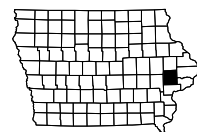


LETTING DATE
 10-18-2022
 UNKNOWN PAVEMENT - GRADE AND NEW
 IM-NHS-080-8(341)269--03-16

CEDAR CO.



INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
* A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 7	Typical Cross Sections
B.8 - 9	Design Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 4	I-80 Westbound
* D.5 - 7	I-80 Eastbound
F Sheets	Detour or Temporary Pavement Sheets
* F.1	Detour Plan and Profile Sheets
G Sheets	Survey Sheets
G.1	Survey Information
G.2	Control Point Vicinity Map
G.3	Horizontal Control Tab.
G.4 - 5	Alignment Information and Superelevation Data
J Sheets	Traffic Control and Staging Sheets
J.1 - 2	Staging Notes
* J.3	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.4 - 7	Staging and Traffic Control Typical Section Sheets
* J.8 - 15	Staging and Traffic Control Plan Sheets, Stage 1
* J.16 - 23	Staging and Traffic Control Plan Sheets, Stage 2
* J.24 - 31	Staging and Traffic Control Plan Sheets, Stage 3
* J.32 - 39	Staging and Traffic Control Plan Sheets, Stage 4
K Sheets	Interchange Sheets
* K.1	Rest Area Interchange Layout
* K.2	Rest Area Ramp B
* K.3	Rest Area Ramp C
M Sheets	Storm Sewer Sheets
M.1	Storm Sewer Tabulation Sheet
* M.2	Storm Sewer Legend & Symbol Information Sheet
* M.3 - 6	Storm Sewer Plan & Profile Sheets
T Sheets	Earthwork Quantity Sheets
* T.1A - T.1D	Earthwork Template Legend
T.2 - 7	Earthwork Quantity Sheets
U Sheets	500 Series, Mod.Stds. and Detail Sheets
* U.1	Rest Area Ramp C - Ramp Taper Detail
V Sheets	Bridge and Culvert Situation Plans
* V.1 - 8	Bridge Situation Plans
* V.9 - 18	Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 49	I-80 Westbound
W.50 - 98	I-80 Eastbound
Y Sheets	Ramp Cross Sections
Y.1 - 4	Rest Area Ramp C
	* Color Plan Sheets



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

CEDAR COUNTY

UNKNOWN PAVEMENT - GRADE AND NEW

0.2 mi E of Co Rd X52 (Pine Ave) to 0.7 mi W of US 6 at Sugar Creek (EB/WB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.



For Project Location Map
Refer to Sheet A.2

DESIGN DATA RURAL			
2020	AADT	41,185	V.P.D.
2040	AADT	75,580	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	37	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1		Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 04-03-20

REVISIONS

TOTAL

203

PROJECT IDENTIFICATION NUMBER

14-16-080-020-01

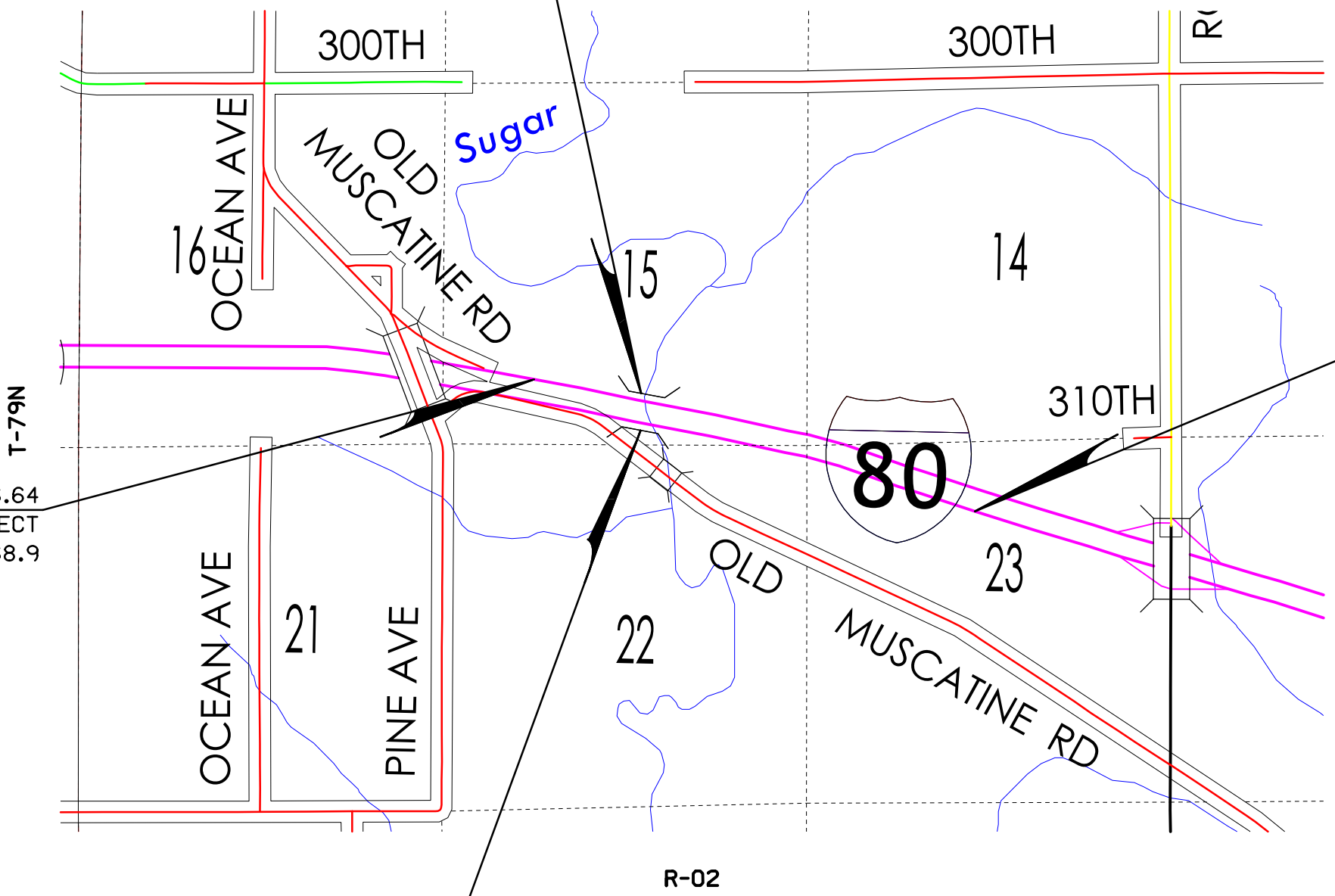
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IM-NHS-080-8(341)269--03-16

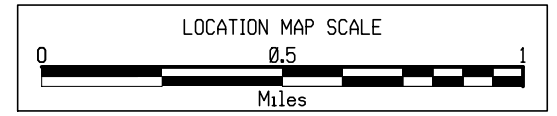
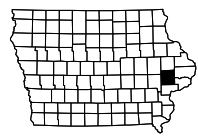
R.O.W. PROJECT NUMBER

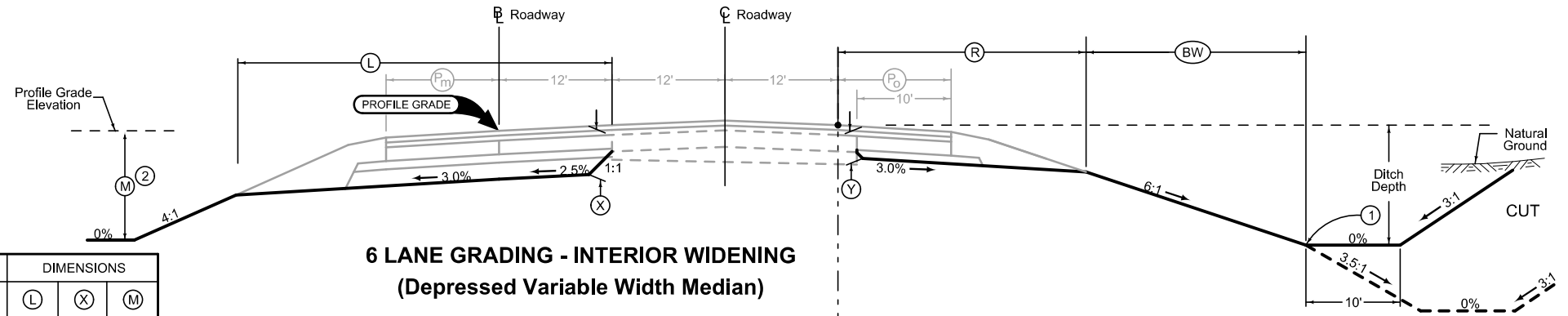
IMN-080-8(340)270--0E-16

I-80 WB BRIDGE OVER SUGAR CREEK
 FHWA BRIDGE No.: 18661
 BRIDGE DESIGN No.: 222



I-80 EB BRIDGE OVER SUGAR CREEK
 FHWA BRIDGE No.: 18651
 BRIDGE DESIGN No.: 322



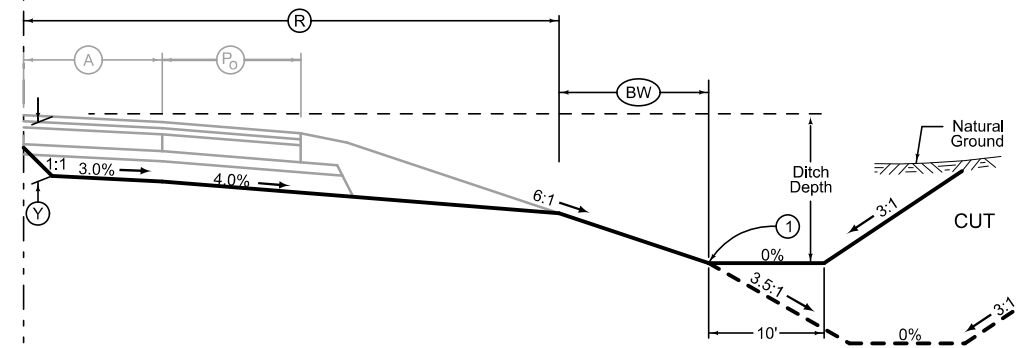


**6 LANE GRADING - INTERIOR WIDENING
(Depressed Variable Width Median)**

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	L Feet	X Inches	M Feet
I-80 WESTBOUND	4926+40.09 - 4938+75.00	38.9	32	3
I-80 WESTBOUND	4951+75.00 - 4972+00.00	38.9	32	3
I-80 EASTBOUND	5920+50.00 - 5939+00.00	38.9	32	3
I-80 EASTBOUND	5953+00.00 - 5973+00.00	38.9	32	3

Shoulder Grading

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	R Feet	Y Inches	BW Feet
I-80 WESTBOUND	4926+40.09 - 4933+50.00	25.8	19.5	8.2
I-80 WESTBOUND	4957+55.61 - 4972+00.00	25.8	19.5	8.2
I-80 EASTBOUND	5920+50.00 - 5939+00.00	25.8	19.5	8.2
I-80 EASTBOUND	5960+60.59 - 5973+00.00	25.8	19.5	8.2



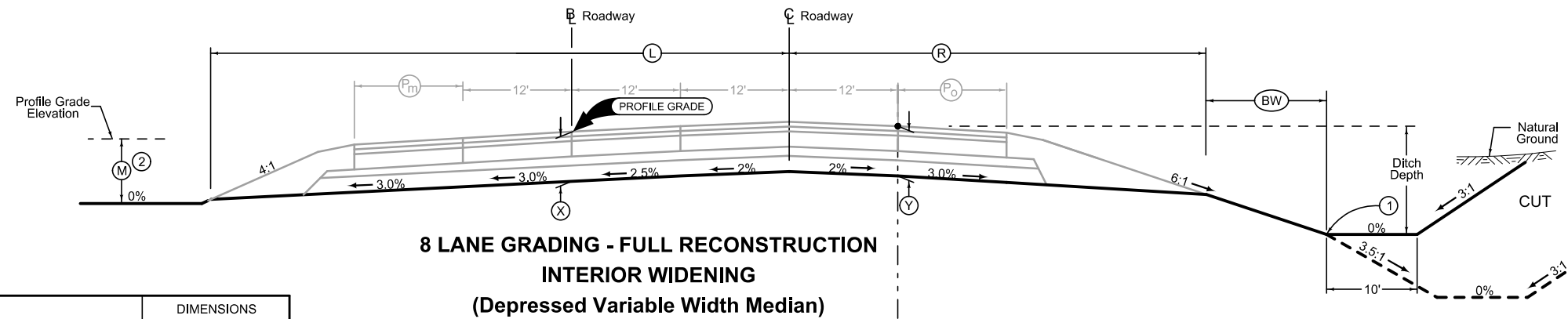
Auxillary Lane Grading

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	R Feet	Y Inches	BW Feet
I-80 WESTBOUND	4933+50.00 - 4938+75.00	33.5-35.3	32	.5-0
I-80 WESTBOUND	4951+75.00 - 4957+55.61	38.7-63.4	32	0
I-80 EASTBOUND	5953+00.00 - 5956+24.63	38.7	32	0

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

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

- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② Nominal Dimension. Varies due to split profile grades and split horizontal alignment.

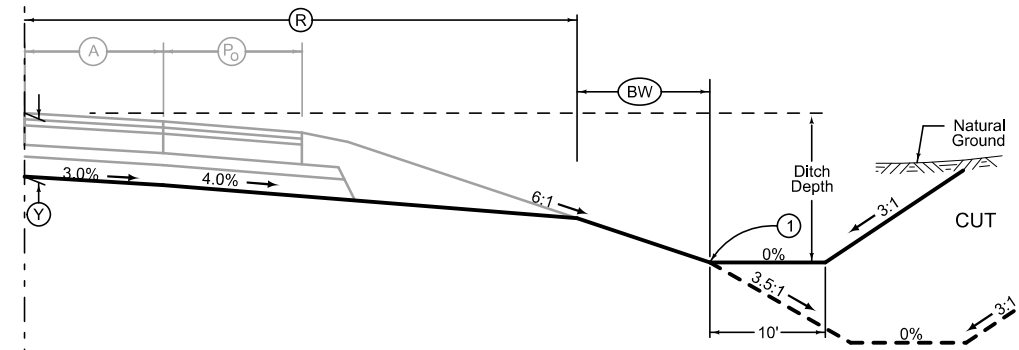


**8 LANE GRADING - FULL RECONSTRUCTION
INTERIOR WIDENING
(Depressed Variable Width Median)**

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(X) Inches	(M) Feet
I-80 WESTBOUND	4938+75.00 - 4939+43.76	63.6	32	3
I-80 WESTBOUND	4943+61.77 - 4944+43.89	65.2-66.7	32	3
I-80 WESTBOUND	4944+43.89 - 4951+75.00	63.6	32	3
I-80 EASTBOUND	5939+00.00 - 5939+82.28	63.6	32	3
I-80 EASTBOUND	5939+82.28 - 5940+64.22	66.7-65.2	32	3
I-80 EASTBOUND	5945+03.25 - 5953+00.00	63.6	32	3

Shoulder Grading

LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	(R) Feet	(Y) Inches	(BW) Feet
I-80 EASTBOUND	5939+00.00 - 5939+23.97	45.6	32	0
I-80 EASTBOUND	5939+23.97 - 5940+64.22	48.7-47.2	32	0



Auxillary Lane Grading

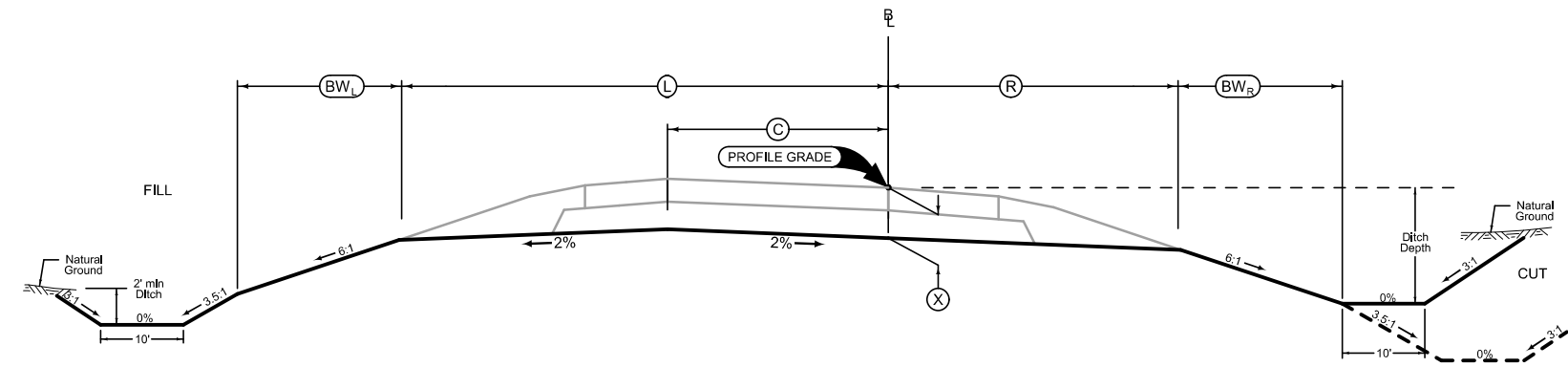
LOCATION		DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION	(R) Feet	(Y) Inches	(BW) Feet
I-80 WESTBOUND	4938+75.00 - 4939+50.00	35.3-38.7	32	0
I-80 WESTBOUND	4939+50.00 - 4939+43.76	38.7	32	0
I-80 WESTBOUND	4943+61.77 - 4944+60.36	42.4-44.3	32	0
I-80 WESTBOUND	4944+60.36 - 4951+75.00	38.7	32	0
I-80 EASTBOUND	5944+10.55 - 5946+24.63	38.7	32	0
I-80 EASTBOUND	5946+24.63 - 5953+00.00	38.7	32	0

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

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

See Typical EW-301 & EW-302 for grading at guardrail

- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② Nominal Dimension. Varies due to split profile grades and split horizontal alignment.



RAMP GRADING

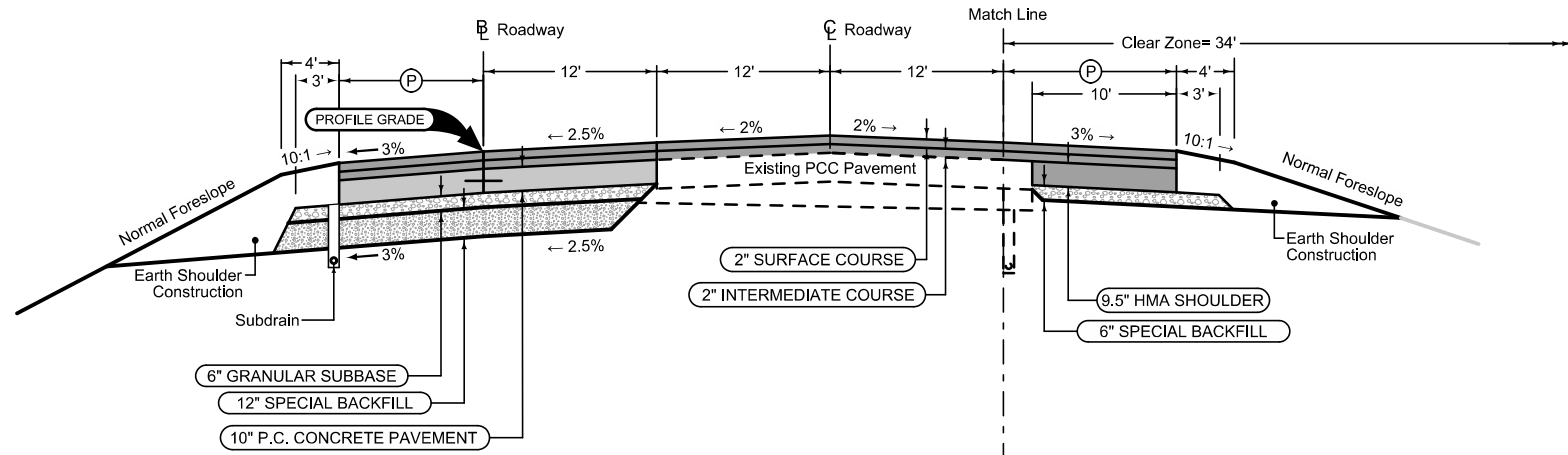
Section view is in direction of traffic.

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

LOCATION			DIMENSIONS						
INTERCHANGE	RAMP	STATION TO STATION	(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW _L) Feet	(BW _R) Feet	
I-80 P.O. Rest Area	B	2570+00.00 2576+75.00	33.8	19.5	16	22	0.2	0	
I-80 P.O. Rest Area	C	3573+04.68 3575+00.00	33.8	19.5	16	22	.2	0	
I-80 W.C. Rest Area	C	3557+54.38 3560+25.00	33.8	19.5	16	22	6.2	4.5	

Full Depth PCC Shoulder

6D_Closed_P_FullPCC_ Modified			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
WB	4926+40.09	4938+75.00	12
WB	4951+75.00	4972+00.00	12
EB	5920+50.00	5939+00.00	12
EB	5953+00.00	5973+00.00	12



Full Depth HMA Shoulder

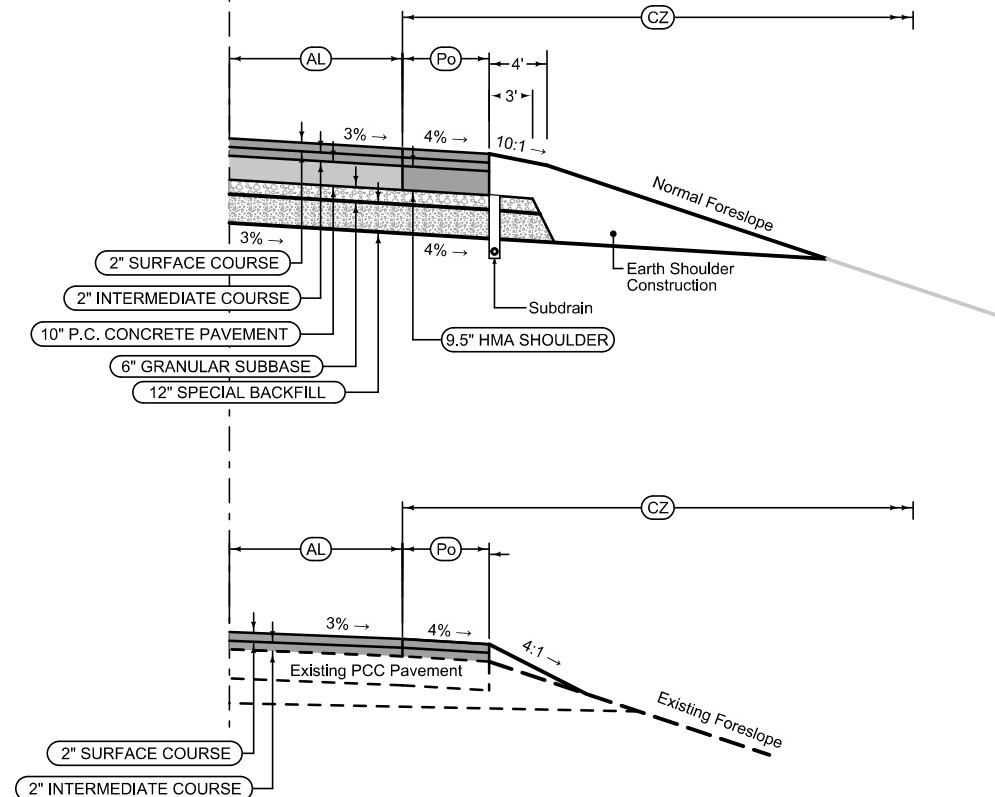
Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: Match Existing. Refer to PV-121.

6D_P_FullPCC_ Modified			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
WB	4926+40.09	4933+50.00	12
WB	4957+55.61	4972+00.00	12
EB	5920+50.00	5939+00.00	12
EB	5960+60.59	5973+00.00	12

6 LANE PAVING - INTERIOR WIDENING (Depressed Variable Width Median)

Section shown in the direction of traffic.
 Mainline Jointing:
 Transverse joints: Match Existing. Refer to PV-121.

6DP_Dprs_ Modified		
Direction of Travel	BEGIN STATION	END STATION
WB	4926+40.09	4938+75.00
WB	4951+75.00	4972+00.00
EB	5920+50.00	5939+00.00
EB	5953+00.00	5973+00.00

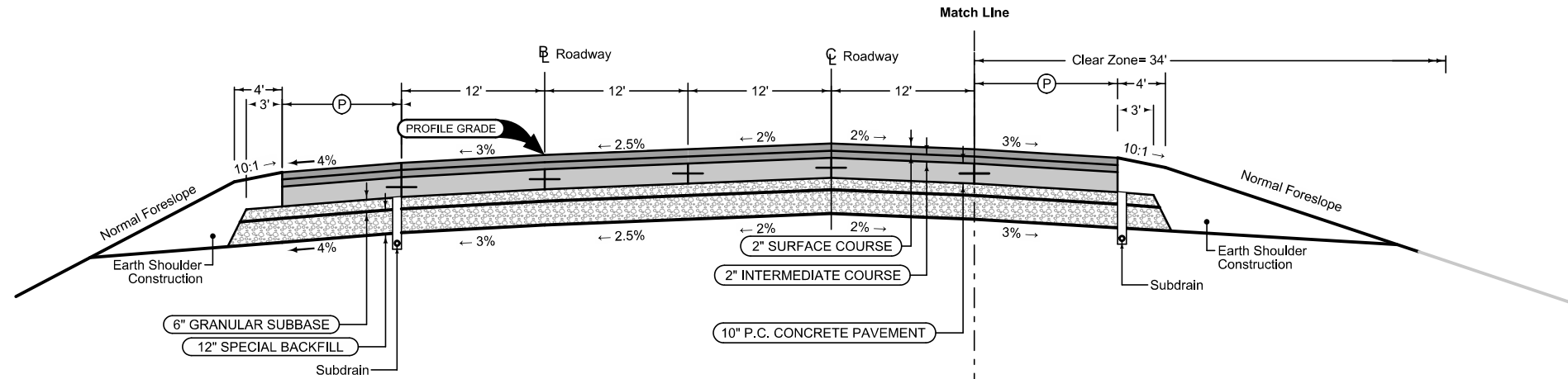


Auxiliary Lane

2_AL_HMA_ Modified					
Direction of Travel	STATION TO STATION	(AL) Feet	(Po) Feet	(CZ) Feet	
WB	4933+50.00	4938+75.00	2-10.5	10-6	34-24
WB	4951+75.00	4954+45.46	12	6	24
WB	4954+45.46	4957+55.61	12-36.2	6	24
EB	5953+00.00	5956+24.63	12	6	24

Auxiliary Lane Resurfacing

_AuxLane_Overlay_ New					
Direction of Travel	STATION TO STATION	(AL) Feet	(Po) Feet	(CZ) Feet	
EB	5956+24.63	5960+60.59	12-41.6	6	24



**8 LANE PAVING - FULL RECONSTRUCTION - INTERIOR WIDENING
(Depressed Variable Width Median)**

Section shown in the direction of traffic.
Mainline Jointing:
Transverse joints: CD at 17' spacing

Full Depth PCC Shoulder

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

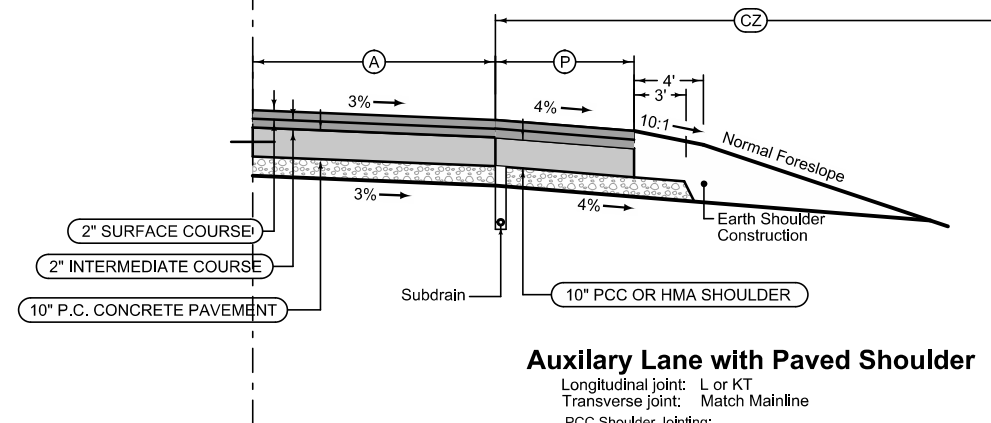
6D_Closed_P_FullPCC_04-19-11			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
WB	4938+75.00	4939+43.76	12
WB	4943+61.77	4944+43.89	13.6-15.1
WB	4944+43.89	4951+75.00	12
EB	5939+00.00	5939+82.28	12
EB	5939+82.28	5940+64.22	15.1-13.6
EB	5945+03.25	5953+00.00	12

8DP_Dprs_Modified		
Direction of Travel	BEGIN STATION	END STATION
WB	4938+75.00	4939+43.76
WB	4943+61.77	4951+75.00
EB	5939+00.00	5940+64.22
EB	5945+03.25	5953+00.00

Full Depth PCC Shoulder

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

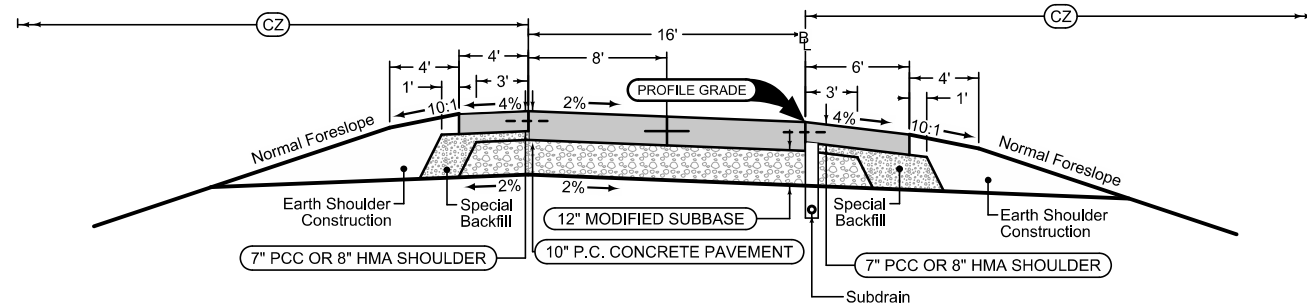
6D_Closed_P_FullPCC_04-19-11			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
EB	5939+00.00	5939+23.97	12
EB	5939+23.97	5940+64.22	15.1-13.6



Auxiliary Lane with Paved Shoulder

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

2_AuxLane_PCC_Modified					
ROAD IDENTIFICATION	STATION TO STATION	(A) Feet	(P) Feet	(CZ) Feet	
WB	4938+75.00	4939+50.00	10.5-12	6	24
WB	4939+50.00	4939+43.76	12	6	24
WB	4943+61.77	4944+60.36	12	9.7-11.6	24
WB	4944+60.36	4951+75.00	12	6	24
EB	5945+03.25	5946+24.63	3.4-12	8.6-6	30.6-24
EB	5946+24.63	5953+00.00	12	6	24



Section shown in the direction of traffic.

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

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 15' spacing

HMA Shoulder Jointing:
 Longitudinal joint: B

1RP_1R_P_ALT_ Modified			
ROAD IDENTIFICATION	BEGIN STATION	END STATION	CZ Feet
I-80 W.C. Rest Area Ramp C	3557+54.38	3560+25.00	24

Welcome Center Rest Area Interchange Ramps

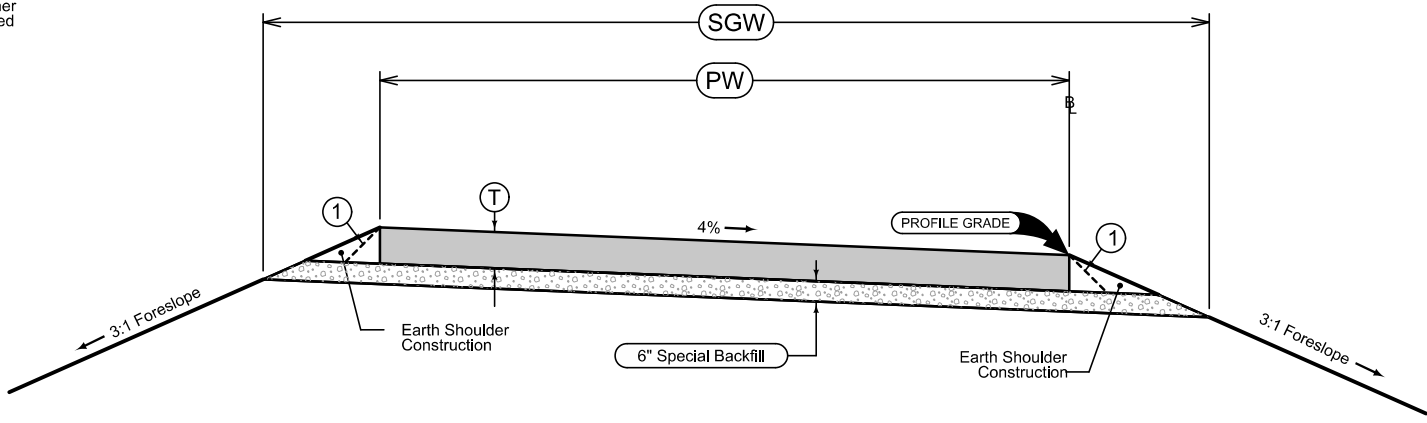
D_Detour
10-21-14

DESIGNER INFO

LOCATION		DIMENSIONS						6\"/>	
ROAD IDENTIFICATION	STATION TO STATION	HMA			PCC				Earth Shoulder Construction
		PW Feet	T Inches	SGW Feet	PW Feet	T Inches	SGW Feet	Tons/Station	
Temporary Rest Area Ramp C	34959+07.09 - 34961+12.72	20			20				

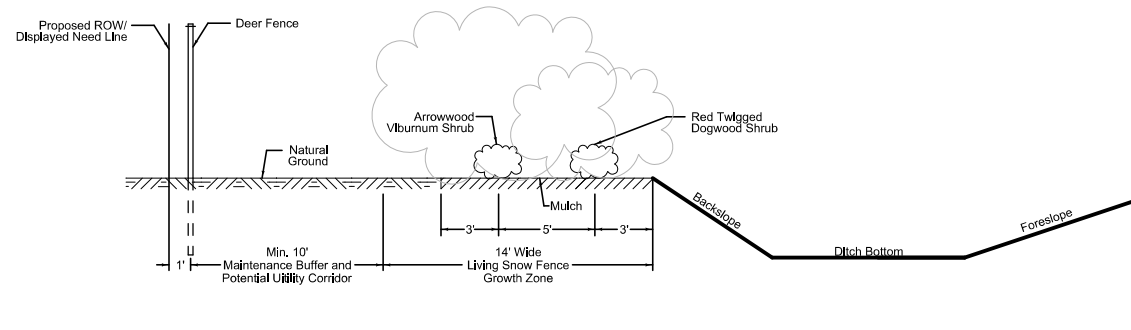
Quantity calculations based on vertical pavement edges.
 Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.

① Possible HMA 1:1 slope



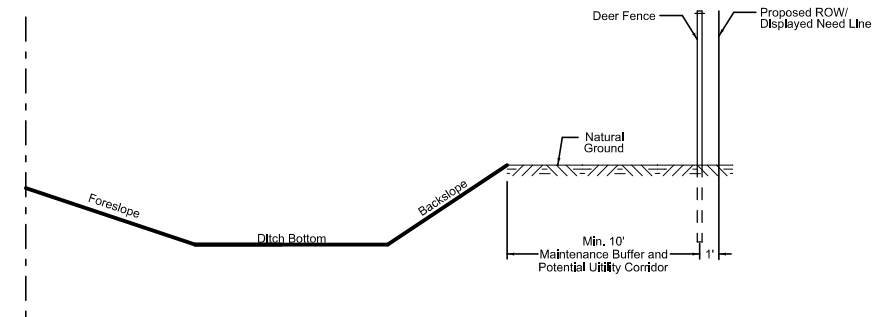
DETOUR PAVING

Temporary Rest Area Ramp C



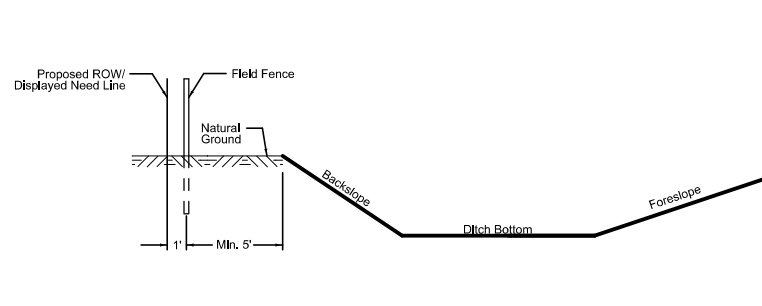
**TYP. WB MAINLINE
& WB RAMPS
(NORTH/LT)**

**APPLICABLE MAINLINE/RAMP
ROADWAY SECTION**

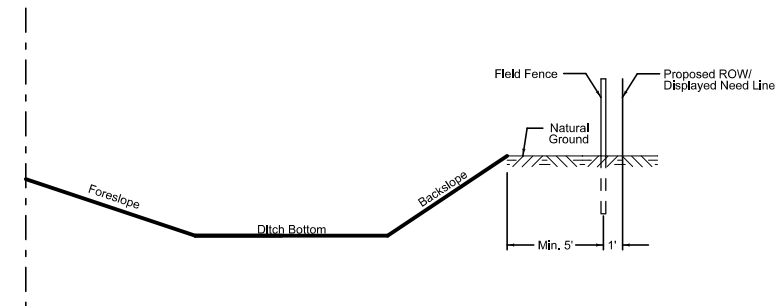


**TYP. EB MAINLINE
& EB RAMPS
(SOUTH/RT)**

**Living Snow Fence and
Deer Fence Placement**

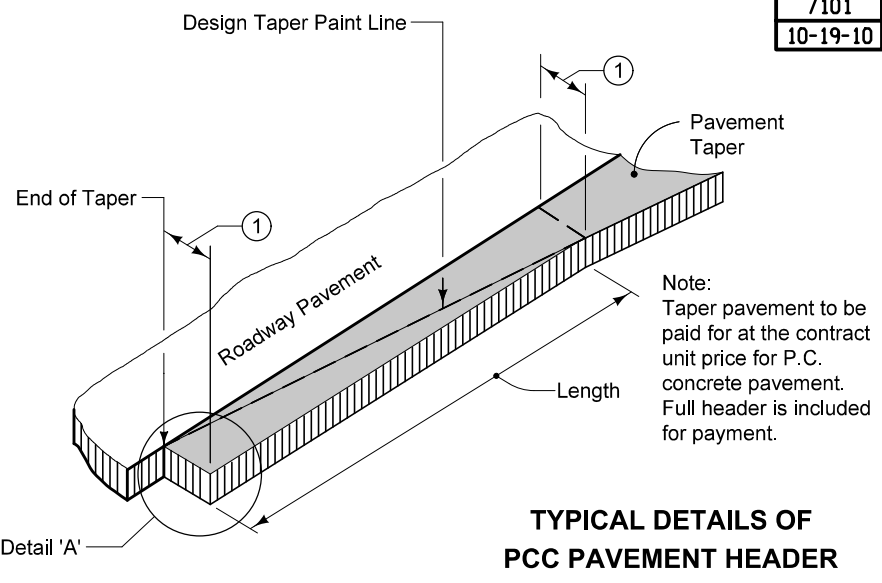
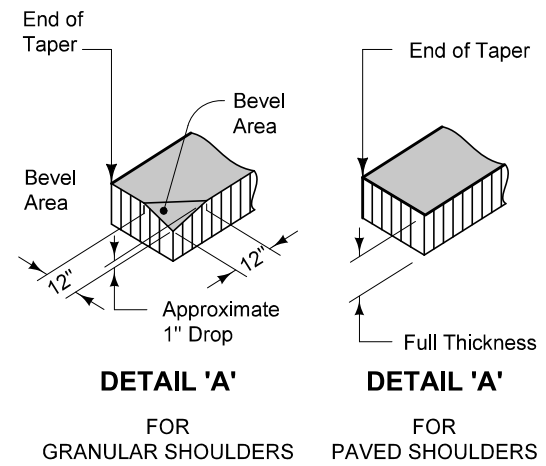


**APPLICABLE SIDE ROAD
ROADWAY SECTION**

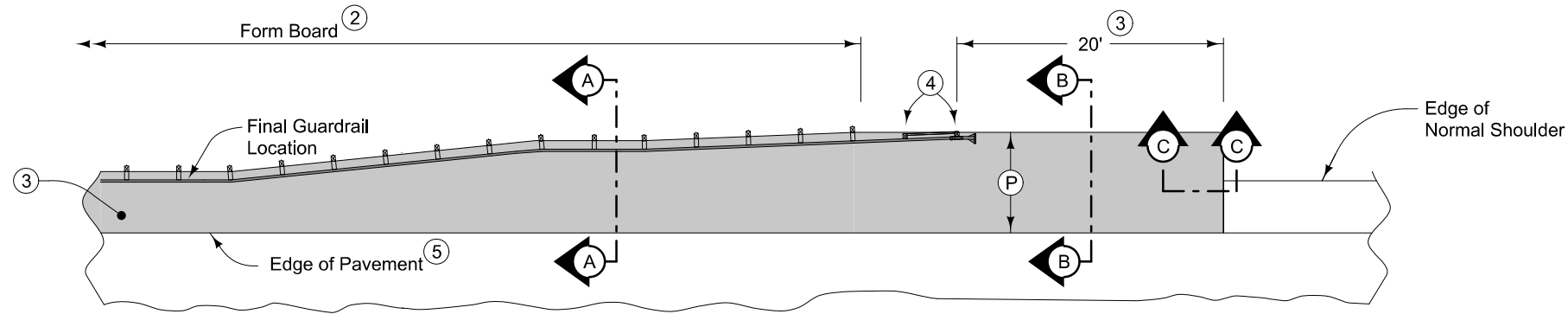


Field Fence Placement

7101
10-19-10



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



PLAN VIEW

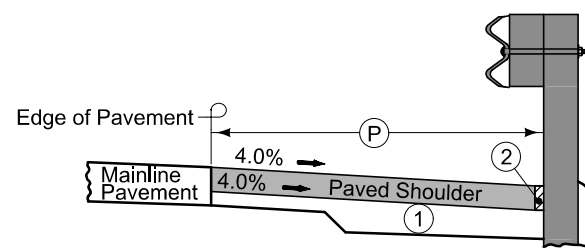
Refer to Full Depth PCC Shoulder typical sections for pavement material and thicknesses. For PCC, use the following jointing layout:

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.

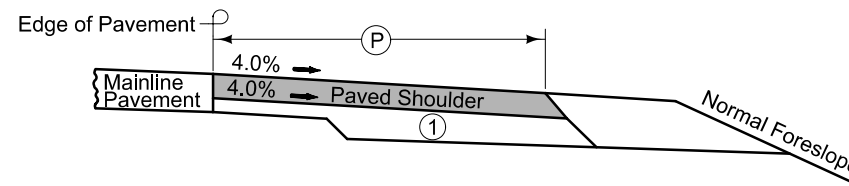
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

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.

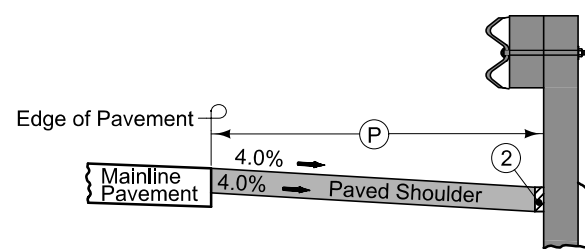


Section A-A

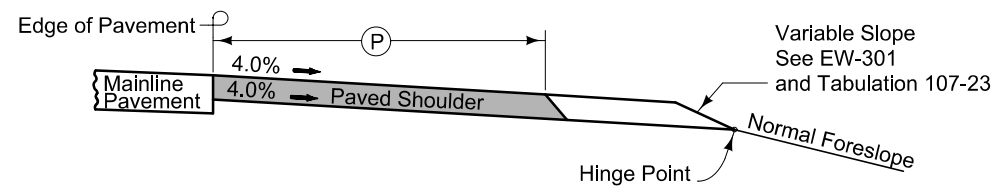


Section B-B

NEW CONSTRUCTION

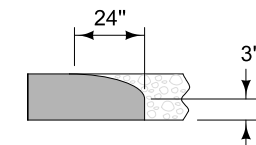


Section A-A



Section B-B

EXISTING SHOULDER



Section C-C
Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL

SURVEY SYMBOLS

- FENO Control Monument
- TOP Top of Bridge Piers
- REF reference tie points
- SOP Size of pipe
- SBR size of bridge
- CP Control Point Generic
- UV Misc utility vault
- PIP pipes(cast iron,steel,tile,etc)
- STOP ST stop sign
- PRO profile-r.r. rail,swk,abut
- BM bench mark
- D cl of draw or stream
- TLNR tree line right
- FW fence wire
- TDC tree deciduous
- GDL guard rails
- SIGN SI sign
- PPC power pole, Owner C
- PPB power pole, Owner B
- TEV evergreen tree
- ROW right of way rails
- PPA power pole, Owner A
- DU cl of draw upstream
- RIP rip-rap
- LUM luminaire
- GR Ground Field Survey
- BNK stream bank
- TLNL tree line left
- WC Wildcard
- TW Top of Water
- SP Stream Profile
- EG edge of gravel road
- CON concrete or a/c slab
- BD Bridge Deck
- BLS Bridge Low Steel
- BCL bridge centerline
- BRG bridge
- C center of roadway
- EB electrical box
- PL Photo Location
- CUL culvert
- INB intake-beehive
- OUT tile outlet
- STP stump
- GDC Cable Guardrail
- BB billboard or sign
- SIGN SL speed limit sign
- MM mile marker post
- TPD telephone pedestal
- LC lot corner
- MH Misc manhole
- UE utility elevation
- IN intake-grate,curb,umbrella
- LIN miscellaneous line
- CMP corrugated metal pipes
- WHD water hydrant
- BLD foundation or building
- SEP septic tank
- SHR shrub
- MIS miscellaneous
- LP L.P. tank
- TR Telephone Riser Pole
- ENU edge of unpaved entrance&parking
- CU curb or center island
- GU gutter
- UB Misc utility box
- CS concrete slab
- RET retaining walls
- FWD wood fence
- ROC rock outcropping
- TV tv dish
- WV water valve
- EW edge of water
- FCL security & chain link
- GP guard post / Bollard
- S Soil sampling site

UTILITY LEGEND

- Eastern Iowa Light and Power Cooperative
- Dennis Hill
- 600 East 5th Street
- Wilton, IA 52778
- 563-732-2211: Ext 7330
- dennis.hill@easterniowa.com

- ICN (Iowa Communications Network)
- Mike Broderick
- 400 East 1st Street / Grimes Office Building
- Des Moines, IA 50319
- 515-725-4741
- mike.broderick@iowa.gov

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 PCC Pavement with HMA Surfacing Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed HMA Resurfacing Shading
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
 - Need Line
 - Saw Cut
 - Guardrail
 - Trench Drain
 - HighTension Cable Guardrail
 - Sheet Pile
 - Pavement Removal
 - Clearing & Grubbing Area

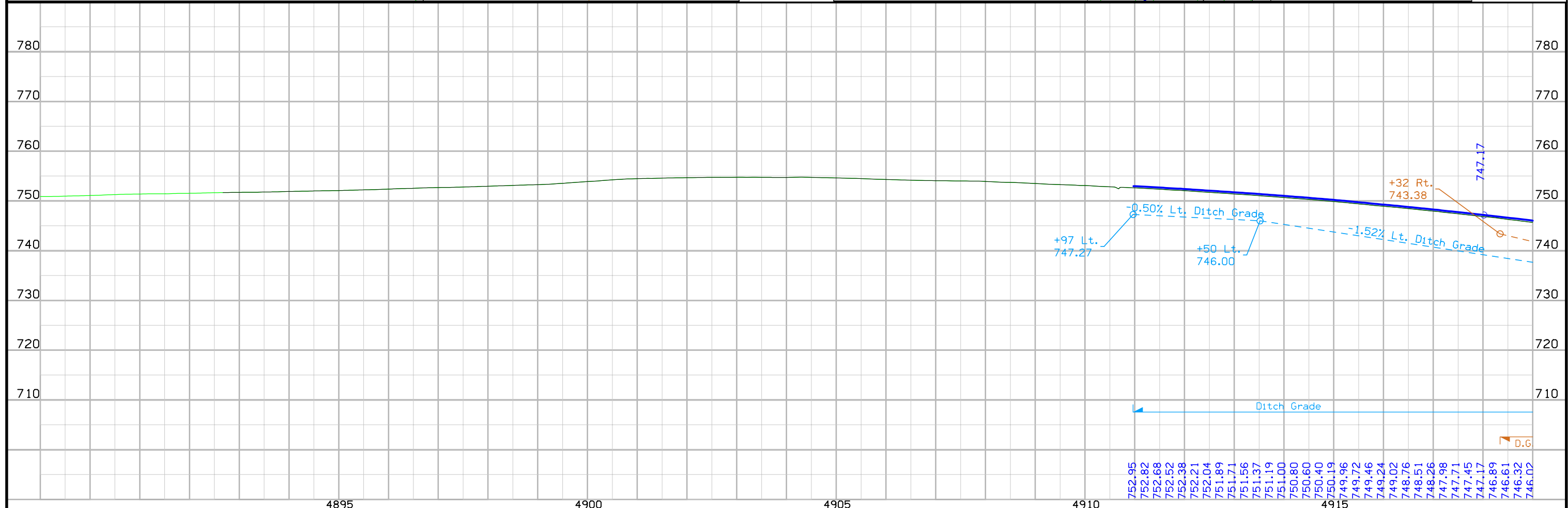
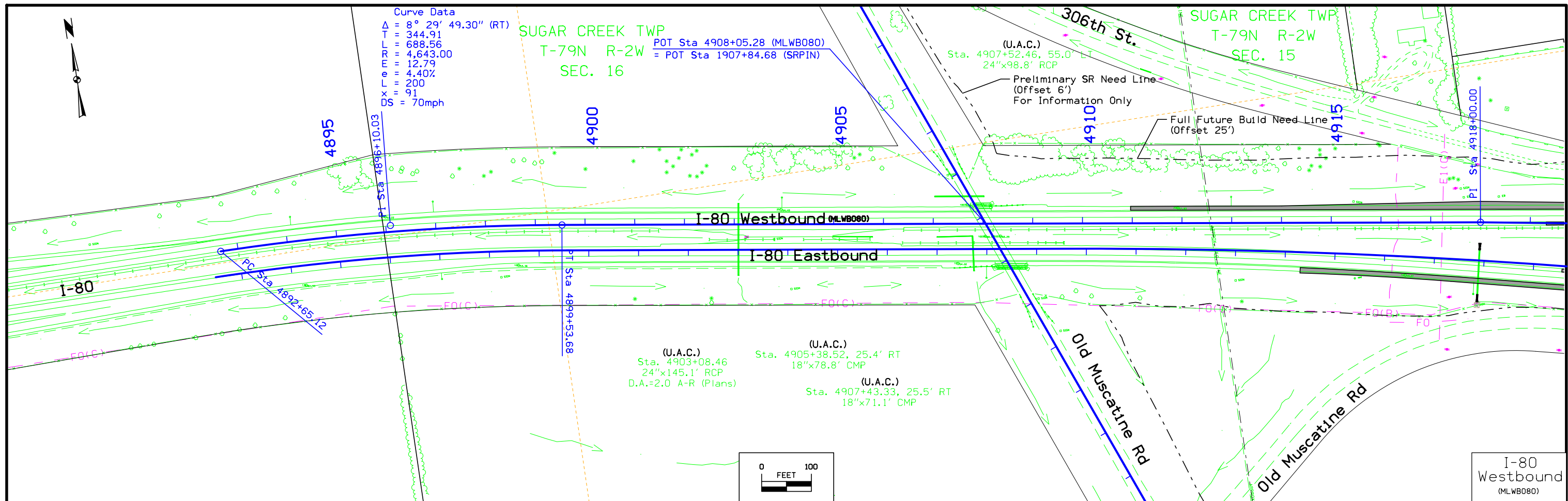
- Existing Ditch Dike (U.A.C.)

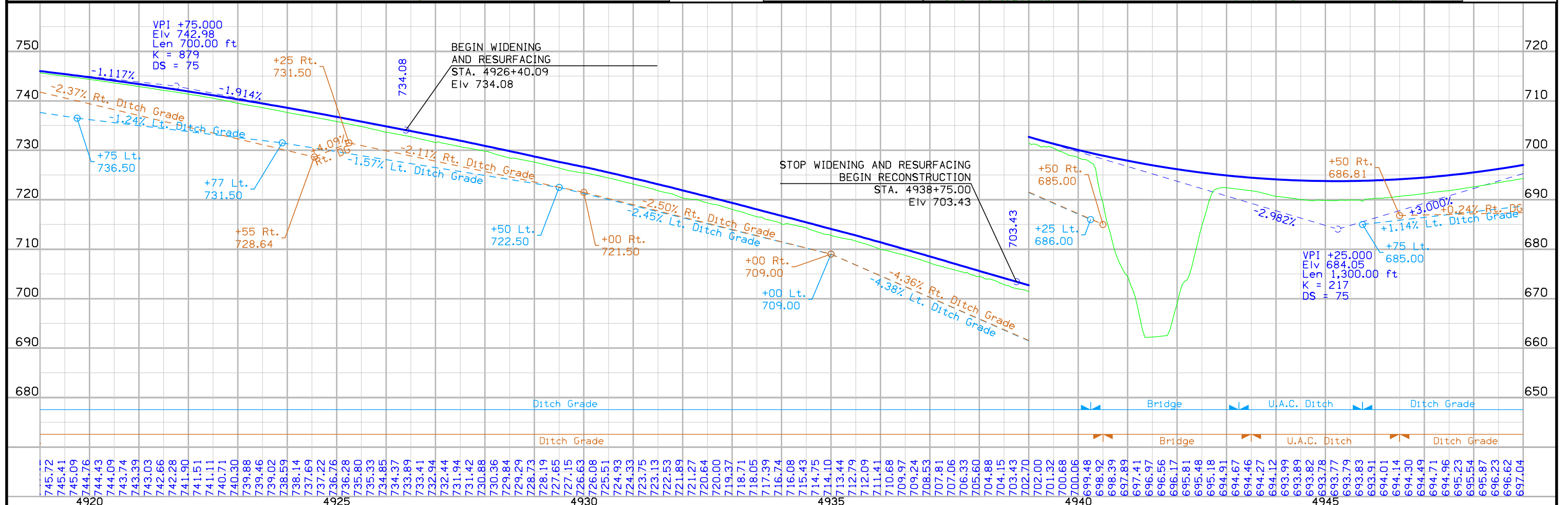
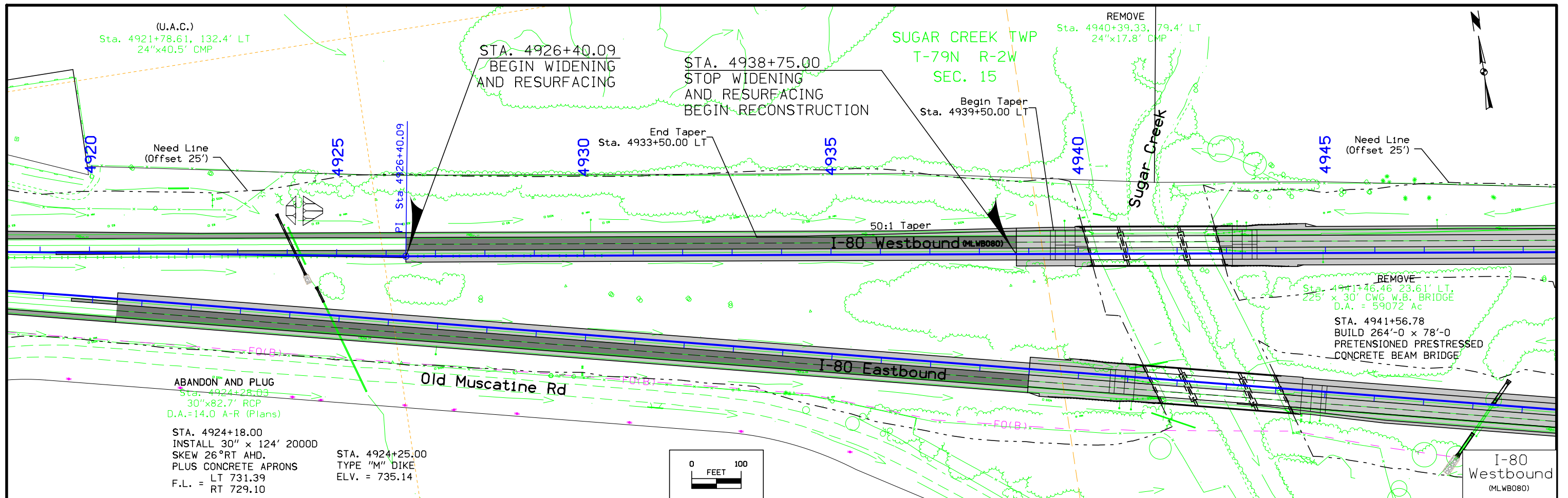
RIGHT-OF-WAY LEGEND

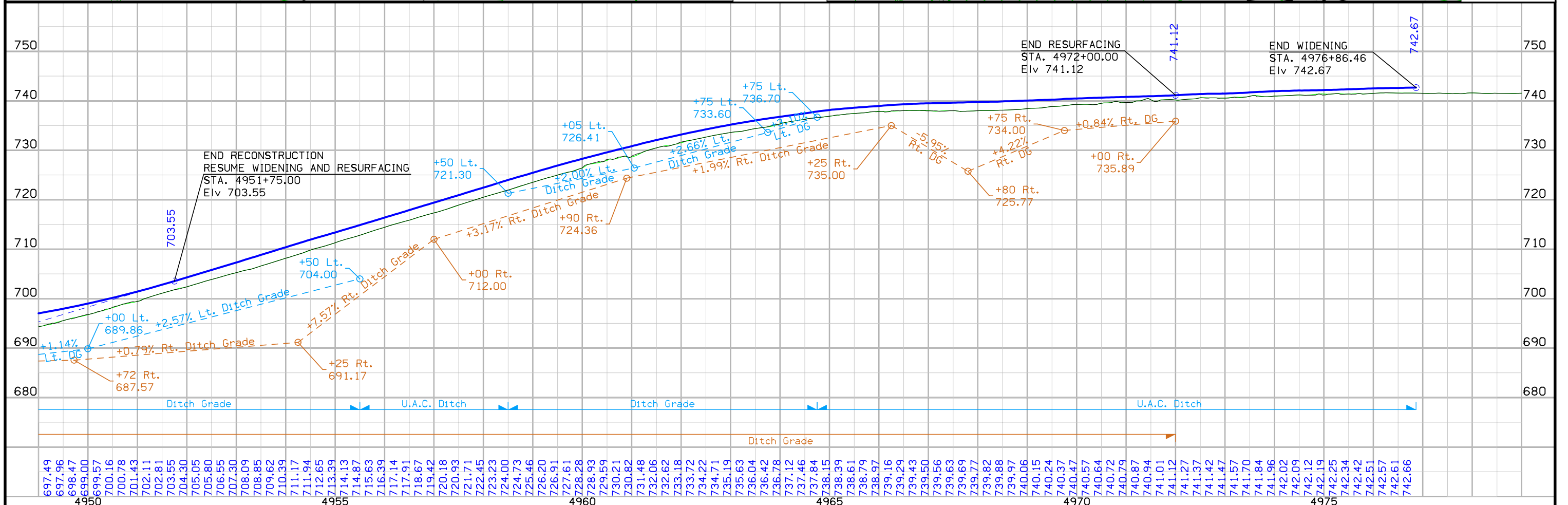
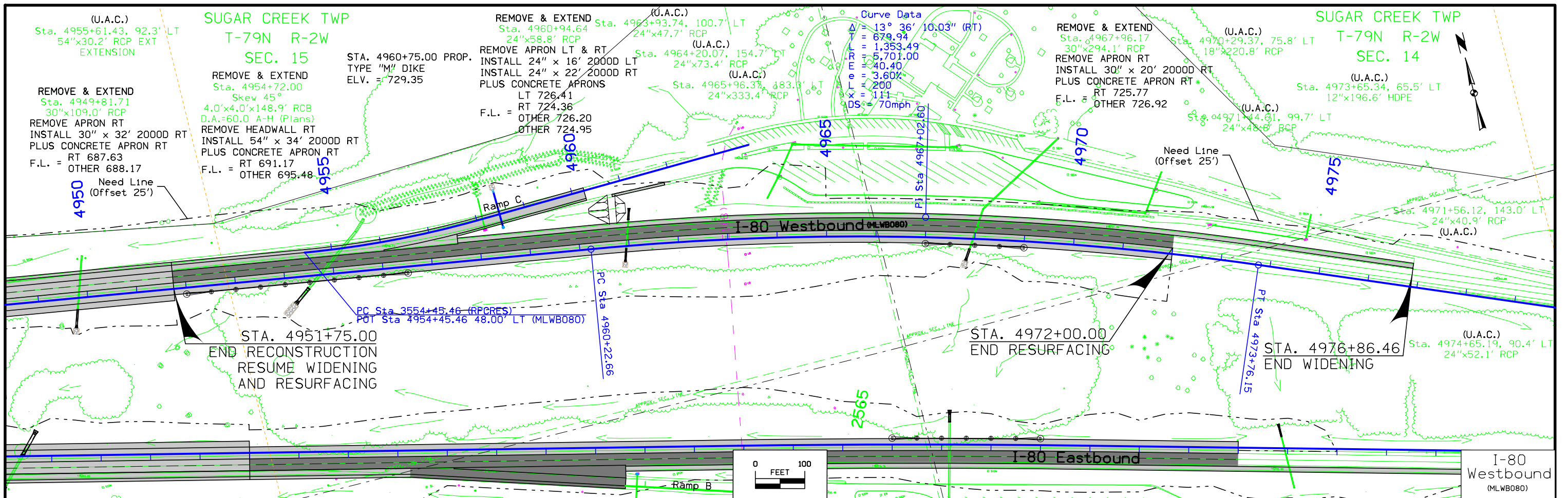
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

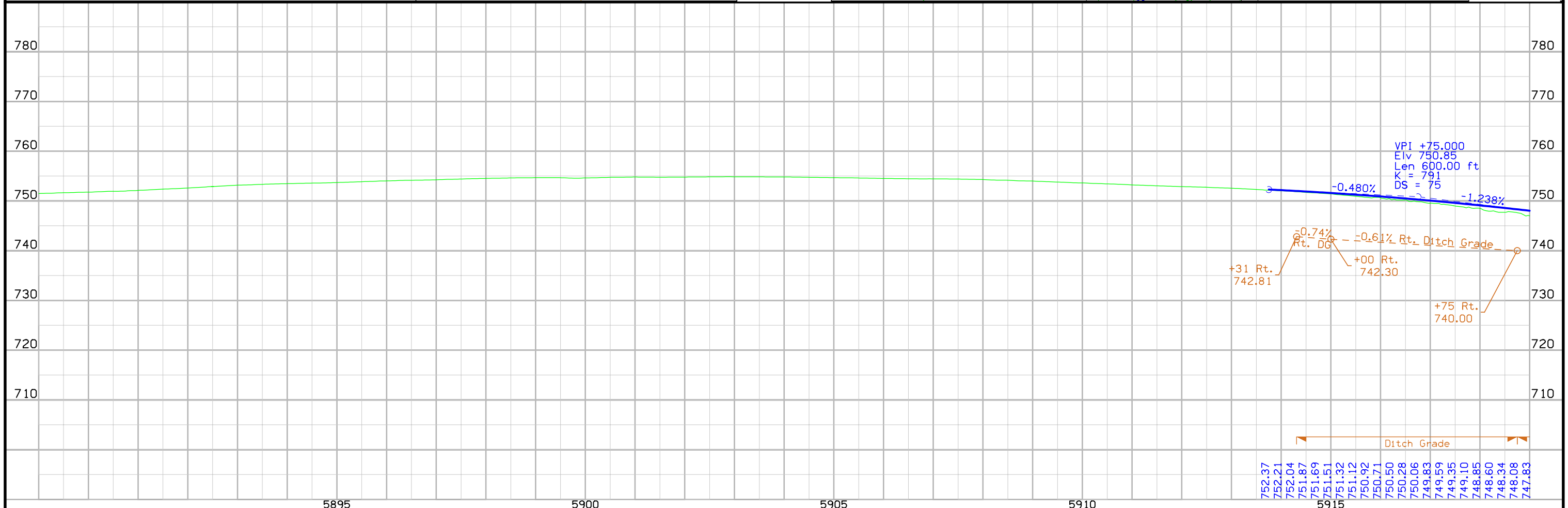
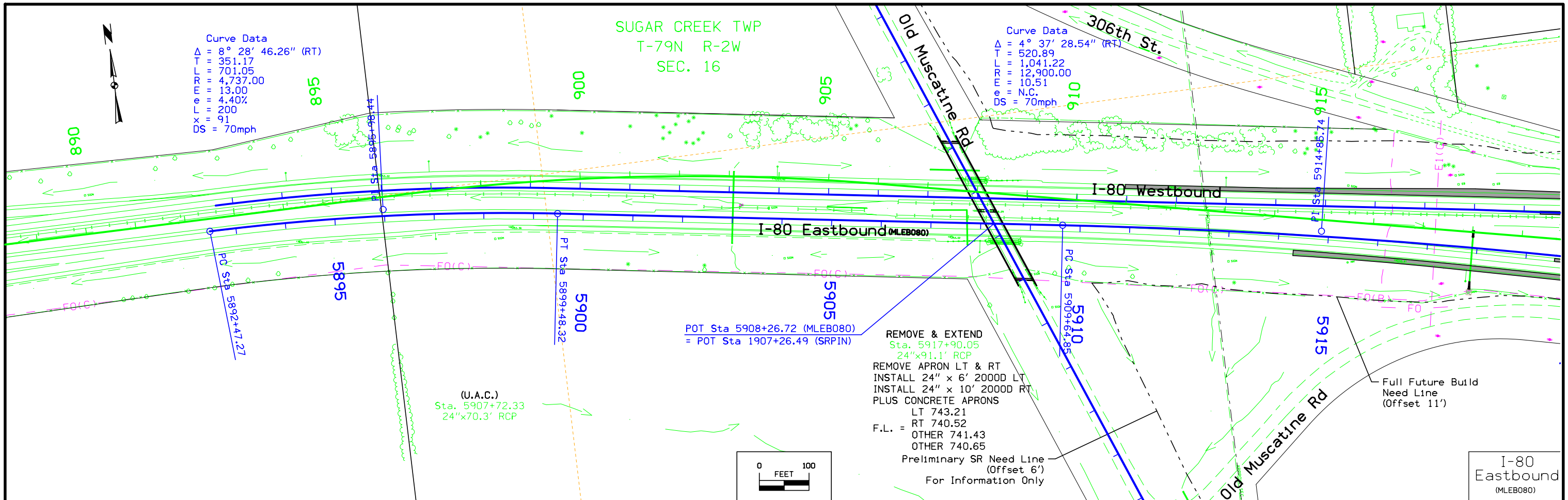
(COVERS SHEET SERIES D, E, F, & K)

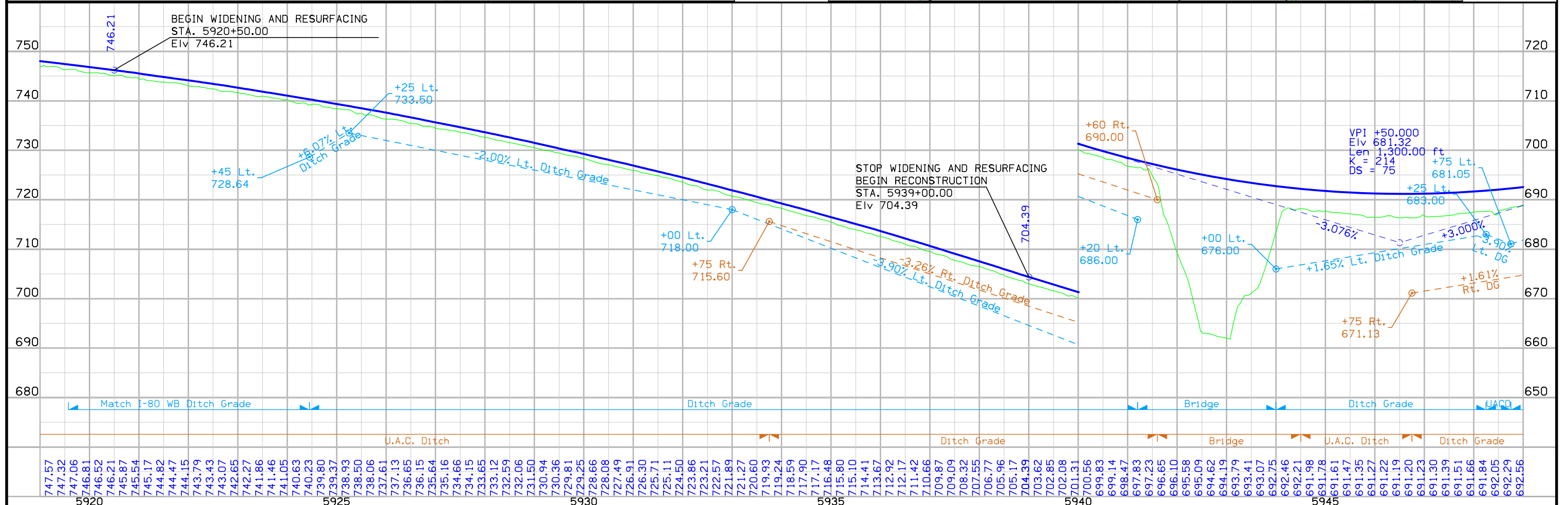
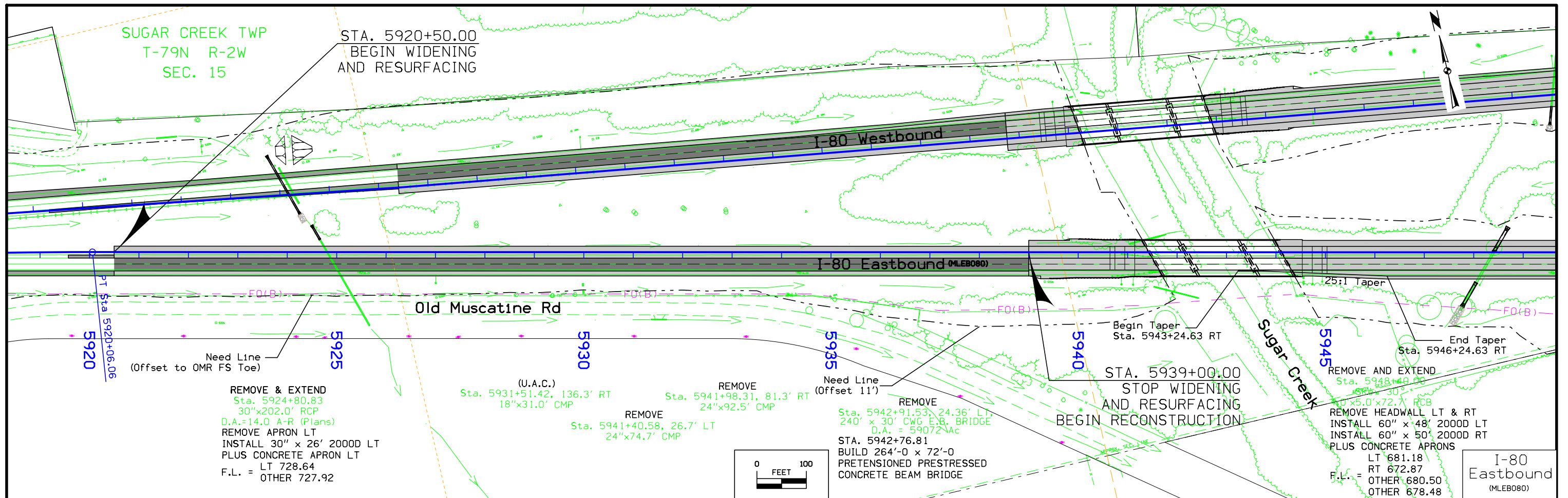




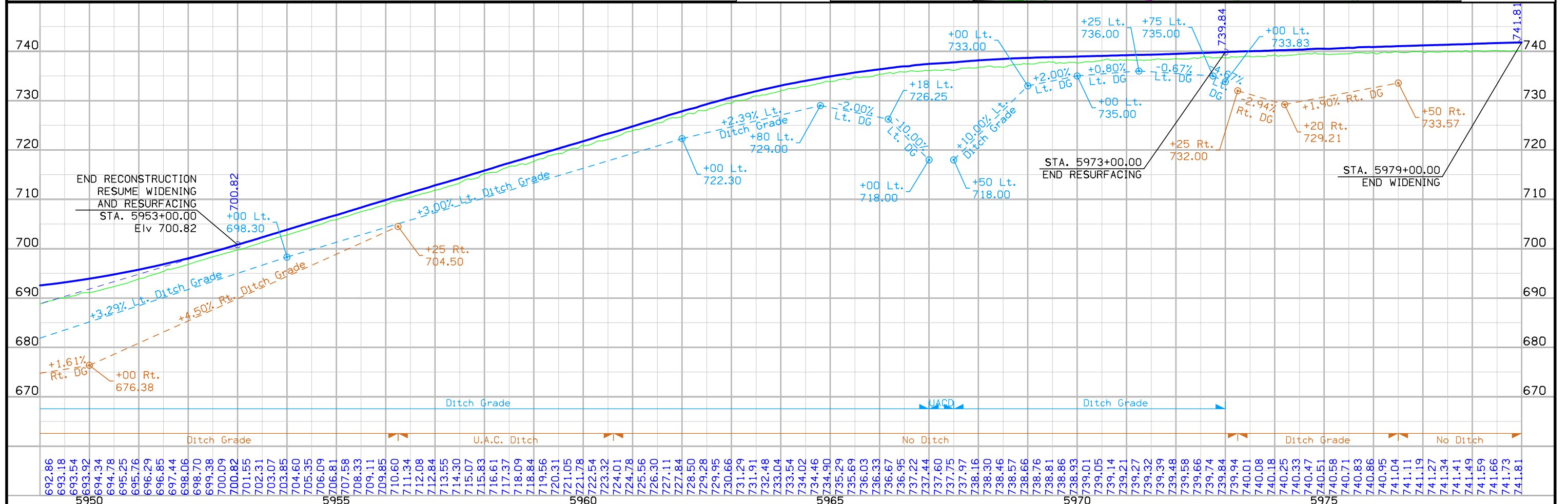
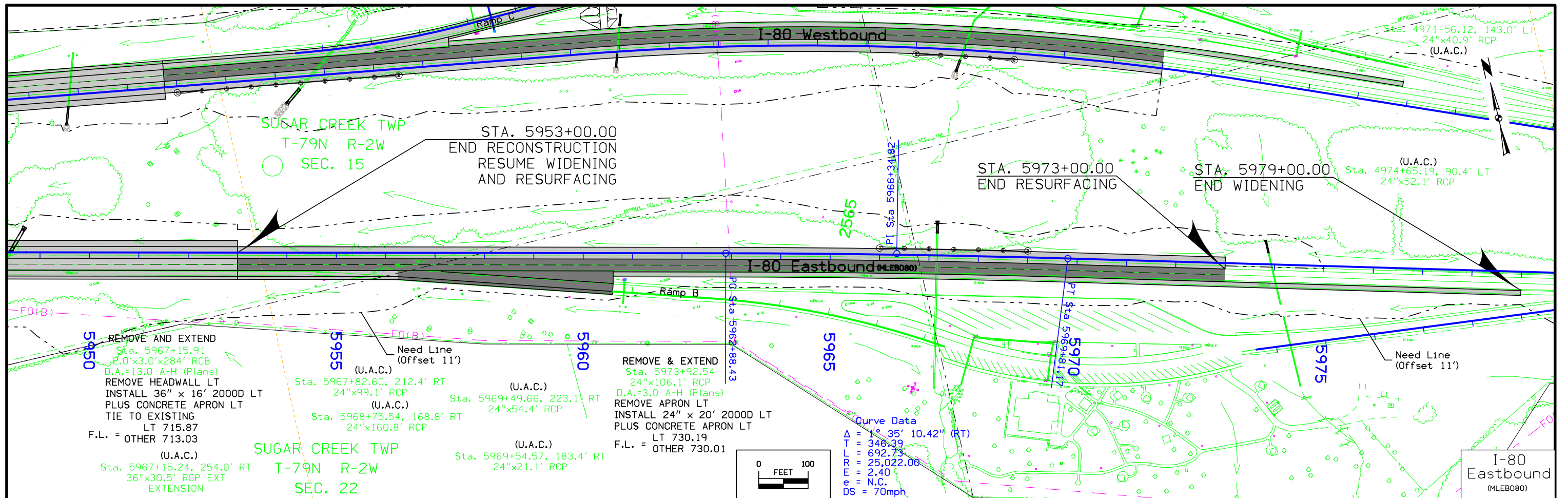


FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT \ HR Green	CEDAR COUNTY	PROJECT NUMBER	IM-NHS-080-8(341)269--03-16	SHEET NUMBER	D.4
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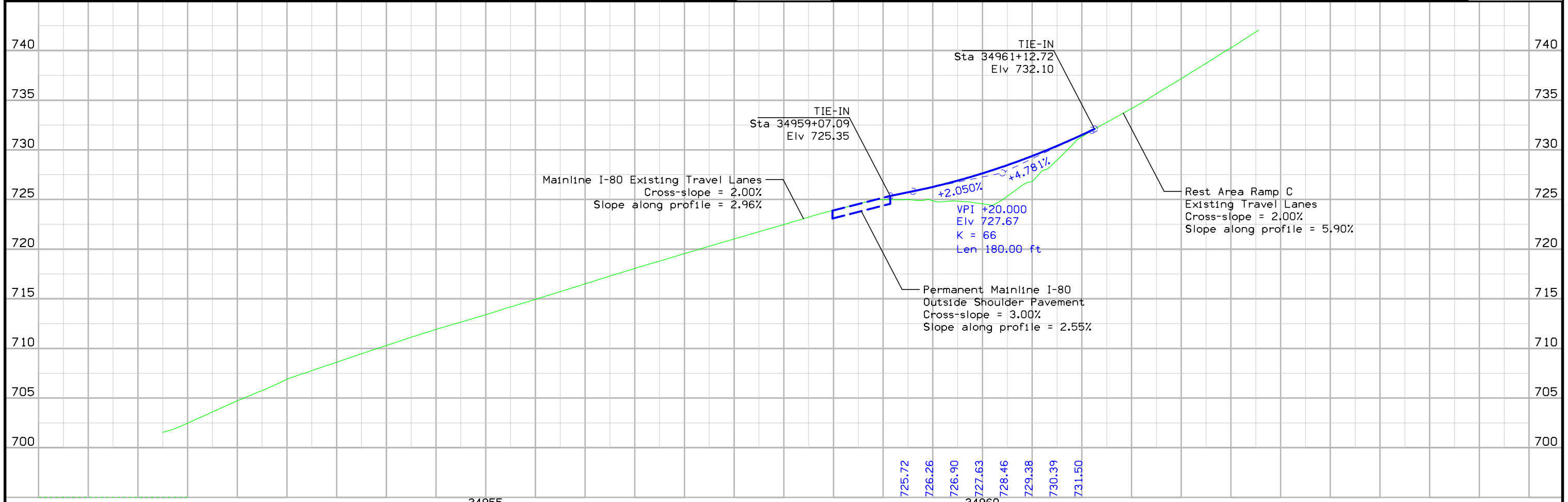
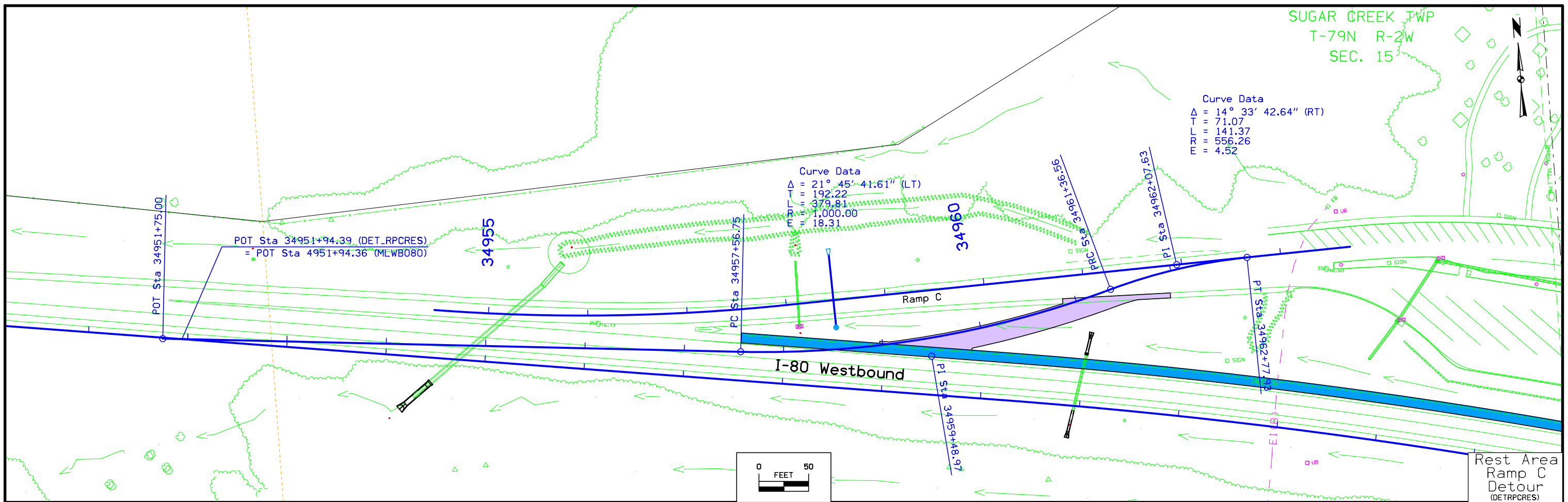
747.57	747.32	747.06	746.81	746.52	746.21	745.87	745.54	745.17	744.82	744.47	744.15	743.79	743.43	743.07	742.65	742.27	741.86	741.46	741.05	740.63	740.23	739.80	739.37	738.93	738.50	738.06	737.61	737.13	736.65	736.15	735.64	735.16	734.66	734.15	733.65	733.12	732.59	732.06	731.50	730.94	730.36	729.81	729.25	728.66	728.08	727.49	726.91	726.30	725.71	725.11	724.50	723.86	723.21	722.57	721.89	721.27	720.60	719.93	719.24	718.59	717.90	717.17	716.48	715.80	715.10	714.41	713.67	712.92	712.17	711.42	710.66	709.87	709.09	708.32	707.55	706.77	705.96	705.17	704.39	703.62	702.85	702.08	701.31	700.56	699.83	699.14	698.47	697.83	697.23	696.65	695.98	695.09	694.62	694.19	693.79	693.41	693.07	692.75	692.46	692.21	691.98	691.78	691.61	691.47	691.35	691.27	691.22	691.19	691.20	691.23	691.30	691.39	691.51	691.66	691.84	692.05	692.29	692.56
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SUGAR CREEK TWP
T-79N R-2W
SEC. 15

Curve Data
 $\Delta = 14^\circ 33' 42.64''$ (RT)
 T = 71.07
 L = 141.37
 R = 556.26
 E = 4.52

Curve Data
 $\Delta = 21^\circ 45' 41.61''$ (LT)
 T = 192.22
 L = 379.81
 R = 1,000.00
 E = 18.31



Survey Information

Cedar County
IM-080-7(132)266—13-16
E of Cedar River to approx
0.5 mi W of Co Rd Y26
PIN 04-16-080-020

General Information

Measurement units for this survey are US survey feet. This survey is for the preliminary design for the section of I-80 from Cedar River to the Cedar/Scott County line in Cedar County, Iowa. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM with Photo control. This survey request was for the I-80 corridor only. Project horizontal datum is NAD83(2011), Iowa RCS Zone 10 (Cedar Rapids).

Vertical Control

Vertical datum for this survey is relative to NAVD88 (computed using Geoid12B for the derived orthometric elevations listed). This survey consisted of observing 13 new FENO 1-meter rod monuments using minimum 2hr initial static observations along with data from 5 Iowa RTN CORS sites: Coralville (IACI), Muscatine (IAMU), Maquoketa (IAMQ), Davenport (IADA) and Tipton (IATI).

Additionally, 5 local existing county GPS monuments with published NAVD88 elevations were observed and used that are located in proximity to the I-80 corridor area: Scott County GPS 2005-624 along with Cedar County GPS points 2007-28, 2007-35, 2007-42 and 2007-48.

Scott County GPS Pt 2005-624 has a published Elv of: 726.41 usft
Survey Elv = 726.4 usft

Cedar County GPS Pt 2007-28 has a published Elv of 718.04 usft
Survey Elv = 718.03 usft

Cedar County GPS Pt 2007-35 has a published Elv of 737.79 usft
Survey Elv = 737.80 usft

Cedar County GPS Pt 2007-42 has a published Elv of 731.74 usft
Survey Elv = 731.74 usft

Cedar County GPS Pt 2007-48 has a published Elv of 748.57 usft
Survey Elv = 748.57 usft

The final vertical adjustment results show standard deviations were less than 0.04 ft. at 95% confidence level (2 sigma) for the new FENO monuments.

Horizontal Control

The project coordinate system for this survey is NAD83(2011) Iowa RCS Zone 10 (Cedar Rapids) us survey feet. This survey control is relative to IARTN reference stations. IARTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by averaging a minimum of two IARTN observations of 120 minutes minimum session length for the first observation, and 120 minutes minimum for the second observation with appropriate time spans between each session. The horizontal standard deviation of these adjusted observations was less than 0.02 ft. at 95% confidence level (2 sigma).

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. IR-80-7(57)256—12-16. Survey stationing was equated to the plan PI at STA 770+79.75 and run back and ahead with two station equations throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI STA 852+32.6 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 852+32.91

PI STA 901+28.40 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 901+25.46

PI STA 964+80.8 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 964+82.07

PI STA 1056+26.06 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 1056+23.36

PI STA 1097+36.09 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 1097+35.96

Equation
PC STA 1155+72.21 (Back) =
PC STA 1200+00.00 (Ahead)

PI STA 1204+62.50 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 1204+62.54

PI STA 1296+83.1 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 1296+83.17

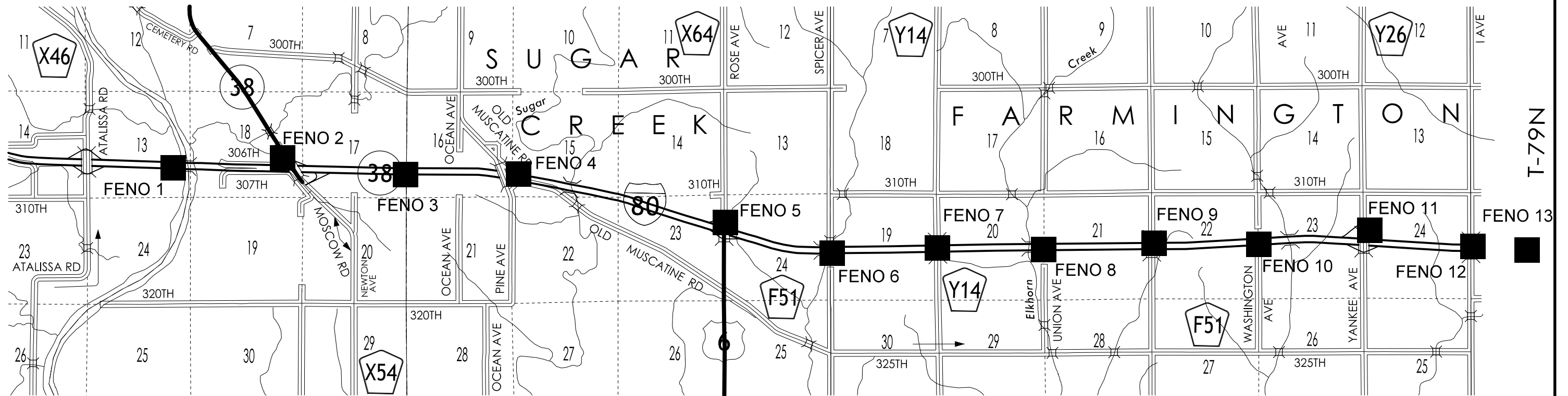
PI STA 1359+99.7 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 1360+02.29

PI STA 1432+18.5 As-built Plans Project No. IR-80-7(57)256—12-16
Survey PI STA 1432+16.38

Equation
STA 1439+81.54 (Back) =
STA 0+00.00 (Ahead)

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points
 Primary control is for use with RTK base stations and for RTN validation.
 Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 10

Coordinate listing from next sheet will be used with 1aRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 10

Point Name	Northing	Easting	Elevation	Feature
FENO1	7931903.988	20645032.90	660.792	FENO
FENO2	7932401.155	20650487.31	675.723	FENO
FENO3	7931576.605	20656608.15	750.540	FENO
FENO4	7931615.375	20662241.43	745.228	FENO
FENO5	7929177.084	20672559.46	755.379	FENO
FENO6	7927658.057	20677873.71	707.123	FENO
FENO7	7928042.512	20683236.53	764.044	FENO
FENO8	7927833.998	20688433.39	696.149	FENO
FENO9	7928143.386	20693929.25	723.017	FENO
FENO10	7928103.960	20699161.29	736.667	FENO
FENO11	7928788.784	20704684.46	735.398	FENO
FENO12	7927995.048	20709822.03	721.353	FENO
FENO13	7927804.629	20712523.29	702.864	FENO

ALIGNMENT COORDINATES

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	
I-80														
1	MLEB080					5892+47.27 R1	7931707.95	20659941.52	5895+98.44 R1	7931707.40	20660292.69	5899+48.32 R1	7931655.07	20660639.94
3	MLEB080					5909+64.85 R1	7931503.61	20661645.11	5914+85.74 R1	7931426.00	20662160.19	5920+06.06 R1	7931307.11	20662667.33
5	MLEB080					5962+88.43 R1	7930329.69	20666836.66	5966+34.82 R1	7930250.62	20667173.91	5969+81.17 R1	7930162.26	20667508.84
7	MLEB080					5992+44.74 R1	7929584.81	20669697.52	5996+23.29 R1	7929488.23	20670063.54	6000+01.77 R1	7929379.41	20670426.12
8	MLEB080	6004+76.96 R1	7929242.79	20670881.24										
1	MLWB080					4892+65.12 R1	7931757.92	20659959.45	4896+10.03 R1	7931757.38	20660304.37	4899+53.68 R1	7931705.88	20660645.41
3	MLWB080	4918+00.00 R1	7931430.22	20662471.04										
4	MLWB080	4926+40.09 R1	7931292.94	20663299.83										
5	MLWB080					4960+22.66 R1	7930787.91	20666644.49	4967+02.60 R1	7930686.39	20667316.81	4973+76.15 R1	7930429.60	20667946.40
7	MLWB080					4993+02.00 R1	7929702.26	20669729.62	4999+19.57 R1	7929469.03	20670301.45	5005+36.19 R1	7929291.49	20670892.95
8	MLWB080	5005+92.76 R1	7929275.22	20670947.13										
Old Muscatine Rd/Pine														
1	SRPIN	1884+00.00 R1	7929272.08	20661919.92										
2	SRPIN	1891+50.78 R1	7930022.82	20661927.96										
3	SRPIN					1894+00.88 R1	7930272.91	20661927.61	1895+68.04 R1	7930440.07	20661927.37	1897+31.43 R1	7930596.00	20661867.13
5	SRPIN					1913+22.76 R1	7932080.39	20661293.64	1916+34.19 R1	7932370.89	20661181.40	1919+37.43 R1	7932595.50	20660965.67
6	SRPIN	1925+24.09 R1	7933018.60	20660559.28										
Rest Area Ramp C														
1	RPCRES					3554+45.46 R1	7930921.55	20666080.93	3556+23.19 R1	7930895.01	20666256.67	3557+99.99 R1	7930899.88	20666434.33
2	RPCRES	3563+70.49 R1	7930915.51	20667004.62										
Rest Area Ramp C Detour														
1	DET RPCRES	4951+75.00 R1	7930913.48	20665806.18										
2	DET RPCRES					4957+56.75 R1	7930856.41	20666385.12	4959+48.97 R1	7930837.55	20666576.42	4961+36.56 R1	7930890.96	20666761.07
3	DET RPCRES					4961+36.56 R1	7930890.96	20666761.07	4962+07.63 R1	7930910.71	20666829.34	4962+77.93 R1	7930912.66	20666900.39
Existing Rest Area Ramp B														
1	ExPvt_RES_EB	9000+00.00 R1	7930306.36	20666596.06										
2	ExPvt_RES_EB					9001+98.70 R1	7930247.97	20666785.98	9004+42.42 R1	7930176.34	20667018.94	9006+83.23 R1	7930045.64	20667224.65
3	ExPvt_RES_EB					9006+83.23 R1	7930045.64	20667224.65	9009+90.13 R1	7929881.07	20667483.70	9012+77.32 R1	7929897.28	20667790.17
4	ExPvt_RES_EB					9012+77.32 R1	7929897.28	20667790.17	9013+01.72 R1	7929898.57	20667814.54	9013+26.03 R1	7929896.21	20667838.83
6	ExPvt_RES_EB					9018+71.17 R1	7929843.40	20668381.40	9019+08.48 R1	7929839.79	20668418.54	9019+45.78 R1	7929835.09	20668455.55

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data											Remarks			
			Spiral Data						Curve Data								
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L		R	E	
I-80																	
C1	MLEB080										T1900xt	T1900xt	T1901xt	T1912xt	T1900xt		
C2	MLEB080										T1900xt	T1901xt	T1902xt	T1935xt	T1900xt		
C3	MLEB080										T1900xt	T1900xt	T1901xt	T1968xt	T1900xt		
C4	MLEB080										T1900xt	T1901xt	T1902xt	T1961xt	T1900xt		
C1	MLWB080										T1900xt	T1900xt	T1901xt	T1912xt	T1900xt		
C2	MLWB080										T1900xt	T1901xt	T1903xt	T1915xt	T1900xt		
C3	MLWB080										T1900xt	T1901xt	T1903xt	T1935xt	T1900xt		
Old Muscatine																	
C1	SRPIN										T1900xt	T1900xt	T1900xt	T1902xt	T1900xt		
C2	SRPIN										T1900xt	T1900xt	T1901xt	T1904xt	T1900xt		
Rest Area Ramp C																	
C1	RPCRES										T1900xt	T1900xt	T1900xt	T1905xt	T1900xt		
Rest Area Ramp C Detour																	
C1	DET RPCRES										21°45'41.6"	T1900xt	T1901xt	T1902xt	T1900xt		
C2	DET RPCRES										14°33'42.6"	T1900xt	T1900xt	T1901xt	T1900xt		
Existing Rest Area Ramp B																	
C1	ExPvt_RES_EB										15°20'15.9"	T1900xt	T1901xt	T1904xt	T1900xt		
C2	ExPvt_RES_EB										35°27'26.3"	T1900xt	T1901xt	T1902xt	T1900xt		
C3	ExPvt_RES_EB										8°35'14.5"	T1900xt	T1900xt	T1900xt	T1900xt		
C4	ExPvt_RES_EB										1°40'35.1"	T1900xt	T1900xt	T1906xt	T1900xt		

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	Section G-G	Section H-H	Case A	Case B	Case C	Case S	Case T	Remarks
			e	L	x															
			FT	%	FT															
MLWB080	MLWB080_1	4643	4.4	200	91	PV-307Ma	4889+88.62	4890+11.37	4890+34.12	4891+25.12	4892+16.12	4892+38.87	4892+61.62	4893+25.12	4892+65.12			4893+06.92		
							4902+30.18	4902+07.43	4901+84.68	4900+93.68	4900+02.68	4899+79.93	4899+57.18	4898+93.68	4899+53.68			4899+11.88		
MLEB080	MLEB080_1	4737	4.4	200	91	PV-307Ma	5889+70.77	5889+93.52	5890+16.27	5891+07.27	5891+98.27	5892+21.02	5892+43.77	5893+07.27	5892+47.27			5892+43.77	5892+89.07	
							5902+24.82	5902+02.07	5901+79.32	5900+88.32	5899+97.32	5899+74.57	5899+51.82	5898+88.32	5899+48.32			5899+51.82	5899+06.52	
MLWB080	MLWB080_8	5701	3.6	200	111	PV-307Mb	4957+16.16	4957+43.91	4957+71.66	4958+82.66	4959+93.66	4960+21.41	4960+49.16	4960+82.66		4960+22.66				
							4976+82.65	4976+54.90	4976+27.15	4975+16.15	4974+05.15	4973+77.40	4973+49.65	4973+16.15		4973+76.15				
RPCRES	RPCRES	2000	5.4	168	62	PV-303	3552+65.86	3553+27.86	3554+45.46	3554+95.86							3554+52.30	3554+52.30		
							3559+79.59	3559+17.59	3557+99.99	3557+49.59							3557+93.15	3557+93.15		

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED.

SUGAR CREEK TWP
T-79N R-2W
SEC. 15

WENDLING QUARRIES INC.

N

4925+61
±164'±EX R/W

4926+01
±166'

4926+51
±166'

4927+12
±164'±EX R/W

4930
4932+12
±164'±EX R/W

4933+18
±173'

935
4936+16
±175'

4937+07
±162'±EX R/W

4939+65
±152'±EX R/W

4939+36
±153'±EX R/W

4939+51
±155'

I-80 Westbound (MLWB080)

Old Muscatine Rd

I-80 East



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: IMN-080-8(340)270--0E-16	
Plan Date: 06/16/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

SUGAR CREEK TWP
T-79N R-2W
SEC. 15

(2)

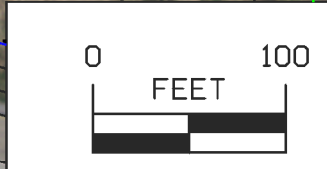
CHARLES H FRYMOYER TRUST

4946+58 (MLWB080)
±140'±EX R/W

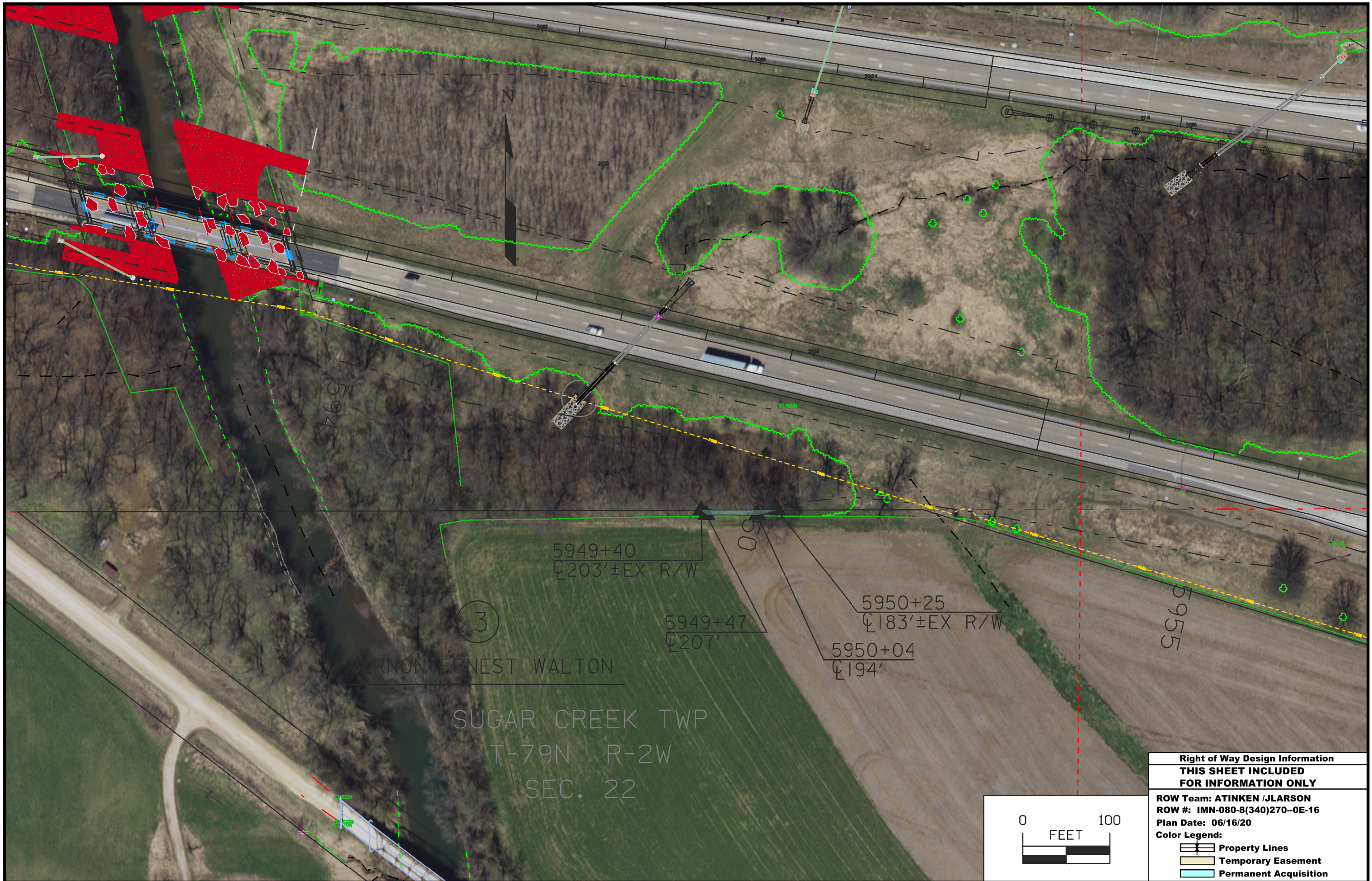
4947+51
±143'

4953+59
±142'±EX R/W

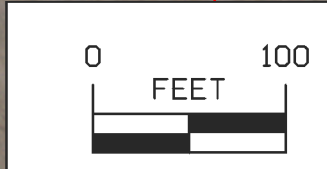
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Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: IMN-080-8(340)270--0E-16	
Plan Date: 06/16/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



3
 ERNON ERNEST WALTON
 SUGAR CREEK TWP
 T-79N R-2W
 SEC. 22



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: IMN-080-8(340)270--0E-16	
Plan Date: 06/16/20	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

TRAFFIC CONTROL PLAN

Traffic control on this project shall be in accordance with the standard road plans shown in tabulation 105-4 and the specific layouts shown in the plans. For additional complementary information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the current standard specifications and supplemental specifications.

Maintain two lanes of traffic in each direction on I-80 during daylight hours. Night time single-lane closures will be allowed as shown on Tab 108-23B.

The Engineer may modify lane closure hours as necessary to accommodate unexpected heavy traffic volume.

STAGING NOTES

GENERAL NOTES:

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

Traffic access to the Rest Area and Welcome Center shall be maintained throughout the project.

STAGE 1

Summary:

This stage is primarily pre-work in preparation for a significant traffic shift in Stage 2. Temporary Rest Area Ramp C is constructed in this stage due to its proximity to the outside shoulder reconstruction work, although traffic does not use Temporary Rest Area Ramp C until Stage 3. There is no construction of the Sugar Creek Full Reconstruction Area or I-80 over Sugar Creek bridges in this stage.

Traffic:

I-80 (both directions):

- Maintain traffic on existing lanes
- Narrow lanes from existing 12'-wide to 11'-wide toward the inside at the upstream ends of the project and widen lanes from 11'-wide back to existing 12'-wide at the downstream ends of the project.
- Close outside lane for construction of interim detour pavement areas and permanent outside shoulder. Lane closure shall occur during night hours.

Rest Area Ramp B:

- Modify exit ramp taper, then maintain traffic on existing lanes.

Rest Area Ramp C:

- Maintain traffic on existing lanes.

Construction:

I-80 (both directions):

- Grade and pave interim detour pavement areas along outside shoulders at the west end of the project beyond the interior widening area.
- Grade and pave permanent outside shoulder in both interior widening areas and beyond interior widening areas at the east end of the project.

Rest Area Ramp B:

- No construction.

Rest Area Ramp C:

- Grade and pave Temporary Rest Area Ramp C.

(All roadways):

- Conduct work associated with and necessary for said construction. This will include, but is not limited to, grading, paving, pavement removal, drainage, striping, signing, barrier, clearing and grubbing, and temporary erosion control.

STAGE 2

Summary:

This stage is the first major construction stage of the project and is for the inside portions of permanent pavement and the I-80 over Sugar Creek bridges. Temporary Rest Area Ramp C is already constructed but not in use until Stage 3.

Traffic:

I-80 (both directions):

- Shift traffic from existing lanes to the outside at the upstream ends of the project, shift traffic inward and narrow lanes from 12'-wide to 11'-wide approaching the Sugar Creek Full Reconstruction area, shift traffic outward and widen lanes from 11'-wide to 12'-wide just beyond the Sugar Creek Full Reconstruction area, and shift traffic back to the existing lanes at the downstream ends of the project.
- Close inside lane for construction of short portions of interior widening construction near Sugar Creek Full Reconstruction area. Lane

STAGING NOTES

closure shall occur during night hours.

Rest Area Ramp B:

- Modify exit ramp taper, then maintain traffic on existing lanes.

Rest Area Ramp C:

- Maintain traffic on existing lanes.

Construction:

I-80 (both directions):

- Grade and pave interim detour pavement areas along inside shoulders at the west end of the project beyond the interior widening areas.
- Grade and pave inside portion of both interior widening areas
- Grade and pave temporary detour pavement along the median side of both interior widening areas at the ends abutting the Sugar Creek Full Reconstruction areas.
- Grade and pave inside portion of Sugar Creek Full Reconstruction areas with HMA Surface Runout applied over the pavement abutting the I-80 over Sugar Creek bridges per Iowa DOT Standard Road Plan PR-201 "Runouts for Resurfacing".
- Build inside portion of I-80 over Sugar Creek bridges.

