

KEOKUK CO.
PCC PAVEMENT - GRADE AND REPLACE
NHSN-092-8(36)--2R-54
 LETTING DATE
 01-19-2022

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
A.2	Design Criteria (Temporary Sheet)
B Sheets	Typical Cross Sections and Details
B.1 - 3	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 7	IA 92
E Sheets	Side Road Plan and Profile Sheets
* E.1	IA 21
* E.2	Co Rd V33
F Sheets	Detour or Temporary Pavement Sheets
* F.1 - 10	Detour Plan and Profile Sheets
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
* J.1	Traffic Control Plan
* J.1	Staging Notes
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3 - 14	Staging and Traffic Control Sheets
N Sheets	Traffic Signal Sheets
* N.1 - 10	Pavement Markings



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM KEOKUK COUNTY

PCC PAVEMENT - GRADE AND REPLACE

IA 92 / IA 21 and IA 92 / Co Rd V33 Intersections

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

97

PROJECT IDENTIFICATION NUMBER

16-54-092-030

PROJECT NUMBER

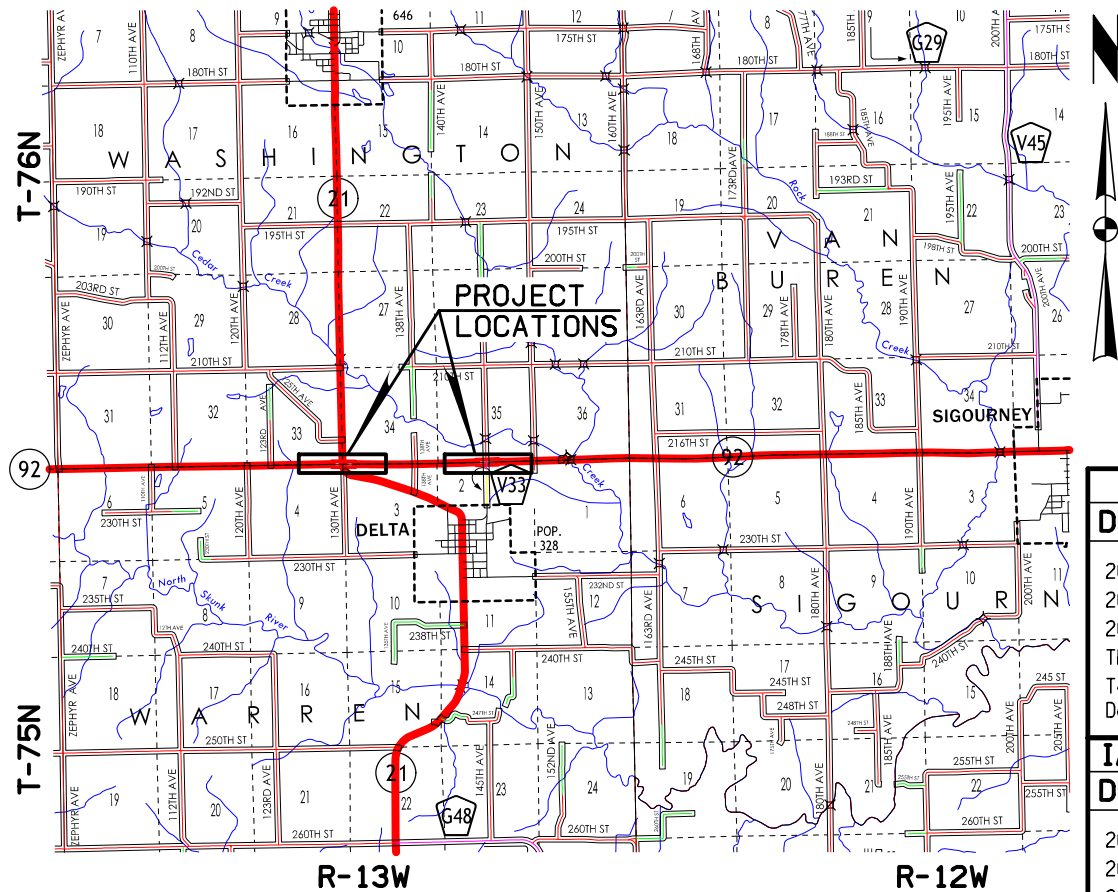
NHSN-092-8(36)--2R-54

R.O.W. PROJECT NUMBER

NHSN-092-8(39)--2R-54

INDEX OF SHEETS

No.	DESCRIPTION
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 36	IA 92 Cross Sections
X Sheets	Side Road Cross Sections
X.1 - 5	IA 21 Cross Sections
X.6 - 8	Co Rd V33 Cross Sections
	* Color Plan Sheets



IA 92 / IA 21 DESIGN DATA RURAL

2021 AADT	2870	V.P.D.
2041 AADT	3530	V.P.D.
20 -- DHV	--	V.P.H.
TRUCKS	15	%
Total		
Design ESALs	--	

IA 92 / Co Rd V33 DESIGN DATA RURAL

2021 AADT	2590	V.P.D.
2041 AADT	3180	V.P.D.
20 -- DHV	--	V.P.H.
TRUCKS	11	%
Total		
Design ESALs	--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Taylor Theulen	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - Date: 03/15/2019

FILE NO.

ENGLISH

DESIGN TEAM

Van Dyke\Stanley Consultants Inc.

KEOKUK COUNTY

PROJECT NUMBER

NHSN-092-8(36)--2R-54

SHEET NUMBER

A.1

4:02:27 PM 2/14/2019 3994

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Roadway	IA 92		Submittal Date	12/04/18
PIN Number	16-54-092-030		Approval Date	
Project Number	NHSN-092-8(36)--2R-54			
District	District 5	Assistant District Engineer	Mark Van Dyke	
County	KEOKUK	or		
Route	IA 92		Office Director	
Location	IA 21 and County Road V33 Intersections			
Work Type	Grade and Pave			
Segment Manager				
Designer	Stanley Consultants			

Rural Two-Lane Highways (Rural Arterials)				
Design Element	Preferred	Acceptable	Project Values	
Design speed (mph)	60	50	60	
Maximum superelevation rate (Refer to Section 2A-2)	6%	8%	6%	
Design lane width (ft)	12	12	12	
Full depth paved width (ft)	14	12	12	
Right turn lane (ft)	12	10	12	
Climbing Lane (ft)	12	12	12	
Left turn lane (ft)	12	10	12	
Pavement cross-slope (on tangent sections)	Through lanes	2%	1.5% minimum, 2% maximum	2%
	Auxiliary and turn lanes	3%	3% maximum	3%
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)	4%		Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard	N/A
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	N/A
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3:1
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)	Curbed roadways	2%	not steeper than 3:1	N/A
		3:1	2.5:1	3:1
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	5 x 10
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	N/A
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	N/A
Bridge width—existing*	Bridge length ≤ 200 ft	design lane widths + no less than 2 ft left and right	design lane widths + 2 ft. offset left and right	N/A
		16.5	16	N/A
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5 at interchange locations, 15 at all other locations	14	N/A
	Over non-primary	23.3	23.3	N/A
	Over railroad	17.5	17	N/A
	Sign trusses and pedestrian bridges	Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	N/A
Structural Capacity				N/A
Level of Service	B	B	B	

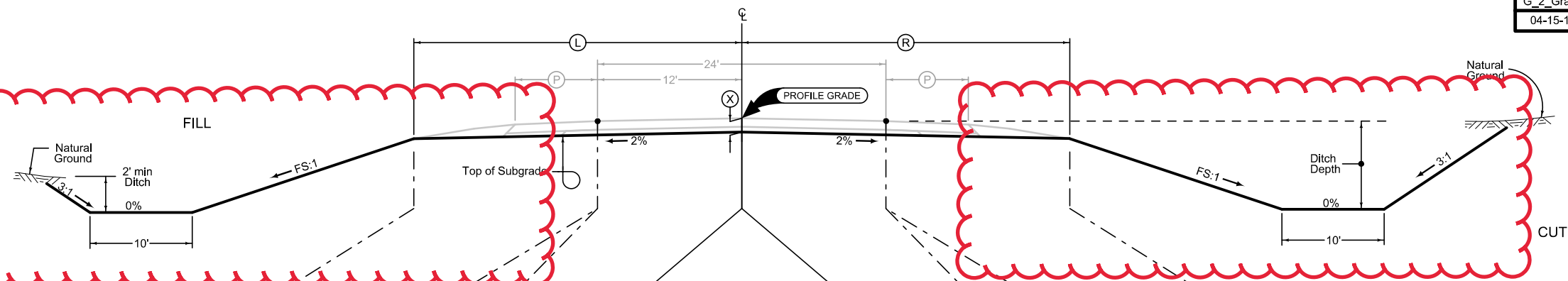
*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exception is required)

Roadway Design Speed (mph) = 60		Design Criteria for High Speed Roadways												Project Values
Design Element	Design Speed, mph	Preferred Criteria					Acceptable Criteria							
		50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)		425	495	570	645	730	820	425	495	570	645	730	820	570
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	1330
	$e_{max} = 6\%$	--	--	--	--	--	--	758	960	1200	1480	1810	2210	--
Minimum vertical curve length (ft) (Refer to Section 2B-1)	crest vertical curves	150	165	180	195	210	225	150	165	180	195	210	225	200
	$e_{max} = 8\%$	84	114	151	193	247	312	84	114	151	193	247	312	151
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	sag vertical curves	96	115	136	157	181	206	96	115	136	157	181	206	136
	roadways without fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	136
Minimum gradient (%) (Refer to Section 2B-1)	Urban roadways	0.5						0.3% with a curb, 0.0% without a curb						0.3
	Rural roadways													N/A
Maximum gradient (%) (Refer to Section 2B-1)	Interstates	4						3						3
														N/A
Clear zone	See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						30	

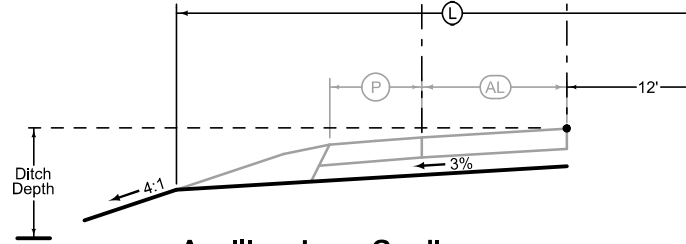
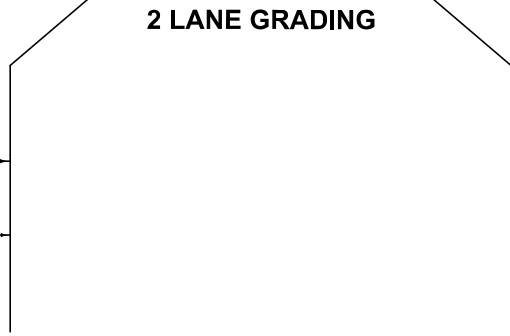
Design year ADT = 3530		Effective Shoulder Width and Type for Two-Lane Highways				
Preferred (values shown in feet)		Urban Roadways		Acceptable (values shown in feet)		Project Values
Rural Roadways	Urban Roadways	Rural Roadways	Urban Roadways	Rural Roadways	Urban Roadways	
Turn lanes with shoulders	6	6	6	0	6	
Turn lanes with curbs	6	See Section 3C-2	6	0	N/A	
Climbing Lanes	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width		
	6	4	4	0	N/A	
Two-Lane Highways	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width		
	10	10	8	2*	10' paved	
On roadways approaching urban areas (due to increased bike traffic)	10	10	6	2*		
On all curves with a superelevation rate of 7.0% or greater	10	10	4	2*		
On roadways with design year ADT > 5000	10	6	4	2*		
On all other NHS	10	4	4	2*		
On non-NHS routes with design year ADT > 3000	10	4	4	2*		
On non-NHS routes with design year ADT < 3000	8	2*	4	2*		

*Requires safety edge-Refer to Section 3C-6
 Curbs should be located beyond the outer edge of the effective shoulder width in rural areas
 Refer to Section 3C-2 for curb offsets in urban areas
 Notes:

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	FS
IA 92	143+86.62 - 168+86.25	31.6-47.6	31.6	21.5	4:1
IA 92	223+61.49 - 247+83.91	31.6-47.6	31.6	21.5	4:1

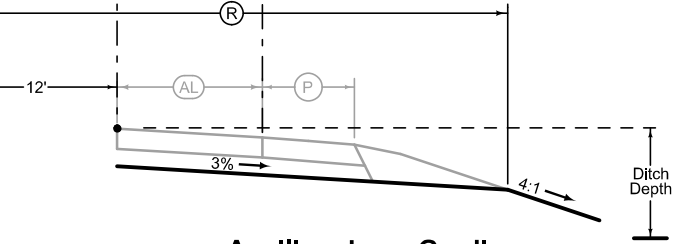


Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.
See plan & profile sheets and cross sections for additional details of ditches and backslopes.



Auxiliary Lane Grading

LOCATION		(R)
ROAD IDENTIFICATION	STATION TO STATION	Feet
IA 92	157+57.43 - 166+03.04	76.6-44.6



Auxiliary Lane Grading

LOCATION		(R)
ROAD IDENTIFICATION	STATION TO STATION	Feet
IA 92	148+08.93 - 155+93.94	31.6-57.3

Currently using 10:1 for 4 ft and then 4:1 to the toe of slope which is pushing out construction limits considerably in various areas, requiring additional ROW. Should other options be considered here such as removing 10:1 area and using 6:1 to clear zone and then 3:1 to toe of slope?

Full Depth HMA Shoulder

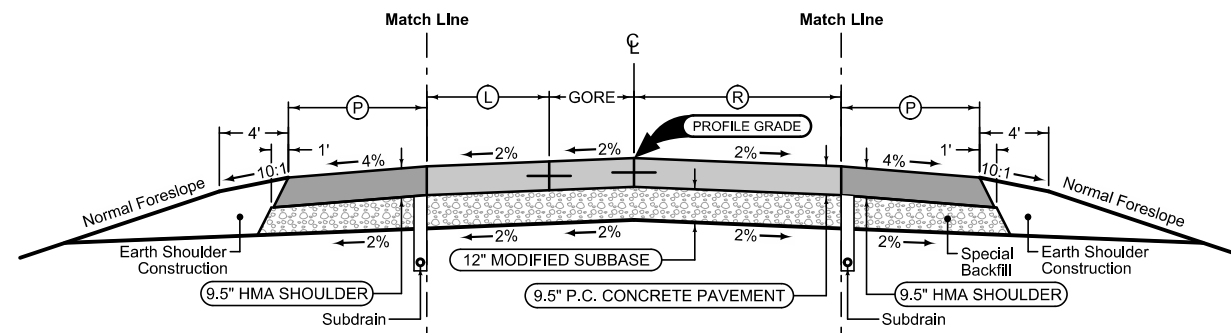
Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION		(P) Feet
134+25.00	154+88.36	10
166+03.04	178+50.00	10
214+00.00	257+45.00	10

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION		(P) Feet
134+25.00	148+08.93	10
158+61.62	178+50.00	10
214+00.00	257+45.00	10



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

2P_10-19-10				
STATION TO STATION		(L) Feet	GORE Feet	(R) Feet
143+86.62	153+36.22	12	0 - 16	12
153+36.22	160+06.57	12	16	12
160+06.57	168+86.25	12	16 - 0	12
223+61.49	232+37.70	12	0 - 16	12
232+37.70	239+07.70	12	16	12
239+07.70	247+83.91	12	16 - 0	12

Full Depth HMA Shoulder

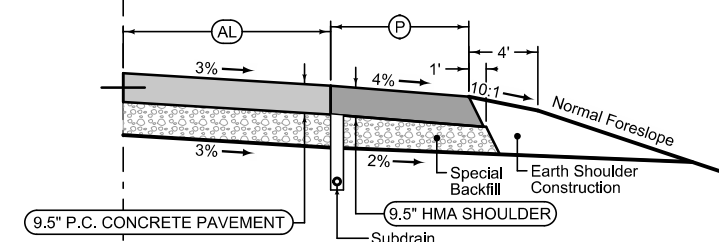
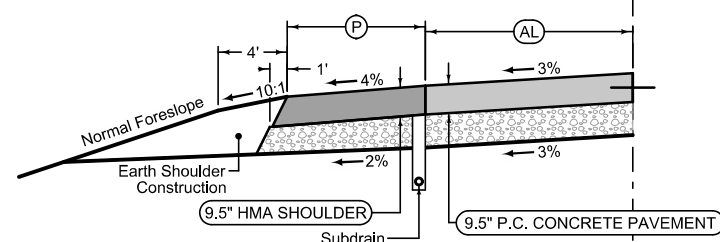
Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION		(P) Feet
157+57.43	164+83.29	6
164+83.29	166+03.04	6 - 10

Auxiliary Lane

Longitudinal joint: L or KT
Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
157+57.43	166+03.04	32.7 - 0



Auxiliary Lane

Longitudinal joint: L or KT
Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
148+08.93	155+93.94	0 - 29.7

Full Depth HMA Shoulder

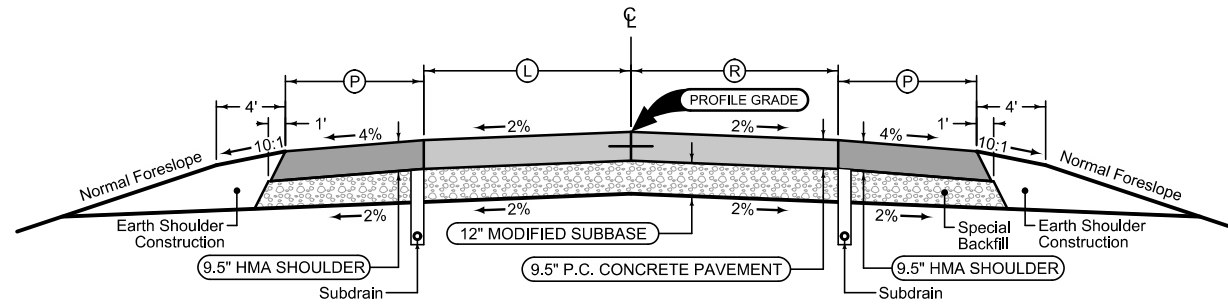
Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION		(P) Feet
148+08.93	148+97.46	10 - 6
148+97.46	155+93.94	6

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION	(P)	Feet
1155+05.68	1156+59.09	6
1156+99.23	1159+12.83	6



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

2P_10-19-10			
STATION TO STATION	(L)	(R)	Feet
1155+05.68	1156+59.09	11	11
1156+99.23	1159+12.83	11	11

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

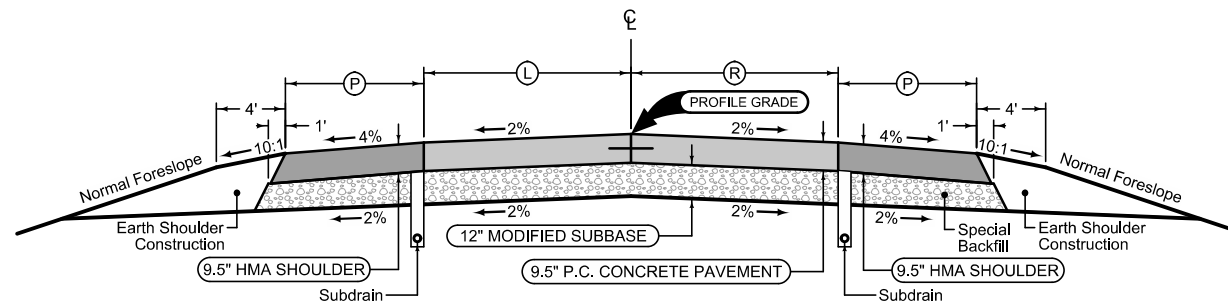
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STATION TO STATION	(P)	Feet
1155+05.68	1156+59.09	6
1156+99.23	1159+12.83	6

IA 21

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION	(P)	Feet
1234+02.48	1235+60.70	6



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

2P_10-19-10			
STATION TO STATION	(L)	(R)	Feet
1234+02.48	1235+60.70	12	12
1236+00.70	1236+60.84	12	12

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_P_FullHMA_10-19-10		
STATION TO STATION	(P)	Feet
1234+02.48	1235+60.70	6

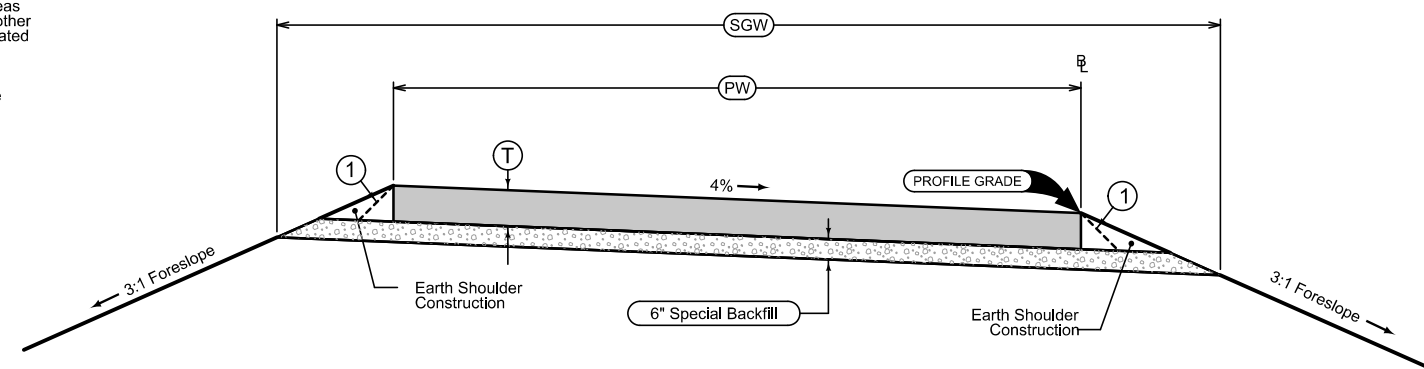
Co Rd V33

ROAD IDENTIFICATION	LOCATION STATION TO STATION		DIMENSIONS						6\"/>	
			HMA			PCC				
			PW Feet	T Inches	SGW Feet	PW Feet	T Inches	SGW Feet		
DET10	5136+04.93	5155+63.82	VARIES	8	VARIES	VARIES	7	VARIES		
DET11	5157+65.59	5178+50.15	VARIES	8	VARIES	VARIES	7	VARIES		
DET20	5214+00.00	5234+63.07	VARIES	8	VARIES	VARIES	7	VARIES		
DET21	5236+83.06	5257+45.16	VARIES	8	VARIES	VARIES	7	VARIES		

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

D_Detour
10-21-14

DESIGNER
INFO

SURVEY SYMBOLS

- ▣ FENO FENO Monument
- CP Control Point
- PLG Location of General Photo
- PCP Photo Control Point
- CU Back of Curb
- GU Gutter In Front of Curb
- EP Edge of Paved Roads (ML or SR)
- SH Paved Shoulder
- D Centerline Draw or Stream (Down)
- GR Ground Shot
- LIN Miscellaneous Line
- SNP Unpaved Shoulder
- C Centerline BL of Road (ML or SR)
- TIL Tile Line
 - OUT Tile Outlet
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- BL Topo Breakline
- EG Edge of Gravel Road
 - DTM Photogrammetry Elv Control Check
 - PRO Profile Shot
- PIP Pipe Culvert
 - SOP Size of Pipe or Culvert
- CUL Culvert
- ▣ IN Storm Sewer Intake
- UE Utility Elevation
- CON Concrete or A/C Slab
 - REF Reference Tie Point
 - PI Tangent Point
 - PC Curve Point
 - PT Curve Point
 - SCR Section Corner
- ▣ POT Tangent Point
- WC Wild Card (Misc. Field Shot)
- T1 — TL1D Telephone Line Co. 1 - Quality D
- F0 — FO1D Fiber Optic Co. 1 - Quality D
 - TP TPD Telephone Pedestal
- E1 — EL1D Electric Line Co. 1 - Quality D
- T2 — TL2D Telephone Line Co. 2 - Quality D
 - LUM Luminaire
 - PPA Power Pole Co. 1
 - PR Electric Riser Pole
- W — WL1D Water Line Co. 1 - Quality D
 - WV Water Valve
- ROW Right of Way Mark
- FW Wire Fence
- DU Centerline Draw or Stream (Up)
- GDL Guard Rail Steel

UTILITY LEGEND

- T1 — Windstream
Kelly Eggers
101 West Madison
Mt. Pleasant, IA 52641
319-385-5004
- F0 — Alliant Energy
Heather Doe
200 1st St. SE
Cedar Rapids, IA 52401
319-786-8196
- T2 — ICN
Mike Broderick
400 E 14th Street
Grimes State Office Bldg
Des Moines, IA 50319
515-725-4610
- W — Wapello Rural Water Association
Krista Huffman
PO Box 538
Ottumwa, IA 52501
641-682-8351
- E1 — State of Iowa Highway Maintenance
Supervisor - Transportation
Douglas Swan
207 E. 227th Street
Fairfield, IA 52556
641-472-5367

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

Reference Point

Station — Survey Line

- ▲ Section Corner
- — — — — Ground Line Intercept
- ▨ Saw Cut
- ▧ Guardrail
- ▩ Trench Drain
- • — • — • — High Tension Cable Guardrail
- ~ ~ ~ ~ ~ Sheet Pile
- ▨ Pavement Removal
- ▩ Clearing & Grubbing Area
- ▩ Pavement Obliterate

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
- C/A Access Control
- |— Property Line

SURVEYED UTILITY OWNER SYMBOLS

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

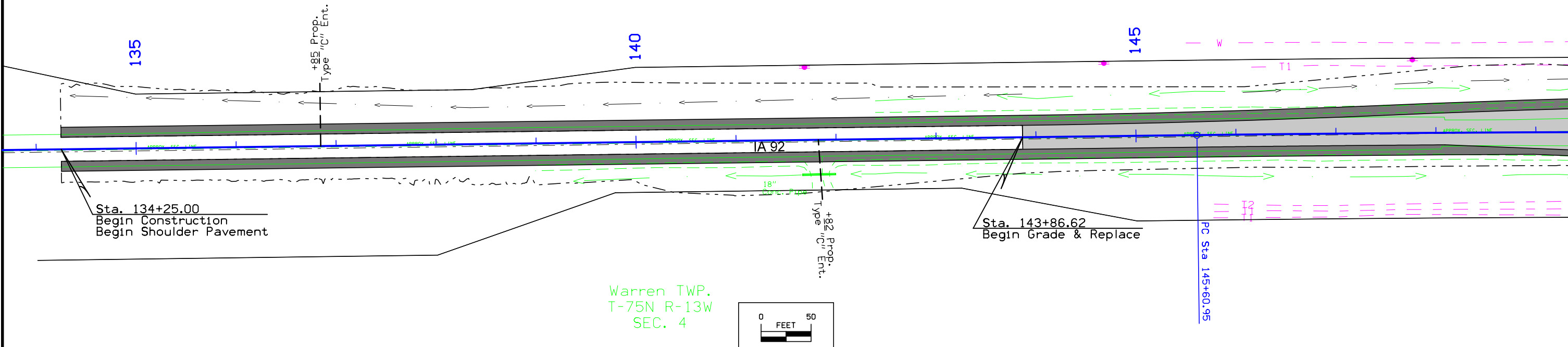
Remark Abbreviations
 QLA Quality Level A Highest guideline quality level
 QLD Quality Level D Lowest guideline quality level

- T1 — TL1D Windstream Communications - Quality D
- F0 — FO1D Windstream Communications - Quality D
- E1 — EL1D Iowa DOT- Quality D
- T2 — TL2D Iowa Communications Network - Quality D
- PPA Alliant Energy
- PR Iowa DOT
- W — WL1D Wapello Rural Water Association - Quality D

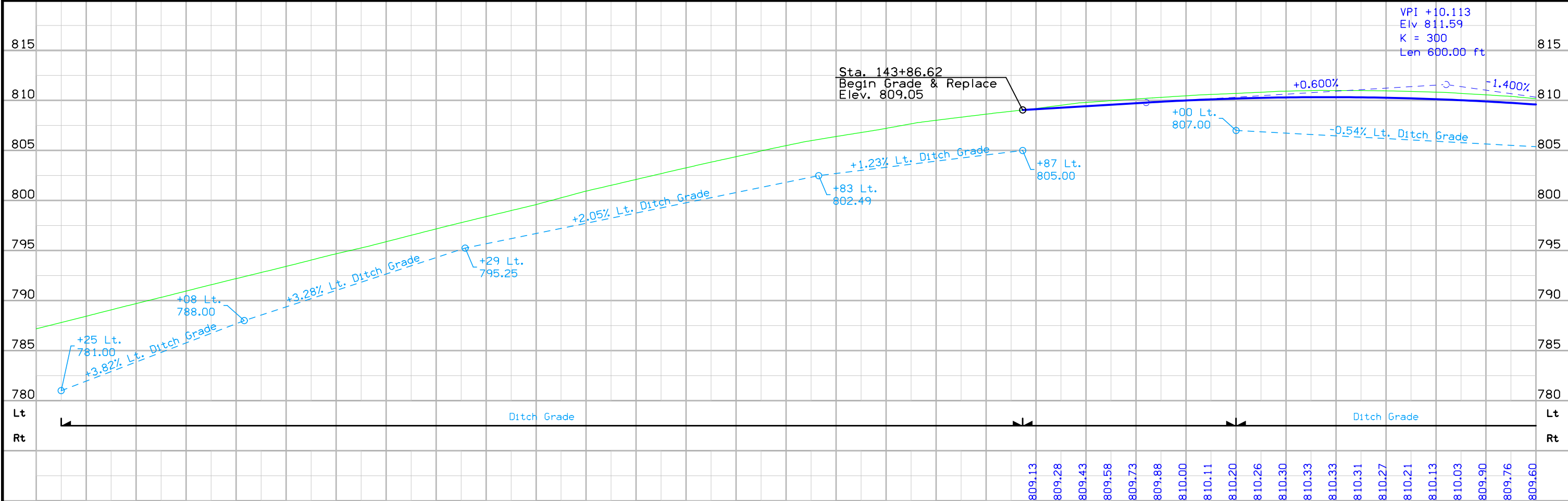
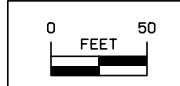
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

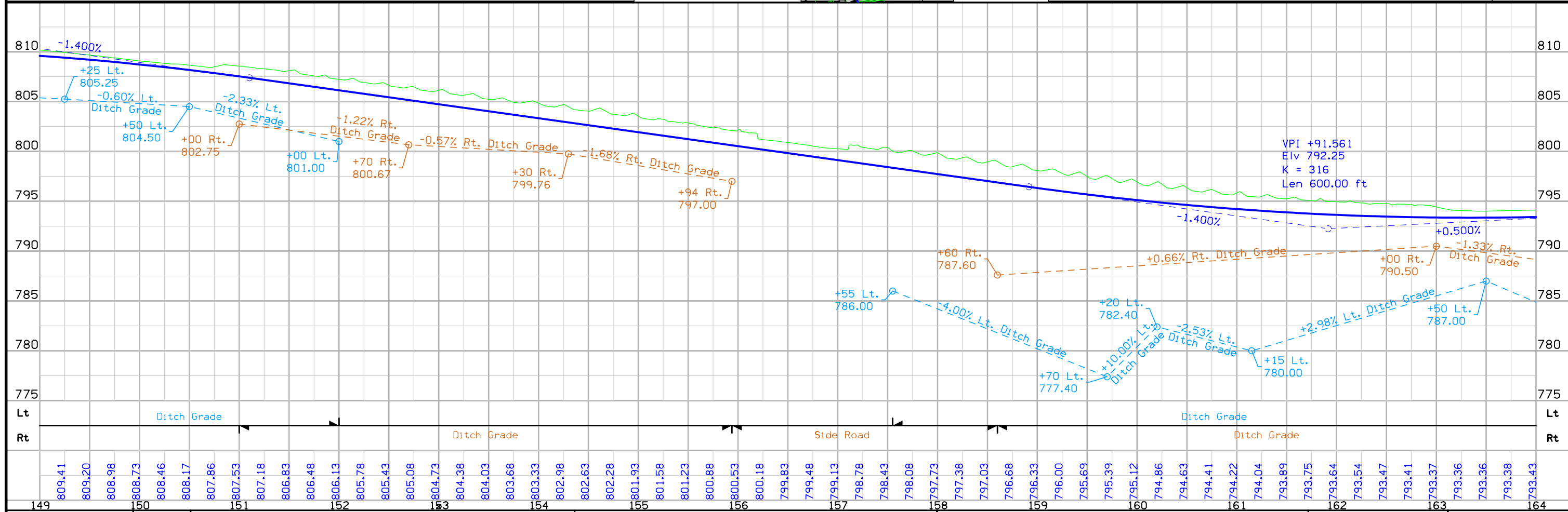
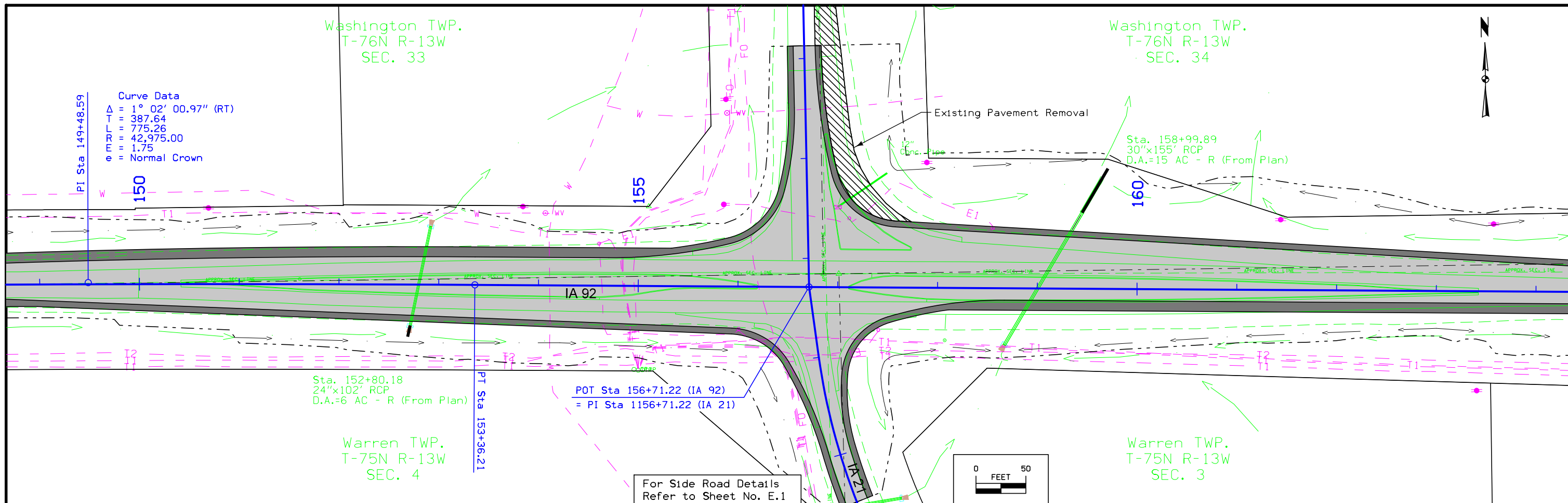
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T-76N R-13W
SEC. 33



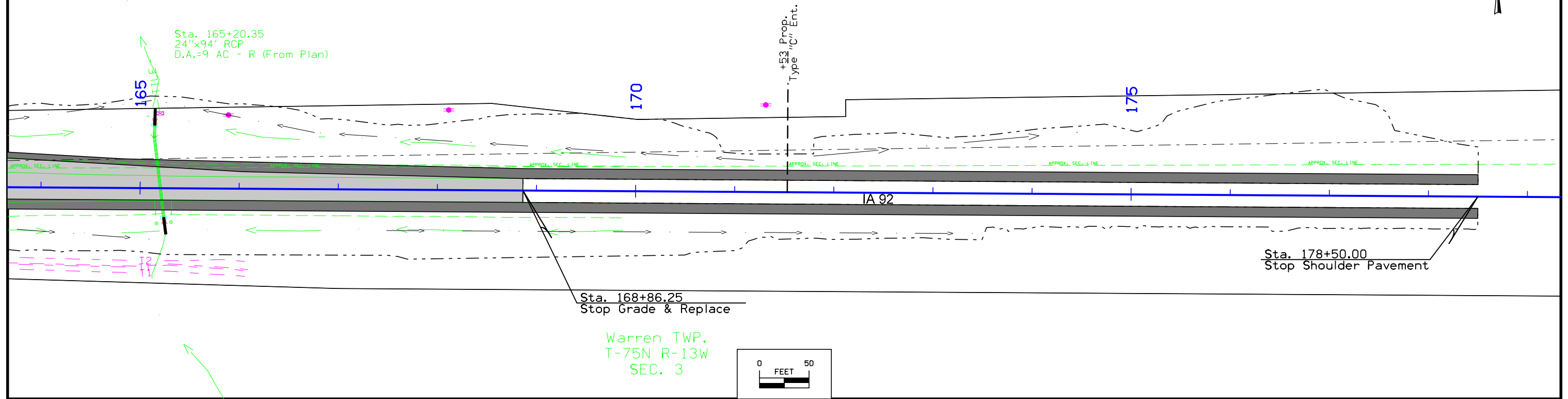
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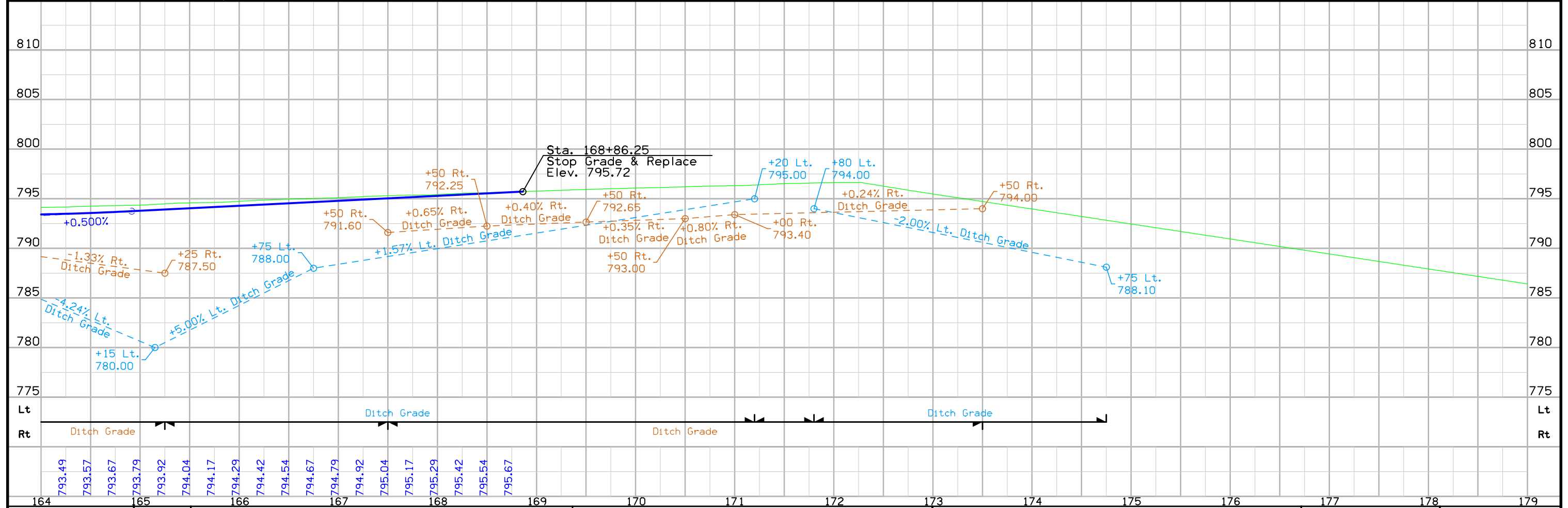
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810.13	810.03	809.90	809.76	809.60											



