



Show site. IA 17, 200<sup>th</sup> Street, and the 210<sup>th</sup> Connector 2-lane sections will consist of 2 - 12' through lanes and 8' granular shoulders.

On IA 17 there will be a southbound offset right turn lane at the 210<sup>th</sup> Connector and an eastbound right turn lane and southbound offset right turn lane at T Avenue/existing IA 17. The 210<sup>th</sup> Connector will have an eastbound right turn lane at IA 17. An eastbound offset right turn lane will be built on 210<sup>th</sup> Street at the 210<sup>th</sup> Connector roadway. All intersections in the corridor are currently unsignalized and will remain unsignalized throughout this project.

All sections will consist of a 10:1 slope off the edge of shoulder for 4', a 6:1 slope extending to the clear zone, and a 3.5:1 slope to proposed ditch bottom. IA 17 and 200<sup>th</sup> street will utilize a 5'x10' ditch, and the 210<sup>th</sup> Connector will use a 3'x 5' ditch. Ditch depths will vary in order to promote positive drainage and maintain a minimum ditch grade of 0.4% where possible, however, conditions such as culvert flowlines and existing ground elevations restrict ditch grades throughout the corridor. 3:1 backslopes will be utilized throughout. No sidewalks or trails are included as a part of the project.

The following sideroad intersections will be impacted by proposed IA 17 construction: 217<sup>th</sup> Street, 200<sup>th</sup> Street, 205<sup>th</sup> Street, S Avenue, and T Avenue. 200<sup>th</sup> Street construction will affect sideroad intersections at Quartz Avenue, R Avenue, and S Avenue. The 210<sup>th</sup> Connector will affect intersections at 210<sup>th</sup> Street and IA 17. All existing gravel roads intersecting reconstructed areas of IA 17 will be paved 50' from the edge of IA 17 pavement.

Existing culverts will be extended in the widening section. All culverts in the areas of reconstruction will be replaced. In reconstructed areas of IA 17 and the 210<sup>th</sup> Connector, culverts will be sized and placed at locations to maintain existing drainage patterns. The project site currently contains tile lines throughout with intakes in the existing ditch bottoms. Tiles will be replaced throughout the reconstruction limits and affected intakes and pipes will be reconstructed to maintain tile functionality.

All proposed culverts and extensions will follow pertinent standards from both the Office of Bridge and Structures Preliminary Bridge Design Manual and the Office of Design design manual. These standards include < 2' of headwater for the 50-year design storm, outlet rip-rap placement, and culverts extending past the clear zone.

Along existing IA 17 at STA 39+28 in front of the Monsanto facilities, an existing 3' x 2' RCB conveys storm water from the west to the east side of the roadway where it then drains southeast, entering into an storm sewer system that flows east. The existing RCB will be plugged and abandoned and replaced with a skewed RCP discharging storm water closer to the downstream storm sewer.

Along 200<sup>th</sup> Street/relocated IA 17 near STA 165+39, existing drainage is conveyed from north to south using one 42" and two 36" RCPs spread nearly 85' apart. Existing culverts flow into the ditch and pond in the corner of the field until they begin flowing south along existing IA 17. The proposed design consists of removing the three existing culverts and replacing them with twin RCPs aligned with the existing IA 17 NB/SB ditch.

The project is currently programmed for FY2023 (Grading & Bridge Project) and FY 2024 (Paving Project). Project staging entails closing IA 17 just north of the

proposed the 210<sup>th</sup> Connector in order to grade relocated IA 17 and the 210<sup>th</sup> Connector, while bridge construction commences after embankment settlement is complete. Widening of SB IA 17 and the mill & overlay of IA 17 from the interchange with US 30, north to 210<sup>th</sup> Connector, will occur concurrently with all other IA 17 mainline paving and the 210<sup>th</sup> Connector paving. Traffic will utilize 217<sup>th</sup> Street as a detour route throughout the 2-year construction. Upon completion of the newly constructed 210<sup>th</sup> Connector and IA 17 between US 30 and the 210<sup>th</sup> Connector, construction of 200<sup>th</sup> Street from Quartz Avenue east to relocated IA 17 and the widening of NB IA 17 from the US 30 interchange north to the 210<sup>th</sup> Connector will begin. Newly constructed IA 17 will be opened to traffic, and NB/SB traffic will be detoured along the 210<sup>th</sup> Connector and 210<sup>th</sup> Street. The contractor will be required to maintain access to properties along 200<sup>th</sup> Street & relocated IA 17.

Right of way will be required throughout the entire corridor. The D5 date is 2/1/19, and R1 is 5/31/19. Fee title acquisitions, permanent easements, and temporary construction easements will be necessary throughout most of the corridor. The following parcels are potential total acquisitions:

- Haberer, Thomas and Julia (STA 60+00 LT): Potential total acquisition. Boone County reported zoning requirements would allow a new home to be constructed elsewhere on the parcel.
- Along IA 17 near STA 65+00 on the east side, Kurt and Shawn Kastenschmidt's parcel (Howl-A-Day Inn), is a possible total acquisition. Snyder will examine relocating the entrance to allow access to the parcel. The entrance would come off IA 17 south of their property prior to the grade increase associated with the proposed bridge then curve northward extending to their existing drive.

Most parcels throughout the corridor will have their accesses replaced in kind. Multiple parcels will have accesses relocated due to achieve better access spacing and the change in grade resulting from the change in profile grade over the 210<sup>th</sup> Street and the UPRR.

Along proposed IA 17 between STA 113+00 and 125+00, all accesses will require review to determine appropriate locations to best fit design criteria.

The following accesses along 200<sup>th</sup> Street will be removed after review by Boone County: Sta. 301+66.5, 304+05.13, 304+79.37.

Access control priority level through the corridor is Priority IVa. An access review meeting will be scheduled with the Office of Traffic and Safety. During the field exam there was a review of the accesses throughout the corridor.

Listed below is a summary of design related comments from the field exam meeting:

- Display current/design traffic volumes for relocated IA 17/200<sup>th</sup> and relocated IA 17/200<sup>th</sup>/T Ave
- 4" mill & overlay through the IA 17 widening section
- 12' through lanes throughout (no longer use 14'-wide lanes)
- 10' shoulders required
- Use shallow ditches to maintain minimum 0.4% ditch grades where possible
- Ditch not required in particular areas

- Shoulders in front of Farm Progress Show site to be paved full width
  - (Farm Progress Show takes place every other August)
- Review backslopes along west side of roadway in front of Monsanto to stay out of fence
- Subdrain intake near STA 40, LT side plugged, ditch sits full of water
- Line up entrance STA 45+60.99 RT with 210<sup>th</sup> Connector
- Close entrance at STA 47+00 LT
- Replace culvert at STA 48+73.87
- Review all curves to verify length is at least 15 times the design speed
- Boone County to report on zoning requirements for Thomas and Julia Haberer (STA 60+00 LT)
- Design relocated entrance for Kurt and Shawn Kastenschmidt (STA 65+00 RT)
- Move bridge pier to meet clear zone requirements
- Transition bridge barrier to TL-4 over UPRR. Do not show a fence on bridge.
- Close entrance at STA 74+75 LT
- Review ditch grades at STA 78+50 RT
- Design entrance at STA 80+30.34 LT
- Verify property lines at IA 17 and 205<sup>th</sup> Street
- Review IA 17 profile at 200<sup>th</sup> St intersection to create sag south of intersection
- Review entrance spacing along proposed IA 17 between STA 113+00 and 125+00 with Access Management Policy
- Close entrance at STA 114+25 LT, pave entrance off of S Avenue
- Relocate entrance at STA 116+39.56 LT to align with entrance at STA 118+38.27 RT
- Review joint drive at STA 123+26.35 RT
- IA 17 profile coming off of existing NB/SB IA 17 to be at 1.5 – 2.5% creating sag
- Review warrants for existing IA 17 SB right turn lane at proposed IA 17
  - If warranted, use offset right turn lane
  - Create new sheet showing construction limits for turn lane
  - More survey required north of 200<sup>th</sup> St/proposed IA 17 & existing IA 17
- Review entrance spacing along 200<sup>th</sup> St between STA 300+00 to STA 308+00 (Boone county to review)
- County requests rumble strips at intersection of 200<sup>th</sup> St and Quartz Ave
- Gas and water main along south side of 200<sup>th</sup> St is shallow, coordinate with utility companies on conflicts.
- Review 200<sup>th</sup> St profile to reduce fill at west end
- County drain tile along 200<sup>th</sup> St not shown, county to provide map or locate in field
- Remove entrance at STA 327+13.22 RT: previous location of rail road, not entrance
- EB 200<sup>th</sup> St RTL at IA 17 to be offset
- Review if medians at 200<sup>th</sup> St and IA 17 are raised or painted (DOT transitioning to painted medians in lieu of raised medians)
- Increase the 210<sup>th</sup> Connector design speed to 60 mph. Update profile and horizontal alignment.
- Review the 210<sup>th</sup> Connector profile at 210<sup>th</sup> St to not drain onto existing 210<sup>th</sup> Street.
  - Review 210<sup>th</sup> St superelevated curve
- No paving will be included in FY 2023 project.
- Maintain 3' between vehicle path and EOP on turning movements

There will be significant impacts to utilities throughout the corridor that will require relocations. Once revisions to the field exam plans are complete, plans will be sent to all

utility companies present in the corridor.

An initial meeting with utilities will occur in late fall of 2019. Meeting will be set up Jeremy Laude.

Agreements will be necessary with Boone County for reconstruction of the sideroads and easements for work on County property through much of the corridor.

Preliminary earthwork quantities were calculated. There will be approximately 216,000 CY of contractor furnished fill.

Office of Location and Environment will complete the environmental review. The project is anticipated to be classified as a countersigned categorical exclusion.

Marked up field exam plan sheets may be viewed in projectwise at:  
[pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0801701016\Design\Design Events\D2\D2\\_FieldExamNotes\\_2018-06-12.pdf](pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0801701016\Design\Design Events\D2\D2_FieldExamNotes_2018-06-12.pdf)

Revised plans and cross sections may be viewed in projectwise at:  
<pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0801701016\Design\Design Events\D2>

This project is currently scheduled for a November 2022 letting. The current cost estimate is approximately \$14.5 million, broken down as follows:

Grading	STPN-17-2(23)	\$2.4 Million	FY 2023
New Bridge	STPN-17-2(22)	\$2.4 Million	FY 2023
Paving	STPN-17-2(24)	\$9.5 Million	FY 2024
Traffic Signs	STPN-17-2(25)	\$31 K	FY 2024
Erosion Control	STPN-17-2(26)	\$200 K	FY 2025

### **Machine Guidance Electronic Files Checklist**

*Add information to address any incomplete items below:*

<b>Yes</b>	<b>N/A</b>	<b>No</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Horizontal and Vertical Alignments Complete
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Typical Templates showing proposed Pavement, Shoulder, Foreslope design
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Correct Feature Naming for Roadway Breaklines and Components

*Revisions to the vertical profiles, typical section, entrances, and pavement returns may still require revision up to the D5 event.*

cc:

M. J. Sankey	S. J. Gent	M. J. Kennerly
E. C. Wright	W.A. Sorenson	D. L. Maifield
K. K. Patel	K. D. Nicholson	T. Nicholson
K. Brink	J. E. Laaser-Webb	T. Crouch
V. A. Brewer	D. R. Tebben	S. Godbold
N. L. Cuva	M. A. Swenson	C. B. Brakke
D. E. Sprengeler	J. Nelson	D. A. Popp
J. McCollough	G. A. Novey	D. R. Claman
T. J. Gustafson	S. P. Anderson	B. Hofer
J. Garton	J. Lavine	J. Tibodeau
J. Larson	Local FHWA	P. C. Keen
A. Smyth	S. J. Megivern	M. K. Solberg
N. Thede	J. Hermann	D. Newell
S. Kruse (Boone Co.)	M. Solberg	

**BOONE CO.**  
 GRADING, BRIDGE, PCC PAVEMENT  
 LETTING DATE 11-15-2022  
 STPN-017-2(27)--2J-08

INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 5	Design Criteria
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 5	Typical Cross Sections and Details
<b>C Sheets</b>	<b>Quantities and General Information</b>
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	Pollution Prevention Plan
C.1	General Notes
C.1	Tabulations (beg. with tab. of incidentals if needed)
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 14	Iowa Highway 17
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1 - 6	200th Street
* E.7 - 9	210th Street Connector
* E.10	R Avenue
* E.11	205th Street
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Reference Ties and Bench Marks
G.2	Horizontal Control Tab. & Super for all Alignments
<b>H Sheets</b>	<b>Right-of-Way Sheets</b>
H.1 - 12	Iowa Highway 17
HE.1 - 6	200th Street
HE.7 - 8	210th Street Connector
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
* J.2	Staging Notes Stage
* J.3	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.4	Staging and Traffic Control Sheets Stage
<b>L Sheets</b>	<b>Geometric, Staking and Jointing Sheets</b>
L.1 - 21	Geometric & Staking "Mainline or Side Road Name"
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>
V.1 - 21	Bridge and Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 144	Mainline Cross Sections
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1 - 120	Side Road Cross Sections
	* Color Plan Sheets



## Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM

# BOONE COUNTY

## GRADING, BRIDGE, PCC PAVING

Approx 0.5 mi N of US 30 north and east approx 3 mi

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

For Project Location Map  
Refer to Sheet No. A.02



EARTHWORK SUMMARY				
ROAD ID	EXCAVATION TOTAL CUT (CY)	FILL + 30% TOTAL FILL (CY)	BORROW	WASTE
IA 17 (FY 2023)	16,646	228,565	-213,800	-
210th Street Connector (FY 2023)	10,796	11,031	-2,800	-
FY 2023 TOTALS	30,019	239,596	-216,600	-
IA 17 (FY 2024)	55,527	55,527	-	2,700
200th STREET (FY 2024)	97,178	97,179	-	12,200
FY 2024 TOTALS	152,705	152,705	-	69,500
PROJECT TOTALS	182,724	394,714	-216,600	69,500

IA-17/S AVENUE DESIGN DATA RURAL			
2015 AADT	3,800	V.P.D.	
2035 AADT	4,500	V.P.D.	
2035 DHV	--	V.P.H.	
TRUCKS	12	%	
Total Design ESALs	--		

200TH STREET DESIGN DATA RURAL			
2015 AADT	80	V.P.D.	
2035 AADT	3,500	V.P.D.	
2035 DHV	--	V.P.H.	
TRUCKS	12	%	
Total Design ESALs	--		

210TH STREET DESIGN DATA RURAL			
2015 AADT	0	V.P.D.	
2035 AADT	4,400	V.P.D.	
2035 DHV	--	V.P.H.	
TRUCKS	10	%	
Total Design ESALs	--		

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

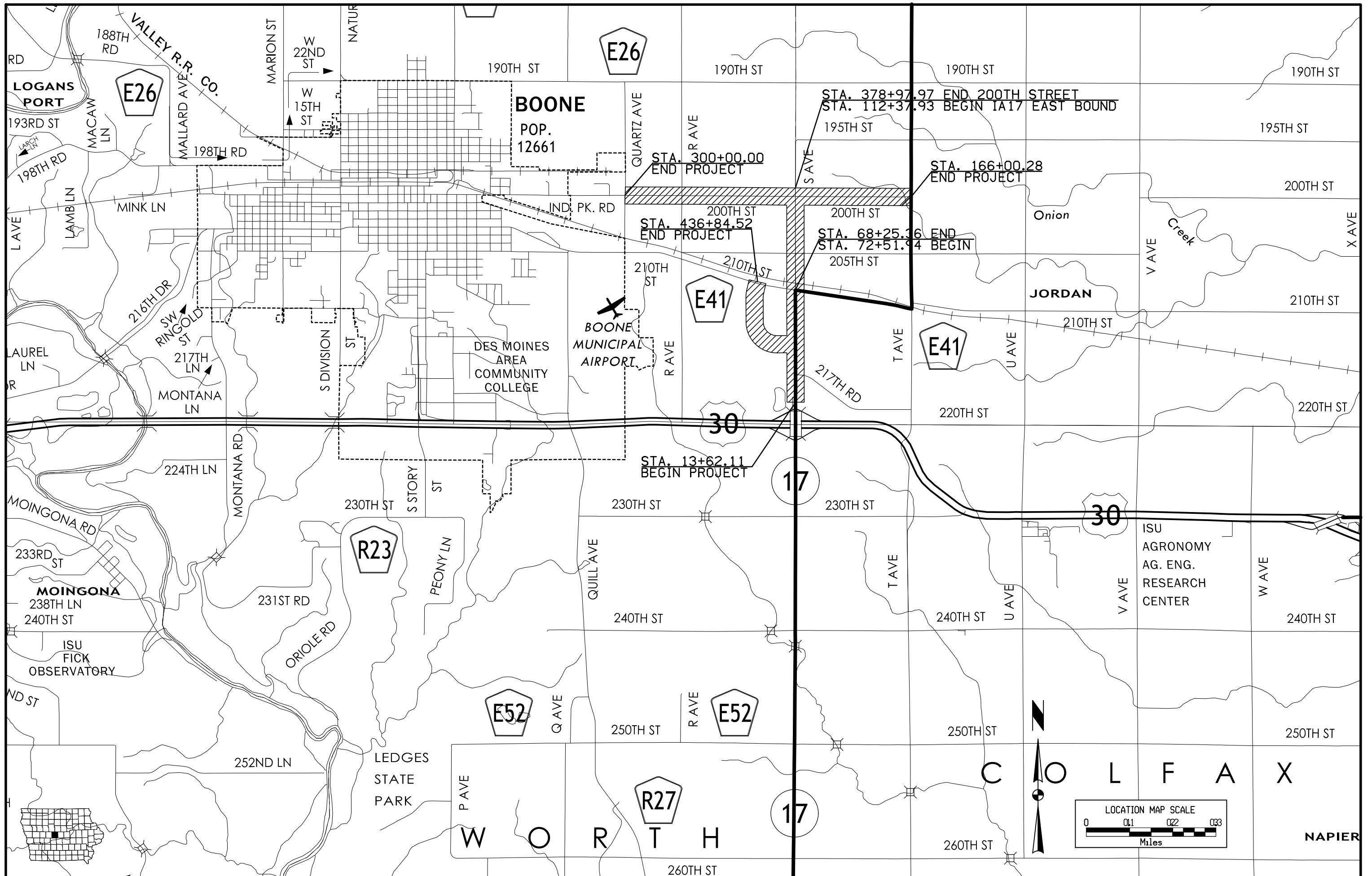
**REVISED**  
**D2 PLAN**

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

Gabriel A. Nelson, P.E. \_\_\_\_\_ Date \_\_\_\_\_  
 License Number 17382  
 My License Renewal Date is December 31, 2018  
 Pages or sheets covered by this seal:

Date: 7-13-18

REVISIONS	TOTAL
	361
PROJECT IDENTIFICATION NUMBER	
16-08-017-010	
PROJECT NUMBER	
STPN-017-2(27)--2J-08	
R.O.W. PROJECT NUMBER	
STPN-017-2(21)--2J-08	





<b>Roadway</b>	<b>Mainline IA 17</b>		
<b>PIN Number</b>	16-08-017-010	<b>Submittal Date</b>	06/05/18
<b>Project Number</b>	STPN-017-2(21)--2J-08	<b>Approval Date</b>	
<b>District</b>	District 1	<b>Assistant District Engineer</b>	
<b>County</b>	BOONE	or	
<b>Route</b>	IA 17	<b>Office Director</b>	
<b>Location</b>	Approx. 0.5 mi N of US 30 North and East Approx. 3 mi		
<b>Work Type</b>			
<b>Segment Manager</b>	Tony Gustafson		
<b>Designer</b>	Snyder & Associates, Inc.		

Design Manual Section 1C-1  
Last Updated: 05-26-17

### Rural Two-Lane Highways (Rural Arterials)

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

Design Manual Section 1C-1  
Last Updated: 05-26-17

Design Element	Preferred Criteria						Acceptable Criteria						Project Values		
	Design Speed, mph						Design Speed, mph								
	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			
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e <sub>max</sub> = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	9130
		e <sub>max</sub> = 8%	--	--	--	--	--	--	--	758	960	1200	1480	1810	2210
Minimum vertical curve length (ft) (Refer to Section 2B-1)		150	165	180	195	210	225	150	165	180	195	210	225	300	
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	157
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	142
		roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	142
Minimum gradient (%) (Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.21%	
Maximum gradient (%) (Refer to Section 2B-1)	Urban roadways	4	3				5	7	6	6	--	--	--	4.00%	
	Rural roadways		5	5	4	4		4	4						
	Interstates		5	5	4	4		4	4						
Clear zone		See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						30	

**FIELD EXAM CHECKLIST**

- 1 - Duration of project?
- 2 - Speed Limit
- 3 - Speed Limit during construction
- 4 - Is sight distance a problem?
- 5 - Patching quantities full depth, partial depth, and surface.
- 6 - Does patching need to be done in the project area or do the construction limits need to be extended?  
Who will provide locations of patches by milepost?
- 7 - Are rumble strips going to be placed with this project or a separate project?
- 8 - Leveling and strengthening locations and lengths (i.e. station to station).
- 9 - Do any of the utilities need to be relocated (power/telephone poles) either permanently or temporarily for construction?
- 10 - Names and addresses of affected utility companies.
- 11 - Locations of entrances to be reshaped.
- 12 - Are there existing drainage problems?
- 13 - Are there any Wetland Impacts or any other environmental issues?

**FIELD EXAM CHECKLIST**

- 14 - Note any special features not shown on plan.
- 15 - Note condition of existing culverts.
- 16 - Number and location of EF joints.
- 19 - Disposition of bridge handrail and guardrail, including posts.
- 20 - Inventory of existing guardrail.
- 21 - Remove & Reinstall Signs District Maintenance or by the Contractor?
- 22 - Longitudinal joint repair locations (station to station).
- 23 - Tabulation of adjustment of fixtures.
- 24 - Clearing and grubbing quantities by unit or by area?
- 25 - Resurfacing Projects is District Survey able to preserve Section Corners & Points?  
If "no", then add these items under Construction Survey.

**FIELD EXAM CHECKLIST**

Contractor furnish borrow? (Yes) / (No)

Full depth patches to be PCC? (Yes) / (No)

Full depth PCC patches to be doweled? (Yes) / (No)

Soils to determine and provide tabulation of subdrains? (Yes) / (No)

Pollution Prevention Plan required? (Yes) / (No)

Field Office? (Yes) / (No)

Construction Survey and or Point Preservation by DOT or Contractor? See Dist. 1 Surveyor for this (DOT) / (Contractor).

Survey by Office of Design? (Yes) / (No)

Pavement markings for turn lanes as determined by the District? (Yes) / (No)

Any RWIS or Traffic Recorder Sites within project limits? (Yes) / (No)

City Participation Limits ?

Any Curb and Gutter repair?





### Widening (LT)

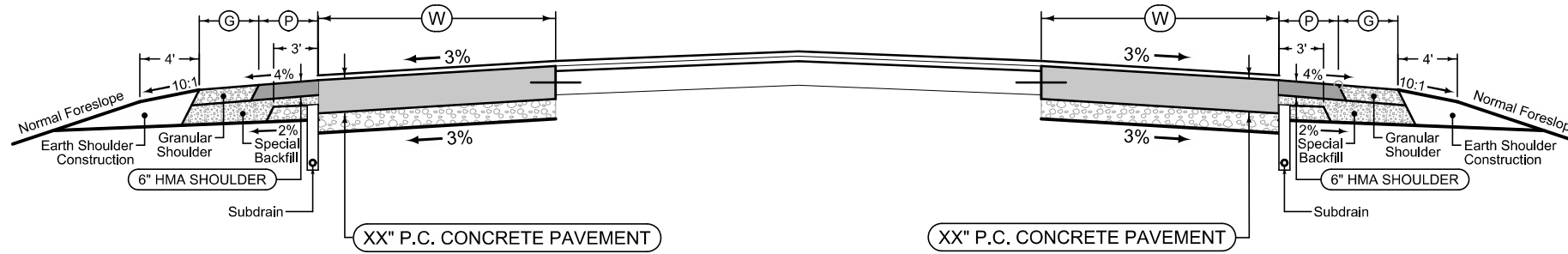
Longitudinal joint: L or KT  
Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(W) Feet
9+00.00	14+40.46	0-8
14+40.46	50+58.85	8
50+58.85	55+30.90	8-0

### Combination Shoulder (LT)

Shoulder Jointing:  
Longitudinal joint: B

2_C_10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
9+00.00	29+80.44	6	4
30+84.45	44+15.58	6	4
45+11.58	46+42.22	6	4
48+77.22	55+30.90	6	4



IA 17 3-LANE SECTION

### Combination Shoulder (RT)

Shoulder Jointing:  
Longitudinal joint: B

2_C_10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
9+00.00	29+94.55	6	4
30+68.41	45+24.04	6	4
45+98.02	57+91.66	6	4

### Widening (RT)

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(W) Feet
9+00.00	14+40.46	0-8
14+40.46	50+00.18	8
50+00.18	57+91.66	8-0

### Combination Shoulder (LT)

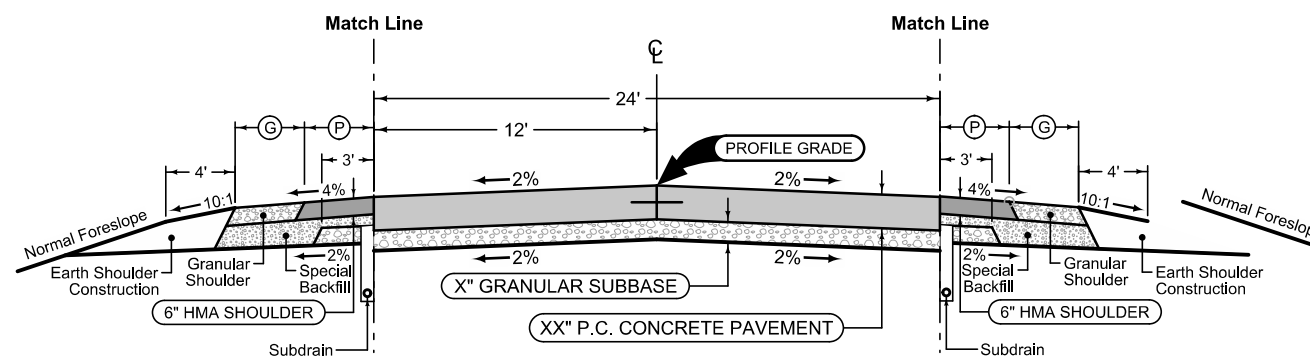
Shoulder Jointing:  
Longitudinal joint: B

2_C_10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
57+91.66	68+25.92	6	4
72+59.88	105+65.80	6	4
123+82.04	158+97.68	6	4

### Combination Shoulder (RT)

Shoulder Jointing:  
Longitudinal joint: B

2_C_10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
57+91.66	68+18.16	6	4
72+52.12	105+65.80	6	4
123+82.04	158+97.68	6	4



IA 17 2-LANE SECTION

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

2P_10-19-10	
STATION TO STATION	
57+91.66	105+65.80
123+82.04	158+97.68

### Auxiliary Lane (LT)

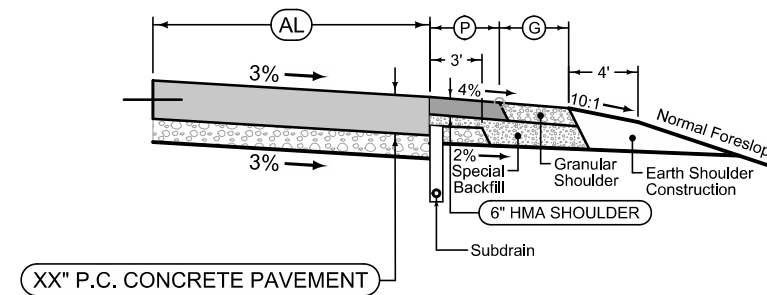
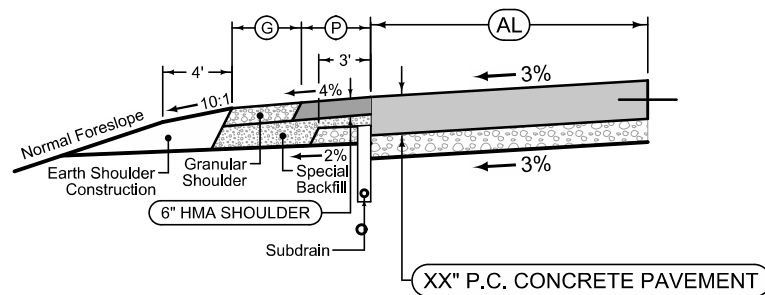
Longitudinal joint: L or KT  
Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
105+65.80	108+05.78	0-12
108+05.78	110+05.78	12
112+38.59	115+98.41	16
115+98.41	123+82.04	16-0

### Combination Shoulder (LT)

Shoulder Jointing:  
Longitudinal joint: B

2_C_10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
105+65.80	110+05.78	6	4
112+38.59	114+46.10	6	4
114+88.10	123+82.04	6	4



### Auxiliary Lane (RT)

Longitudinal joint: L or KT  
Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
108+04.97	109+53.99	0-12
109+53.99	110+78.99	12
114+38.40	116+29.06	12
116+29.06	118+69.16	12-0
158+97.68	160+77.36	0-12
160+77.36	165+29.08	12

### Combination Shoulder (RT)

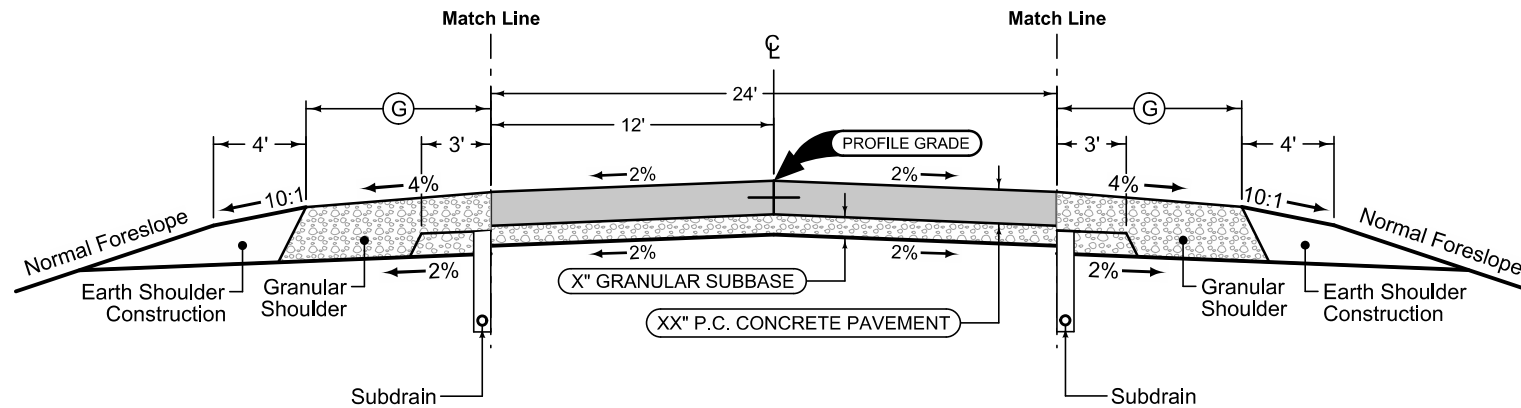
Shoulder Jointing:  
Longitudinal joint: B

2_C_10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
108+04.97	110+78.99	6	4
114+38.40	118+69.54	6	4
158+97.68	165+29.08	6	4



### Granular Shoulder

2_G_SR_10-19-10		
STATION TO STATION		(G) Feet
301+89.32	367+75.97	8

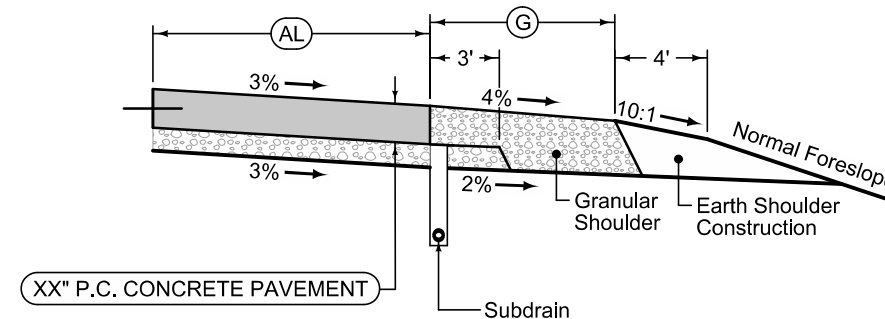
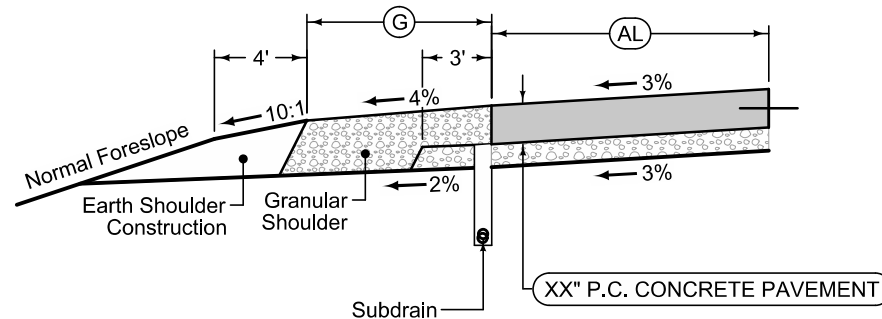


### Granular Shoulder

2_G_SR_10-19-10		
STATION TO STATION		(G) Feet
301+89.32	367+75.97	8

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

2P_10-19-10	
STATION TO STATION	
301+89.32	367+75.97



### Auxiliary Lane (LT)

#### Granular Shoulder (LT)

2_G_SR_10-19-10		
STATION TO STATION		(G) Feet
367+75.97	378+97.97	8

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
367+75.97	375+40.21	0-16
375+40.21	378+97.97	16

### Auxiliary Lane (RT)

Longitudinal joint: L or KT  
 Transverse joint: Match Mainline

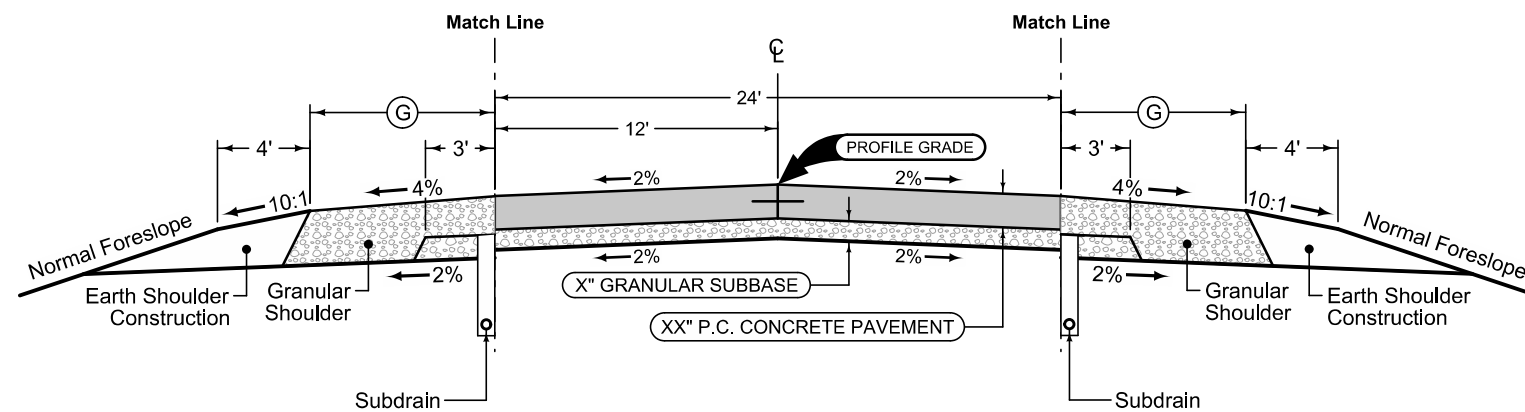
2_AuxLane_PCC_10-18-16		
STATION TO STATION		(AL) Feet
373+91.21	375+40.21	0-12
375+40.21	376+65.21	12

#### Granular Shoulder (RT)

2_G_SR_10-19-10		
STATION TO STATION		(G) Feet
373+91.21	376+65.21	8

## 200TH STREET TYPICAL SECTION

200TH STREET PAVING TYPICALS



**Granular Shoulder**

2_G_SR_		Ⓞ
10-19-10		
STATION TO STATION		Feet
402+12.91	434+82.32	8

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

2P_		
10-19-10		
STATION TO STATION		
402+12.91	434+82.32	

**Granular Shoulder**

2_G_SR_		Ⓞ
10-19-10		
STATION TO STATION		Feet
402+12.91	434+82.32	8

**210TH CONNECTOR TYPICAL SECTION**

### SURVEY SYMBOLS

	IN Storm Sewer Intake		F02 - FOB Underground Fiber Optic Co. 2
	FW Wire Fence		T1 - TLA Underground Telephone Line Co. 1
	INB Storm Sewer Beehive Intake		E1 - ELA Underground Electric Line Co. 1
	PR Electric Riser Pole		F0 - FOA Underground Fiber Optic Co. 1
	GP Guard Post (Less Than 4 Posts)		W - WLA Underground Water Line Co. 1
	SL Speed Limit Sign		St.S.2 - STB Storm Sewer Line Co. 2
	SI Sign		San. - SAA Sanitary Sewer Line Co. 1
	T1le - TIL Tile Line		E2 - ELB Underground Electric Line Co. 2
	GDL Guard Rail Steel		TV - TVA Underground TV Cable Co. 1
	LUM Luminaire		F03 - FOC Underground Fiber Optic Co. 3
	UE Utility Elevation		
	WV Water Valve		
	GPR Guard Post (4 or More Posts)		
	FP Filler Pipe		
	OUT Tile Outlet		
	MIS Miscellaneous		
	PPA Power Pole Co. 1		
	AST Above Ground Storage Tank		
	LP L.P. Tank		
	FLg Flag Poles		
	WHD Water Hydrant		
	WEL Well		
	MH Utility Access (Manhole)		
	TPD Telephone Pedestal		
	MM Mile Marker Post		
	FCL Chain Link and Security Fence		
	EB Electrical Box		
	TV Satellite TV Dish		
	UB Utility Box		
	UST Underground Tank		
	GV Gas Valve		
	WHU WHU RV Water Hook Up		
	SEP Septic Tank		
	FHD Fire Hydrants		
	FWD Wood Fence		
	RET Retaining Walls		
	D Centerline Draw or Stream (Down)		
	BNK Stream Bank		
	RIP Rip-Rap		
	EW Edge of Water		
	DU Centerline Draw or Stream (Up)		
	ENT Centerline BL of Entrance		
	ENU Edge Unpaved Entrance & Parking		
	EG Edge of Gravel Road		
	SNP Unpaved Shoulder		
	DIK Centerline of Dike or Dam		

### UTILITY LEGEND

-G-----	ALLIANT ENERGY
-G2-----	BAKKEN PIPELINE
-F0-----	CENTURYLINK
-F02-----	IOWA COMMUNICATIONS NETWORK
-F03-----	OGDEN TELEPHONE COMPANY
-T1-----	
-W-----	XENIA RURAL WATER DISTRICT
-San-----	
-W2-----	CITY OF BOONE
-San2-----	
-E1-----	MIDLAND POWER COMPANY
-E2-----	IOWA
-TV-----	MEDIACOM COMMUNICATIONS CORP.

### 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.
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

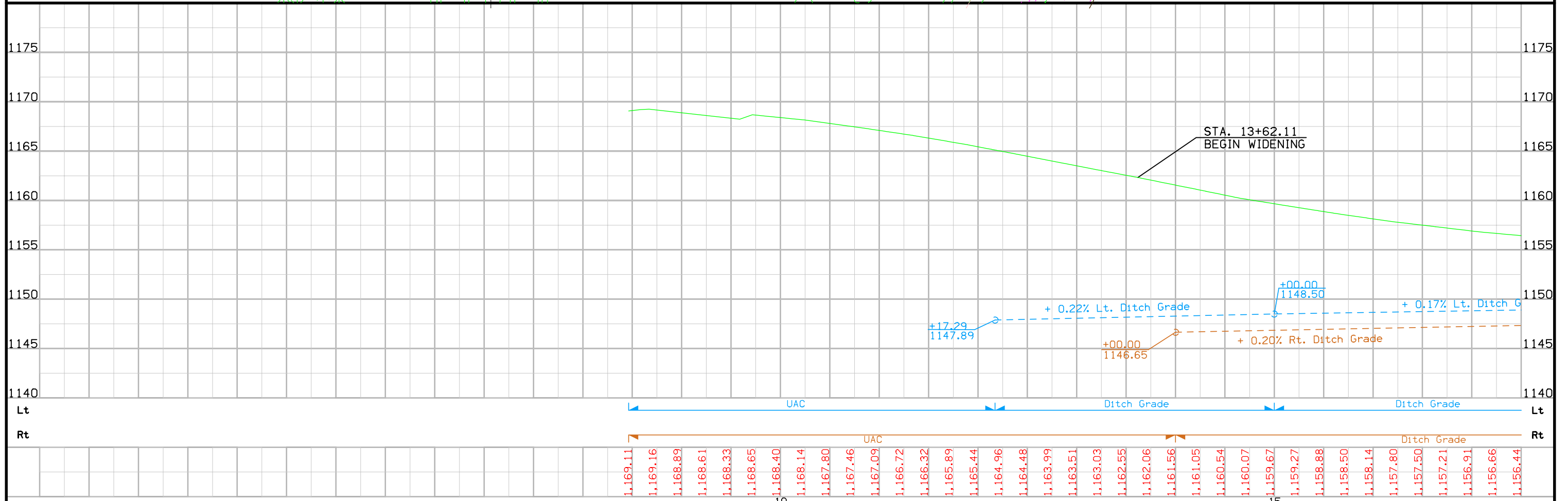
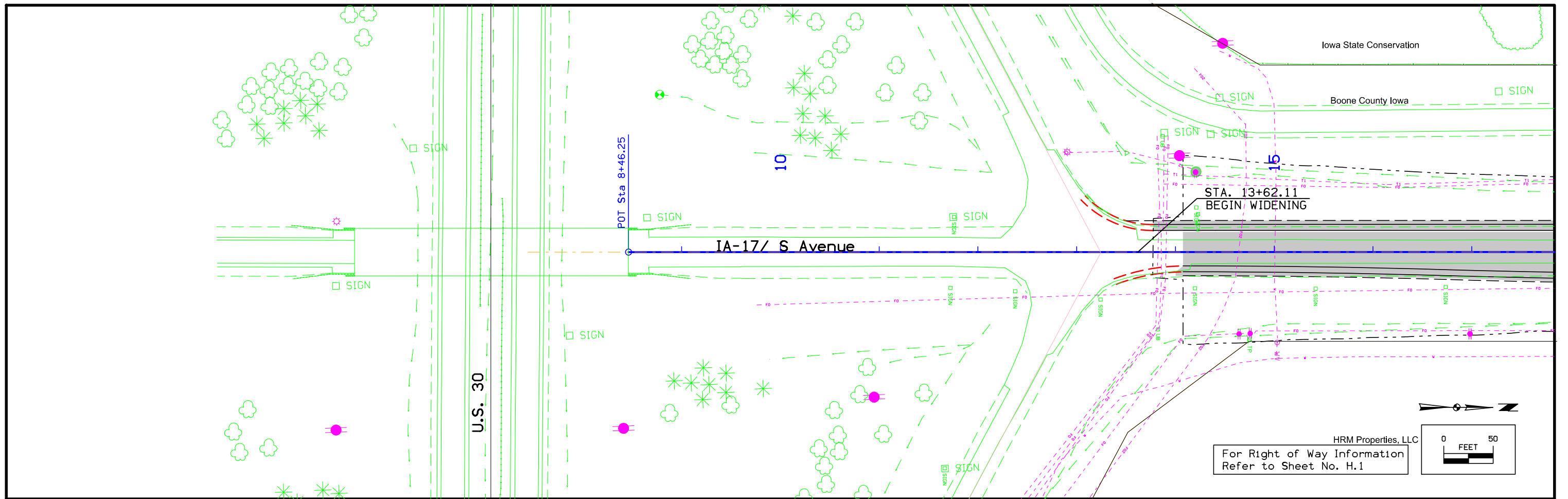
LINEWORK	Design	Color No.	Description
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

Symbol	Description
	Reference Point
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

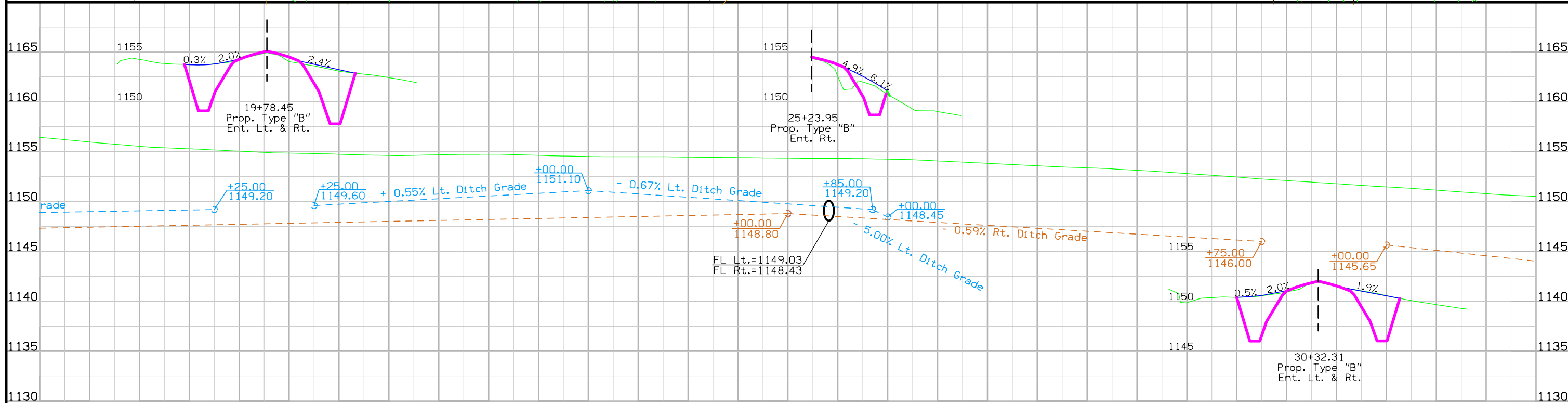
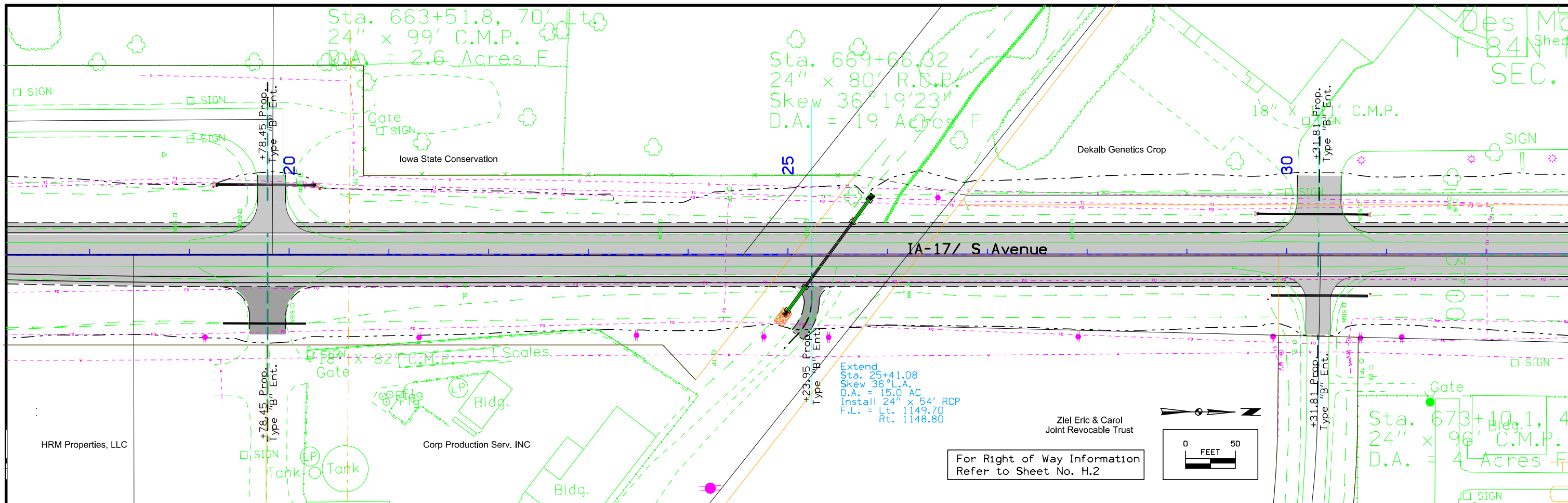
Symbol	Description
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	C/A Access Control
	Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

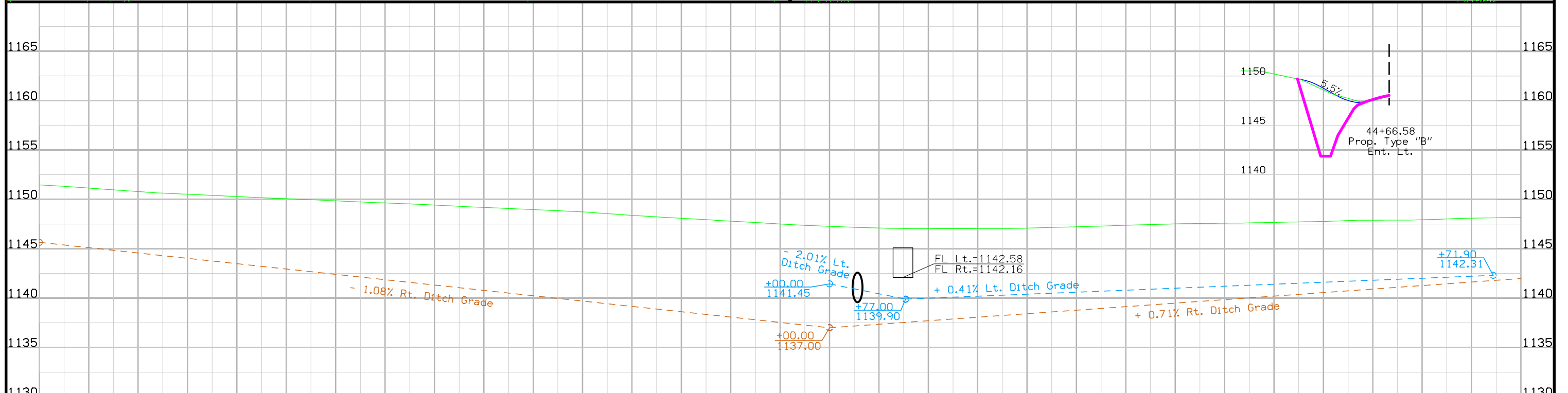
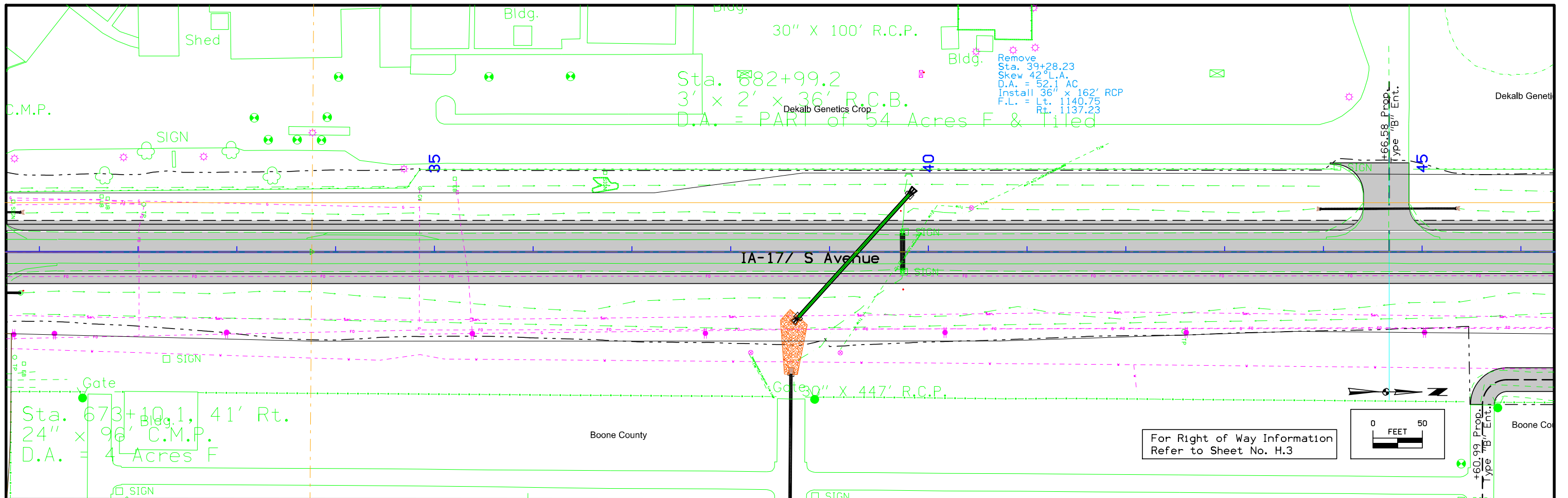
(COVERS SHEET SERIES D, E, F, & K)



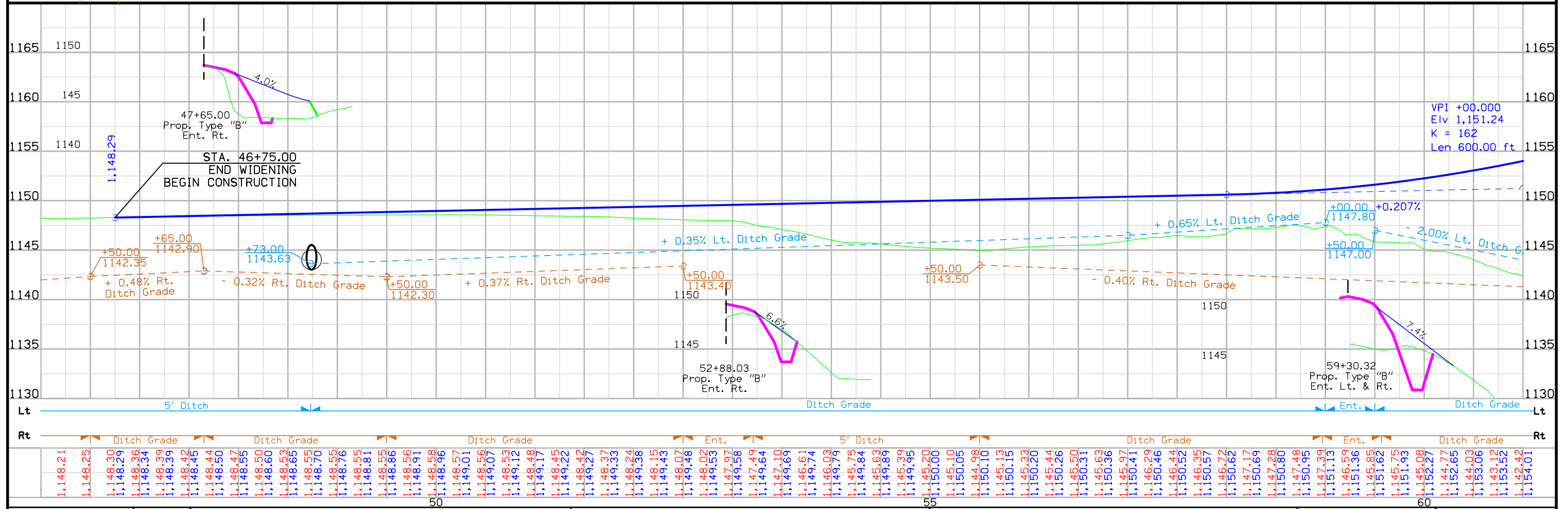
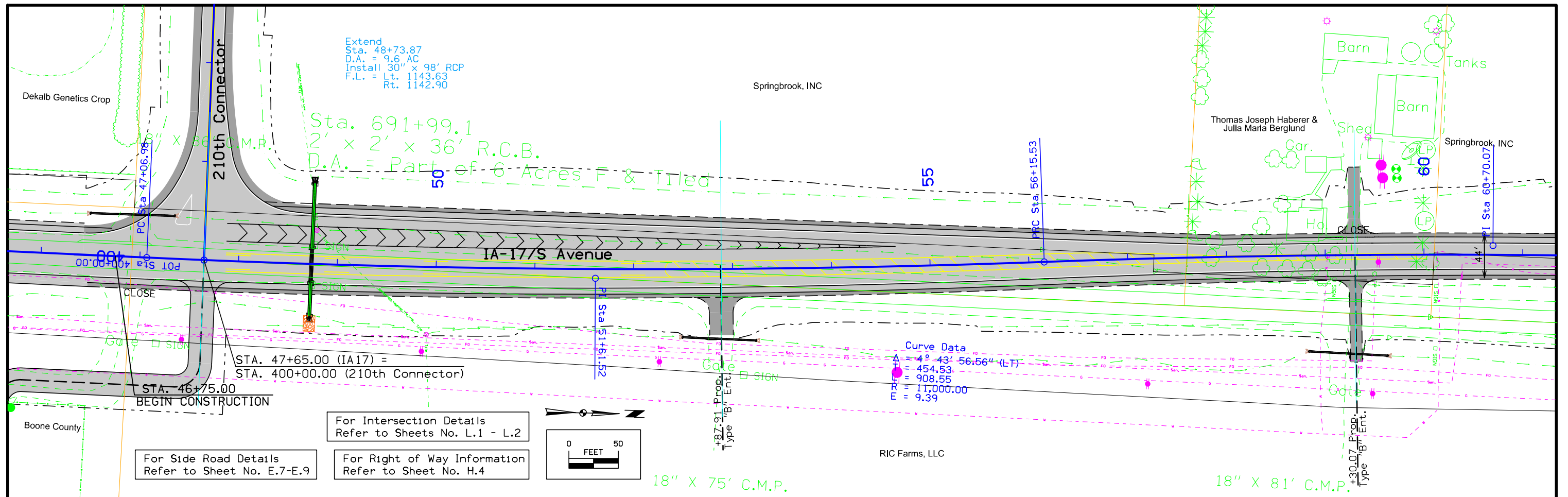
FILE NO.	ENGLISH	DESIGN TEAM	<b>Snyder &amp; Associates</b>	BOONE COUNTY	PROJECT NUMBER	<b>STPN-017-2(27)--2J-08</b>	SHEET NUMBER	<b>D.2</b>
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Lt	Ent.	Ditch Grade	Ditch Grade	5' Ditch	Ent.	Lt																																																					
Rt	Ent.	Ditch Grade	Ditch Grade	Ent.	Rt																																																						
1.156.20	1.155.97	1.155.75	1.155.54	1.155.39	1.155.29	1.155.17	1.155.05	1.154.92	1.154.85	1.154.80	1.154.74	1.154.67	1.154.62	1.154.63	1.154.69	1.154.72	1.154.74	1.154.71	1.154.63	1.154.56	1.154.52	1.154.49	1.154.49	1.154.49	1.154.46	1.154.44	1.154.41	1.154.39	1.154.36	1.154.33	1.154.32	1.154.30	1.154.25	1.154.20	1.154.08	1.153.96	1.153.83	1.153.71	1.153.59	1.153.47	1.153.38	1.153.28	1.153.13	1.152.98	1.152.81	1.152.63	1.152.46	1.152.26	1.152.10	1.151.95	1.151.79	1.151.62	1.151.47	1.151.33	1.151.14	1.150.97	1.150.79	1.150.63	1.150.52



Station	Elevation	Station	Elevation	Station	Elevation
35	1.151.33	40	1.147.27	45	1.148.18
	1.151.14		1.147.17		1.148.10
	1.150.97		1.147.10		1.148.02
	1.150.79		1.147.04		1.147.95
	1.150.63		1.147.03		1.147.86
	1.150.52		1.147.04		1.147.77
	1.150.41		1.147.05		1.147.67
	1.150.29		1.147.06		1.147.56
	1.150.17		1.147.09		1.147.45
	1.150.07		1.147.15		1.147.38
	1.149.97		1.147.22		1.147.30
	1.149.86		1.147.30		1.147.22
	1.149.74		1.147.38		1.147.15
	1.149.64		1.147.45		1.147.09
	1.149.54		1.147.52		1.147.06
	1.149.42		1.147.56		1.147.04
	1.149.30		1.147.59		1.147.03
	1.149.19		1.147.62		1.147.04
	1.149.08		1.147.67		1.147.05
	1.148.97		1.147.72		1.147.06
	1.148.85		1.147.77		1.147.09
	1.148.73		1.147.86		1.147.15
	1.148.56		1.147.89		1.147.22
	1.148.38		1.147.90		1.147.30
	1.148.23		1.147.95		1.147.38
	1.148.09		1.148.02		1.147.45
	1.147.94		1.148.10		1.147.52
	1.147.80		1.148.14		1.147.56
	1.147.65				1.147.59
	1.147.51				1.147.62
	1.147.37				1.147.67
	1.147.27				1.147.72



Iowa State University Foundation  
Douglas C Gustafson

Sta. 711+06.2  
24" x 66' R.C.P.  
D.A. = Part of 25 Acres E & Titled

Sta. 68+85.37  
Skew 8° L.A.  
D.A. = 70.4 AC  
Install 42" x 340' RCP  
F.L. = Lt. 1140.10  
Rt. 1138.75

Sta. 71+68.07  
Skew 6° L.A.  
D.A. = 21.8 AC  
Install 30" x 306' RCP  
F.L. = Lt. 1144.30  
Rt. 1143.40

STA. 68+25.36  
END CONSTRUCTION

STA. 72+51.94  
BEGIN CONSTRUCTION

65

Sect. 25

210th Street

70

75

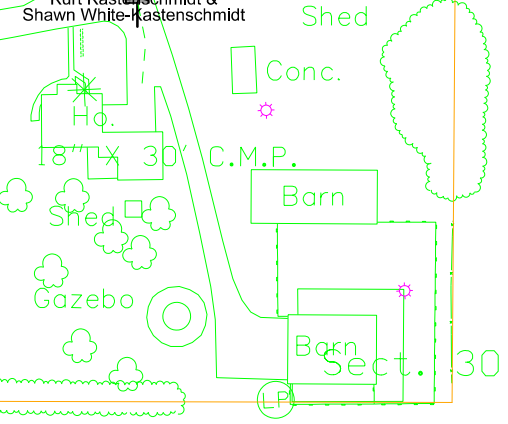
Springbrook, INC

IA-17/S Avenue

Curve Data  
Δ = 4° 43' 56.56" (RT)  
L = 454.53  
R = 988.55  
E = 11,000.00  
F = 9.39

PT Sta 65+24.00

Kurt Kastenschmidt &  
Shawn White-Kastenschmidt



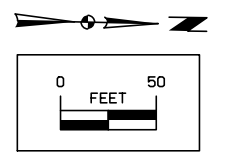
RIC Farms, LLC

Landus  
Cooperative

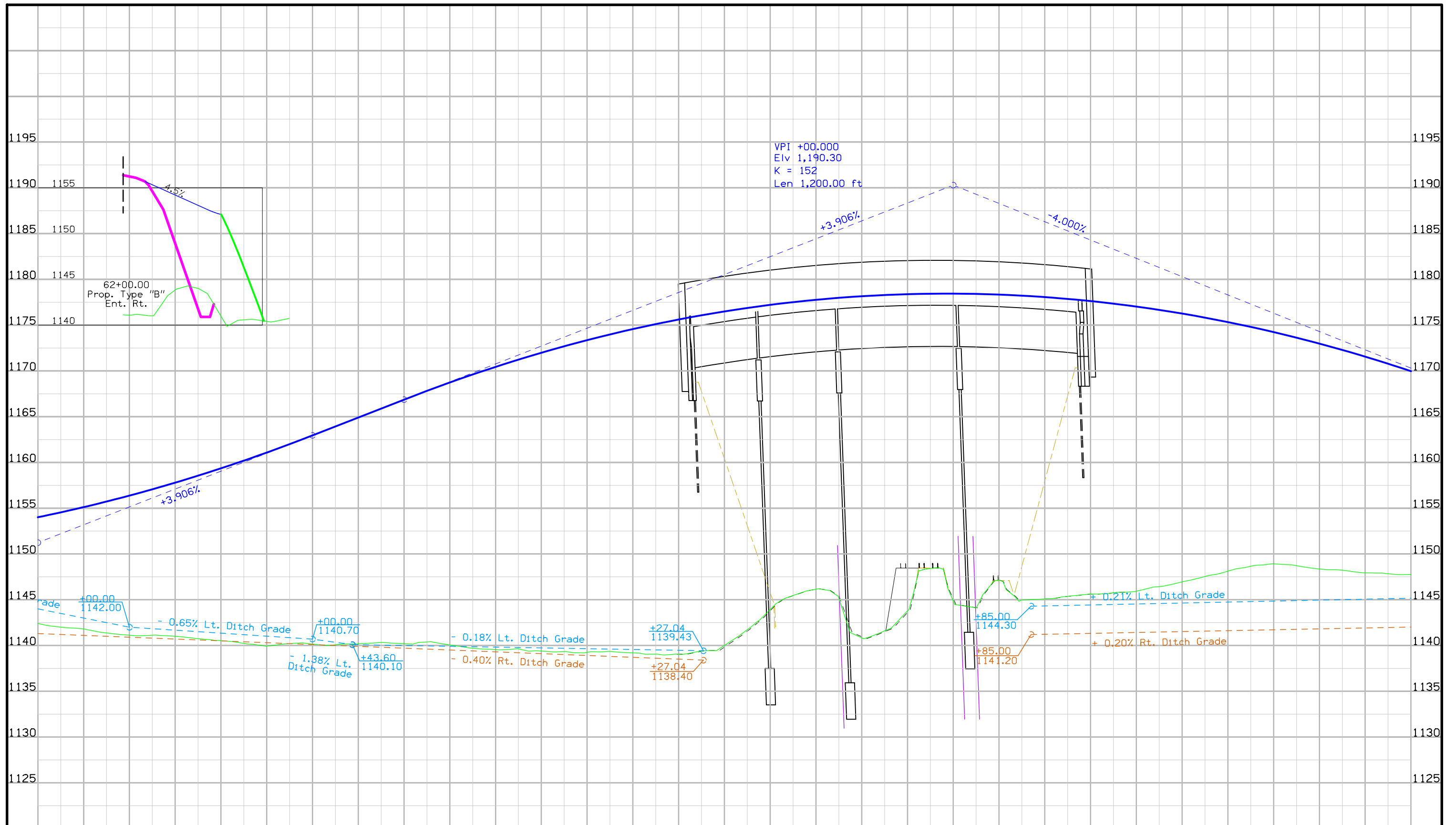
Margaret S. Kemmerer

For Right of Way Information  
Refer to Sheet No. H.5

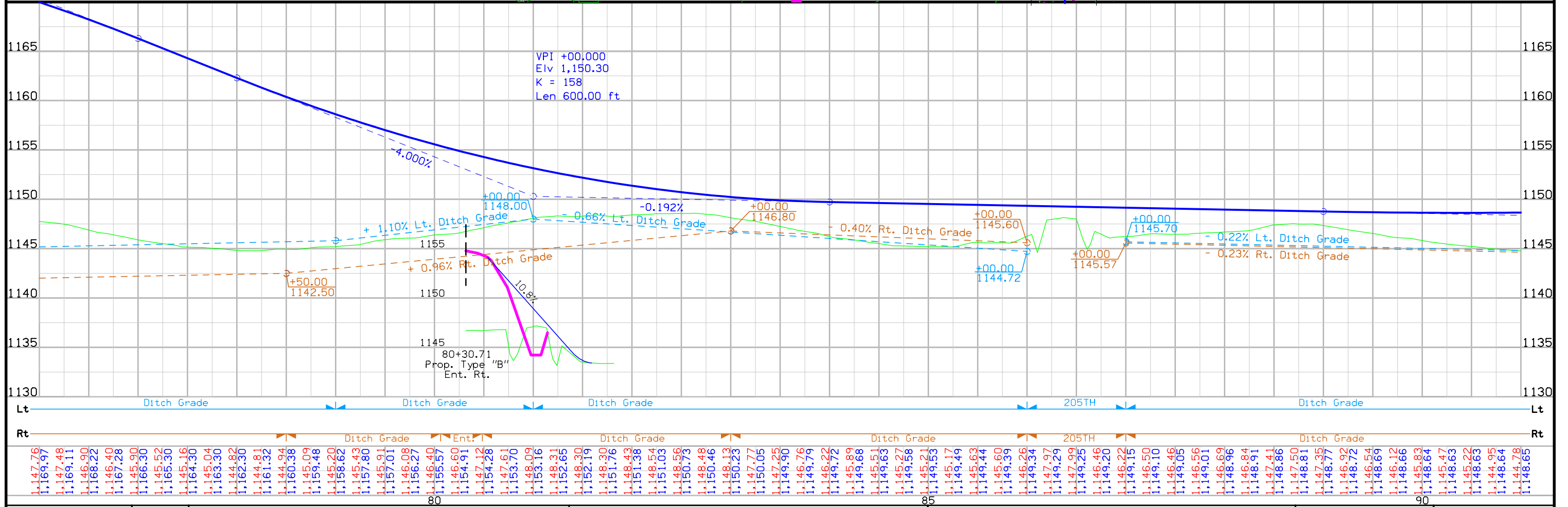
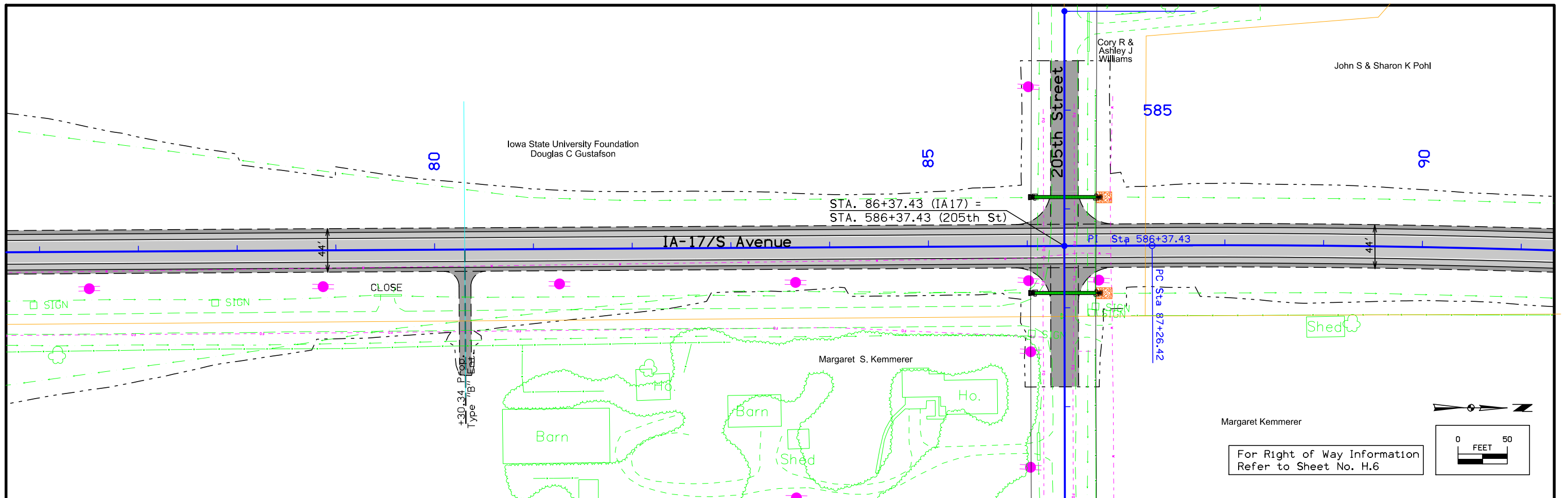
For Bridge Situation Plan  
Refer to Sheet No. V.



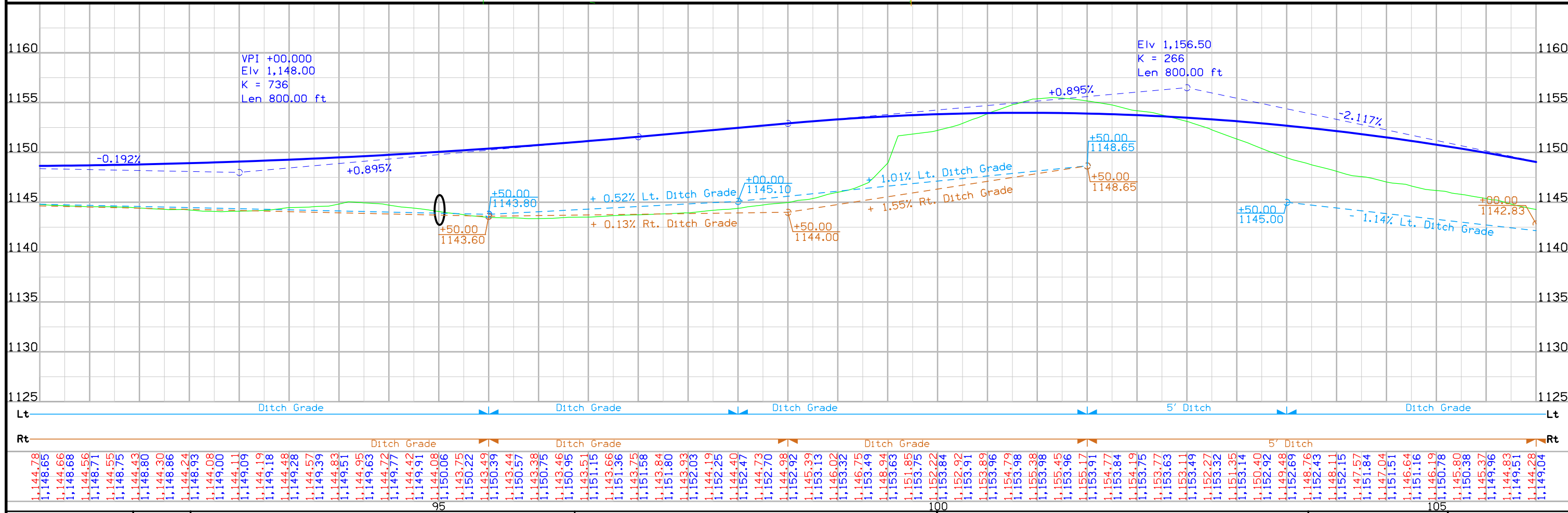
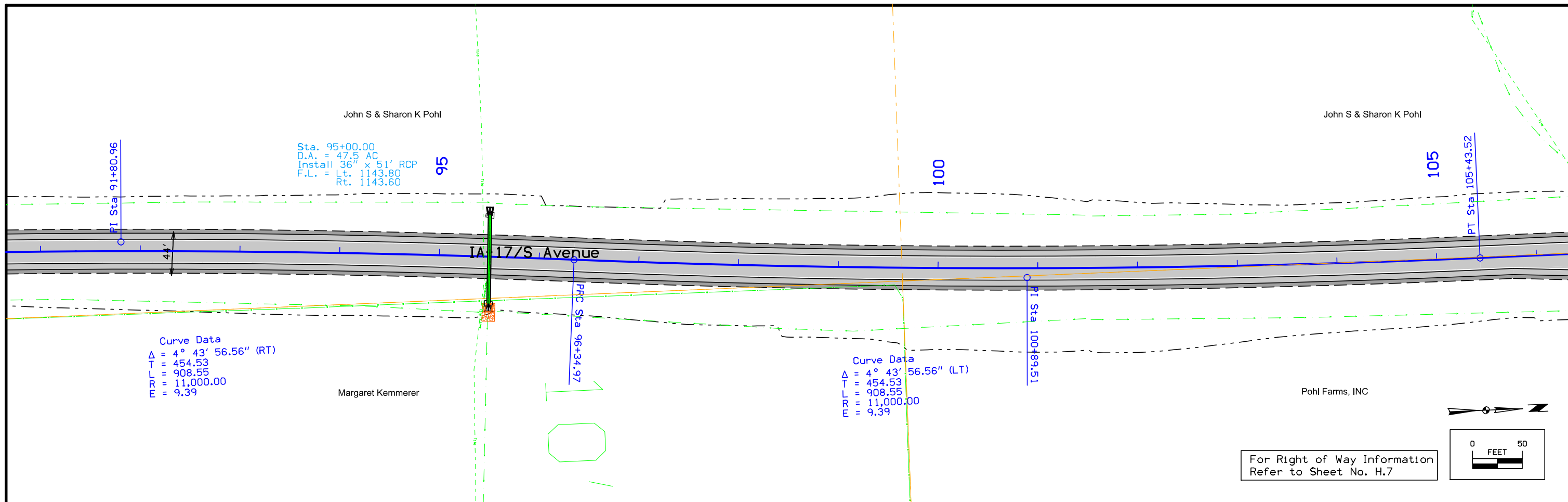


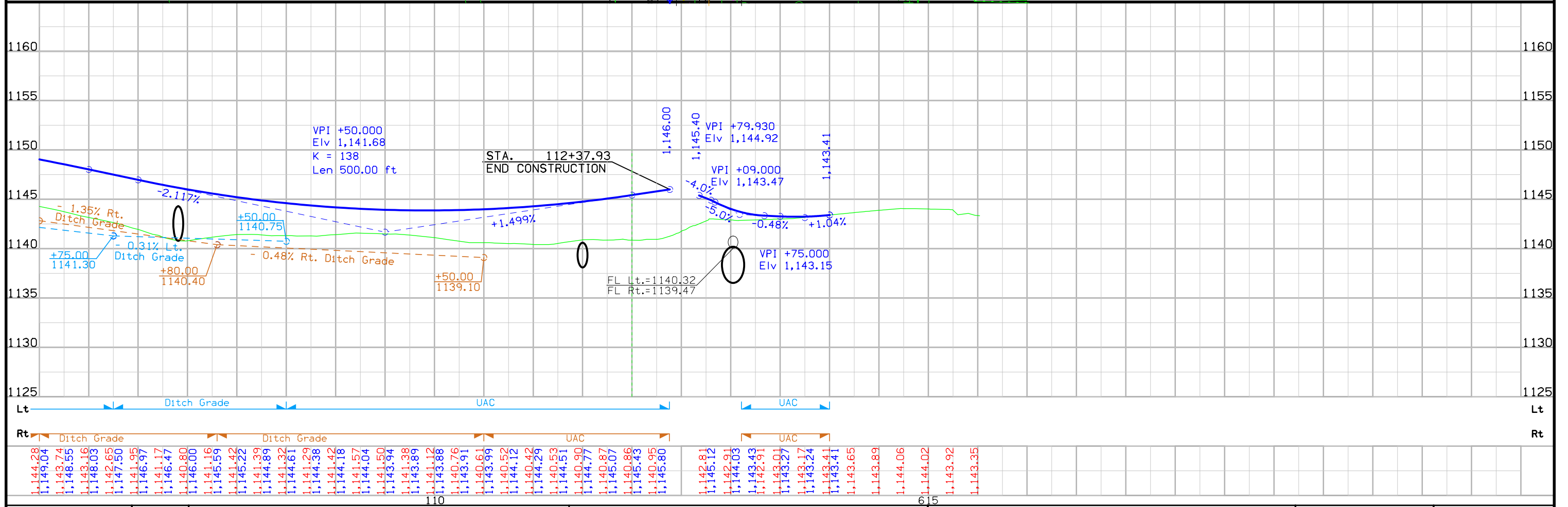
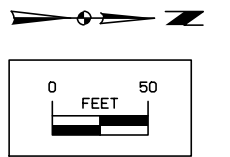
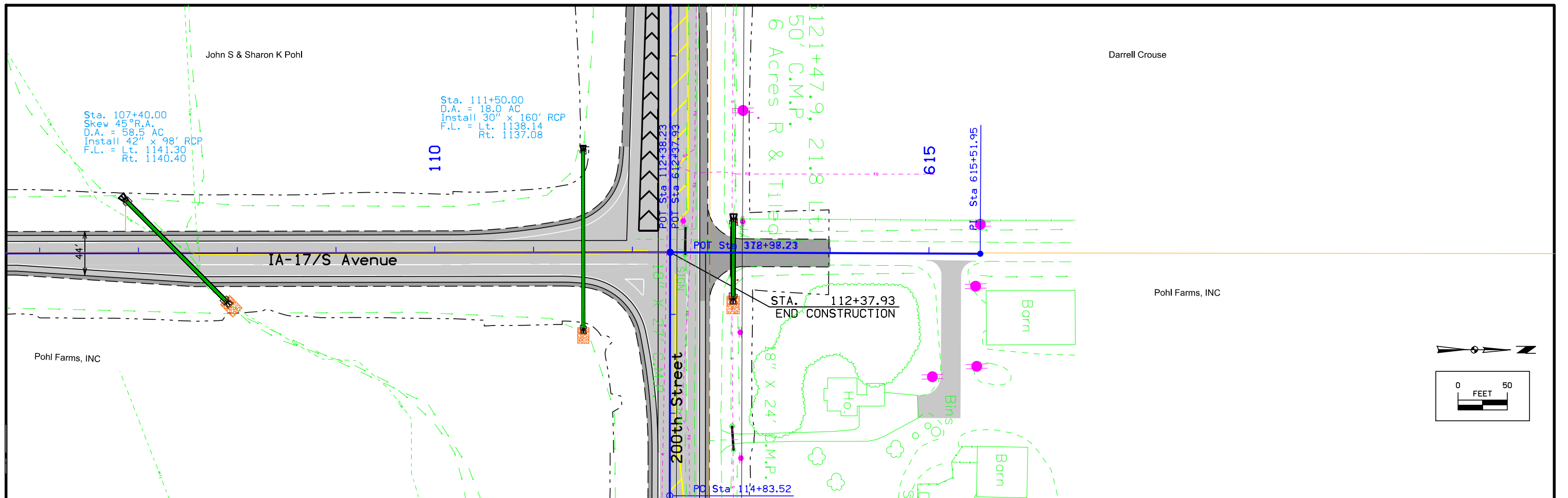


Lt	Ditch Grade		Grade	Ditch Grade		BRIDGE		Ditch Grade		Lt																																																																																																													
Rt	Ditch Grade			Ditch Grade		BRIDGE		Ditch Grade		Rt																																																																																																													
1,142.42	1,154.01	1,142.01	1,154.55	1,141.81	1,155.12	1,141.37	1,155.73	1,141.12	1,156.38	1,141.13	1,157.07	1,141.01	1,157.79	1,140.74	1,158.56	1,140.52	1,159.36	1,140.24	1,160.20	1,139.94	1,161.08	1,140.15	1,162.96	1,140.09	1,163.93	1,140.19	1,164.91	1,140.33	1,165.89	1,140.19	1,166.86	1,140.39	1,167.82	1,140.07	1,168.73	1,139.71	1,169.61	1,139.55	1,170.44	1,139.63	1,171.23	1,139.39	1,171.98	1,139.34	1,172.69	1,139.26	1,173.36	1,139.36	1,173.98	1,139.20	1,174.57	1,139.06	1,175.11	1,139.04	1,175.62	1,139.40	1,176.08	1,140.01	1,176.50	1,141.73	1,176.88	1,143.93	1,177.22	1,145.47	1,177.51	1,146.15	1,177.77	1,145.16	1,177.99	1,140.84	1,178.16	1,141.60	1,178.29	1,143.76	1,178.38	1,148.40	1,178.43	1,144.85	1,178.44	1,144.11	1,178.41	1,147.16	1,178.34	1,144.96	1,178.22	1,145.09	1,178.06	1,145.38	1,177.87	1,145.62	1,177.63	1,145.77	1,177.35	1,145.93	1,177.03	1,146.44	1,176.67	1,146.95	1,176.26	1,147.55	1,175.82	1,148.11	1,175.34	1,148.66	1,174.81	1,148.93	1,174.24	1,148.72	1,173.63	1,148.35	1,172.98	1,148.22	1,172.29	1,147.93	1,171.56	1,147.84	1,170.79	1,147.76	1,169.97

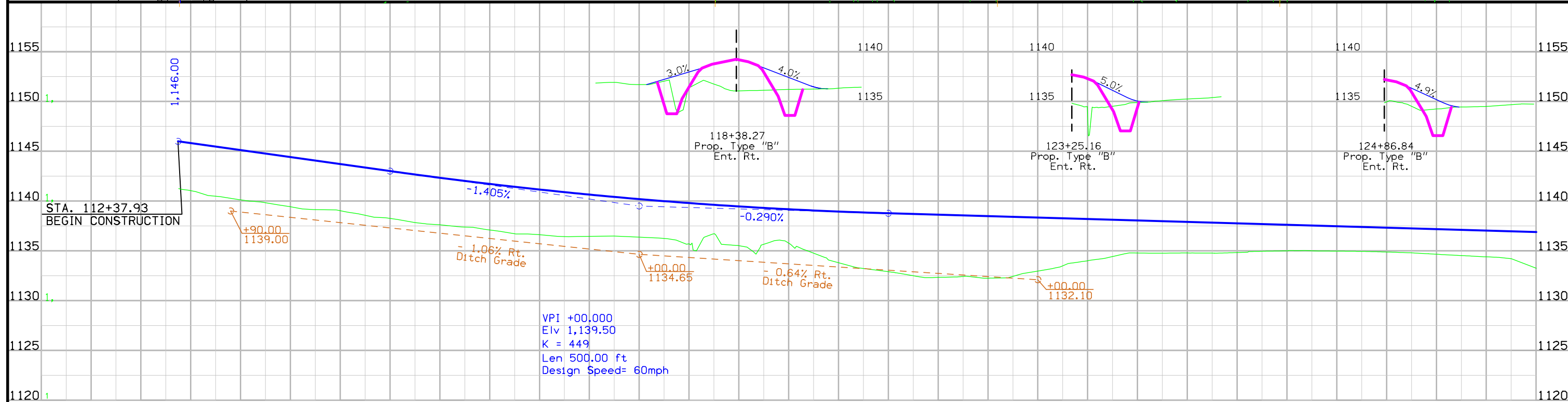
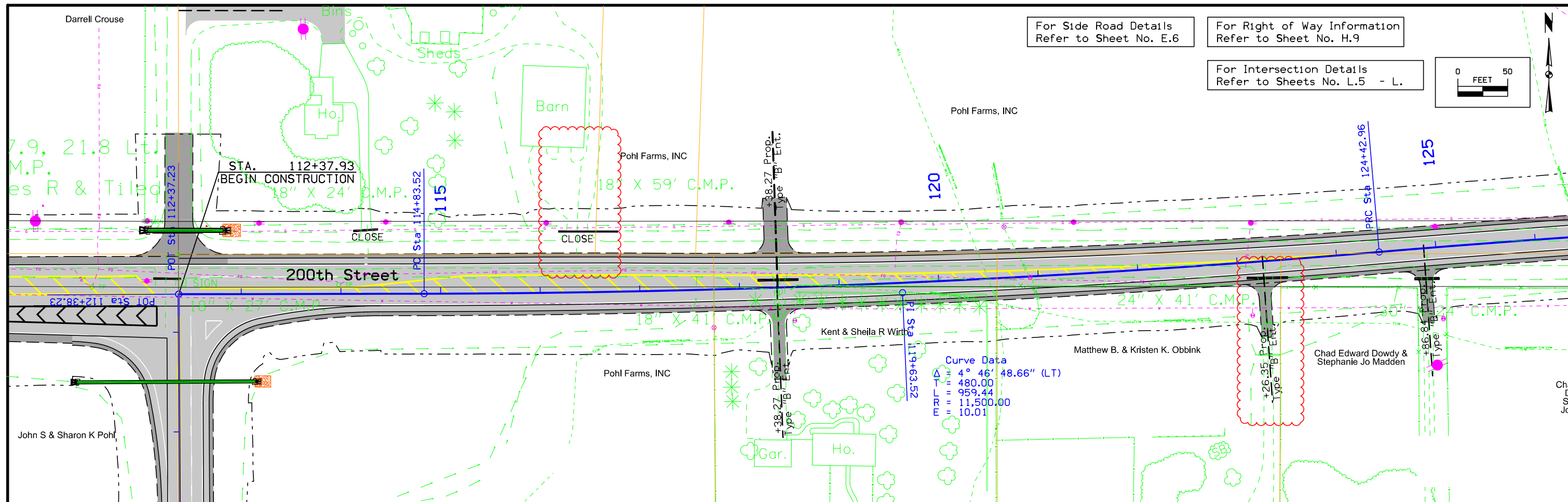


FILE NO.	ENGLISH	DESIGN TEAM	<b>Snyder &amp; Associates</b>	BOONE COUNTY	PROJECT NUMBER	<b>STPN-017-2(27)--2J-08</b>	SHEET NUMBER	<b>D.8</b>
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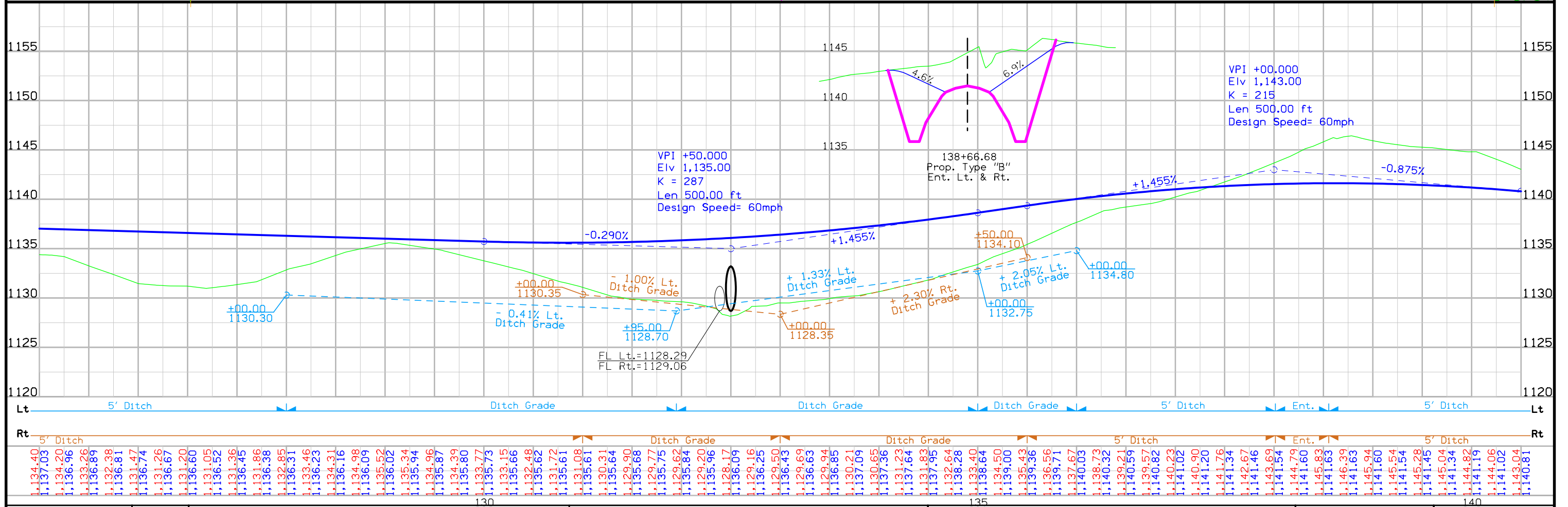
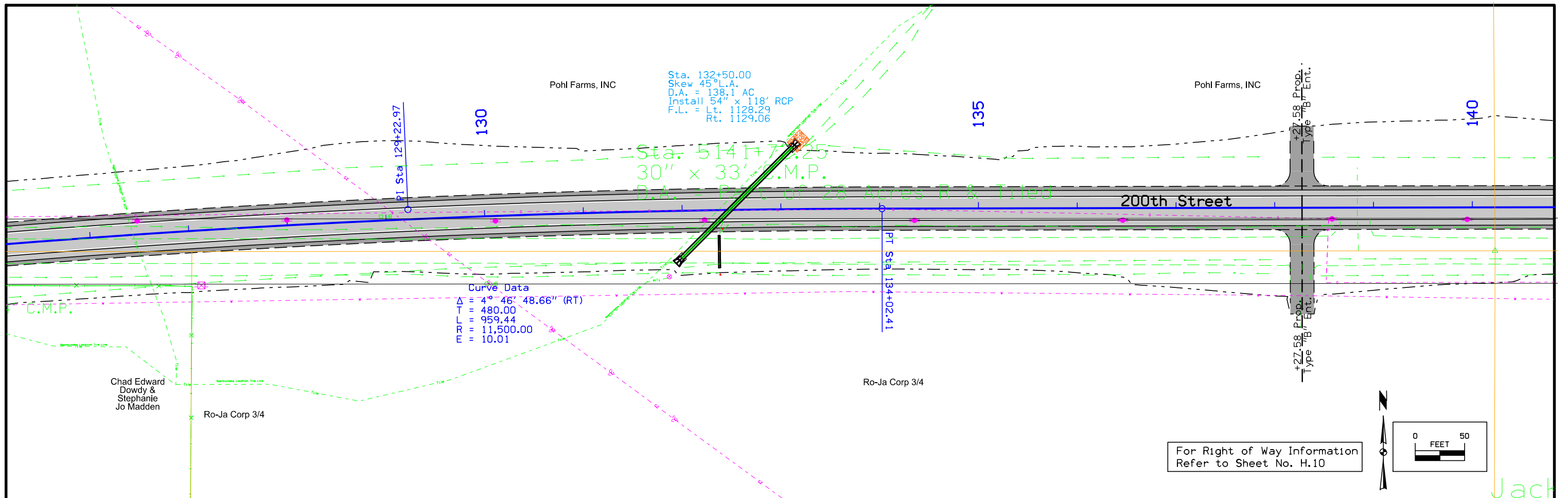




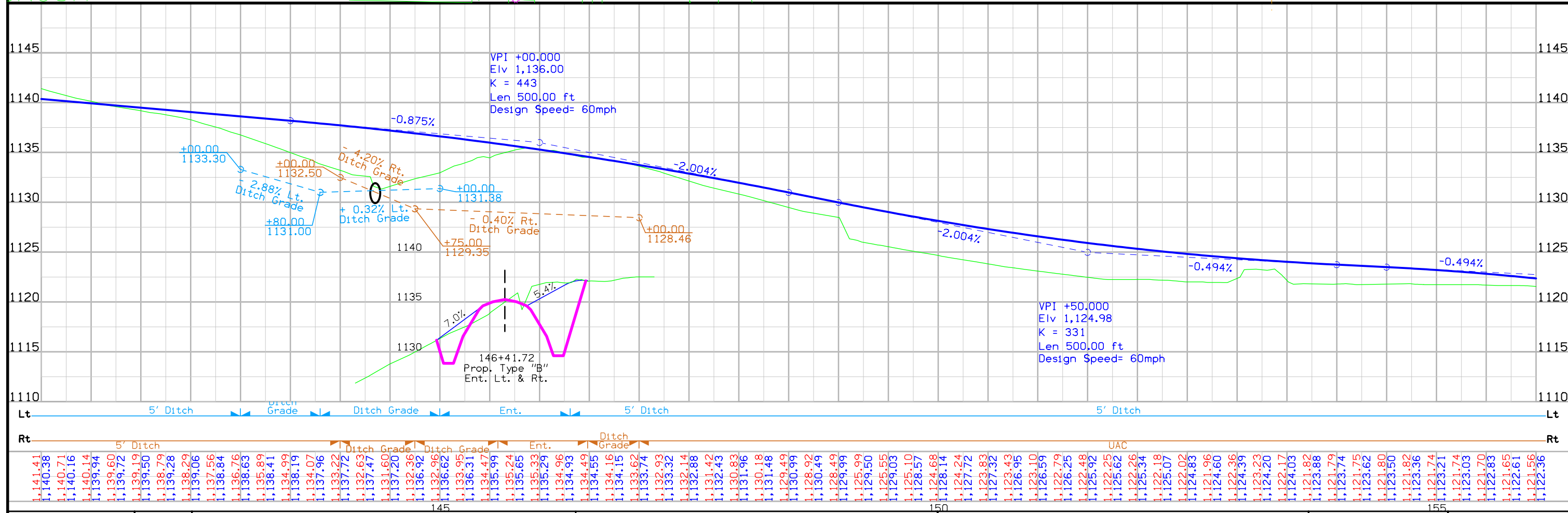
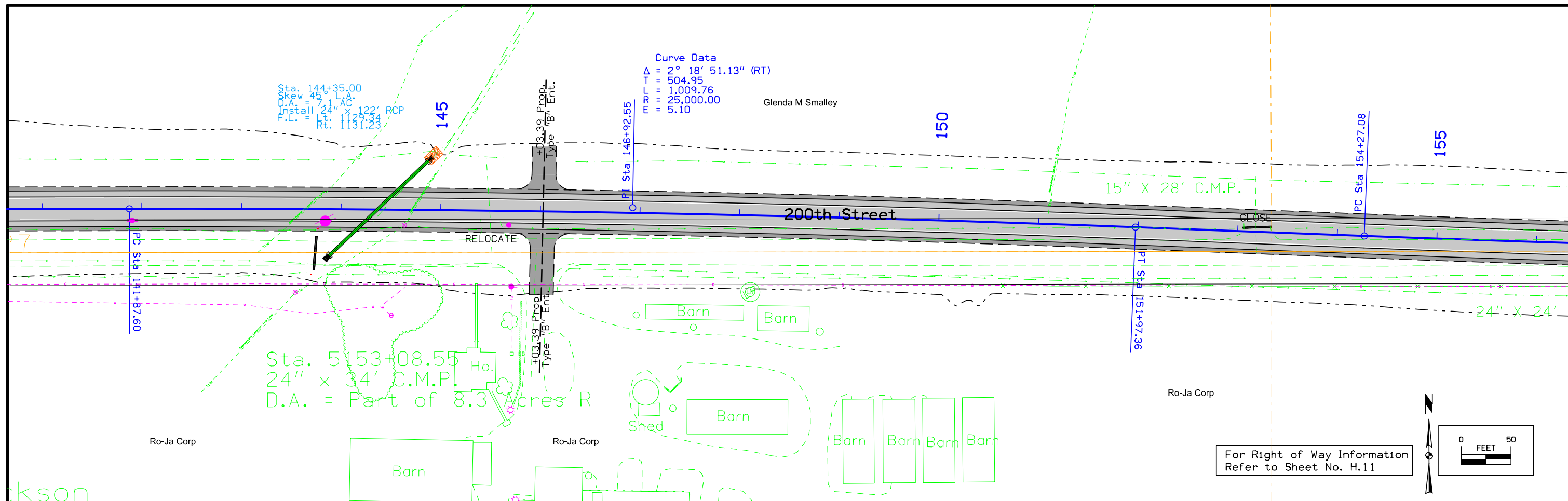
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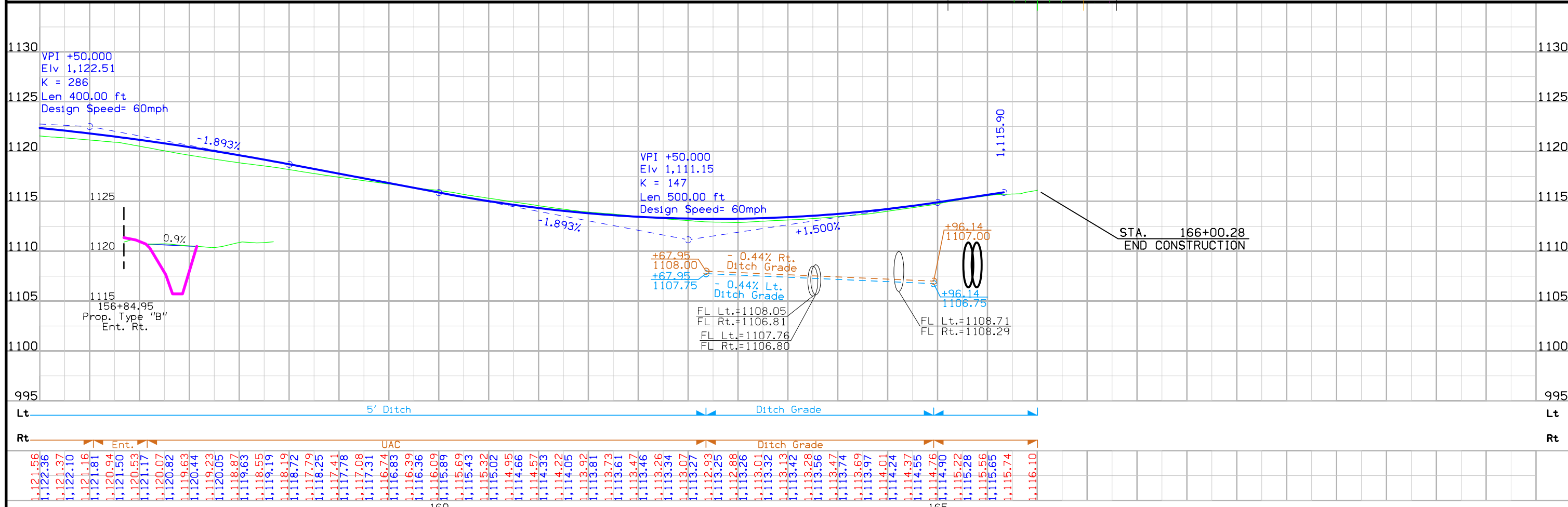
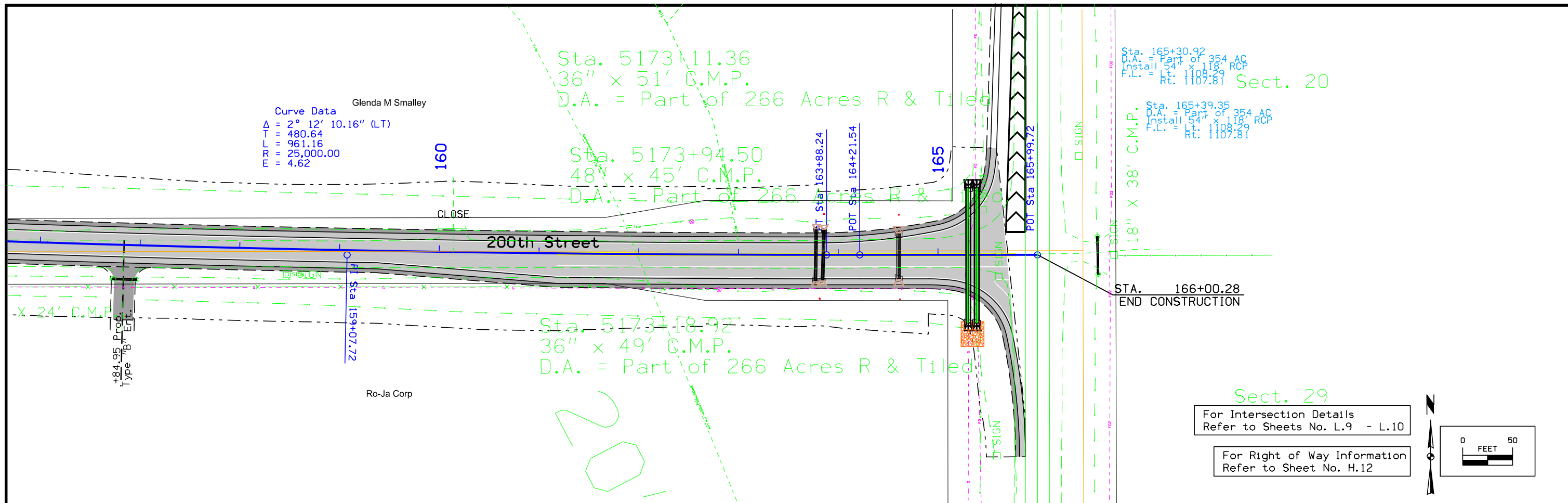


Lt	5' Ditch		Ent.	5' Ditch		Lt
Rt	Ditch Grade		Ent.	Ditch Grade		Rt
	1.141.04	1.145.82		1.132.33	1.138.63	
	1.140.49	1.145.47		1.132.42	1.138.56	
	1.140.13	1.145.12		1.132.25	1.138.48	
	1.139.83	1.144.77		1.132.43	1.138.41	
	1.139.43	1.144.42		1.132.96	1.138.34	
	1.139.13	1.144.06		1.133.50	1.138.27	
	1.139.03	1.143.71		1.134.01	1.138.19	
	1.138.57	1.143.36		1.134.43	1.138.12	
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	1.139.31	1.133.58				
	1.139.18	1.133.34				
	1.134.77	1.133.10				
	1.139.05	1.132.86				
	1.133.80	1.132.62				
	1.138.95	1.132.38				
	1.133.23	1.132.14				
	1.138.85	1.131.90				
	1.132.90	1.131.66				
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	1.132.42	1.130.46				
	1.138.56	1.130.22				
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	1.132.43	1.129.50				
	1.138.41	1.129.26				
	1.132.96	1.129.02				
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	1.132.42	1.127.82				
	1.138.56	1.127.58				
	1.132.25	1.127.34				
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	1.132.43	1.126.86				
	1.138.41	1.126.62				
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	1.132.96	1.123.74				
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	1.133.50	1.123.26				
	1.136.70	1.123.02				
	1.138.63	1.122.78				
	1.132.42	1.122.54				
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	1.132.43	1.097.84				
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	1.132.42	1.096.16				
	1.138.56	1.095.92				
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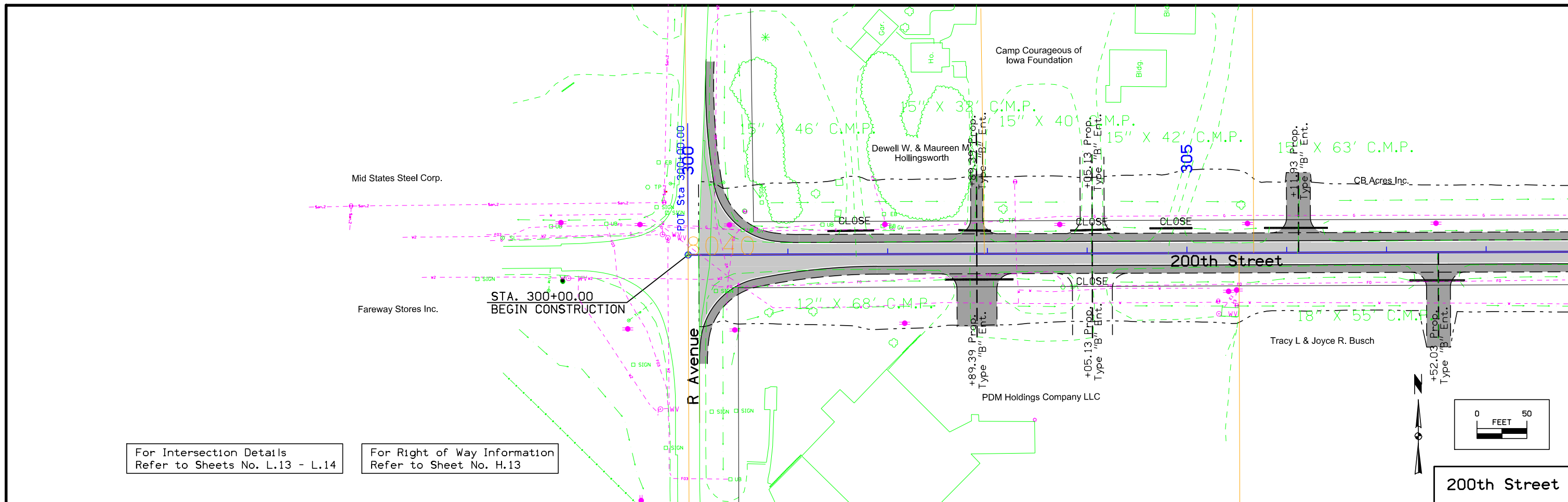
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		<b>Snyder &amp; Associates</b>		<b>STPN-017-2(27)--2J-08</b>	<b>D.12</b>





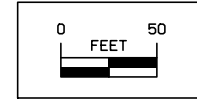
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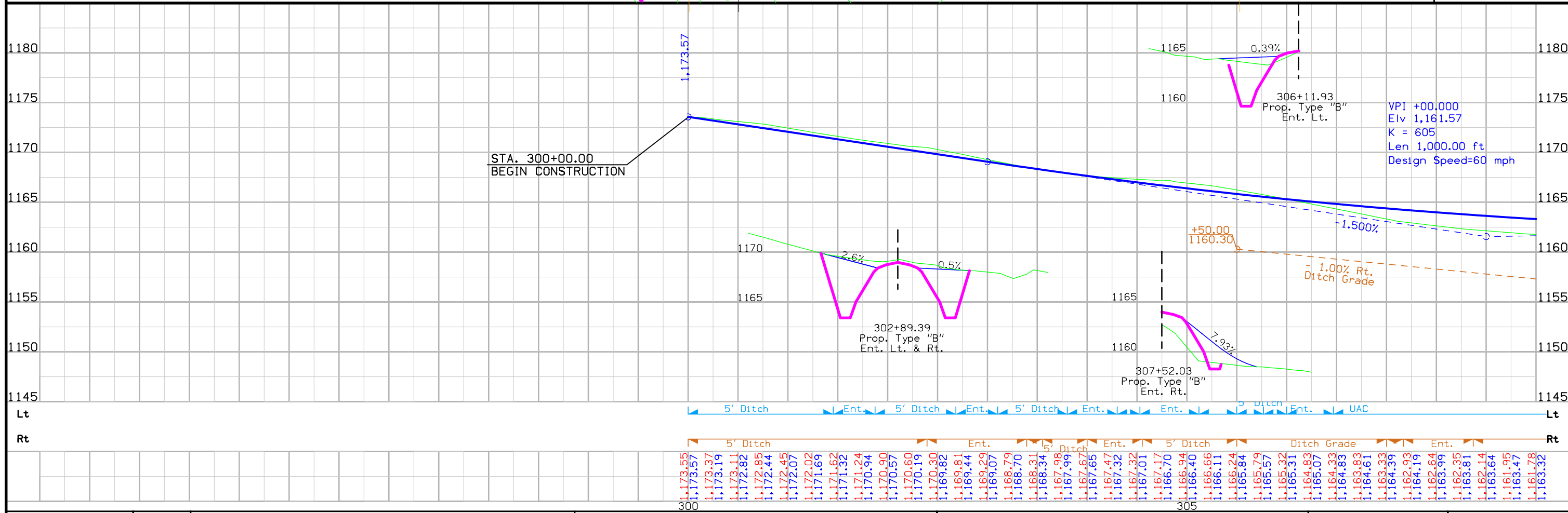


For Intersection Details  
Refer to Sheets No. L.13 - L.14

For Right of Way Information  
Refer to Sheet No. H.13



200th Street



Sta. 5066+89.0  
24" x 43' C.M.  
D.A. = 10 Acres

310

315

320

200th Street

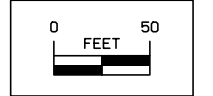
Tracy L & Joyce R. Busch

+58.81 Prop. Ent. Type "B"

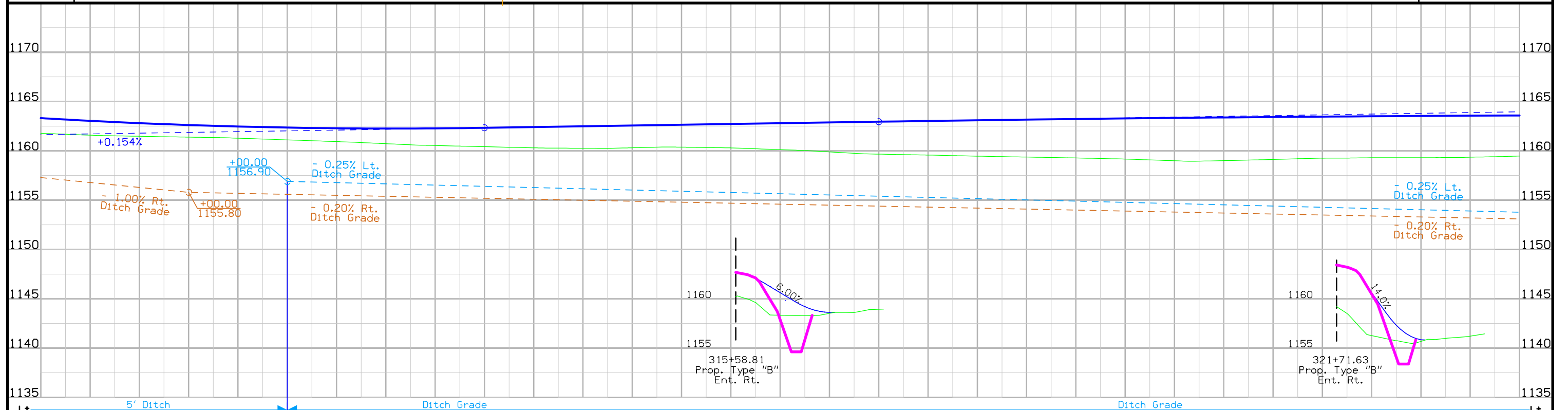
+71.63 Prop. Ent. Type "B"

+71.63 Prop. Ent. Type "B"

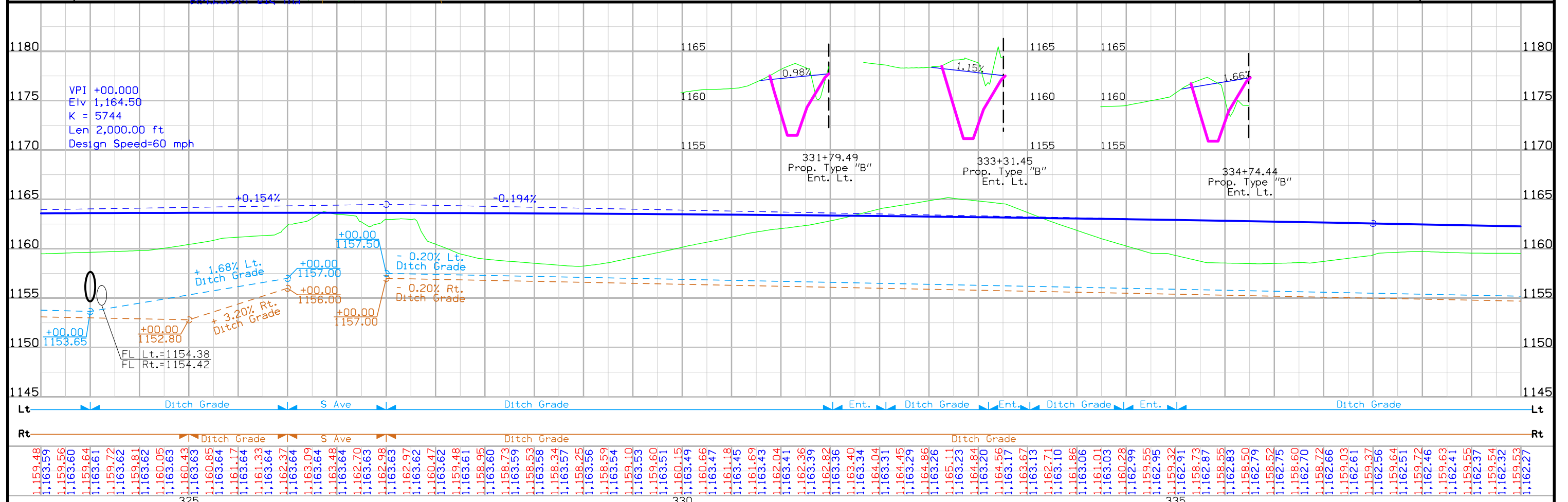
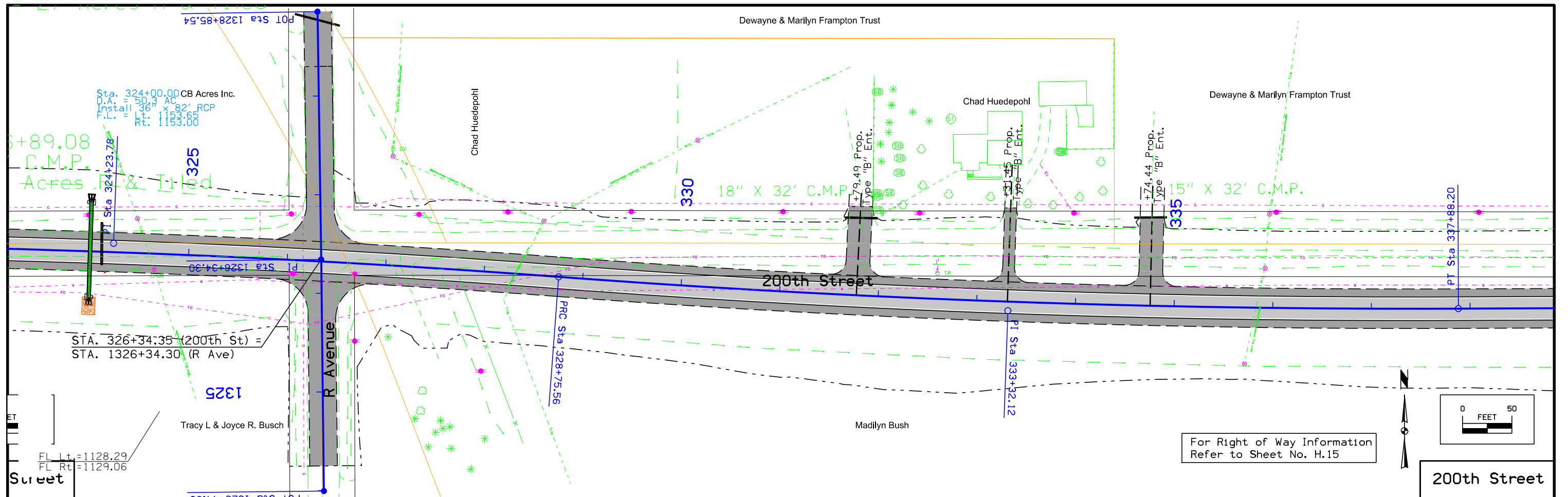
For Right of Way Information Refer to Sheet No. H.14



200th Street

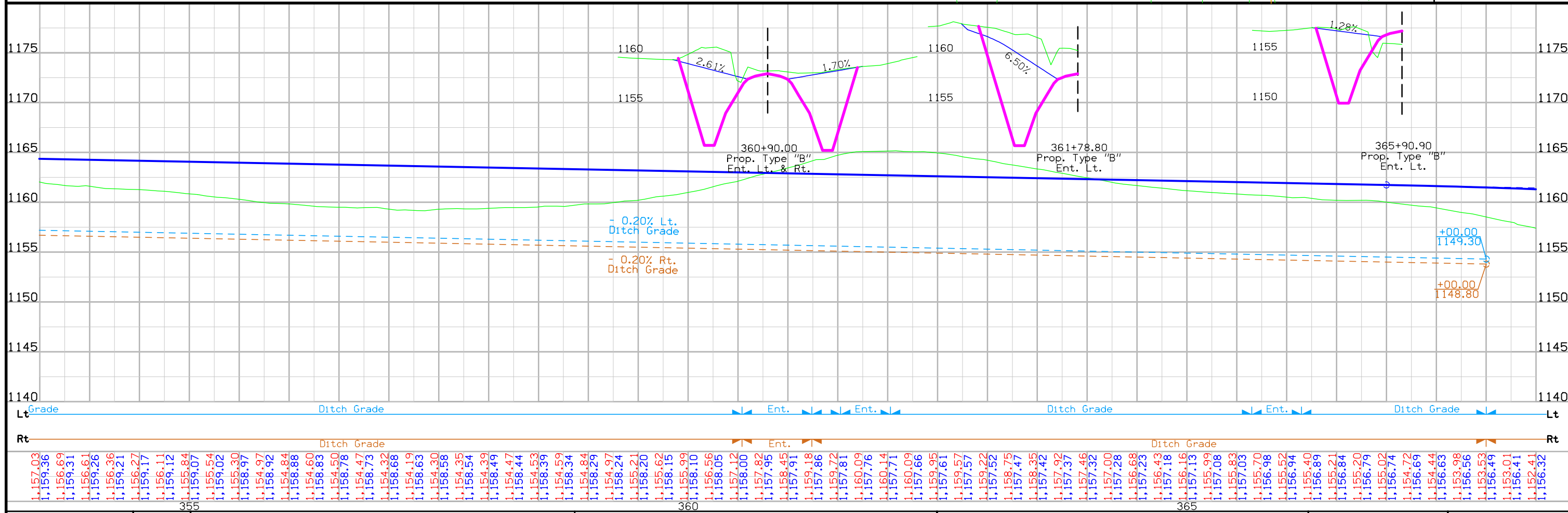
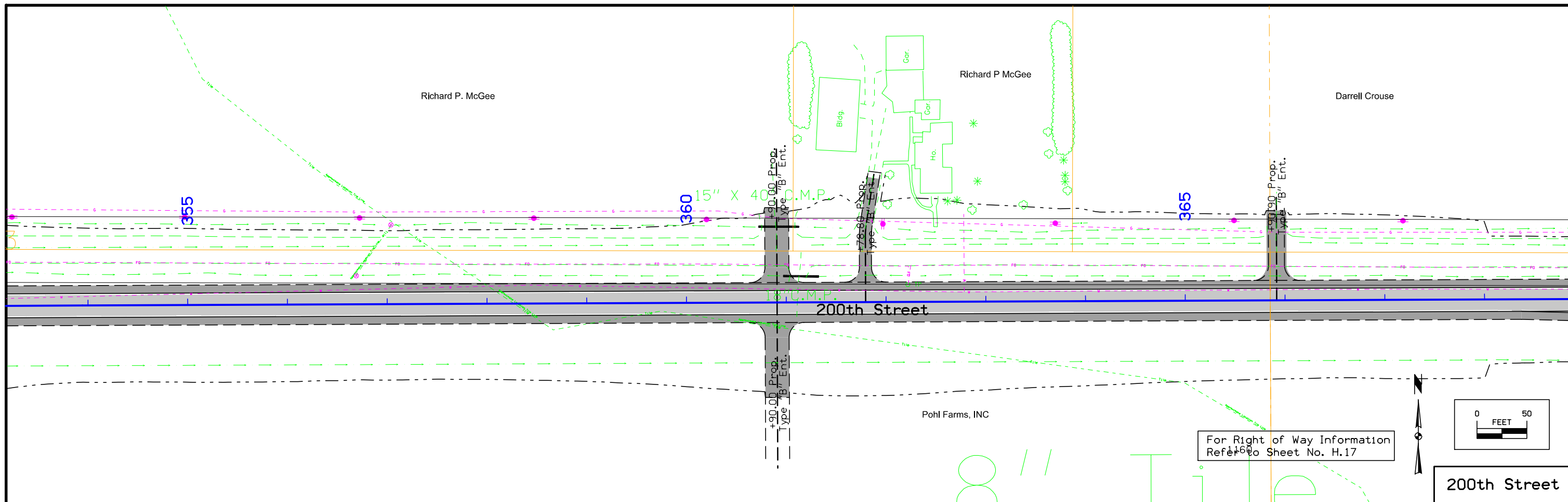


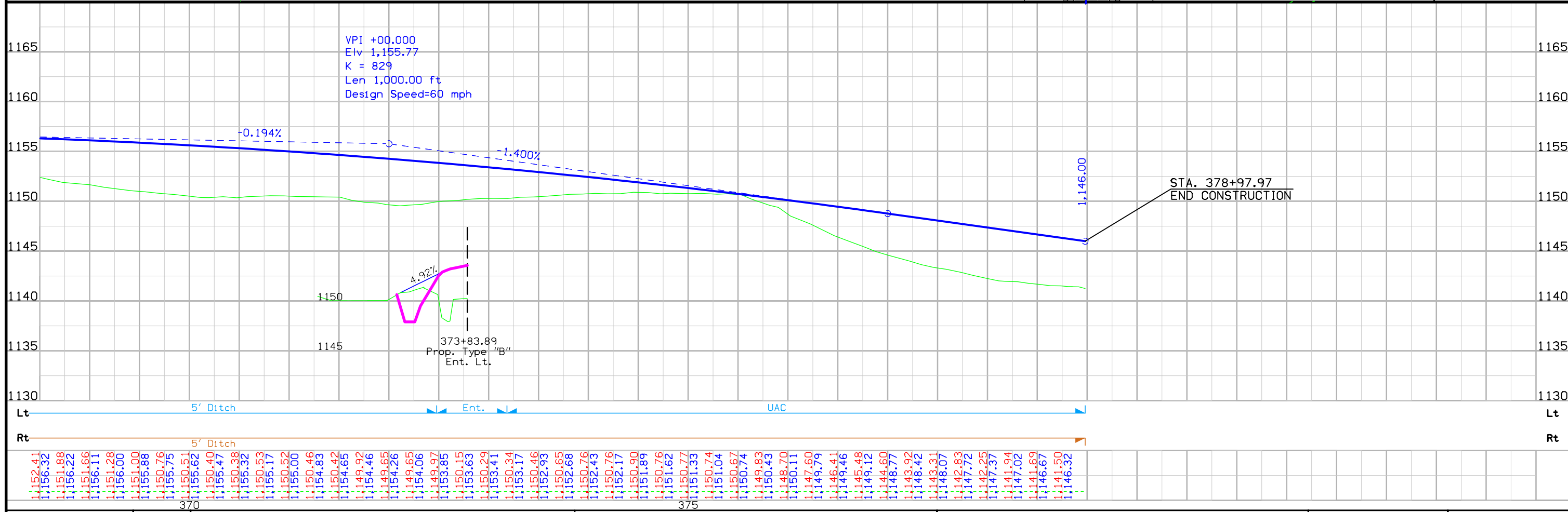
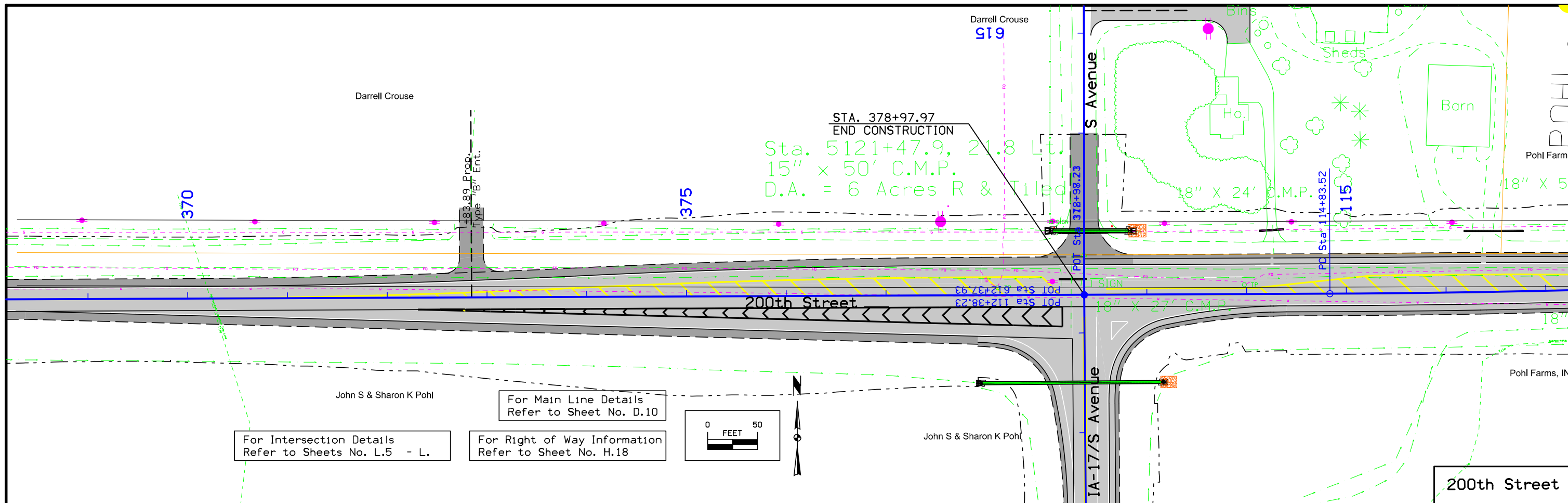
Lt										Ditch Grade										Ent.										Ditch Grade										Rt																																																																															
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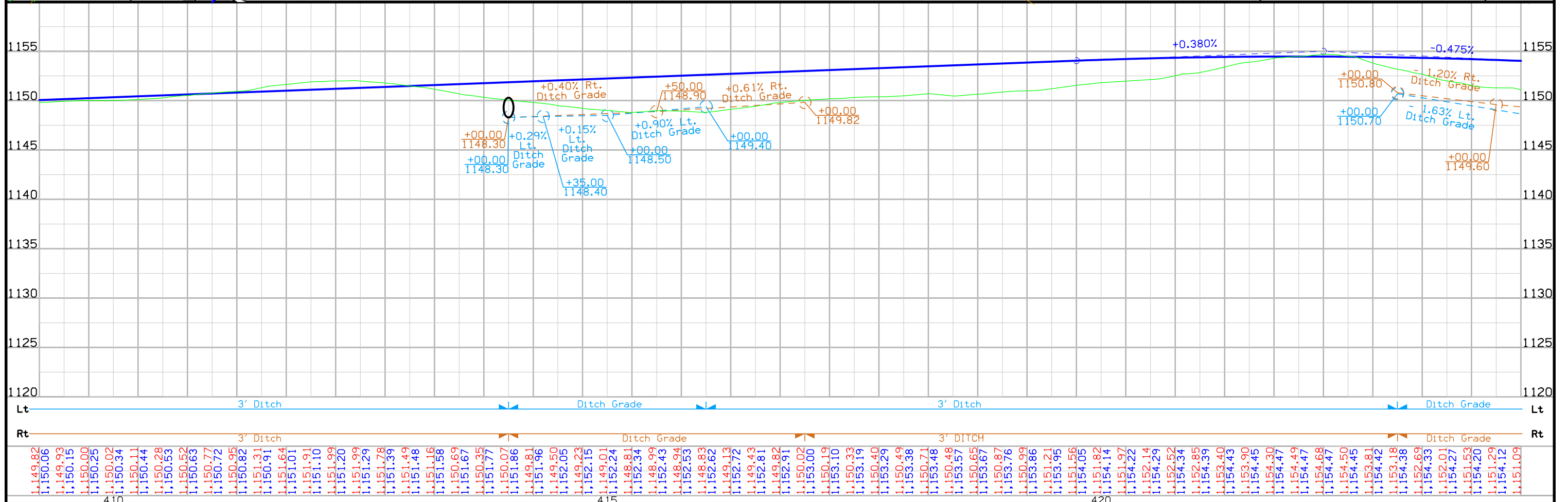
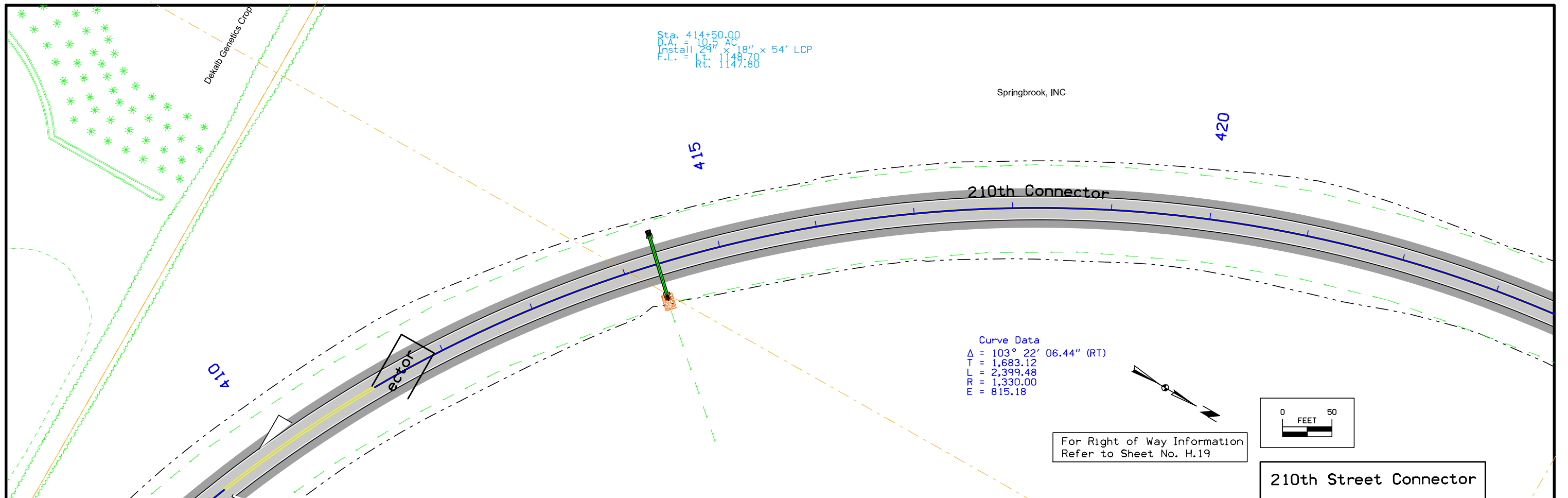
FILE NO.	ENGLISH	DESIGN TEAM	BOONE COUNTY	PROJECT NUMBER	SHEET NUMBER
		<b>Snyder &amp; Associates</b>		<b>STPN-017-2(27)--2J-08</b>	<b>E.3</b>



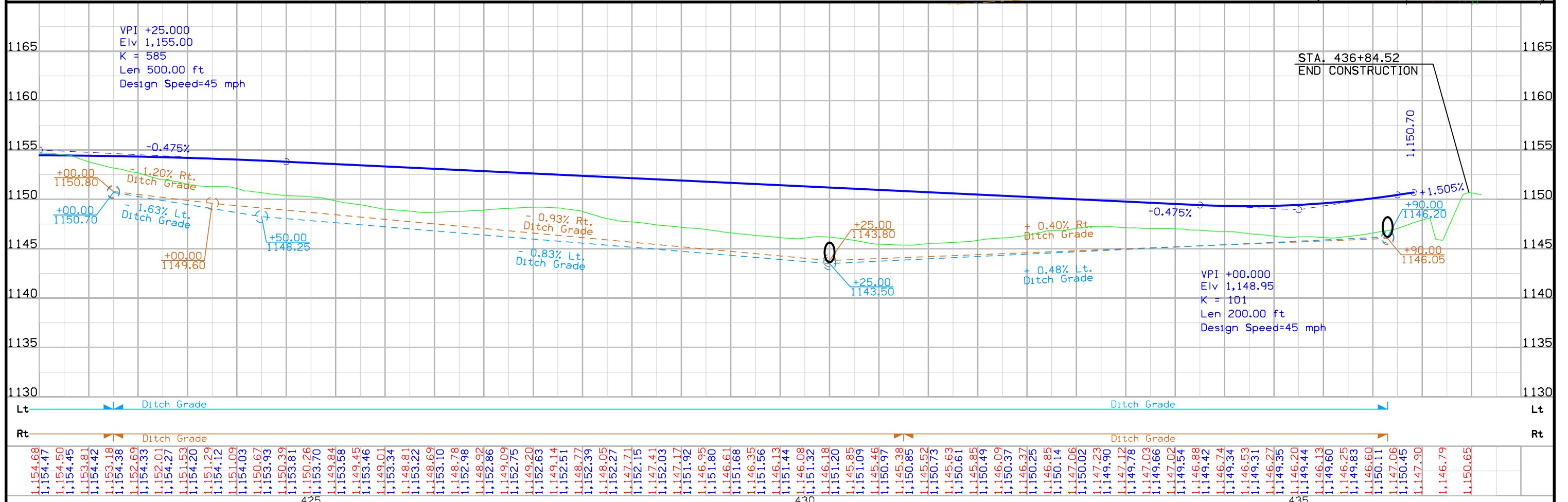
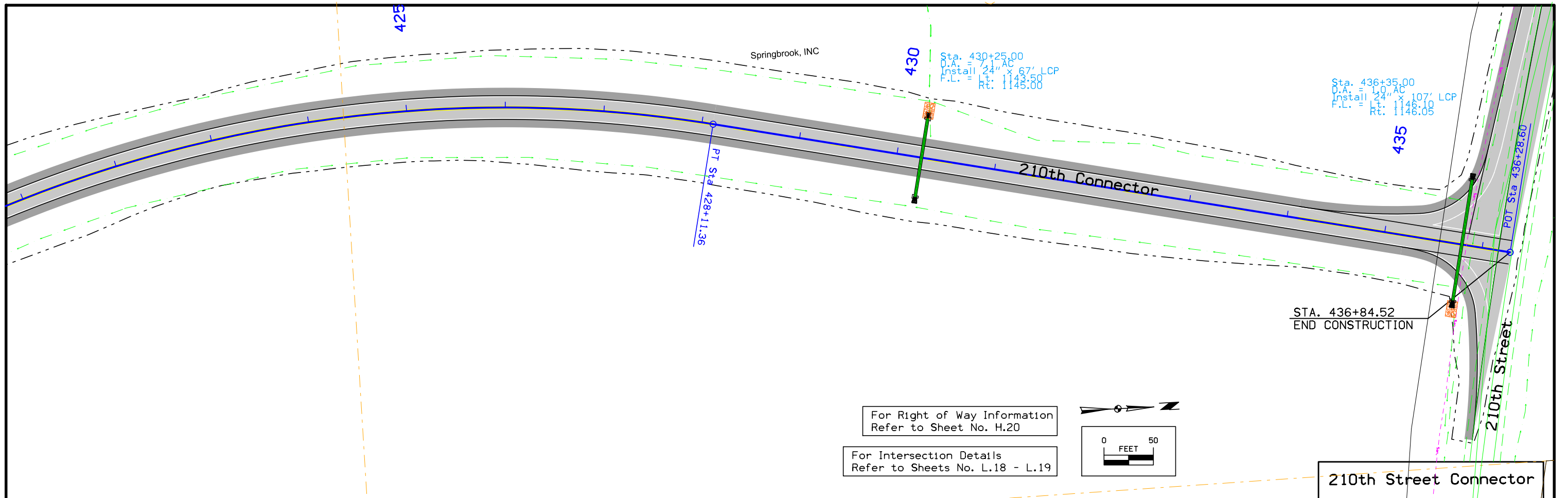












FILE NO.	ENGLISH	DESIGN TEAM	<b>Snyder &amp; Associates</b>	BOONE COUNTY	PROJECT NUMBER	<b>STPN-017-2(27)--2J-08</b>	SHEET NUMBER	<b>E.9</b>
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## Survey Information

Boone County  
Project # STPN-017-2(23)—2J-08  
IA Hwy 17 From US Hwy 30 to 200th St.  
& East from Intersection Quartz Ave &  
200th St. to IA Hwy 17  
Sap-878  
PIN 16-08-017-010

### General Information

Measurement units for this survey are US survey feet. IA Hwy 17 From US Hwy 30 to 200th St. & East from Intersection Quartz Ave & 200th St. to IA Hwy 17. Project datum and control information is provided by Design Survey Office.