Rest Area Ramp B:

- No construction.

Rest Area Ramp C:

- No construction.

(All roadways):

- Conduct work associated with and necessary for said construction. This will include, but is not limited to, grading, paving, pavement removal, drainage, striping, signing, barrier, clearing and grubbing, and temporary erosion control.

STAGE 3

Summary:

This stage is the second major construction stage of the project and is for the remainder (outside portions) of the permanent pavement and the I-80 over Sugar Creek bridges. Temporary Rest Area Ramp C is in use in this stage, while permanent Rest Area Ramp C is constructed.

Traffic:

I-80 (both directions):

- Shift traffic inward from existing lanes and narrow lanes from 12'-wide to 11'-wide through the upstream interior widening areas, then shift traffic back to the existing lanes and widen lanes from 11'-wide to 12'-wide through the downstream interior widening areas.

Rest Area Ramp B:

- Modify exit ramp taper, then maintain traffic on existing lanes.

Rest Area Ramp C:

- Maintain traffic on Temporary Rest Area Ramp C and modify entrance ramp taper.

Construction:

I-80 (both directions):

- Grade and pave outside portion of Sugar Creek Full Reconstruction areas with HMA Surface Runout applied over the pavement abutting the I-80 over Sugar Creek bridges per Iowa DOT Standard Road Plan PR-201 "Runouts for Resurfacing".
- [Westbound only] Grade and pave outside portion of interior widening area between Sugar Creek Full Reconstruction area and Rest Area Ramp C.
- Build outside portion of I-80 over Sugar Creek bridges.

Rest Area Ramp B:

- No construction.

Rest Area Ramp C:

- Grade and Pave permanent Rest Area Ramp C.

(All roadways):

- Conduct work associated with and necessary for said construction. This will include, but is not limited to, grading, paving, pavement removal, drainage, striping, signing, barrier, clearing and grubbing, and temporary erosion control.

STAGE 4

Summary:

This last stage is for the final remaining items, primarily the HMA Overlay across nearly all sections with permanent pavement, while traffic is in the "walkaway" configuration. The I-80 over Sugar Creek bridges are already constructed.

Traffic:

I-80 (both directions):

- Maintain traffic on existing and final lanes, which follow the same alignment. Traffic control shall be per Iowa DOT Standard Road Plan TC-482 "Uneven Lanes". Close single lanes at a time nightly as needed for construction of HMA Overlay per Iowa DOT Standard Road Plans TC-418 "Lane Closure on Divided Highway". Lane closures as needed shall occur during night hours.

108-26A
08-01-08

STAGING NOTES

Rest Area Ramp B:
- Maintain traffic on new exit ramp and then on existing lane.

Rest Area Ramp C:
- Maintain traffic on existing lane and then on new entrance ramp.

Construction:

I-80 (both directions):
- Remove HMA Surface Runout applied over the pavement abutting the I-80 over Sugar Creek bridges.
- Remove temporary detour pavement along the median side of both interior widening areas at the ends abutting the Sugar Creek Full Reconstruction areas.
- Pave HMA Overlay across full width of pavement through interior widening areas and Sugar Creek Full Reconstruction areas. The locations of exclusively permanent outside shoulder at the east end of the project and the I-80 over Sugar Creek bridges themselves shall not receive the HMA Overlay.

Rest Area Ramp B:
- No construction.

Rest Area Ramp C:
- Remove Temporary Rest Area Ramp C.

(All roadways):
- Conduct work associated with and necessary for said construction. This will include, but is not limited to, paving, pavement removal, striping, signing, barrier, and temporary erosion control.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
IM-NHS-080-7(164)270--03-16	Bridge Replacement - PPCB
BRFIMX-080-7(108)270--14-16	Bridge Replacement - PPCB

108-23B
10-17-17

* This is to only be used in conjunction with Tabulation 108-23A
Shaded area indicates times that lane closures are not allowed

TRAFFIC CONTROL CLOSURE TABLE(S)












	AM											Noon		PM																																																				
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FRI																																																																		
SAT																																																																		

108-25
10-21-14




511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
I-80			No restrictions anticipated									





















CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	 Existing Pavement Shading
Gray, Light	(48)	 Previously Constructed Pavement Shading
Gray, Med	(80)	 Previously Constructed Granular Surface Shading
Blue, Light	(230)	 Proposed Pavement Shading
Lavender	(9)	 Temporary Pavement Shading
Red	(3)	 Proposed Bridge Shading
Brown, Med	(237)	 Proposed Grading
Green, Dashed	(10)	 Existing Grading
Green, Solid	(237)	 Previously Constructed Grading
Violet	(15)	 Temporary Barrier Rail, Unpinned
Flush Orange	(228)	 Temporary Barrier Rail, Pinned

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	 Existing Topographic Features and Labels
Magenta	(5)	 Pavement Marking Call Outs
Blue	(1)	 Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	 Pavement Markings, Yellow
Off White	(254)	 Pavement Markings, White
Violet	(15)	 Temporary barrier rail, Unpinned
Flush Orange	(228)	 Temporary barrier rail, Pinned
SHADING	Design Color No.	
Green, Light	(225)	 Existing Pavement Shading
Gray, Light	(48)	 Proposed PCC Pavement with HMA Surfacing Shading
Gray, Med	(80)	 Proposed Granular Shading
Gray, Dark	(112)	 Proposed HMA Resurfacing Shading
Blue, Light	(230)	 Proposed Pavement Shading
Lavender	(9)	 Temporary Pavement Shading
Brown, Light	(236)	 Proposed Grading Limits Shading
Pink, Dark	(13)	 Proposed MSE or CIP Wall Shading
Red	(3)	 Proposed Bridge Shading
Black w/Gray, Light Fill	(0,48)	 Previously Constructed Structure

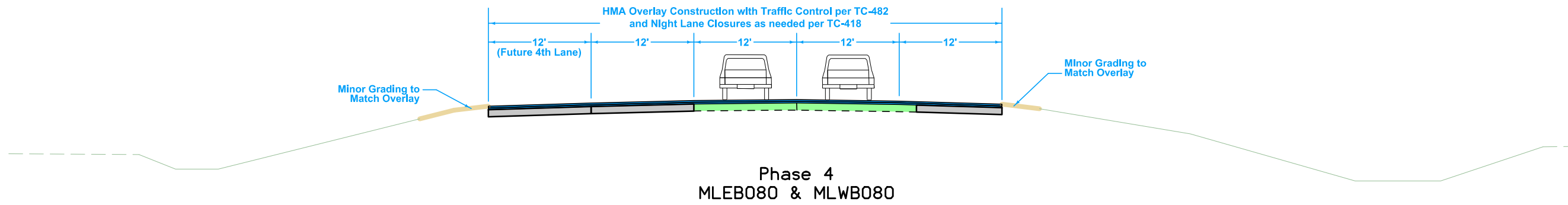
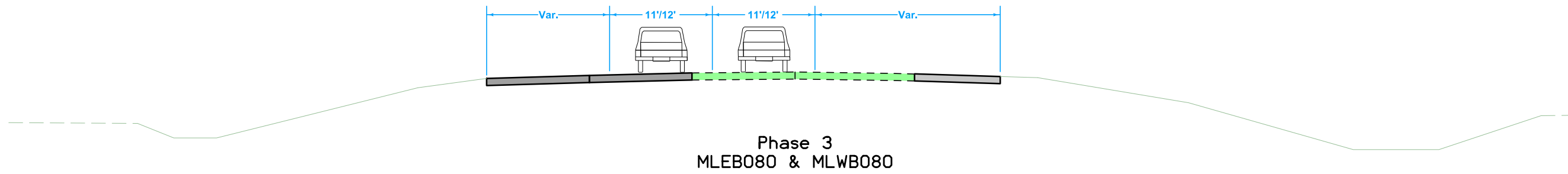
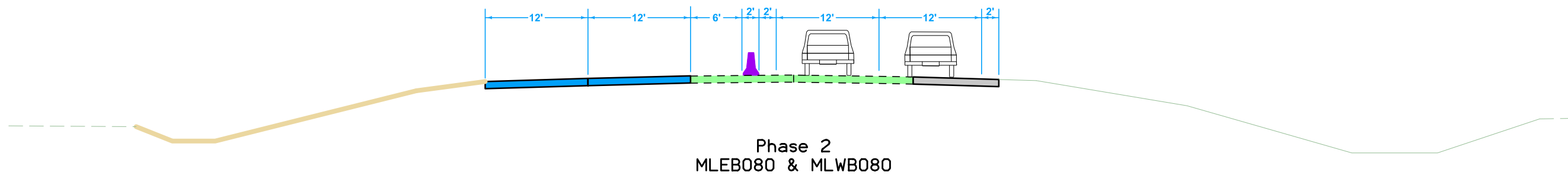
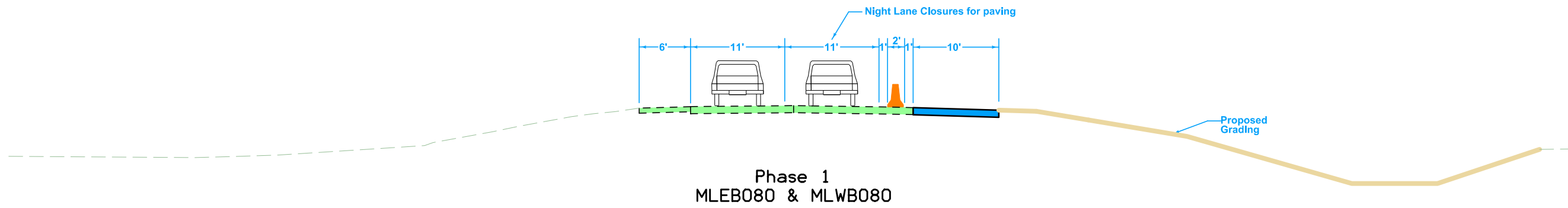
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

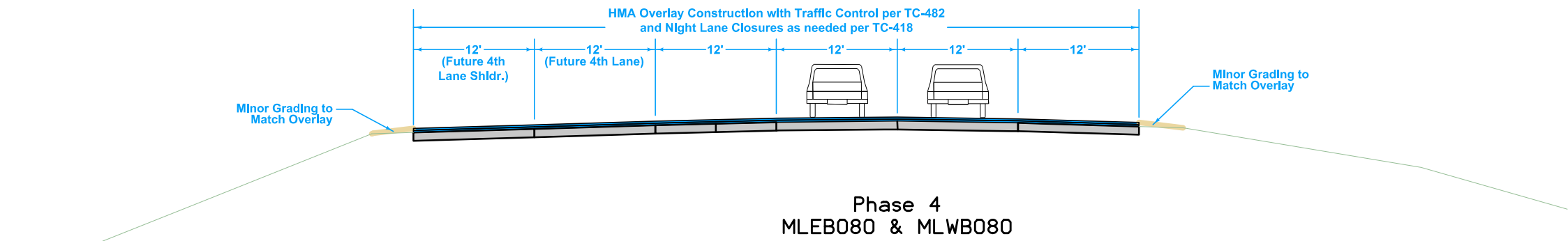
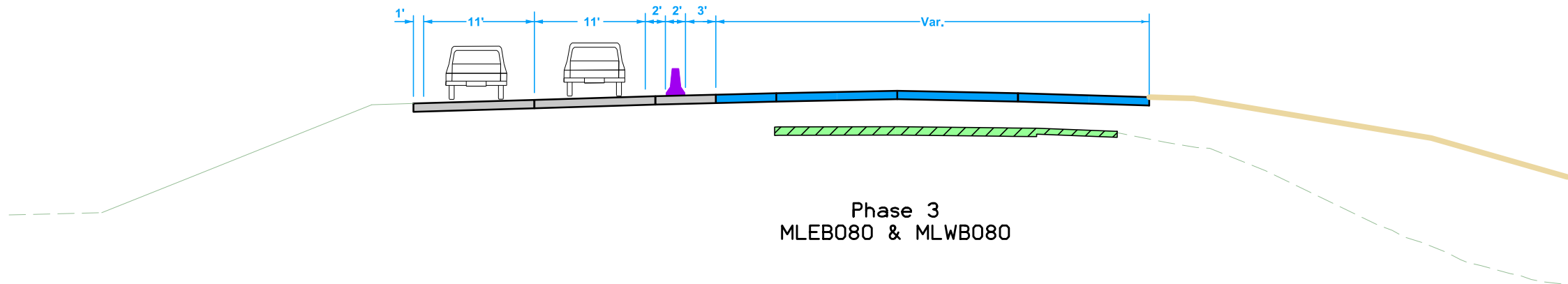
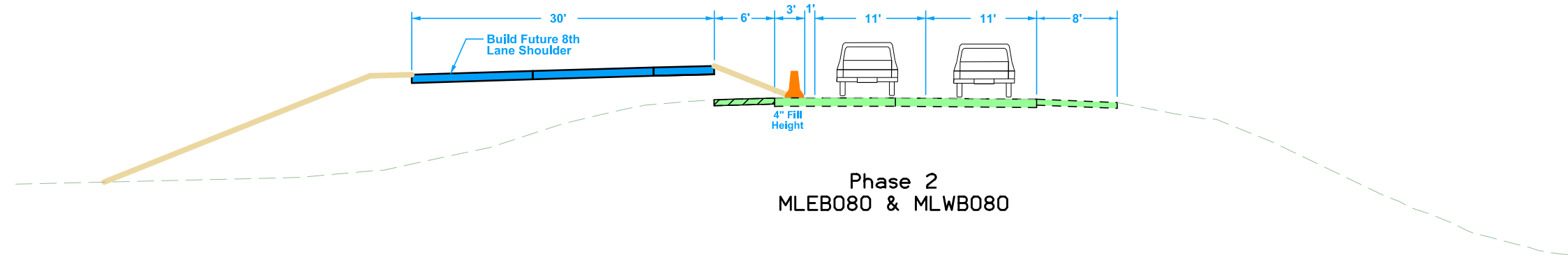
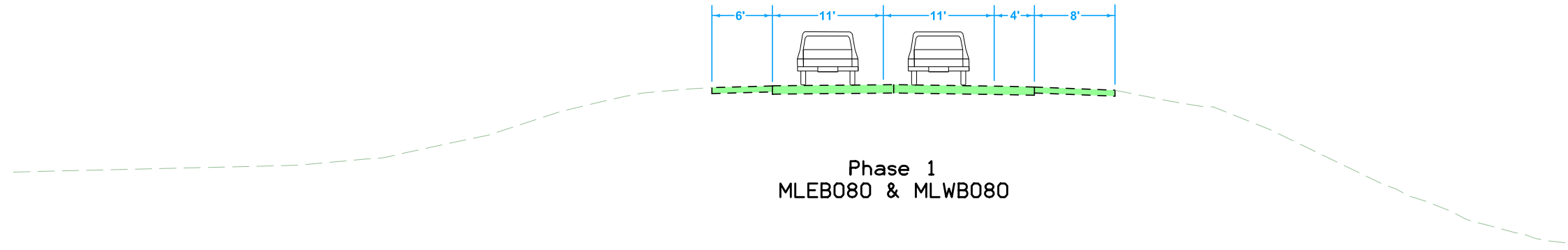
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

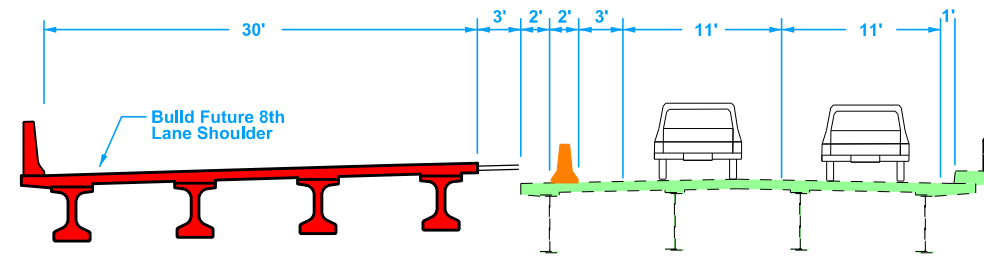
(COVERS SHEET SERIES J)



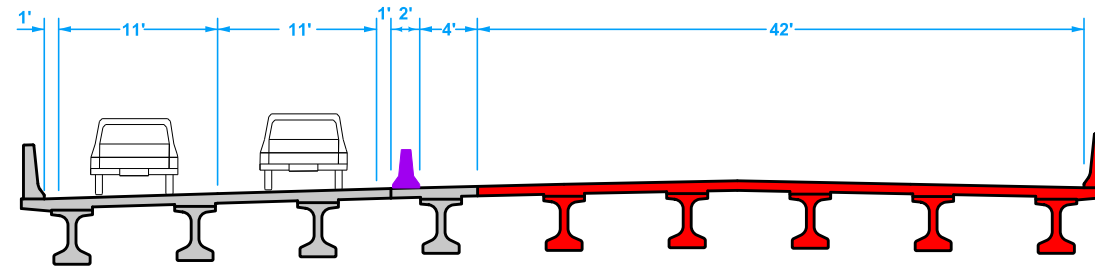
Interior Widening Areas



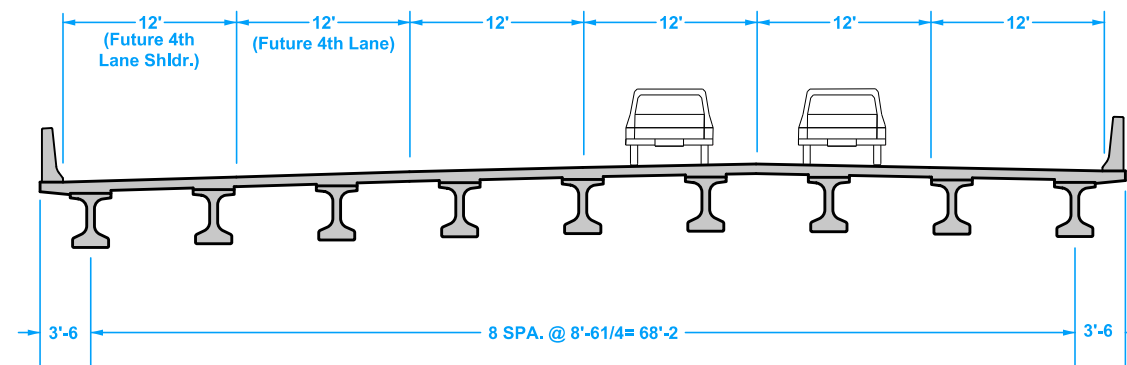
Sugar Creek Full Reconstruction Areas



Stage 2
MLEB080 & MLWB080



Stage 3
MLEB080 & MLWB080
(EB SHOWN)



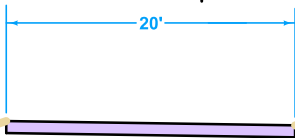
Phase 4
MLEB080 & MLWB080
(EB SHOWN)

I-80 over Sugar Creek
Bridge Reconstruction

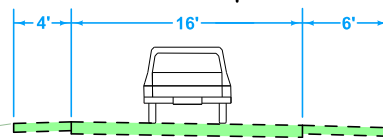
(I-80 westbound)



Temporary Rest Area Ramp C



Existing Rest Area Ramp C

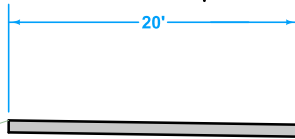


Phase 1

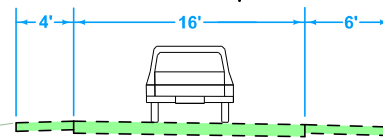
(I-80 westbound)



Temporary Rest Area Ramp C



Existing Rest Area Ramp C

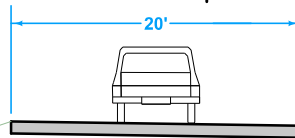


Phase 2

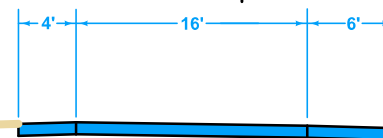
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Temporary Rest Area Ramp C

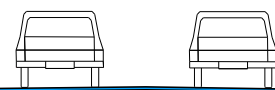


Proposed Rest Area Ramp C

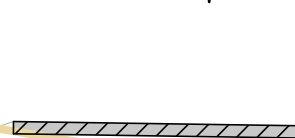


Phase 3

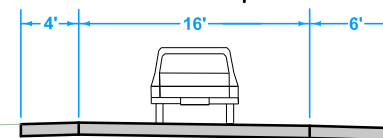
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Temporary Rest Area Ramp C



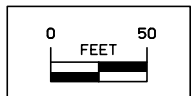
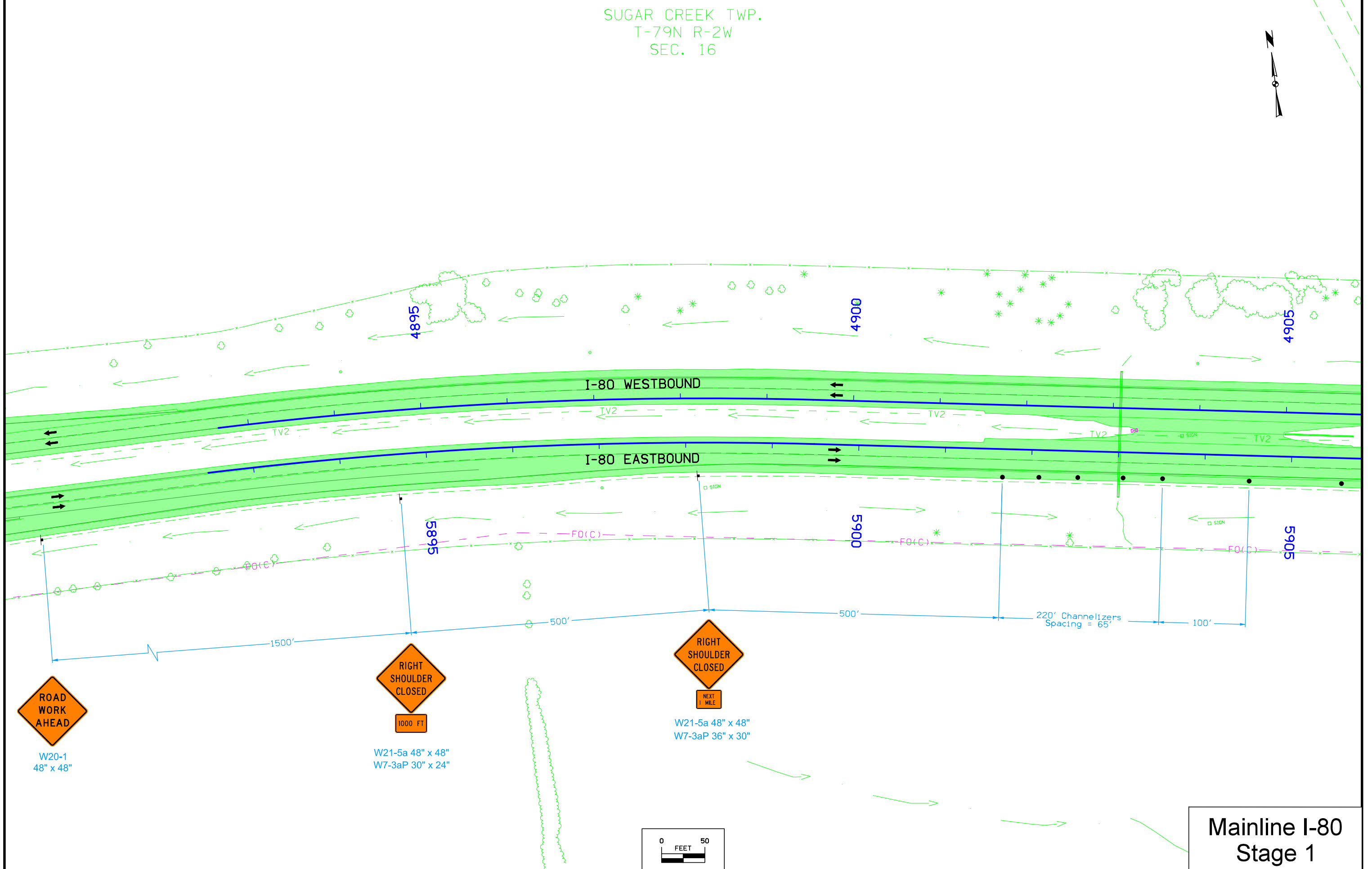
Proposed Rest Area Ramp C



Phase 4

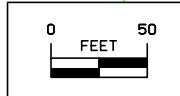
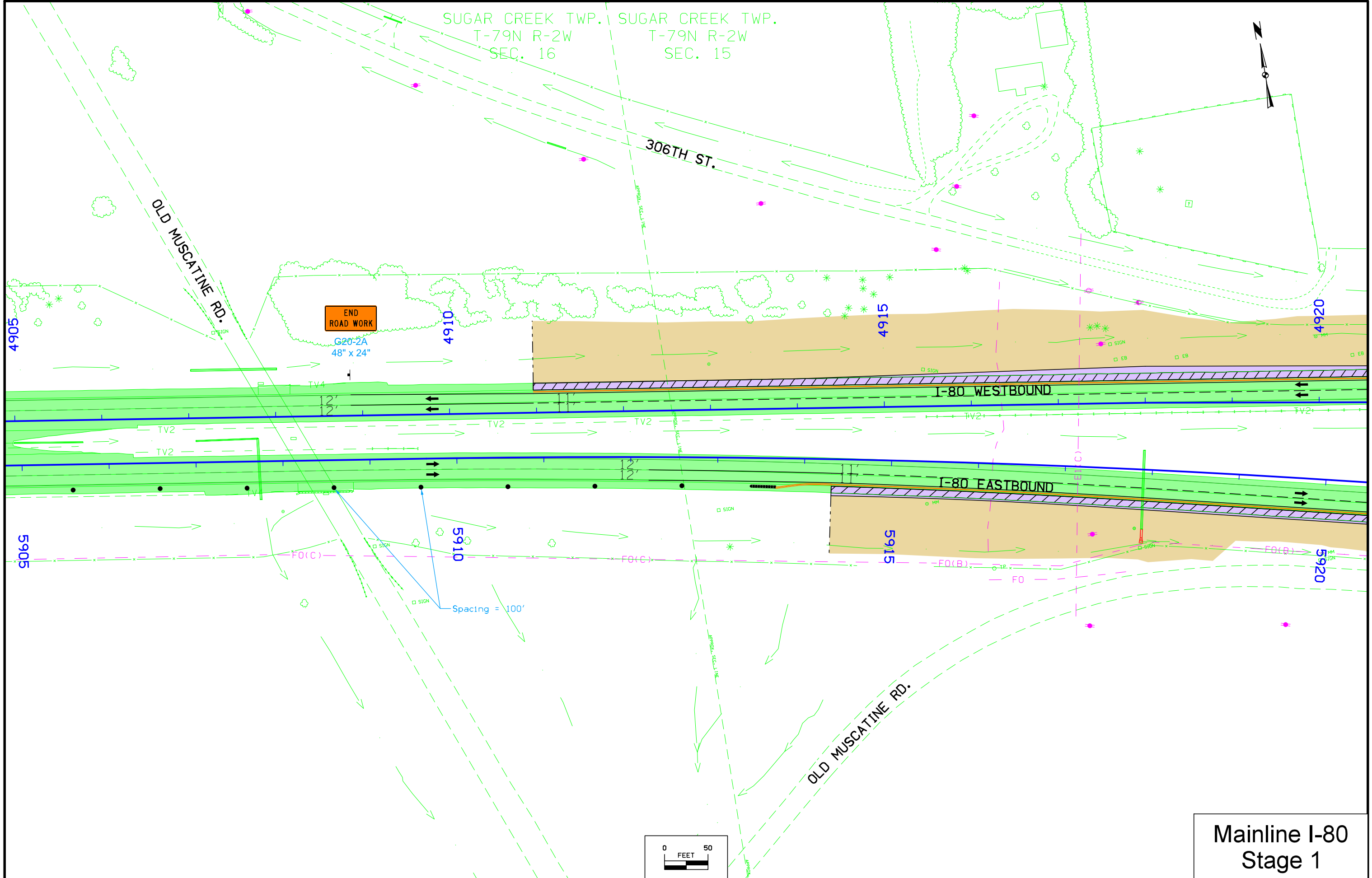
Rest Area Ramp C

SUGAR CREEK TWP.
T-79N R-2W
SEC. 16



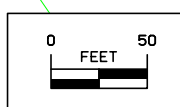
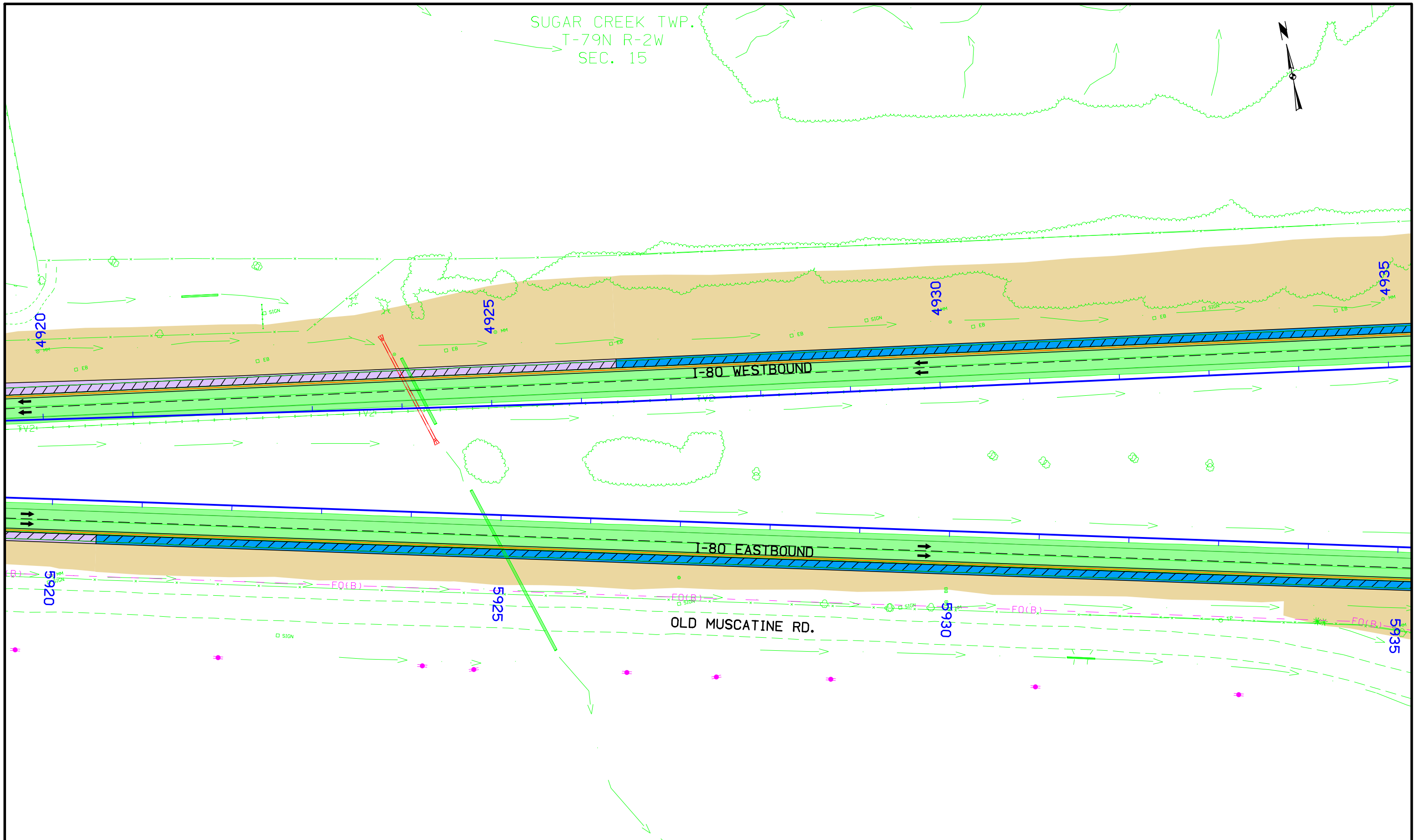
Mainline I-80
Stage 1

SUGAR CREEK TWP. T-79N R-2W SEC. 16
SUGAR CREEK TWP. T-79N R-2W SEC. 15



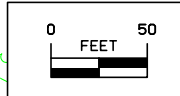
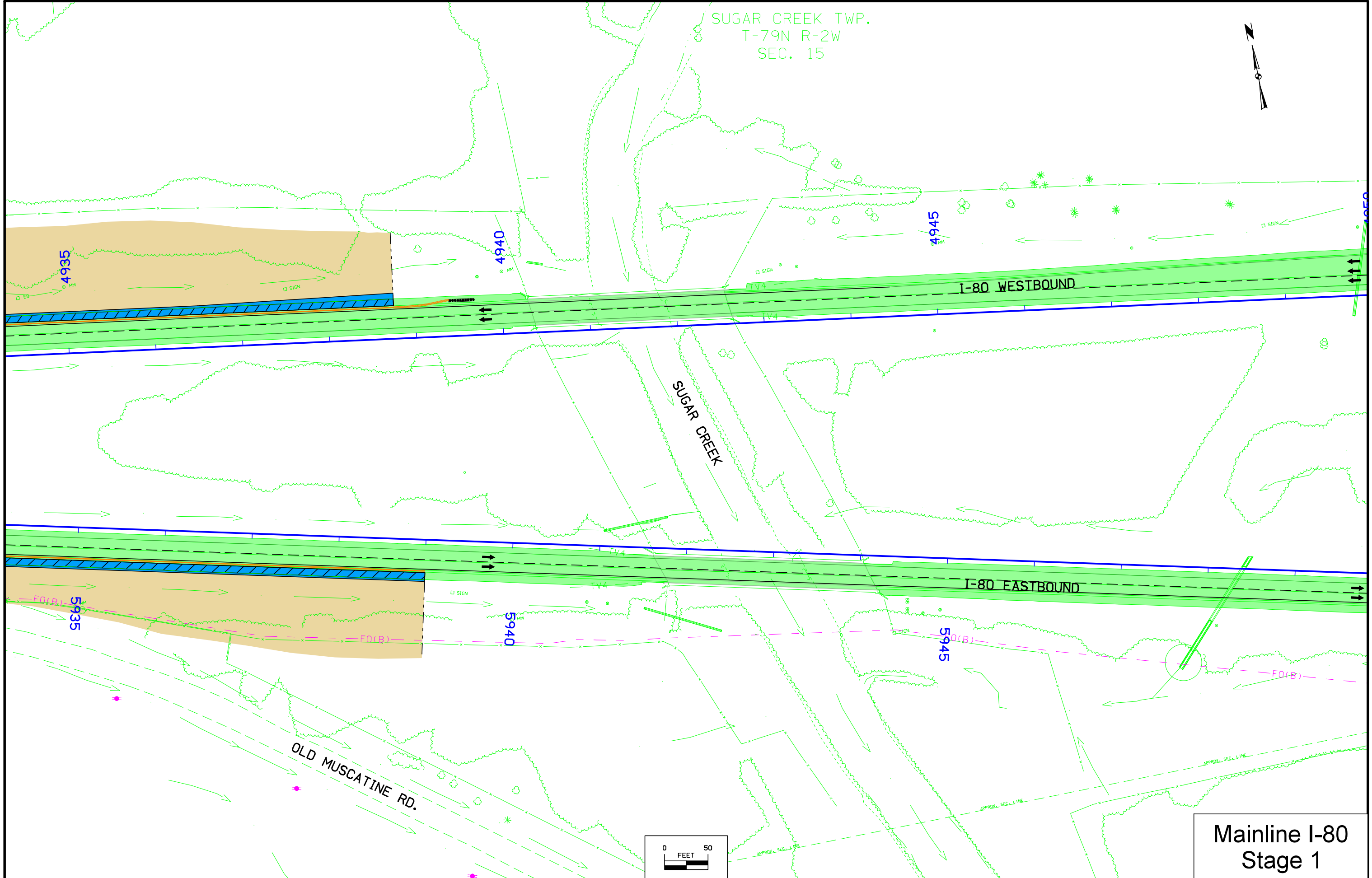
Mainline I-80
Stage 1

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



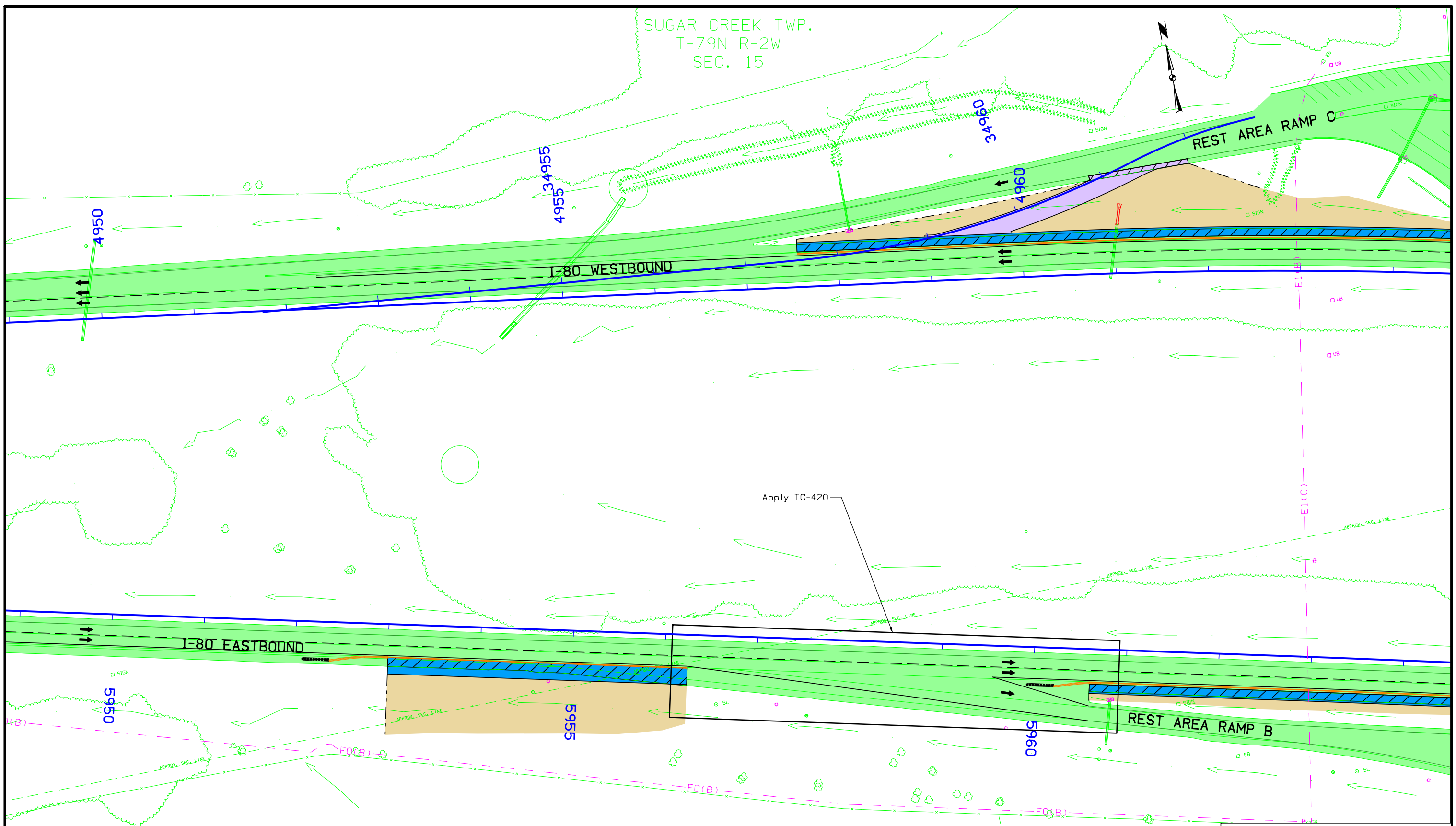
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Stage 1

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15

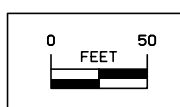


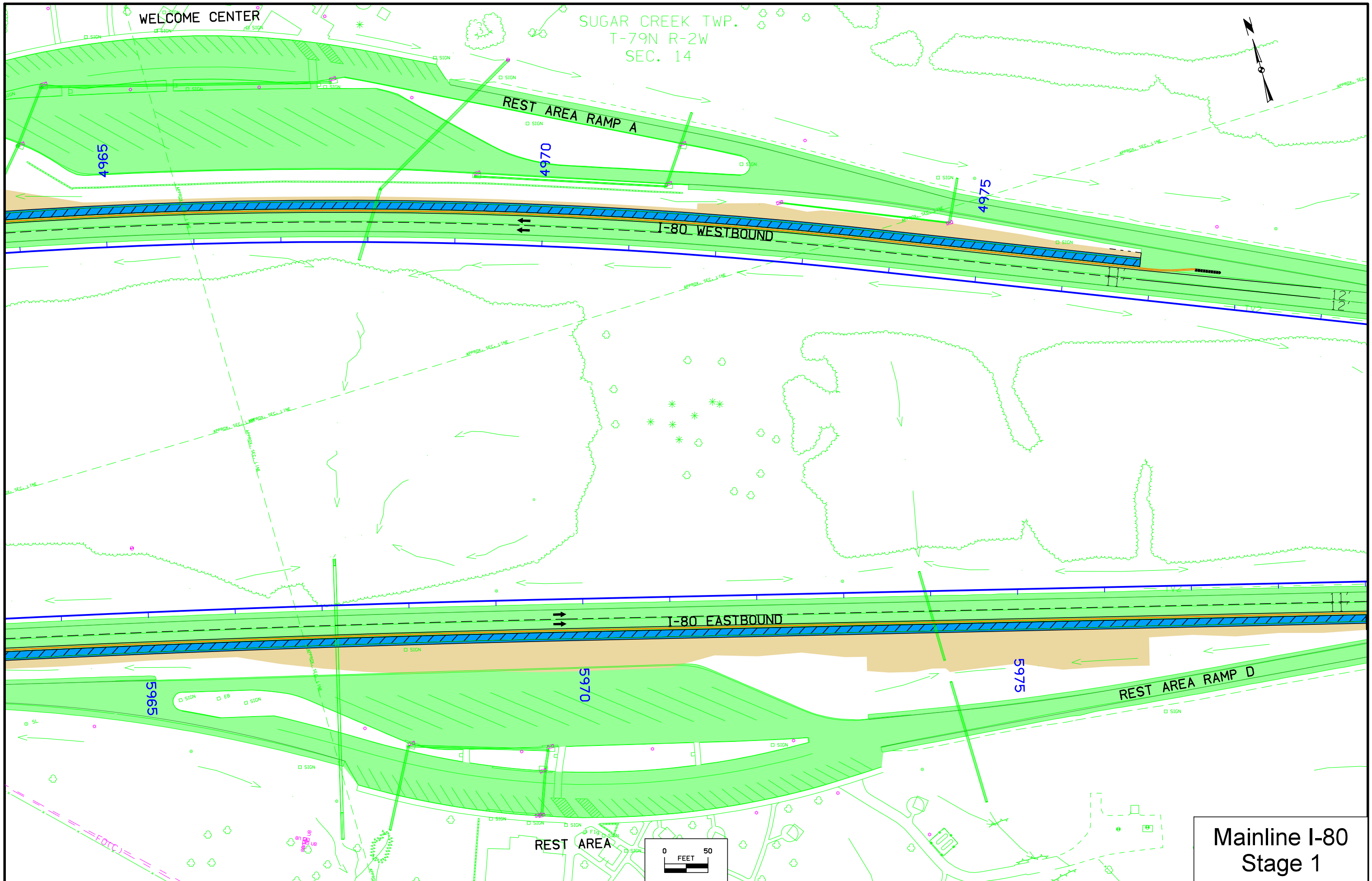
Mainline I-80
Stage 1

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



Mainline I-80
Rest Area Ramp B
Rest Area Ramp C
Stage 1





WELCOME CENTER

SUGAR CREEK TWP.
T-79N R-2W
SEC. 14

REST AREA RAMP A

I-80 WESTBOUND

I-80 EASTBOUND

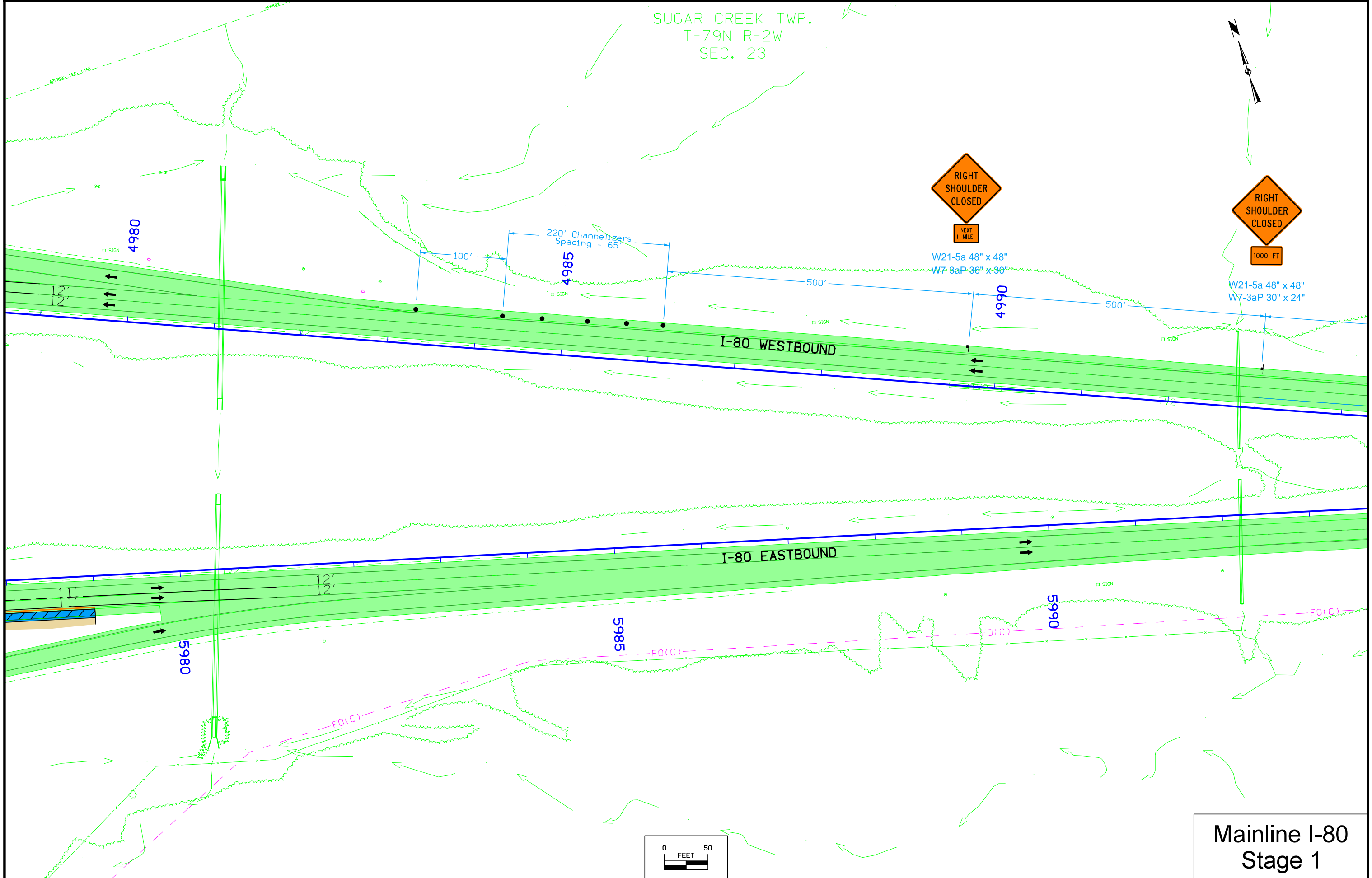
REST AREA RAMP D

REST AREA



Mainline I-80
Stage 1

SUGAR CREEK TWP.
T-79N R-2W
SEC. 23



Mainline I-80
Stage 1

SUGAR CREEK TWP.
T-79N R-2W
SEC. 23



W20-1
48" x 48"

4995

5000

1500'

5005

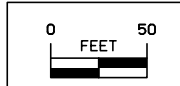
I-80 WESTBOUND

I-80 EASTBOUND

5669

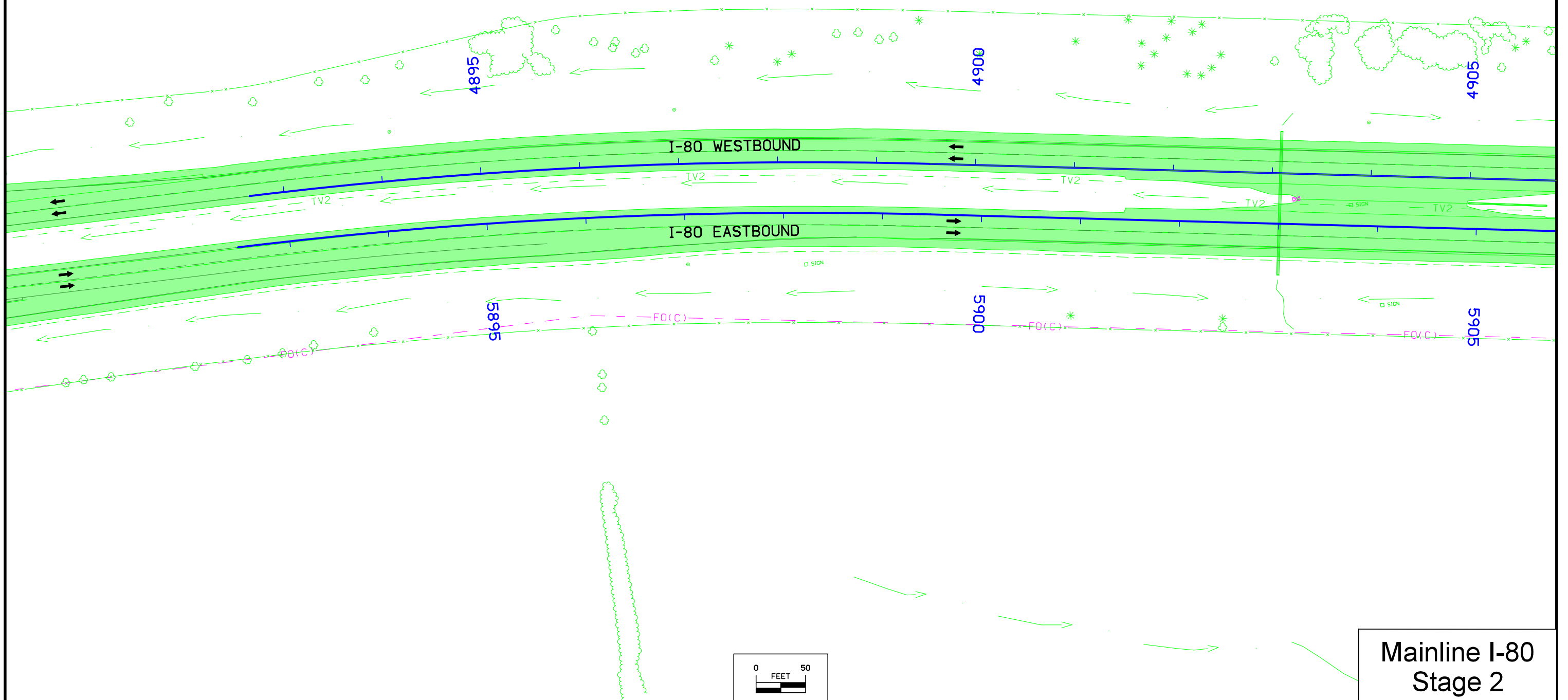
6000

FO(C) FO(C) FO(C) FO(C) FO(C)

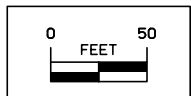


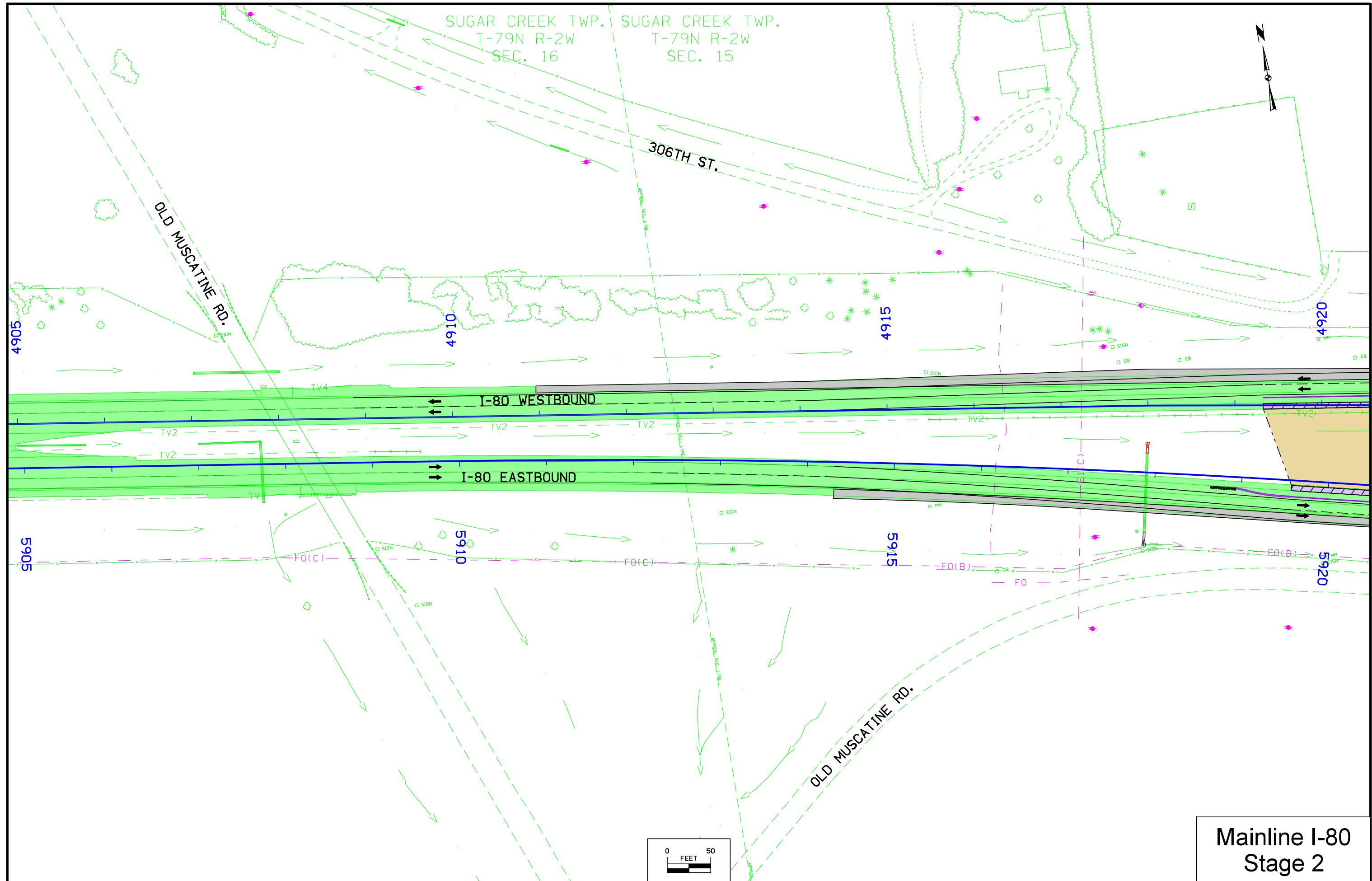
Mainline I-80
Stage 1

SUGAR CREEK TWP.
T-79N R-2W
SEC. 16



Mainline I-80
Stage 2





SUGAR CREEK TWP. T-79N R-2W SEC. 16
 SUGAR CREEK TWP. T-79N R-2W SEC. 15

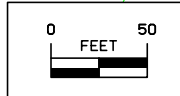
306TH ST.

OLD MUSCATINE RD.

I-80 WESTBOUND

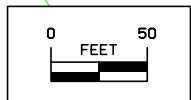
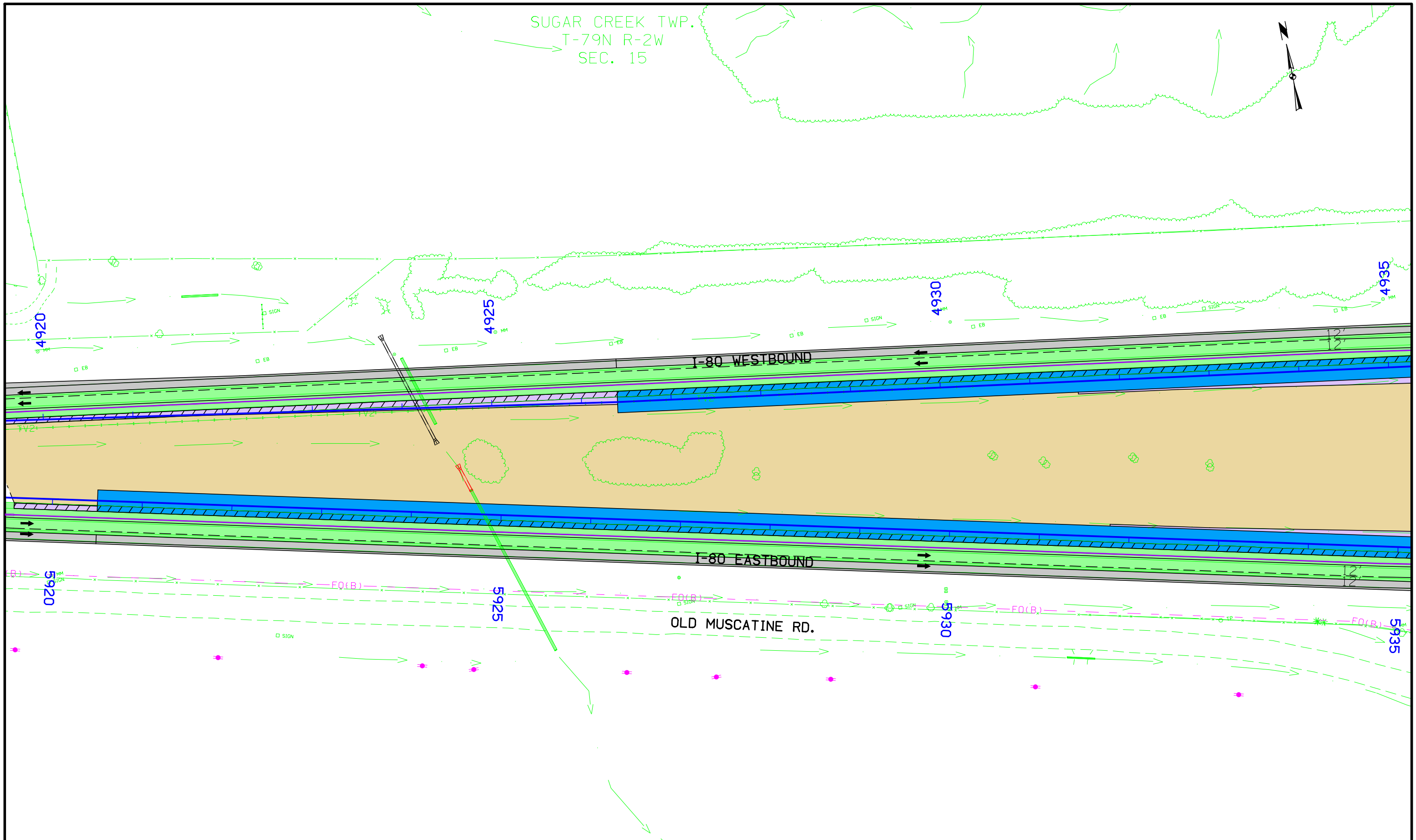
I-80 EASTBOUND

OLD MUSCATINE RD.



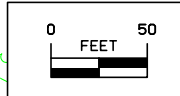
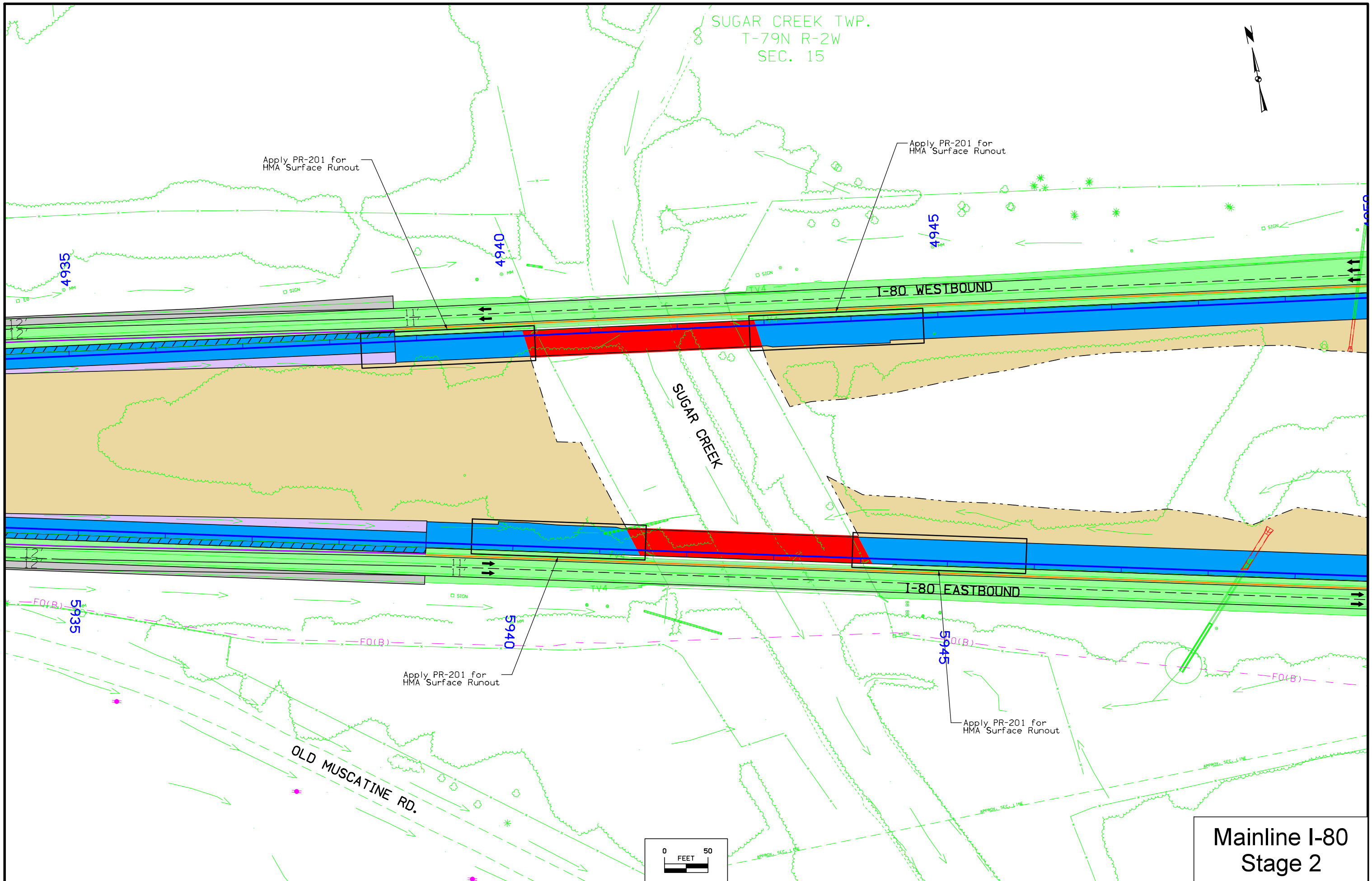
Mainline I-80
 Stage 2

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



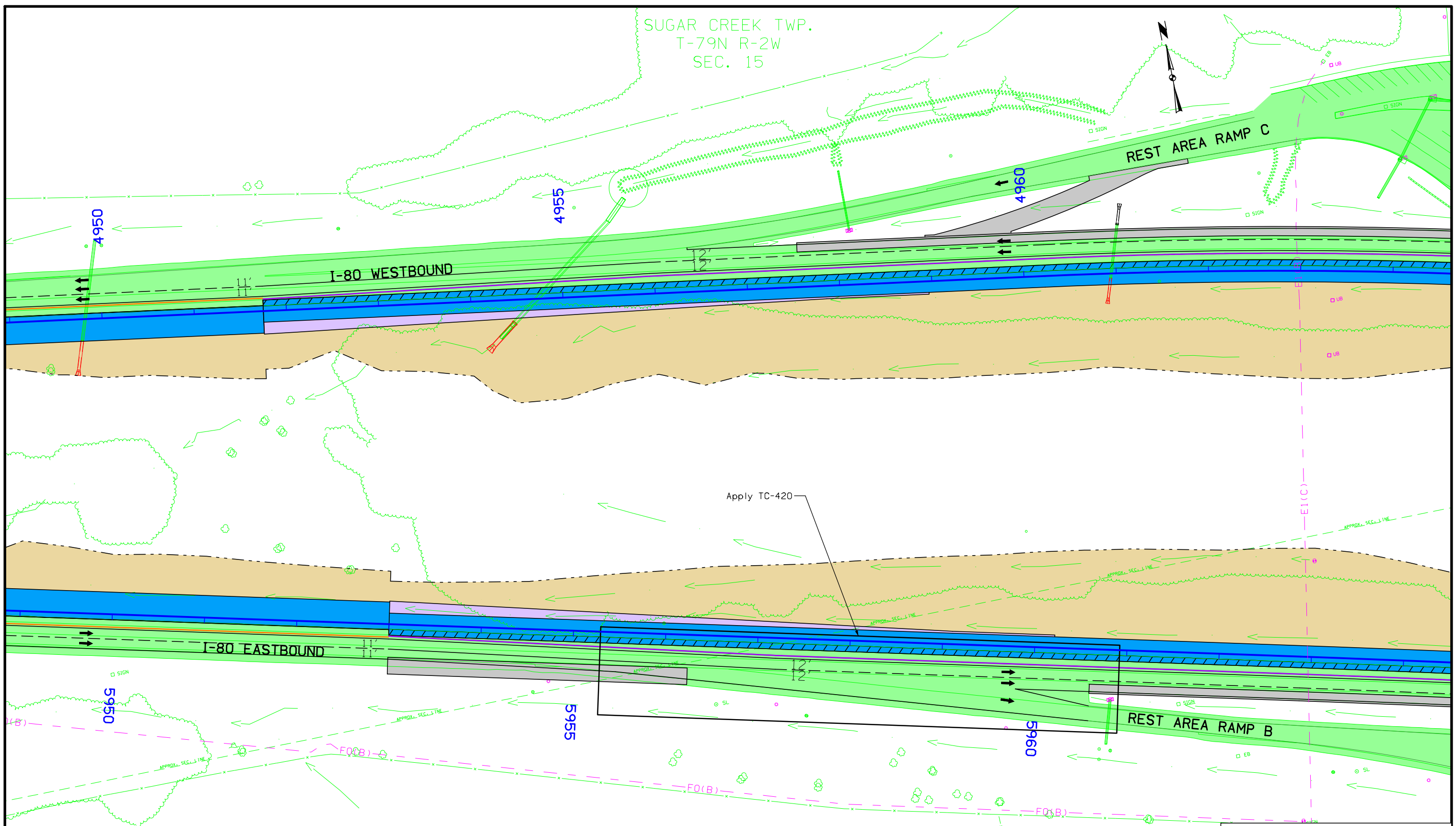
Mainline I-80
Stage 2

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15

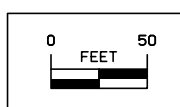


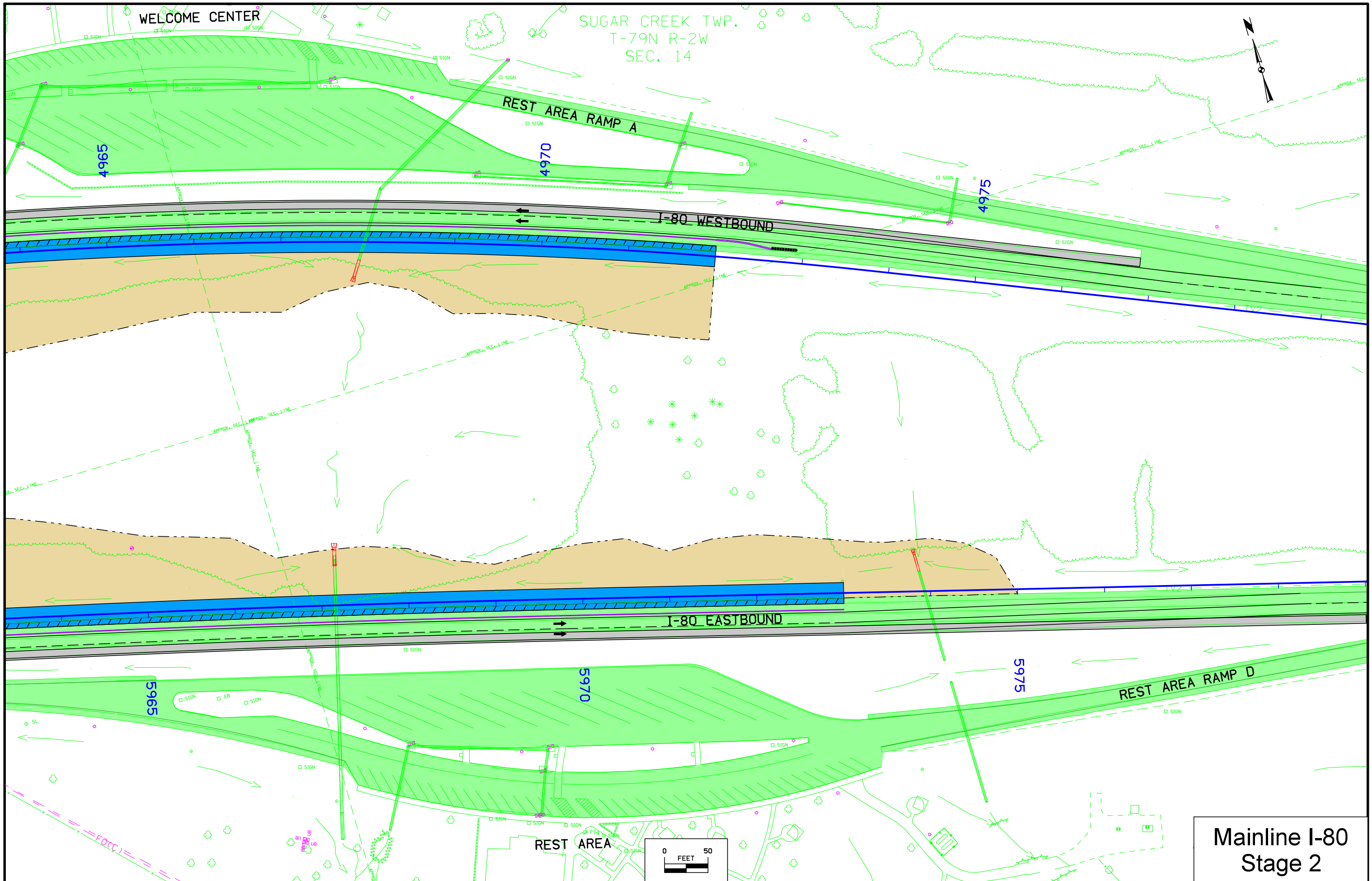
Mainline I-80
Stage 2

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



Mainline I-80
Rest Area Ramp B
Rest Area Ramp C
Stage 2





WELCOME CENTER

SUGAR CREEK TWP.
T-79N R-2W
SEC. 14

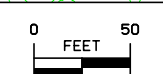
REST AREA RAMP A

I-80 WESTBOUND

I-80 EASTBOUND

REST AREA RAMP D

REST AREA

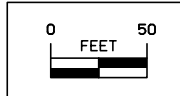
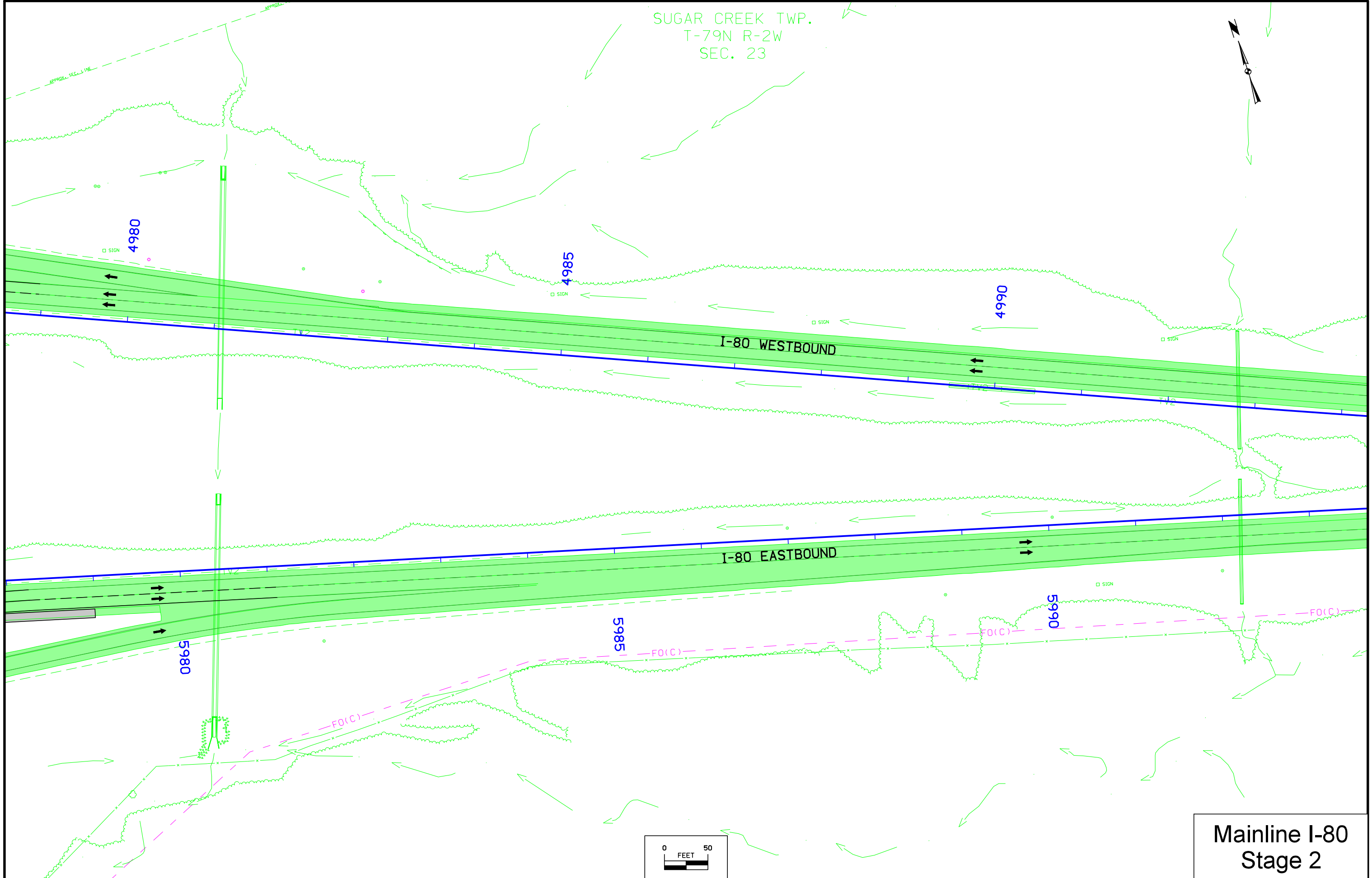


Mainline I-80
Stage 2

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT \ HR Green	CEDAR COUNTY	PROJECT NUMBER	IM-NHS-080-8(341)269--03-16	SHEET NUMBER	J.21
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SUGAR CREEK TWP.
T-79N R-2W
SEC. 23

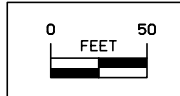
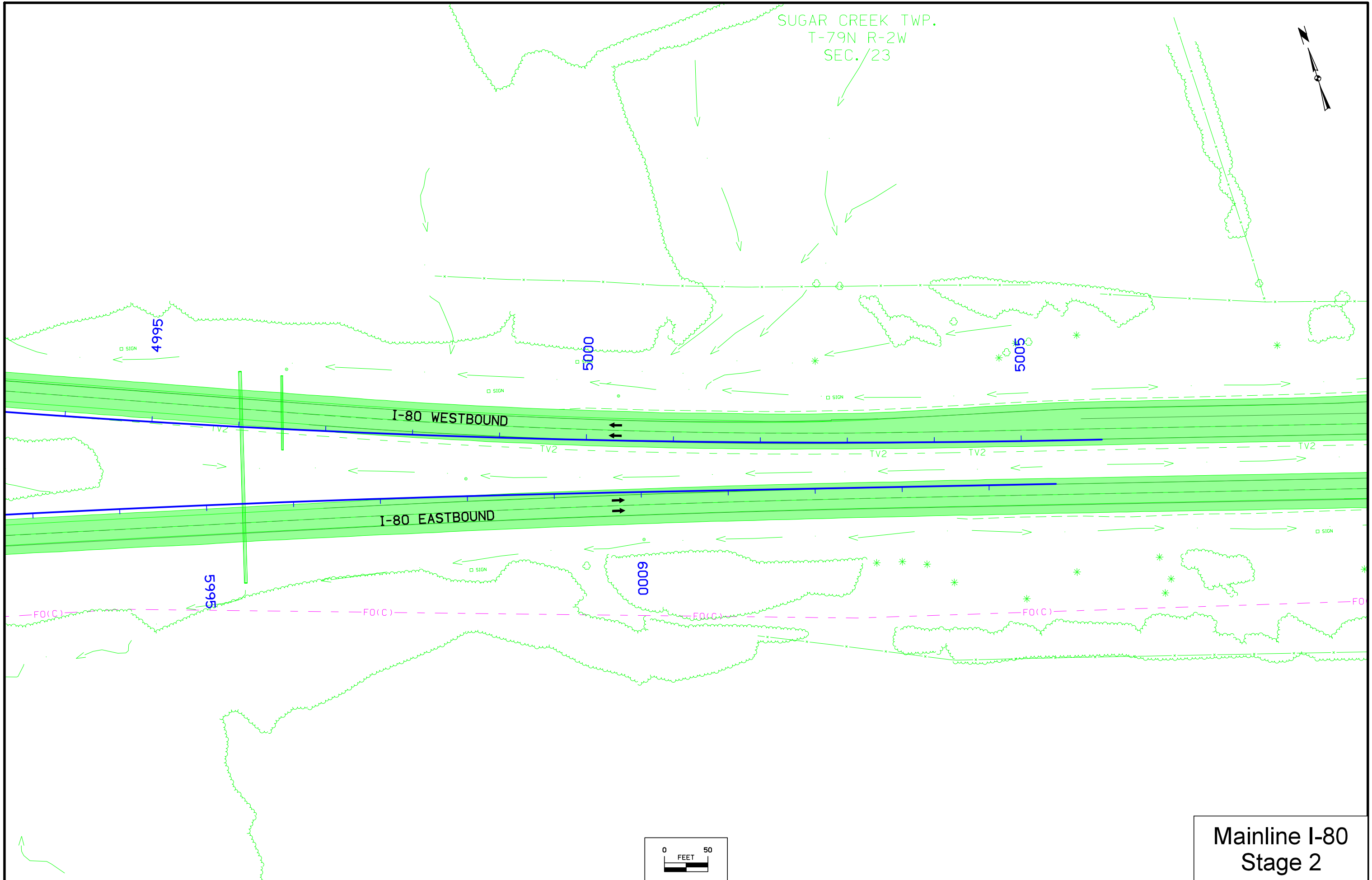


**Mainline I-80
Stage 2**

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT \ HR Green	CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-8(341)269--03-16	SHEET NUMBER J.22
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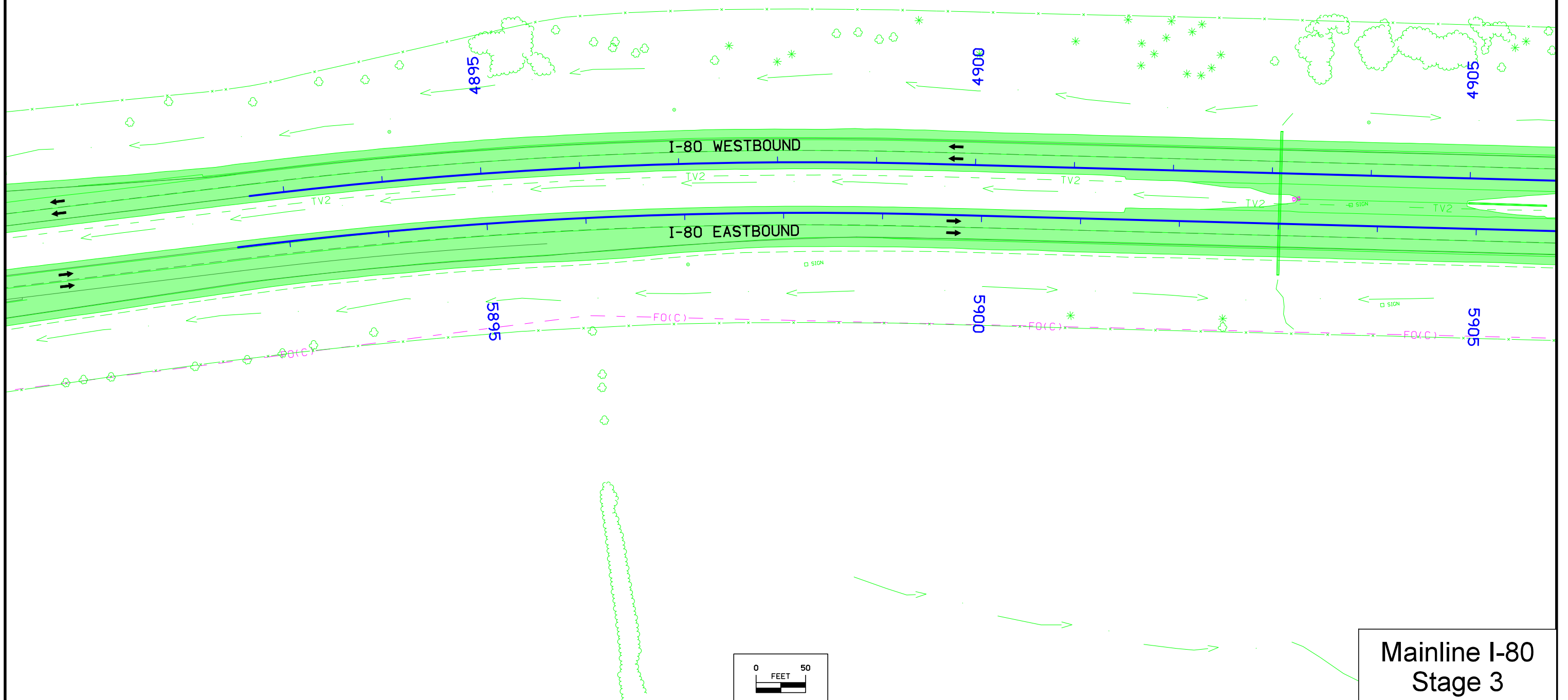
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SUGAR CREEK TWP.
T-79N R-2W
SEC. 23

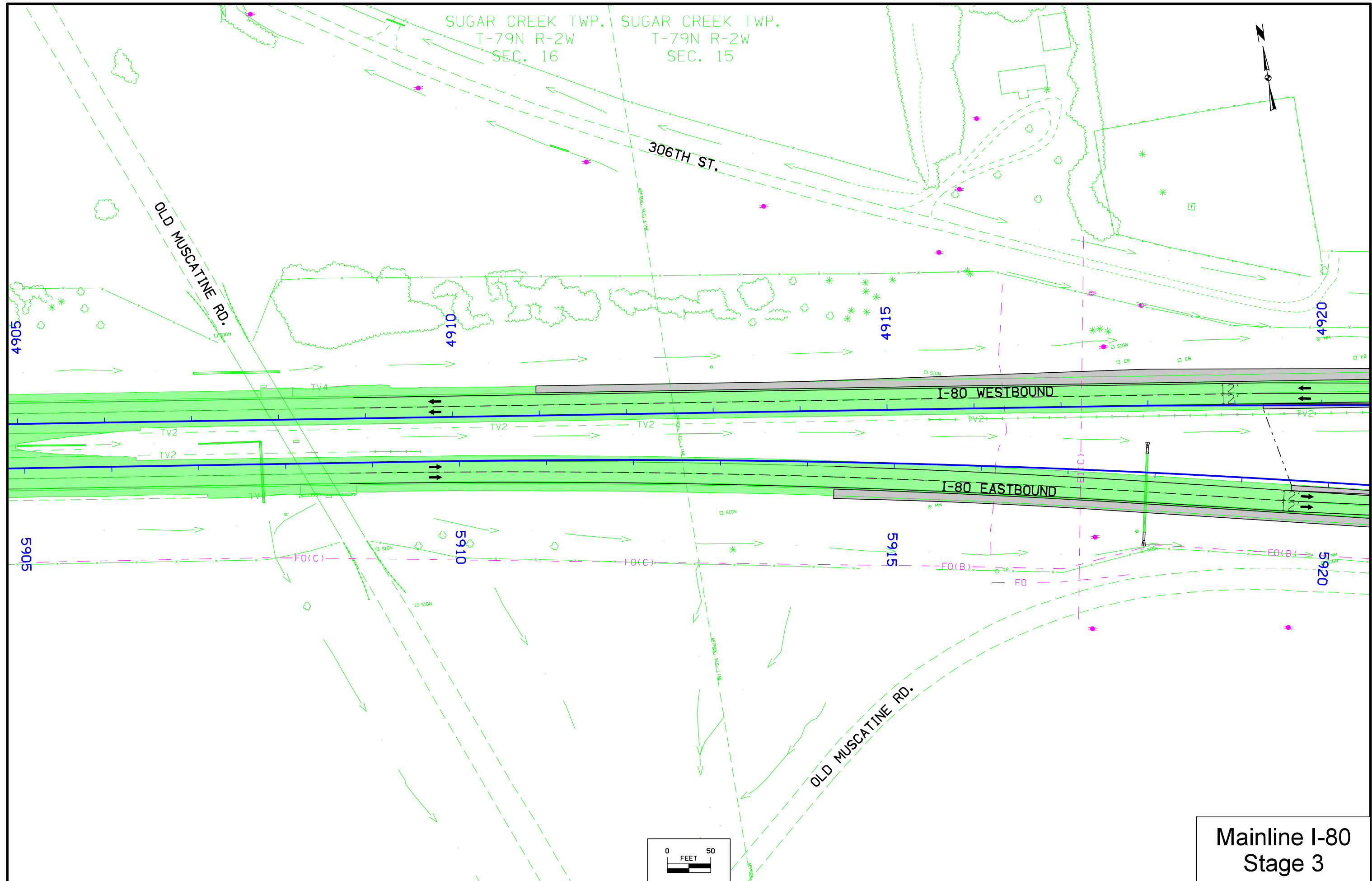


Mainline I-80
Stage 2

SUGAR CREEK TWP.
T-79N R-2W
SEC. 16

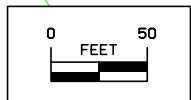
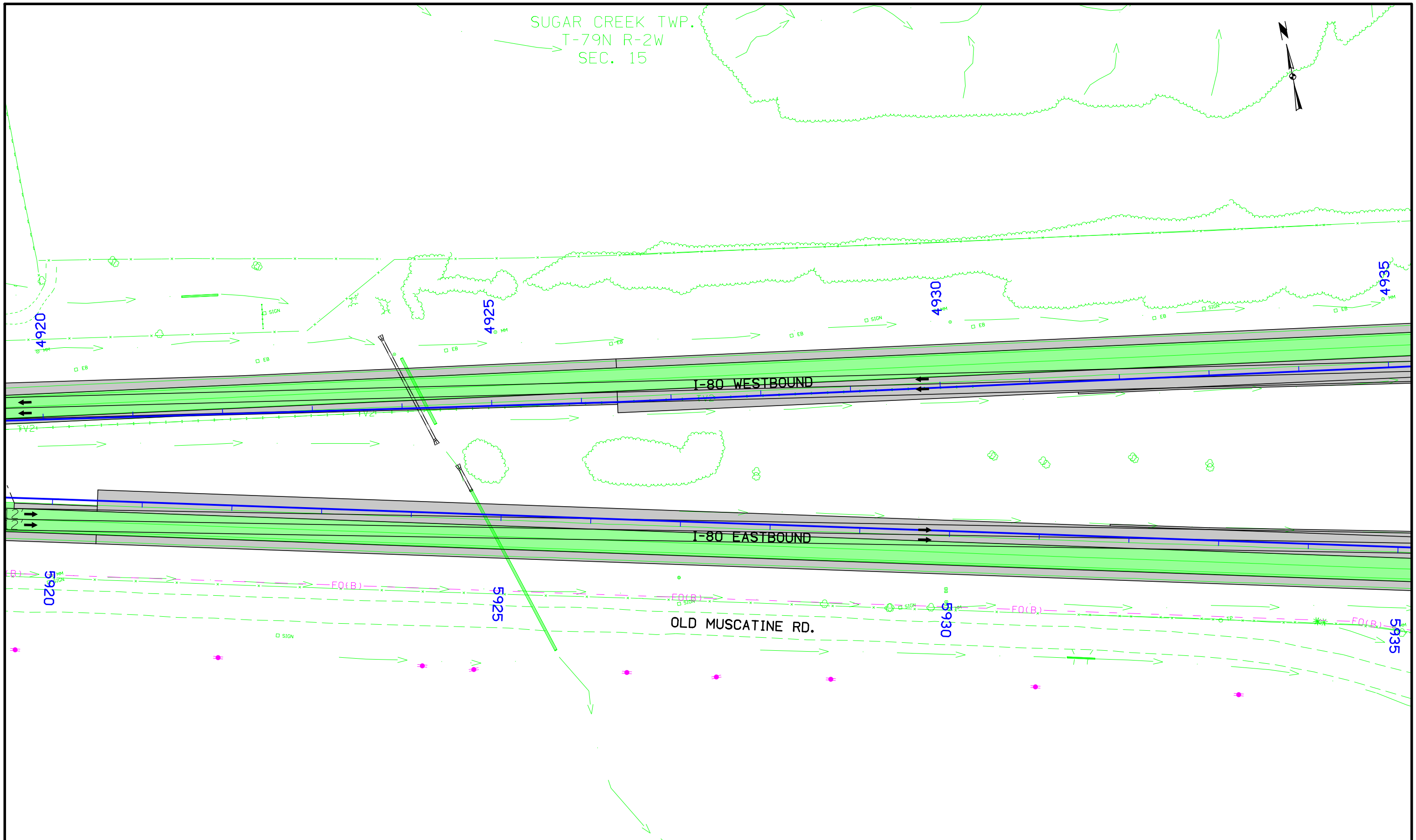


Mainline I-80
Stage 3



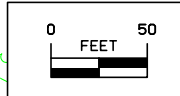
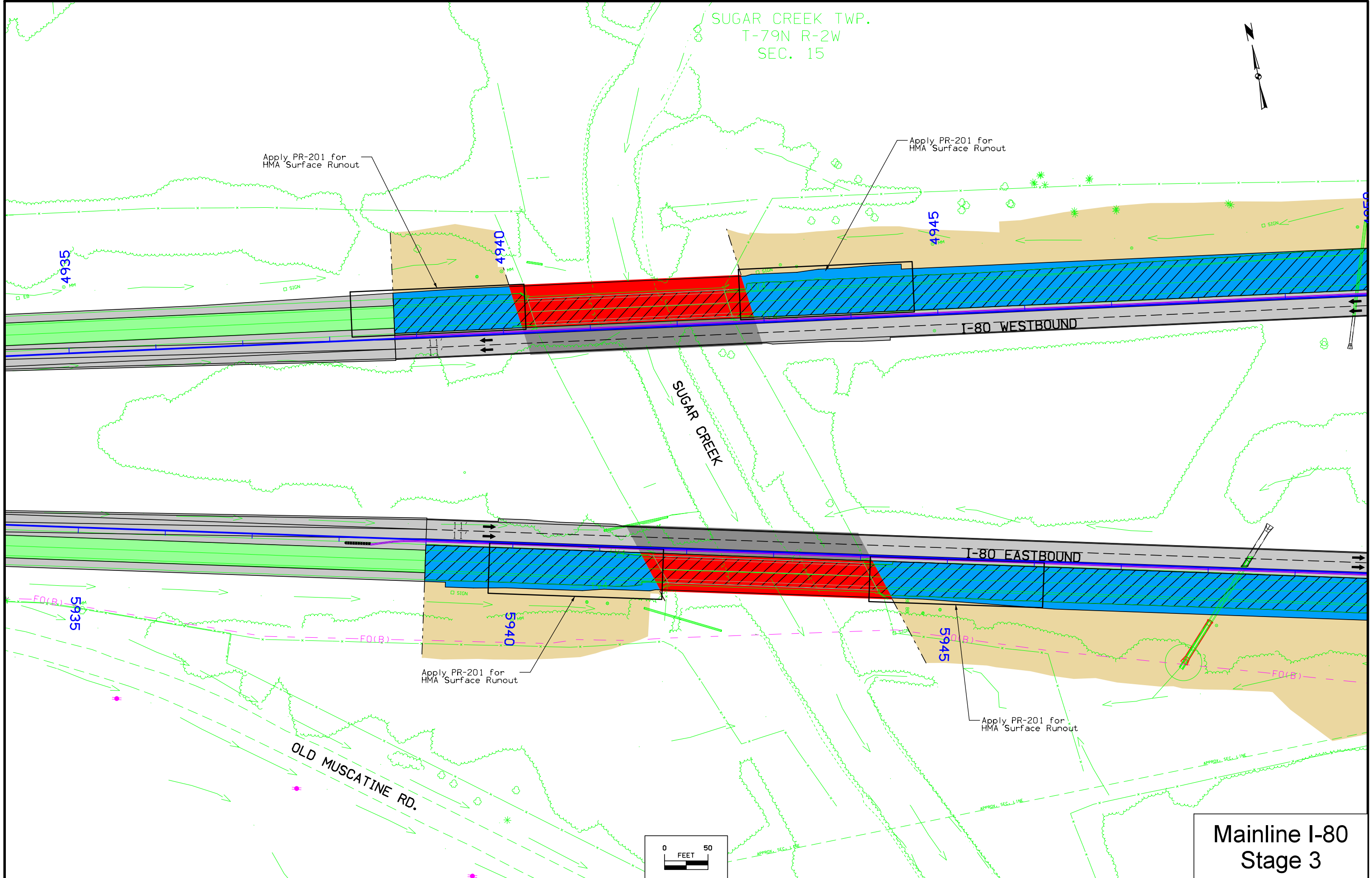
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Stage 3

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15

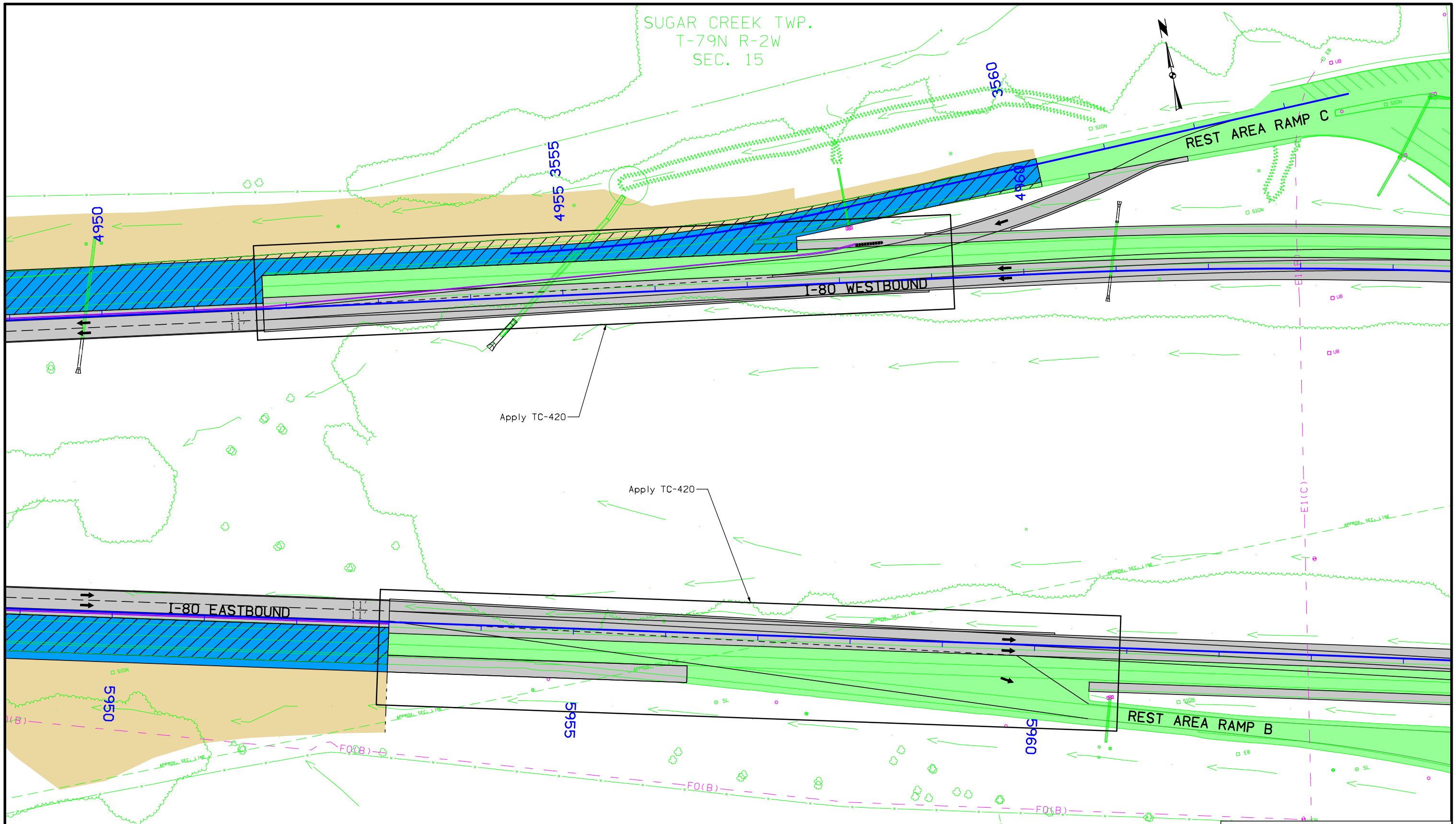


Mainline I-80
Stage 3

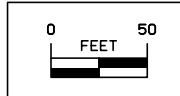
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T-79N R-2W
SEC. 15

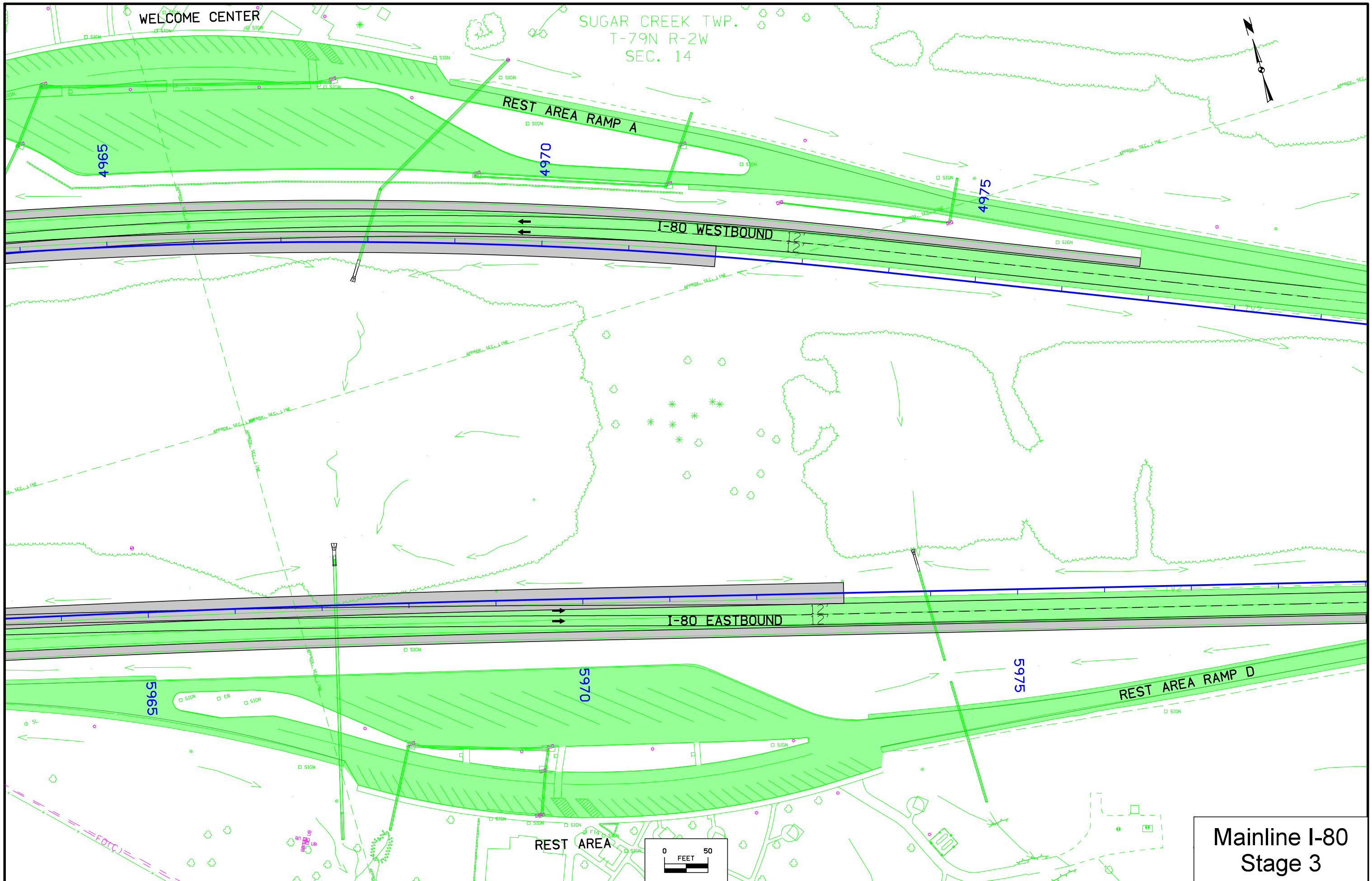


Mainline I-80
Stage 3



Mainline I-80
 Rest Area Ramp B
 Rest Area Ramp C
 Stage 3





SUGAR CREEK TWP.
T-79N R-2W
SEC. 14

WELCOME CENTER

REST AREA RAMP A

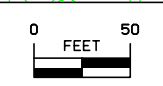
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I-80 EASTBOUND

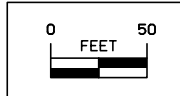
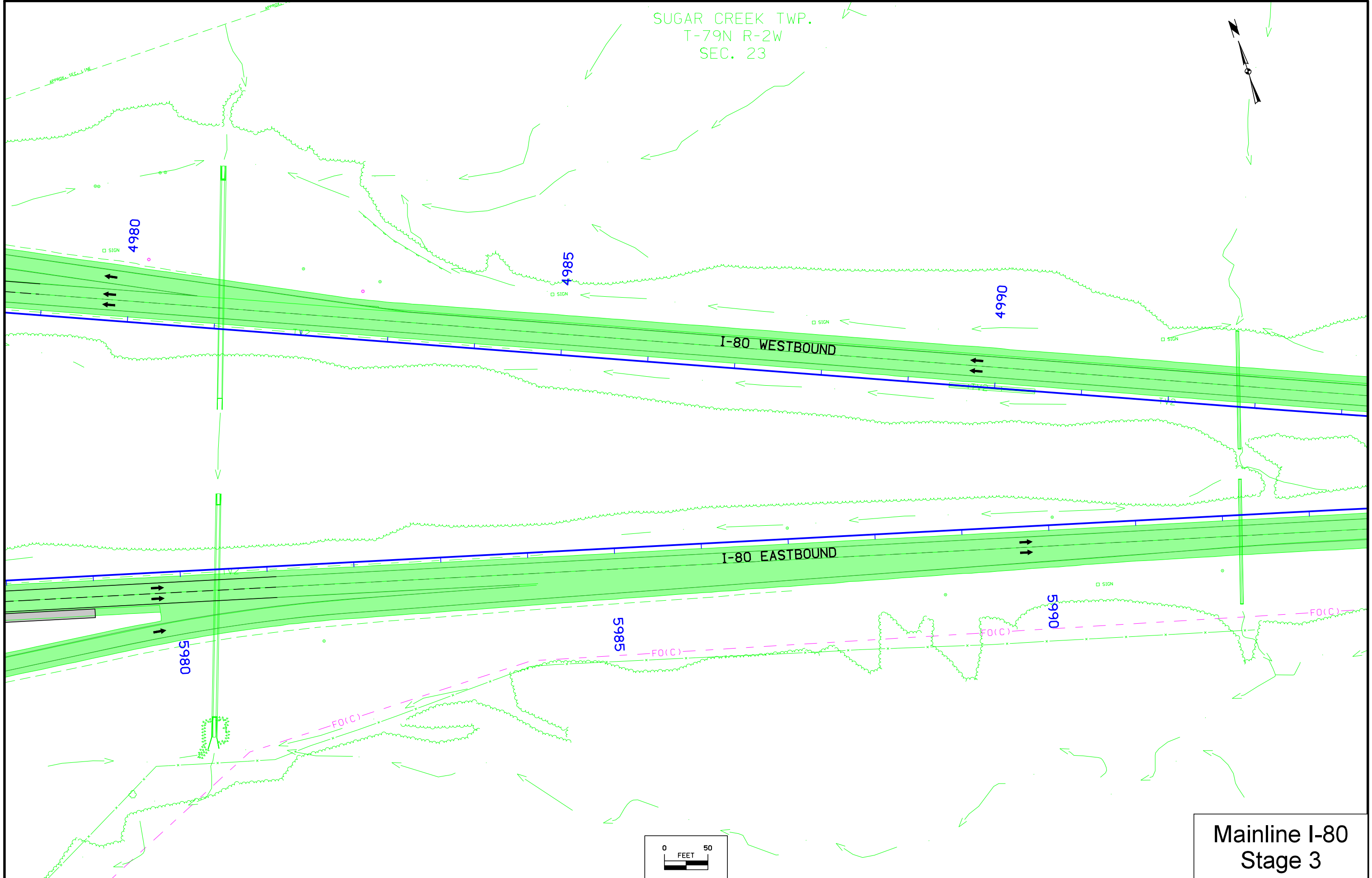
REST AREA RAMP D