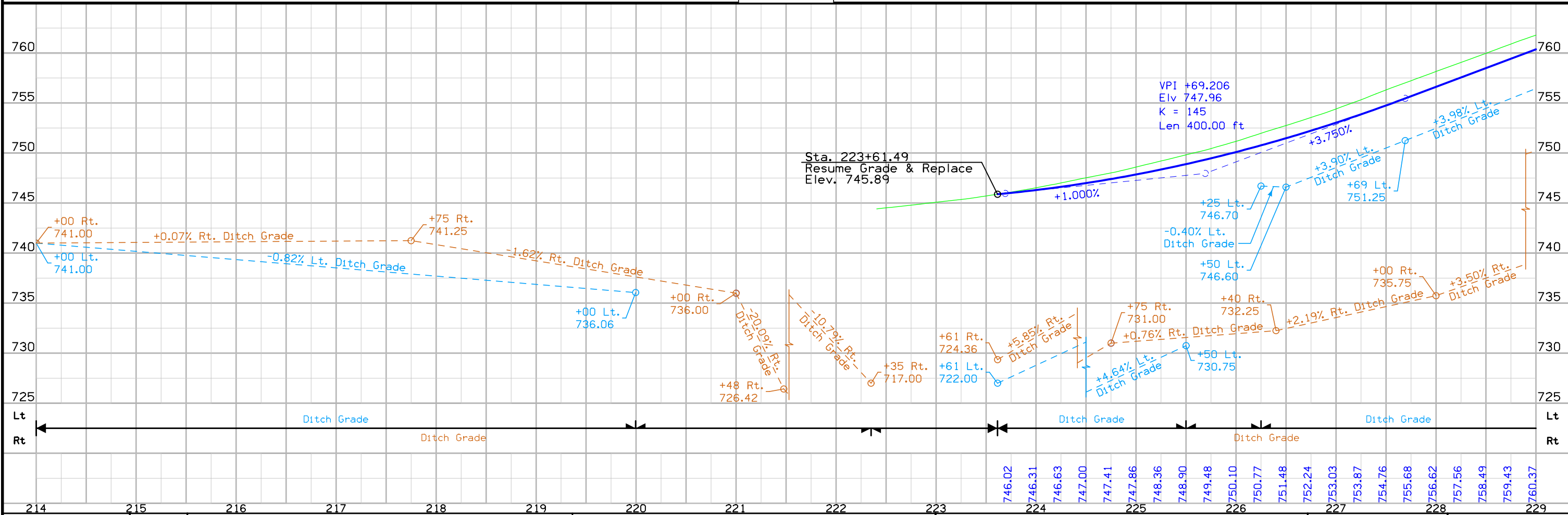
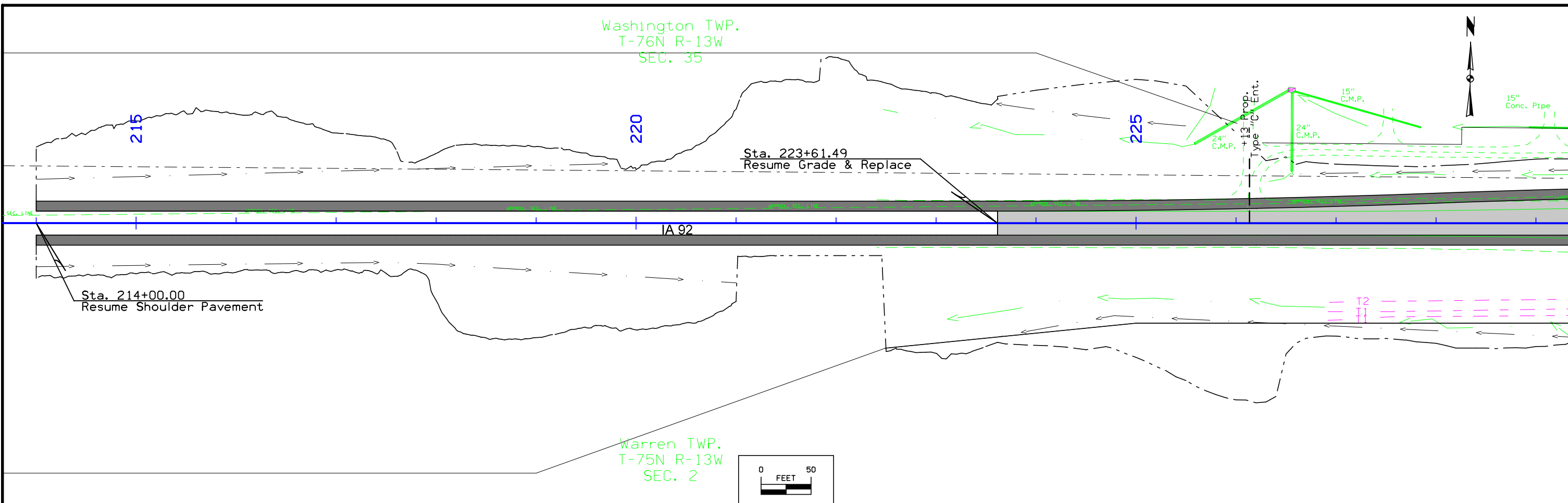
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T-76N R-13W
SEC. 34

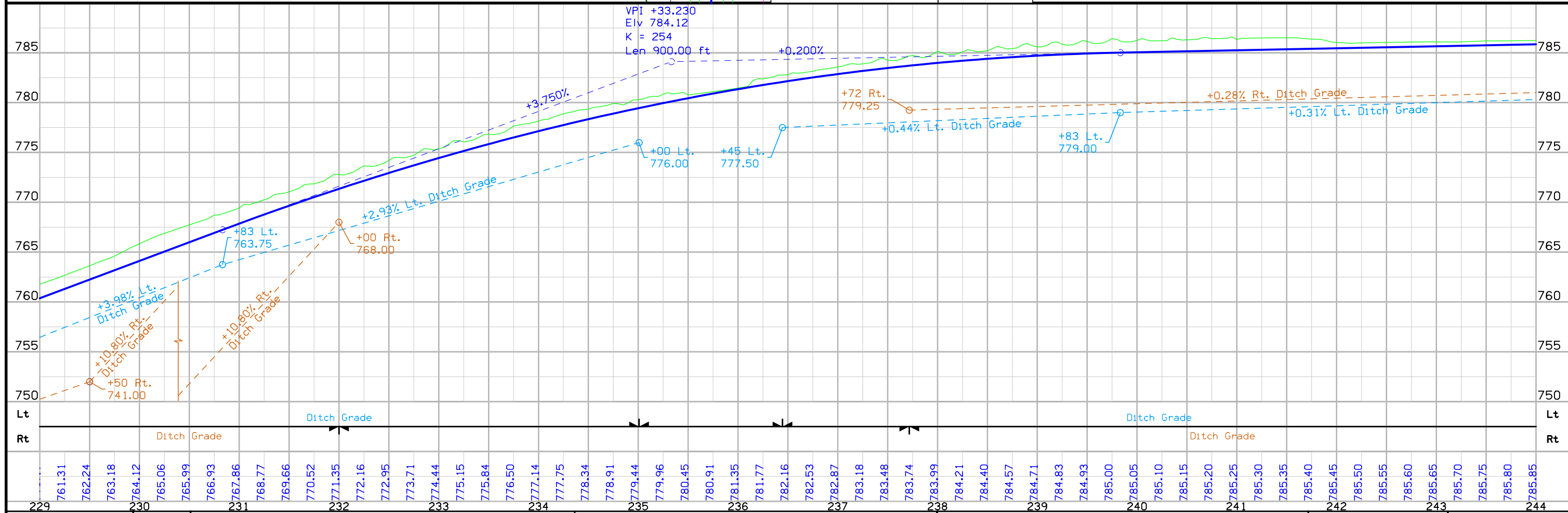
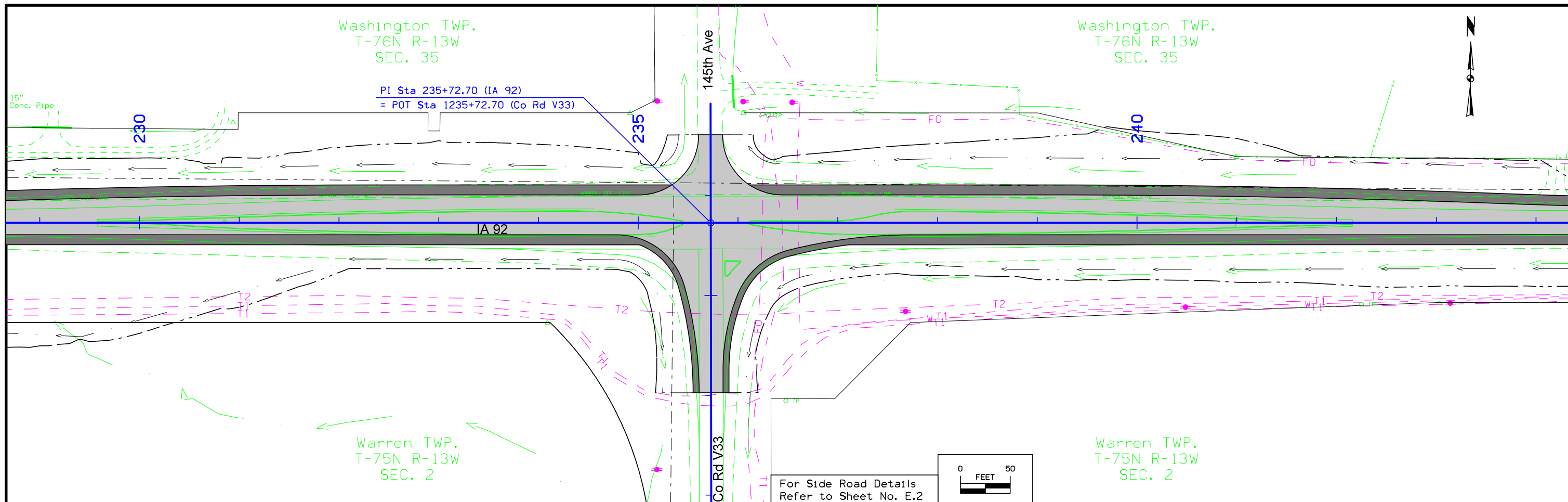


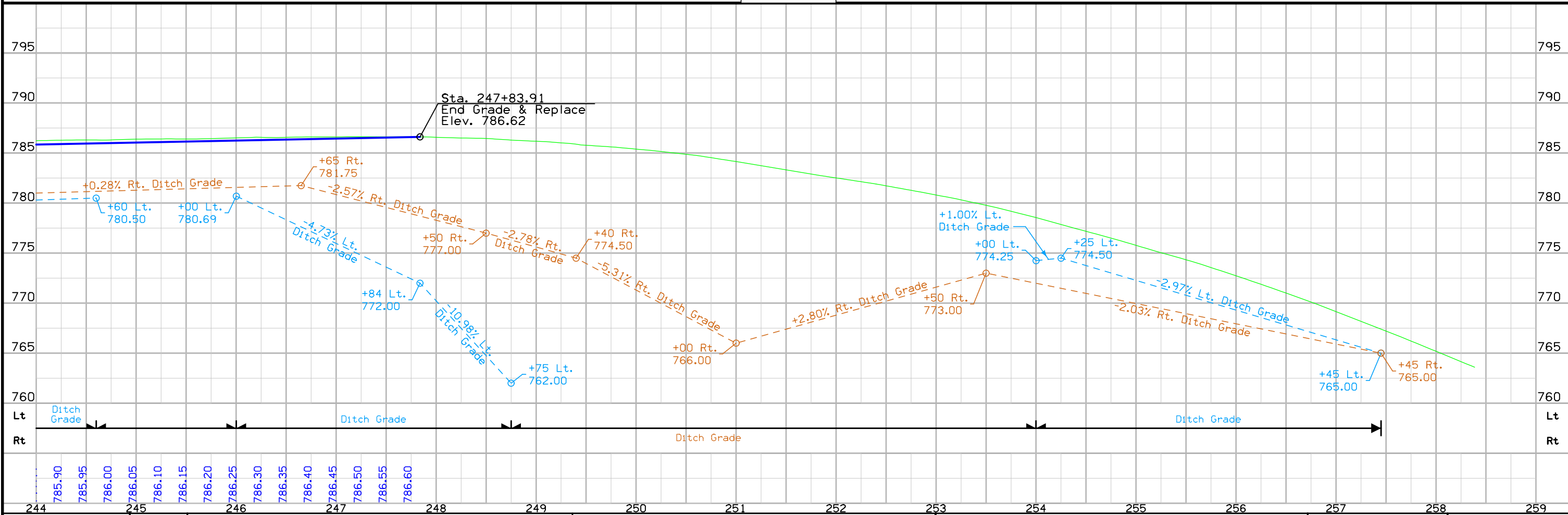
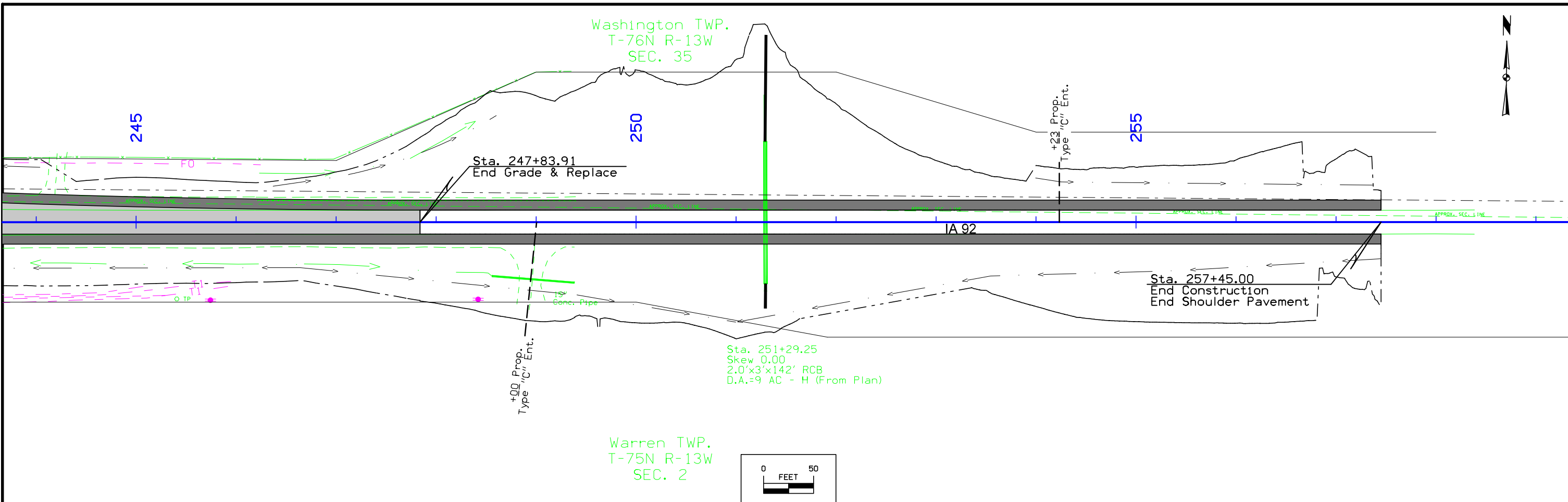
Warren TWP.
T-75N R-13W
SEC. 3

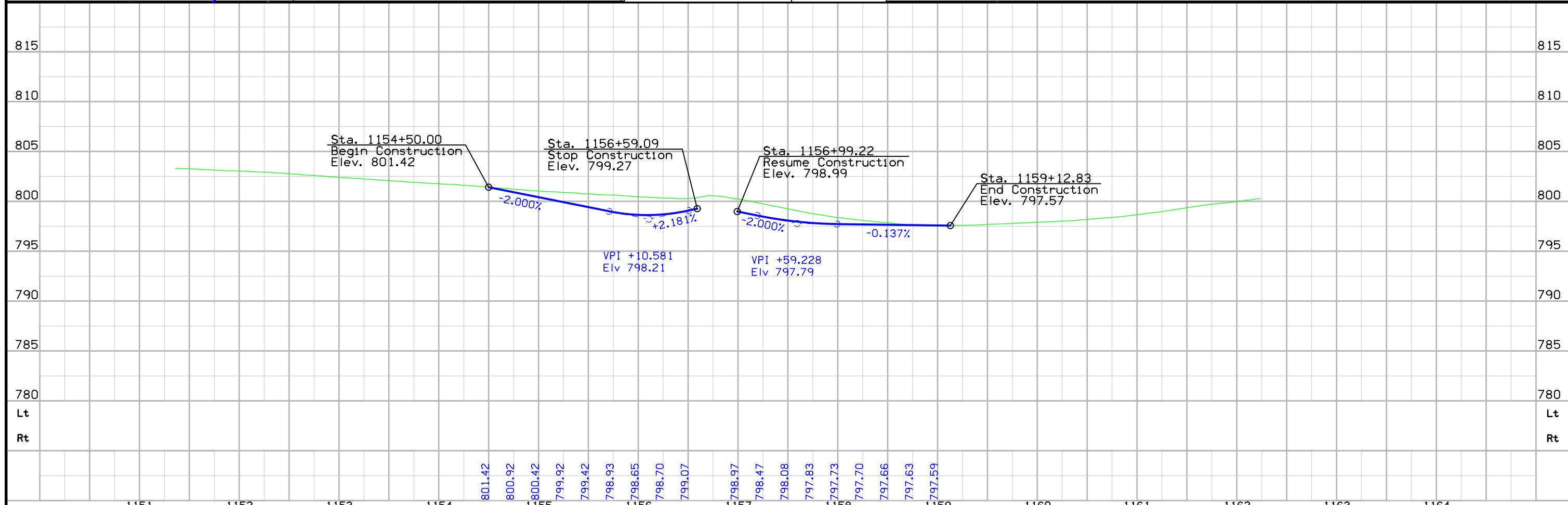
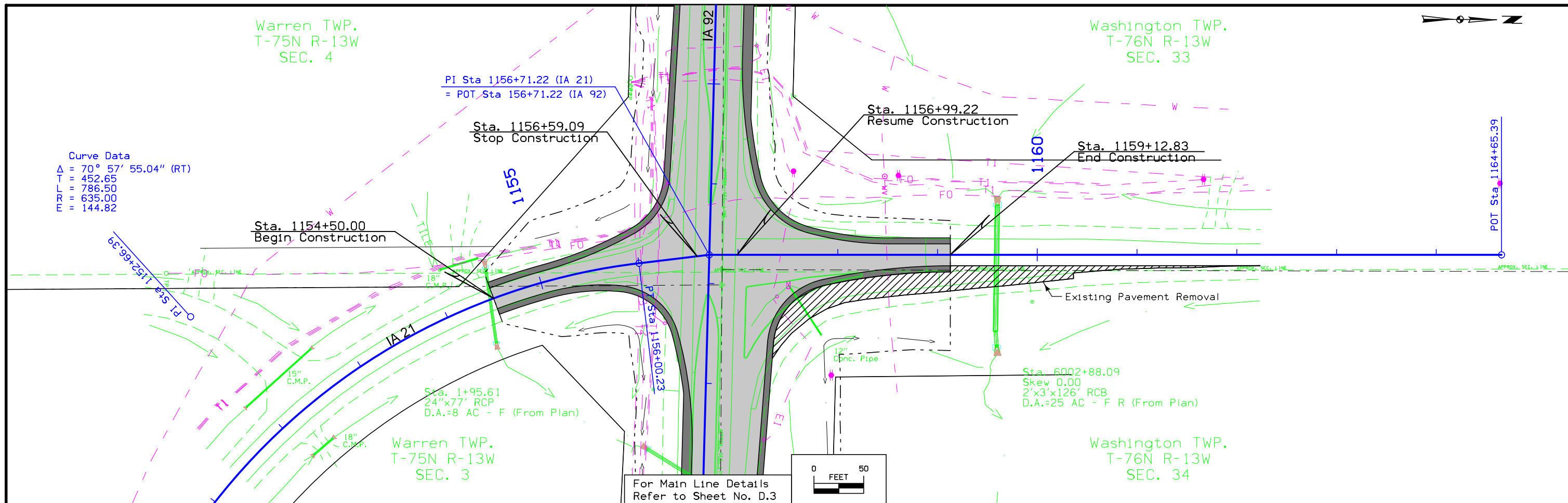


FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	D.4
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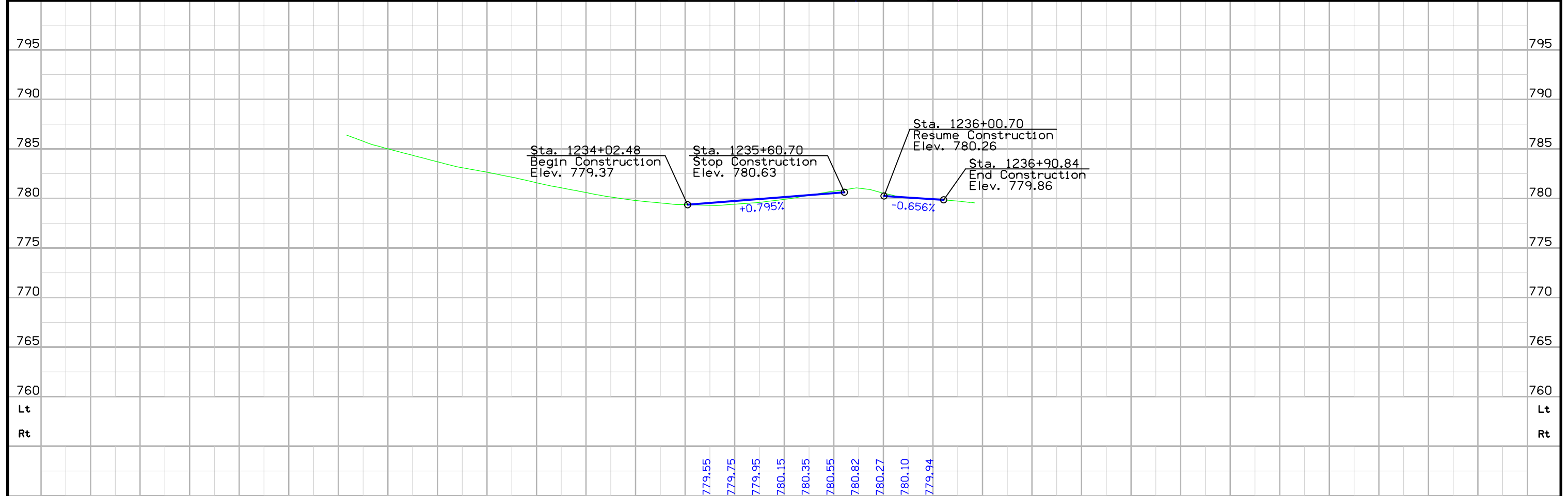
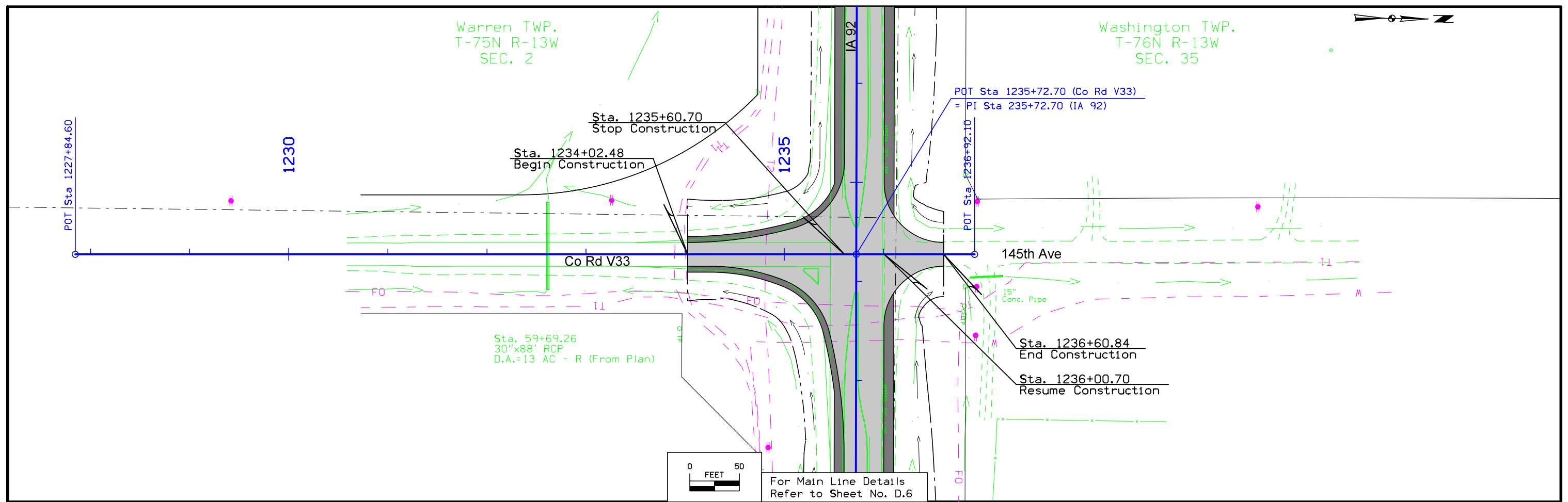
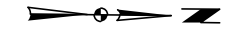




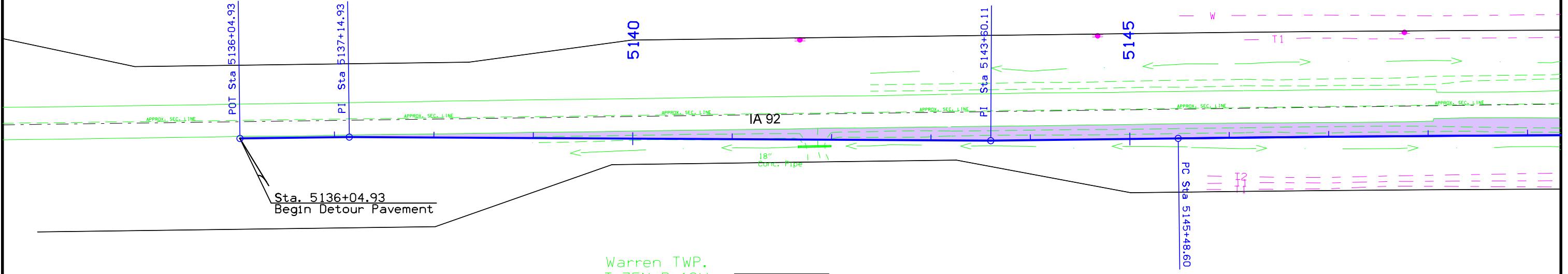
FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	E.1
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Warren TWP.
T-75N R-13W
SEC. 2

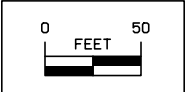
Washington TWP.
T-76N R-13W
SEC. 35



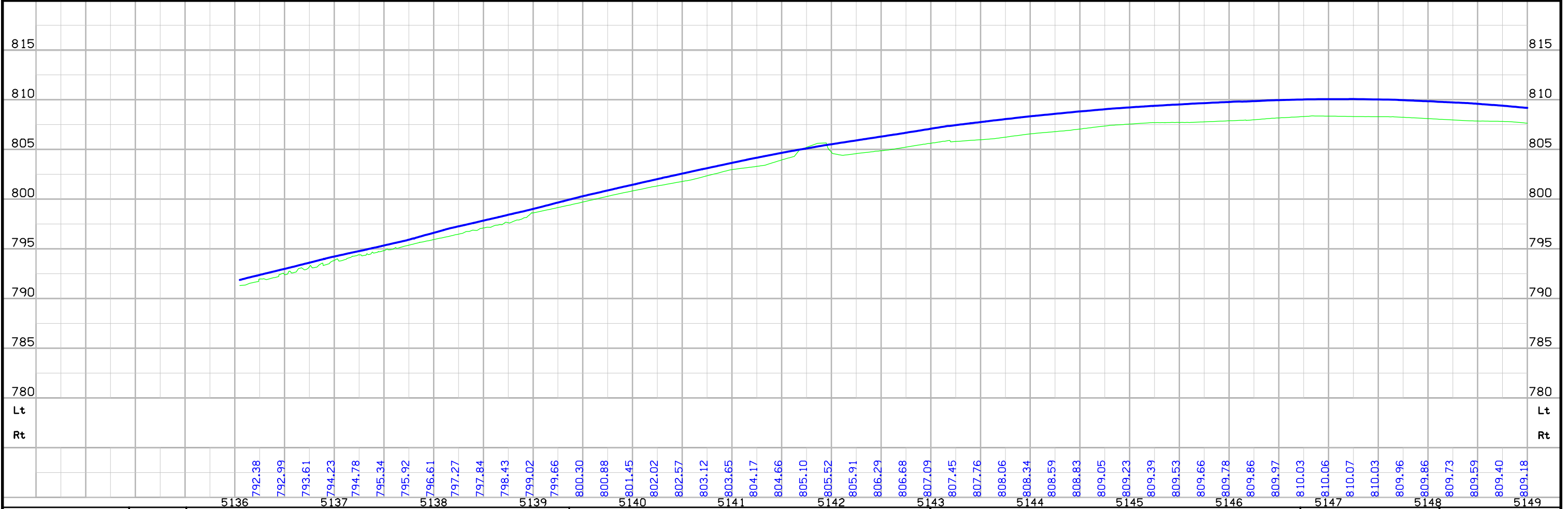
Washington TWP.
T-76N R-13W
SEC. 33



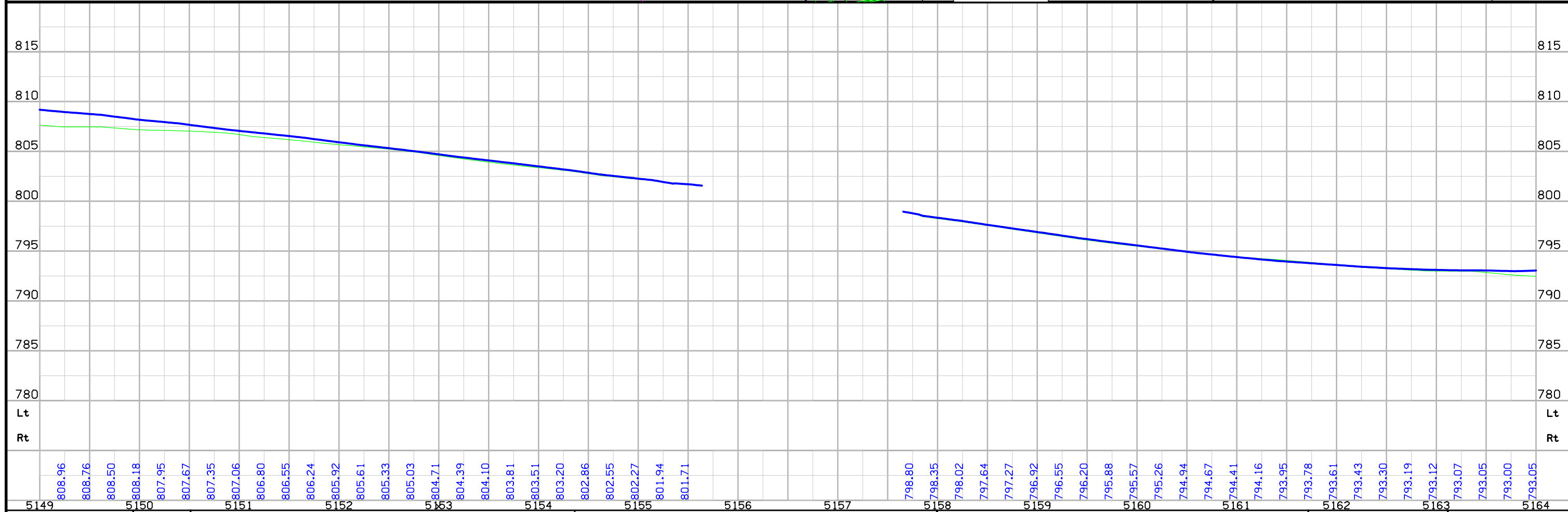
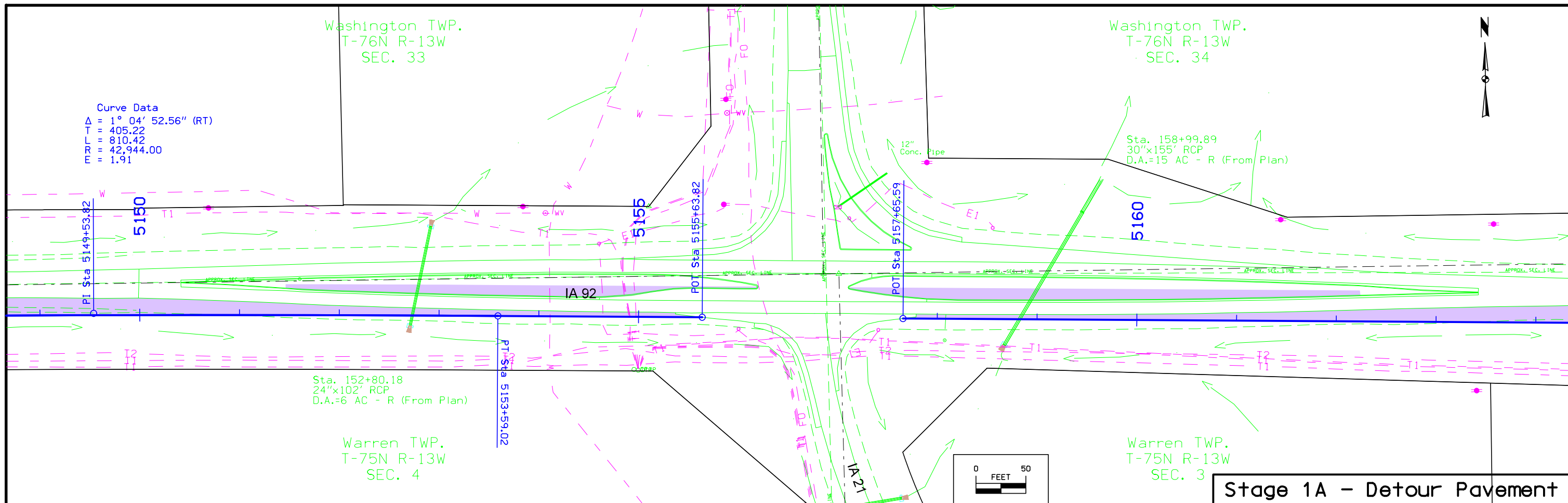
Warren TWP.
T-75N R-13W
SEC. 4



Stage 1A - Detour Pavement



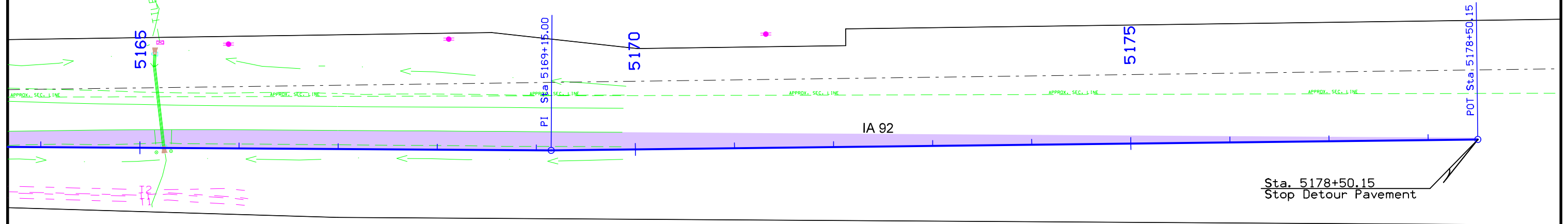
FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	F.1
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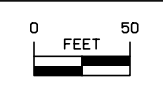
Washington TWP.
T-76N R-13W
SEC. 34



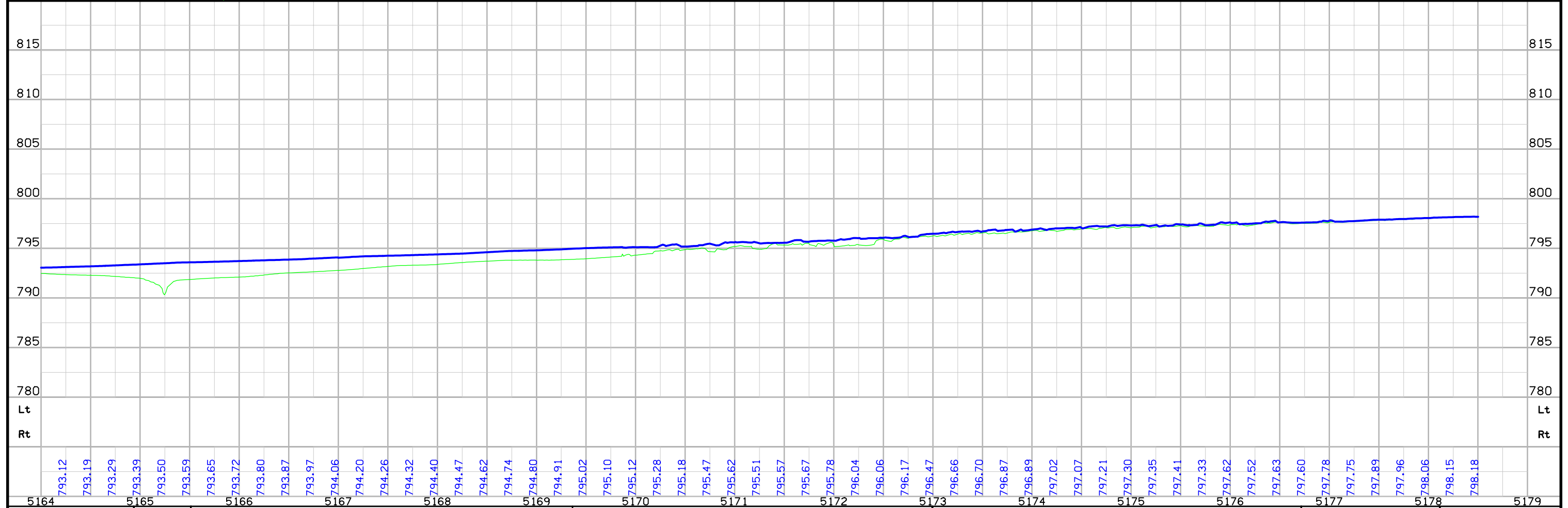
Sta. 165+20.35
24"x94' RCP
D.A.=9 AC - R (From Plan)



Warren TWP.
T-75N R-13W
SEC. 3



Stage 1A - Detour Pavement

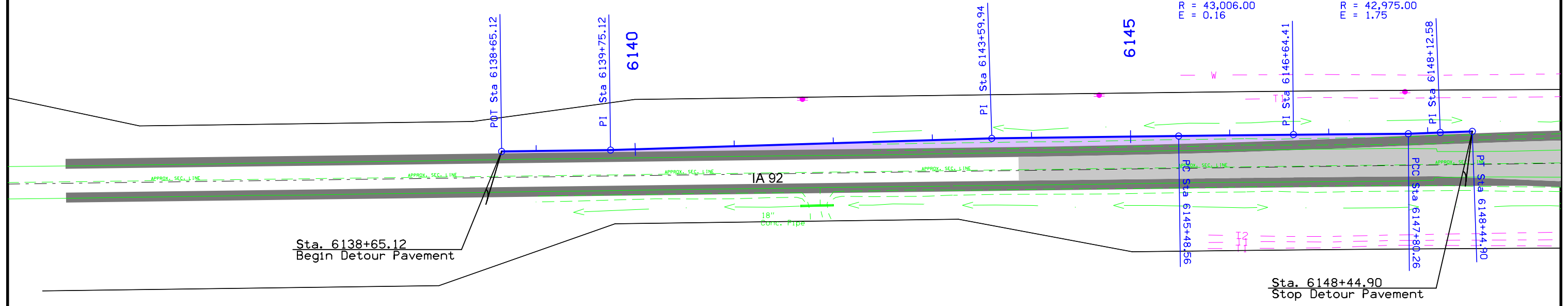


5164	793.12	793.19	793.29	793.39	793.50	793.59	793.65	793.72	793.80	793.87	793.97	794.06	794.20	794.26	794.32	794.40	794.47	794.62	794.74	794.80	794.91	795.02	795.10	795.12	795.28	795.18	795.47	795.62	795.51	795.57	795.67	795.78	796.04	796.06	796.17	796.47	796.66	796.70	796.87	796.89	797.02	797.07	797.21	797.30	797.35	797.41	797.33	797.62	797.52	797.63	797.60	797.78	797.75	797.89	797.96	798.06	798.15	798.18	5179
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Washington TWP.
T-76N R-13W
SEC. 33

Curve Data
 $\Delta = 0^\circ 18' 31.29''$ (RT)
 $T = 115.85$
 $L = 231.70$
 $PR = 43,006.00$
 $E = 0.16$

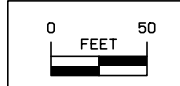
Curve Data
 $\Delta = 1^\circ 02' 00.97''$ (RT)
 $T = 387.64$
 $L = 775.26$
 $PR = 42,975.00$
 $E = 1.75$