### Vertical Control

Vertical Control was established on 8 monuments on the project designated as points CP1, CP2, CP24, CP3, CP31, CP43, CP82, and CP84 These monuments are stable and are expected to hold vertical reasonably well. The vertical datum is NAVD88. Datum was transferred from the Iowa RTN reference station at Ames to the projects monuments mentioned above by using concurrent 4-6 hour static measurements and post processing connecting vectors. Geoid 12 A was used in processing. The Ames reference station orthometric height used is 972.524 US Survey Ft.

This survey observed 3 Boone Control Monuments and 2 NGS BM's with published NAVD88 heights to validate the reference station height used in computation of project heights. The survey heights determined at the three county monuments and 2 NGS BM's validate the NAVD 88 height used at the Ames reference station and the positions of the project control monuments within acceptable tolerance.

Vertical datum for this survey is NAVD88 (Computed using Geoid g12au3). Ellipsoidal Height GRS80 was computed at project points by conducting four to six hour GPS static observations.

Boone County Control mark designated 99-024 has a published height of 1168.02 = CP24 This Survey Height. = 1168.02.

Boone County Control mark designated 99-031 has a published height of 1120.54 = CP31 This Survey Height. = 1120.52.

Boone County Control mark designated 99-043 has a published height of 1170.11 = CP43 This Survey Height. = 1170.10.

NGS Bench mark designated GSVS 082 has a published height of 1139.78 = CP82 This Survey Height. = 1139.792.

NGS Bench mark designated GSVS 084 has a published height of 1139.78 = CP82 This Survey Height. = 1144.382.

### Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 8 (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. Coordinates were determined by conducting four to six hour GPS static observations.

### Alignment Information

#### IA Hwy 17

The alignment for this survey is a retrace of As-built Plans Project #'s FR-17-1(11)—2G-77, FN-17-2(12)—21-08 & FN-17-2(12)—21-08. Survey stationing was equated at POT Sta. 634+15.1 As-built Plans Project # FR-17-1(11)—2G-77, and was run ahead with an equation.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 634+15.1 This Survey  
= POT Sta. 634+15.1 As-built Plans Project # FR-17-1(11)—2G-77

PI Sta. 674+86.47 This Survey  
= PI Sta. 674+85.53 As-built Plans Project # FR-17-1(11)—2G-77

PI Sta. 712+64.66 Back This Survey  
= PI Sta. 68+62.66 Ahead This Survey  
= PI Sta. 69+56.21 As-built Plans Project # FN-17-2(12)—21-08

PI Sta. 114+87.99 This Survey  
= PI Sta. 114+87.69 As-built Plans Project # FN-17-2(12)—21-08

PI Sta. 123+30.67 This Survey  
= PI Sta. 123+29.28 As-built Plans Project # FN-17-2(12)—21-08

PI Sta. 149+01.12 This Survey  
= PI Sta. 149+01.01 As-built Plans Project # F-17-2(4)—20-08

PI Sta. 175+33.57 This Survey  
= PI Sta. 175+33.57 As-built Plans Project # F-17-2(4)—20-08

#### 200th St.

The alignment for this survey was locating the section corners on approximate center line of 200th St. Survey stationing was equated to the plan at PI Sta. 5175+33.75 As-built plans project # F-17-2(4)—20-8, and was run back and ahead with no equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 5175+33.75 This Survey  
= PI Sta. 5175+33.75 As-built plans project # F-17-2(4)—20-8

#### 210th St.

The alignment for this survey is a retrace of As-built Plans Project #'s RFMX-(1)—56-08 & FN-17-2(12)—21-08. Survey stationing was equated to the plan at PI Sta. 1061+75.65, and was run back and ahead with no equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

CP Sta. 1004+61.8 This Survey  
= PI Sta. 1072+24.1 As-built Plans Project # RFMX-(1)—56-08

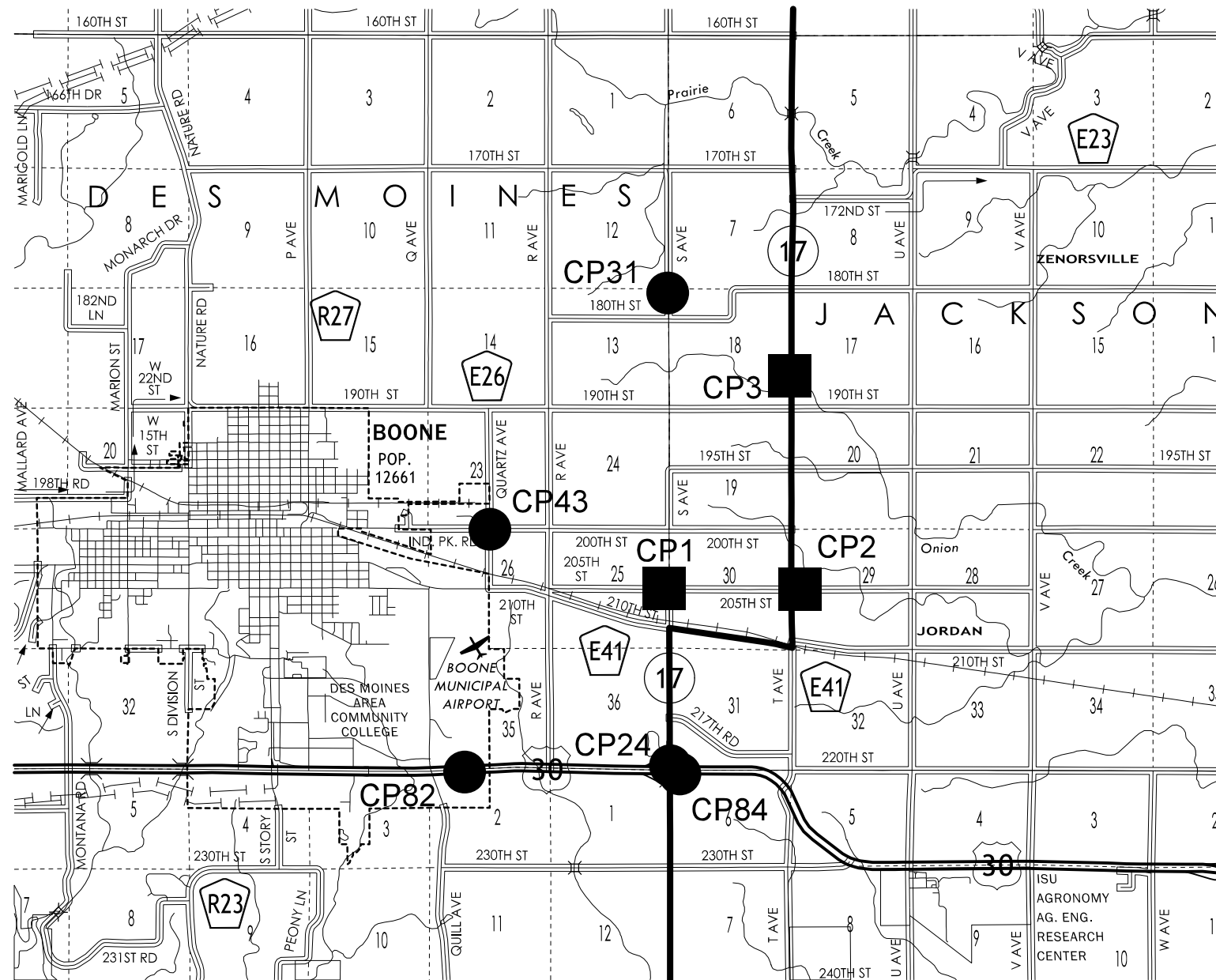
CP Sta. 1004+61.8 This Survey  
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PI Sta. 1065+75.65 This Survey  
= PI Sta. 1065+75.65 As-built Plans Project # FN-17-2(12)—21-08

PI Sta. 1065+56.20 This Survey  
= PI Sta. 1069+56.21 As-built Plans Project # FN-17-2(12)—21-08

## 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 8

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

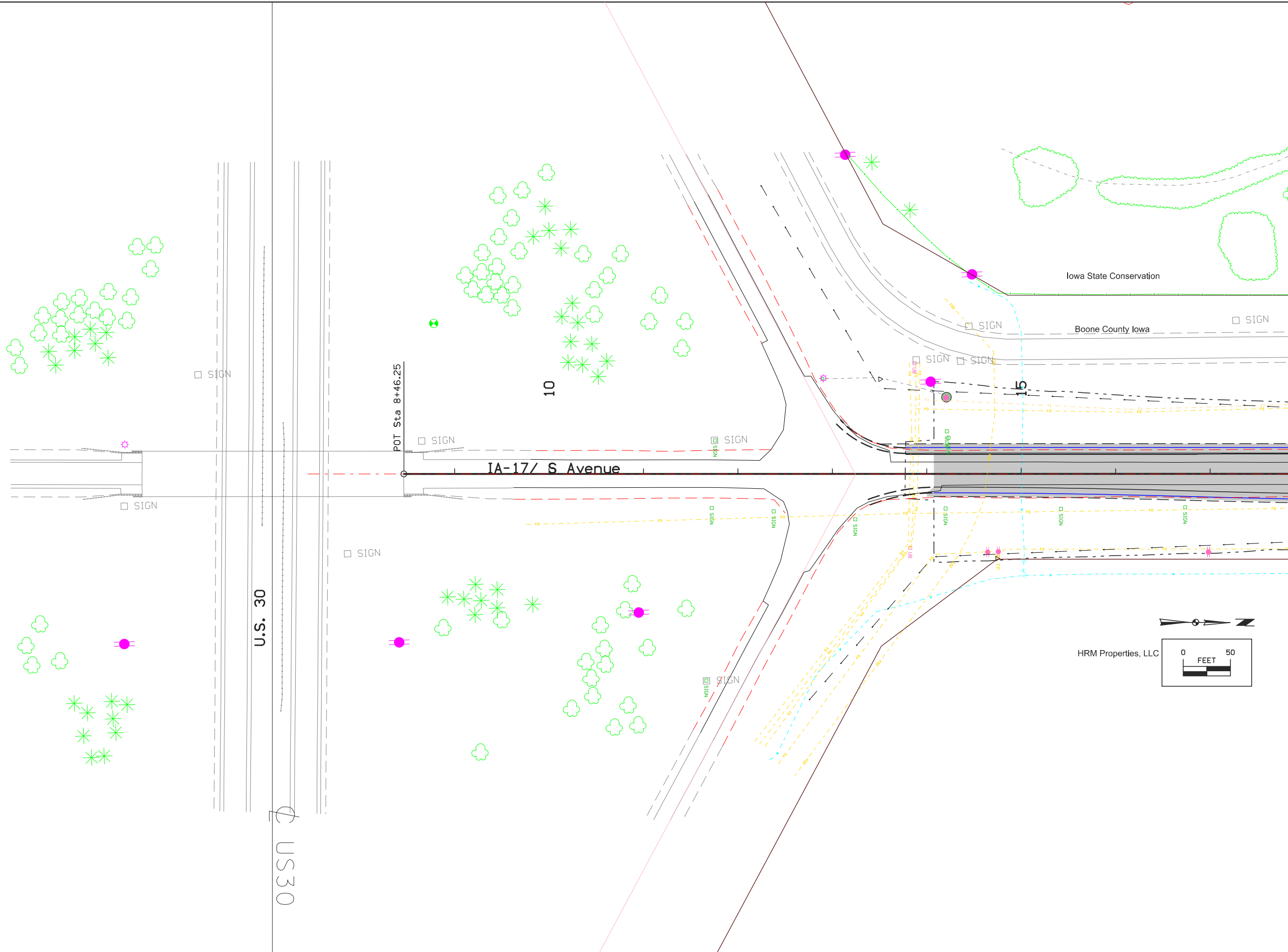
# HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

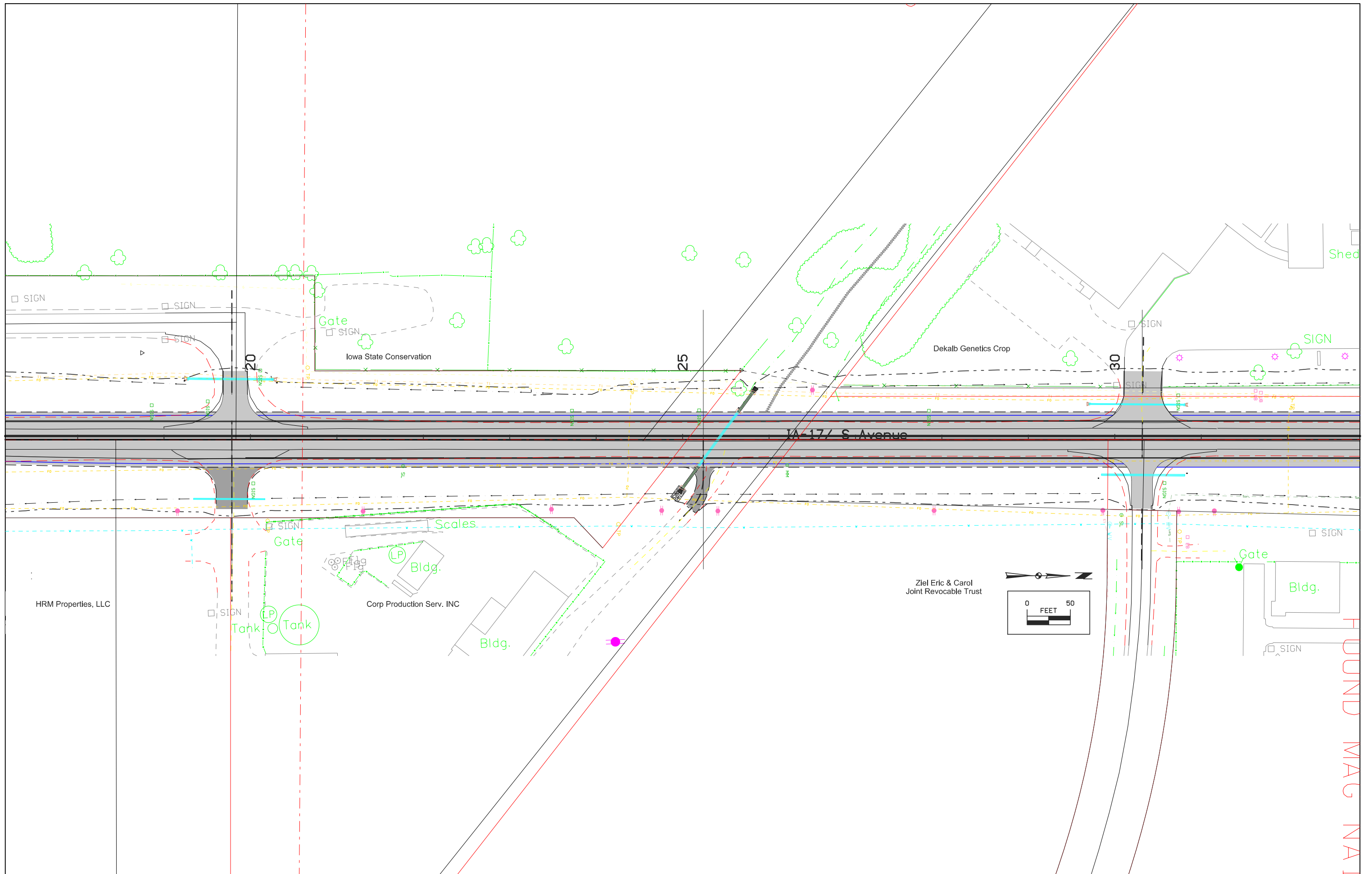
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VERT. DATUM: NAVD88

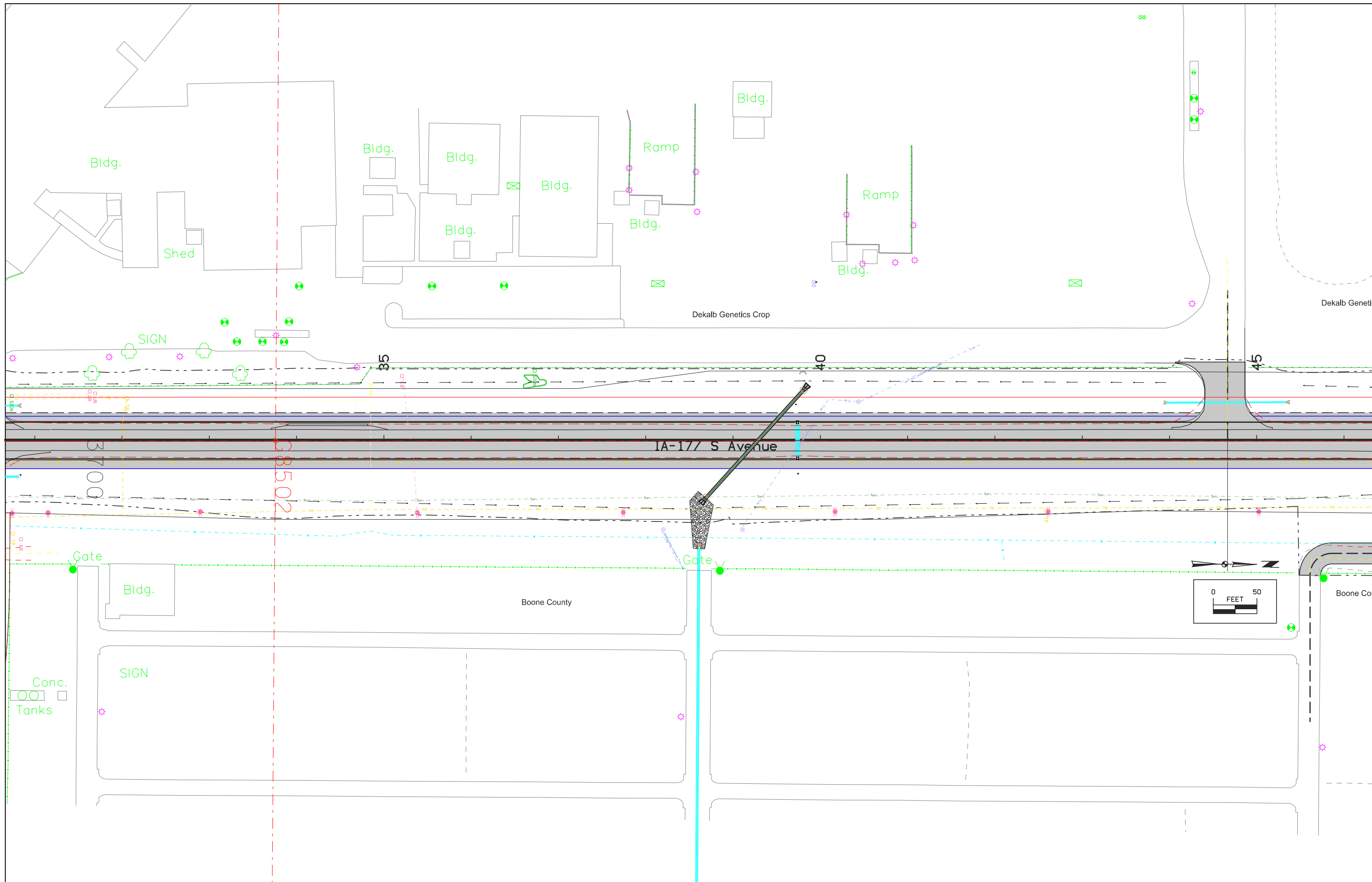
Ia. Regional Coordinate System Zone 8

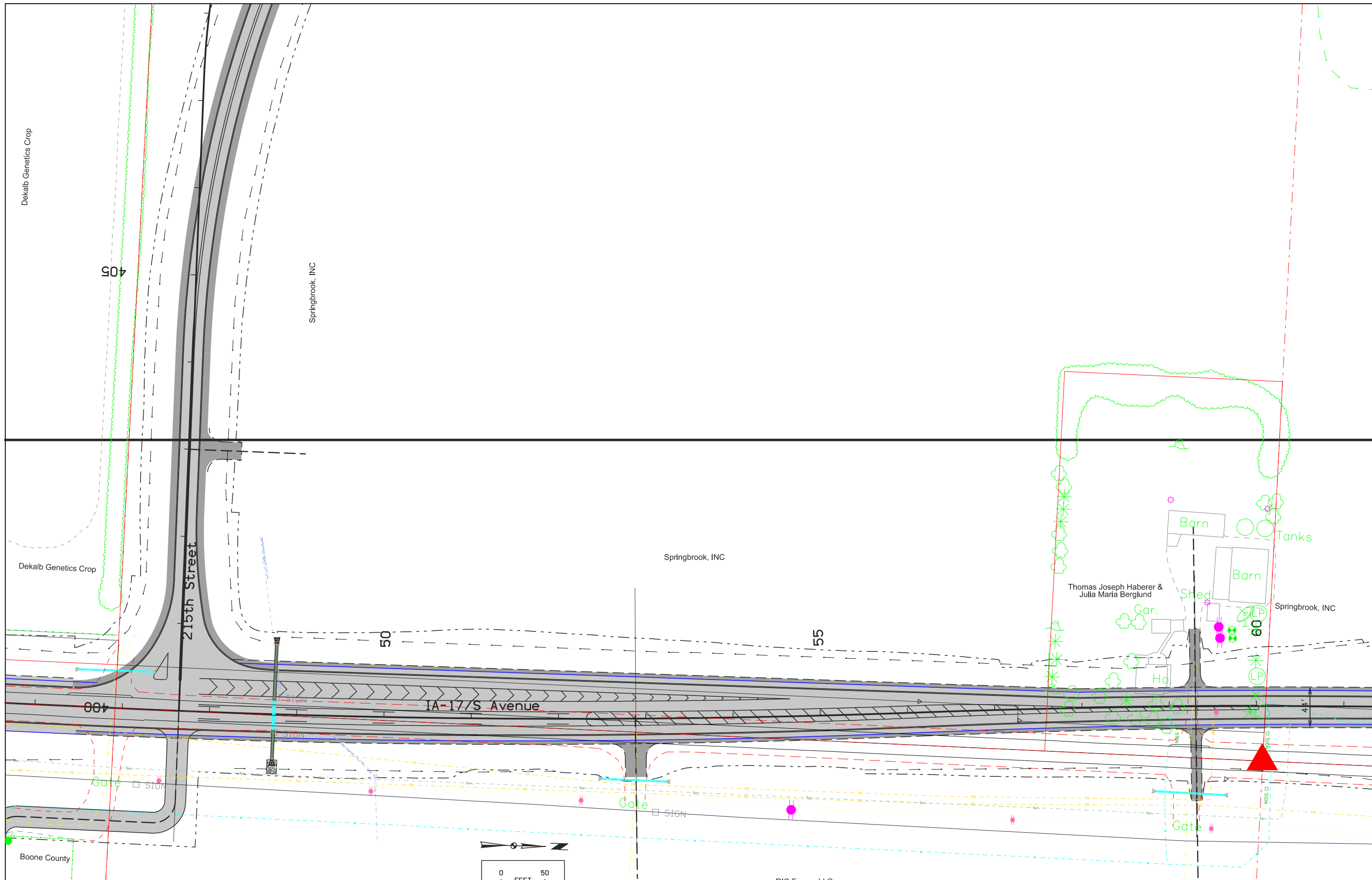
Point Name	Northing	Easting	Elevation	Feature Definition	Description
CP1	7658276.76	18472905.14	1150.24	FENO	SET FENO MONUMENT_240' W OF INTERS. S AVE & 205TH ST_34' N OF 205TH ST_55' E OF FARM ENT._33' SE OF POWER POLE
CP2	7658268.25	18478857.22	1123.06	FENO	SET FENO MONUMENT_357' E OF INTERS. IA HWY 17 & 205TH ST._27' N OF 205TH ST_138' E OF FARM ENT._126' NE OF POWER POLE
CP24	7650518.7	18473197.66	1168.02	CP	FD DISK INSIDE PVC CASING STAMPED 99-24_164' N OF W.B. US HWY 30_63' NE OF NE COR BRG FLOOR_28' E OF IA HWY 17_158' NW OF POWER POLE
CP3	7667588.48	18478412.07	1102.24	FENO	SET FENO MONUMENT_1433' N OF INTERS. IA HWY 17 & 190TH ST_87' W OF IA HWY 17_217' SW OF FARM ENT @ CL IA HWY 17
CP31	7671232.32	18473079.31	1120.52	CP	FD DISK INSIDE PVC CASING STAMPED 99-31_1148' N OF INTERS. S AVE & 180TH ST_30' W OF S AVE_158' S OF HIGHTOWER POLES
CP43	7660875.51	18465285.39	1170.1	CP	FD DISK INSIDE PVC CASING STAMPED 99-43_51' SE OF INTERS. OF QUARTZ AVE & 200TH ST_45' E OF QUARTZ AVE_40' S OF 200TH ST34' N OF POWER POLE
CP82	7650237.63	18464179.29	1139.79	CP	FD STEEL ROD INSIDE PVC CASING_71' S OF E.B. US HWY 30_14' W OF FIELD ENT_1458' E OF INTERS. OF E.B. US HWY & CO. RD R27
CP84	7650162.34	18473611.35	1144.38	CP	FD NGS DISK IN CONC BASE STAMPED GSUS 084 2013_444' E OF IA HWY 17_114 S OF E.B. US HWY 30_263' E OF POWER POLE_173' NW OF E.B. ON RAMP



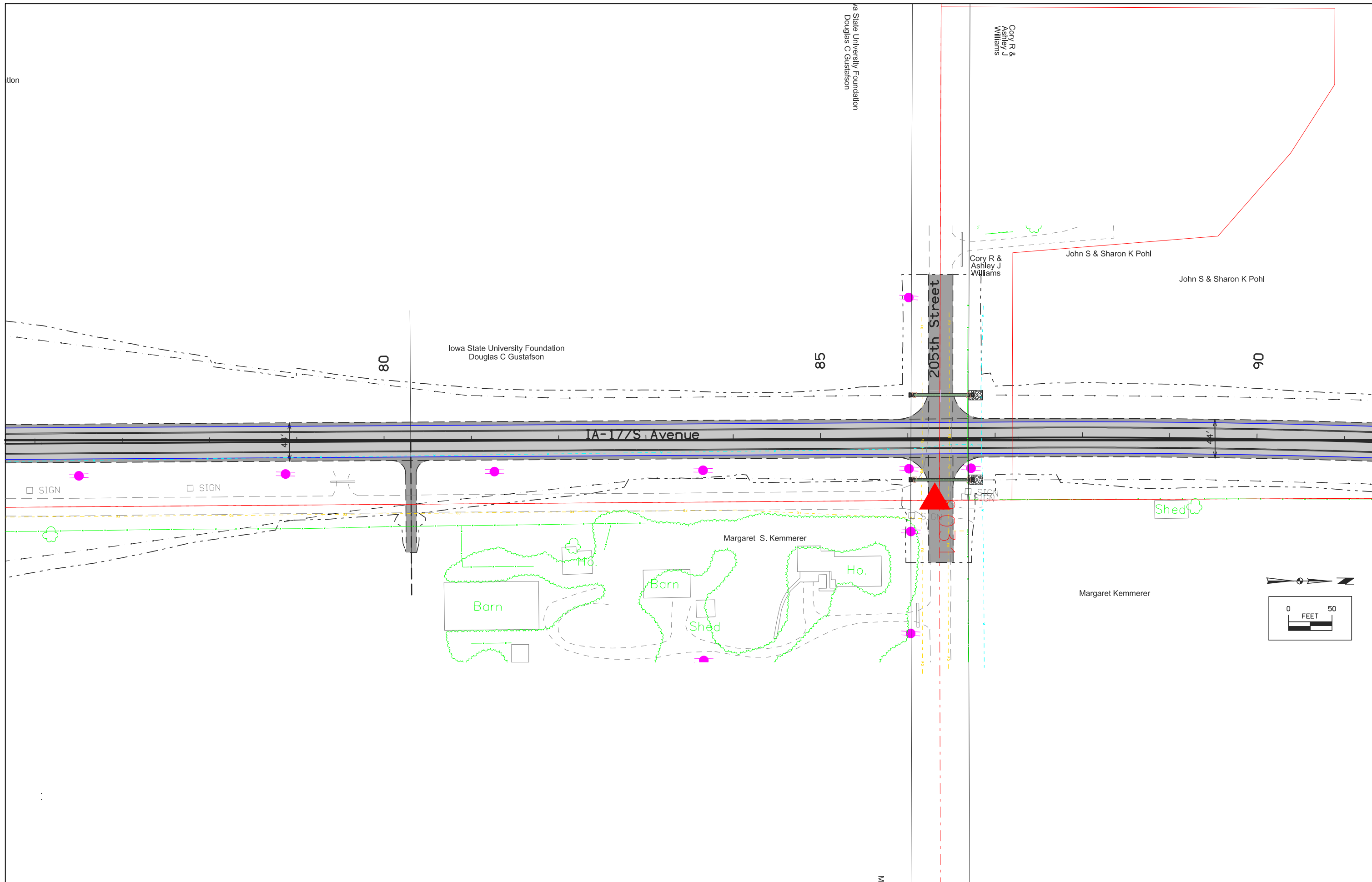


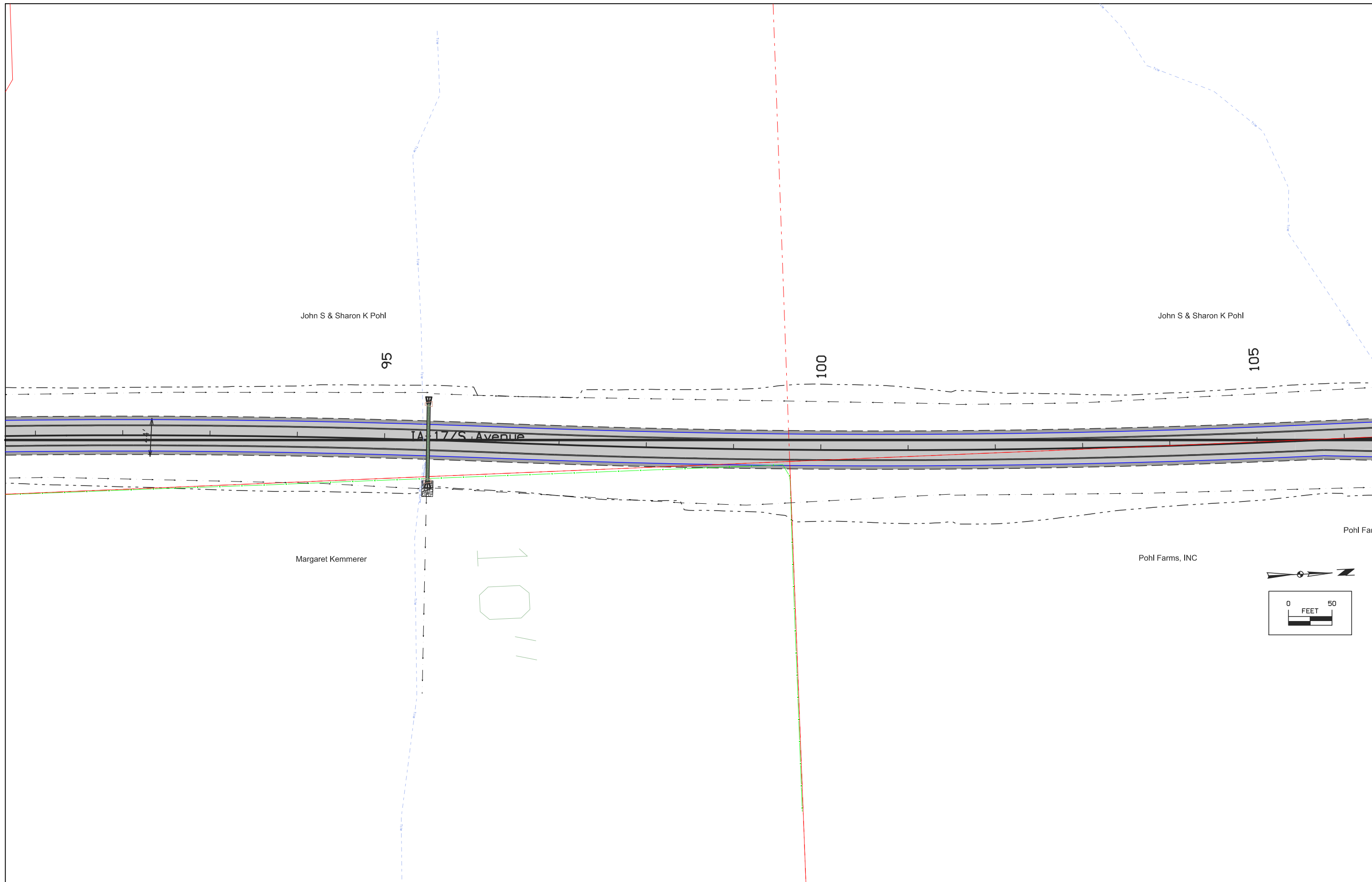


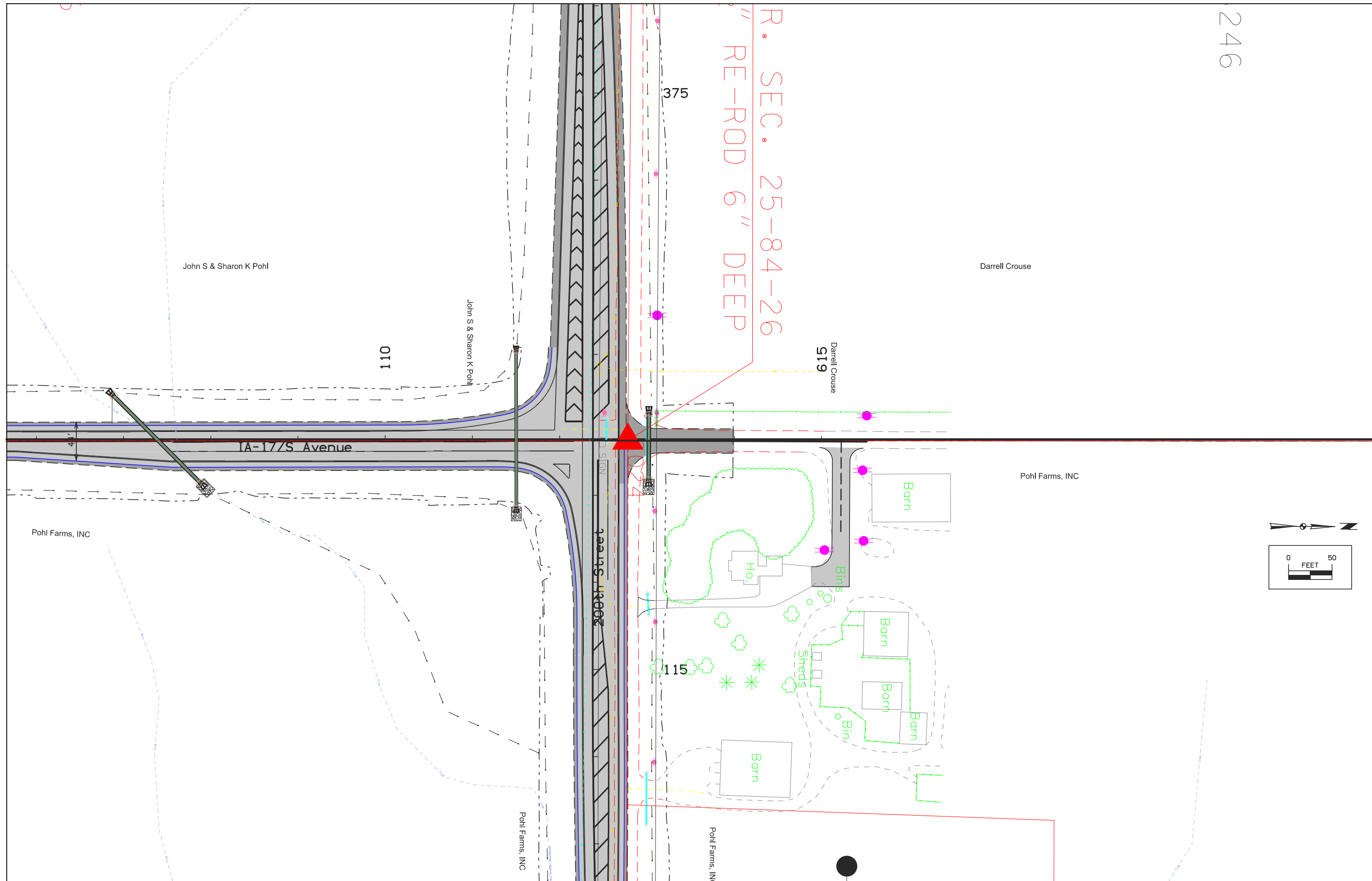


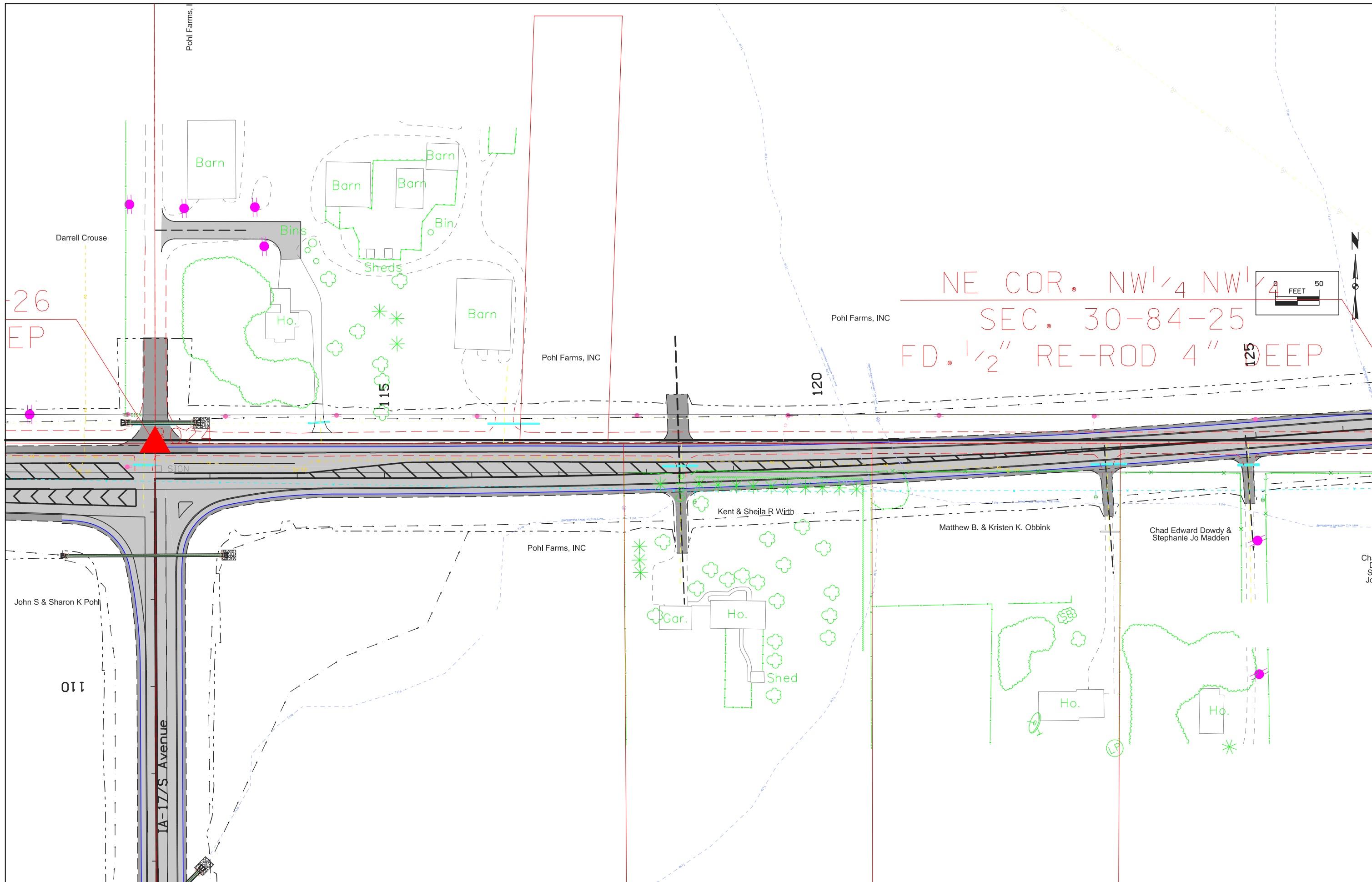


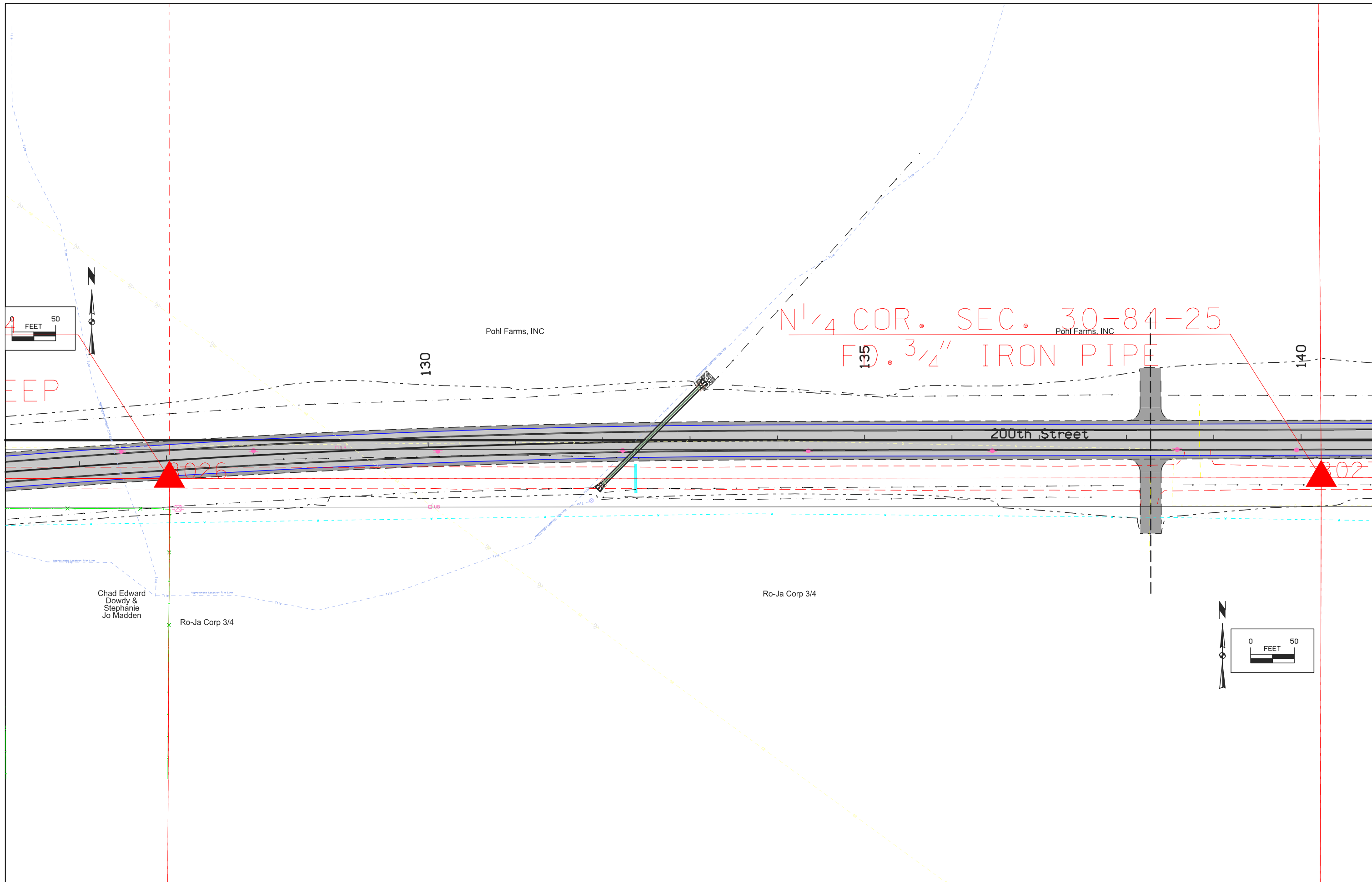




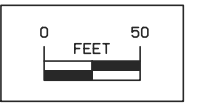
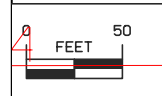






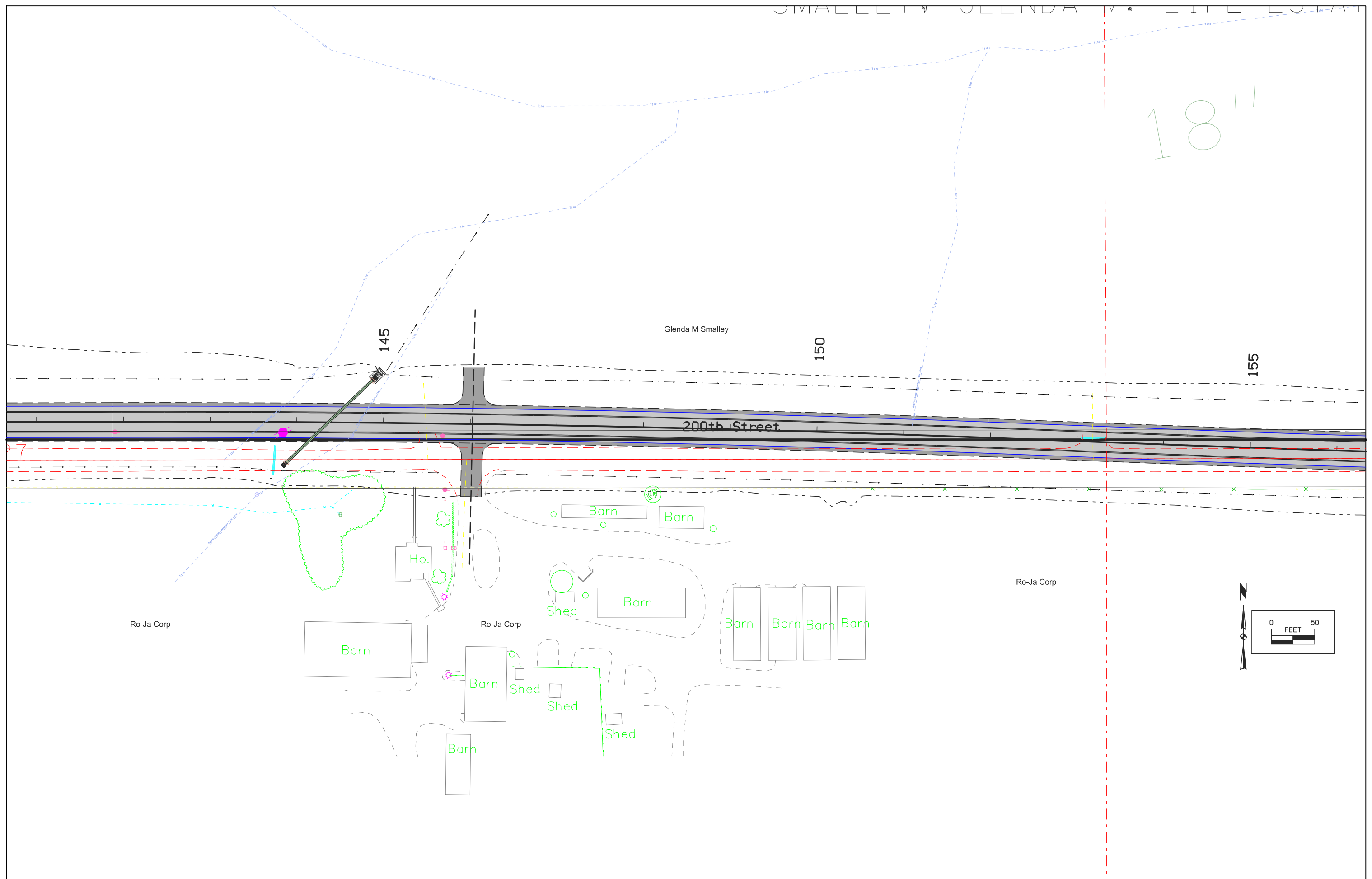


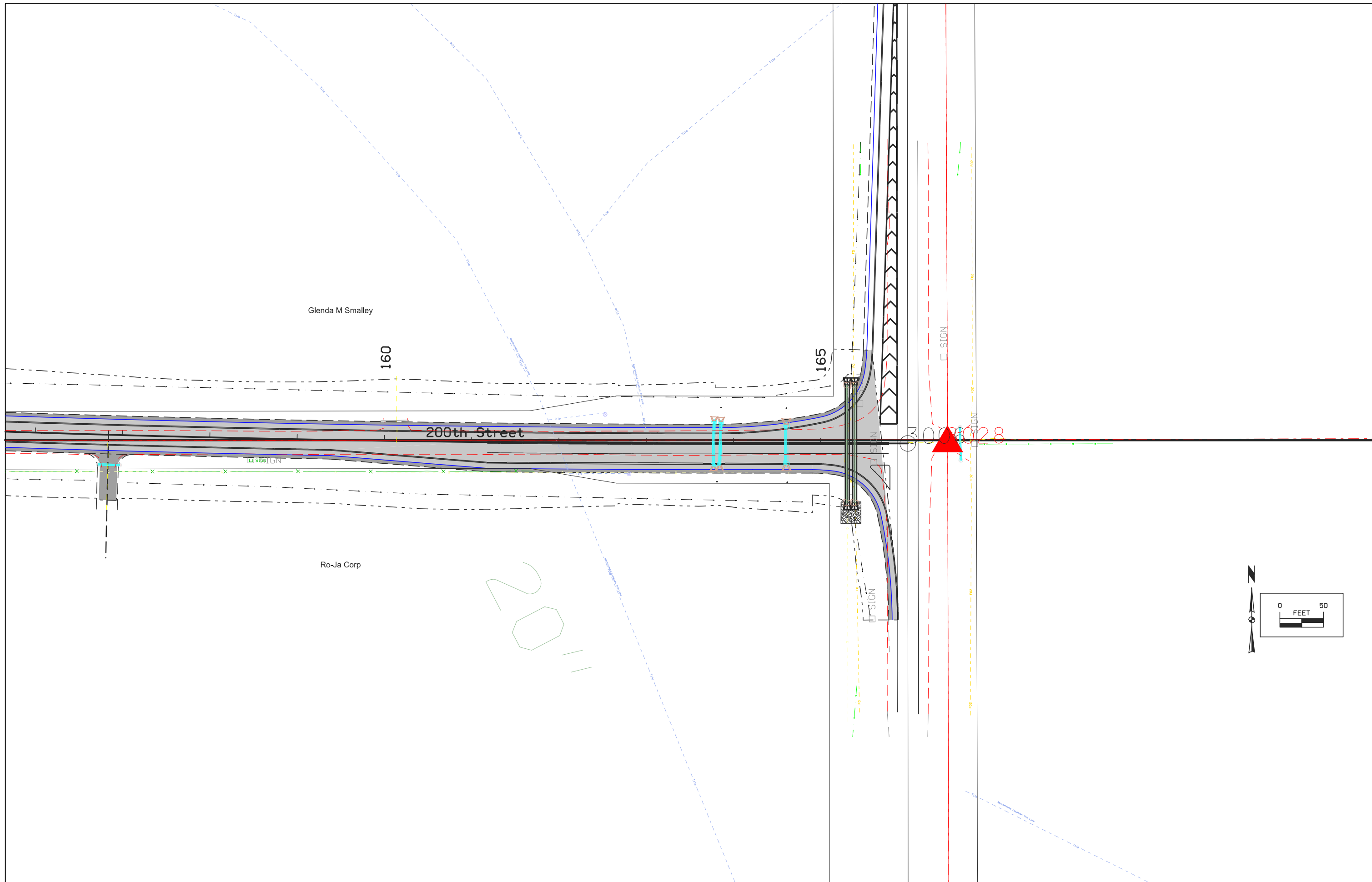
N<sup>1</sup>/<sub>4</sub> COR. SEC. 30-84-25  
 135) . 3/4" IRON PIPE



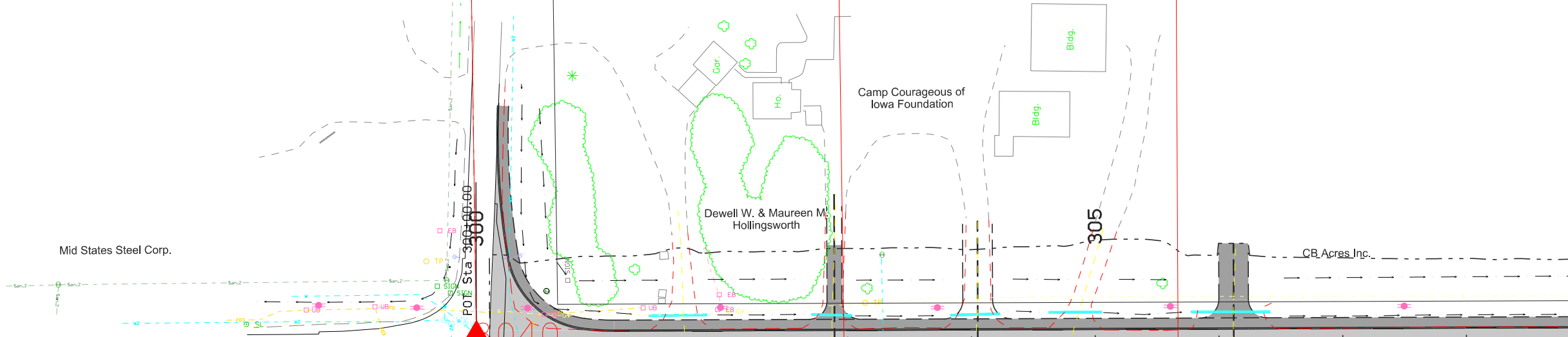


180'





Sect. 23



Mid States Steel Corp.

Dewell W. & Maureen M. Hollingsworth

Camp Courageous of Iowa Foundation

CB Acres Inc.

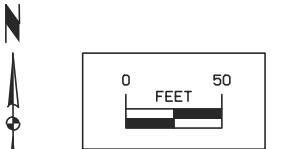
Fareway Stores Inc.

Tracy L & Joyce R. Busch

PDM Holdings Company LLC

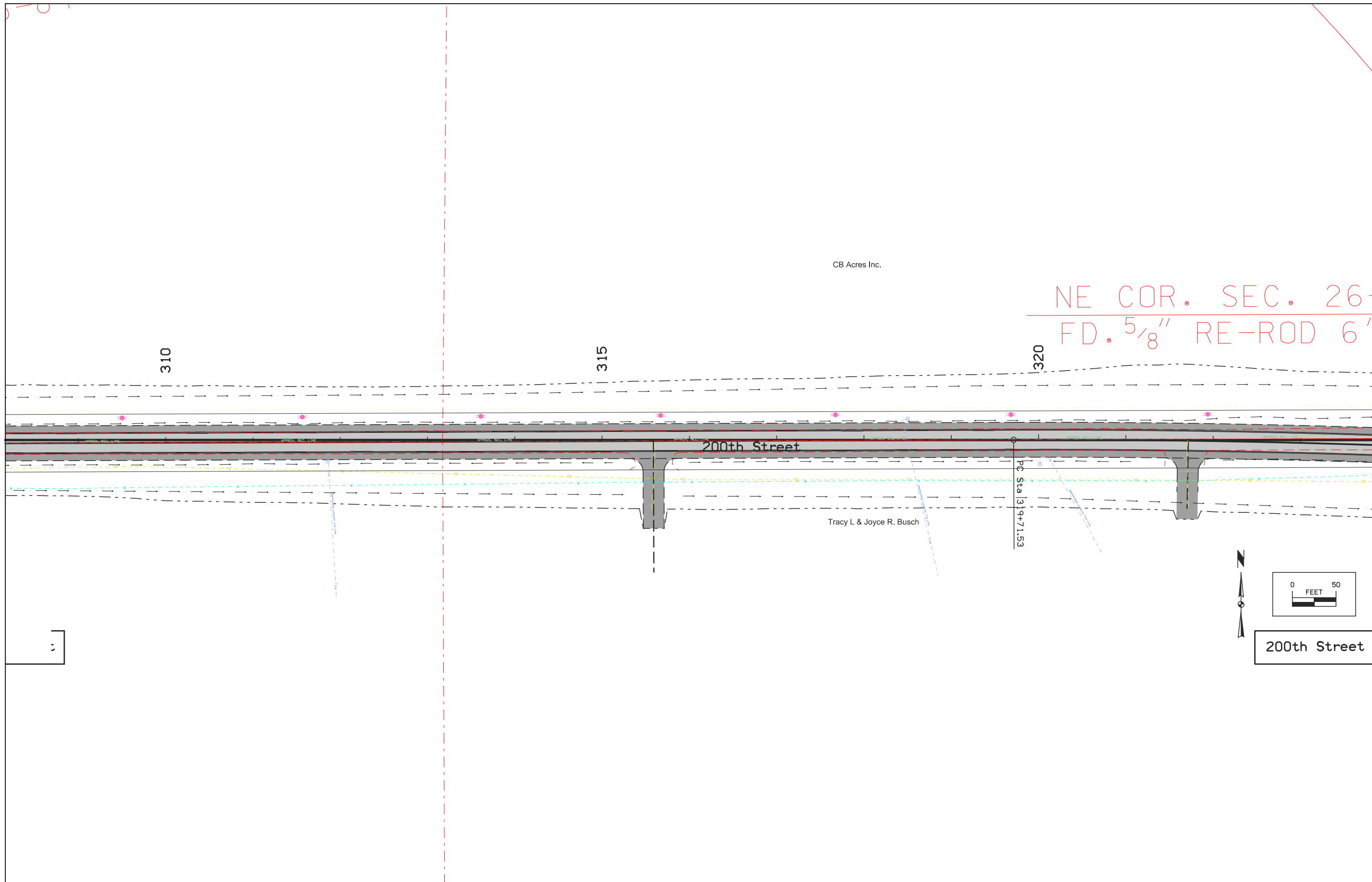
R Avenue

200th Street



200th Street

Sect. 26



310

315

320

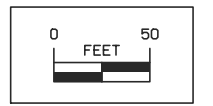
CB Acres Inc.

NE COR. SEC. 26-  
FD. 5/8" RE-ROD 6'

200th Street

Tracy L & Joyce R. Busch

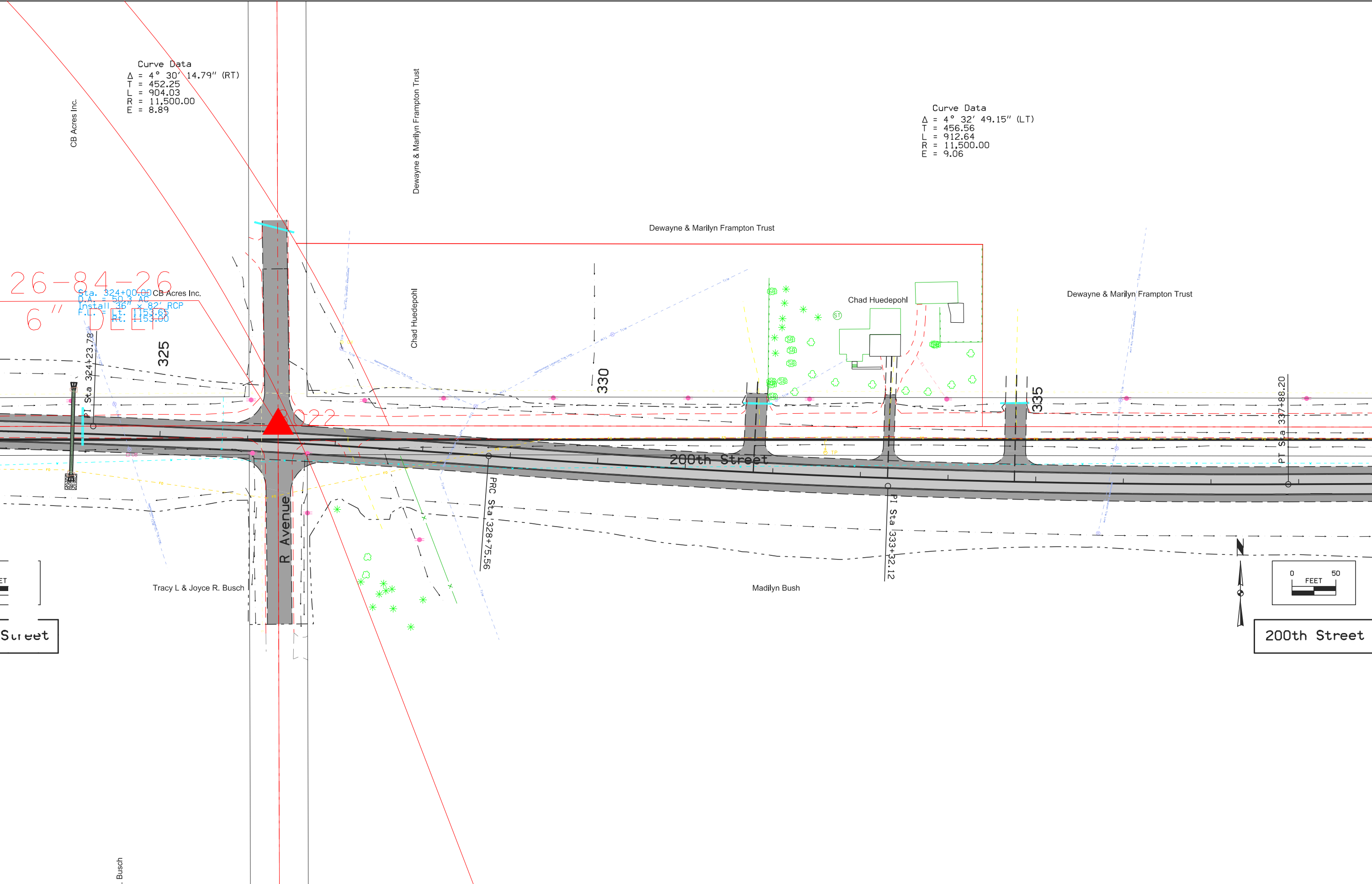
PC Sta | 319+71.53



200th Street

Curve Data  
 $\Delta = 4^\circ 30' 14.79''$  (RT)  
 T = 452.25  
 L = 904.03  
 R = 11,500.00  
 E = 8.89

Curve Data  
 $\Delta = 4^\circ 32' 49.15''$  (LT)  
 T = 456.56  
 L = 912.64  
 R = 11,500.00  
 E = 9.06



26-84-26  
 6" RCP  
 324+00-00  
 Install 36" x 82" RCP  
 100' x 100'

Street

200th Street

Sect. 24

Darrell Crouse

N<sup>1</sup>/<sub>4</sub> COR. SEC. 25-84-26  
FD. 1/2" RE-ROD 3" DEEP

340

345

350

023

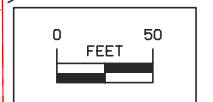
200th Street

Madilyn Bush

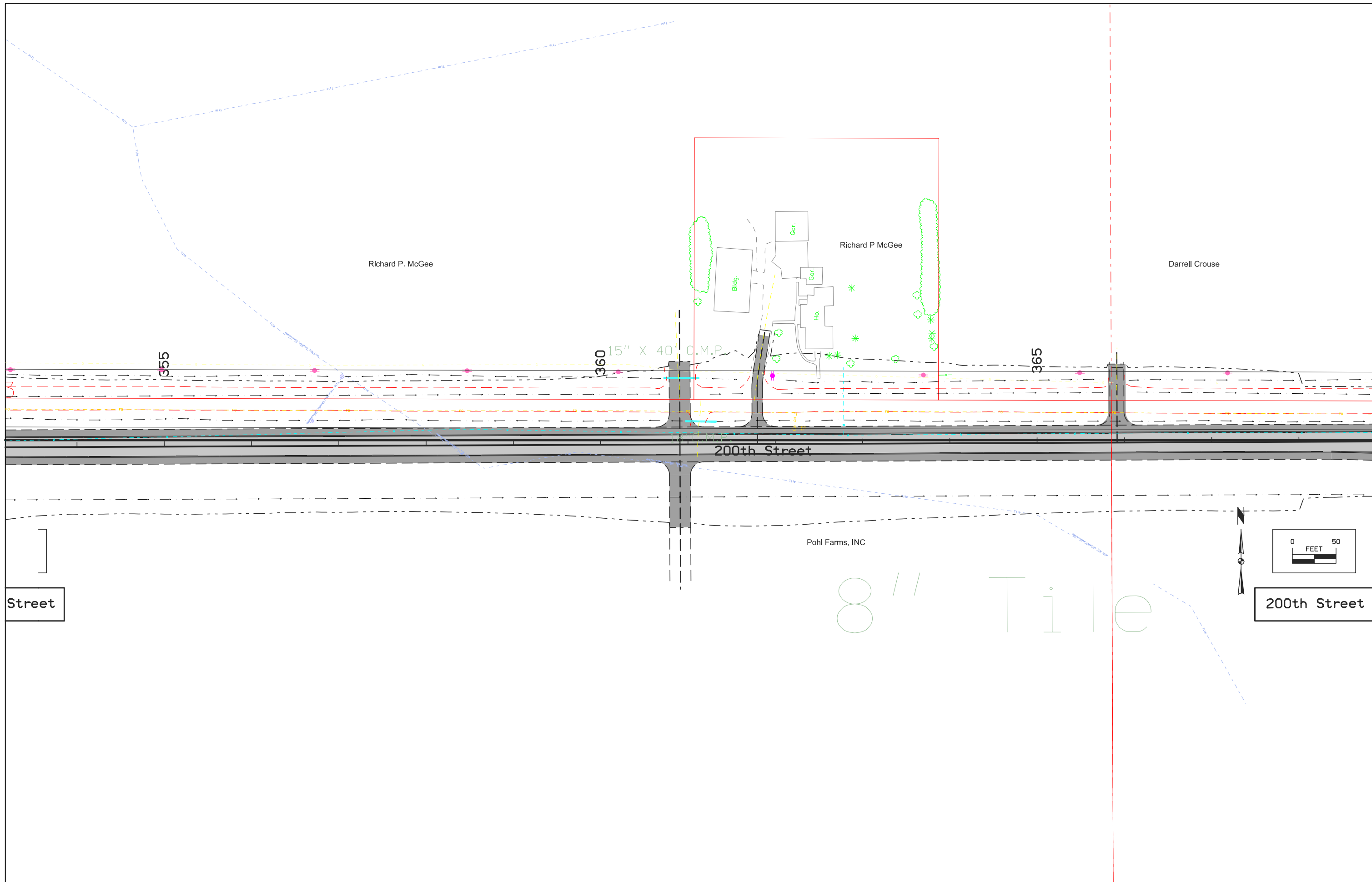
ET

Street

Des Moines  
T-84N R-26W  
SEC. 25



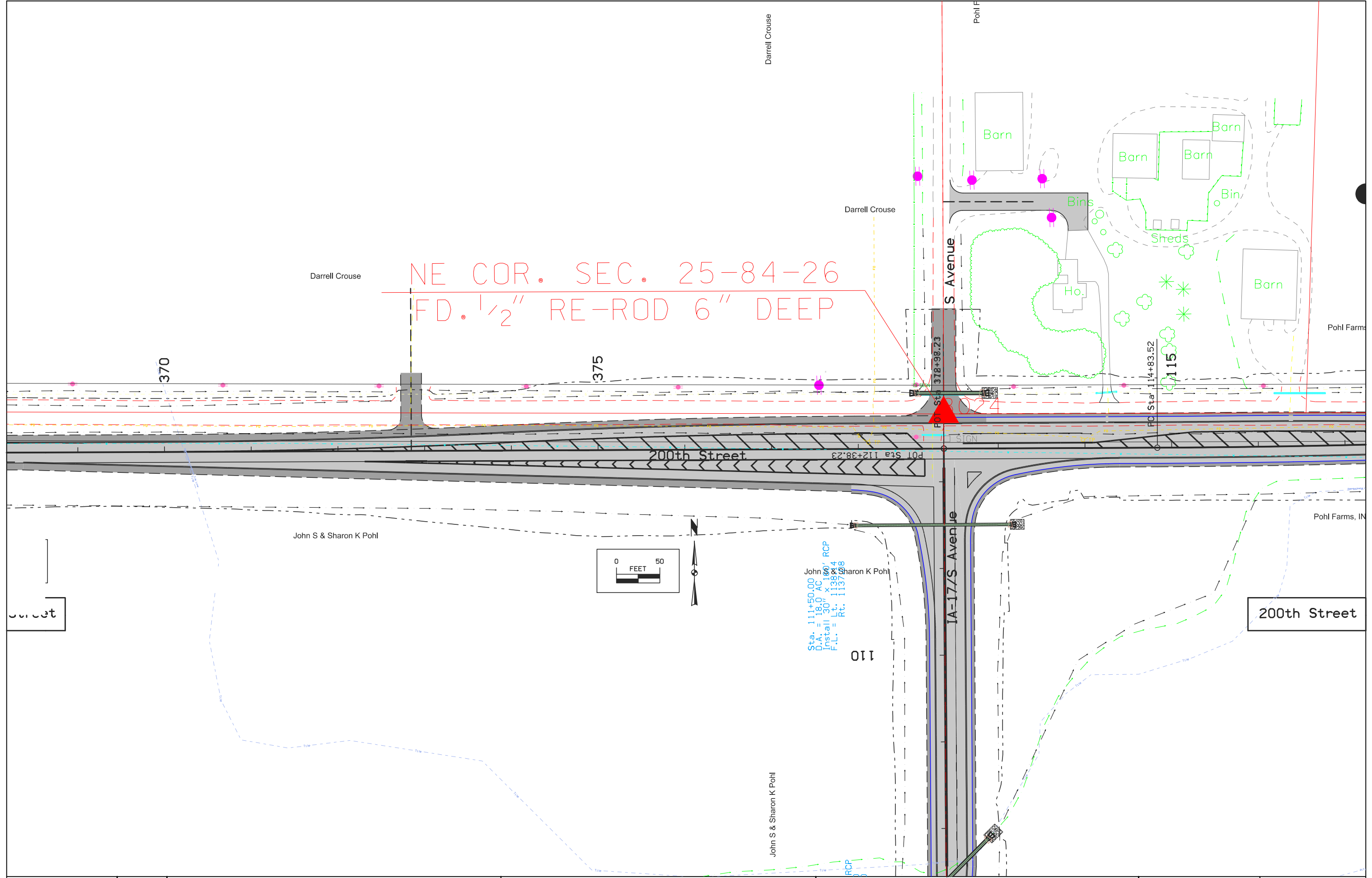
200th Street



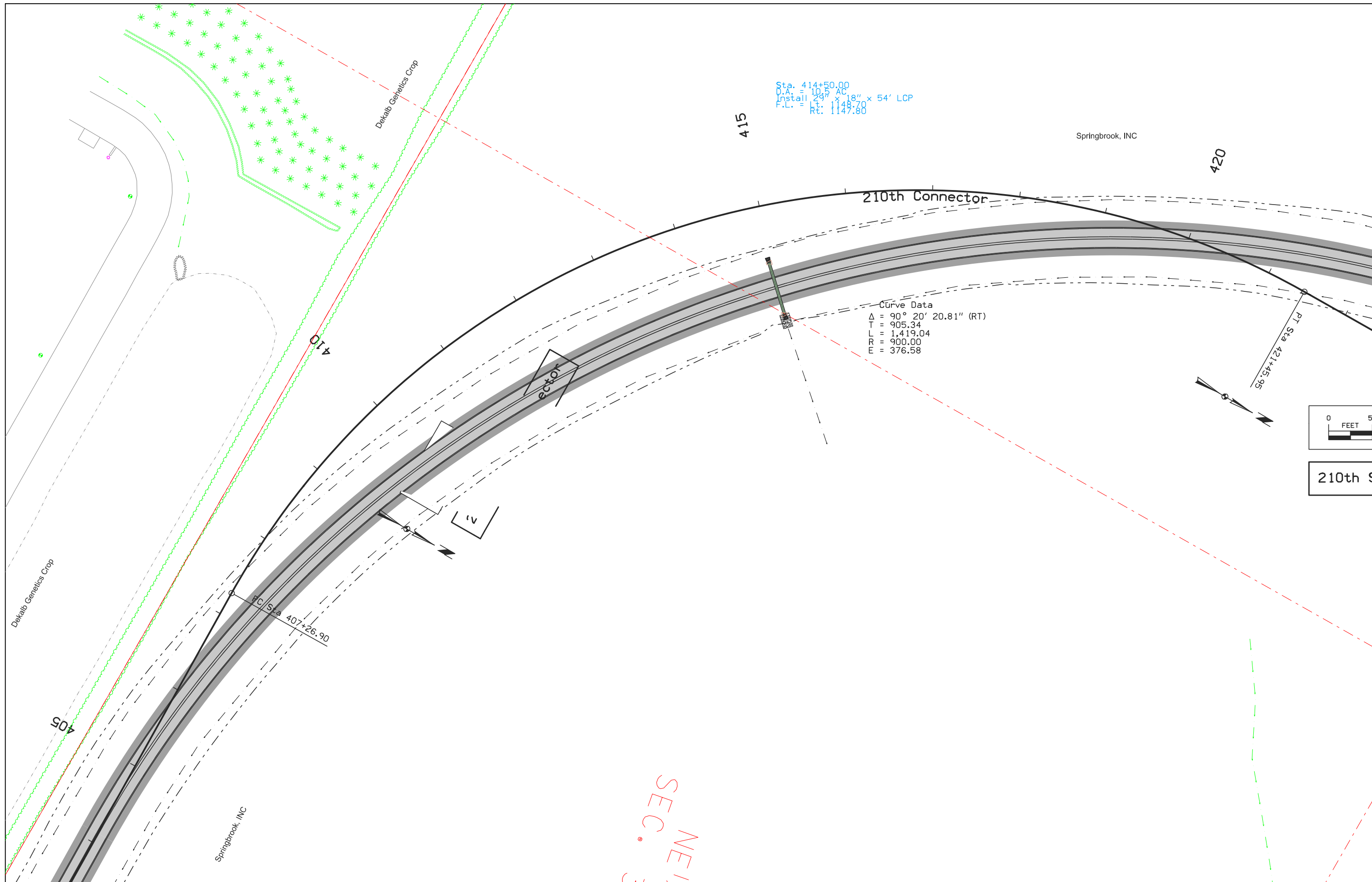
Street

200th Street

NE COR. SEC. 25-84-26  
FD. 1/2" RE-ROD 6" DEEP

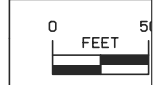






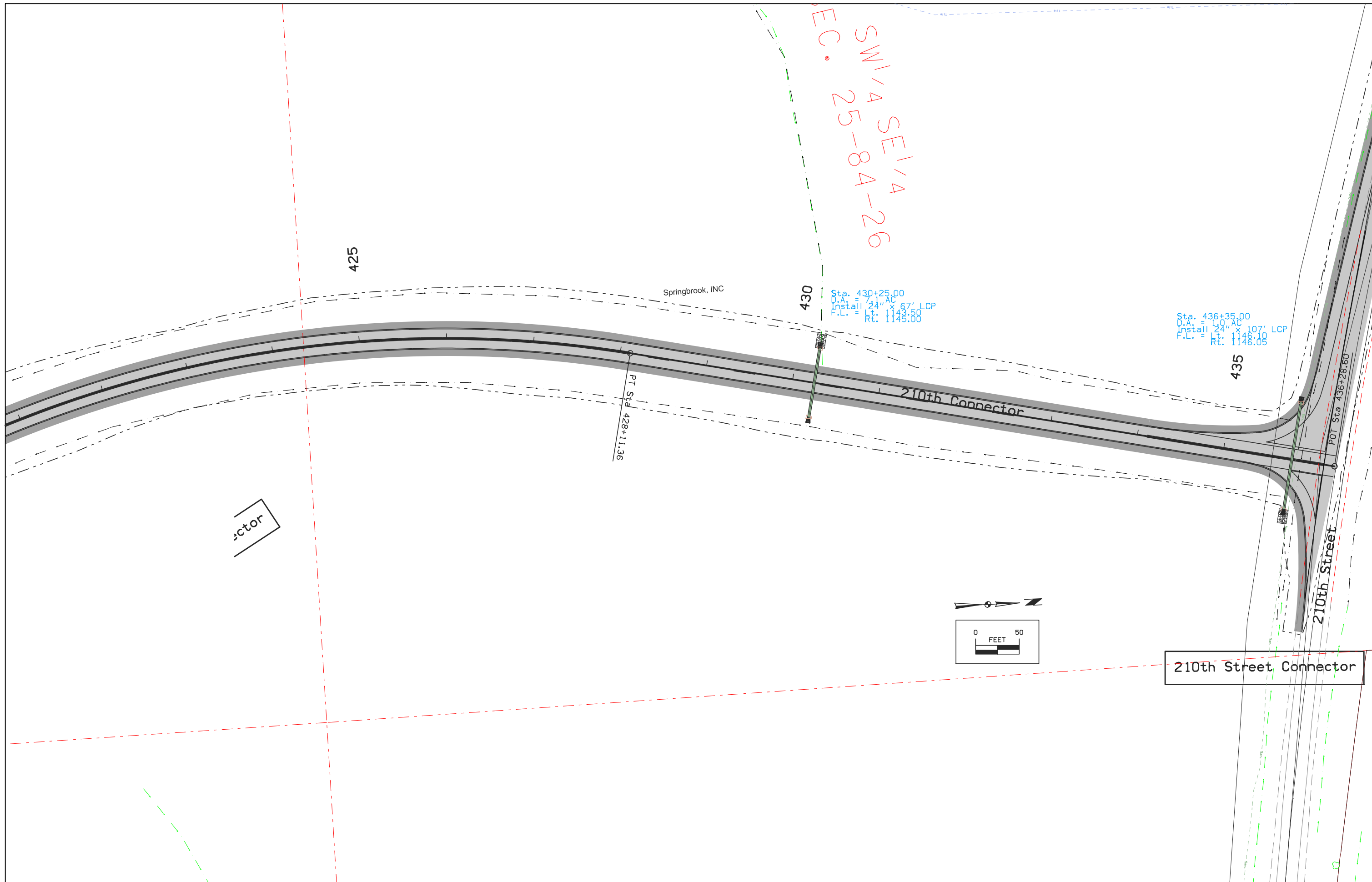
Sta. 414+50.00  
 D.A. = 10.5' AC  
 Install 29" x 18" x 54' LCP  
 F.L. = 1148.70  
 Rt. 1147.80

Curve Data  
 $\Delta = 90^\circ 20' 20.81''$  (RT)  
 T = 905.34  
 L = 1,419.04  
 R = 900.00  
 E = 376.58

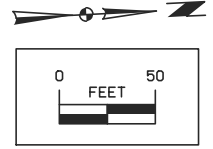


210th S

SEC. NEW



ector












210th Street Connector

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

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

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





















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

**PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS**

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

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

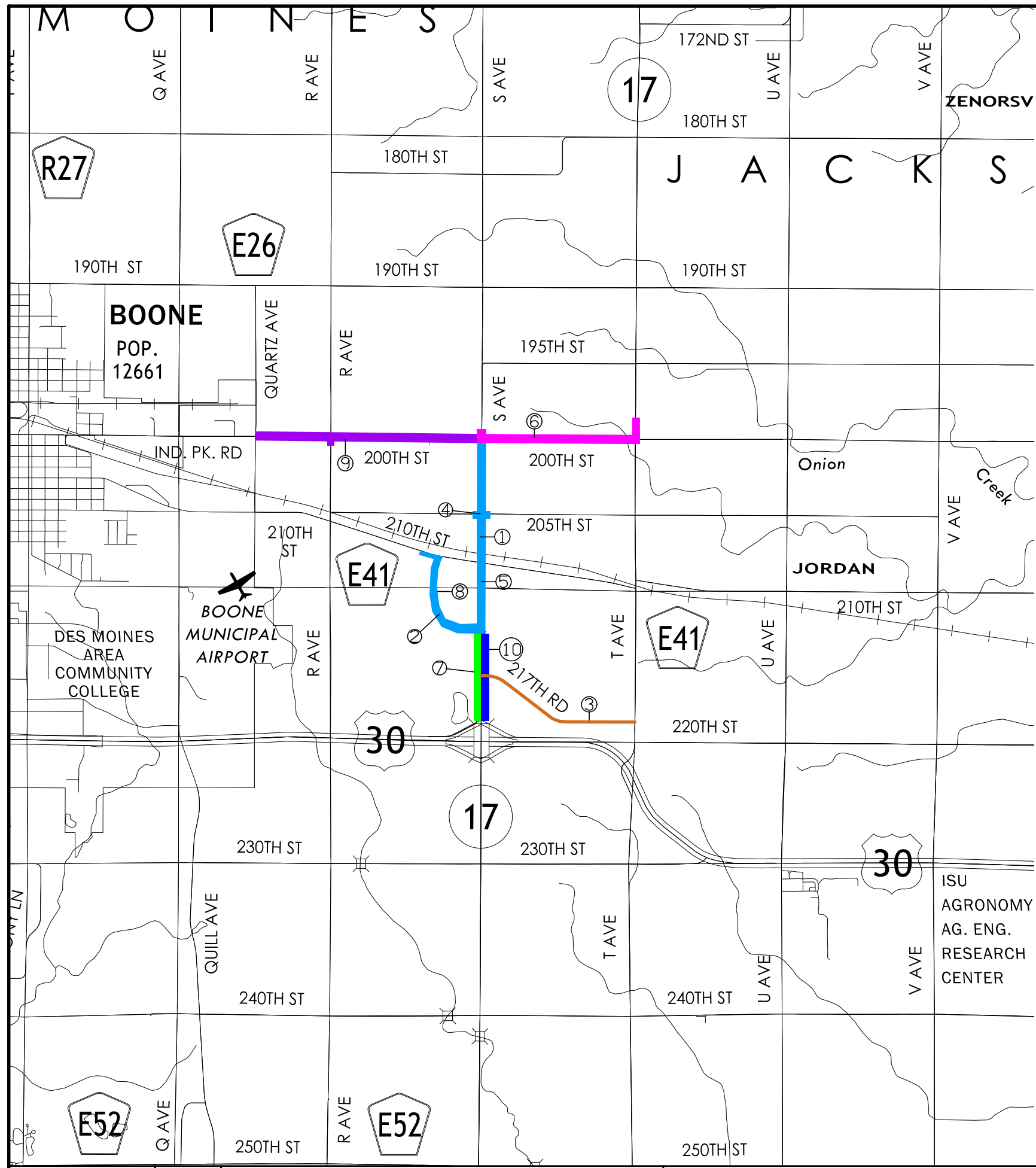
**PLAN VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

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

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

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

(COVERS SHEET SERIES J)



STAGE 1 - FY2023

1. CLOSE IA 17 JUST NORTH OF PROPOSED 210TH STREET CONNECTOR ROAD AND S AVE. FROM 210TH STREET TO 205TH STREET. GRADE PROPOSED IA 17 FROM PROPOSED 210TH STREET CONNECTOR ROAD TO 200TH STREET.
2. GRADE THE 210TH STREET CONNECTOR ROAD FROM IA 17 TO 210TH STREET.
3. DETOUR NORTHBOUND AND SOUTHBOUND IA 17 TRAFFIC ALONG 217TH ROAD.
4. MAINTAIN EASTBOUND AND WESTBOUND TRAFFIC ALONG 205TH STREET AT THE INTERSECTION WITH PROPOSED IA 17.

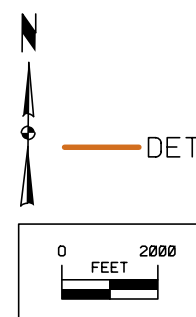
STAGE 2 - FY2024

5. PAVE IA 17 FROM THE PROPOSED 210TH STREET CONNECTOR ROAD TO 200TH STREET. MAINTAIN TRAFFIC ALONG DESIGNATED DETOUR ROUTE.
6. GRADE AND PAVE PROPOSED IA 17 FROM S AVE. TO EXISTING IA 17. KEEP IA 17 TRAFFIC ON DETOUR ROUTE ALONG 217TH ROAD.
7. WIDEN SOUTHBOUND IA 17 FROM THE HWY 30 INTERCHANGE TO THE PROPOSED 210TH STREET CONNECTOR ROAD.
8. PAVE THE 210TH STREET CONNECTOR ROAD FROM IA 17 TO 210TH STREET.

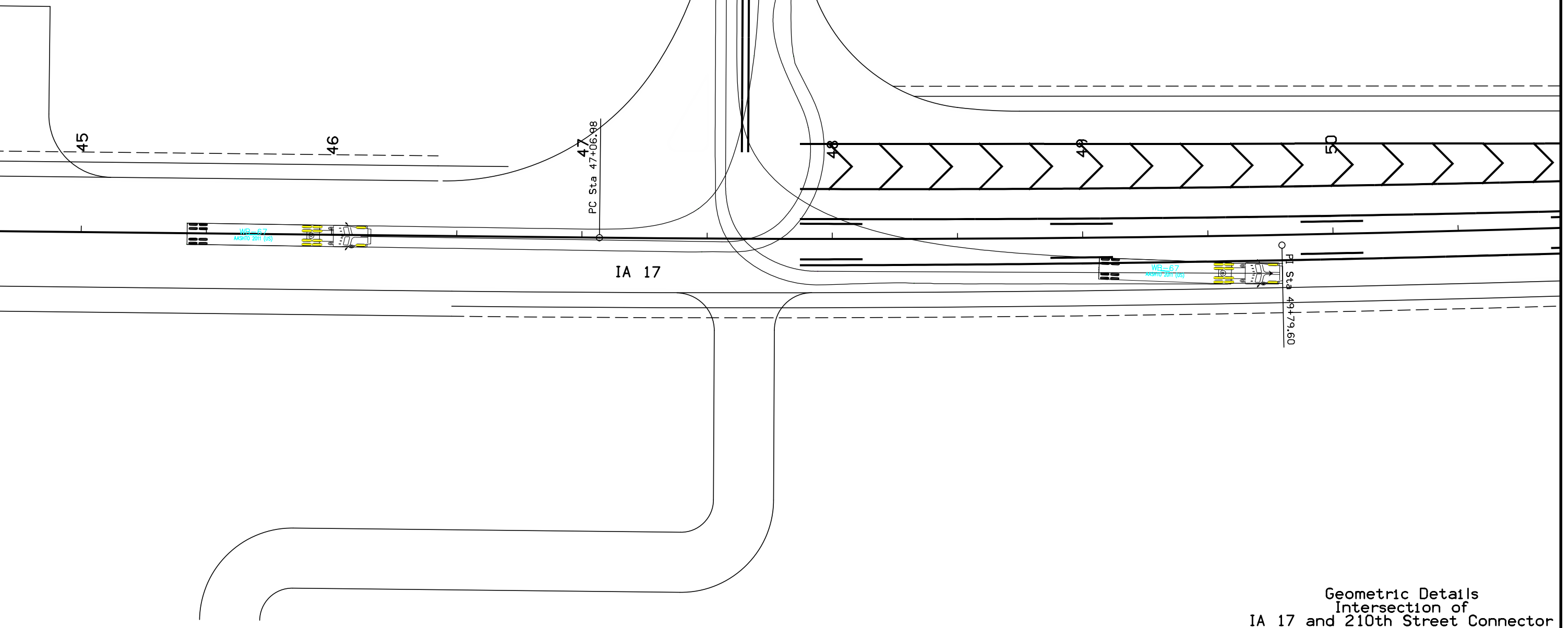
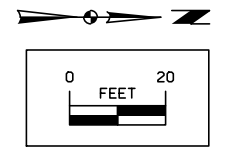
STAGE 3 - FY2024

9. GRADE AND PAVE 200TH STREET FROM QUARTZ AVE. TO S AVE. MAINTAIN ACCESS TO RESIDENTS BY UTILIZING EXISTING 200TH STREET.
10. WIDEN NORTHBOUND IA 17 FROM THE HWY 30 INTERCHANGE TO THE PROPOSED 210TH STREET CONNECTOR ROAD.
11. NEW IA 17 SHALL BE OPEN TO NORTHBOUND AND SOUTHBOUND IA 17 TRAFFIC.

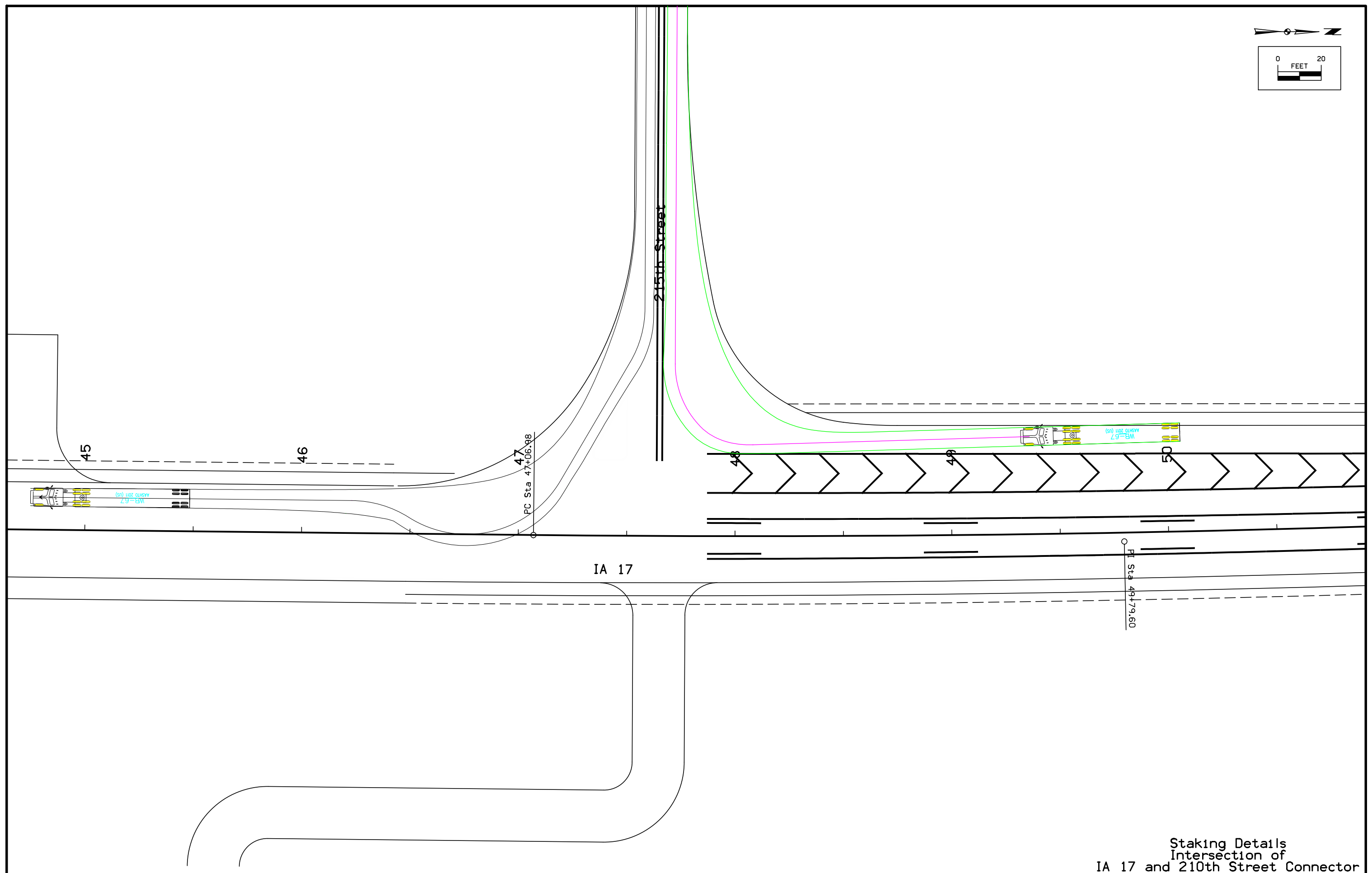
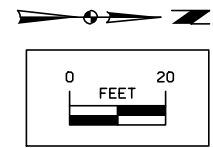
— DETOUR ROUTE



Opening Year		Design Year 2035	
AM Peak		AM Peak	
60	135	75	165
40	-	50	-
250	-	305	-
65	130	80	160
PM Peak		PM Peak	
50	140	60	170
40	-	50	-
95	-	115	-
190	140	230	170

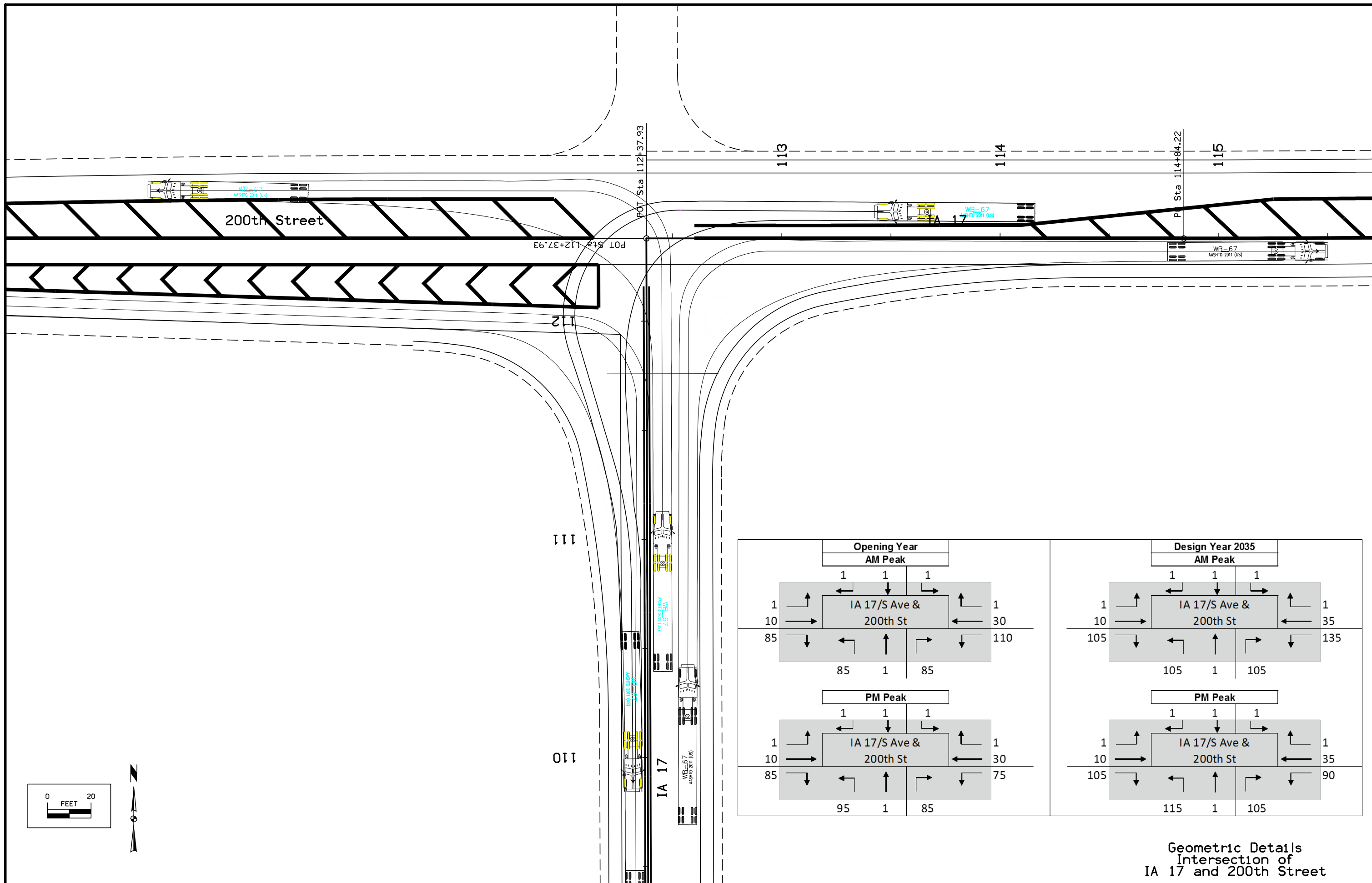


Geometric Details  
Intersection of  
IA 17 and 210th Street Connector



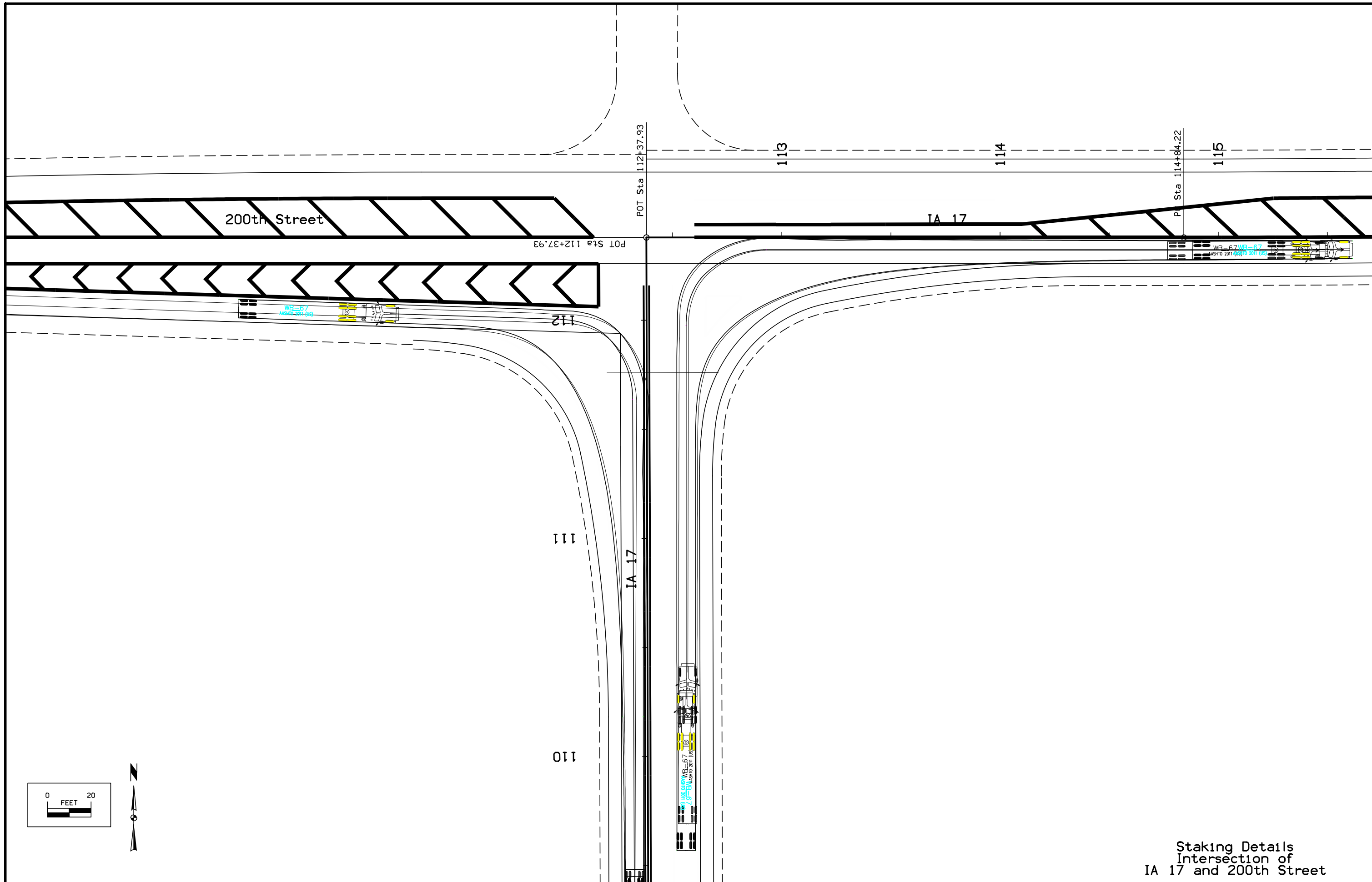
Staking Details  
Intersection of  
IA 17 and 210th Street Connector

FILE NO.	ENGLISH	DESIGN TEAM	<b>Snyder &amp; Associates</b>	BOONE COUNTY	PROJECT NUMBER	<b>STPN-017-2(27)--2J-08</b>	SHEET NUMBER	L.2
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Opening Year		Design Year 2035	
AM Peak		AM Peak	
1	1	1	1
10	30	10	35
85	110	105	135
85	85	105	105
PM Peak		PM Peak	
1	1	1	1
10	30	10	35
85	75	105	90
95	85	115	105

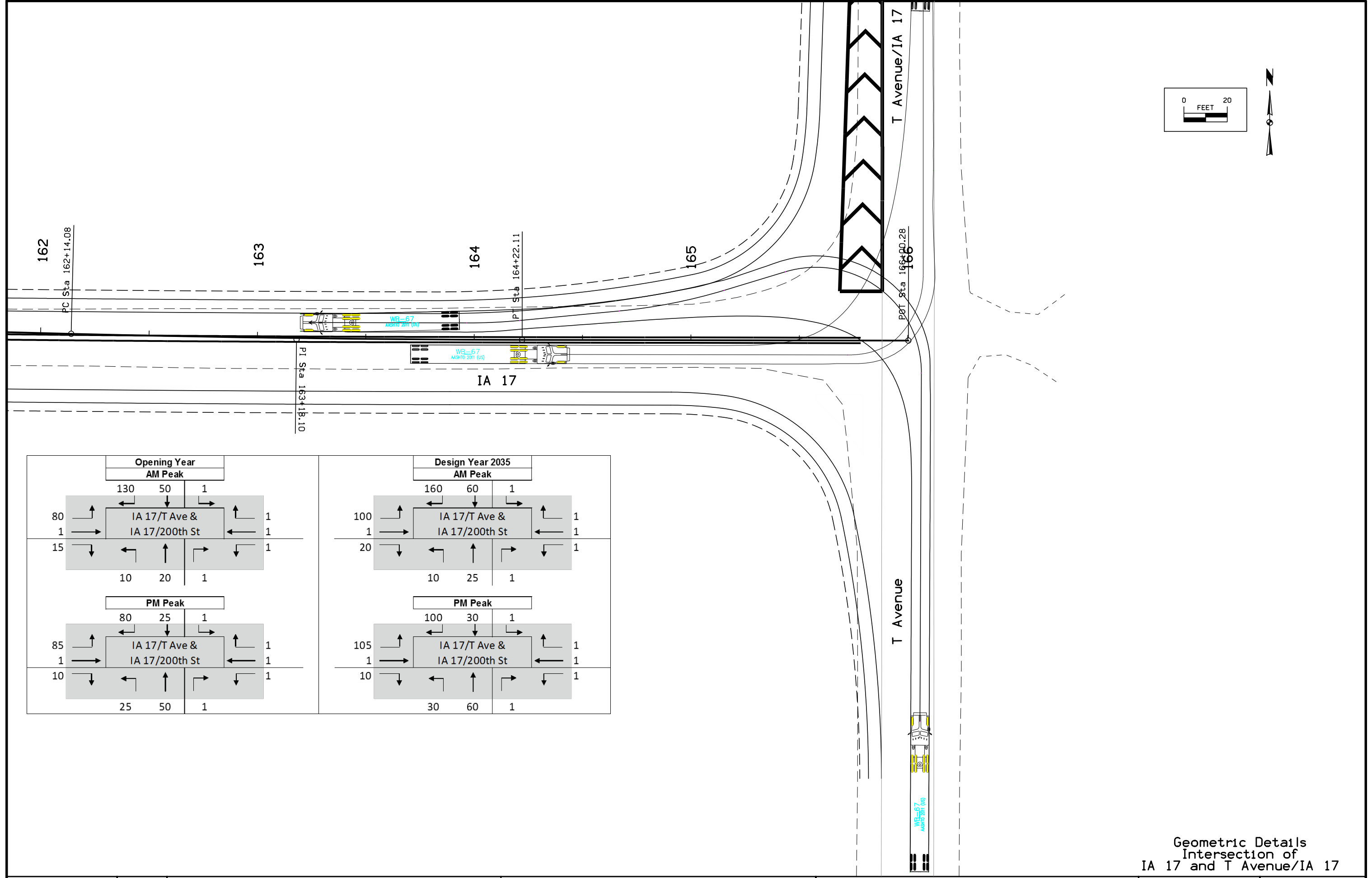
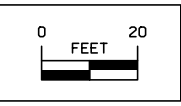
Geometric Details  
Intersection of  
IA 17 and 200th Street



Staking Details  
 Intersection of  
 IA 17 and 200th Street

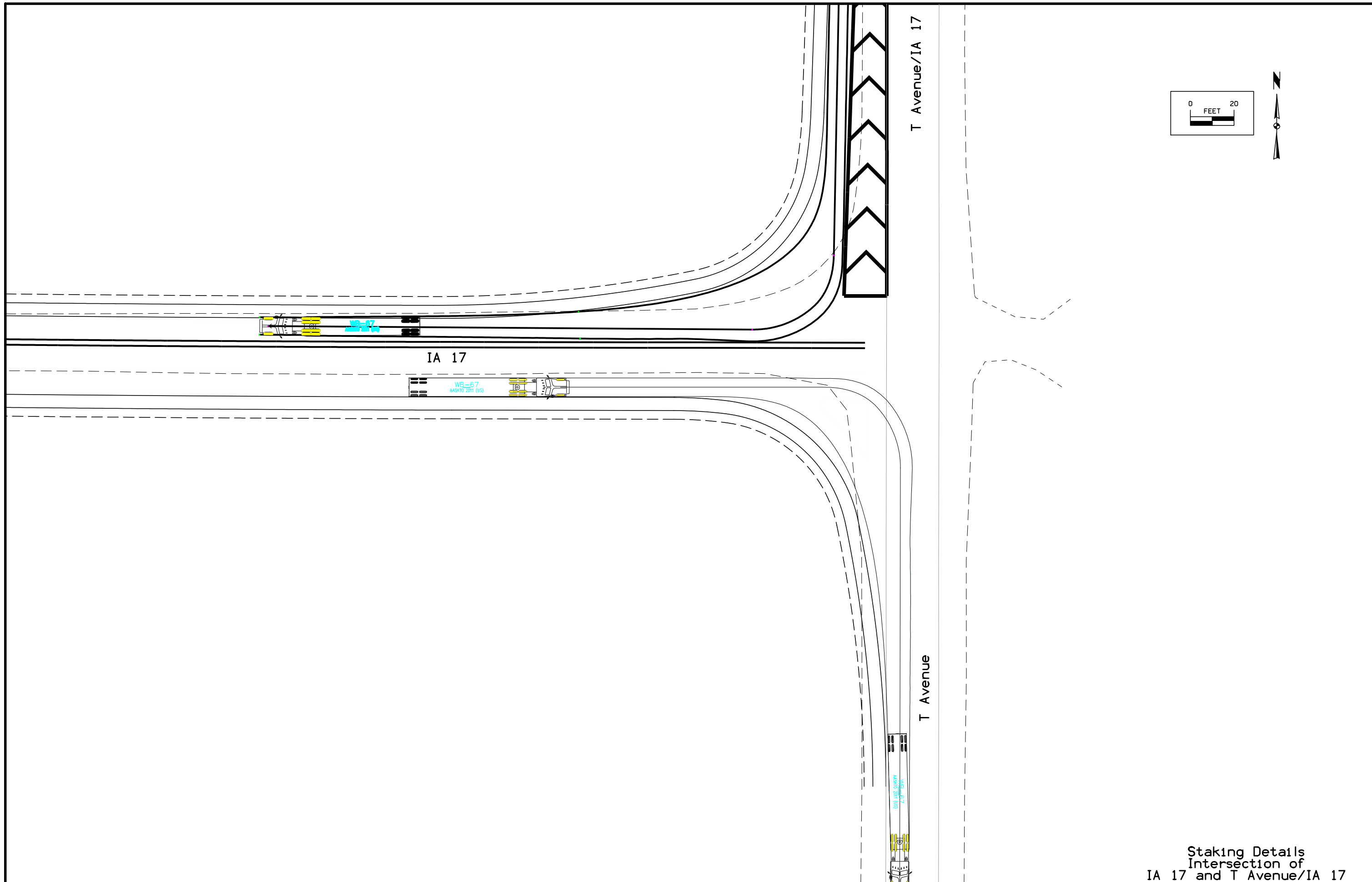
FILE NO.	ENGLISH	DESIGN TEAM	<b>Snyder &amp; Associates</b>	BOONE COUNTY	PROJECT NUMBER	<b>STPN-017-2(27)--2J-08</b>	SHEET NUMBER	L.6
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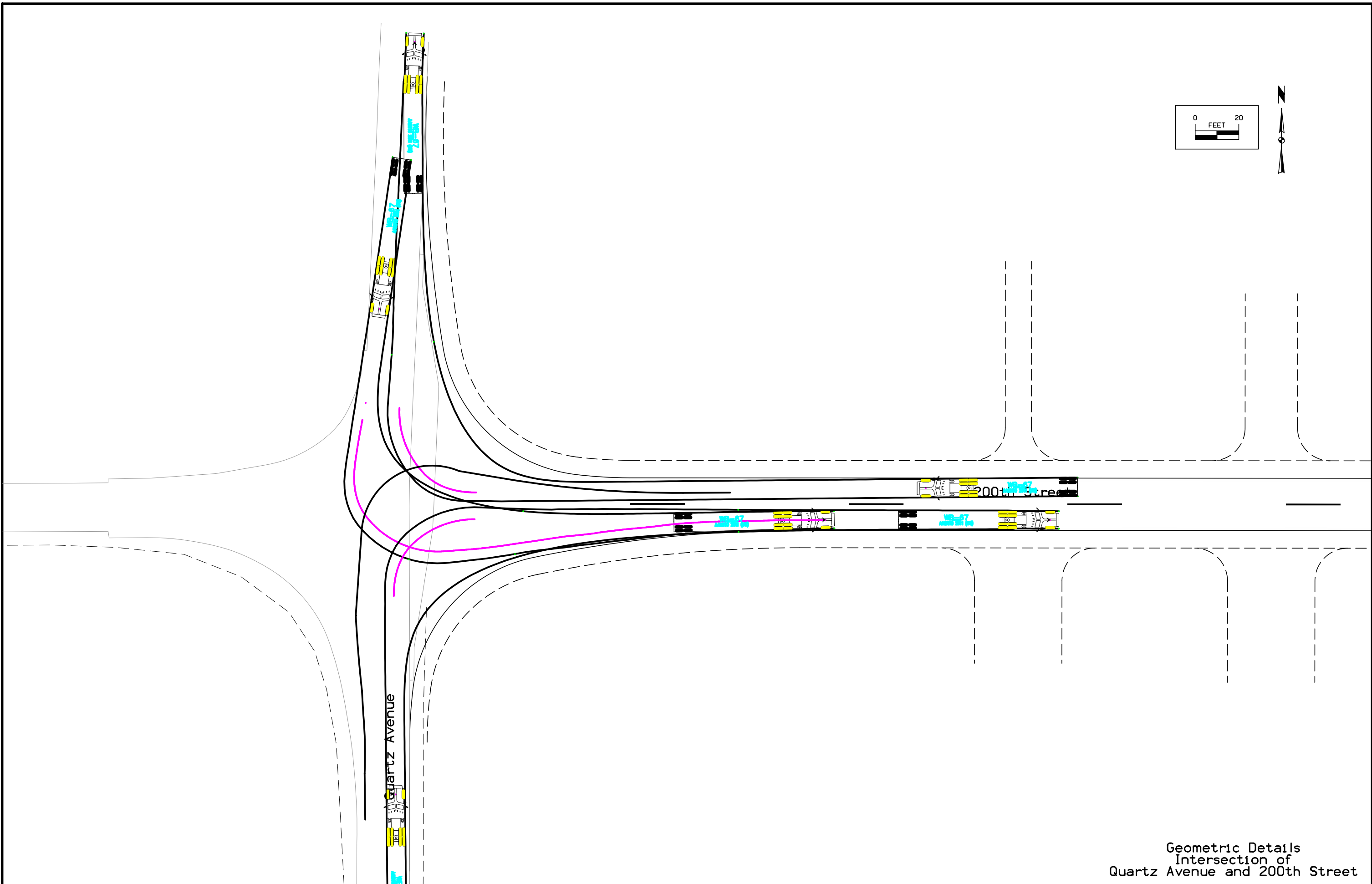


Opening Year		Design Year 2035	
AM Peak		AM Peak	
130	50   1	160	60   1
80	↑	100	↑
1	→	1	→
IA 17/T Ave & IA 17/200th St		IA 17/T Ave & IA 17/200th St	
15	↓	20	↓
10	←	10	←
20	↑	25	↑
1	→	1	→
PM Peak		PM Peak	
80	25   1	100	30   1
85	↑	105	↑
1	→	1	→
IA 17/T Ave & IA 17/200th St		IA 17/T Ave & IA 17/200th St	
10	↓	10	↓
25	←	30	←
50	↑	60	↑
1	→	1	→

Geometric Details  
Intersection of  
IA 17 and T Avenue/IA 17

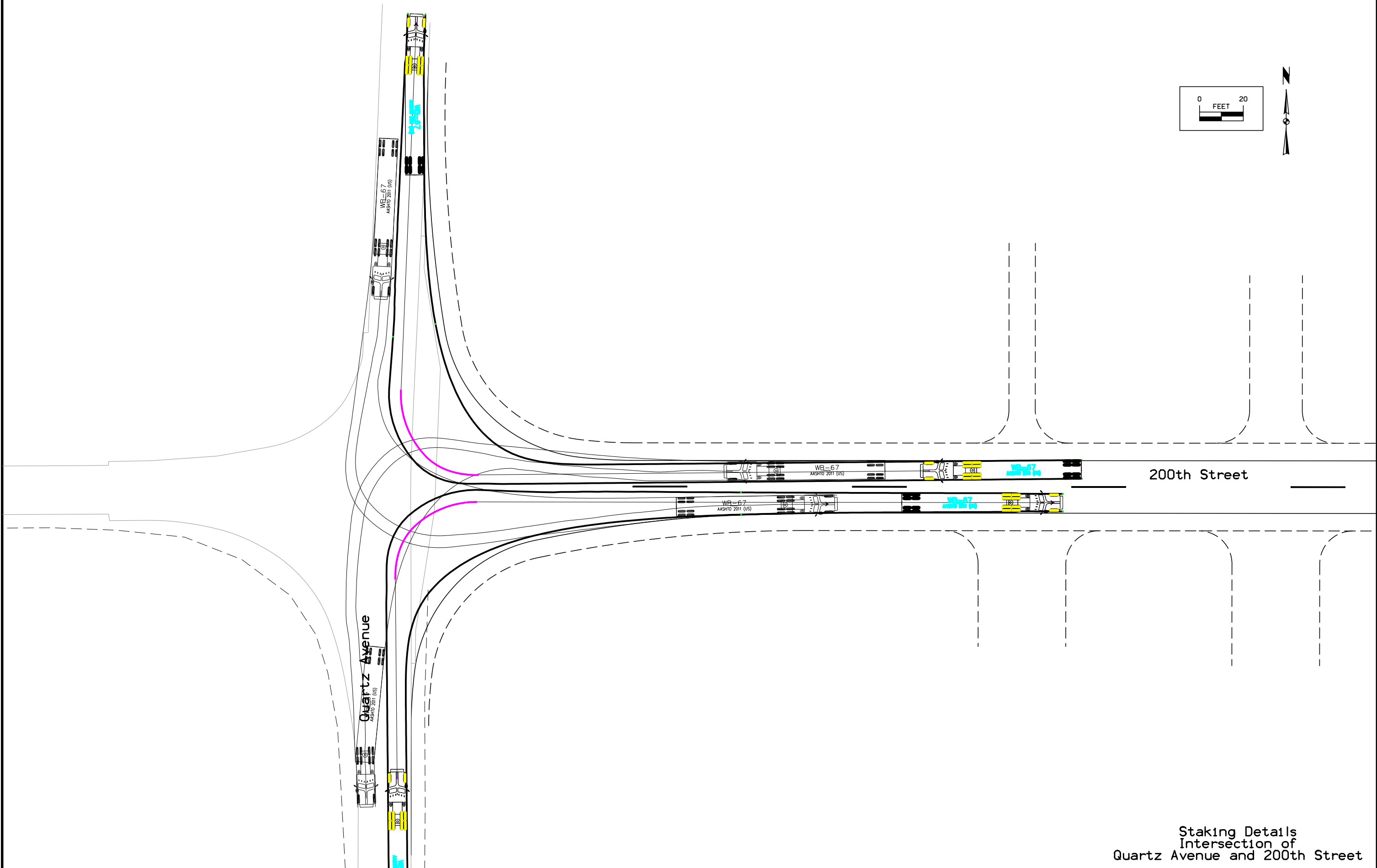
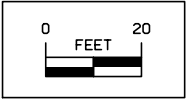


Staking Details  
 Intersection of  
 IA 17 and T Avenue/IA 17

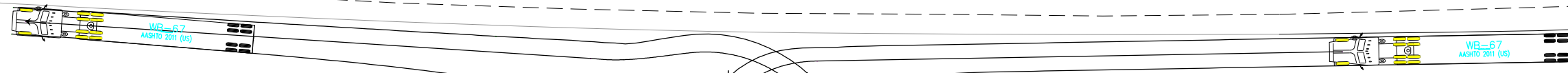


Geometric Details  
 Intersection of  
 Quartz Avenue and 200th Street

FILE NO.	ENGLISH	DESIGN TEAM <b>Snyder &amp; Associates</b>	BOONE COUNTY	PROJECT NUMBER <b>STPN-017-2(27)--2J-08</b>	SHEET NUMBER <b>L.13</b>
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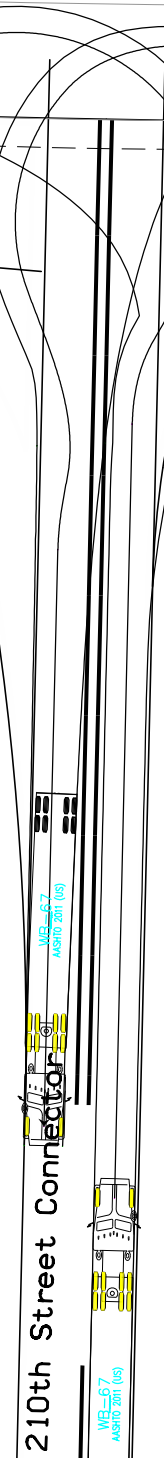


Staking Details  
Intersection of  
Quartz Avenue and 200th Street

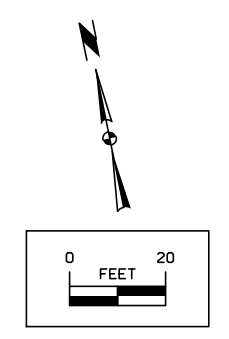


210th Street

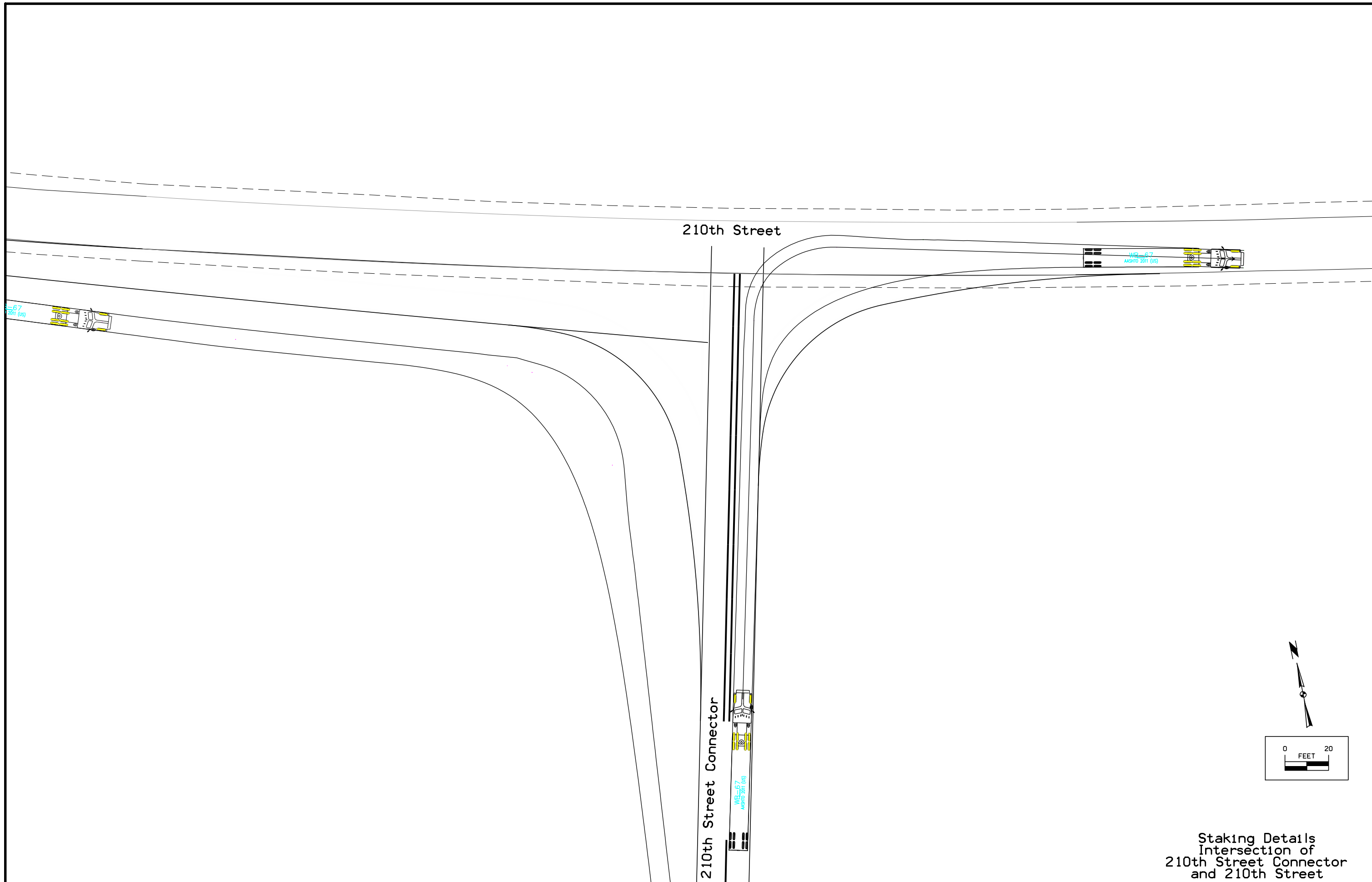
Opening Year		Design Year 2035	
AM Peak		AM Peak	
-	10	-	10
280	20	340	25
95	10	115	10
PM Peak		PM Peak	
-	10	-	10
130	30	160	35
220	10	270	10



210th Street Connector



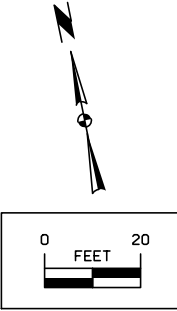
Geometric Details  
Intersection of  
210th Street Connector  
and 210th Street

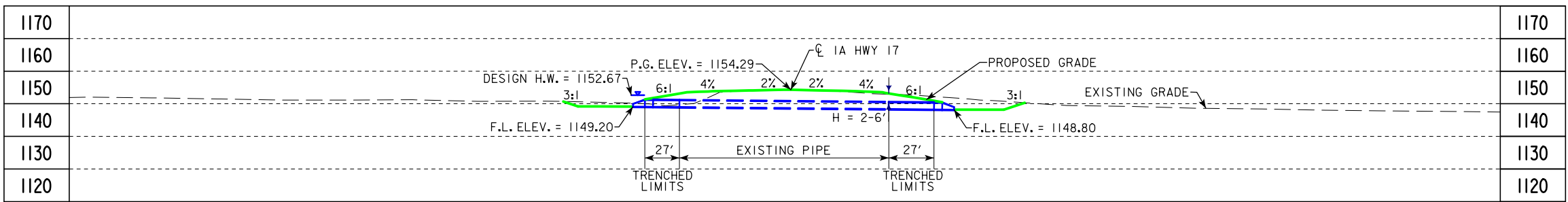


210th Street

210th Street Connector

Staking Details  
 Intersection of  
 210th Street Connector  
 and 210th Street





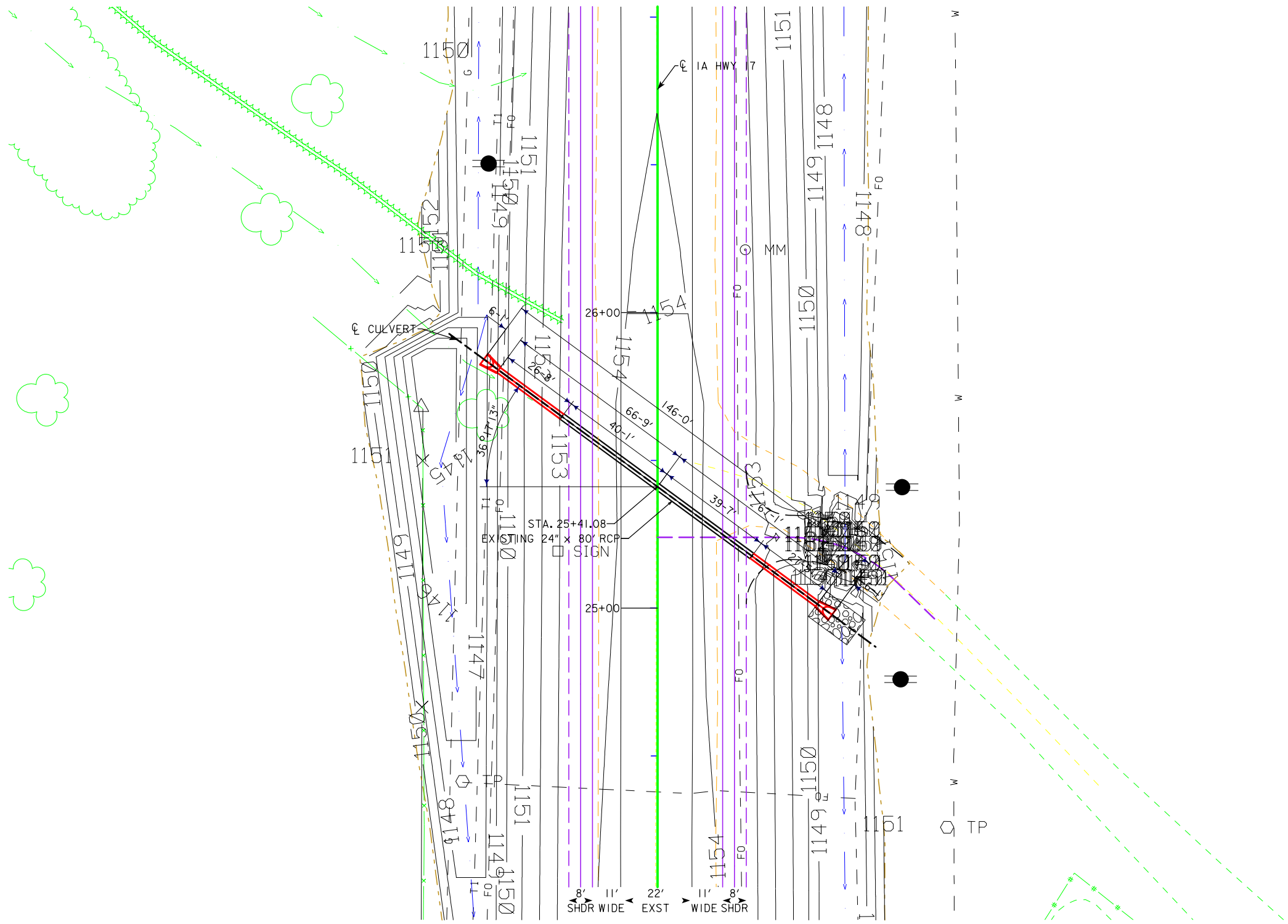
BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	11	22	8
TOTALS	11	22	8

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

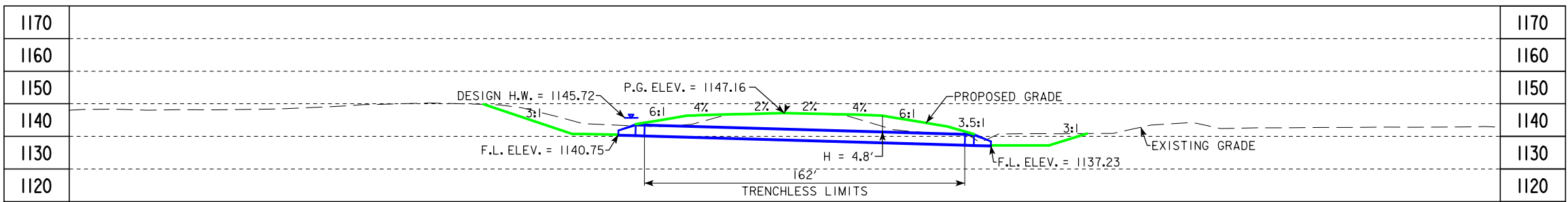
DRAINAGE AREA = 15.0 ACRES  
 DESIGN DISCHARGE,  $Q_{50} = 23$  CFS  
 DESIGN HIGH WATER = 1152.67

LOCATION

IA-17  
 T-84 NR-25W & R-26W  
 SECTIONS 31 & 36  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



DESIGN FOR 36° SKEW  
**24" X 54'**  
**REINFORCED CONCRETE PIPE**  
**CULVERT EXTENSION**  
**PLAT PLAN**  
 STA. 25+41.08  $\phi$  IA-17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? ? DESIGN NO.    ?

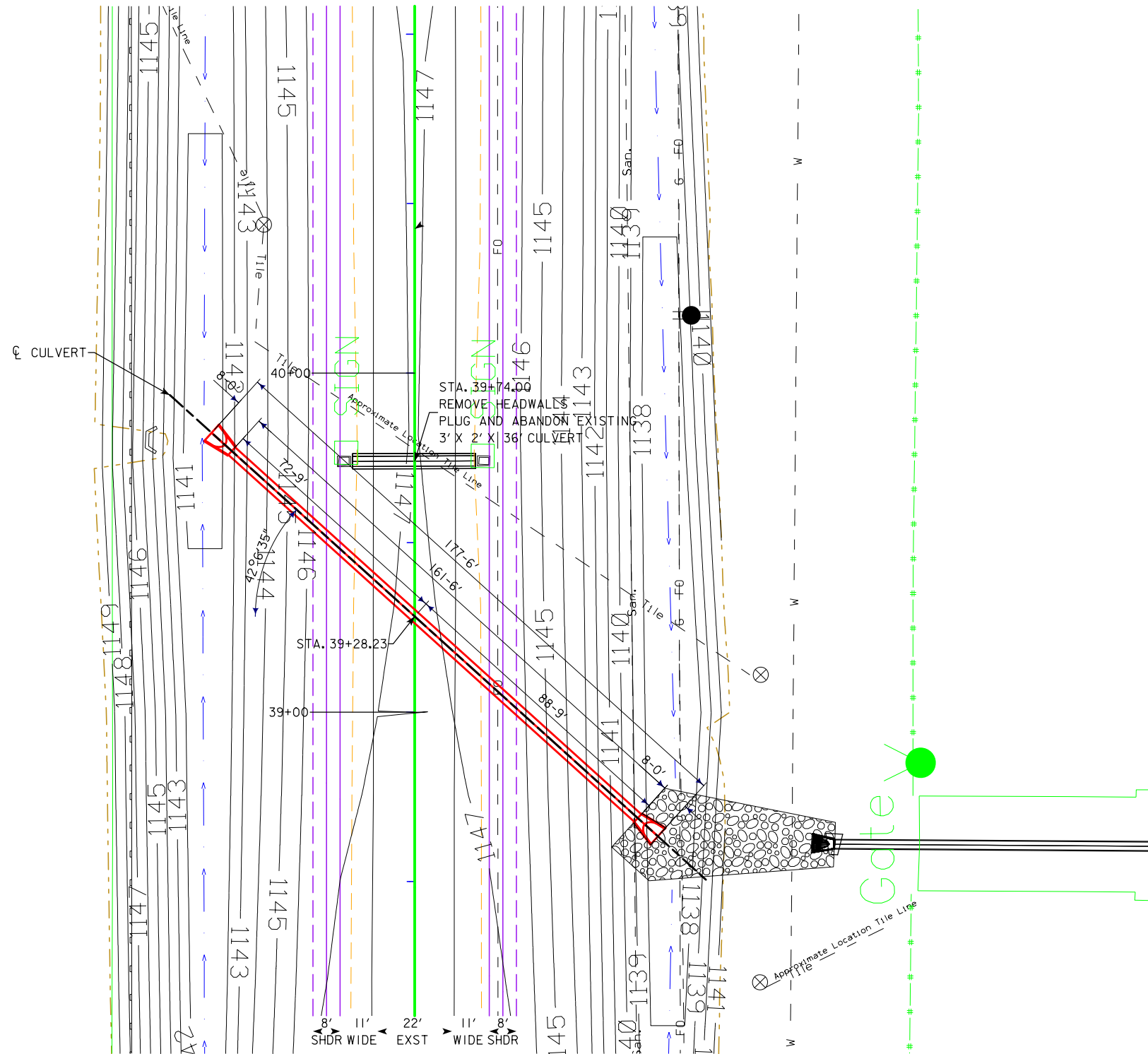
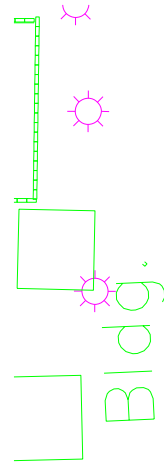


BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVELTMENT QUANTITIES INCLUDED WITH ROAD PLANS			
LOCATION	REVELTMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	123	175	87
TOTALS	123	175	87

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.1

HYDRAULIC DATA

DRAINAGE AREA = 52.1 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 61 CFS  
 DESIGN HIGH WATER = 1145.72

LOCATION

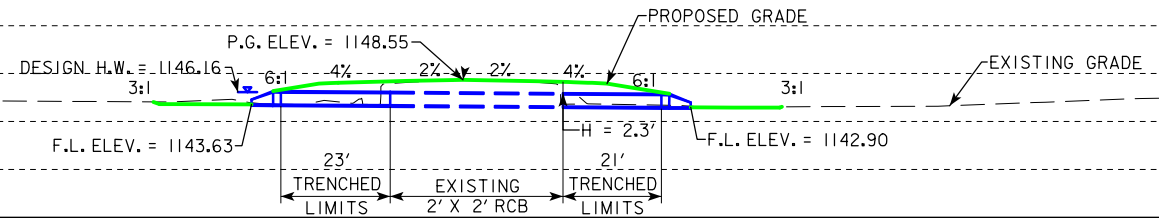
1A-17  
 T-84 NR-25W & R-26W  
 SECTIONS 31 & 36  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



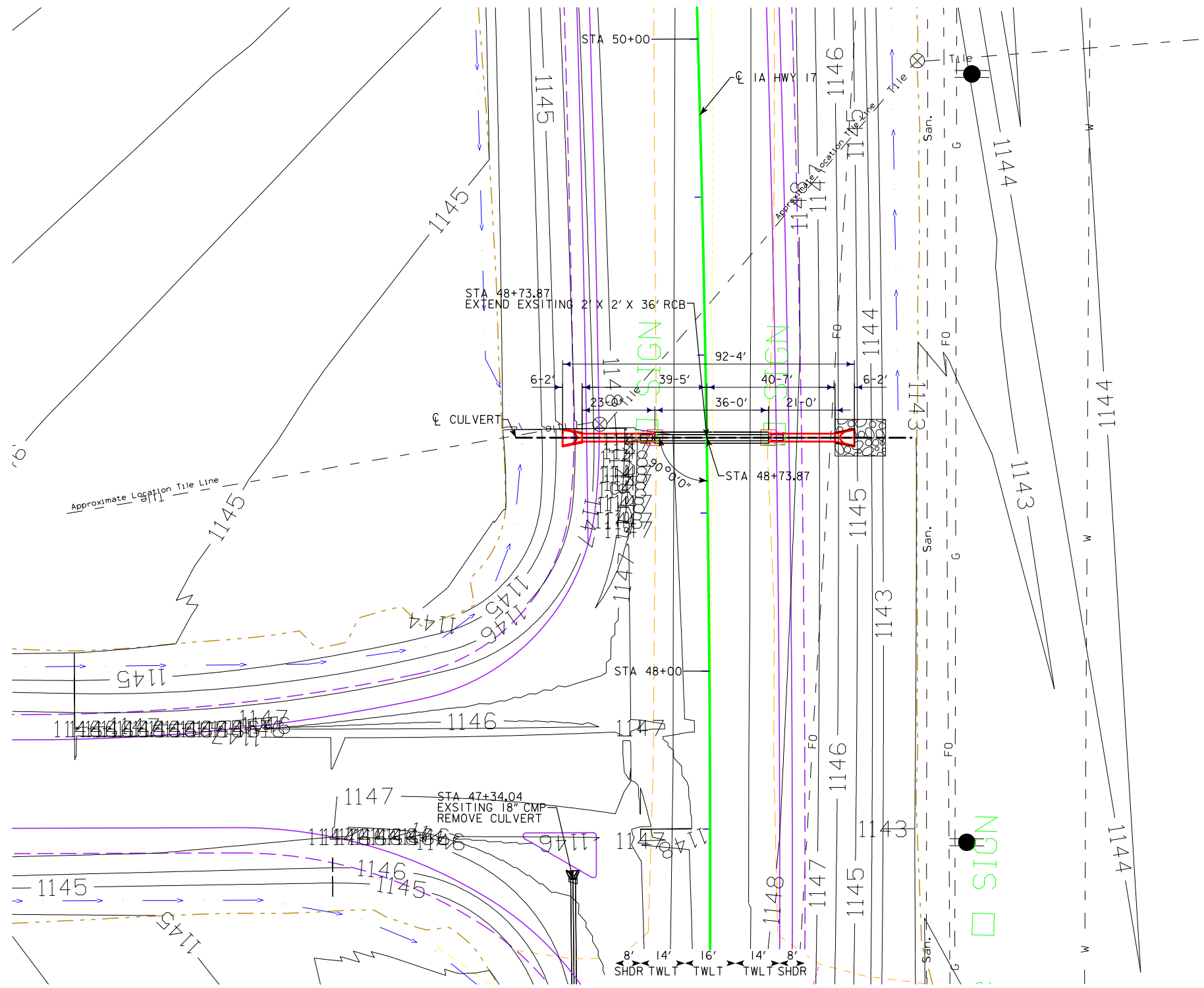
DESIGN FOR 42° SKEW  
**36" X 162' (TRENCHLESS)  
 REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 39+28.23  $\phi$  Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 1 FILE NO. ? DESIGN NO. ?



