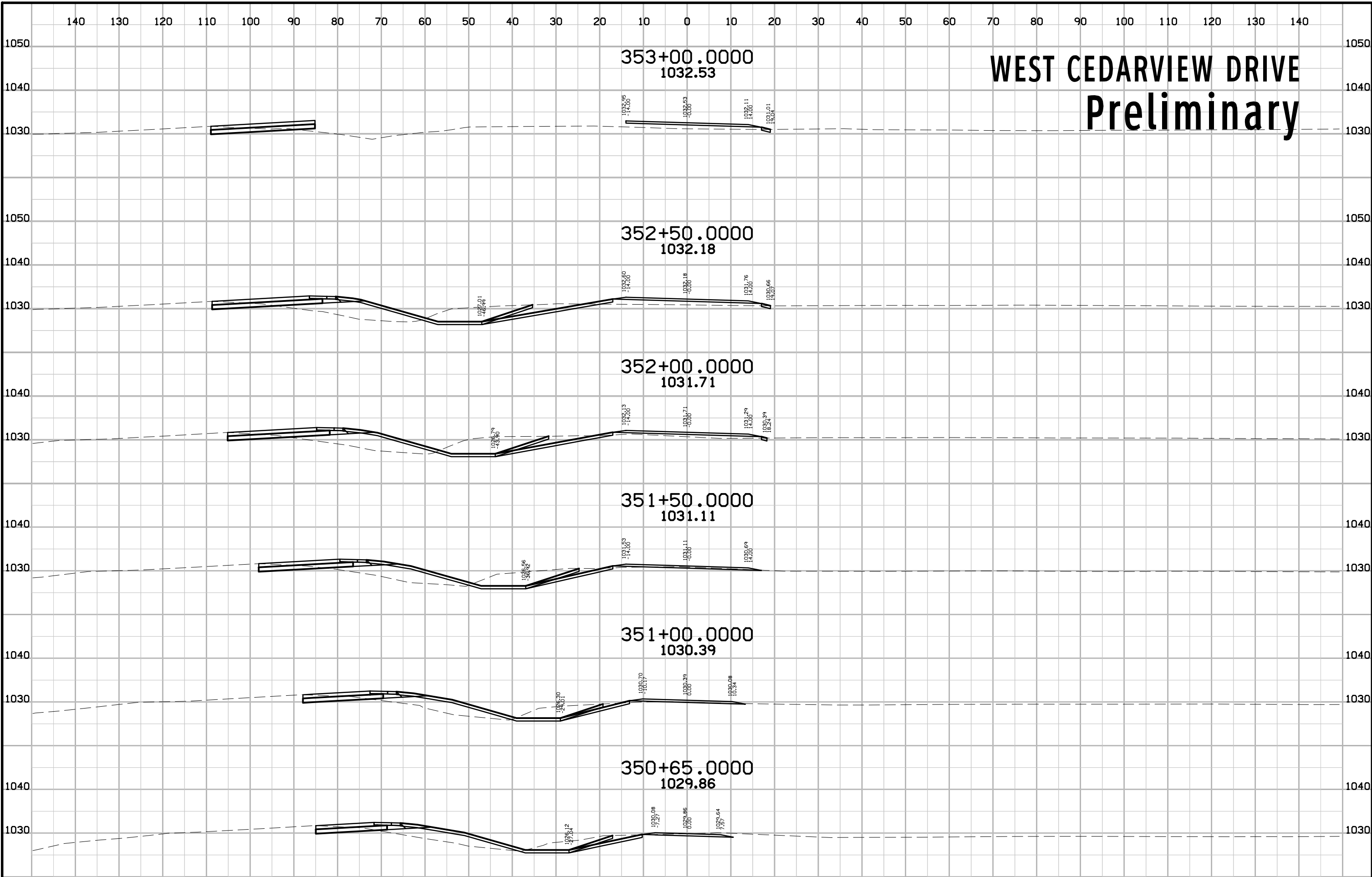
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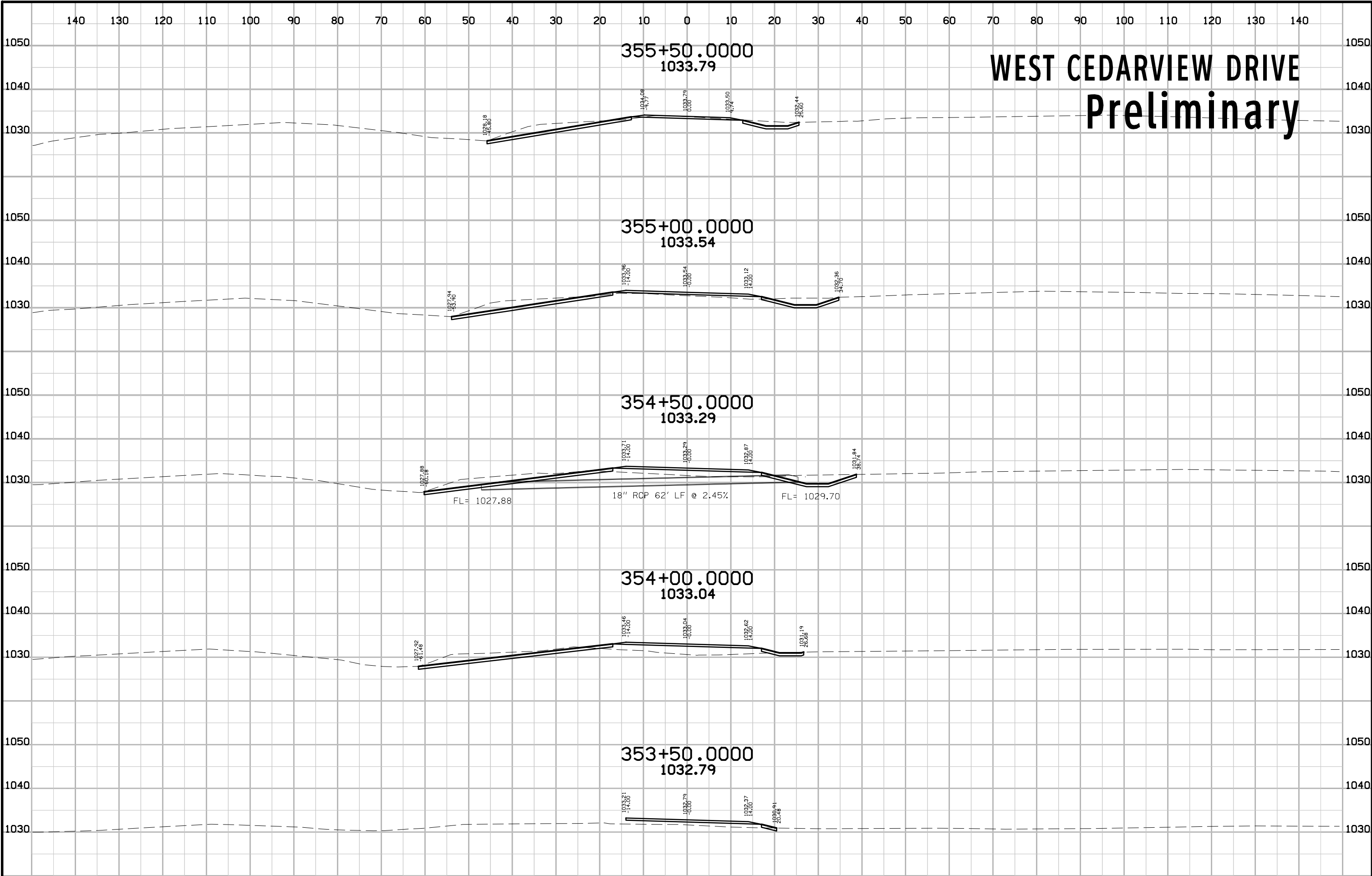
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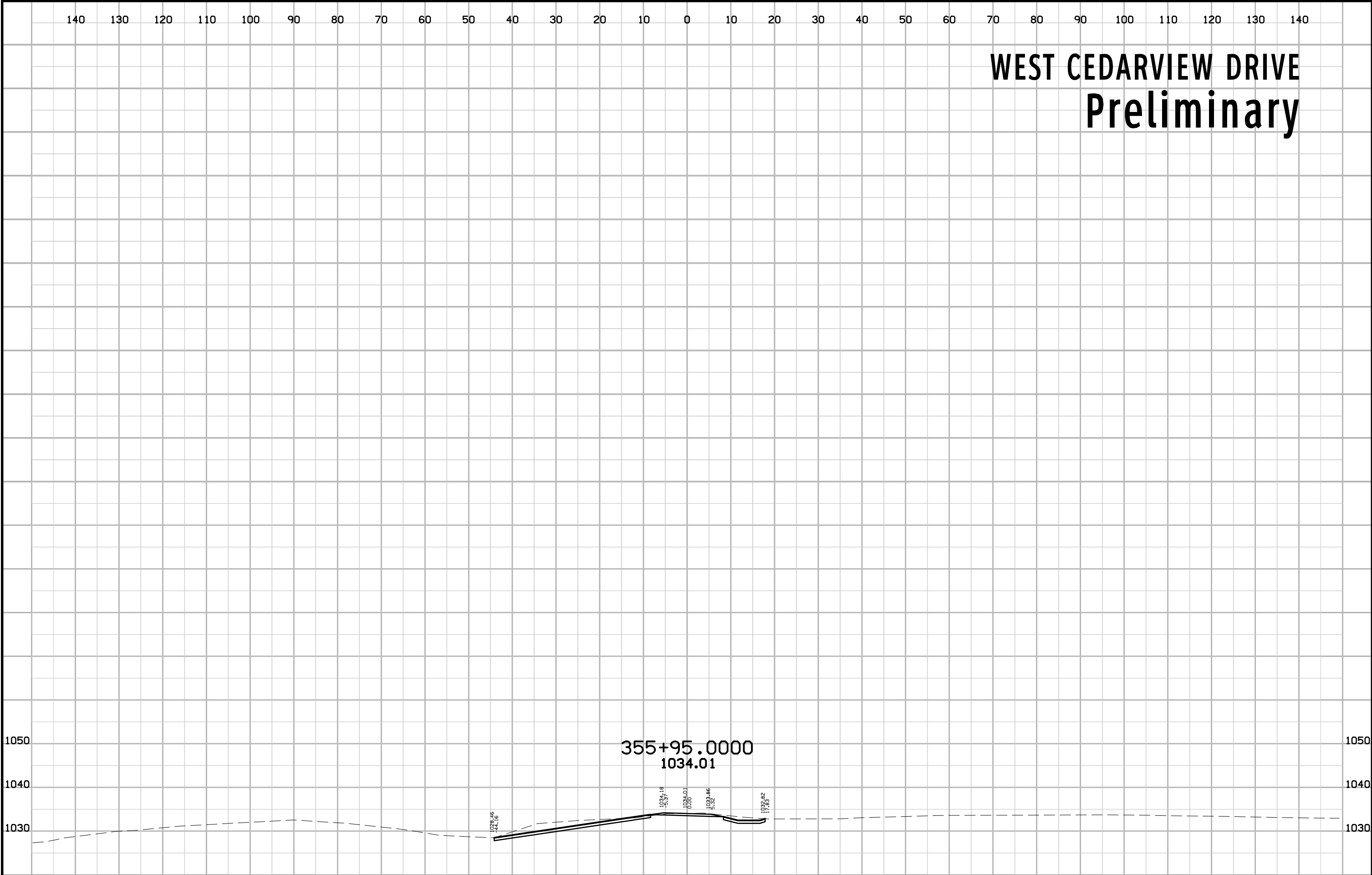
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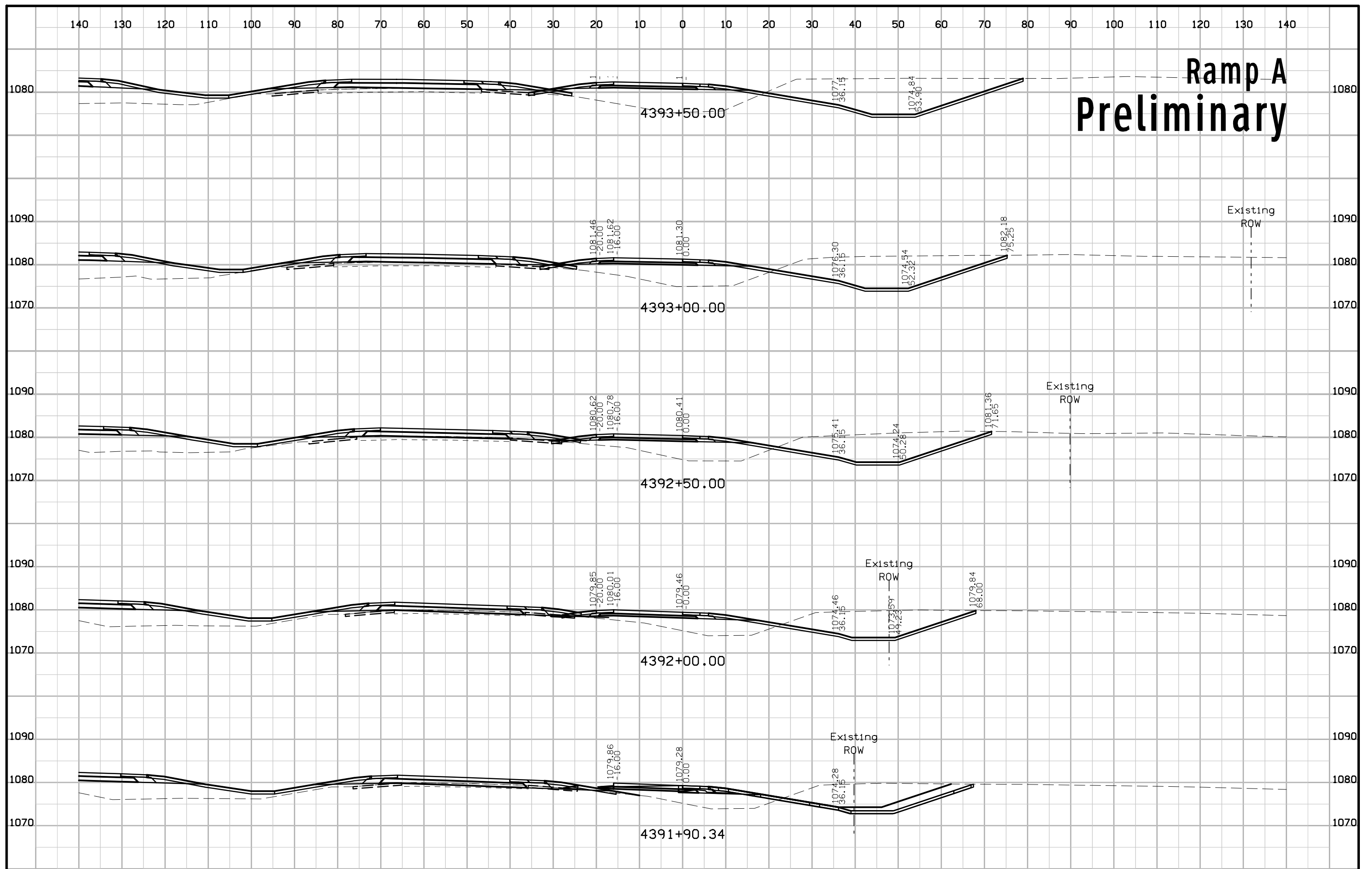