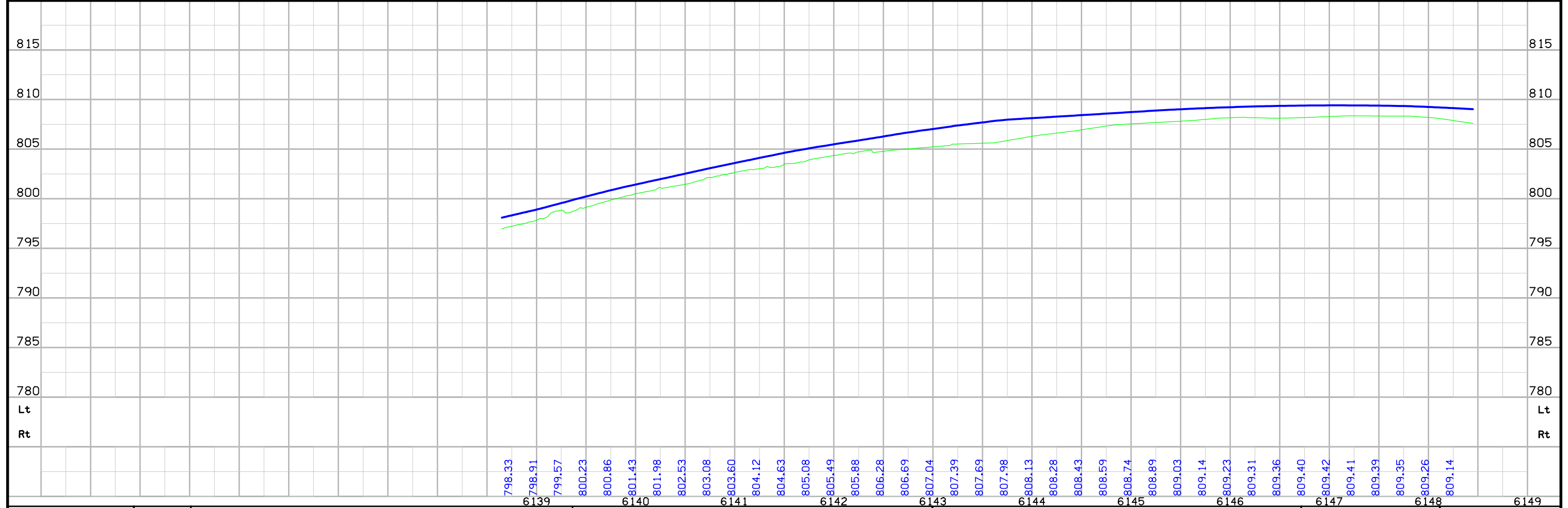
Sta. 6138+65.12
Begin Detour Pavement

Sta. 6148+44.90
Stop Detour Pavement

Warren TWP.
T-75N R-13W
SEC. 4

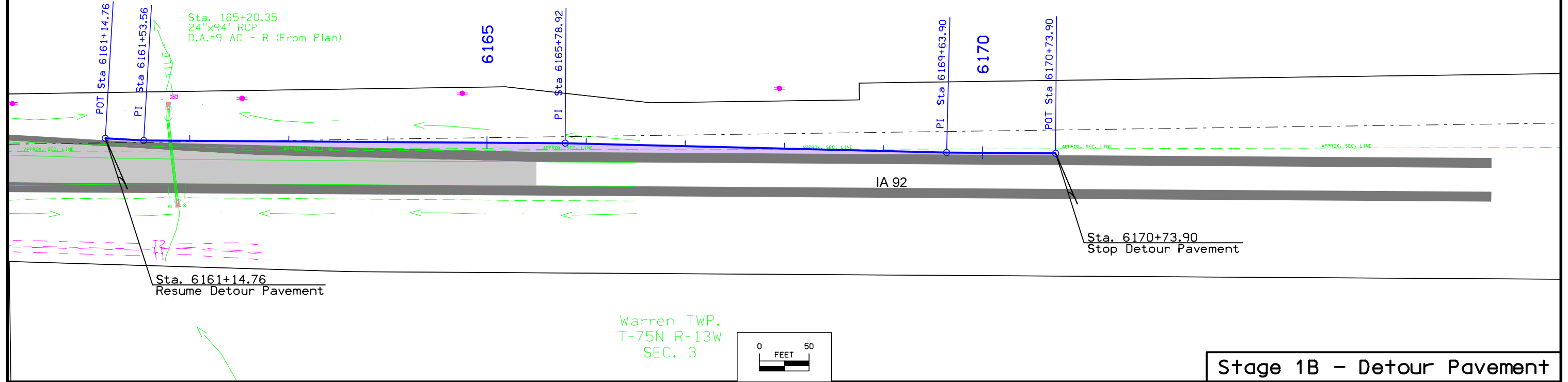


Stage 1B - Detour Pavement

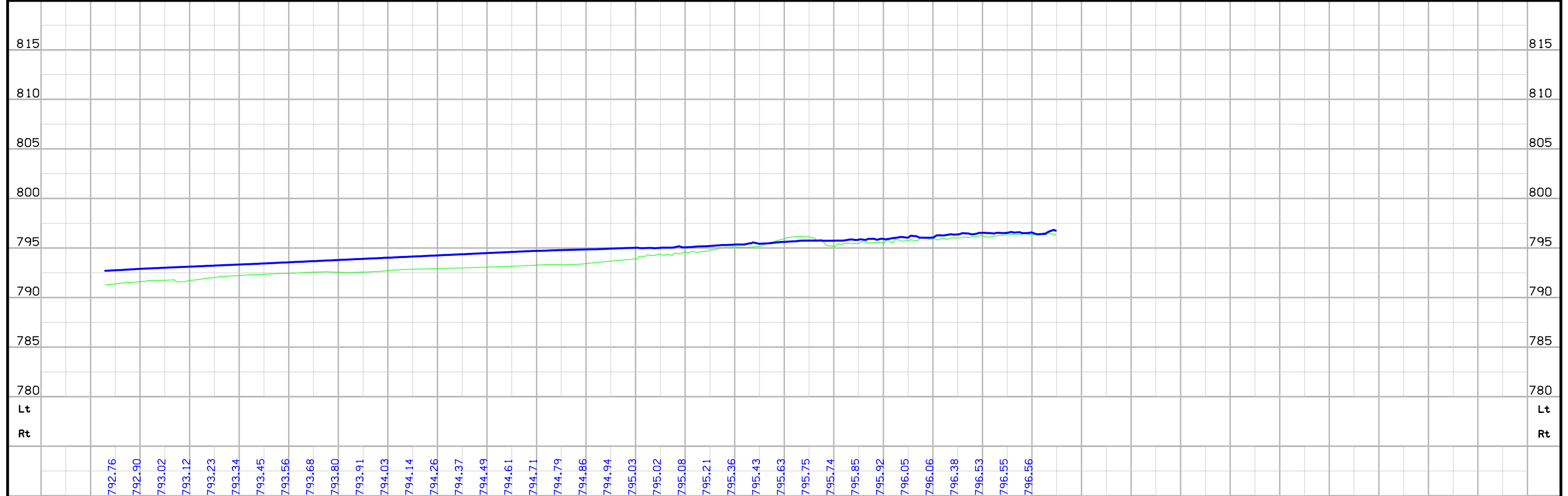


FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	F.4
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Washington TWP.
T-76N R-13W
SEC. 34



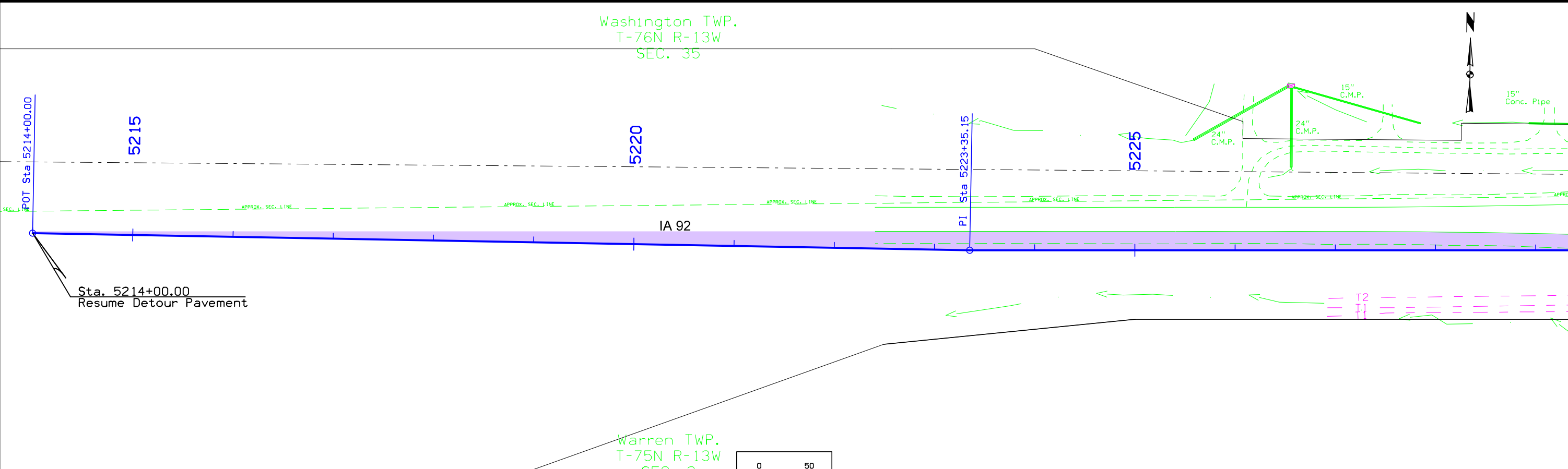
Stage 1B - Detour Pavement



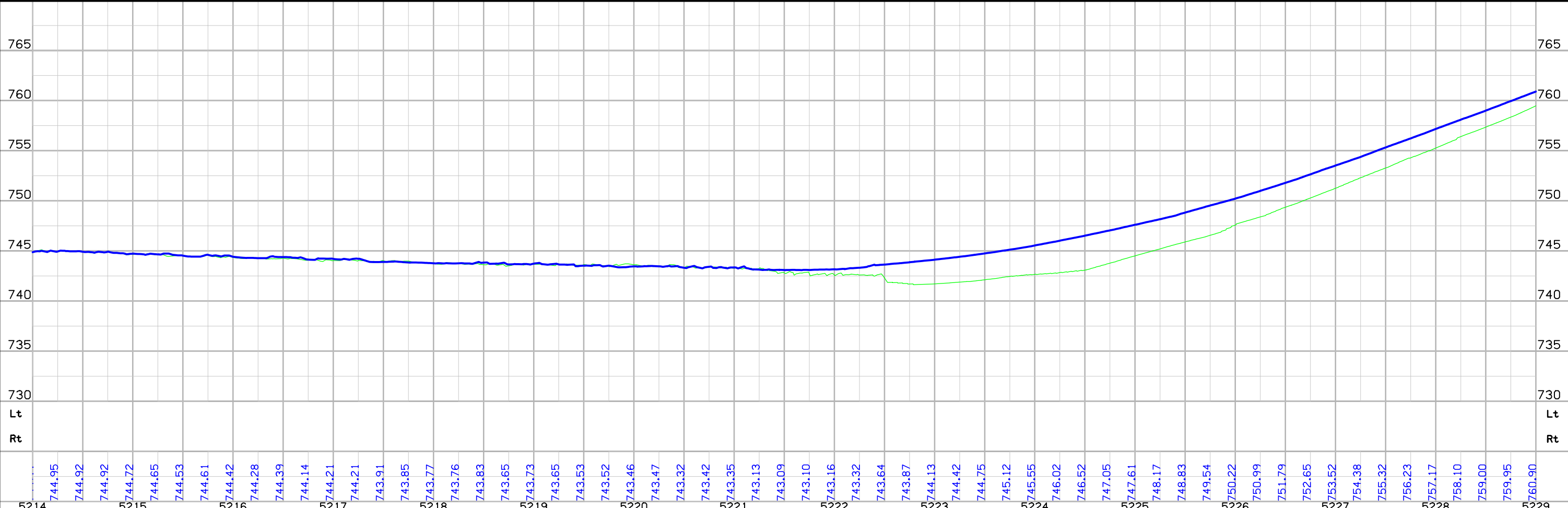
FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	F.5
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Washington TWP.
T-76N R-13W
SEC. 35

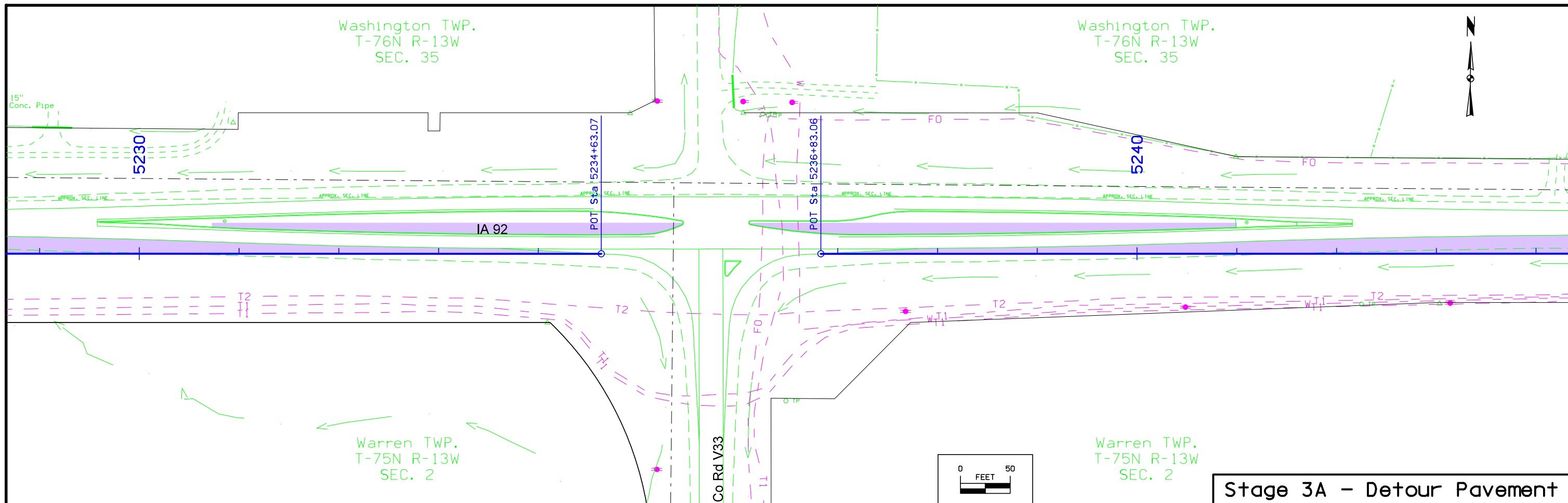
Warren TWP.
T-75N R-13W
SEC. 2



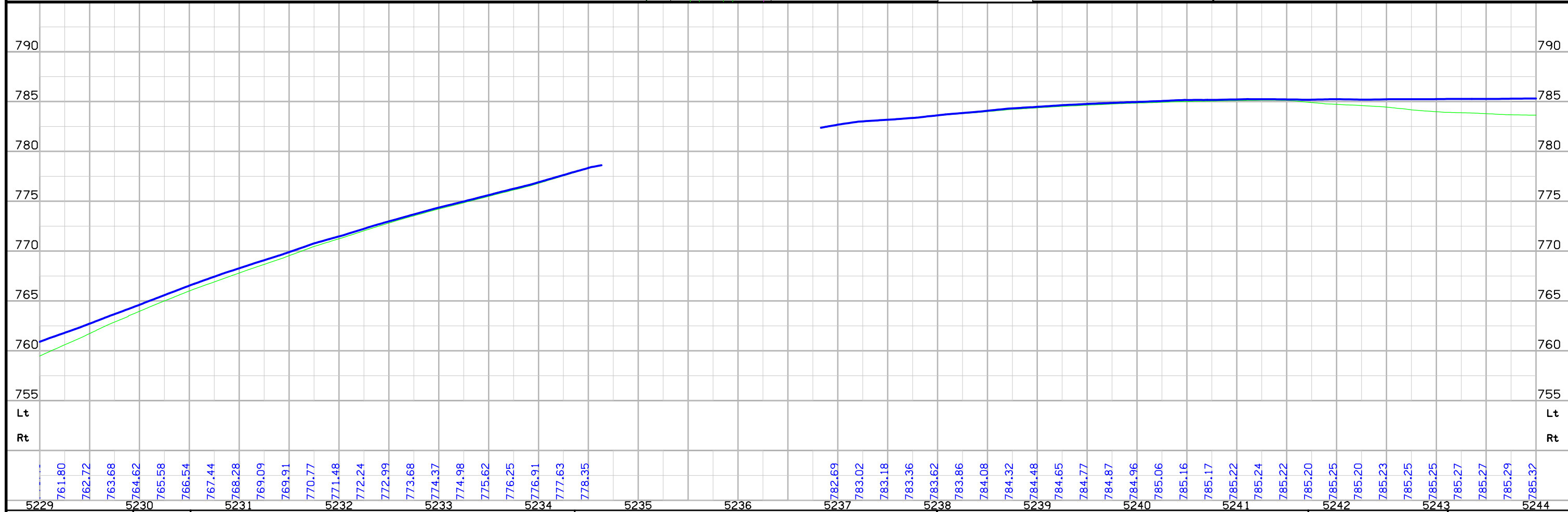
Stage 3A - Detour Pavement



5214	744.95	744.92	744.92	744.72	744.65	744.53	744.61	744.42	744.28	744.39	744.14	744.21	744.21	743.91	743.85	743.77	743.76	743.83	743.65	743.73	743.65	743.53	743.52	743.46	743.47	743.32	743.42	743.35	743.13	743.09	743.10	743.16	743.32	743.64	743.87	744.13	744.42	744.75	745.12	745.55	746.02	746.52	747.05	747.61	748.17	748.83	749.54	750.22	750.99	751.79	752.65	753.52	754.38	755.32	756.23	757.17	758.10	759.00	759.95	760.90	5229
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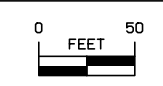
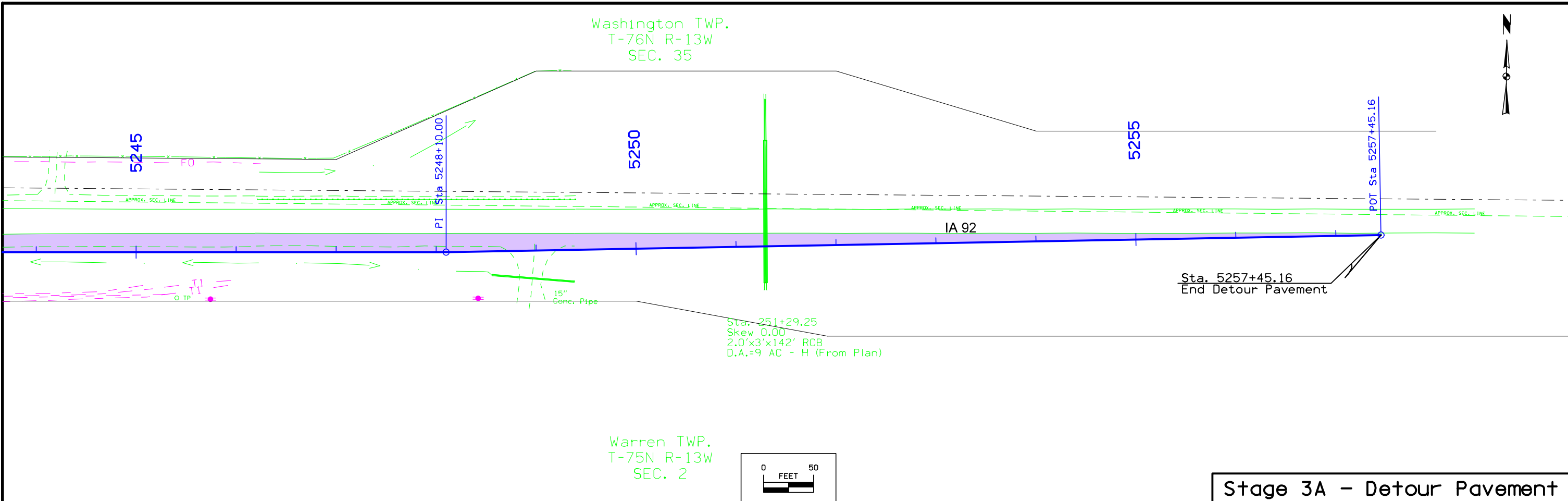
Stage 3A - Detour Pavement



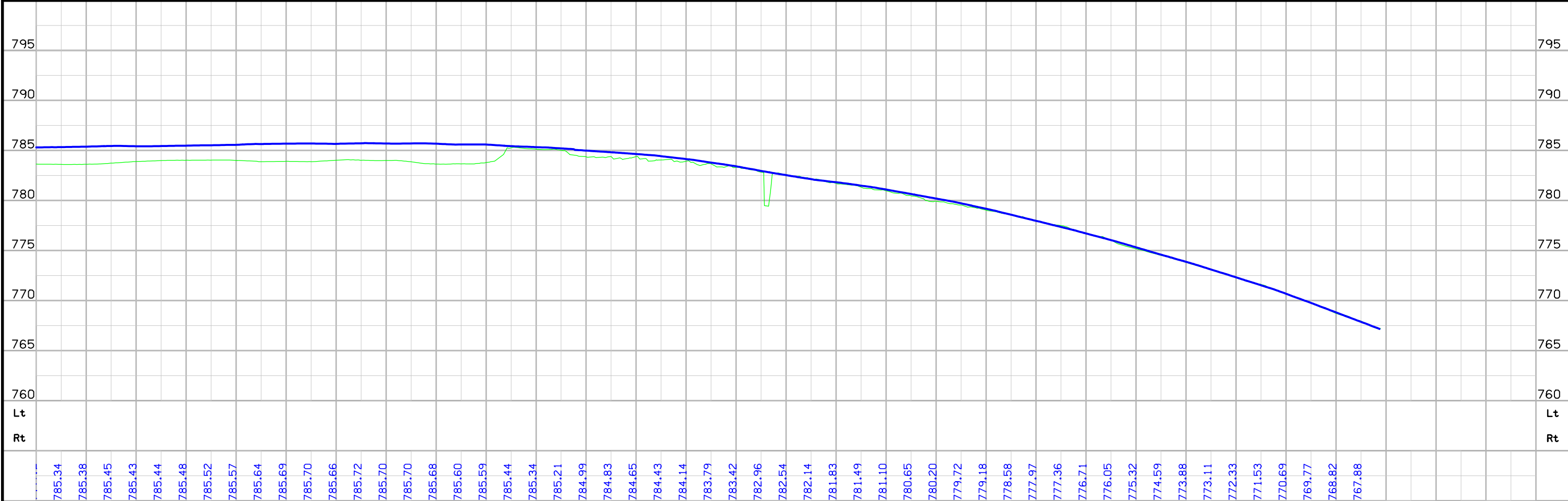
FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	F.7
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Washington TWP.
T-76N R-13W
SEC. 35

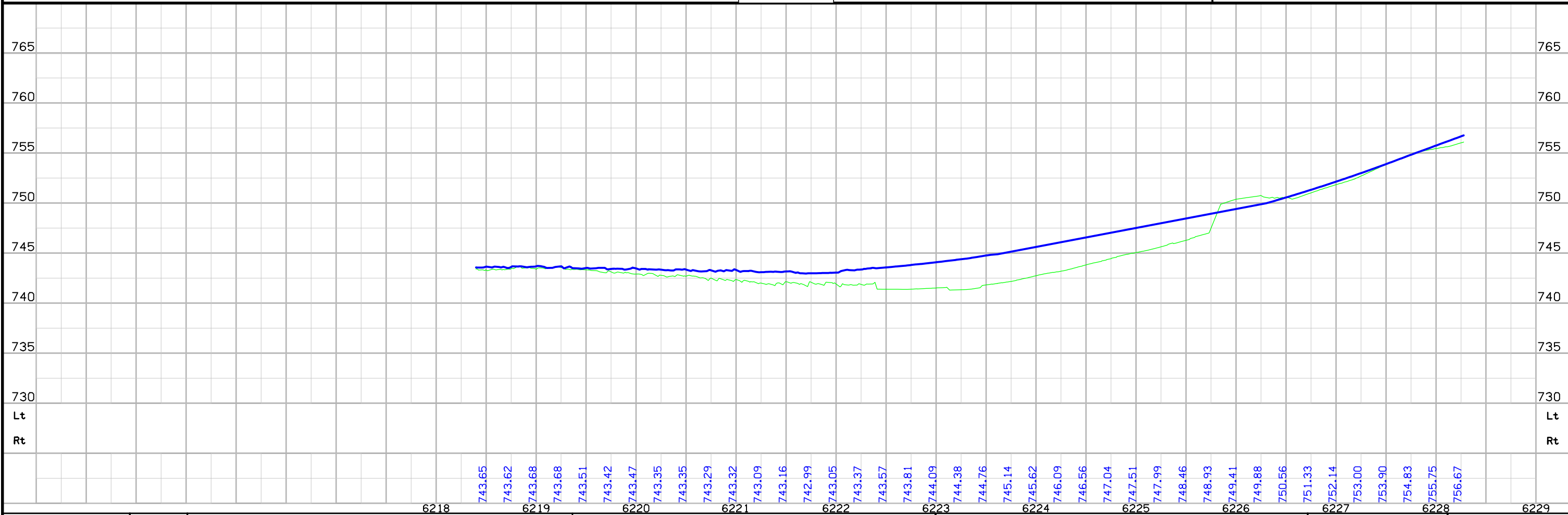
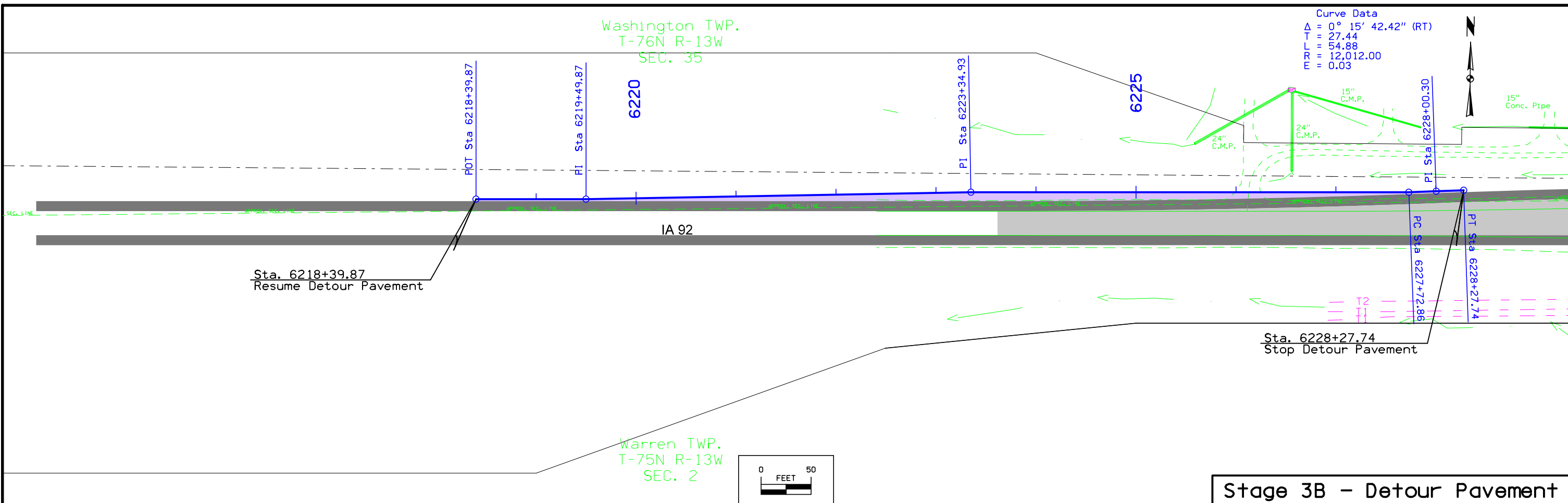
Warren TWP.
T-75N R-13W
SEC. 2

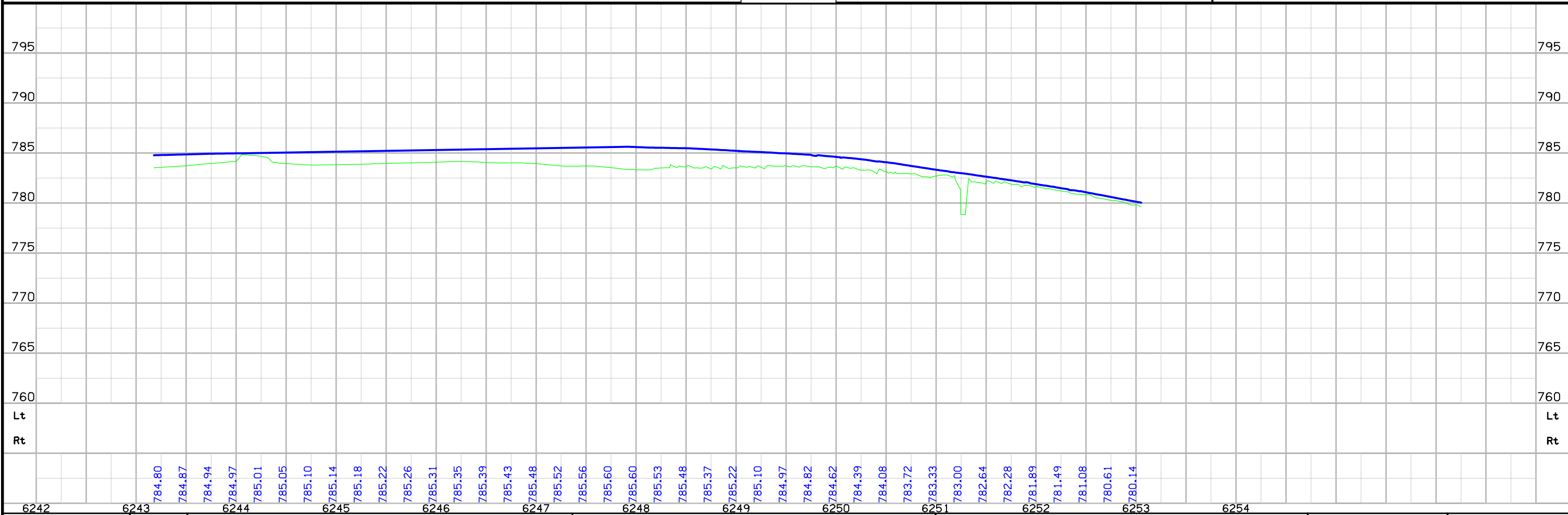
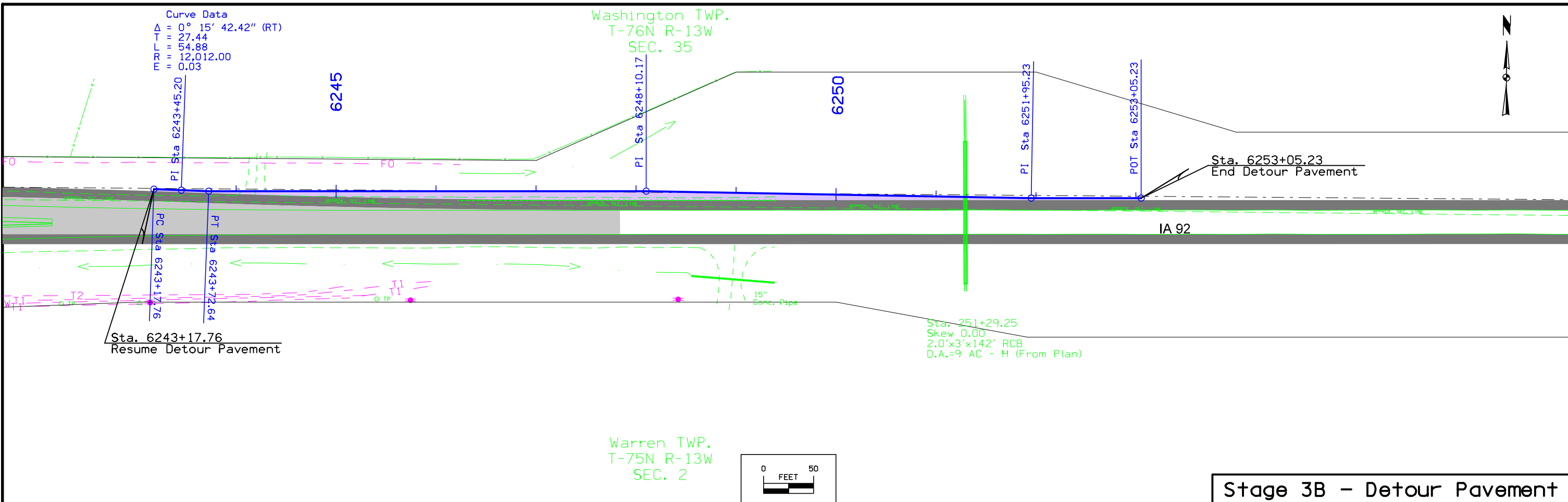


Stage 3A - Detour Pavement



5244	785.34	785.38	785.45	785.43	785.44	785.48	785.52	785.57	785.64	785.69	785.70	785.66	785.72	785.70	785.70	785.68	785.60	785.59	785.44	785.34	785.21	784.99	784.83	784.65	784.43	784.14	783.79	783.42	782.96	782.54	782.14	781.83	781.49	781.10	780.65	780.20	779.72	779.18	778.58	777.97	777.36	776.71	776.05	775.32	774.59	773.88	773.11	772.33	771.53	770.69	769.77	768.82	767.88	5258
FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.																								KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54										SHEET NUMBER	F.8														





Survey Information

County: Keokuk
 PIN: 16-54-092-030
 Project Number: NHSN-092-8(36)--2R-54
 Location: NW and N of Delta (District-5)
 Type of Work: Reconstruction of the IA 92 and IA 21 intersection and the IA 92 and County Rd V33 intersection
 Project Directory: 5402103017

General Information

Measurement units for this survey are US survey feet. This survey is proposed for two intersection replacements. The IA 92 and IA 21 intersection NW of Delta and the IA 92 and V33 intersection N of Delta. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM with Photo control.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12A). Benchmarks were placed throughout the project using post processed static observations relative to IARTN Base Network. A minimum of 6hrs of data was simultaneously collected on each of these primary control points.

Keokuk County Control Pt. 412 was checked for vertical tolerance. The vertical difference is about 0.1 ft.
 Keokuk County Control Pt. 419 was checked for vertical tolerance. The vertical difference is about 0.1 ft.

Horizontal Control

The project coordinate system for this survey is IARCS Zone 13 (U.S. 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.

Keokuk County Control Pt. 412 was checked for horizontal tolerance. The horizontal difference is about 0.05 ft.
 Keokuk County Control Pt. 419 was checked for horizontal tolerance. The horizontal difference is about 0.1 ft.

Point	Name	Northing	Easting	Elevation	Feature	Definition
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303	6796024.608	23389066.700	784.83	784.83	FENO3 MONUMENT 1304' EAST OF THE INTERSECTION OF IA92 AND V33 41' SOUTH OF CENTERLINE IA92 AND WEST OF DRIVEWAY.	
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419	6796482.253	23397059.776	781.55	781.55	BM COUNTY MONUMENT #419 BERNTSEN TOP SECURITY ROD MONUMENT EITH A 2-1/2" DIA DOMED CAP AND A PERMANENT MAGNET INCASED IN A 5"DIA PVC PIPE WITH A NGS STYLE ALUMINUM ACCESS COVER.	
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302	6796066.353	23386470.482	743.71	743.71	FENO2 MONUMENT 1293' WEST OF THE INTERSECTION OF IA92 AND V33 24.5' NORTH OF CENTERLINE IA92.	
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412	6796167.686	23378996.388	809.04	809.04	BM COUNTY MONUMENT #412 BERNTSEN TOP SECURITY ROD MONUMENT EITH A 2-1/2" DIA DOMED CAP AND A PERMANENT MAGNET INCASED IN A 5"DIA PVC PIPE WITH A NGS STYLE ALUMINUM ACCESS COVER.	
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301	6796092.641	23382200.835	796.09	796.09	FENO1 MONUMENT 2337' EAST OF THE INTERSECTION OF IA92 AND IA21 45' NORTH OF CENTERLINE IA92 AND EAST OF FIELD ENTRANCE.	
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Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans Project No. F-34(5), No.452, Keokuk County No. S-1832, and No. F-961(1).

Survey stationing was equated to the plan PI at STA 143+59 for alignment SURML092W and ran ahead without equation throughout the survey.

Survey stationing was equated to the plan POT at Sta. 235+72.7 for alignment SURML092E and ran back and ahead without equation throughout the survey.

Survey stationing was equated to the plan POT at Sta. 6000+00 for alignment SURSR021N and ran ahead without equation throughout the survey.

Survey stationing was equated to the plan POT at Sta. 0+00 for alignment SURSR021S and ran ahead without equation throughout the survey.

Survey stationing was equated to the plan POT at Sta. 62+80.6 for alignment SURSRV33S and ran back without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

SURML092W Alignment

PI Sta. 143+59 As-built Plans Project No. F-34(5)
 Survey PI Sta. 143+59

PC Sta. 145+61 As-built Plans Project No. F-34(5)
 Survey PC Sta. 145+60.95

PI Sta. 149+48.6 As-built Plans Project No. F-34(5)
 Survey PI Sta. 149+48.59

PT Sta. 153+36 As-built Plans Project No. F-34(5)
 Survey PT Sta. 153+36.21

POT Sta. 170+01.1 As-built Plans Project No. F-34(5)
 Survey POT Sta. 170+01.67

SURML092E Alignment

POT Sta. 207+98.4 As-built Plans Project No. F-34(5)
 Survey POT Sta. 207+99.8

POT Sta. 235+72.7 As-built Plans Project No. F-34(5)
 Survey POT Sta. 235+72.7

POT Sta. 250+98.9 As-built Plans Project No. F-34(5)
 Survey POT Sta. 251+02.66

SURSR021N Alignment

POT Sta. 6000+00 As-built Plans Project No. 452
 Survey POT Sta. 6000+00

Survey $\frac{7}{32}$ Best Fit Centerline $\frac{9}{32}$ POT Sta. 6007+94.19

SURSR021S Alignment

POT Sta. 0+00 As-built Plans Keokuk County Project No. S-1832
 Survey POT Sta. 0+00

PC Sta. 0+22.4 As-built Plans Keokuk County Project No. S-1832
 Survey PC Sta. 0+22.4

PI Sta. 4+92.4 As-built Plans Keokuk County Project No. S-1832
 Survey PI Sta. 4+92.41

PT Sta. 8+32.2 As-built Plans Keokuk County Project No. S-1832
 Survey PT Sta. 8+32.2

Survey $\frac{7}{32}$ Best Fit Centerline $\frac{9}{32}$ POT Sta. 11+46.89

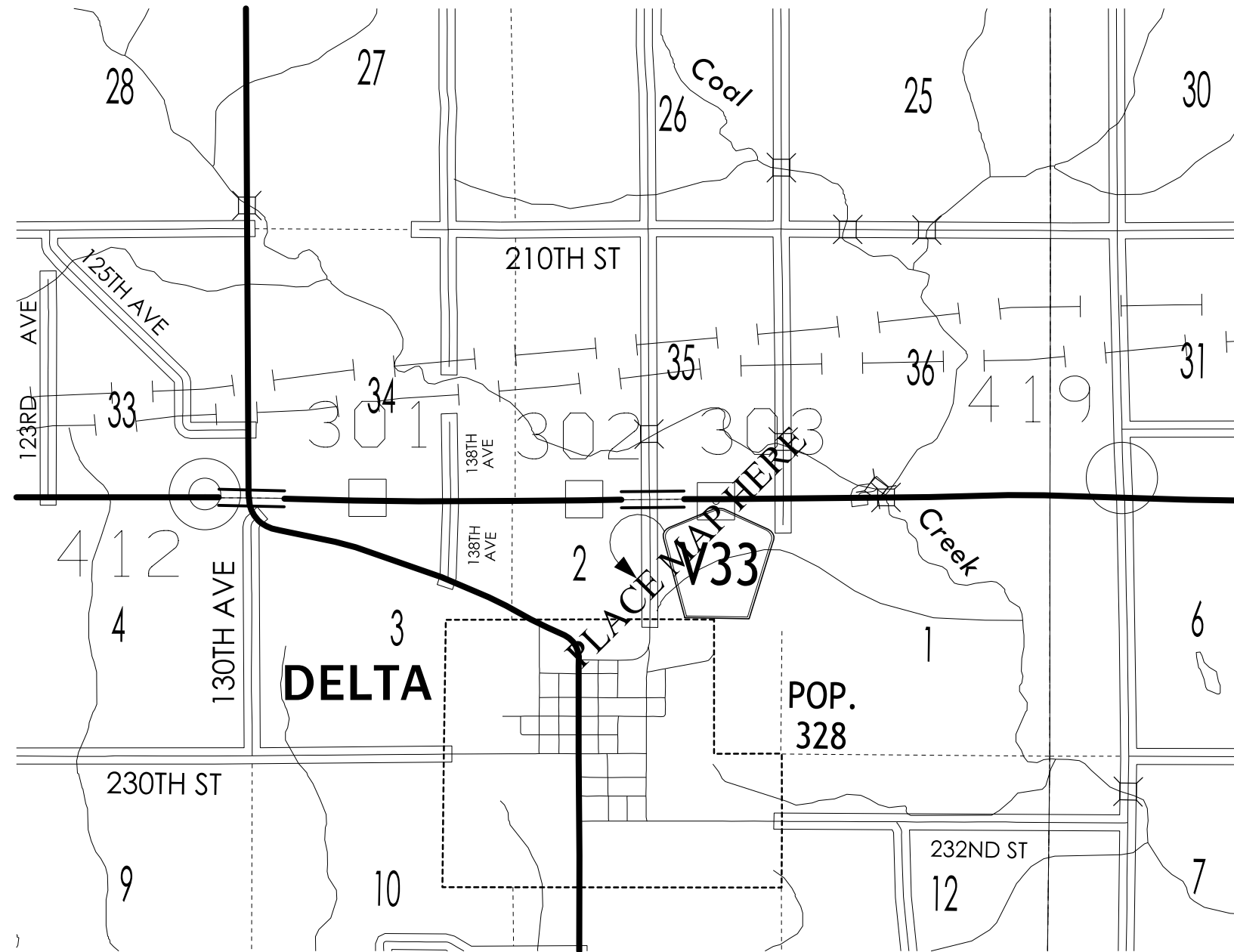
SURSRV33S

PT Sta. 54+92.5 As-built Plans Project No. F-961(1)
 Survey PT Sta. 54+92.5

POT Sta. 62+80.6 As-built Plans Project No. F-961(1)
 Survey POT Sta. 62+80.6

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 2013.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 14

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 2013.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 14

Point#	Name	Northing	Easting	Elevation	Feature	Definition
303		6796024.608	23389066.700	784.83	FENO3 MONUMENT	1304' EAST OF THE INTERSECTION OF IA92 AND V33 41' SOUTH OF CENTERLINE IA92 AND WEST OF DRIVEWAY.
419		6796482.253	23397059.776	781.55	BM COUNTY MONUMENT #419	BERNTSEN TOP SECURITY ROD MONUMENT EITH A 2-1/2" DIA DOMED CAP AND A PERMANENT MAGNET INCASED IN A 5"DIA PVC PIPE WITH A NGS STYLE ALUMINUM ACCESS COVER.
302		6796066.353	23386470.482	743.71	FENO2 MONUMENT	1293' WEST OF THE INTERSECTION OF IA92 AND V33 24.5' NORTH OF CENTERLINE IA92.
412		6796167.686	23378996.388	809.04	BM COUNTY MONUMENT #412	BERNTSEN TOP SECURITY ROD MONUMENT EITH A 2-1/2" DIA DOMED CAP AND A PERMANENT MAGNET INCASED IN A 5"DIA PVC PIPE WITH A NGS STYLE ALUMINUM ACCESS COVER.
301		6796092.641	23382200.835	796.09	FENO1 MONUMENT	2337' EAST OF THE INTERSECTION OF IA92 AND IA21 45' NORTH OF CENTERLINE IA92 AND EAST OF FIELD ENTRANCE.

