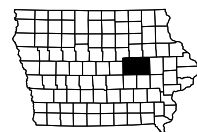


LETTING DATE  
07-21-2020

PCC PAVEMENT - GRADE AND NEW  
NHSX-030-6(240)--3H-86

TAMA CO.



INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 13	Typical Cross Sections and Details
<b>C Sheets</b>	<b>Quantities and General Information</b>
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	Pollution Prevention Plan
C.1	General Notes
C.1	Tabulations (beg. with tab. of incidentals if needed)
<b>CD Sheets</b>	<b>Soils Tabulations</b>
CD.1	Tabulations (beg. with tab. of incidentals if needed)
<b>CE Sheets</b>	<b>Soils Tabulations</b>
CE.1	Tabulations (beg. with tab. of incidentals if needed)
<b>CS Sheets</b>	<b>Soils Tabulations</b>
CS.1	Soils Tabulations
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 11	US 30
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1	IA 21
* E.2	11th Avenue
<b>F Sheets</b>	<b>Detour or Temporary Pavement Sheets</b>
* F.1	Detour Plan and Profile Sheets
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 6	Reference Ties and Bench Marks
G.7 - 19	Horizontal Control Tab. & Super for all Alignments
<b>H Sheets</b>	<b>Right-of-Way Sheets</b>
H.1	"Mainline Name"
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
* J.1	Staging Notes Stage
* J.1	Tabulation of Special Events
<b>K Sheets</b>	<b>Interchange Sheets</b>
* K.1 - 2	US 30 & IA 21 Interchange Layout Sheets
* K.3	US 30 & IA 21 RAMP "A" Plan and Profile Sheets
* K.4	US 30 & IA 21 RAMP "B" Plan and Profile Sheets
* K.5	US 30 & IA 21 RAMP "C" Plan and Profile Sheets
* K.6	US 30 & IA 21 RAMP "D" Plan and Profile Sheets
* K.7 - 8	US 30 & US 218 Interchange Layout Sheets
<b>L Sheets</b>	<b>Geometric, Staking and Jointing Sheets</b>
L.1	Geometric & Staking "Mainline or Side Road Name"
L.2	Edge Profiles "Mainline or Side Road Name"
* K.1 - 2	US 30 & IA 21 Interchange Layout Sheets
* K.2	US 30 & IA 21 RAMP "A" Plan and Profile Sheets
* K.2	US 30 & IA 21 RAMP "B" Plan and Profile Sheets
* K.2	US 30 & IA 21 RAMP "C" Plan and Profile Sheets
* K.2	US 30 & IA 21 RAMP "D" Plan and Profile Sheets
L.3	Jointing "Mainline or Side Road Name"



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

TAMA COUNTY

PCC PAVEMENT - GRADE AND NEW

W of IA 21 to 11th Ave Dr

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.  
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



For Project Location Map  
Refer to Sheet A.2

DESIGN DATA RURAL			
2017	AADT	5400	V.P.D.
2037	AADT	8500	V.P.D.
2037	DHV	880	V.P.H.
	TRUCKS	19	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Kelly C. Bell	Primary Signature Block
CD.1	David R. Claman	Hydraulic Signature Block
CS.1	John A. Christiansen	Geotech Signature Block

REVISIONS

TOTAL

973

PROJECT IDENTIFICATION NUMBER

92-06-030-030-02

PROJECT NUMBER

NHSX-030-6(240)--3H-86

R.O.W. PROJECT NUMBER

NHSN-030-6(247)--2R-86

NHSN-030-6(248)--2R-06

INDEX OF SHEETS

No.	DESCRIPTION
<b>Q Sheets</b>	<b>Soils Sheets</b>
Q.1	Soils Legend & Symbol Information Sheet
Q.2	Soils Sheets "Mainline or Side Road Name"
<b>T Sheets</b>	<b>Earthwork Quantity Sheets</b>
T.1	Earthwork Quantity Sheets
<b>U Sheets</b>	<b>500 Series, Mod.Stds. and Detail Sheets</b>
U.1	500 Series, Modified Standards and Detail Sheets
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1 - 556	Mainline Cross Sections
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1 - 28	IA 21 Cross Section Sheets
X.100 - 106	11th Avenue Cross Sections
X.200 - 209	11th Avenue Drive Cross Sections
<b>Y Sheets</b>	<b>Ramp Cross Sections</b>
Y.1 - 13	US 30 & IA 21 Ramp "A" Cross Sections
Y.100 - 111	US 30 & IA 21 Ramp "B" Cross Sections
Y.200 - 210	US 30 & IA 21 Ramp "C" Cross Sections
Y.300 - 308	US 30 & IA 21 Ramp "D" Cross Sections
	* Color Plan Sheets

ROADWAY DESIGN



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

*Kelly Bell*

Signature

Kelly C. Bell

Printed or Typed Name

My license renewal date is December 31, 2019

xx-xx-xxxx

Date

Pages or sheets covered by this seal: X

2020 Primary

Sta. 804+00  
END CONSTRUCTION

STA. 705+41.13  
BEGIN CONSTRUCTION

T- 82N  
T- 83N

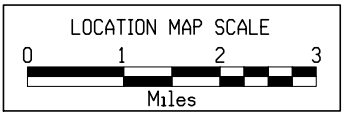
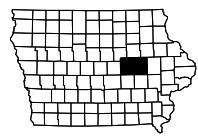
R-13W

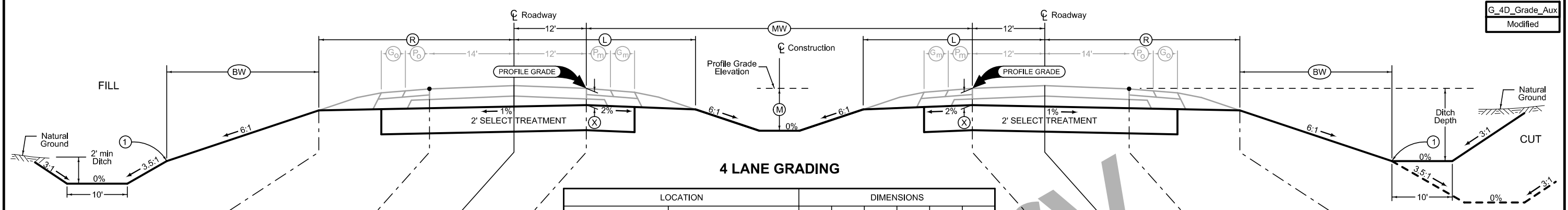
R-12W

R-11W

R-10W

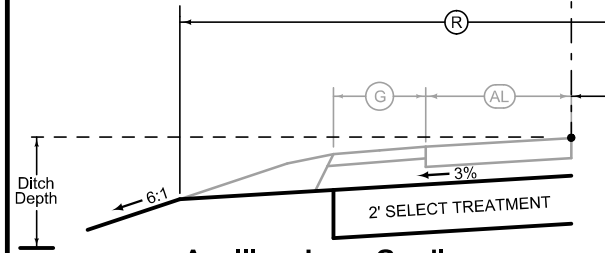
IA 21 Bridge  
FHWA No.700500





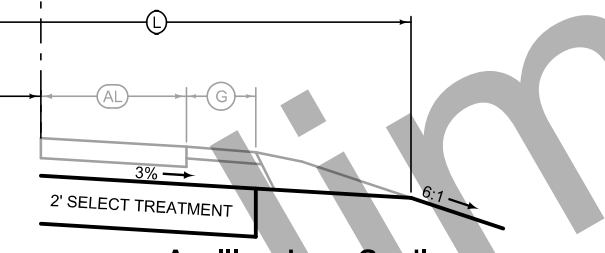
**4 LANE GRADING**

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L	R	X	BW	MW	M	
		Feet	Feet	Inches	Feet	Feet	Feet	
U.S. Highway 30	705+41.13 - 806+00.00	32.0	33.0	16	19.6	64	4	



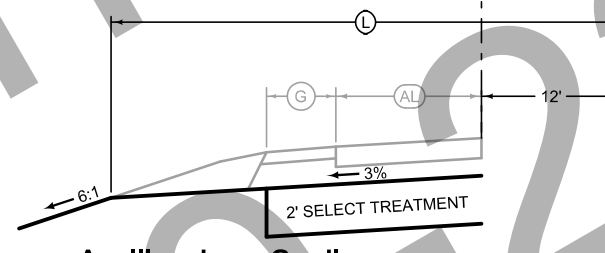
**Auxiliary Lane Grading**

LOCATION			R
ROAD IDENTIFICATION	STATION TO STATION		Feet
U.S. 30 WB (Ramp C Taper)	718+00.00 - 730+30.00		70.8
U.S. 30 WB (Ramp A Taper)	753+50.00 - 759+50.00		72.9



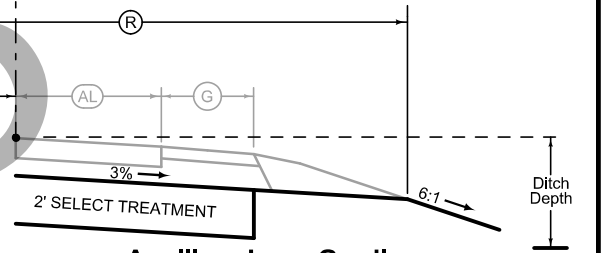
**Auxiliary Lane Grading**

LOCATION			L
ROAD IDENTIFICATION	STATION TO STATION		Feet
U.S. 30 WB (11th Ave)	791+30.00 - 791+30.00		41.3
U.S. 30 WB (11th Ave)	792+80.00 - 792+80.00	0.0 - 41.3	



**Auxiliary Lane Grading**

LOCATION			L
ROAD IDENTIFICATION	STATION TO STATION		Feet
U.S. 30 EB (11th Ave)	786+80.20 - 788+00.20	0.0 - 41.3	
U.S. 30 EB (11th Ave)	788+00.20 - 789+50.20		41.3



**Auxiliary Lane Grading**

LOCATION			R
ROAD IDENTIFICATION	STATION TO STATION		Feet
U.S. 30 EB (Ramp B Taper)	722+50.00 - 728+50.00		72.9
U.S. 30 EB (Ramp D Taper)	749+70.00 - 762+00.00		70.8

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

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

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

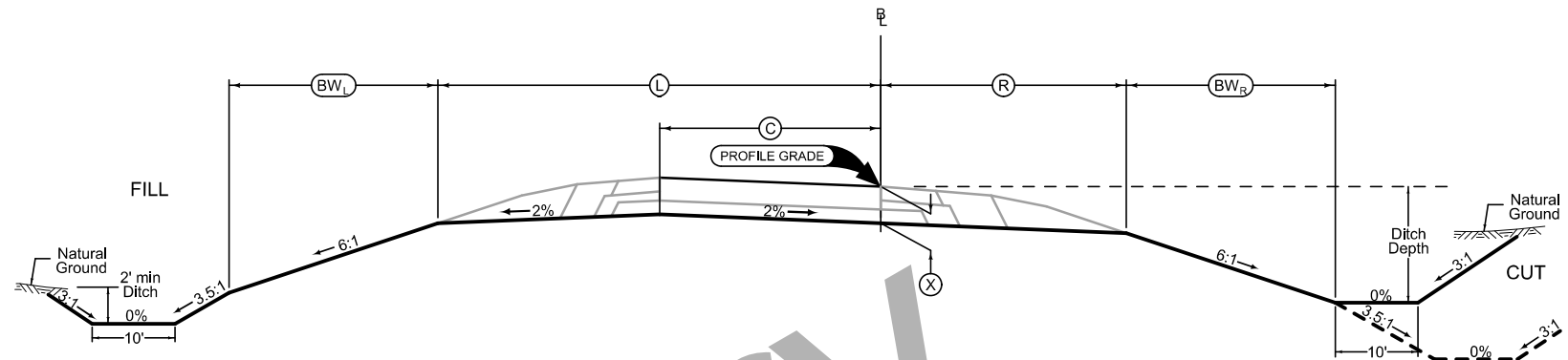
Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.

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

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

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW <sub>L</sub> ) Feet	(BW <sub>R</sub> ) Feet
Iowa 21	A	1540+80.38	1553+50.00	30.3	16.1	16.0	16.0	21.2	20.1
Iowa 21	B	2528+50.00	2541+35.84	30.3	16.1	16.0	16.0	21.2	20.1
Iowa 21	C	3530+28.66	3541+39.90	30.3	16.1	16.0	16.0	21.2	20.1
Iowa 21	D	4540+74.35	4549+71.34	30.3	16.1	16.0	16.0	21.2	20.1

G\_1R\_Grade  
04-15-14



Section view is in direction of traffic.

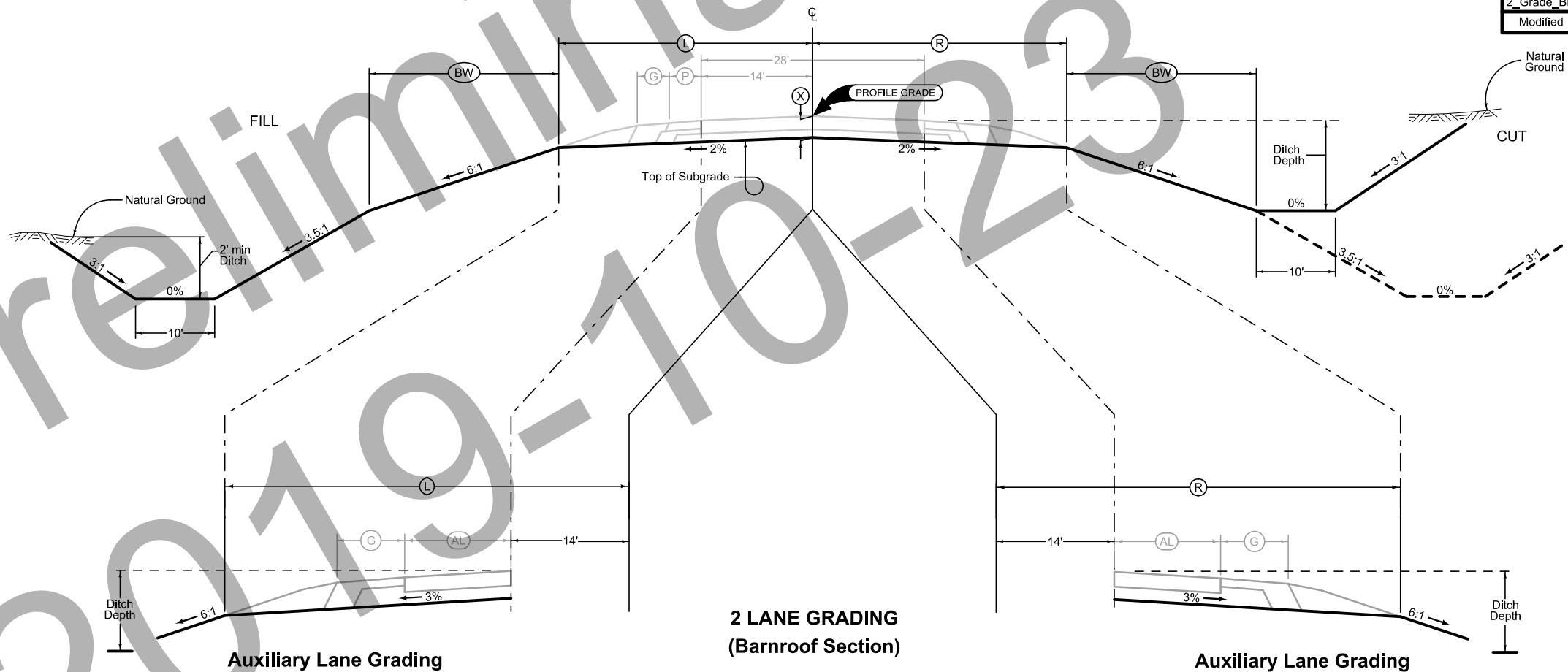
Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super-elevated curves.

RAMP GRADING

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet
Iowa Highway 21	250+00.00	252+00.00	38.6	38.6	16.0	19.9
Iowa Highway 21	252+00.00	257+95.00	38.6 - 46.6	38.6 - 46.6	16.0	19.9
Iowa Highway 21	257+95.00	260+90.00	46.6	(1)	16.0	19.9
Iowa Highway 21	260+90.00	270+75.00	46.6	46.6	16.0	19.9
Iowa Highway 21	270+75.00	273+70.00	(1)	46.6	16.0	19.9
Iowa Highway 21	273+70.00	280+90.00	46.6 - 38.6	46.6 - 38.6	16.0	19.9
Iowa Highway 21	280+90.00	281+50.00	38.6	38.6	16.0	19.9

(1) See Auxiliary Lane Grading

2\_Grade\_BR  
Modified



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

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

2 LANE GRADING  
(Barnroof Section)

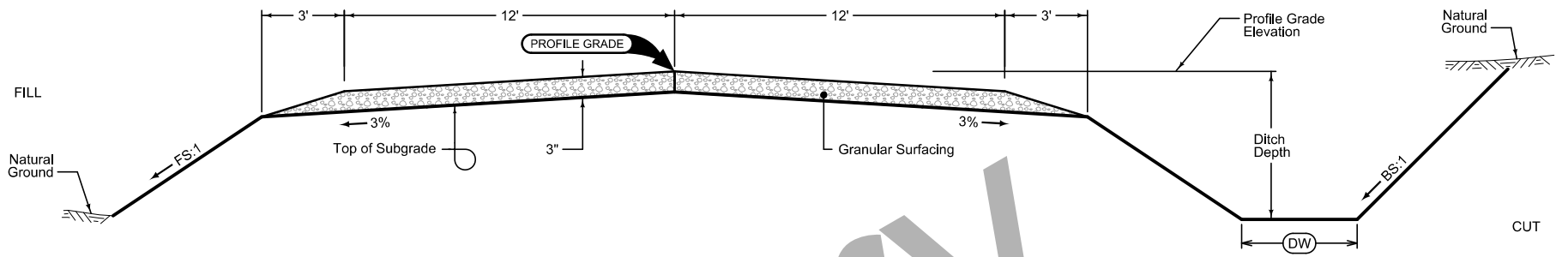
LOCATION			(L) Feet
ROAD IDENTIFICATION	STATION TO STATION		
Iowa Highway 21	270+75.00	272+50.00	53.1
Iowa Highway 21	272+50.00	273+70.00	39.8 - 53.1

LOCATION			(R) Feet
ROAD IDENTIFICATION	STATION TO STATION		
Iowa Highway 21	257+95.00	259+15.00	39.8 - 53.1
Iowa Highway 21	259+15.00	260+90.00	53.1



LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	FS	BS	DW Feet
11th Avenue	11786+75.00 11789+81.93	3	3	
11th Avenue	11790+97.94 11796+50.00	3	3	

G\_2\_GradeGran  
10-17-17



**GRADING AND GRANULAR SURFACING**

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

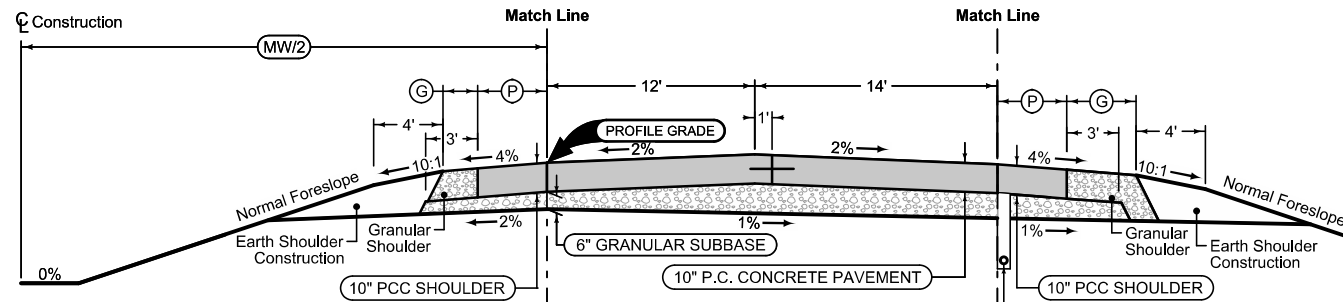
See plan & profile sheets and cross sections for additional details of ditches and backslopes.

Preliminary  
2019-10-23

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

4_C_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
EB	705+41.13	786+80.20	4.0	2.0
EB	789+50.00	804+00.00	4.0	2.0



Section shown in the direction of traffic.

Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

4DP_ 10-19-10			
Direction of Travel	BEGIN STATION	END STATION	(MW) Feet
EB	705+41.13	804+00.00	64

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

4_C_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
EB	705+41.13	722+50.00	4.0	4.0
EB	728+50.00	749+40.00	4.0	4.0
EB	772+50.37	804+00.00	4.0	4.0

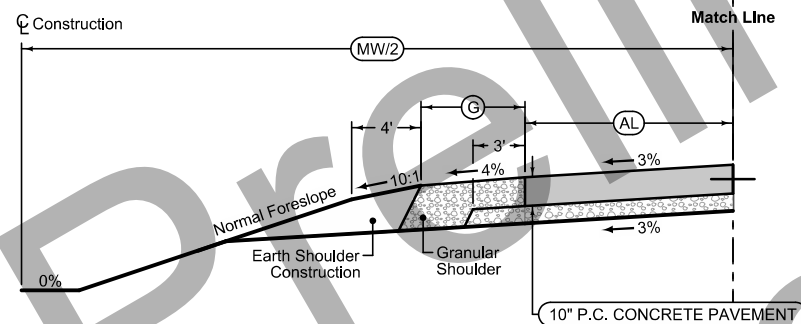
**Auxiliary Lane**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

4_AuxLane_PCC_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
EB	786+80.20	788+00.20	0.0 - 12.0	6.0
EB	788+00.20	789+50.20	12.0	6.0

**Auxiliary Lane Granular Shoulder**

4_AL_Shldr_G_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
EB	786+80.20	788+00.20	0.0 - 12.0	6.0
EB	788+00.20	789+50.20	12.0	6.0



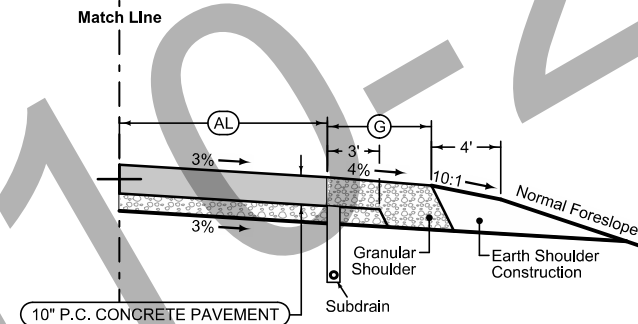
**Auxiliary Lane**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

4_AuxLane_PCC_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
EB	722+50.00	728+50.00	0.0 - 40.0	6.0
EB	749+70.00	760+00.00	37.9 - 4.0	6.0

**Auxiliary Lane Granular Shoulder**

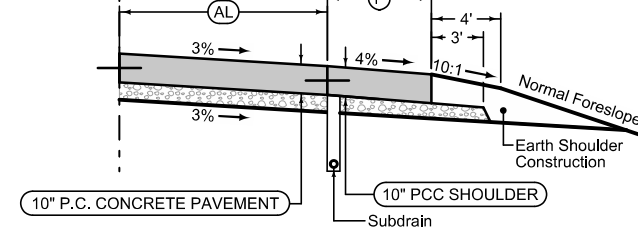
4_AL_Shldr_G_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
EB	722+50.00	728+50.00	0.0 - 40.0	6.0
EB	749+70.00	760+00.00	37.9 - 4.0	6.0



**Auxiliary Lane Full Depth Shoulder**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline  
 Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

2_AuxLane_PCC_ 10-18-16			
STATION TO STATION	(AL) Feet	(P) Feet	
760+00.00	763+00.00	4-0	6-8
763+00.00	772+50.37	0	8



**CHECK SHOULDERS**

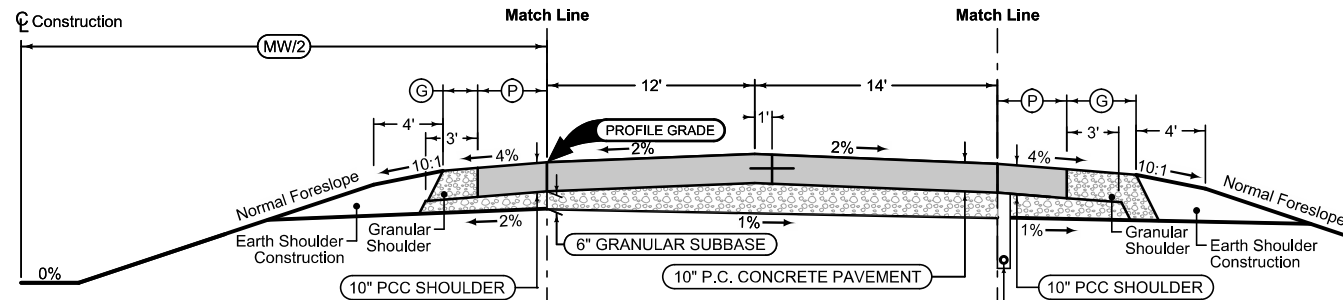
See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

**U.S. Highway 30 EB**

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

4_C_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
WB	705+41.13	791+30.00	4.0	2.0
WB	794+00.00	795+00.00	4.0	2.0



Section shown in the direction of traffic.

Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

4DP_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(MW) Feet	
WB	705+41.13	795+00.00	64	

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

4_C_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
WB	705+41.13	718+00.00	4.0	4.0
WB	730+00.00	753+50.00	4.0	4.0
WB	759+50.00	795+00.00	4.0	4.0

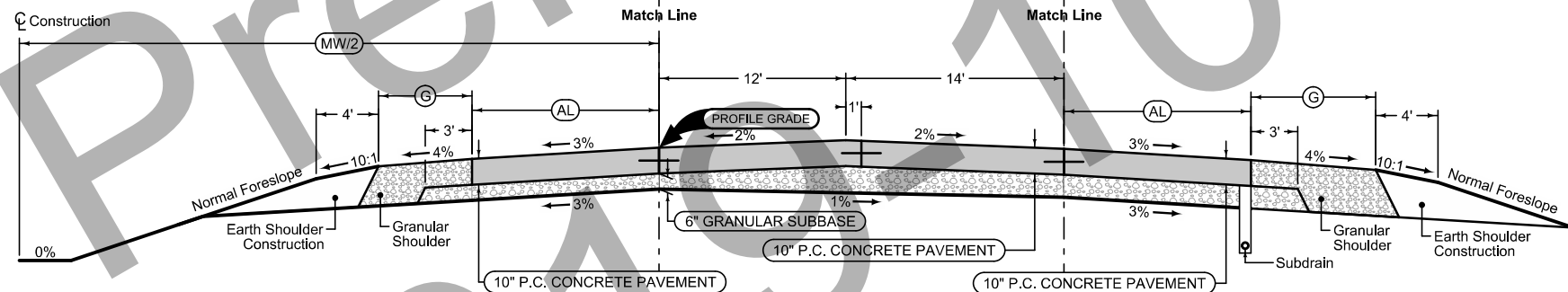
**Auxiliary Lane**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

4_AuxLane_PCC_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
WB	791+30.00	792+80.00	12.0	6.0
WB	792+80.00	794+00.00	12.0-0.0	6.0

**Auxiliary Lane Granular Shoulder**

4_AL_Shldr_G_ 10-19-10		
Direction of Travel	BEGIN STATION	END STATION
WB	791+30.00	792+80.00
WB	792+80.00	794+00.00



**Auxiliary Lane**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

4_AuxLane_PCC_ 10-19-10				
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(G) Feet
WB	718+00.00	730+30.00	0.0-37.9	6.0
WB	753+50.00	759+50.00	40.0-0.0	6.0

**Auxiliary Lane Granular Shoulder**

4_AL_Shldr_G_ 10-19-10		
Direction of Travel	BEGIN STATION	END STATION
WB	718+00.00	730+30.00
WB	753+50.00	759+50.00

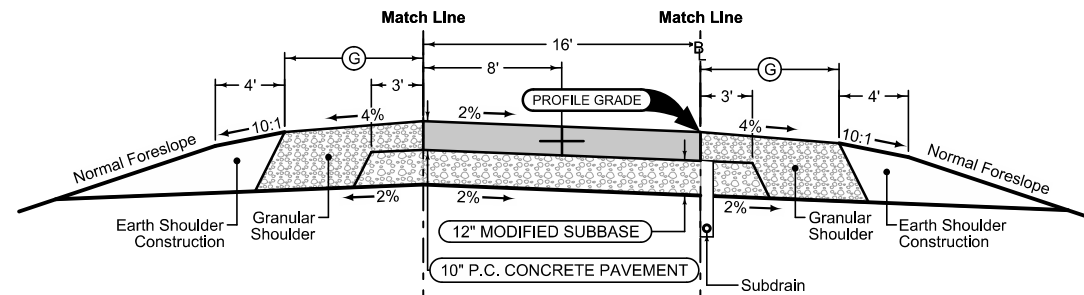
**CHECK SHOULDERS**

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

**U.S. Highway 30 WB**

**Granular Shoulder**

1R_G_ 10-19-10		
BEGIN STATION	END STATION	⊙ Feet
A 1540+80.38	1553+50.00	4.0
B 2528+50.00	2541+35.84	4.0
C 3530+28.66	3541+39.90	4.0
D 4540+74.35	4549+71.34	4.0



**Granular Shoulder**

1R_G_ 10-19-10		
BEGIN STATION	END STATION	⊙ Feet
A 1540+80.38	1553+50.00	6.0
B 2528+50.00	2541+35.84	6.0
C 3530+28.66	3541+39.90	6.0
D 4540+74.35	4549+71.34	6.0

Section shown in the direction of traffic.

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

1RP_ 10-17-17		
BEGIN STATION	END STATION	
A 1540+80.38	1553+50.00	
B 2528+50.00	2541+35.84	
C 3530+28.66	3541+39.90	
D 4540+74.35	4549+71.34	

**CHECK SHOULDERS**

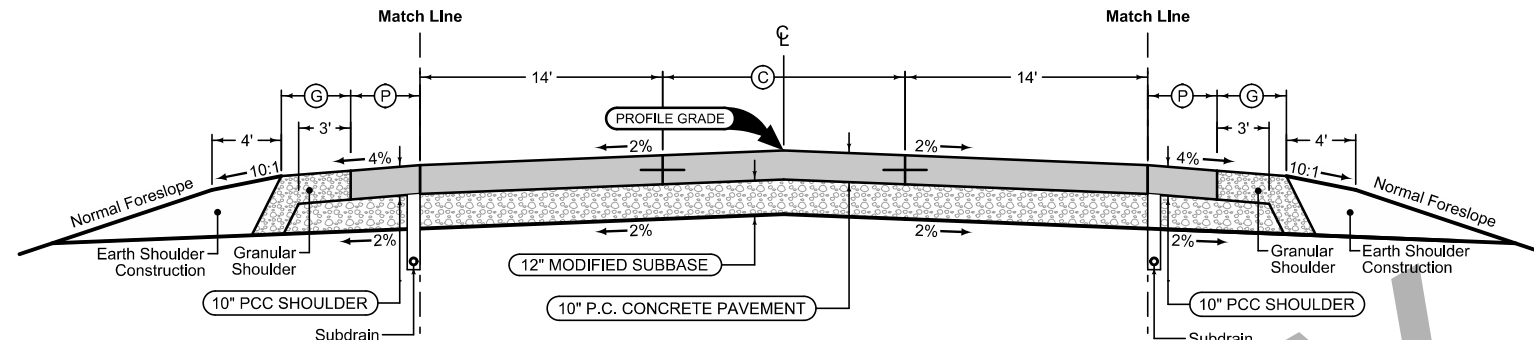
See Tab 100-24 or 100-25 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

**Iowa Highway 21 Ramps**

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

STATION TO STATION		(P) Feet	(G) Feet
250+00.00	270+75.00	4.0	4.0
273+70.00	281+50.00	4.0	4.0



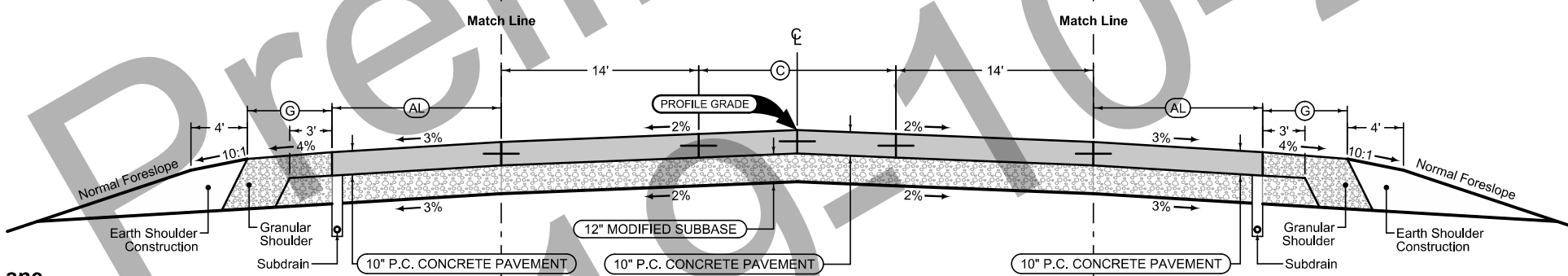
Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

STATION TO STATION		(C) Feet
250+00.00	252+00.00	0.0
252+00.00	257+95.00	0.0 - 16.0
257+95.00	273+70.00	16.0
273+70.00	280+90.00	16.0 - 0.0
280+90.00	281+50.00	0.0

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

STATION TO STATION		(P) Feet	(G) Feet
250+00.00	257+95.00	4.0	4.0
260+90.00	281+50.00	4.0	4.0



**Auxiliary Lane**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

STATION TO STATION		(AL) Feet	(G) Feet
270+75.00	272+50.00	12.0	6.0
272+50.00	273+70.00	12.0 - 0.0	6.0

**Auxiliary Lane Granular Shoulder**

**Auxiliary Lane**

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

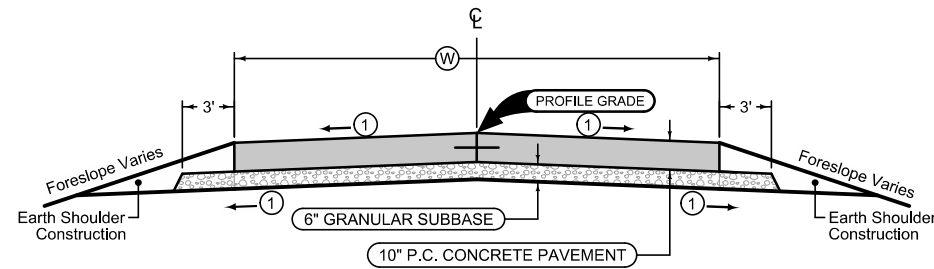
STATION TO STATION		(AL) Feet	(G) Feet
257+95.00	259+15.00	0.0 - 12.0	6.0
259+15.00	260+90.00	12.0	6.0

**Auxiliary Lane Granular Shoulder**

**CHECK SHOULDERS**

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

**Iowa Highway 21**



Subgrade parallels pavement slope.  
See L sheets for details.

Mainline Jointing:  
Transverse joints: CD at 17' spacing  
Longitudinal joint: L-2

LOCATION		DIMENSIONS
ROAD IDENTIFICATION	STATION TO STATION	Ⓜ Feet

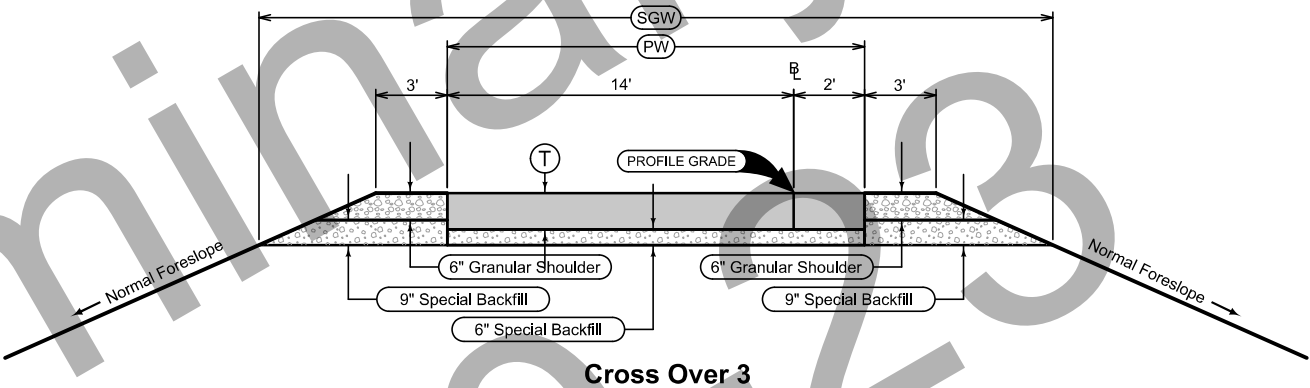
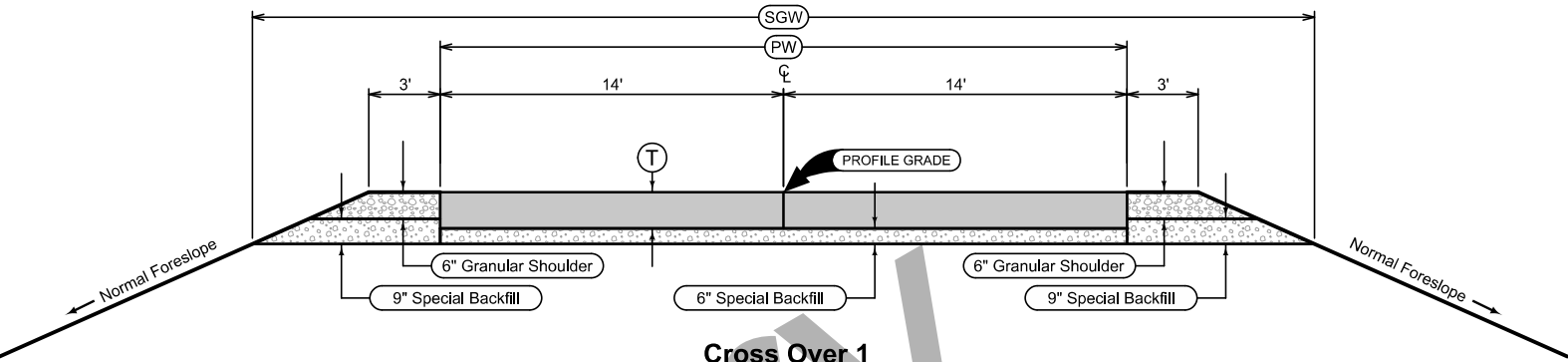
Preliminary  
2019-10-23

See Tab 100-24 for pavement quantities.

**Paved Returns**

LOCATION		DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION	HMA			PCC		
		PW Feet	T Inches	SGW Feet	PW Feet	T Inches	SGW Feet

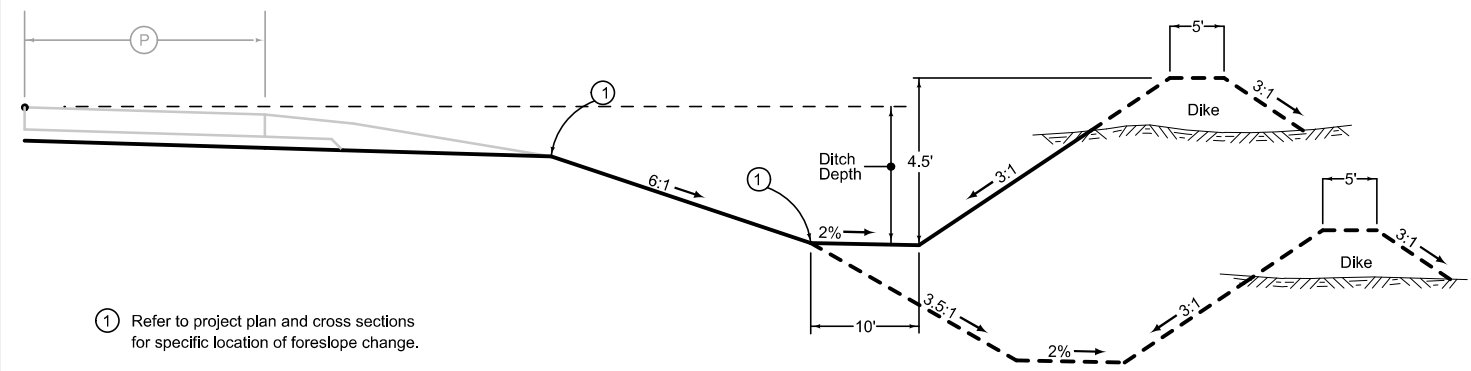
Quantity calculations based on vertical pavement edges.  
 Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.  
 See Tab. 112-8 for Quantities



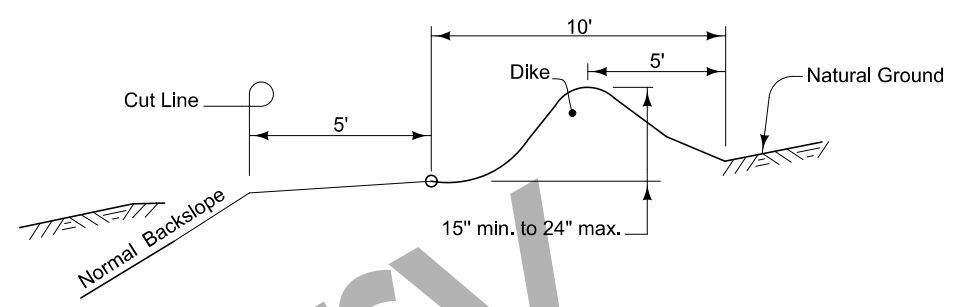
PCC Detour Pavement Jointing:  
 Longitudinal joints adjacent to mainline pavement:  
 KT-2 or L-2 if mainline pavement is new. Bend bars out.  
 BT-3 if mainline pavement is existing.  
 Longitudinal jointing of Detour Pavement (Crossover 2 Only)  
 KT-2 or L-2 spaced at one-quarter median width.  
 Transverse joints:  
 Match existing roadway joints. CD joints are required.  
 HMA Detour Pavement Jointing:  
 Longitudinal joints: B

Preliminary  
 2019-10-23

Ditch



DETAILS OF TYPICAL DITCH W/ DIKE



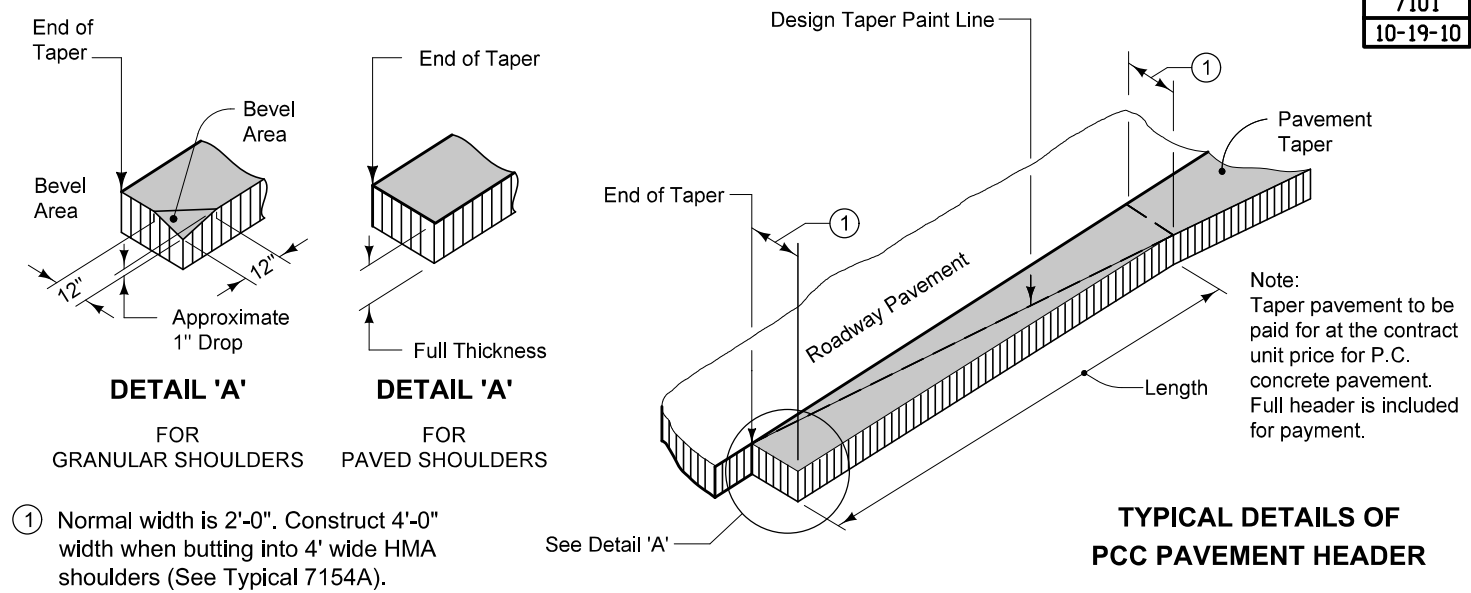
Refer to plans for locations of intercepting ditches. Dike for intercepting ditch shall be made by taking earth from roadway side. Do not excavate back of dike.

TYPICAL CROSS SECTION INTERCEPTING DITCH

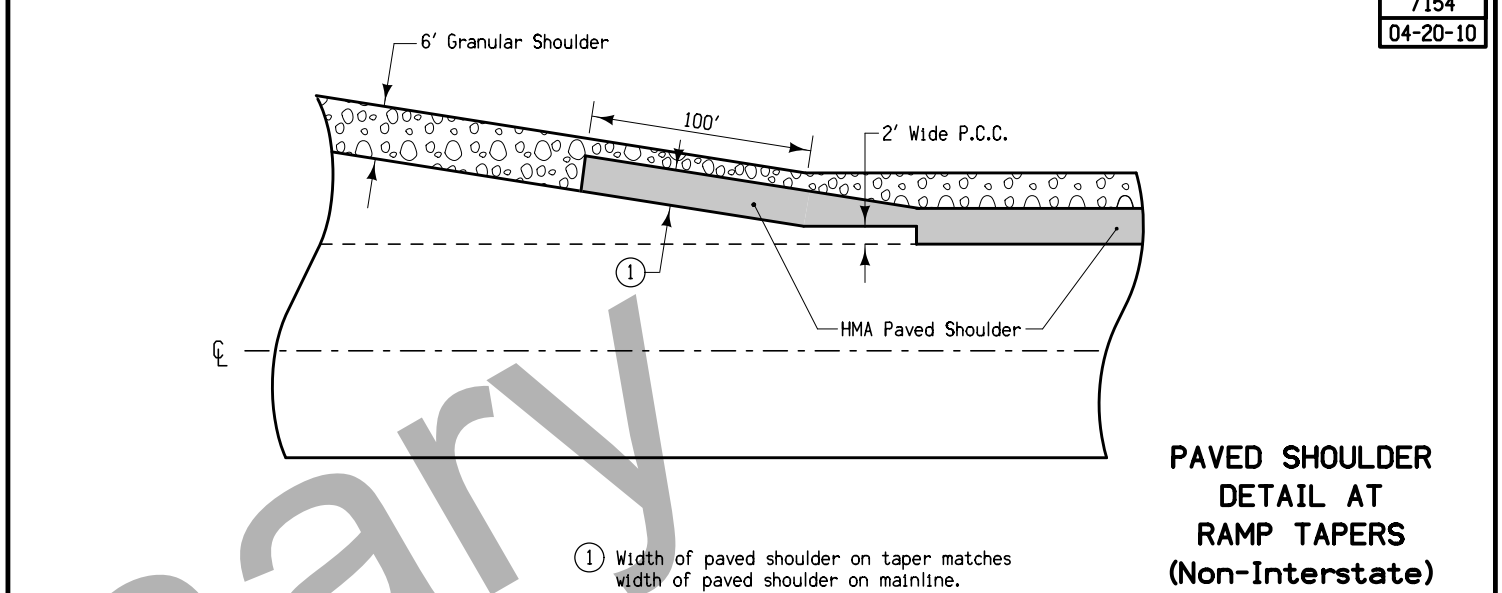
Preliminary  
2019-10-23



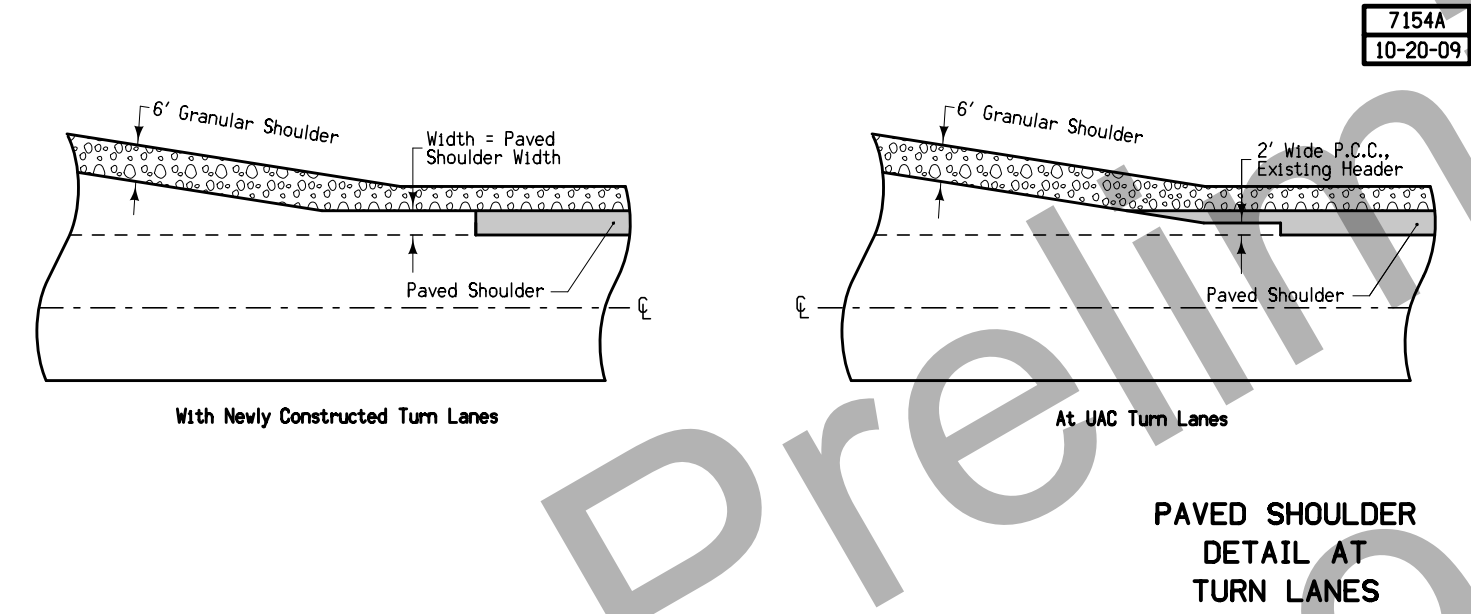
7101  
10-19-10



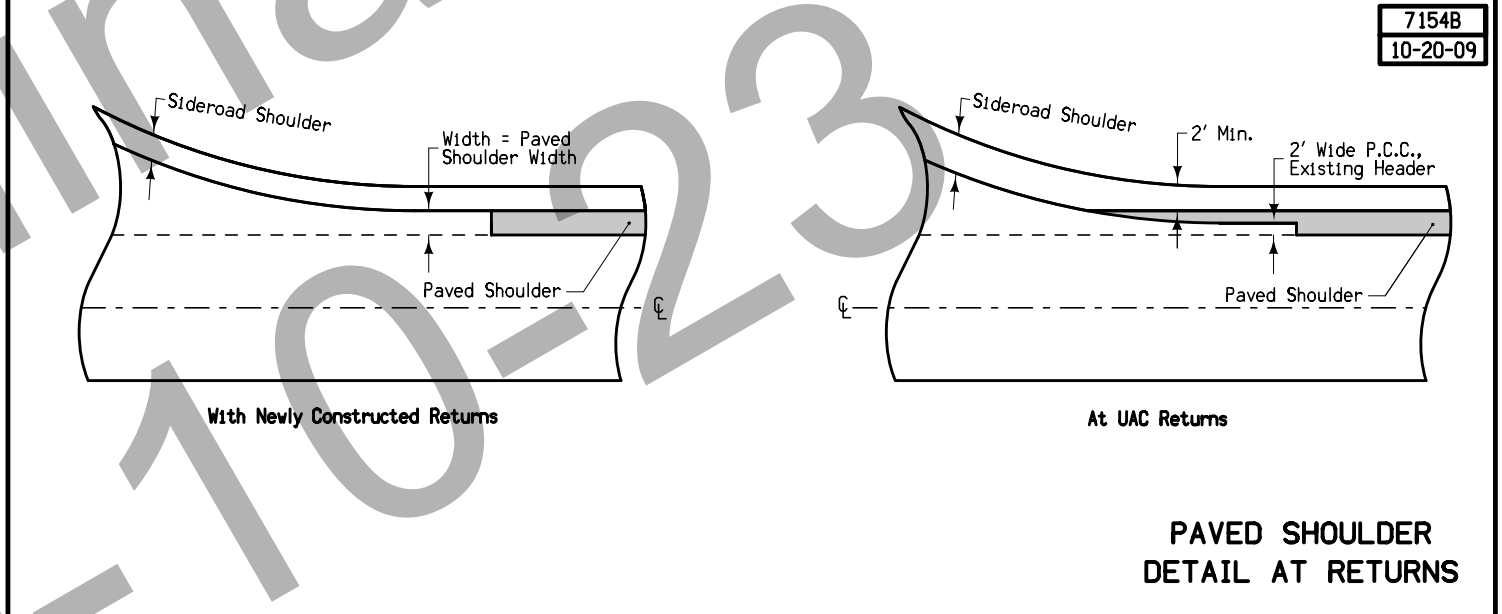
7154  
04-20-10

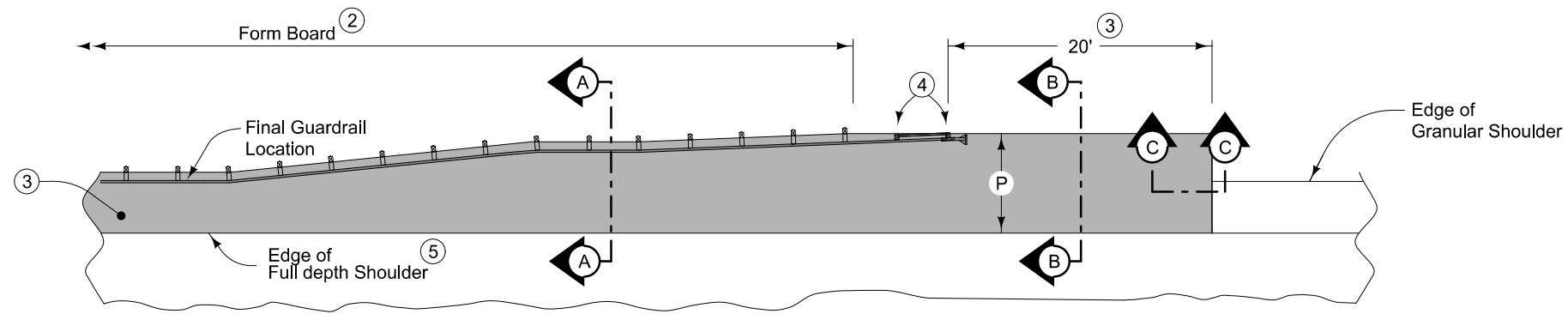


7154A  
10-20-09

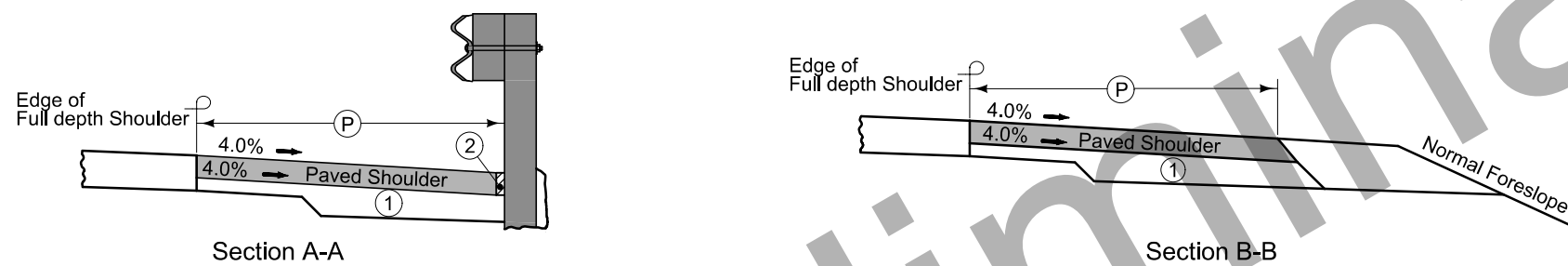


7154B  
10-20-09





PLAN VIEW



NEW CONSTRUCTION

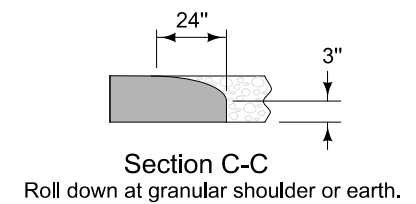
6" HMA Paved Shoulder at guardrail. 6" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- ① For subgrade treatment, refer to other details in the plan.
- ② PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ⑤ 'KT-1 joint for PCC shoulder.  
'B' joint for HMA shoulder.



PAVED SHOULDER AT GUARDRAIL

### SURVEY SYMBOLS

- GDL Guard Rail Steel
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- TDC Tree Deciduous
- SI Sign
- BNK Stream Bank
- EW Edge of Water
- TEV Evergreen Tree
- HDG Hedge Row
- LP L.P. Tank
- DIK Centerline of Dike or Dam
- SHR Shrub
- SI Sign
- RET Retaining Walls
- FWD Wood Fence
- FCL Chain Link and Security Fence
- LUM Luminaire
- FLG Flag Poles
- WM Wind Mill
- STP Stump
- CIS Cistern
- PPB Power Pole Co. 2
- LUM Luminaire
- PPD Power Pole Co. 4
- PPC Power Pole Co. 3
- PPE Power Pole Co. 5
- RT Radio Tower
- UB Utility Box
- SI Sign
- TPD Telephone Pedestal
- TIL Tile Line
- OUT Tile Outlet
- MM Mile Marker Post
- MH Utility Access (Manhole)
- WV Water Valve
- WHD Water Hydrant
- CIS Cistern
- MIS Miscellaneous
- WEL Well
- EB Electrical Box
- St.S. STA Storm Sewer Line Co. 1
- IN Storm Sewer Intake
- INB Storm Sewer Beehive Intake
- SEP Septic Tank
- WM Wind Mill

### UTILITY LEGEND

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

- E2 - East-Central Iowa Rural Electric Cooperative  
Tom Schmitt  
2400 Bing Miller Lane / PO Box 248  
Urbana, IA 52345  
3194434343 413  
tom.schmitt@ecirec.coop
- F0 - CenturyLink (LightCore)  
Robert Sampson  
1310 E MARY ST  
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(636) 887-5367  
NationalRelo@centurylink.com
- F02 - Windstream Communications (ILEC)  
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11101 Anderson Dr. Suite 100  
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- T2 - Windstream Communications (ILEC)  
Joy Matthews  
11101 Anderson Dr. Suite 100  
Little Rock, AR 72212  
(501) 748-7654  
WCI.OSP.Permits@windstream.com
- W - Poweshiek Water Association  
Chad Coburn  
125 Industrial Drive  
Brooklyn, IA 52211  
(641) 522-7416  
chad@poweshiekwater.com

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

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING		
	Design Color No.	
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

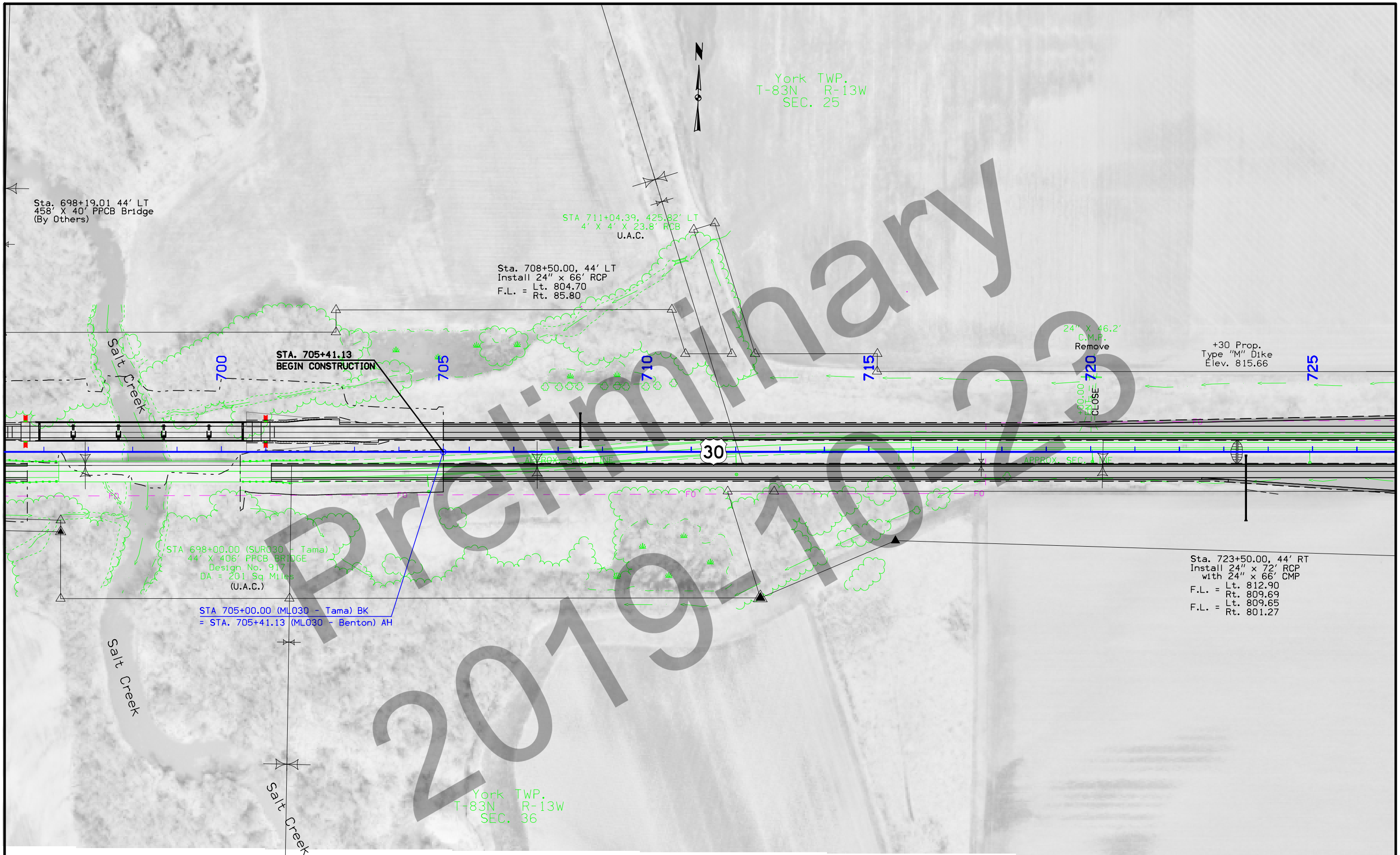
Clearing & Grubbing Area

### 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)



York TWP.  
T-83N R-13W  
SEC. 25

Sta. 698+19.01 44' LT  
458' X 40' PPCB Bridge  
(By Others)

STA 711+04.39, 425.82' LT  
4' X 4' X 23.8' RCB  
U.A.C.

Sta. 708+50.00, 44' LT  
Install 24" x 66' RCP  
F.L. = Lt. 804.70  
Rt. 85.80

STA. 705+41.13  
BEGIN CONSTRUCTION

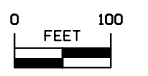
+30 Prop.  
Type "M" Dike  
Elev. 815.66

STA 698+00.00 (SUR030 - Tama)  
44' X 406' PPCB BRIDGE  
Design No. 917  
DA = 201 Sq Miles  
(U.A.C.)

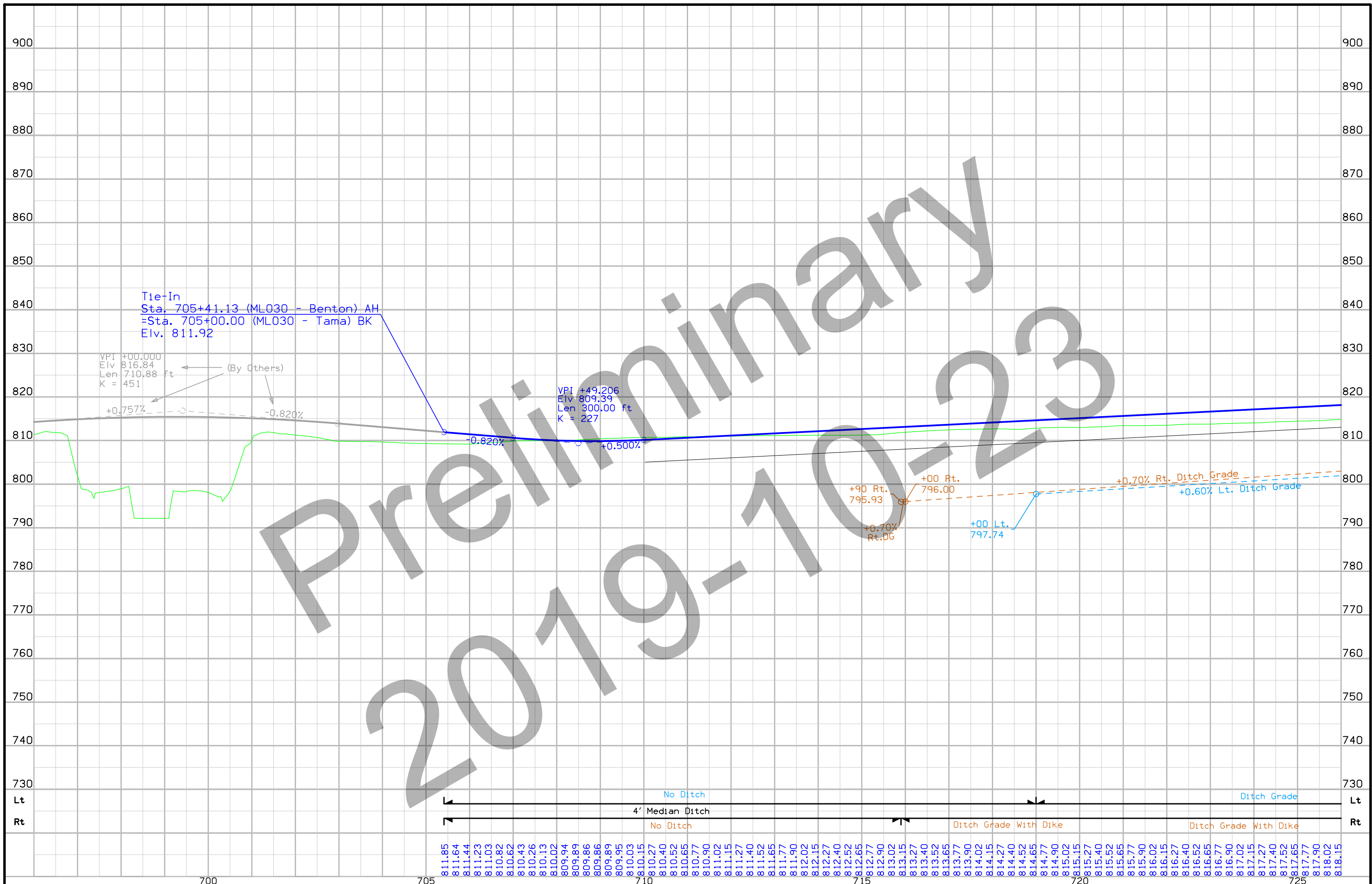
STA 705+00.00 (ML030 - Tama) BK  
= STA. 705+41.13 (ML030 - Benton) AH

Sta. 723+50.00, 44' RT  
Install 24" x 72' RCP  
with 24" x 66' CMP  
F.L. = Lt. 812.90  
Rt. 809.69  
F.L. = Lt. 809.65  
Rt. 801.27

York TWP.  
T-83N R-13W  
SEC. 36



U.S. Highway 30



Tie-In  
 Sta. 705+41.13 (ML030 - Benton) AH  
 =Sta. 705+00.00 (ML030 - Tama) BK  
 Eiv. 811.92

VPI +00.000  
 Eiv 816.84  
 Len 710.88 ft  
 K = 451

VPI +49.206  
 Eiv 809.39  
 Len 300.00 ft  
 K = 227

Lt	No Ditch		Ditch Grade		Lt
Rt	4' Median Ditch		Ditch Grade With Dike		Rt
	No Ditch		Ditch Grade With Dike		
	811.85	810.27	813.15	815.15	818.15
	811.64	810.40	813.02	815.02	817.90
	811.44	810.52	813.27	815.27	817.77
	811.23	810.65	813.40	815.40	817.52
	811.03	810.77	813.52	815.52	817.40
	810.82	810.90	813.65	815.65	817.27
	810.62	811.02	813.77	815.77	817.15
	810.43	811.15	813.90	815.90	817.02
	810.26	811.27	814.02	816.02	816.85
	810.13	811.40	814.15	816.15	816.77
	810.02	811.52	814.27	816.27	816.65
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	809.89	811.77	814.52	816.52	816.40
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	809.86	812.15	814.90	816.90	816.02
	809.89	812.27	815.02	817.02	815.85
	809.95	812.40	815.15	817.15	815.77
	810.03	812.52	815.27	817.27	815.65
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	810.77	813.27	816.02	818.02	814.90
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	811.27	813.77	816.52		814.40
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	812.77	815.27	818.02		812.90
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	817.52				811.44
	817.65				811.64
	817.77				811.85



York TWP.  
T-83N R-13W  
SEC. 25

Kane TWP.  
T-83N R-12W  
SEC. 30

Sta. 743+25.00  
Install 30" x 192' RCP  
Lt. 820.75  
F.L. = Rt. 816.92

Sta. 749+68  
Skew 45° LT AHEAD  
8' X 6' X 83' RCB  
D.A. = 316 Ac - R  
Remove

Sta. 742+01  
24" X 104' Conc Pipe  
D.A. = 14 Ac - R  
Remove

Sta. 750+30.00 (PHASE 2)  
Build 10' x 4' 193' RCB  
Skew = 30° Lt. Ahd.  
F.L. = Lt. 823.99  
Design No. 818

+30 Prop.  
Type "M" Dike  
Elev. 823.16

+30 Prop.  
Type "M" Dike  
Elev. 838.12

Sta. 738+50.00, 44' RT  
Install 24" x 96' RCP  
Lt. 820.40  
F.L. = Rt. 813.58

Sta. 750+30.00 (PHASE 1)  
Build 10' x 4' x 127' RCB  
Skew = 30° Lt. Ahd.  
F.L. = Lt. 822.09  
Rt. 820.70  
Design No. 418

Sta. 753+50.00  
Install 24" x 92' RCP  
F.L. = Lt. 835.36  
Rt. 832.76

POT Sta. 741+11.03 (ML030)  
= POT Sta. 265+80.76 (SUR021)

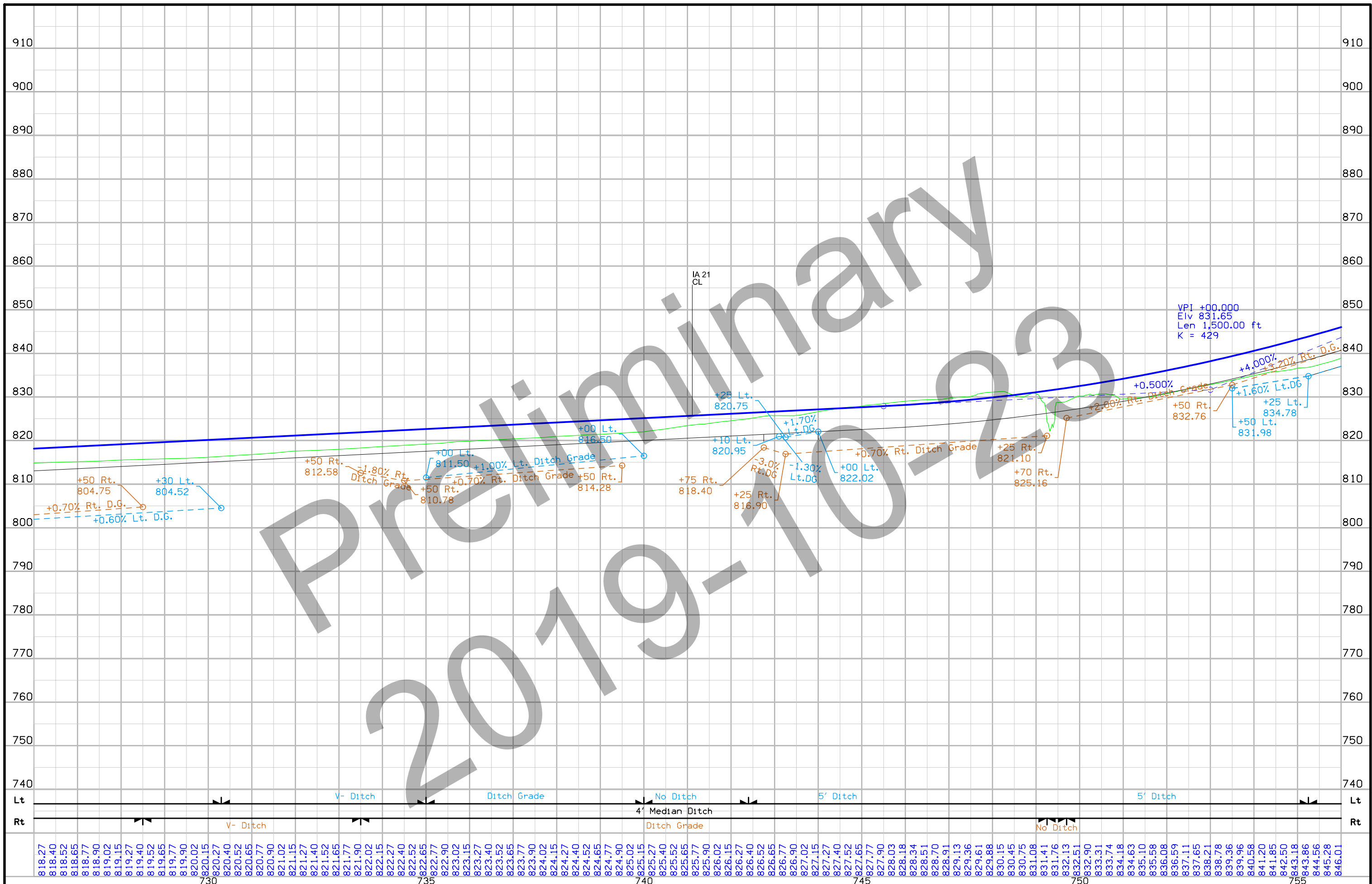
Curve Data  
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T = 111.33  
L = 222.65  
R = 14,000.00  
E = 0.44

York TWP.  
T-83N R-13W  
SEC. 36

Kane TWP.  
T-83N R-12W  
SEC. 31



U.S. Highway 30



FILE NO. 31043	ENGLISH	DESIGN TEAM Flattery \ Bell	TAMA COUNTY	PROJECT NUMBER NHSX-030-6(240)--3H-86	SHEET NUMBER D.5	REVISED
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Kane TWP.  
T-83N R-12W  
SEC. 30

Kane TWP.  
T-83N R-12W  
SEC. 30

Sta. 785+19  
24" X 69' Conc Pipe  
D.A. = 8' Ac - R  
Remove

Sta. 778+25.00 (PHASE 2)  
Extend 30" x 114' RCP  
with 30" x 110' RCP  
F.L. = Lt. 899.17  
Rt. 903.18  
Other 906.37

Sta. 785+18.00 (PHASE 2)  
Extend 24" x 134' RCP  
with 24" x 98' RCP  
F.L. = Lt. 903.13  
Rt. 907.91  
Other 907.91

+50 Prop.  
Type "M" Dike  
Elev. 872.41

24" X 49.6'  
C.M.P.  
Remove

Sta. 763+50.00  
Install 24" x 94' RCP  
F.L. = Lt. 860.89  
Rt. 869.65

Sta. 778+27  
2' X 2' X 71' RCB  
D.A. = 10' Ac - VH  
Remove

24" X 51.8'  
C.M.P.  
Remove

30

36" X 58.3'  
C.M.P.  
Remove

+00 Prop.  
Type "C" Ent.  
36" Uncl. Pipe

+30 Prop.  
Type "M" Dike  
Elev. 906.6

Sta. 778+25.00 (PHASE 1)  
Install 30" x 114' RCP  
F.L. = Lt. 906.47  
Rt. 908.01

Sta. 773+50.00  
Install 24" x 92' RCP  
F.L. = Lt. 903.84  
Rt. 897.30

Sta. 785+18.00 (PHASE 1)  
Install 24" x 134' RCP  
F.L. = Lt. 907.91  
Rt. 908.00

29"x18" Uncl. Pipe

36" Uncl. Pipe

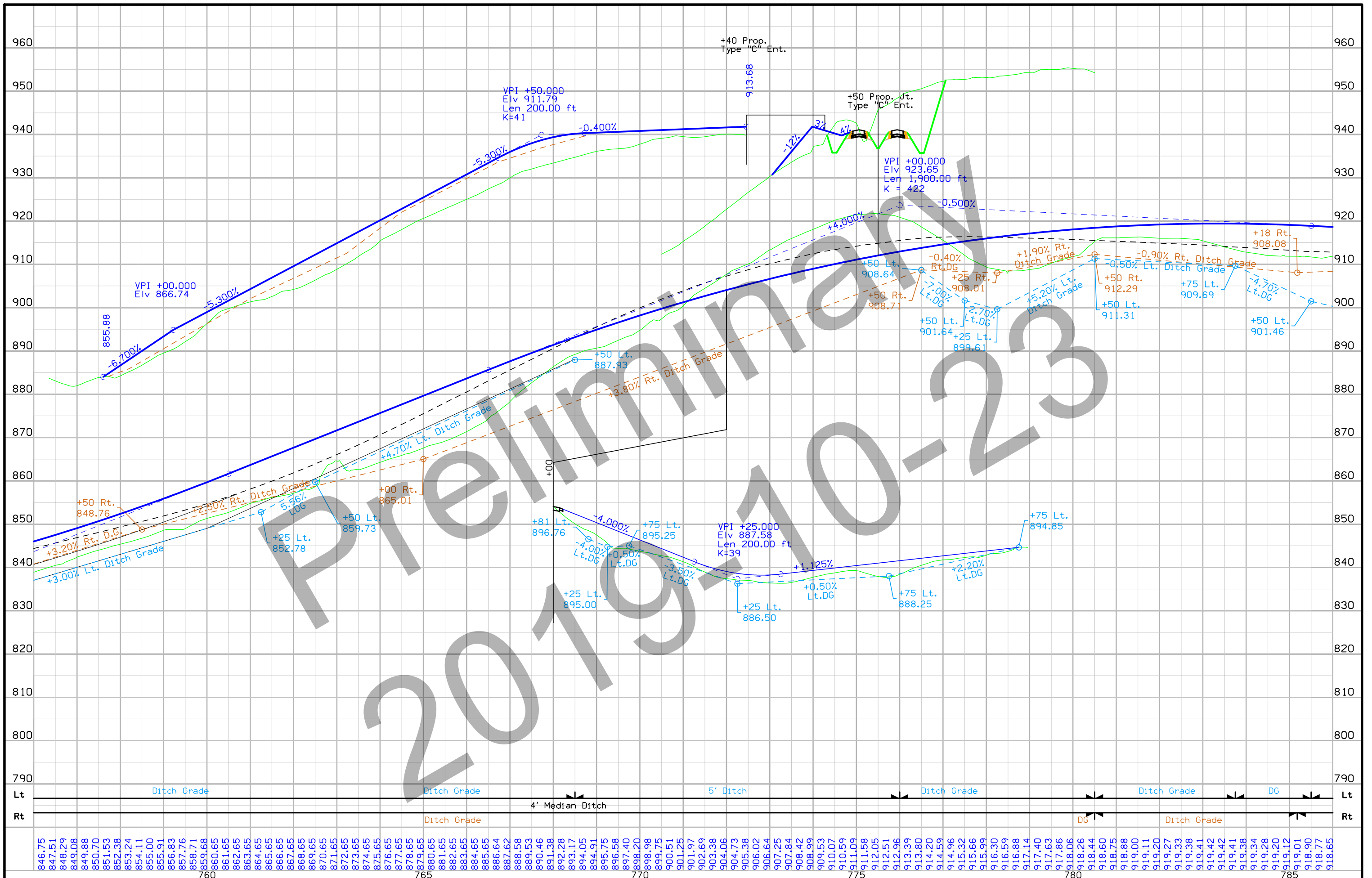
Kane TWP.  
T-83N R-12W  
SEC. 31

Kane TWP.  
T-83N R-12W  
SEC. 31



U.S. Highway 30





FILE NO. <b>31043</b>	ENGLISH	DESIGN TEAM <b>Flattery \ Bell</b>	TAMA COUNTY	PROJECT NUMBER <b>NHSX-030-6(240)--3H-86</b>	SHEET NUMBER <b>D.7</b>	REVISED
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8:51:28 AM 9/12/2019 dhain pw:\nt\PwInt1.dot.int.lan:PWMain\Documents\Projects\0603003092\Design\.(240)\_PCC Pavement - Grade and New\06030240\_D03.sht

Kane TWP.  
T-83N R-12W  
SEC. 29

Sta. 788+95.00  
Build 5' x 4' 3:1 Flume & Basin  
F.L. = Lt. 893.87  
Rt. 905.33  
Design No. 918

Sta. 788+95.00 (PHASE 2)  
Extend 42" x 64' RCP  
F.L. = Lt. 905.33  
Rt. 906.19

POT Sta. 790+39.23 (ML030)  
= POT Sta. 11790+40 (SR11THAVE)

Sta. 794+84.00 (PHASE 2)  
Extend 24" x 112' RCP  
with 24" x 84' RCP  
F.L. = Lt. 916.70  
Rt. 919.22

STA. 795+00.00  
END WB CONSTRUCTION

Sta. 794+87  
24" X 67' Conc Pipe  
D.A. = 13 Ac - R  
Remove

Sta. 794+84.00 (PHASE 1)  
Install 24" X 112' RCP  
F.L. = Lt. 919.05  
Rt. 922.52

+70 Prop.  
Type "M" Dike  
Elev. 924.36

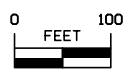
Sta. 803+00.00  
Install 24" x 92'  
F.L. = Lt. 940.58  
Rt. 934.30

Sta. 816+56  
4' X 5' X 40' W/ EXTS RCB  
D.A. = 22 Ac - GR

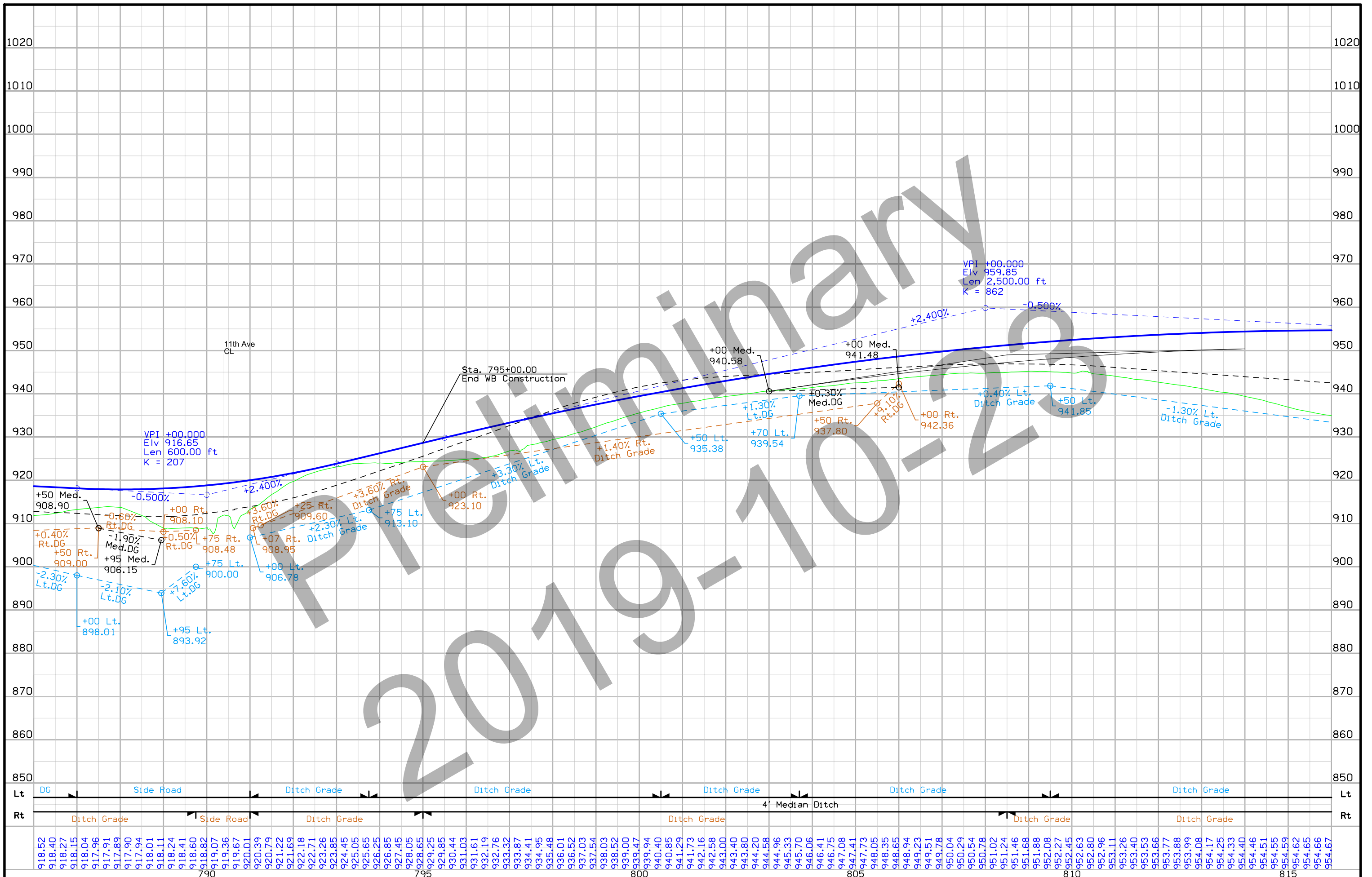
Sta. 788+97  
3' X 3' X 65' RCB  
D.A. = 38 Ac - R

Sta. 788+00.00  
Install 24" x 88' RCP  
F.L. = Lt. 914.40  
Rt. 908.70

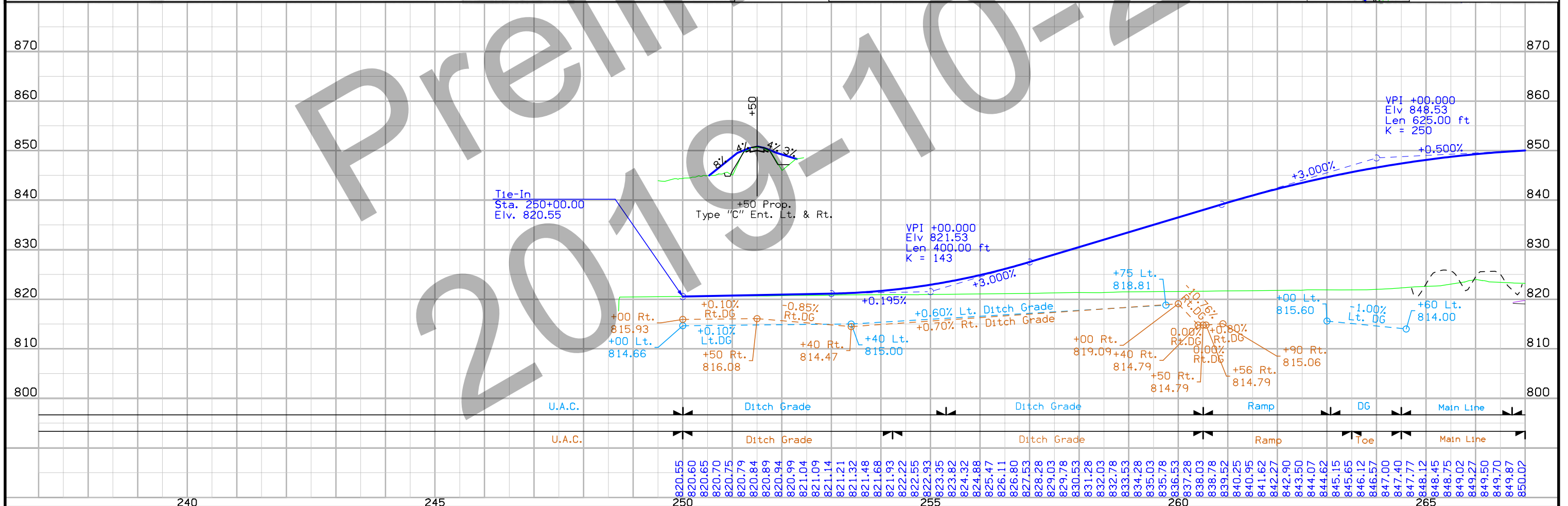
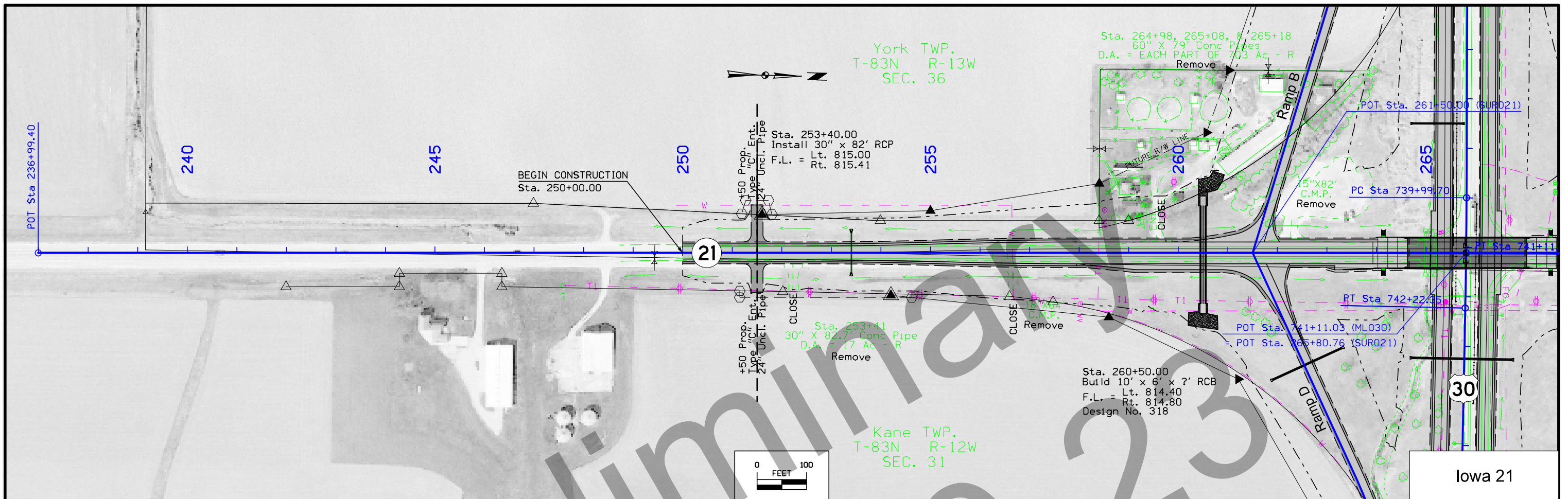
Kane TWP.  
T-83N R-12W  
SEC. 32



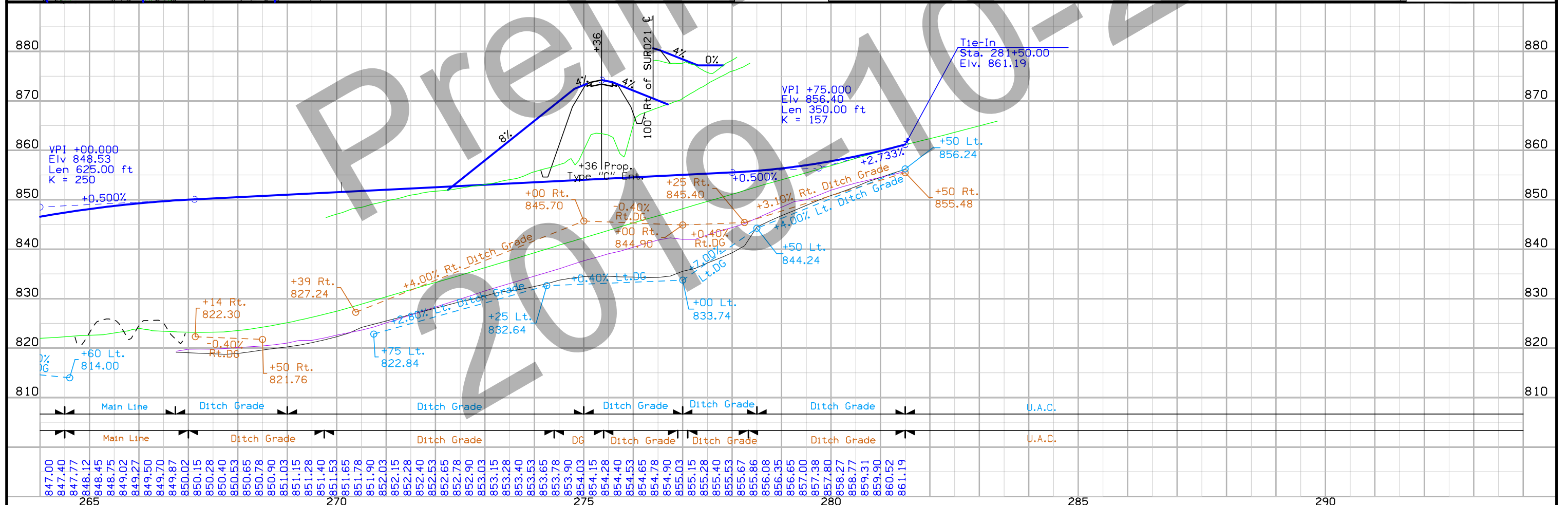
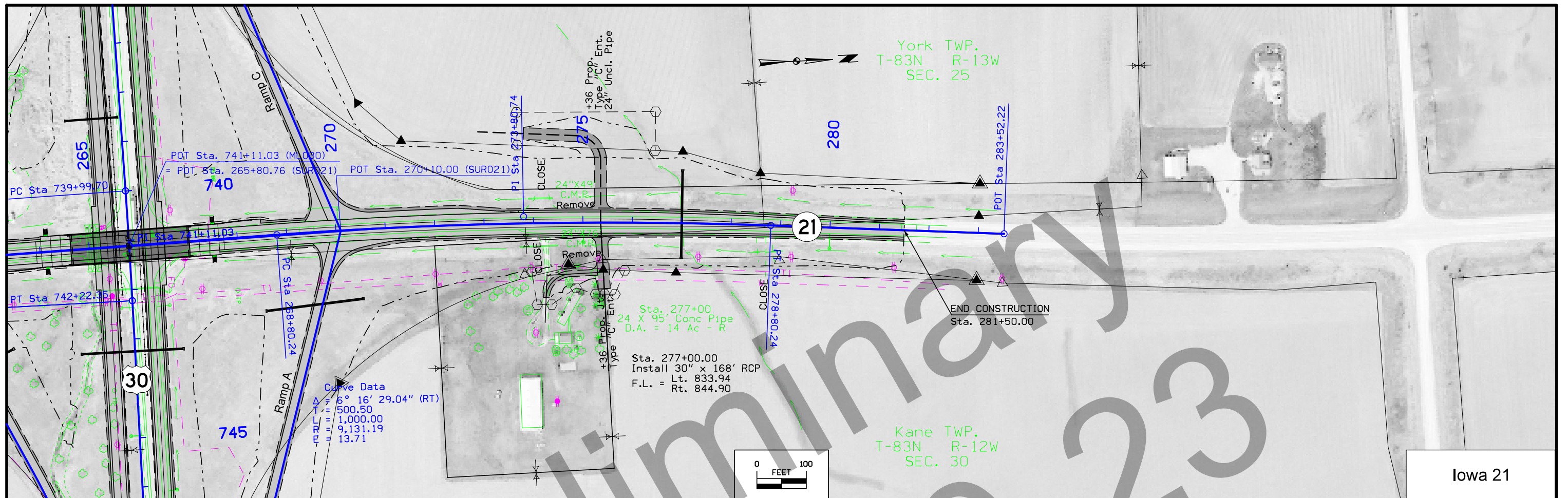
U.S. Highway 30



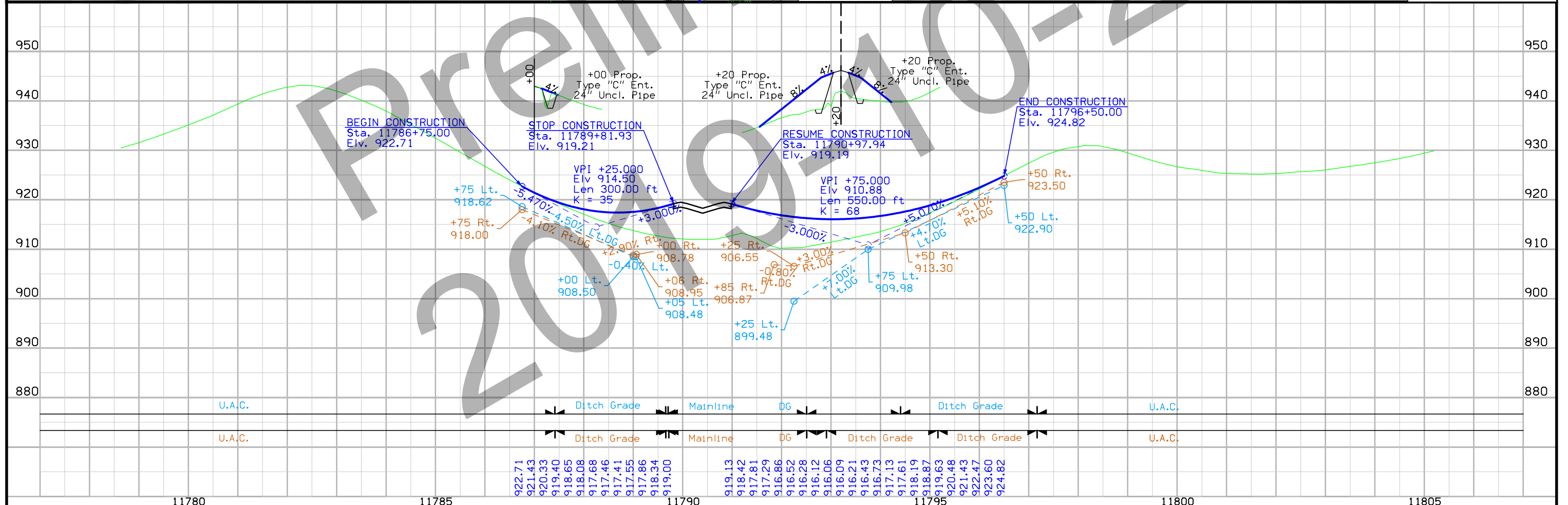
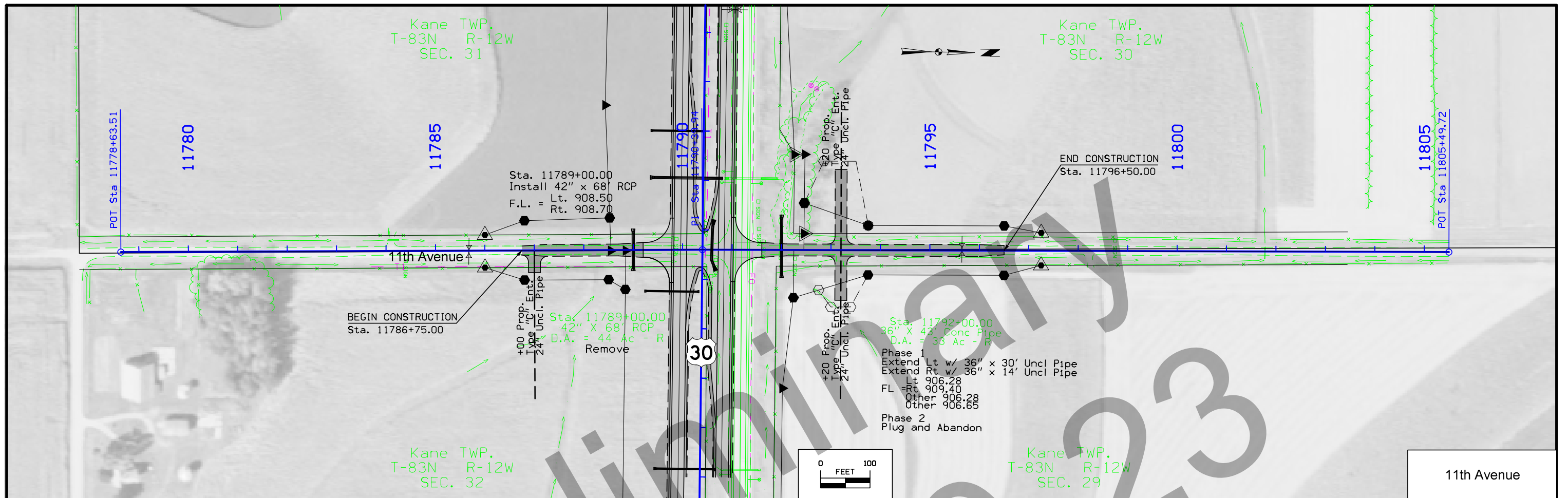




FILE NO. 31043	ENGLISH	DESIGN TEAM Flattery \ Bell	TAMA COUNTY	PROJECT NUMBER NHSX-030-6(240)--3H-86	SHEET NUMBER E.1
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FILE NO. 31043	ENGLISH	DESIGN TEAM Flattery \ Bell	TAMA COUNTY	PROJECT NUMBER NHSX-030-6(240)--3H-86	SHEET NUMBER E.3
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**Survey Information**

Benton County  
 NHS-030-6(87)--19-06  
 Benton County HWY 30 from the  
 Tama County Line  
 To HWY 218  
 PIN 96-06-030-030  
 Sap-0150.4

**Party Personnel**

John Dewey- Party Chief  
 John Bennett- Assistant Survey  
 Party Chief  
 Jeffrey Duncan- Assistant Survey  
 Party Chief

**Date(s) of Survey**

Begin Date  
 12/2010  
 End Date  
 09/2011

**General Information**

Measurement units for this survey are US survey feet. This survey is for proposed reconstruction of Highway 30. This project is a partial field survey for the digital terrain model. This survey was limited to the specific area of the survey request. Additional aerial photography survey will be added to this survey in 06030087.pho

**Vertical Control**

Vertical datum for this survey is relative to NAVD88.

**Horizontal Control**

The coordinate system is Iowa State Plane North Zone. Due to lower linear distortion on this project there was no modification from state plane grid to ground. Horizontal control was brought to the site by averaging a minimum of five GPS network observations on control throughout the project. Geodetic datum for this survey is NAD83(CORS96)(EPOCH 2002.00)

**Alignment Information**

The horizontal alignment for Highway 30 survey is a retrace of As-built Plans No. FN-30-6(33)21-06, F-278 (2), NHS-30-6(63)19-06, and BRF-30-6(51)38-86. Survey stationing was equated to the plan FN-30-6(33)21-06 at the POT at Sta. 741+13.08 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plans as follows:

- PI Sta. 712+36.65 This Survey  
= PI Sta. 1712+35.79 As-built Plans Project No. BRF-30-6(51)38-86
- PI Sta. 773+71.87 This Survey  
= PI Sta. 773+71.89 As-built Plans Project No. FN-30-6(33)21-06
- PI Sta. 817+03.67 This Survey  
= PI Sta. 817+04.05 As-built Plans Project No. FN-30-6(33)21-06
- PI Sta. 896+29.25 This Survey  
= PI Sta. 896+29.59 As-built Plans Project No. FN-30-6(33)21-06  
= PI Sta. 130+40.1 As-built Plans Project No. F-278 (2)
- PI Sta. 921+04.41 This Survey  
= PI Sta. 155+15.25 As-built Plans Project No. F-278 (2)
- PI Sta. 949+24.00 This Survey  
= PI Sta. 183+34.73 As-built Plans Project No. F-278 (2)
- PI Sta. 1002+56.36 This Survey  
= PI Sta. 236+66.4 As-built Plans Project No. F-278 (2)
- PI Sta. 1055+72.26 This Survey  
= PI Sta. 289+81.7 As-built Plans Project No. F-278 (2)
- PI Sta. 1081+96.62 This Survey  
= PI Sta. 316+05.65 As-built Plans Project No. F-278 (2)
- PI Sta. 1108+34.49 This Survey  
= PI Sta. 342+43.56 As-built Plans Project No. F-278 (2)
- PI Sta. 1160+95.18 This Survey  
= PI Sta. 395+05.4 As-built Plans Project No. F-278 (2)

**ALIGNMENT INFORMATION CONT.**

- PI Sta. 1213+52.34 This Survey  
= PI Sta. 447+63.2 As-built Plans Project No. F-278 (2)
- PI Sta. 1266+19.55 This Survey  
= PI Sta. 500+32.2 As-built Plans Project No. F-278 (2)
- PI Sta. 1300+58.26 This Survey  
= PI Sta. 534+72.9 As-built Plans Project No. F-278 (2)
- PI Sta. 1318+83.00 This Survey  
= PI Sta. 552+98.55 As-built Plans Project No. F-278 (2)
- PI Sta. 1345+08.44 This Survey  
= PI Sta. 579+25.1 As-built Plans Project No. F-278 (2)
- PI Sta. 1371+29.08 This Survey  
= PI Sta. 605+46.9 As-built Plans Project No. F-278 (2)
- PI Sta. 1383+16.83 This Survey  
= PI Sta. 617+35.0 As-built Plans Project No. F-278 (2)
- PI Sta. 1396+23.81 This Survey  
= PI Sta. 630+42.5 As-built Plans Project No. F-278 (2)
- PI Sta. 1422+83.03 This Survey  
= PI Sta. 657+03.2 As-built Plans Project No. F-278 (2)
- PI Sta. 1455+00.70 This Survey  
= PI Sta. 689+22.86 As-built Plans Project No. NHS-30-6(63)19-06
- PI Sta. 1466+79.53 This Survey  
= PI Sta. 701+02.41 As-built Plans Project No. NHS-30-6(63)19-06
- PI Sta. 1475+58.31 This Survey  
= PI Sta. 709+80.83 As-built Plans Project No. NHS-30-6(63)19-06
- PI Sta. 1501+99.70 This Survey  
= PI Sta. 736+22.21 As-built Plans Project No. NHS-30-6(63)19-06
- PI Sta. 1528+62.66 This Survey  
= PI Sta. 762+85.17 As-built Plans Project No. NHS-30-6(63)19-06

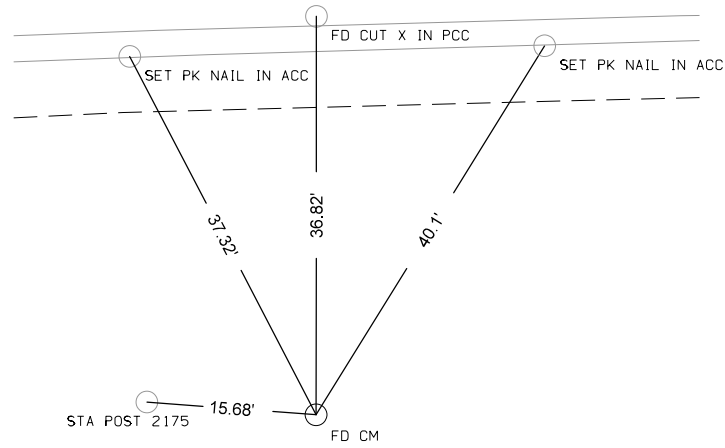
FOR ADDITIONAL SURVEY INFORMATION SEE SURVEY INDEX

## VERTICAL CONTROL

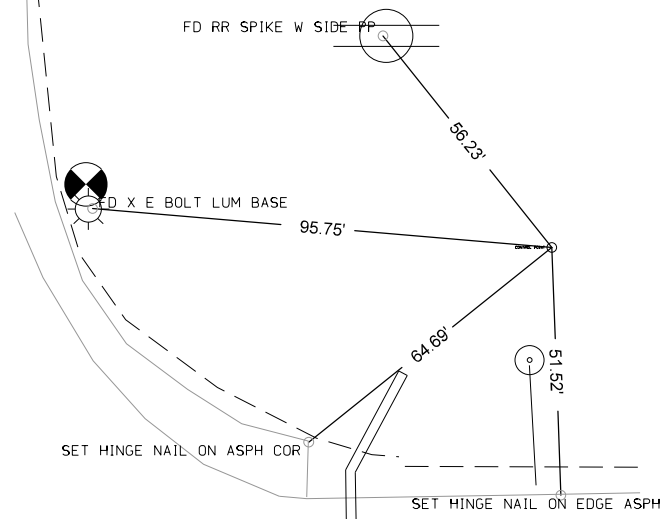
Point	North	East	Elevation	Station	Offset	Feature	Description
571	3452388.867	5249107.981	831.446	749+96.36	-28.231	BM	FND IHC BM N. HDWL 8'X6' RCB
603	3452396.088	5253009.836	910.728	788+97.95	28.038	BM	BUTTON ON HDWL
606	3452384.629	5255882.182	935.222	817+70.02	65.218	BM	CM
608	3452415.538	5258481.886	925.434	843+69.90	59.781	CP	CP/BM FD CM
609	3452515.328	5259881.424	918.753	857+70.35	-26.293	BM	FND IHC BM N HDWL
610	3452471.161	5261092.660	893.613	869+81.10	29.739	BM	FND IHC BM S HDWL
613	3452428.726	5263785.828	937.363	896+73.32	99.251	BM	FND CUT SQUARE IN TOP OF 24" RCP
614	3452491.442	5264152.691	932.885	900+40.89	42.331	BM	FND CUT X INLET HDWL
615	3452526.591	5265450.419	943.449	913+39.03	29.014	BM	FND IHC BM ON INLET HDWL
618	3452617.654	5268415.187	938.062	943+04.79	-25.345	BM	FND IHC BM ON INLET HDWL
619	3452658.553	5269000.009	945.997	948+90.02	-59.907	BM	FND CONC MON
622	3452597.326	5271999.562	937.034	978+88.80	27.444	BM	FND IHC BM ON INLET HDWL
624	3452565.569	5274414.003	928.709	1003+03.04	79.812	BM	FND CM
625	3452623.082	5274950.147	933.220	1008+39.59	25.227	BM	FND IHC BM ON INLET HDWL
628	3452635.631	5277433.426	932.447	1033+22.90	25.354	BM	FND IHC BM ON INLET HDWL
630	3452694.607	5279099.715	923.109	1049+89.47	-25.116	BM	FND CUT X ON INLET HDWL
631	3452584.670	5279767.154	923.309	1056+55.90	89.182	BM	FND CM
632	3452652.205	5280091.417	919.408	1059+80.75	25.529	BM	IHC BM ON INLET HDWL
634	3452665.029	5281484.166	920.798	1073+73.55	30.660	BM	FND CUT X ON OUTLET HDWL
636	3452685.351	5283184.282	889.098	1090+73.76	32.996	BM	FND CUT X ON INLET HDWL
637	3452705.697	5284202.737	912.177	1100+92.40	26.641	BM	FND IHC BM ON INLET HDWL
638	3452799.972	5285001.824	904.935	1108+92.58	-56.775	BM	FND CONC MON
639	3452723.644	5285587.302	894.729	1114+77.14	26.316	BM	FND IHC BM ON INLET HDWL
640	3452738.144	5286677.374	894.998	1125+67.31	24.418	BM	FND IHC BM ON INLET HDWL
641	3451671.559	5287594.067	875.806	1134+71.61	1101.528	BM	CUT X IN HDWL
642	3452768.906	5288509.610	863.863	1143+99.78	14.838	BM	FND CUT X ON SW HANDRAIL OF BRIDGE
647	3452898.213	5294690.692	874.024	1205+82.06	-27.856	BM	FND IHC ON NE HANDRAIL OF BRIDGE
648	3452958.492	5295408.323	890.460	1213+00.51	-77.409	BM	◇ CONTROL POINT
649	3452923.486	5296554.911	898.809	1224+46.45	-25.187	BM	FND IHC ON NE HANDRAIL OF BRIDGE
650	3452931.138	5297070.286	894.703	1229+61.88	-25.096	BM	FND IHC BM ON INLET HDWL
657	3453041.305	5303314.193	906.294	1292+06.44	-57.164	BM	◇ CONTROL POINT
659	3452973.885	5304655.597	919.496	1305+47.03	25.354	BM	FND IHC BM ON INLET HDWL
660	3452934.892	5305956.039	902.142	1318+46.73	84.184	BM	FND CM
661	3453053.781	5306689.582	901.779	1325+81.99	-23.826	BM	FND IHC BM ON INLET HDWL
662	3453076.202	5308106.918	911.220	1339+99.50	-25.275	BM	FND IHC BM ON INLET HDWL
664	3453098.968	5310235.027	874.695	1361+27.62	-24.018	BM	FND IHC BM ON INLET HDWL
665	3453144.030	5311277.289	888.165	1371+70.39	-58.163	BM	◇ CONTROL POINT
667	3453144.072	5312921.061	875.129	1388+14.76	-26.940	BM	FND IHC BM ON INLET HDWL
64	3453142.516	5316335.395	884.289	1422+27.97	58.435	CP	FND REBAR IN CONC MON◇ CONTROL POINT
672	3453230.571	5316649.820	886.498	1425+44.16	-23.460	BM	FND IHC BM ON INLET HDWL
674	3453289.523	5319380.345	906.622	1452+75.17	-30.264	BM	FND IHC BM ON INLET HDWL
675	3453302.342	5320342.423	908.596	1462+36.49	-50.359	BM	FND IHC BM ON INLET HDWL
22882	3458665.009	5321373.879	891.321	1473+58.98	-5410.401	CP	FND CM
22879	3455926.698	5321531.534	925.754	1474+69.18	-2669.870	CP	FND CM
676	3450211.215	5321827.497	887.594	1476+76.43	3049.526	BM	CUT X IN HDWL
678	3453350.665	5322225.316	928.472	1481+21.14	-84.091	BM	CUT X IN CONC



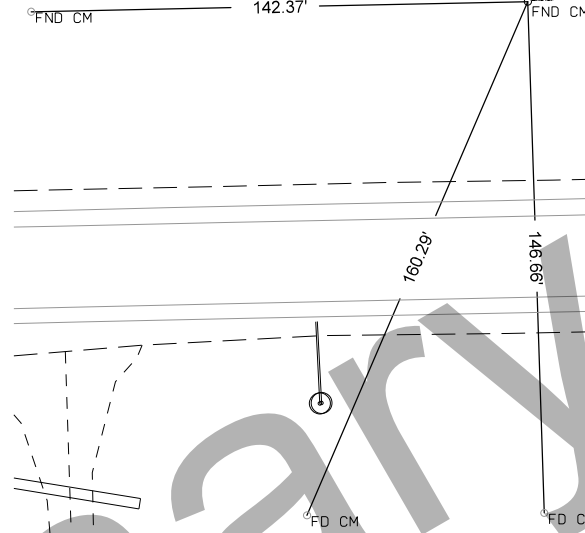
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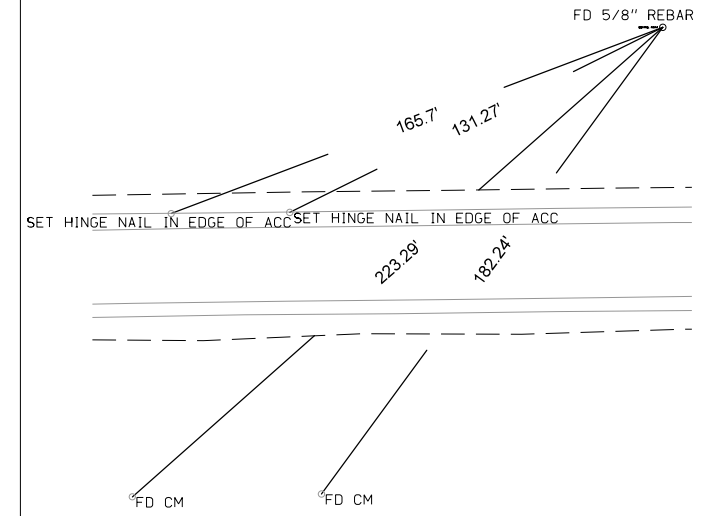
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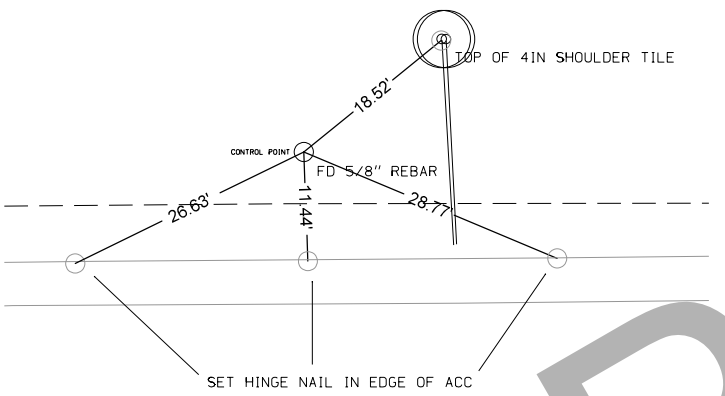
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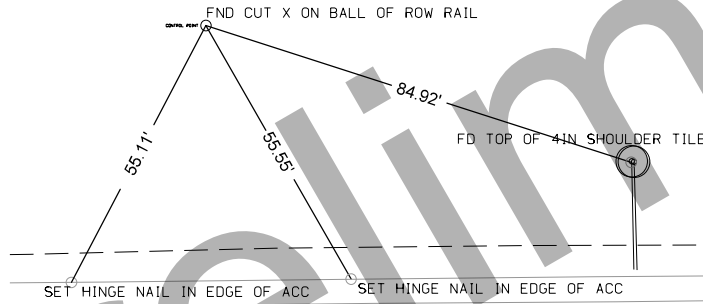
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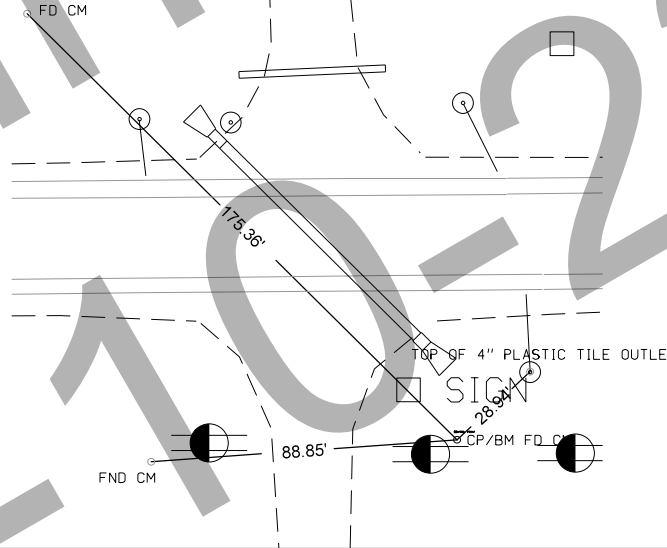
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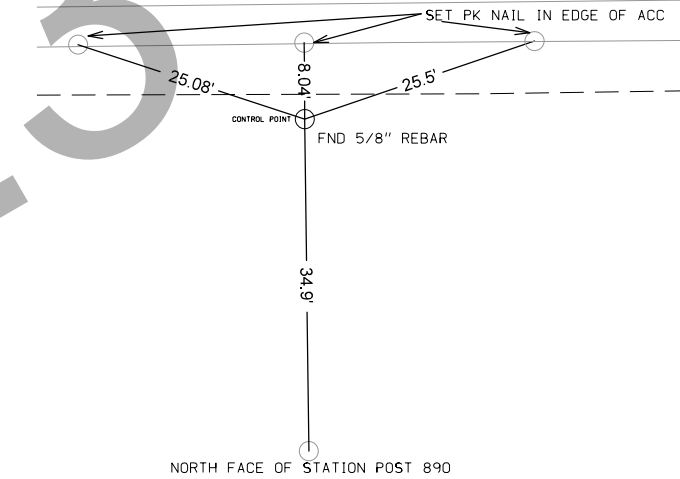
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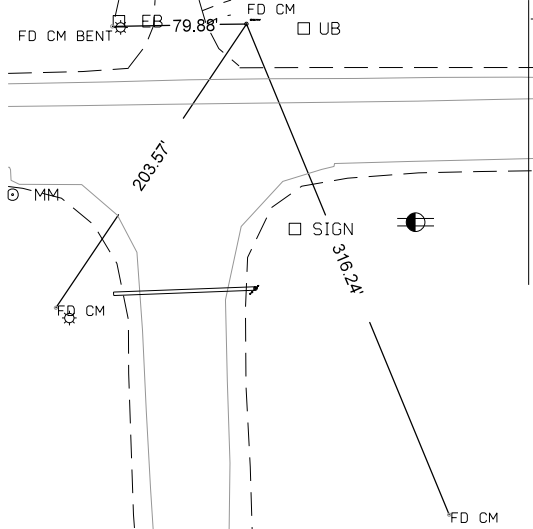
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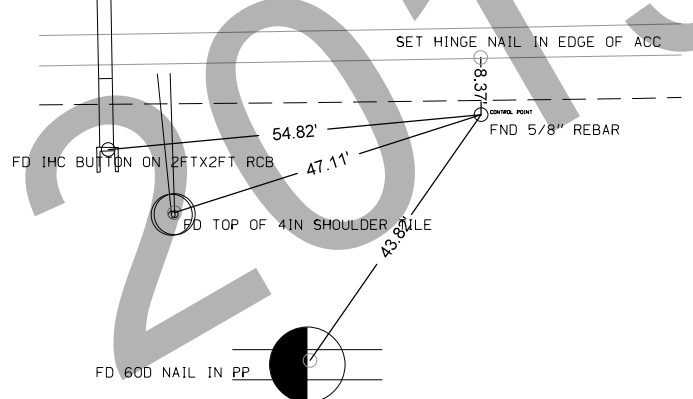
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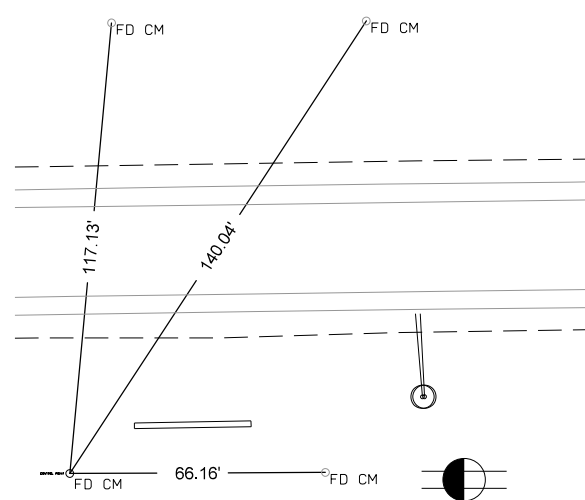
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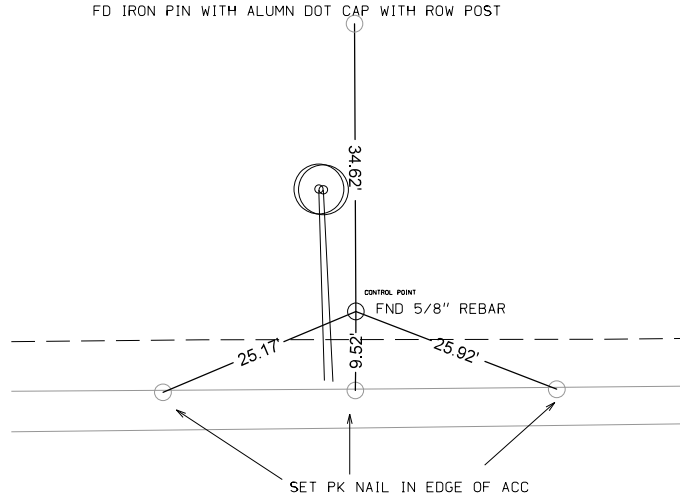
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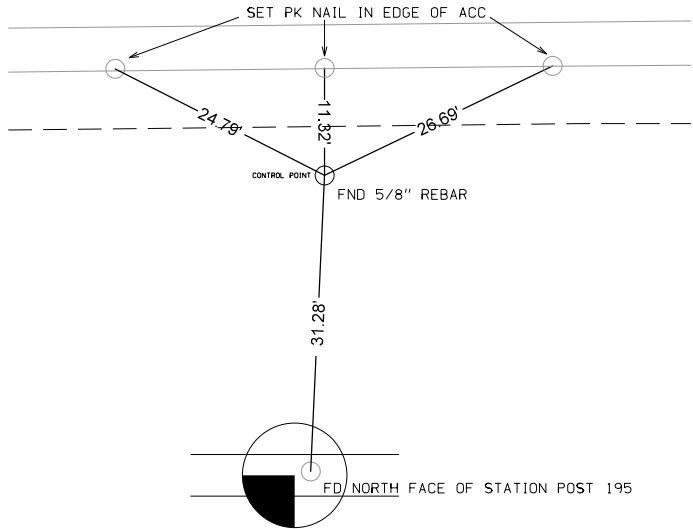
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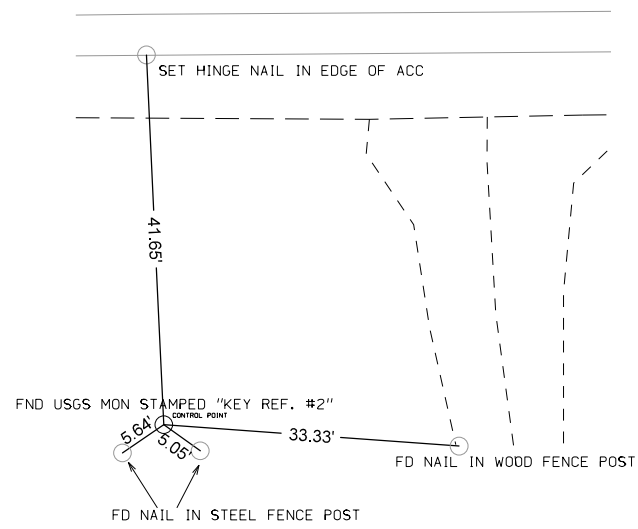
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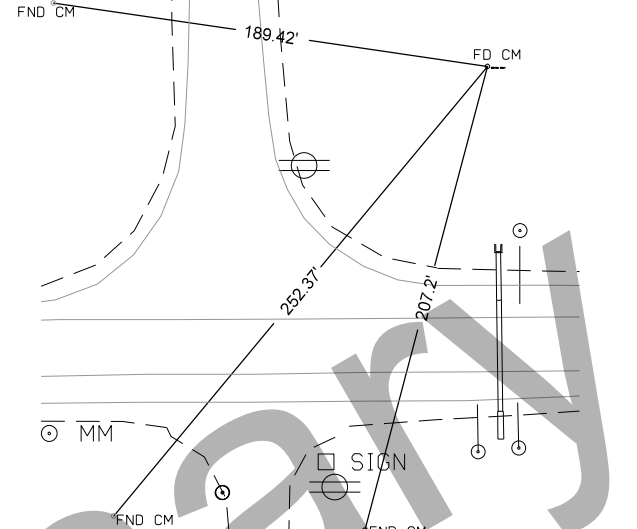
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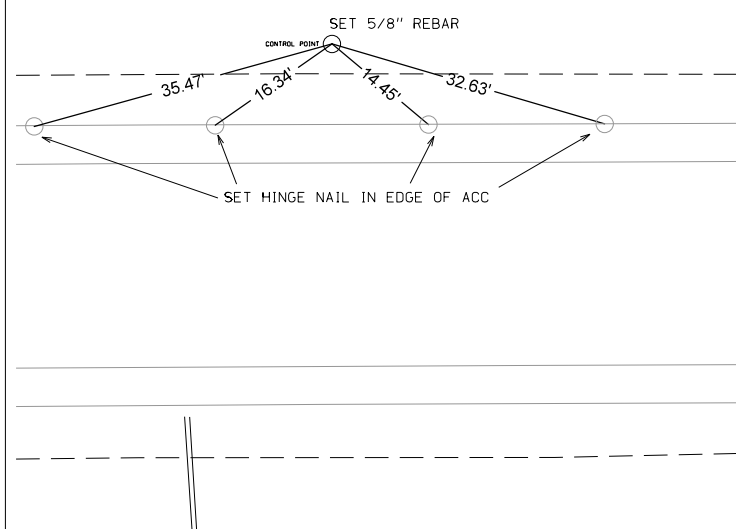
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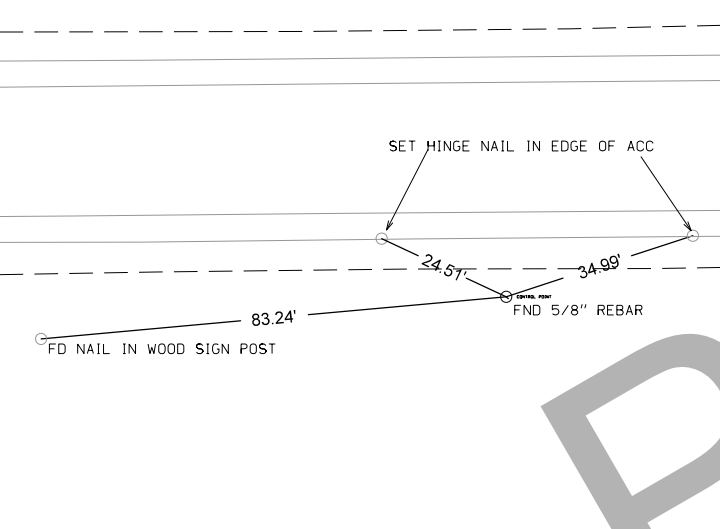
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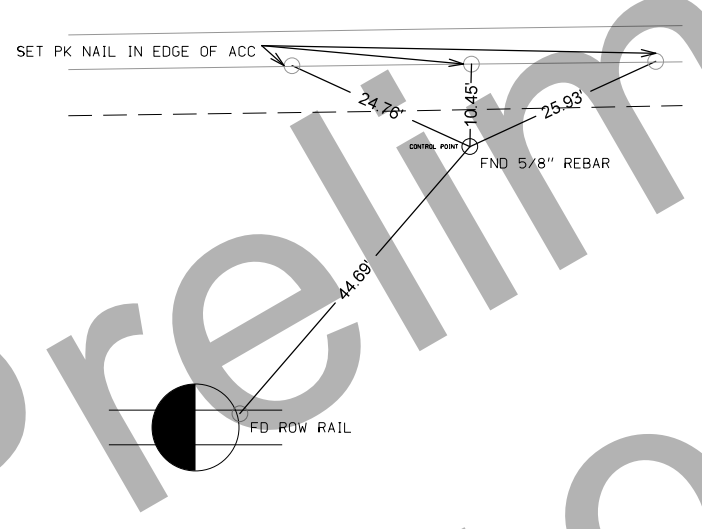
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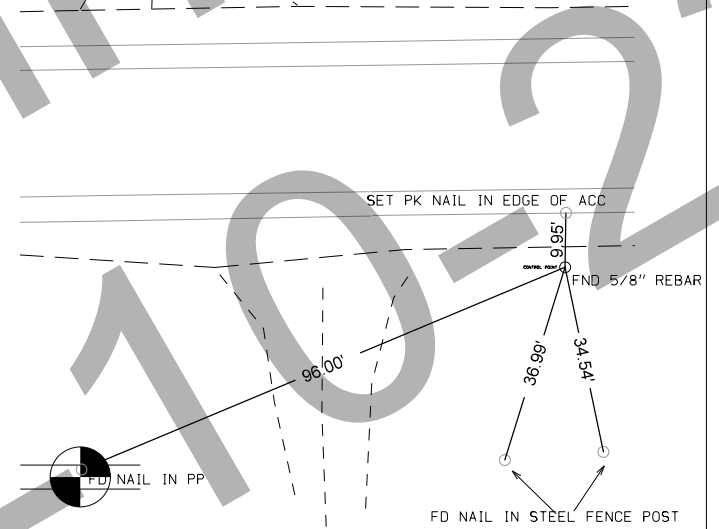
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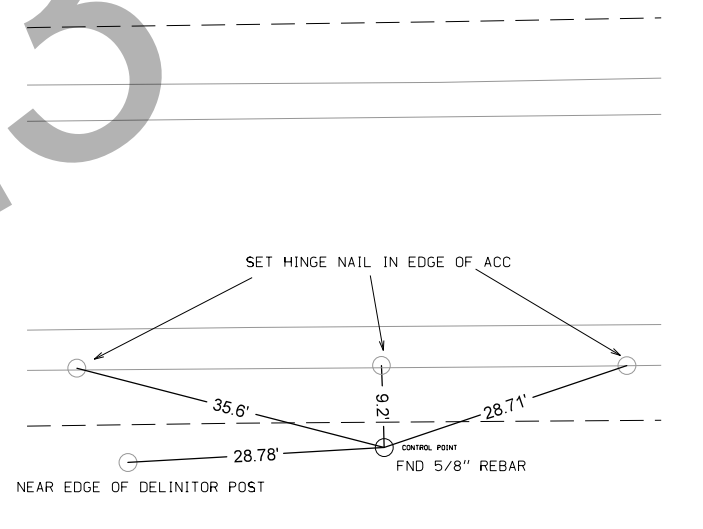
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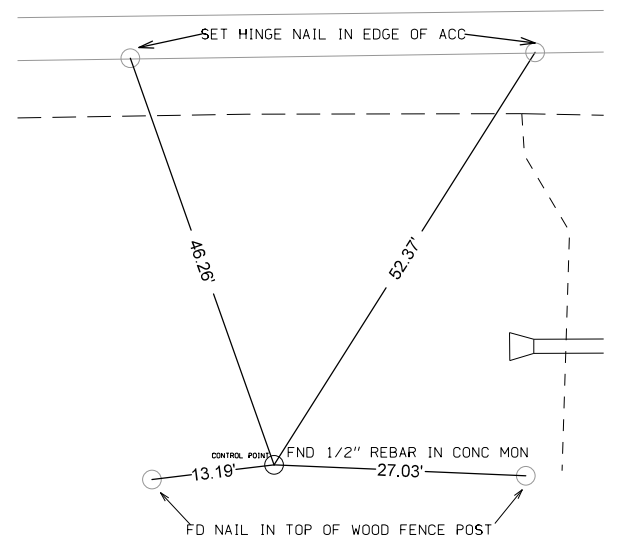
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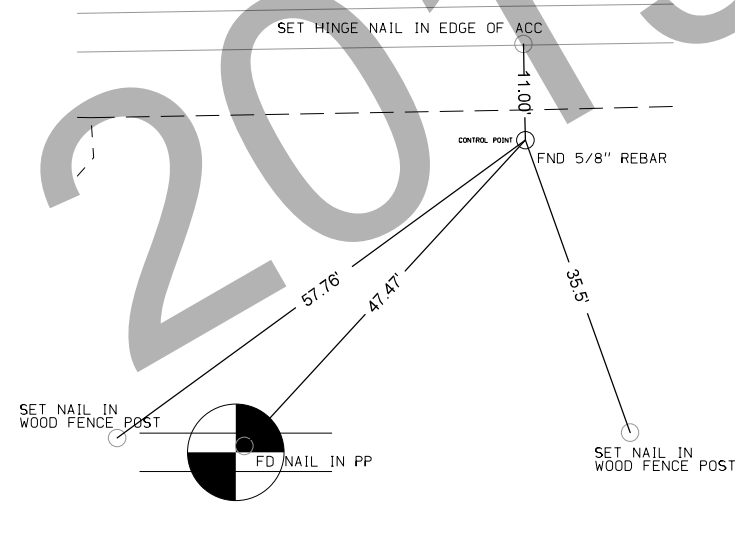
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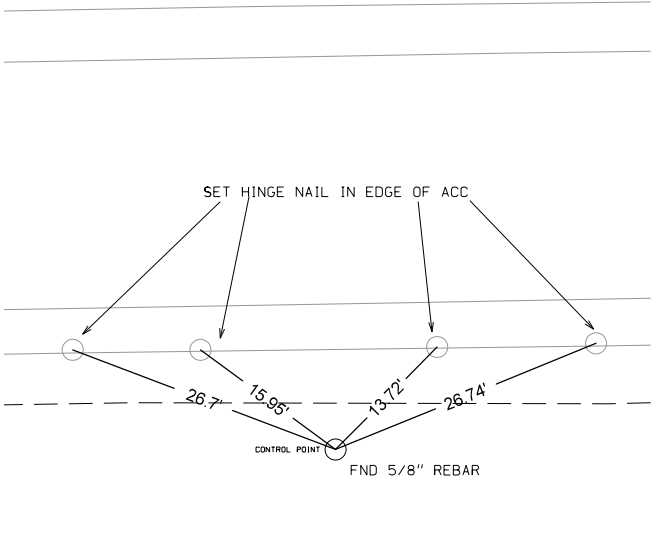
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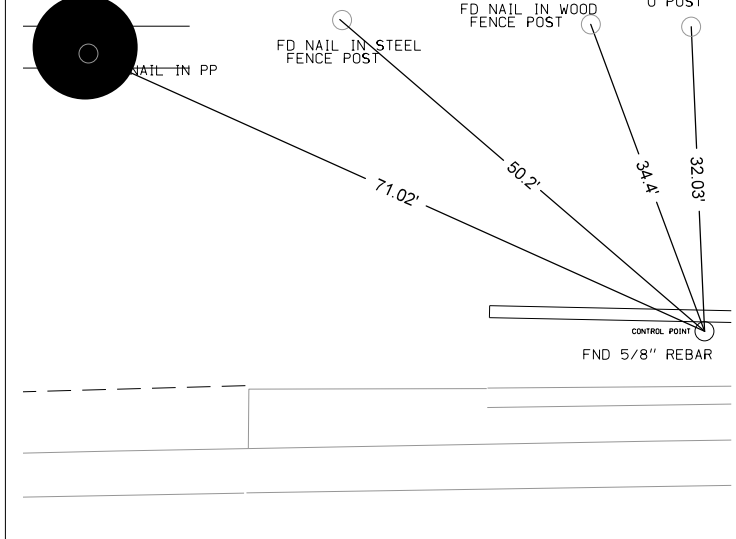
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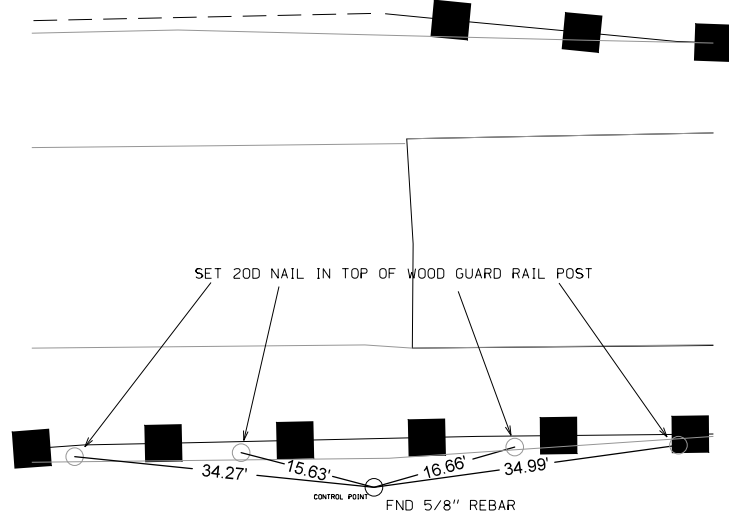
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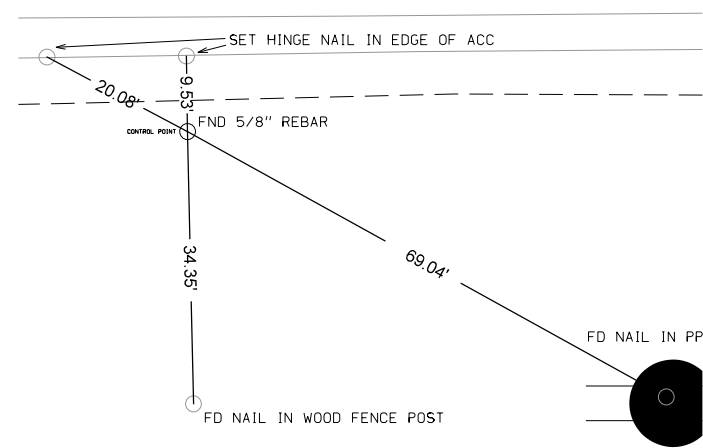
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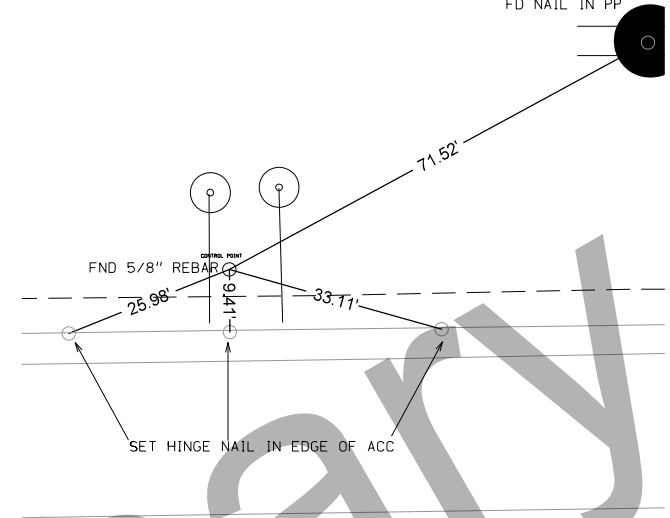
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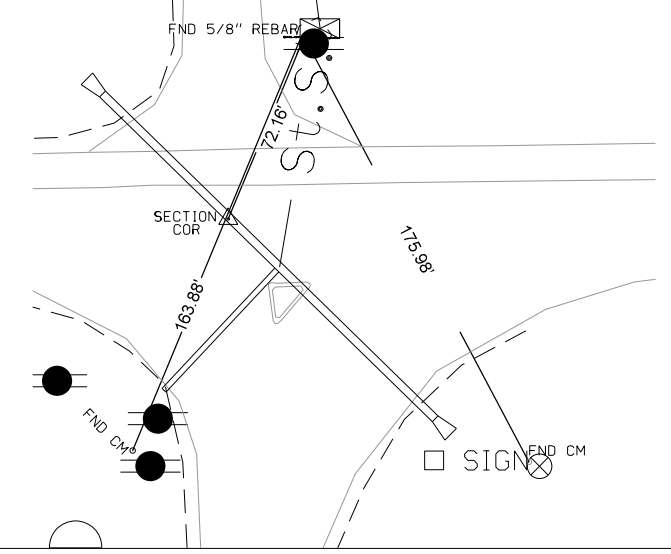
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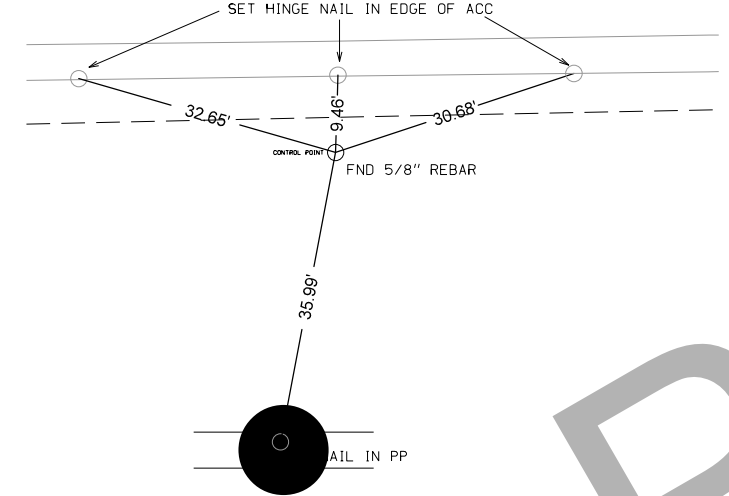
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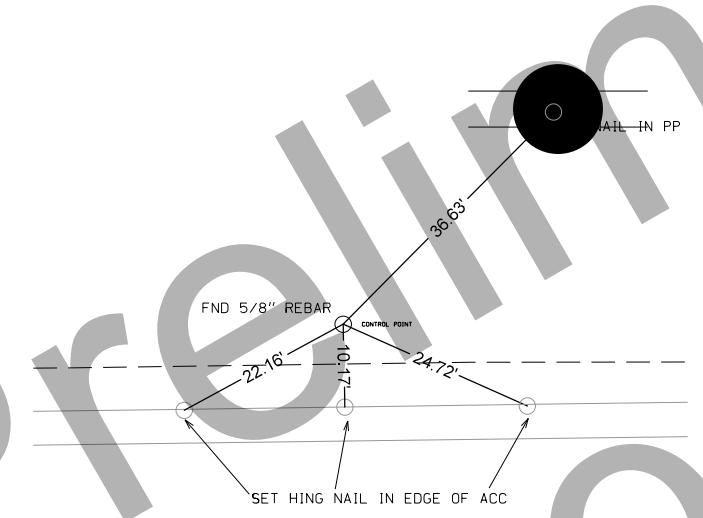
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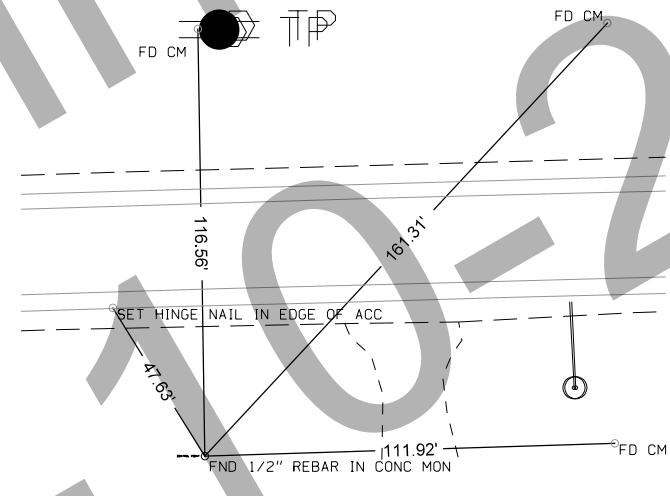
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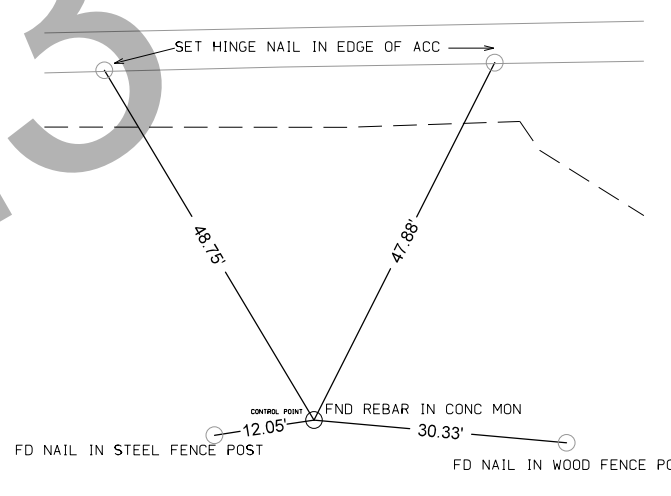
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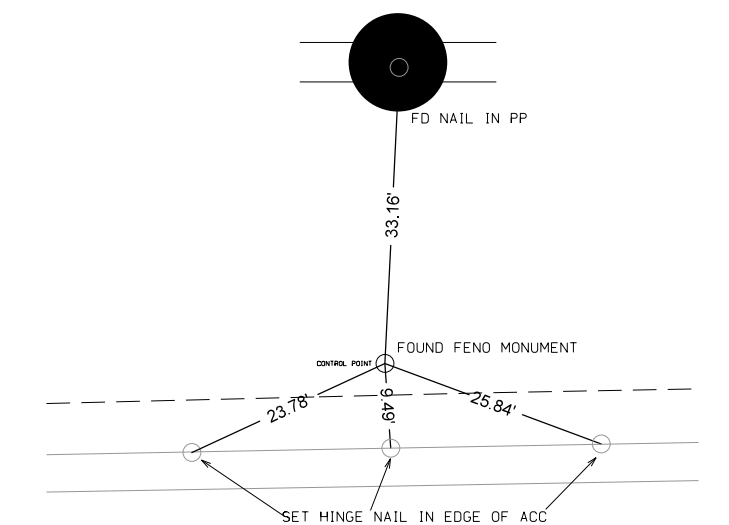
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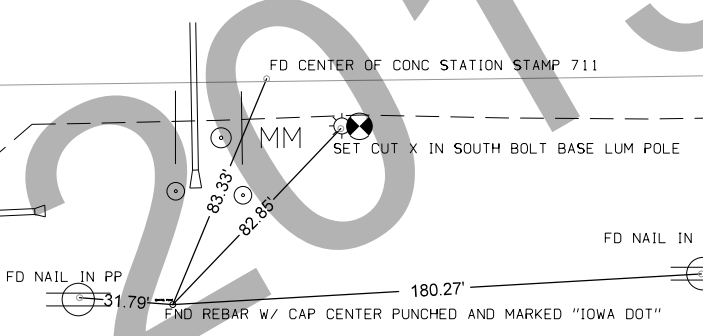
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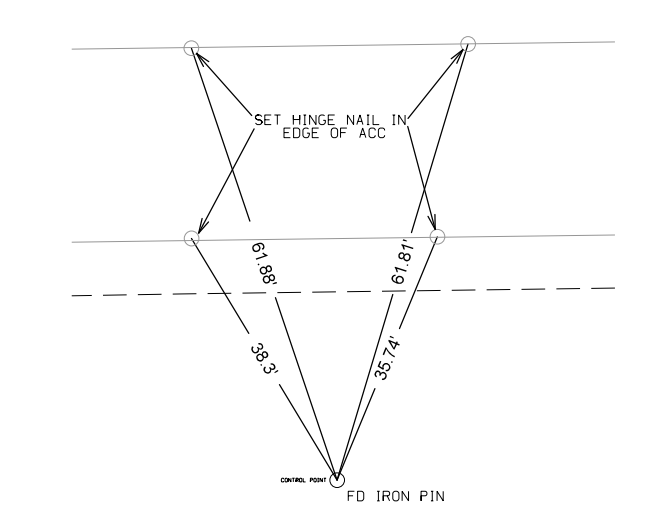
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 CP 65, FD Feno Monument  
 N=3453271.786, E=5318684.952