REST AREA

Mainline I-80
Stage 3

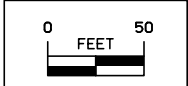
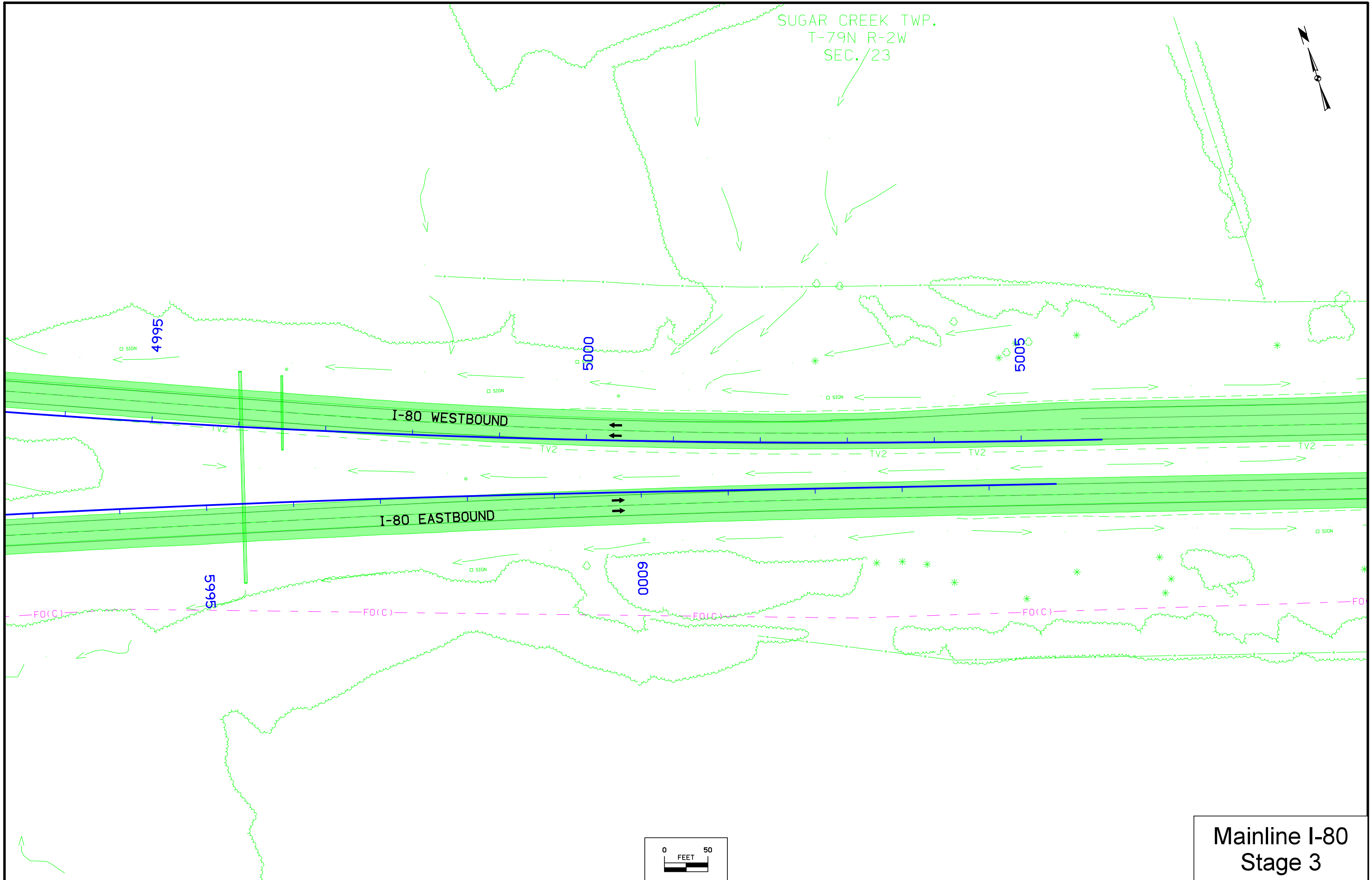


SUGAR CREEK TWP.
T-79N R-2W
SEC. 23



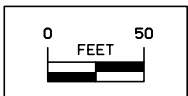
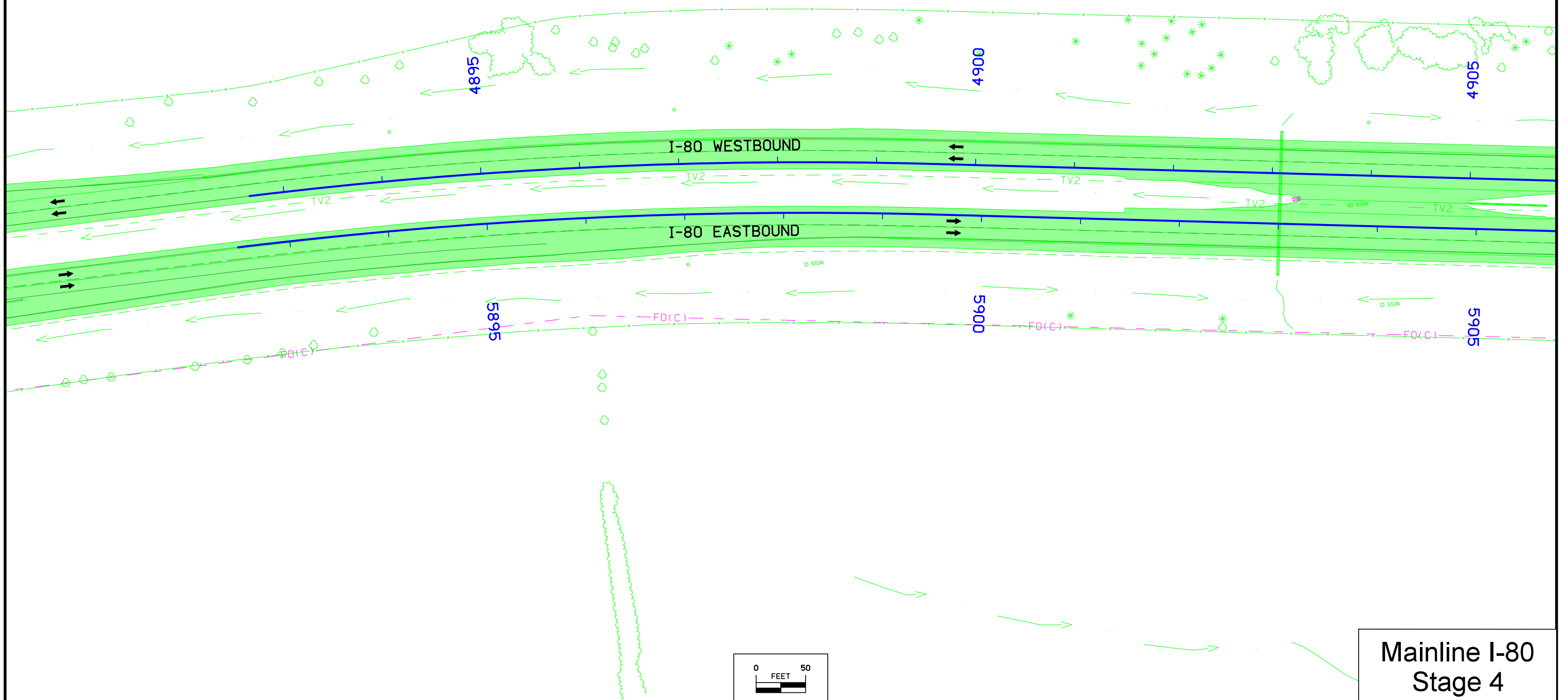
Mainline I-80
Stage 3

SUGAR CREEK TWP.
T-79N R-2W
SEC. 23

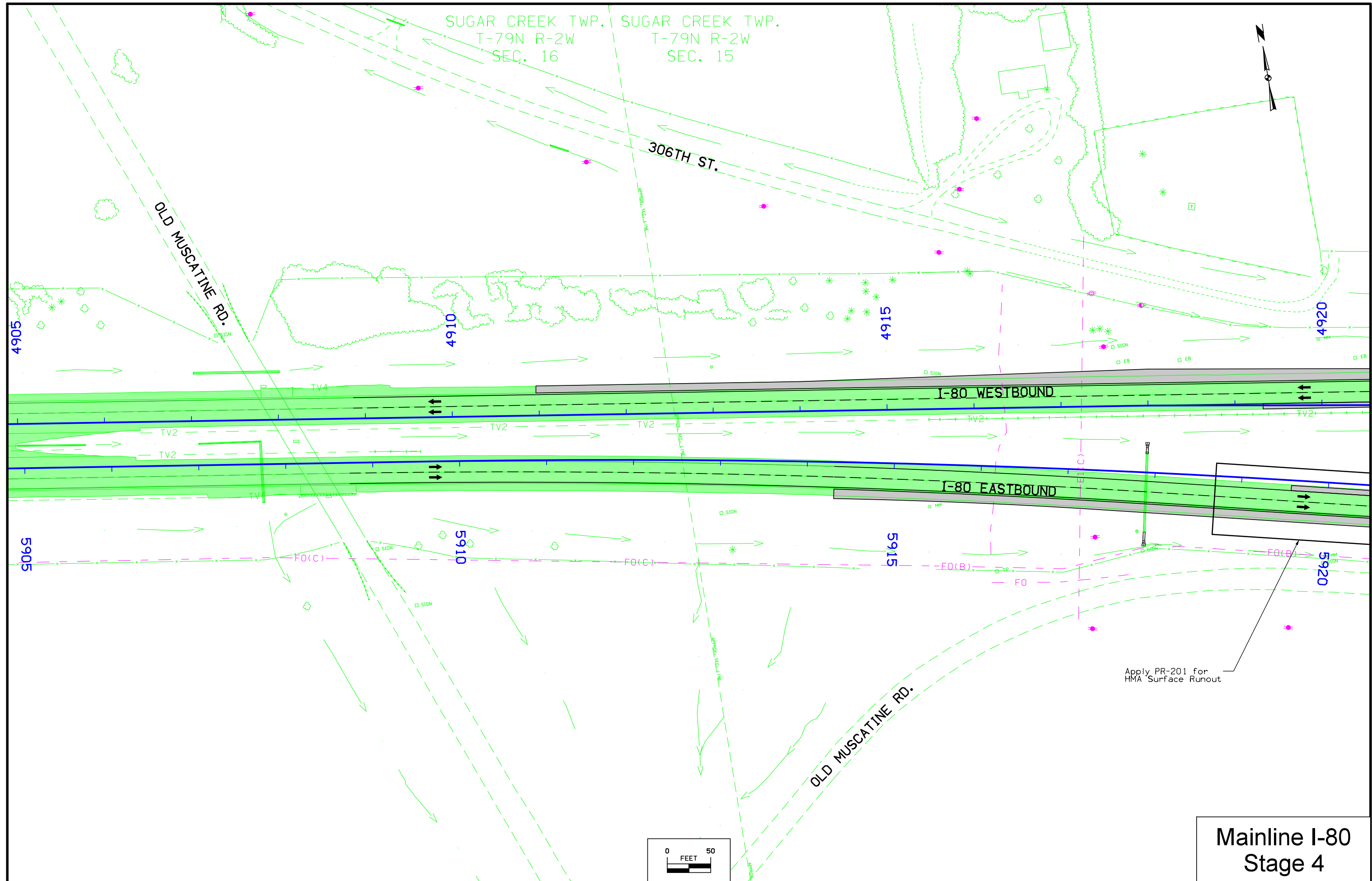


Mainline I-80
Stage 3

SUGAR CREEK TWP.
T-79N R-2W
SEC. 16

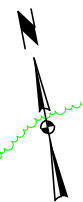


Mainline I-80
Stage 4



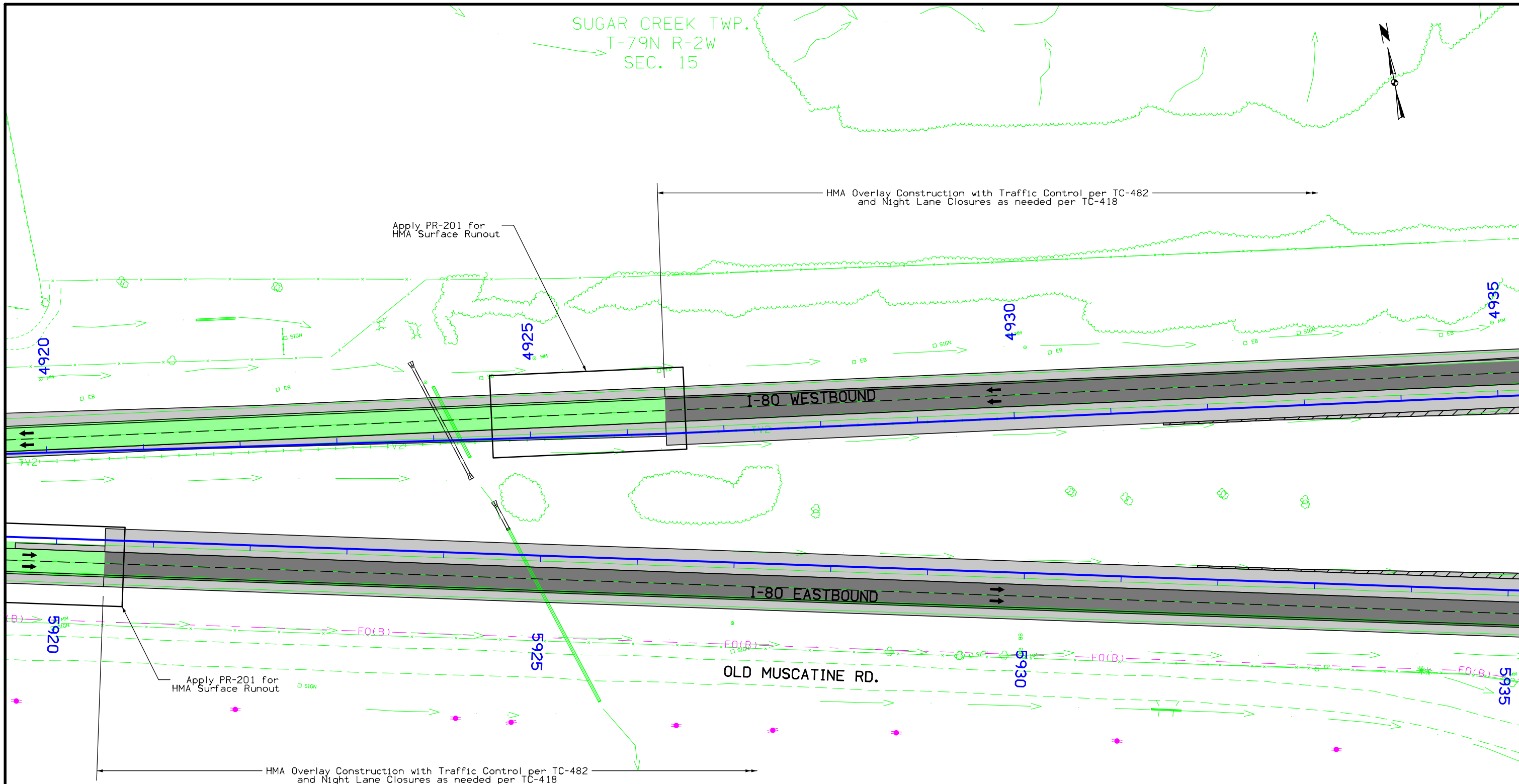
**Mainline I-80
Stage 4**

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



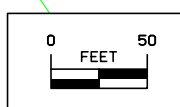
HMA Overlay Construction with Traffic Control per TC-482
and Night Lane Closures as needed per TC-418

Apply PR-201 for
HMA Surface Runout



Apply PR-201 for
HMA Surface Runout

HMA Overlay Construction with Traffic Control per TC-482
and Night Lane Closures as needed per TC-418



Mainline I-80
Stage 4

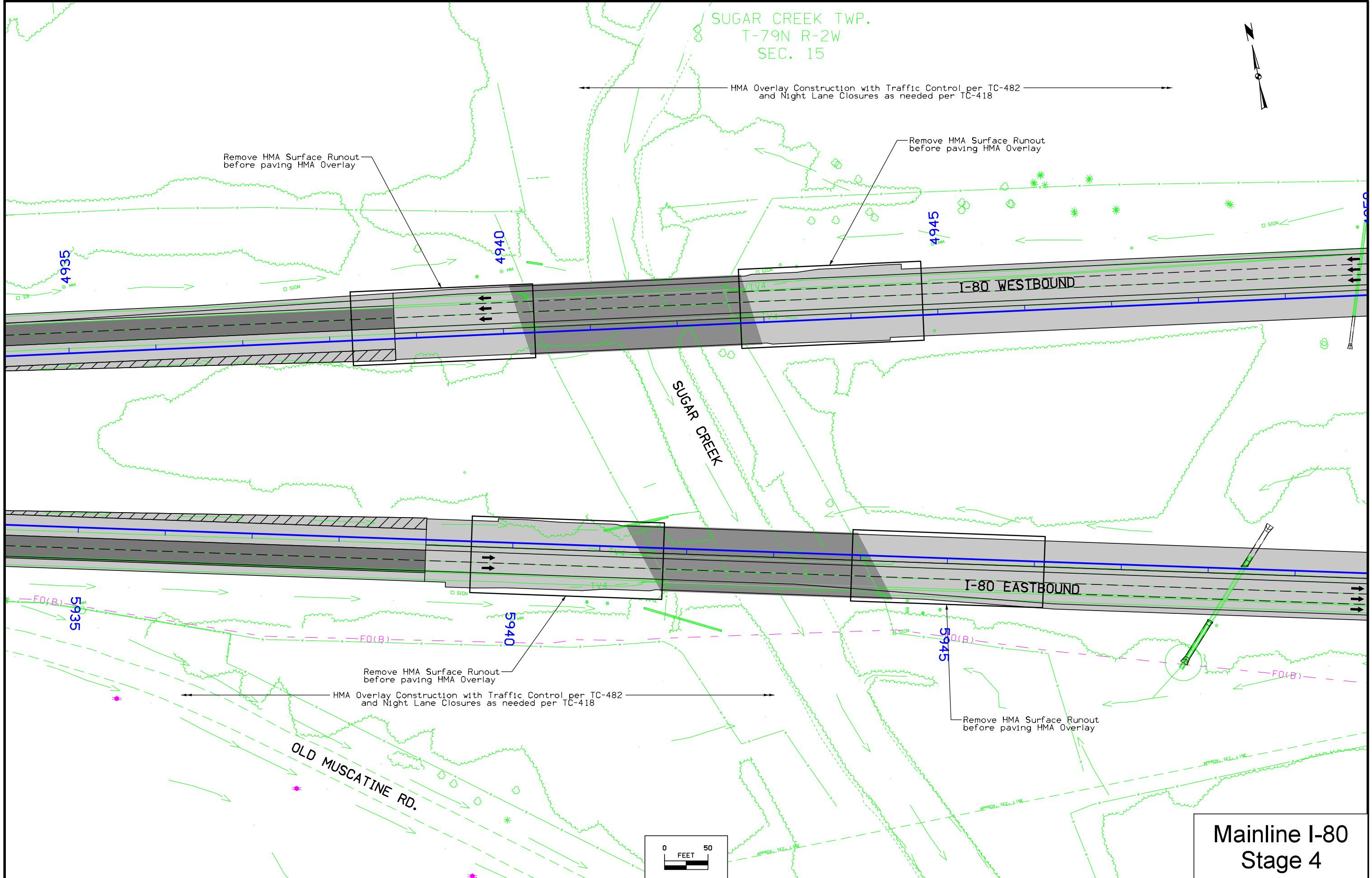
SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



HMA Overlay Construction with Traffic Control per TC-482
and Night Lane Closures as needed per TC-418

Remove HMA Surface Runout
before paving HMA Overlay

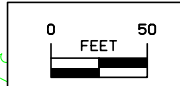
Remove HMA Surface Runout
before paving HMA Overlay



Remove HMA Surface Runout
before paving HMA Overlay

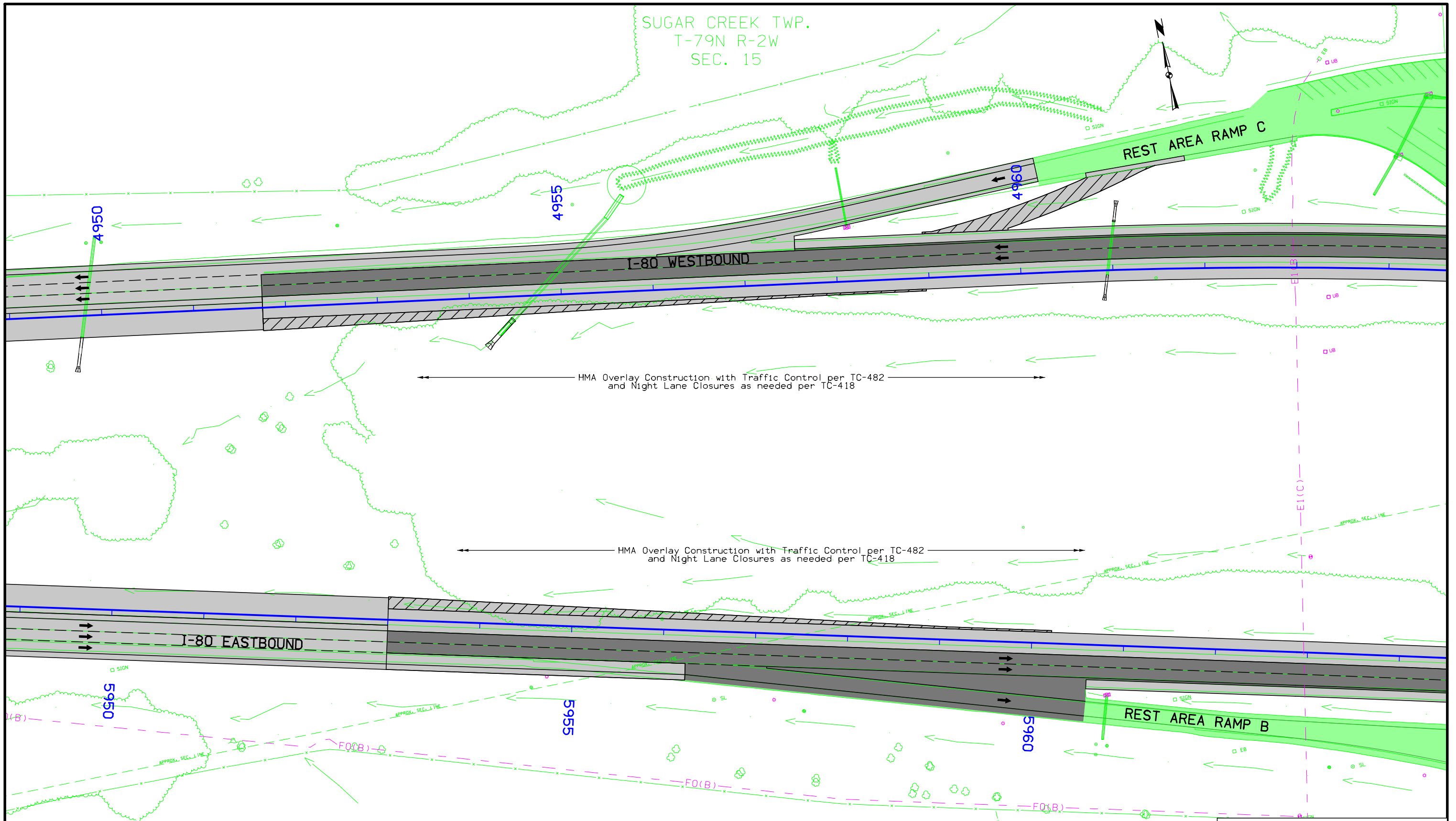
HMA Overlay Construction with Traffic Control per TC-482
and Night Lane Closures as needed per TC-418

Remove HMA Surface Runout
before paving HMA Overlay

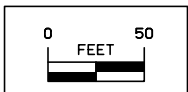


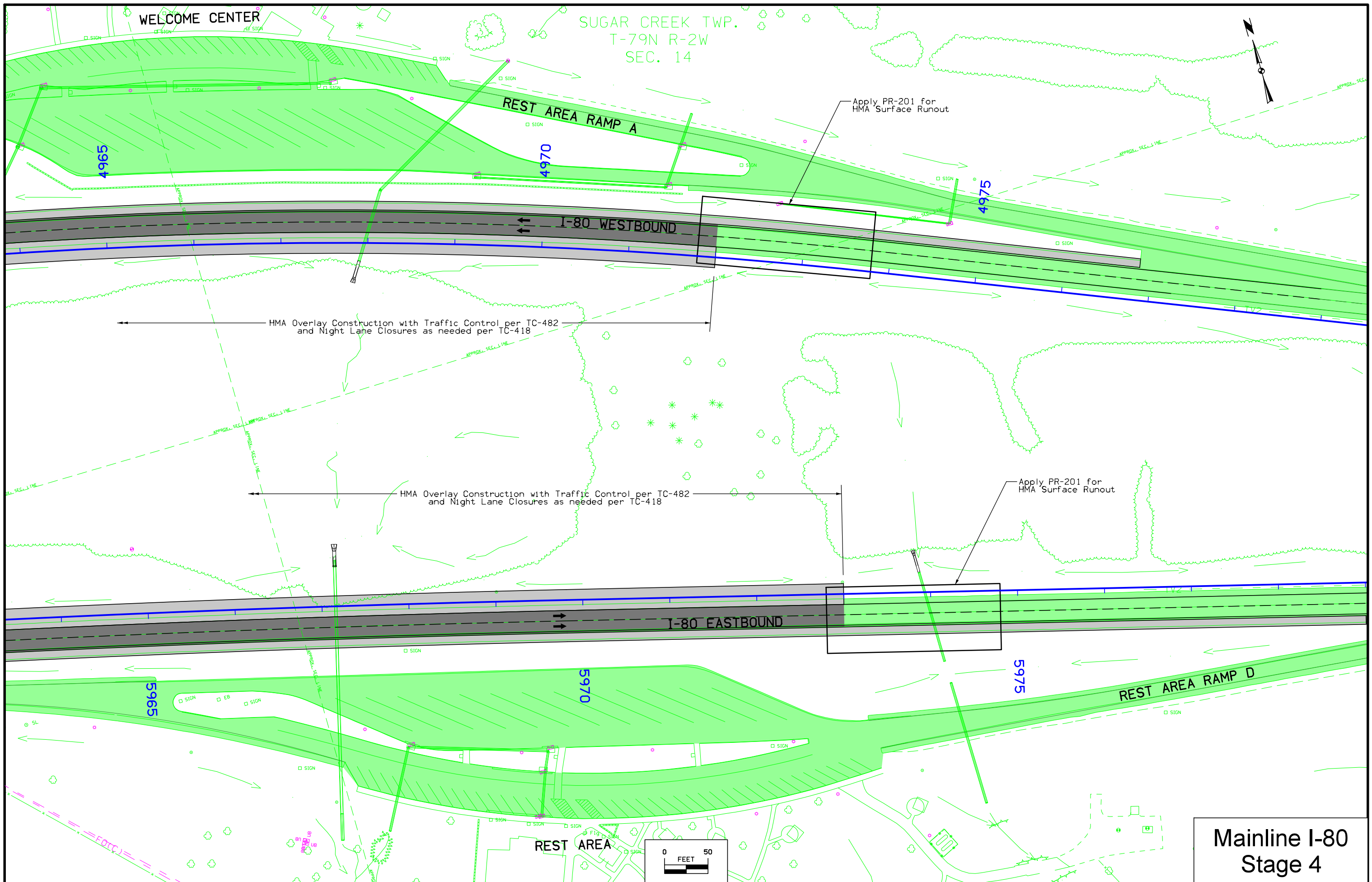
Mainline I-80
Stage 4

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



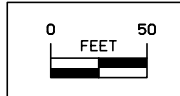
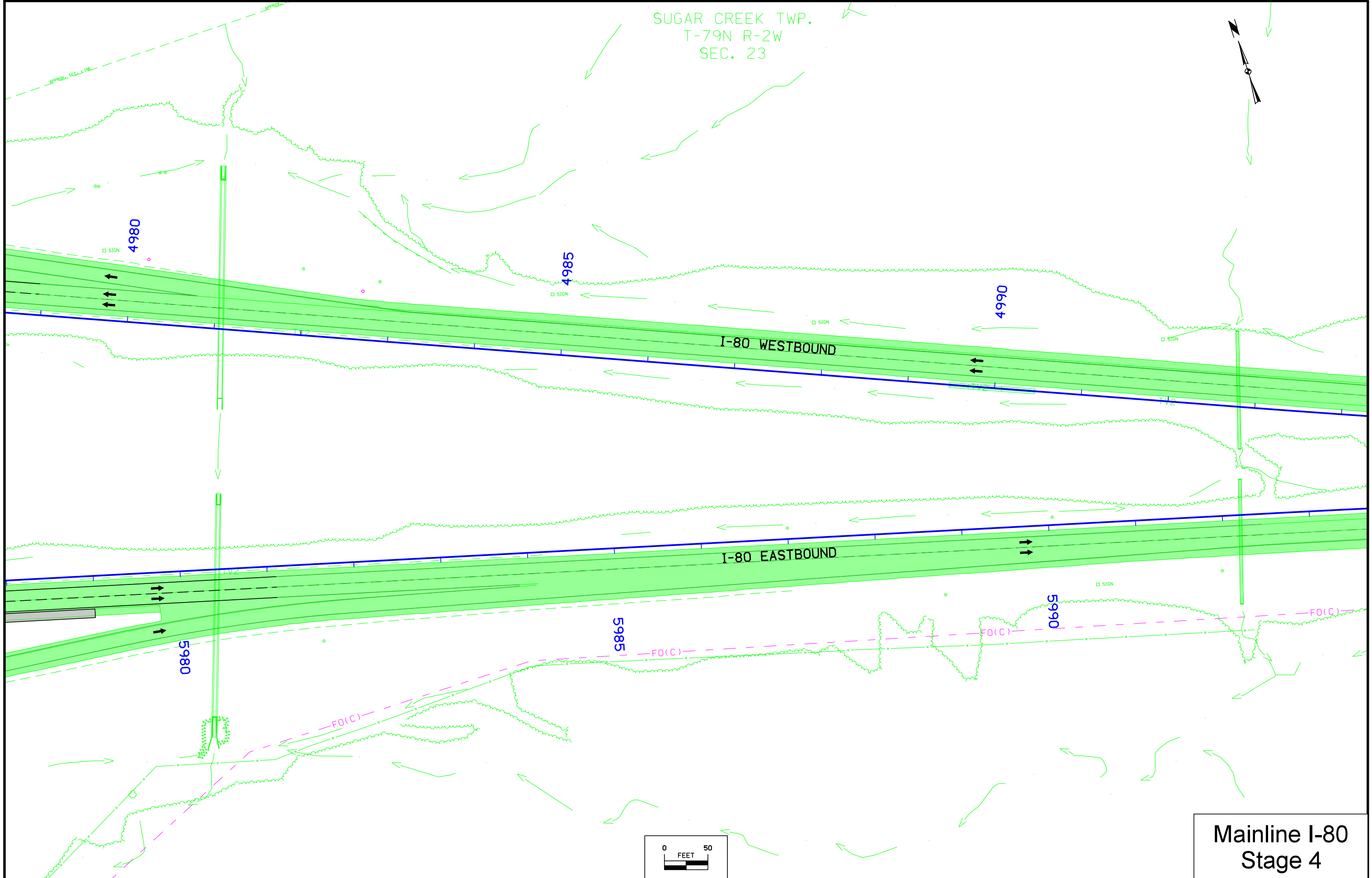
Mainline I-80
Rest Area Ramp B
Rest Area Ramp C
Stage 4





**Mainline I-80
Stage 4**

SUGAR CREEK TWP.
T-79N R-2W
SEC. 23

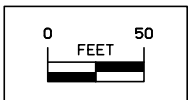
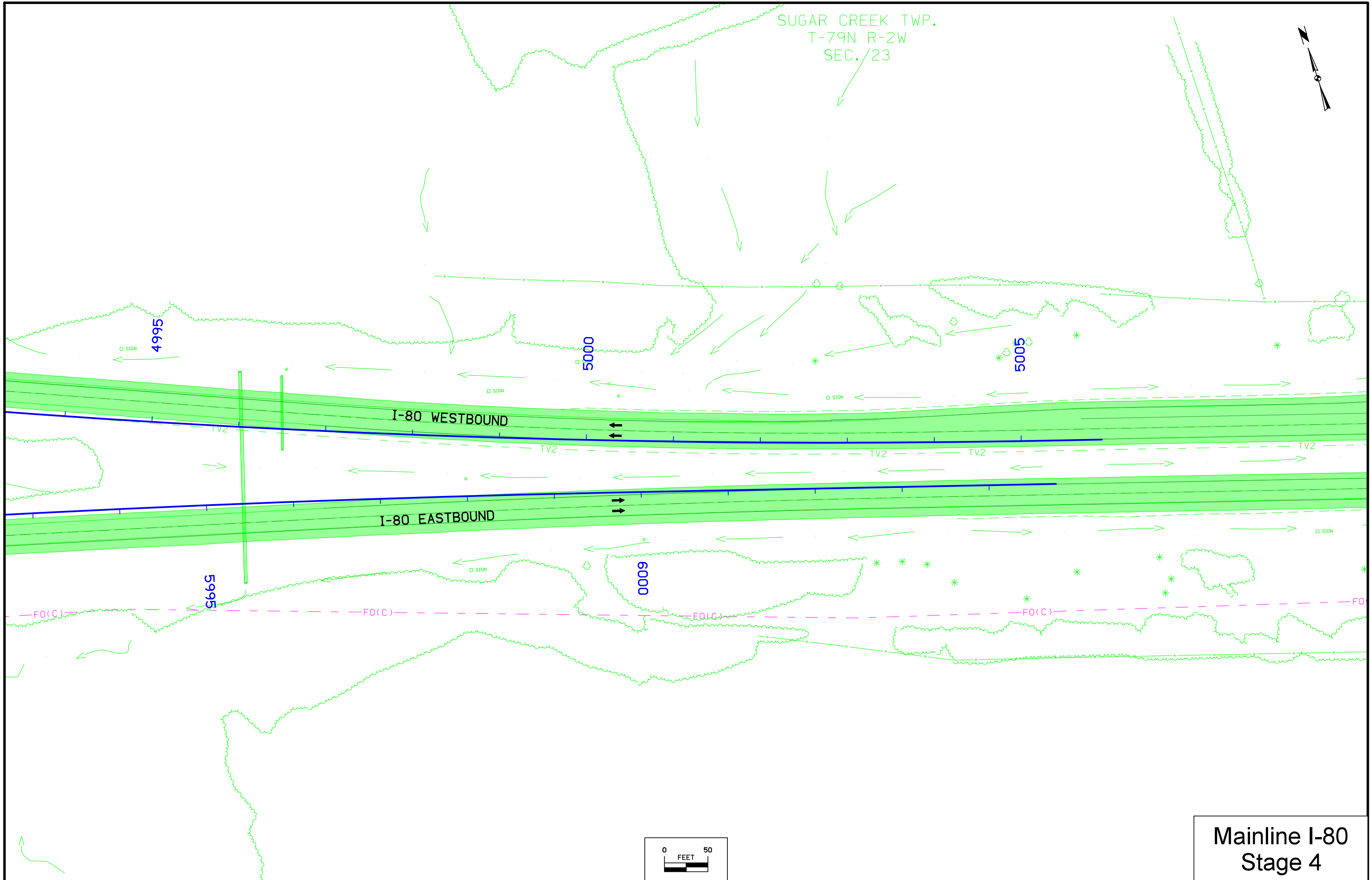


Mainline I-80
Stage 4

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT \ HR Green	CEDAR COUNTY	PROJECT NUMBER	IM-NHS-080-8(341)269--03-16	SHEET NUMBER	J.38
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SUGAR CREEK TWP.
T-79N R-2W
SEC. 23

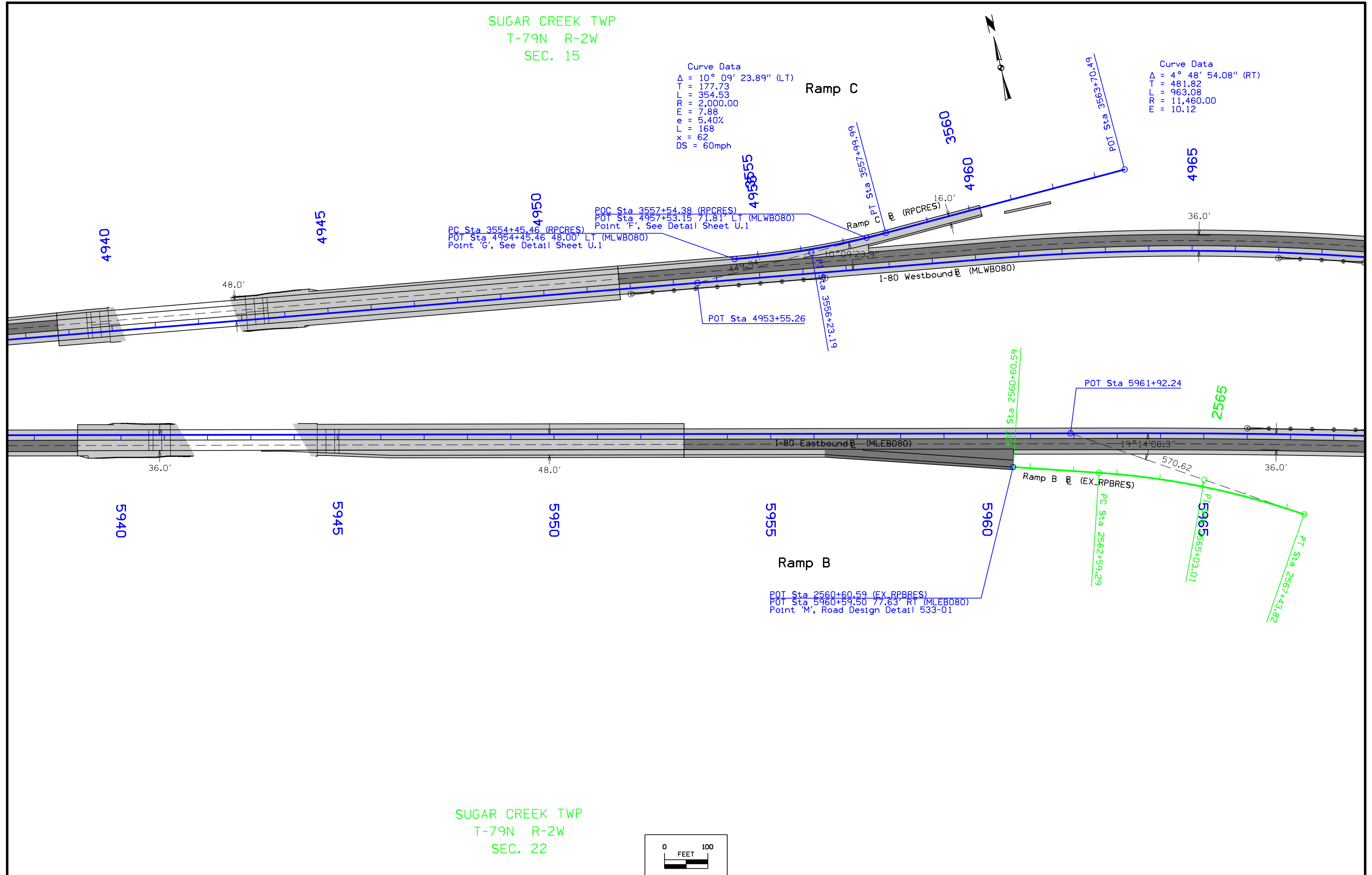


Mainline I-80
Stage 4

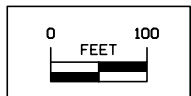
SUGAR CREEK TWP
T-79N R-2W
SEC. 15

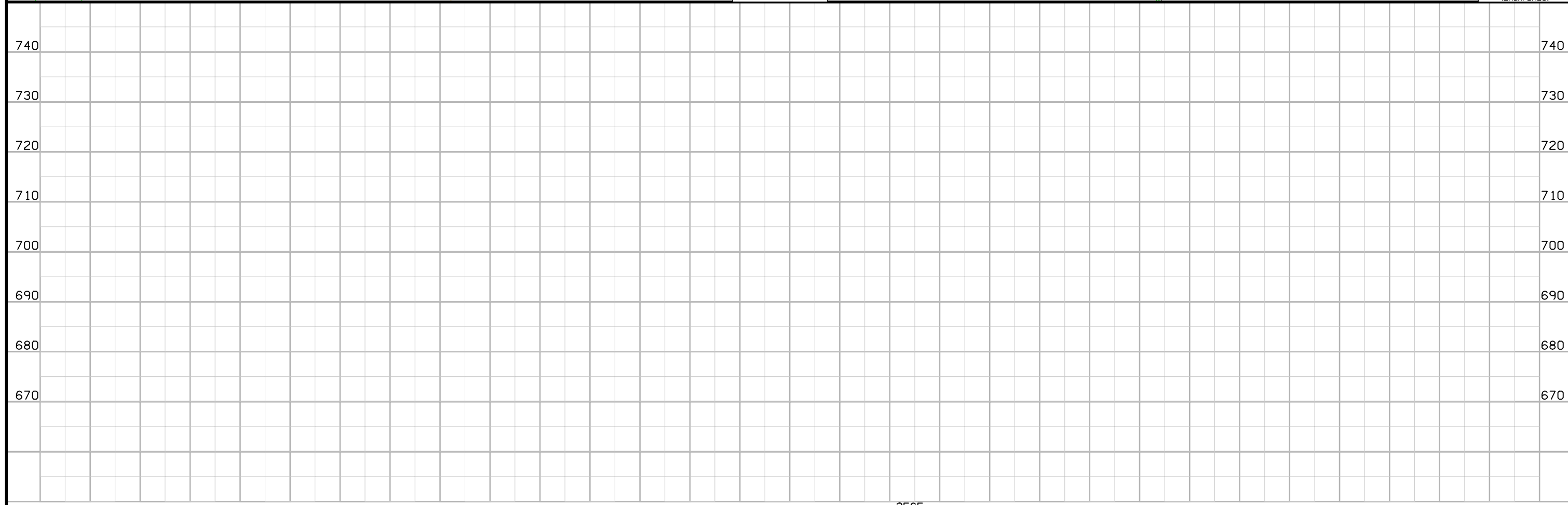
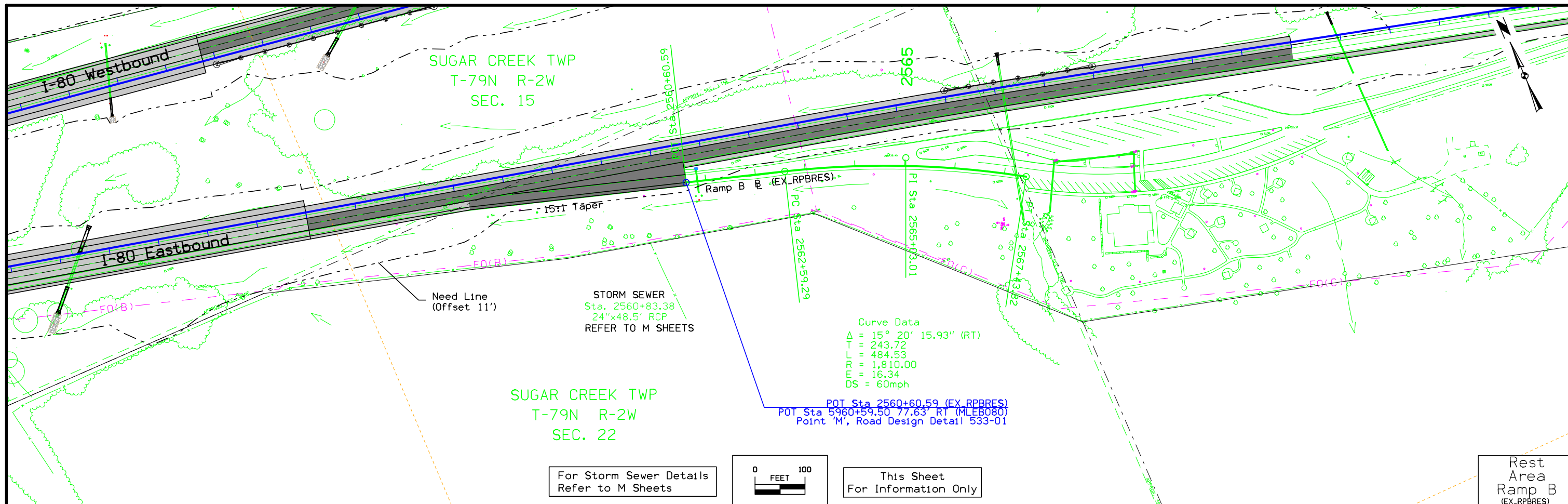
Curve Data
 $\Delta = 10^{\circ} 09' 23.89''$ (LT)
 T = 177.73
 L = 354.53
 R = 2,000.00
 E = 7.88
 e = 5.40%
 L = 168
 x = 62
 DS = 60mph

Curve Data
 $\Delta = 4^{\circ} 48' 54.08''$ (RT)
 T = 481.82
 L = 963.08
 R = 11,460.00
 E = 10.12



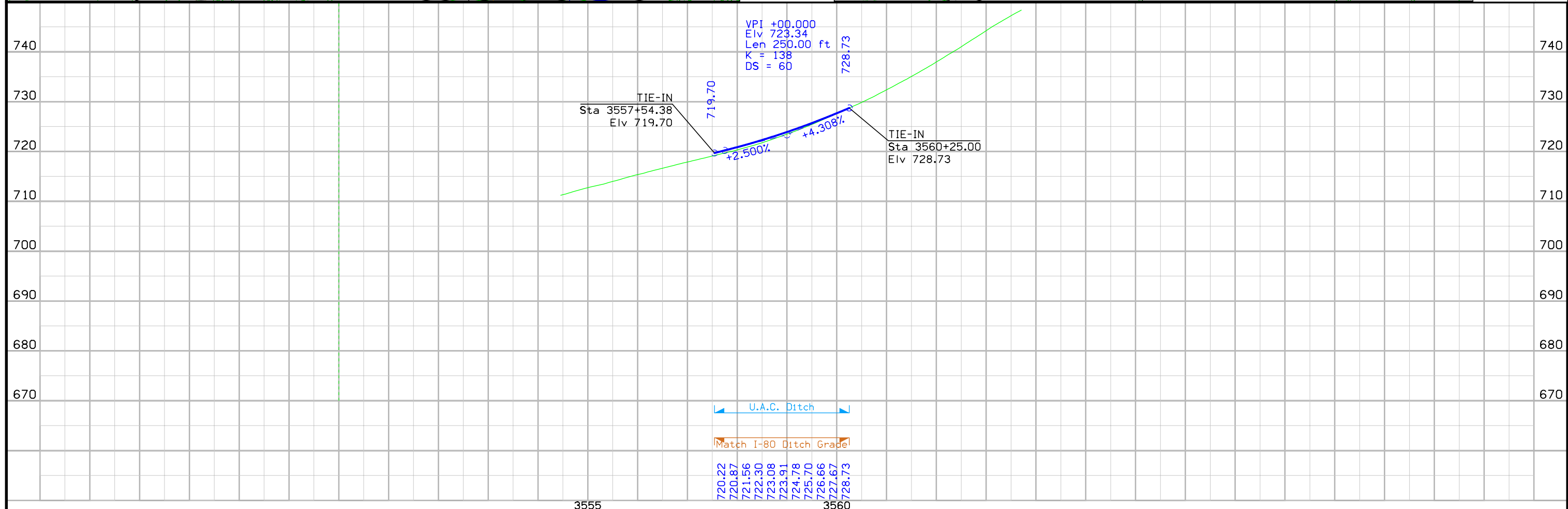
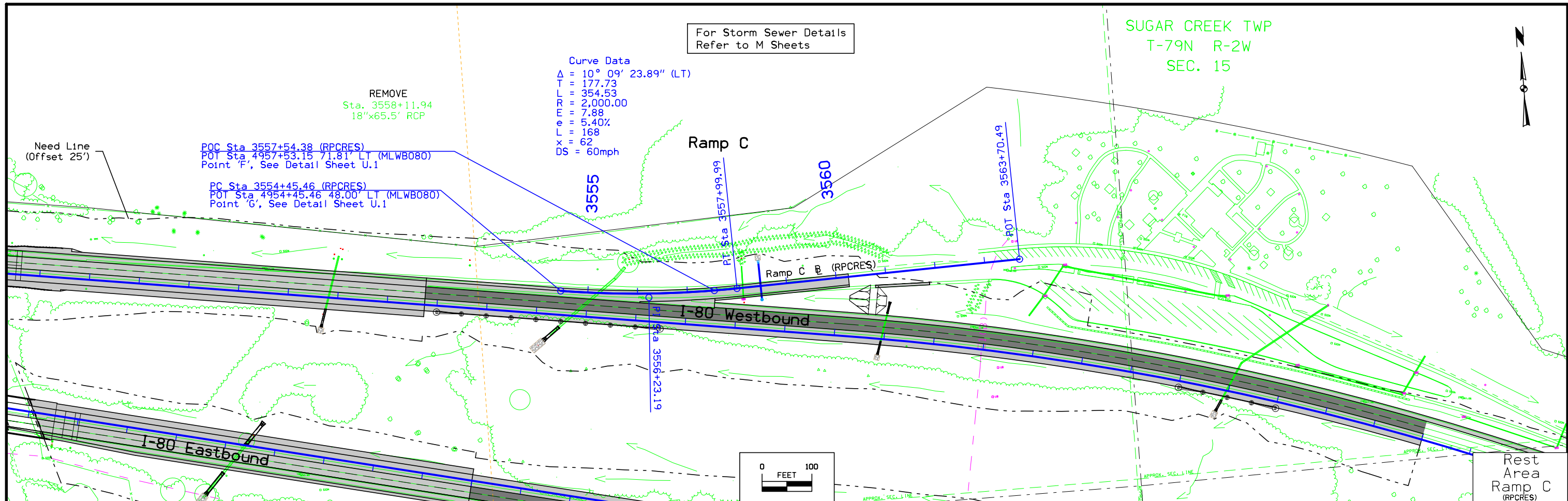
SUGAR CREEK TWP
T-79N R-2W
SEC. 22





For Storm Sewer Details
Refer to M Sheets

SUGAR CREEK TWP
T-79N R-2W
SEC. 15



STORM SEWER

- ① Diameter or equivalent diameter
- ② XSTS = Existing Structure XSTP = Existing Pipe
- * Bid Item

INTAKES AND UTILITY ACCESSES

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

No.	Location Station and Offset	*Type or Standard Road Plan	Form	Bottom	Other	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines			Pipe Profile Sheet No.	Notes
			Grade	Well				From	To		Size					Inlet Elevation	Outlet Elevation	Other Elevation		
			Elev.	Elev.				FT	IN		FT					FT	FT	FT		
040	2560+83.50, 25.00' LT (MLEB080)	INTAKE ADJUSTMENT, MAJOR	743.05	N/A			XSTP-040	040	XSTS041	-	24	Incid'l	N/A	0.50+/-		718.42+/-	718.18+/-		M.6	
XSTS041	2560+83.36, 29.39' RT (MLEB080)	EXISTING OUTLET	FL=718.10	N/A																
030	3558+47.70, 27.60' RT (SURMLA080)	SW-401 MOD (48")	721.3	711.79			P-030	030	031	2000	24	73	70.8	2.00		712.29	711.17		M.4	
031	3558+47.70, 51.85' LT (SURMLA080)	DR-201 (24")	FL=710.78	N/A																

SURVEY SYMBOLS

- FENO Control Monument
- TOP Top of Bridge Piers
- REF reference tie points
- SOP Size of pipe
- SBR size of bridge
- CP Control Point Generic
- UV Misc utility vault
- PIP pipes(cast iron,steel,tile,etc)
- STOP ST stop sign
- PRO profile-r.r. rail,swk,abut
- BM bench mark
- D cl of draw or stream
- TLNR tree line right
- FW fence wire
- TDC tree deciduous
- GDL guard rails
- SIGN SI sign
- PPC power pole, Owner C
- PPB power pole, Owner B
- TEV evergreen tree
- ROW right of way rails
- PPA power pole, Owner A
- DU cl of draw upstream
- RIP rip-rap
- LUM luminaire
- GR Ground Field Survey
- BNK stream bank
- TLNL tree line left
- WC Wildcard
- TW Top of Water
- SP Stream Profile
- EG edge of gravel road
- CON concrete or a/c slab
- BD Bridge Deck
- BLS Bridge Low Steel
- BCL bridge centerline
- BRG bridge
- C center of roadway
- EB electrical box
- PL Photo Location
- CUL culvert
- INB intake-beehive
- OUT tile outlet
- STP stump
- GDC Cable Guardrail
- BB billboard or sign
- SIGN SL speed limit sign
- MM mile marker post
- TPD telephone pedestal
- LC lot corner
- MH Misc manhole
- UE utility elevation
- IN intake-grate,curb,umbrella
- LIN miscellaneous line
- CMP corrugated metal pipes
- WH water hydrant
- BLD foundation or building
- SEP septic tank
- SHR shrub
- MIS miscellaneous
- LP L.P. tank
- TR Telephone Riser Pole
- ENU edge of unpaved entrance&parking
- CU curb or center island
- GU gutter
- UB Misc utility box
- CS concrete slab
- RET retaining walls
- FWD wood fence
- ROC rock outcropping
- TV tv dish
- WV water valve
- EW edge of water
- FCL security & chain link
- GP guard post / Bollard
- S Soil sampling site

- PPA power pole, Owner A
- E1(B) EL1B UG electric, Eastern Iowa Light & Power - Quality B
- E1(C) EL1C UG electric, Eastern Iowa Light & Power - Quality C
- F0(B) FO1B fiber optics, Iowa Communications Network - Quality B
- F0(C) FO1C fiber optics, Iowa Communications Network - Quality C

UTILITY LEGEND

- Eastern Iowa Light and Power Cooperative
600 East 5th Street
Wilton, IA 52778
563-732-2211: Ext 7330
dennis.hill@easterniowa.com
- F0(B) ICN (Iowa Communications Network)
Mike Broderick
400 East 1st Street / Grimes Office Building
Des Moines, IA 50319
515-725-4741
mike.broderick@iowa.gov

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design	Color No.	
Black	(17)		Proposed Storm Sewer Details
Blue	(1)		Alignment, Stationing, Tic Marks, and Alignment Annotation

SHADING	Design	Color No.	
Gray, Light	(48)		Proposed PCC Pavement with HMA Surfacing Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed HMA Resurfacing Shading

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design	Color No.	
Green	(18)		Existing Ground Line Profile
Black	(17)		Proposed Ground Line Profile
Gray, Dark	(112)		Existing Storm Sewer Pipe
Blue	(1)		Proposed Storm Sewer Pipe
Blue, Light	(230)		Proposed Storm Sewer Structure

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Proposed Storm Sewer Pipe
- Proposed Storm Sewer Structure
- Existing Culvert
- Proposed Culvert

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Existing Ground
- Proposed Ground
- Existing Storm Sewer Pipe or Structure
- Proposed Storm Sewer Pipe
- Proposed Storm Sewer Structure

- Reference Point
- Station
- Survey Line
- Section Corner
- Need Line
- Saw Cut
- Guardrail

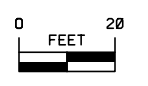
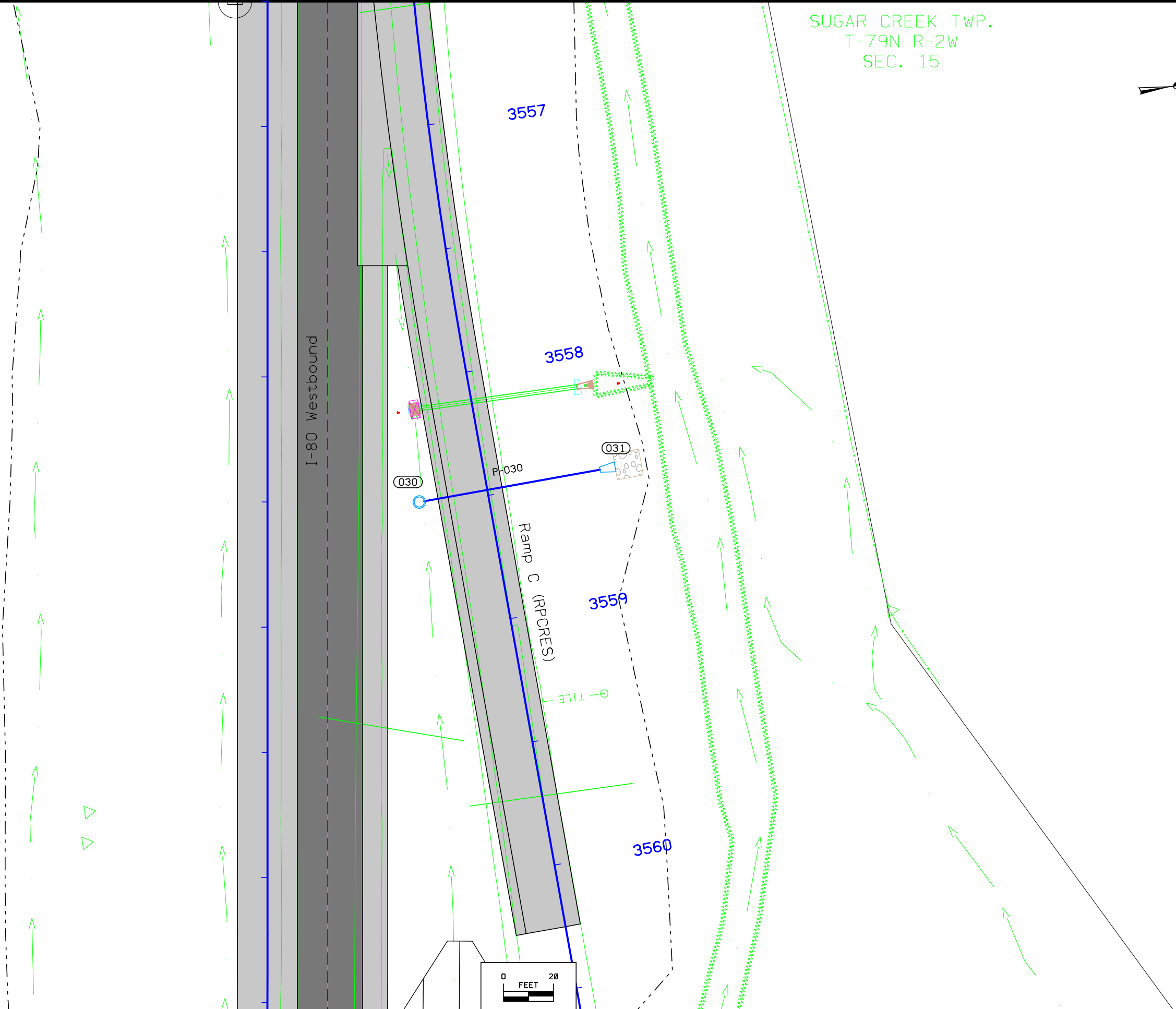
RIGHT-OF-WAY LEGEND

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

STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES M)

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



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726

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706

030
 SW-401 MOD (48")
 3558+47.70, 27.60'
 FG 721.30
 BW 711.79

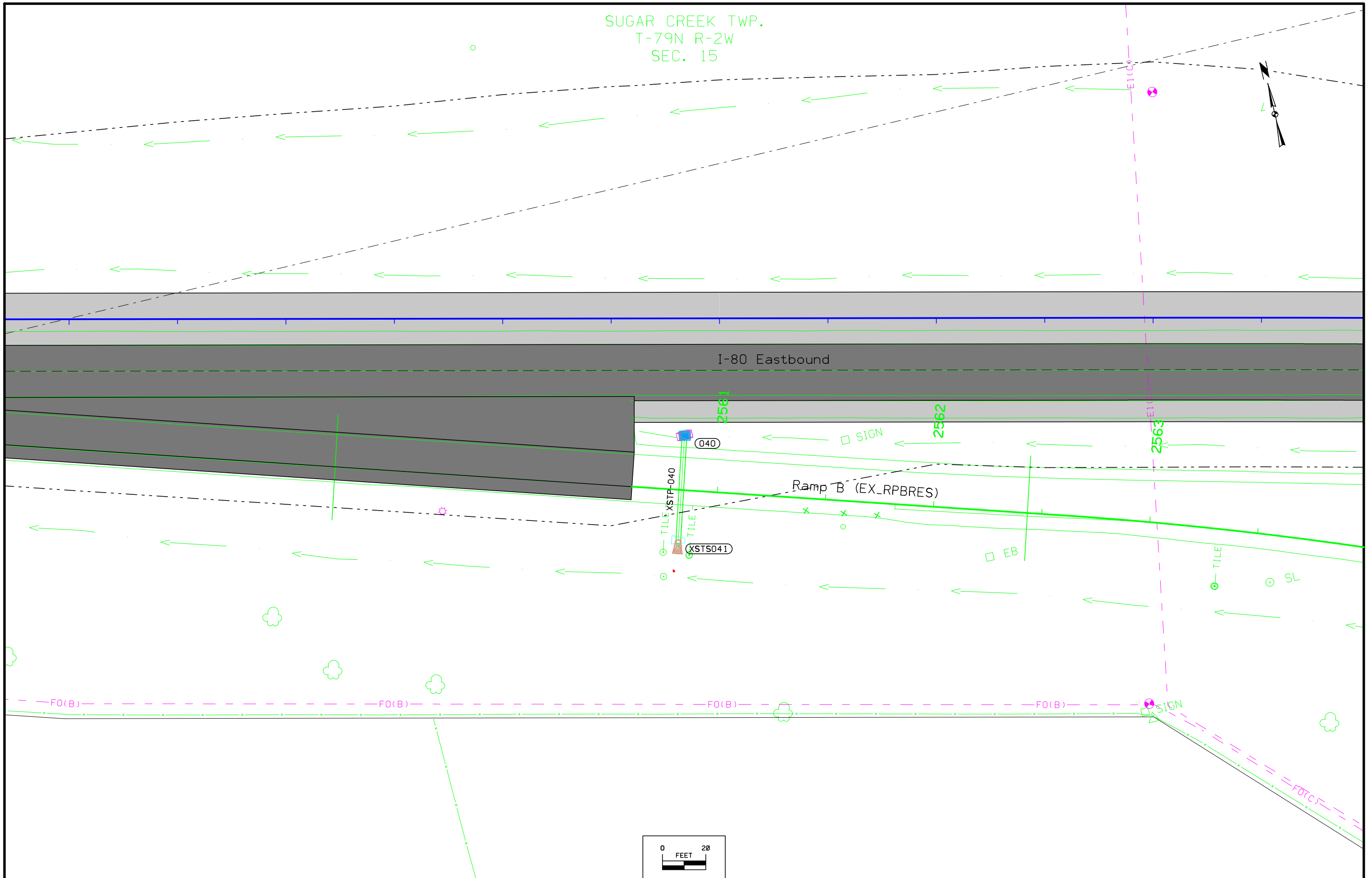
031
 DR-201 (24")
 3558+47.70, -51.85'
 FG 710.78

P-030
 70.8 LF
 24' 20000
 2.00%

FL 712.29

FL 710.88

SUGAR CREEK TWP.
T-79N R-2W
SEC. 15



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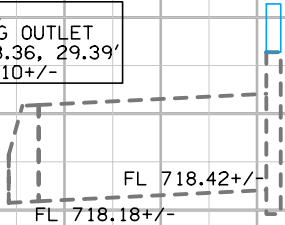
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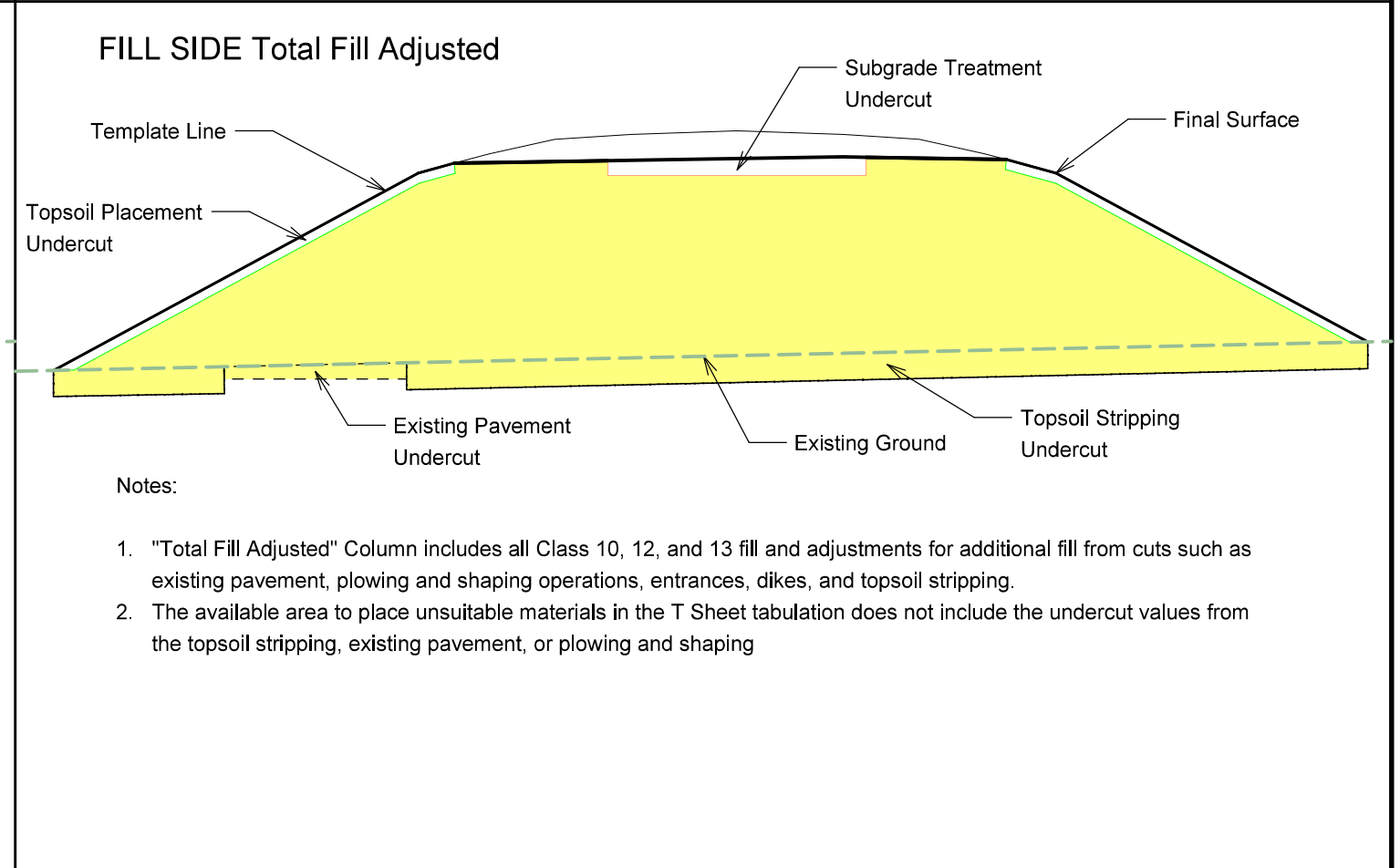
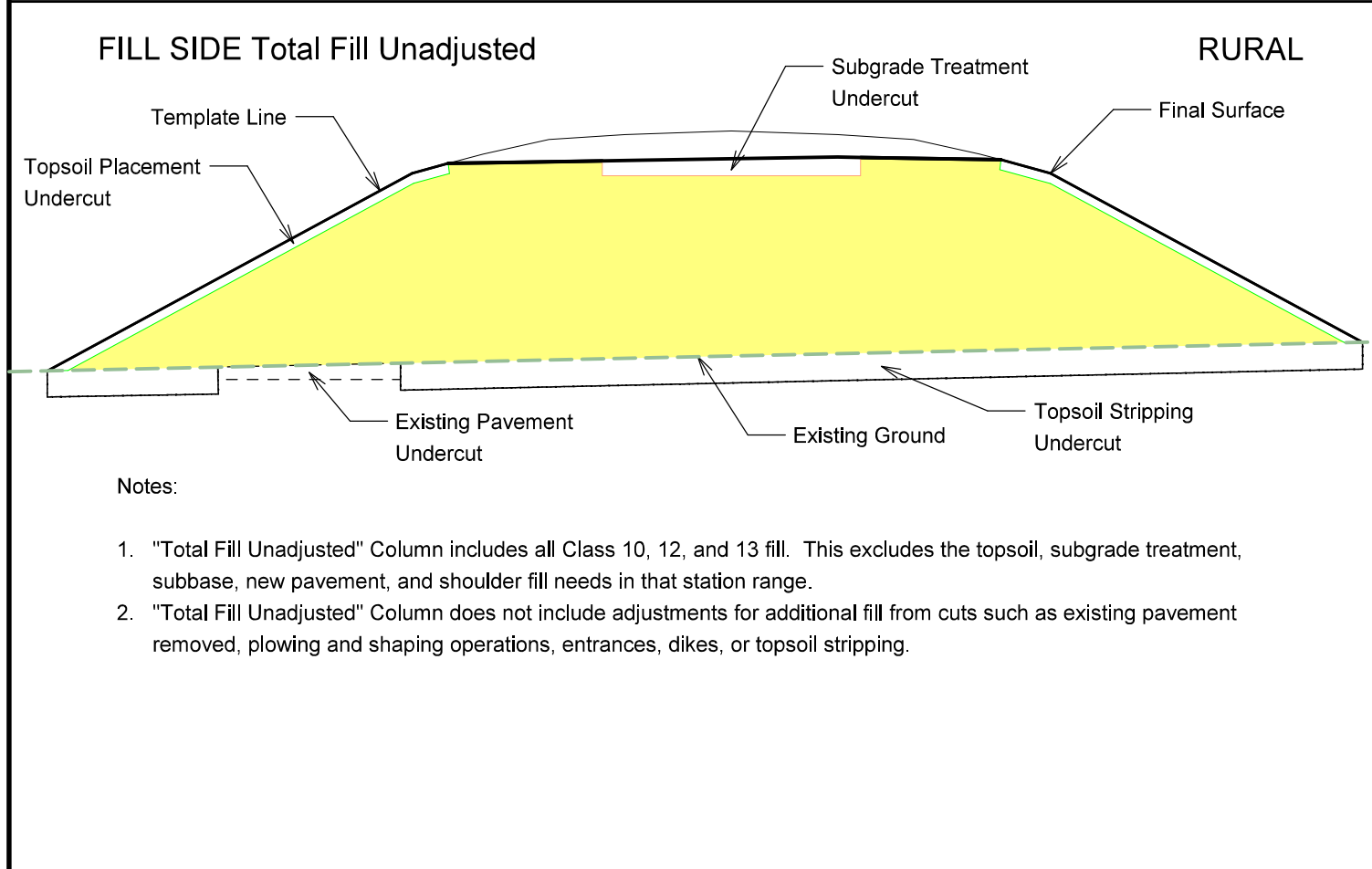
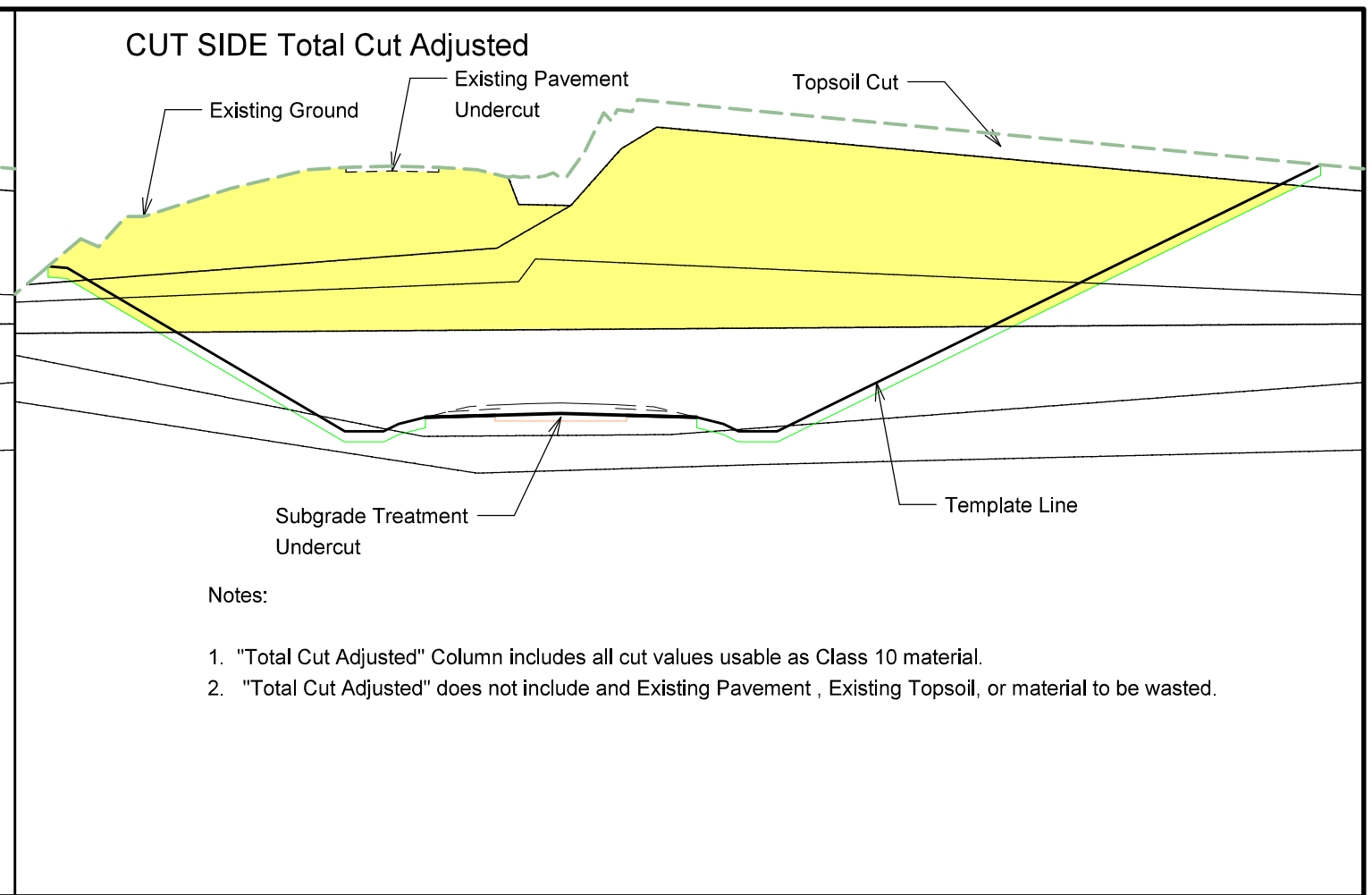
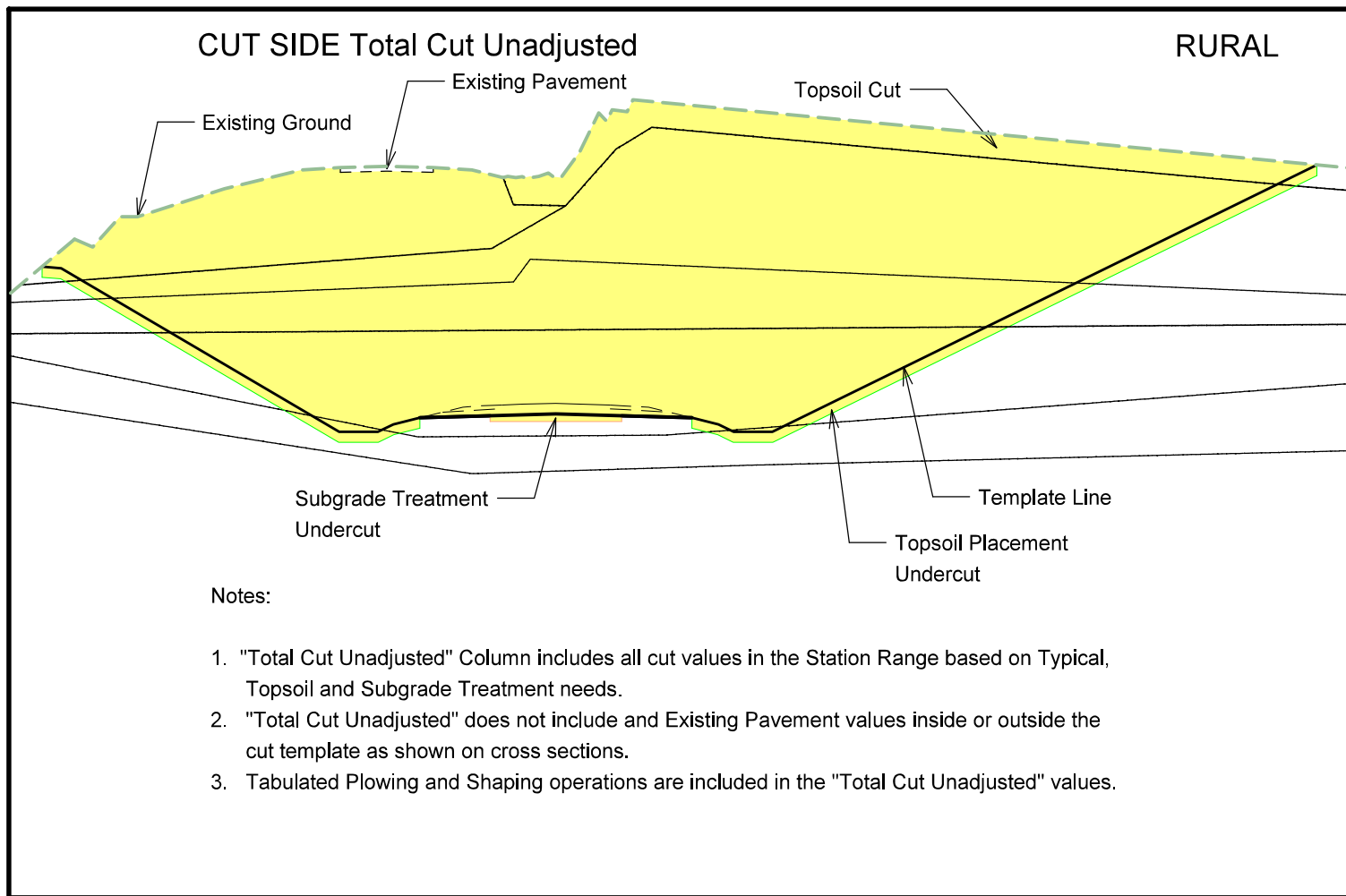
714

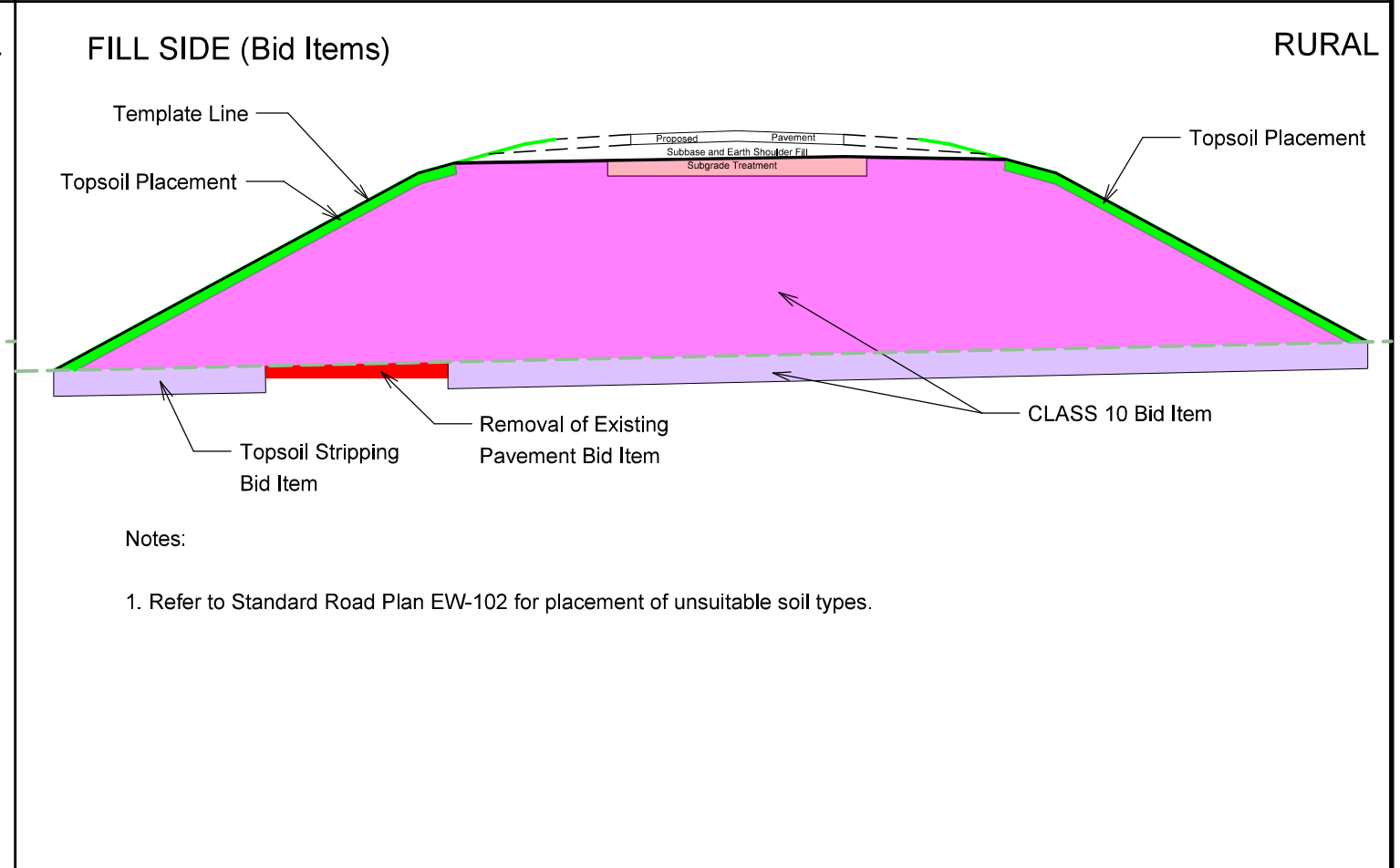
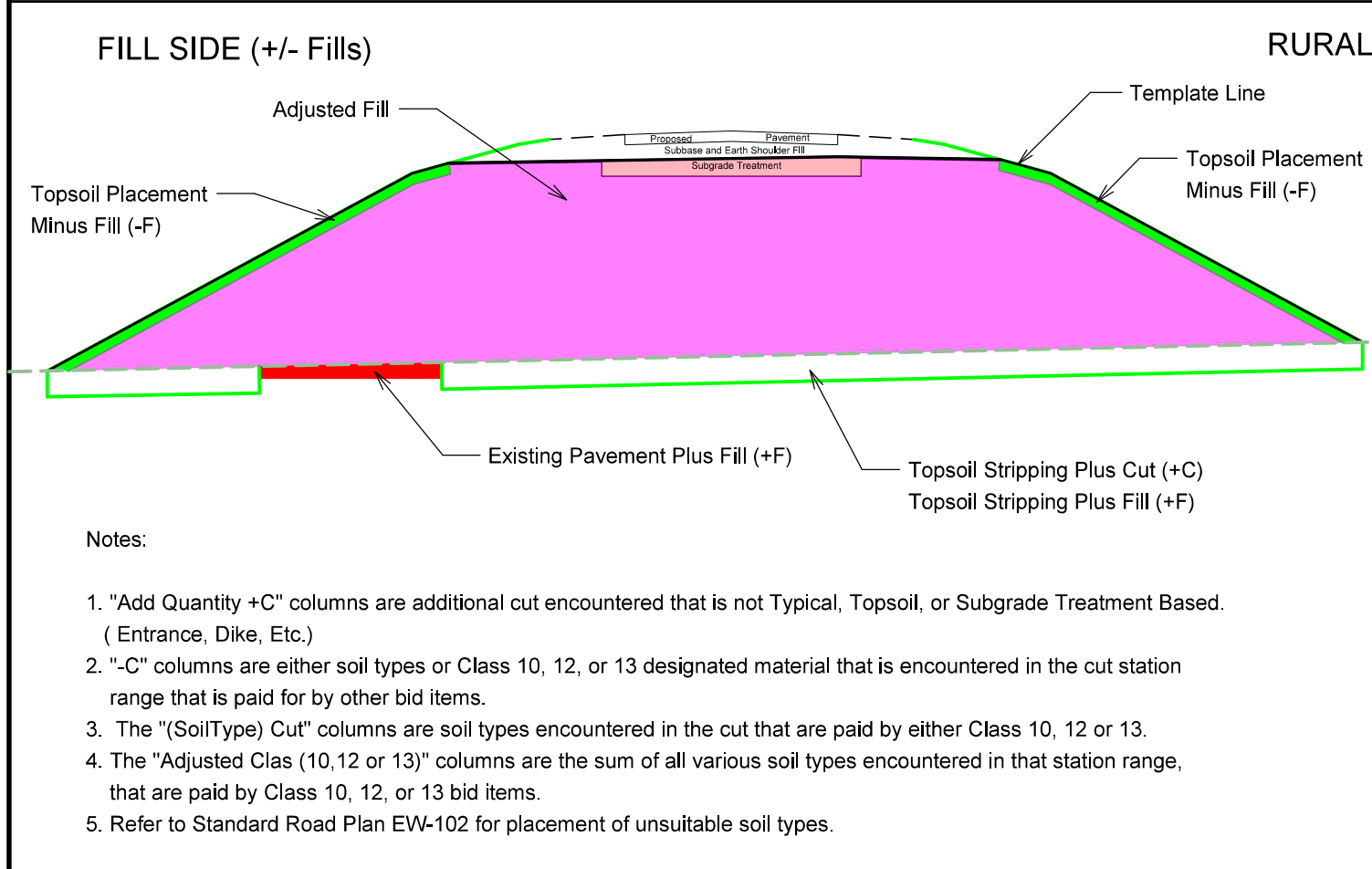
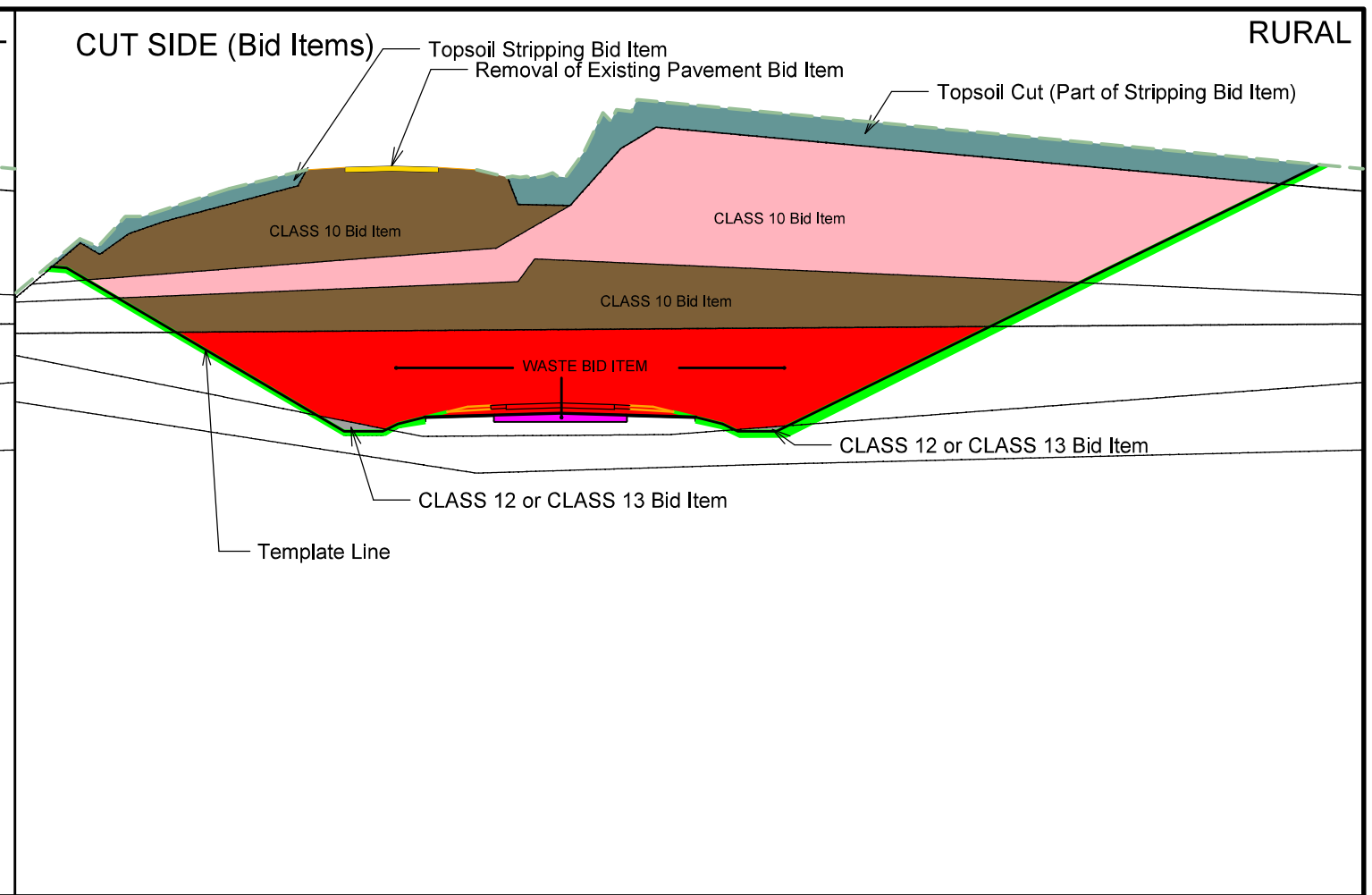
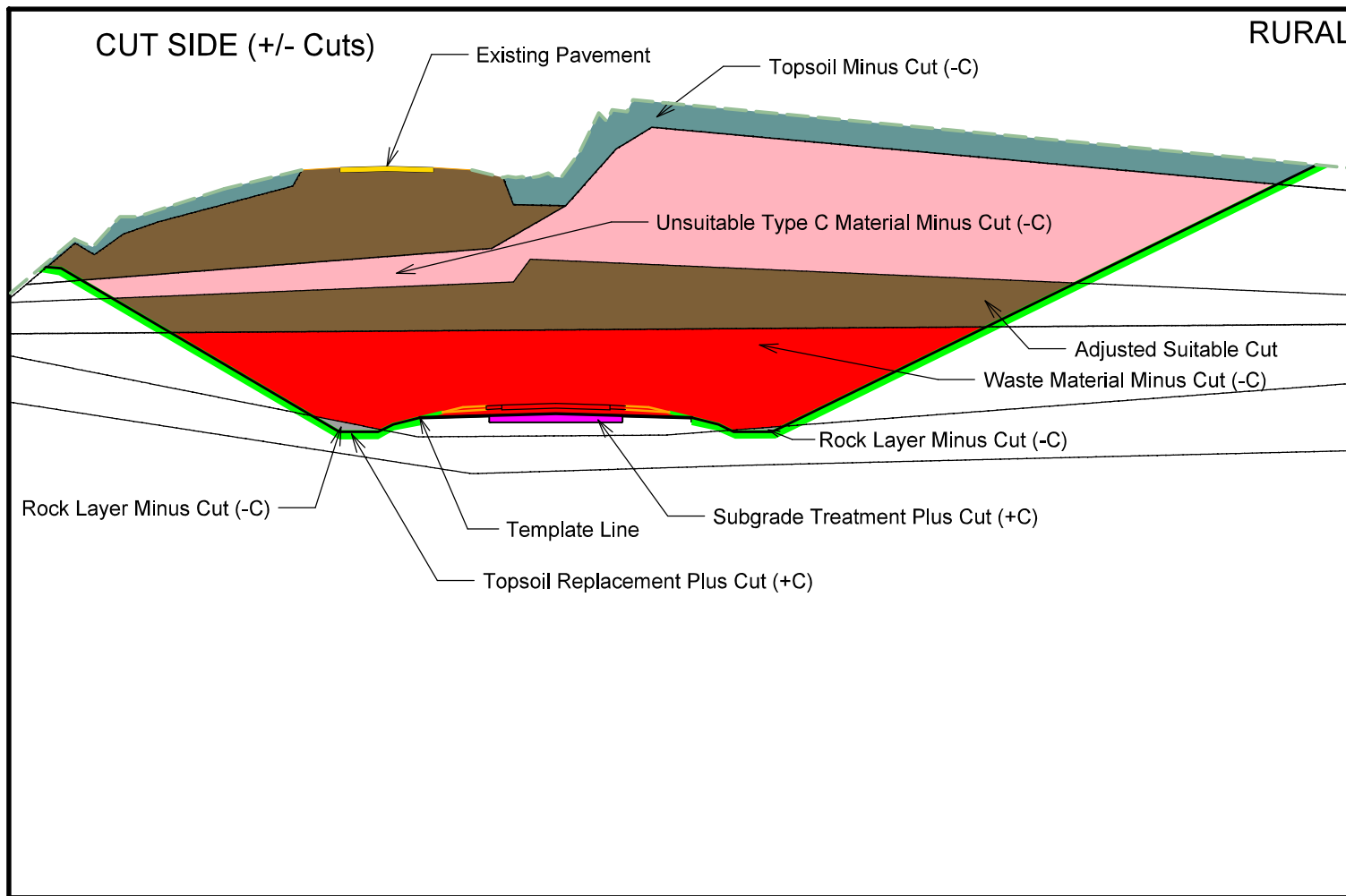
XSTS041
 EXISTING OUTLET
 2560+83.36, 29.39'
 FL 718.10+/-

O40
 INTAKE ADJUSTMENT, MAJOR
 2560+83.50, -25.00'
 FG 723.05
 BW N/A



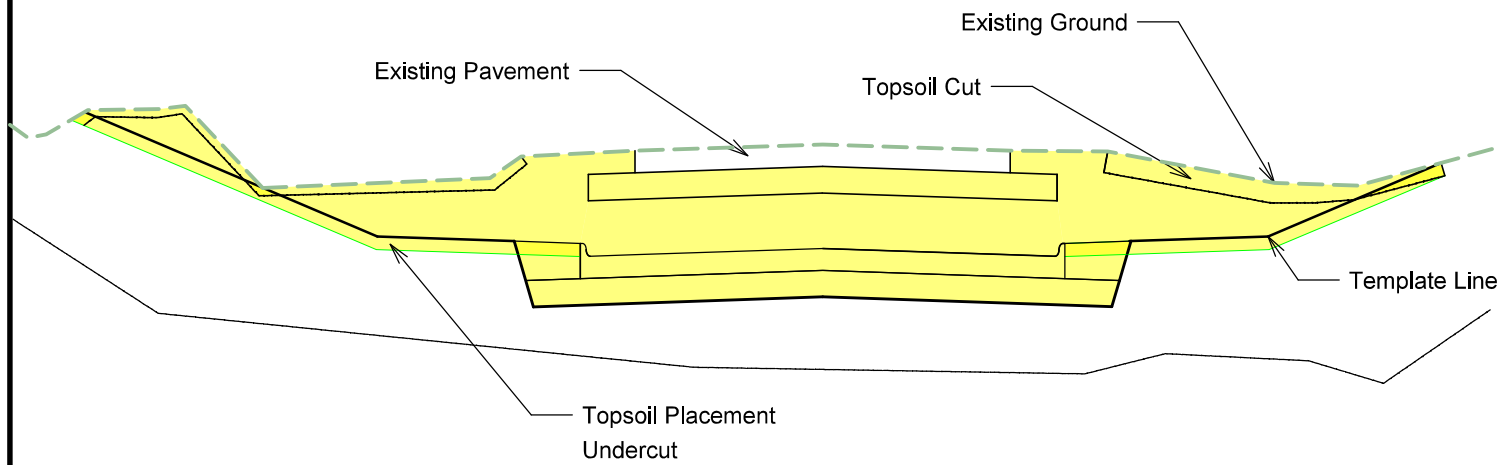
XSTS-040





CUT SIDE Total Cut Unadjusted

URBAN

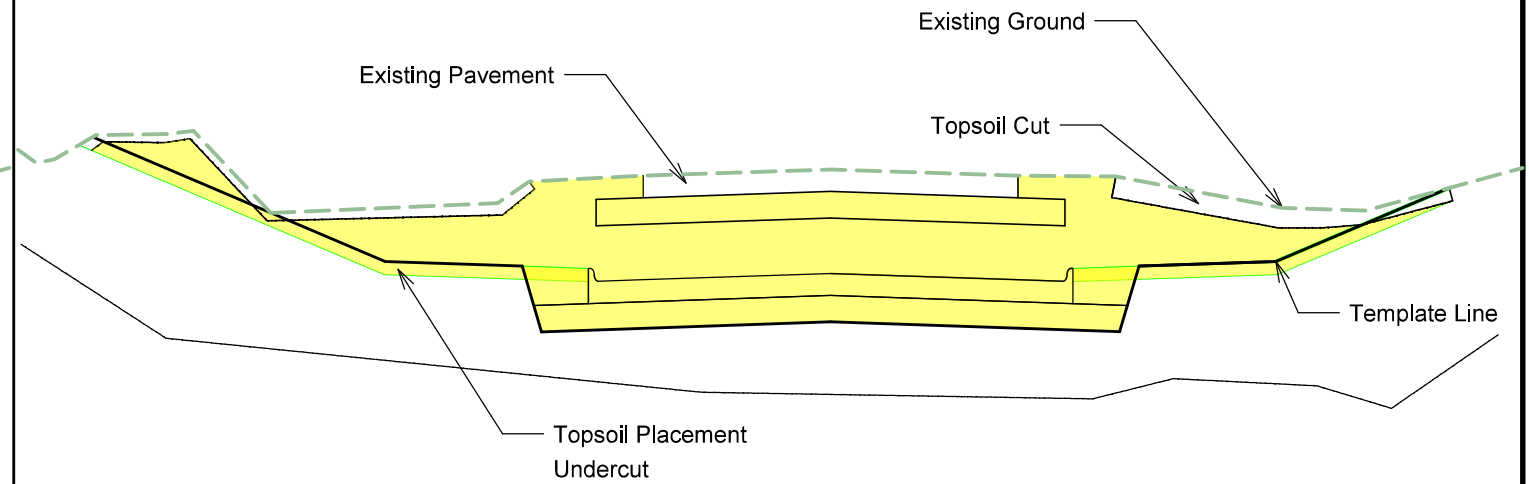


Notes:

1. "Total Cut Unadjusted" Column includes all cut values in the Station Range based on Typical, Topsoil and Subgrade Treatment needs.
2. "Total Cut Unadjusted" does not include and Existing Pavement values inside or outside the cut template as shown on cross sections.
3. Tabulated Plowing and Shaping operations are included in the "Total Cut Unadjusted" values.

CUT SIDE Total Cut Adjusted

URBAN

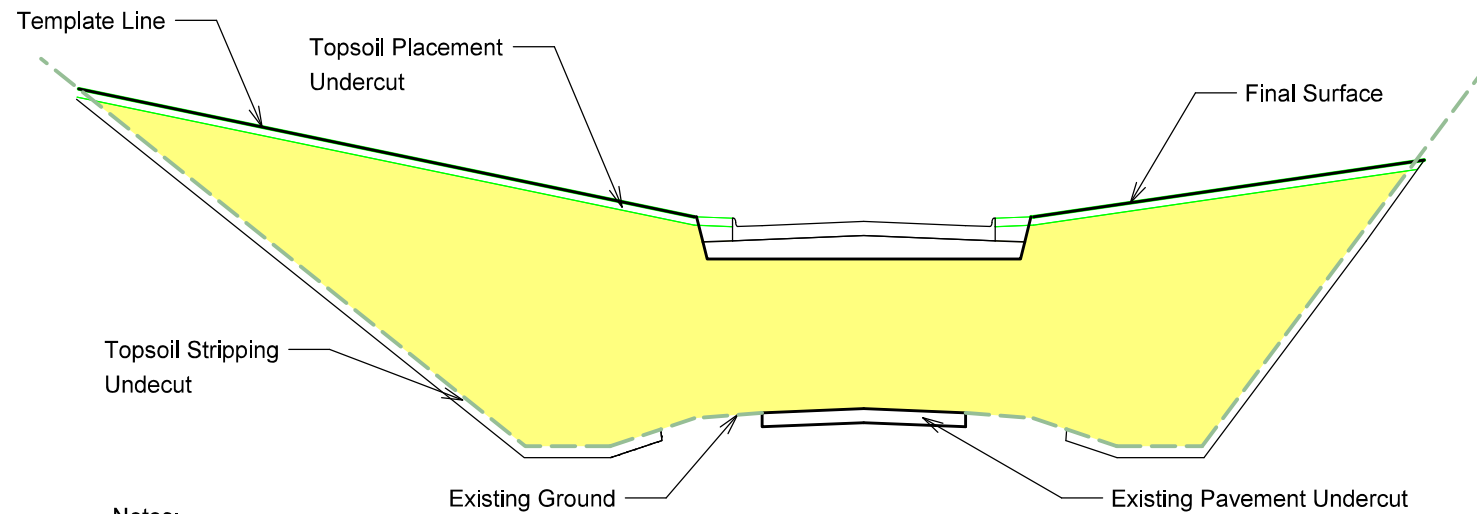


Notes:

1. "Total Cut Adjusted" Column includes all cut values usable as Class 10 material.
2. "Total Cut Adjusted" does not include and Existing Pavement , Existing Topsoil, or material to be wasted.

FILL SIDE Total Fill Unadjusted

URBAN

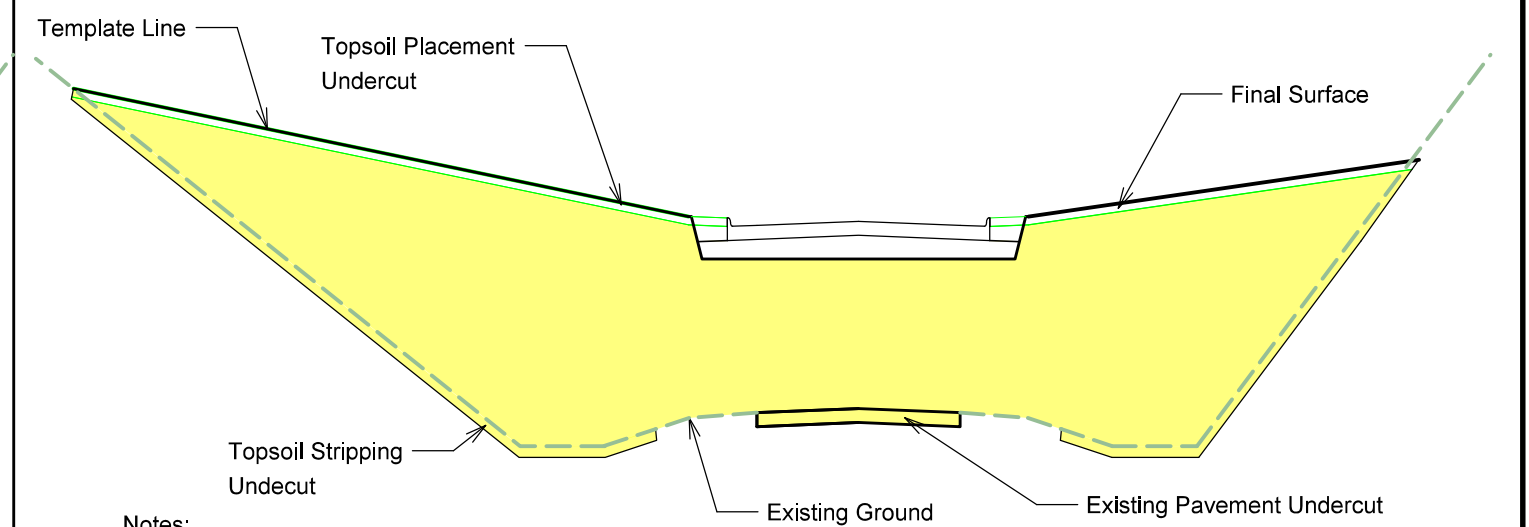


Notes:

1. "Total Fill Unadjusted" Column includes all Class 10, 12, and 13 fill. This excludes the topsoil, subgrade treatment, subbase, new pavement, and shoulder fill needs in that station range.
2. "Total Fill Unadjusted" Column does not include adjustments for additional fill from cuts such as existing pavement removed, plowing and shaping operations, entrances, dikes, or topsoil stripping.