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	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML092W	133+50.00	6796101.50	23377542.55															
2	ML092W							145+48.49	6796099.05	23378741.03									
3	ML092W	181+00.00	6796032.42	23382291.88															
4	ML092E	207+00.00	6796028.06	23384890.73															
5	ML092E	235+72.70	6796053.65	23387763.32															
6	ML092E	260+00.00	6796075.70	23390190.52															
7	SR021	1144+96.99	6795404.90	23380681.46															
8	SR021							1148+13.74	6795470.25	23380371.53									
9	SR021	1156+71.22	6796083.22	23379863.63															
10	SR021	1164+65.39	6796877.37	23379859.02															
11	SRV33	1227+84.60	6795265.60	23387771.88															
12	SRV33	1236+92.10	6796173.04	23387762.02															
13	DET10	5136+04.93	6796081.71	23377797.44															
14	DET10	5137+14.93	6796081.49	23377907.44															
15	DET10	5143+60.11	6796068.44	23378552.48															
16	DET10							5145+48.60	6796068.05	23378740.97									
17	DET10	5155+63.82	6796054.46	23379756.09															
18	DET11	5157+65.59	6796050.25	23379957.33															
19	DET11	5169+15.00	6796026.21	23381106.49															
20	DET11	5178+50.15	6796023.65	23382041.64															
21	DET14	6138+65.12	6796124.45	23378057.71															
22	DET14	6139+75.12	6796124.23	23378167.71															
23	DET14	6143+59.94	6796130.44	23378552.48															
24	DET14							6145+48.56	6796130.05	23378741.10									
25	DET14							6147+80.26	6796128.95	23378972.80									
26	DET15	6161+14.76	6796099.90	23380643.95															
27	DET15	6161+53.56	6796097.09	23380682.65															
28	DET15	6165+78.92	6796088.19	23381107.92															
29	DET15	6169+63.90	6796073.15	23381492.60															
30	DET15	6170+73.90	6796070.84	23381602.58															
31	DET20	5214+00.00	6796020.30	23385590.83															
32	DET20	5223+35.15	6796011.63	23386525.95															
33	DET20	5234+63.07	6796021.68	23387653.81															
34	DET21	5236+83.06	6796023.66	23387873.96															
35	DET21	5248+10.00	6796033.89	23389000.85															
36	DET21	5257+45.16	6796059.39	23389935.66															
37	DET22	6218+39.87	6796062.22	23386030.35															
38	DET22	6219+49.87	6796063.19	23386140.34															
39	DET22	6223+34.93	6796073.62	23386525.27															
40	DET22							6227+72.86	6796077.53	23386963.17									
41	DET23							6243+17.76	6796093.42	23388508.05									
42	DET23	6248+10.17	6796095.89	23389000.42															
43	DET23	6251+95.23	6796092.39	23389385.46															
44	DET23	6253+05.23	6796093.39	23389495.46															

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		
C1	ML092W												1°04'52.56"	405.52	811.01	42975.00	1.91	
C2	SR021												70°57'55.04"	452.65	786.50	635.00	144.82	
C3	DET10												1°04'52.56"	405.22	810.42	42944.00	1.91	
C4	DET14												0°18'31.29"	115.85	231.70	43006.00	0.16	
C5	DET14												0°18'30.01"	32.32	64.64	12012.00	0.04	
C6	DET22												0°15'42.42"	27.44	54.88	12012.00	0.03	
C7	DET23												0°15'42.42"	27.44	54.88	12012.00	0.03	

TRAFFIC CONTROL PLAN

- IA 92
- Maintain traffic on existing IA 92 at all times utilizing on-site detours.
 - Maintain traffic to all residents, businesses, farmsteads, and field entrances at all times.
- IA 21
- Close during construction. Closure period shall be minimized to 14 days.
 - During closure, detour NB IA 21 traffic to Co Rd V33 to IA 92 to IA 149 to IA 22 to IA 21.
 - During closure, detour SB IA 21 traffic to IA 22 to IA 21 to IA 149 to IA 92 to IA 21.
- Co Rd V33/145th Ave
- Close during construction. Closure period shall be minimized to 14 days.
 - IA 21 and Co Rd V33 interections cannot be closed at the same time as City of Delta traffic to use IA 21 to access IA 92.
 - During closure, detour NB Co Rd V33 traffic to IA 21 to IA 92.
 - During closure, detour SB 145th Ave traffic to 210th St to 150th Ave to IA 92.
- Cemetery (NW corner of Co Rd V33/145th Ave)
- Access to cemetery shall be provided at all times during the project. Stage IA 92 work to keep one point of access open at all times.

STAGING NOTES

It is not the intent of the sequence of construction to confine the Contractor's activities to the area of suggested stages alone. It is understood that some of the various steps, though listed in numerical order, may occur simultaneously. Therefore, the Contractor may conduct several operations concurrently on the project, provided that the existing traffic is maintained and that these operations do not conflict with the staging indicated here in.

It is recognized that as various activities related to the construction progress, certain situations may arise which will preclude adhering to the original construction sequence or, which in the opinion of the Contractor, would readily adhere itself to a more efficient staging operation. Should this occur, and the Contractor desires to deviate from the original plan, they shall submit an alternate plan for approval by the Engineer.

Stage 1A Construction (IA 92/IA 21):

- Pave on-site detours and shift traffic.

Stage 1B Construction (IA 92/IA 21):

- Construct north half of intersection improvements and paved detours.

Stage 2 Construction (IA 92/IA 21):

- Shift traffic and construct south half of intersection improvements.
- Remove all detour pavement and open to traffic.

Stage 3A Construction (IA 92/Co Rd V33):

- Pave on-site detours and shift traffic.

Stage 3B Construction (IA 92/Co Rd V33):

- Construct north half of intersection improvements and paved detours.










Stage 4 Construction (IA 92/Co Rd V33):

- Shift traffic and construct south half of intersection improvements.
- Remove all detour pavement and open to traffic.

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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





















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

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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

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

	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Single White Delineators		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)

Washington TWP.
T-76N R-13W
SEC. 33



1000'

1000'

1000'

END
ROAD WORK

G20-2A
48" x 24"



W14-3
48" X 60" X 60"



W20-1
48" x 48"

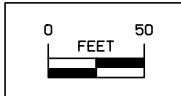


R4-1
36" x 48"

Warren TWP.
T-75N R-13W
SEC. 4



50
M.P.H.
W13-1
24" x 24"



Washington TWP.
T-76N R-13W
SEC. 33



135

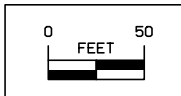
140

145

IA 92

Begin TBR

Warren TWP.
T-75N R-13W
SEC. 4



Stage 1 - Traffic Control and Staging

FILE NO.

ENGLISH

DESIGN TEAM

Van Dyke\Stanley Consultants Inc.

KEOKUK COUNTY

PROJECT NUMBER

NHSN-092-8(36)--2R-54

SHEET NUMBER

J.3

9:25:41 AM 2/14/2019 8725

pw:\projectwise.dot.int.lan:PWMain\Documents\Projects\5409203016\Design\CADD\SHT\SHT_54092036_J02.dgn

Washington TWP.
T-76N R-13W
SEC. 33

Washington TWP.
T-76N R-13W
SEC. 34



Cemetery: Stage construction accordingly to maintain one of the two access points at all times

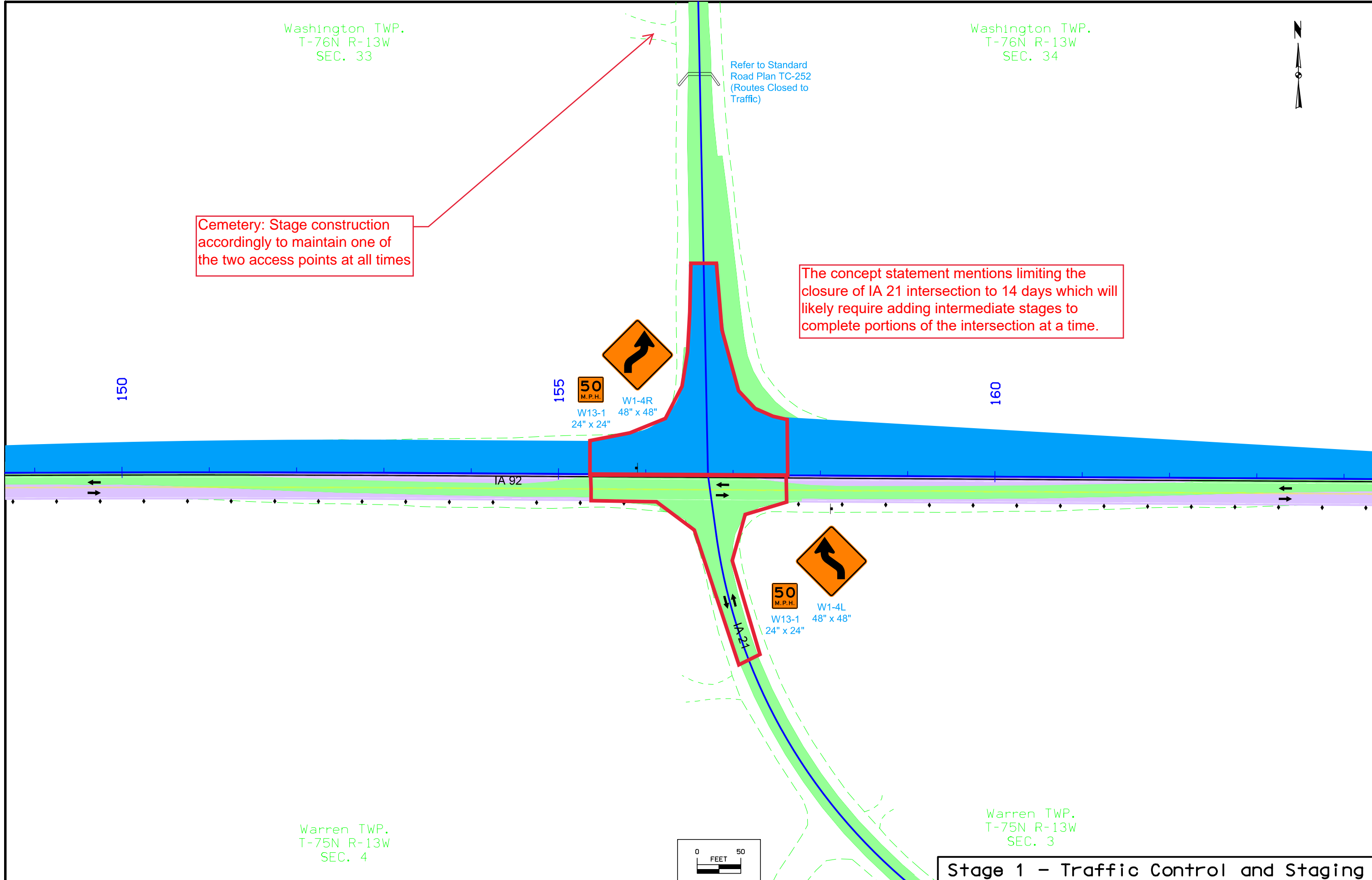
The concept statement mentions limiting the closure of IA 21 intersection to 14 days which will likely require adding intermediate stages to complete portions of the intersection at a time.

Refer to Standard Road Plan TC-252 (Routes Closed to Traffic)

150

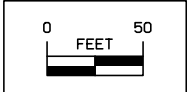
155

160



Warren TWP.
T-75N R-13W
SEC. 4

Warren TWP.
T-75N R-13W
SEC. 3



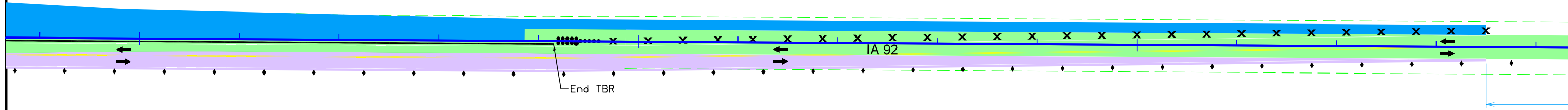
Stage 1 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 34

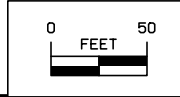
165

170

175



Warren TWP.
T-75N R-13W
SEC. 3



Washington TWP.
T-76N R-13W
SEC. 34

180



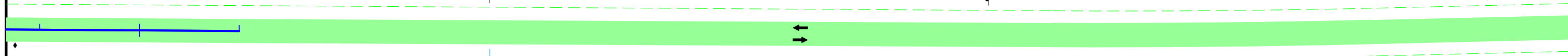
W13-1
24" x 24"



R4-1
36" x 48"



W20-1
48" x 48"

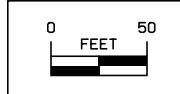


W14-3
48" X 60" X 60"



G20-2A
48" x 24"

Warren TWP.
T-75N R-13W
SEC. 3



Stage 1 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 33



1000'

1000'

1000'

END
ROAD WORK

G20-2A
48" x 24"



W14-3
48" X 60" X 60"



W20-1
48" x 48"

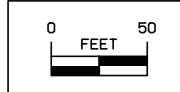


R4-1
36" x 48"

Warren TWP.
T-75N R-13W
SEC. 4



50
M.P.H.
W13-1
24" x 24"



Washington TWP.
T-76N R-13W
SEC. 33

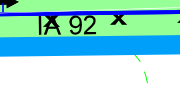


135

140

145

Begin TBR



Warren TWP.
T-75N R-13W
SEC. 4

Stage 2 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 33

Washington TWP.
T-76N R-13W
SEC. 34



150

155

160

IA 92

50
M.P.H.

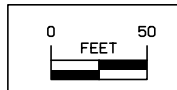
W13-1 24" x 24"
W1-4R 48" x 48"

Refer to Standard
Road Plan TC-252
(Routes Closed to
Traffic)

IA 21

Warren TWP.
T-75N R-13W
SEC. 4

Warren TWP.
T-75N R-13W
SEC. 3



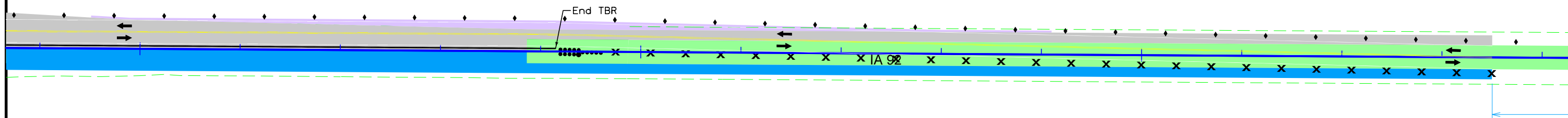
Stage 2 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 34

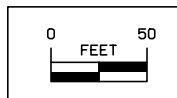
165

170

175



Warren TWP.
T-75N R-13W
SEC. 3



Washington TWP.
T-76N R-13W
SEC. 34

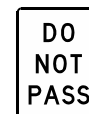
180



W1-4R
48" x 48"



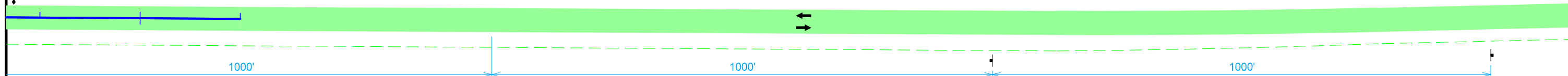
W13-1
24" x 24"



R4-1
36" x 48"



W20-1
48" x 48"

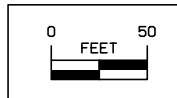


W14-3
48" X 60" X 60"



G20-2A
48" x 24"

Warren TWP.
T-75N R-13W
SEC. 3



Stage 2 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 34

Washington TWP.
T-76N R-13W
SEC. 35



END
ROAD WORK

G20-2A
48" x 24"

NO
PASSING
ZONE

W14-3
48" X 60" X 60"

210

ROAD
WORK
AHEAD

W20-1
48" x 48"

DO
NOT
PASS

R4-1
36" x 48"

1000'

1000'

50
M.P.H.

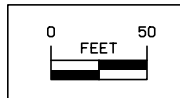
W13-1
24" x 24"

W1-4R
48" x 48"

1000'

Warren TWP.
T-75N R-13W
SEC. 3

Warren TWP.
T-75N R-13W
SEC. 2



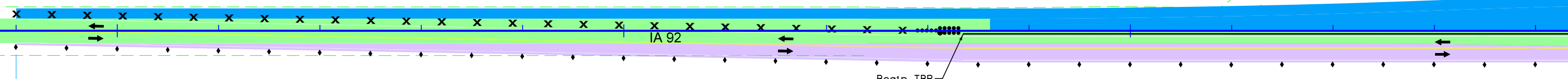
Washington TWP.
T-76N R-13W
SEC. 35



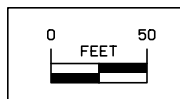
215

220

225



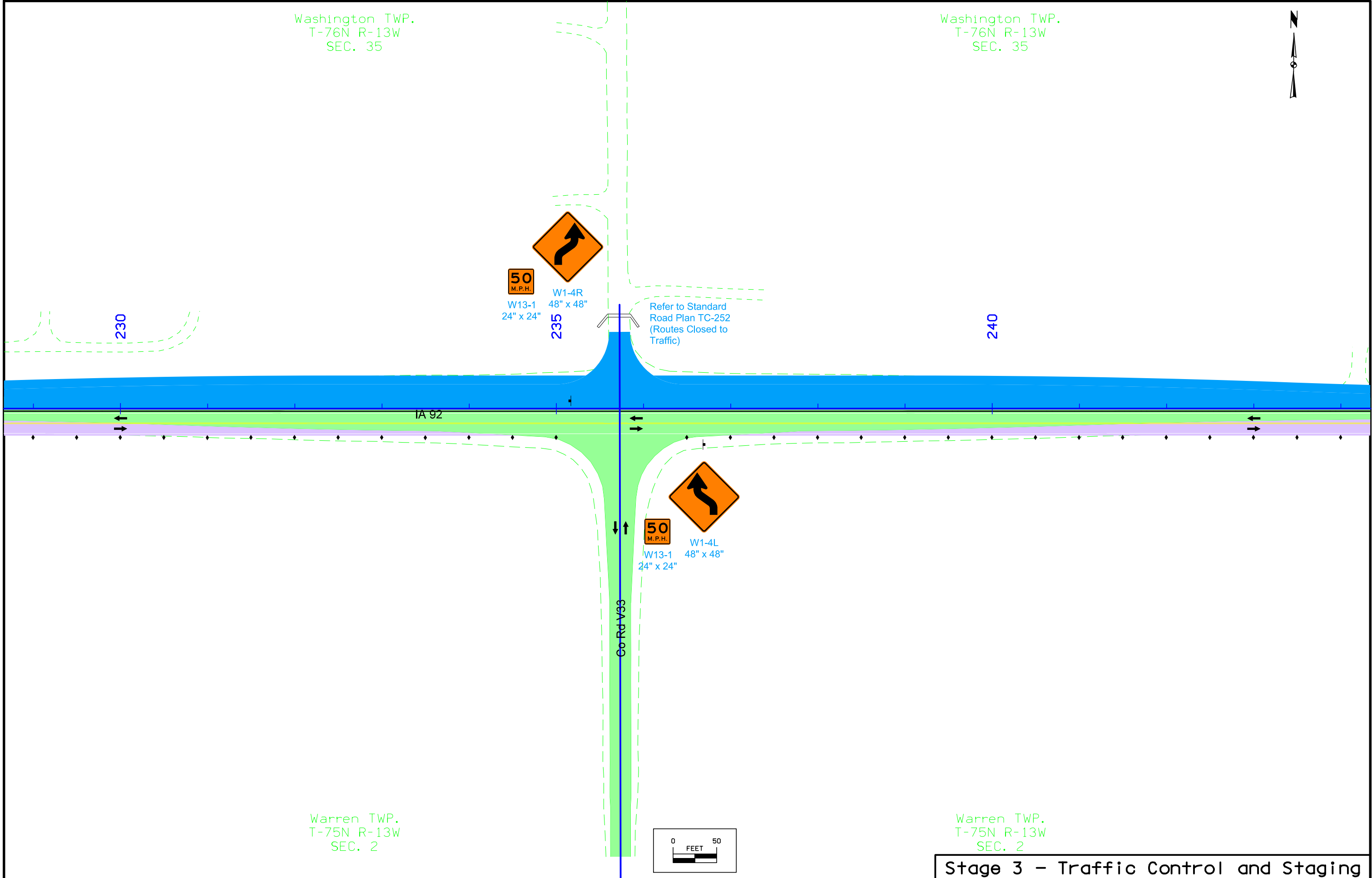
Warren TWP.
T-75N R-13W
SEC. 2



Stage 3 - Traffic Control and Staging

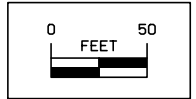
Washington TWP.
T-76N R-13W
SEC. 35

Washington TWP.
T-76N R-13W
SEC. 35



Warren TWP.
T-75N R-13W
SEC. 2

Warren TWP.
T-75N R-13W
SEC. 2



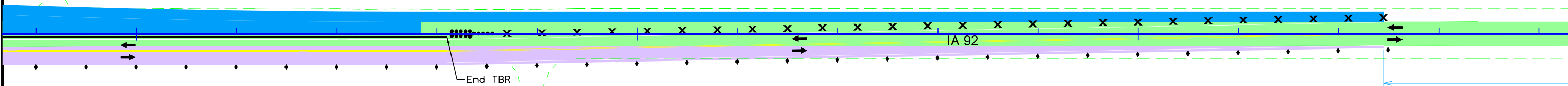
Stage 3 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 35

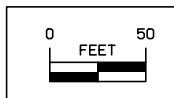
245

250

255



Warren TWP.
T-75N R-13W
SEC. 2



Washington TWP.
T-76N R-13W
SEC. 35



50
M.P.H.

W13-1
24" x 24"

W1-4L
48" x 48"

DO
NOT
PASS

R4-1
36" x 48"



W20-1
48" x 48"



1000'

1000'

1000'

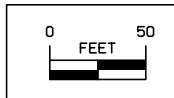


W14-3
48" X 60" X 60"



G20-2A
48" x 24"

Warren TWP.
T-75N R-13W
SEC. 2



Stage 3 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 34

Washington TWP.
T-76N R-13W
SEC. 35



END
ROAD WORK

G20-2A
48" x 24"



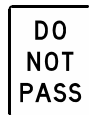
W14-3
48" X 60" X 60"

210



W20-1
48" x 48"

1000'



R4-1
36" x 48"

1000'



50
M.P.H.

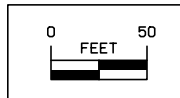
W13-1
24" x 24"

W1-4L
48" x 48"

1000'

Warren TWP.
T-75N R-13W
SEC. 3

Warren TWP.
T-75N R-13W
SEC. 2



Washington TWP.
T-76N R-13W
SEC. 35



215

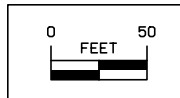
220

225

Begin TBR

PA 92

Warren TWP.
T-75N R-13W
SEC. 2



Stage 4 - Traffic Control and Staging

FILE NO.

ENGLISH

DESIGN TEAM

Van Dyke\Stanley Consultants Inc.

KEOKUK COUNTY

PROJECT NUMBER

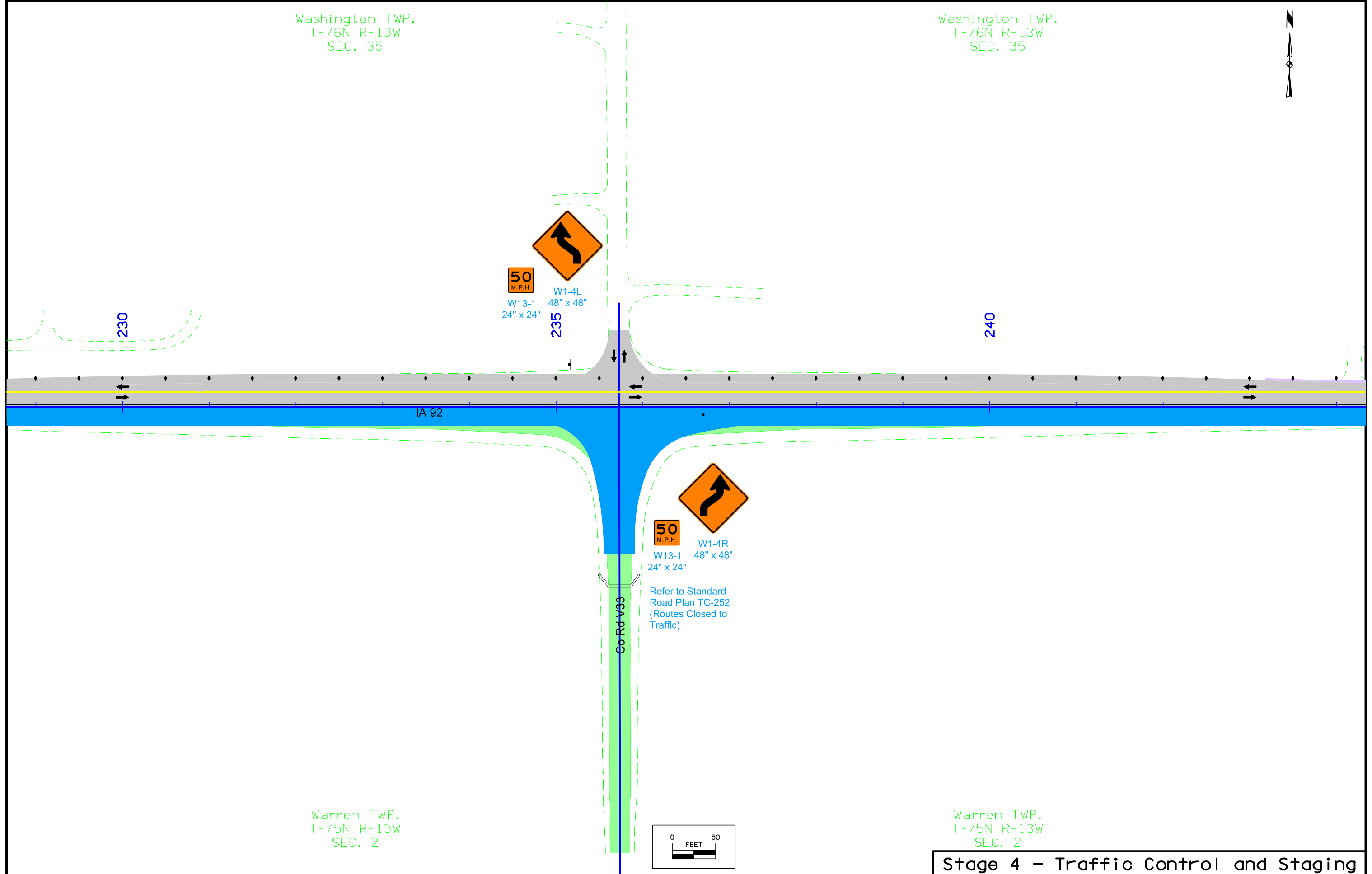
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SHEET NUMBER

J.12

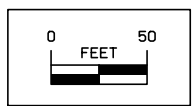
Washington TWP.
T-76N R-13W
SEC. 35

Washington TWP.
T-76N R-13W
SEC. 35



Warren TWP.
T-75N R-13W
SEC. 2

Warren TWP.
T-75N R-13W
SEC. 2



Stage 4 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 35

245

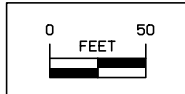
250

255

End TBR

IA 92

Warren TWP.
T-75N R-13W
SEC. 2



Washington TWP.
T-76N R-13W
SEC. 35



50
M.P.H.

W13-1
24" x 24"

W1-4R
48" x 48"

DO
NOT
PASS

R4-1
36" x 48"

ROAD
WORK
AHEAD

W20-1
48" x 48"

1000'

1000'

1000'

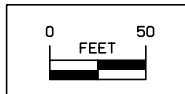
NO
PASSING
ZONE

W14-3
48" X 60" X 60"

END
ROAD WORK

G20-2A
48" x 24"

Warren TWP.
T-75N R-13W
SEC. 2



Stage 4 - Traffic Control and Staging

Washington TWP.
T-76N R-13W
SEC. 33



142

143

144

145

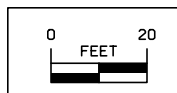
146

147

R 12000'

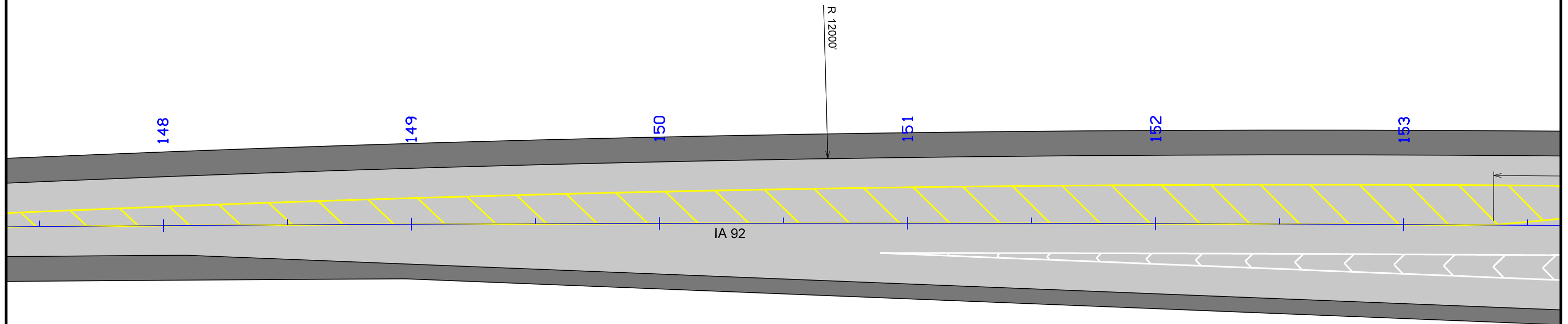
IA 92

Warren TWP.
T-75N R-13W
SEC. 4

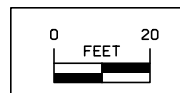


Pavement Markings

Washington TWP.
T-76N R-13W
SEC. 33



Warren TWP.
T-75N R-13W
SEC. 4

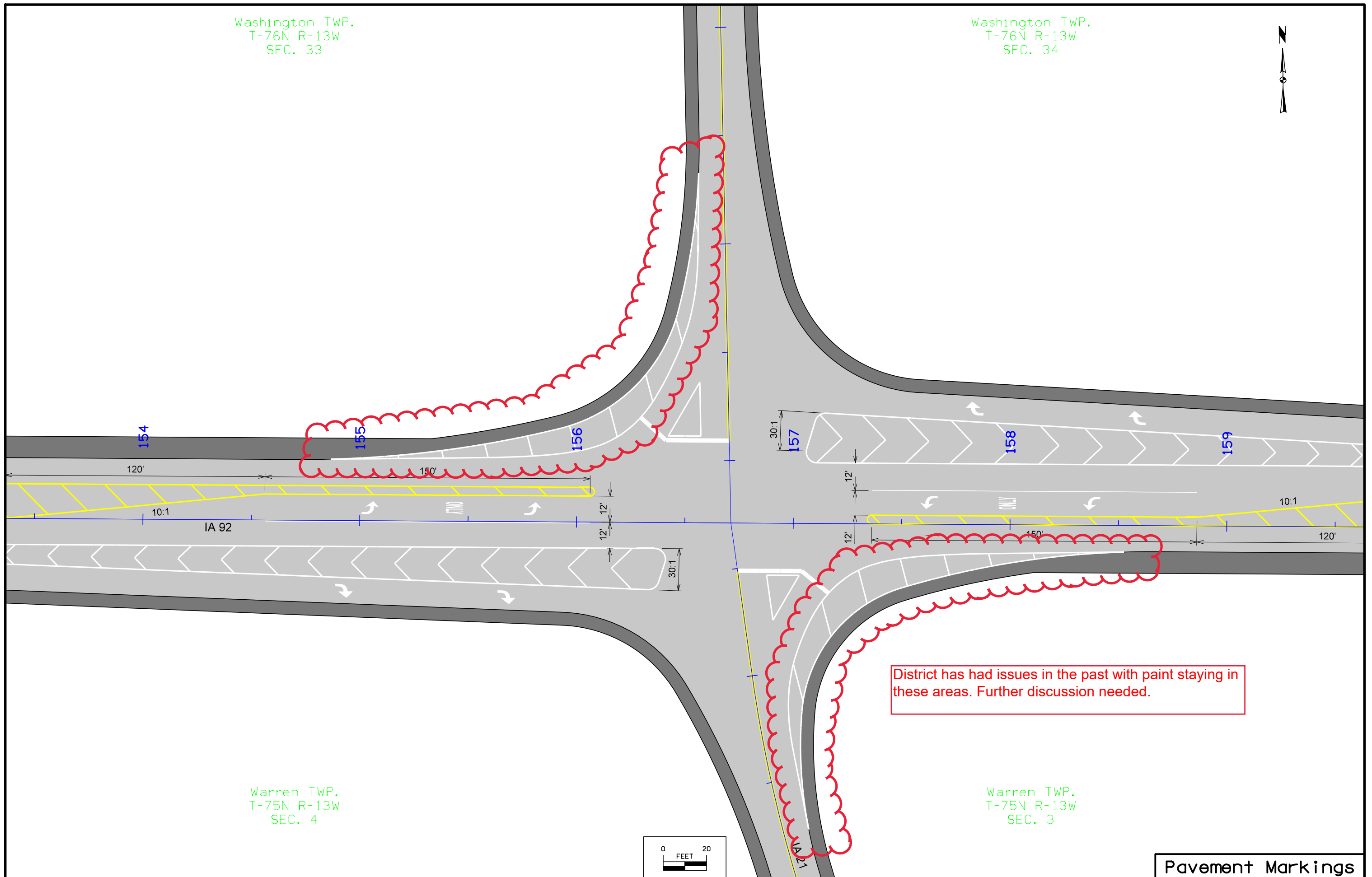


Pavement Markings

FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	N.2
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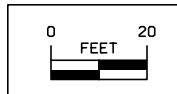
Washington TWP.
T-76N R-13W
SEC. 33

Washington TWP.
T-76N R-13W
SEC. 34



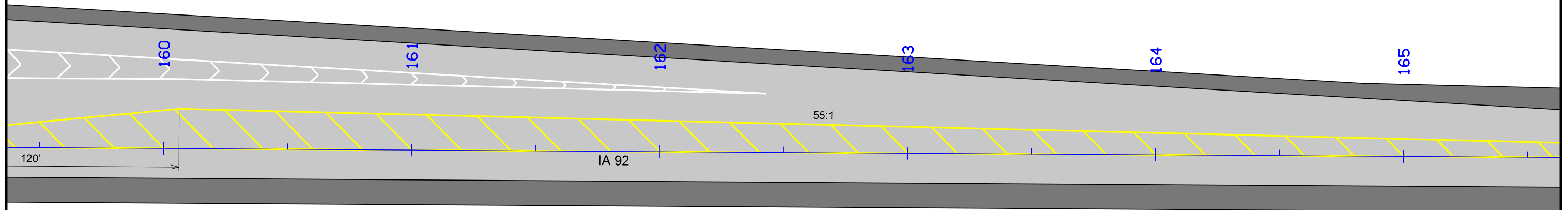
Warren TWP.
T-75N R-13W
SEC. 4

Warren TWP.
T-75N R-13W
SEC. 3

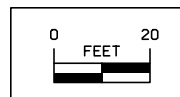


Pavement Markings

Washington TWP.
T-76N R-13W
SEC. 34



Warren TWP.
T-75N R-13W
SEC. 3



Pavement Markings

FILE NO.	ENGLISH	DESIGN TEAM	Van Dyke\Stanley Consultants Inc.	KEOKUK COUNTY	PROJECT NUMBER	NHSN-092-8(36)--2R-54	SHEET NUMBER	N.4
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Washington TWP.
T-76N R-13W
SEC. 34



166

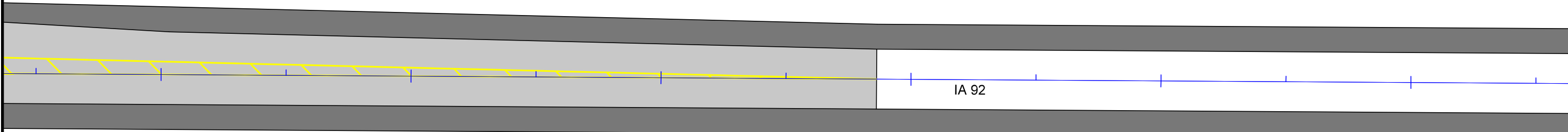
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168

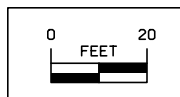
169

170

171



Warren TWP.
T-75N R-13W
SEC. 3



Pavement Markings

Washington TWP.
T-76N R-13W
SEC. 35



221

222

223

224

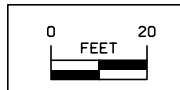
225

226

R 12000'

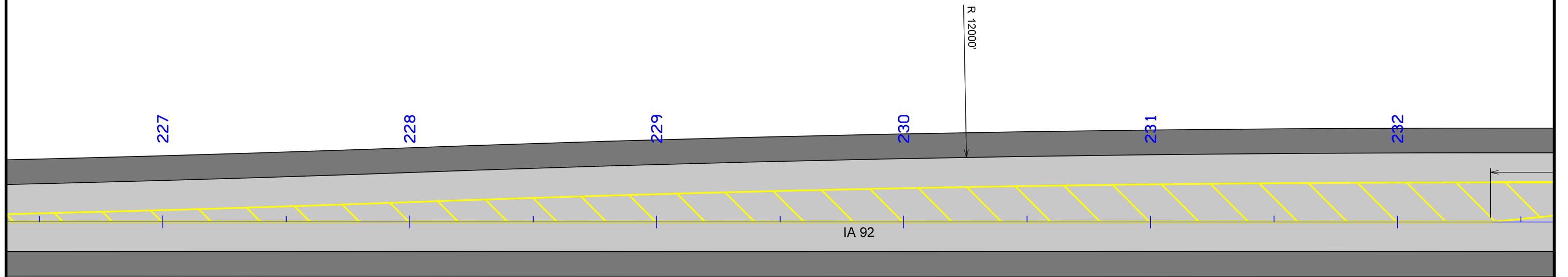
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Warren TWP.
T-75N R-13W
SEC. 2

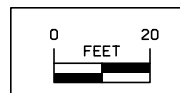


Pavement Markings

Washington TWP.
T-76N R-13W
SEC. 35



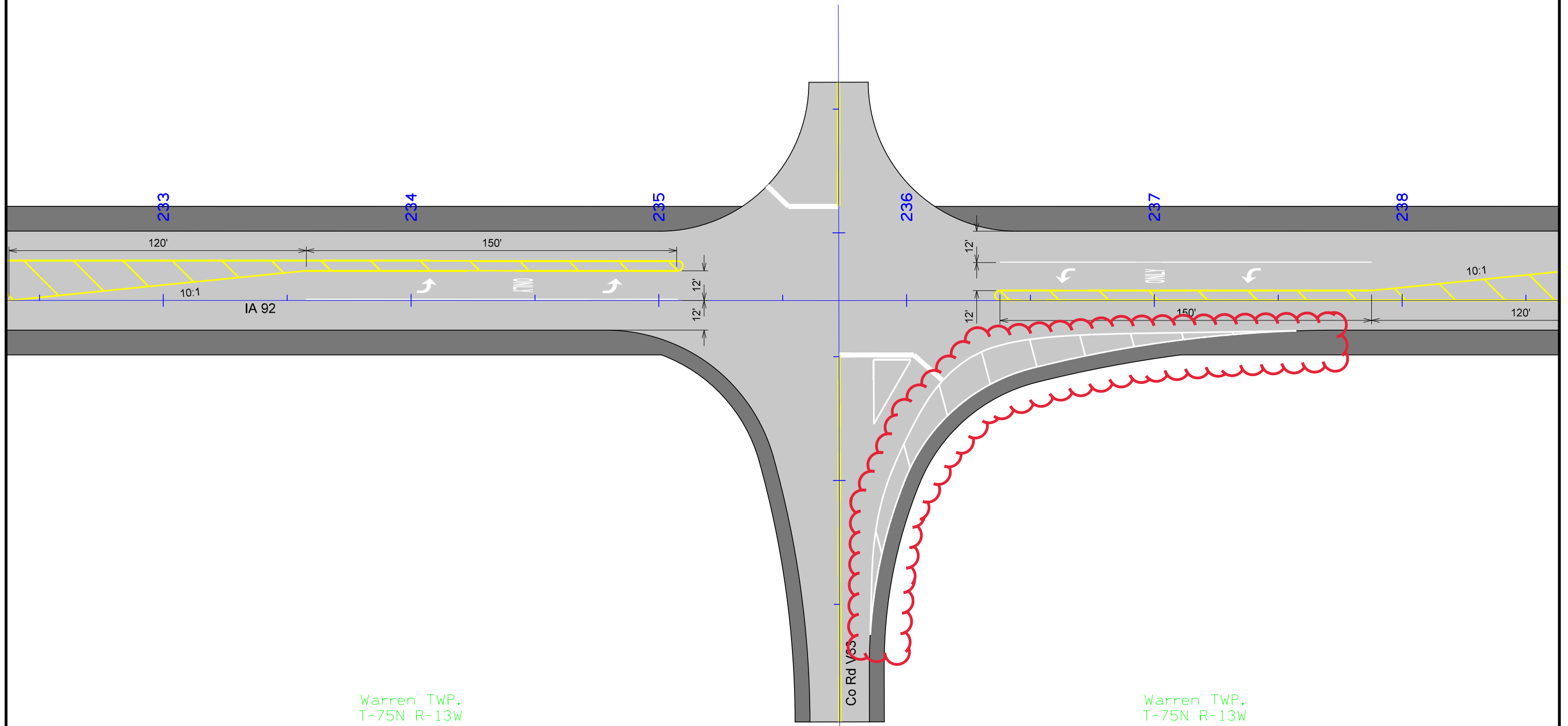
Warren TWP.
T-75N R-13W
SEC. 2



Pavement Markings

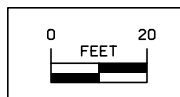
Washington TWP.
T-76N R-13W
SEC. 35

Washington TWP.
T-76N R-13W
SEC. 35



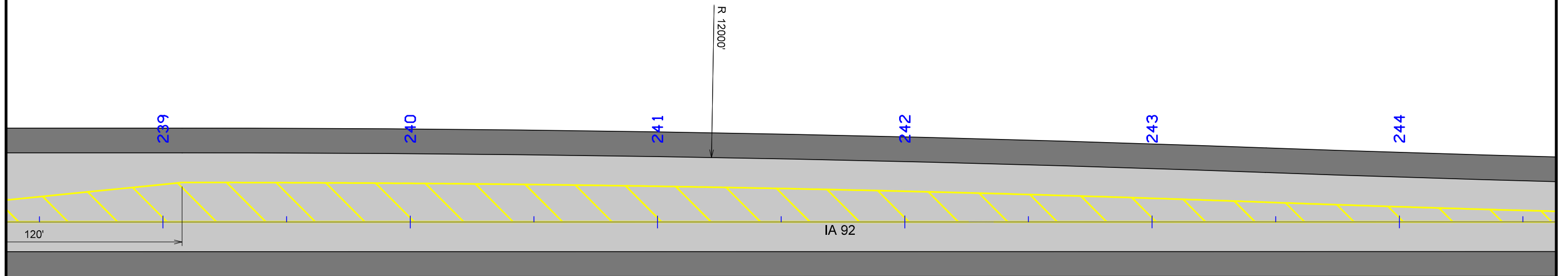
Warren TWP.
T-75N R-13W
SEC. 2

Warren TWP.
T-75N R-13W
SEC. 2

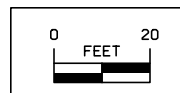


Pavement Markings

Washington TWP.
T-76N R-13W
SEC. 35



Warren TWP.
T-75N R-13W
SEC. 2



Pavement Markings

Washington TWP.
T-76N R-13W
SEC. 35



245

R 12000'

246

247

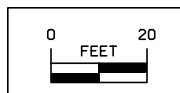
248

249

250

IA 92

Warren TWP.
T-75N R-13W
SEC. 2



Pavement Markings

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS----- Topsoil (Class 10)
- SLOPE DRESSING----- 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.