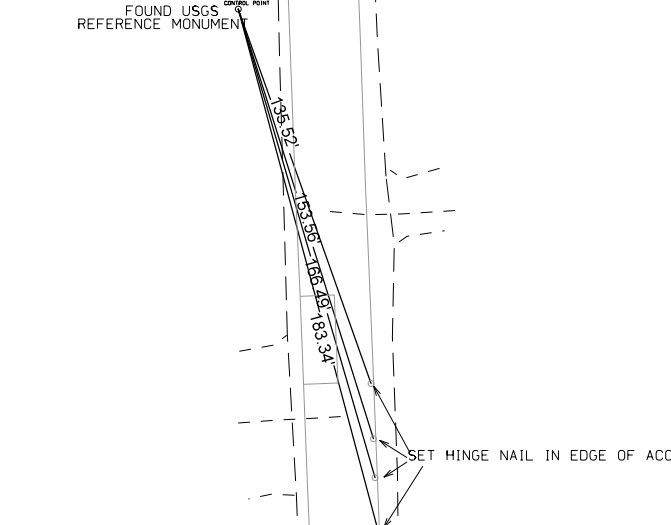
CP STA 1476+43, 165' RT  
 CP 67, FD Rebar Cap CTR Punched, Marked "IOWA DOT"  
 N=3453094.791, E=5321751.741



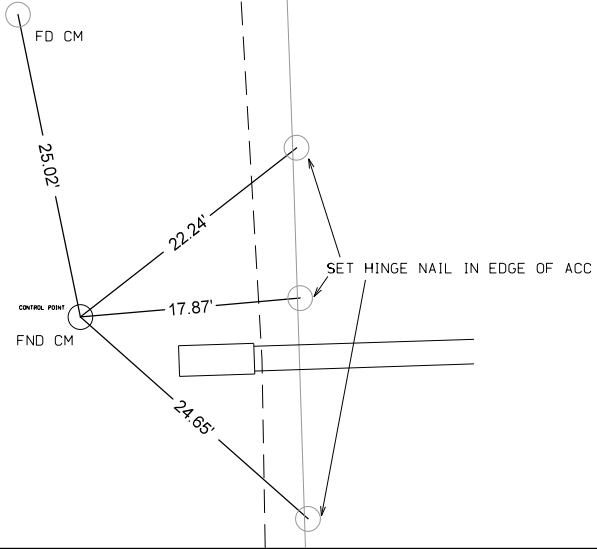
CP STA 1501+99, 1' RT  
 CP 40910, FD Iron Pin  
 N=3453293.933, E=5324304.848



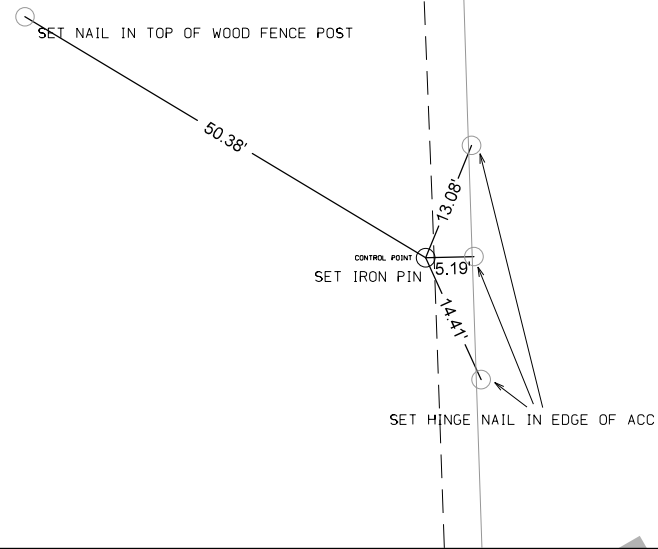
CP STA 1474+89, 1772' LT  
 CP 6777, FD USGS Monument  
 N=3455029.393, E=5321566.362



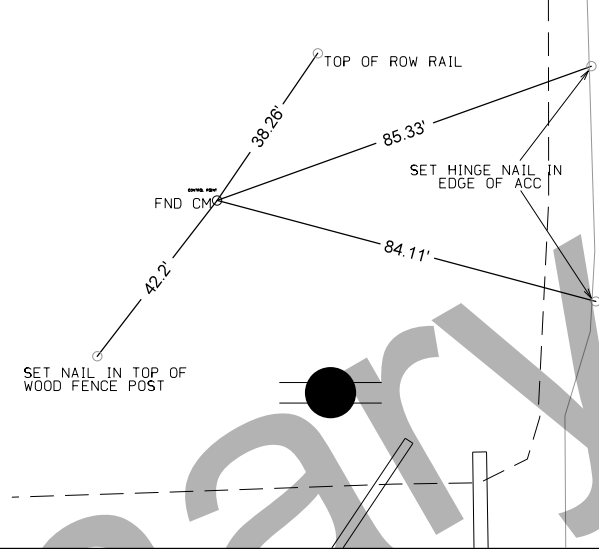
CP STA 1474+69, 2669' LT  
 CP 22879, FD Concrete Monument  
 N=3455926.698, E=5321531.534



CP STA 1474+53, 4182' LT  
 CP 300, Set Iron Pin  
 N=3457438.982, E=5321491.499



CP STA 1473+58, 5410' LT  
 CP 300, FD Concrete Monument  
 N=3458665.009, E=5321373.879



Preliminary  
 2019-10-23

ALIGNMENT COORDINATES

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
SUR030 - Existing US 30 CL																			
143		686+94.11	3,452,163.60	5,242,811.06															
C16								701+77.43	3,452,194.65	5,244,294.05	705+31.22	3,452,202.06	5,244,647.77	708+84.50	3,452,241.99	5,244,999.29			
C1								708+84.50	3,452,241.99	5,244,999.29	712+36.65	3,452,281.74	5,245,349.19	715+88.31	3,452,289.13	5,245,701.27			
C2								770+71.89	3,452,404.19	5,251,183.65	773+71.90	3,452,410.49	5,251,483.58	776+71.89	3,452,413.17	5,251,783.58			
34785		817+03.67	3,452,449.19	5,255,815.19															
C3								893+29.25	3,452,523.90	5,263,440.41	896+29.25	3,452,526.84	5,263,740.39	899+29.25	3,452,531.89	5,264,040.35			
C4								918+04.41	3,452,563.43	5,265,915.25	921+04.41	3,452,568.47	5,266,215.20	924+04.41	3,452,571.72	5,266,515.19			
22857		949+24.00	3,452,599.02	5,269,034.63															
C5								999+56.36	3,452,642.73	5,274,066.80	1002+56.36	3,452,645.33	5,274,366.79	1005+56.36	3,452,646.86	5,274,666.79			
C6								1052+72.27	3,452,670.93	5,279,382.63	1055+72.27	3,452,672.47	5,279,682.63	1058+72.27	3,452,676.33	5,279,982.60			
34798		1081+96.62	3,452,706.30	5,282,306.77															
22863		1108+34.49	3,452,742.53	5,284,944.39															
C7								1157+95.18	3,452,799.87	5,289,904.75	1160+95.18	3,452,803.34	5,290,204.73	1163+95.18	3,452,807.82	5,290,504.69			
34816		1213+52.34	3,452,881.87	5,295,461.30															
C7A								1263+19.56	3,452,956.49	5,300,427.96	1266+19.56	3,452,960.99	5,300,727.92	1269+19.56	3,452,963.68	5,301,027.91			
C8								1297+58.27	3,452,989.08	5,303,866.51	1300+58.27	3,452,991.77	5,304,166.50	1303+58.27	3,452,996.36	5,304,466.46			
22869		1318+83.00	3,453,019.68	5,305,991.02															
C9								1342+08.45	3,453,054.02	5,308,316.21	1345+08.45	3,453,058.45	5,308,616.18	1348+08.45	3,453,061.51	5,308,916.16			
C10								1368+29.08	3,453,082.10	5,310,936.70	1371+29.08	3,453,085.16	5,311,236.68	1374+29.08	3,453,089.12	5,311,536.65			
C11								1380+16.82	3,453,096.89	5,312,124.34	1383+16.83	3,453,100.86	5,312,424.32	1386+16.82	3,453,111.02	5,312,724.16			
C12								1393+23.80	3,453,134.96	5,313,430.74	1396+23.80	3,453,145.12	5,313,730.57	1399+23.79	3,453,151.55	5,314,030.50			
34823		1422+83.03	3,453,202.12	5,316,389.19															
C13								1455+00.60	3,453,263.70	5,319,606.18	1457+79.30	3,453,269.03	5,319,884.82	1460+57.88	3,453,260.83	5,320,163.39			
C14								1464+01.51	3,453,250.72	5,320,506.88	1466+80.13	3,453,242.51	5,320,785.37	1469+58.64	3,453,247.83	5,321,063.94			
C15								1470+58.50	3,453,249.74	5,321,163.78	1475+58.50	3,453,259.28	5,321,663.69	1480+58.50	3,453,266.06	5,322,163.64			
952		26+40.57	3,453,295.09	5,324,304.84															
953		1743+04.51	3,453,331.04	5,326,967.55															
ML030 - Proposed US 30 CL																			
20100		690+00.00	3,452,213.99	5,243,115.97															
20110								739+99.70	3,452,318.66	5,248,114.57	741+11.03	3,452,320.99	5,248,225.87	742+22.35	3,452,321.55	5,248,337.20			
20115		817+01.28	3,452,359.20	5,255,816.04															
20120		896+27.22	3,452,436.85	5,263,741.59															
20125		921+02.43	3,452,478.48	5,266,216.45															
20130		949+21.65	3,452,509.02	5,269,035.51															
20135		1002+53.75	3,452,555.33	5,274,367.41															
20140		1055+69.85	3,452,582.47	5,279,683.44															
20145		1081+94.60	3,452,616.30	5,282,307.97															
20150		1108+32.40	3,452,652.54	5,284,945.52															
20155		1160+93.15	3,452,713.35	5,290,205.92															
20160		1213+50.47	3,452,791.88	5,295,462.65															
20165		1266+17.41	3,452,871.00	5,300,729.00															
20170		1300+56.14	3,452,901.77	5,304,167.59															
20175		1318+81.14	3,452,929.69	5,305,992.37															
20180		1345+06.35	3,452,968.46	5,308,617.30															
20185		1371+26.92	3,452,995.16	5,311,237.73															
20190		1422+81.53	3,453,112.14	5,316,391.02															
20295		1475+57.24	3,453,227.30	5,321,665.47															
20297								1496+00.00	3,453,254.99	5,323,708.04	1500+89.35	3,453,261.63	5,324,197.34	1505+78.60	3,453,284.22	5,324,686.17			
20299								1505+78.60	3,453,284.22	5,324,686.17	1510+68.84	3,453,306.85	5,325,175.88	1515+58.99	3,453,313.47	5,325,666.07			
20205		1528+60.59	3,453,331.04	5,326,967.55															
SUR021 - Existing/Proposed IA 21 CL																			
34786		236+99.40	3,449,440.05	5,248,296.50															
CUR21																			
921		283+52.22	3,454,089.26	5,248,288.84															
SR021A - Proposed IA 21 Ramp A BL																			
81000		1540+57.34	3,452,749.68	5,248,216.28															
81001								1549+96.28	3,452,481.28	5,249,116.04	1551+48.80	3,452,437.68	5,249,262.20	1553+00.00	3,452,428.30	5,249,414.44			
81001		1553+50.00	3,452,425.23	5,249,464.34															
SR021B - Proposed IA 21 Ramp B BL																			
82001		2528+50.00	3,452,196.61	5,246,967.17															
82001								2529+00.00	3,452,194.33	5,247,017.12	2530+50.88	3,452,187.45	5,247,167.85	2532+00.48	3,452,146.98	5,247,313.20			
82003		2541+58.84	3,451,889.92	5,248,236.44															
SR021C - Proposed IA 21 Ramp C BL																			
83001								3528+00.00	3,452,371.53	5,246,913.50	3531+16.06	3,452,384.46	5,247,229.30	3534+26.94	3,452,494.15	5,247,525.72			
83002		3541+63.27	3,452,749.68	5,248,216.28															

ALIGNMENT COORDINATES

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
SR021D - Proposed IA 21 Ramp D BL																			
84000		4540+50.14	3,451,889.92	5,248,236.44															
84001								4545+40.73	3,452,105.62	5,248,677.06	4547+41.88	3,452,194.06	5,248,857.73	4549+40.00	3,452,225.11	5,249,056.46			
84002								4549+40.00	3,452,225.11	5,249,056.46	4550+70.18	3,452,245.22	5,249,185.09	4552+00.00	3,452,248.47	5,249,315.23			
SR11THAVE - Proposed 11th Avenue CL																			
50000		11778+63.51	3,451,169.63	5,253,179.62															
50005		11790+39.94	3,452,345.80	5,253,154.72															
50010		11805+49.72	3,453,855.44	5,253,133.82															
REVO21A - Proposed IA 21 Width Transition																			
40600		0+00.00	3,450,990.53	5,248,272.49															
40605								0+04.54	3,450,995.07	5,248,272.38	1+39.69	3,451,130.17	5,248,269.07	2+74.81	3,451,265.32	5,248,269.76			
40606								2+74.81	3,451,265.32	5,248,269.76	4+09.95	3,451,400.46	5,248,270.44	5+45.08	3,451,535.56	5,248,267.13			
40610		5+45.08	3,451,535.56	5,248,267.13															
REVO21B - Proposed IA 21 Width Transition																			
40611		0+00.00	3,453,109.00	5,248,241.66															
40615								0+00.43	3,453,109.43	5,248,241.68	2+61.24	3,453,370.13	5,248,249.27	5+21.98	3,453,630.33	5,248,267.08			
40619		7+18.91	3,453,826.79	5,248,280.53															
REVO21C - Proposed IA 21 Width Transition																			
40620		0+00.00	3,450,989.84	5,248,244.50															
40625								0+00.00	3,450,989.84	5,248,244.50	1+35.14	3,451,124.95	5,248,241.19	2+70.27	3,451,259.89	5,248,233.88			
40626								2+70.27	3,451,259.89	5,248,233.88	4+05.41	3,451,394.84	5,248,226.57	5+40.54	3,451,529.94	5,248,223.26			
40630		5+45.08	3,451,534.48	5,248,223.14															
REVO21D - Proposed IA 21 Width Transition																			
40640		0+00.00	3,453,110.28	5,248,197.68															
40645								0+00.28	3,453,110.56	5,248,197.69	2+52.48	3,453,362.65	5,248,205.03	5+04.46	3,453,613.55	5,248,230.63			
40649		7+21.20	3,453,829.17	5,248,252.63															
SR021A_RET_1 - IA 21 Ramp A Return 1																			
34011								10+00.00	3,452,716.04	5,248,329.03	10+23.56	3,452,722.78	5,248,306.45	10+46.76	3,452,735.92	5,248,286.90			
34012								10+46.76	3,452,735.92	5,248,286.90	10+79.43	3,452,754.14	5,248,259.78	11+08.79	3,452,786.13	5,248,253.17			
34013								11+08.79	3,452,786.13	5,248,253.17	11+86.25	3,452,861.99	5,248,237.49	12+63.12	3,452,939.44	5,248,238.30			
SR021A_RET_1 - IA 21 Ramp A Return 4																			
81040		40+00.00	3,452,690.05	5,248,239.10															
81041								40+00.00	3,452,690.05	5,248,239.10	40+27.61	3,452,711.75	5,248,256.16	40+50.45	3,452,708.87	5,248,283.61			
81042								40+50.45	3,452,708.87	5,248,283.61	40+71.36	3,452,706.69	5,248,304.41	40+92.15	3,452,700.71	5,248,324.46			
81043		40+92.15	3,452,700.71	5,248,324.46															
SR021B_RET_2 - IA 21 Ramp B Return 2																			
35021								20+00.00	3,451,937.21	5,248,126.25	20+20.70	3,451,931.65	5,248,146.19	20+41.30	3,451,929.46	5,248,166.77			
35022								20+41.30	3,451,929.46	5,248,166.77	20+67.92	3,451,926.63	5,248,193.24	20+91.41	3,451,944.36	5,248,213.10			
SR021B_RET_3 - IA 21 Ramp B Return 3																			
35030		30+00.00	3,451,927.16	5,248,102.69															
35031								30+00.00	3,451,927.16	5,248,102.69	30+26.72	3,451,919.99	5,248,128.43	30+53.36	3,451,909.46	5,248,152.99			
35032								30+53.36	3,451,909.46	5,248,152.99	30+92.60	3,451,894.00	5,248,189.05	31+26.32	3,451,856.02	5,248,198.91			
35033								31+26.32	3,451,856.02	5,248,198.91	31+98.28	3,451,786.37	5,248,216.97	32+69.61	3,451,714.43	5,248,218.73			
35034		32+69.61	3,451,714.43	5,248,218.73															
SR021C_RET_1 - IA 21 Ramp C Return 2																			
83023								20+00.00	3,452,814.57	5,248,181.85	20+27.61	3,452,786.96	5,248,181.93	20+53.88	3,452,763.21	5,248,167.84			
83022								20+53.88	3,452,763.21	5,248,167.84	20+70.15	3,452,749.22	5,248,159.54	20+85.92	3,452,739.93	5,248,146.18			
83021								20+85.92	3,452,739.93	5,248,146.18	21+46.46	3,452,705.35	5,248,096.49	22+06.35	3,452,684.34	5,248,039.72			
SR021C_RET_3 - IA 21 Ramp C Return 3																			
36031								30+00.00	3,452,664.13	5,248,031.20	30+58.40	3,452,684.40	5,248,085.97	31+16.34	3,452,692.48	5,248,143.80			
36032								31+16.34	3,452,692.48	5,248,143.80	31+45.83	3,452,696.57	5,248,173.00	31+71.71	3,452,677.28	5,248,195.31			
SR021D_RET_1 - IA 21 Ramp D Return 1																			
84010		10+00.00	3,451,965.43	5,248,256.59															
84011								10+00.00	3,451,965.43	5,248,256.59	10+33.62	3,451,950.77	5,248,286.84	10+64.34	3,451,959.52	5,248,319.30			
84012								10+64.34	3,451,959.52	5,248,319.30	11+17.25	3,451,973.30	5,248,370.38	11+69.83	3,451,996.56	5,248,417.89			
84013		11+69.83	3,451,996.56	5,248,417.89															

ALIGNMENT COORDINATES

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
SR021D.RET.4 - IA 21 Ramp D Return 4		40+00.00	3,451,830.77	5,248,271.90															
84040																			
84041								40+00.00	3,451,830.77	5,248,271.90	40+31.00	3,451,861.76	5,248,271.14	40+60.28	3,451,888.19	5,248,287.33			
84042								40+60.28	3,451,888.19	5,248,287.33	40+74.11	3,451,899.98	5,248,294.55	40+87.67	3,451,908.66	5,248,305.32			
84043								40+87.67	3,451,908.66	5,248,305.32	41+48.30	3,451,946.74	5,248,352.51	42+08.43	3,451,973.39	5,248,406.96			
84044		42+08.43	3,451,973.39	5,248,406.96															
SR11THAVE.RET.3 - Proposed Median Return @ 11th Avenue																			
50032								30+00.00	3,452,325.35	5,253,064.89	30+27.13	3,452,325.49	5,253,092.02	30+52.71	3,452,340.60	5,253,114.56			
50034								30+52.71	3,452,340.60	5,253,114.56	30+73.51	3,452,352.18	5,253,131.83	30+75.16	3,452,358.44	5,253,112.00			
50036								30+75.16	3,452,358.44	5,253,112.00	31+37.80	3,452,377.29	5,253,052.26	31+99.43	3,452,376.97	5,252,989.63			
SR11THAVE.RET.4 - Proposed Median Return @ 11th Avenue																			
50042								40+00.00	3,452,366.26	5,253,244.69	40+27.13	3,452,366.12	5,253,217.55	40+52.71	3,452,351.01	5,253,195.02			
50044								40+52.71	3,452,351.01	5,253,195.02	40+73.51	3,452,339.42	5,253,177.74	40+75.16	3,452,333.17	5,253,197.58			
50046								40+75.16	3,452,333.17	5,253,197.58	41+37.80	3,452,314.32	5,253,257.31	41+99.43	3,452,314.63	5,253,319.95			
SR021CH																			
SRCH3		99+25.00	3,452,017.57	5,248,412.83															
SRCH1		100+00.00	3,452,091.72	5,248,424.09															
SRCH2		101+09.83	3,452,200.30	5,248,440.59															
DET1																			
6005								100+00.00	3,452,304.12	5,253,615.00	103+36.33	3,452,305.81	5,253,951.33	106+71.08	3,452,363.64	5,254,282.65			
6010								107+83.08	3,452,382.90	5,254,392.98	111+11.55	3,452,439.38	5,254,716.56	114+38.55	3,452,442.31	5,255,045.01			
DET2																			
6100		200+00.00	3,452,389.60	5,253,114.57															
6105								205+00.00	3,452,392.12	5,253,614.56	206+62.16	3,452,392.93	5,253,776.72	208+24.10	3,452,408.74	5,253,938.12			
6110								209+36.10	3,452,419.66	5,254,049.58	210+91.42	3,452,434.80	5,254,204.17	212+46.54	3,452,436.19	5,254,359.48			
6115		219+98.64	3,452,442.91	5,255,111.55															

SPIRAL OR CIRCULAR CURVE DATA

101-17  
04-19-11

Name	Location	Δ <sub>scs</sub>	Horizontal Alignment Data														Remarks	
			Spiral Data				Curve Data				Horizontal Alignment Data							
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ <sub>c</sub>	T	L	R	E			
SUR030 - Existing US 30 CL																		
C16																		
C1																		
C2																		
C3																		
C4																		
C5																		
C6																		
C7																		
C7A																		
C8																		
C9																		
C10																		
C11																		
C12																		
C13																		
C14																		
C15																		
ML030 - Proposed US 30 CL																		
20110																		
20297																		
20299																		
SUR021 - Existing/Proposed IA 21 CL																		
CUR21																		
SR021A - Proposed IA 21 Ramp A BL																		
81001																		
SR021B - Proposed IA 21 Ramp B BL																		
82001																		

**SPIRAL OR CIRCULAR CURVE DATA**

101-17  
04-19-11

Name	Location	Δ <sub>s</sub>	Horizontal Alignment Data												Remarks			
			Spiral Data						Curve Data									
			θ <sub>s</sub>	L <sub>s</sub>	T <sub>s</sub>	E <sub>s</sub>	X <sub>c</sub>	Y <sub>c</sub>	L.T.	S.T.	Δ <sub>c</sub>	T	L	R		E		
SR021C - Proposed IA 21 Ramp C BL 83001													17° 57' 38.31" LT	316.06'	626.94'	2,000.00'	24.82'	
SR021D - Proposed IA 21 Ramp D BL 84001 84002													17° 12' 01.45" RT 7° 26' 54.43" RT	201.15' 130.18'	399.27' 260.00'	1,330.00' 2,000.00'	15.12' 4.23'	
REVO21A - Proposed IA 21 Width Transition 40605 40606													1° 41' 45.91" RT 1° 41' 45.91" LT	135.14' 135.14'	270.27' 270.27'	9,130.00' 9,130.00'	1.00' 1.00'	
REVO21B - Proposed IA 21 Width Transition 40615													2° 14' 48.59" RT	260.81'	521.55'	13,300.00'	2.56'	
REVO21C - Proposed IA 21 Width Transition 40625 40626													1° 41' 45.91" LT 1° 41' 45.91" RT	135.14' 135.14'	270.27' 270.27'	9,130.00' 9,130.00'	1.00' 1.00'	
REVO21D - Proposed IA 21 Width Transition 40645													4° 09' 23.15" RT	252.20'	504.18'	6,950.00'	4.57'	
SR021A.RET.1 - IA 21 Ramp A Return 1 34011 34012 34013													17° 17' 04.21" RT 44° 25' 36.42" RT 12° 16' 51.91" RT	23.56' 32.67' 77.46'	46.76' 62.03' 154.33'	155.00' 80.00' 720.00'	1.78' 6.41' 4.15'	
SR021A.RET.4 - IA 21 Ramp A Return 4 81041 81042													57° 48' 25.06" RT 10° 37' 15.59" RT	27.61' 20.91'	50.45' 41.71'	50.00' 225.00'	7.11' 0.97'	
SR021B.RET.2 - IA 21 Ramp B Return 2 35021 35022													9° 27' 57.67" LT 47° 51' 05.86" LT	20.70' 26.62'	41.30' 50.11'	250.00' 60.00'	0.86' 5.64'	
SR021B.RET.3 - IA 21 Ramp B Return 3 35031 35032 35033													7° 38' 34.96" RT 52° 15' 30.00" RT 13° 08' 06.90" RT	26.72' 39.24' 71.96'	53.36' 72.97' 143.28'	400.00' 80.00' 625.00'	0.89' 9.11' 4.13'	
SR021C.RET.2 - IA 21 Ramp C Return 2 83023 83022 83021													30° 52' 07.74" RT 24° 28' 52.57" RT 14° 31' 34.39" RT	27.61' 16.27' 60.54'	53.88' 32.05' 120.43'	100.00' 75.00' 475.00'	3.74' 1.74' 3.84'	
SR021C.RET.3 - IA 21 Ramp C Return 3 36031 36032													12° 20' 38.18" RT 48° 48' 16.30" RT	58.40' 29.49'	116.34' 55.37'	540.00' 65.00'	3.15' 6.38'	
SR021D.RET.1 - IA 21 Ramp D Return 1 84011 84012													40° 57' 46.45" LT 10° 59' 18.43" LT	33.62' 52.90'	64.34' 105.48'	90.00' 550.00'	6.07' 2.54'	
SR021D.RET.4 - IA 21 Ramp D Return 4 84041 84042 84043													32° 53' 44.81" RT 19° 36' 45.48" RT 12° 48' 46.30" RT	31.00' 13.83' 60.63'	60.28' 27.38' 120.76'	105.00' 80.00' 540.00'	4.48' 1.19' 3.39'	
SR11THAVE.RET.3 - Proposed Median Return @ 11th Avenue 50032 50034 50036													33° 33' 16.79" LT 128° 38' 44.64" LT 17° 47' 58.57" LT	27.13' 20.80' 62.64'	52.71' 22.45' 124.26'	90.00' 10.00' 400.00'	4.00' 13.08' 4.87'	
SR11THAVE.RET.4 - Proposed Median Return @ 11th Avenue 50042 50044 50046													33° 33' 16.79" LT 128° 38' 44.64" LT 17° 47' 58.57" LT	27.13' 20.80' 62.64'	52.71' 22.45' 124.26'	90.00' 10.00' 400.00'	4.00' 13.08' 4.87'	
DET1 6005 6010 DET2 6105 6110													9° 36' 44.93" LT 9° 23' 20.19" RT 5° 18' 19.99" LT 5° 04' 55.25" RT	336.33' 328.47' 162.16' 155.32'	671.08' 655.47' 324.10' 310.44'	4,000.00' 4,000.00' 3,500.00' 3,500.00'	14.11' 13.46' 3.75' 3.44'	



**SUPERELEVATION DATA**

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e %	L FT	x FT														
IA 21 Ramp A	81001	1330	6.0	186	62	PV-303	1549+28.08		1549+96.28 1553+00.00	1550+52.08 1552+44.20					1549+90.08 1553+06.20	1549+90.08 1553+06.20			
IA 21 Ramp B	82001	1330	6.0	186	62	PV-303	2532+68.68		2529+00.00 2532+00.48	2529+55.80 2531+44.68					2528+93.80 2532+06.68	2528+93.80 2532+06.68			
IA 21 Ramp C	83001	2000	5.4	168	62	PV-303	3534+82.54		3528+00.00 3534+26.94	3528+50.40 3533+76.54					3528+06.84 3534+20.10	3528+06.84 3534+20.10			
IA 21 Ramp D	84001	1330	5.4	151	56	PV-303	4544+91.03		4545+40.73	4545+86.03 4549+40.00					4545+46.88 4549+79.15	4545+46.88 4549+79.15			
IA 21 Ramp D	84002	2000	5.4	168	62	PV-303	4552+55.60		4552+00.00	4549+40.00 4551+49.60					4548+96.44 4551+93.16	4548+96.44 4551+93.16			

Preliminary  
2019-10-23





York TWP.  
T-83N R-13W  
SEC. 25



Curve Data (36001)  
Δ = 24° 30' 40.00" (LT)  
T = 434.45  
L = 855.60  
R = 2,000.00  
E = 46.64

POT Sta 726+75.00, 78.00' Lt =  
PC Sta 3526+75.00  
Point 'G' Standard Road Plan PV-411

POT Sta 726+75.00, 98.00' RT =  
POT Sta 2526+75.00  
Point 'M' Standard Road Plan PV-410

Curve Data (35001)  
Δ = 28° 35' 39.44" (RT)  
T = 338.94  
L = 663.76  
R = 1,330.00  
E = 42.51

POC Sta 271+50.00 (SU021) =  
PI Sta 1540+03.03 (SU021A) =  
PI Sta 3542+09.55 (SU021C)

POC Sta 271+50.00 (SU021) =  
PI Sta 1540+03.03 (SU021A) =  
PI Sta 3542+09.55 (SU021C)

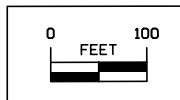
Curve Data (34001)  
Δ = 27° 32' 22.88" (RT)  
T = 183.80  
L = 360.49  
R = 750.00  
E = 22.19

Curve Data (35002)  
Δ = 27° 50' 57.88" (LT)  
T = 185.95  
L = 364.55  
R = 750.00  
E = 22.71

POC Sta 260+10.00 (SU021) =  
PI Sta 2542+14.58 (SU021B) =  
PI Sta 4540+17.97 (SU021D)

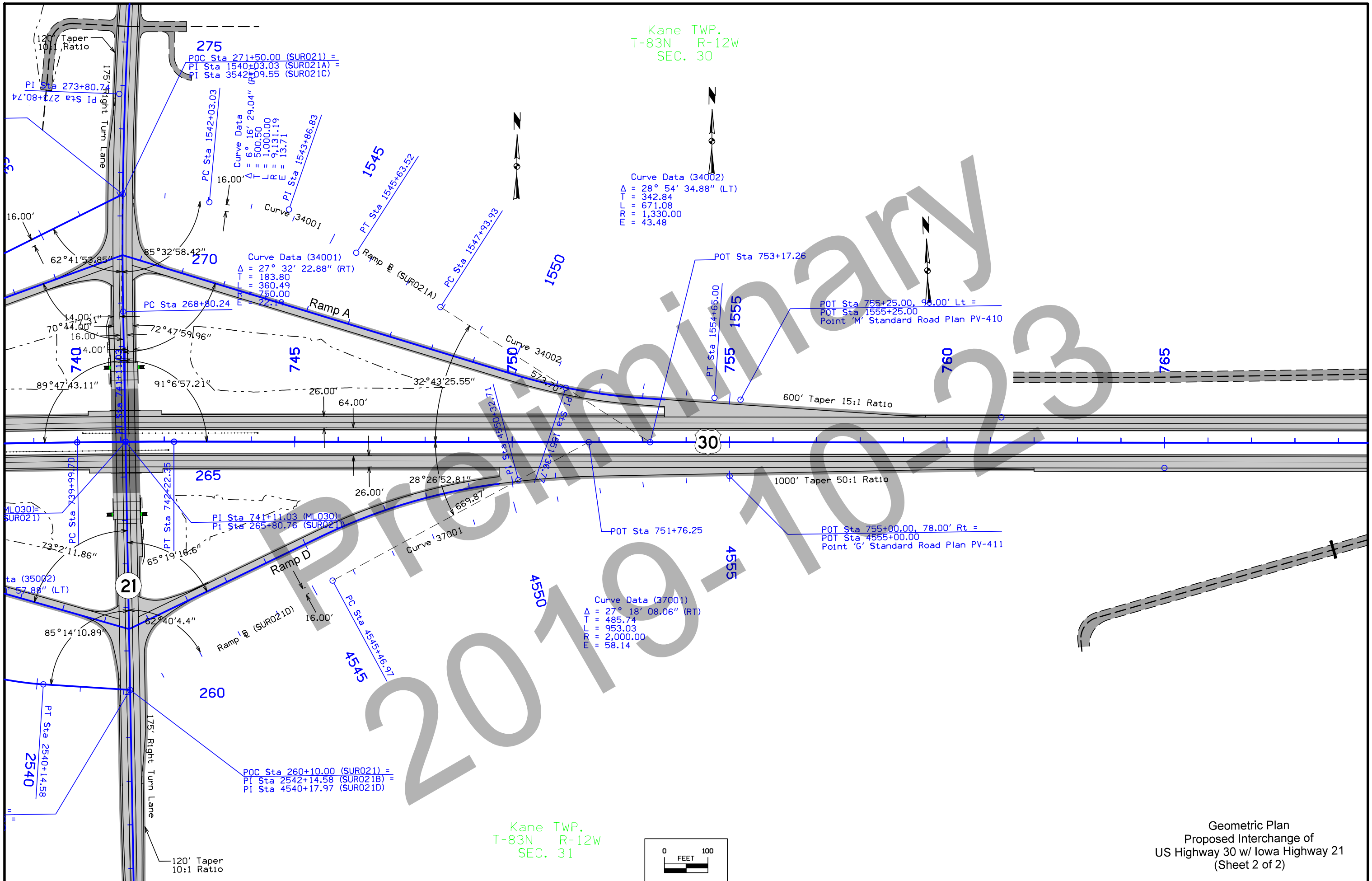
POC Sta 260+10.00 (SU021) =  
PI Sta 2542+14.58 (SU021B) =  
PI Sta 4540+17.97 (SU021D)

York TWP.  
T-83N R-13W  
SEC. 36



Geometric Plan  
Proposed Interchange of  
US Highway 30 w/ Iowa Highway 21  
(Sheet 1 of 2)

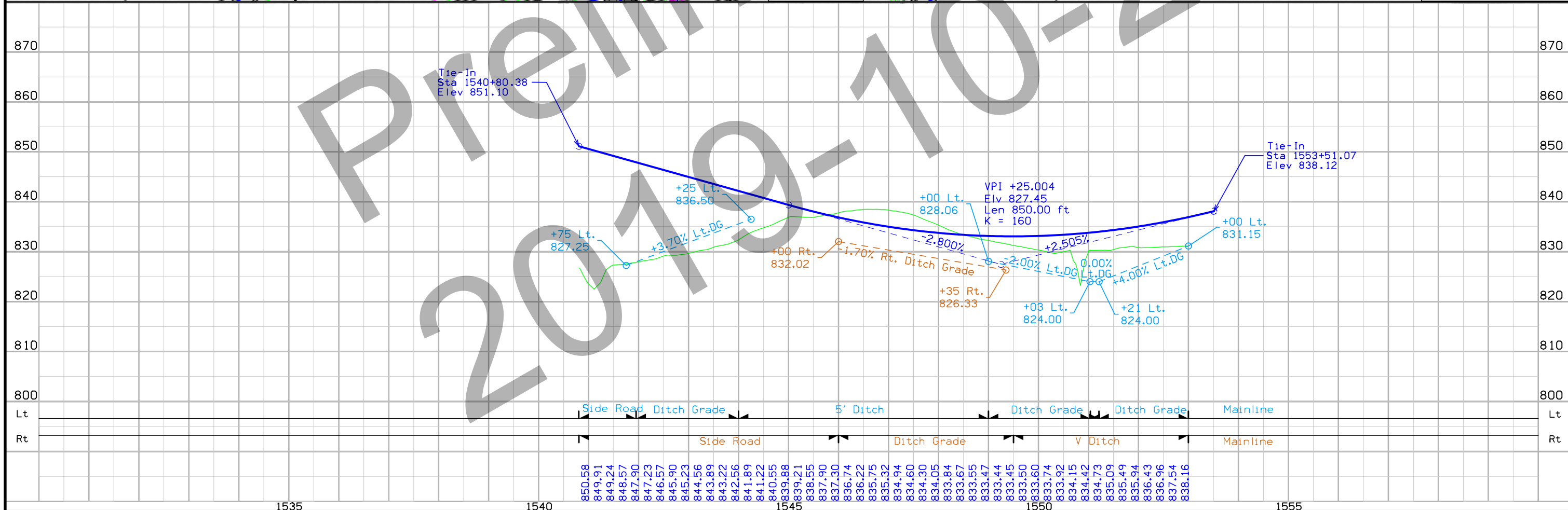
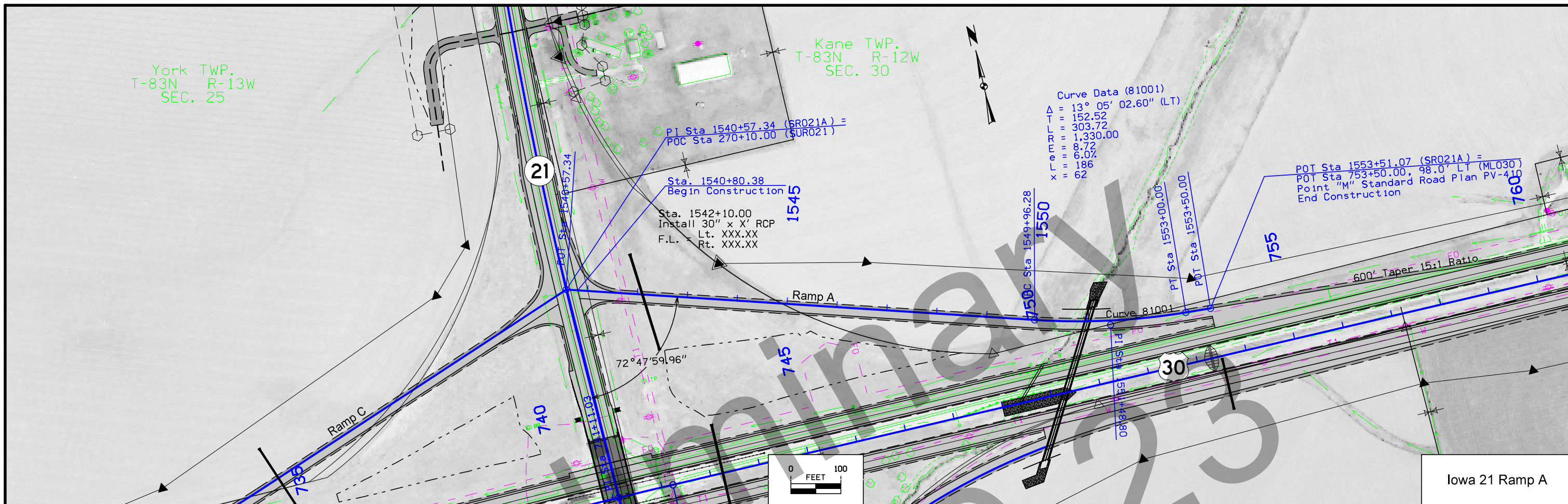
Kane TWP.  
T-83N R-12W  
SEC. 30

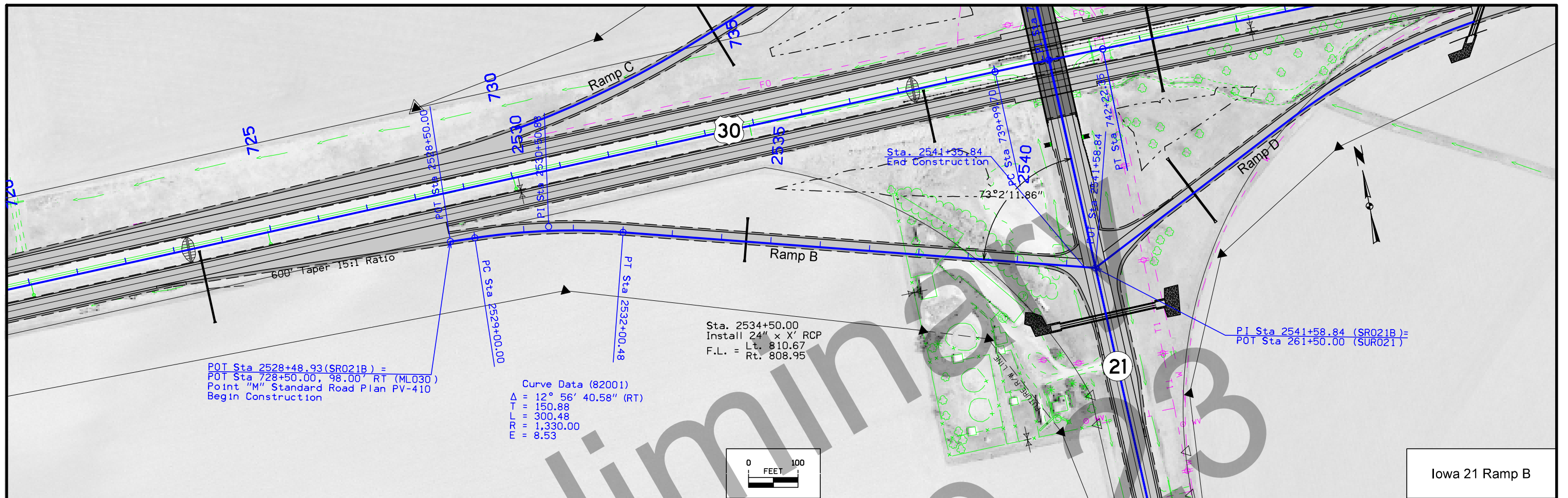


Kane TWP.  
T-83N R-12W  
SEC. 31

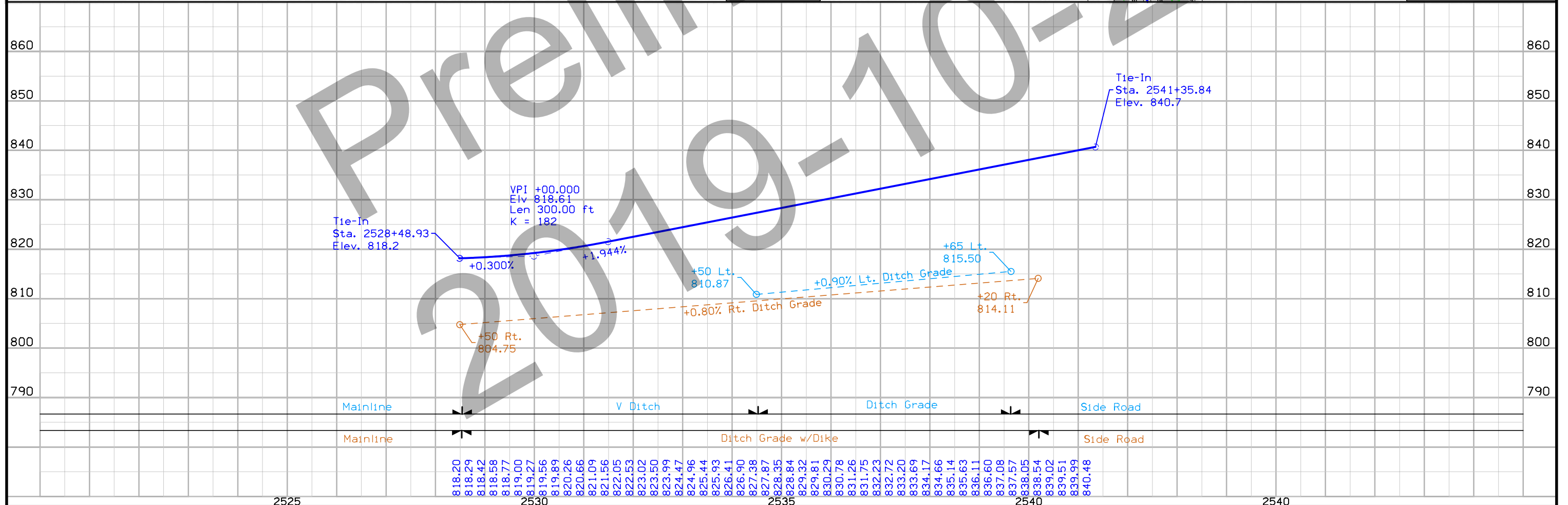
Geometric Plan  
Proposed Interchange of  
US Highway 30 w/ Iowa Highway 21  
(Sheet 2 of 2)







Iowa 21 Ramp B



818.20	818.29	818.42	818.58	818.77	819.00	819.27	819.56	819.89	820.26	820.66	821.09	821.56	822.05	822.53	823.02	823.50	823.99	824.47	824.96	825.44	825.93	826.41	826.90	827.38	827.87	828.35	828.84	829.32	829.81	830.29	830.78	831.26	831.75	832.23	832.72	833.20	833.69	834.17	834.66	835.14	835.63	836.11	836.60	837.08	837.57	838.05	838.54	839.02	839.51	839.99	840.48
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York TWP.  
T-83N R-13W  
SEC. 25

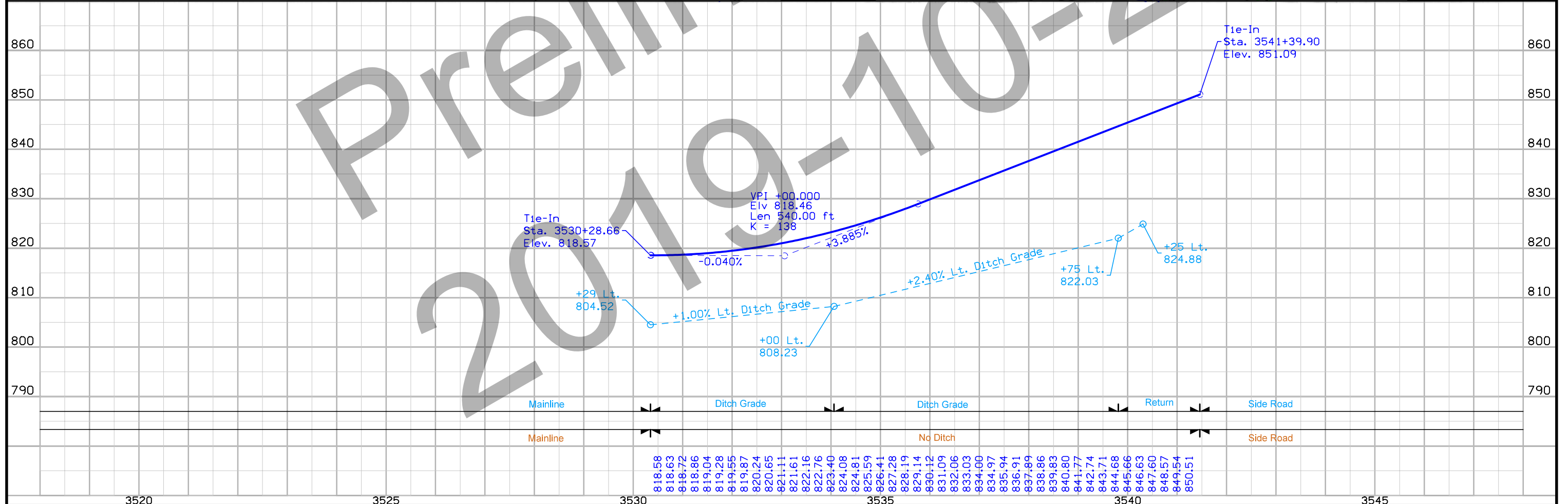
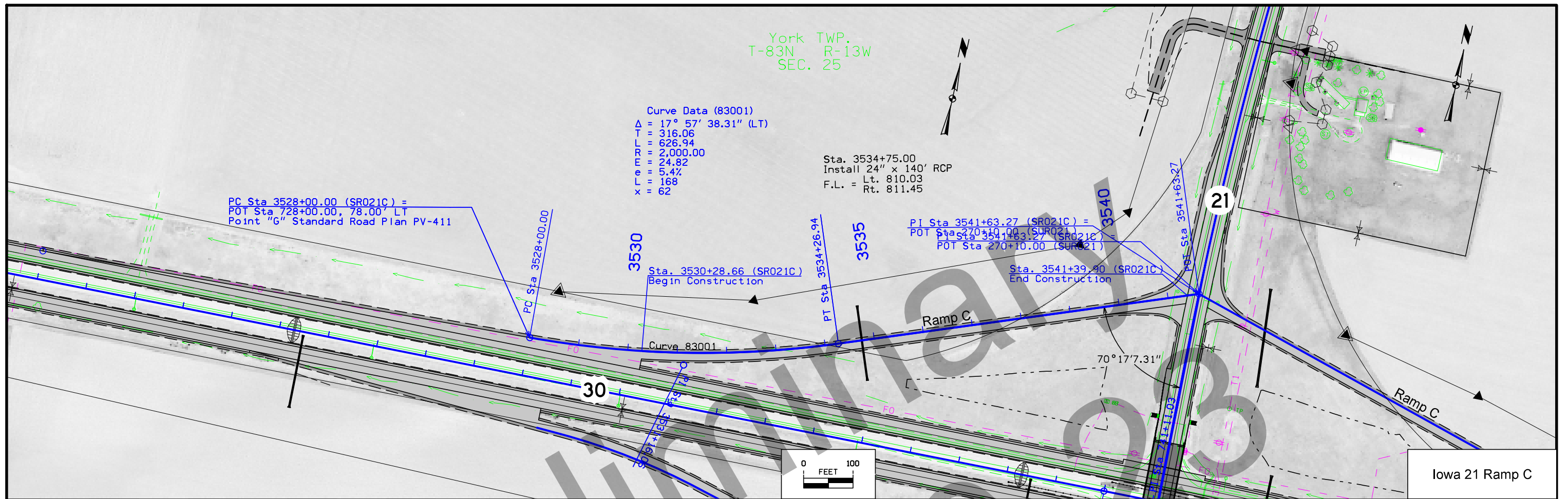
Curve Data (83001)  
 $\Delta = 17^\circ 57' 38.31''$  (LT)  
 T = 316.06  
 L = 626.94  
 R = 2,000.00  
 E = 24.82  
 F = 5.4%  
 L = 168  
 x = 62

Sta. 3534+75.00  
 Install 24" x 140' RCP  
 F.L. = Lt. 810.03  
 Rt. 811.45

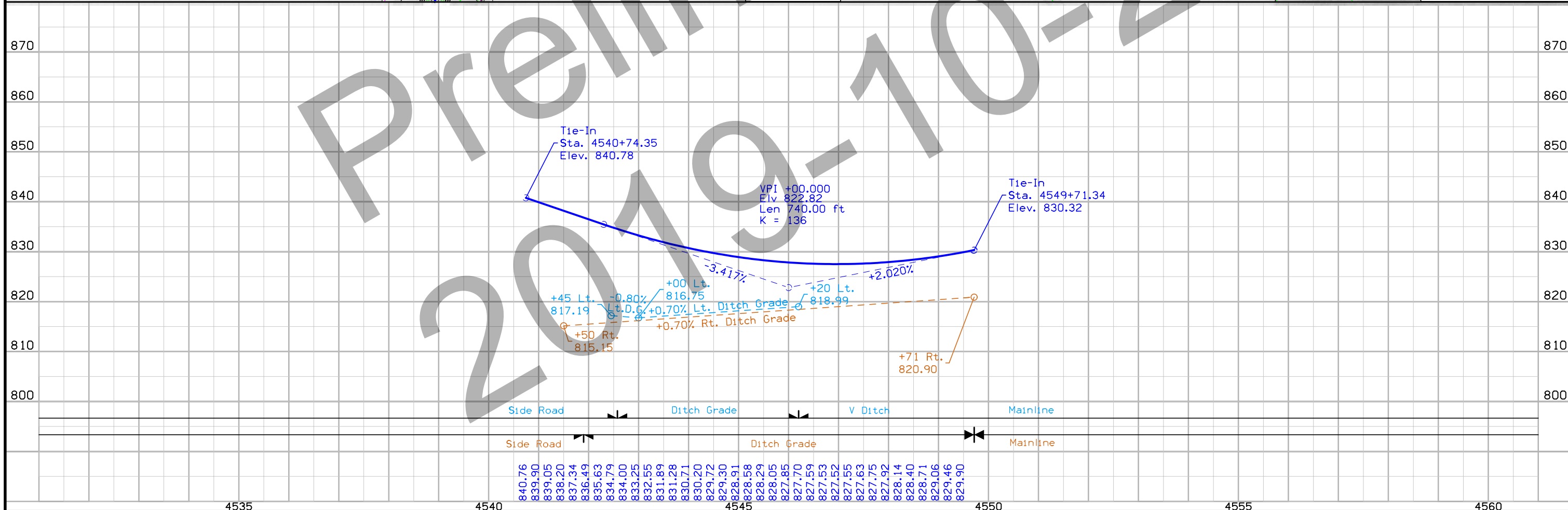
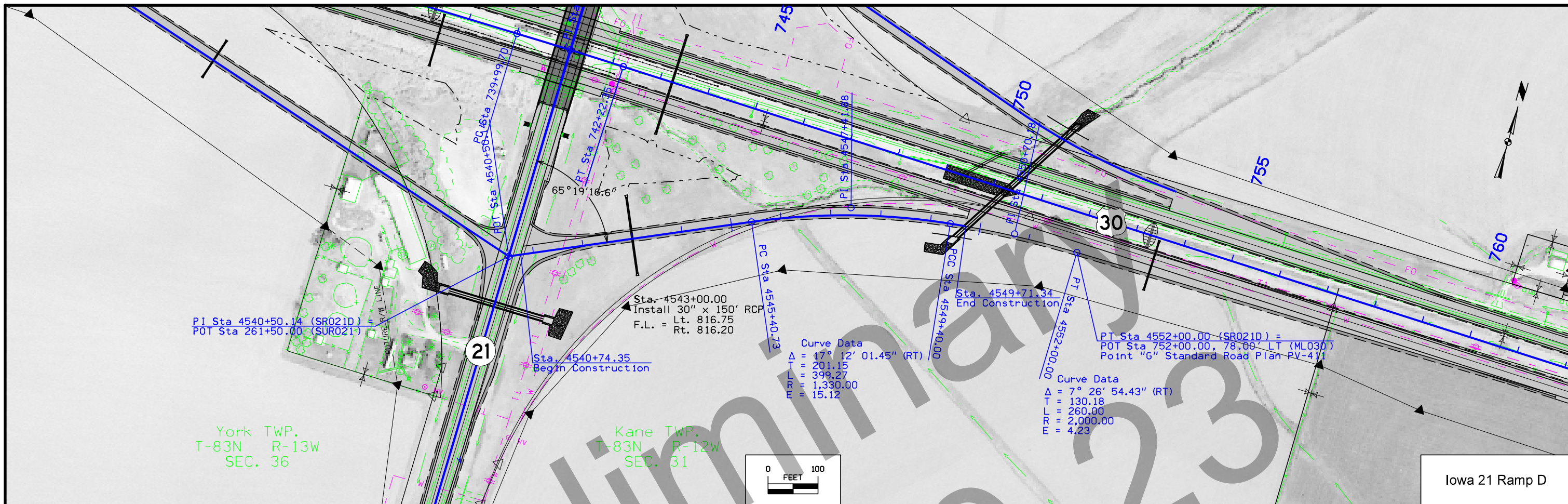
PC Sta 3528+00.00 (SR021C) =  
 POT Sta 728+00.00, 78.00' LT  
 Point "G" Standard Road Plan PV-411

PI Sta 3541+63.27 (SR021C) =  
 POT Sta 270+10.00 (SR021)  
 POT Sta 3541+63.27 (SR021C)  
 POT Sta 270+10.00 (SR021)

Sta. 3541+39.90 (SR021C)  
 End Construction

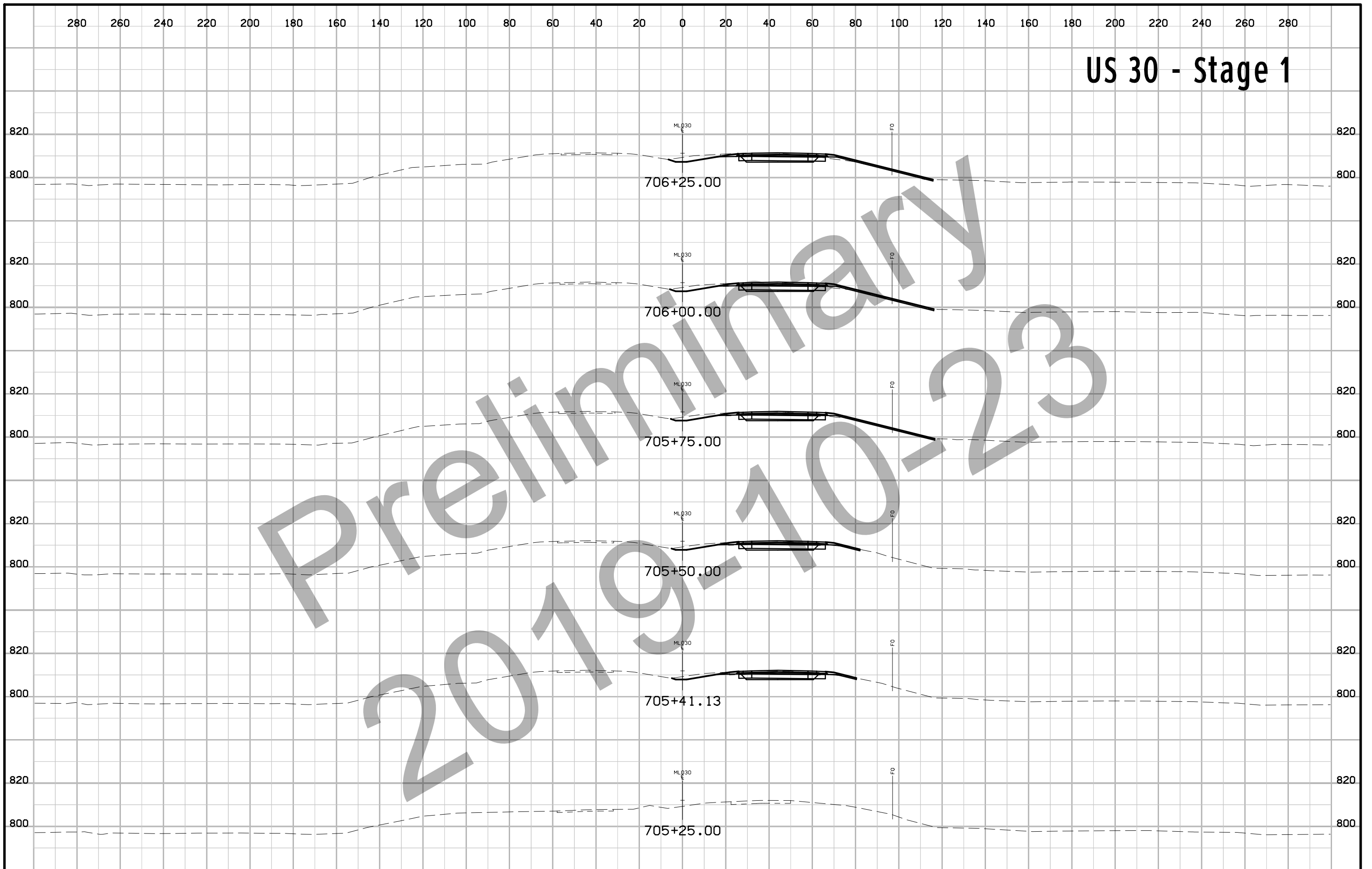




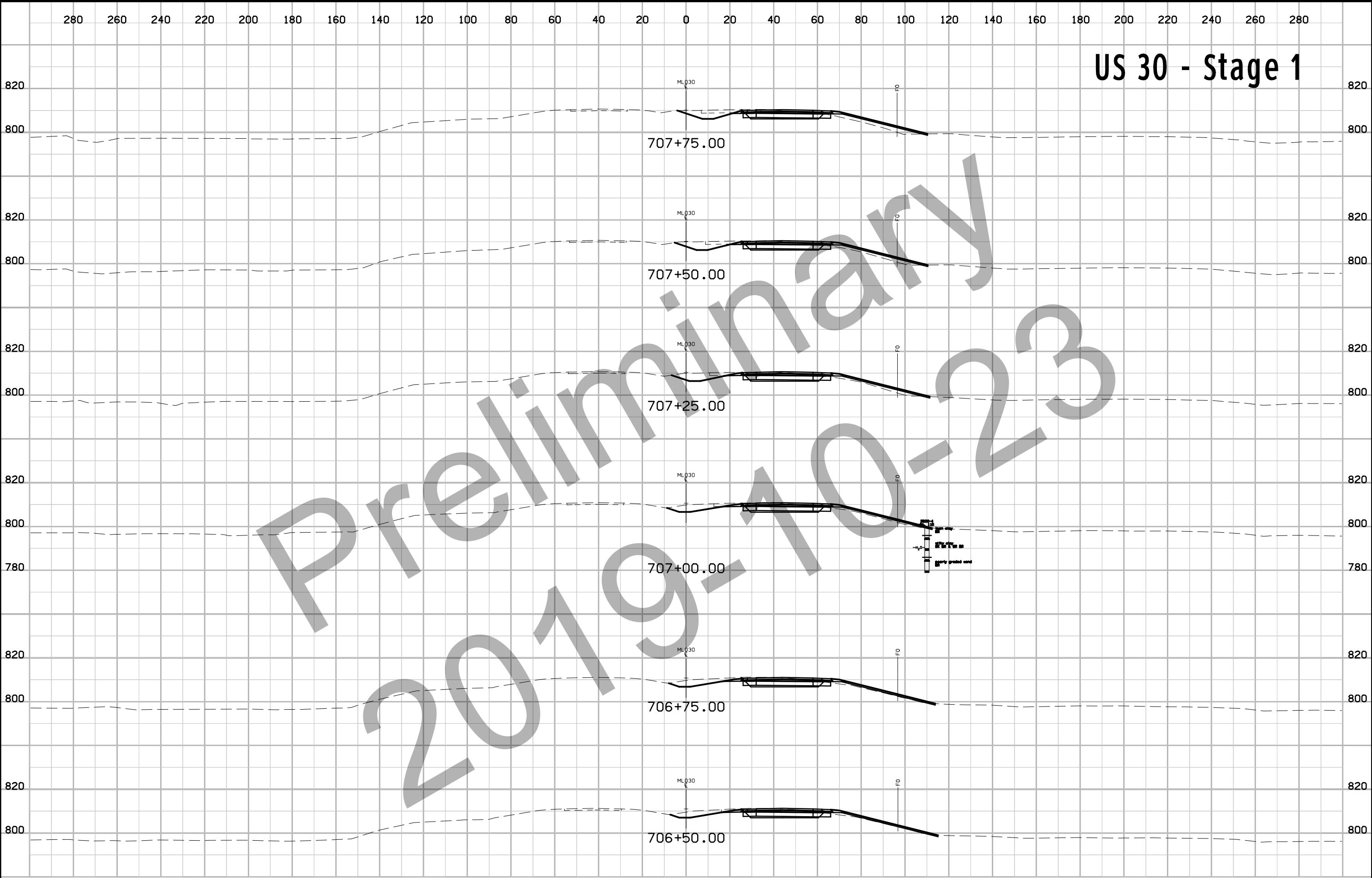


FILE NO. 31043	ENGLISH	DESIGN TEAM Flattery \ Bell	TAMA COUNTY	PROJECT NUMBER NHSX-030-6(240)--3H-86	SHEET NUMBER K.6
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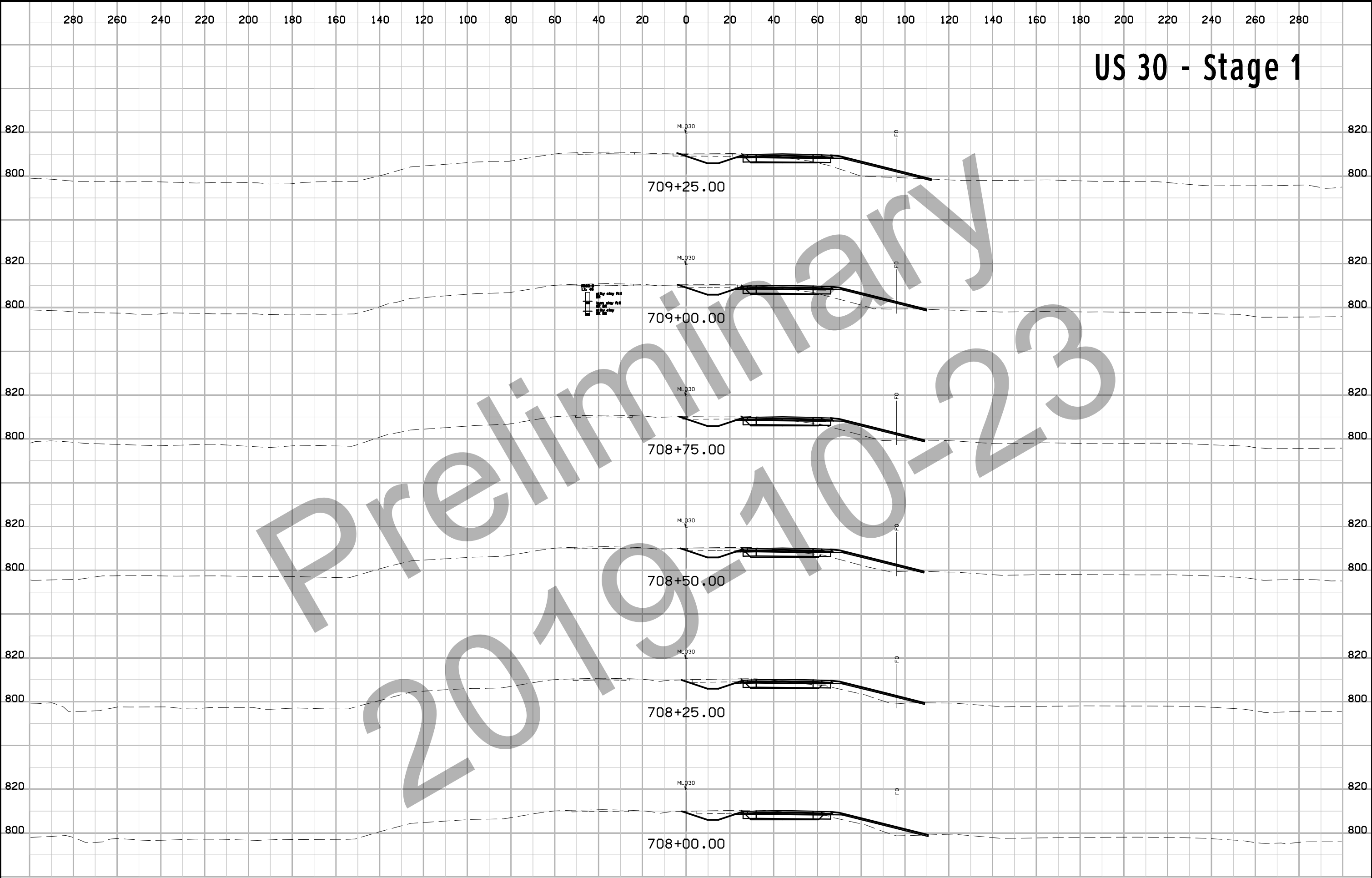
# US 30 - Stage 1



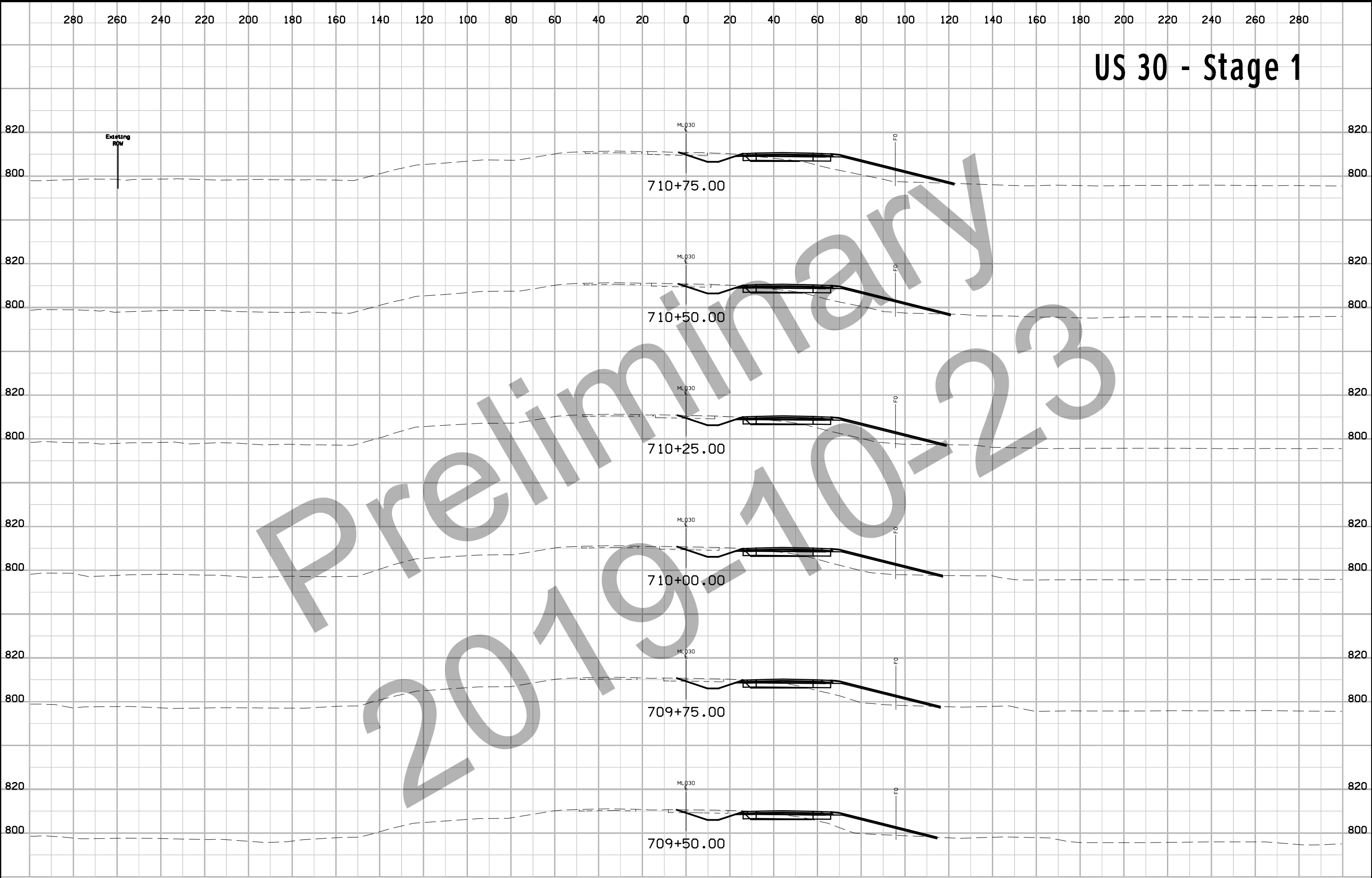
# US 30 - Stage 1



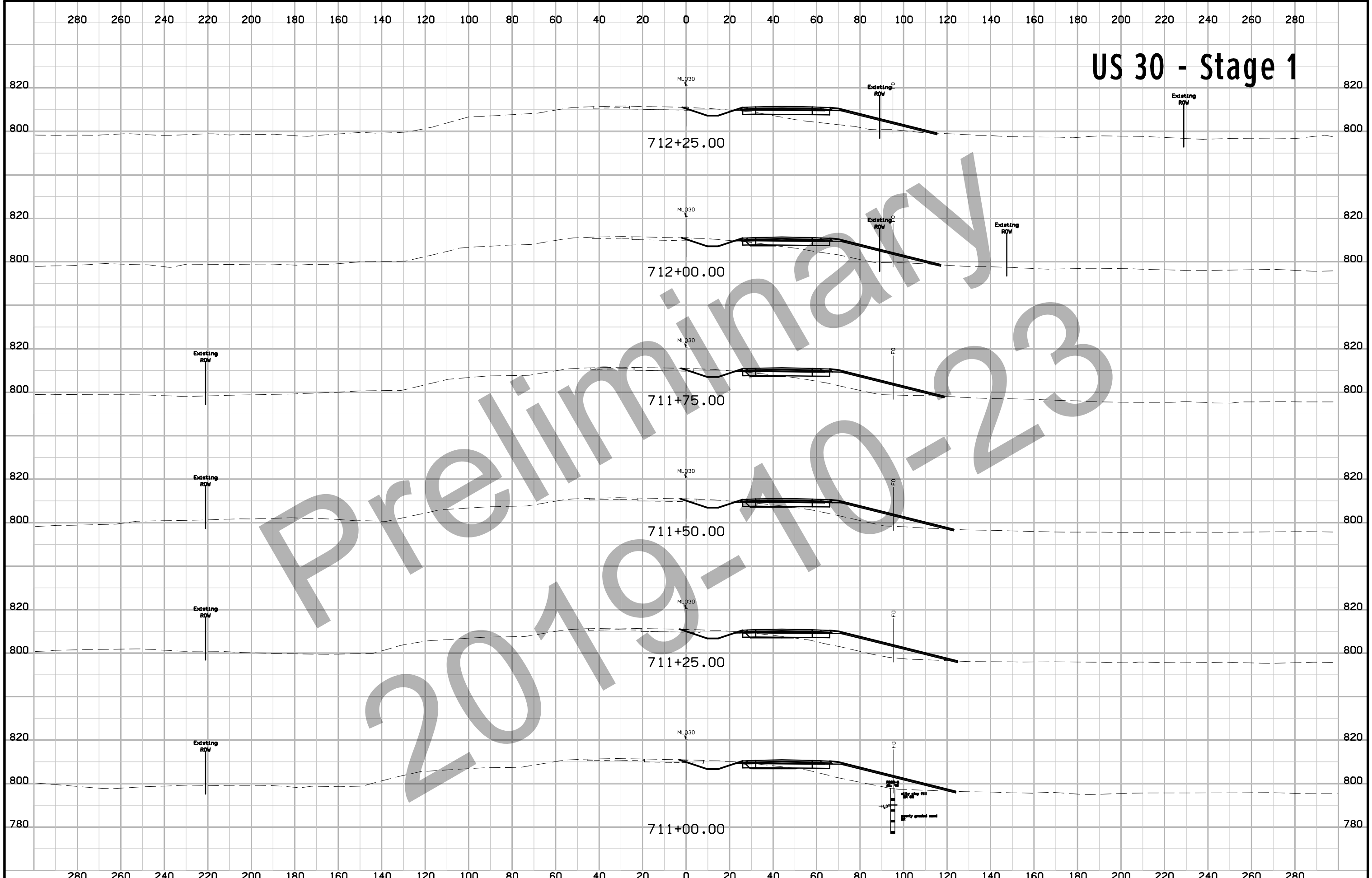
# US 30 - Stage 1



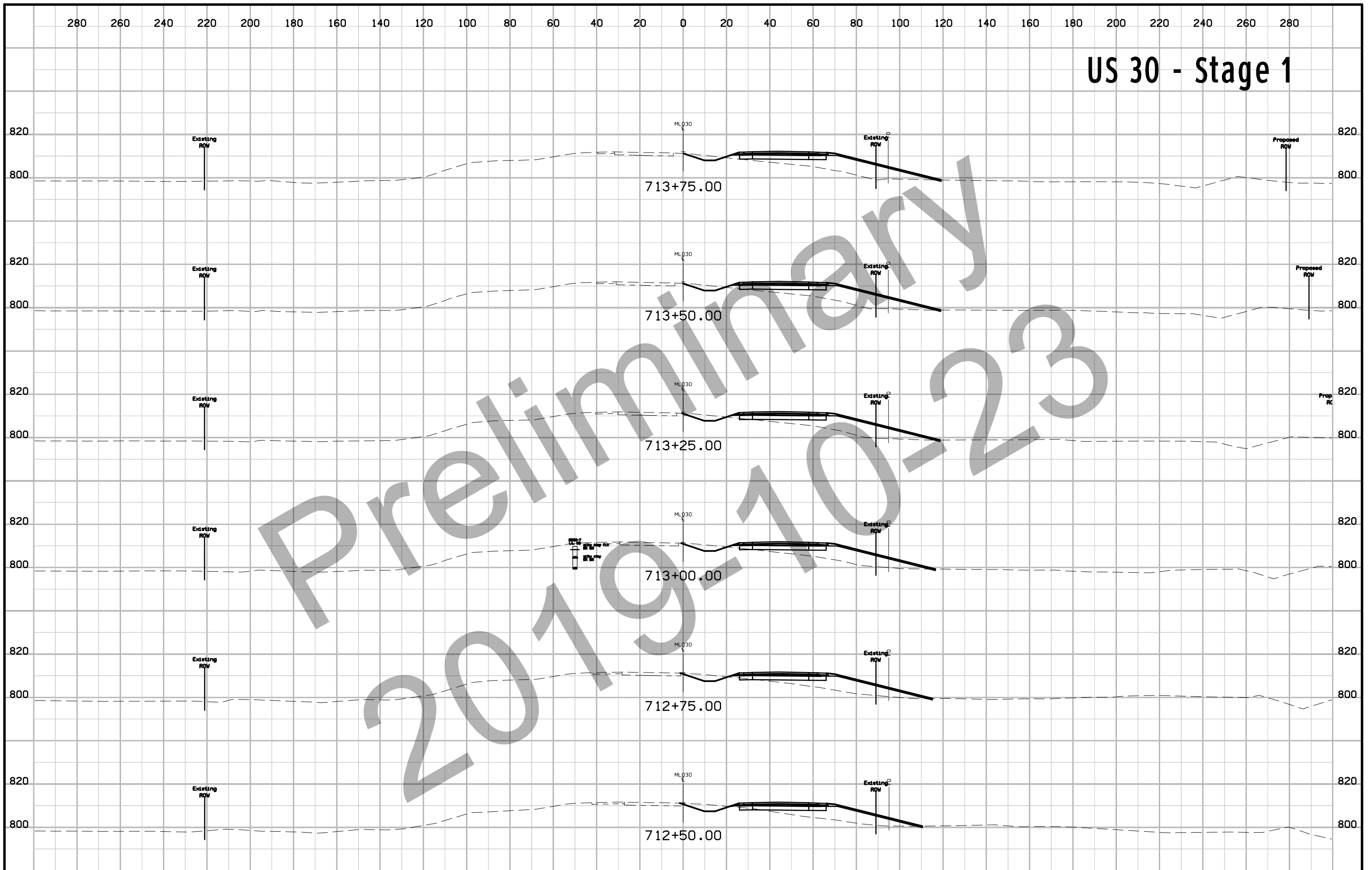
# US 30 - Stage 1



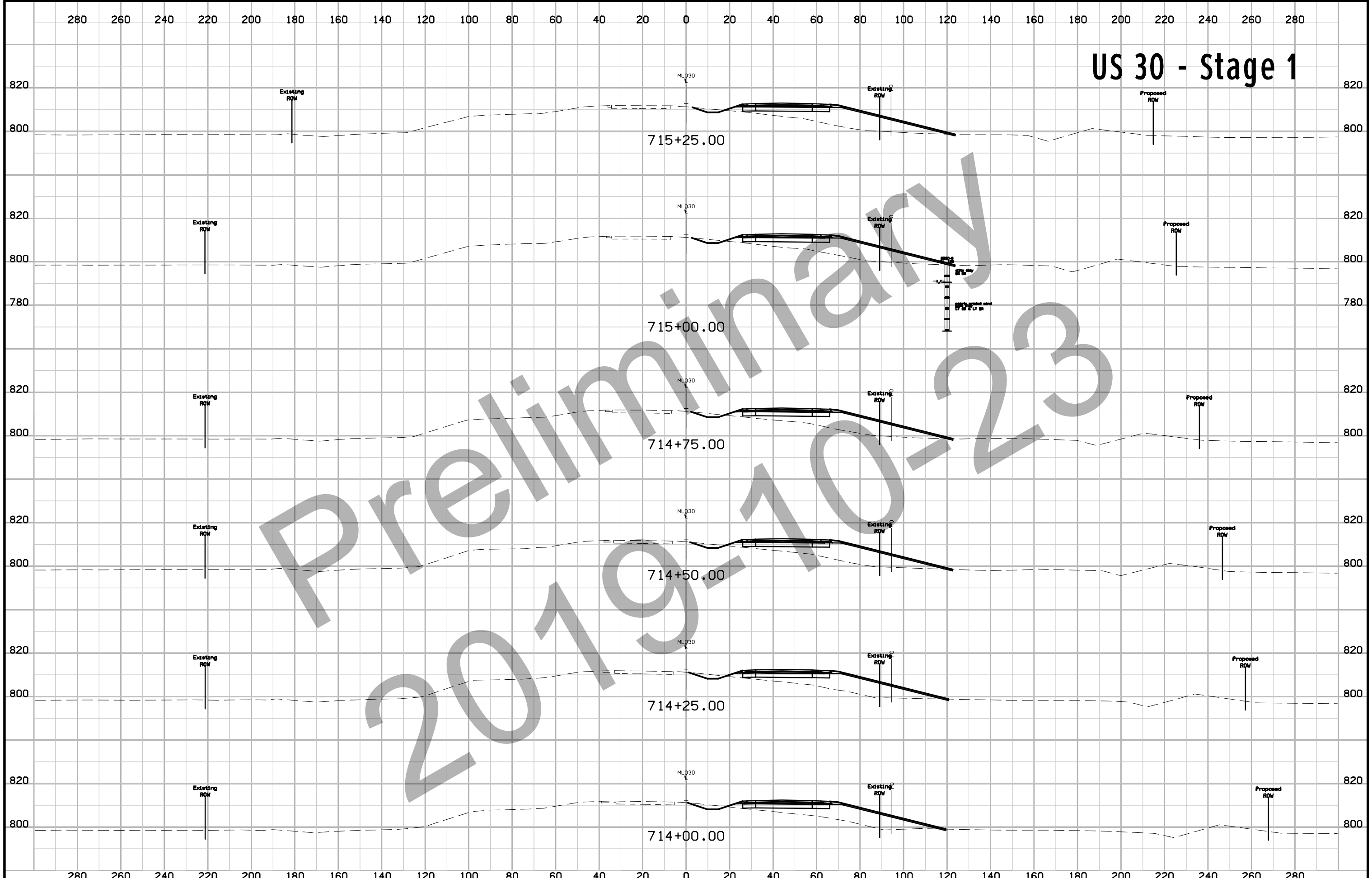
# US 30 - Stage 1



# US 30 - Stage 1

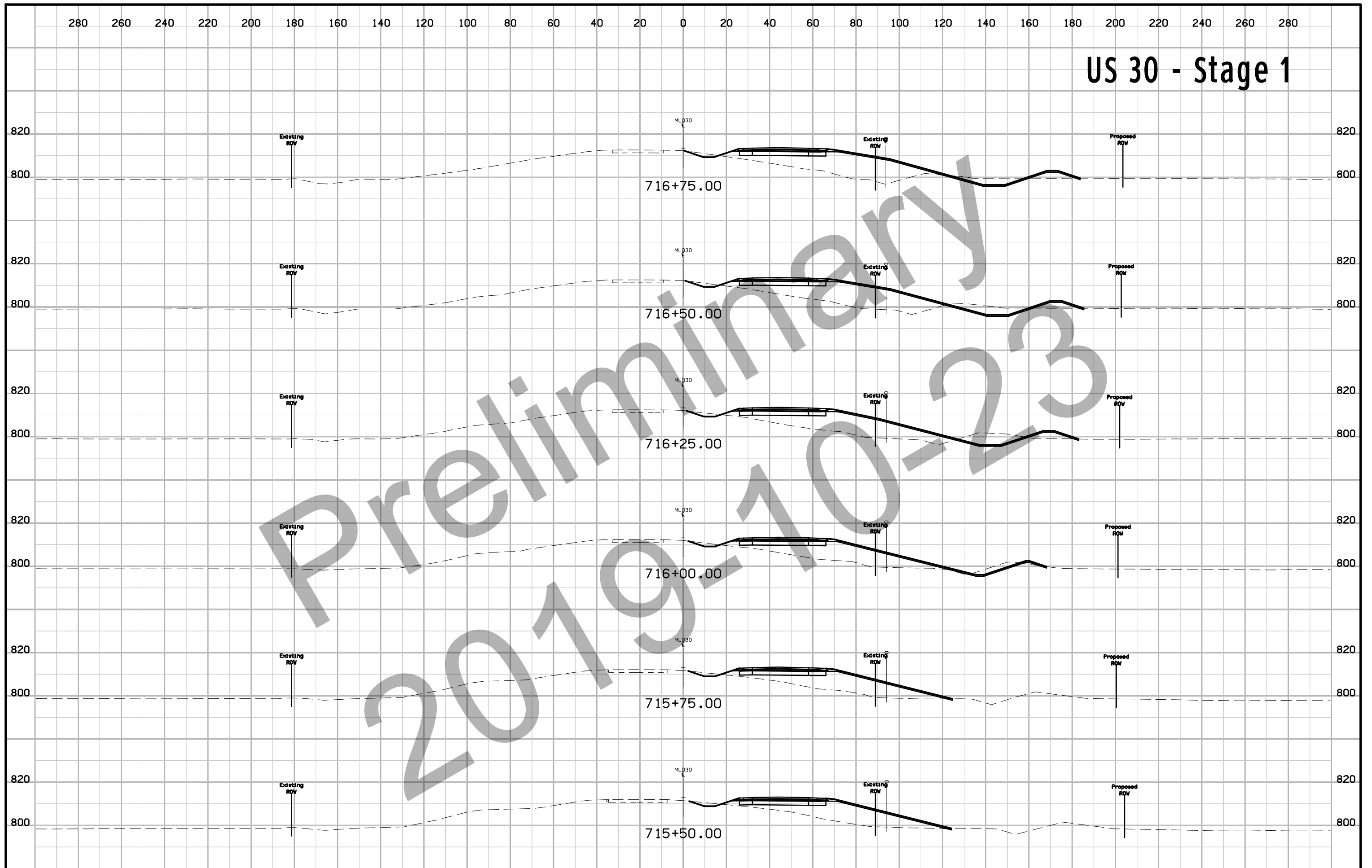


# US 30 - Stage 1

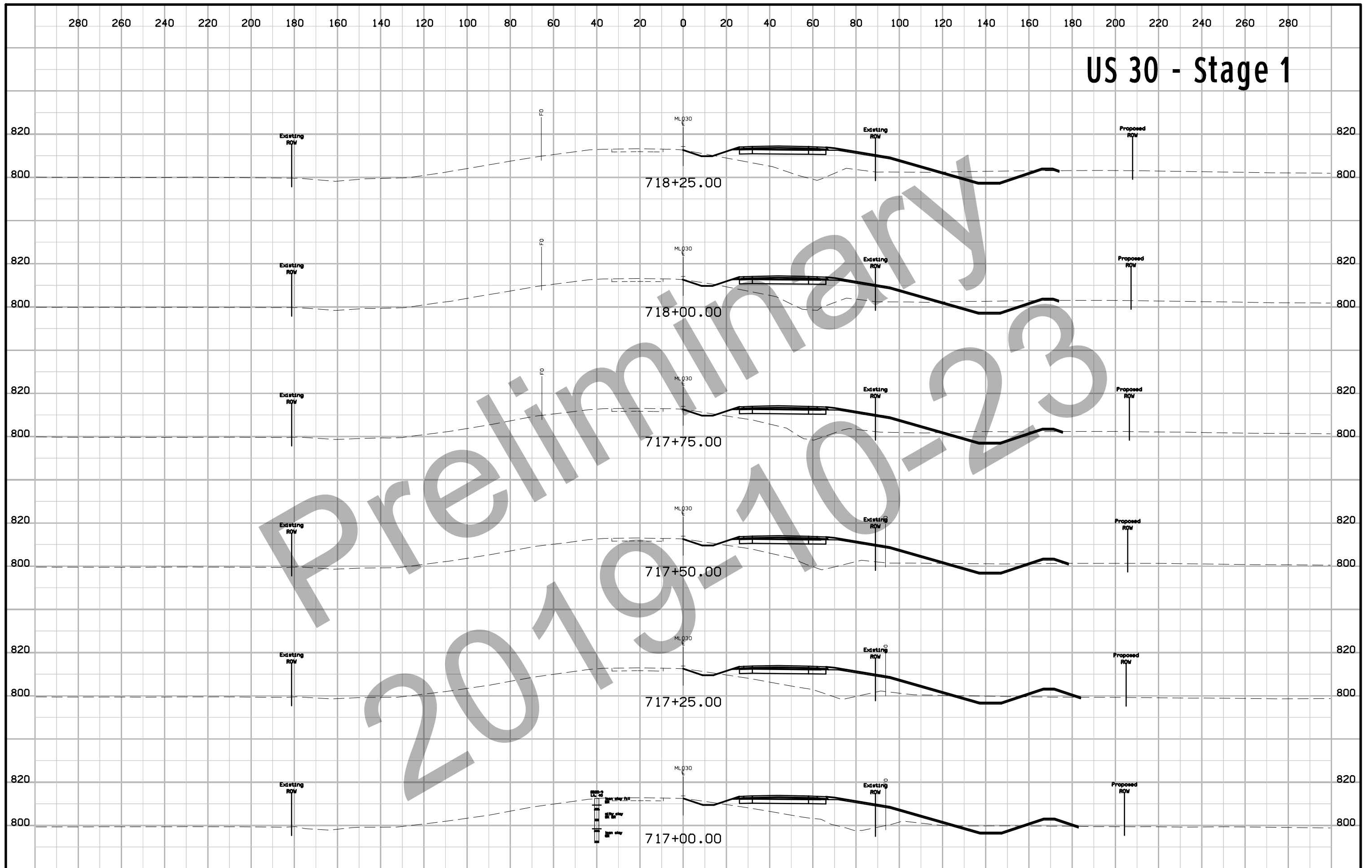




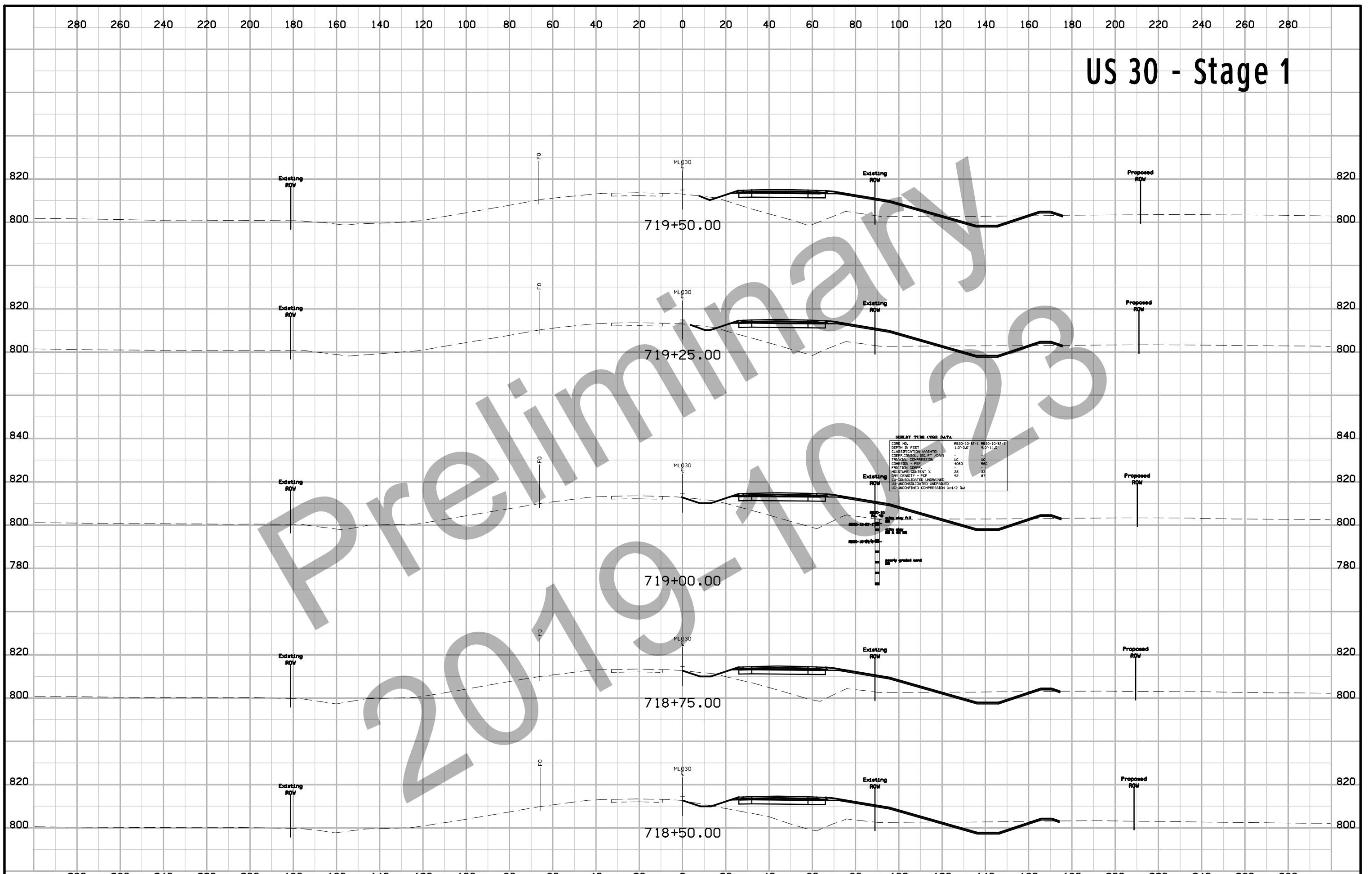
# US 30 - Stage 1



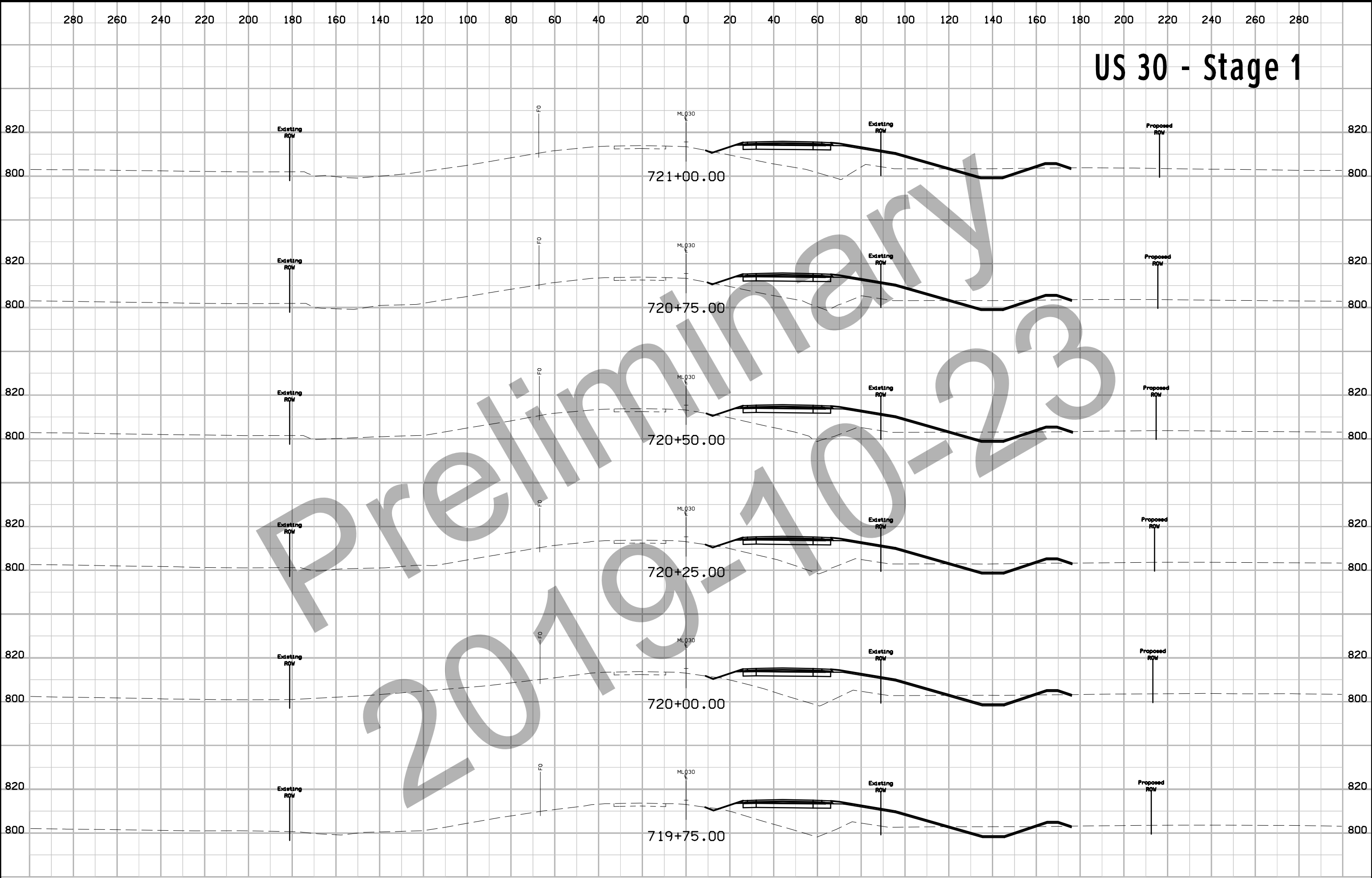
# US 30 - Stage 1



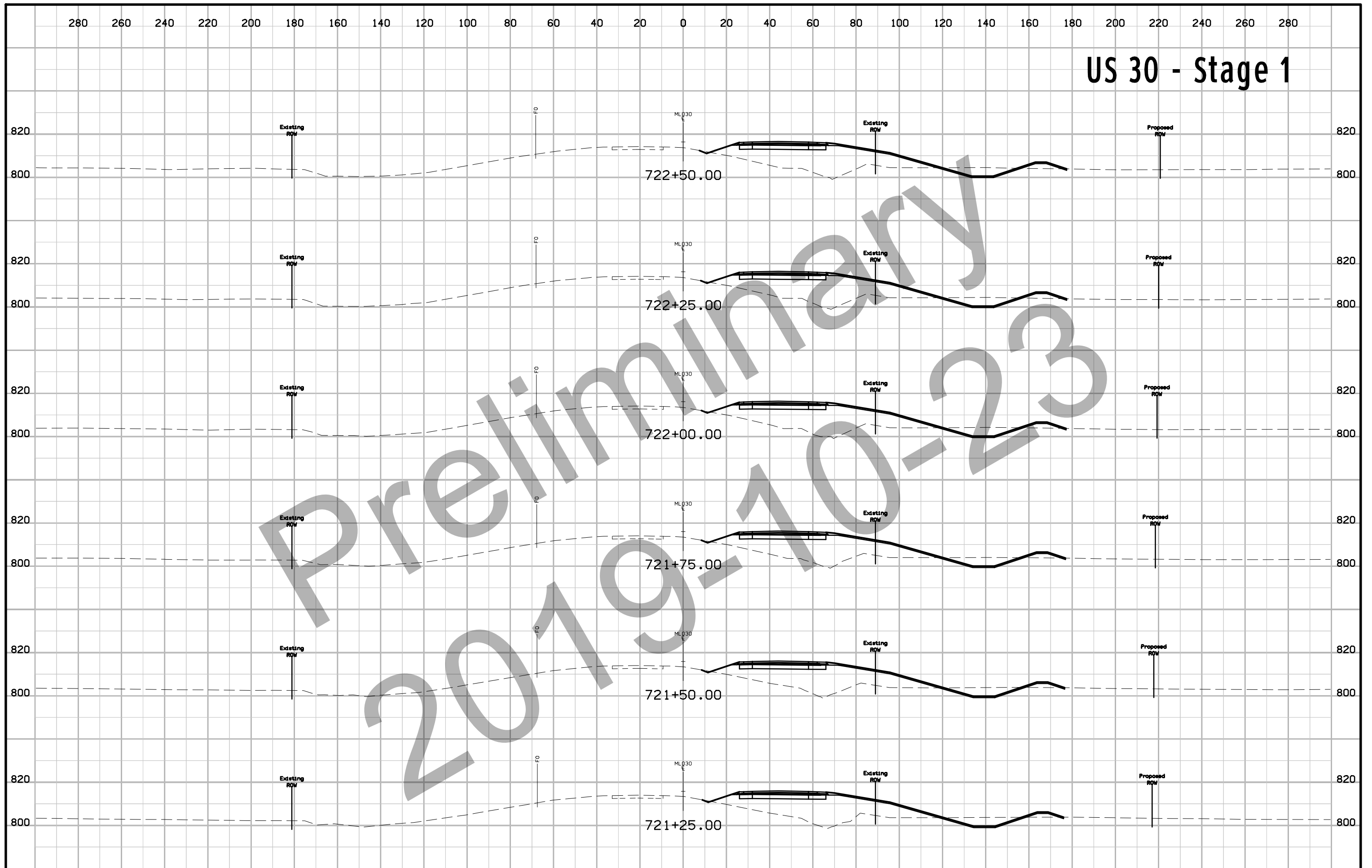
# US 30 - Stage 1



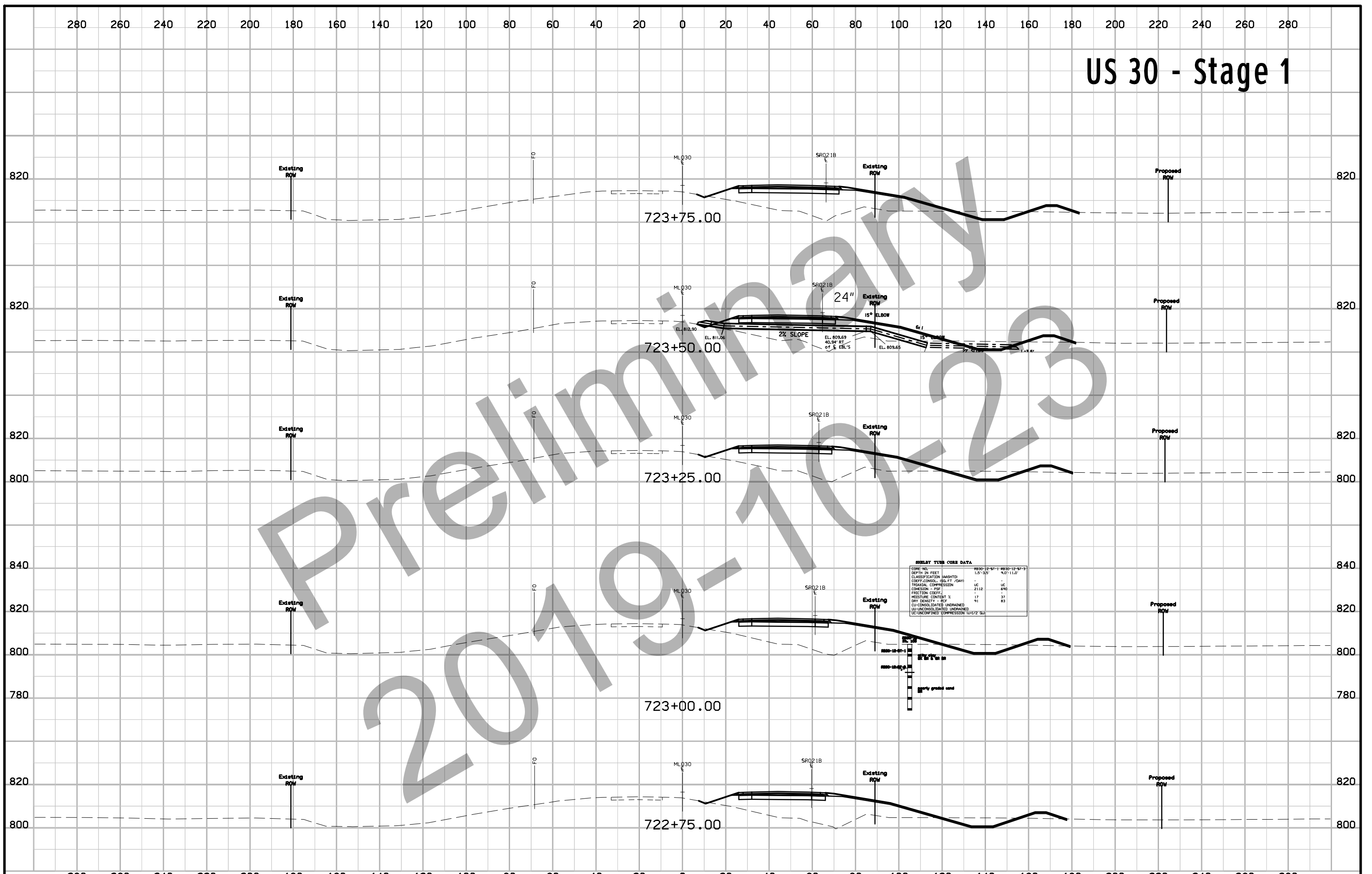
# US 30 - Stage 1



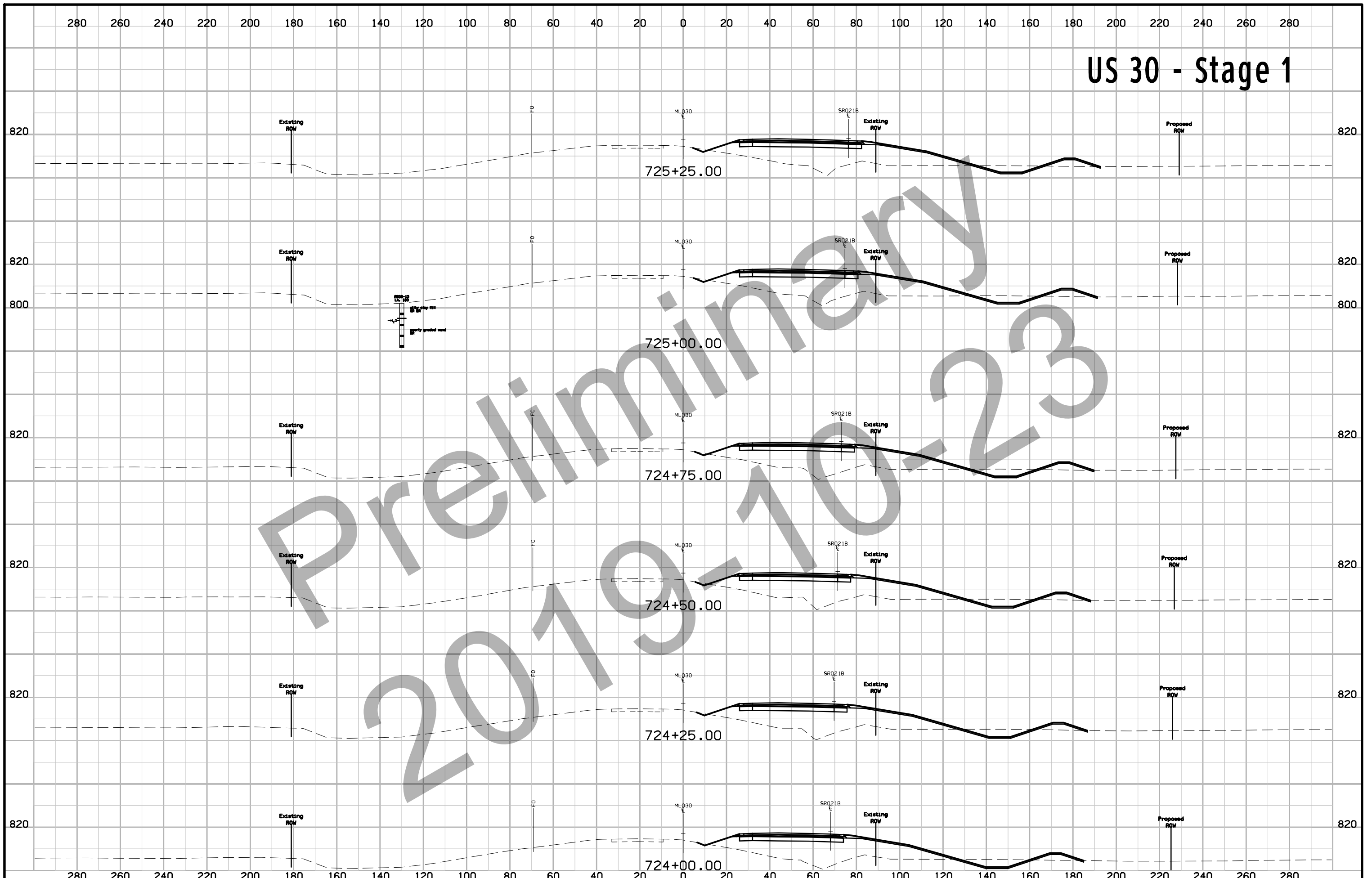
# US 30 - Stage 1



# US 30 - Stage 1

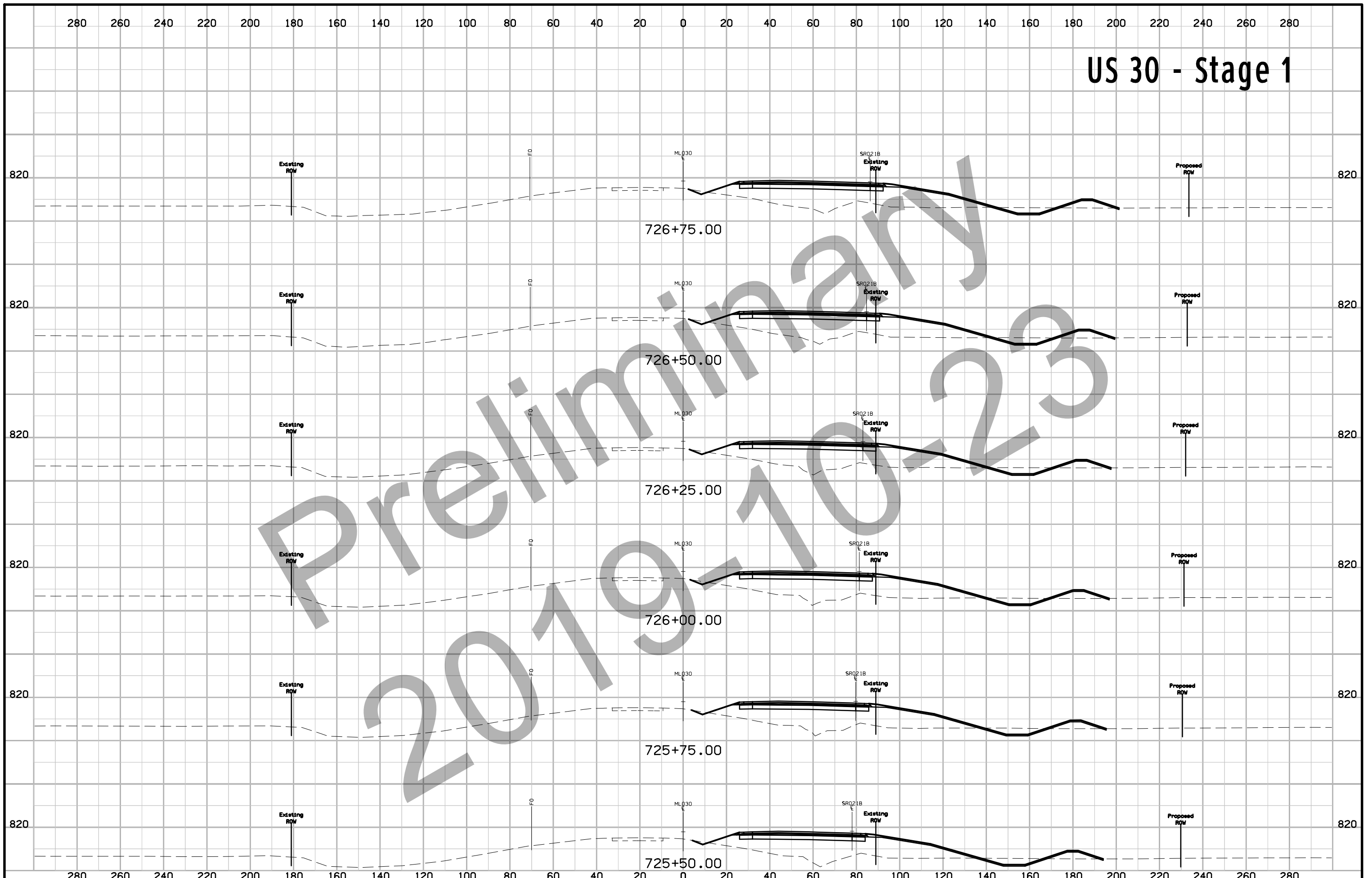


# US 30 - Stage 1



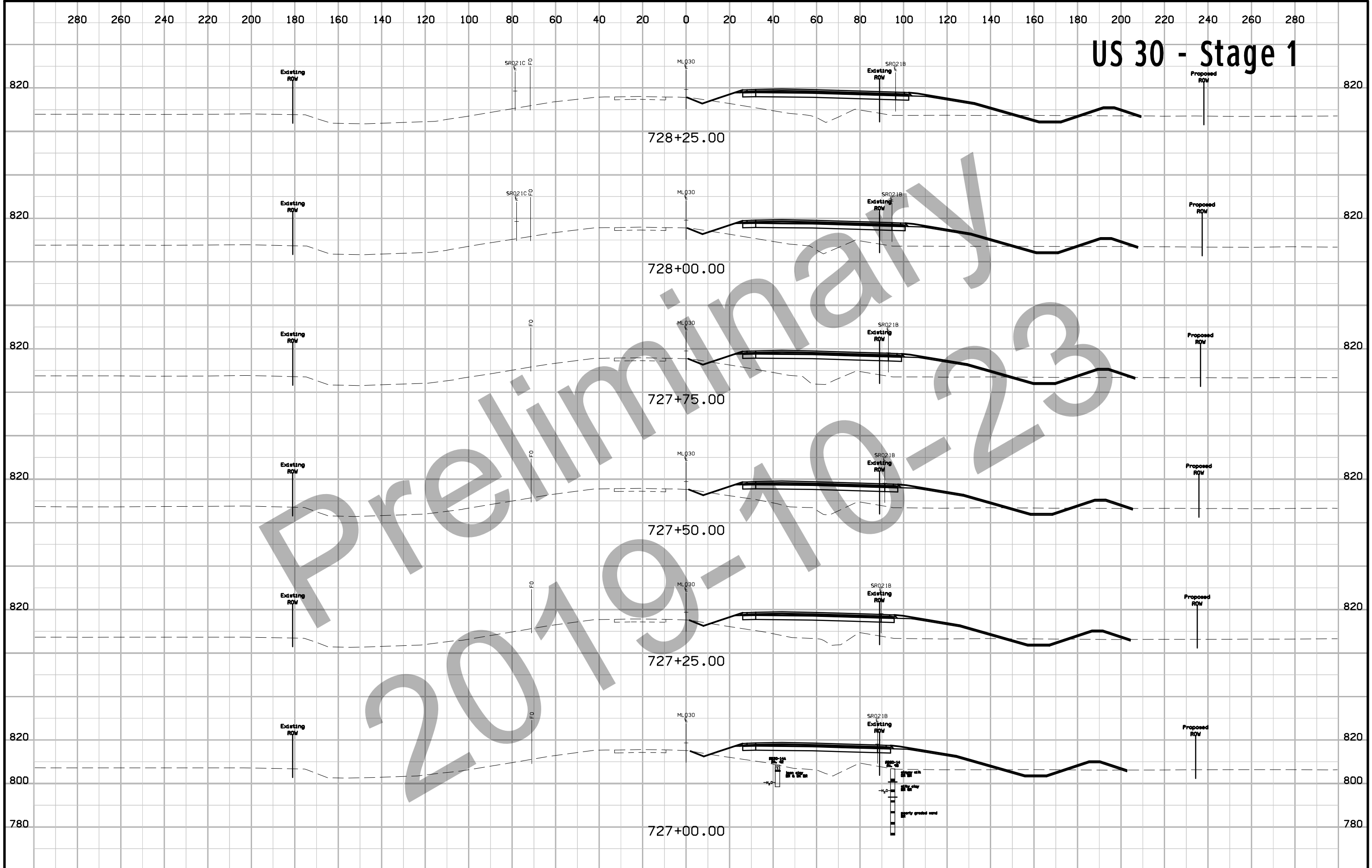
Preliminary 2019 10 23

# US 30 - Stage 1



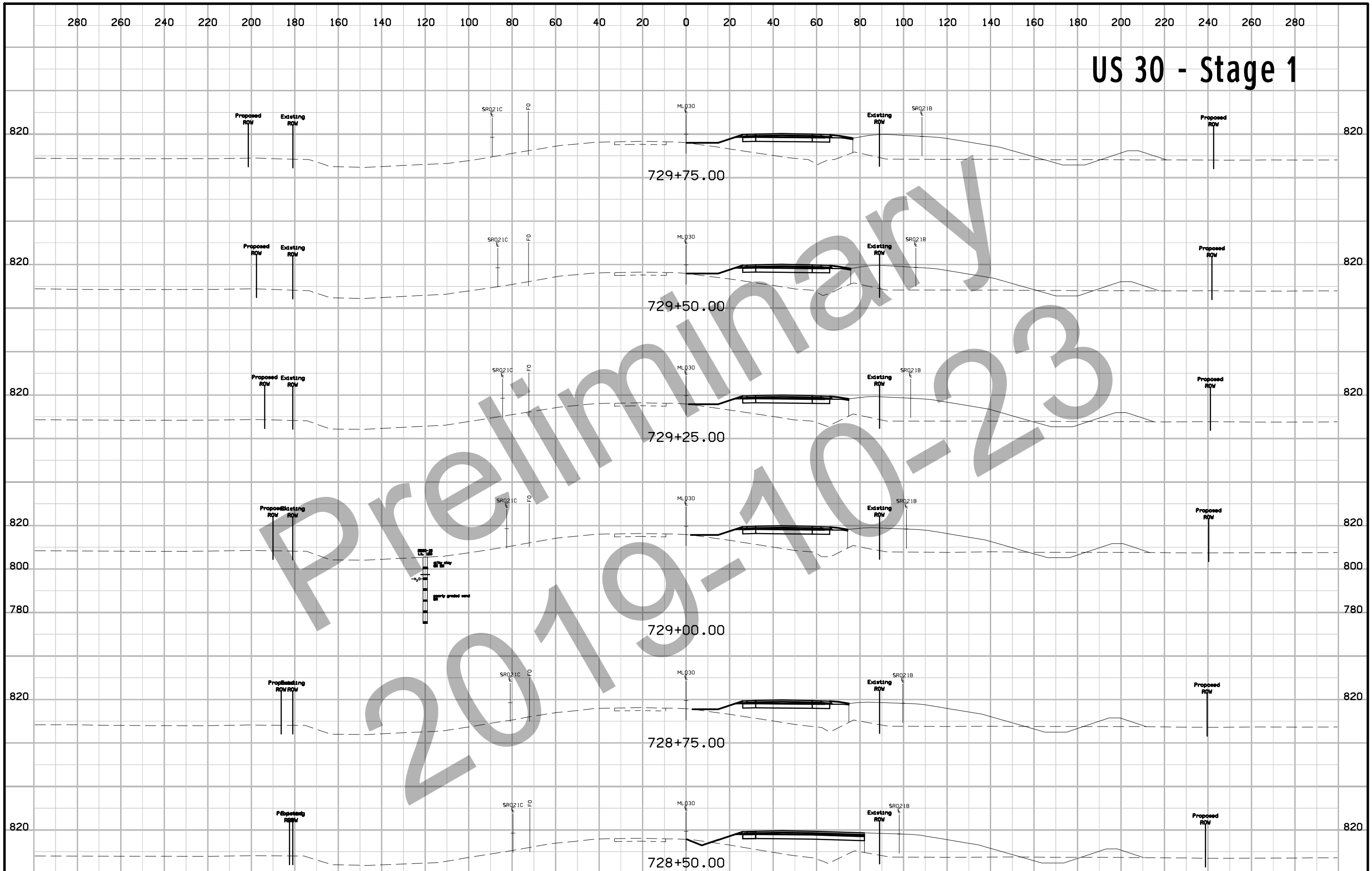


# US 30 - Stage 1



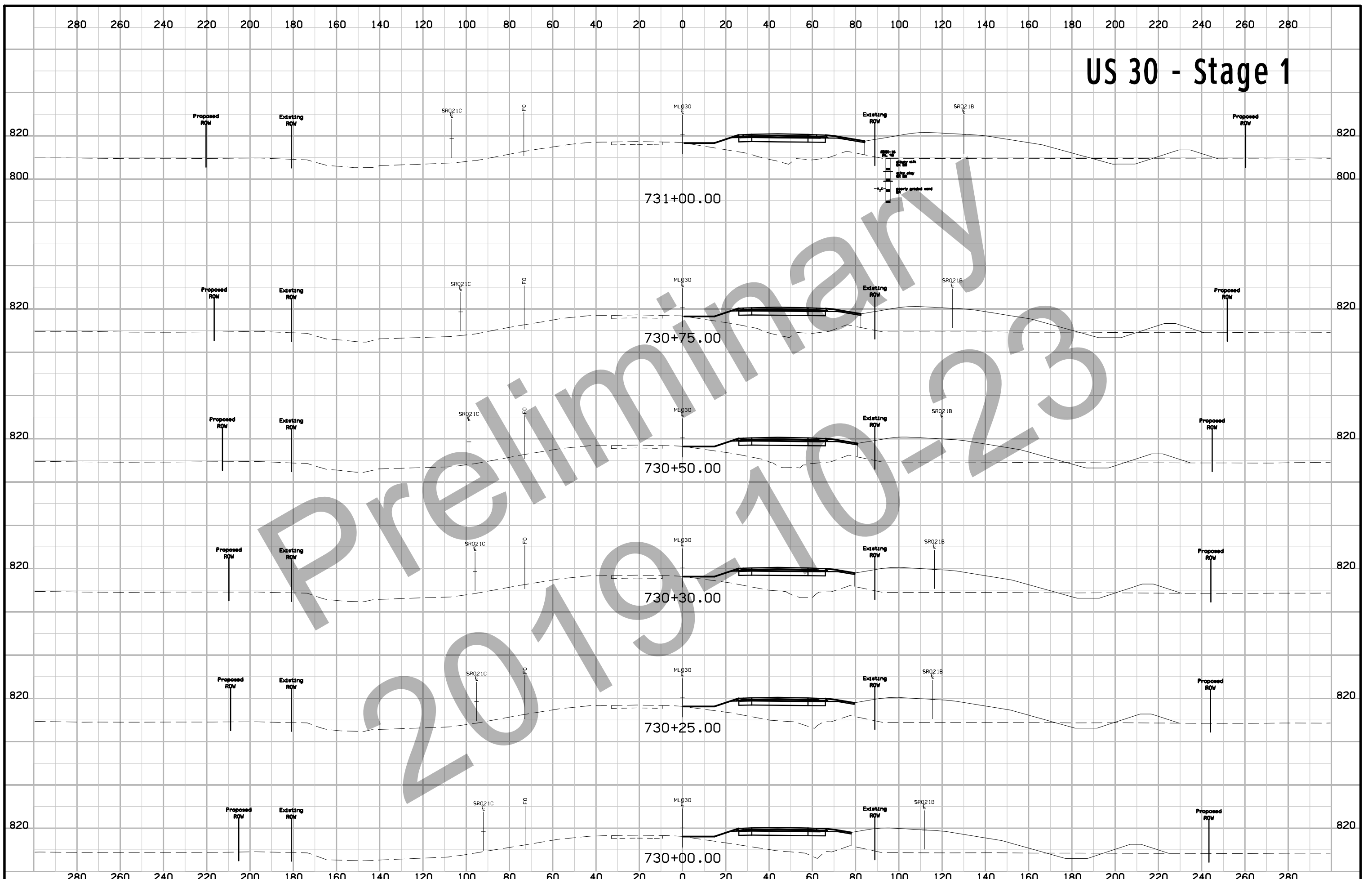
2019-10-23  
Preliminary

# US 30 - Stage 1

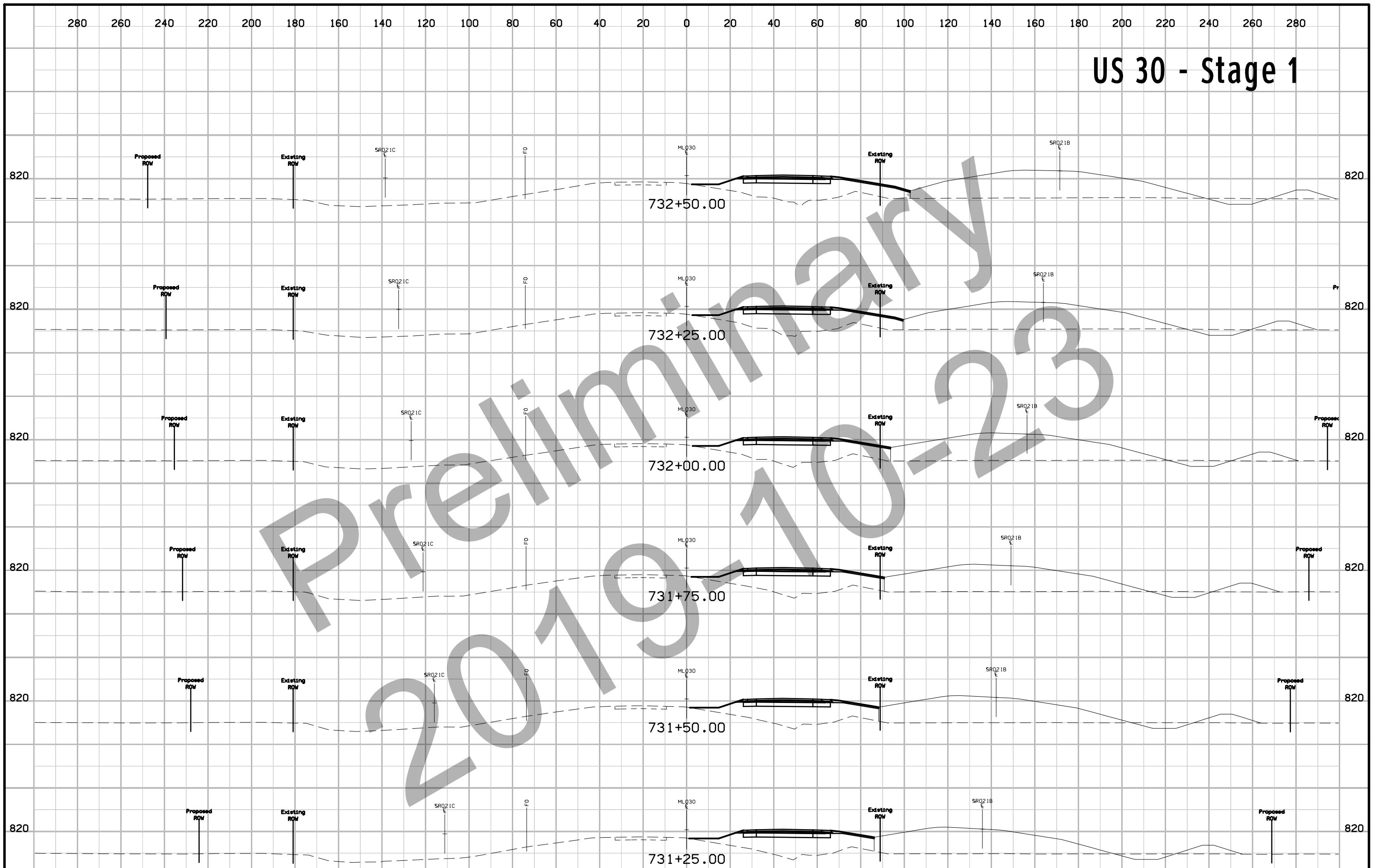


Preliminary  
 2019-10-23

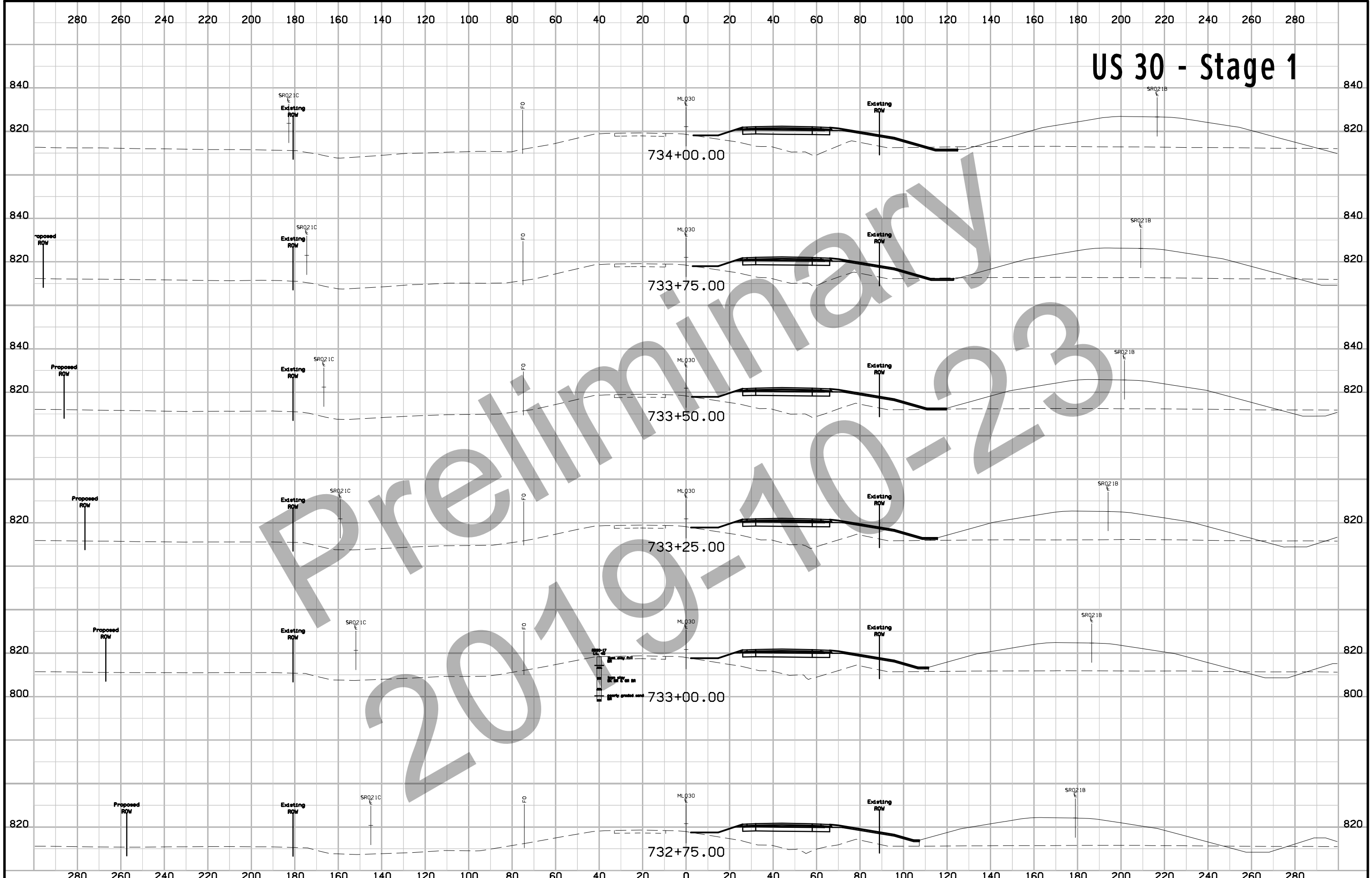
# US 30 - Stage 1



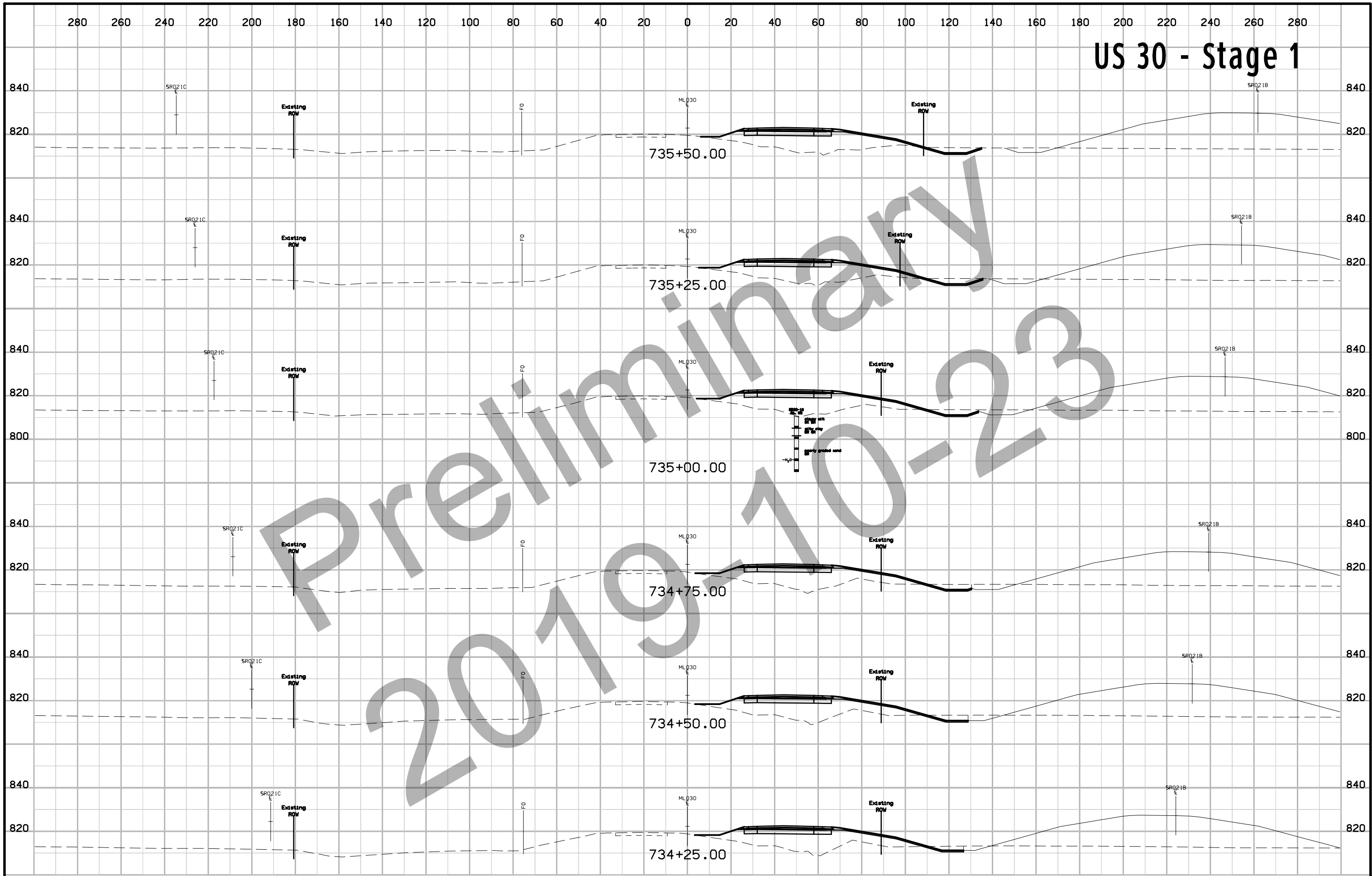
# US 30 - Stage 1



# US 30 - Stage 1

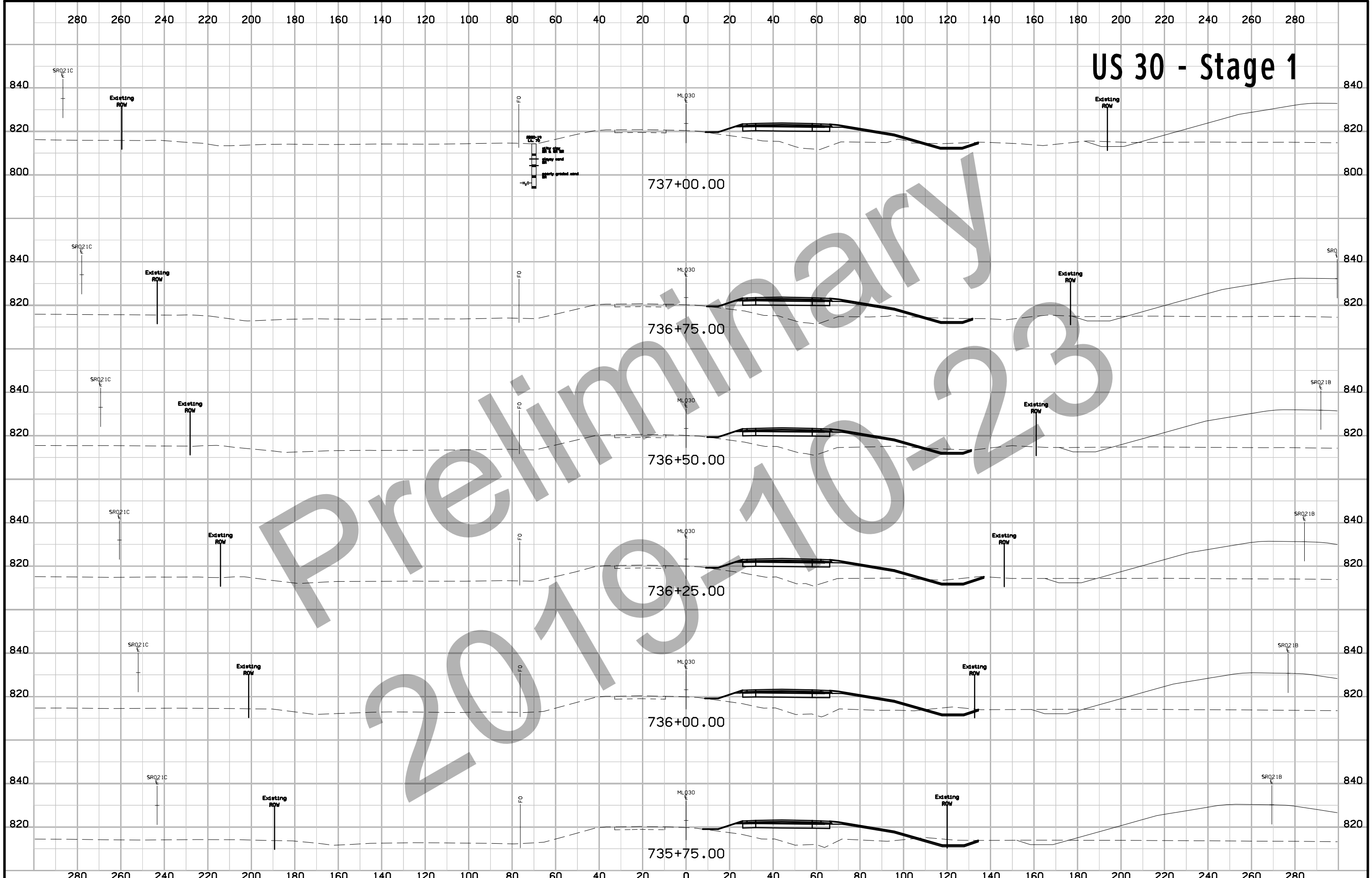


# US 30 - Stage 1

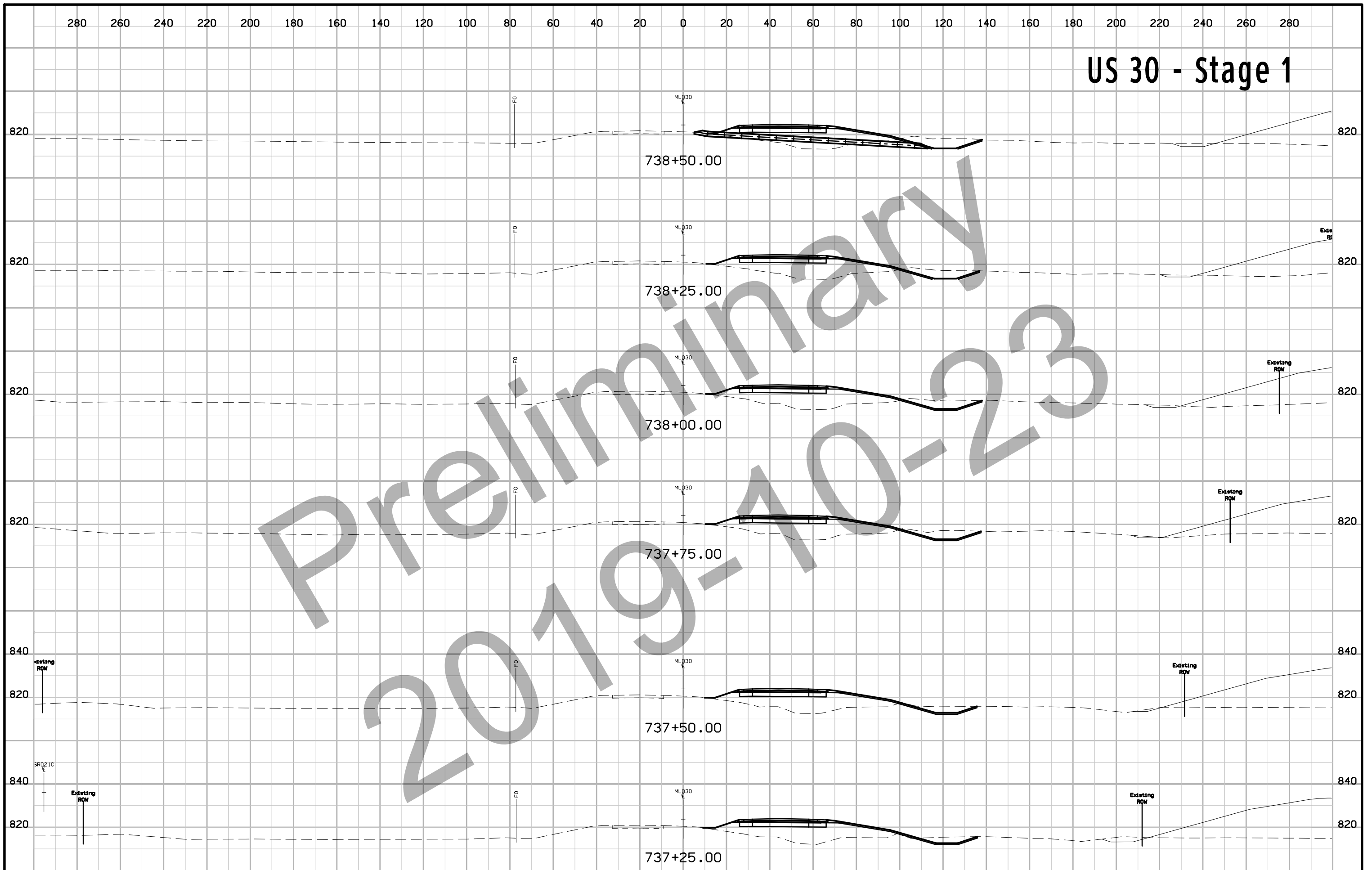




# US 30 - Stage 1



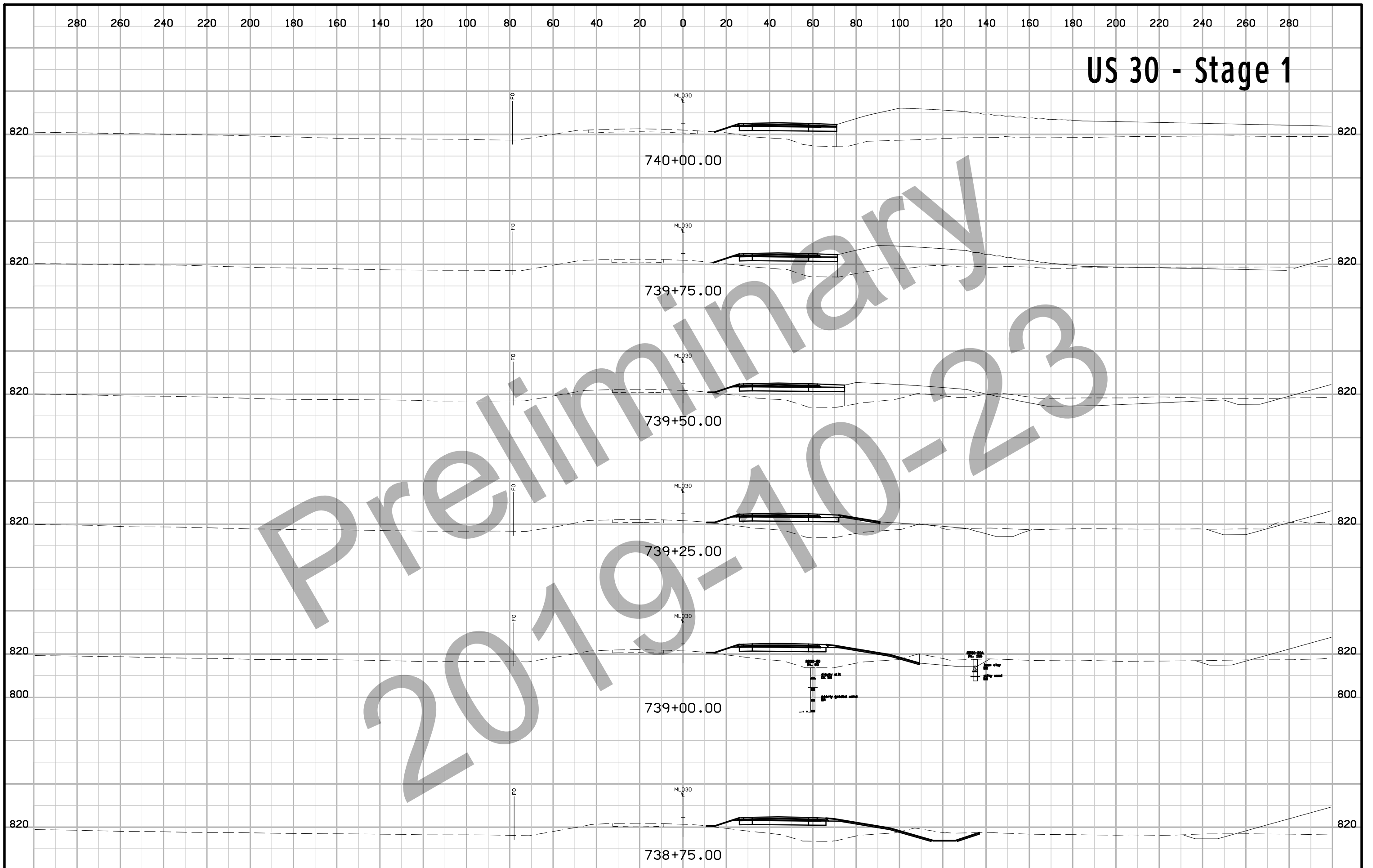
# US 30 - Stage 1



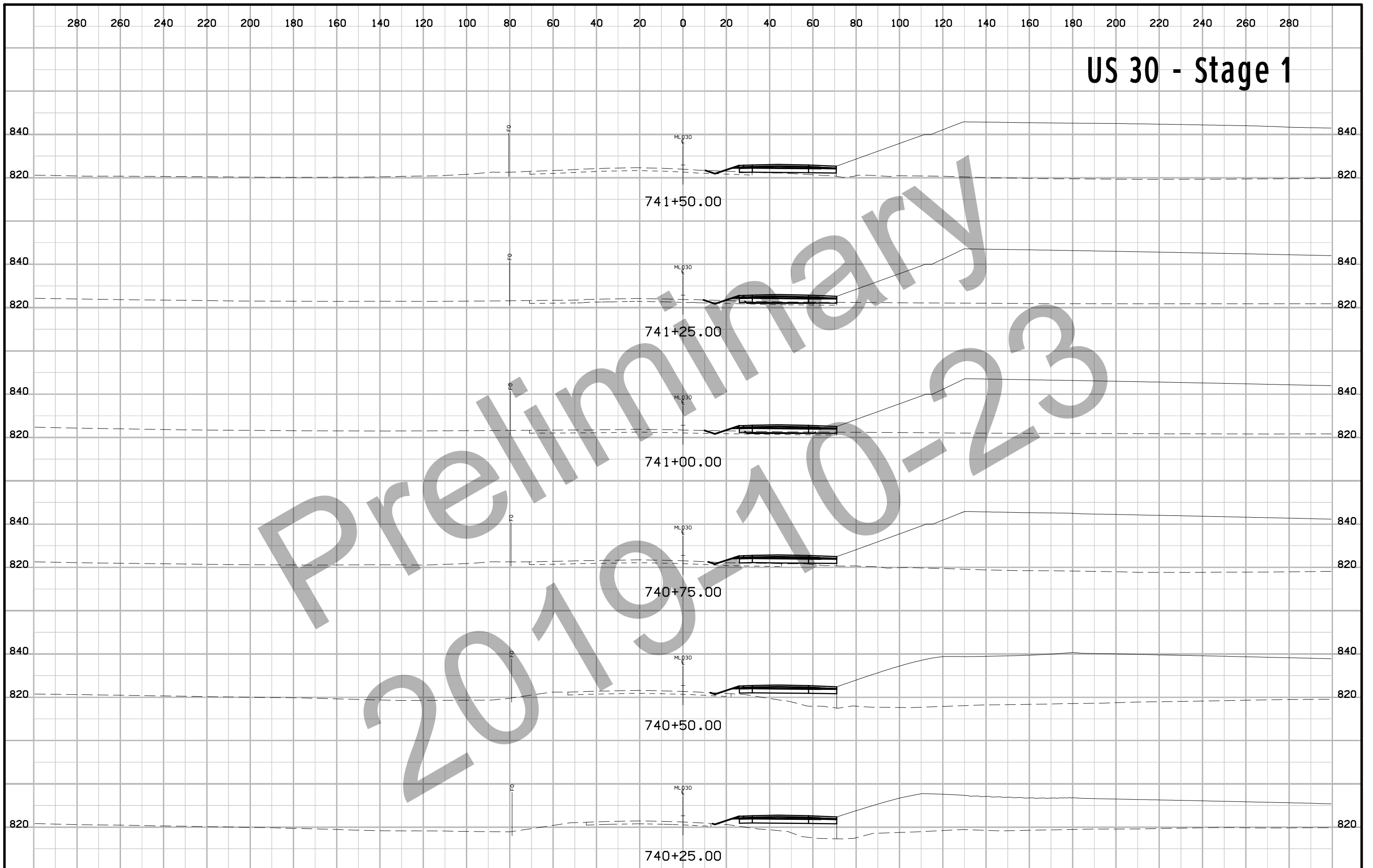
Preliminary  
2019-10-23

FILE NO.	ENGLISH	DESIGN TEAM	Flattery\Bell	BENTON COUNTY	PROJECT NUMBER	NHS-030-6(87)--19-06	SHEET NUMBER	W.123
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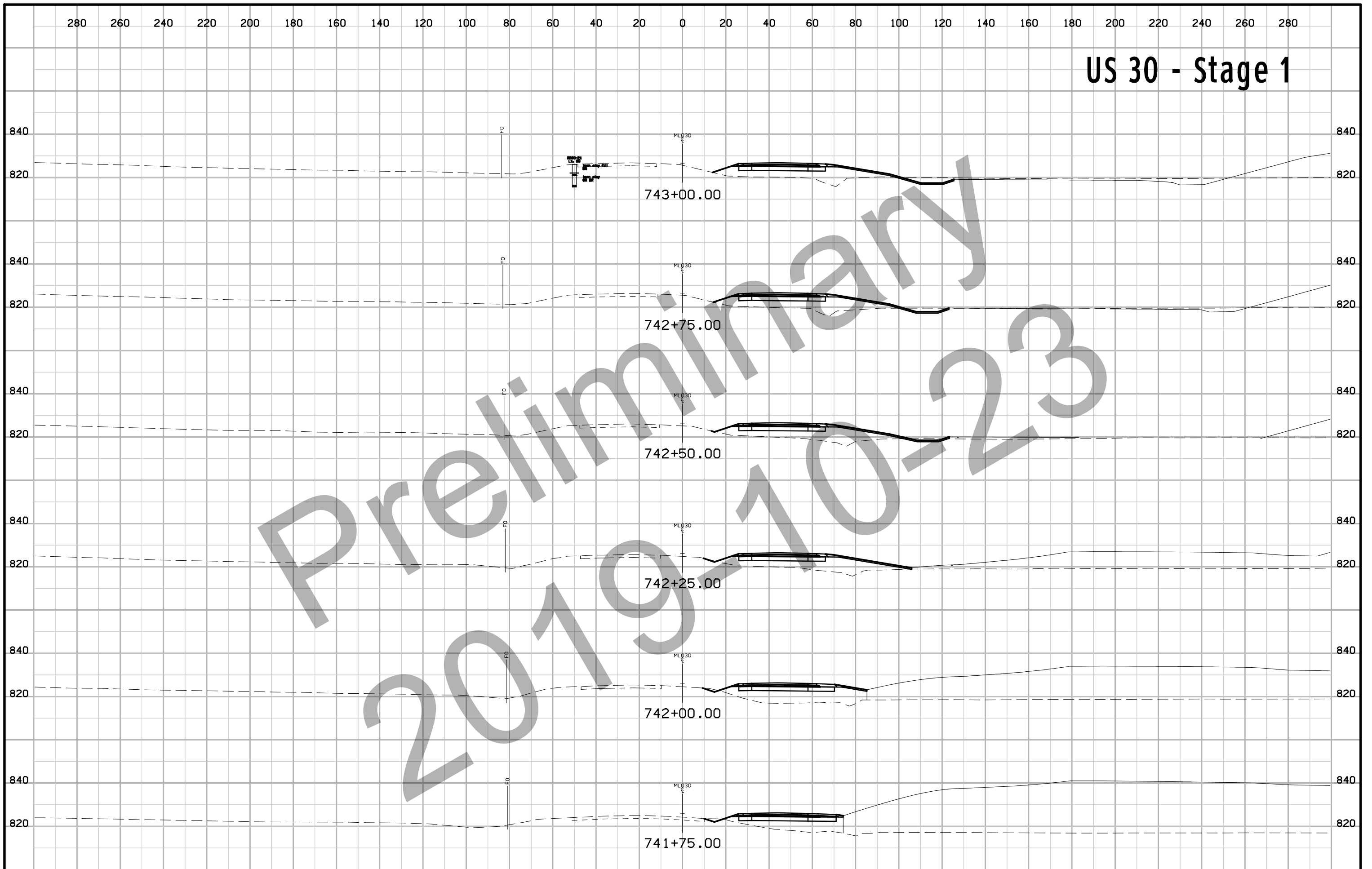
# US 30 - Stage 1