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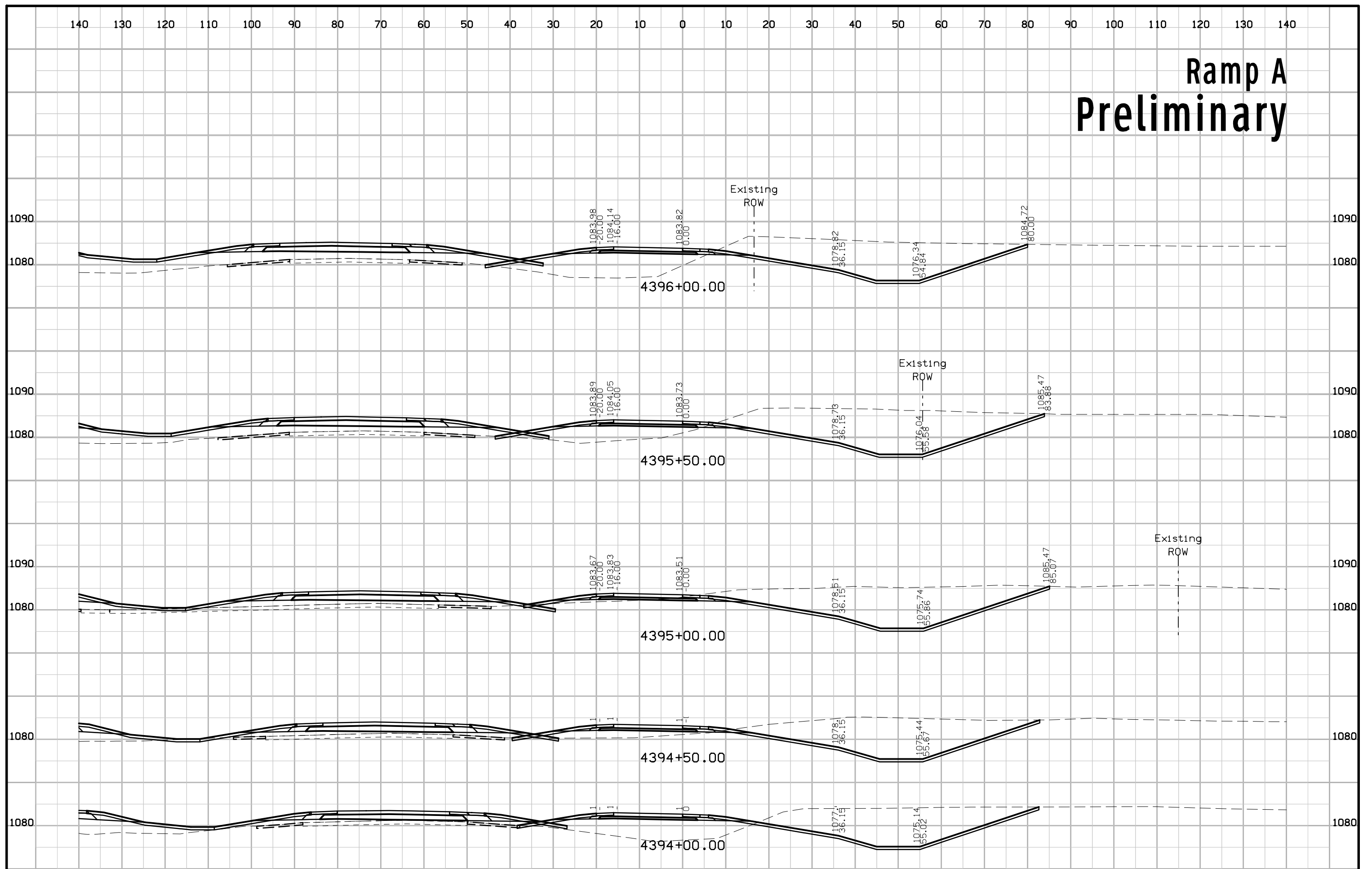
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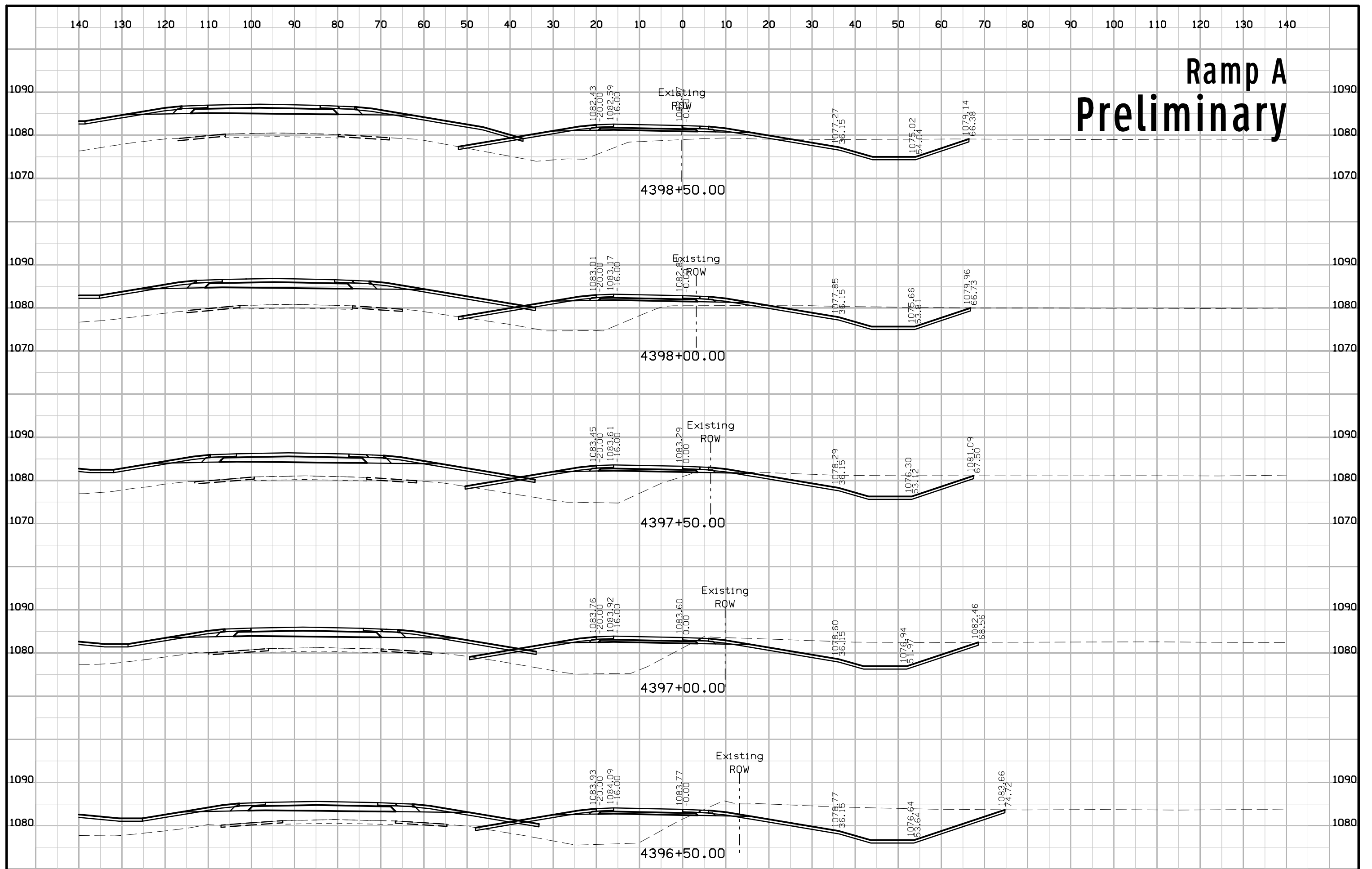
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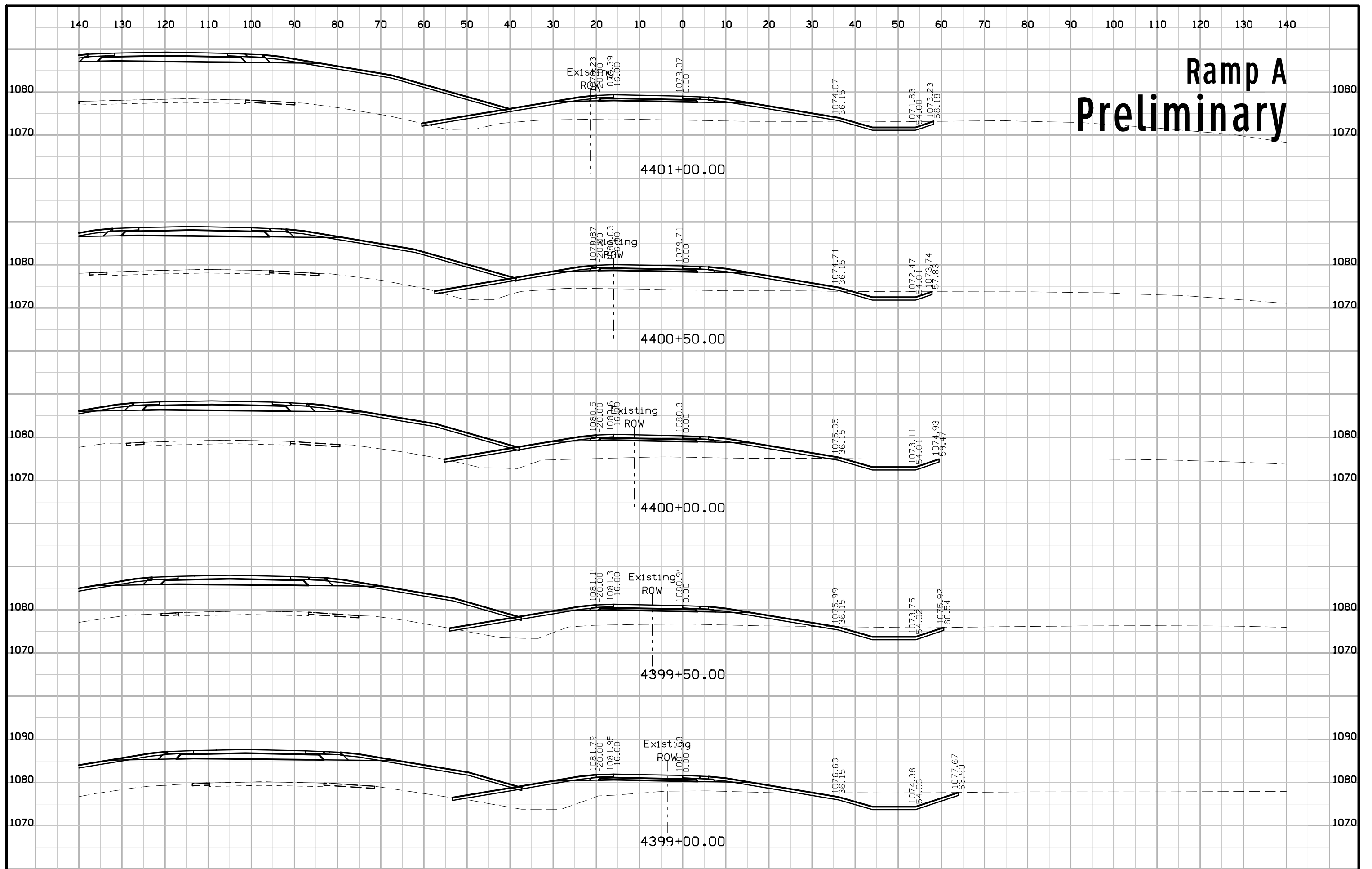
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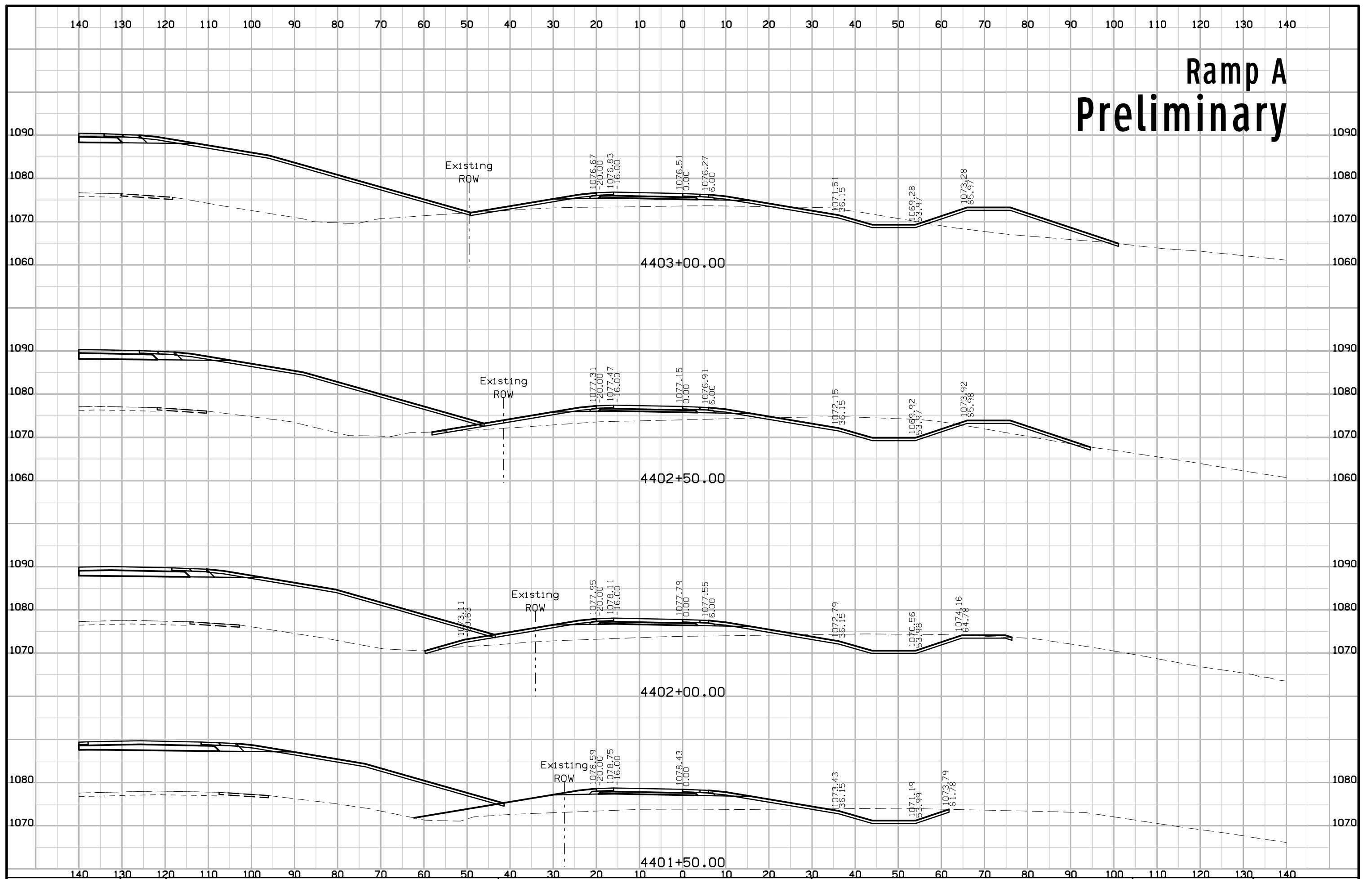