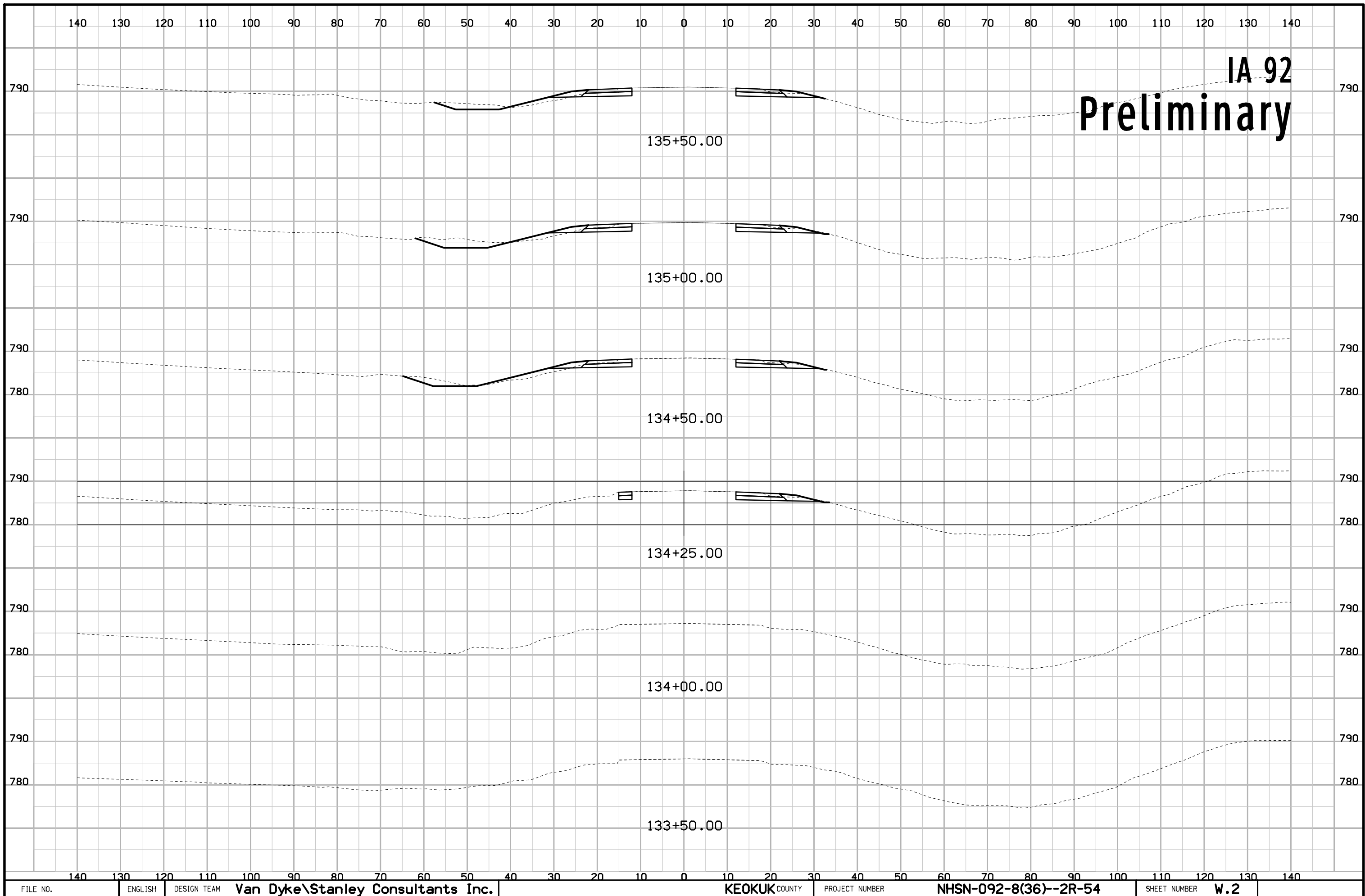
Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

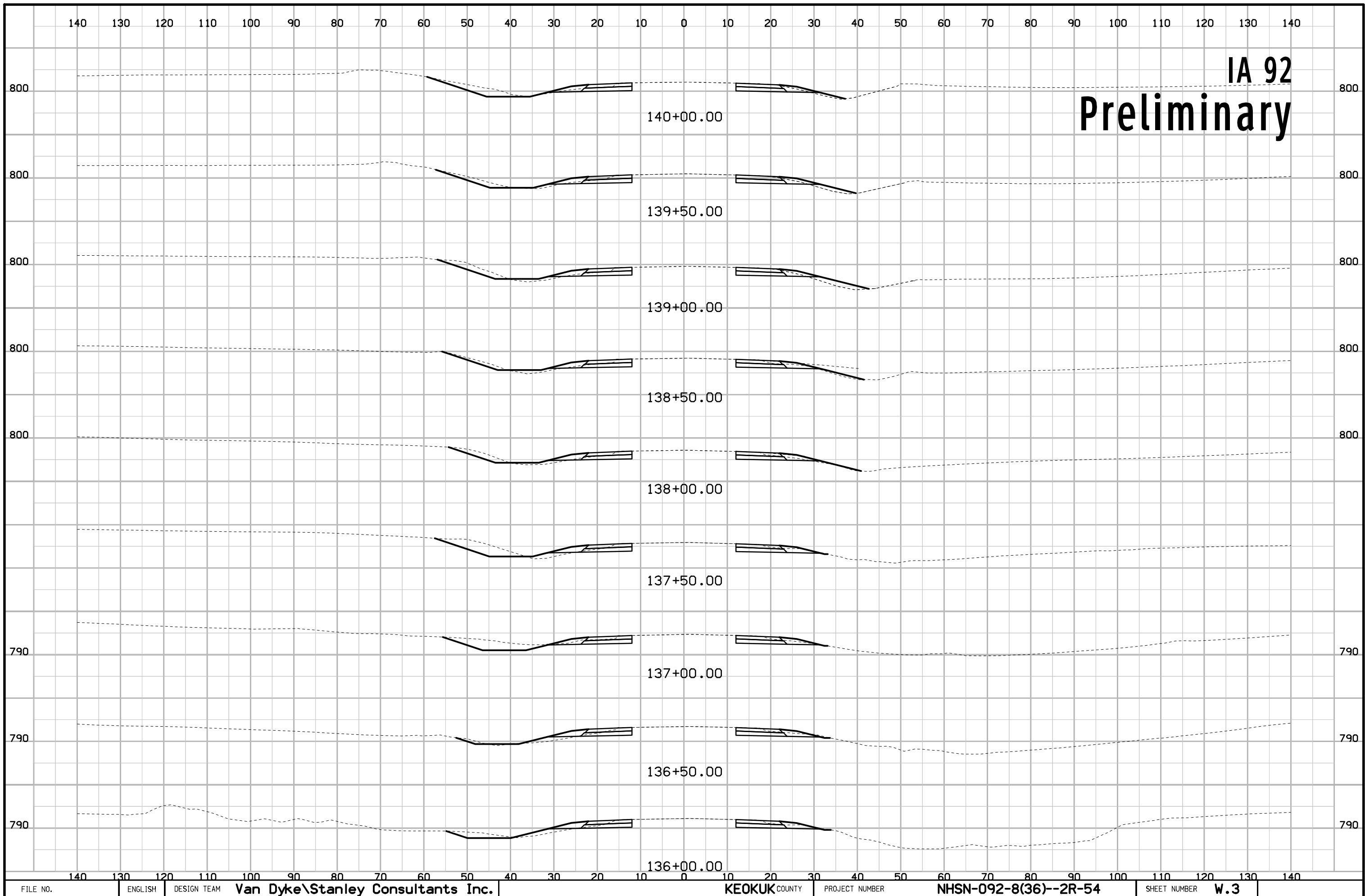
- Existing ROW
----- Existing Right-of-Way Limit
- Proposed ROW
----- Proposed Right-of-Way Limit
- Temporary ROW
----- Temporary Right-of-Way Limit

**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

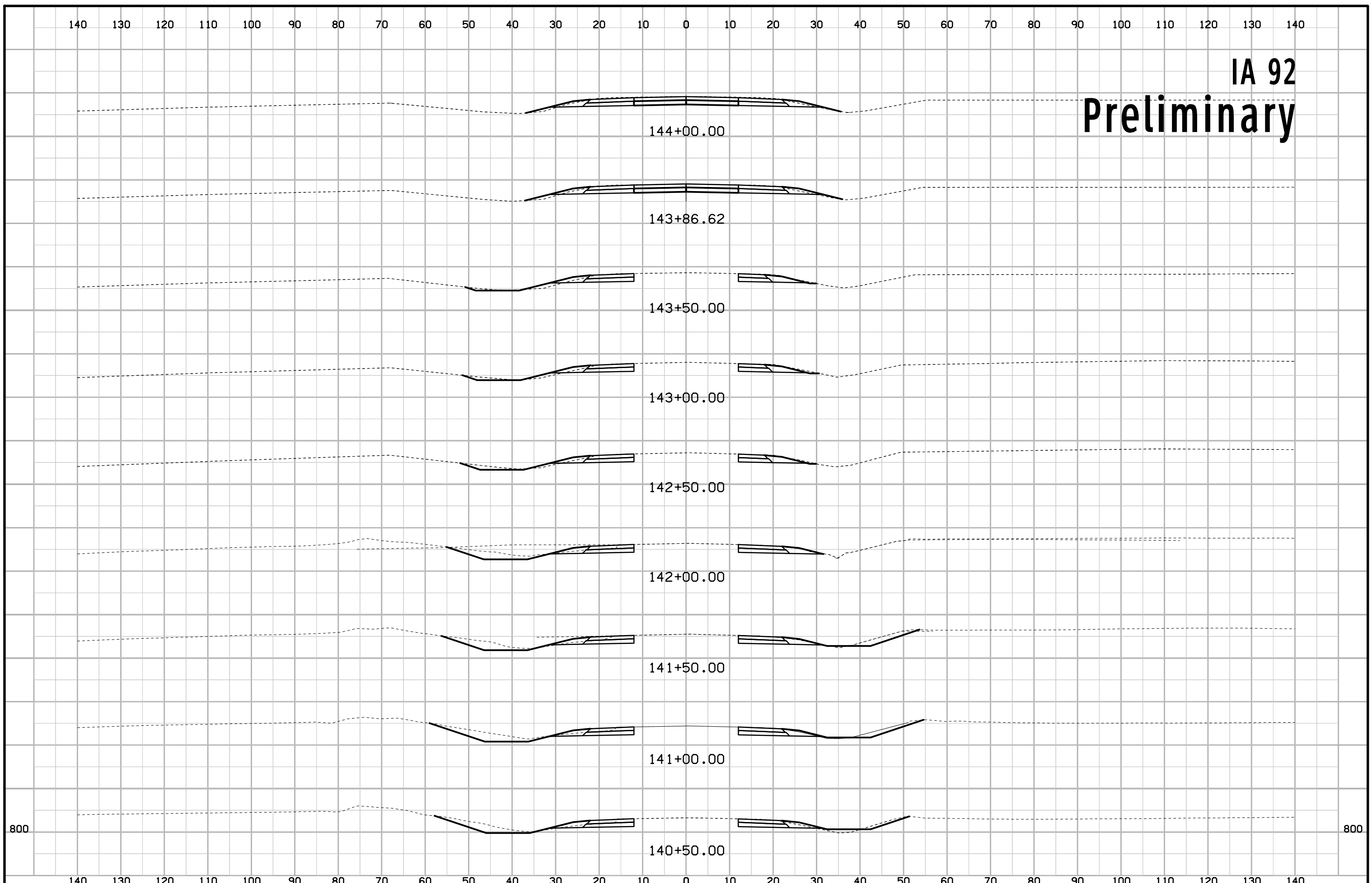
(COVERS SHEET SERIES W, X, Y, & Z)

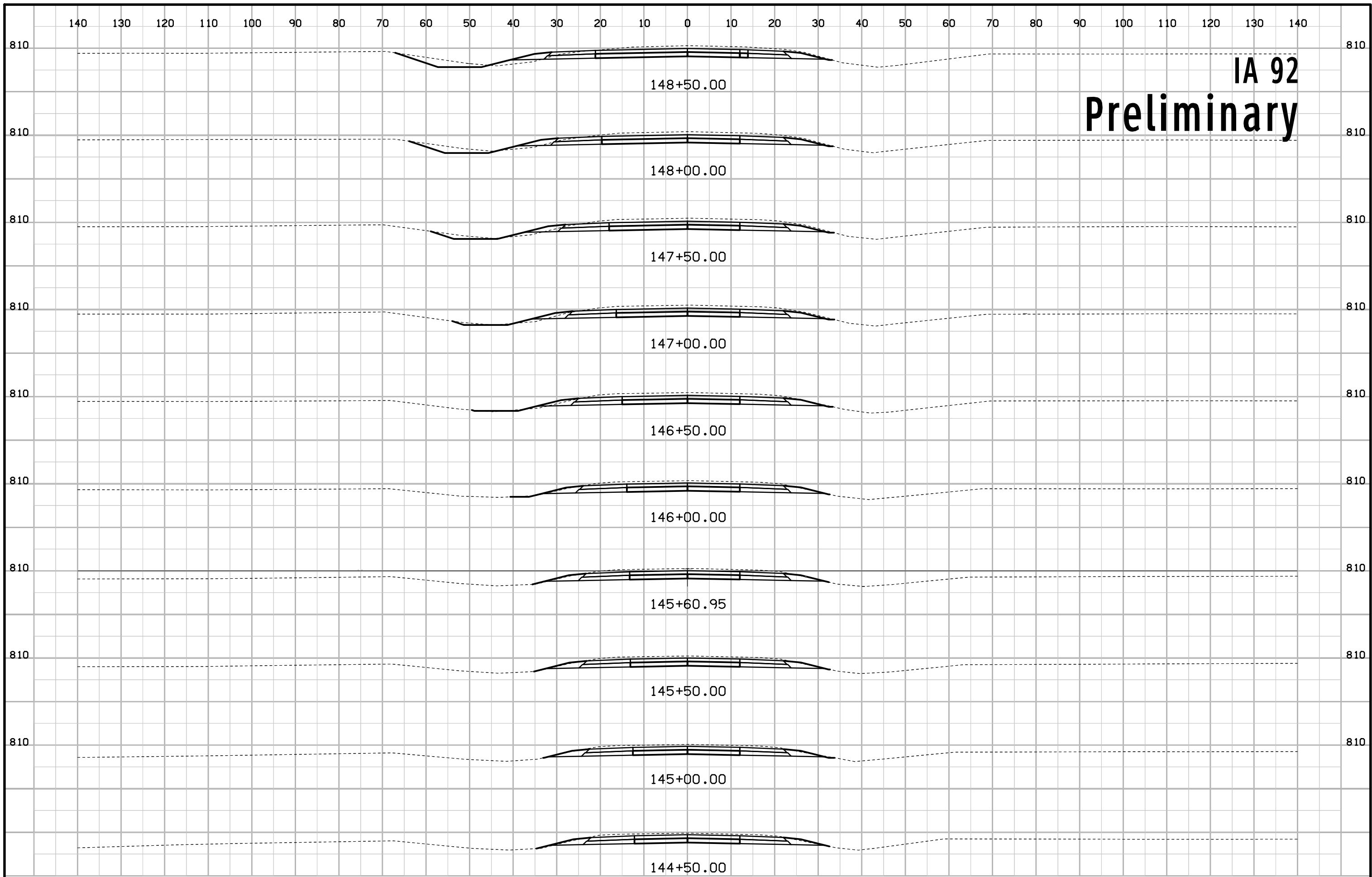


IA 92
Preliminary



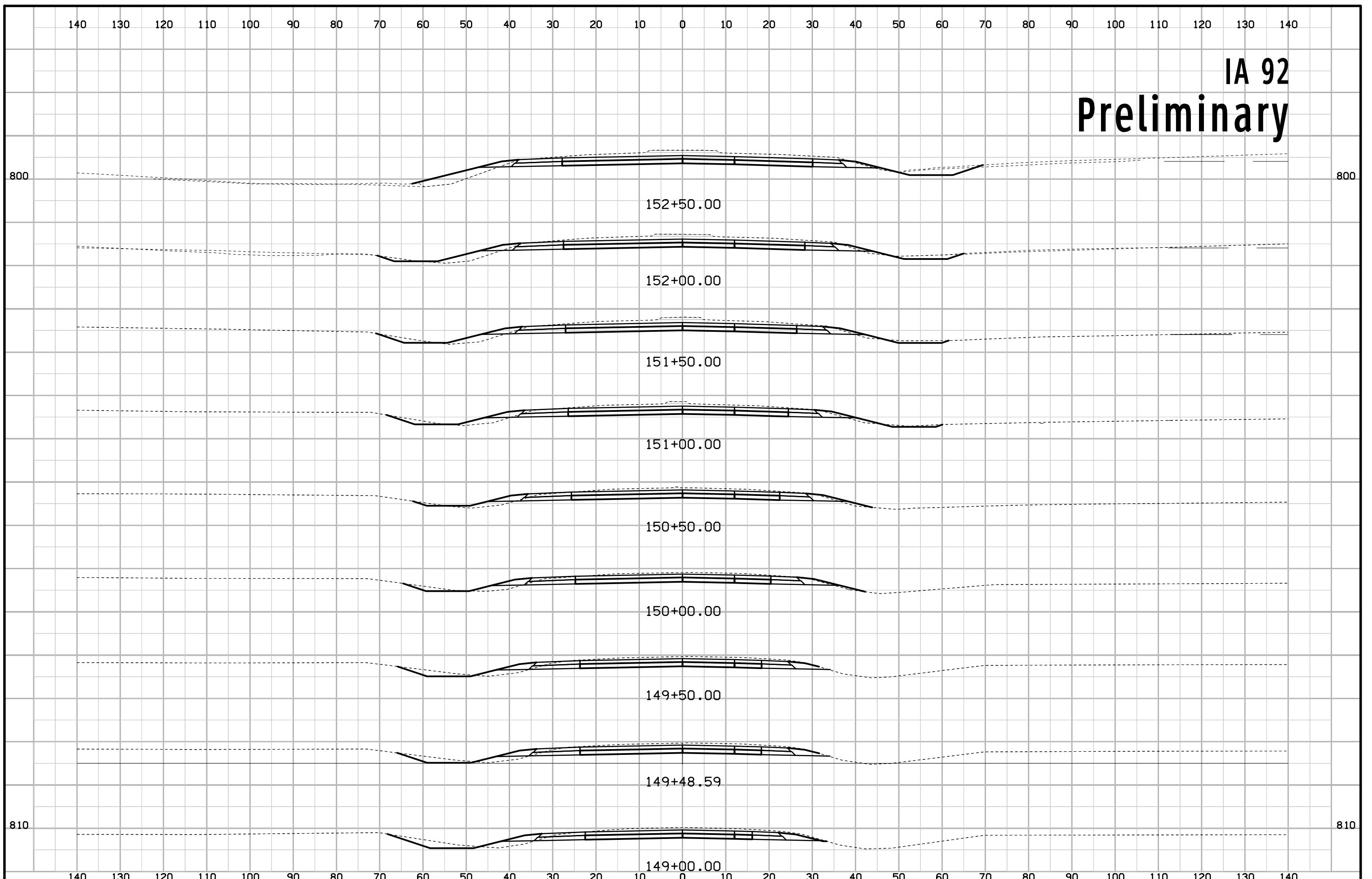
IA 92
Preliminary

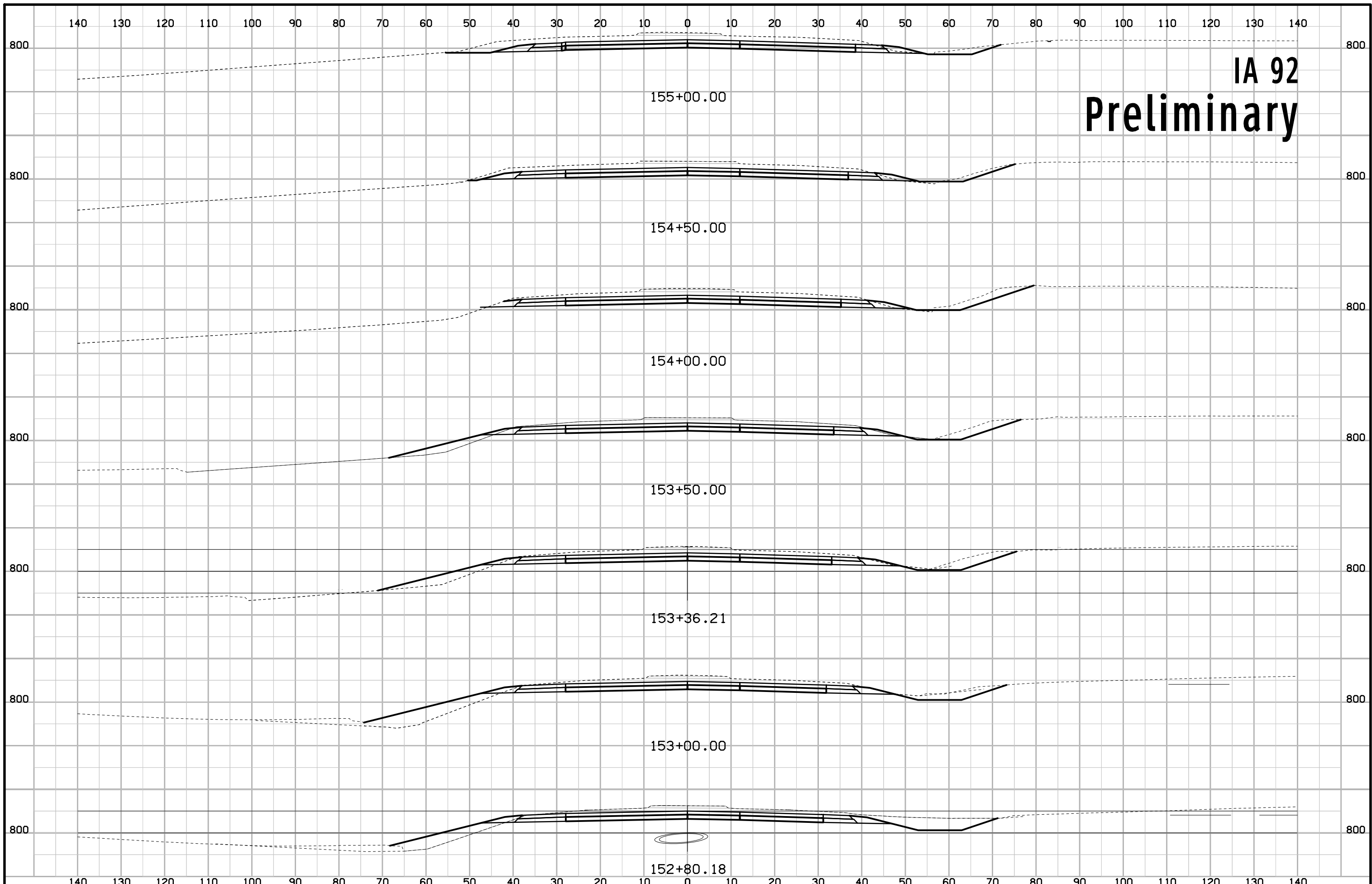




IA 92
Preliminary

IA 92 Preliminary





IA 92
Preliminary

155+00.00

154+50.00

154+00.00

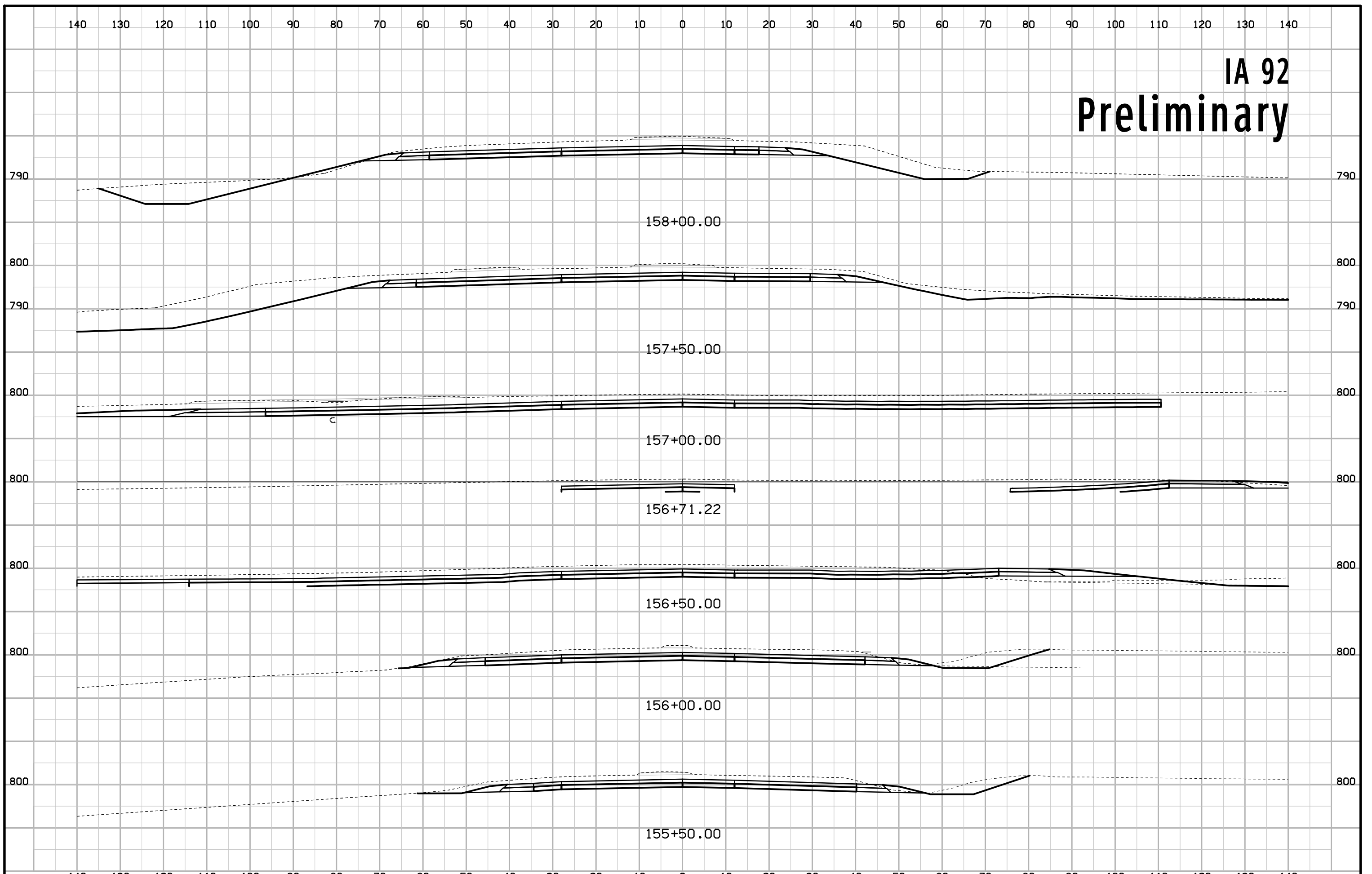
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153+36.21

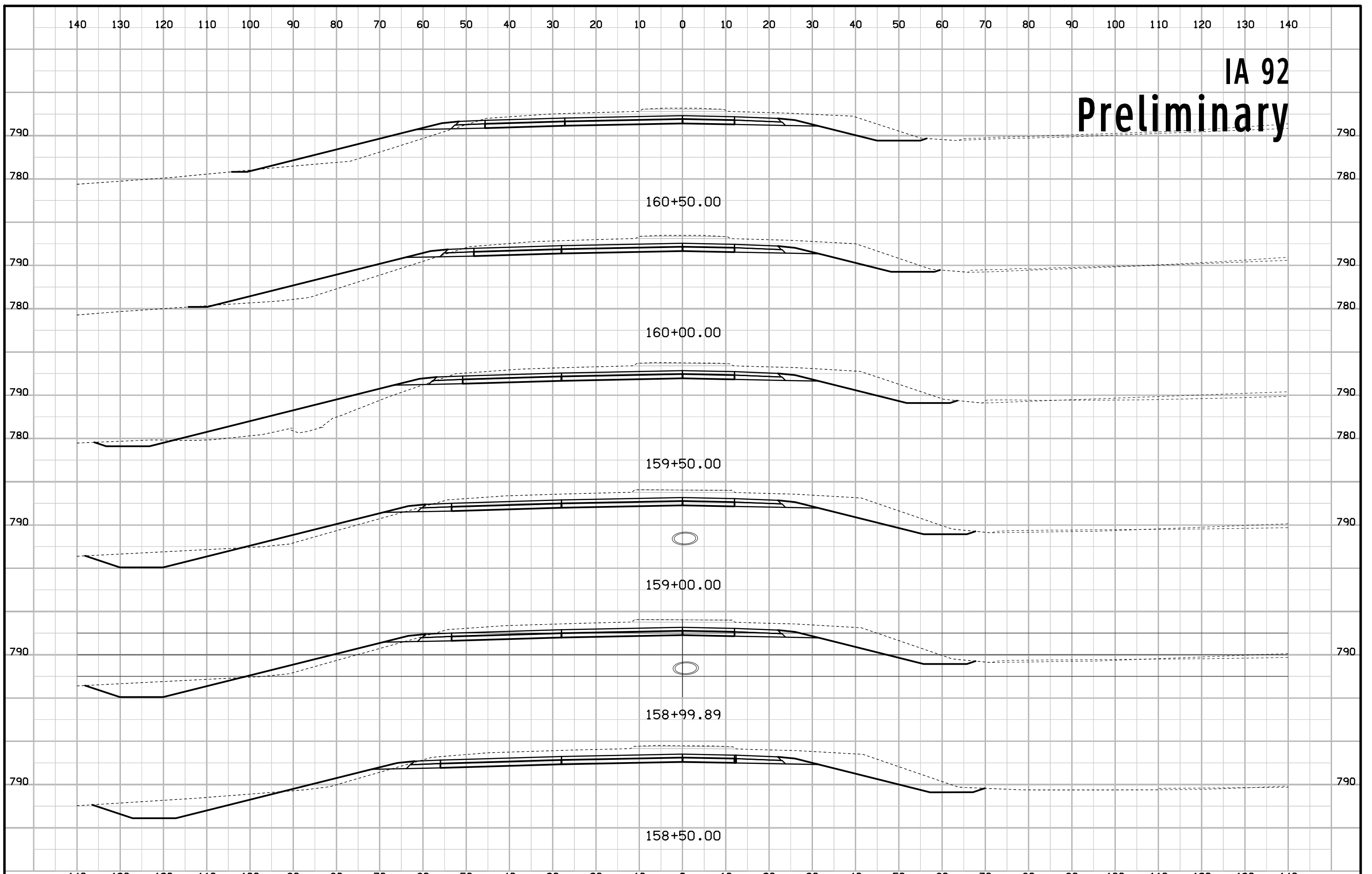
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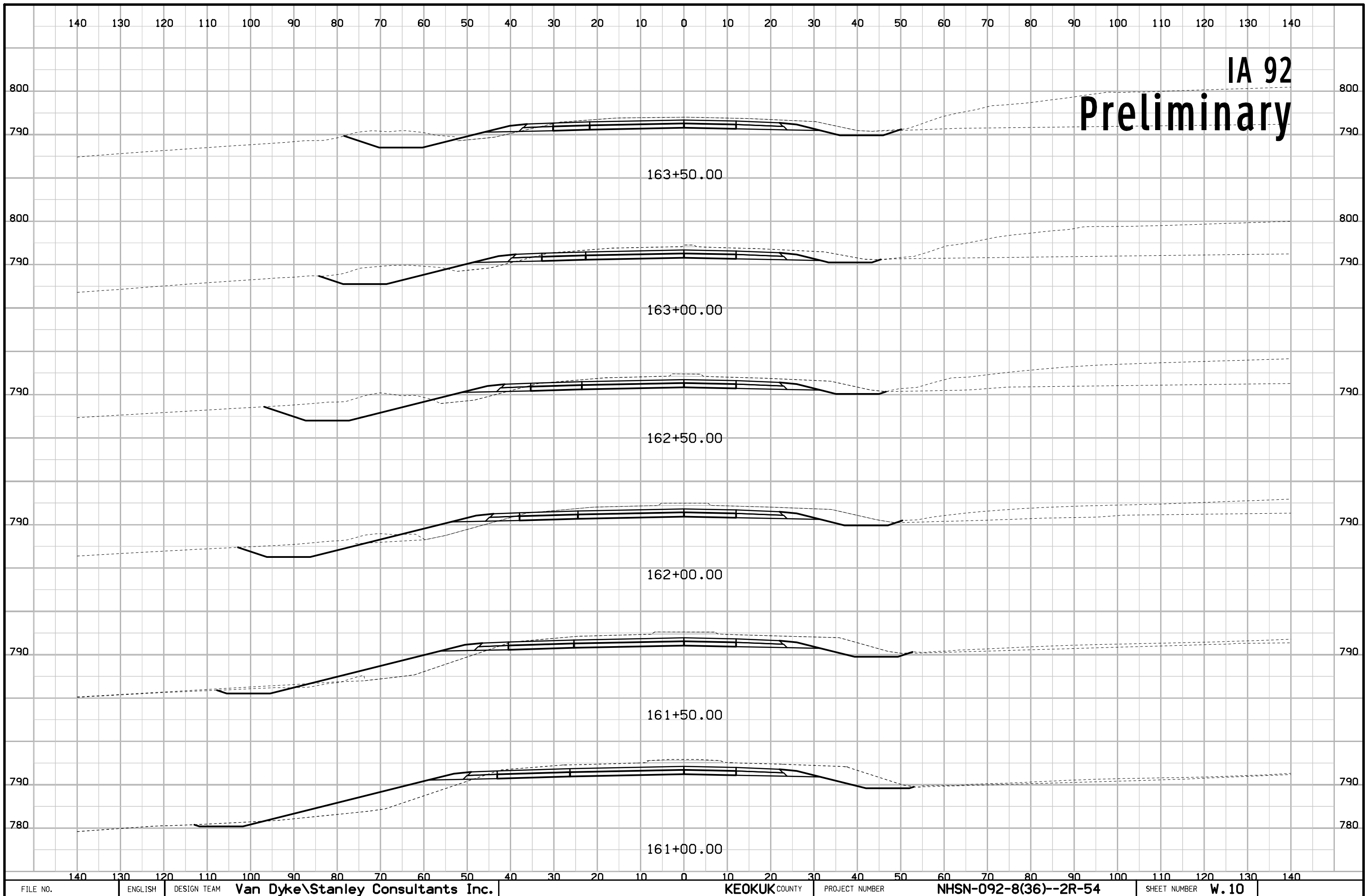
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IA 92 Preliminary



IA 92
Preliminary





IA 92
Preliminary

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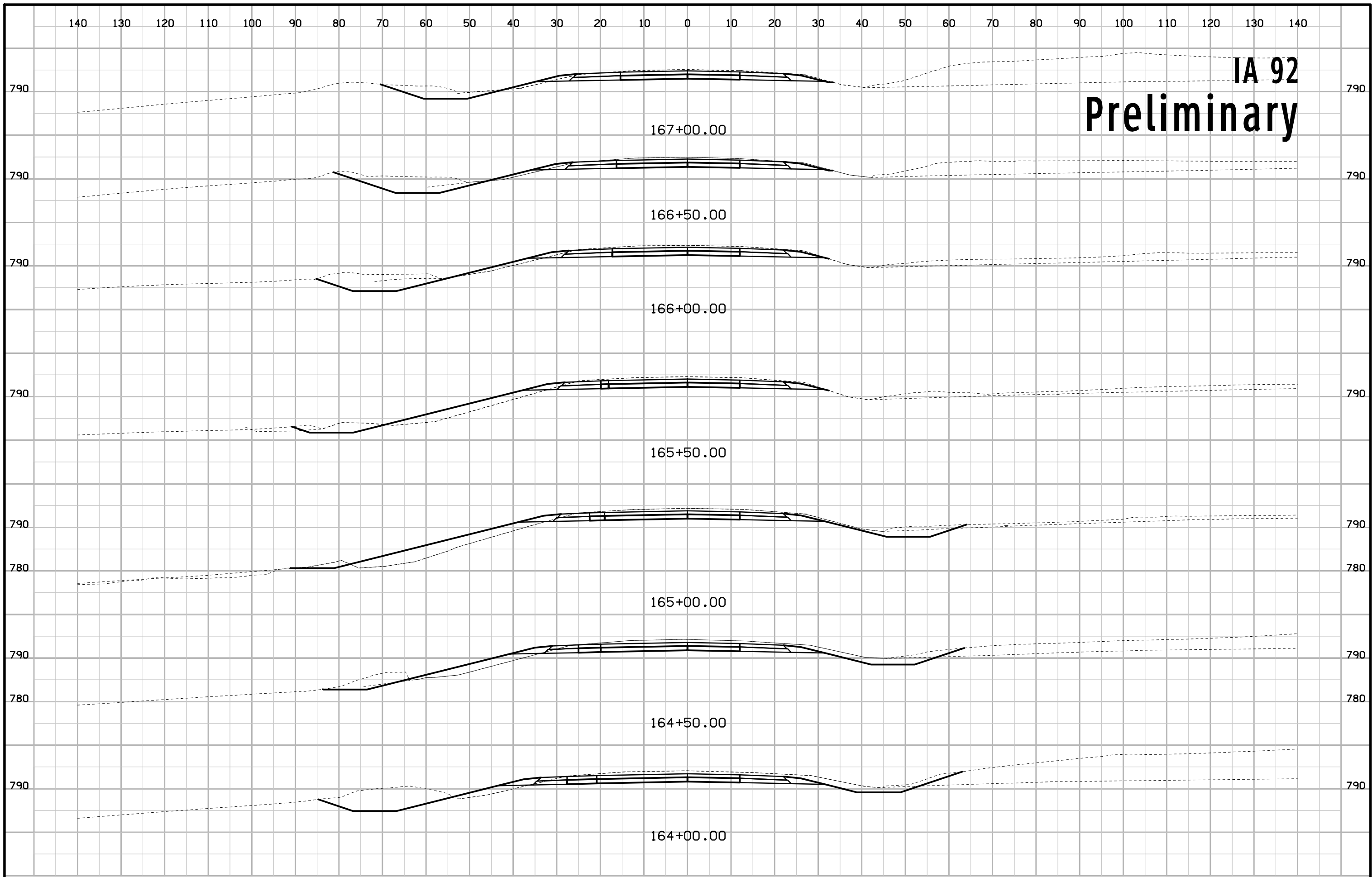
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162+50.00