1170		1170
1160		1160
1150		1150
1140		1140
1130		1130
1120		1120



LONGITUDINAL SECTION ALONG  $\phi$  CULVERT



PLAT PLAN

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	17	34	12
TOTALS	17	34	12

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

UTILITIES LEGEND:  
REFER TO D.I

HYDRAULIC DATA

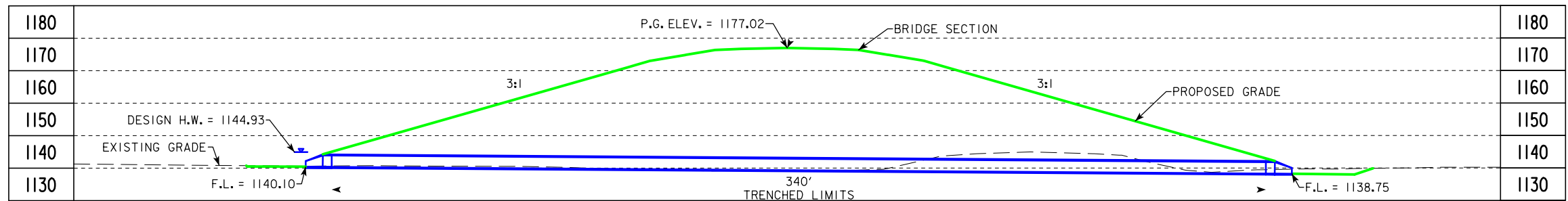
DRAINAGE AREA = 9.6 ACRES  
DESIGN DISCHARGE,  $Q_{50}$  = 17 CFS  
DESIGN HIGH WATER = 1146.14

LOCATION

1A-17  
T-84 NR-25W & R-26W  
SECTIONS 31 & 36  
DES MOINES AND JACKSON TOWNSHIPS  
BOONE COUNTY



DESIGN FOR 0° SKEW  
**30" X 44' RCP  
REINFORCED CONCRETE BOX  
CULVERT EXTENSION  
PLAT PLAN**  
STA. 48+73.87  $\phi$  Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?

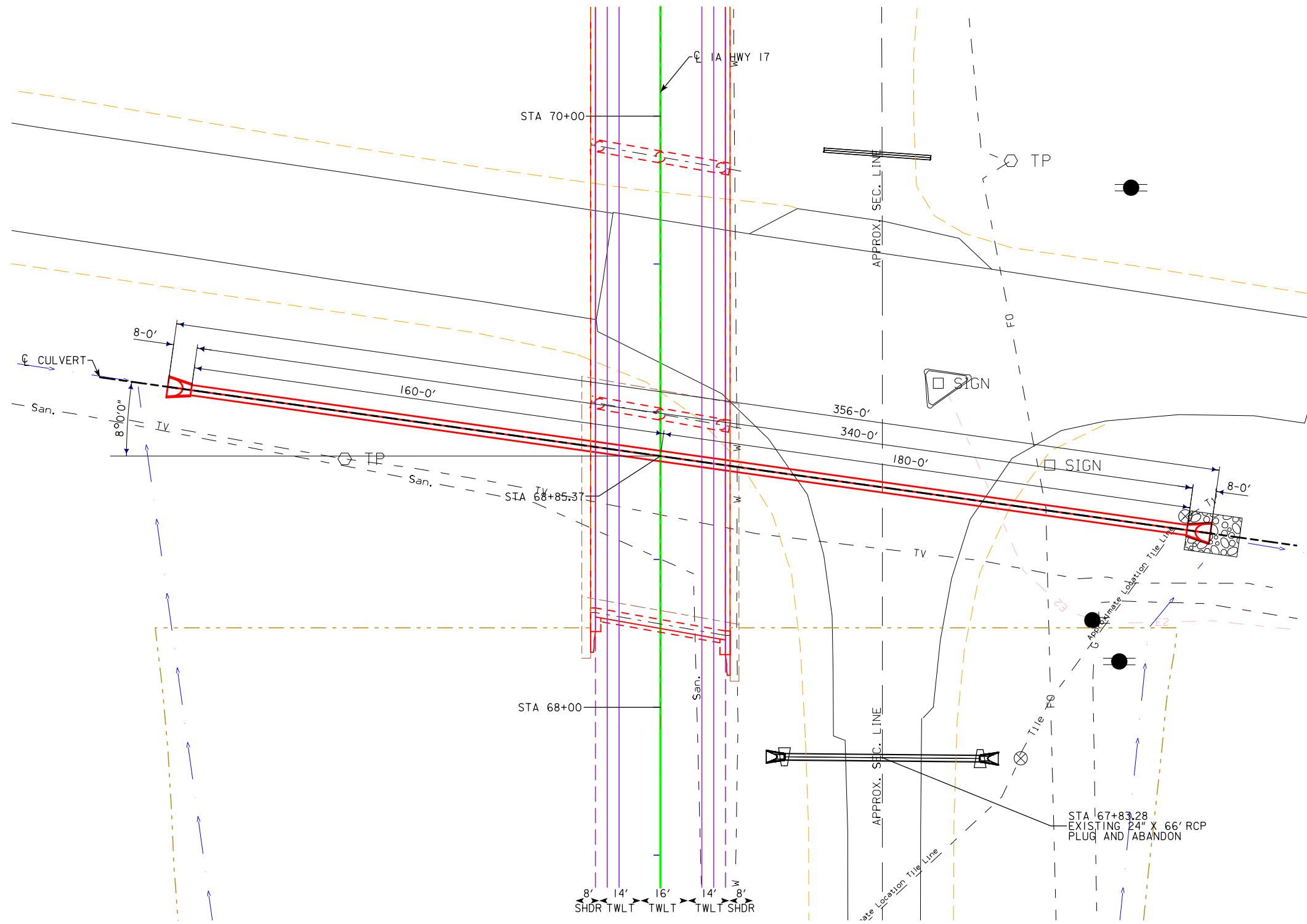


LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	17	34	12
TOTALS	17	34	12

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 70.4 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 76 CFS  
 DESIGN HIGH WATER = 1144.93

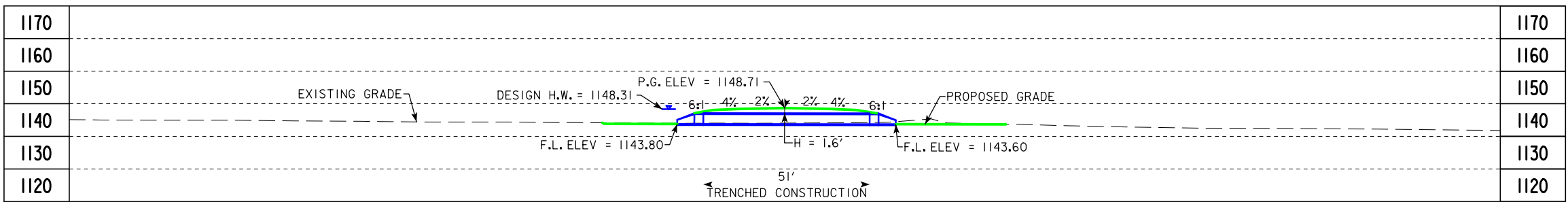
LOCATION

1A-17  
 T-84N R-25W & R-26W  
 SECTIONS 30 & 25  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



DESIGN FOR 8° SKEW  
**42" X 340'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 68+85.37  $\phi$  Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.   ?    DESIGN NO.   ?



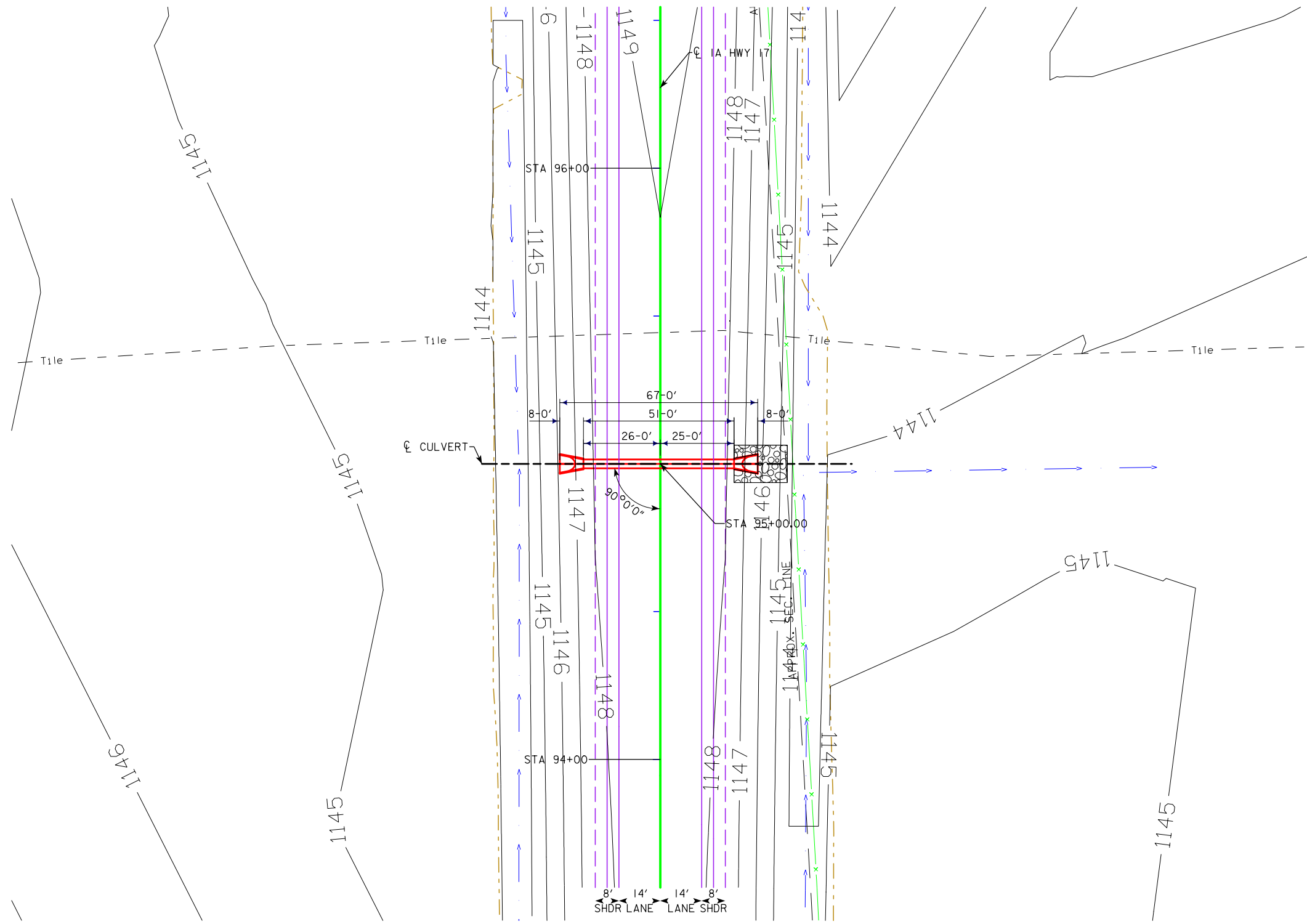


LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	20	39	14
TOTALS	20	39	14

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

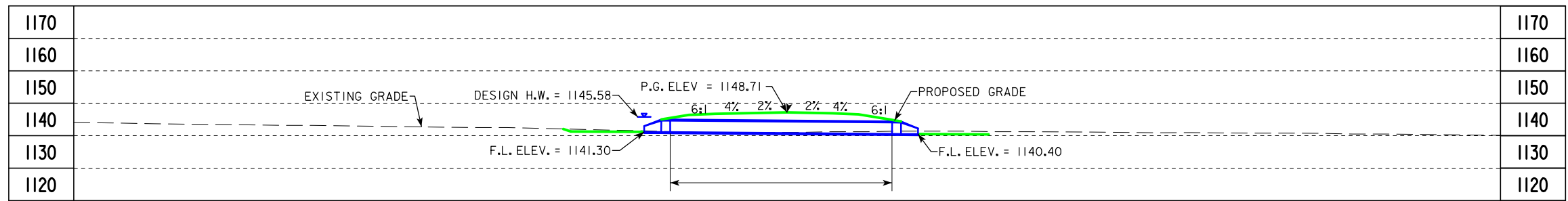
DRAINAGE AREA = 47.5 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 56 CFS  
 DESIGN HIGH WATER = 1148.31

LOCATION

1A-17  
 T-84N R-25W & R-26W  
 SECTIONS 30 & 25  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



DESIGN FOR 0° SKEW  
**36" X 51'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 95+00.00  $\phi$  Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?



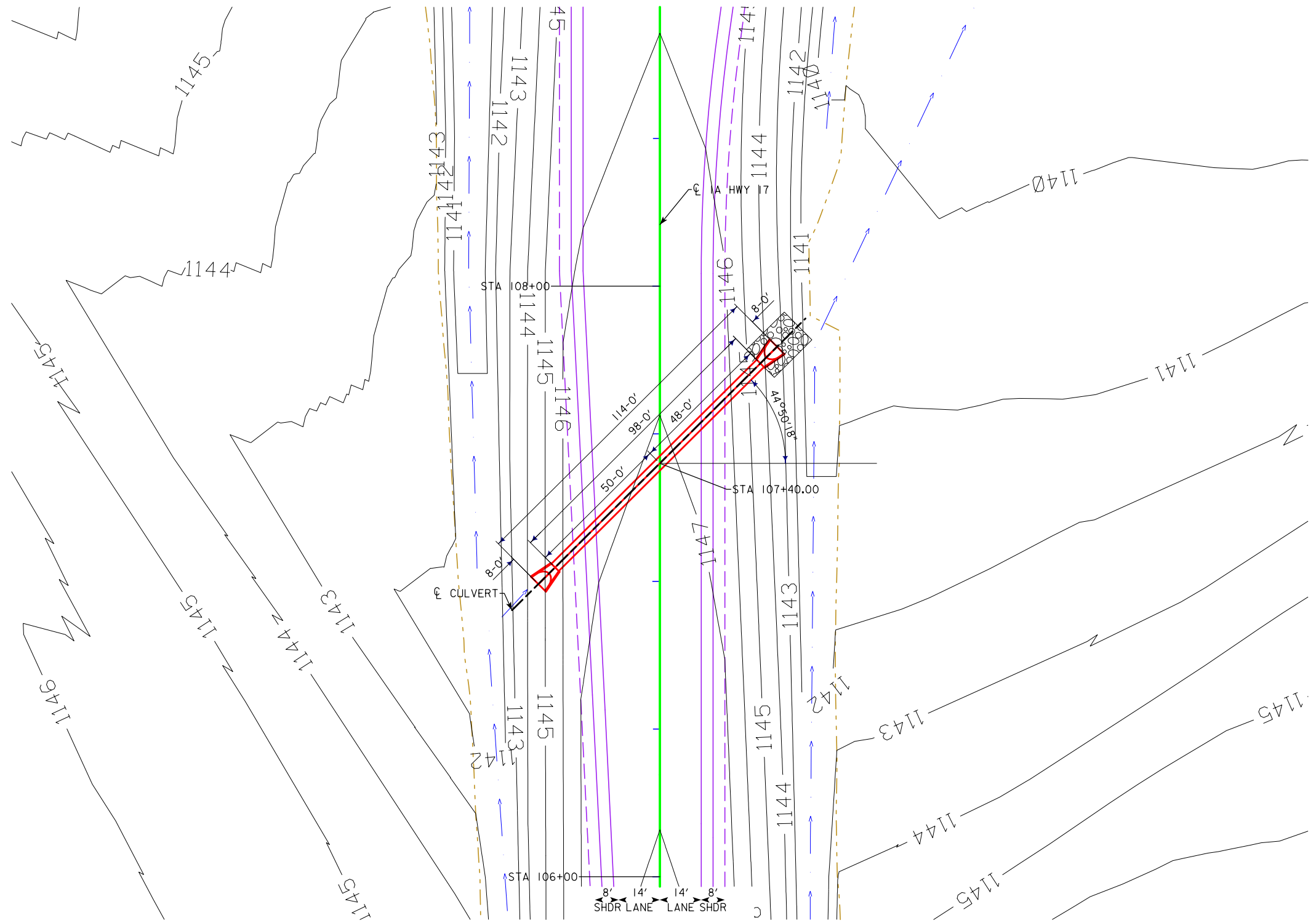
BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	20	39	14
TOTALS	20	39	14

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



PLAT PLAN

UTILITIES LEGEND:  
 REFER TO D.I

HYDRAULIC DATA

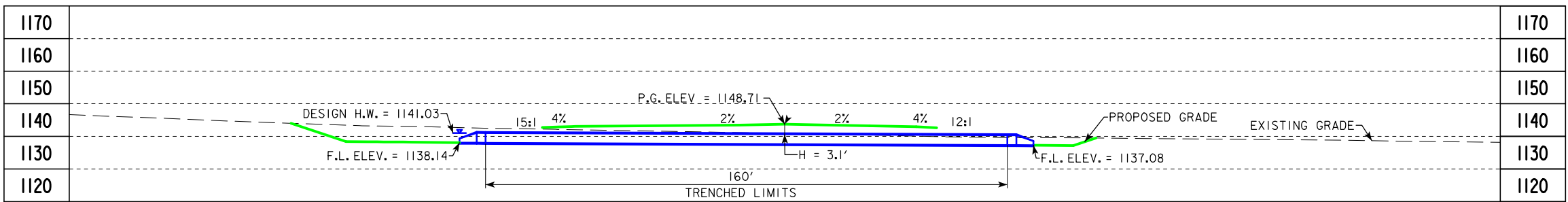
DRAINAGE AREA = 58.5 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 67 CFS  
 DESIGN HIGH WATER = +4.28

LOCATION

1A-17  
 T-84N R-25W & R-26W  
 SECTIONS 30 & 25  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



DESIGN FOR 45° SKEW  
**42" X 98'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 107+40.00  $\phi$  Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?

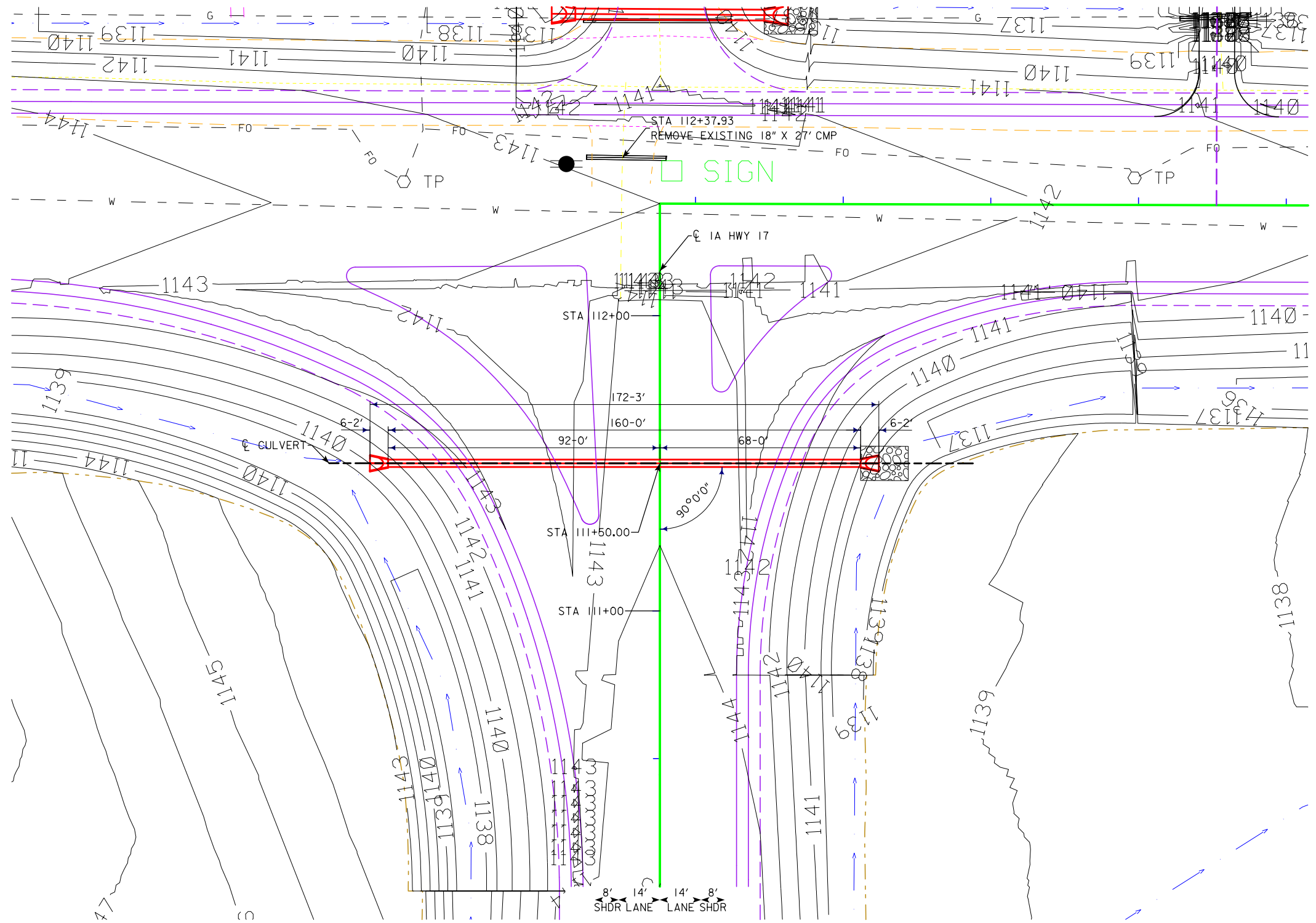


BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

**ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS**

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	17	34	12
TOTALS	17	34	12

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



**UTILITIES LEGEND:**  
 REFER TO D.I

**HYDRAULIC DATA**

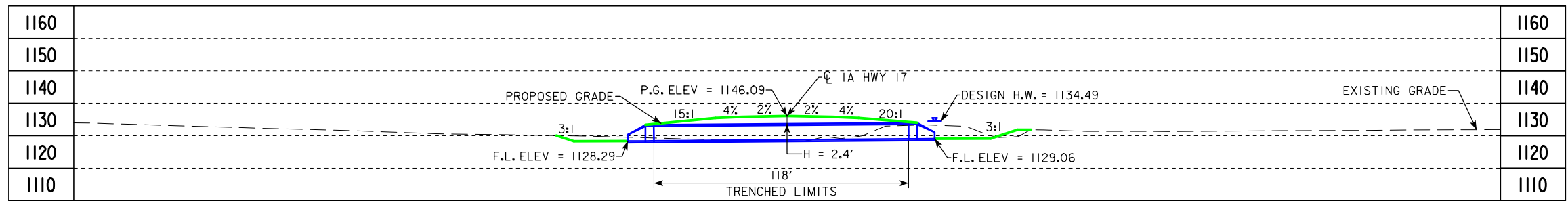
DRAINAGE AREA = 18.0 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 27 CFS  
 DESIGN HIGH WATER = 1141.03

**LOCATION**

IA-17  
 T-84N R-25W & R-26W  
 SECTIONS 30 & 25  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY

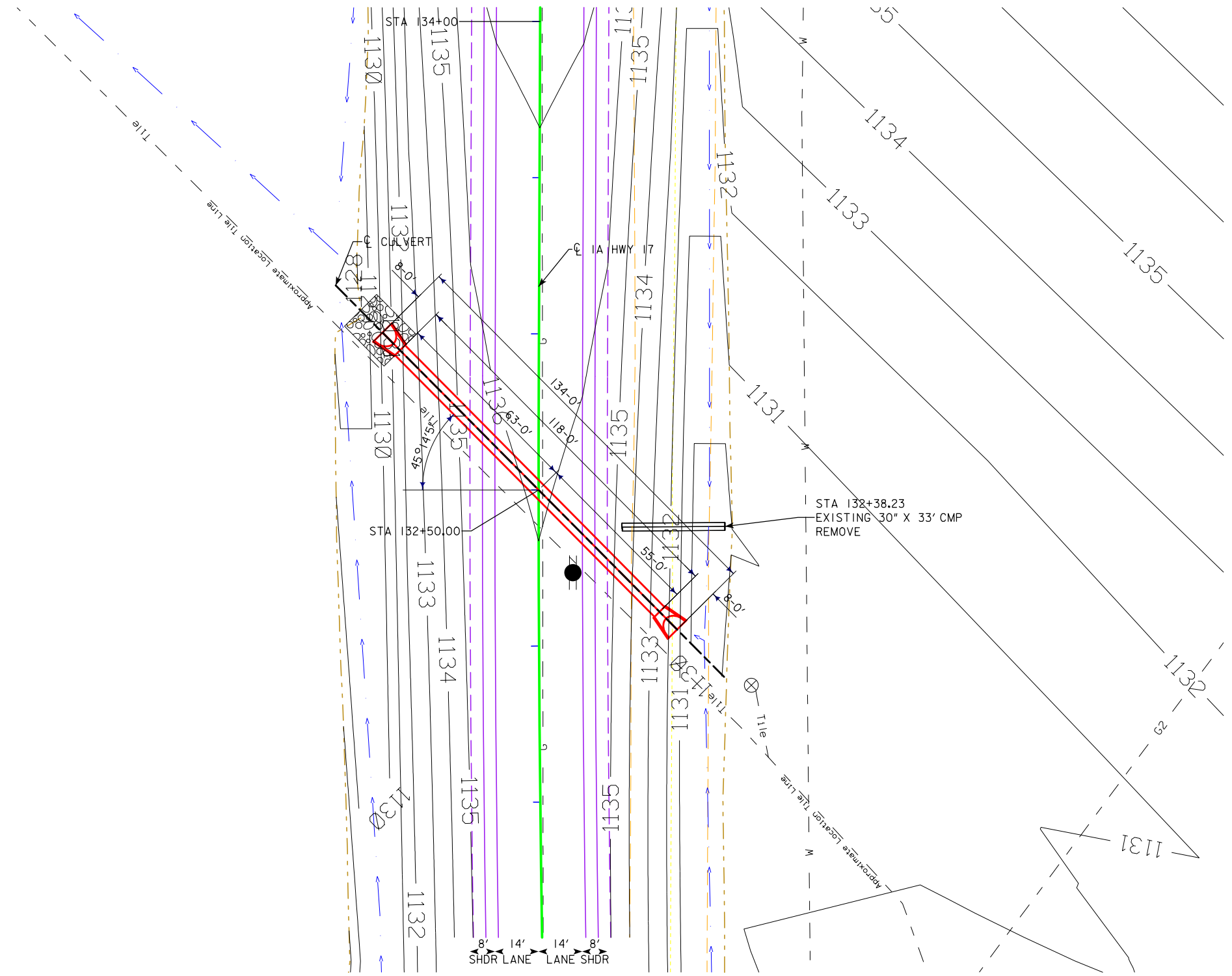


DESIGN FOR 0° SKEW  
**30" X 160'**  
**REINFORCED CONCRETE PIPE**  
**PLAT PLAN**  
 STA. 111+50.00 C Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 1 FILE NO. ? DESIGN NO. ?



BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

LONGITUDINAL SECTION ALONG  $\phi$  CULVERT



ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	22	42	16
TOTALS	22	42	16

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

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

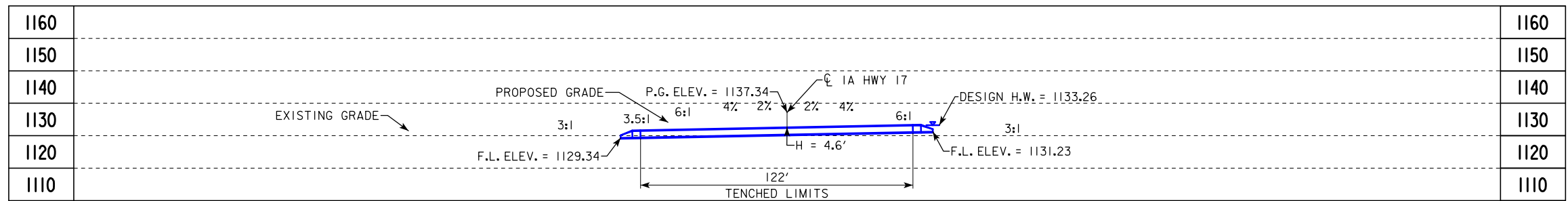
DRAINAGE AREA = 138.1 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 124 CFS  
 DESIGN HIGH WATER = 1134.49

LOCATION

IA-17  
 T-84N R-25W  
 SECTIONS 19 & 30  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



DESIGN FOR 45° SKEW  
**54" X 118'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 132+50.00  $\phi$  Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?



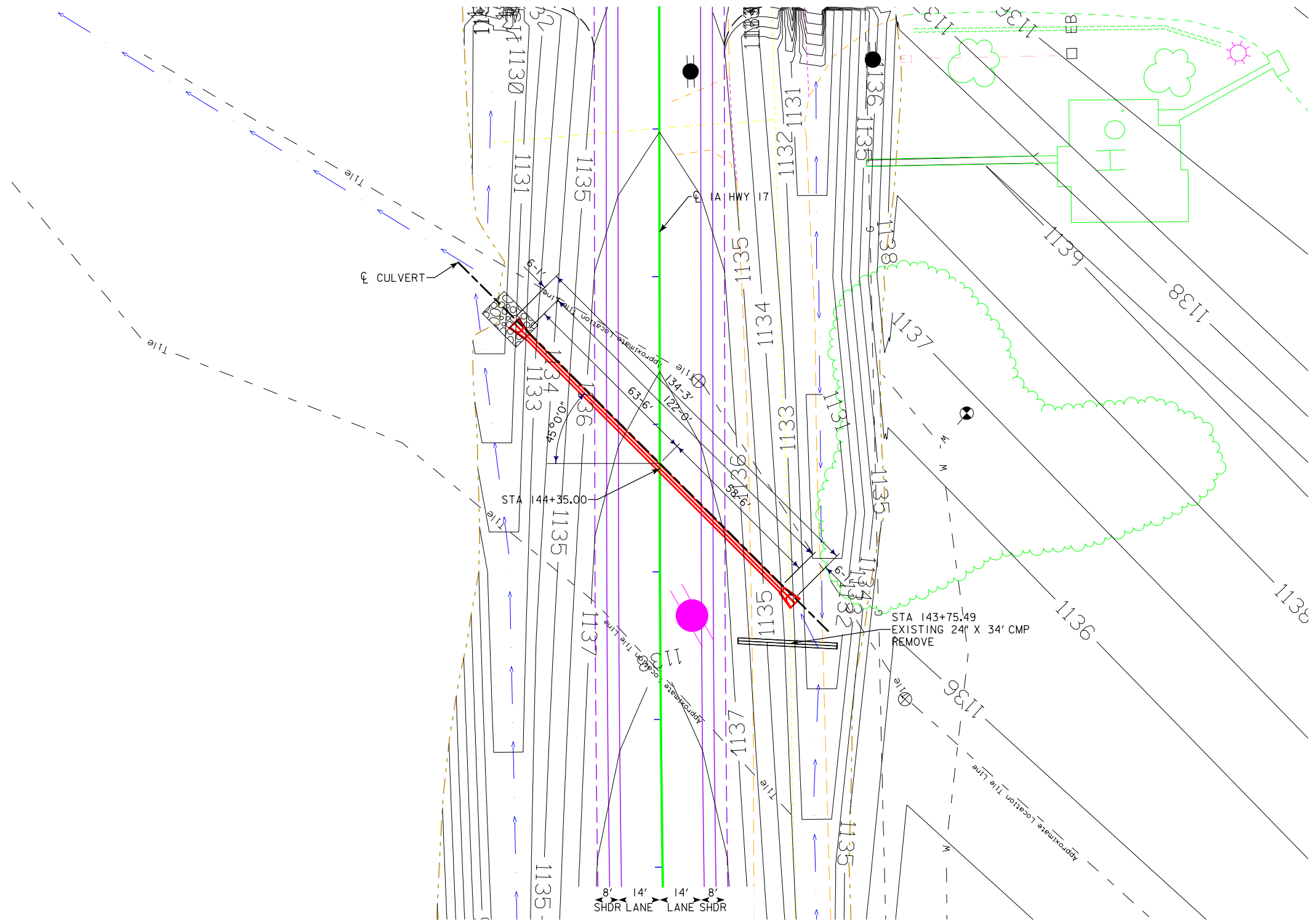
BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

LONGITUDINAL SECTION ALONG CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	16	33	11
TOTALS	16	33	11

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



PLAT PLAN

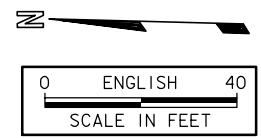
UTILITIES LEGEND:  
 REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 7.1 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 13 CFS  
 DESIGN HIGH WATER = 1133.26

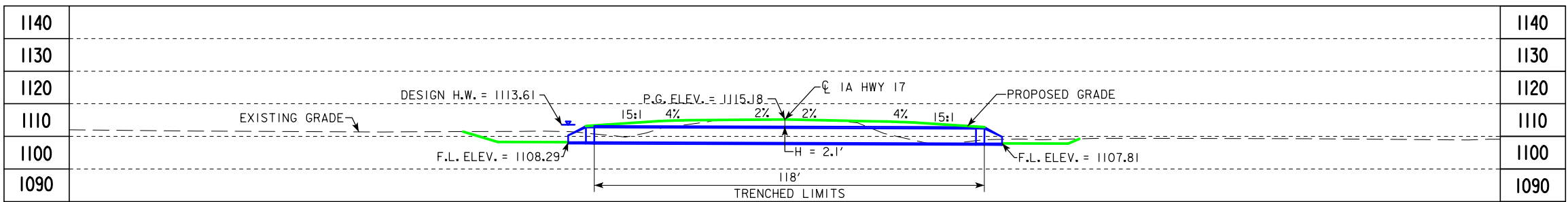
LOCATION

IA-17  
 T-84N R-25W  
 SECTIONS 19 & 30  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



DESIGN FOR 45° SKEW  
**24" X 122'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 144+35.00 C Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?





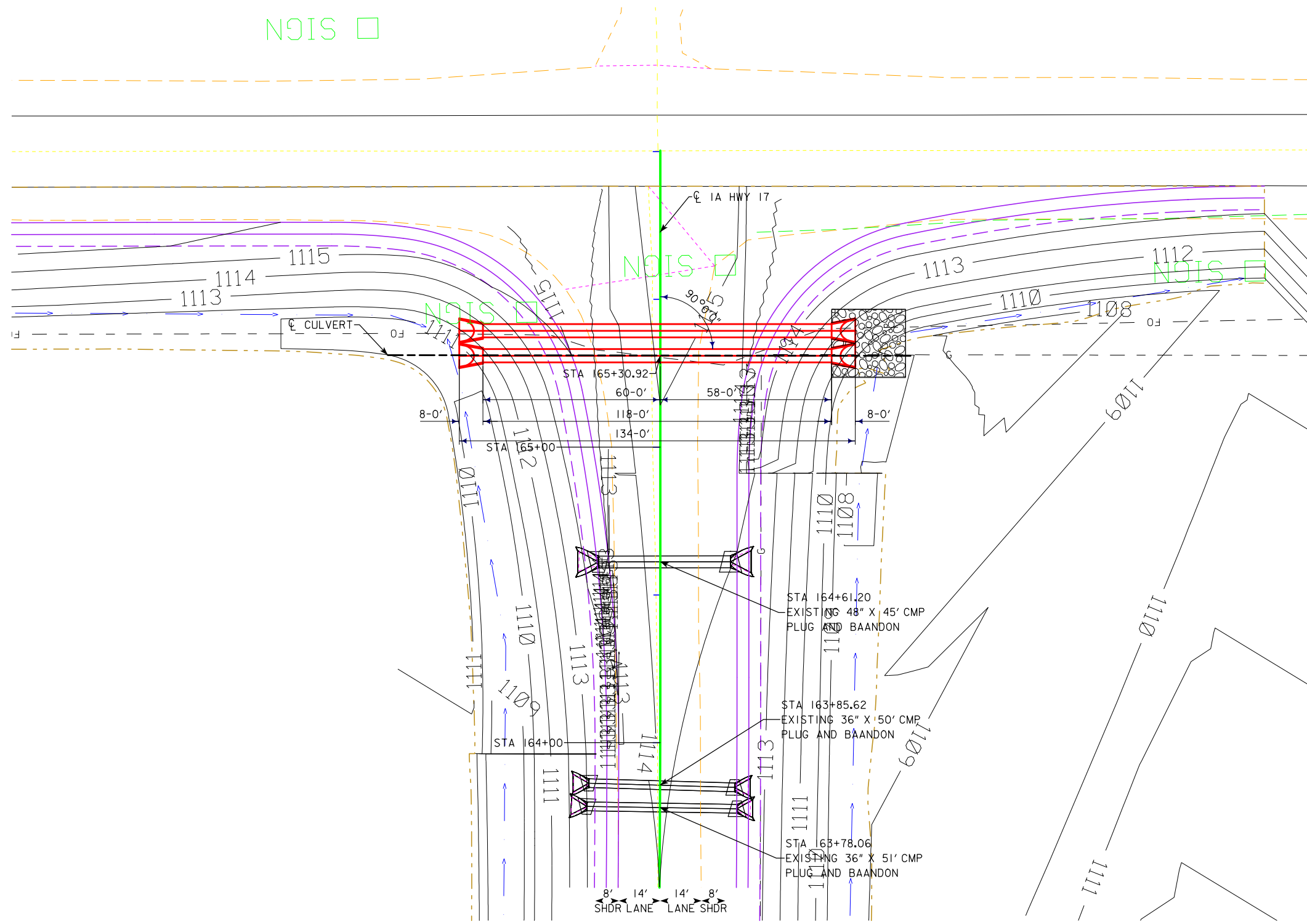
LONGITUDINAL SECTION ALONG CL CULVERT

BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	24	42	18
TOTALS	24	42	18

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

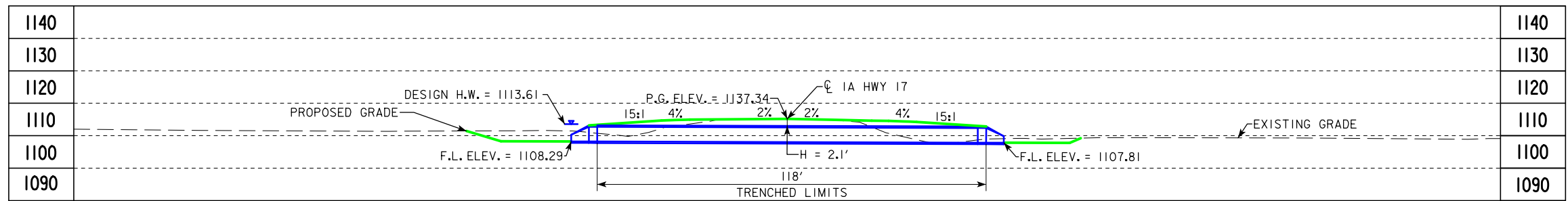
DRAINAGE AREA = PART OF 354 ACRES  
 DESIGN DISCHARGE,  $Q_{50} = 242$  CFS  
 DESIGN HIGH WATER = 1113.61

LOCATION

IA-17  
 T-84N R-25W  
 SECTIONS 19 & 30  
 JACKSON TOWNSHIP  
 BOONE COUNTY



DESIGN FOR 0° SKEW  
**54" X 118'**  
**REINFORCED CONCRETE PIPE**  
**PLAT PLAN**  
 STA. 165+30.92 CL Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?



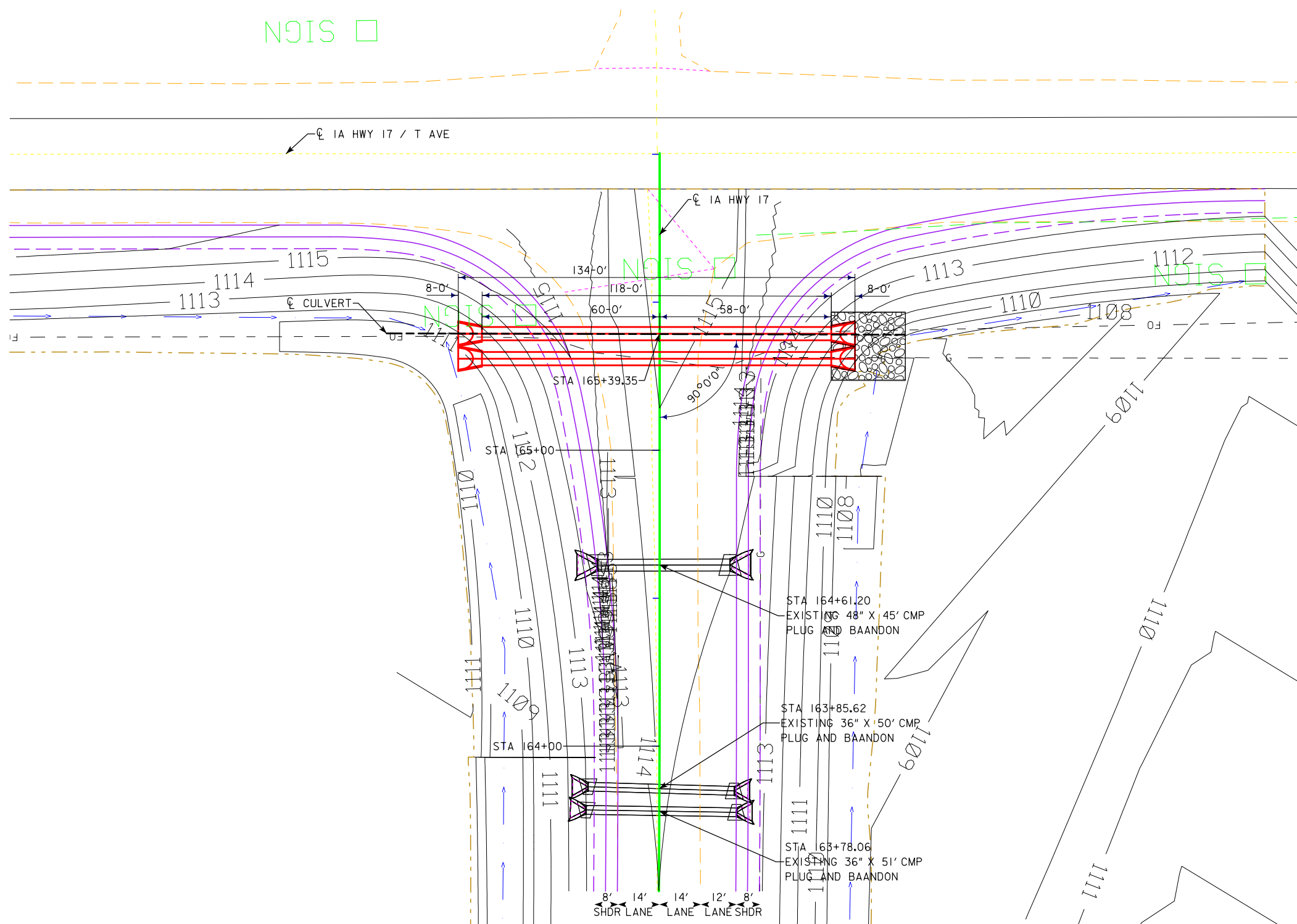
LONGITUDINAL SECTION ALONG CL CULVERT

BENCH MARK NO. C910  
 ELEV. = 889.337  
 STA. 53+67.35, 20.73' RT  
 IRS RED CAP

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	24	42	18
TOTALS	24	42	18

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



PLAT PLAN

UTILITIES LEGEND:

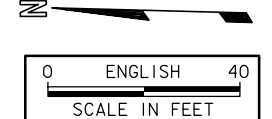
REFER TO D.I

HYDRAULIC DATA

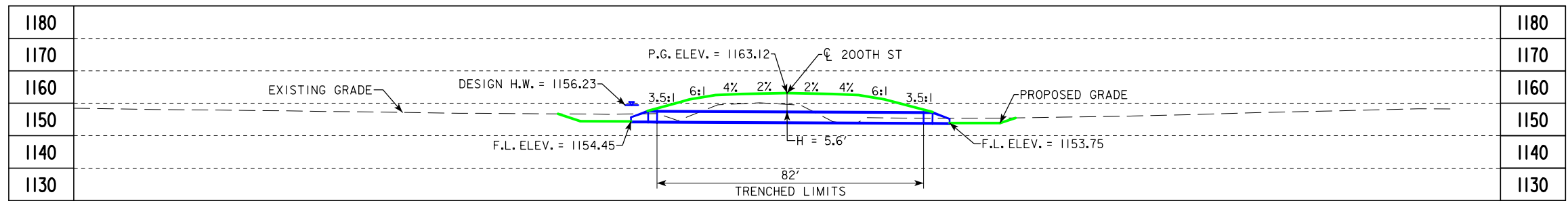
DRAINAGE AREA = PART OF 354 ACRES  
 DESIGN DISCHARGE,  $Q_{50} = 242$  CFS  
 DESIGN HIGH WATER = 1113.61

LOCATION

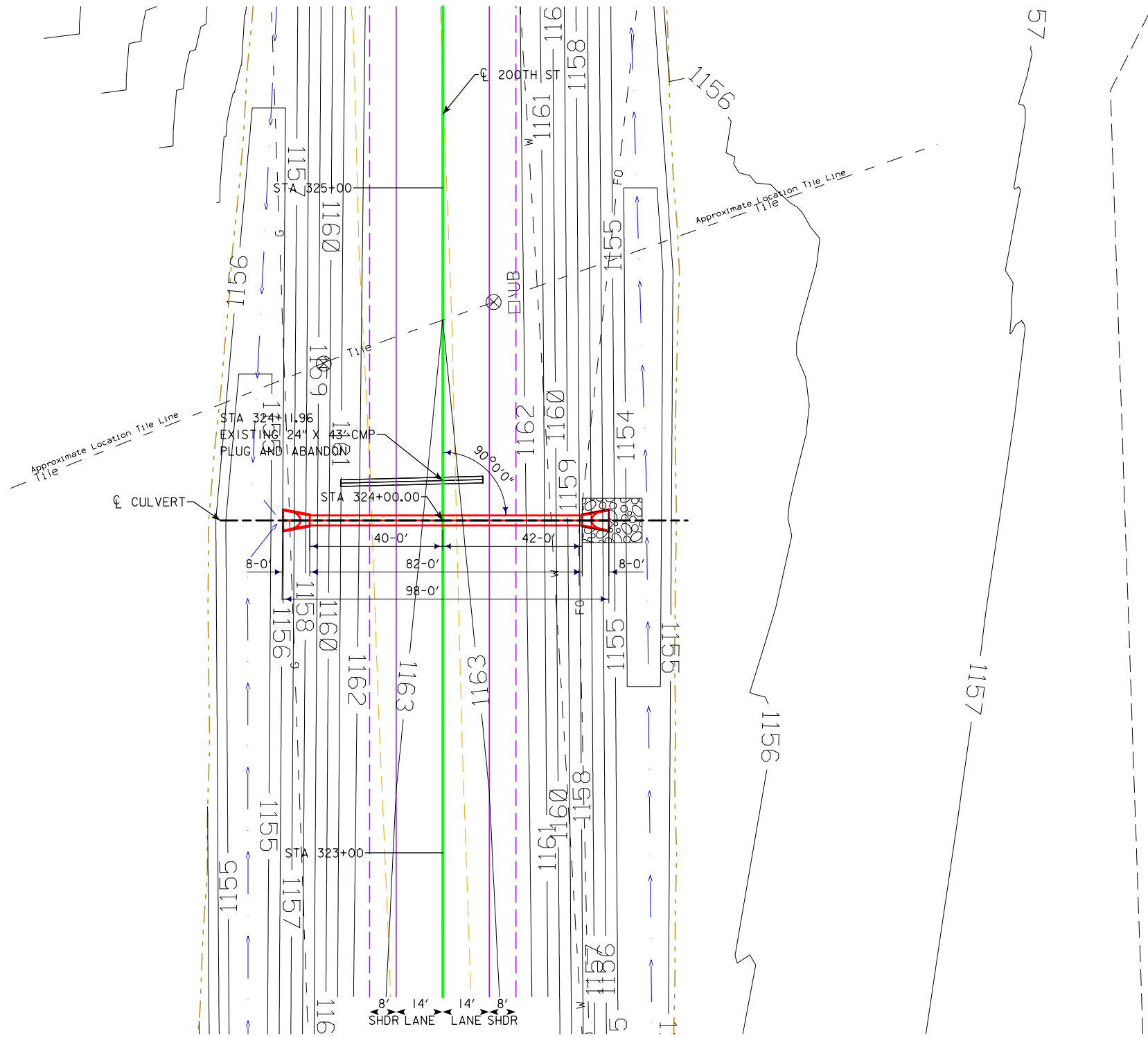
IA-17  
 T-84N R-25W  
 SECTIONS 19 & 30  
 JACKSON TOWNSHIP  
 BOONE COUNTY



DESIGN FOR 0° SKEW  
**54" X 118'**  
**REINFORCED CONCRETE PIPE**  
**PLAT PLAN**  
 STA. 165+39.35 CL Iowa Hwy 17 JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?



LONGITUDINAL SECTION ALONG CL. CULVERT



PLAT PLAN

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	20	39	14
TOTALS	20	39	14

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

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

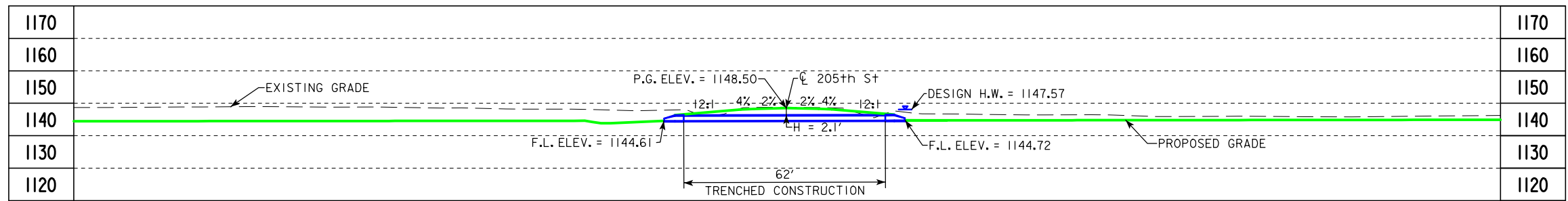
DRAINAGE AREA = 50.3 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 59 CFS  
 DESIGN HIGH WATER = 1156.23

LOCATION

IA-17  
 T-84N R-26W  
 SECTIONS 23 & 26  
 DES MOINES TOWNSHIP  
 BOONE COUNTY



DESIGN FOR 0° SKEW  
**36" X 82'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 324+00.00 CL. 200th St. JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. \_\_\_ OF \_\_\_ FILE NO. \_\_\_ ? DESIGN NO. ?

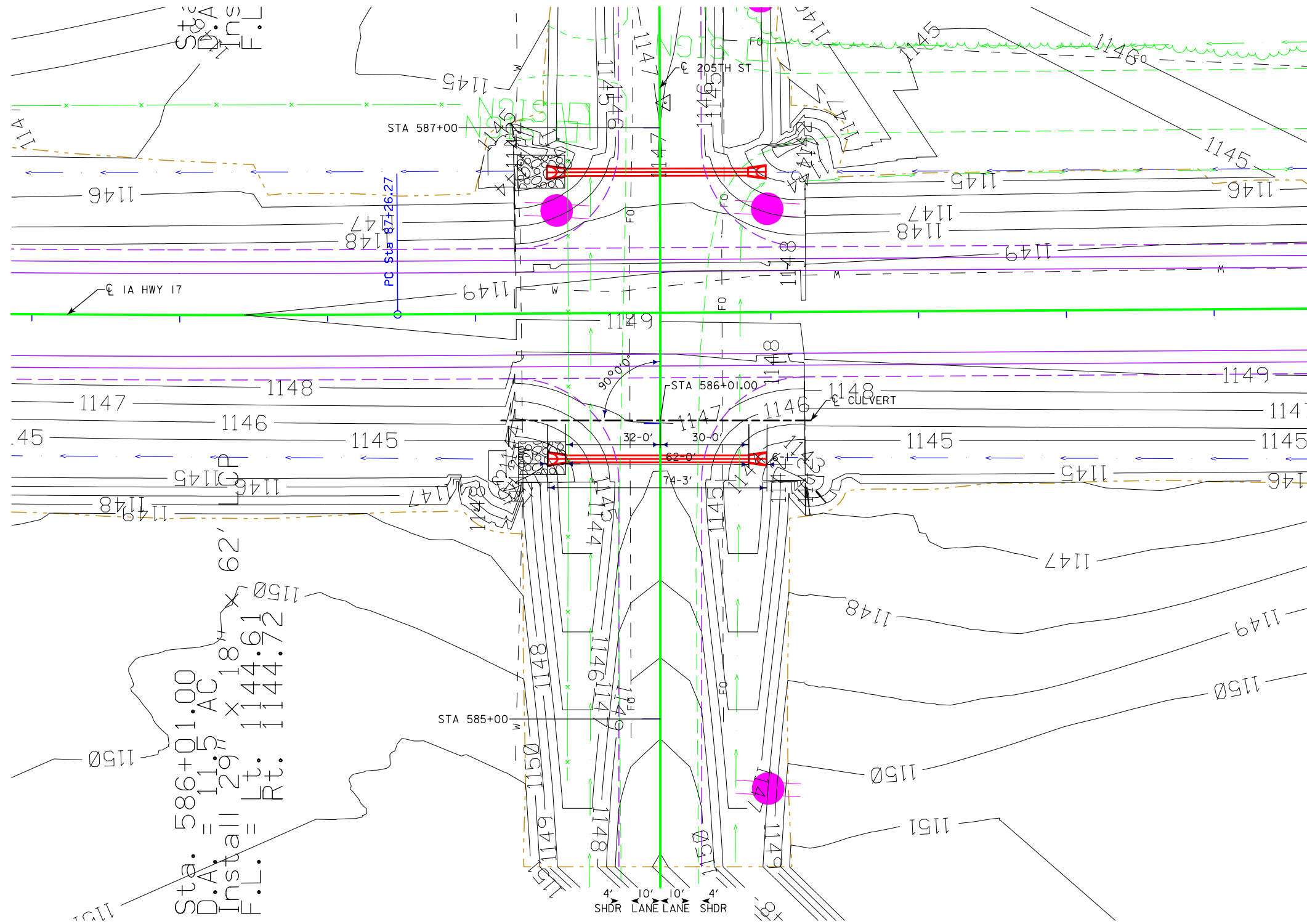


LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	17	33	12
TOTALS	17	33	12

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 11.5 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 19 CFS  
 DESIGN HIGH WATER = 1147.57



LOCATION

IA-17  
 T-84N R-25W & R-26W  
 SECTIONS 30 & 25  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY



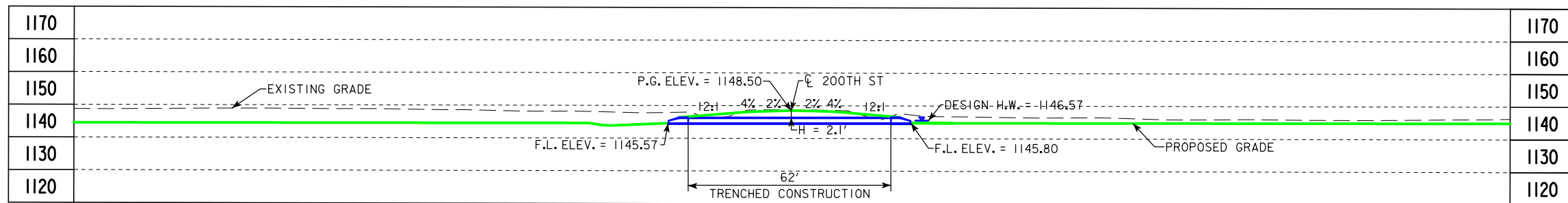
DESIGN FOR 0° SKEW  
**29" X 18" X 62'**  
**LOW CLEARANCE CONCRETE PIPE**

PLAT PLAN

STA. 586+01.00  $\phi$  205th St. JUNE 2018

BOONE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? DESIGN NO.    ?

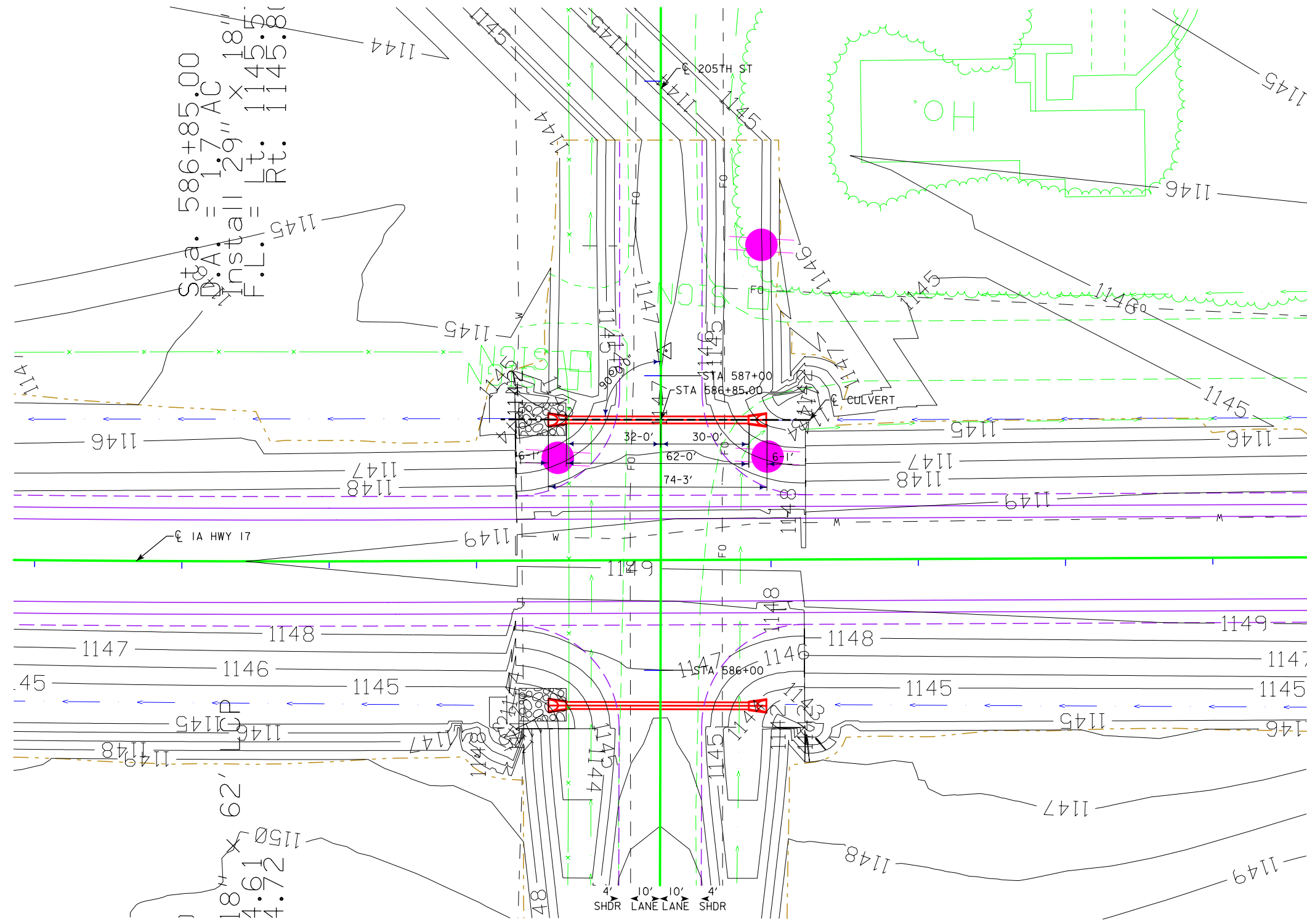


LONGITUDINAL SECTION ALONG  $\phi$  CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	17	33	12
TOTALS	17	33	12

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.1

HYDRAULIC DATA

DRAINAGE AREA = 1.7 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 4 CFS  
 DESIGN HIGH WATER = 1146.57

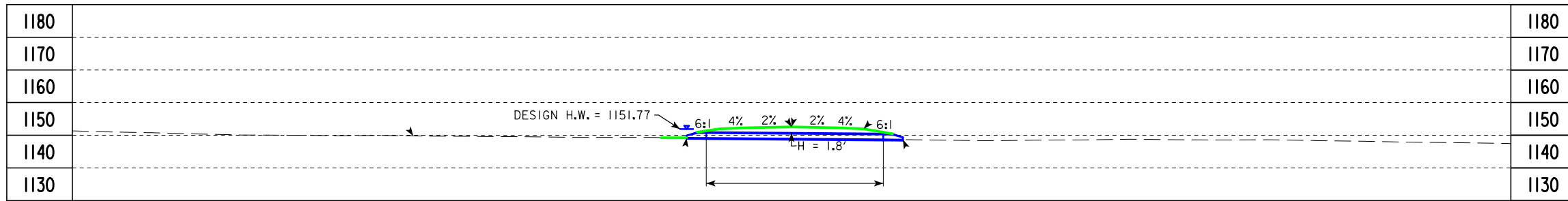
LOCATION

1A-17  
 T-84N R-25W & R-26W  
 SECTIONS 30 & 25  
 DES MOINES AND JACKSON TOWNSHIPS  
 BOONE COUNTY

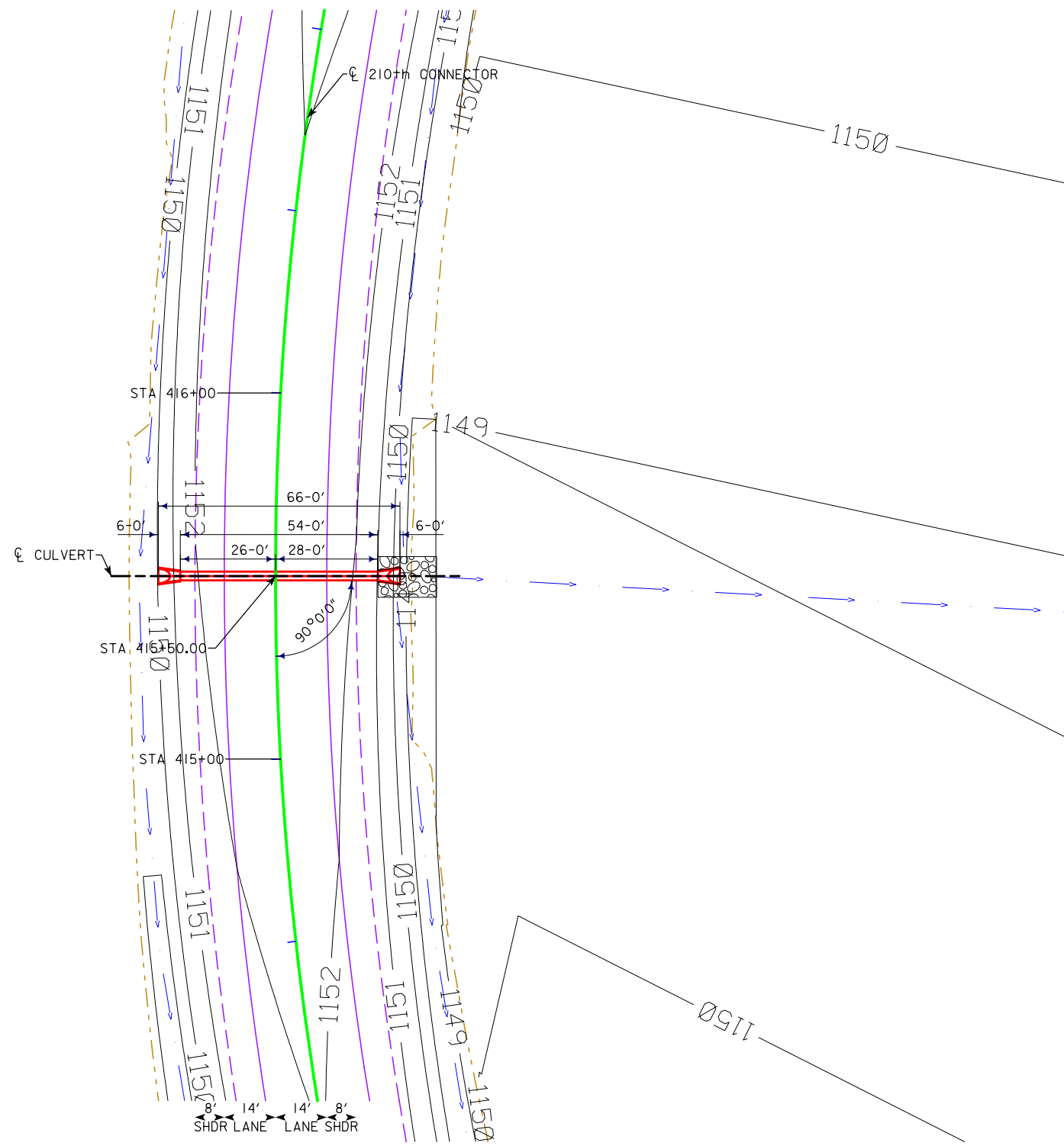


DESIGN FOR 0° SKEW  
**29" X 18" X 62'**  
 LOW CLEARANCE CONCRETE PIPE

PLAT PLAN  
 STA. 586+85.00  $\phi$  205th St. JUNE 2018  
 BOONE COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 1 FILE NO. ? DESIGN NO. ?



LONGITUDINAL SECTION ALONG  $\phi$  CULVERT



PLAT PLAN

ESTIMATED REVELTMENT QUANTITIES INCLUDED WITH ROAD PLANS			
LOCATION	REVELTMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	17	33	12
TOTALS	17	33	12

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

UTILITIES LEGEND:

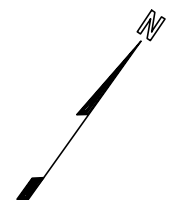
REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 10.5 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 18 CFS  
 DESIGN HIGH WATER = 1151.77

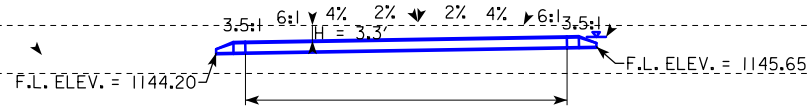
LOCATION

1A-17  
 T-84N R-26W  
 SECTION 36  
 DES MOINES TOWNSHIP  
 BOONE COUNTY



DESIGN FOR 0° SKEW  
**29" X 18" X 54'**  
**LOW CLEARANCE CONCRETE PIPE**  
 PLAT PLAN  
 STA. 415+50.00  $\phi$  210th CONNECTOR JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. \_\_\_ OF \_\_\_ FILE NO. \_\_\_ ? DESIGN NO. \_\_\_ ?

1180		1180
1170		1170
1160		1160
1150		1150
1140		1140
1130		1130

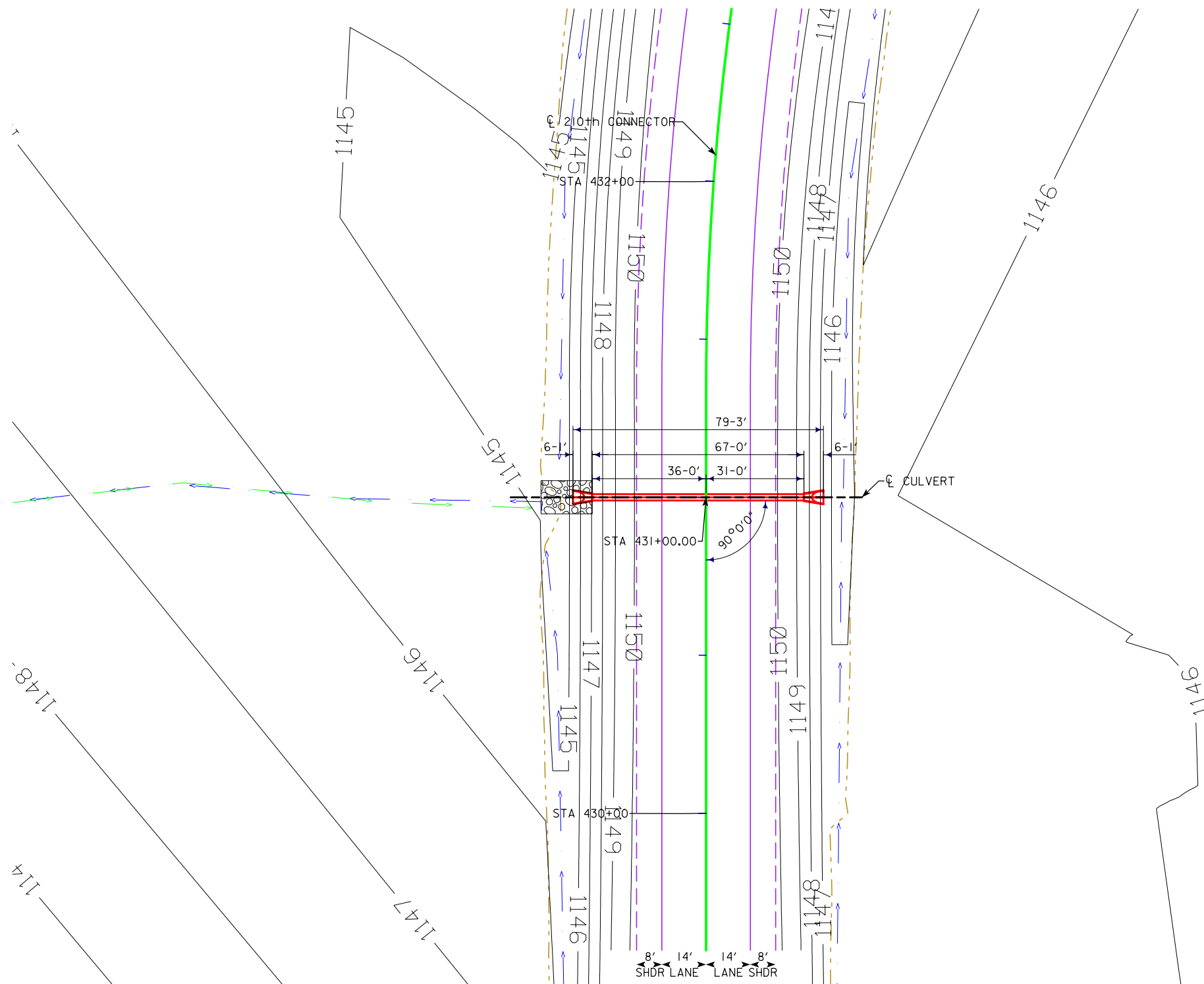


LONGITUDINAL SECTION ALONG CULVERT

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	16	32	11
TOTALS	16	32	11

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



PLAT PLAN

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 7.1 ACRES  
 DESIGN DISCHARGE,  $Q_{50}$  = 13 CFS  
 DESIGN HIGH WATER = 1147.68

LOCATION

1A-17  
 T-84N R-26W  
 SECTION 36  
 DES MOINES TOWNSHIP  
 BOONE COUNTY



DESIGN FOR 0° SKEW  
**24" X 67'**  
**REINFORCED CONCRETE PIPE**

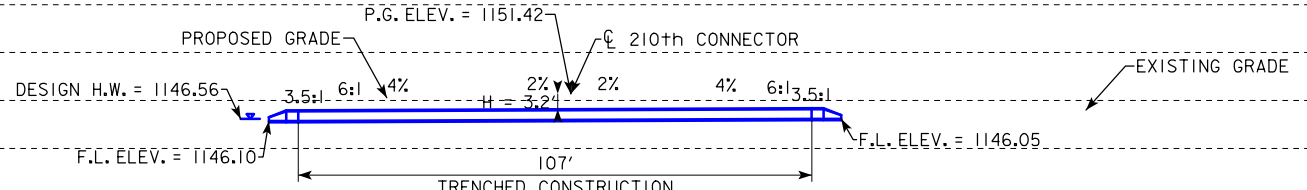
PLAT PLAN

STA. 431+00.00 C 215th St JUNE 2018

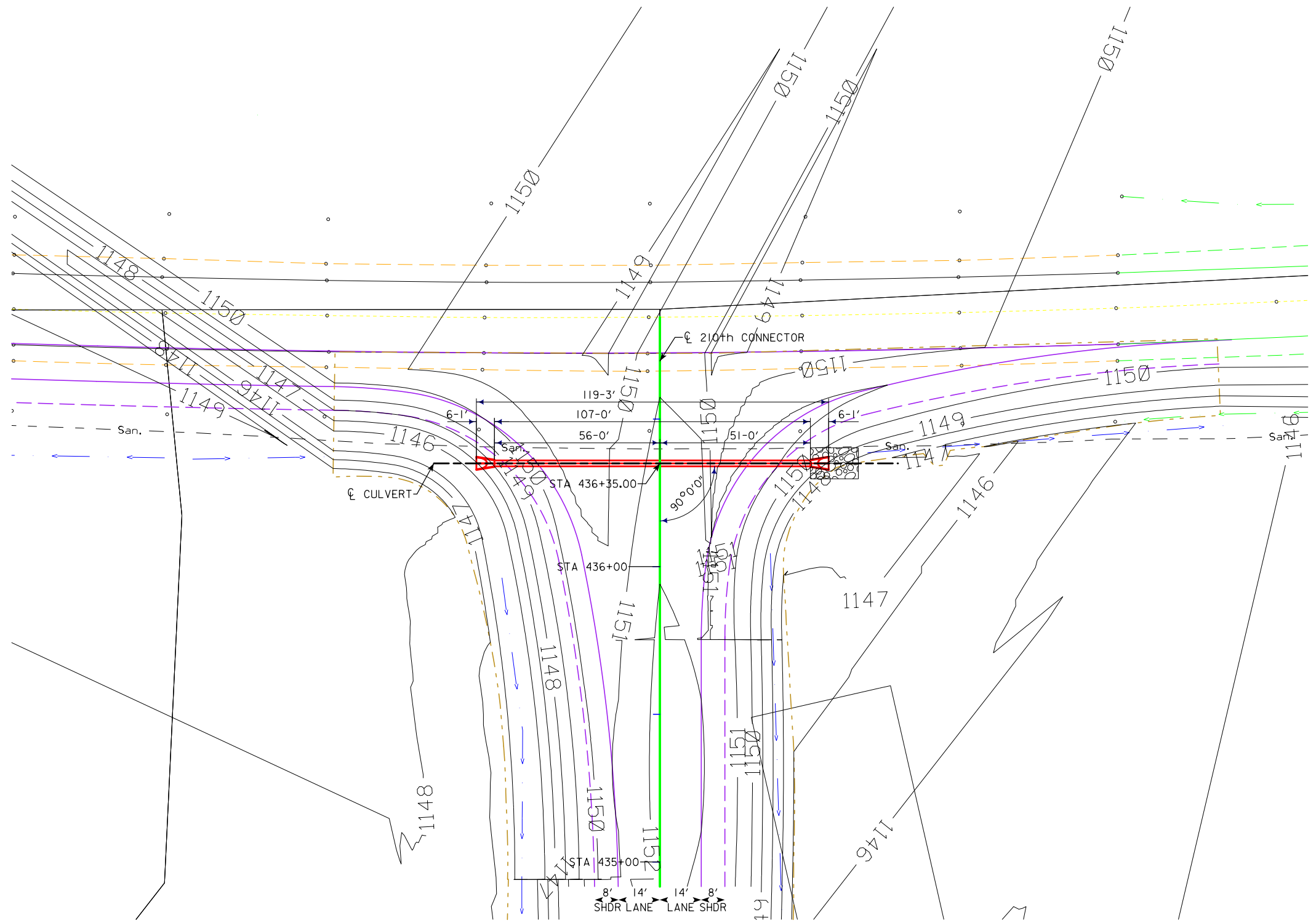
BOONE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. \_\_\_ OF \_\_\_ FILE NO. \_\_\_ ? DESIGN NO. \_\_\_ ?

1180		1180
1170		1170
1160		1160
1150		1150
1140		1140
1130		1130



LONGITUDINAL SECTION ALONG CULVERT



PLAT PLAN

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	16	32	11
TOTALS	16	32	11

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

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 1.0 ACRES  
 DESIGN DISCHARGE, Q<sub>50</sub> = 2 CFS  
 DESIGN HIGH WATER = +0.46

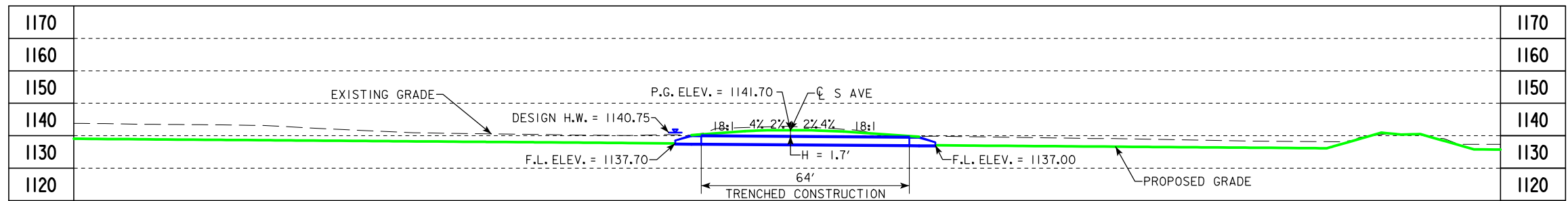
LOCATION

1A-17  
 T-84N R-26W  
 SECTION 36  
 DES MOINES TOWNSHIP  
 BOONE COUNTY



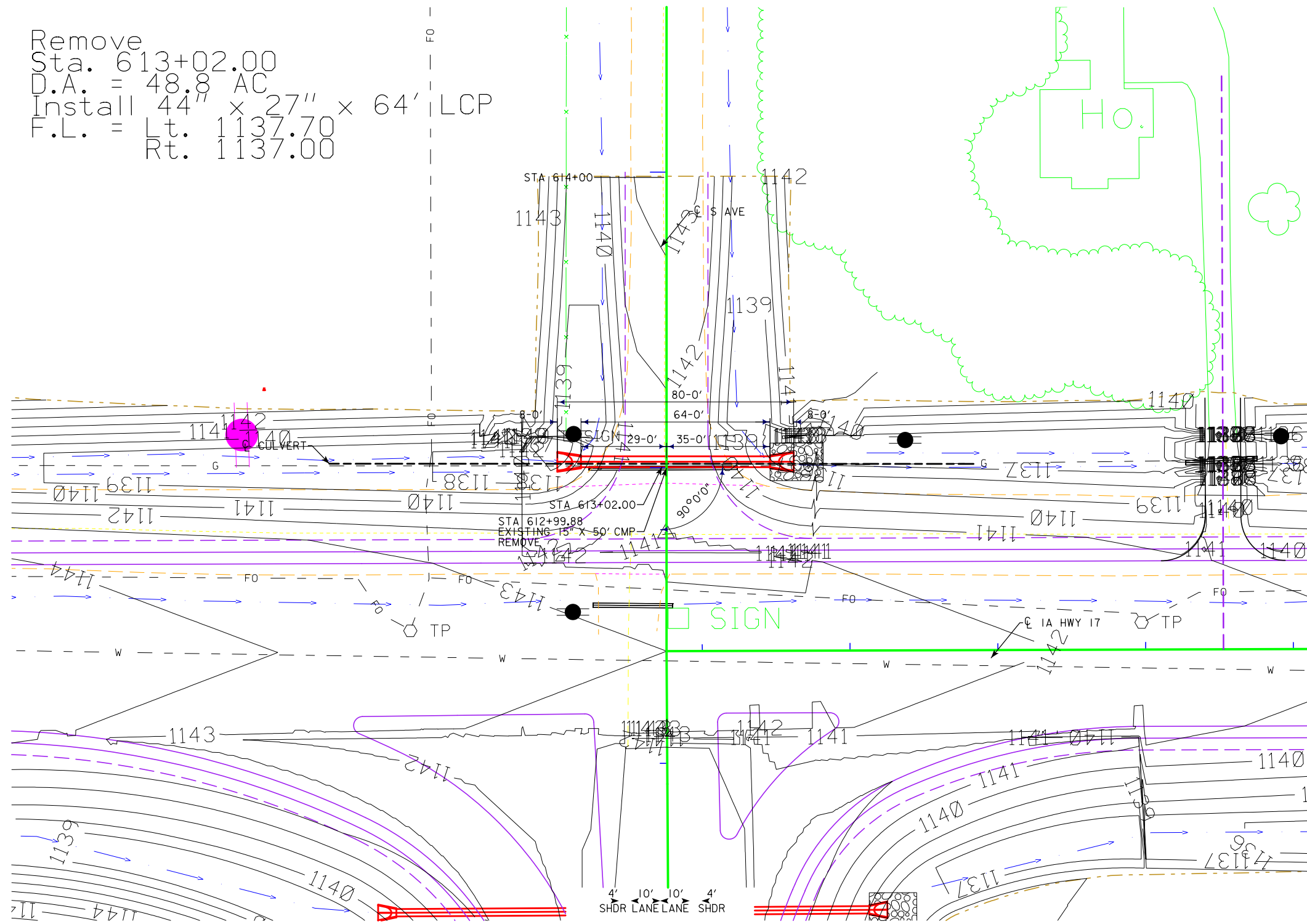
DESIGN FOR 0° SKEW  
**24" X 107'**  
**REINFORCED CONCRETE PIPE**  
 PLAT PLAN  
 STA. 431+00.00 C 210th CONNECTOR JUNE 2018  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO.    OF    FILE NO.    ? ? DESIGN NO.    ?





LONGITUDINAL SECTION ALONG CL CULVERT

Remove  
Sta. 613+02.00  
D.A. = 48.8 AC  
Install 44" x 27" x 64' LCP  
F.L. = Lt. 1137.70  
Rt. 1137.00



PLAT PLAN

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	0	0	0
OUTLET	20	40	14
TOTALS	20	40	14

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

UTILITIES LEGEND:

REFER TO D.I

HYDRAULIC DATA

DRAINAGE AREA = 48.8 ACRES  
DESIGN DISCHARGE, Q<sub>50</sub> = 43 CFS  
DESIGN HIGH WATER = 1140.75

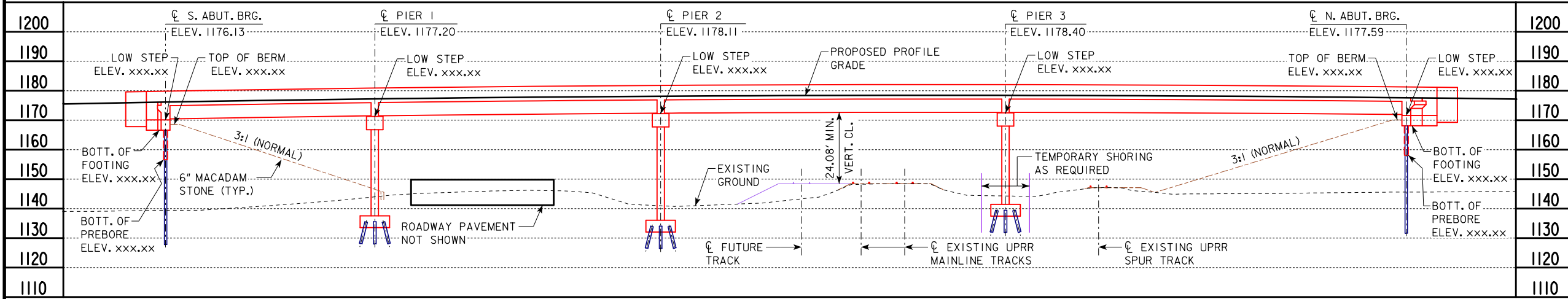
LOCATION

IA-17  
T-84N R-25W & R-26W  
SECTIONS 19 & 24  
JACKSON TOWNSHIP  
BOONE COUNTY



DESIGN FOR 0° SKEW  
44" X 27" X 64'  
LOW CLEARANCE CONCRETE PIPE

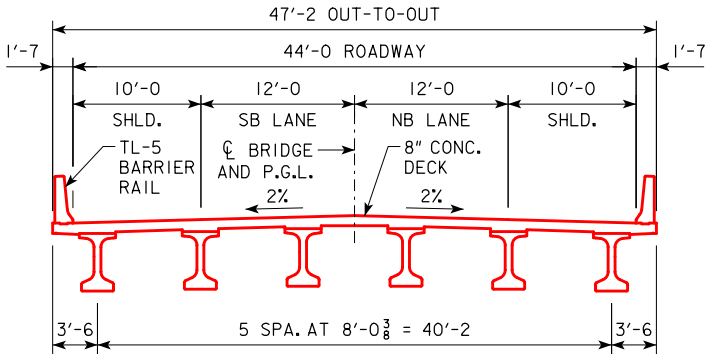
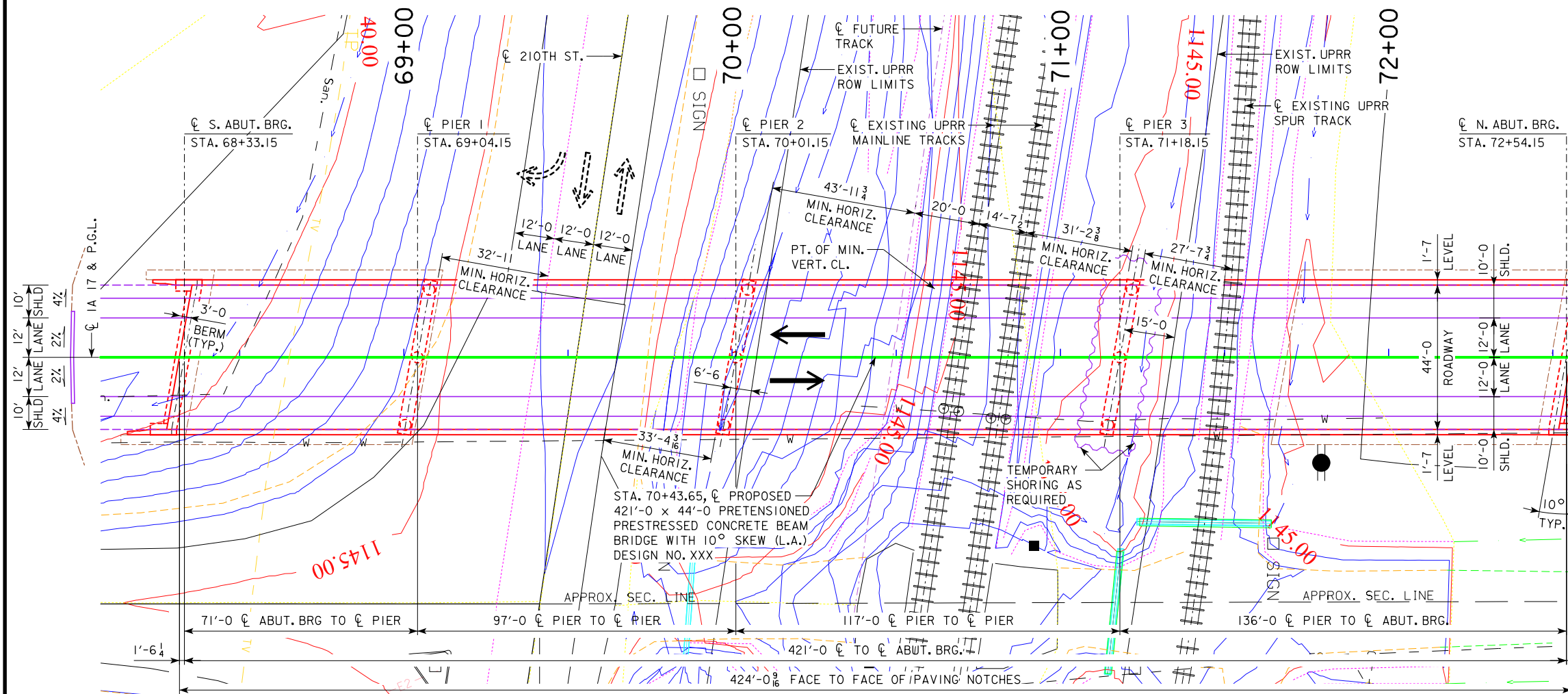
PLAT PLAN  
STA. 613+02.00 CL S AVE  
BOONE COUNTY  
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. 1 OF 1 FILE NO. ? DESIGN NO. ?



**RAILROAD MILEPOST DATA**  
 DOT CROSSING INVENTORY NUMBER: 190721W  
 UNION PACIFIC RAILROAD COMPANY MILEPOST: 0199.430  
 MILEPOST INCREASING TOWARD WEST  
 NOTE: NO AESTHETIC TREATMENTS ARE INTENDED ON BRIDGE.

**LONGITUDINAL SECTION ALONG CL BRIDGE**

TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.03' BELOW THE PROFILE GRADE LINE TO ACCOUNT FOR THE PARABOLIC CROWN.



**BRIDGE CROSS SECTION**

(LOOKING NORTH)  
 BTD BEAMS  
 NOTE: TRANSITION TO TL-4 BARRIER OUTSIDE UPRR ROW.

**IA 17 TRAFFIC ESTIMATE**

2015 AADT	3,330	V.P.D.
202_ AADT	-	V.P.D.
202_ DHV	-	V.P.H.
TRUCKS	-	%
TOTAL DESIGN ESALS	-	

**210TH STREET TRAFFIC ESTIMATE**

2015 AADT	-	V.P.D.
202_ AADT	-	V.P.D.
202_ DHV	-	V.P.H.
TRUCKS	-	%
TOTAL DESIGN ESALS	-	

PRELIMINARY

**SITUATION PLAN**

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.



**MINIMUM VERTICAL CLEARANCE**

OVERHEAD STATION = 70+61.71, OFFSET 20.83' LT.  
 OVERHEAD ELEVATION = 1178.00  
 DEPTH OF SUPERSTRUCTURE = 5.33  
 UNDERPASS STATION = ?, OFFSET ??  
 UNDERPASS ELEVATION = 1148.59  
 MINIMUM VERTICAL CLEARANCE = 24.08'

**UTILITIES LEGEND:**

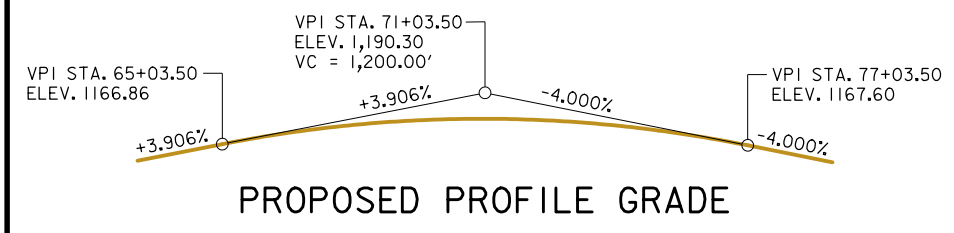
- TV - CABLE TV - MEDIACOM
- FO - FIBER OPTIC - CENTURYLINK
- W - WATER - XENIA RURAL WATER
- SAN. - SANITARY SEWER - XENIA RURAL WATER
- E2 - ELECTRIC - STATE OF IOWA

**LOCATION**

IA 17 OVER U.P.R.R.  
 T-84N R-25W  
 SECTION 30  
 JACKSON TOWNSHIP  
 BOONE COUNTY  
 FHWA NO. ?  
 BRIDGE MAINT. NO. ?  
 LATITUDE 42.052103°  
 LONGITUDE -93.815794°

**421'-0" x 44'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE**

SPANS (71'-0", 97'-0", 117'-0", 136'-0") (BTD BEAMS)  
**SITUATION PLAN**  
 STATION 70+43.65  
**BOONE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. ? OF ? FILE NO. ? DESIGN NO. ?



**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.

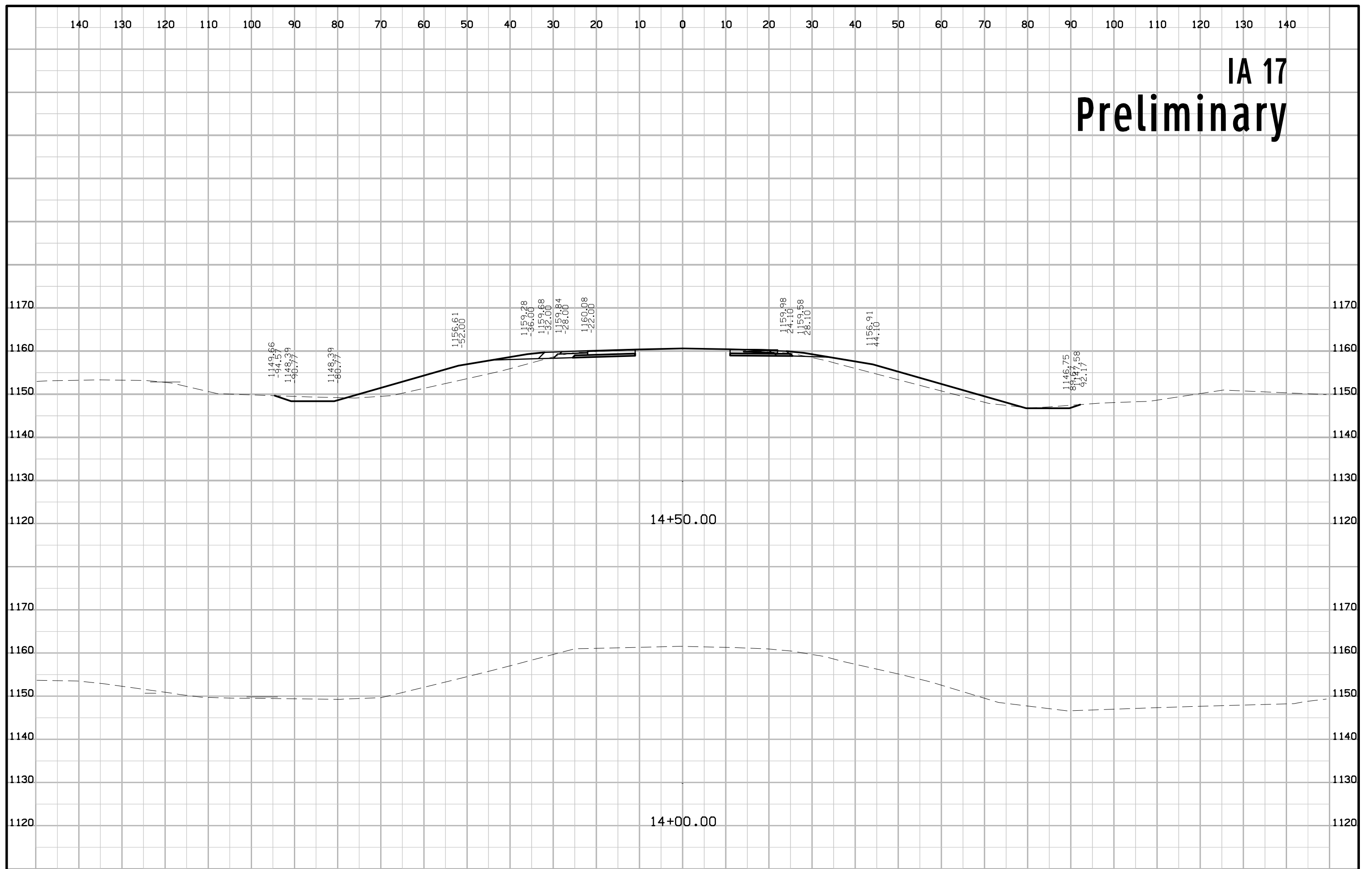
**SYMBOL LEGEND OF CROSS SECTION SHEETS**

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

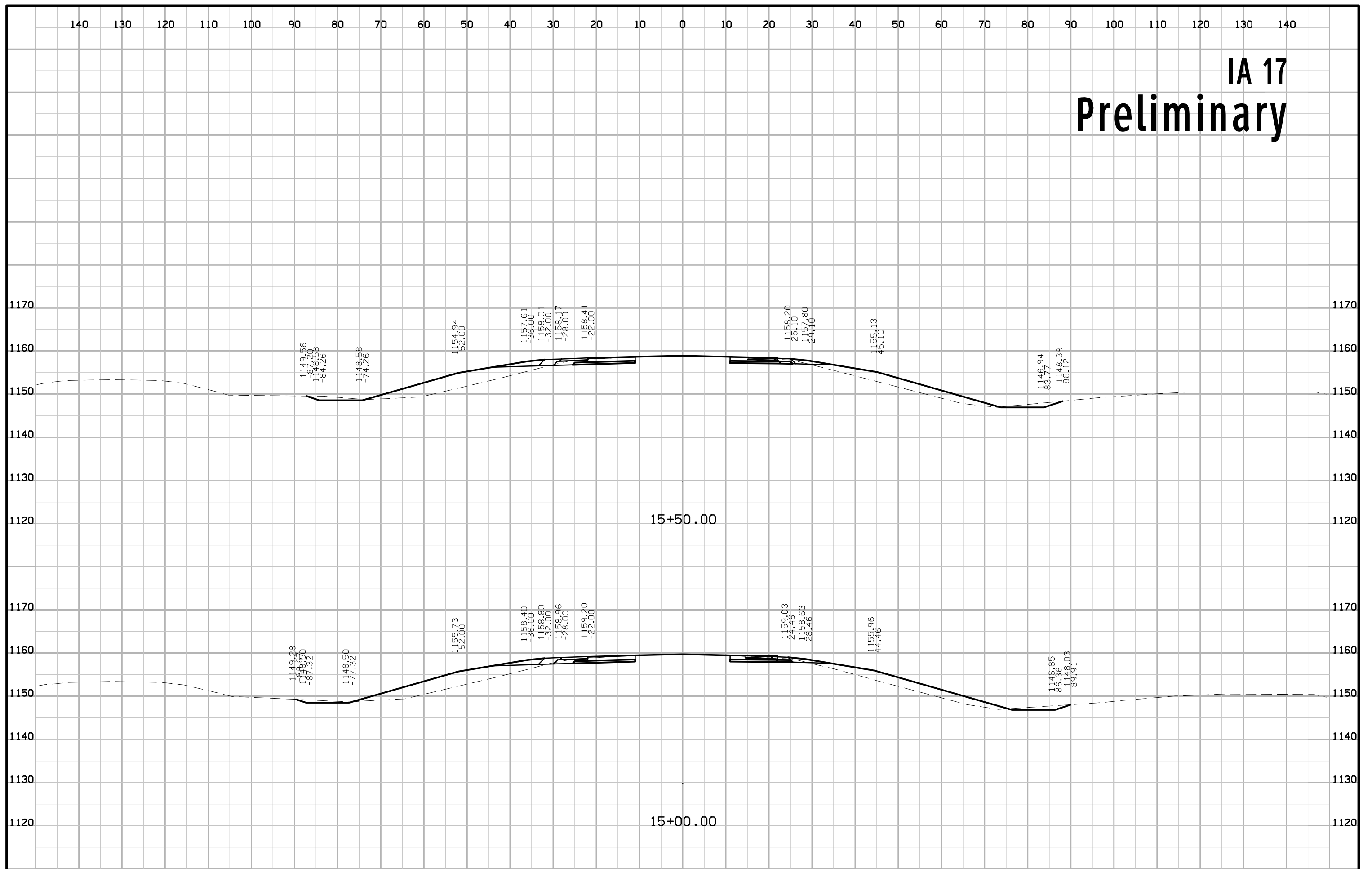
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

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

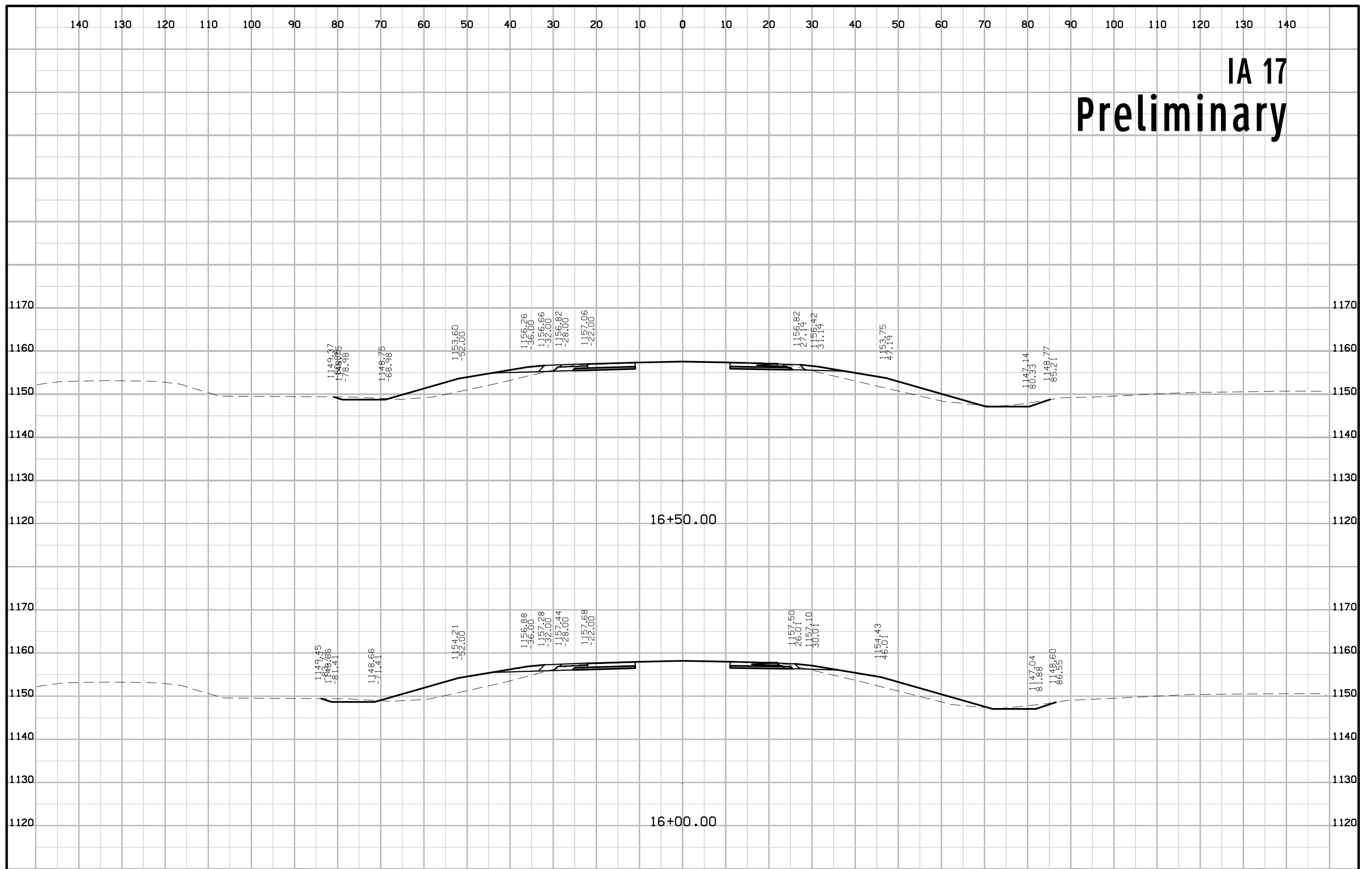
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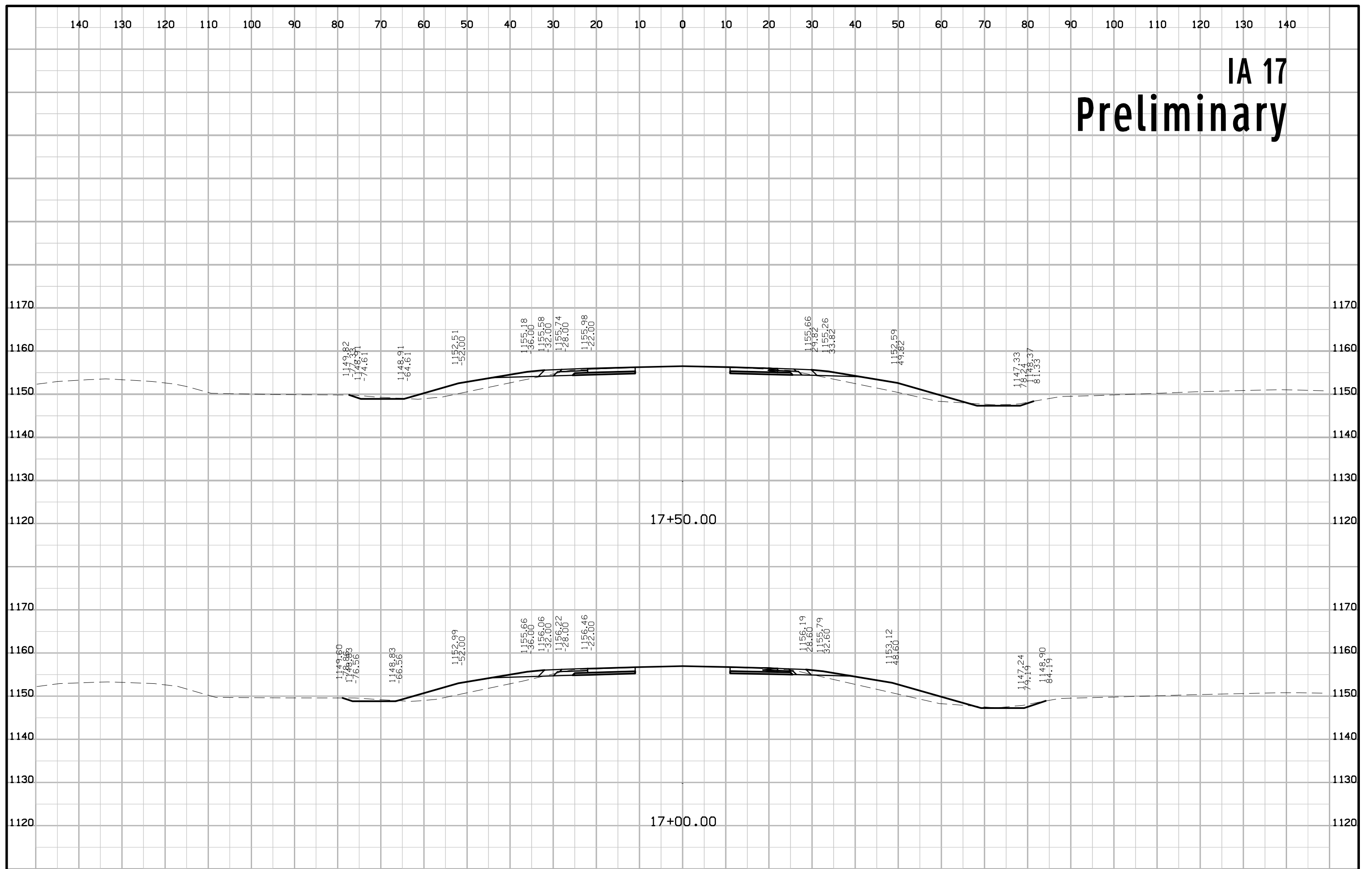
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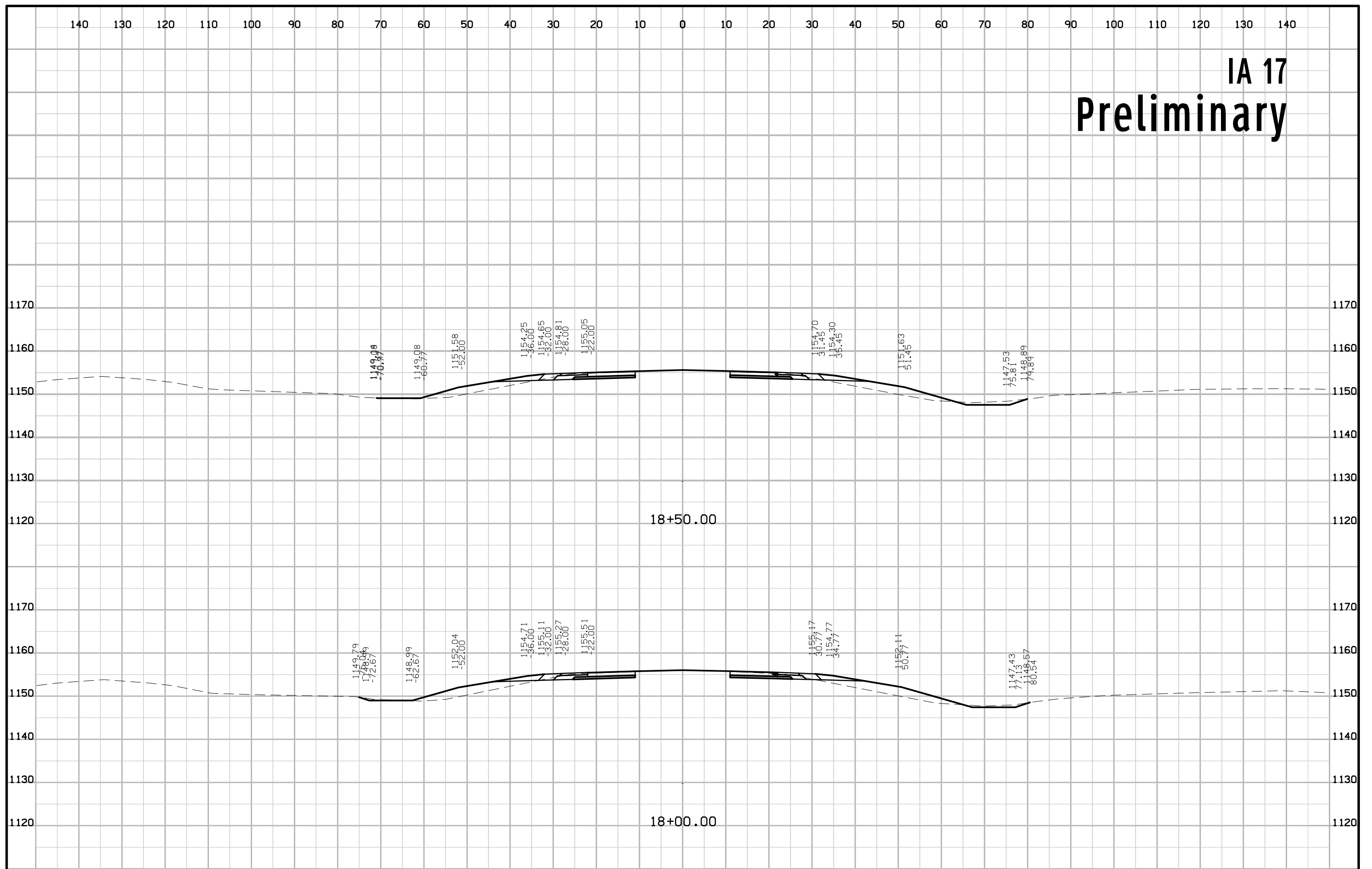
# IA 17 Preliminary



# IA 17 Preliminary

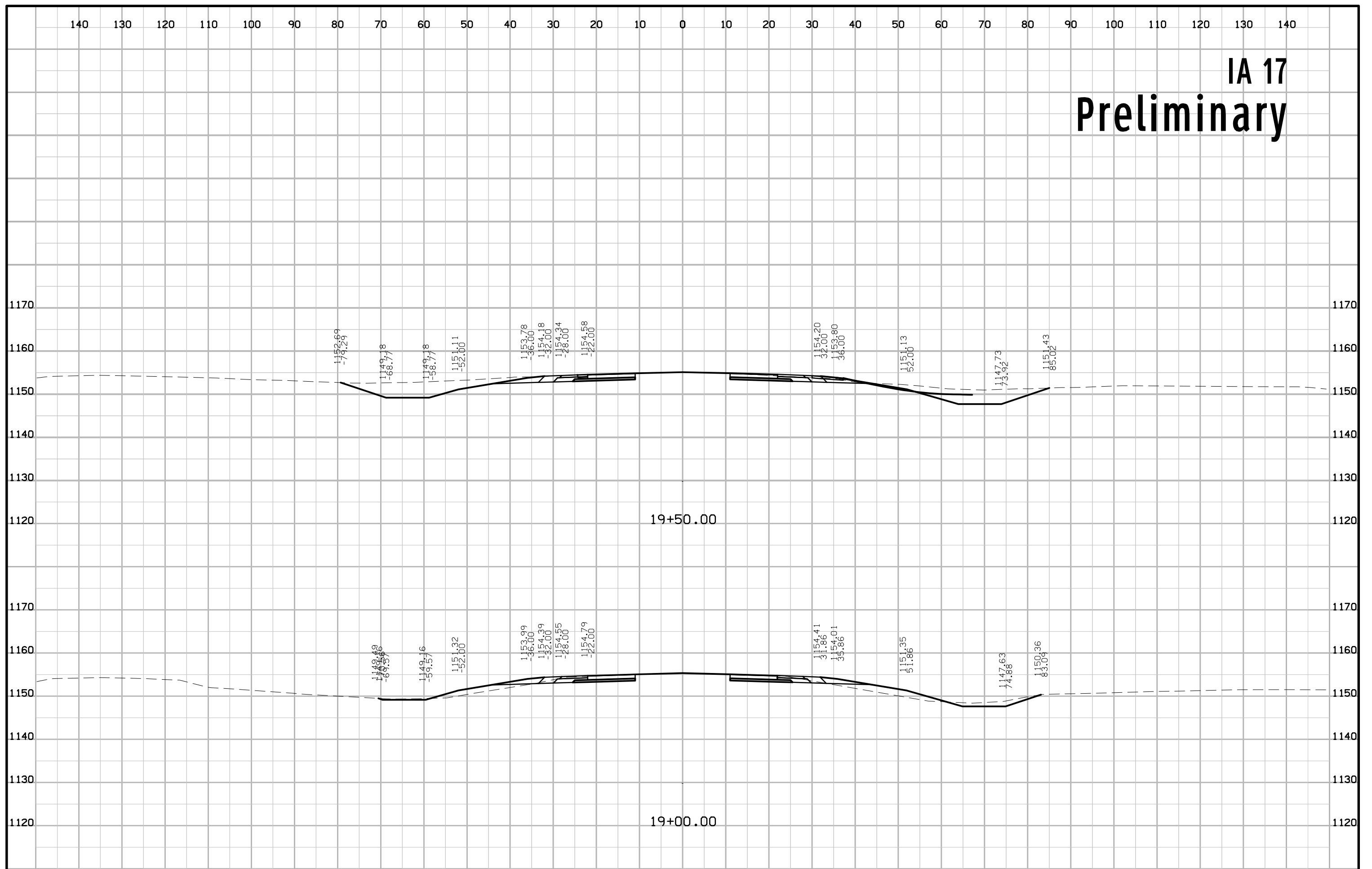


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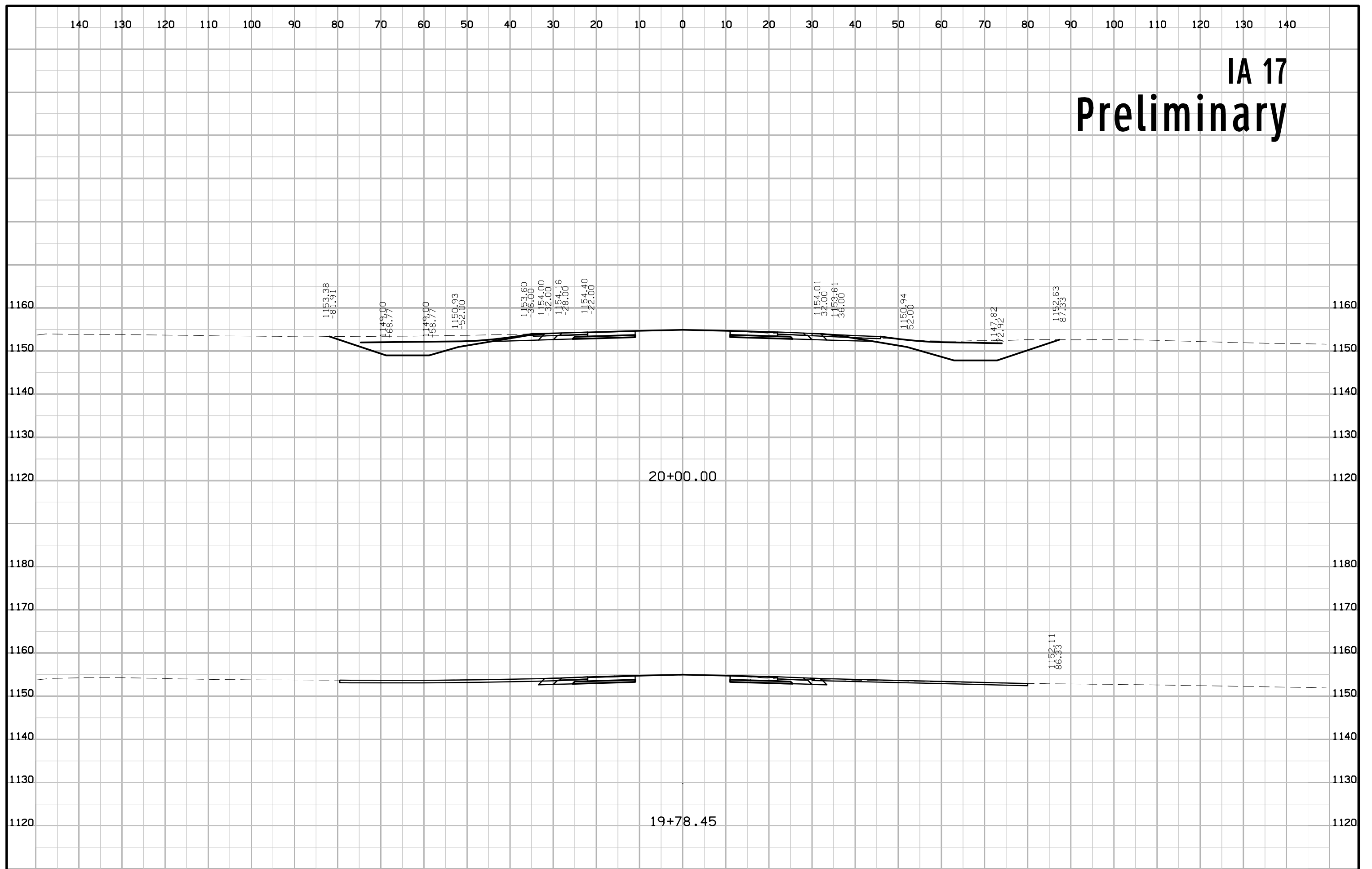




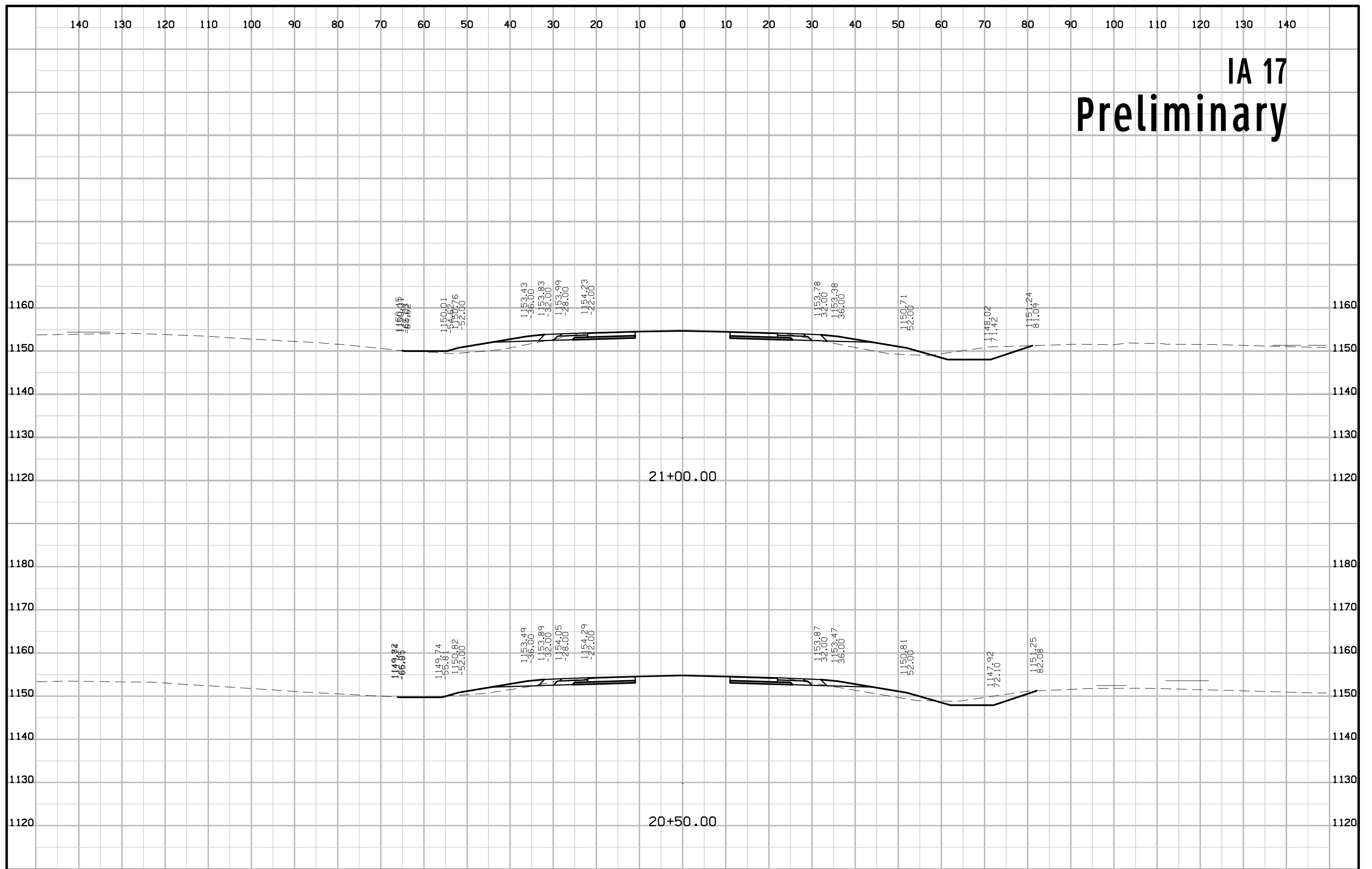
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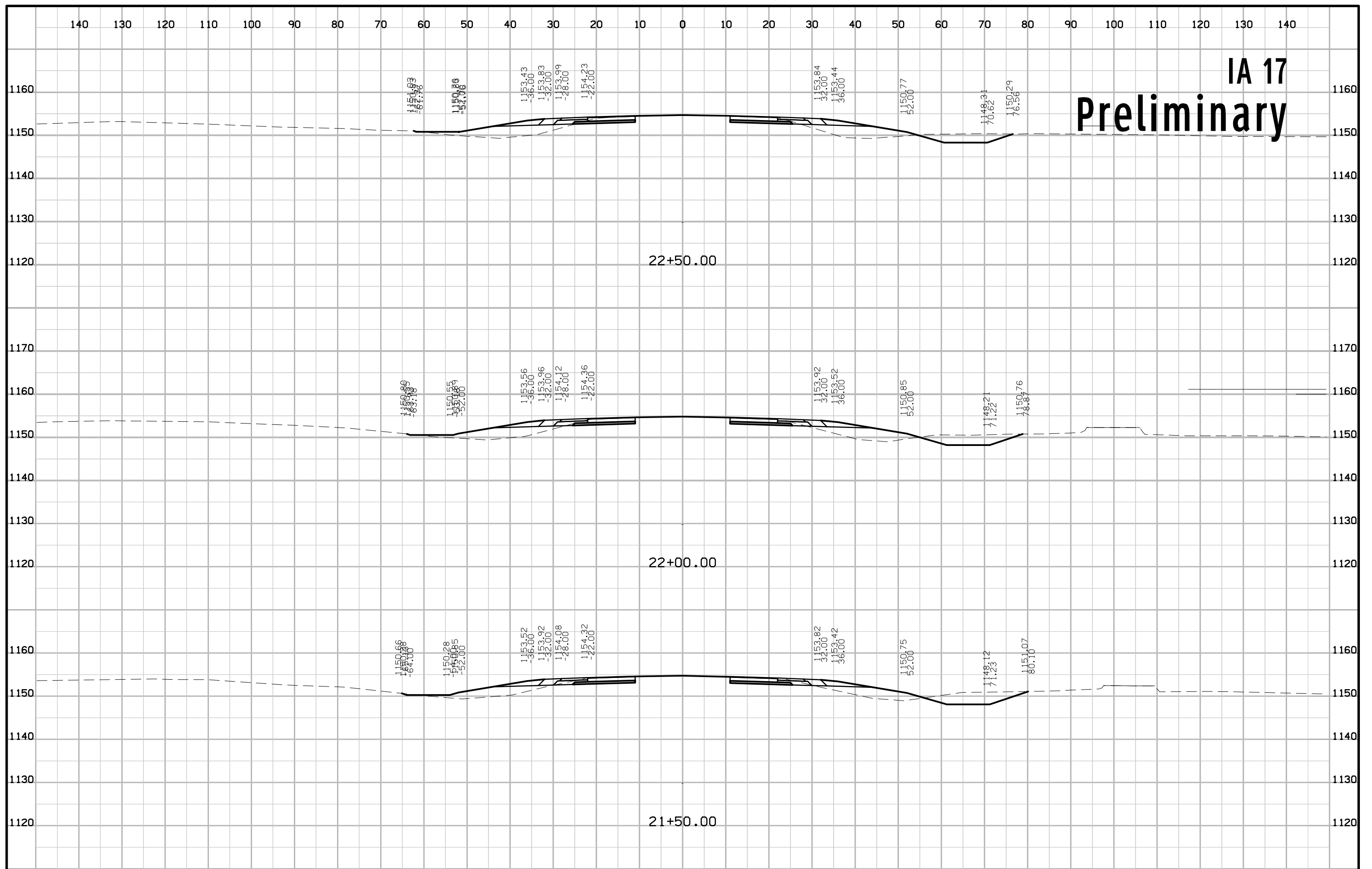
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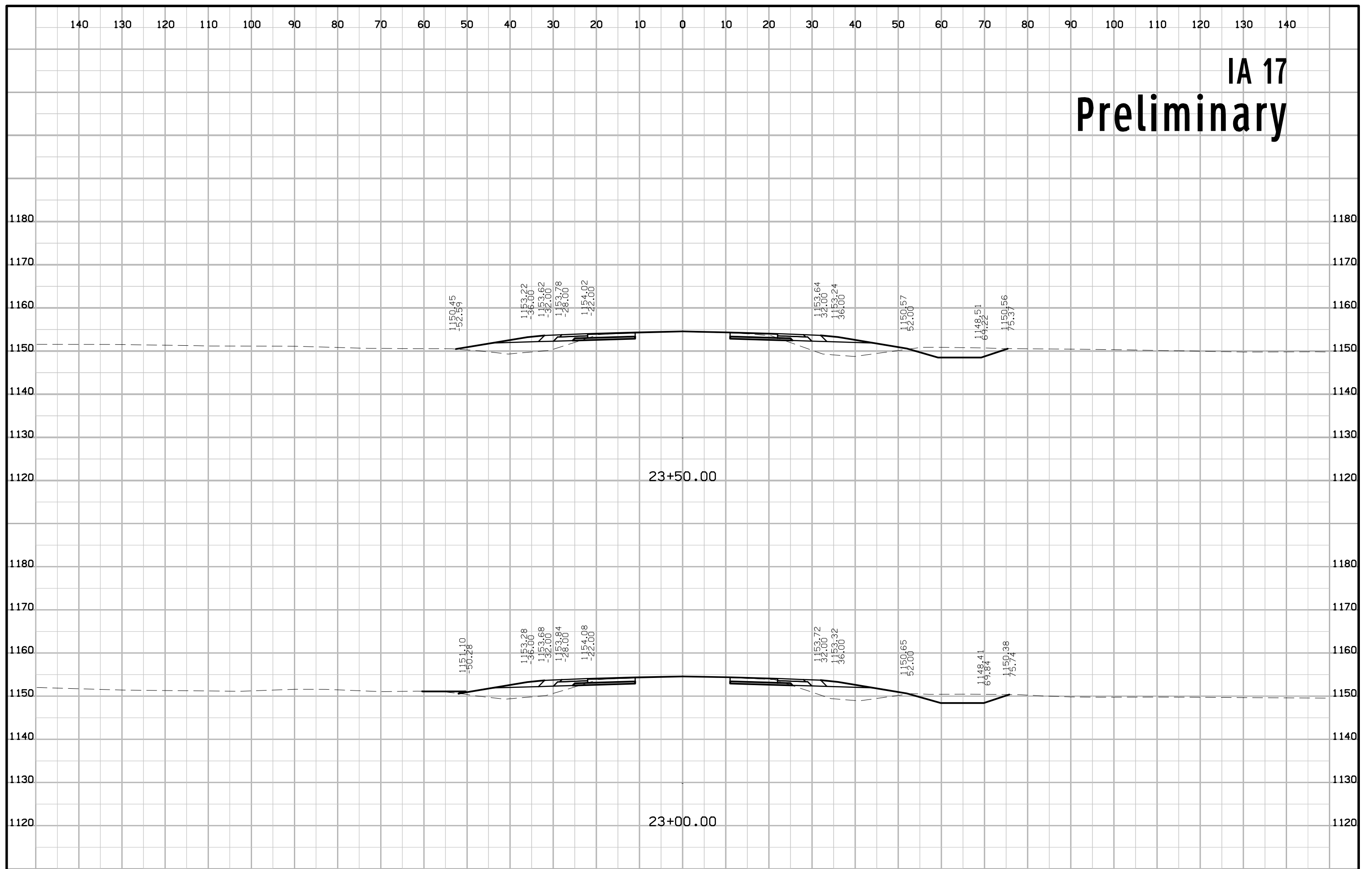
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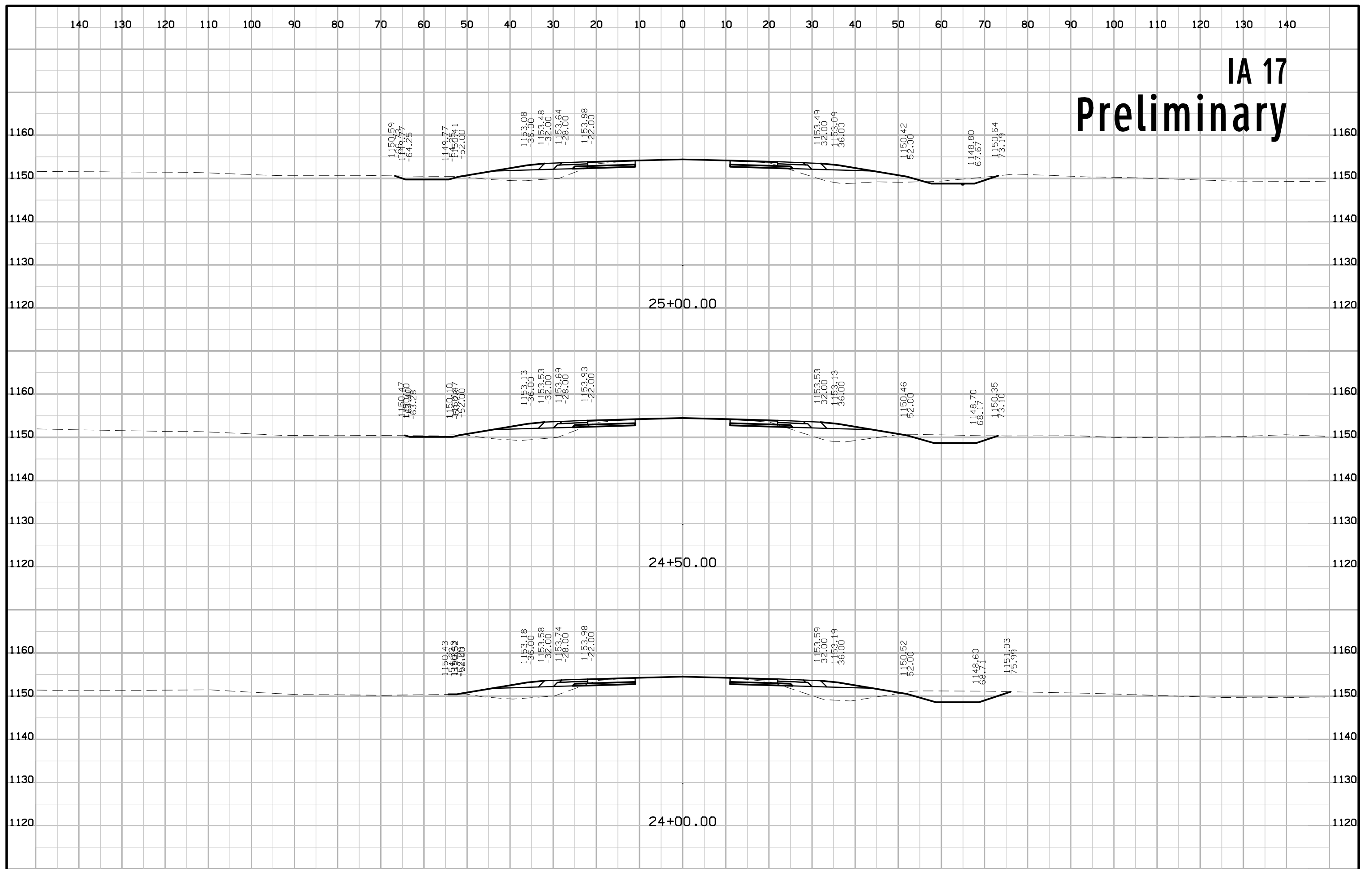
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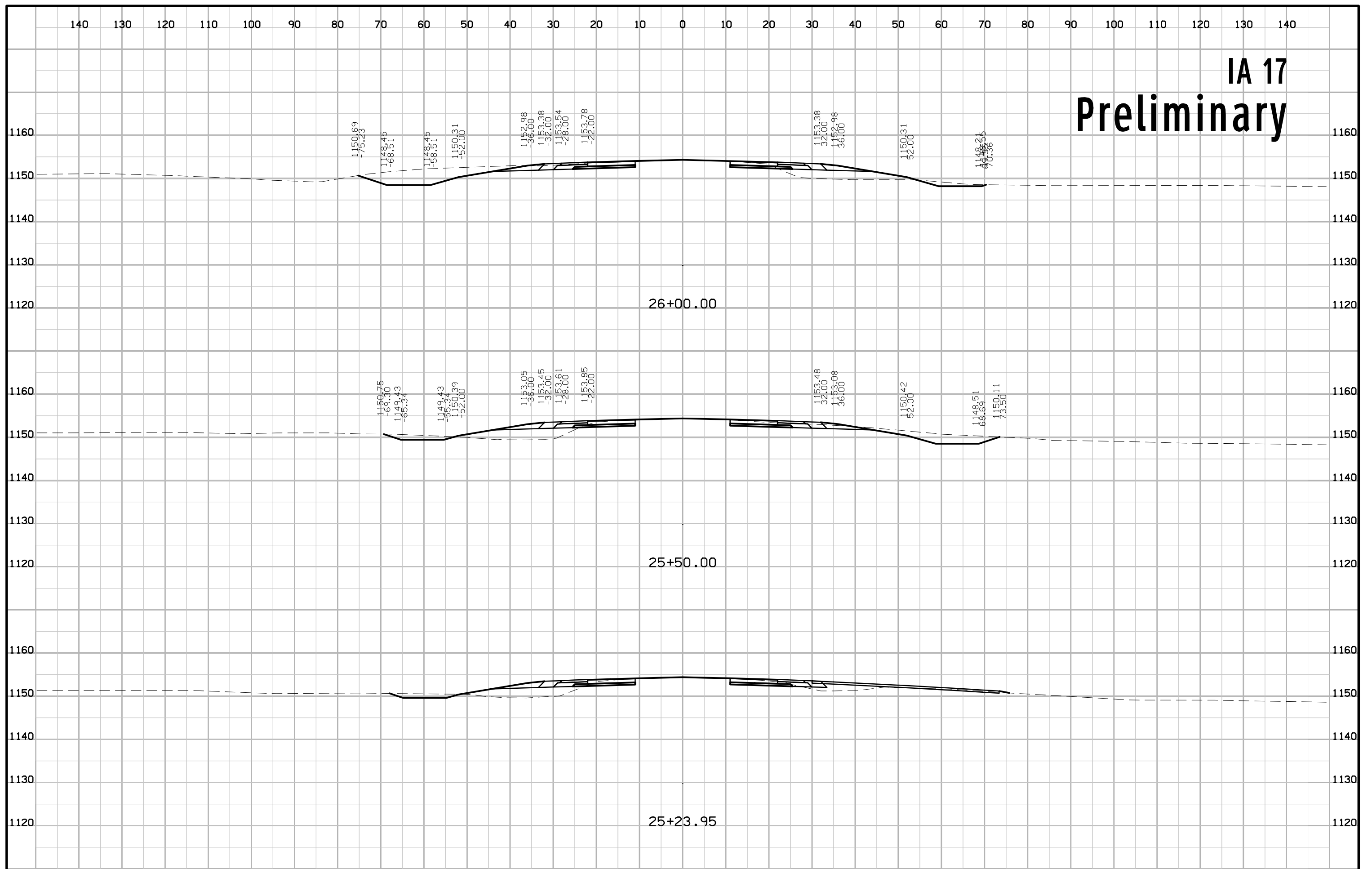
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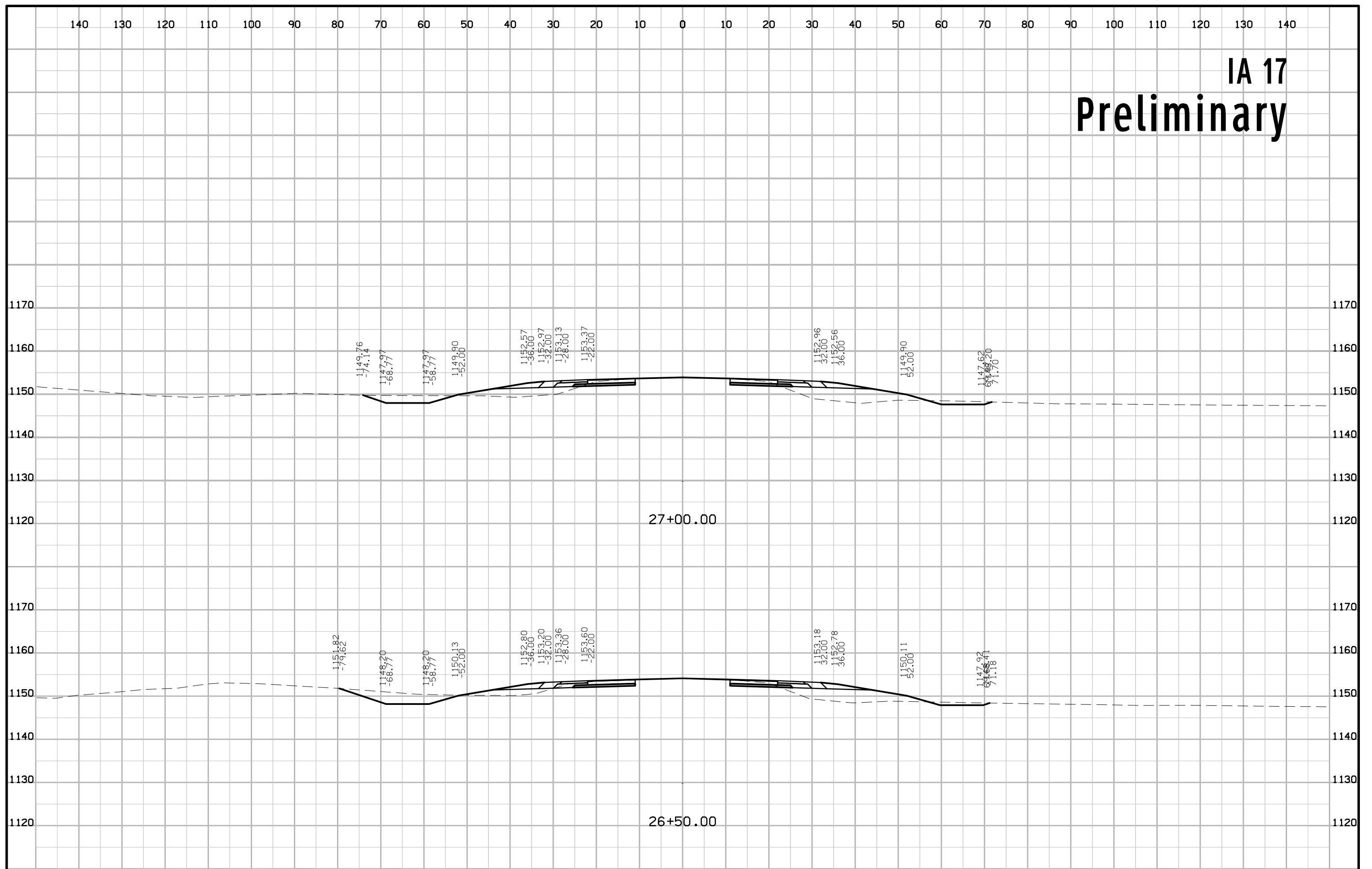
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# IA 17 Preliminary