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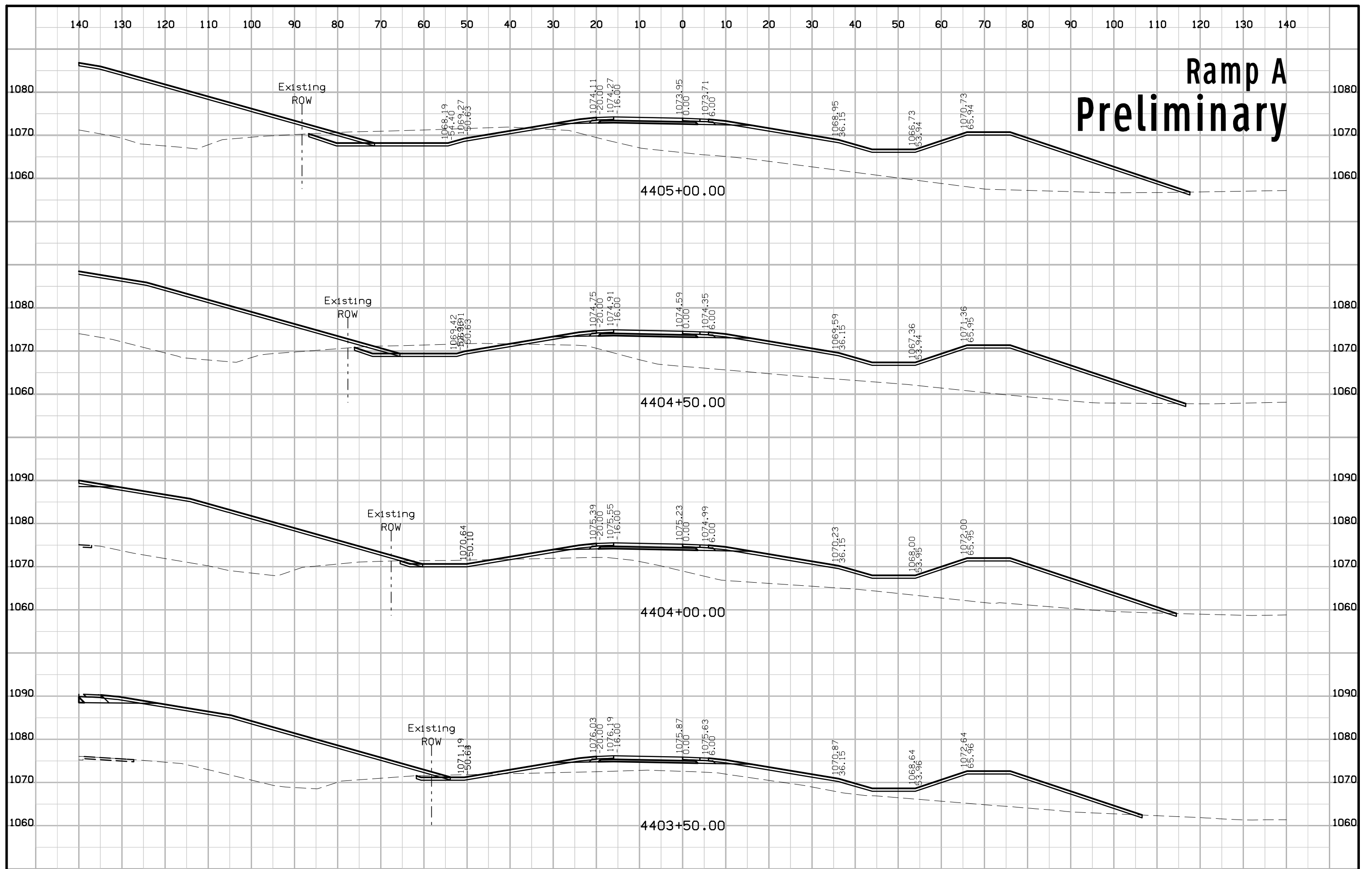
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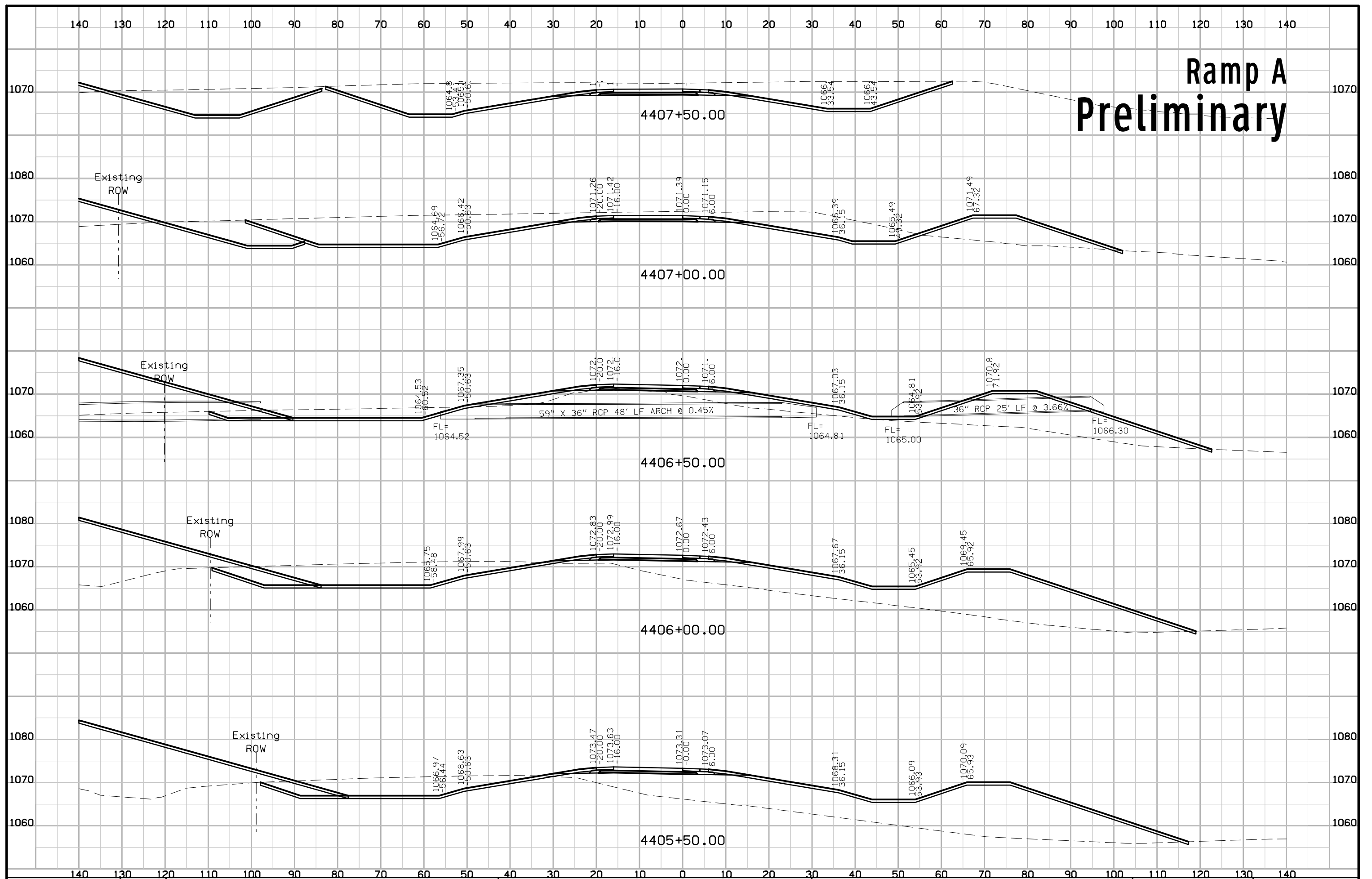
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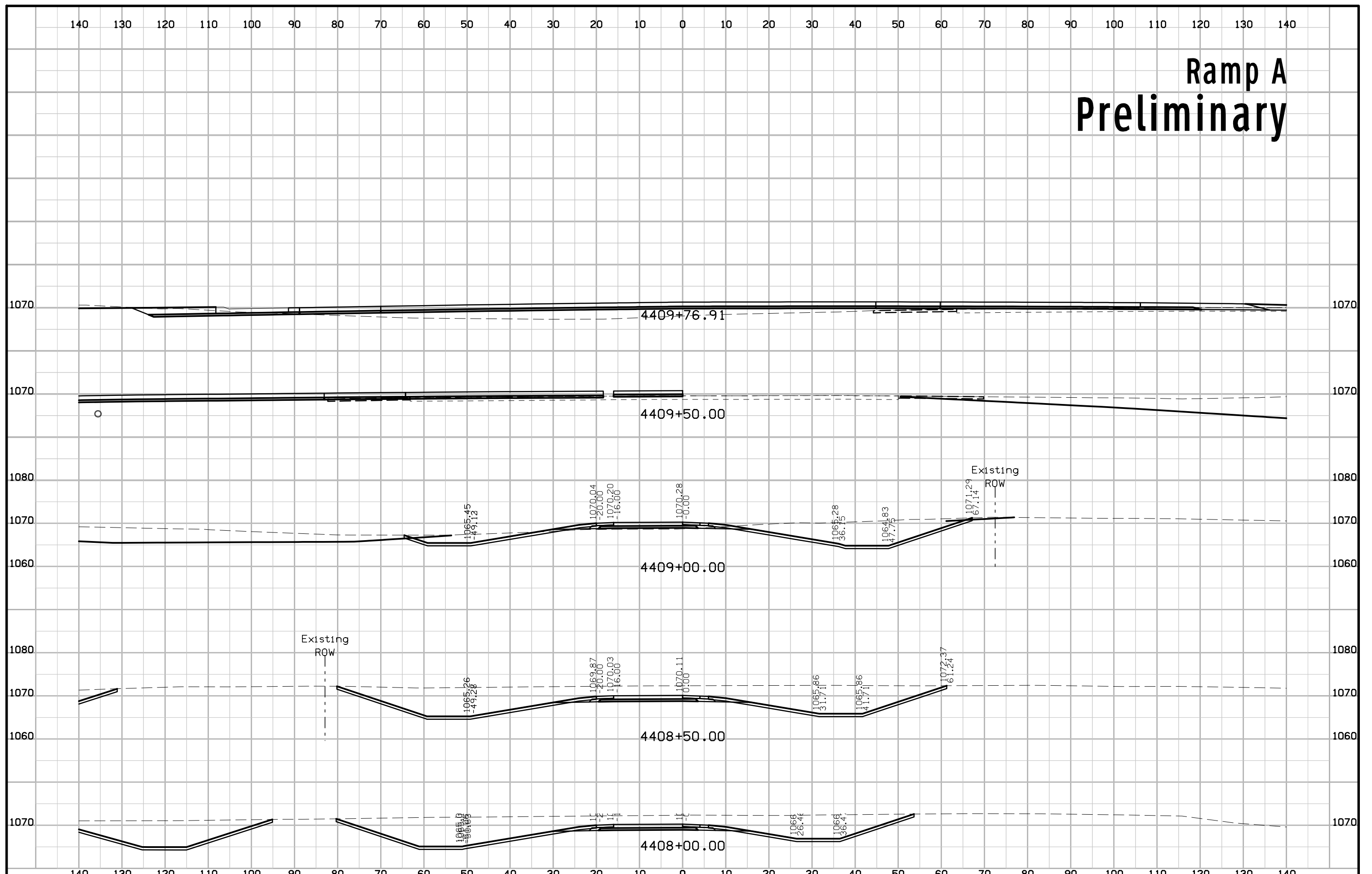
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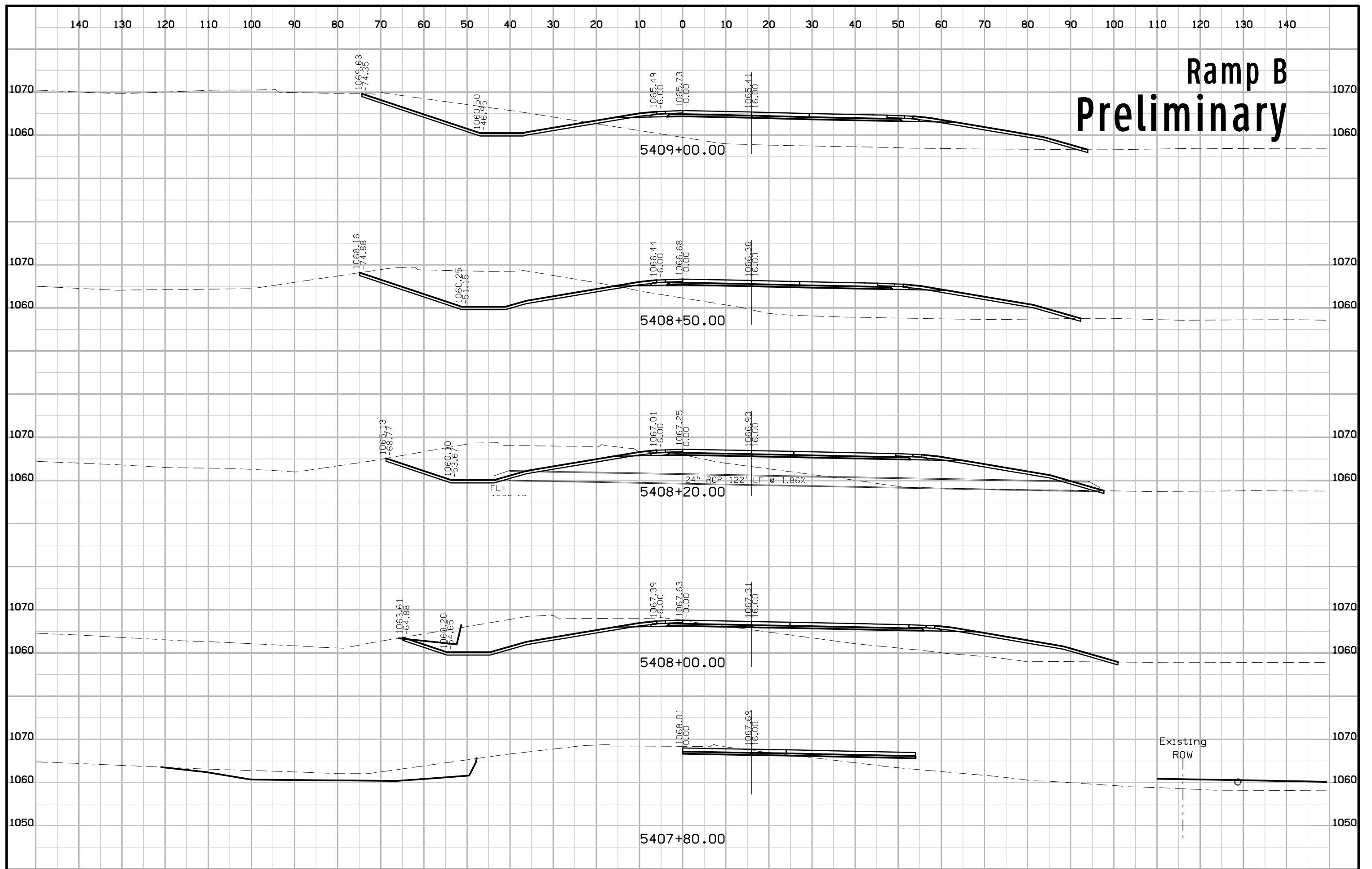