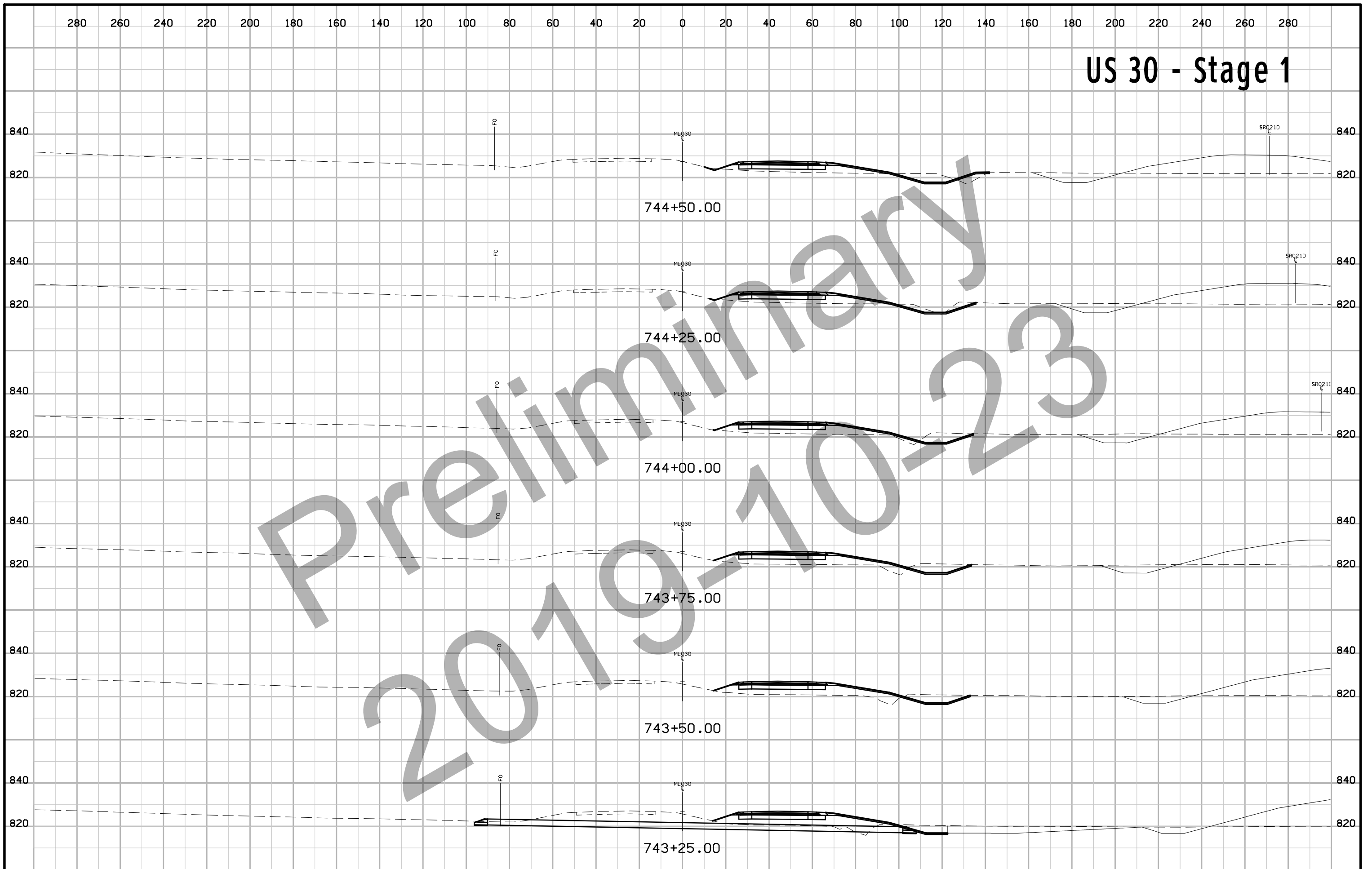
# US 30 - Stage 1



# US 30 - Stage 1

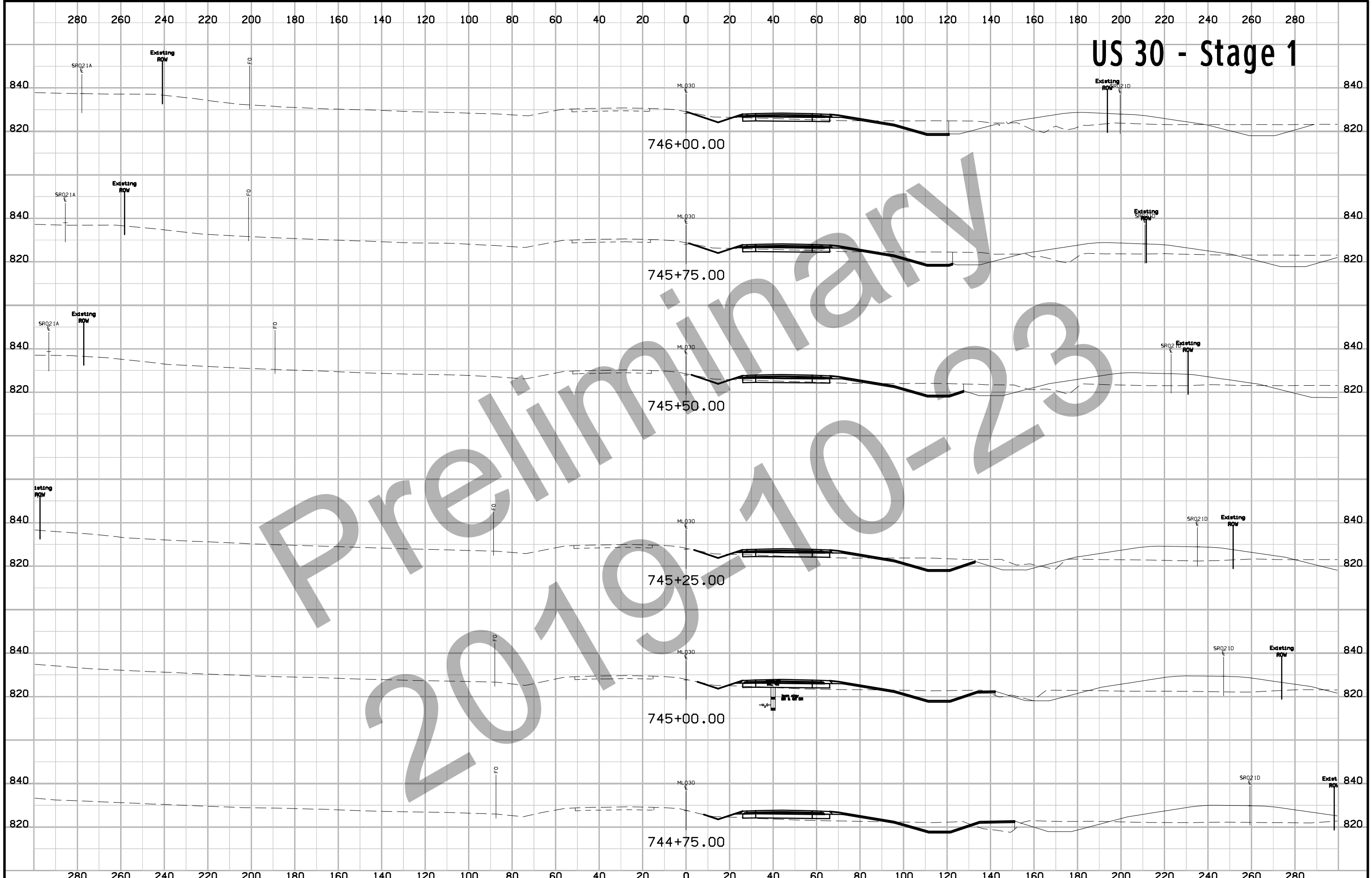


# US 30 - Stage 1



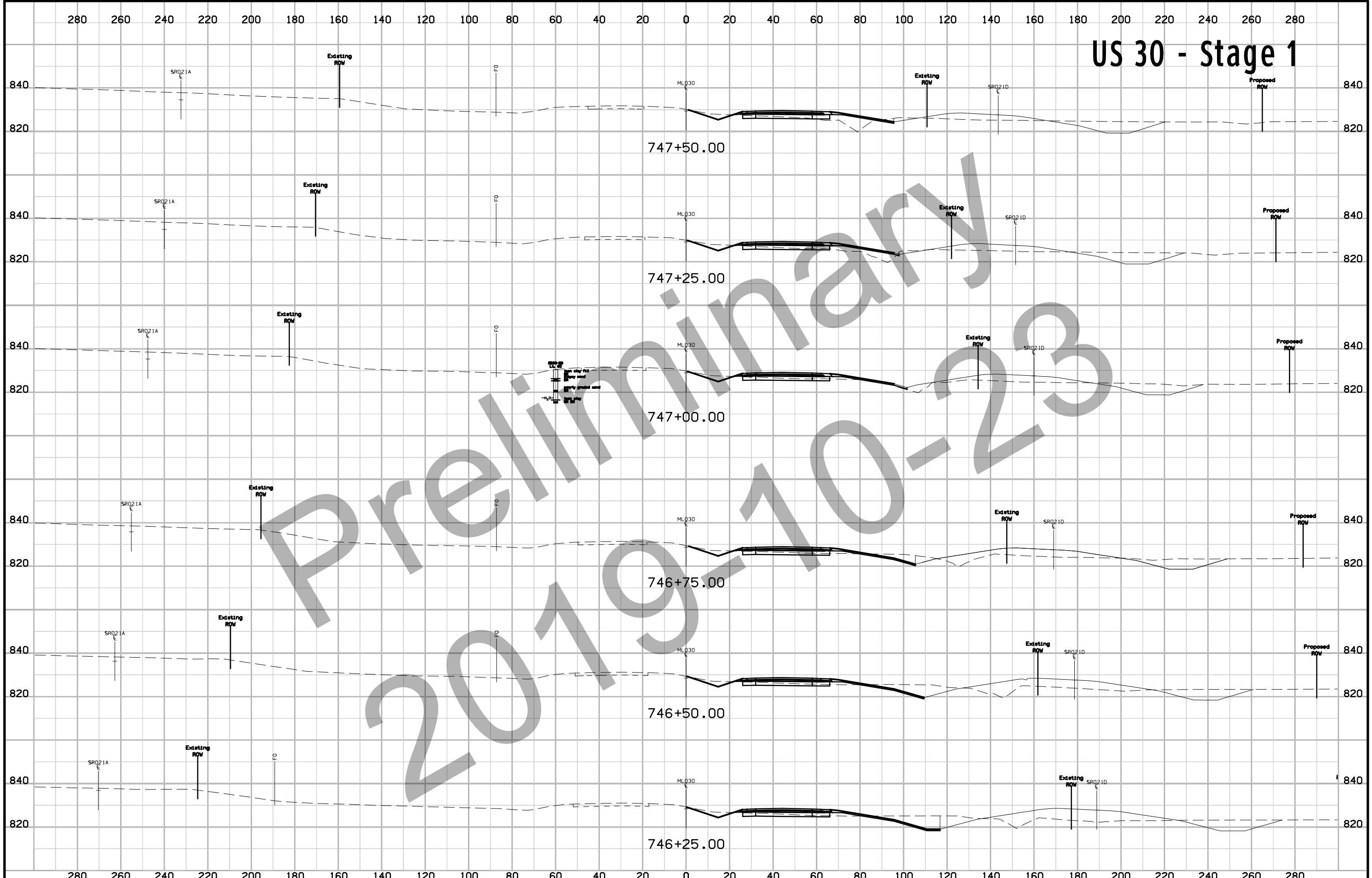
Preliminary  
2019-10-23

# US 30 - Stage 1

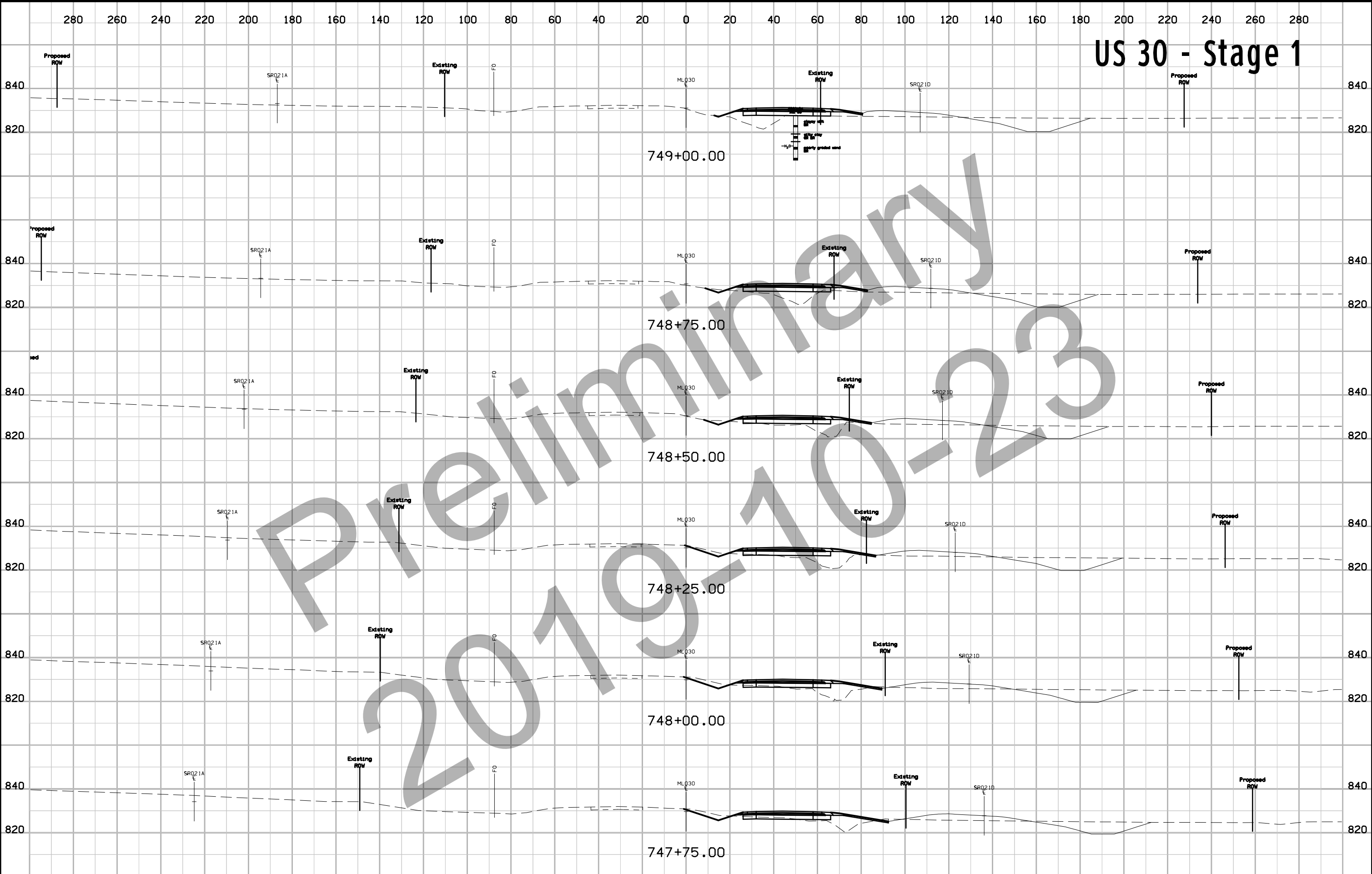




# US 30 - Stage 1

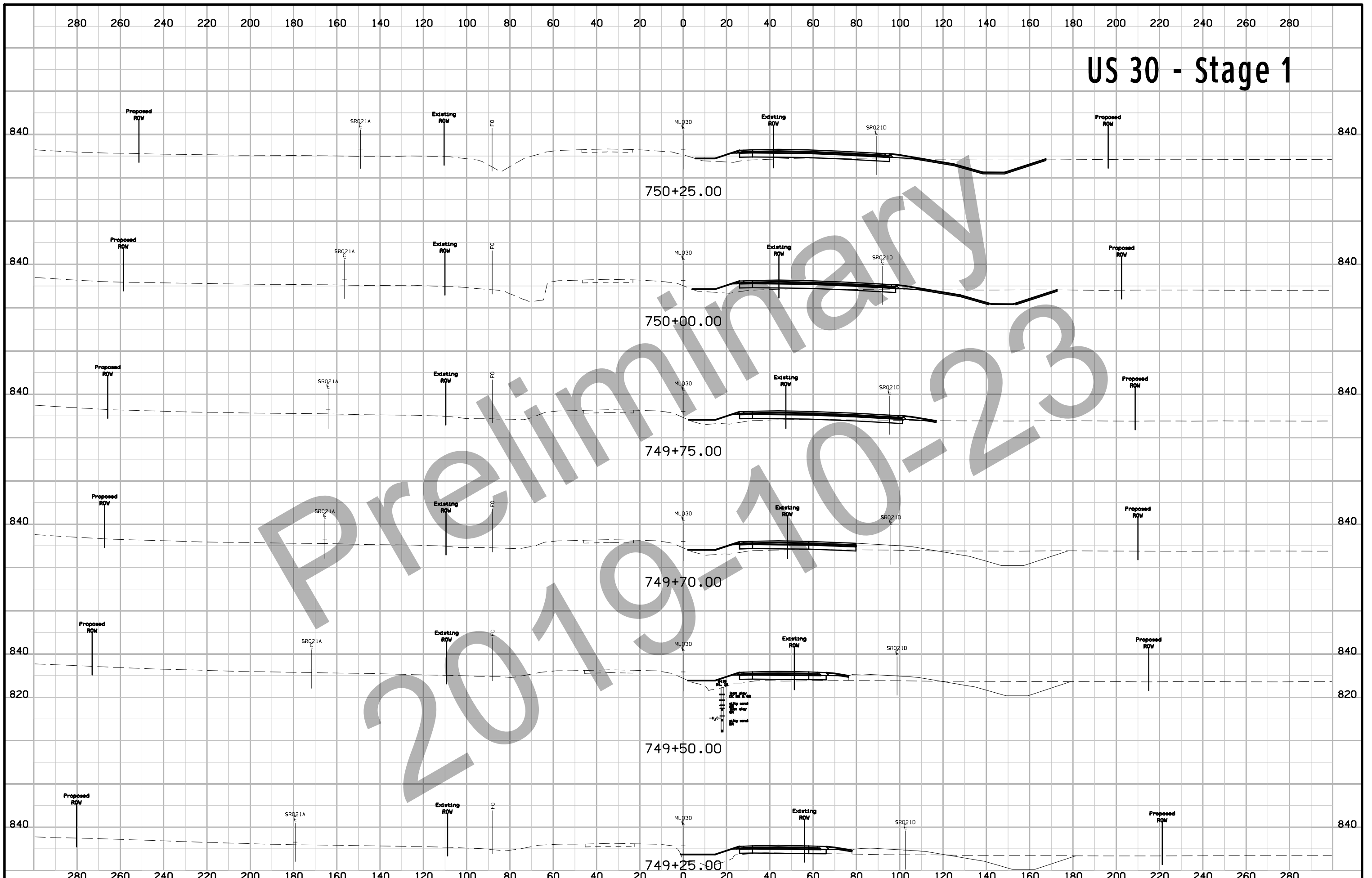


# US 30 - Stage 1

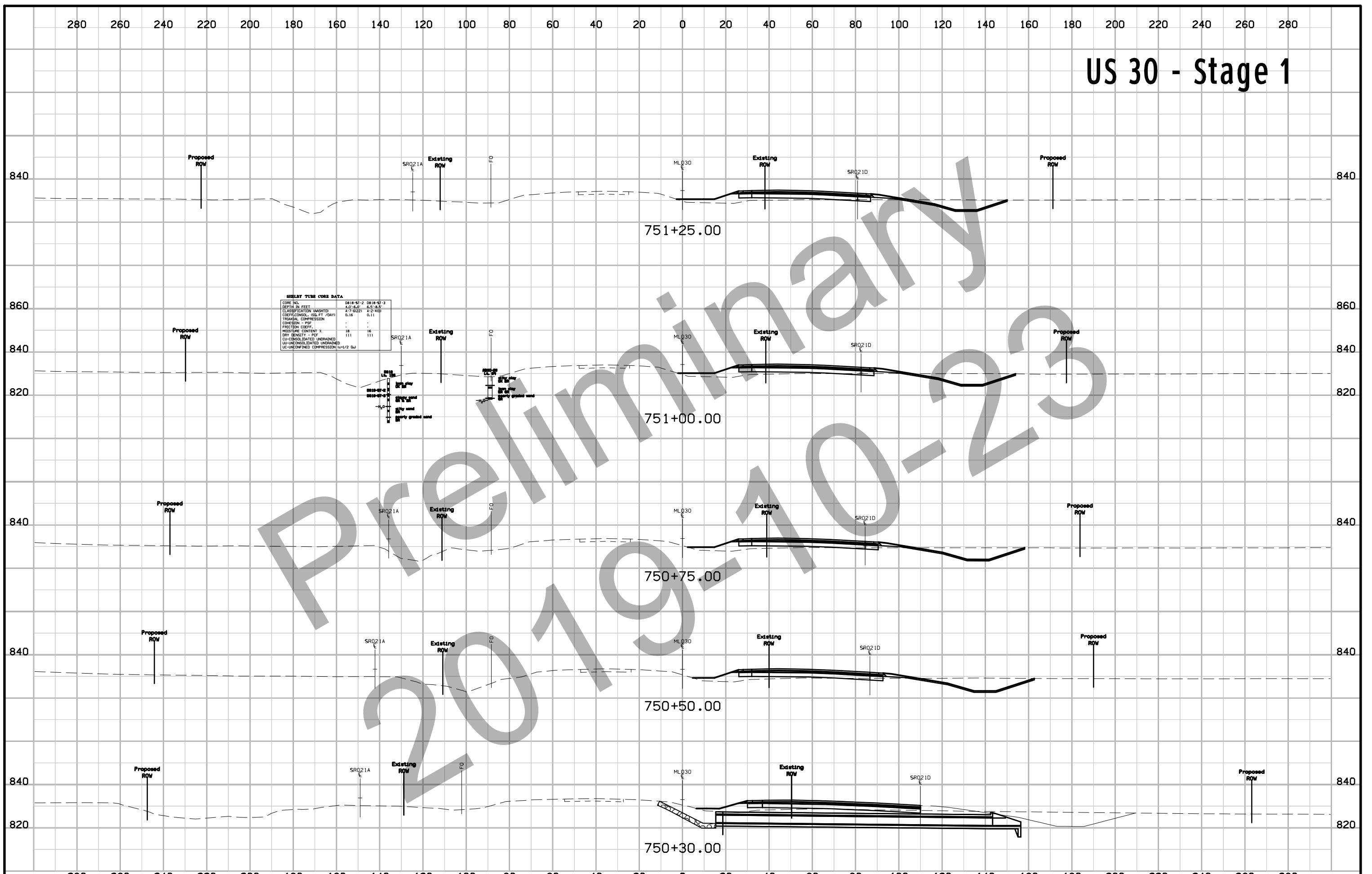


FILE NO.	ENGLISH	DESIGN TEAM	<b>Flattery\Bell</b>	BENTON COUNTY	PROJECT NUMBER	<b>NHS-030-6(87)--19-06</b>	SHEET NUMBER	<b>W.130</b>
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# US 30 - Stage 1

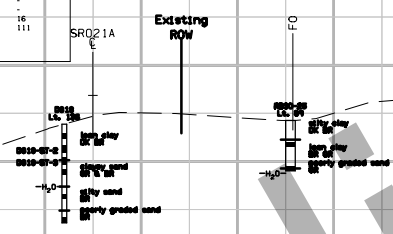


# US 30 - Stage 1

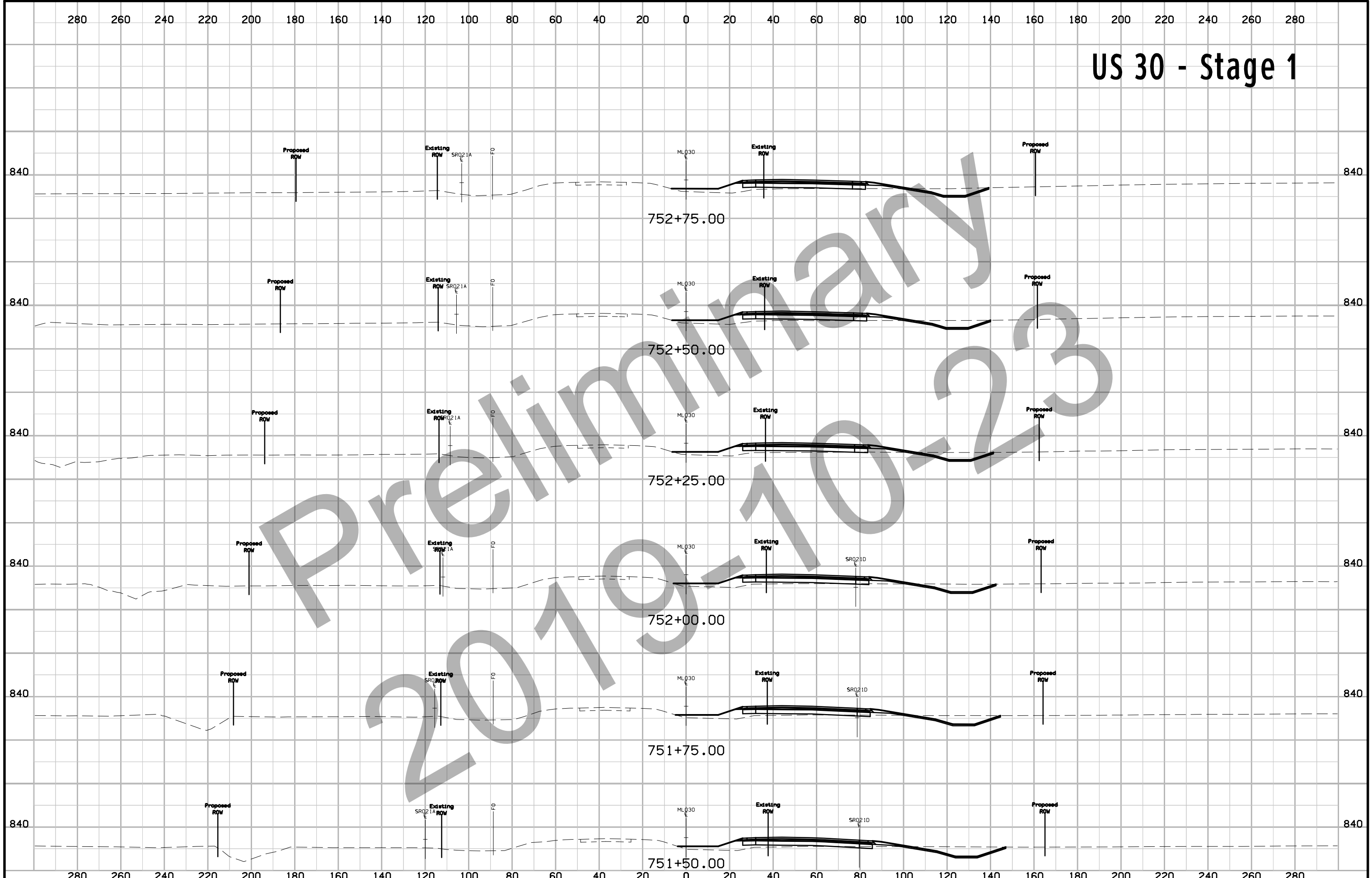


**SIBLBY TUBE CORE DATA**

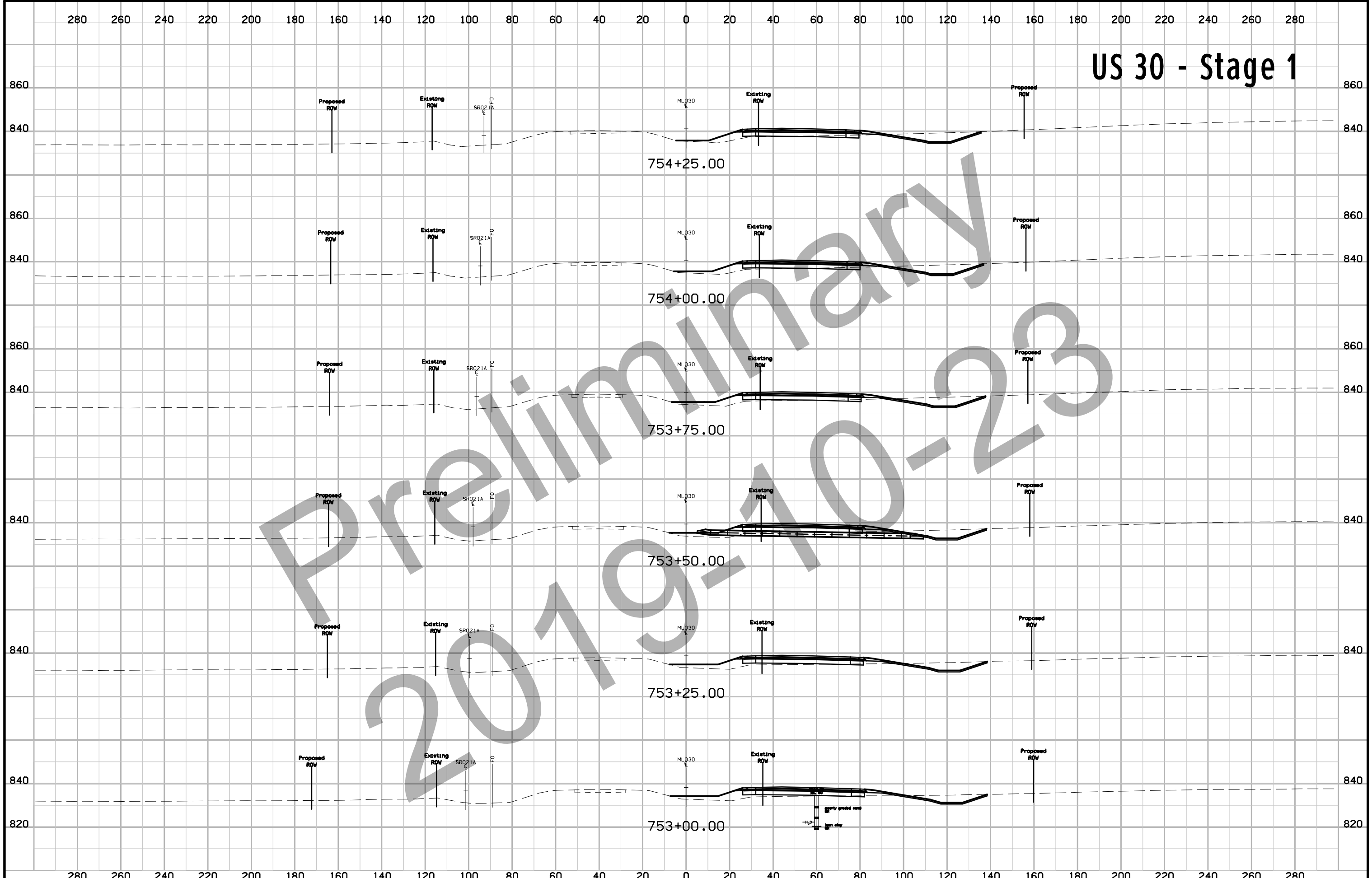
CORE NO.	D818-97-2	D818-97-3
DEPTH IN FEET	4.0-6.0	6.5-8.5
CLASSIFICATION (ASTM)	A-7-6(2)	A-7-6(2)
COEFFICIENT OF CONSOLIDATION (cm <sup>2</sup> /day)	0.16	0.11
TRIALS	COMPRESSION	
COHESION - PSF	-	-
FRICTION COEFF.	-	-
MOISTURE CONTENT %	18	16
DRY DENSITY - PCF	111	111
CU-CONSOLIDATED (UNDRAINED)		
UC-UNCONSOLIDATED (UNDRAINED)		
UC-UNCONSOLIDATED (COMPRESSION) (e=1/2 Du)		



# US 30 - Stage 1

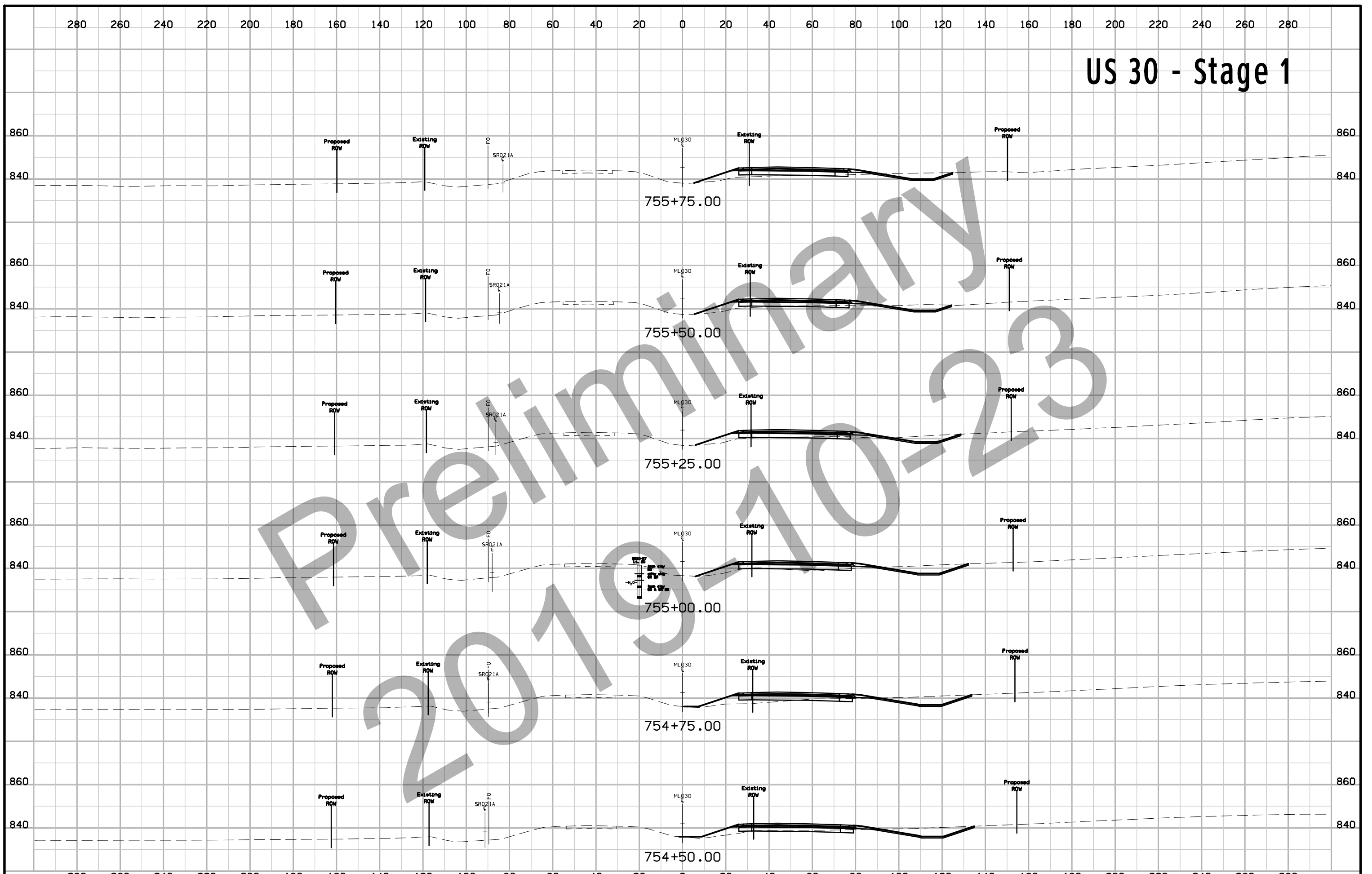


# US 30 - Stage 1

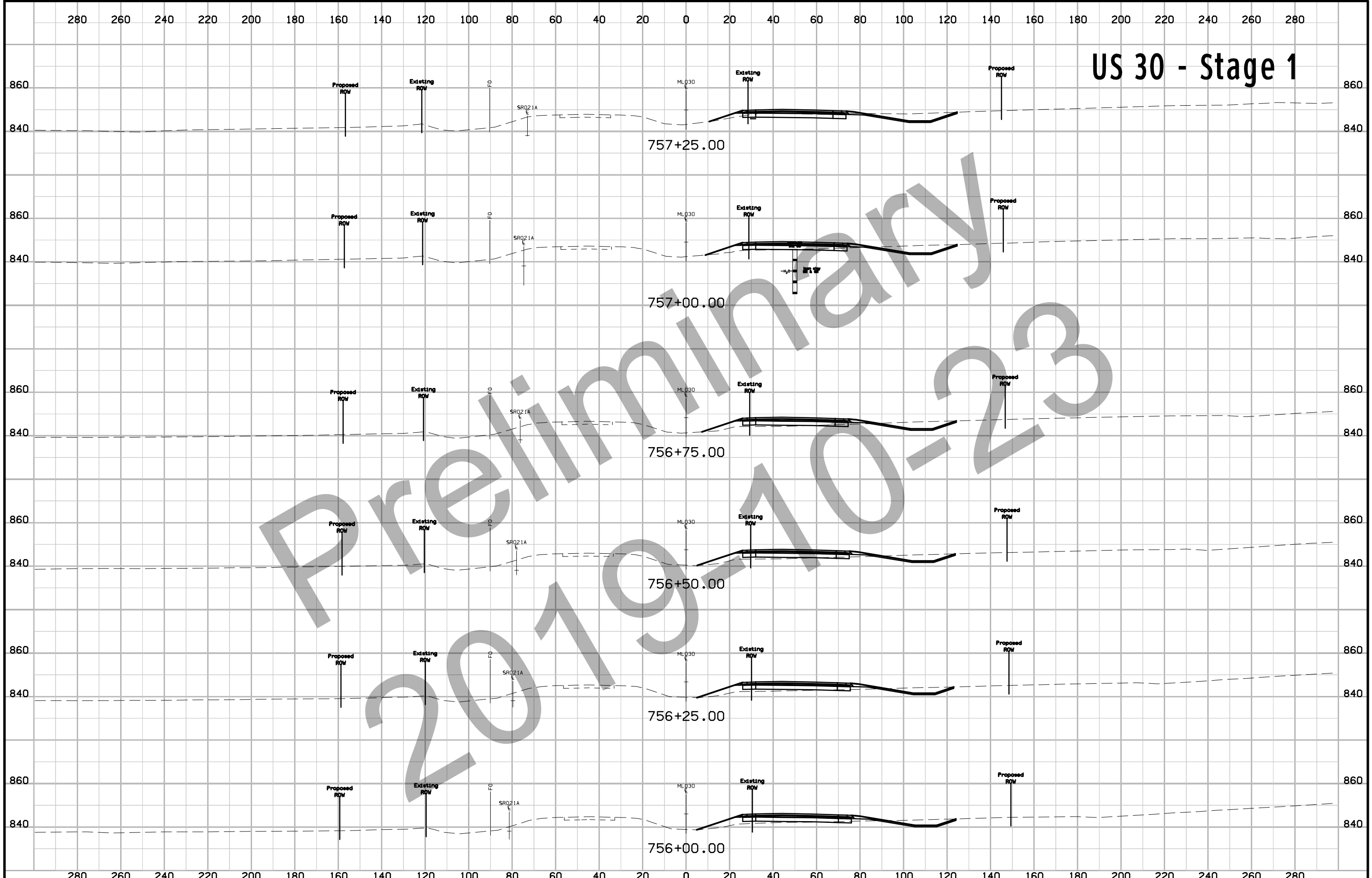




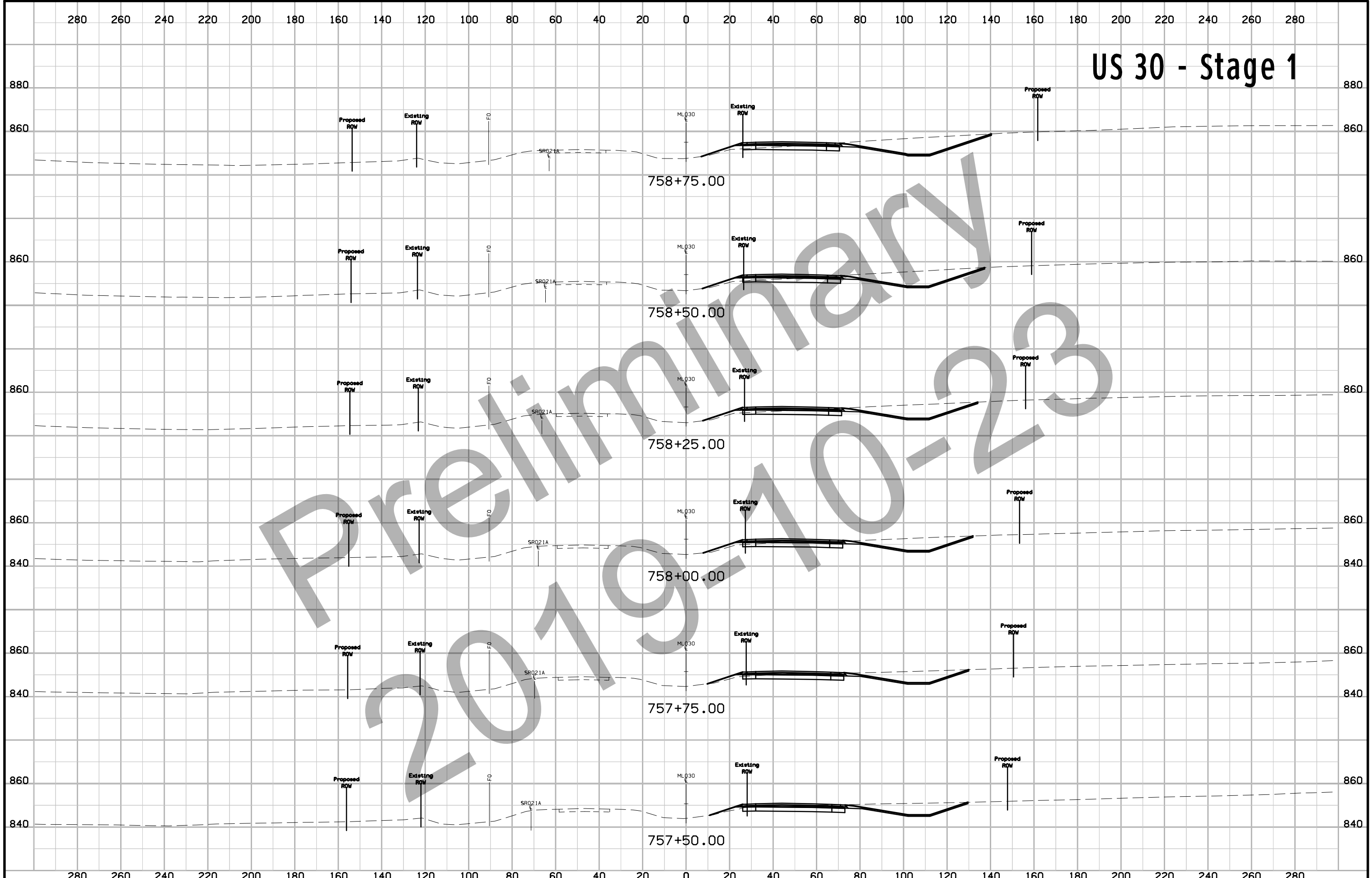
# US 30 - Stage 1



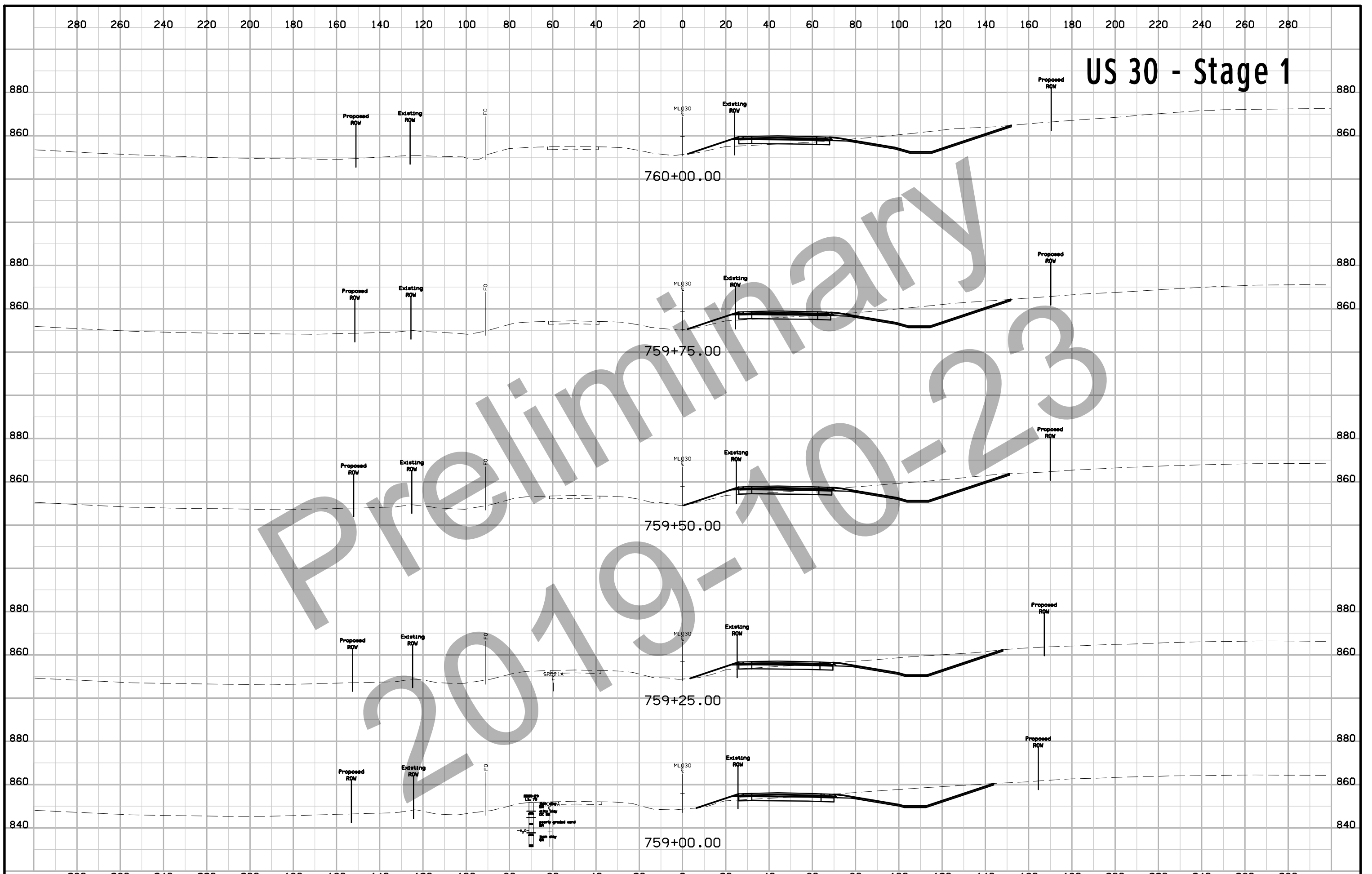
# US 30 - Stage 1



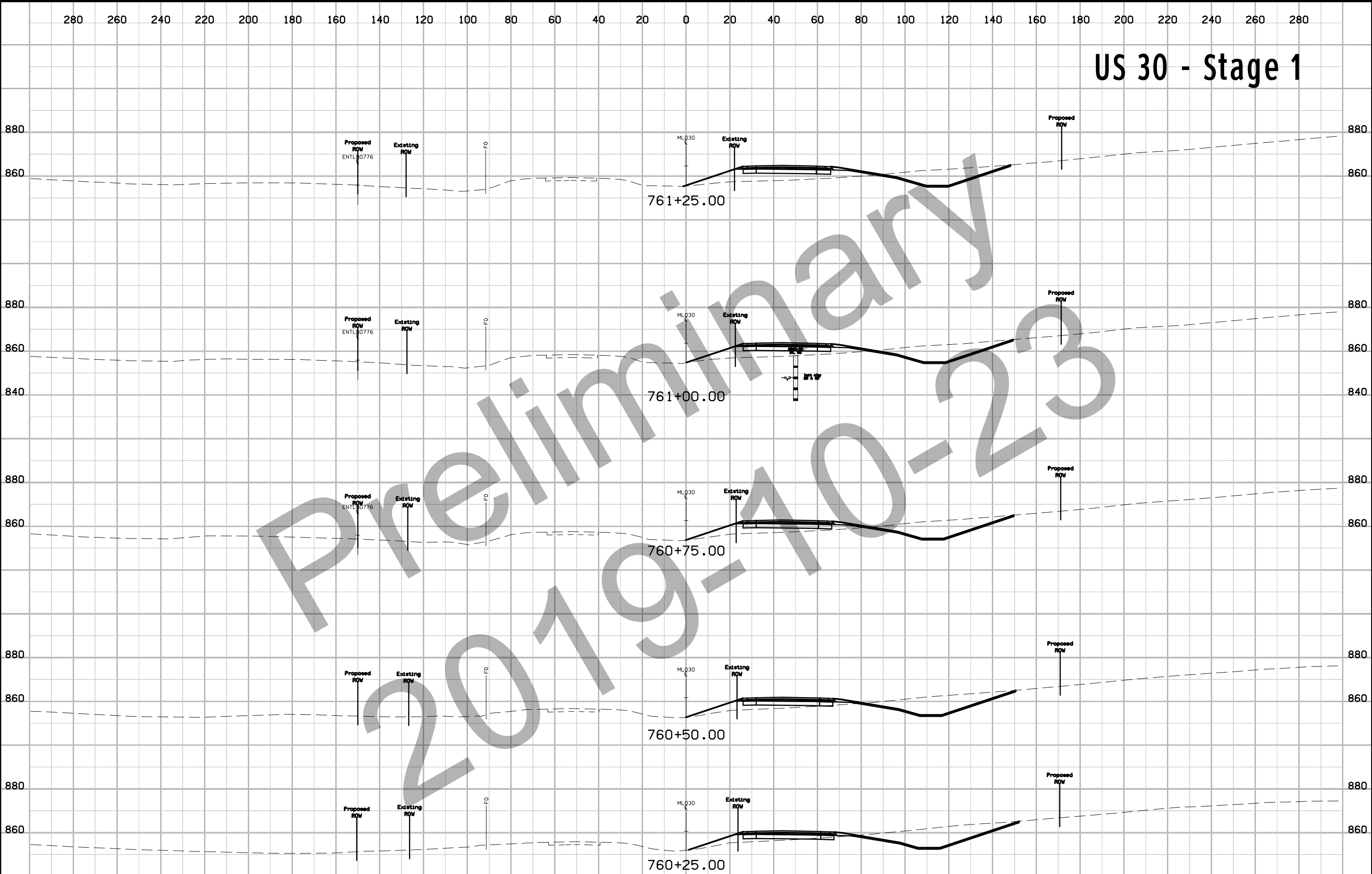
# US 30 - Stage 1



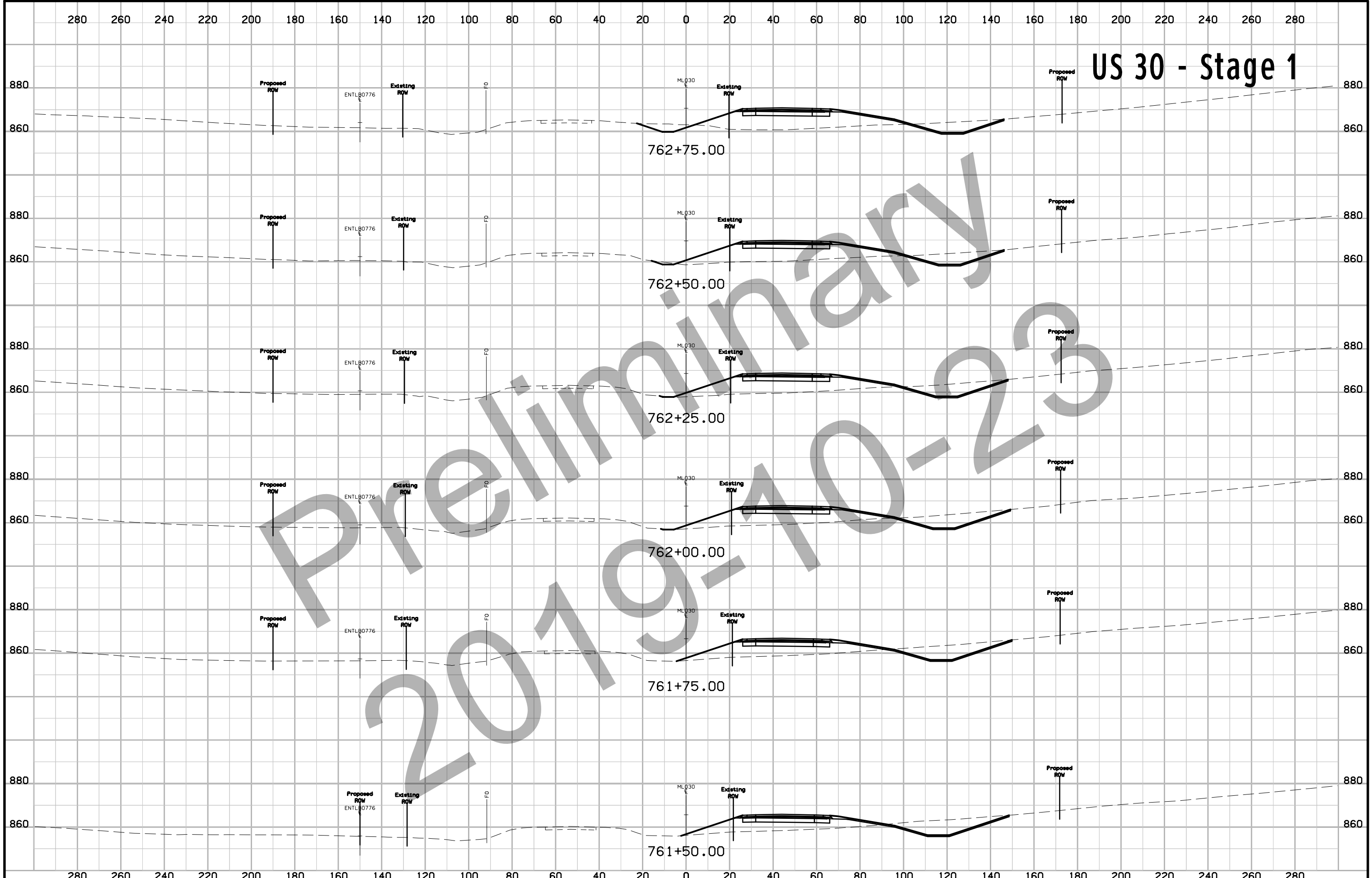
# US 30 - Stage 1



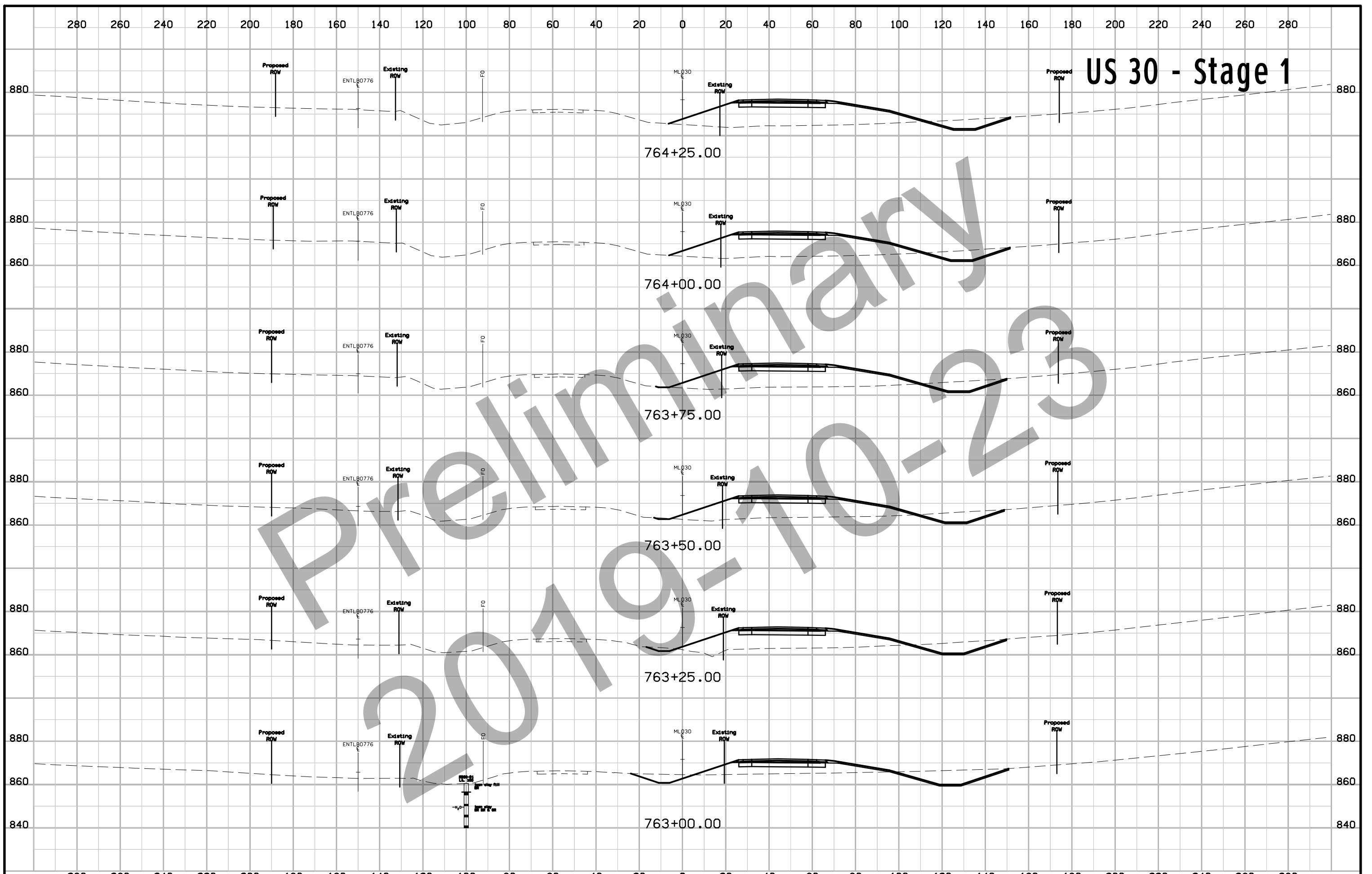
# US 30 - Stage 1



# US 30 - Stage 1

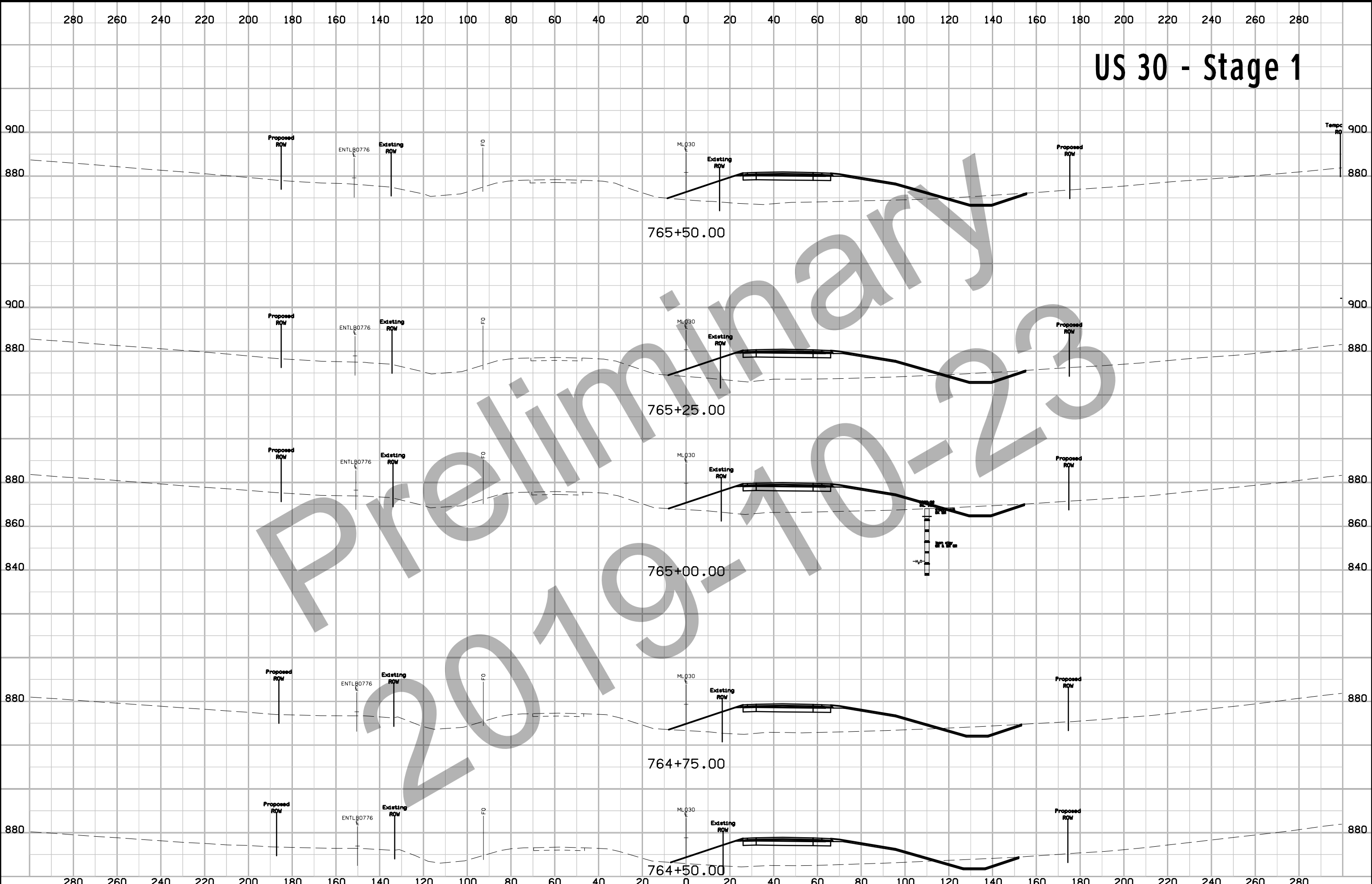


# US 30 - Stage 1

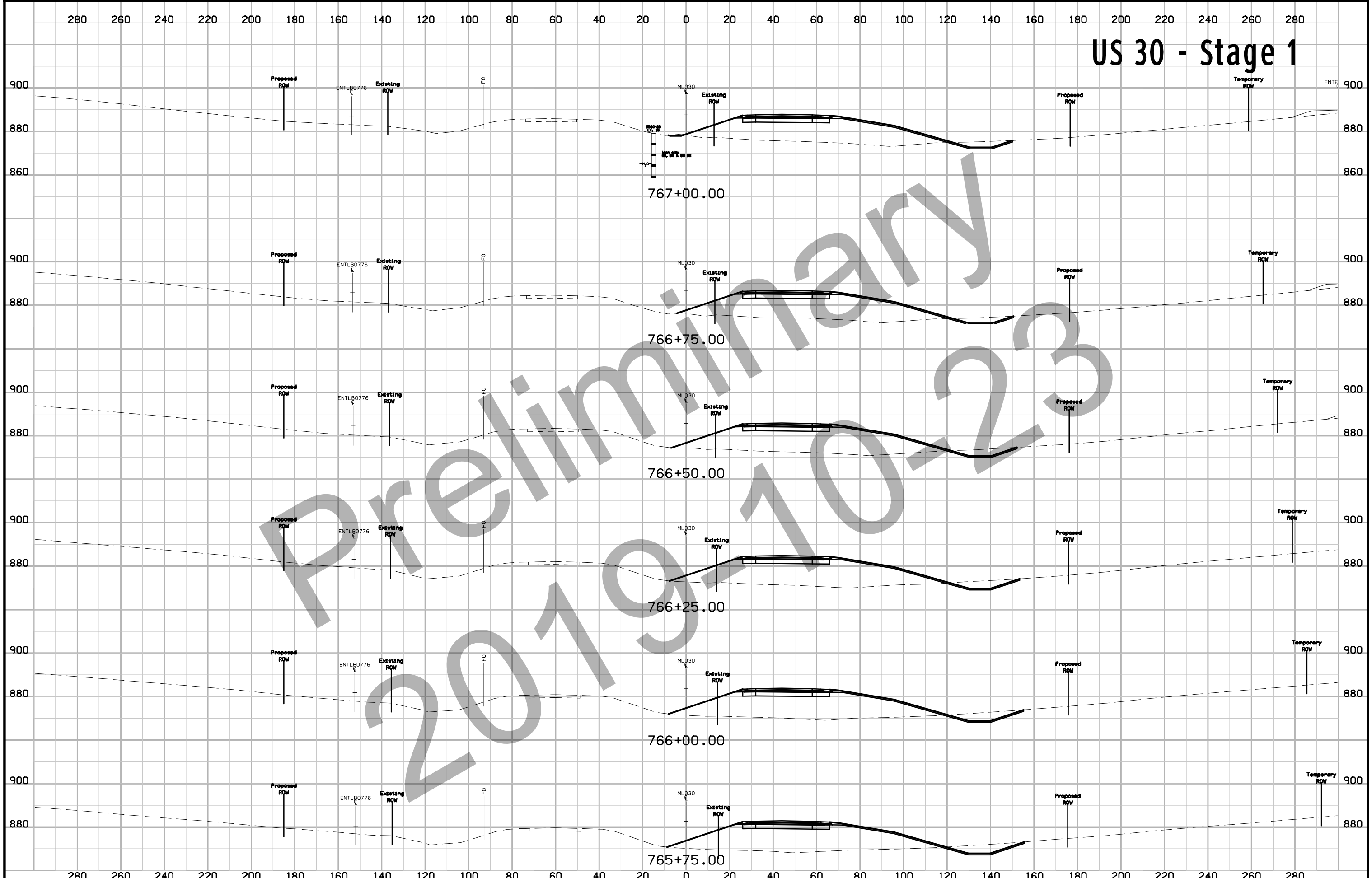




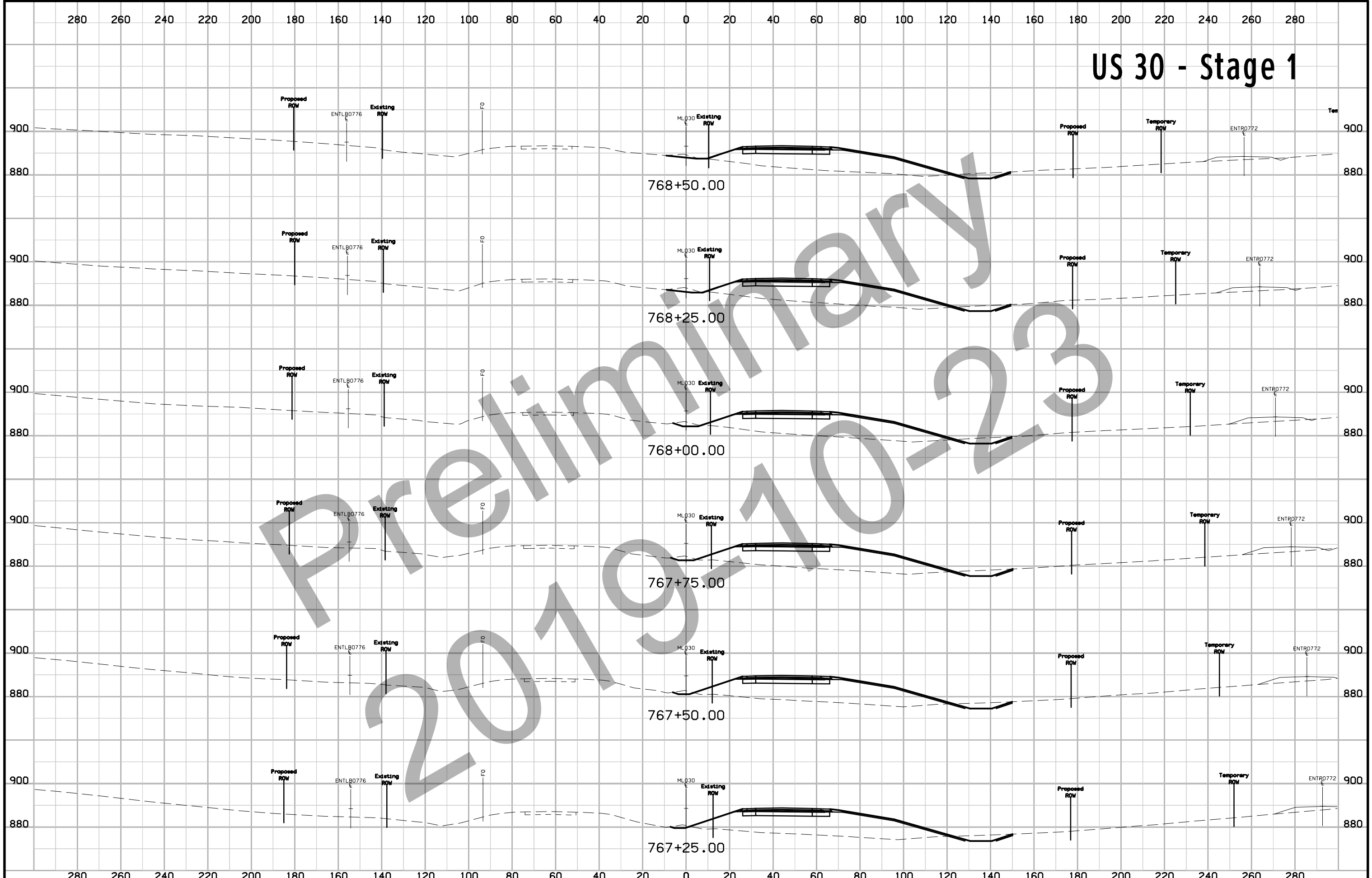
# US 30 - Stage 1



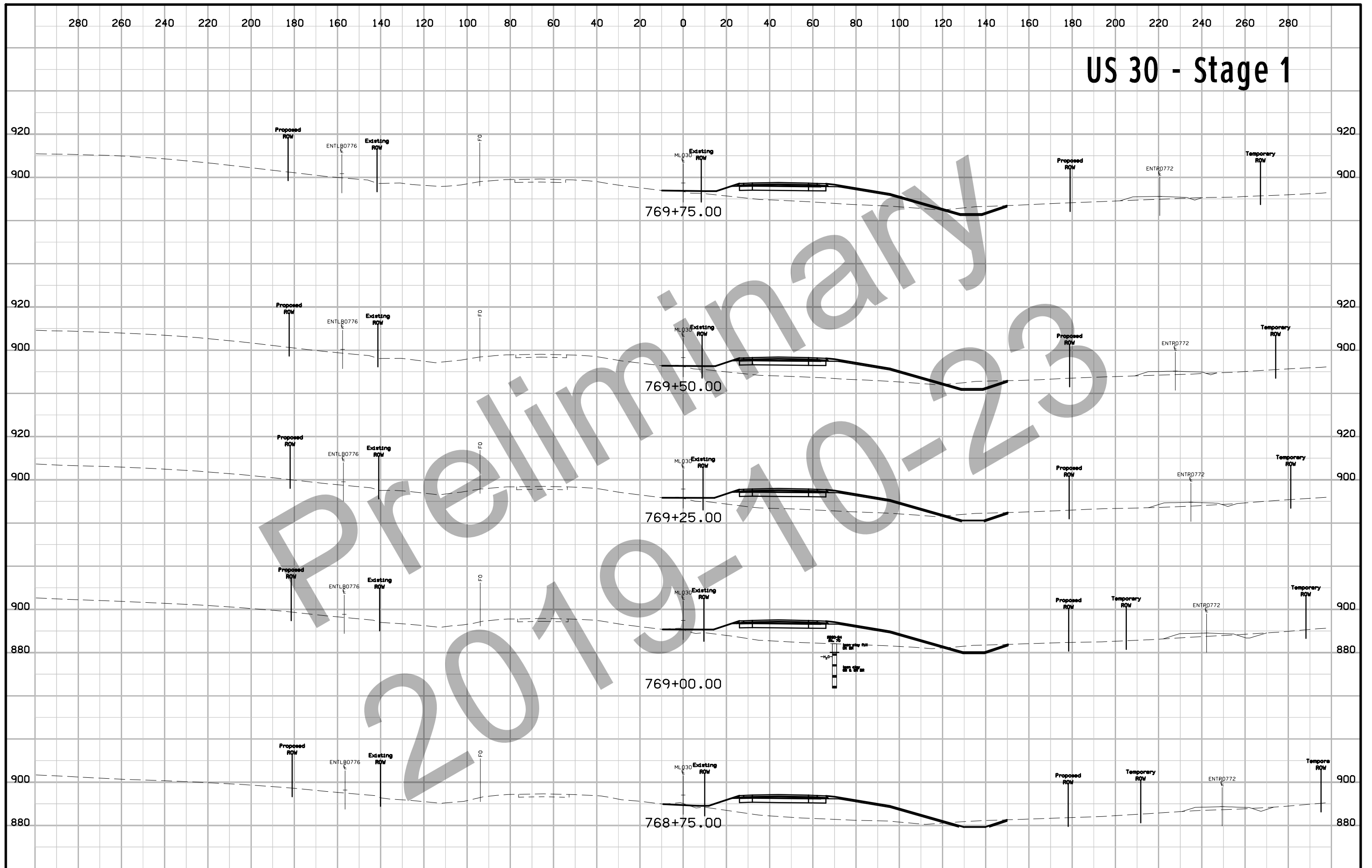
# US 30 - Stage 1



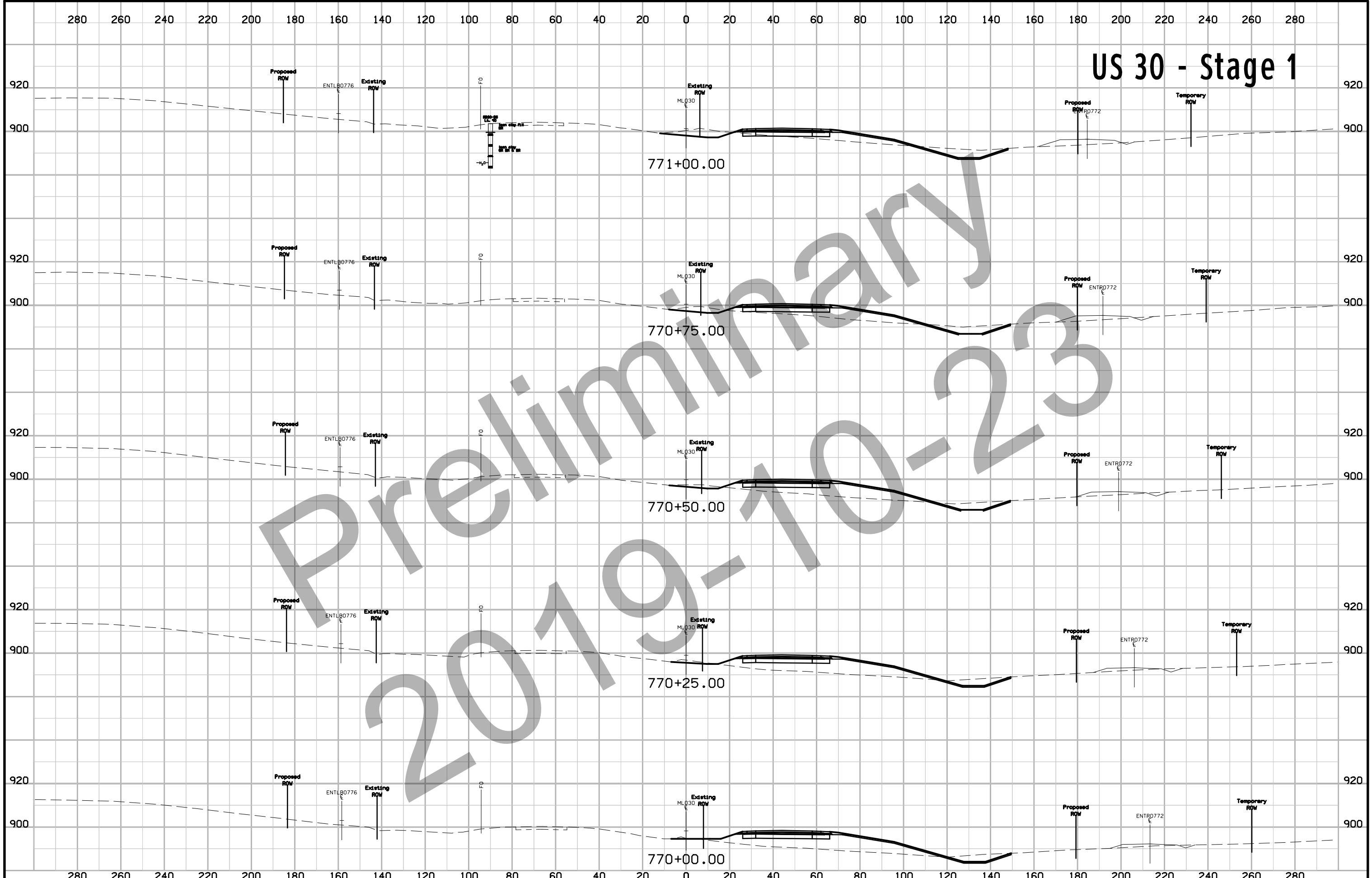
# US 30 - Stage 1



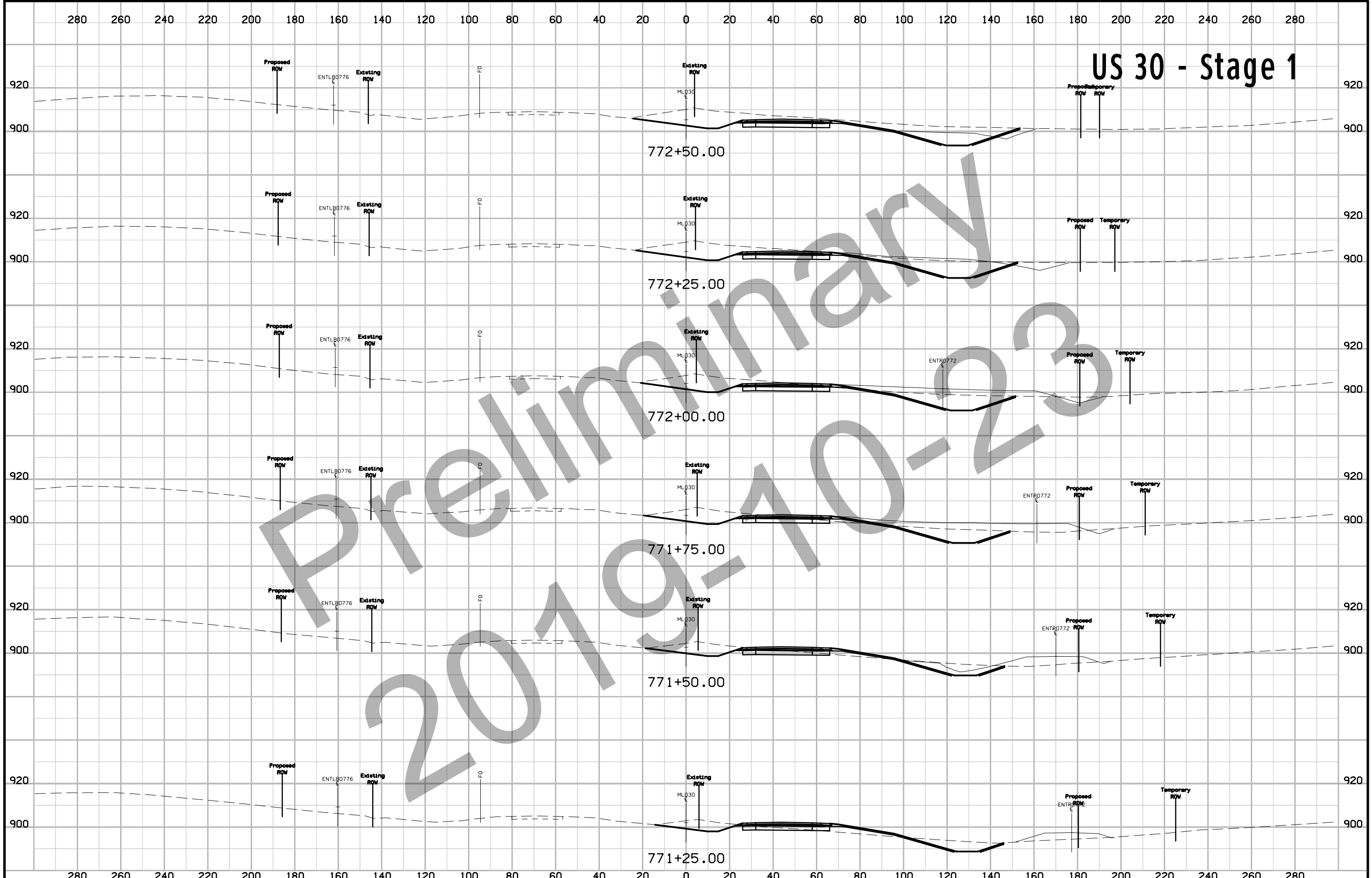
# US 30 - Stage 1



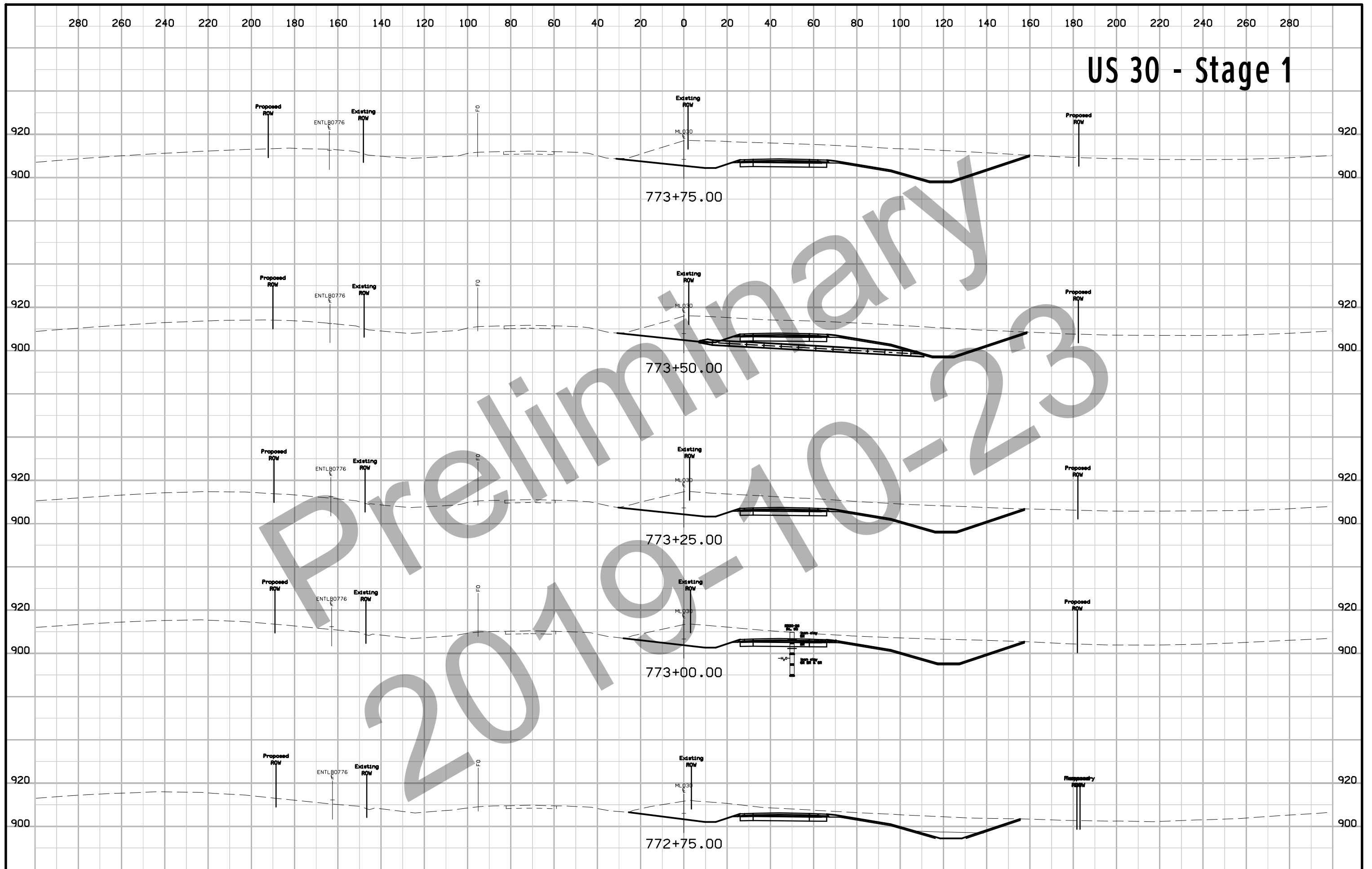
# US 30 - Stage 1



# US 30 - Stage 1



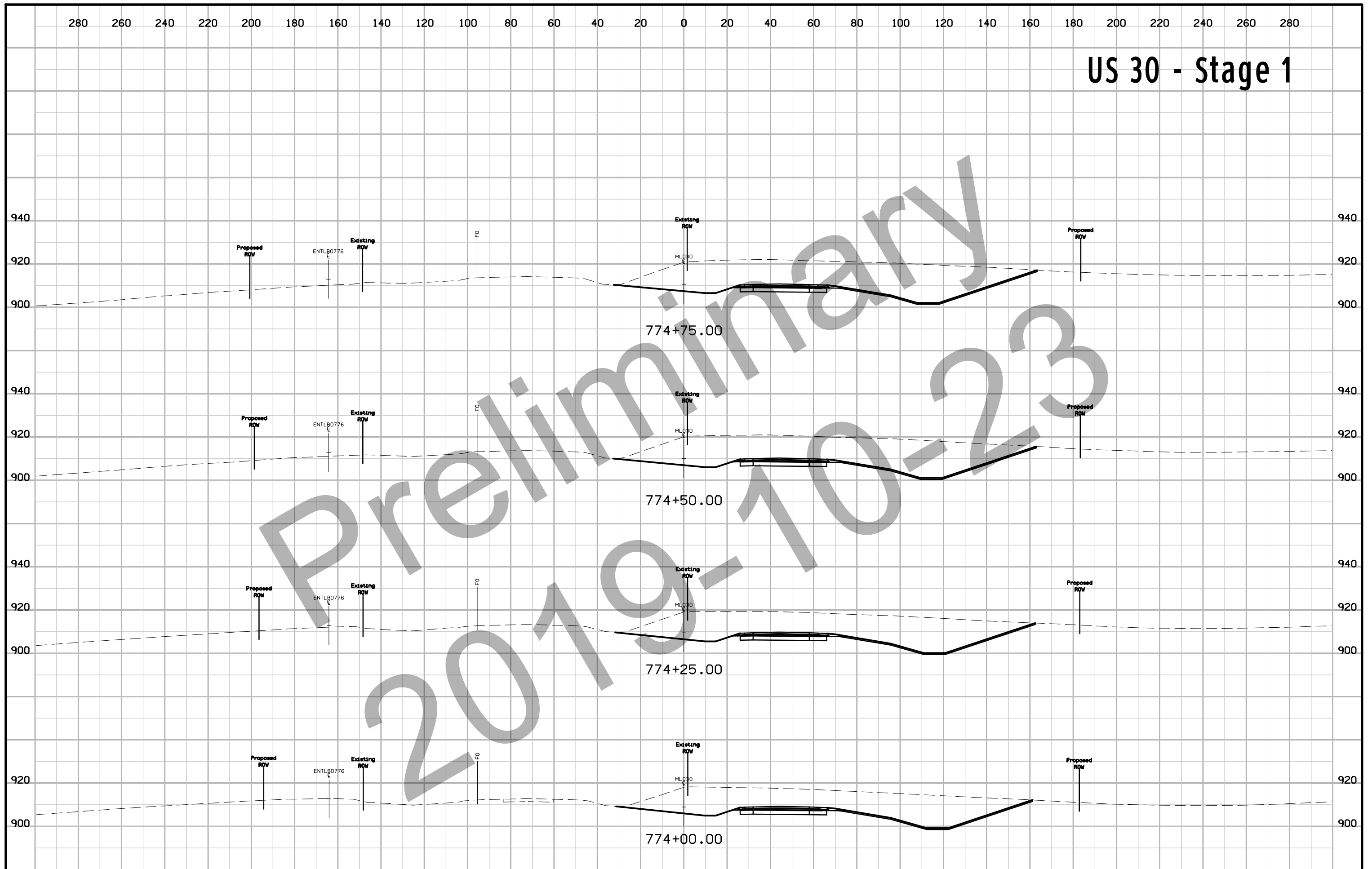
# US 30 - Stage 1



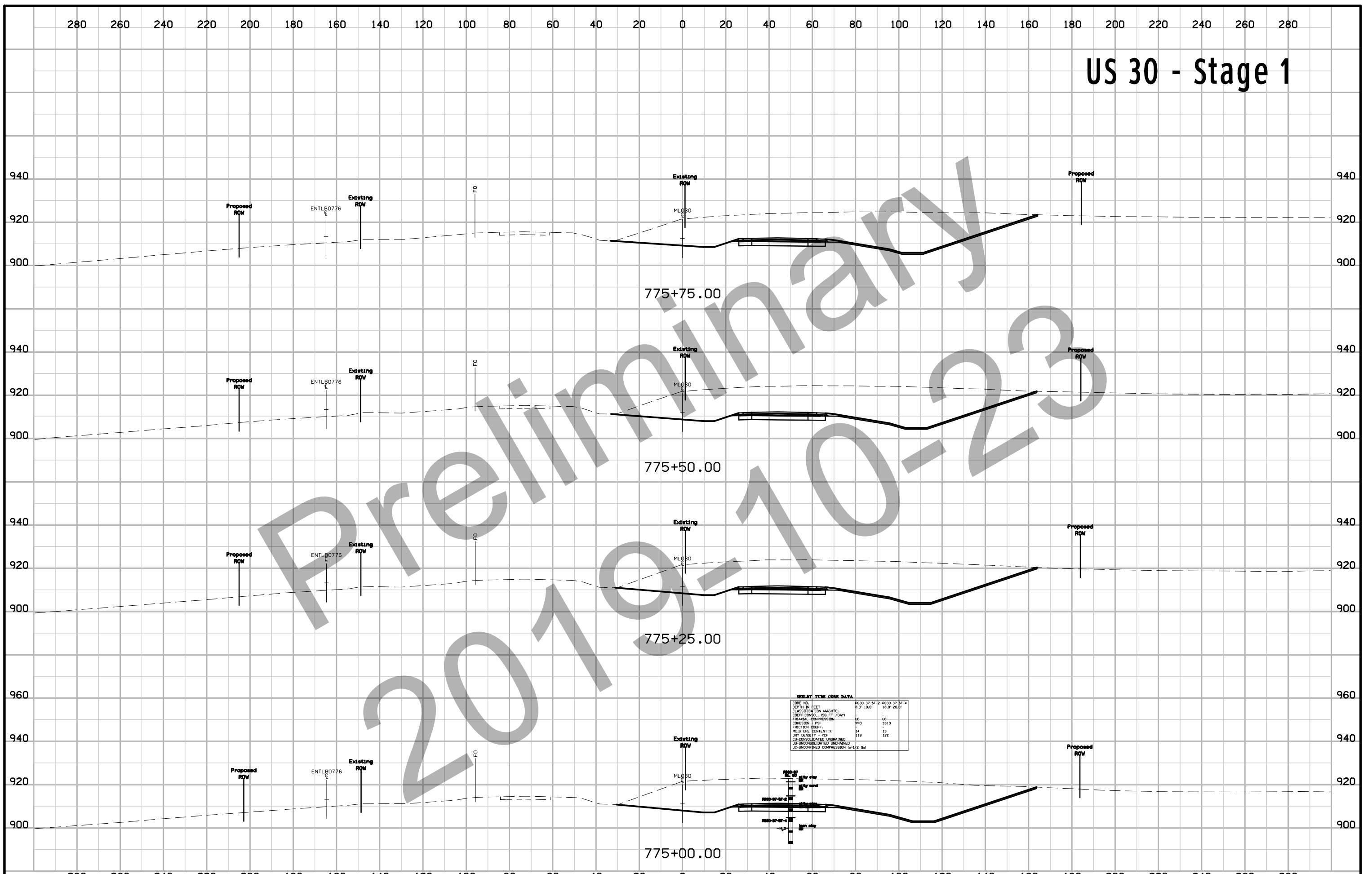
Preliminary  
2019-10-23



# US 30 - Stage 1



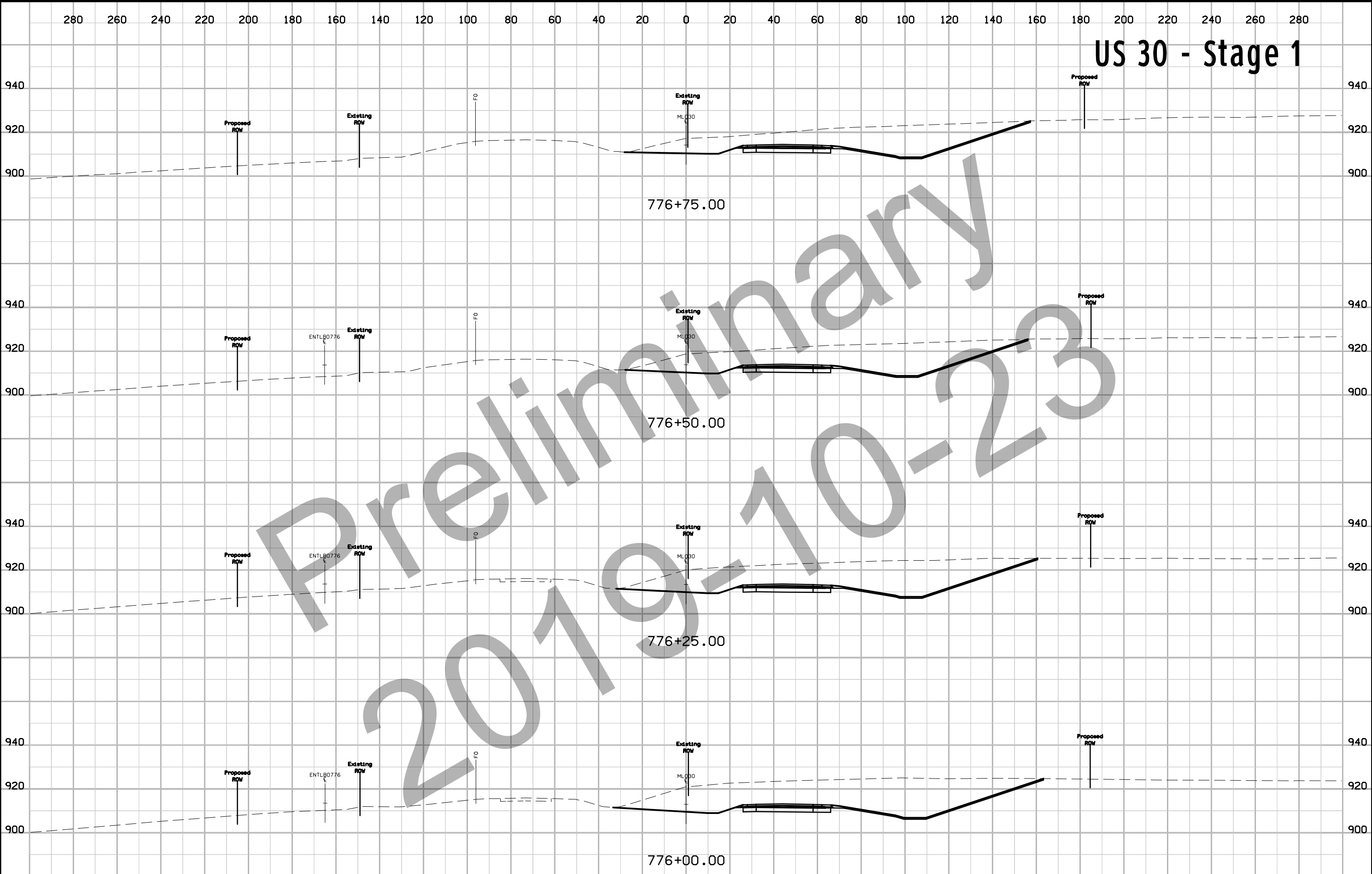
# US 30 - Stage 1



**SHELBY TUBE CORE DATA**

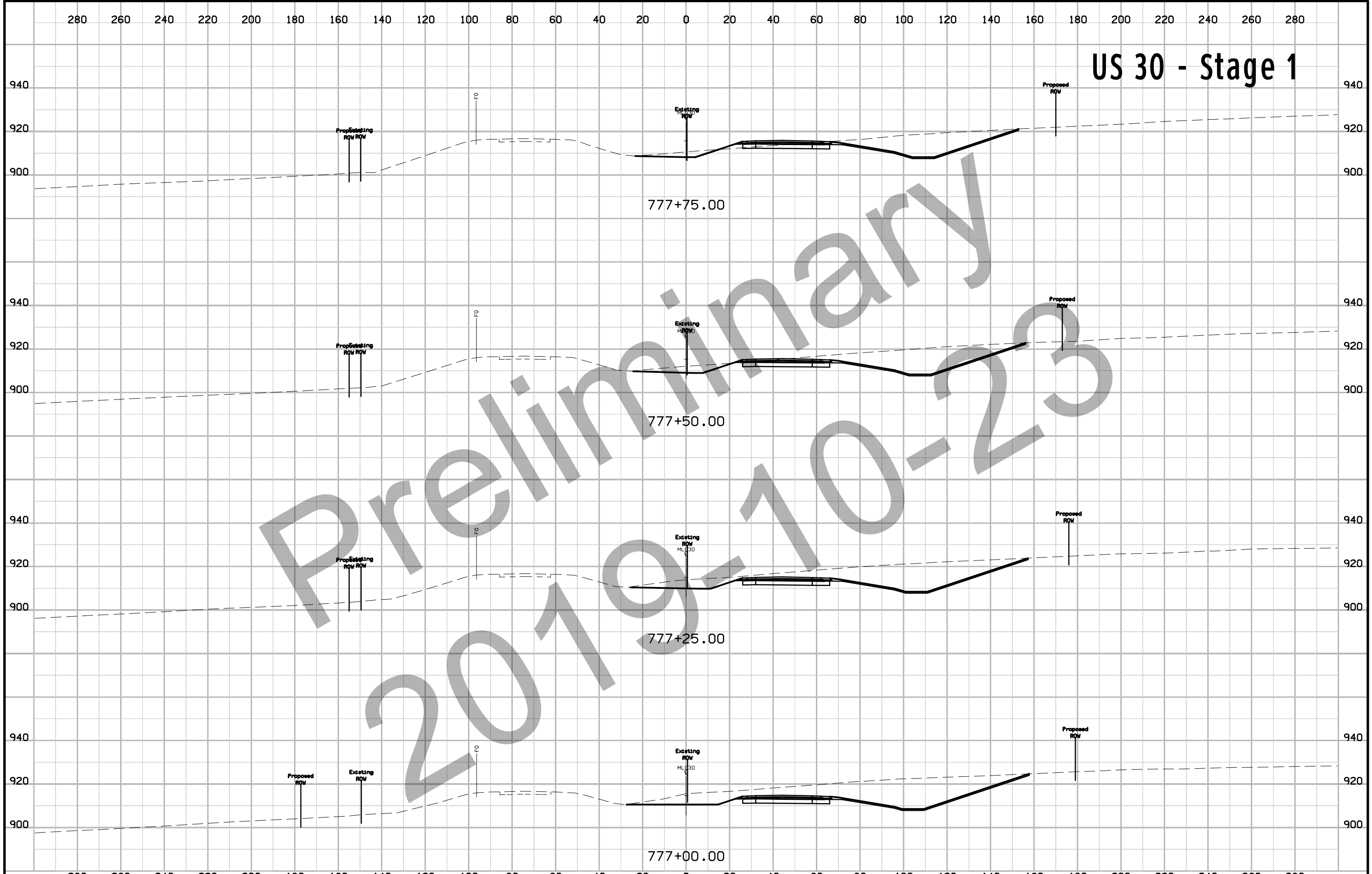
CORE NO.	DEPTH IN FEET	CLASSIFICATION (ASHSTO)
#30-37-51-2	8.0'-10.0'	UC
#30-37-51-4	18.0'-20.0'	UC
COEFFICIENT OF PERMEABILITY (cm/sec)		
COEFFICIENT OF PERMEABILITY (cm/sec)	1.0	1.0
FRICTION COEFFICIENT		
FRICTION COEFFICIENT	0.90	0.3310
MOISTURE CONTENT (%)		
MOISTURE CONTENT (%)	14	13
LIQUID LIMIT (LL) (%)		
LIQUID LIMIT (LL) (%)	118	122
PLASTICITY INDEX (PI)		
PLASTICITY INDEX (PI)	104	109
UNCONSOLIDATED UNDRAINED COMPRESSION (psi)		
UNCONSOLIDATED UNDRAINED COMPRESSION (psi)	1012	1012

# US 30 - Stage 1

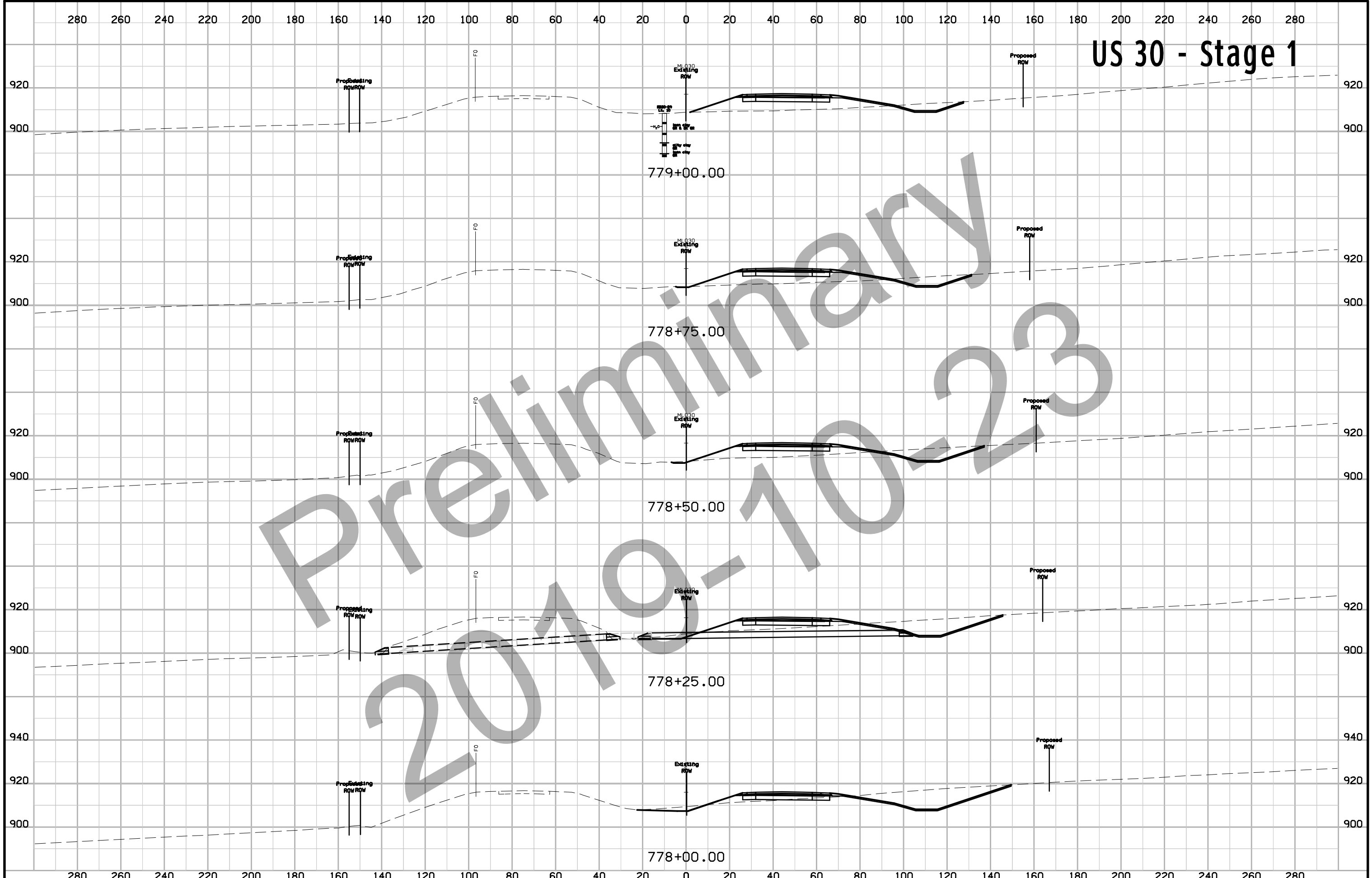


Preliminary  
2019-10-23

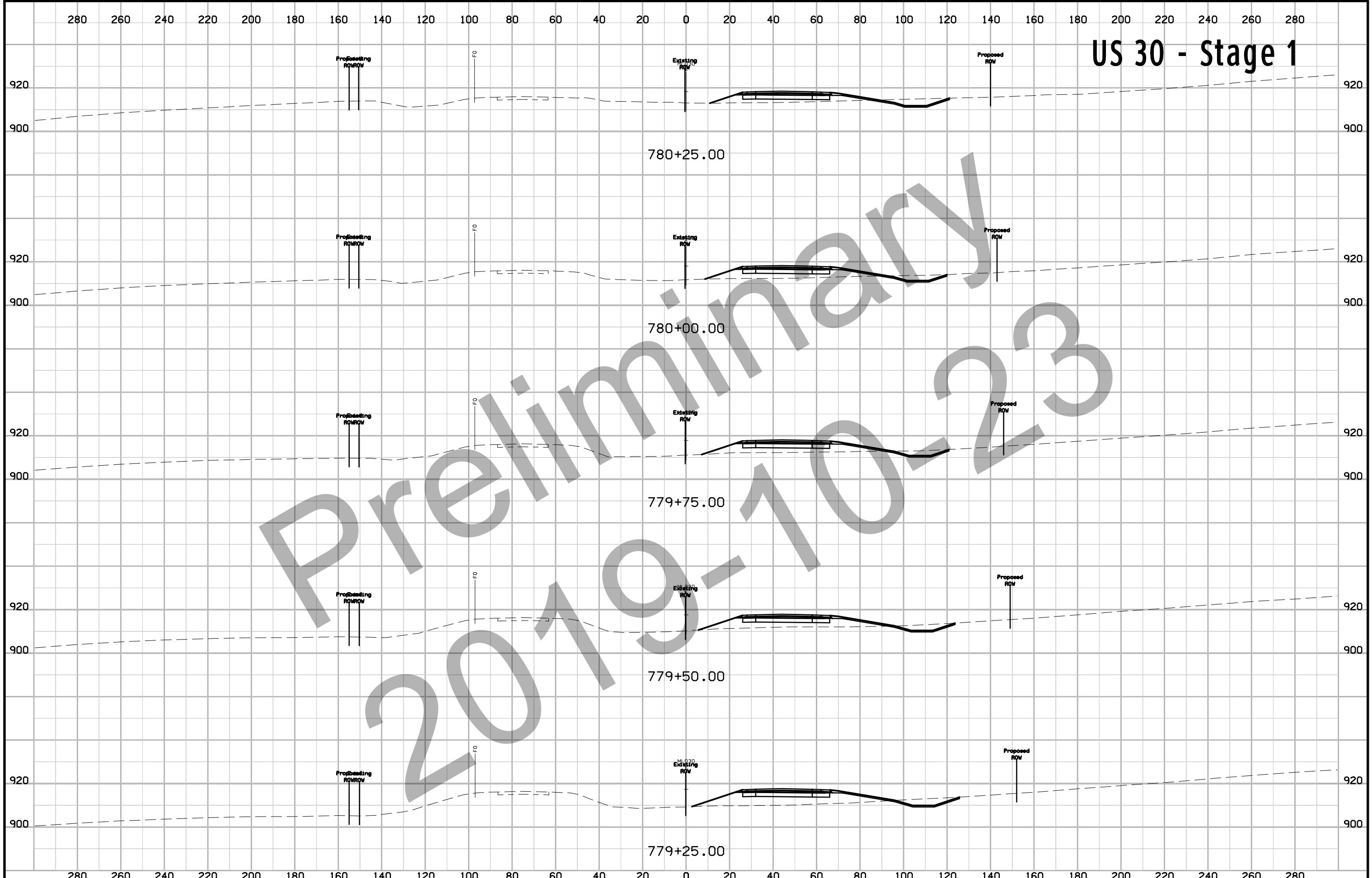
# US 30 - Stage 1



# US 30 - Stage 1

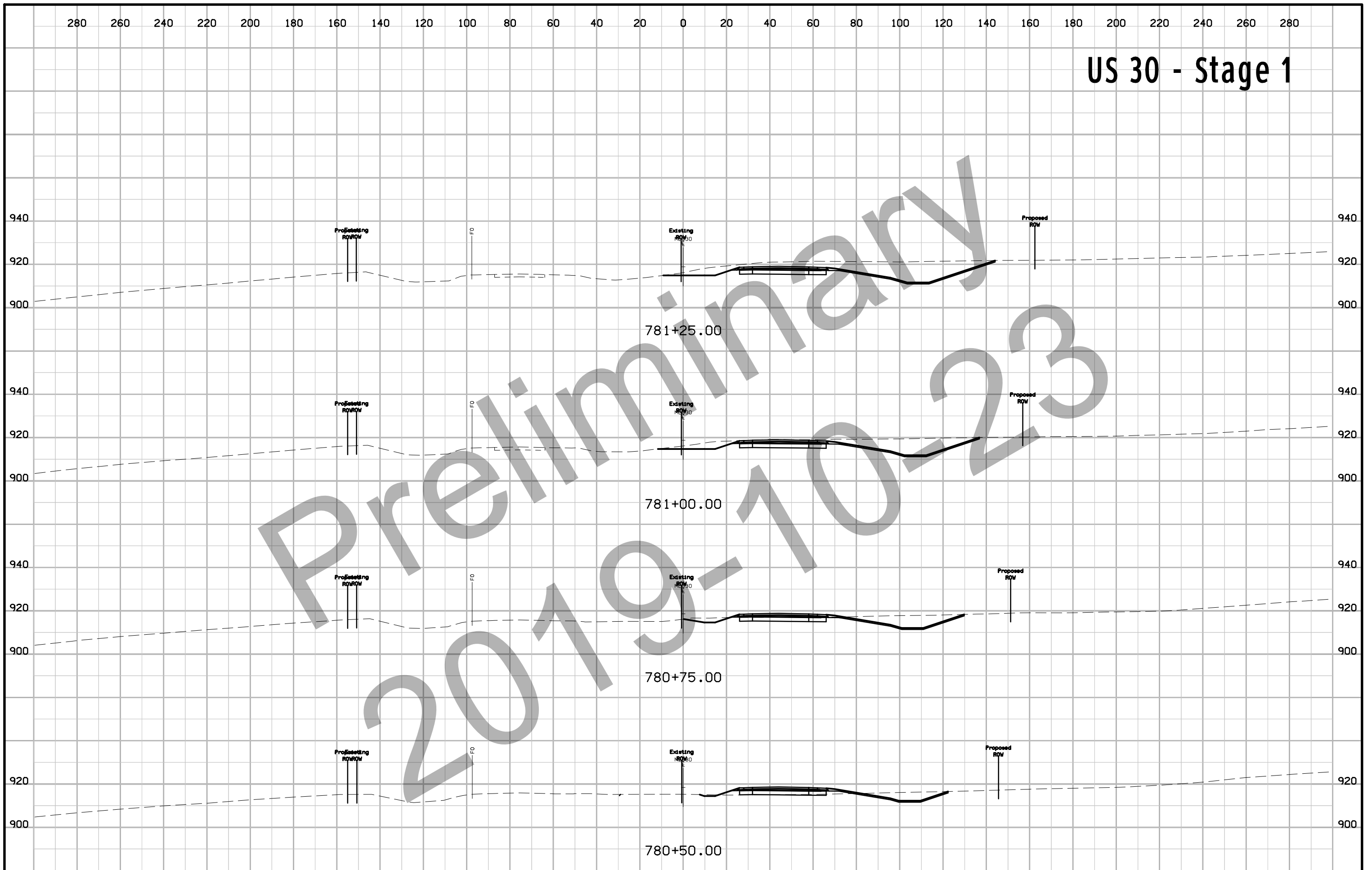


# US 30 - Stage 1



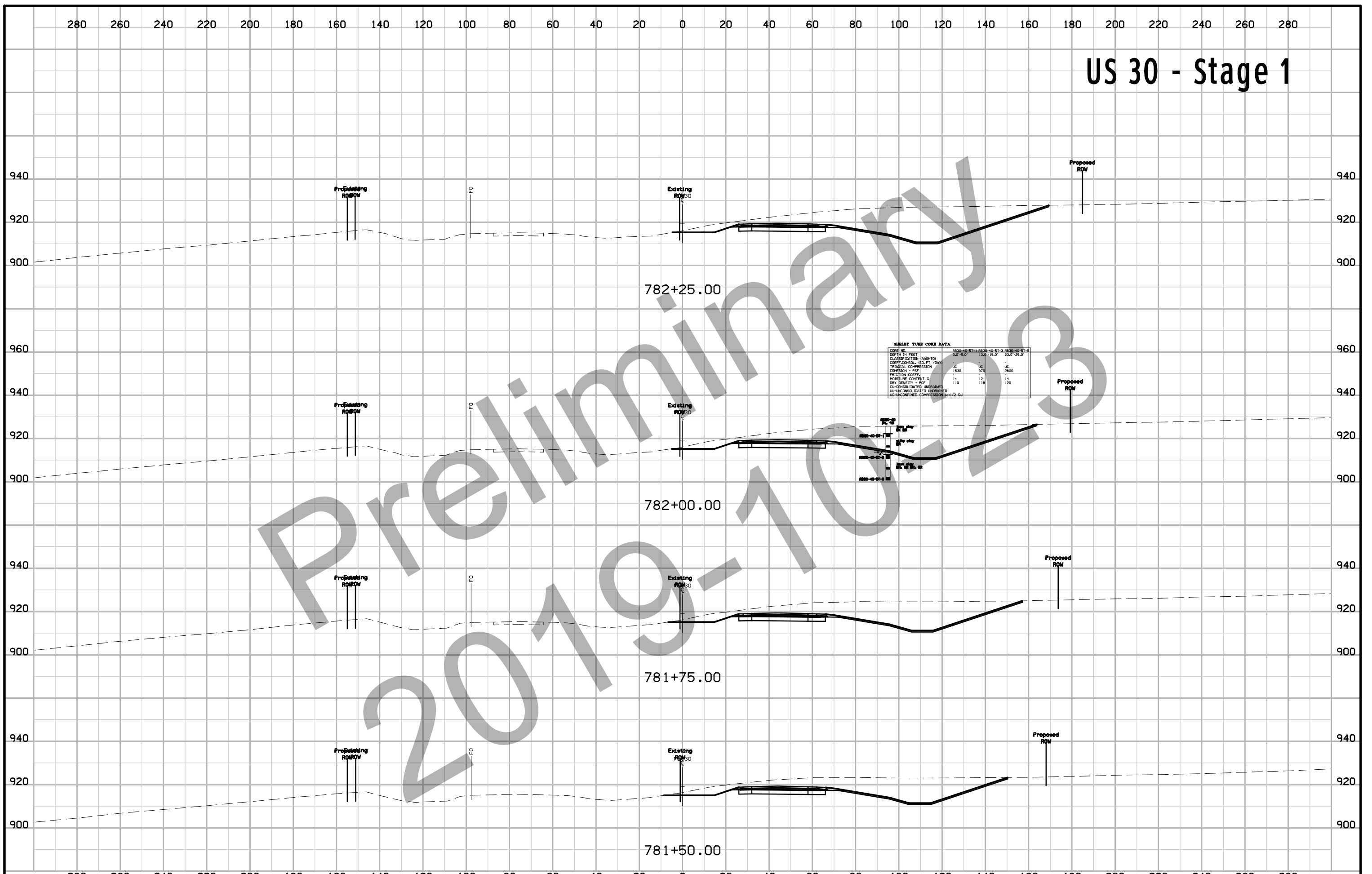
2019-10-23  
Preliminary

# US 30 - Stage 1





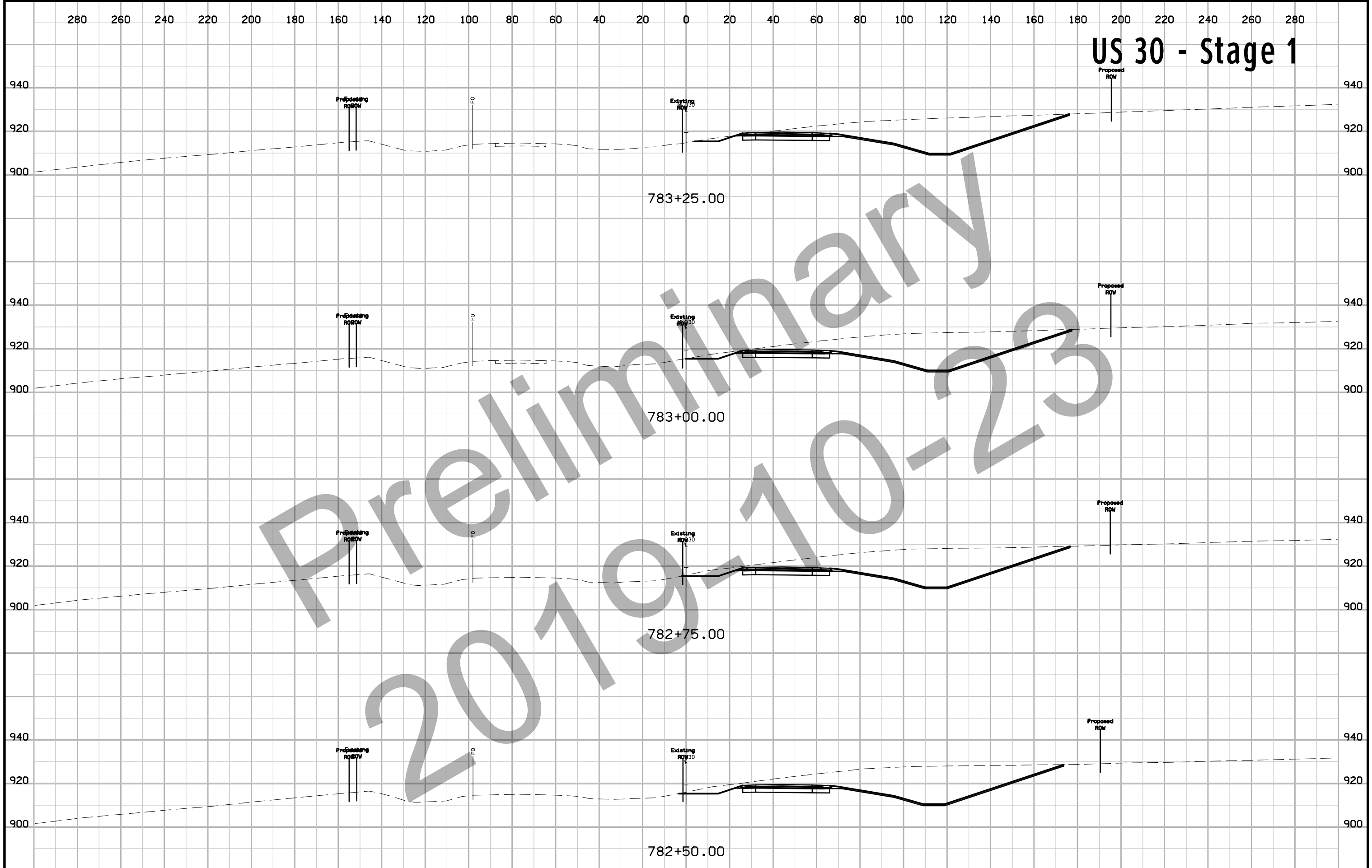
# US 30 - Stage 1



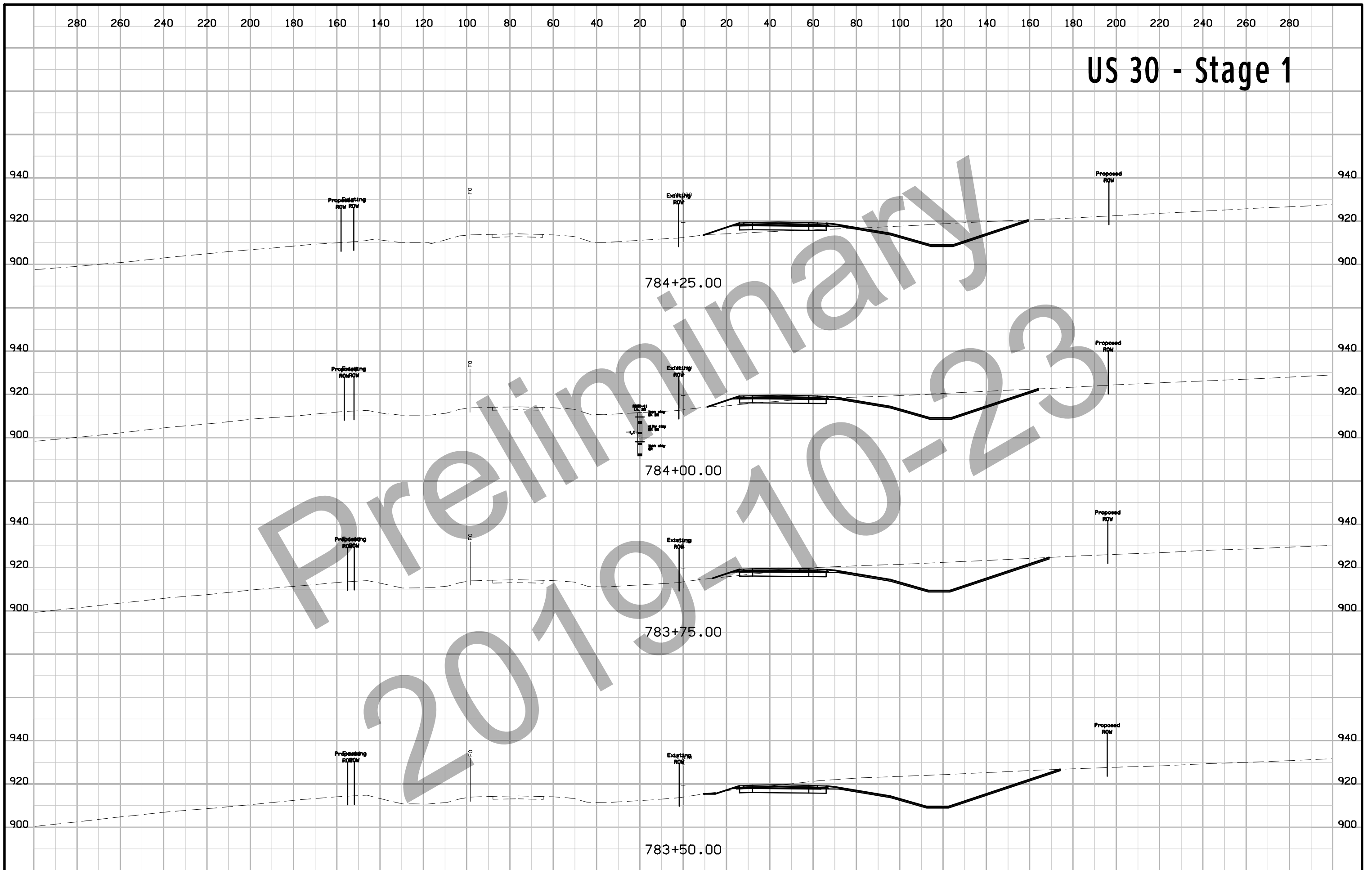
**SHIELT TUBE CORE DATA**

CORE ID	782-40-81	782-40-81-3	782-40-81-5
DEPTH IN FEET	3.0'-5.0'	13.0'-15.0'	23.0'-25.0'
CLASSIFICATION (ASHSTO)			
COEFF. CONSOL. (SO. FT / DAY)	UC	UC	UC
TENSILE COMPRESSION	1530	370	2800
COMPRESSION - PCF			
FRICTION COEFF.	14	12	14
MOISTURE CONTENT %	110	118	120
DRY DENSITY - PCF			
CUR CONSOLIDATED UNDRAINED			
UNCONSOLIDATED UNDRAINED			
UNCONSOLIDATED COMPRESSION (s=1/2, 0.4)			