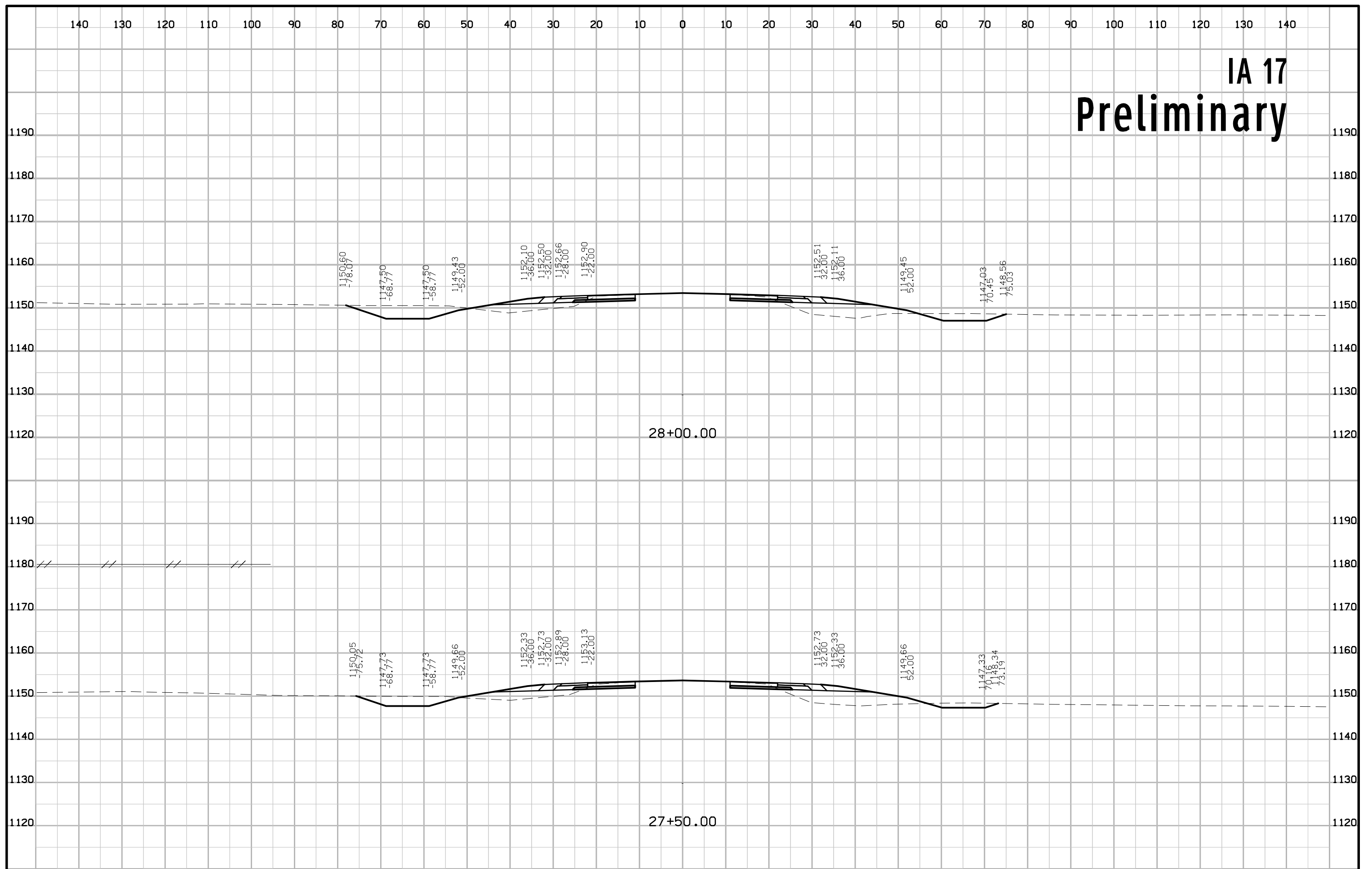


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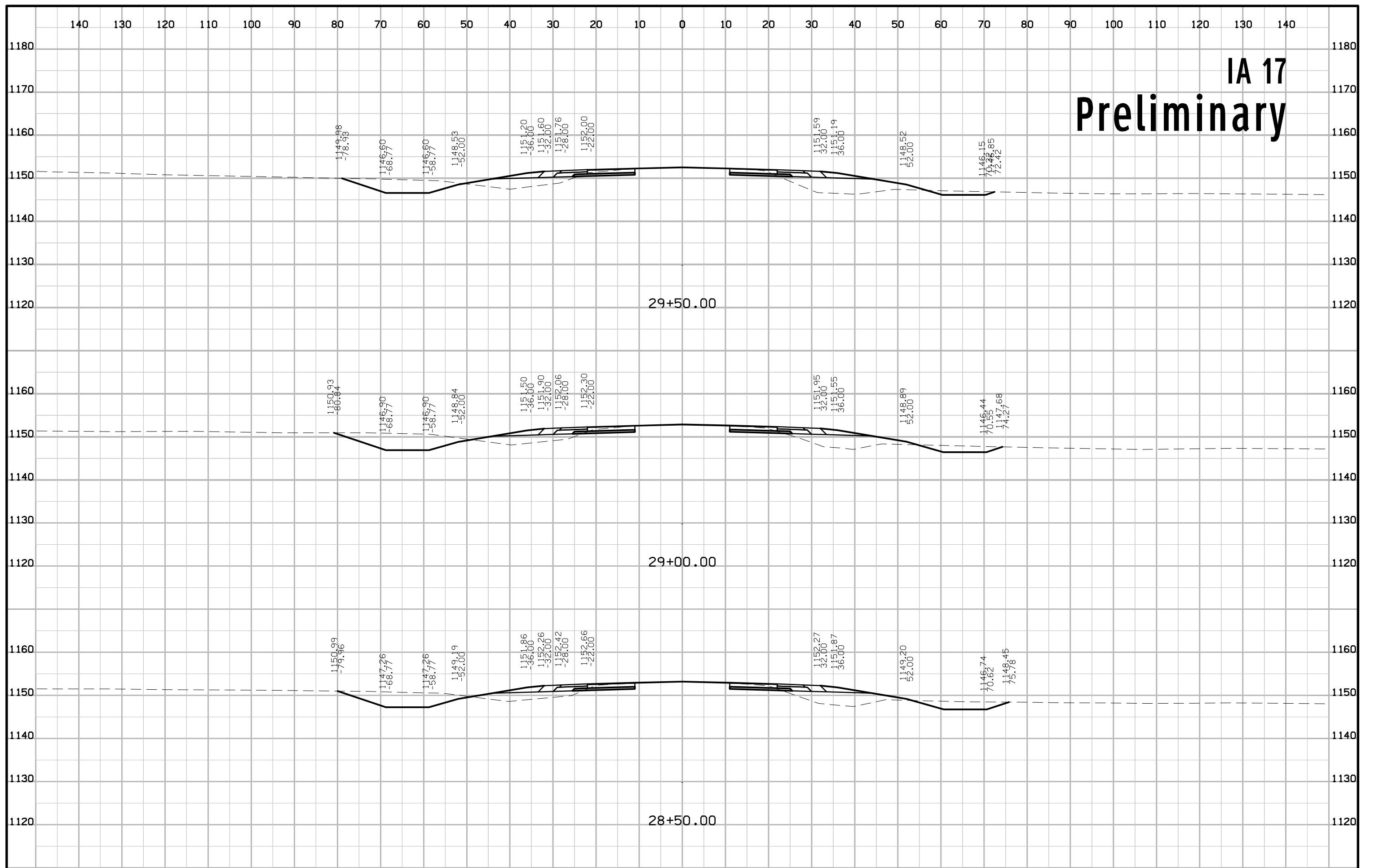




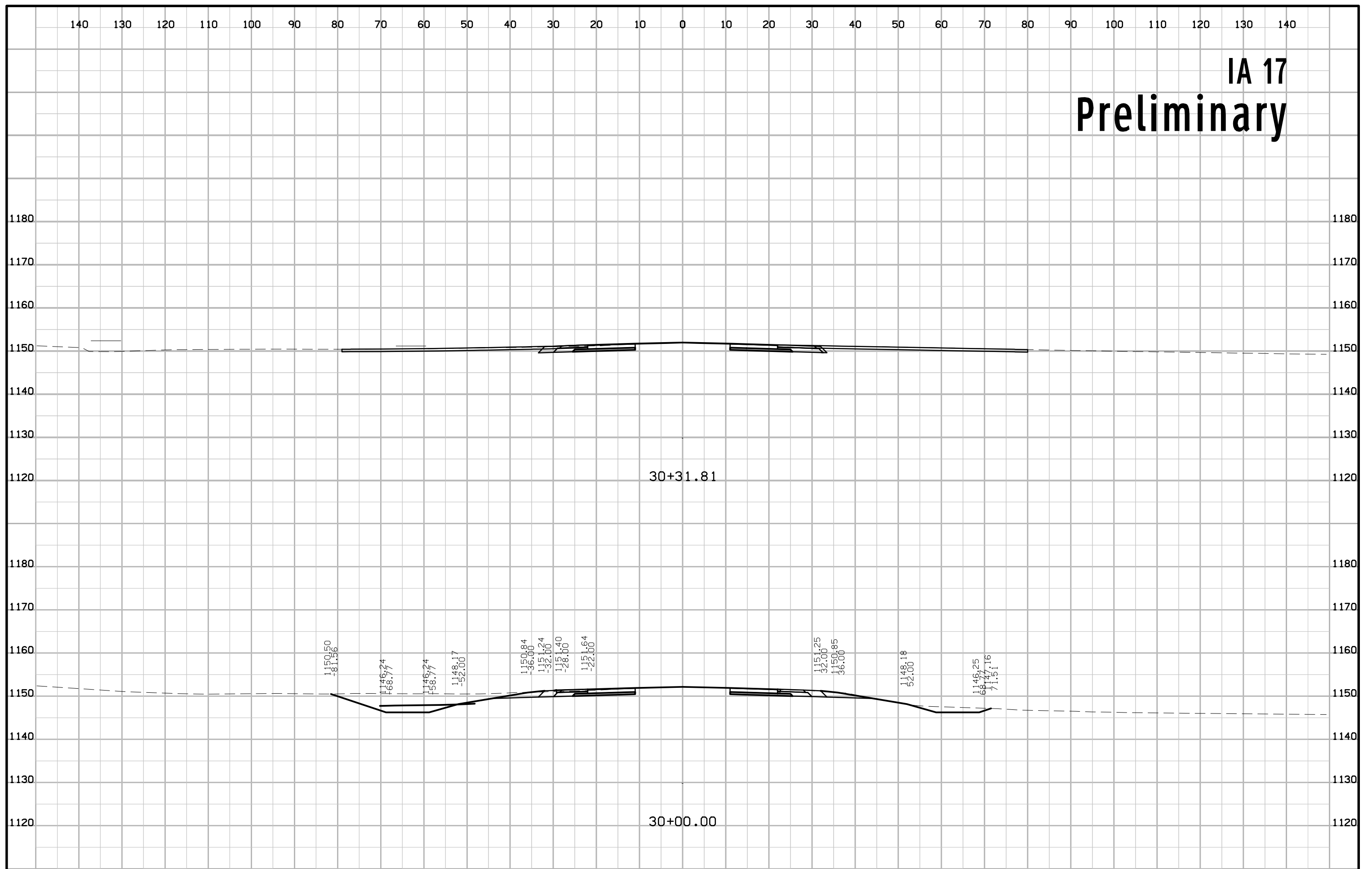
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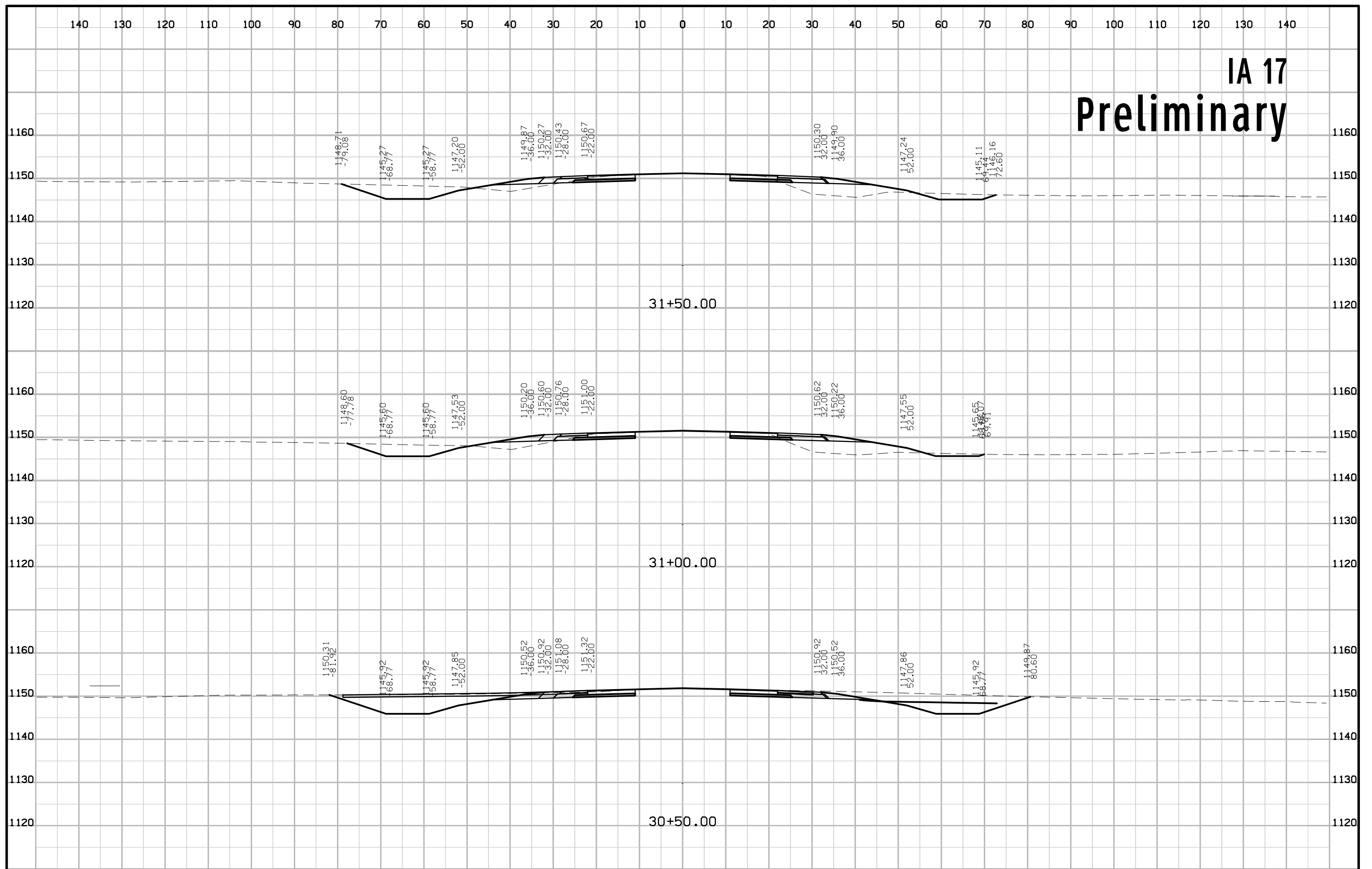
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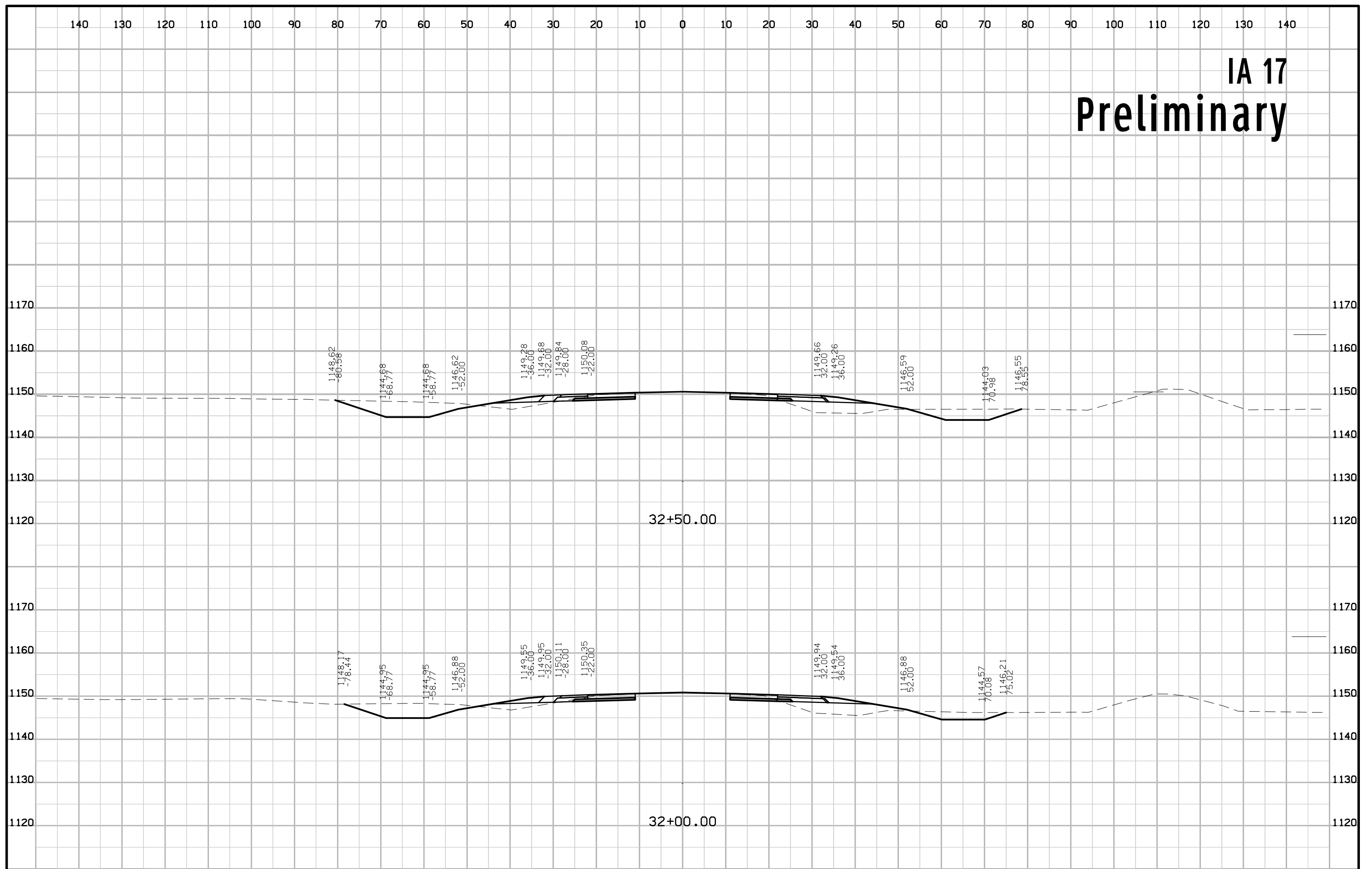
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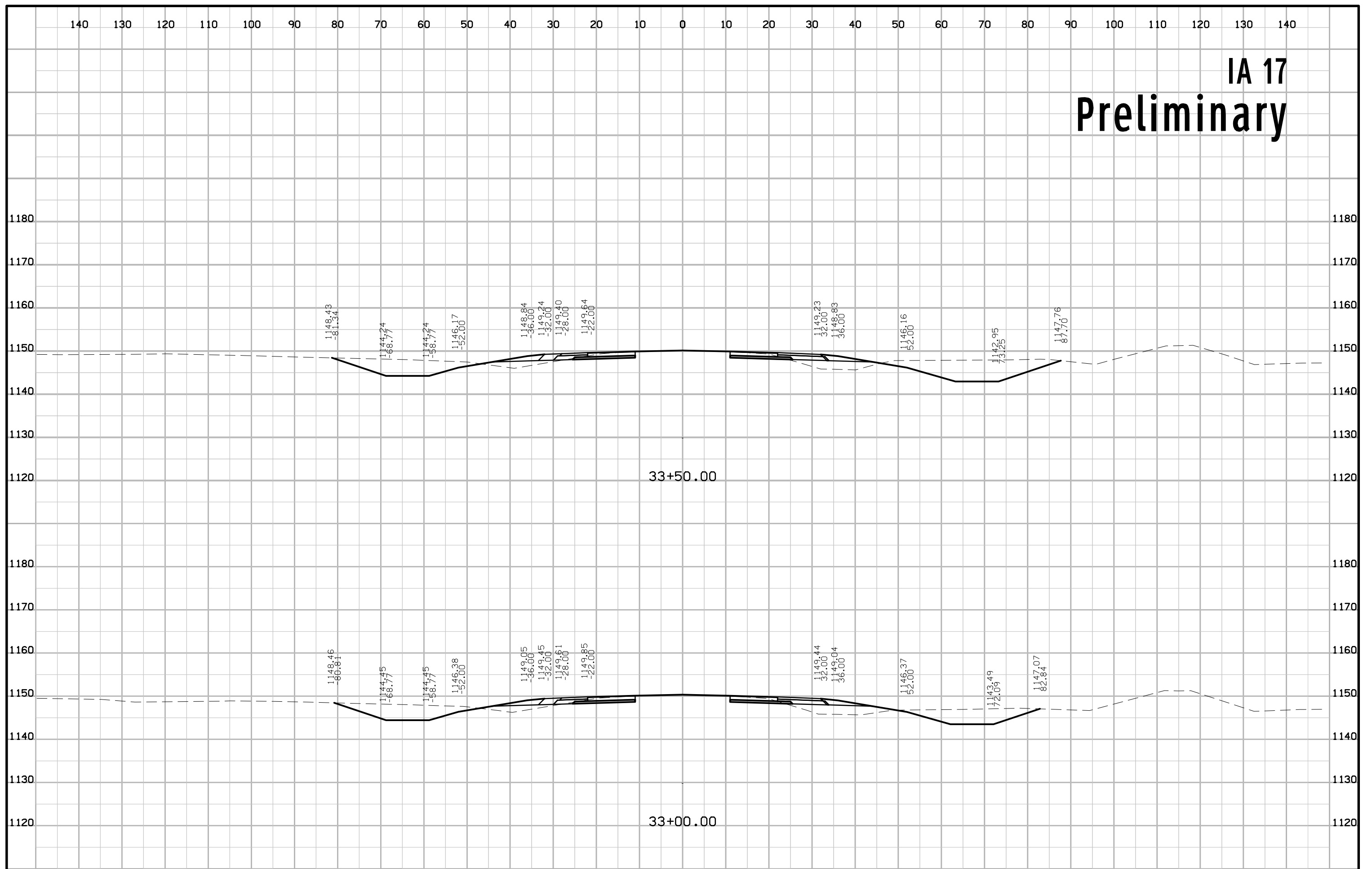
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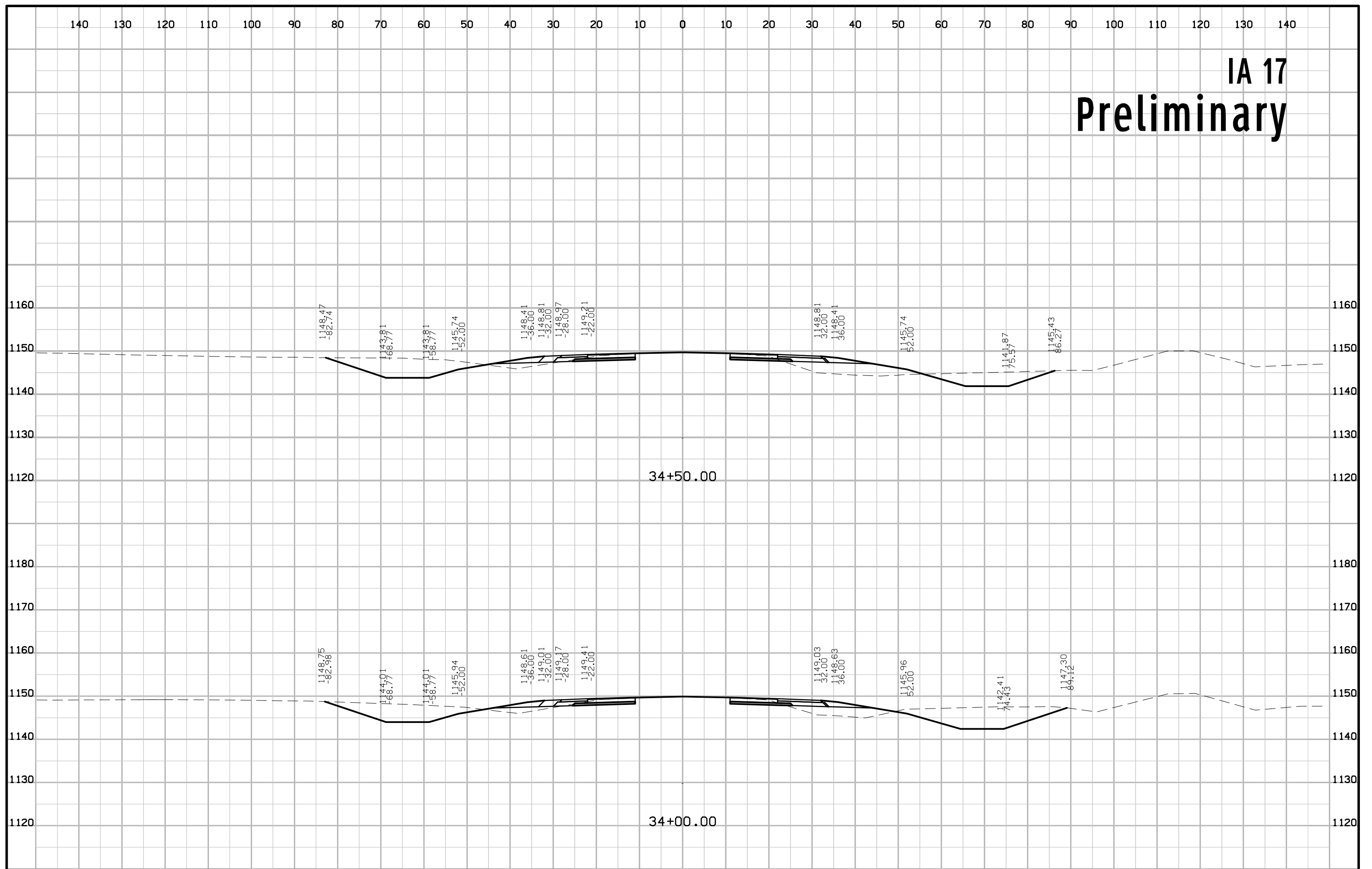
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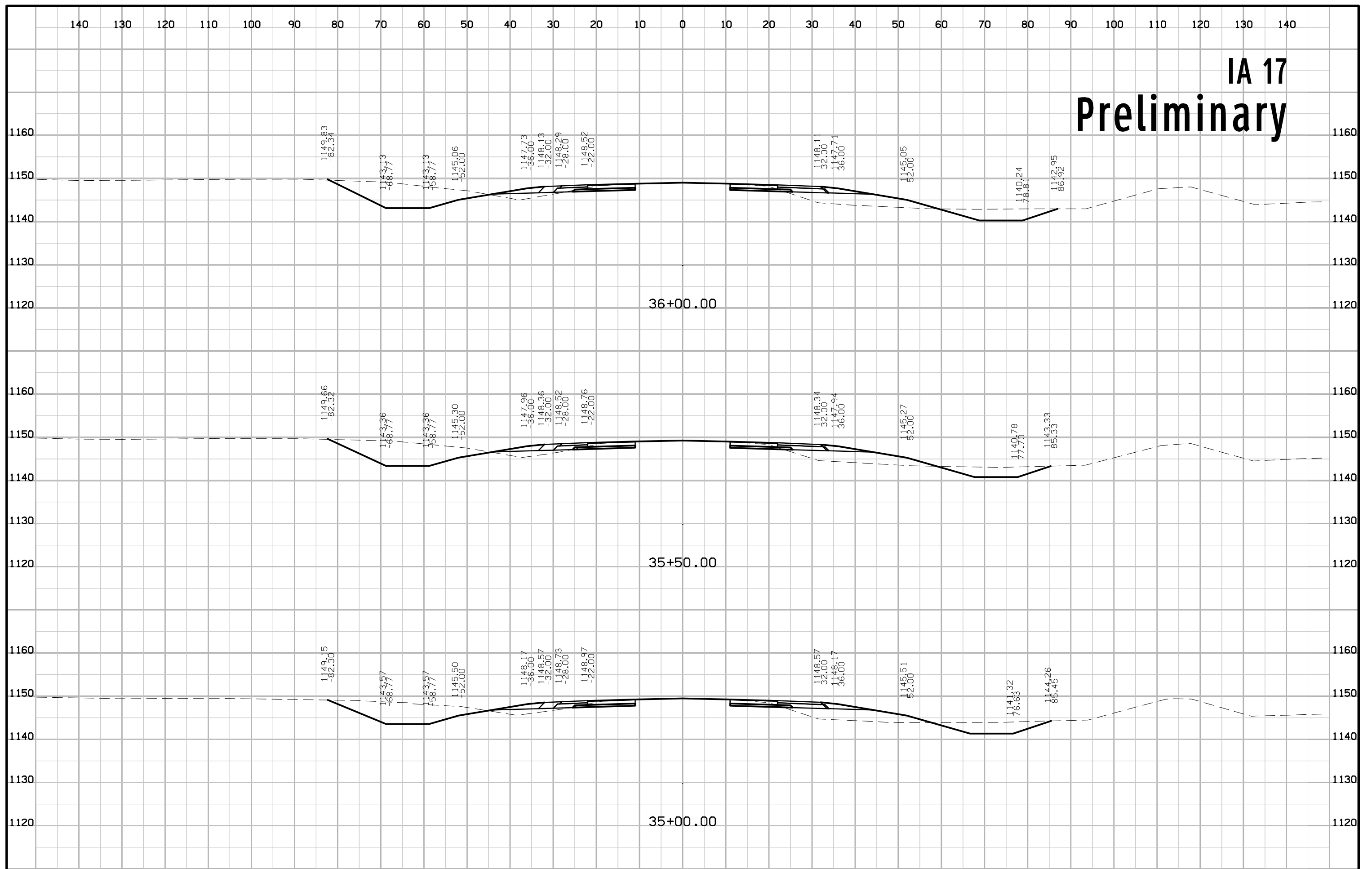
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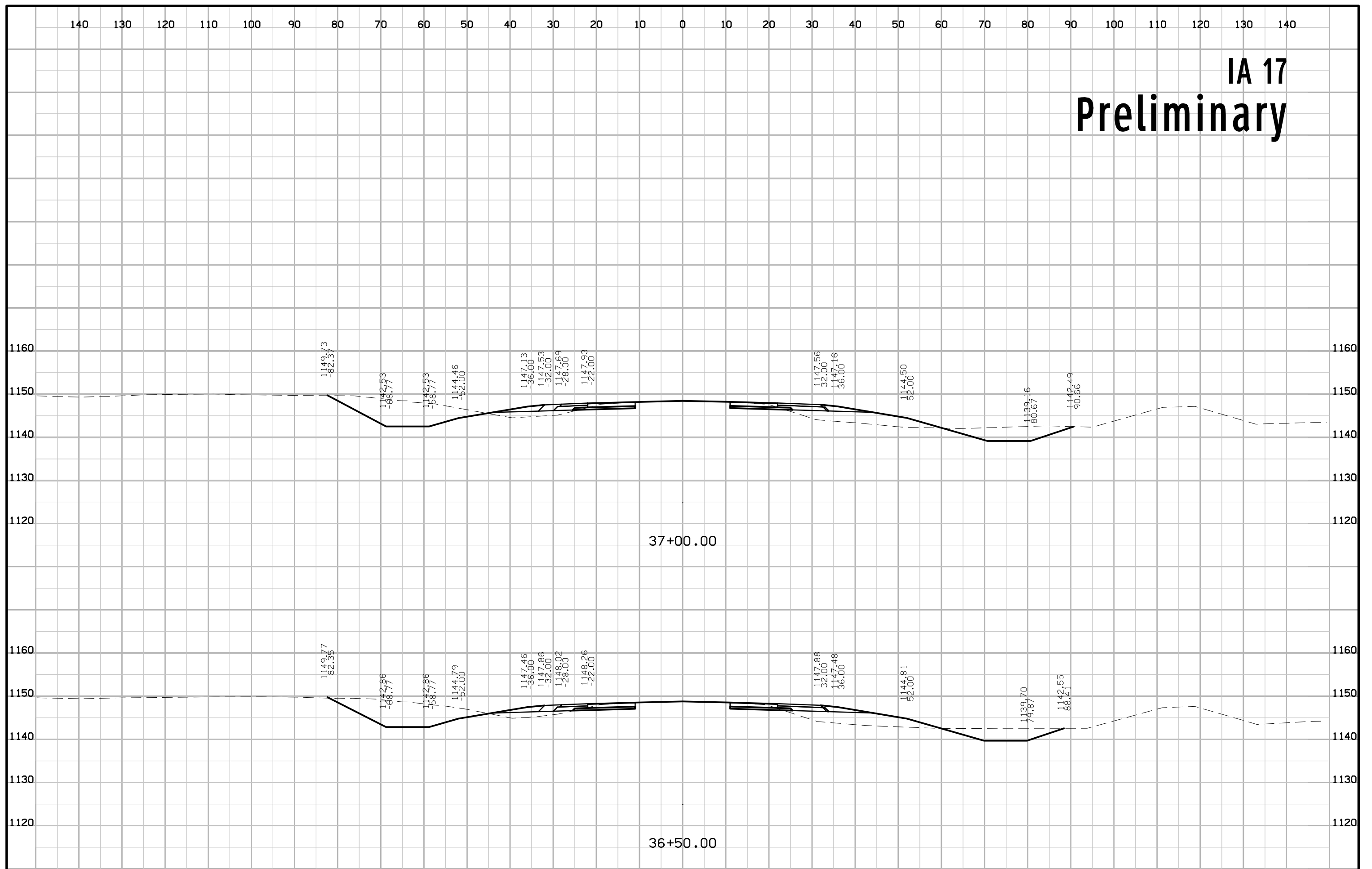


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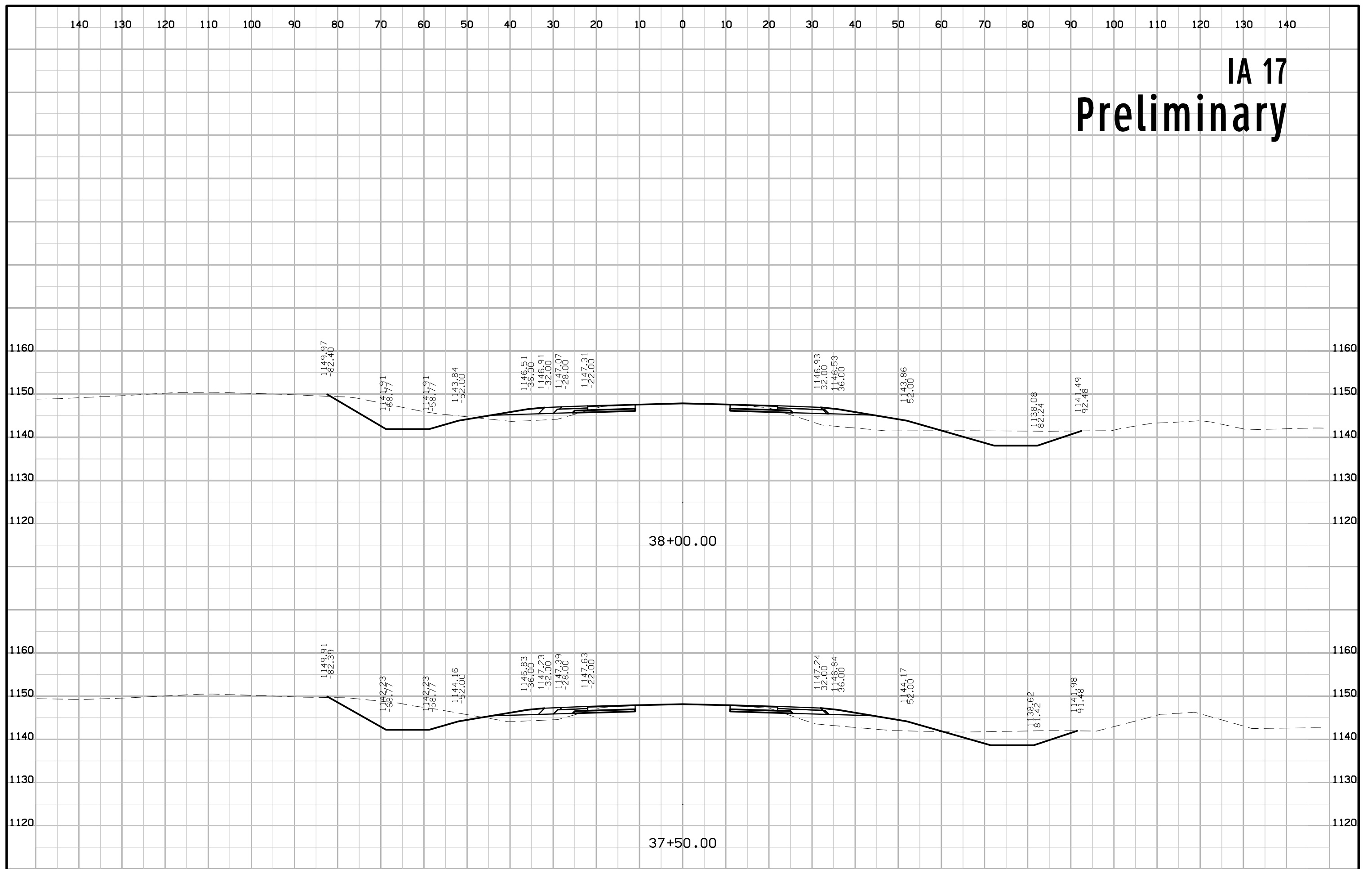




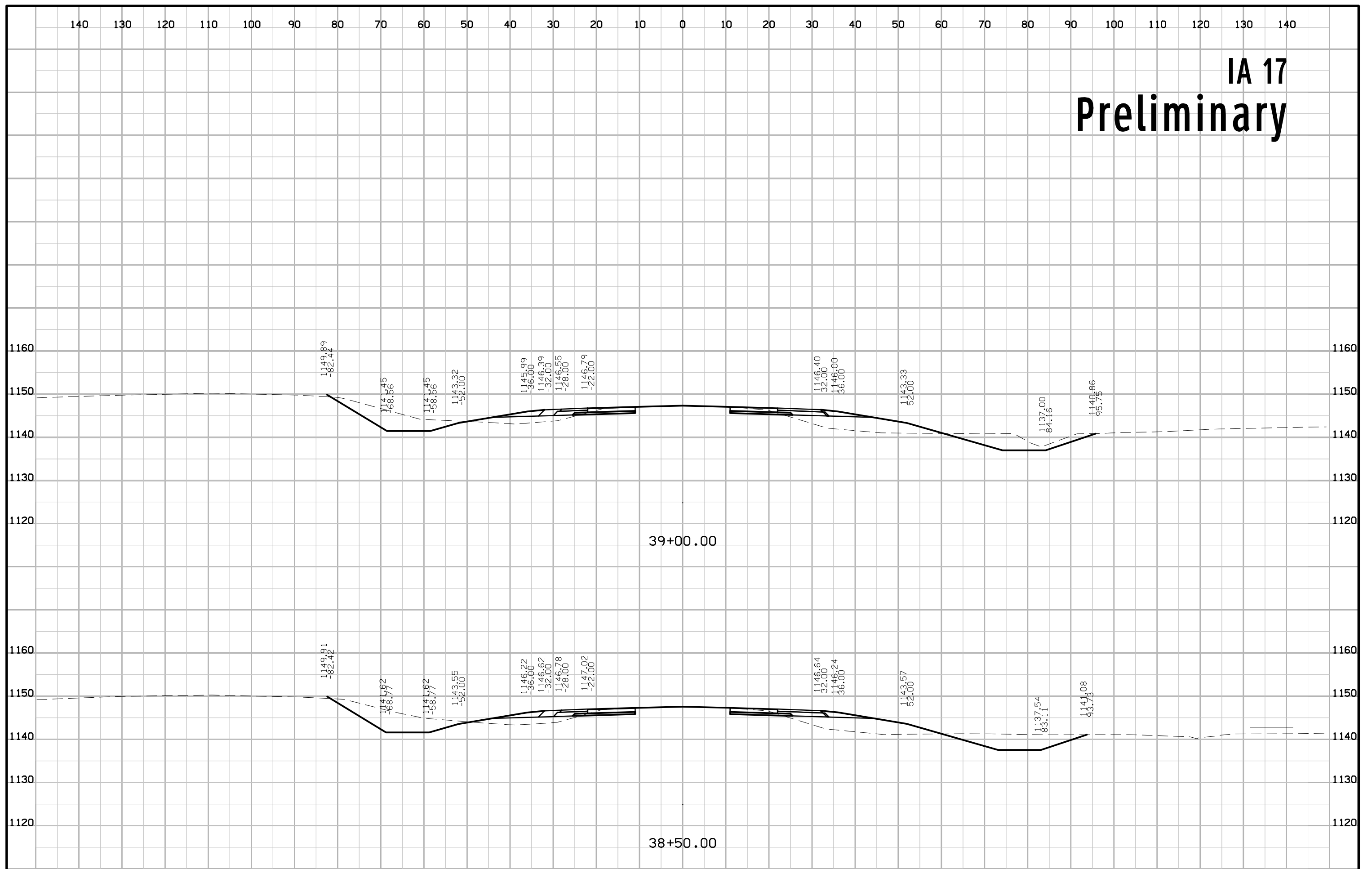
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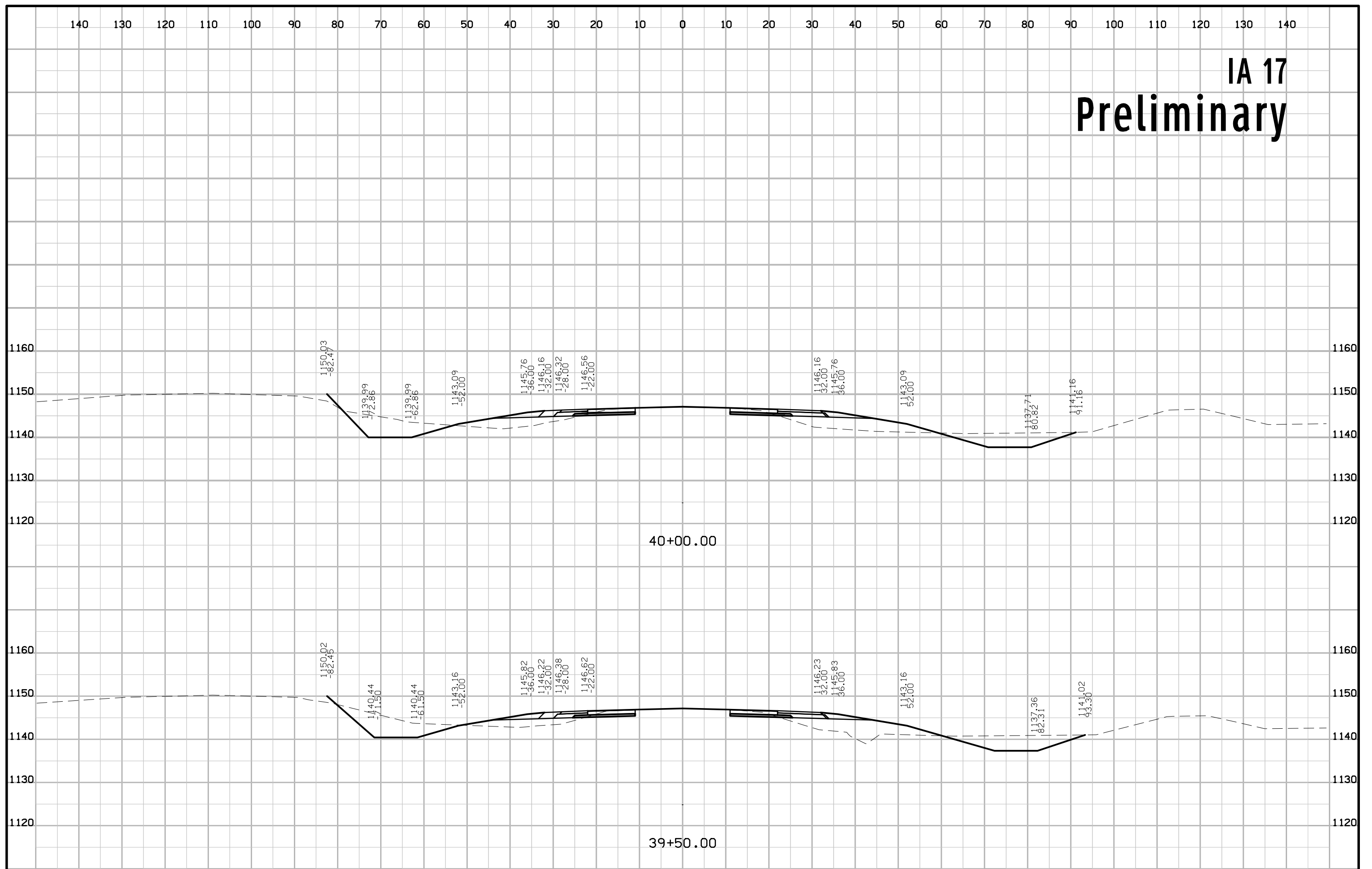
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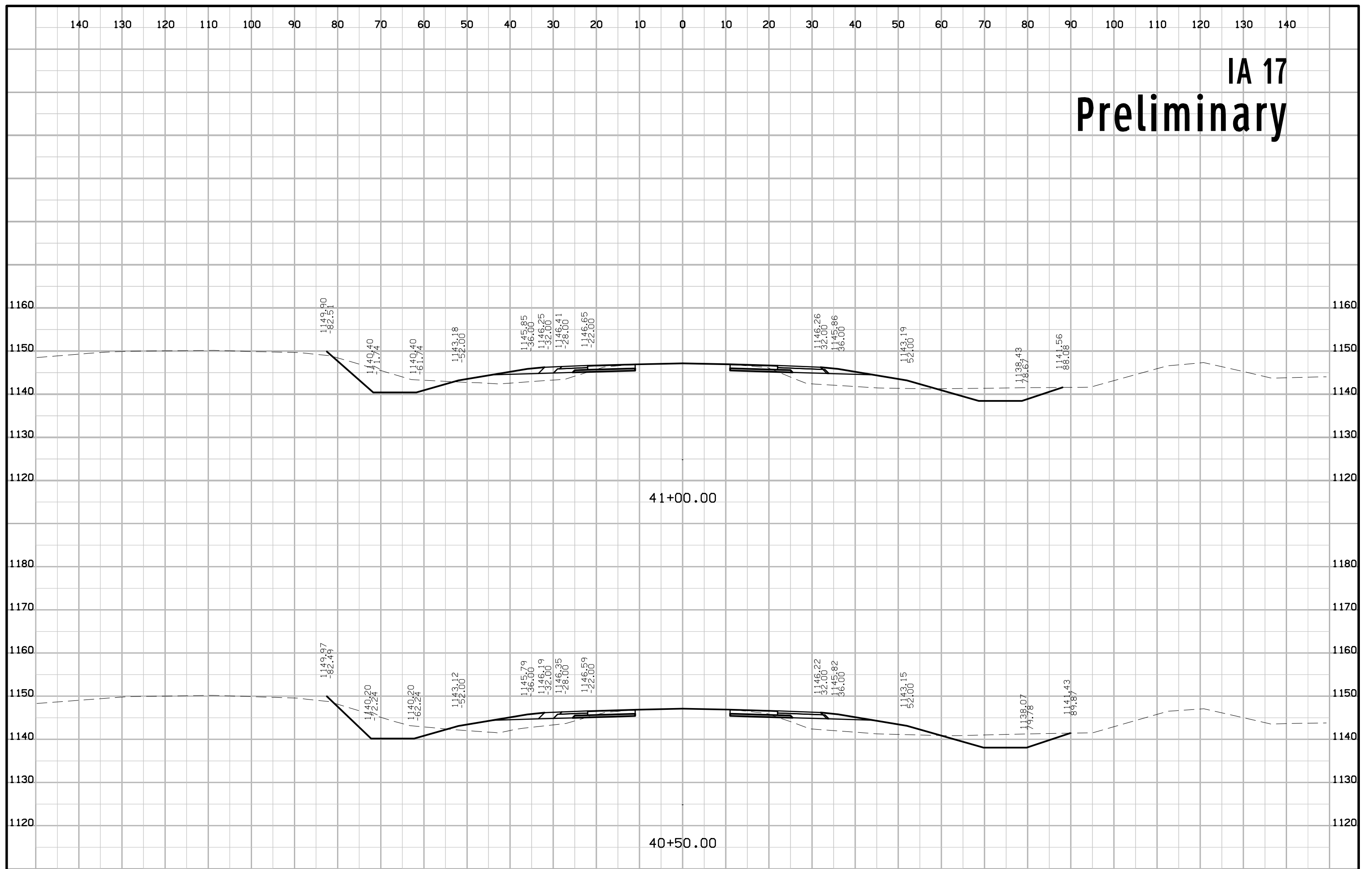
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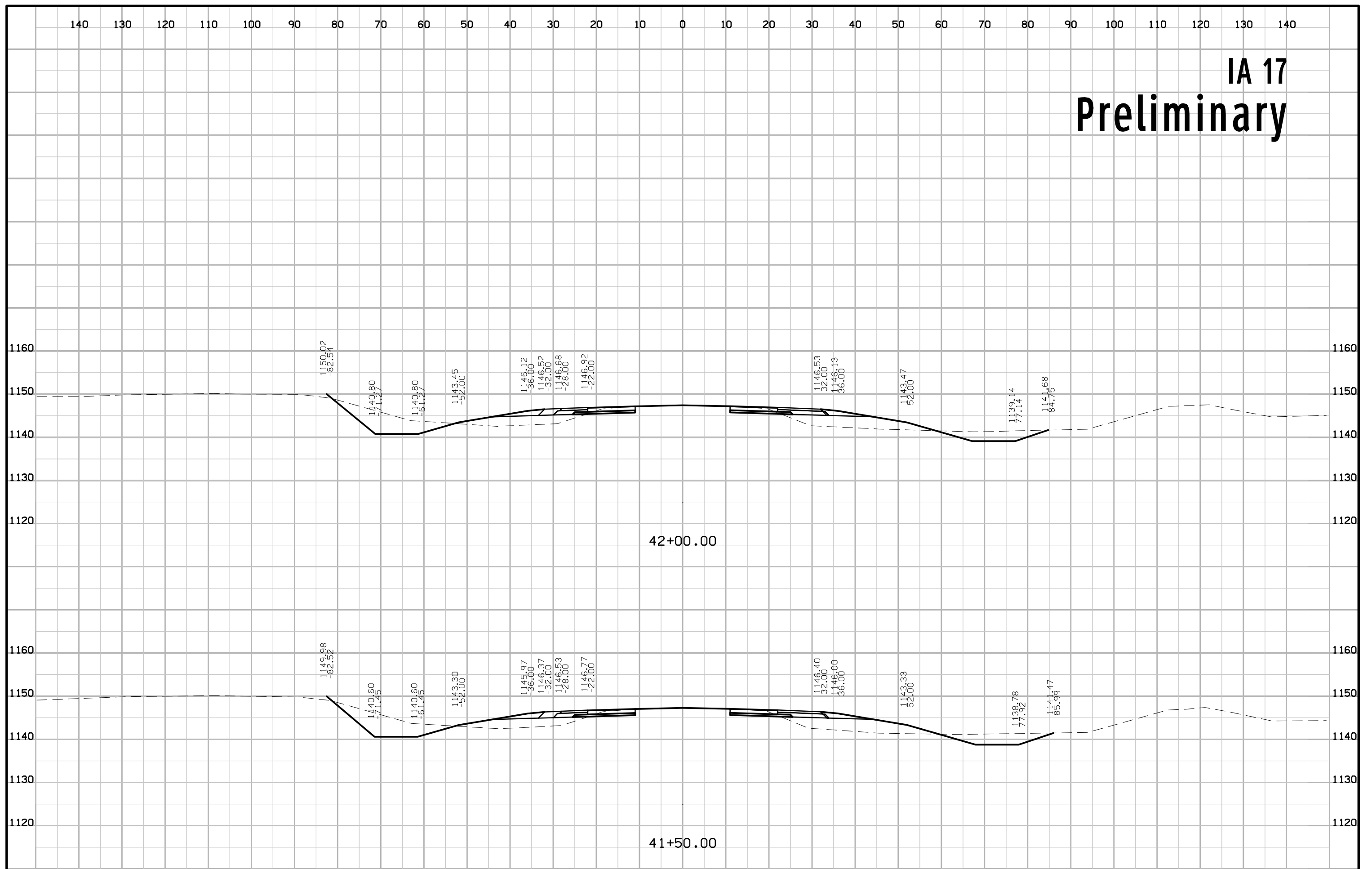
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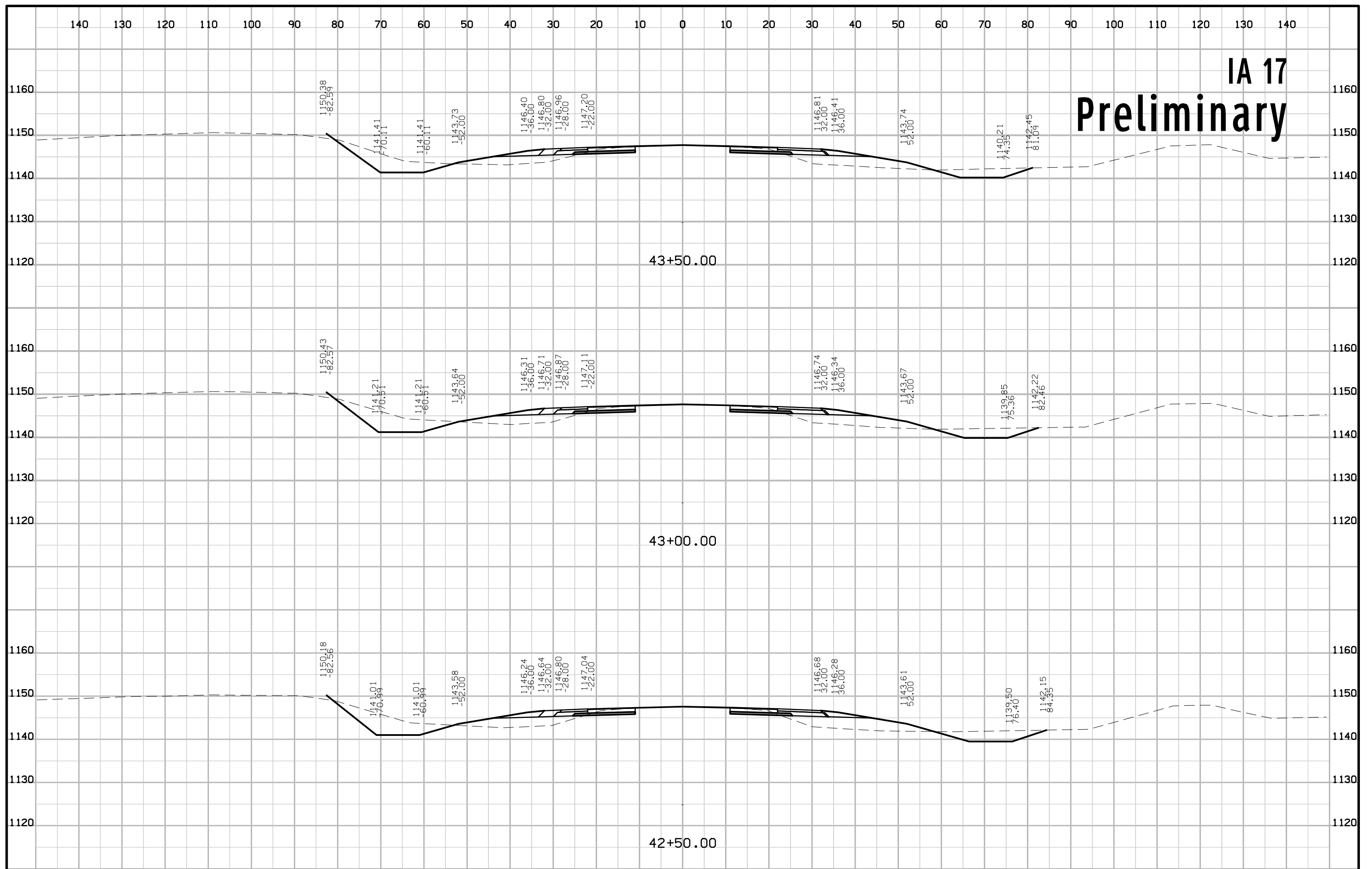
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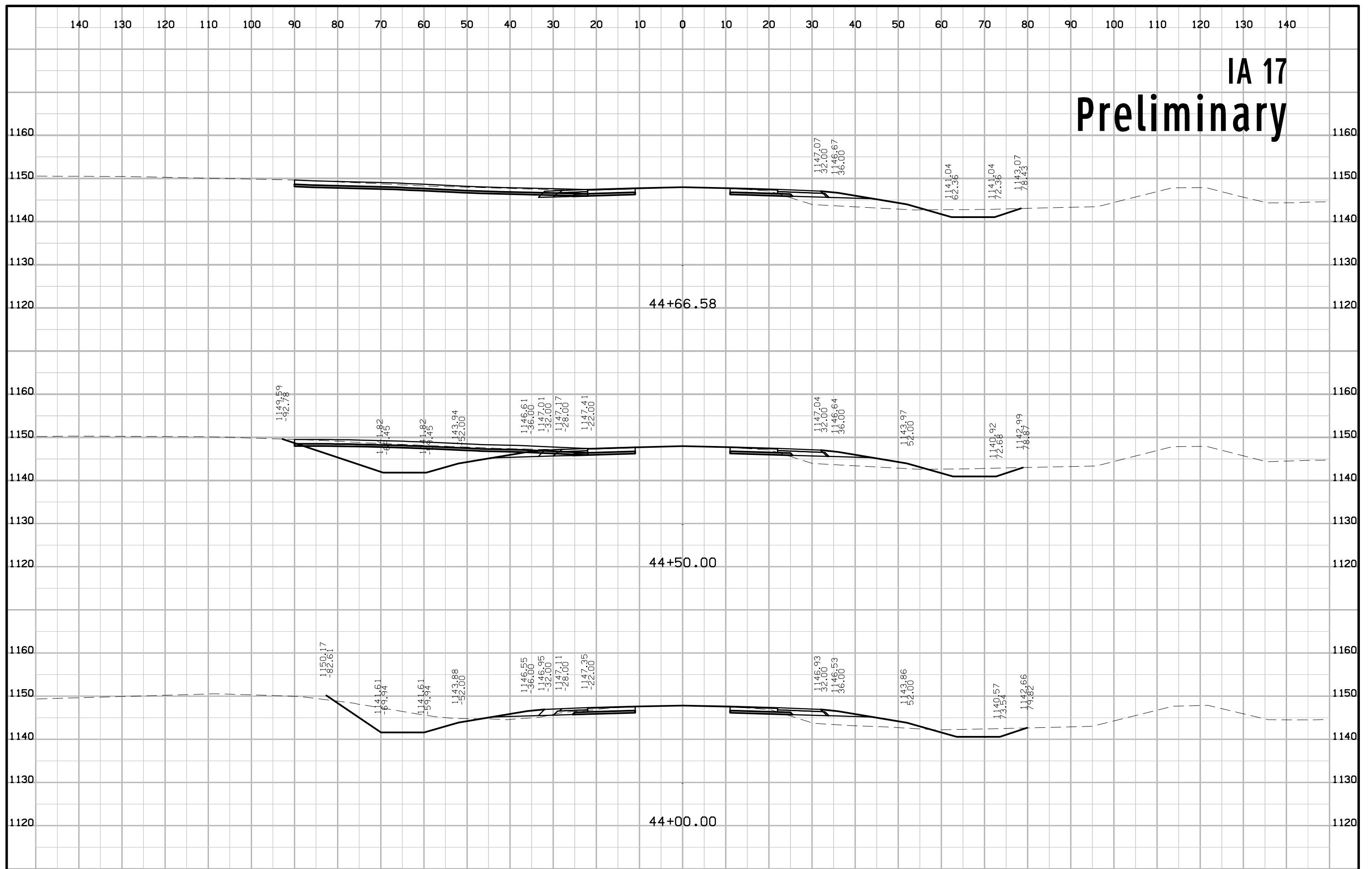
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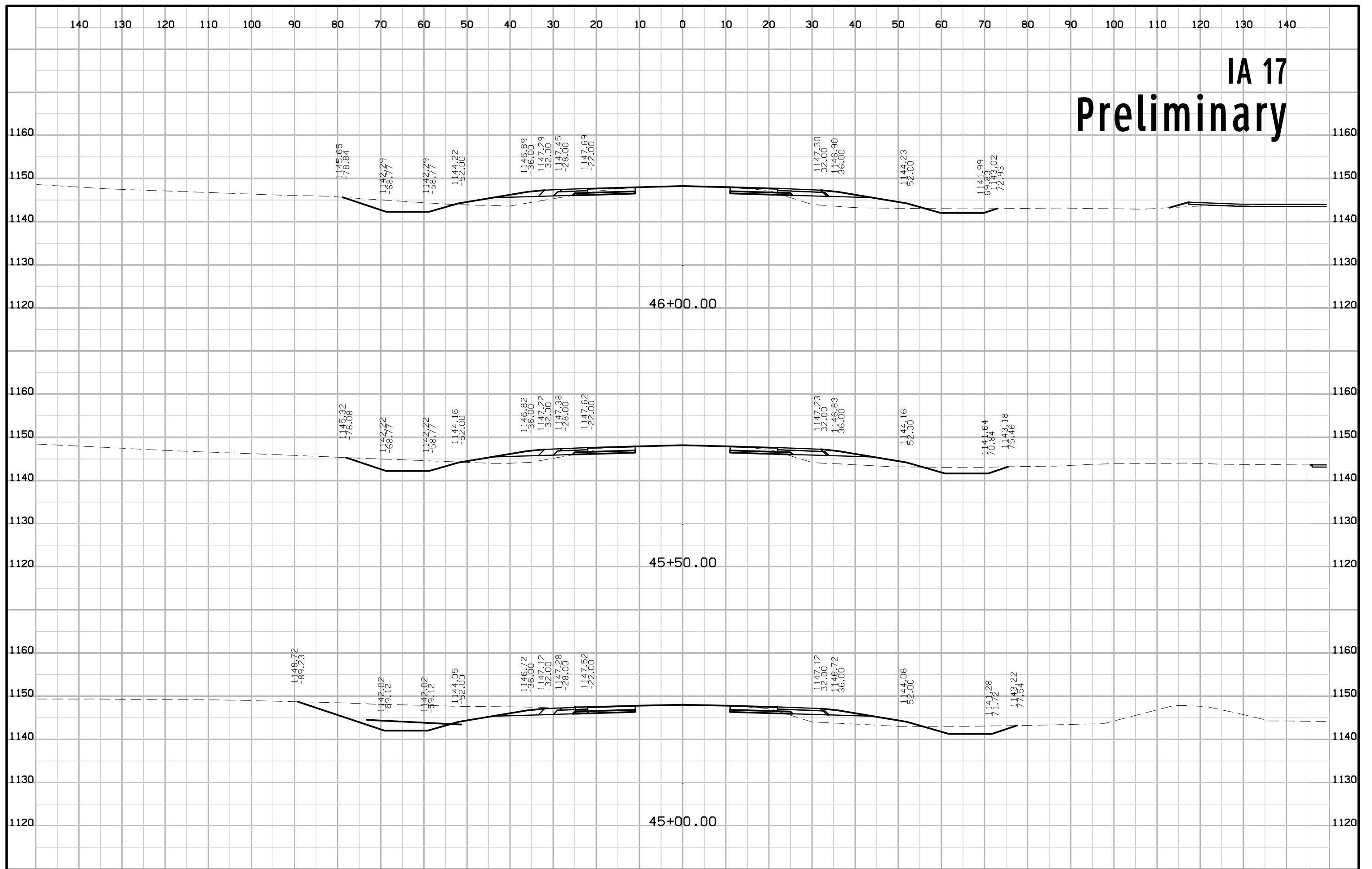


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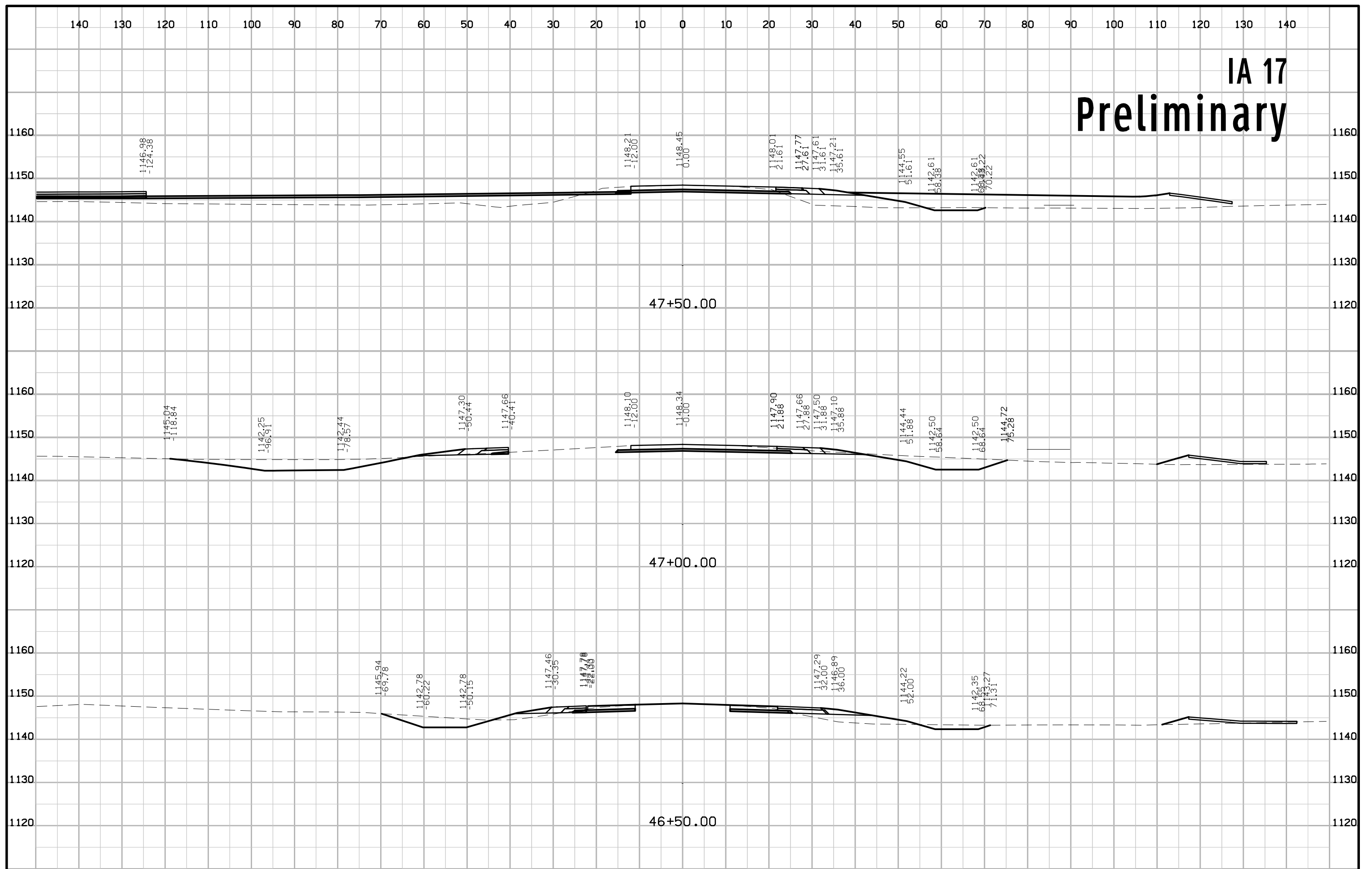




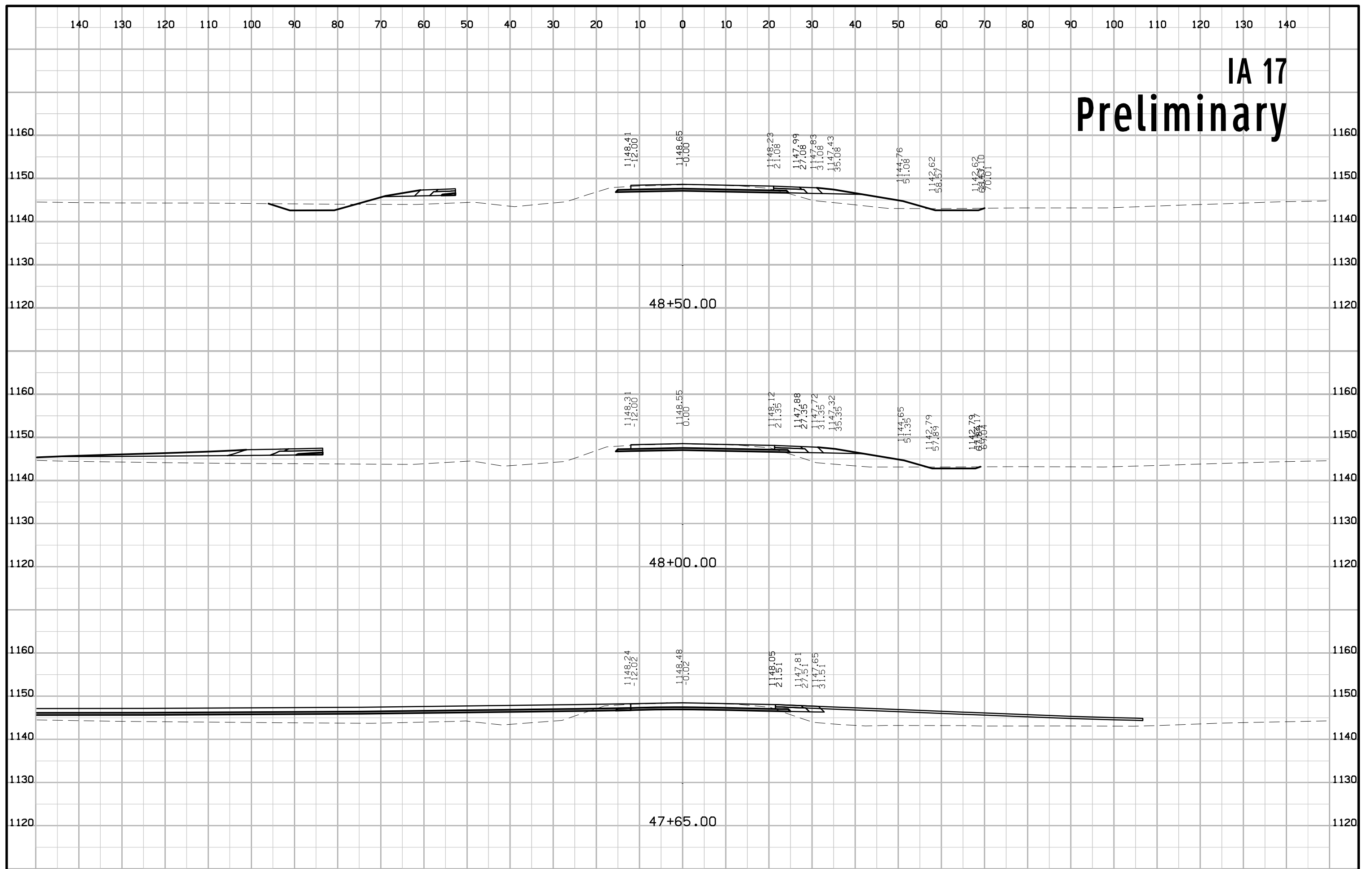
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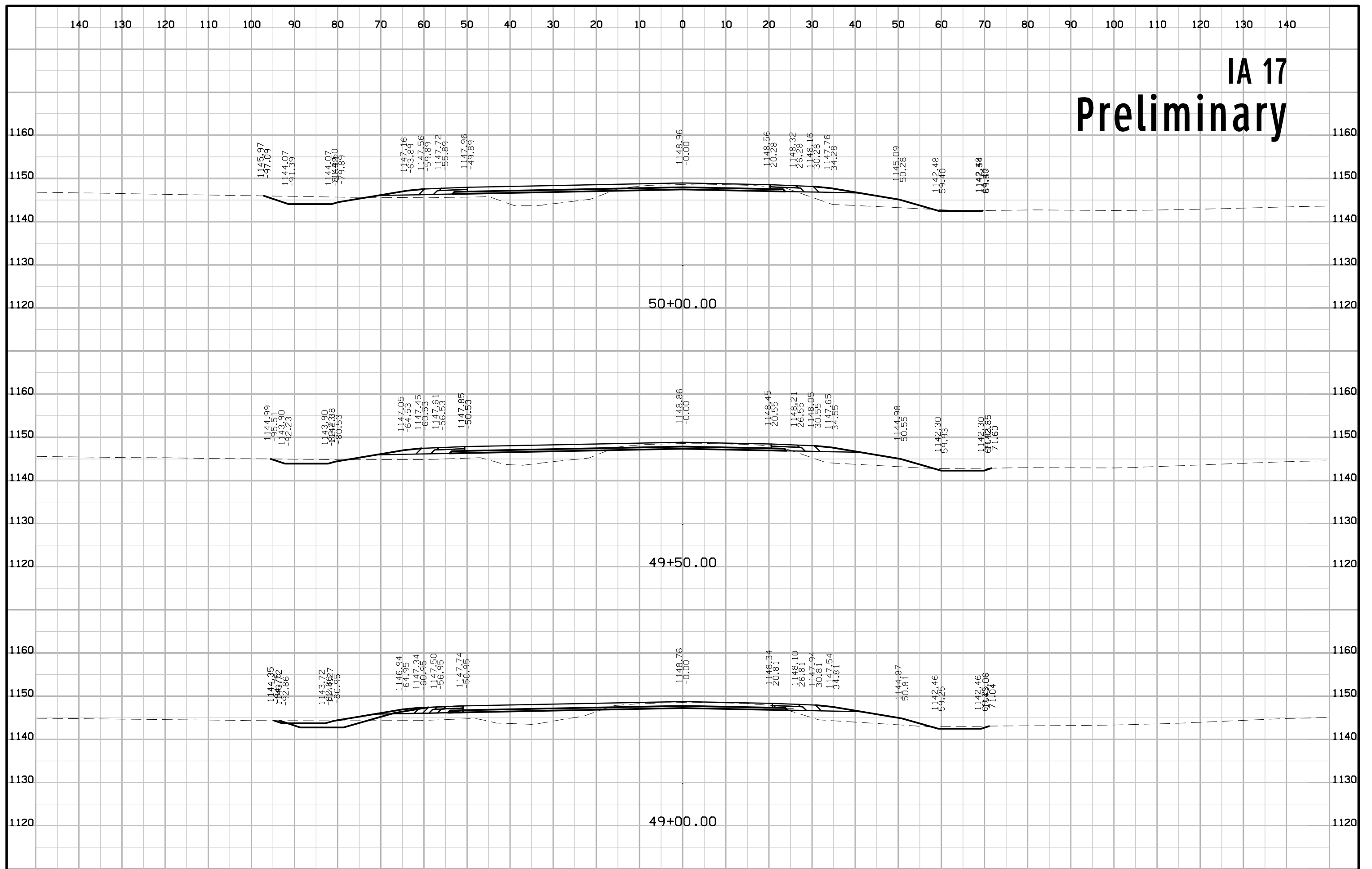
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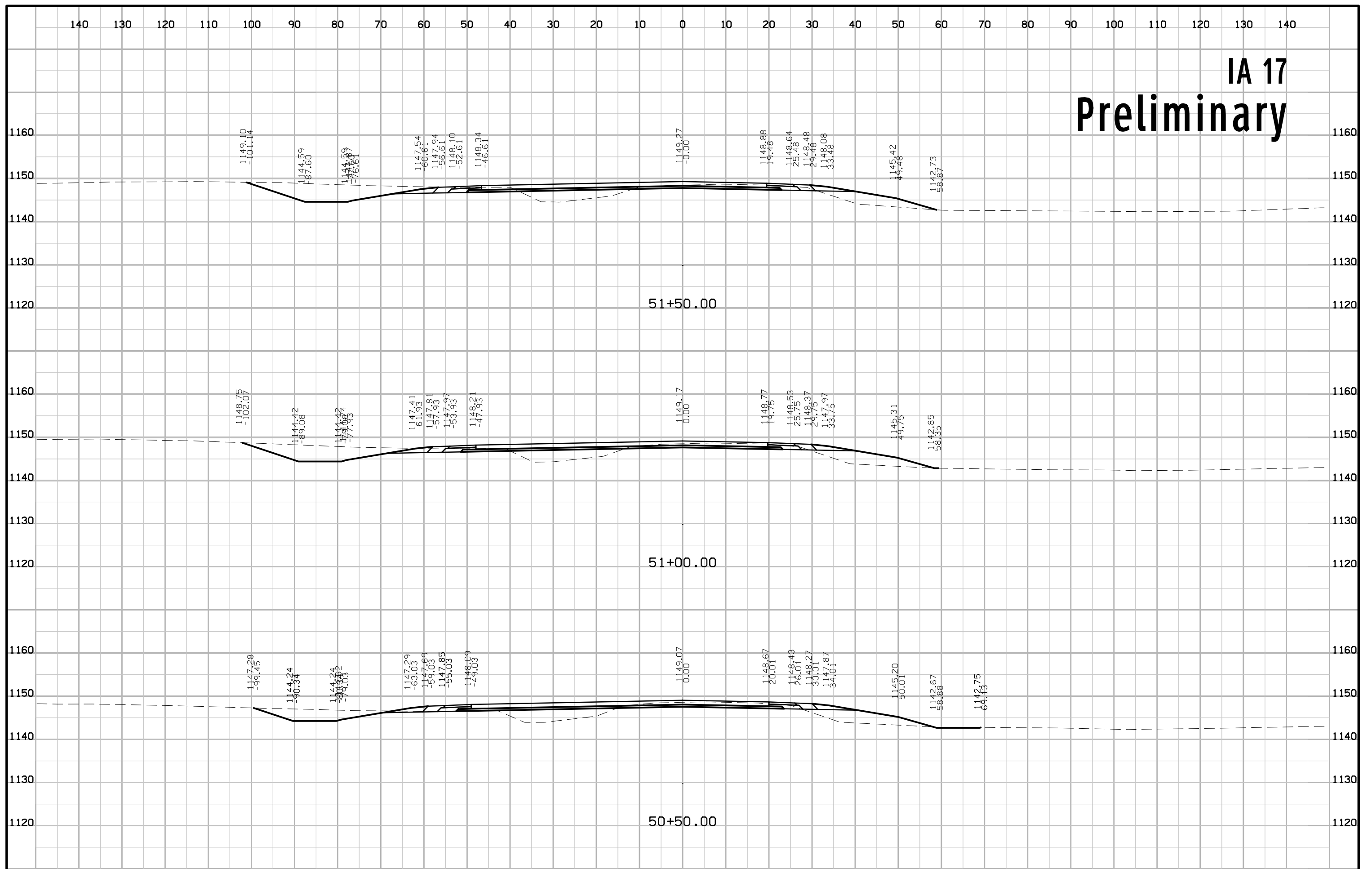
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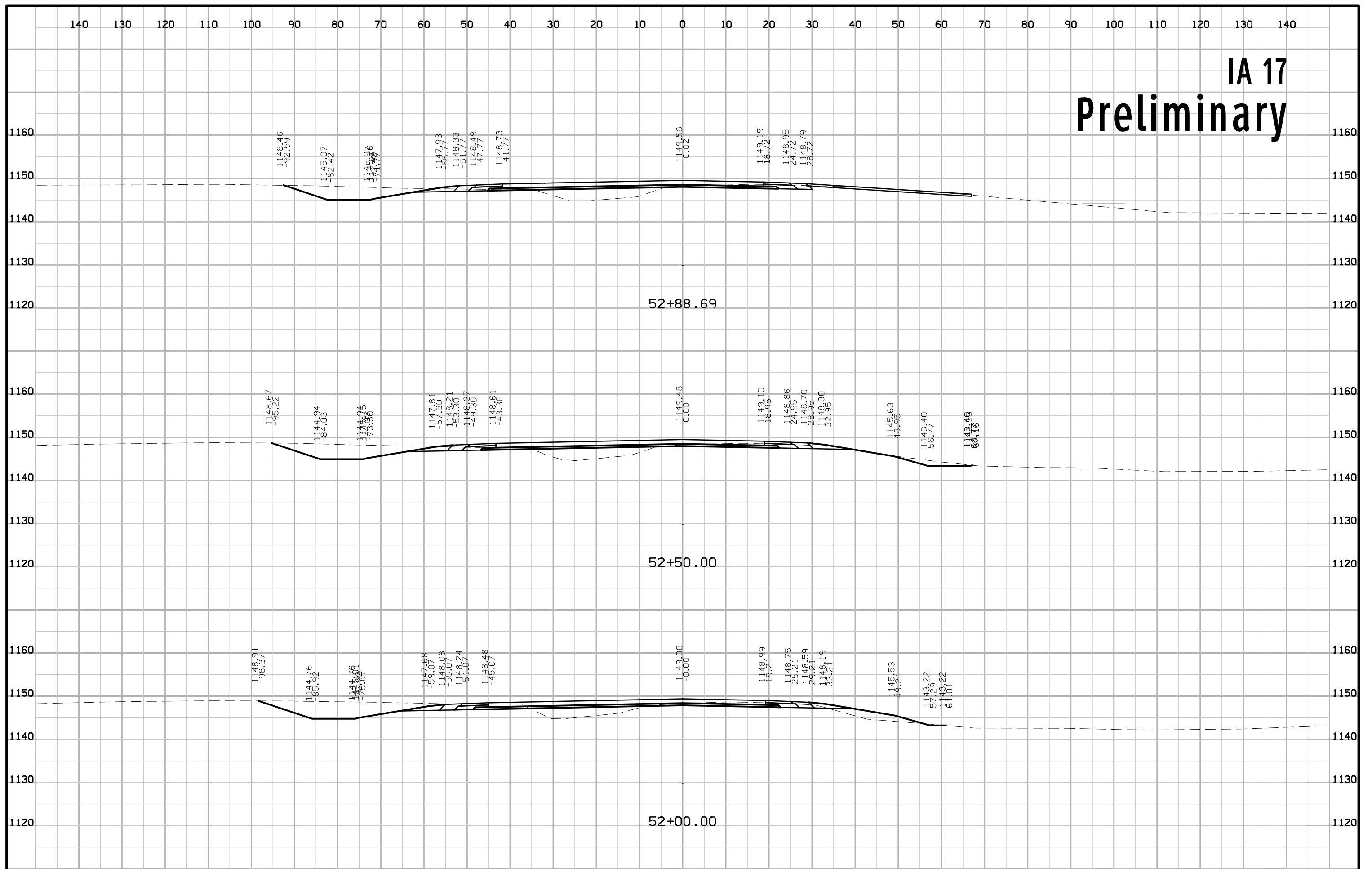
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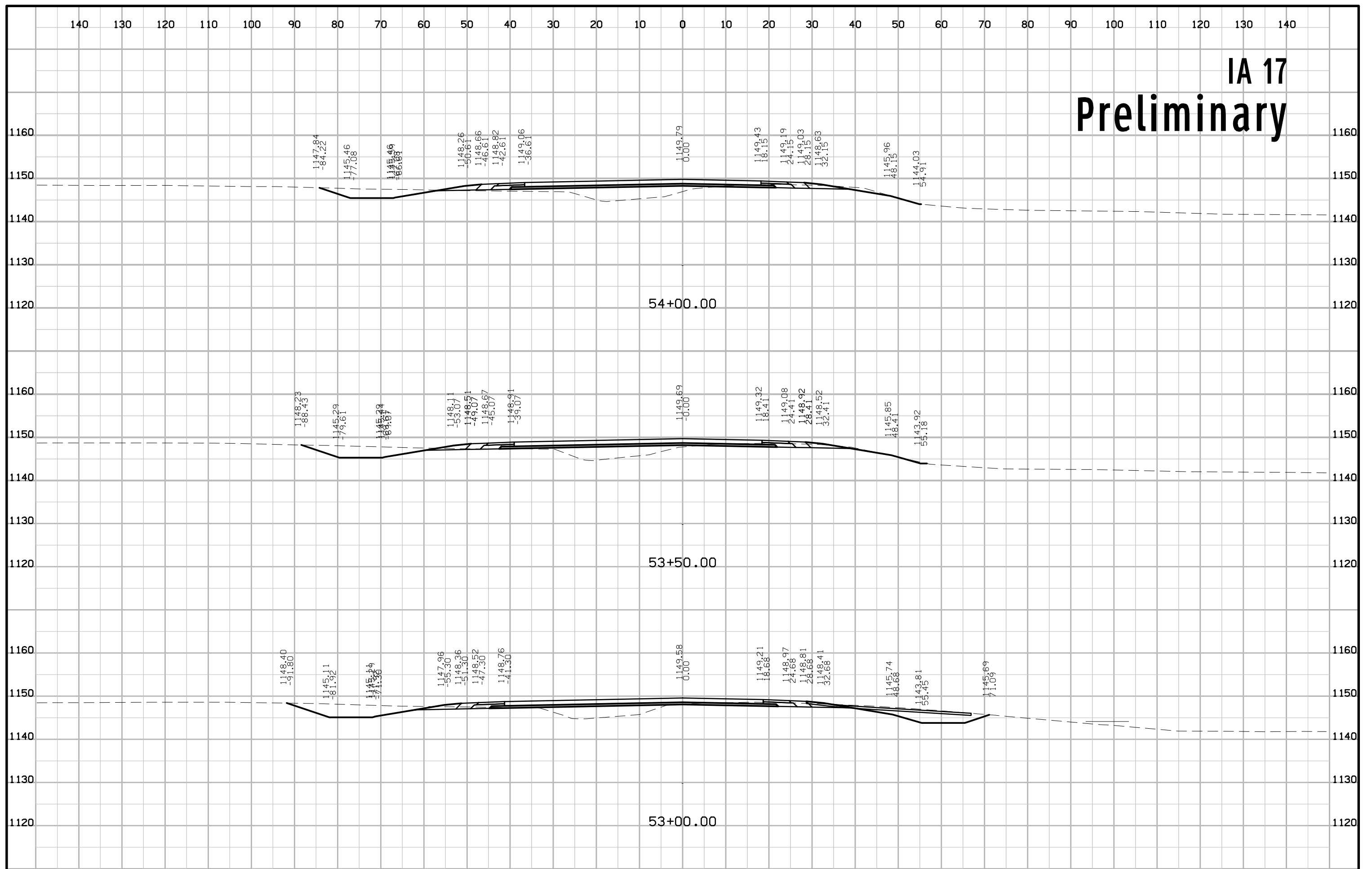
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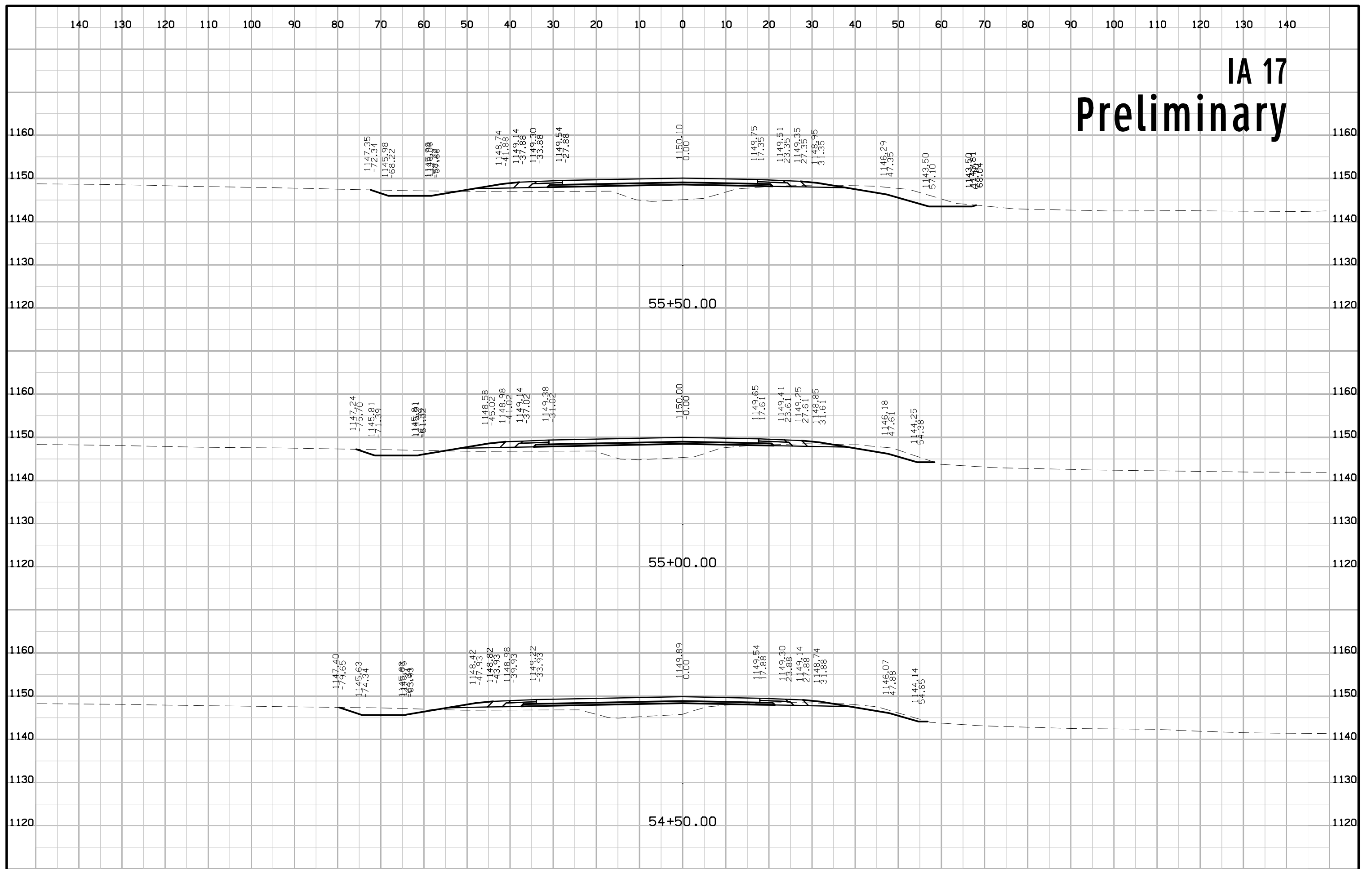
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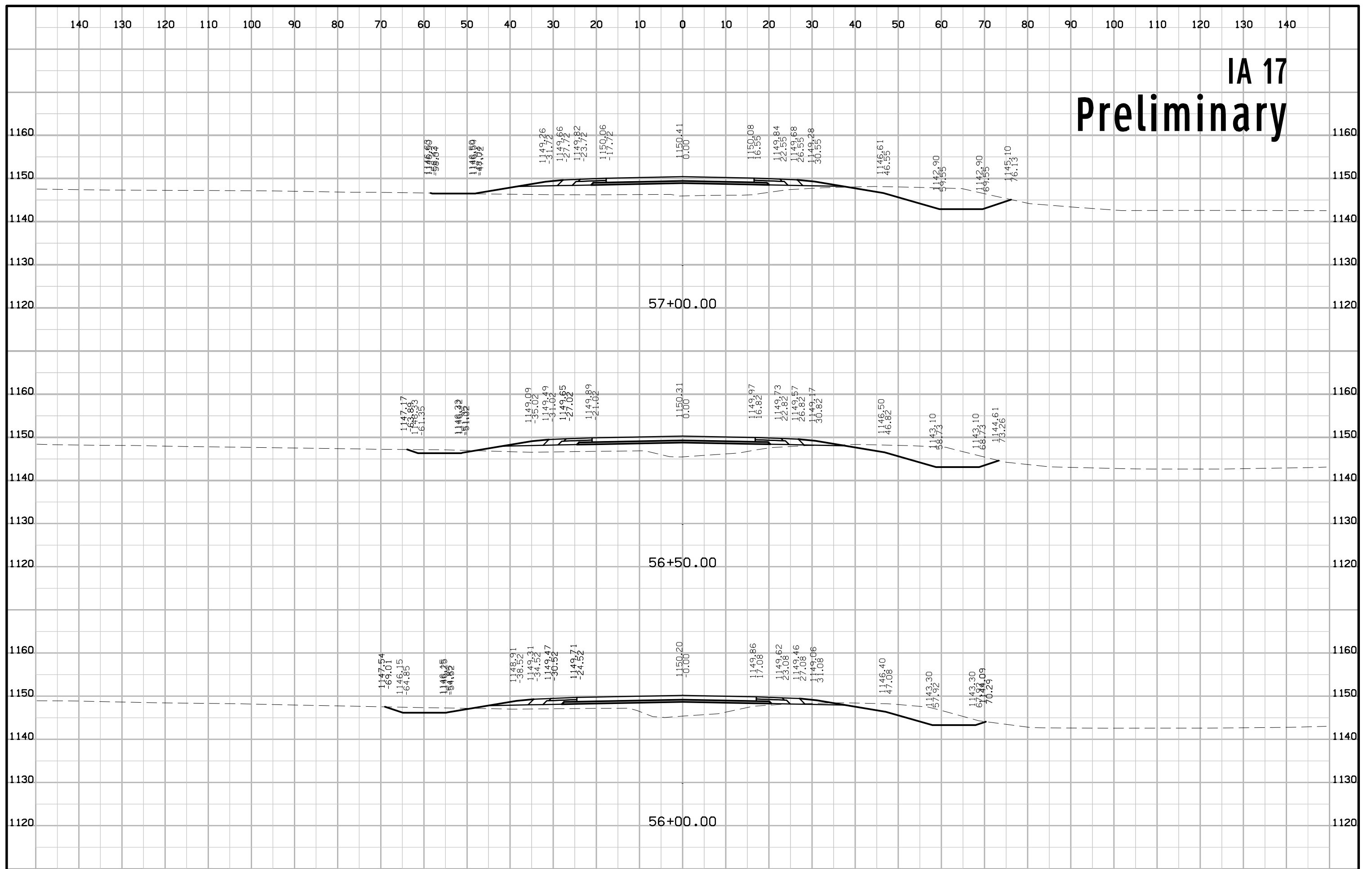


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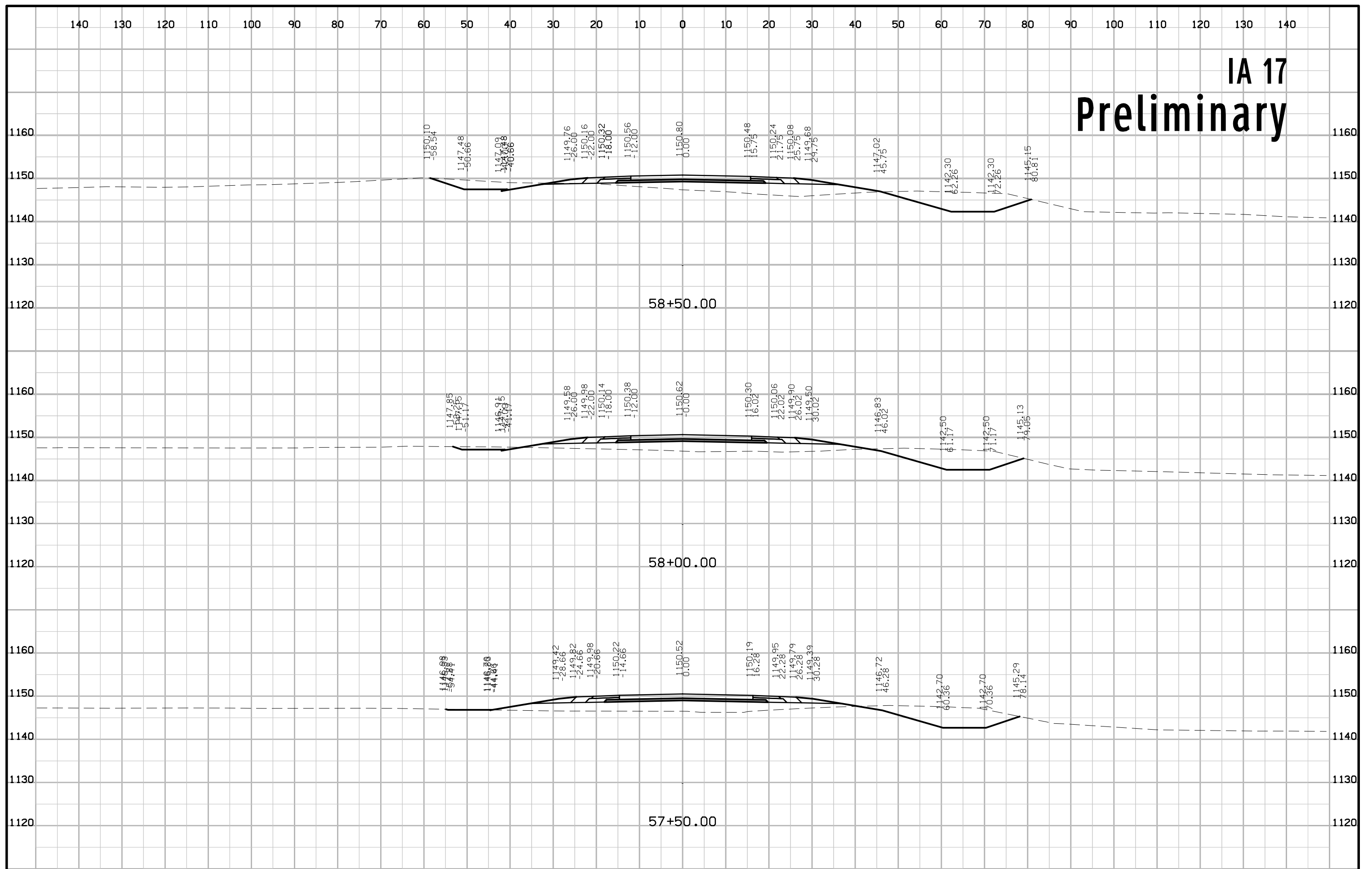




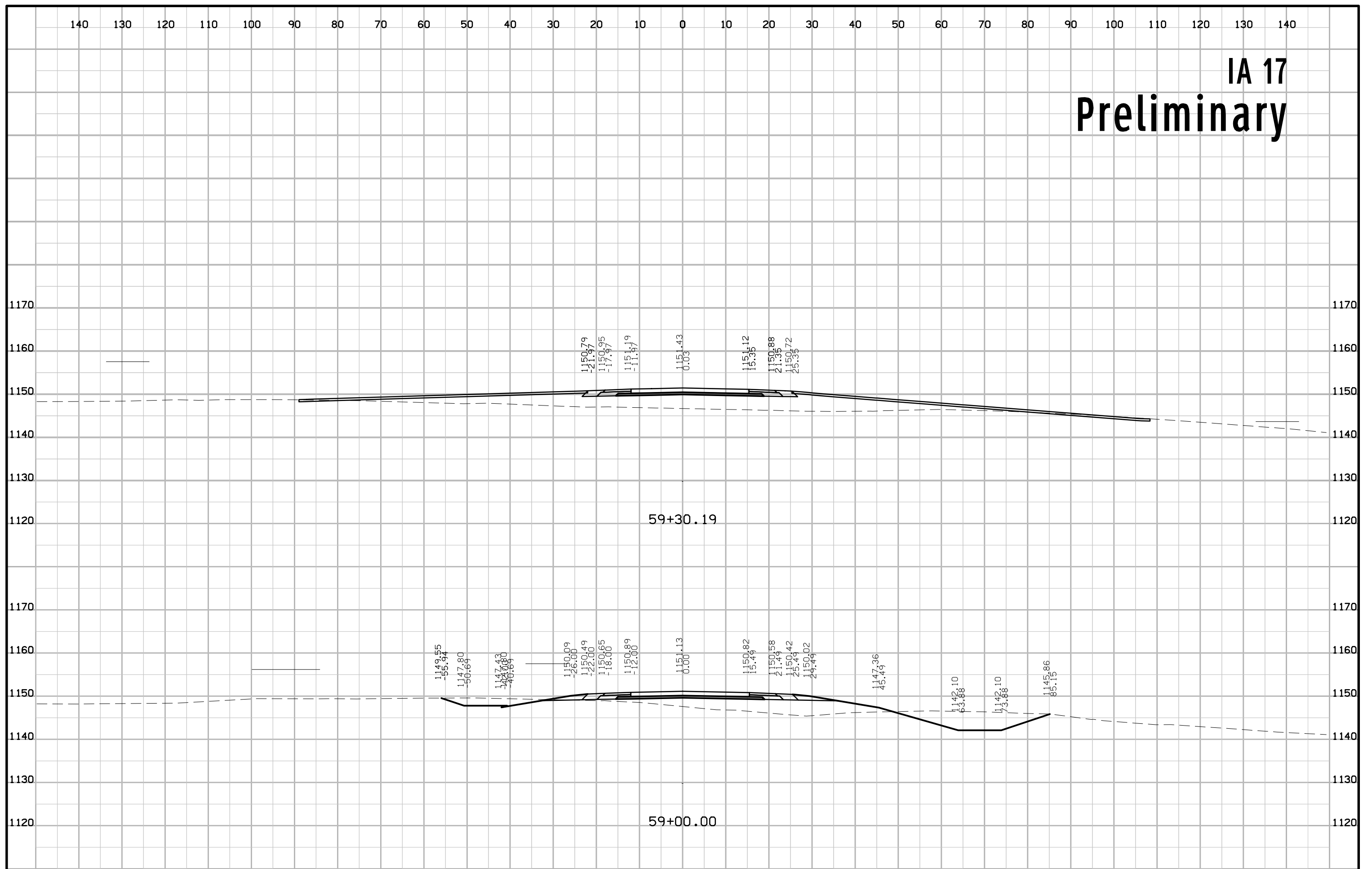
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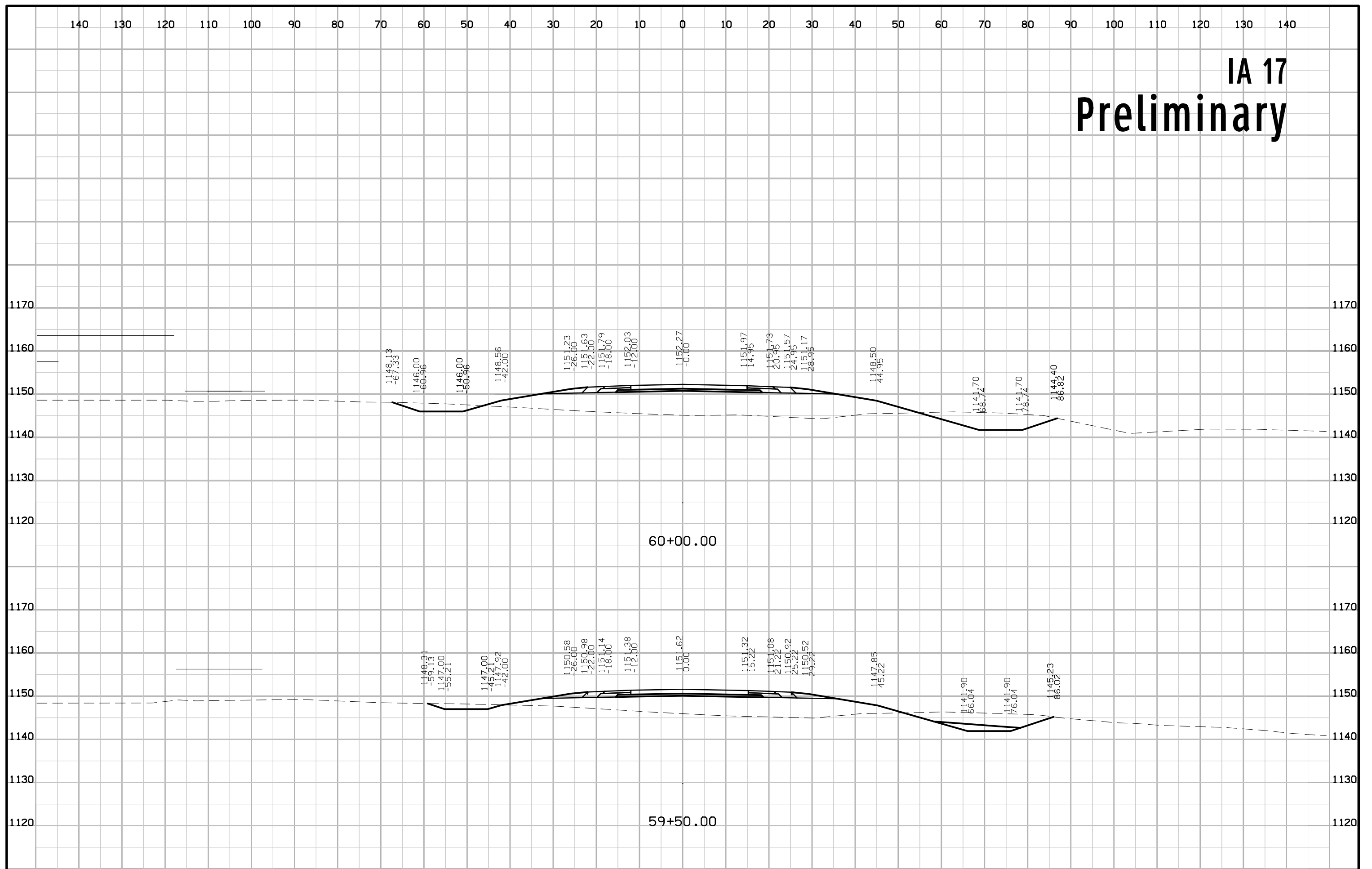
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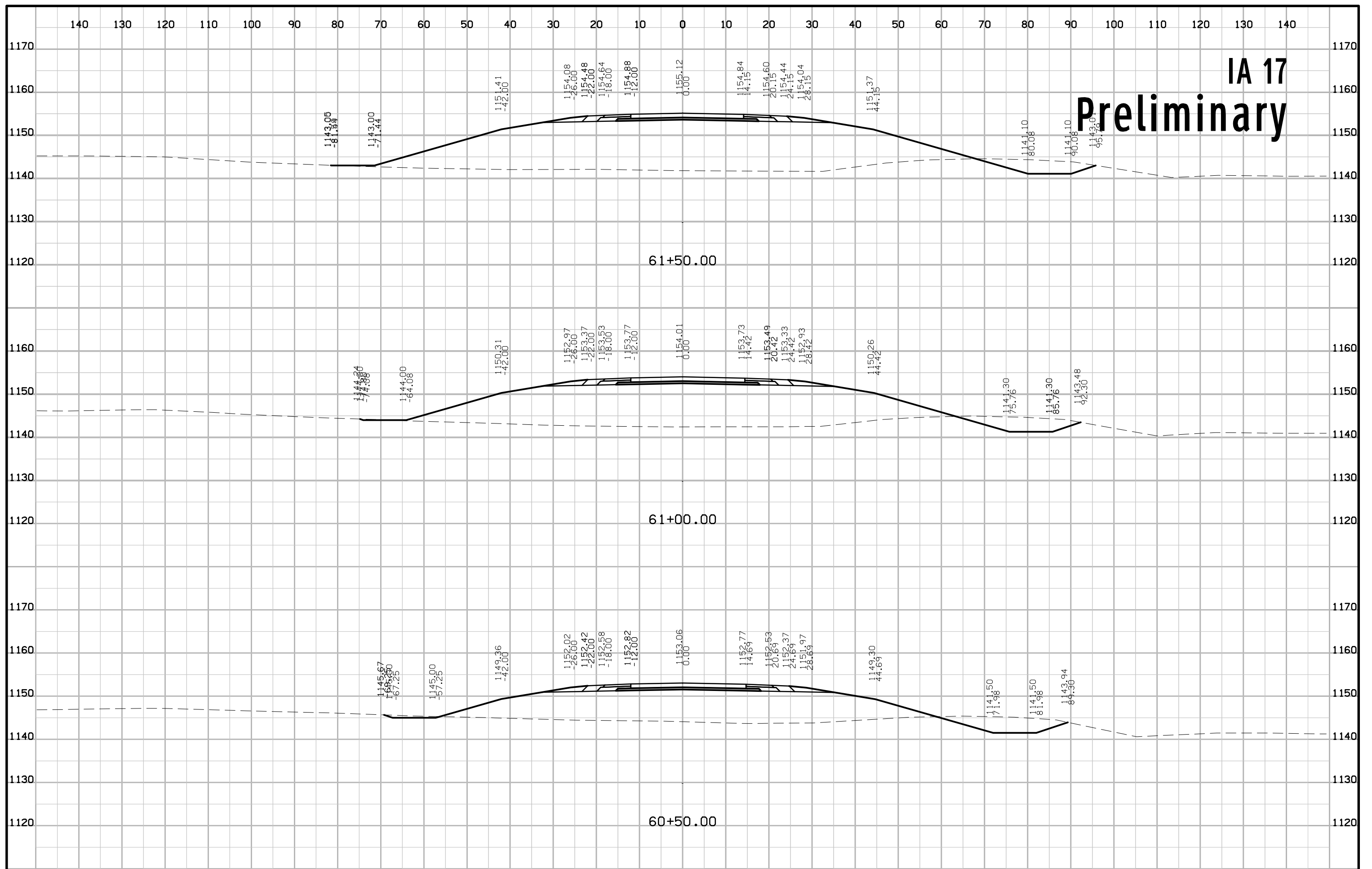
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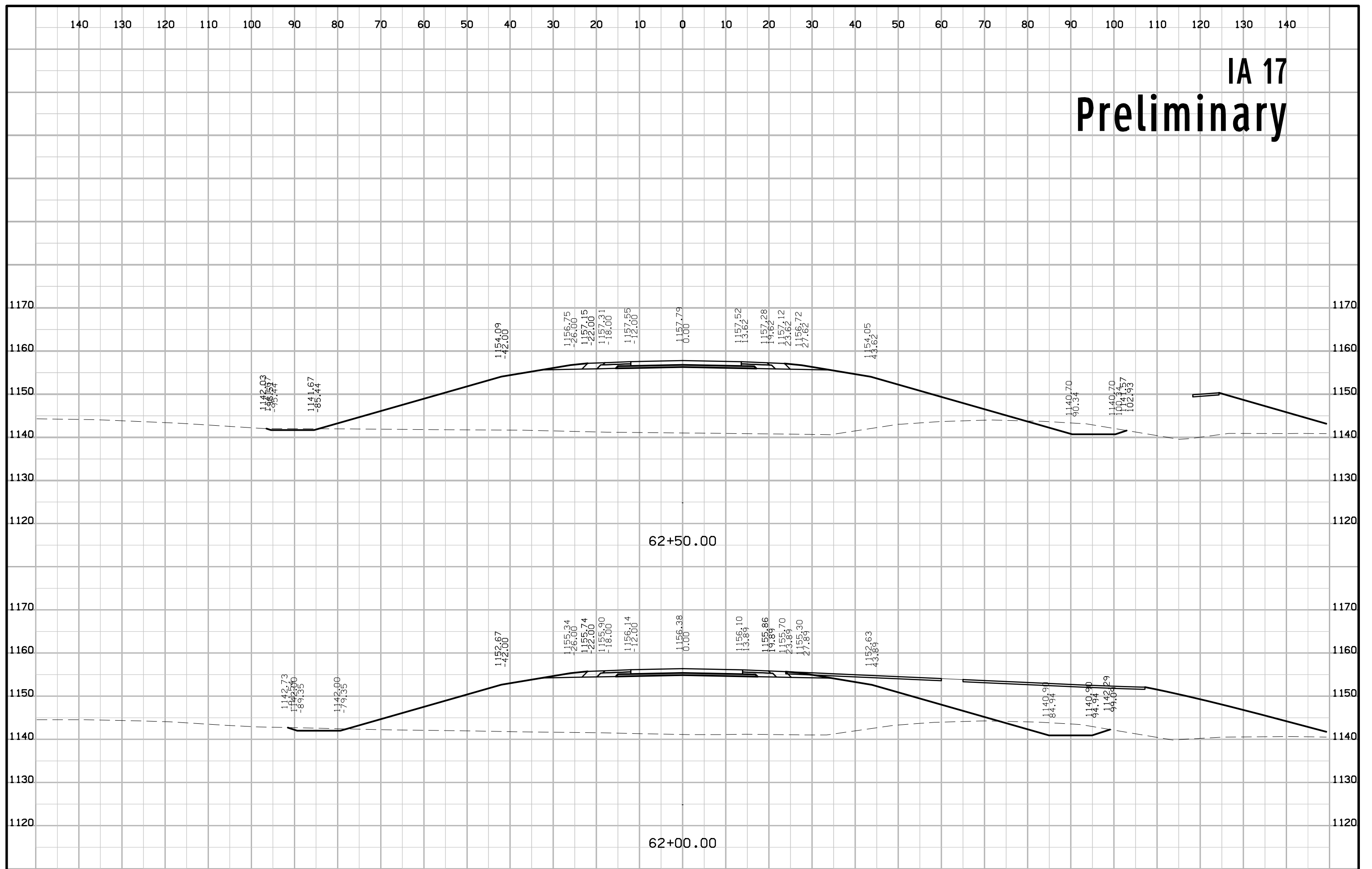
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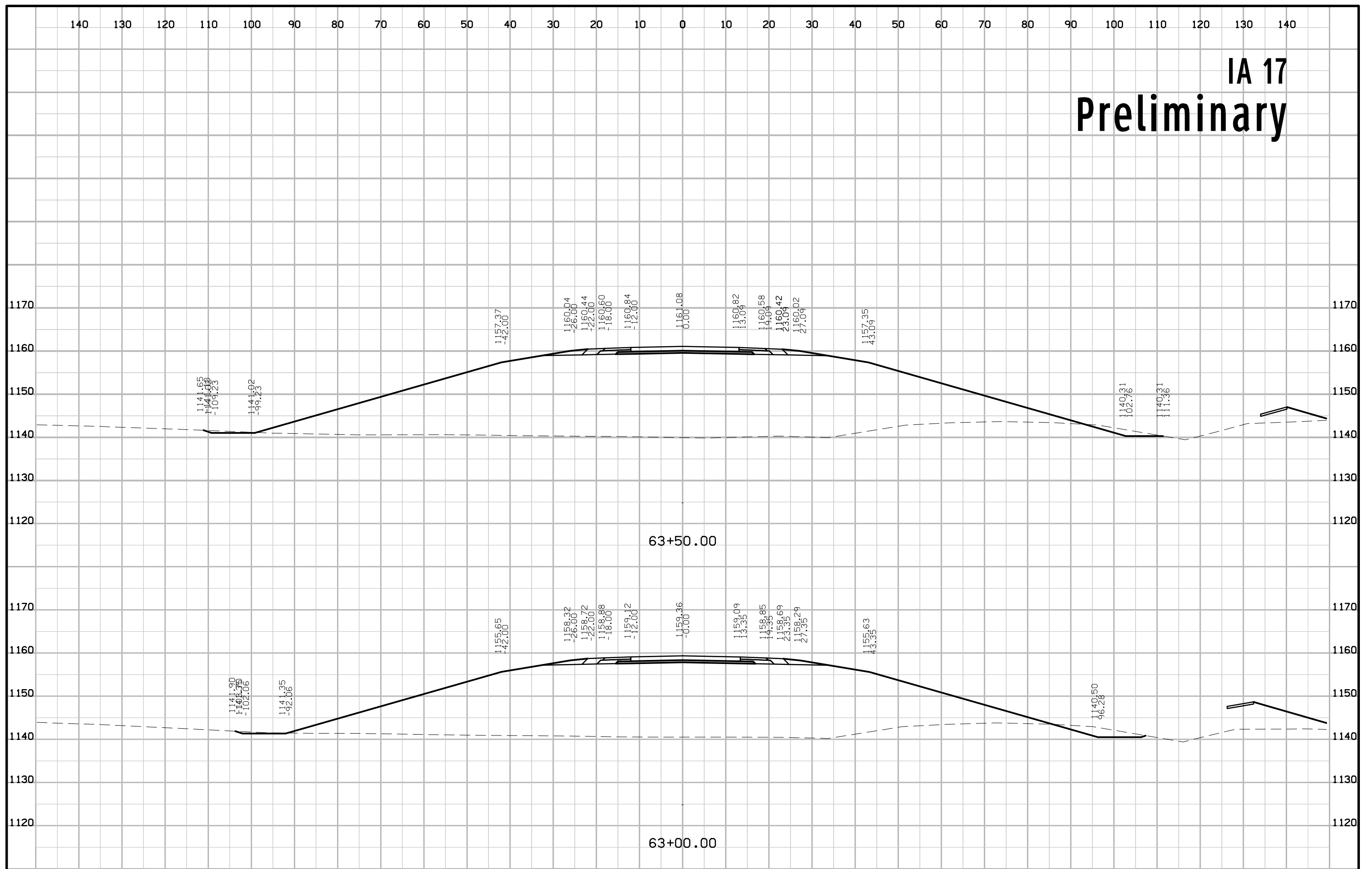
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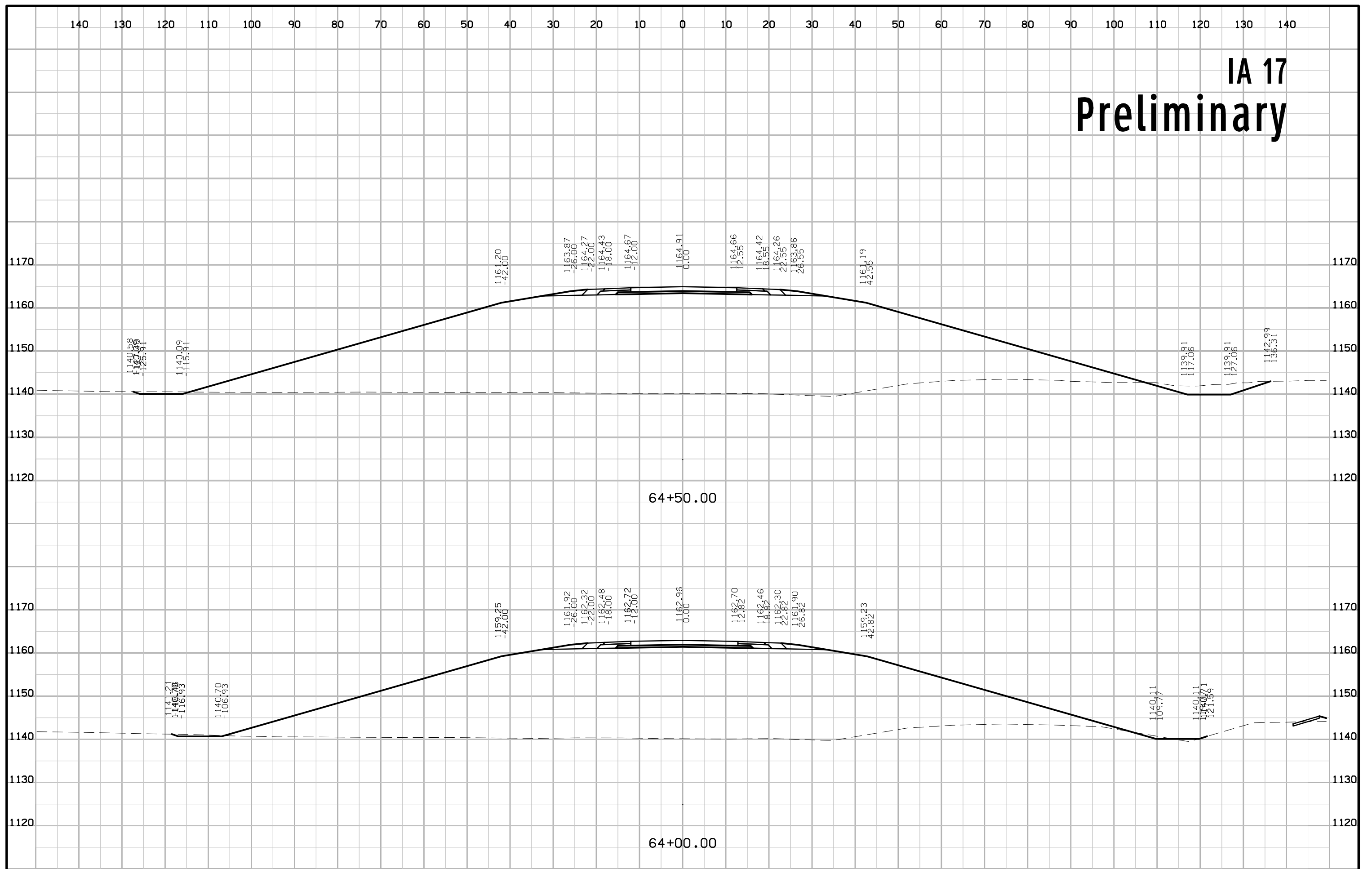
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# IA 17 Preliminary



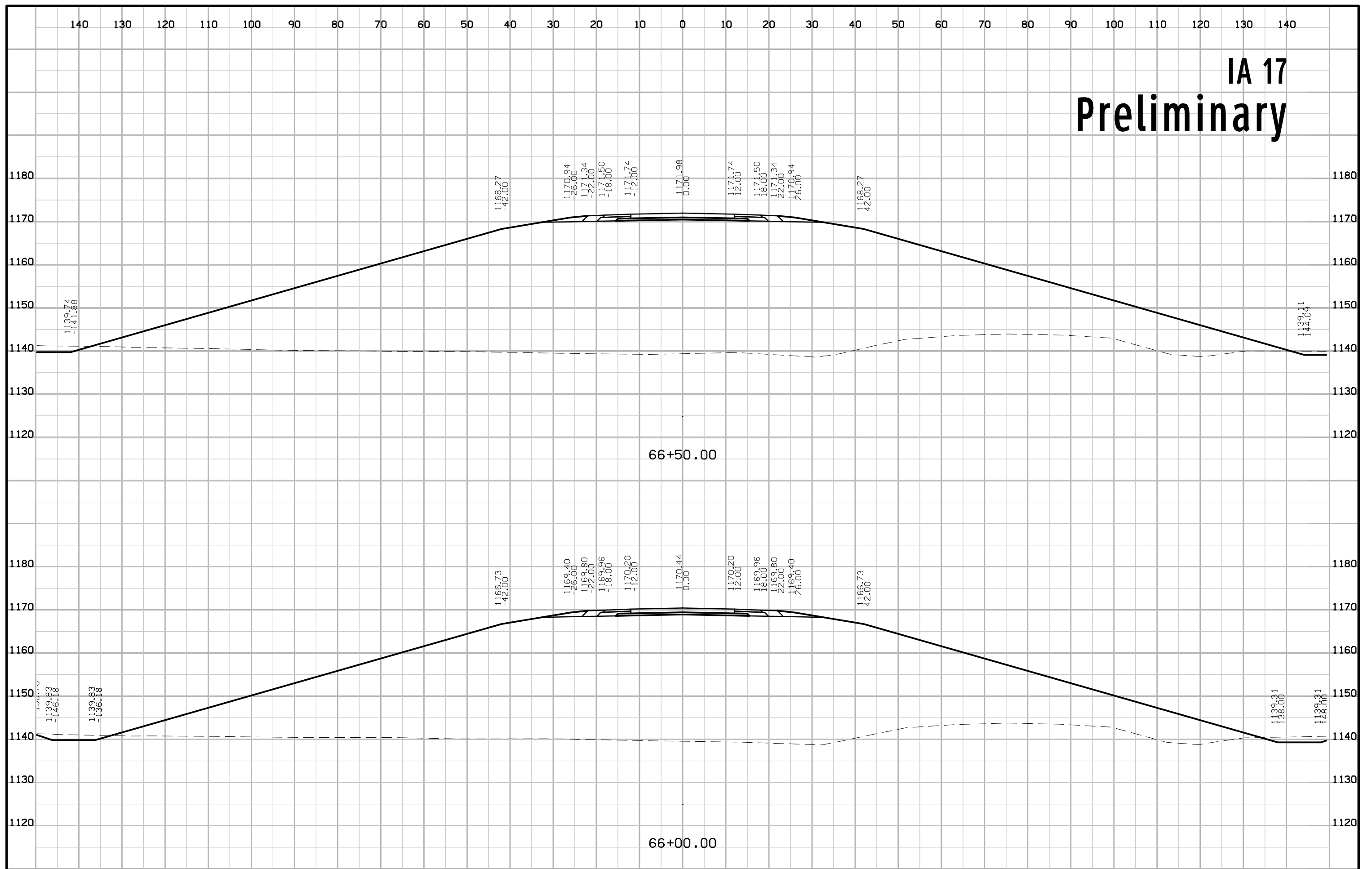
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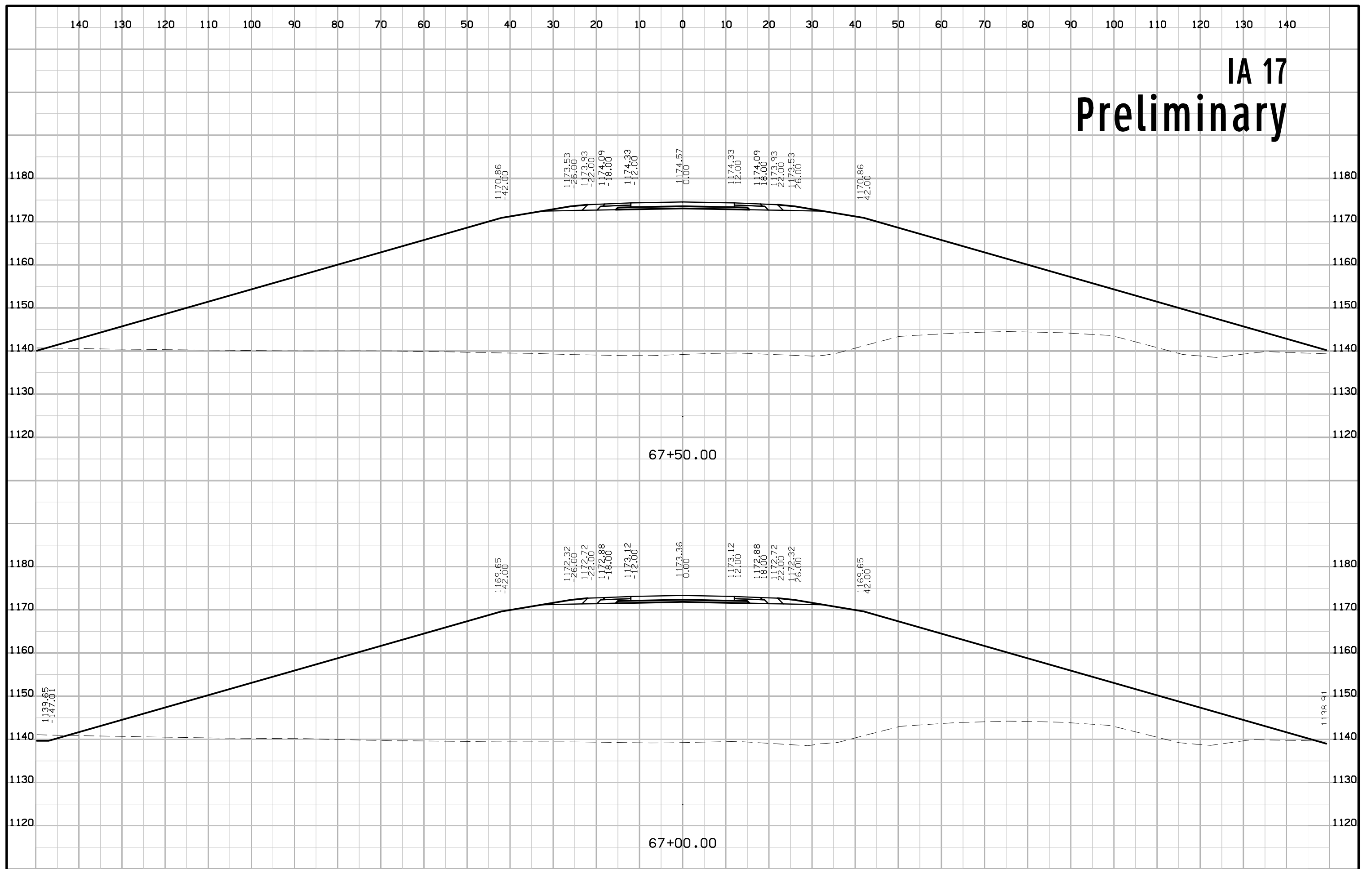