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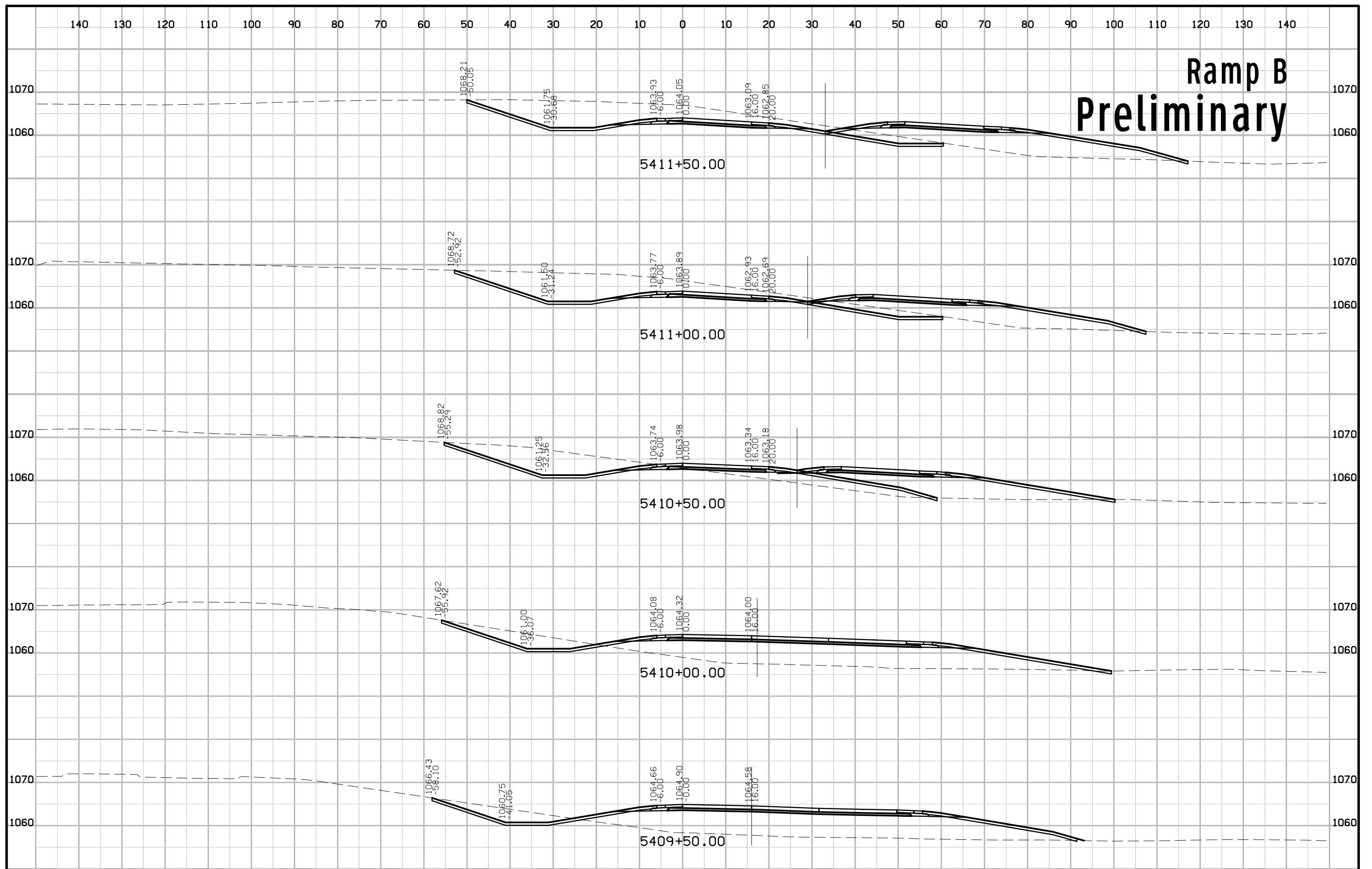
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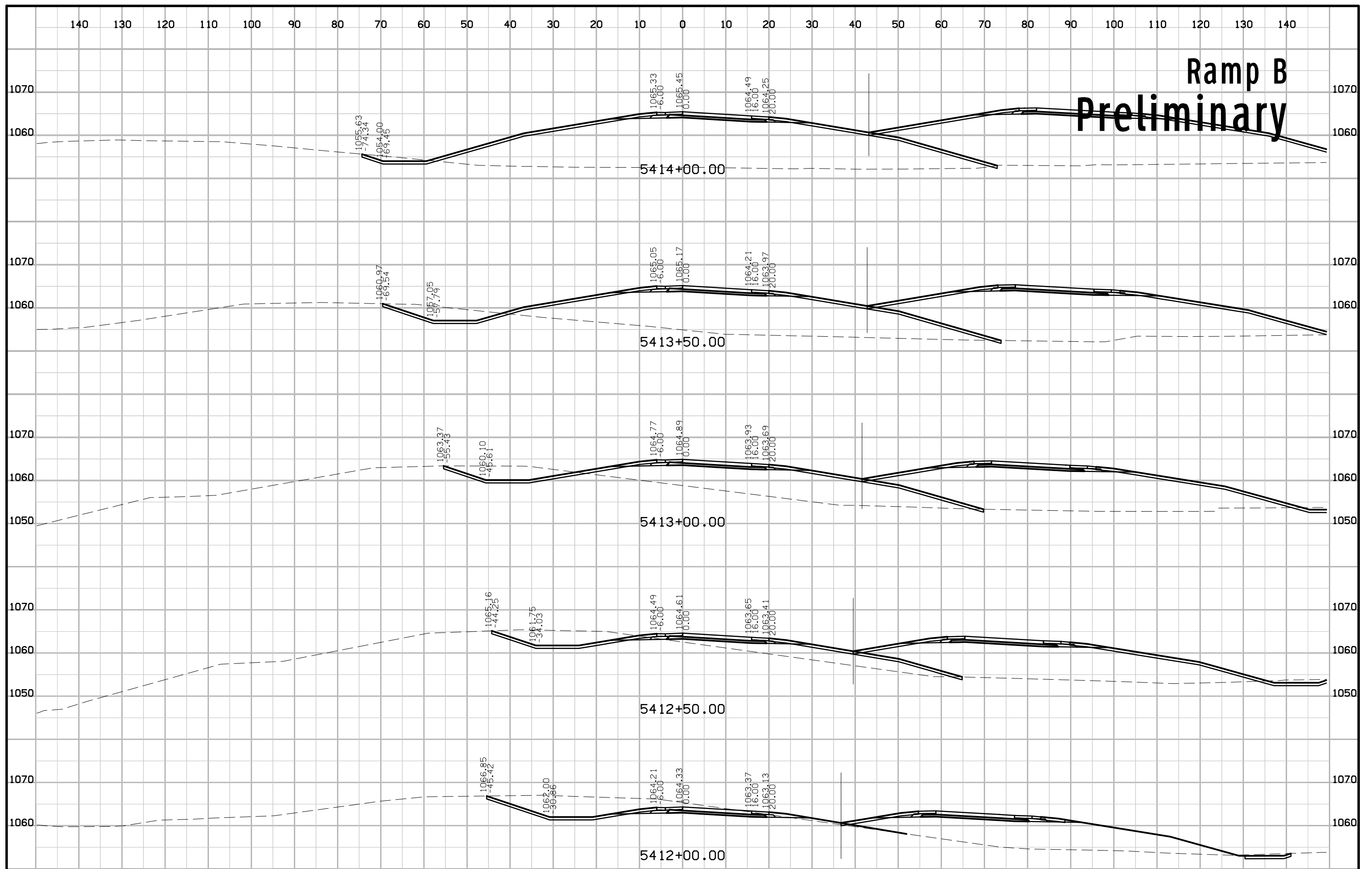
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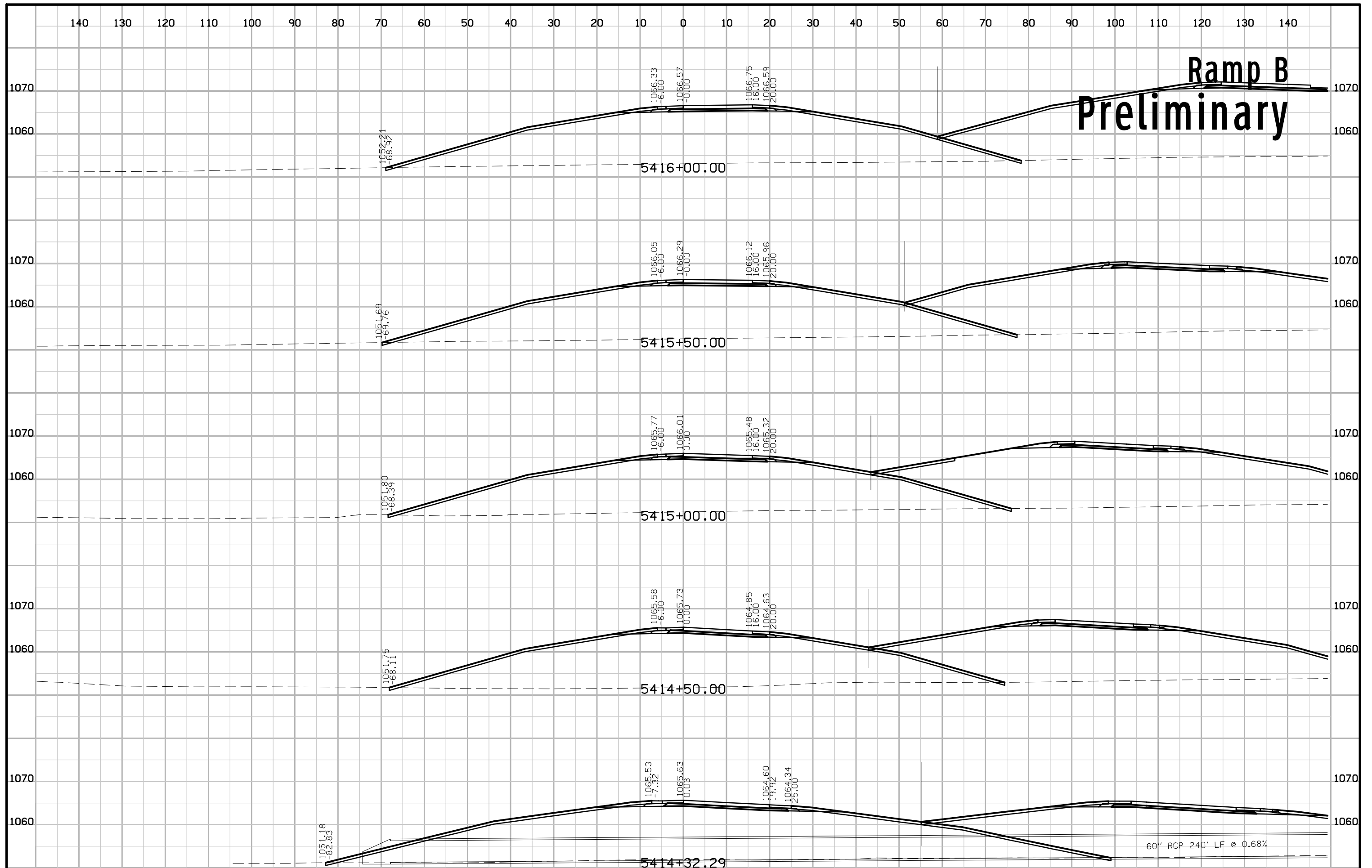


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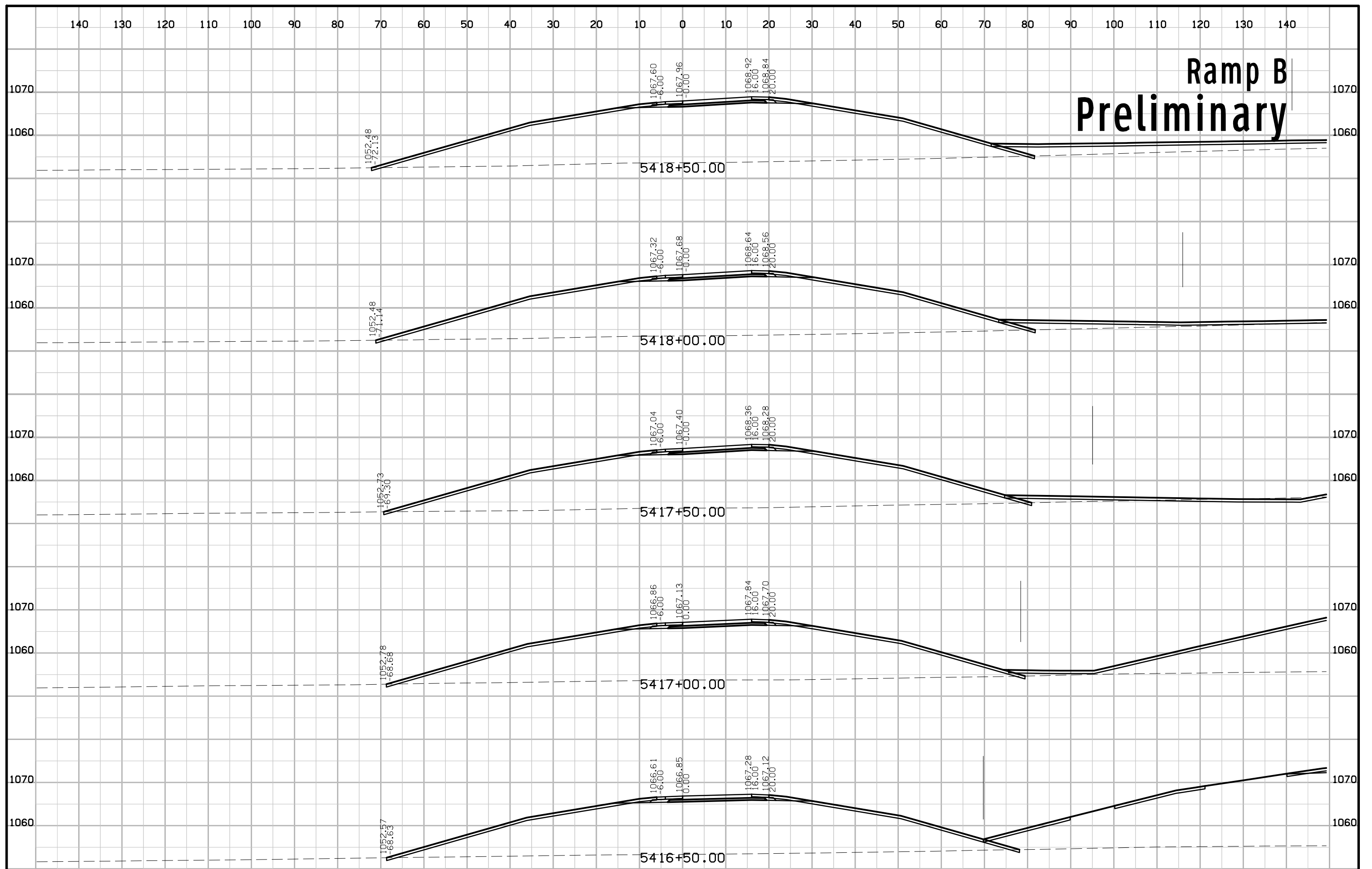