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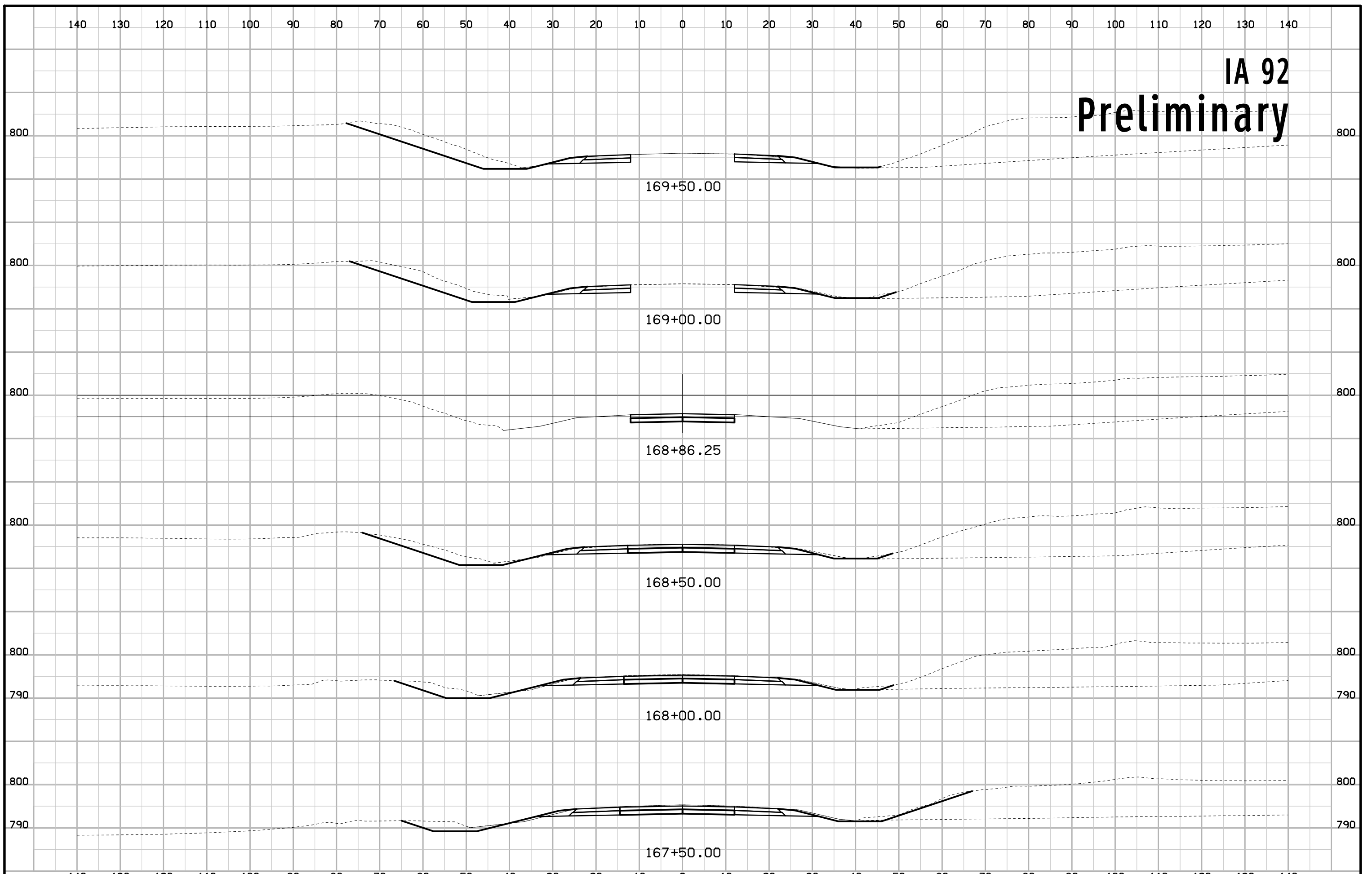
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161+00.00

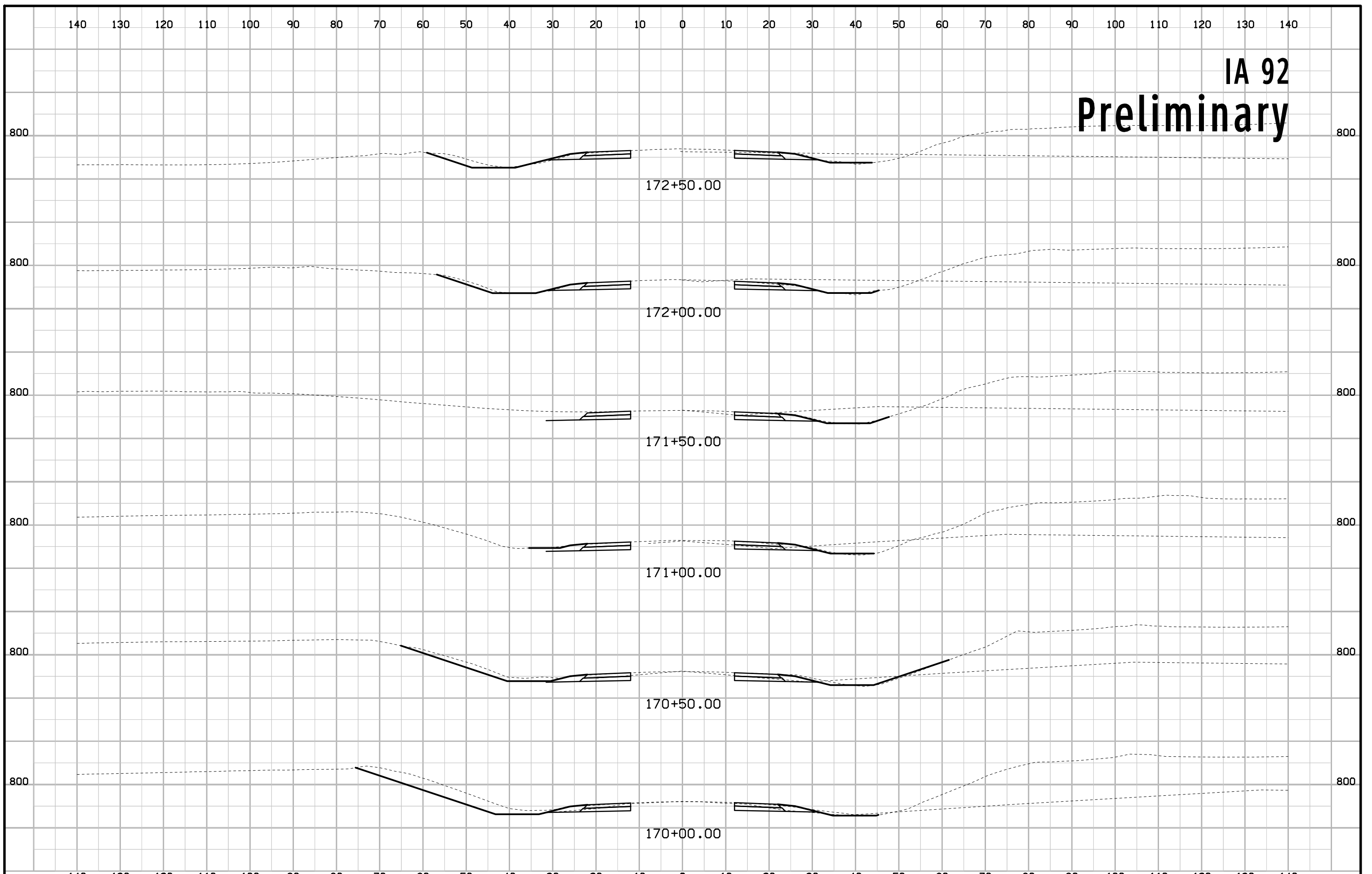


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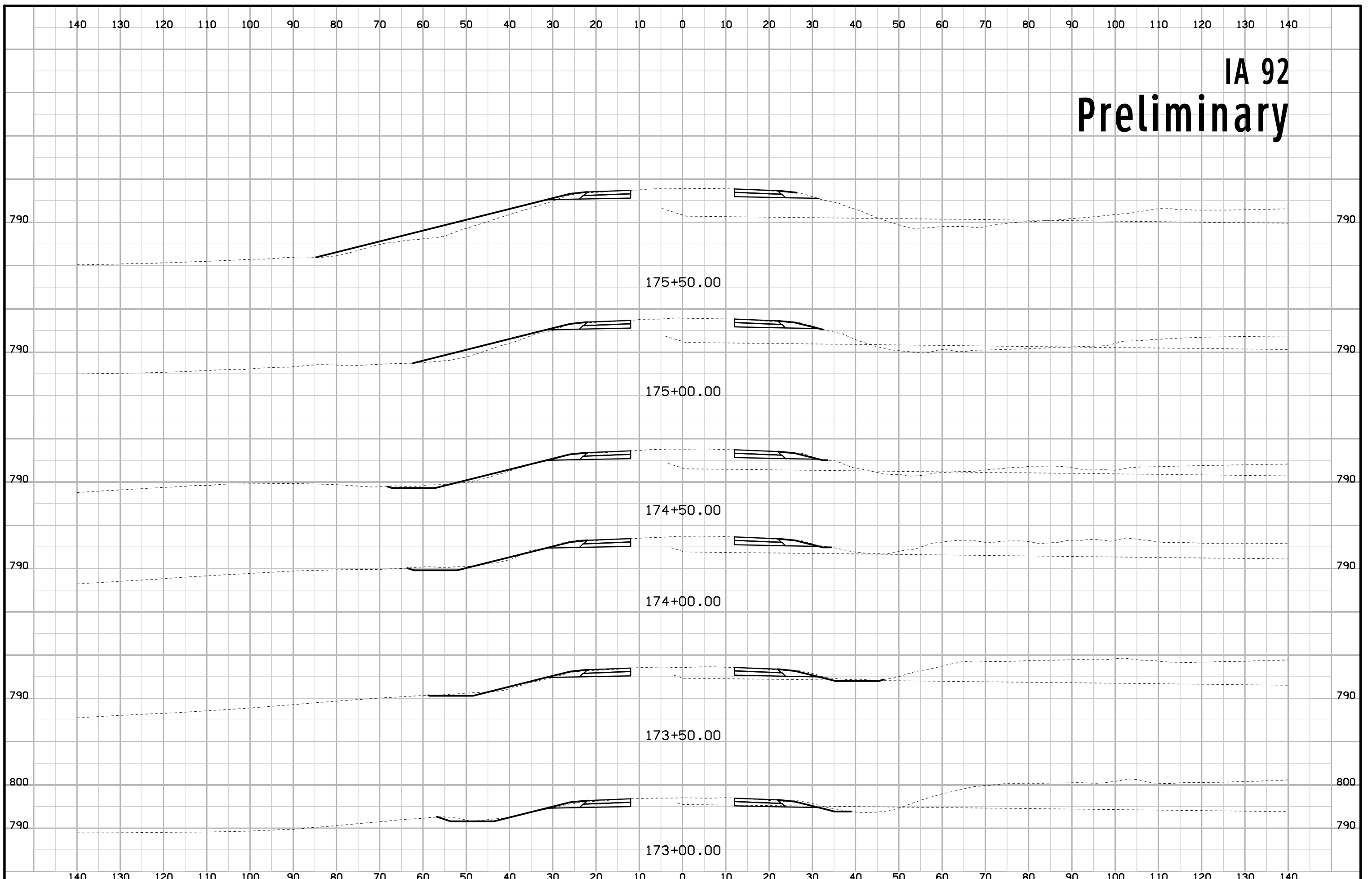
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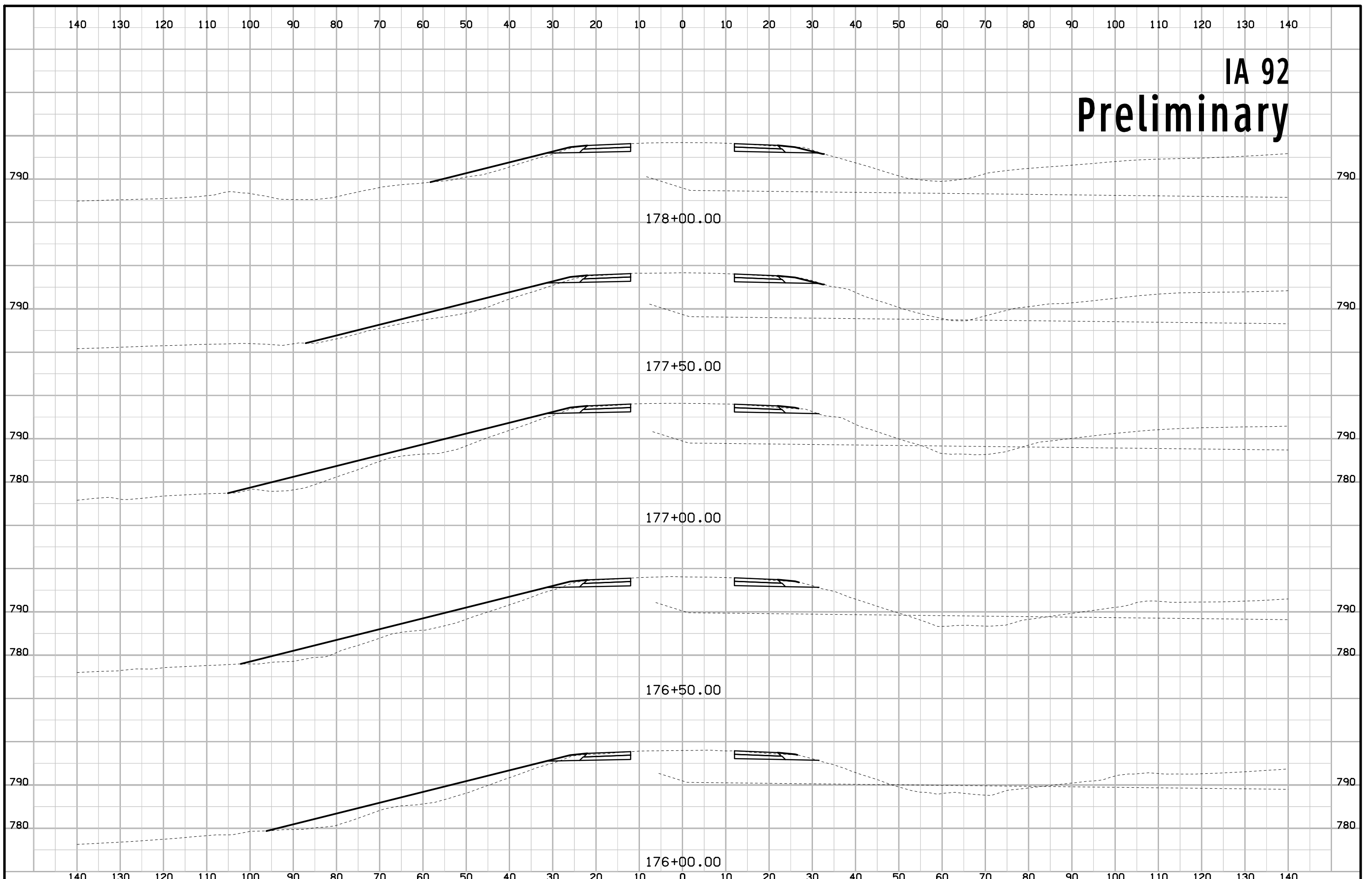
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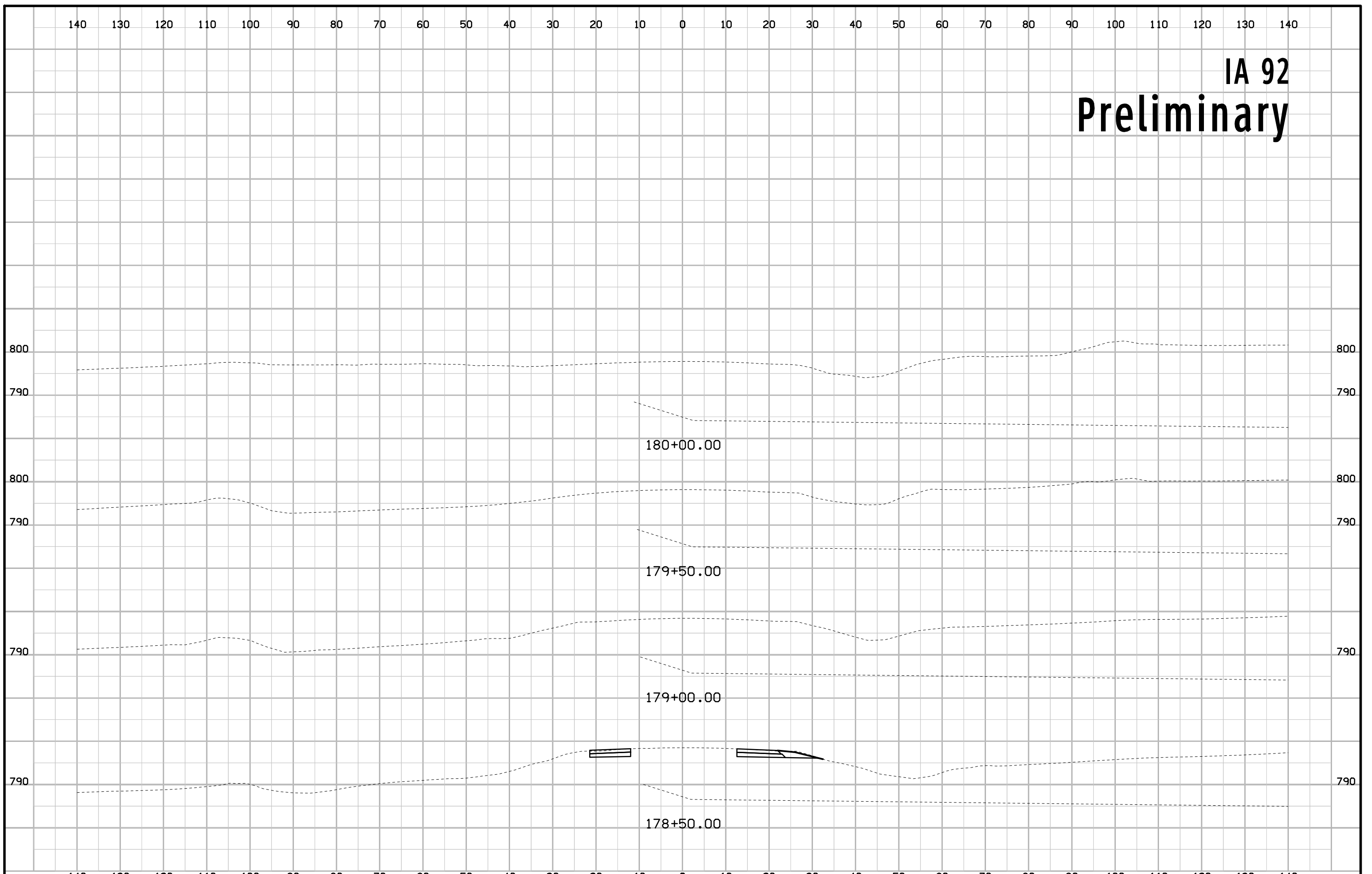
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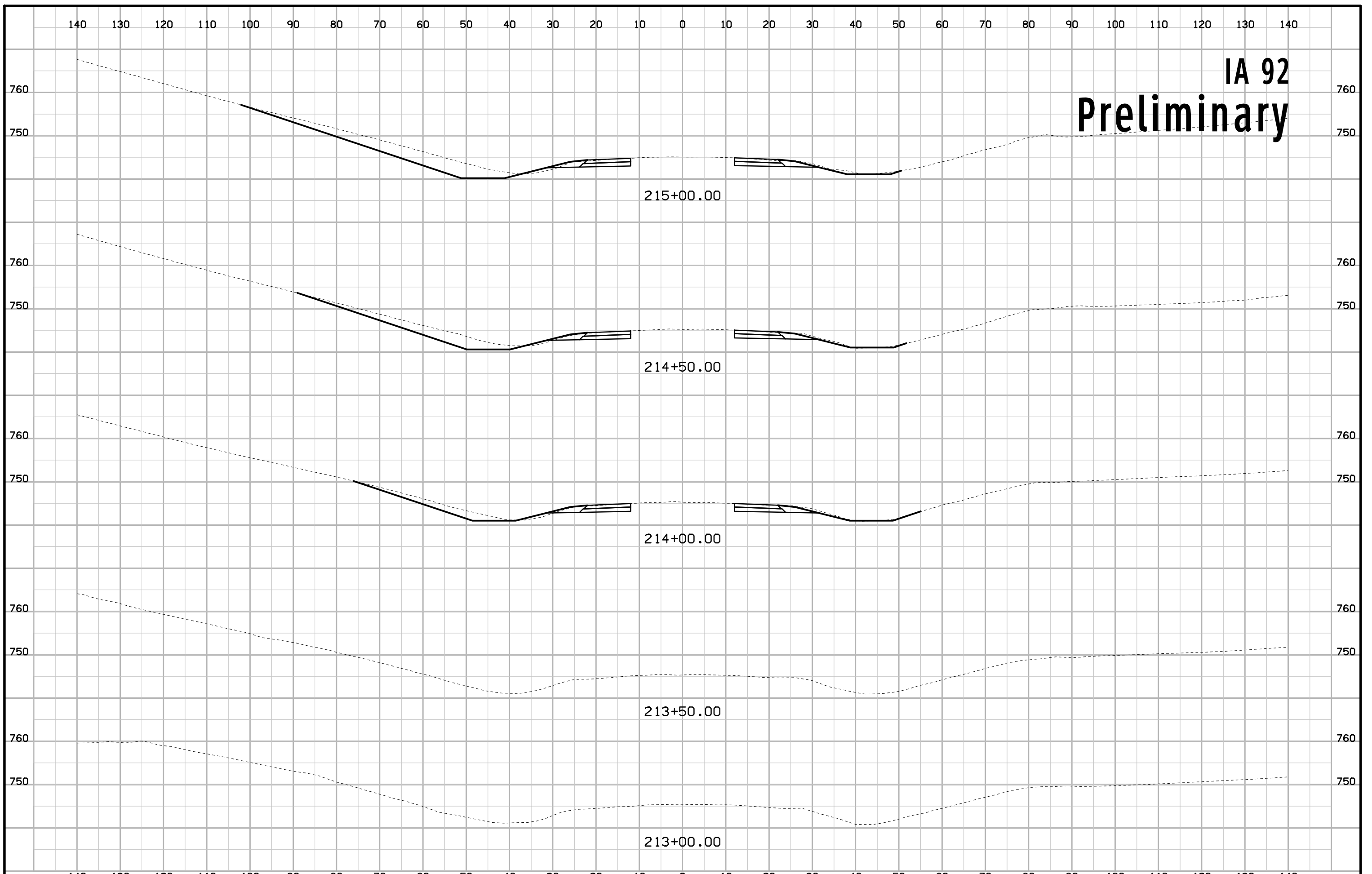
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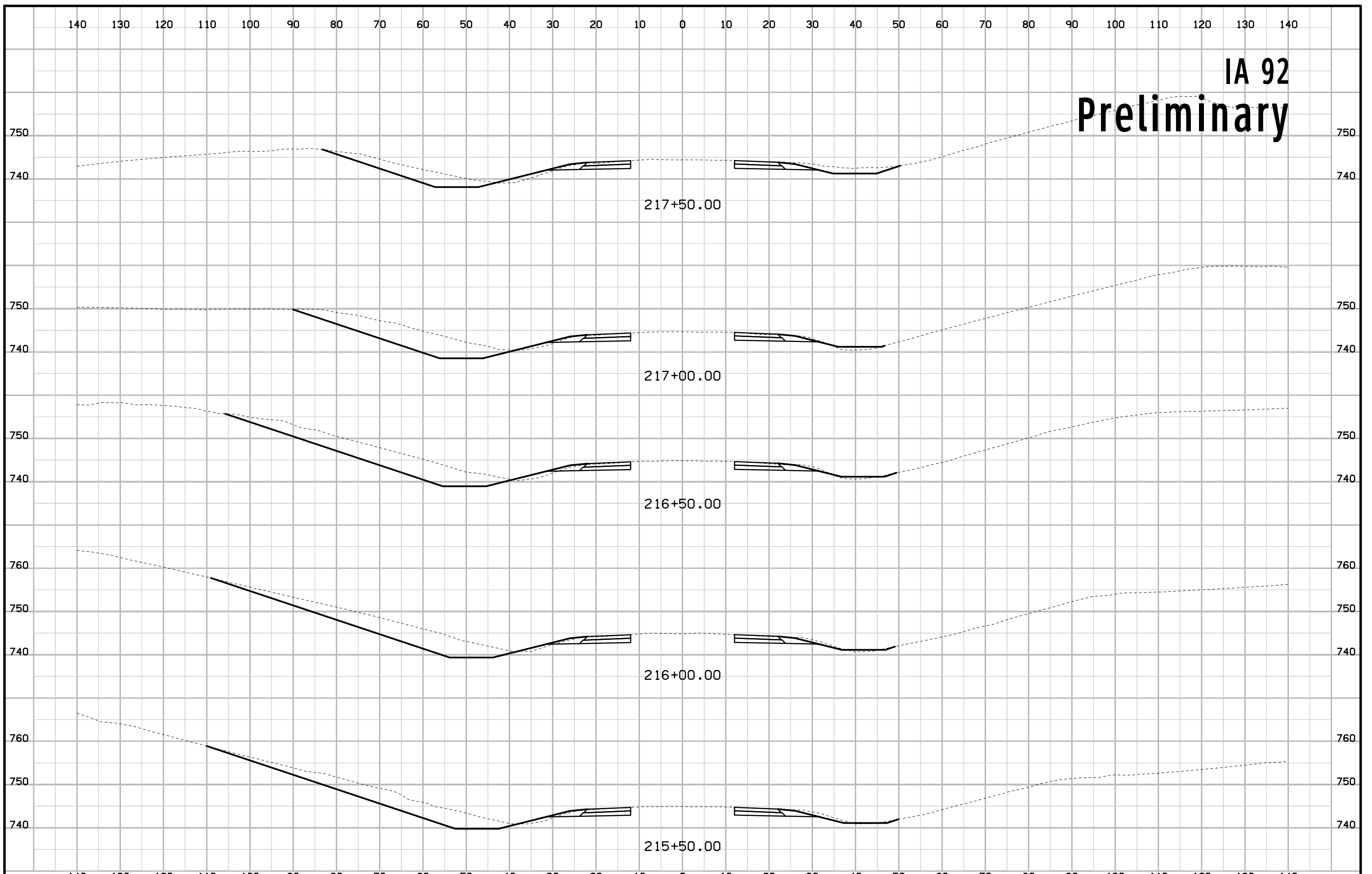
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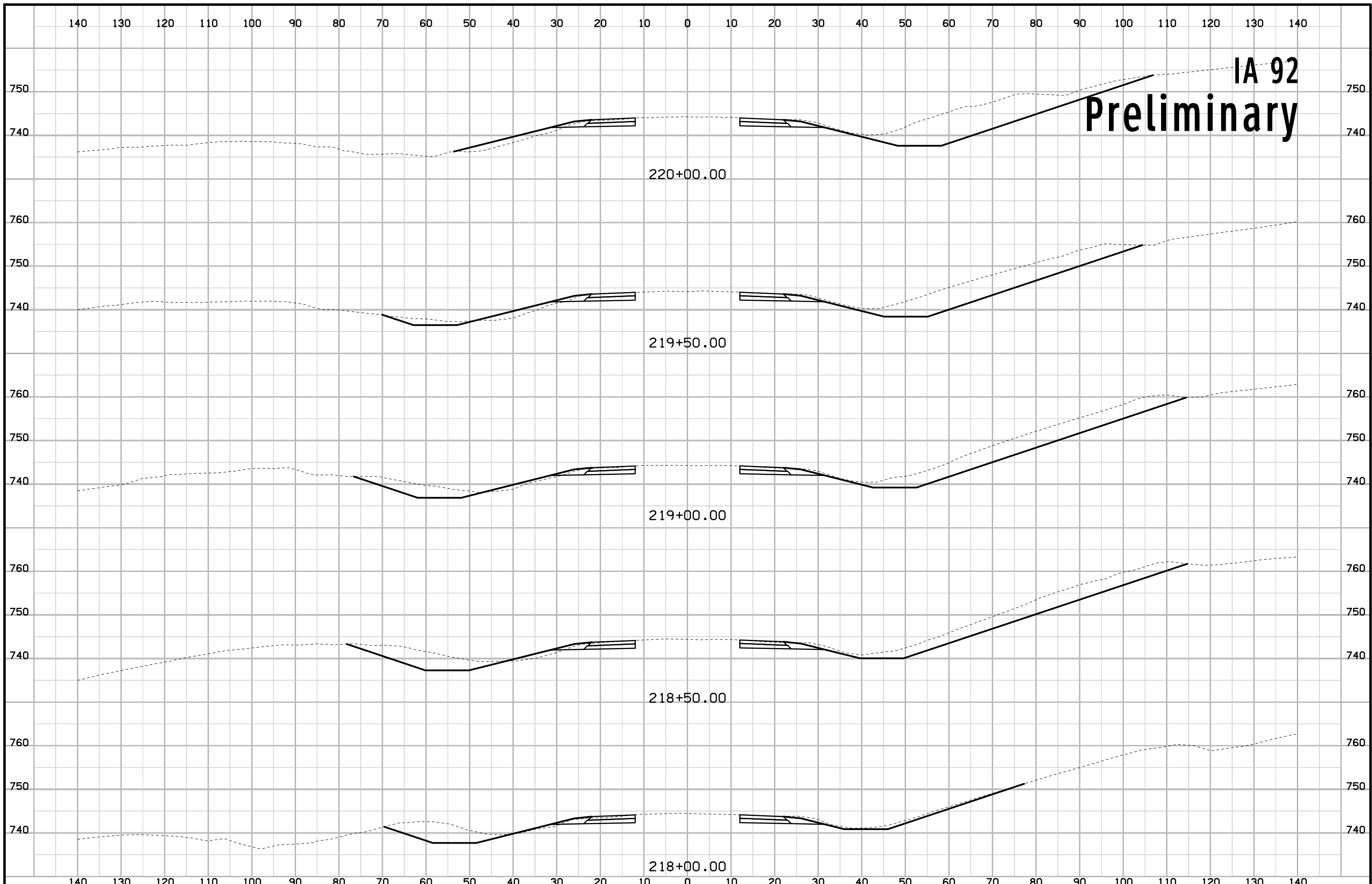


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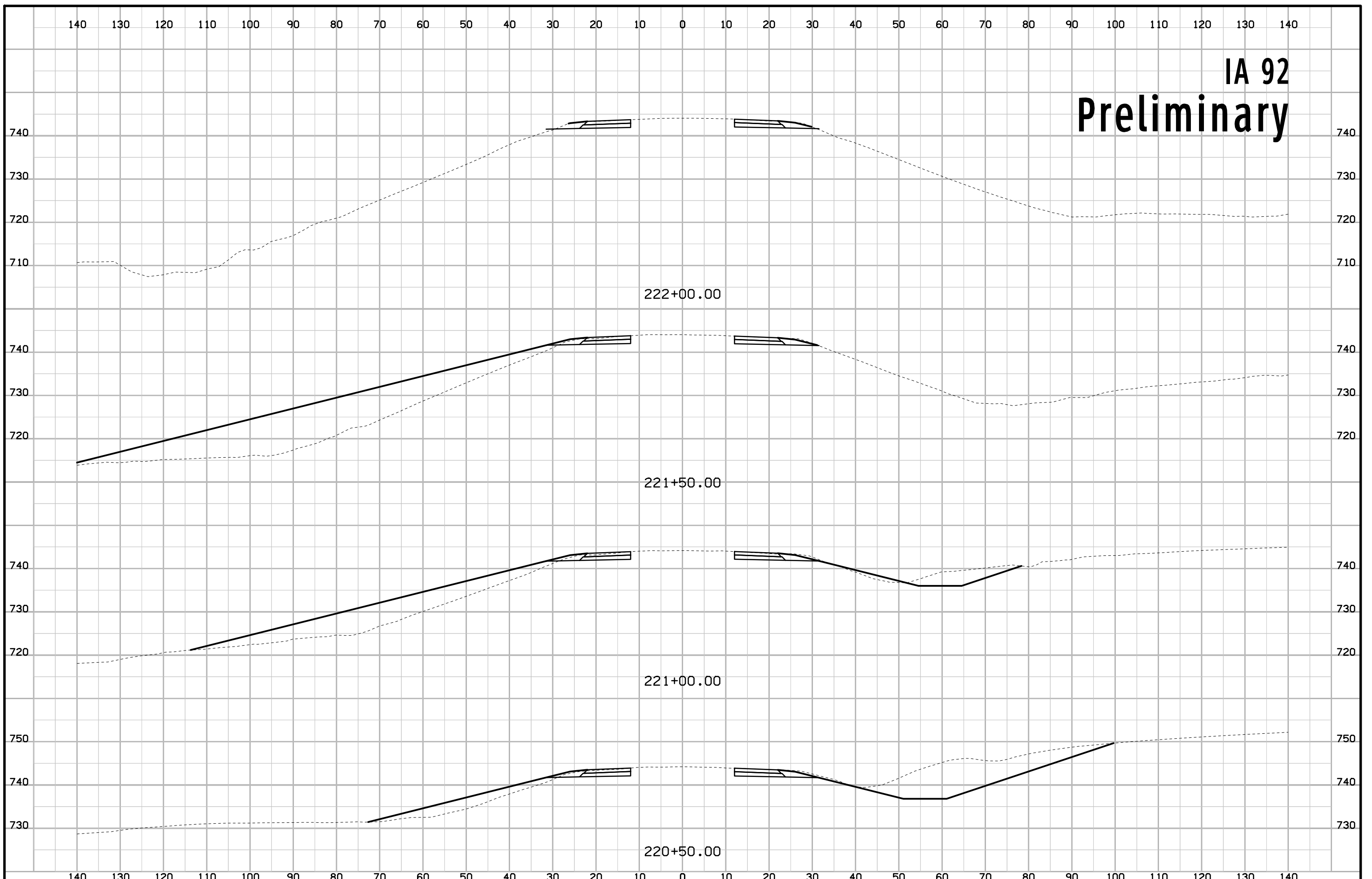
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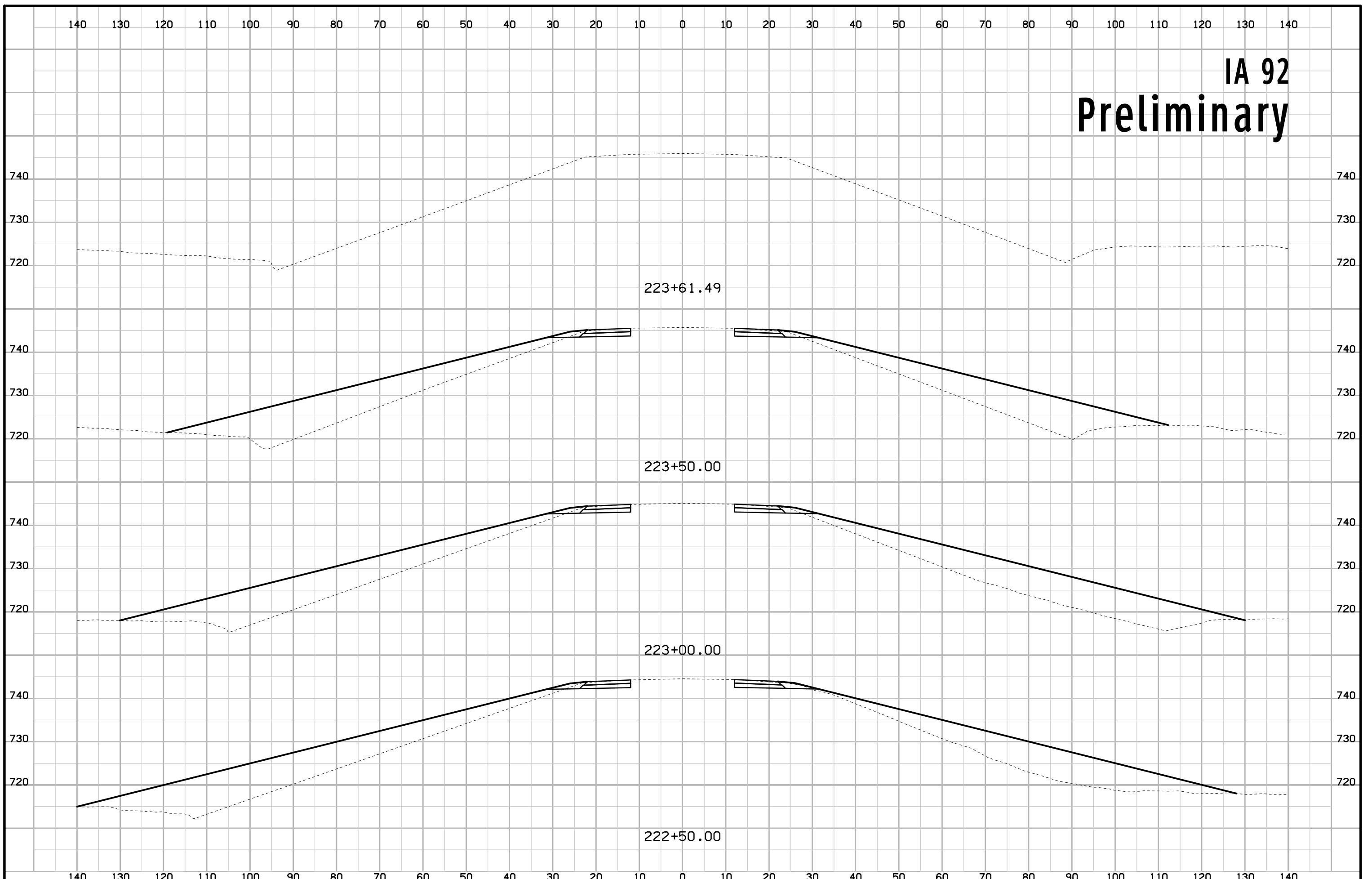