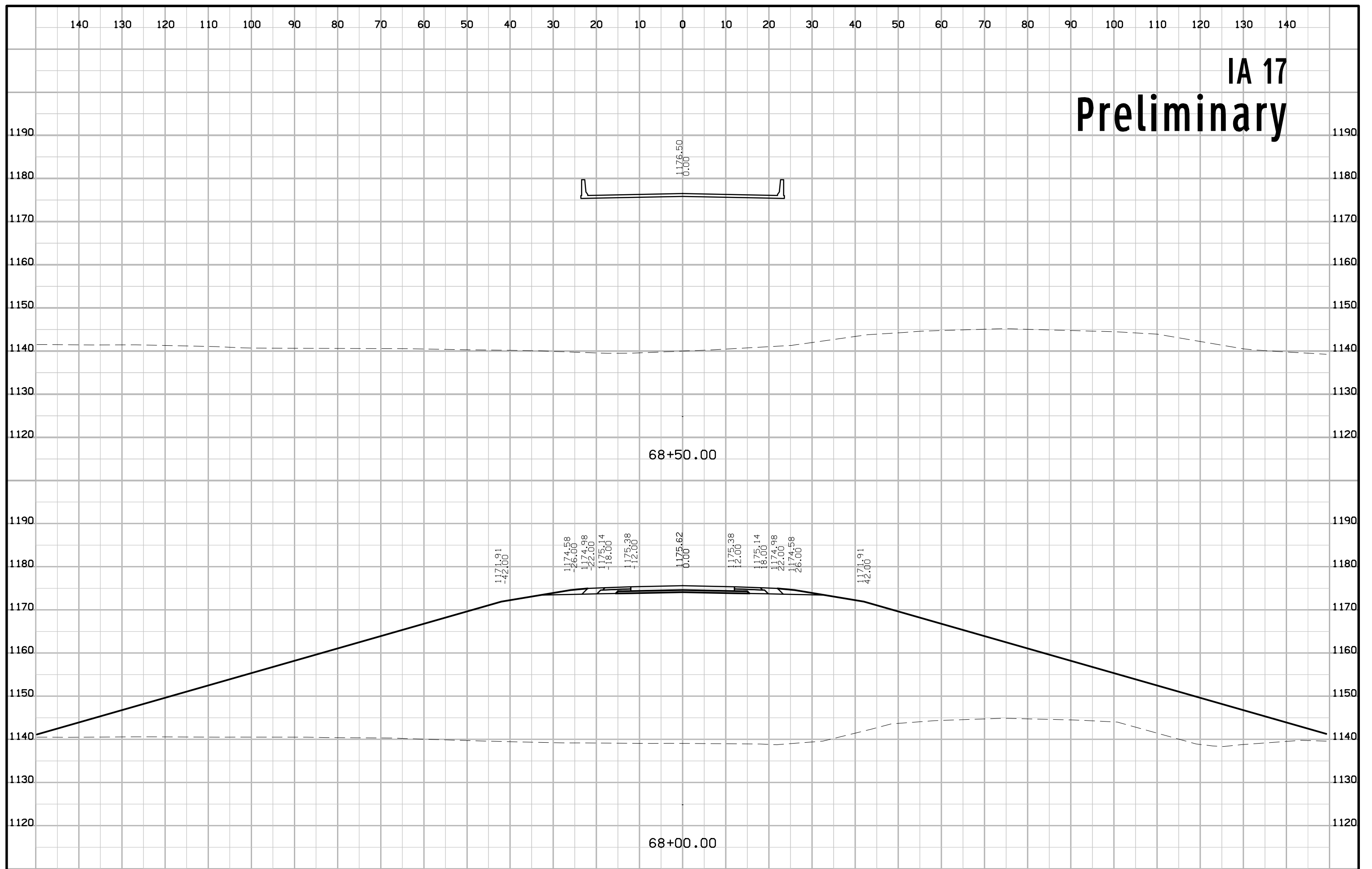
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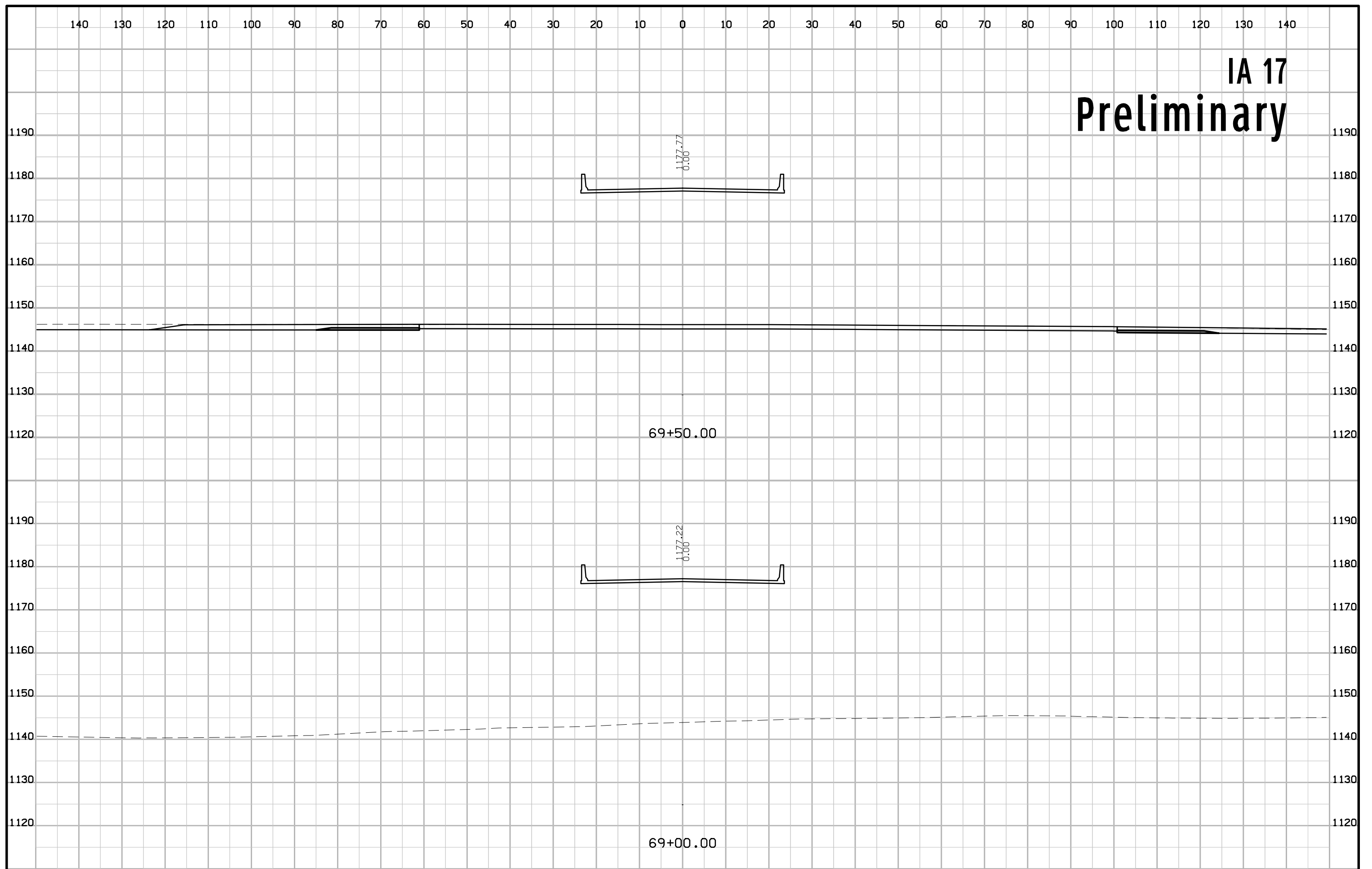
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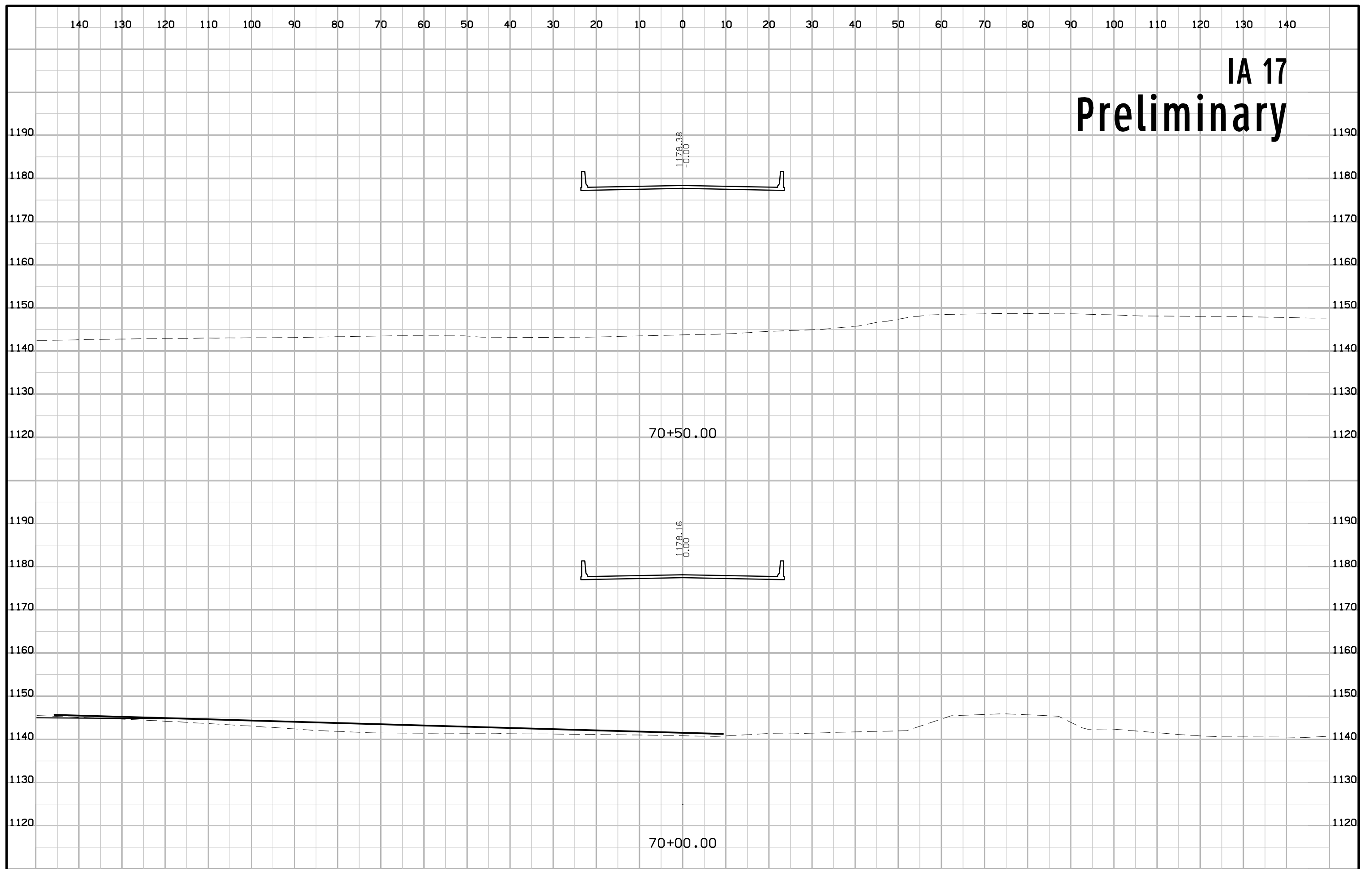
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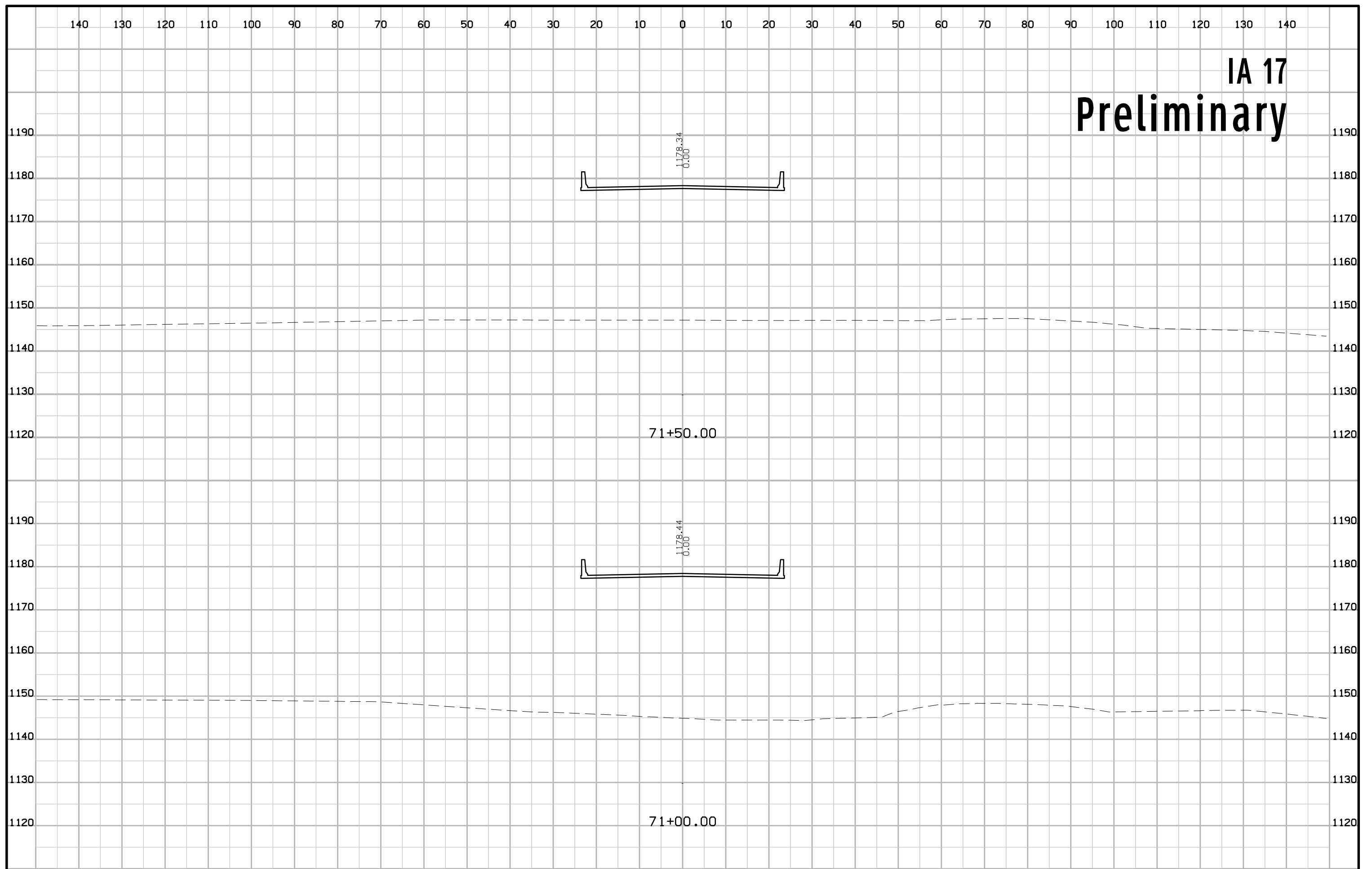
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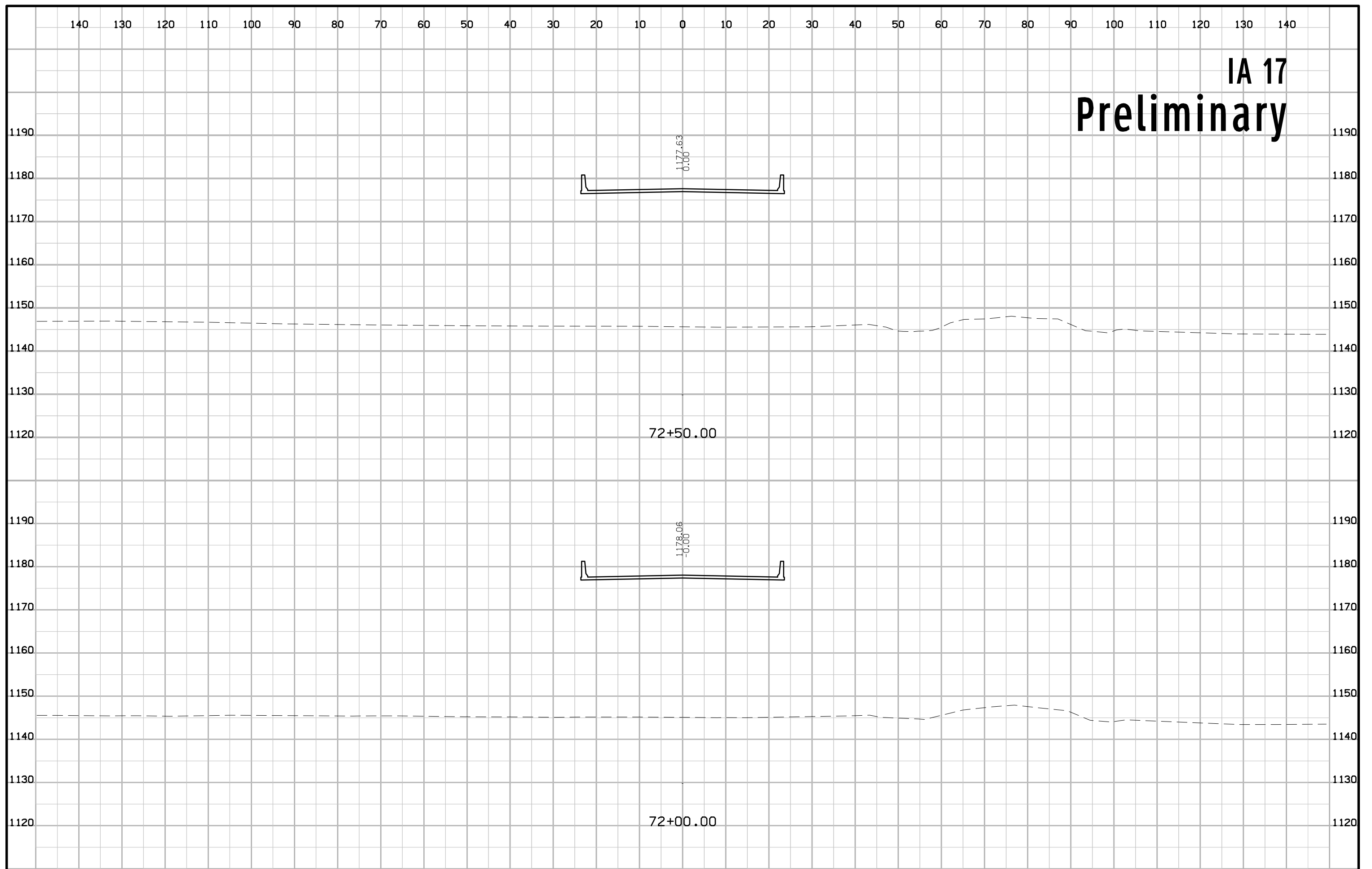
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# IA 17 Preliminary

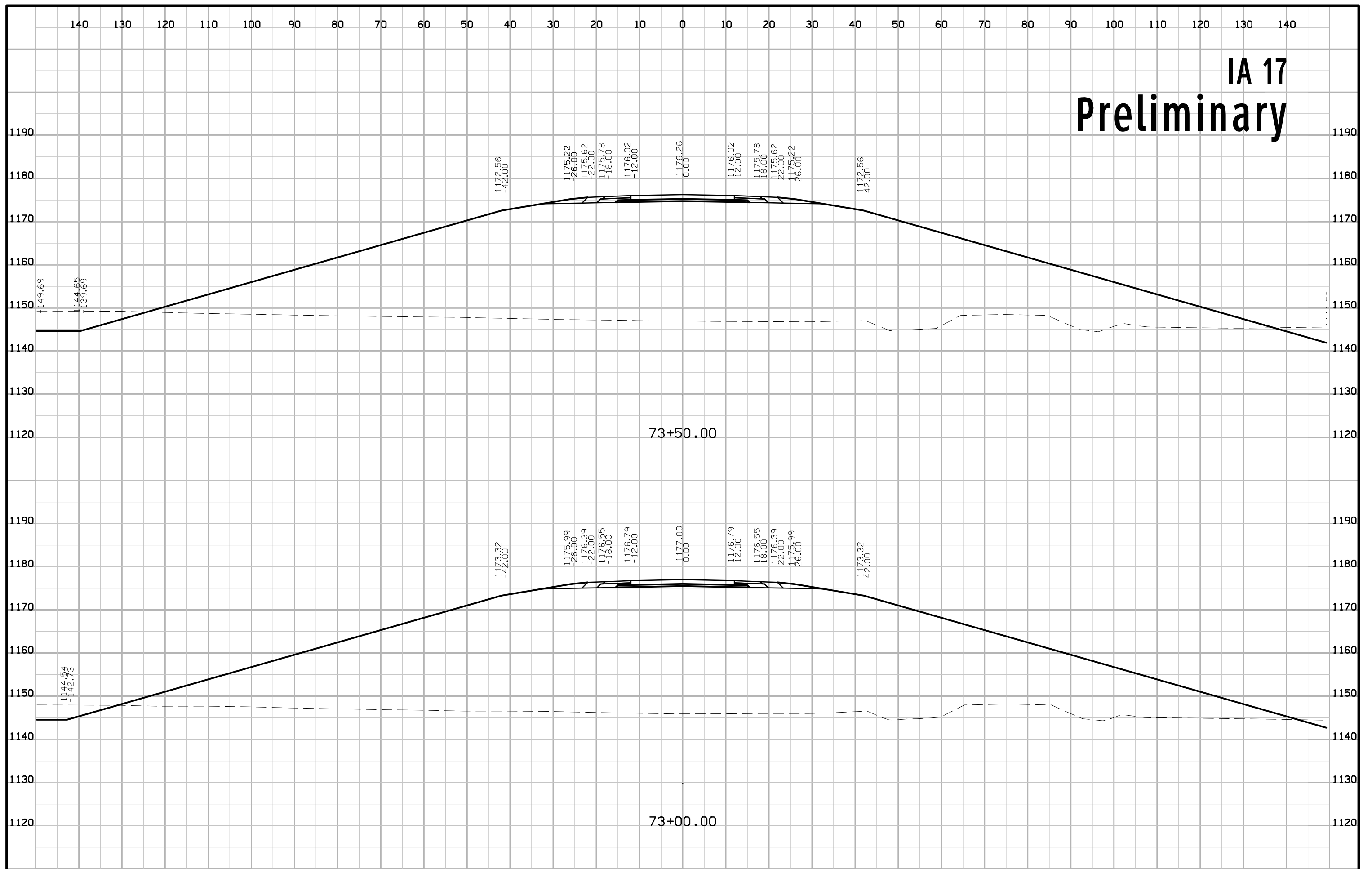


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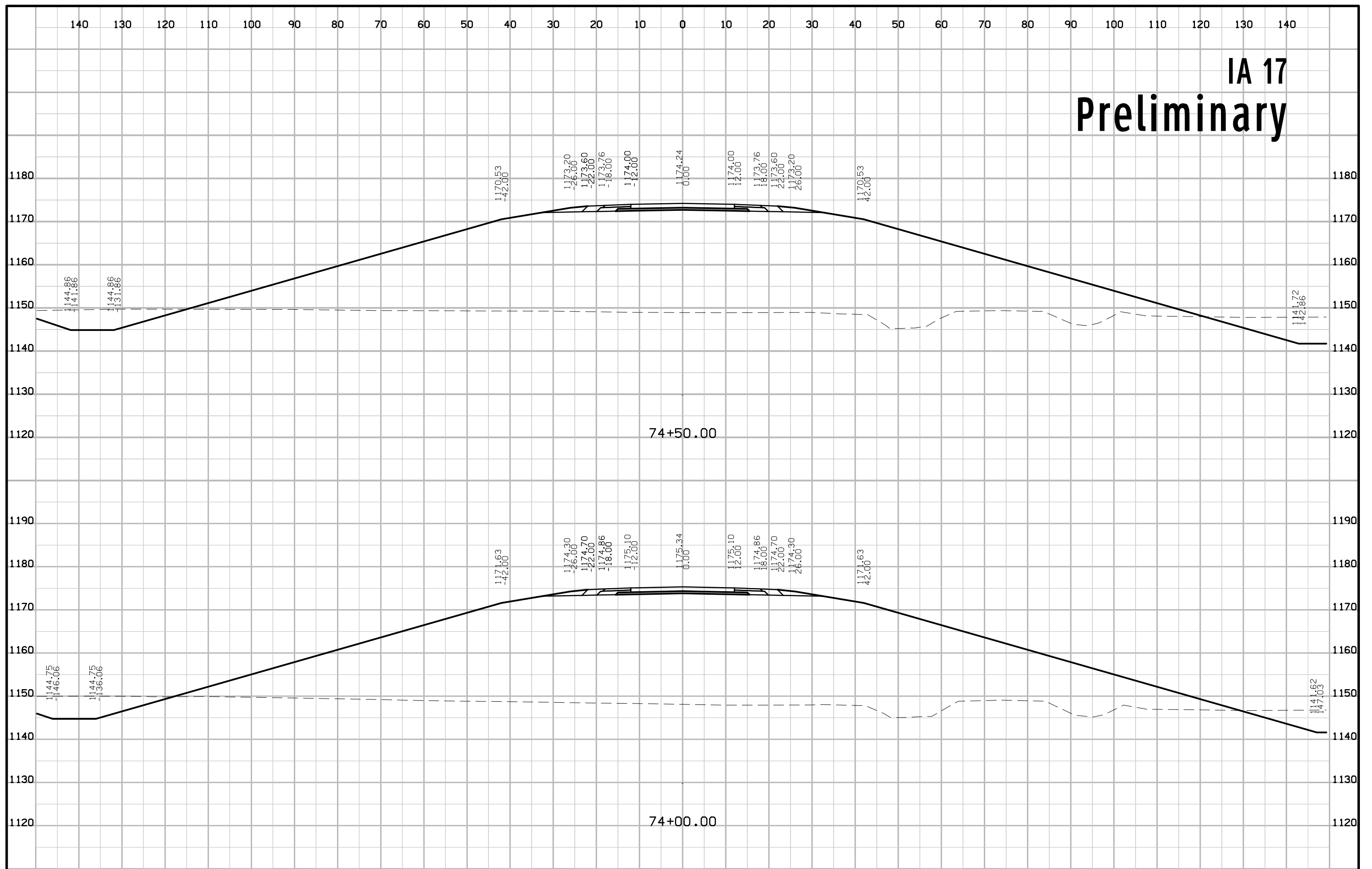




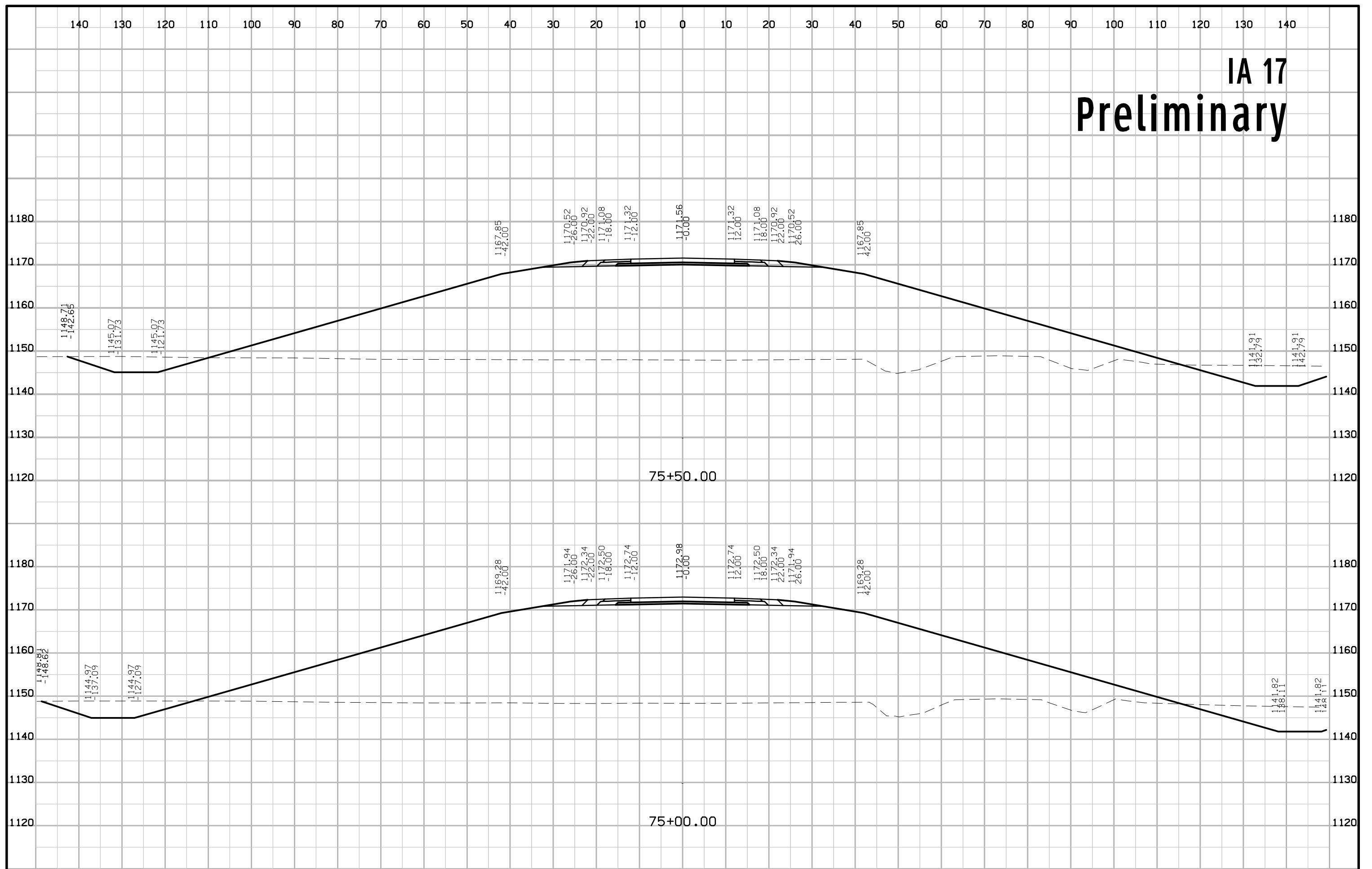
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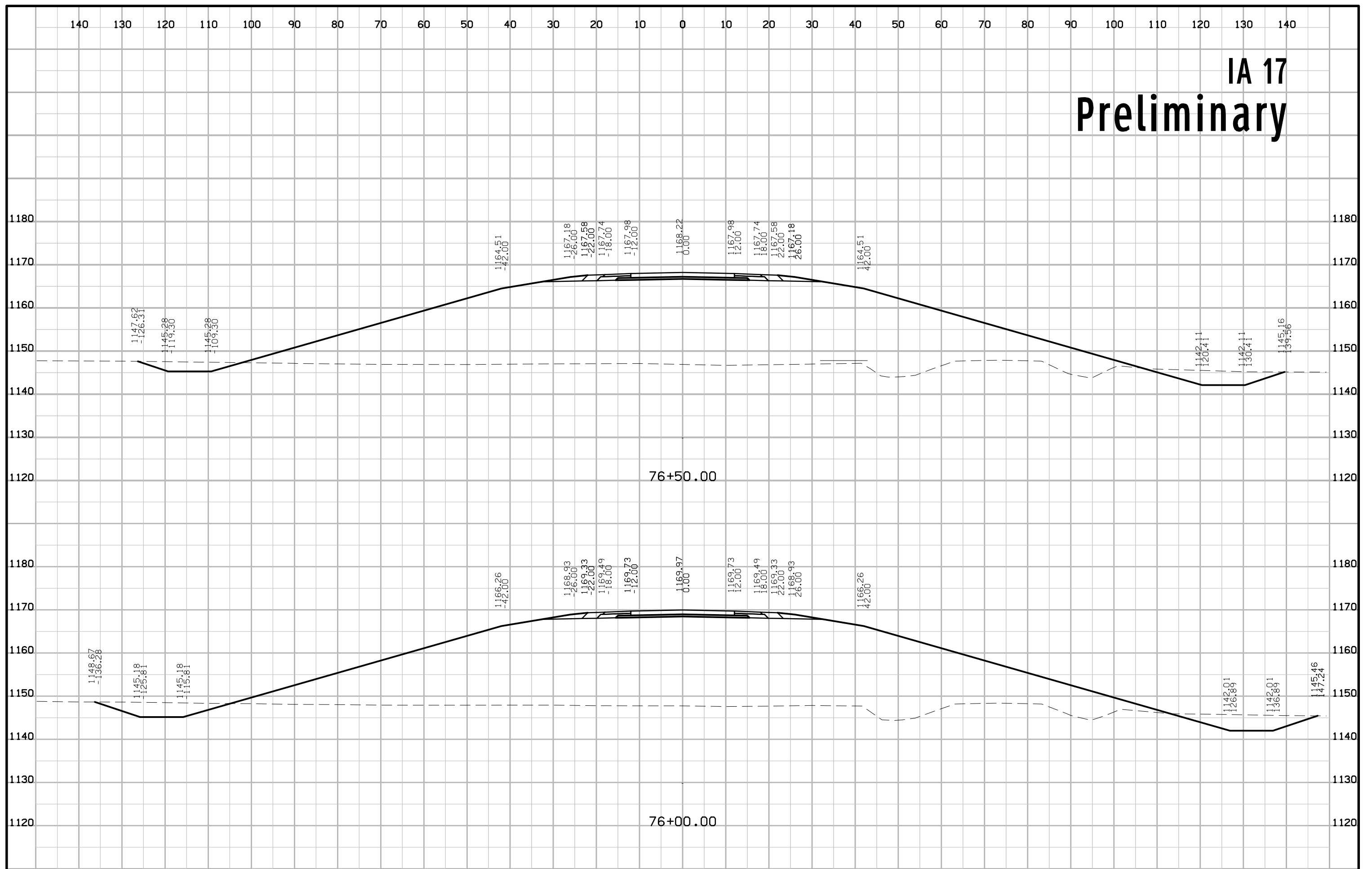
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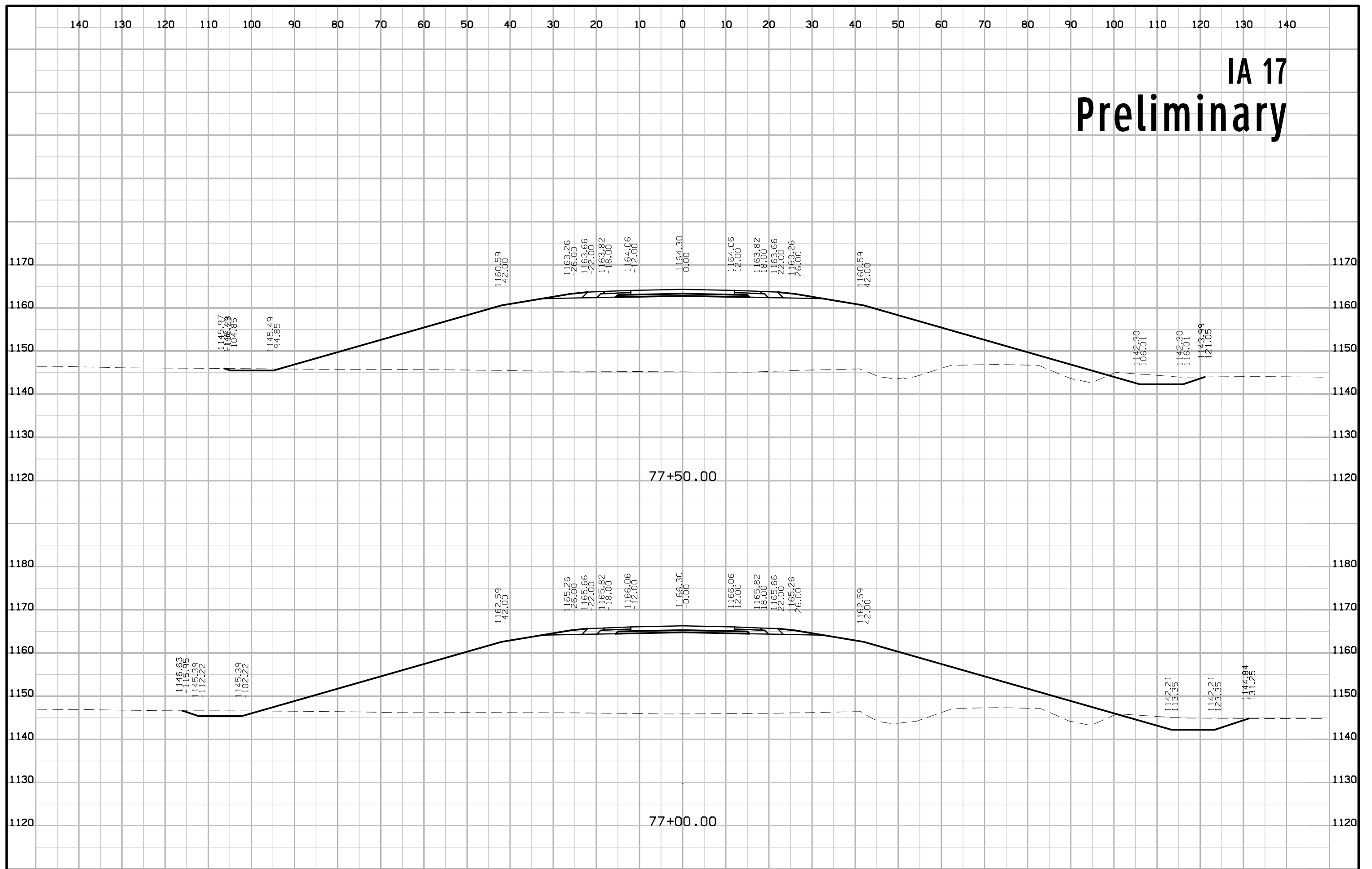
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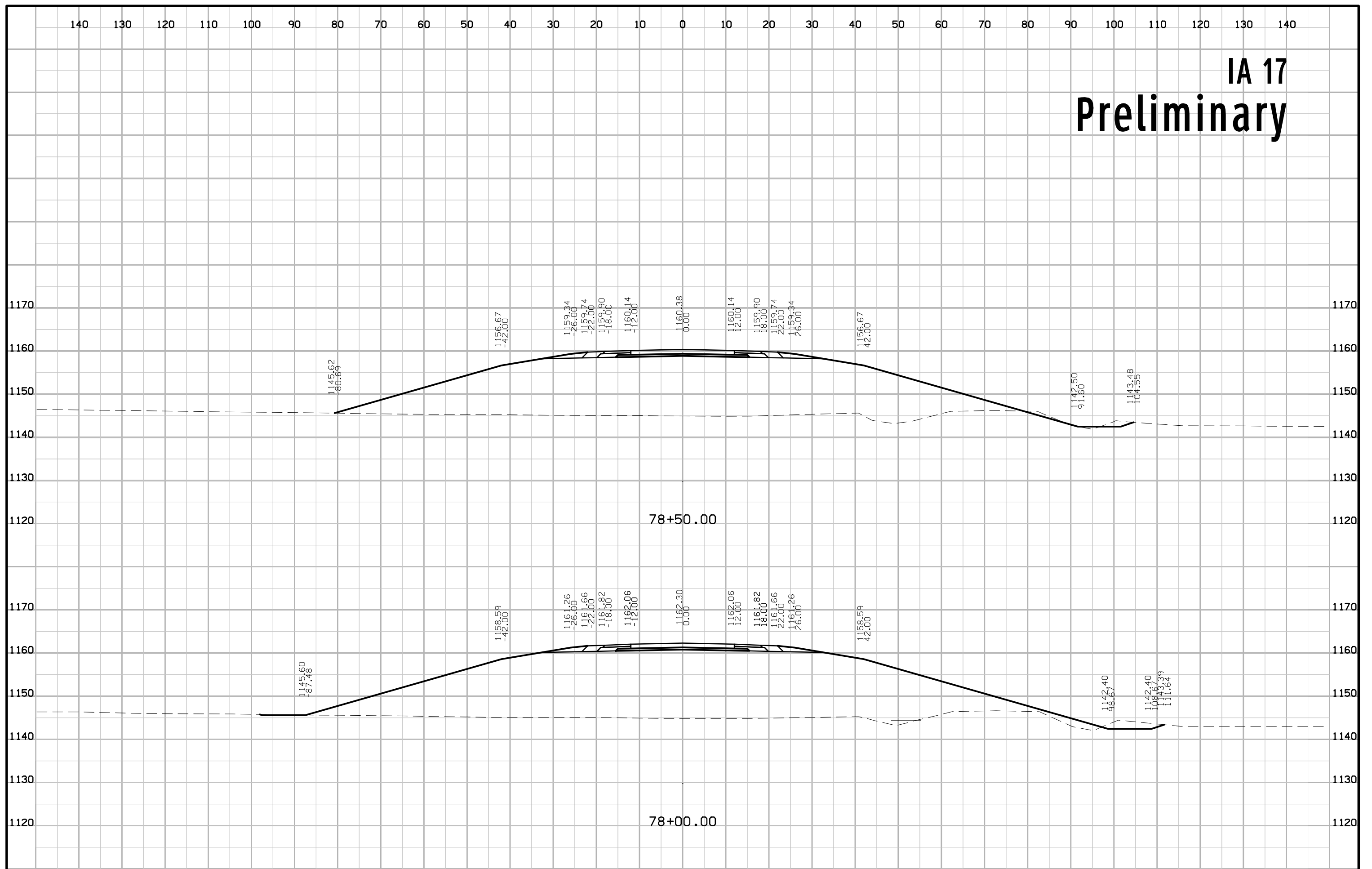
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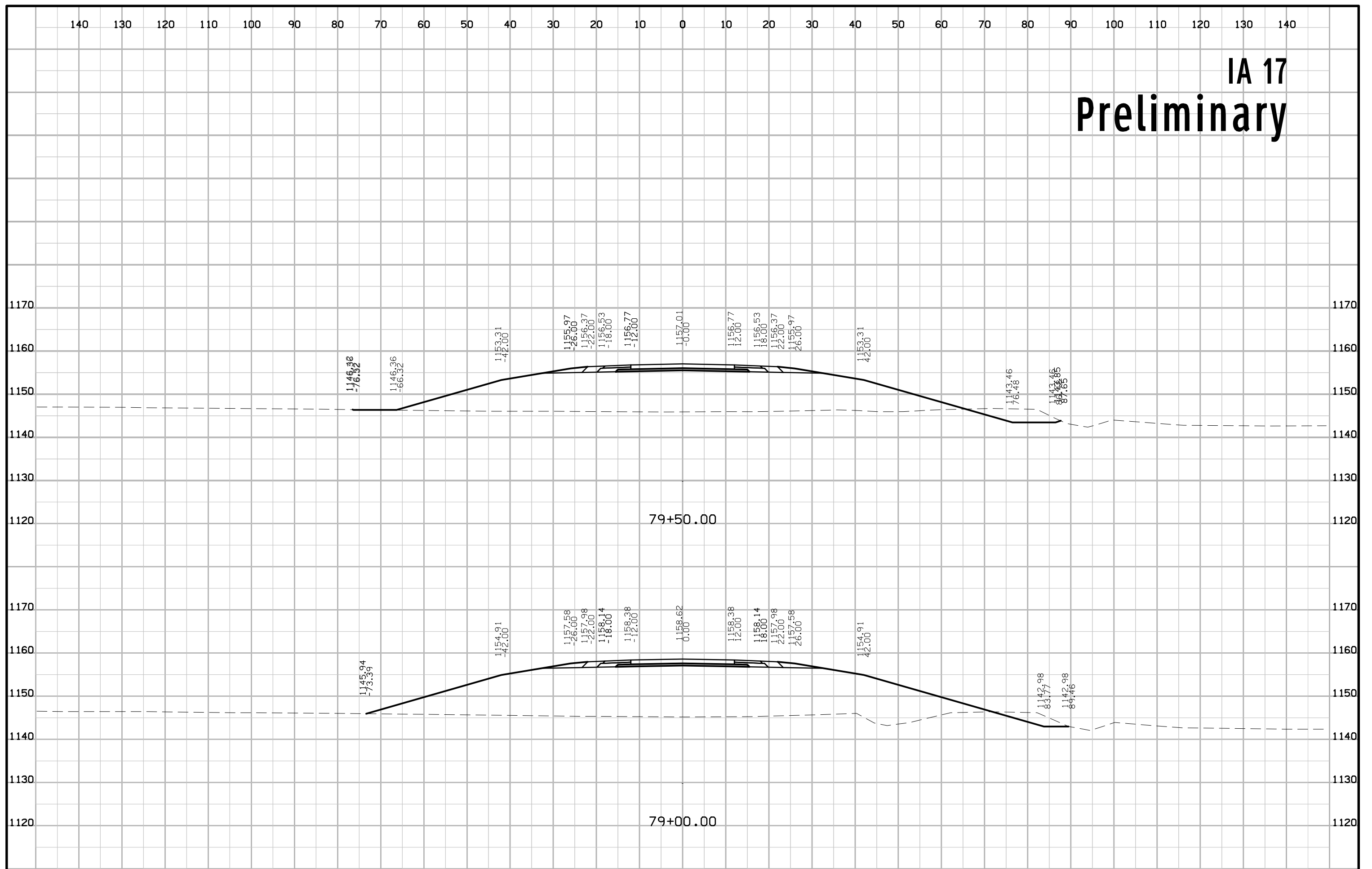
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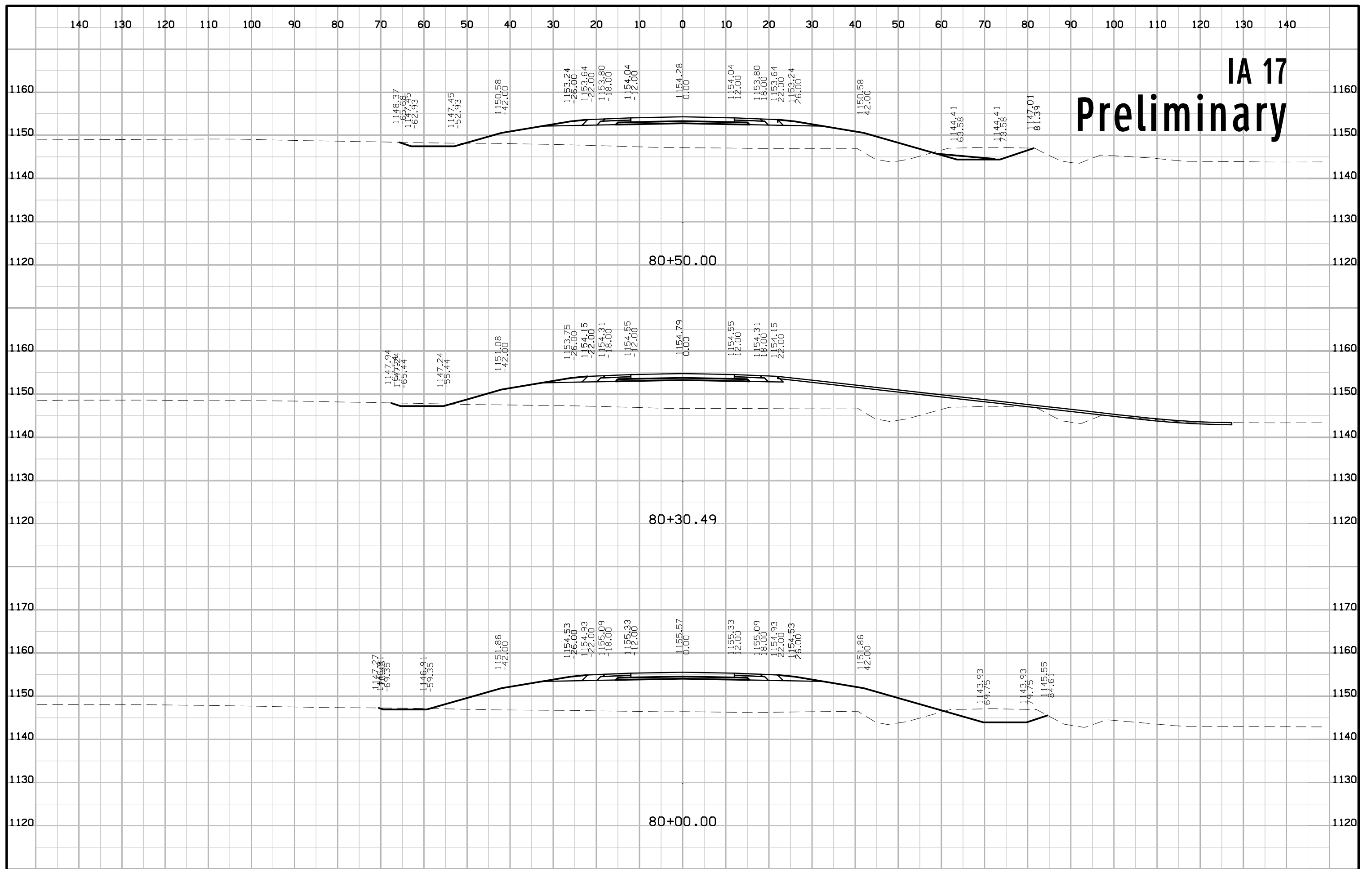
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# IA 17 Preliminary

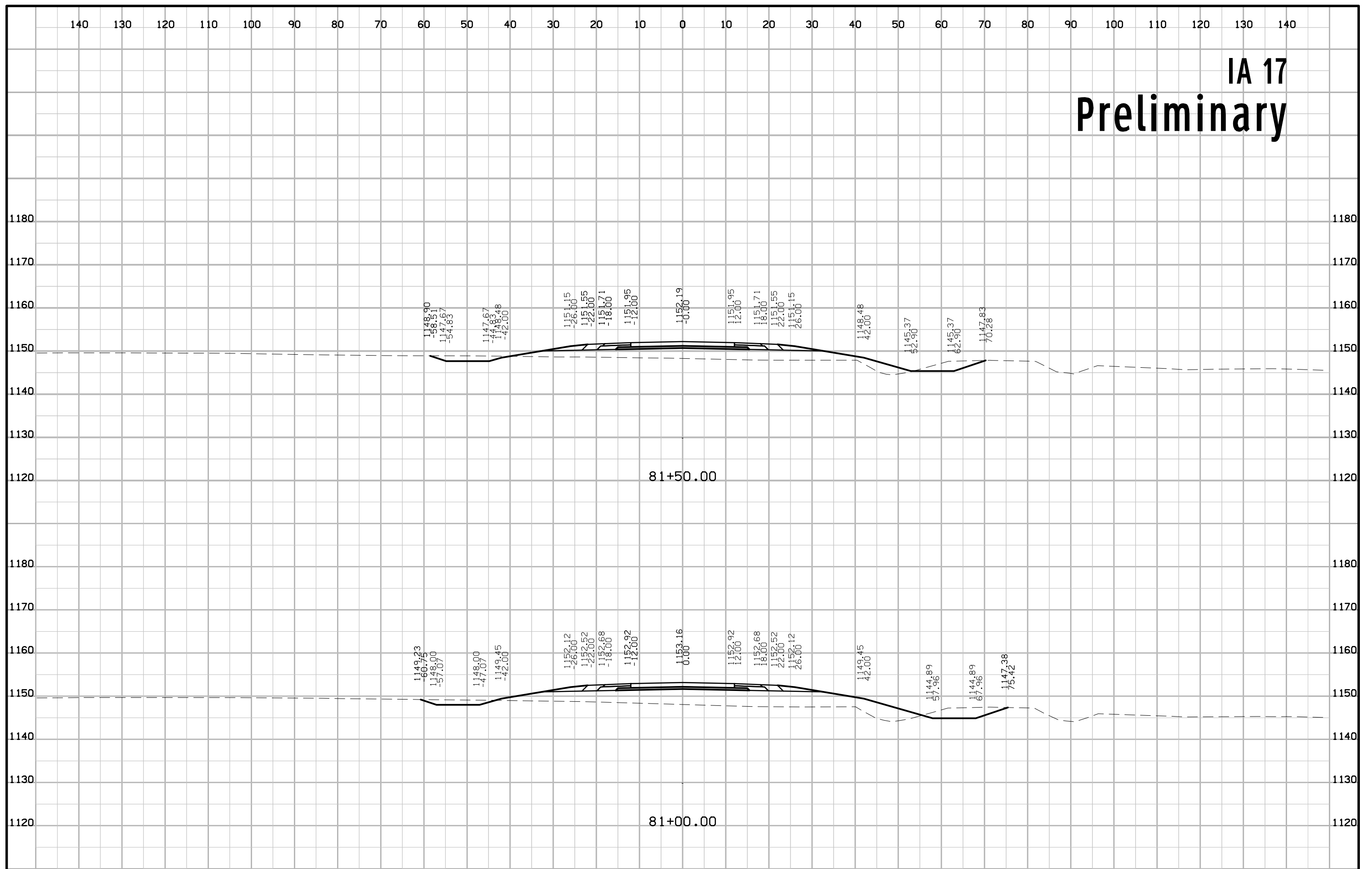


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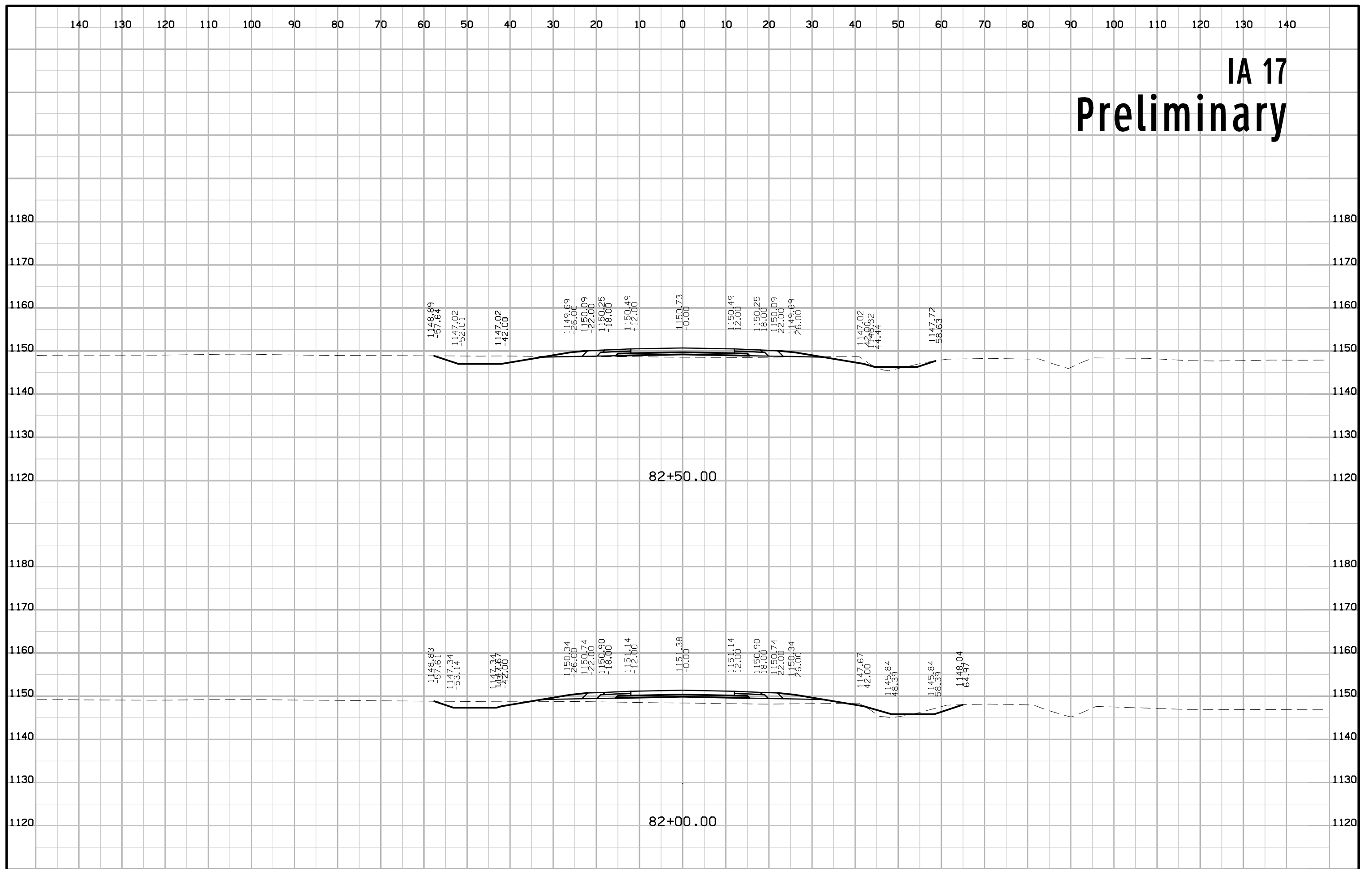




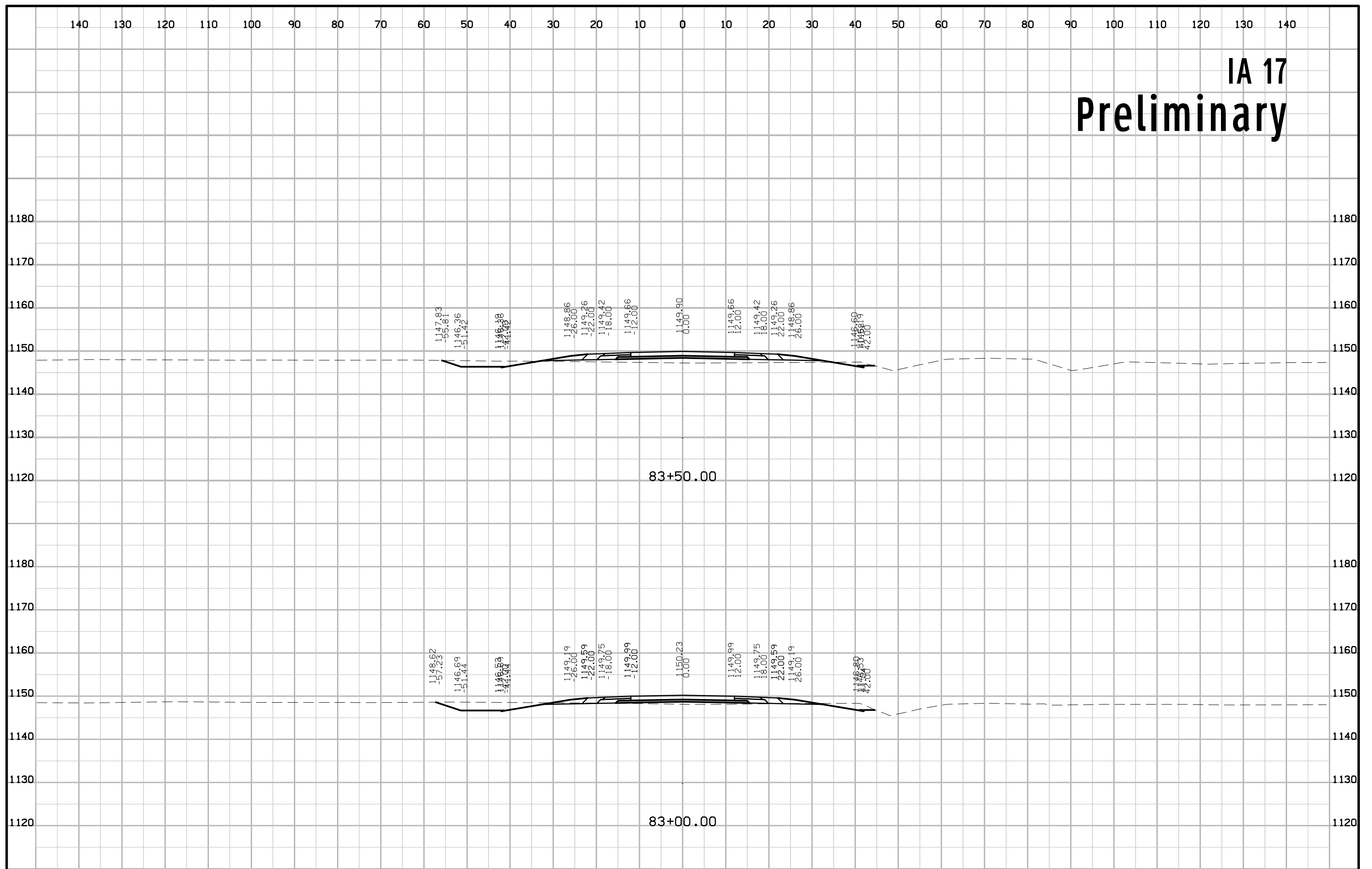
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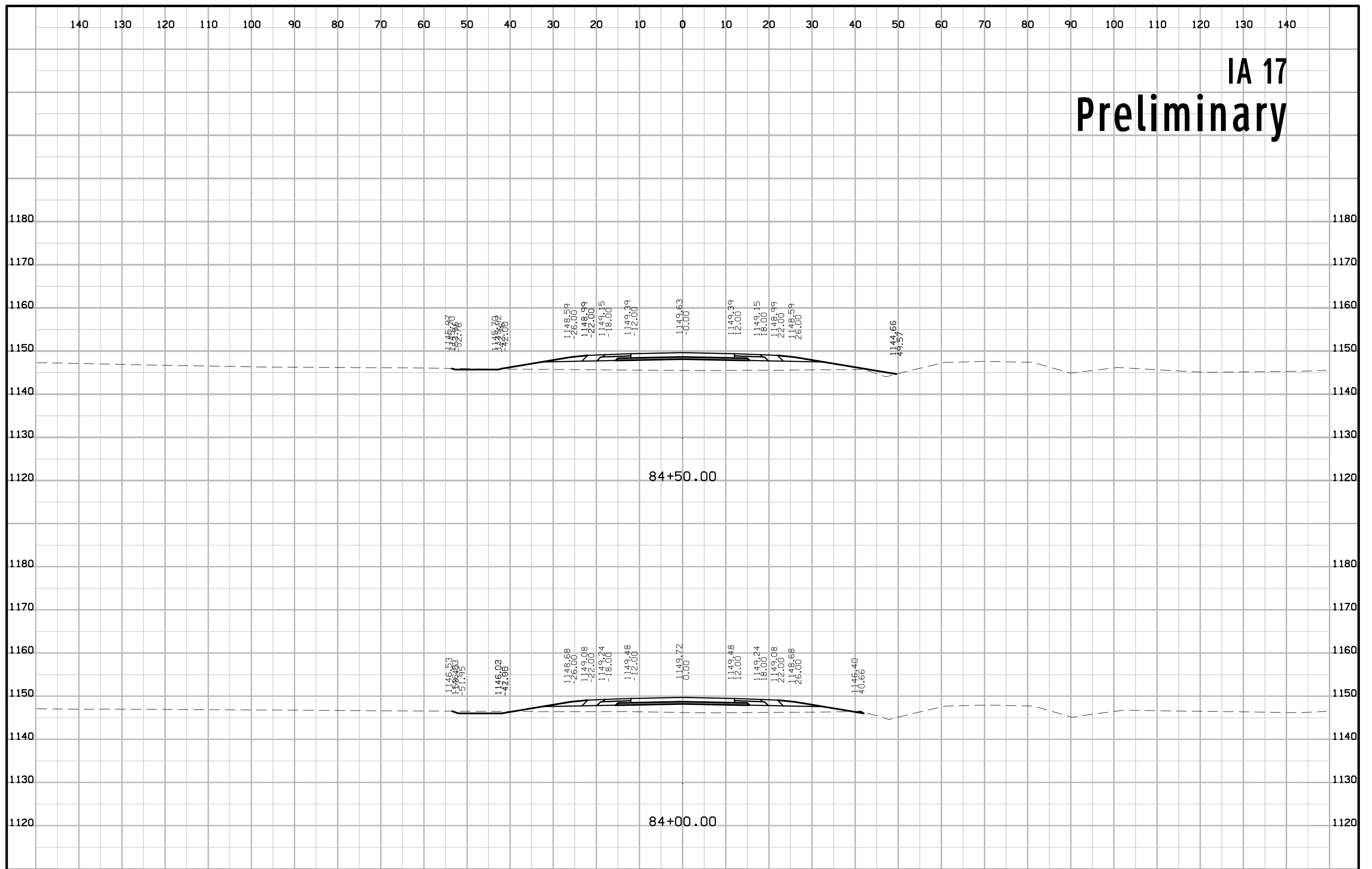
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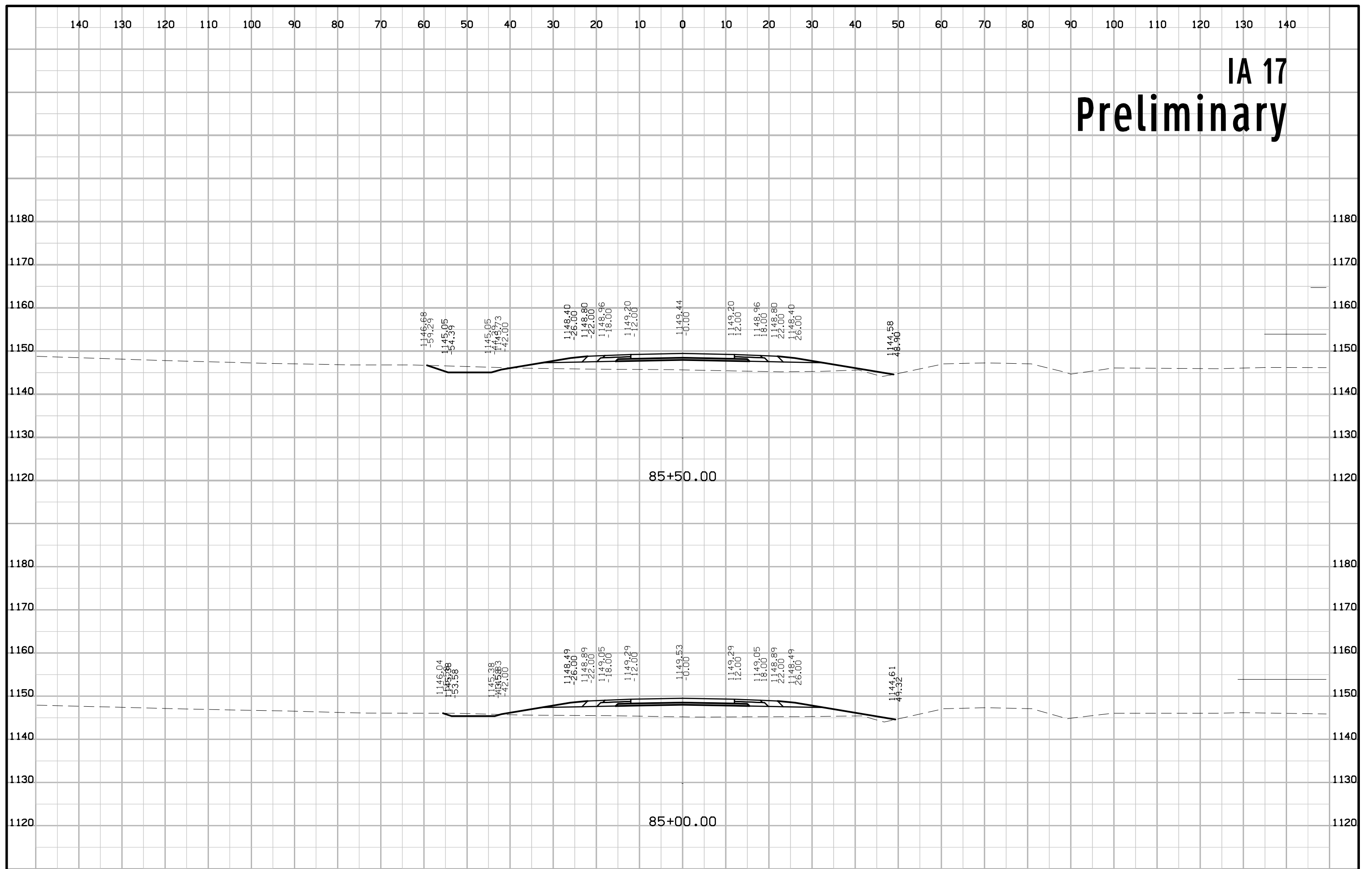
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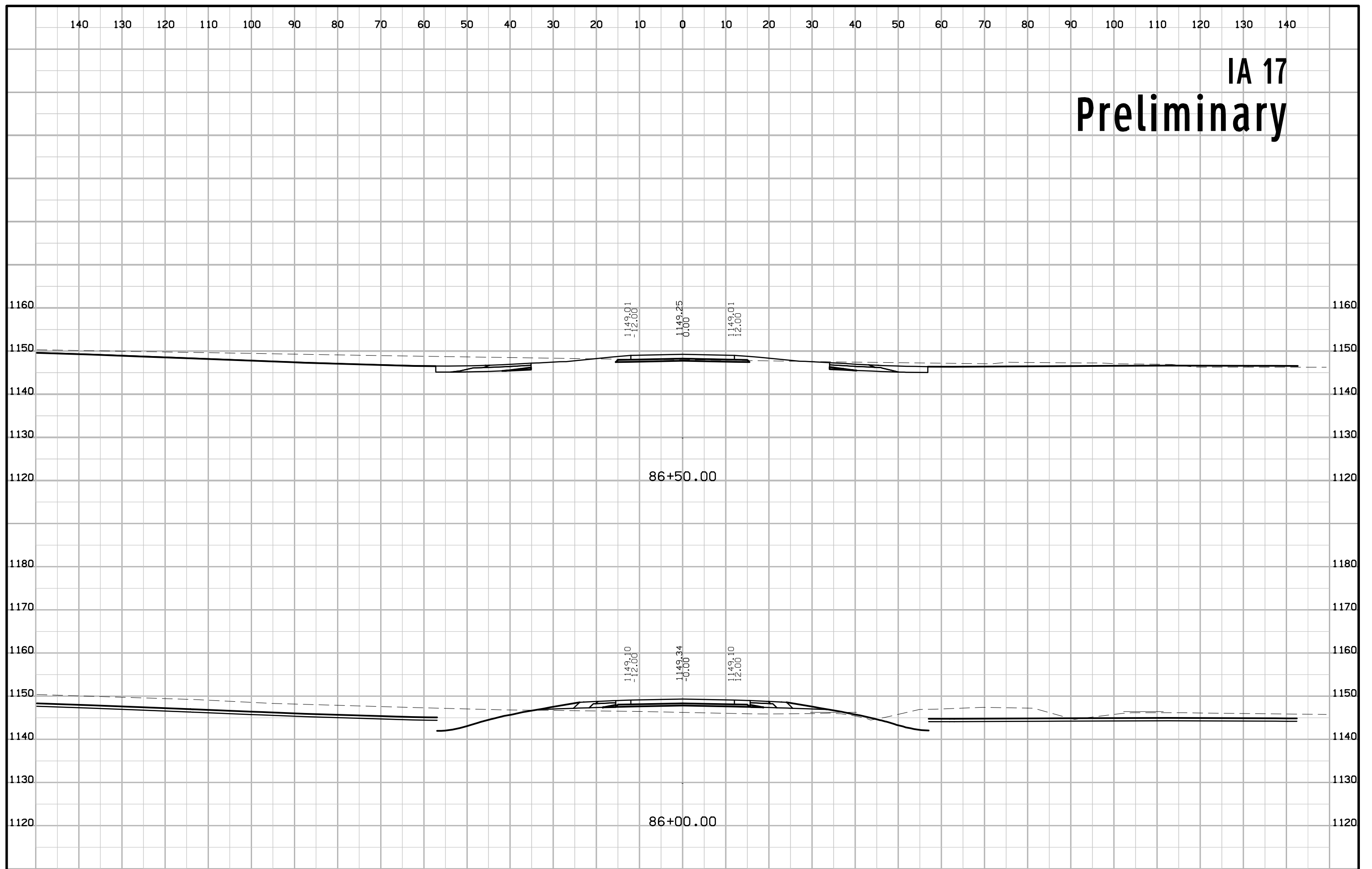
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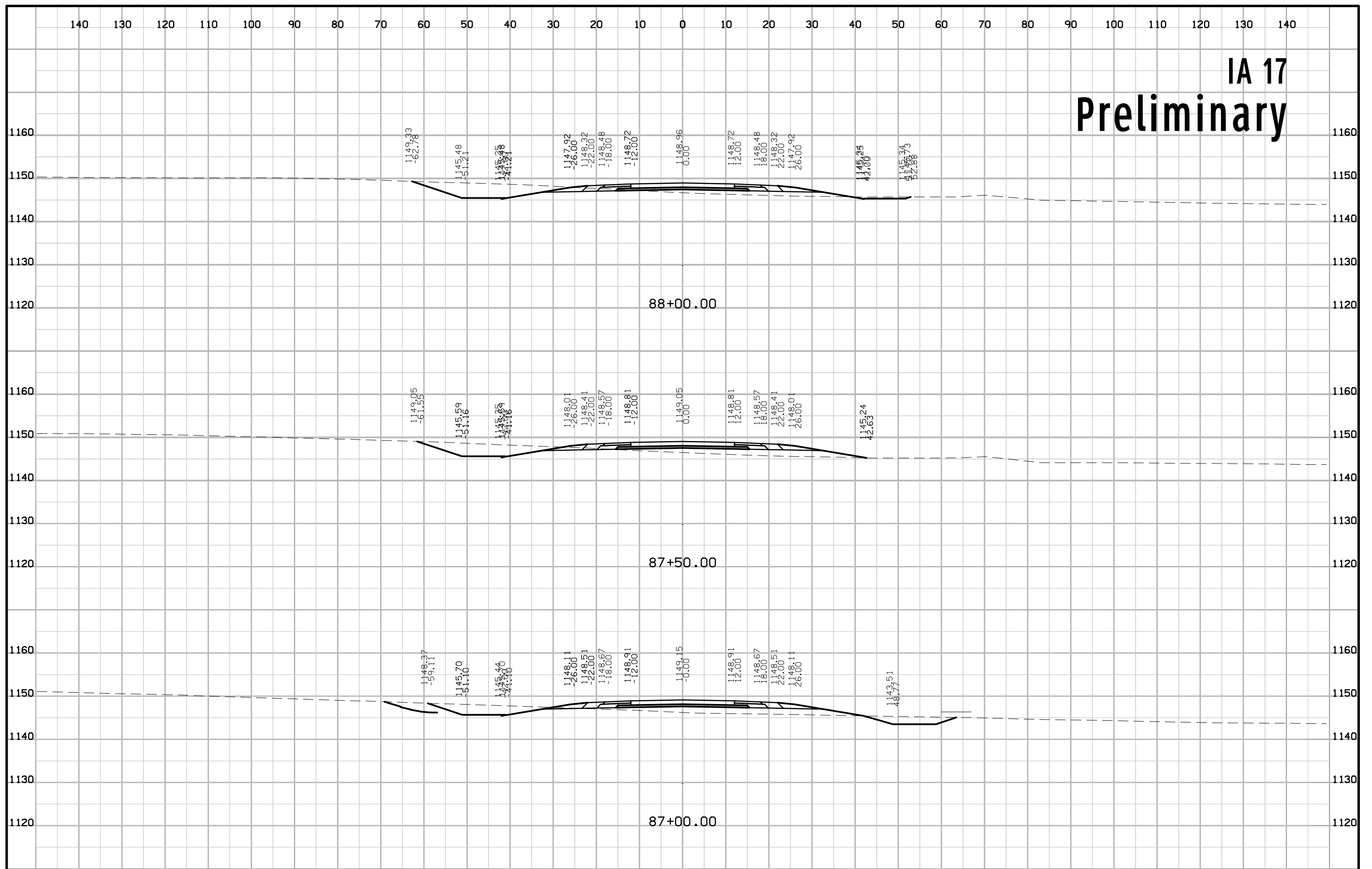
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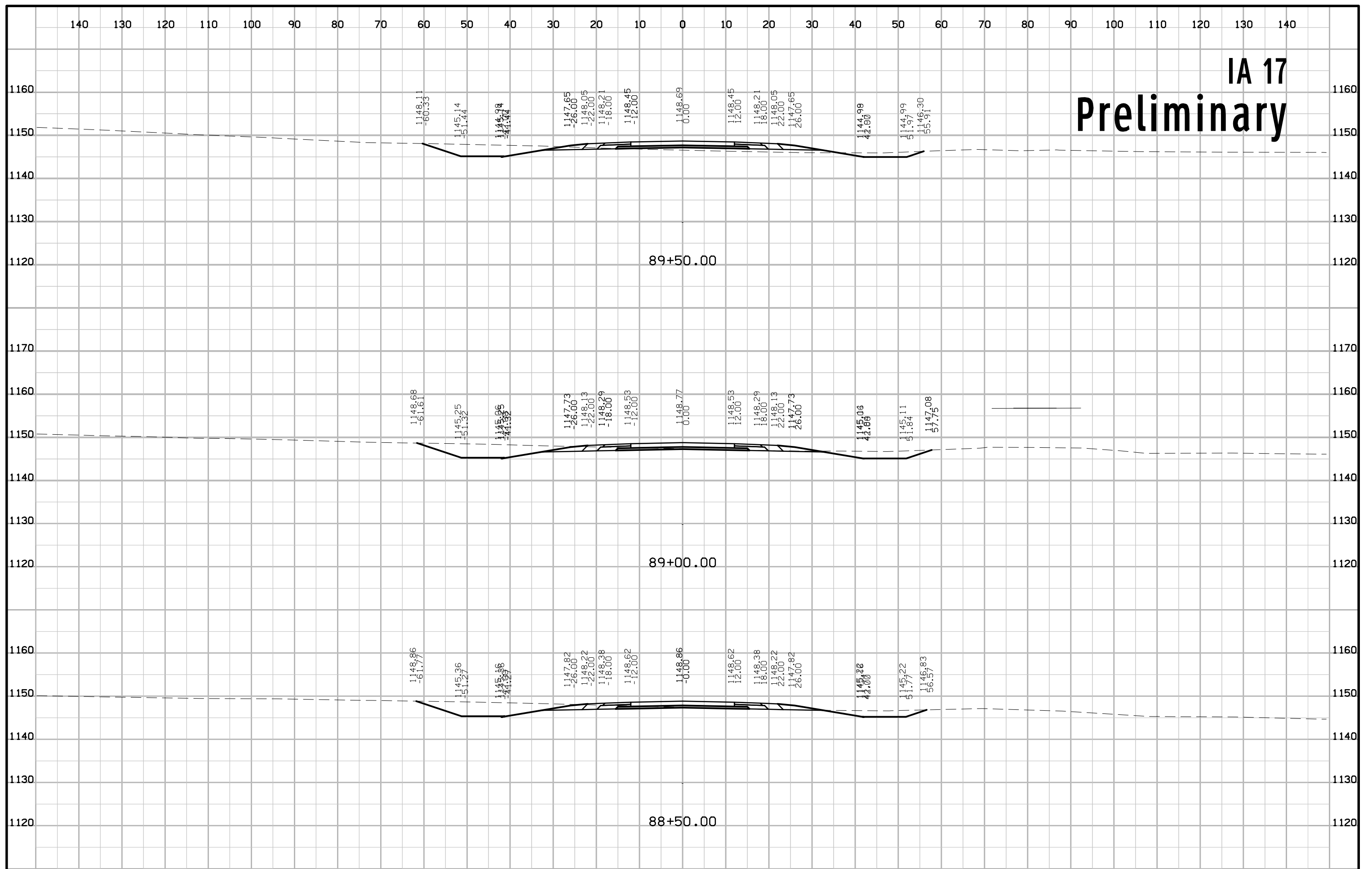
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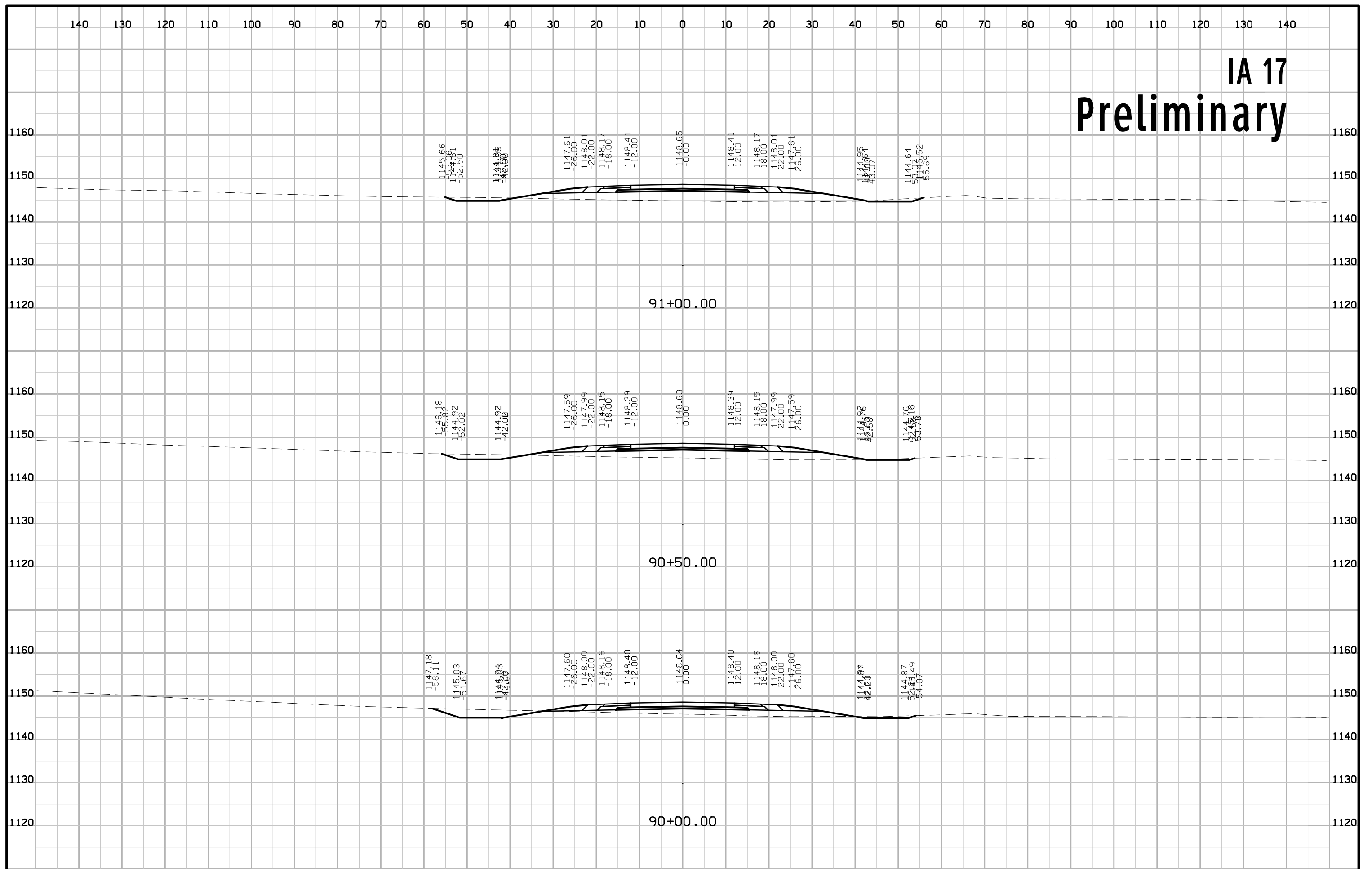


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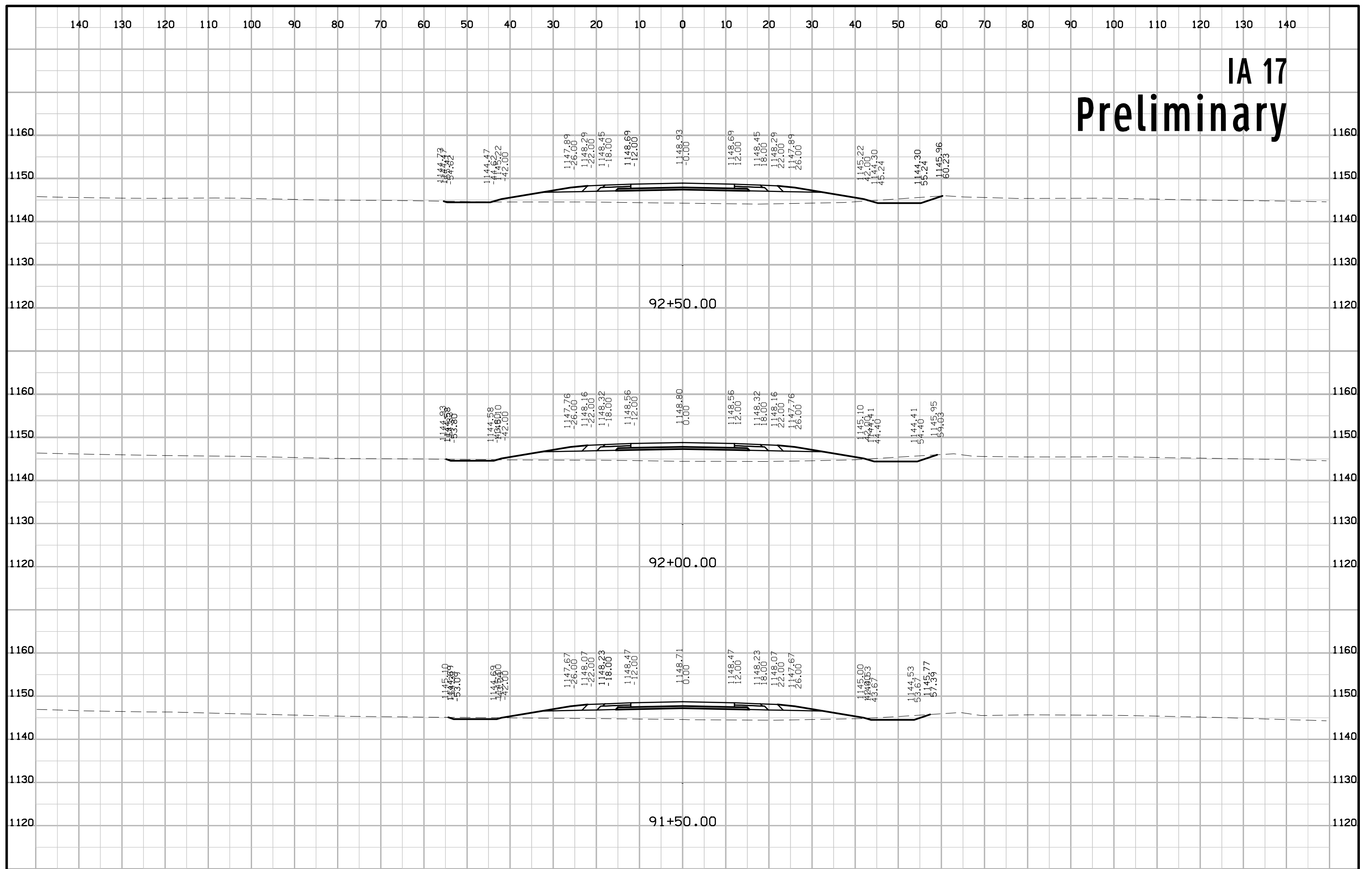




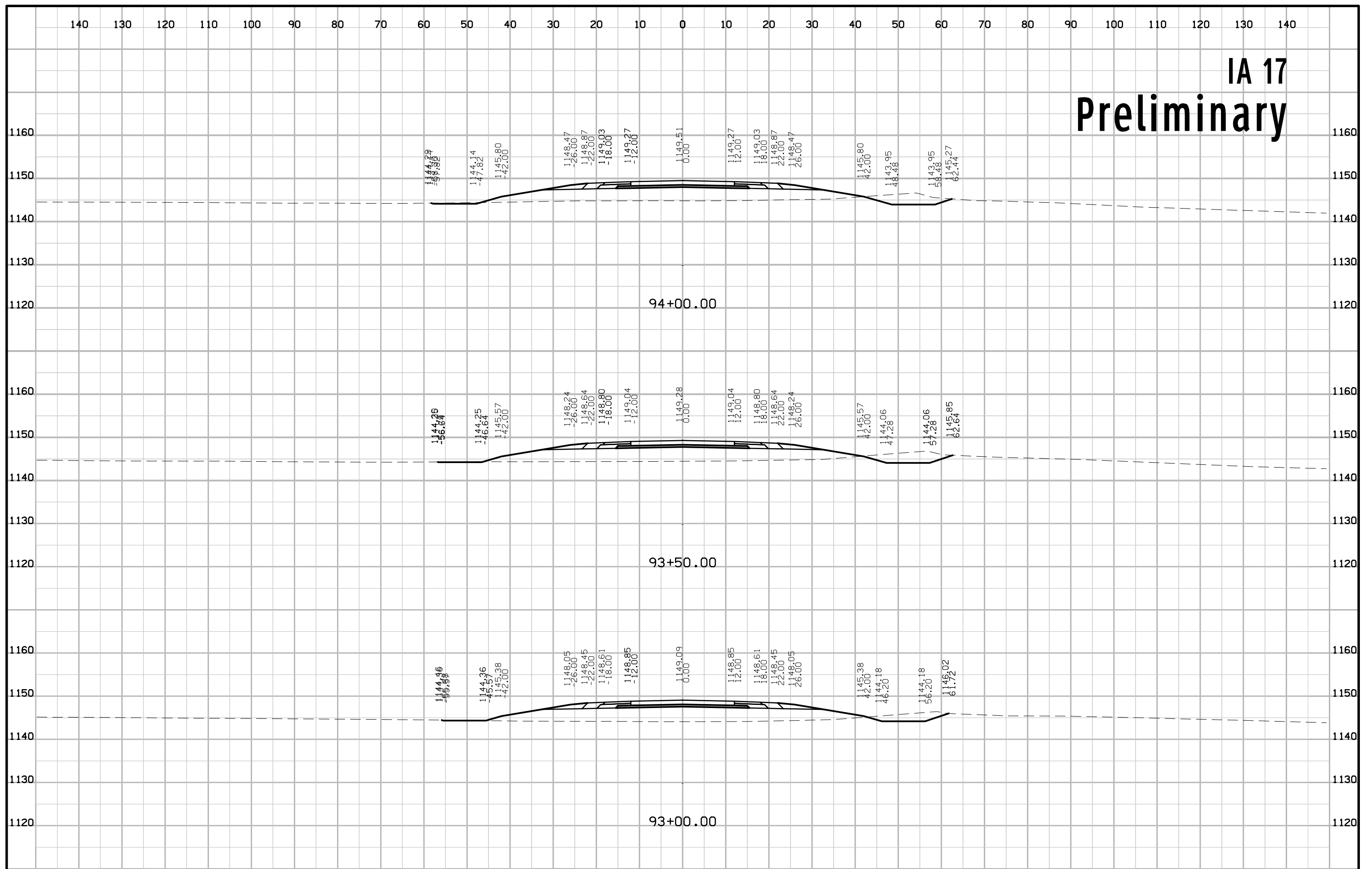
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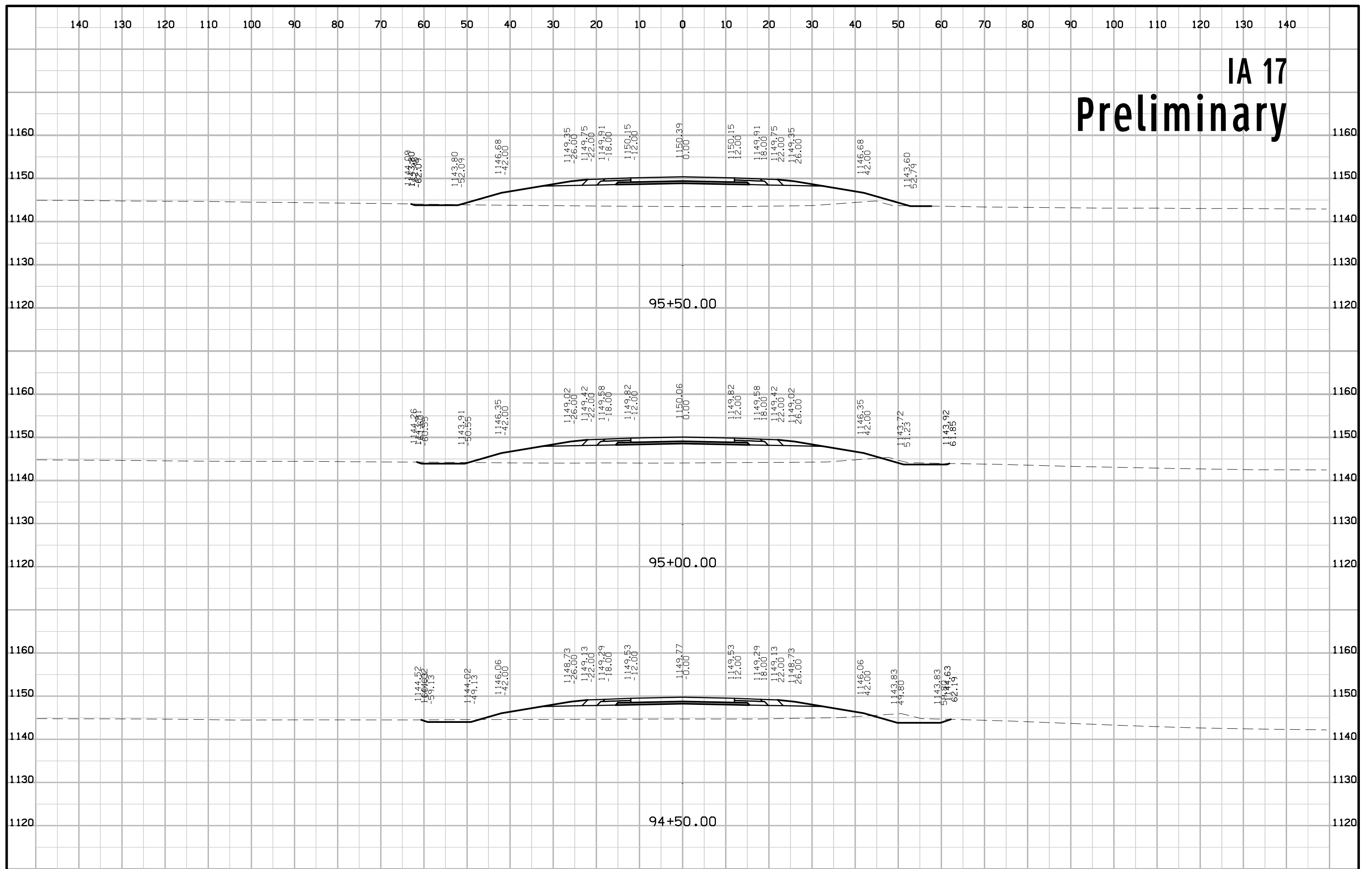
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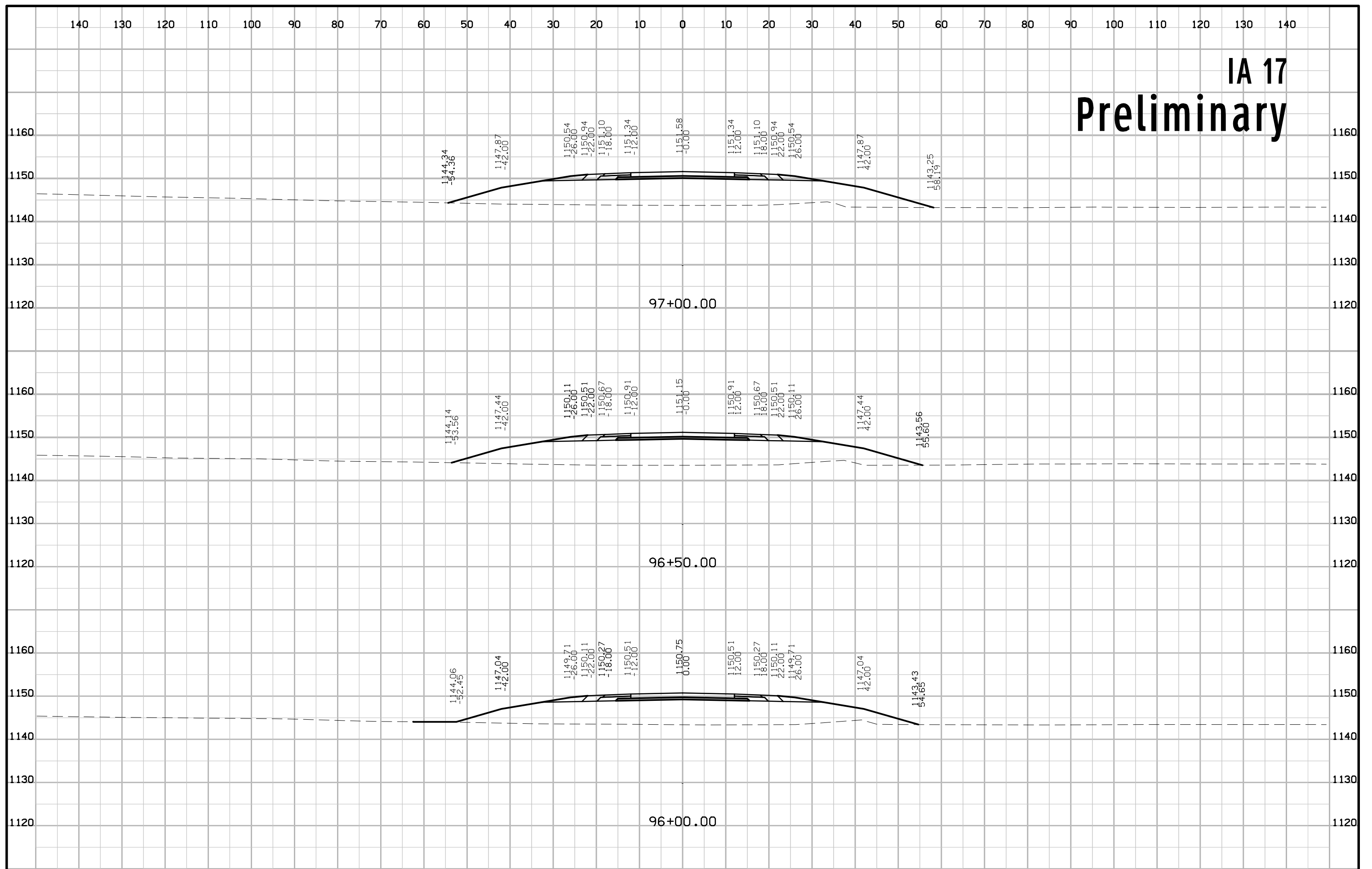
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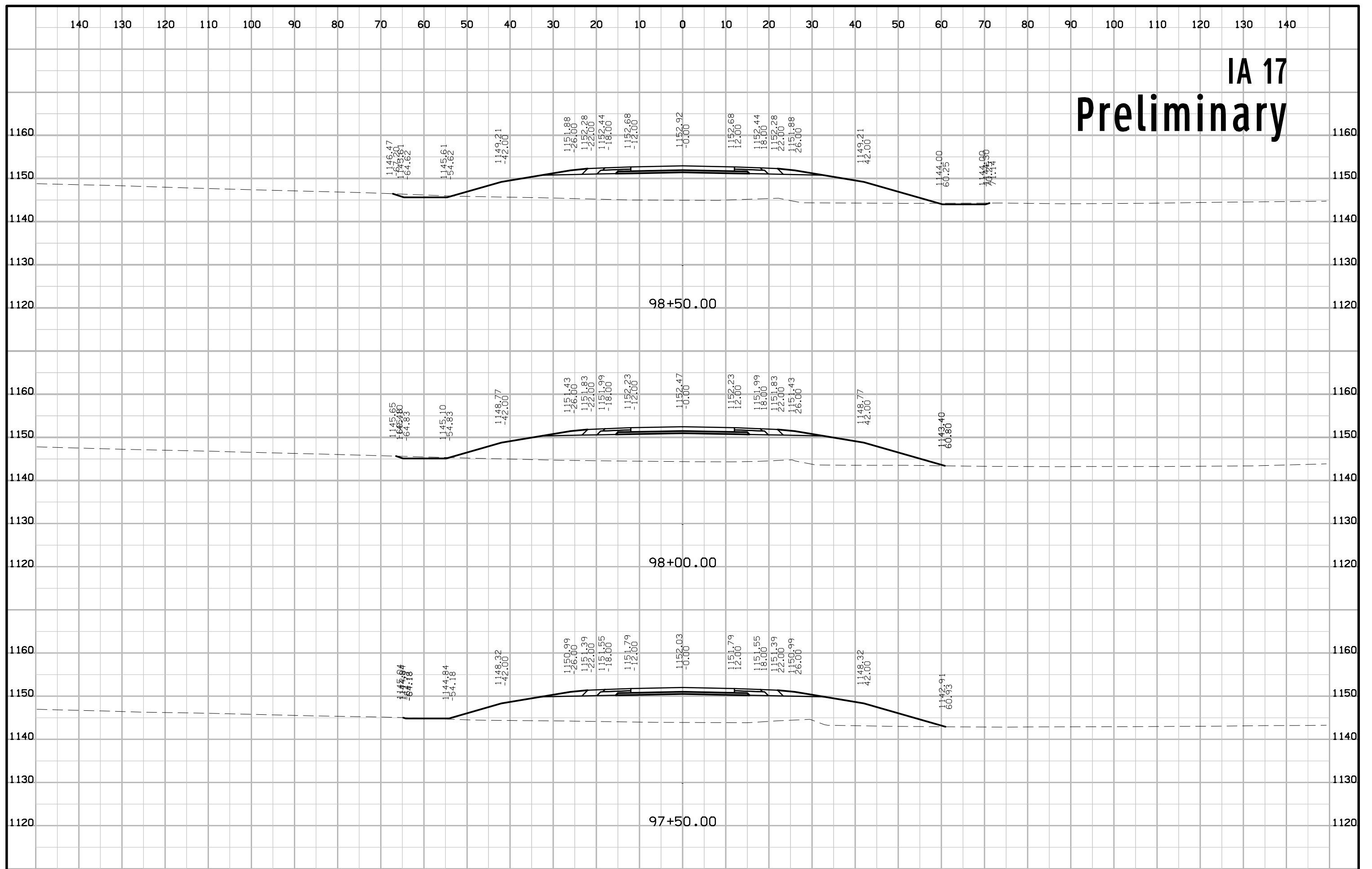
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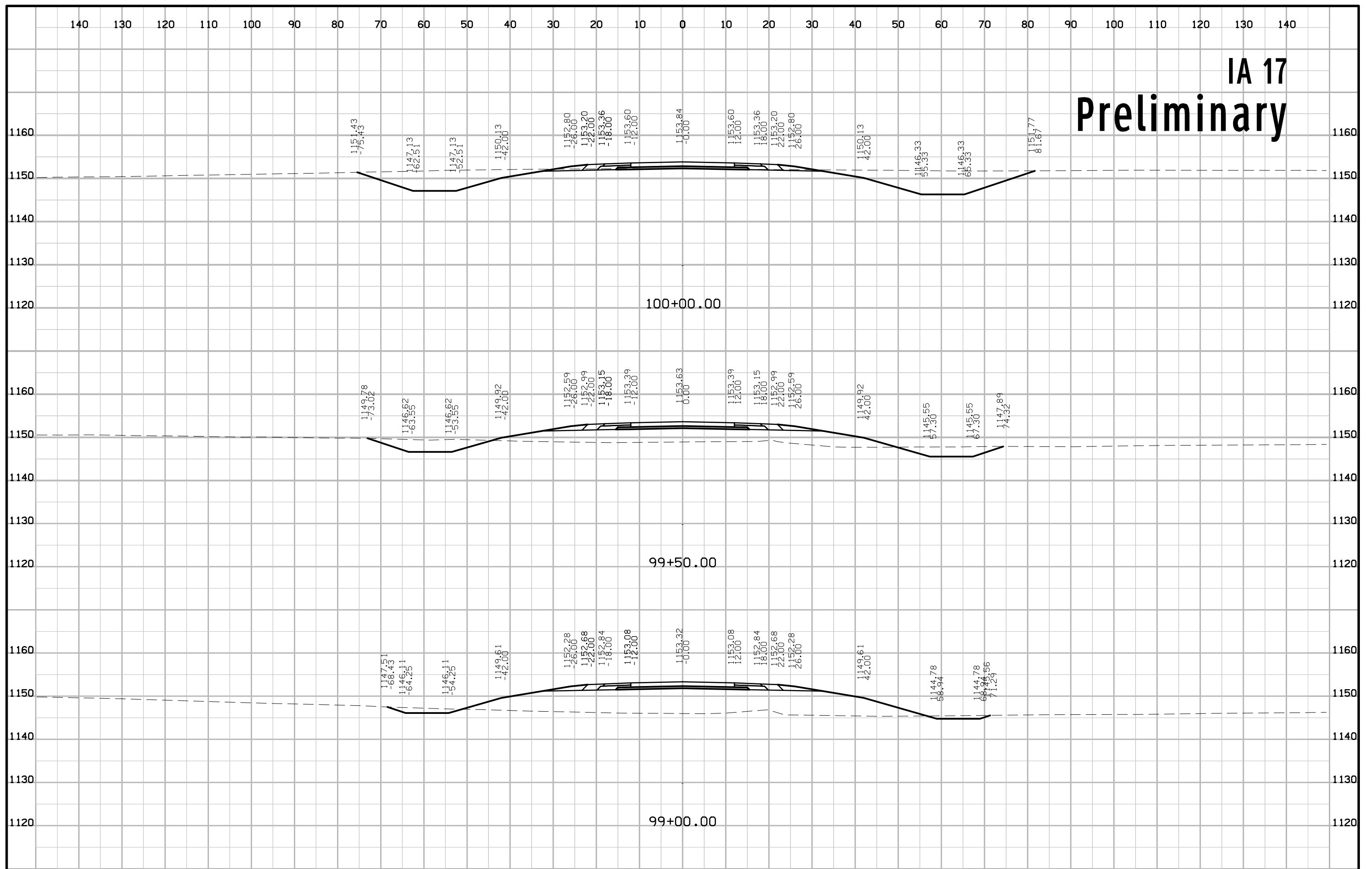
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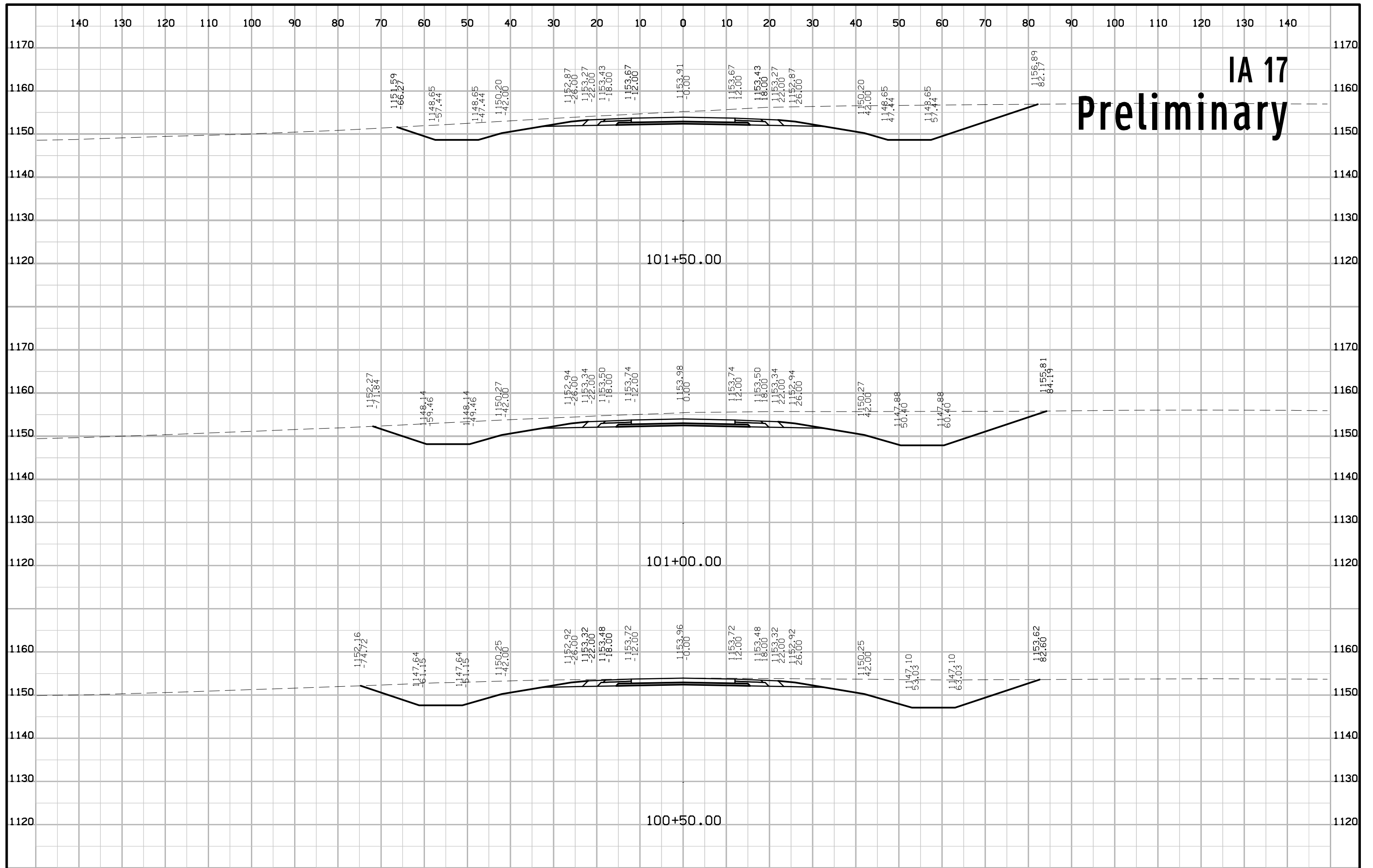


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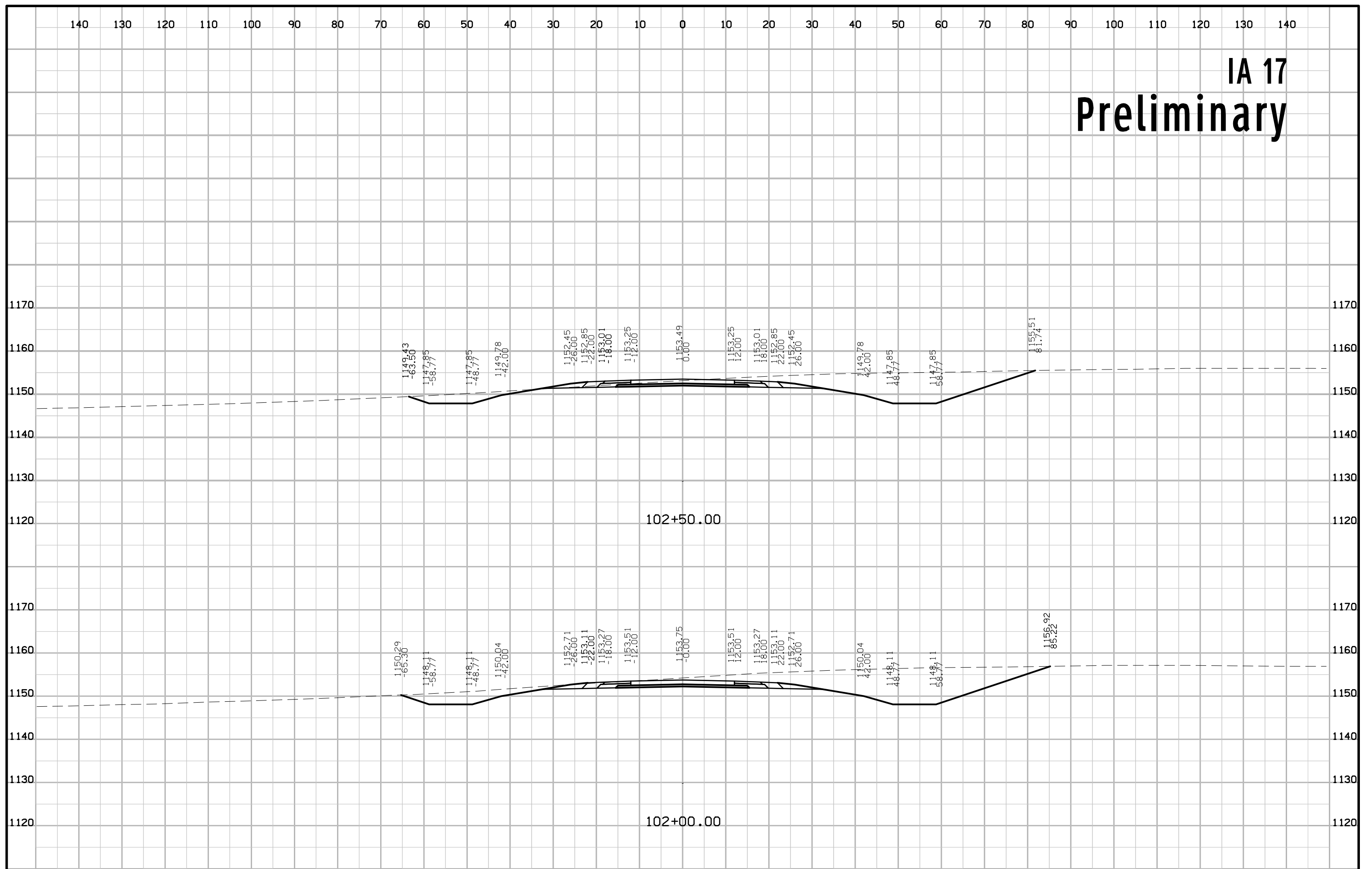
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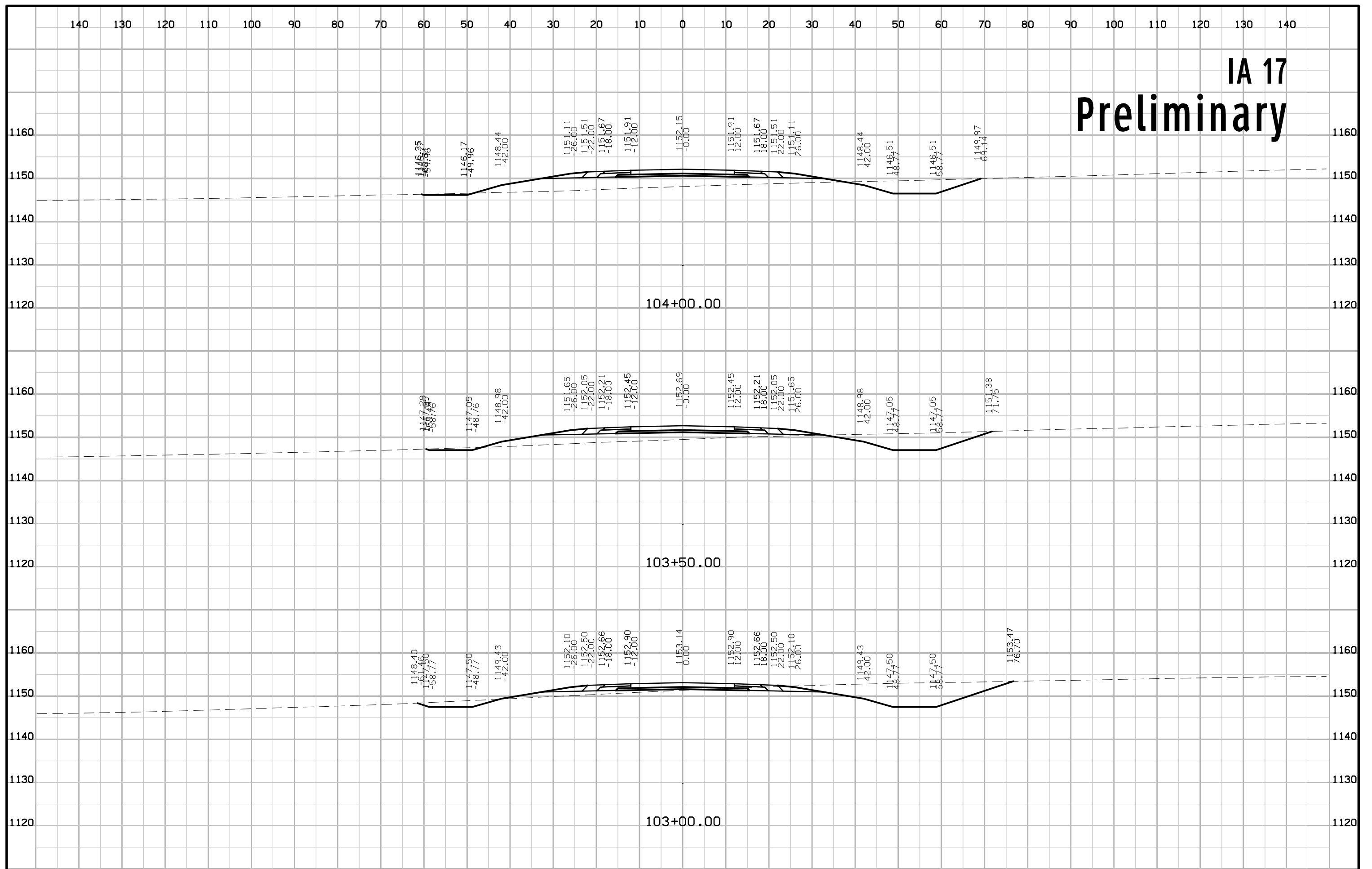




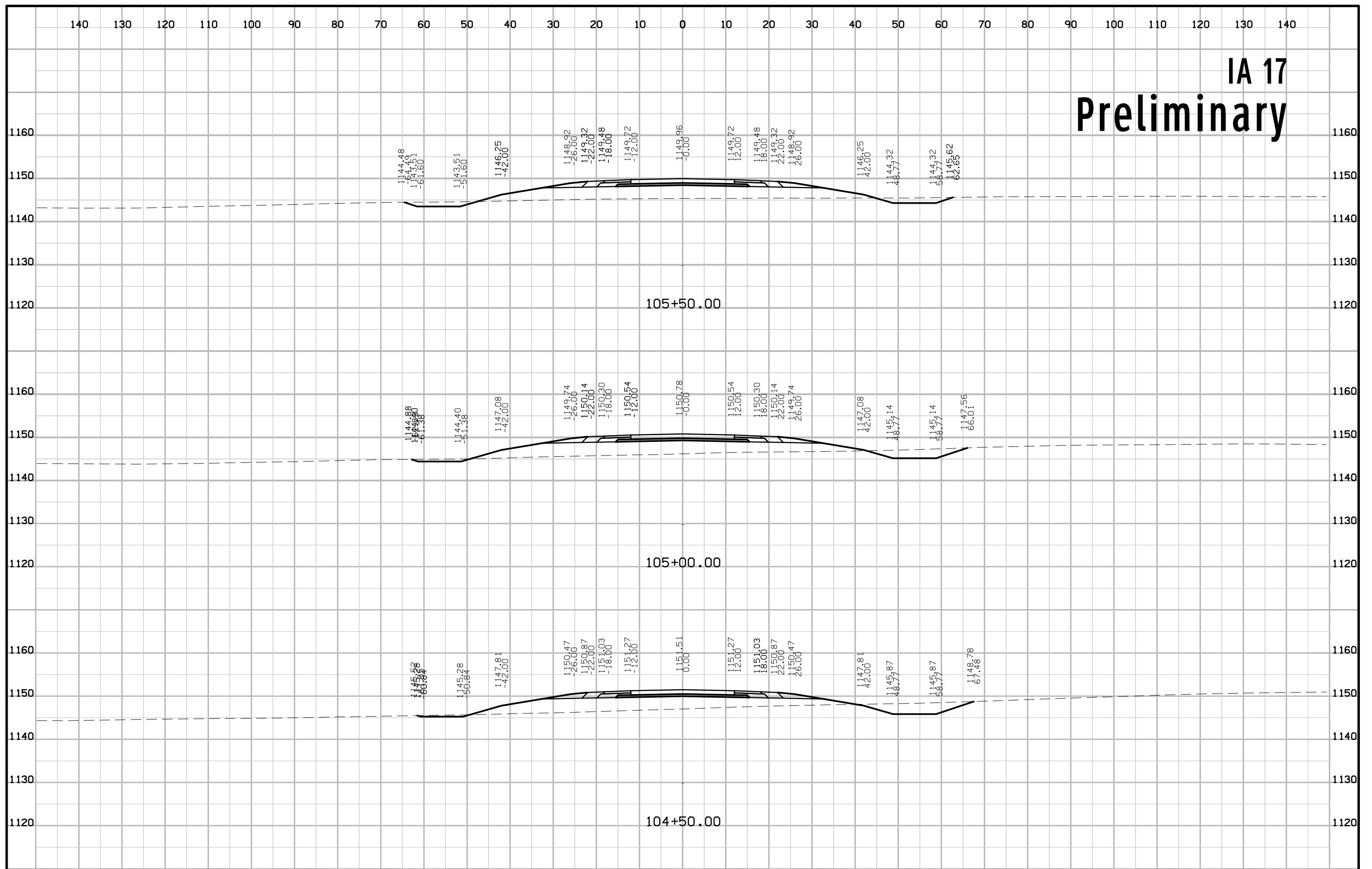
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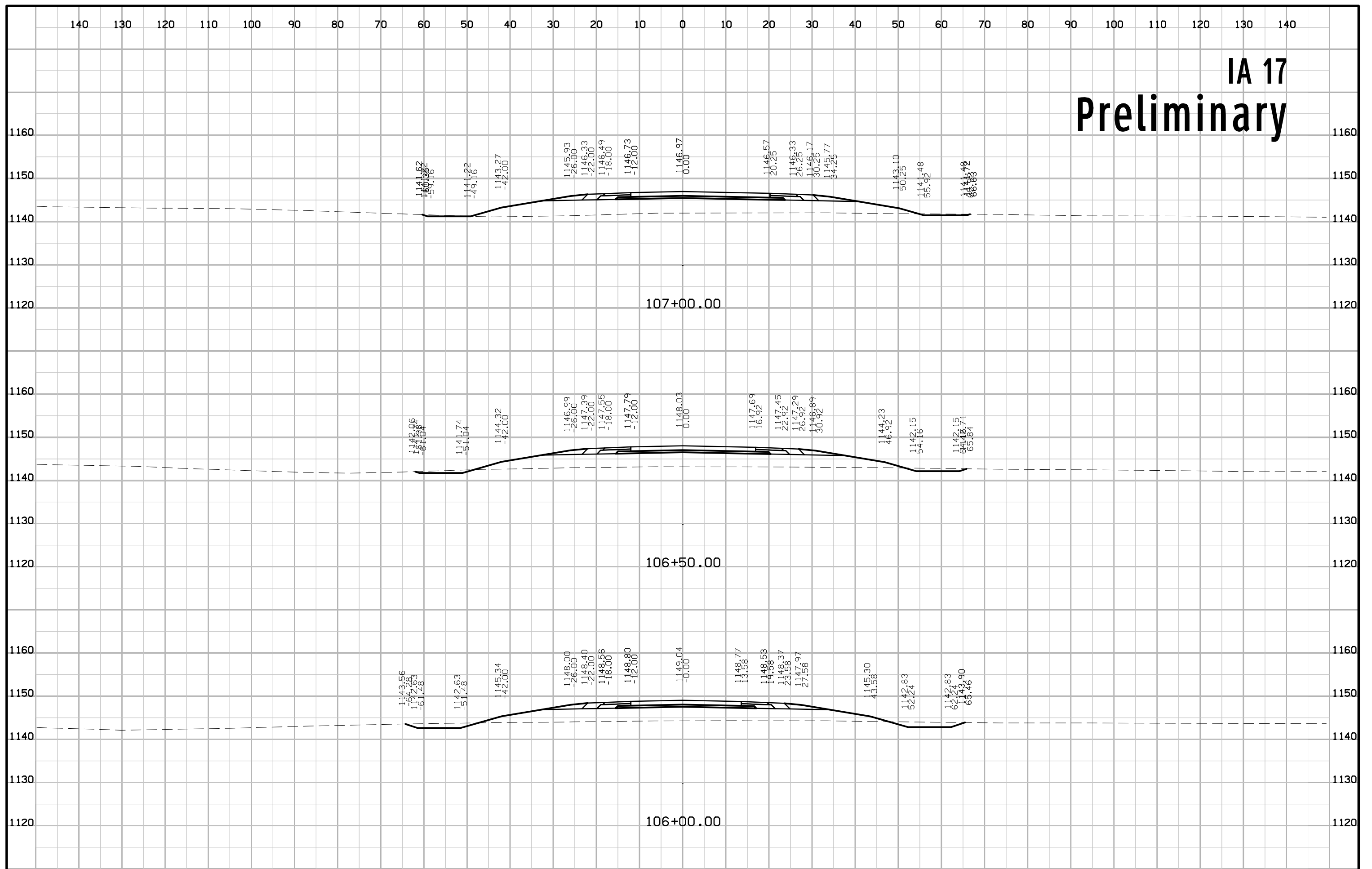
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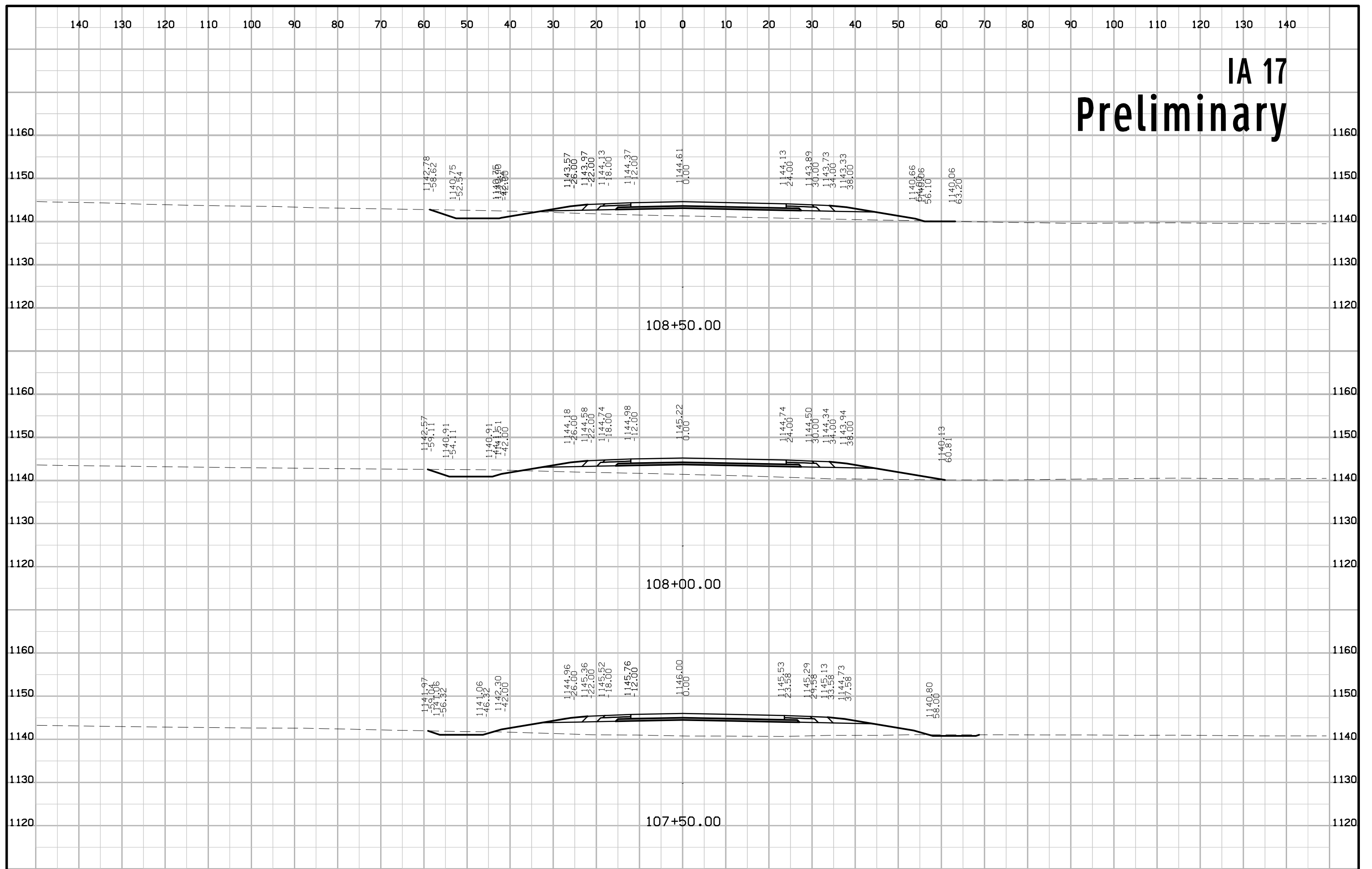
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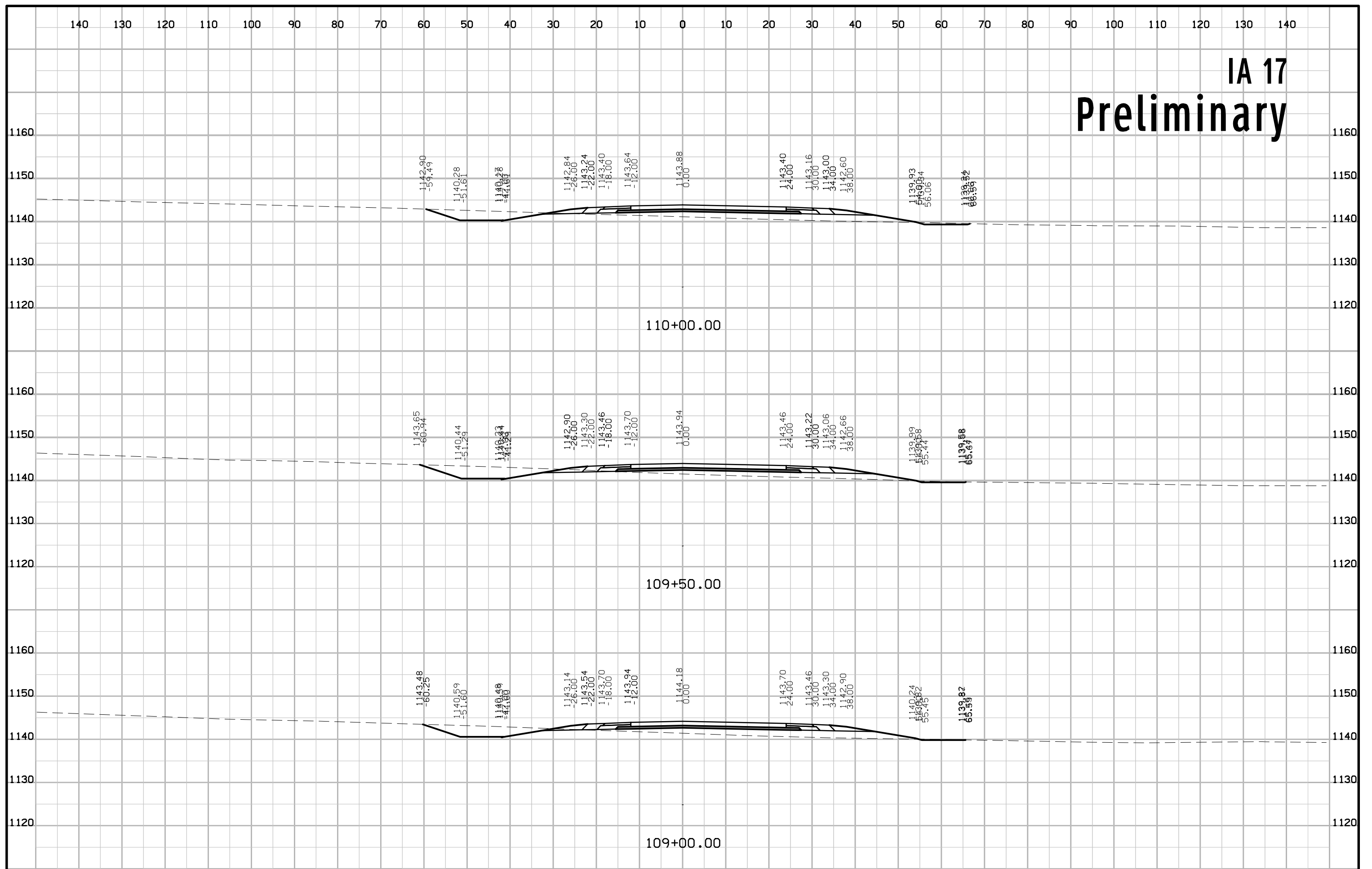
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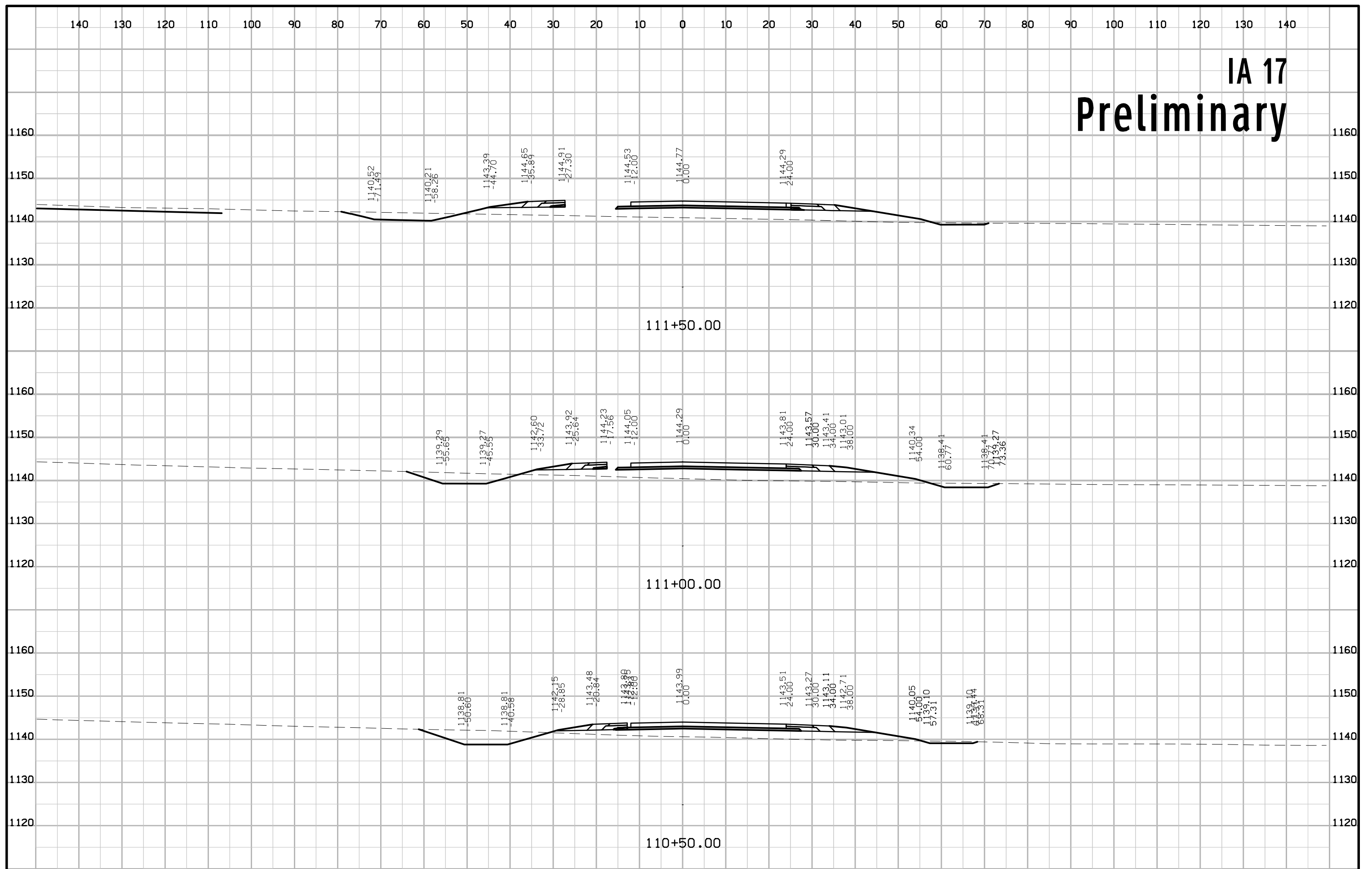
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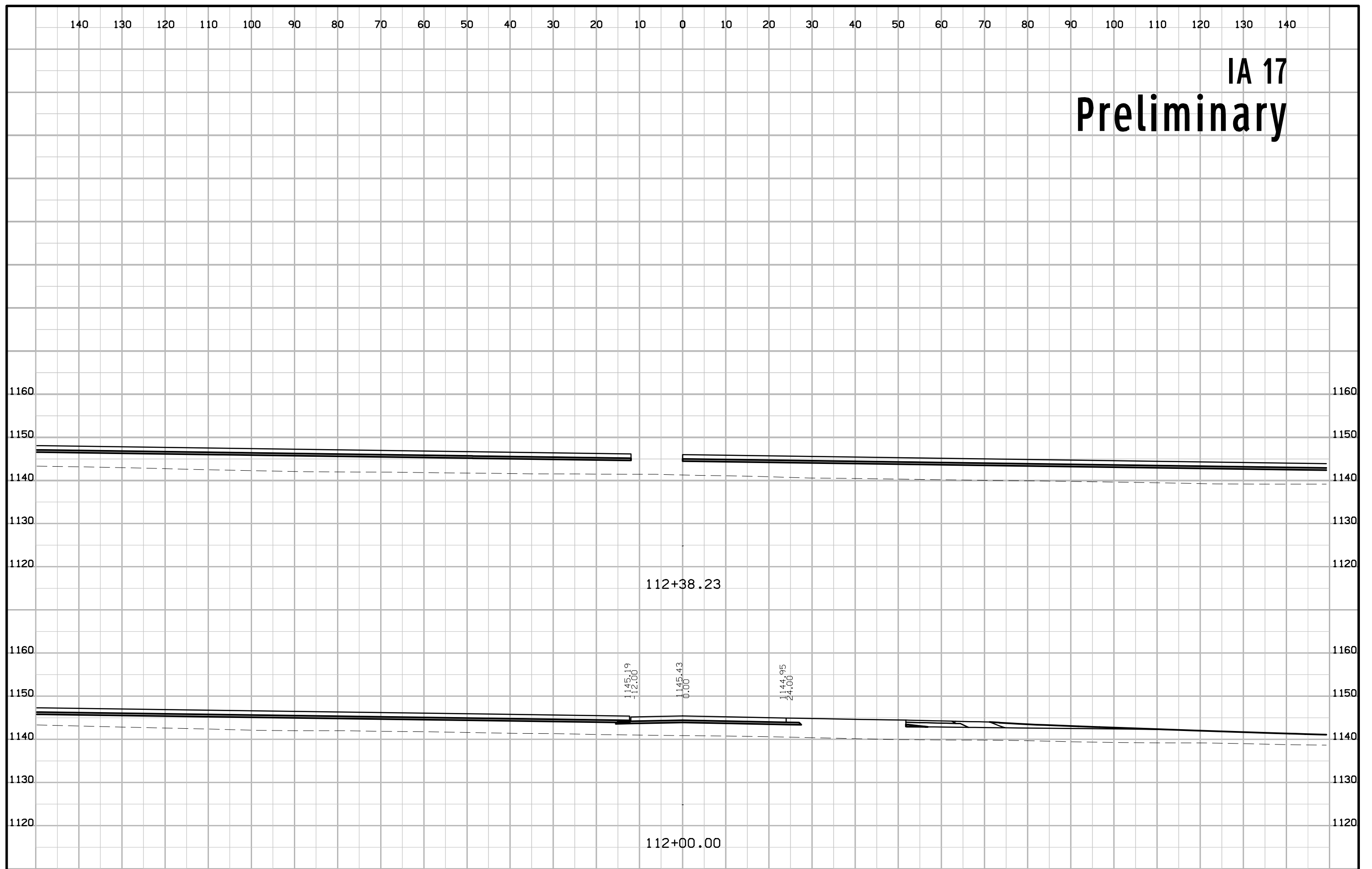
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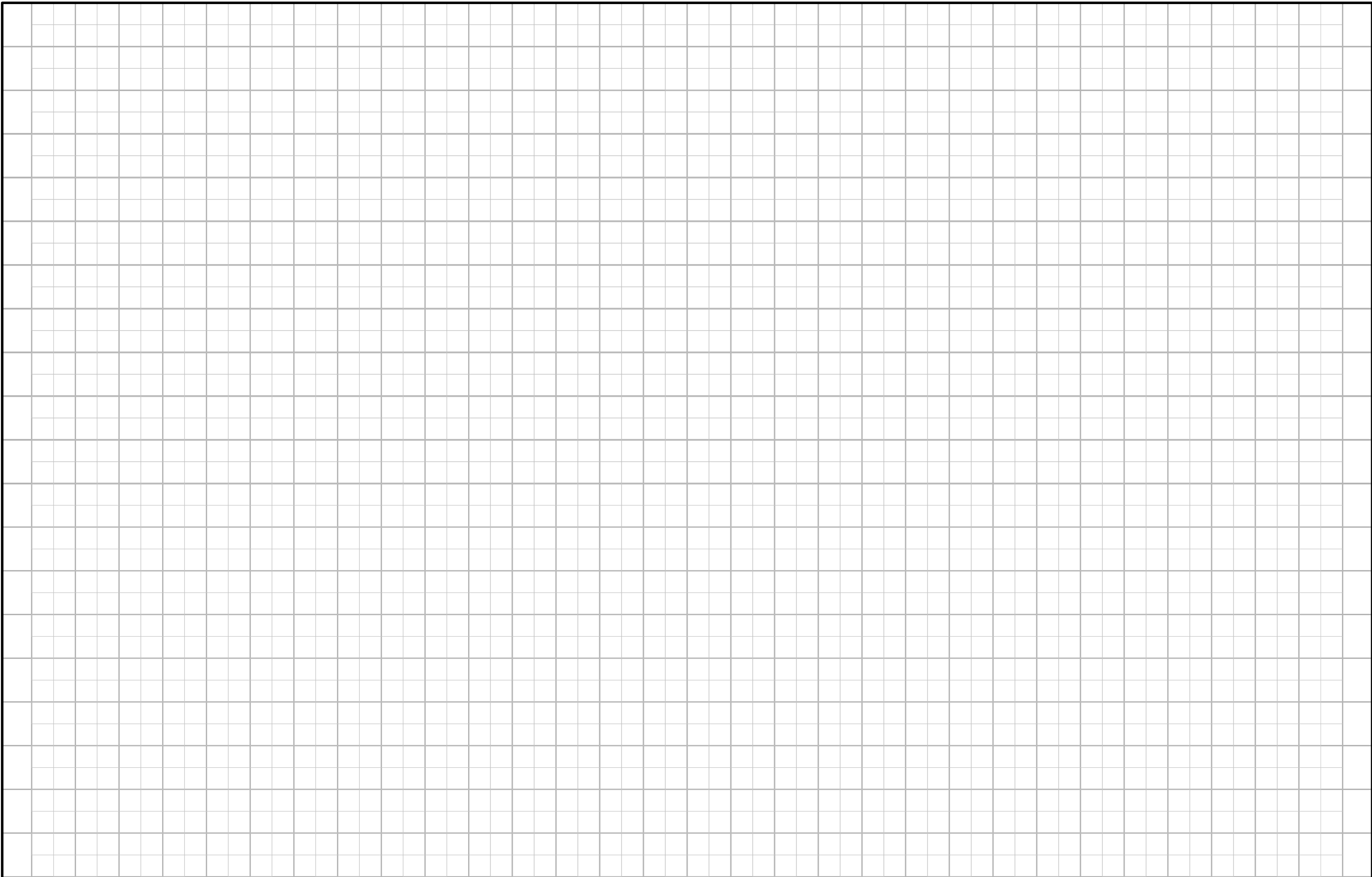
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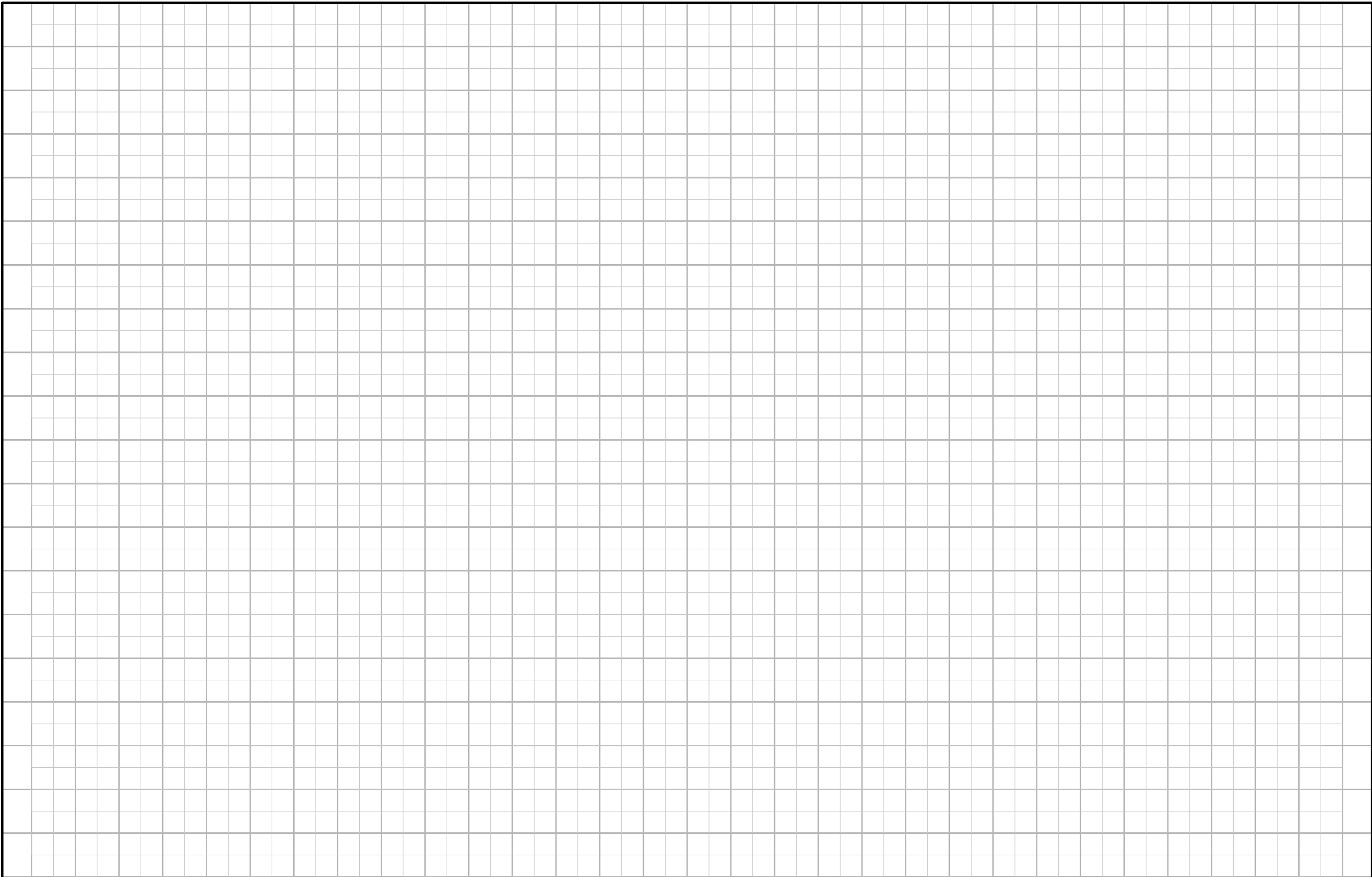