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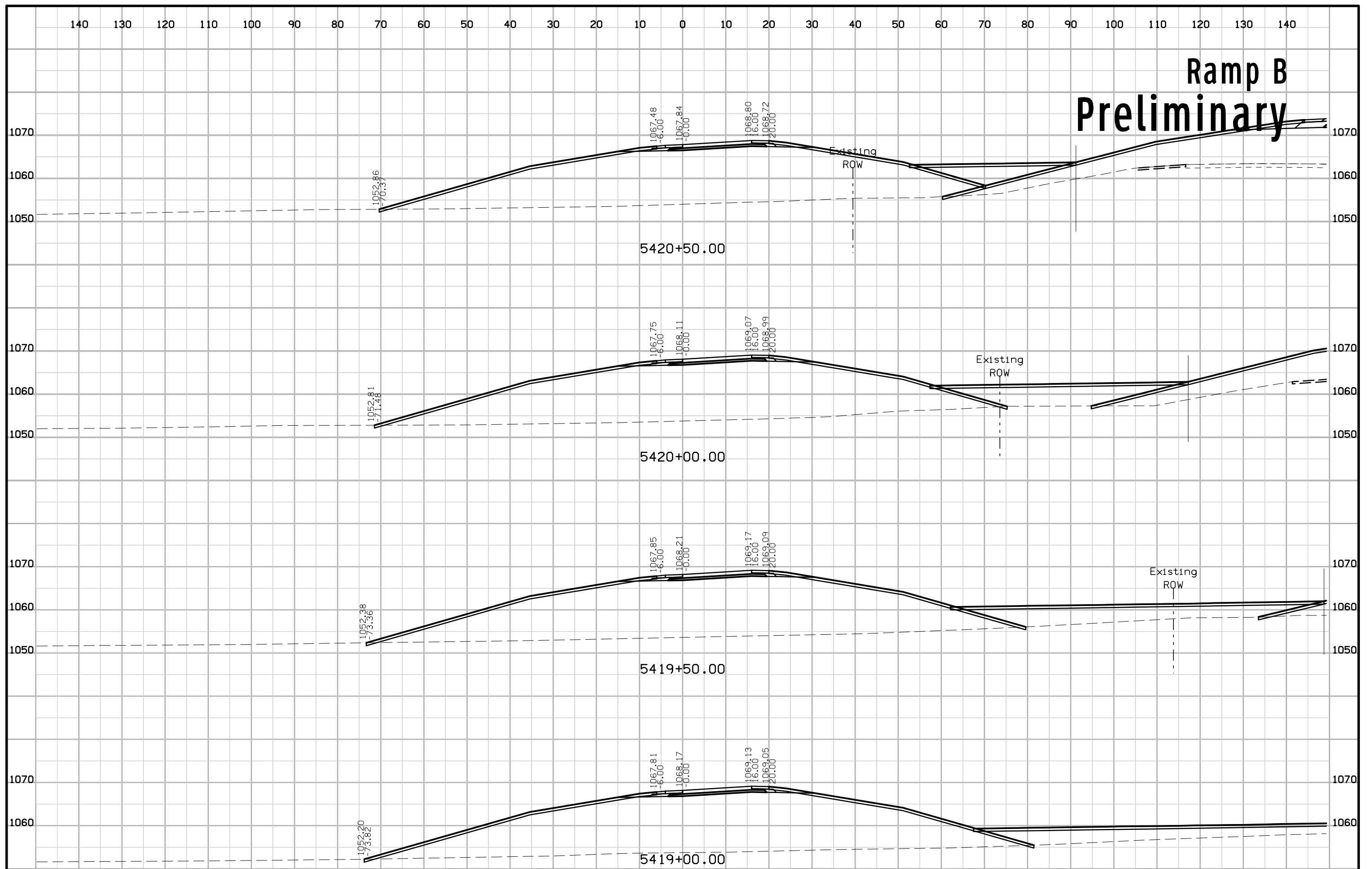


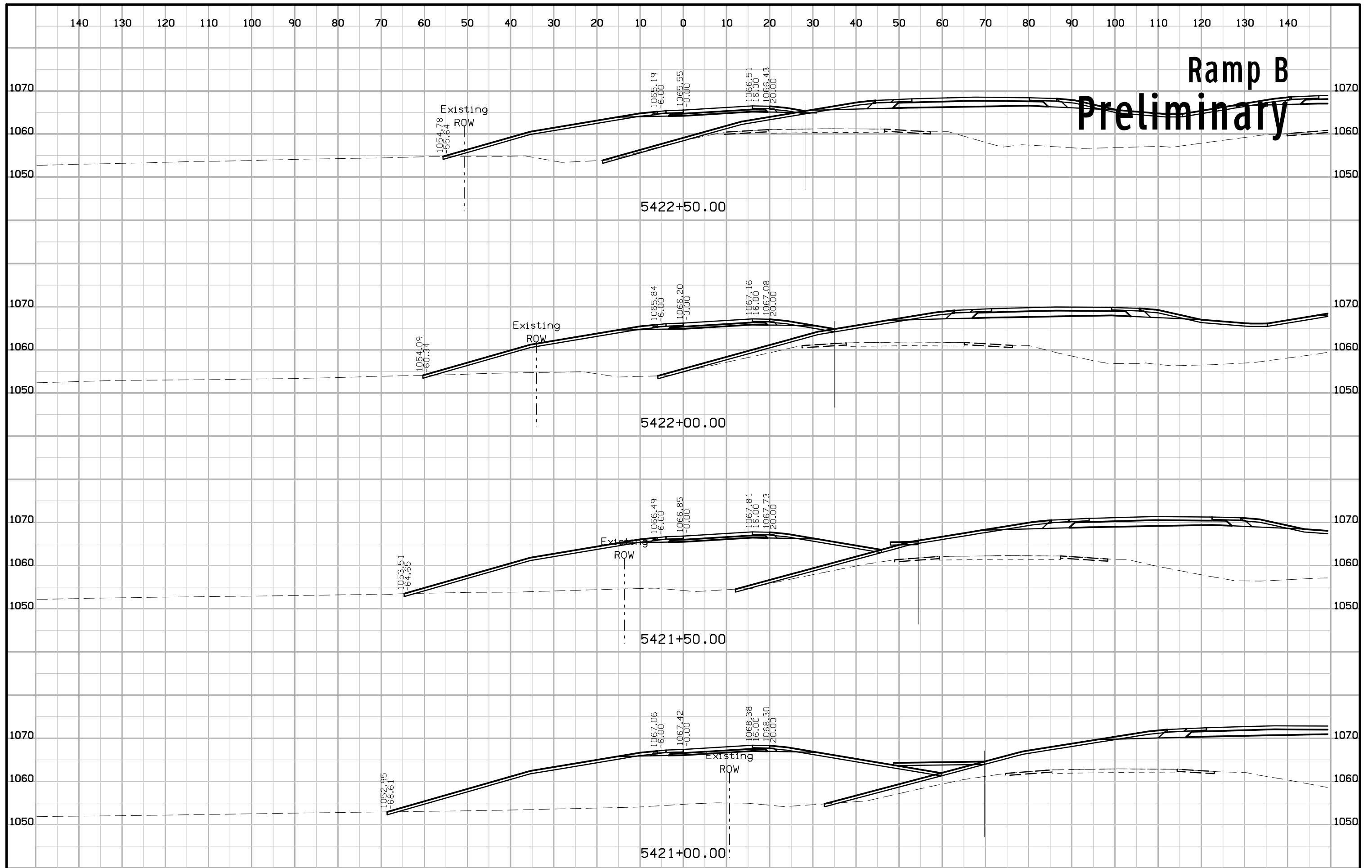


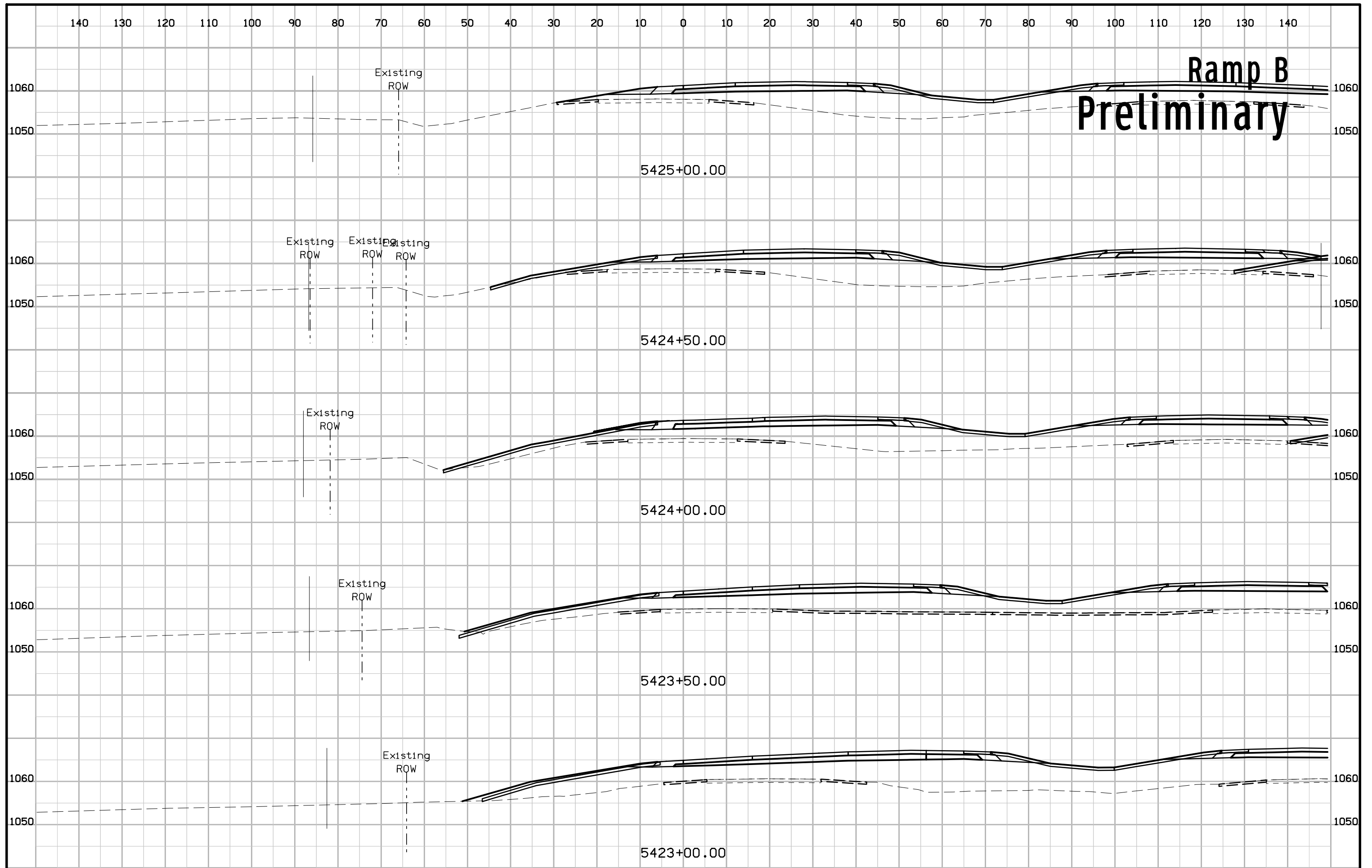
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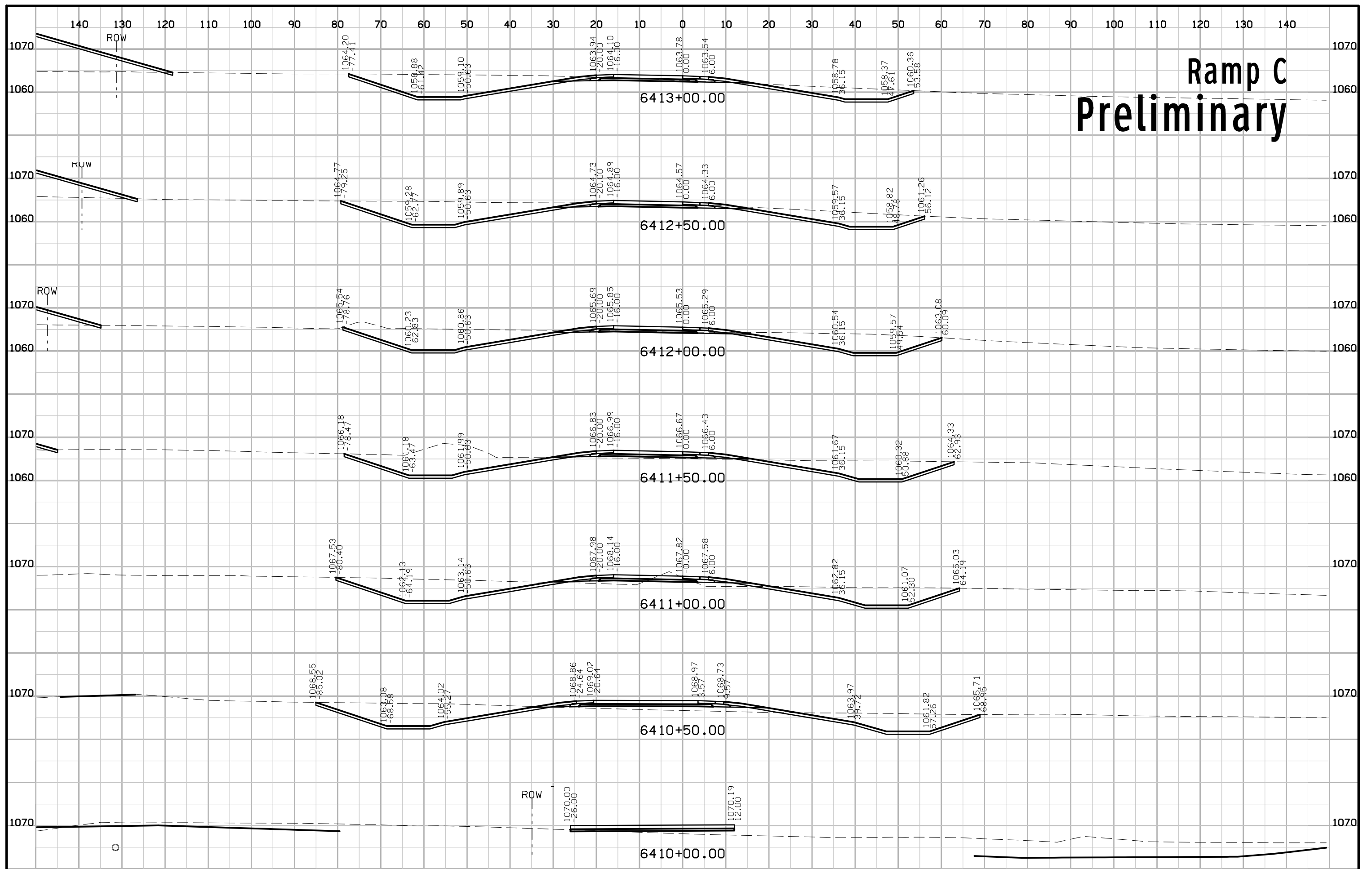