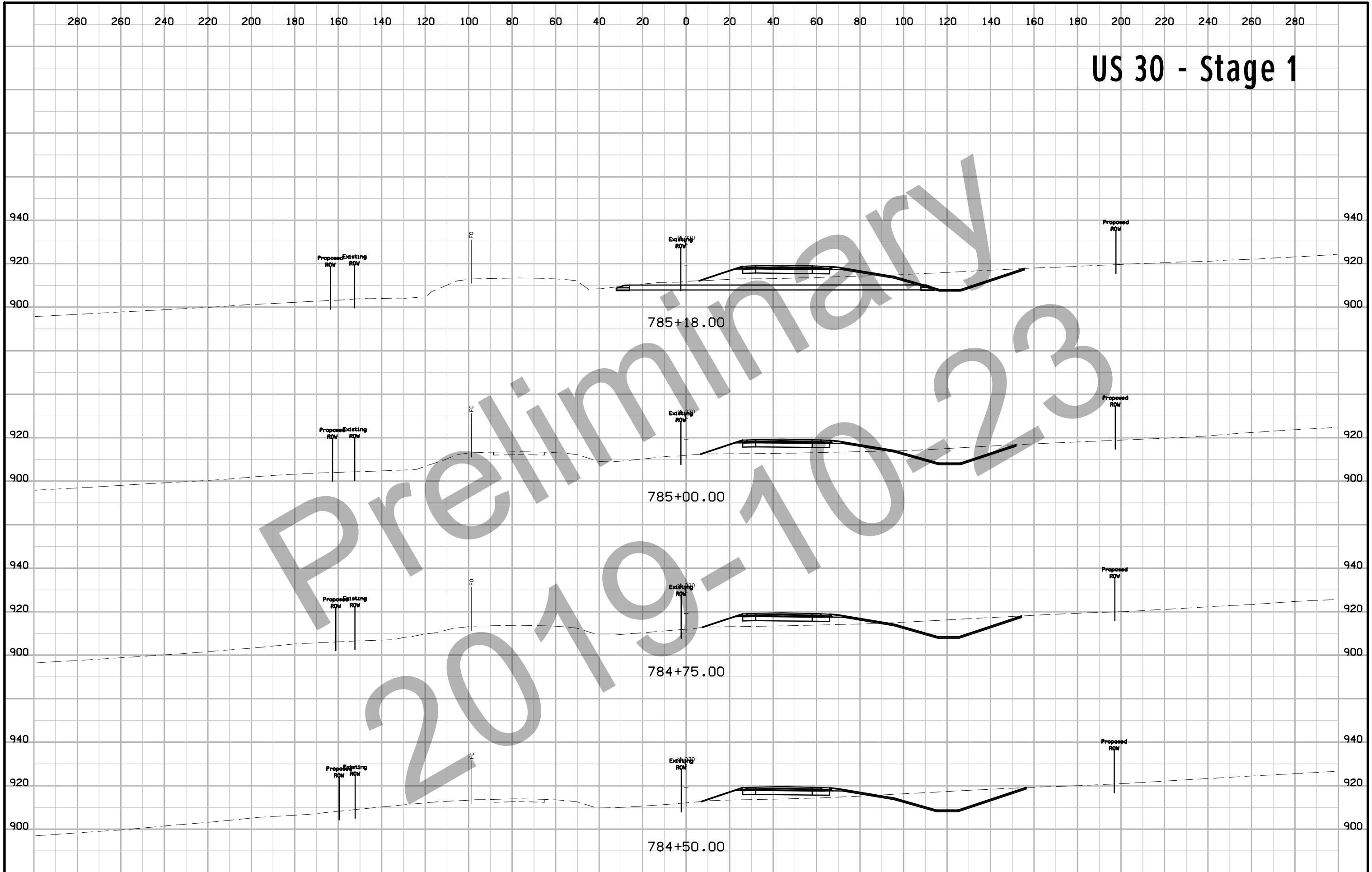
# US 30 - Stage 1



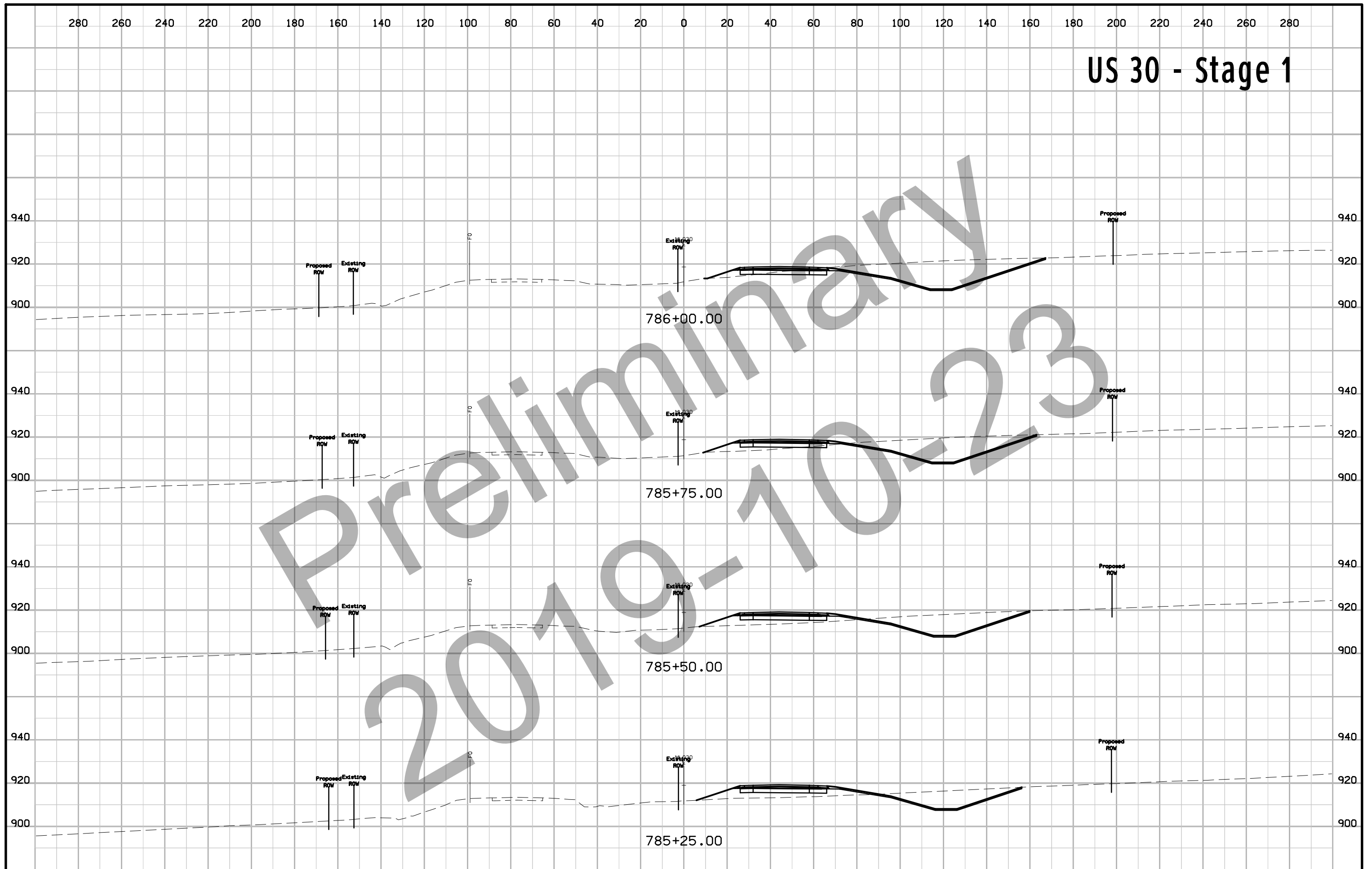
# US 30 - Stage 1



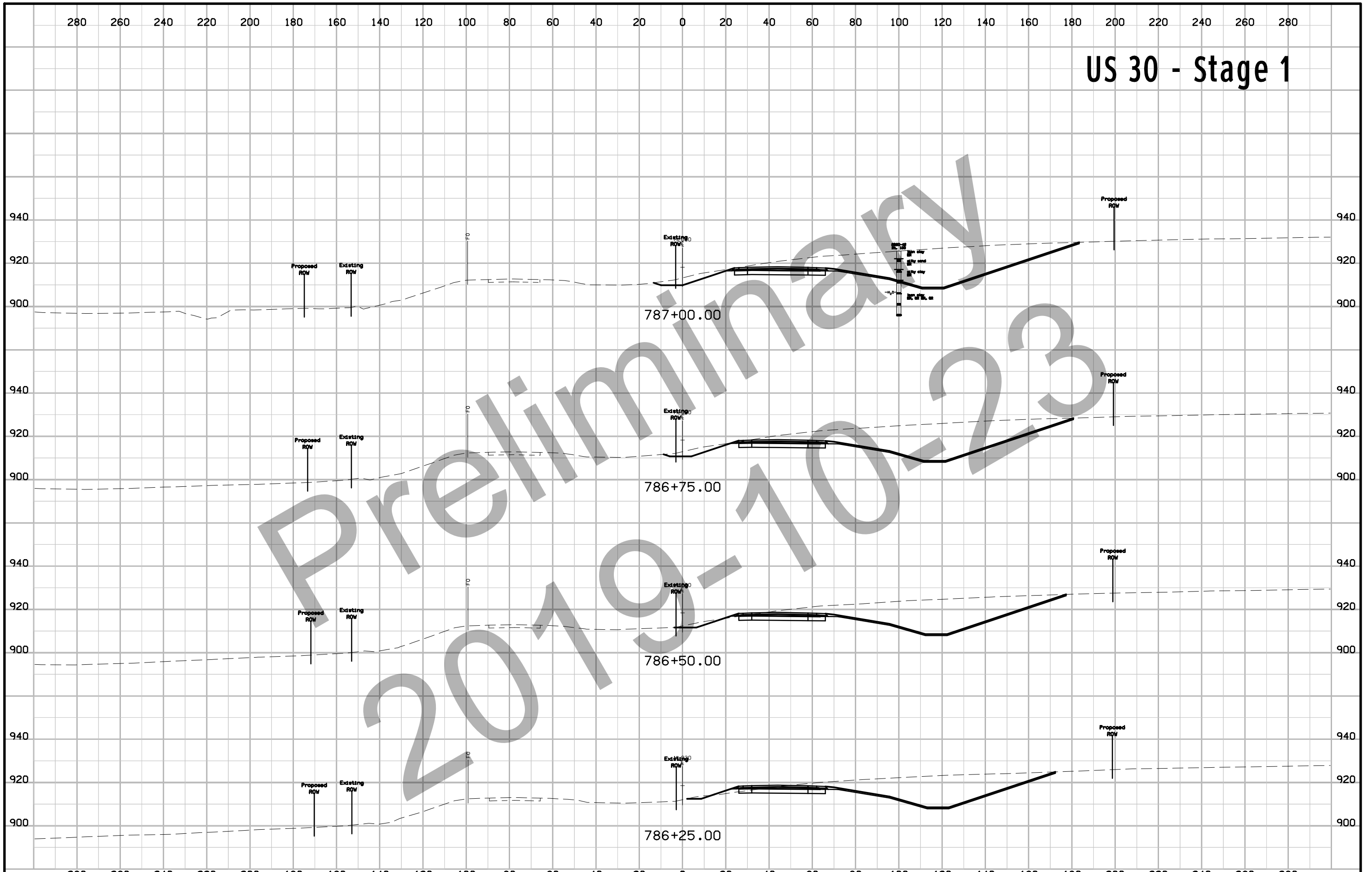
# US 30 - Stage 1



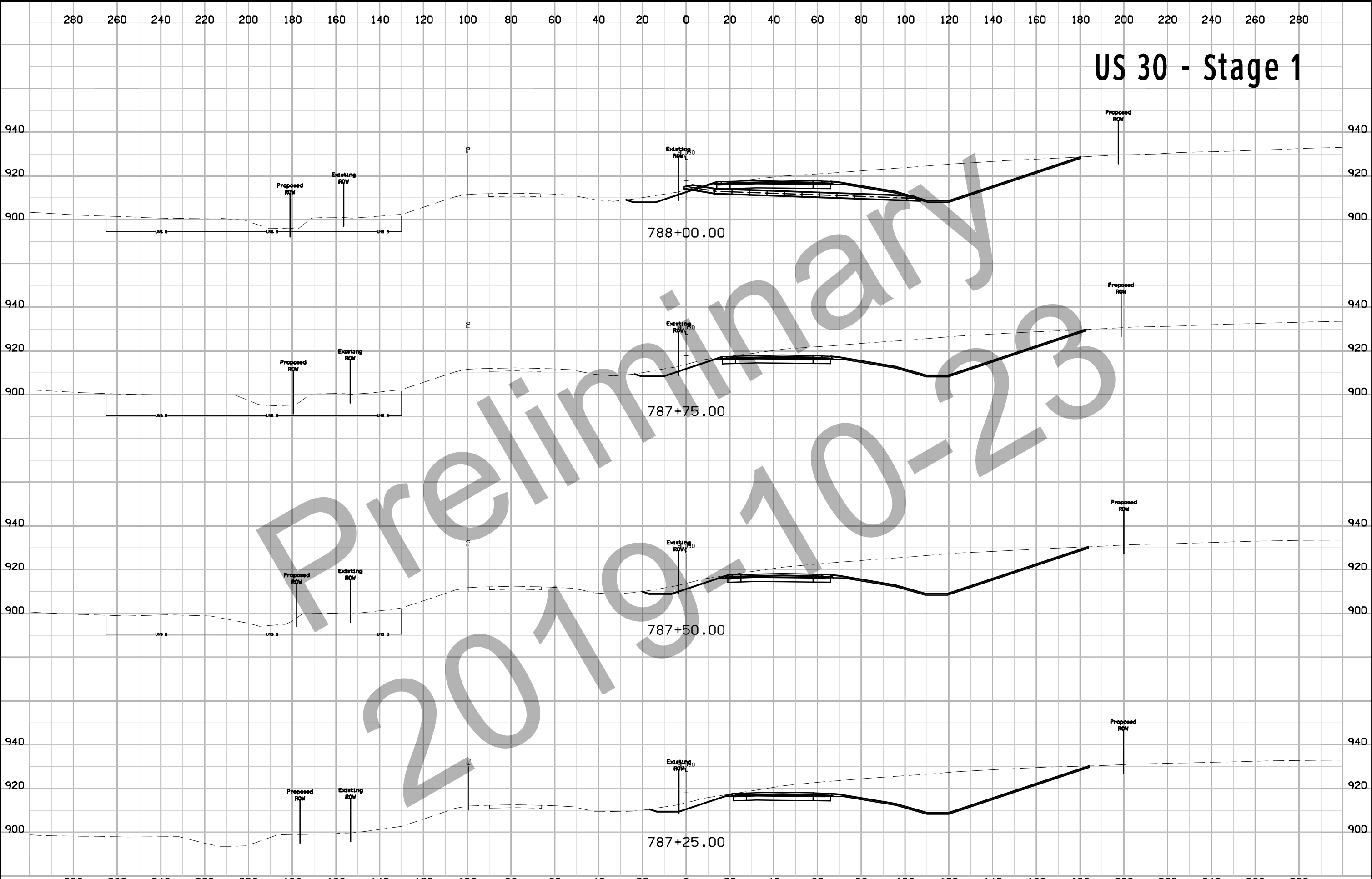
# US 30 - Stage 1



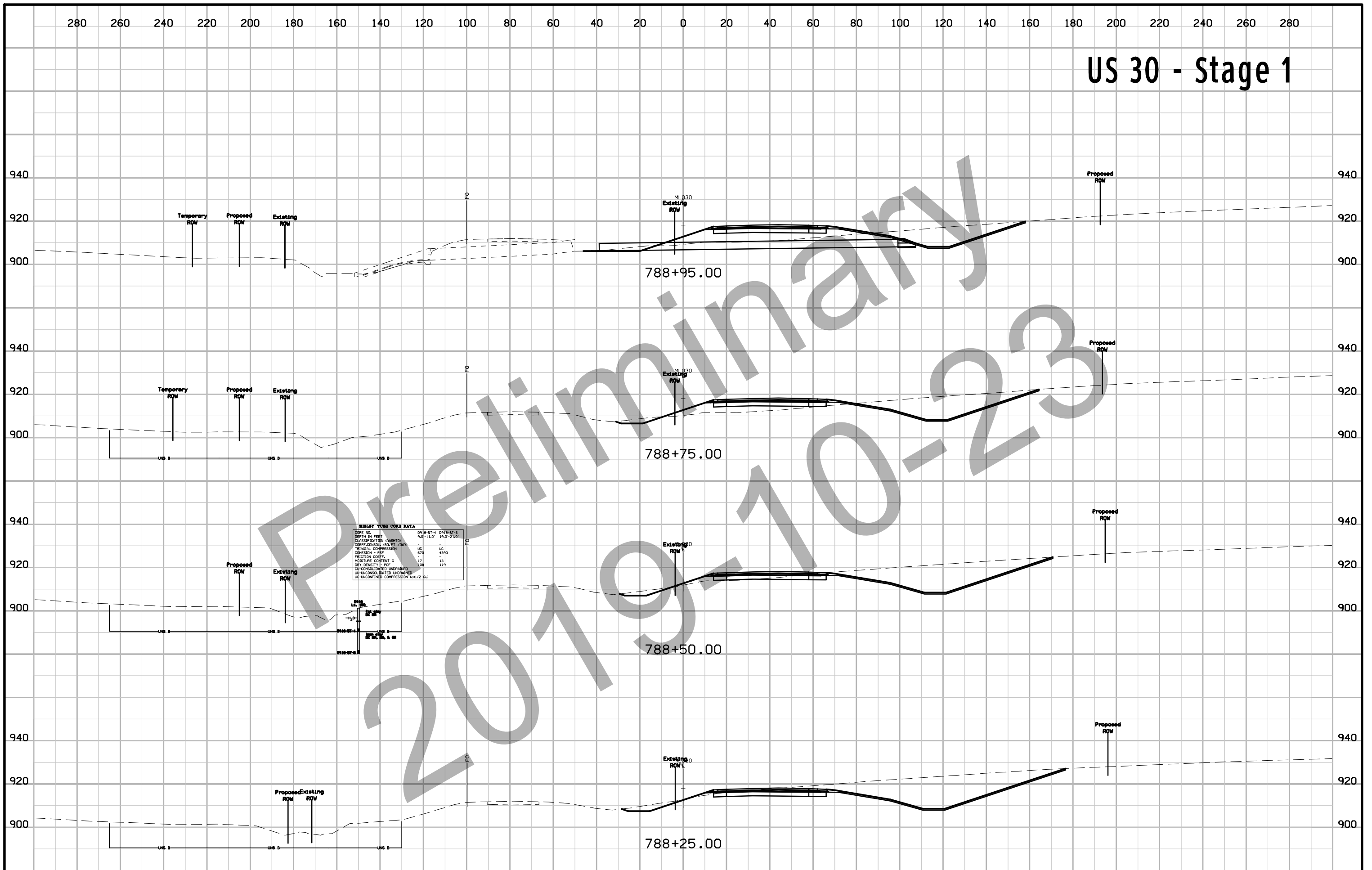
# US 30 - Stage 1



# US 30 - Stage 1



# US 30 - Stage 1

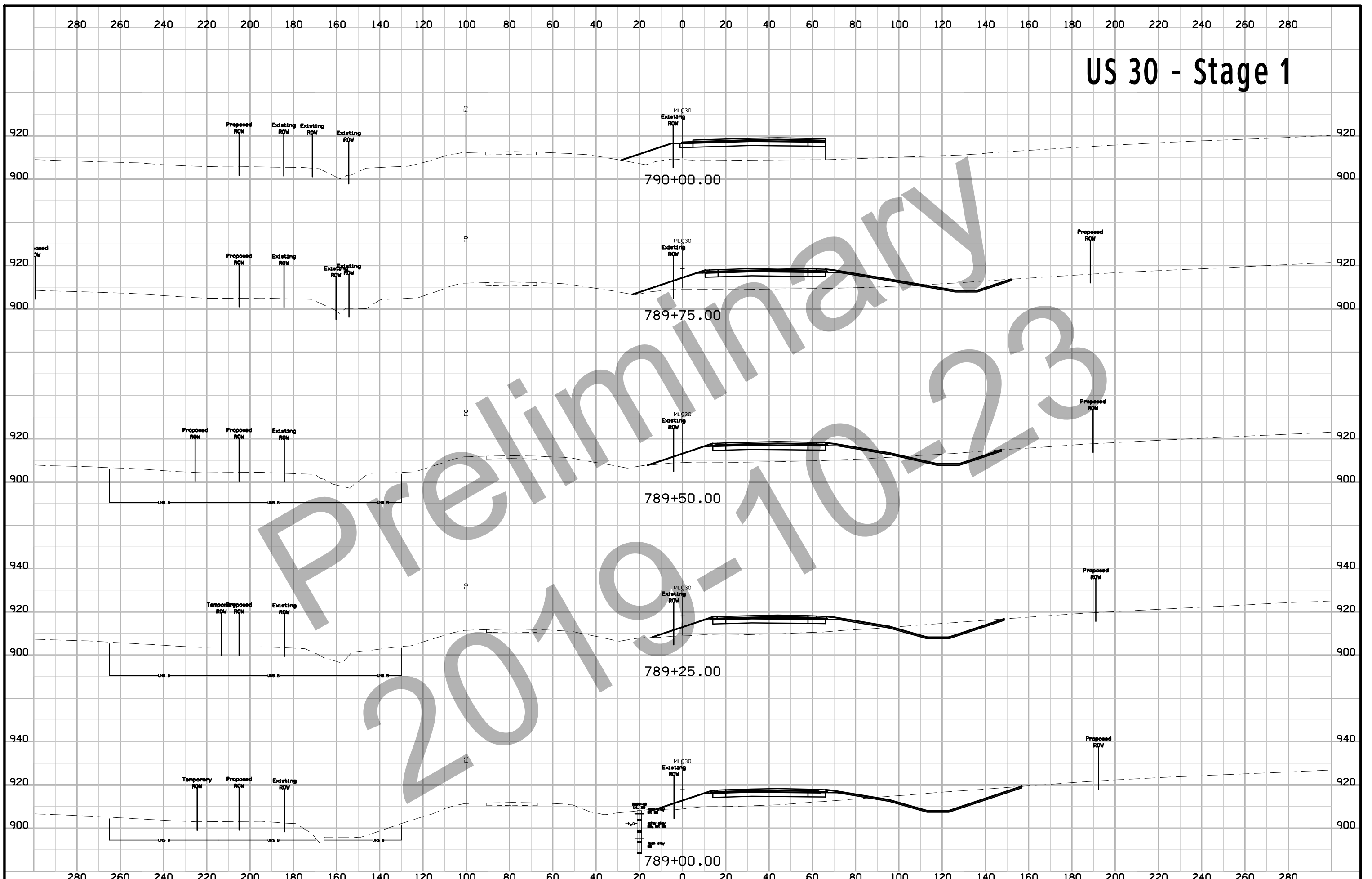


**SHELBY TUBE CORE DATA**

CORE NO.	018-07-4	018-07-6
DEPTH IN FEET	4.00 - 11.00	11.00 - 21.00
CLASSIFICATION (ASTM)	UC	UC
COEFFICIENT OF CONSOLIDATION (cm <sup>2</sup> /min)	4.0	4.0
TRIAxIAL COMPRESSION	UC	UC
COHESION - PSF	17	13
FRICTION COEFF.	108	119
MOISTURE CONTENT %	108	119
DRY DENSITY - PCF	108	119
CO-CONSOLIDATED UNDRAINED	UC-UNCONSOLIDATED UNDRAINED	UC-UNCONSOLIDATED UNDRAINED
UC-UNCONSOLIDATED UNDRAINED	UC-UNCONSOLIDATED UNDRAINED	UC-UNCONSOLIDATED UNDRAINED

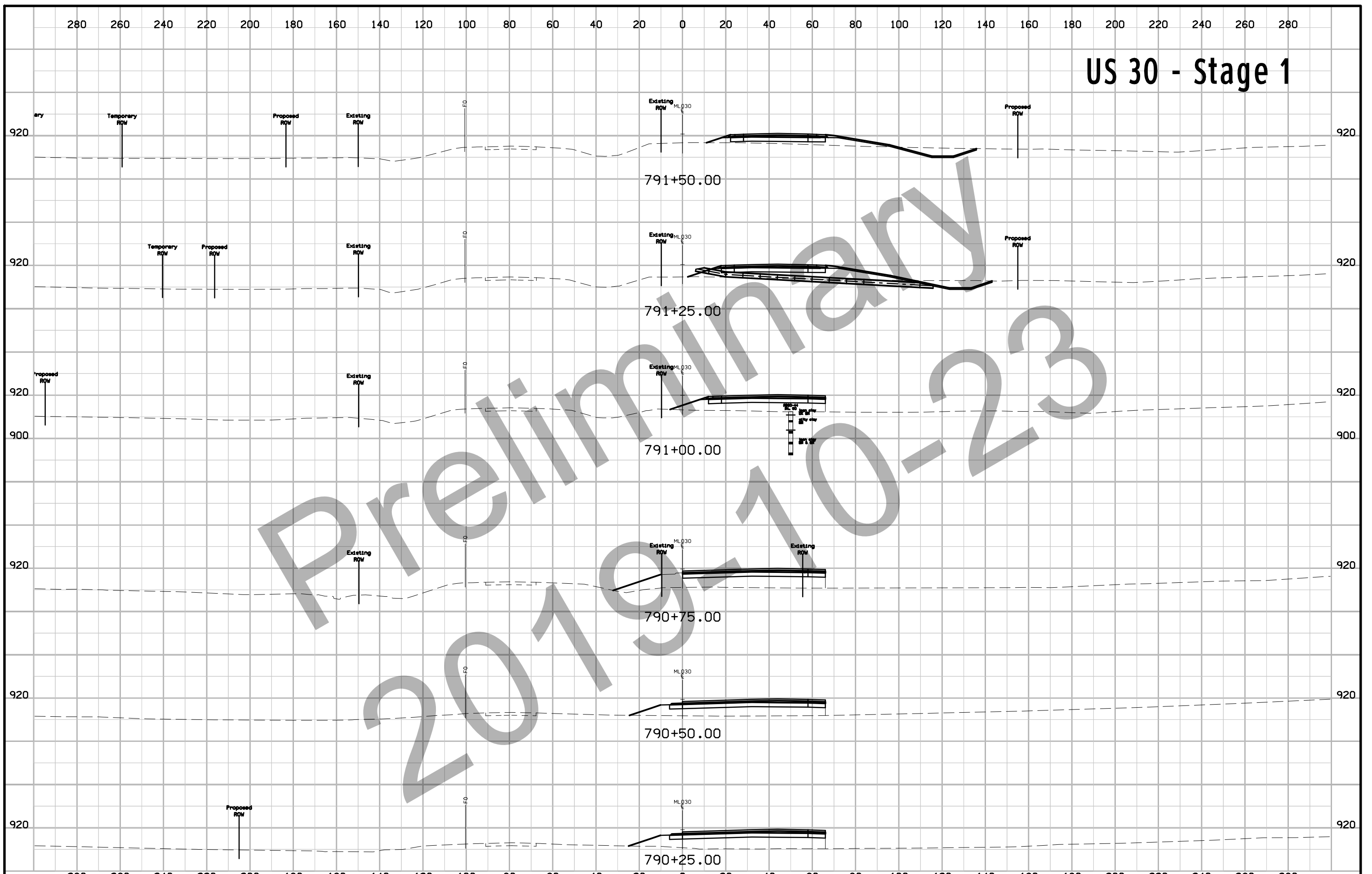


# US 30 - Stage 1



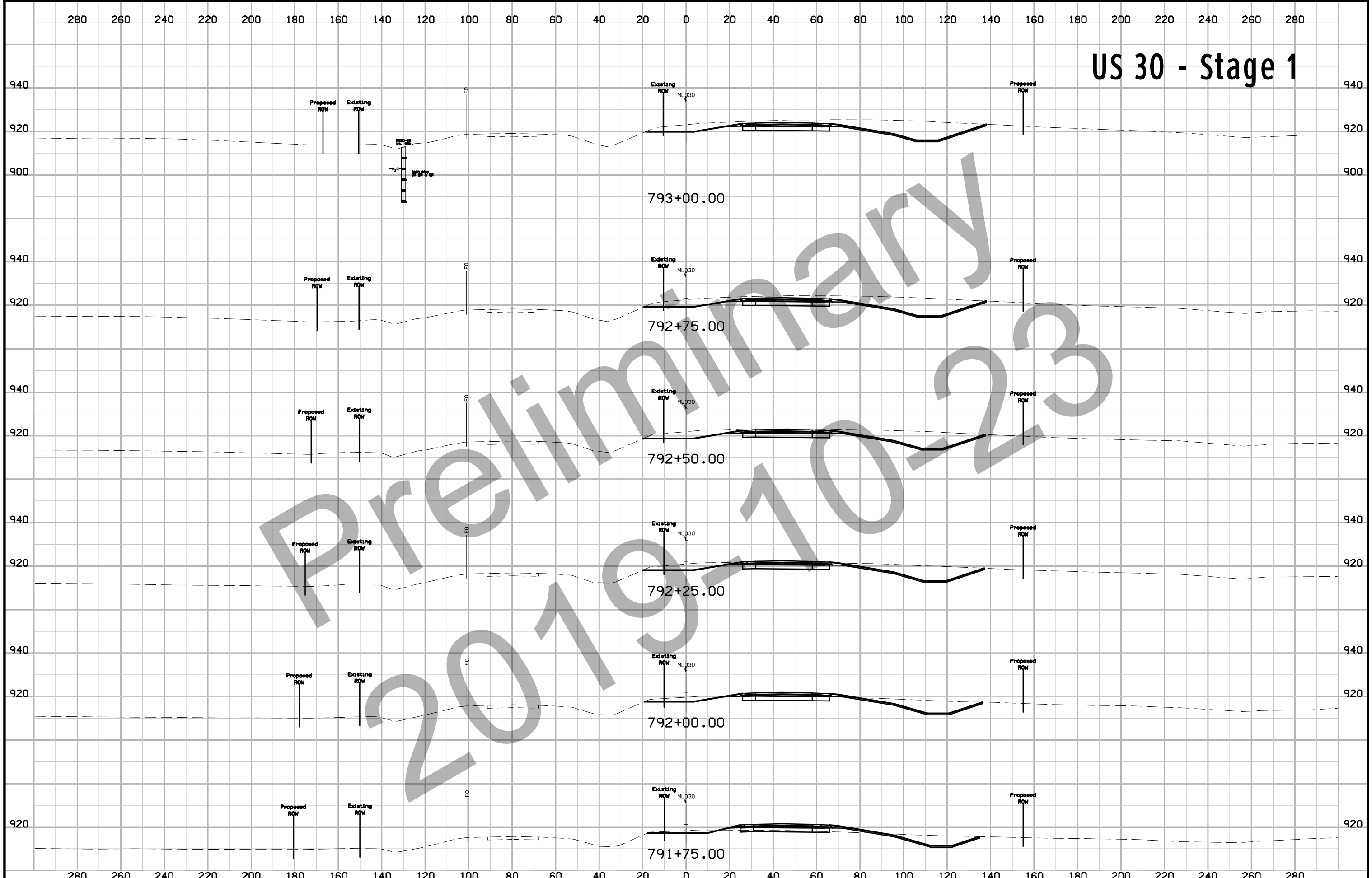
FILE NO.	ENGLISH	DESIGN TEAM	<b>Flattery\Bell</b>	<b>BENTON</b> COUNTY	PROJECT NUMBER	<b>NHS-030-6(87)--19-06</b>	SHEET NUMBER	<b>W.164</b>
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# US 30 - Stage 1

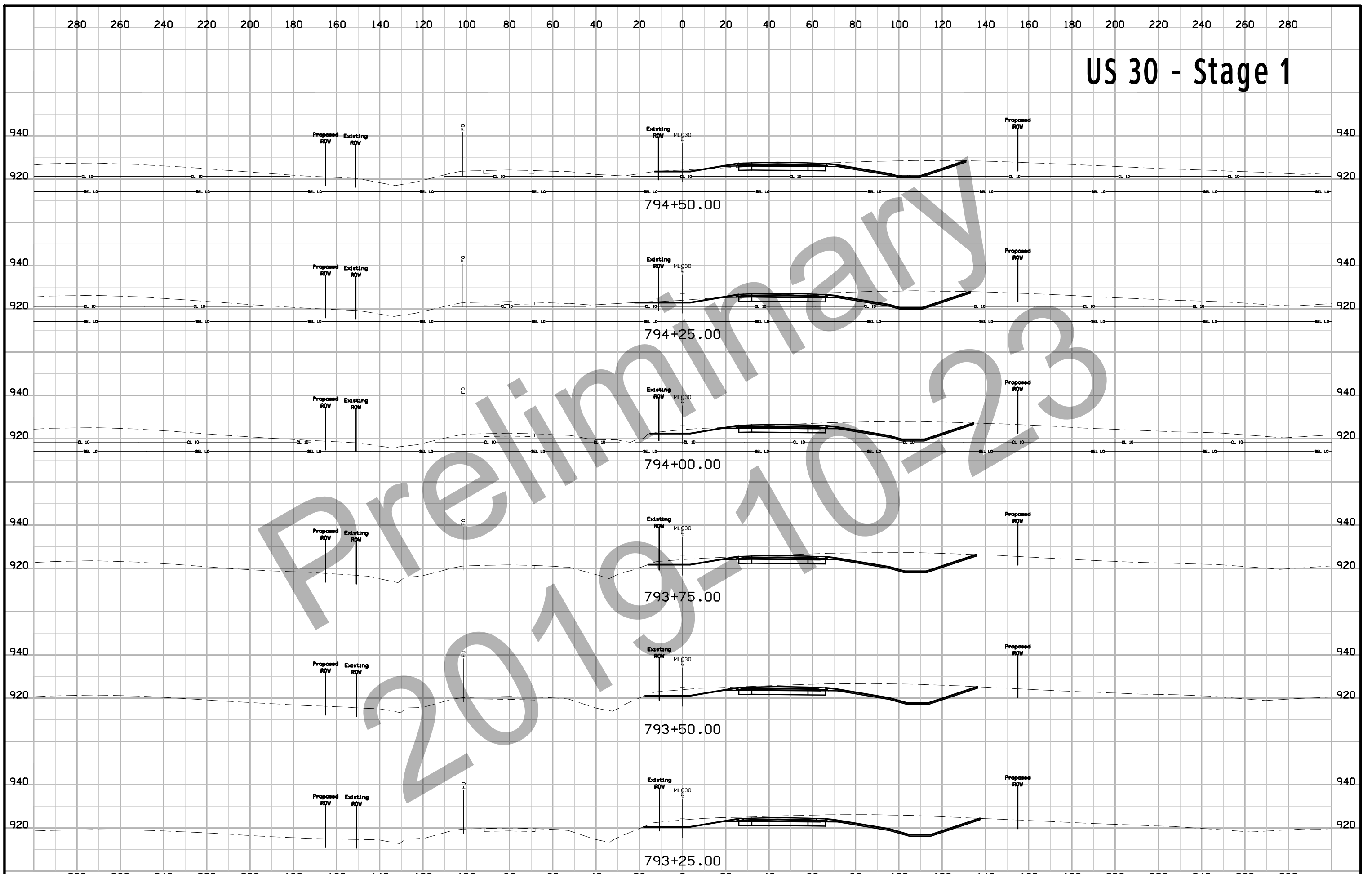


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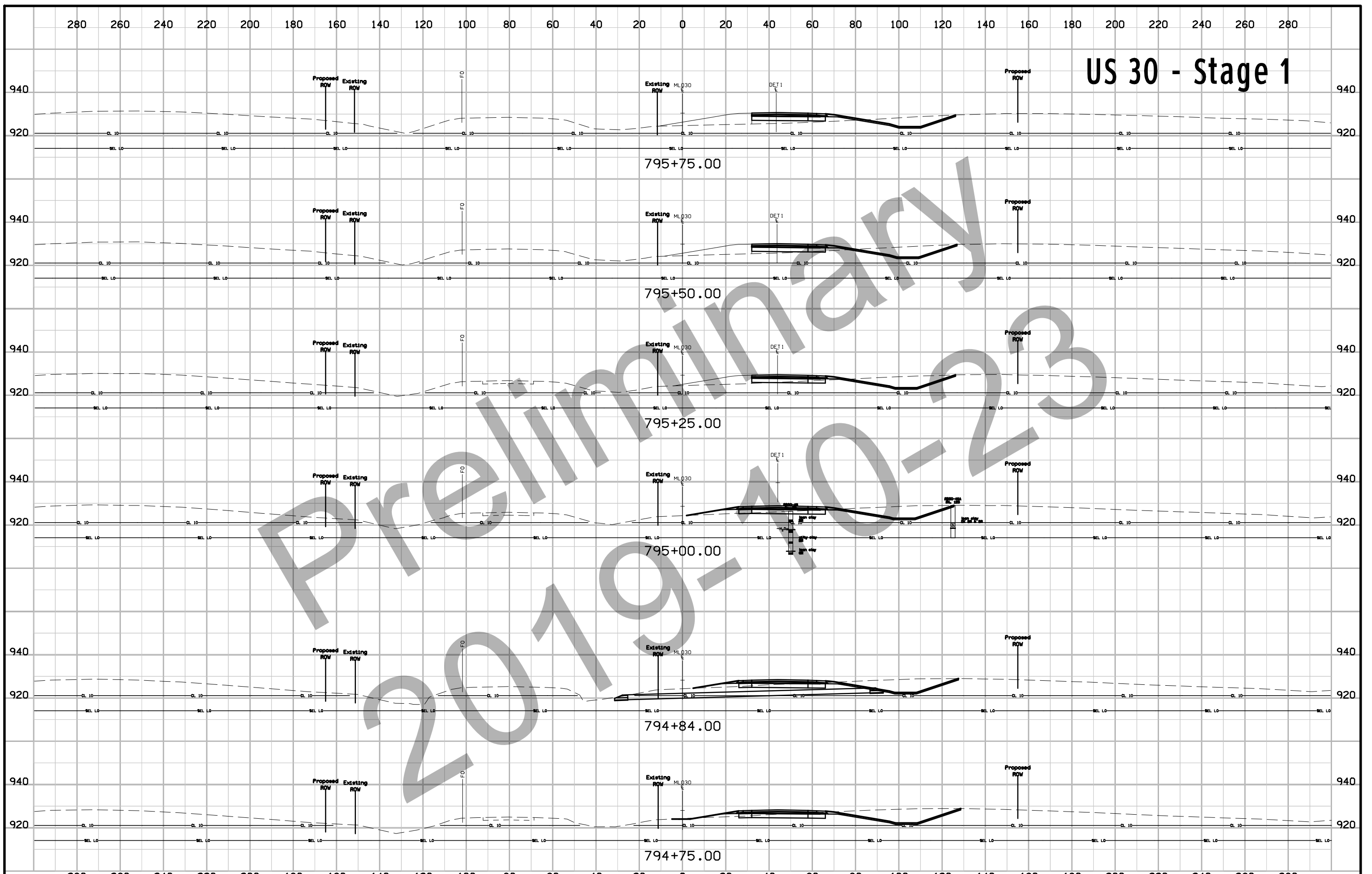
# US 30 - Stage 1



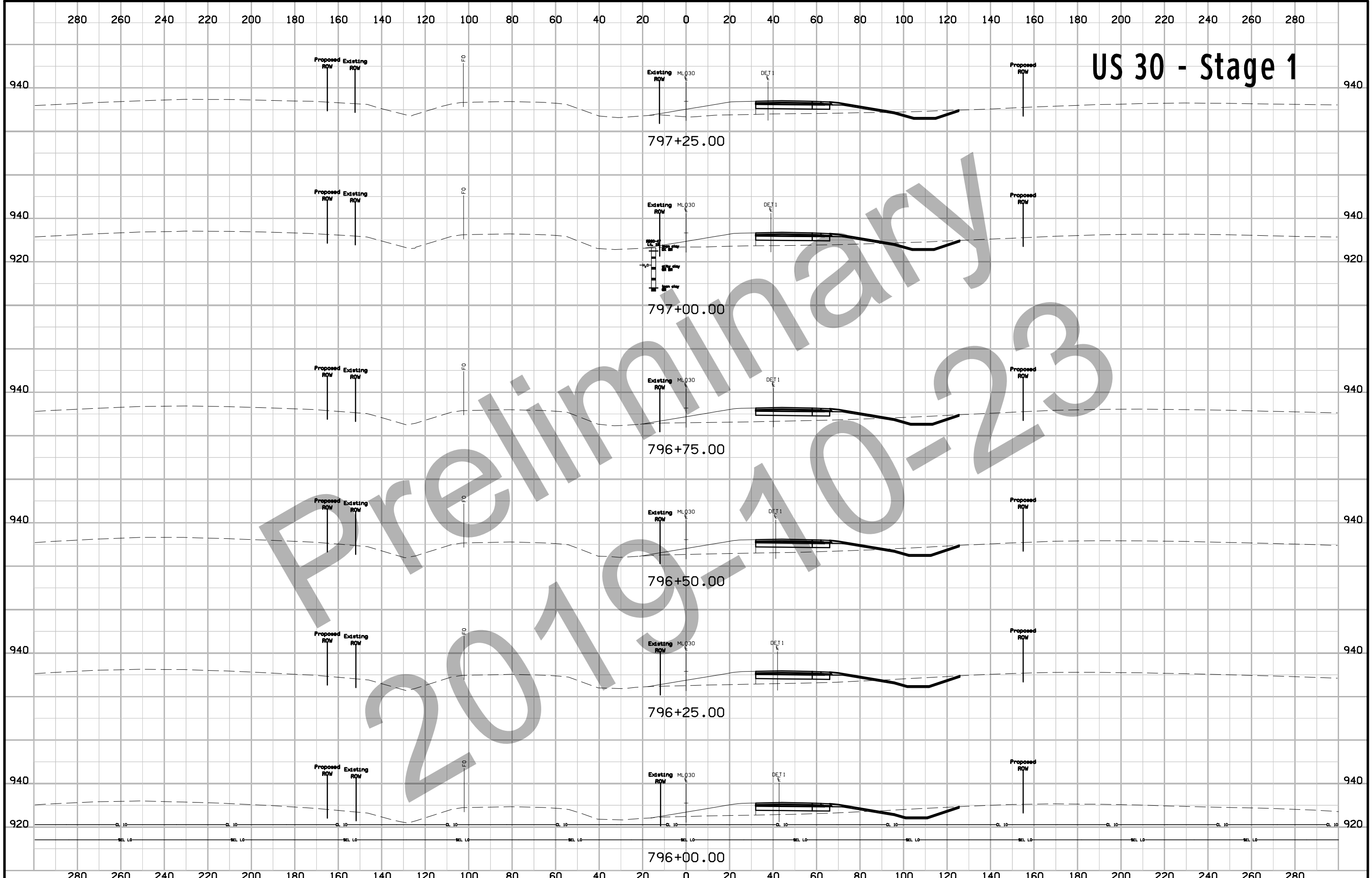
# US 30 - Stage 1



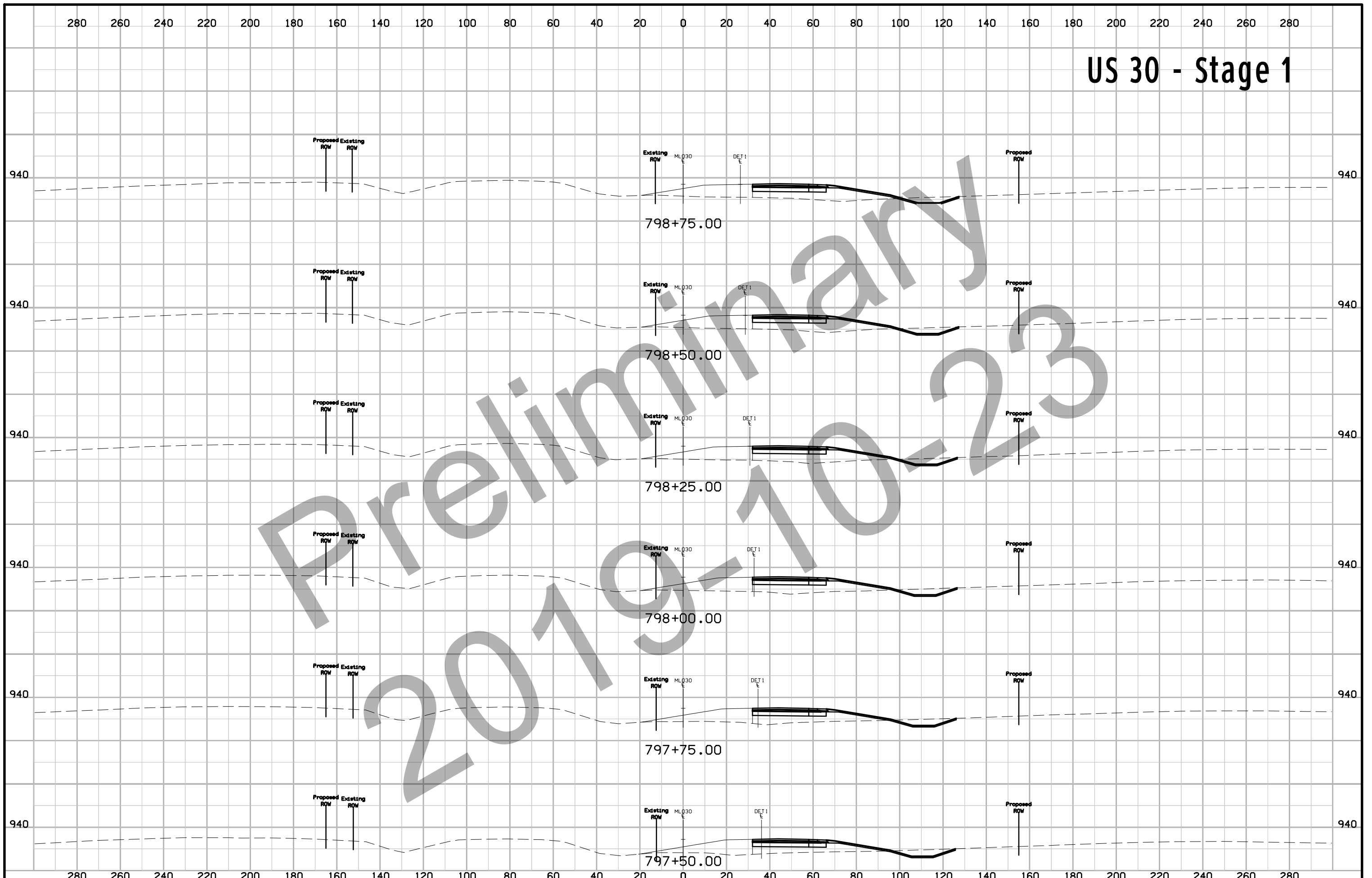
# US 30 - Stage 1



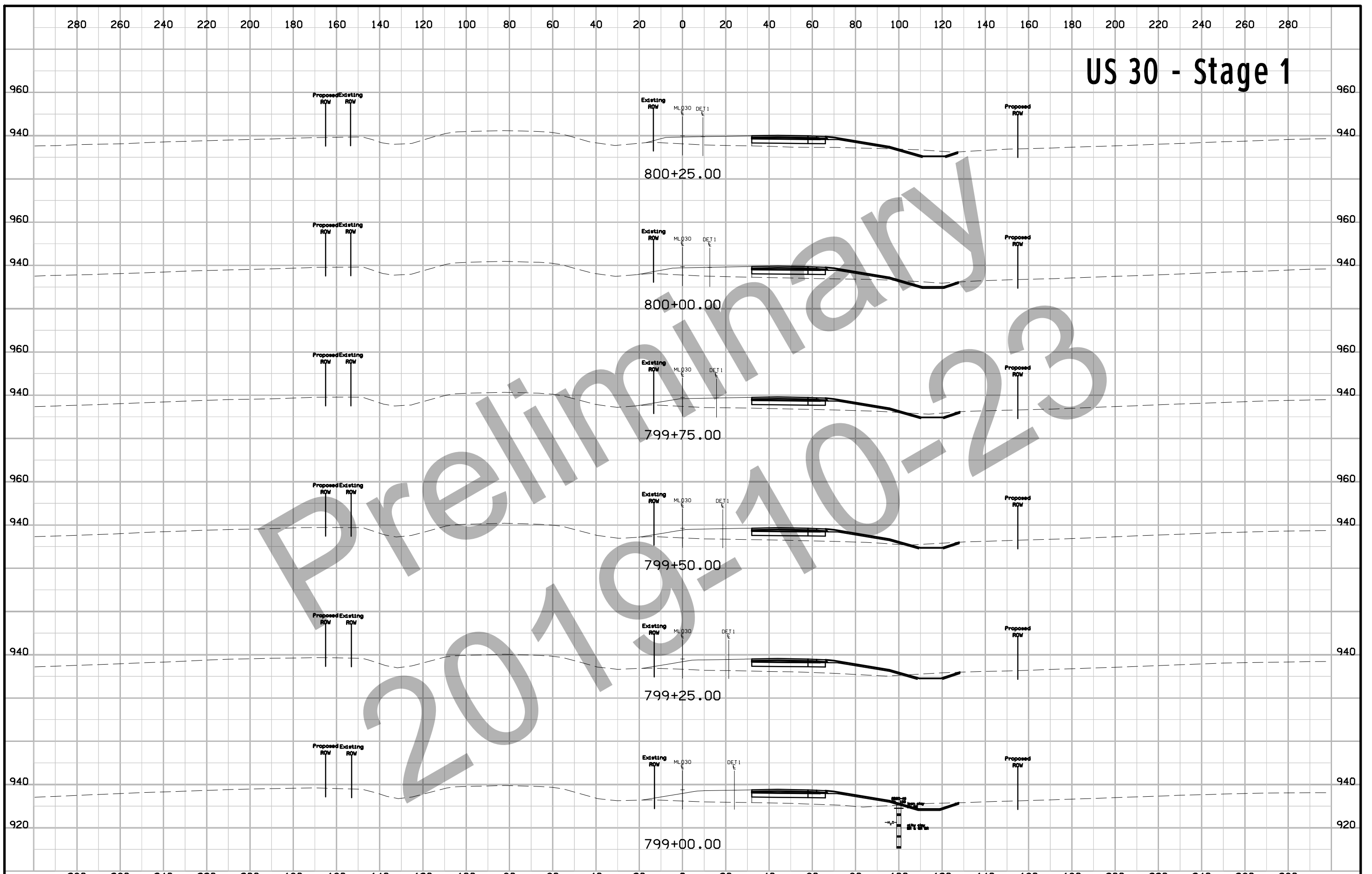
# US 30 - Stage 1



# US 30 - Stage 1

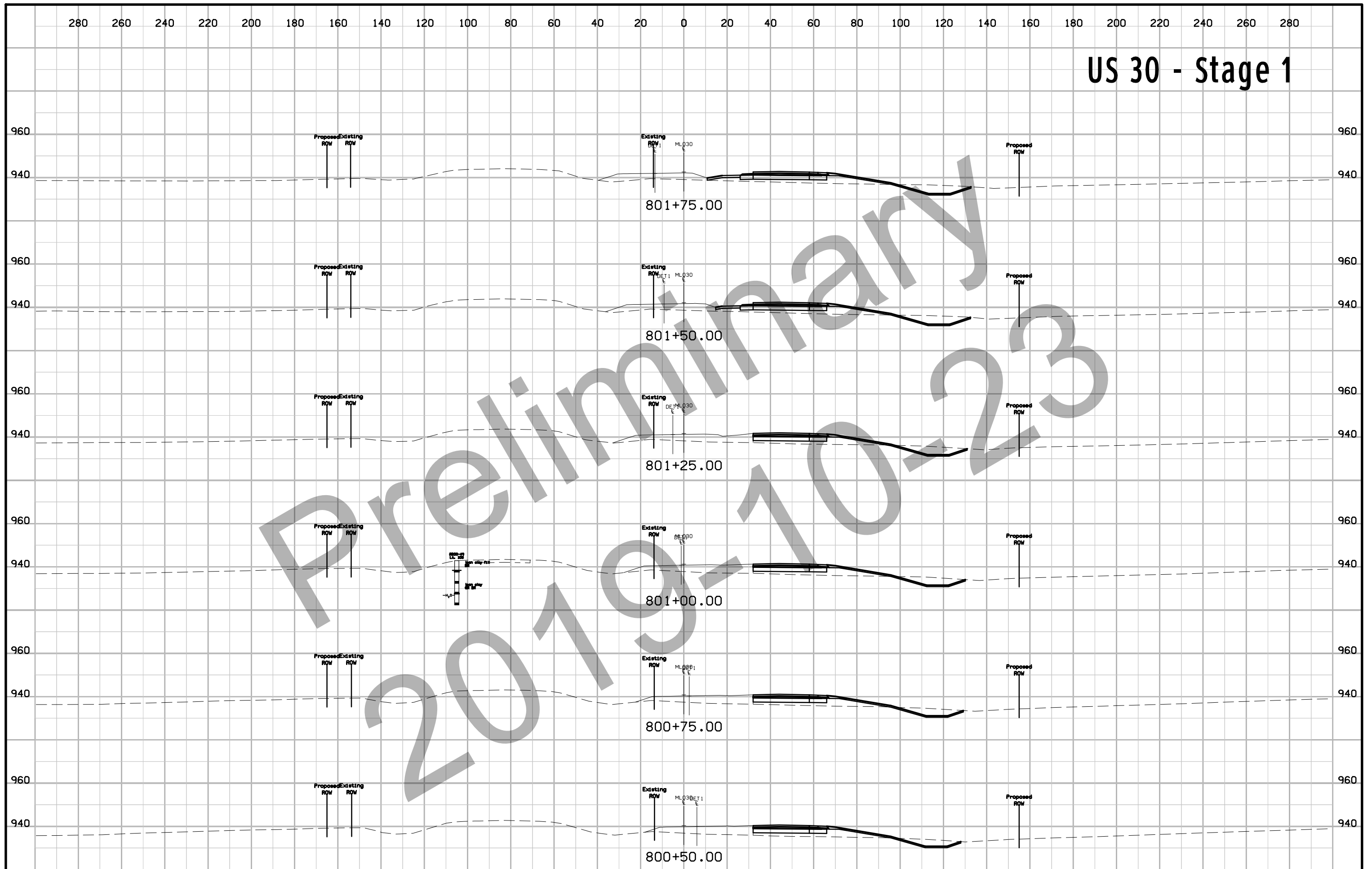


# US 30 - Stage 1

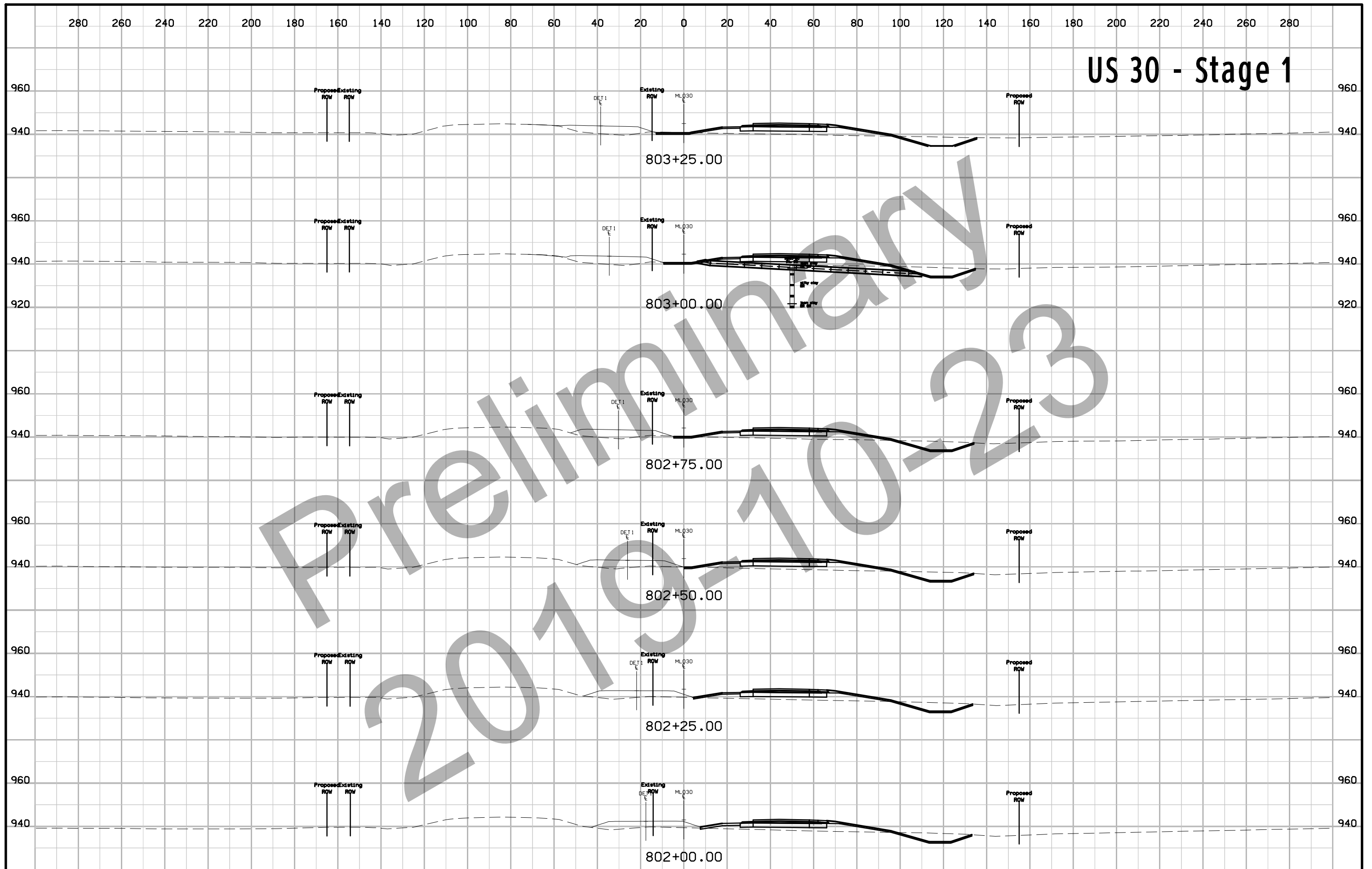




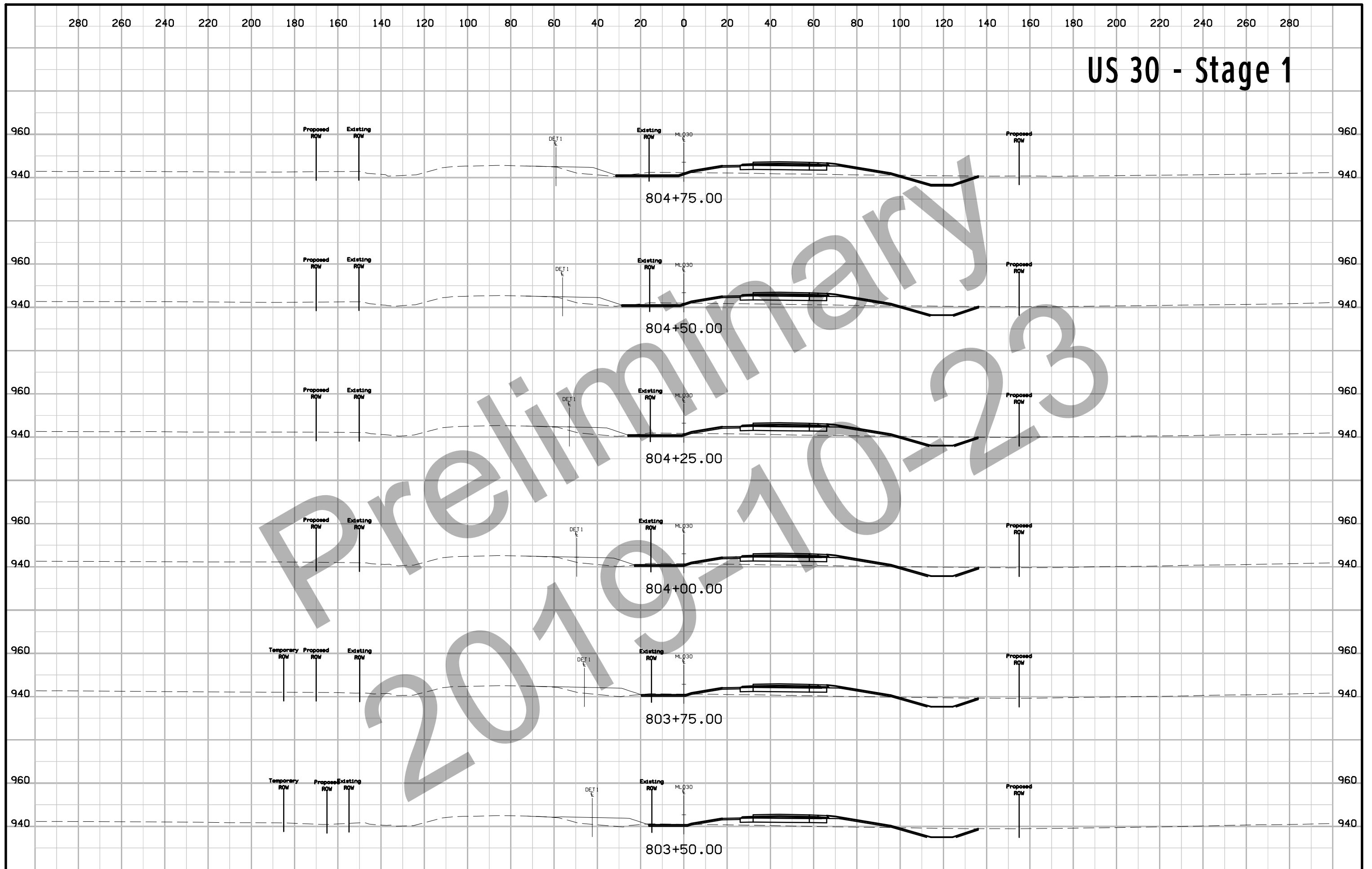
# US 30 - Stage 1



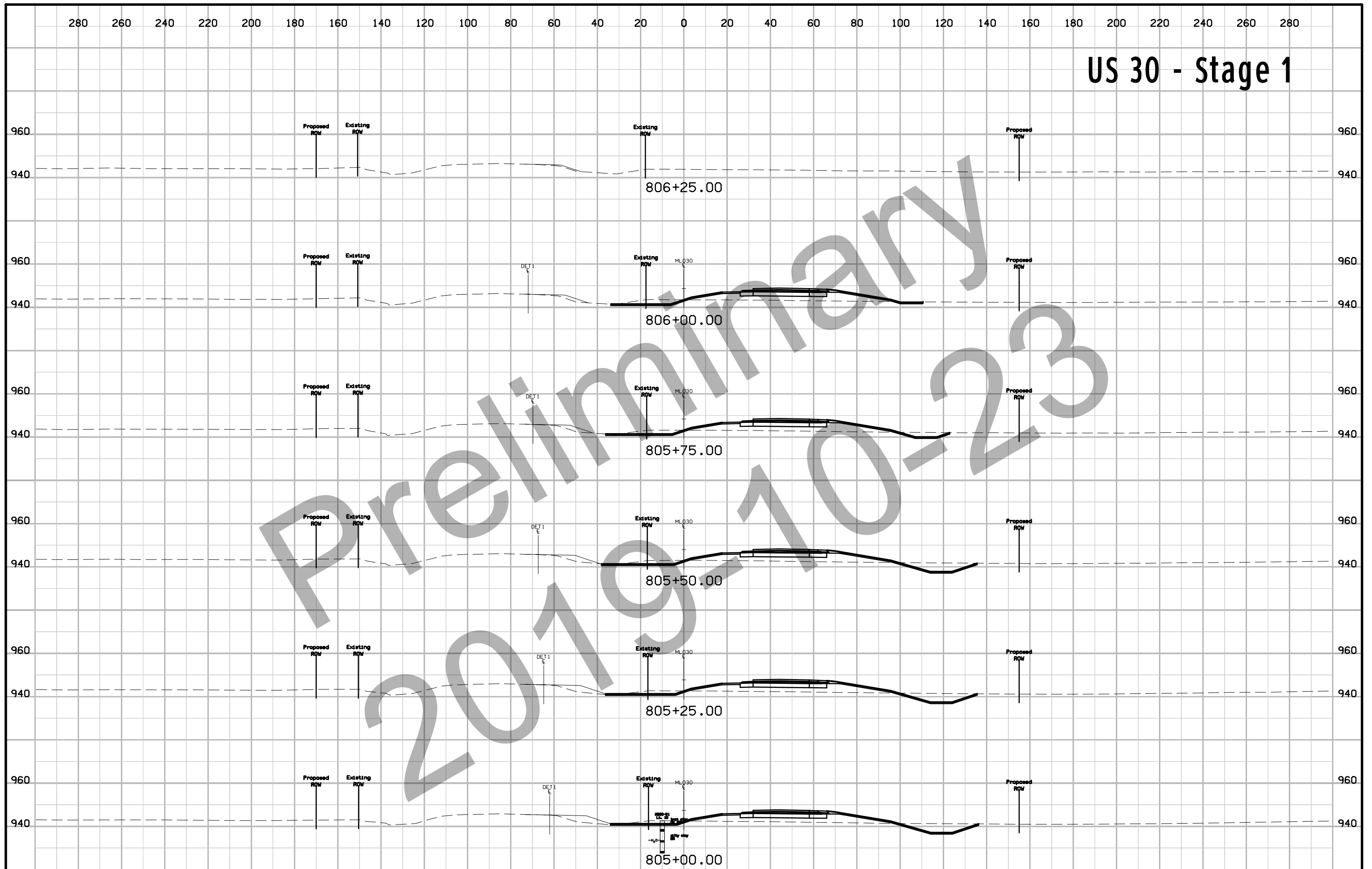
# US 30 - Stage 1



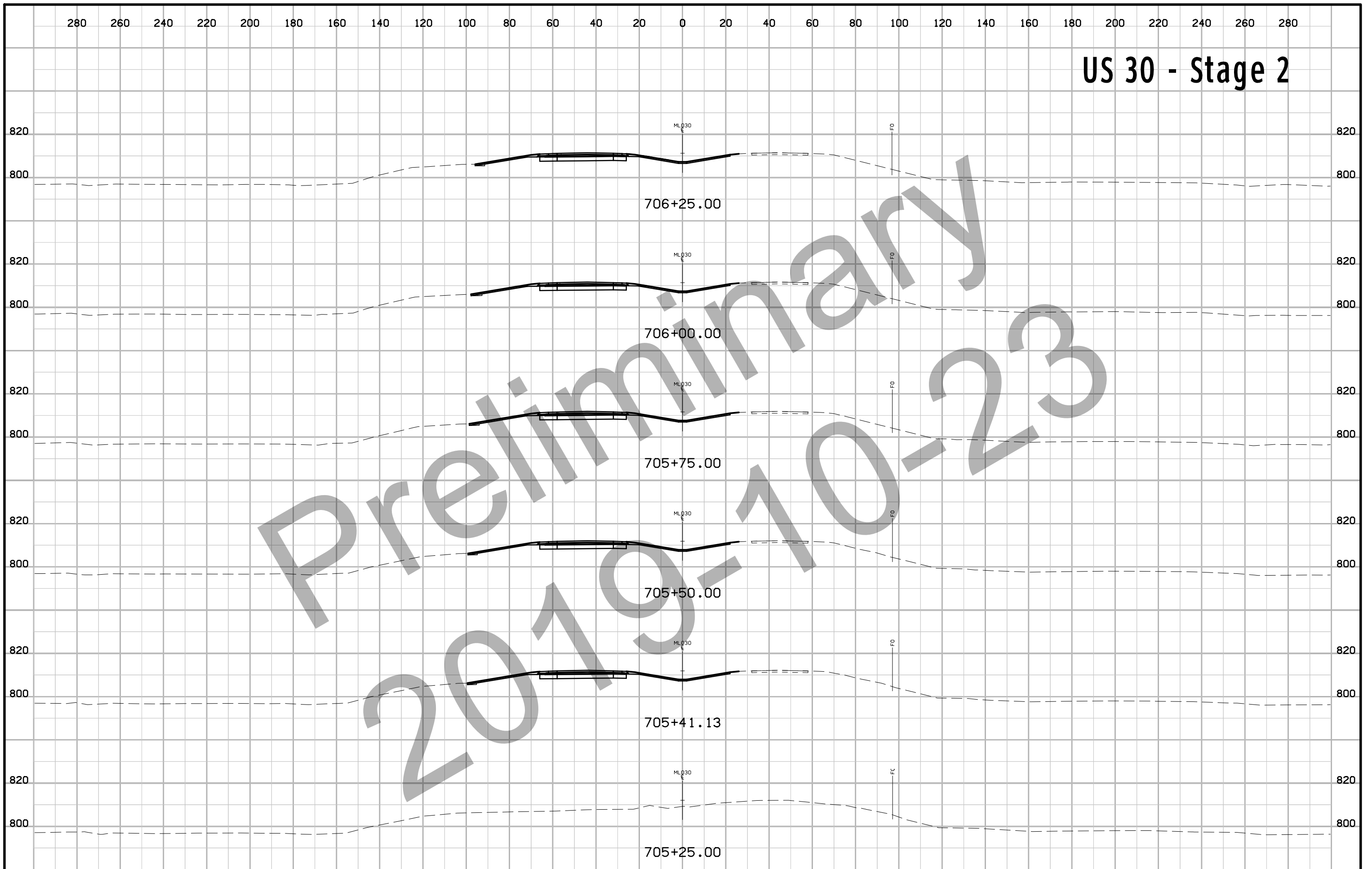
# US 30 - Stage 1



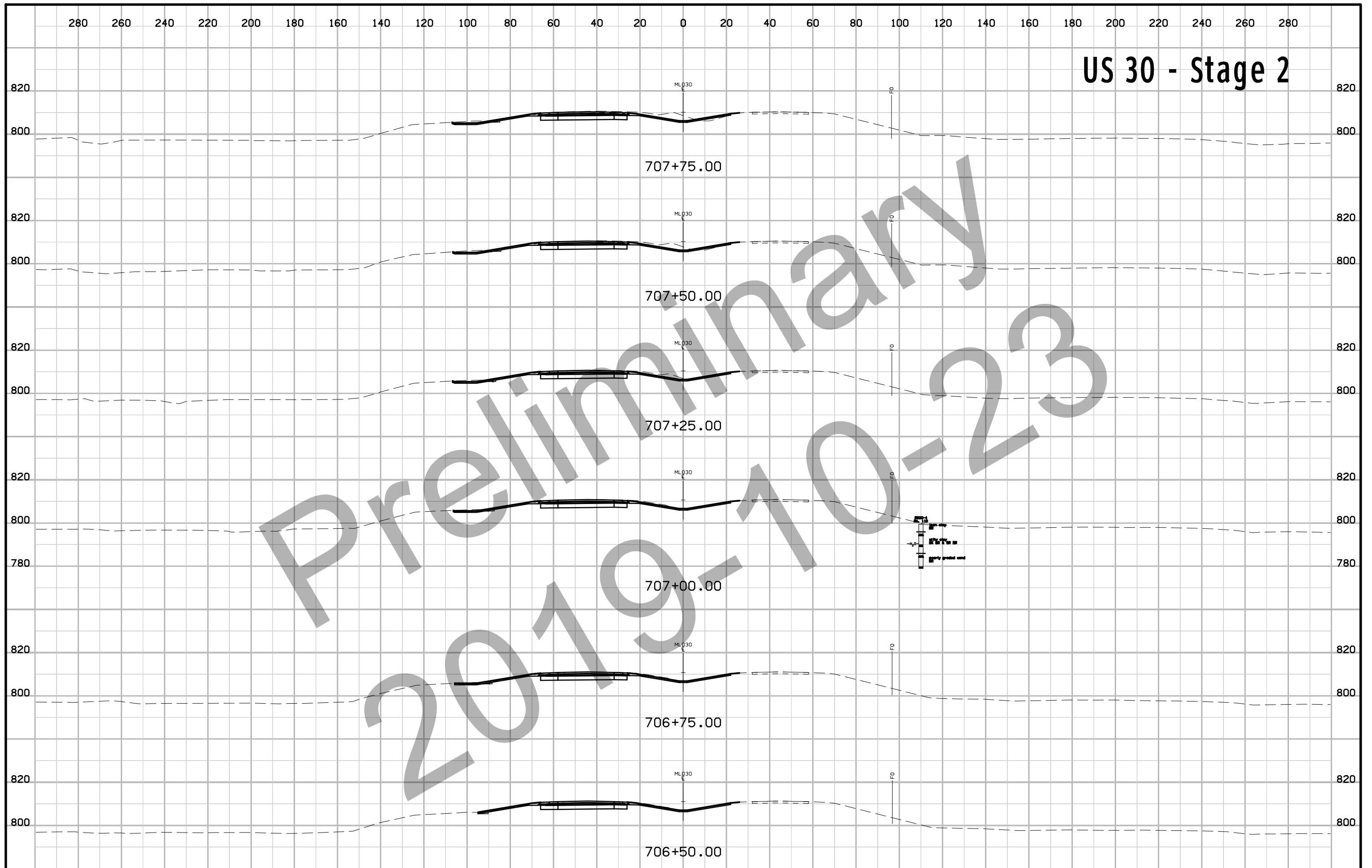
# US 30 - Stage 1



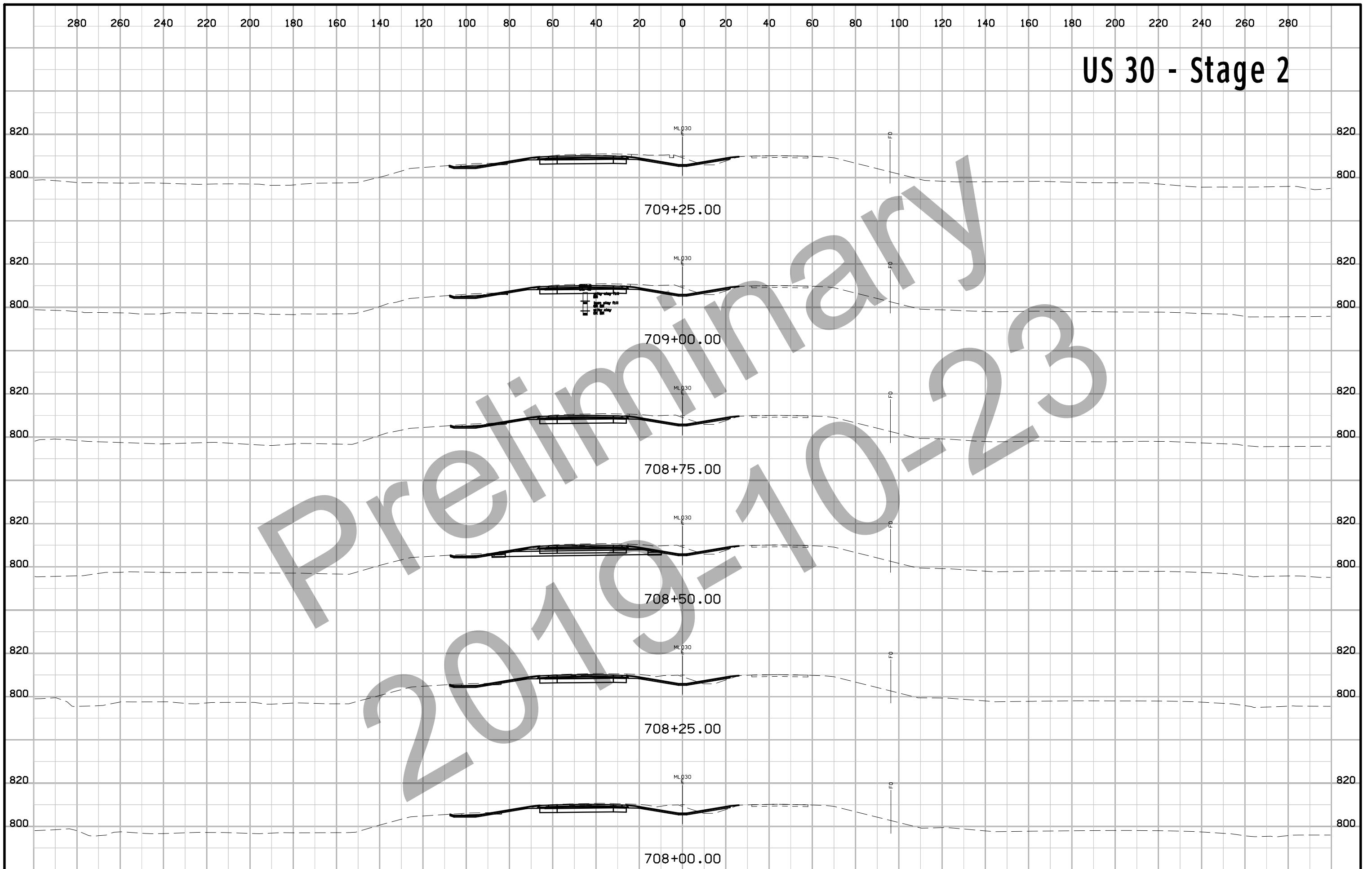
# US 30 - Stage 2



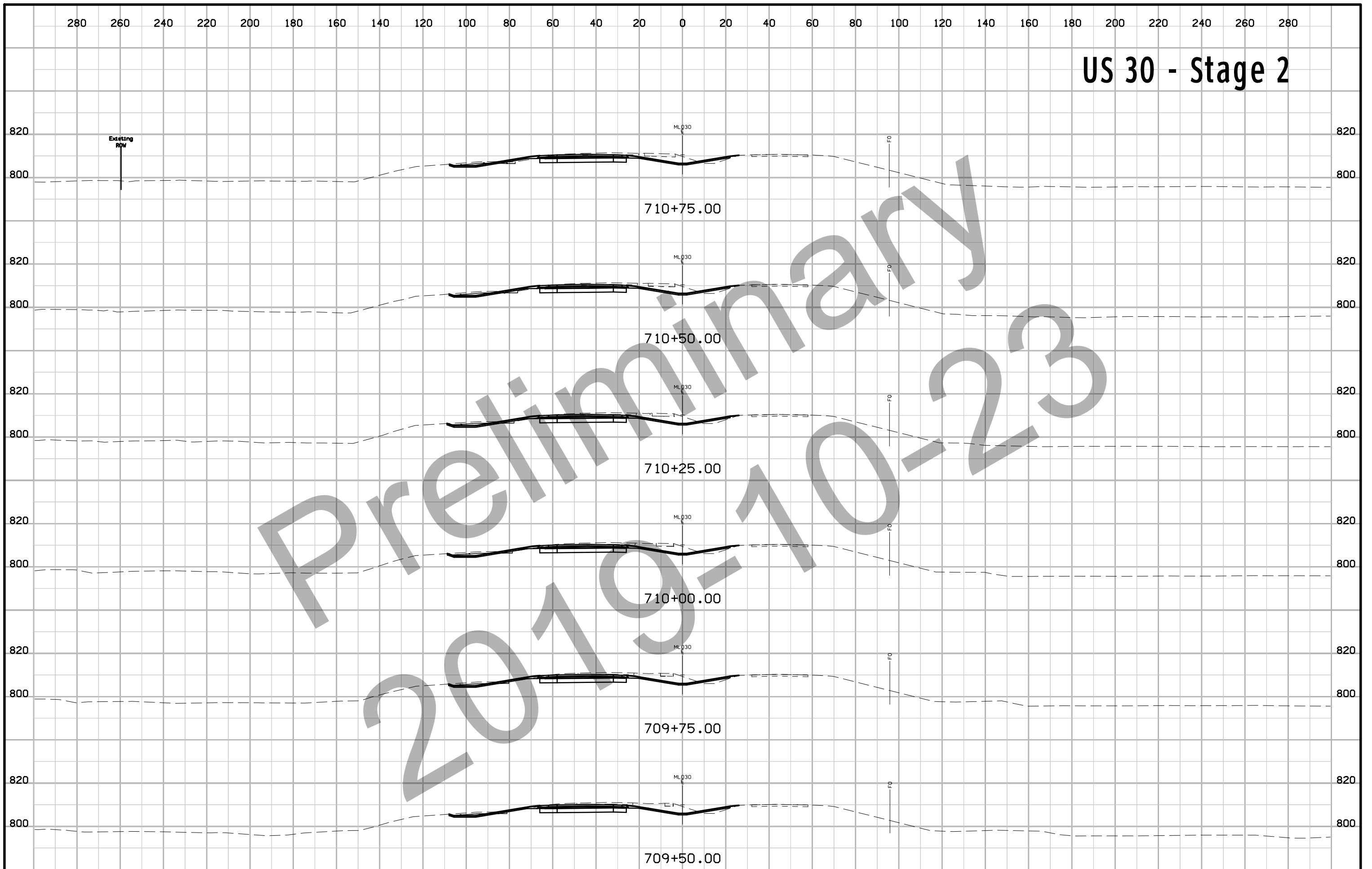
# US 30 - Stage 2



# US 30 - Stage 2

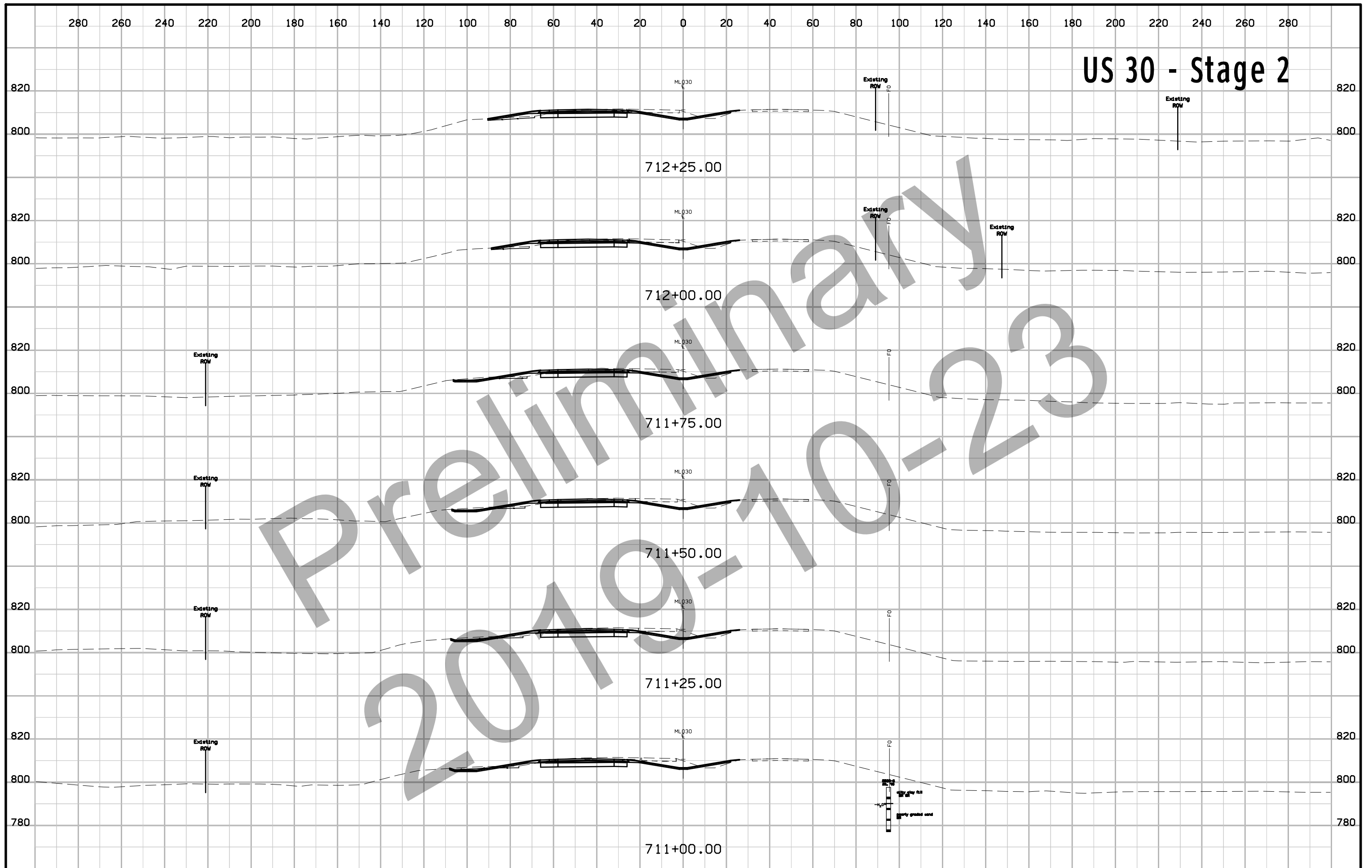


# US 30 - Stage 2

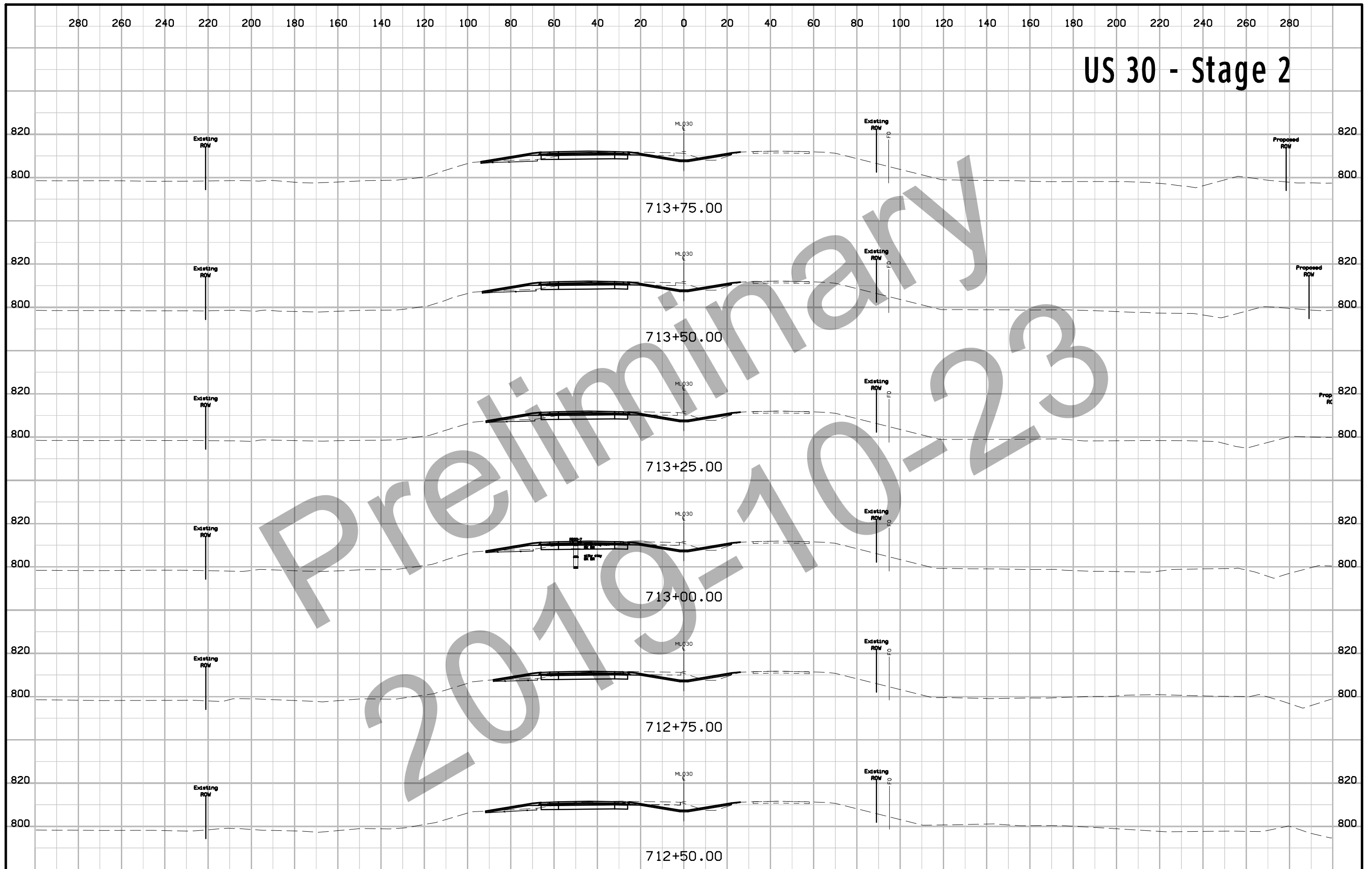




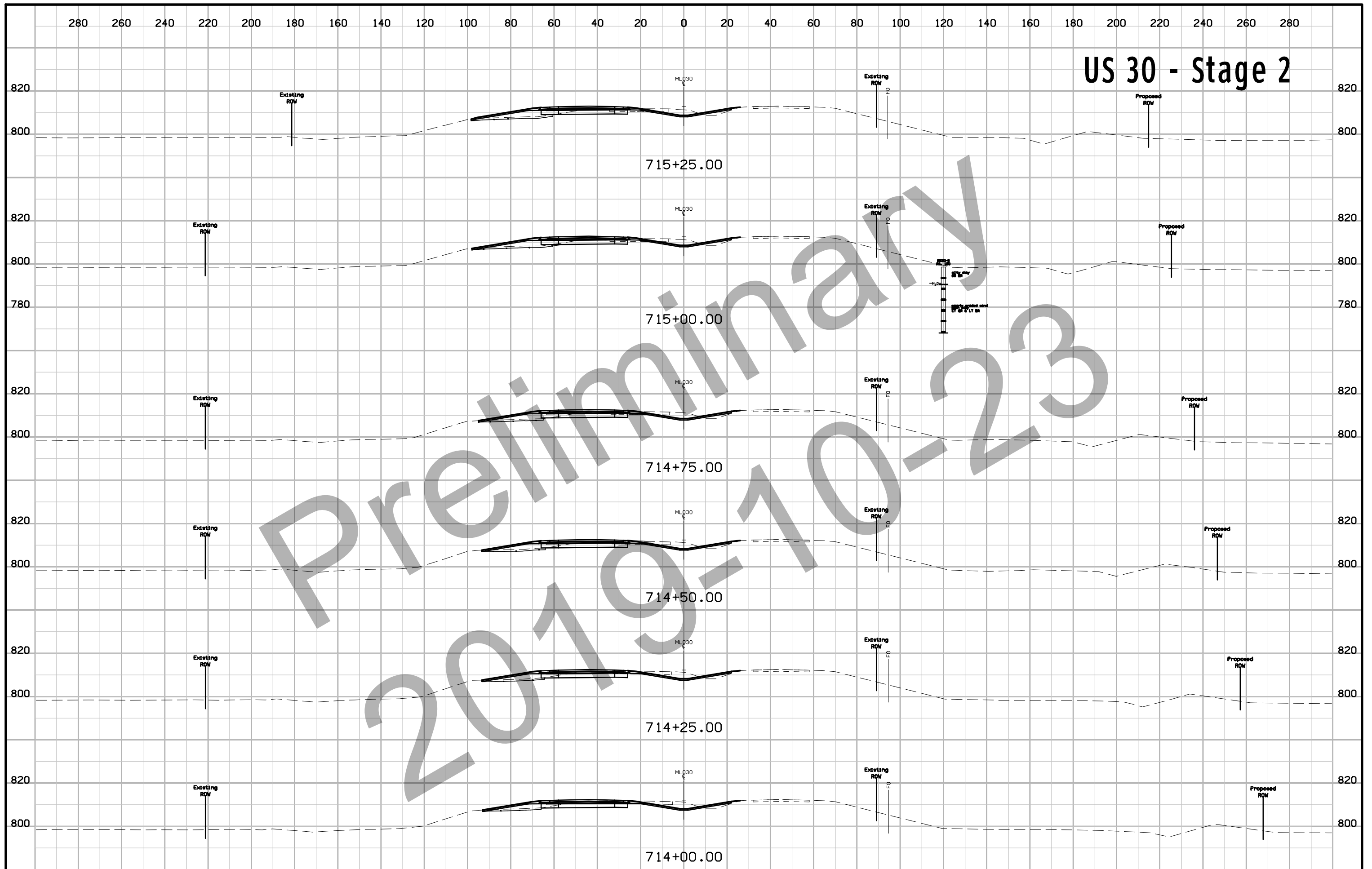
# US 30 - Stage 2



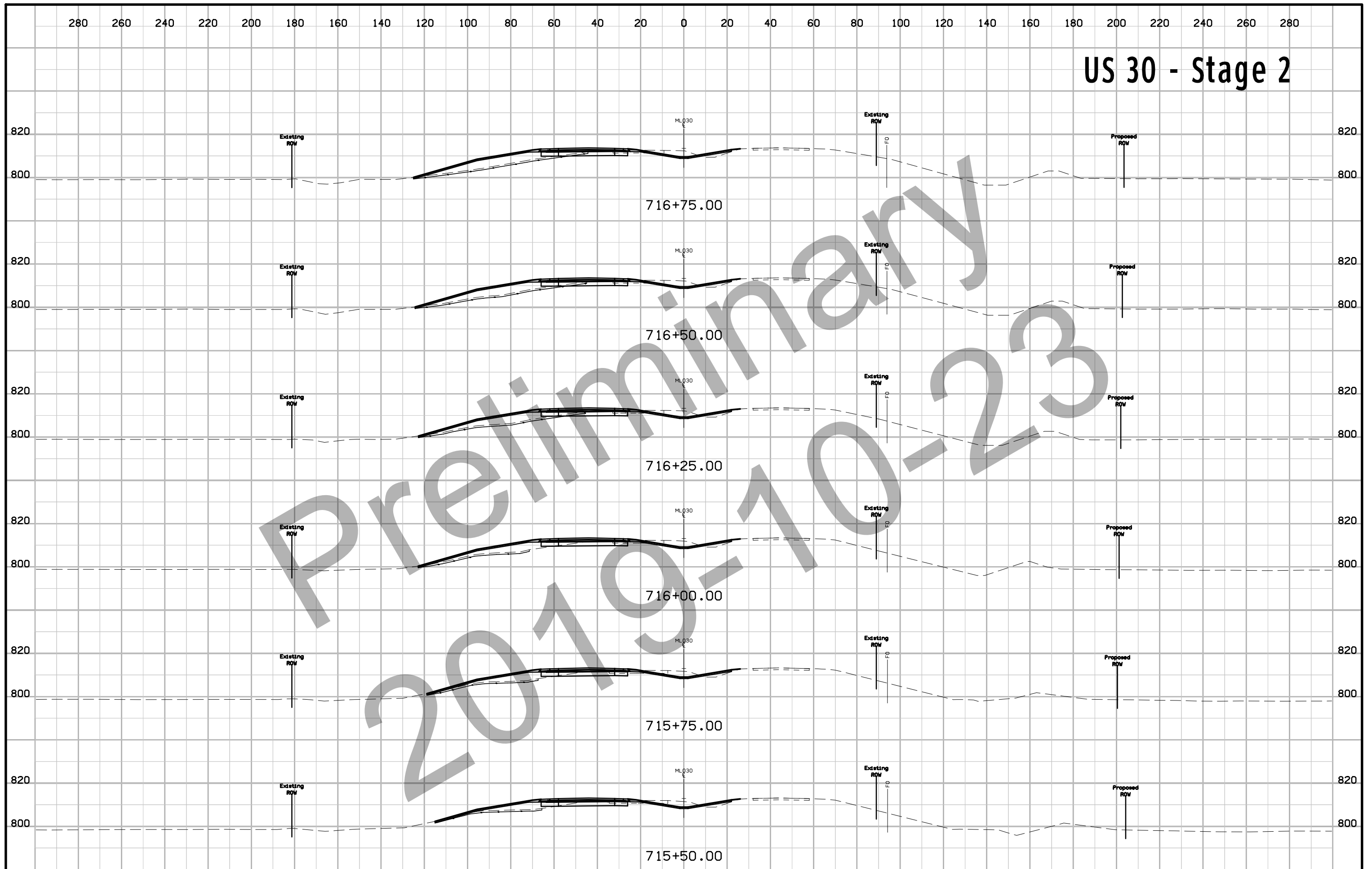
# US 30 - Stage 2



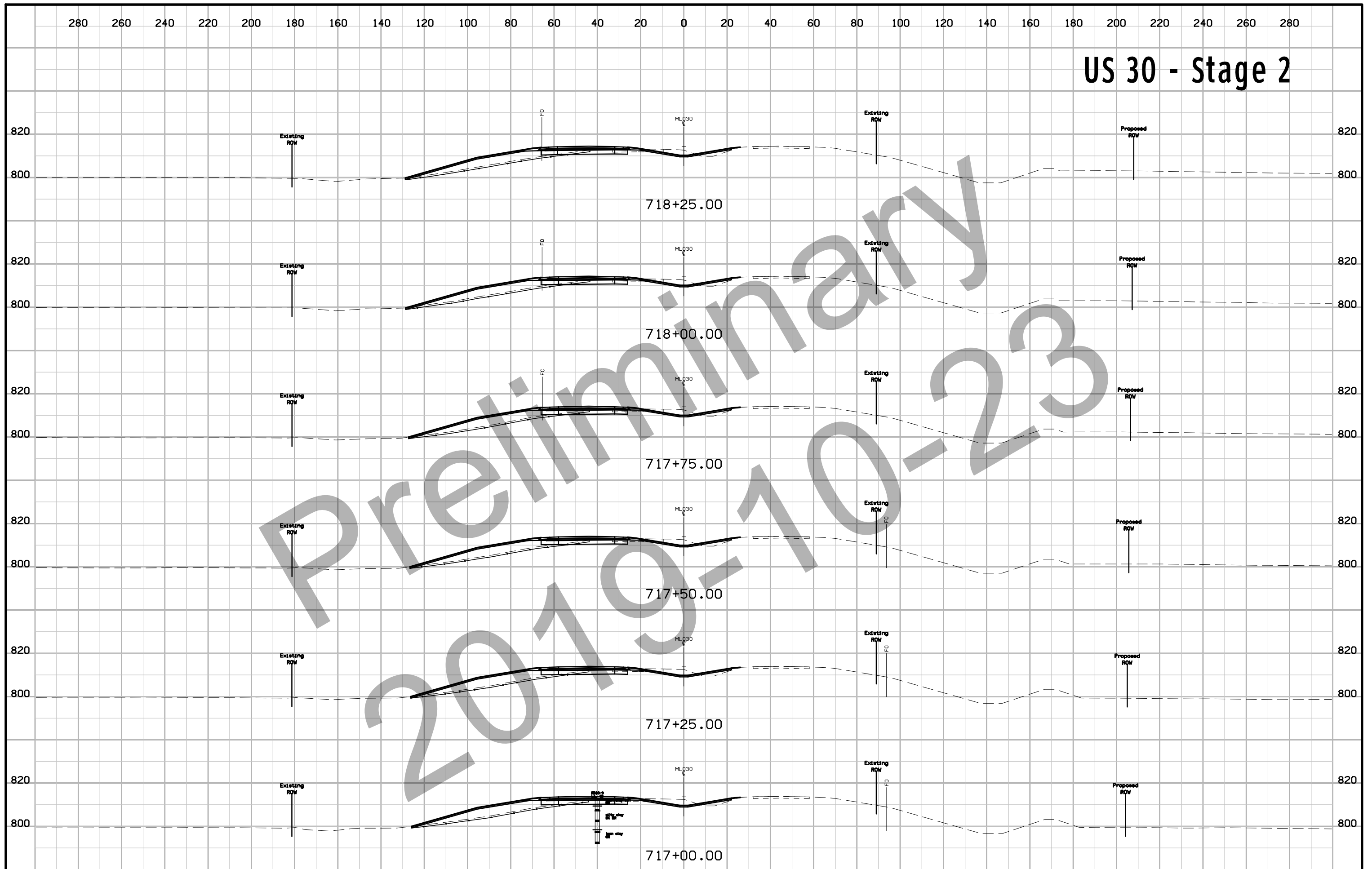
# US 30 - Stage 2



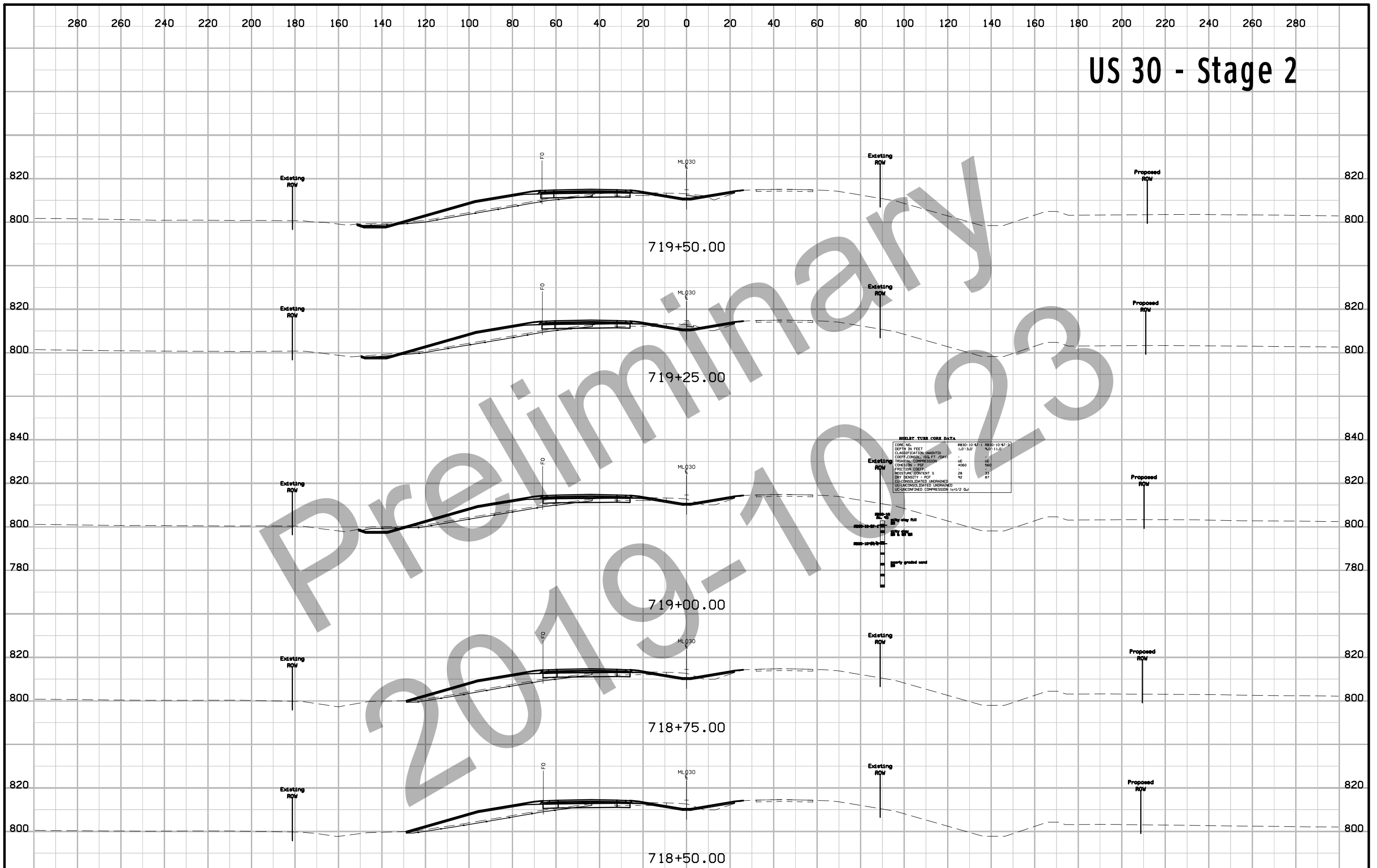
# US 30 - Stage 2



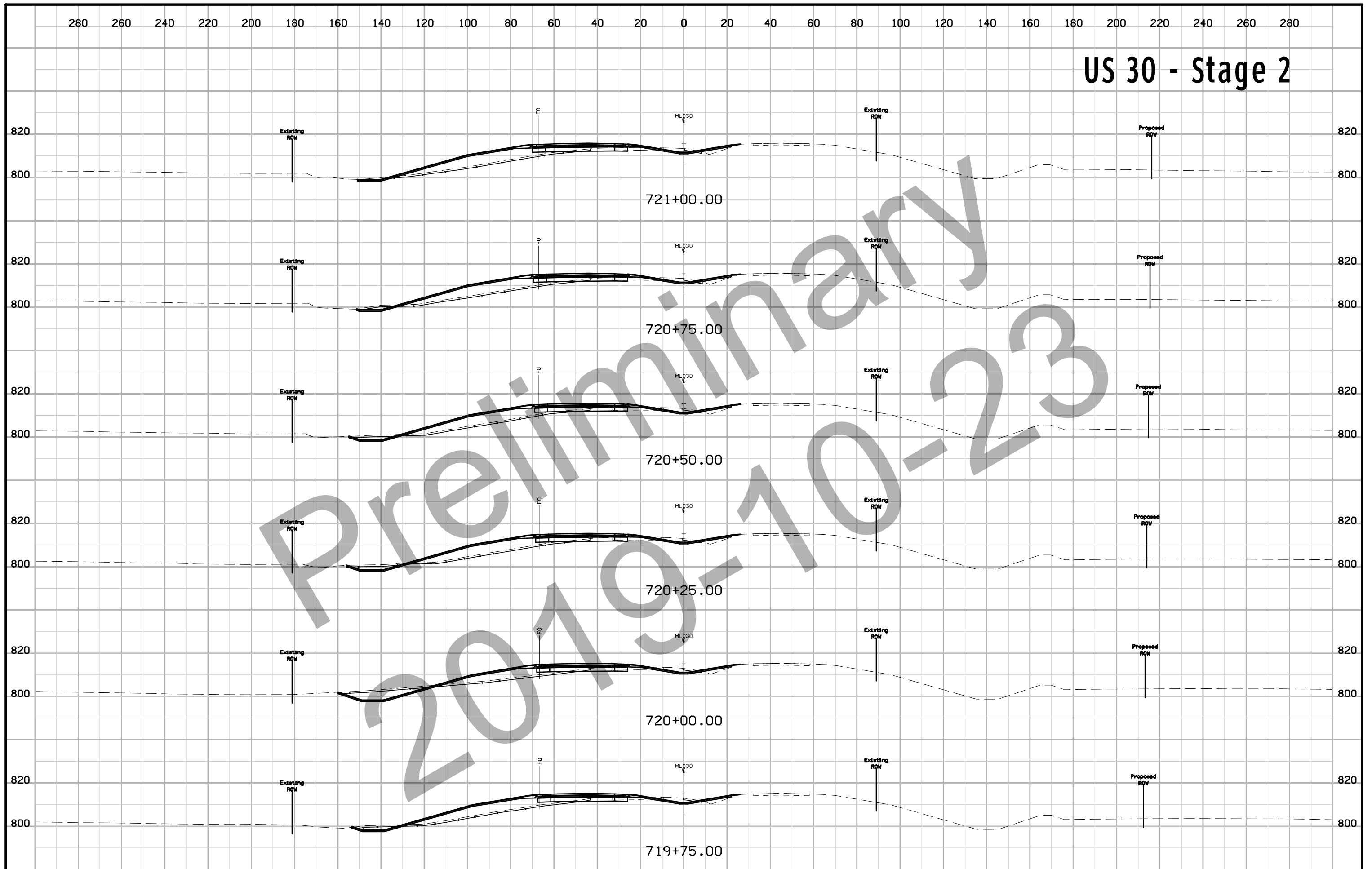
# US 30 - Stage 2



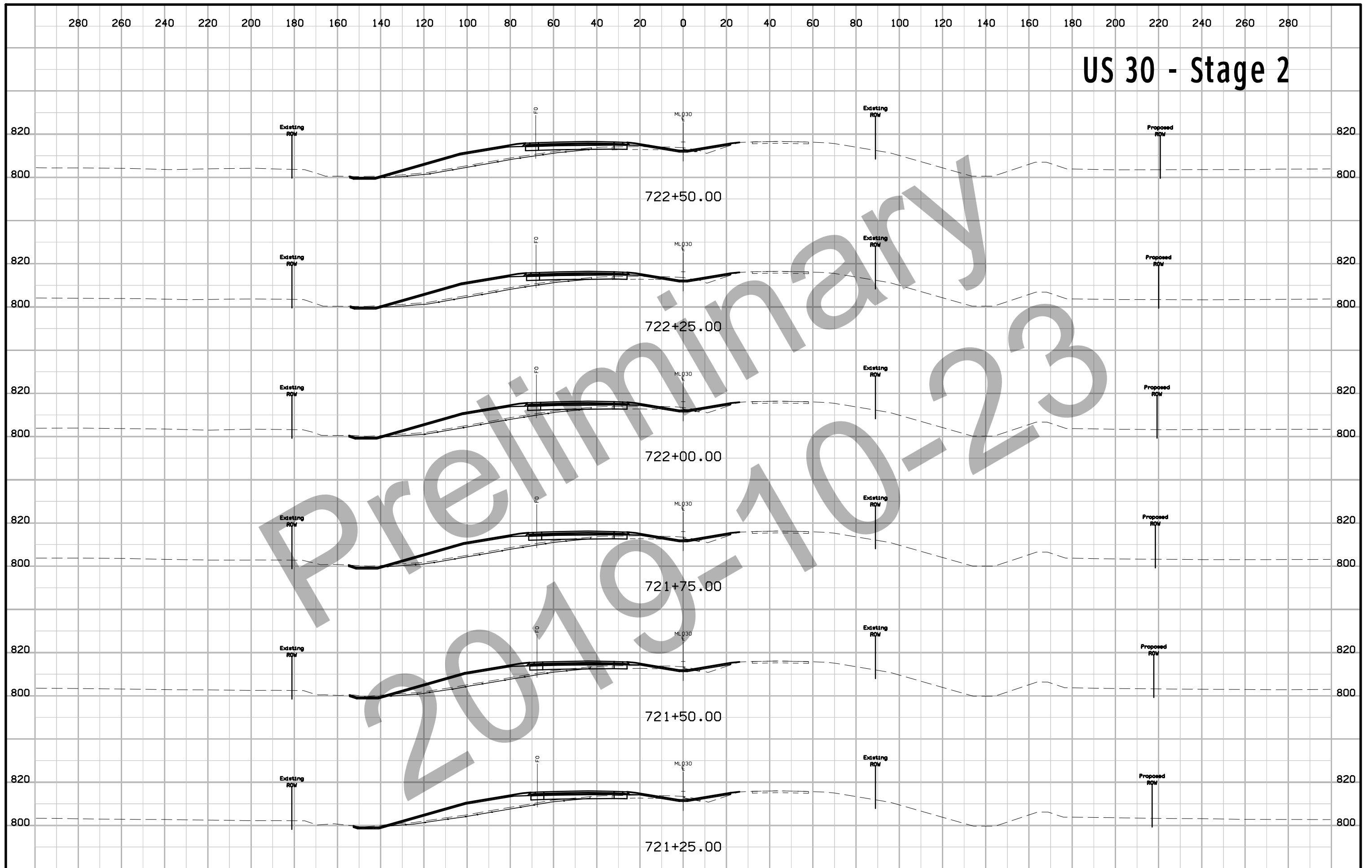
# US 30 - Stage 2



# US 30 - Stage 2

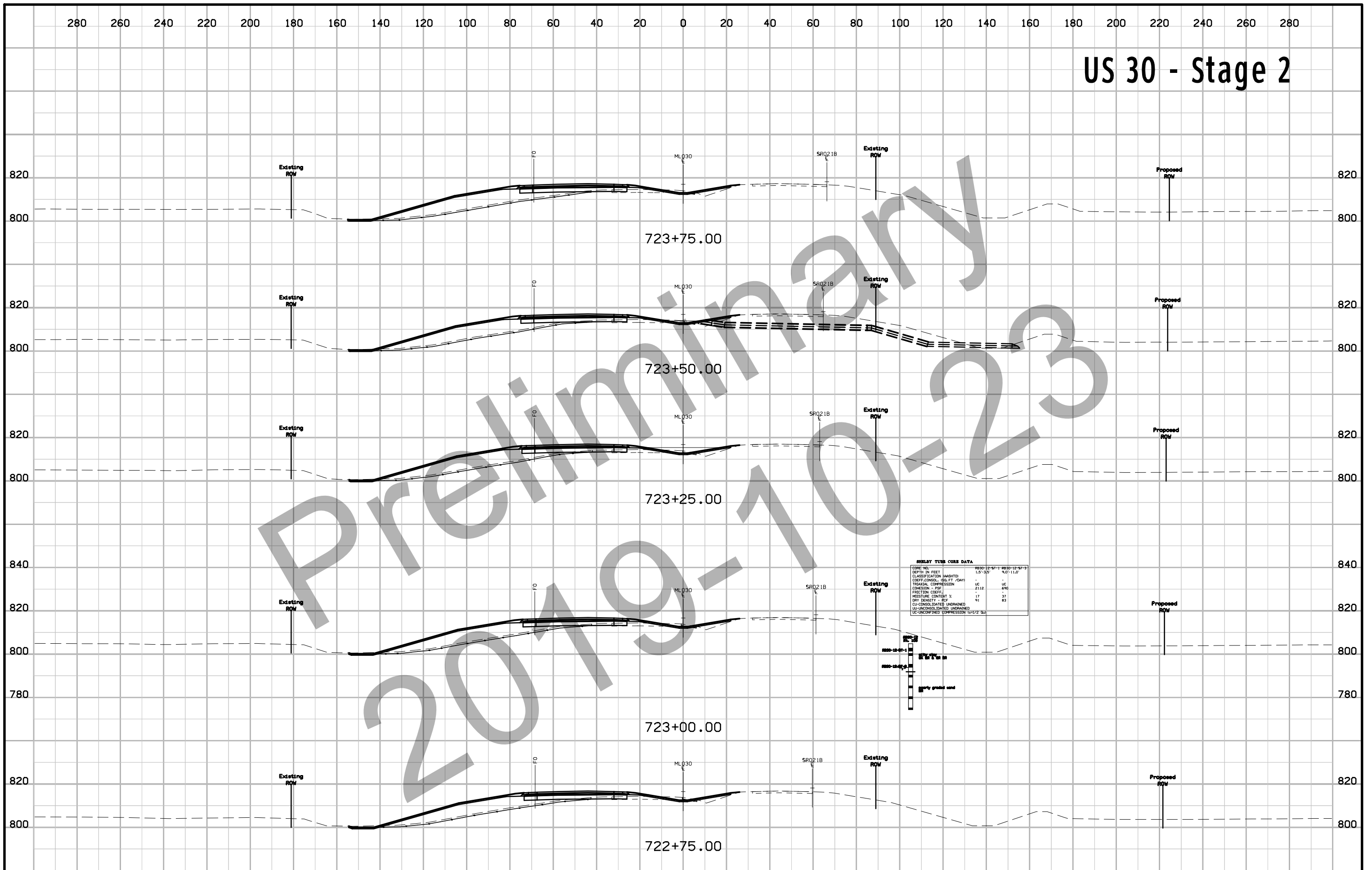


# US 30 - Stage 2





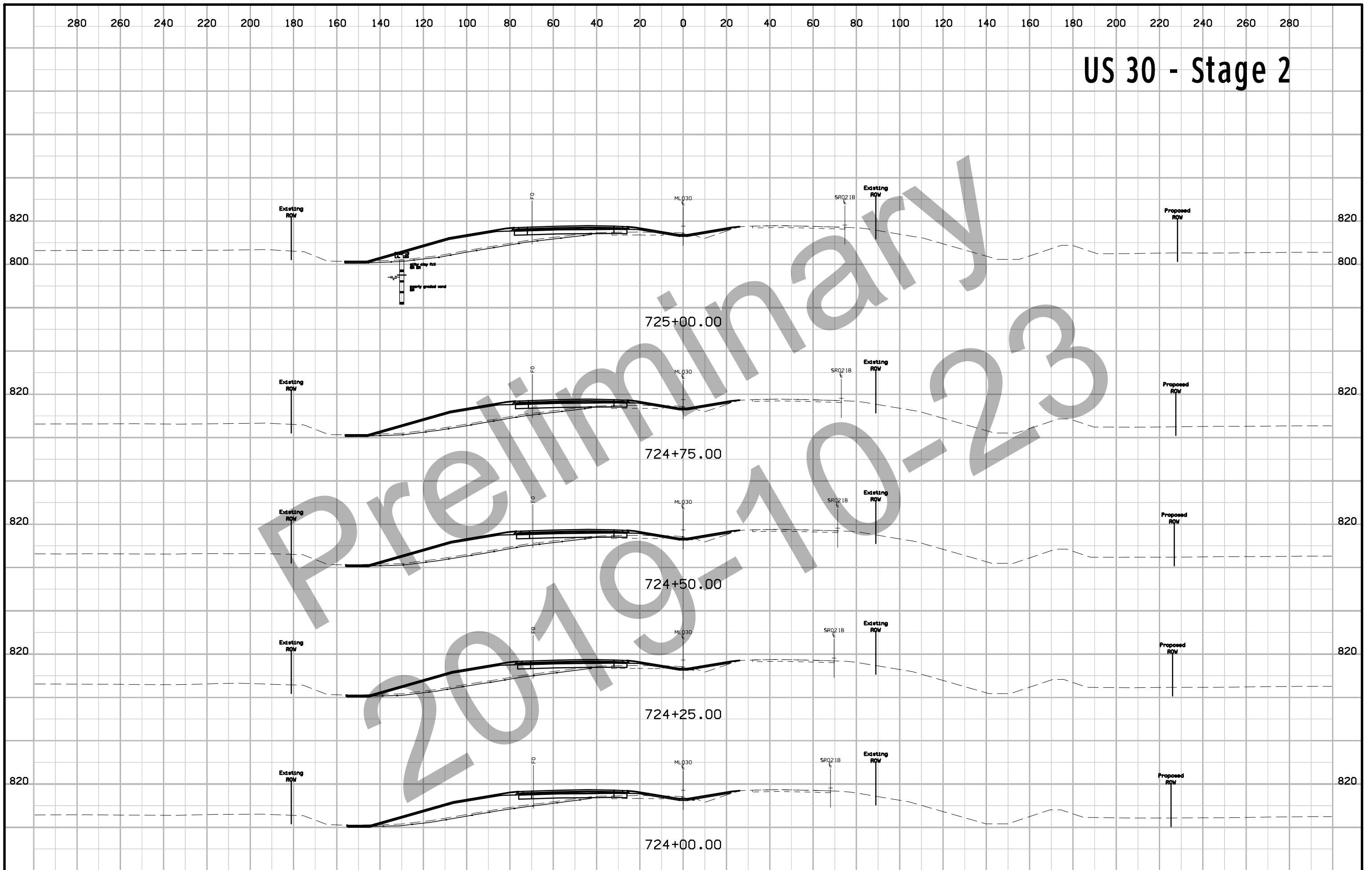
# US 30 - Stage 2



**SHIELT TUBE CORE DATA**

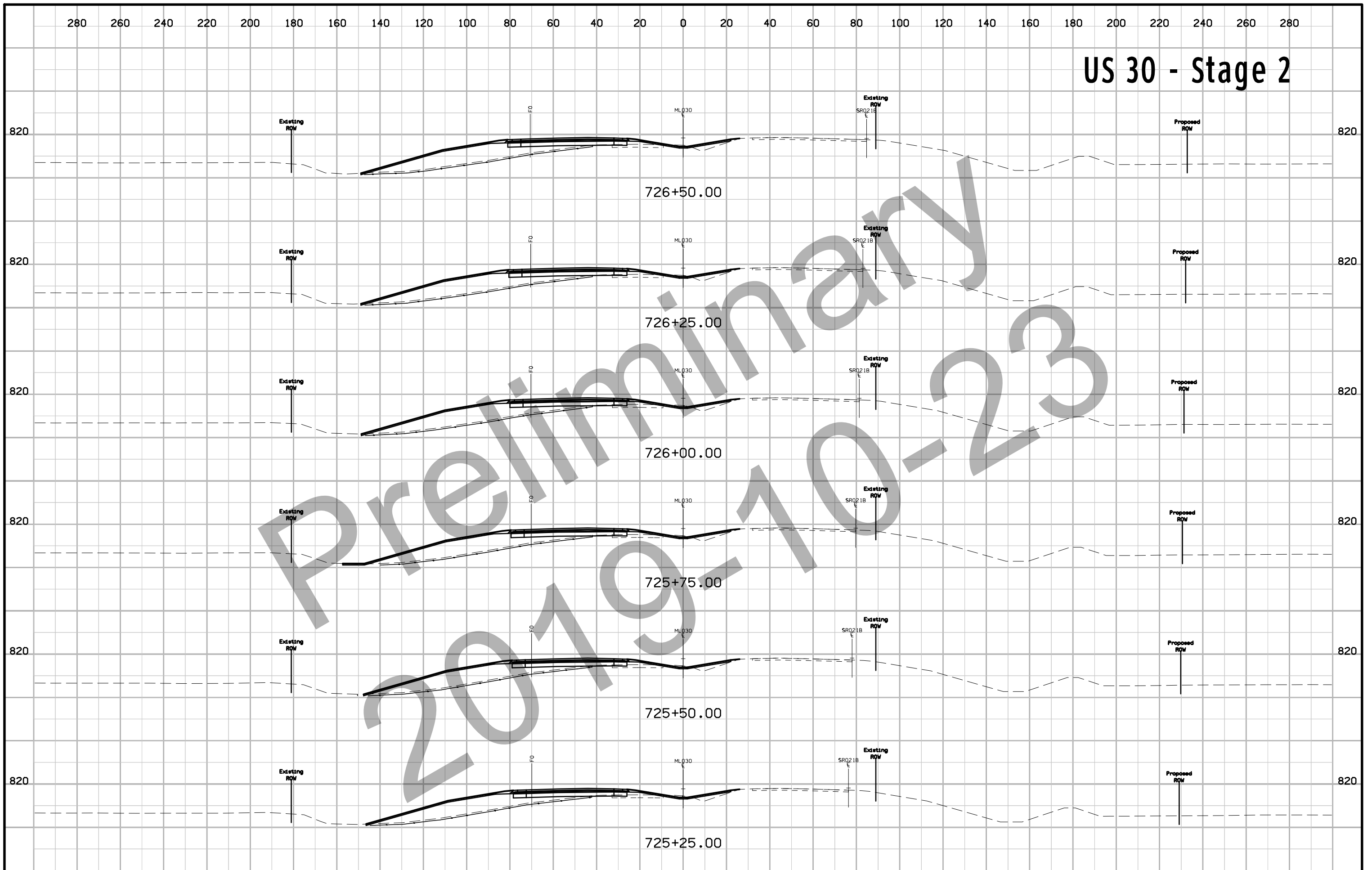
CORE NO.	DEPTH IN FEET	CLASSIFICATION (ASHSTO)	COEFF. CONSOL. (100 FT / DAY)	TRIAL. COMPRESSION	COHESION - PSF	FRICTION COEFF.	MOISTURE CONTENT %	DRY DENSITY - PCF	U-CONSOLIDATED UNDRAINED	U-CONSOLIDATED COMPRESSION (1/1/2 DIA)
RS30-12-91-1	1.5'-3.0'	ML-11.0'	-	UC	2112	17	37	91	-	-
RS30-12-91-3	4.0'-11.0'	-	-	UC	690	-	83	-	-	