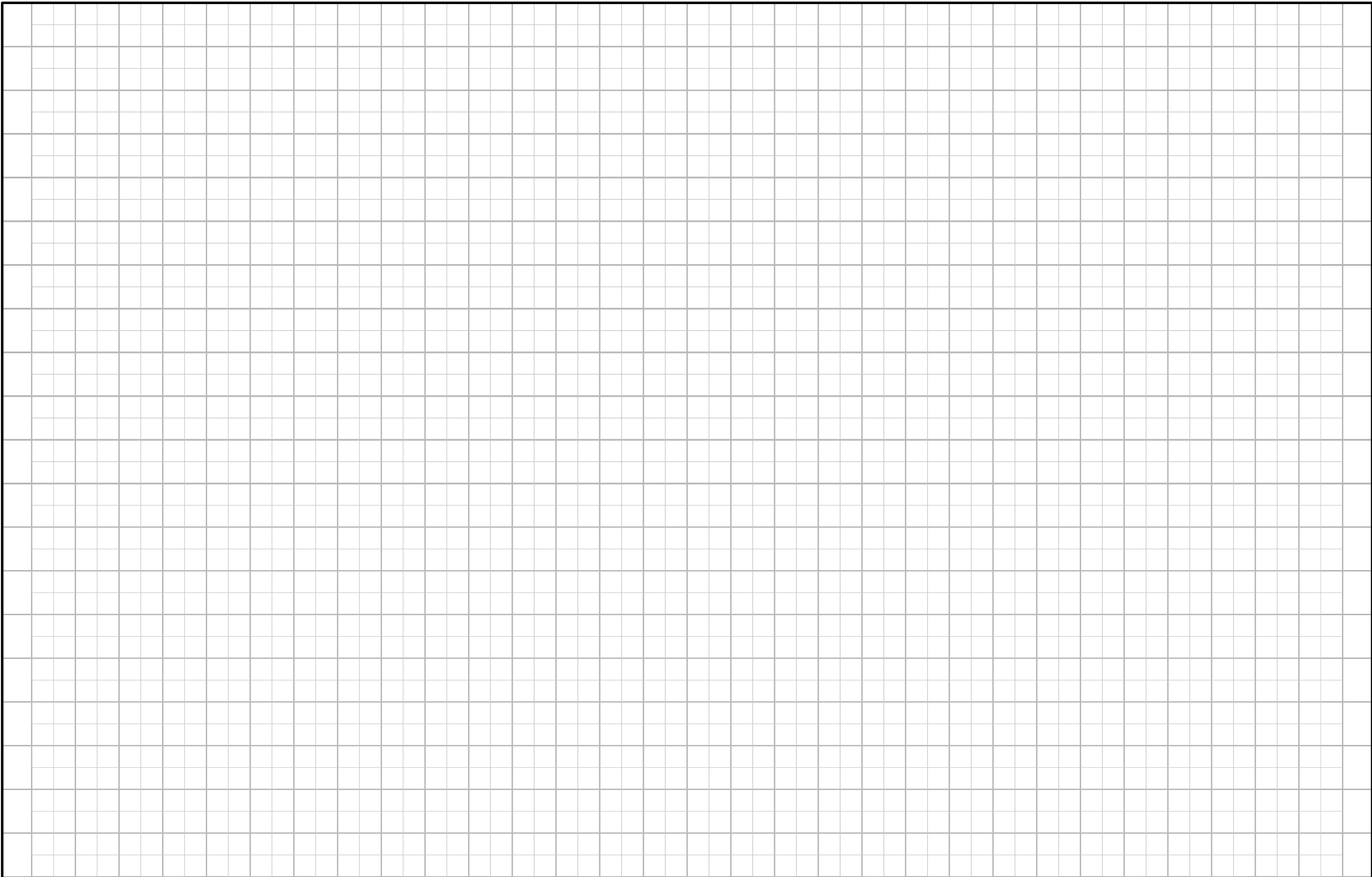
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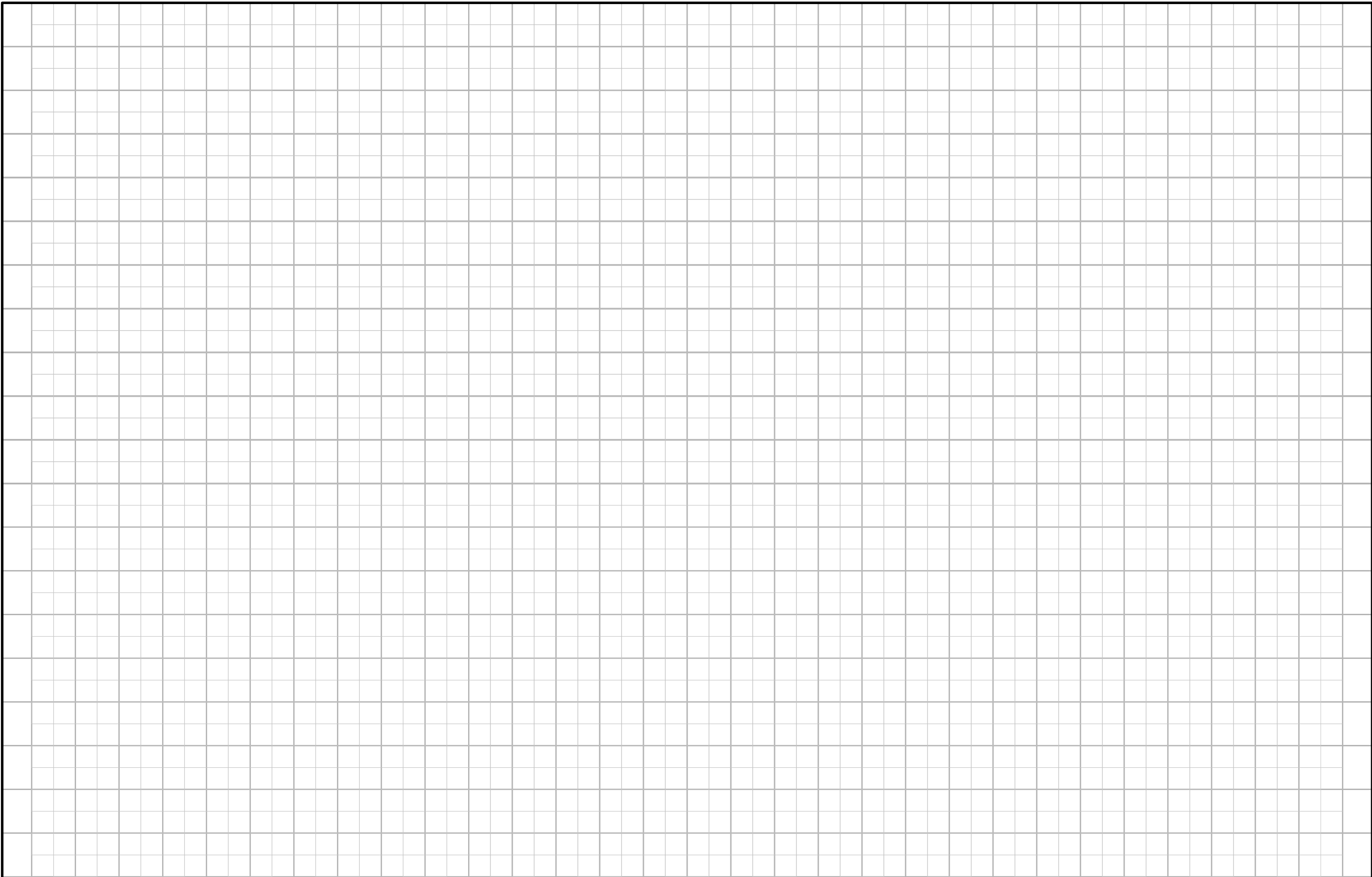


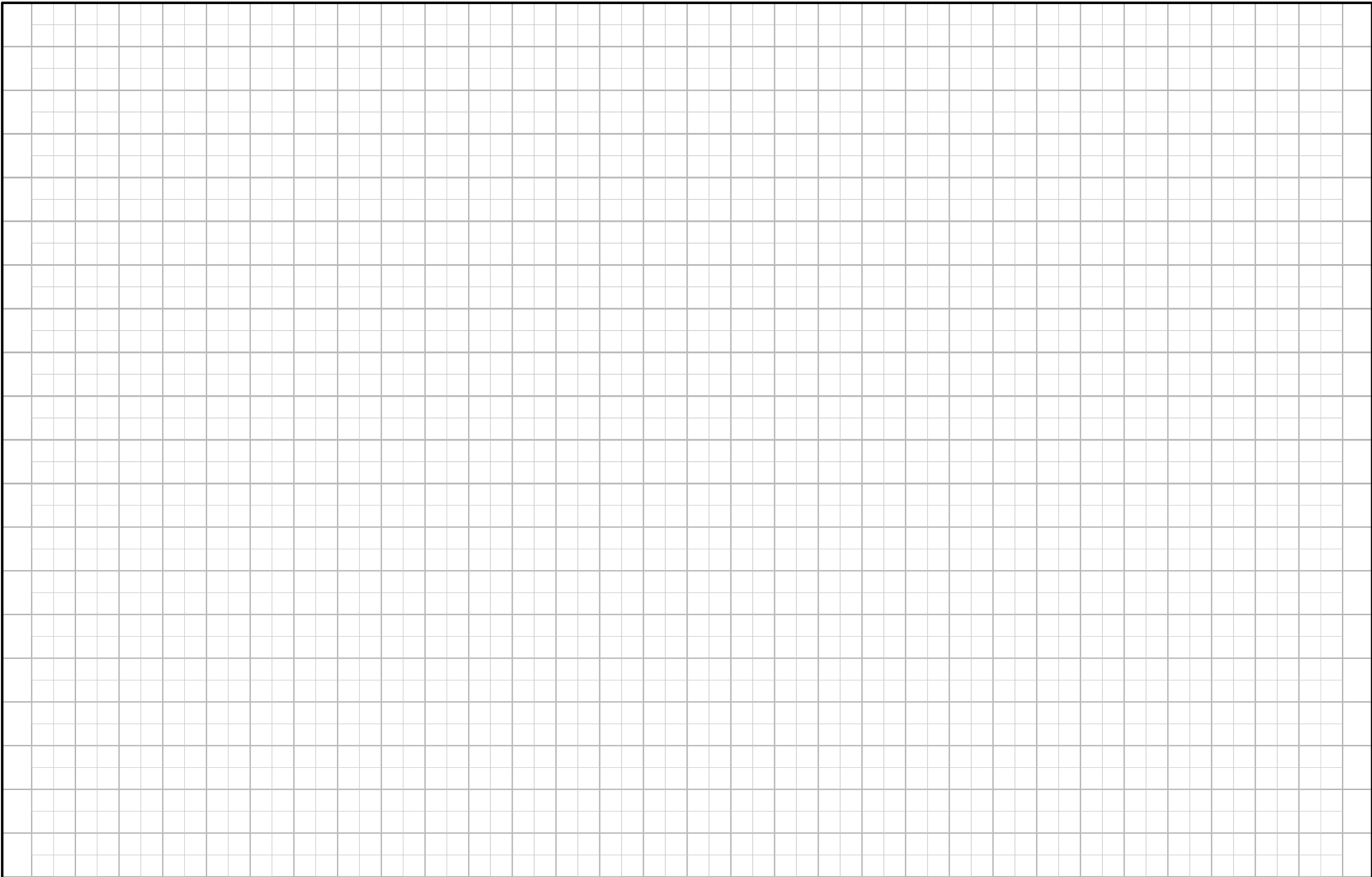


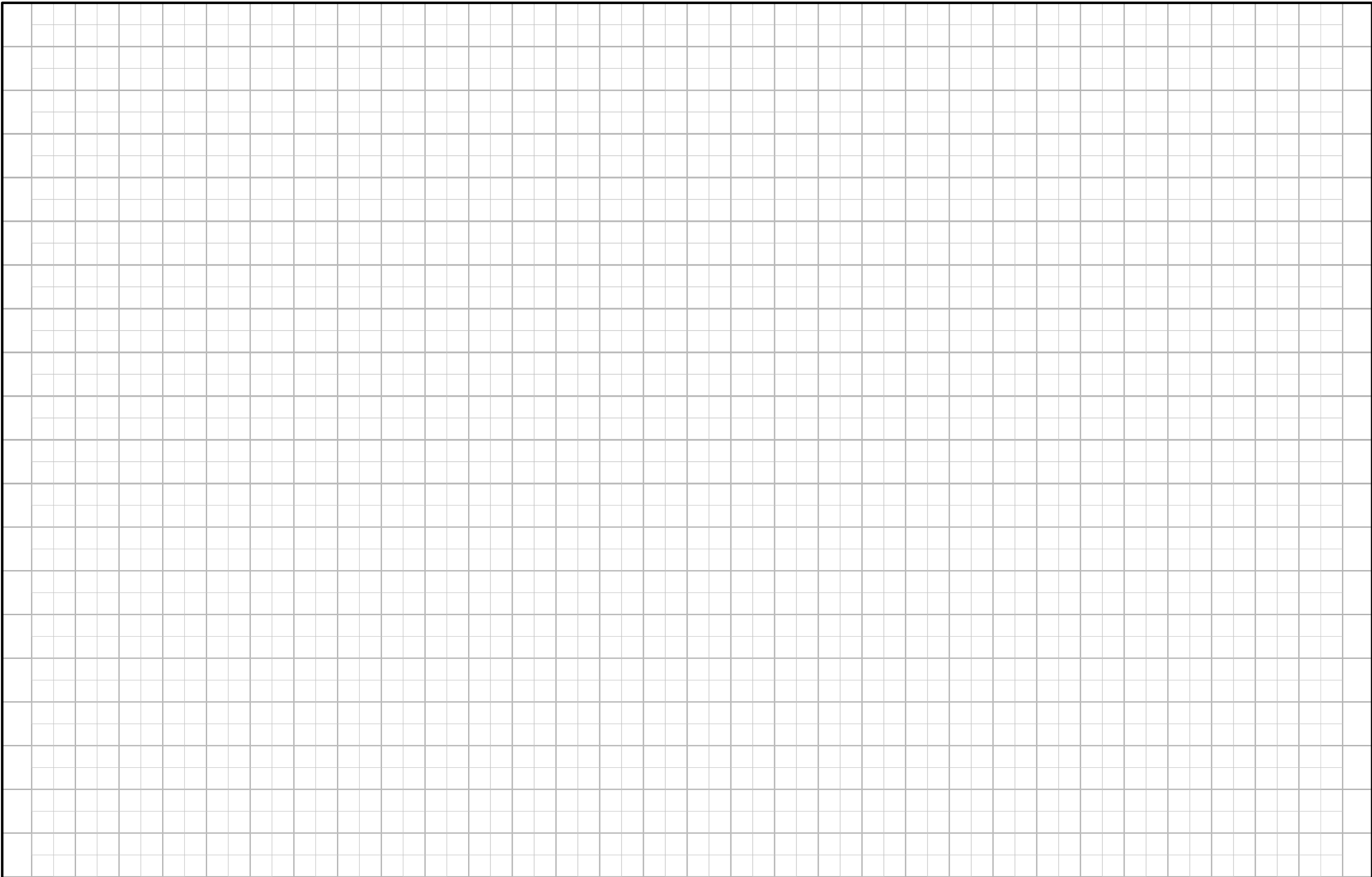


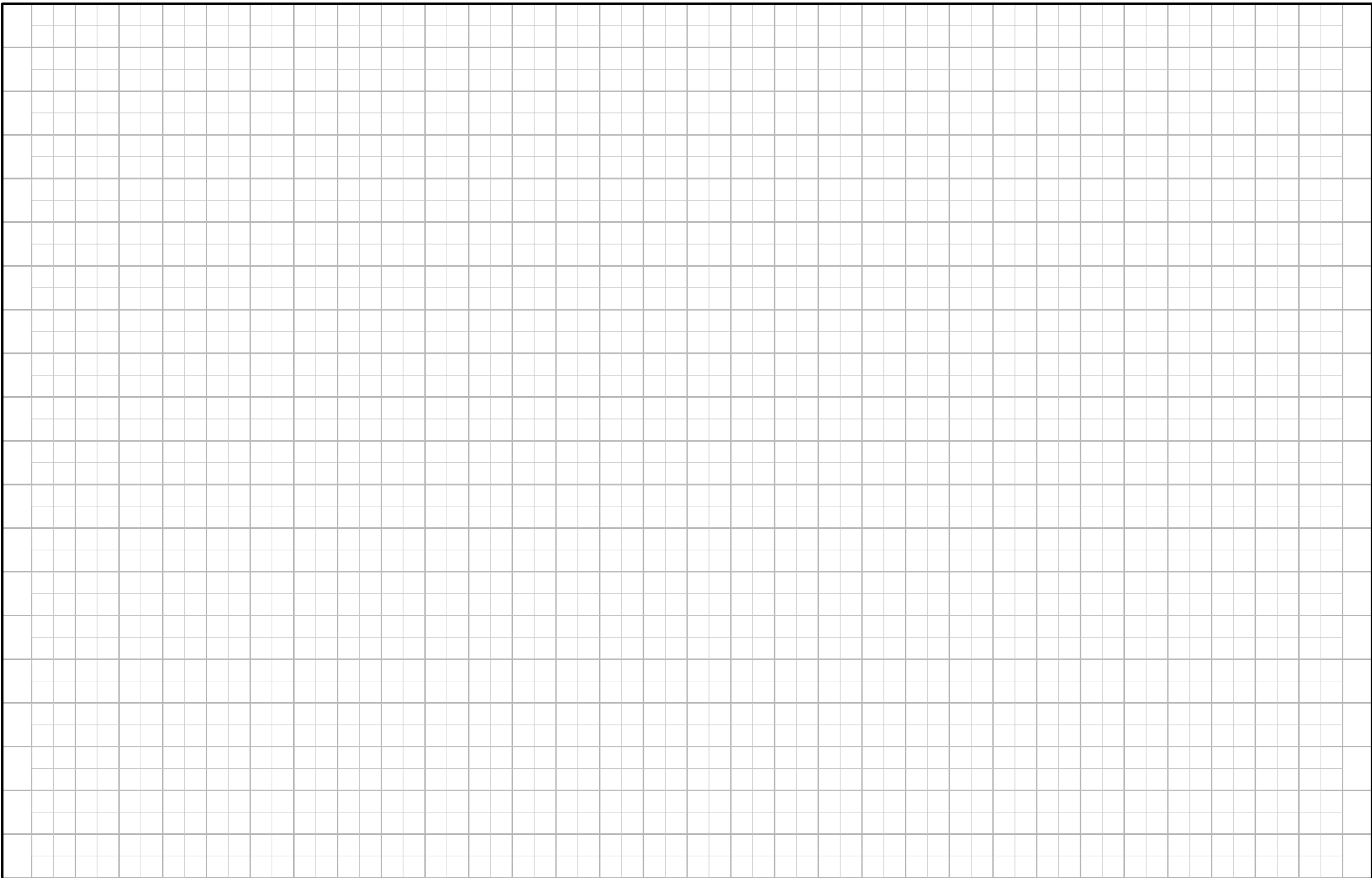


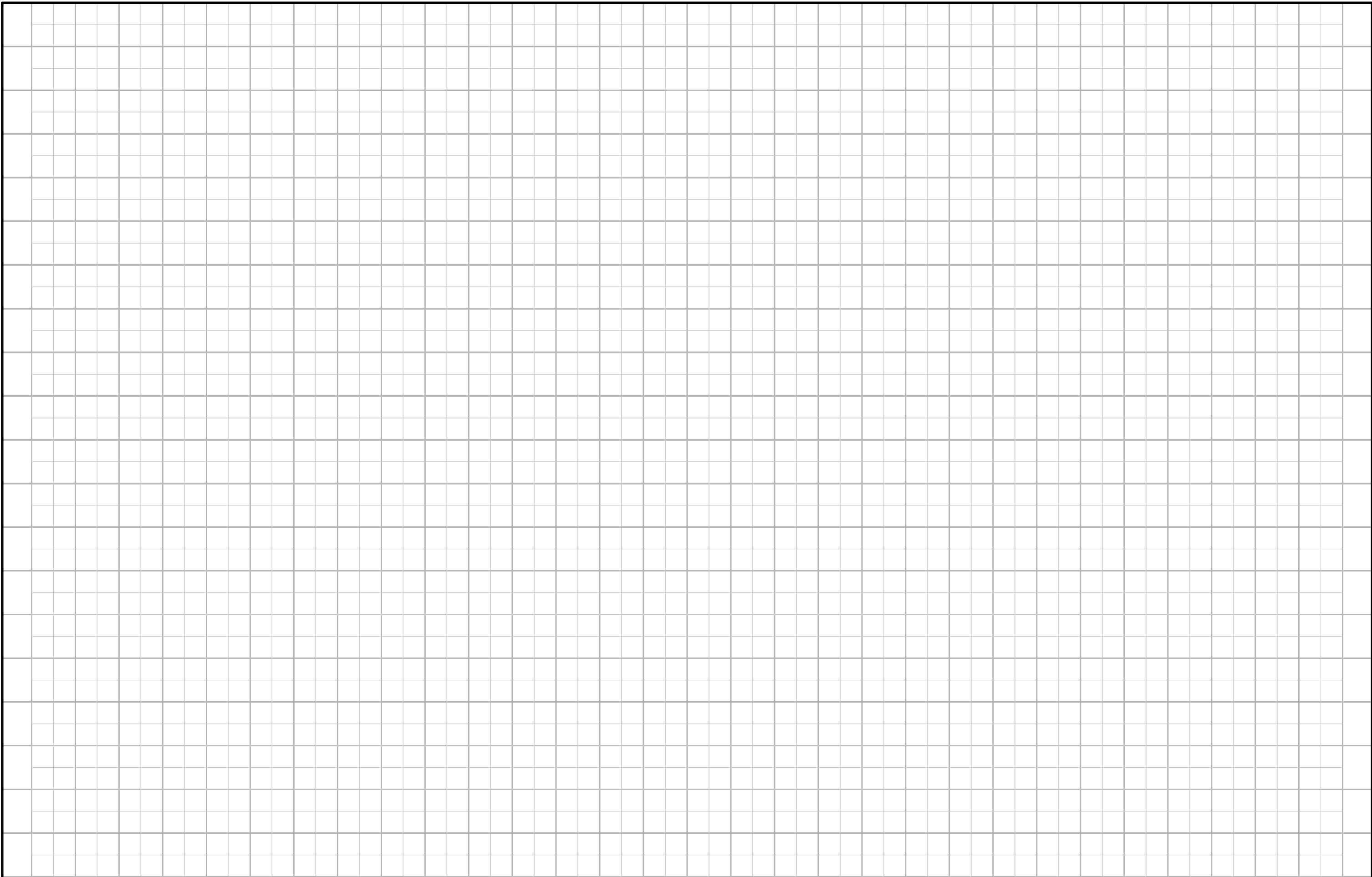






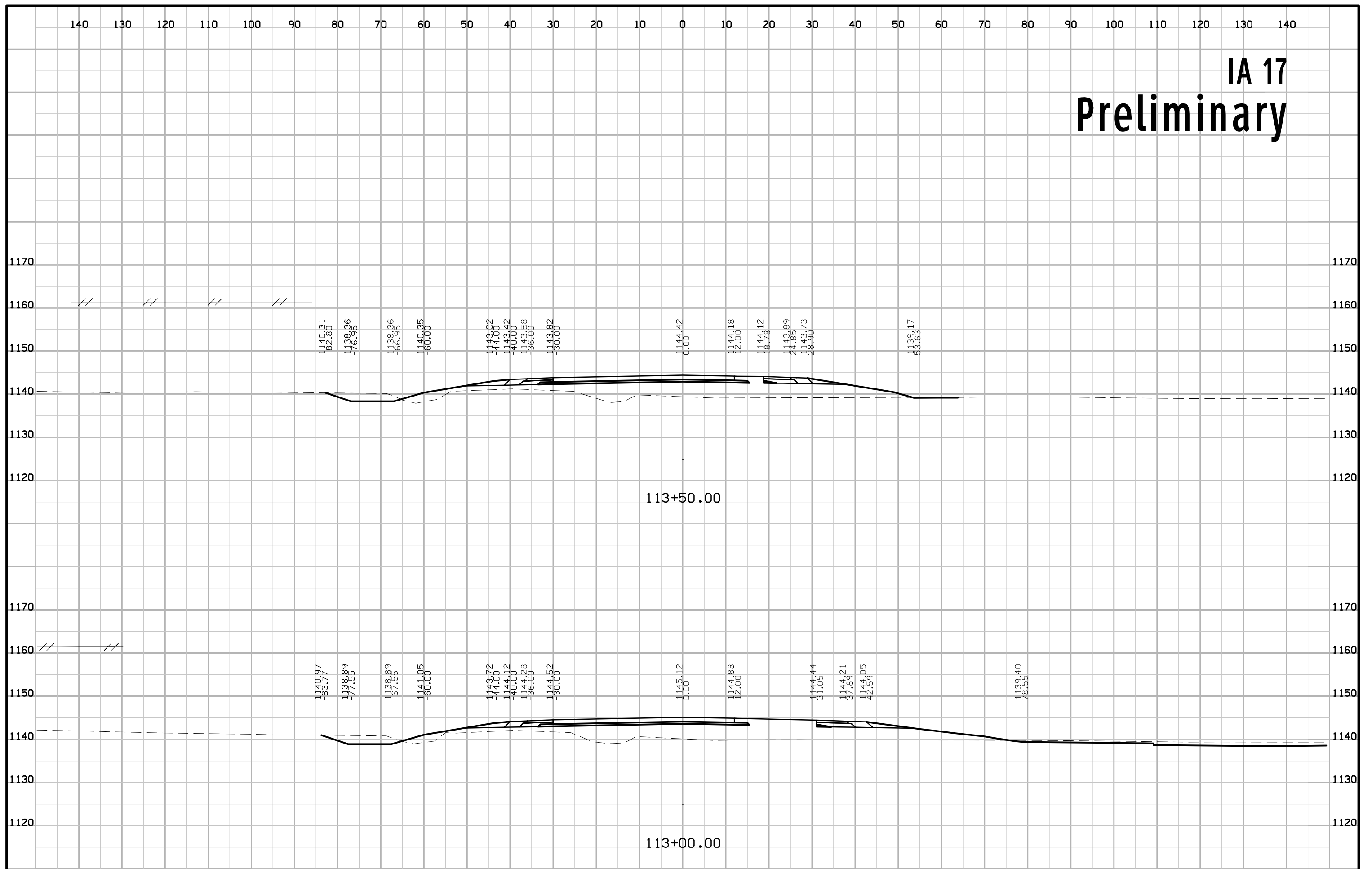




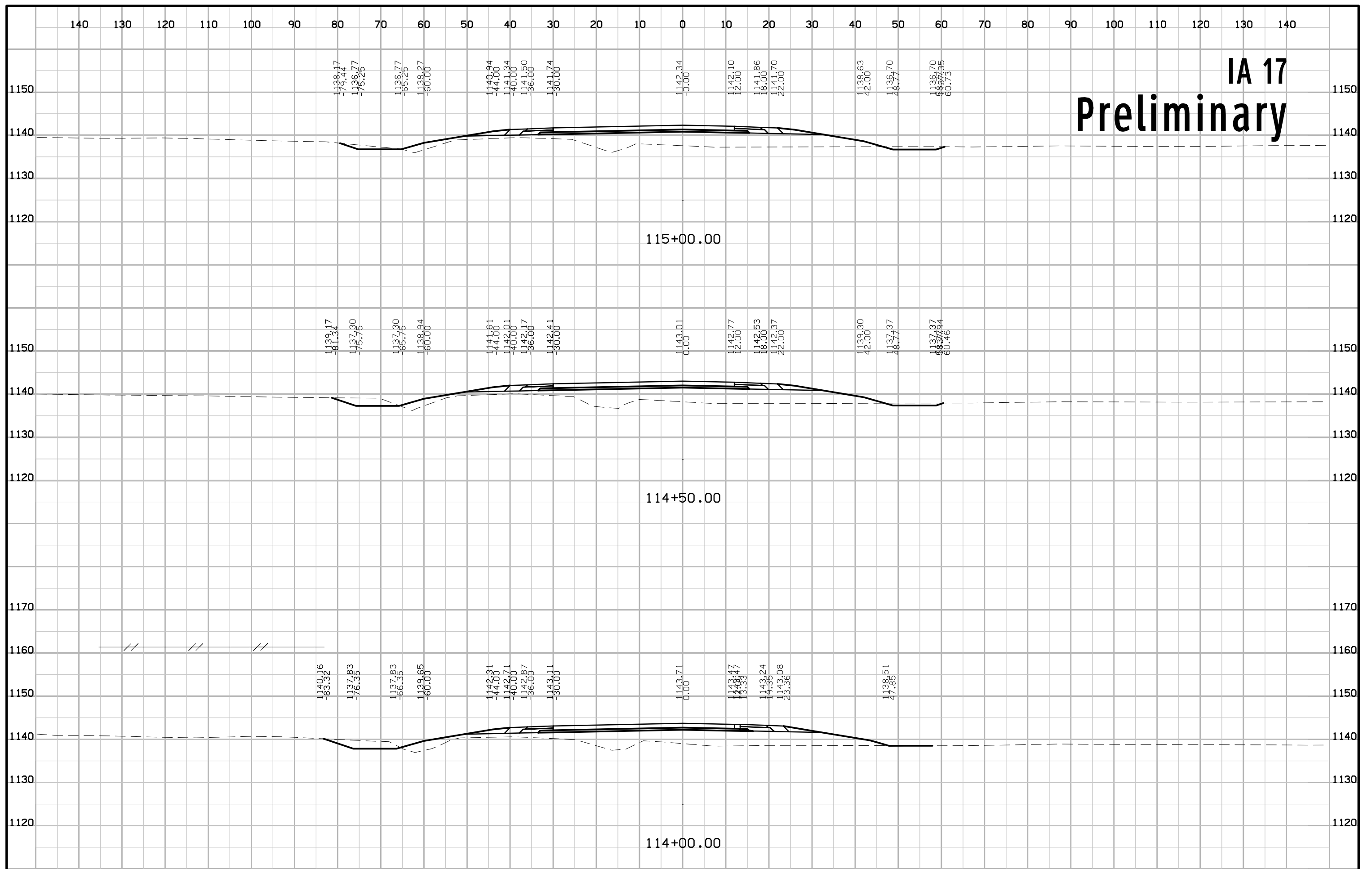




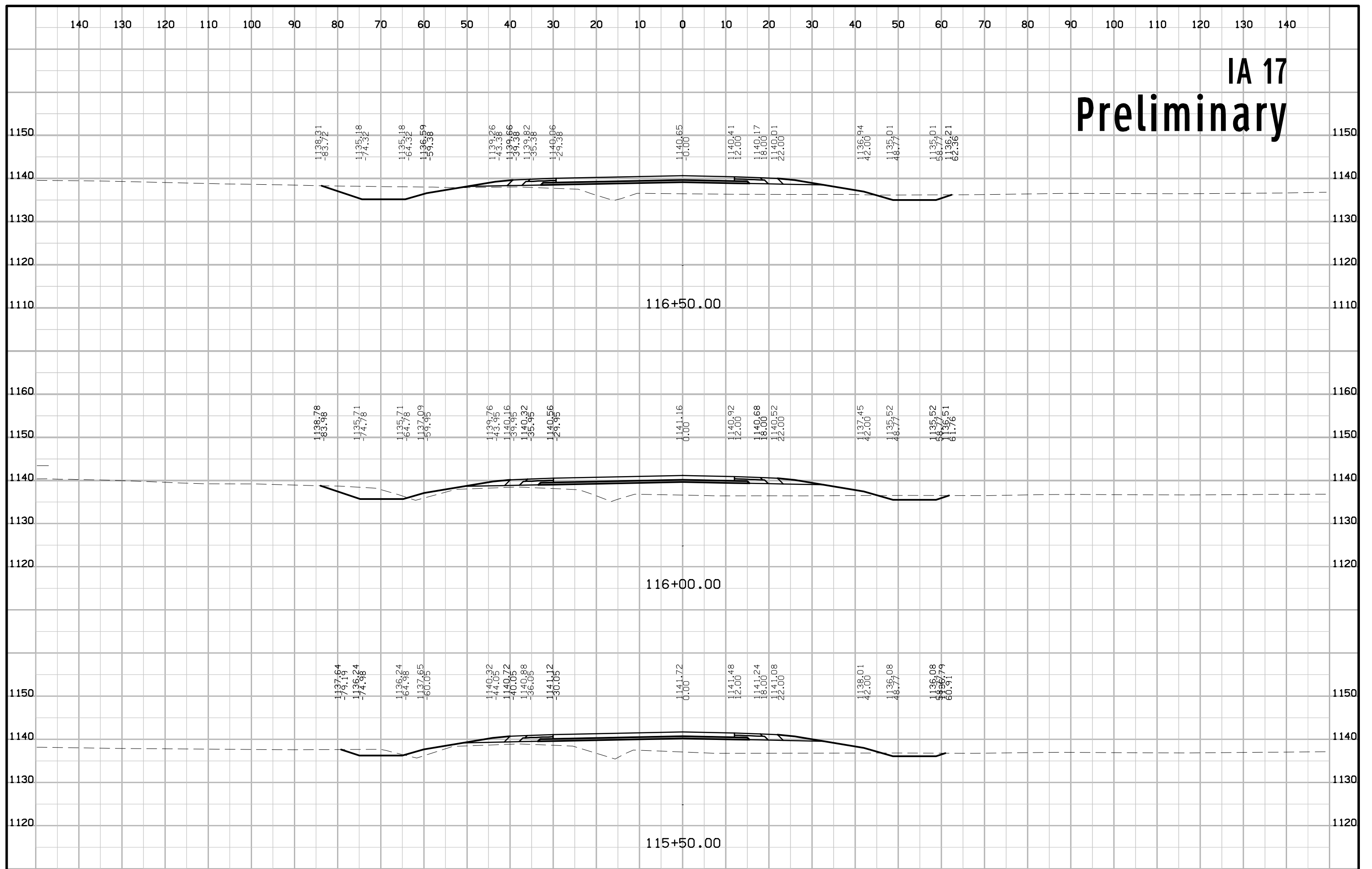
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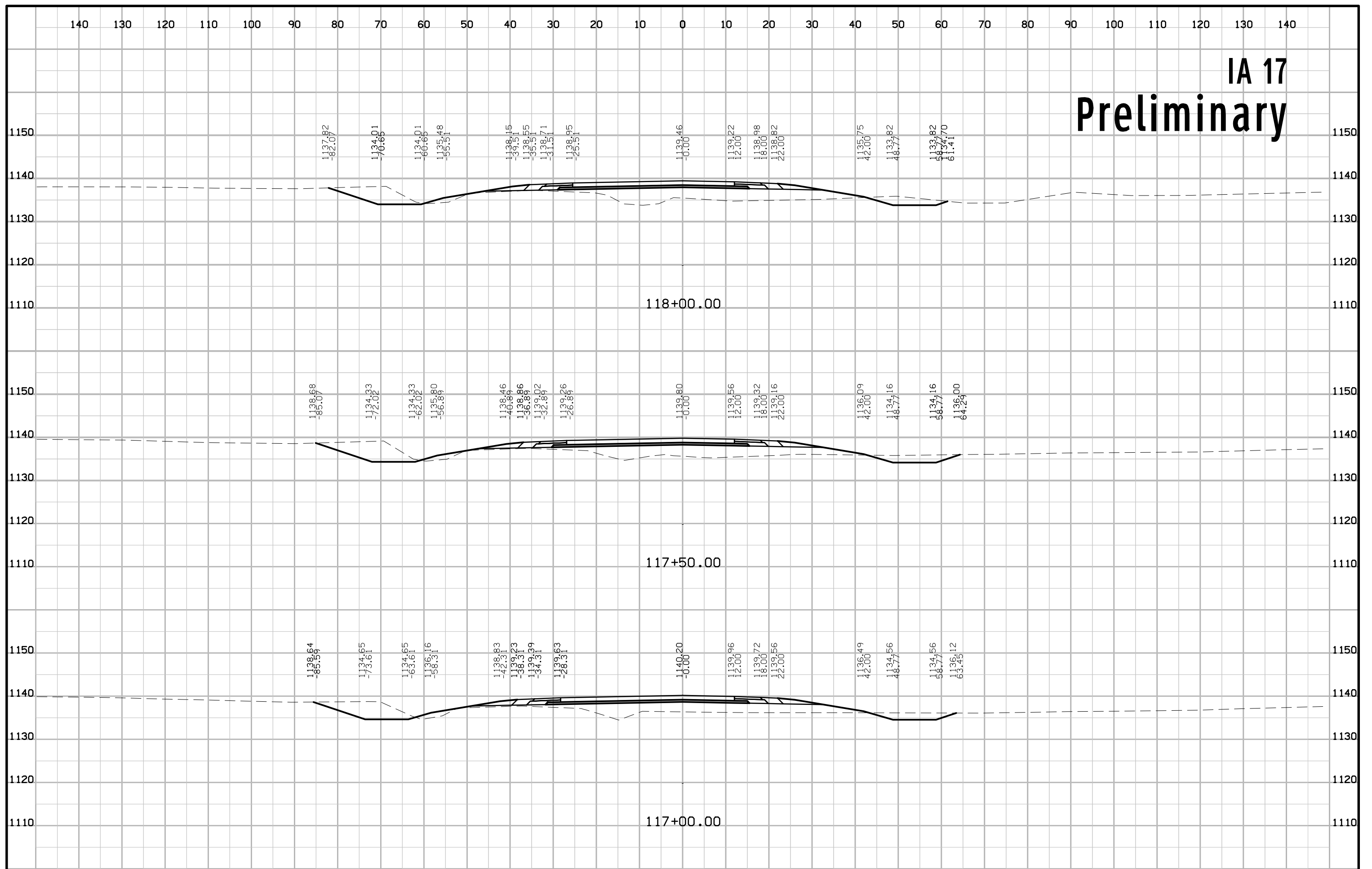
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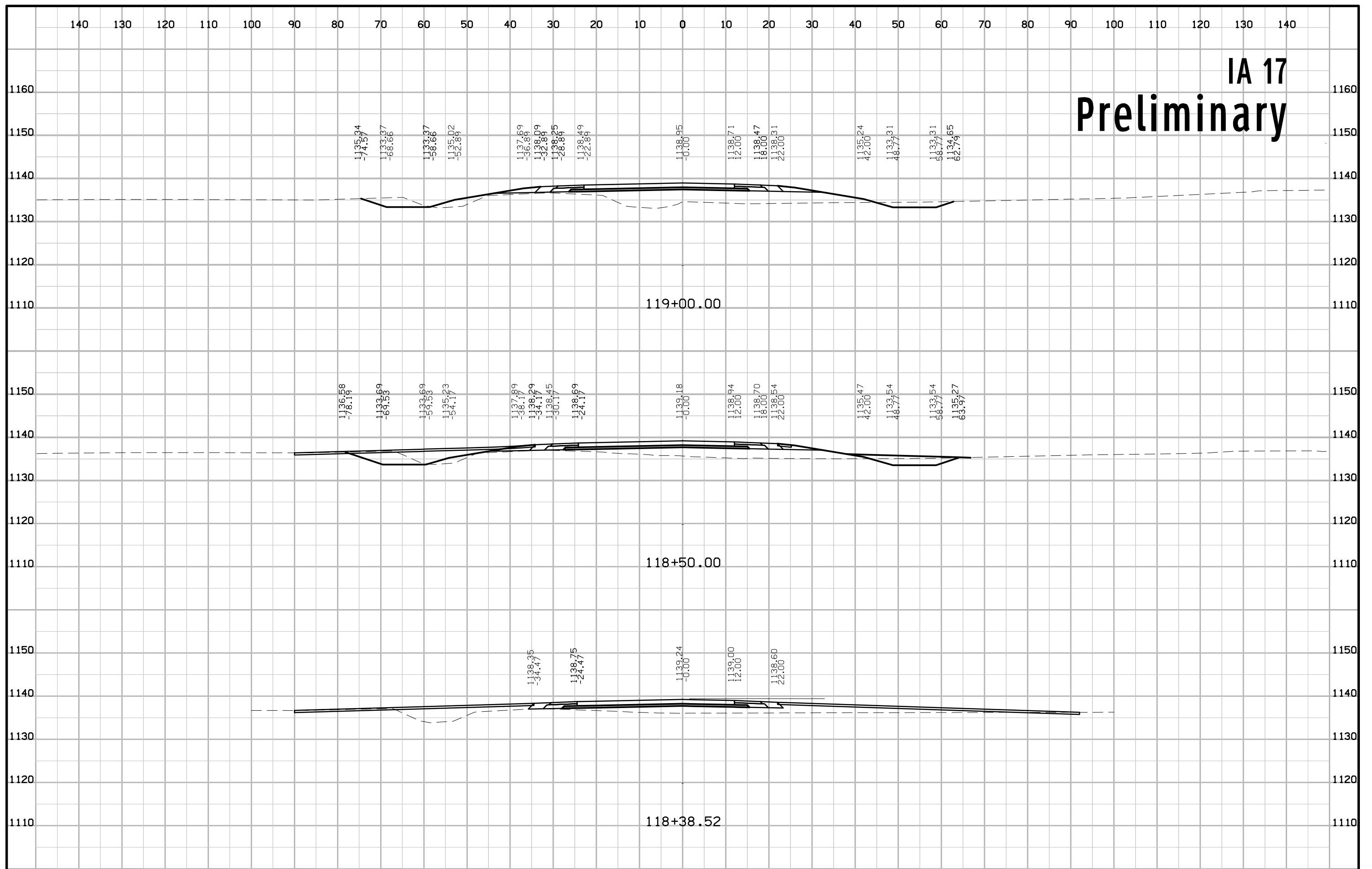
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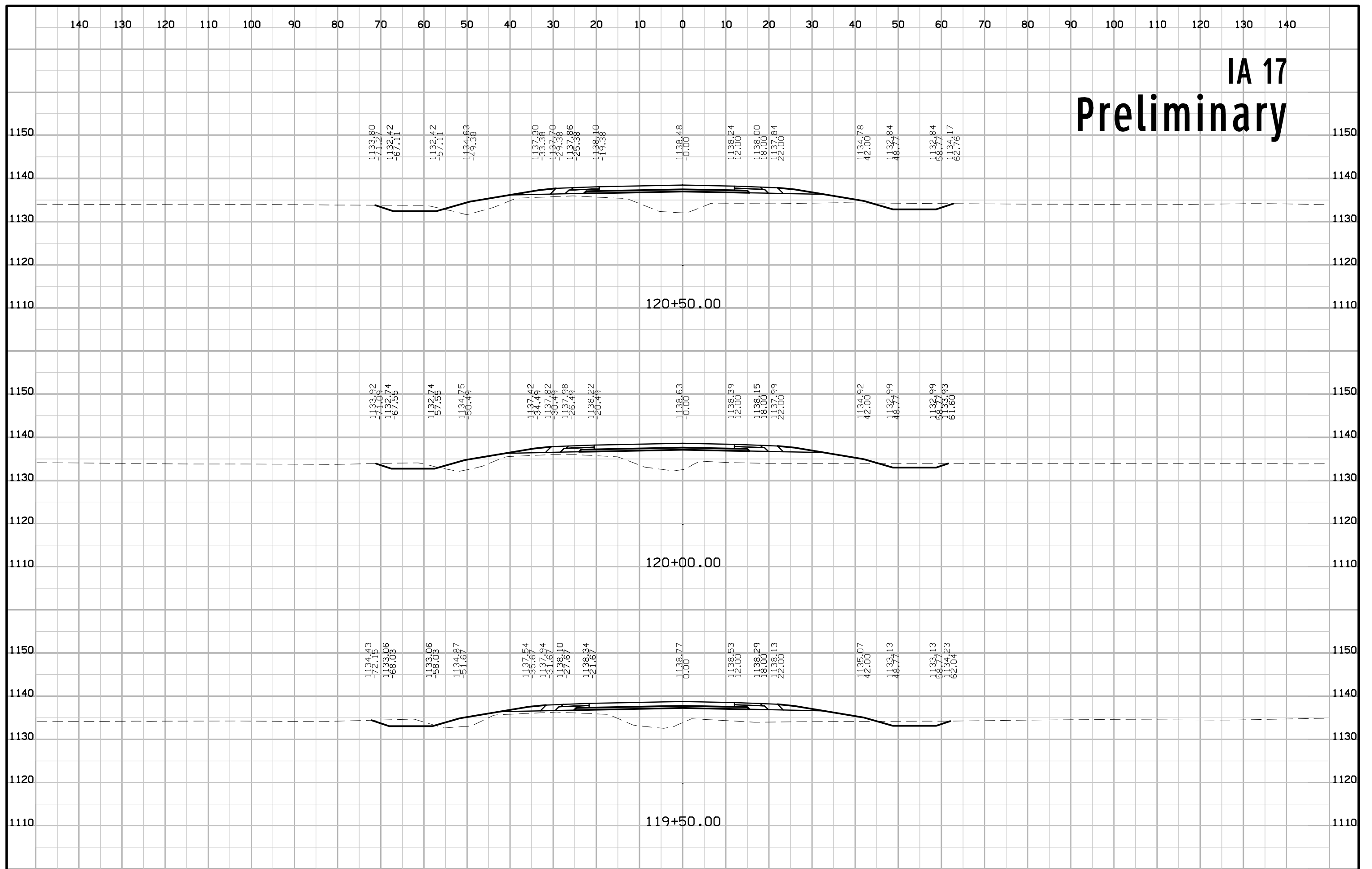
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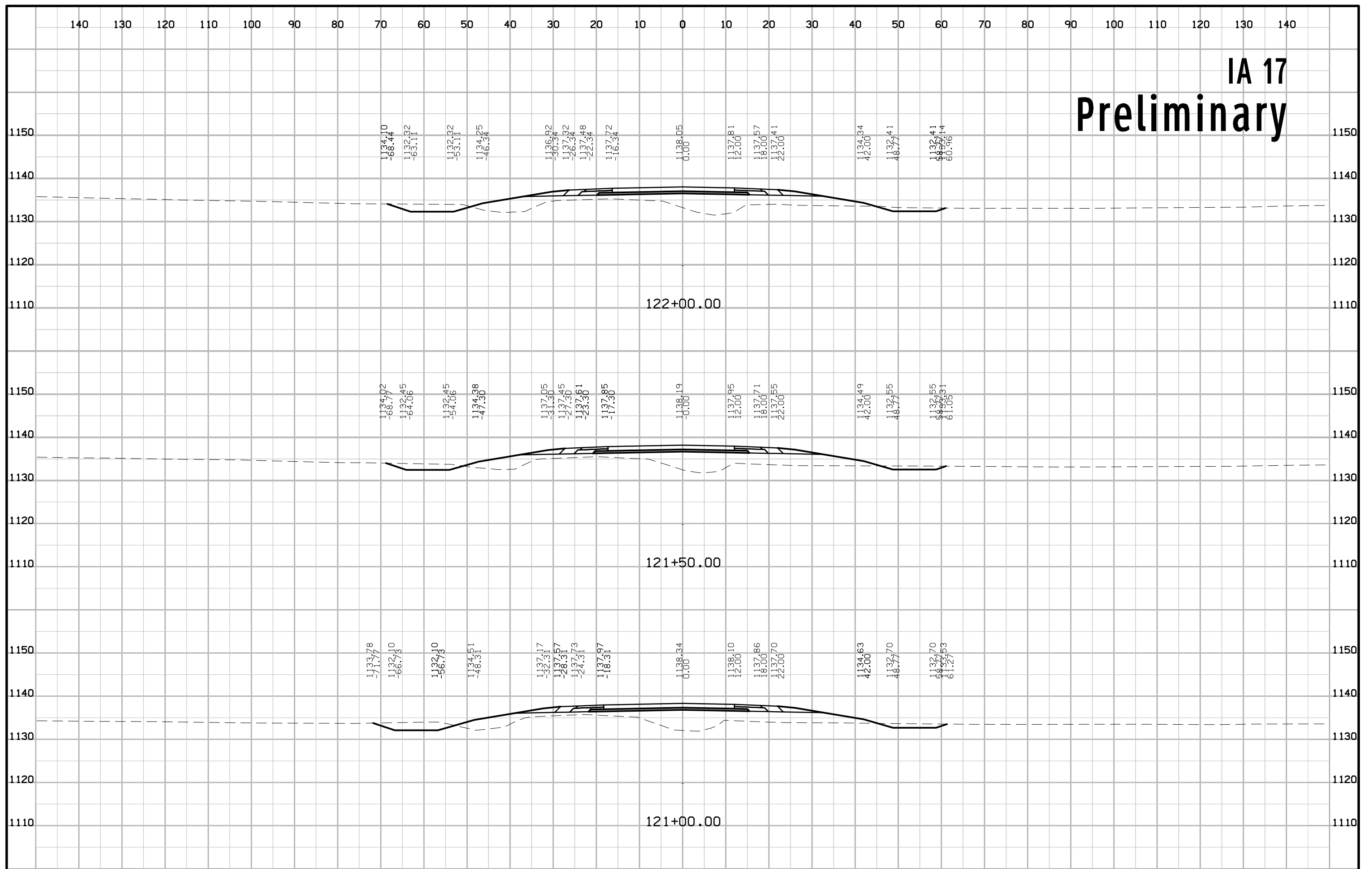
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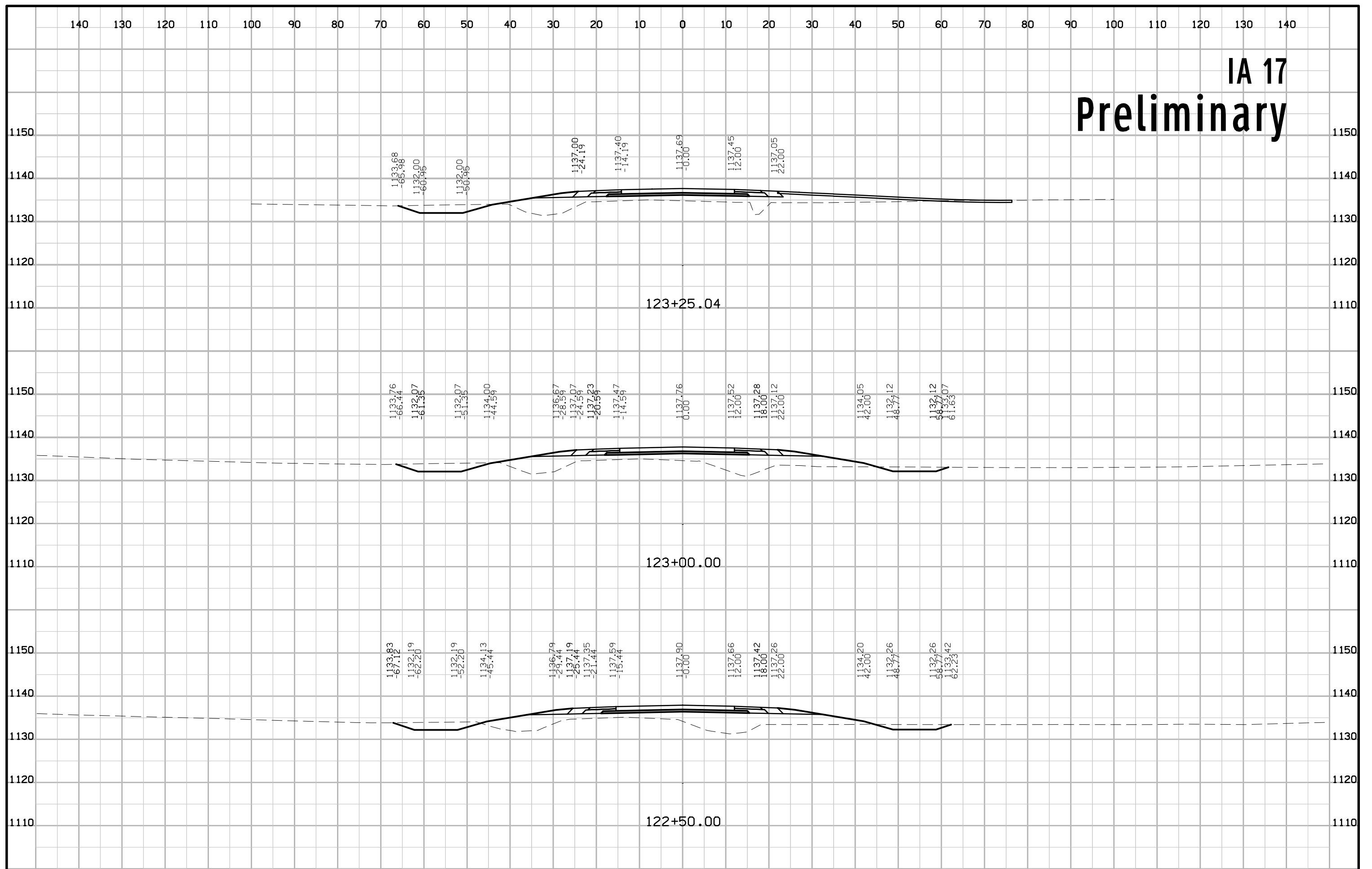
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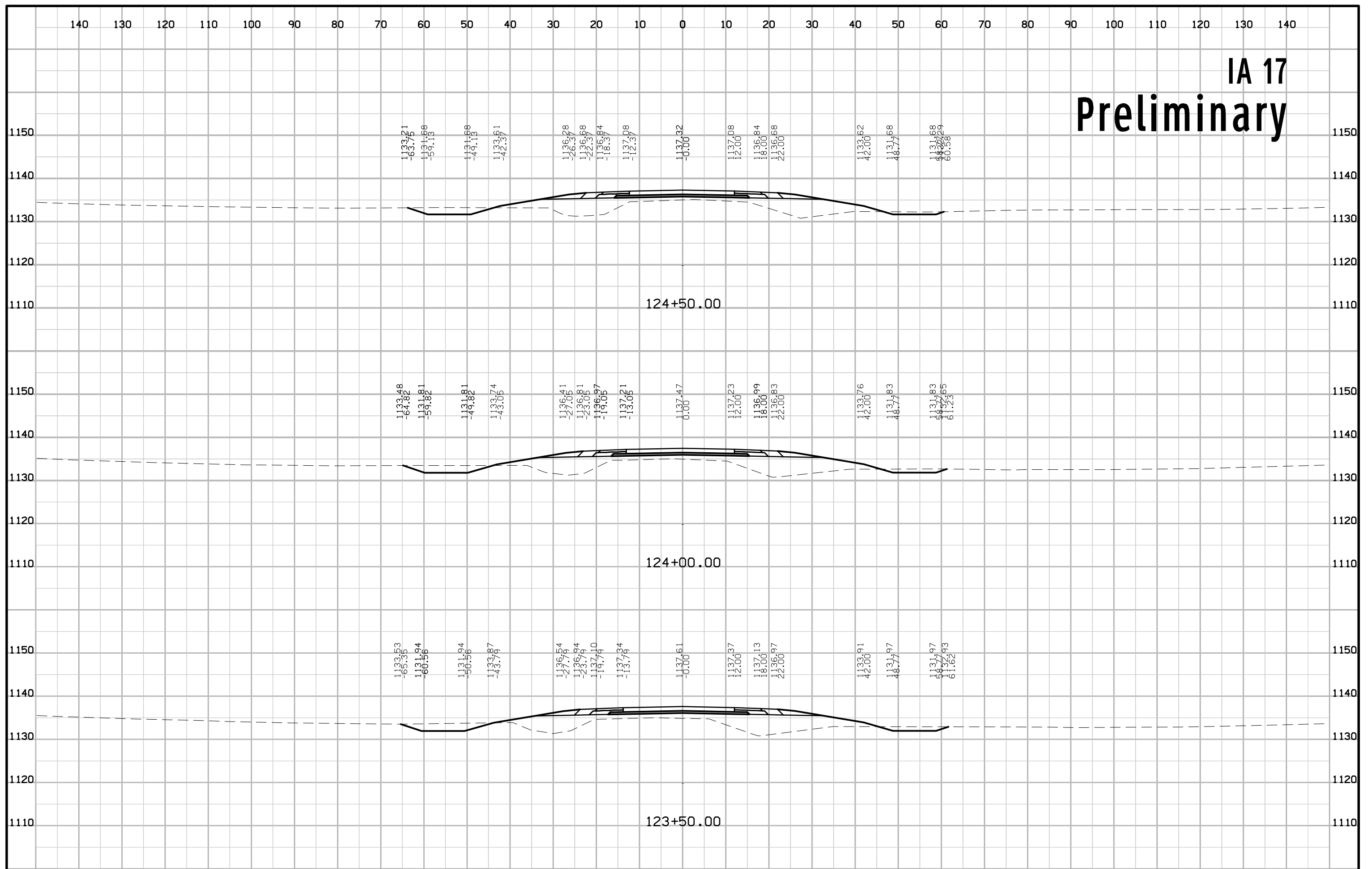


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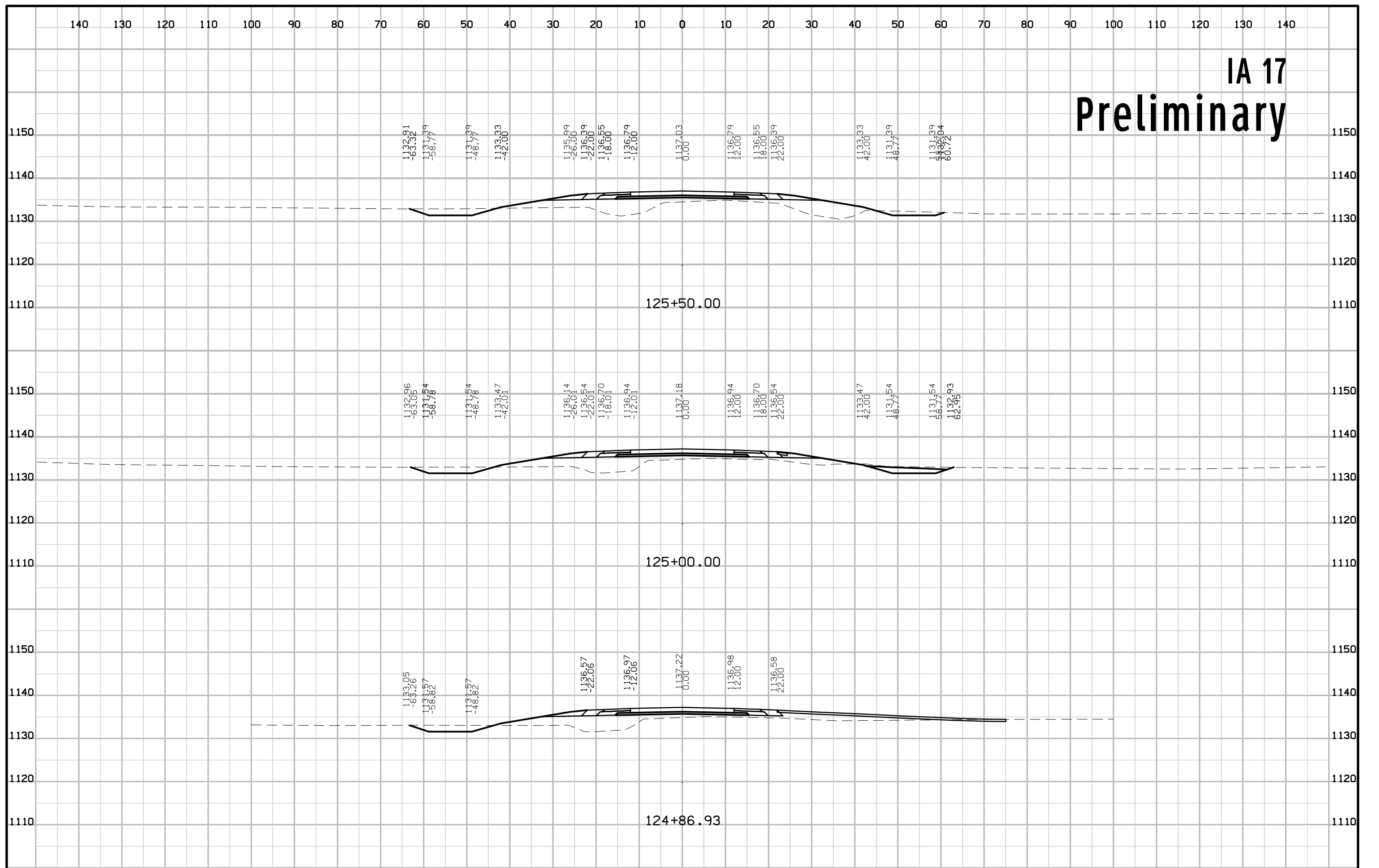




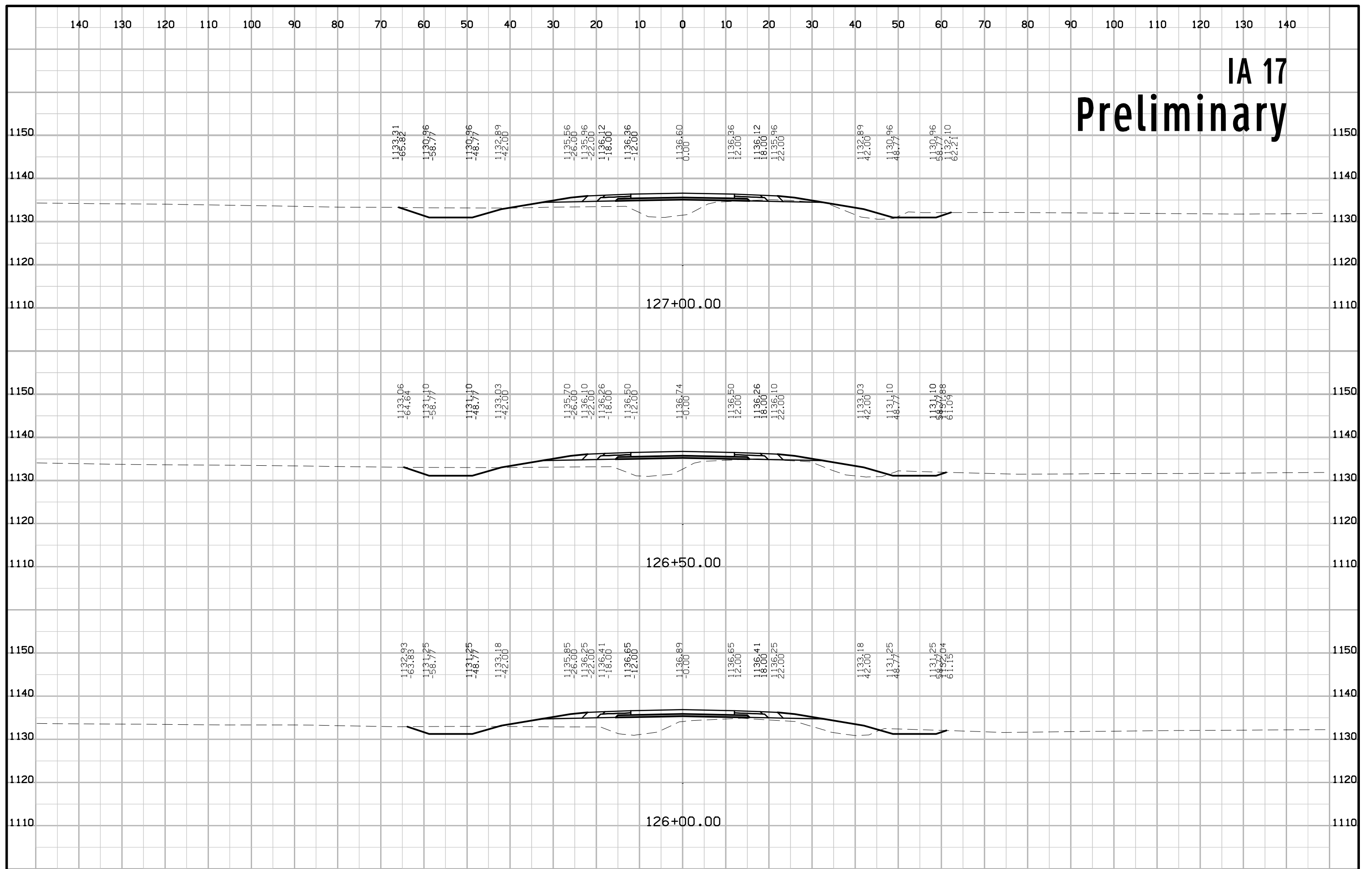
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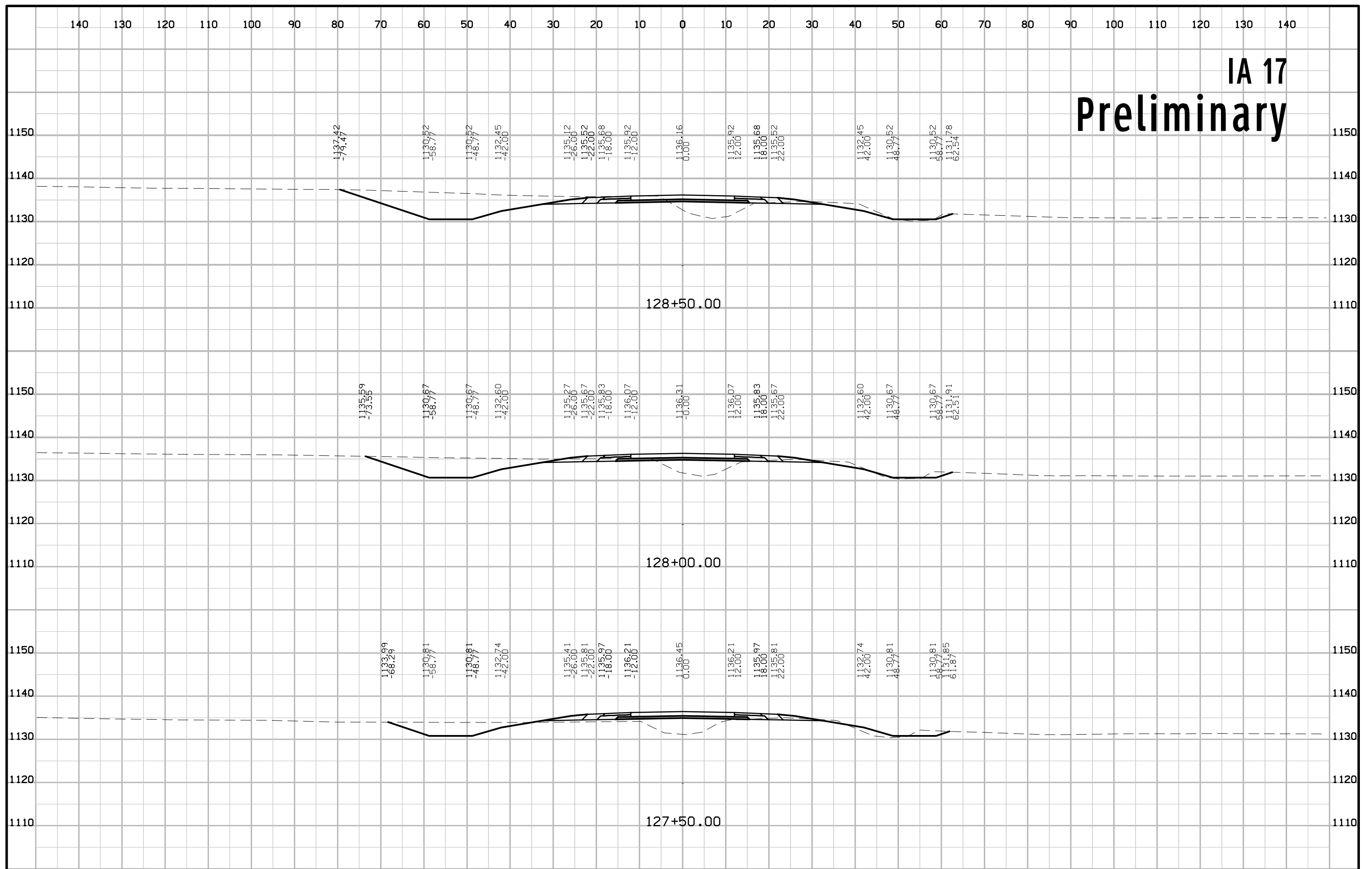
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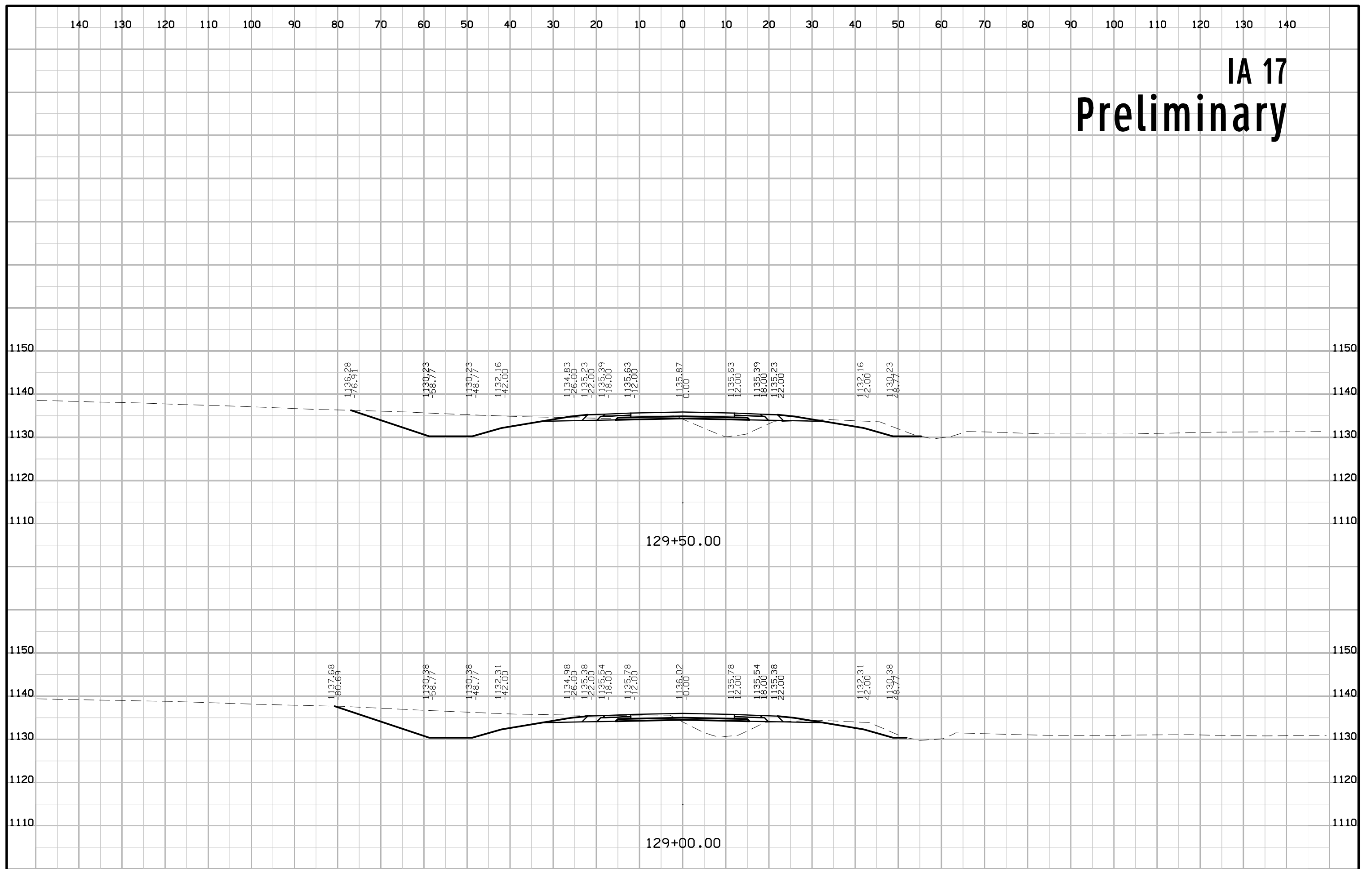
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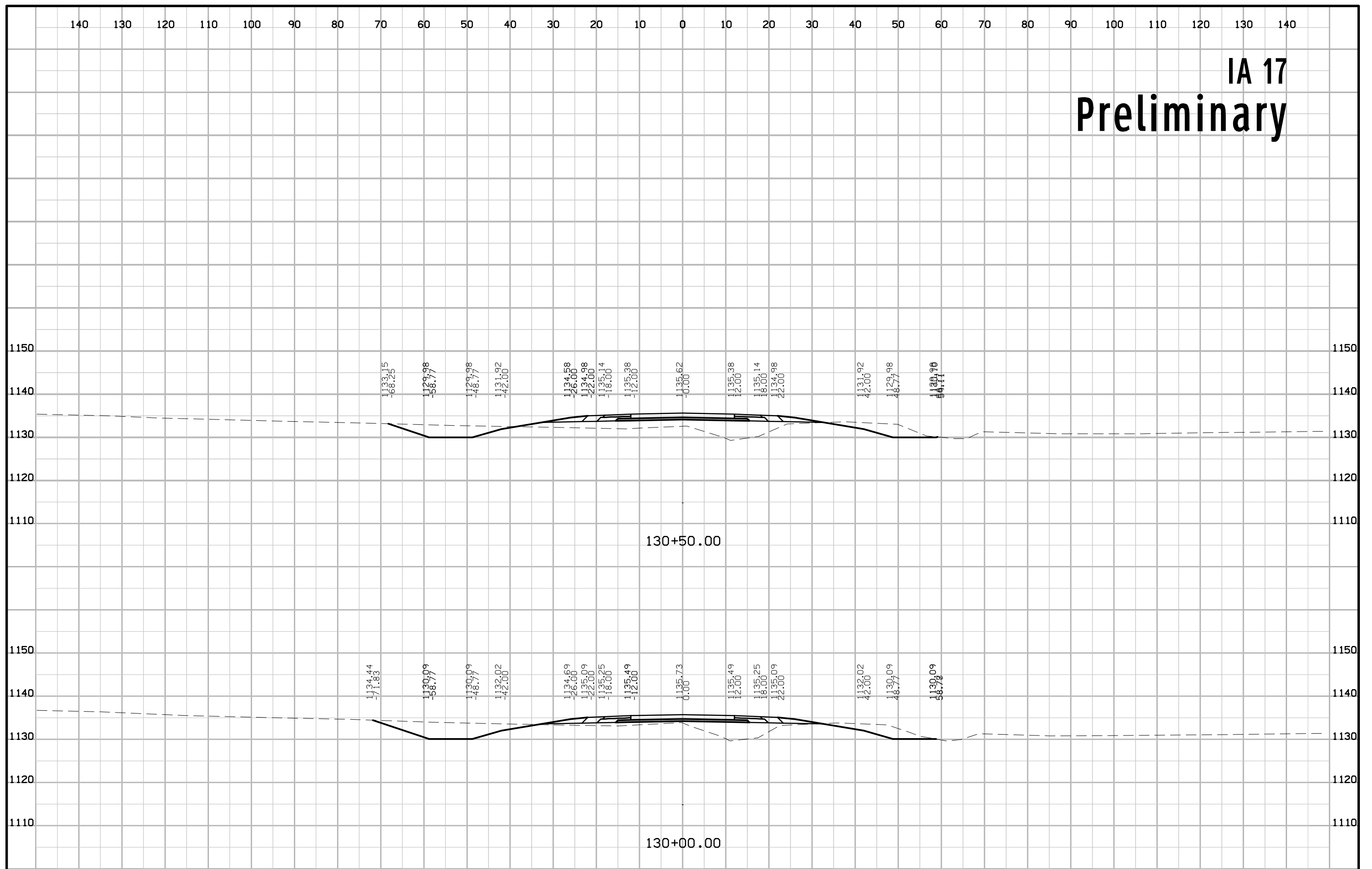
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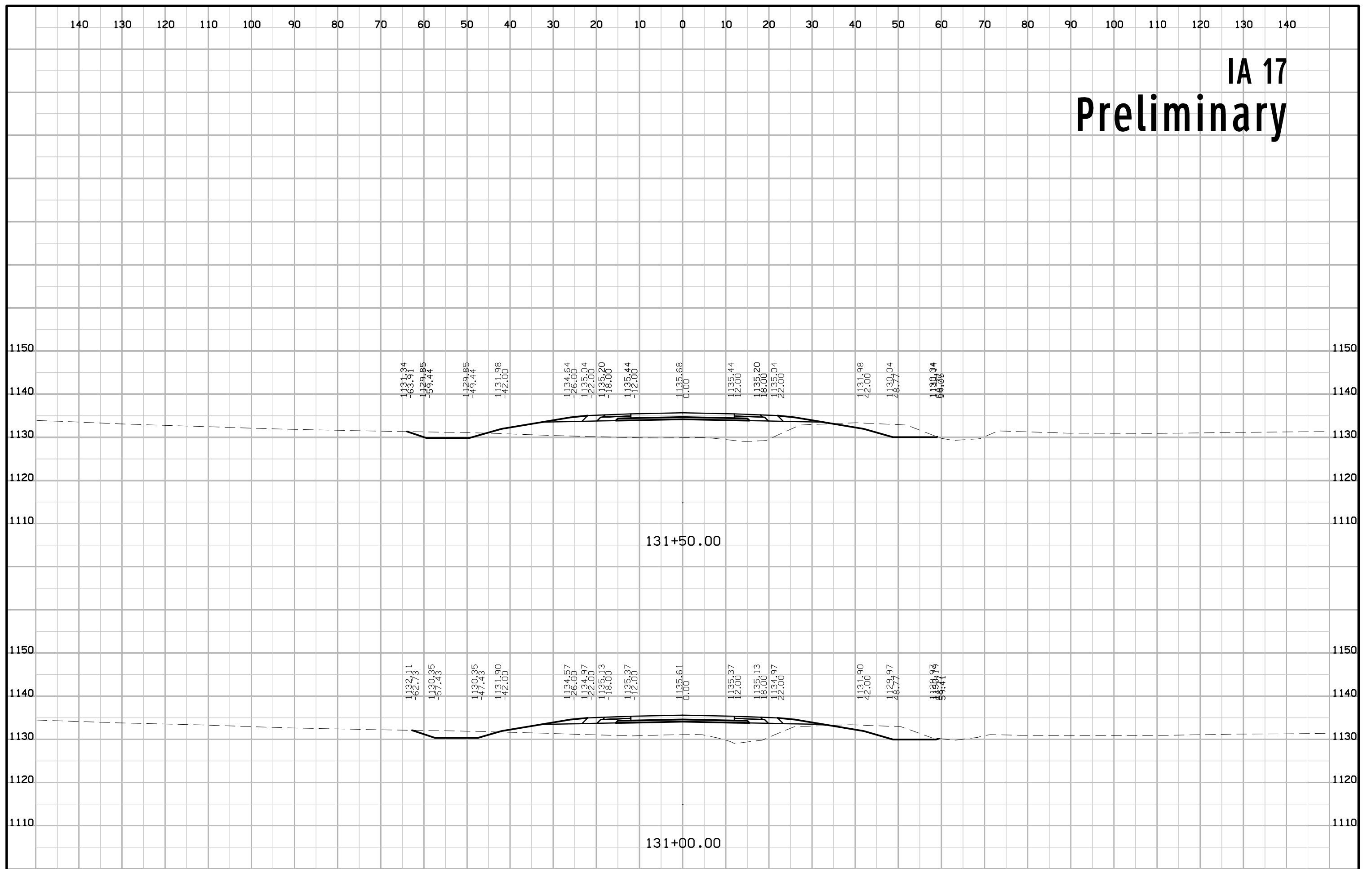
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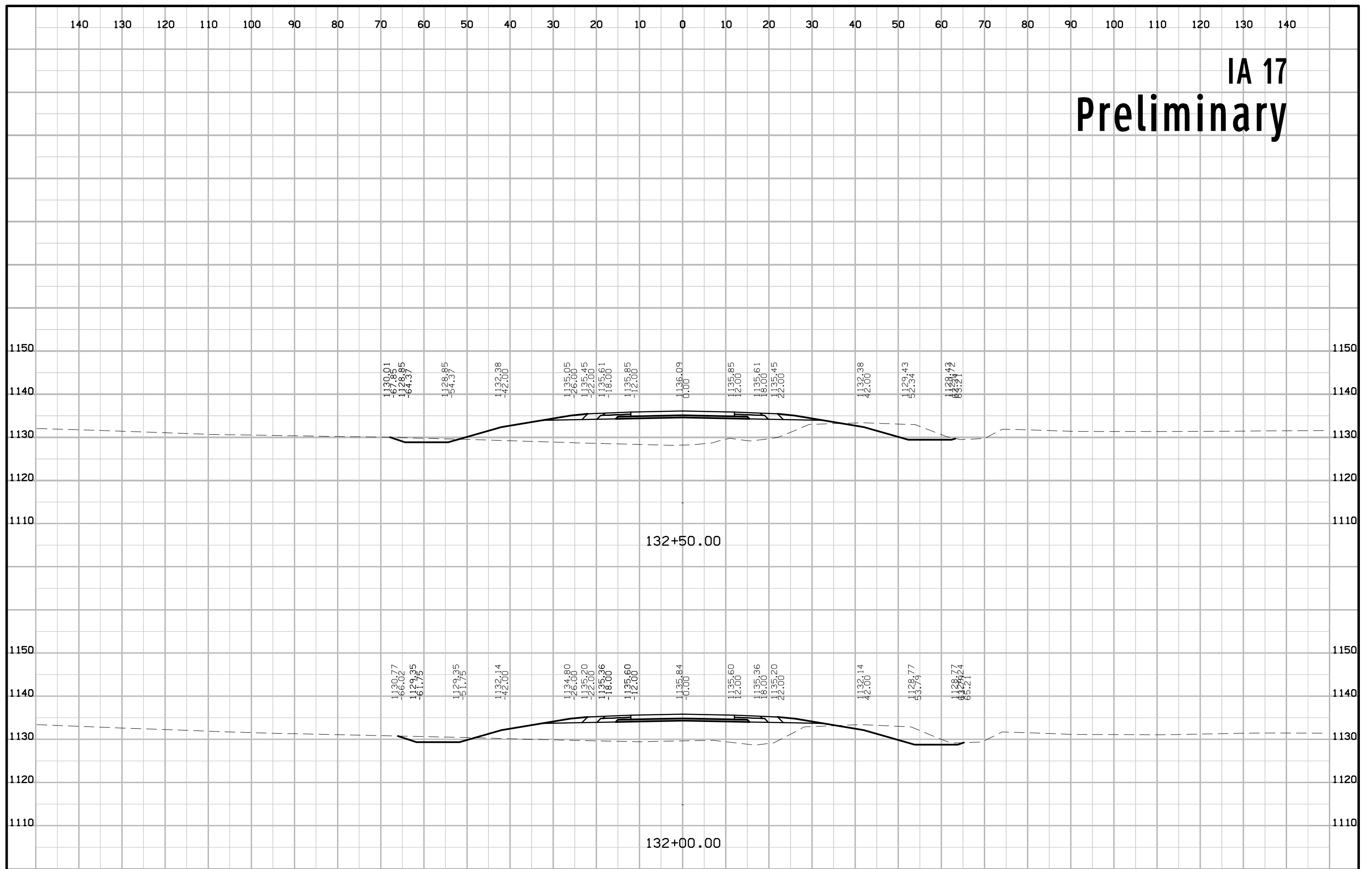
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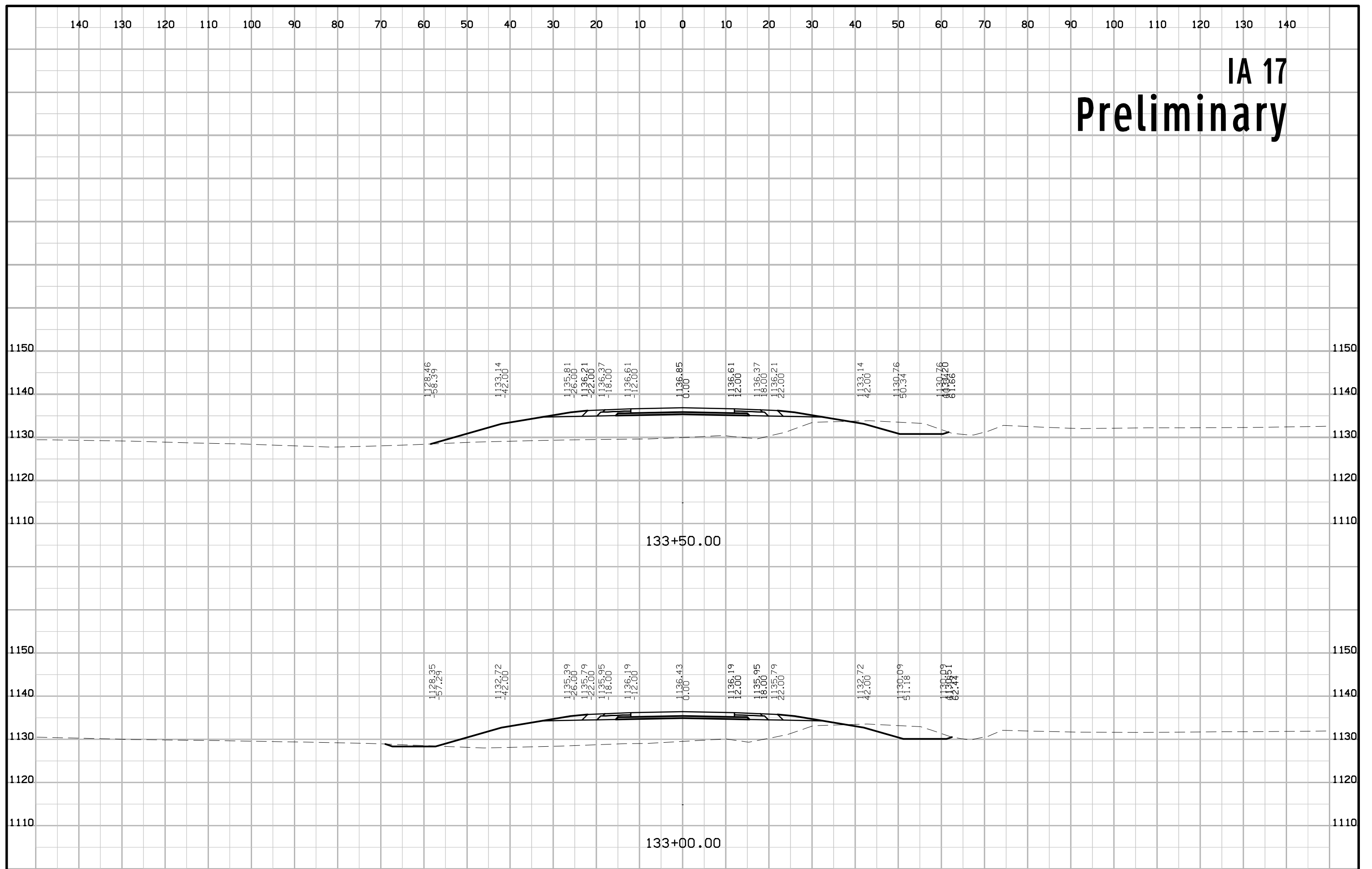


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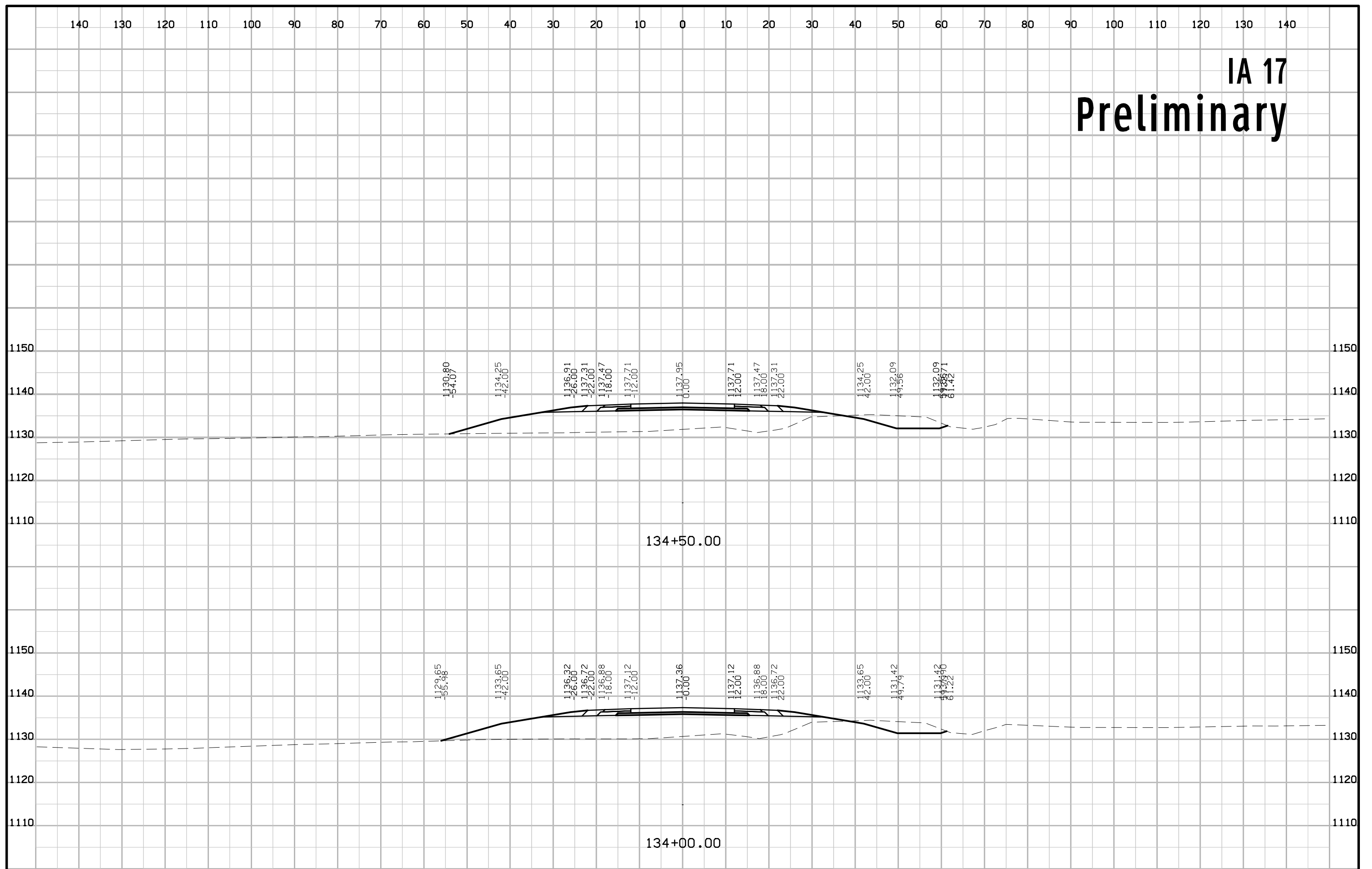




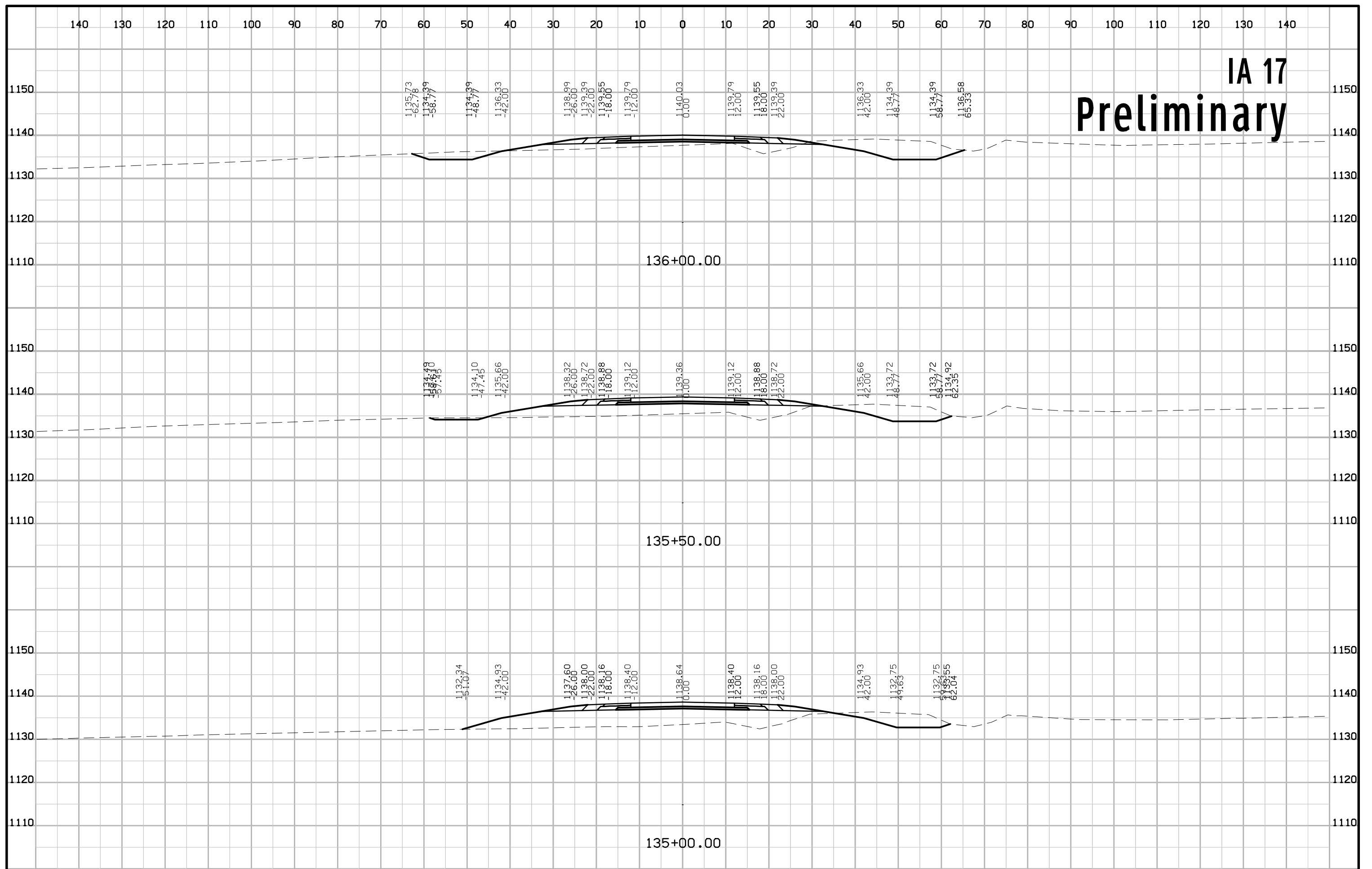
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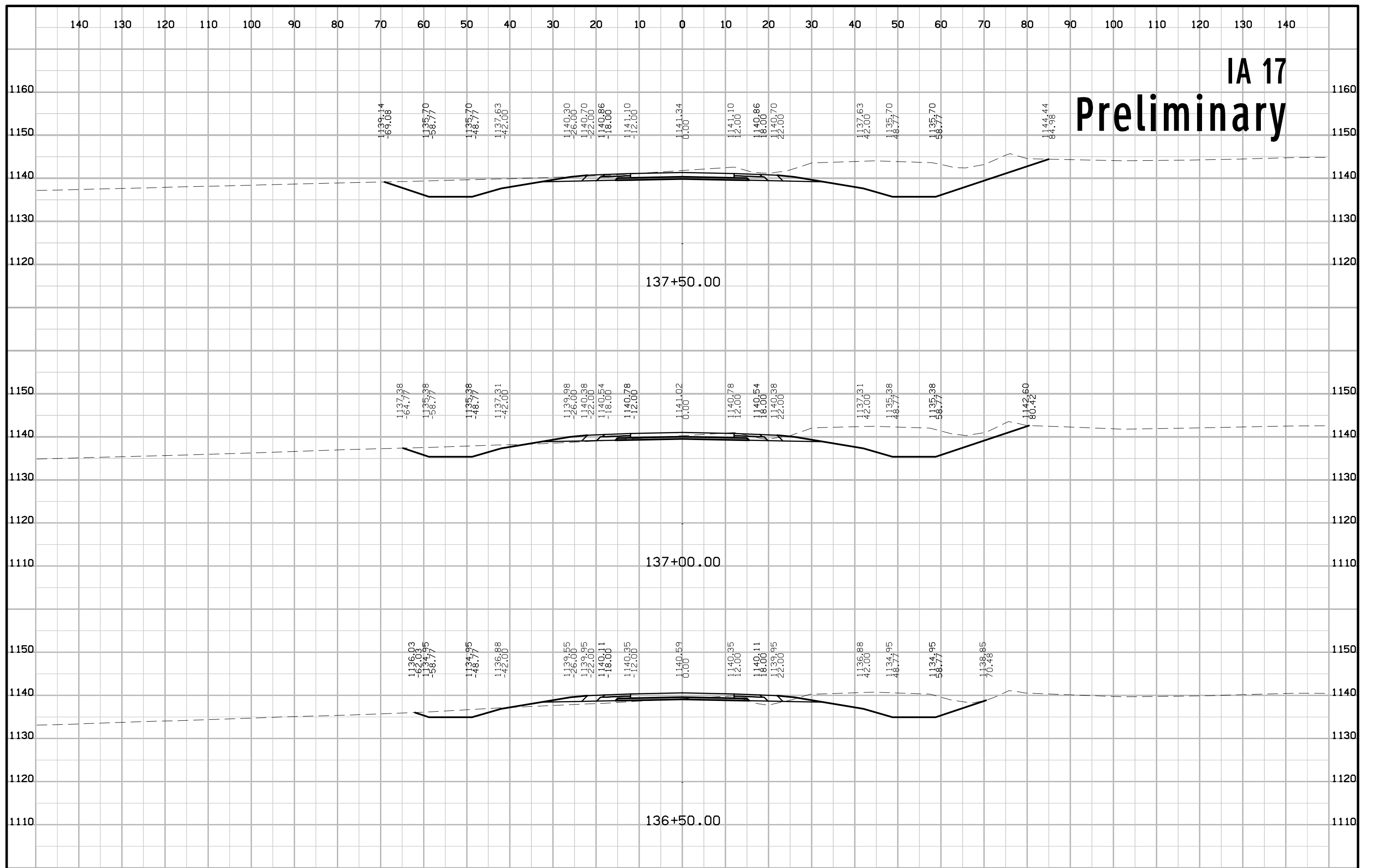


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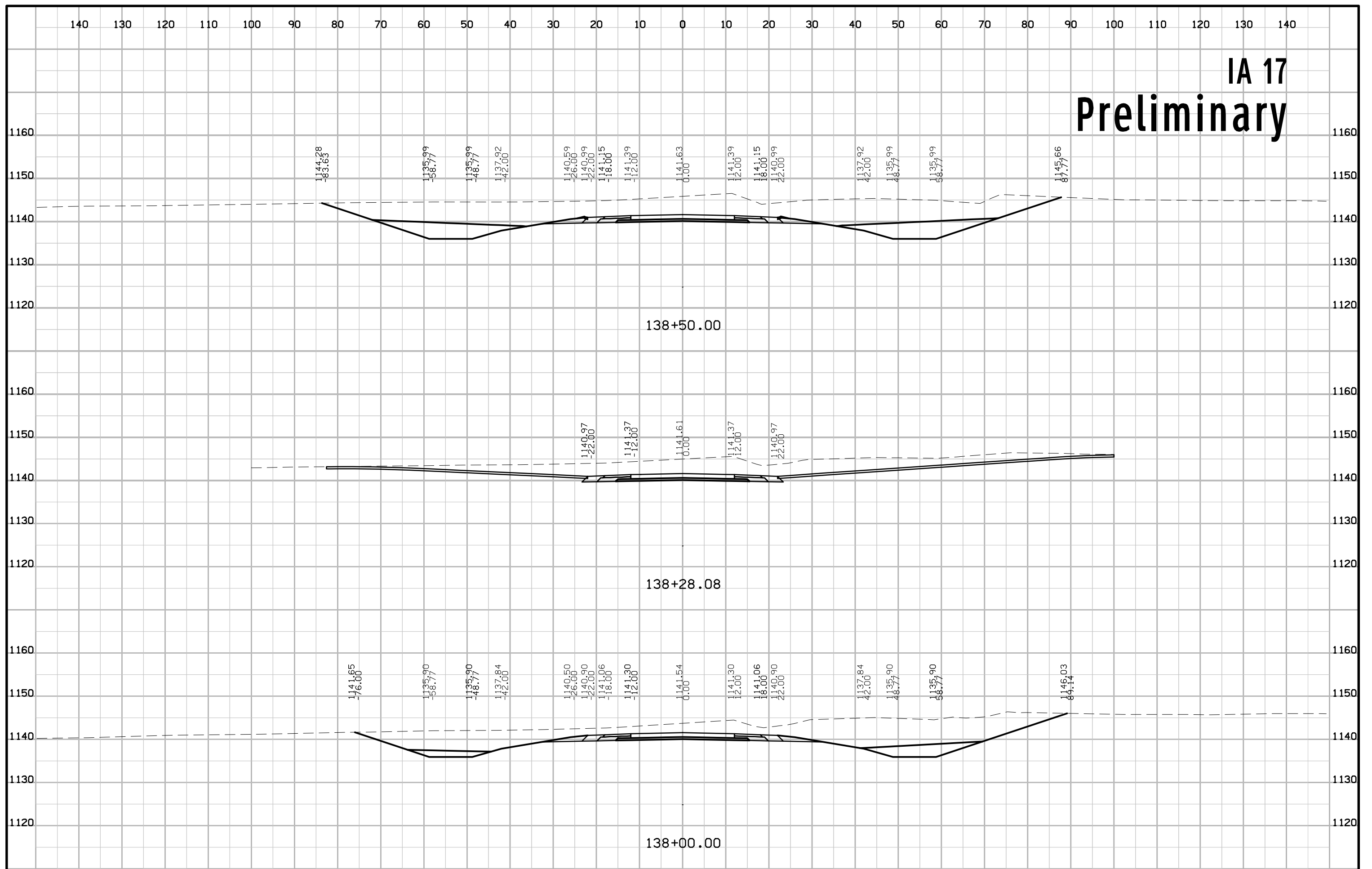


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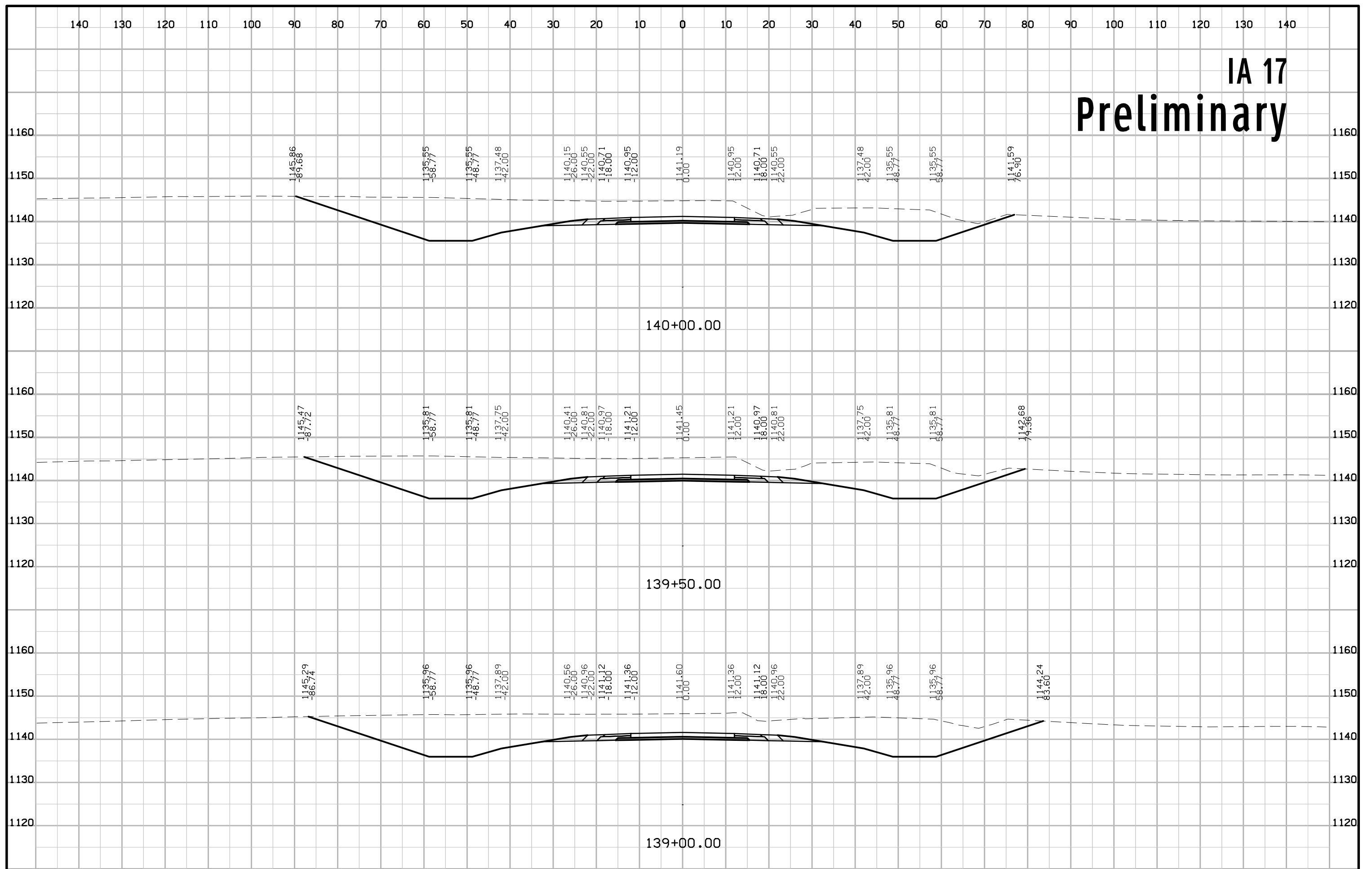
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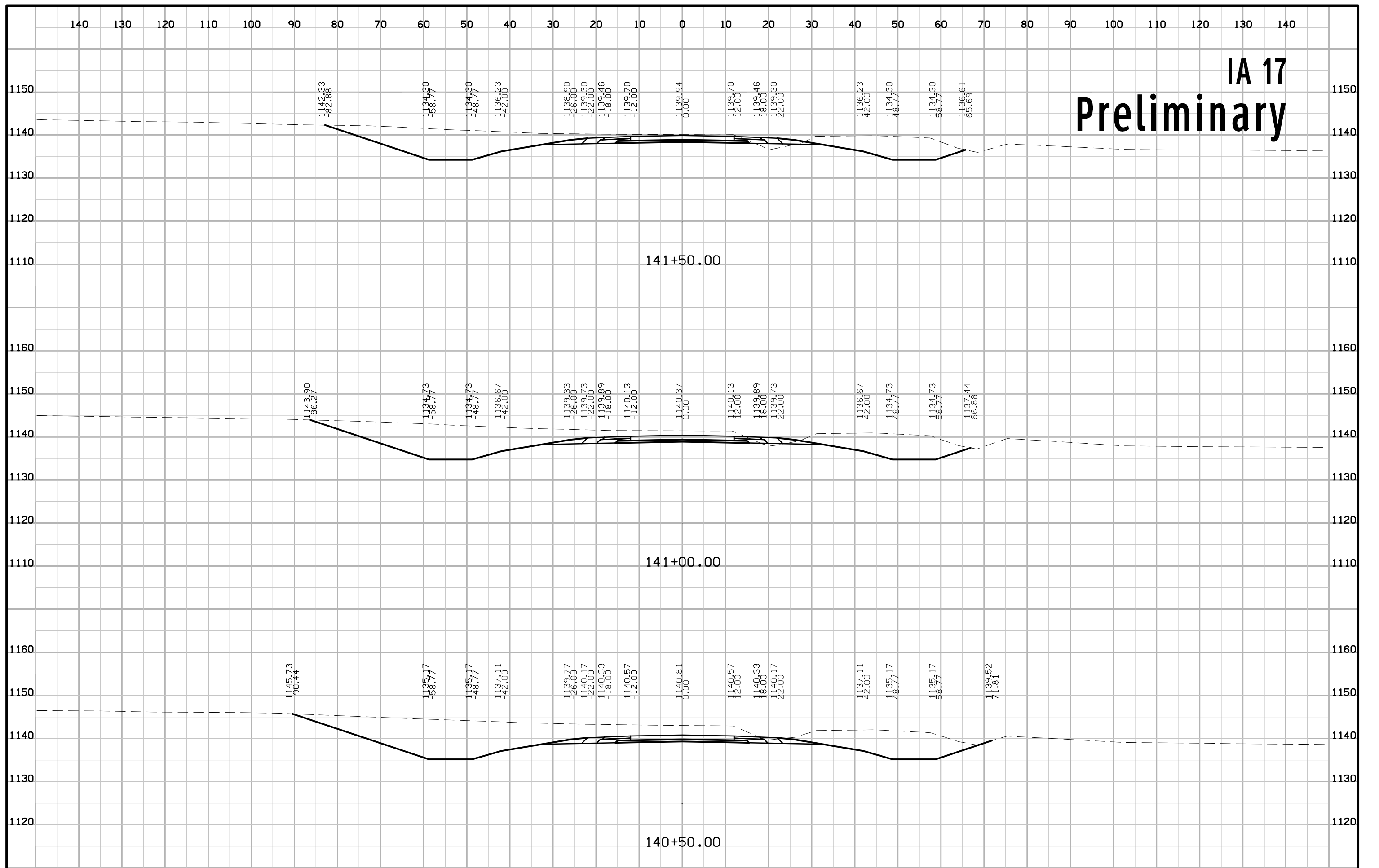
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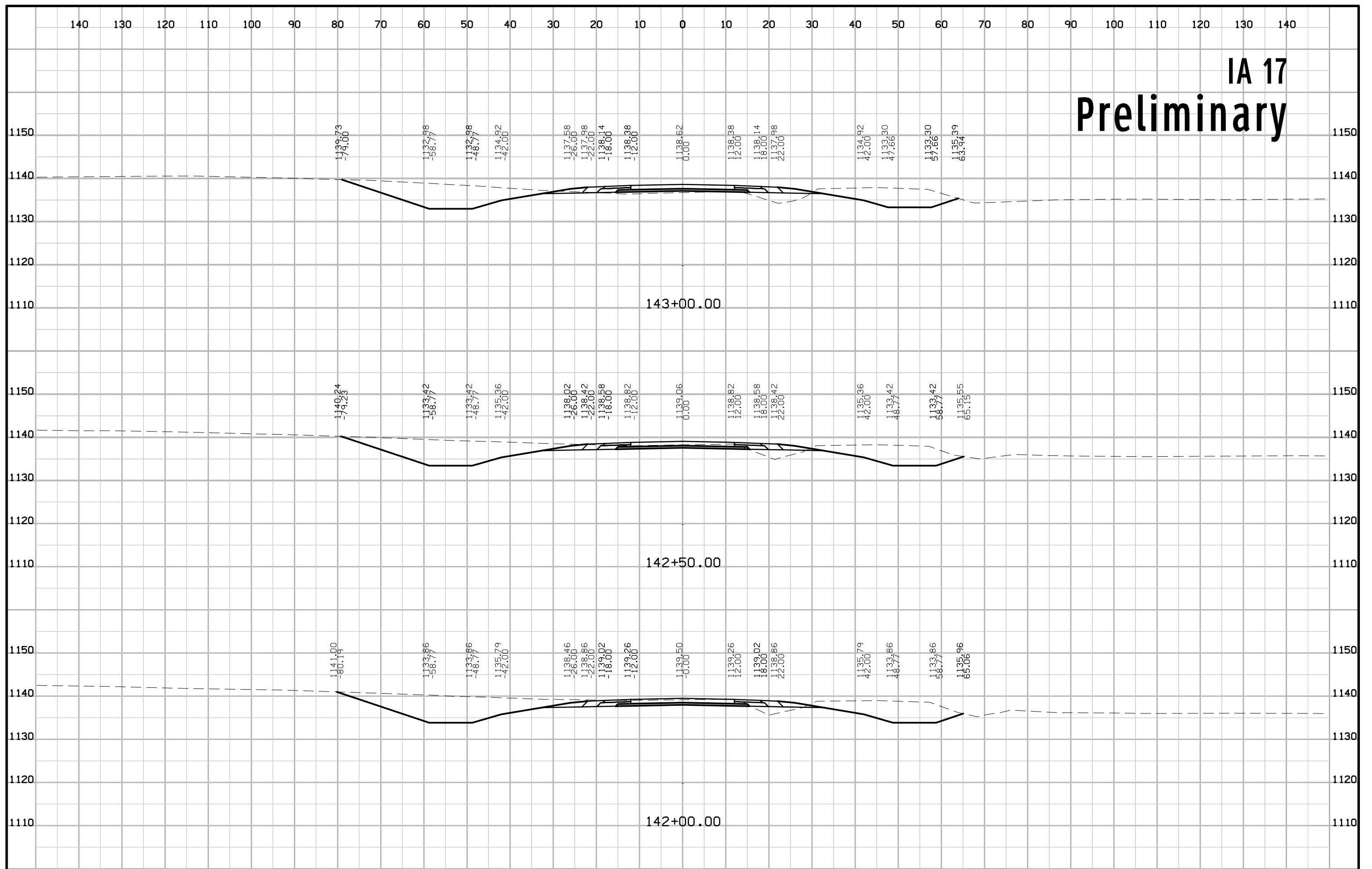
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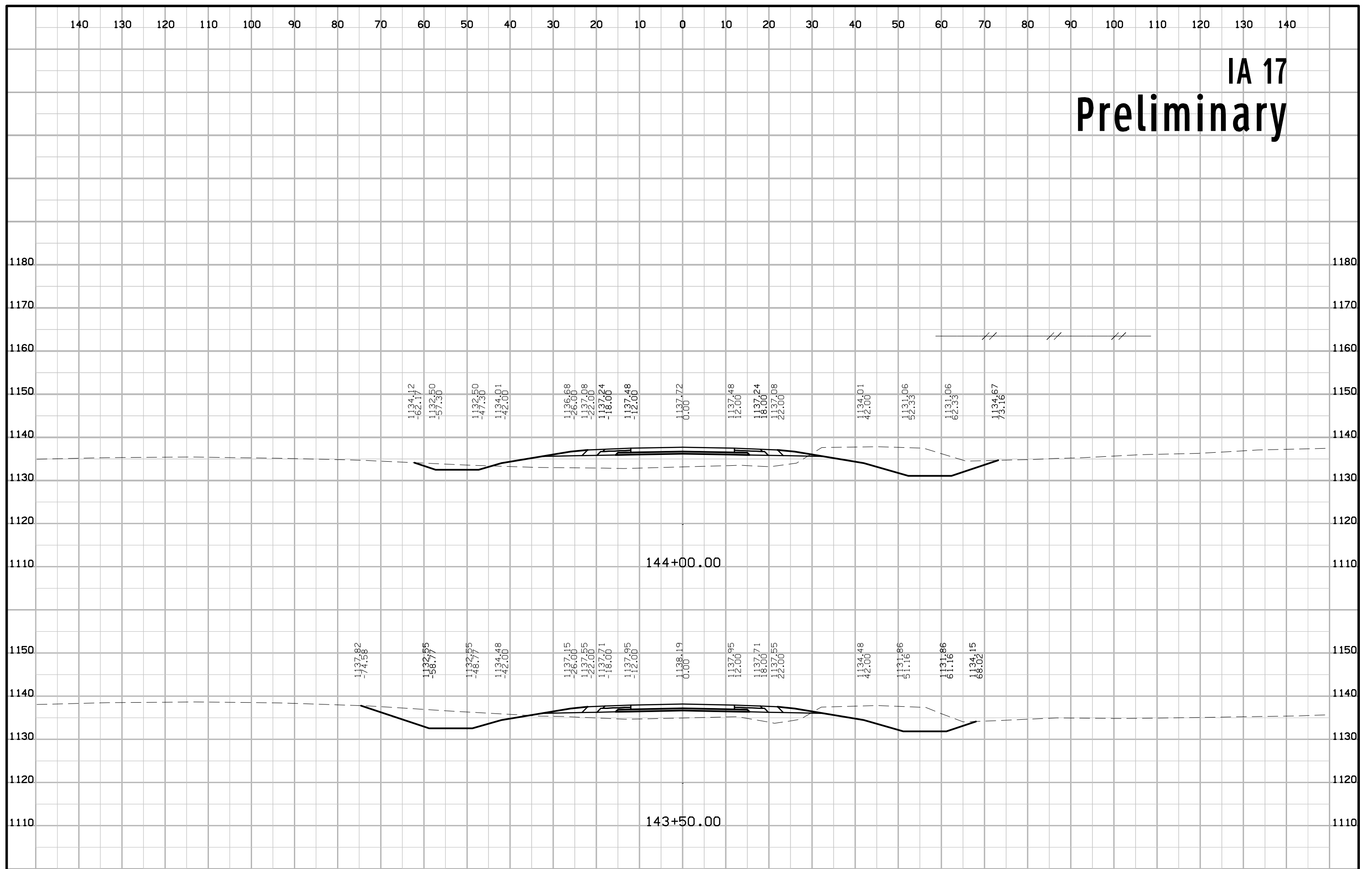


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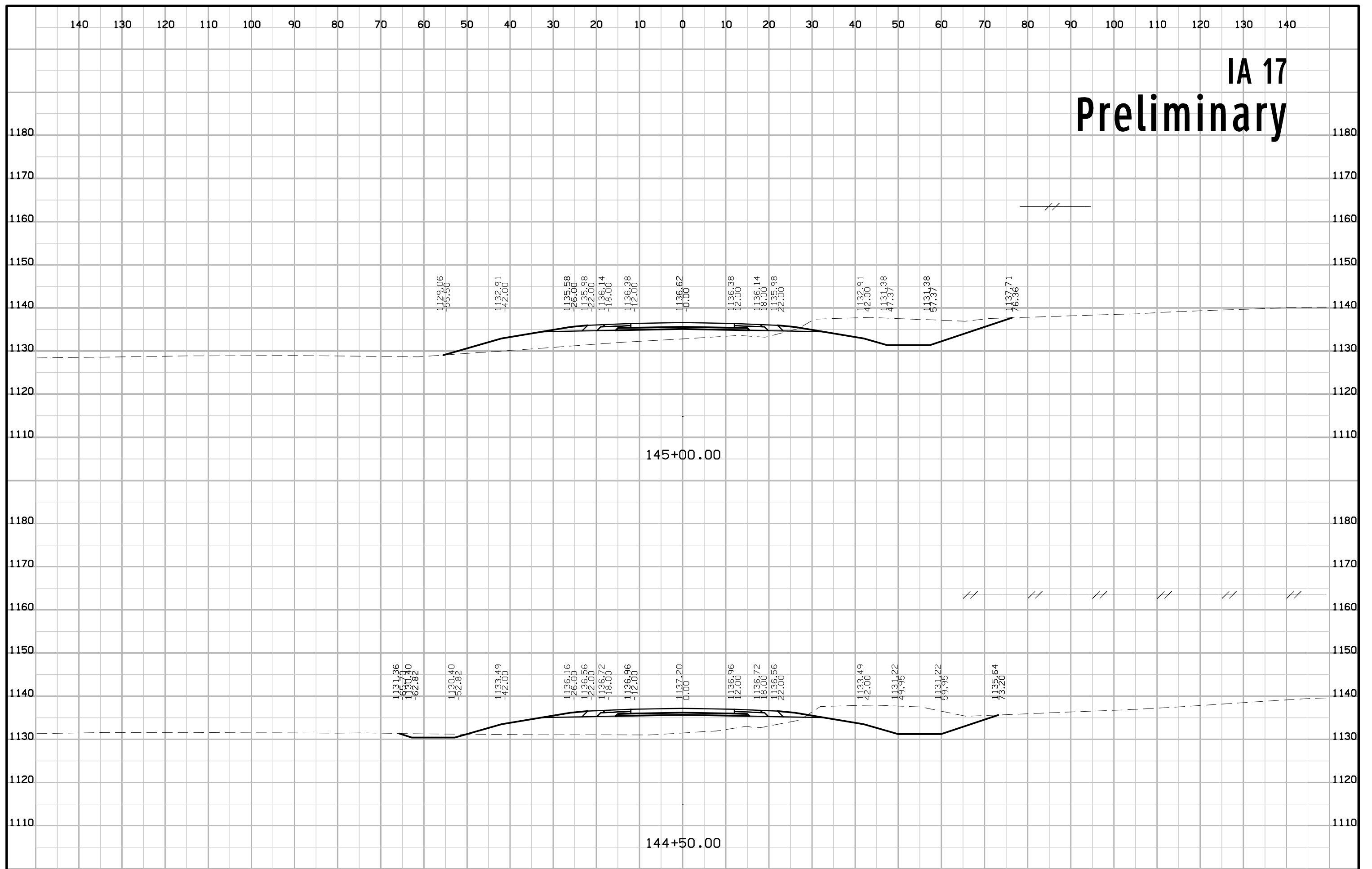