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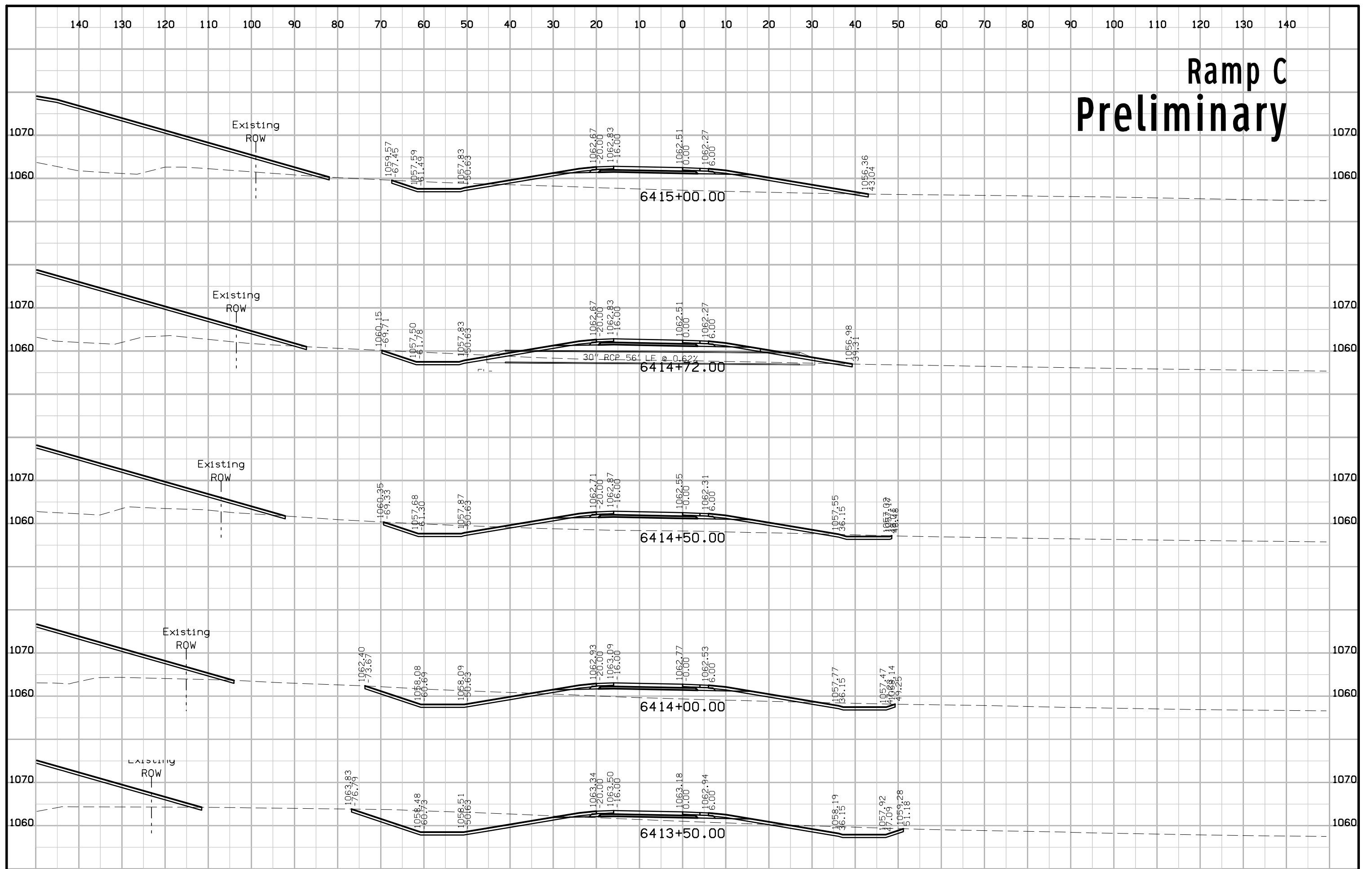




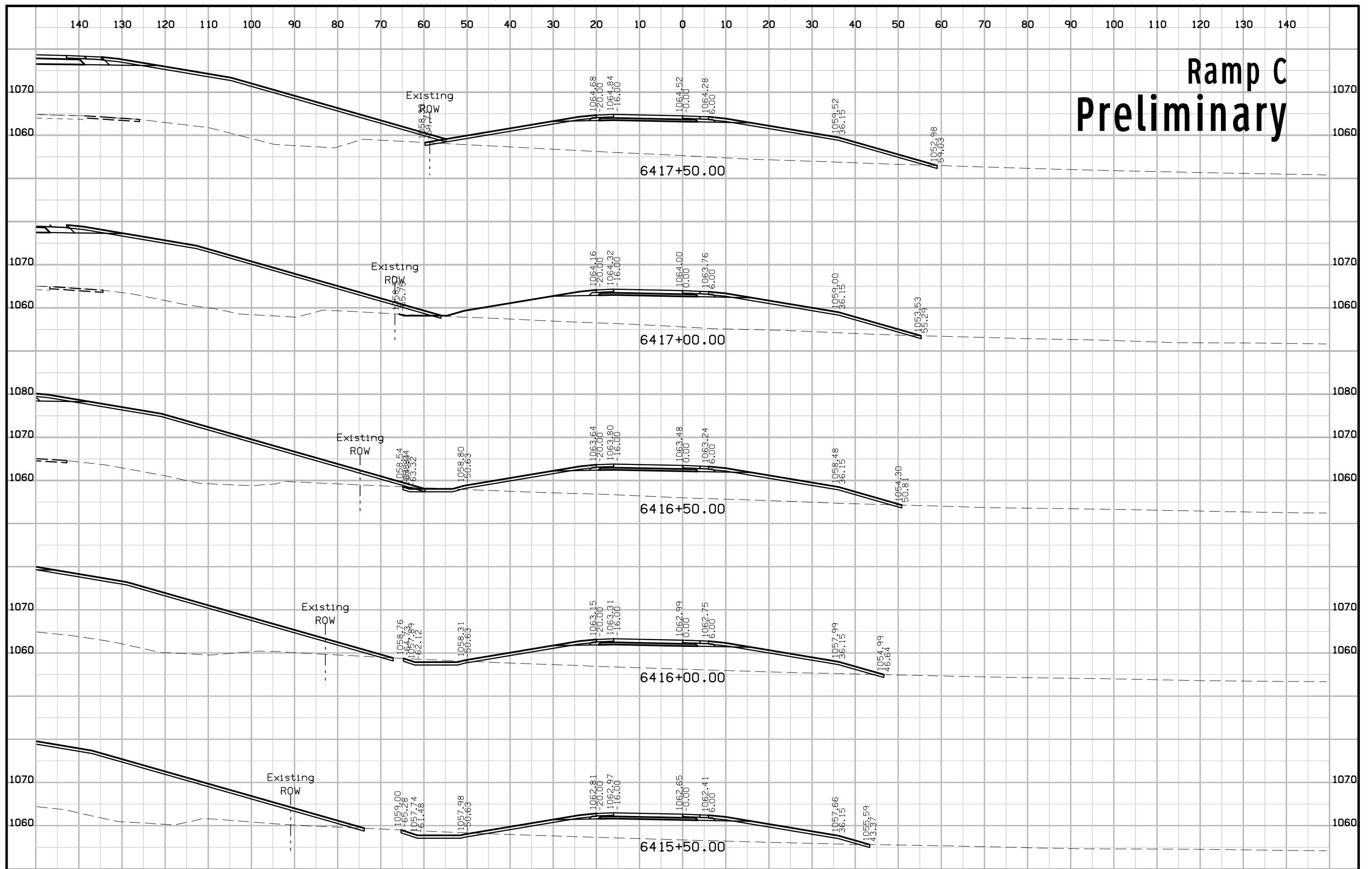
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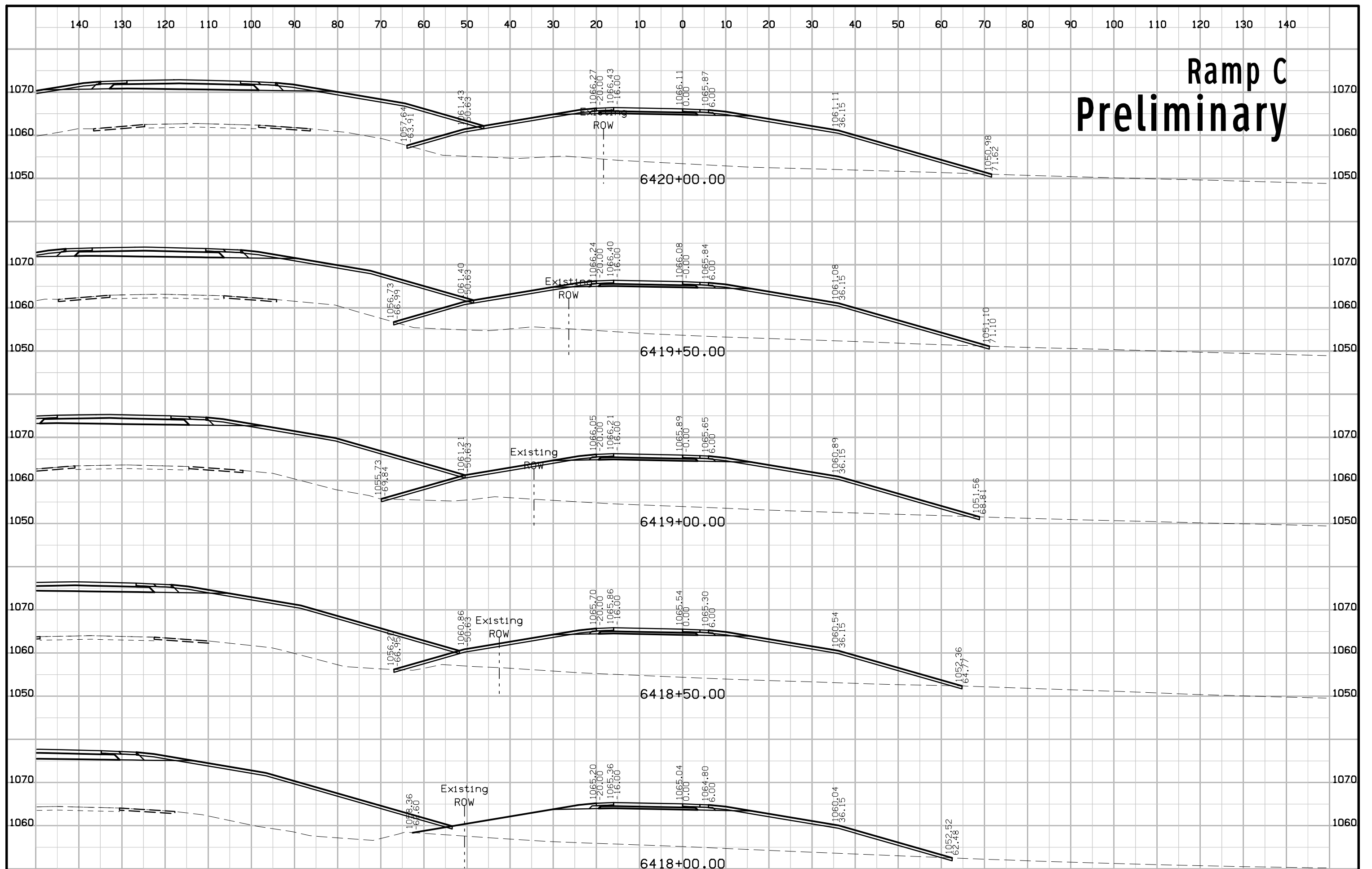
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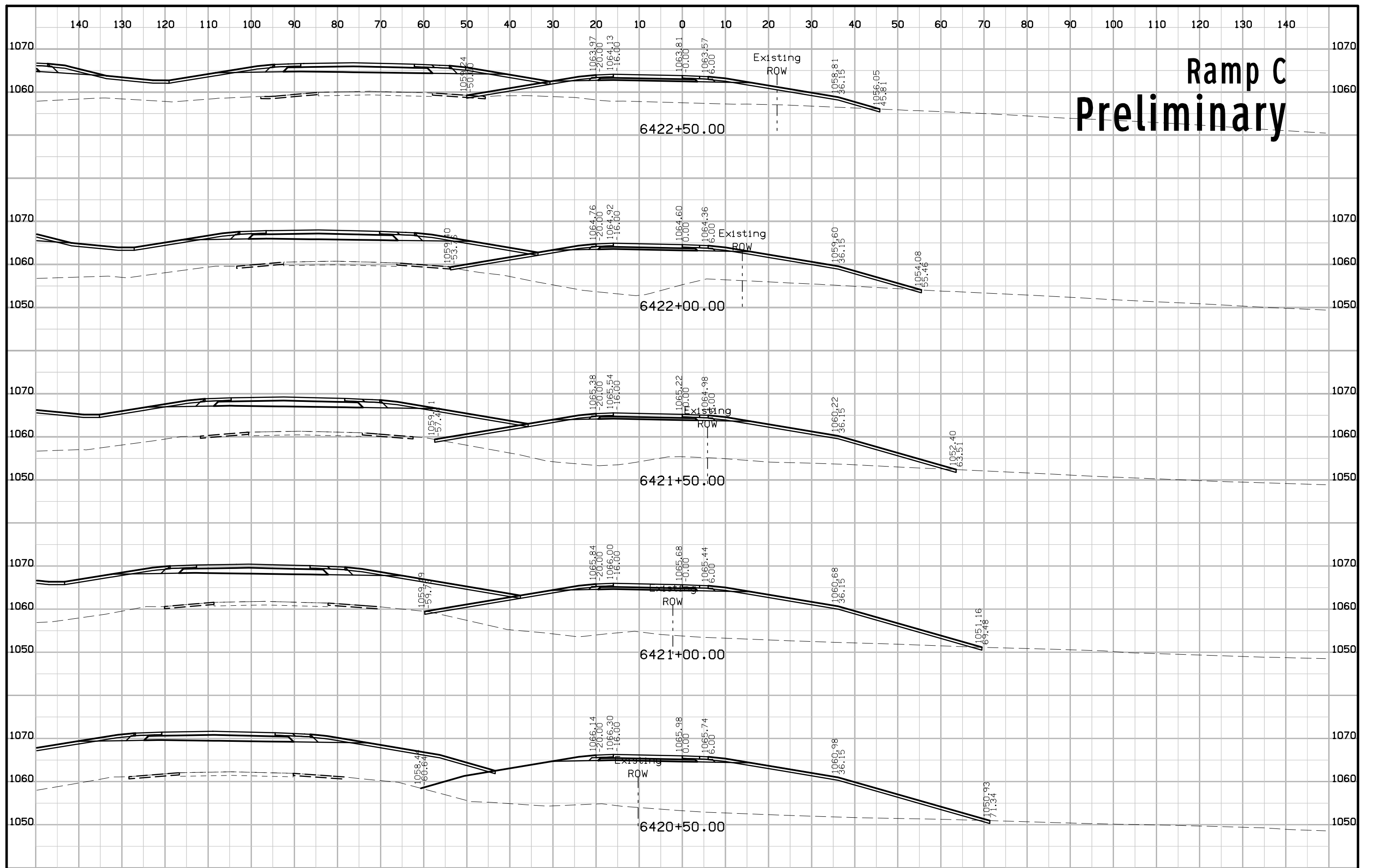
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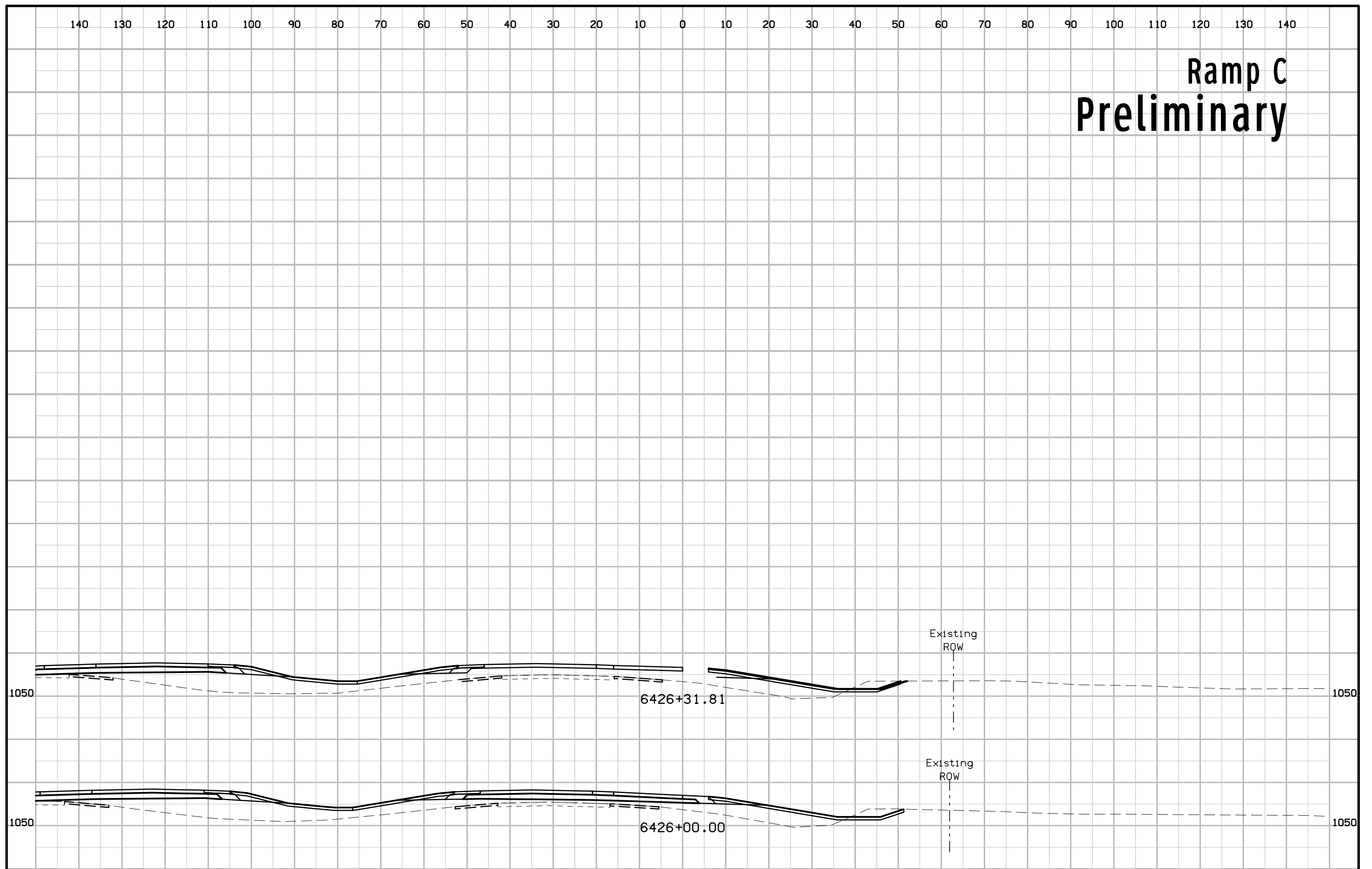