# US 30 - Stage 2



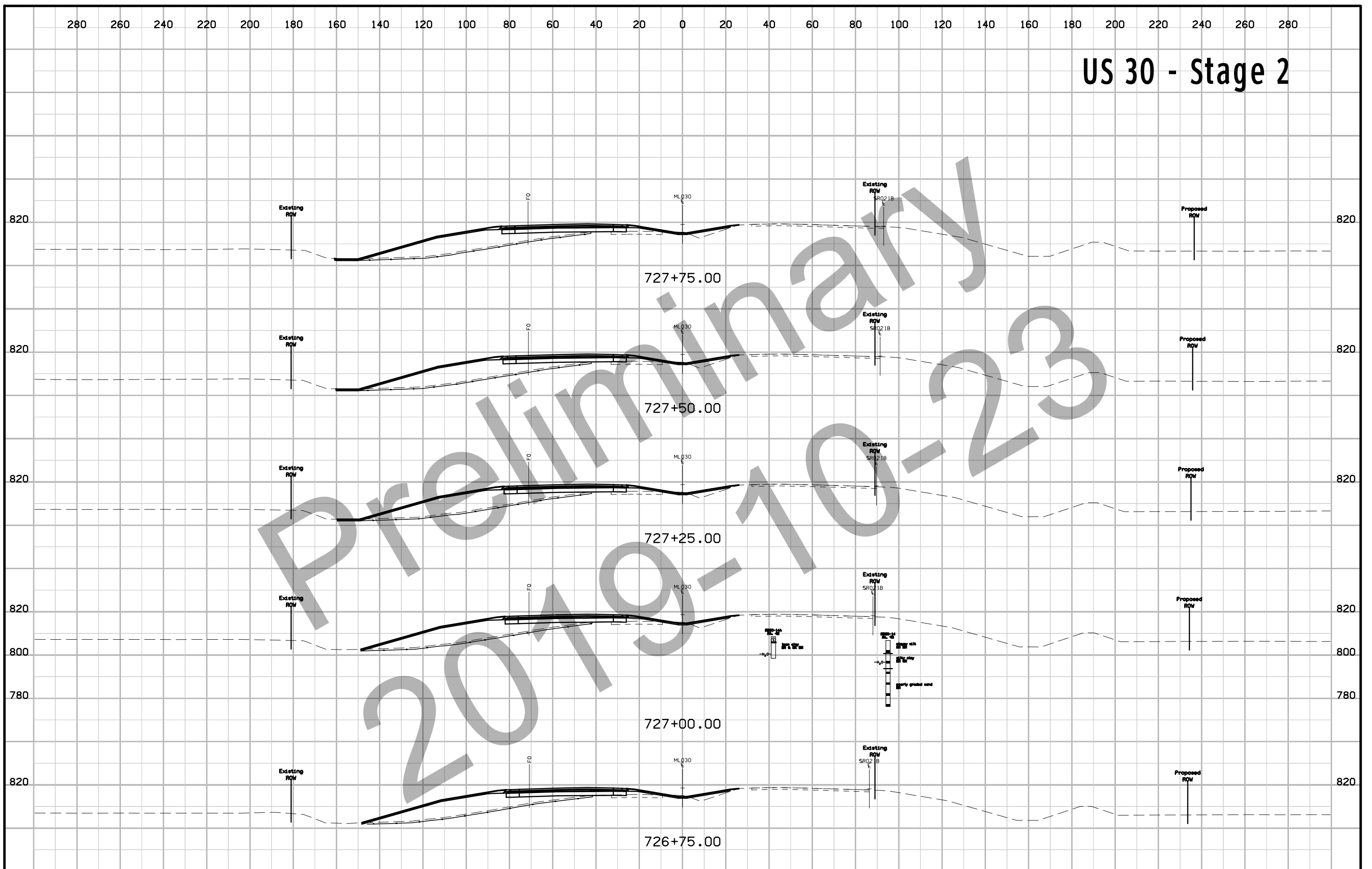
2019-10-23  
Preliminary

# US 30 - Stage 2

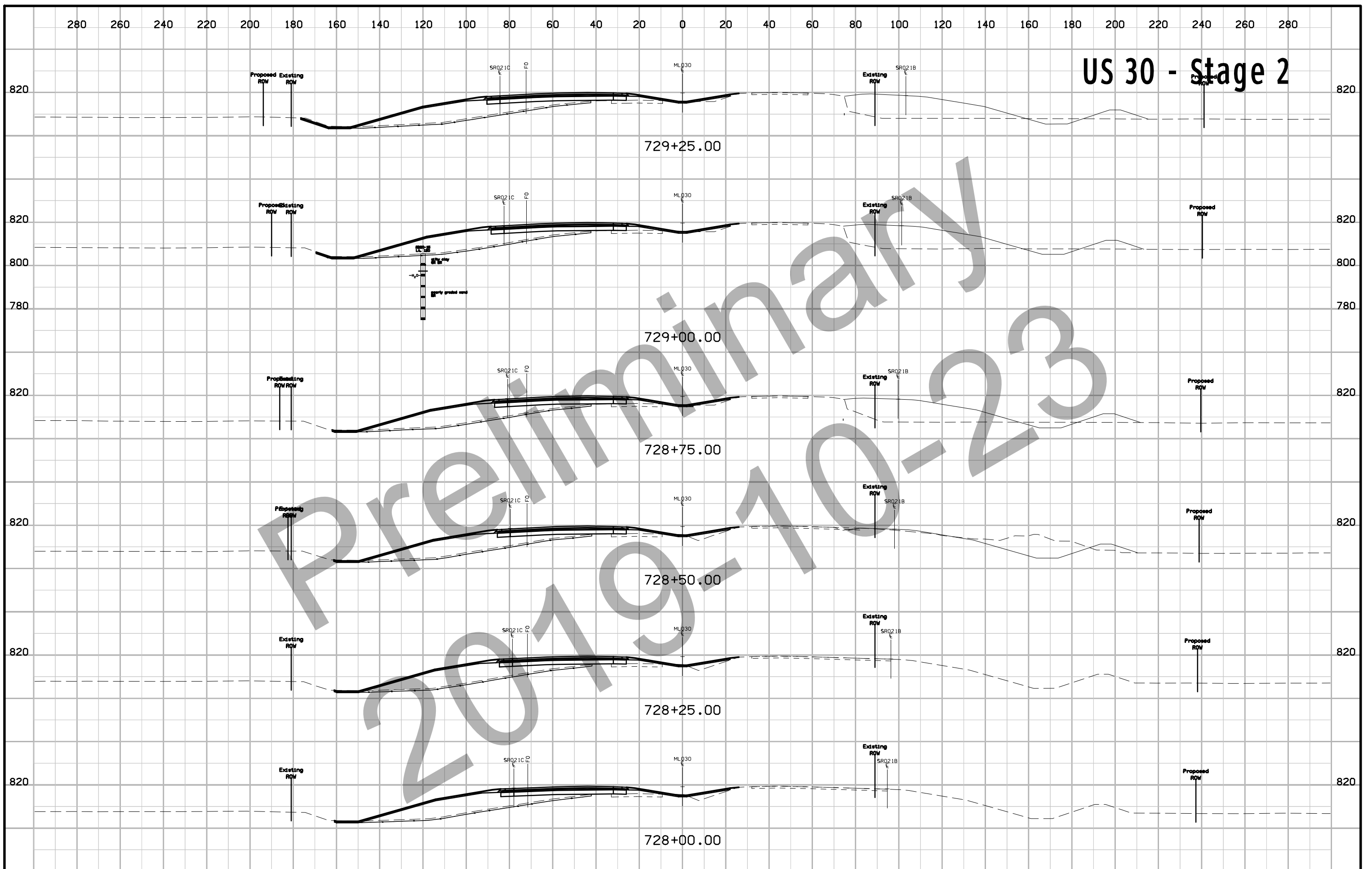


Preliminary 2019-10-23

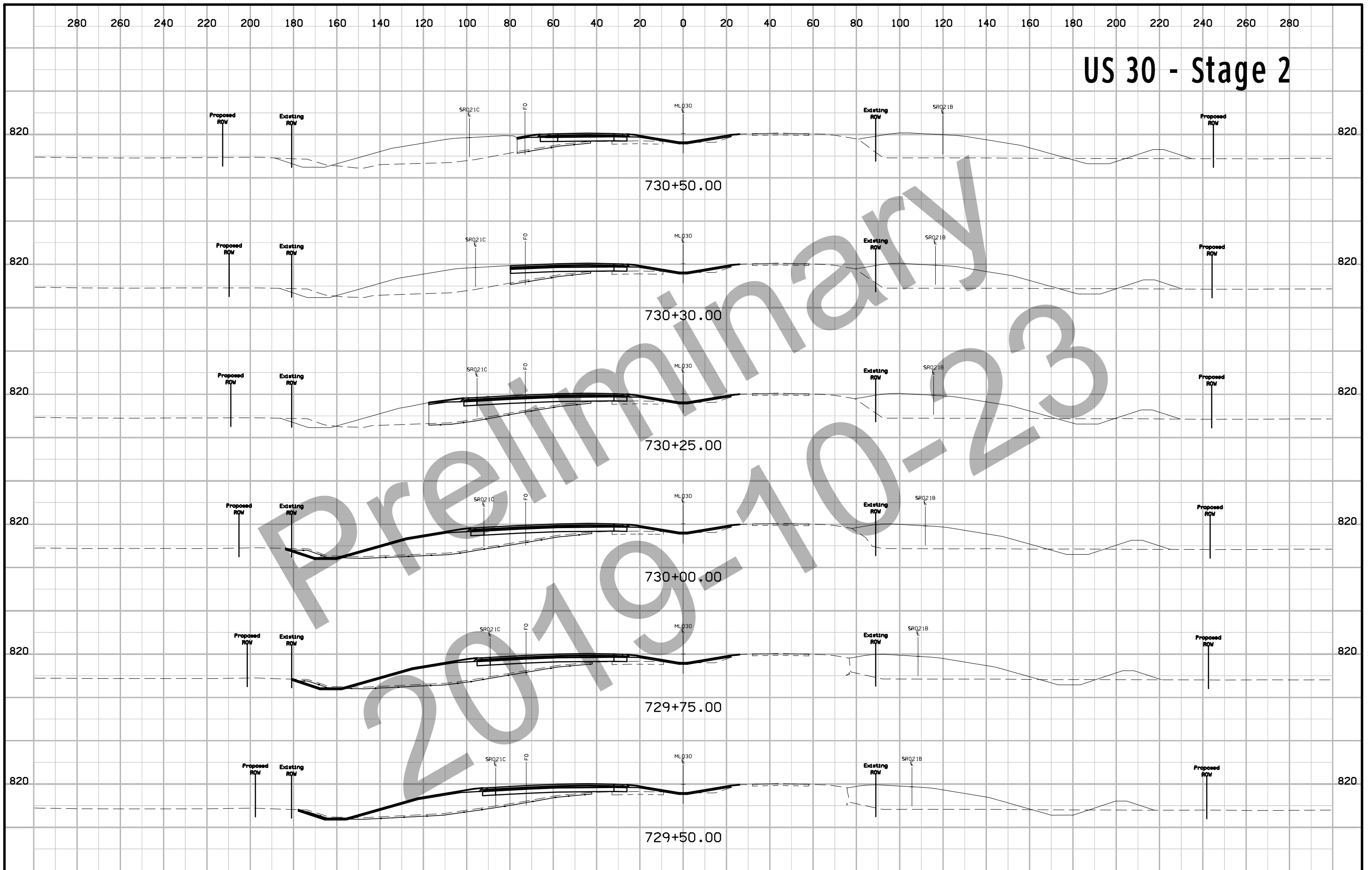
# US 30 - Stage 2



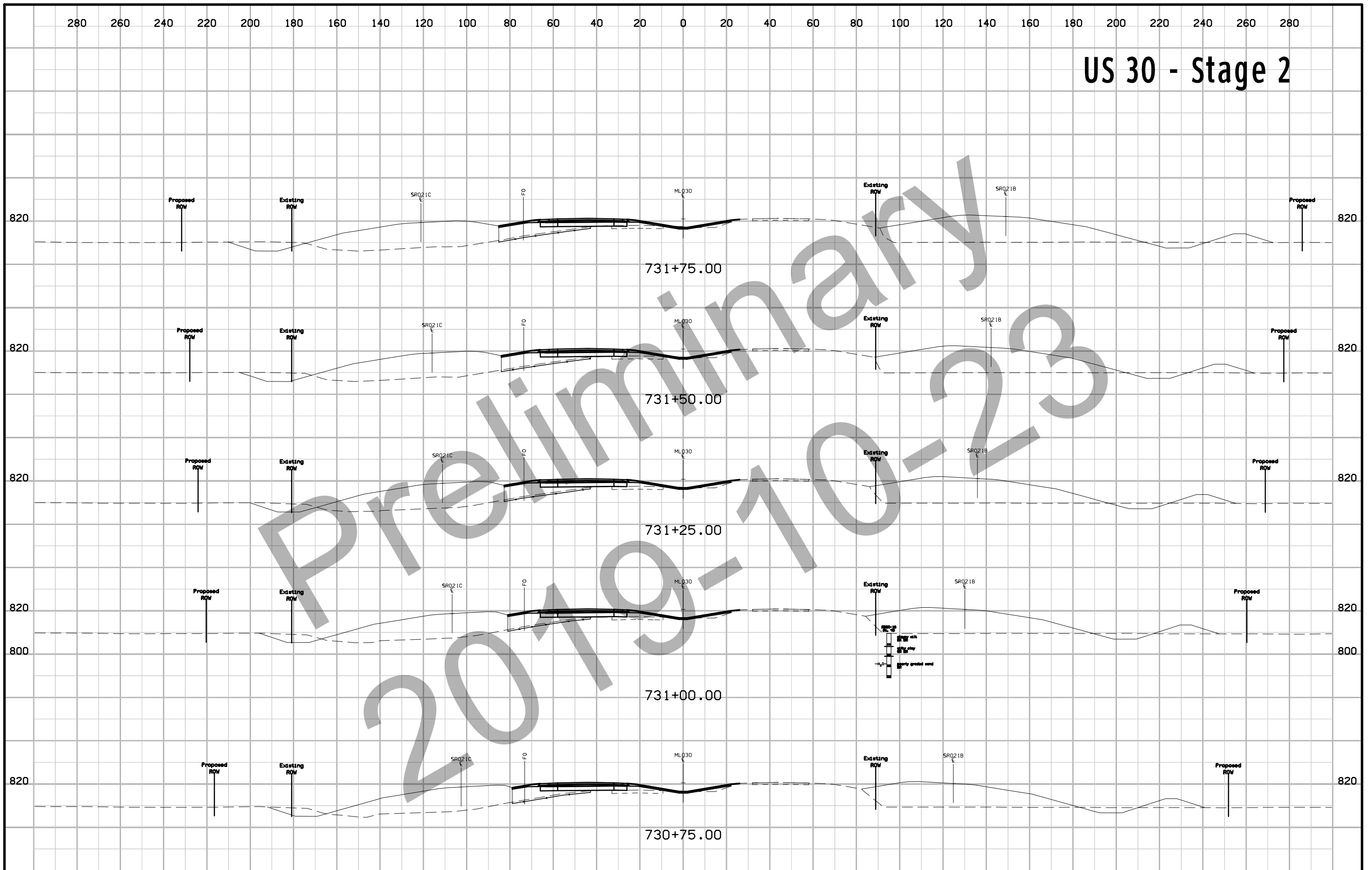
# US 30 - Stage 2



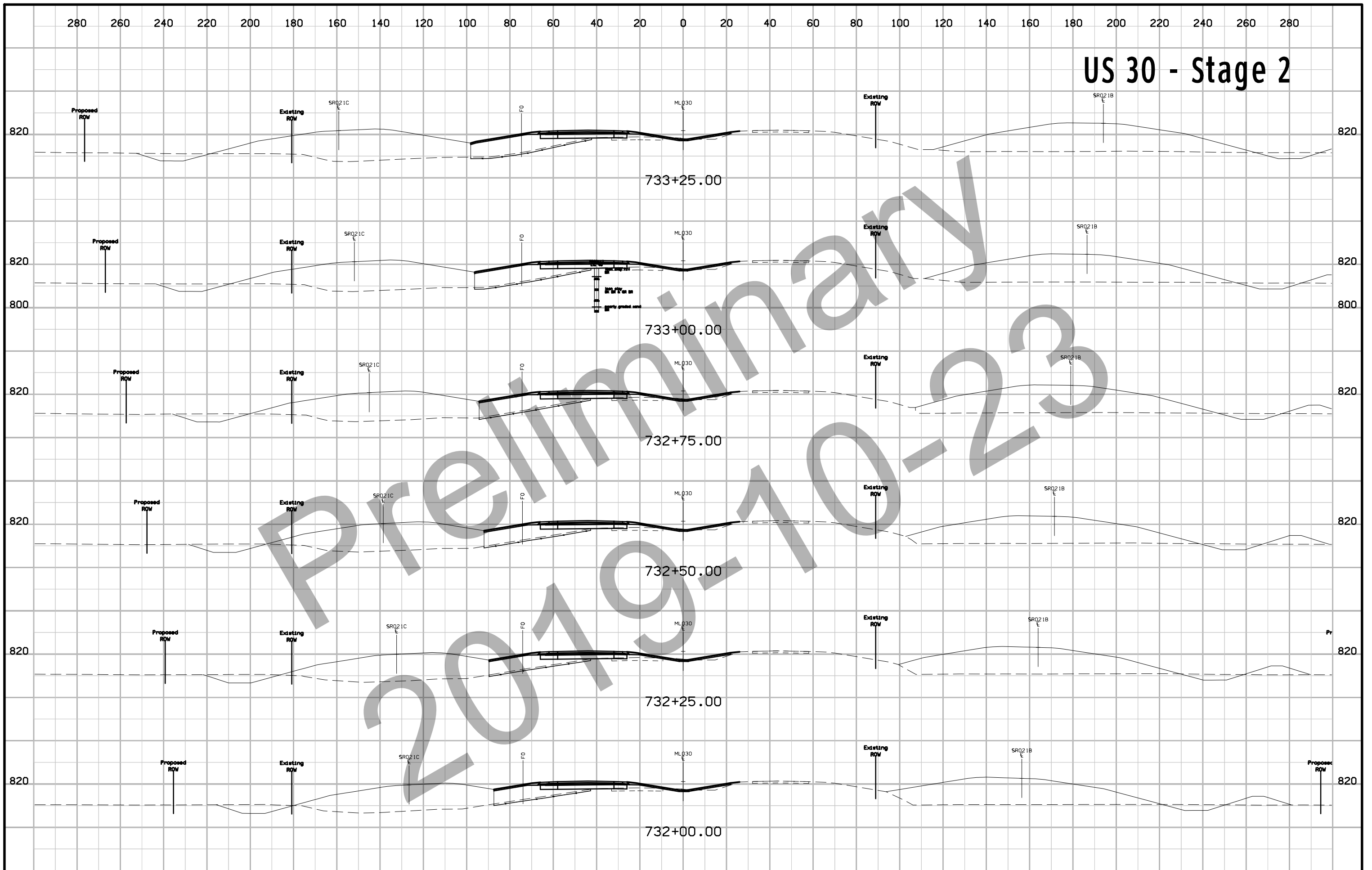
# US 30 - Stage 2



# US 30 - Stage 2

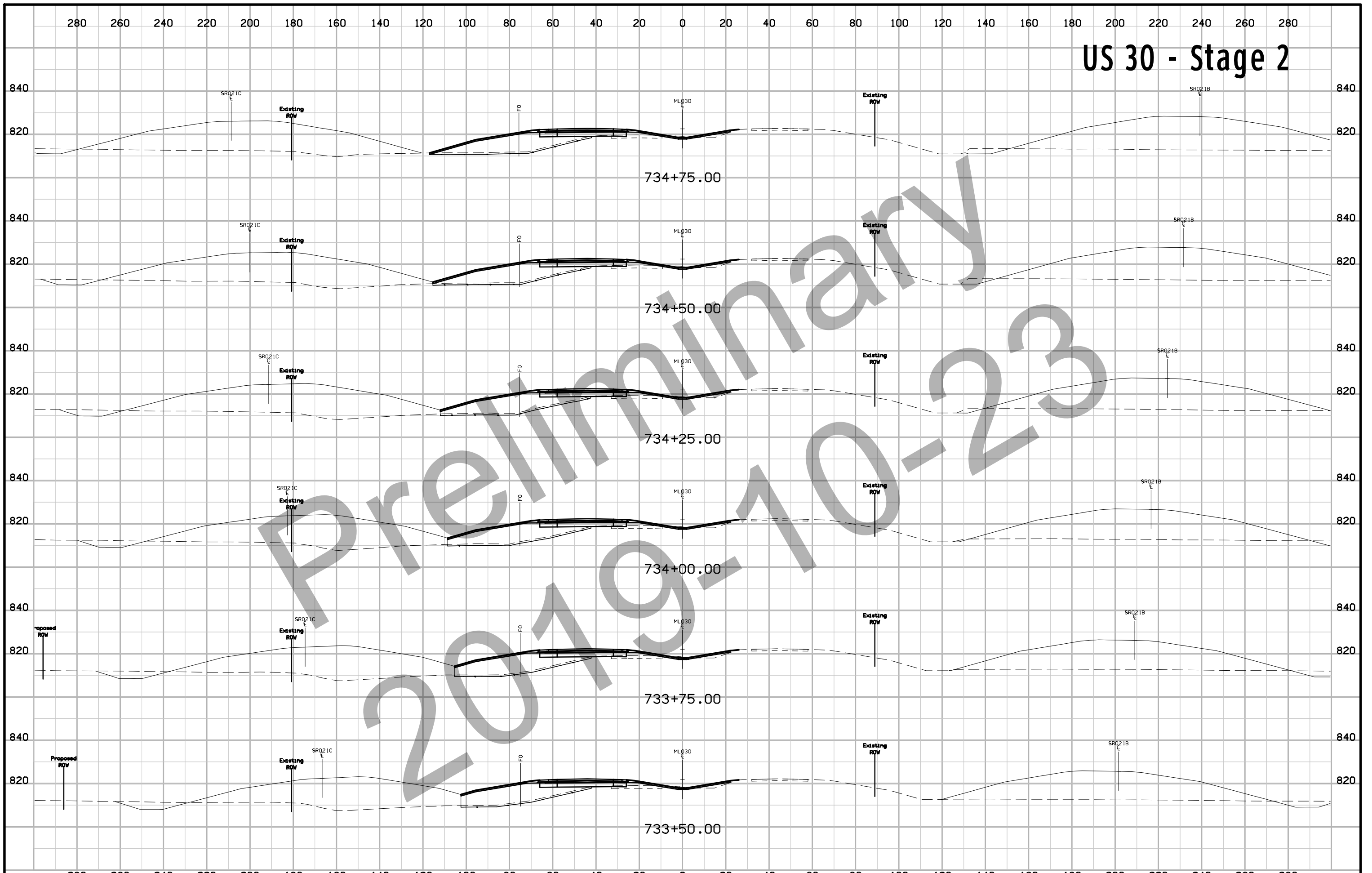


# US 30 - Stage 2

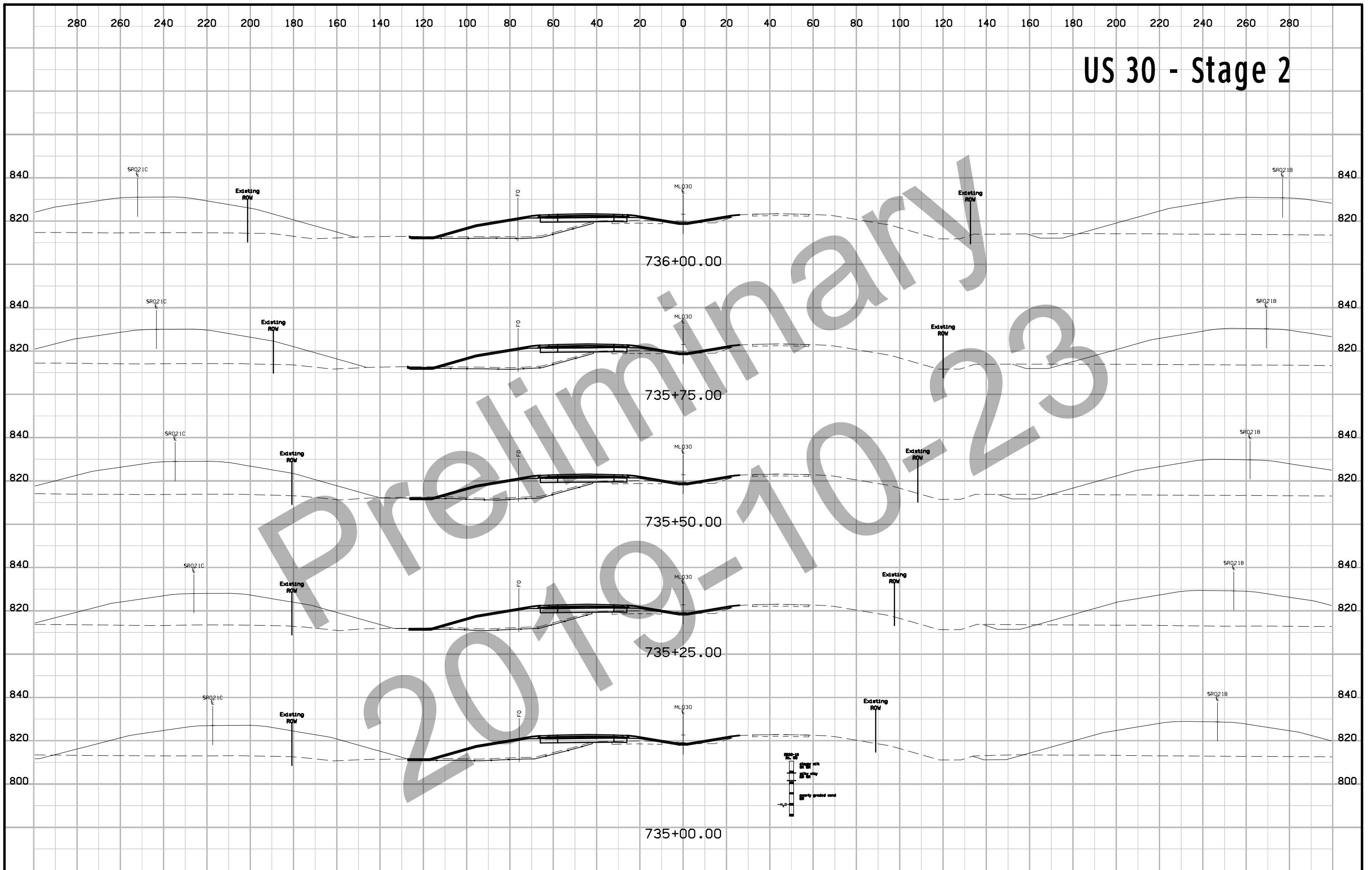




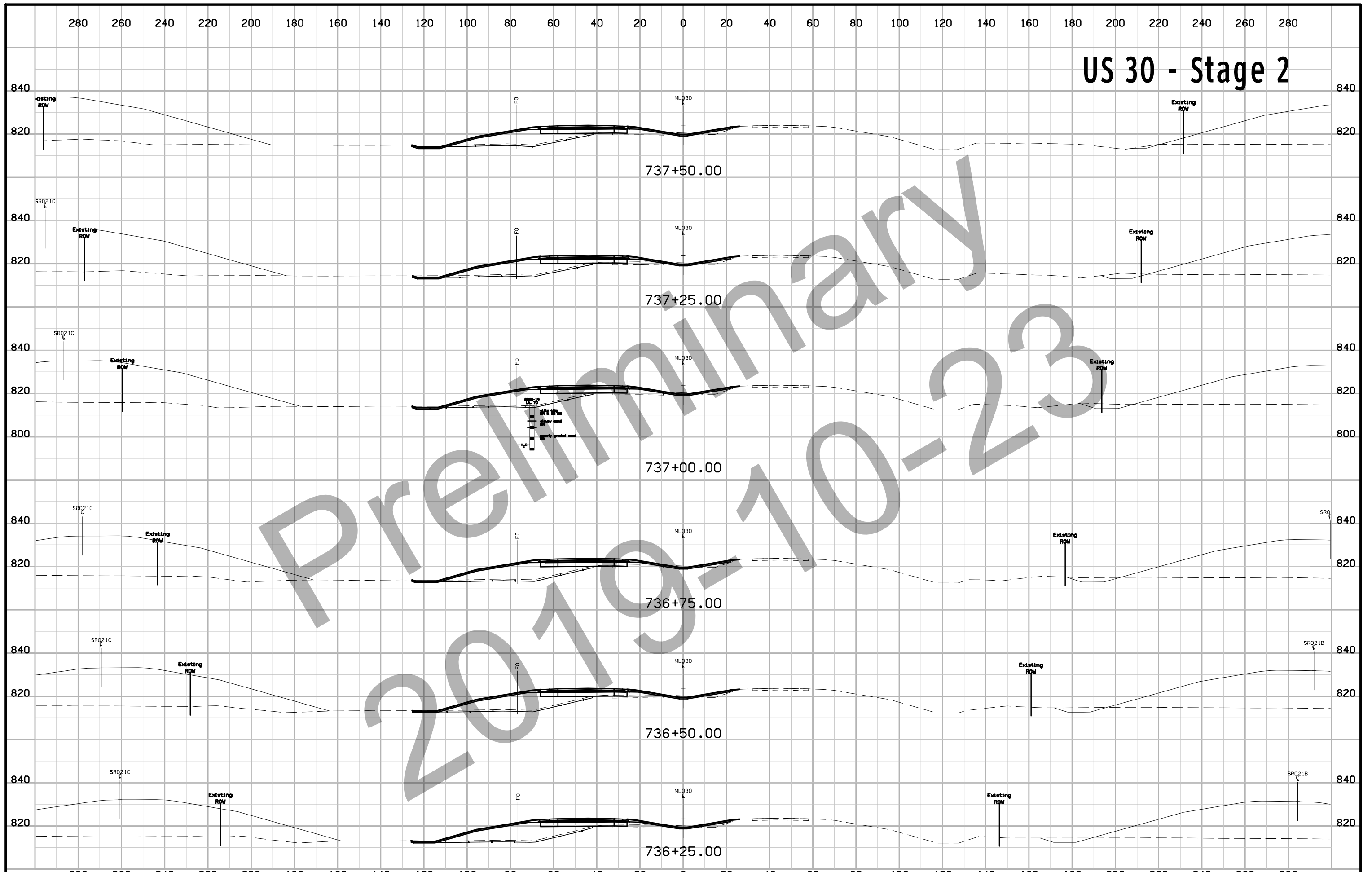
# US 30 - Stage 2



# US 30 - Stage 2

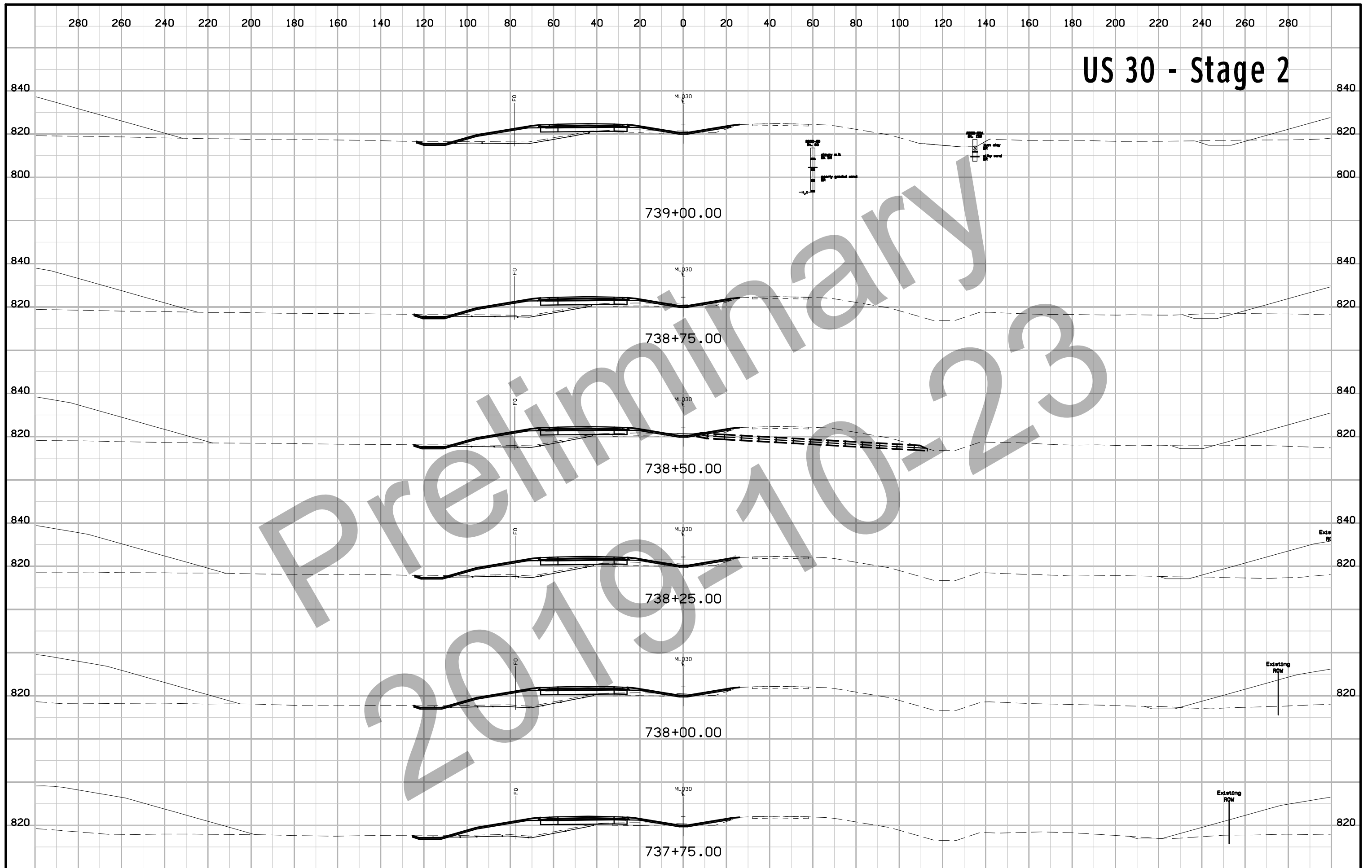


# US 30 - Stage 2

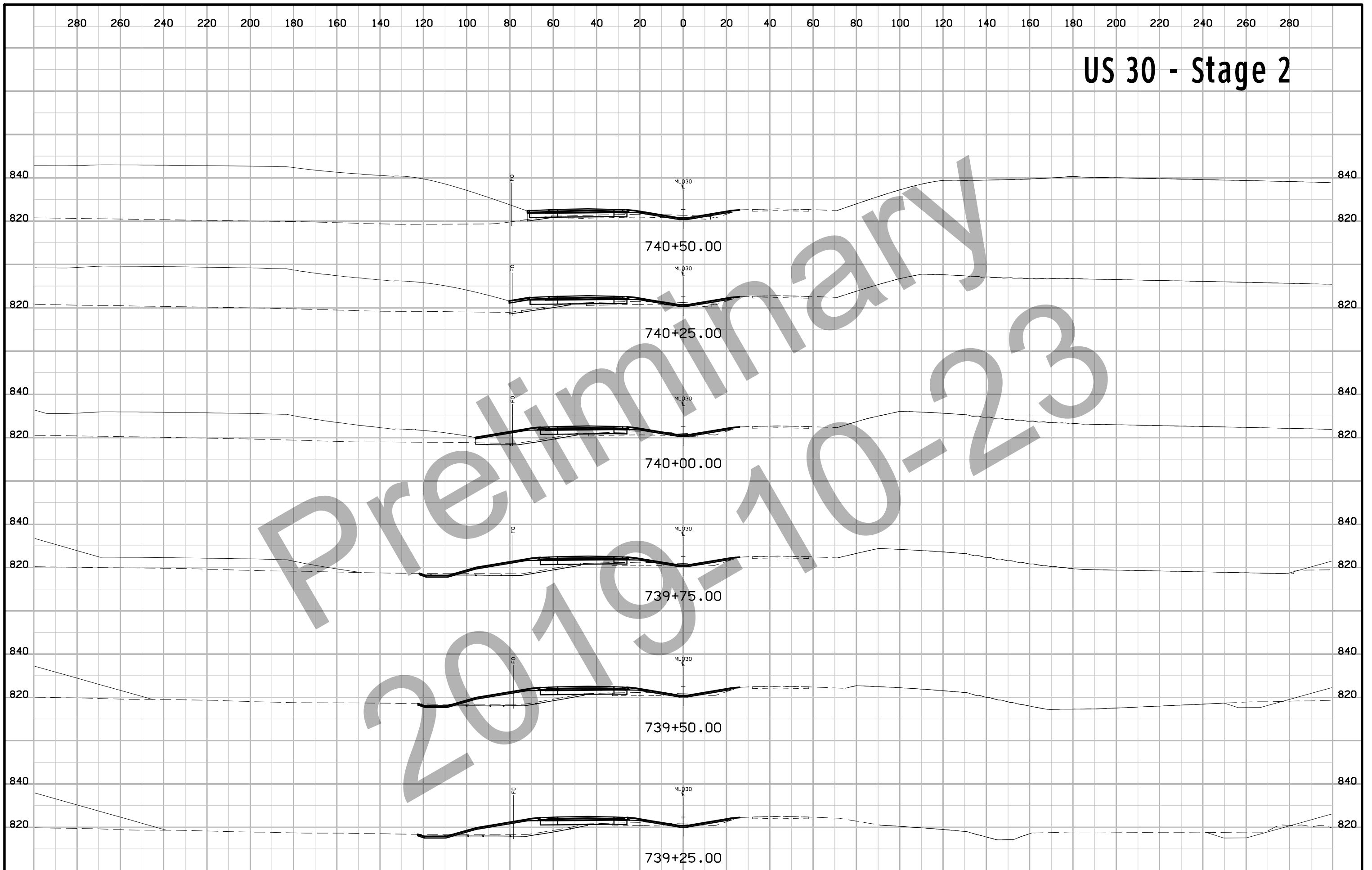


2019 10-23  
Preliminary

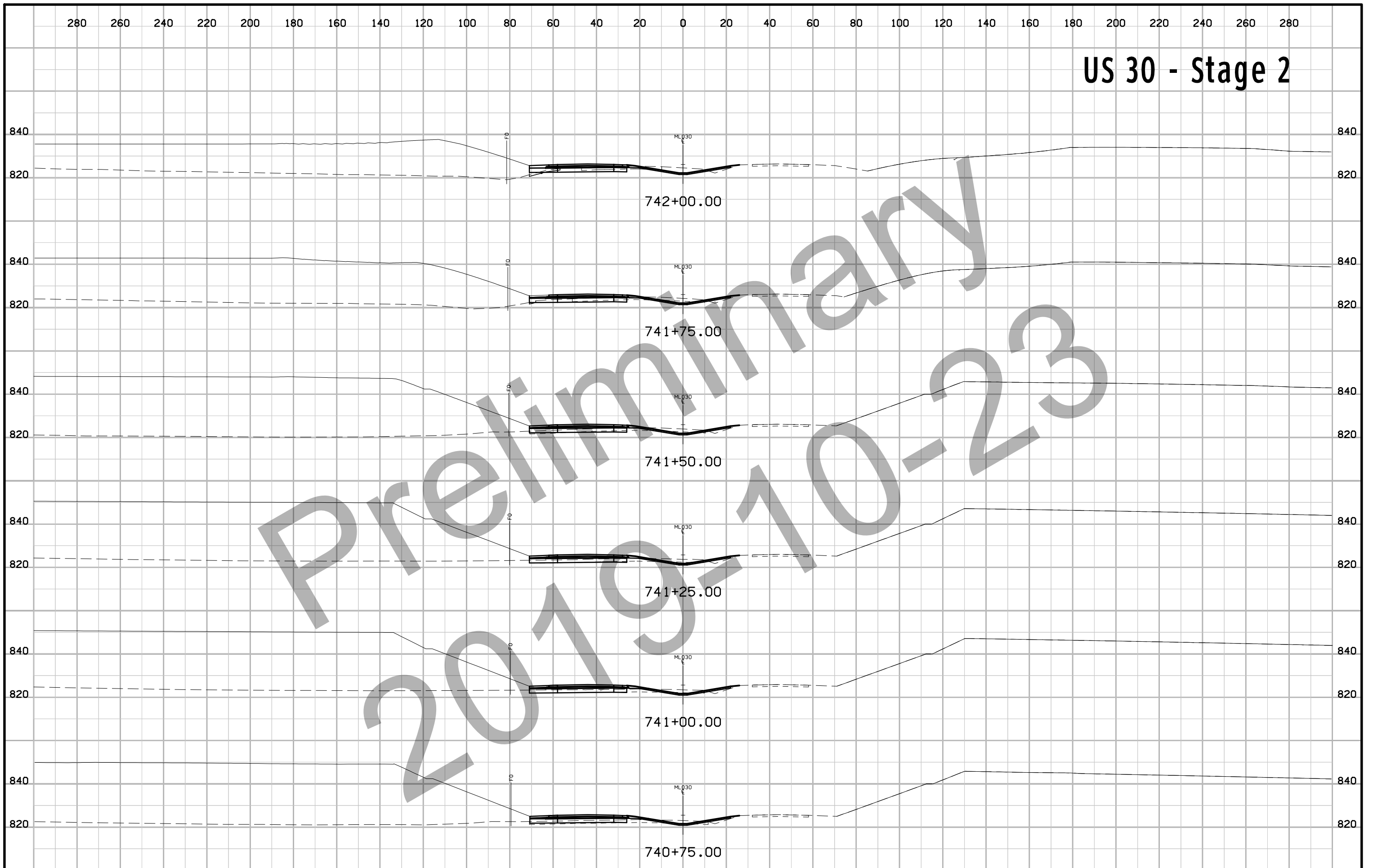
# US 30 - Stage 2



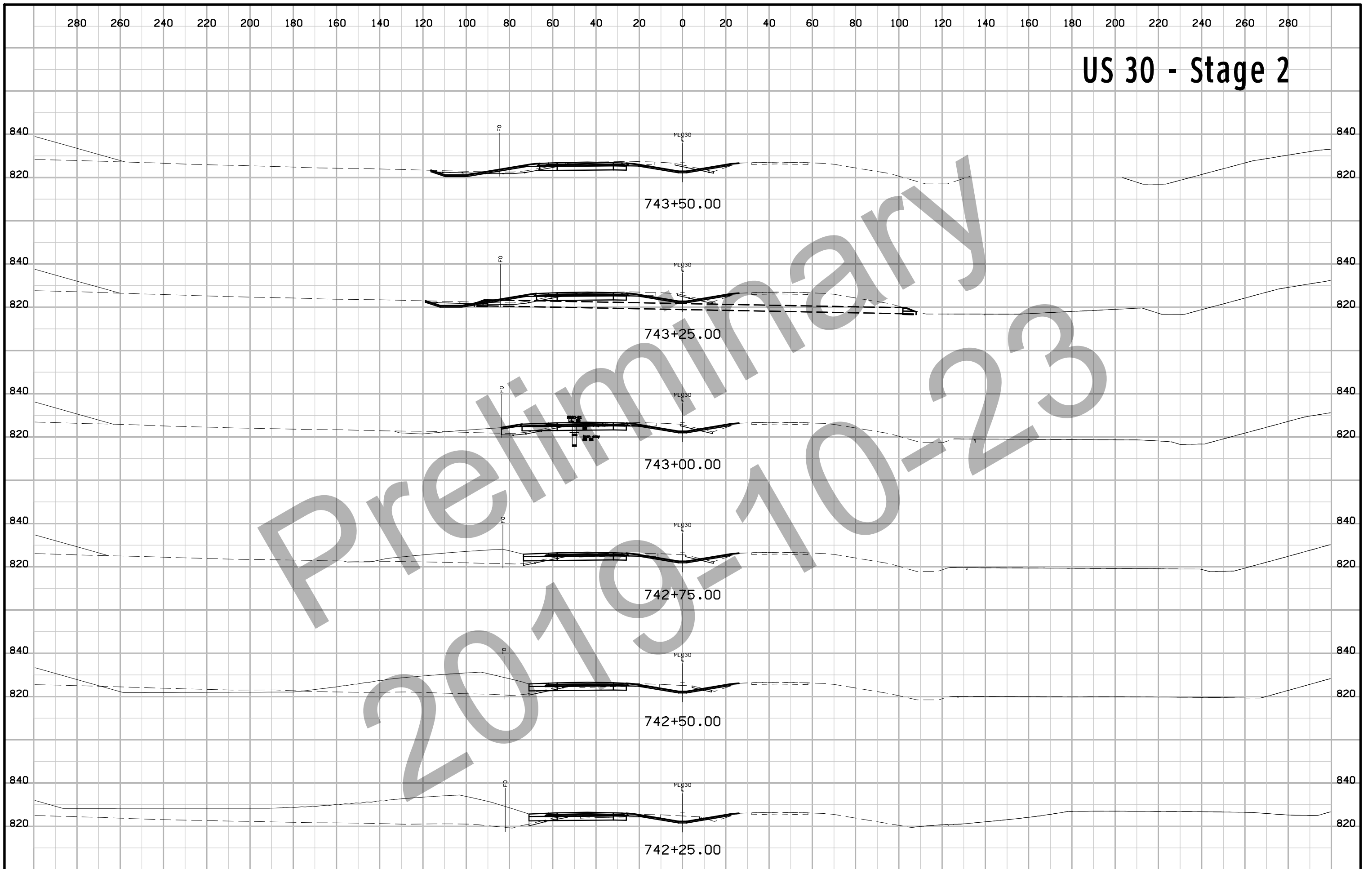
# US 30 - Stage 2



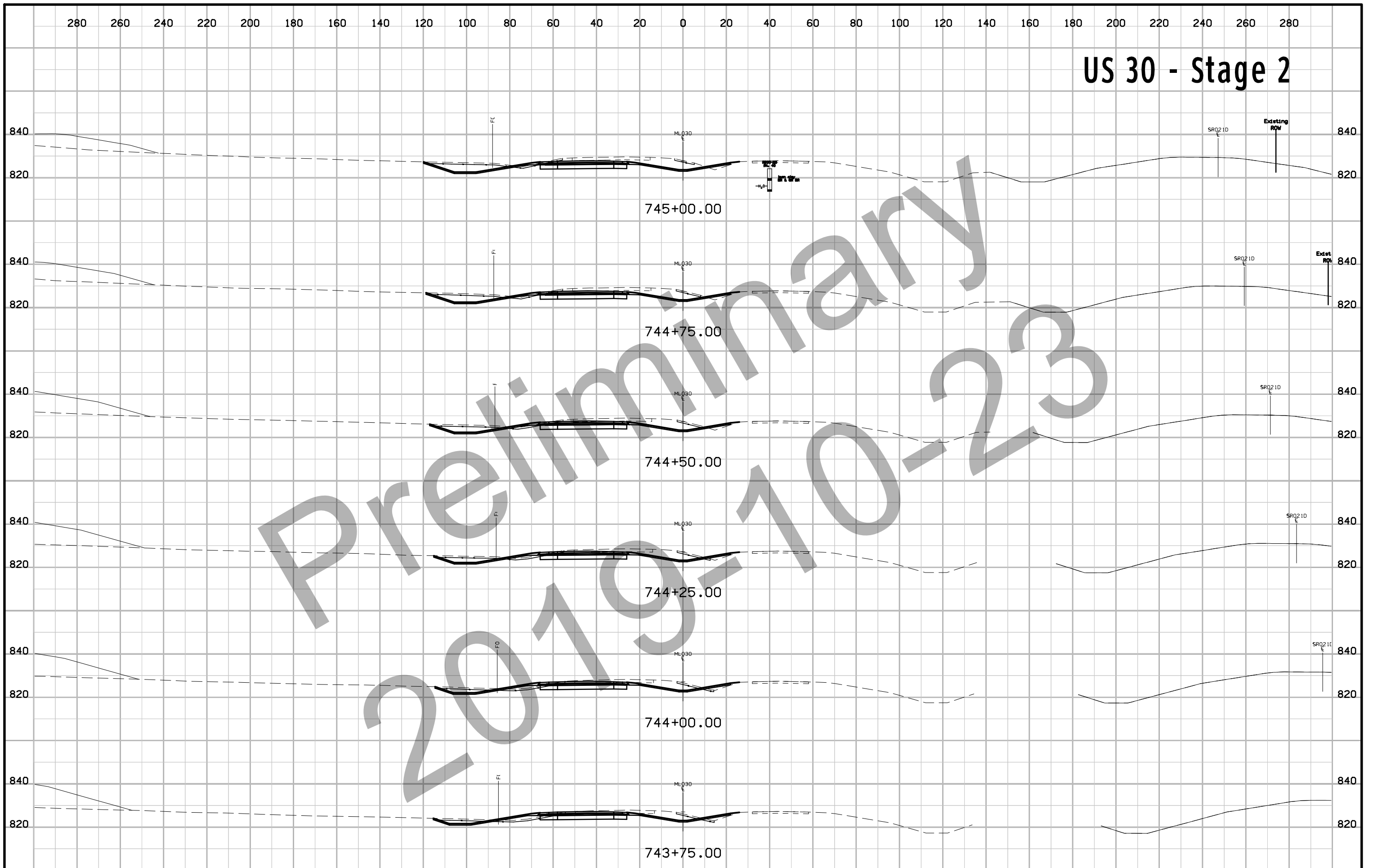
# US 30 - Stage 2



# US 30 - Stage 2

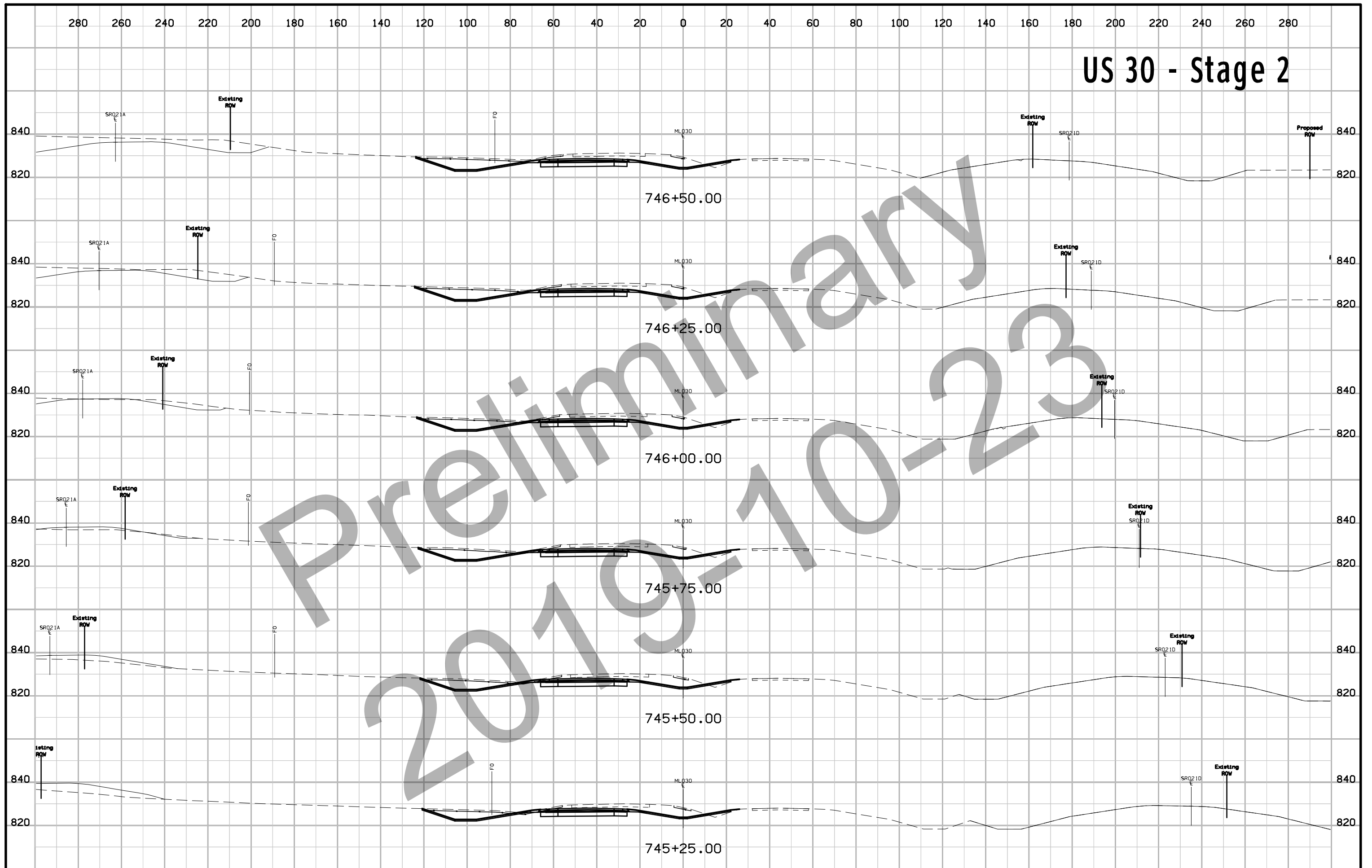


# US 30 - Stage 2

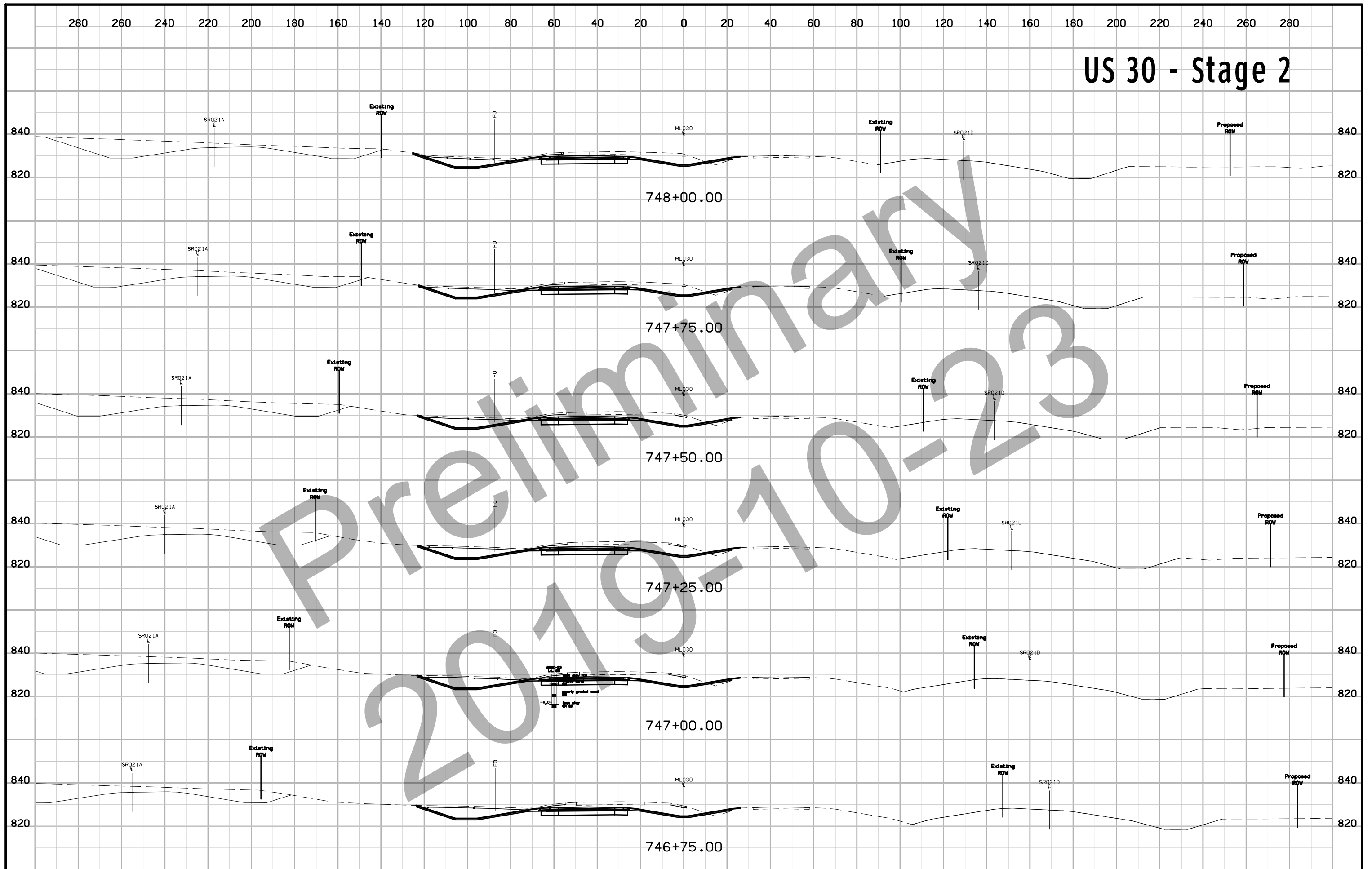




# US 30 - Stage 2

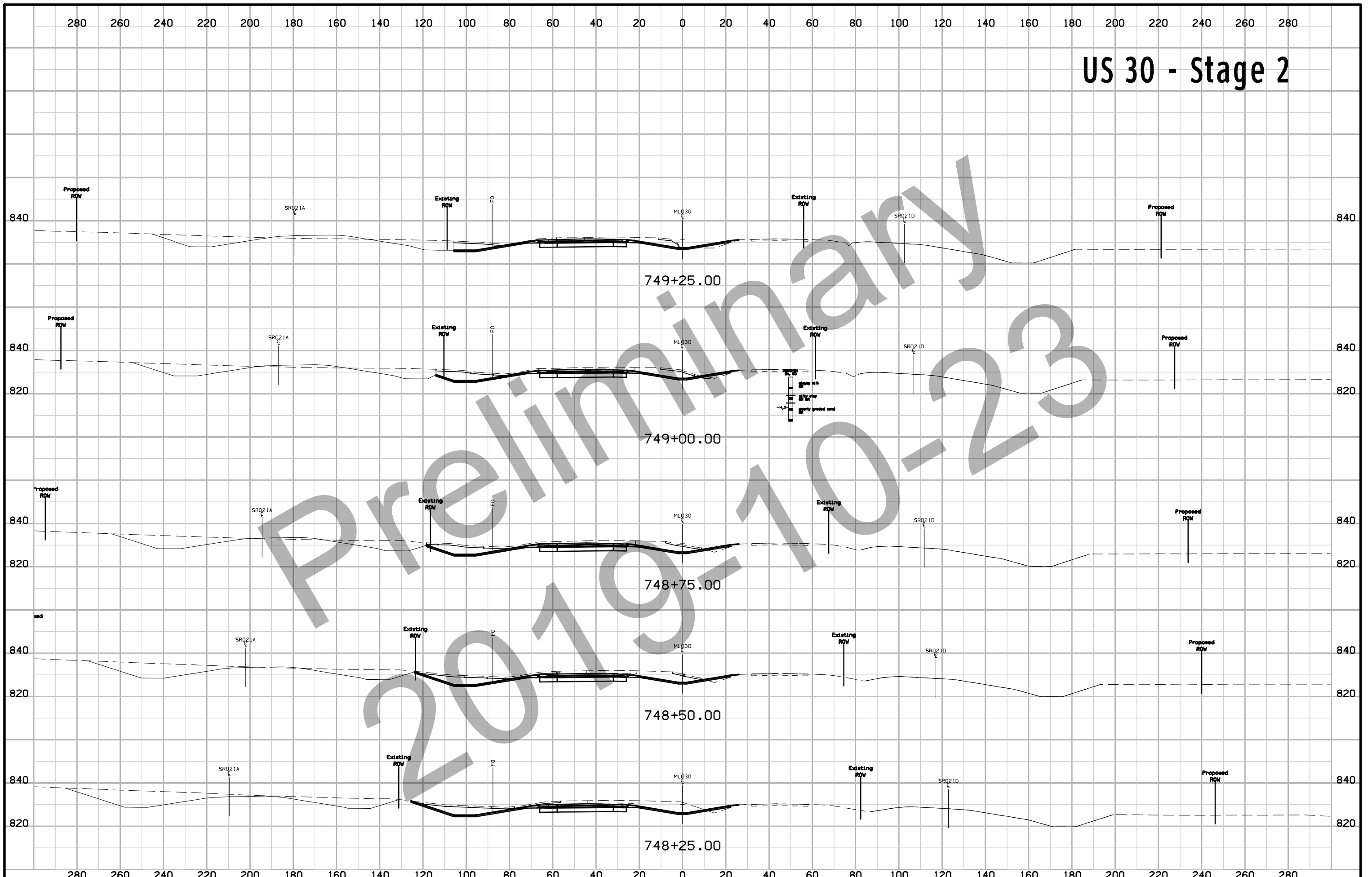


# US 30 - Stage 2

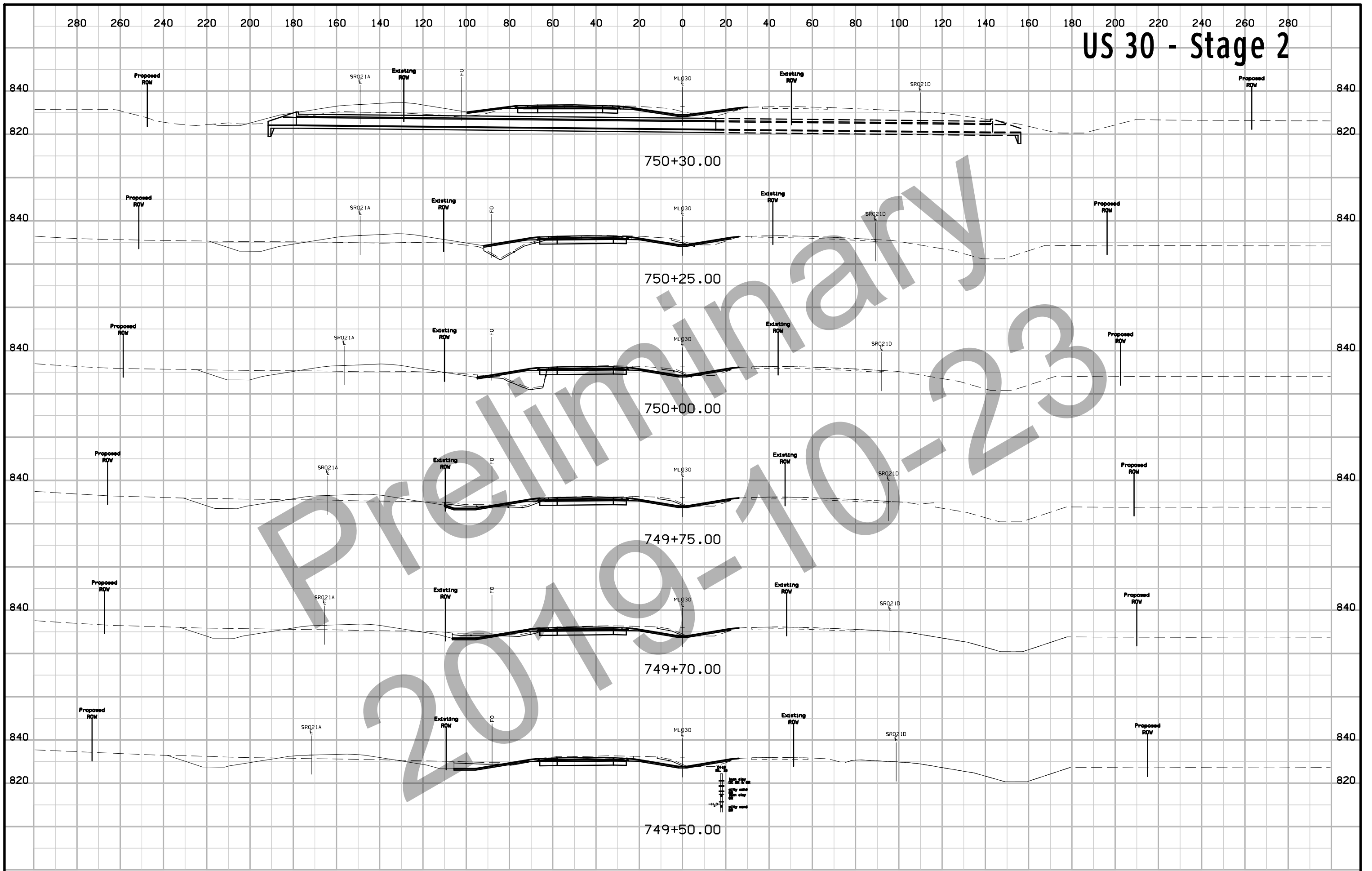


FILE NO.	ENGLISH	DESIGN TEAM	Flattery \ Bell	BENTON COUNTY	PROJECT NUMBER	NHXS-030-6(240)--3H-86	SHEET NUMBER	W.230
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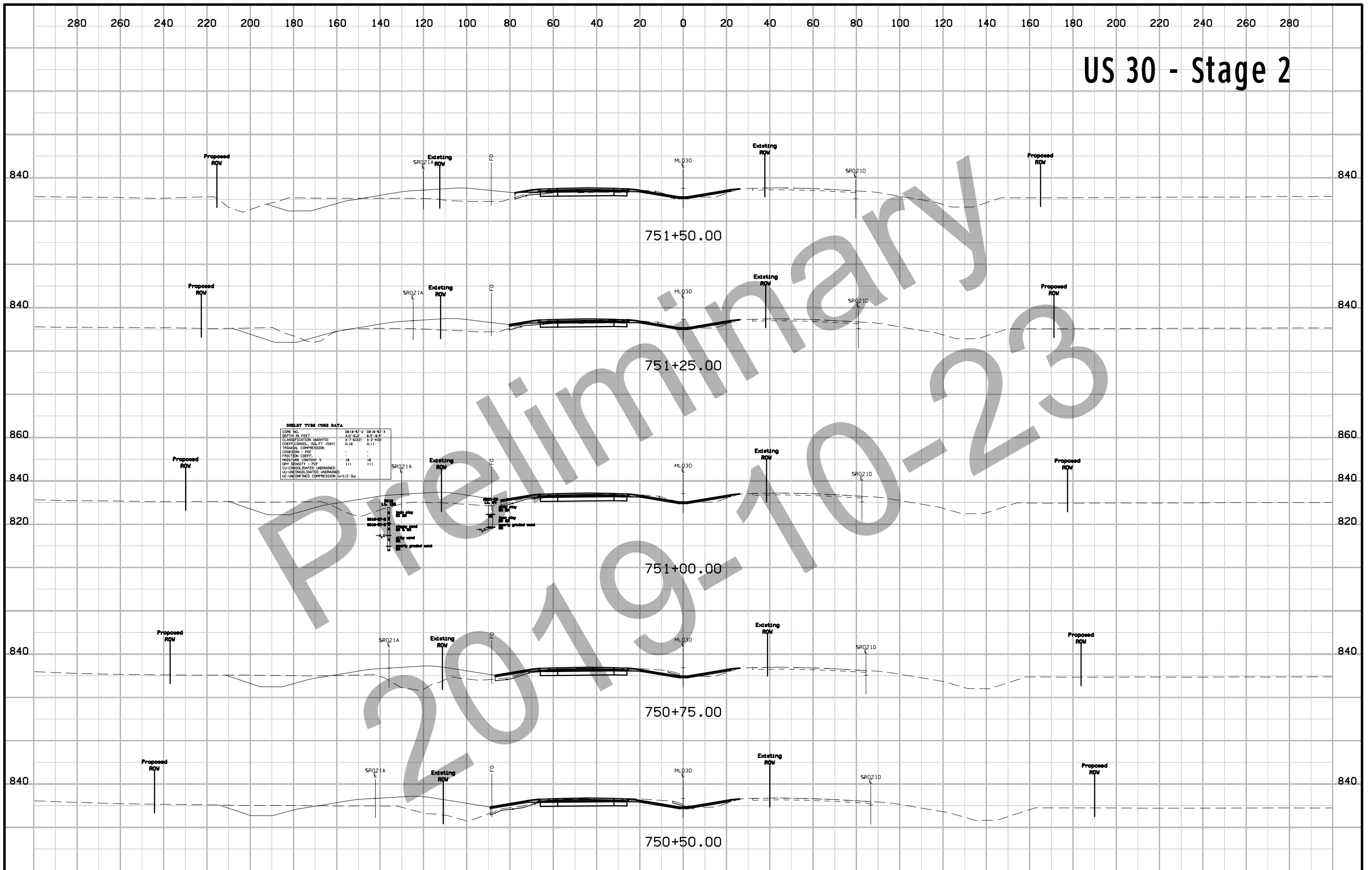
# US 30 - Stage 2



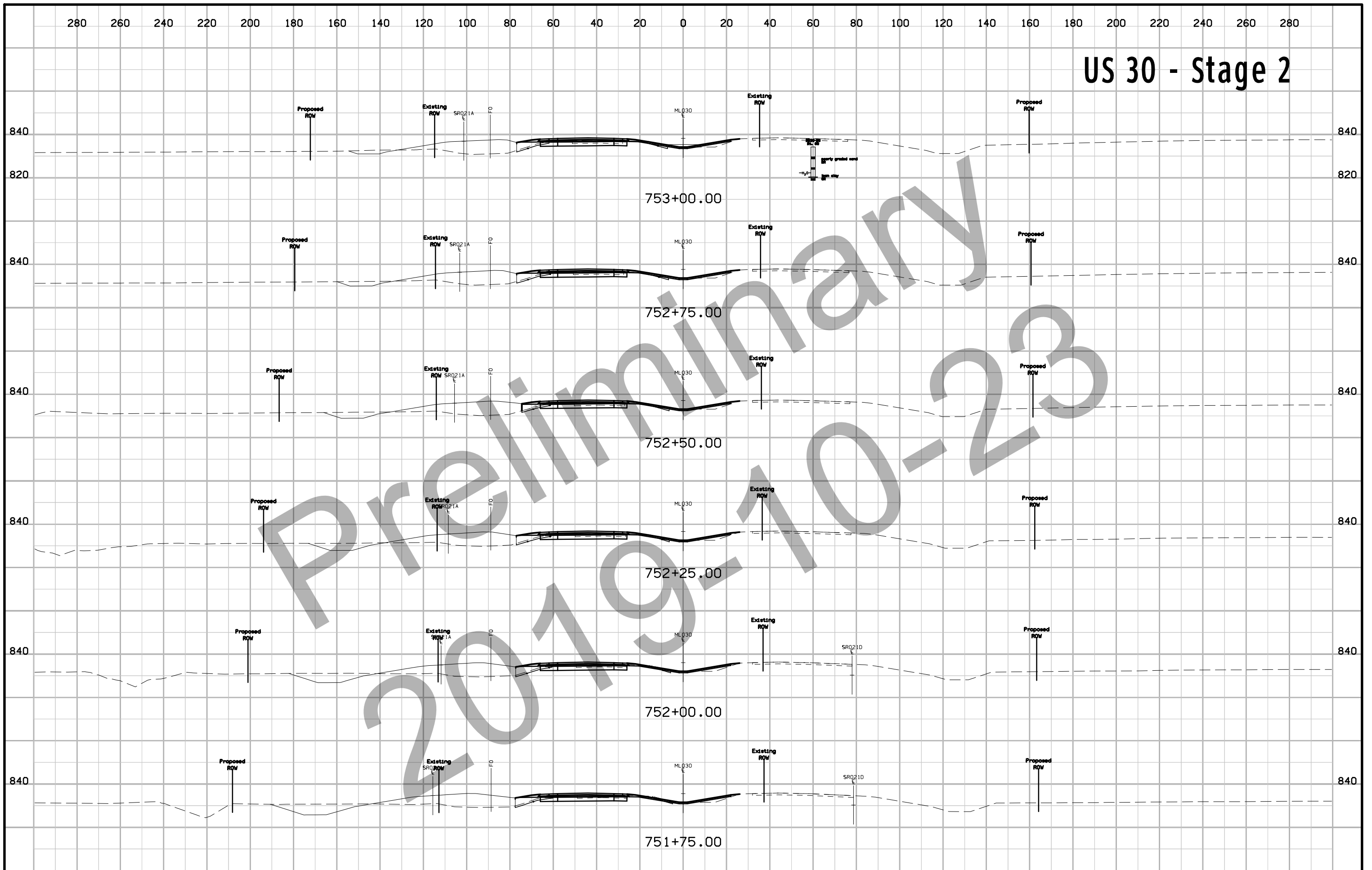
# US 30 - Stage 2



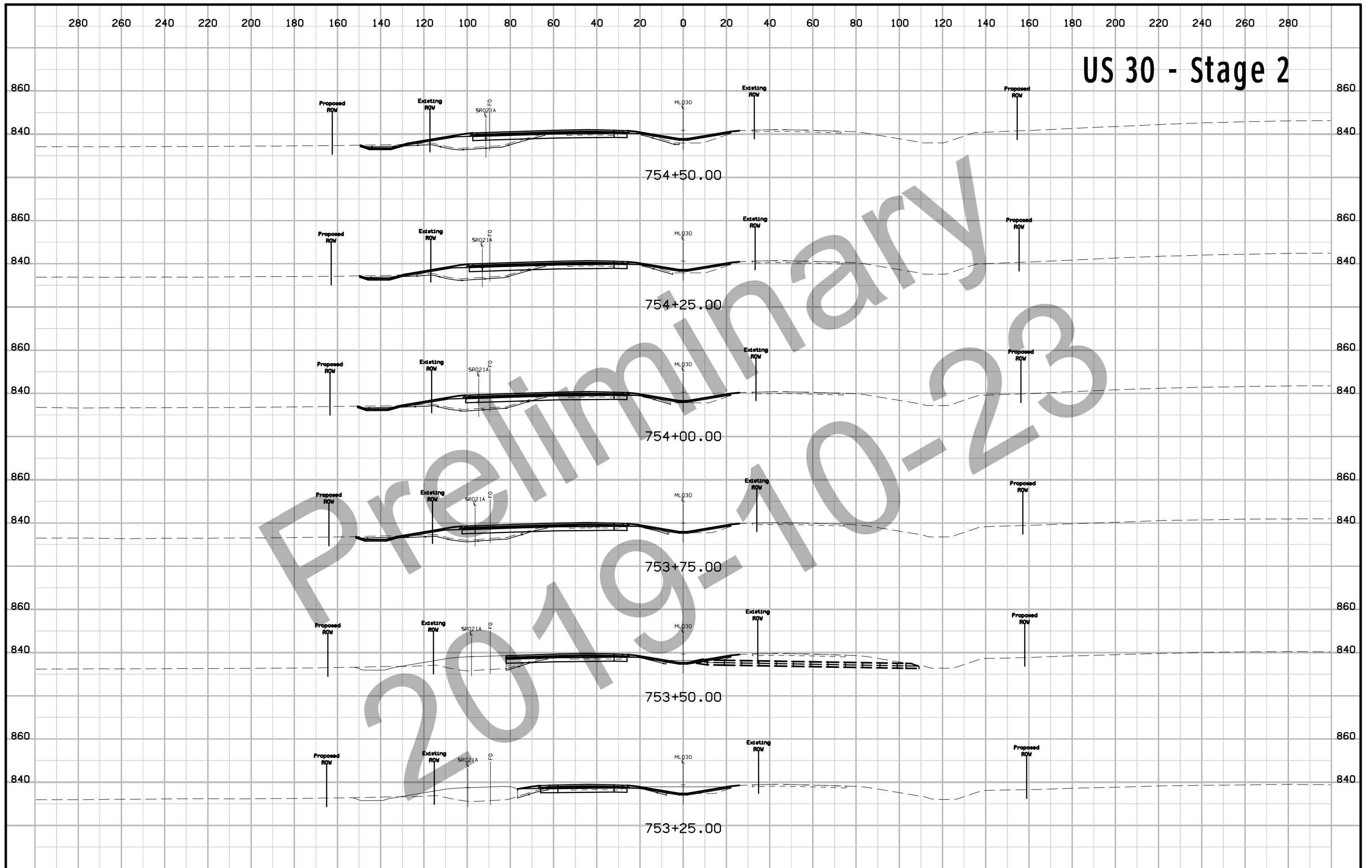
# US 30 - Stage 2



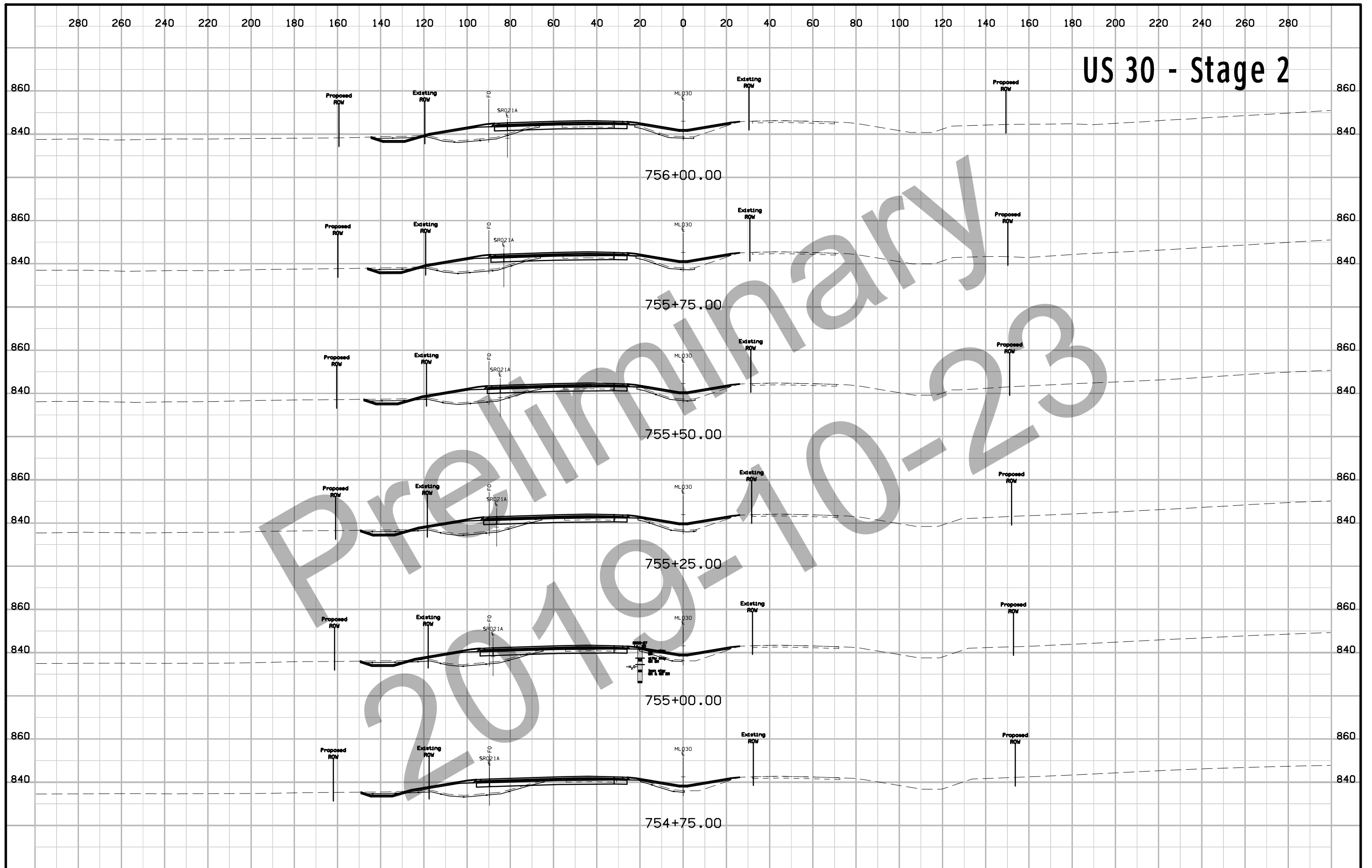
# US 30 - Stage 2



# US 30 - Stage 2

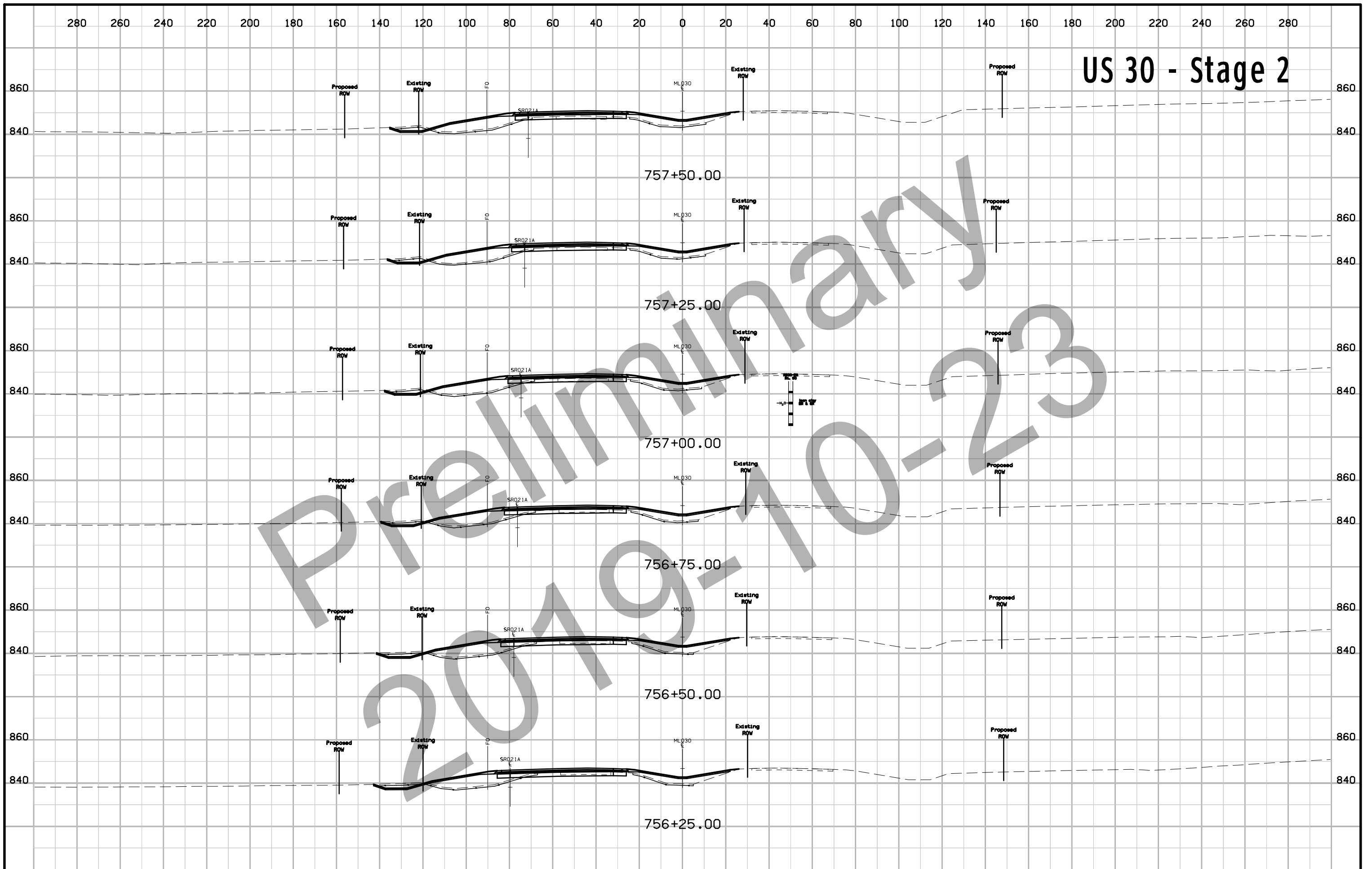


# US 30 - Stage 2

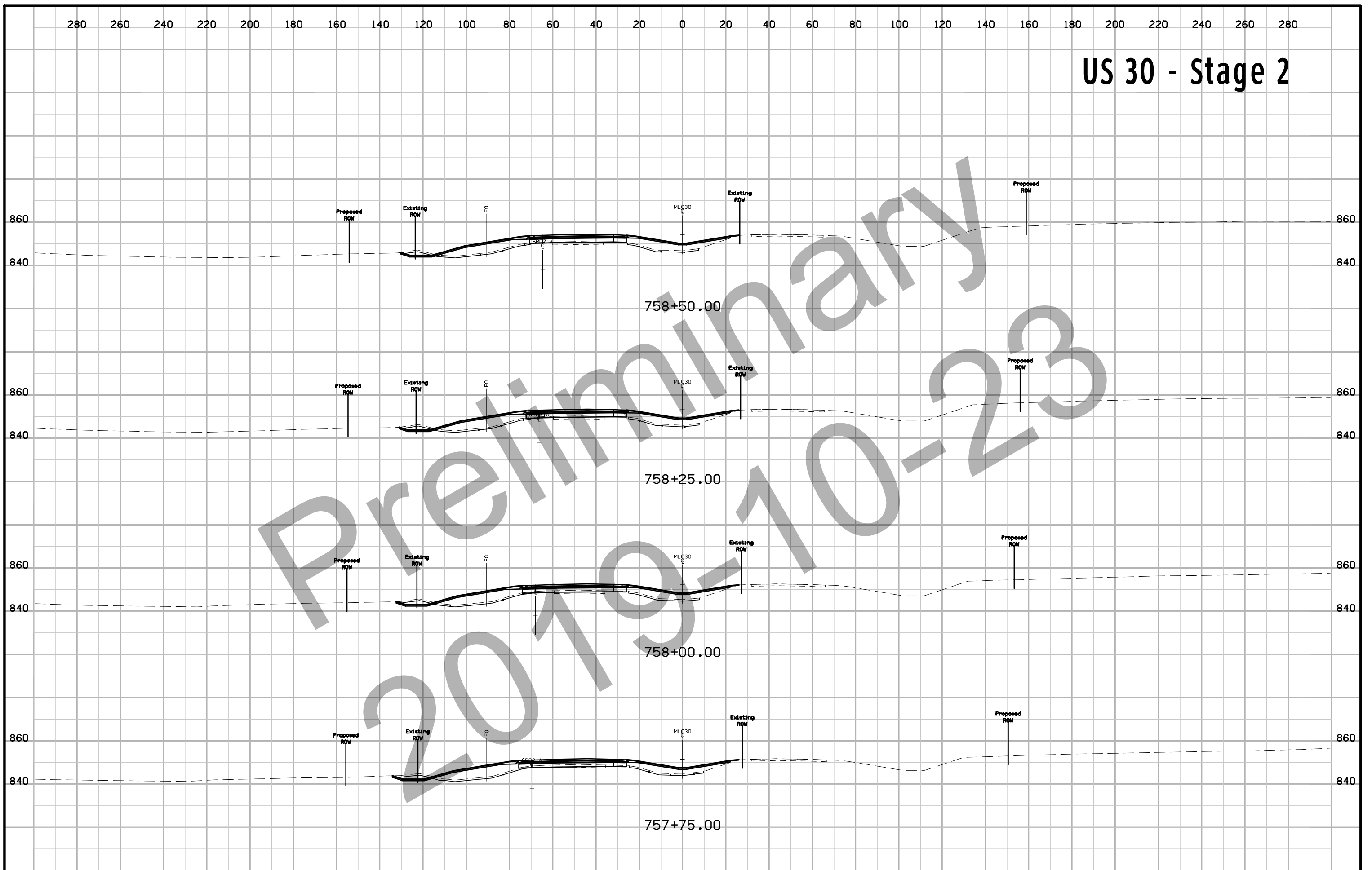




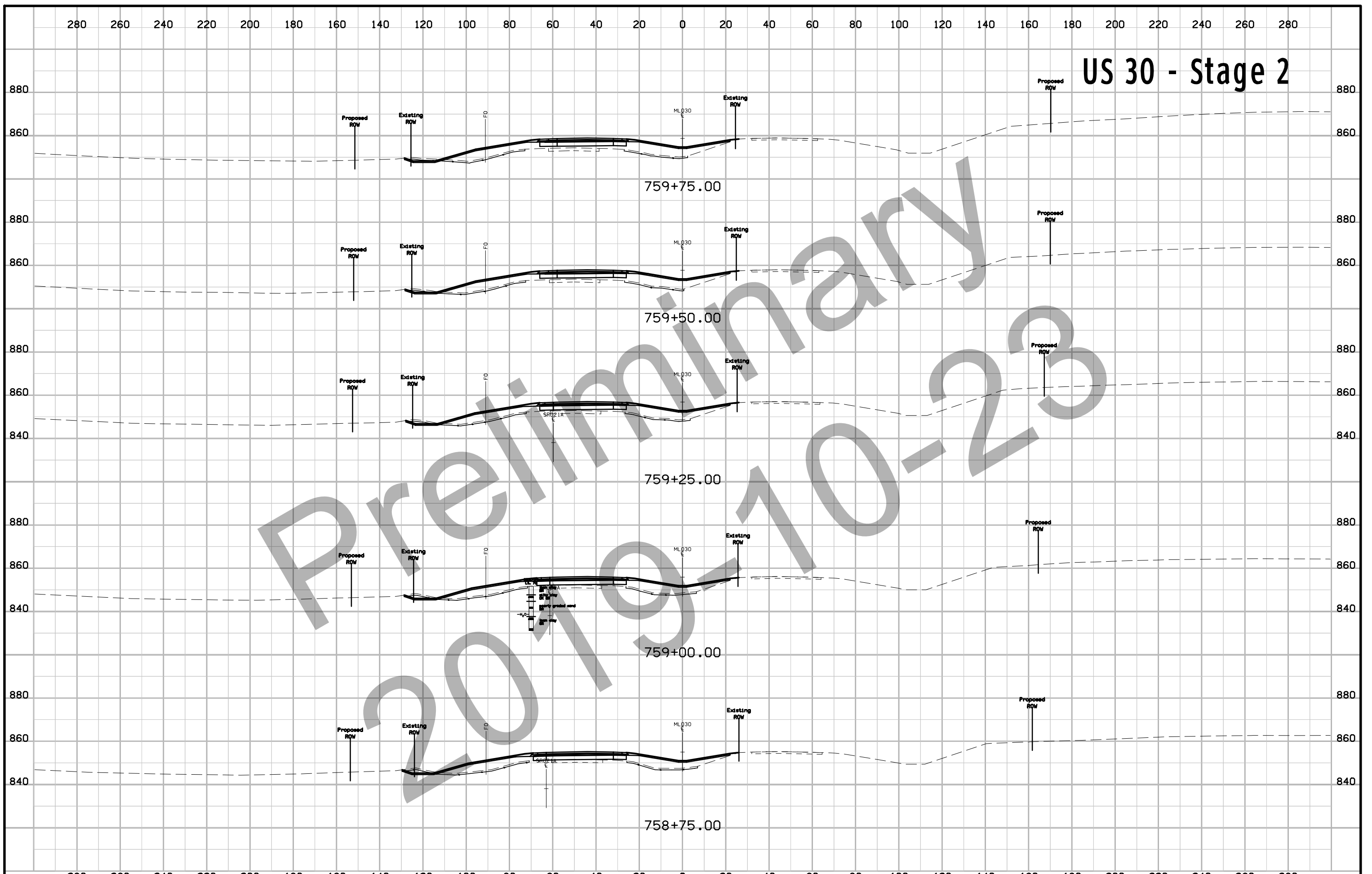
# US 30 - Stage 2



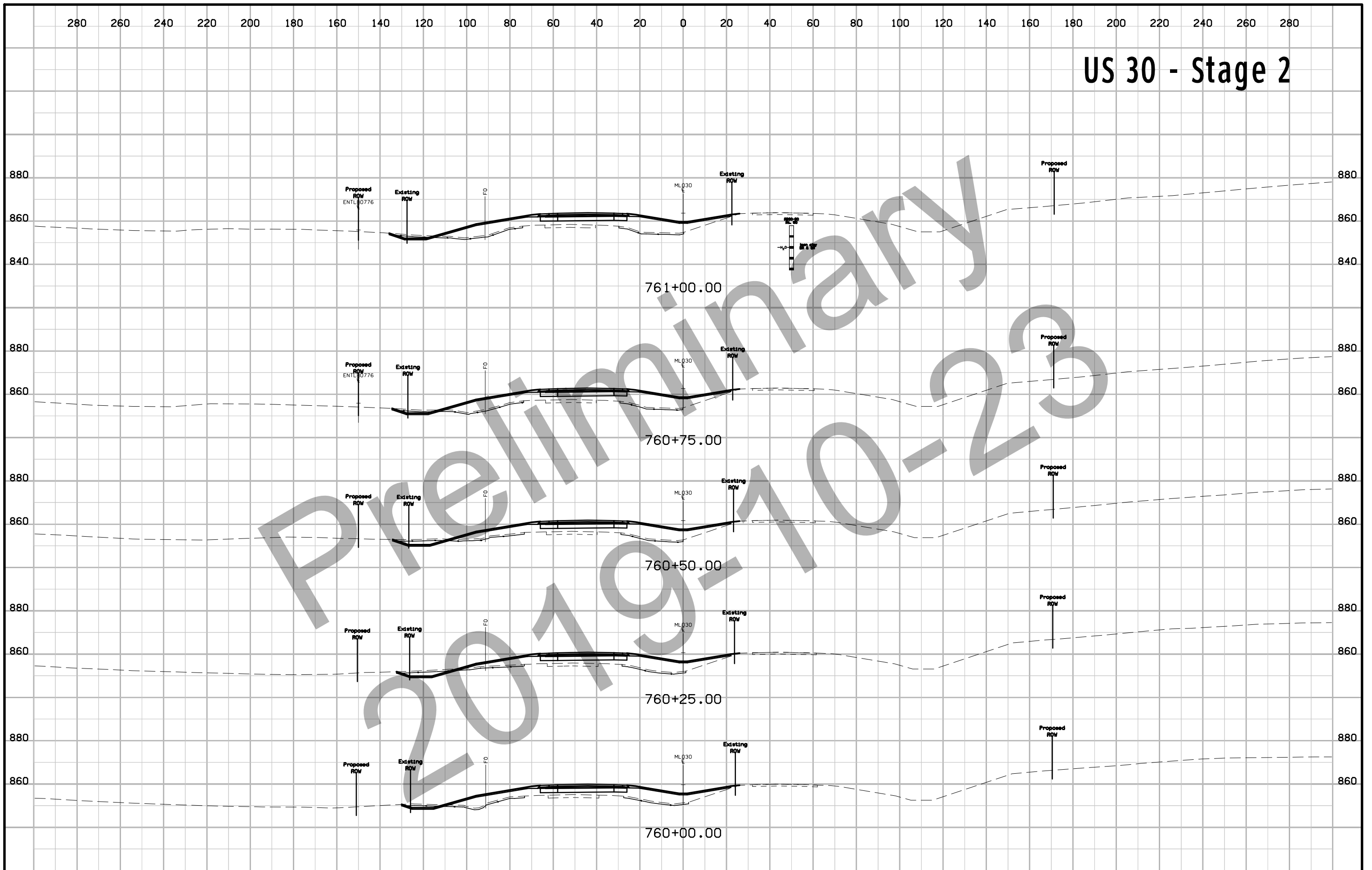
# US 30 - Stage 2



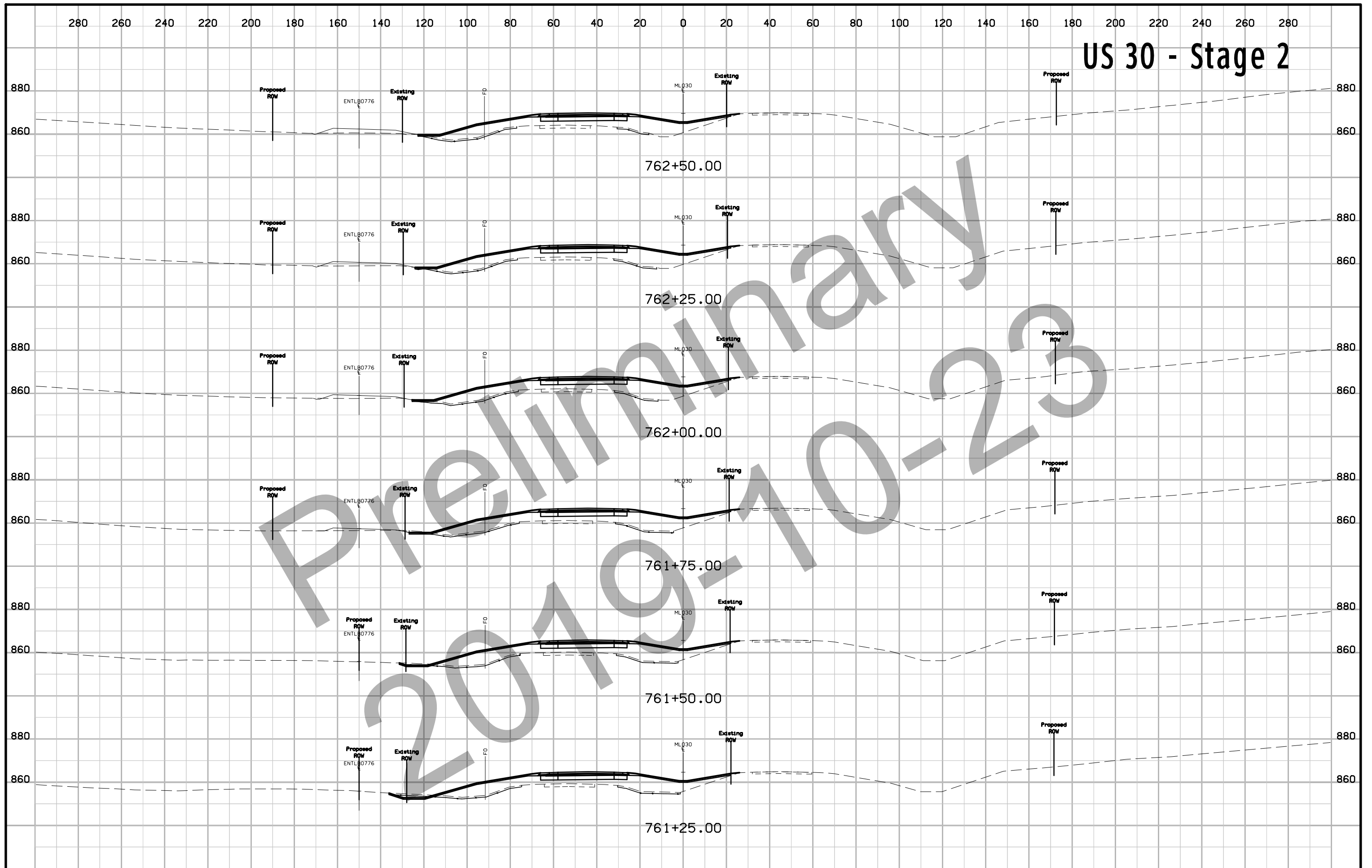
# US 30 - Stage 2



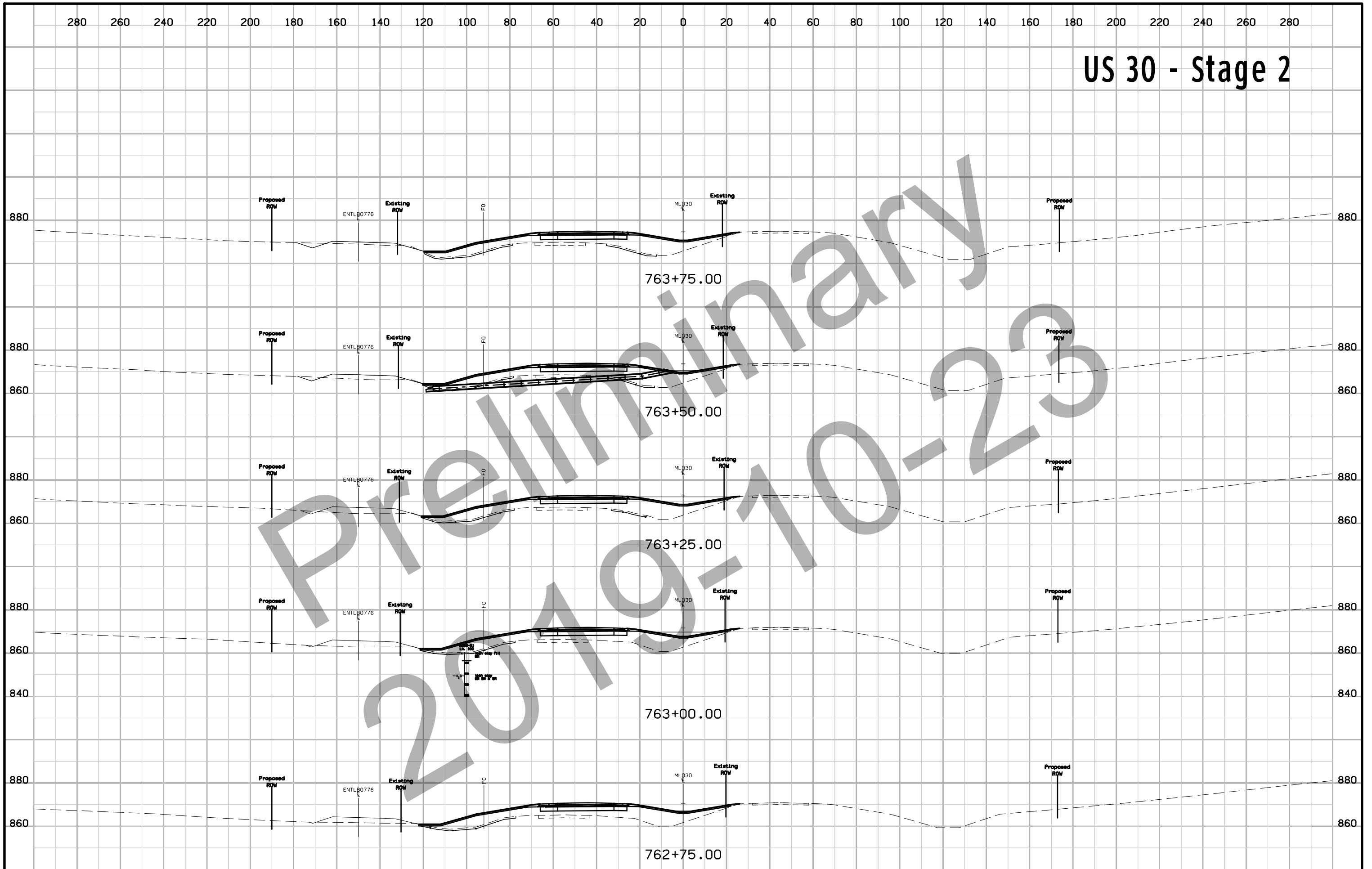
# US 30 - Stage 2



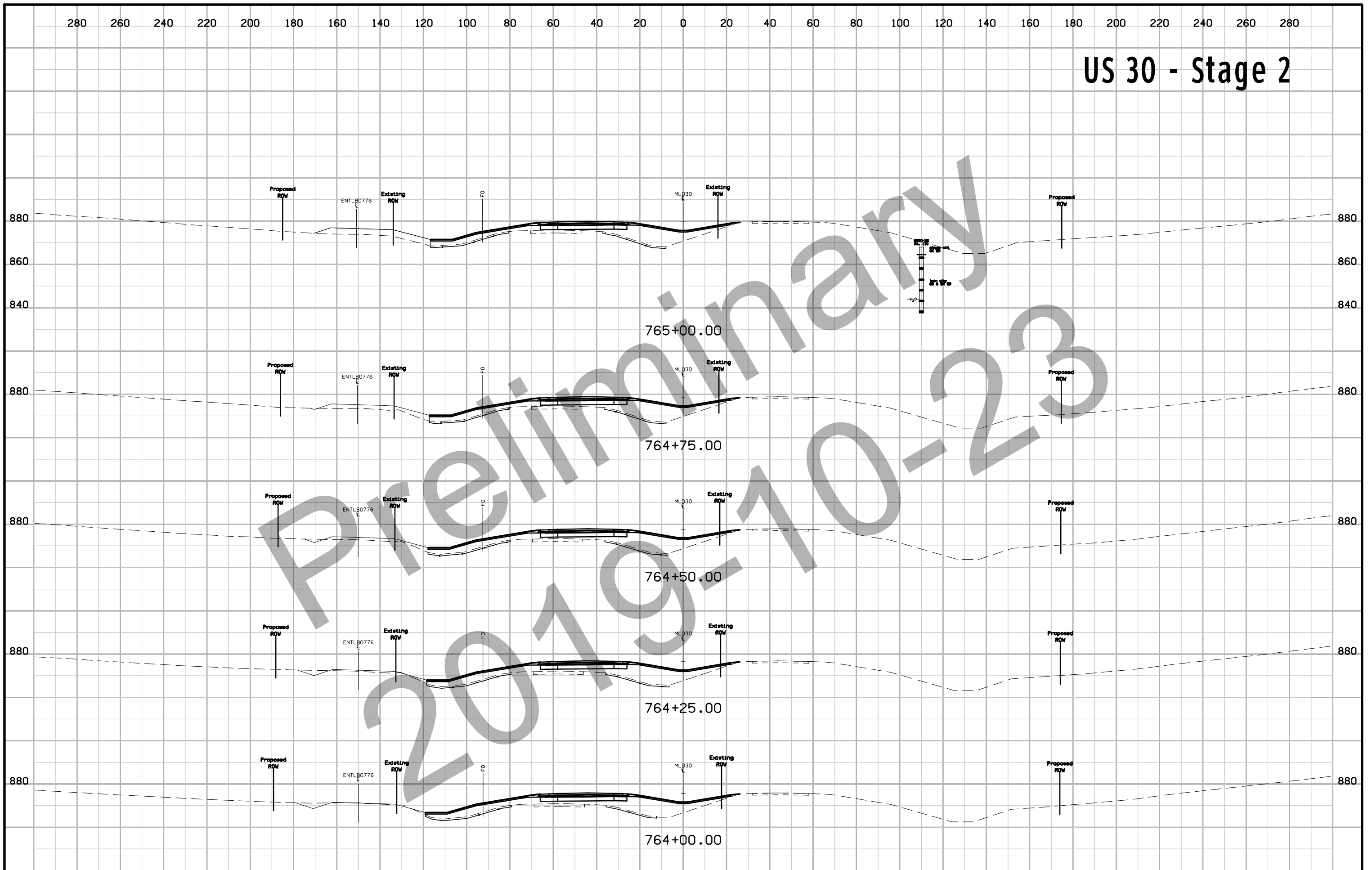
# US 30 - Stage 2



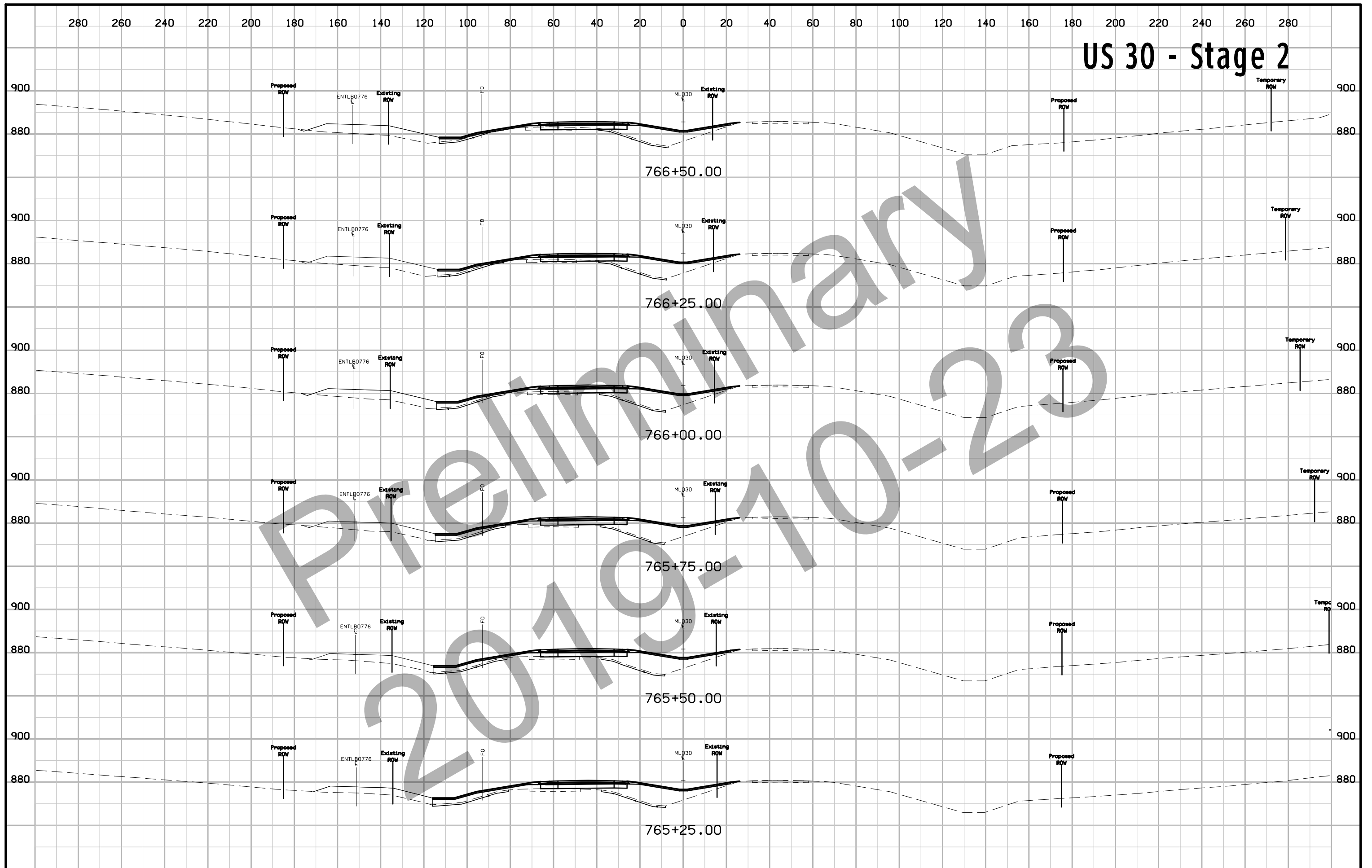
# US 30 - Stage 2



# US 30 - Stage 2

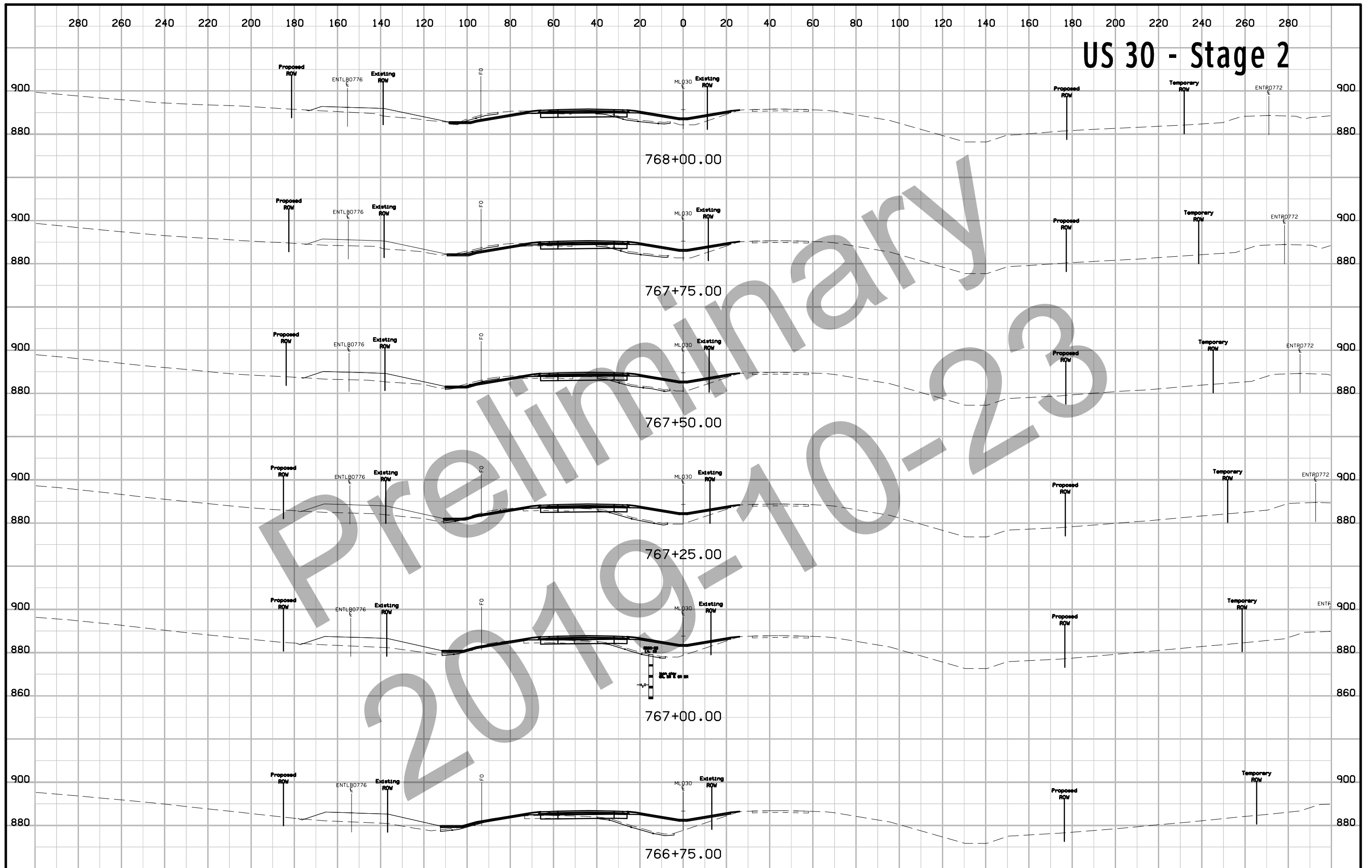


# US 30 - Stage 2



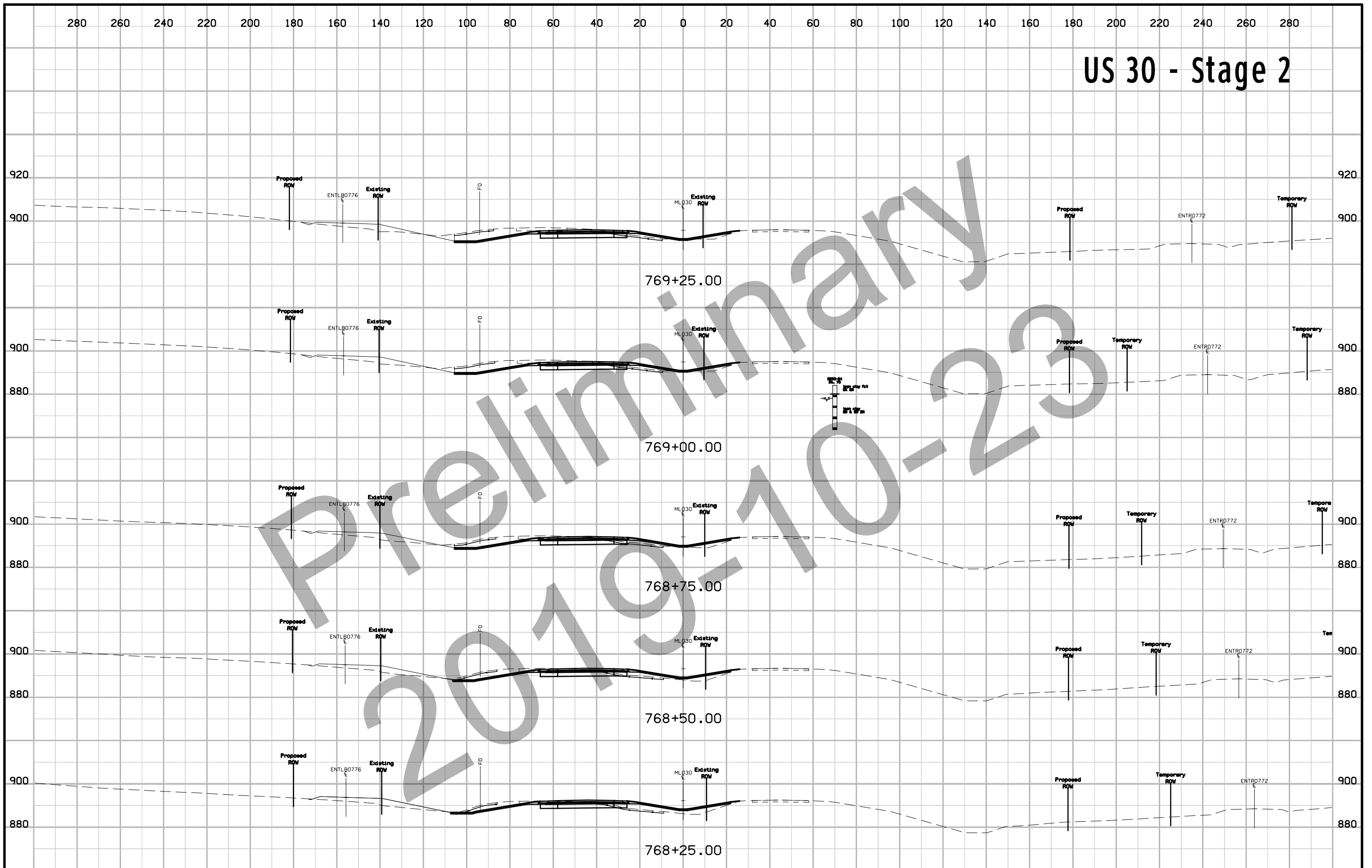


# US 30 - Stage 2

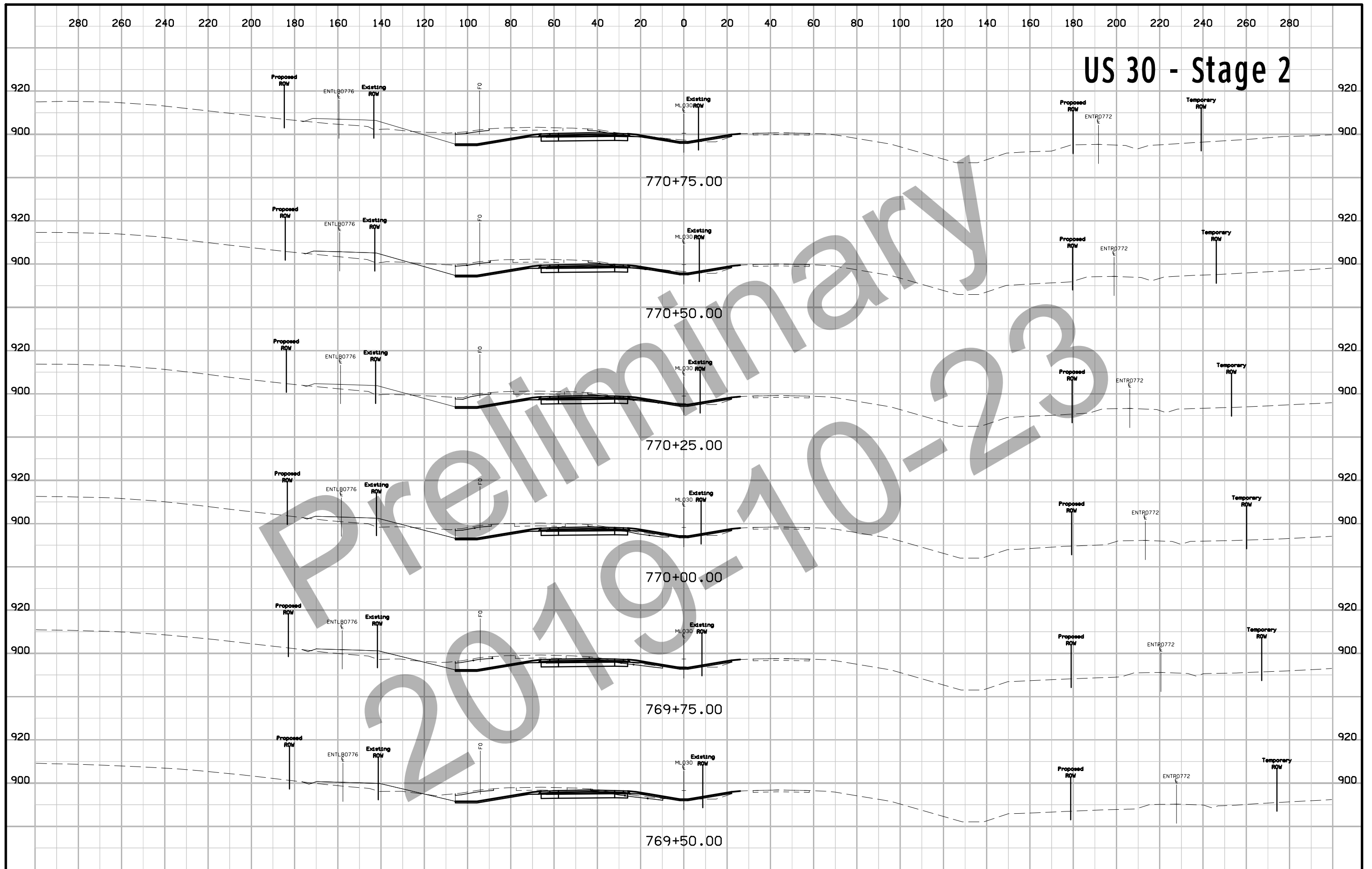


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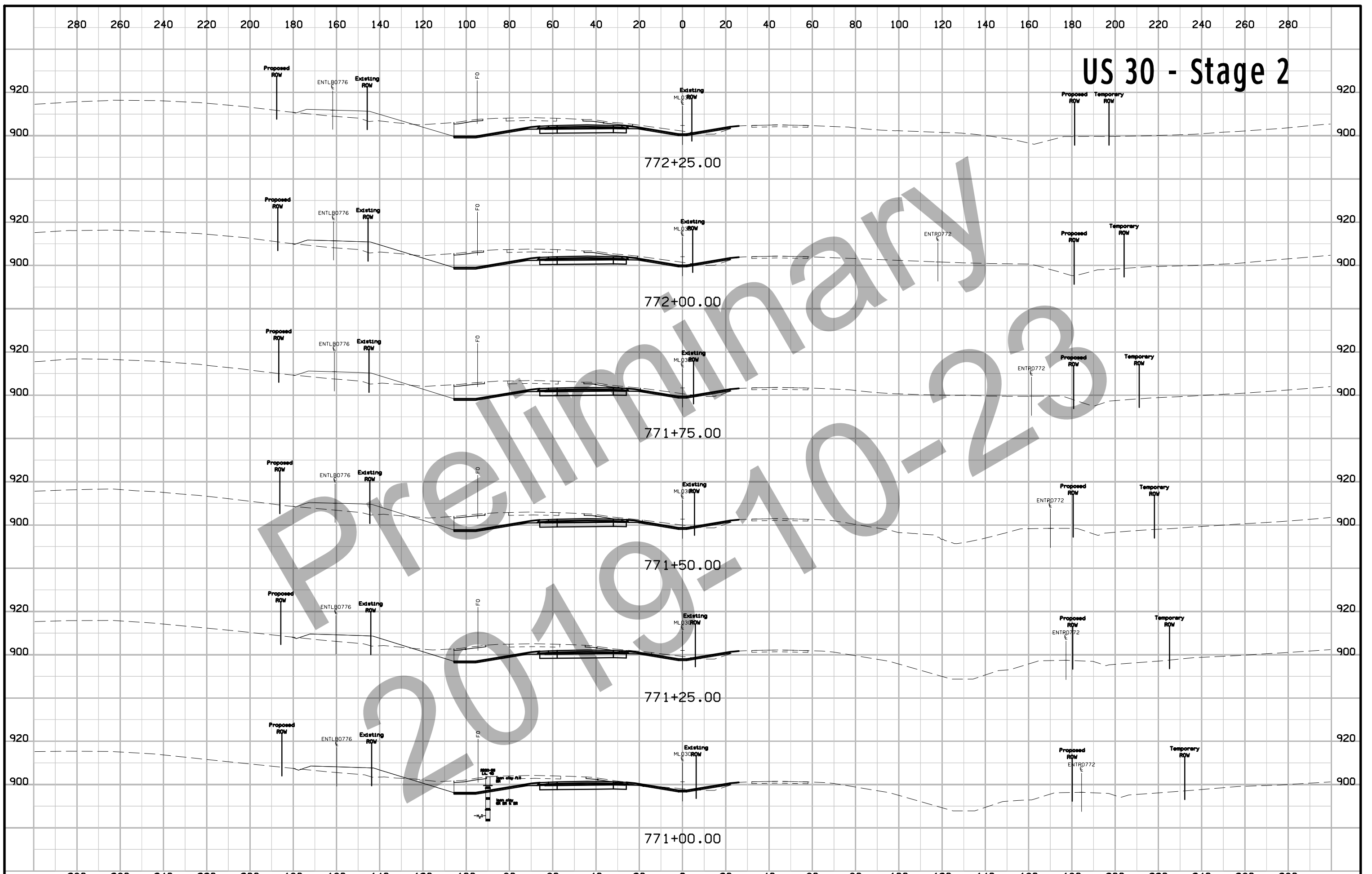
# US 30 - Stage 2



# US 30 - Stage 2

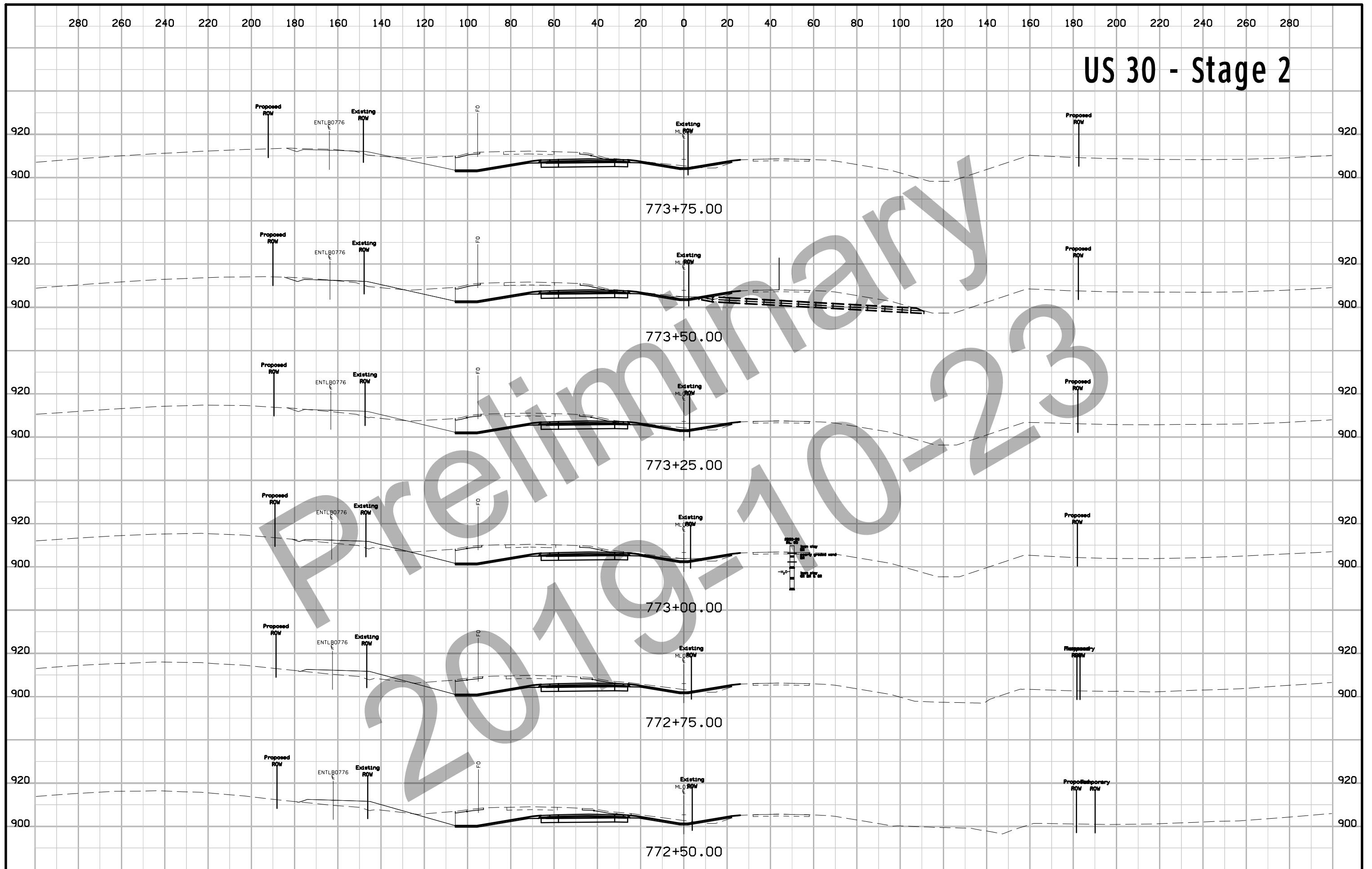


# US 30 - Stage 2

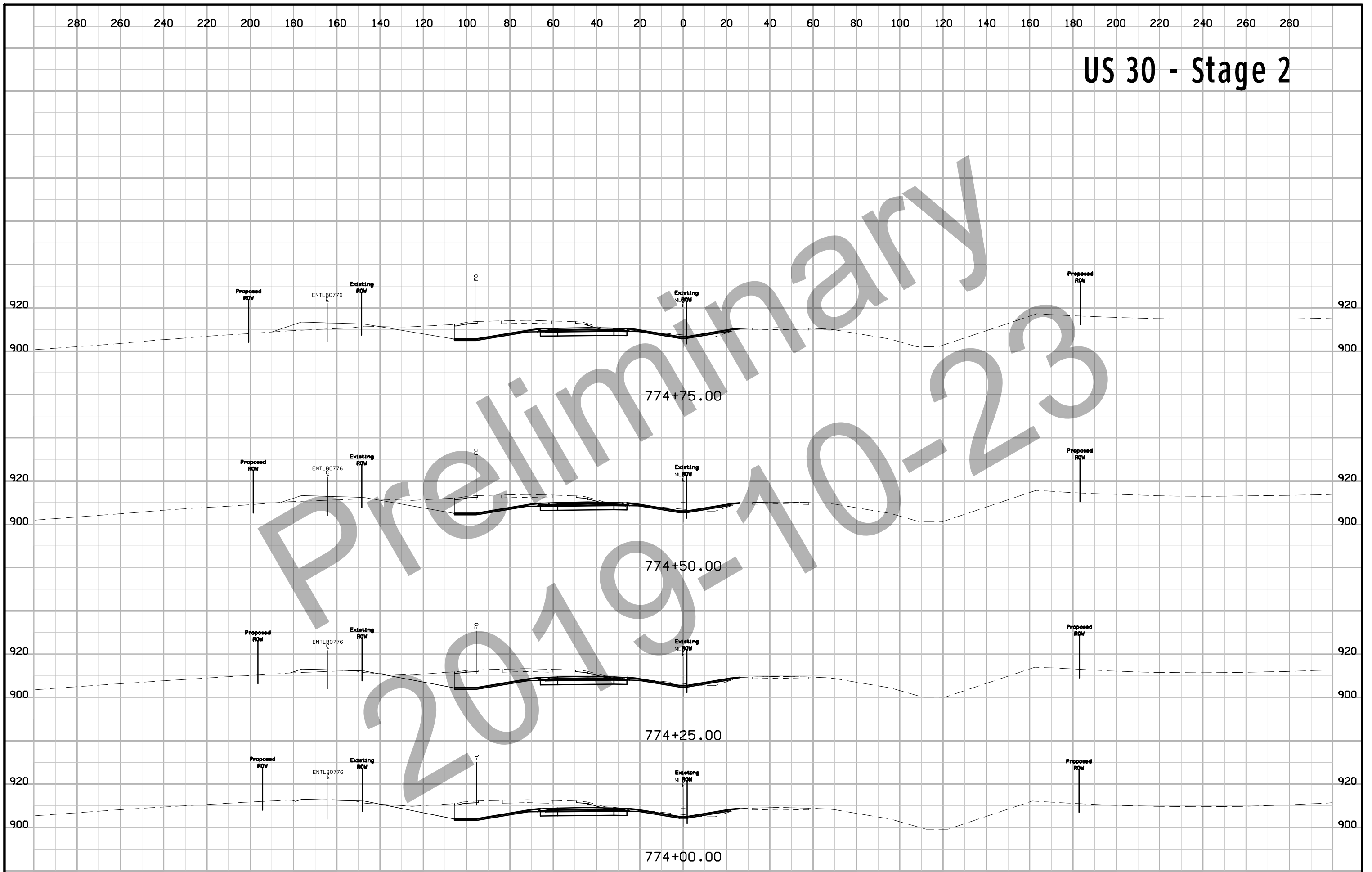


FILE NO.	ENGLISH	DESIGN TEAM	<b>Flattery \ Bell</b>	<b>BENTON</b> COUNTY	PROJECT NUMBER	<b>NHXS-030-6(240)--3H-86</b>	SHEET NUMBER	<b>W.248</b>
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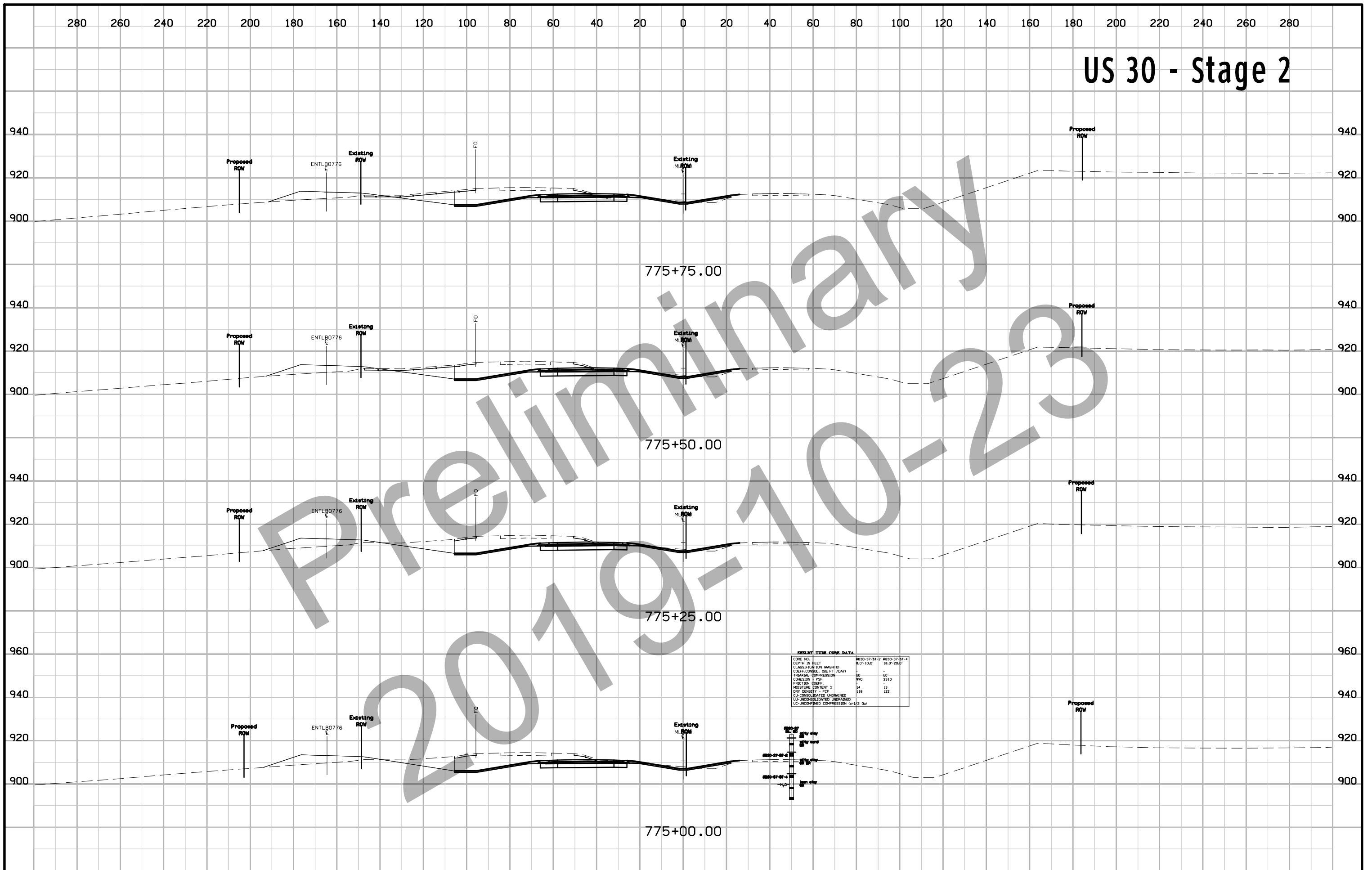
# US 30 - Stage 2



# US 30 - Stage 2



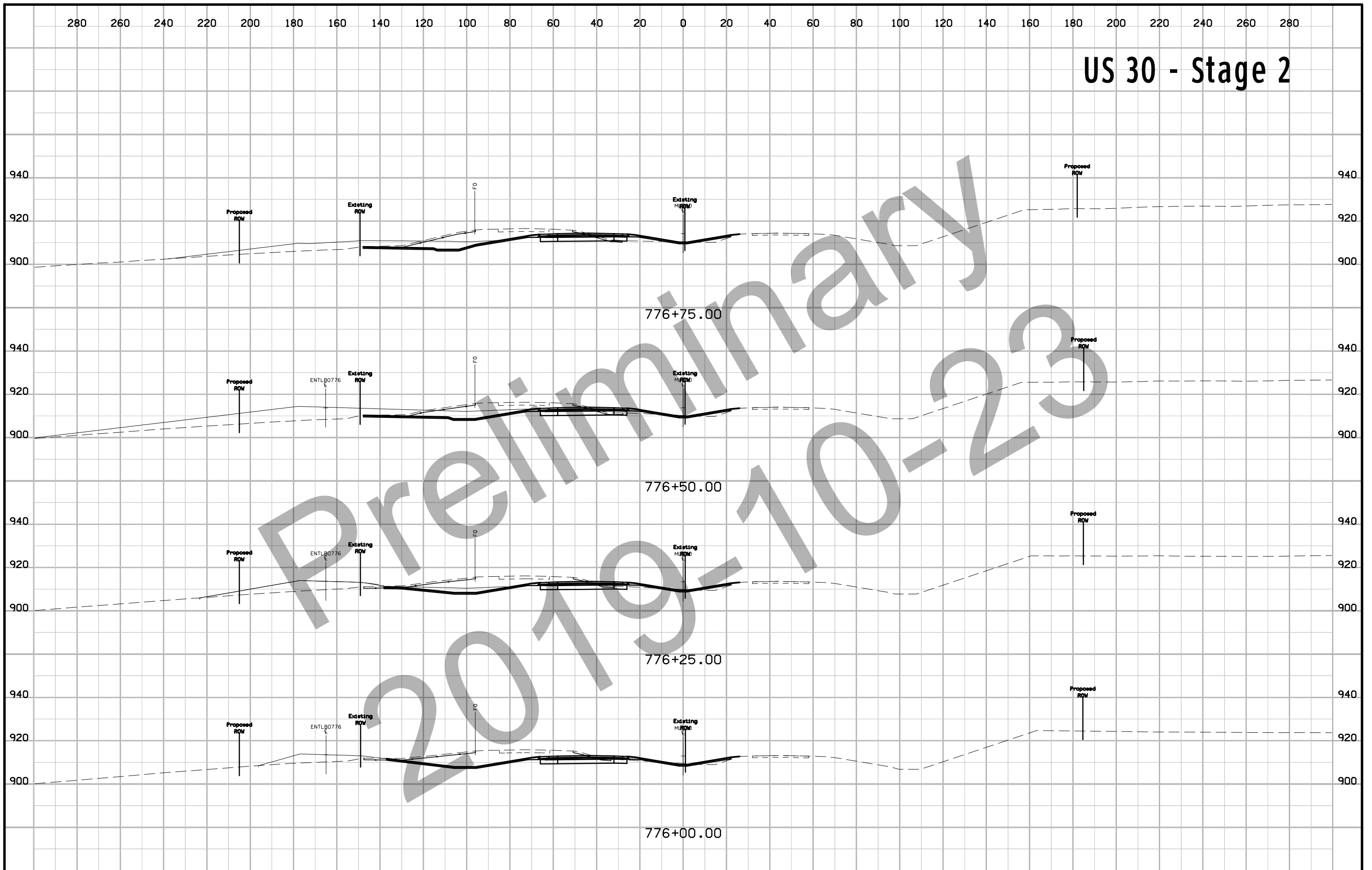
# US 30 - Stage 2



**SHIELLY TUBE CORER DATA**

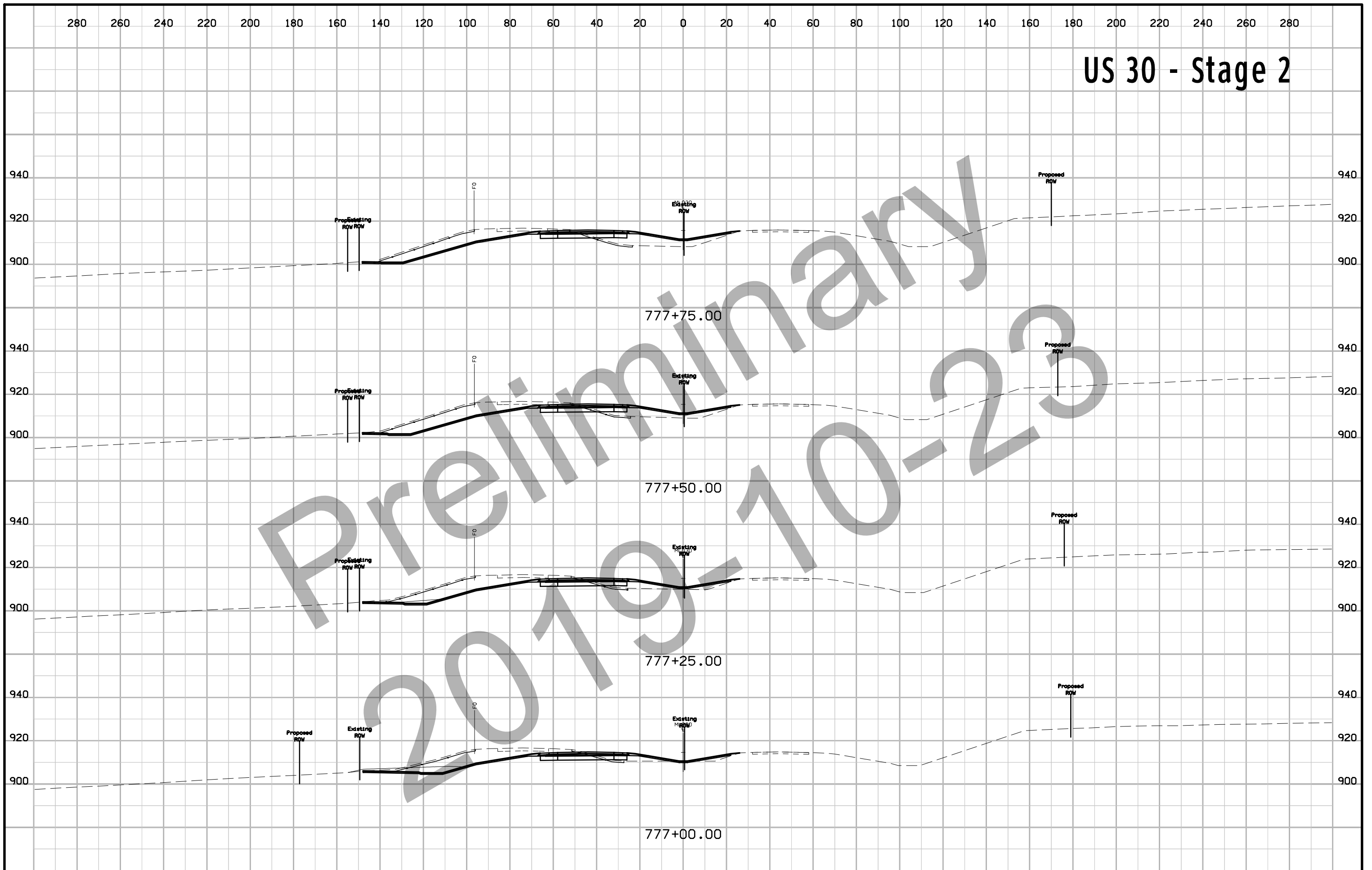
CORE NO.	830-37-51-2	830-37-51-4
DEPTH IN FEET	8.0'-10.0'	18.0'-20.0'
CLASSIFICATION (ASHST)		
COEFF. CONSOL. (SQ. FT / DAY)		
TRIAxIAL COMPRESSION	UC	UC
CONCRETE 1-PSF	990	3310
FRICTION COEFF.	14	13
MOISTURE CONTENT %	118	122
DRY DENSITY - PCF		
CU-UNCONSOLIDATED UNDRAINED		
CU-UNCONSOLIDATED UNDRAINED		
UC-UNCONSOLIDATED UNDRAINED		
UC-UNCONSOLIDATED UNDRAINED		

# US 30 - Stage 2

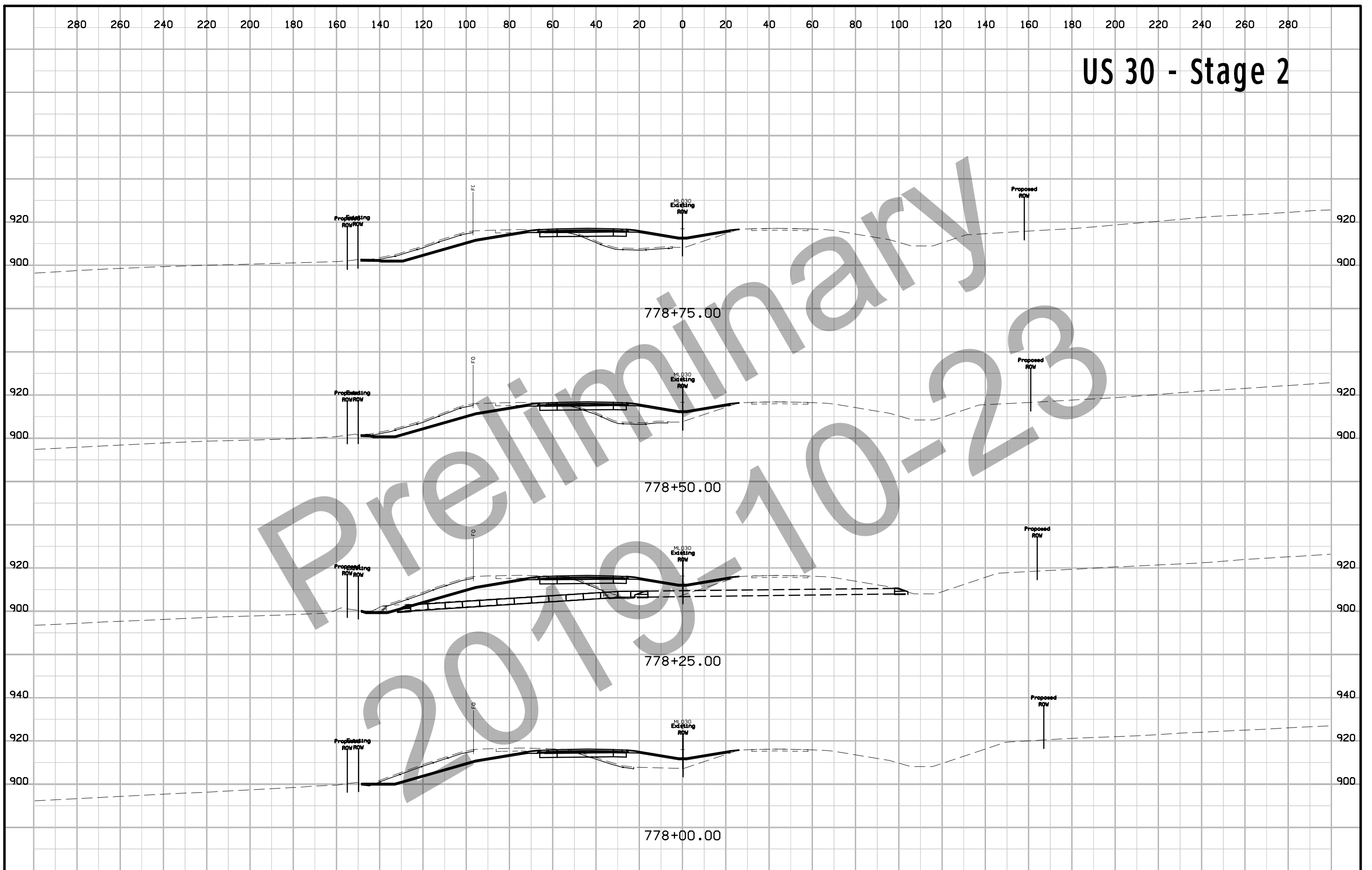




# US 30 - Stage 2

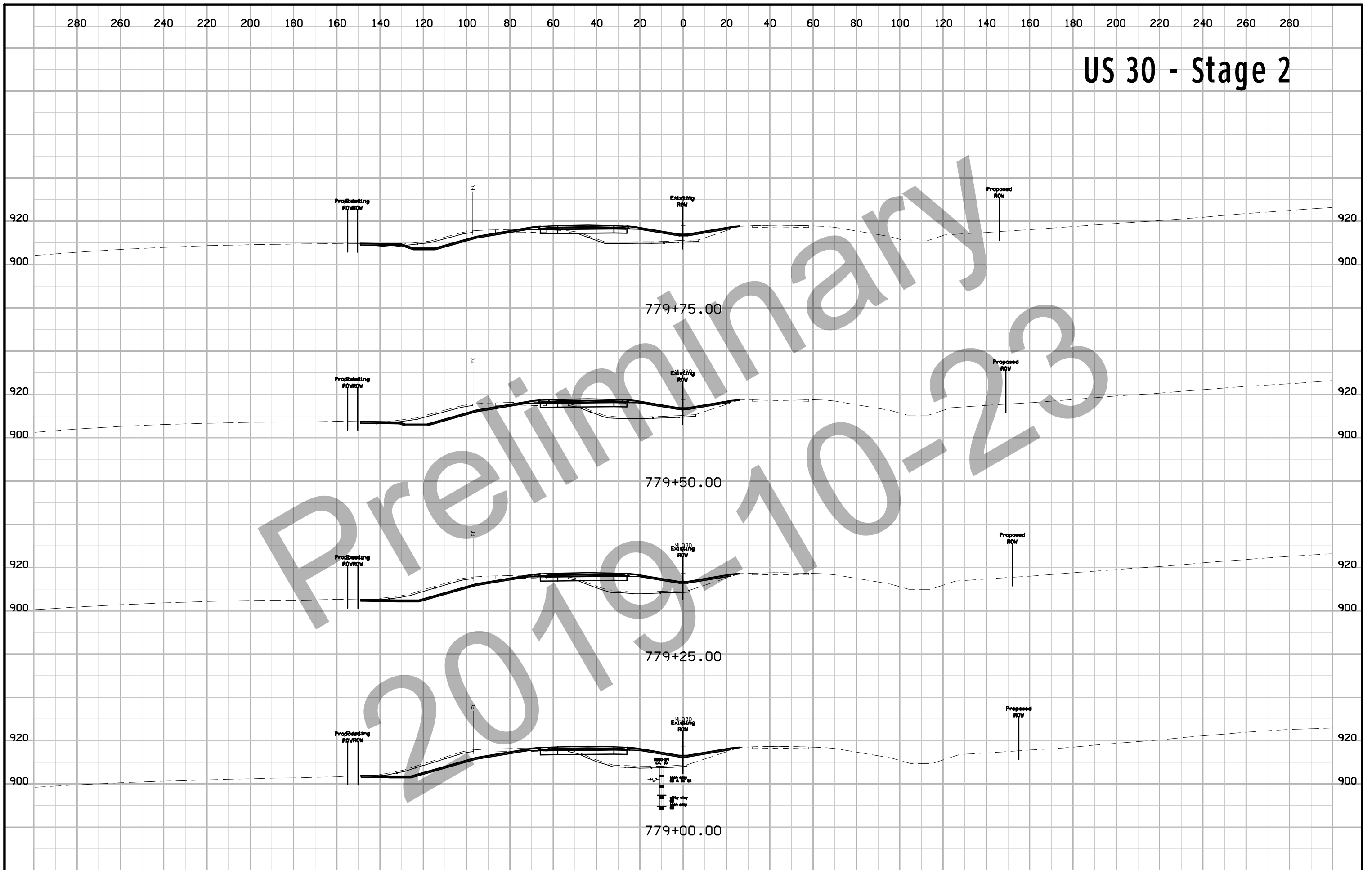


# US 30 - Stage 2

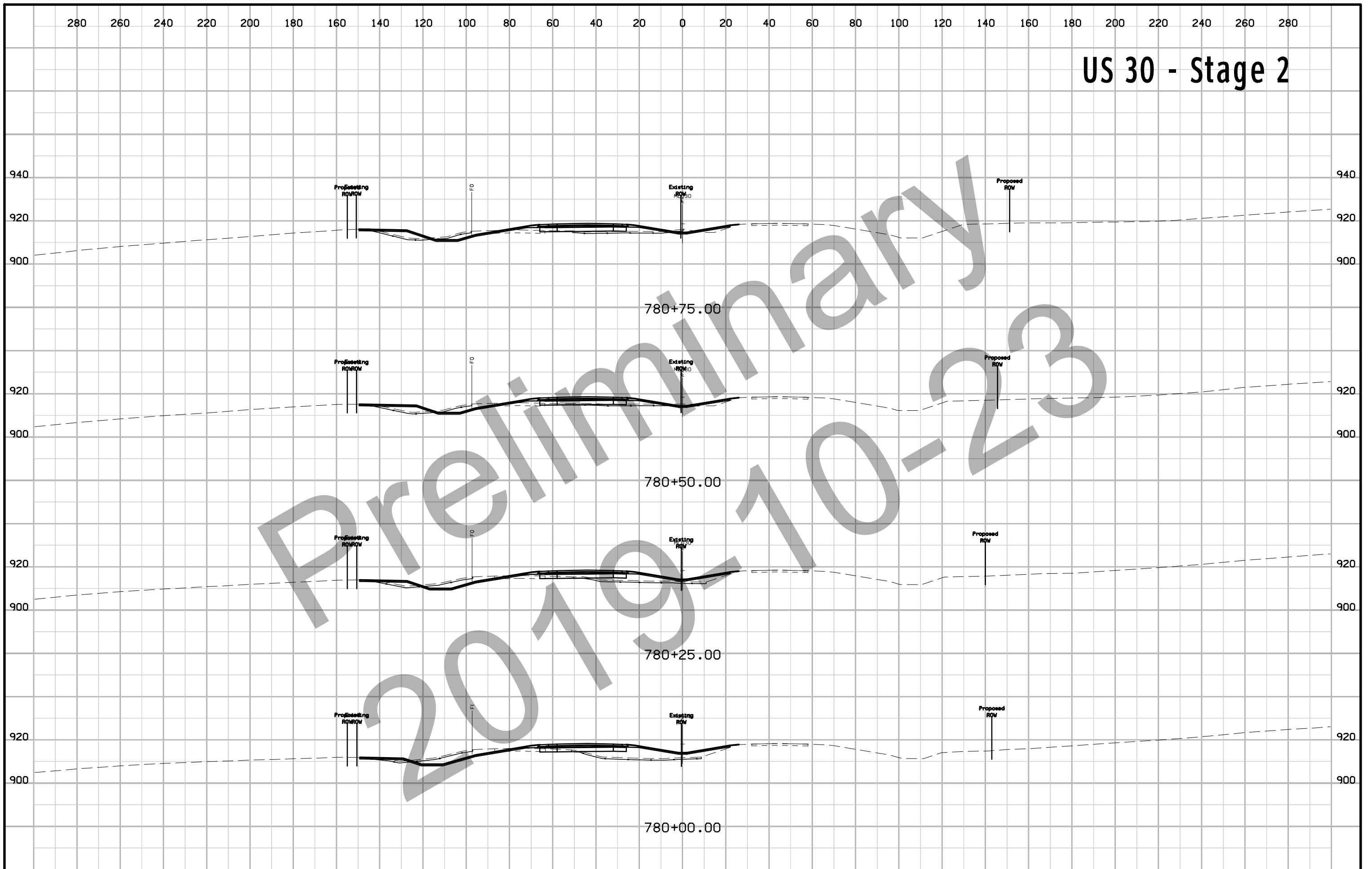


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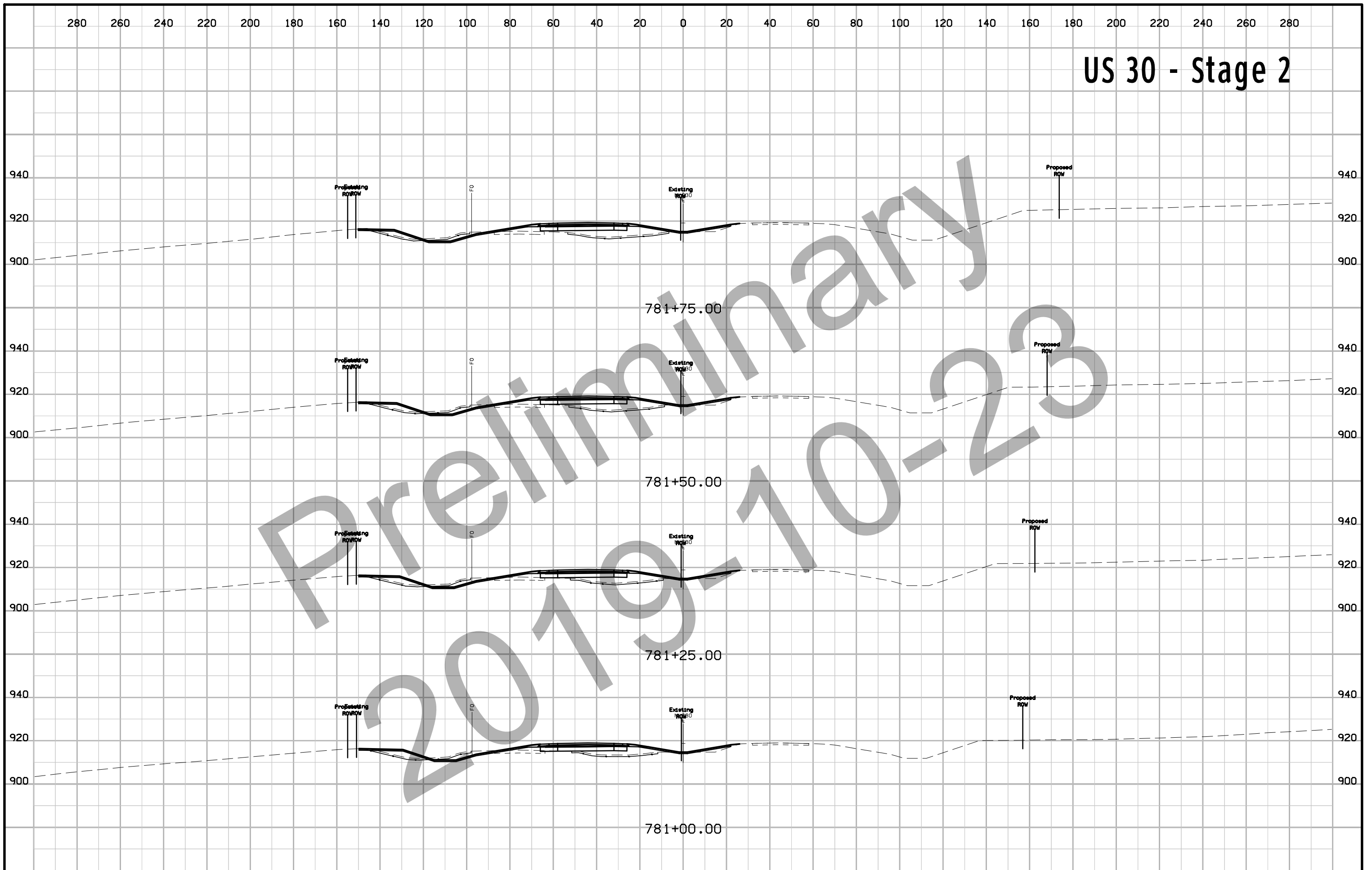
# US 30 - Stage 2



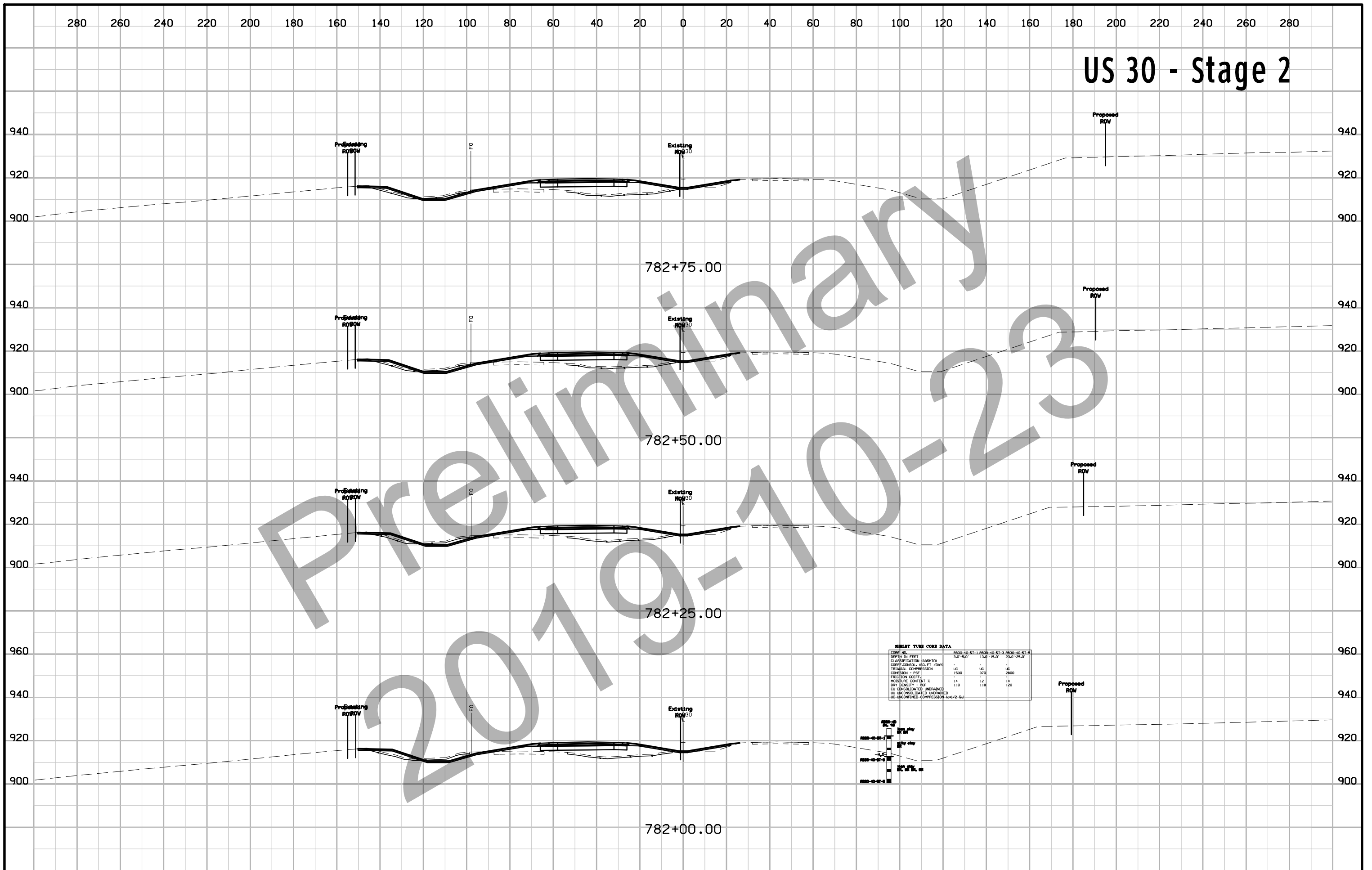
# US 30 - Stage 2



# US 30 - Stage 2



# US 30 - Stage 2

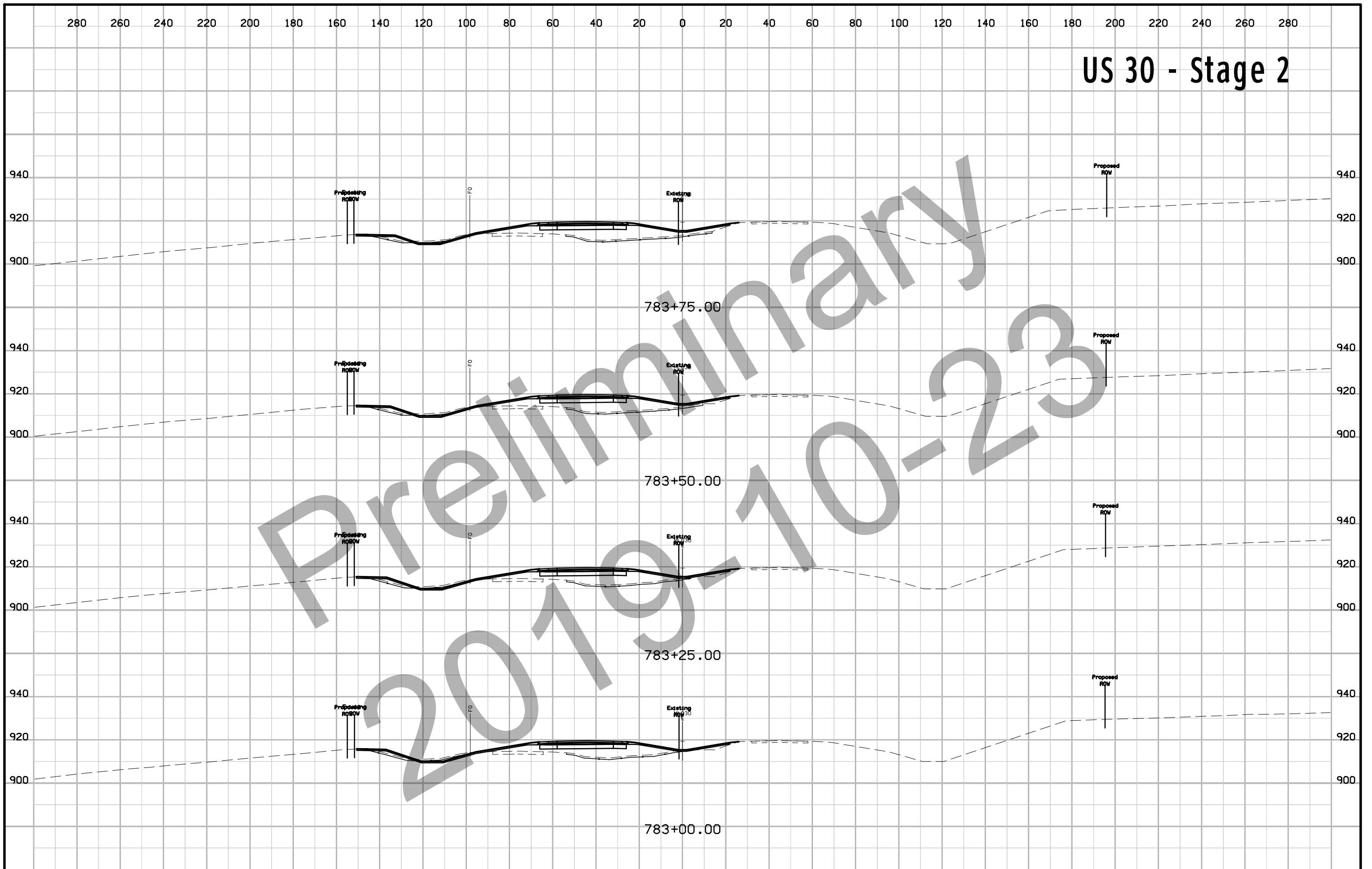


**REBAY TUBE CORE DATA**

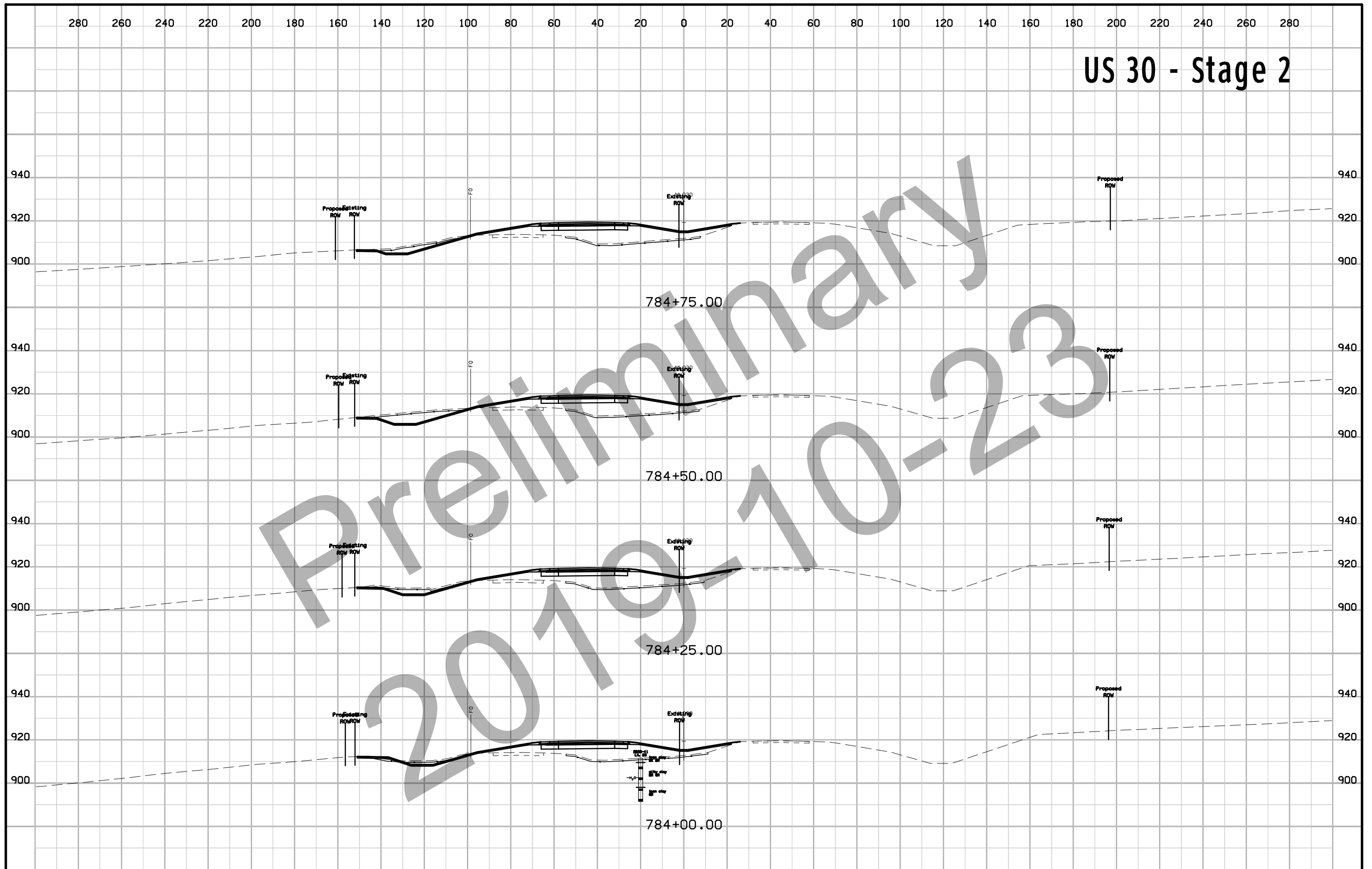
CORE NO.	8030-40-S1-1	8030-40-S1-3	8030-40-S1-5
DEPTH IN FEET	3.0'-5.0'	13.4'-15.0'	23.0'-25.0'
CLASSIFICATION (ASHSTO)	-	-	-
COEFF. CONSOL. (SO. FT. / SQ. FT.)	UC	UC	UC
TRIAXIAL COMPRESSION	1530	370	2800
COMBESION - PSI	-	-	-
FRICTION COEFF.	14	12	14
MOISTURE CONTENT %	110	118	120
DRY DENSITY - PCF	-	-	-
CU-CONSOLIDATED UNDRAINED	-	-	-
UU-UNCONSOLIDATED UNDRAINED	-	-	-
UC-UNCONSOLIDATED COMPRESSION	44-1/2	Q <sub>u</sub>	-