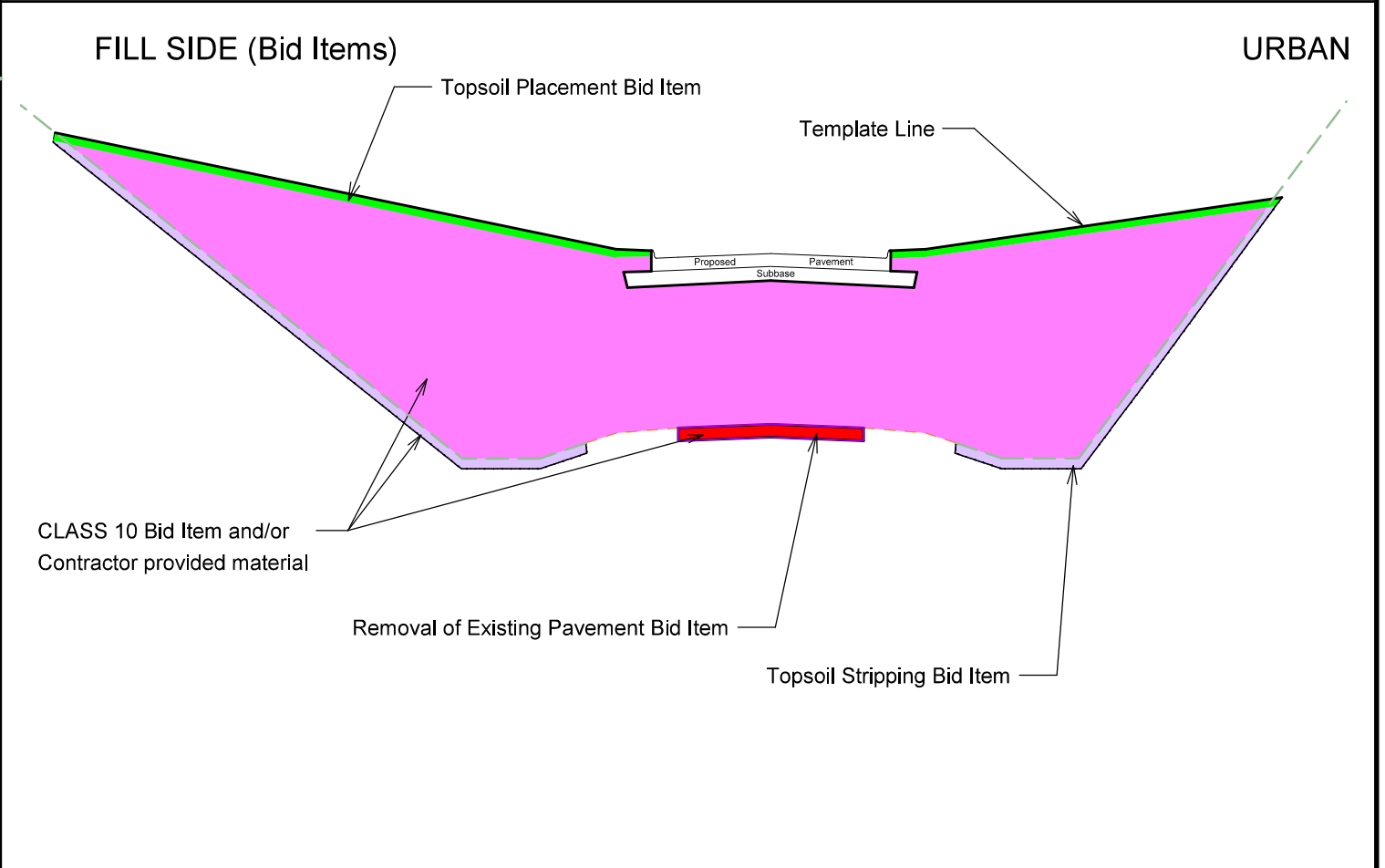
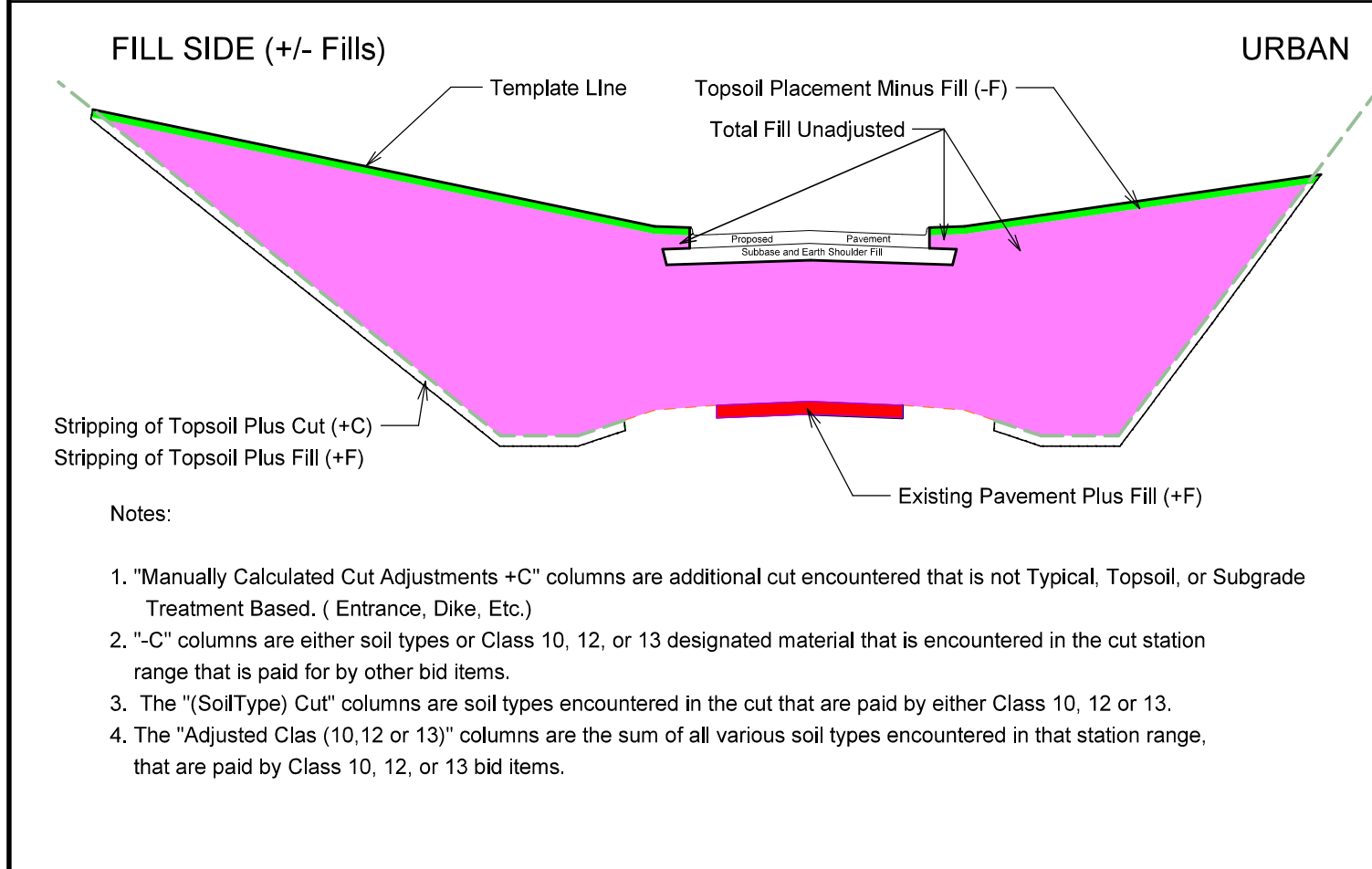
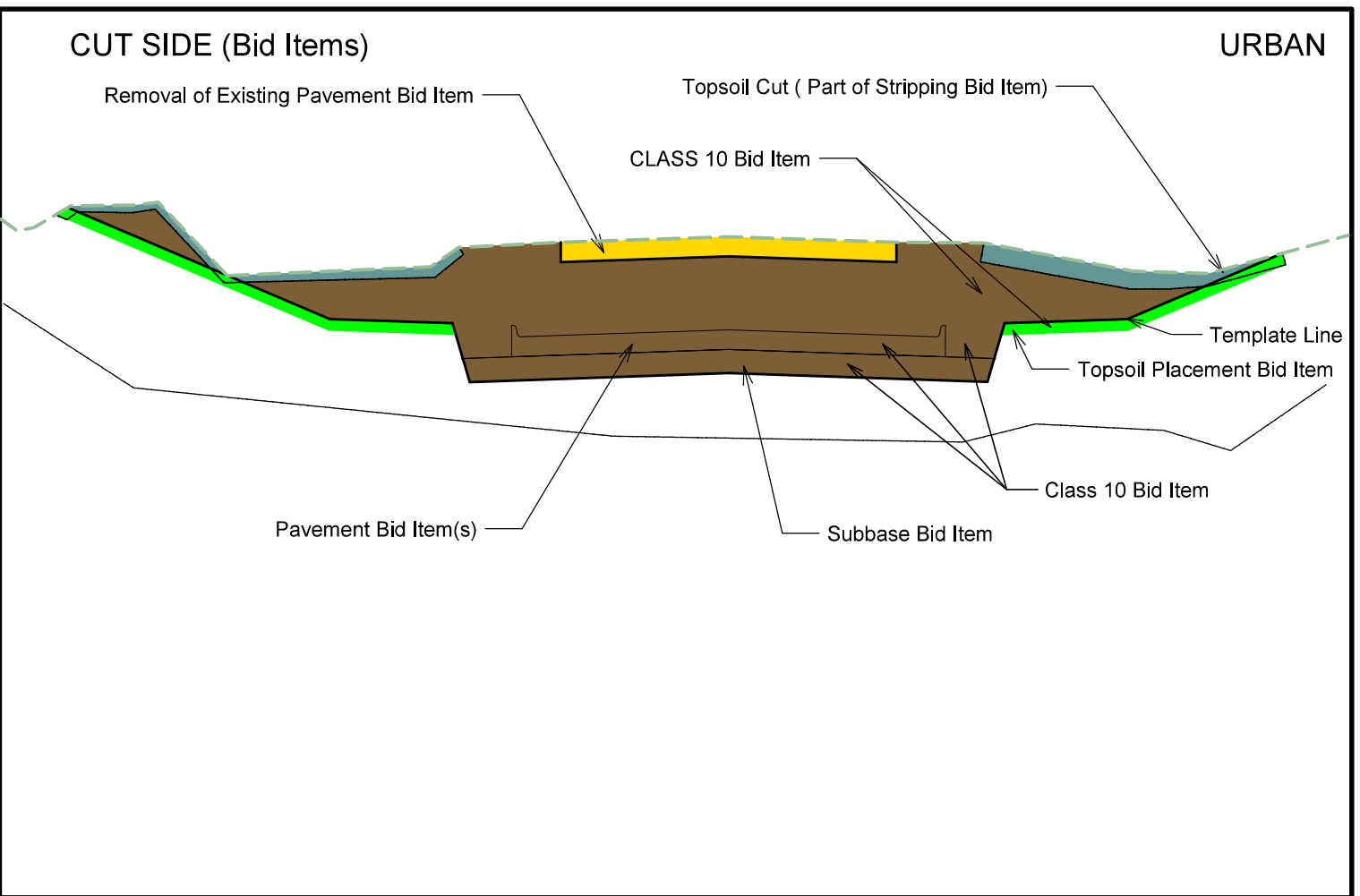
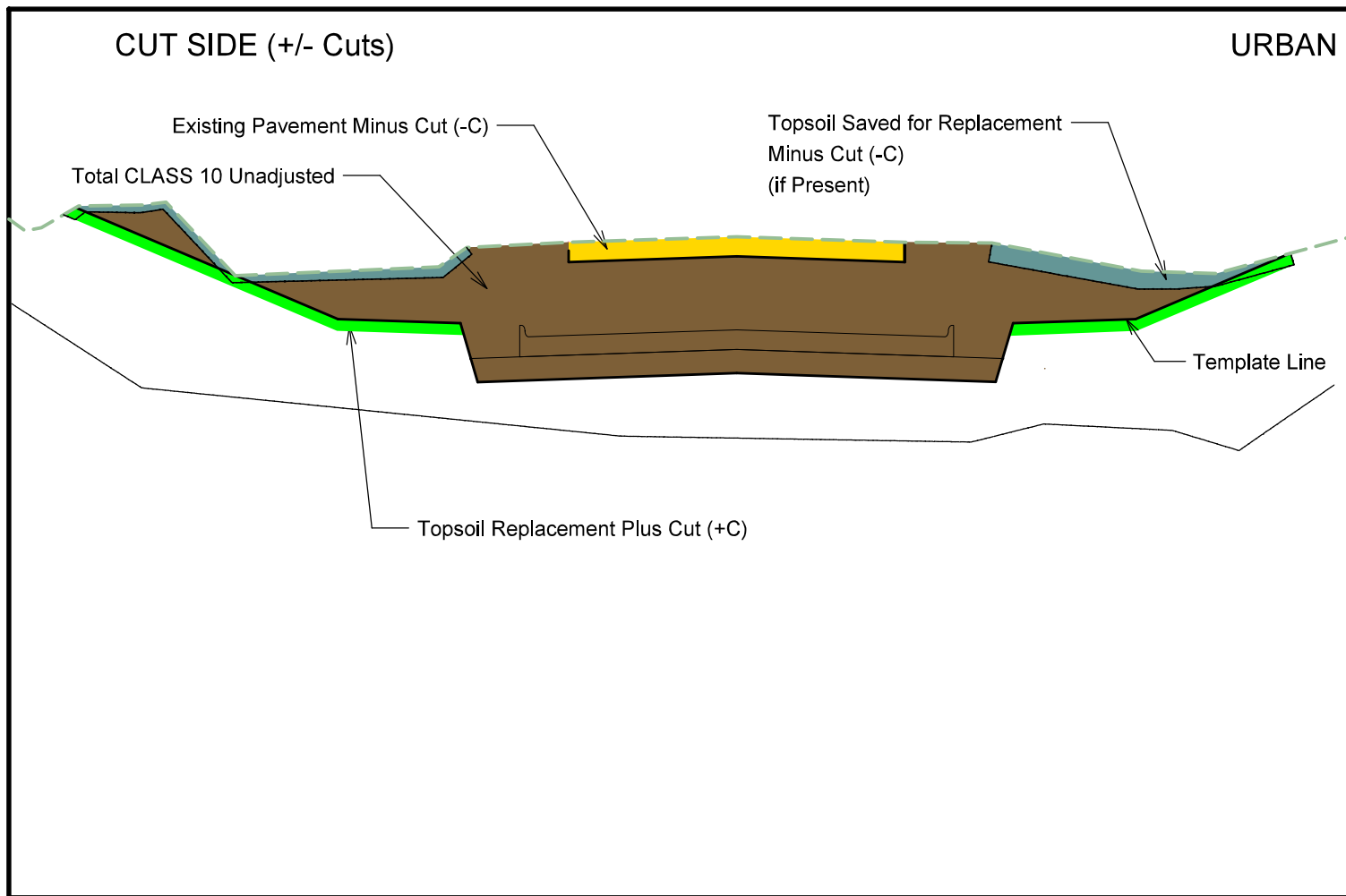
FILL SIDE Total Fill Adjusted

URBAN



Notes:

1. "Total Fill Adjusted" Column includes all Class 10, 12, and 13 fill and adjustments for additional fill from cuts such as existing pavement, plowing and shaping operations, entrances, dikes, and topsoil stripping.
2. The available area to place unsuitable materials in the T Sheet tabulation does not include the undercut values from the topsoil stripping, existing pavement, or plowing and shaping



TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut			Fill				Checks (EW-102)		Topsoil				[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]										
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink										
MLEB080 PH1																							
5920+50.00	178	178	178	98	98	127	51	0	0	0	0	0	0										
5921+00.00	98	98	98	157	157	204	-106	0	0	0	0	0	0										
5921+50.00	95	95	95	169	169	220	-125	0	0	0	0	0	0										
5922+00.00	89	89	89	182	182	237	-148	0	0	0	0	0	0										
5922+50.00	84	84	84	199	199	259	-175	0	0	0	0	0	0										
5923+00.00	84	84	84	207	207	269	-185	0	0	0	0	0	0										
5923+50.00	83	83	83	242	242	315	-232	0	0	0	0	0	0										
5924+00.00	85	85	85	352	352	458	-373	0	0	0	0	0	0										
5924+50.00	97	97	97	307	307	399	-302	0	0	0	0	0	0										
5925+00.00	97	97	97	171	171	222	-125	0	0	0	0	0	0										
5925+50.00	107	107	107	137	137	178	-71	0	0	0	0	0	0										
5926+00.00	162	162	162	115	115	150	13	0	0	0	0	0	0										
5926+50.00	234	234	234	102	102	133	101	0	0	0	0	0	0										
5927+00.00	300	300	300	95	95	124	177	0	0	0	0	0	0										
5927+50.00	376	376	376	87	87	113	263	0	0	0	0	0	0										
5928+00.00	449	449	449	84	84	109	340	0	0	0	0	0	0										
5928+50.00	519	519	519	86	86	112	407	0	0	0	0	0	0										
5929+00.00	577	577	577	86	86	112	465	0	0	0	0	0	0										
5929+50.00	617	617	617	81	81	105	512	0	0	0	0	0	0										
5930+00.00	640	640	640	76	76	99	541	0	0	0	0	0	0										
5930+50.00	633	633	633	75	75	98	536	0	0	0	0	0	0										
5931+00.00	618	618	618	79	79	103	515	0	0	0	0	0	0										
5931+50.00	591	591	591	85	85	111	481	0	0	0	0	0	0										
5932+00.00	545	545	545	91	91	118	427	0	0	0	0	0	0										
5932+50.00	491	491	491	91	91	118	373	0	0	0	0	0	0										
5933+00.00	538	538	538	88	88	114	424	0	0	0	0	0	0										
5933+50.00	705	705	705	91	91	118	587	0	0	0	0	0	0										
5934+00.00	926	926	926	99	99	129	797	0	0	0	0	0	0										
5934+50.00	1,240	1,240	1,240	106	106	138	1,102	0	0	0	0	0	0										
5935+00.00	1,525	1,525	1,525	110	110	143	1,382	0	0	0	0	0	0										
5935+50.00	1,648	1,648	1,648	110	110	143	1,505	0	0	0	0	0	0										
5936+00.00	1,690	1,690	1,690	111	111	144	1,546	0	0	0	0	0	0										
5936+50.00	1,788	1,788	1,788	118	118	153	1,635	0	0	0	0	0	0										
5937+00.00	1,914	1,914	1,914	123	123	160	1,754	0	0	0	0	0	0										
5937+50.00	2,032	2,032	2,032	136	136	177	1,855	0	0	0	0	0	0										
5938+00.00	2,133	2,133	2,133	149	149	194	1,939	0	0	0	0	0	0										
5938+50.00	2,154	2,154	2,154	90	90	117	2,037	0	0	0	0	0	0										
5939+00.00	2,109	2,109	2,109	35	35	46	2,064	0	0	0	0	0	0										
5939+50.00	1,948	1,948	1,948	40	40	52	1,896	0	0	0	0	0	0										
5940+00.00	1,614	1,614	1,614	35	35	46	1,569	0	0	0	0	0	0										
5940+50.00	1,084	1,084	1,084	36	36	47	1,037	0	0	0	0	0	0										
5941+00.00	754	754	754	25	25	33	722	0	0	0	0	0	0										
5941+50.00	836	836	836	12	12	16	820	0	0	0	0	0	0										
5942+00.00	689	689	689	7	7	9	680	0	0	0	0	0	0										
5942+50.00	427	427	427	0	0	0	427	0	0	0	0	0	0										
5943+00.00	302	302	302	0	0	0	302	0	0	0	0	0	0										
5943+50.00	114	114	114	605	605	787	-673	0	0	0	0	0	0										
5944+00.00	24	24	24	1,454	1,454	1,890	-1,866	0	0	0	0	0	0										
5944+50.00	30	30	30	1,540	1,540	2,002	-1,972	0	0	0	0	0	0										
5945+00.00	52	52	52	1,324	1,324	1,721	-1,669	0	0	0	0	0	0										
5945+50.00	65	65	65	1,308	1,308	1,700	-1,635	0	0	0	0	0	0										
5946+00.00	65	65	65	1,327	1,327	1,725	-1,660	0	0	0	0	0	0										
5946+50.00	80	80	80	1,151	1,151	1,496	-1,416	0	0	0	0	0	0										
5947+00.00	99	99	99	905	905	1,177	-1,078	0	0	0	0	0	0										
5947+50.00	135	135	135	800	800	1,040	-905	0	0	0	0	0	0										
5948+00.00	119	119	119	940	940	1,222	-1,103	0	0	0	0	0	0										
5948+50.00	126	126	126	990	990	1,287	-1,161	0	0	0	0	0	0										
5949+00.00	452	452	452	837	837	1,088	-636	0	0	0	0	0	0										
5949+50.00	675	675	675	692	692	900	-225	0	0	0	0	0	0										
5950+00.00	510	510	510	499	499	649	-139	0	0	0	0	0	0										
5950+50.00	389	389	389	325	325	423	-34	0	0	0	0	0	0										
5951+00.00	400	400	400	206	206	268	132	0	0	0	0	0	0										
5951+50.00	422	422	422	130	130	169	253	0	0	0	0	0	0										
5952+00.00	432	432	432	78	78	101	331	0	0	0	0	0	0										
5952+50.00	384	384	384	111	111	144	240	0	0	0	0	0	0										
5953+00.00																							
MLEB080 PH1																							
Totals:	40,478	40,478	40,478	20,197	20,197	26,256	14,222	0	0	0	0	0	0										

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut			Fill				Checks (EW-102)		Topsoil				[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]										
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink										
MLEB080 PH2																							
5953+00.00	333	333	333	163	163	212	121	0	0	0	0	0	0										
5953+50.00	364	364	364	155	155	202	163	0	0	0	0	0	0										
5954+00.00	431	431	431	148	148	192	239	0	0	0	0	0	0										
5954+50.00	503	503	503	143	143	186	317	0	0	0	0	0	0										
5955+00.00	567	567	567	135	135	176	392	0	0	0	0	0	0										
5955+50.00	588	588	588	119	119	155	433	0	0	0	0	0	0										
5956+00.00	528	528	528	89	89	116	412	0	0	0	0	0	0										
5956+50.00	502	502	502	78	78	101	401	0	0	0	0	0	0										
5957+00.00	535	535	535	88	88	114	421	0	0	0	0	0	0										
5957+50.00	576	576	576	94	94	122	454	0	0	0	0	0	0										
5958+00.00	634	634	634	99	99	129	505	0	0	0	0	0	0										
5958+50.00	688	688	688	100	100	130	558	0	0	0	0	0	0										
5959+00.00	762	762	762	104	104	135	627	0	0	0	0	0	0										
5959+50.00	880	880	880	102	102	133	747	0	0	0	0	0	0										
5960+00.00	1,006	1,006	1,006	96	96	125	881	0	0	0	0	0	0										
5960+50.00	1,118	1,118	1,118	81	81	105	1,013	0	0	0	0	0	0										
5961+00.00	1,199	1,199	1,199	67	67	87	1,112	0	0	0	0	0	0										
5961+50.00	1,203	1,203	1,203	70	70	91	1,112	0	0	0	0	0	0										
5962+00.00	1,250	1,250	1,250	76	76	99	1,151	0	0	0	0	0	0										
5962+50.00	1,349	1,349	1,349	83	83	108	1,241	0	0	0	0	0	0										
5963+00.00	1,333	1,333	1,333	83	83	108	1,225	0	0	0	0	0	0										
5963+50.00	1,179	1,179	1,179	76	76	99	1,080	0	0	0	0	0	0										
5964+00.00	988	988	988	71	71	92	896	0	0	0	0	0	0										
5964+50.00	836	836	836	69	69	90	746	0	0	0	0	0	0										
5965+00.00	686	686	686	74	74	96	590	0	0	0	0	0	0										
5965+50.00	423	423	423	115	115	150	274	0	0	0	0	0	0										
5966+00.00	178	178	178	185	185	241	-63	0	0	0	0	0	0										
5966+50.00	94	94	94	357	357	464	-370	0	0	0	0	0	0										
5967+00.00	78	78	78	545	545	709	-631	0	0	0	0	0	0										
5967+50.00	75	75	75	575	575	748	-673	0	0	0	0	0	0										
5968+00.00	74	74	74	445	445	579	-505	0	0	0	0	0	0										
5968+50.00	85	85	85	262	262	341	-256	0	0	0	0	0	0										
5969+00.00	188	188	188	154	154	200	-12	0	0	0	0	0	0										
5969+50.00	281	281	281	123	123	160	121	0	0	0	0	0	0										
5970+00.00	272	272	272	117	117	152	120	0	0	0	0	0	0										
5970+50.00	230	230	230	102	102	133	97	0	0	0	0	0	0										
5971+00.00	219	219	219	79	79	103	116	0	0	0	0	0	0										
5971+50.00	269	269	269	66	66	86	183	0	0	0	0	0	0										
5972+00.00	307	307	307	71	71	92	215	0	0	0	0	0	0										
5972+50.00	291	291	291	84	84	109	182	0	0	0	0	0	0										
5973+00.00	67	67	67	25	25	33	35	0	0	0	0	0	0										
5973+25.00																							
MLEB080 PH2																							
Totals:	23,169	23,169	23,169	5,768	5,768	7,499	15,671	0	0	0	0	0	0										

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut			Fill				Checks (EW-102)		Topsoil				[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]									
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
MLWB080 PH1																						
4926+50.00	1,074	1,074	1,074	76	76	99	975	0	0	0	0	0	0									
4927+00.00	1,090	1,090	1,090	74	74	96	994	0	0	0	0	0	0									
4927+50.00	1,118	1,118	1,118	72	72	94	1,024	0	0	0	0	0	0									
4928+00.00	1,133	1,133	1,133	72	72	94	1,039	0	0	0	0	0	0									
4928+50.00	1,133	1,133	1,133	70	70	91	1,042	0	0	0	0	0	0									
4929+00.00	1,126	1,126	1,126	68	68	88	1,038	0	0	0	0	0	0									
4929+50.00	1,154	1,154	1,154	66	66	86	1,068	0	0	0	0	0	0									
4930+00.00	1,215	1,215	1,215	68	68	88	1,127	0	0	0	0	0	0									
4930+50.00	1,305	1,305	1,305	72	72	94	1,211	0	0	0	0	0	0									
4931+00.00	1,443	1,443	1,443	74	74	96	1,347	0	0	0	0	0	0									
4931+50.00	1,539	1,539	1,539	78	78	101	1,438	0	0	0	0	0	0									
4932+00.00	1,577	1,577	1,577	83	83	108	1,469	0	0	0	0	0	0									
4932+50.00	1,616	1,616	1,616	84	84	109	1,507	0	0	0	0	0	0									
4933+00.00	1,669	1,669	1,669	87	87	113	1,556	0	0	0	0	0	0									
4933+50.00	1,688	1,688	1,688	91	91	118	1,570	0	0	0	0	0	0									
4934+00.00	1,668	1,668	1,668	93	93	121	1,547	0	0	0	0	0	0									
4934+50.00	1,641	1,641	1,641	95	95	124	1,518	0	0	0	0	0	0									
4935+00.00	1,826	1,826	1,826	95	95	124	1,703	0	0	0	0	0	0									
4935+50.00	2,097	2,097	2,097	101	101	131	1,966	0	0	0	0	0	0									
4936+00.00	2,092	2,092	2,092	116	116	151	1,941	0	0	0	0	0	0									
4936+50.00	1,830	1,830	1,830	127	127	165	1,665	0	0	0	0	0	0									
4937+00.00	1,467	1,467	1,467	144	144	187	1,280	0	0	0	0	0	0									
4937+50.00	1,060	1,060	1,060	197	197	256	804	0	0	0	0	0	0									
4938+00.00	901	901	901	295	295	384	518	0	0	0	0	0	0									
4938+50.00	1,018	1,018	1,018	293	293	381	637	0	0	0	0	0	0									
4939+00.00	998	998	998	259	259	337	661	0	0	0	0	0	0									
4939+50.00	782	782	782	337	337	438	344	0	0	0	0	0	0									
4940+00.00	1,074	1,074	1,074	275	275	358	717	0	0	0	0	0	0									
4940+50.00	1,715	1,715	1,715	82	82	107	1,608	0	0	0	0	0	0									
4941+00.00	1,221	1,221	1,221	2	2	3	1,218	0	0	0	0	0	0									
4941+50.00	345	345	345	9	9	12	333	0	0	0	0	0	0									
4942+00.00	858	858	858	13	13	17	841	0	0	0	0	0	0									
4942+50.00	799	799	799	621	621	807	-8	0	0	0	0	0	0									
4943+00.00	40	40	40	1,168	1,168	1,518	-1,478	0	0	0	0	0	0									
4943+50.00	24	24	24	1,148	1,148	1,492	-1,468	0	0	0	0	0	0									
4944+00.00	11	11	11	1,189	1,189	1,546	-1,535	0	0	0	0	0	0									
4944+50.00	6	6	6	1,036	1,036	1,347	-1,341	0	0	0	0	0	0									
4945+00.00	2	2	2	819	819	1,065	-1,063	0	0	0	0	0	0									
4945+50.00	13	13	13	674	674	876	-863	0	0	0	0	0	0									
4946+00.00	62	62	62	508	508	660	-598	0	0	0	0	0	0									
4946+50.00	135	135	135	381	381	495	-360	0	0	0	0	0	0									
4947+00.00	207	207	207	305	305	397	-190	0	0	0	0	0	0									
4947+50.00	265	265	265	248	248	322	-57	0	0	0	0	0	0									
4948+00.00	300	300	300	209	209	272	28	0	0	0	0	0	0									
4948+50.00	298	298	298	176	176	229	69	0	0	0	0	0	0									
4949+00.00	282	282	282	222	222	289	-7	0	0	0	0	0	0									
4949+50.00	265	265	265	319	319	415	-150	0	0	0	0	0	0									
4950+00.00	274	274	274	355	355	462	-188	0	0	0	0	0	0									
4950+50.00	317	317	317	355	355	462	-145	0	0	0	0	0	0									
4951+00.00	362	362	362	405	405	527	-165	0	0	0	0	0	0									
4951+50.00	359	359	359	451	451	586	-227	0	0	0	0	0	0									
4952+00.00																						
MLWB080 PH1																						
Totals:	46,494	46,494	46,494	14,257	14,257	18,535	27,960	0	0	0	0	0	0									

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

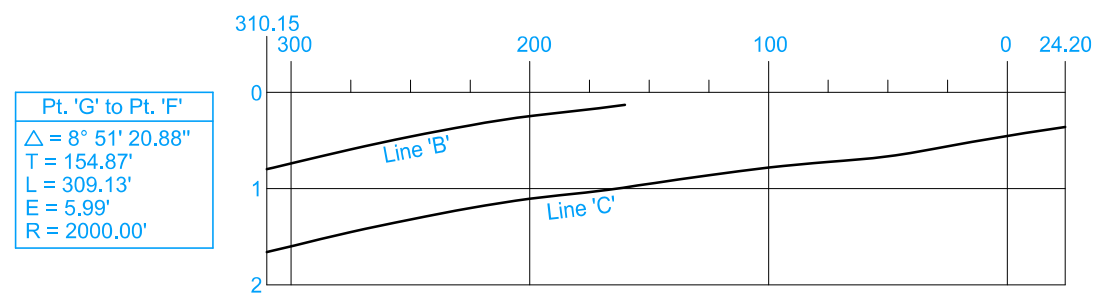
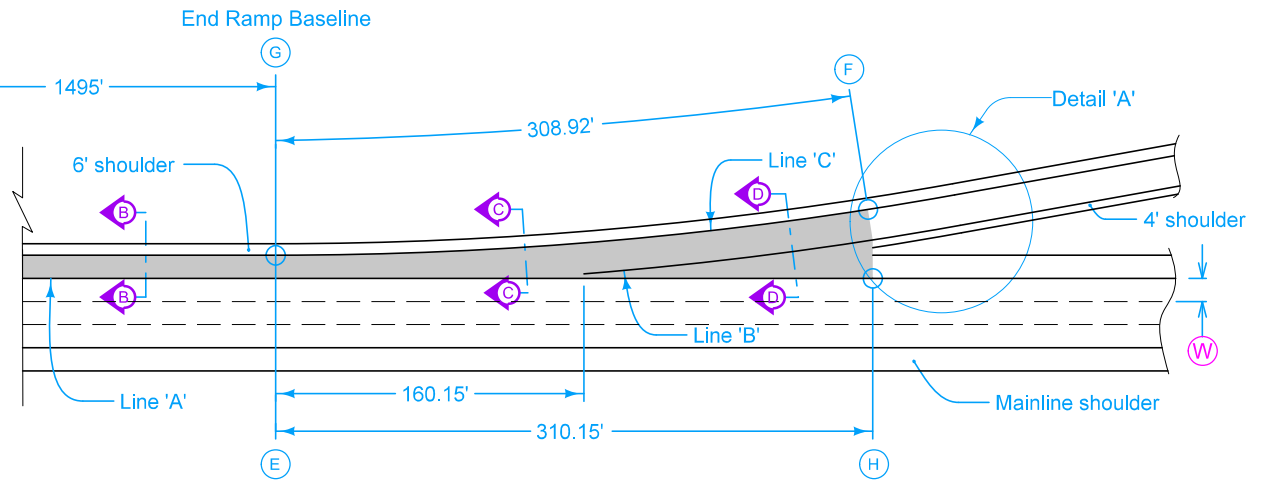
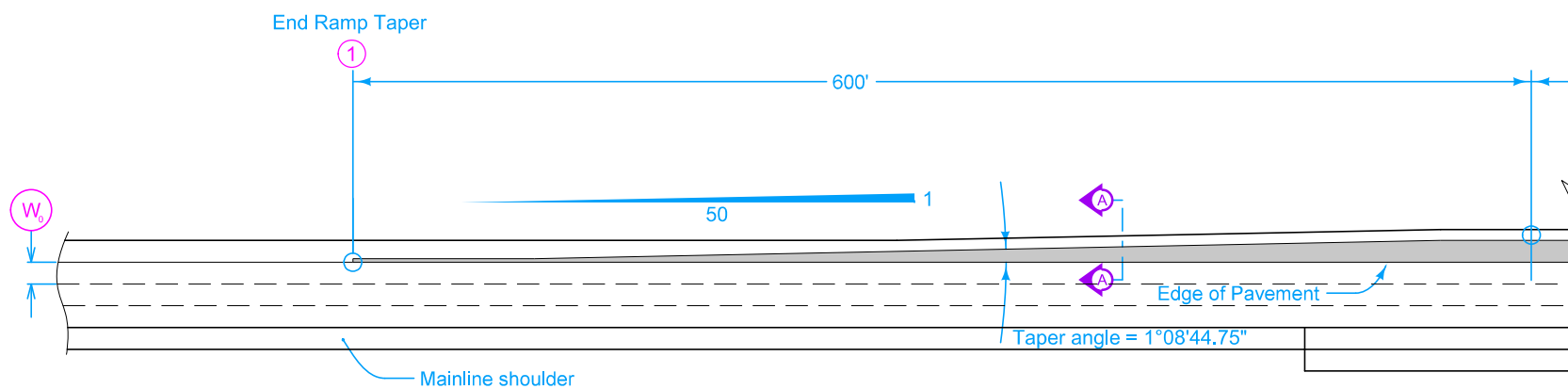
Station	Cut			Fill				Checks (EW-102)		Topsoil				[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]									
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink									
MLWB080 PH2																						
4952+00.00	357	357	357	386	386	502	-145	0	0	0	0	0	0									
4952+50.00	407	407	407	334	334	434	-27	0	0	0	0	0	0									
4953+00.00	429	429	429	383	383	498	-69	0	0	0	0	0	0									
4953+50.00	440	440	440	456	456	593	-153	0	0	0	0	0	0									
4954+00.00	646	646	646	474	474	616	30	0	0	0	0	0	0									
4954+50.00	908	908	908	430	430	559	349	0	0	0	0	0	0									
4955+00.00	792	792	792	379	379	493	299	0	0	0	0	0	0									
4955+50.00	560	560	560	327	327	425	135	0	0	0	0	0	0									
4956+00.00	723	723	723	263	263	342	381	0	0	0	0	0	0									
4956+50.00	914	914	914	197	197	256	658	0	0	0	0	0	0									
4957+00.00	1,008	1,008	1,008	165	165	215	794	0	0	0	0	0	0									
4957+50.00	1,023	1,023	1,023	159	159	207	816	0	0	0	0	0	0									
4958+00.00	982	982	982	157	157	204	778	0	0	0	0	0	0									
4958+50.00	1,040	1,040	1,040	157	157	204	836	0	0	0	0	0	0									
4959+00.00	1,059	1,059	1,059	153	153	199	860	0	0	0	0	0	0									
4959+50.00	1,039	1,039	1,039	150	150	195	844	0	0	0	0	0	0									
4960+00.00	987	987	987	143	143	186	801	0	0	0	0	0	0									
4960+50.00	976	976	976	153	153	199	777	0	0	0	0	0	0									
4961+00.00	1,047	1,047	1,047	177	177	230	817	0	0	0	0	0	0									
4961+50.00	1,174	1,174	1,174	189	189	246	928	0	0	0	0	0	0									
4962+00.00	1,245	1,245	1,245	194	194	252	993	0	0	0	0	0	0									
4962+50.00	1,291	1,291	1,291	188	188	244	1,047	0	0	0	0	0	0									
4963+00.00	1,299	1,299	1,299	169	169	220	1,079	0	0	0	0	0	0									
4963+50.00	1,366	1,366	1,366	129	129	168	1,198	0	0	0	0	0	0									
4964+00.00	1,544	1,544	1,544	90	90	117	1,427	0	0	0	0	0	0									
4964+50.00	1,285	1,285	1,285	72	72	94	1,191	0	0	0	0	0	0									
4965+00.00	864	864	864	62	62	81	783	0	0	0	0	0	0									
4965+50.00	740	740	740	56	56	73	667	0	0	0	0	0	0									
4966+00.00	742	742	742	55	55	72	671	0	0	0	0	0	0									
4966+50.00	715	715	715	76	76	99	616	0	0	0	0	0	0									
4967+00.00	378	378	378	153	153	199	179	0	0	0	0	0	0									
4967+50.00	100	100	100	250	250	325	-225	0	0	0	0	0	0									
4968+00.00	89	89	89	255	255	332	-243	0	0	0	0	0	0									
4968+50.00	190	190	190	204	204	265	-75	0	0	0	0	0	0									
4969+00.00	380	380	380	156	156	203	177	0	0	0	0	0	0									
4969+50.00	570	570	570	110	110	143	427	0	0	0	0	0	0									
4970+00.00	775	775	775	83	83	108	667	0	0	0	0	0	0									
4970+50.00	933	933	933	69	69	90	843	0	0	0	0	0	0									
4971+00.00	999	999	999	62	62	81	918	0	0	0	0	0	0									
4971+50.00	1,010	1,010	1,010	60	60	78	932	0	0	0	0	0	0									
4972+00.00																						
MLWB080 PH2																						
Totals:	33,026	33,026	33,026	7,725	7,725	10,043	22,984	0	0	0	0	0	0									

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

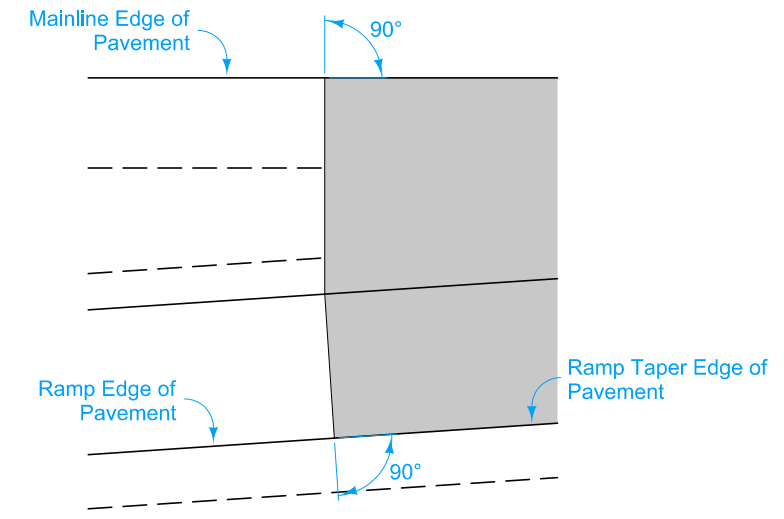
Station	Cut			Fill				Checks (EW-102)		Topsoil				[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]										
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink										
RESTRPC																							
3557+54.40	78	78	78	0	0	0	78	0	0	0	0	0	0										
3558+00.00	84	84	84	2	2	3	81	0	0	0	0	0	0										
3558+50.00	84	84	84	4	4	5	79	0	0	0	0	0	0										
3559+00.00	86	86	86	9	9	12	74	0	0	0	0	0	0										
3559+50.00	93	93	93	9	9	12	81	0	0	0	0	0	0										
3560+00.00																							
RESTRPC																							
Totals:	425	425	425	24	24	32	394	0	0	0	0	0	0										

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut			Fill				Checks (EW-102)		Topsoil				[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]										
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink										
Summary:																							
MLEB080 PH1	40,478	40,478	40,478	20,197	20,197	26,257	14,222	0	0	0	0	0	0										
MLEB080 PH2	23,169	23,169	23,169	5,768	5,768	7,499	15,671	0	0	0	0	0	0										
MLWB080 PH1	46,494	46,494	46,494	14,257	14,257	18,535	27,960	0	0	0	0	0	0										
MLWB080 PH2	33,026	33,026	33,026	7,725	7,725	10,043	22,984	0	0	0	0	0	0										
RESTRPC	425	425	425	24	24	32	394	0	0	0	0	0	0										
Project Totals:	143,592	143,592	143,592	47,971	47,971	62,366	81,231	0	0	0	0	0	0										
Excavation, Class 10, Roadway & Borrow																							
62,366																							
[6]																							
Excavation, Class 10, Waste																							
143,592 - 62,366 = 81,231																							
[3] [6] [7]																							



NOTE: The algebraic difference between ramp profile grade at point (F) and relative profile grade of mainline at point (H) is 0.62%



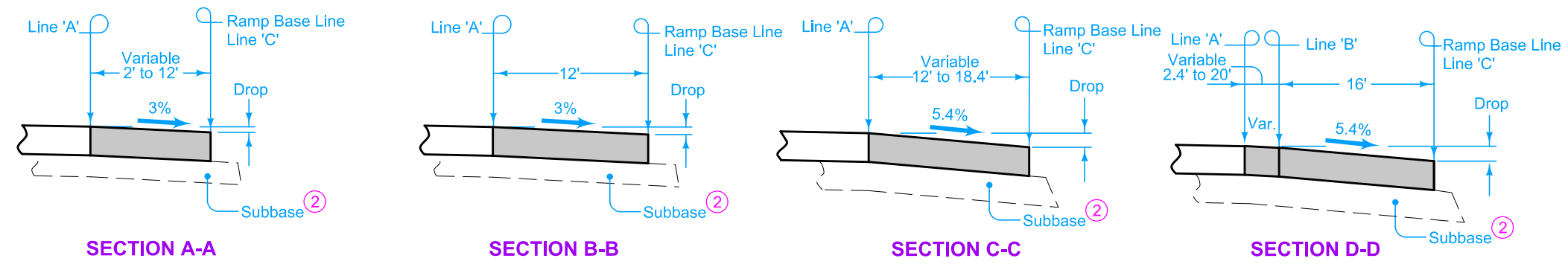
DETAIL A

Construct ramp exit pavement the same thickness as mainline pavement.

For joint detail, see PV-101.

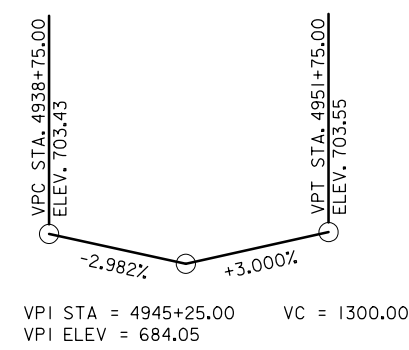
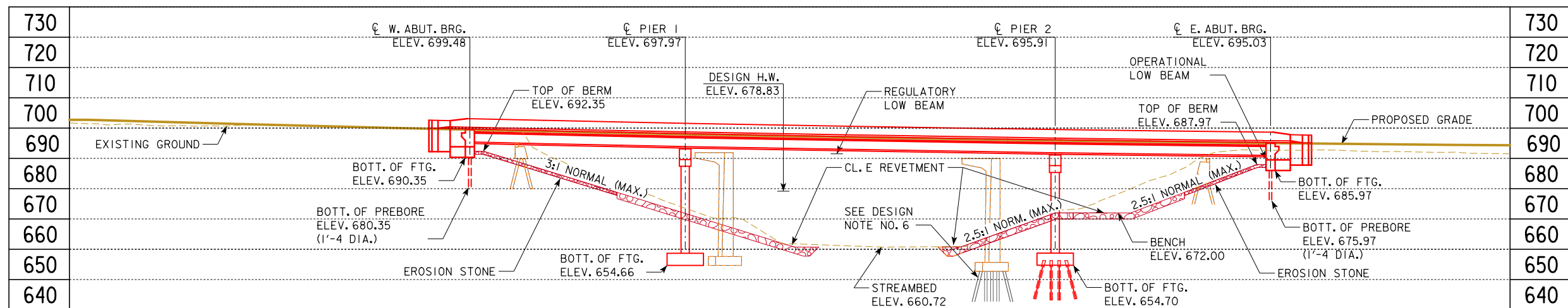
- ① For header construction detail at the end of taper, see Typical 7101 or Typical 7102.
- ② Construct subbase for ramp exit pavement the same thickness as mainline subbase.

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																			
DISTANCE FROM POINT (E) ALONG LINE 'A' (Ft.)		310.15	300	275	250	225	204	200	175	160.15	150	125	100	75	50	25	0	24.2	
From Line 'A' To Line 'B'	OFFSET (Ft.)	20.00	18.45	14.84	11.56	8.60	6.35	5.95	3.61	2.37									
	SLOPE (%)	← Constant 4.0% Slope →								4.11	4.92	5.40							
	DROP (Ft.)	0.80	0.74	0.59	0.46	0.34	0.25	0.24	0.18	0.13									
From Line 'B' To Line 'C'	OFFSET (Ft.)	← Constant 16' Offset →																	
	SLOPE (%)	← Constant 5.4% Slope →																	
	DROP (Ft.)	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86								
From Line 'A' To Line 'C'	OFFSET (Ft.)										17.63	15.91	14.50	13.41	12.63	12.16	12.00	12.00	
	SLOPE (%)										5.40	5.40	5.40	5.40	5.40	4.59	3.78	3.00	
	DROP (Ft.)	1.66	1.60	1.45	1.32	1.20	1.11	1.10	1.04	0.99	0.95	0.86	0.78	0.72	0.68	0.56	0.45	0.36	
DISTANCE FROM POINT (G) ALONG LINE 'C' (Ft.)		309.13	298.73	273.67	248.66	223.68	202.73	198.74	173.83	159.04	150.14	125.08	100.04	75.02	50.01	25.00	0.00		



Rest Area Ramp C (RPCRES)

MODIFIED	REVISION	
	1	07-01-19
ROAD DESIGN DETAIL		533-02
		SHEET 1 of 1
REVISIONS: Added TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP and modified circle note 11.		
PARALLEL ACCELERATION TAPER FOR 16' RAMP (60 MPH DESIGN SPEED)		



LONGITUDINAL SECTION ALONG PROP. W.B. I-80 & P.G.L.

PROPOSED PROFILE GRADE WB I-80

HYDRAULIC DATA

DRAINAGE AREA = 92.3 SQ. MI.
 STREAM SLOPE = 2.0 FT./MI.
 AVG. LOW WATER STAGE = EL. 662.14

Q₂₅ = 9,600 CFS
 STAGE = 677.90
 CHANNEL VELOCITY = 6.78 FPS

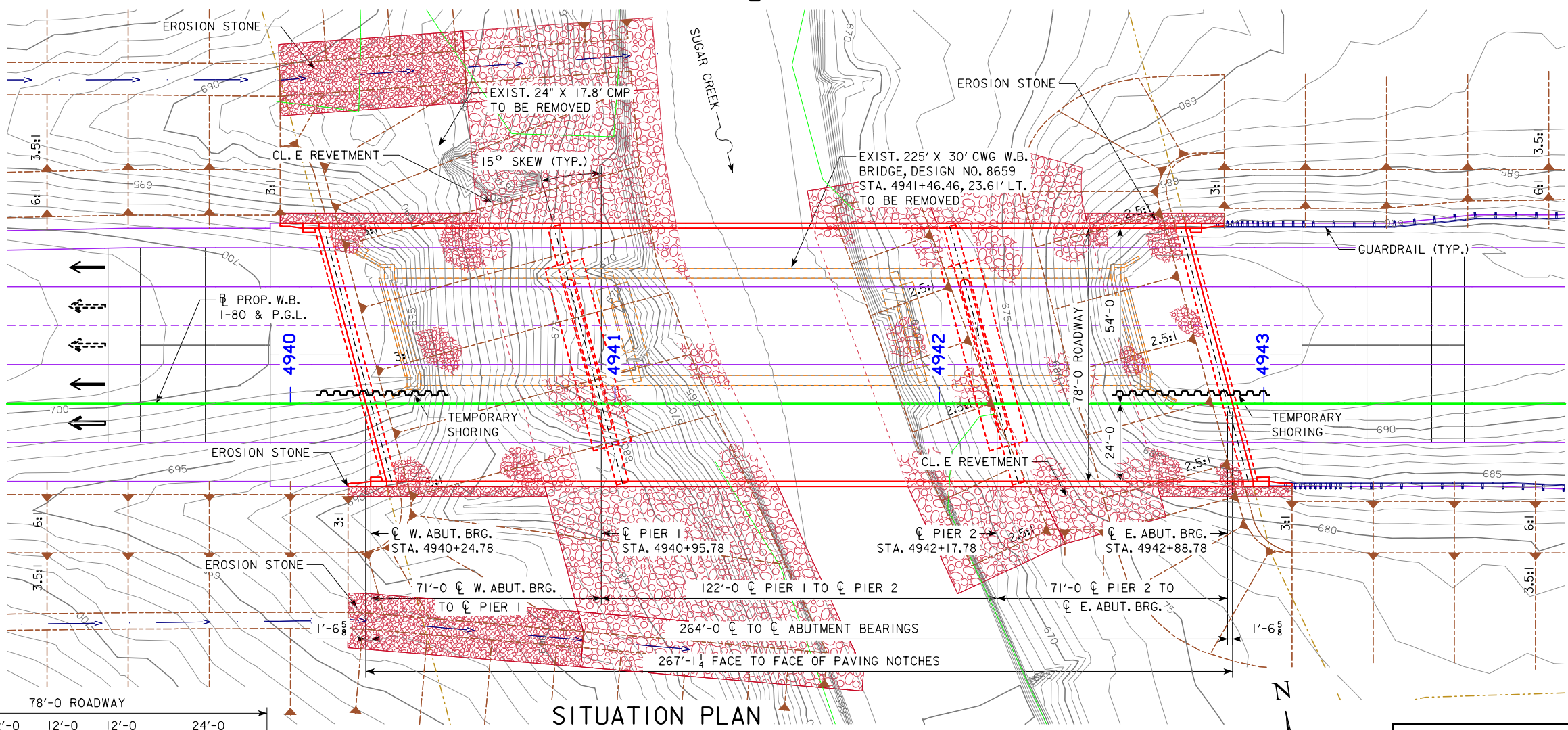
Q₅₀ = 11,600 CFS
 STAGE = 678.83
 BACKWATER = (+)1.07 FT.
 AVG. BRIDGE VELOCITY = 7.45 FPS
 REGULATORY LOW BEAM EL. 691.51

Q₁₀₀ = 13,500 CFS
 STAGE = 680.23
 BACKWATER = (+)1.61 FT.
 AVG. BRIDGE VELOCITY = 7.61 FPS
 OPERATIONAL LOW BEAM EL. 689.73

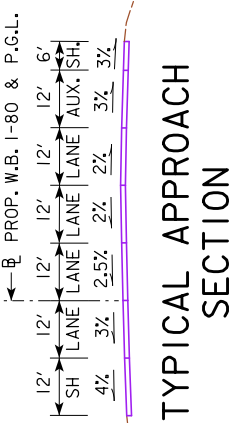
Q₂₀₀ = 17,300 CFS
 STAGE = 681.47
 CALCULATED DESIGN SCOUR = 655.96

Q₅₀₀ = 18,700 CFS
 STAGE = 681.99
 AVG. BRIDGE VELOCITY = 9.05 FPS
 CALCULATED CHECK SCOUR = 655.52

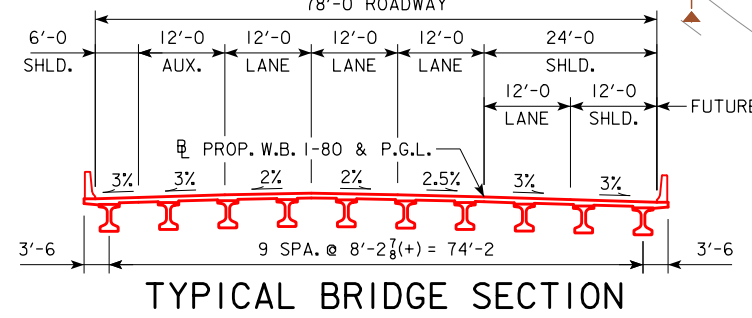
- NOTES:
1. STANDARD INTEGRAL ABUTMENT.
 2. MASH TL-5 BRIDGE RAILING PROPOSED.
 3. PIER TYPE-T PIER.
 4. BEAM TYPE-BTC.
 5. CLASS E REVETMENT STONE.
 6. FINAL DESIGN TO TAKE INTO ACCOUNT PROPOSED PIER PILING MAY BE IN CONFLICT WITH EXISTING PILING.
 7. PROP. VERTICAL DATUM IS APPROX. 8.54' HIGHER THAN USED ON EXISTING PLANS.
 8. PIER 1 FOOTING SET ON ROCK. NO PILES USED AT THIS LOCATION.



SITUATION PLAN



TYPICAL APPROACH SECTION



TYPICAL BRIDGE SECTION

UTILITIES LEGEND:
 NO KNOWN UTILITIES

TRAFFIC ESTIMATE

2020 AADT	20,819	V.P.D.
2040 AADT	38,304	V.P.D.
2040 DHV		V.P.H.
TRUCKS	37%	%
TOTAL DESIGN ESALs		

LOCATION

WESTBOUND I-80 OVER SUGAR CREEK
 T-79N R-02W
 SECTION 15
 SUGAR CREEK TOWNSHIP
 CEDAR COUNTY
 FHWA NO. 18661
 LATITUDE 41.642579°
 LONGITUDE -91.063756°



PRELIMINARY

DESIGN FOR 15° SKEW (R.A.)

264'-0 X 78'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

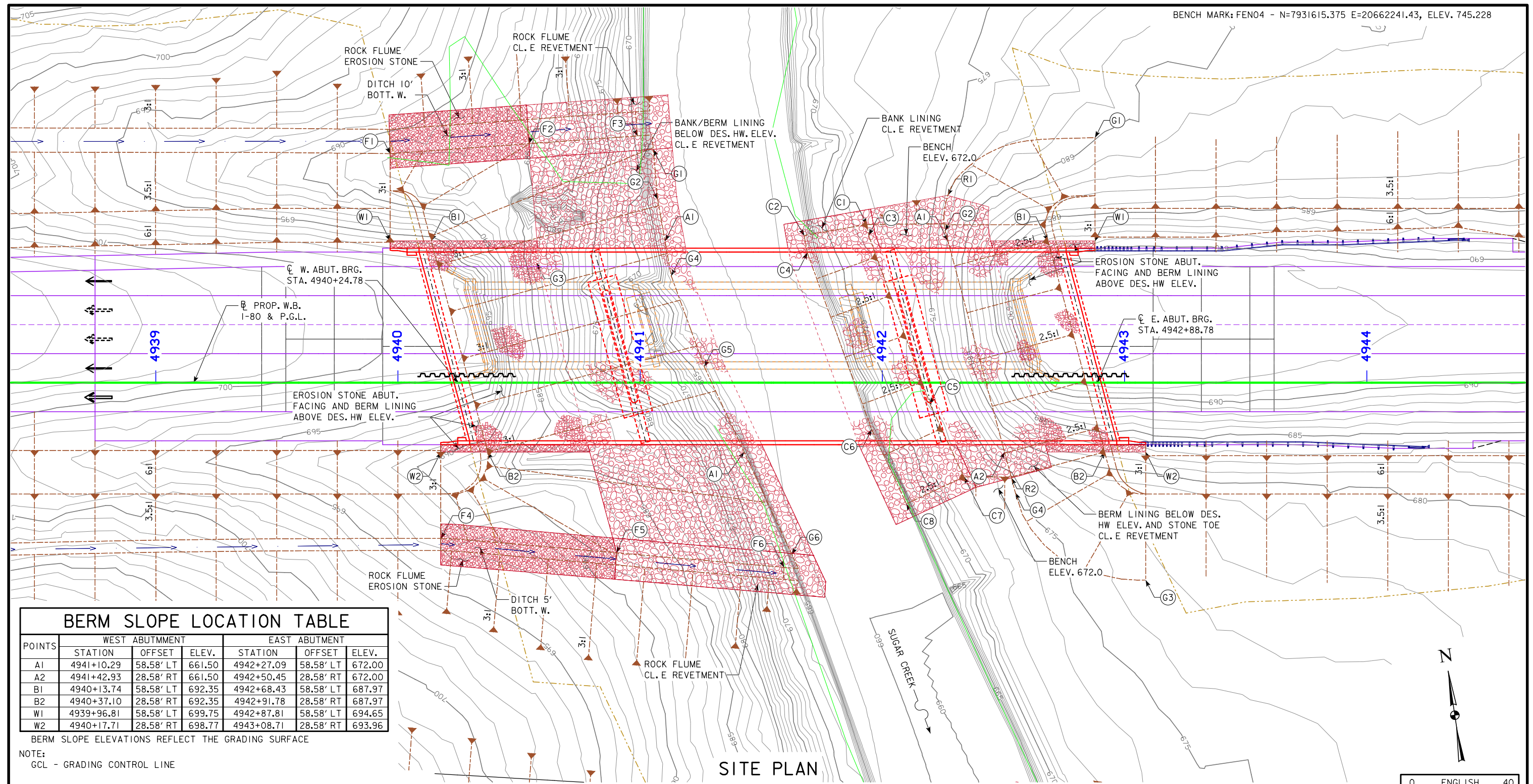
71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN

SITUATION PLAN

STATION 4941+56.78 (WB I-80 OVER SUGAR CREEK) APRIL 2020

CEDAR COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 4 FILE NO. 31800 DESIGN NO. 222



POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	4941+10.29	58.58' LT	661.50	4942+27.09	58.58' LT	672.00
A2	4941+42.93	28.58' RT	661.50	4942+50.45	28.58' RT	672.00
B1	4940+13.74	58.58' LT	692.35	4942+68.43	58.58' LT	687.97
B2	4940+37.10	28.58' RT	692.35	4942+91.78	28.58' RT	687.97
W1	4939+96.81	58.58' LT	699.75	4942+87.81	58.58' LT	694.65
W2	4940+17.71	28.58' RT	698.77	4943+08.71	28.58' RT	693.96

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

NOTE:
GCL - GRADING CONTROL LINE

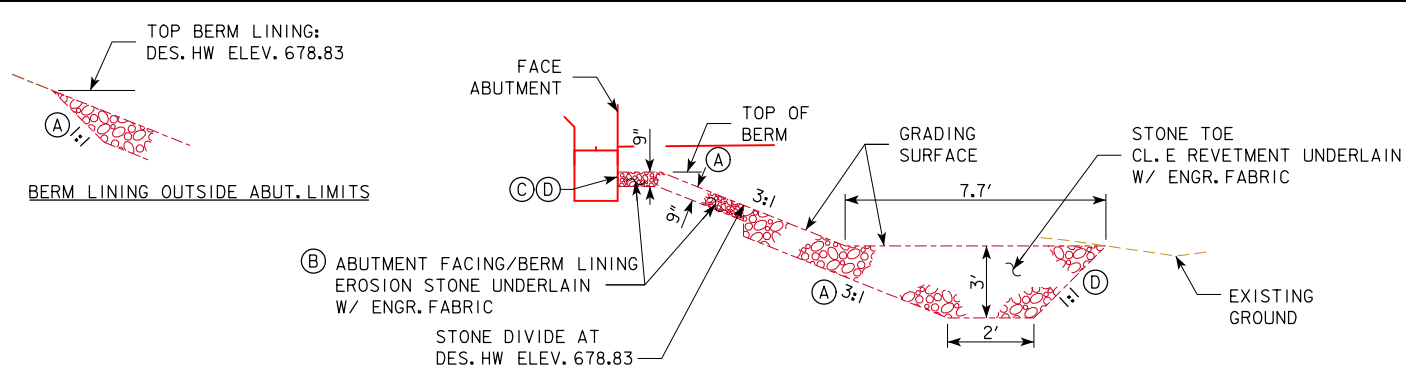
- DITCH/FLUME GRADING CONTROL:**
- (F1) 4939+96.9, 94.61' LT., BTM/EDGE DITCH, ELEV. 687.1
 - (F2) 4940+54.1, 98.7' LT., BTM/EDGE DITCH, ELEV. 677.3
 - (F3) 4940+98.9, 101.9' LT., BTM/EDGE DITCH, ELEV. 660.7
 - (F4) 4940+17.8, 64.35' RT., BTM/EDGE DITCH, ELEV. 686.4
 - (F5) 4940+90.3, 70.3' RT., BTM/EDGE DITCH, ELEV. 677.3
 - (F6) 4941+59.4, 76.3' RT., BTM/EDGE DITCH, ELEV. 660.7
- WEST BERM GRADING CONTROL:**
- (G1) 4941+05.5, 96.4' LT., TOE BERM, GCL, ELEV. 660.7
 - (G2) 4941+07.3, 75.8' LT., TOE BERM, GCL, ELEV. 660.7

- WEST BERM (CONT.):**
- (G3) 4940+57.4, 49.4' LT., DSN. HW, ELEV. 697.1
 - (G4) 4941+12.8, 44.2' LT., TOE BERM, GCL, ELEV. 660.7
 - (G5) 4941+26.5, 6.6' LT., TOE BERM, GCL, ELEV. 660.7
 - (G6) 4941+62.7, 70.9' RT., LOCATION, GCL, ELEV. 660.7
- EAST BERM GRADING CONTROL:**
- (G1) 4942+87.8, 101.3' LT., TOE BERM, GCL, ELEV. 679.9
 - (G2) 4942+25.9, 62.8' LT., TOE BERM, GCL, ELEV. 672.0
 - (G3) 4943+08.7, 81.5' RT., TOE BERM, GCL, ELEV. 676.7
 - (G4) 4942+54.9, 45.4' RT., TOE BERM, GCL, ELEV. 672.0

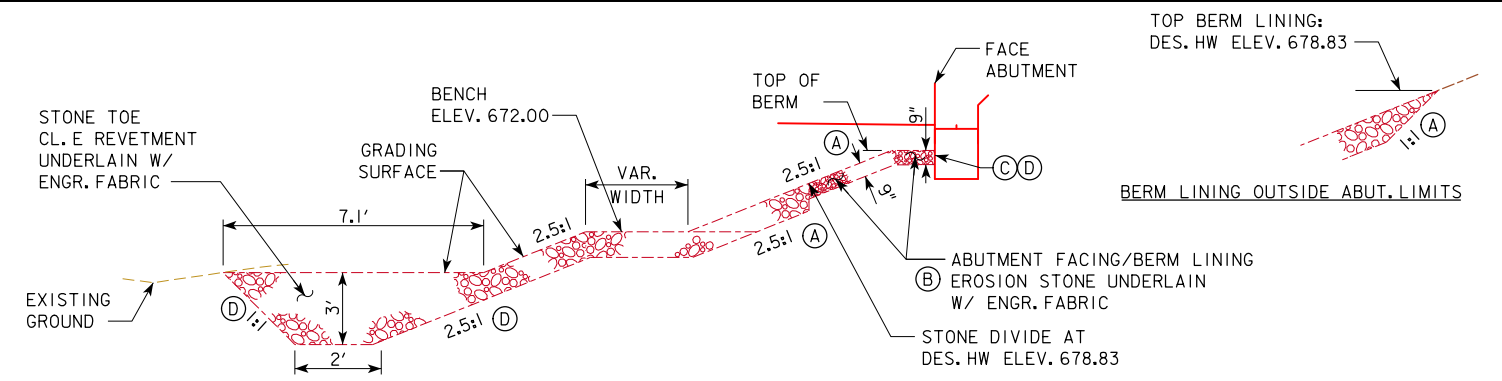
- EAST BANK GRADING CONTROL:**
- (C1) 4941+93.6, 65.4' LT., TOP/BANK, GCL, ELEV. 672.0
 - (C2) 4941+67.8, 60.8' LT., TOE/BANK, GCL, ELEV. 660.7
 - (C3) 4941+94.4, 60.9' LT., TOP/BANK, GCL, ELEV. 672.0
 - (C4) 4941+69.0, 53.7' LT., TOE/BANK, GCL, ELEV. 660.7
 - (C5) 4942+19.8, 8.7' RT., TOP/BANK, GCL, ELEV. 672.0
 - (C6) 4941+95.6, 19.2' RT., TOE/BANK, GCL, ELEV. 660.7
 - (C7) 4942+33.7, 38.9' RT., TOP/BANK, GCL, ELEV. 672.0
 - (C8) 4942+09.9, 50.0' RT., TOE/BANK, GCL, ELEV. 660.7

- EAST REVETMENT LAYOUT:**
- (R1) EDGE BERM LINING/STONE TOE. TOE BERM, 4942+27.0 M.L., 77.4' LT. EDGE PERP. BERM SLOPE
 - (R2) EDGE BERM LINING/STONE TOE, TOE BERM, 4942+53.3 M.L., 39.3 RT. EDGE PERP. BERM SLOPE

PRELIMINARY
 DESIGN FOR 15° SKEW (R.A.)
**264'-0 X 78'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN
SITUATION PLAN - SITE
 STATION 4941+56.78 (WB I-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 4 FILE NO. 31800 DESIGN NO. 222

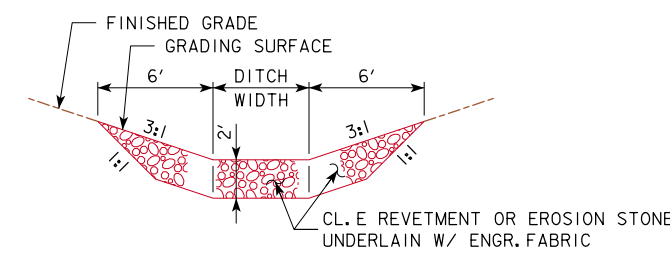


SECTION THROUGH BERM/BANK LINING AND STONE TOE WEST BANK

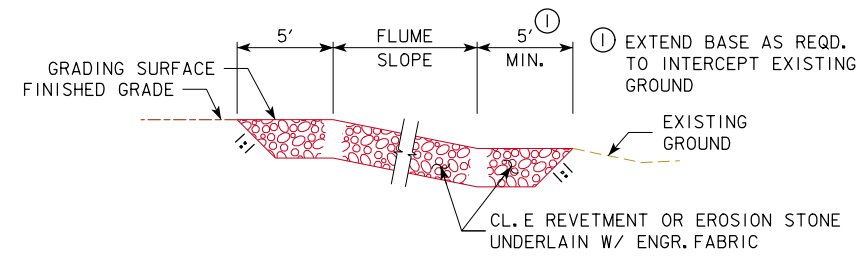


SECTION THROUGH BERM/BANK LINING AND STONE TOE EAST BANK

- Ⓐ SLOPE NORMAL TO ϕ ABUT. / GRADING CONTROL LINE.
- Ⓑ EXTEND FACING OUT TO LATERAL LIMITS OF WING ARMORING.
- Ⓒ CARRY ENGINEERING FABRIC UP TO FACE ABUTMENT.
- Ⓓ SLOPE NORMAL TO BANK GRADING CONTROL LINE (GCL).



SECTION THROUGH ROCK FLUME

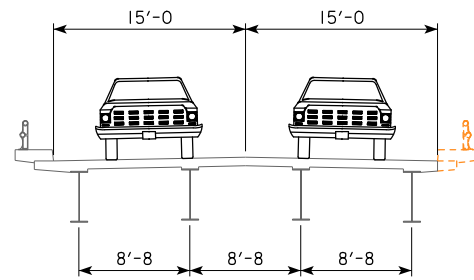


SECTION ALONG ROCK FLUME

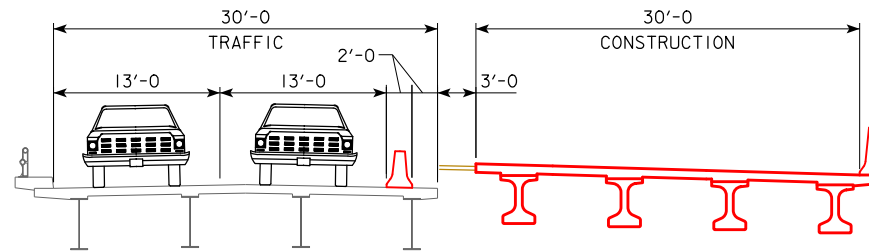
ESTIMATED BERM ARMORING QTY. - I-80 W.B.				
LOCATION	REVTMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
PROP. BRIDGE DESIGN NO. 222:				
BERM/BANK LINING - WEST	1,339.6	199.3	1,433.8	961.8
ROCK FLUME - WEST	259.5	212.4	527.4	294.9
BERM/BANK LINING - EAST	1,247.5	119.9	1,334.0	854.6
TOTALS	2,846.6	531.6	3,295.2	2,111.3

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
 REVTMENT AND EROSION STONE ESTIMATED AT 1.6 TON/CY.

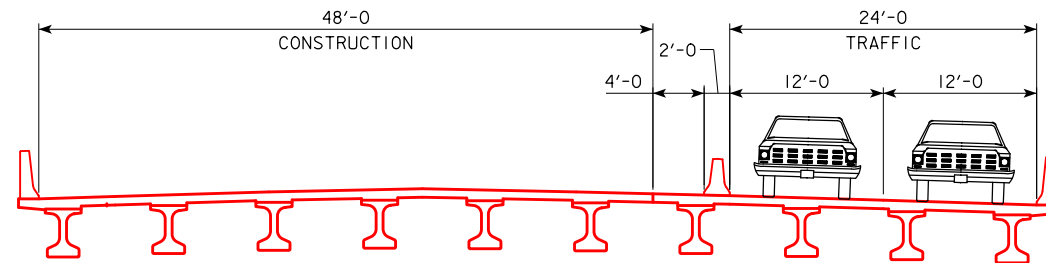
PRELIMINARY
 DESIGN FOR 15° SKEW (R.A.)
**264'-0 X 78'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN
DETAILS
 STATION 4941+56.78 (WB I-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 4 FILE NO. 31800 DESIGN NO. 222



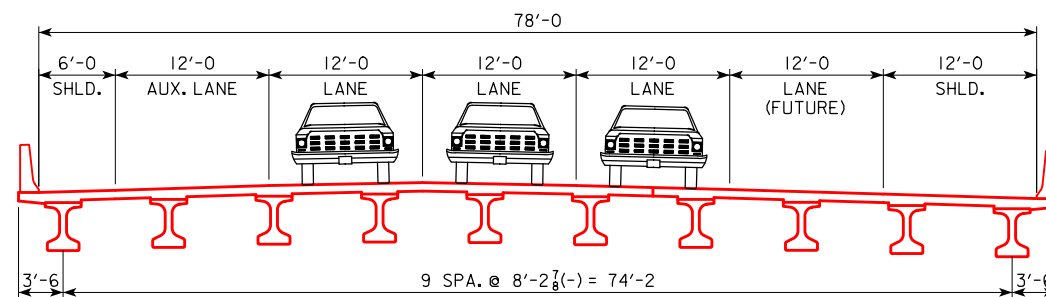
EXISTING CROSS SECTION



STAGE 2

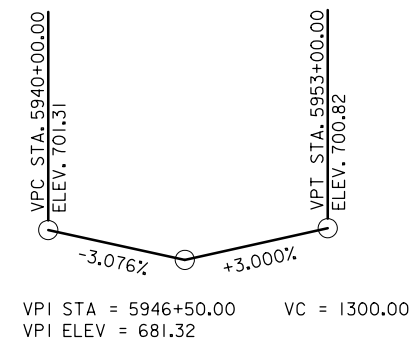
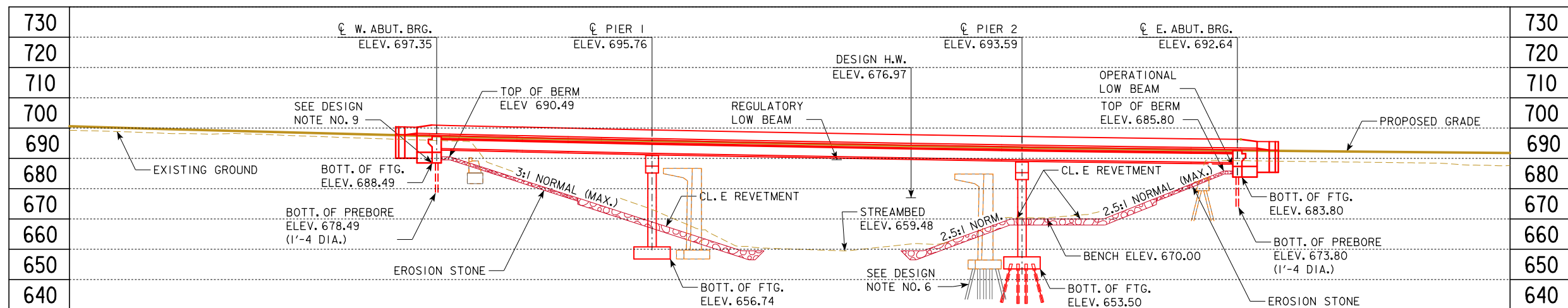


STAGE 3



FINAL CROSS SECTION - W.B. 1-80
(LOOKING EAST)

PRELIMINARY
 DESIGN FOR 15° SKEW (R.A.)
**264'-0 X 78'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN
STAGE CONSTRUCTION
 STATION 4941+56.78 (WB 1-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 4 OF 4 FILE NO. 31800 DESIGN NO. 222



LONGITUDINAL SECTION ALONG CL PROP. E.B. I-80 & P.G.L.

PROPOSED PROFILE GRADE EB I-80

HYDRAULIC DATA
 DRAINAGE AREA = 92.3 SQ. MI.
 STREAM SLOPE = 2.0 FT./MI.
 AVG. LOW WATER STAGE = EL. 661.00

Q₂₅ = 9,600 CFS
 STAGE = 676.16
 CHANNEL VELOCITY = 6.83 FPS

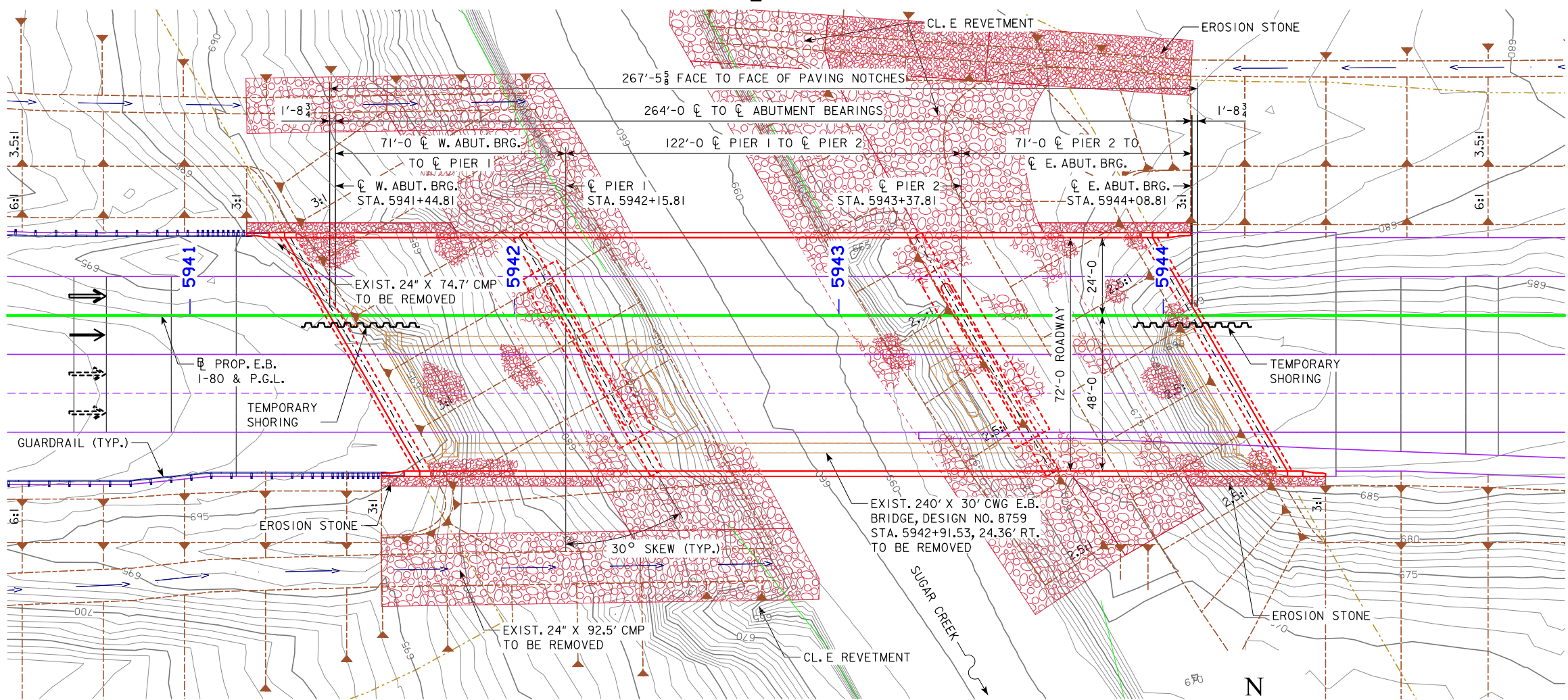
Q₅₀ = 11,600 CFS
 STAGE = 676.97
 BACKWATER = (+)1.89 FT.
 AVG. BRIDGE VELOCITY = 7.59 FPS
 REGULATORY LOW BEAM EL. 689.56

Q₁₀₀ = 13,500 CFS
 STAGE = 678.52
 BACKWATER = (+)2.60 FT.
 AVG. BRIDGE VELOCITY = 7.63 FPS
 OPERATIONAL LOW BEAM EL. 687.55

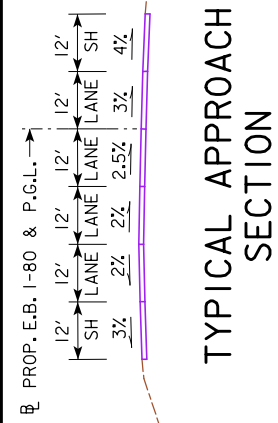
Q₂₀₀ = 17,300 CFS
 STAGE = 679.54
 CALCULATED DESIGN SCOUR = 648.15

Q₅₀₀ = 18,700 CFS
 STAGE = 680.03
 AVG. BRIDGE VELOCITY = 9.25 FPS
 CALCULATED CHECK SCOUR = 647.64

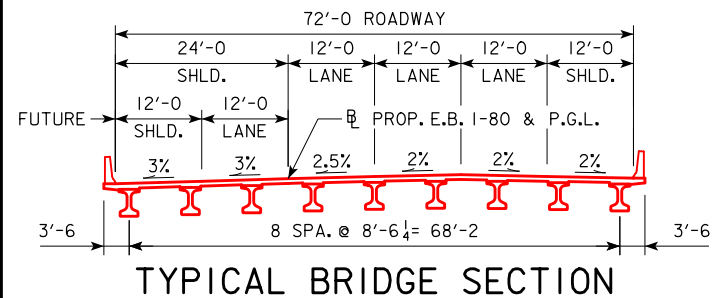
- NOTES:
1. STANDARD INTEGRAL ABUTMENT.
 2. MASH TL-5 BRIDGE RAILING PROPOSED.
 3. PIER TYPE-T PIER.
 4. BEAM TYPE-BTC.
 5. CLASS E REVETMENT STONE.
 6. FINAL DESIGN TO TAKE INTO ACCOUNT PROPOSED PIER PILING MAY BE IN CONFLICT WITH EXISTING PILING.
 7. PROP. VERTICAL DATUM IS APPROX. 8.54' HIGHER THAN USED ON EXISTING PLANS.
 8. PIER 1 FOOTING SET ON ROCK. NO PILES USED AT THIS LOCATION.
 9. FINAL DESIGN TO INVESTIGATE SHALLOW ROCK AT WEST ABUTMENT.



SITUATION PLAN



TYPICAL APPROACH SECTION



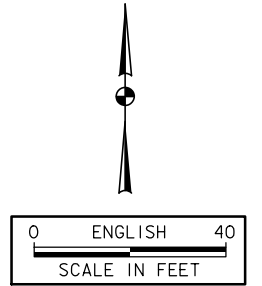
TYPICAL BRIDGE SECTION

UTILITIES LEGEND:
 FO(B) - IOWA COMMUNICATIONS NETWORK

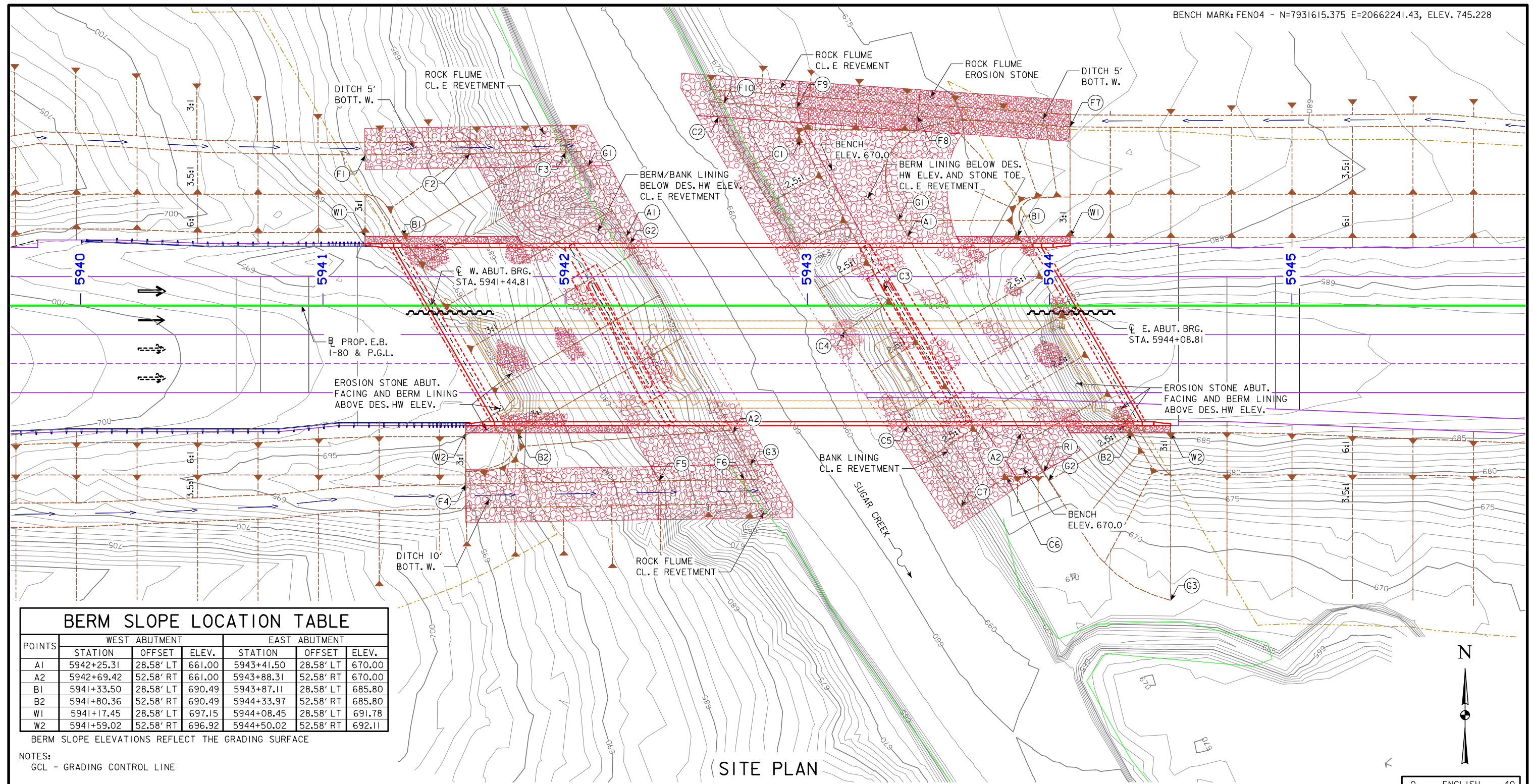
TRAFFIC ESTIMATE

2020 AADT	20,367	V.P.D.
2040 AADT	37,275	V.P.D.
20 DHV		V.P.H.
TRUCKS	37%	%
TOTAL DESIGN ESALs		

LOCATION
 EASTBOUND I-80 OVER SUGAR CREEK
 T-79N R-02W
 SECTION 15
 SUGAR CREEK TOWNSHIP
 CEDAR COUNTY
 FHWA NO. 18651
 LATITUDE 41.641815°
 LONGITUDE -91.063476°



DESIGN FOR 30° SKEW (R.A.)
264'-0" X 72'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 71'-0" END SPANS (BTC BEAMS) 122'-0" INTERIOR SPAN
SITUATION PLAN
 STATION 5942+76.81 (EB I-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 4 FILE NO. 31800 DESIGN NO. 322



(SITE PLAN)

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	5942+25.31	28.58' LT	661.00	5943+41.50	28.58' LT	670.00
A2	5942+69.42	52.58' RT	661.00	5943+88.31	52.58' RT	670.00
B1	5941+33.50	28.58' LT	690.49	5943+87.11	28.58' LT	685.80
B2	5941+80.36	52.58' RT	690.49	5944+33.97	52.58' RT	685.80
W1	5941+17.45	28.58' LT	697.15	5944+08.45	28.58' LT	691.78
W2	5941+59.02	52.58' RT	696.92	5944+50.02	52.58' RT	692.11

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

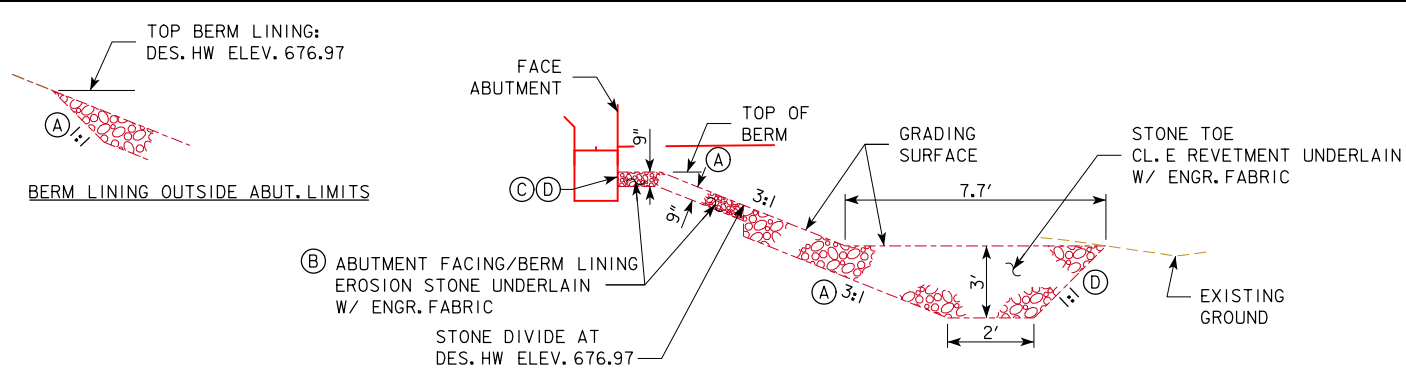
NOTES:
GCL - GRADING CONTROL LINE

- DITCH/FLUME GRADING CONTROL:**
- (F1) 5941+17.4, 62.2' LT., BTM./EDGE DITCH, ELEV. 686.0
 - (F2) 5941+60.7, 62.8' LT., BTM./EDGE DITCH, ELEV. 676.5
 - (F3) 5942+00.3, 63.5' LT., BTM./EDGE DITCH, ELEV. 659.5
 - (F4) 5941+59.0, 73.4' RT., BTM./EDGE DITCH, ELEV. 690.0
 - (F5) 5942+38.8, 72.4' RT., BTM./EDGE DITCH, ELEV. 676.5
 - (F6) 5942+73.9, 71.9' RT., BTM./EDGE DITCH, ELEV. 659.5
 - (F7) 5944+08.4, 73.8' LT., BTM./EDGE DITCH, ELEV. 696.2
 - (F8) 5943+45.5, 78.2' LT., BTM./EDGE DITCH, ELEV. 668.3
 - (F9) 5942+95.7, 81.7' LT., BTM./EDGE DITCH, ELEV. 668.0

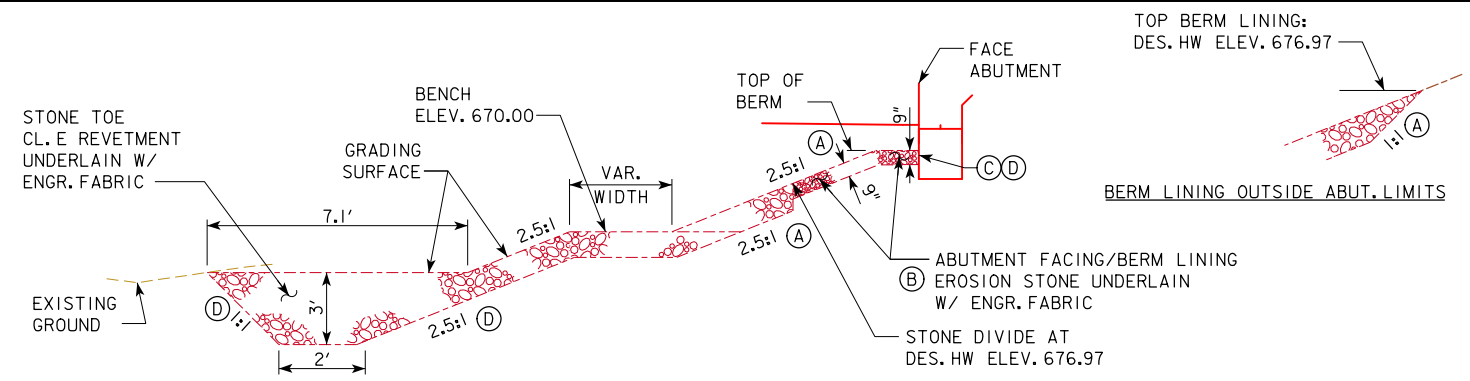
- DITCH/FLUME (CONT.):**
- (F10) 5942+65.6, 83.8' LT., BTM./EDGE DITCH, ELEV. 659.5
- WEST BERM GRADING CONTROL:**
- (G1) 5942+09.5, 57.6' LT., TOE BERM, GCL, ELEV. 659.5
 - (G2) 5942+26.9, 25.6' LT., TOE BERM, GCL, ELEV. 659.5
 - (G3) 5942+76.6, 65.8' RT., TOE BERM, GCL, ELEV. 659.5
- EAST BERM GRADING CONTROL:**
- (G1) 5943+37.5, 35.2' LT., TOE BERM, GCL, ELEV. 670.0
 - (G2) 5943+99.8, 72.3' RT., TOE BERM, GCL, ELEV. 670.0
 - (G3) 5944+50.0, 121.8' RT., TOE BERM, GCL, ELEV. 667.5

- EAST BANK GRADING CONTROL:**
- (C1) 5942+97.4, 68.8' LT., TOP/BANK, GCL, ELEV. 670.0
 - (C2) 5942+63.3, 77.9' LT., TOE/BANK, GCL, ELEV. 659.5
 - (C3) 5943+31.4, 6.1' LT., TOP/BANK, GCL, ELEV. 670.0
 - (C4) 5943+15.4, 10.5' RT., TOE/BANK, GCL, ELEV. 659.5
 - (C5) 5943+41.3, 49.5' RT., TOE/BANK, GCL, ELEV. 659.5
 - (C6) 5943+82.3, 70.7' RT., TOP/BANK, GCL, ELEV. 670.0
 - (C7) 5943+63.5, 83.1' RT., TOE/BANK, GCL, ELEV. 659.5
- EAST REVETMENT LAYOUT:**
- (R1) EDGE BERM LINING, TOE BERM, 5943+97.6 M.L., 68.6' RT. EDGE PERP. BERM SLOPE

PRELIMINARY
 DESIGN FOR 30° SKEW (R.A.)
**264'-0 X 72'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN
SITUATION PLAN - SITE
 STATION 5942+76.81 (EB I-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 4 FILE NO. 31800 DESIGN NO. 322

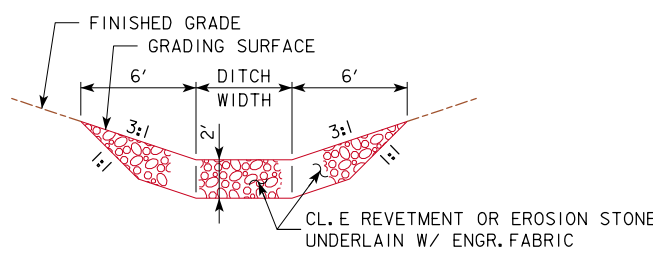


SECTION THROUGH BERM LINING AND STONE TOE WEST BANK

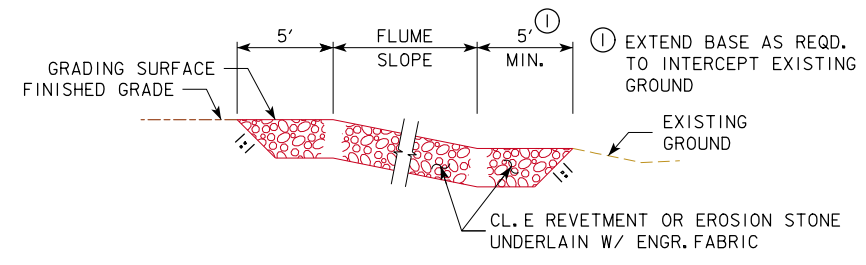


SECTION THROUGH BERM/BANK LINING AND STONE TOE EAST BANK

- (A) SLOPE NORMAL TO ϕ ABUT. / GRADING CONTROL LINE.
- (B) EXTEND FACING OUT TO LATERAL LIMITS OF WING ARMORING.
- (C) CARRY ENGINEERING FABRIC UP TO FACE ABUTMENT.
- (D) SLOPE NORMAL TO BANK GRADING CONTROL LINE (GCL).



SECTION THROUGH ROCK FLUME

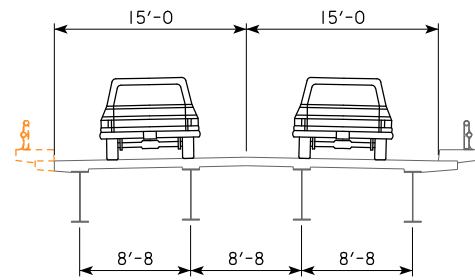


SECTION ALONG ROCK FLUME

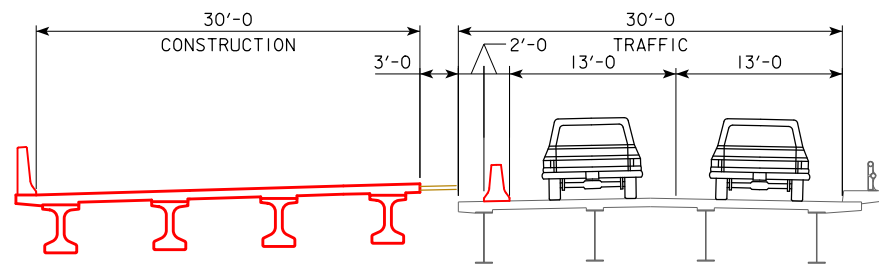
ESTIMATED BERM ARMORING QTY. - I-80 E.B.				
LOCATION	REVTMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
PROP. BRIDGE DESIGN NO. 322:				
BERM/BANK LINING - WEST	1,011.6	185.9	1,156.6	748.4
ROCK FLUME - WEST	402.0	-	449.4	251.3
BERM/BANK LINING - EAST	1,895.1	108.8	1,816.8	1,252.4
ROCK FLUME - EAST	82.0	189.6	303.1	169.8
TOTALS	3,390.7	484.3	3,725.9	2,421.9

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
 REVTMENT AND EROSION STONE ESTIMATED AT 1.6 TON/CY.