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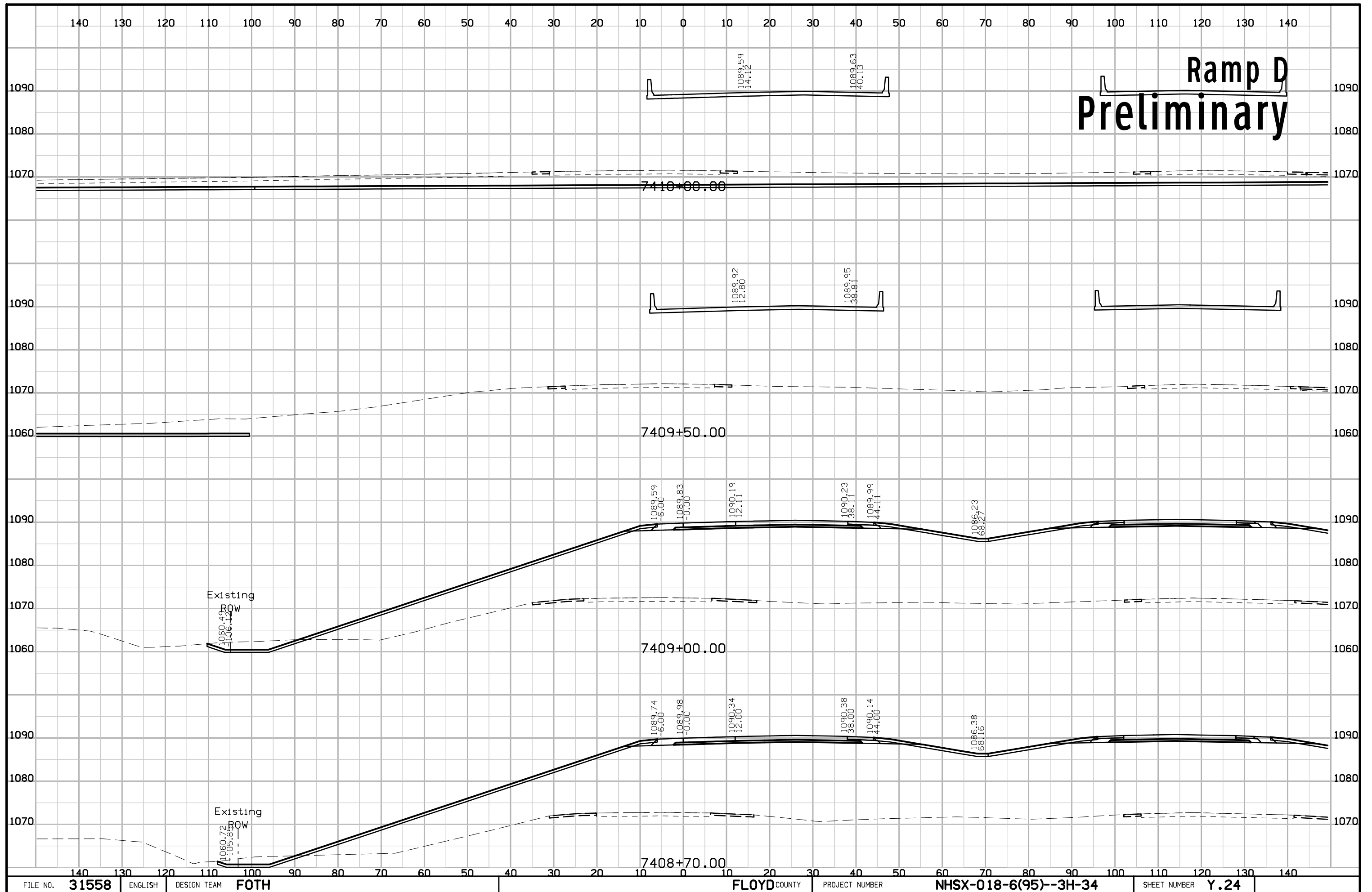


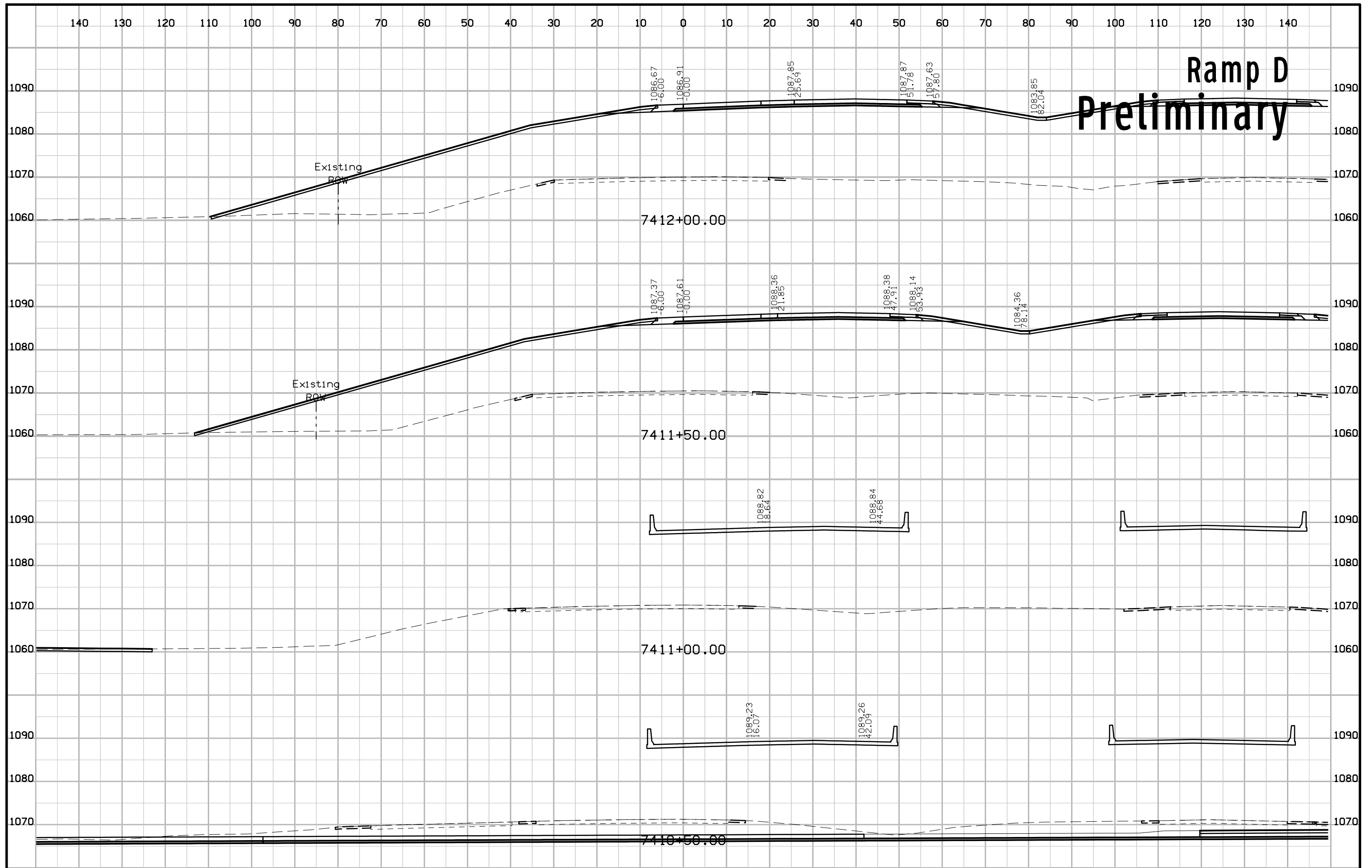
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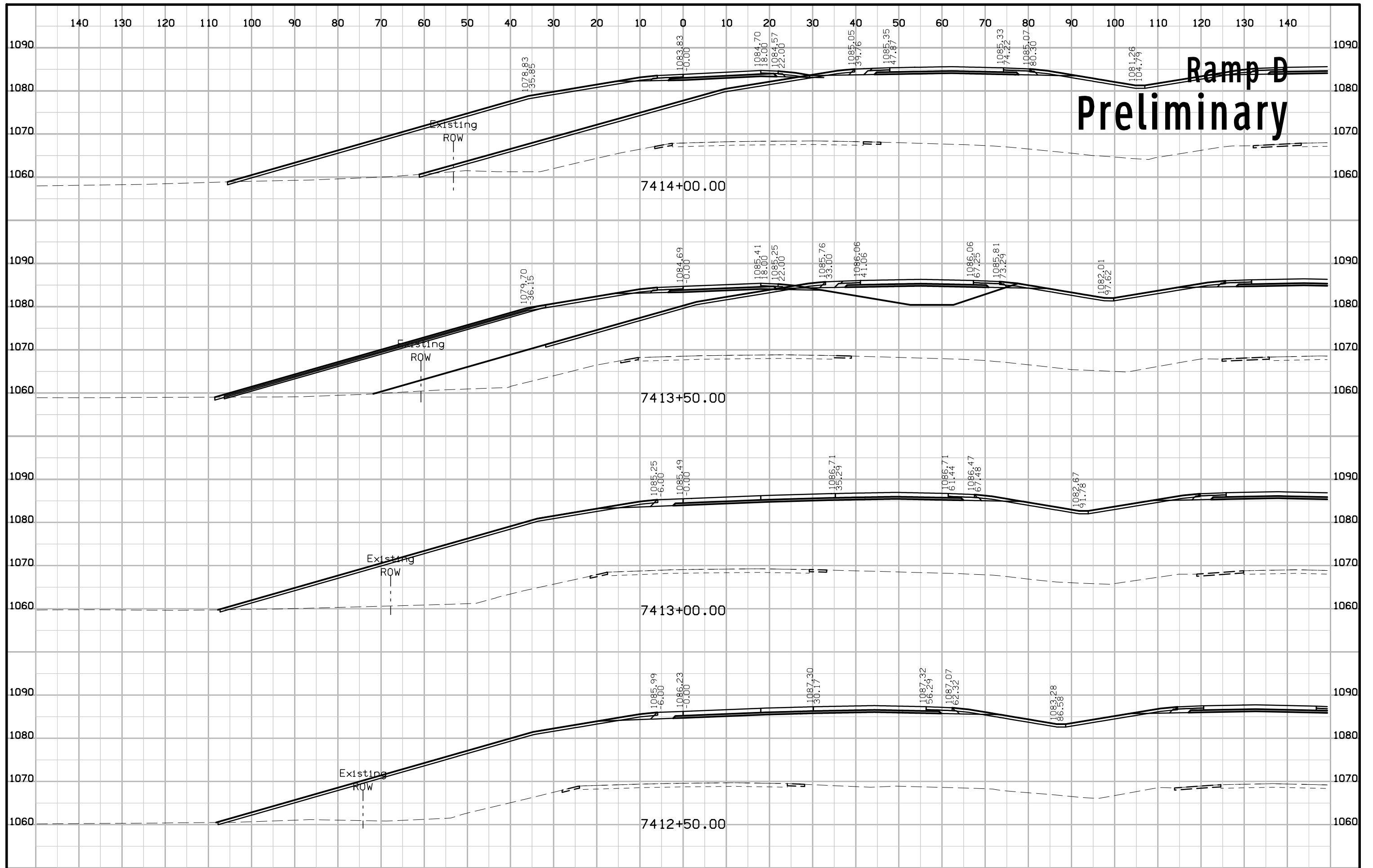


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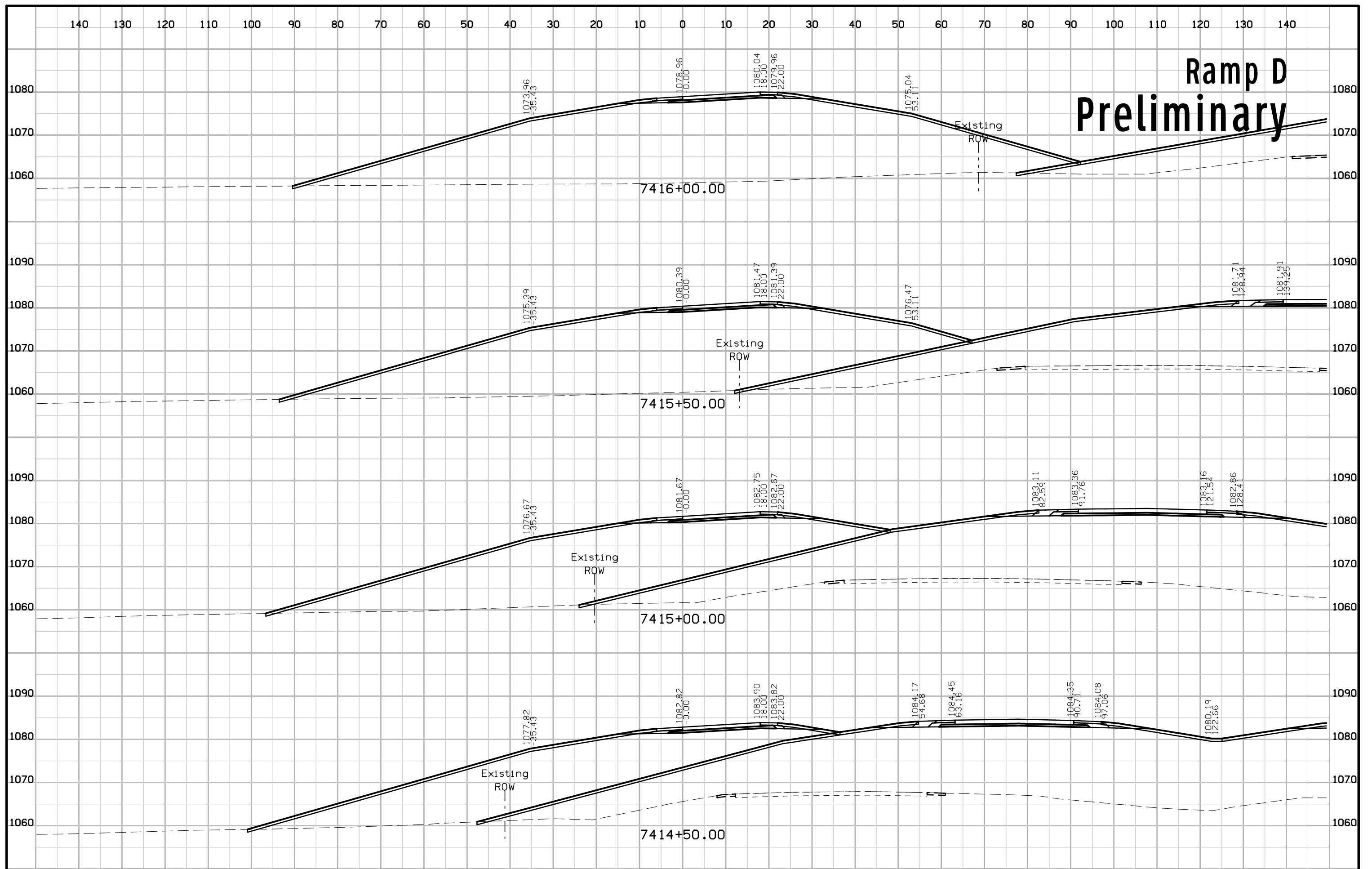