# US 30 - Stage 2

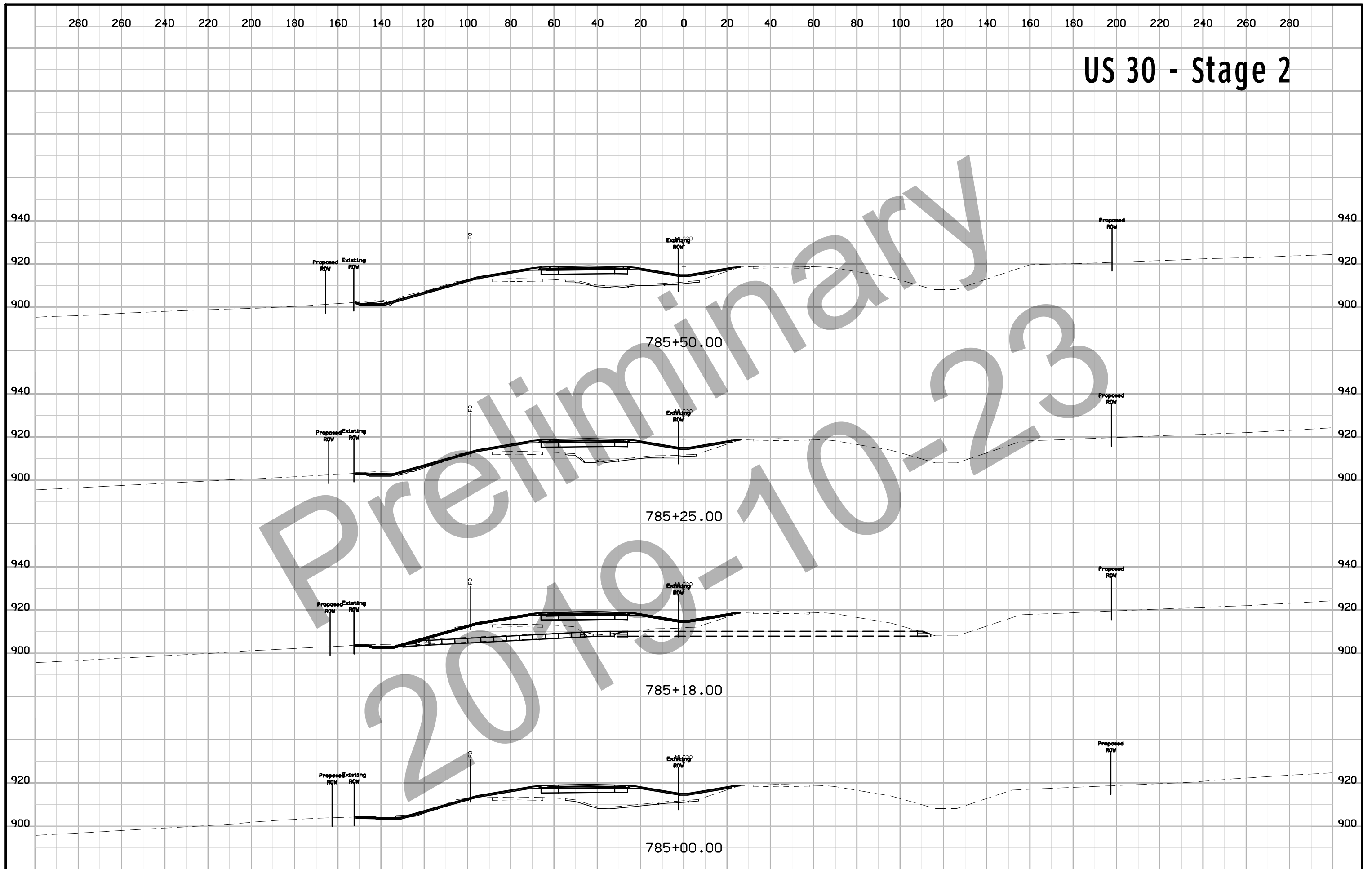


# US 30 - Stage 2

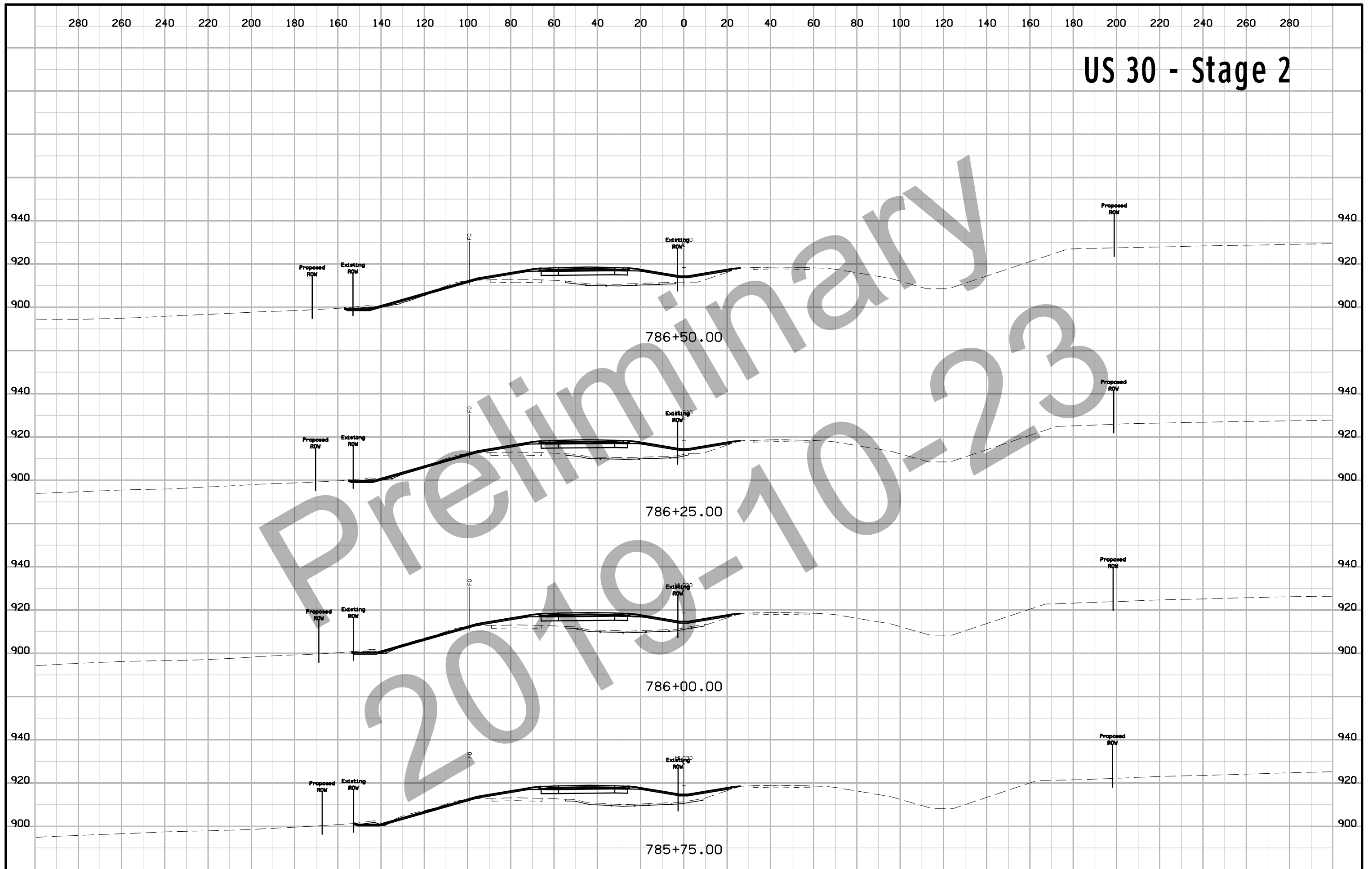




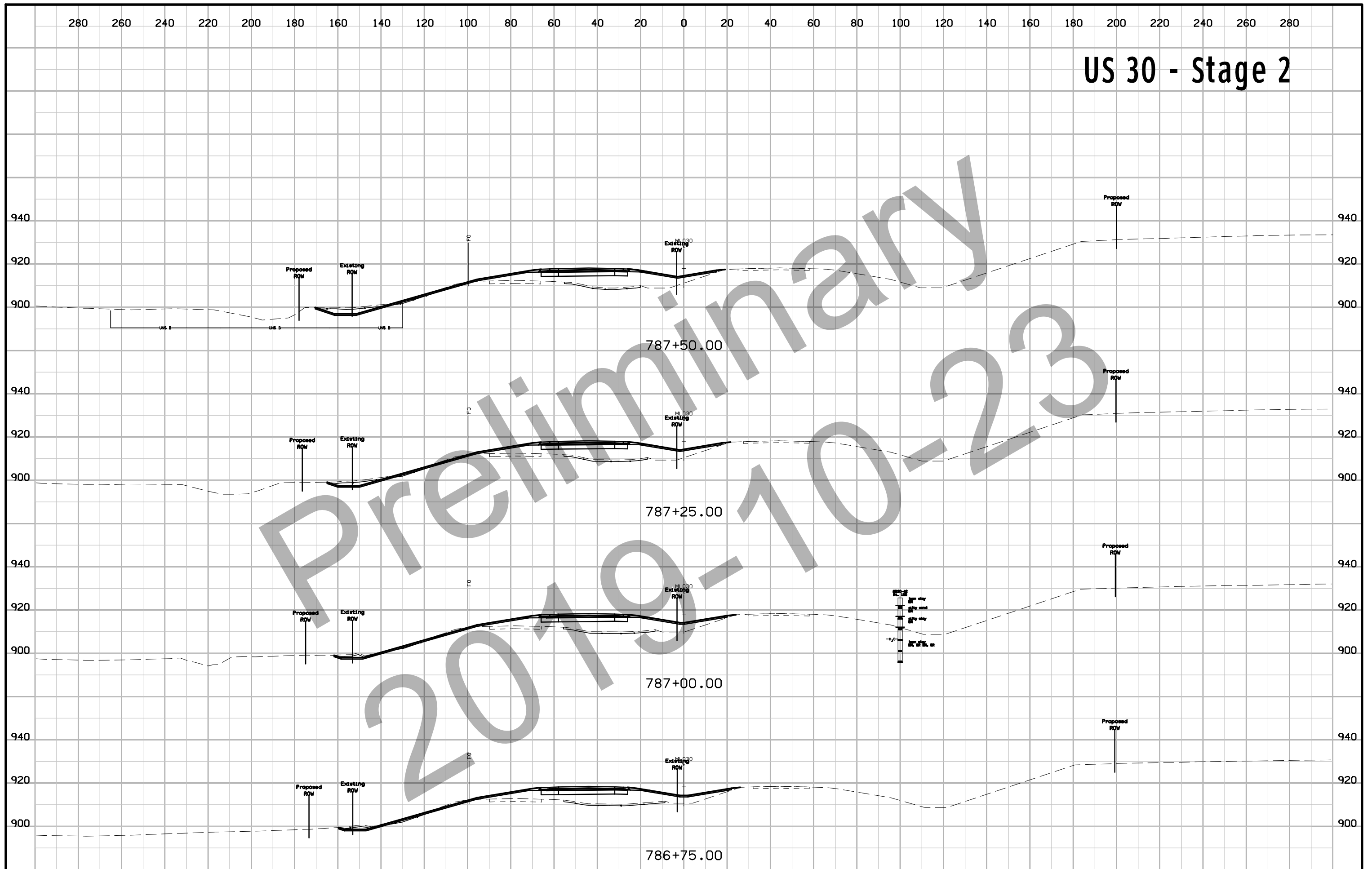
# US 30 - Stage 2



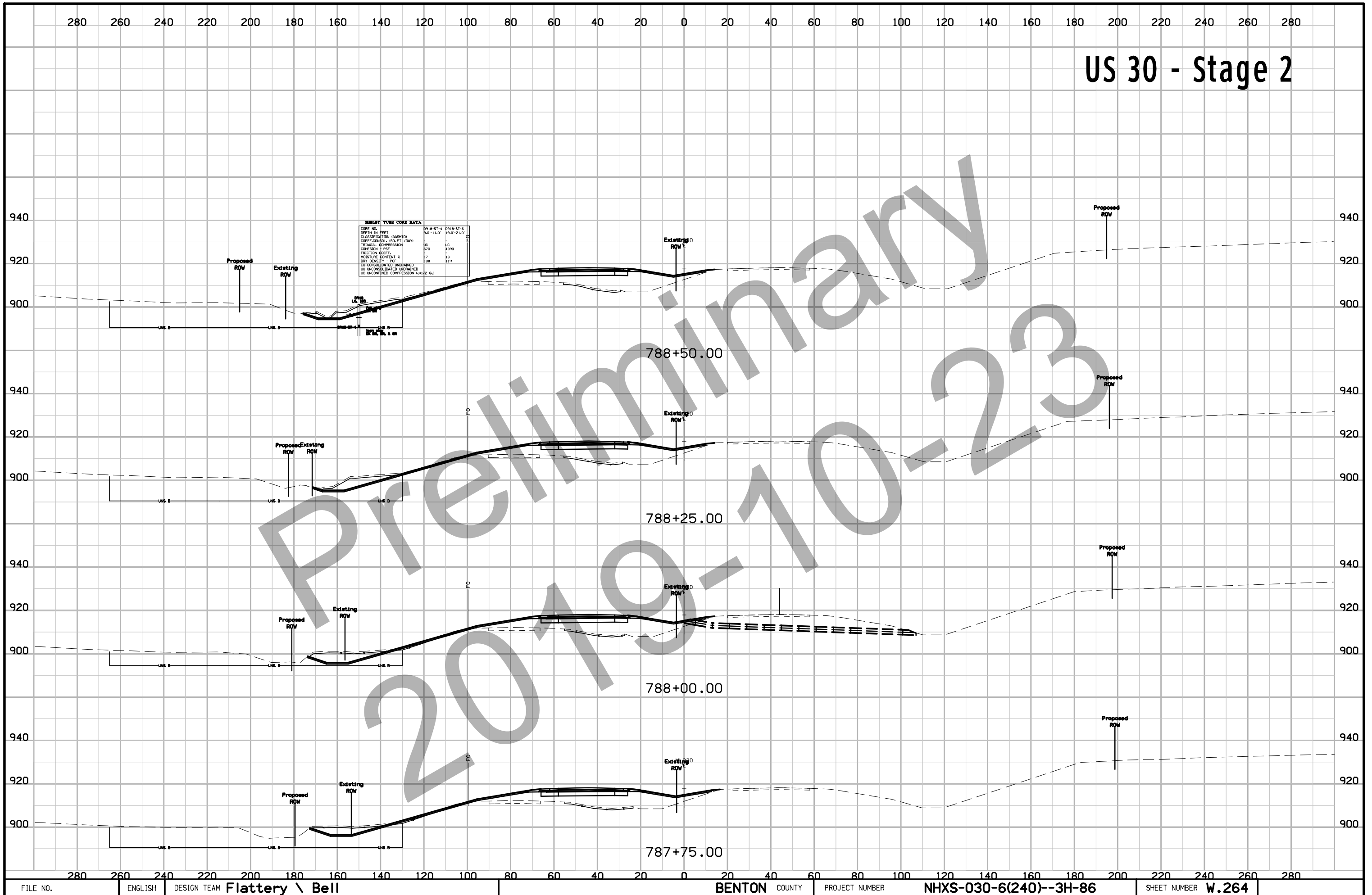
# US 30 - Stage 2



# US 30 - Stage 2



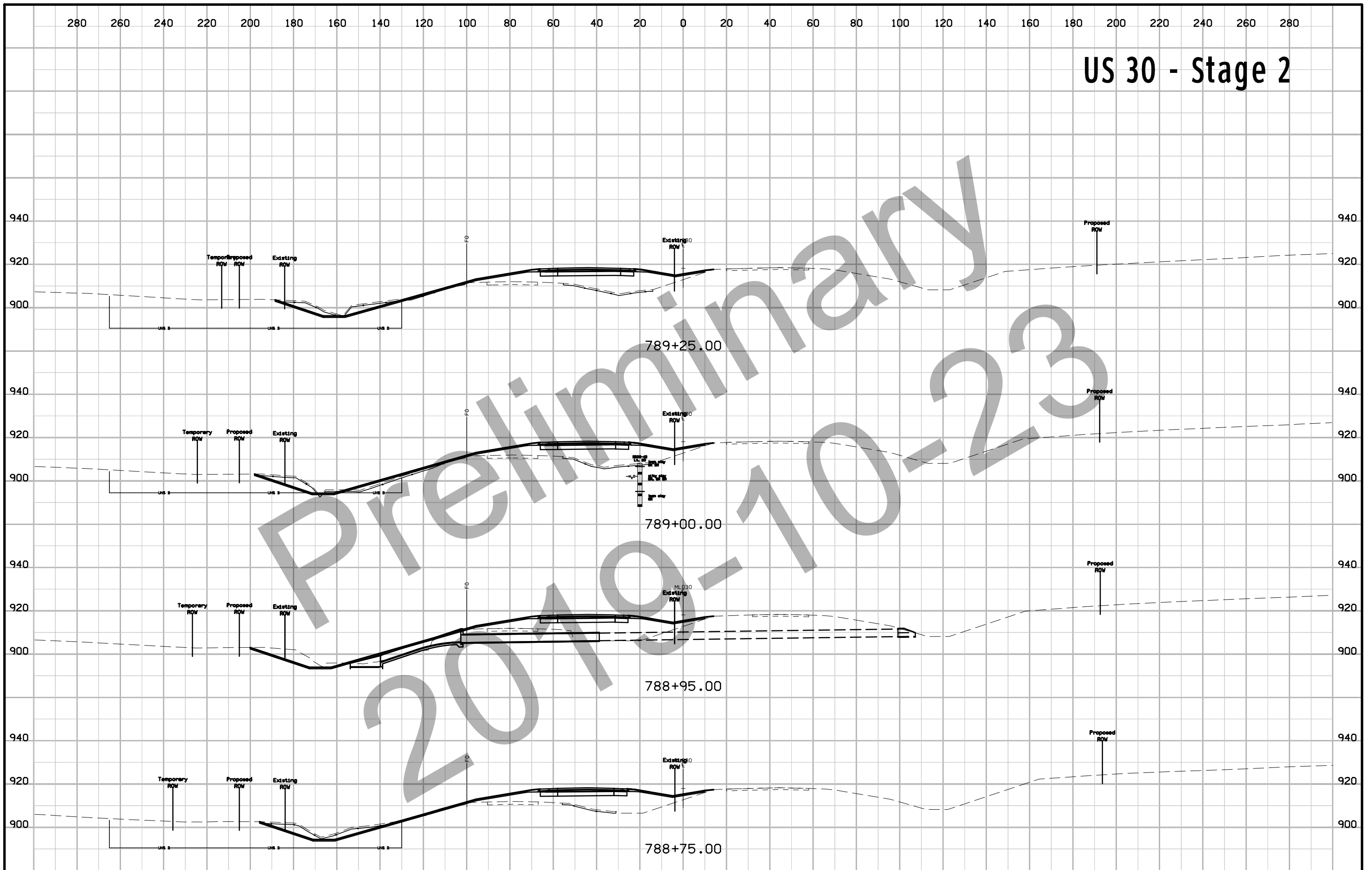
# US 30 - Stage 2



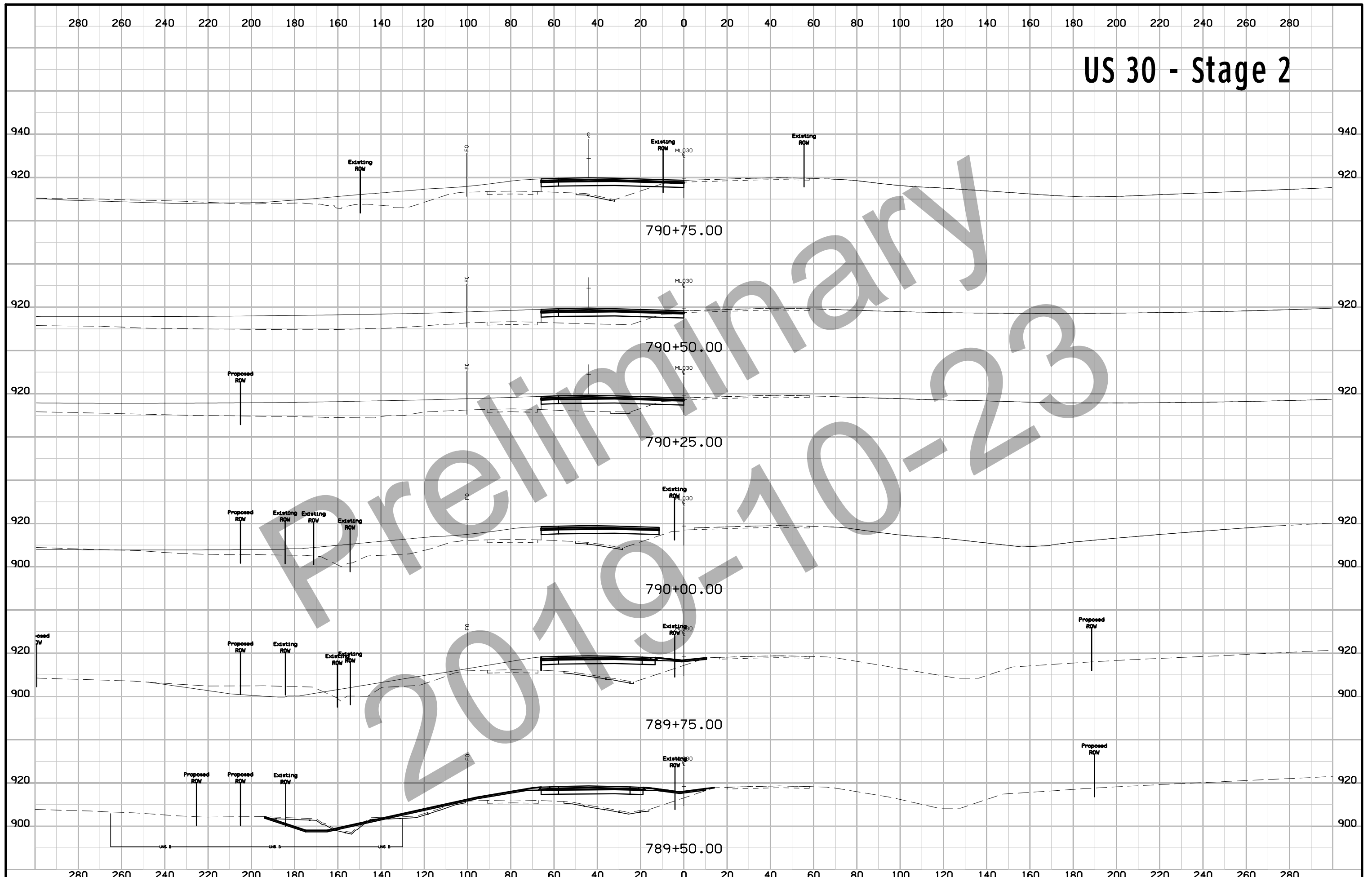
**SHIRLEY TURS CORE DATA**

CORE NO.	D118-S1-A	D118-S1-B
DEPTH IN FEET	9.0'-11.0'	19.0'-21.0'
CLASSIFICATION (ASHTO)		
COEFFICIENT OF COMPRESSION (SOILS)	UC	UC
TRIAxIAL COMPRESSION	0.70	0.790
COHESION - PSF		
FRICTION COEFF.	0.17	0.13
MOISTURE CONTENT %	108	119
DRY DENSITY - PCF		
UNCONSOLIDATED UNDRAINED		
UNCONSOLIDATED UNDRAINED		
UNCONSOLIDATED UNDRAINED		

# US 30 - Stage 2

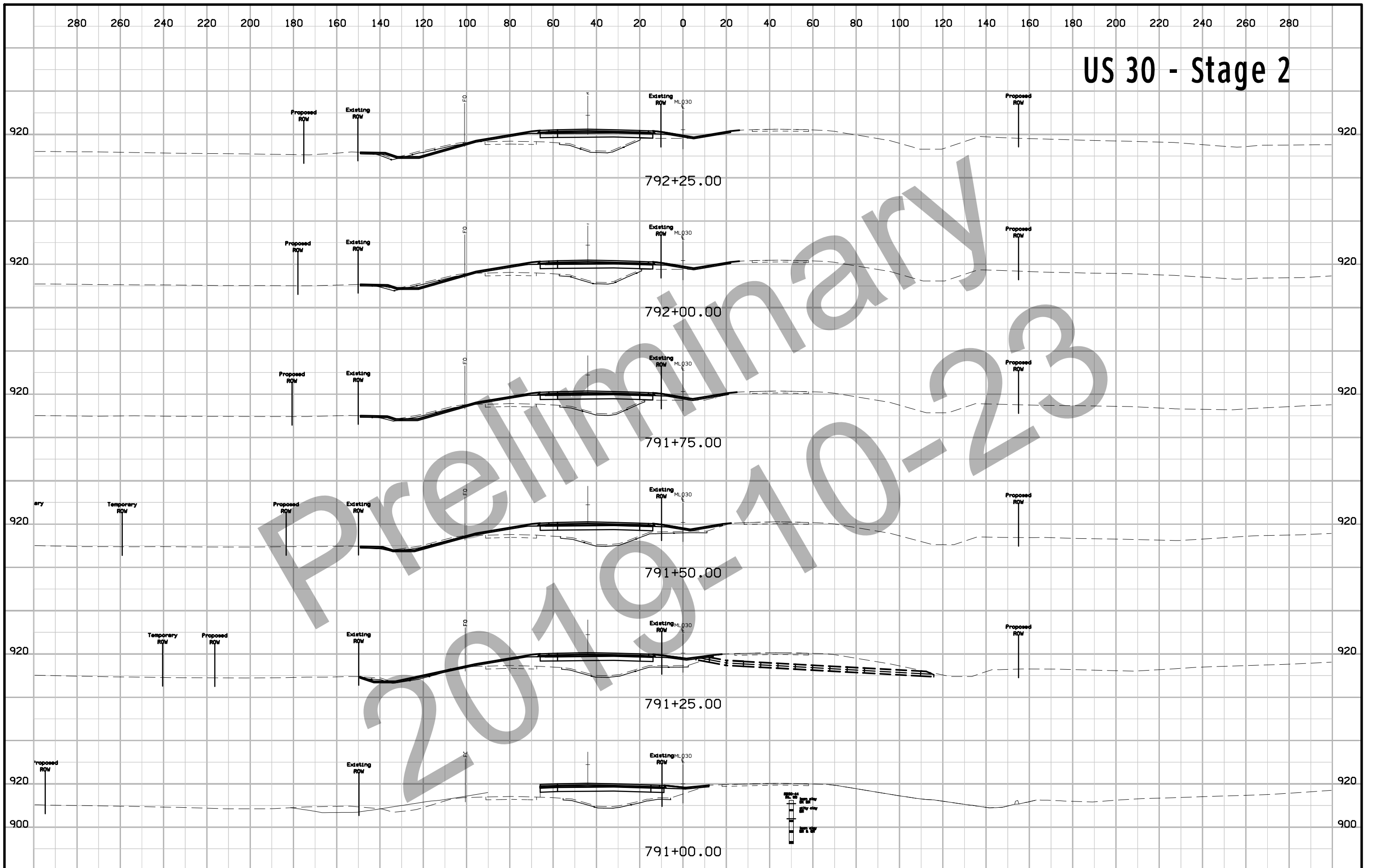


# US 30 - Stage 2

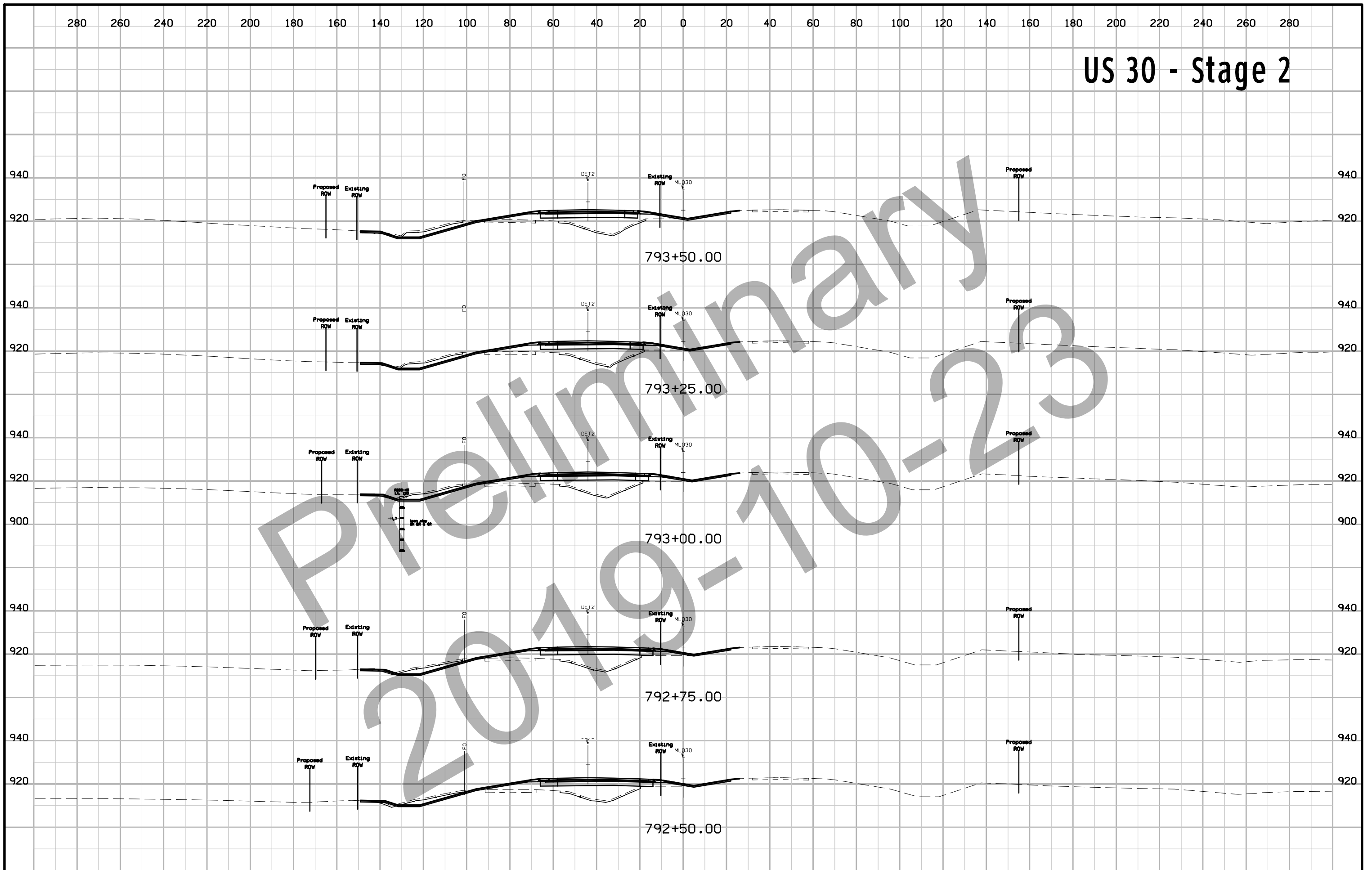


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# US 30 - Stage 2

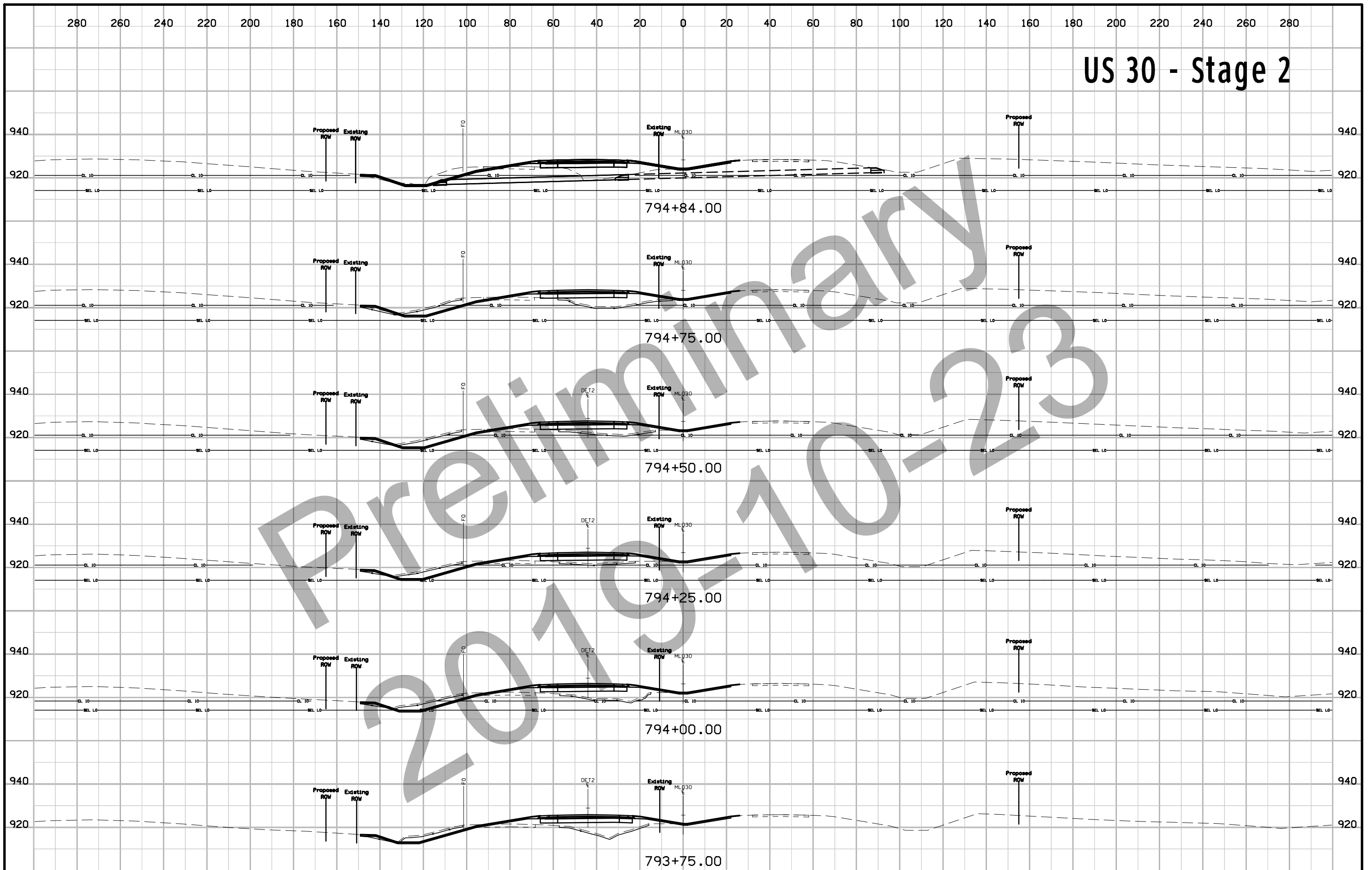


# US 30 - Stage 2





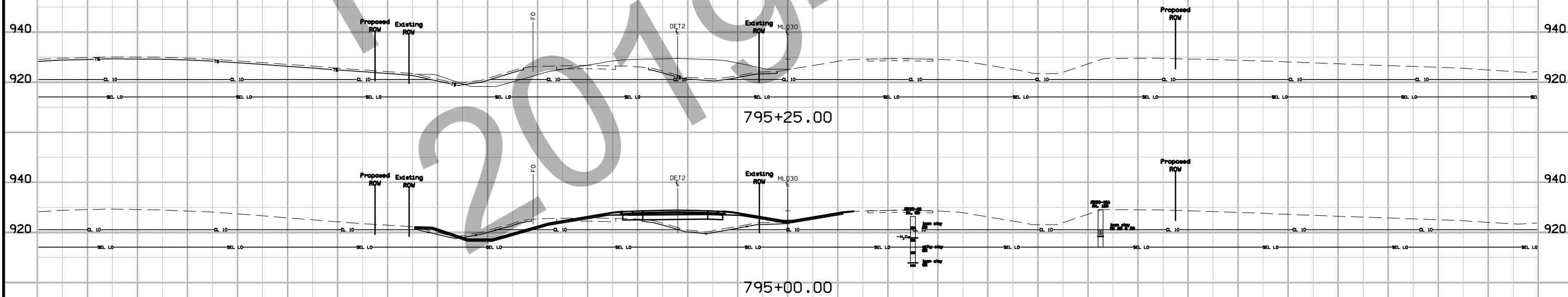
# US 30 - Stage 2



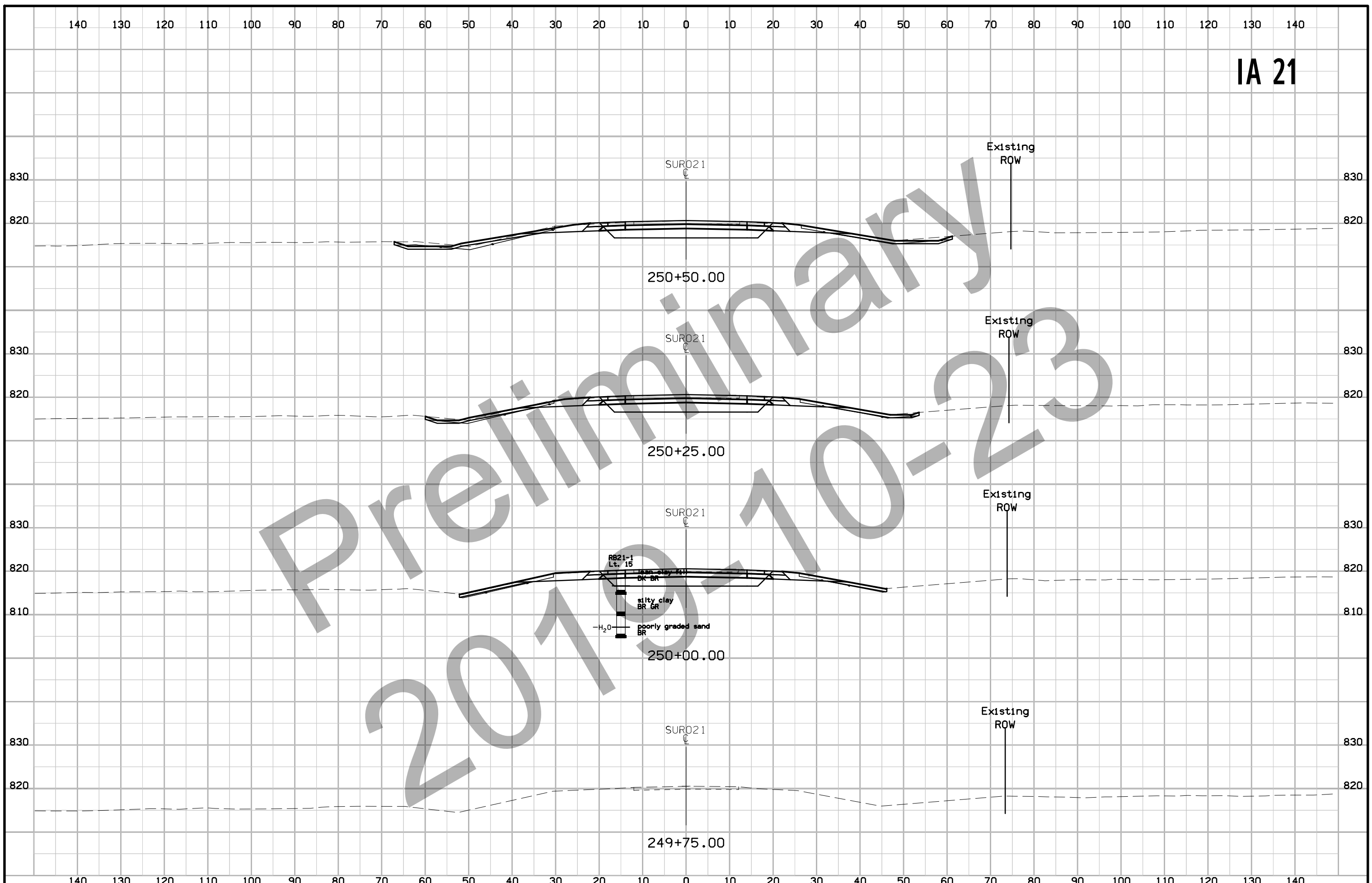
280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

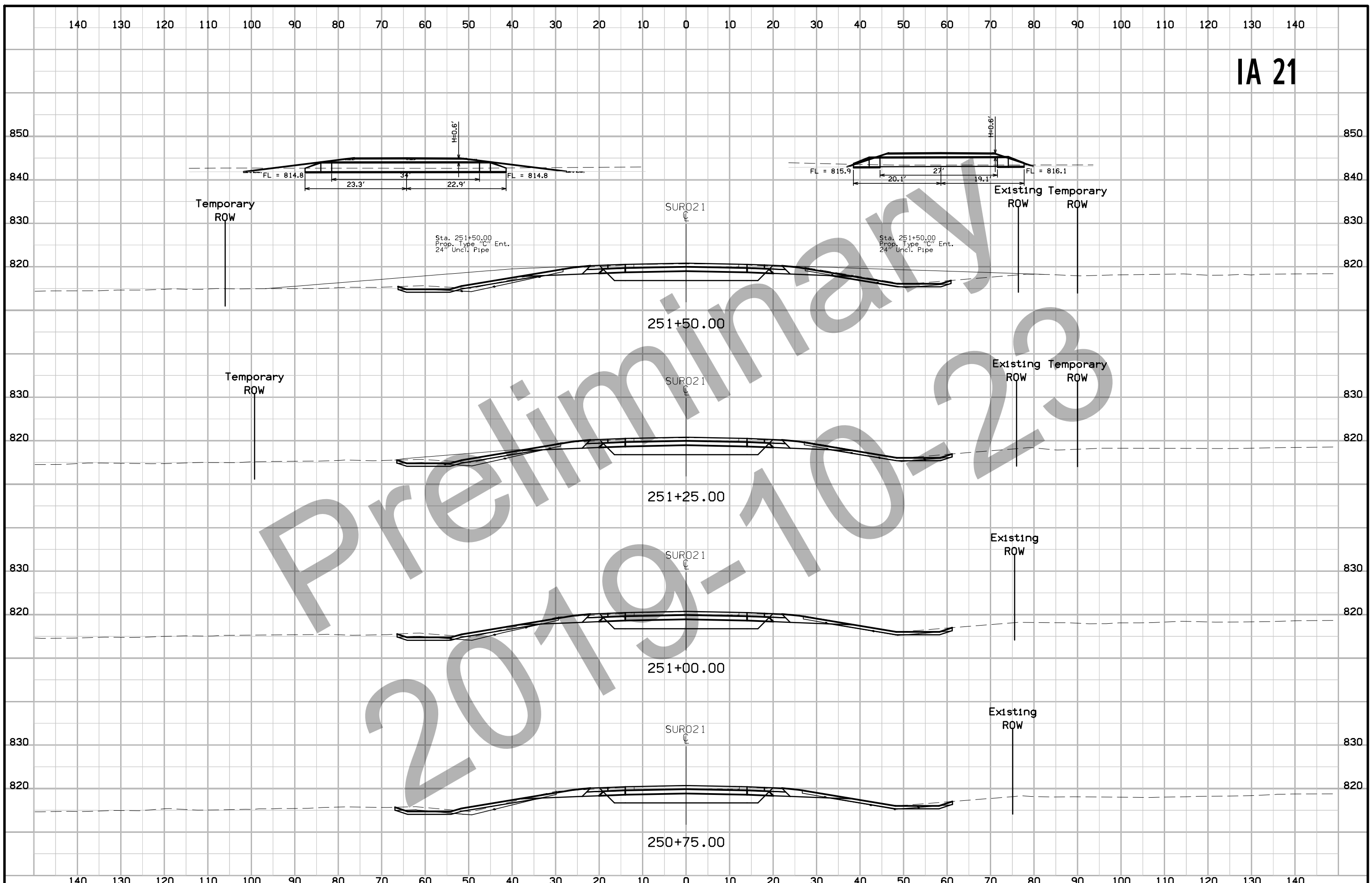
# US 30 - Stage 2

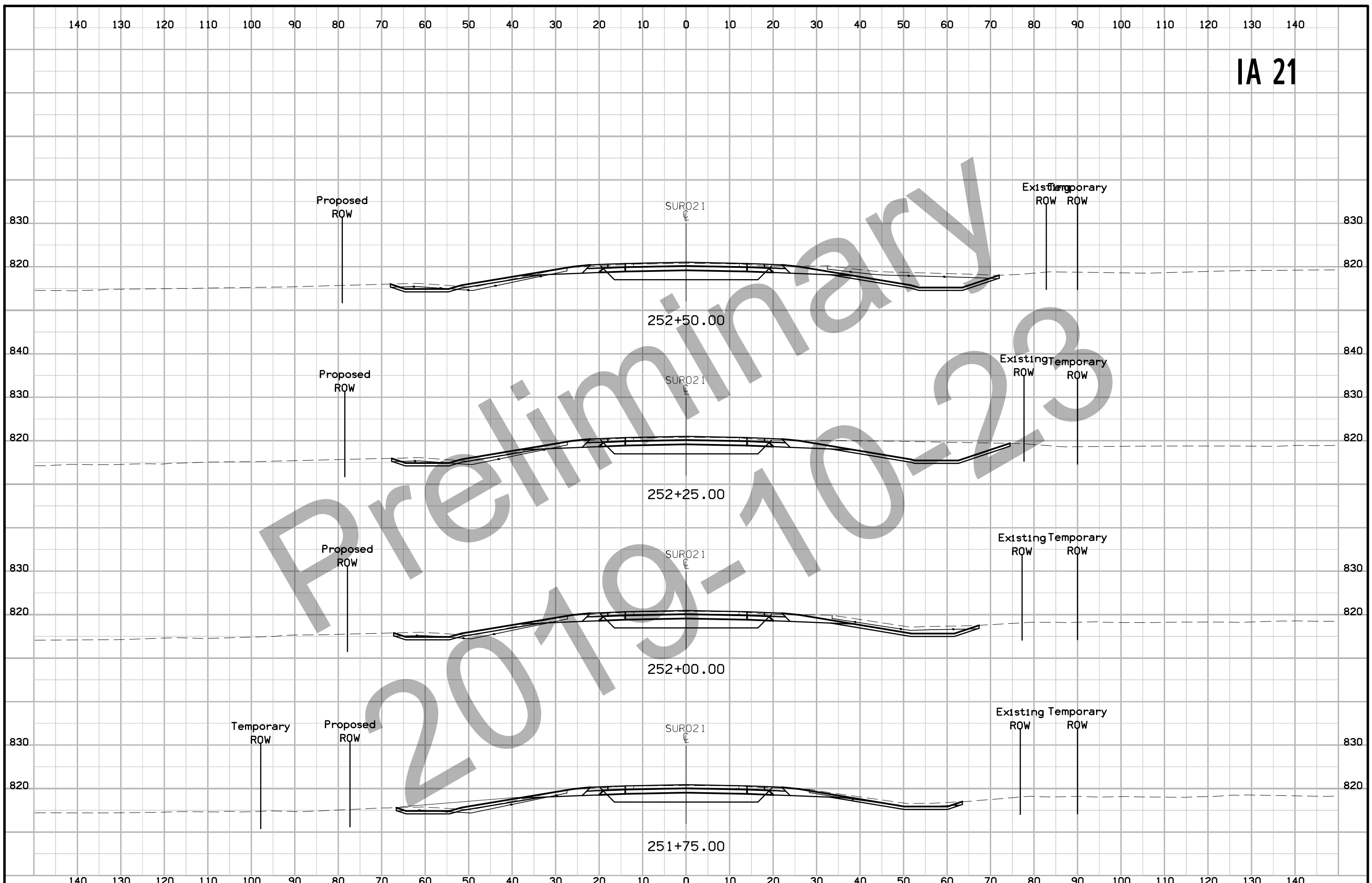
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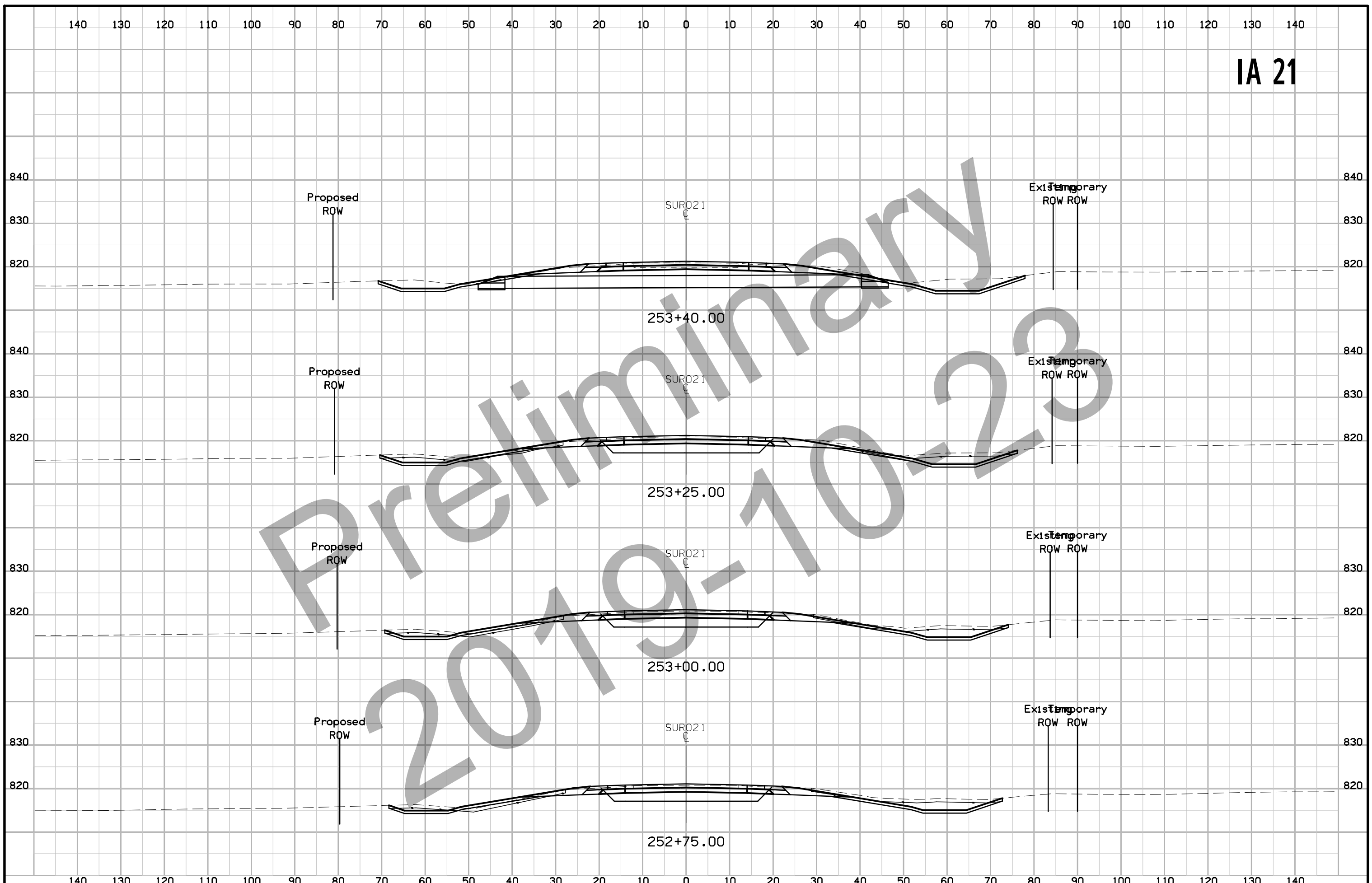


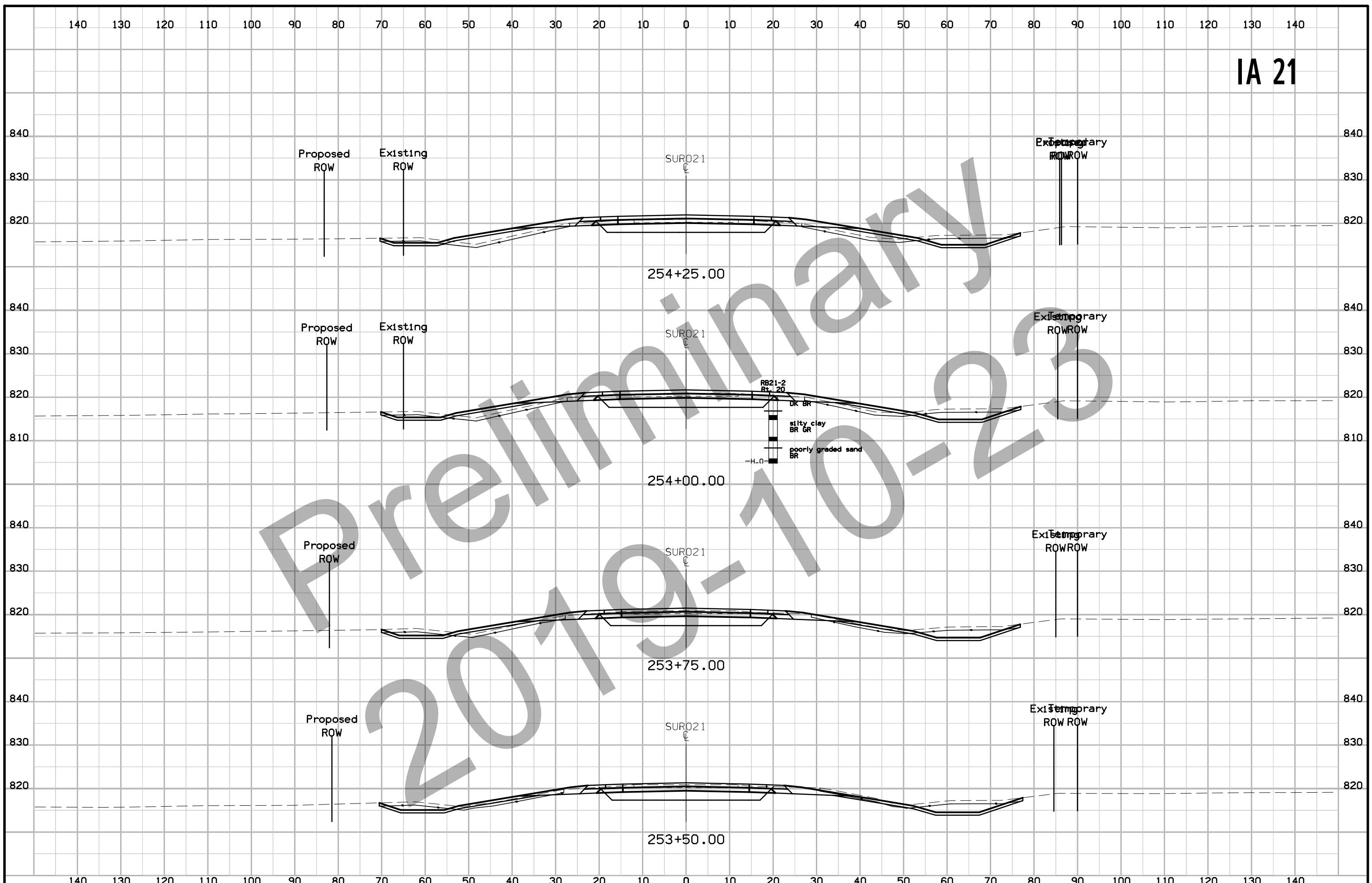
280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280

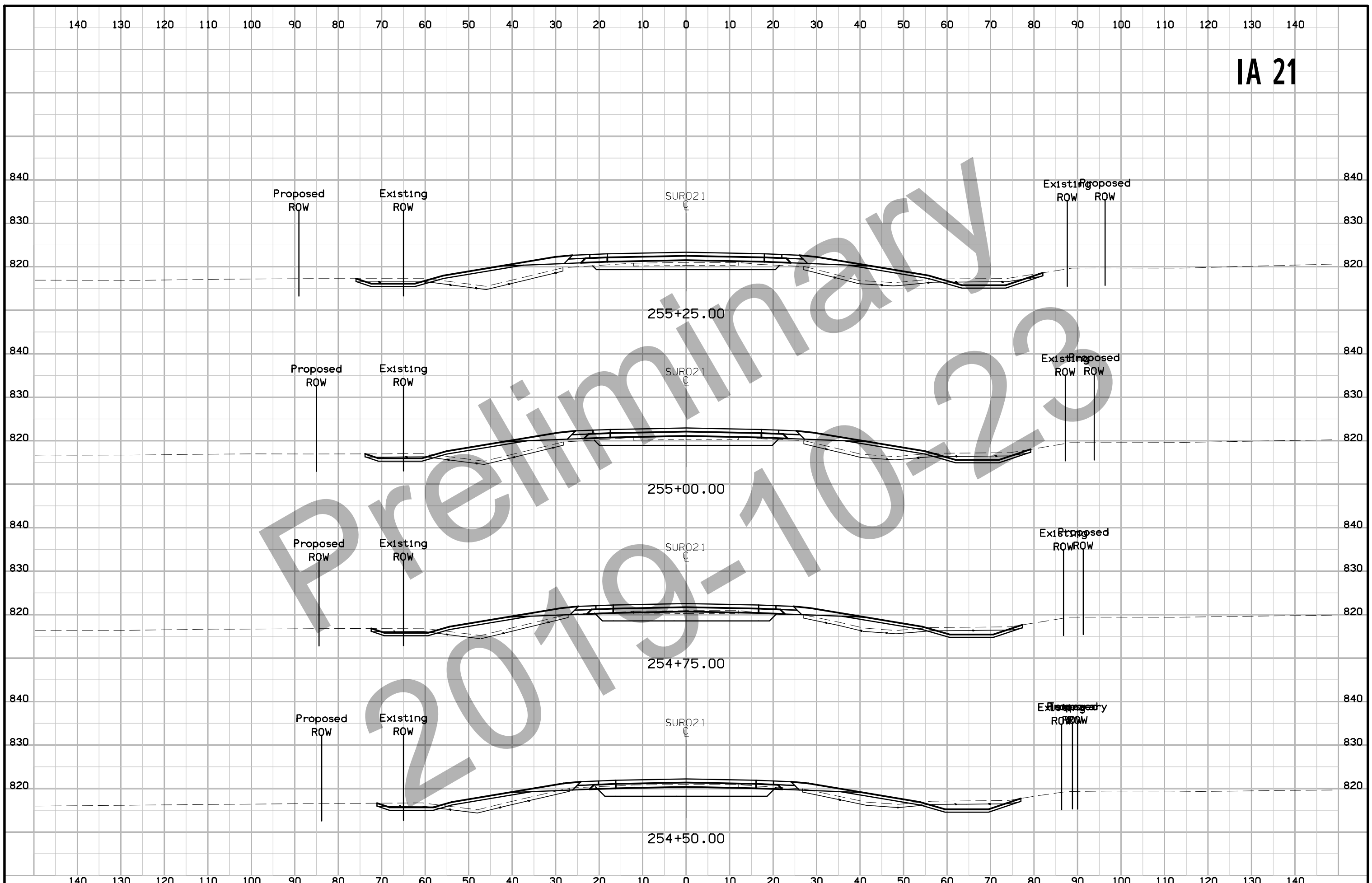






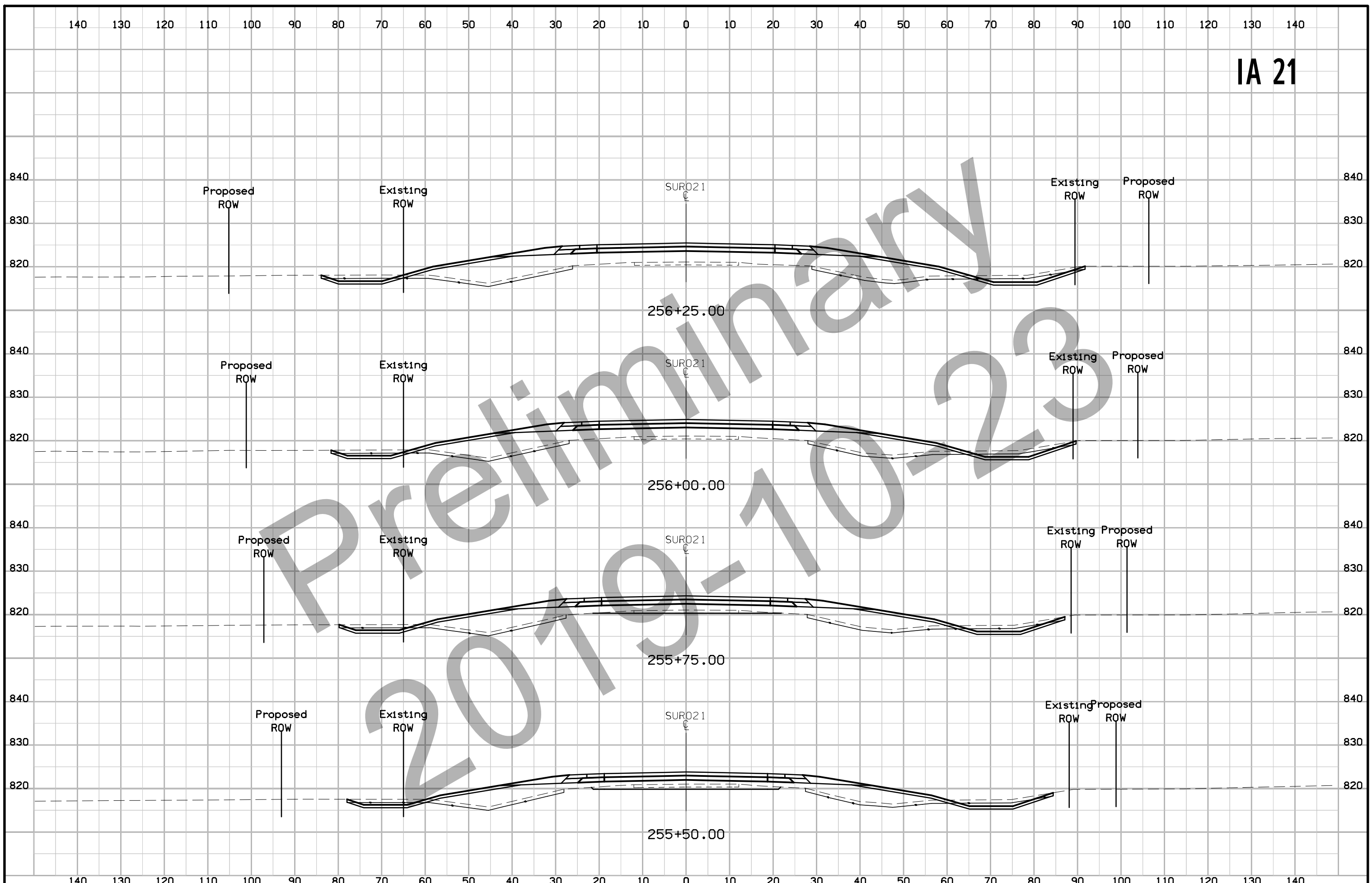




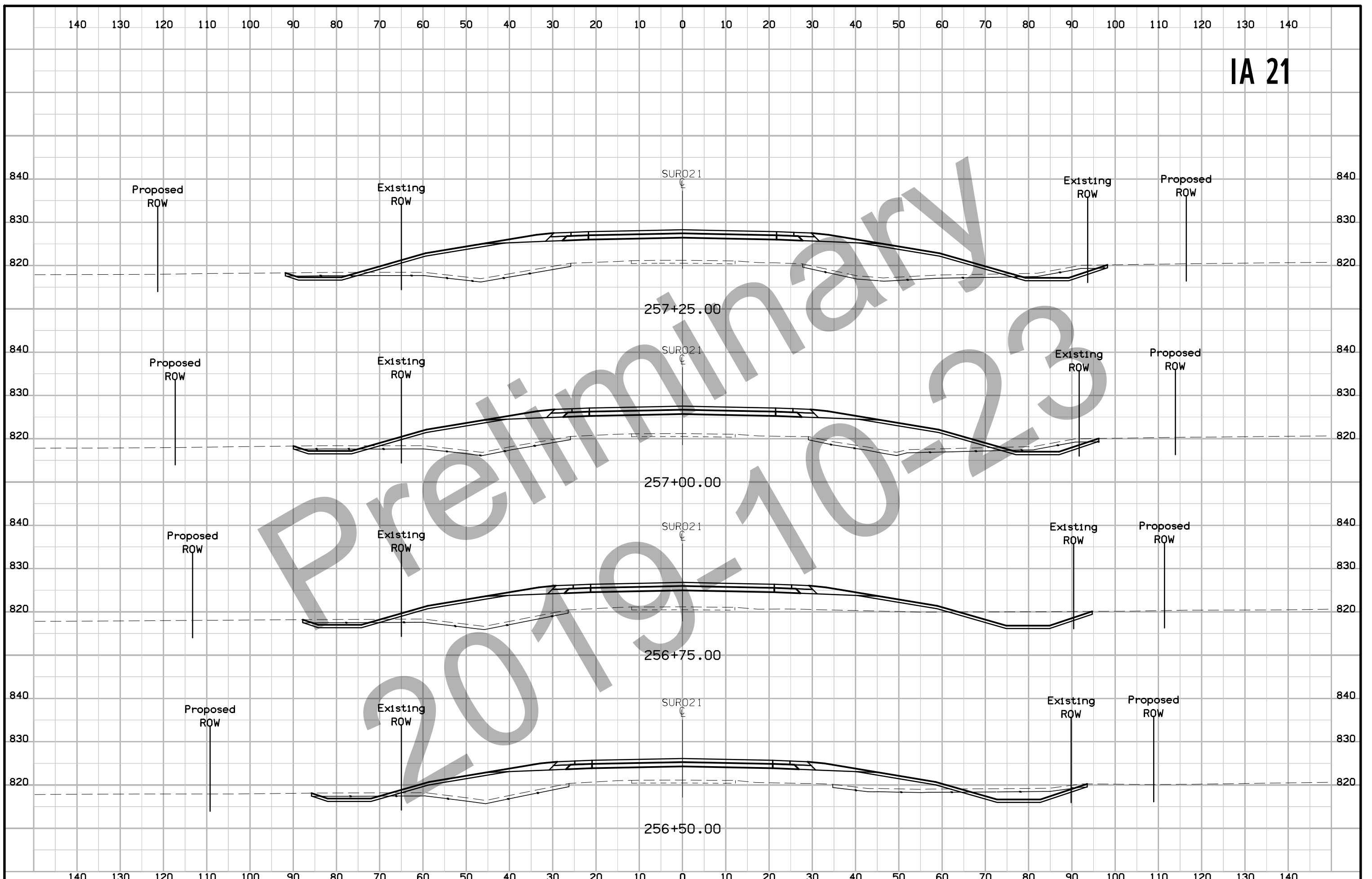


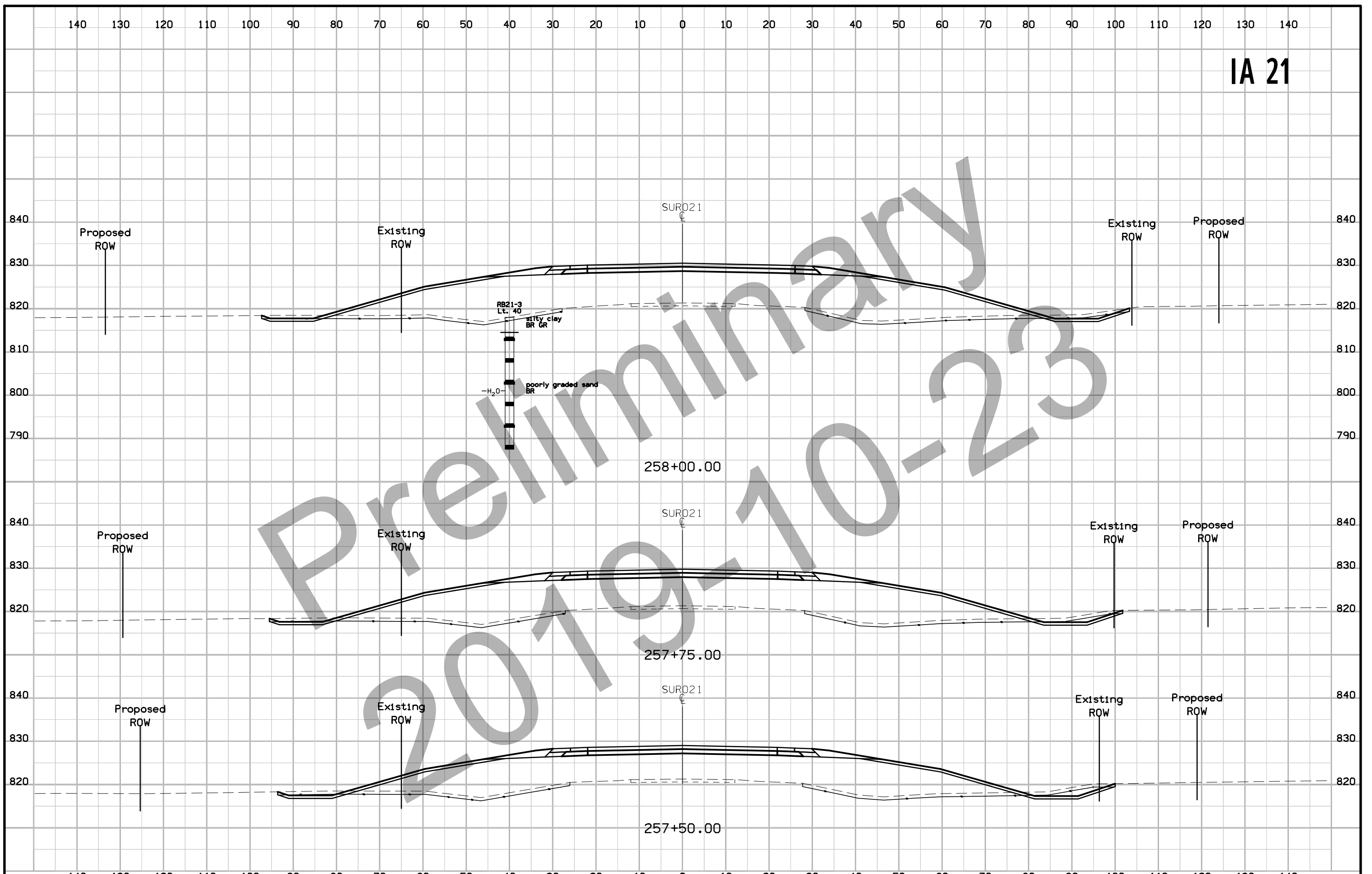


IA 21

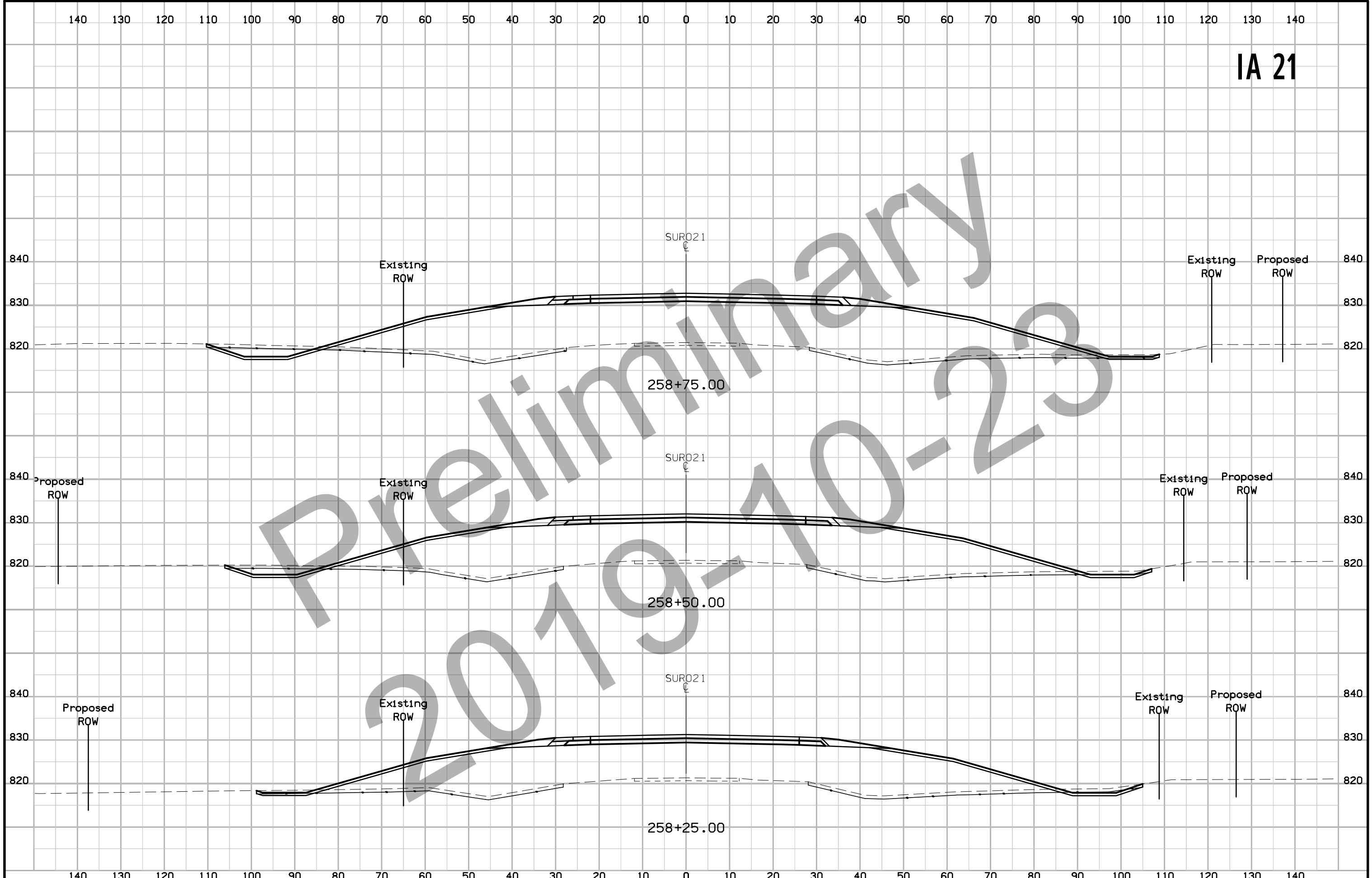


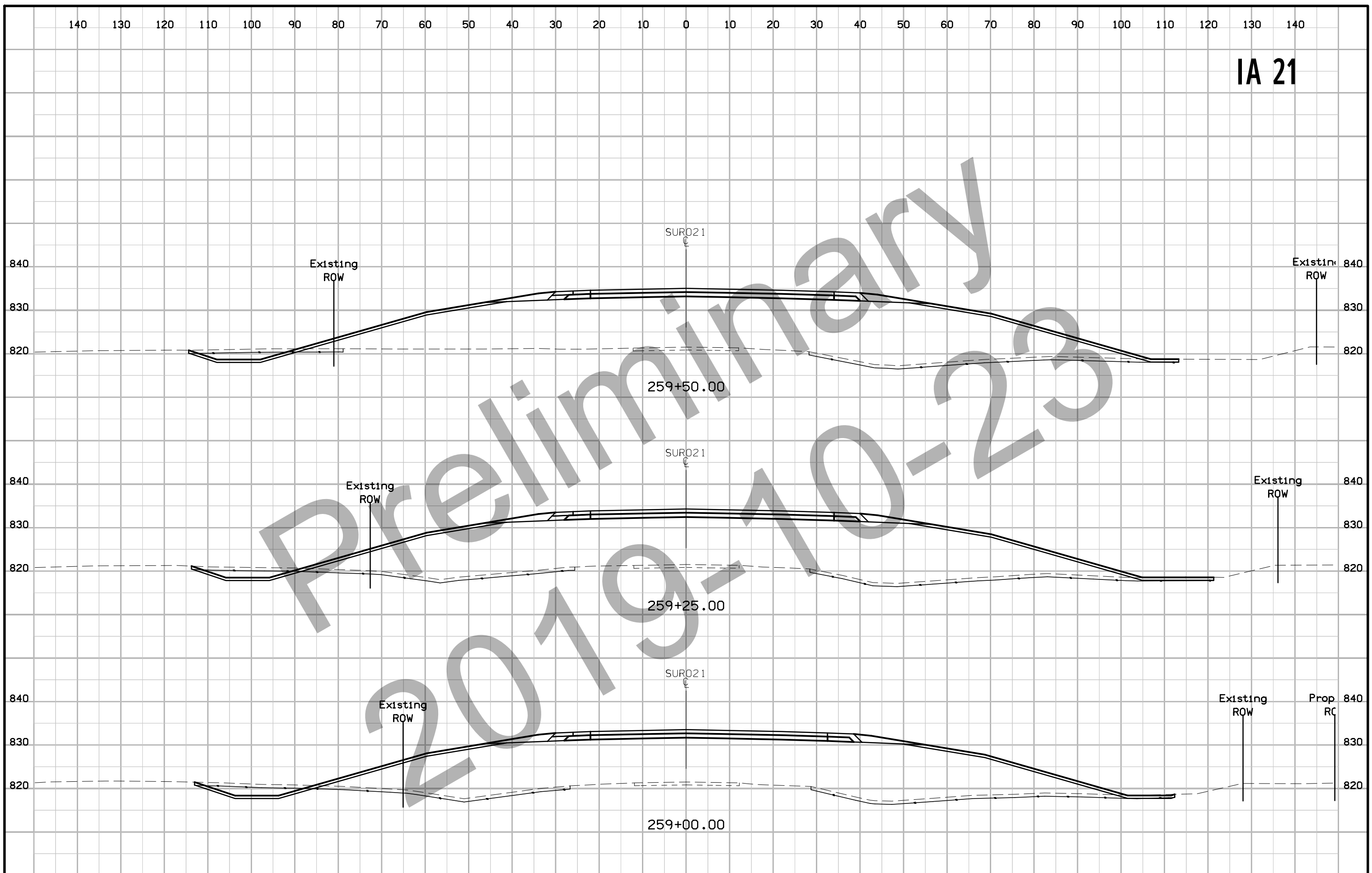
IA 21



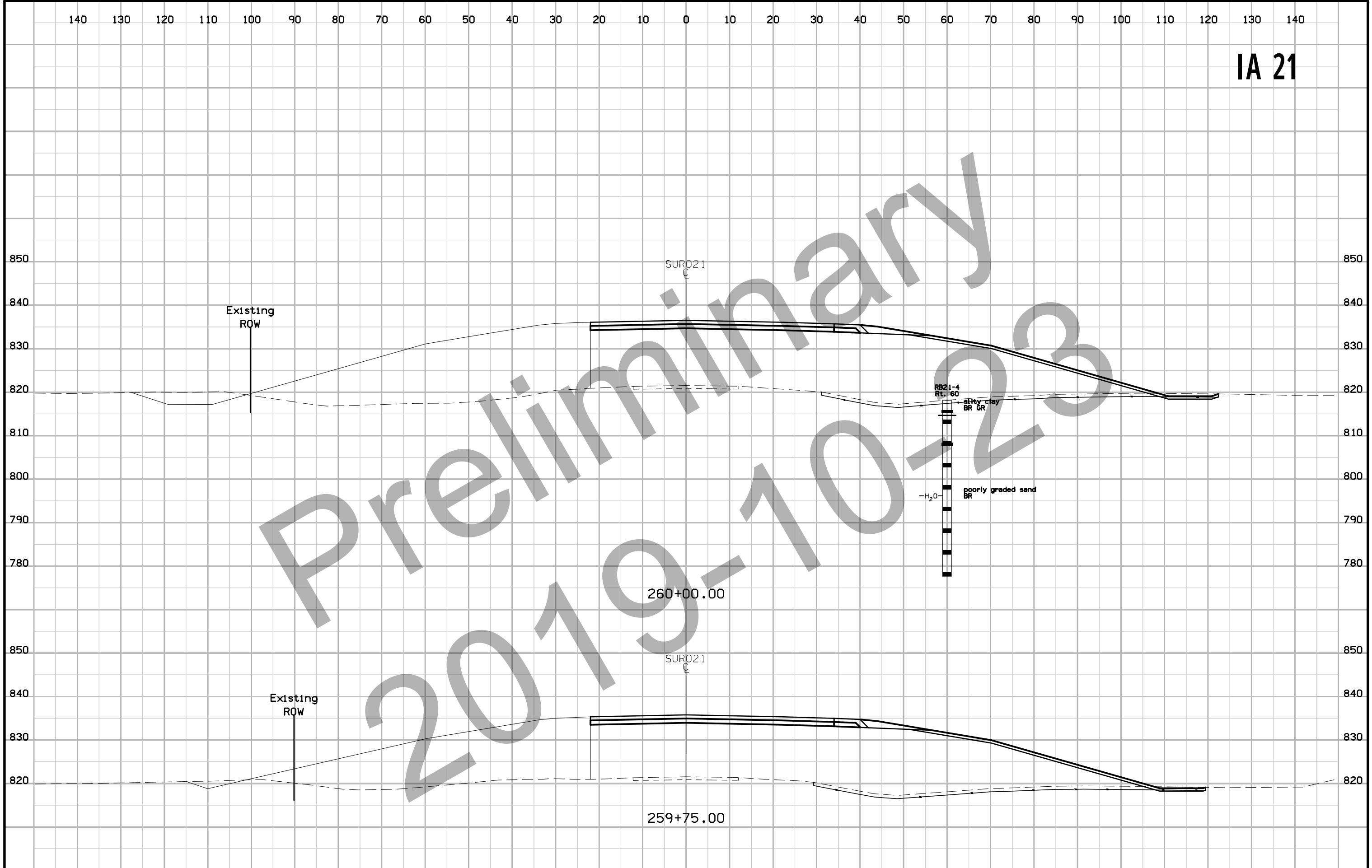


IA 21

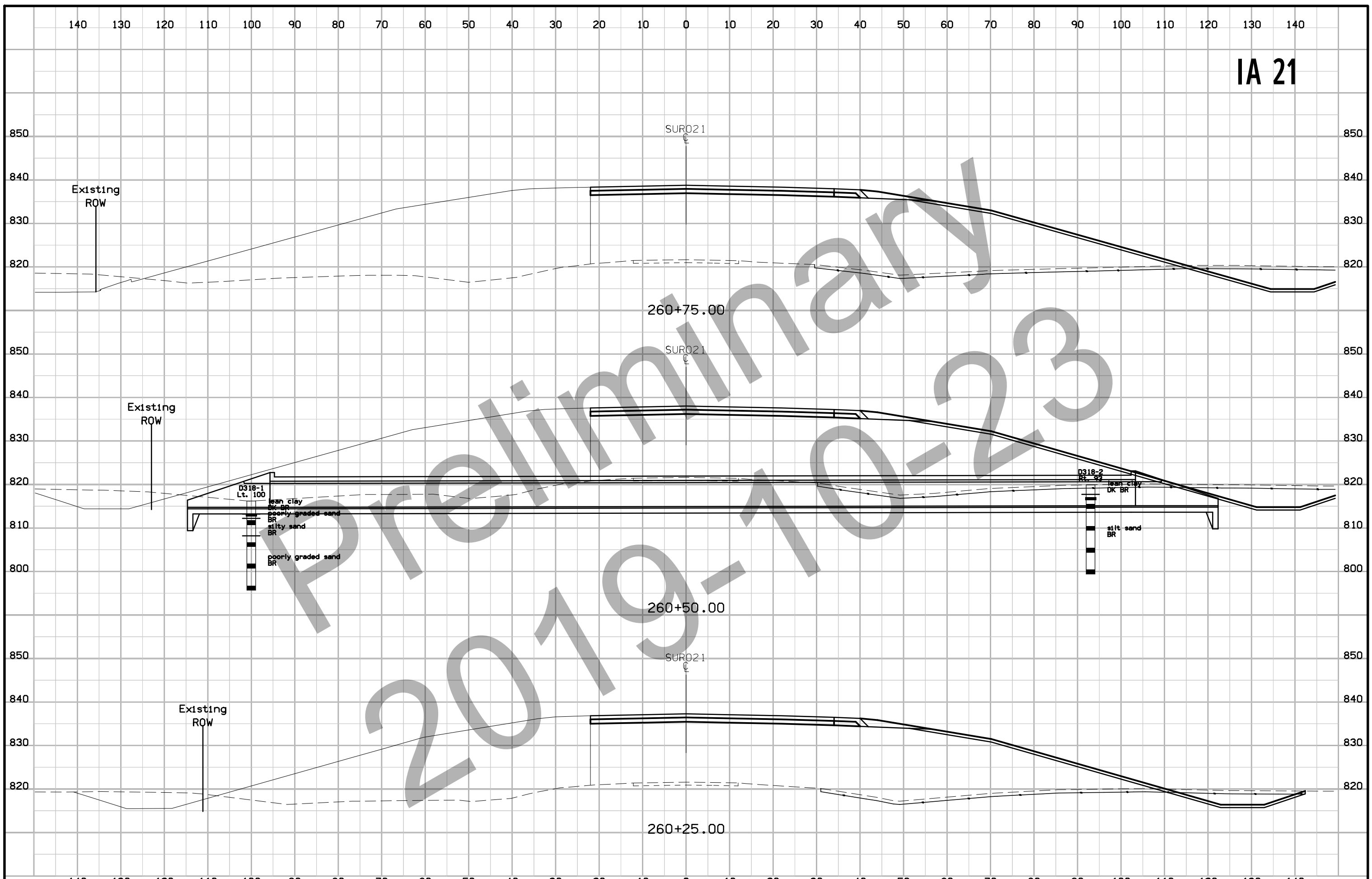




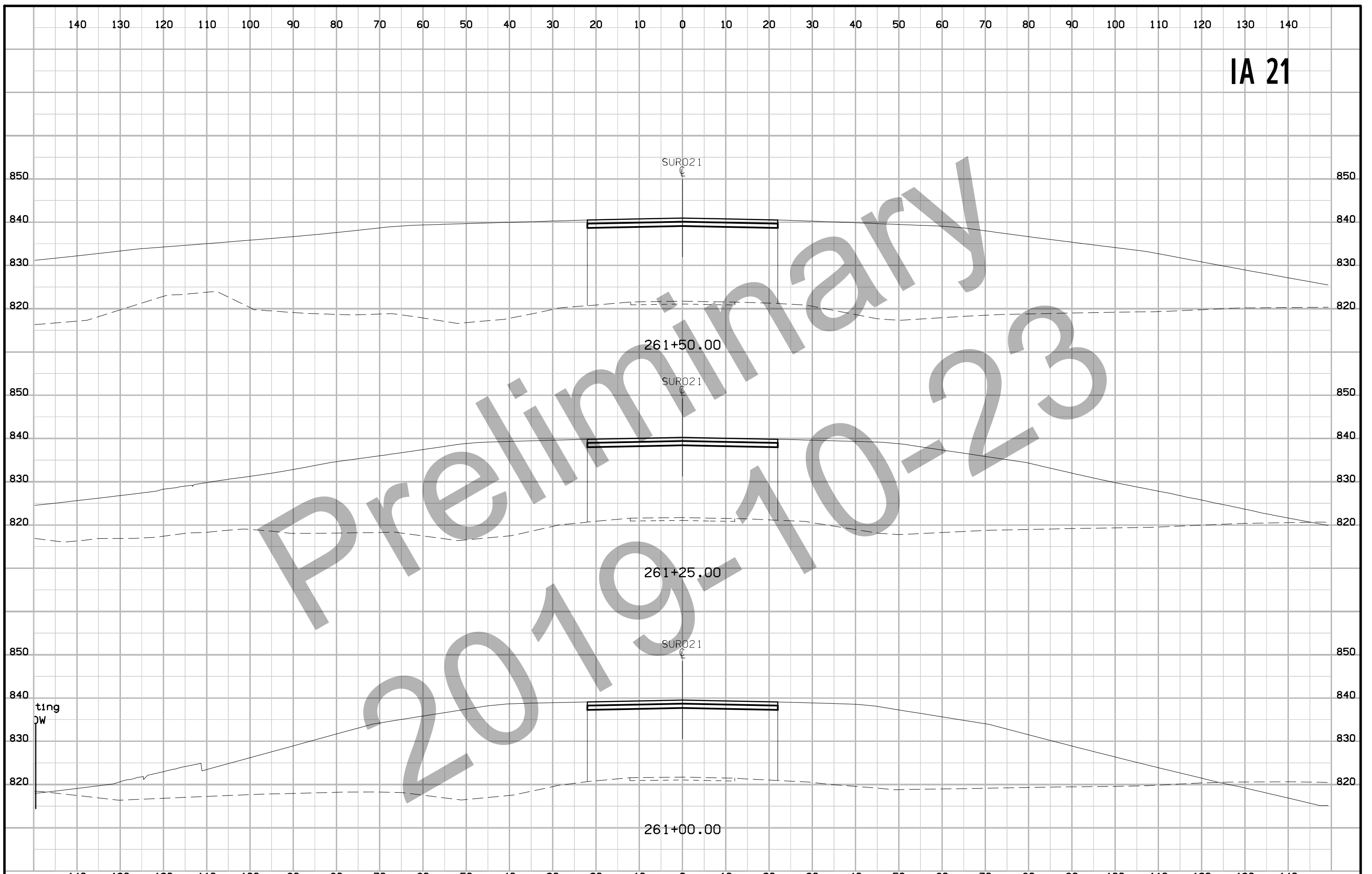
IA 21



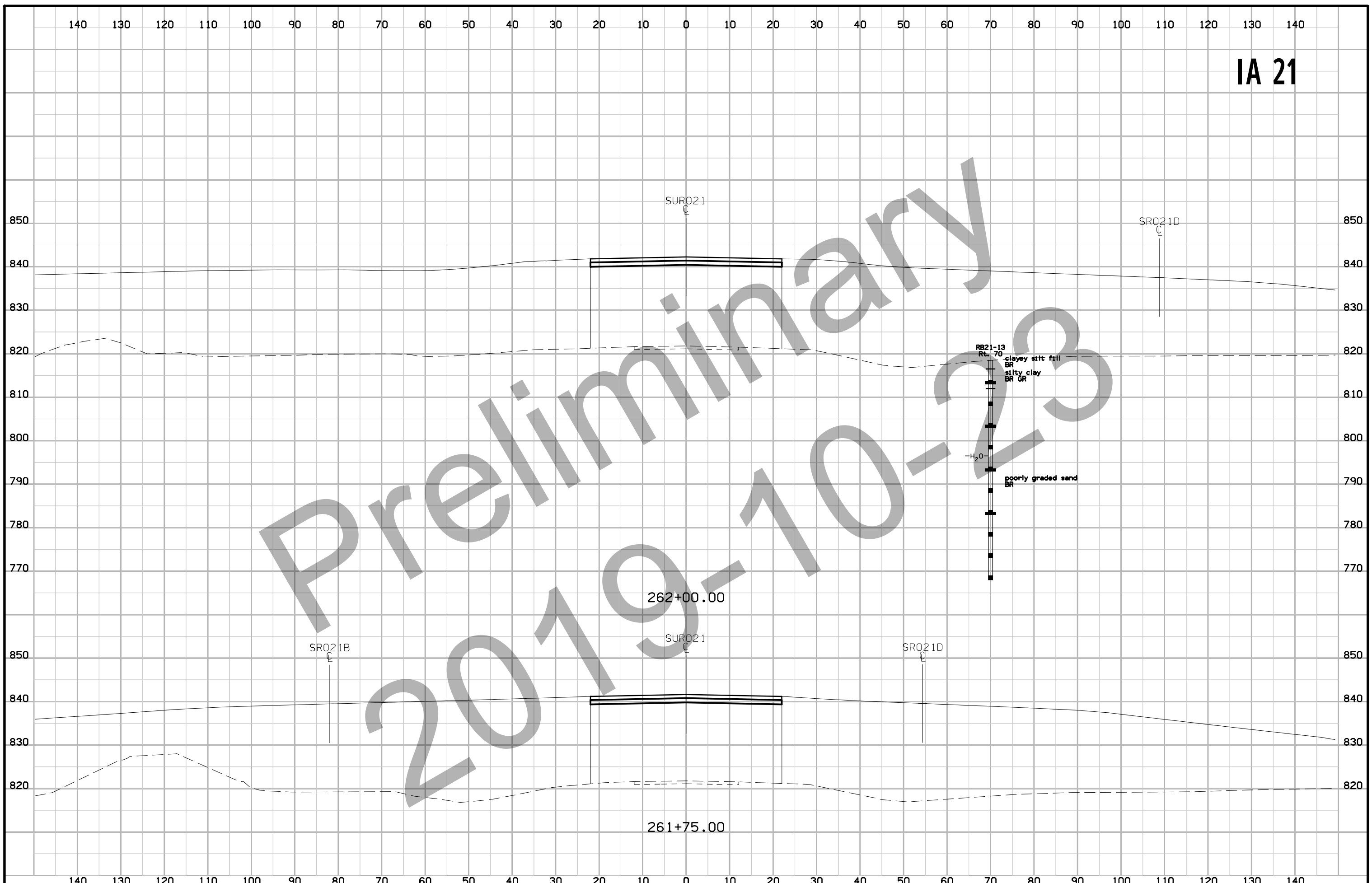
IA 21



IA 21

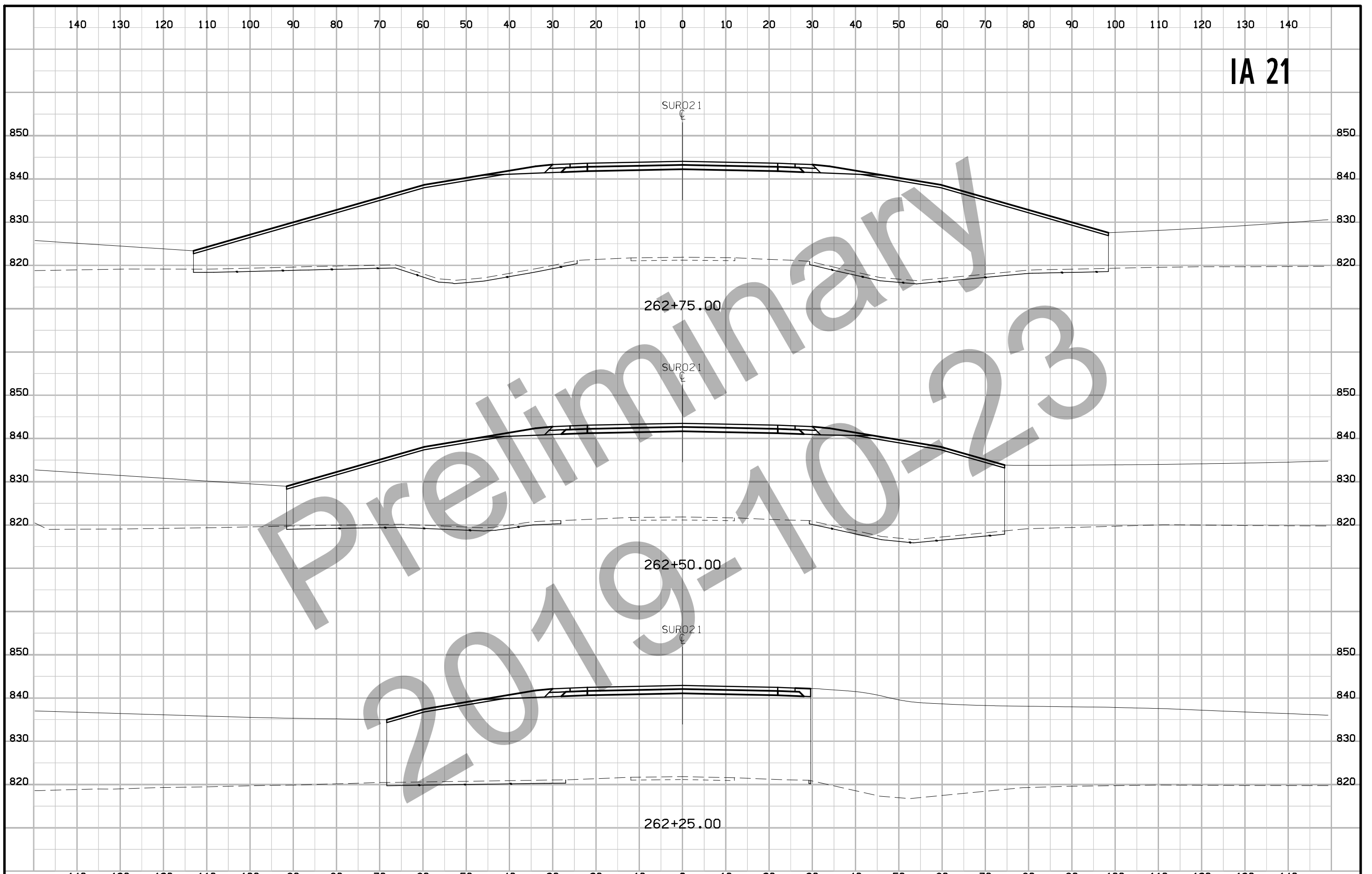




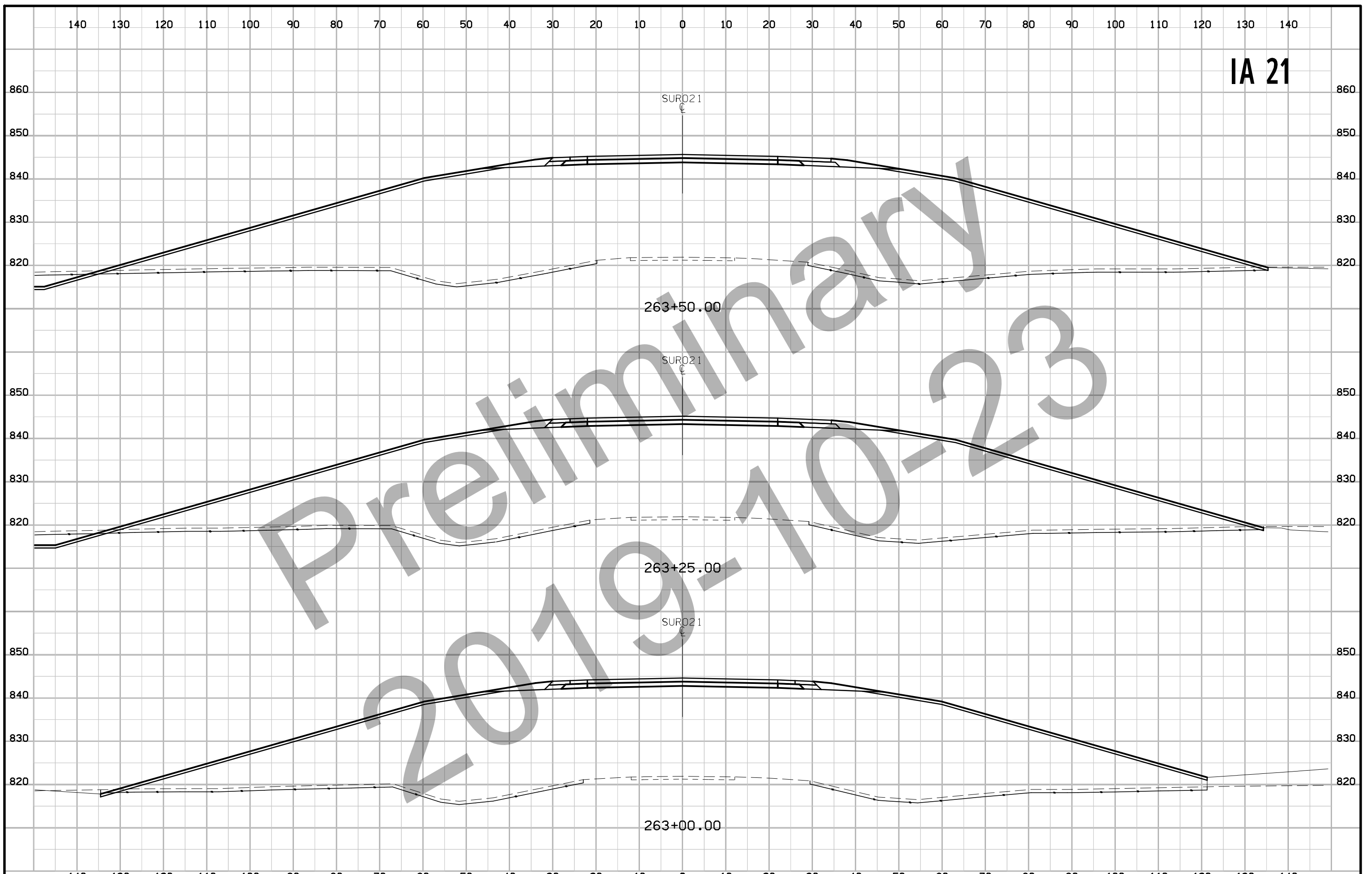


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IA 21

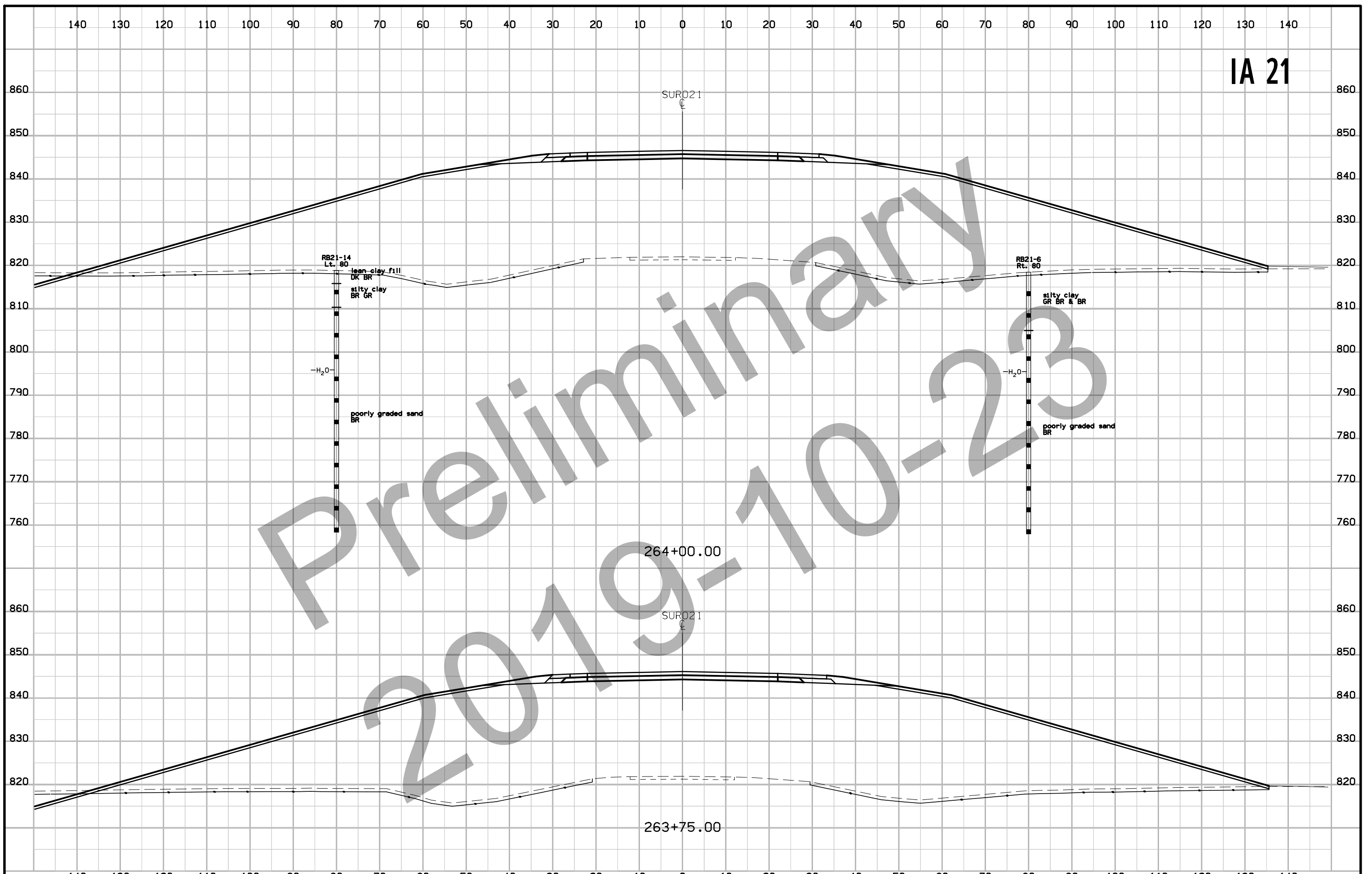


IA 21

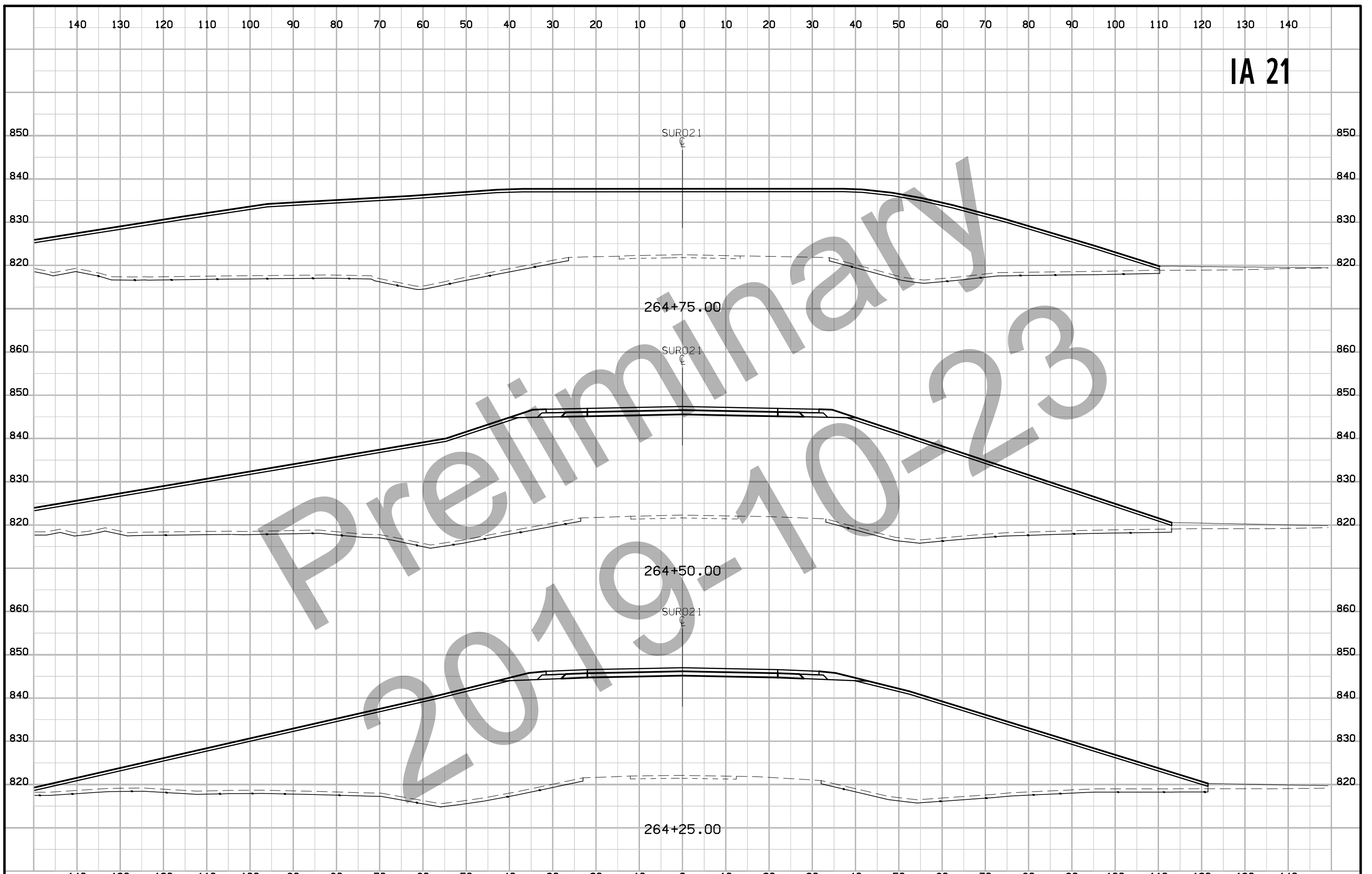


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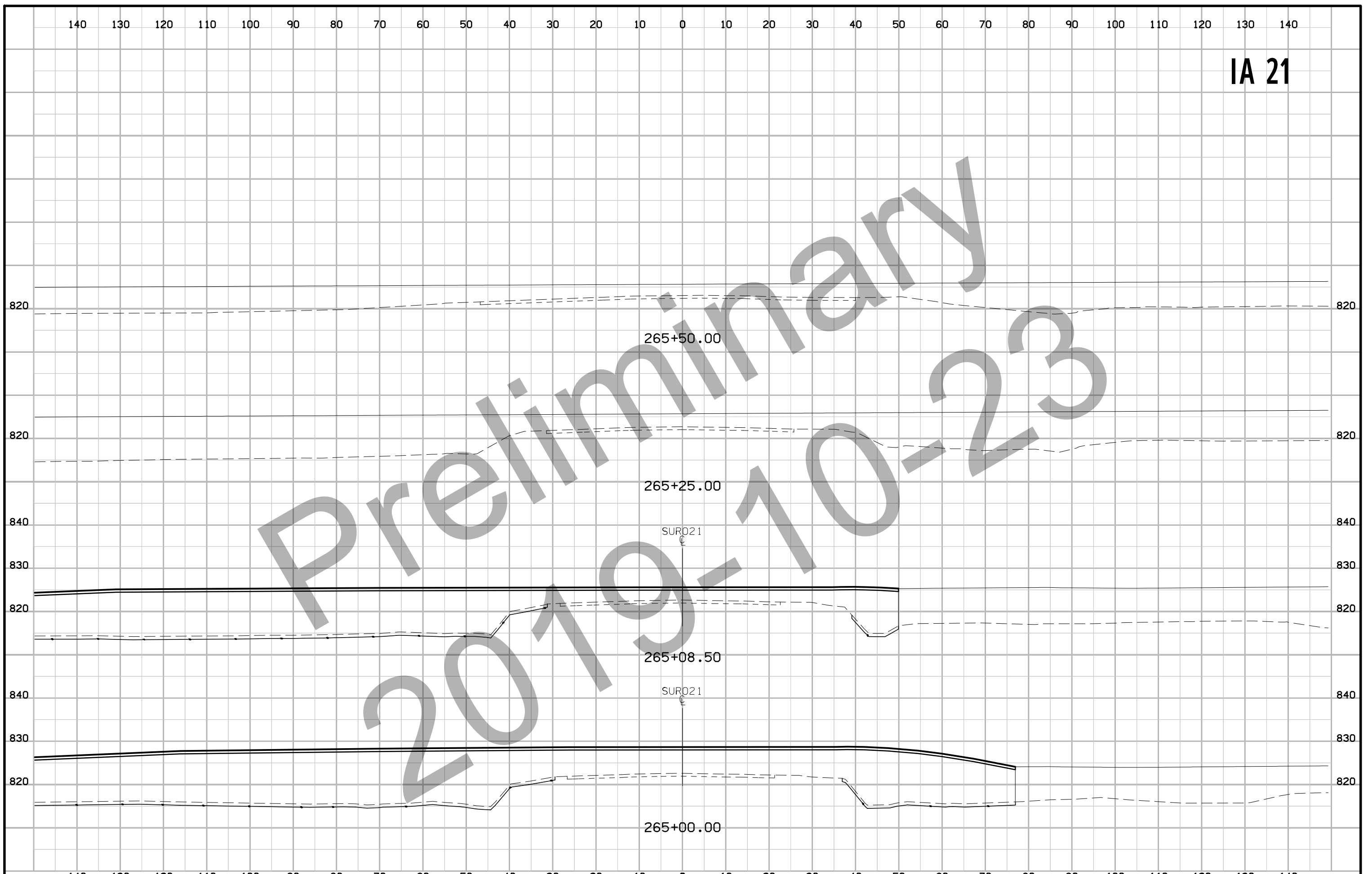
IA 21



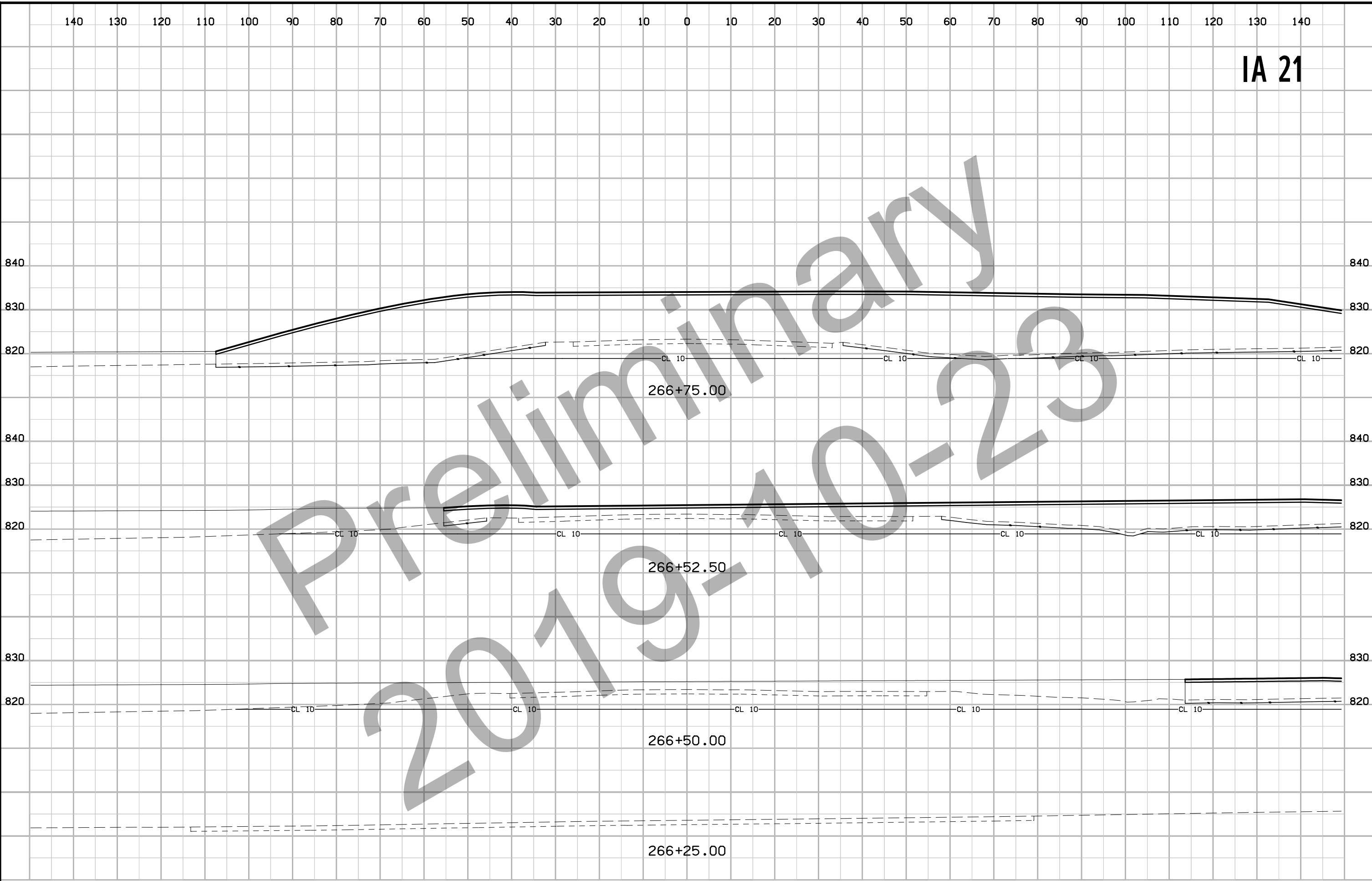
IA 21



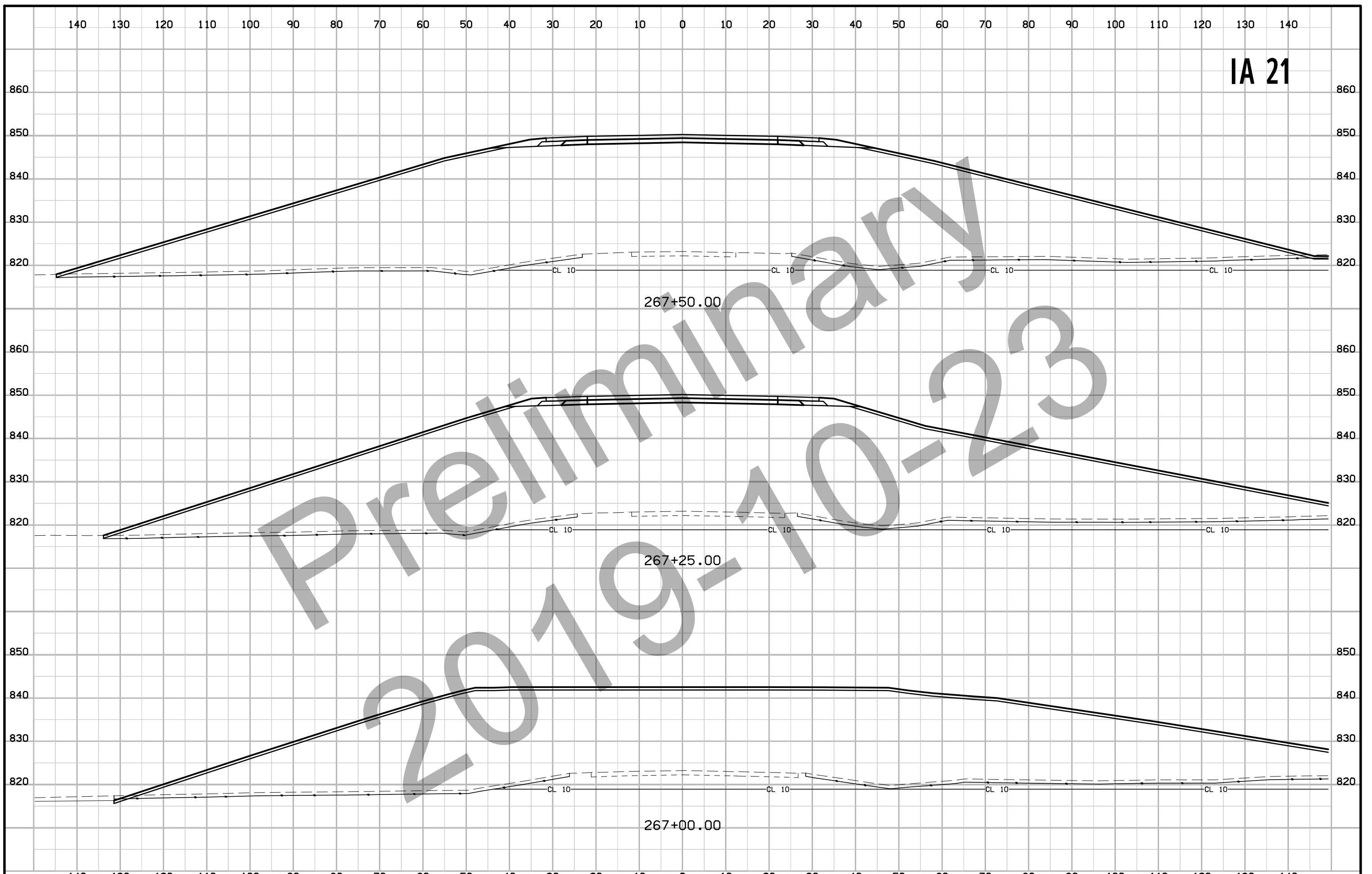
IA 21



IA 21

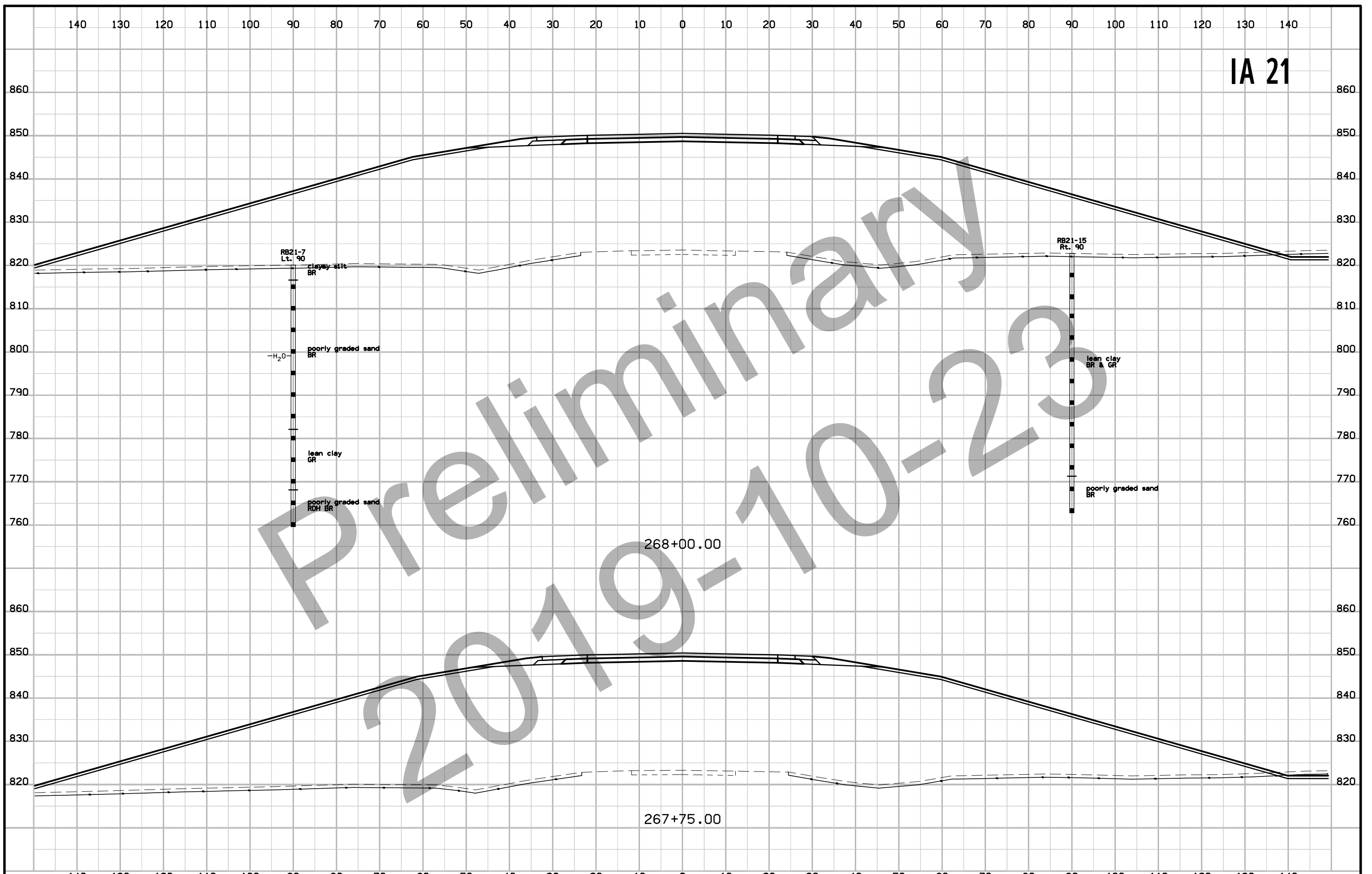


IA 21



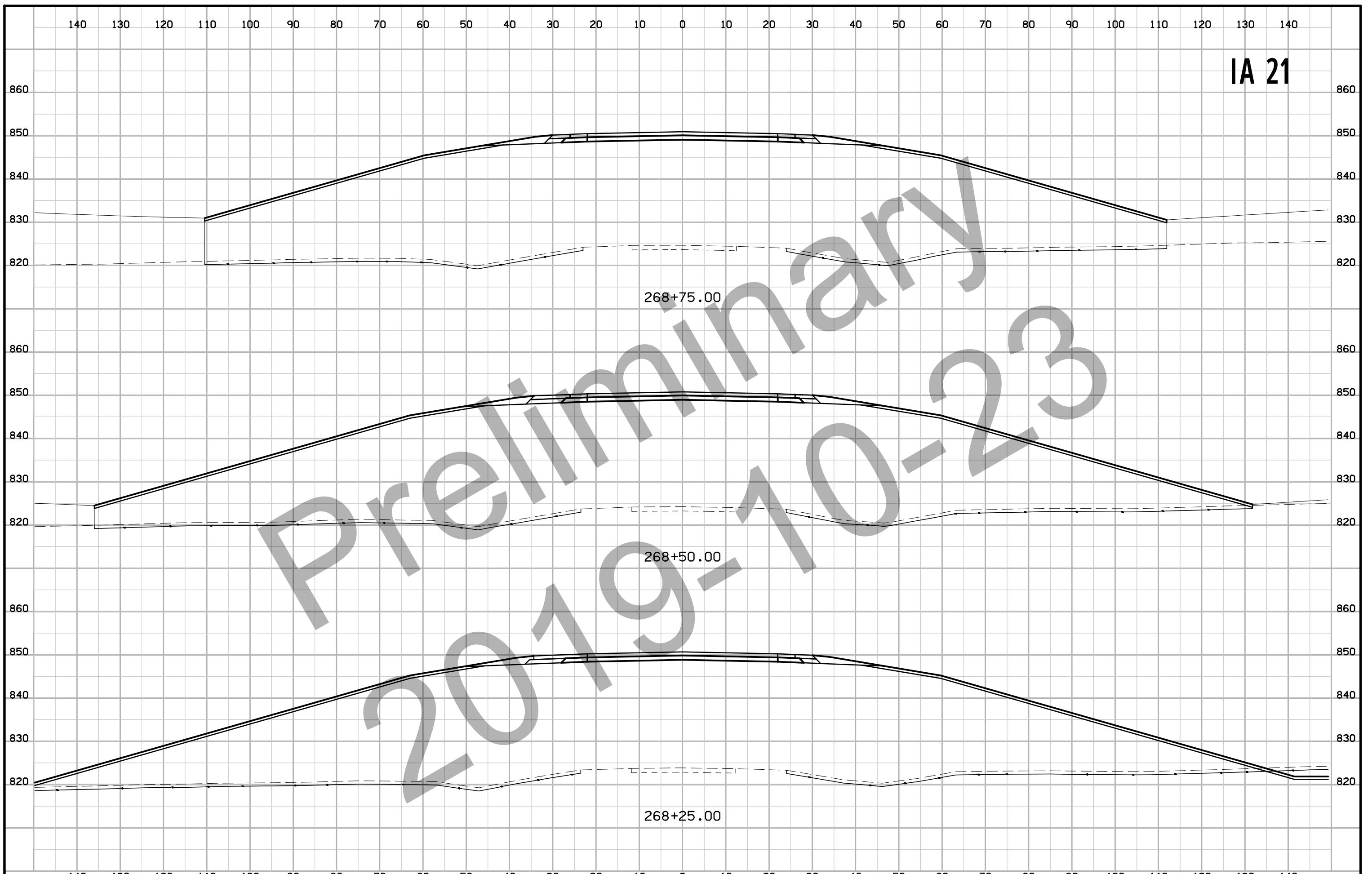


IA 21

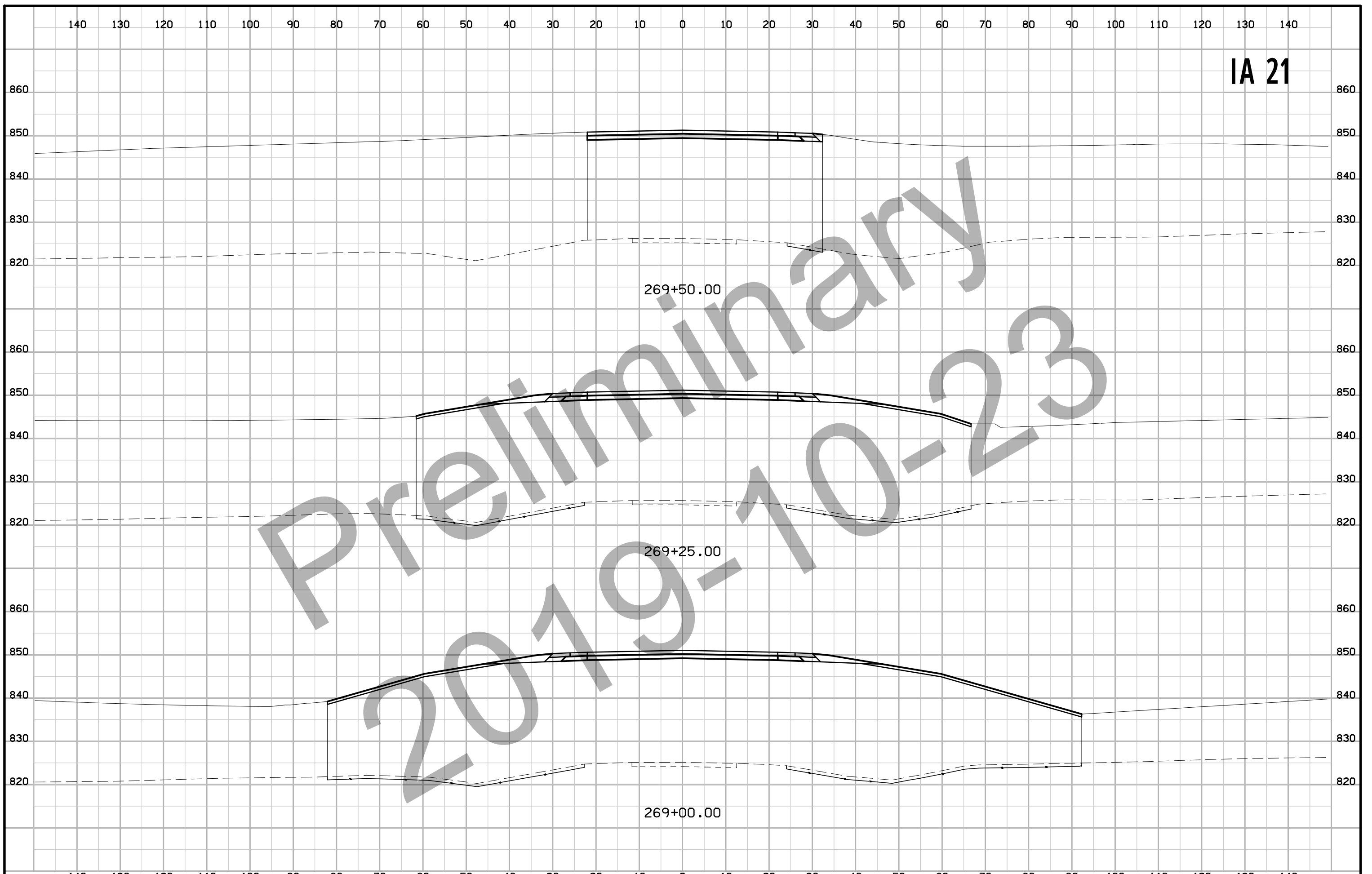


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IA 21

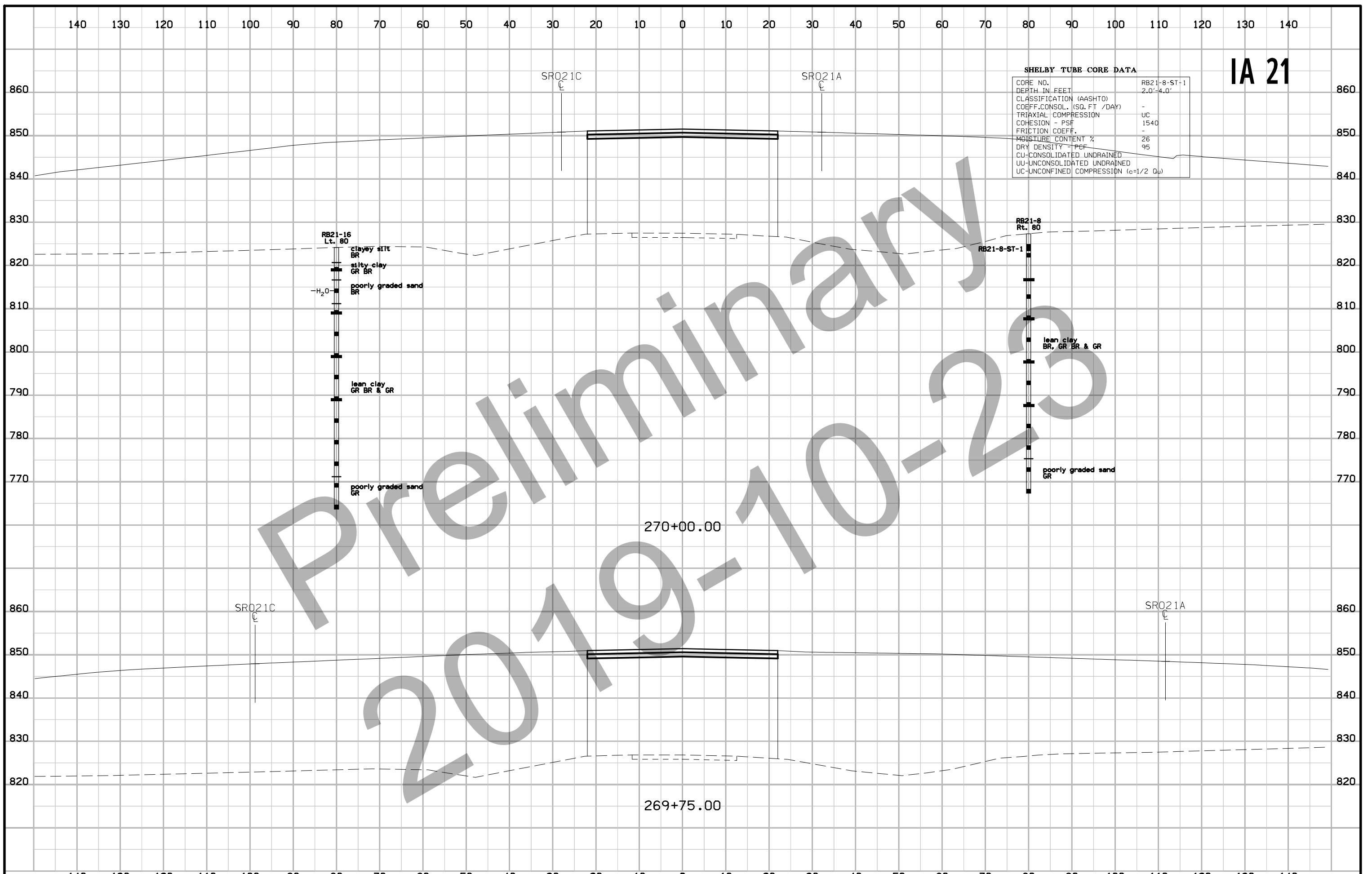


IA 21

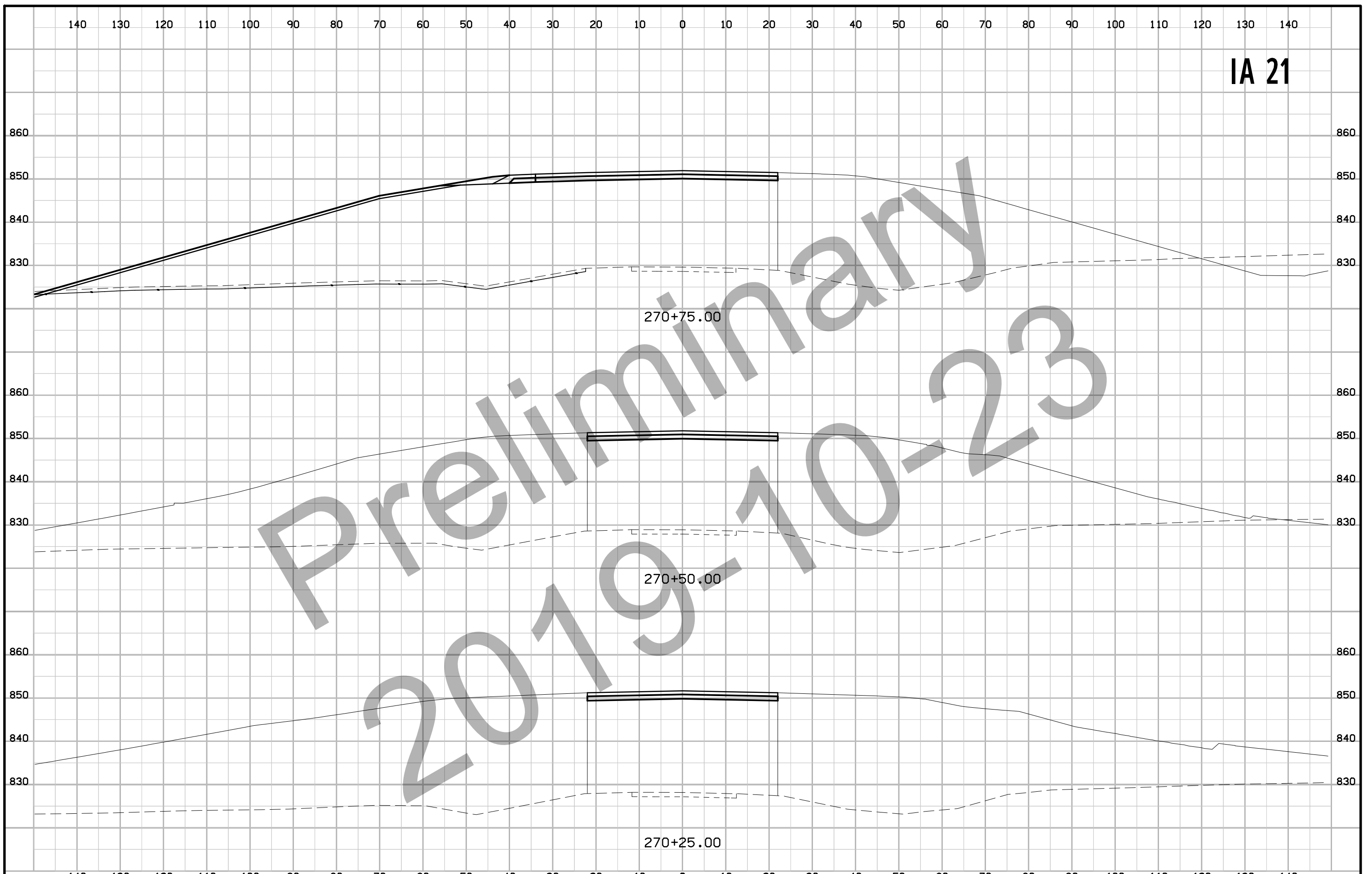


IA 21

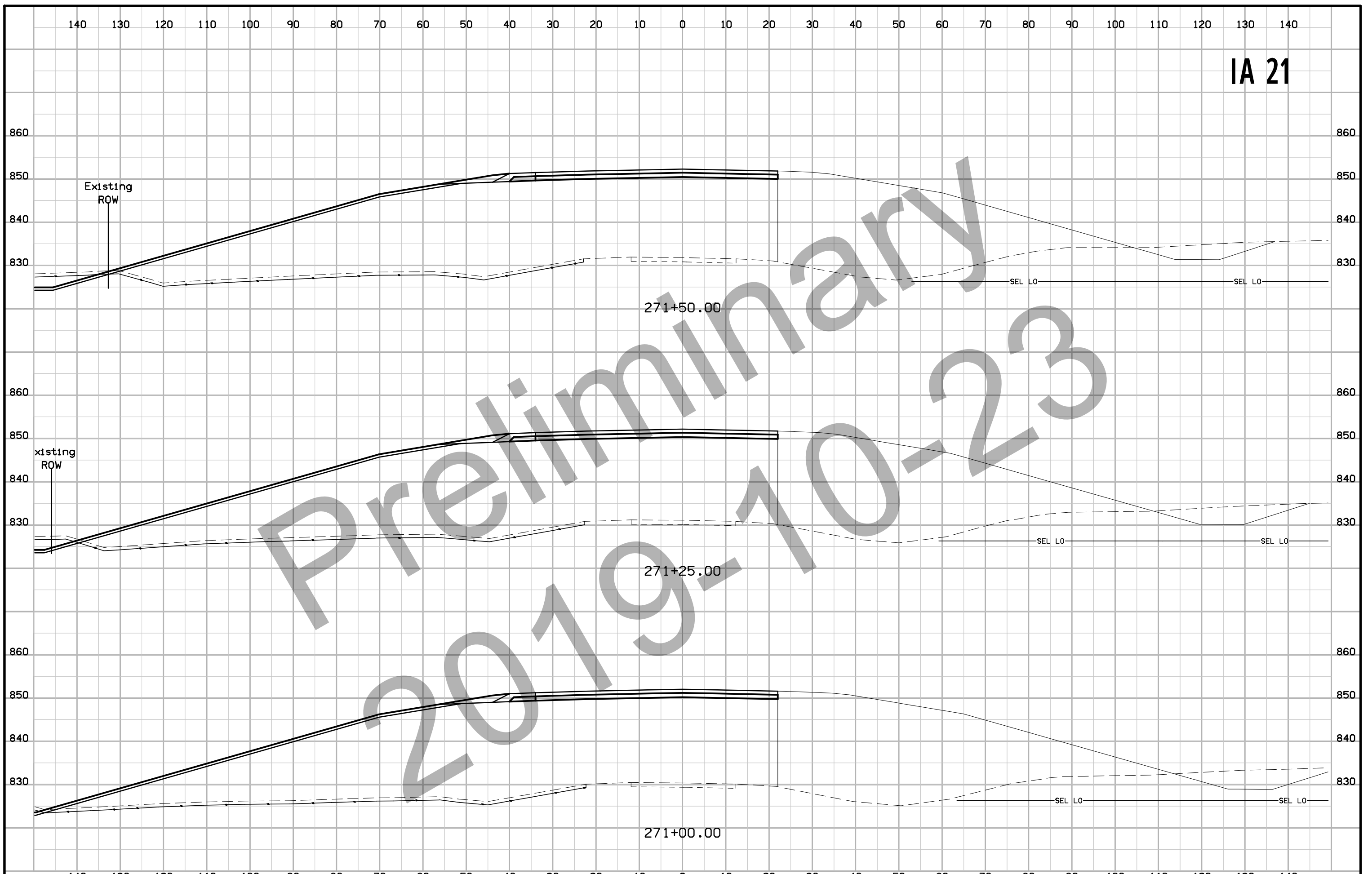
SHELBY TUBE CORE DATA	
CORE NO.	RB21-8-ST-1
DEPTH IN FEET	2.0'-4.0'
CLASSIFICATION (AASHTO)	
COEFF. CONSOL. (SQ. FT / DAY)	-
TRIAxIAL COMPRESSION	UC
COHESION - PSF	1540
FRICTION COEFF.	-
MOISTURE CONTENT %	26
DRY DENSITY - PCF	95
CU-CONSOLIDATED UNDRAINED	
UU-UNCONSOLIDATED UNDRAINED	
UC-UNCONFINED COMPRESSION ( $\sigma = 1/2 \sigma_u$ )	