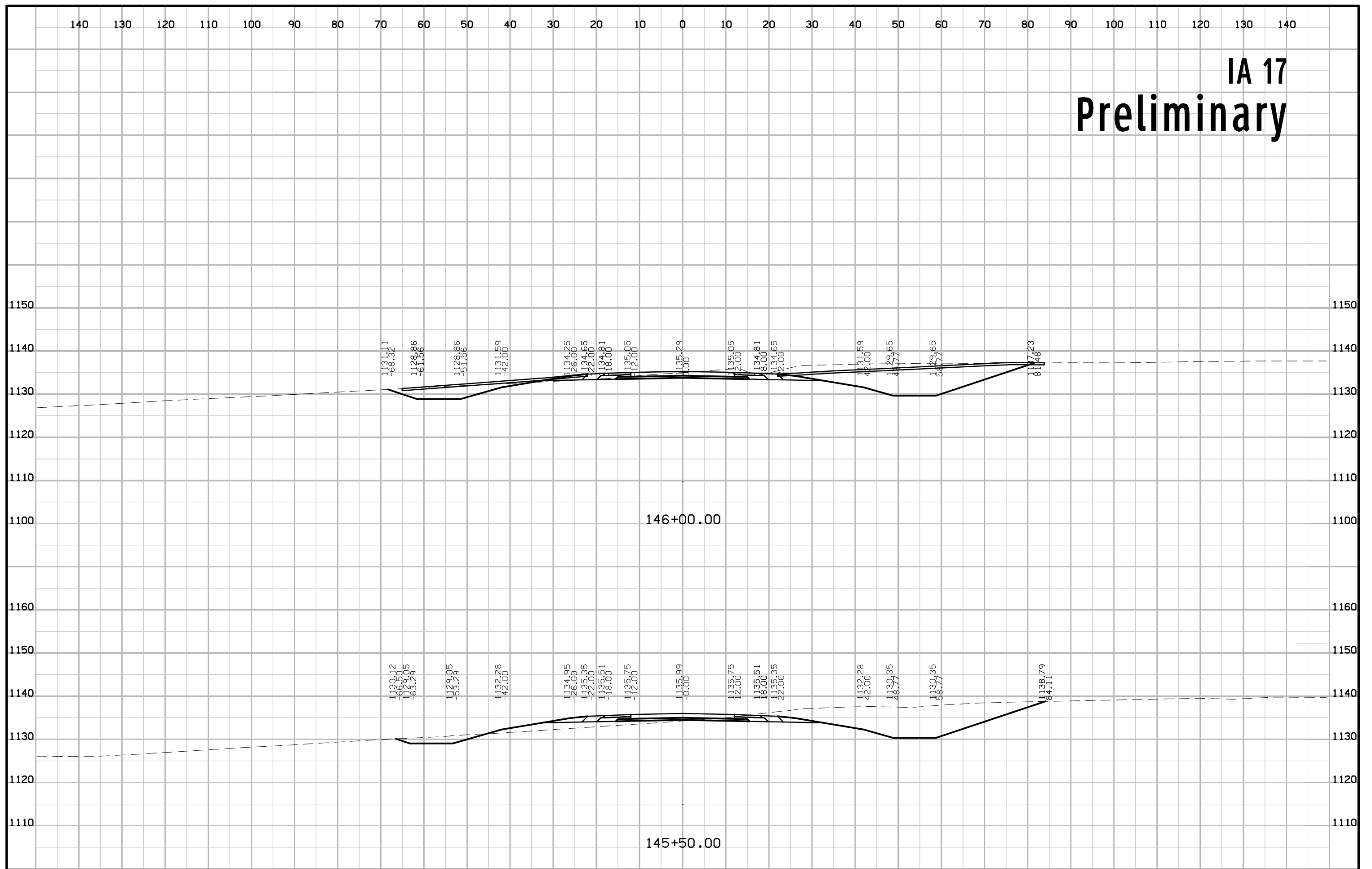
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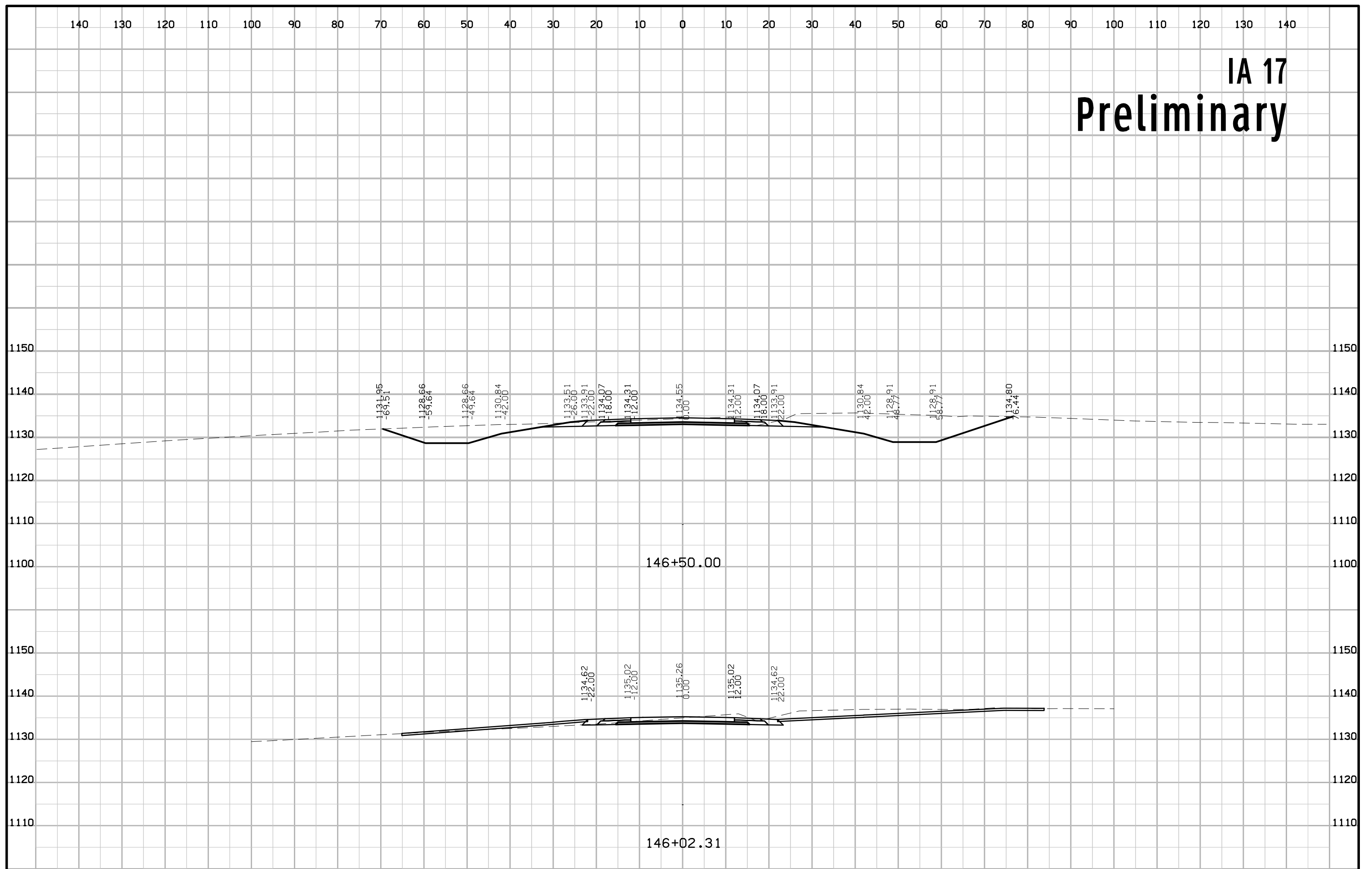
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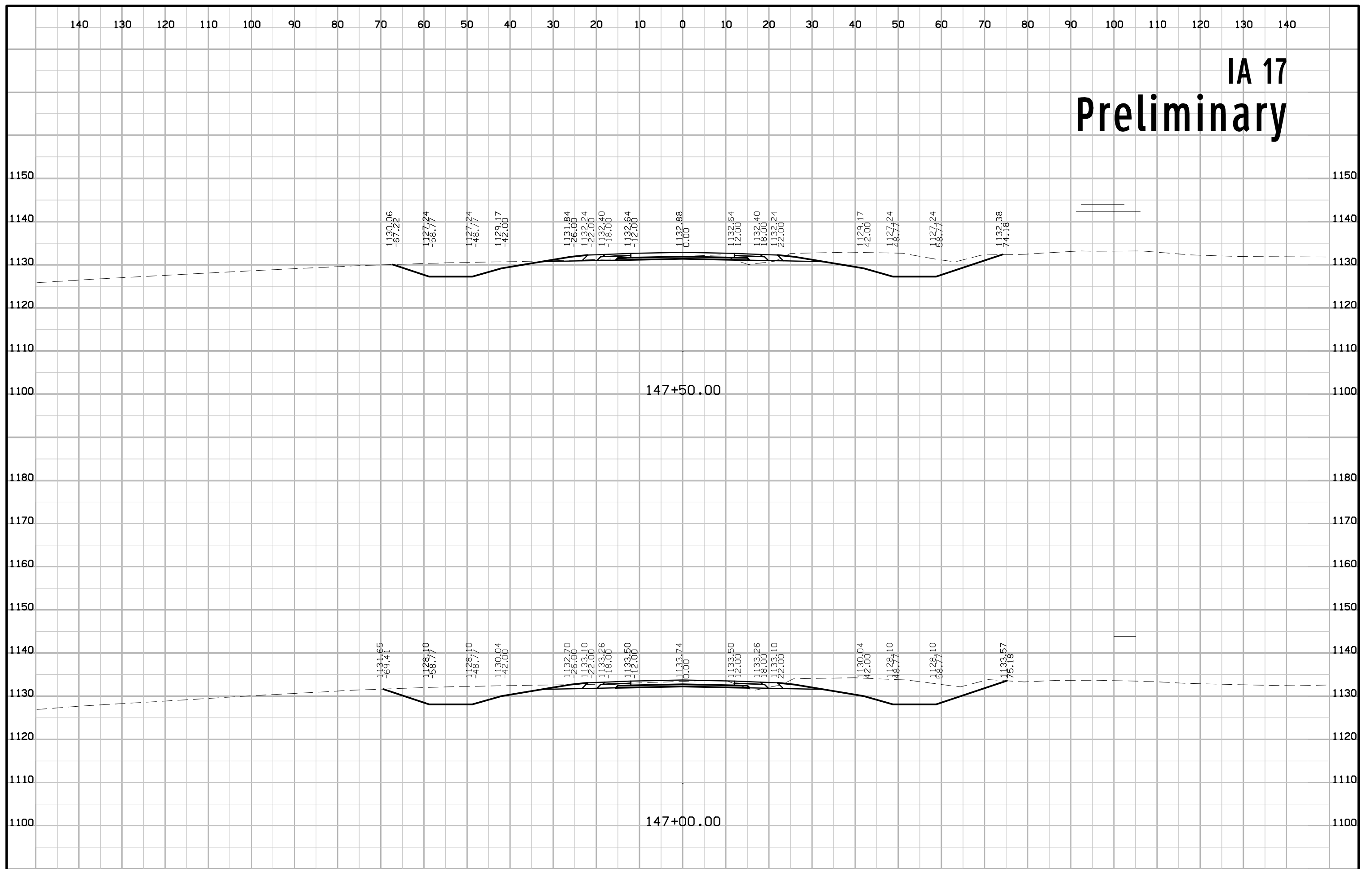
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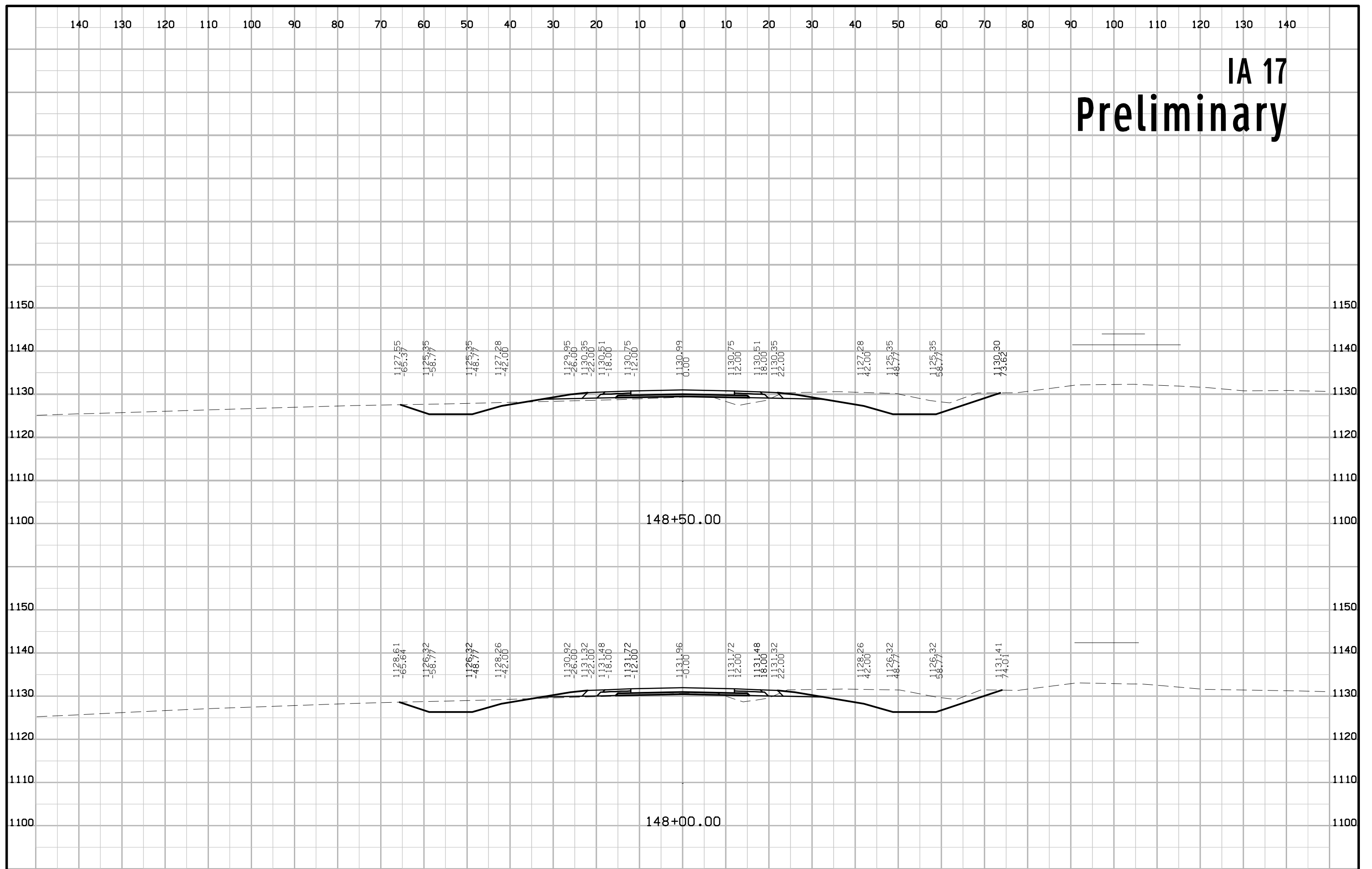
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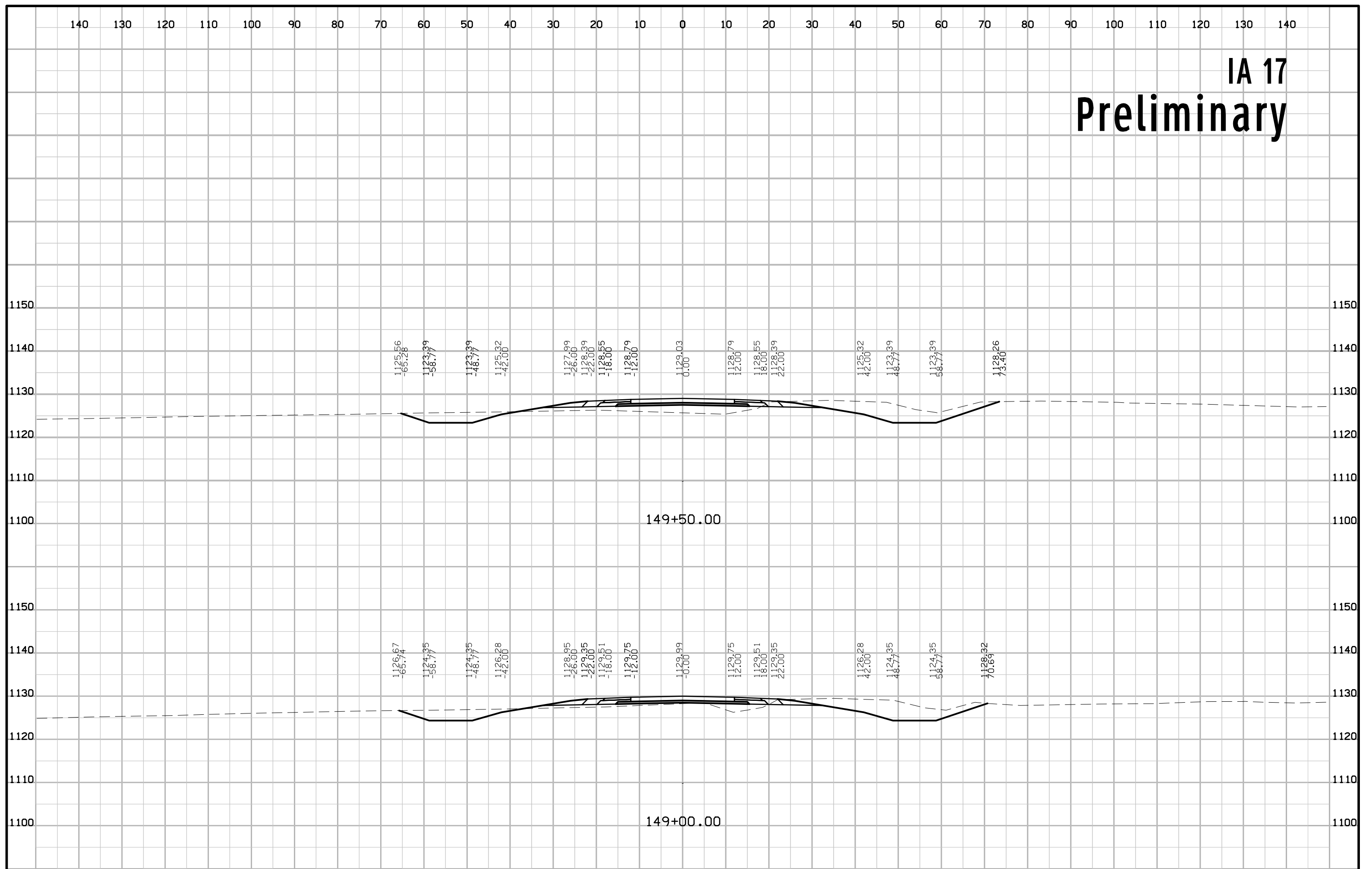
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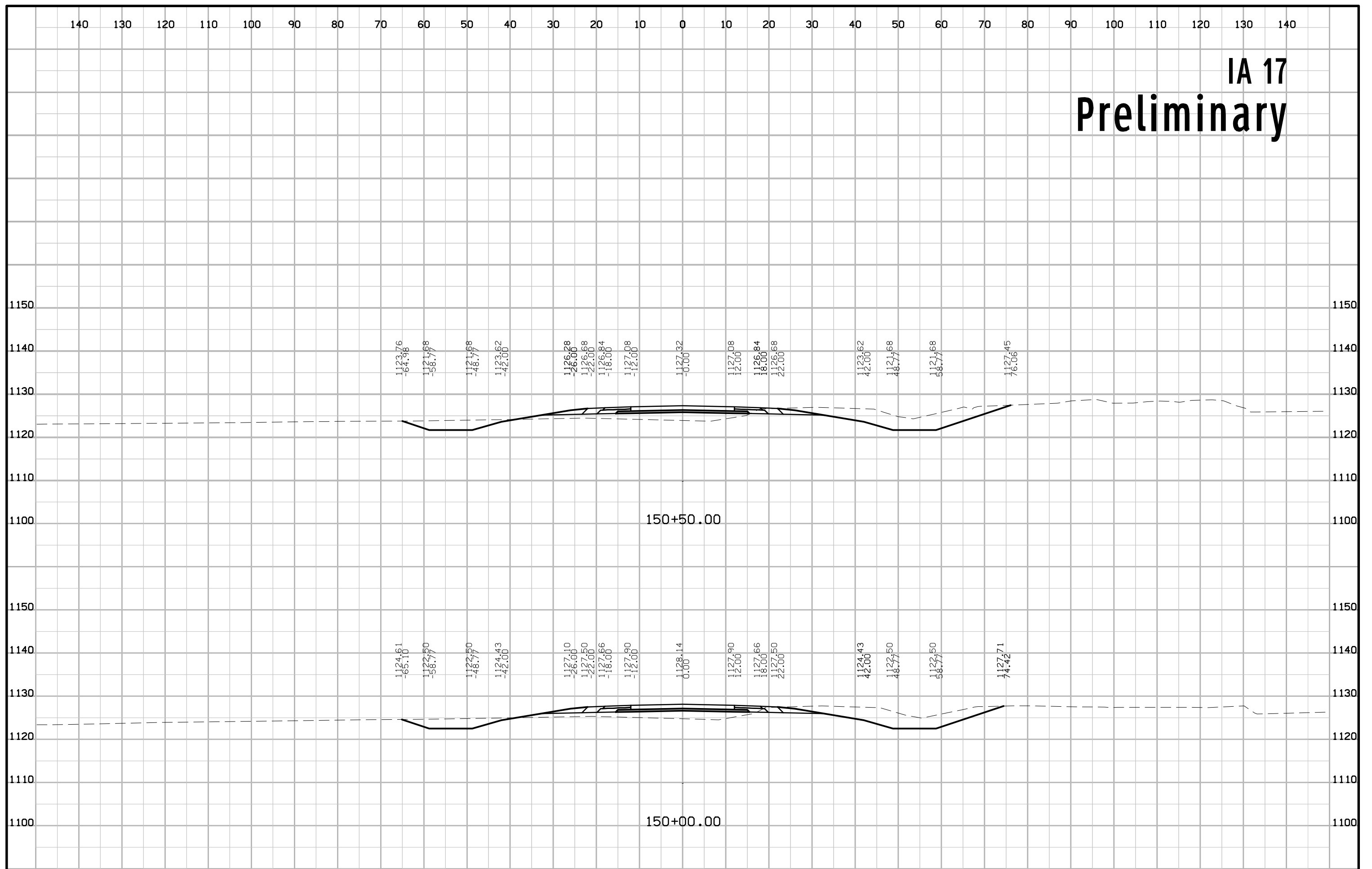
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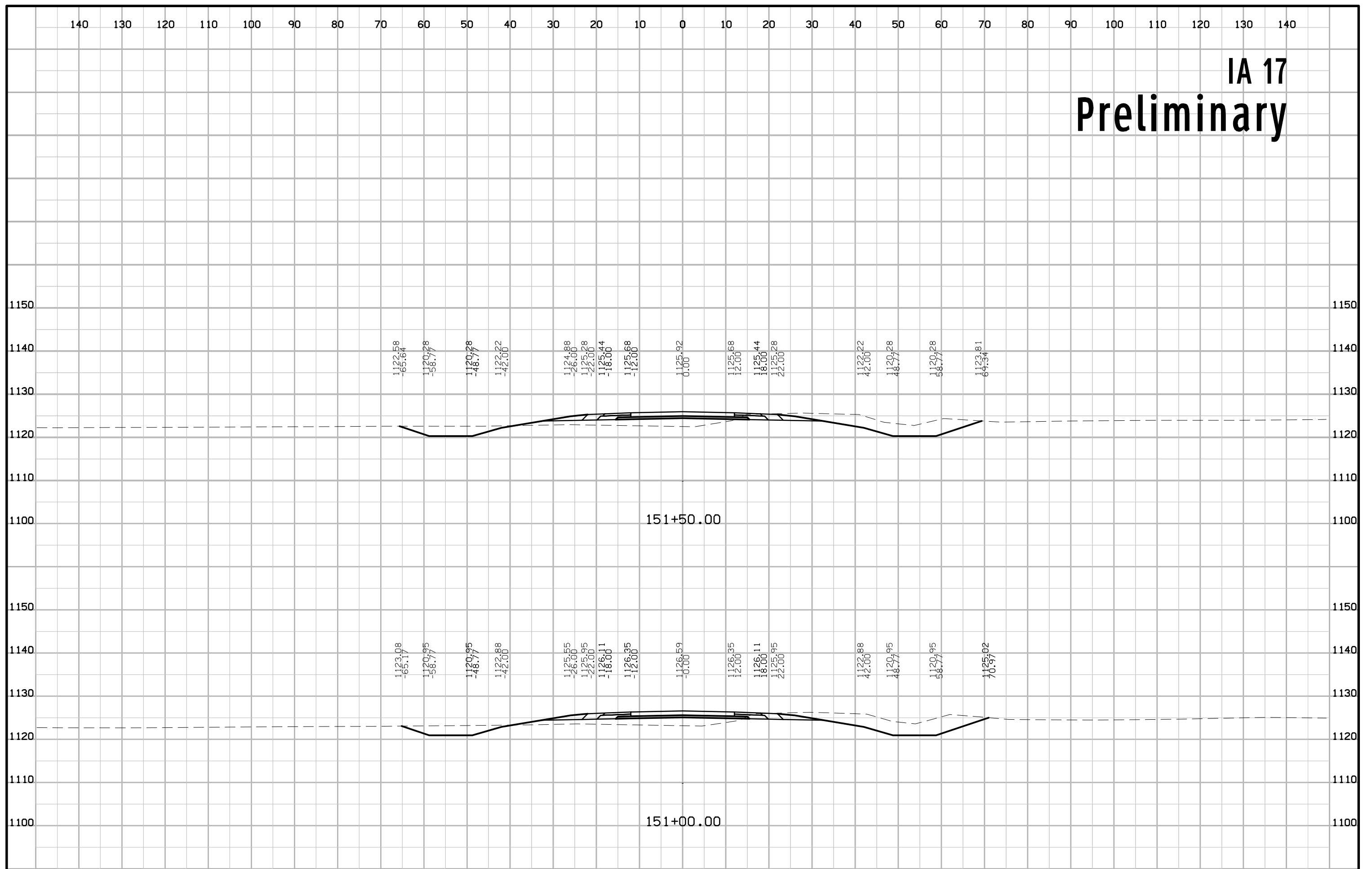


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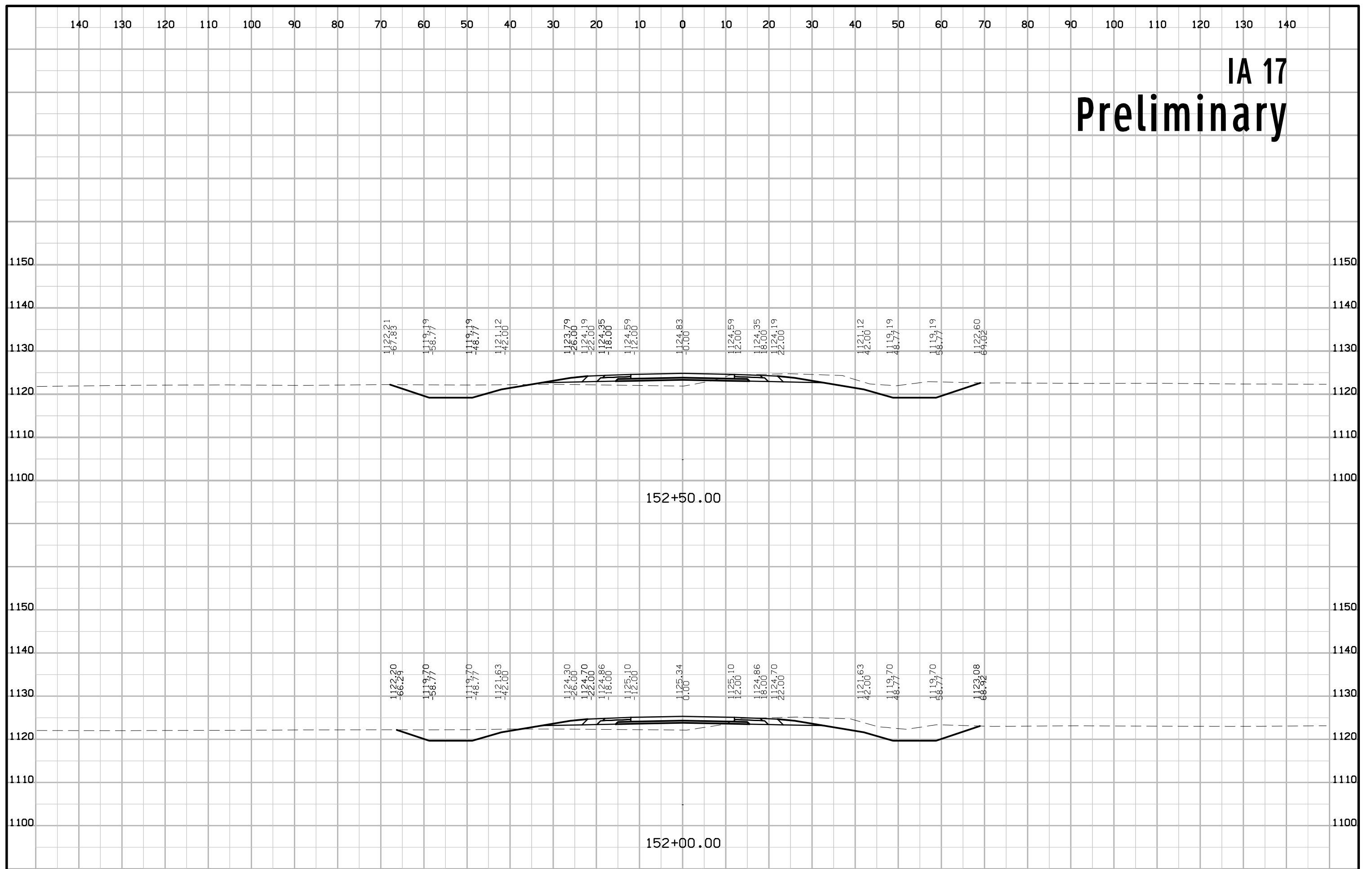




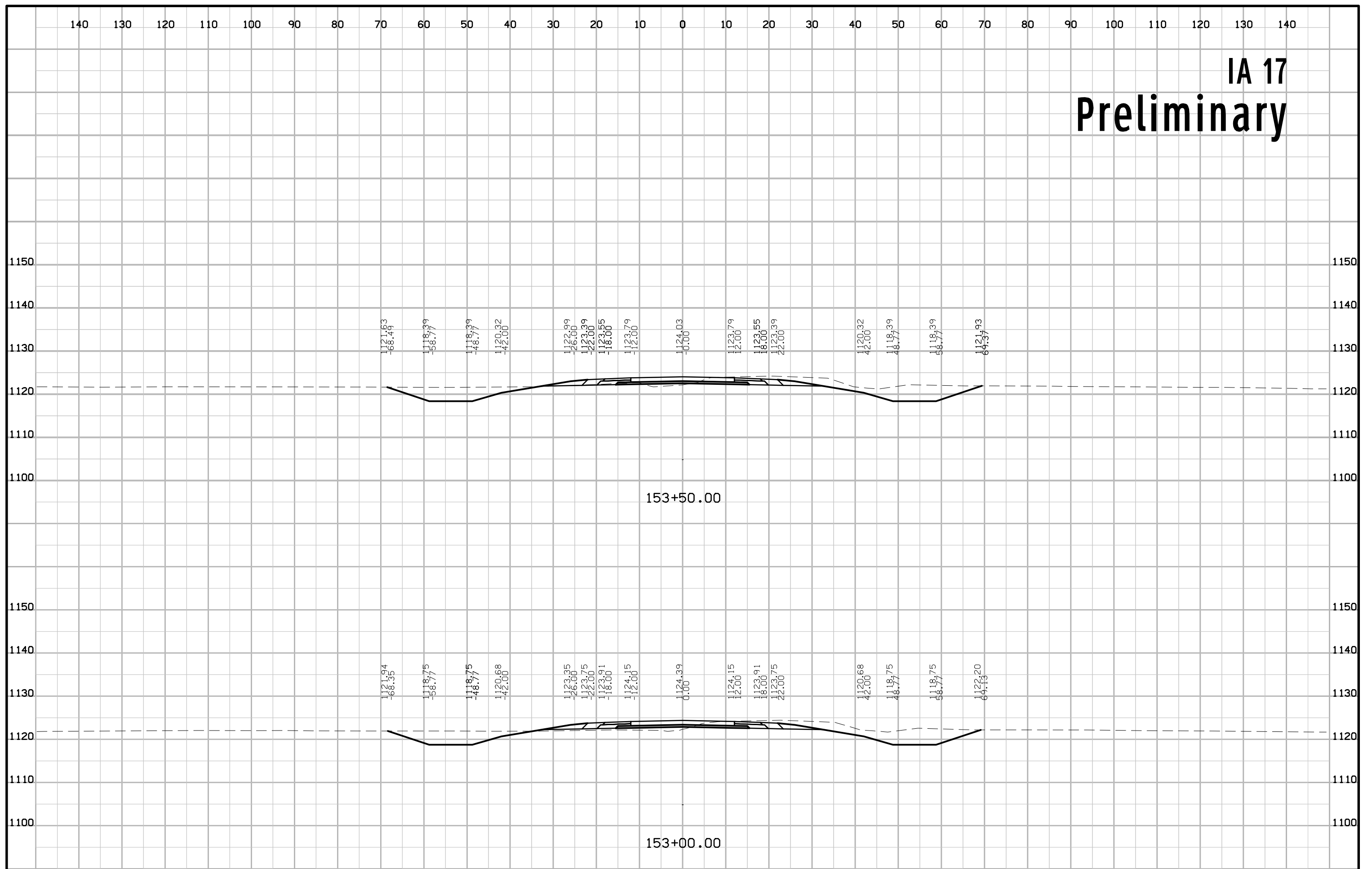
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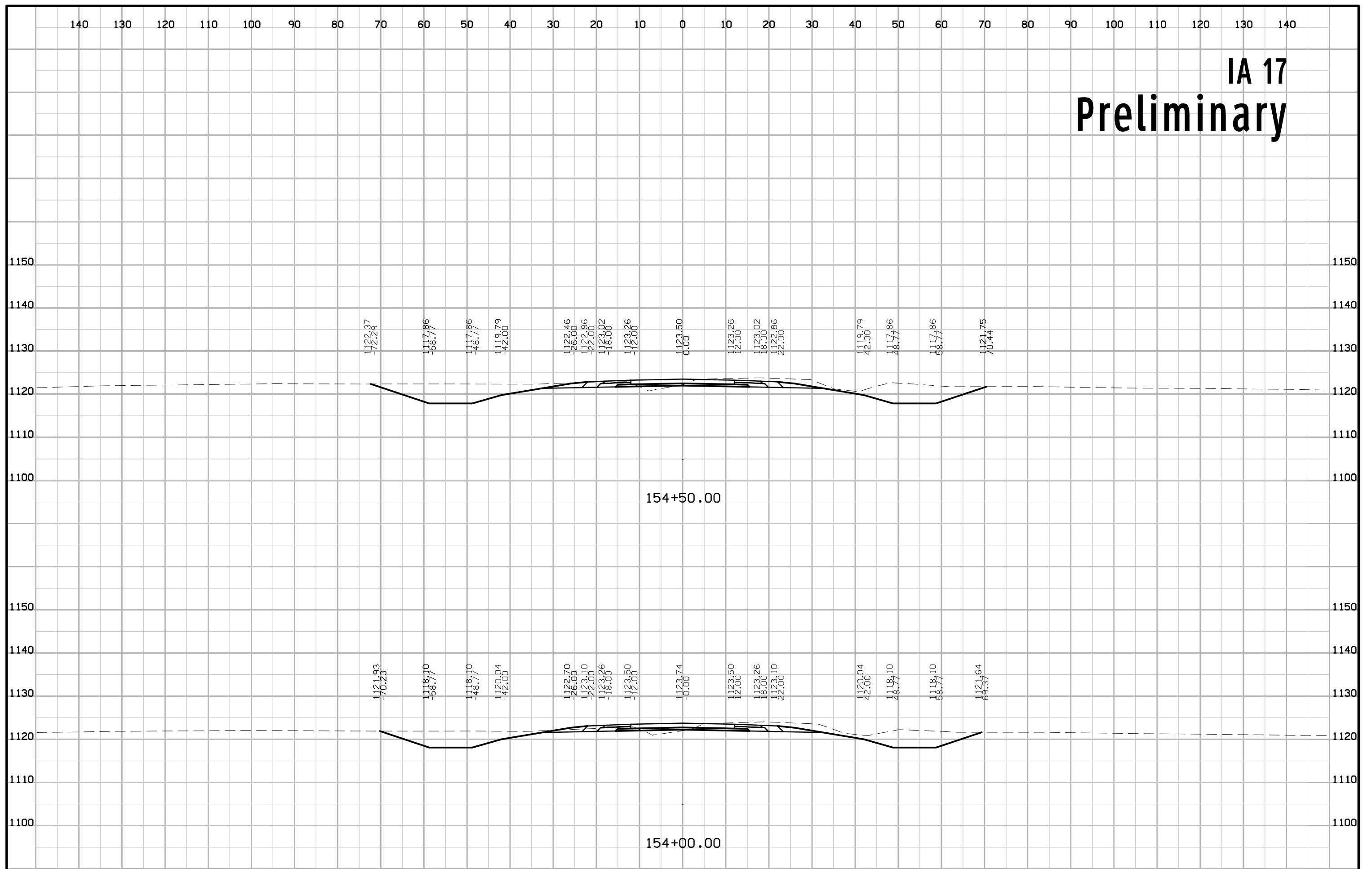
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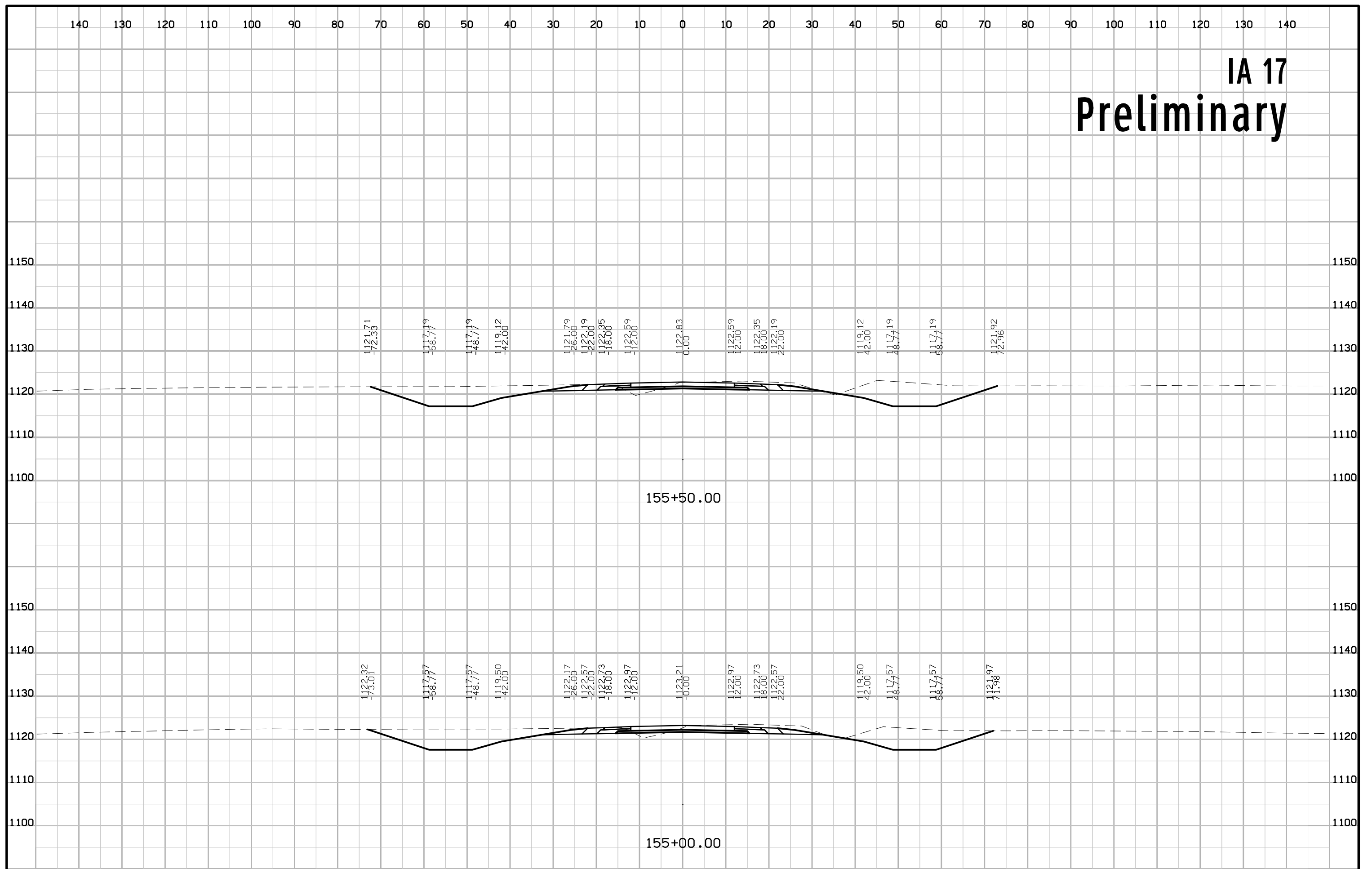
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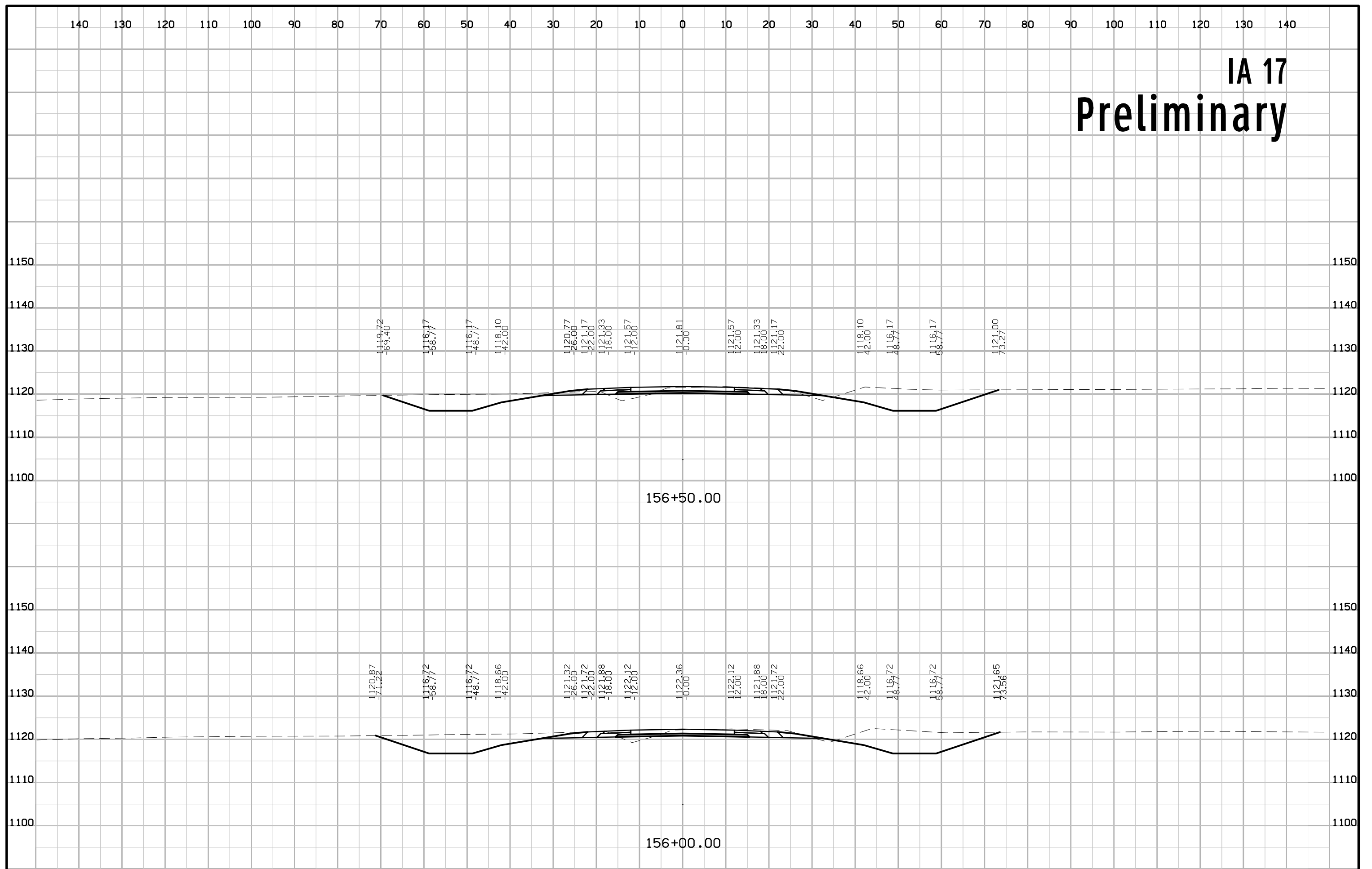
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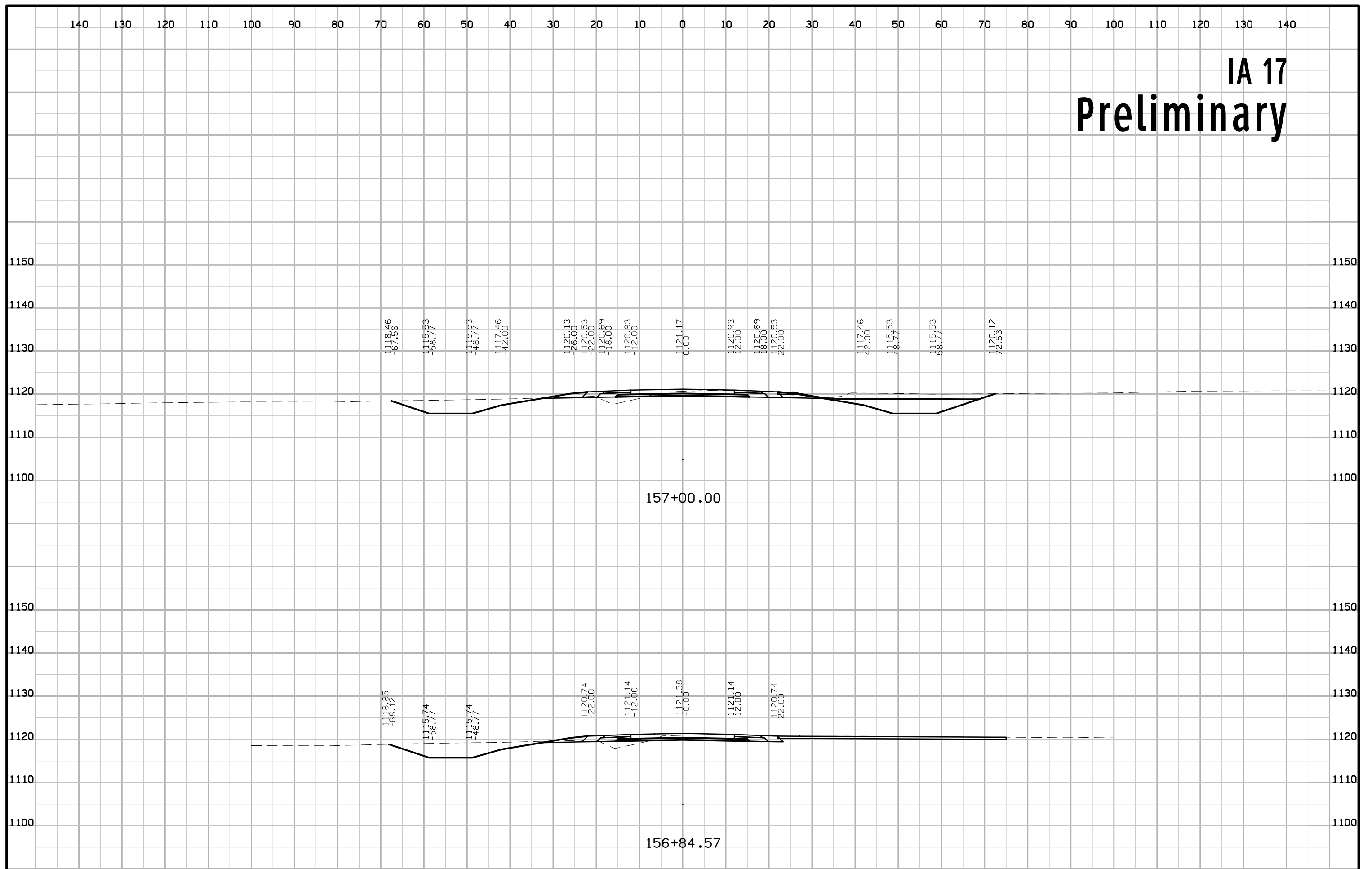
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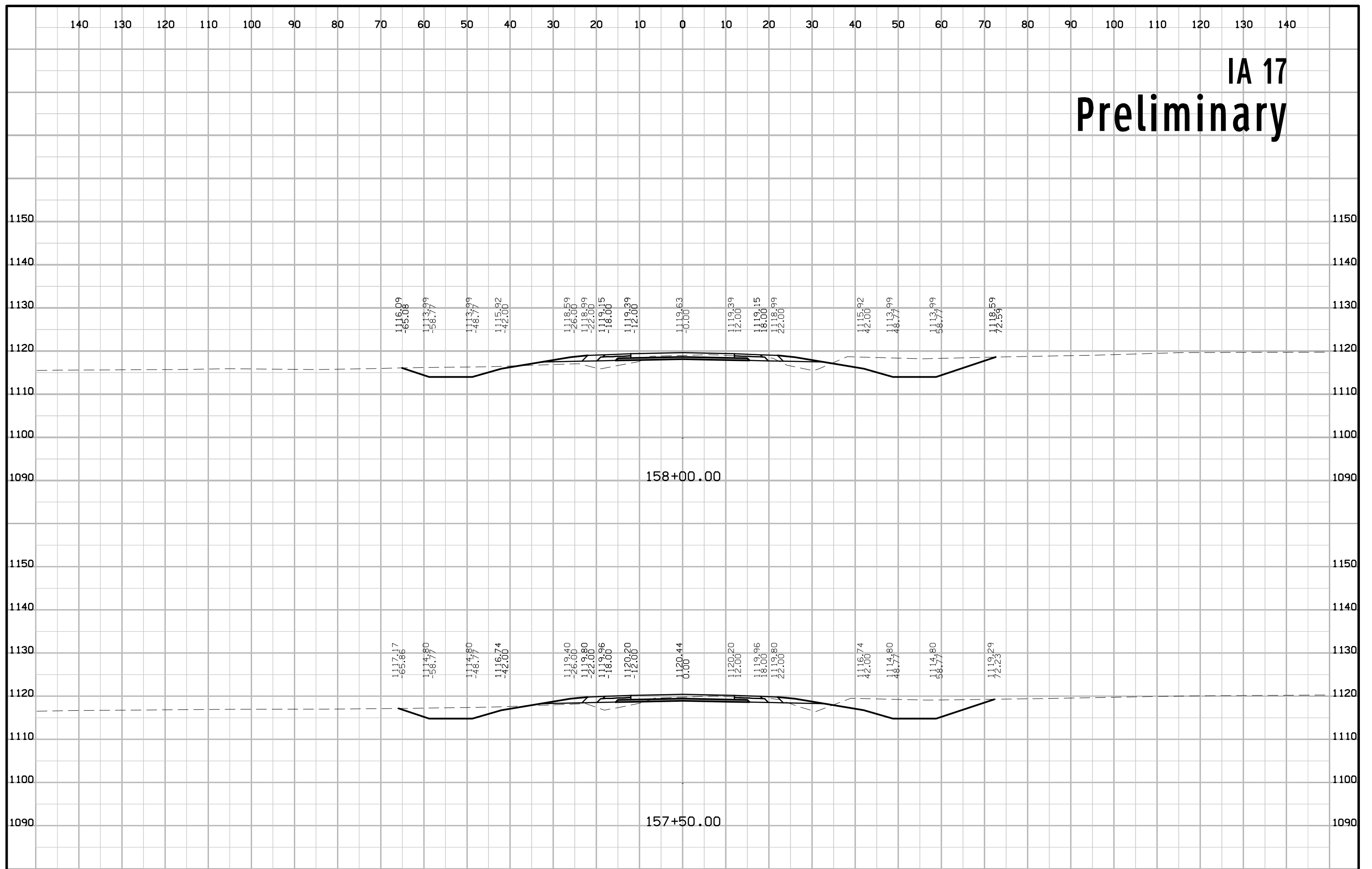
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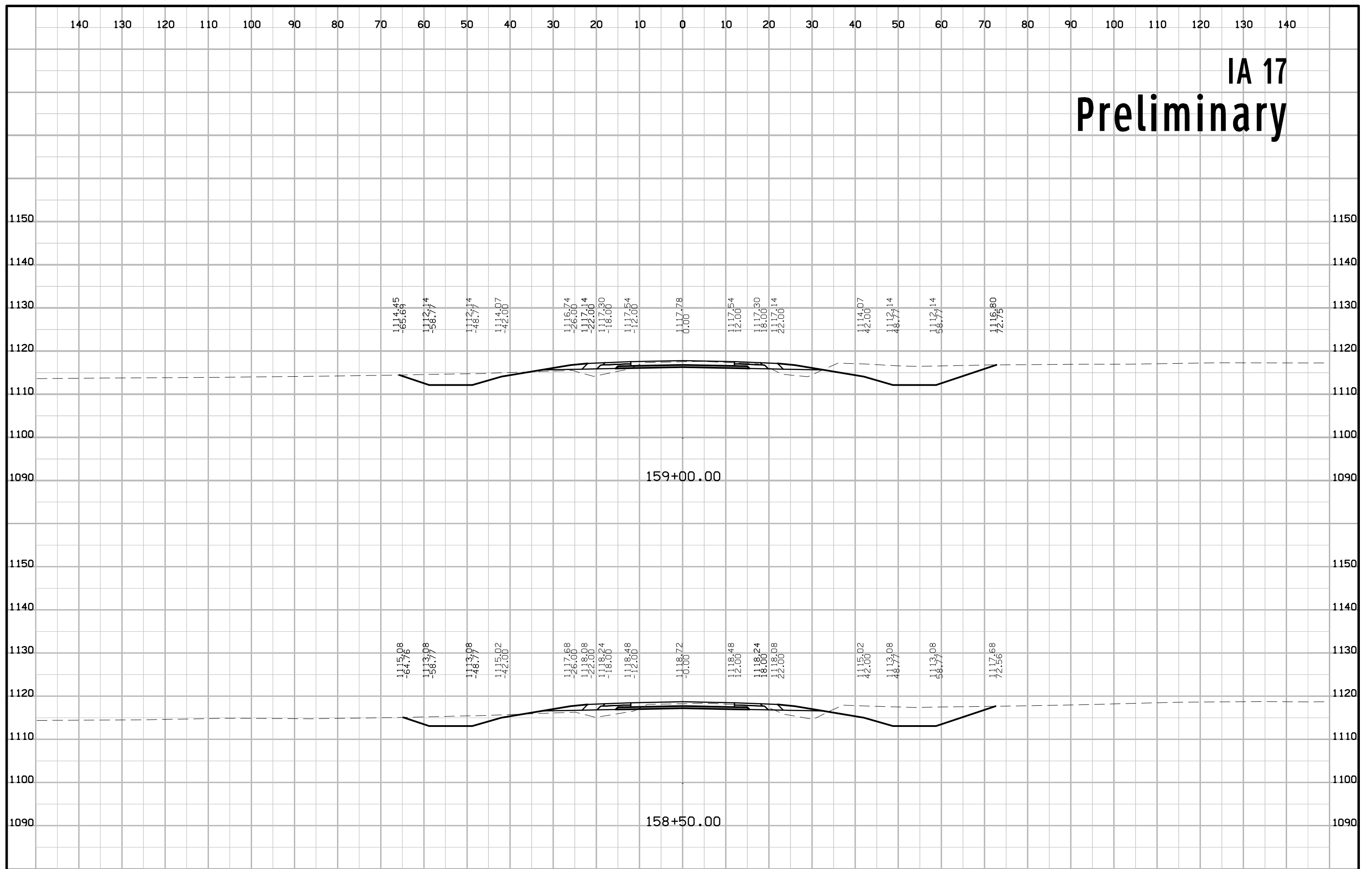


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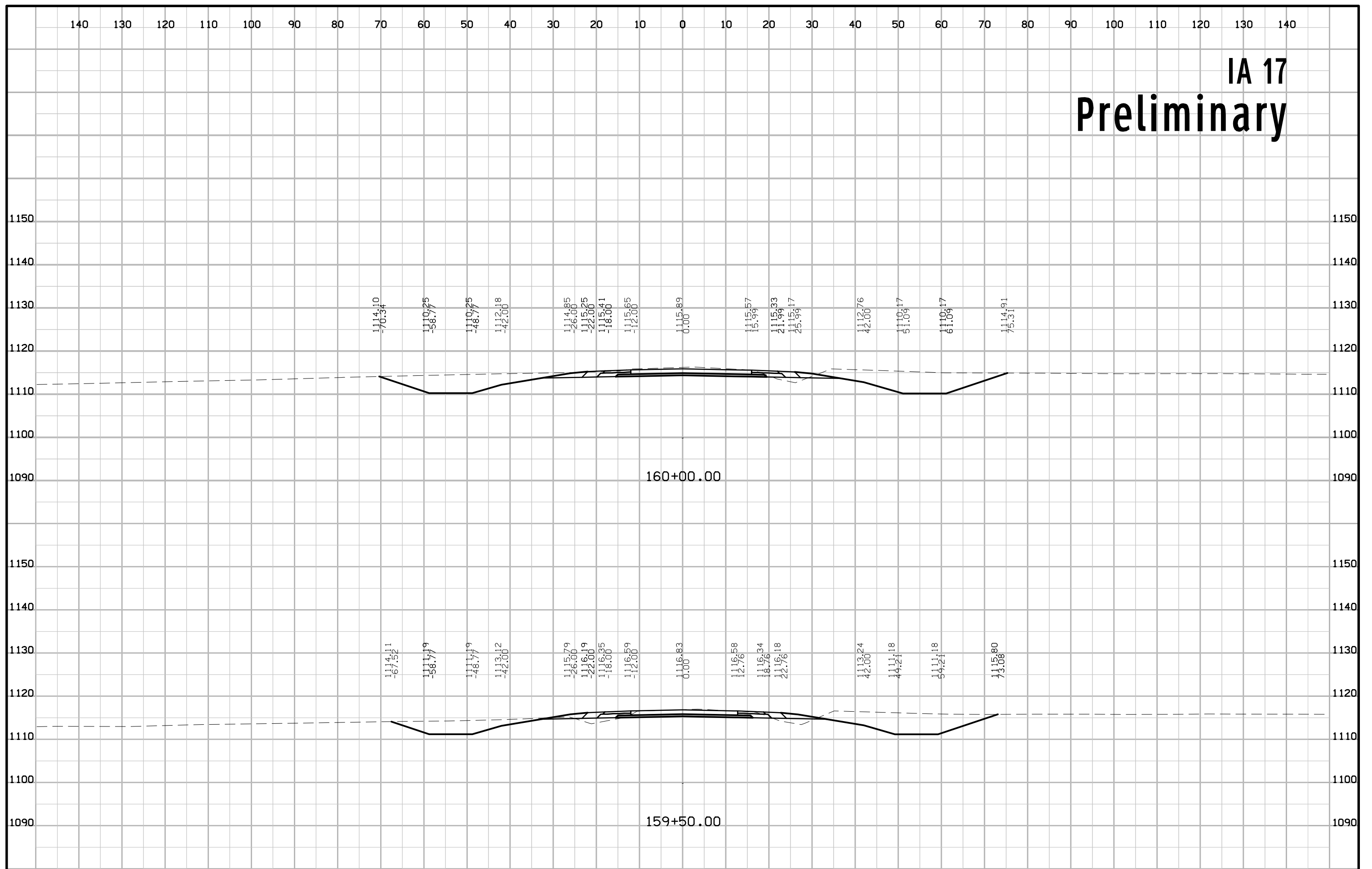




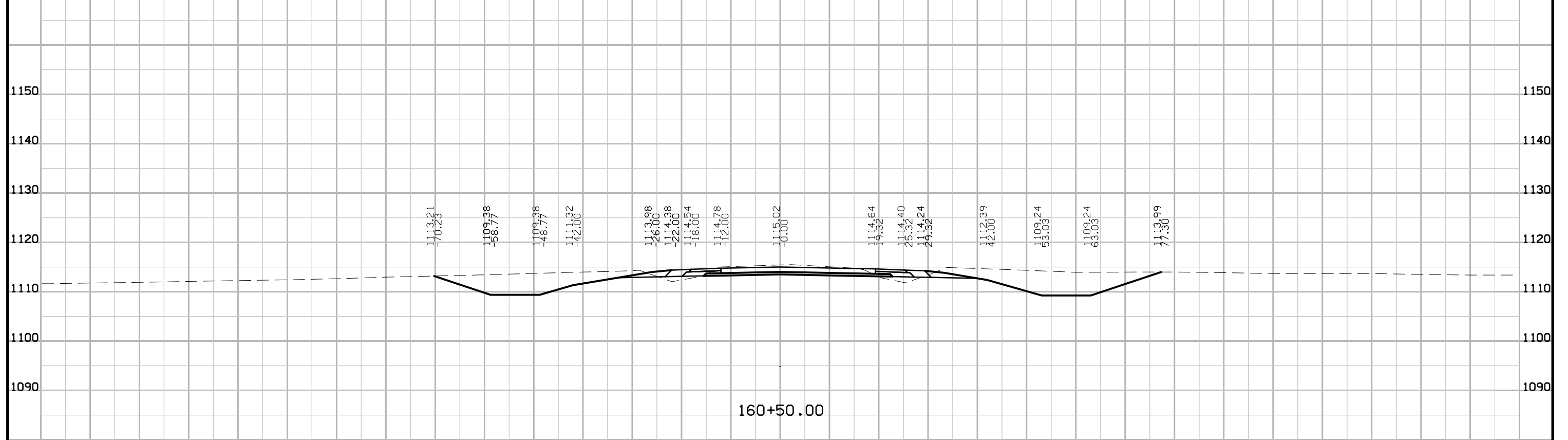
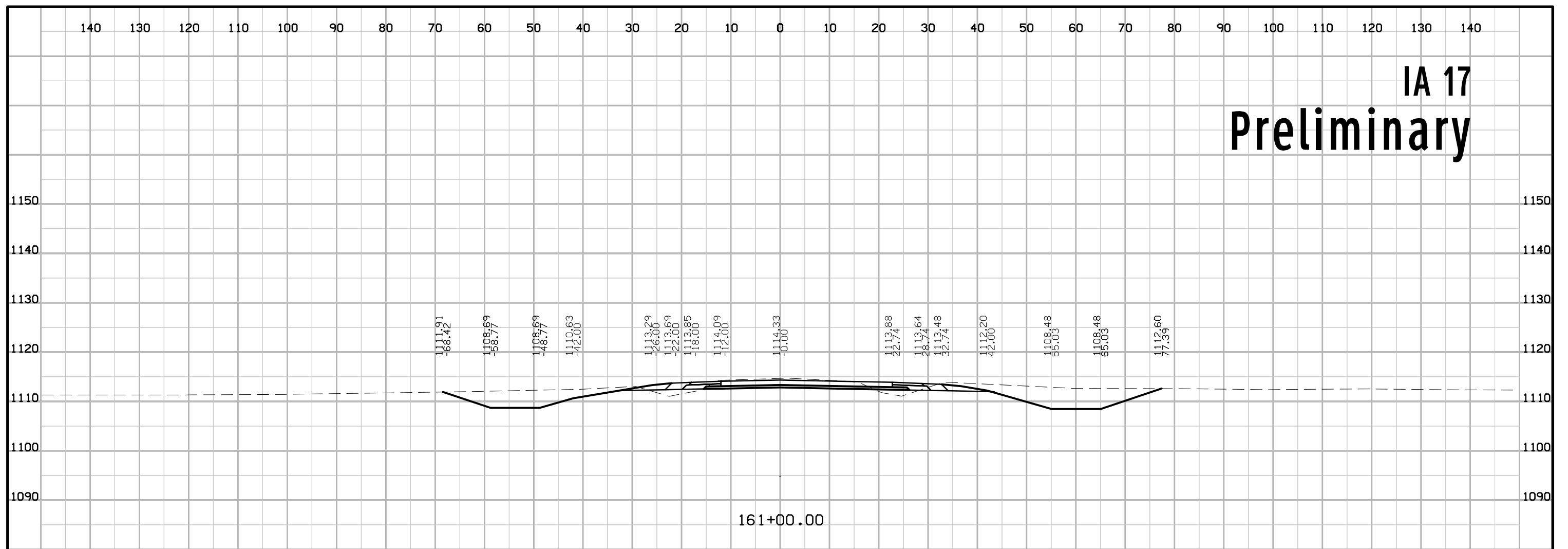
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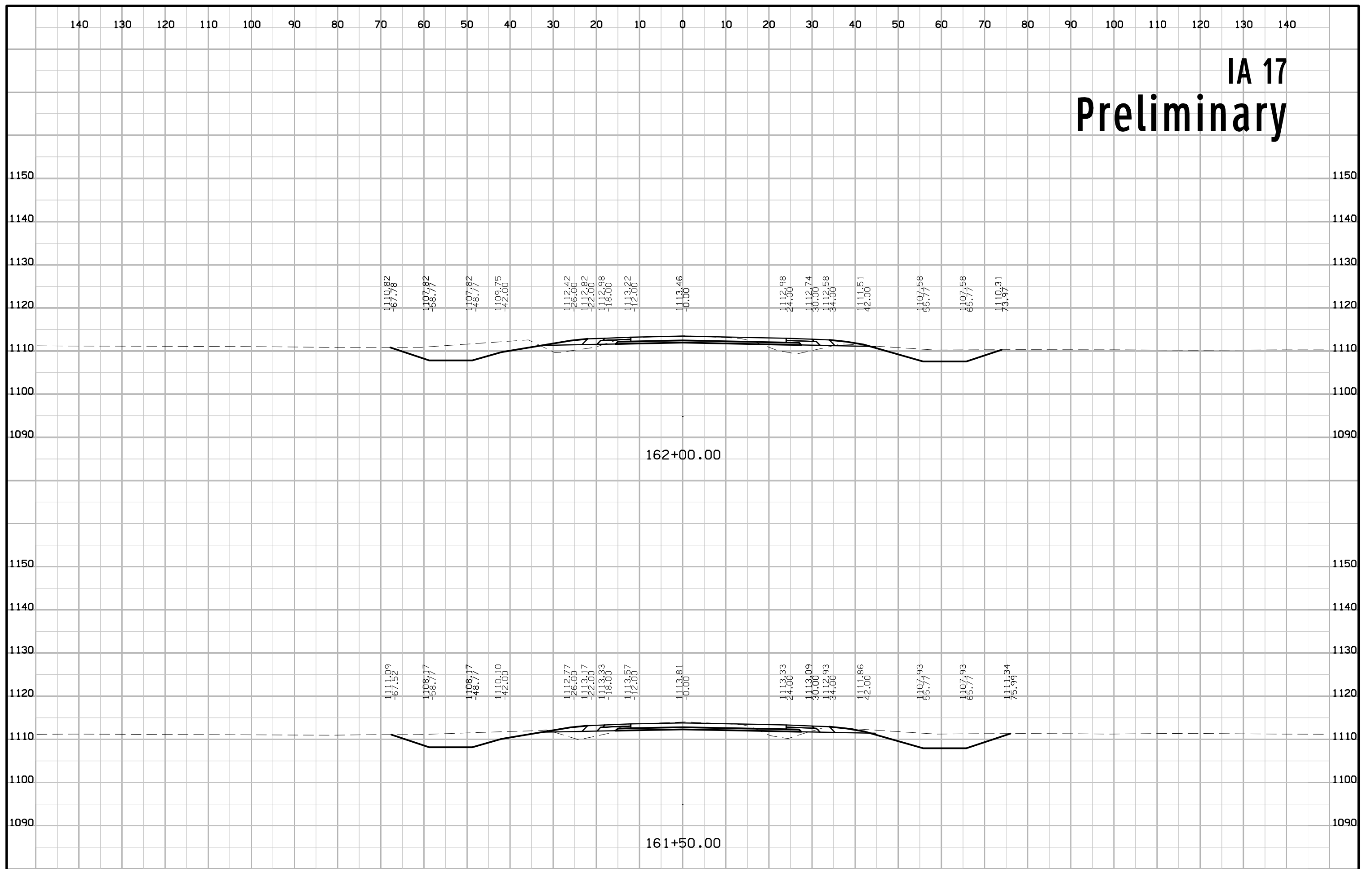
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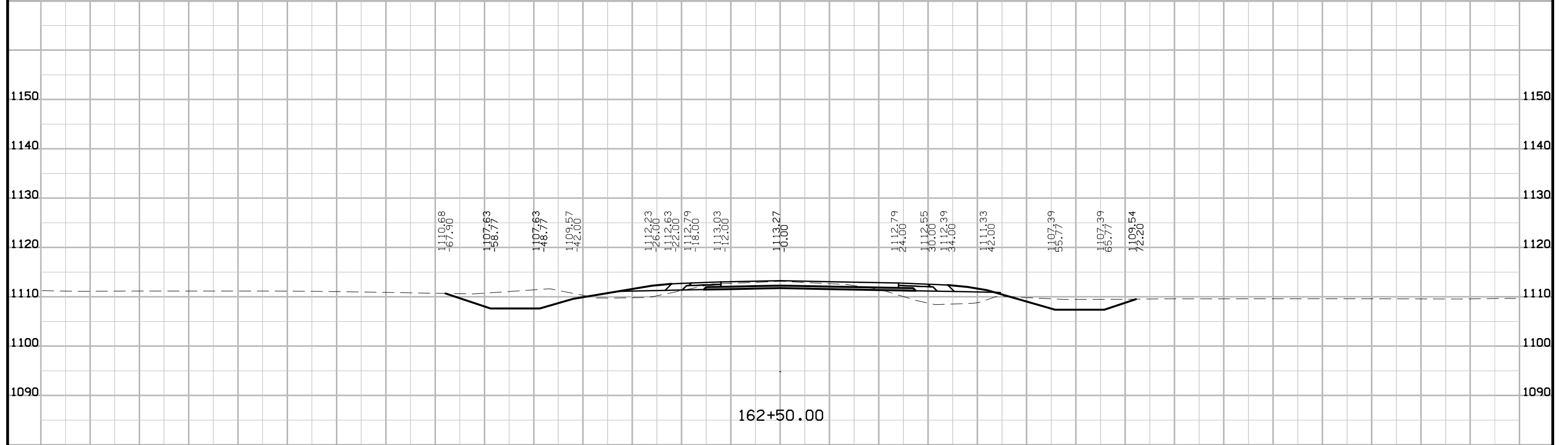
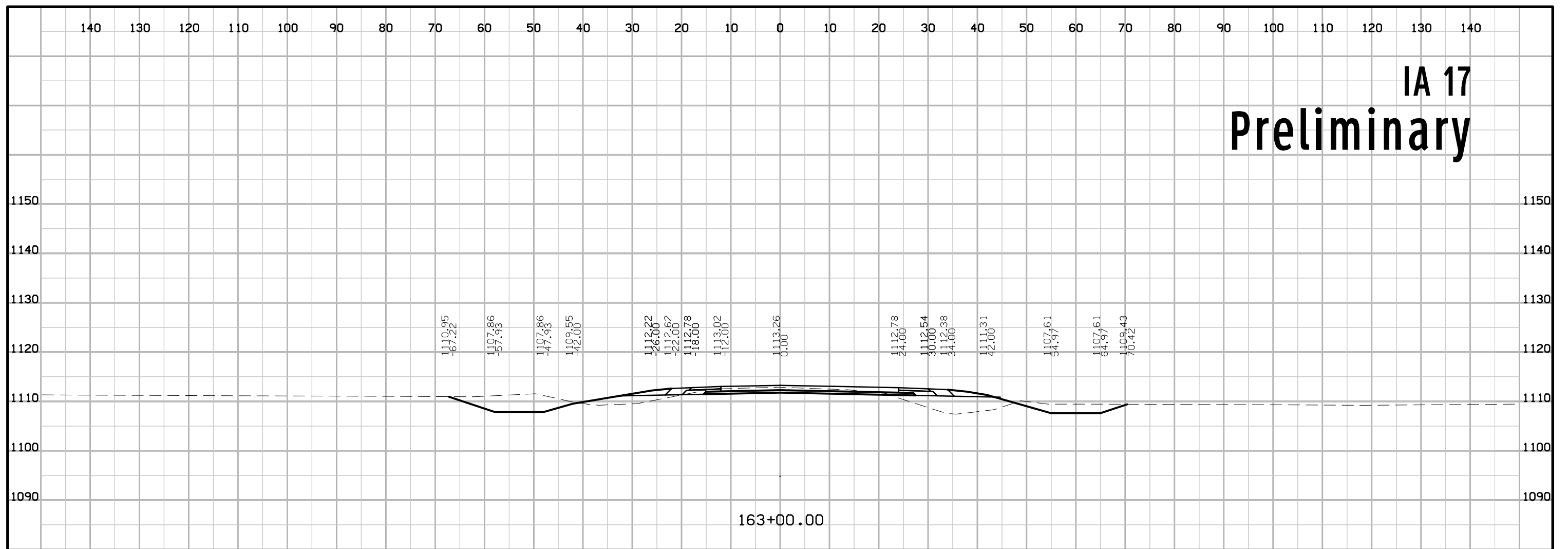
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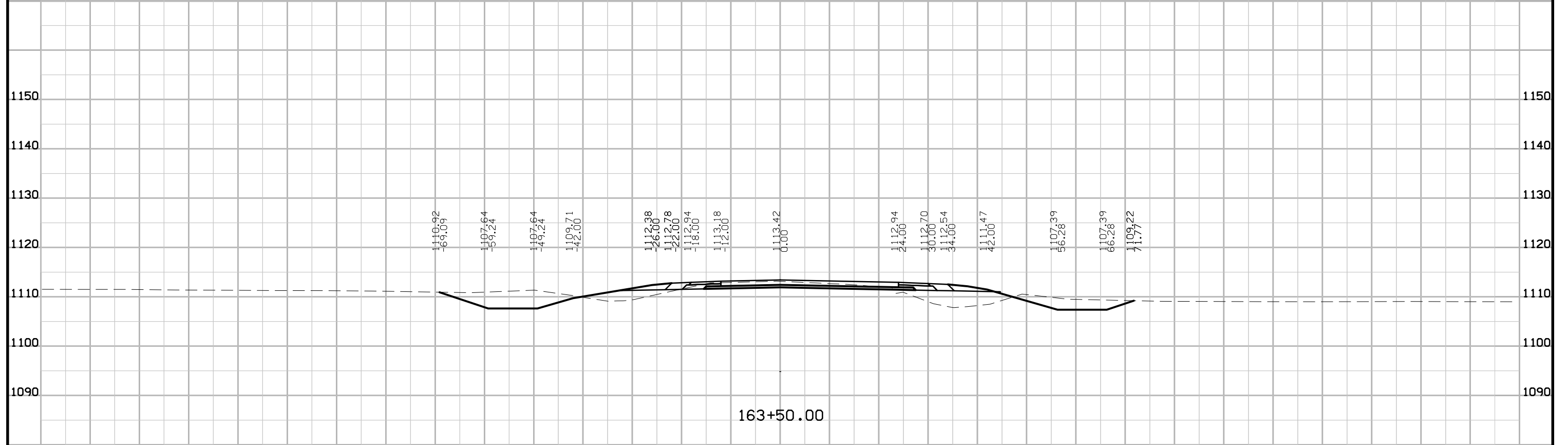
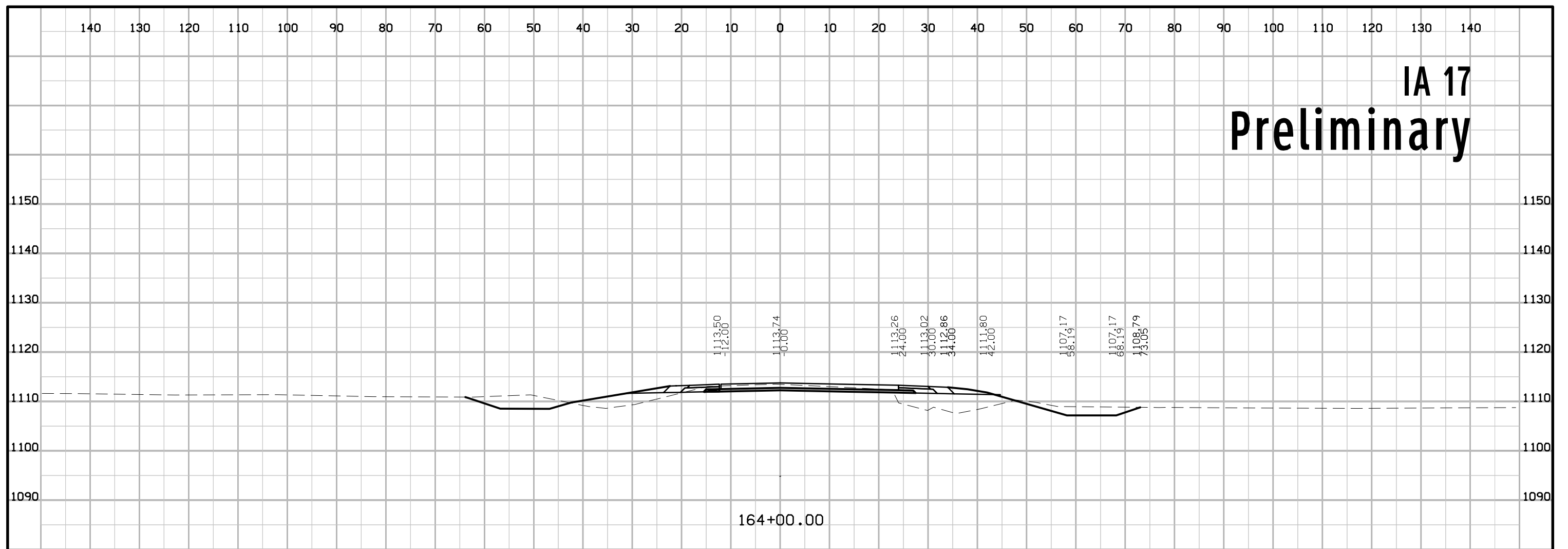
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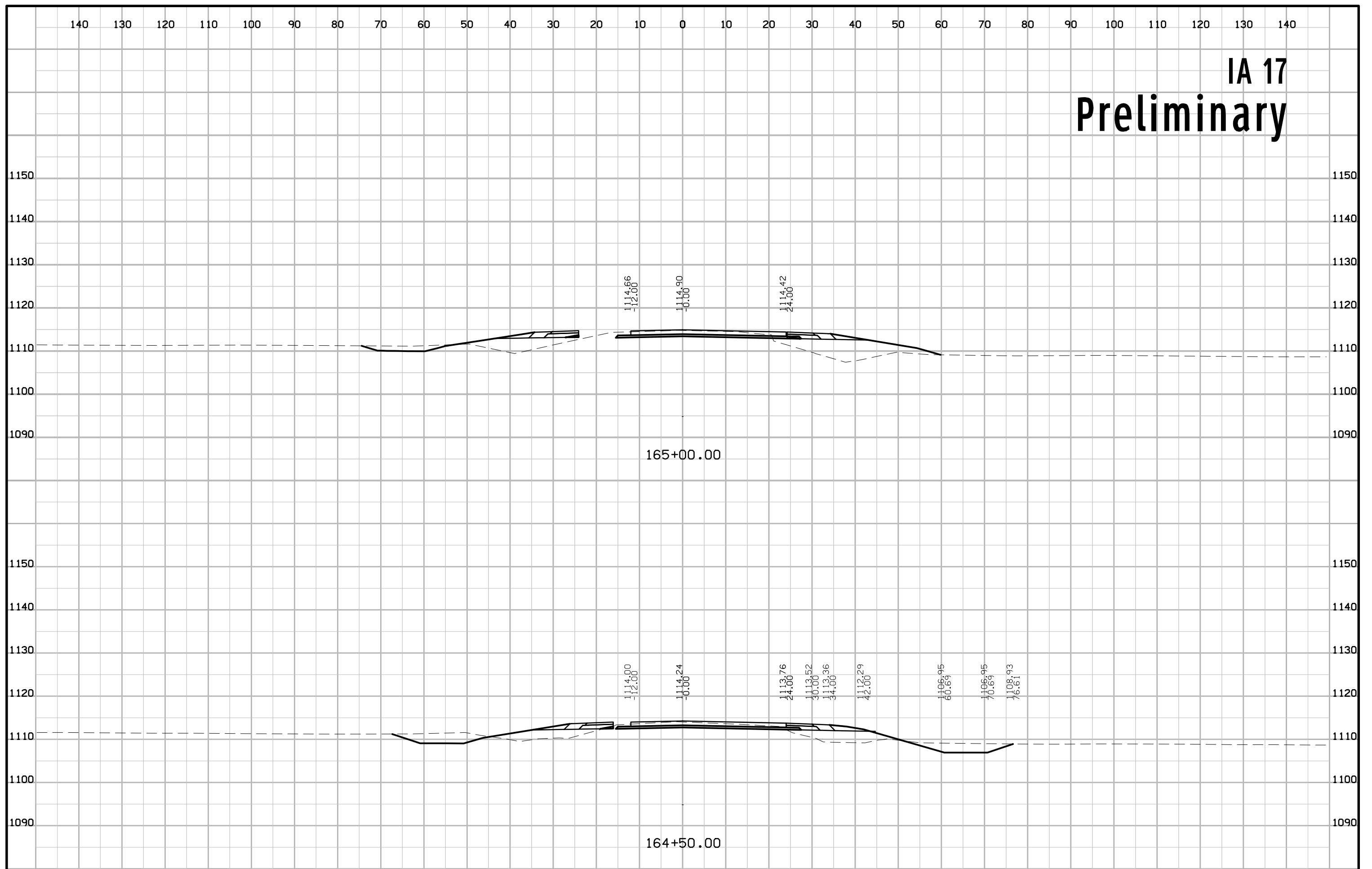
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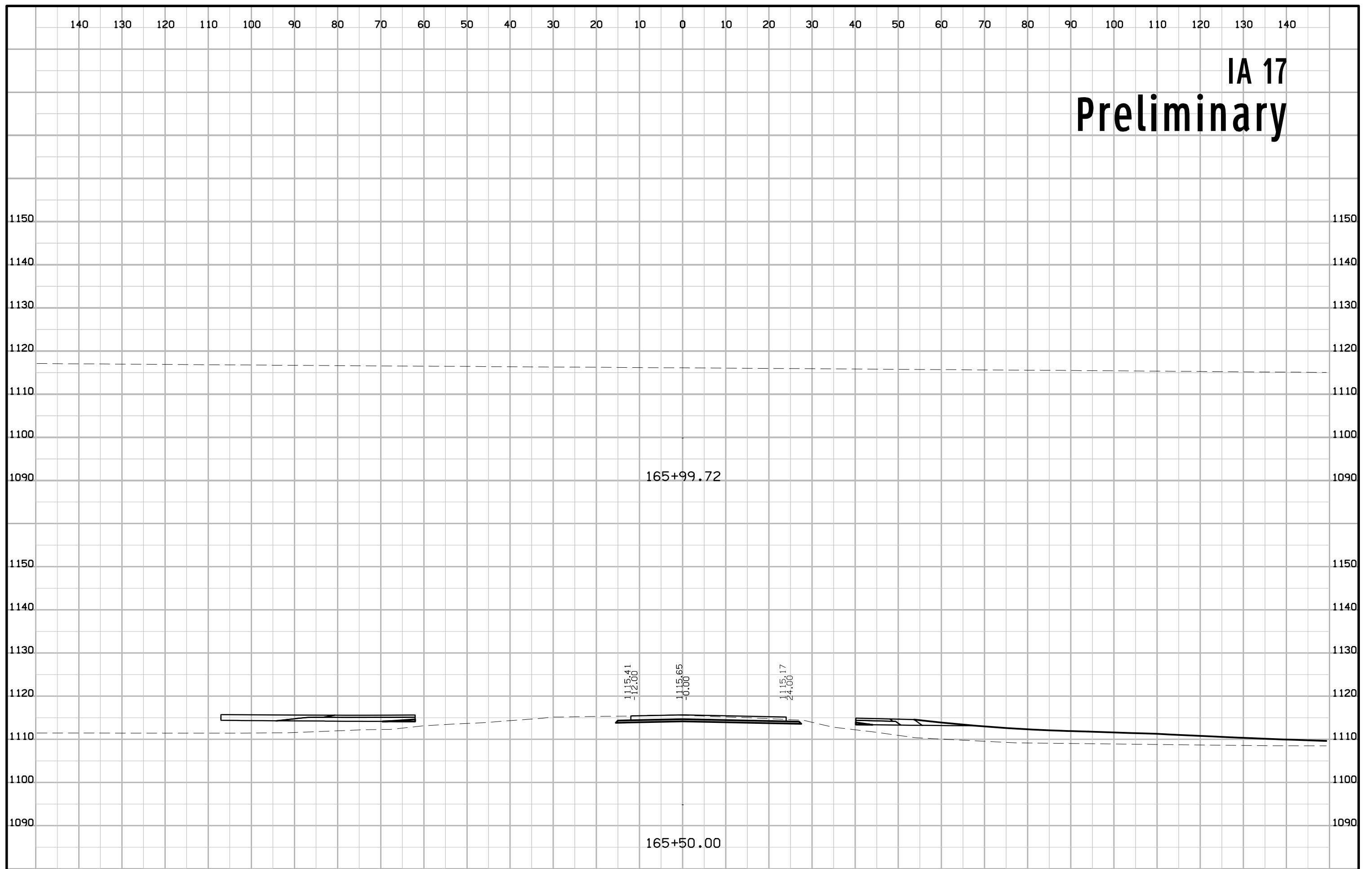
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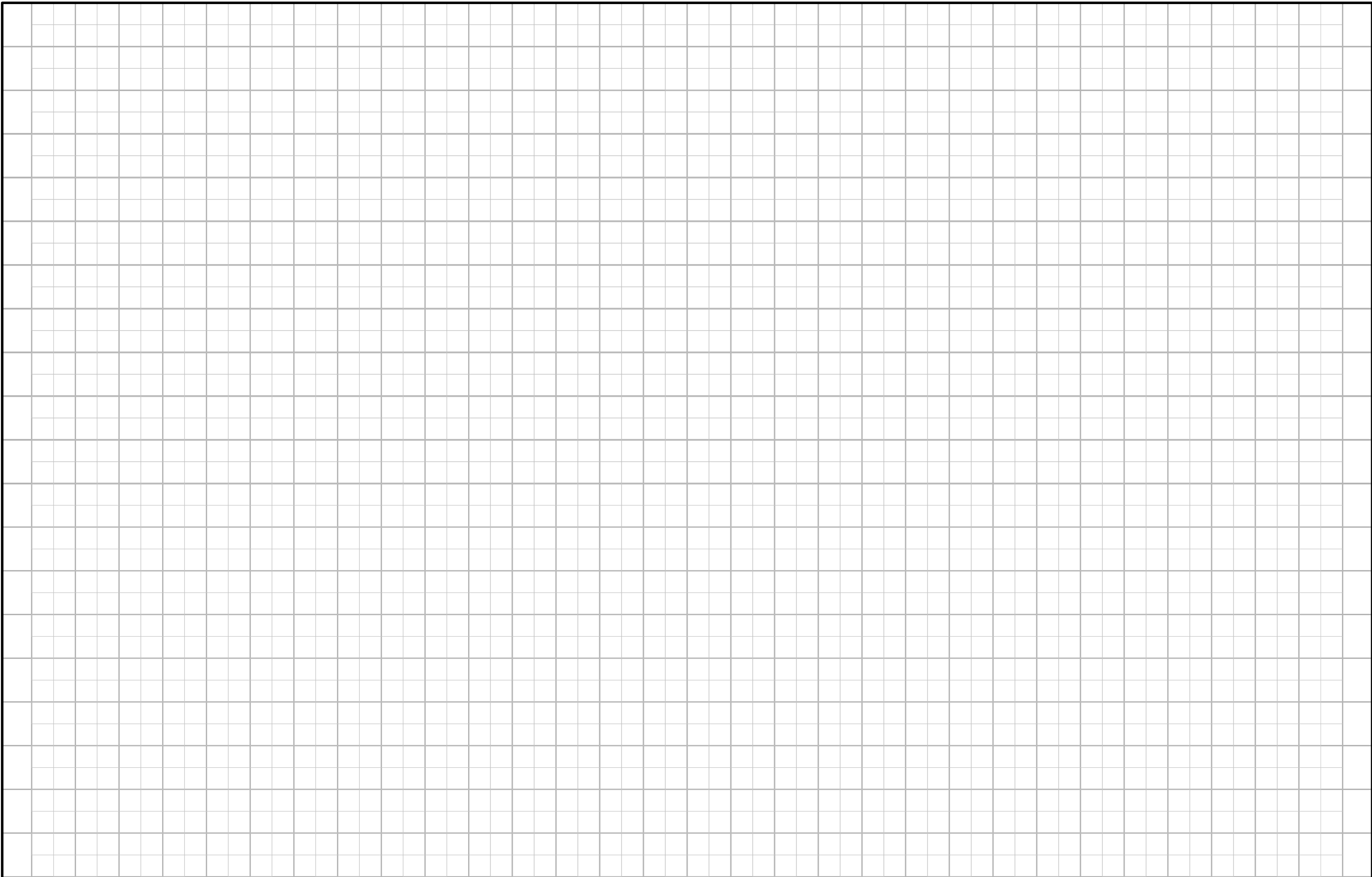
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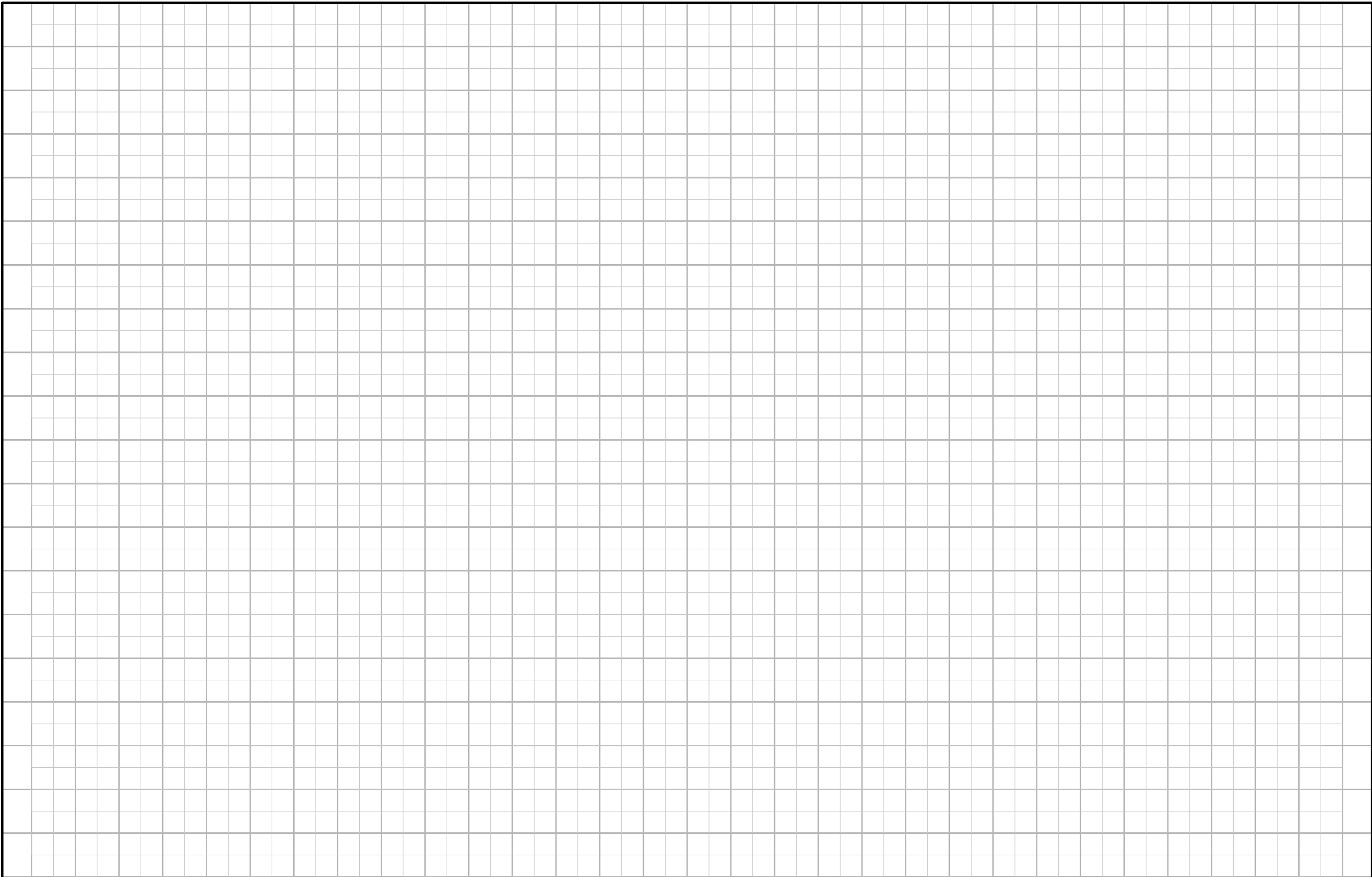


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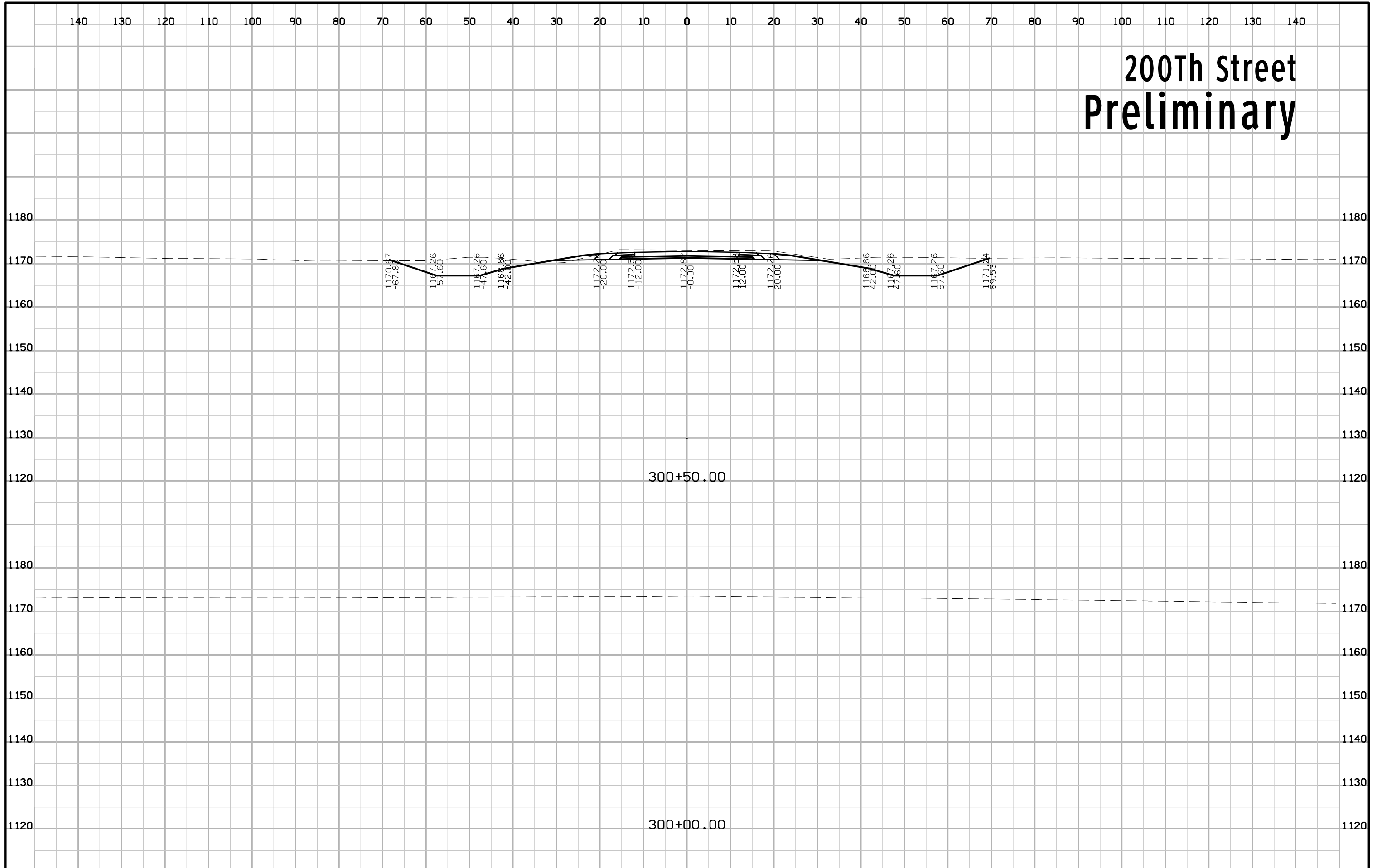




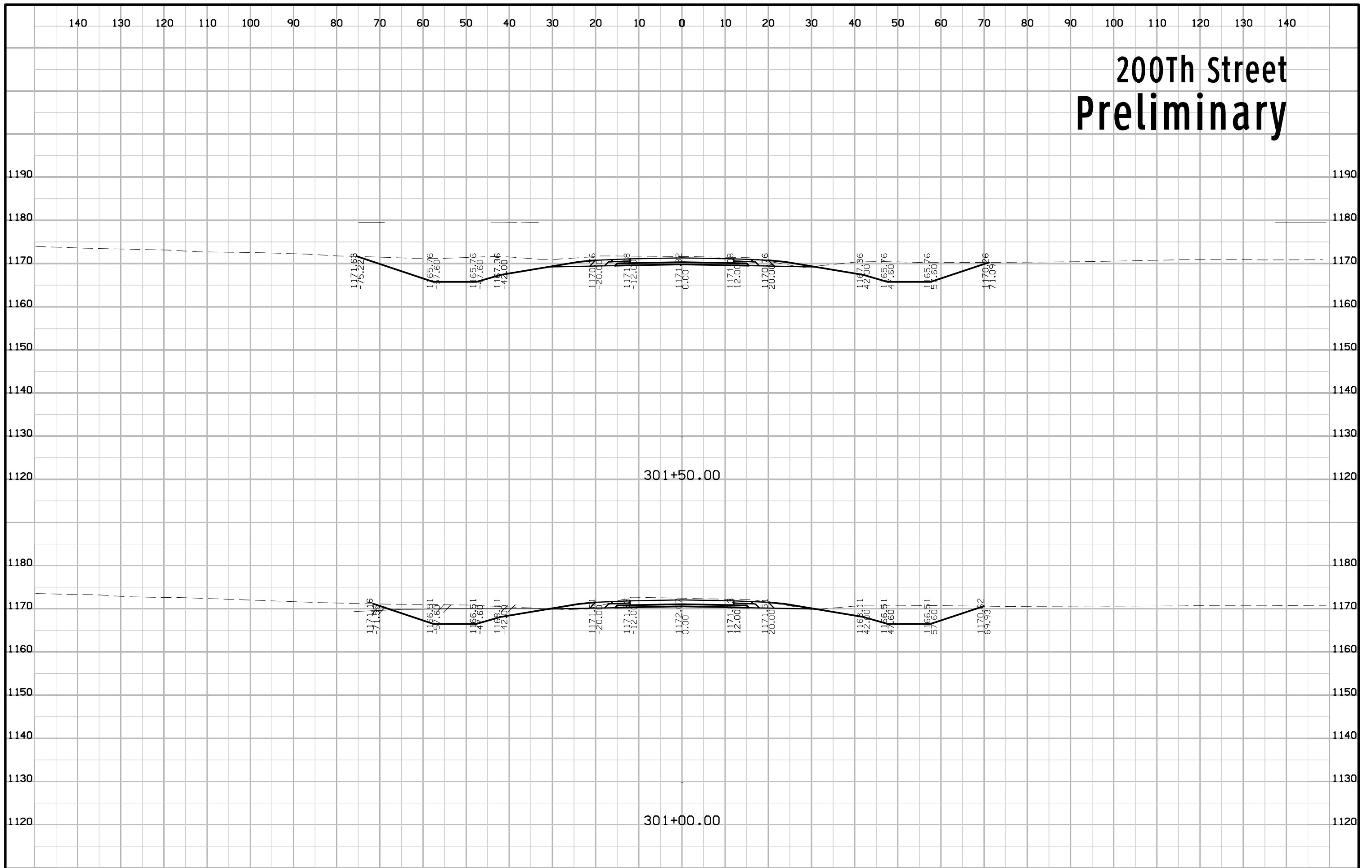




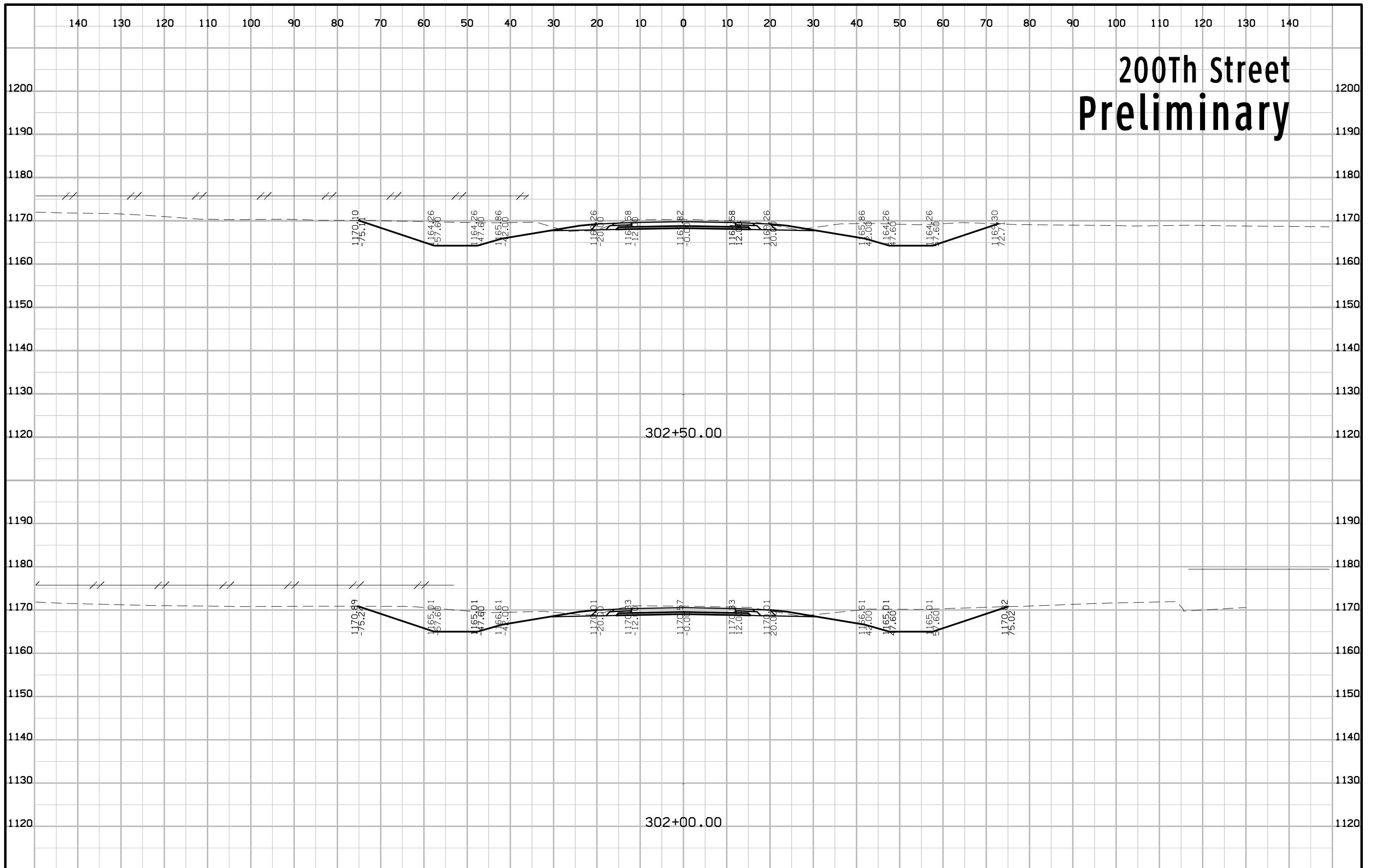
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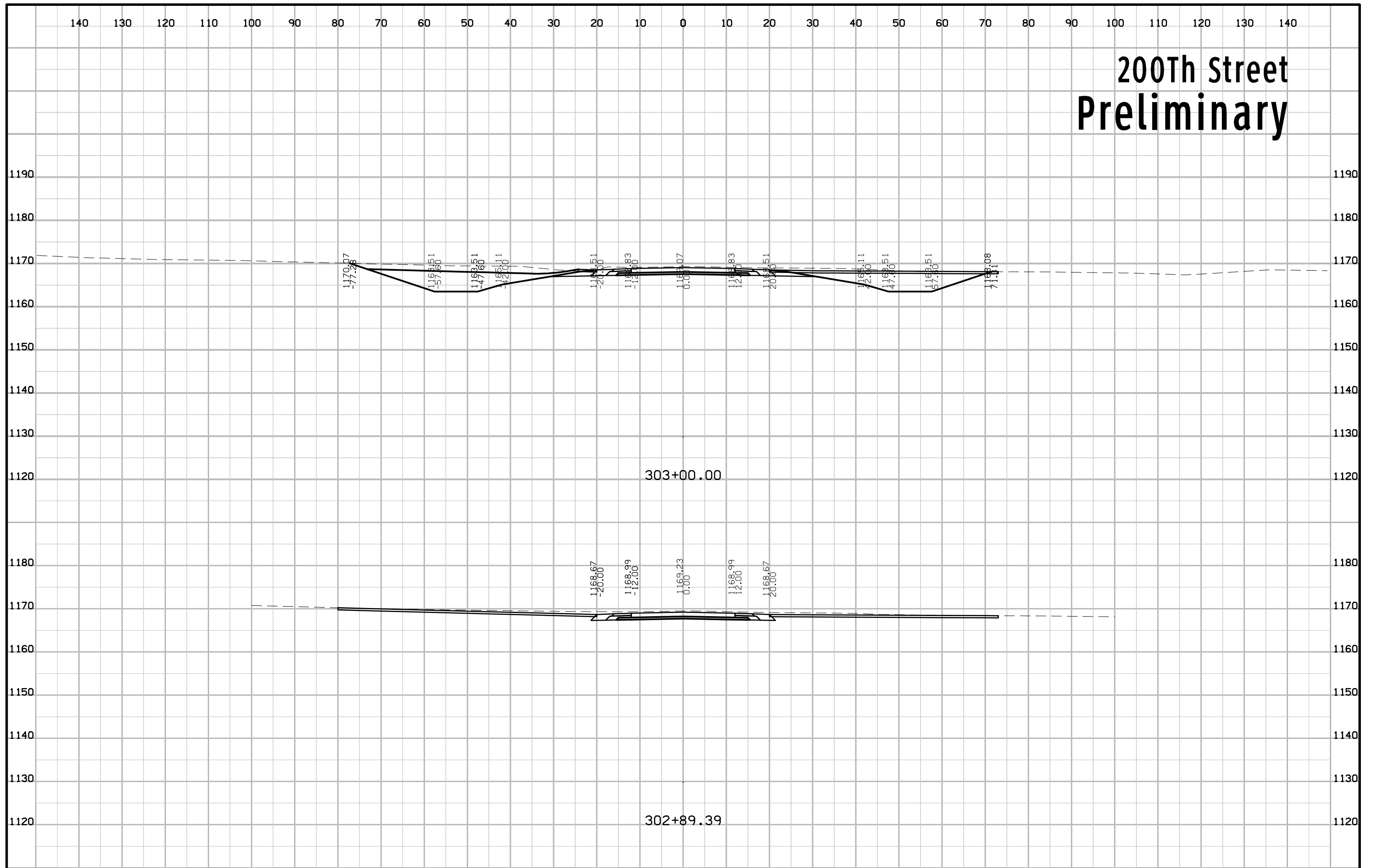
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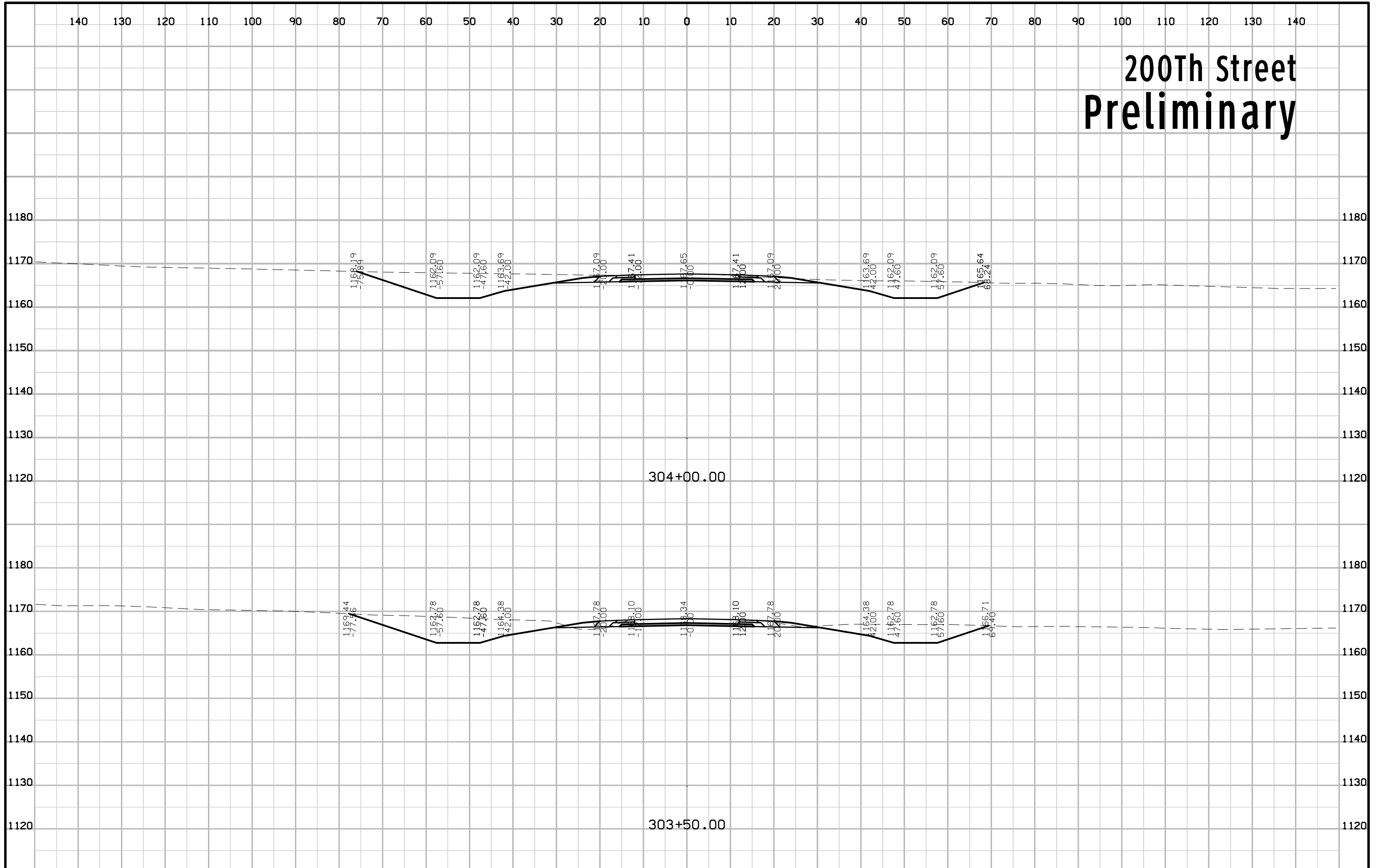
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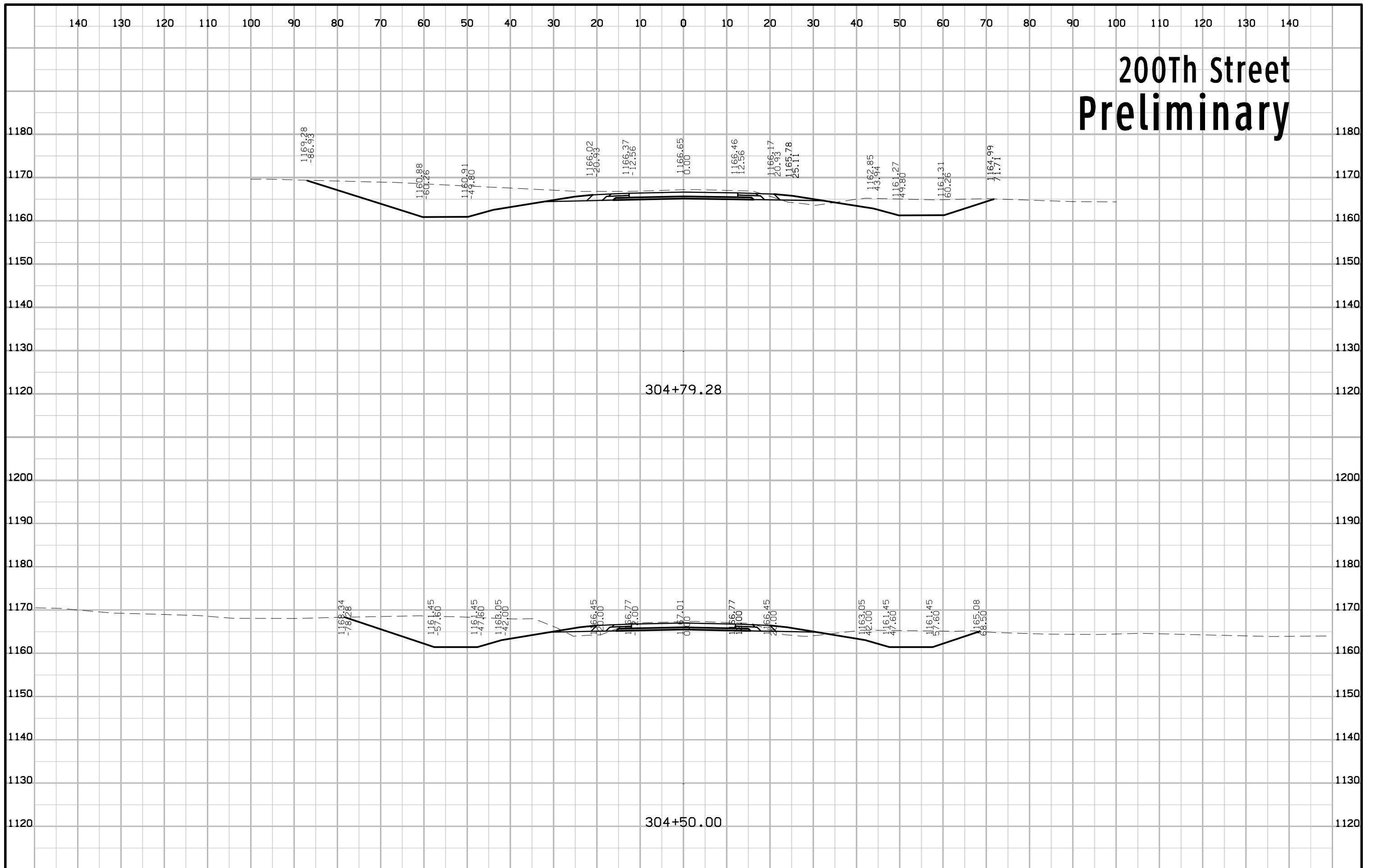
# 200Th Street Preliminary



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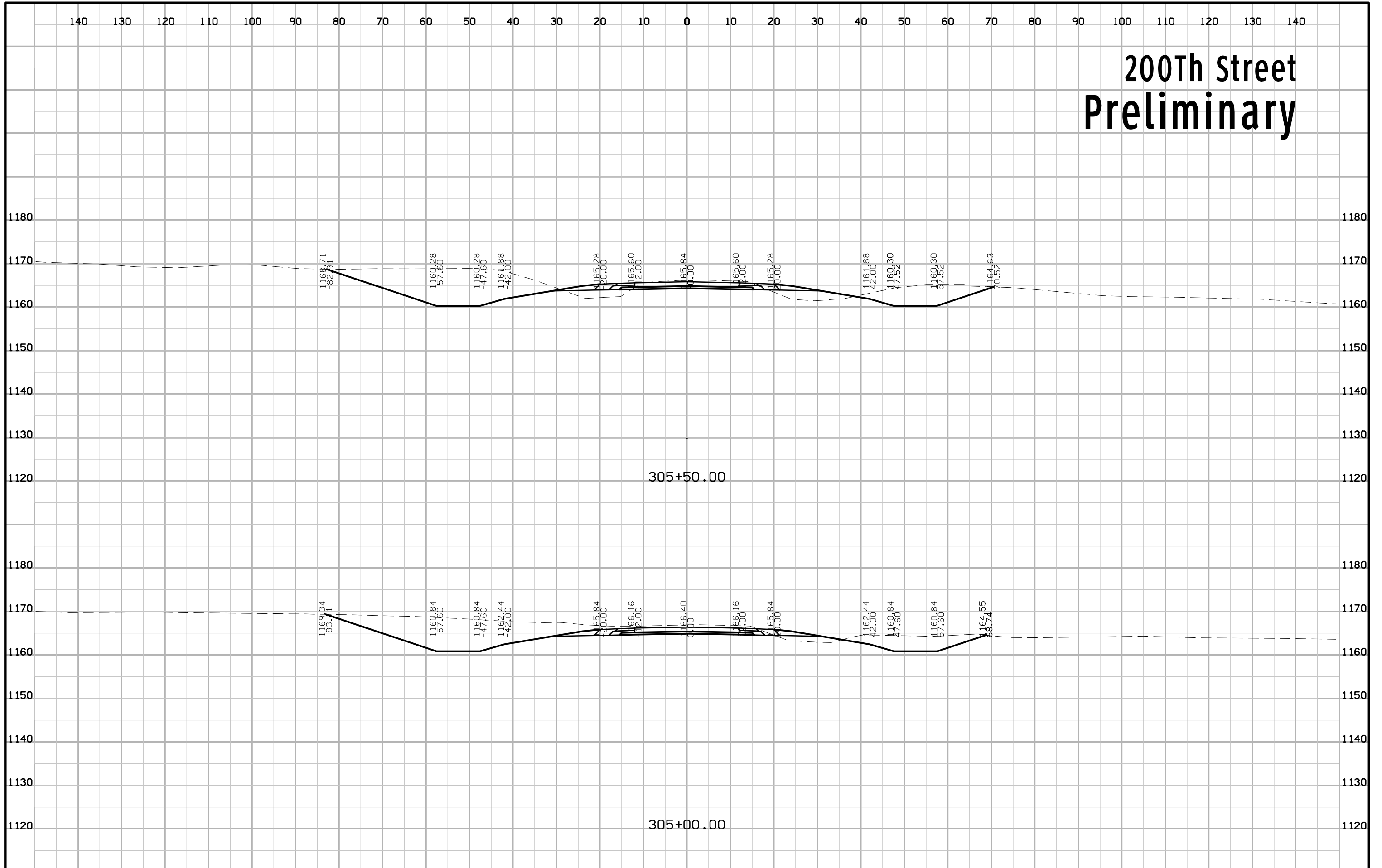


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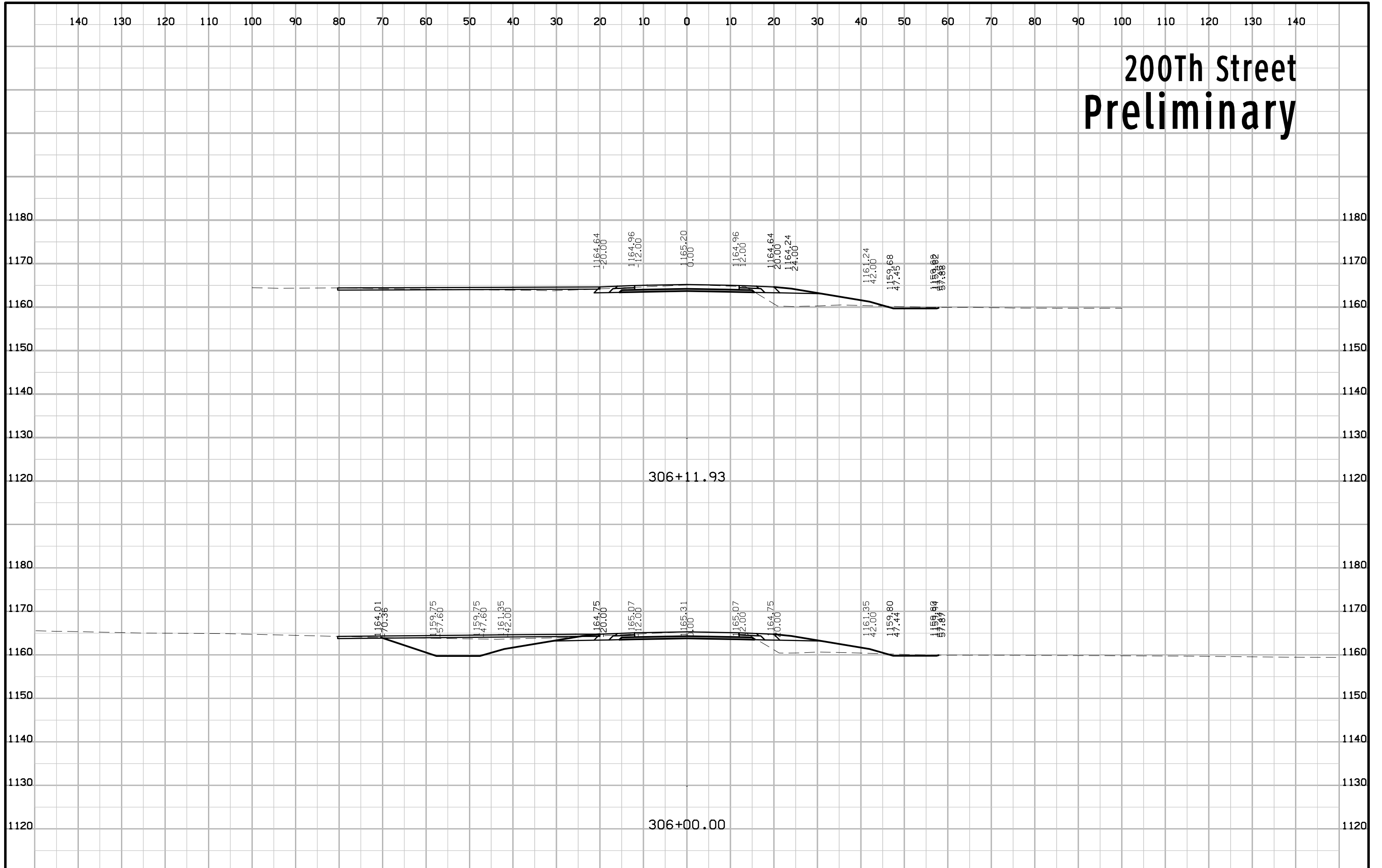




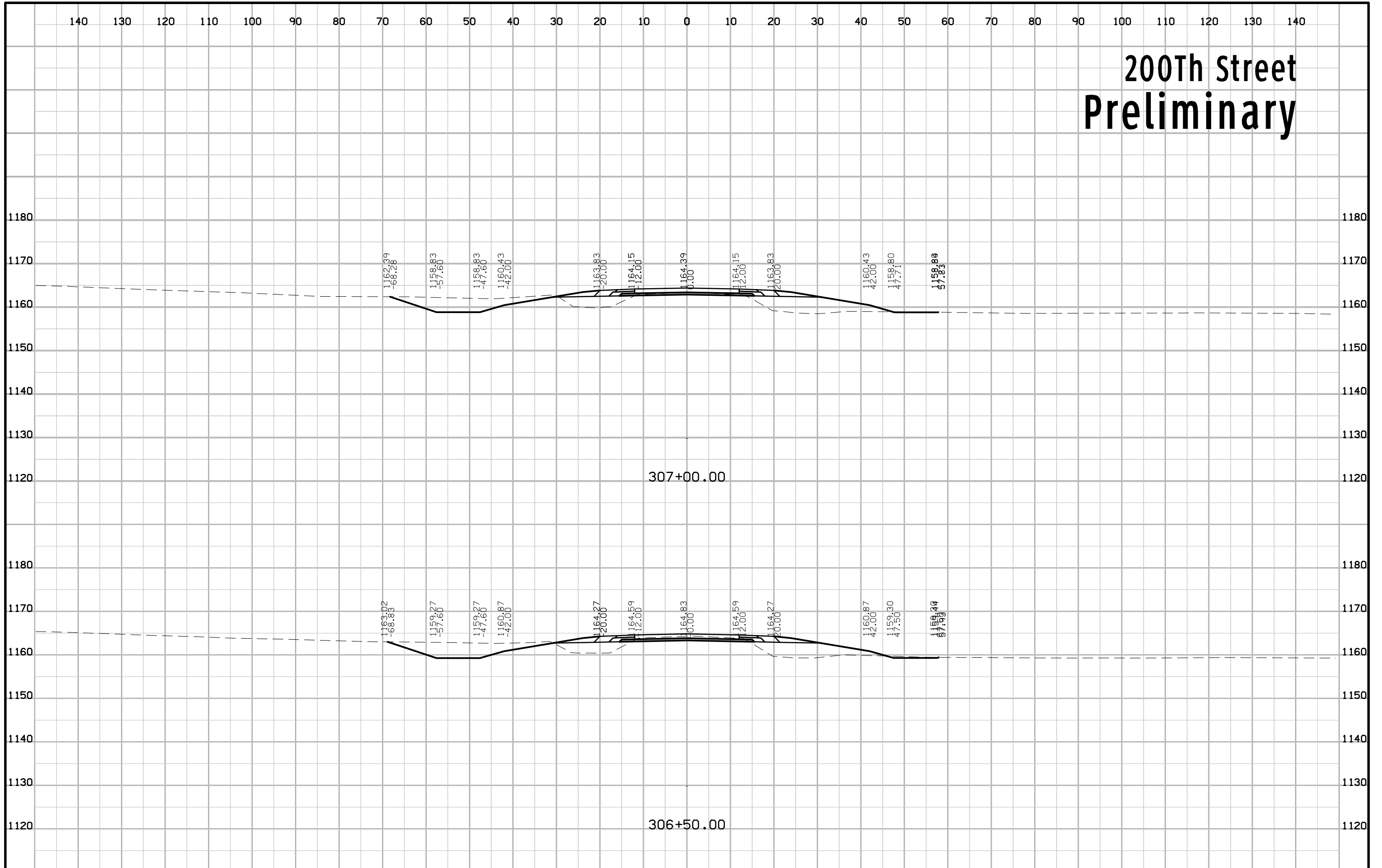
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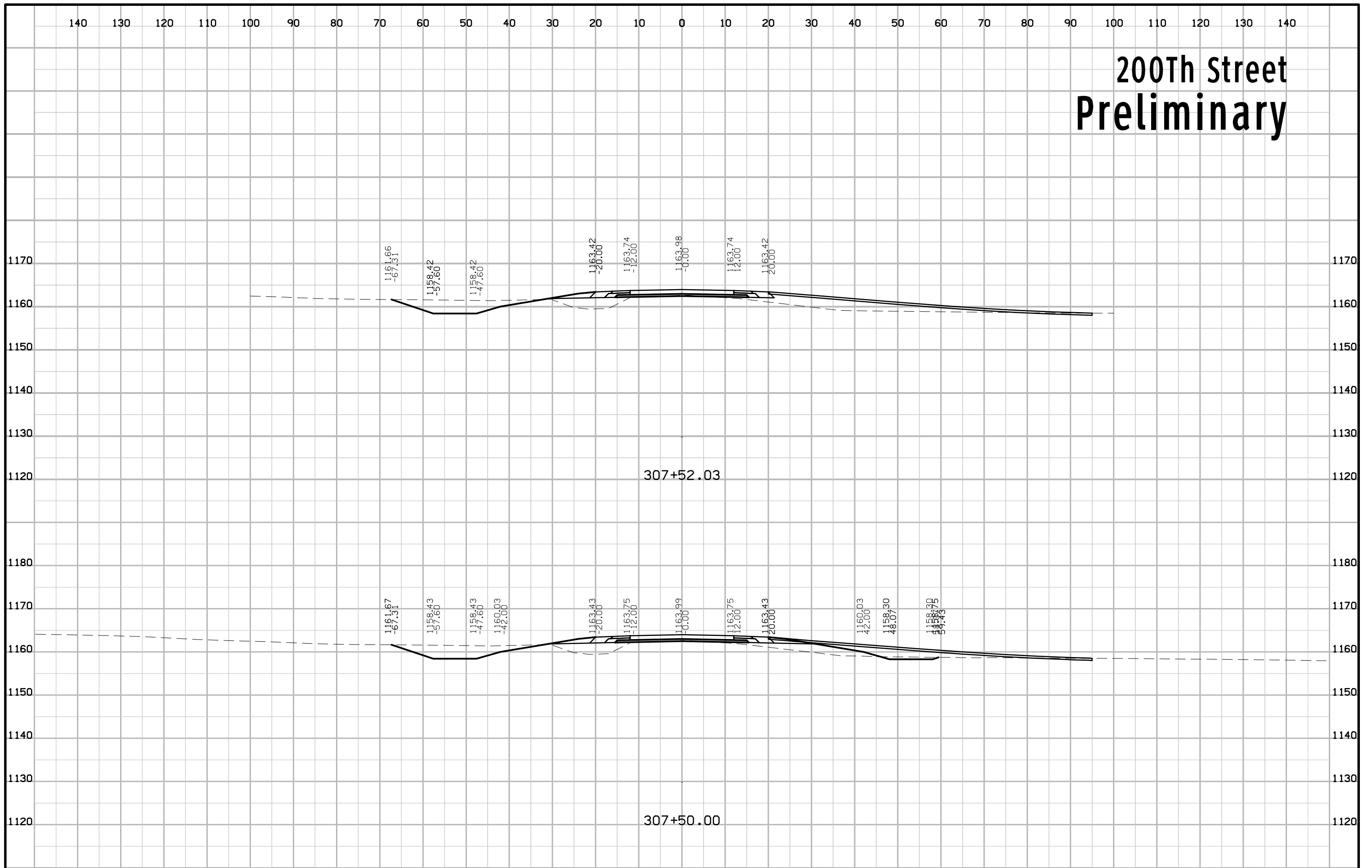
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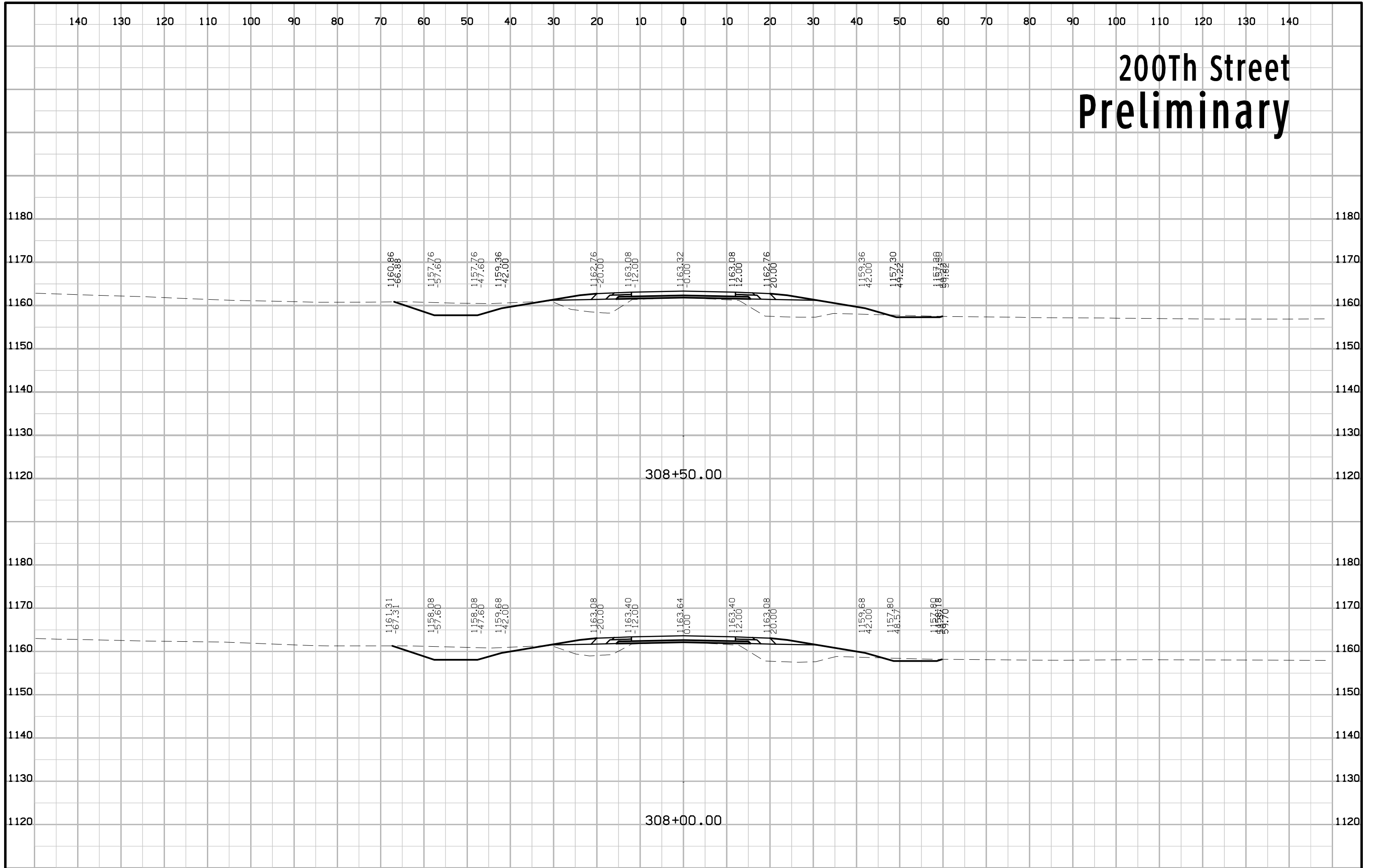
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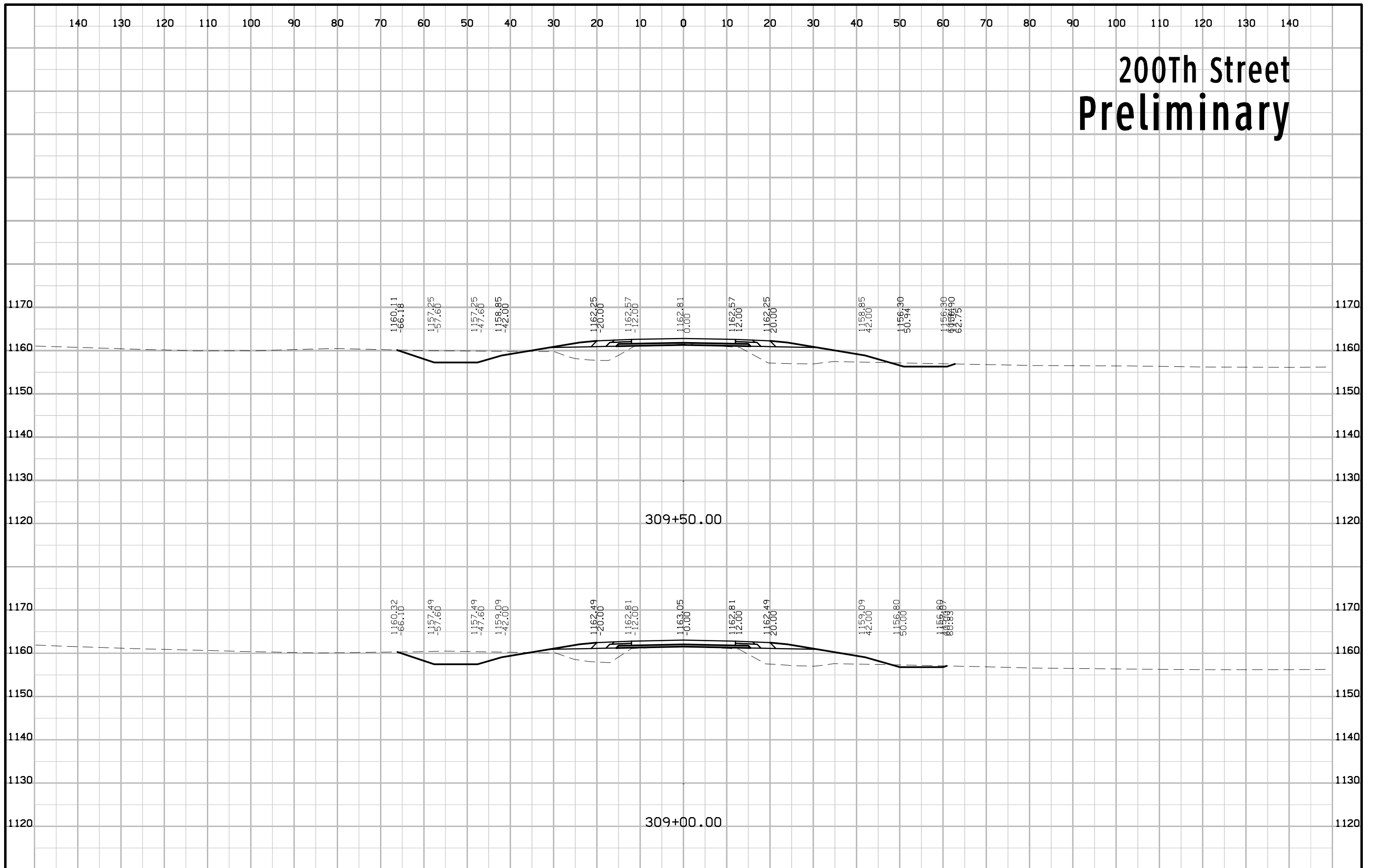
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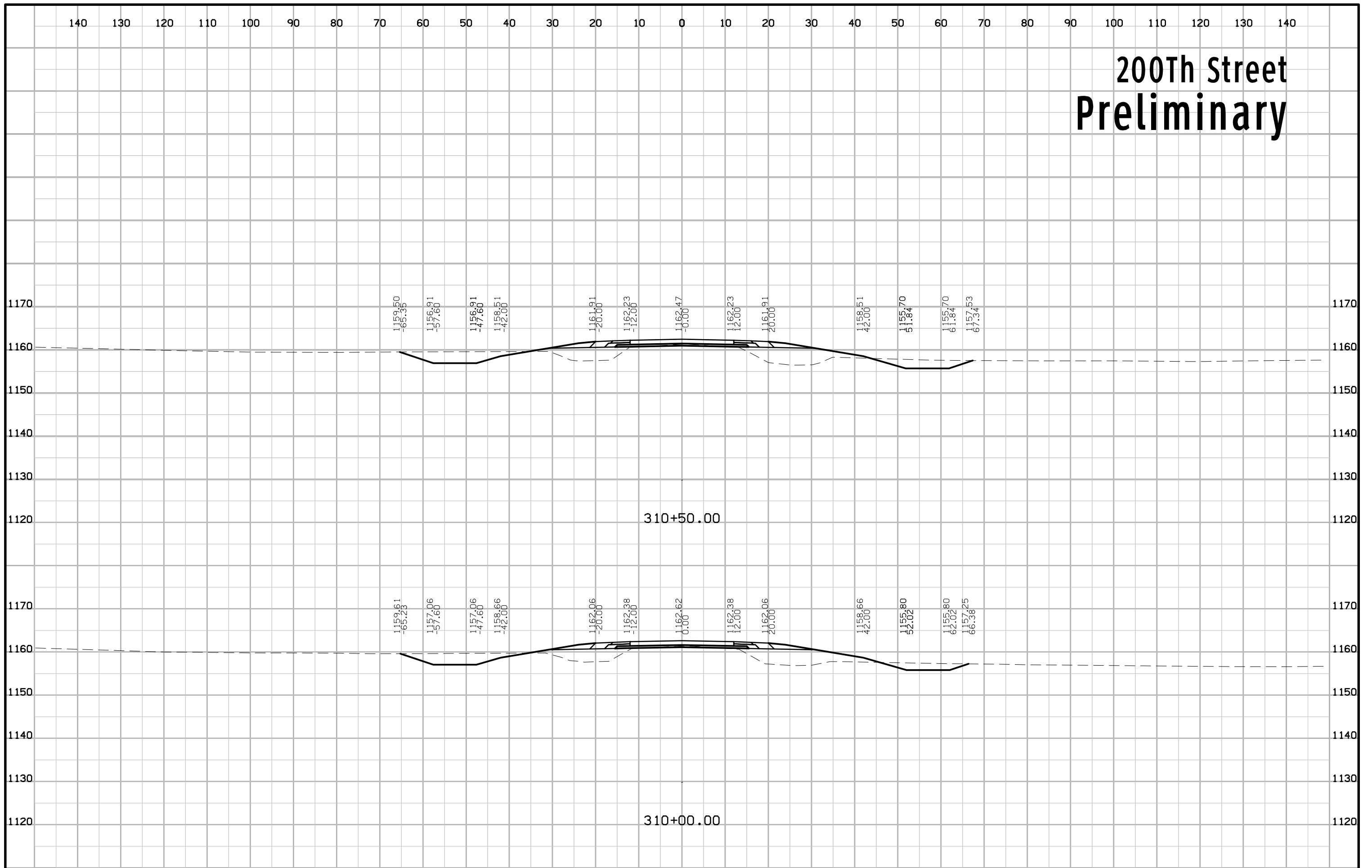
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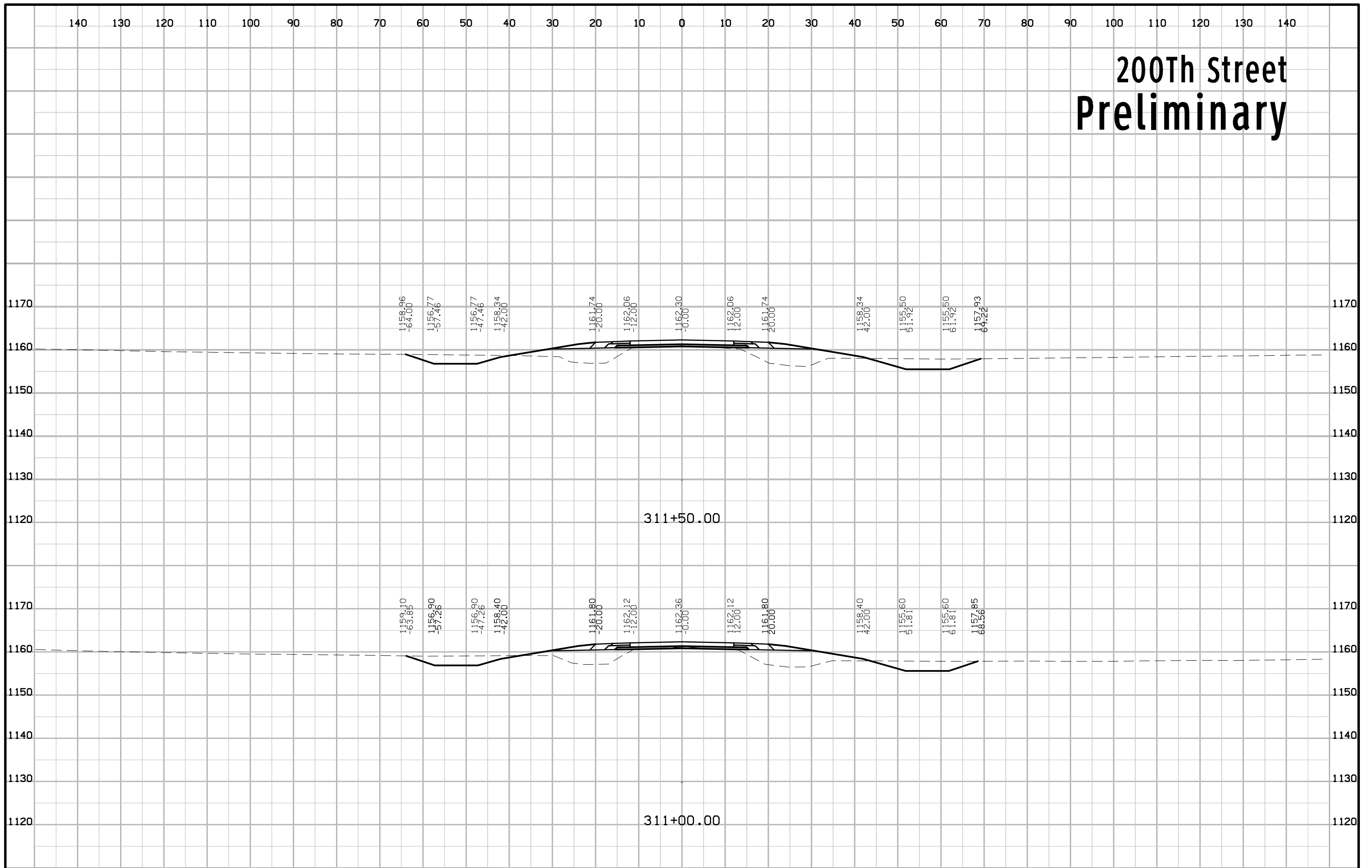
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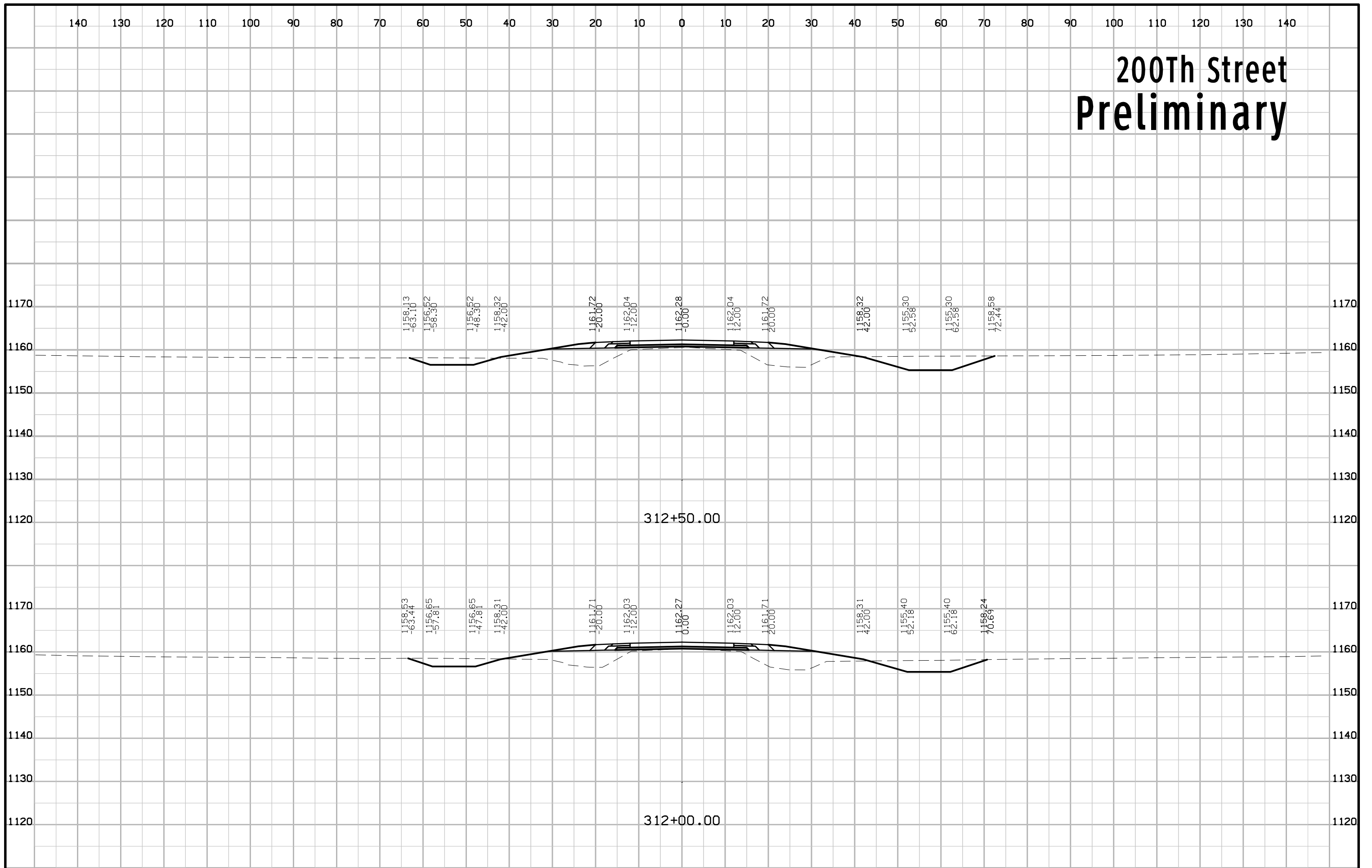