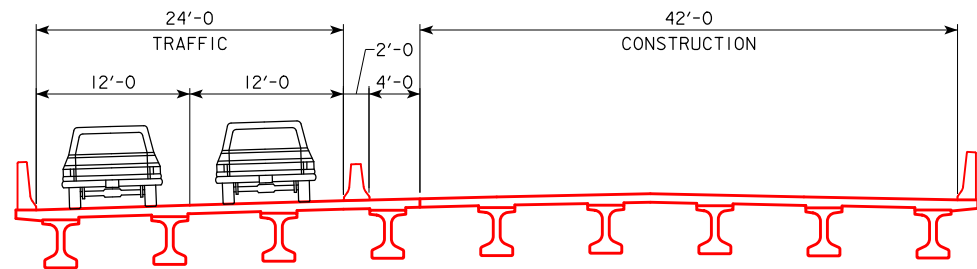
PRELIMINARY
 DESIGN FOR 30° SKEW (R.A.)
**264'-0 X 72'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN
DETAILS
 STATION 5942+76.81 (EB I-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 4 FILE NO. 31800 DESIGN NO. 322



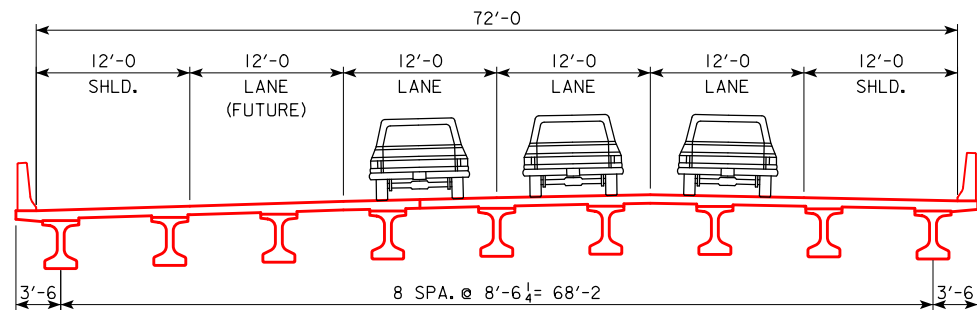
EXISTING CROSS SECTION



STAGE 2

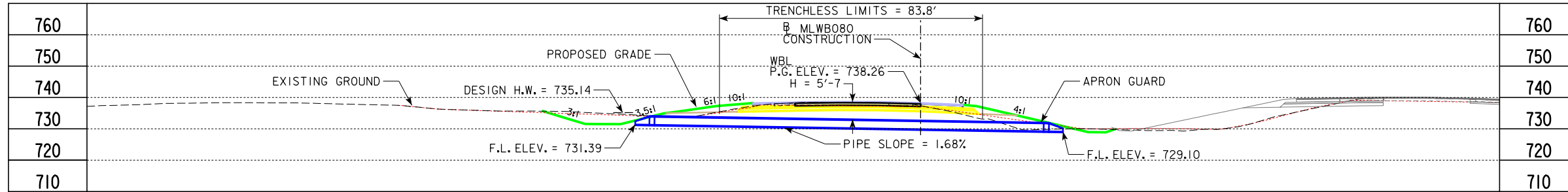


STAGE 3

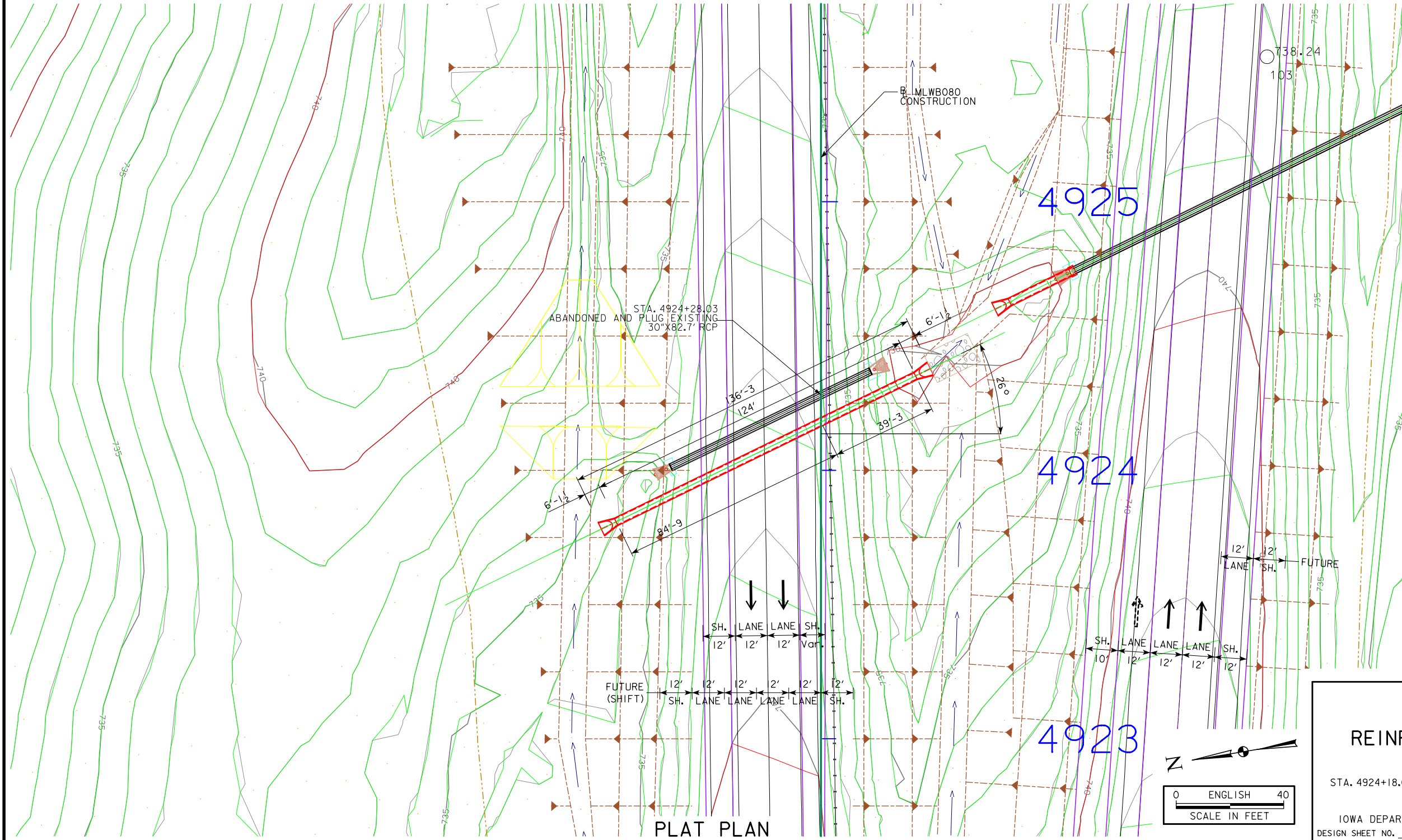


FINAL CROSS SECTION - E.B. I-80
(LOOKING EAST)

PRELIMINARY
 DESIGN FOR 30° SKEW (R.A.)
**264'-0 X 72'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 71'-0 END SPANS (BTC BEAMS) 122'-0 INTERIOR SPAN
STAGE CONSTRUCTION
 STATION 5942+76.81 (EB I-80 OVER SUGAR CREEK) APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 4 OF 4 FILE NO. 31800 DESIGN NO. 322



LONGITUDINAL SECTION ALONG \bar{C} CULVERT

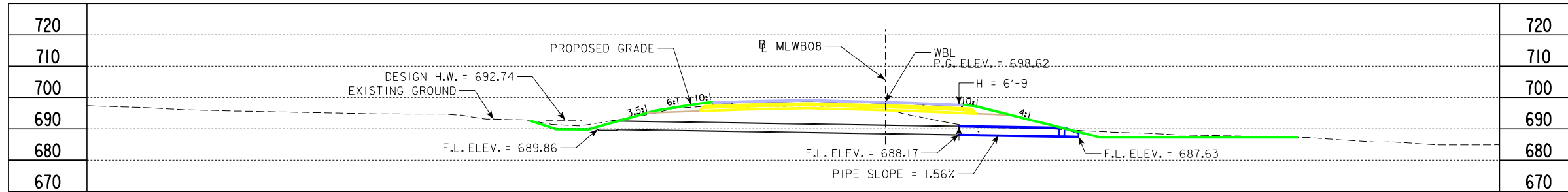


NOTES
 PIPE DIMENSIONS SHOWN IN PLAN VIEW
 BASED ON LAYING LENGTH

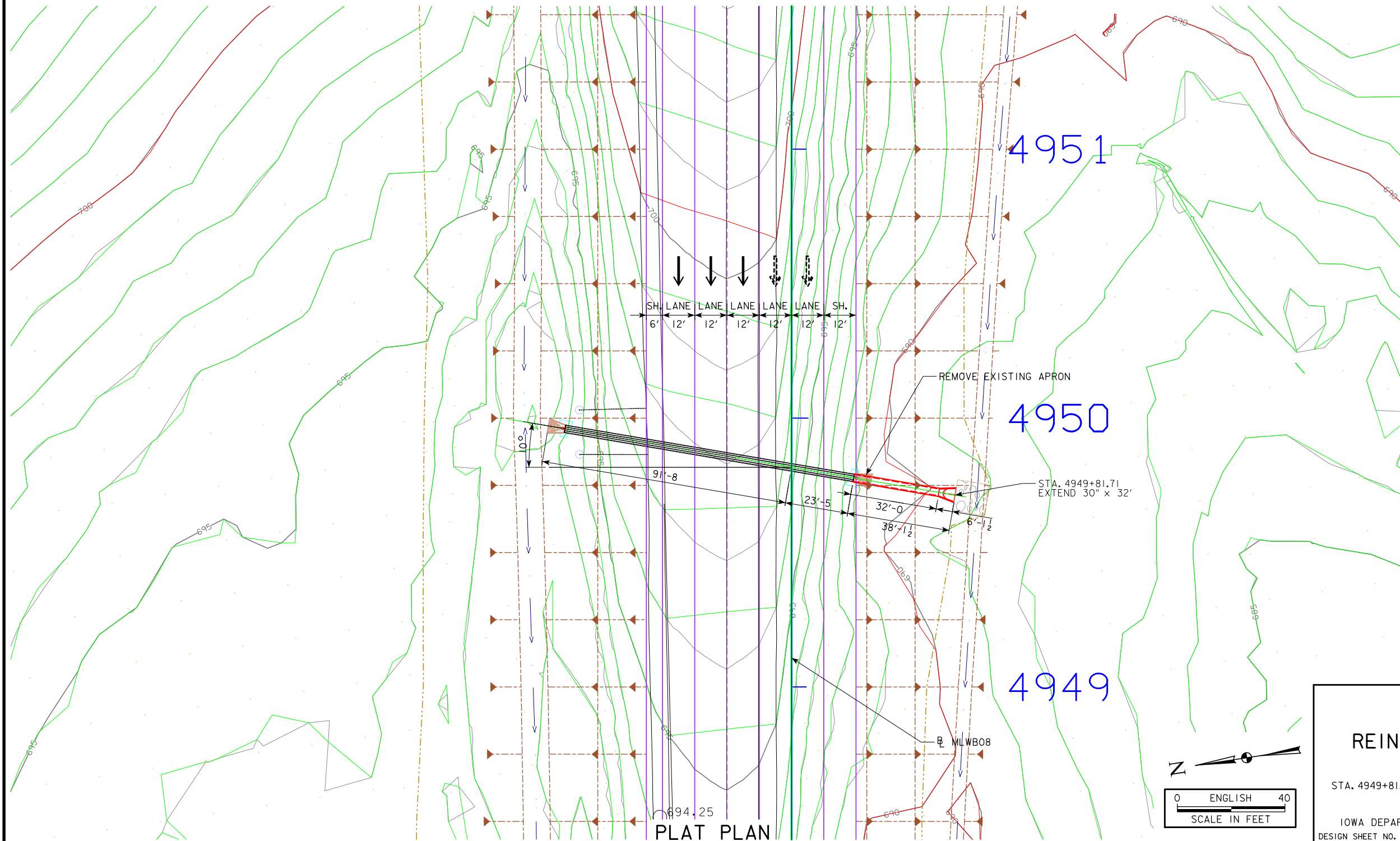
LOCATION
 I-80
 T-79N R-2W
 SECTION 15
 SUGAR CREEK TOWNSHIP
 CEDAR COUNTY

HYDRAULIC DATA
 DRAINAGE AREA = 13.99 ACRES
 DESIGN DISCHARGE, Q50 = 35.8 CFS

DESIGN FOR 26° SKEW RT AHD
30" x 124'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STA. 4924+18.00 WB
 CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. _____ DESIGN NO. _____
 APRIL 2020



LONGITUDINAL SECTION ALONG ϕ CULVERT



NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
 BASED ON LAYING LENGTH

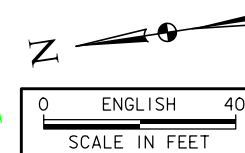
LOCATION

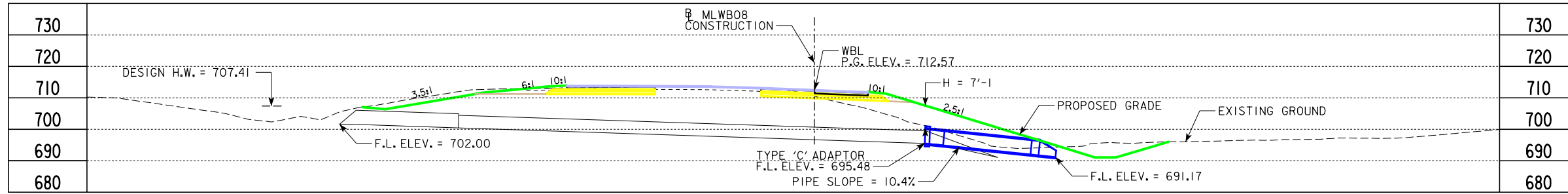
MLWB080
 T-79N R-2W
 SECTION 15
 SUGAR CREEK TOWNSHIP
 CEDAR COUNTY

HYDRAULIC DATA

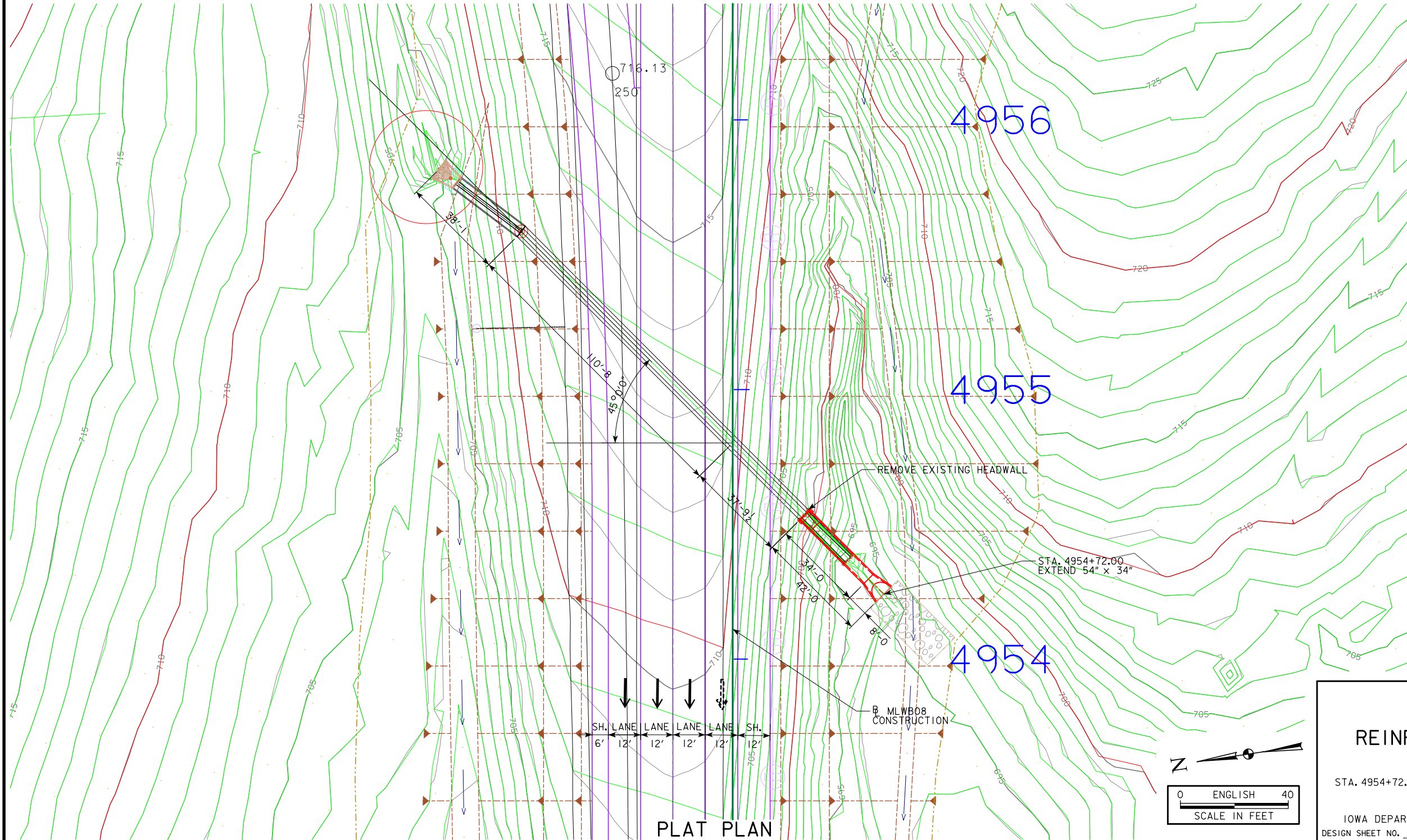
DRAINAGE AREA = 5.04 ACRES
 DESIGN DISCHARGE, Q50 = 26.9 CFS

DESIGN FOR 10° SKEW LT AHD.
EXTEND 30" x 32'
REINFORCED CONCRETE PIPE
PLAT PLAN
 STA. 4949+81.71 WB
 CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. _____ DESIGN NO. _____





LONGITUDINAL SECTION ALONG C_L CULVERT



NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
BASED ON LAYING LENGTH

LOCATION

MLWB080
T-79N R-2W
SECTION 15
SUGAR CREEK TOWNSHIP
CEDAR COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 55.14 ACRES
DESIGN DISCHARGE, Q50 = 125.8 CFS

DESIGN FOR 45° SKEW LT AHD

EXTEND 54" x 34'

REINFORCED CONCRETE PIPE

PLAT PLAN

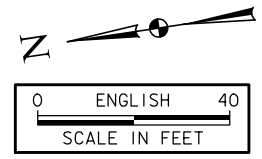
STA. 4954+72.00 WB

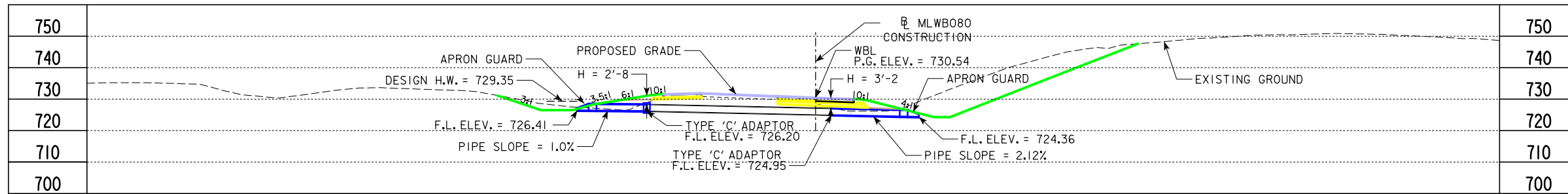
APRIL 2020

CEDAR COUNTY

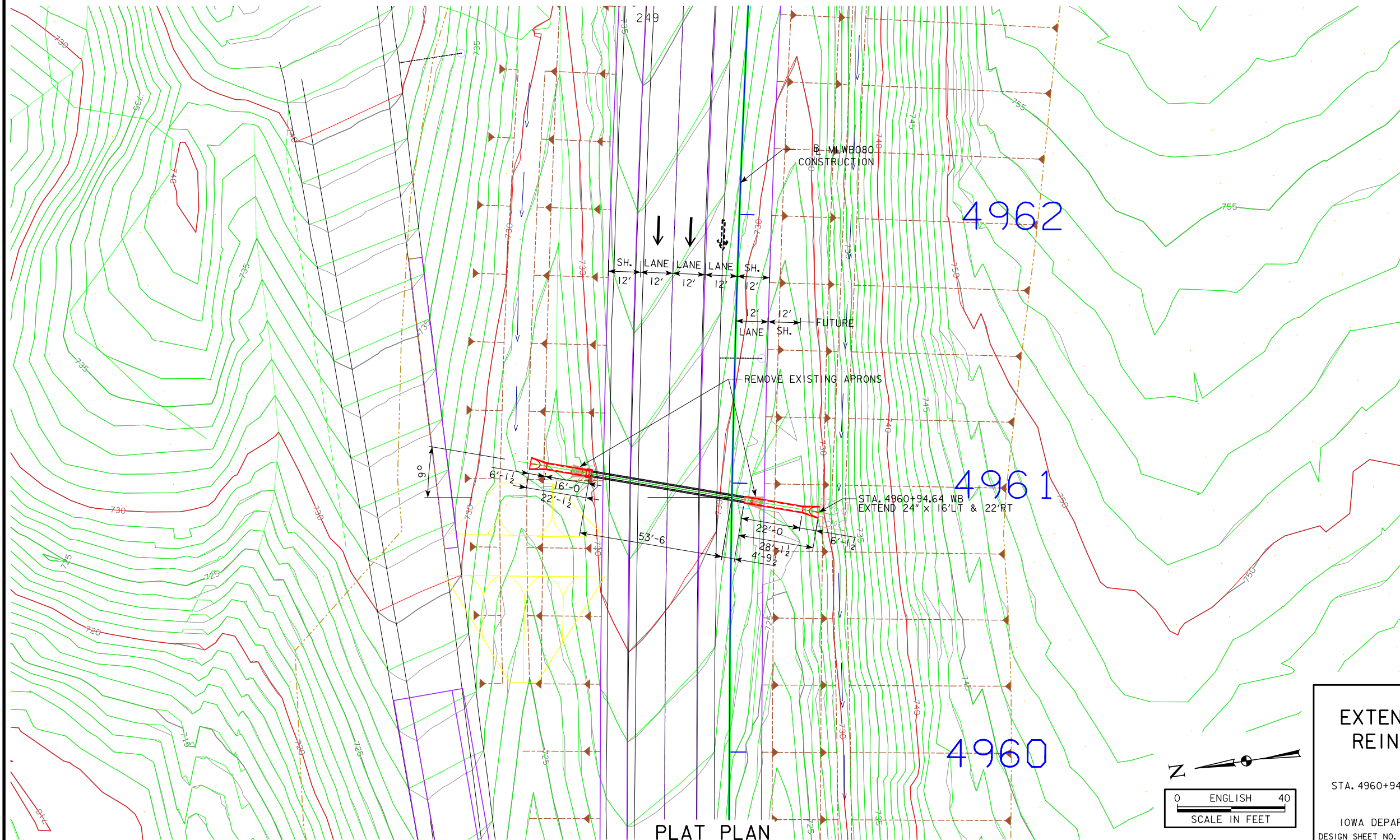
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.





LONGITUDINAL SECTION ALONG ϕ CULVERT



NOTES

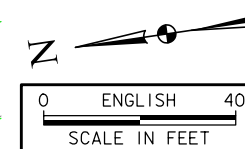
PIPE DIMENSIONS SHOWN IN PLAN VIEW
BASED ON LAYING LENGTH

LOCATION

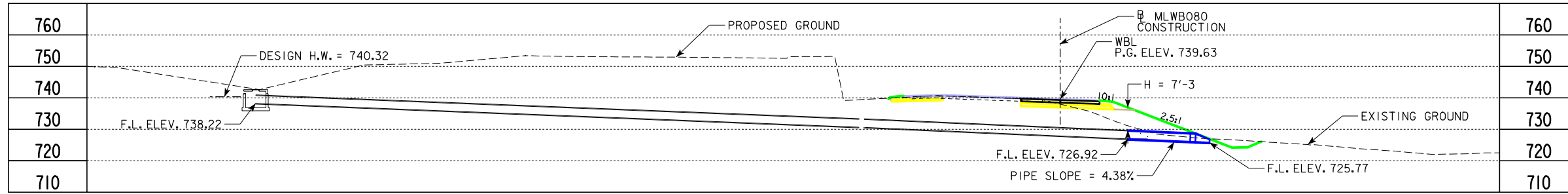
MLWB080
T-79N R-2W
SECTION 22
SUGAR CREEK TOWNSHIP
CEDAR COUNTY

HYDRAULIC DATA

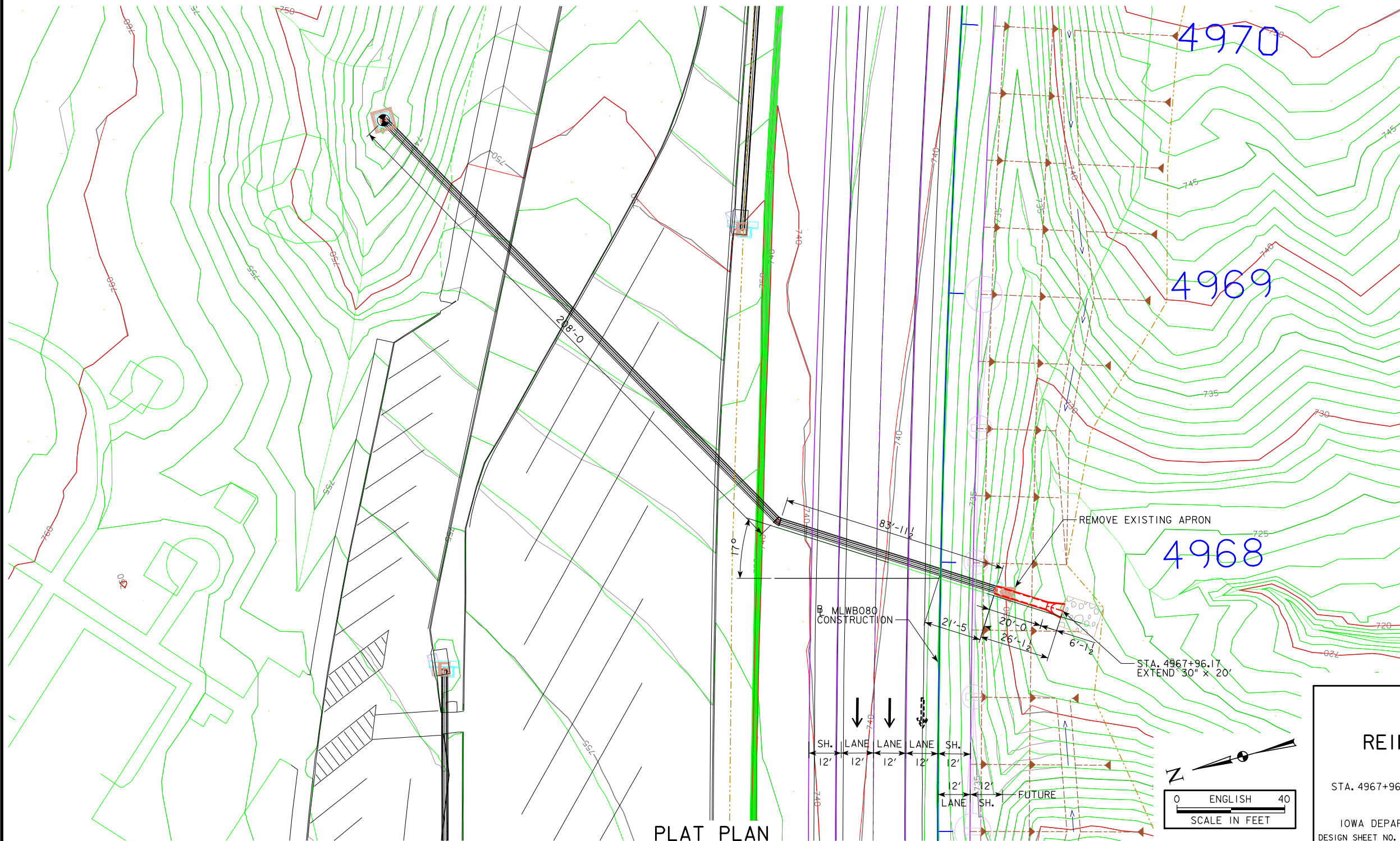
DRAINAGE AREA = 4.12 ACRES
DESIGN DISCHARGE, Q50 = 20.1 CFS



DESIGN FOR 9° SKEW LT AHD
**EXTEND 24" x 16' LT & 22' RT
REINFORCED CONCRETE PIPE
PLAT PLAN**
STA. 4960+94.64 WB APRIL 2020
CEDAR COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.



LONGITUDINAL SECTION ALONG ϕ CULVERT



PLAT PLAN

NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
BASED ON LAYING LENGTH

LOCATION

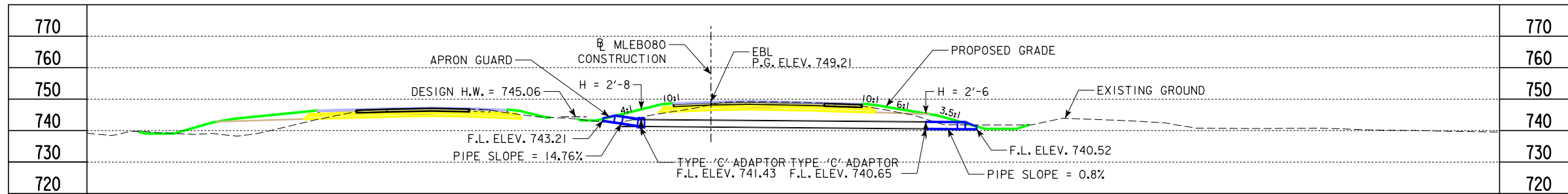
MLWB080
T-79N R-2W
SECTION 23
SUGAR CREEK TOWNSHIP
CEDAR COUNTY

HYDRAULIC DATA

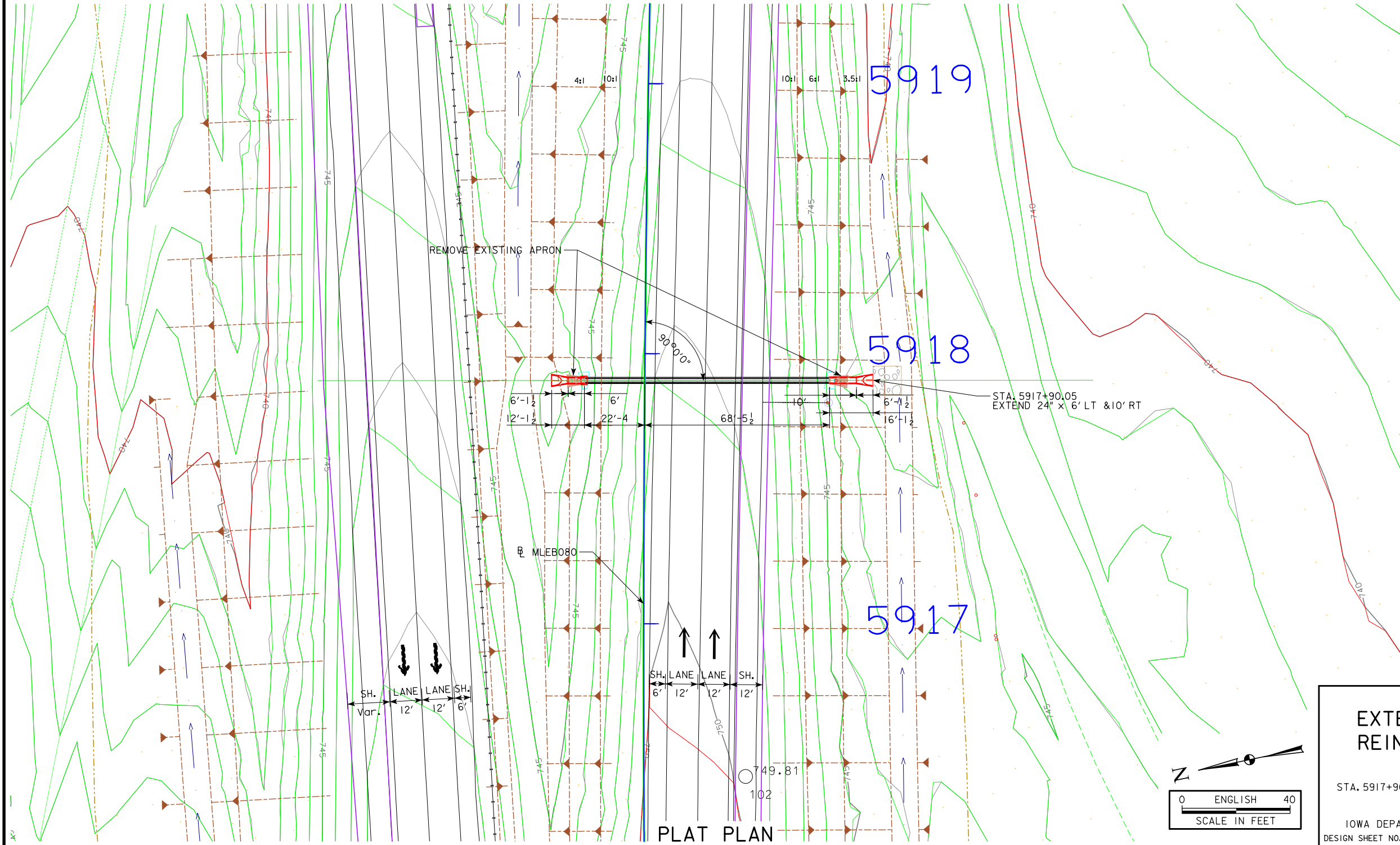
DRAINAGE AREA = 2.87 ACRES
DESIGN DISCHARGE, Q50 = 17.7 CFS

DESIGN FOR 17° SKEW RT BK
EXTEND 30" x 20'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 4967+96.17 WB APRIL 2020
CEDAR COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.



LONGITUDINAL SECTION ALONG CL CULVERT



NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
BASED ON LAYING LENGTH

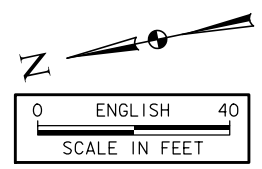
LOCATION

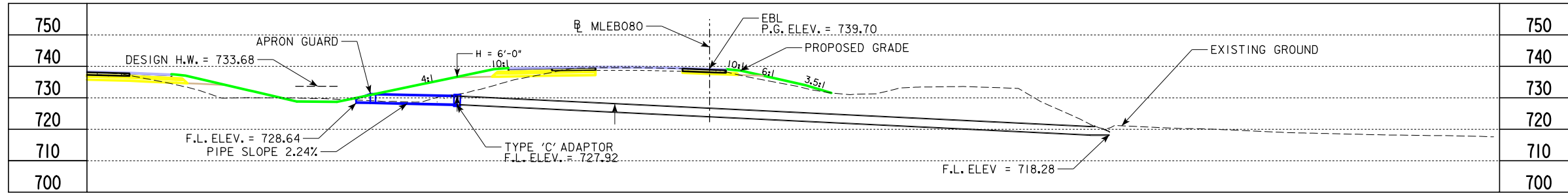
MLEB080
T-79N R-2W
SECTION 15
SUGAR CREEK TOWNSHIP
CEDAR COUNTY

HYDRAULIC DATA

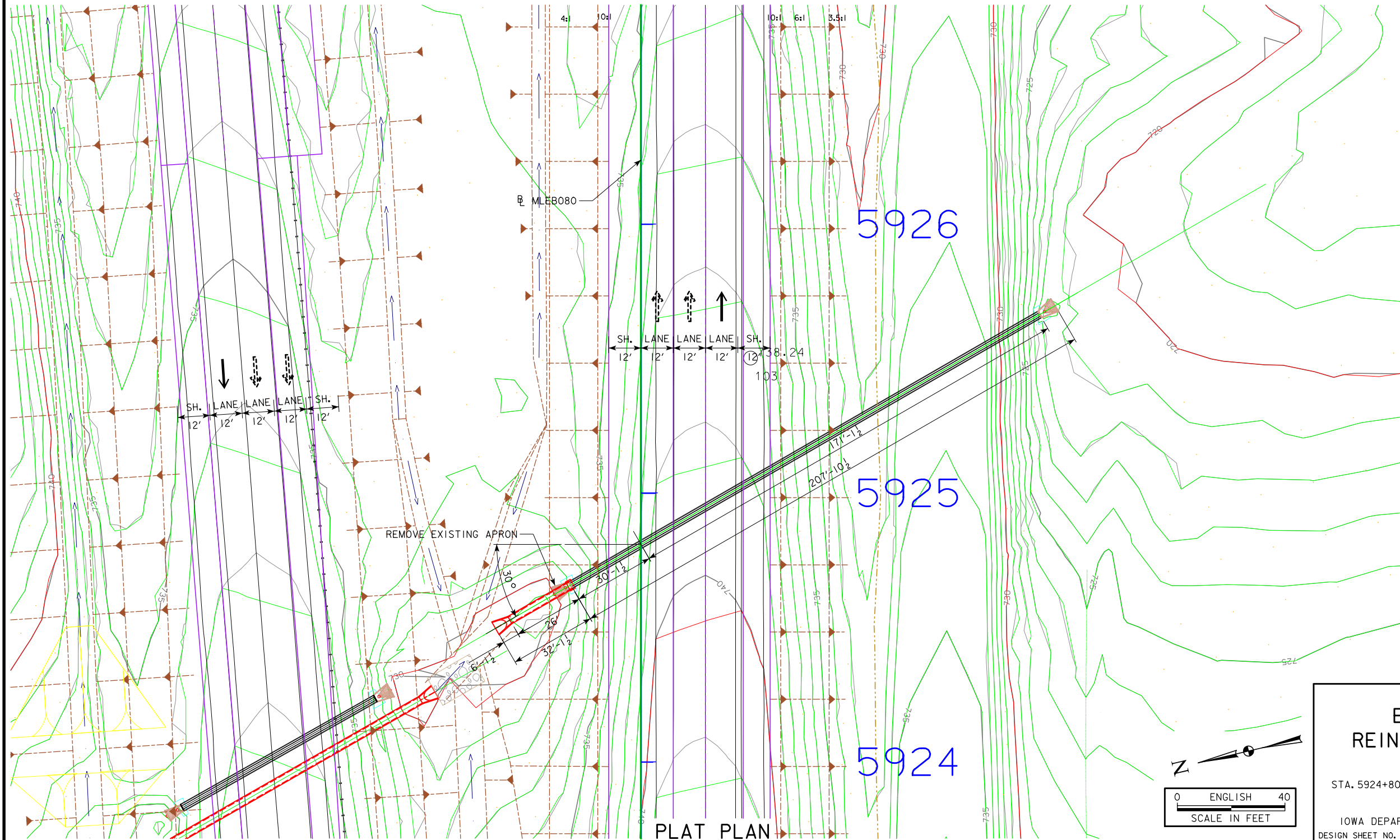
DRAINAGE AREA = 1.98 ACRES
DESIGN DISCHARGE, Q50 = 10.3 CFS

DESIGN FOR 0° SKEW
**EXTEND 24" x 6' LT & 10' RT
REINFORCED CONCRETE PIPE
PLAT PLAN**
STA. 5917+90.05 EB APRIL 2020
CEDAR COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.





LONGITUDINAL SECTION ALONG CL CULVERT



NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
BASED ON LAYING LENGTH

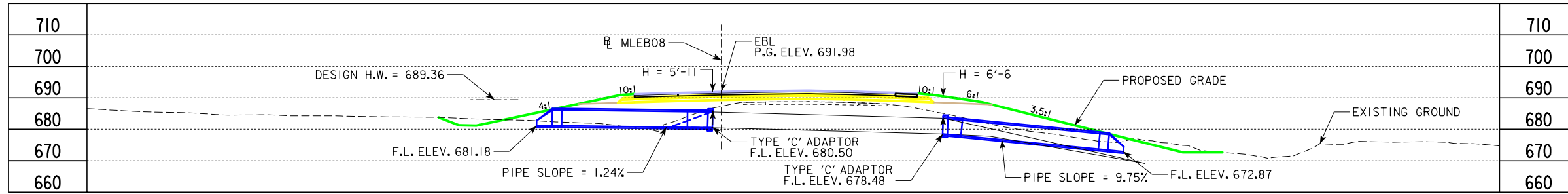
LOCATION

MLEB080
T-79N R-2W
SECTION 15
SUGAR CREEK TOWNSHIP
CEDAR COUNTY

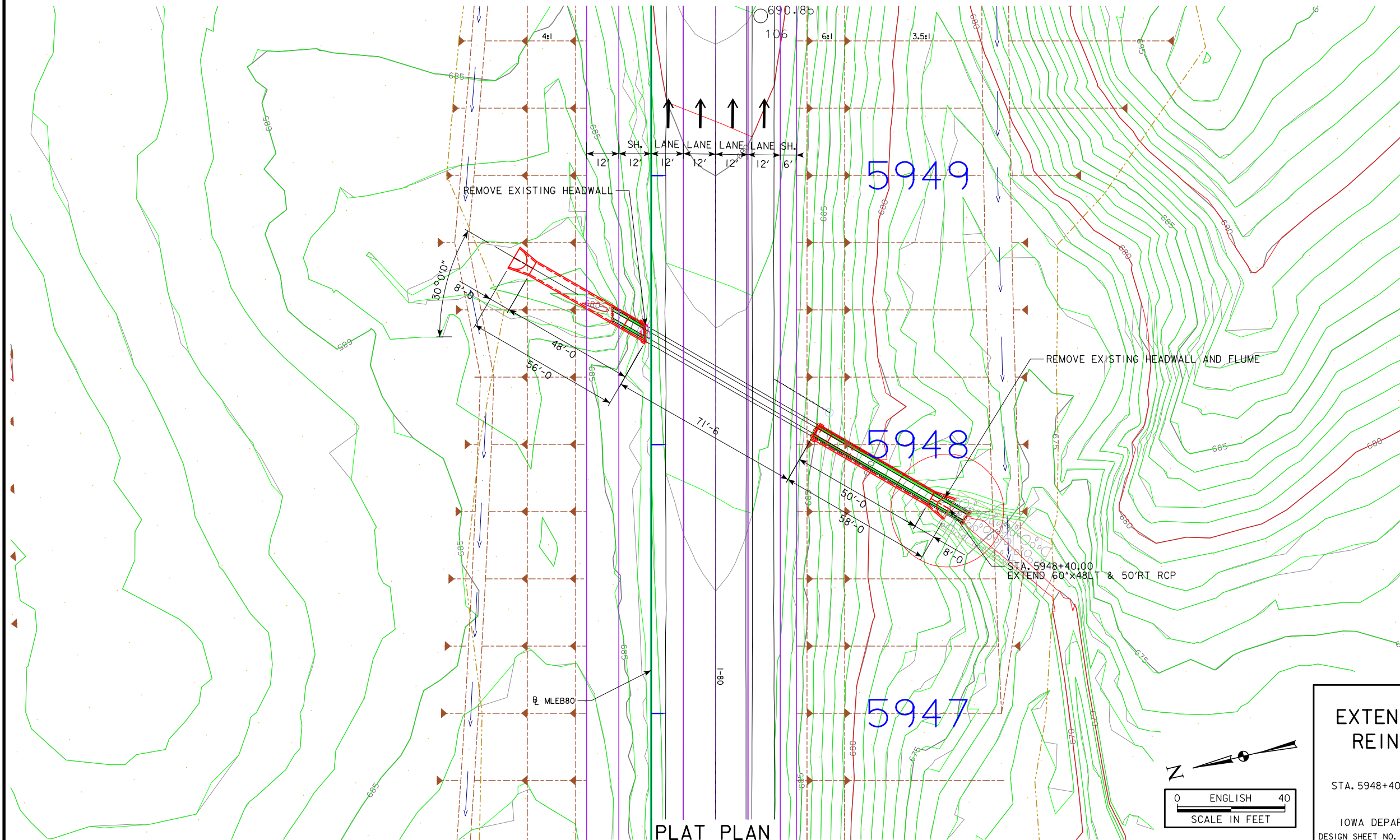
HYDRAULIC DATA

DRAINAGE AREA = 16.11 ACRES
DESIGN DISCHARGE, Q50 = 45.7 CFS

DESIGN FOR 30° SKEW LT BK
**EXTEND 30" x 26' LT
 REINFORCED CONCRETE PIPE
 PLAT PLAN**
 STA. 5924+80.83 EB APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.



LONGITUDINAL SECTION ALONG ϕ CULVERT



PLAT PLAN

NOTES

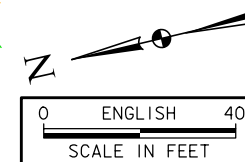
PIPE DIMENSIONS SHOWN IN PLAN VIEW
 BASED ON LAYING LENGTH

LOCATION

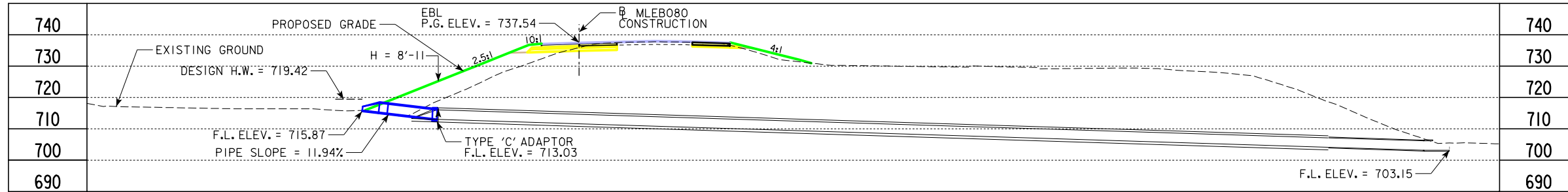
MLEB080
 T-79N R-2W
 SECTION 15
 SUGAR CREEK TOWNSHIP
 CEDAR COUNTY

HYDRAULIC DATA

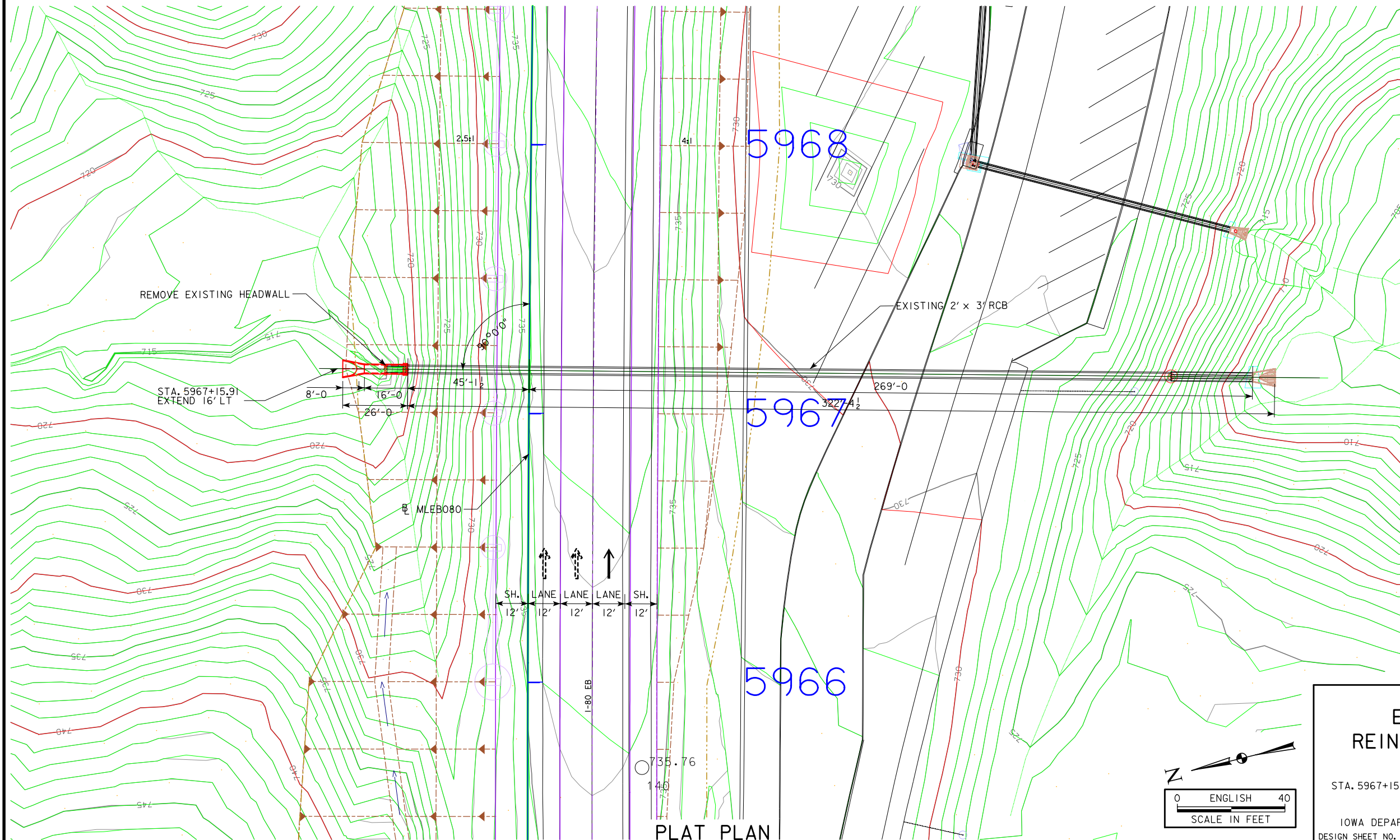
DRAINAGE AREA = 78.87 ACRES
 DESIGN DISCHARGE, Q50 = 219.8 CFS



DESIGN FOR 30° SKEW LT AHD
**EXTEND 60" X 48' LT & 50' RT
 REINFORCED CONCRETE PIPE
 PLAT PLAN**
 STA. 5948+40.00 EB APRIL 2020
CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.



LONGITUDINAL SECTION ALONG ϕ CULVERT



NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
BASED ON LAYING LENGTH

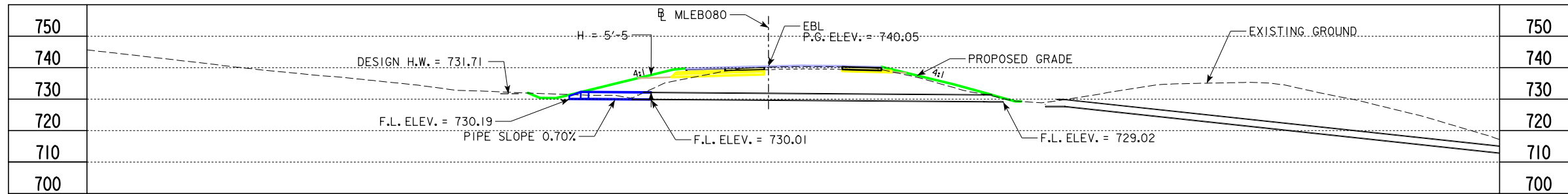
LOCATION

MLEB080
T-79N R-2W
SECTION 23
SUGAR CREEK TOWNSHIP
CEDAR COUNTY

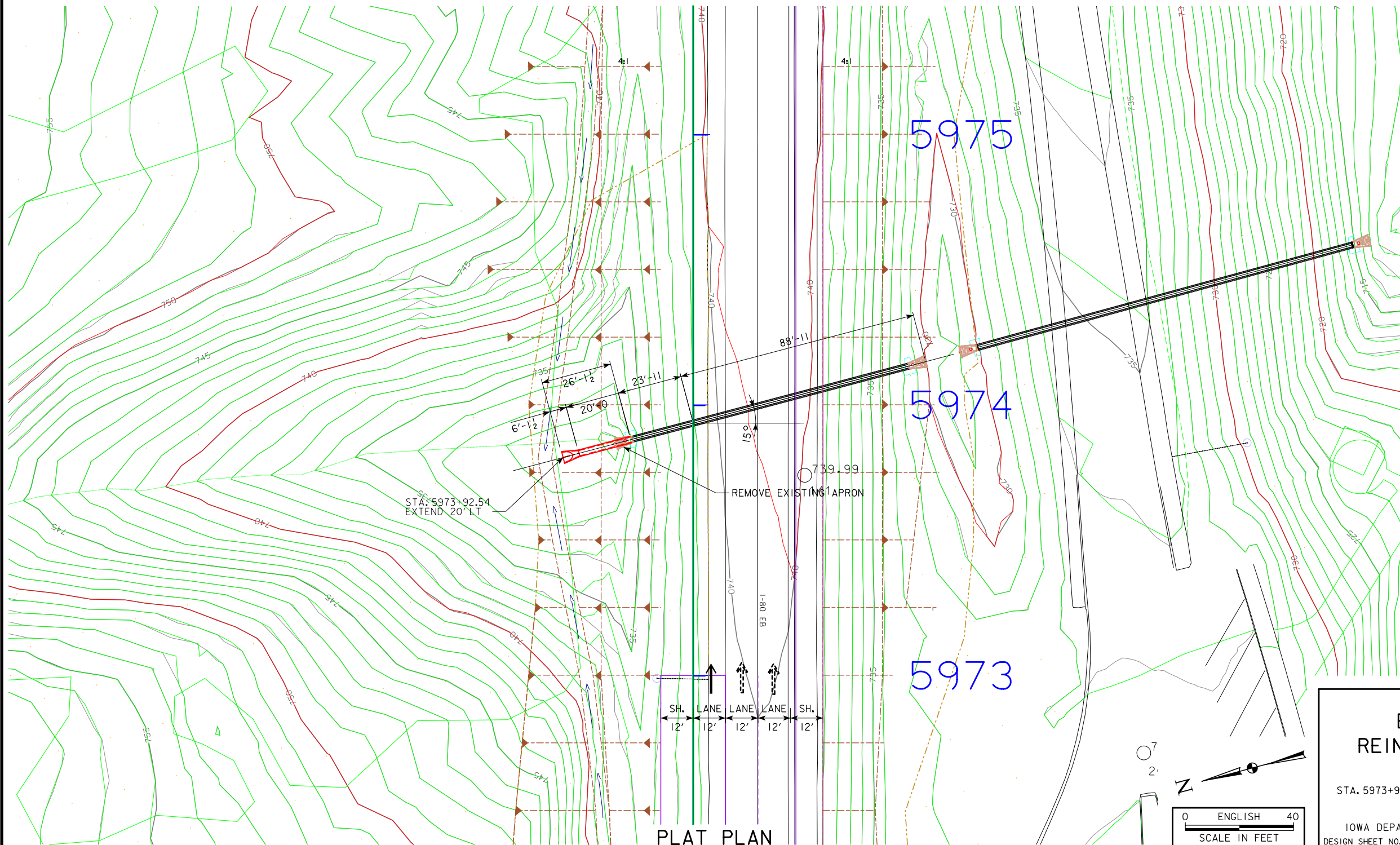
HYDRAULIC DATA

DRAINAGE AREA = 12.0 ACRES
DESIGN DISCHARGE, Q50 = 44.5 CFS

DESIGN FOR 0° SKEW
**EXTEND 36" x 16' LT
REINFORCED CONCRETE PIPE
PLAT PLAN**
STA. 5967+15.91 EB APRIL 2020
CEDAR COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. DESIGN NO.



LONGITUDINAL SECTION ALONG CULVERT



NOTES

PIPE DIMENSIONS SHOWN IN PLAN VIEW
 BASED ON LAYING LENGTH

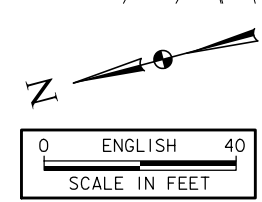
LOCATION

MLEB080
 T-79N R-2W
 SECTION 23
 SUGAR CREEK TOWNSHIP
 CEDAR COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 3.19 ACRES
 DESIGN DISCHARGE = 9.2 CFS

DESIGN FOR 15° SKEW LT BK
**EXTEND 24" X 20' LT
 REINFORCED CONCRETE PIPE
 PLAT PLAN**
 STA. 5973+92.54 EB
 CEDAR COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. _____ DESIGN NO. _____
 APRIL 2020



LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

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

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

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

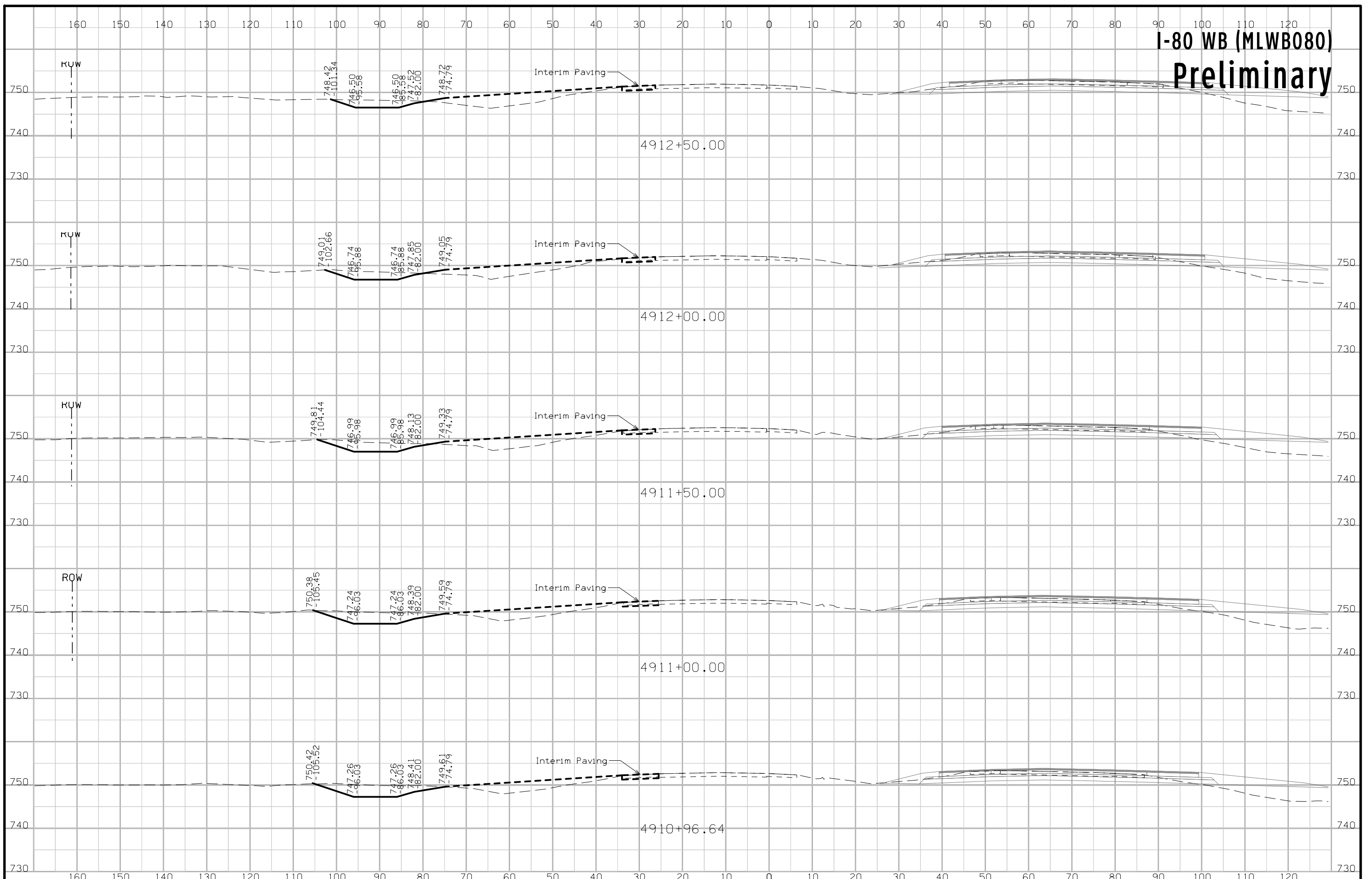
SYMBOL LEGEND OF CROSS SECTION SHEETS

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

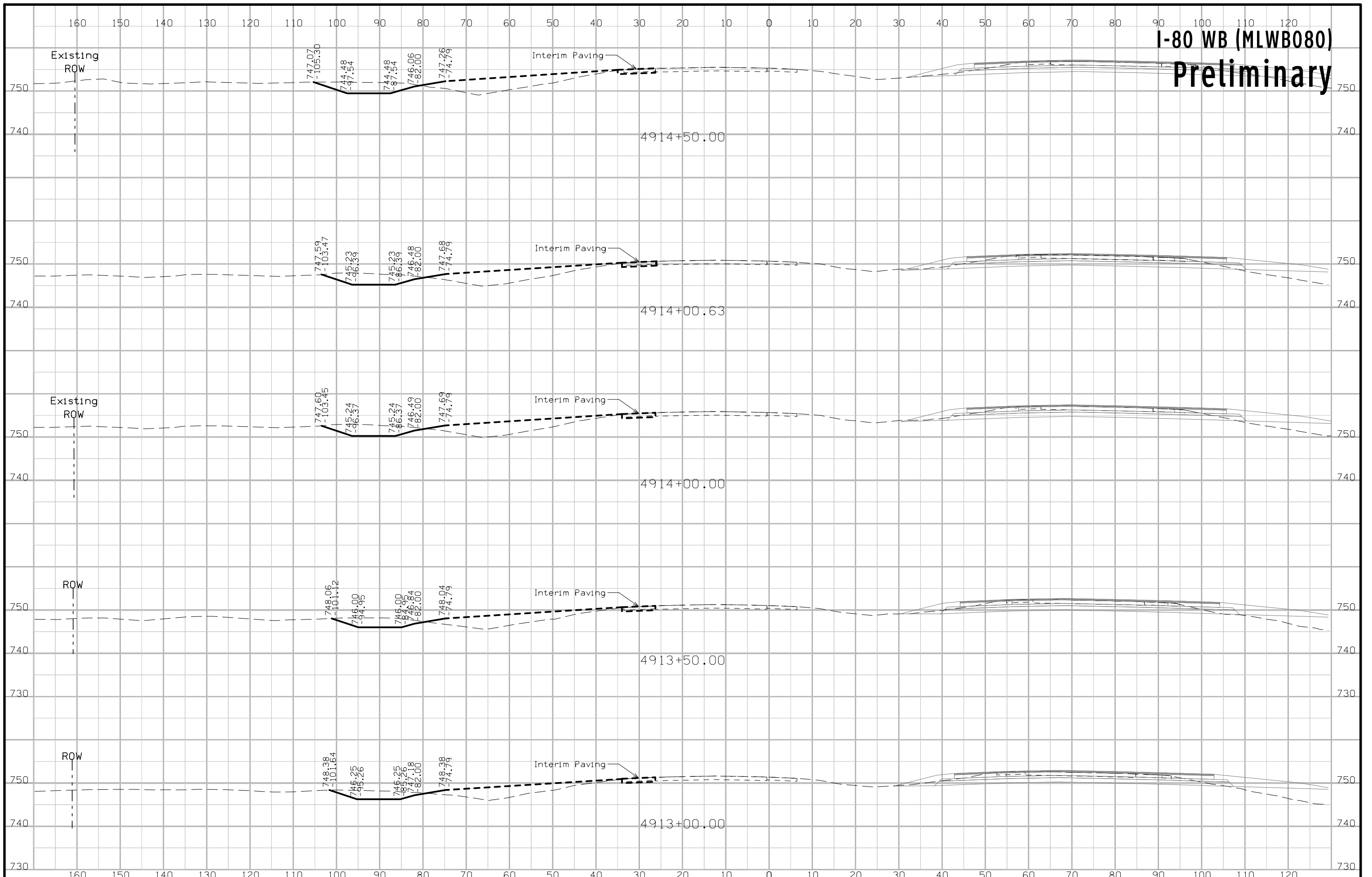
**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

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

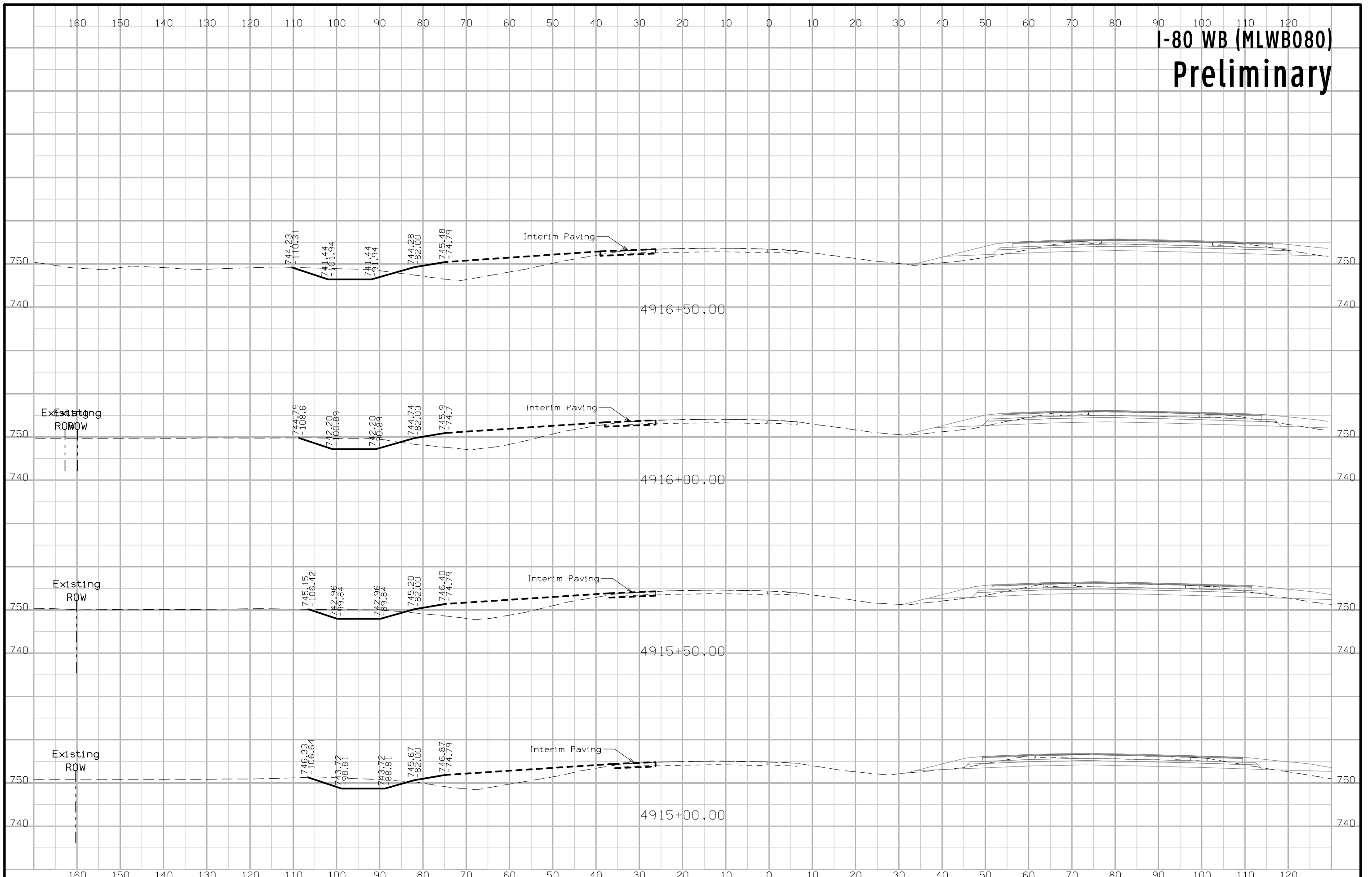
I-80 WB (MLWB080) Preliminary



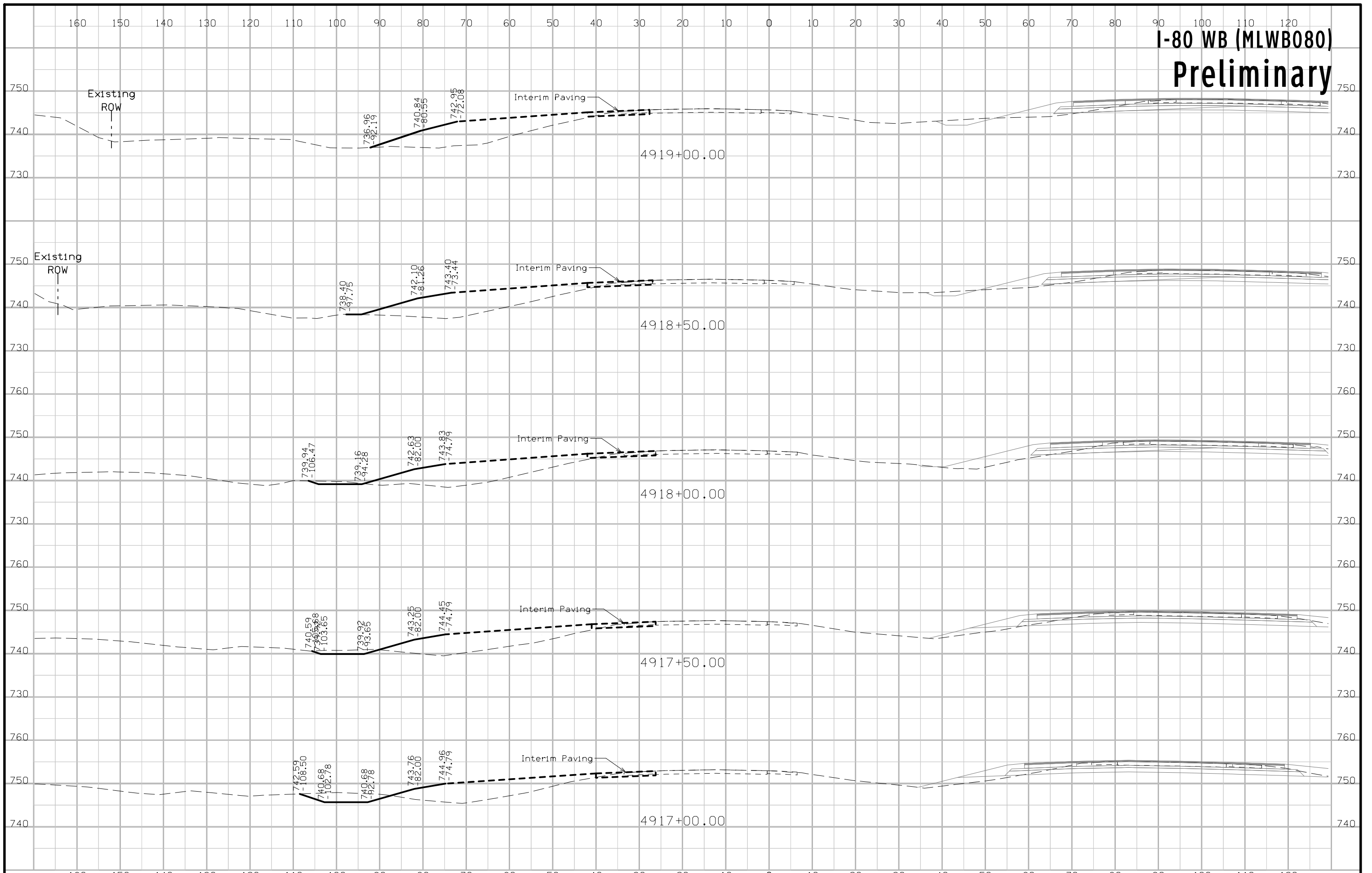
I-80 WB (MLWB080) Preliminary



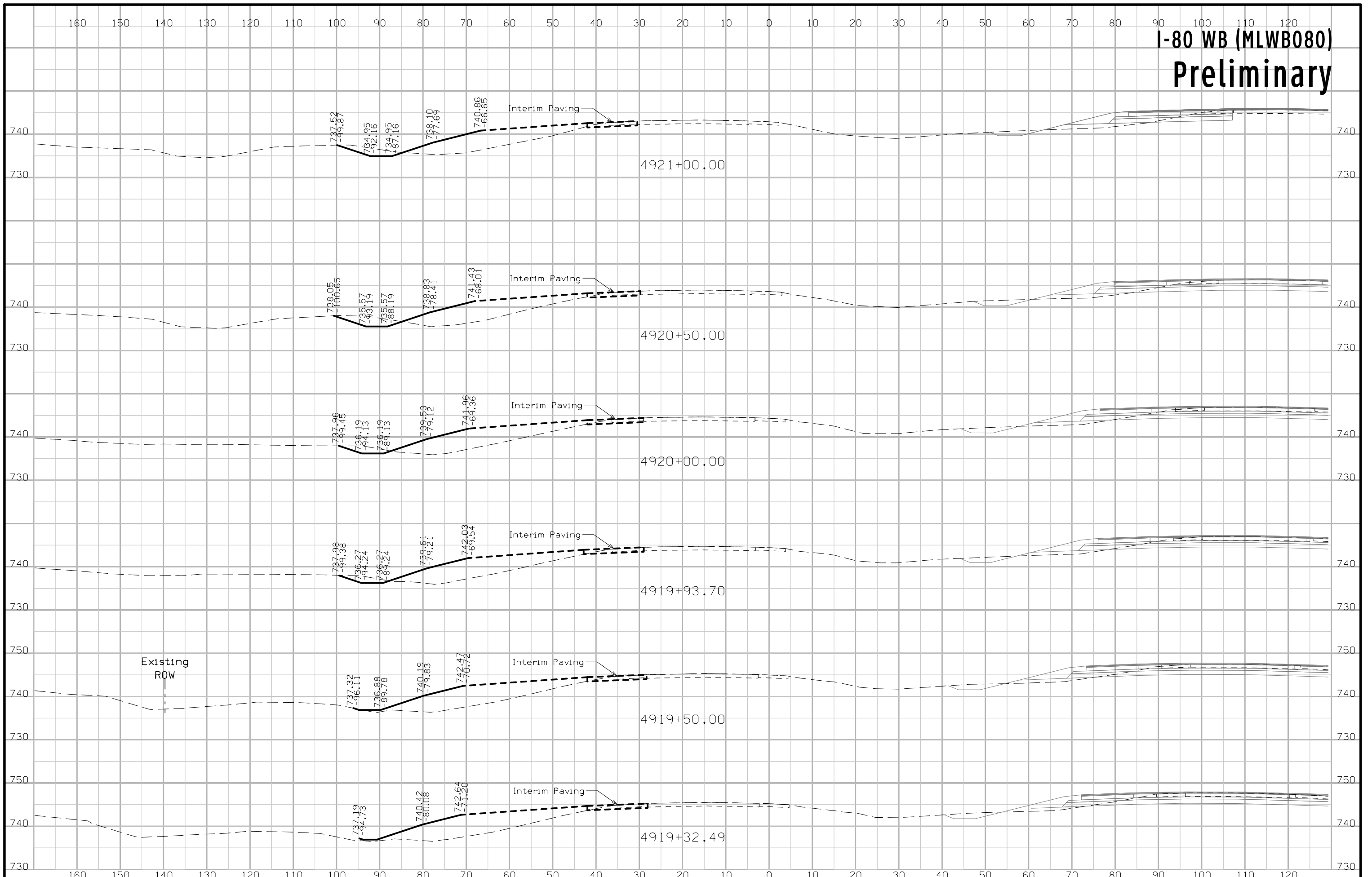
I-80 WB (MLWB080) Preliminary



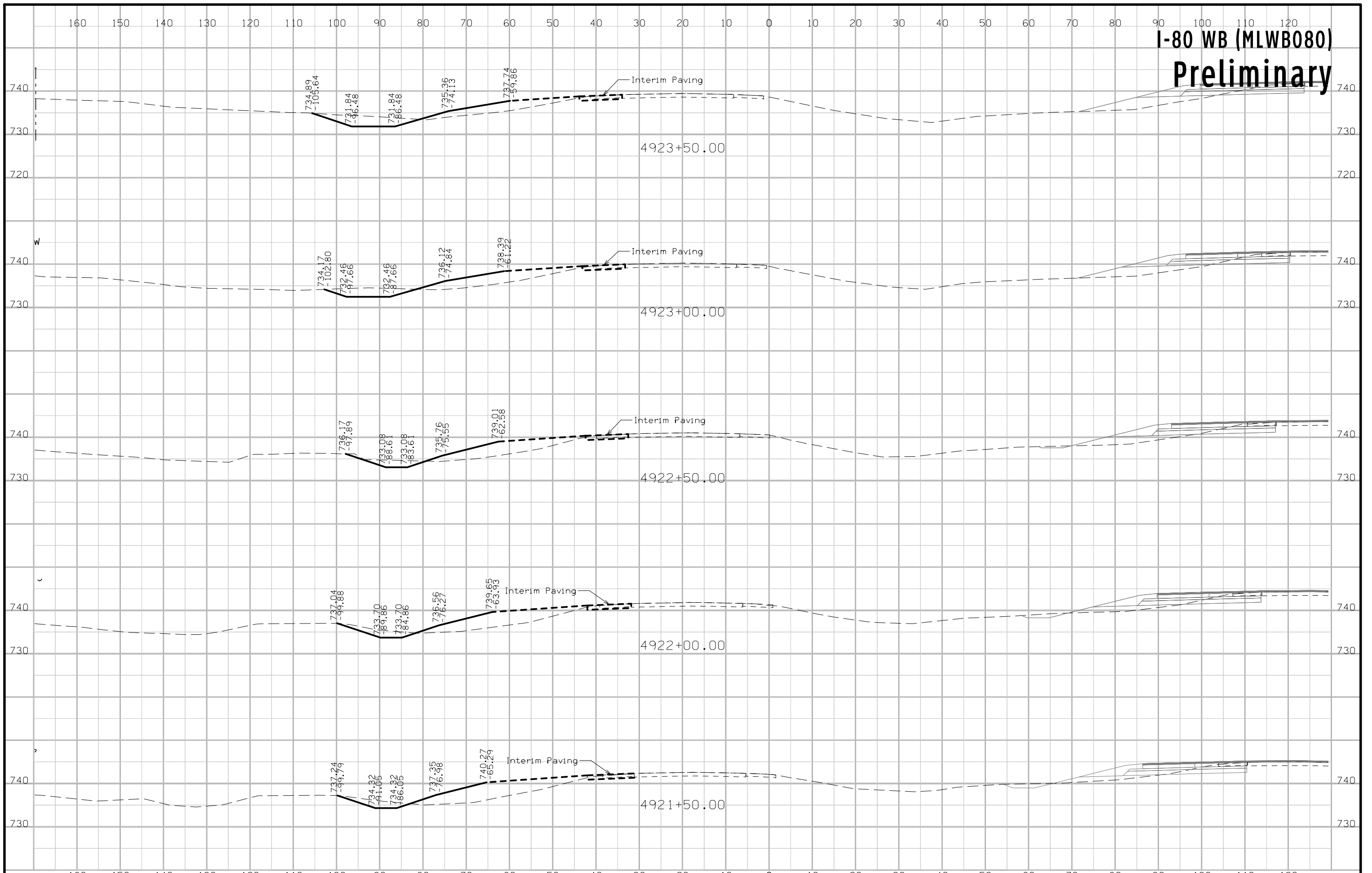
I-80 WB (MLWB080) Preliminary



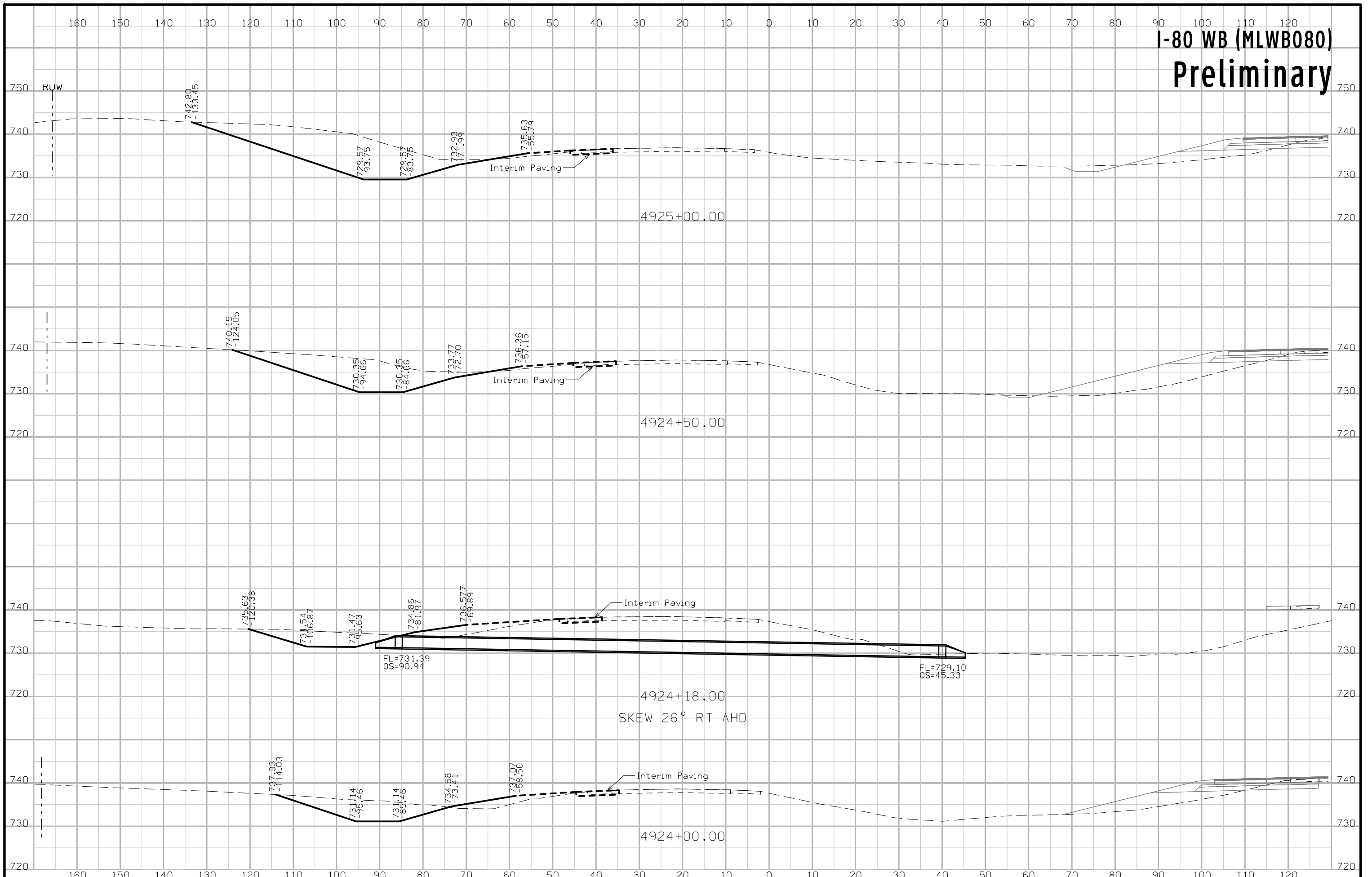
I-80 WB (MLWB080) Preliminary



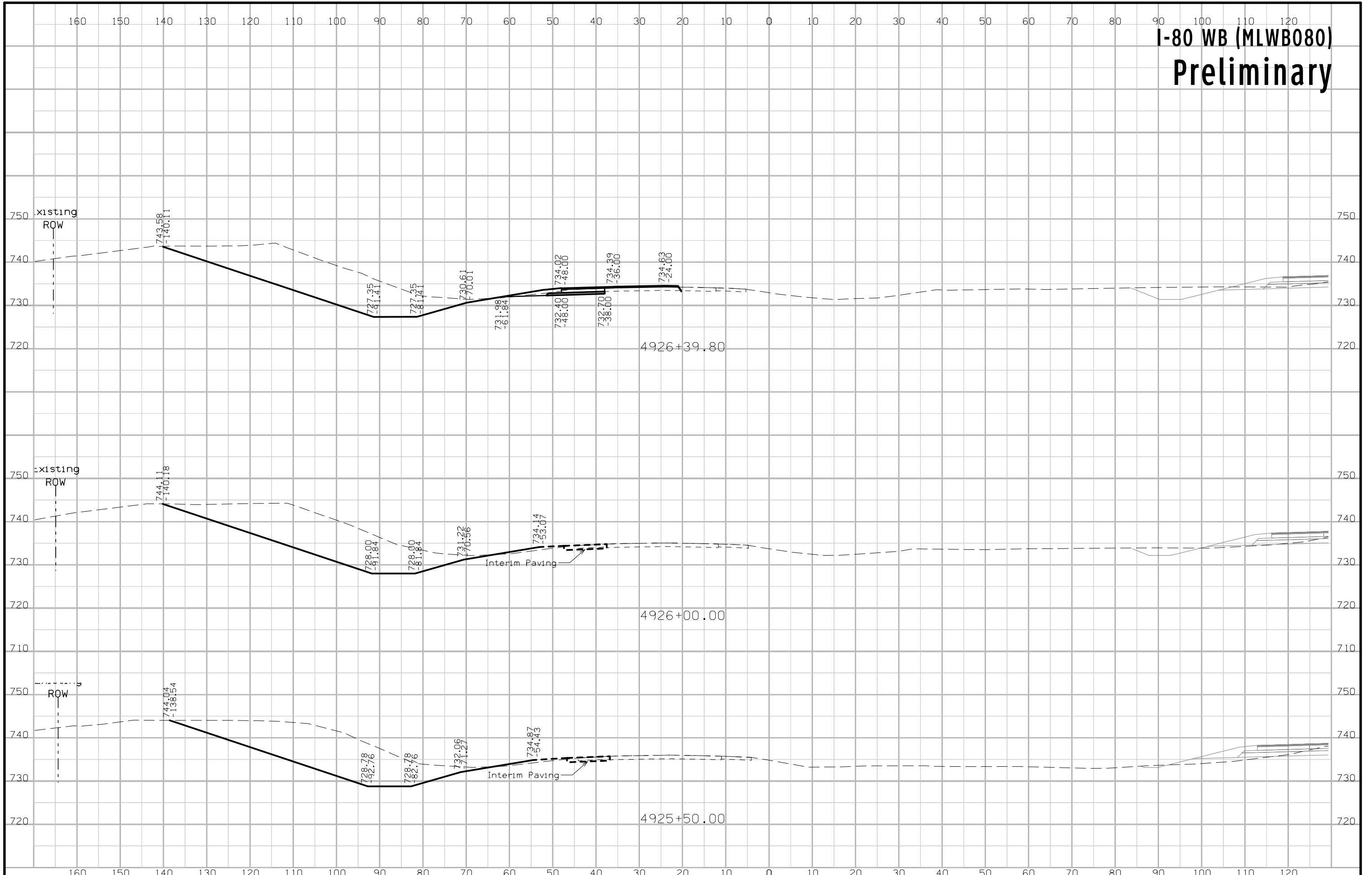
I-80 WB (MLWB080) Preliminary



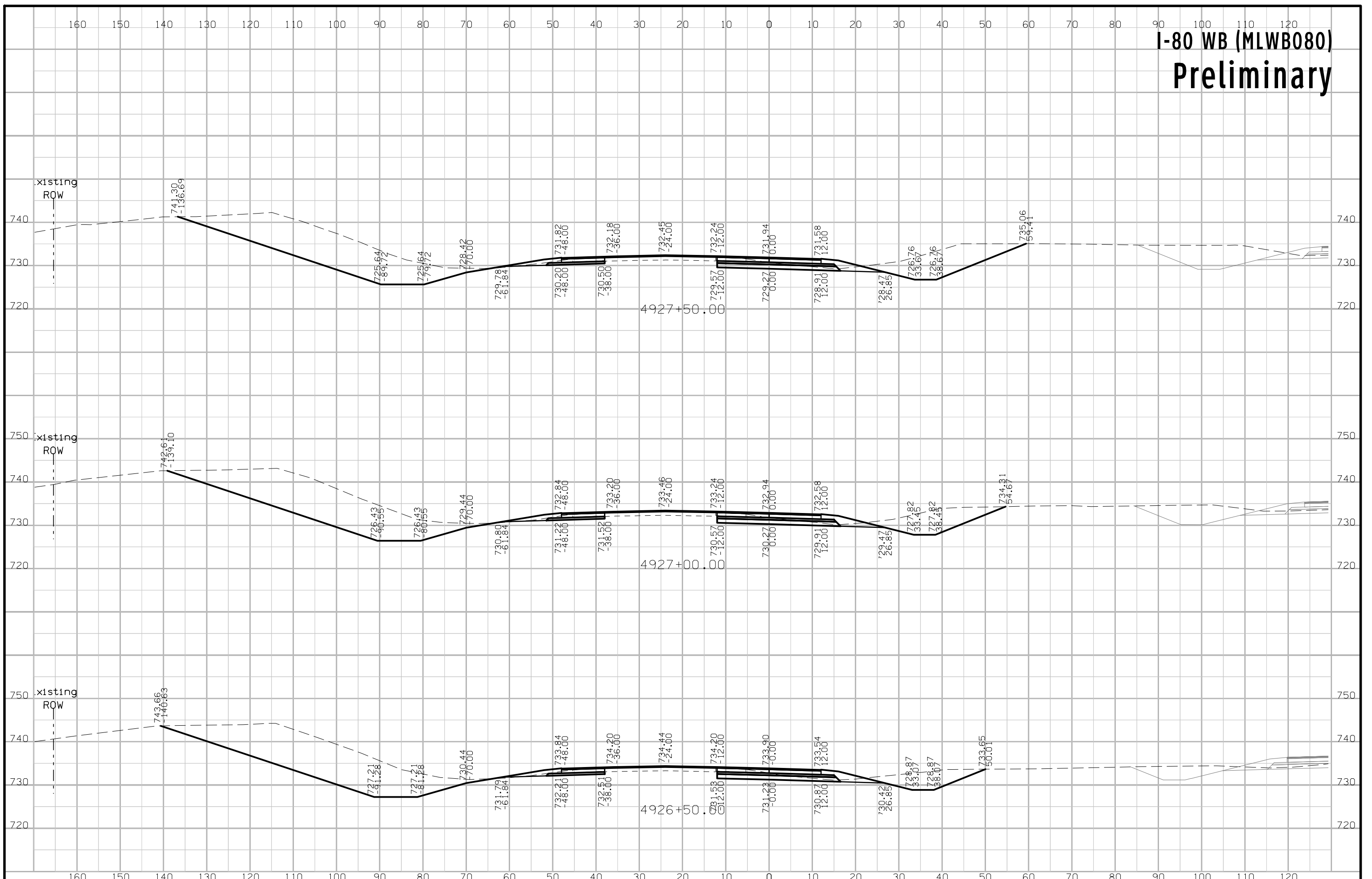
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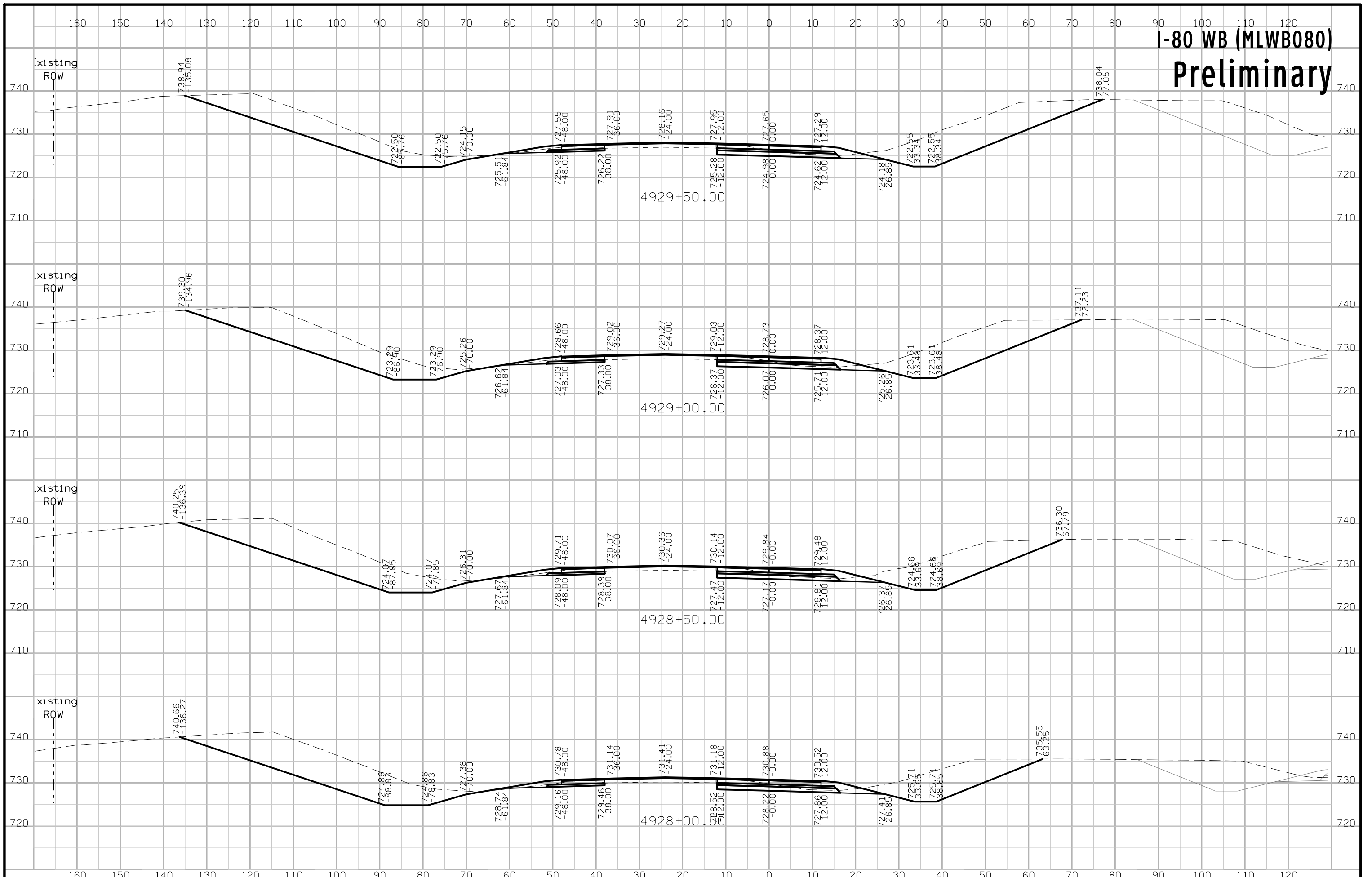
I-80 WB (MLWB080) Preliminary