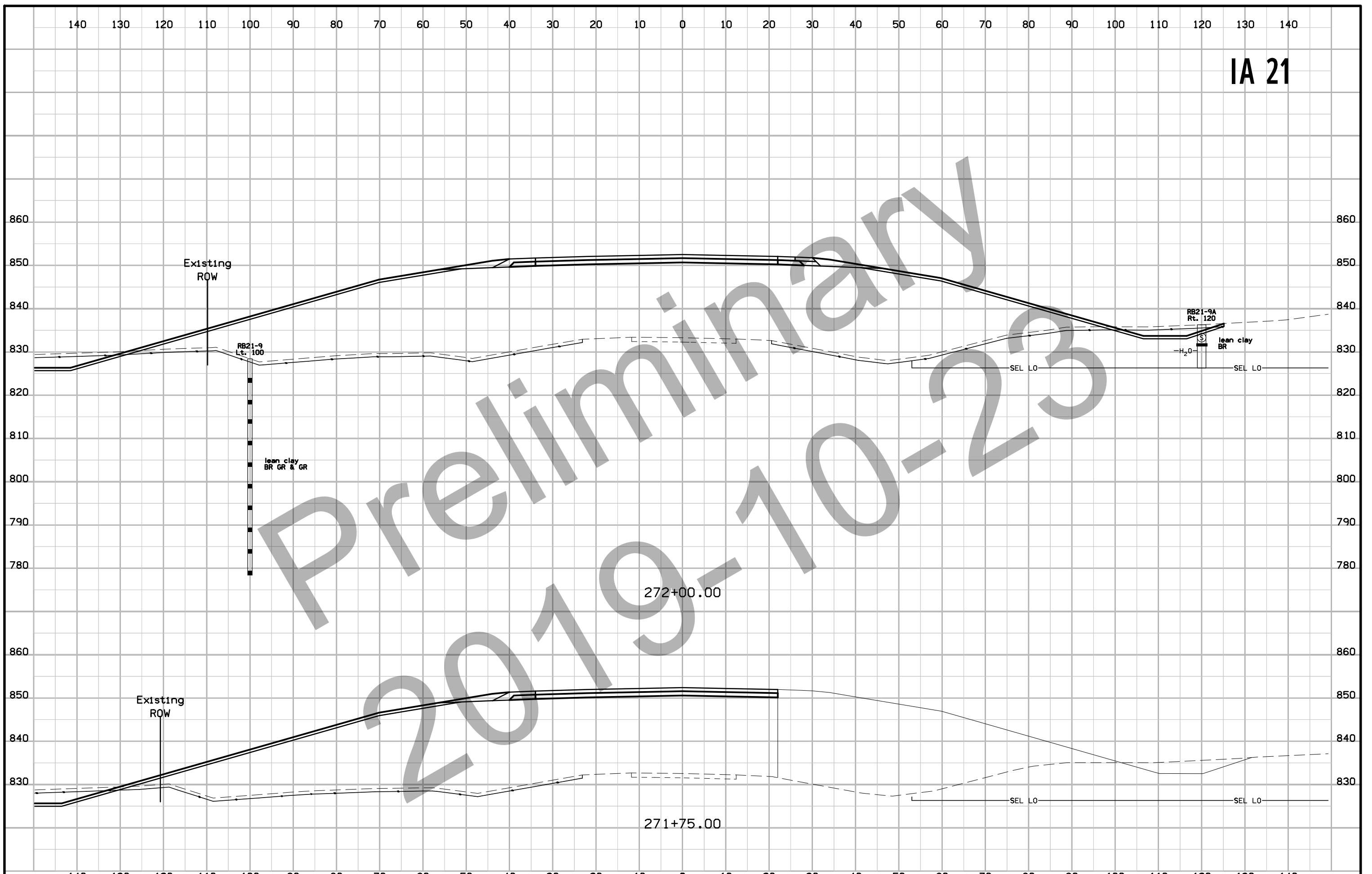


IA 21

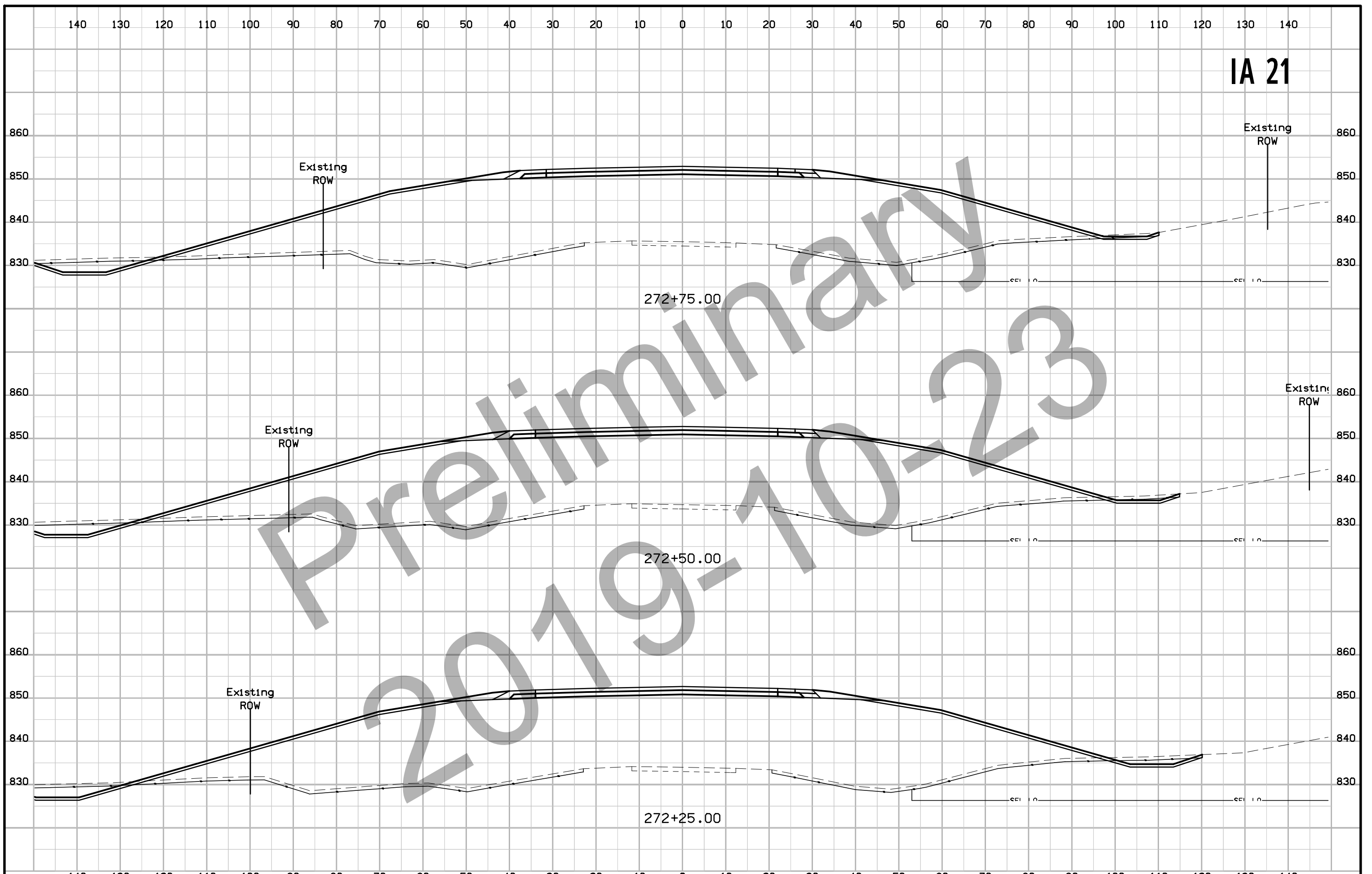


IA 21



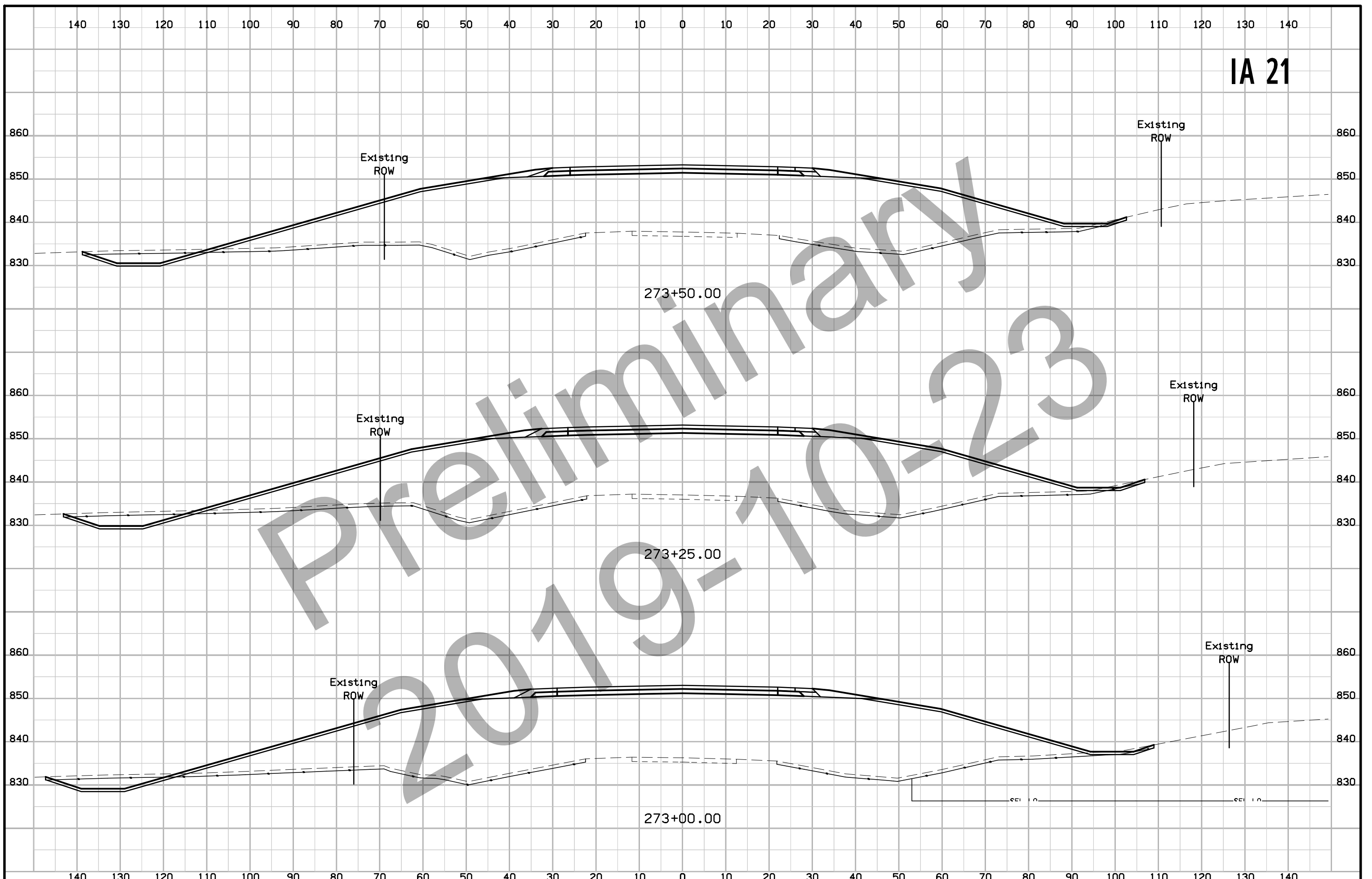


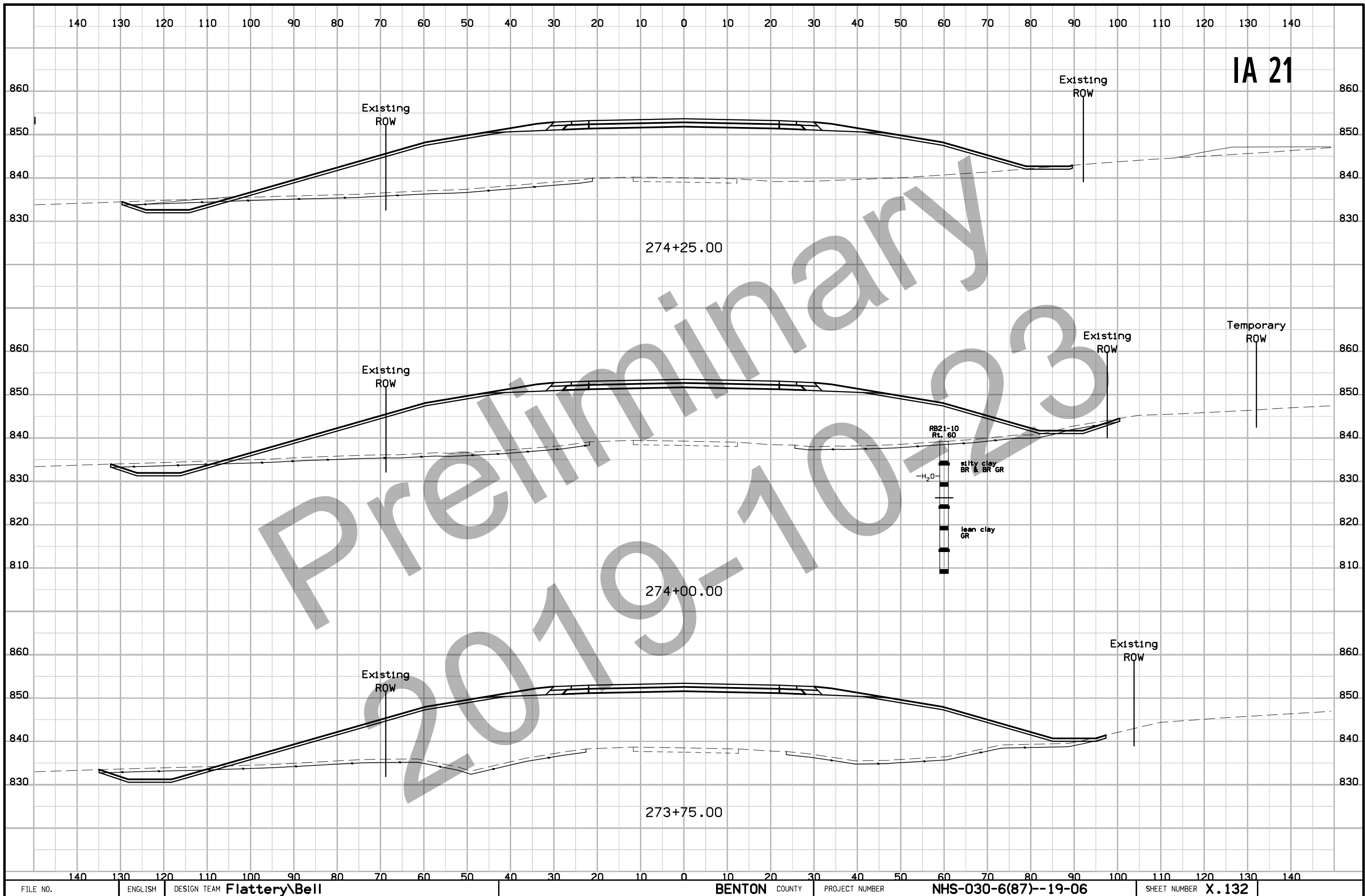
IA 21





IA 21



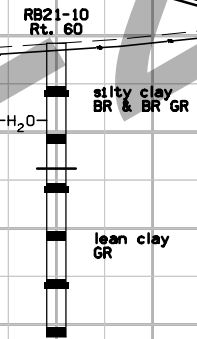


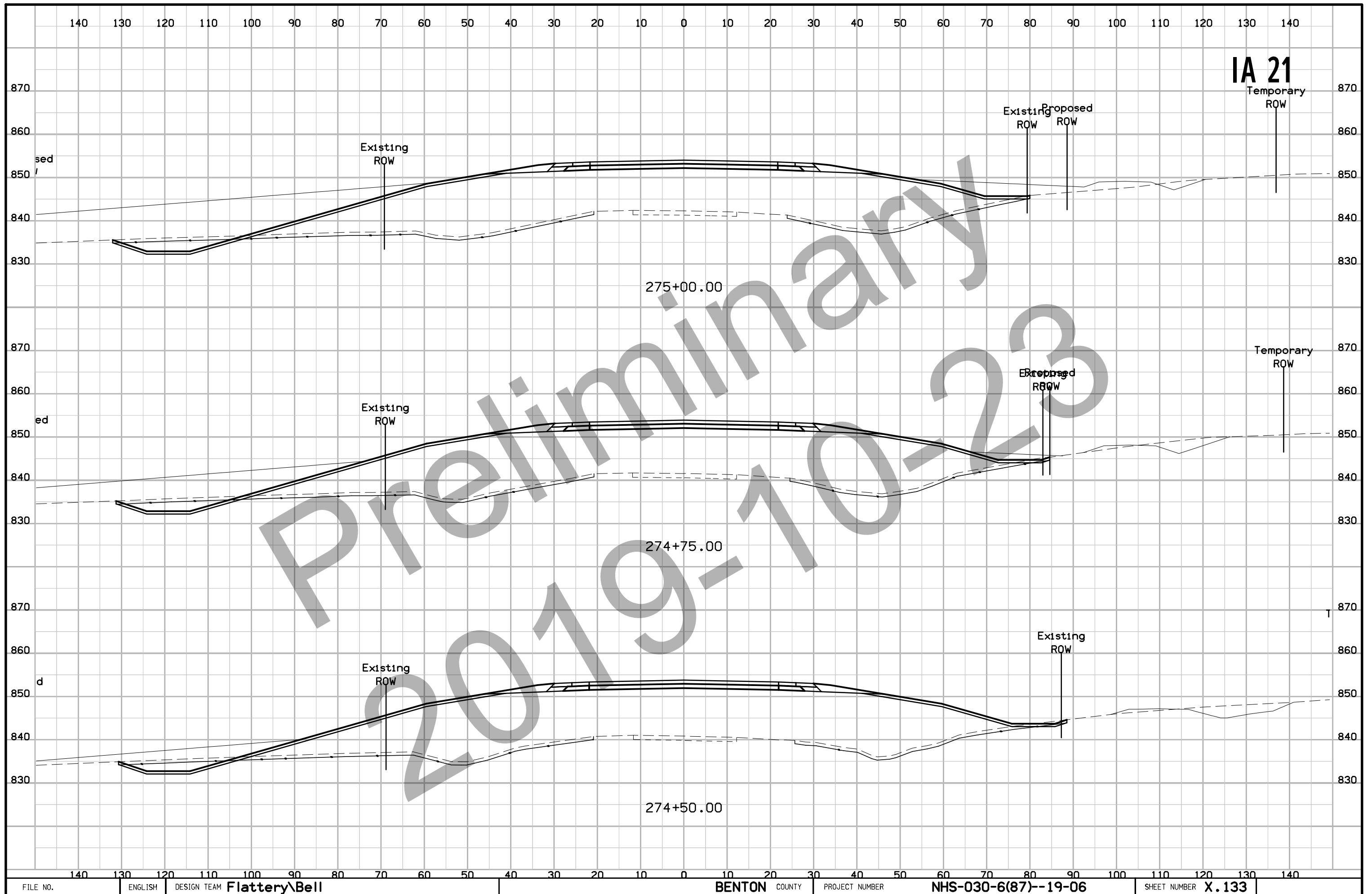
IA 21

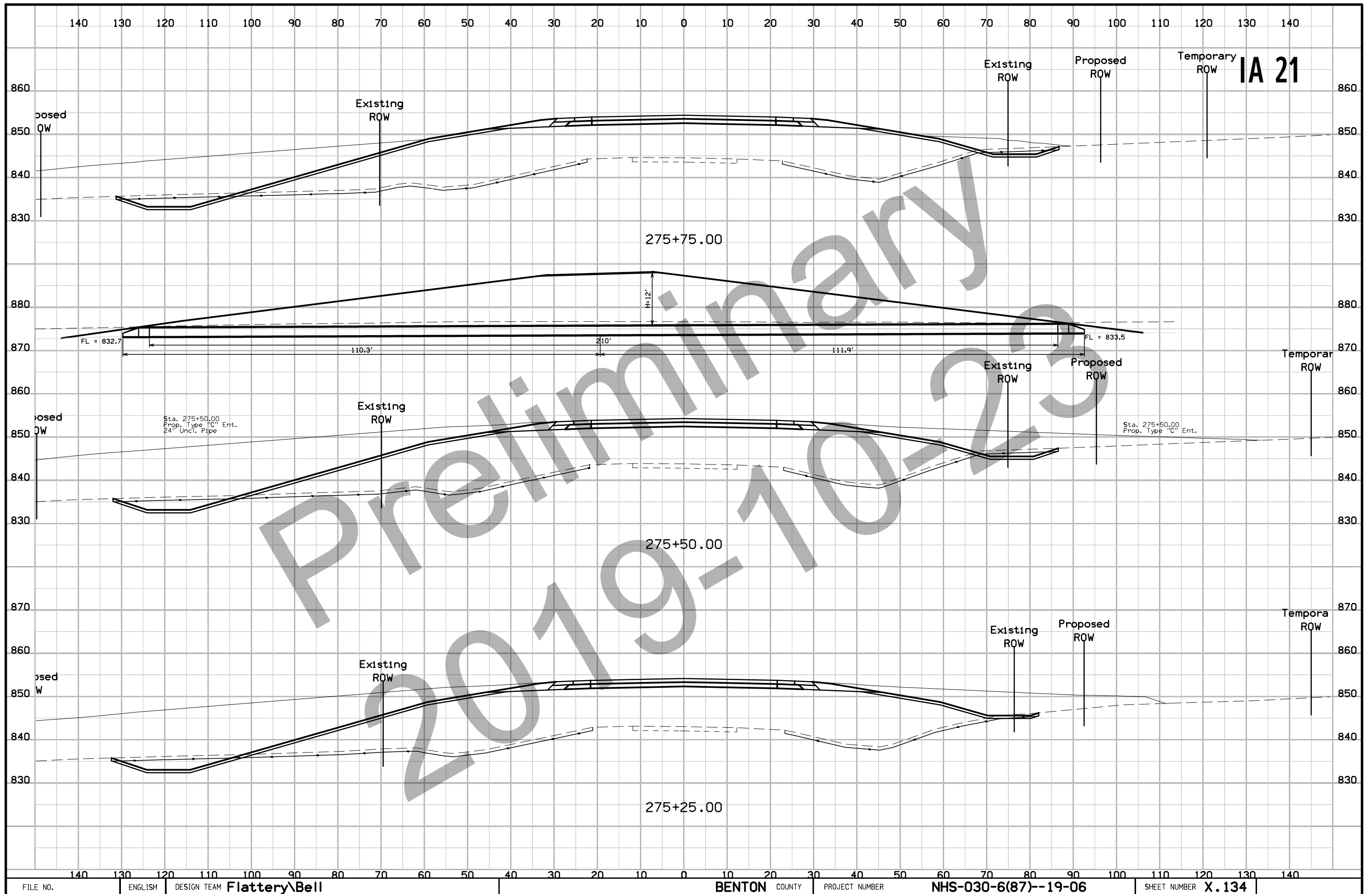
274+25.00

274+00.00

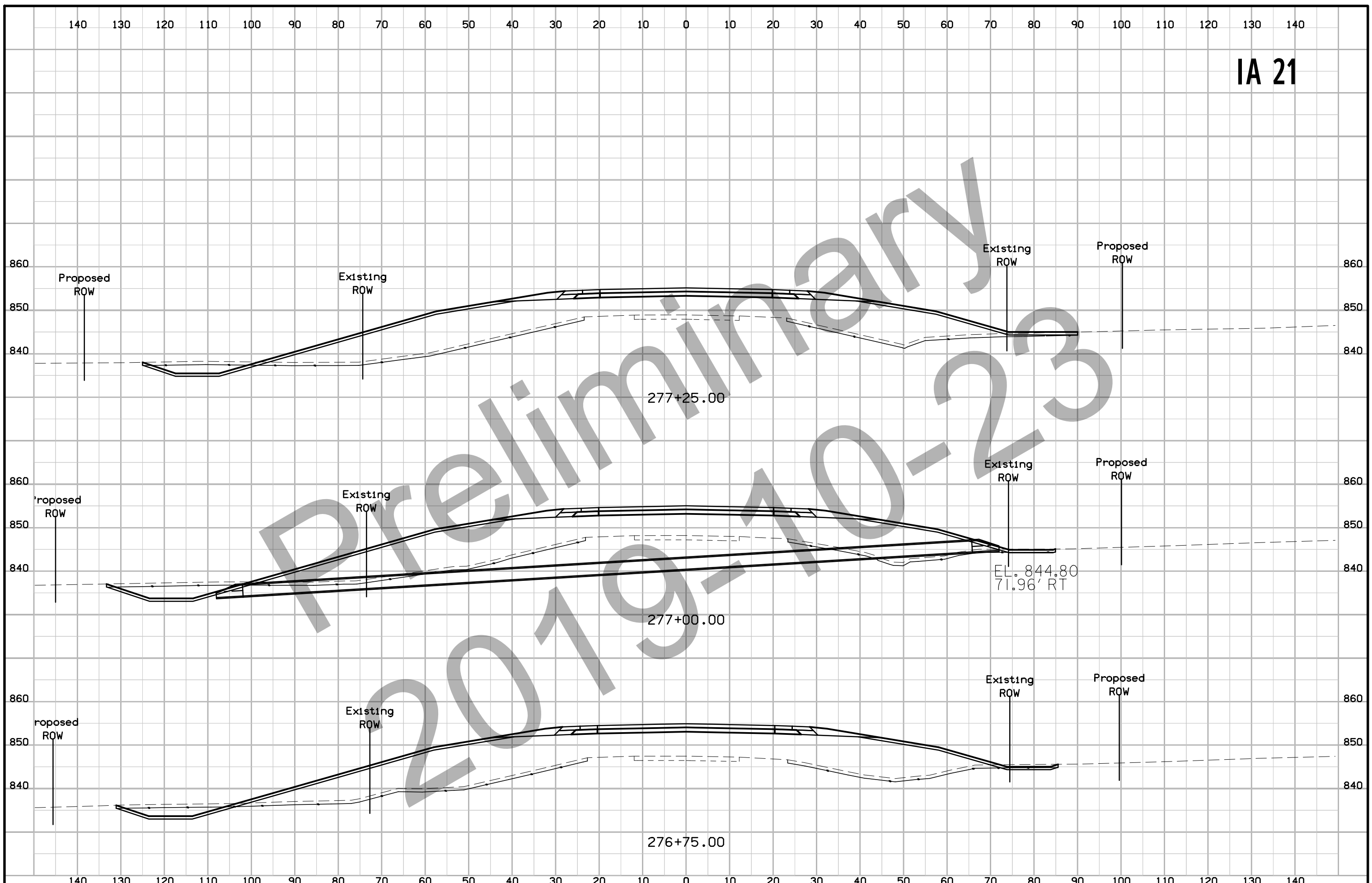
273+75.00

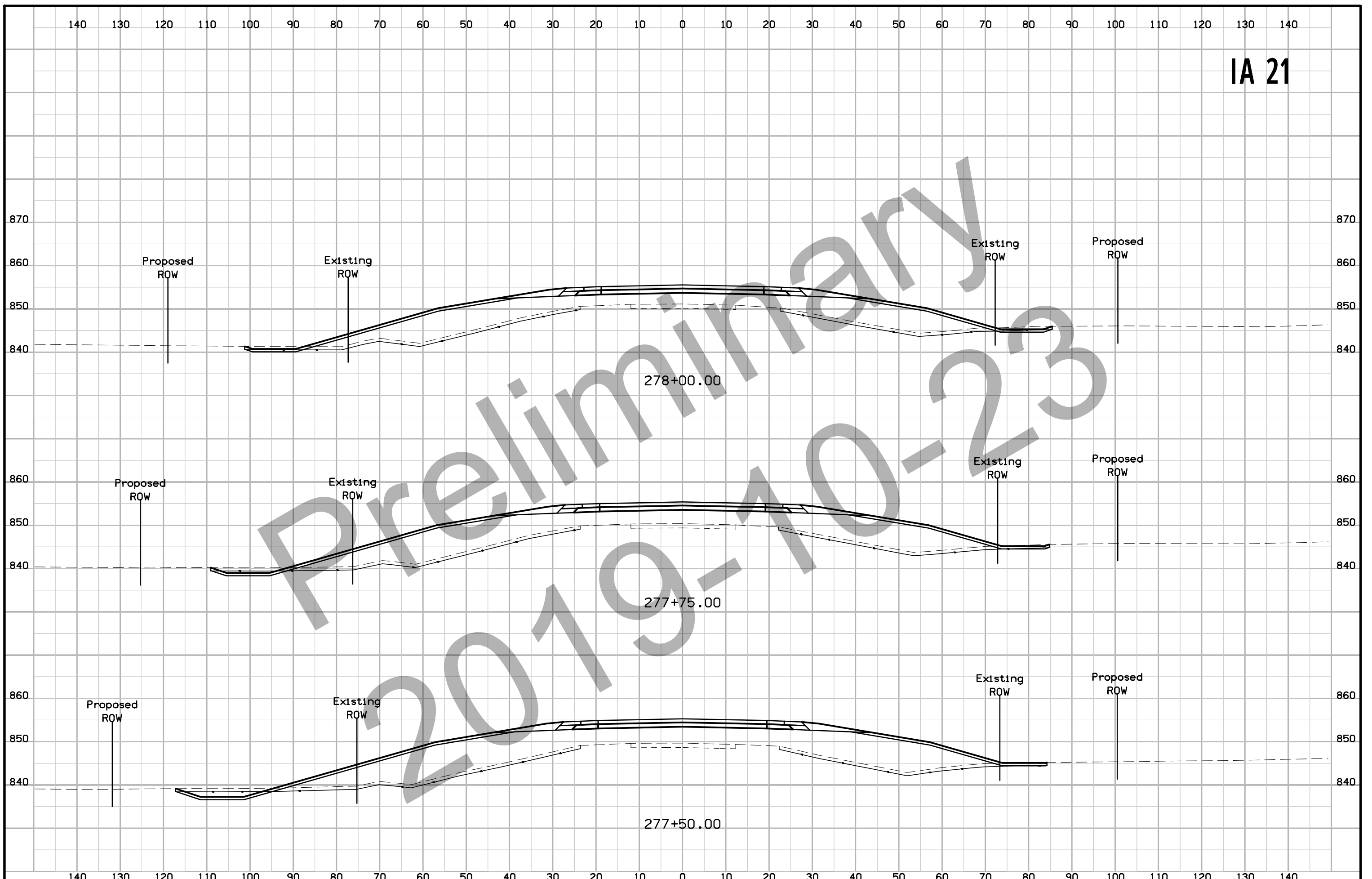




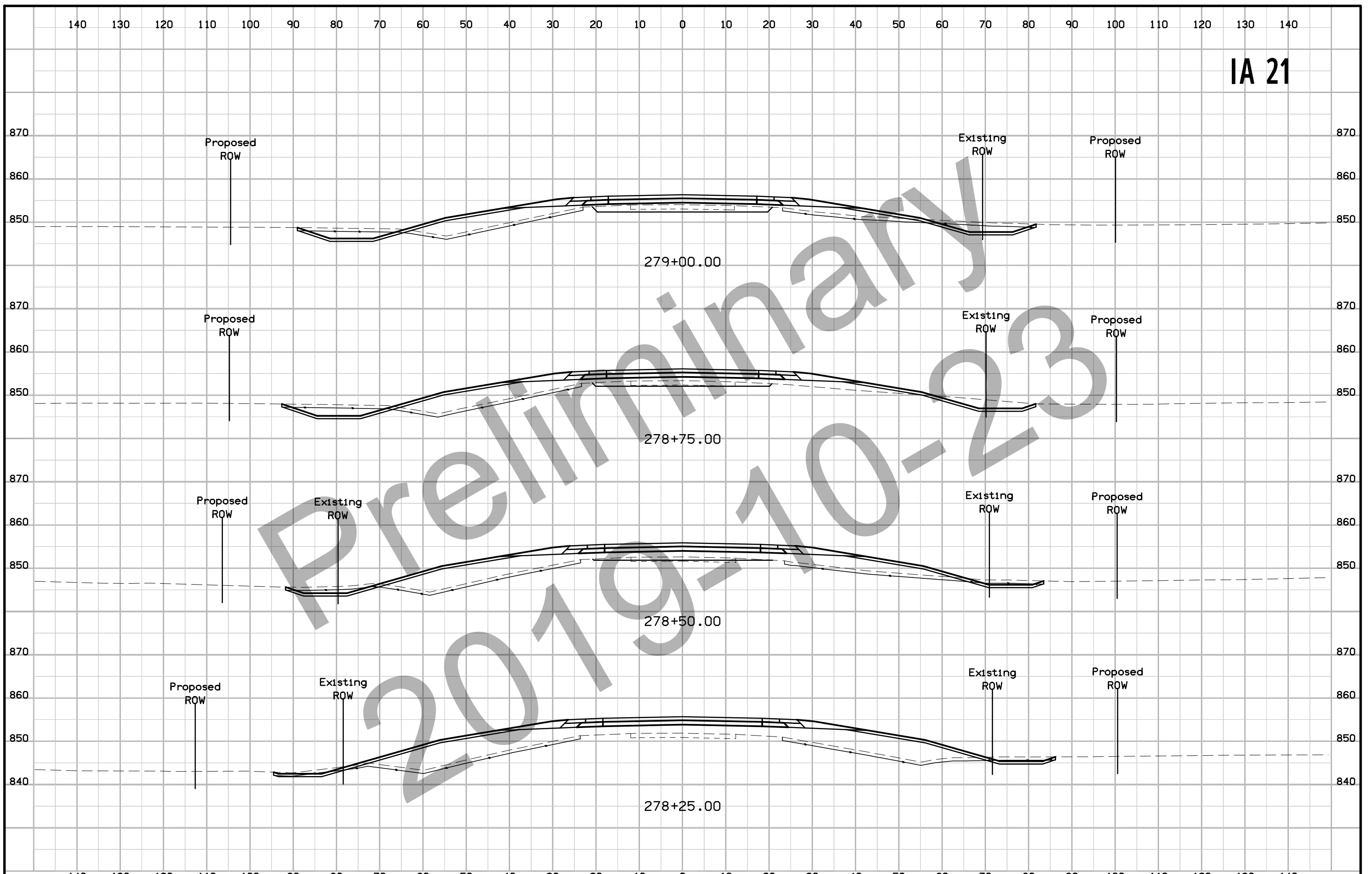




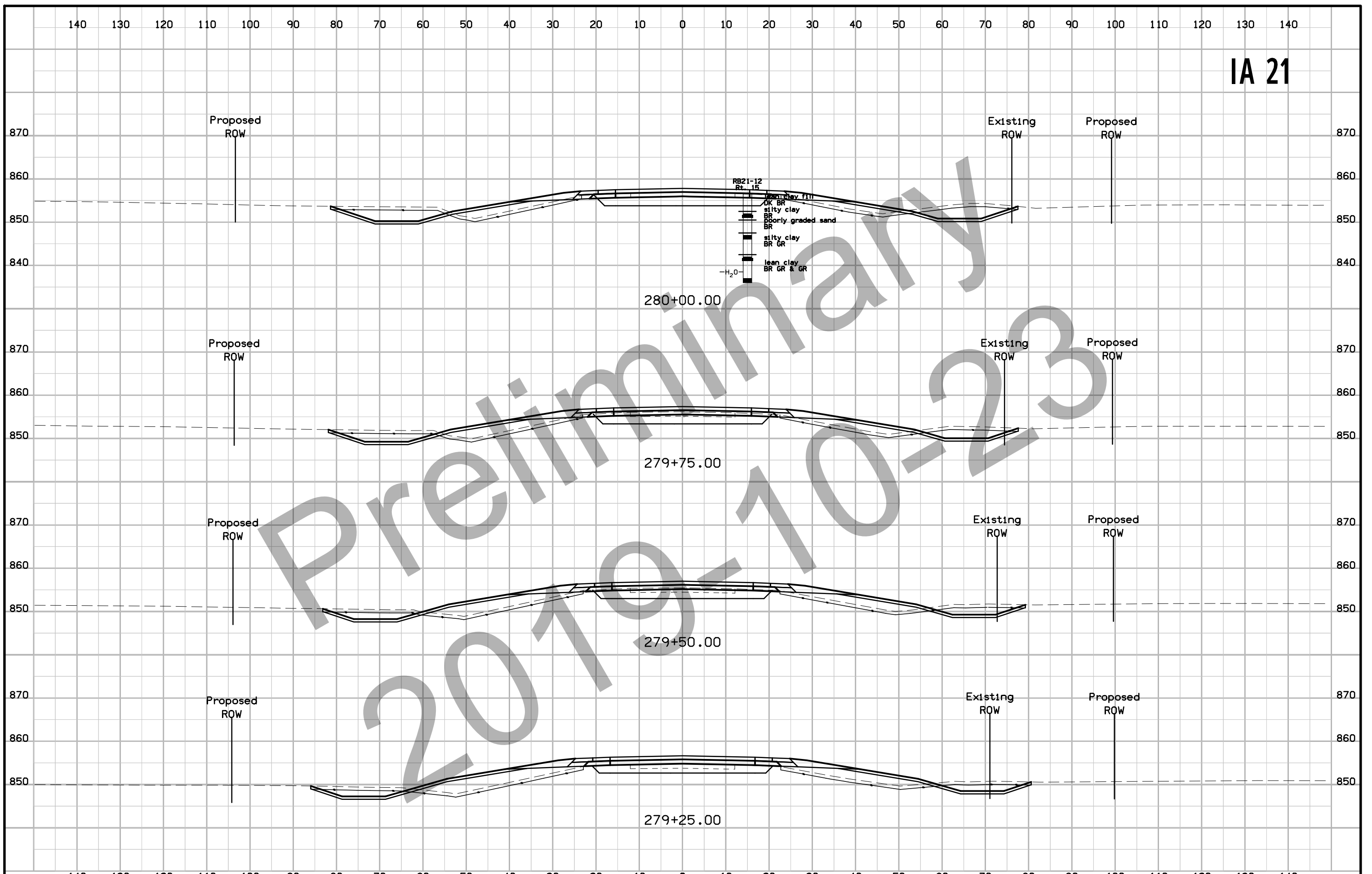




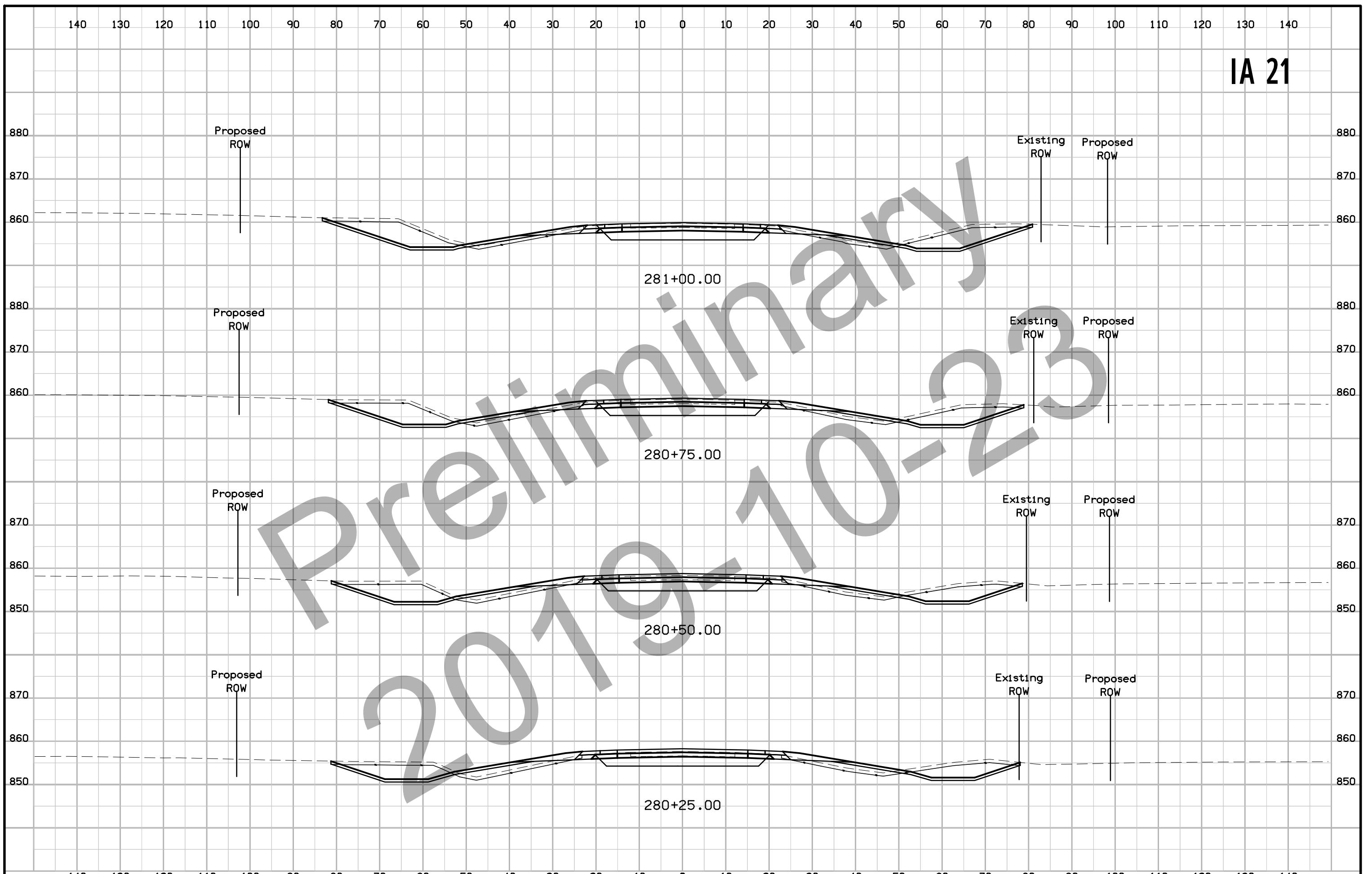
IA 21

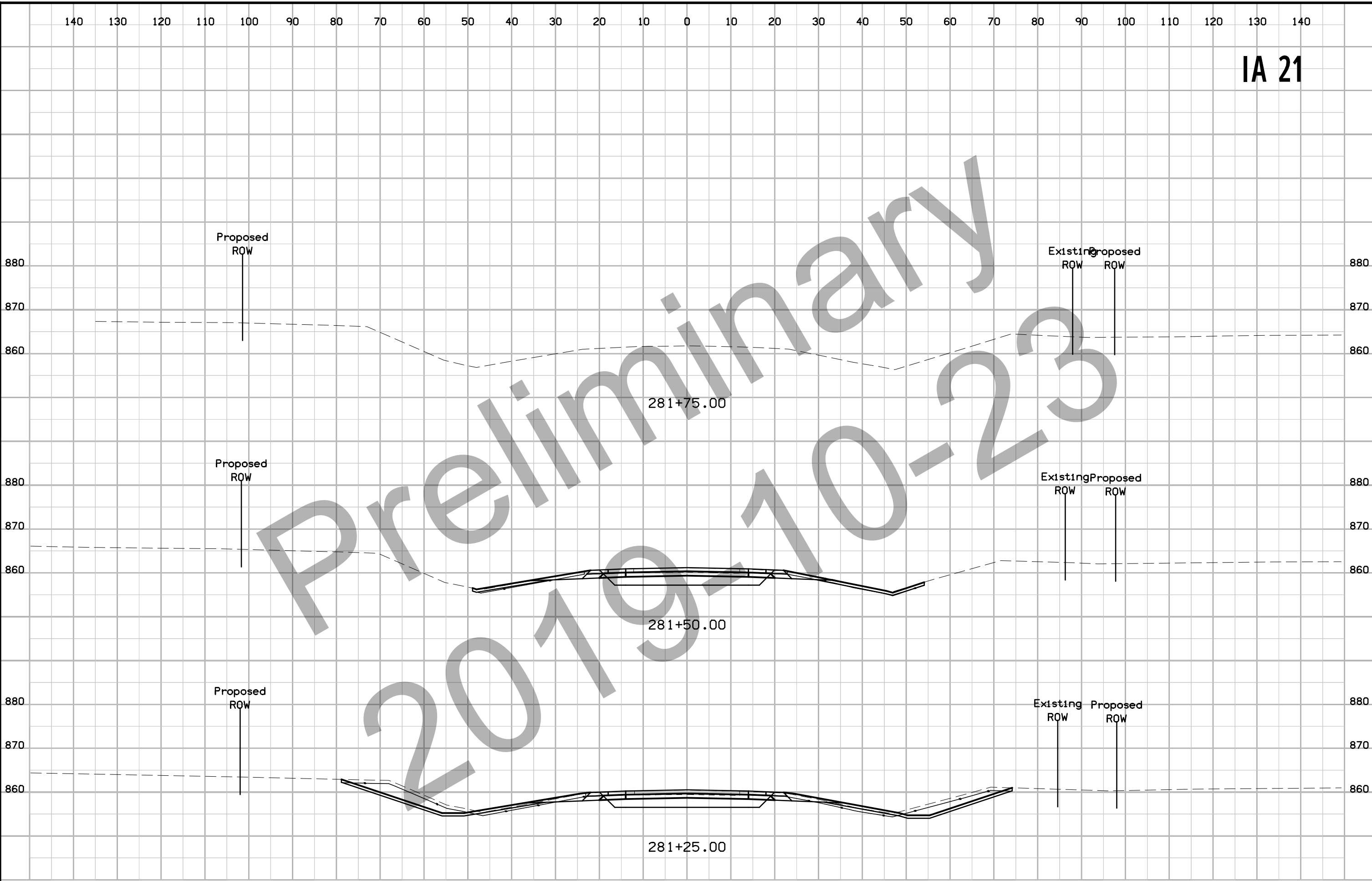






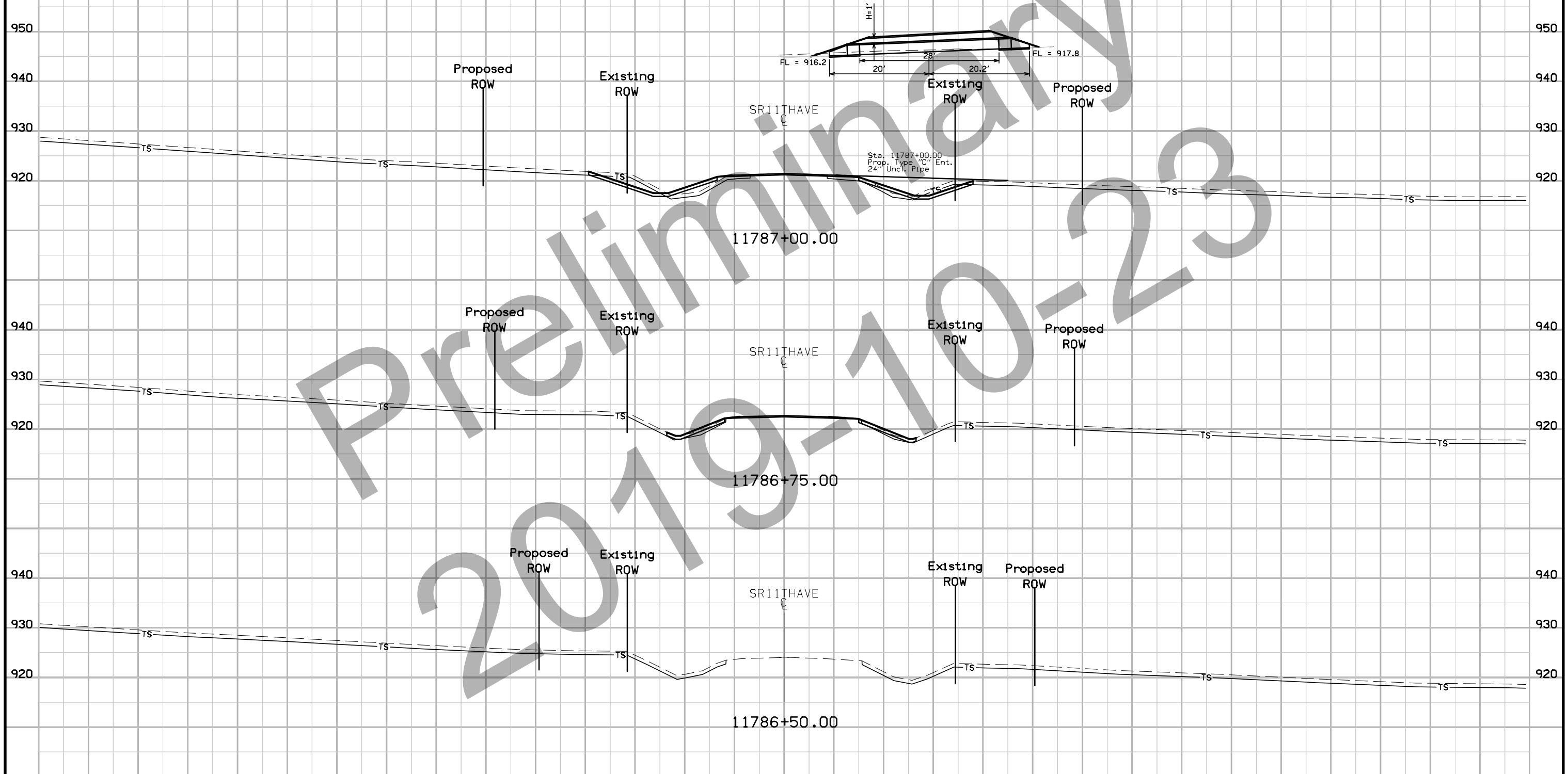
IA 21



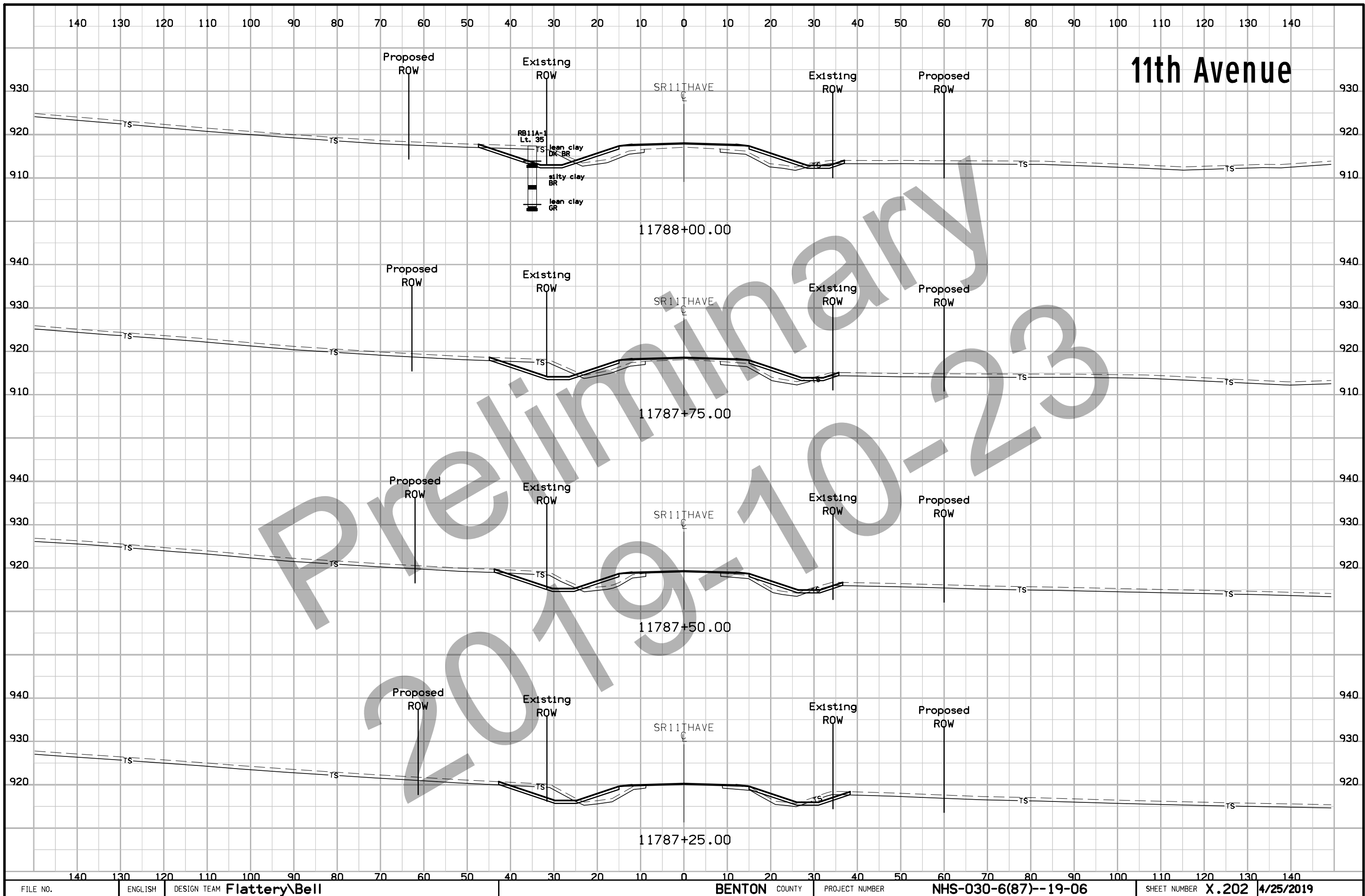


140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

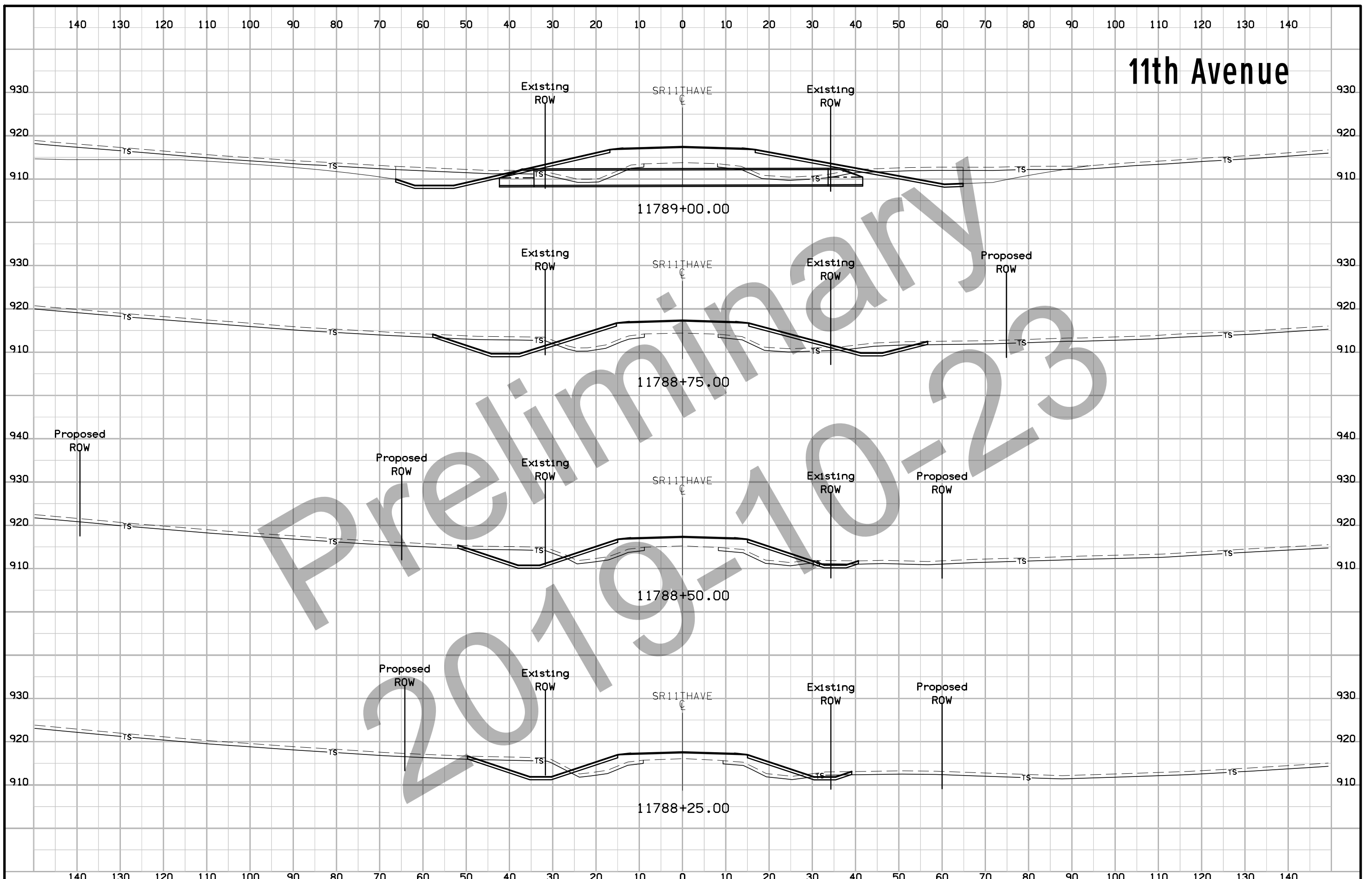
# 11th Avenue



140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

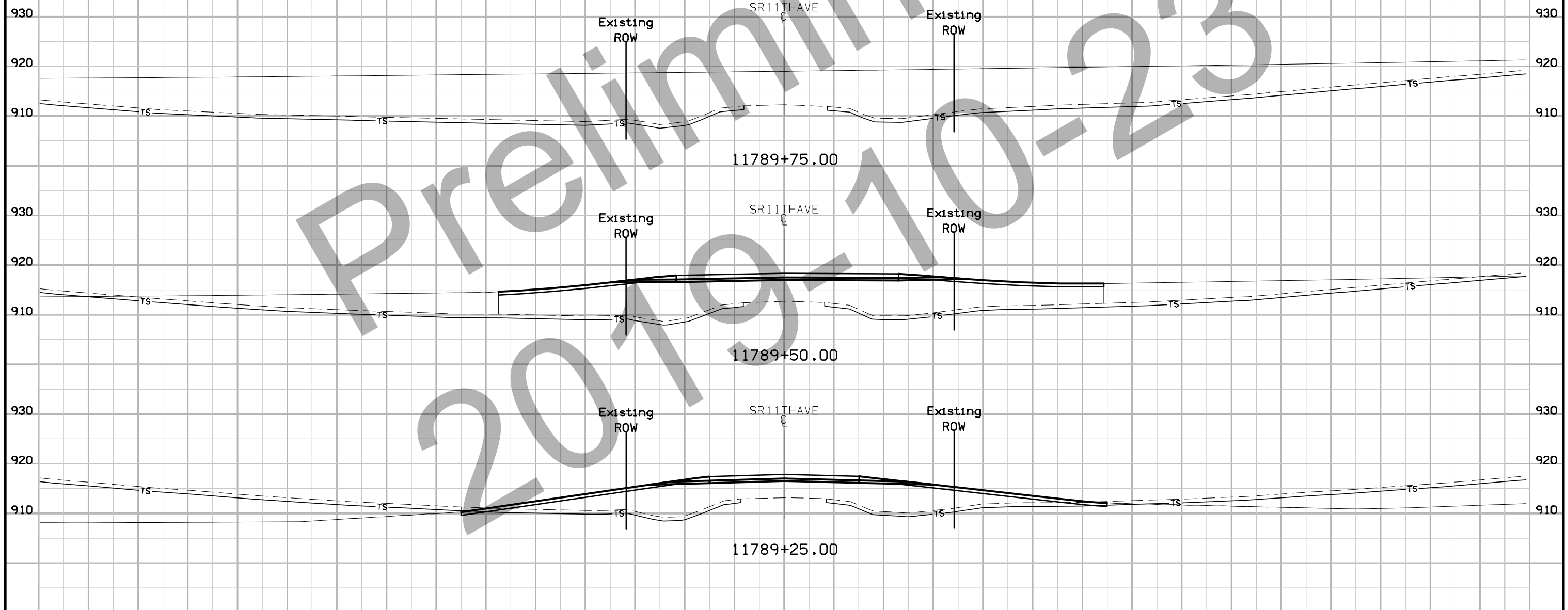


# 11th Avenue



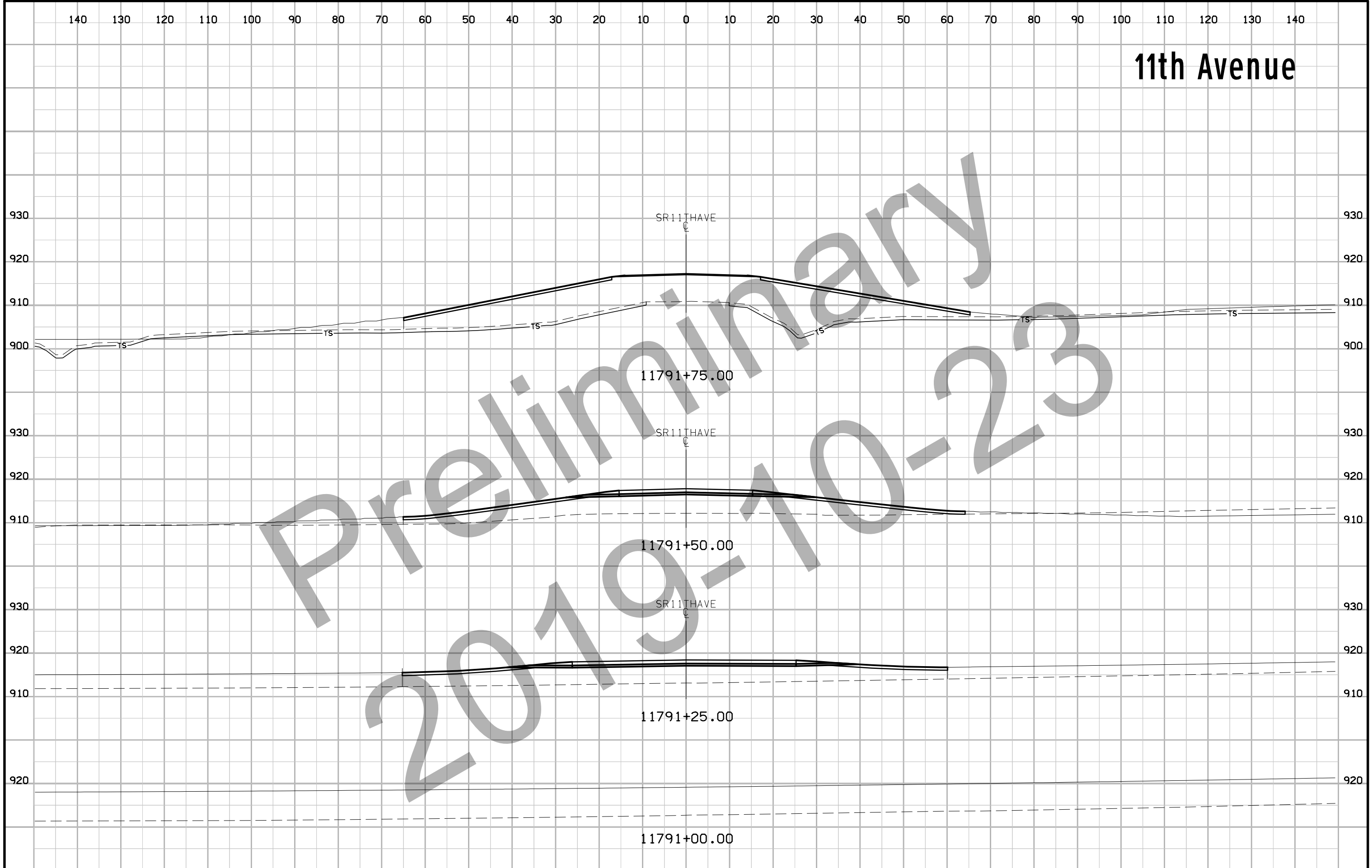
140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

# 11th Avenue



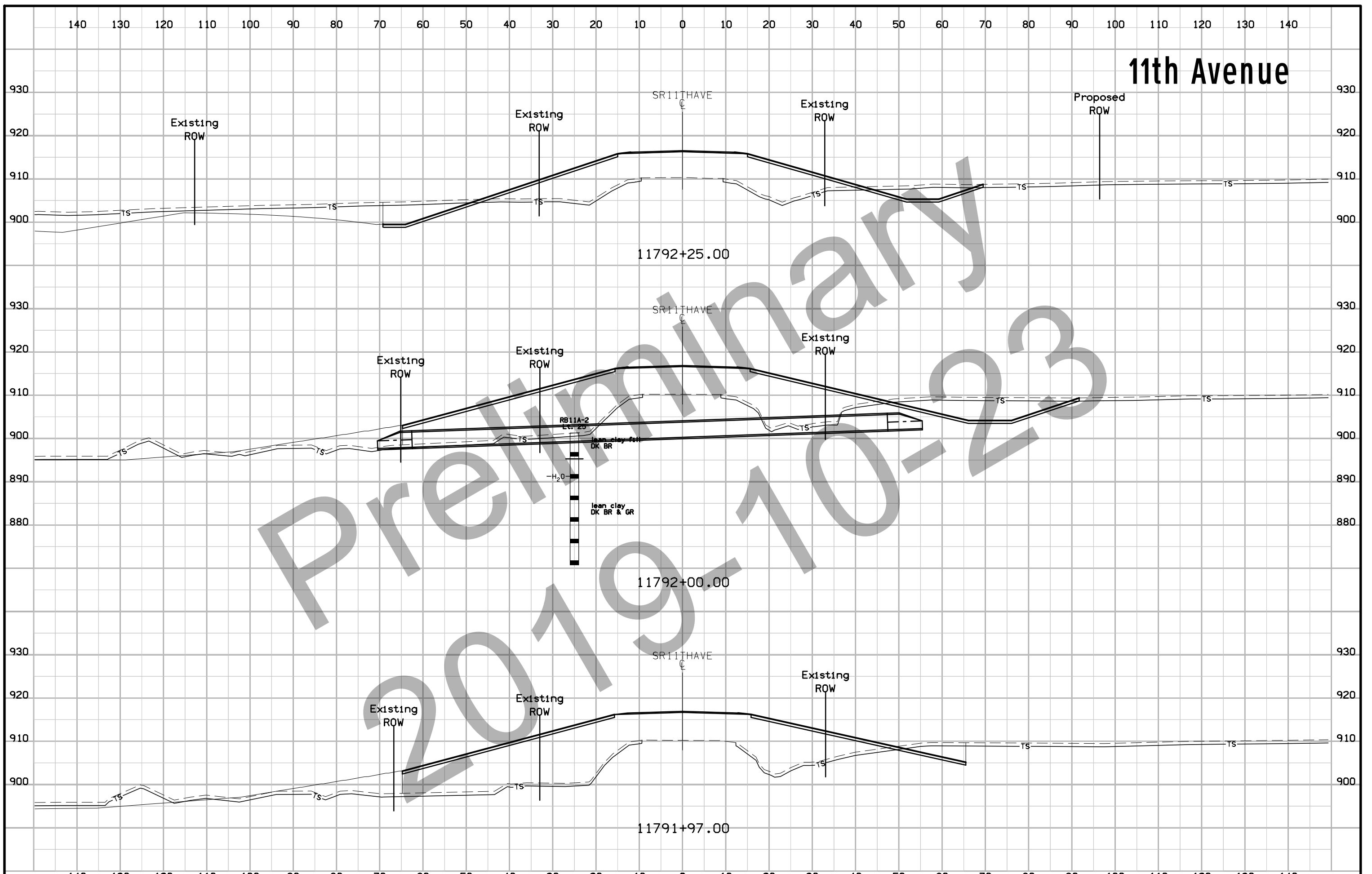
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# 11th Avenue

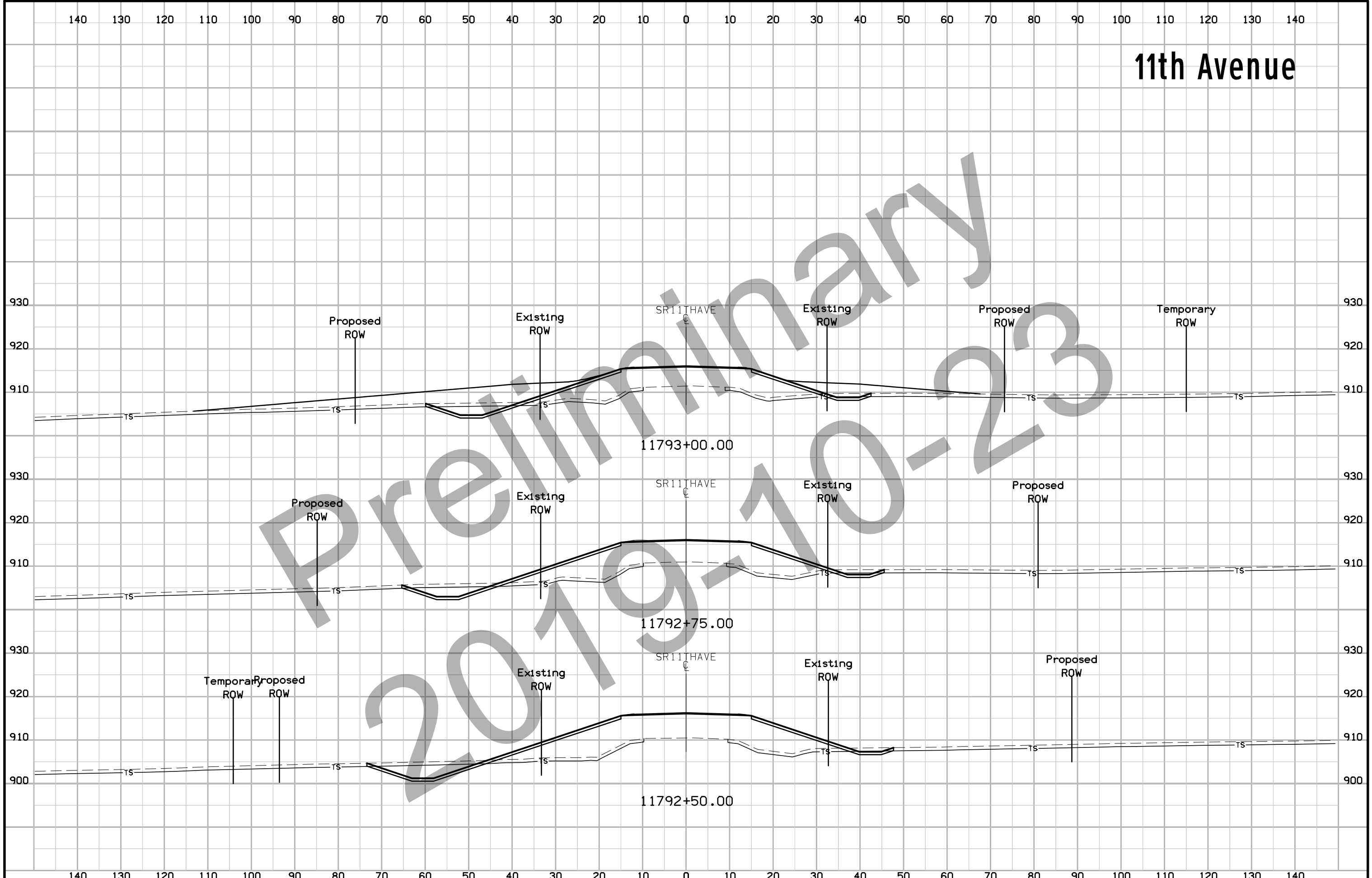




# 11th Avenue

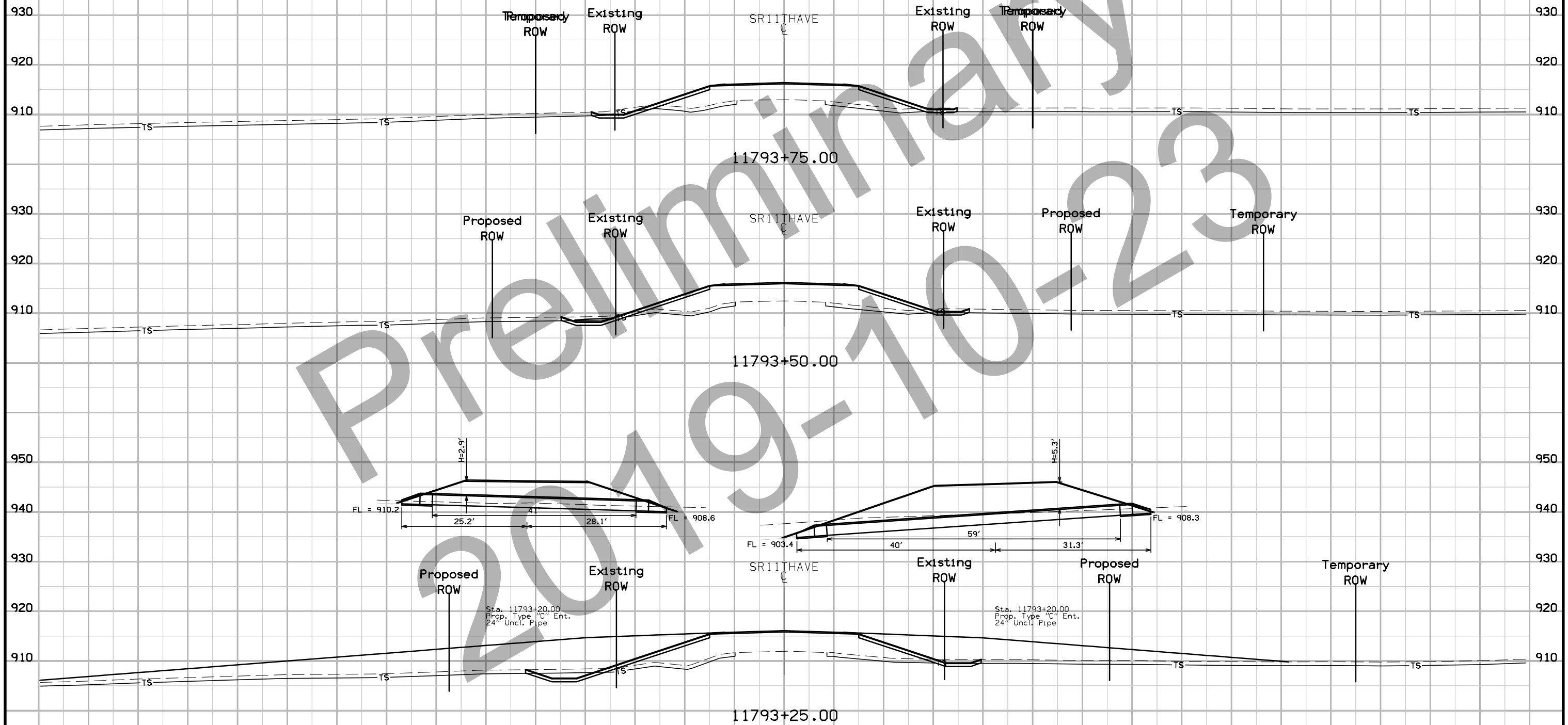


# 11th Avenue

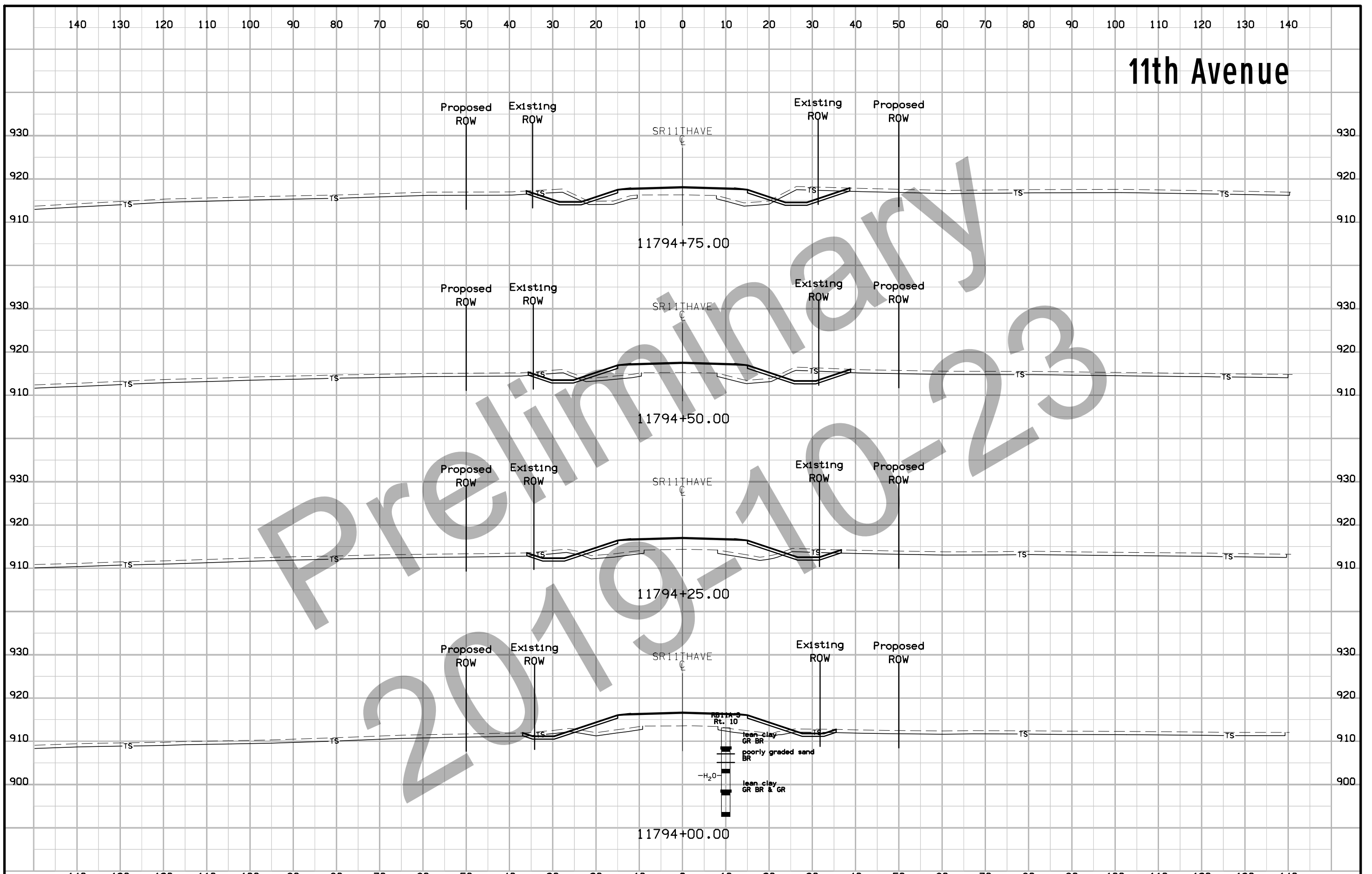


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# 11th Avenue

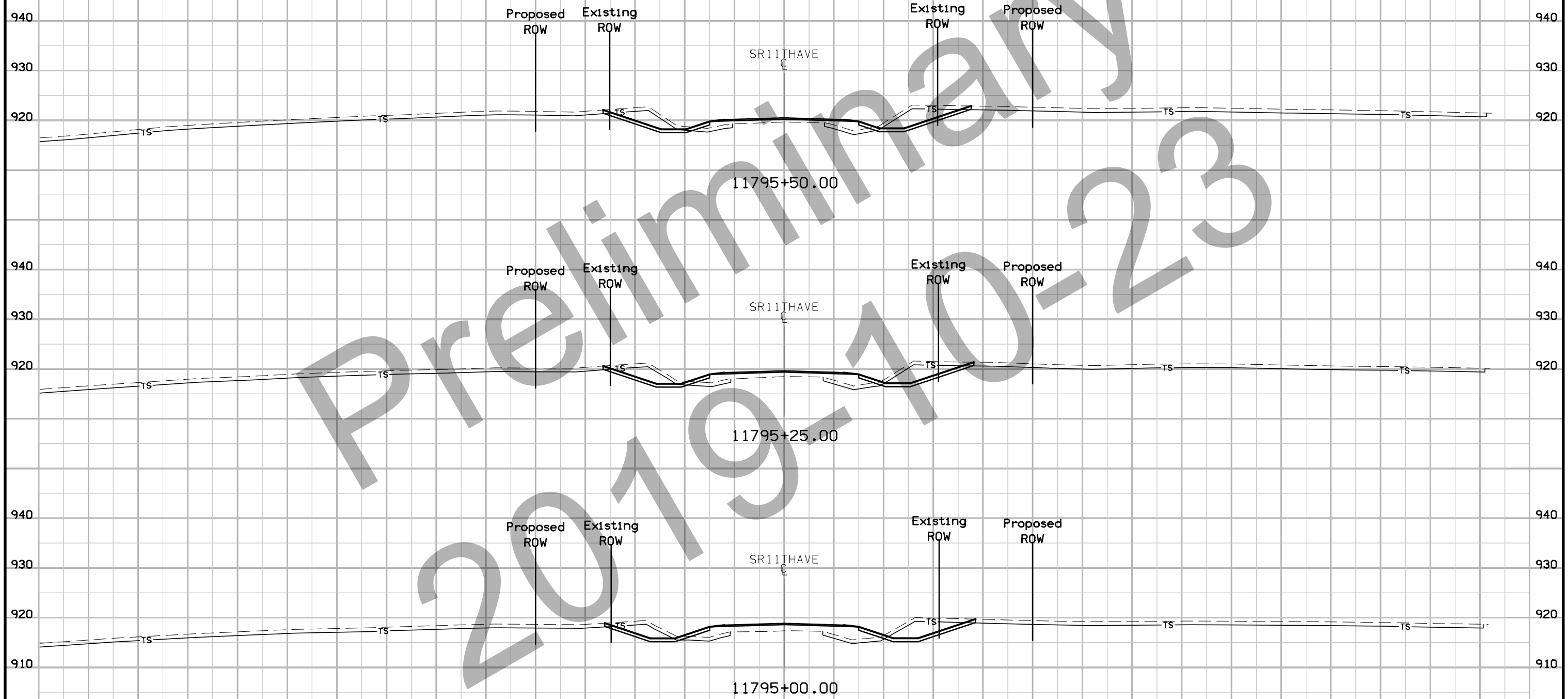


# 11th Avenue



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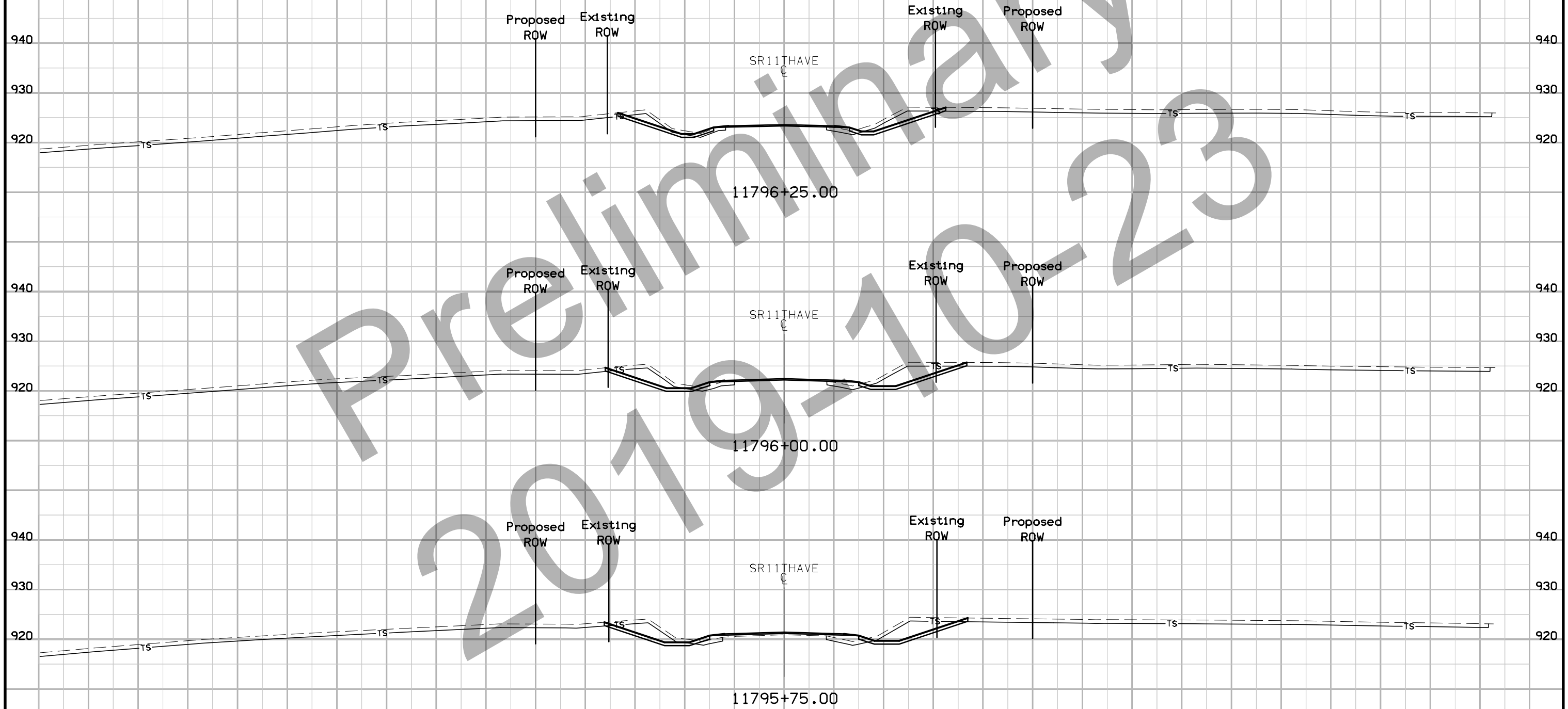
# 11th Avenue



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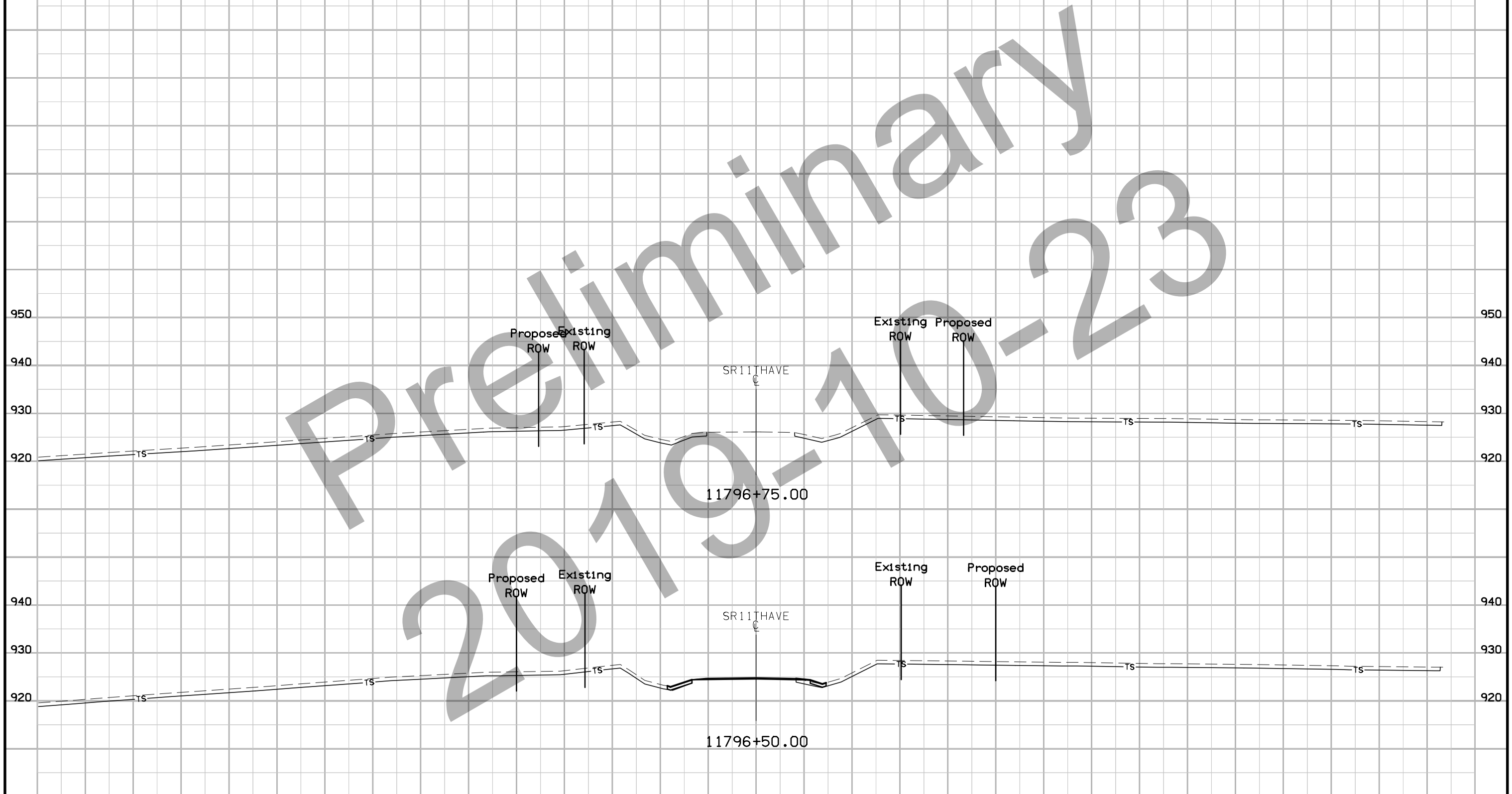
# 11th Avenue



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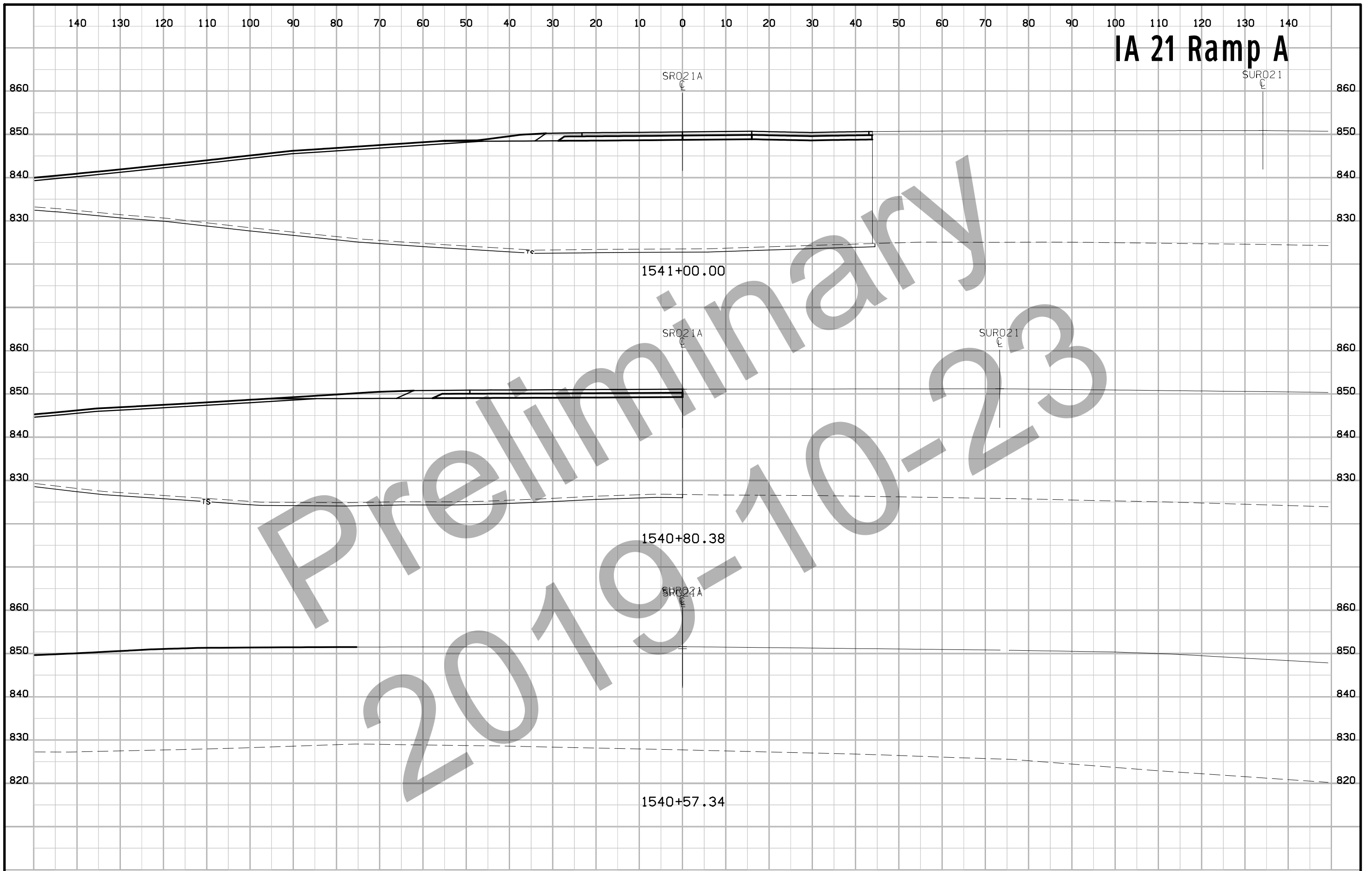
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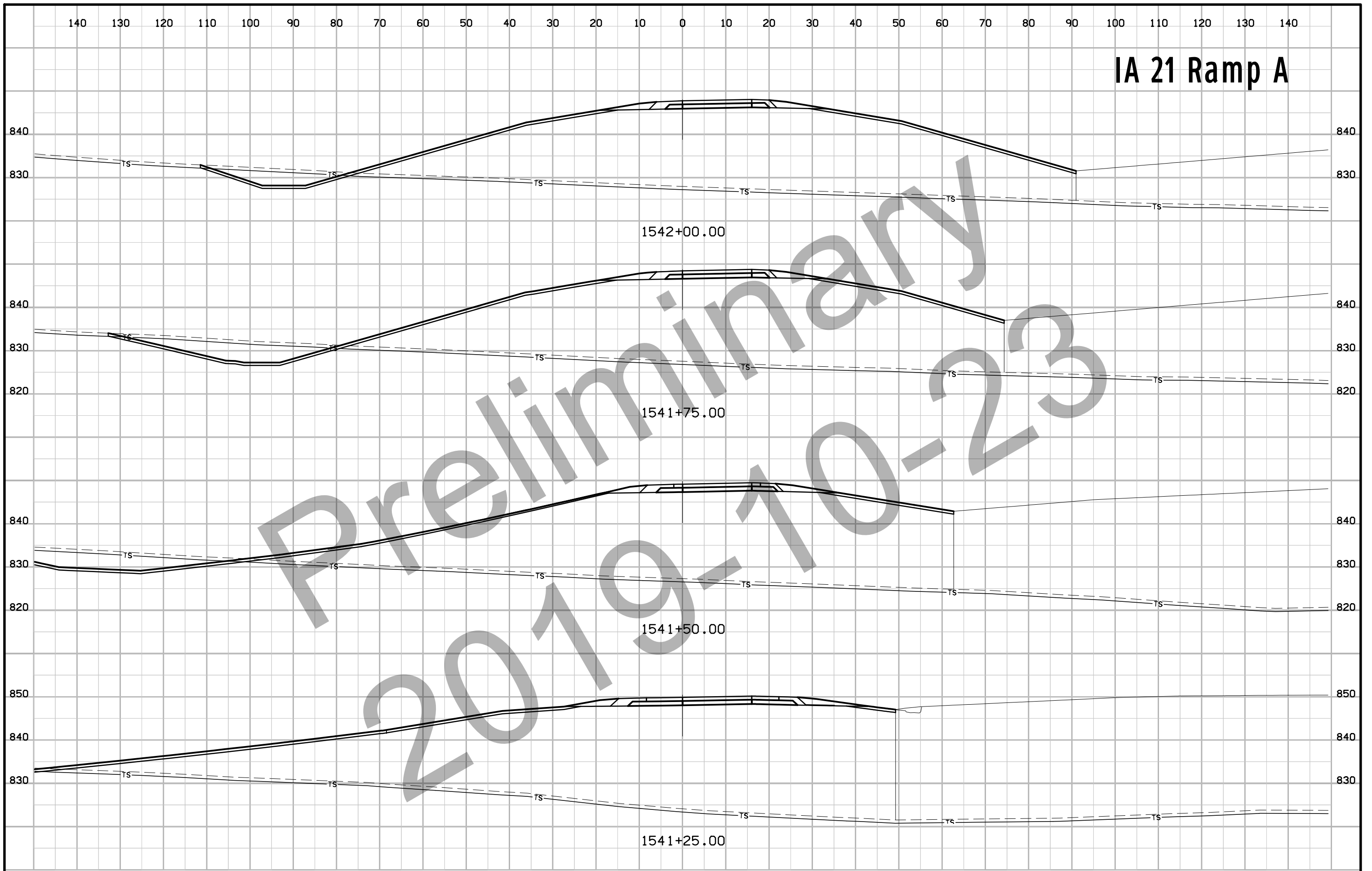
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# IA 21 Ramp A

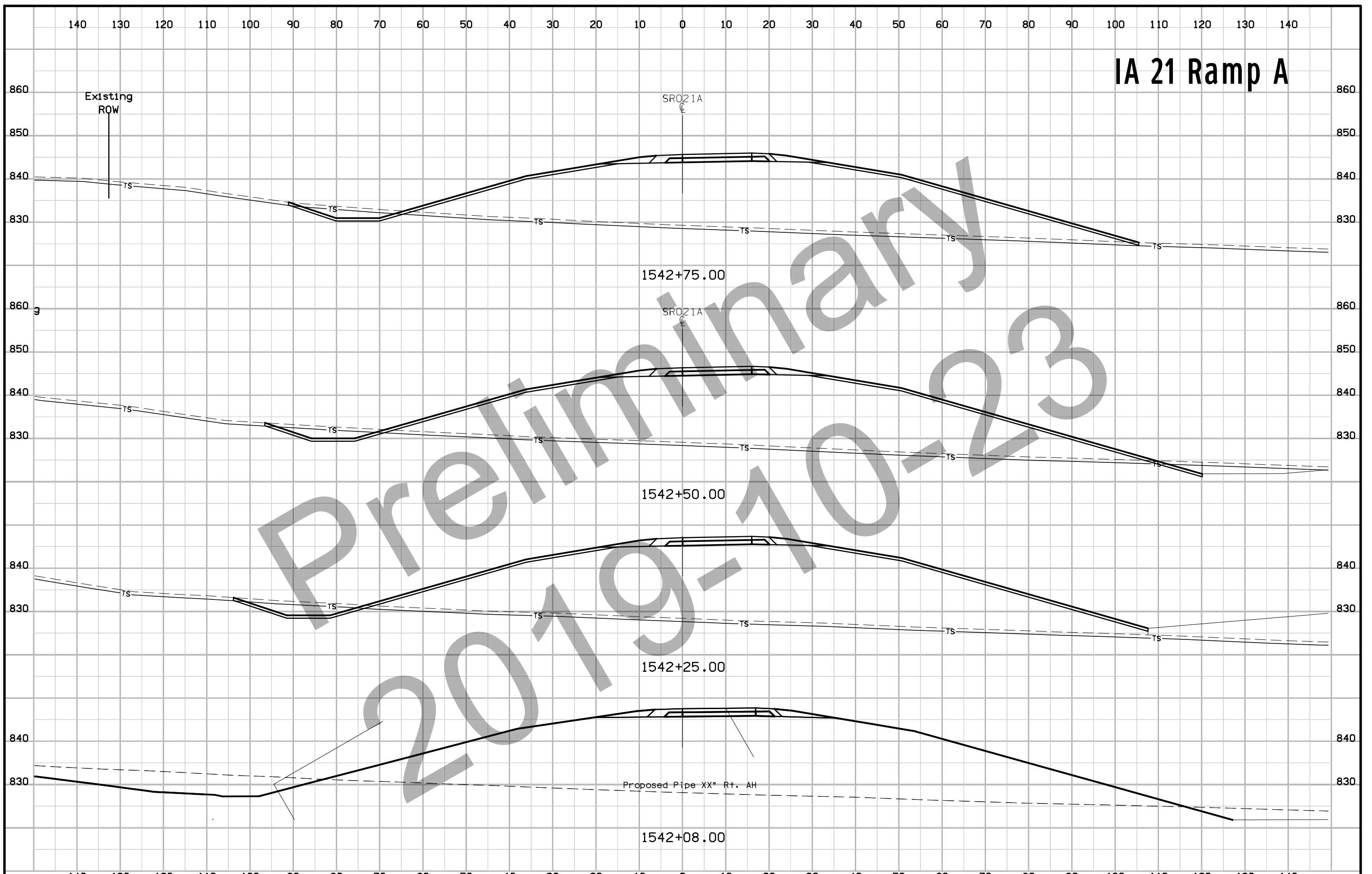




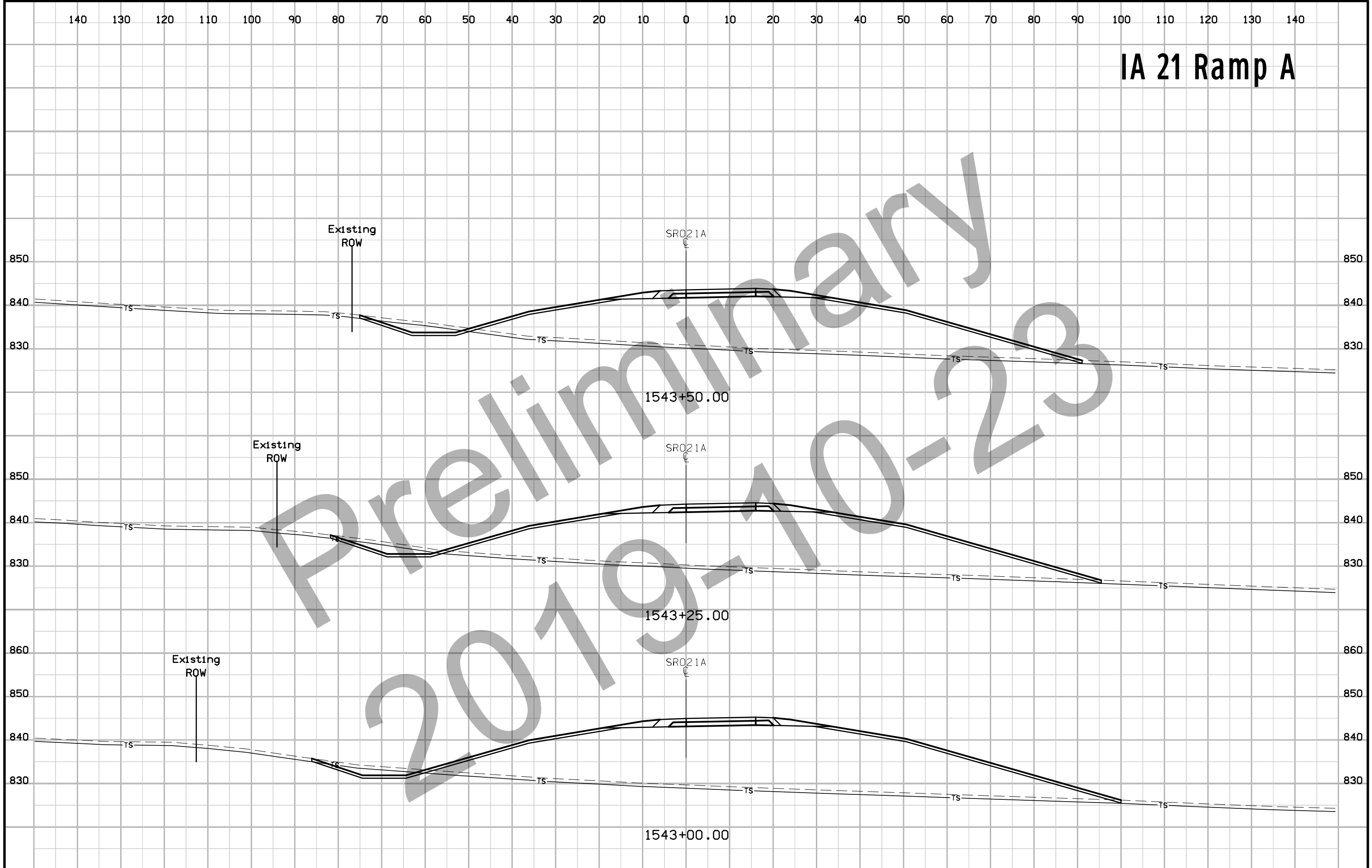
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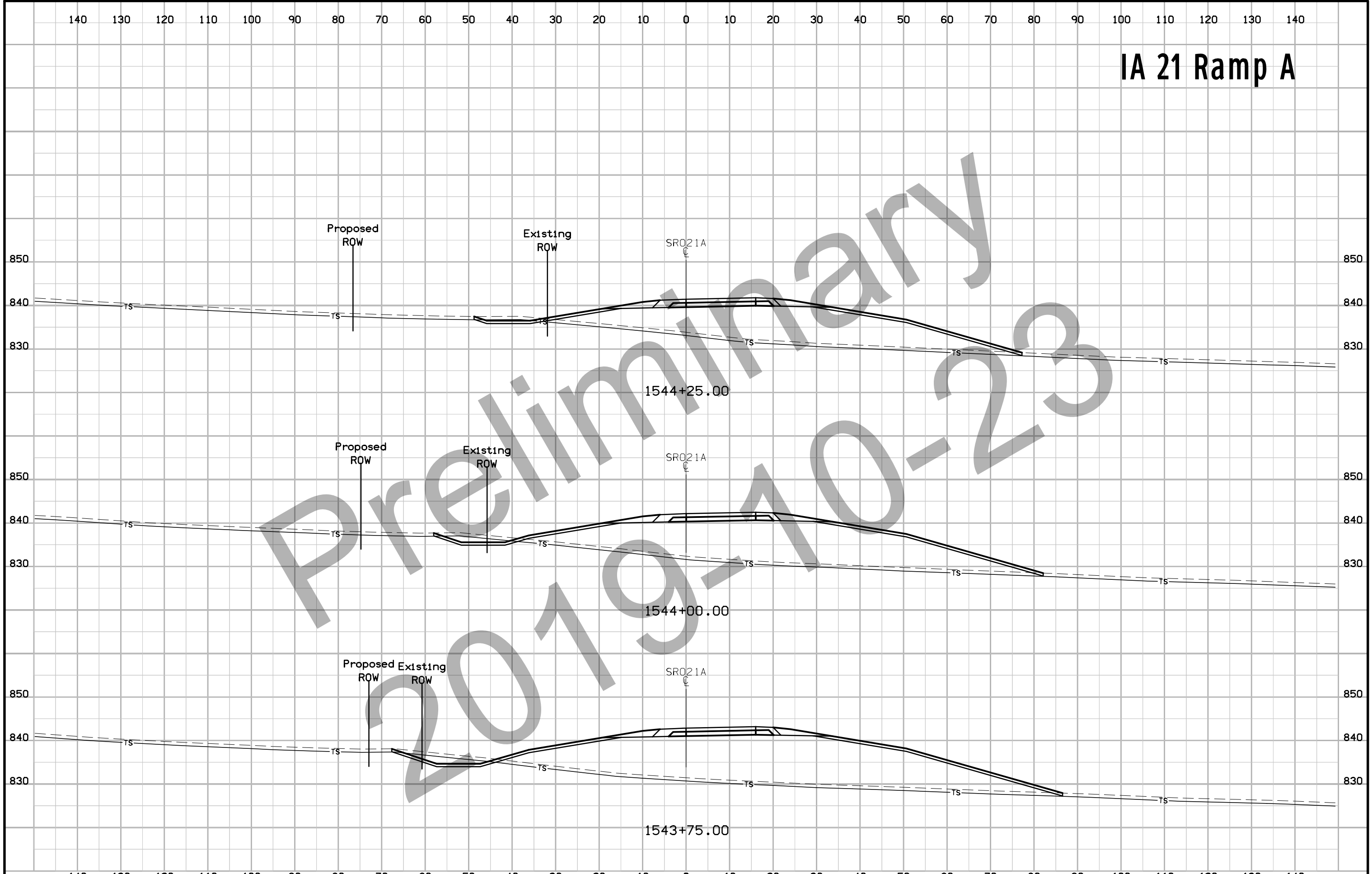
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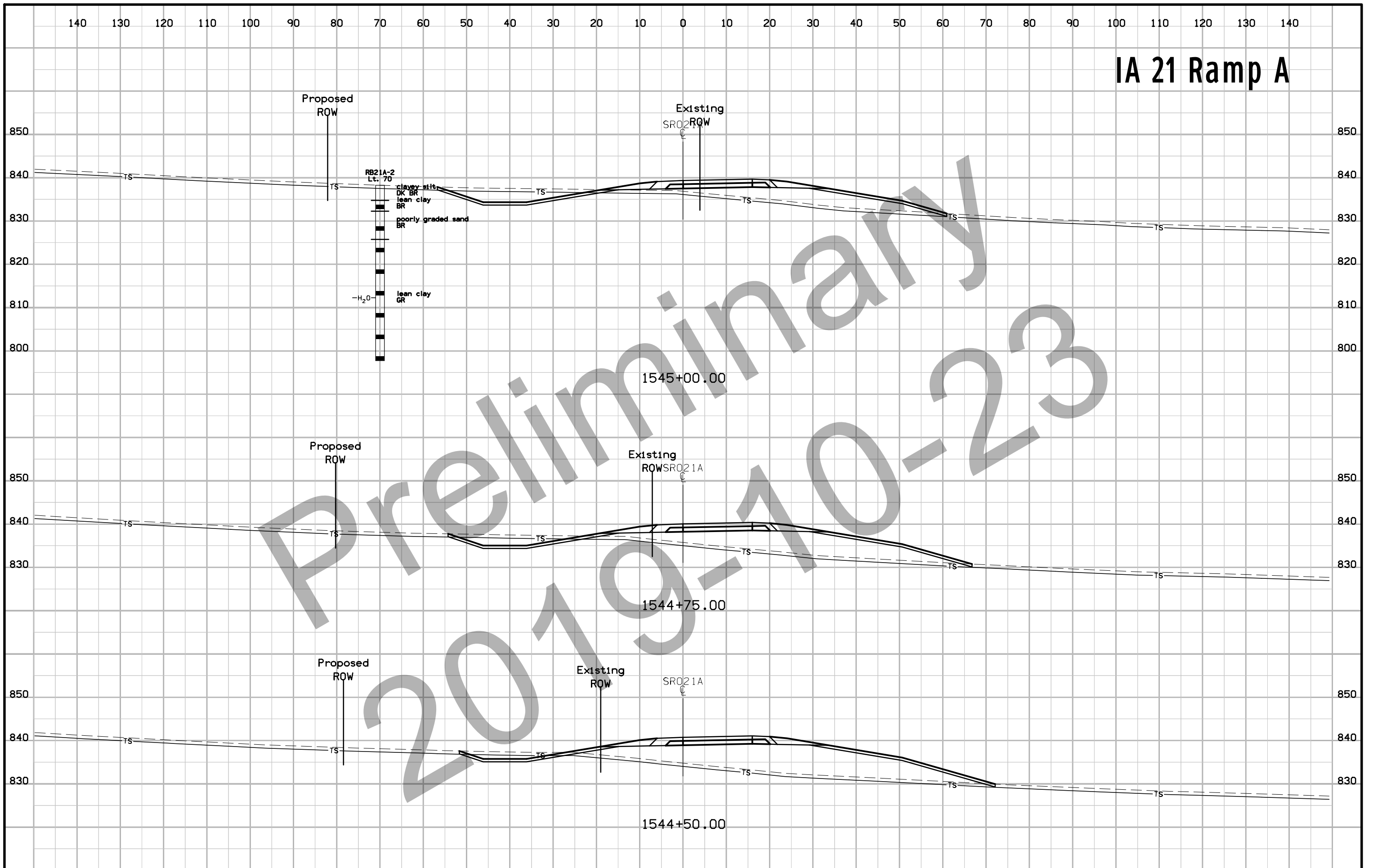
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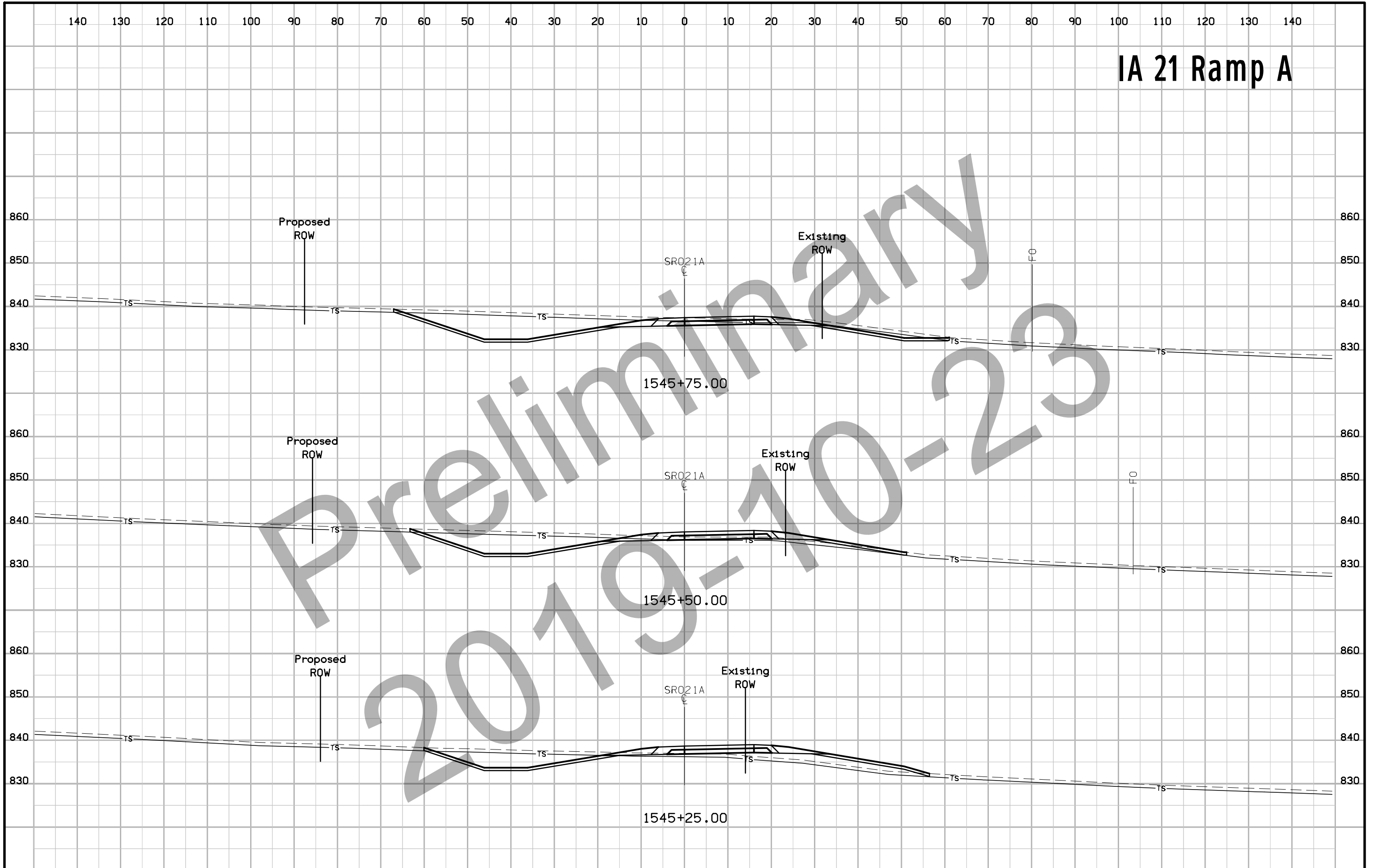
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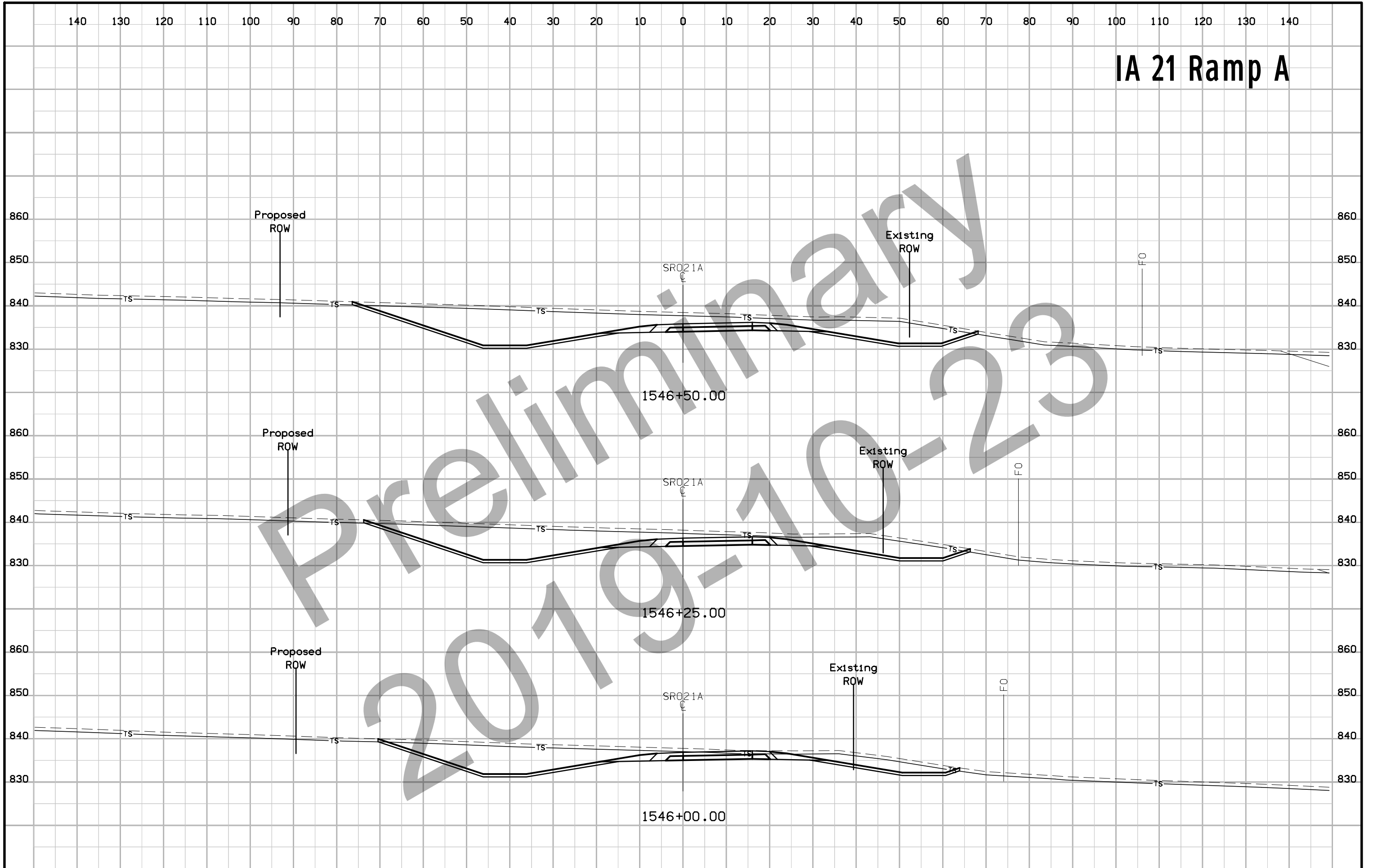
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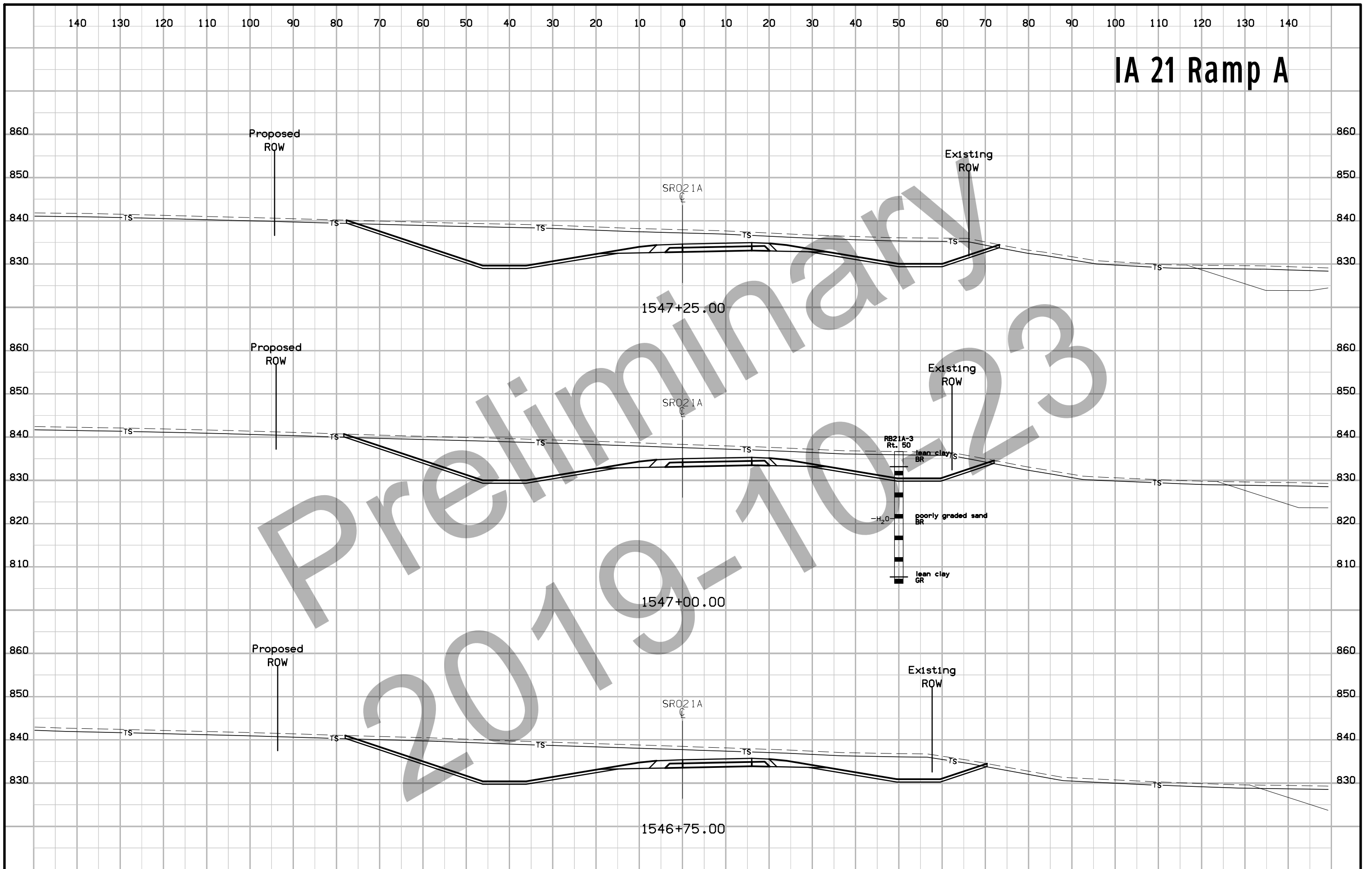
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# IA 21 Ramp A

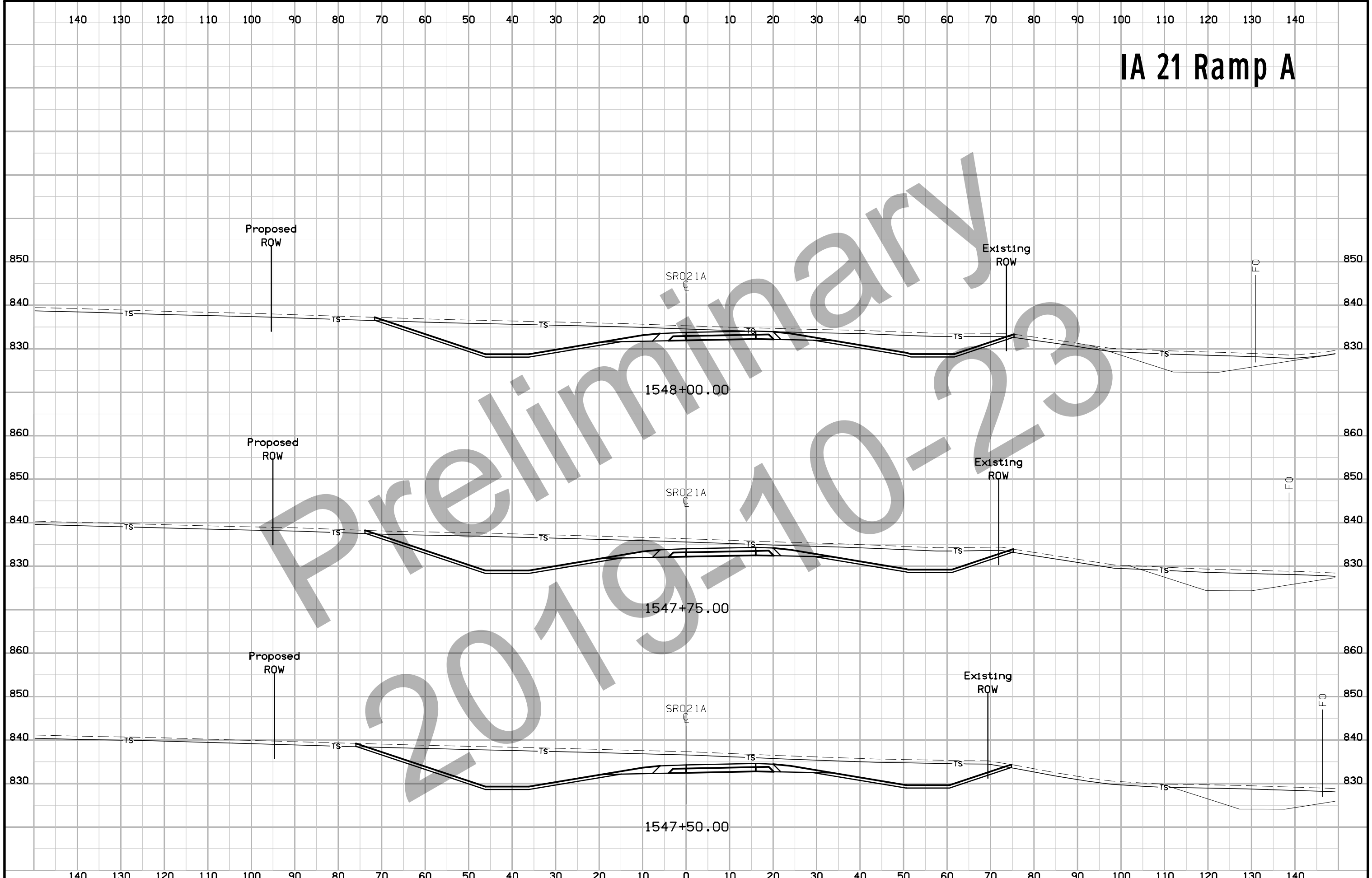


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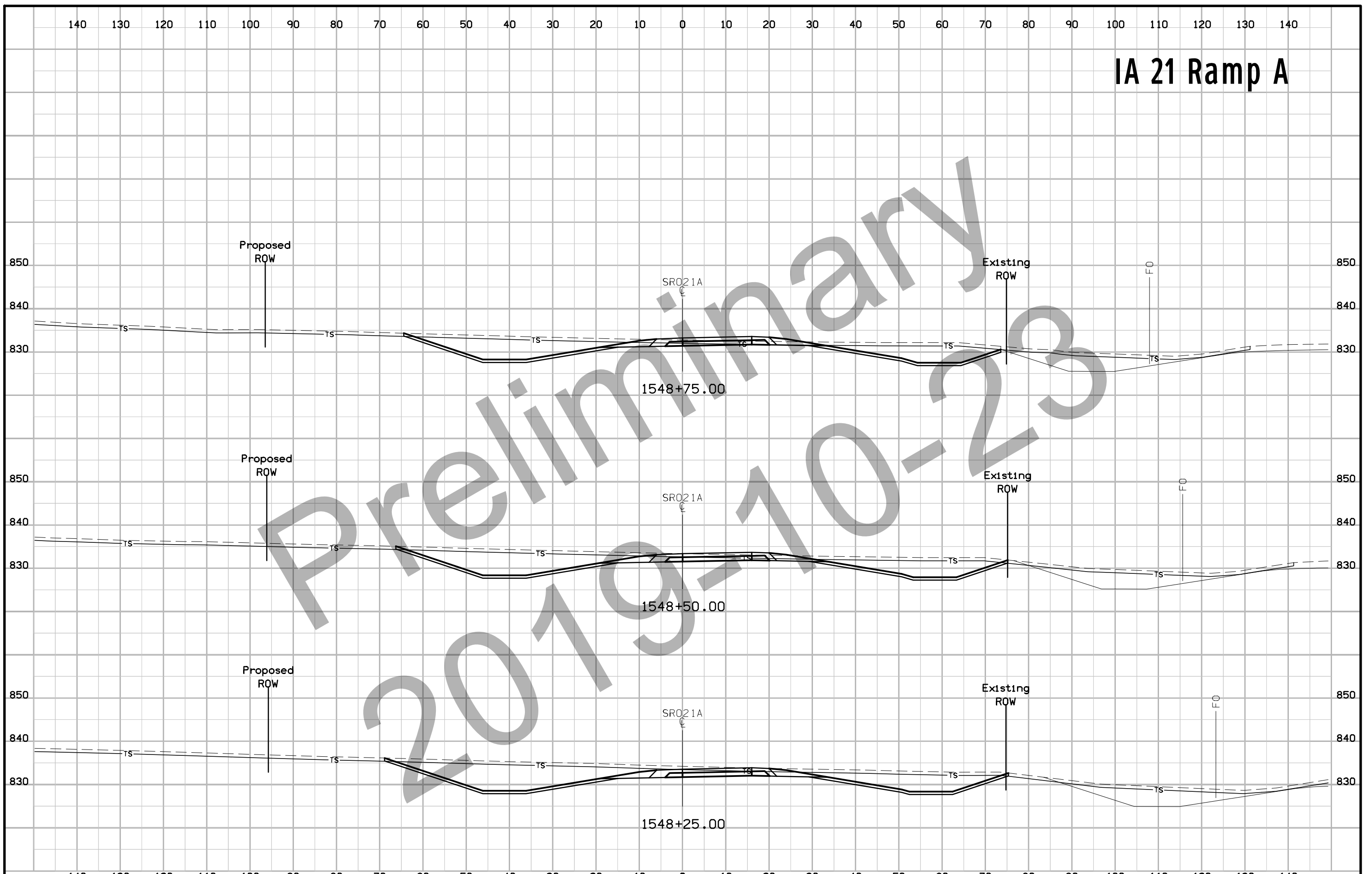




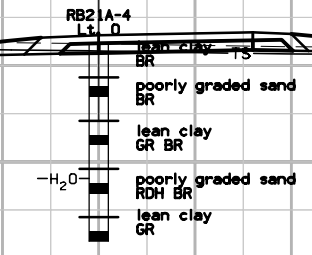
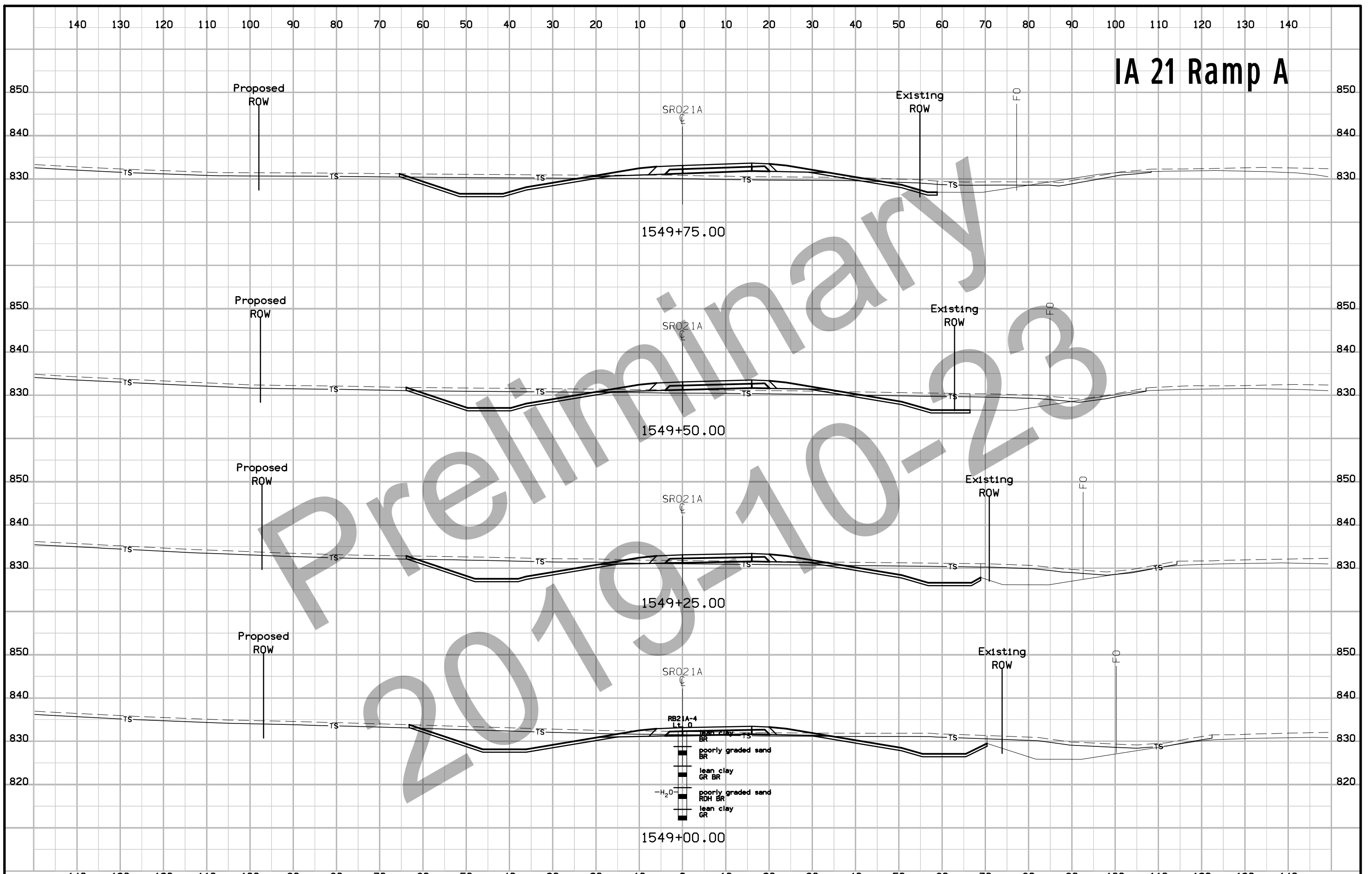
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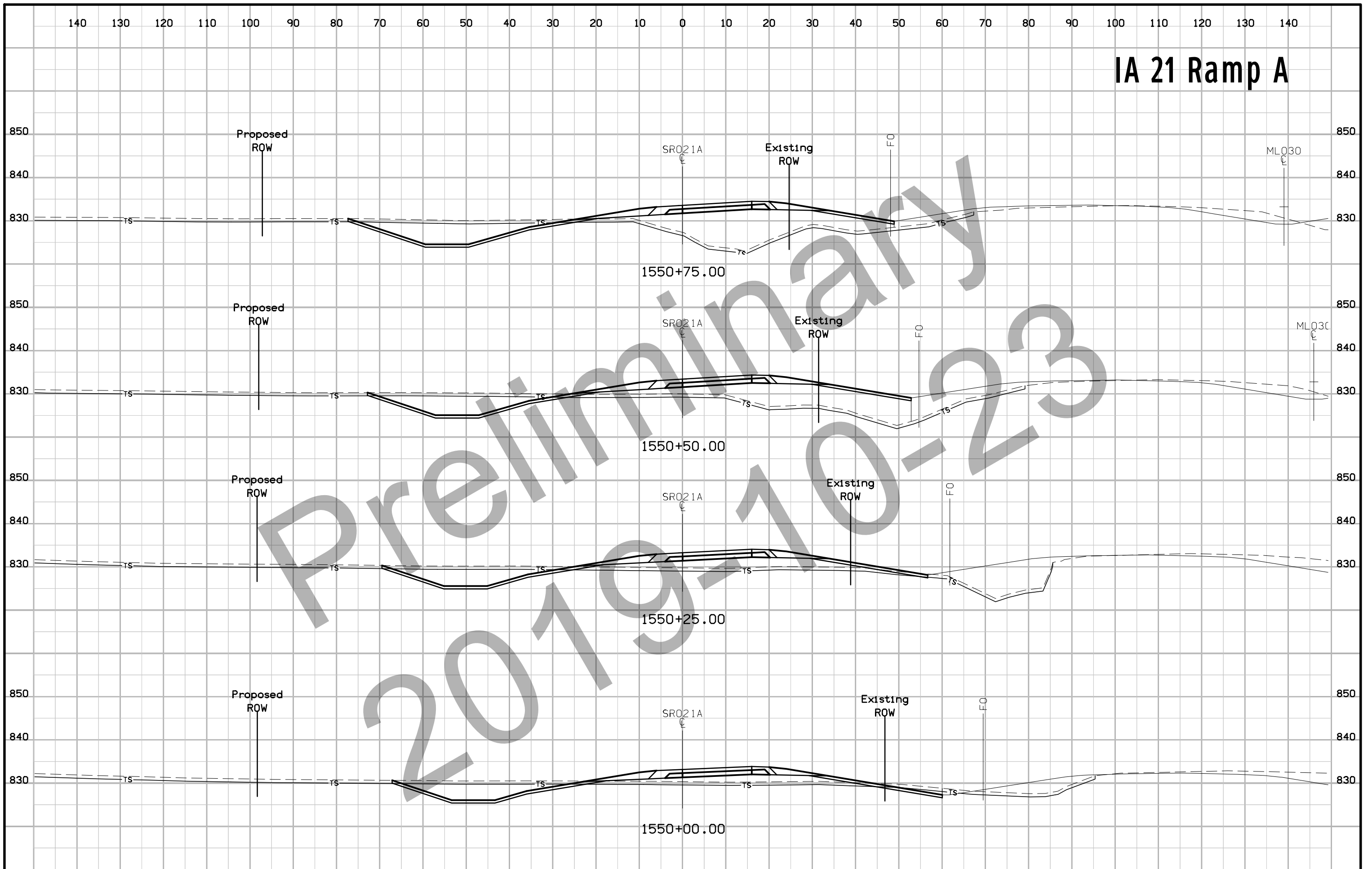
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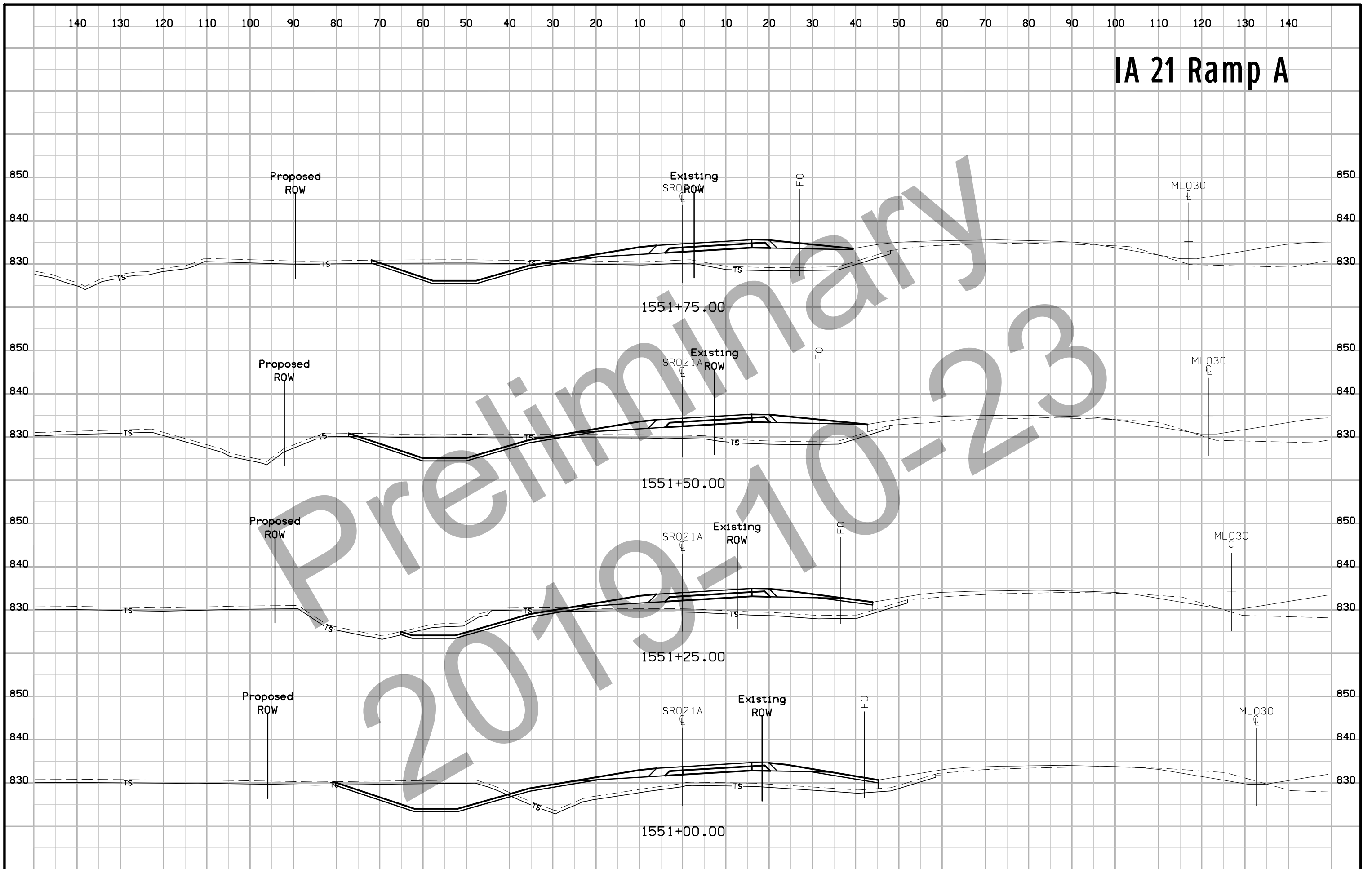
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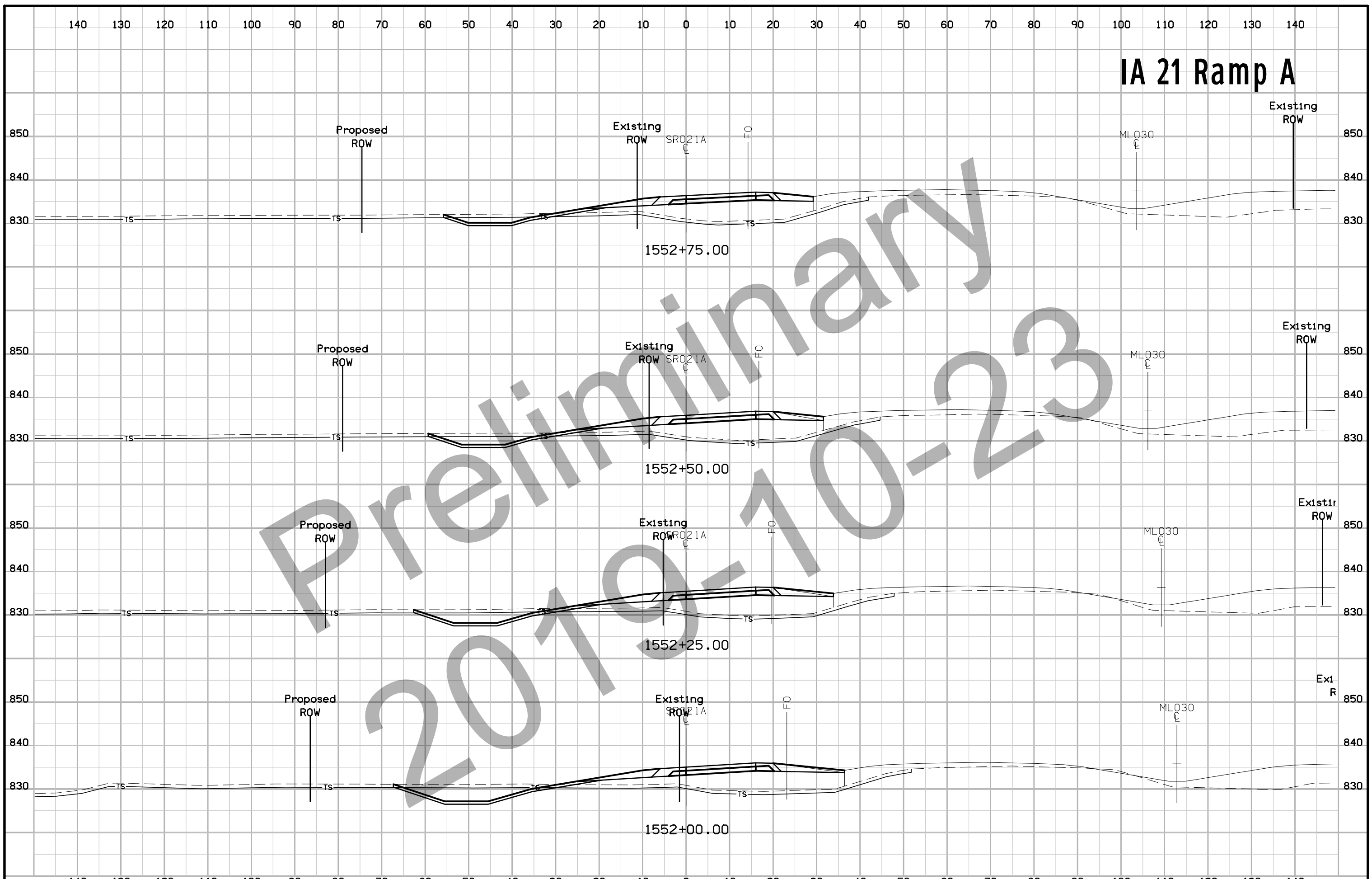
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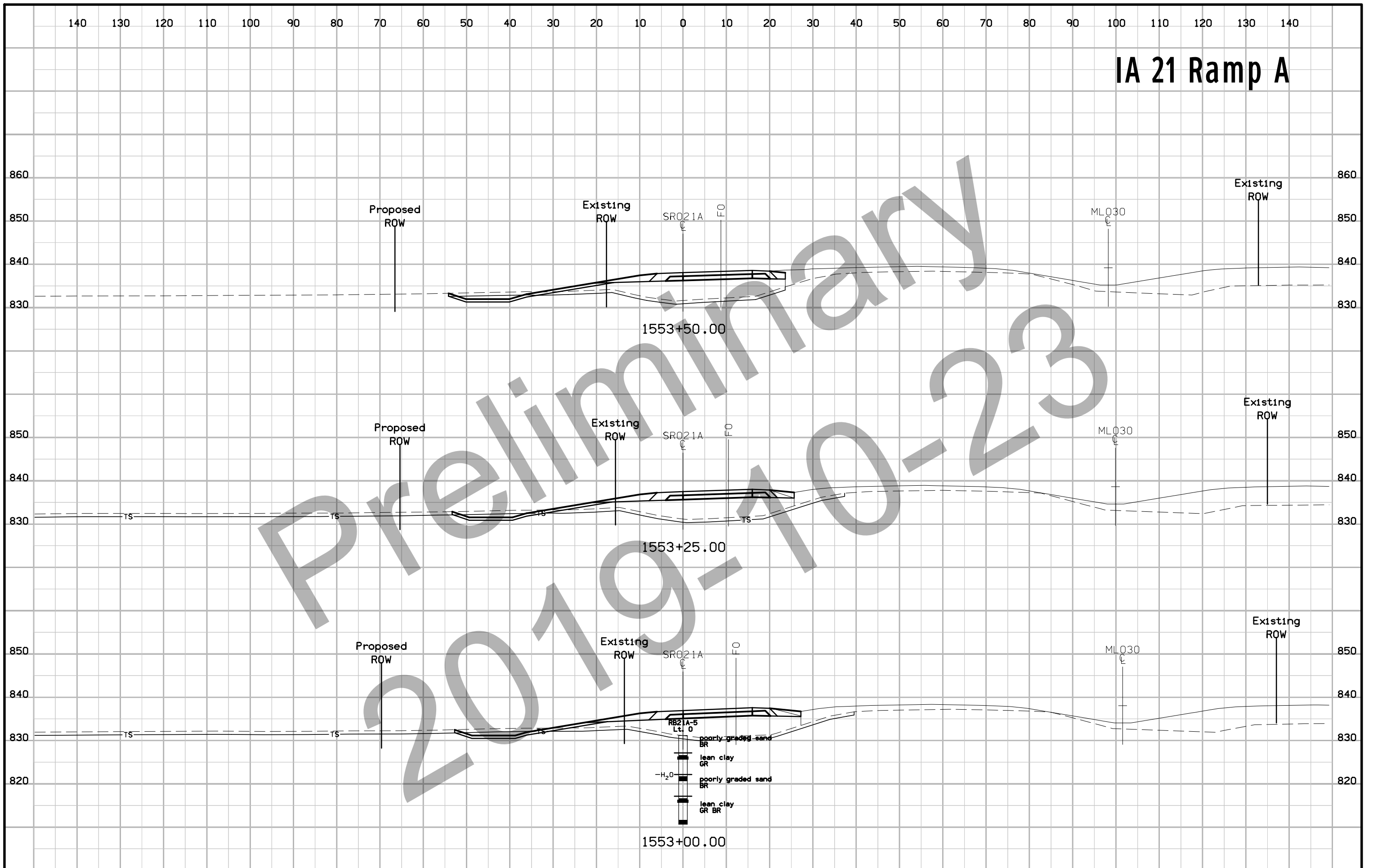
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# IA 21 Ramp A