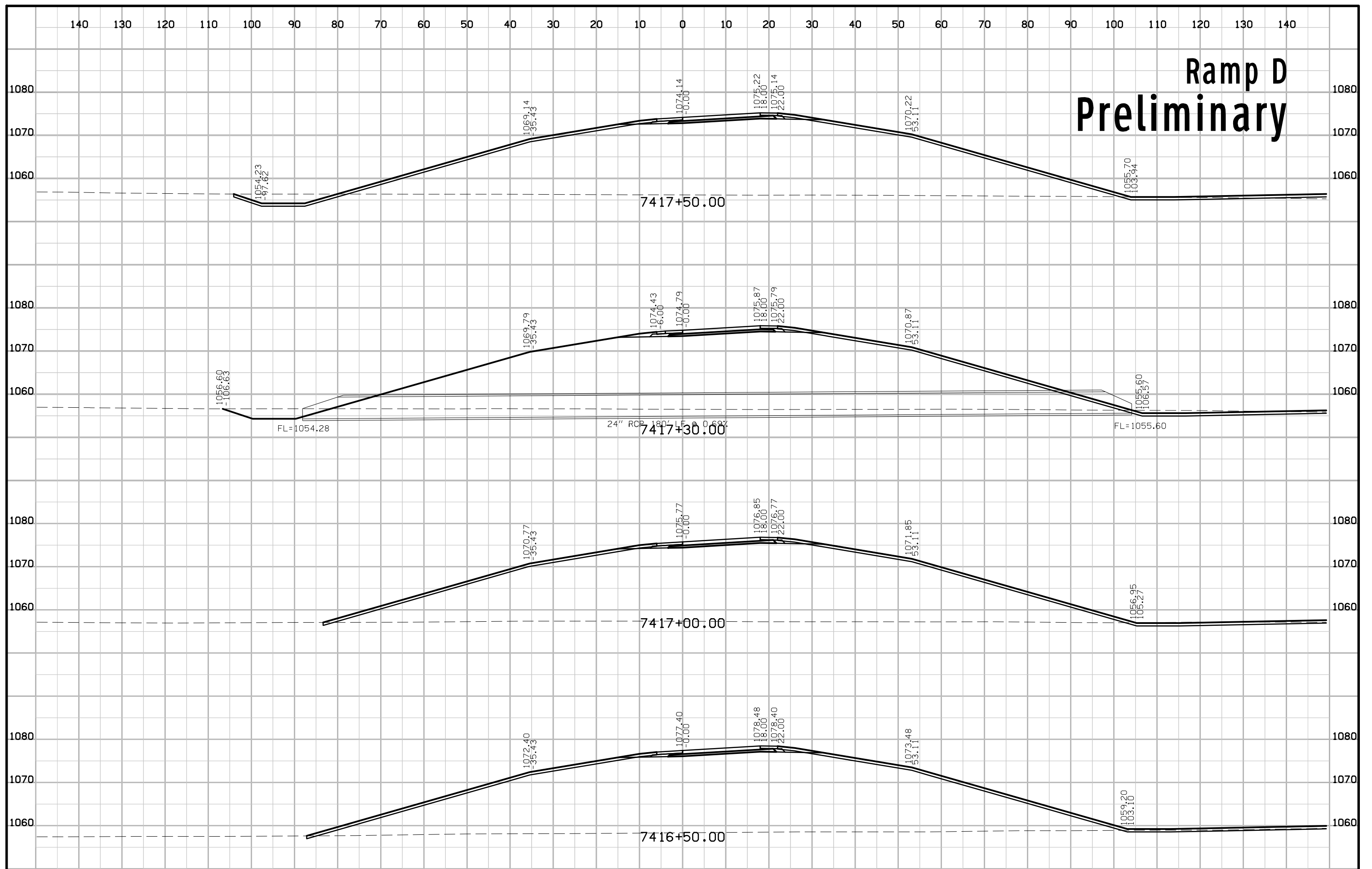




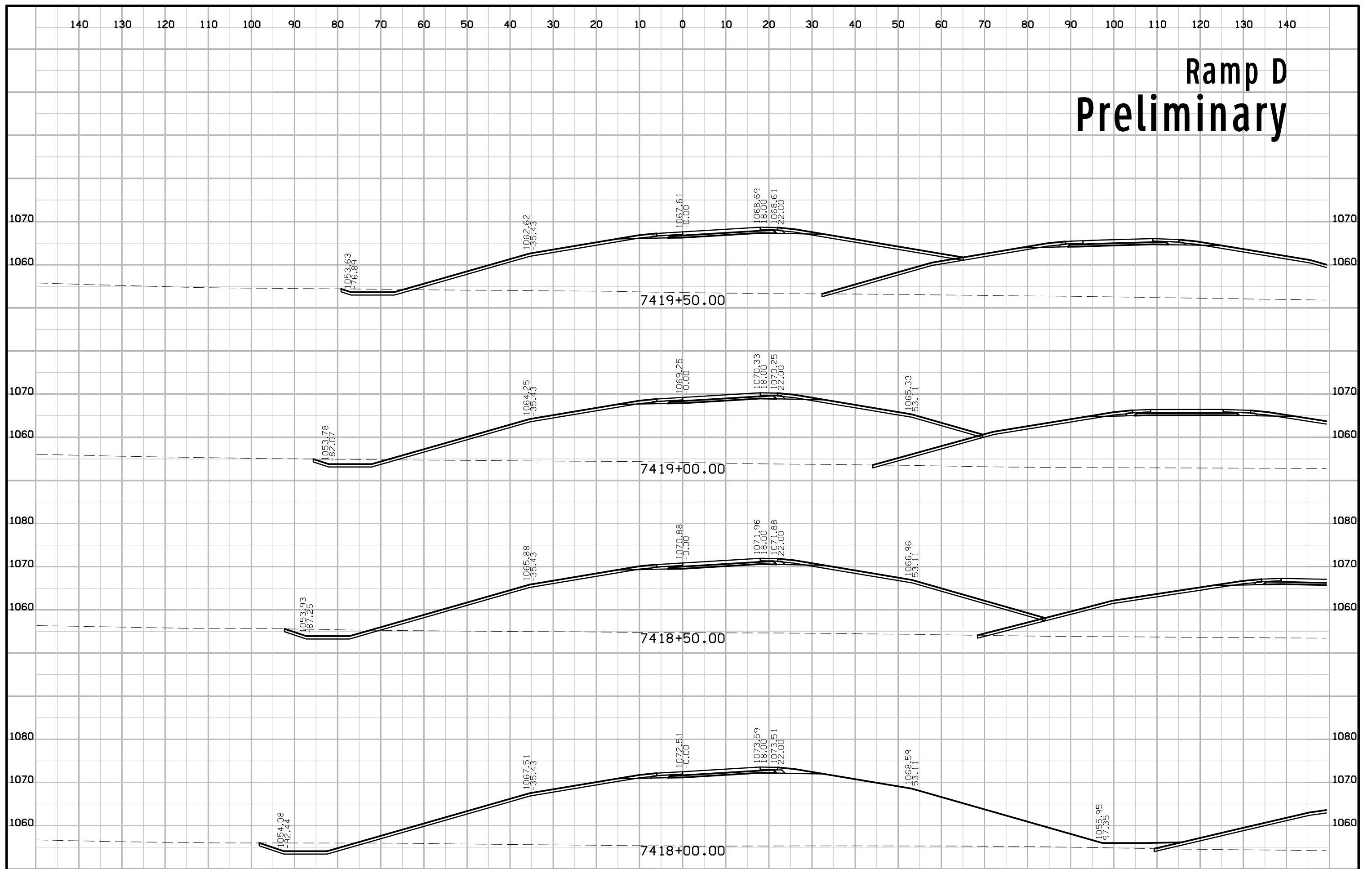
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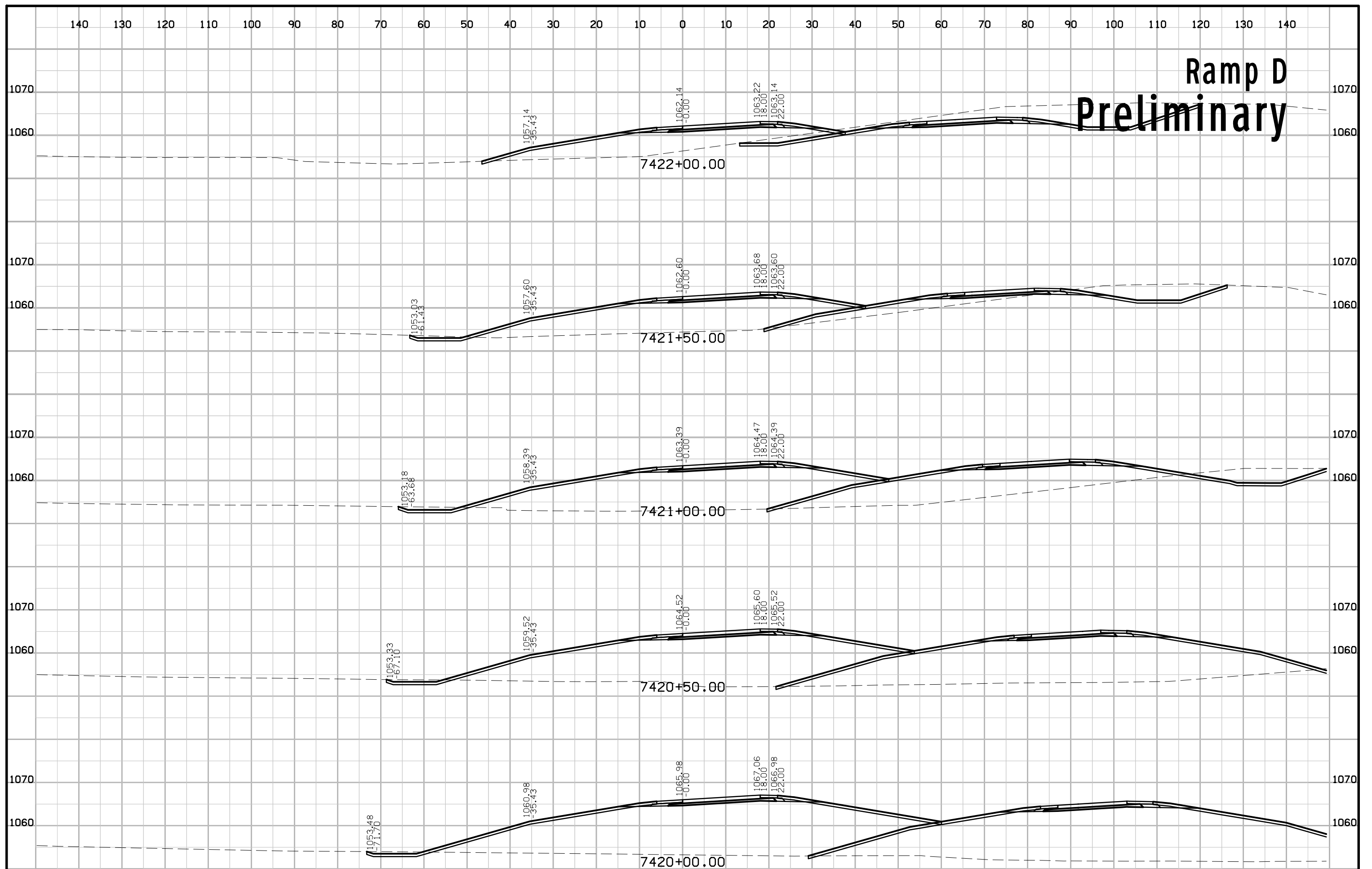
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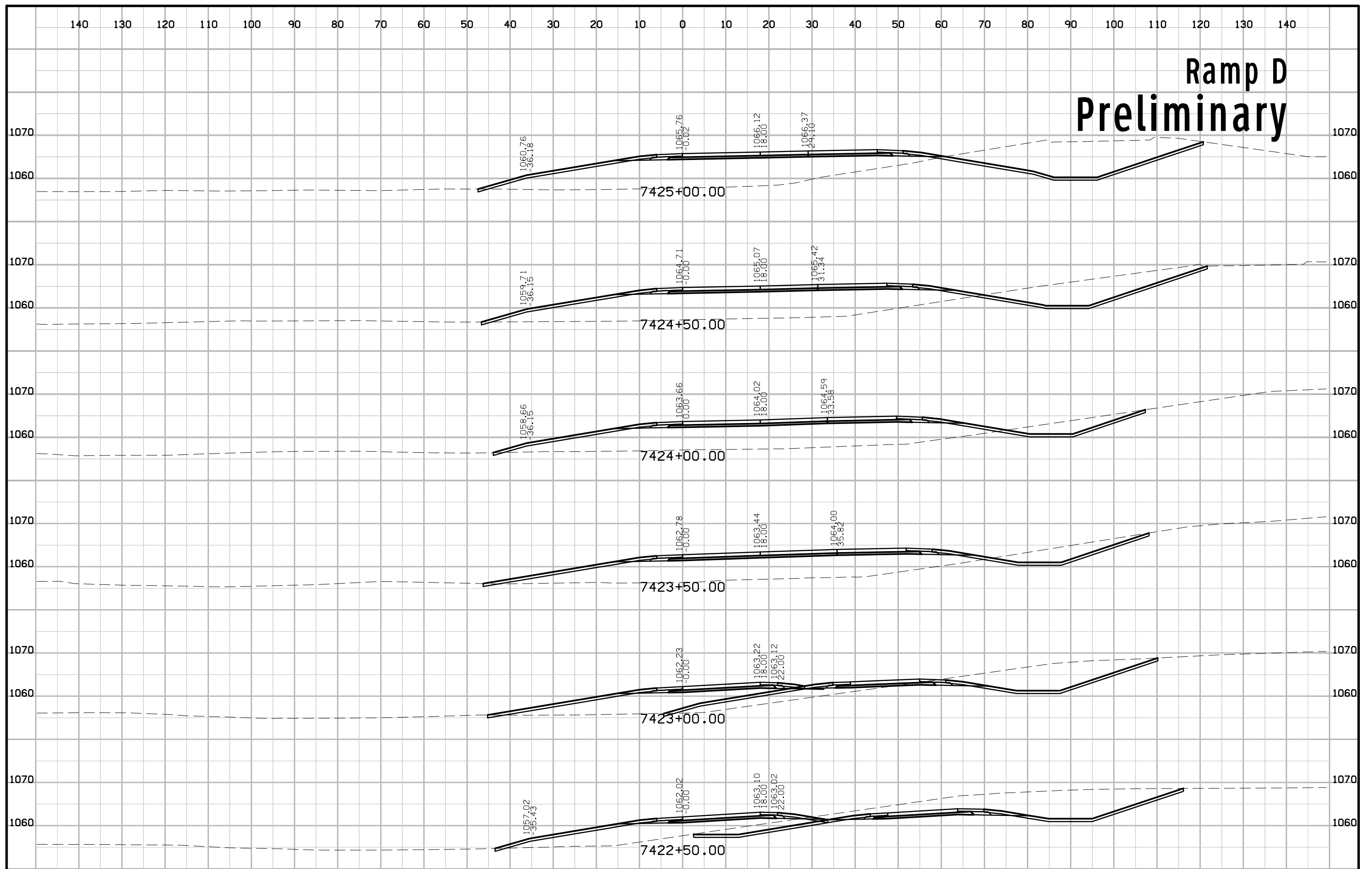
Ramp D Preliminary



Ramp D Preliminary



Ramp D Preliminary



Ramp D Preliminary