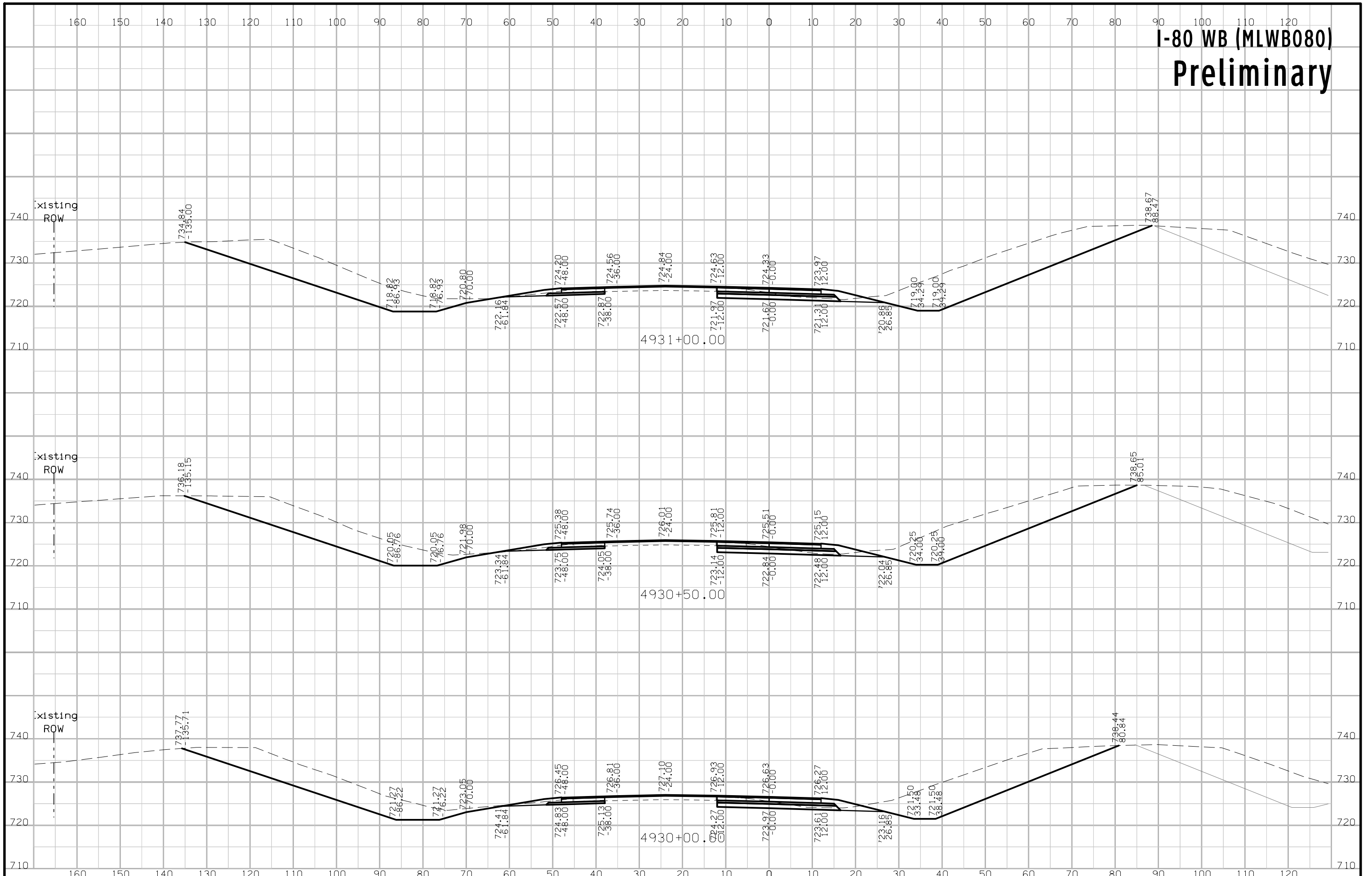
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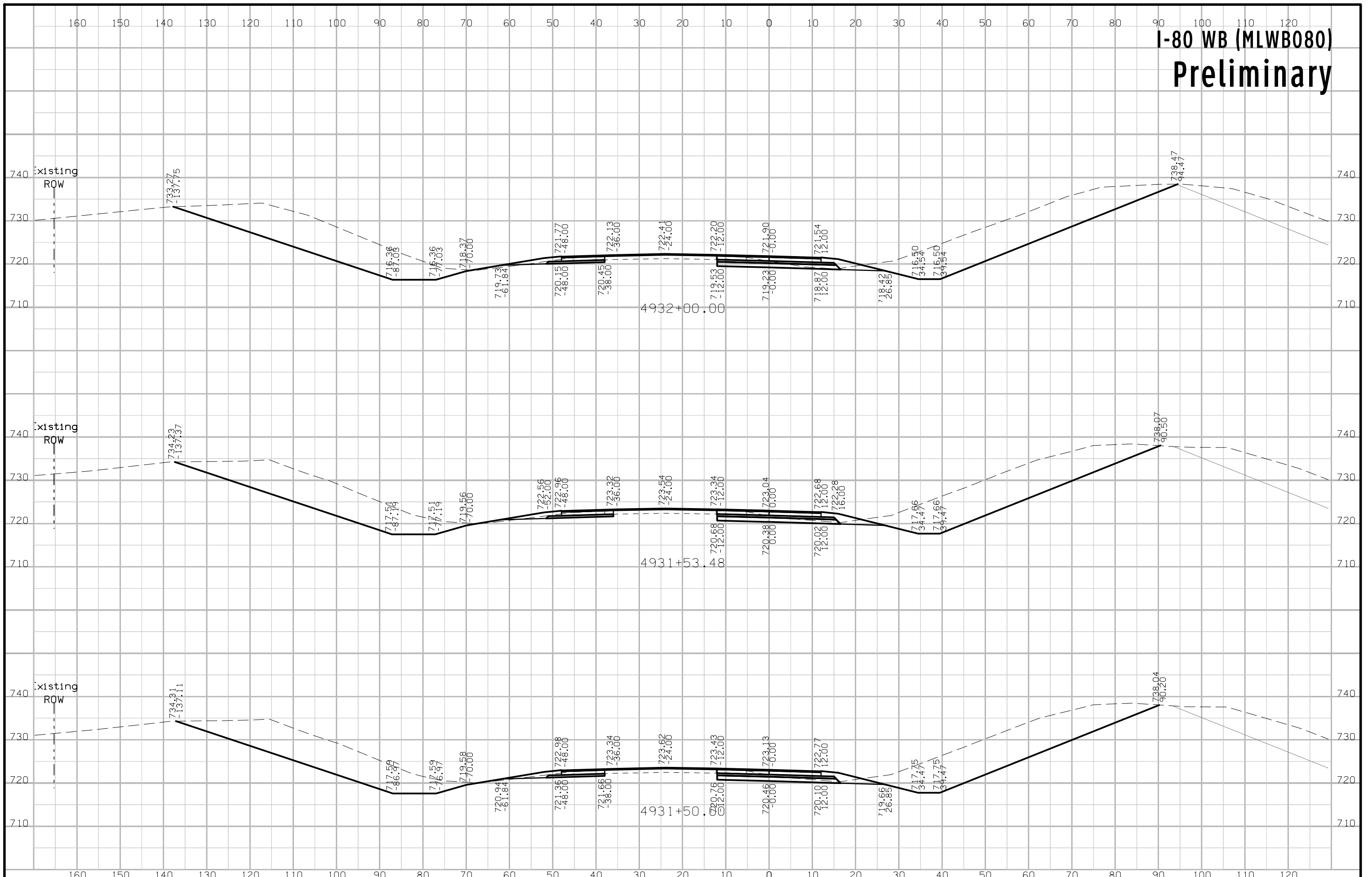
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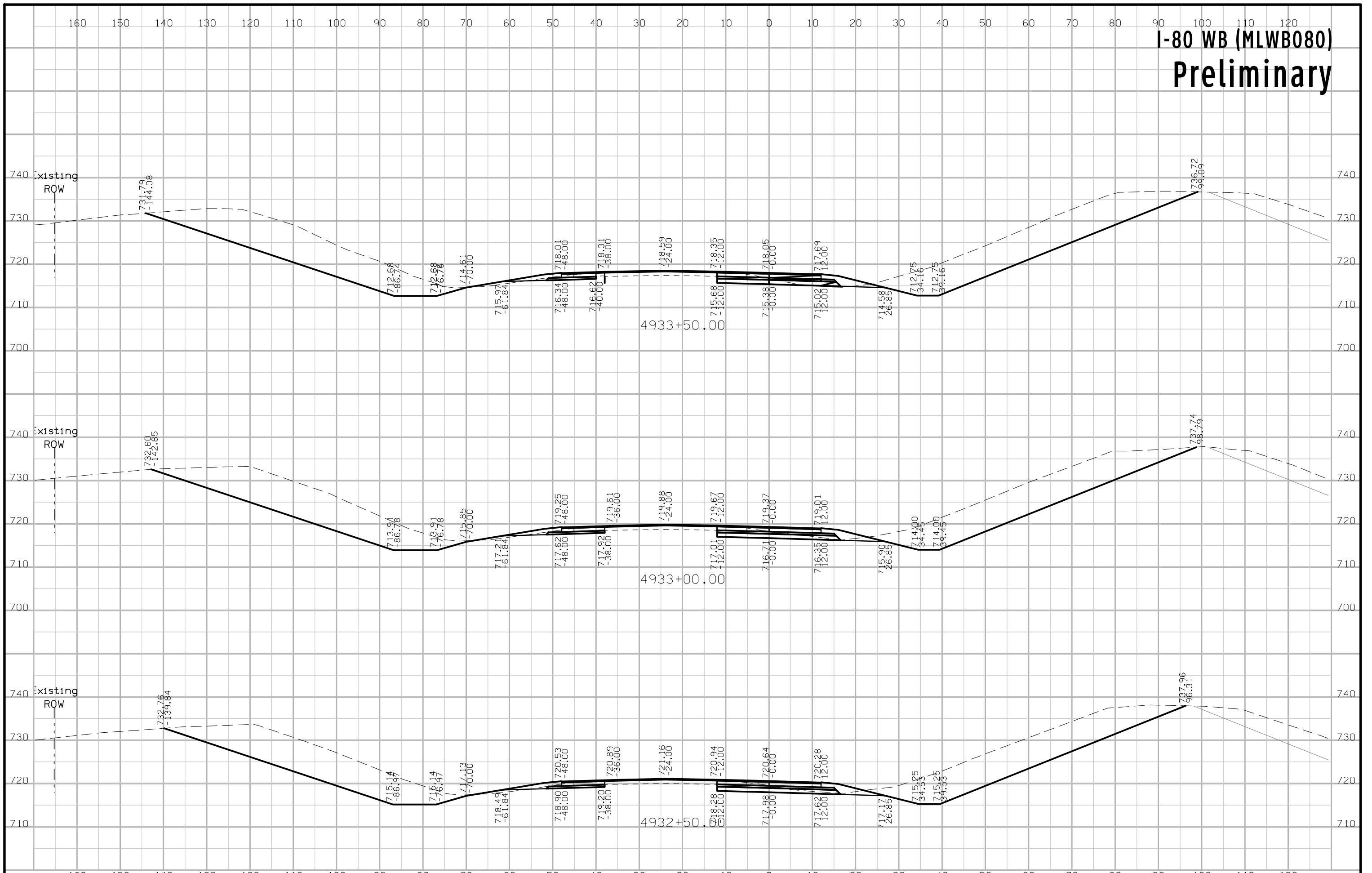
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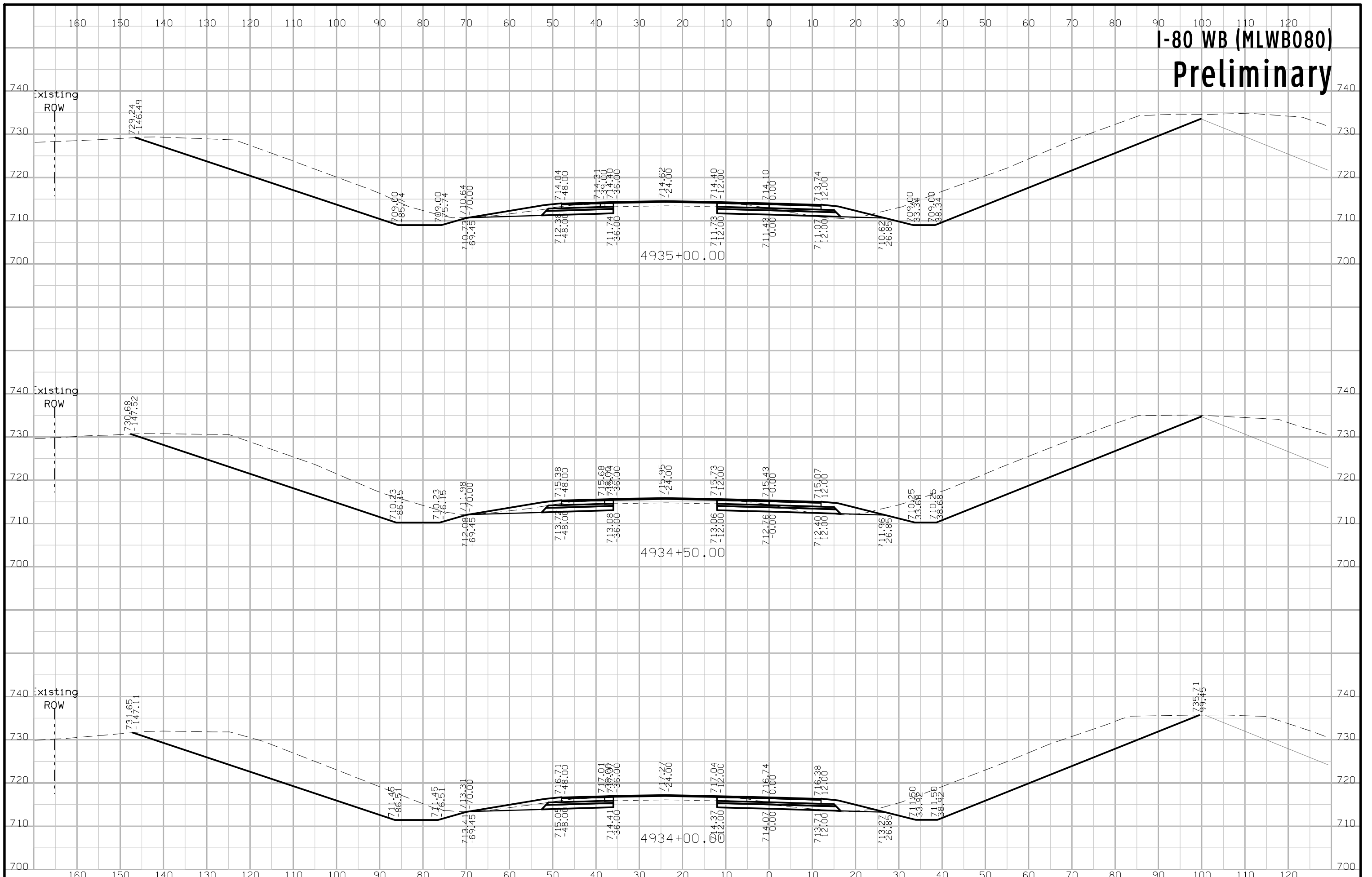
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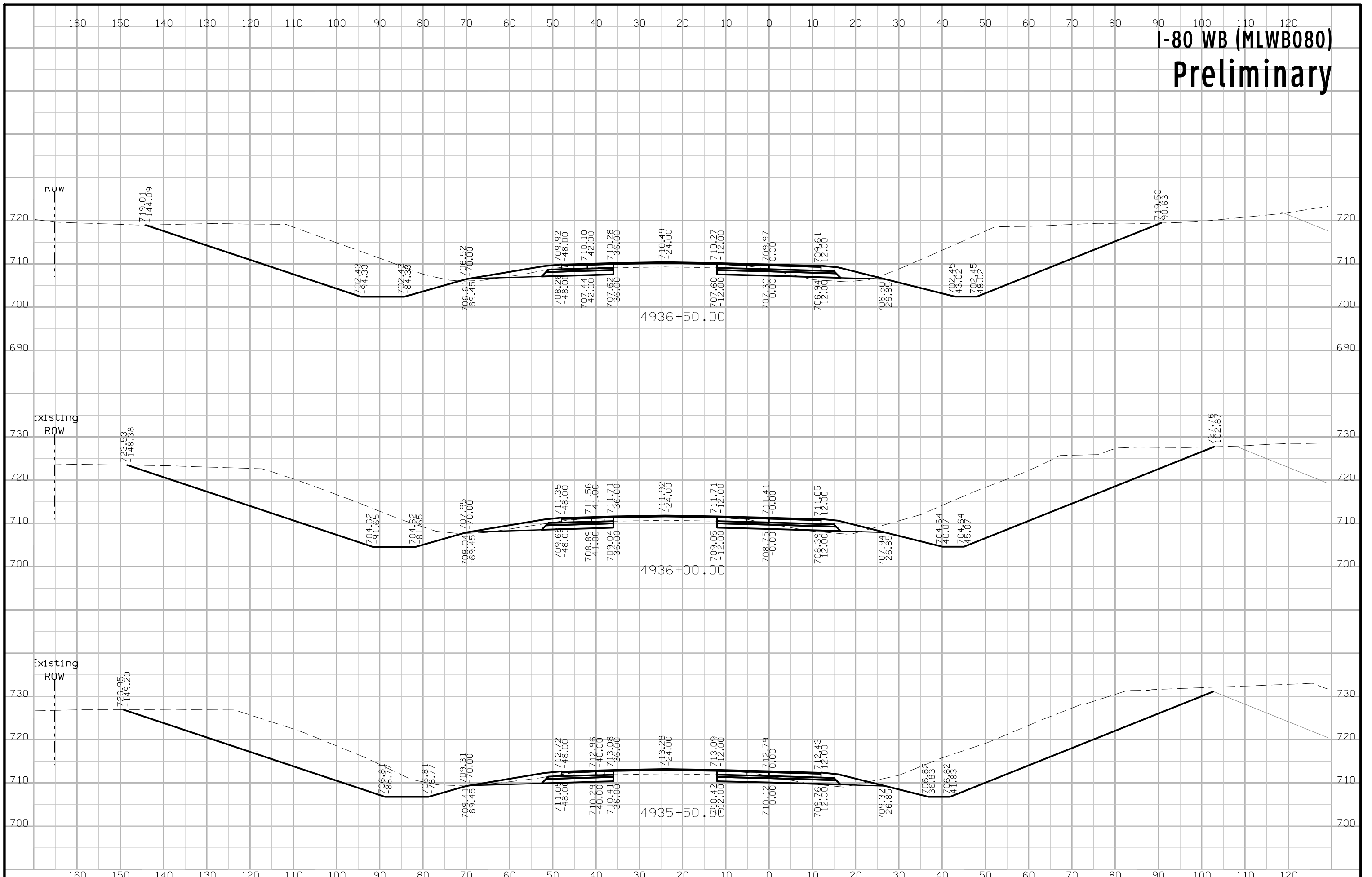
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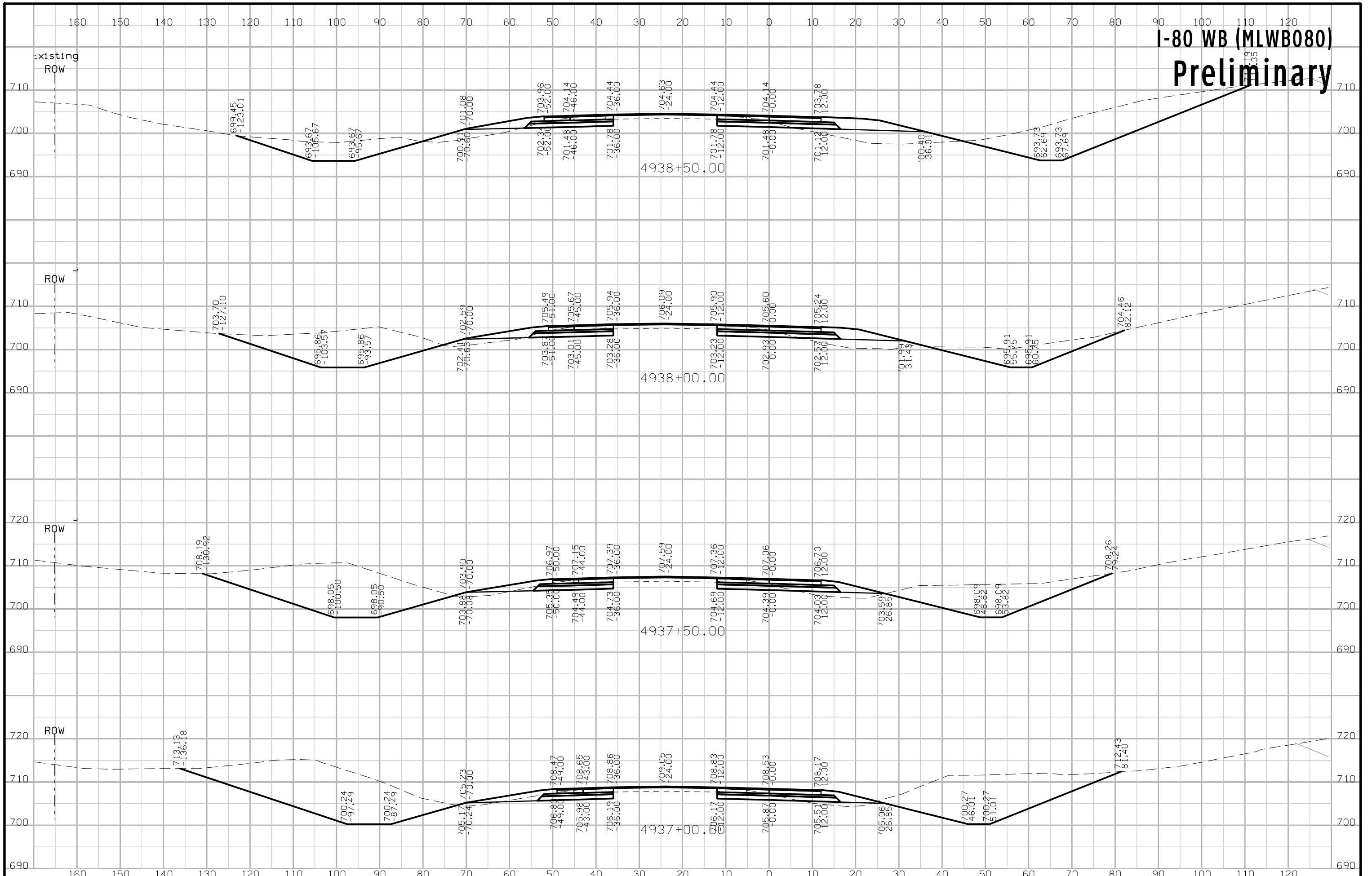
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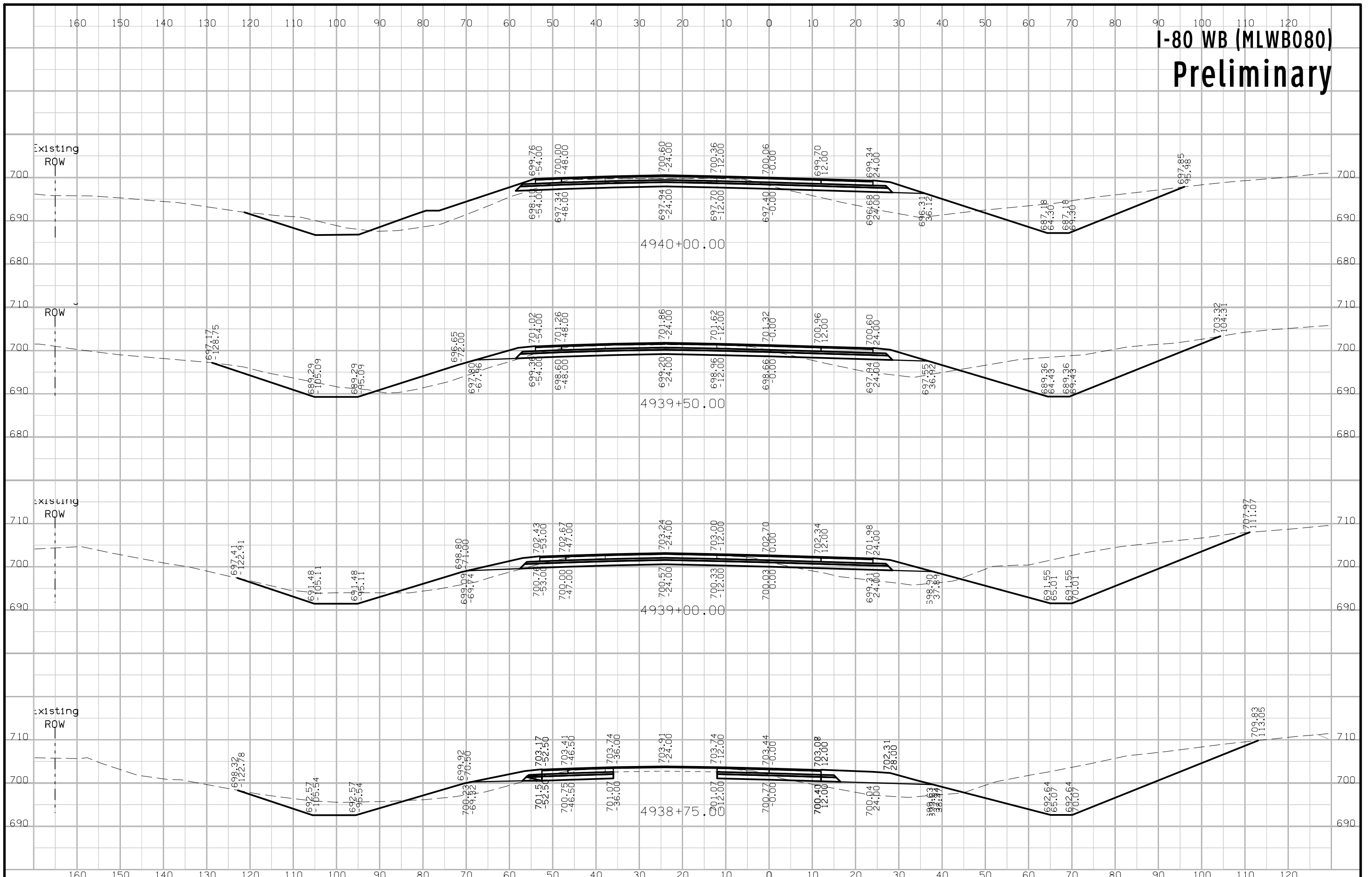
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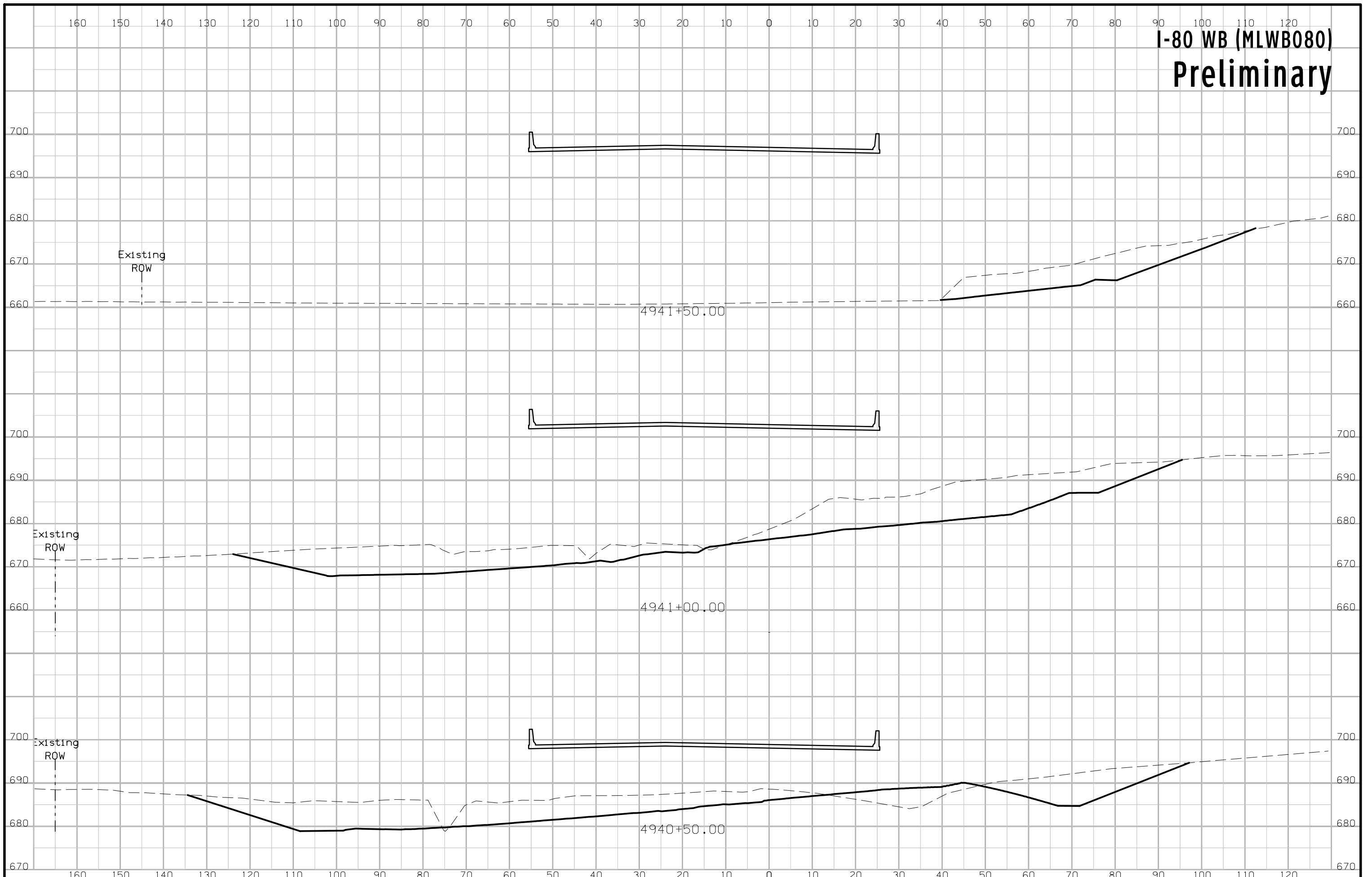
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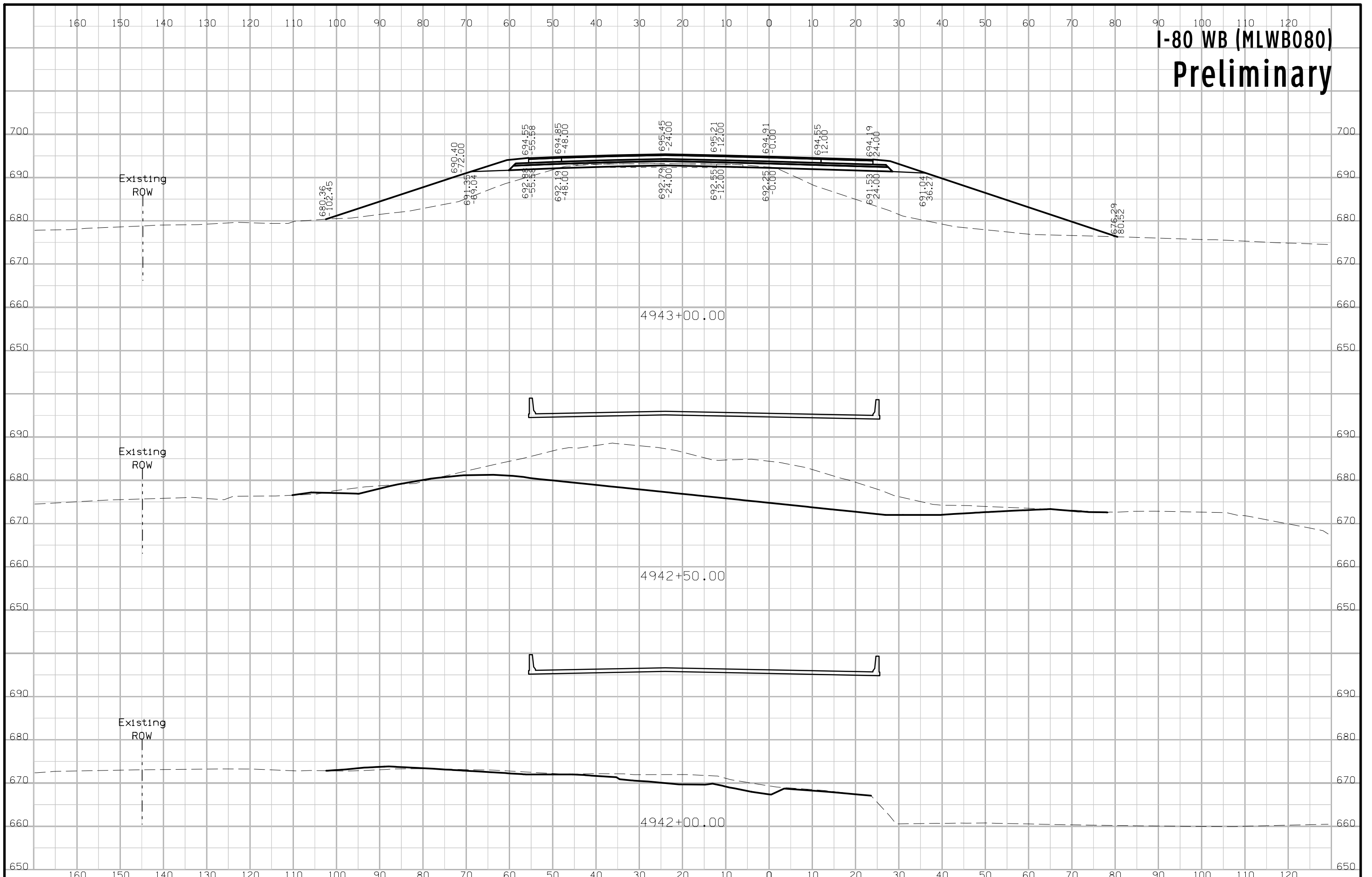
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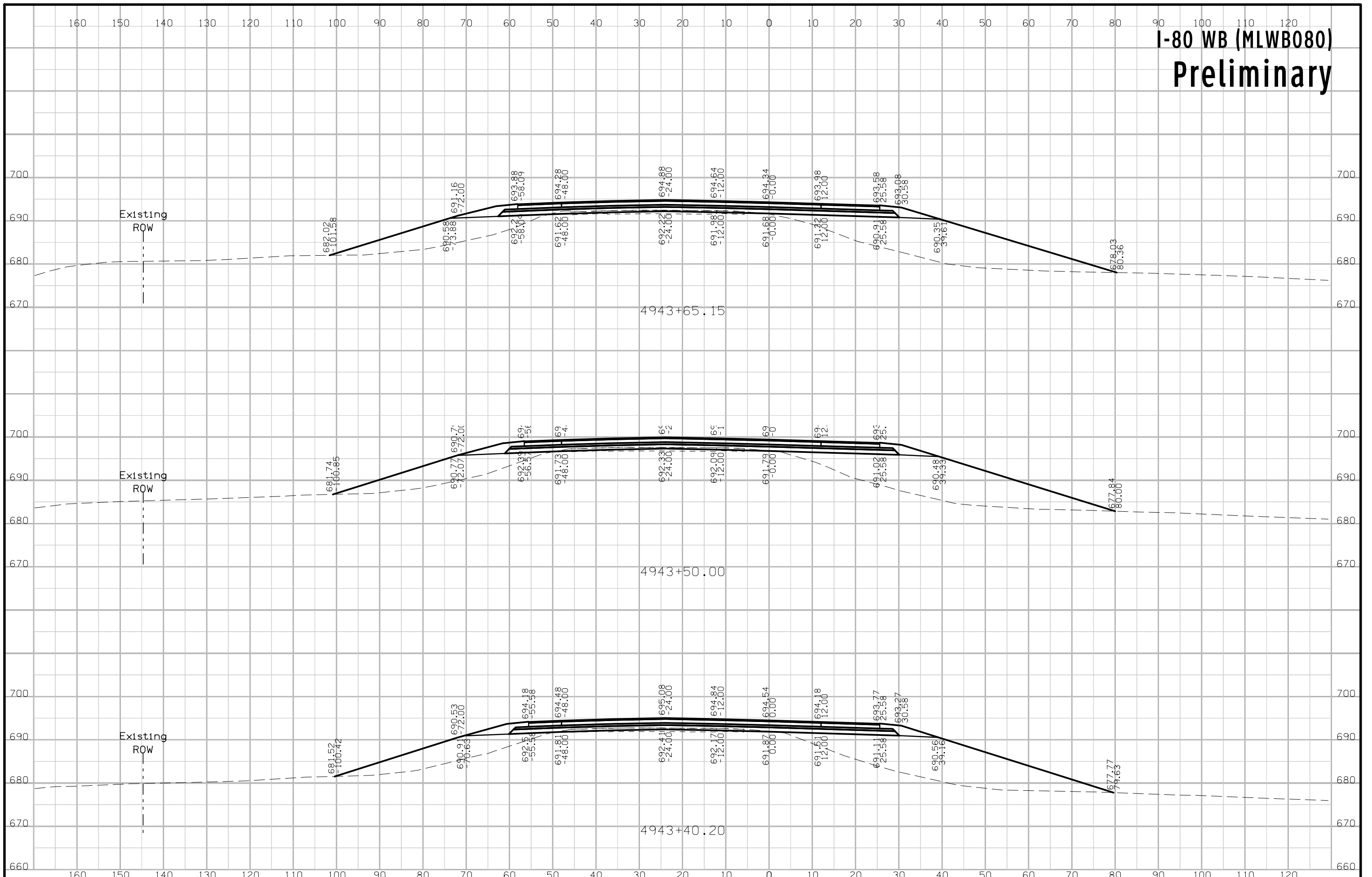
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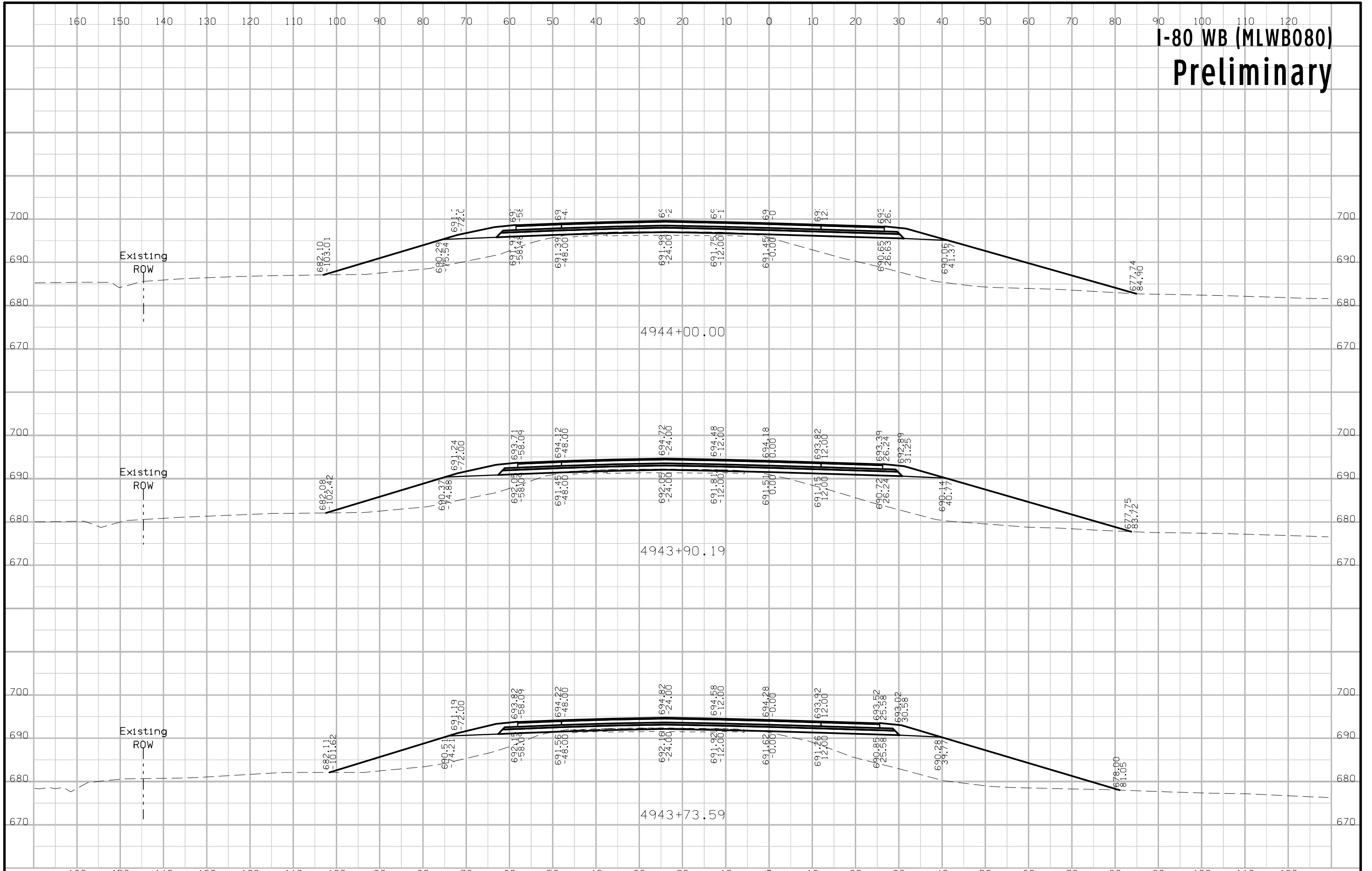
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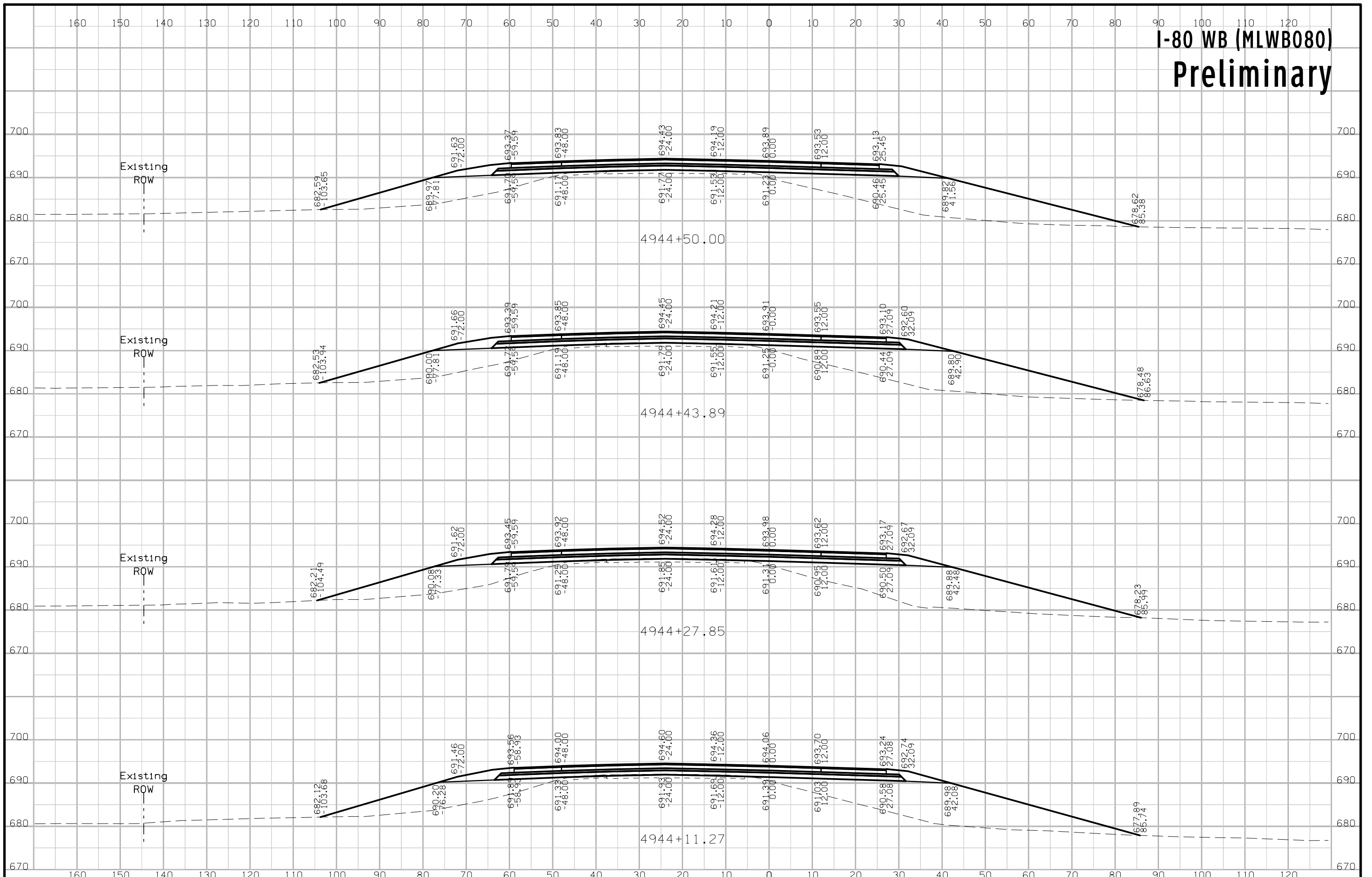
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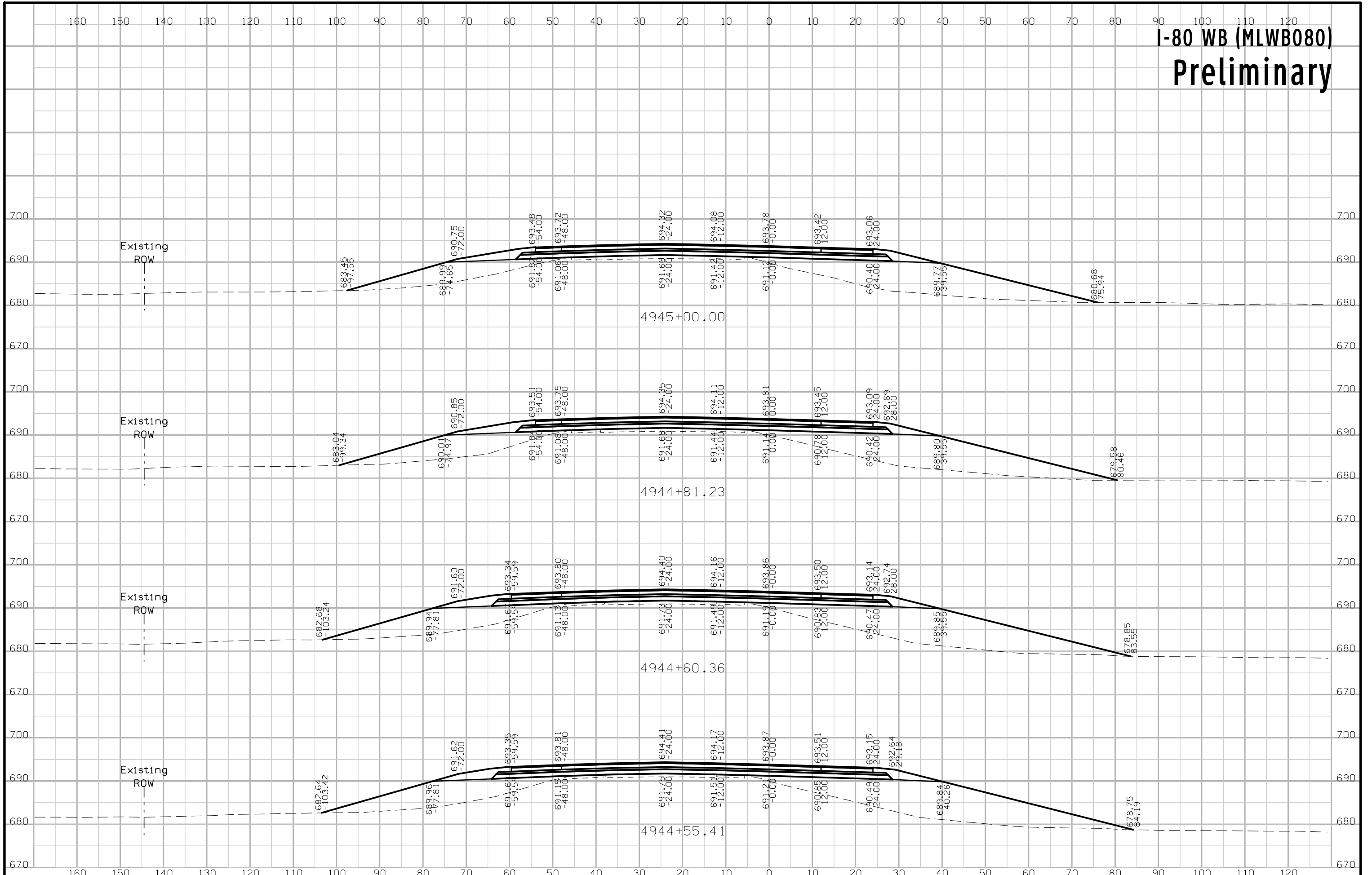
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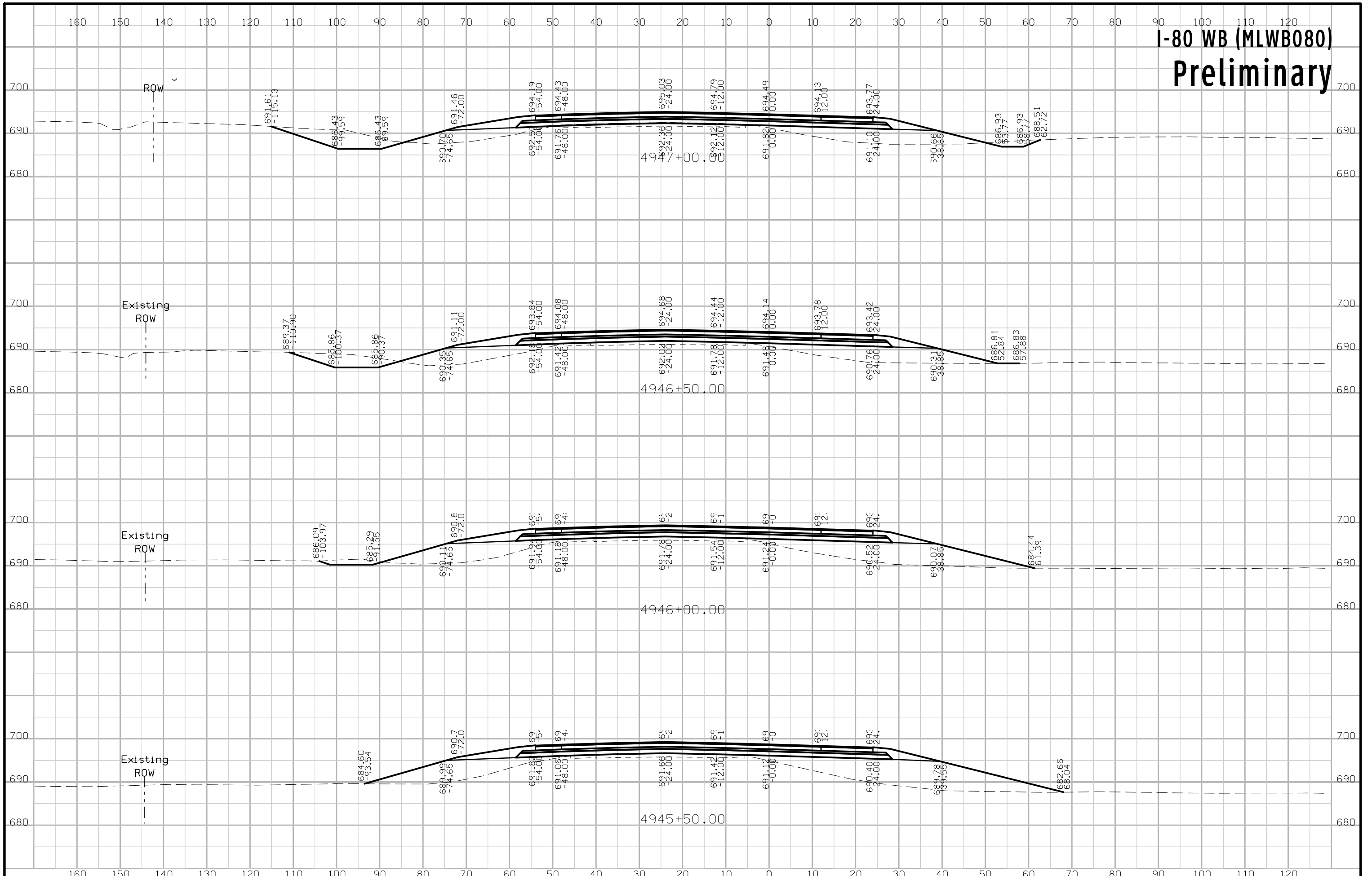
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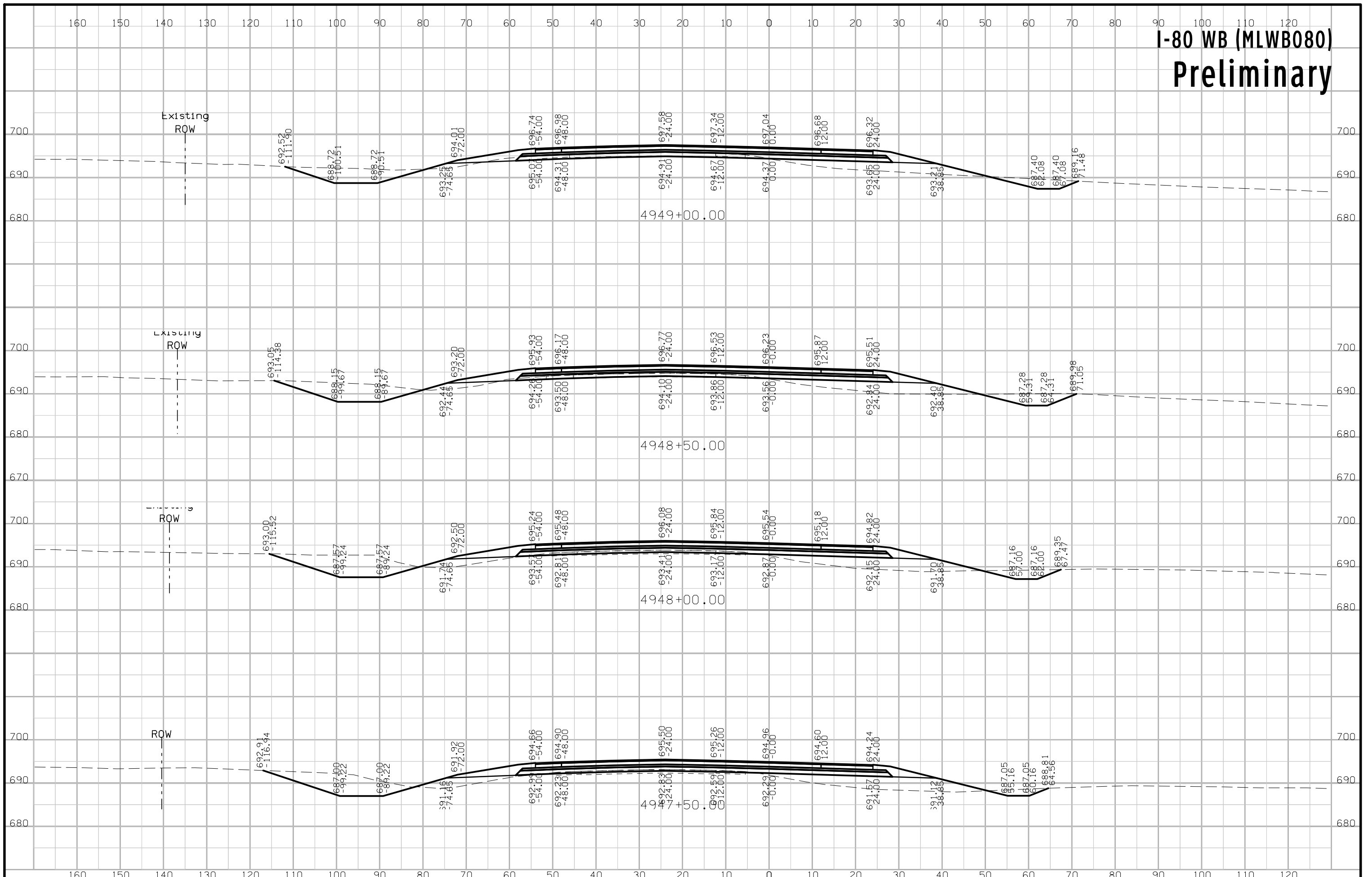
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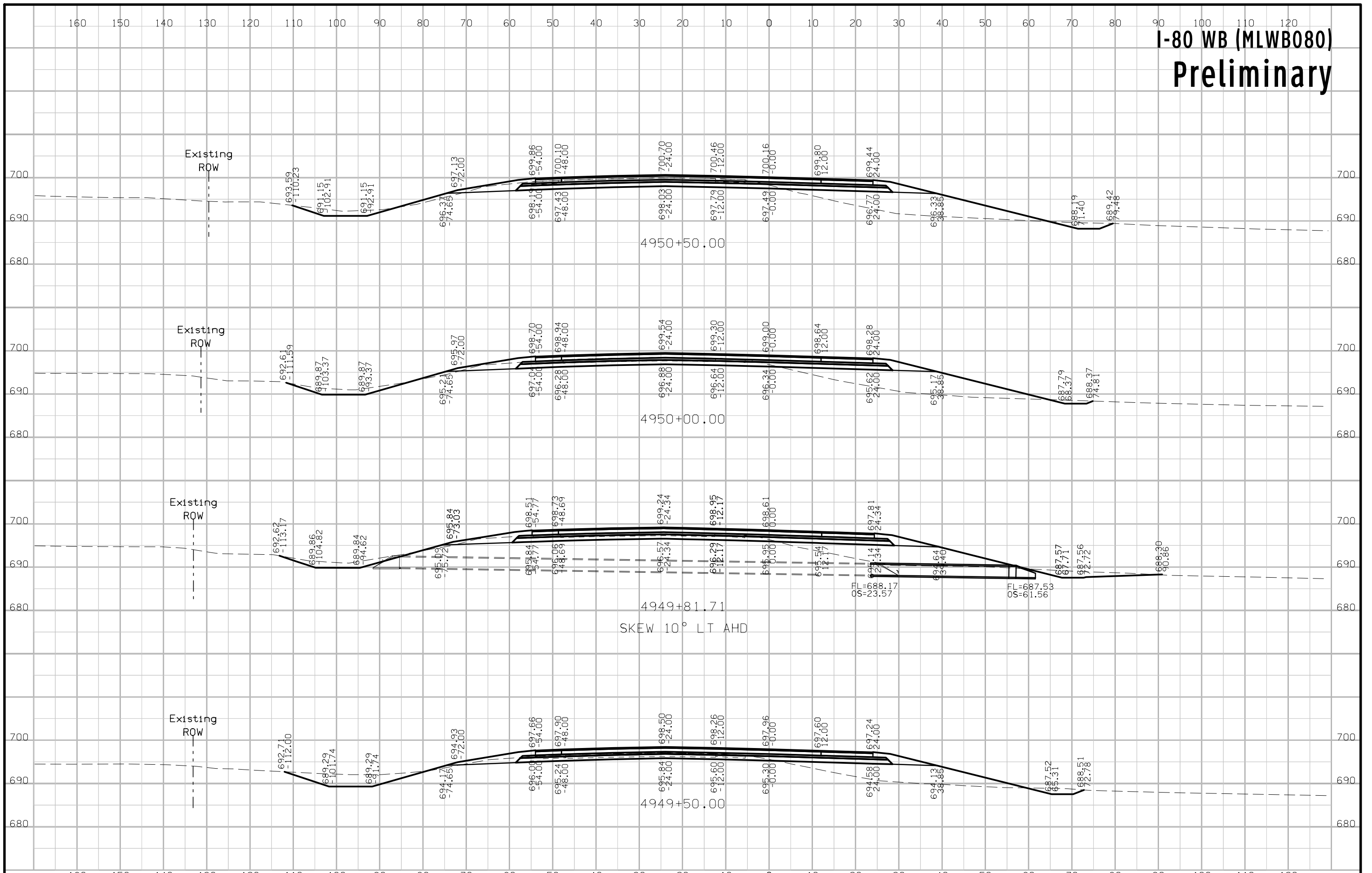
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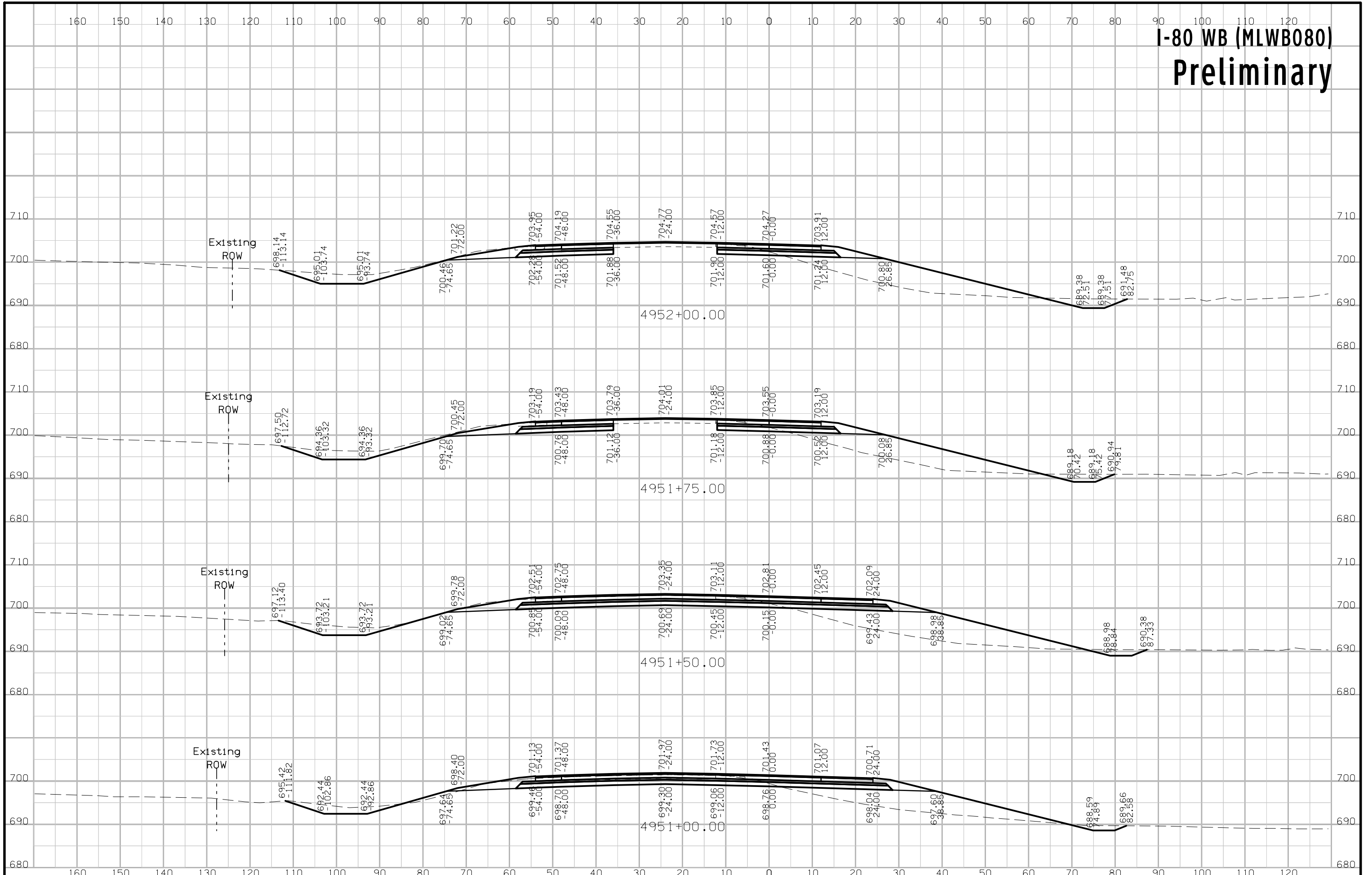
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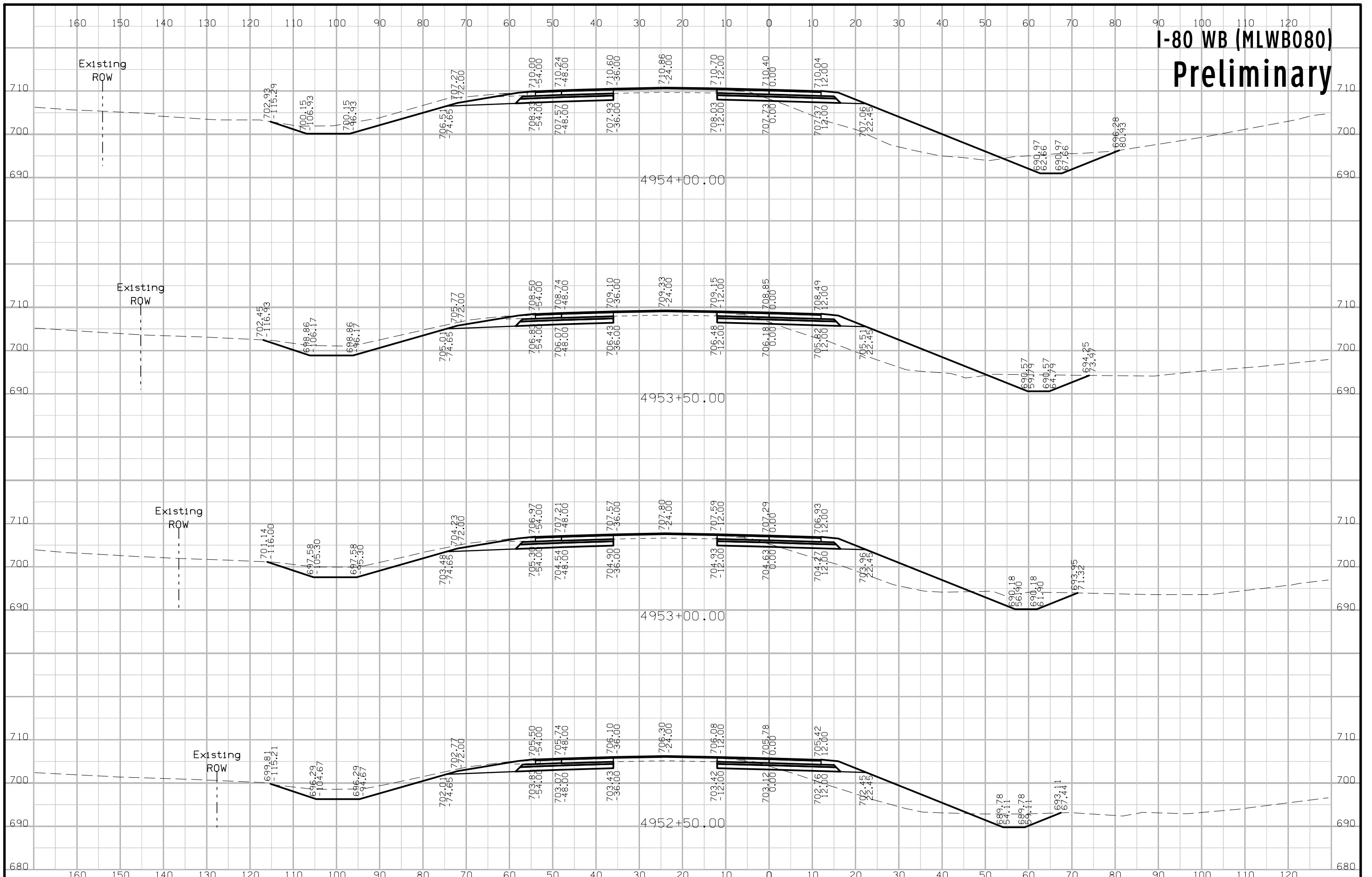
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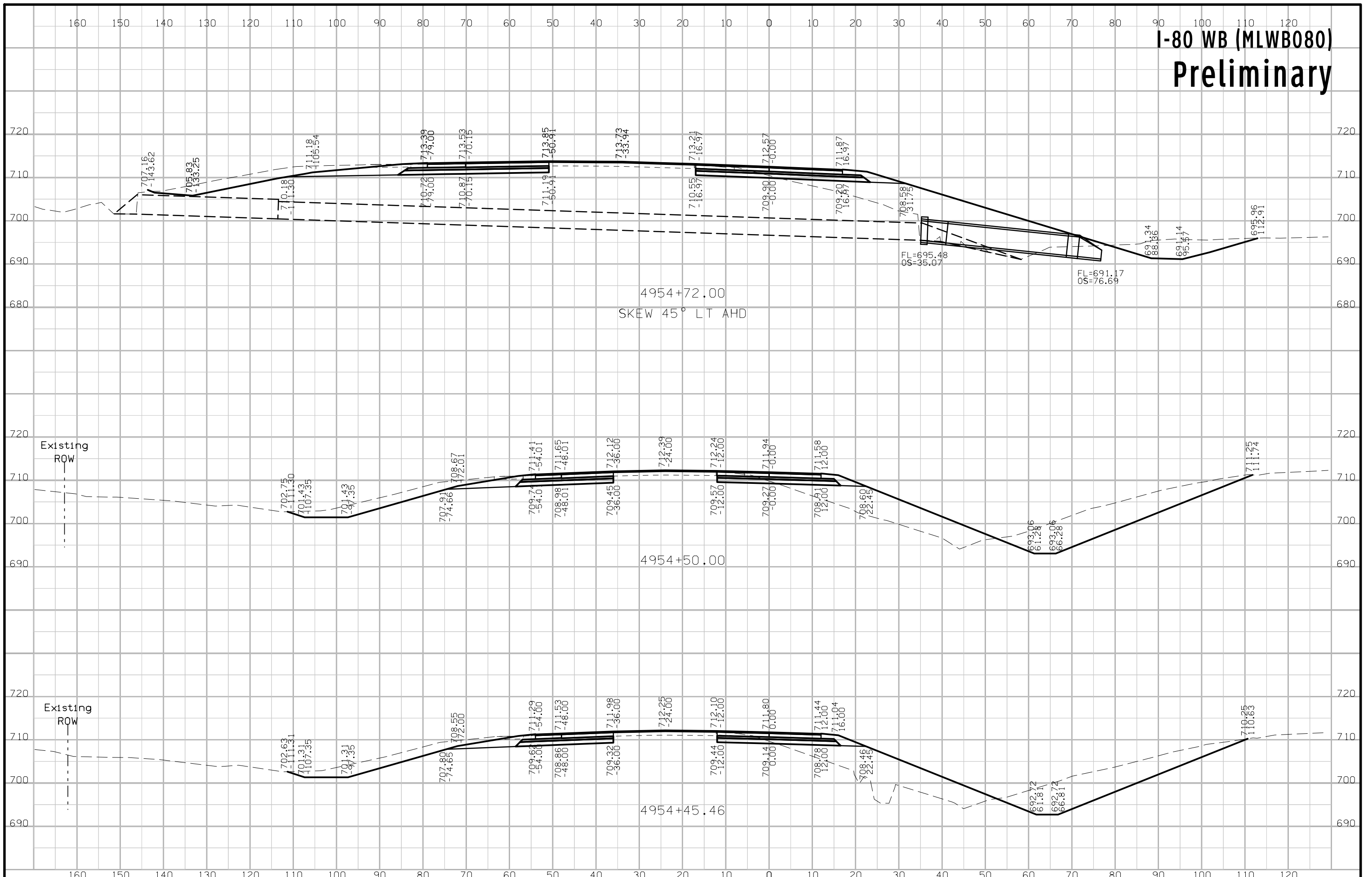
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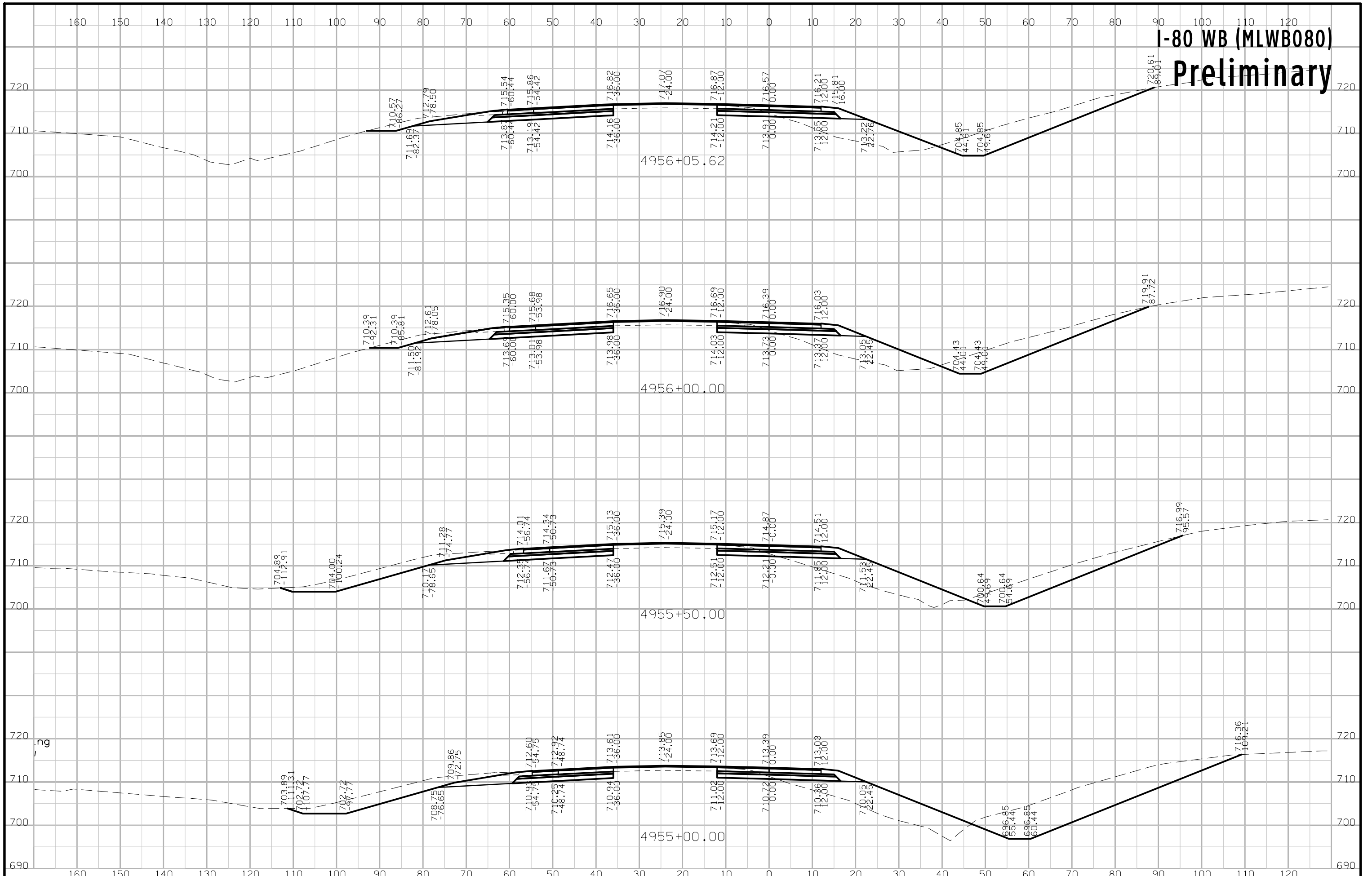
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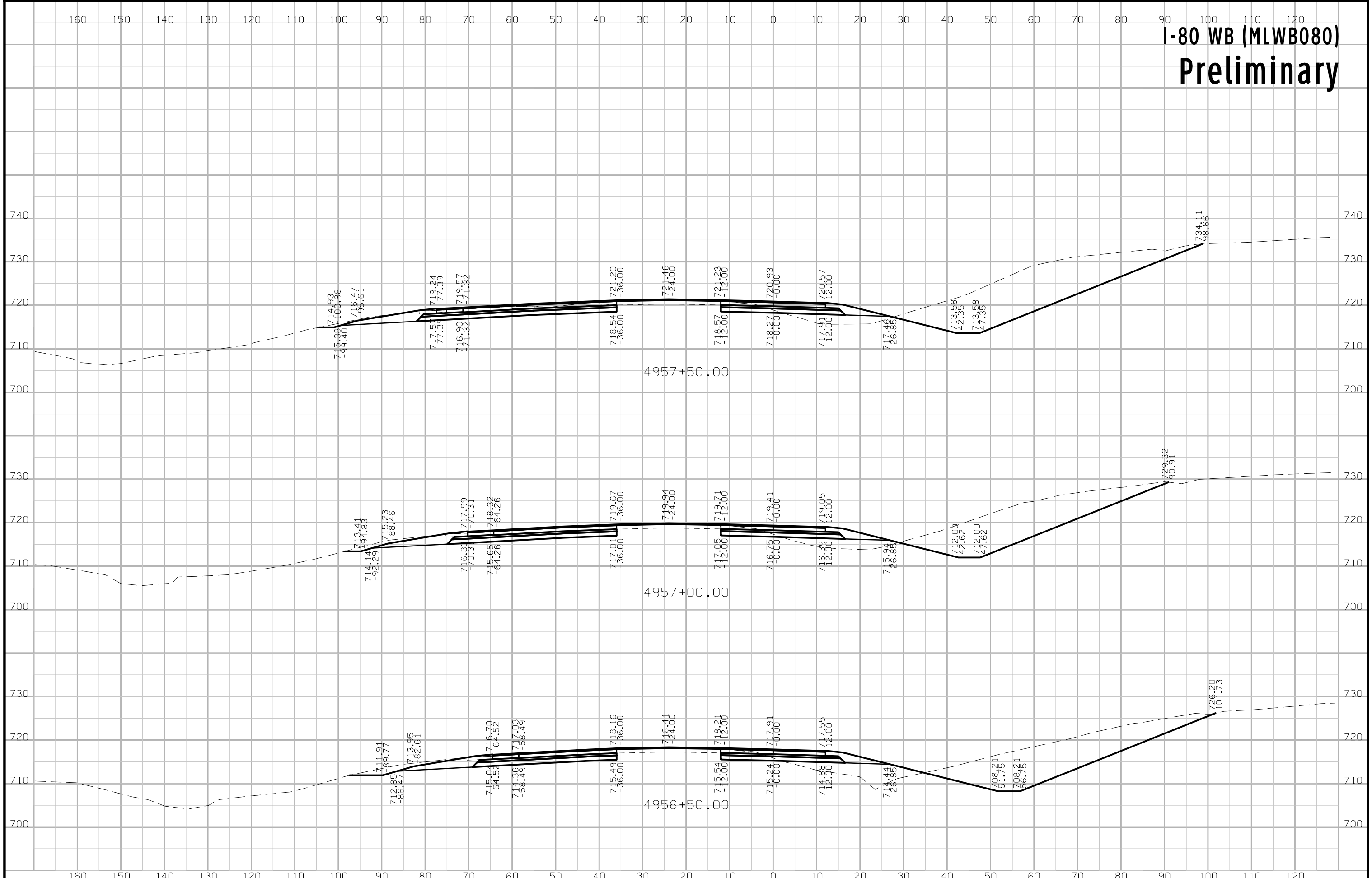
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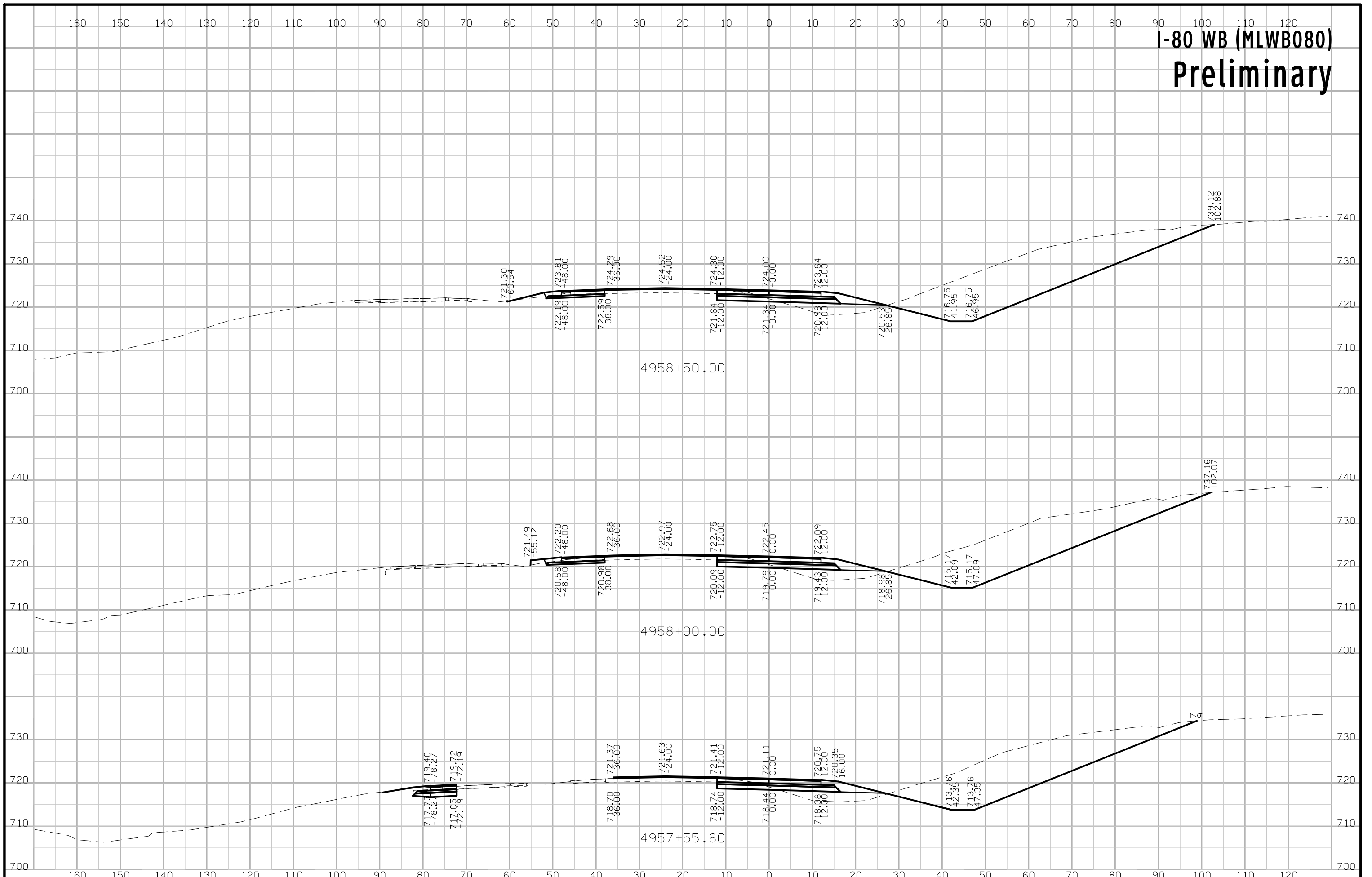
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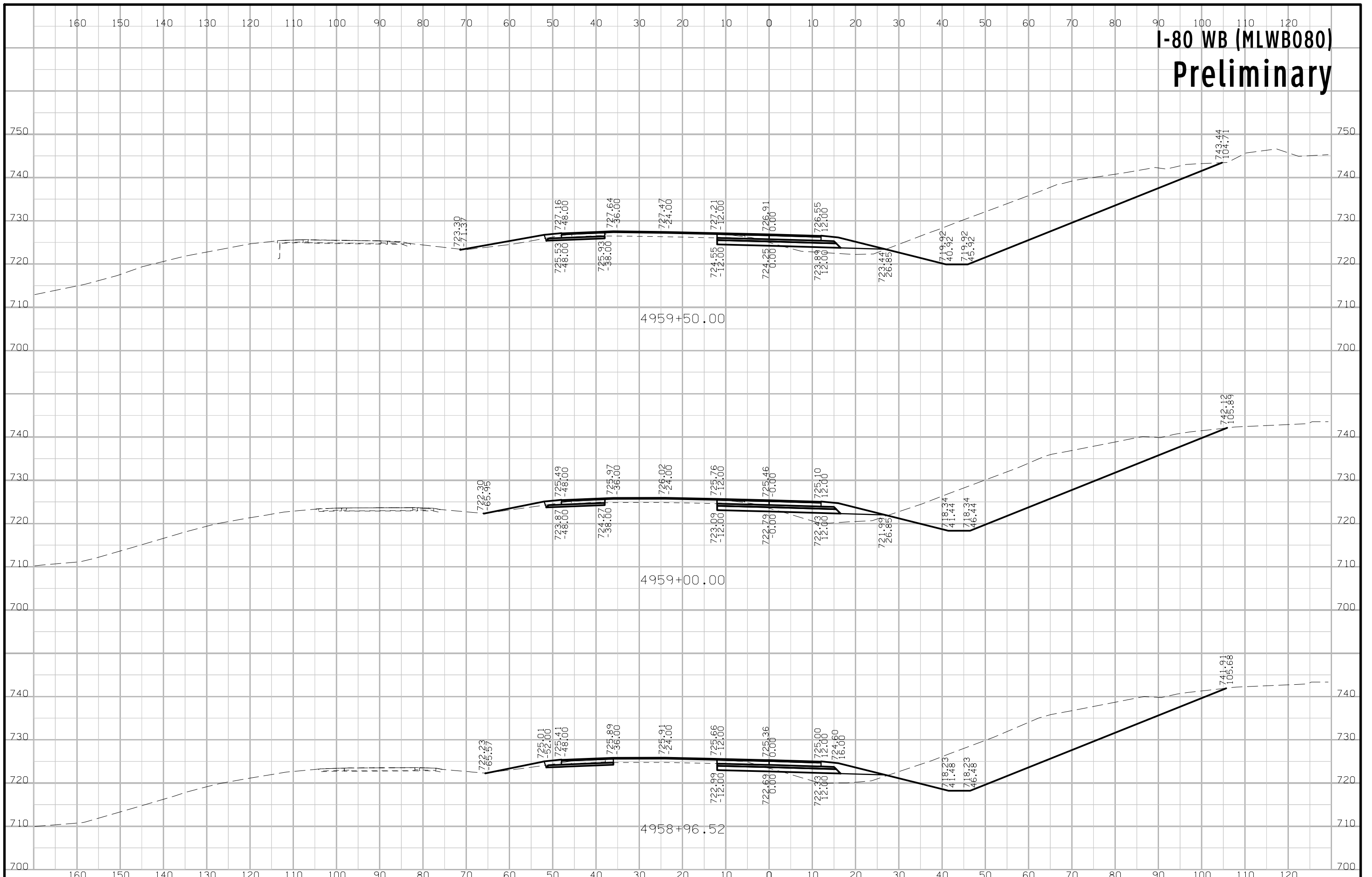
I-80 WB (MLWB080) Preliminary



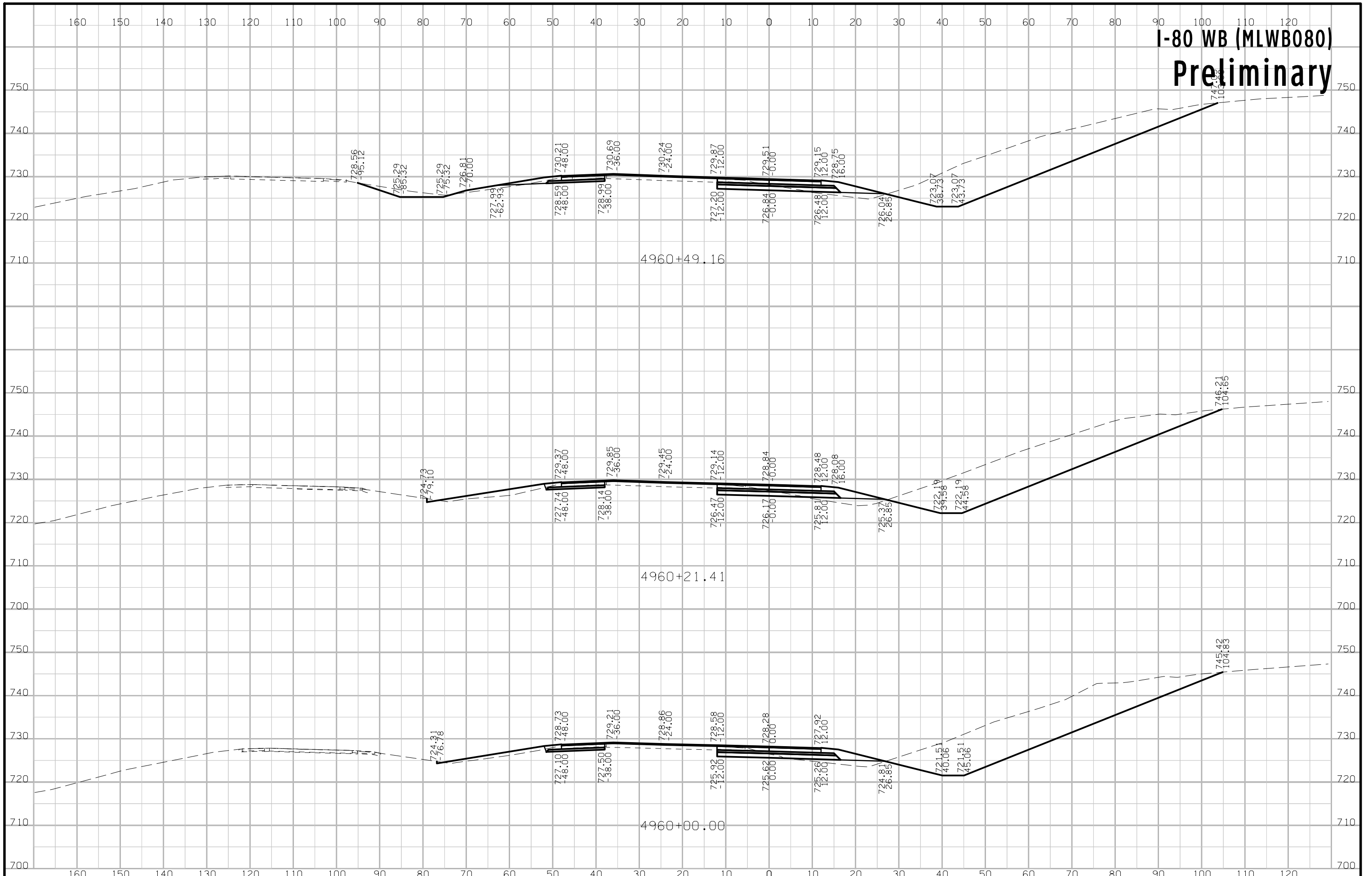
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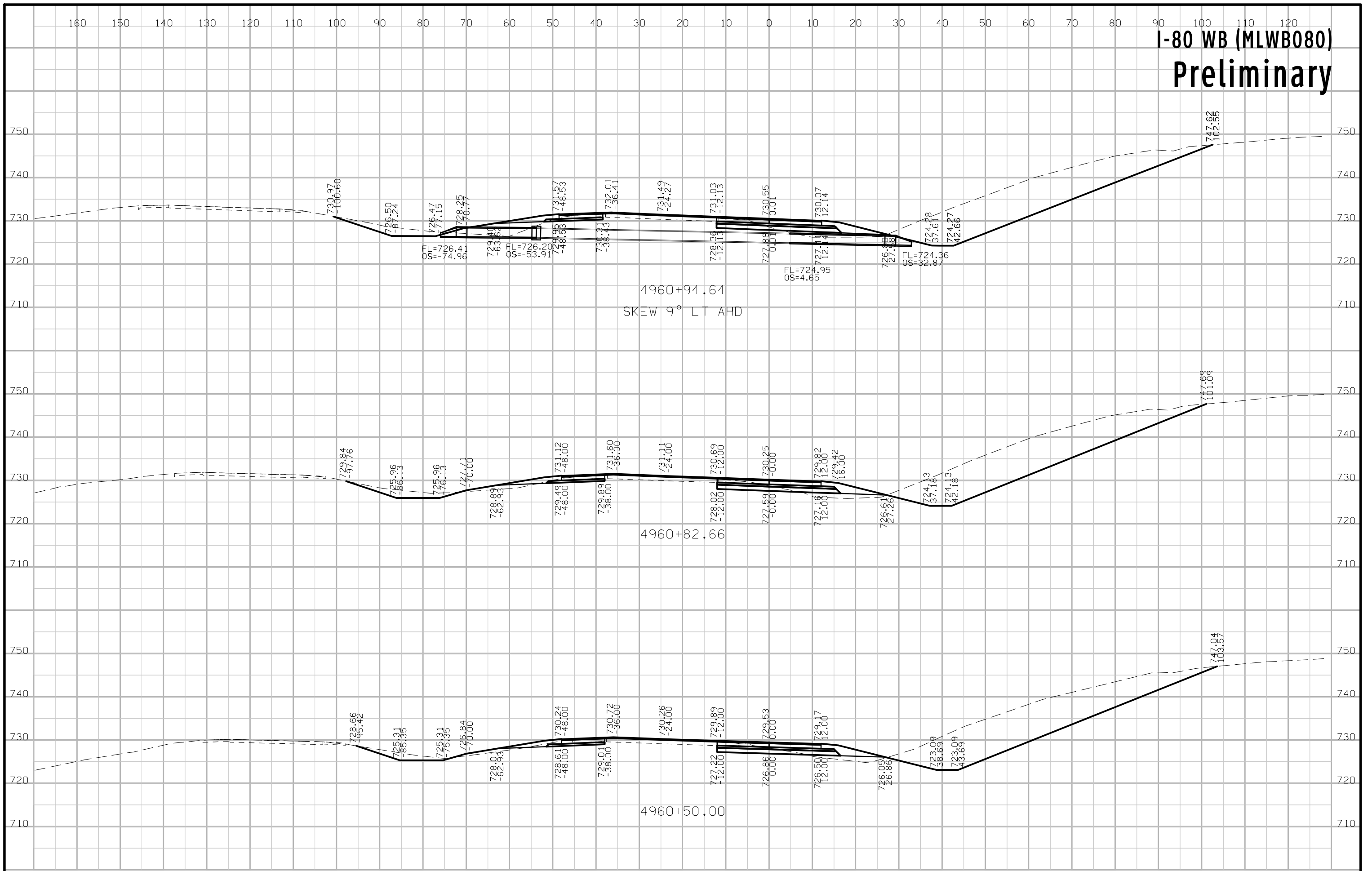
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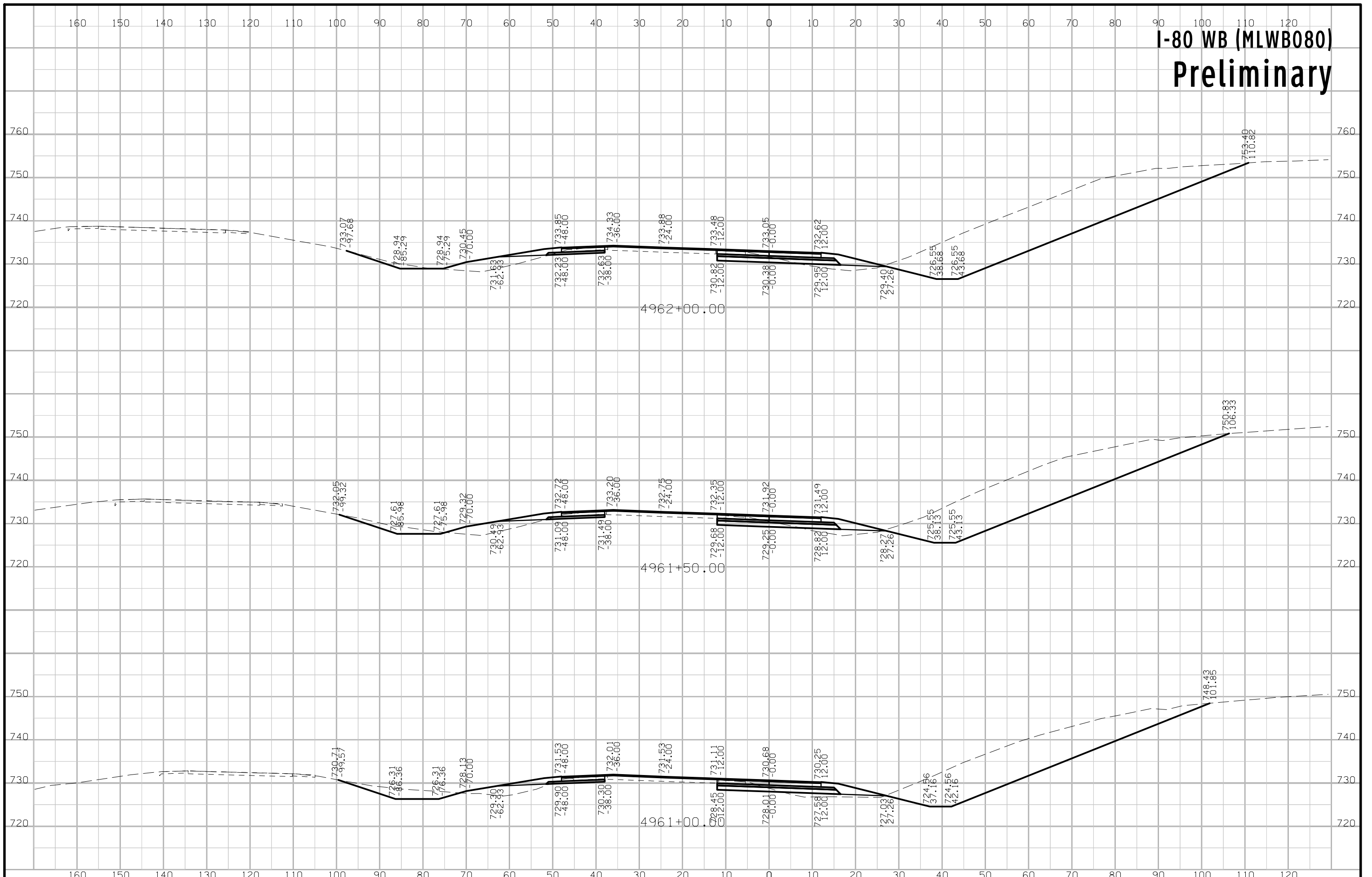
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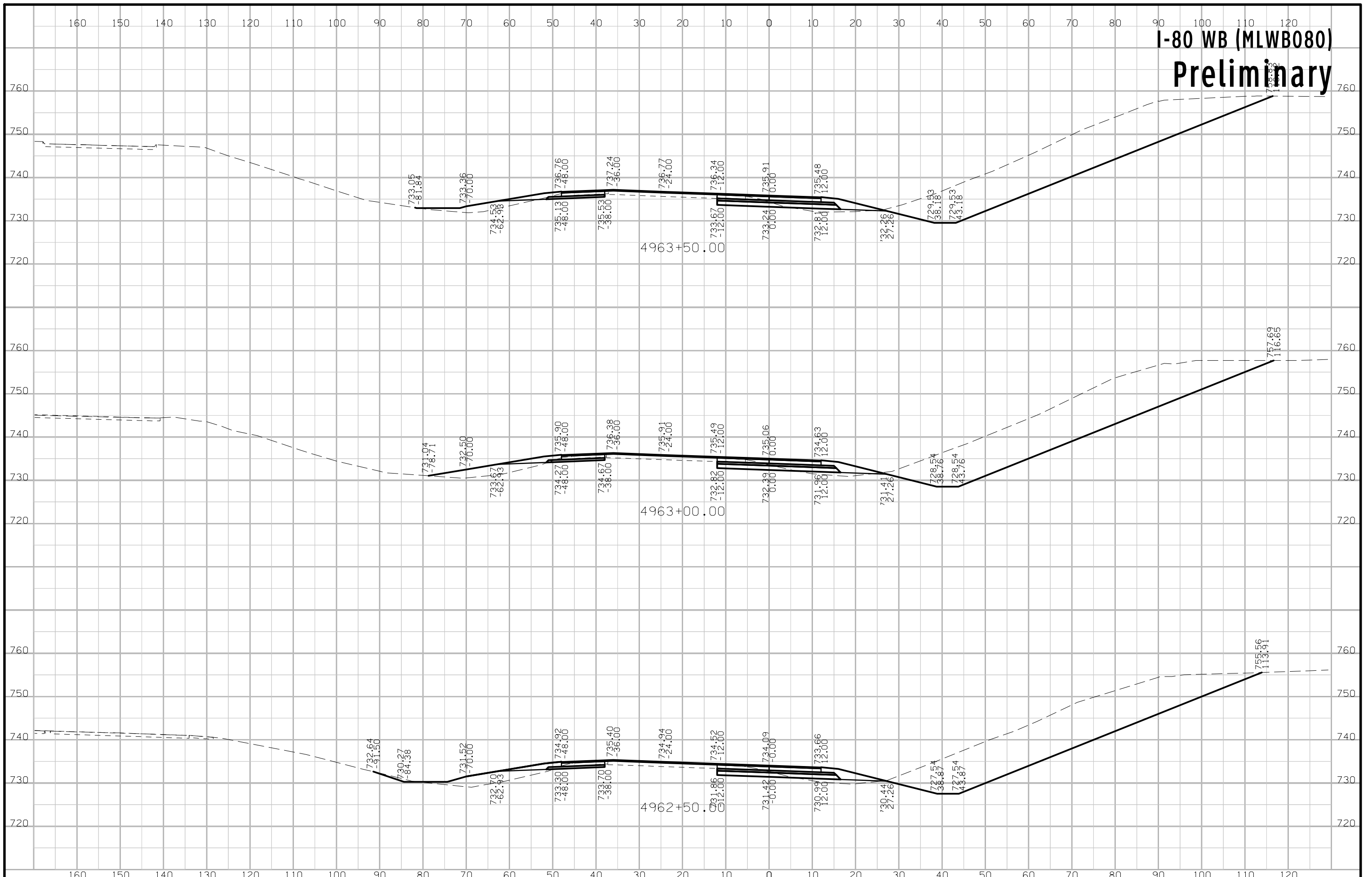
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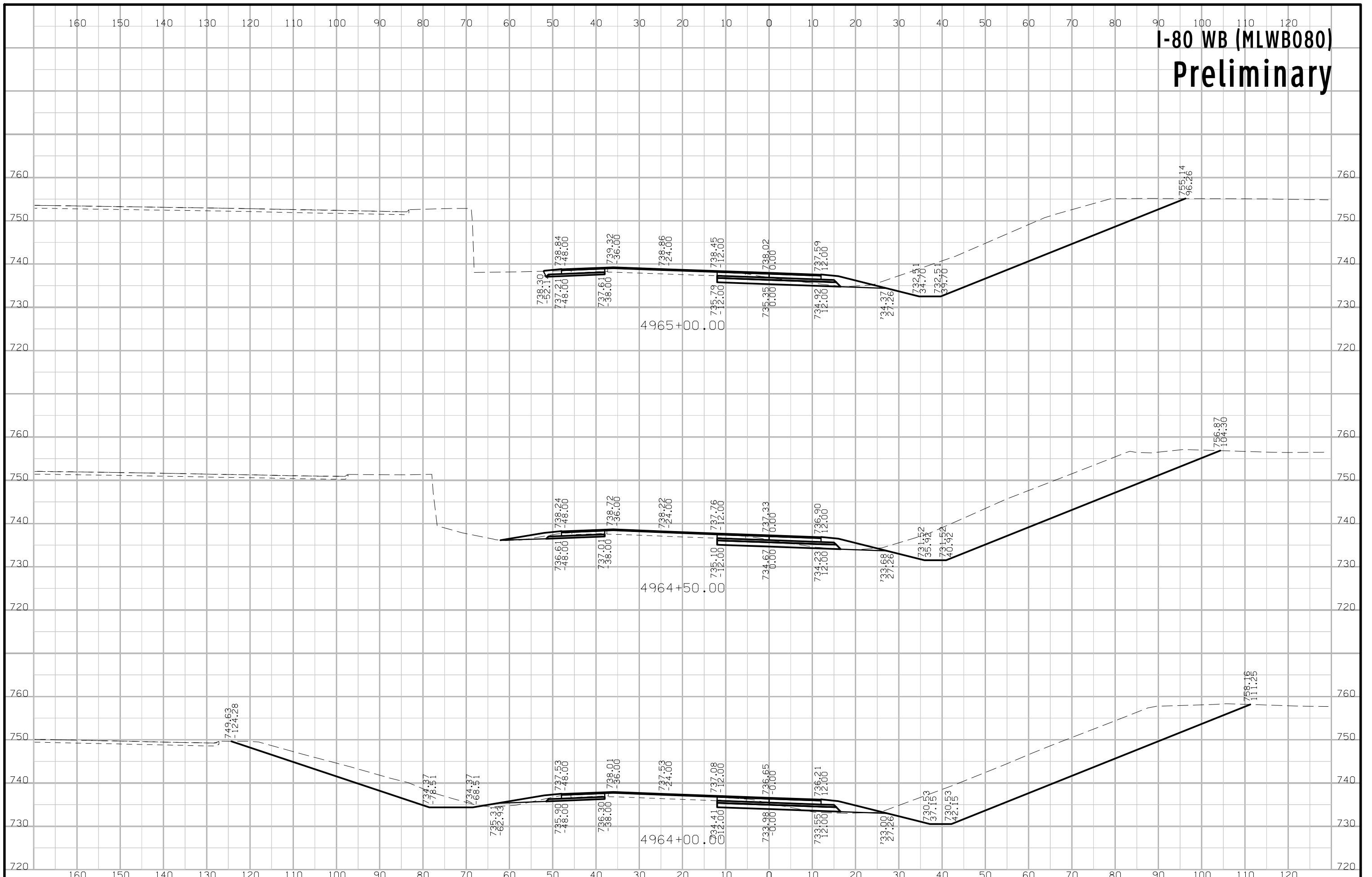
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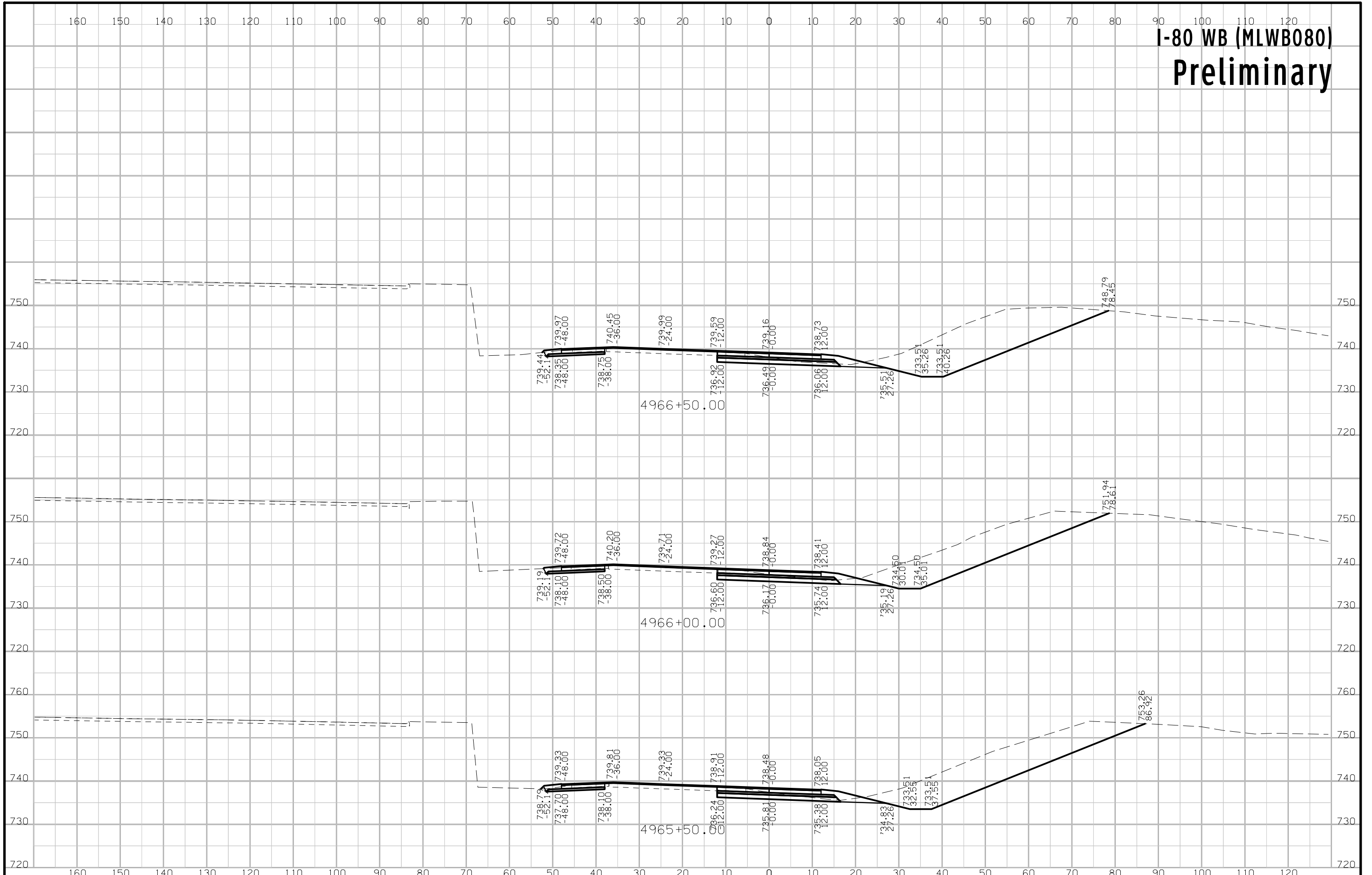
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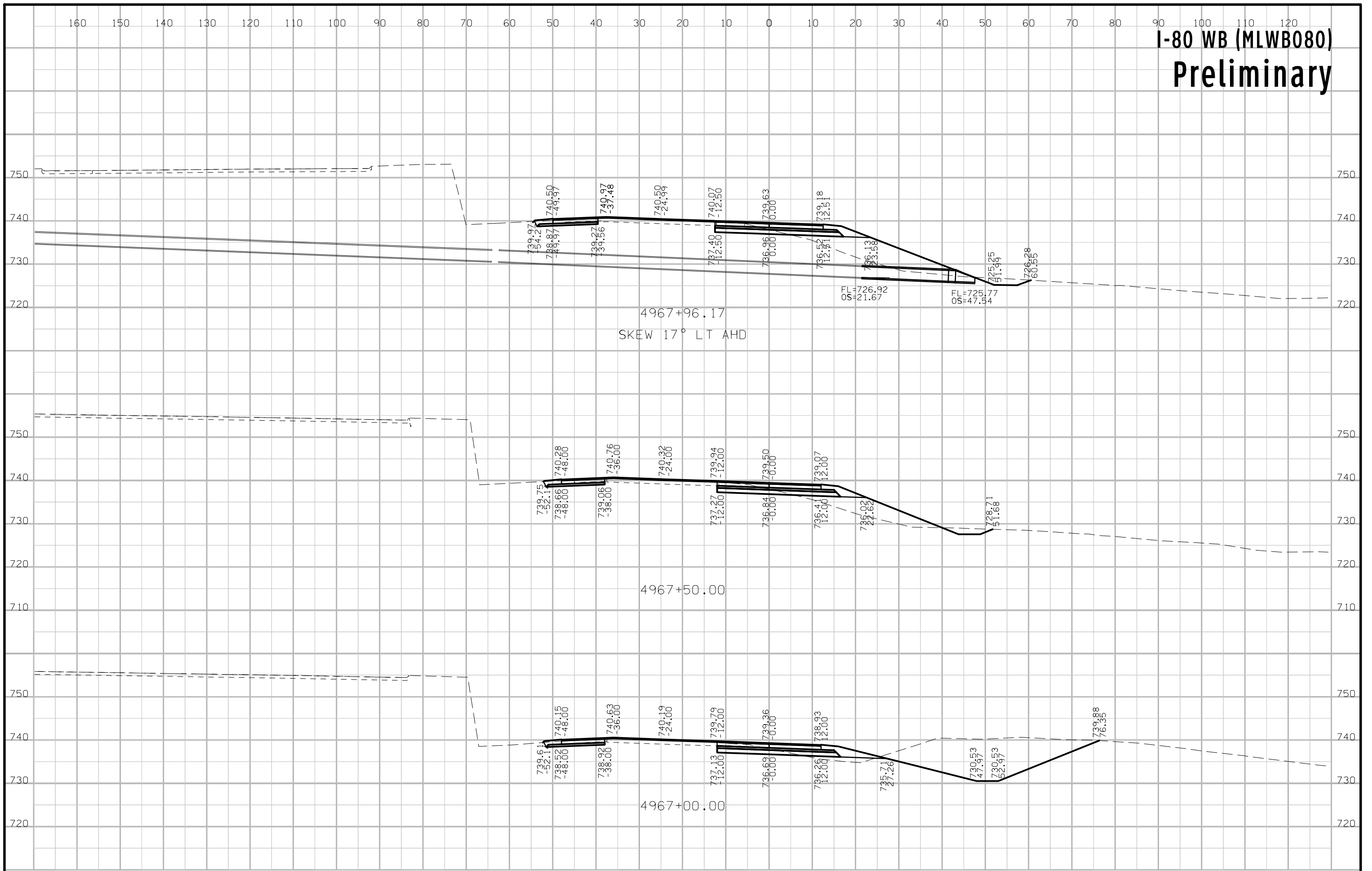
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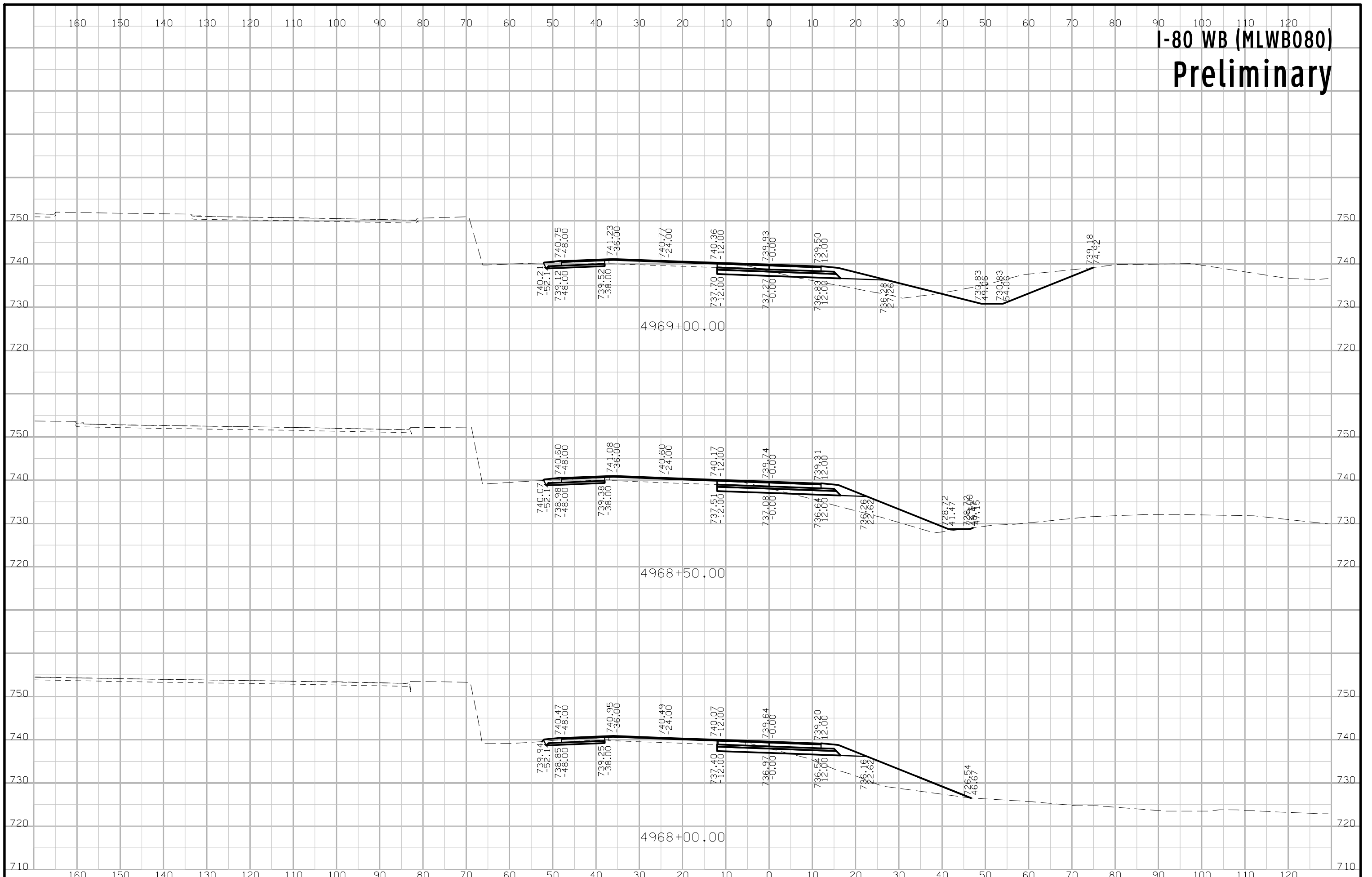
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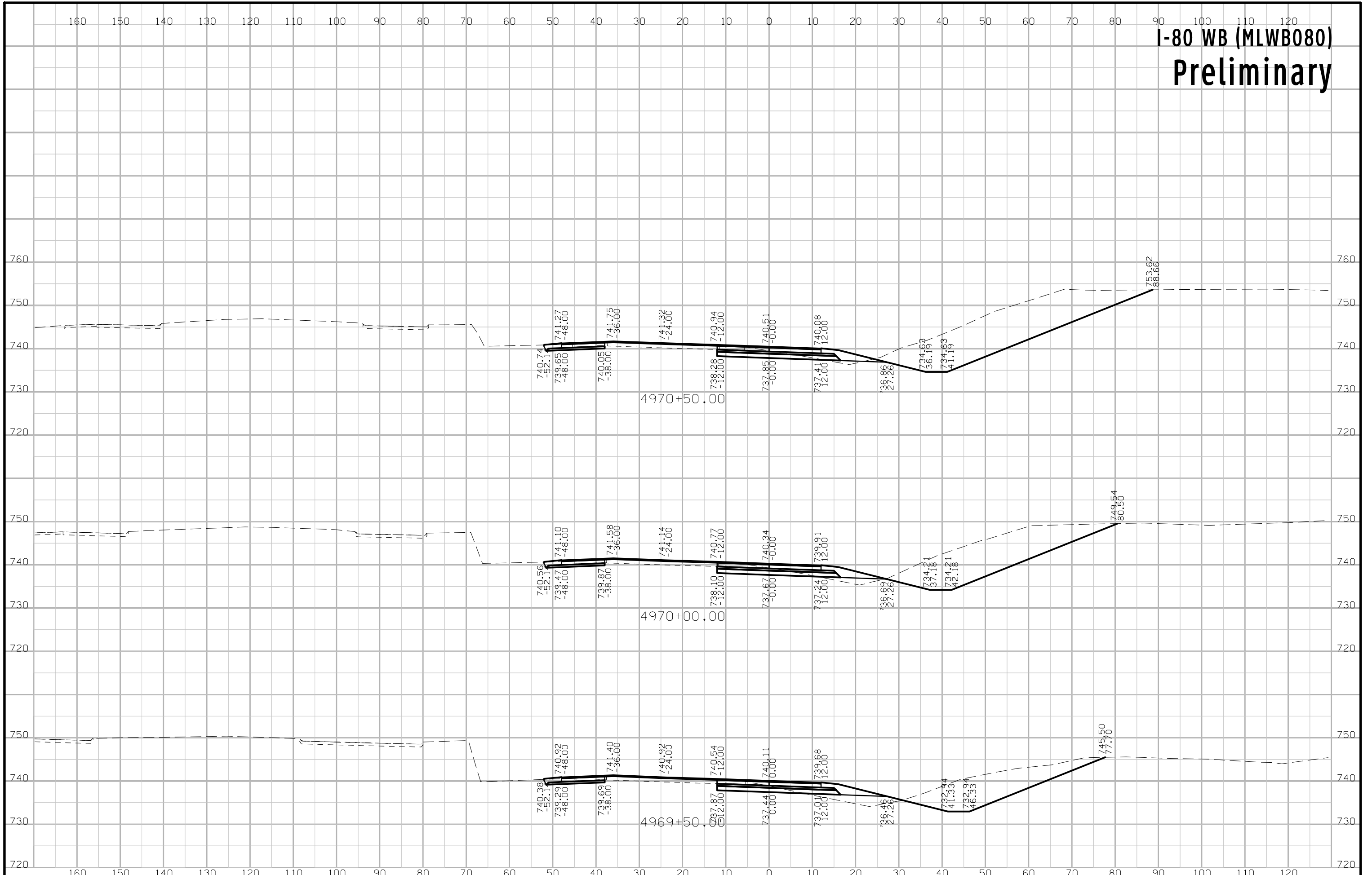
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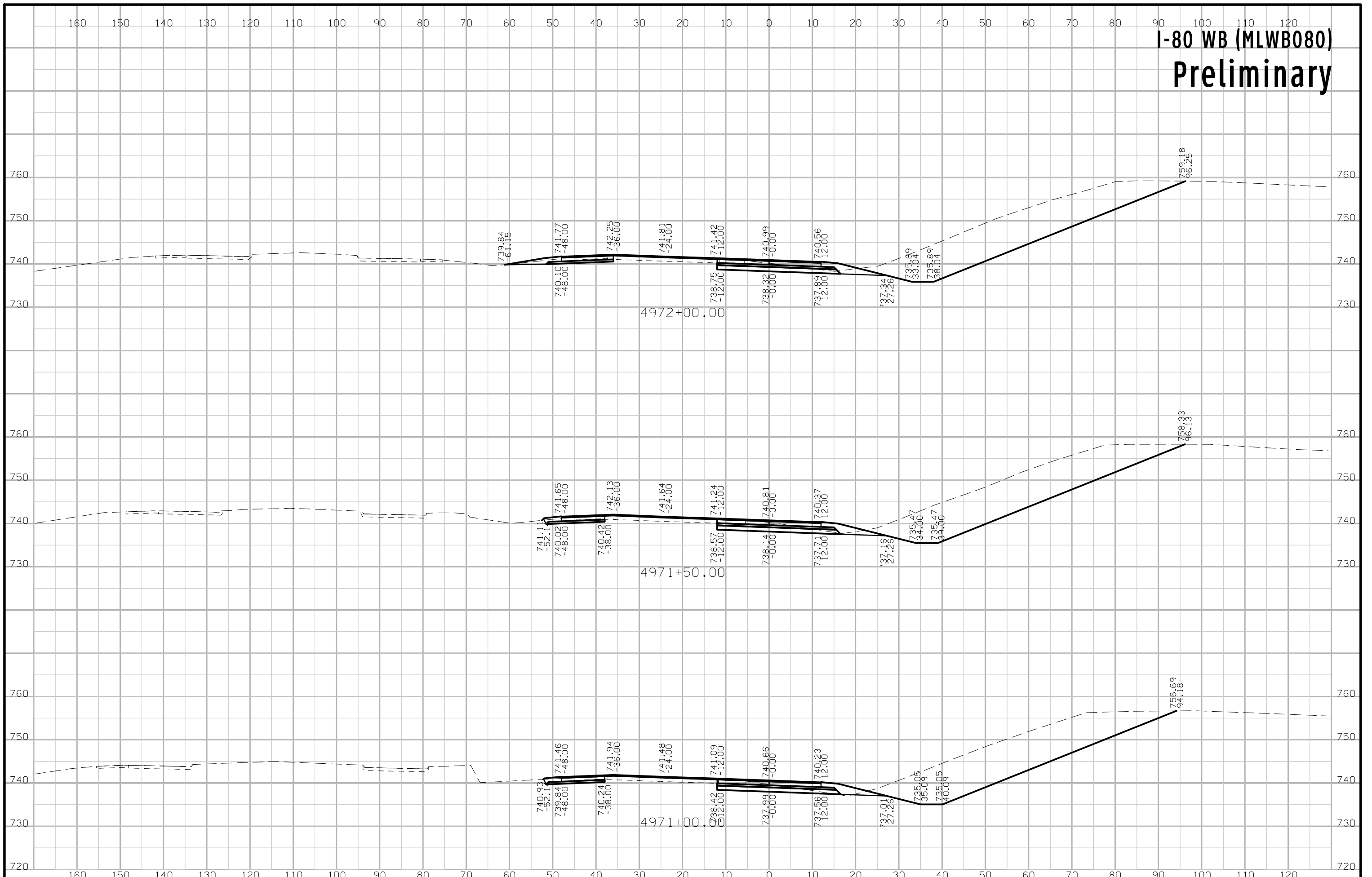
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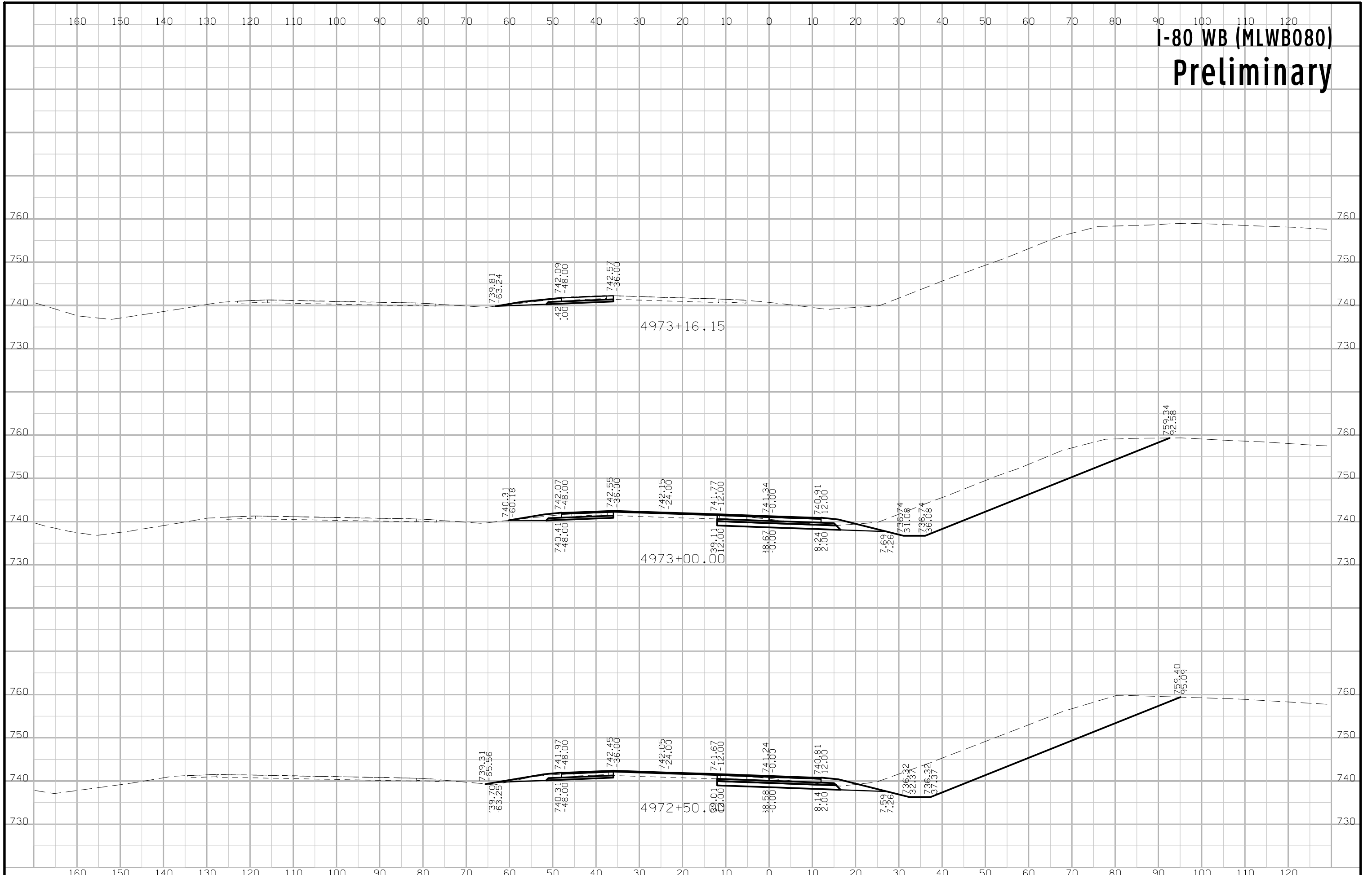
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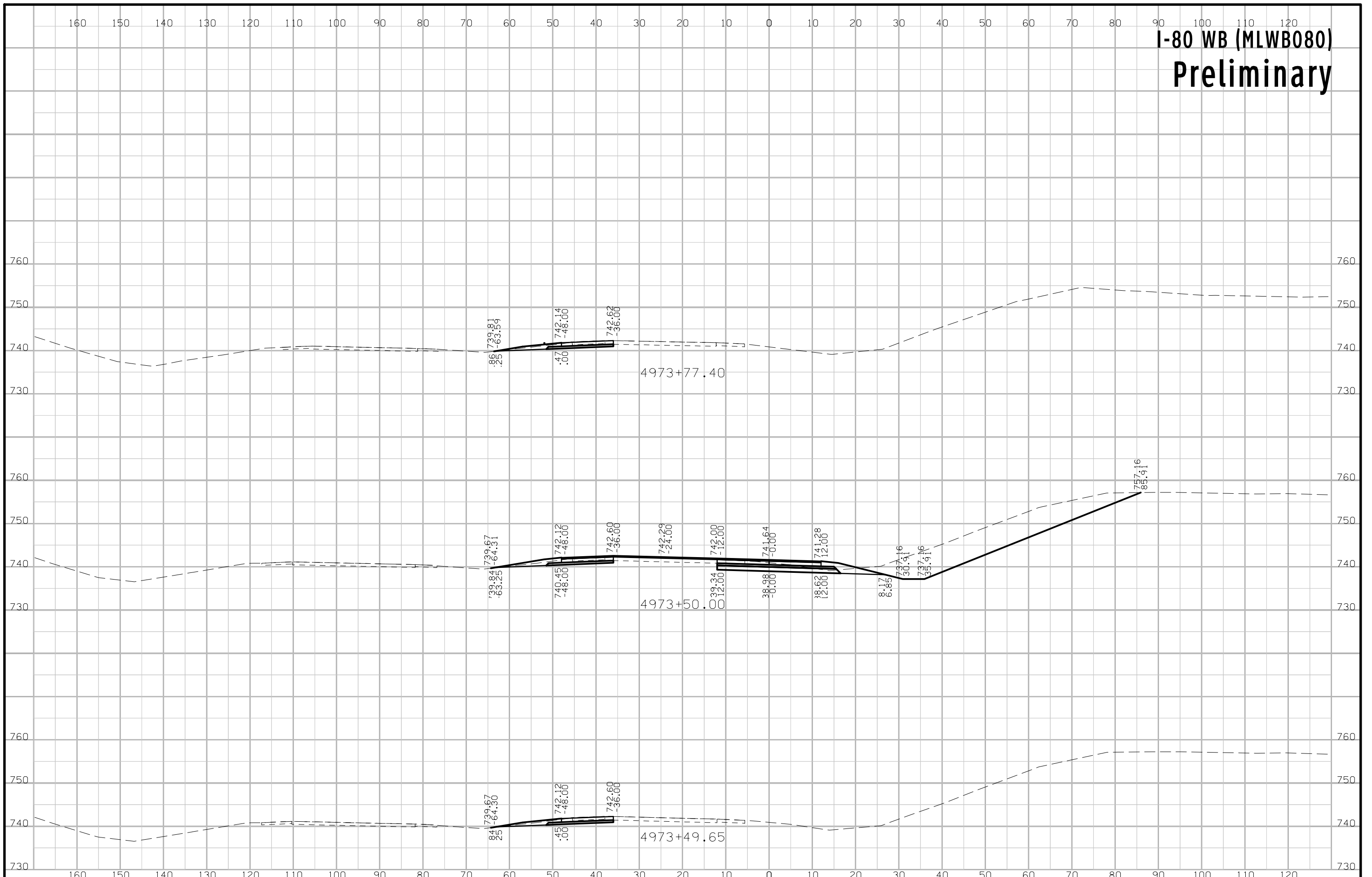
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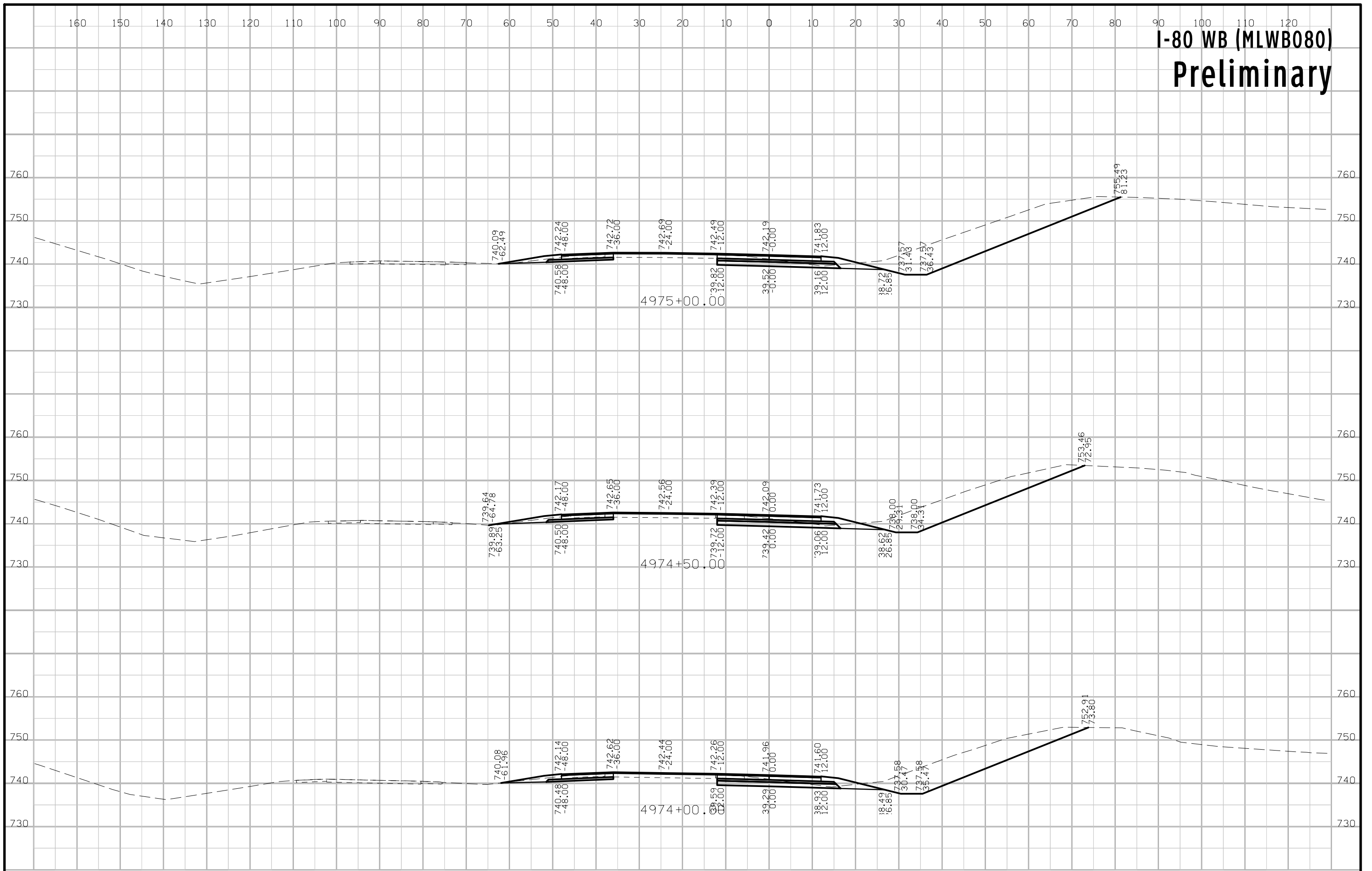
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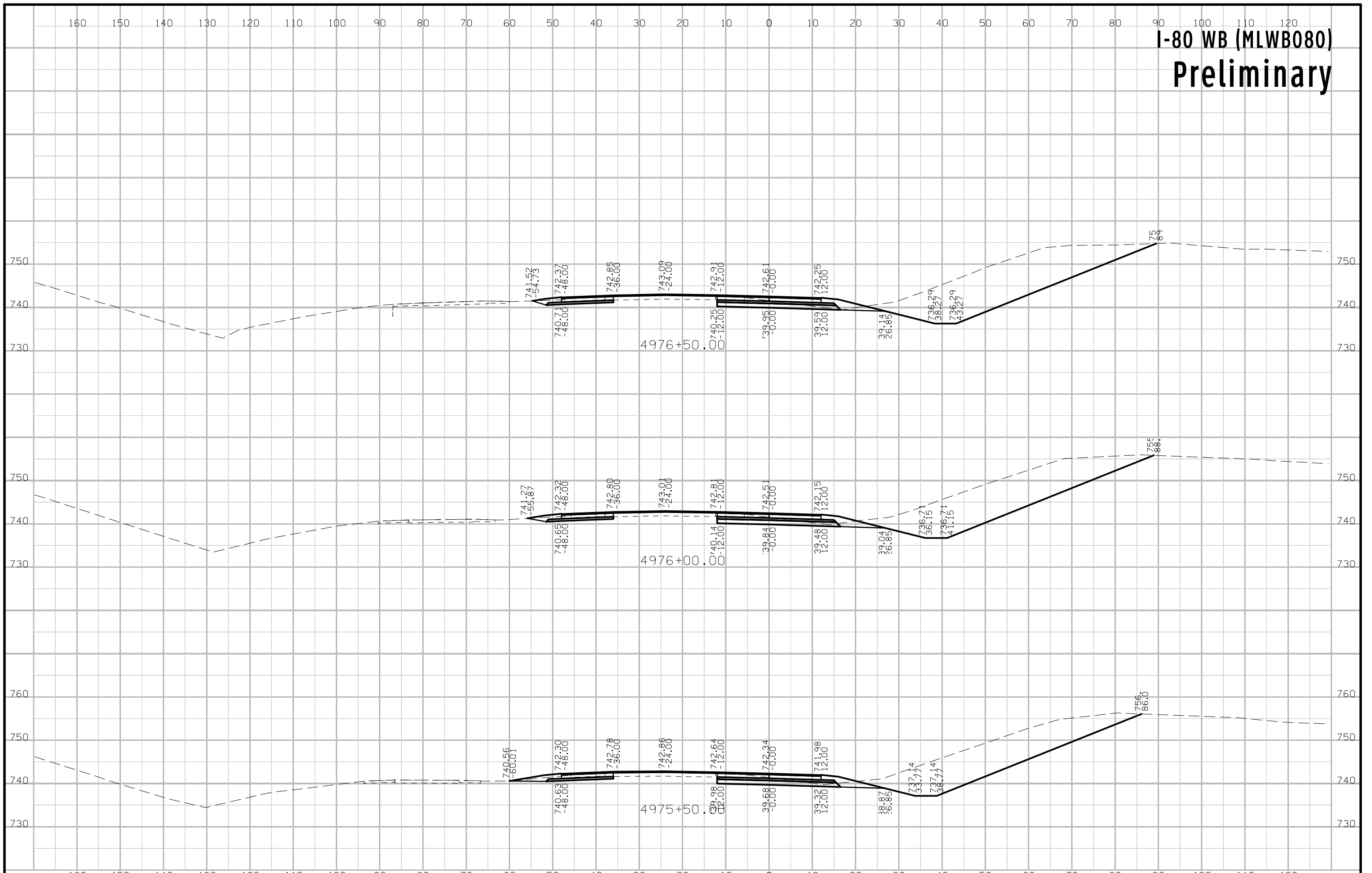
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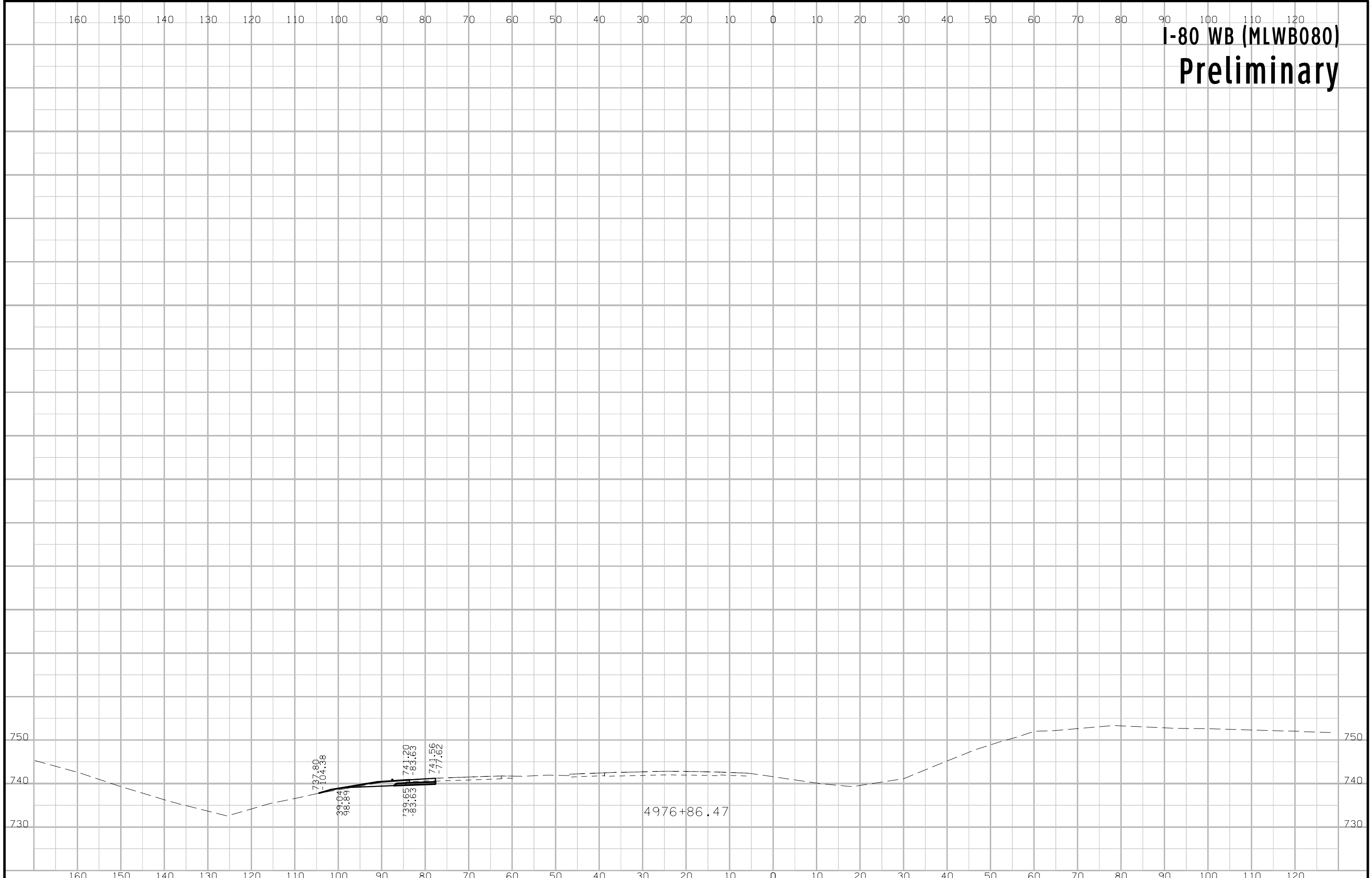
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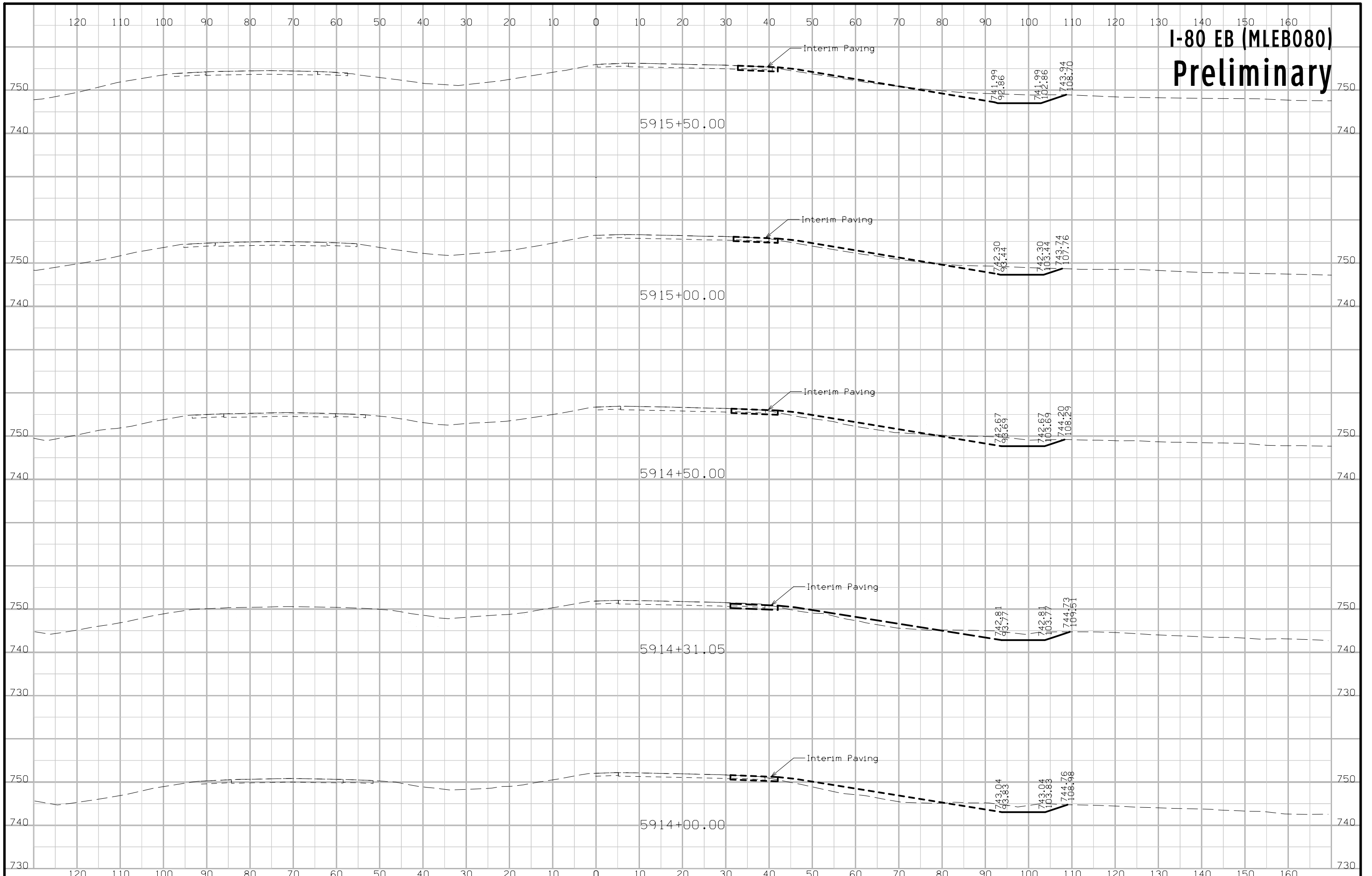
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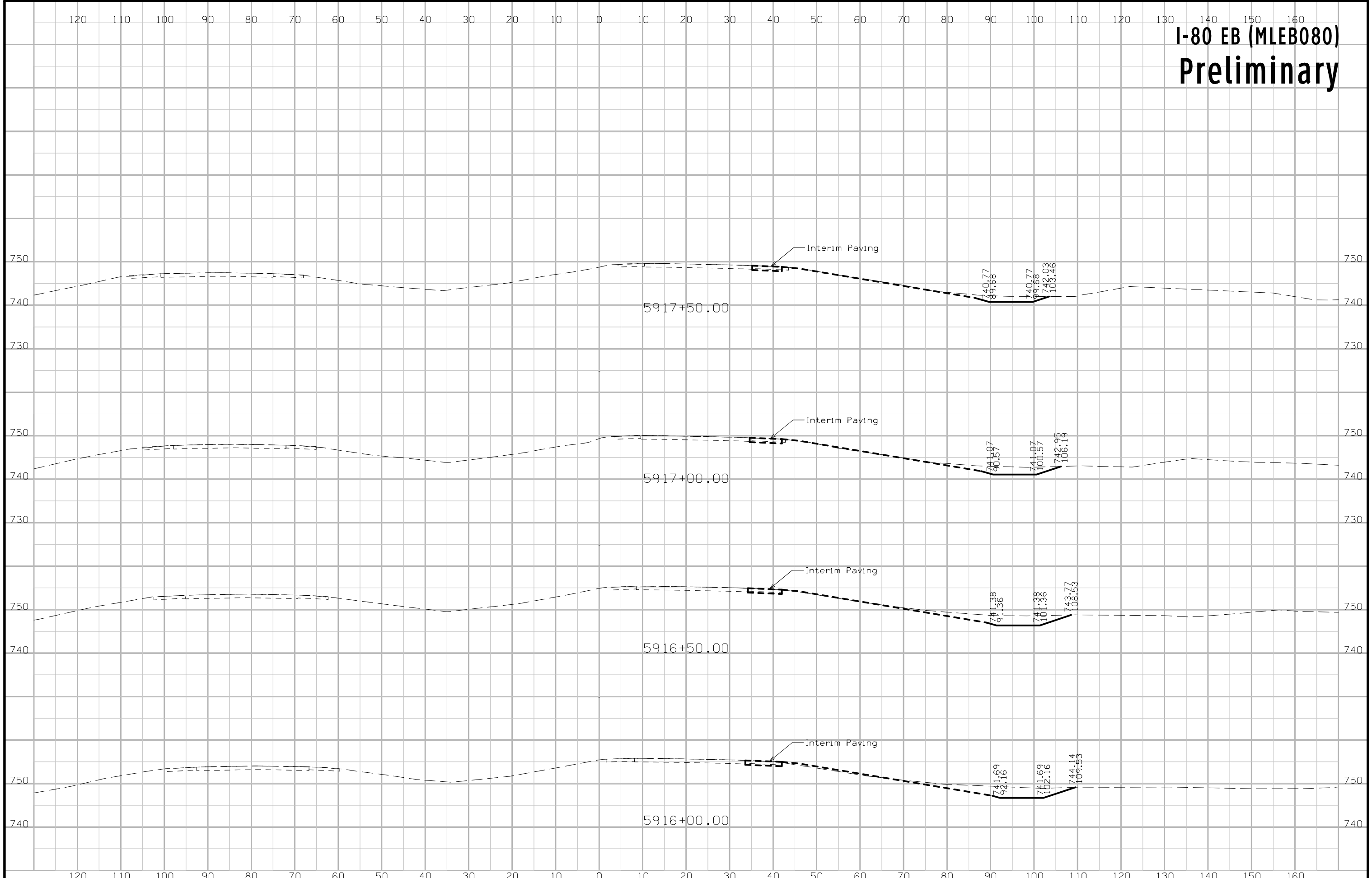
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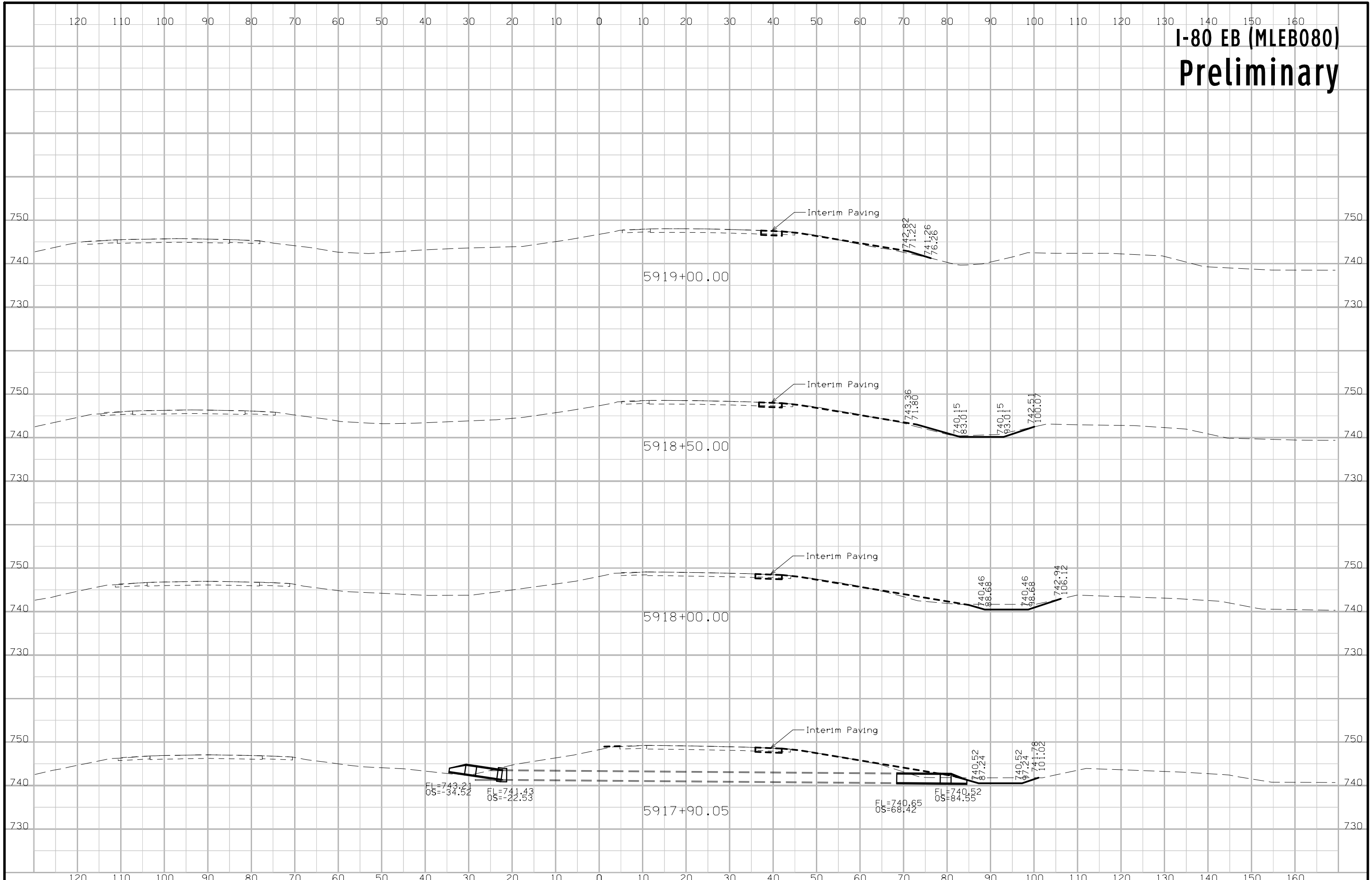
I-80 EB (MLEB080) Preliminary