# IA 21 Ramp A

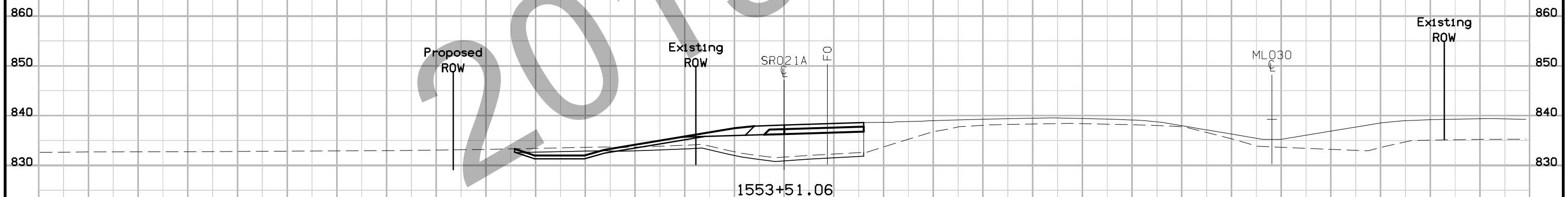


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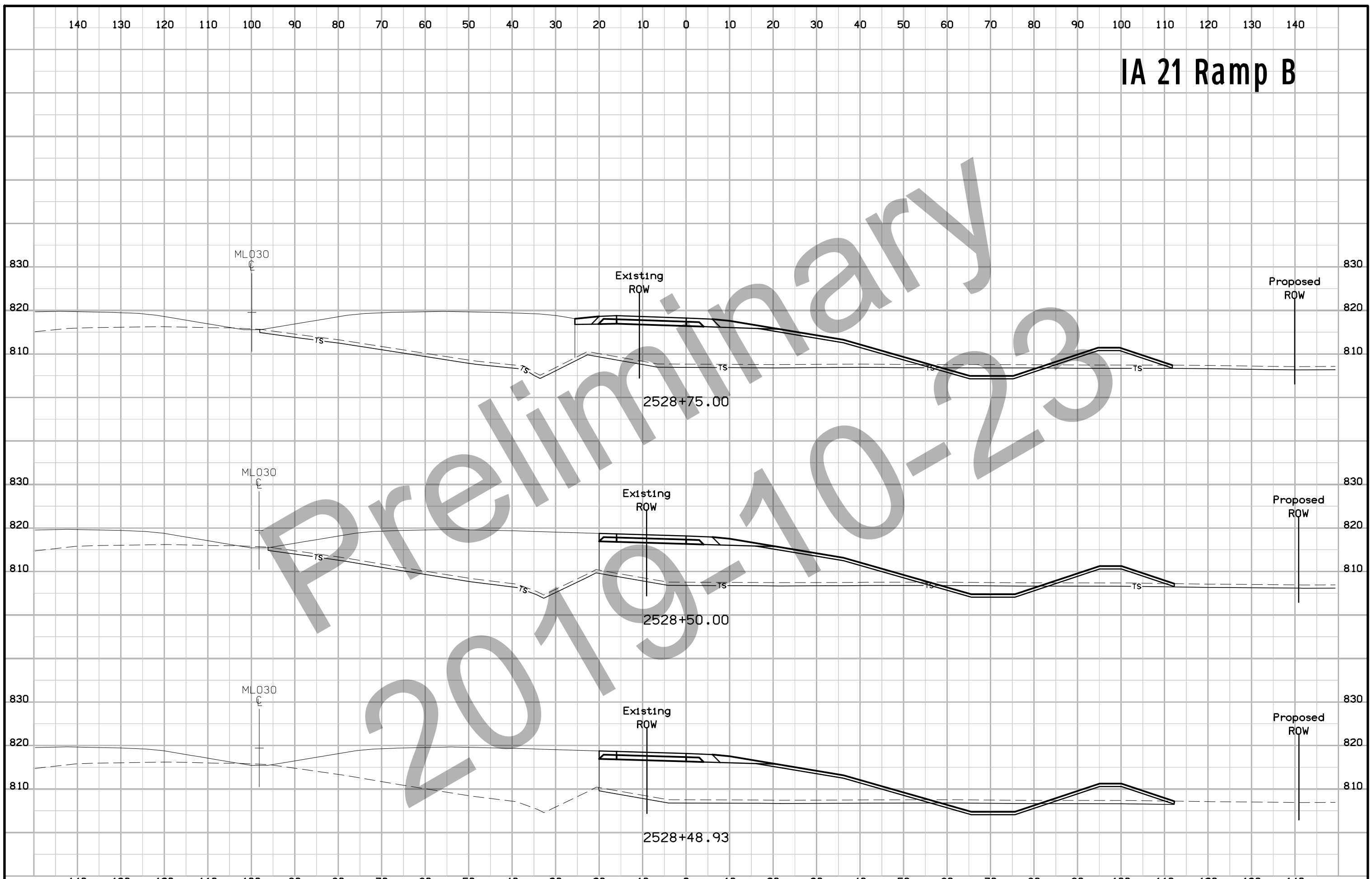
Preliminary  
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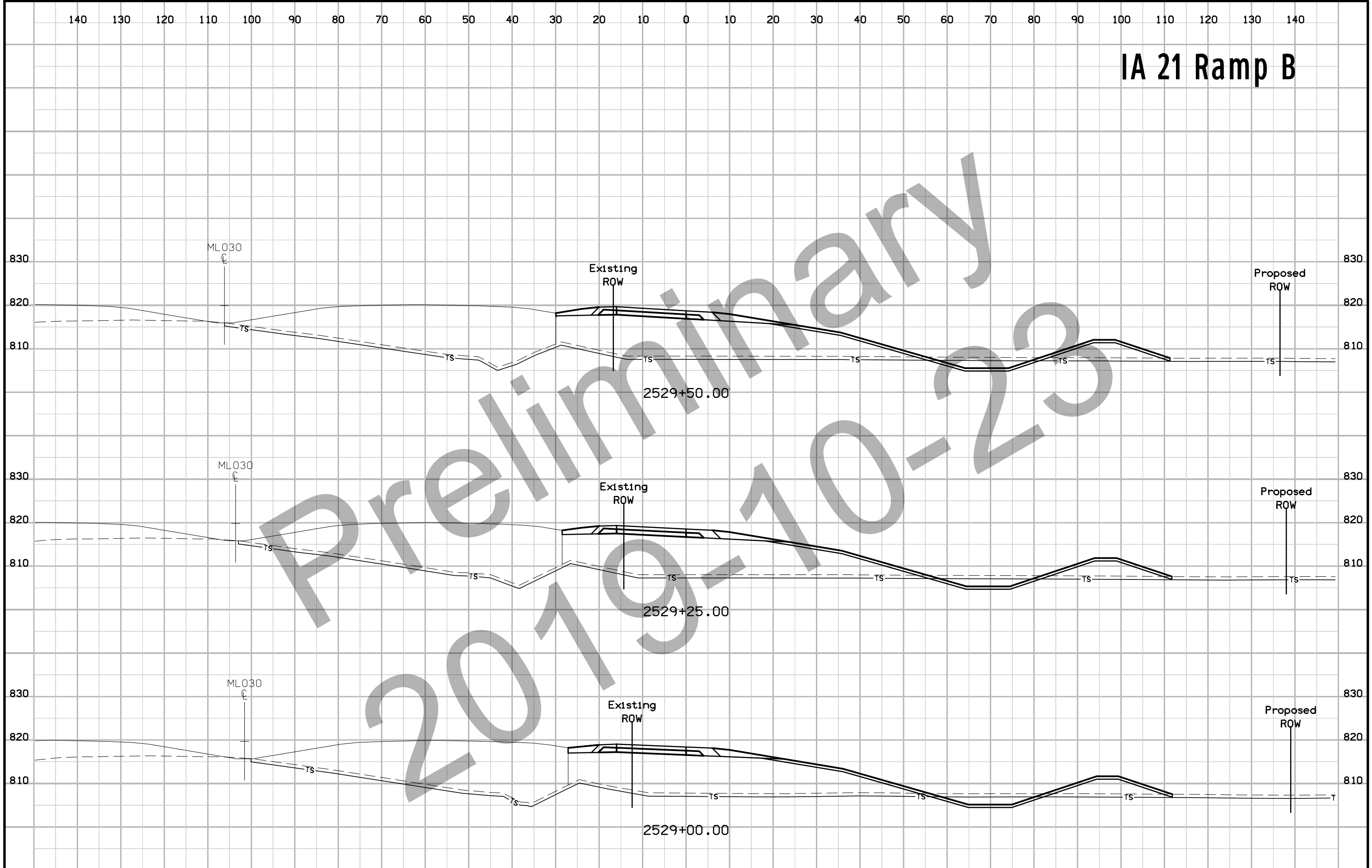
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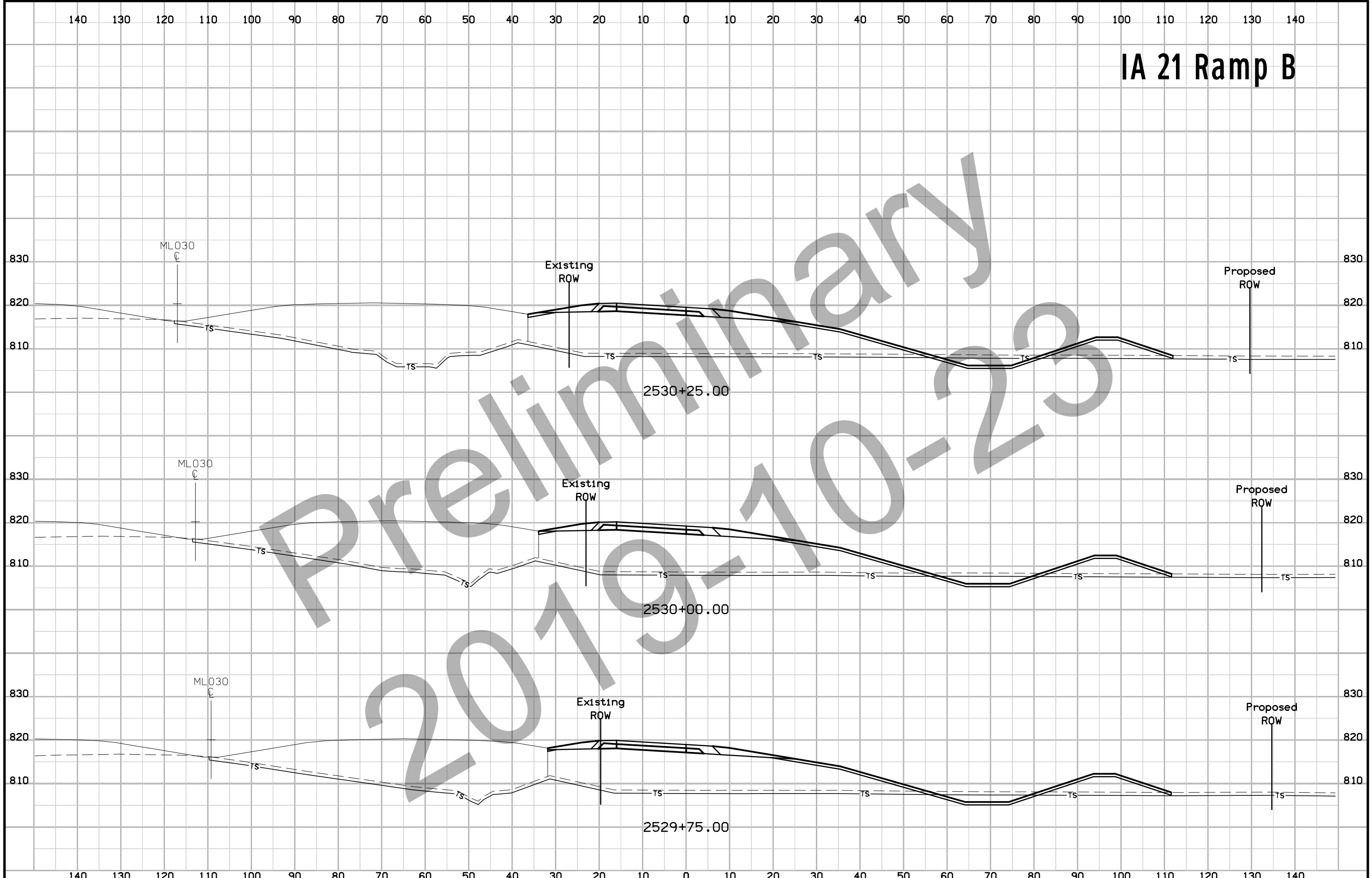
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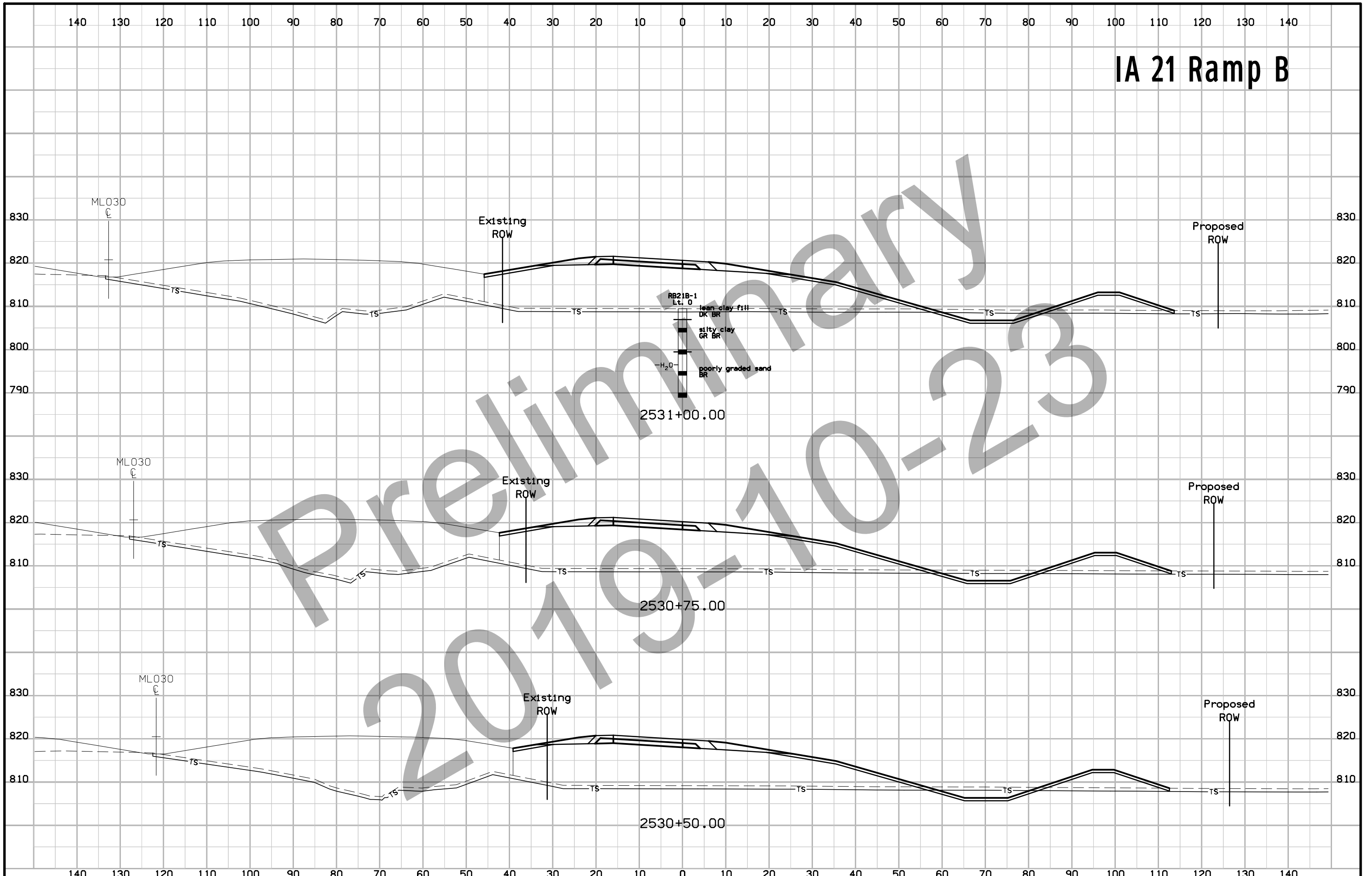
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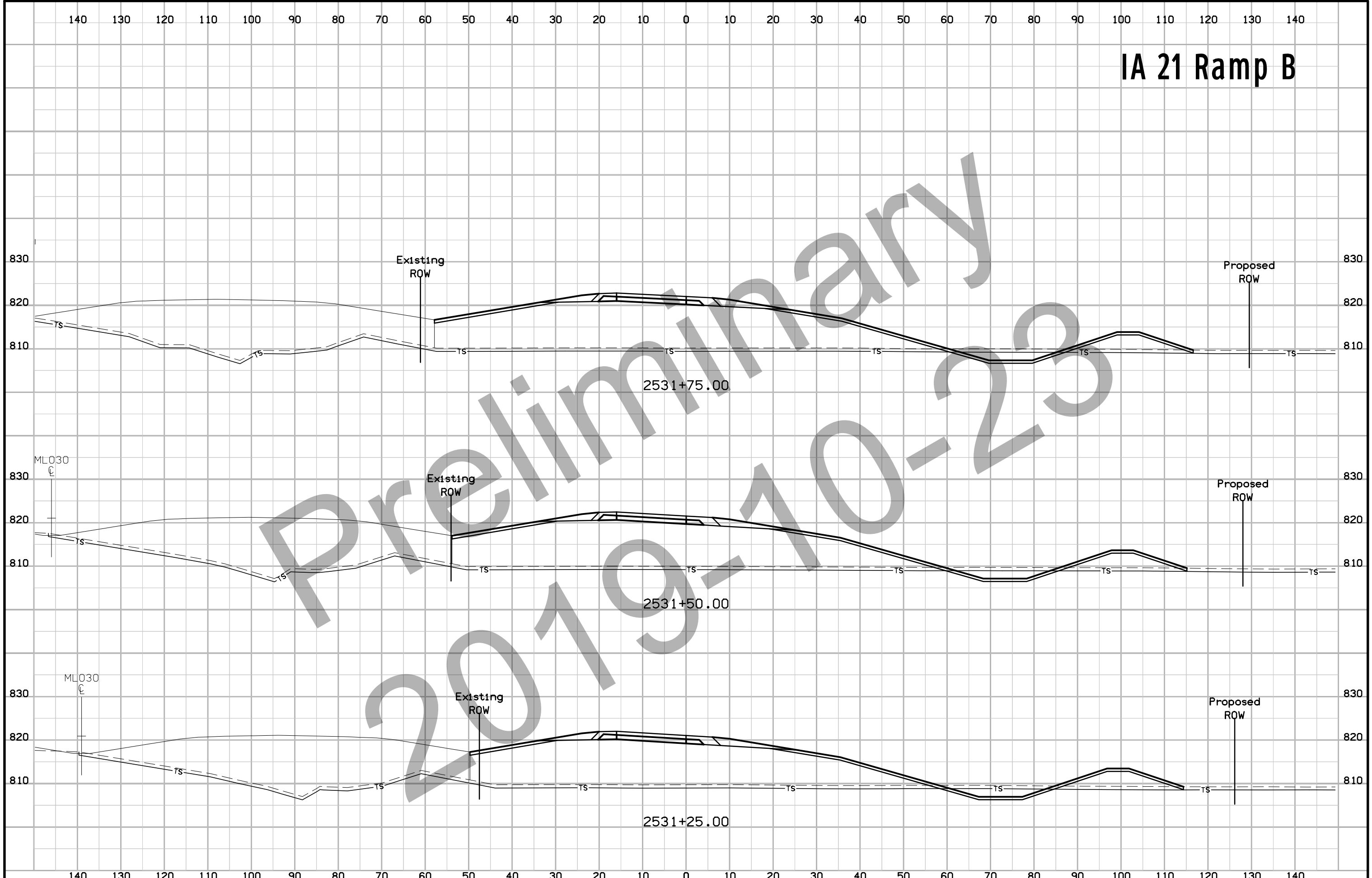
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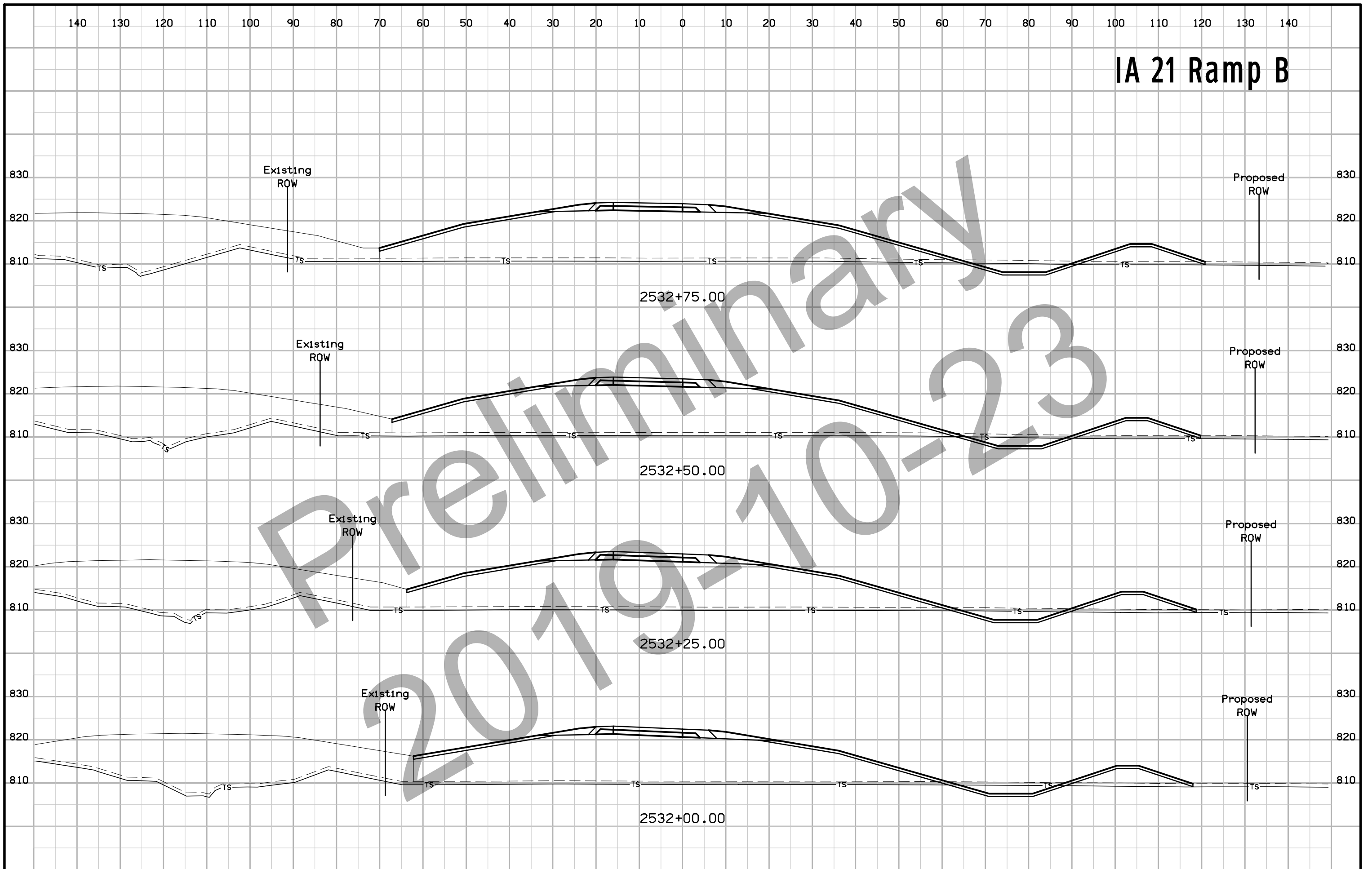
# IA 21 Ramp B



# IA 21 Ramp B

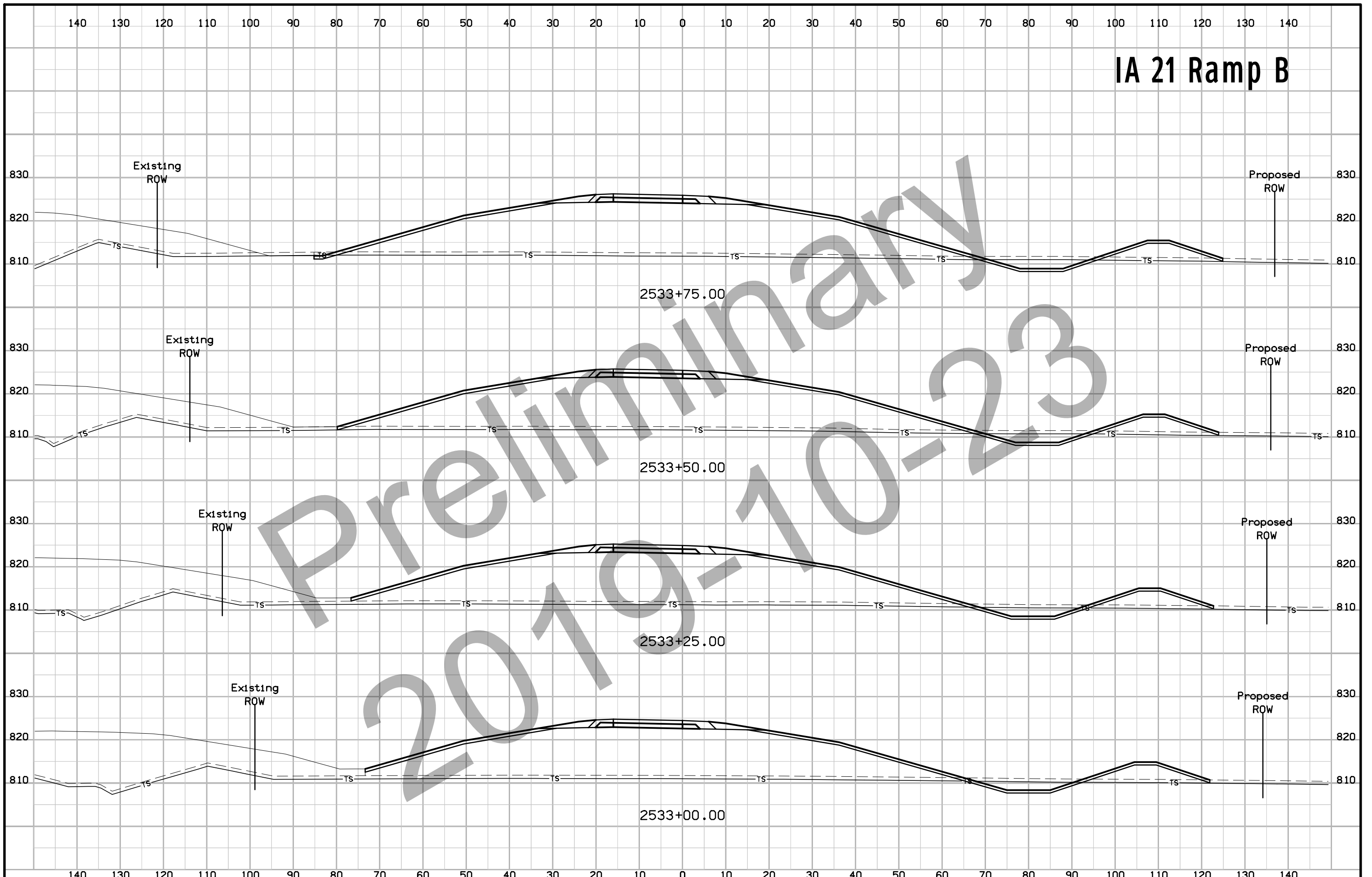


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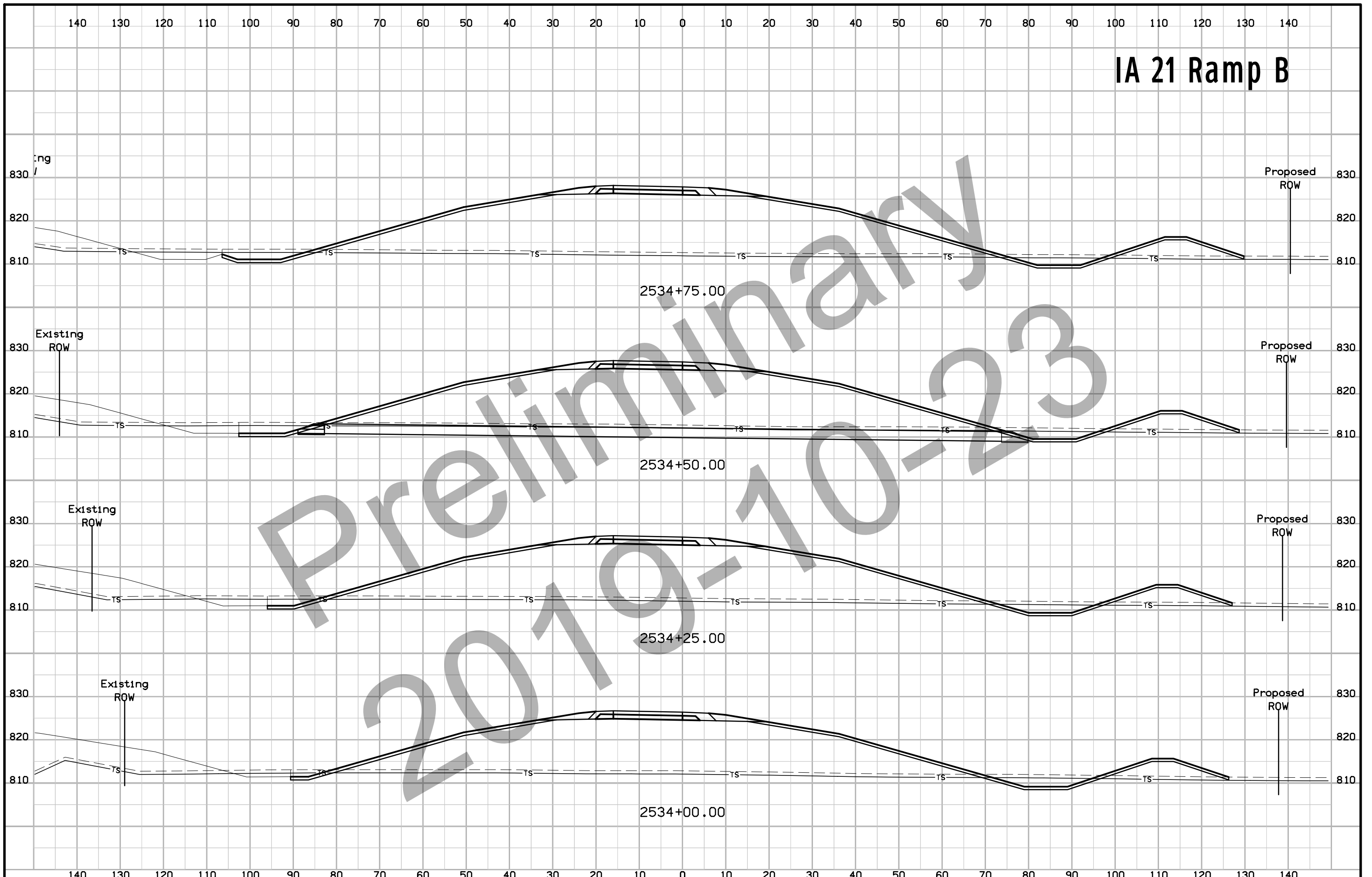


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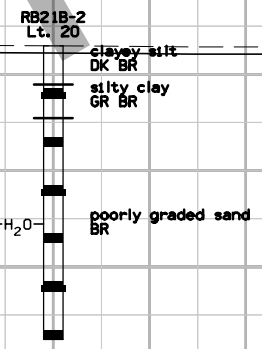
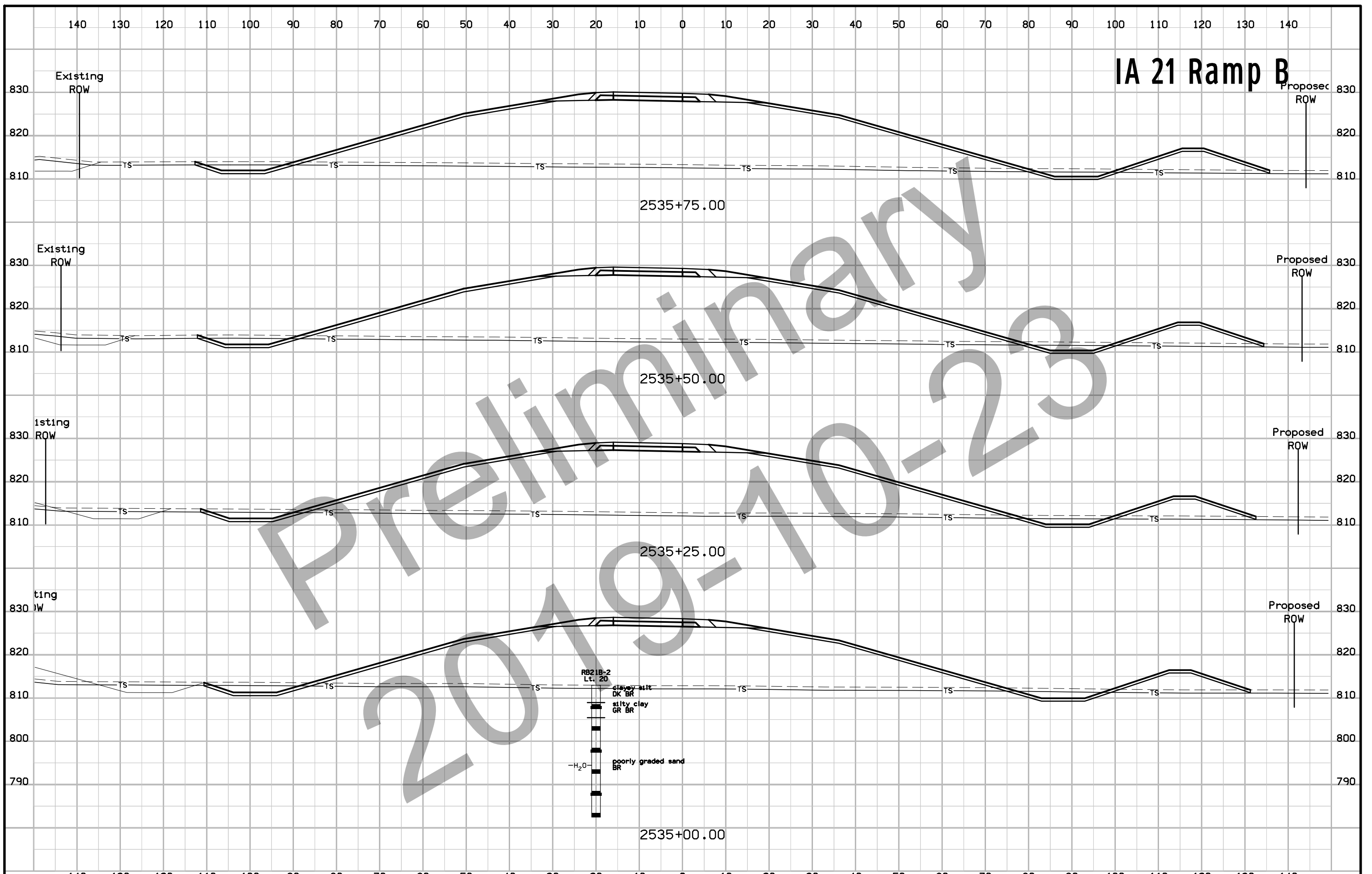


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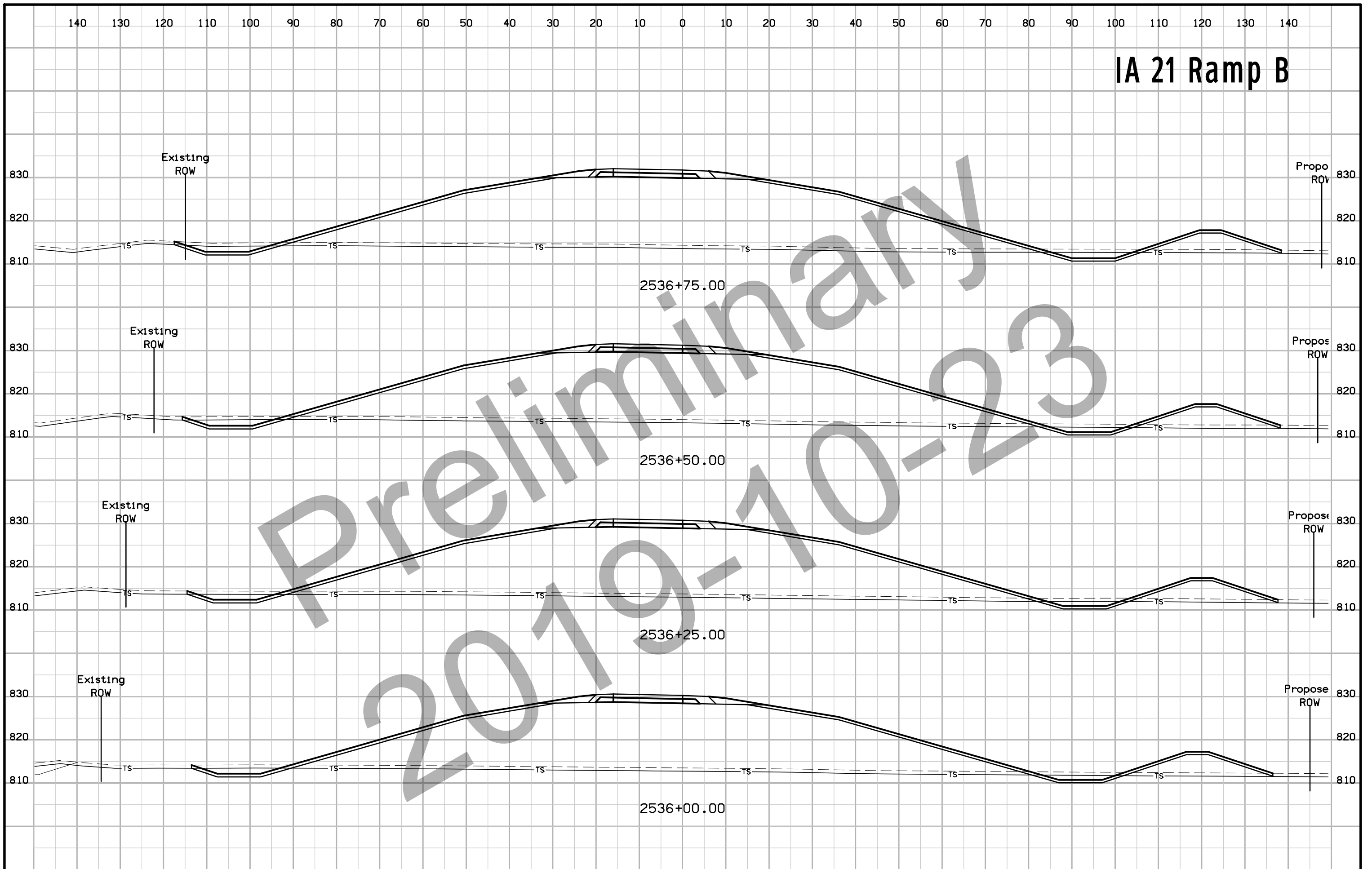




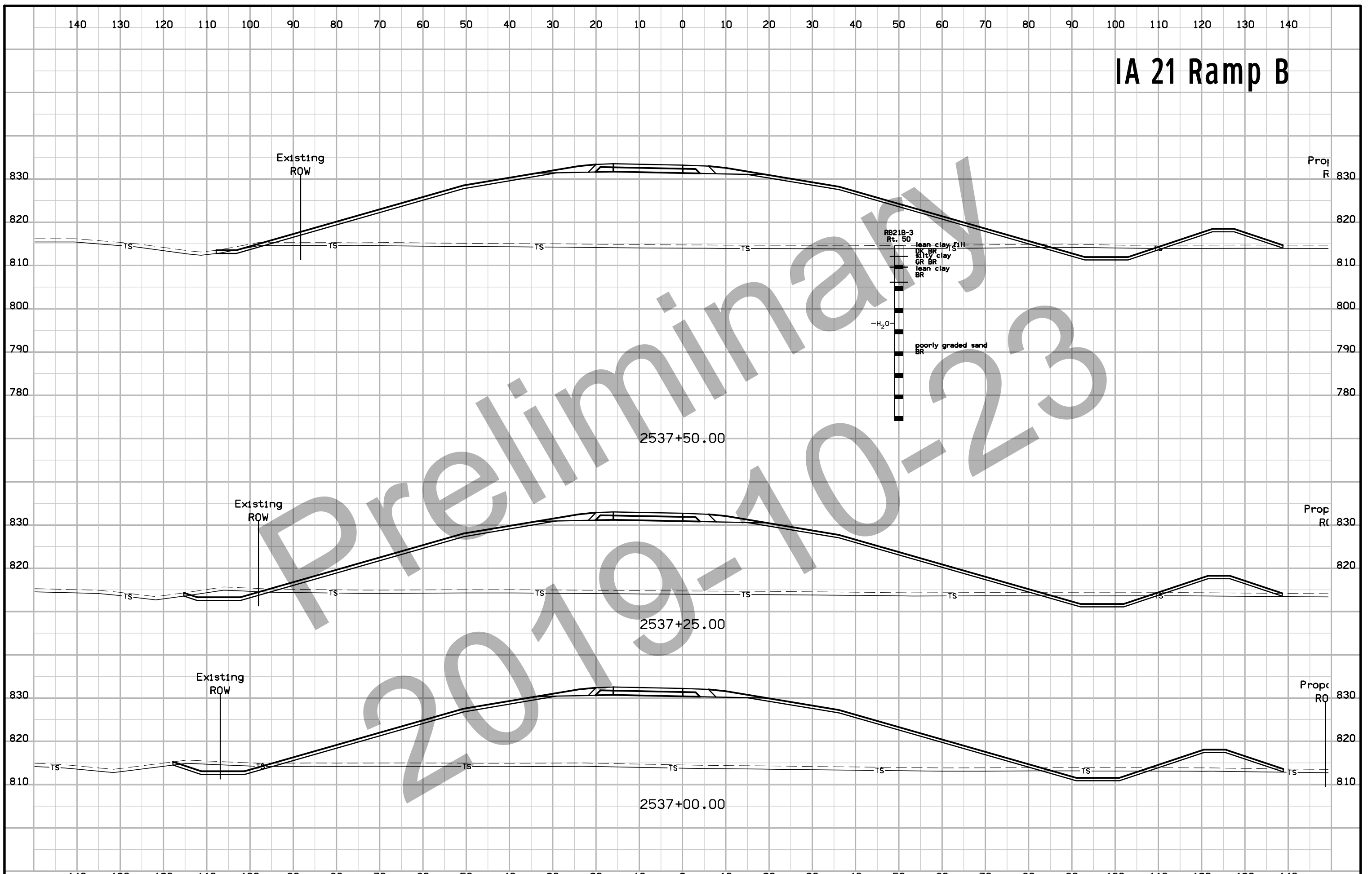
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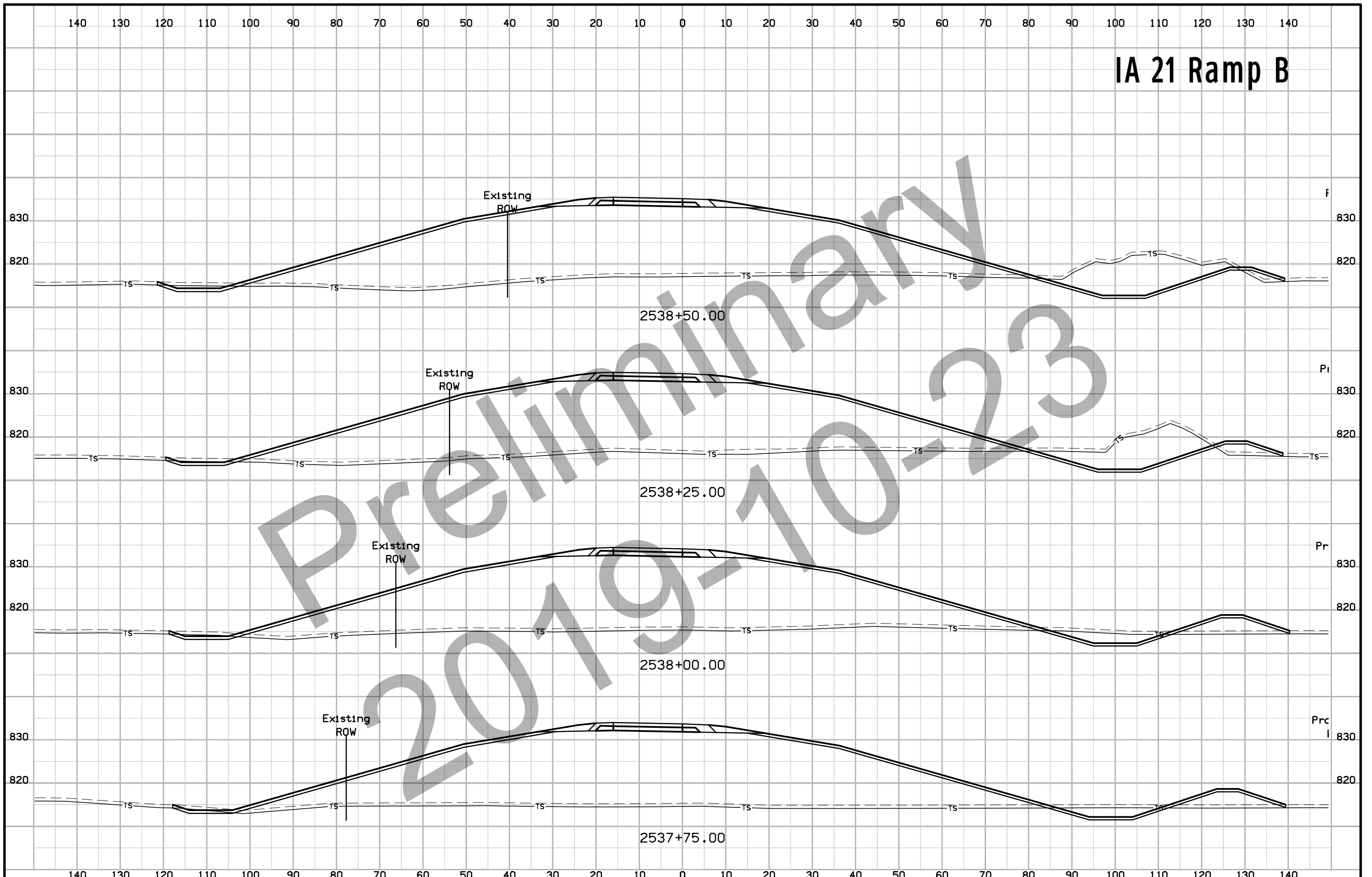
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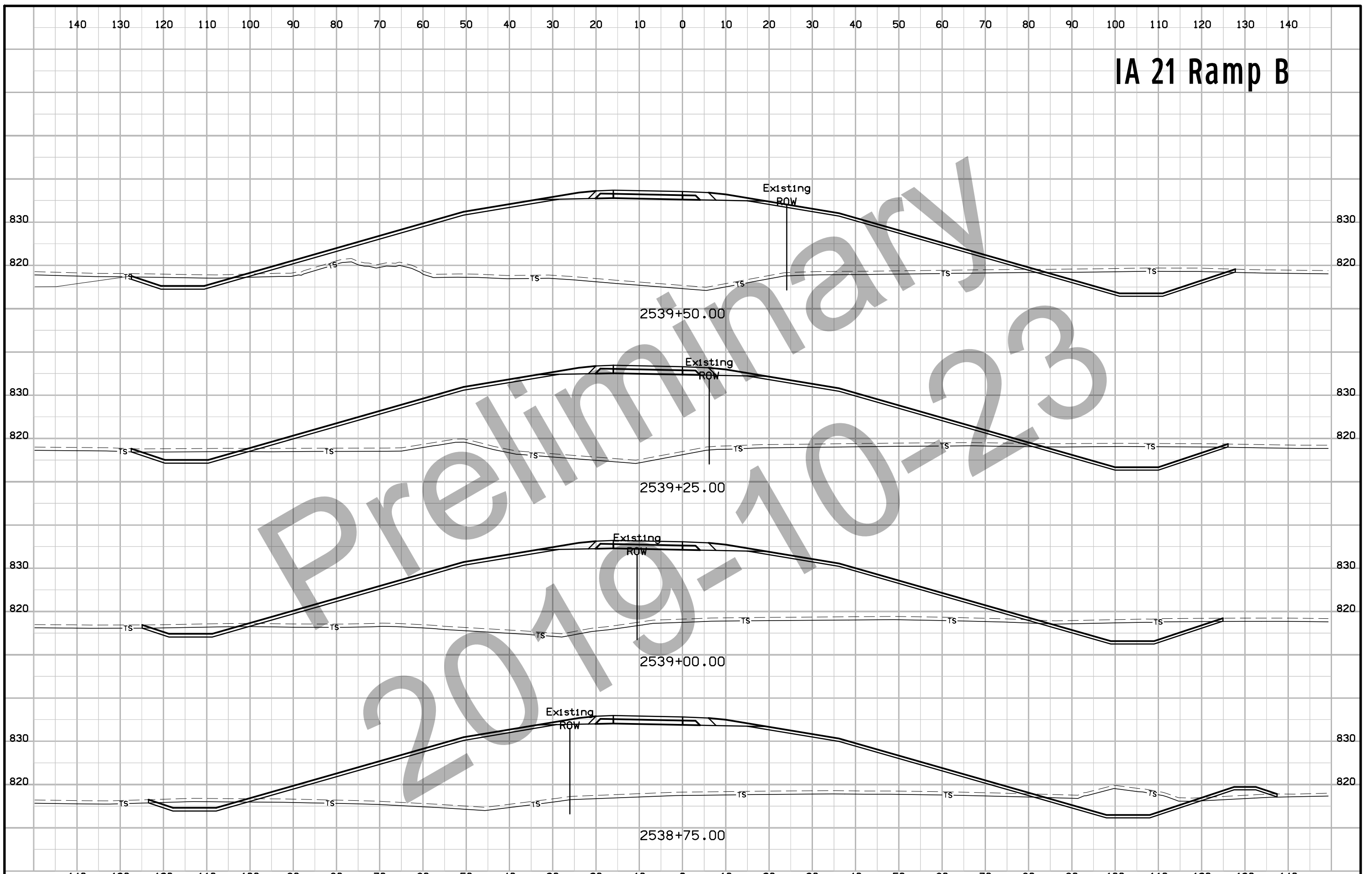
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# IA 21 Ramp B

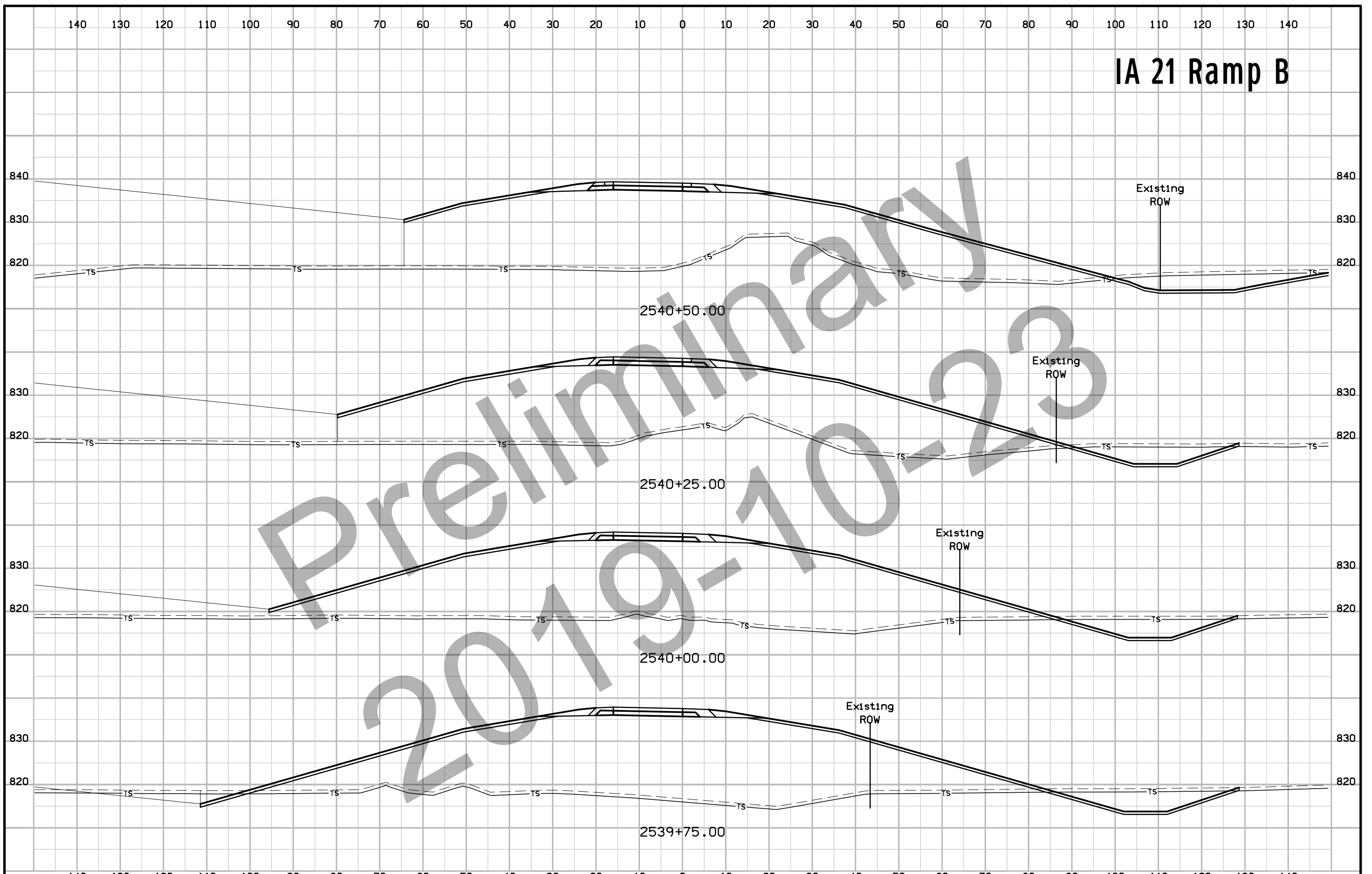


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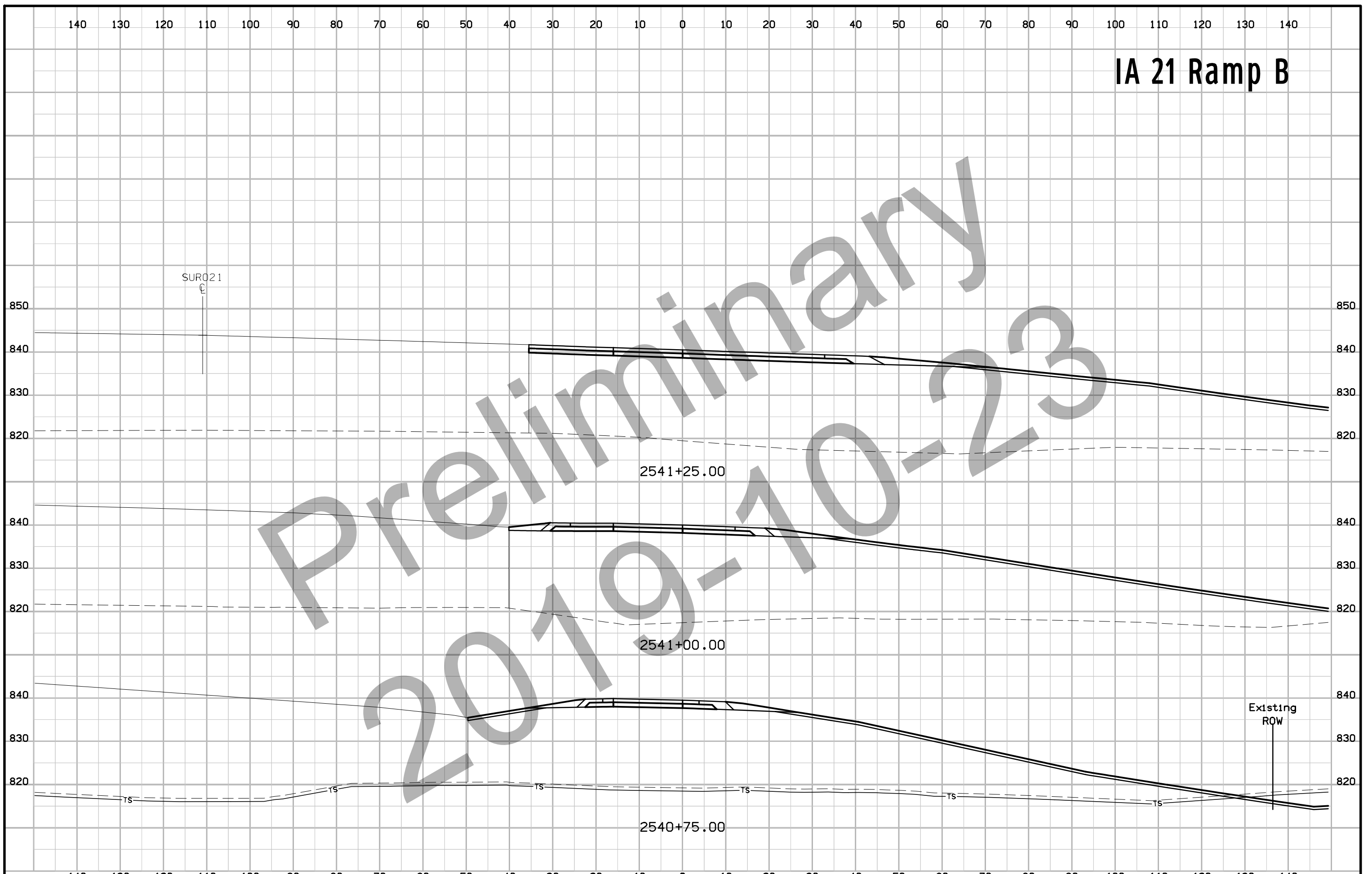


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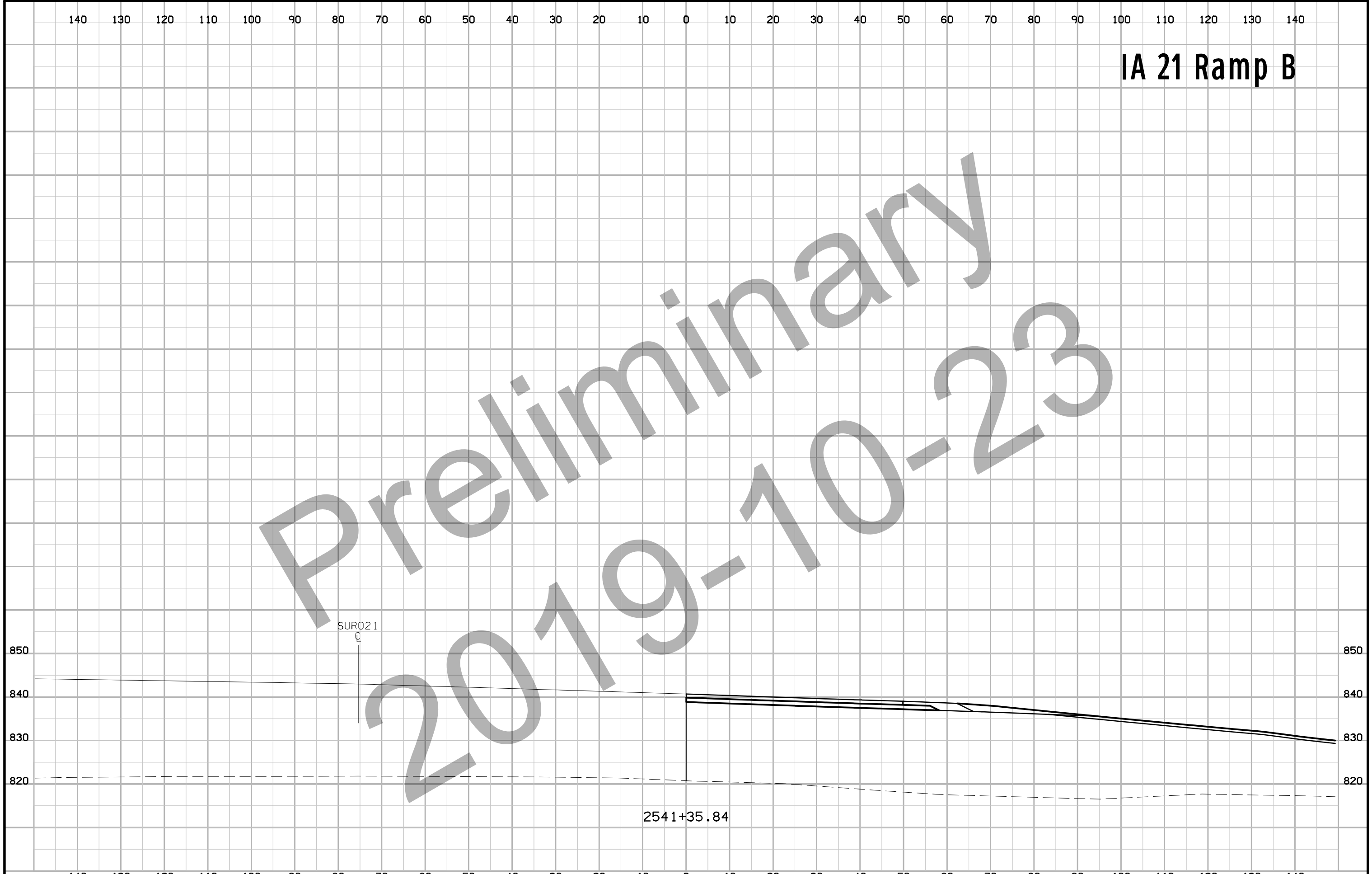


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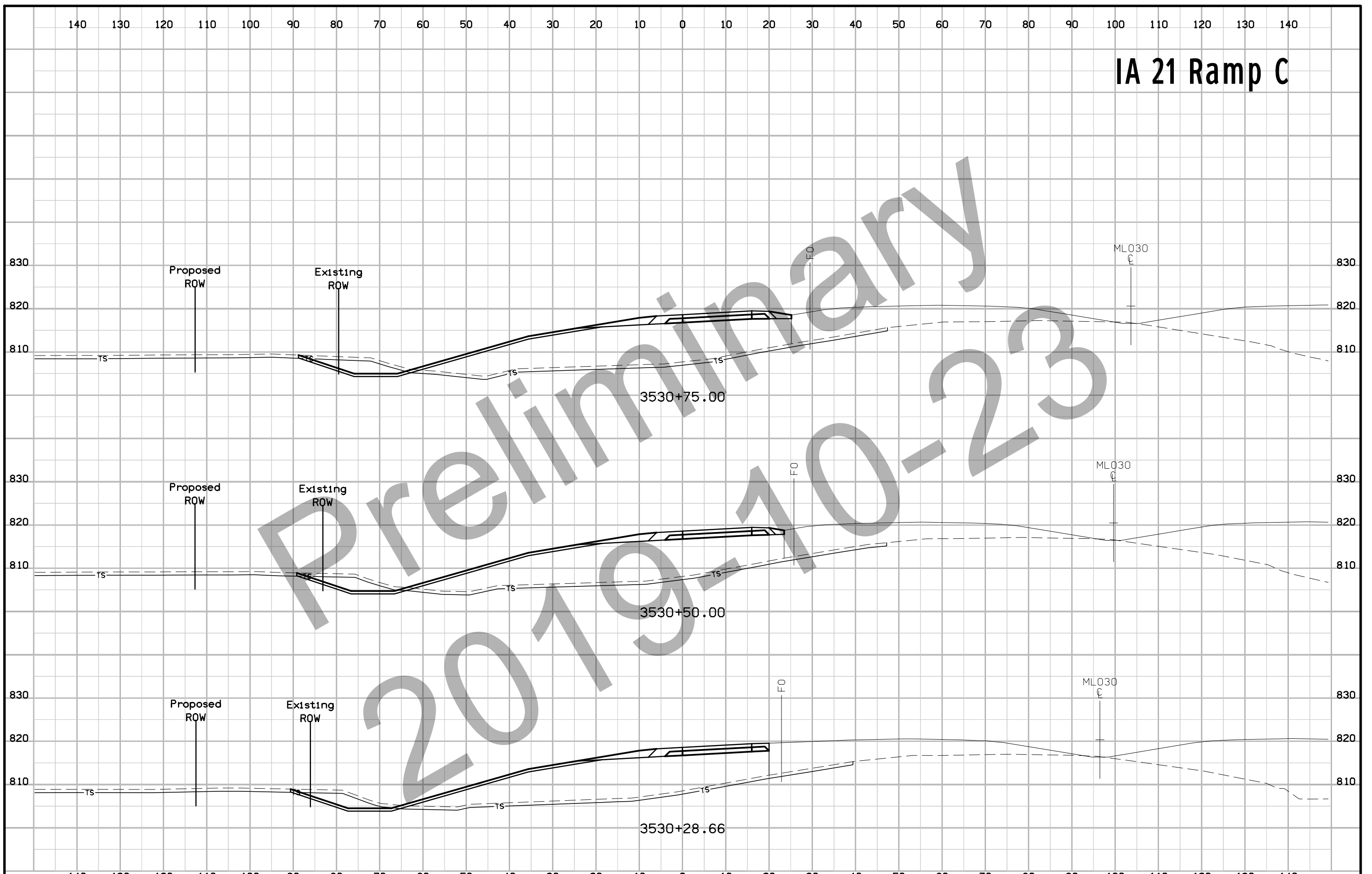
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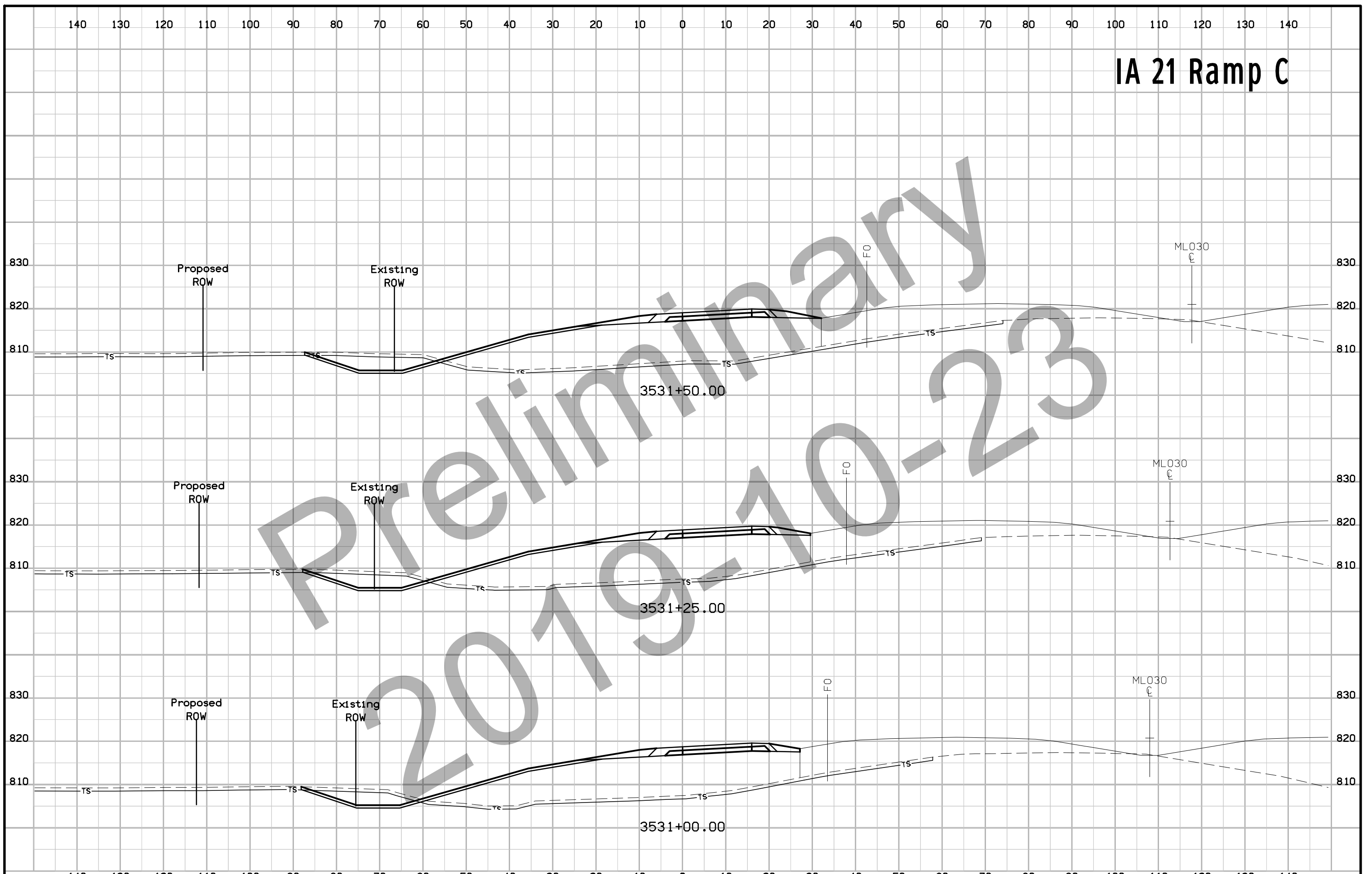




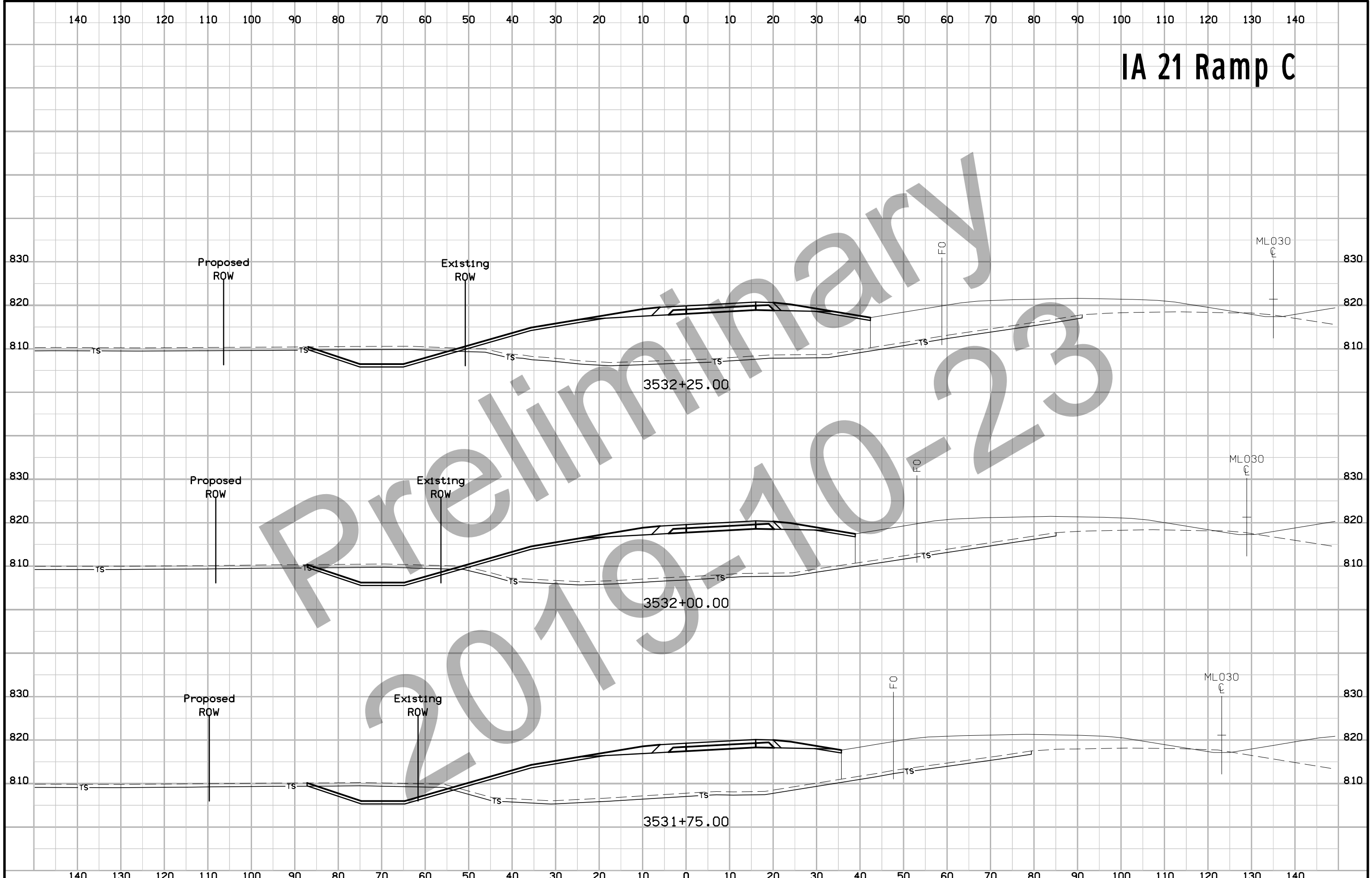
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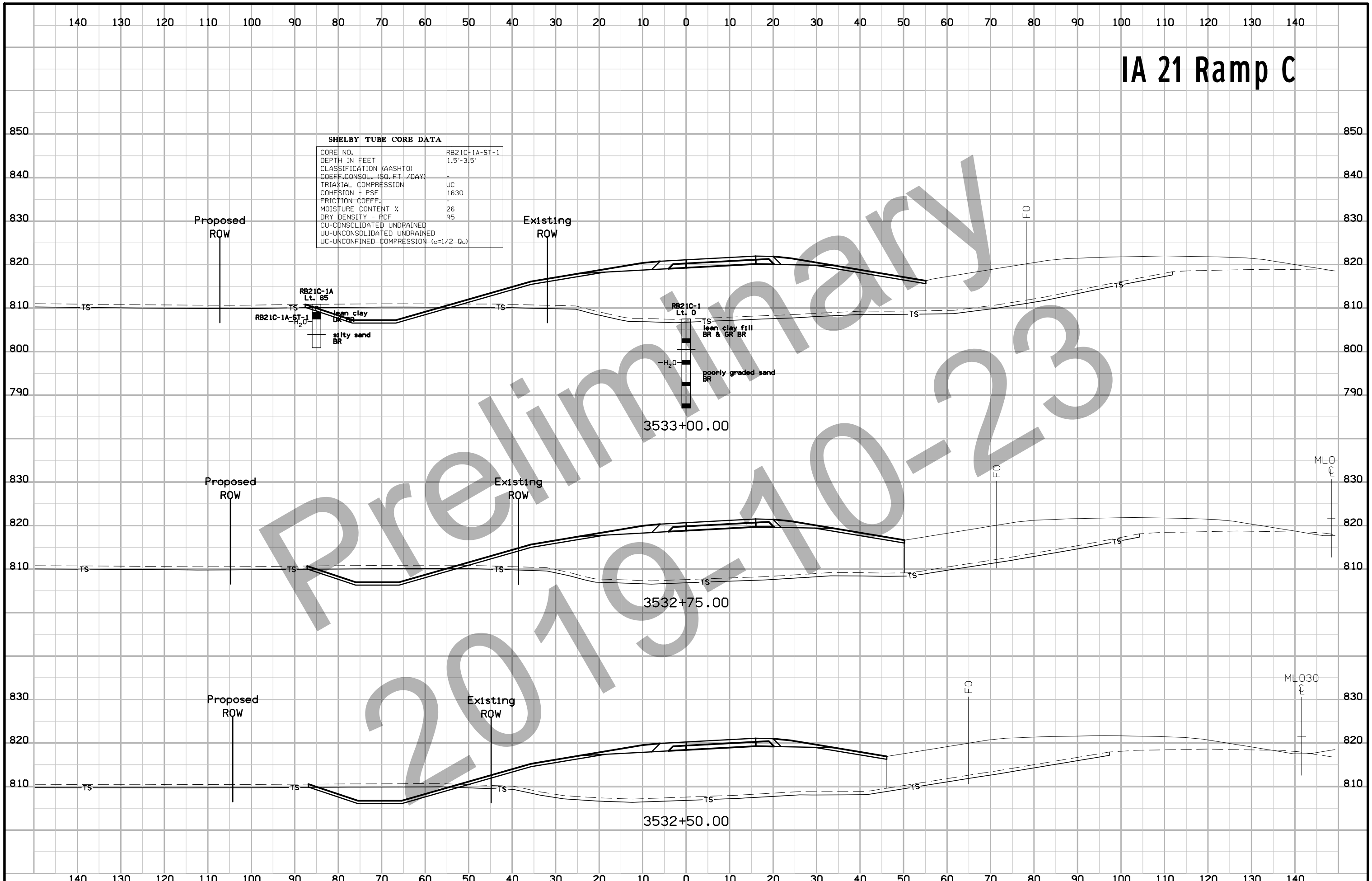
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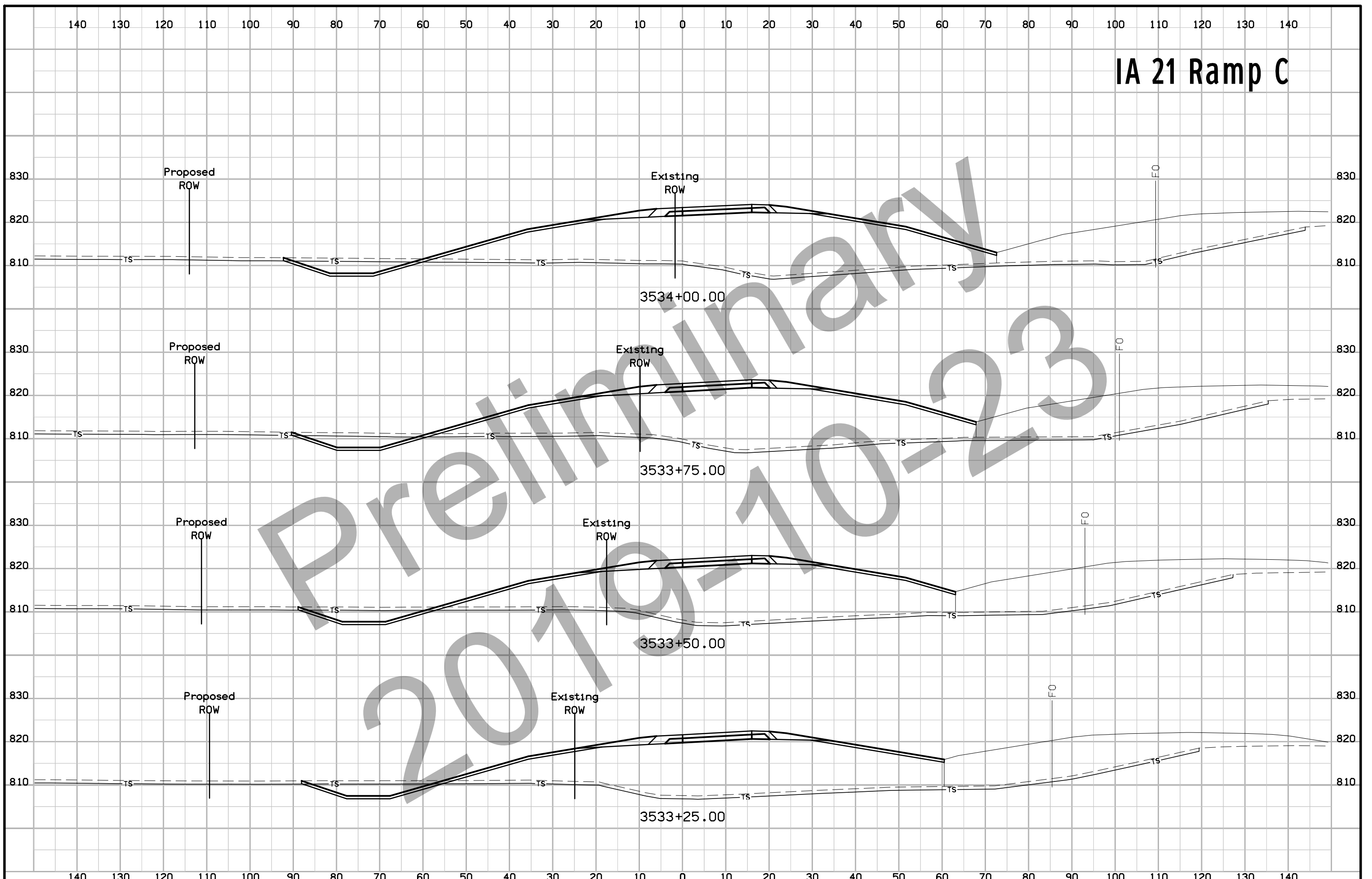
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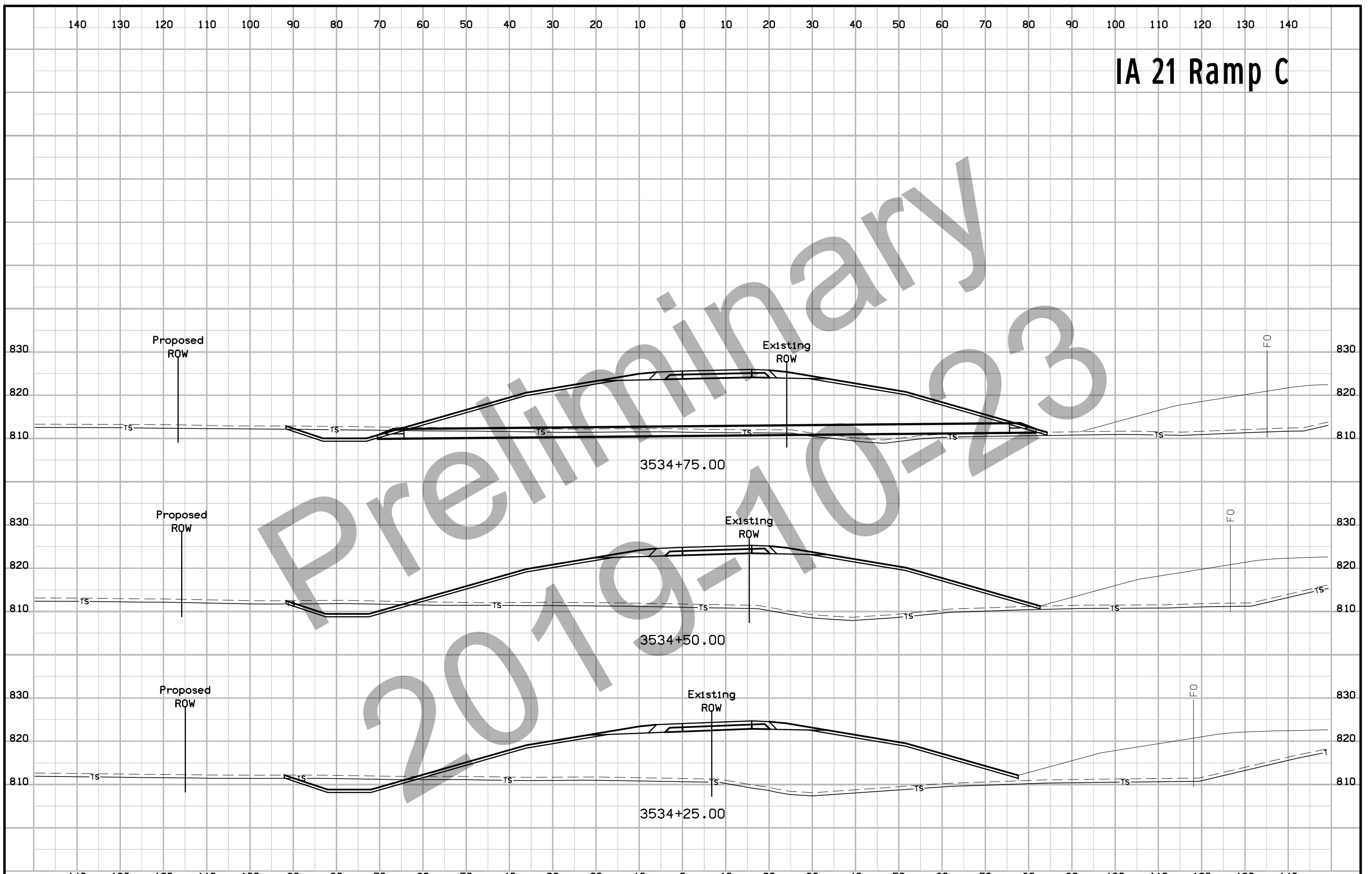
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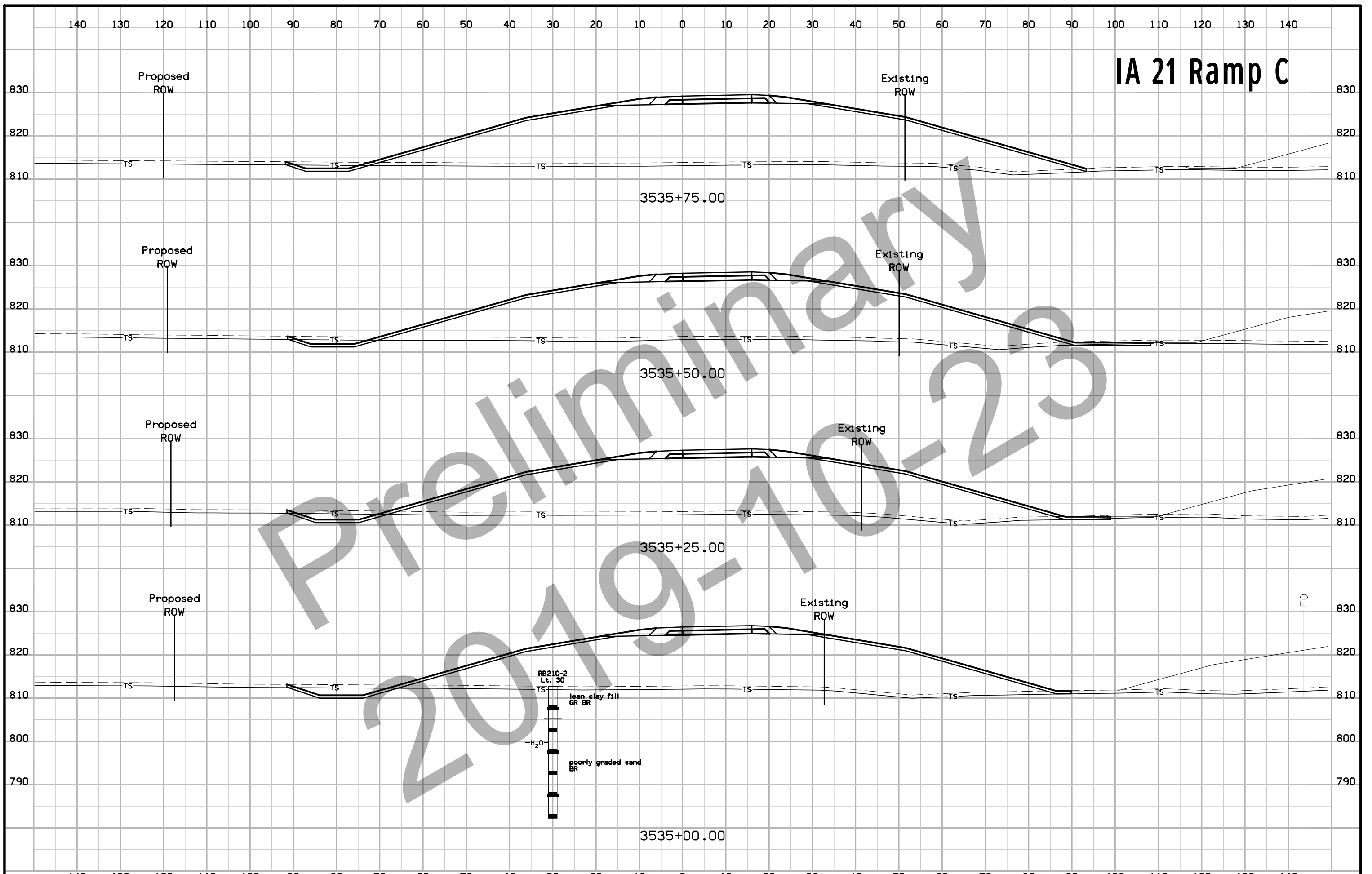
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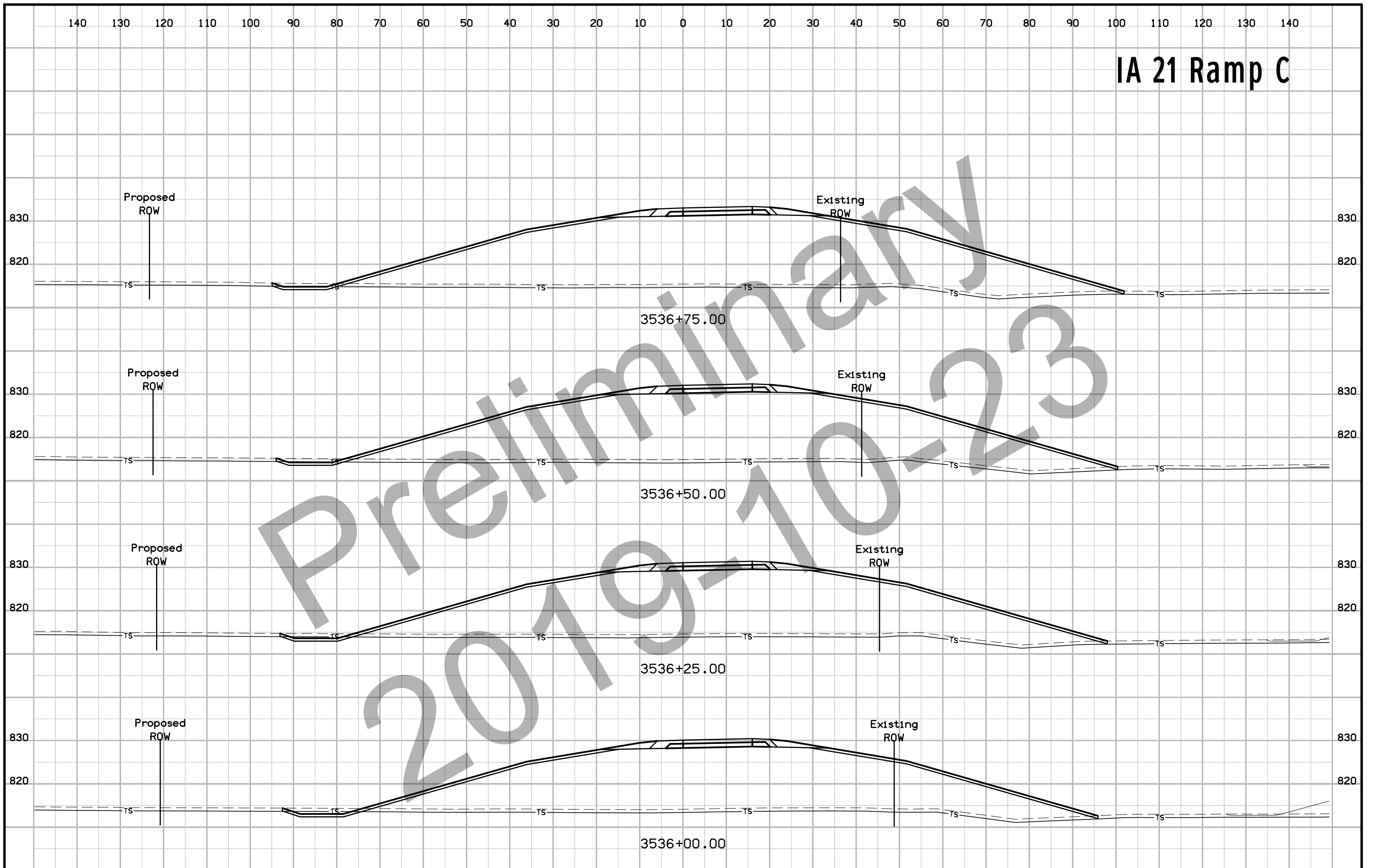
# IA 21 Ramp C



# IA 21 Ramp C

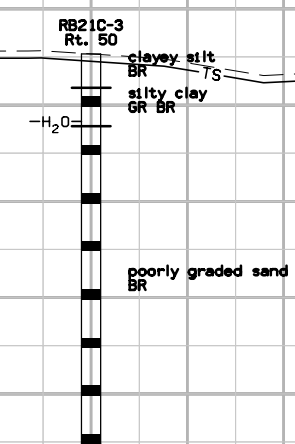
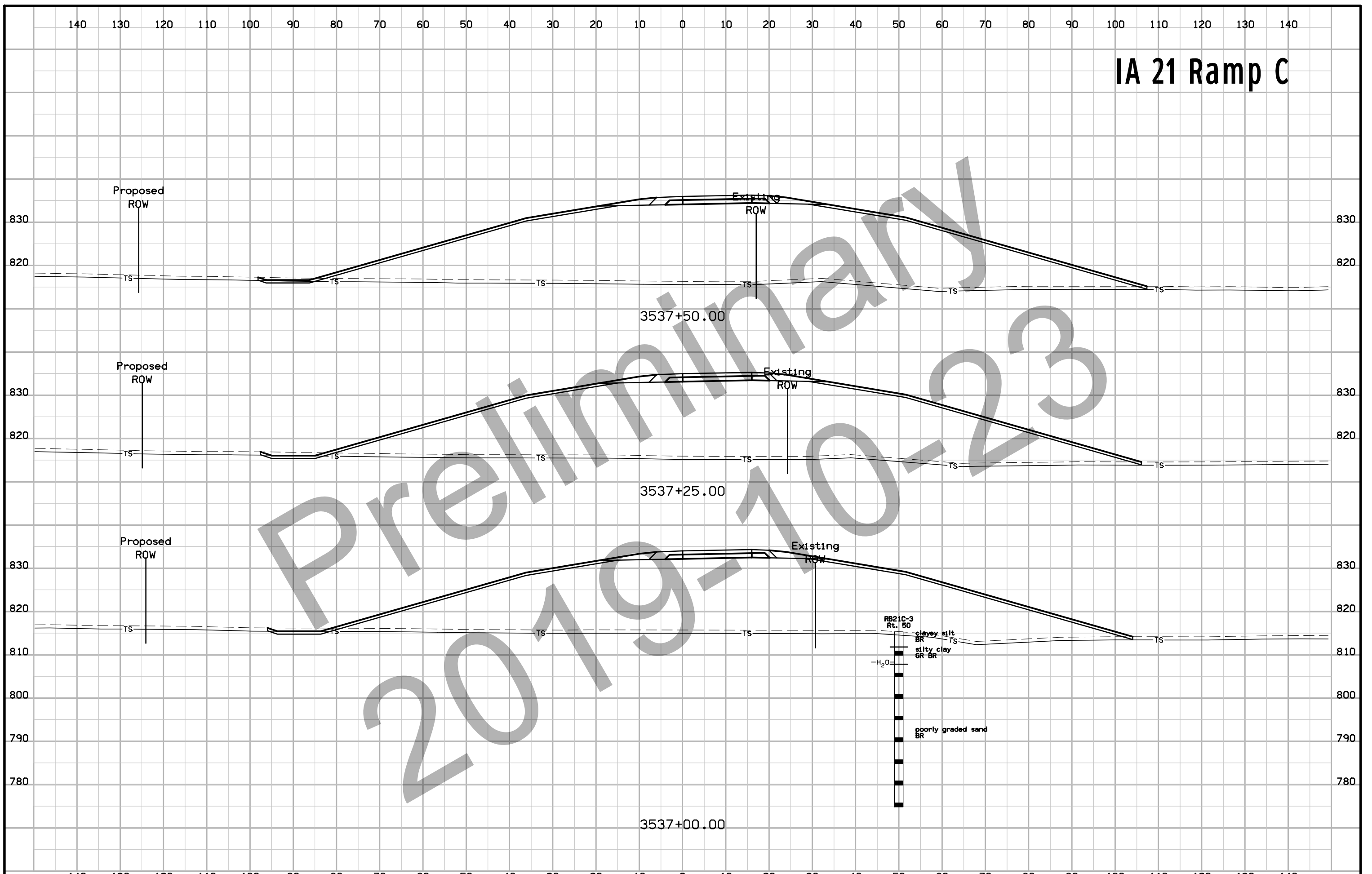


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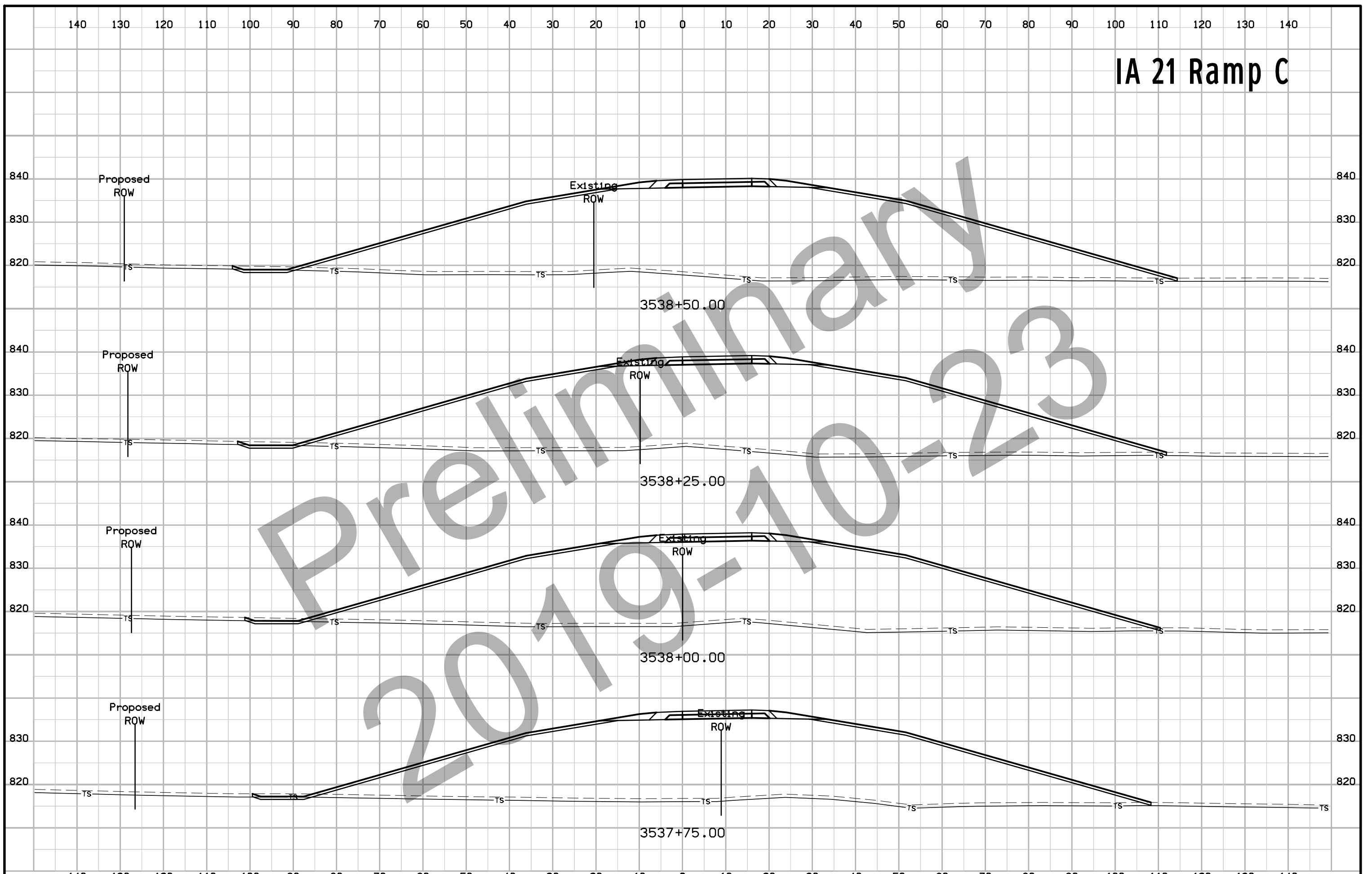




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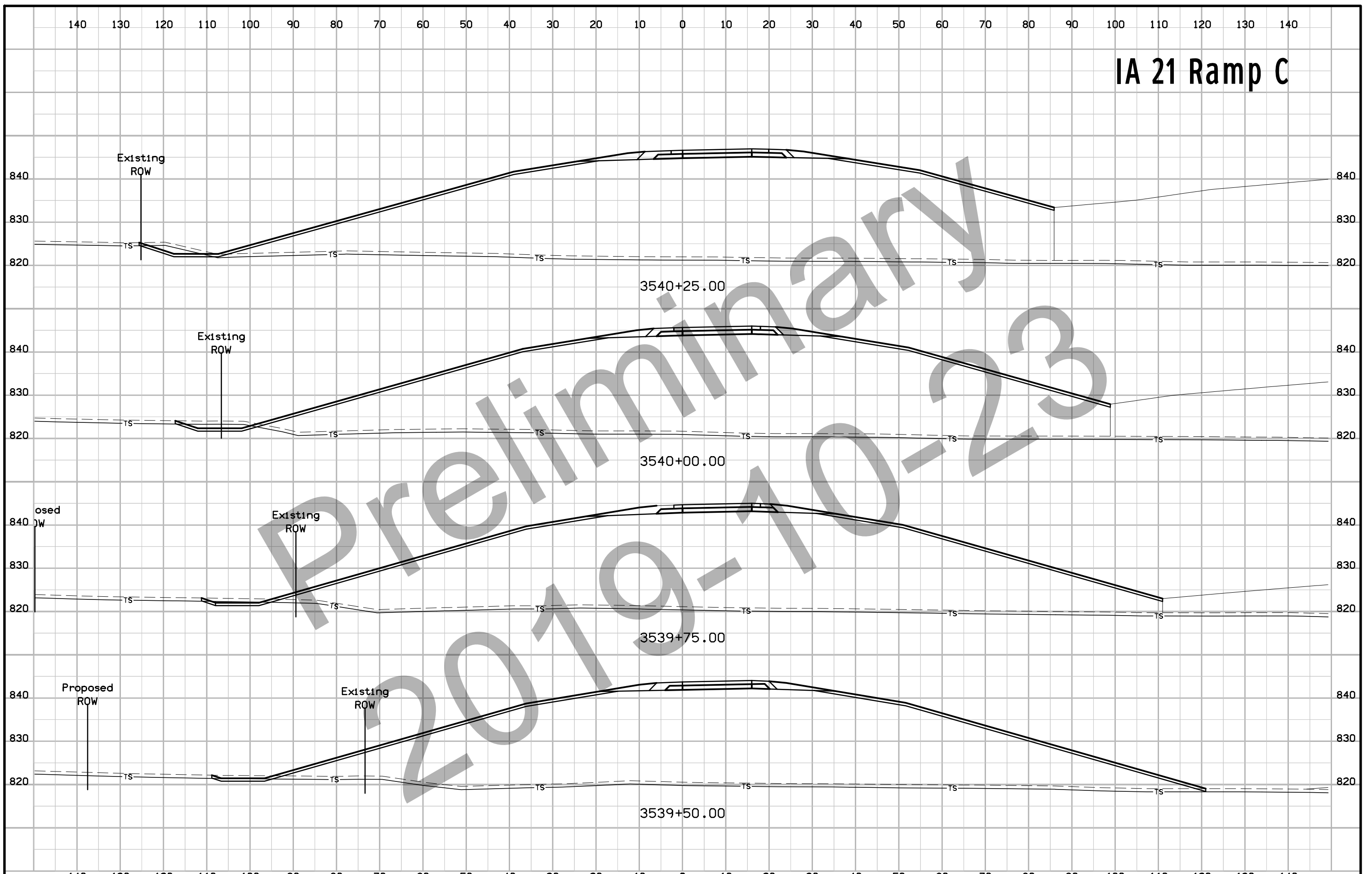
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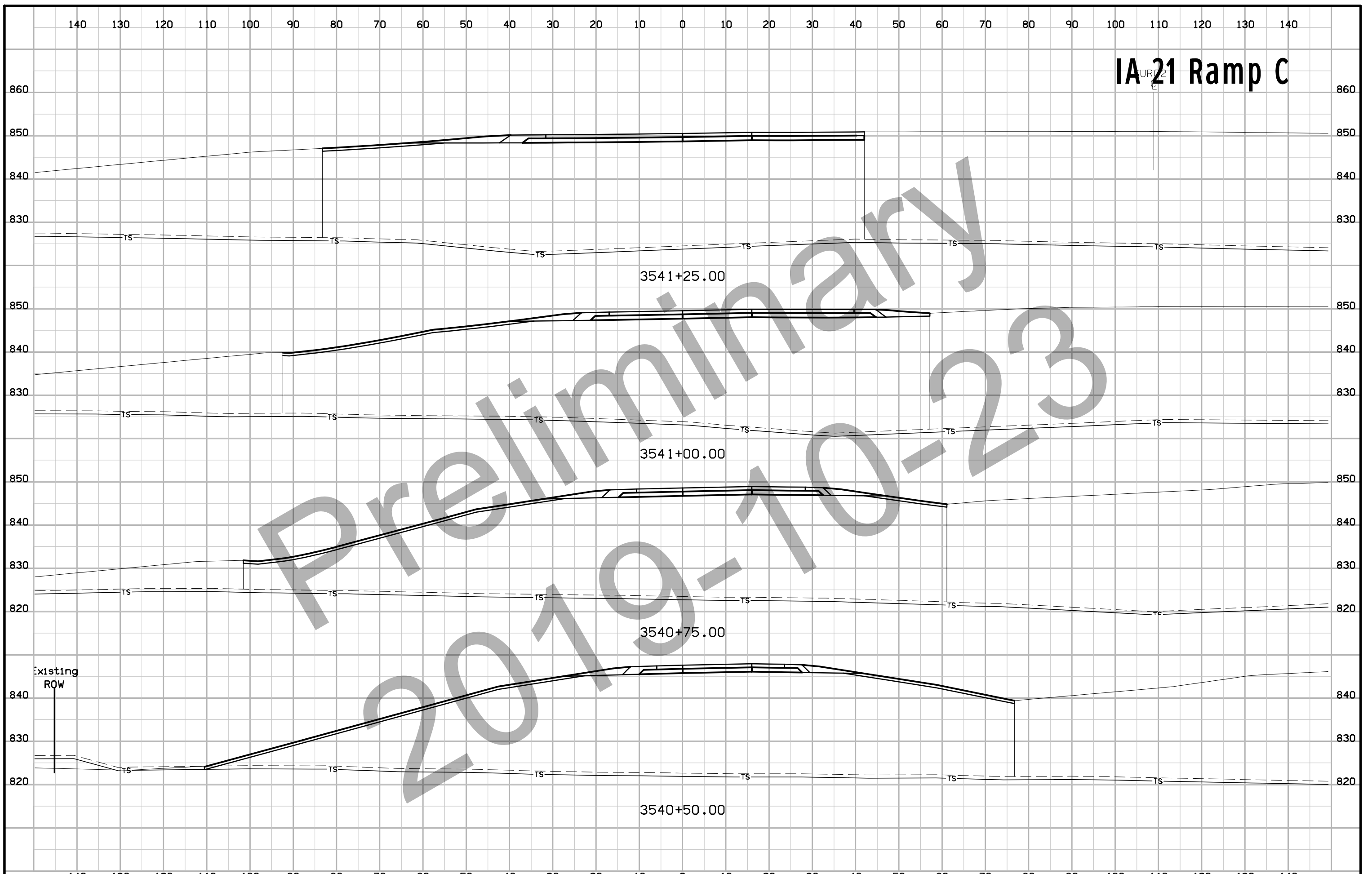
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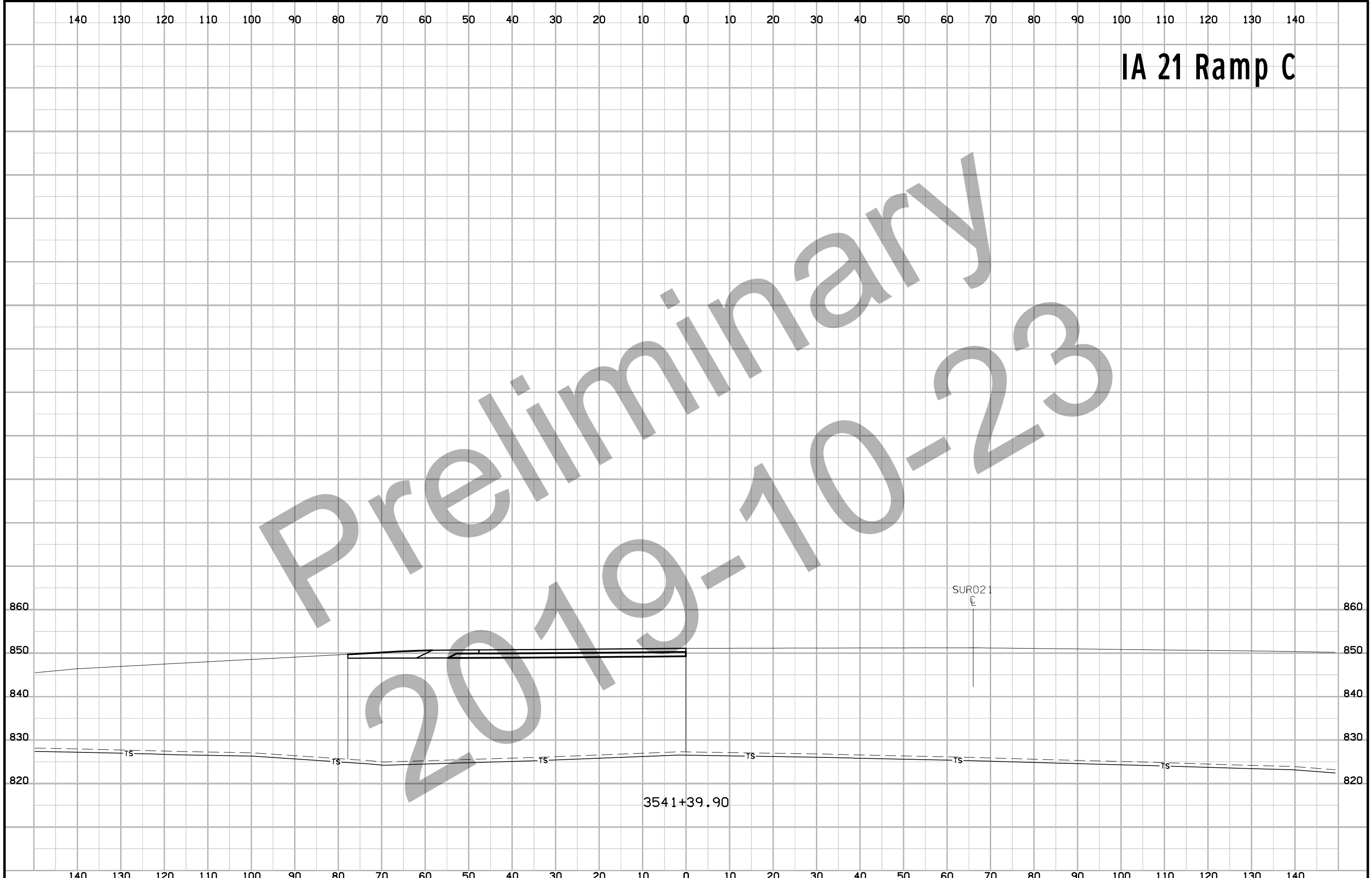
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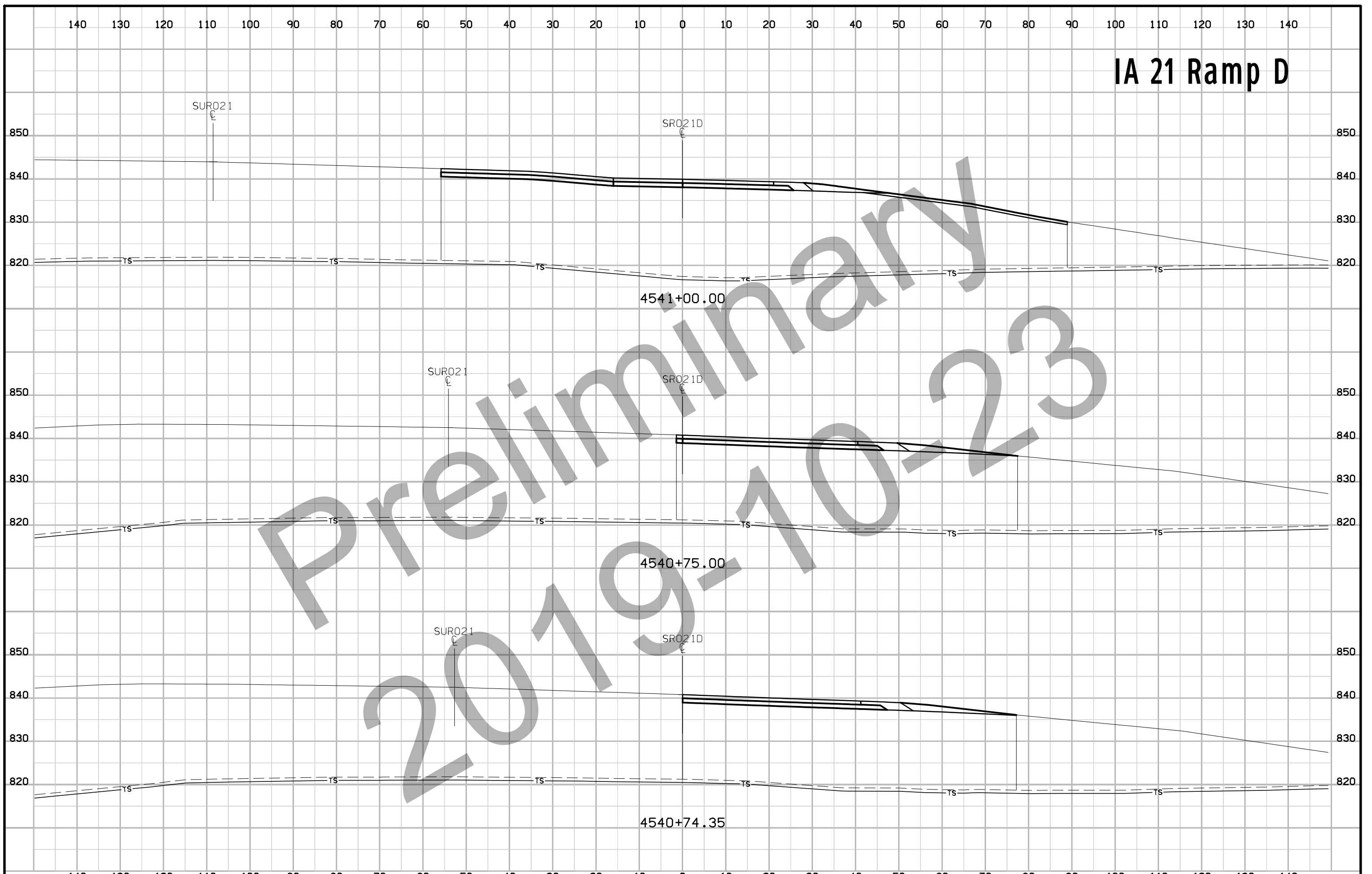
2019-10-23  
Preliminary

# IA 21 Ramp C

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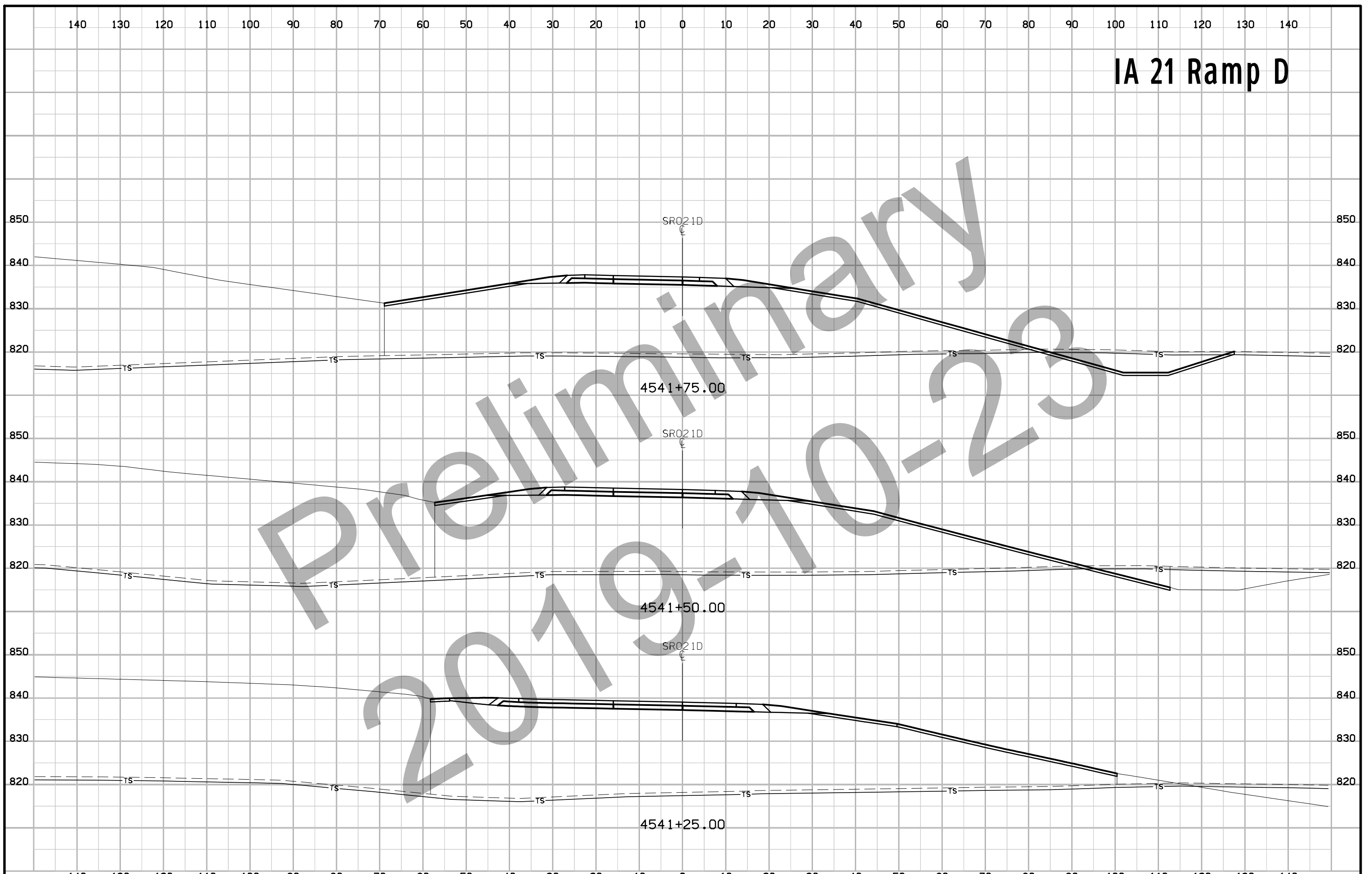


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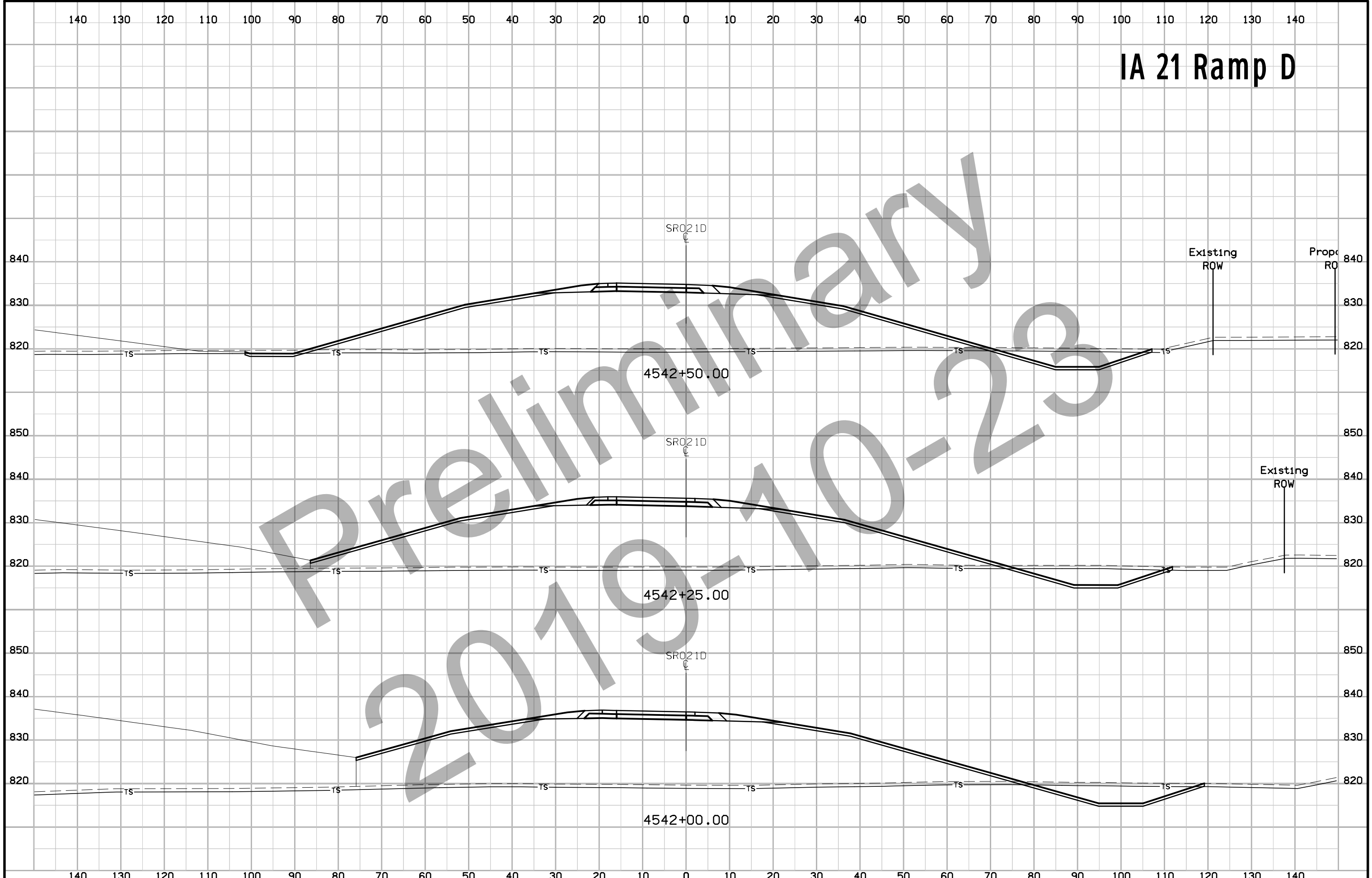
Preliminary  
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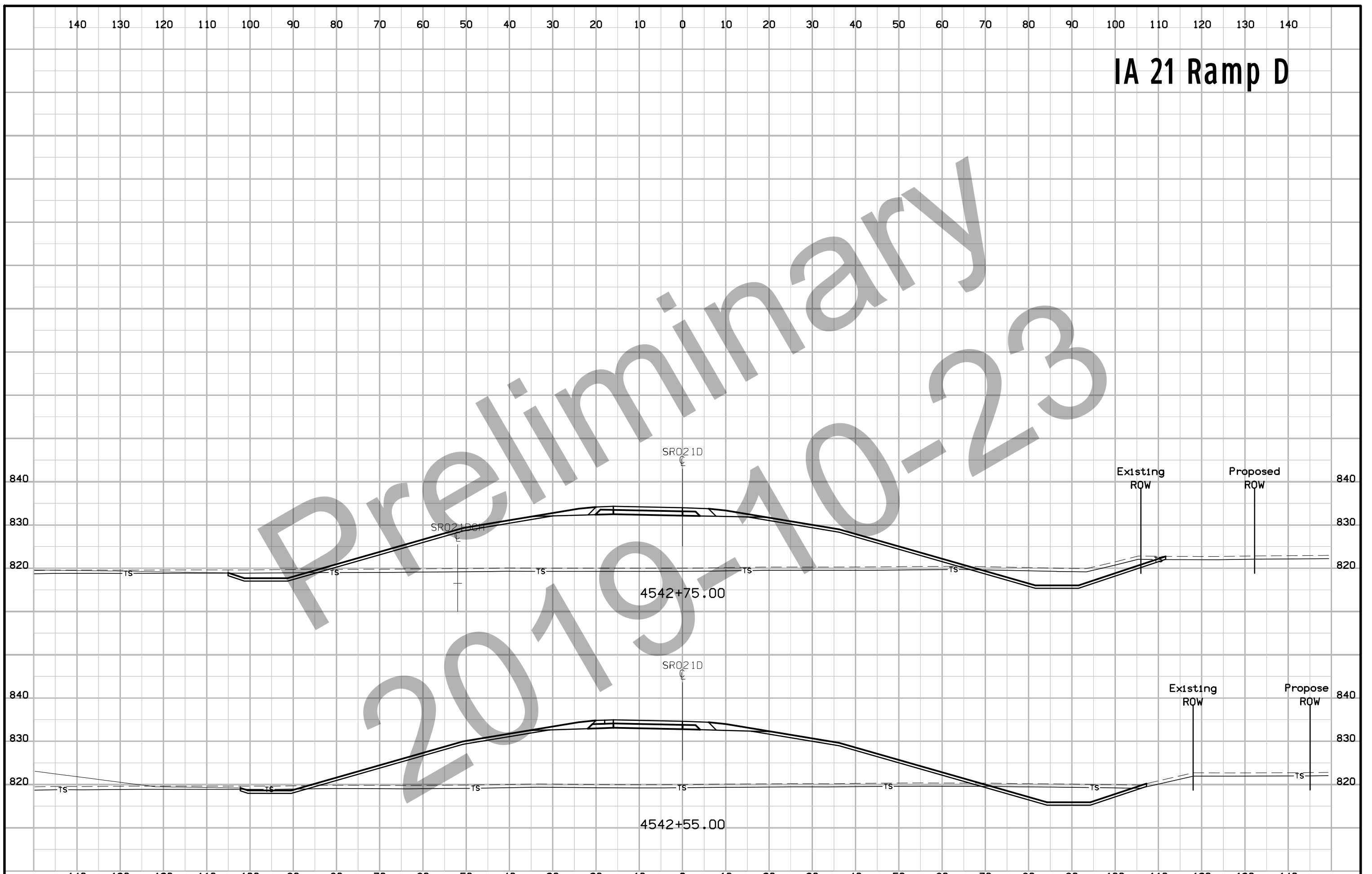




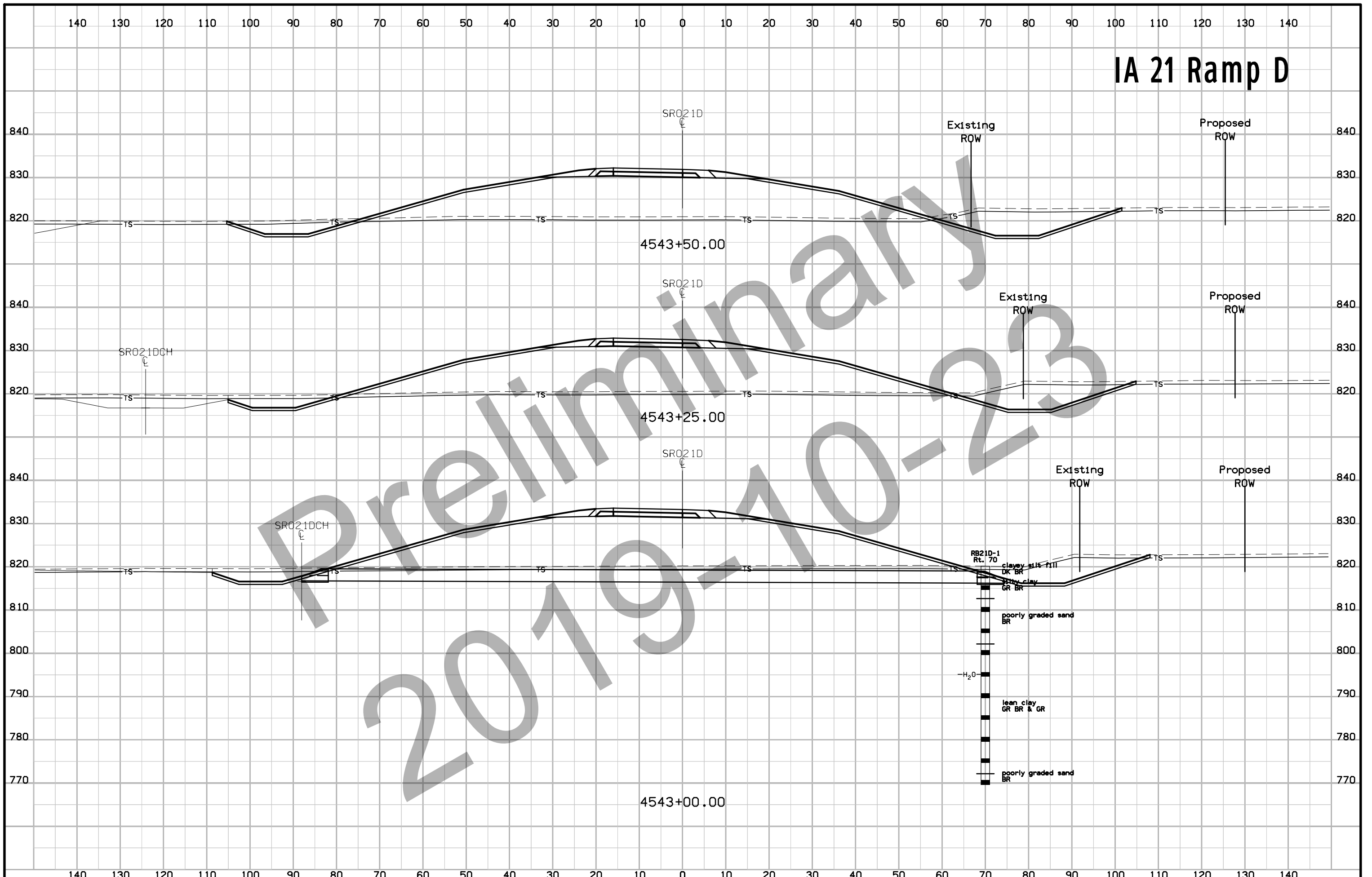
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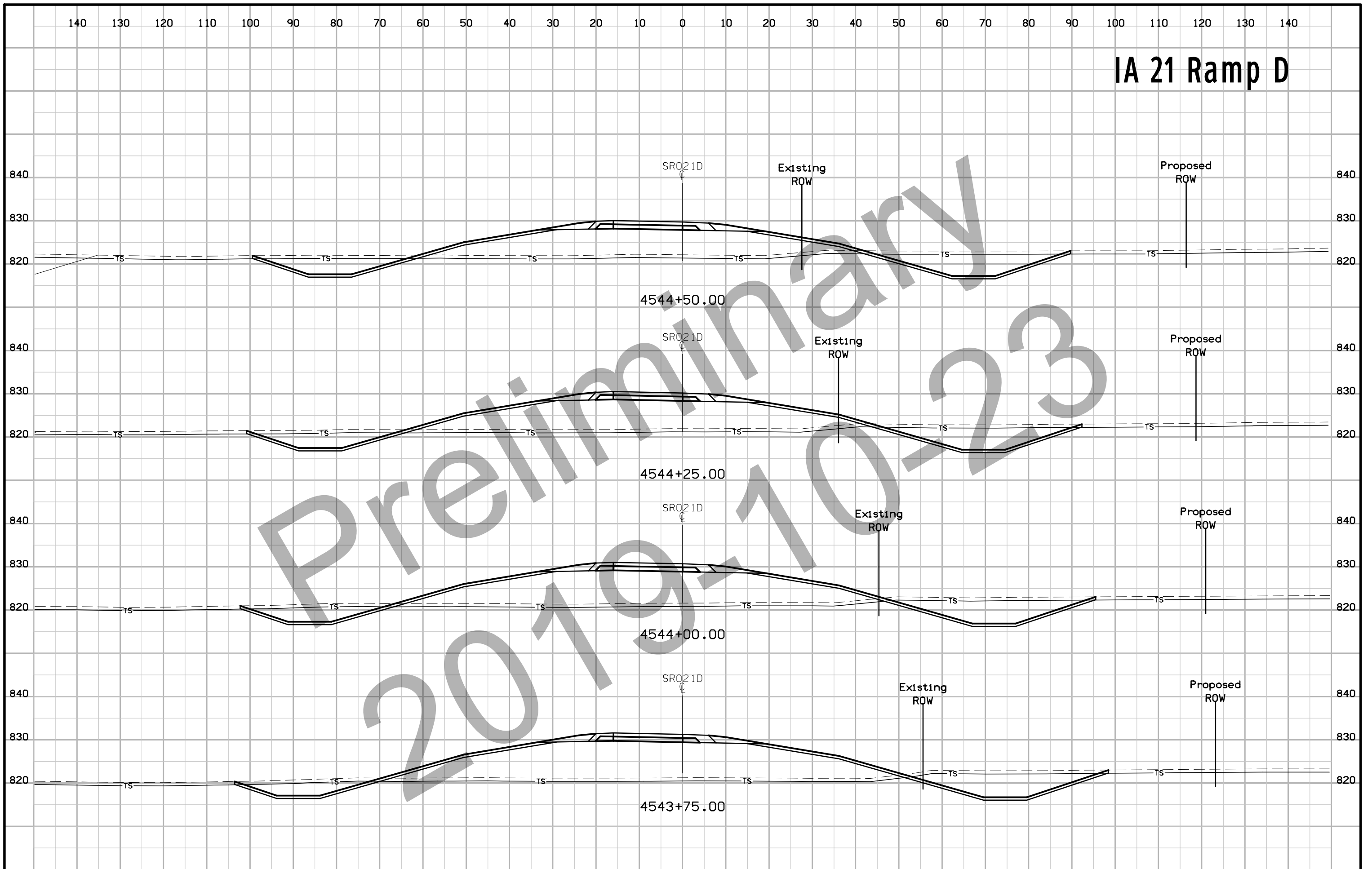
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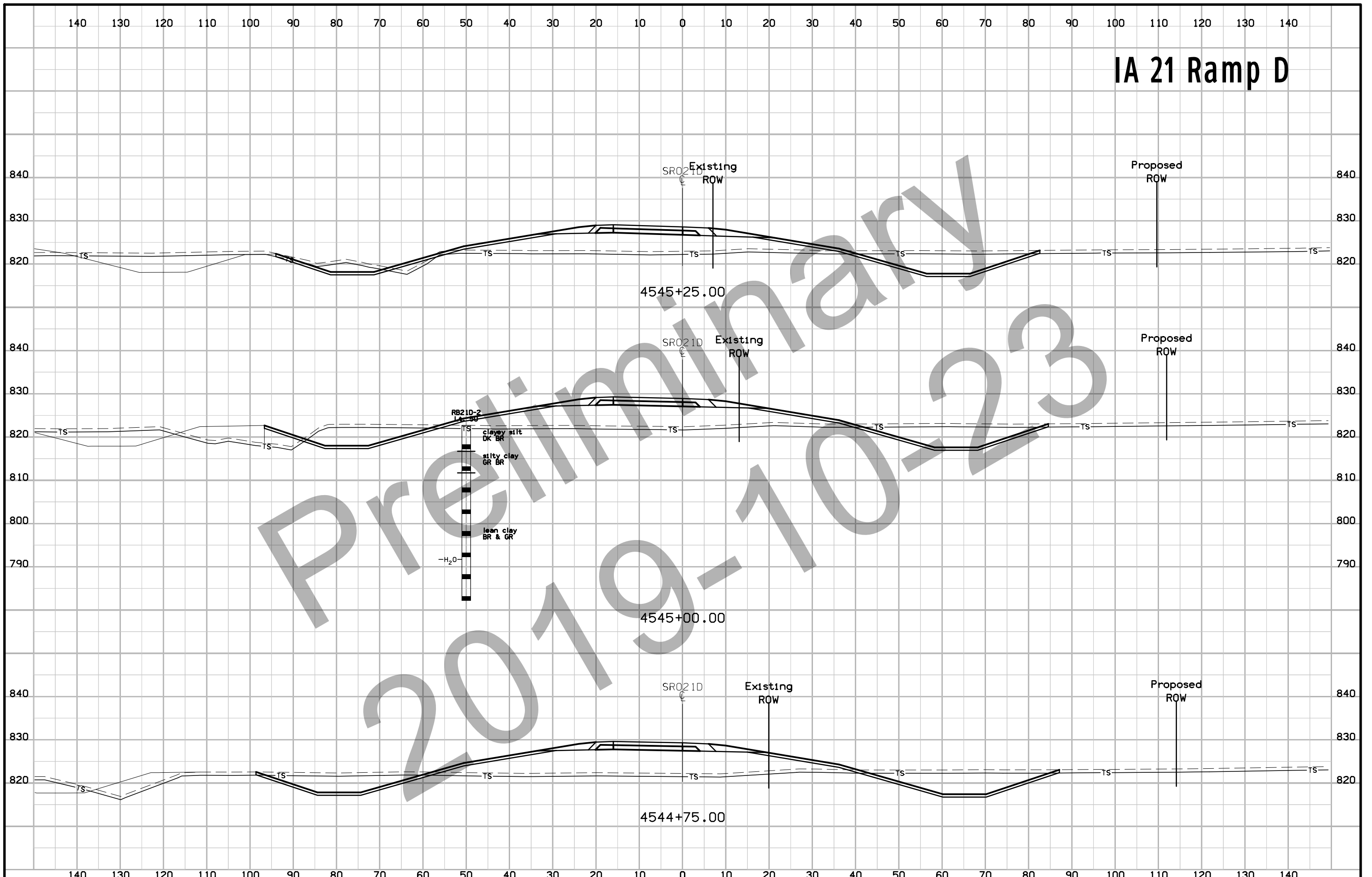
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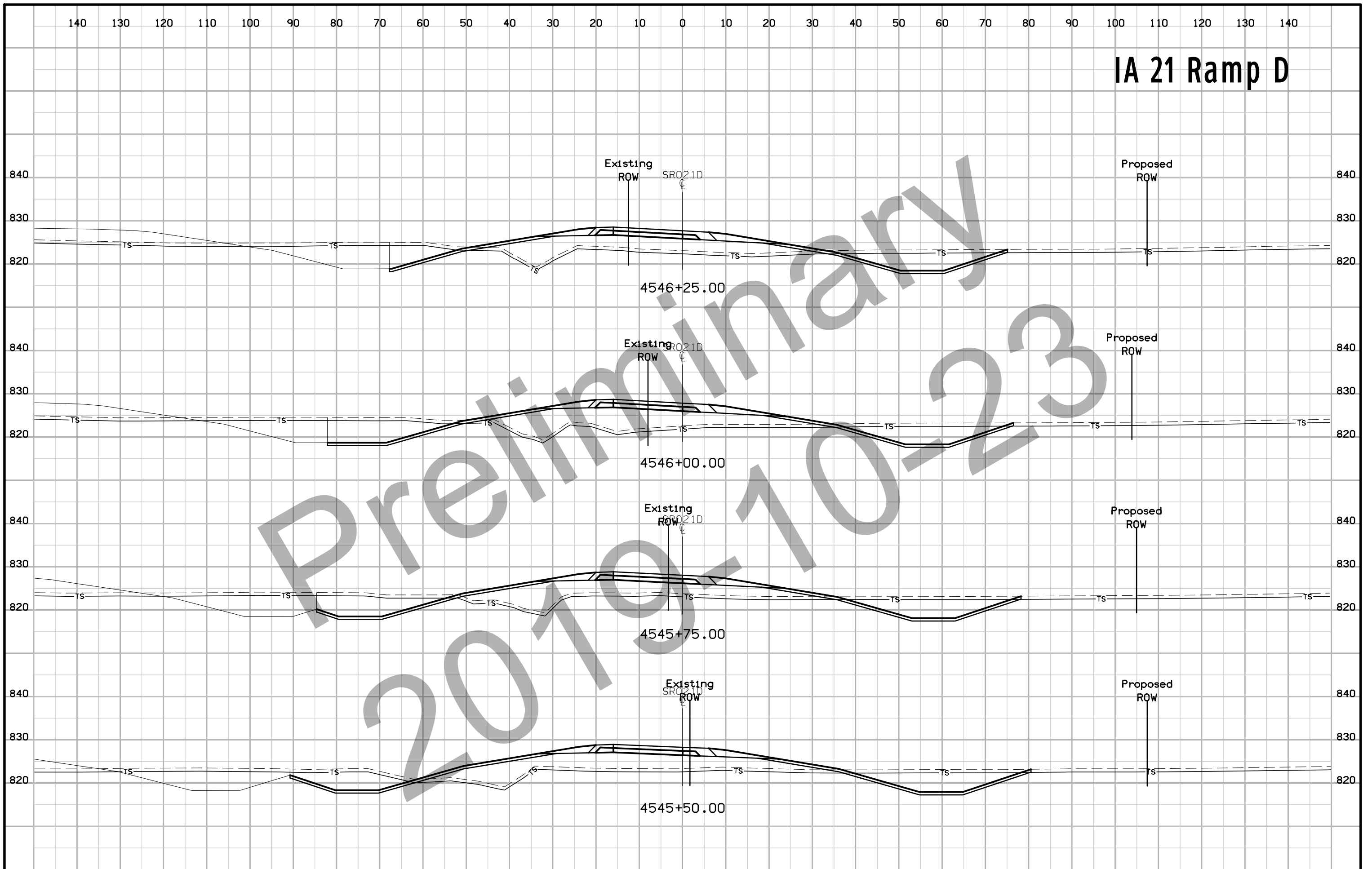
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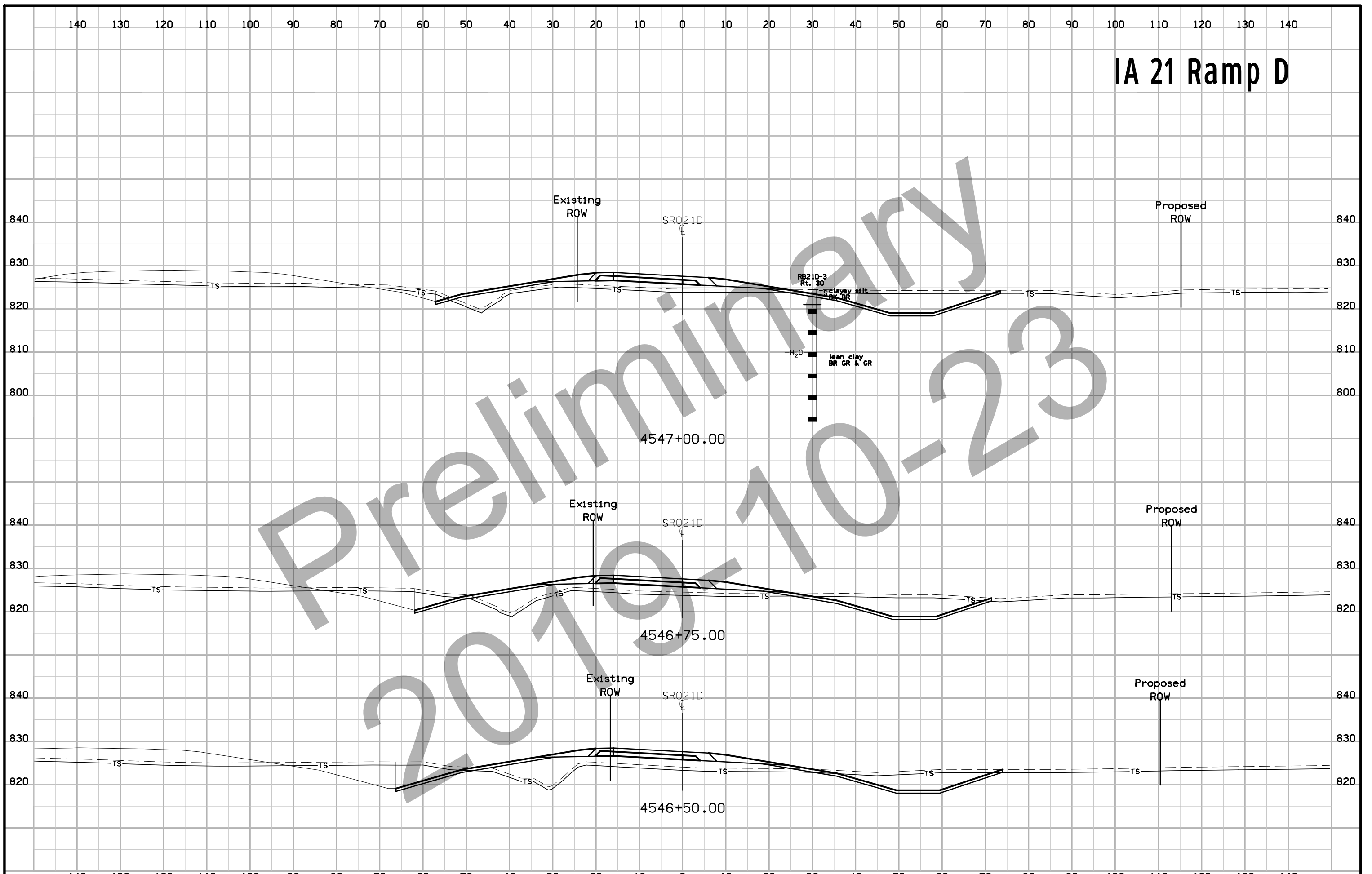
# IA 21 Ramp D



# IA 21 Ramp D

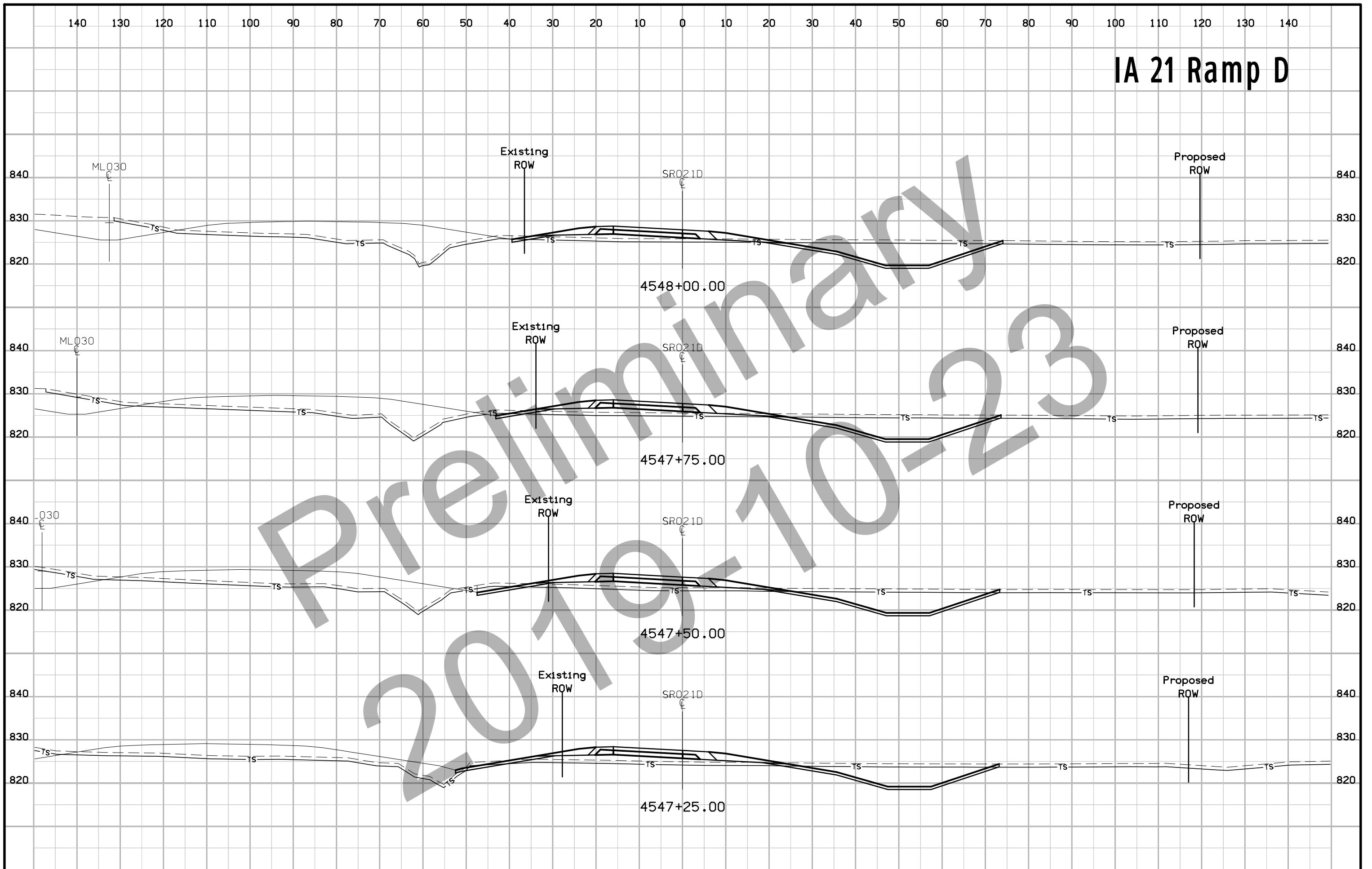


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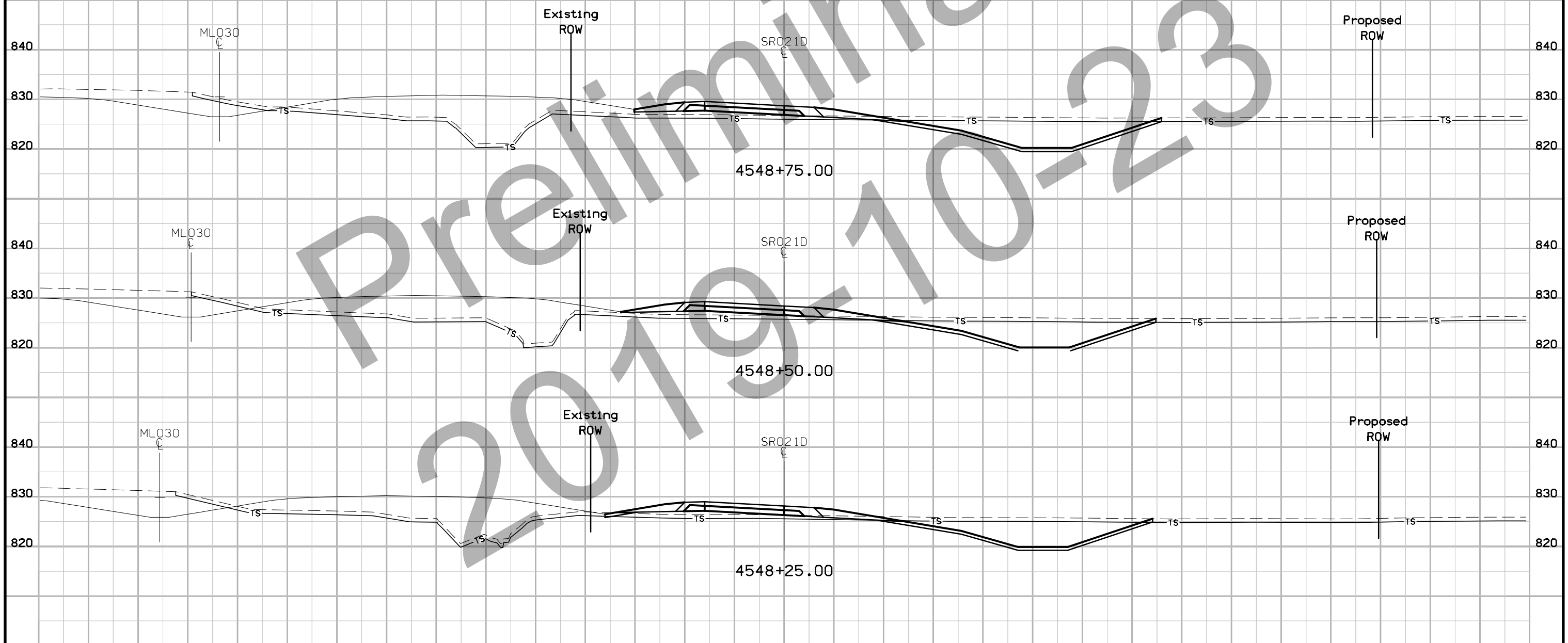
# IA 21 Ramp D





140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

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