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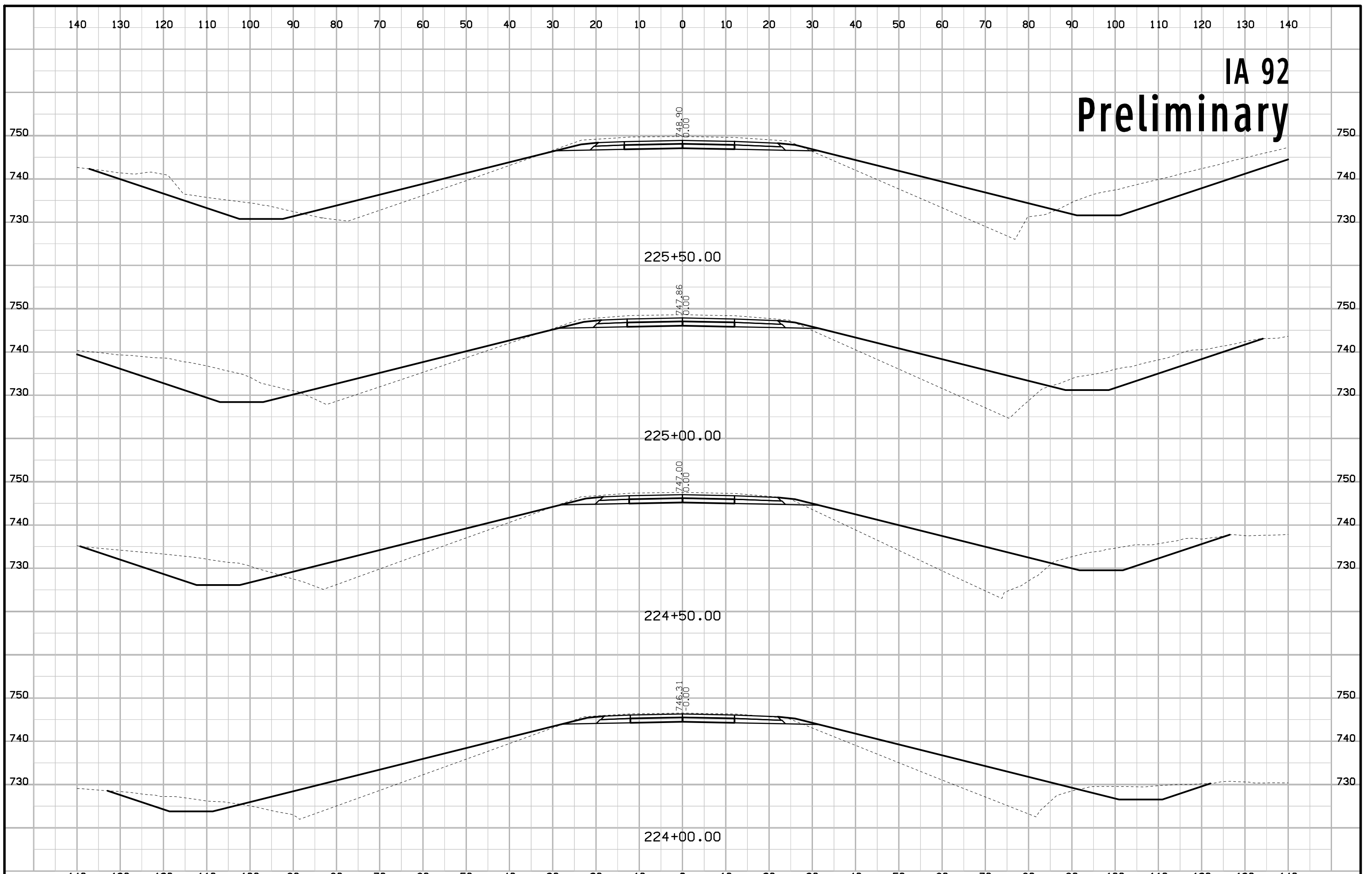
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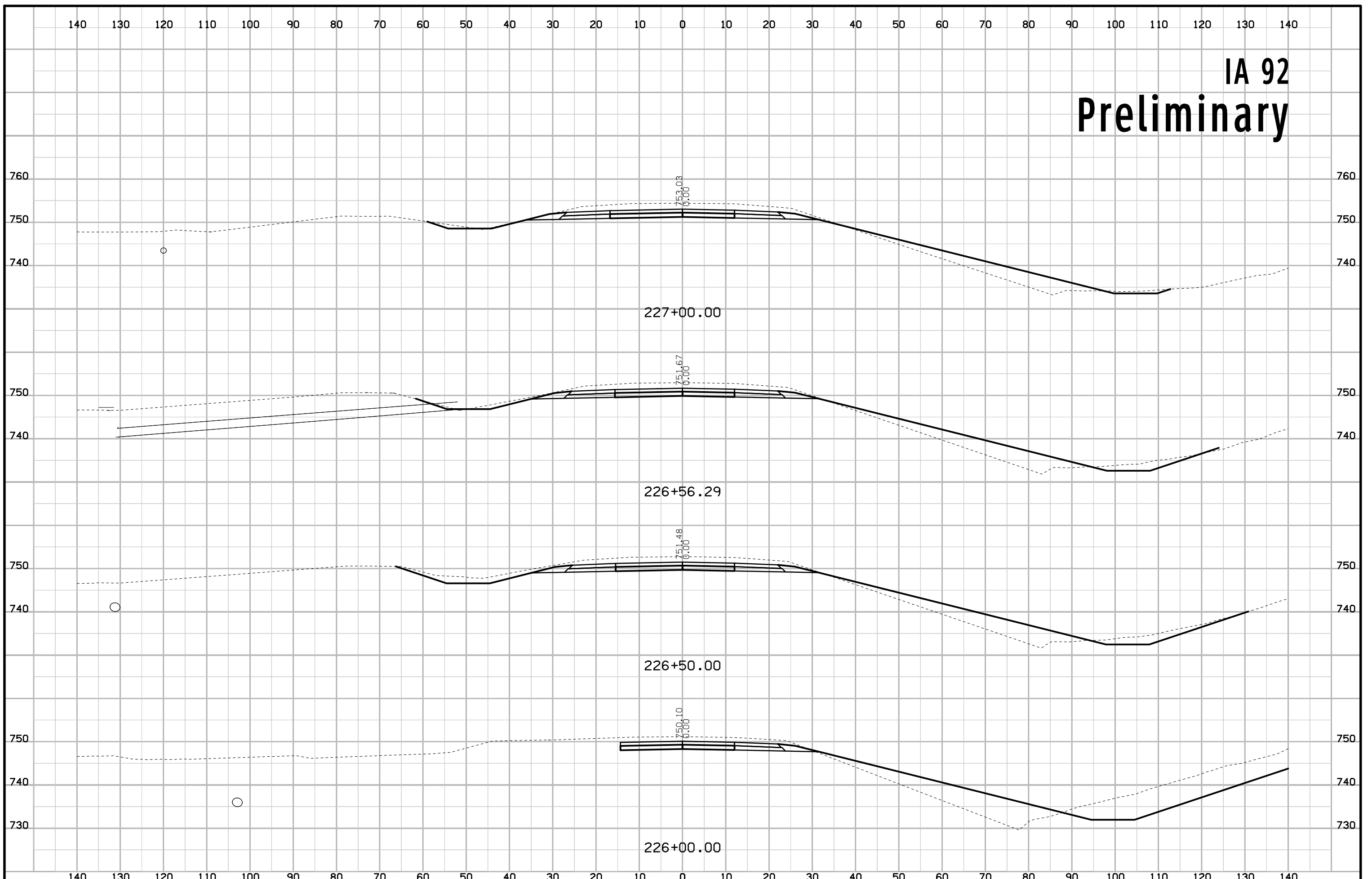
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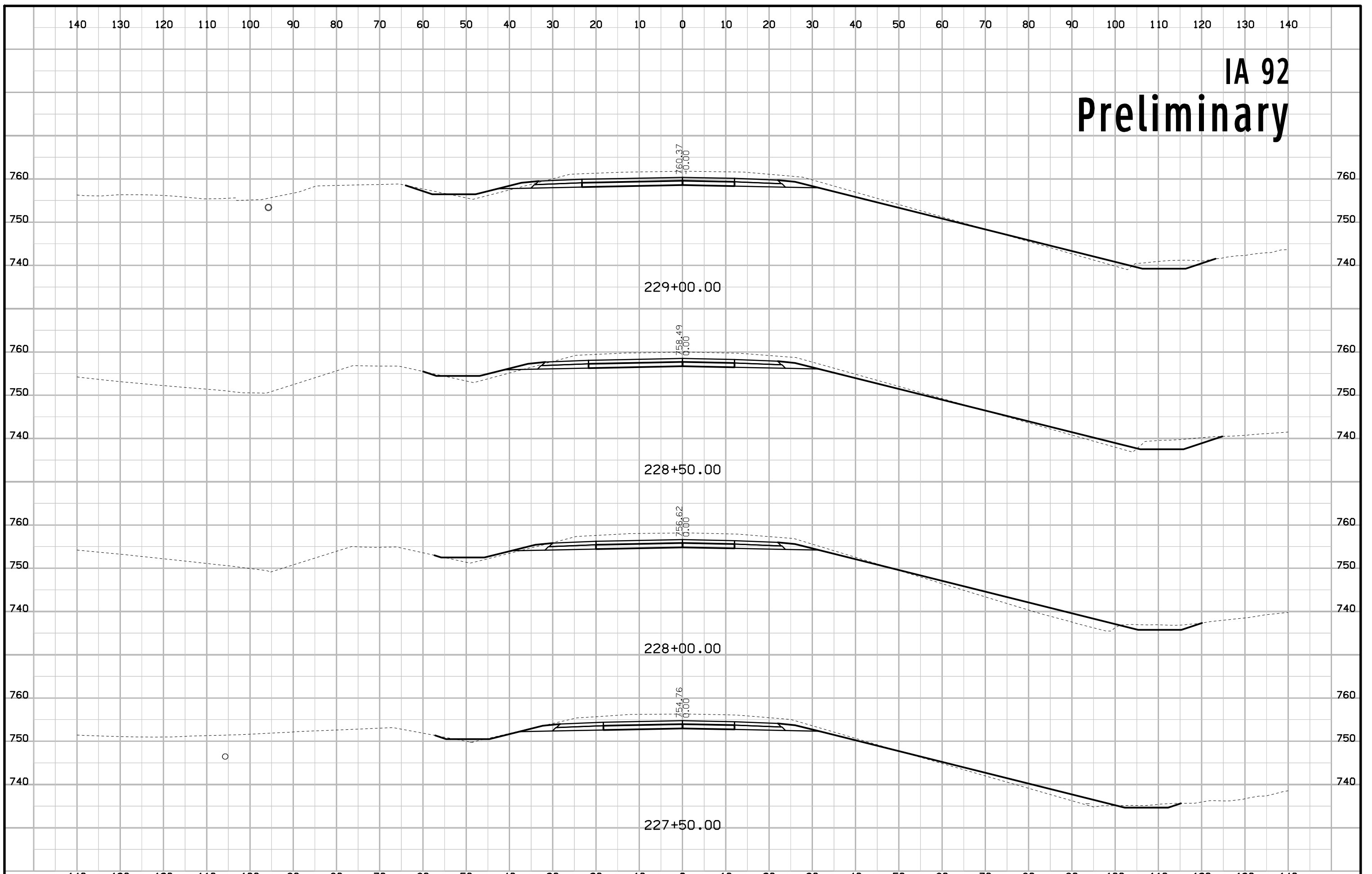
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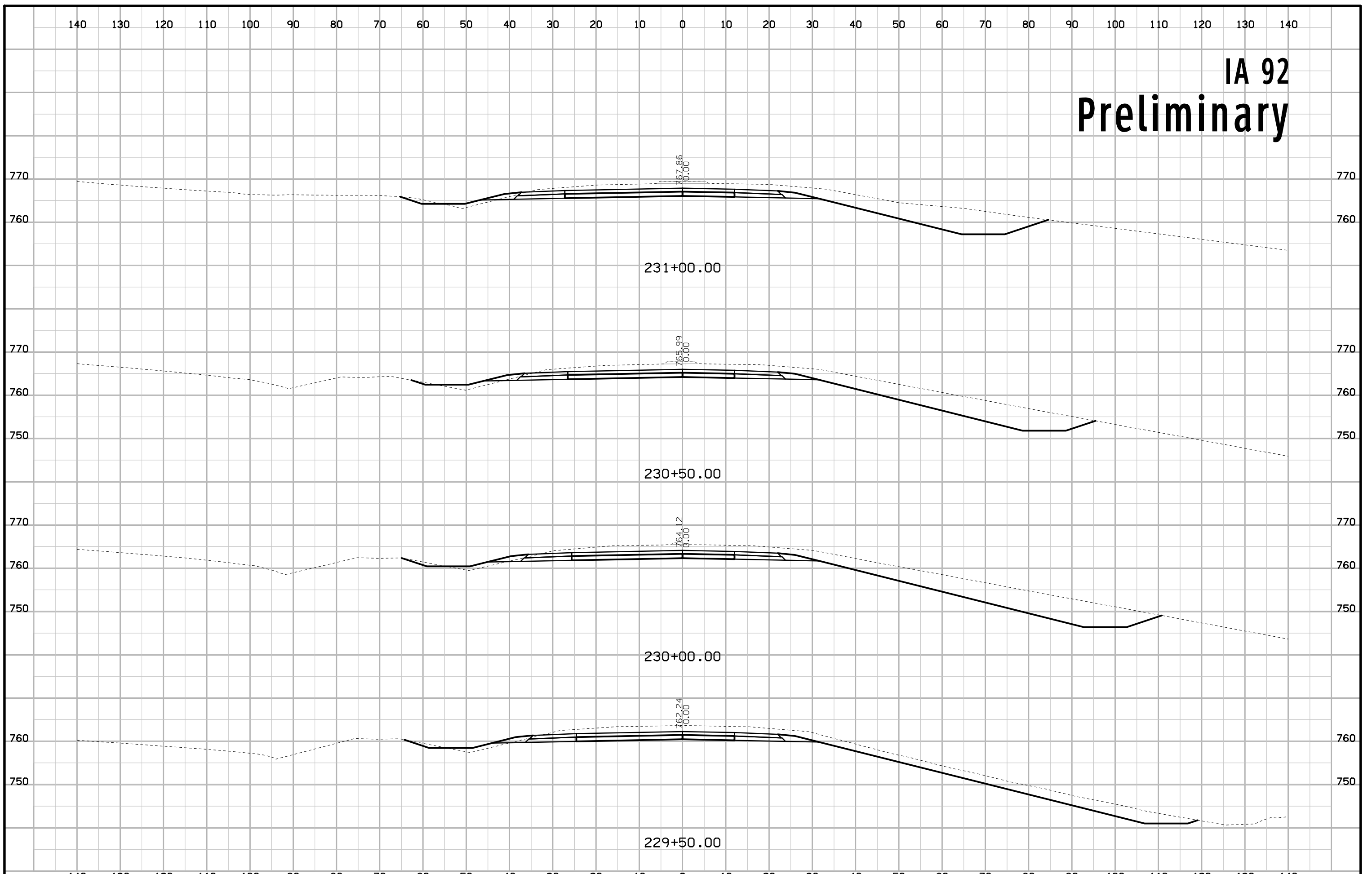
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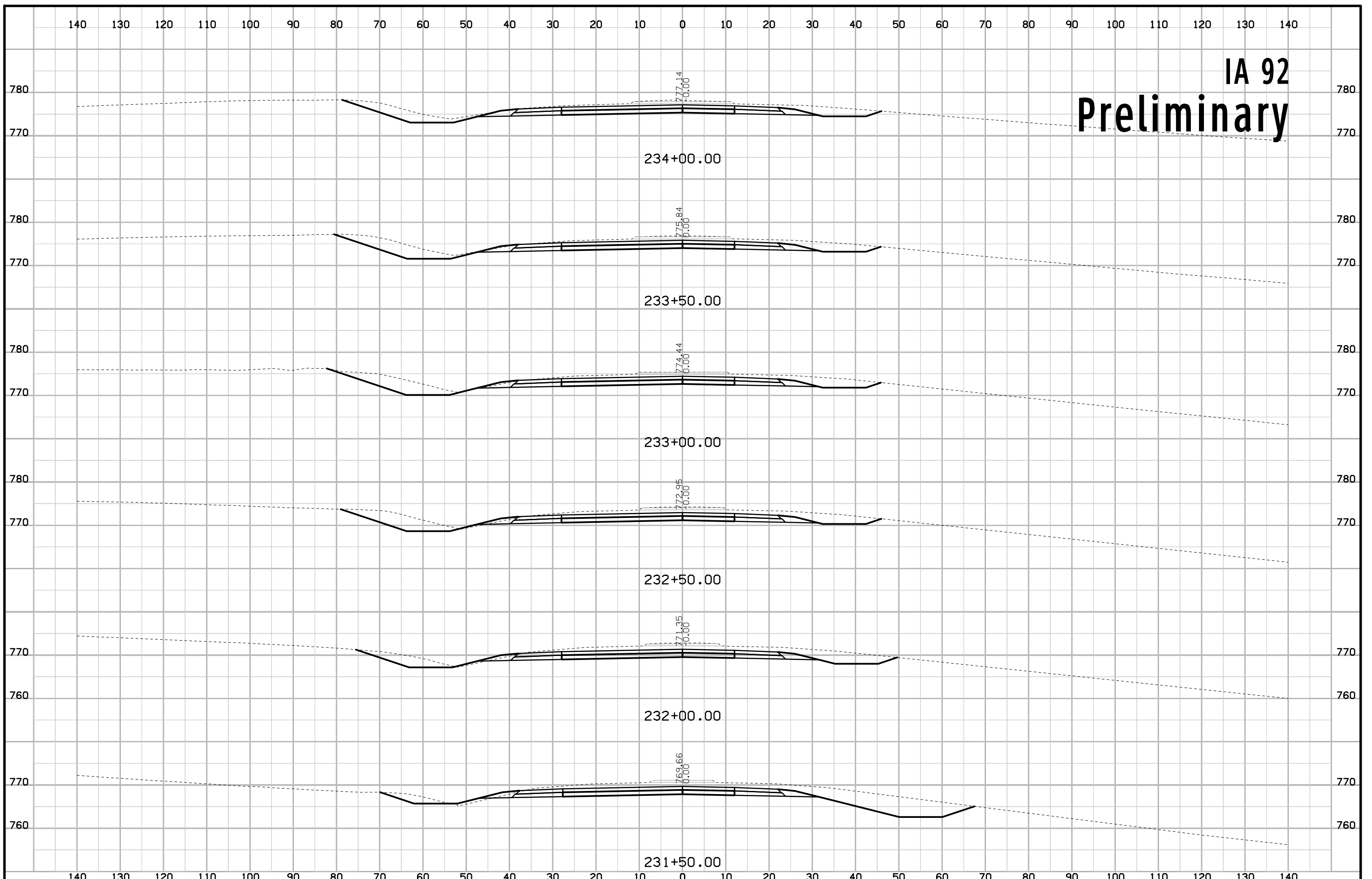
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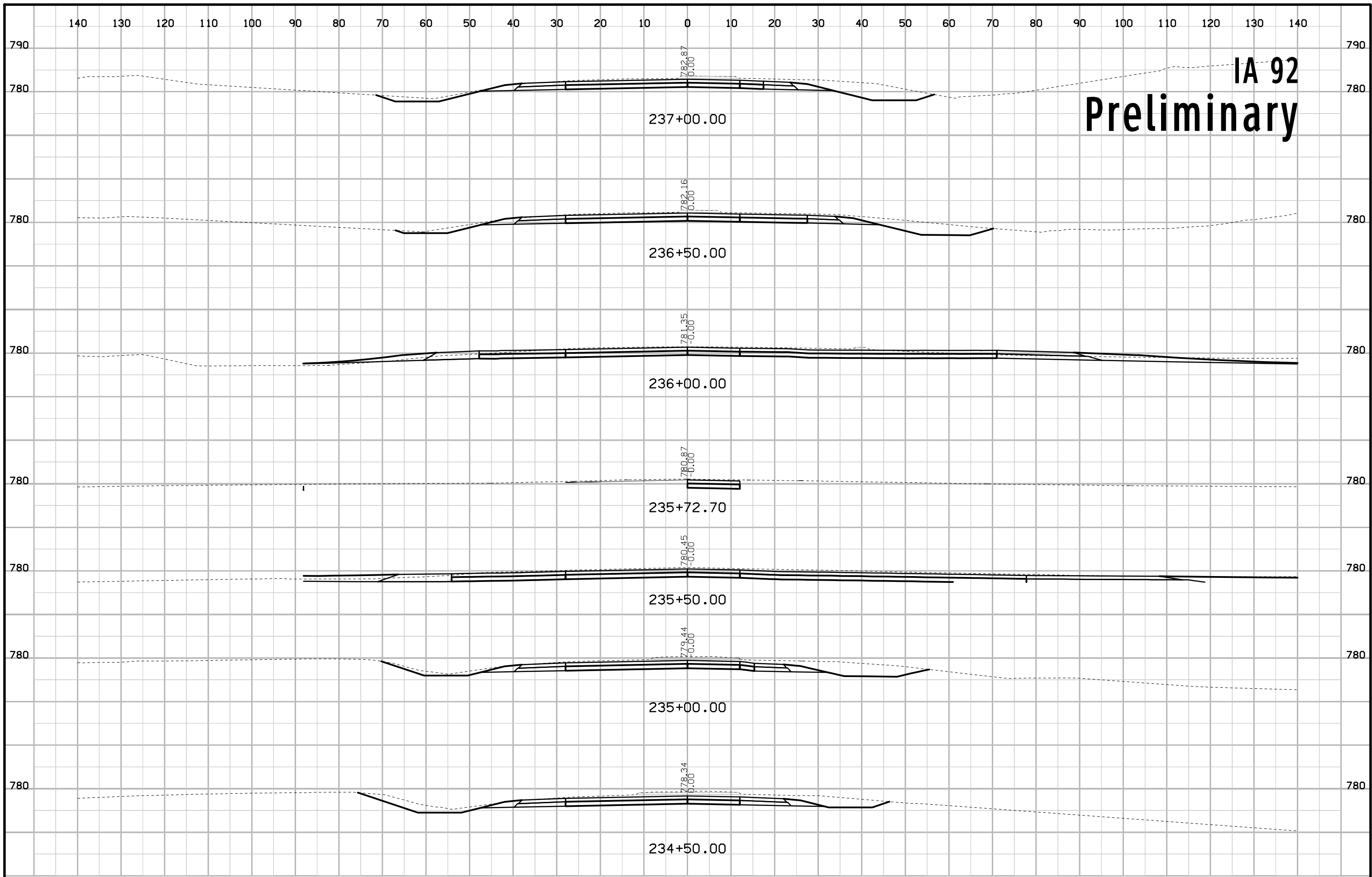


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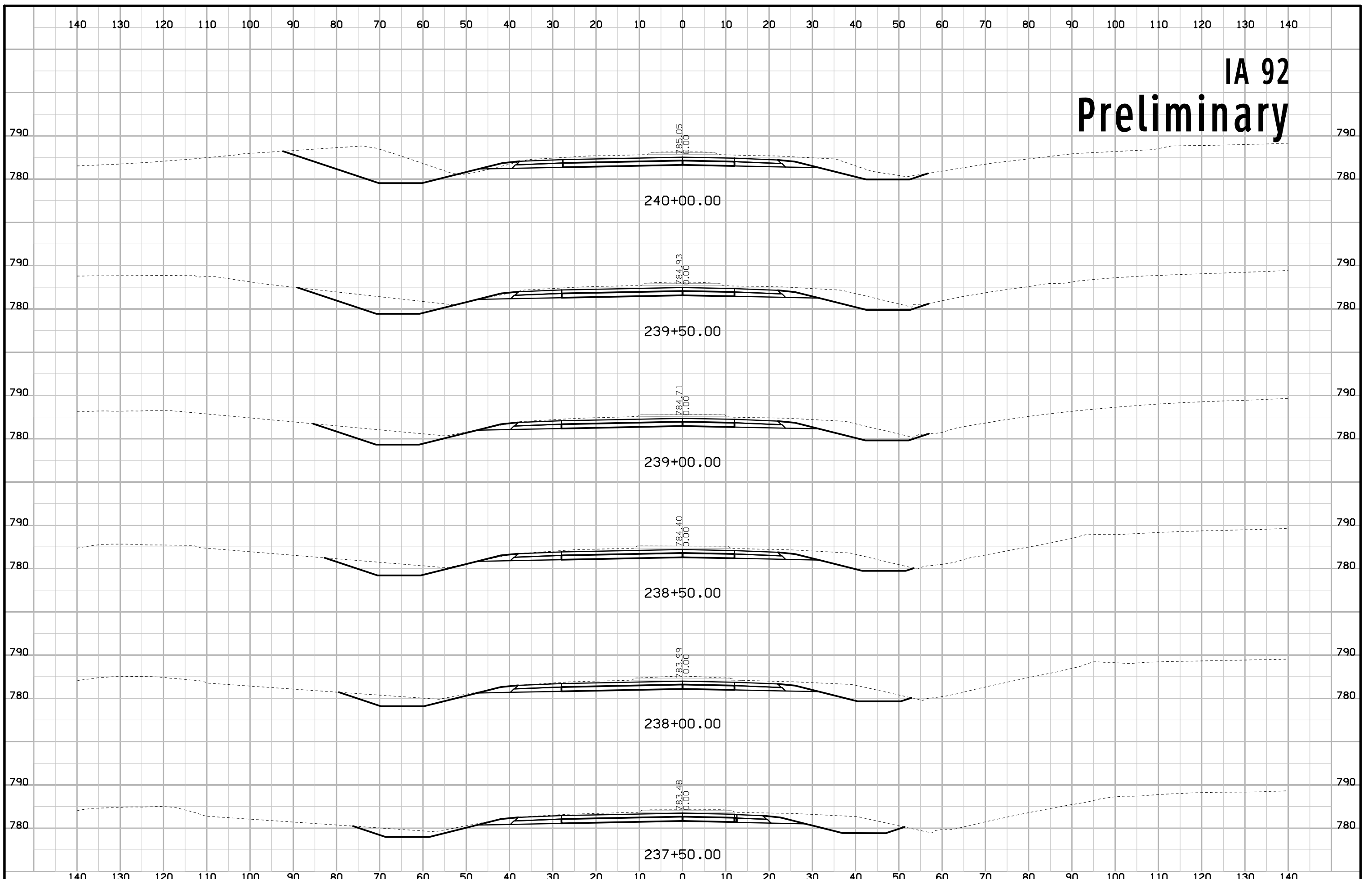


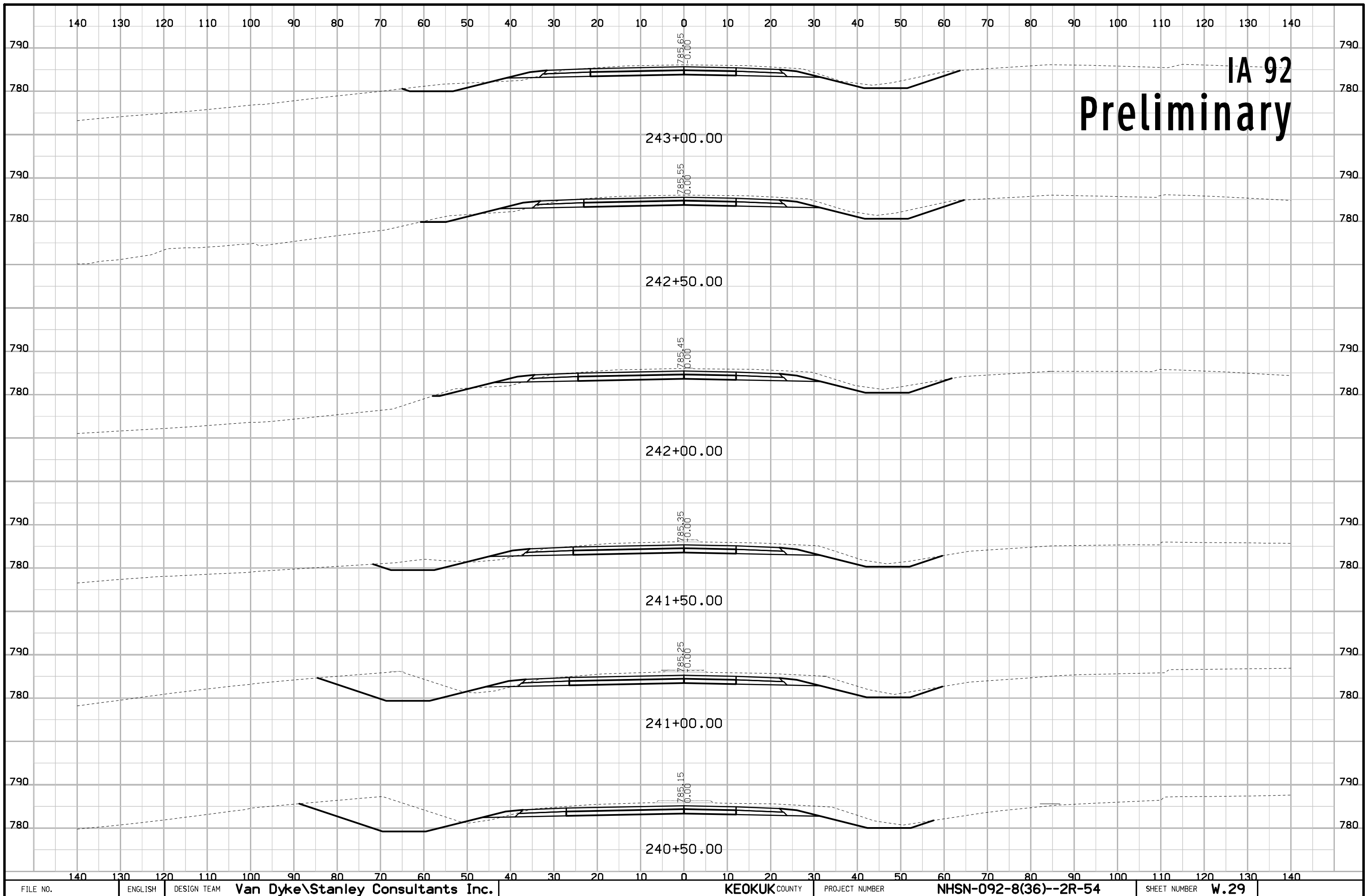
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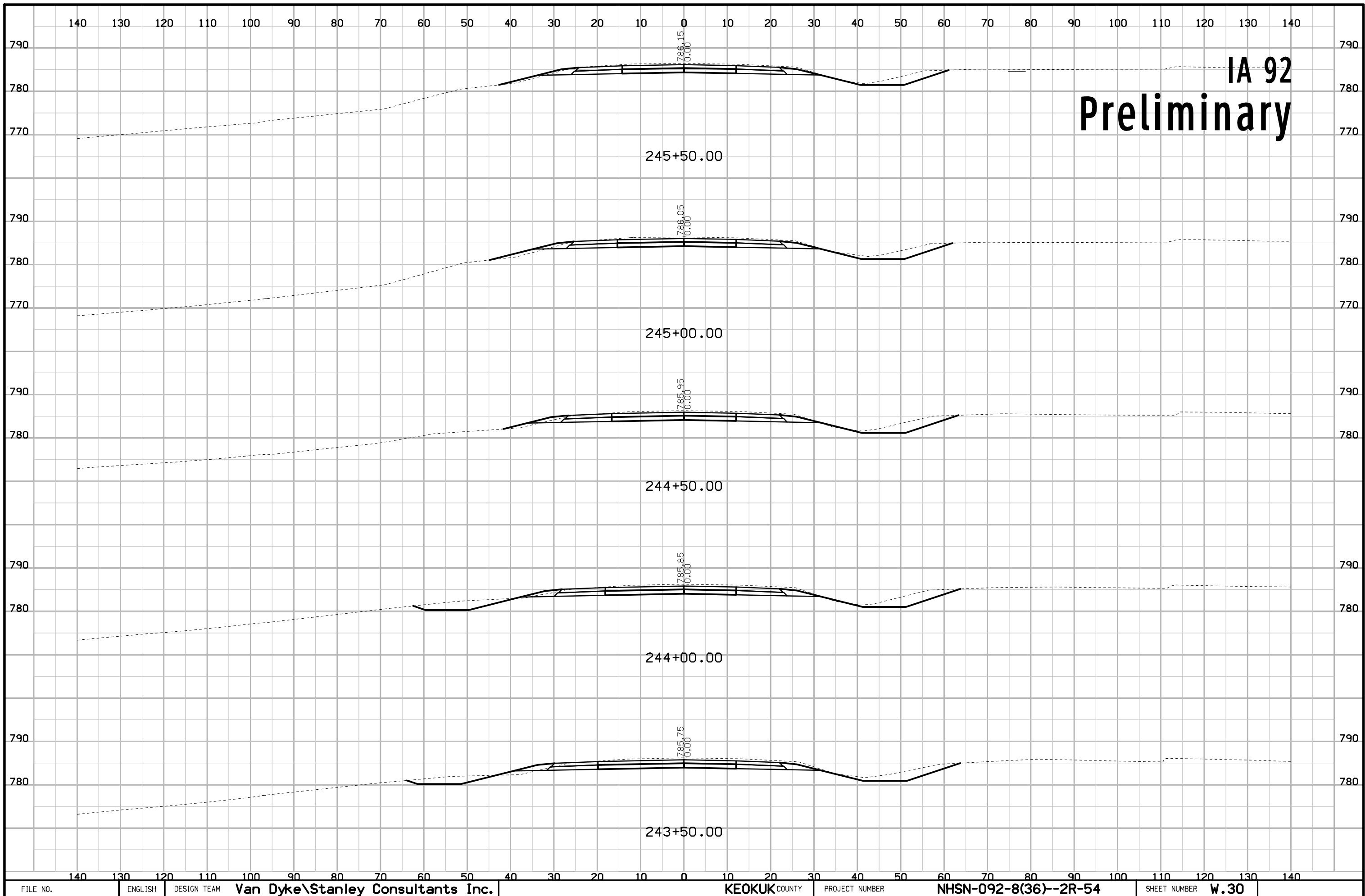


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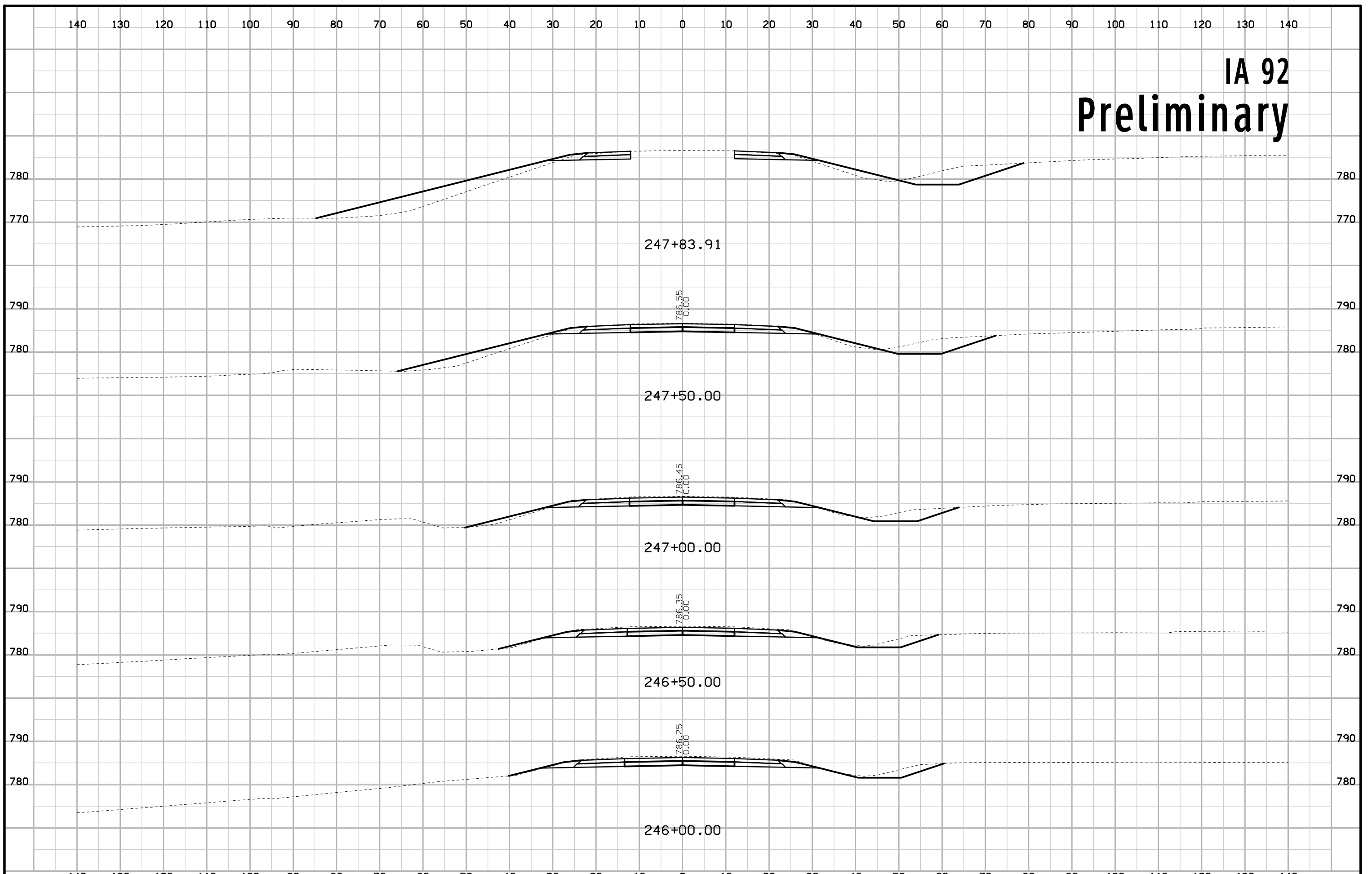




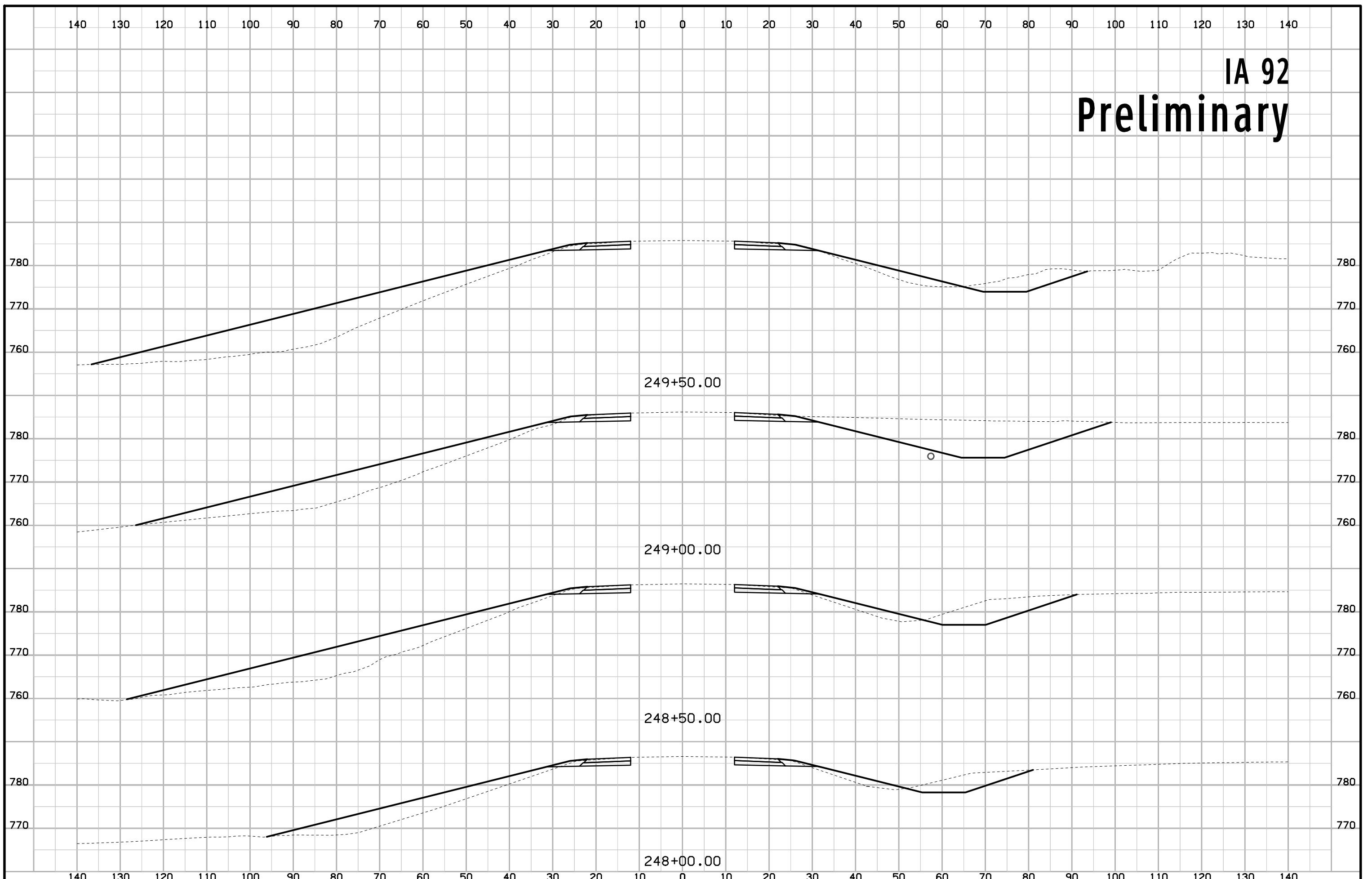
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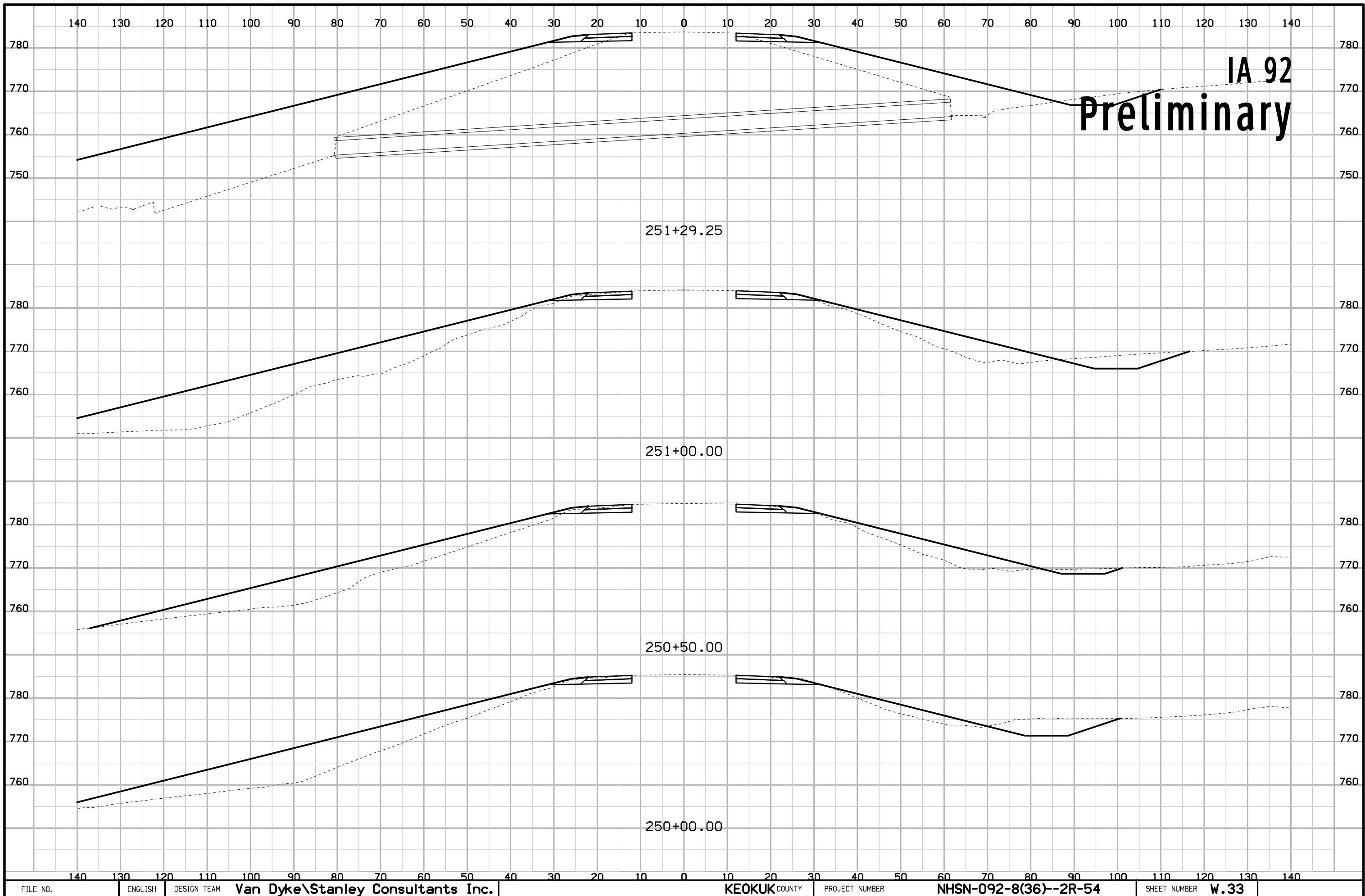