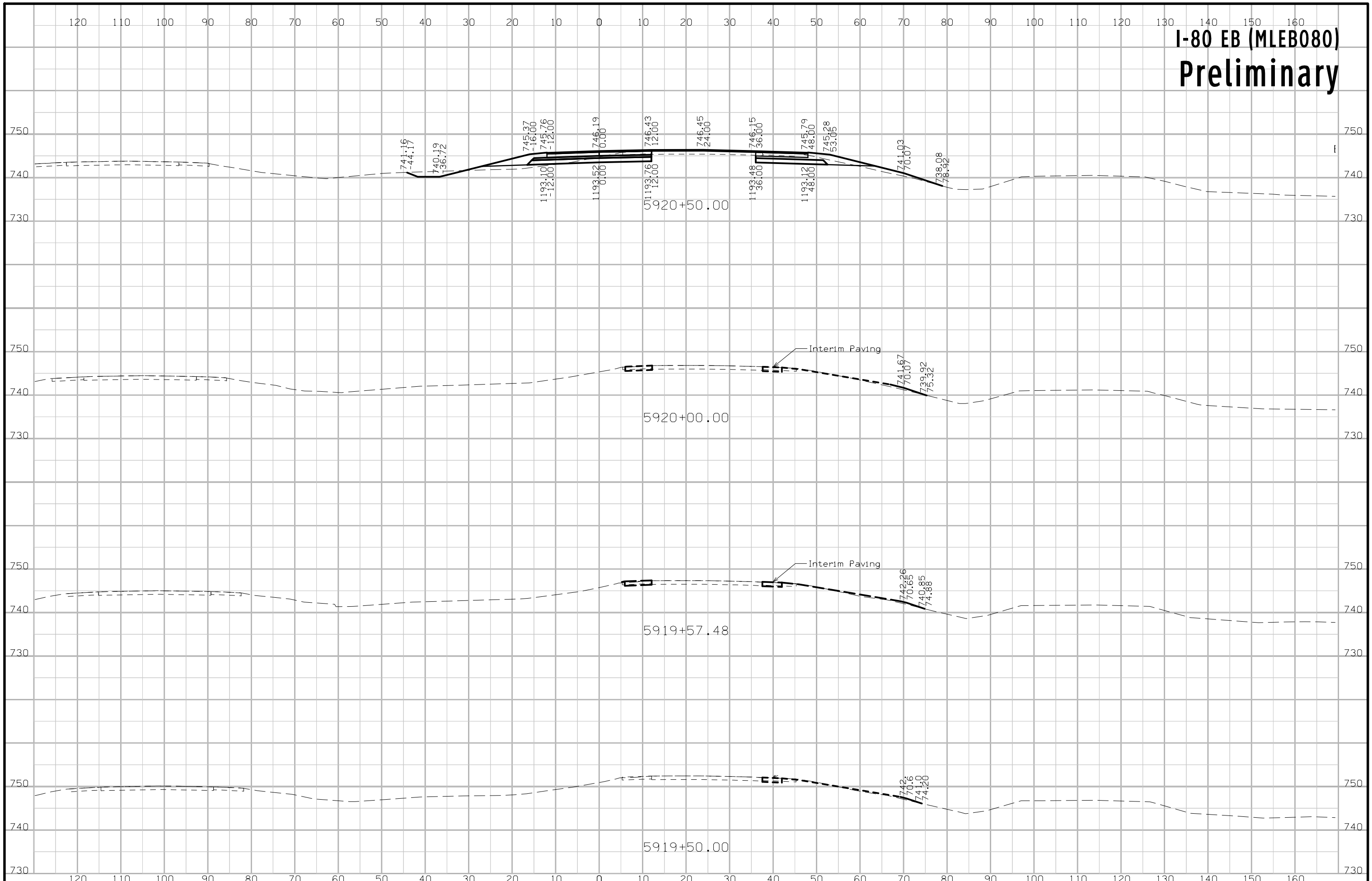
I-80 EB (MLEB080) Preliminary



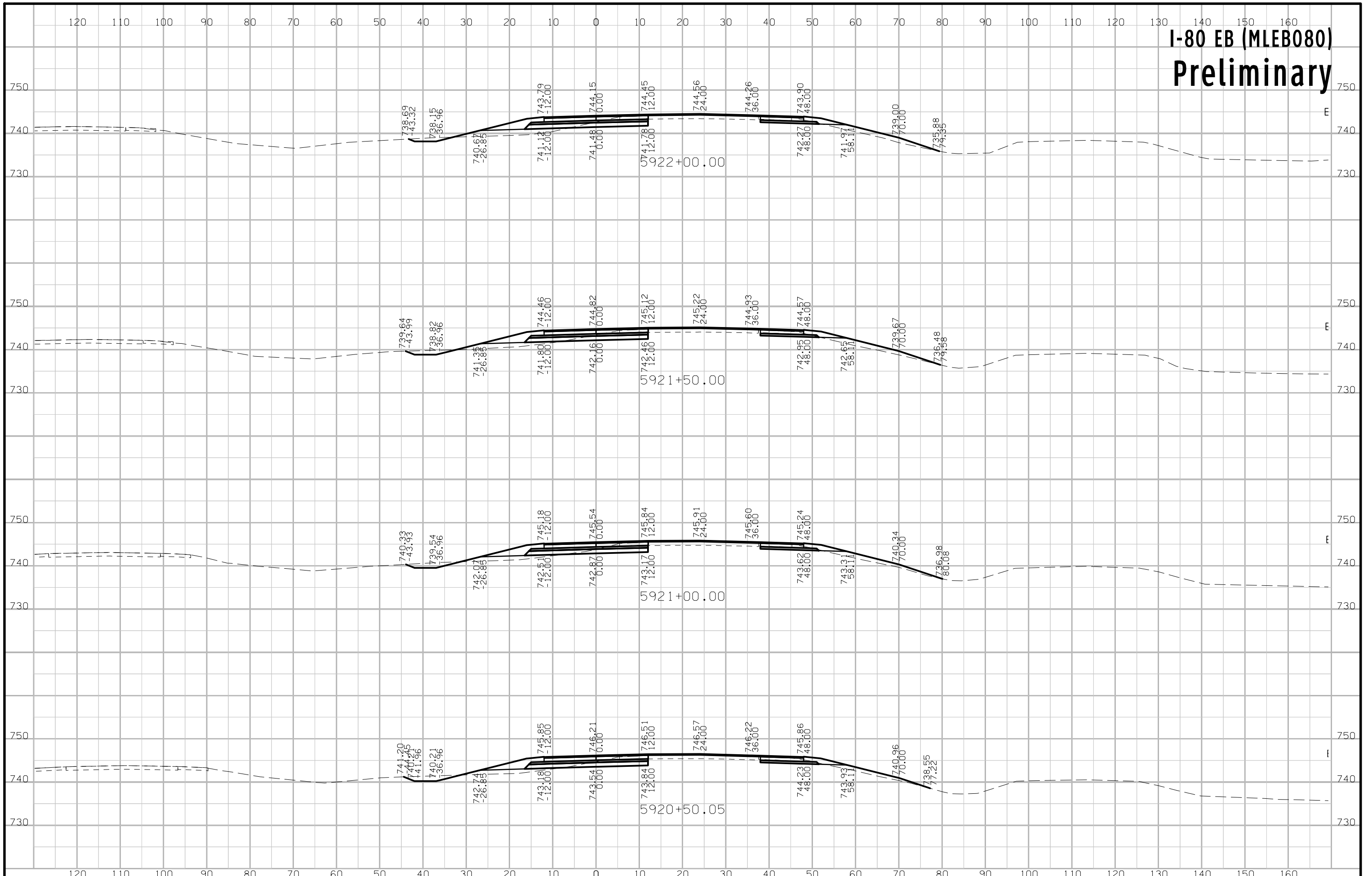
I-80 EB (MLEB080) Preliminary



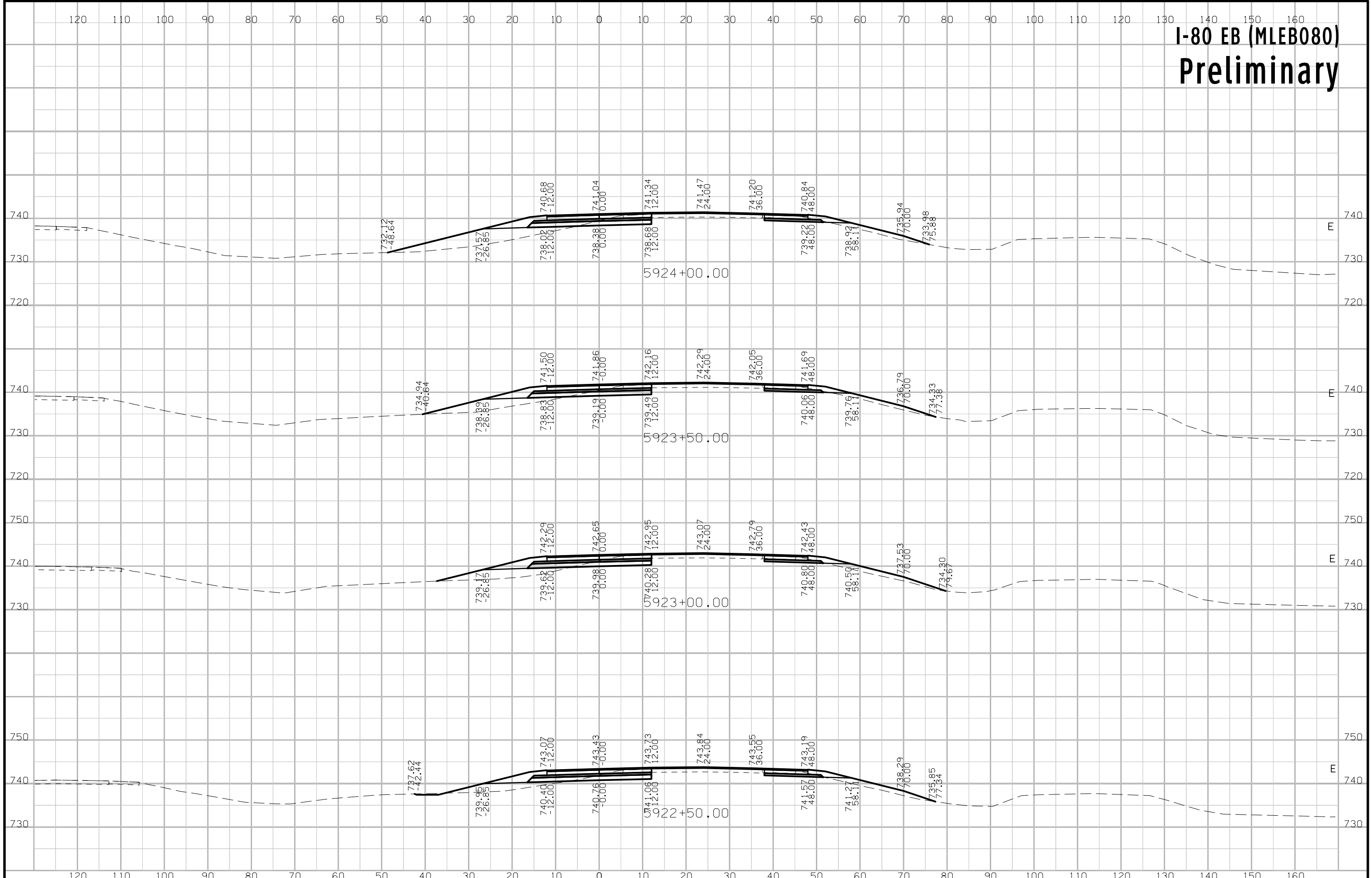
I-80 EB (MLEB080) Preliminary



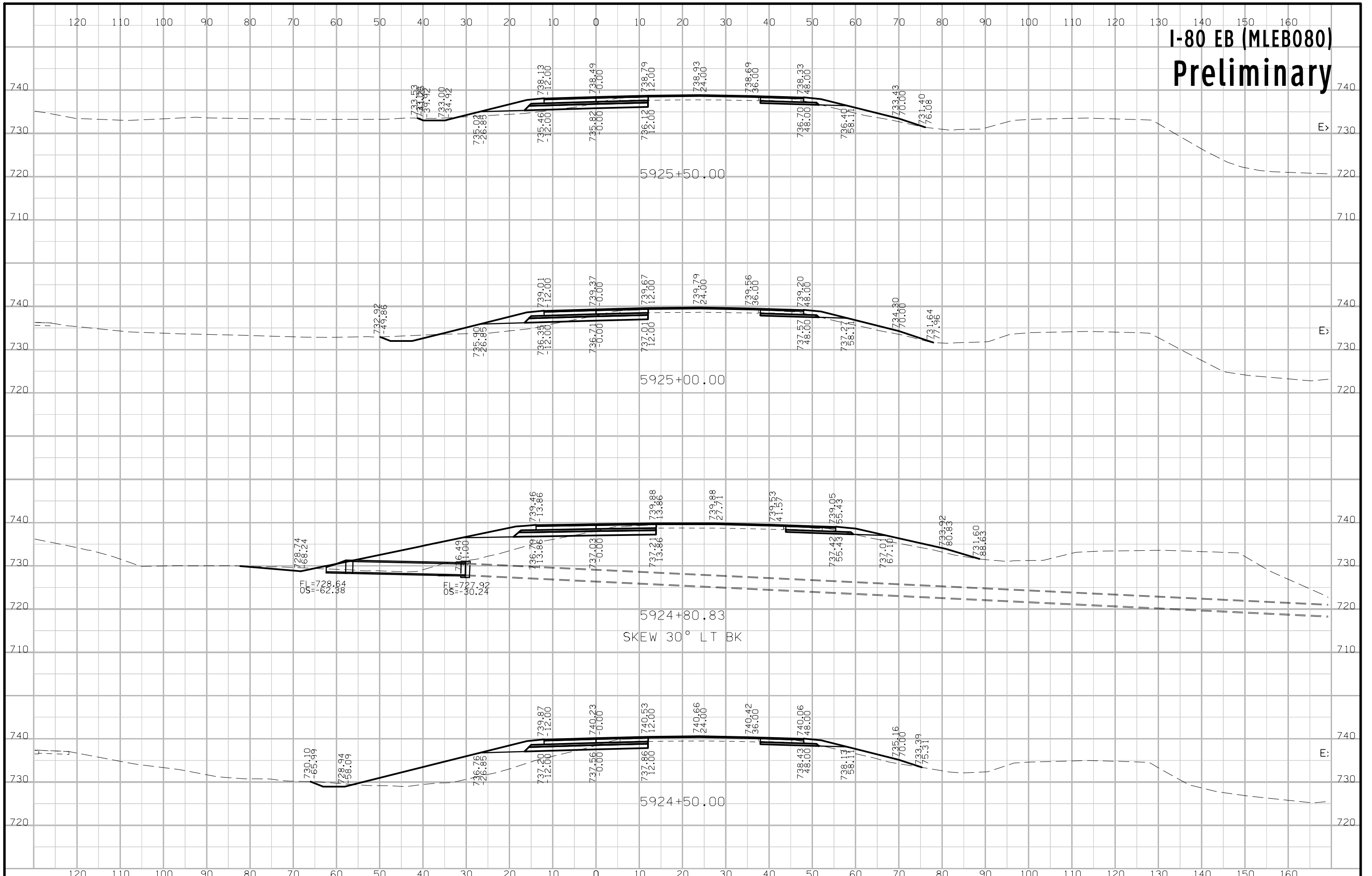
I-80 EB (MLEB080) Preliminary



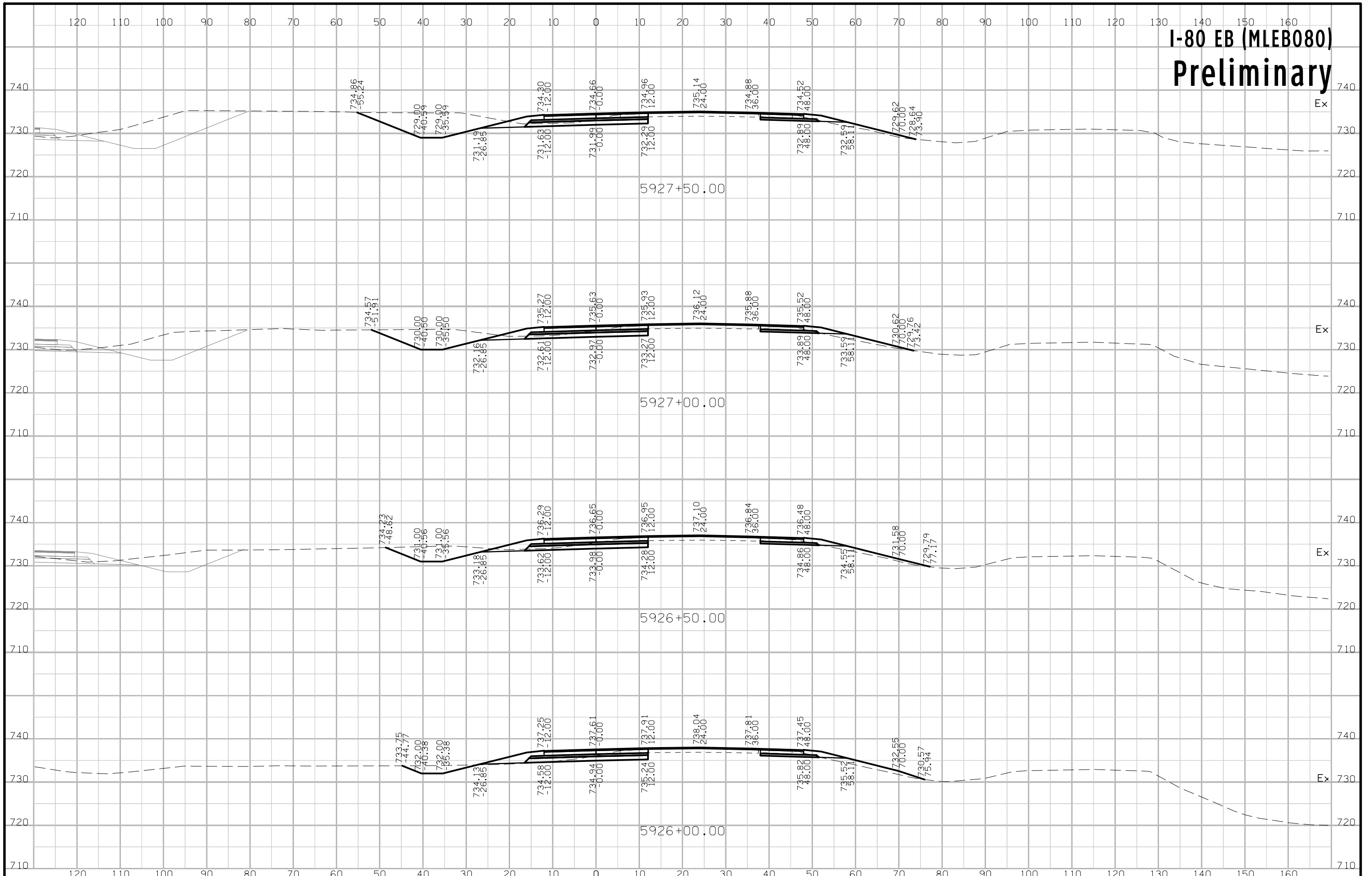
I-80 EB (MLEB080) Preliminary



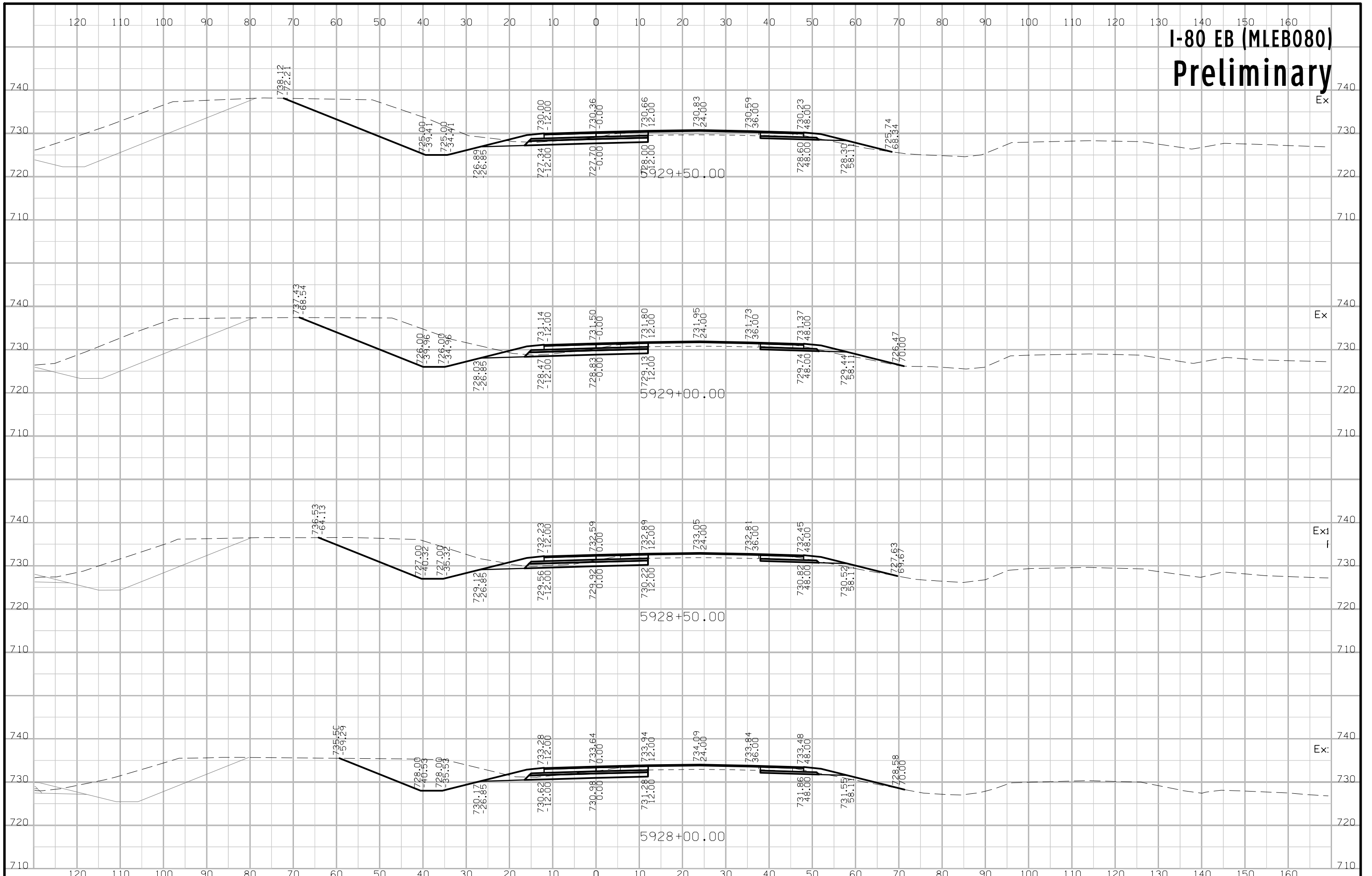
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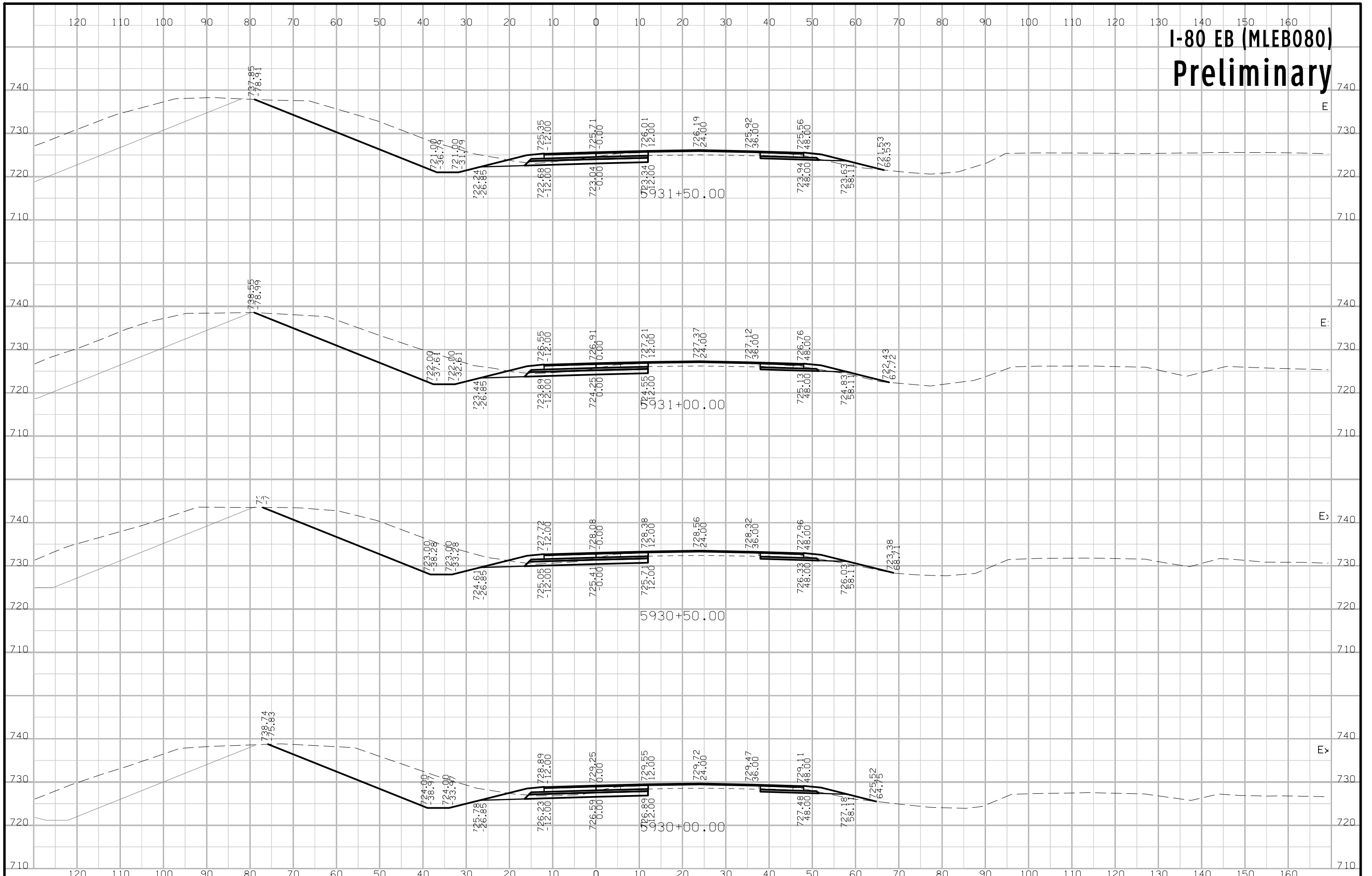
I-80 EB (MLEB080) Preliminary



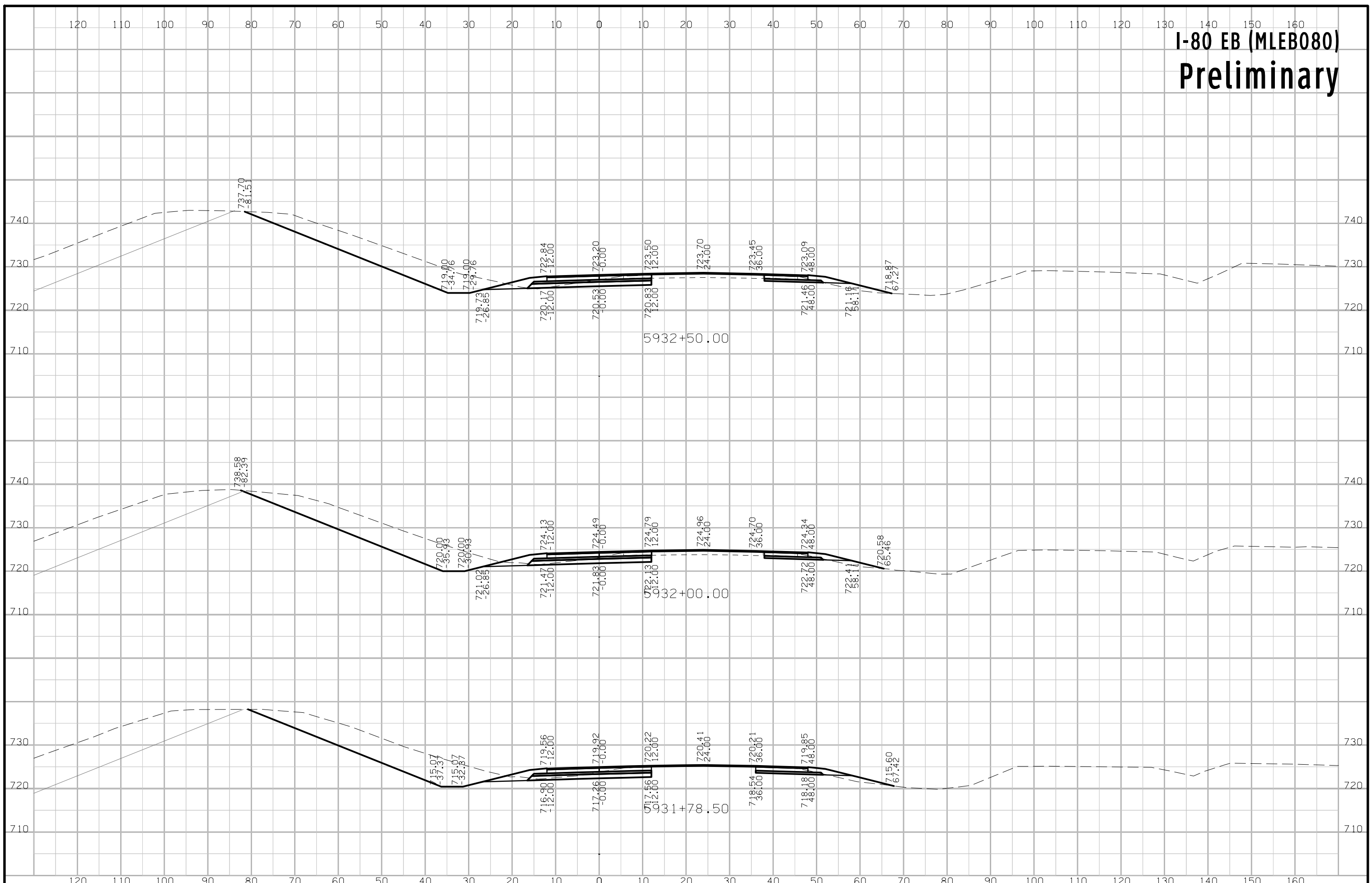
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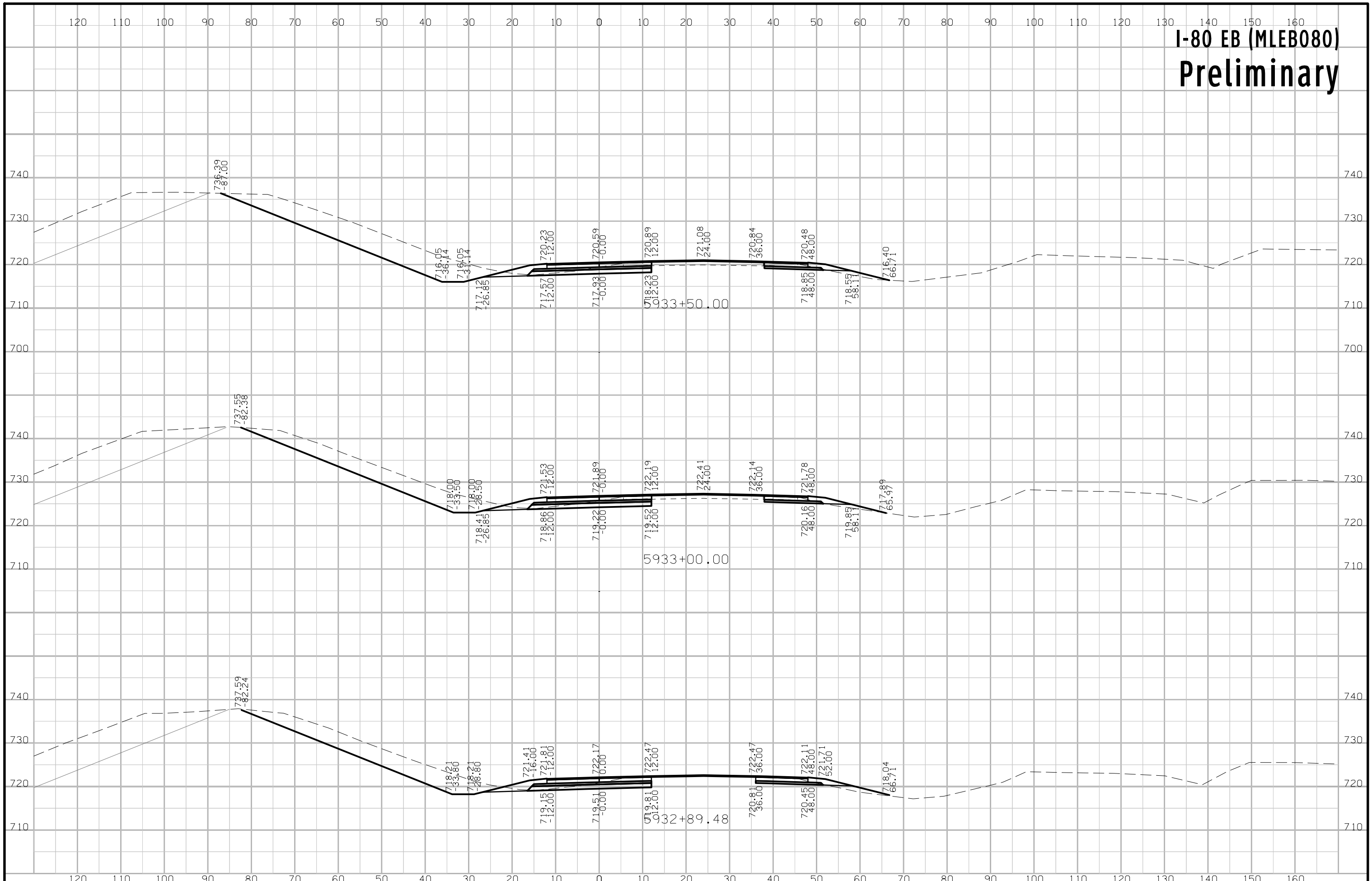
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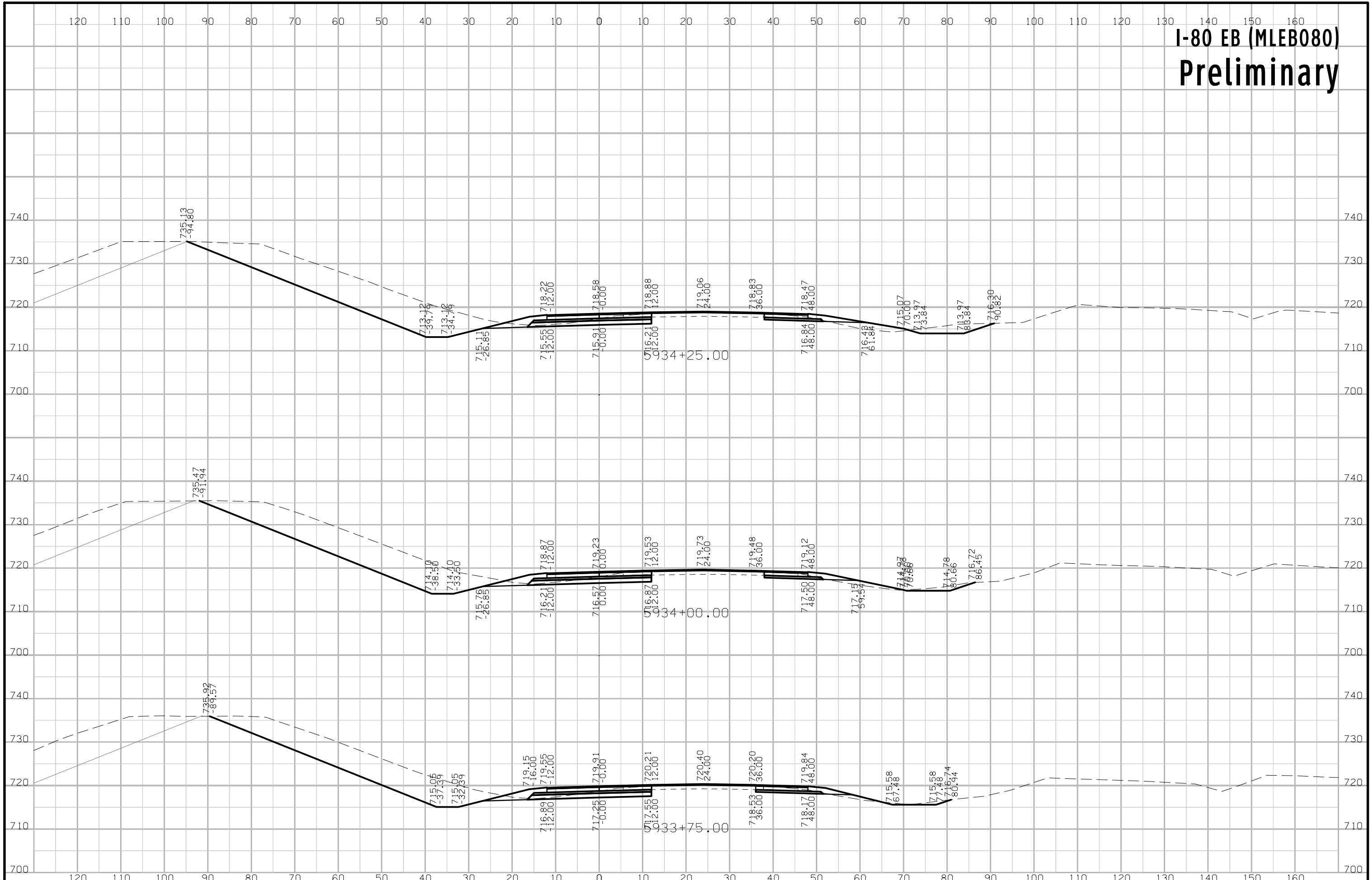
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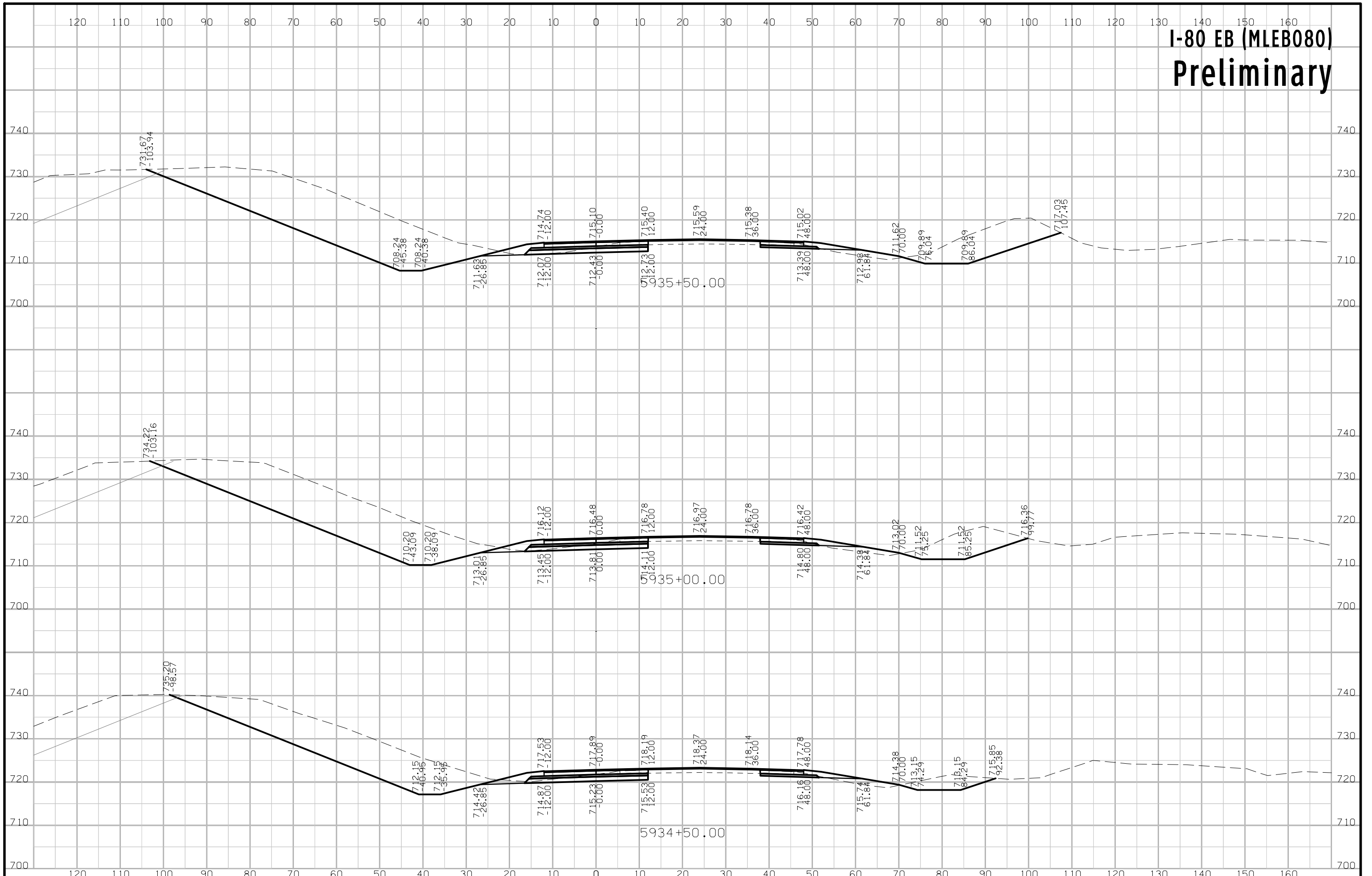
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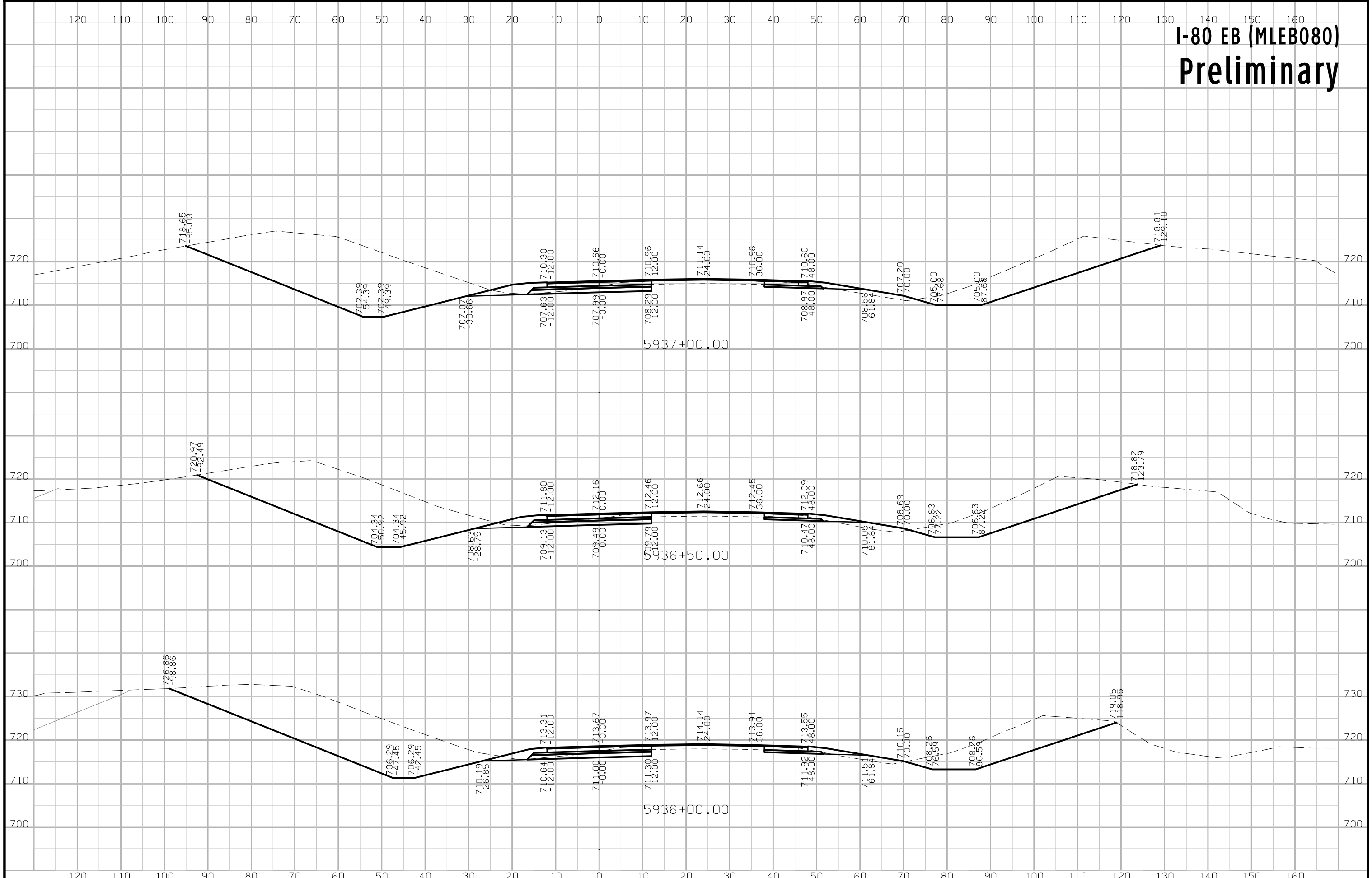
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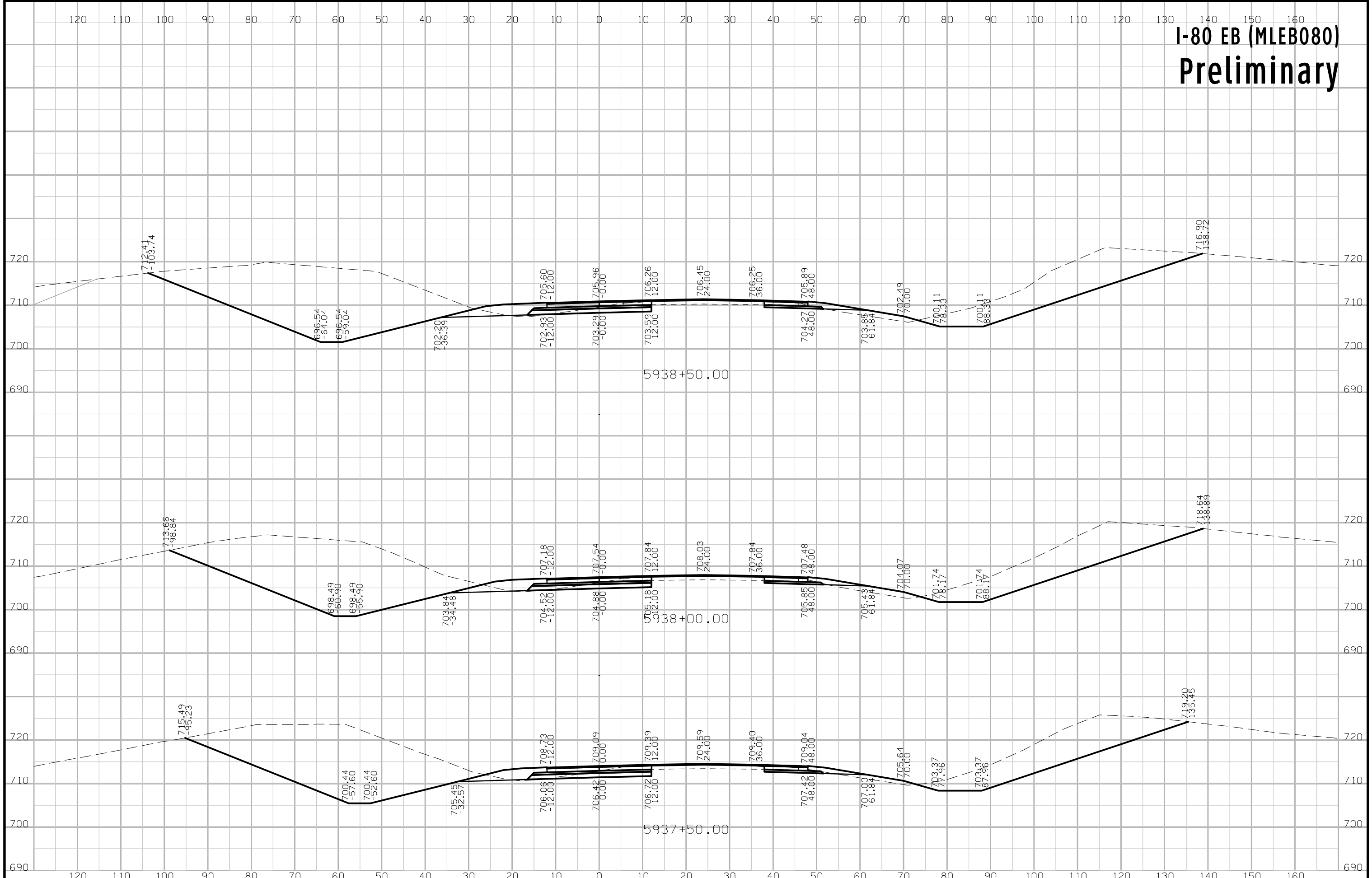
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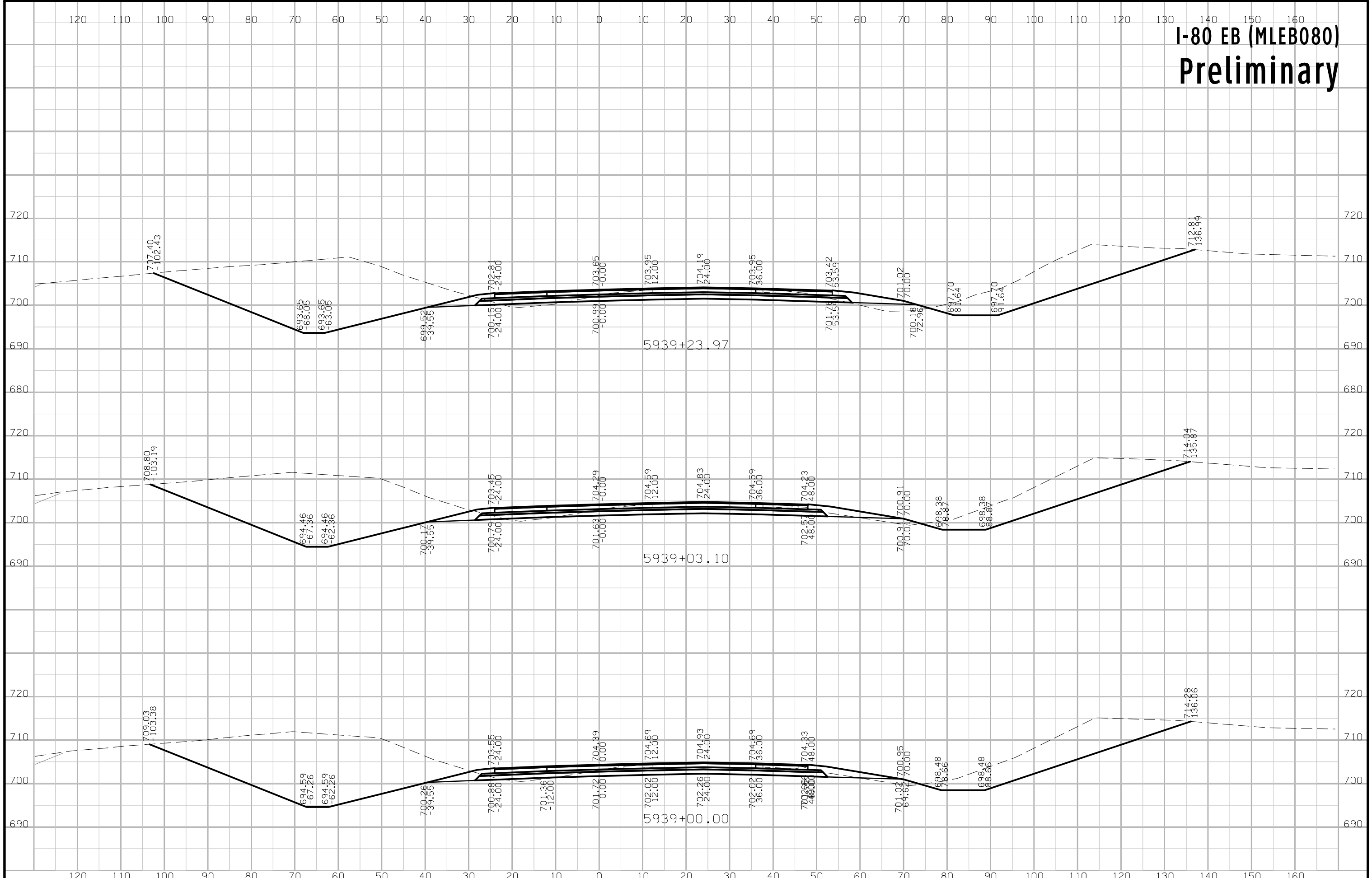
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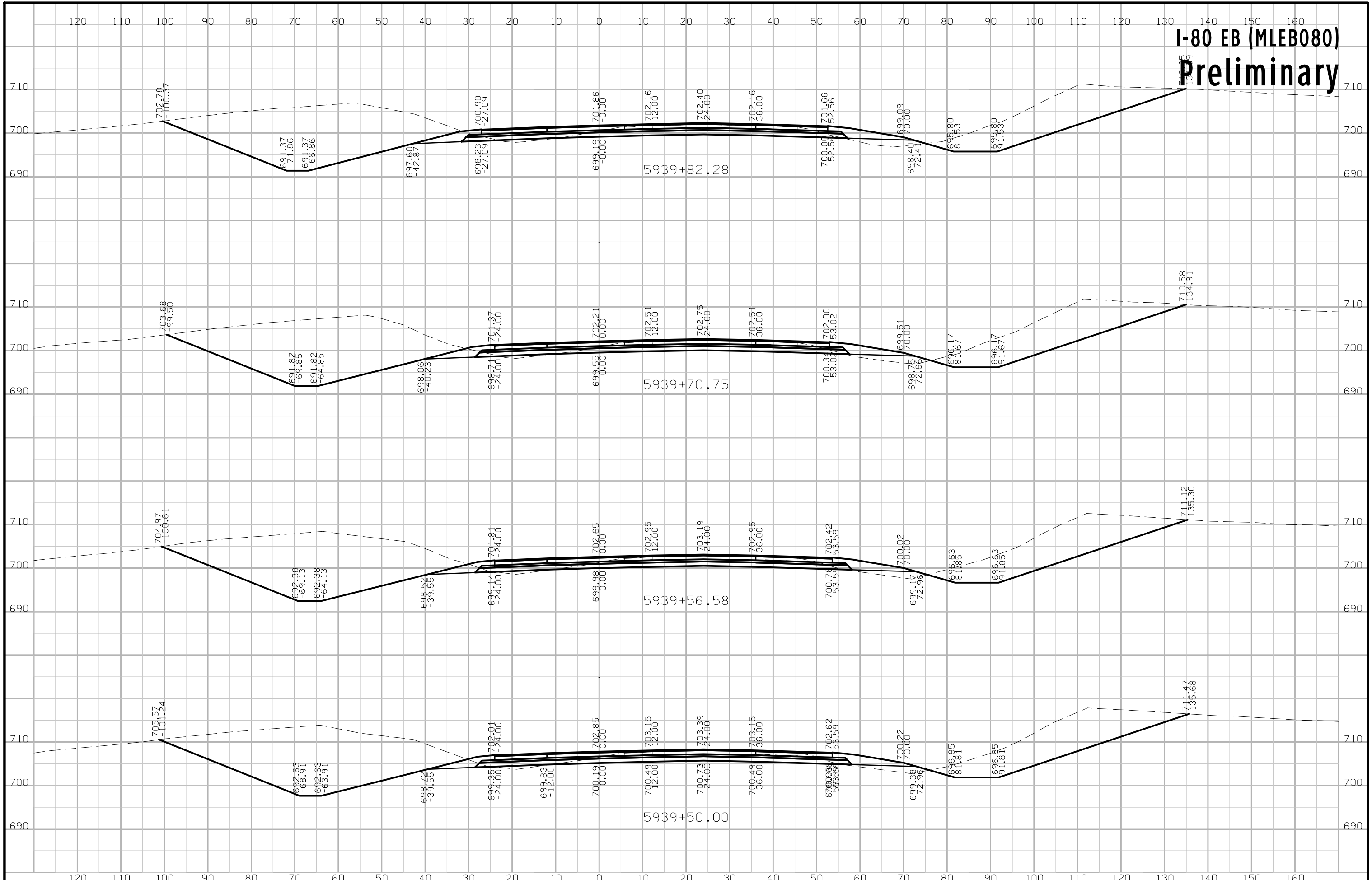
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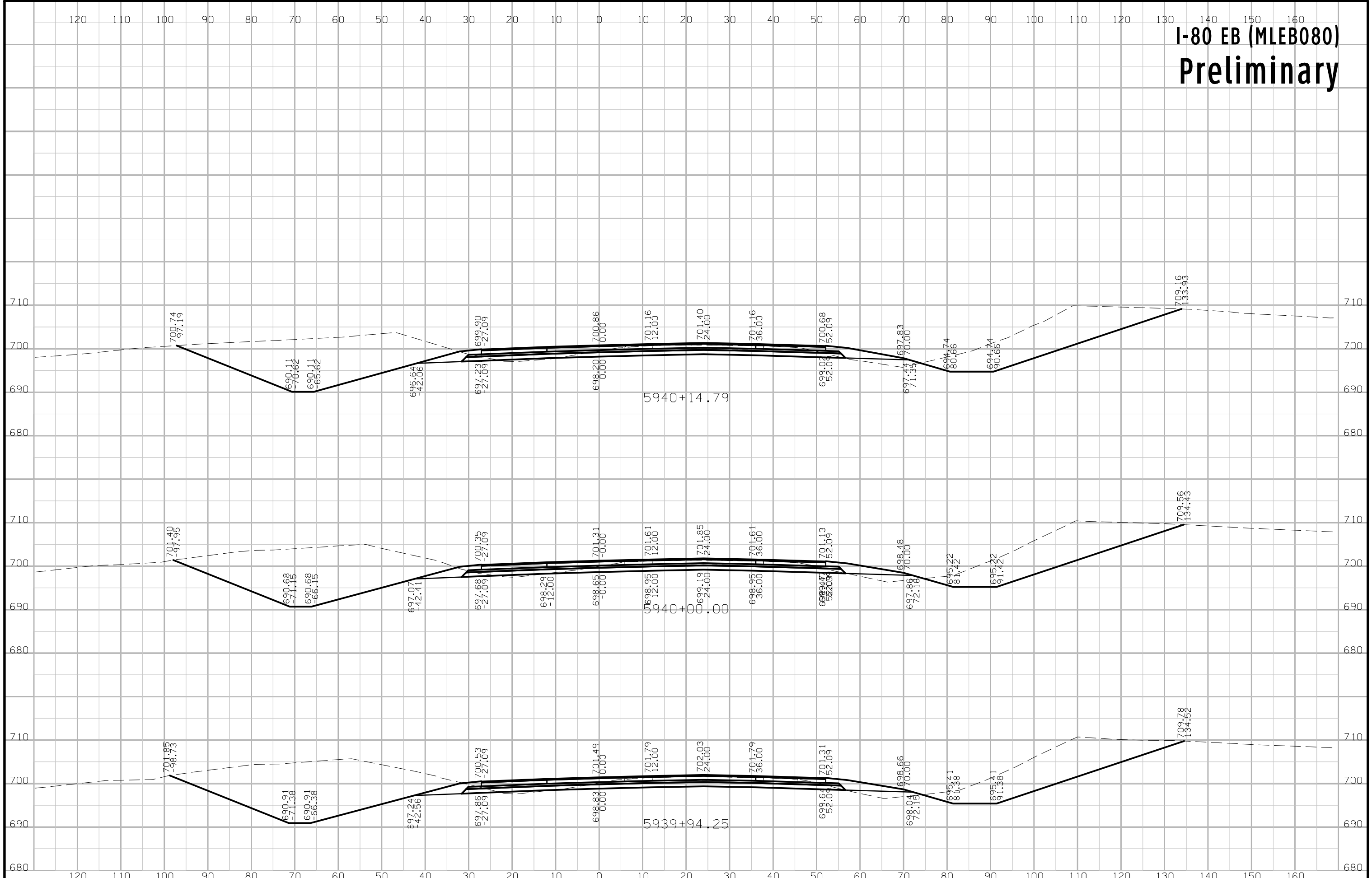
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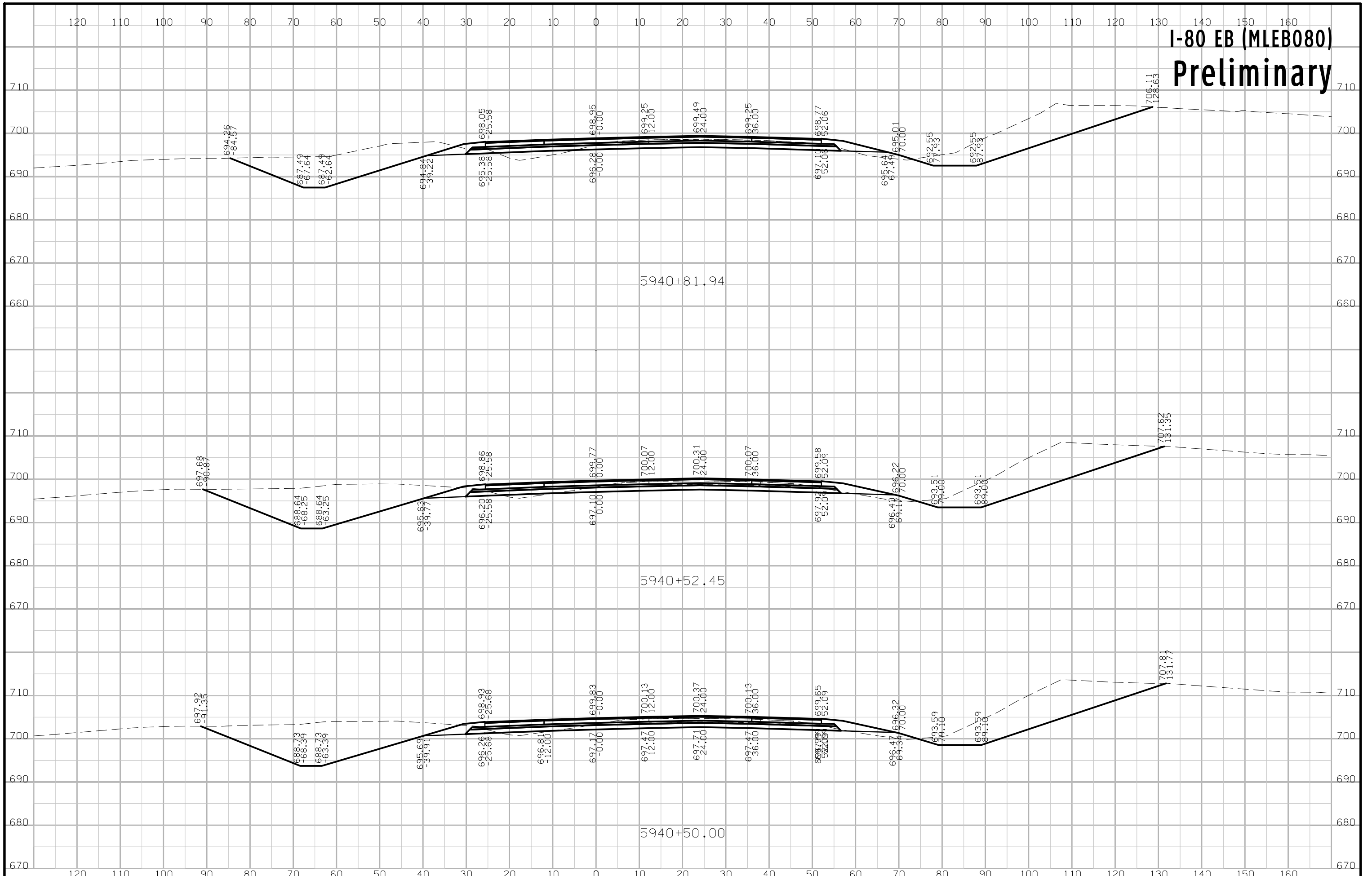
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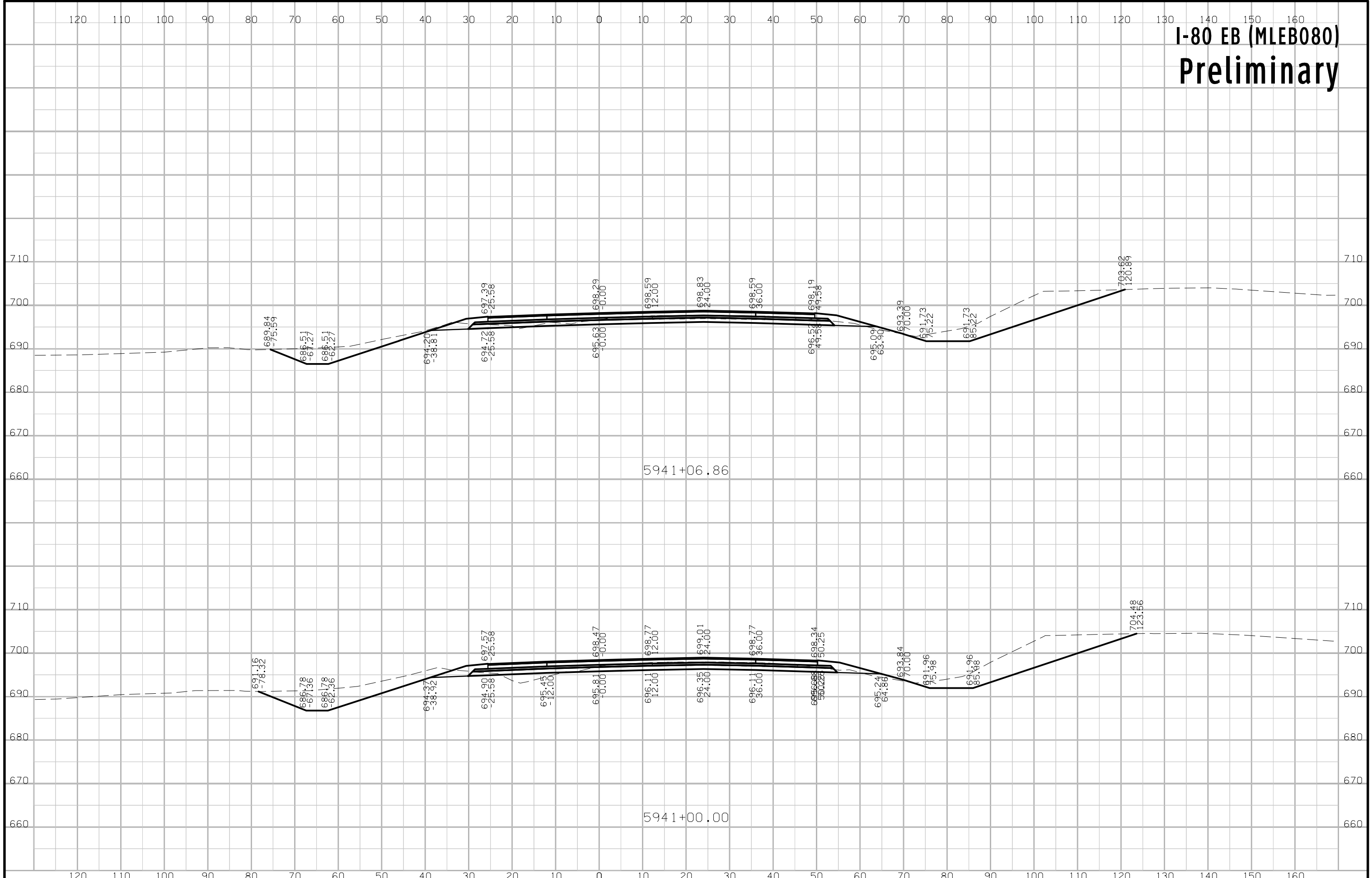
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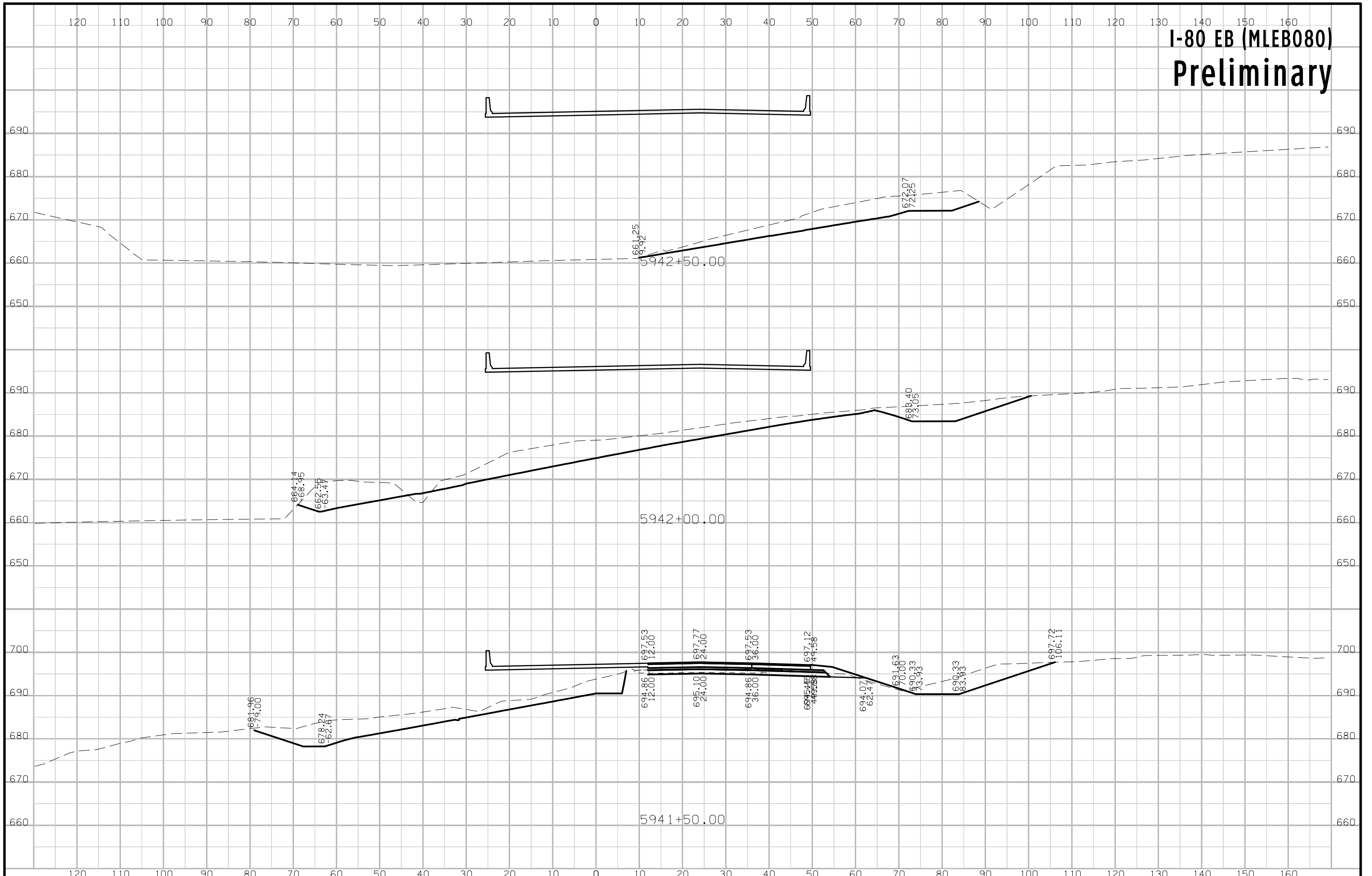
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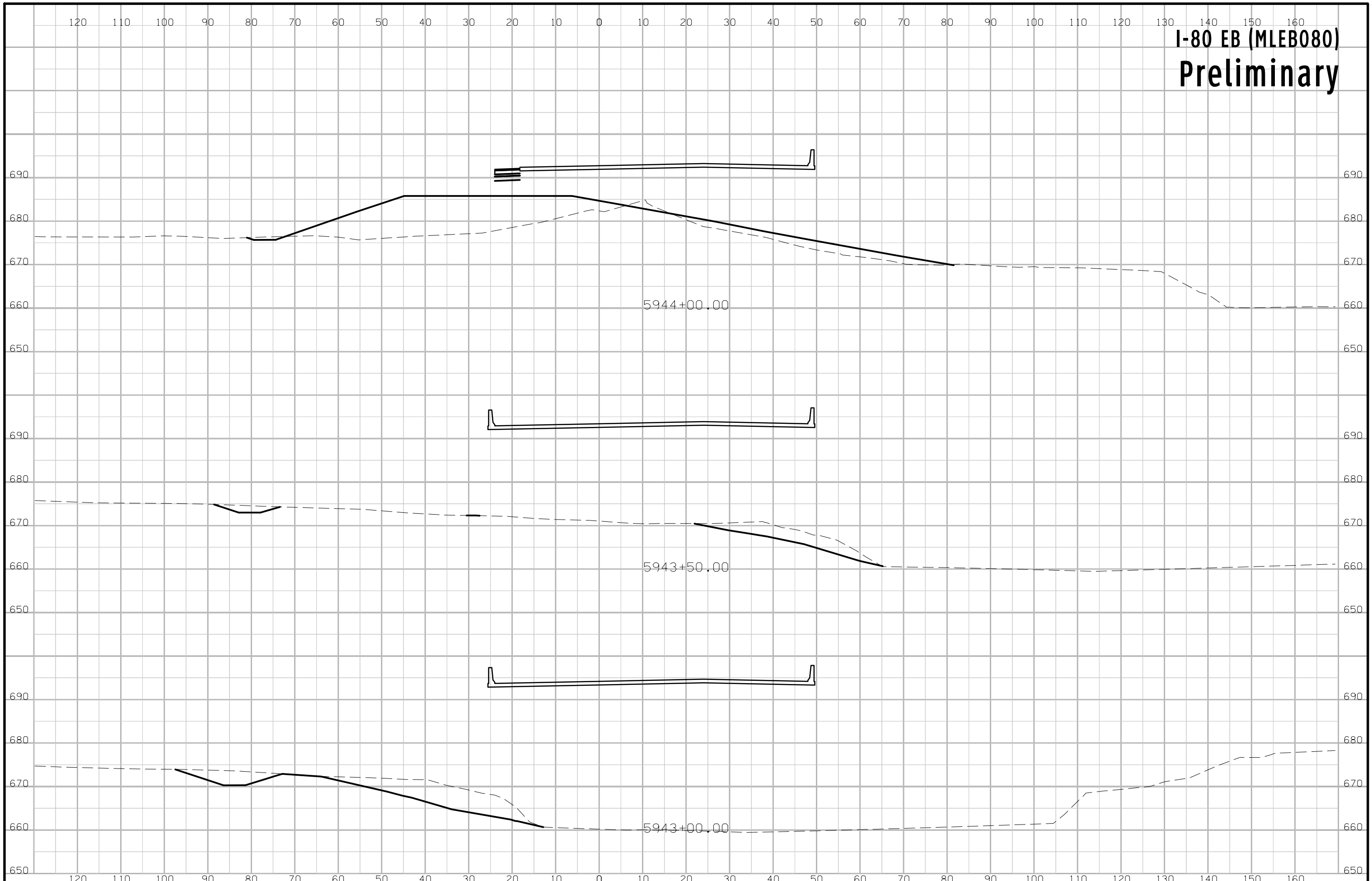
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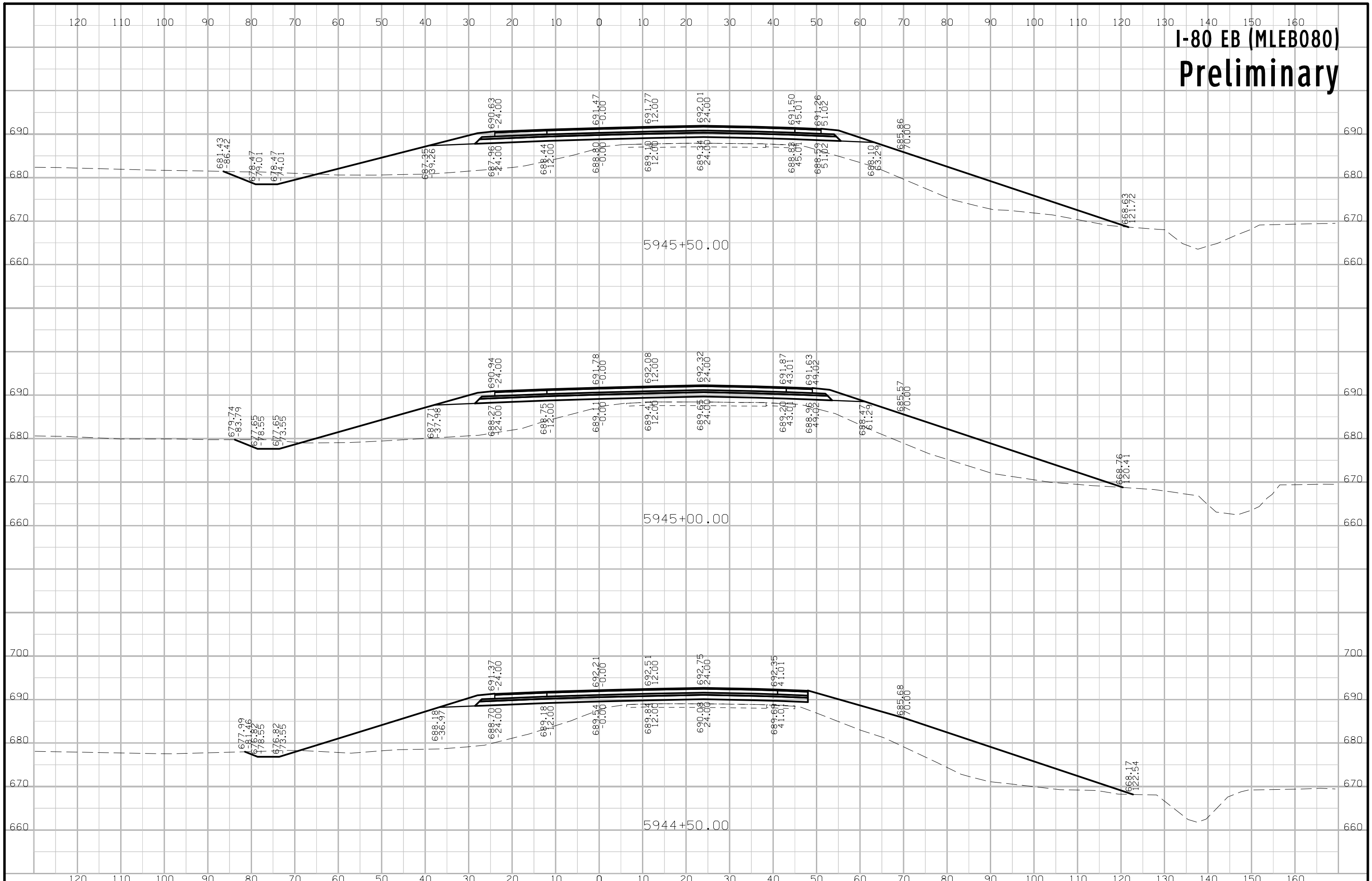
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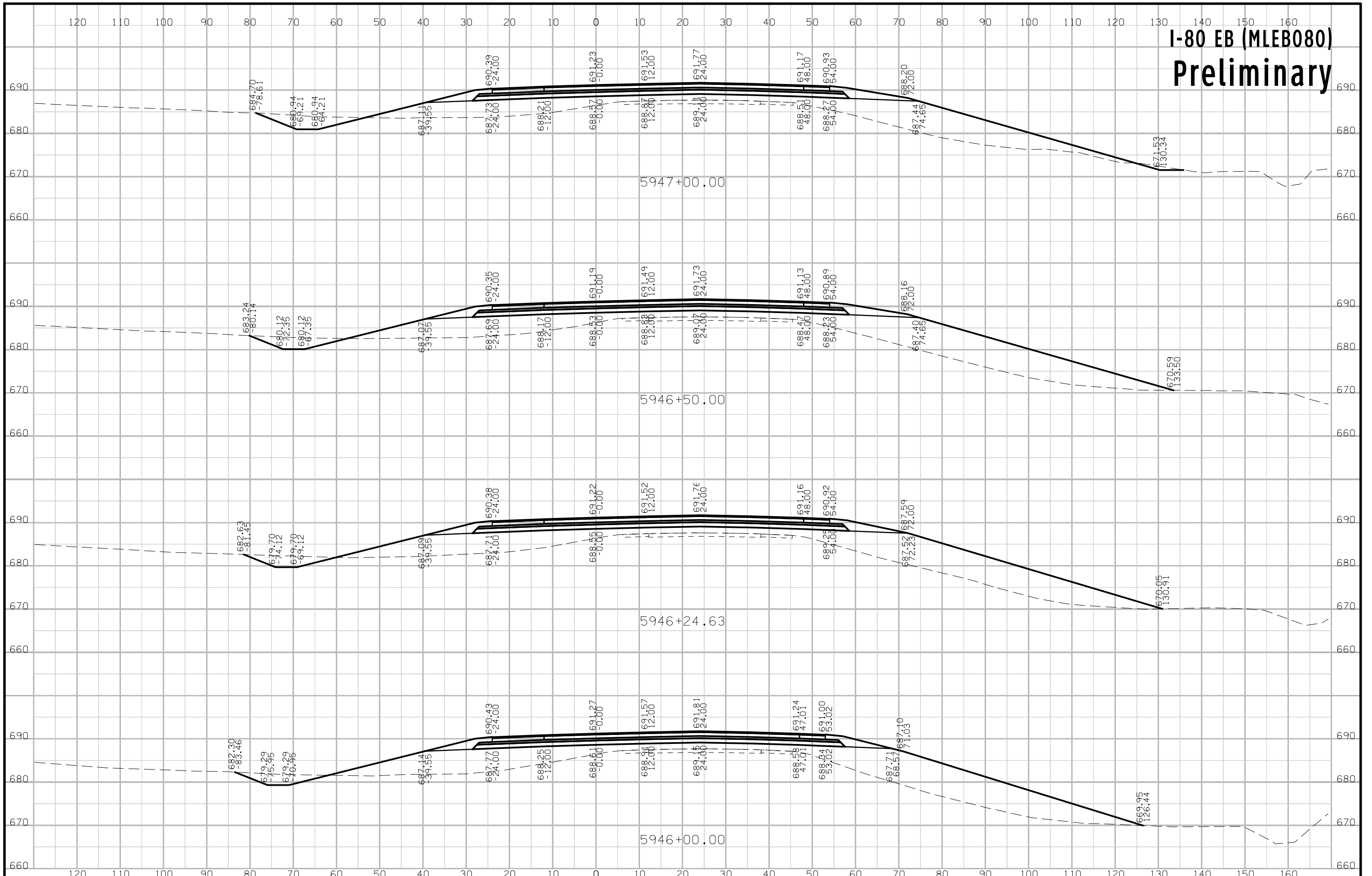
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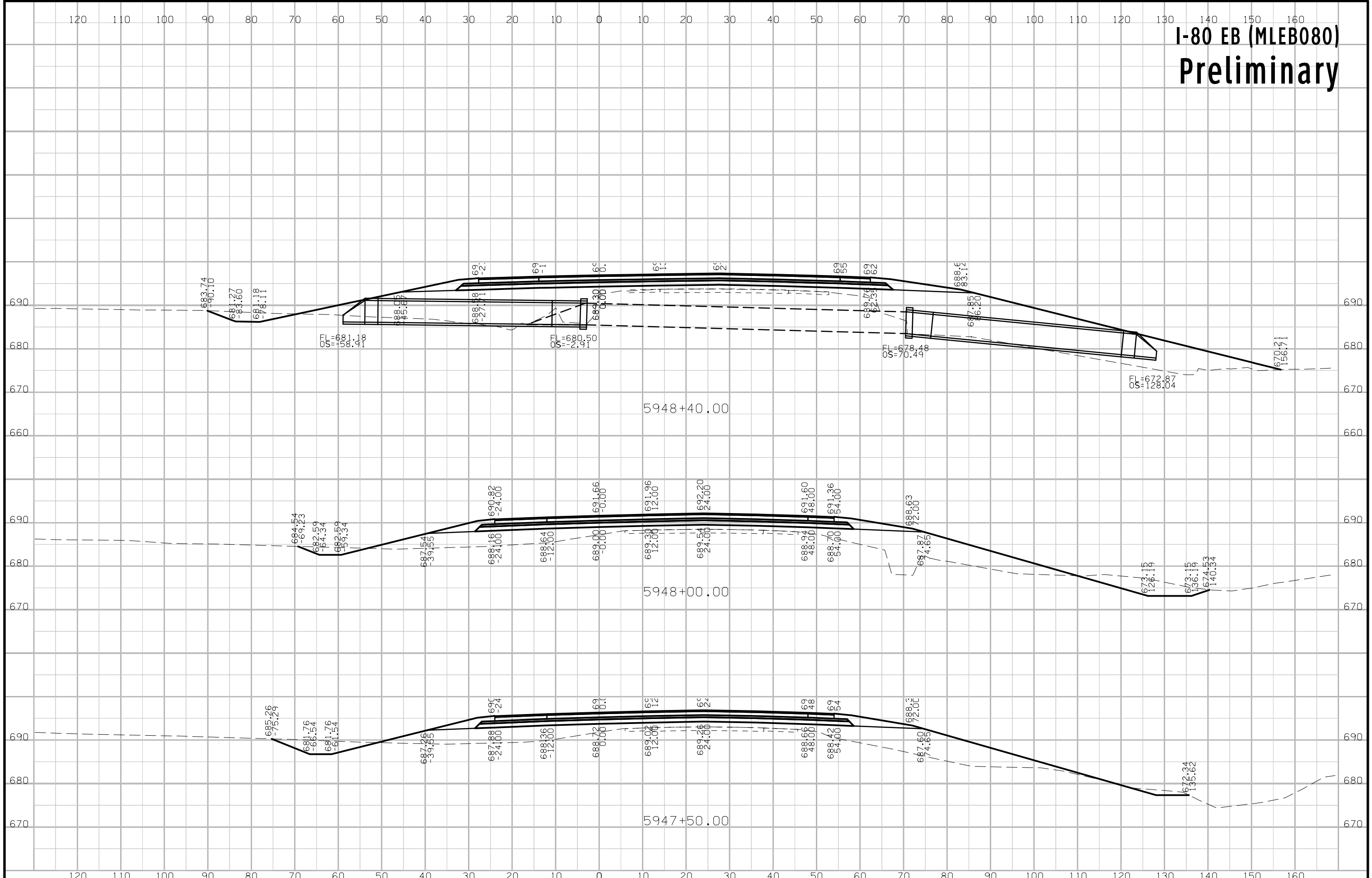
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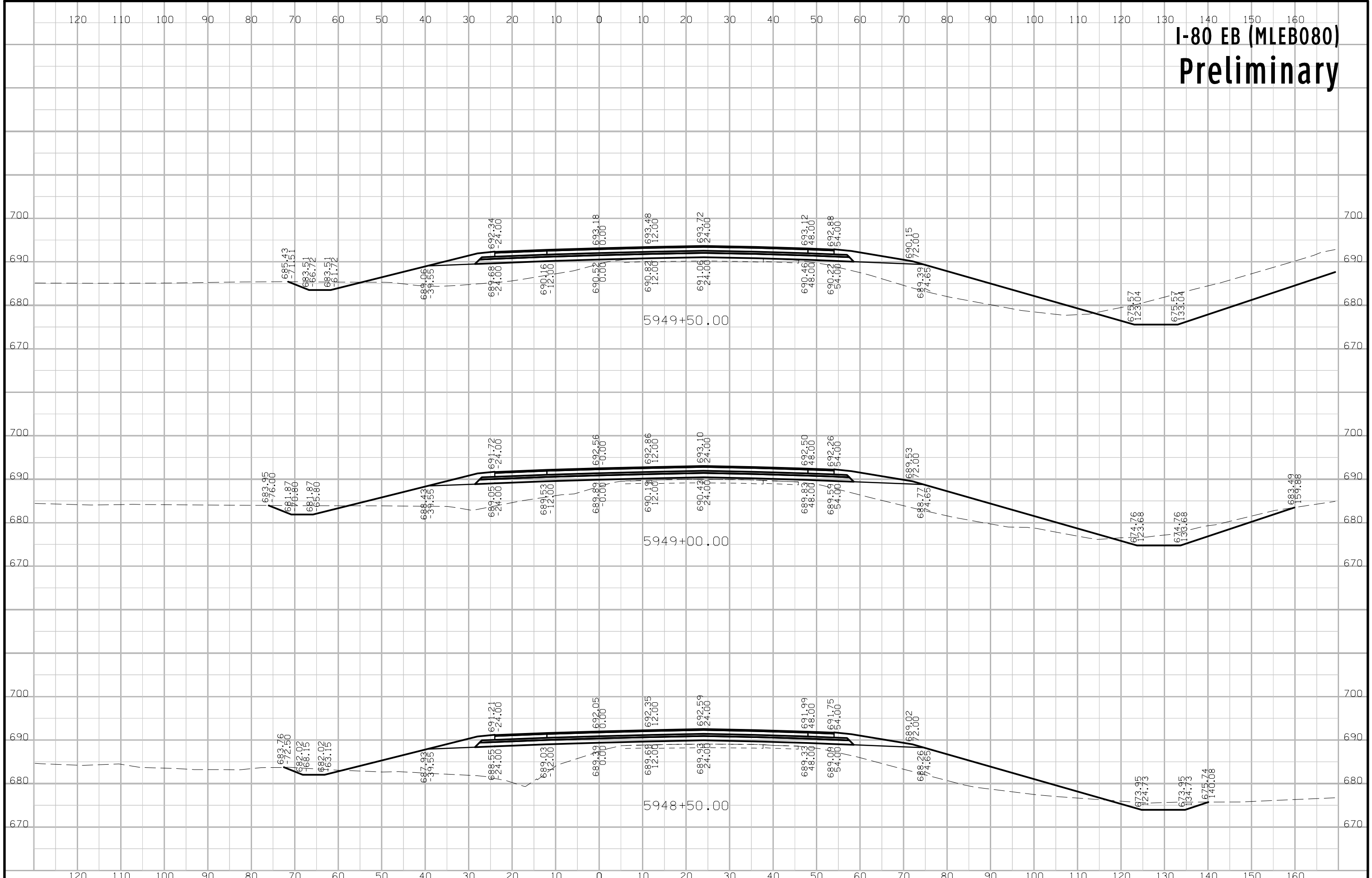
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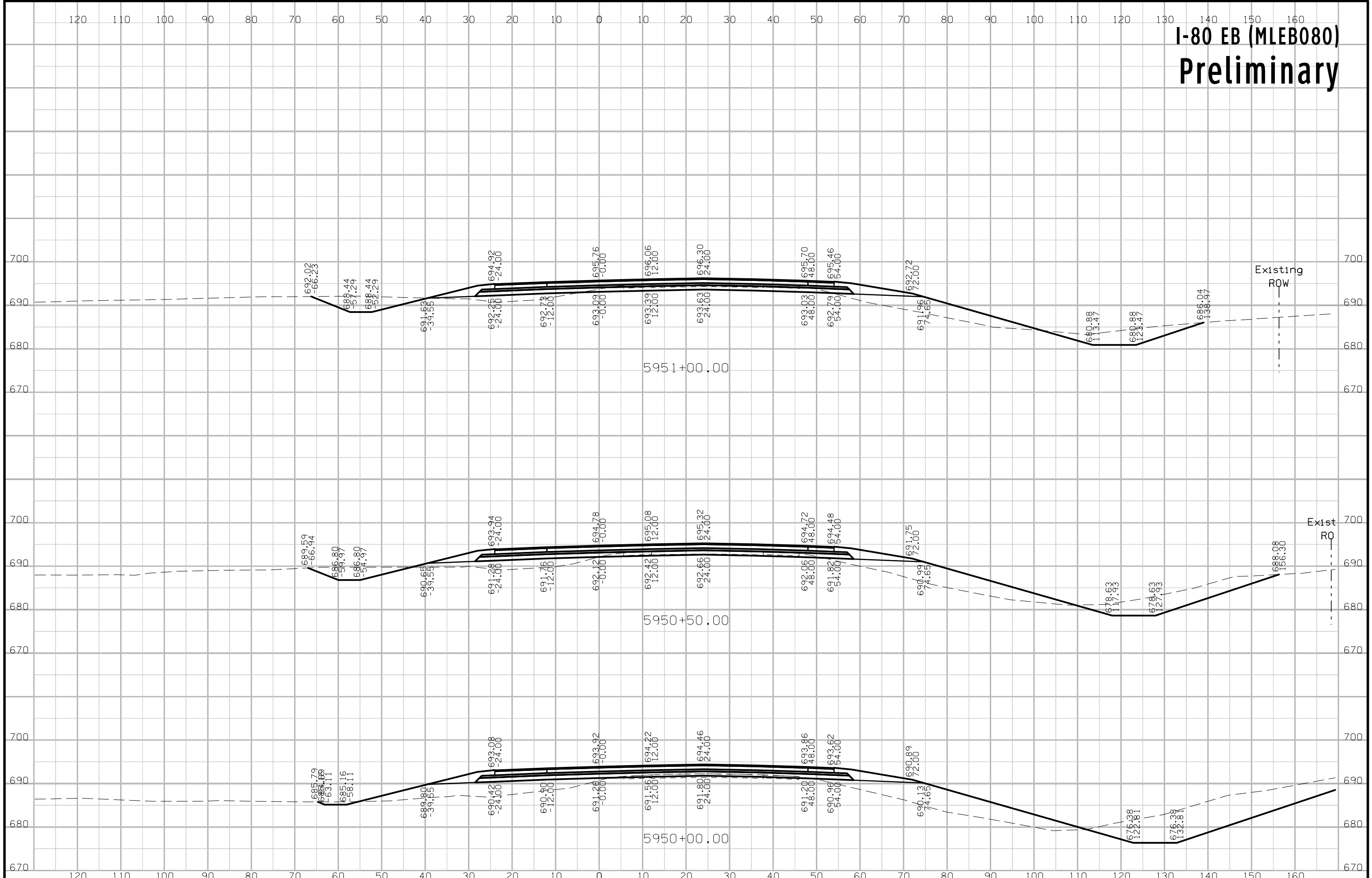
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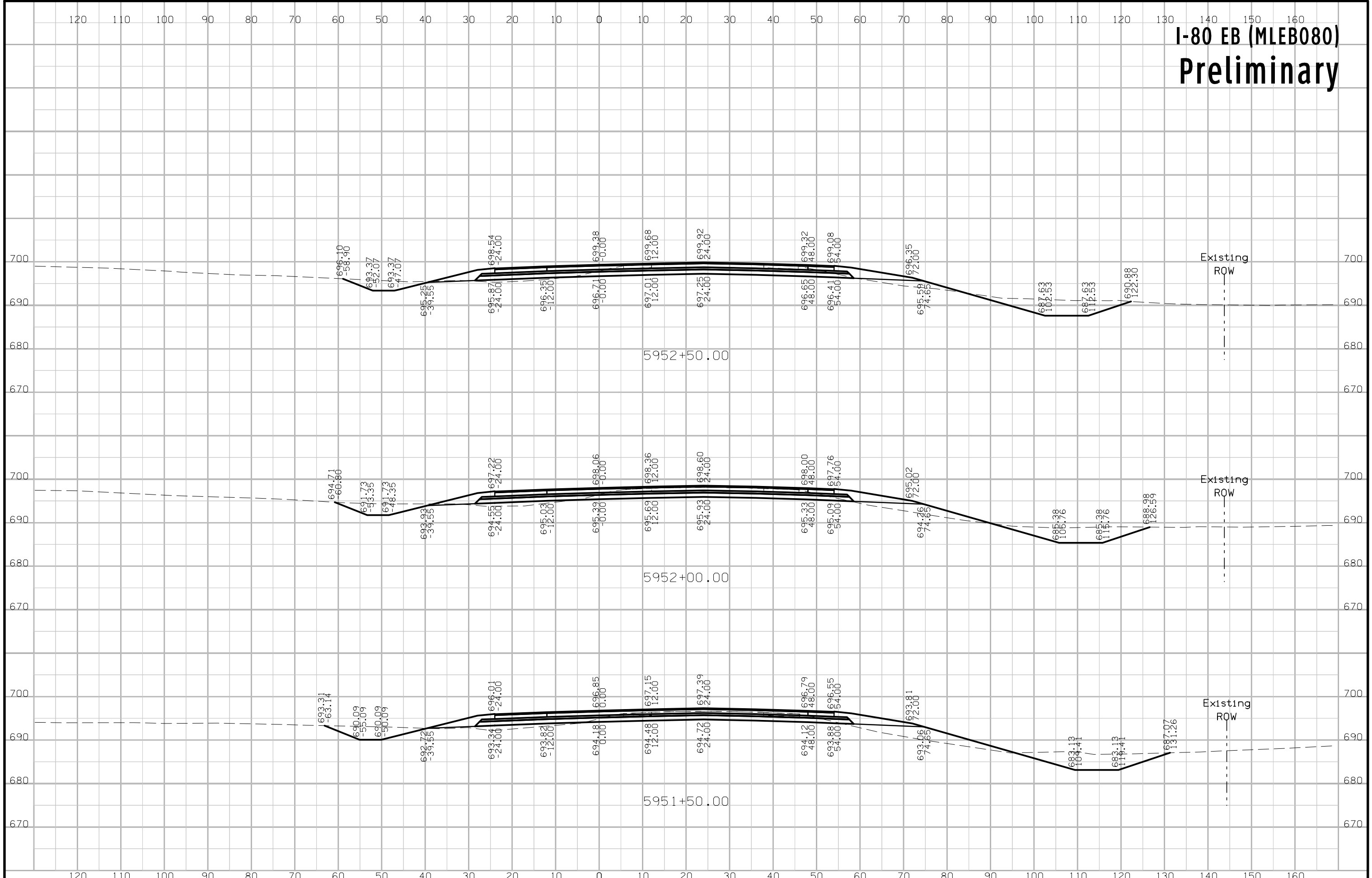
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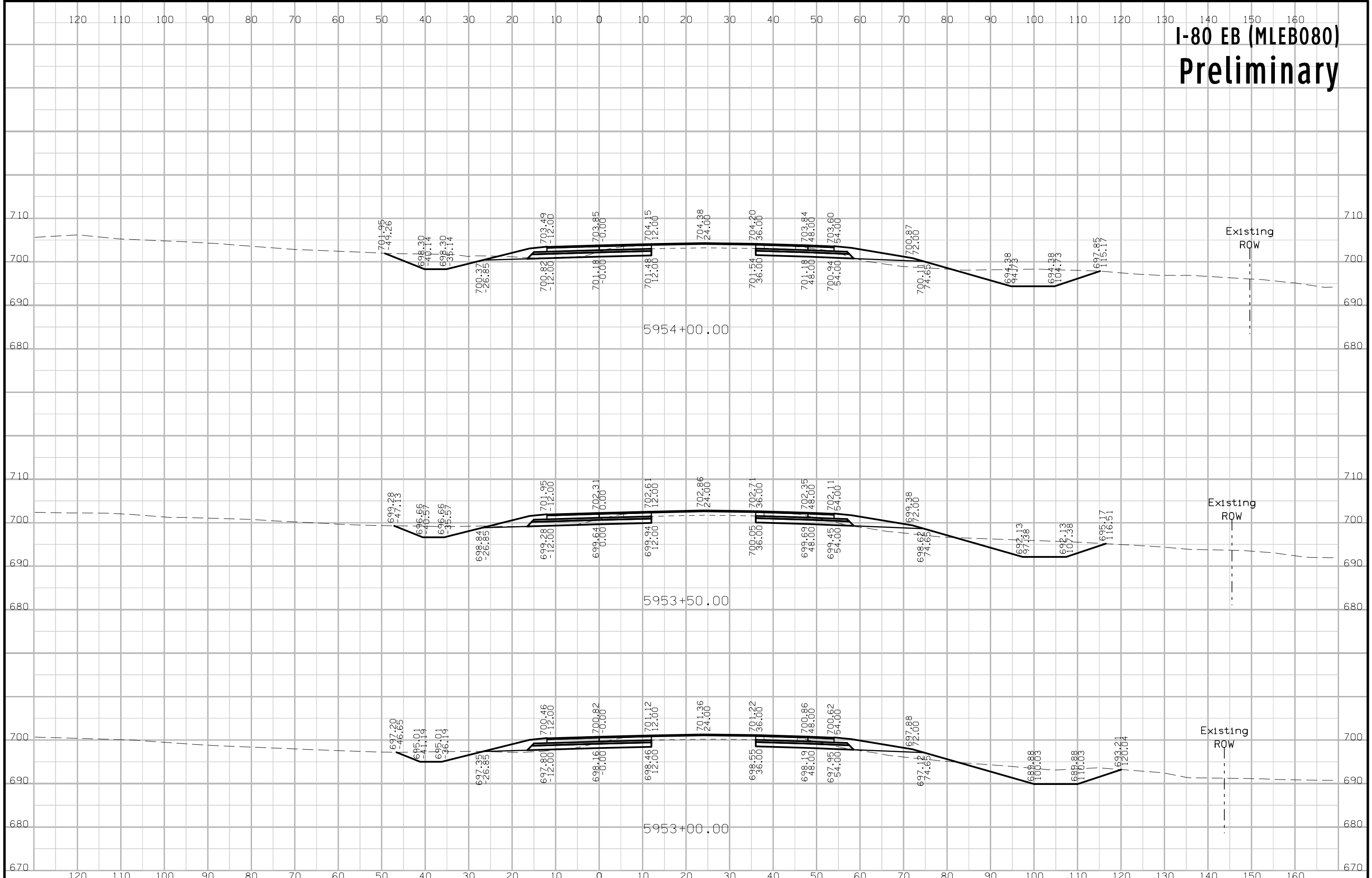
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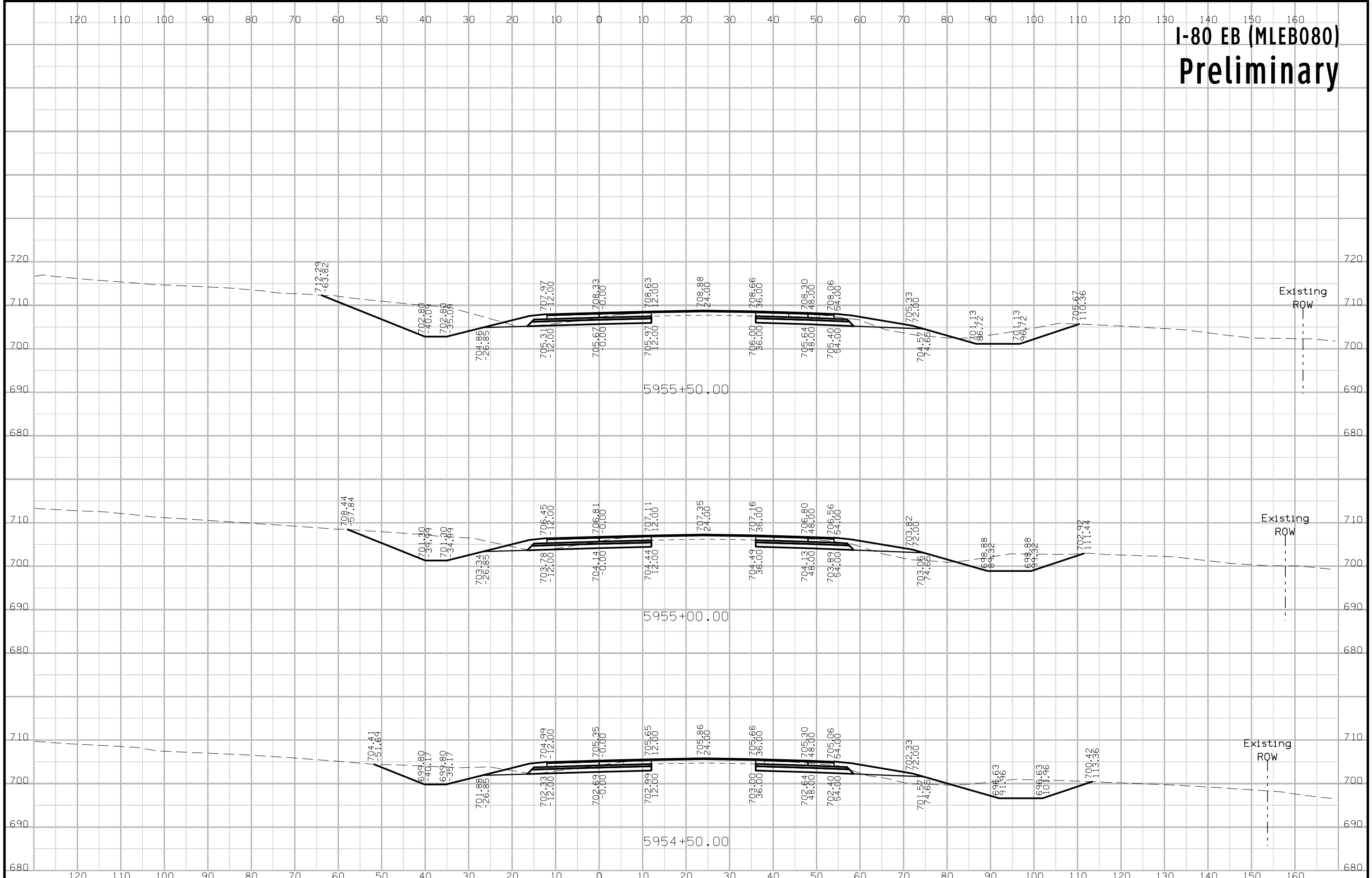
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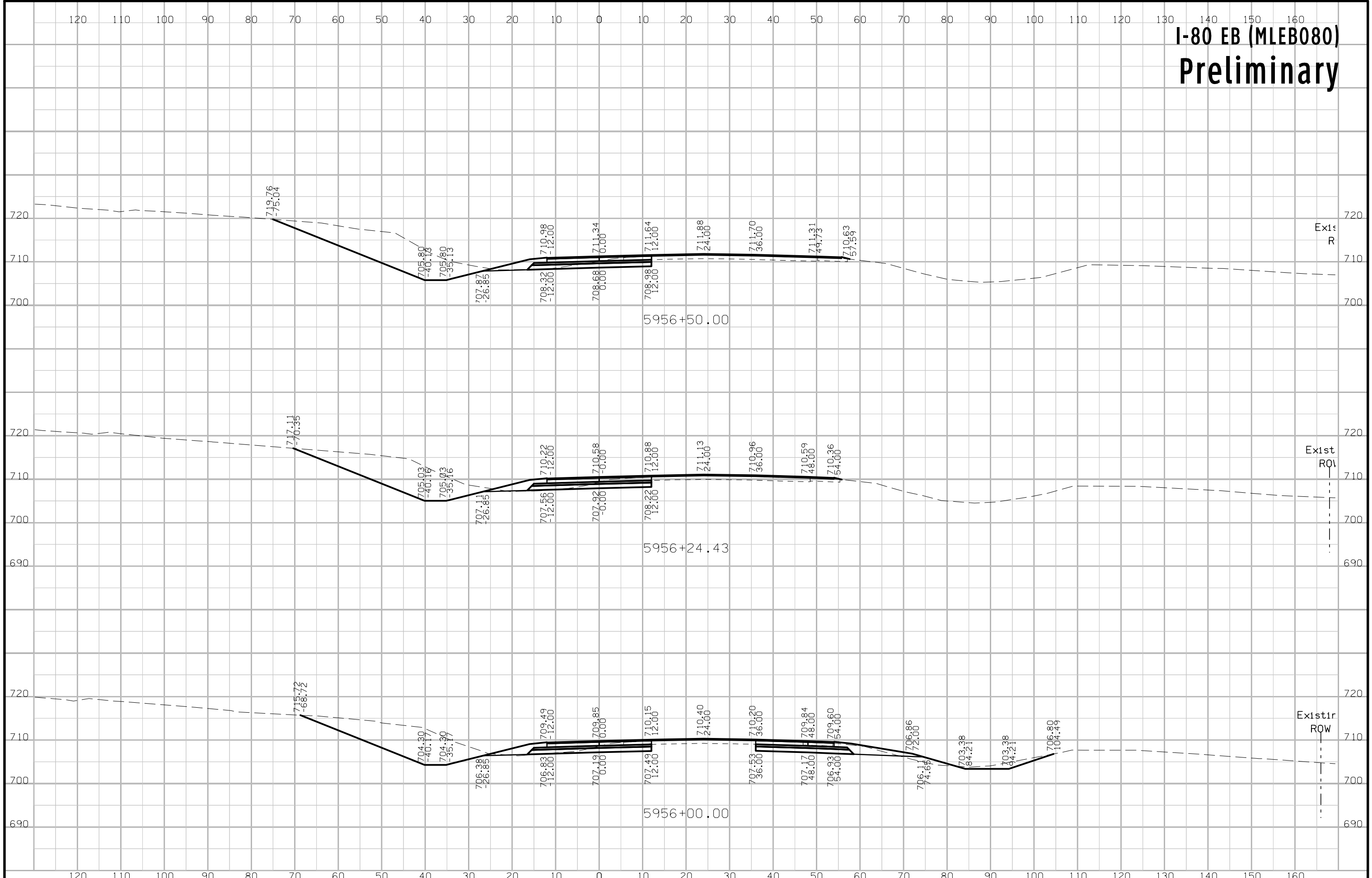
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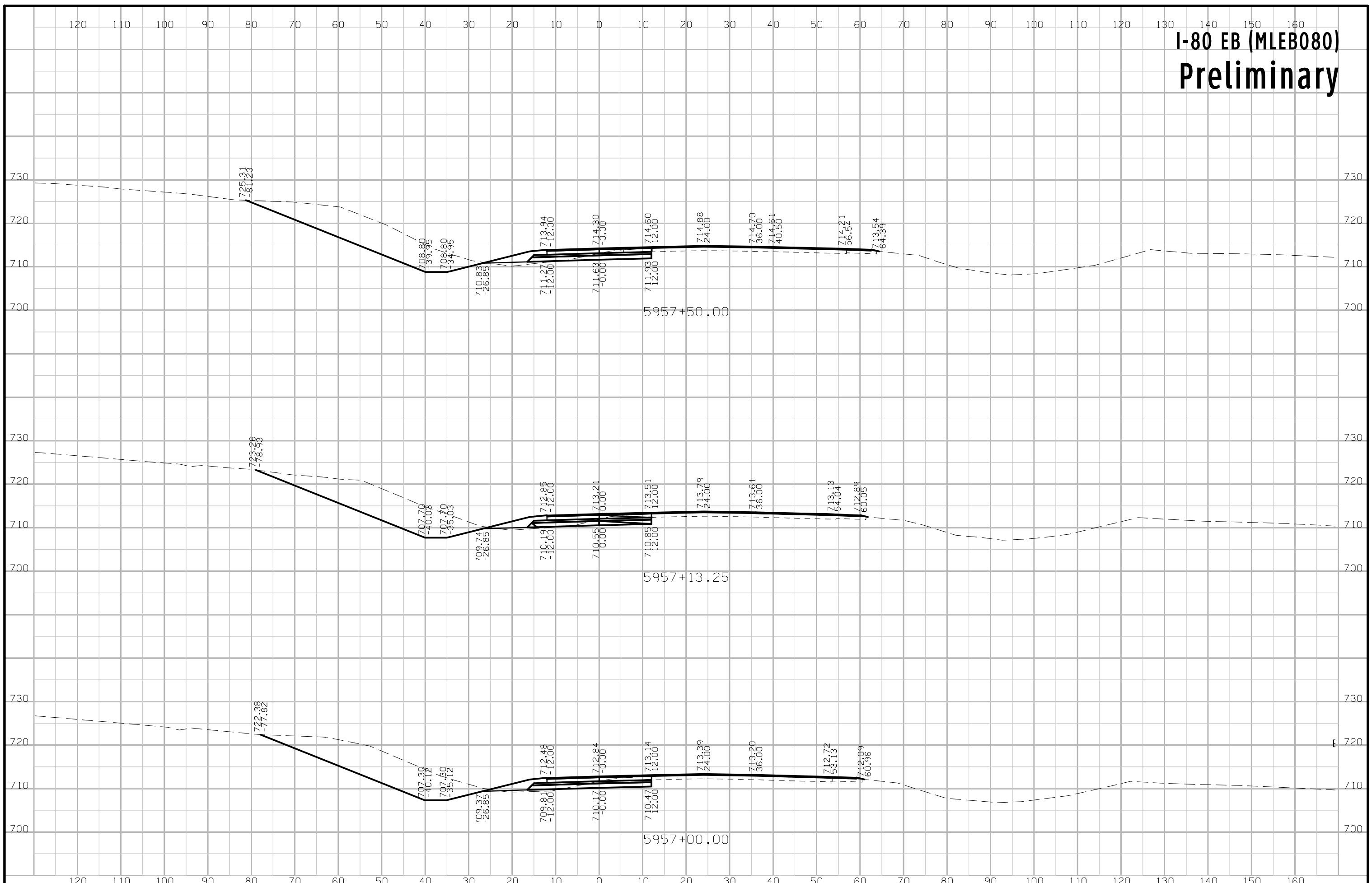
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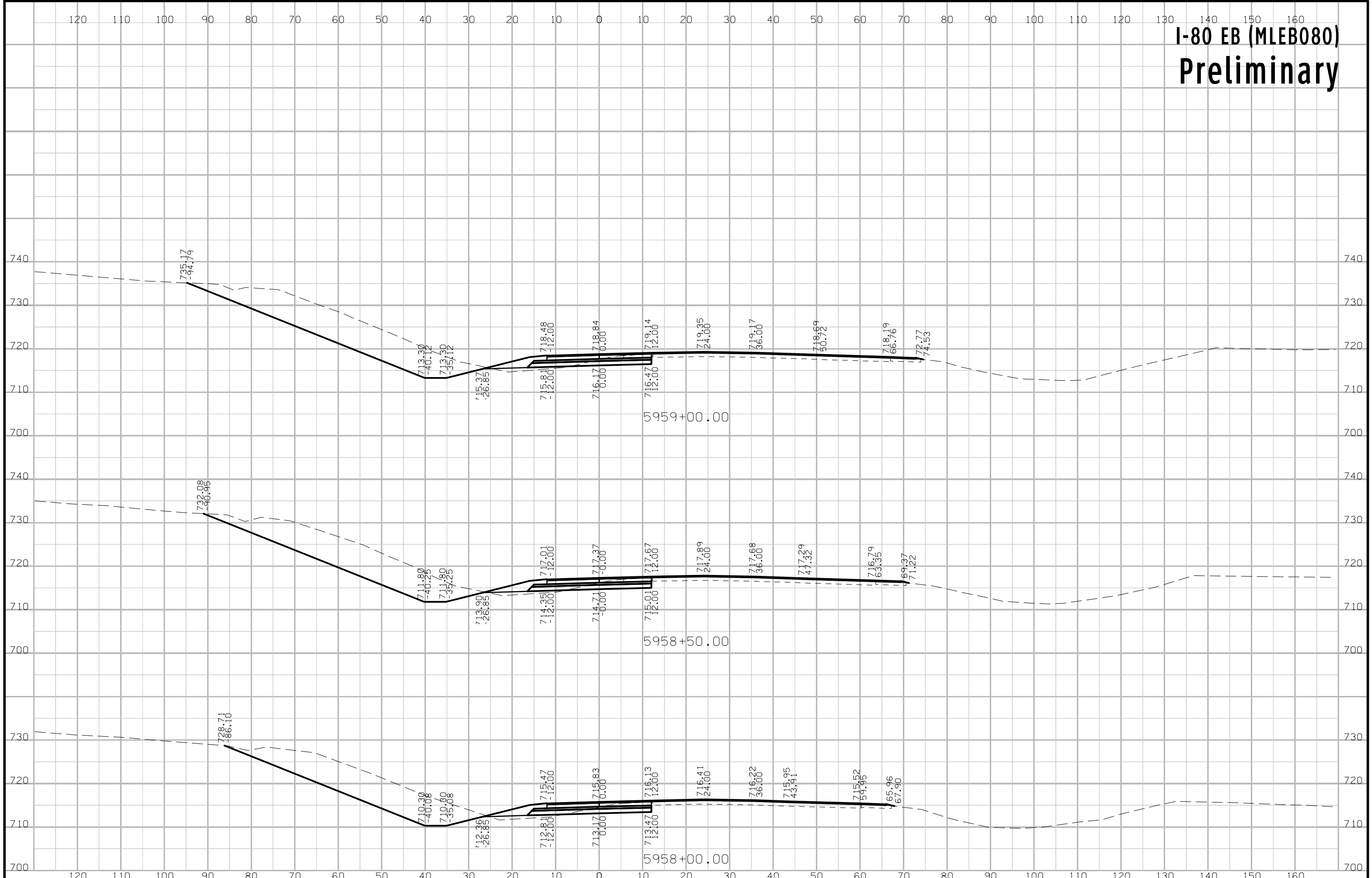
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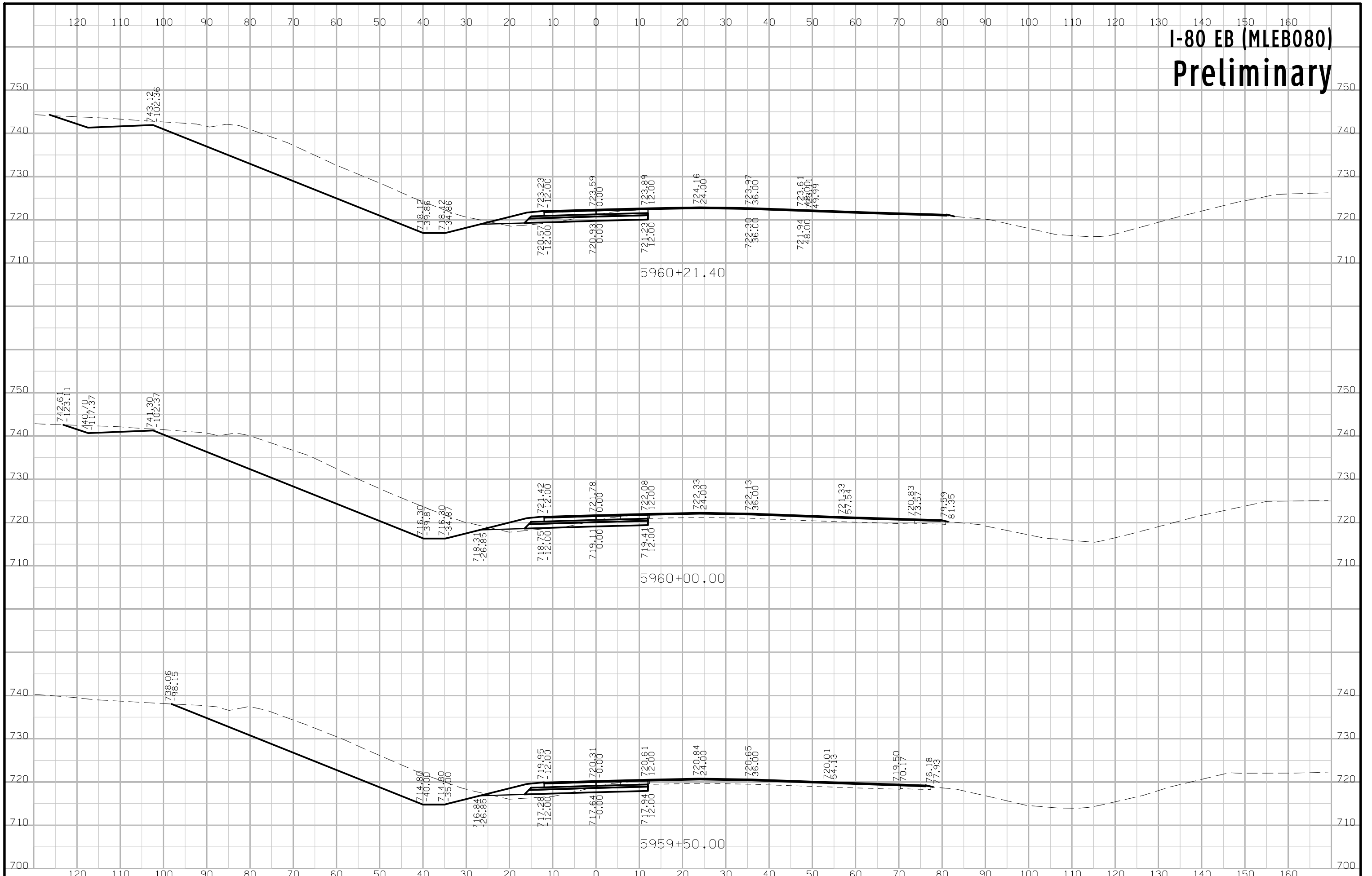
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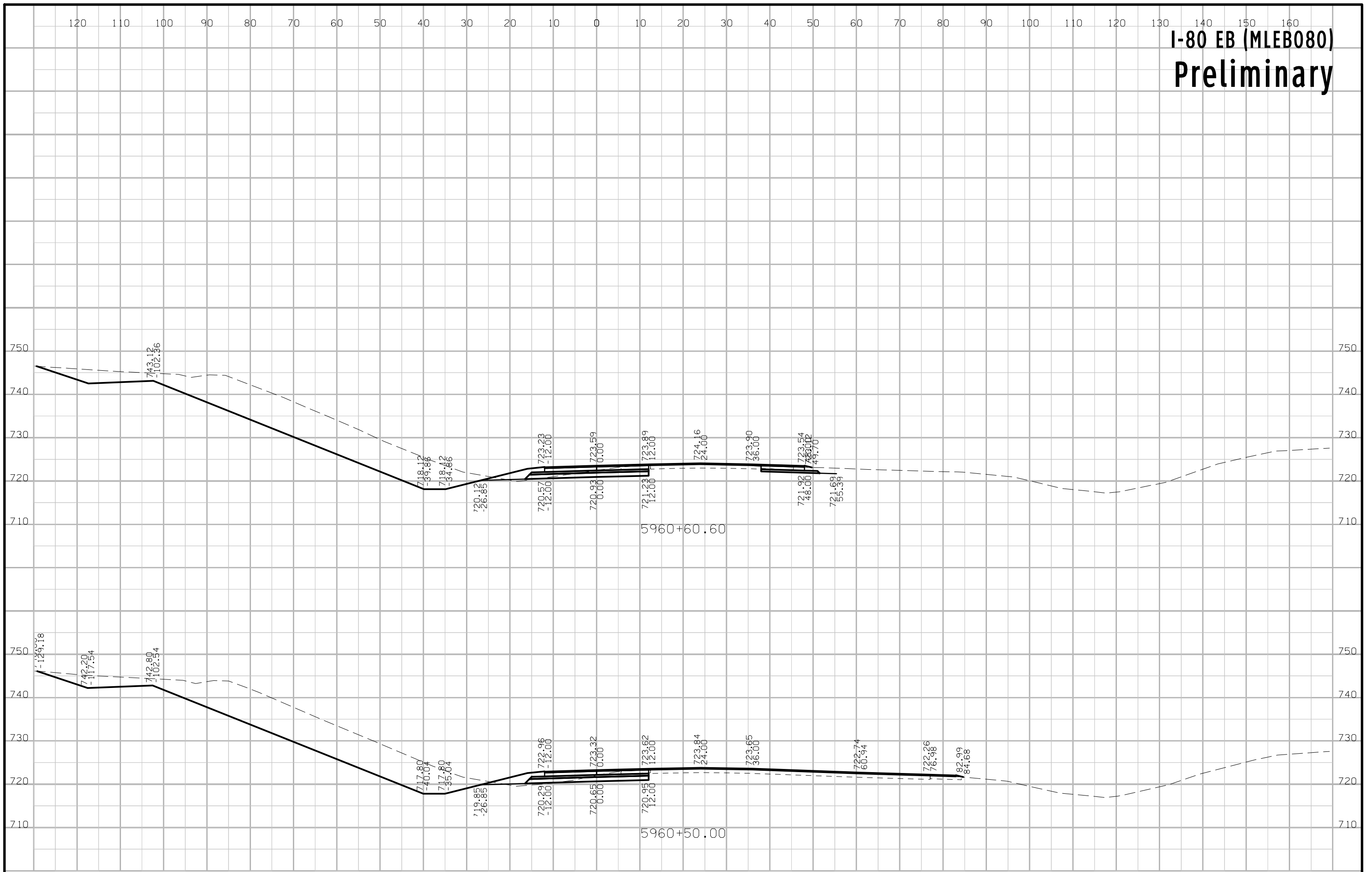
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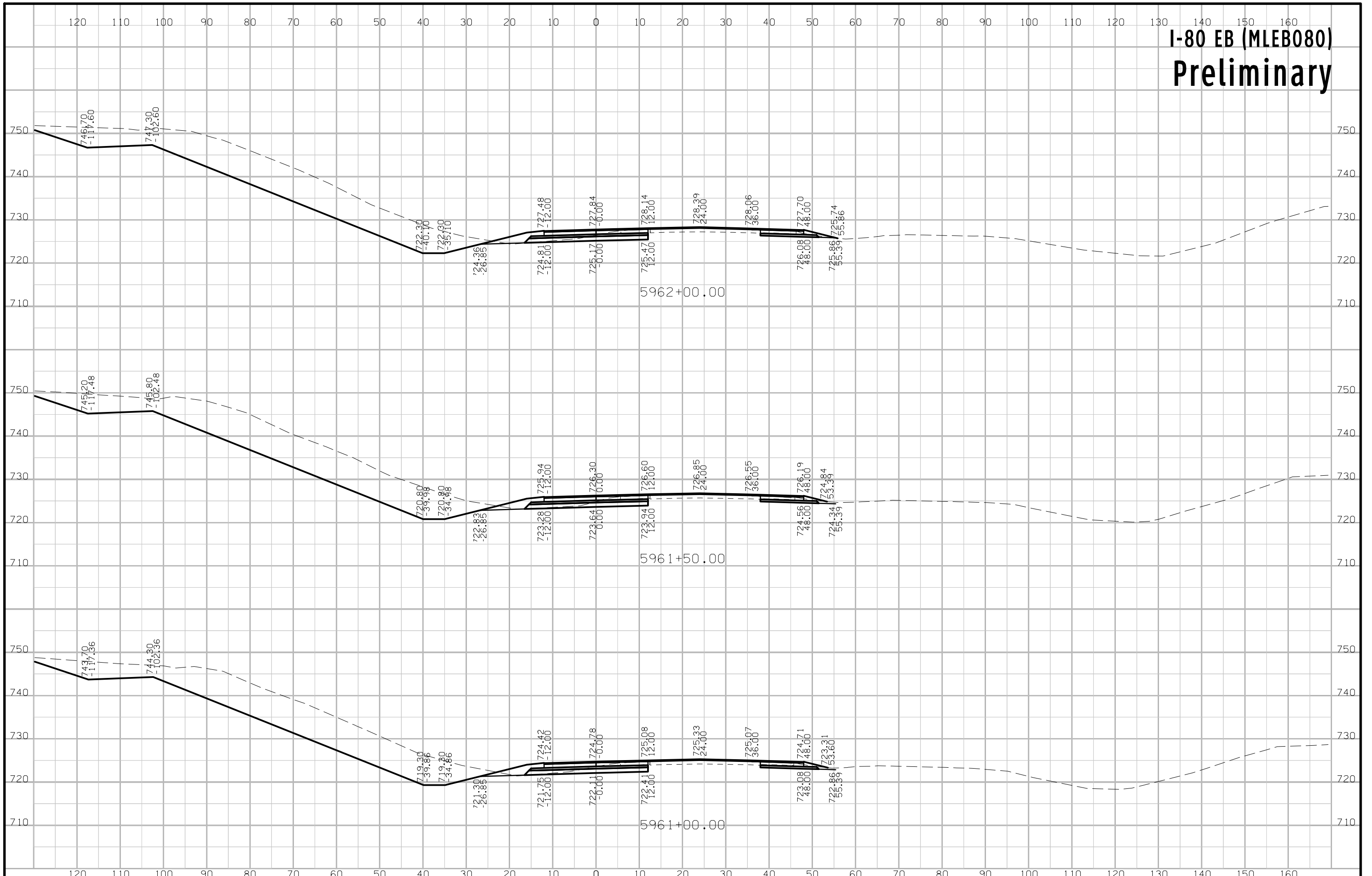
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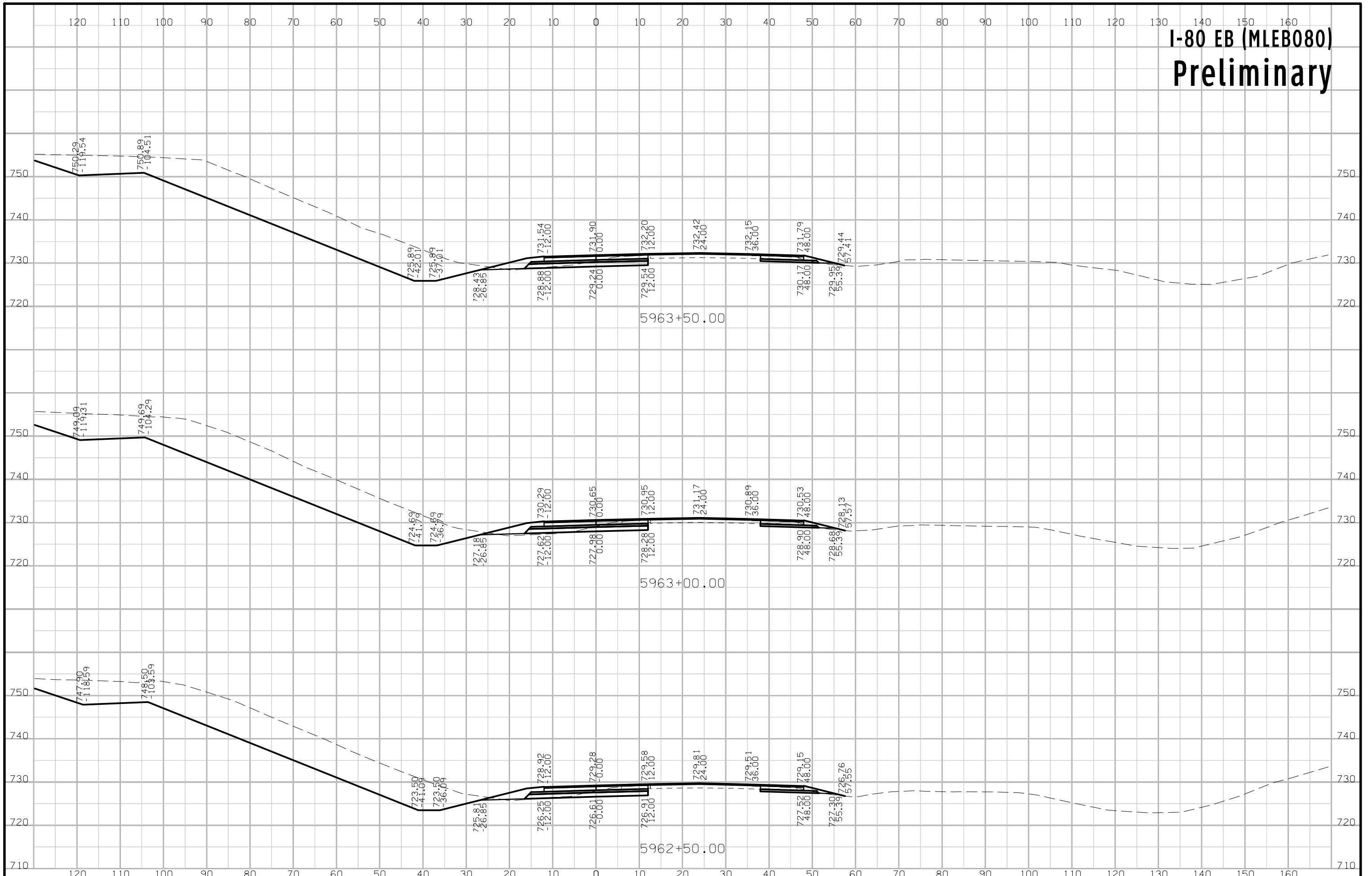
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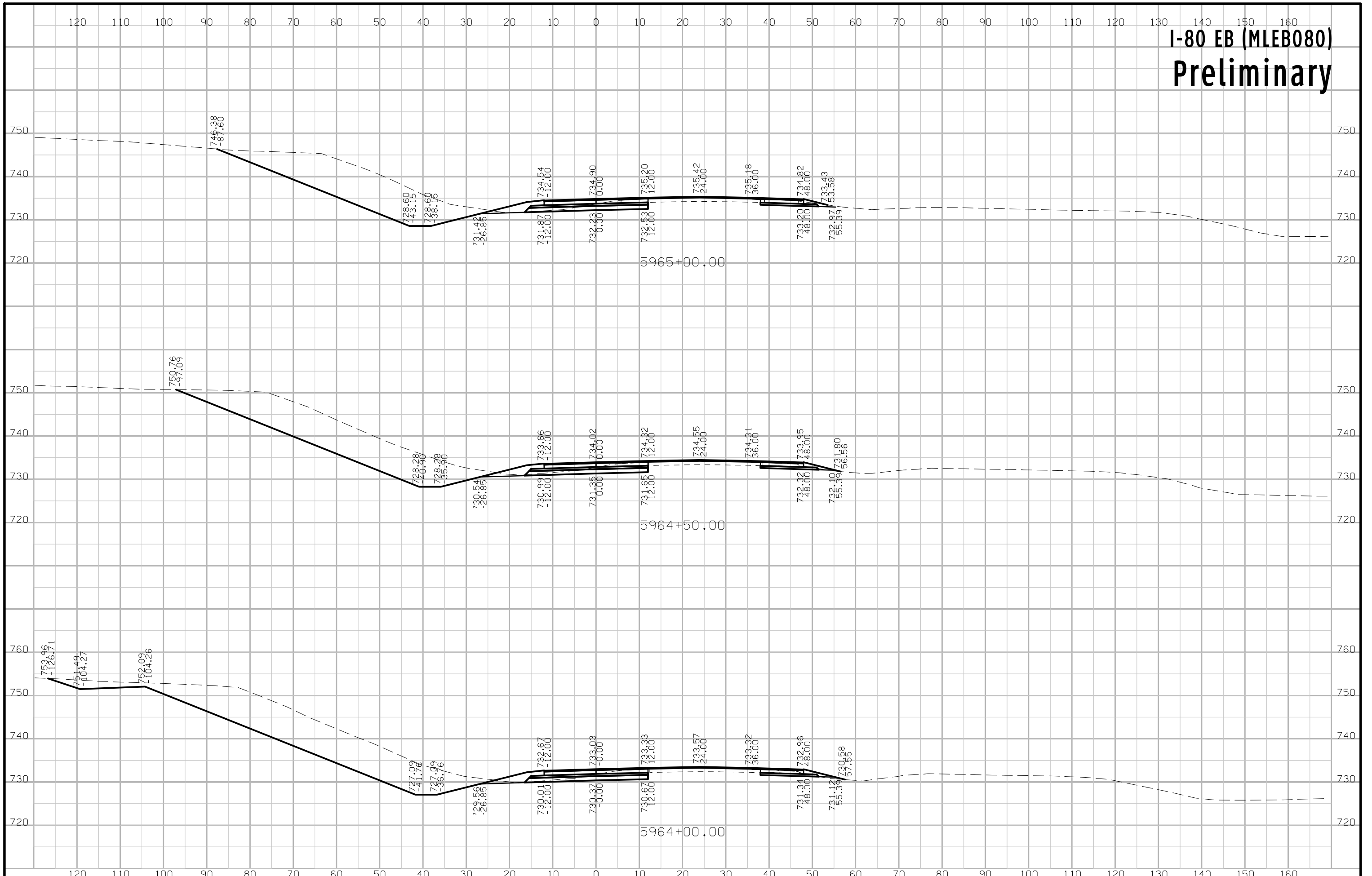
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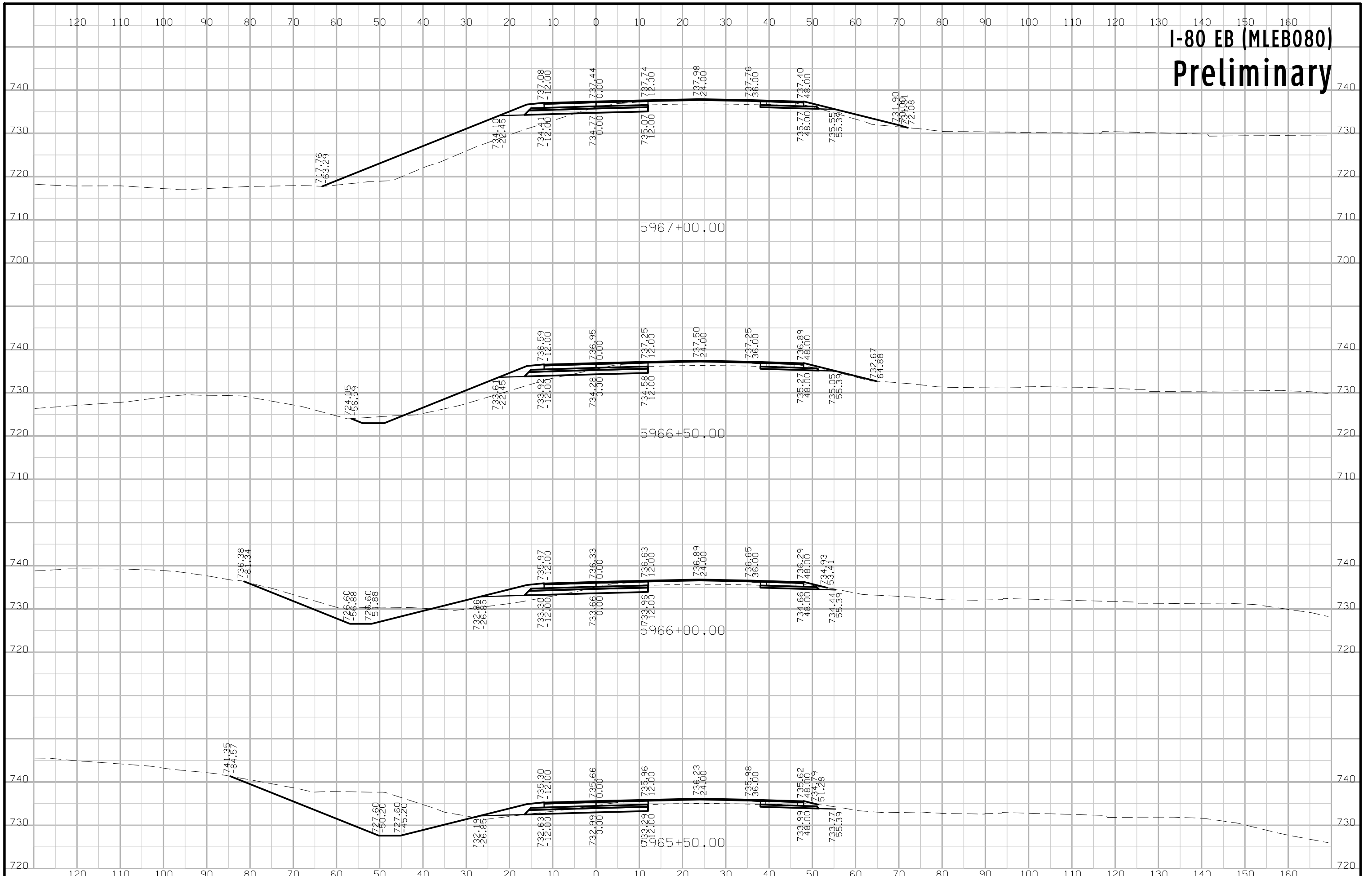
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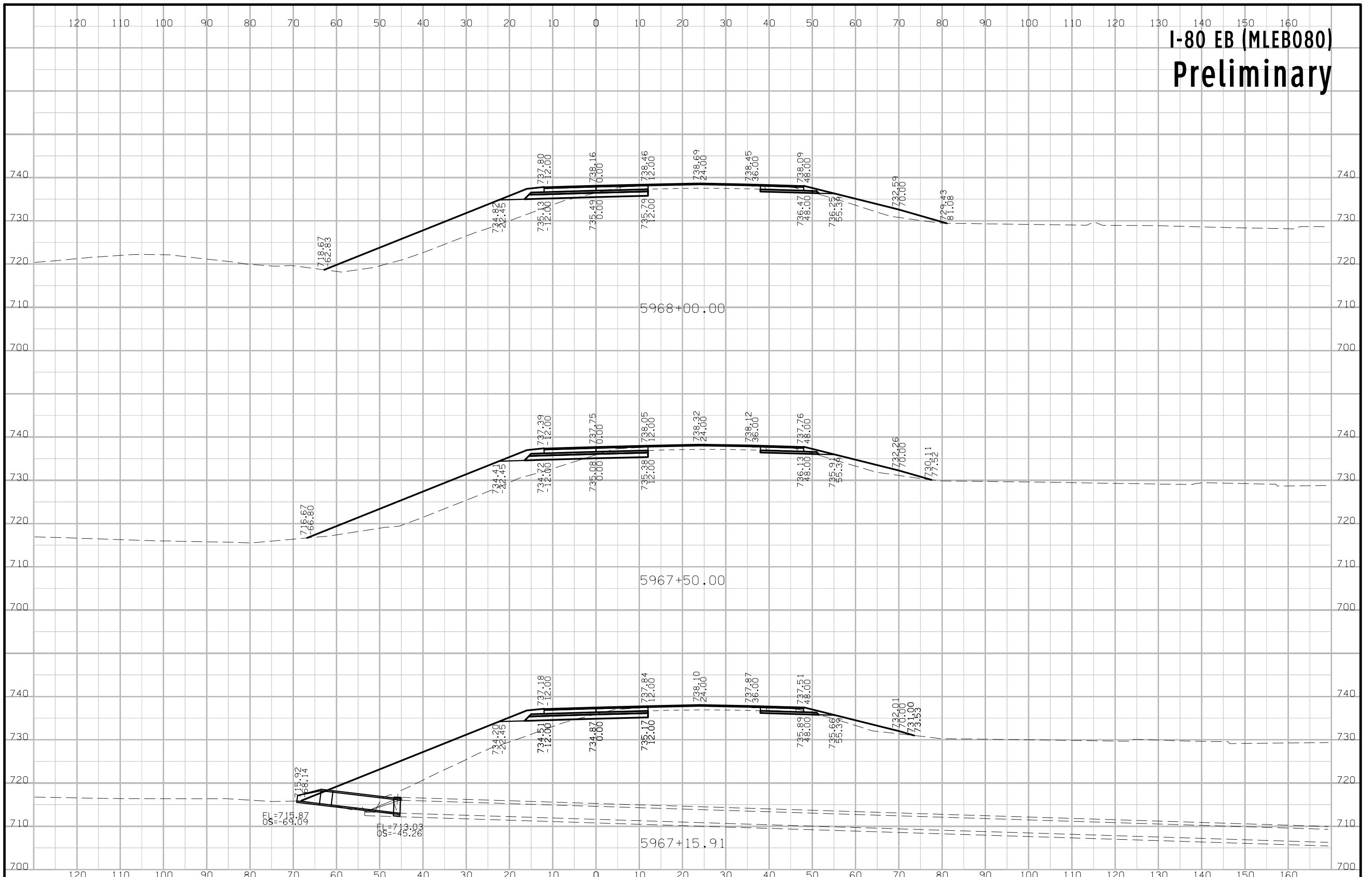
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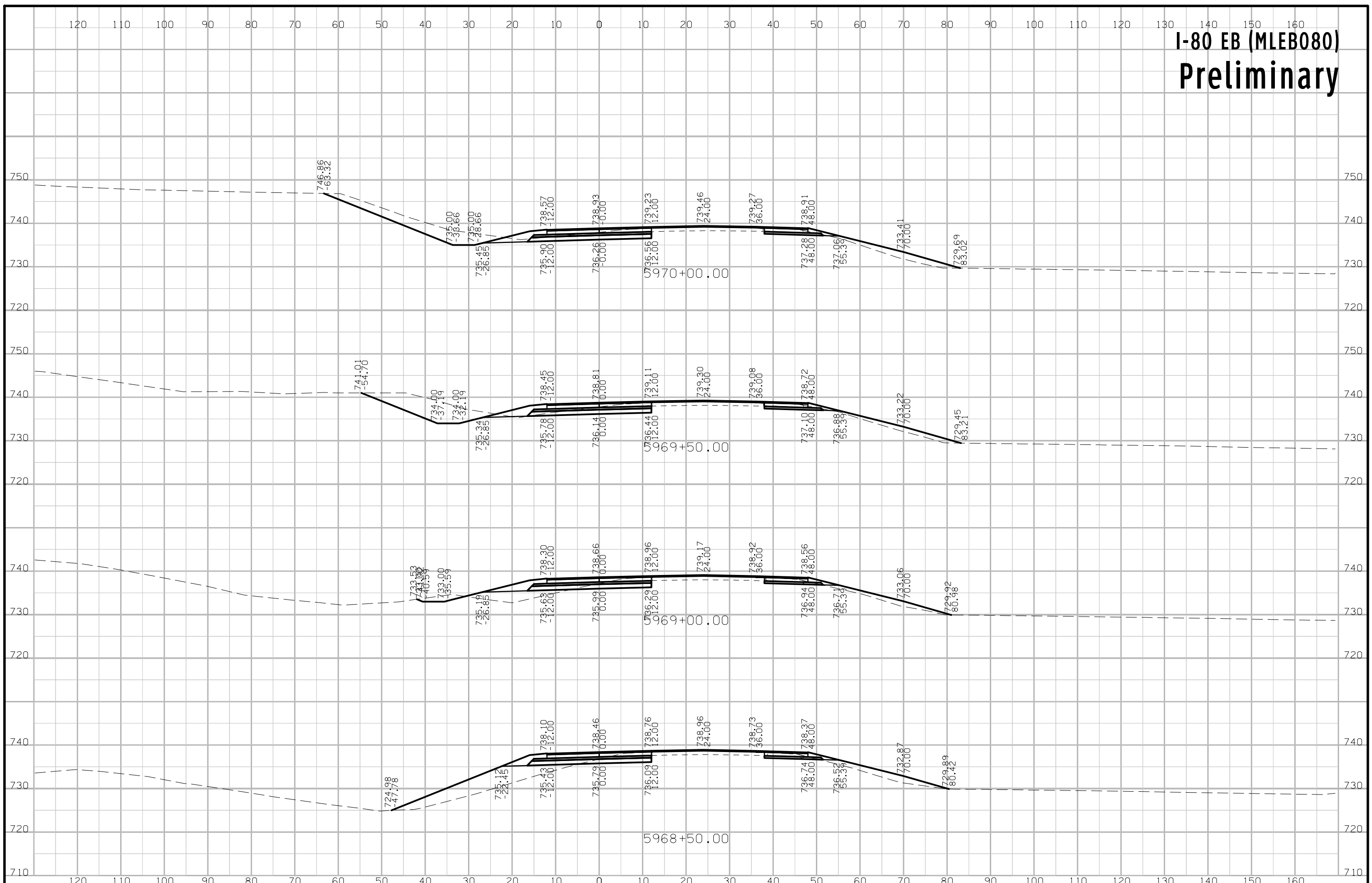
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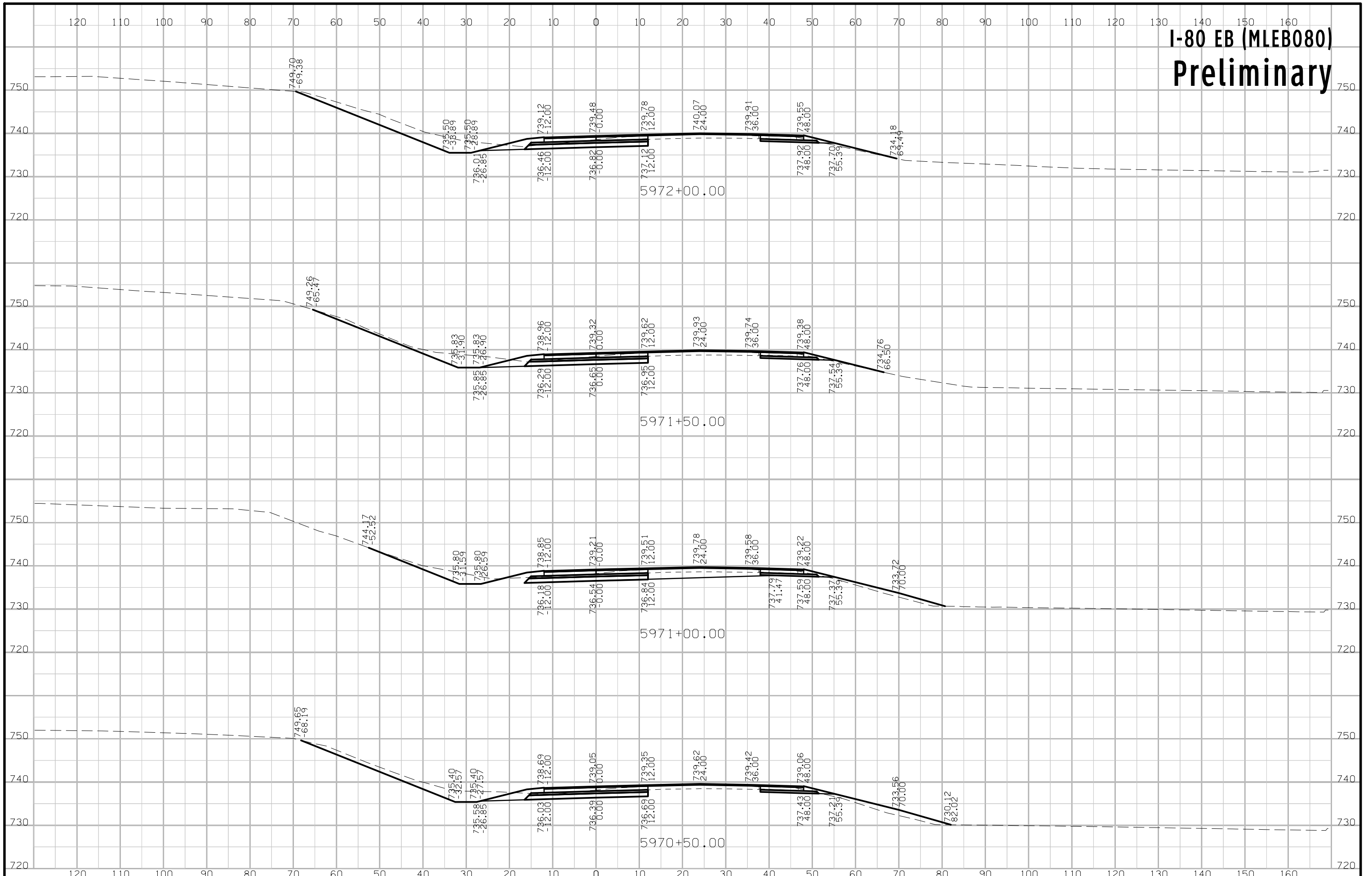
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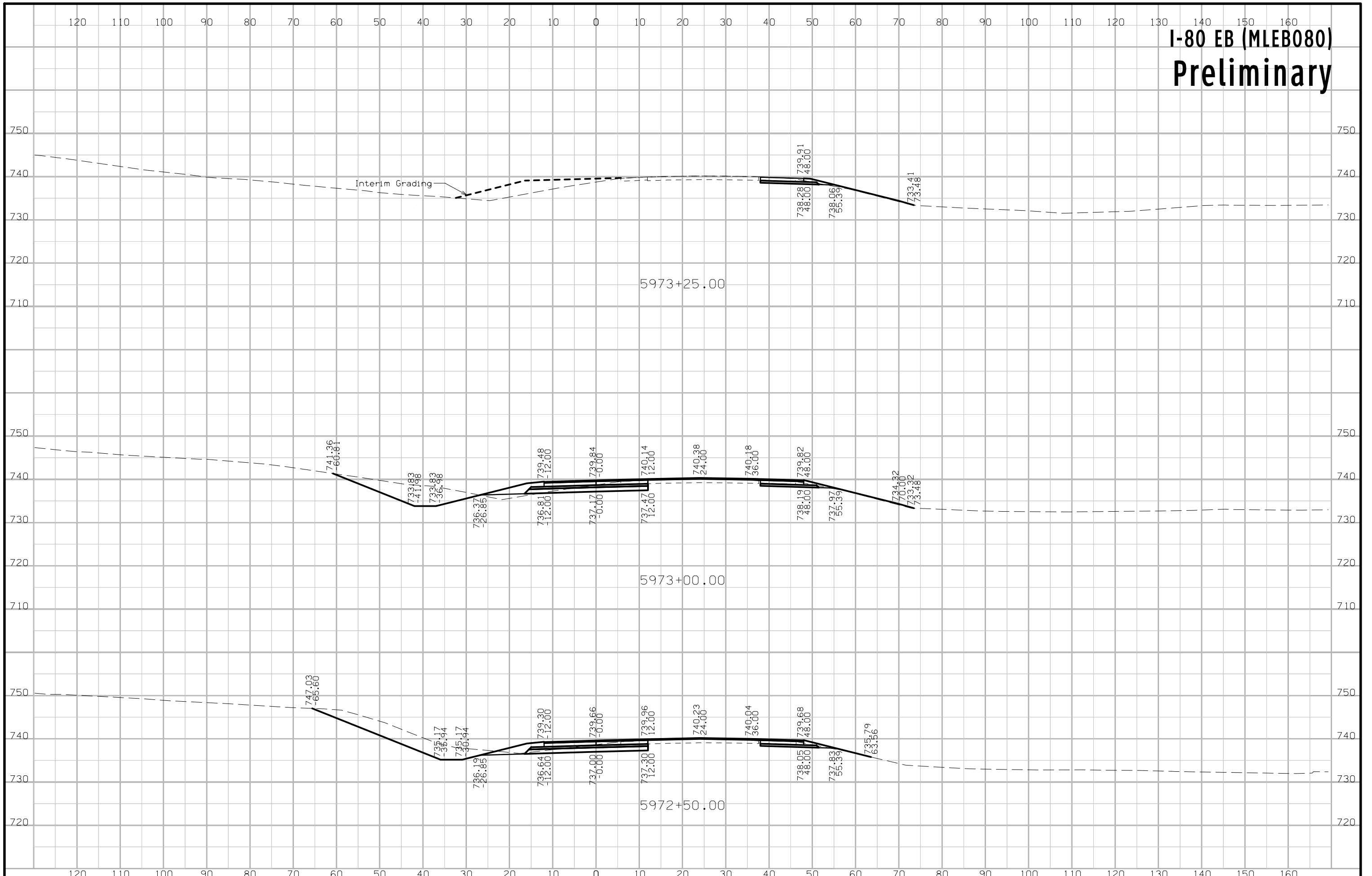
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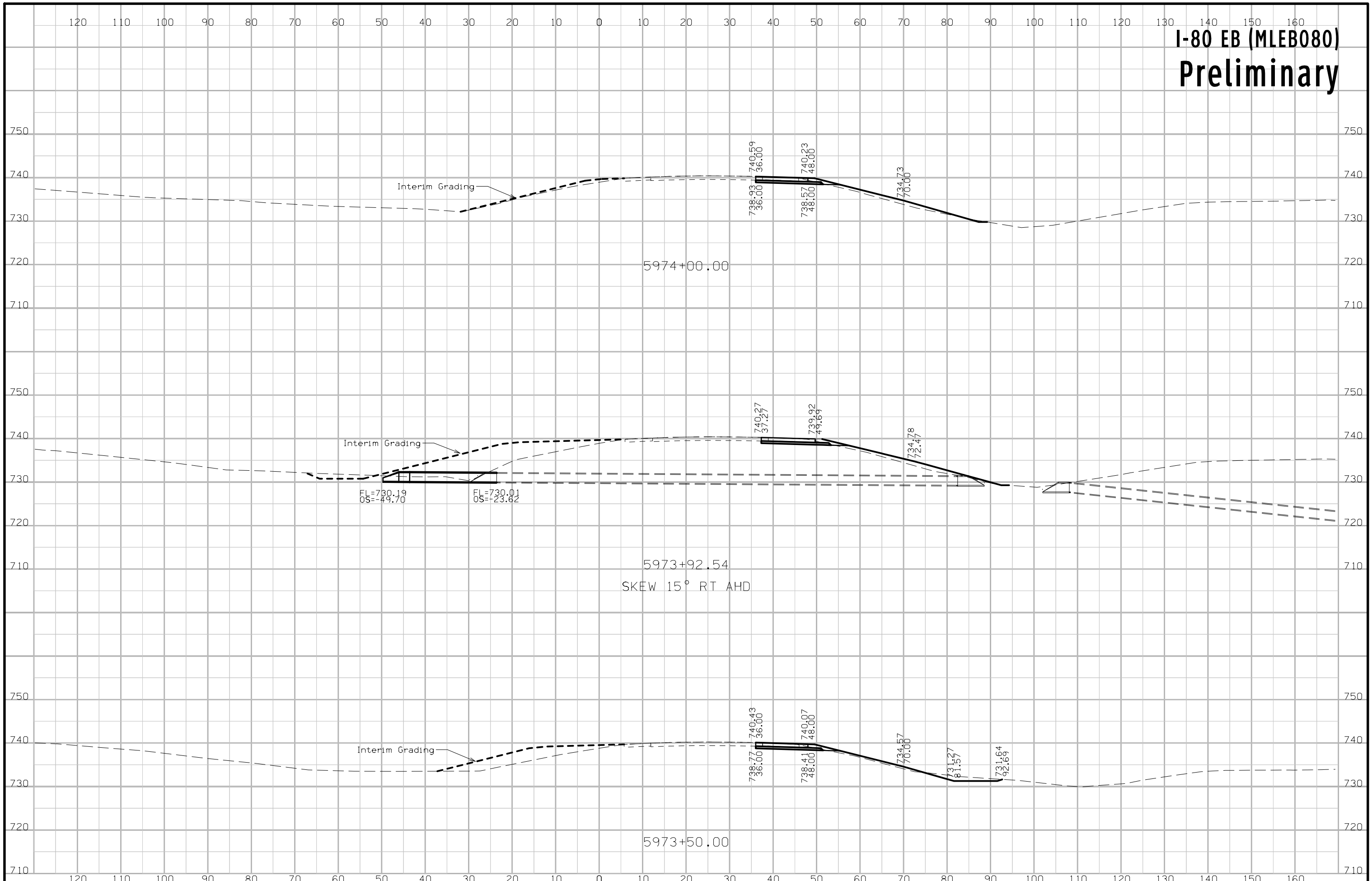
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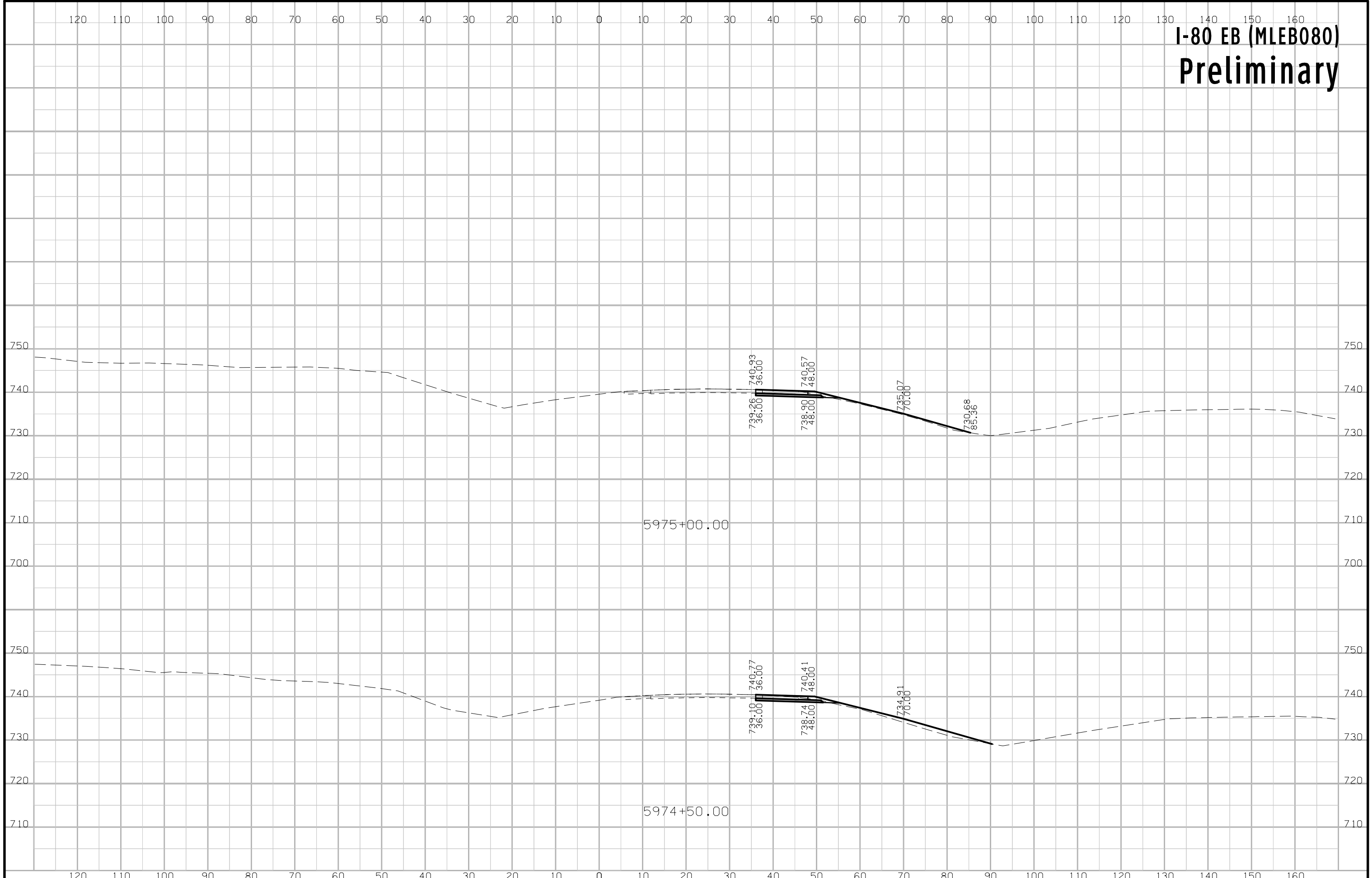
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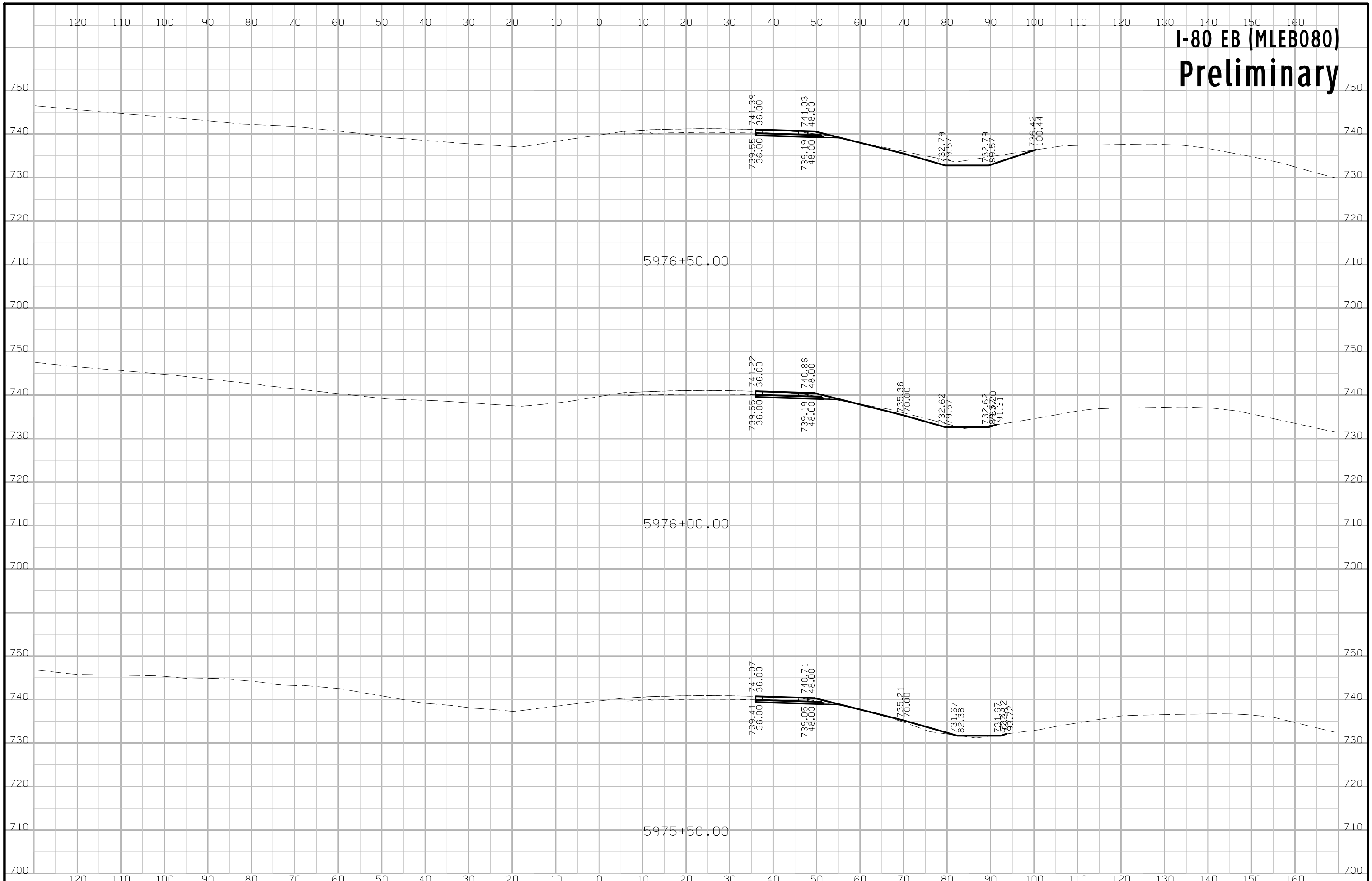
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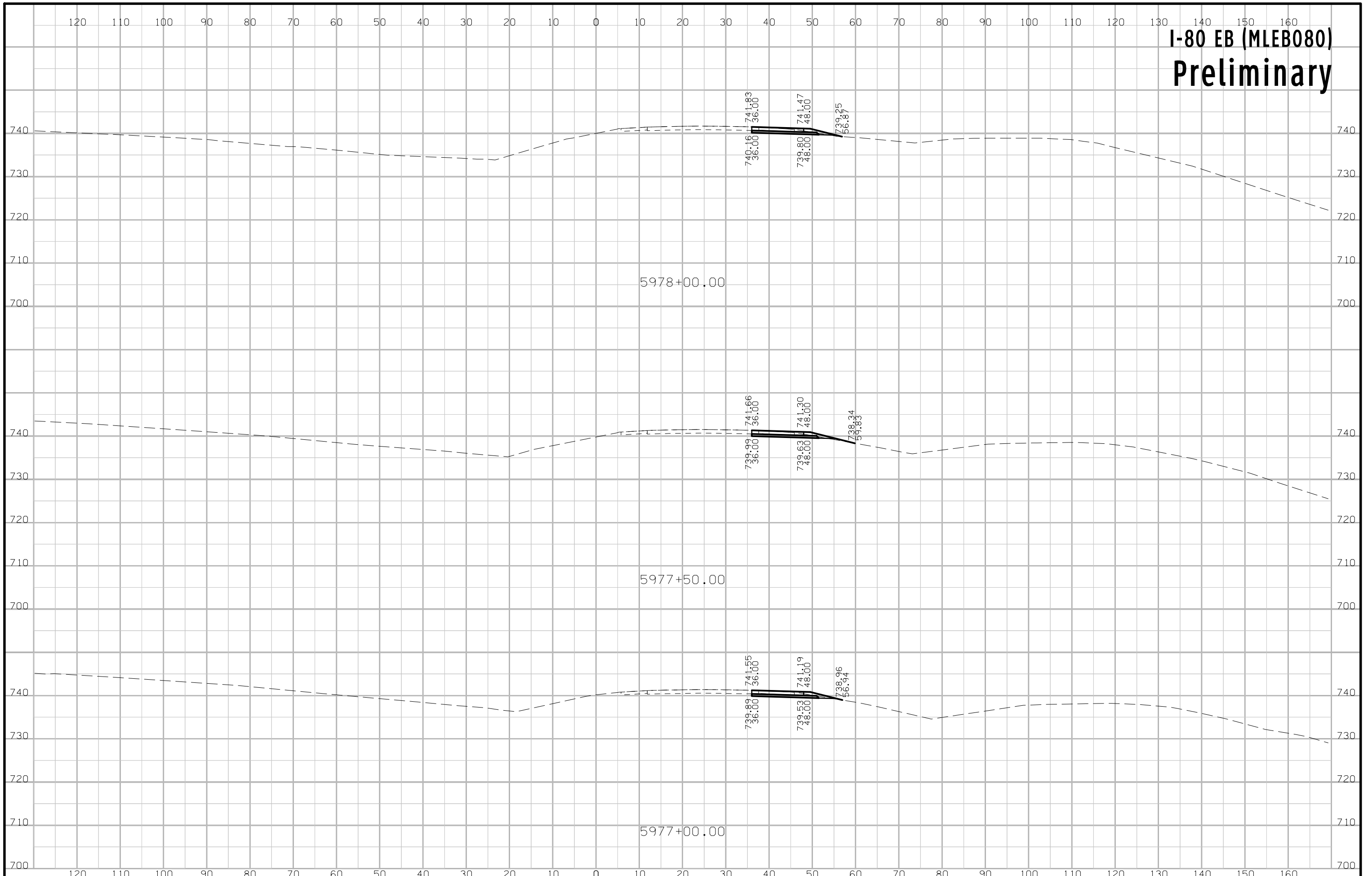
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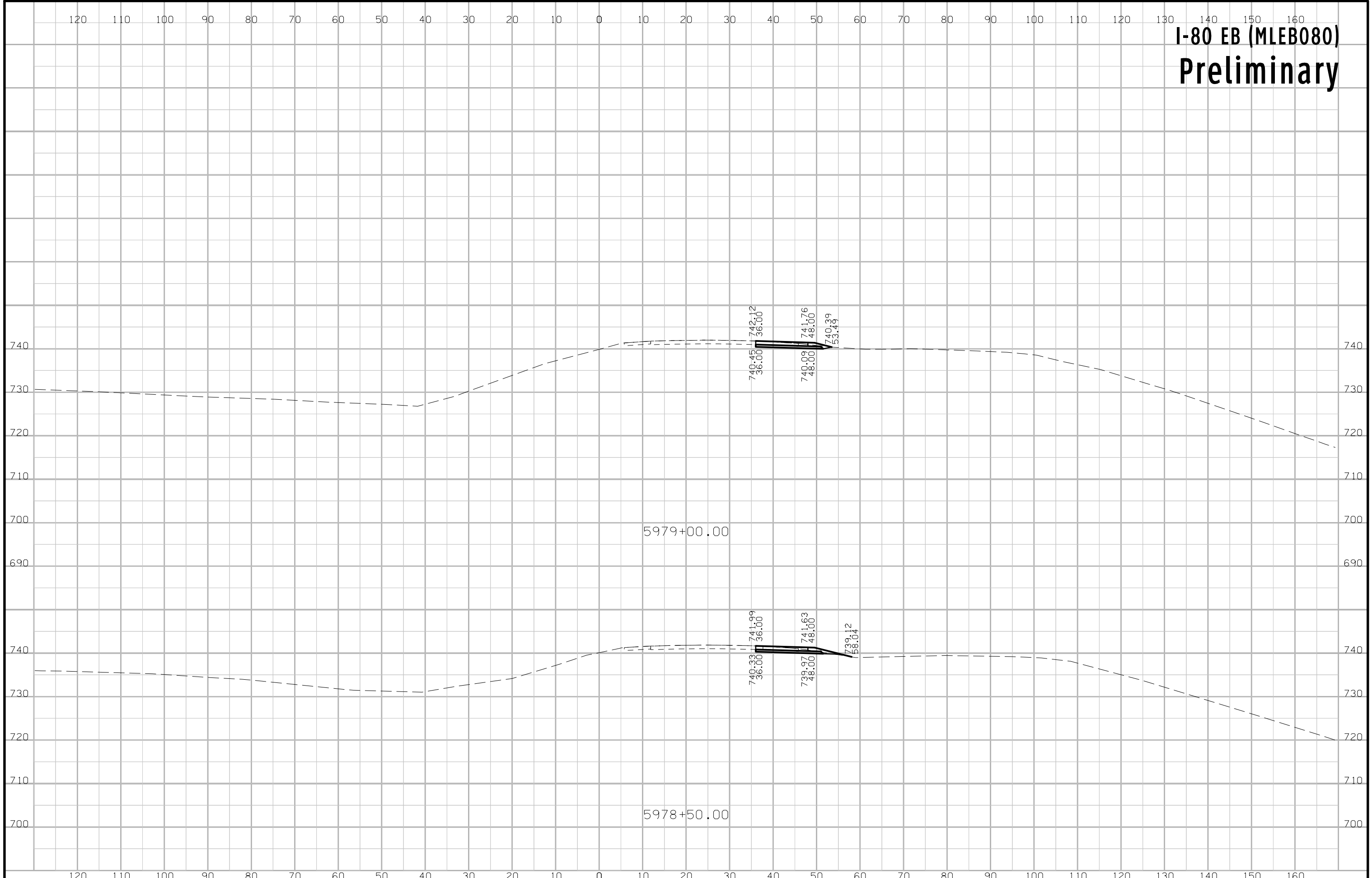
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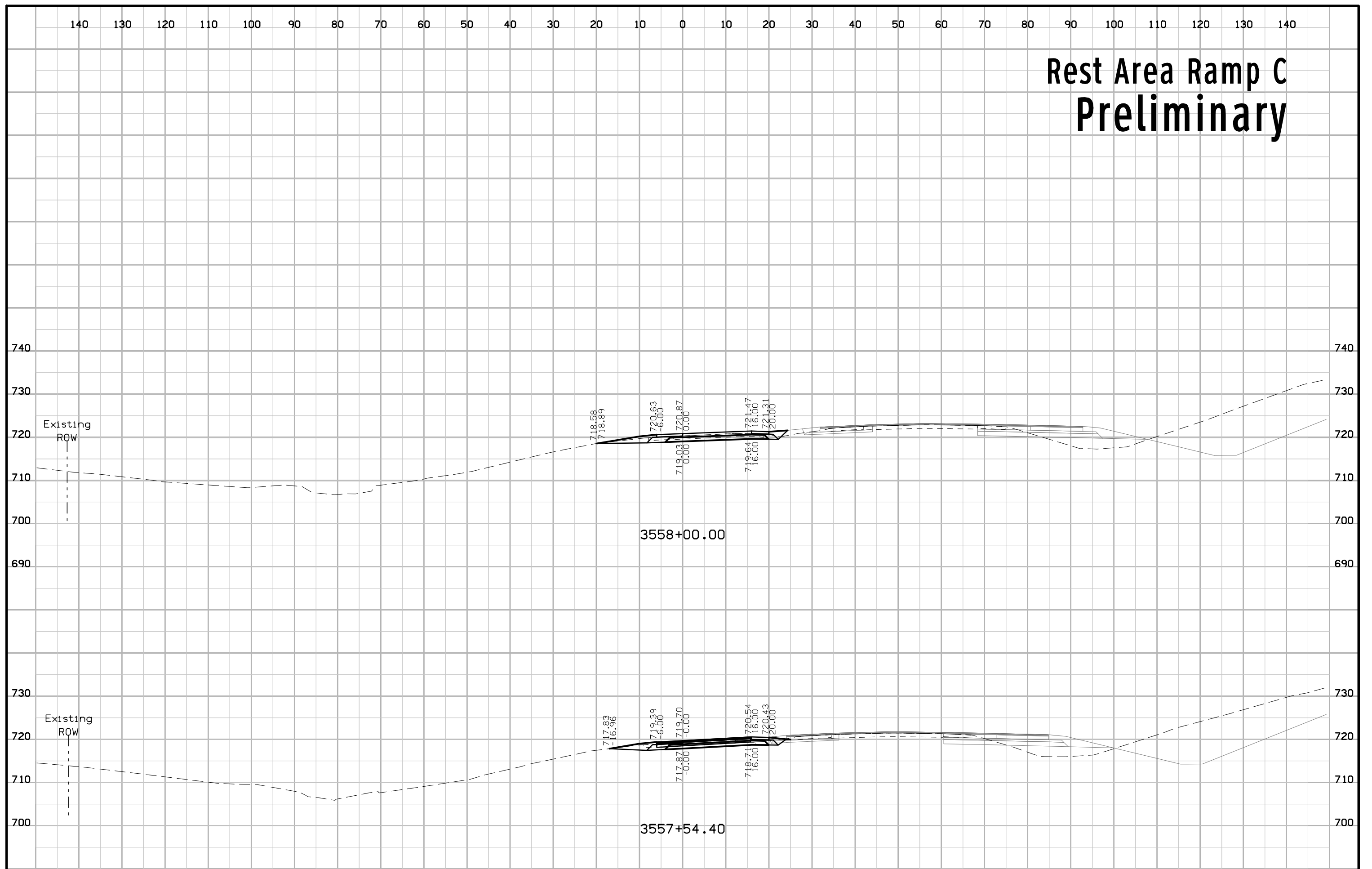
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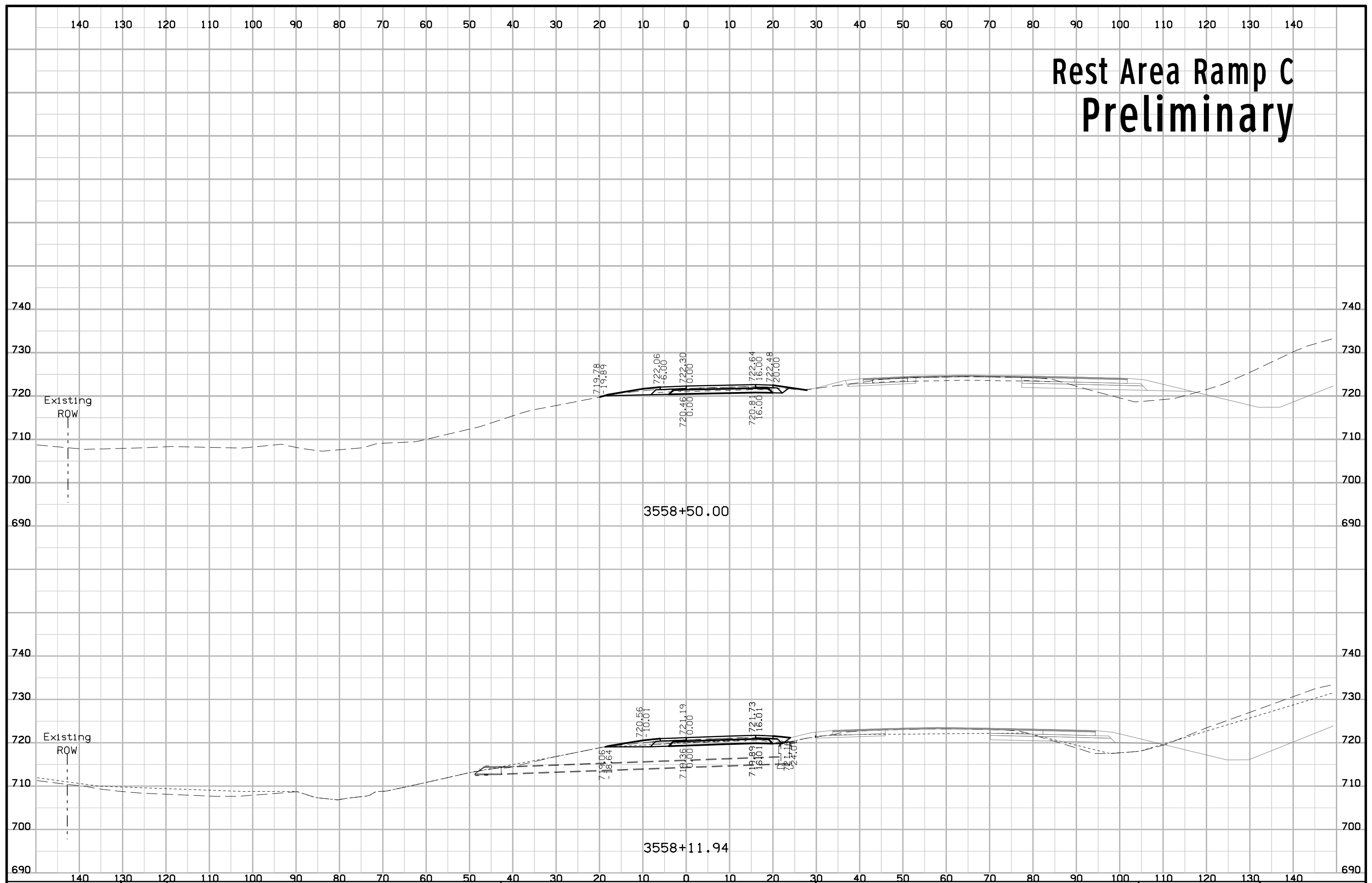
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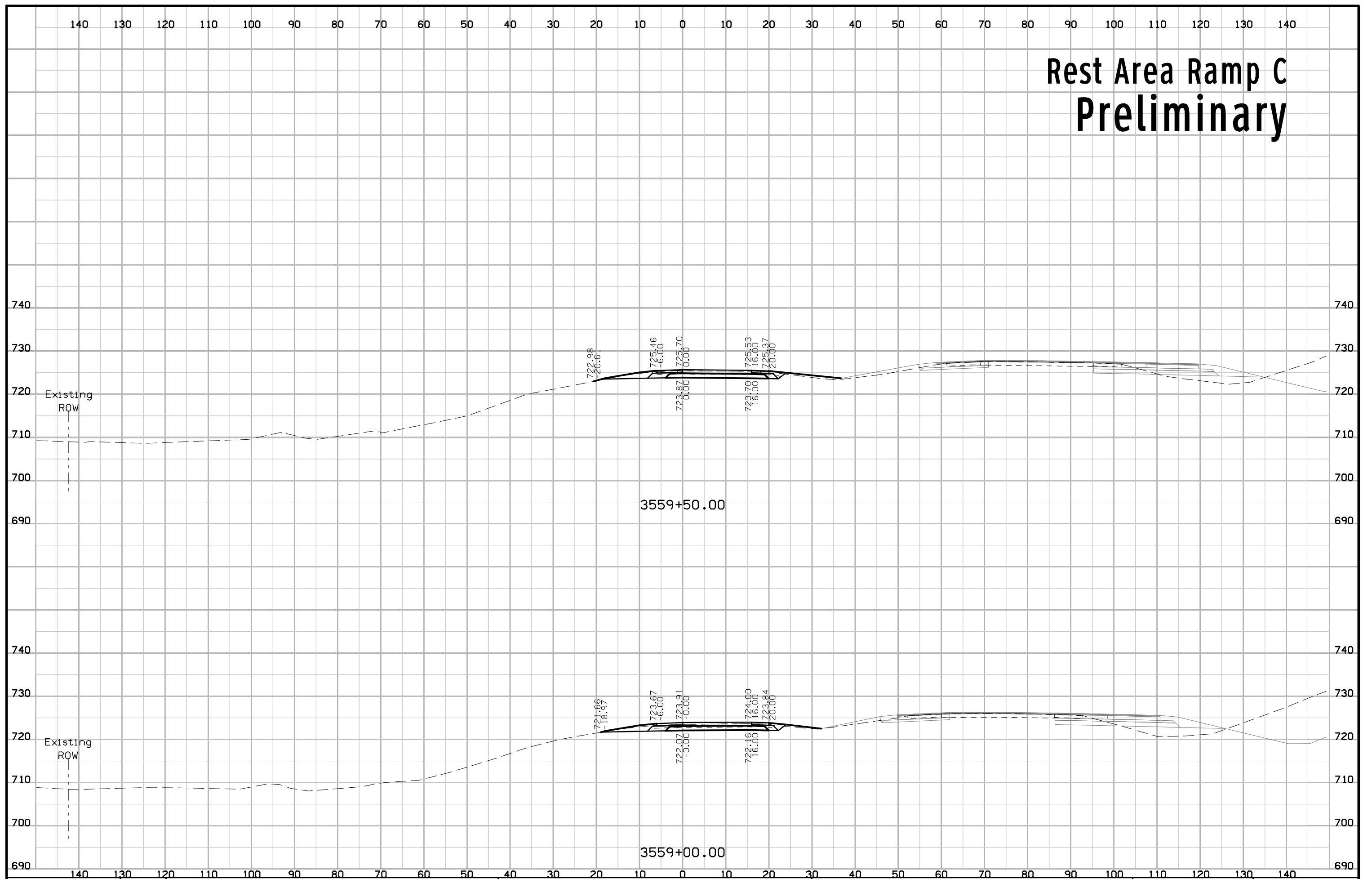
Rest Area Ramp C Preliminary



Rest Area Ramp C Preliminary



Rest Area Ramp C Preliminary



Rest Area Ramp C Preliminary