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IA 92 Preliminary





IA 92
Preliminary

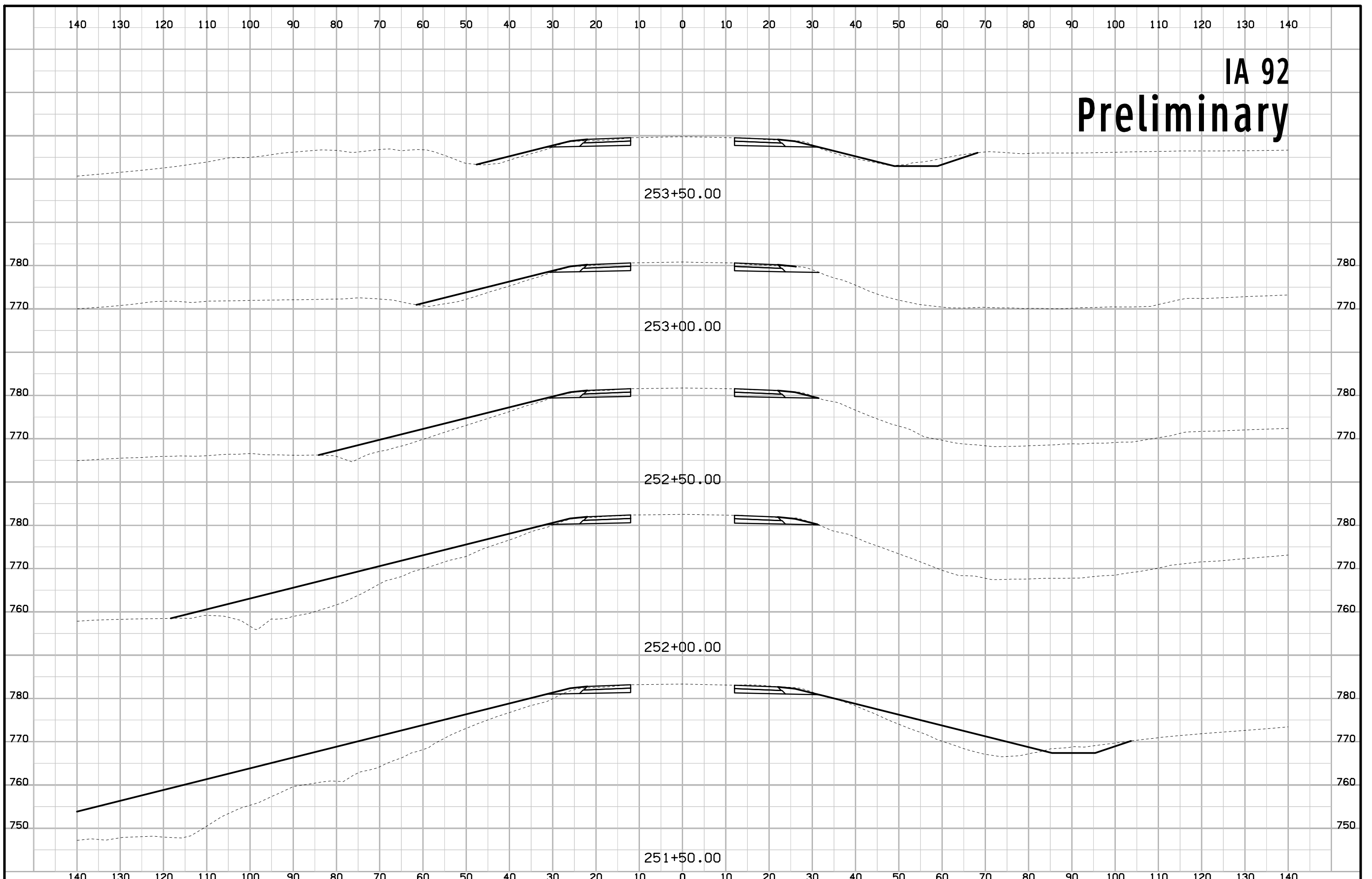
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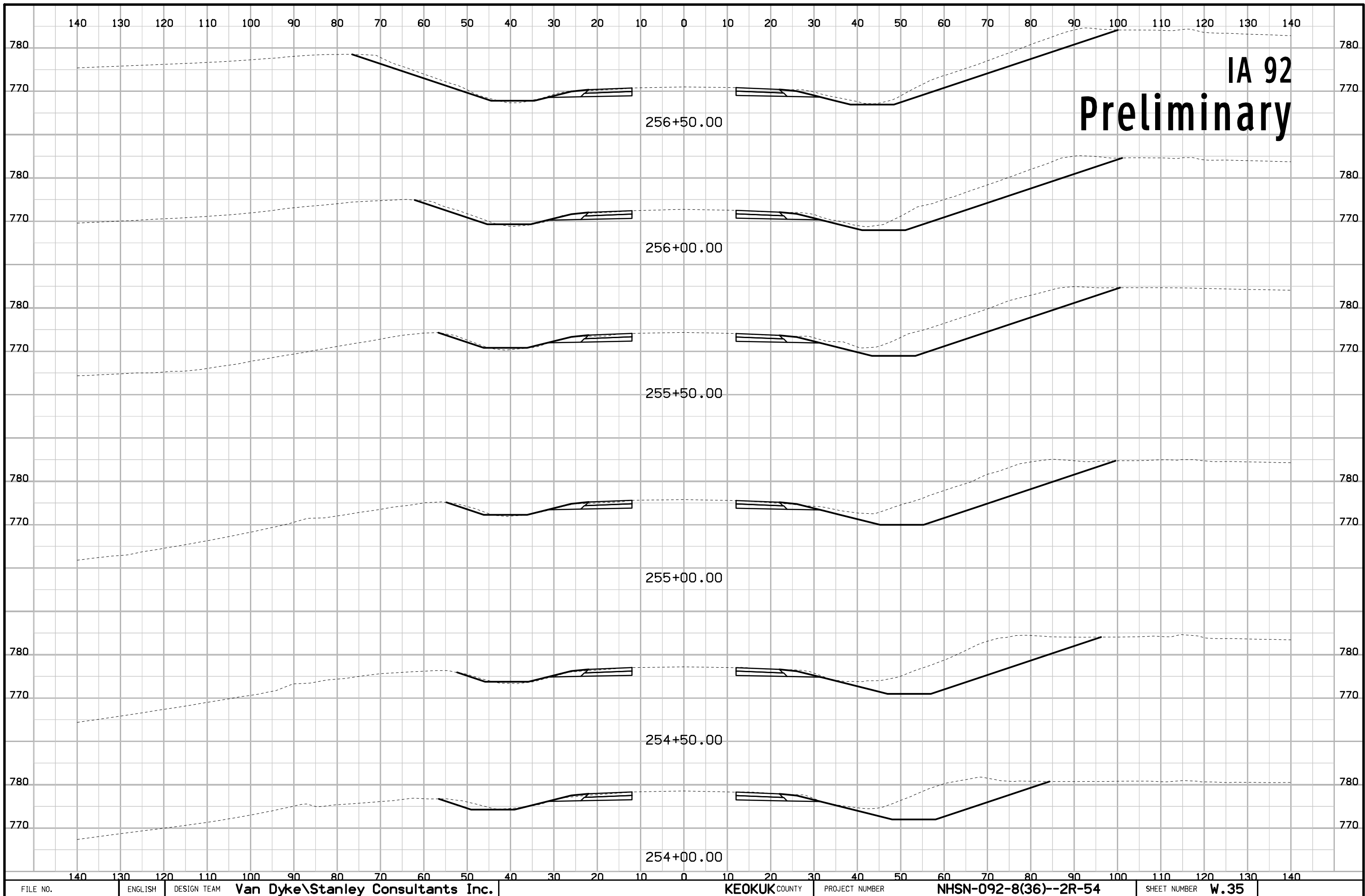
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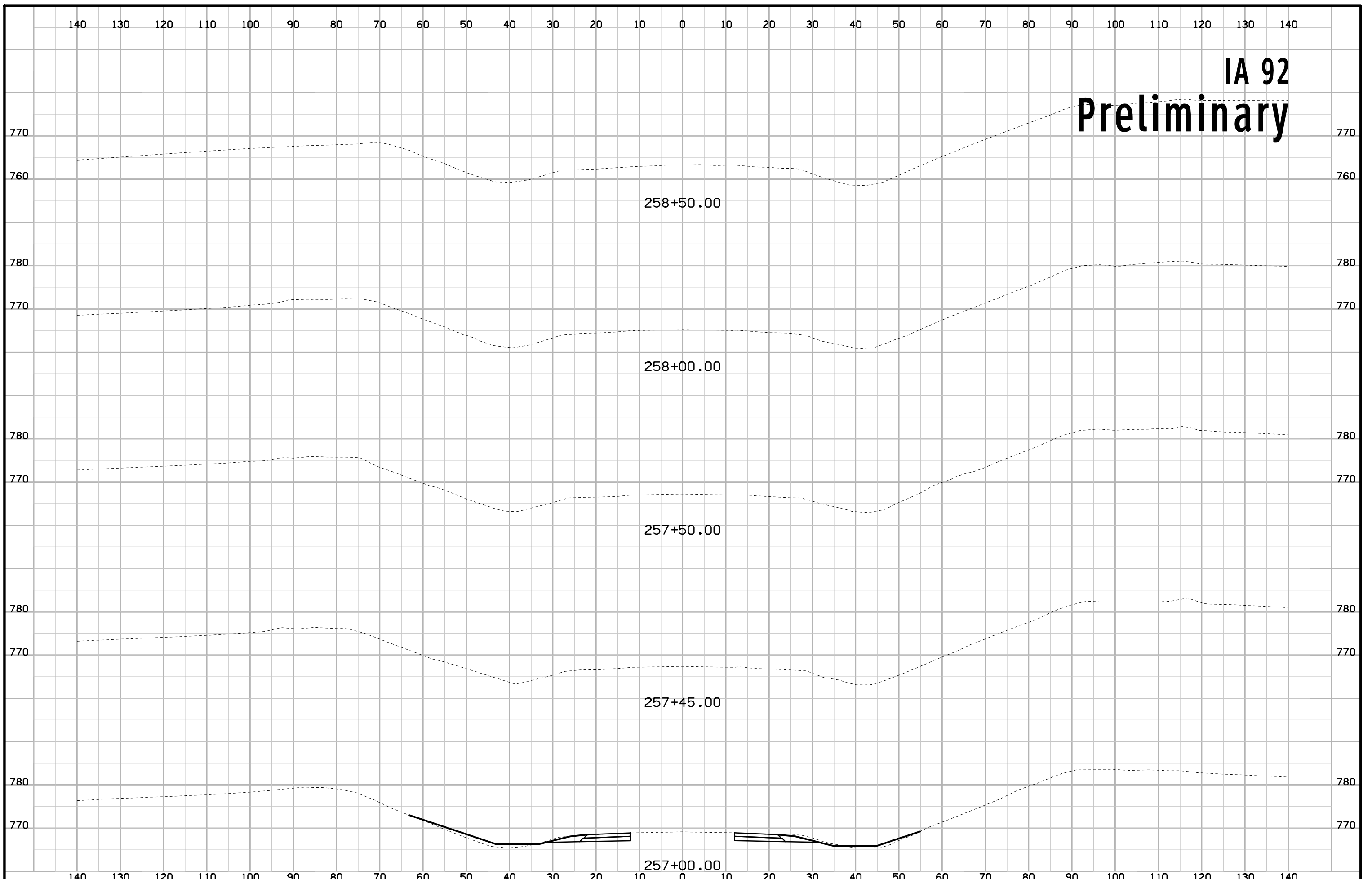
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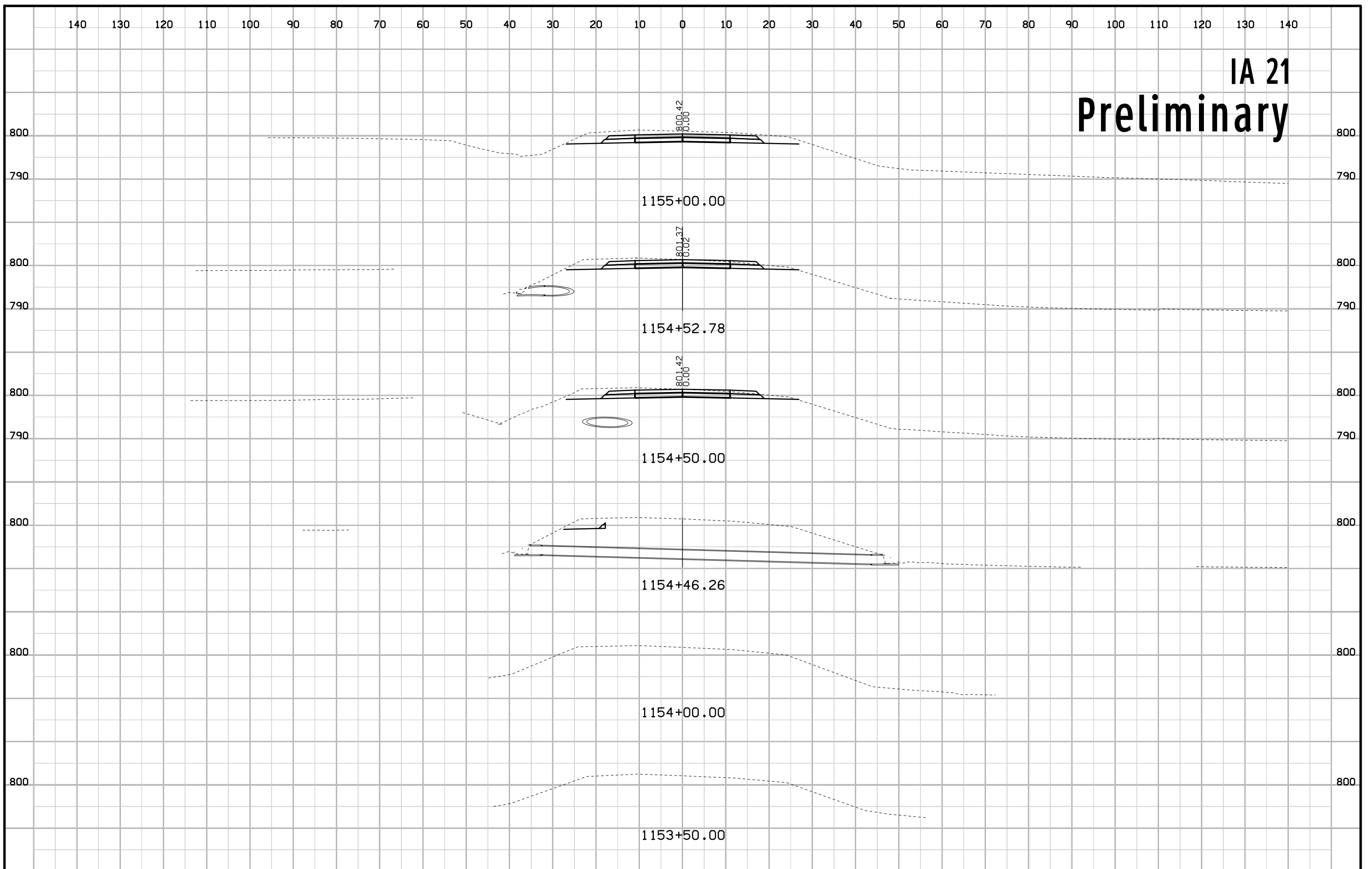




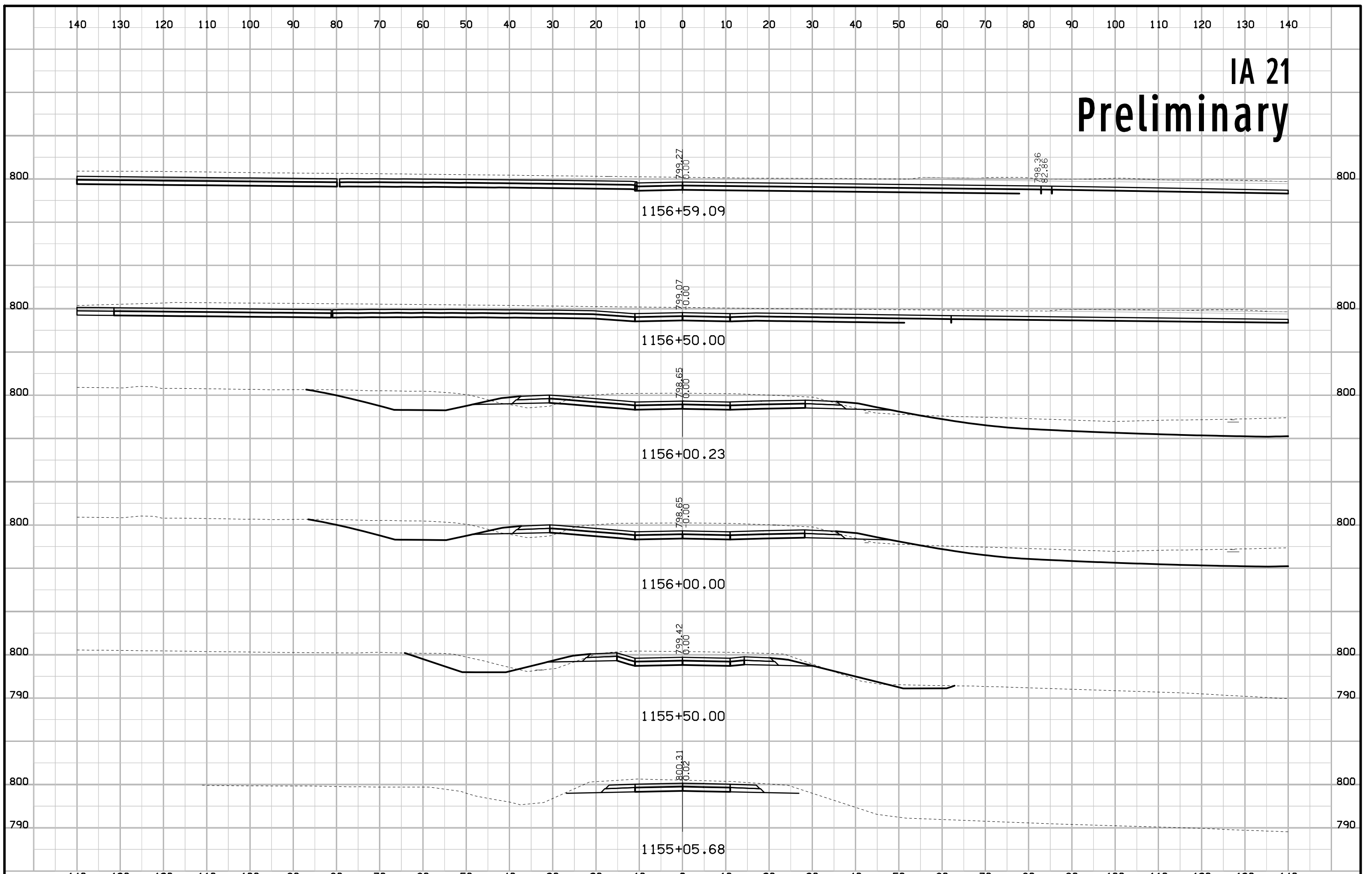
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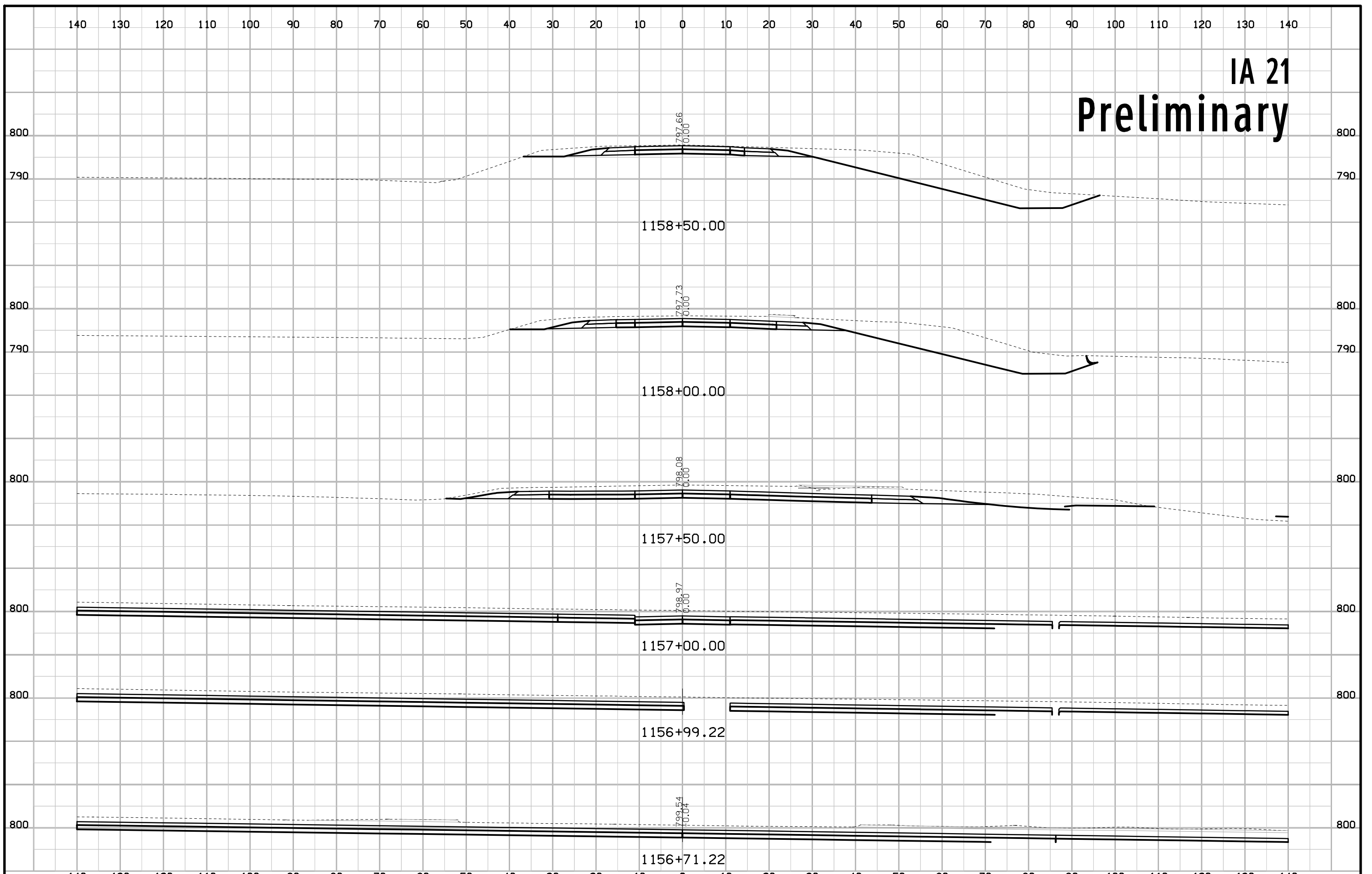
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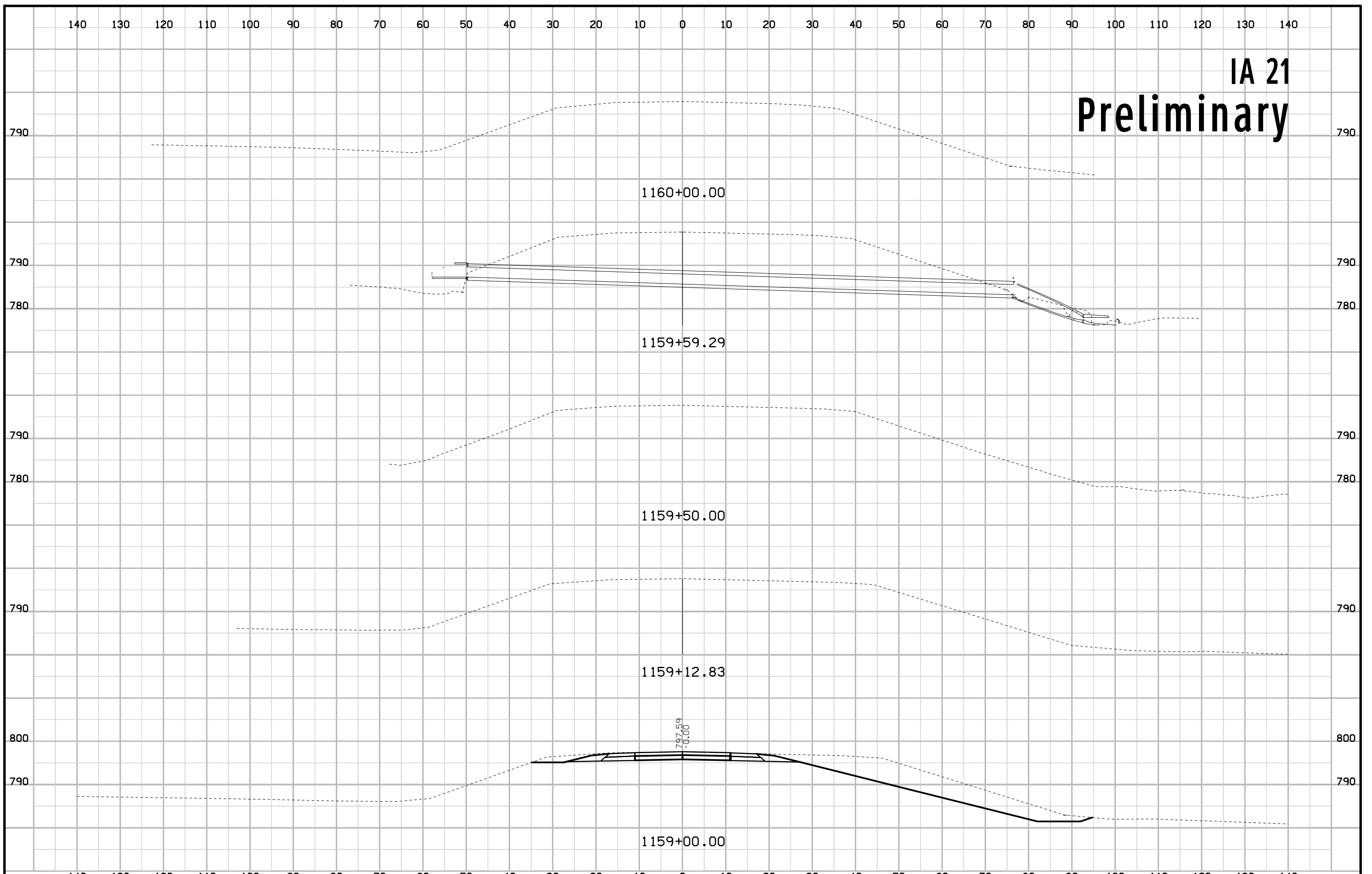
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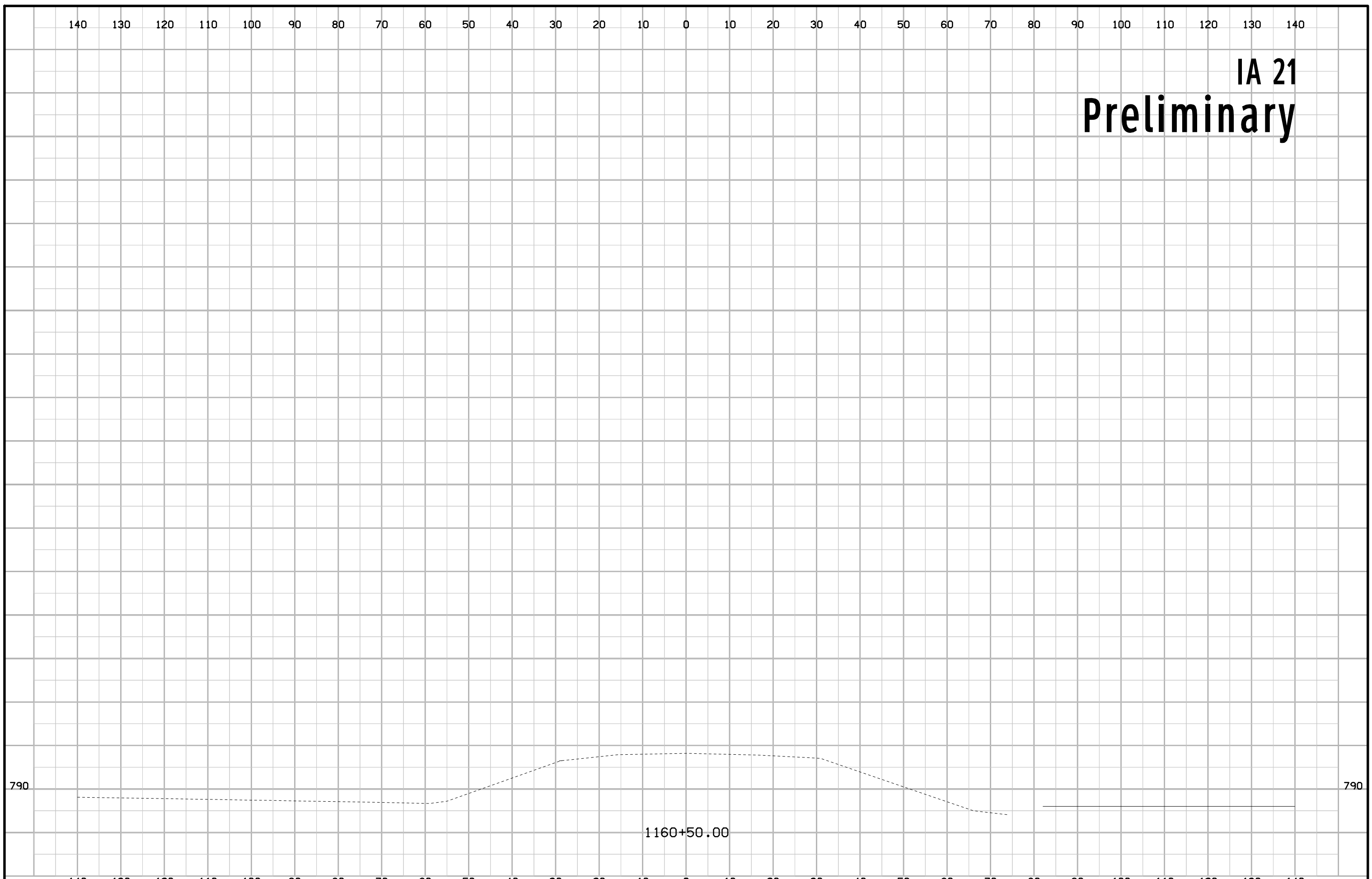
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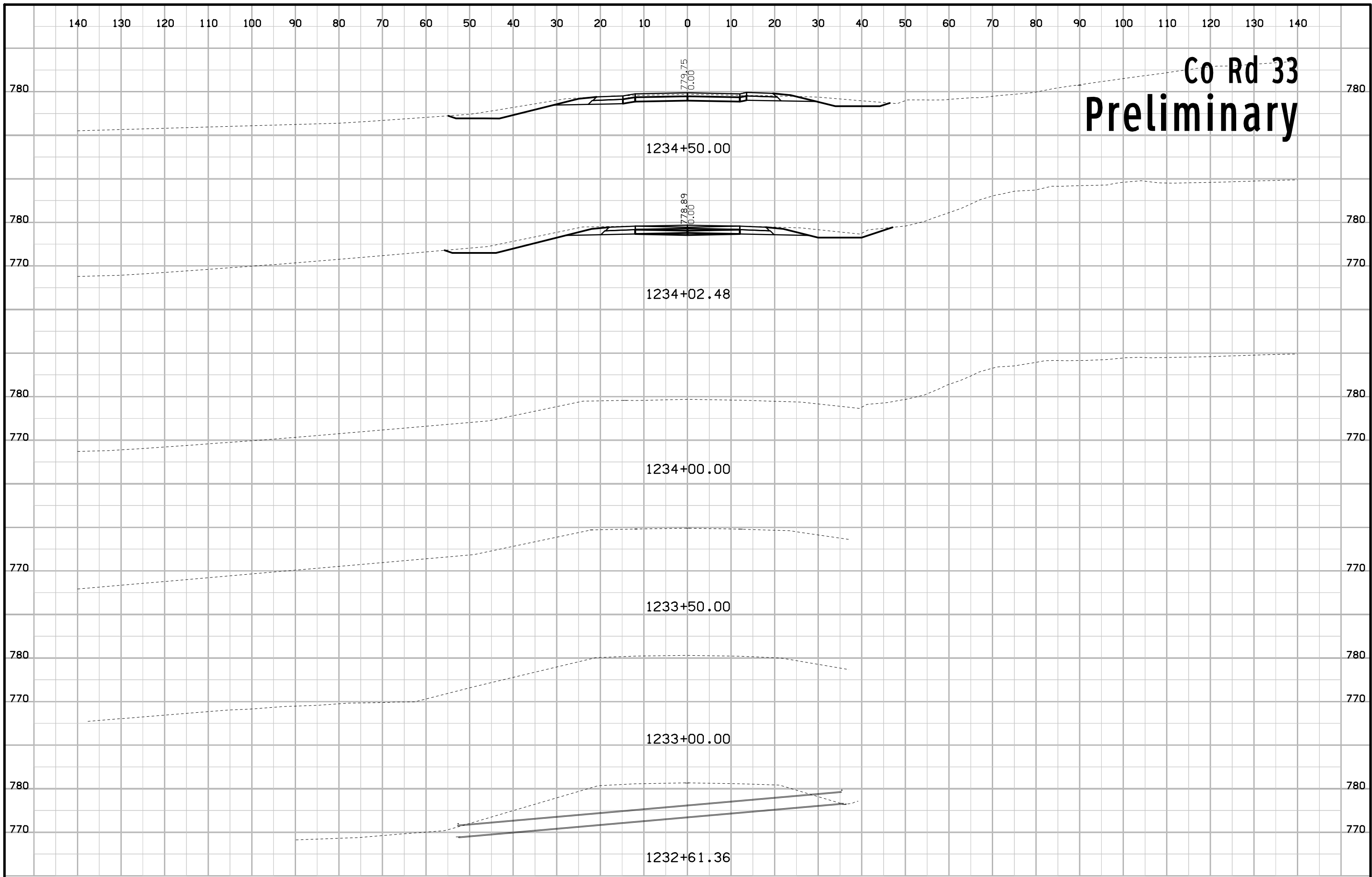


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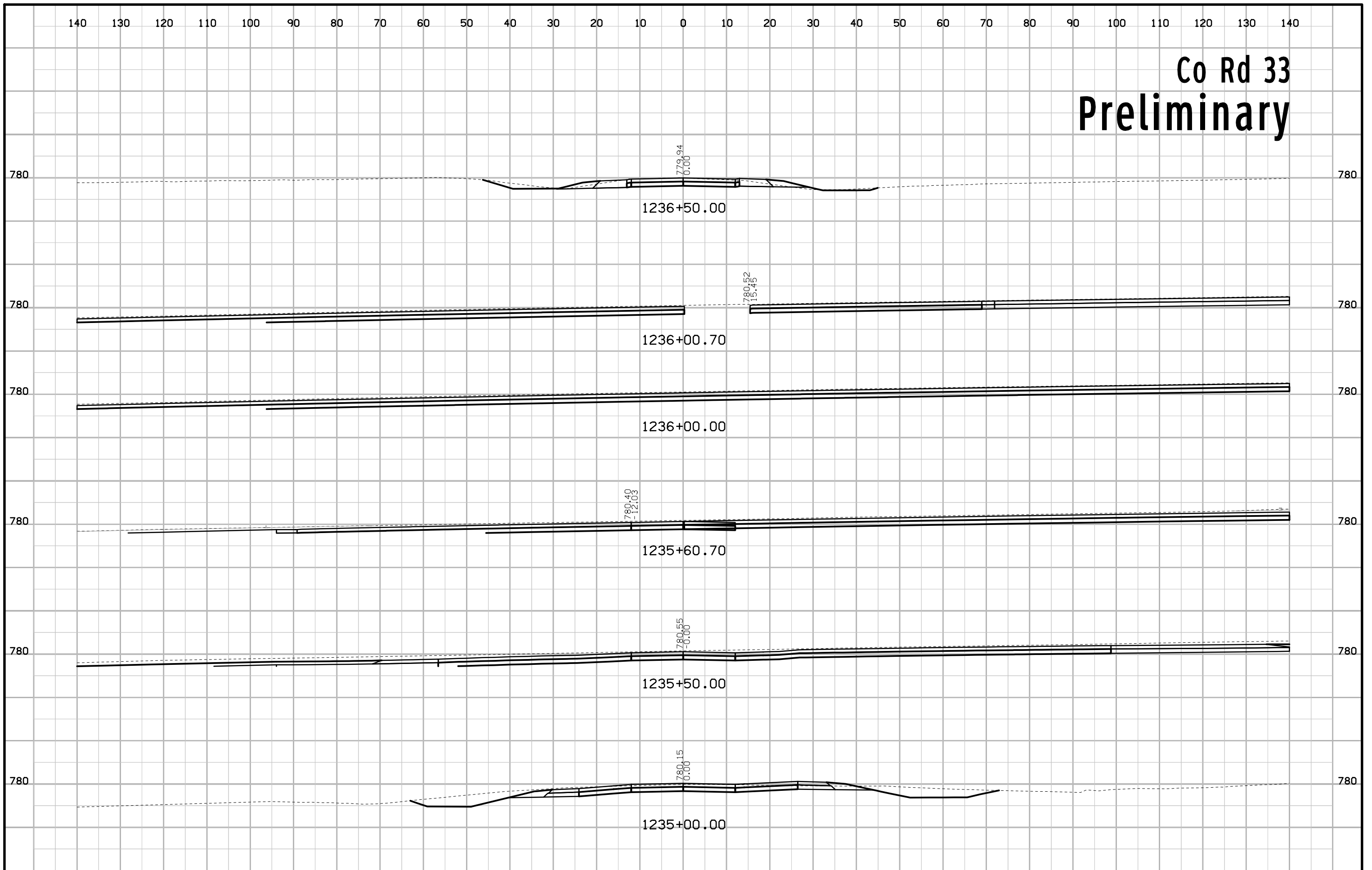
IA 21 Preliminary





Co Rd 33 Preliminary

Co Rd 33 Preliminary



Co Rd 33 Preliminary