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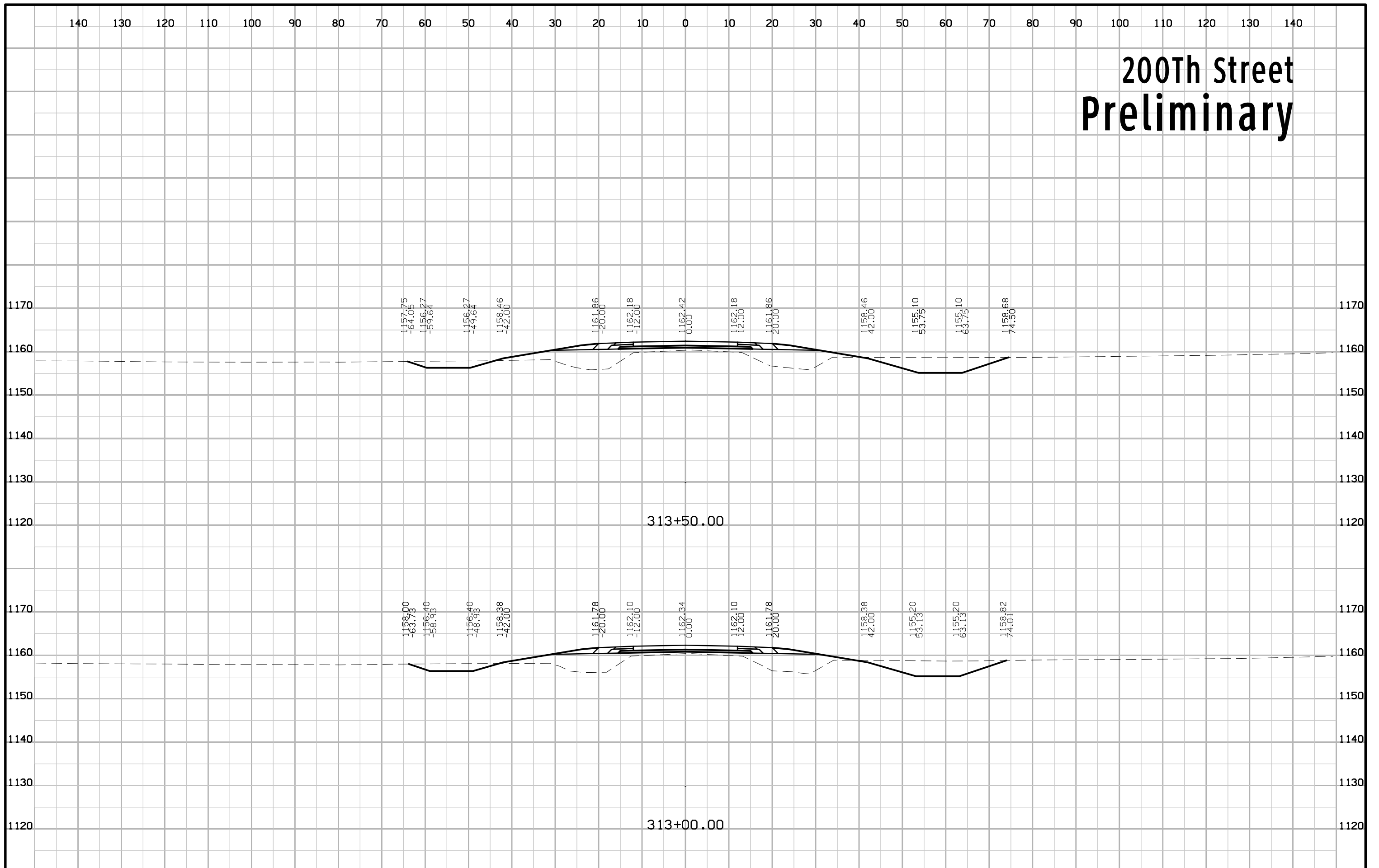




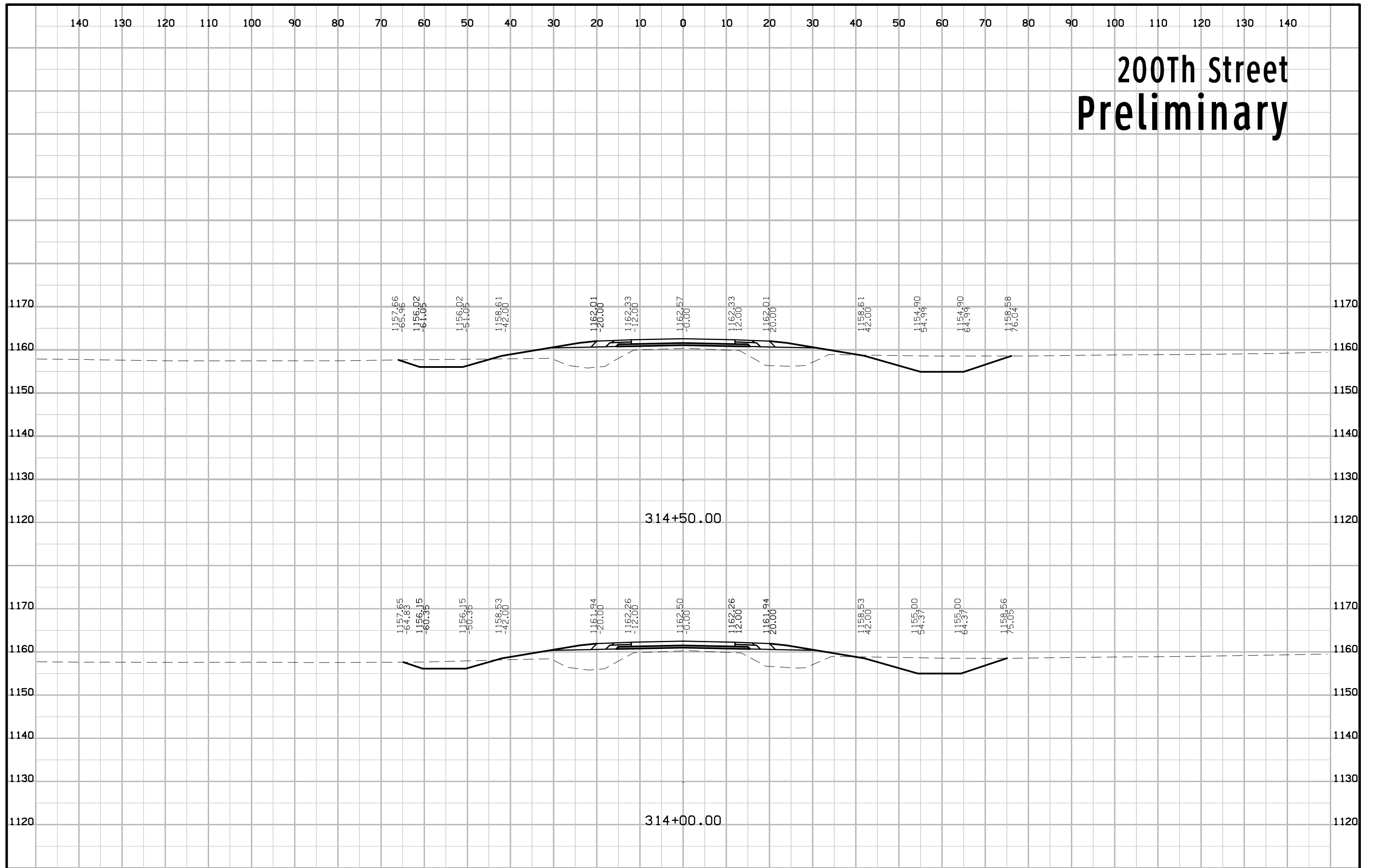
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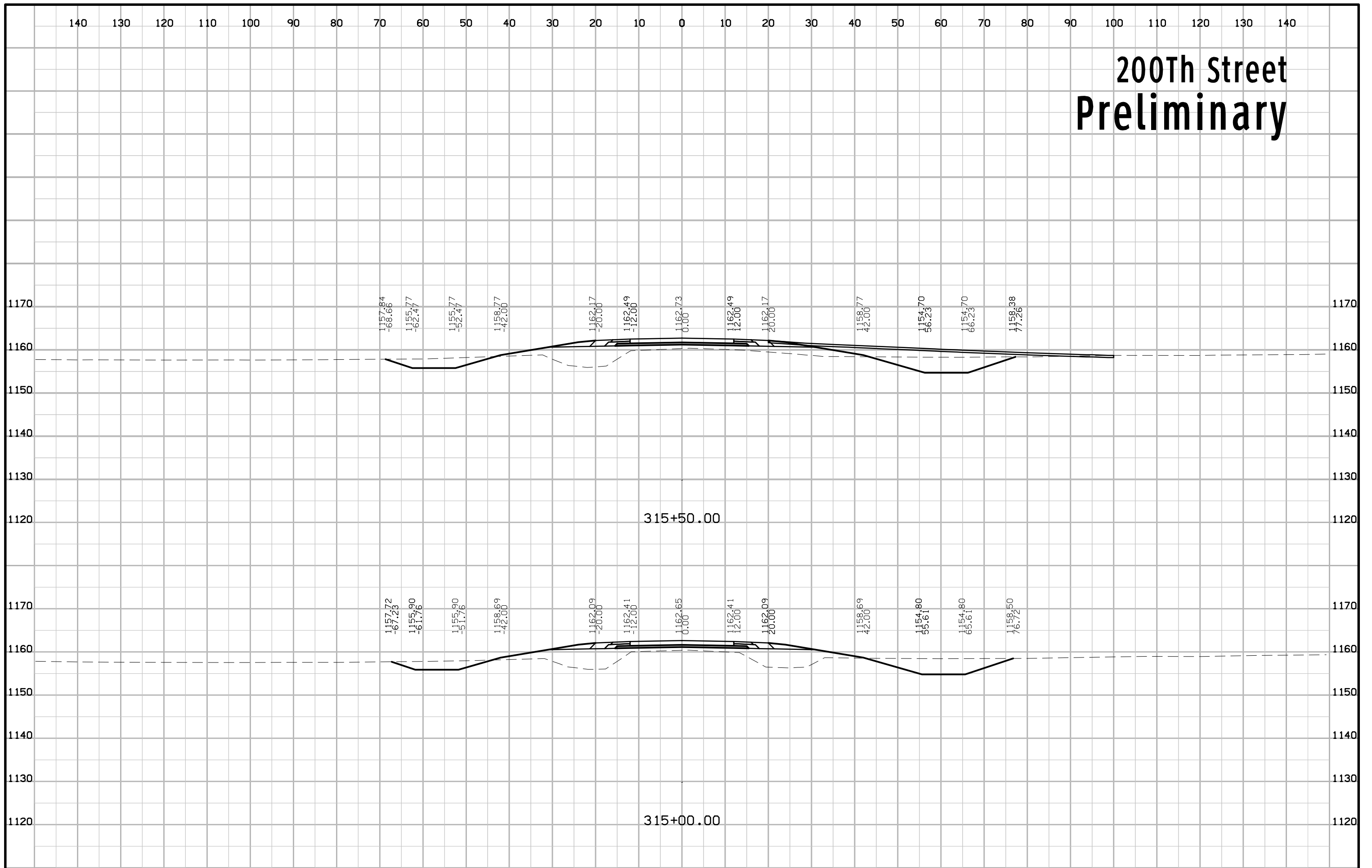
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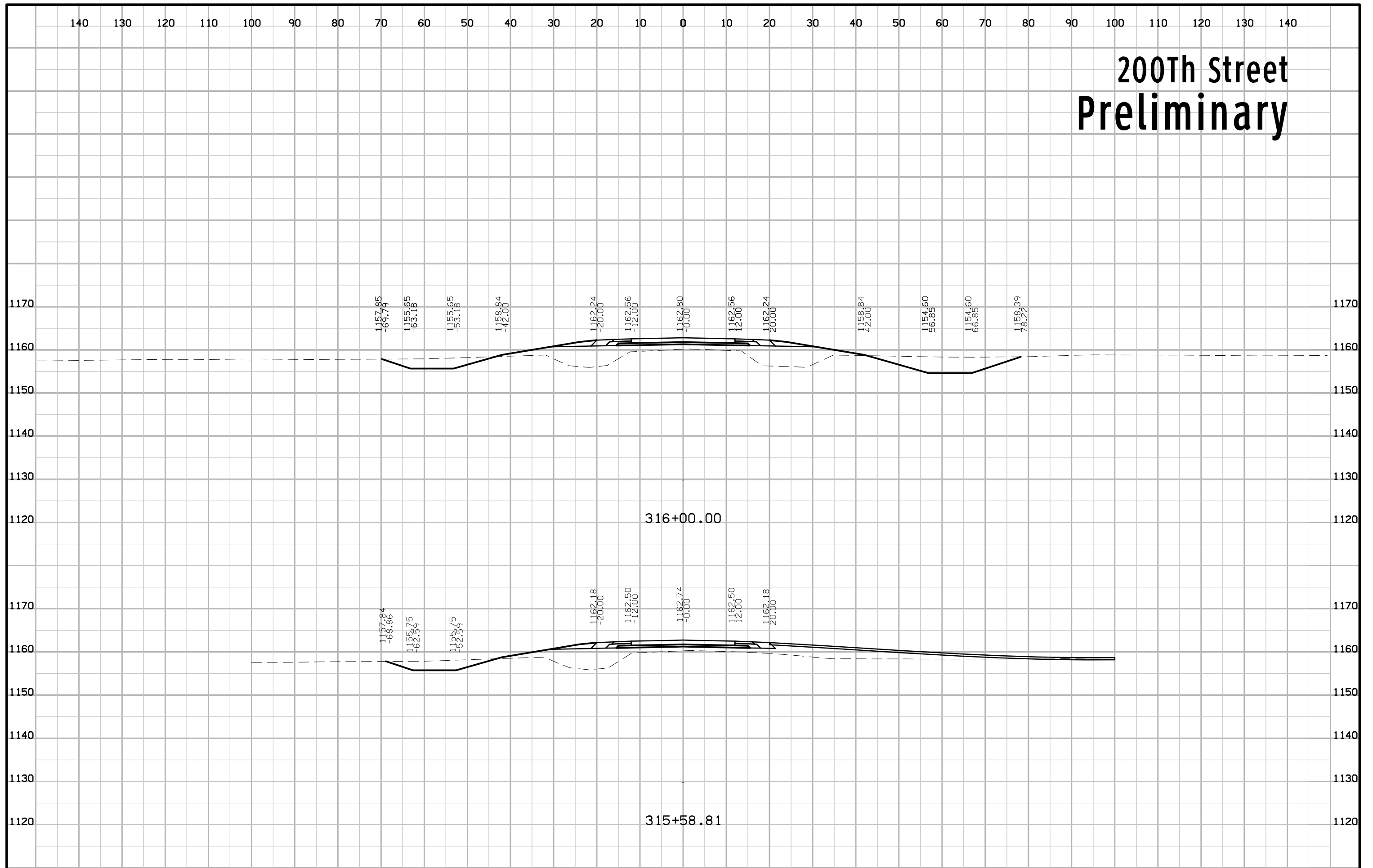
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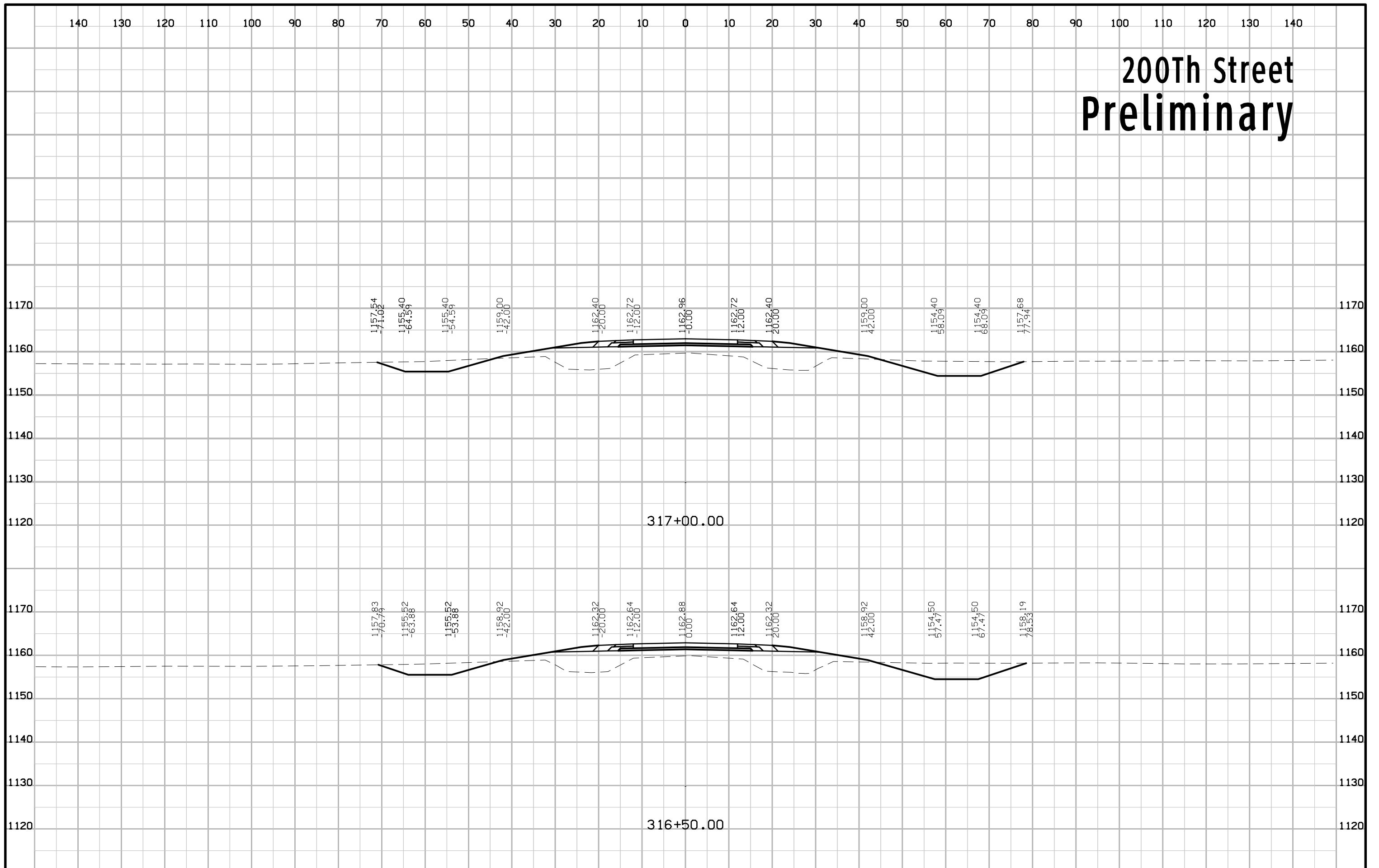
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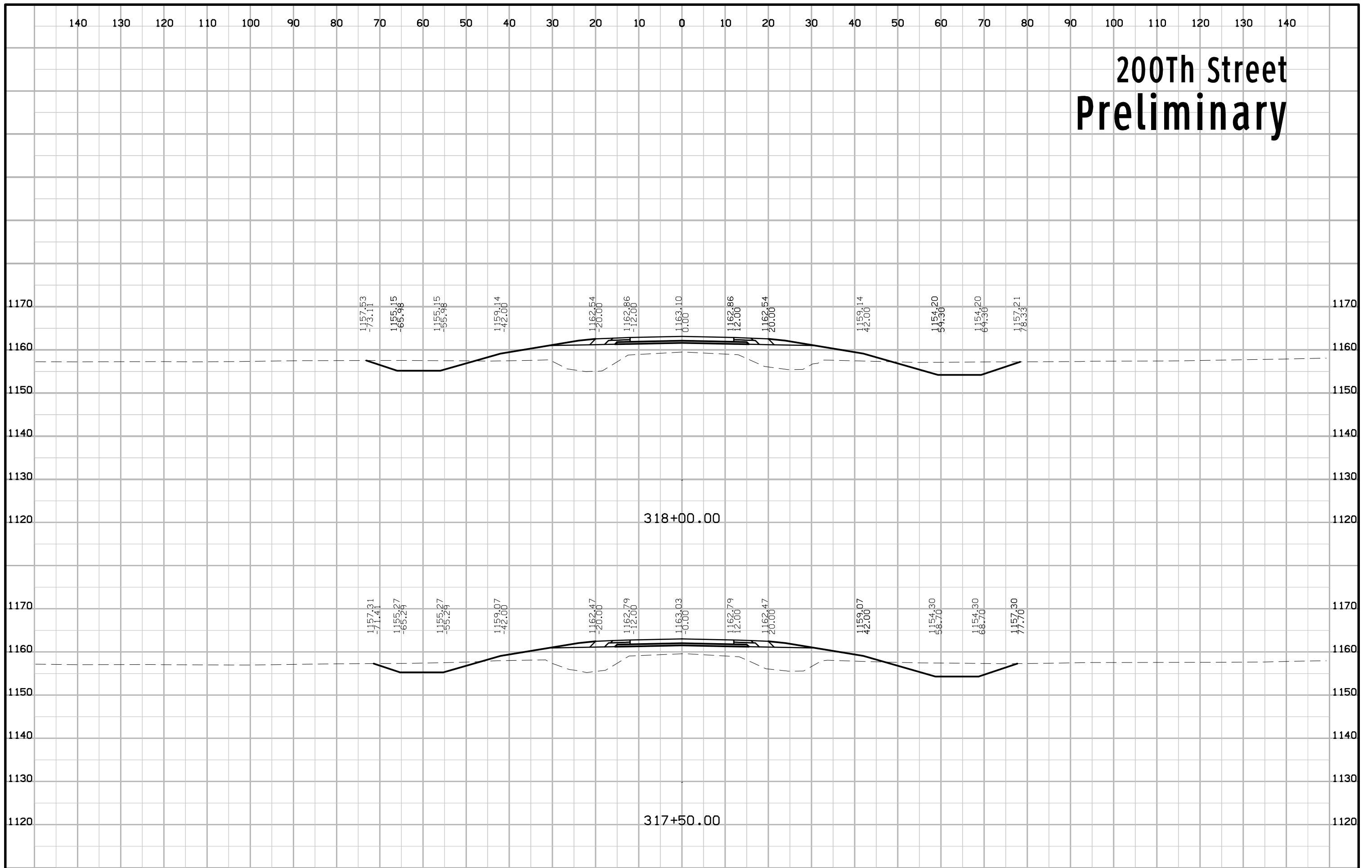
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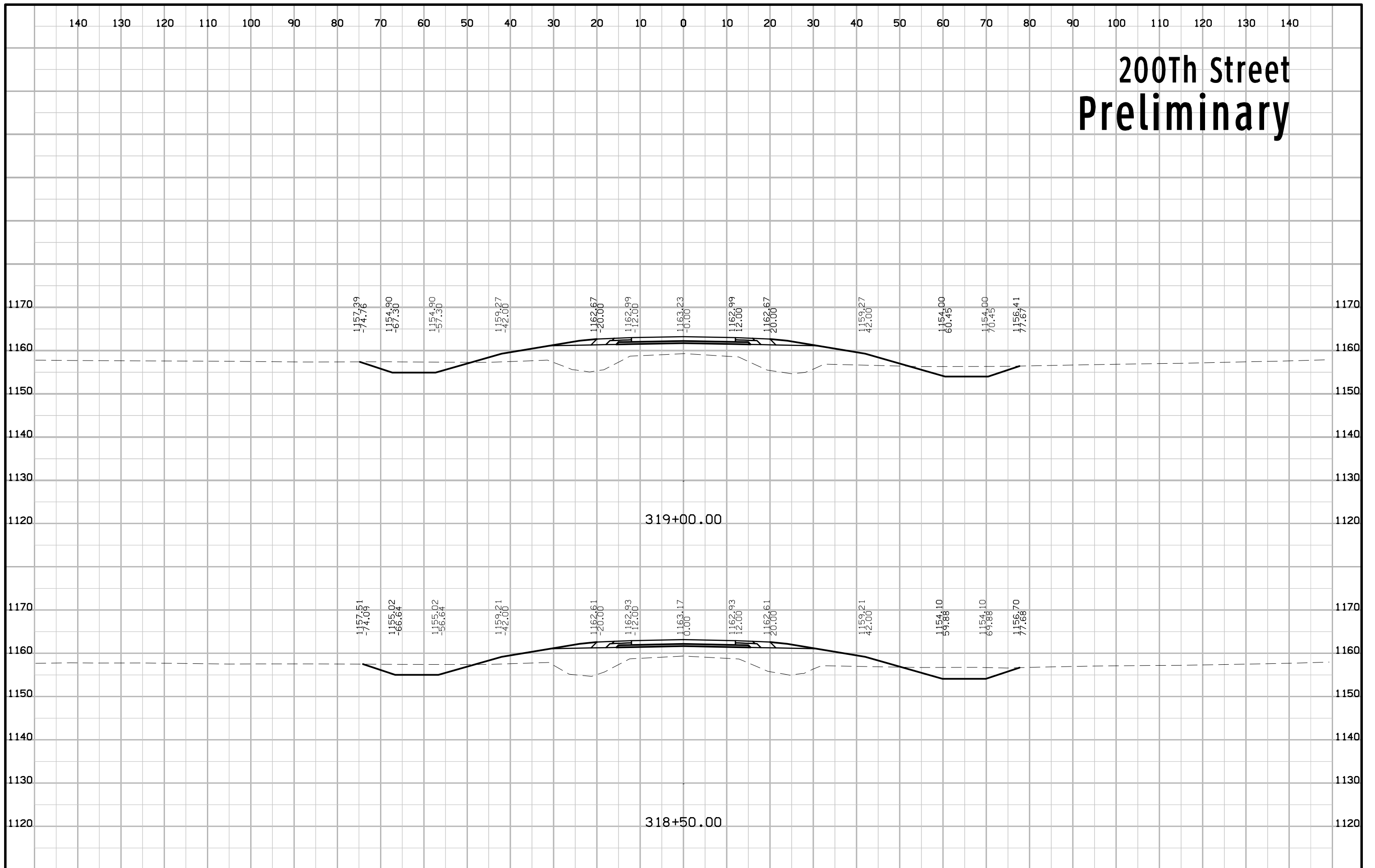
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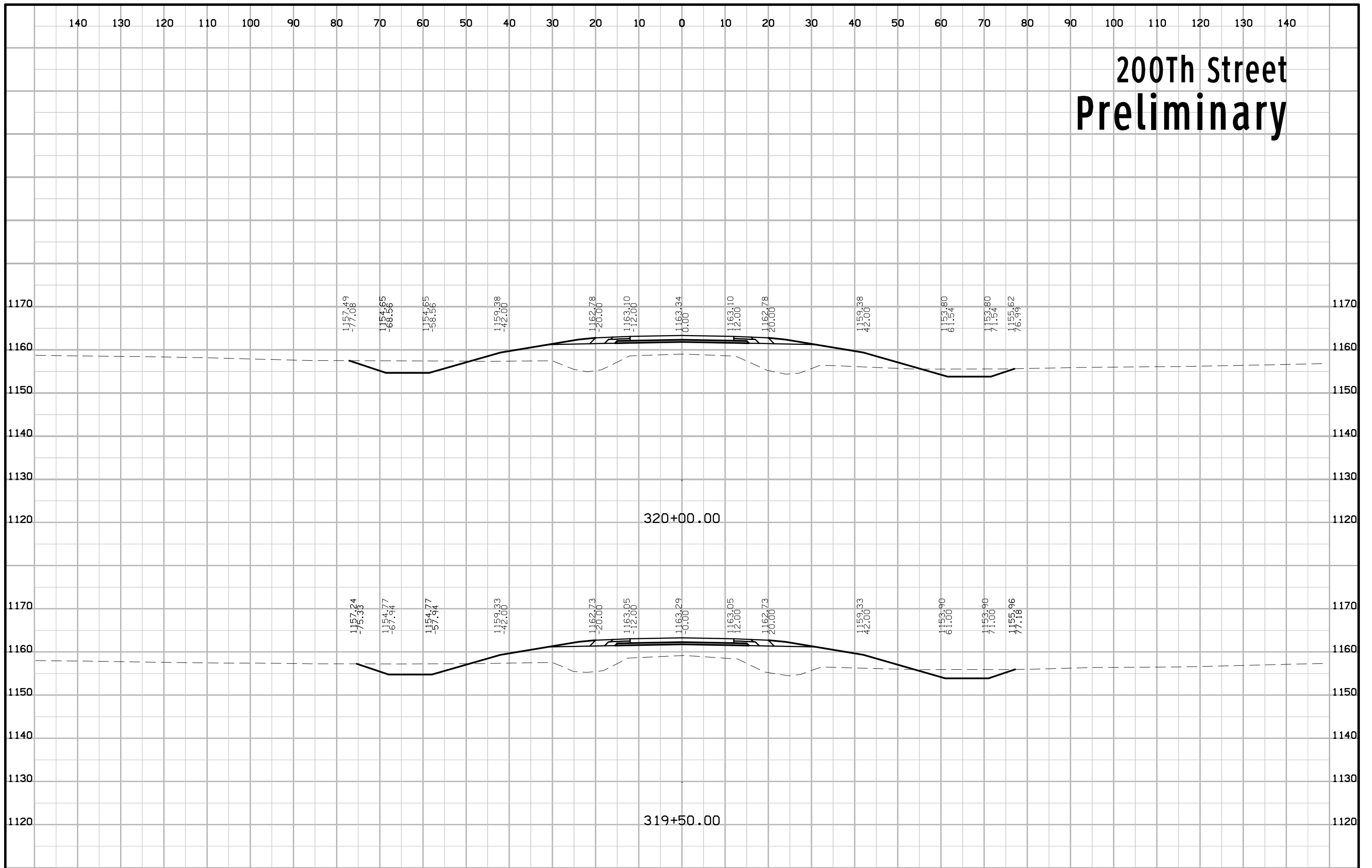


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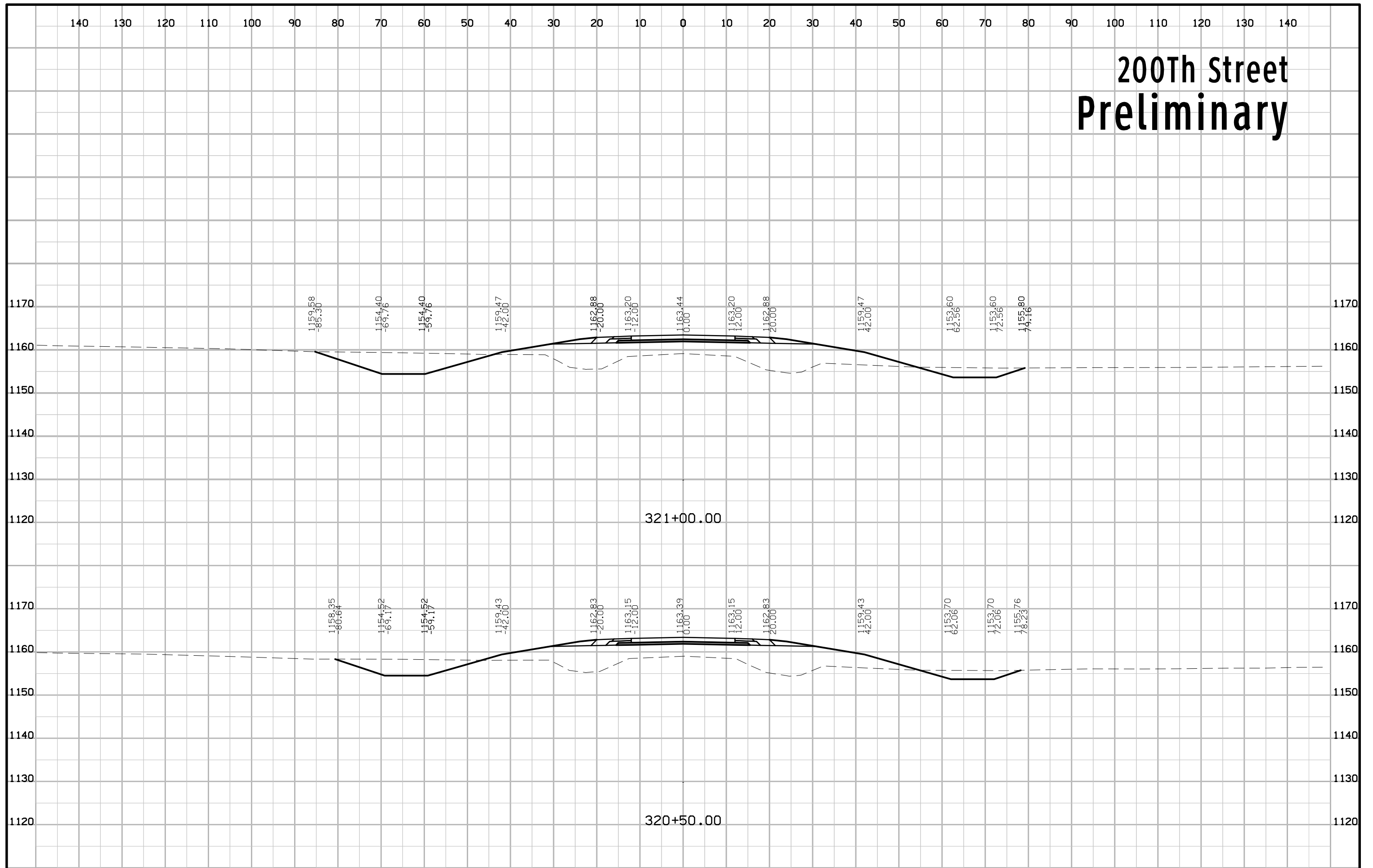




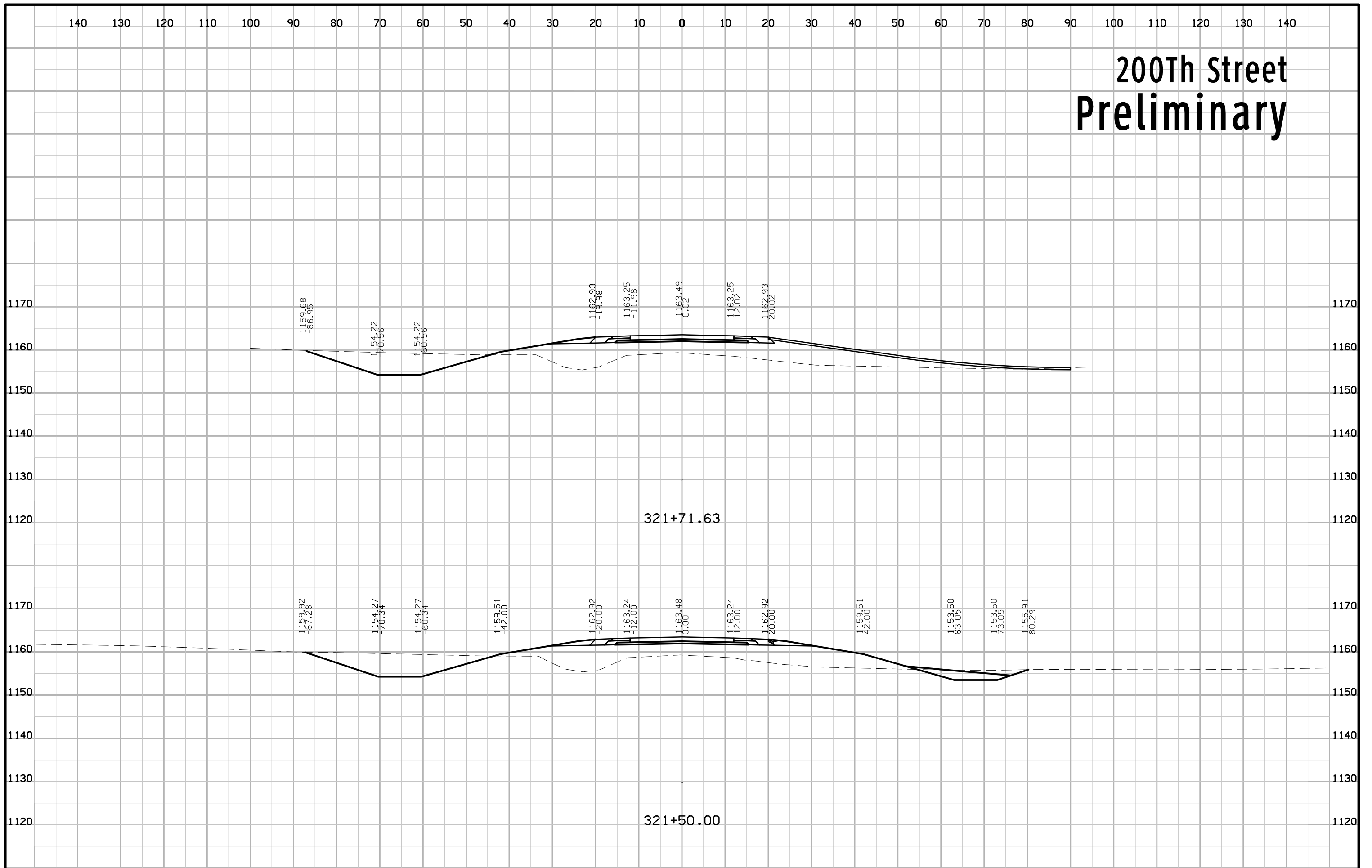
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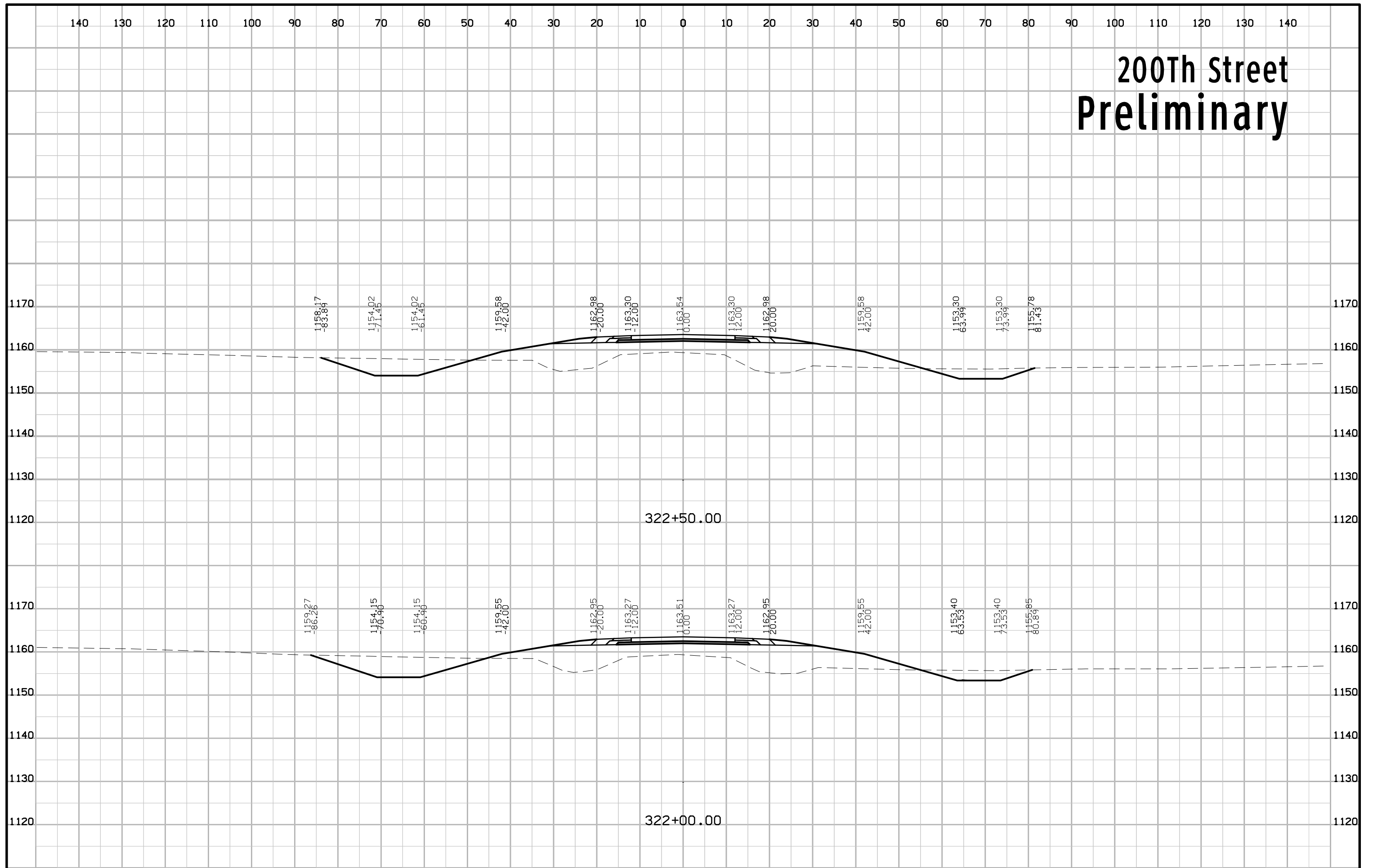
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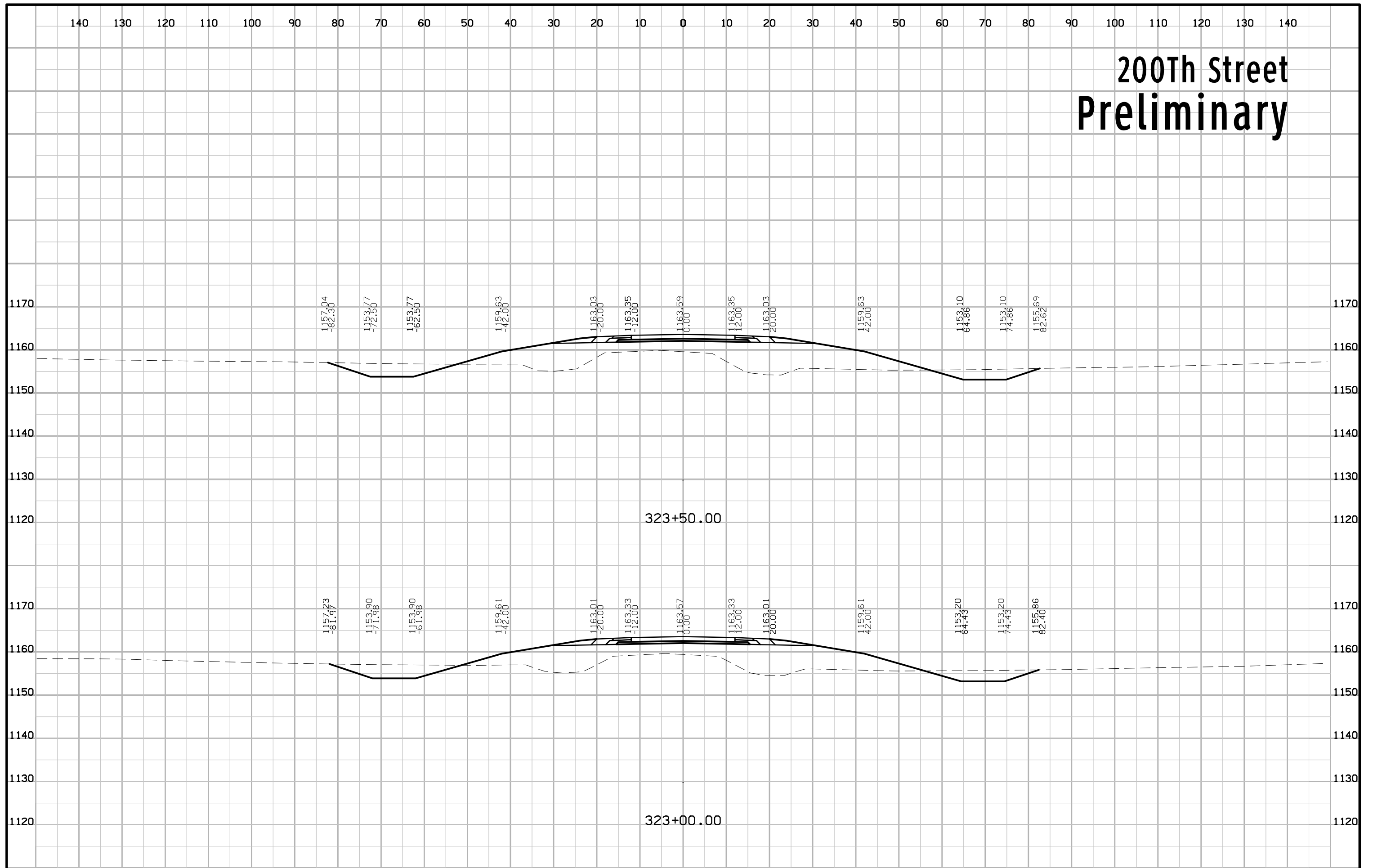
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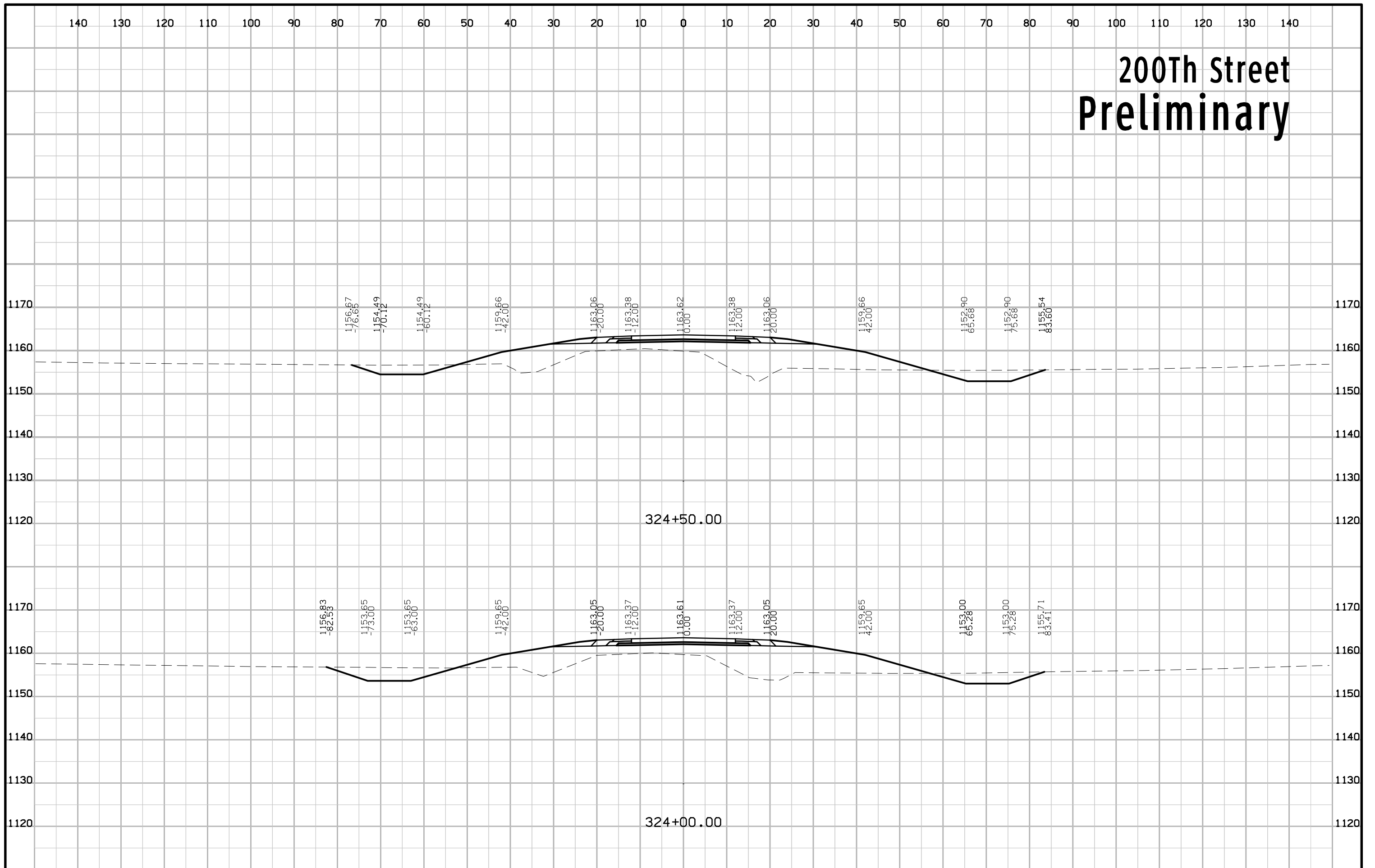
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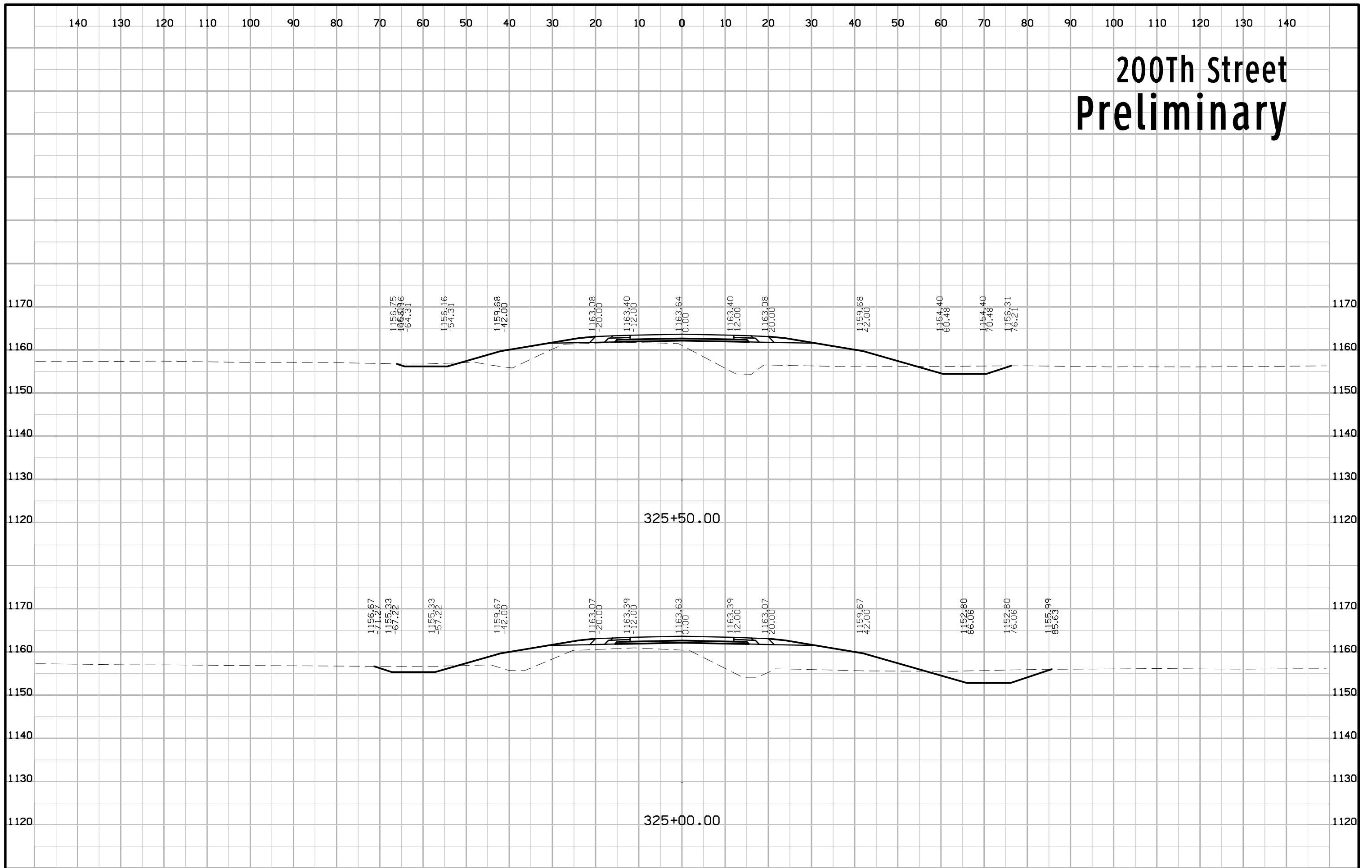
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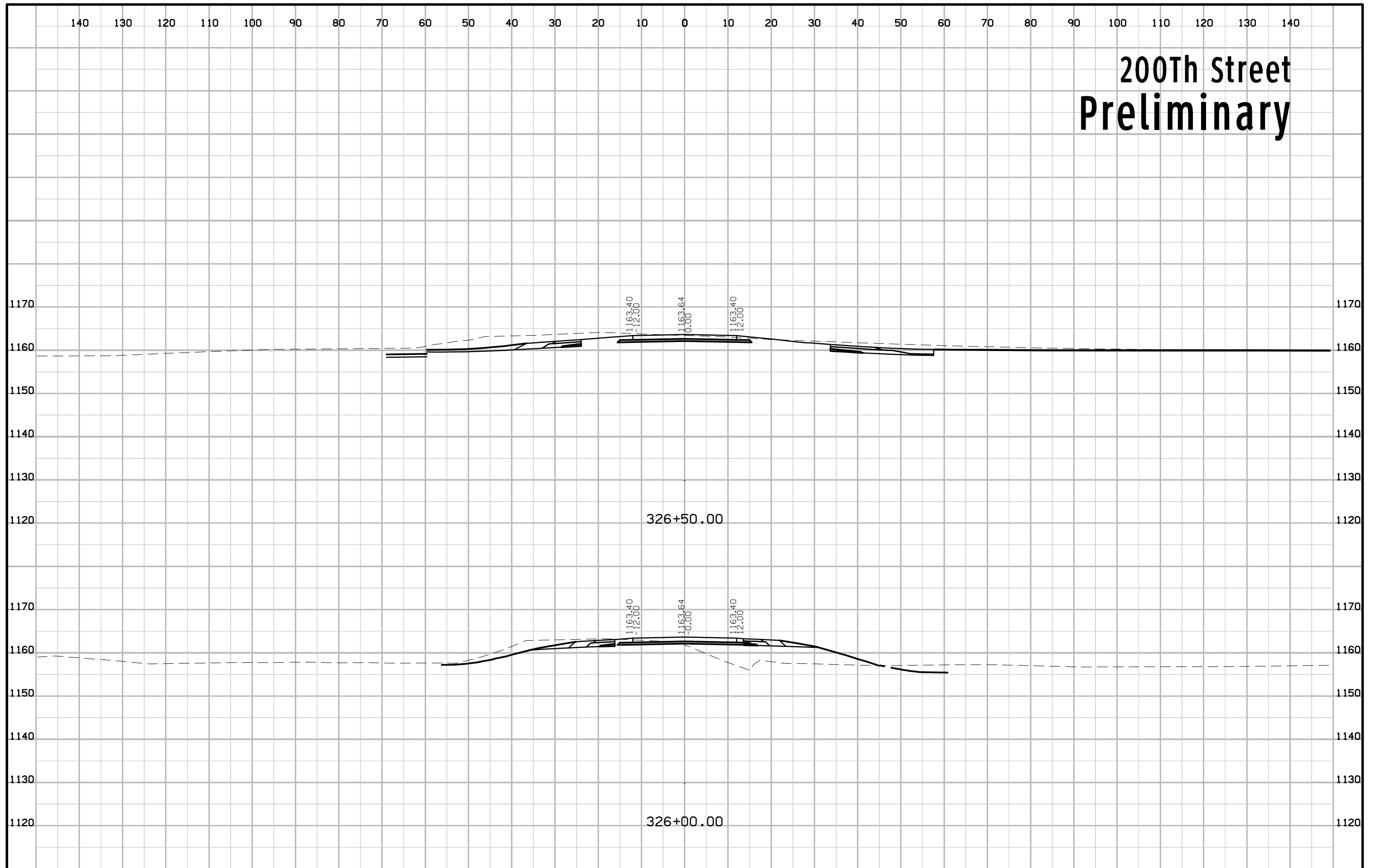
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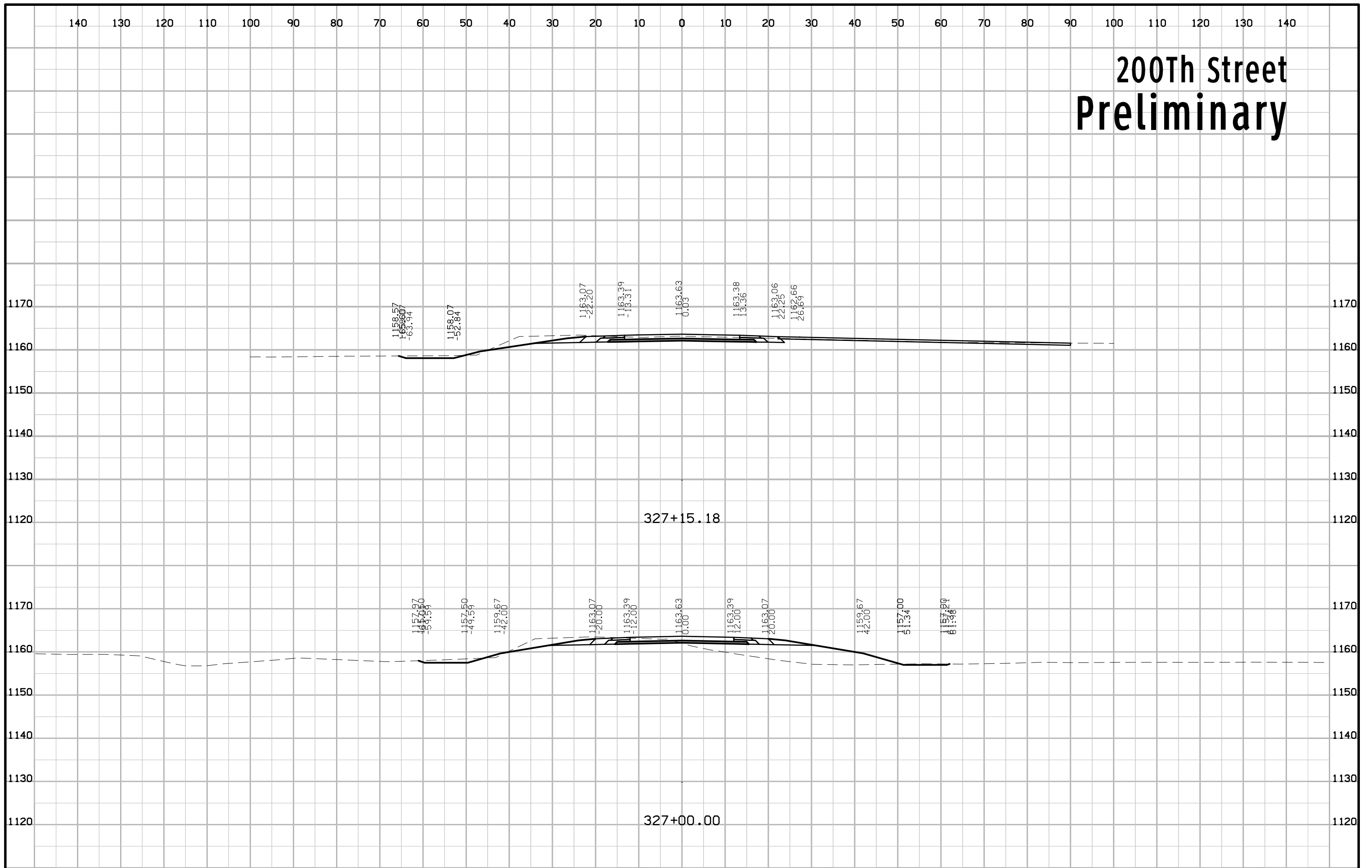


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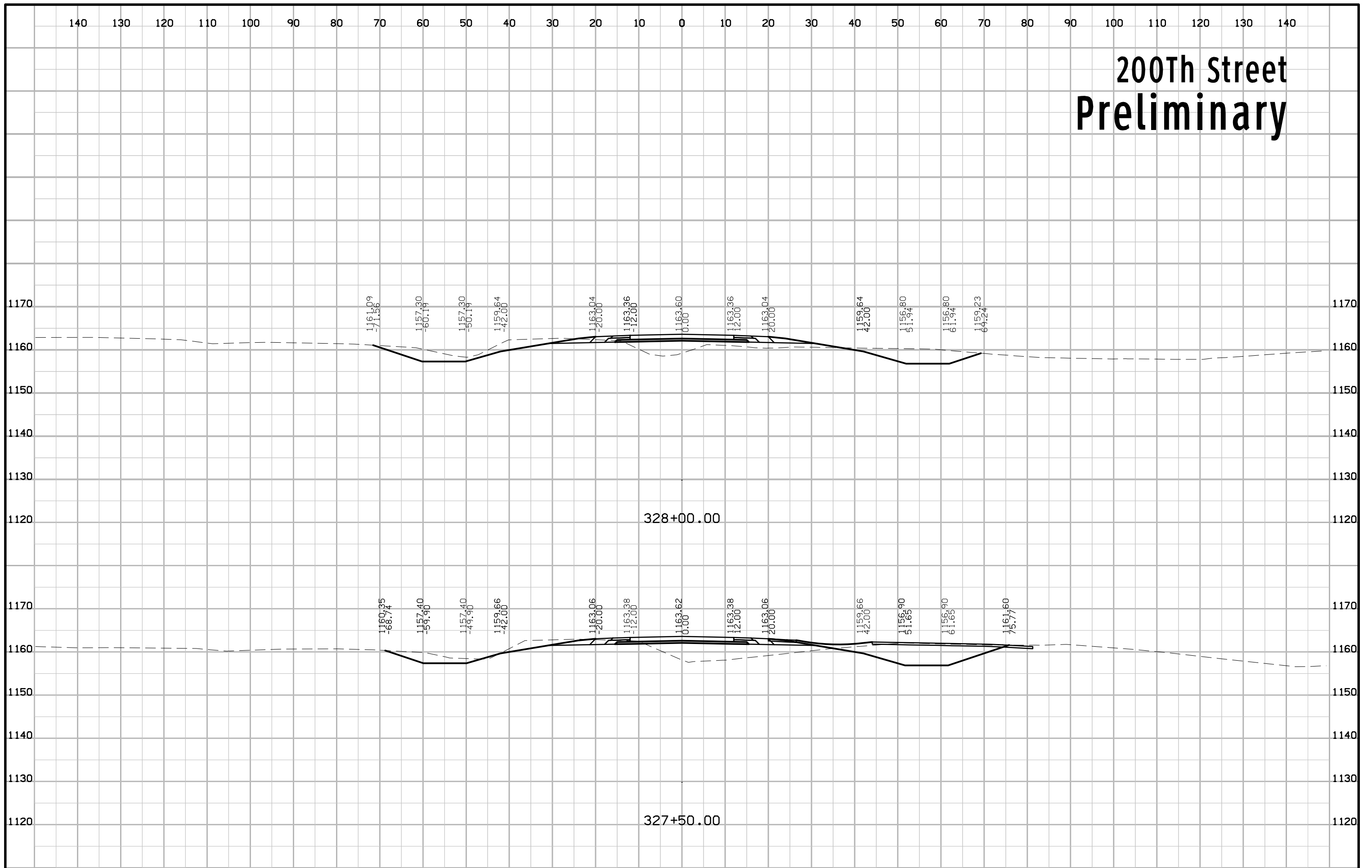




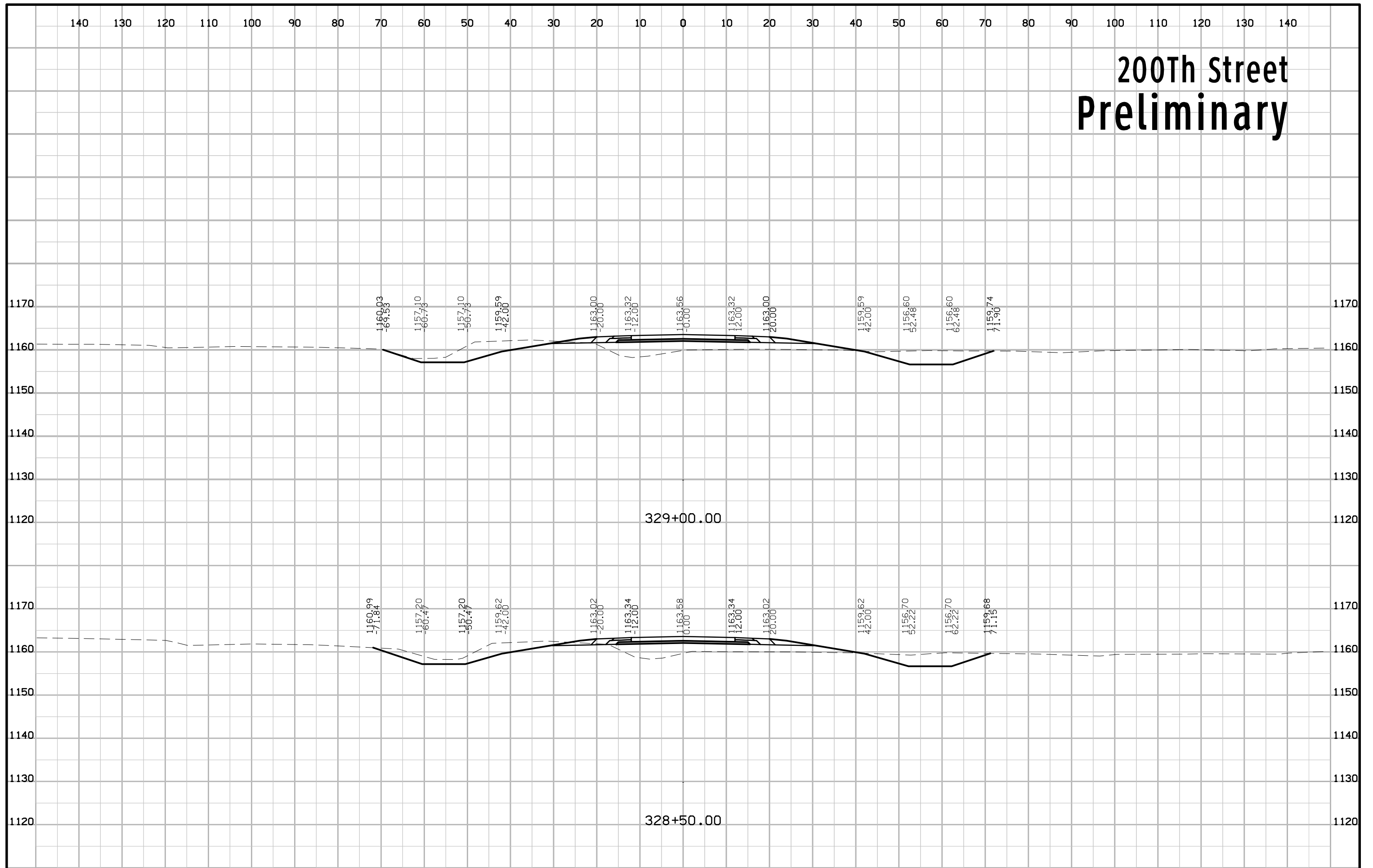
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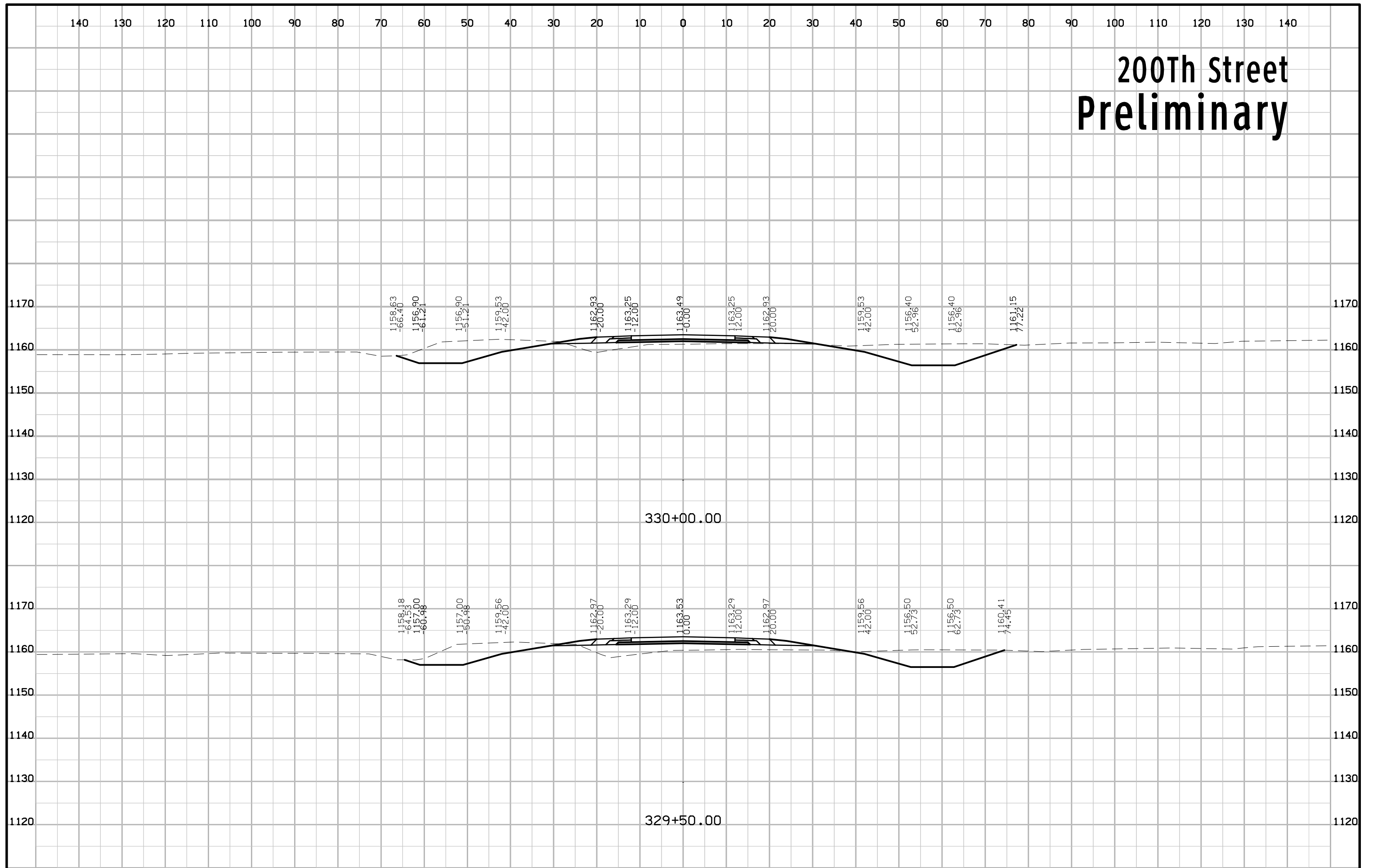
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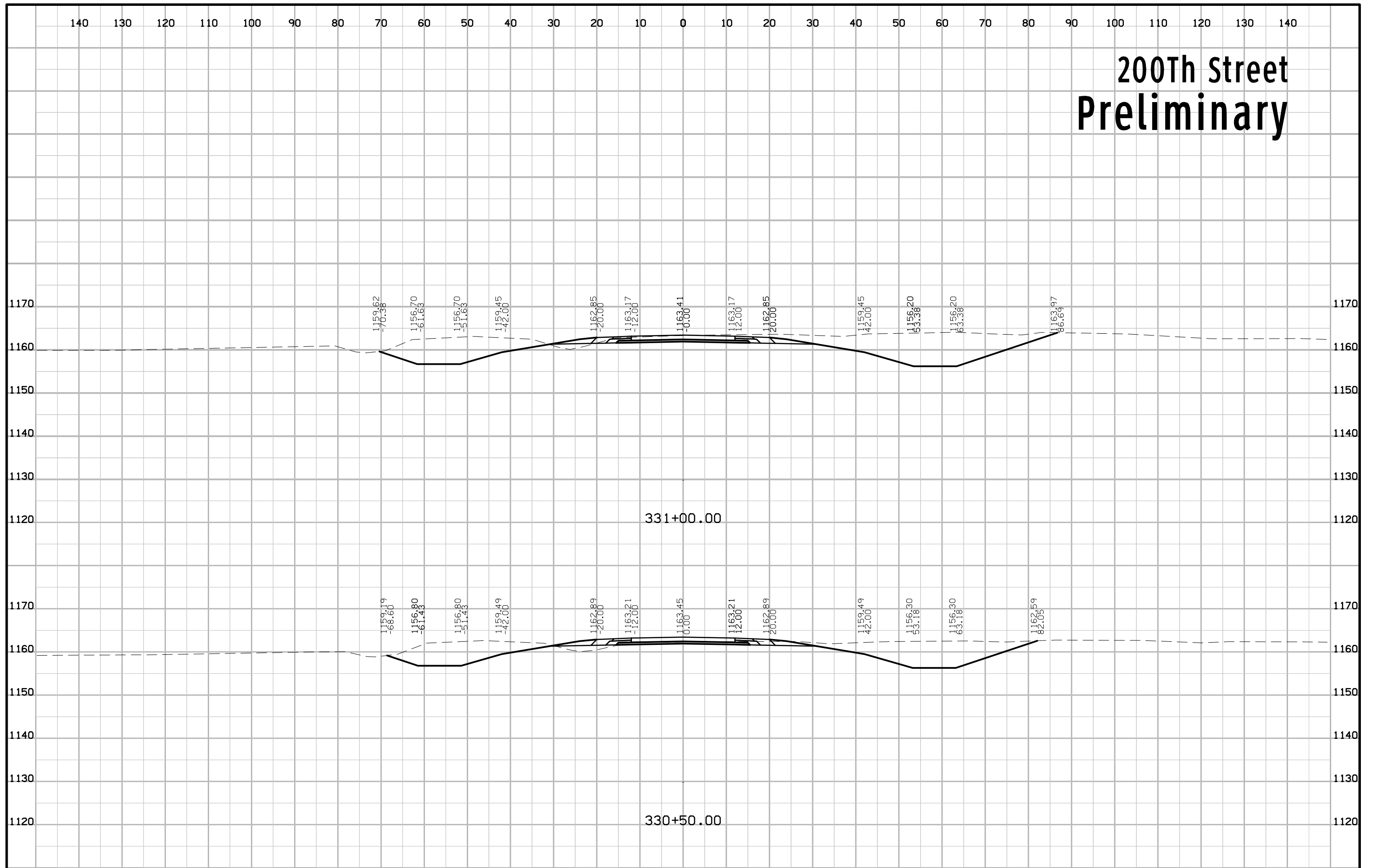
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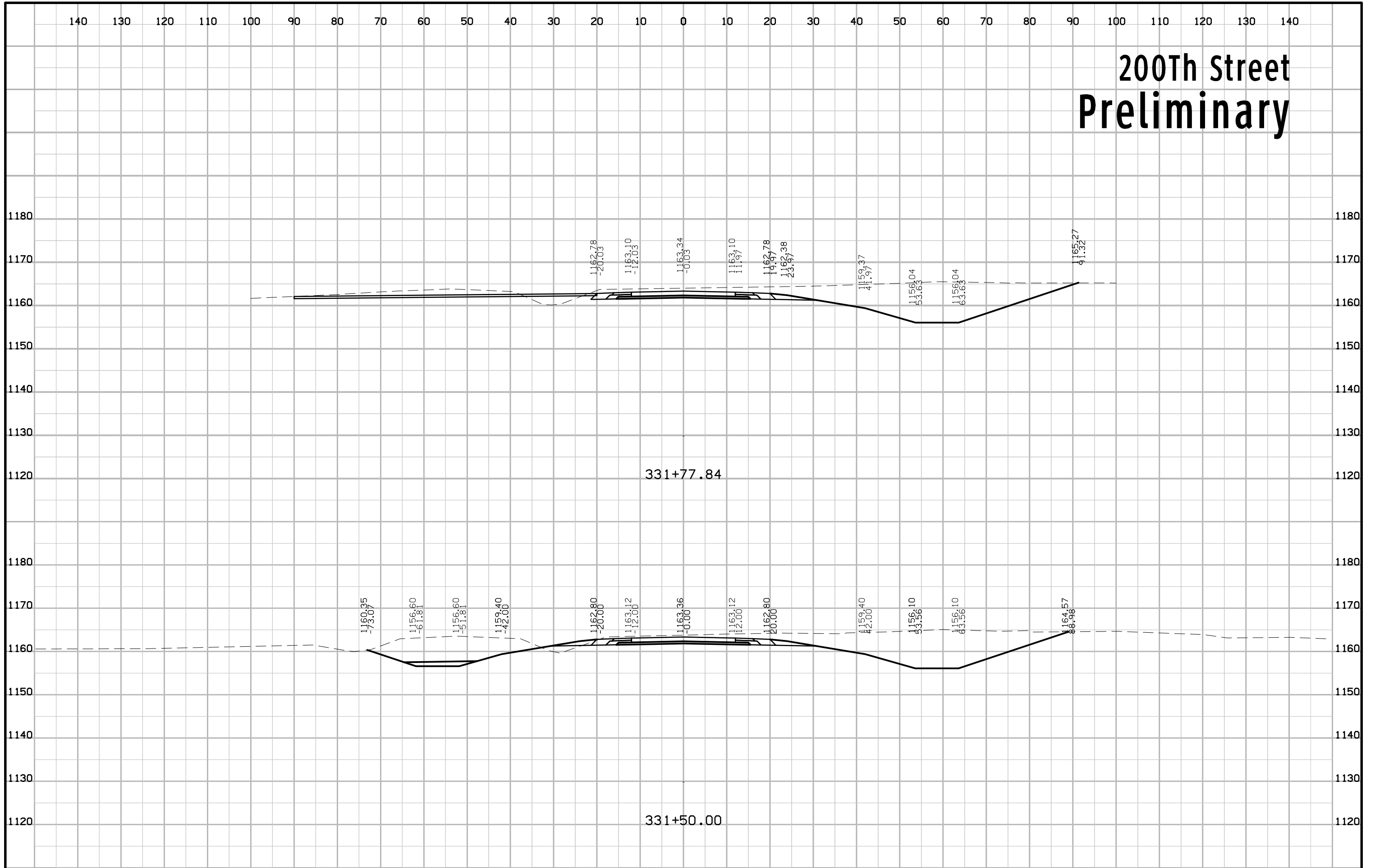
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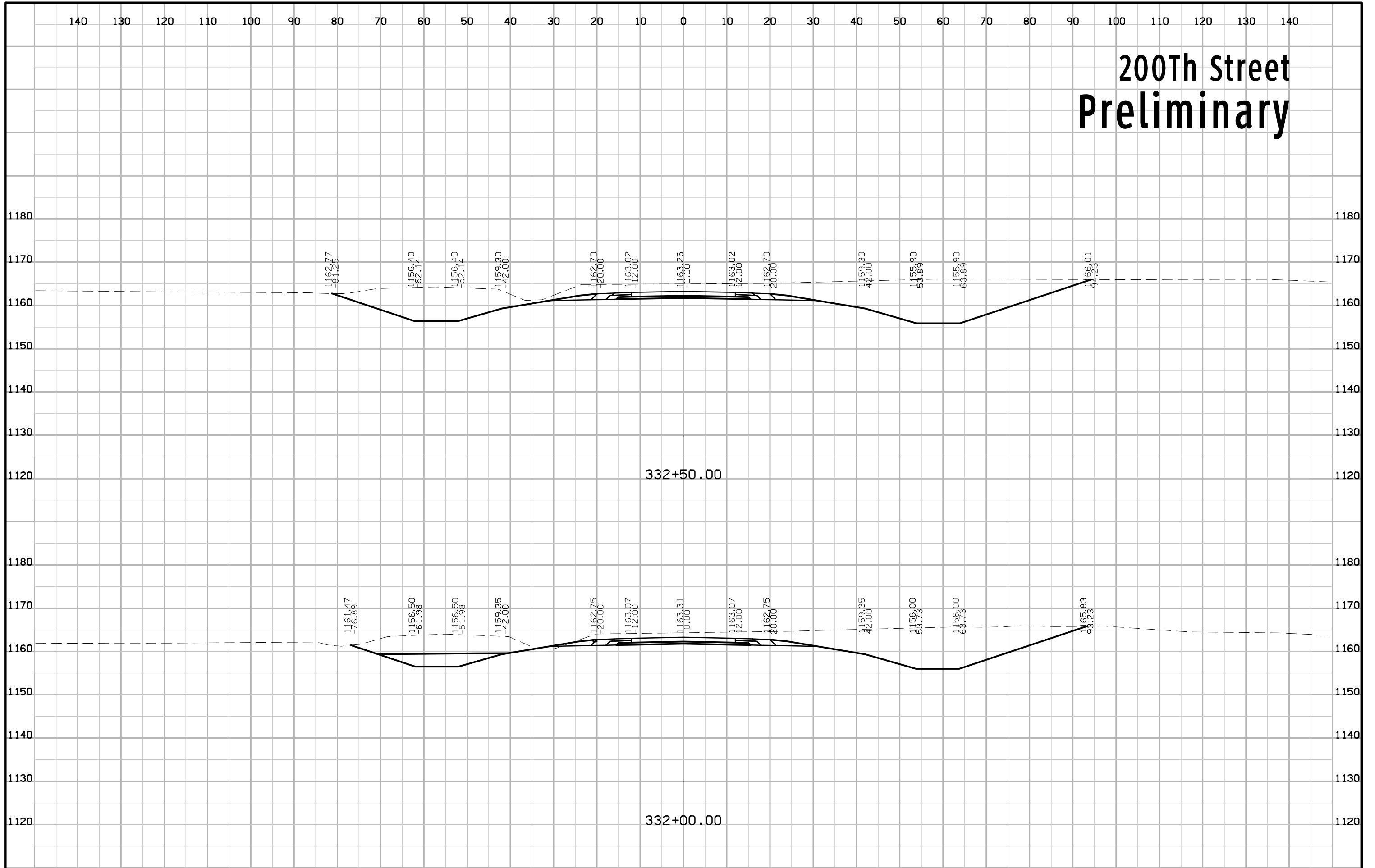
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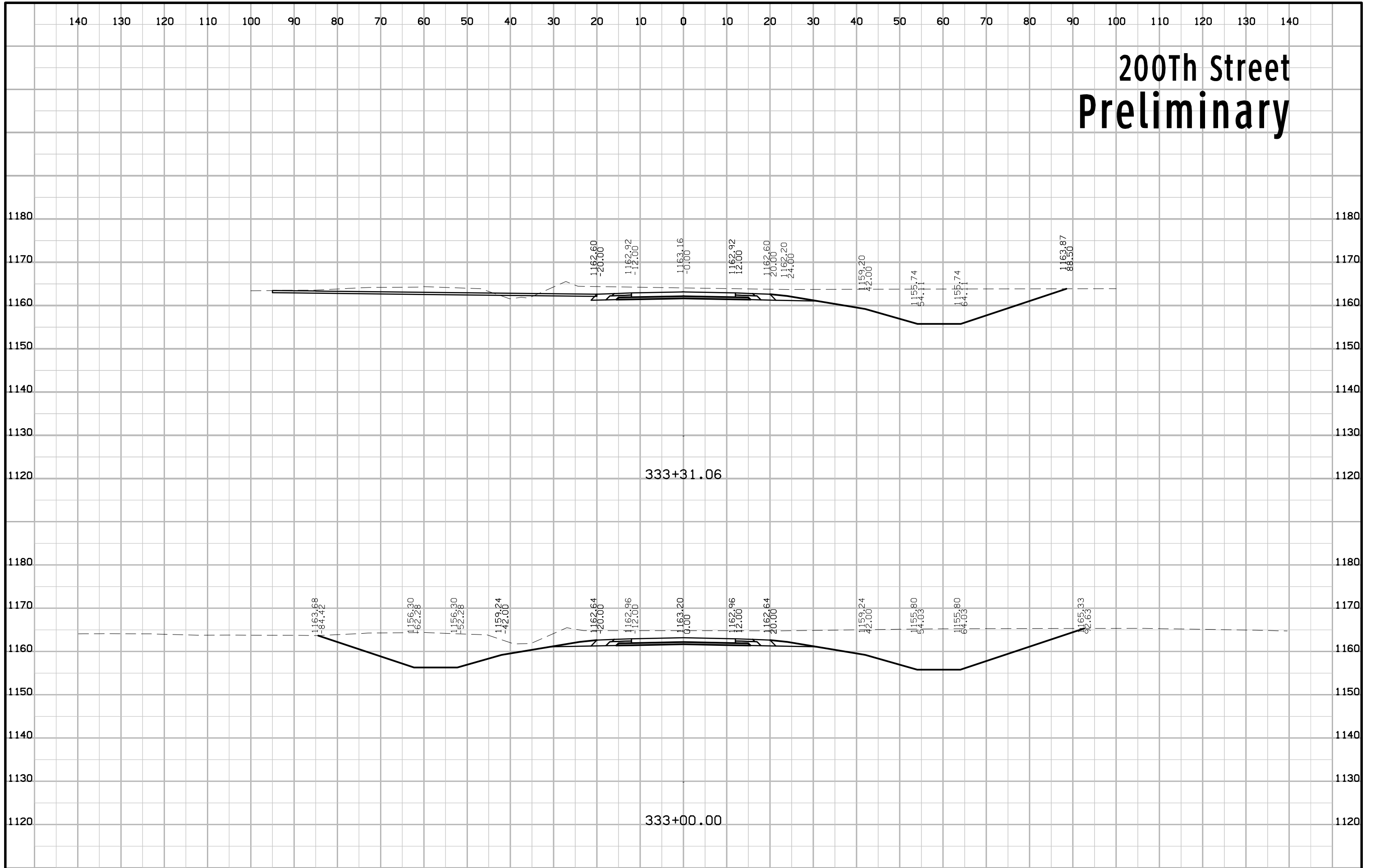
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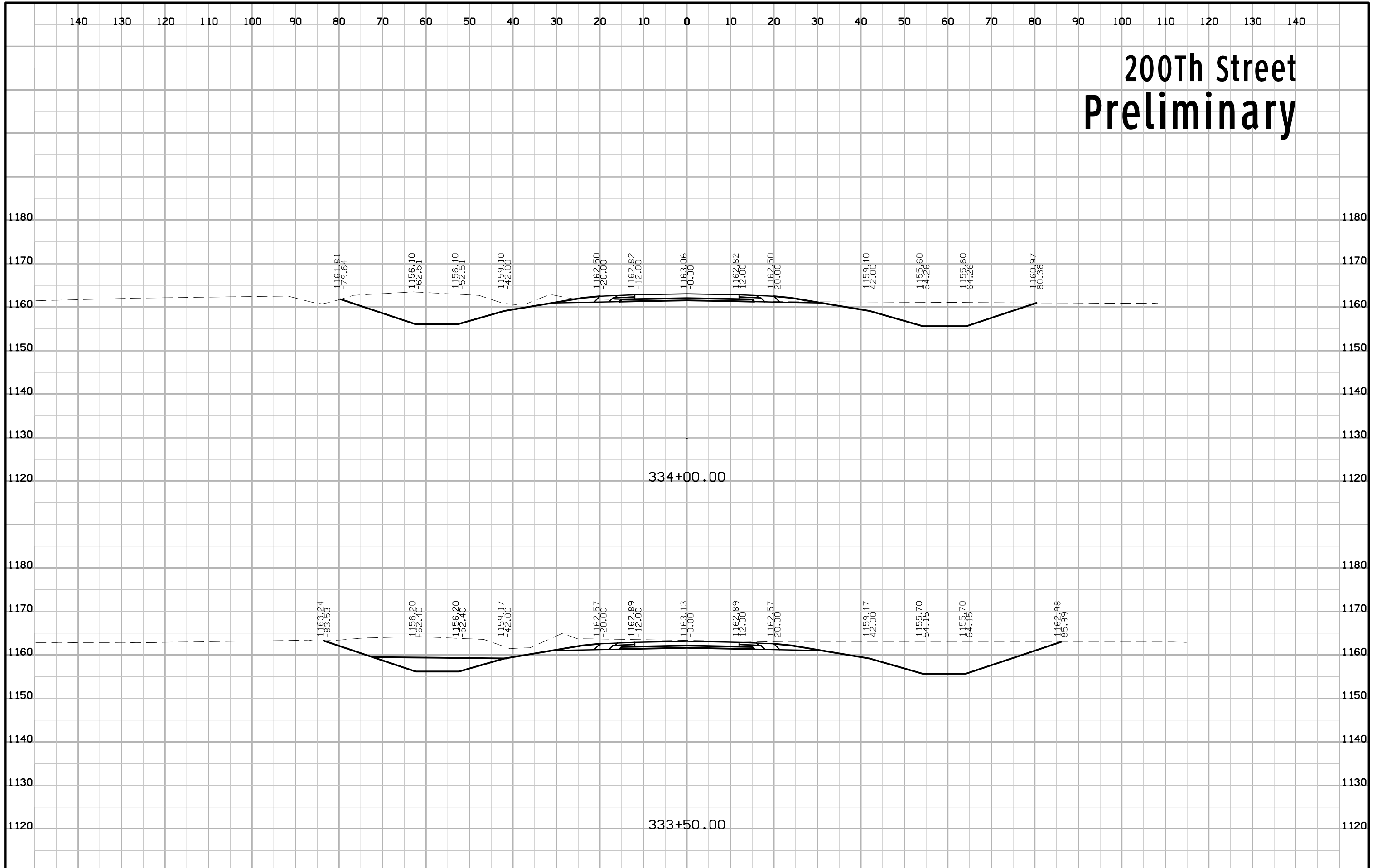


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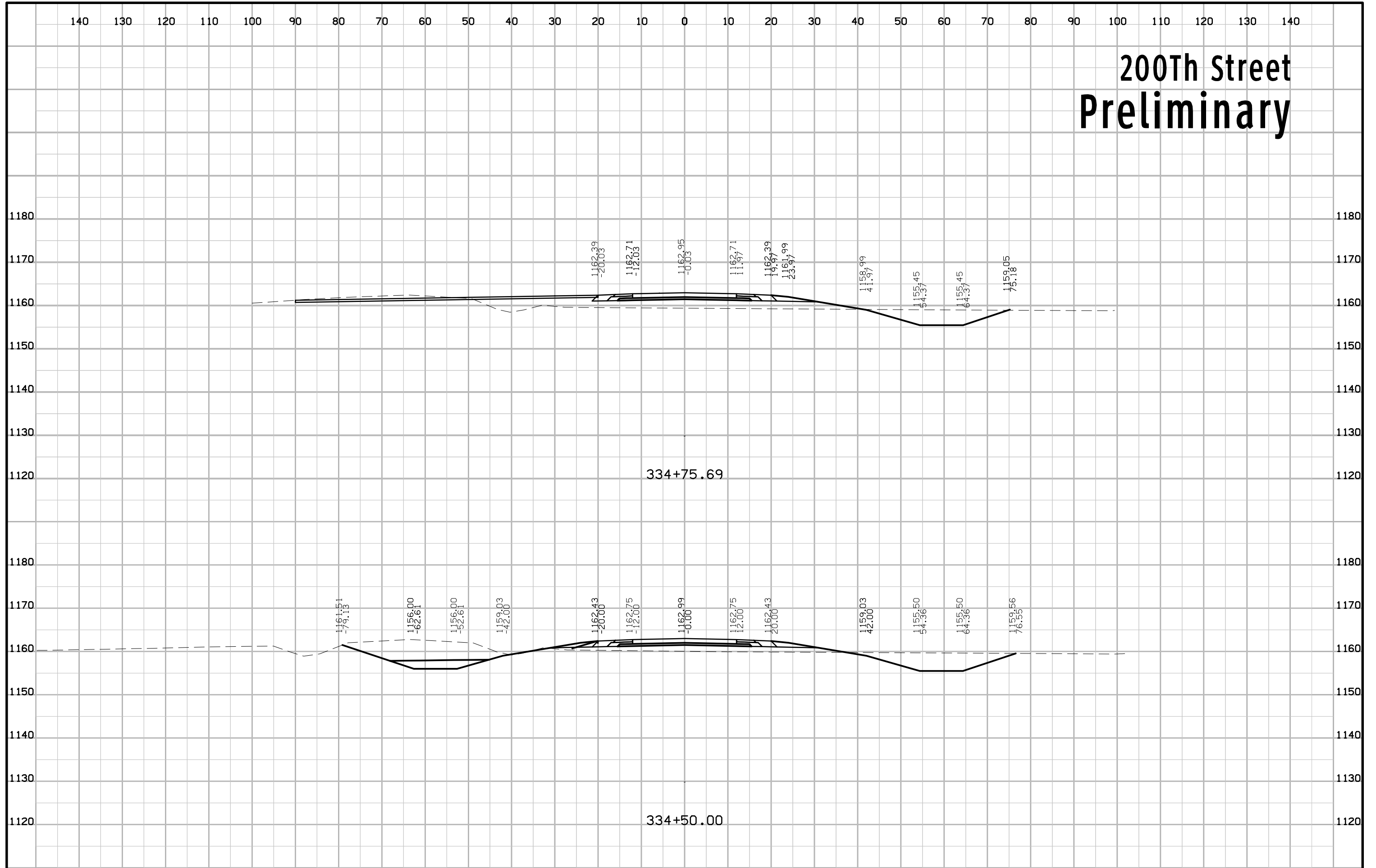




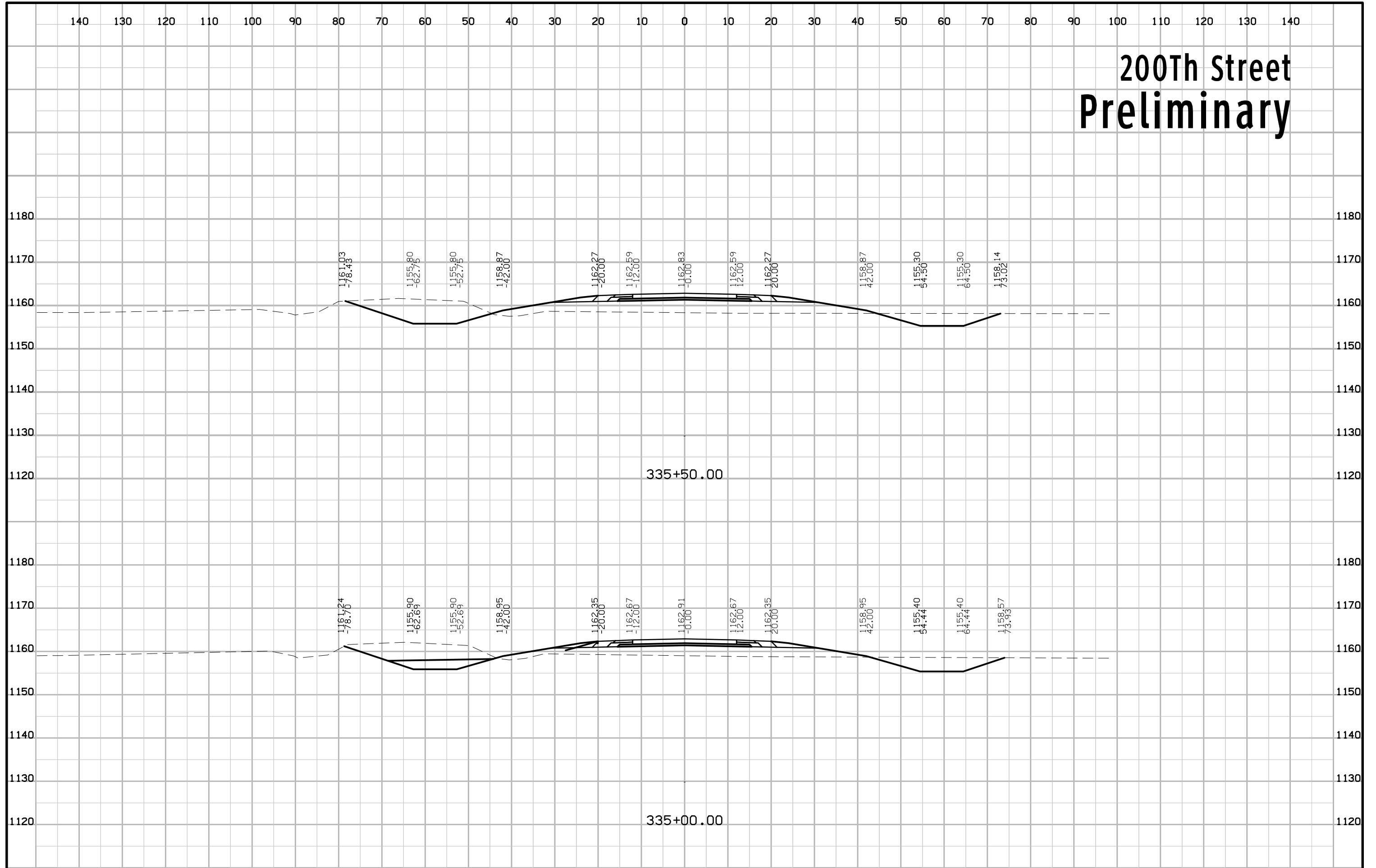
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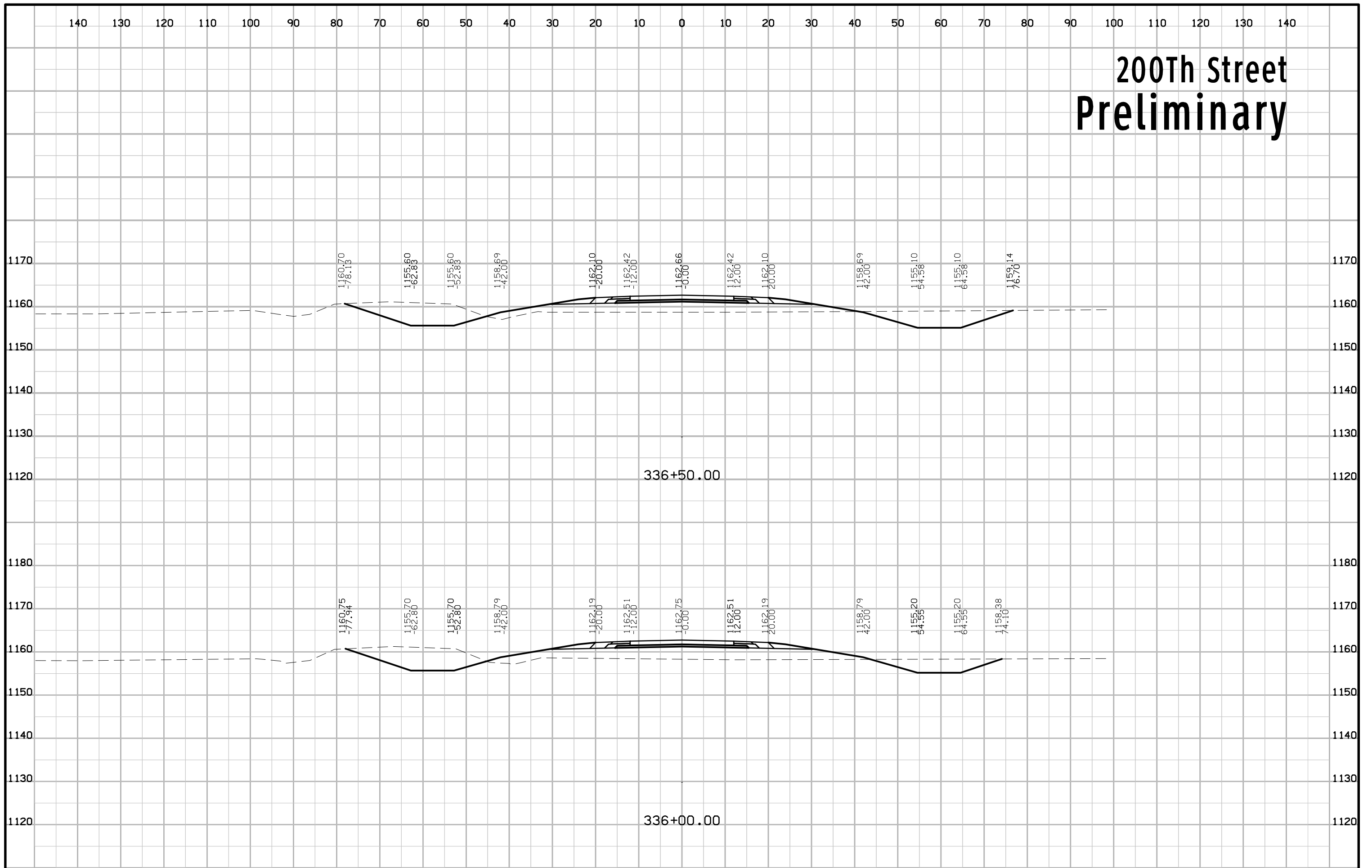
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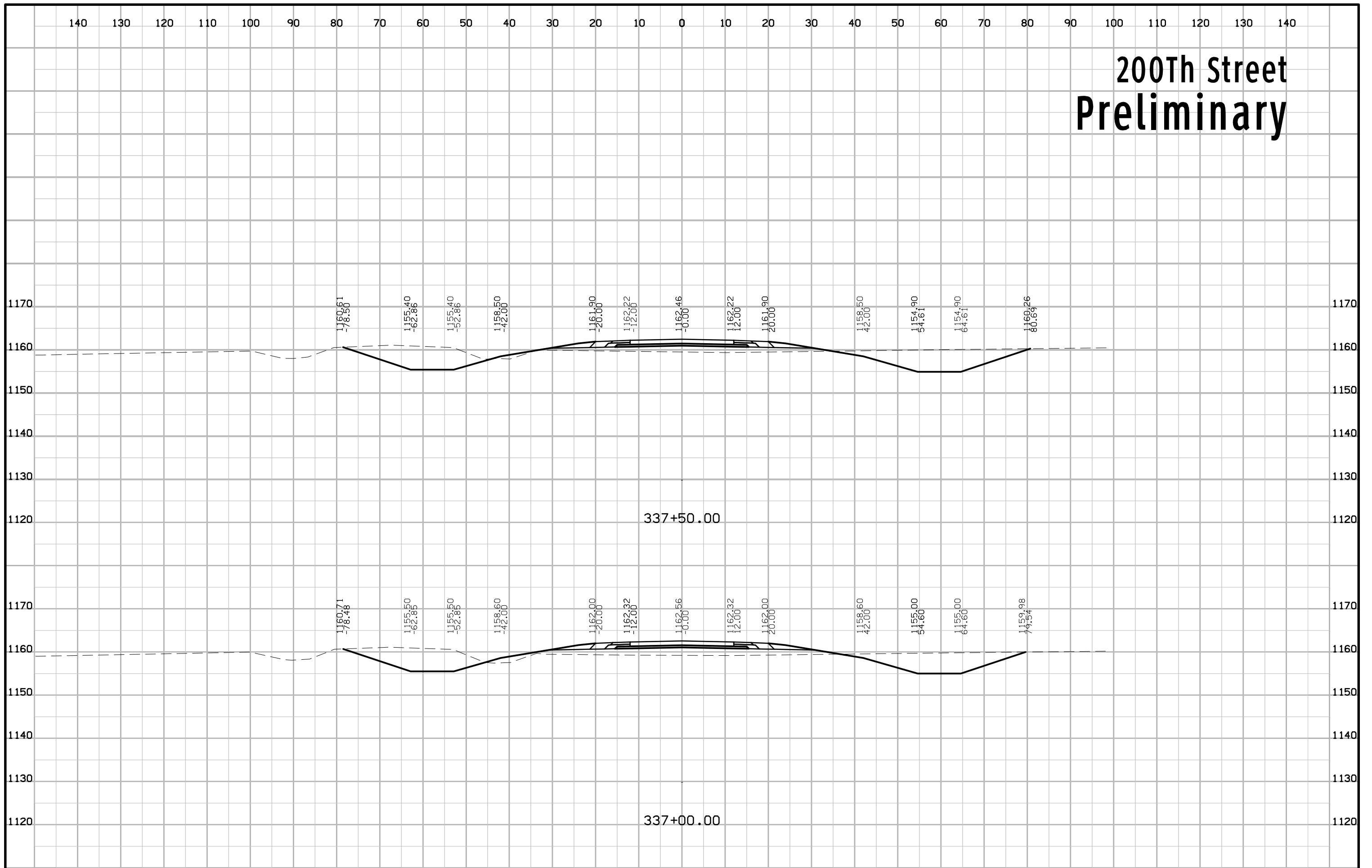
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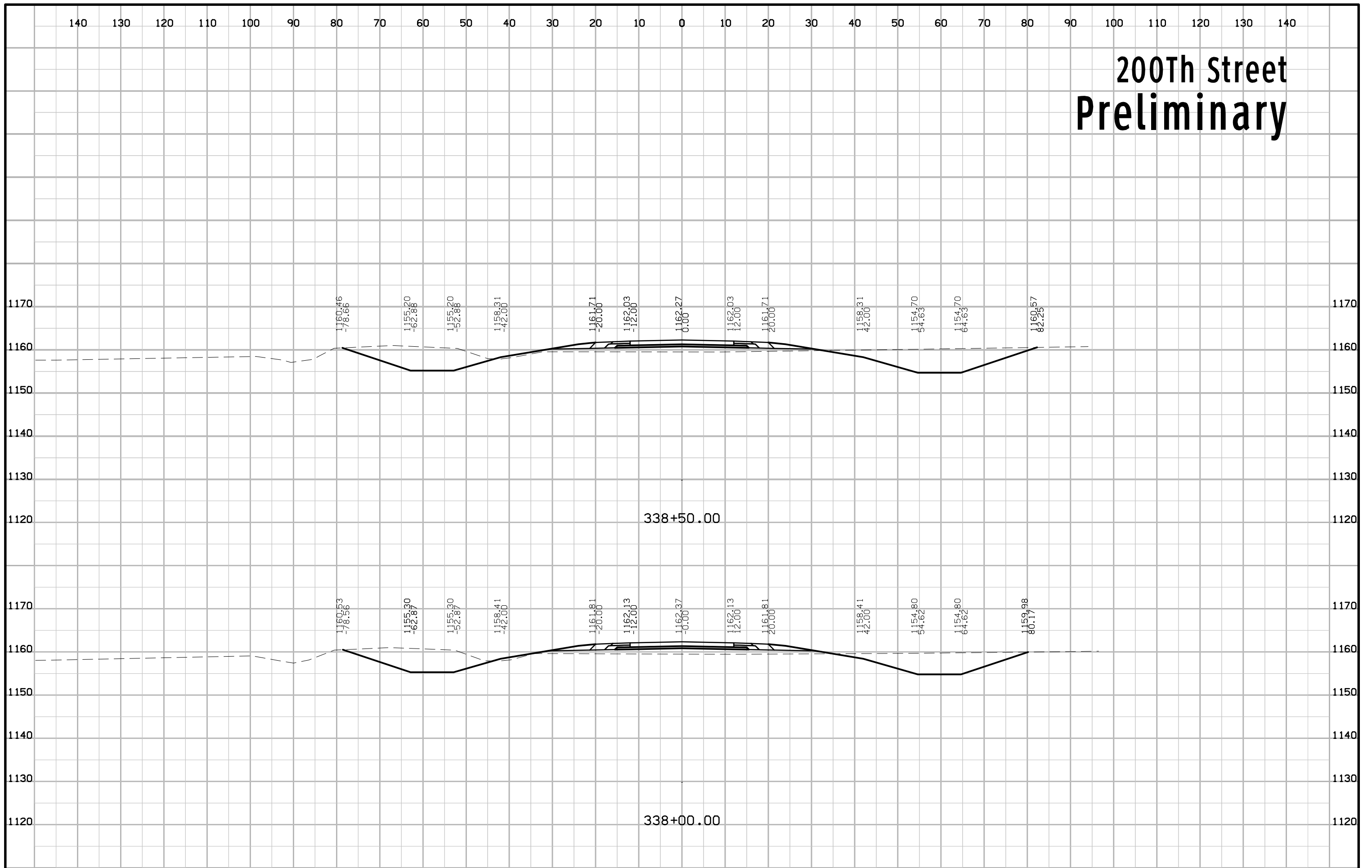
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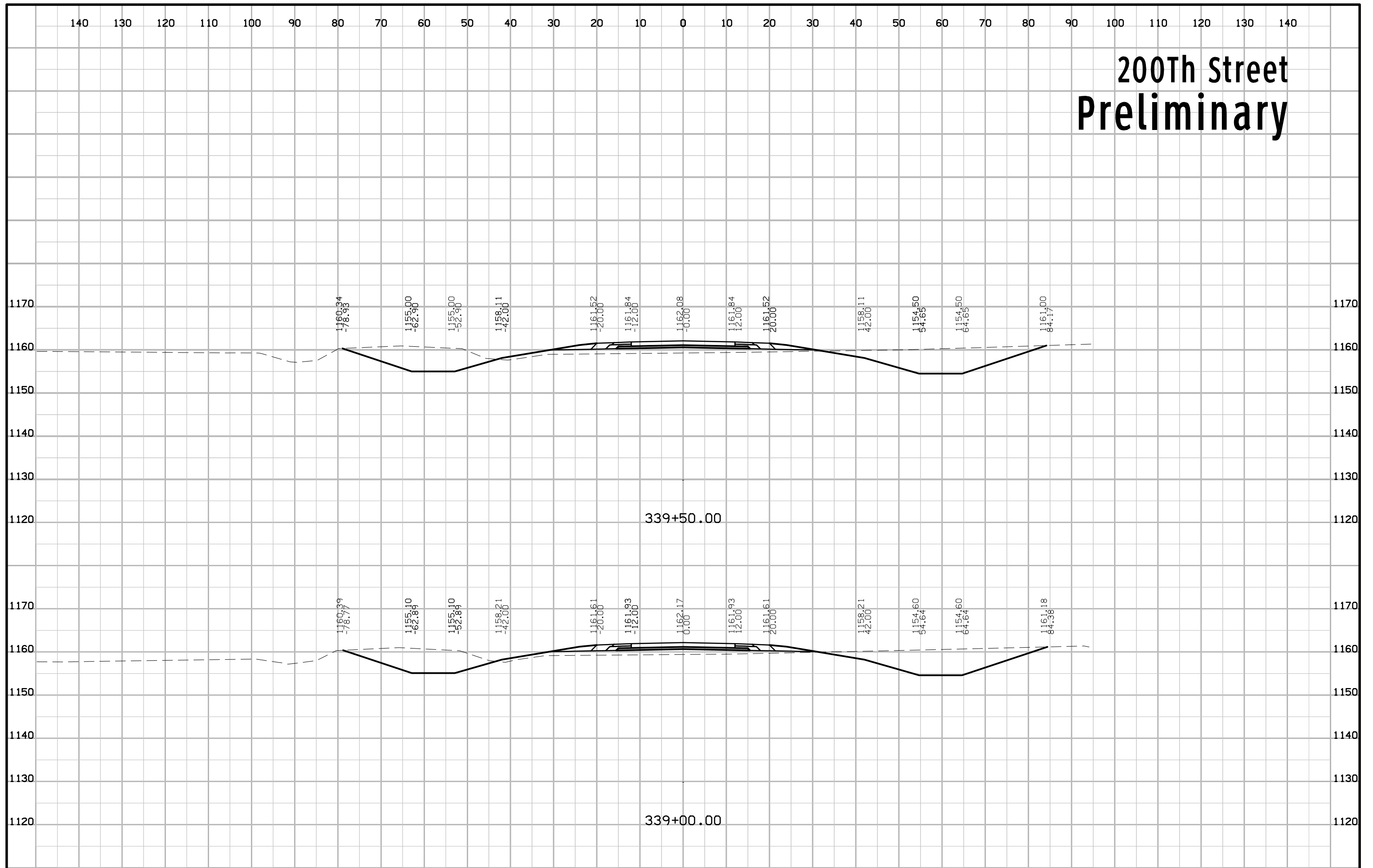
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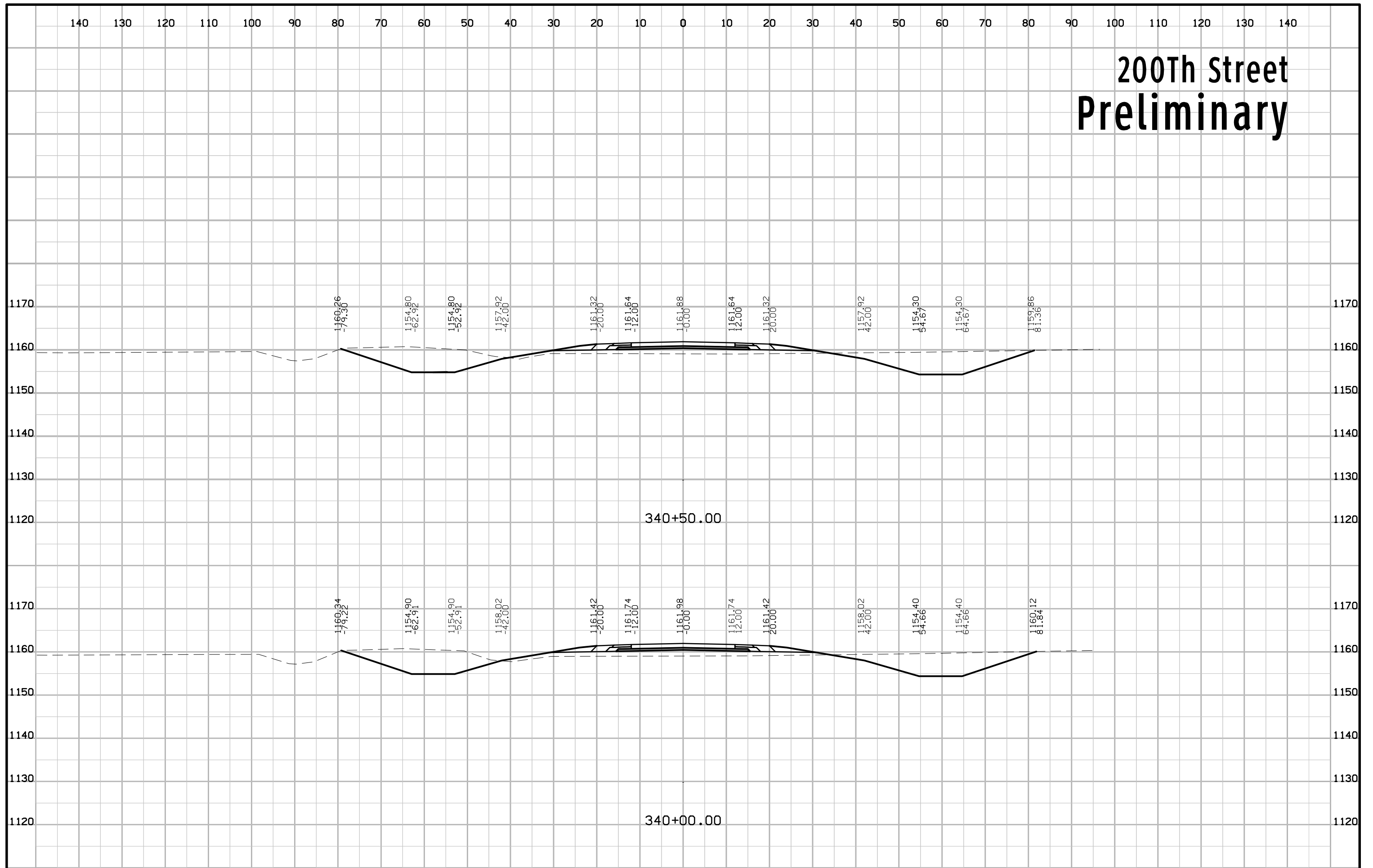
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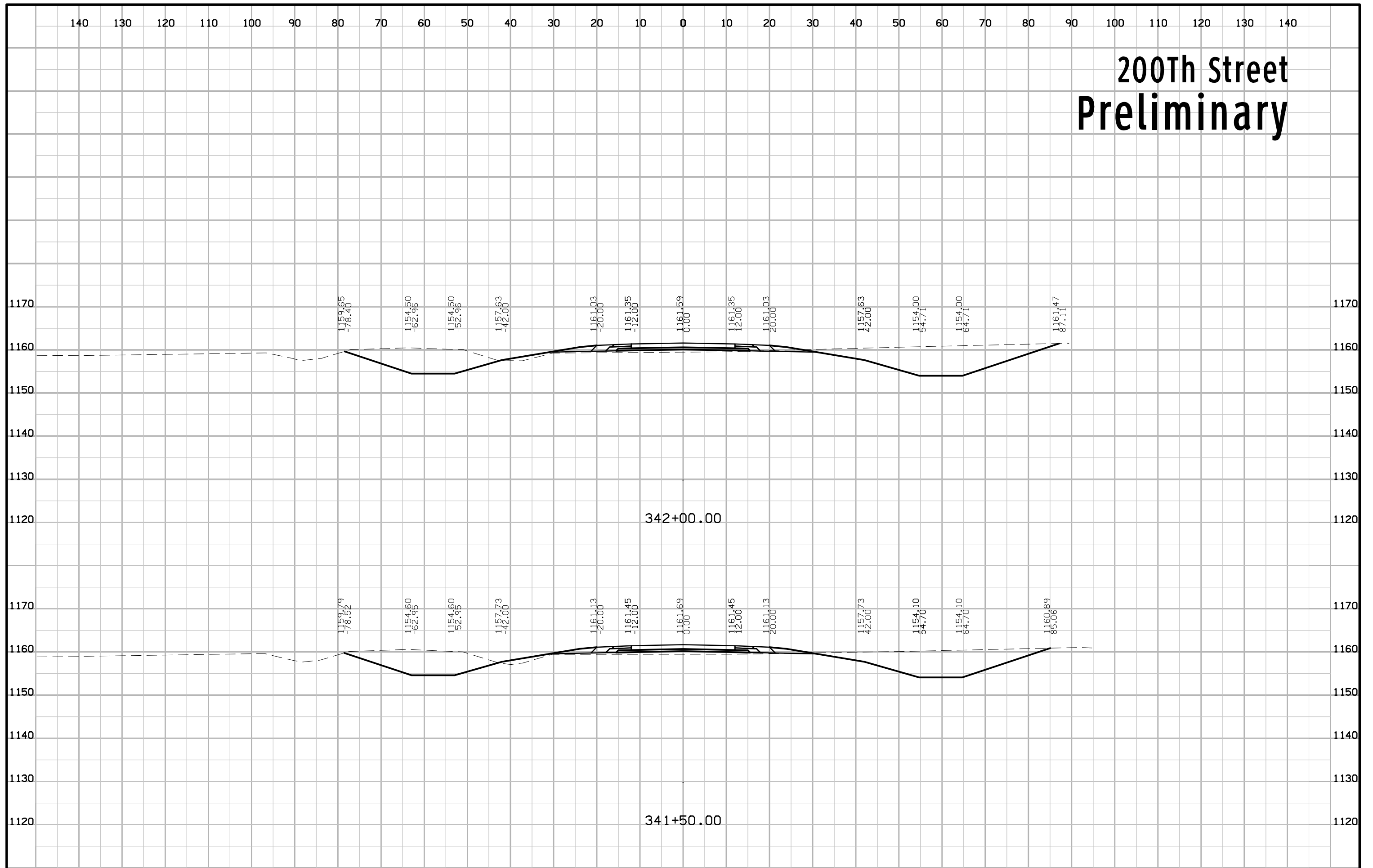




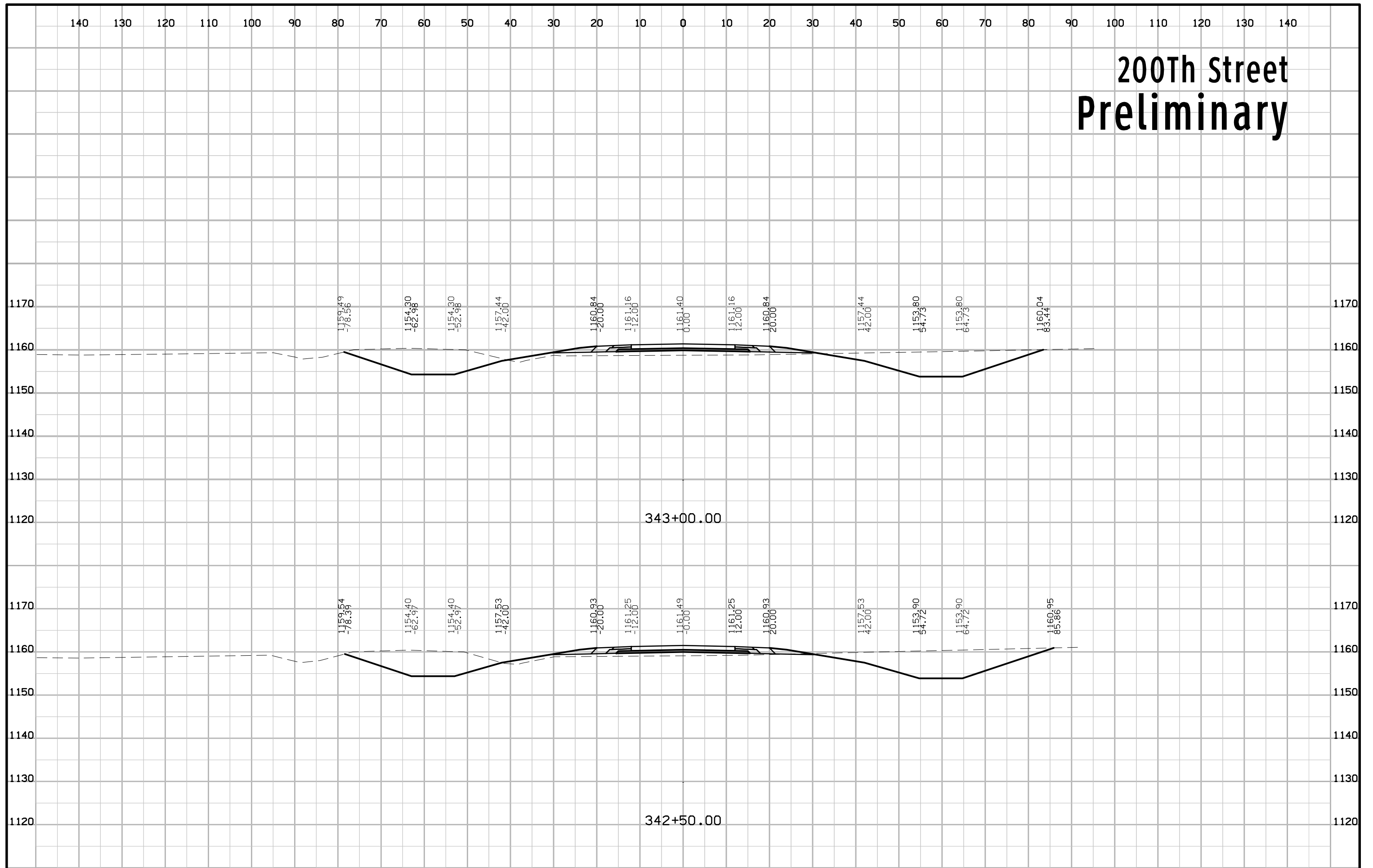
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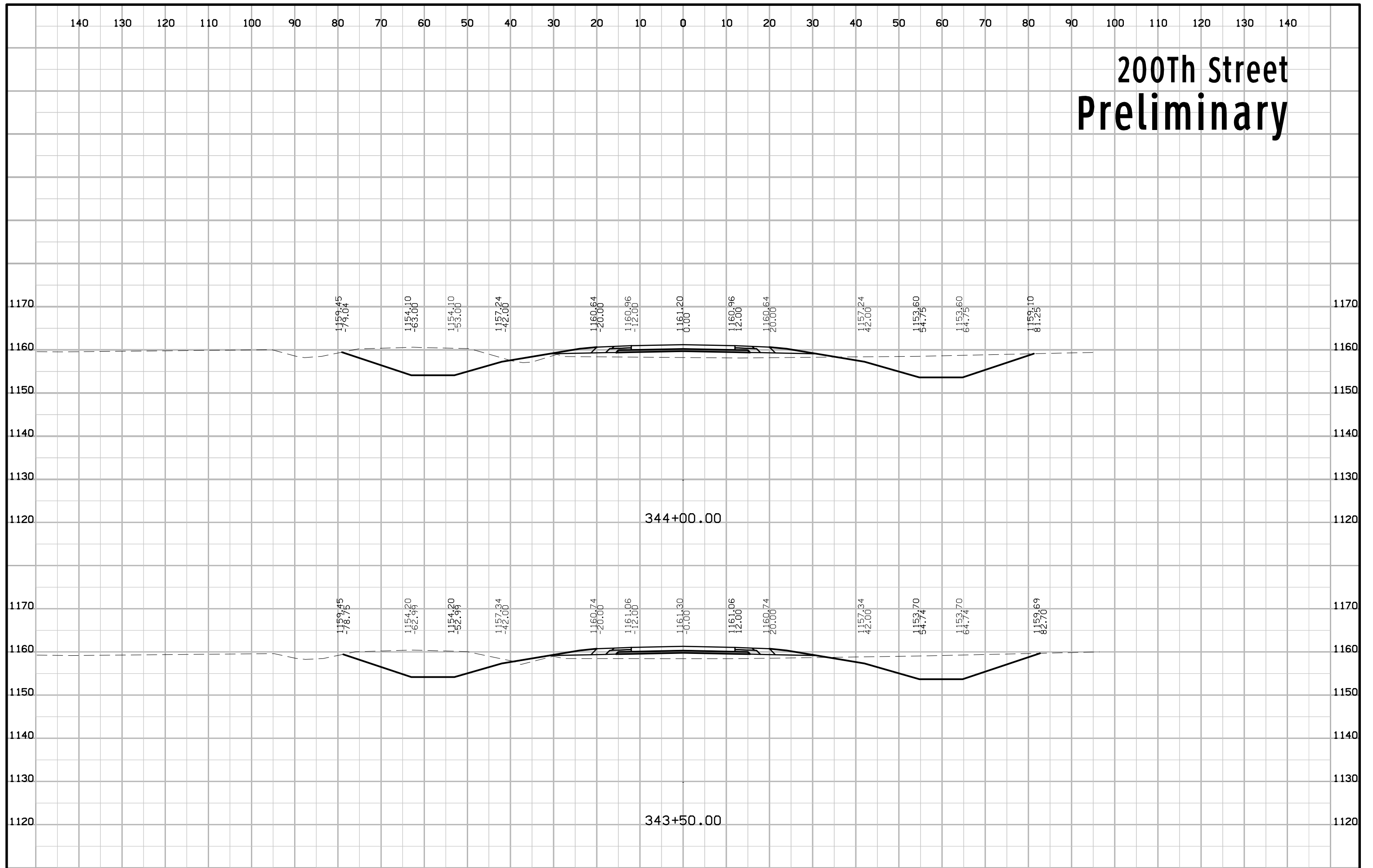
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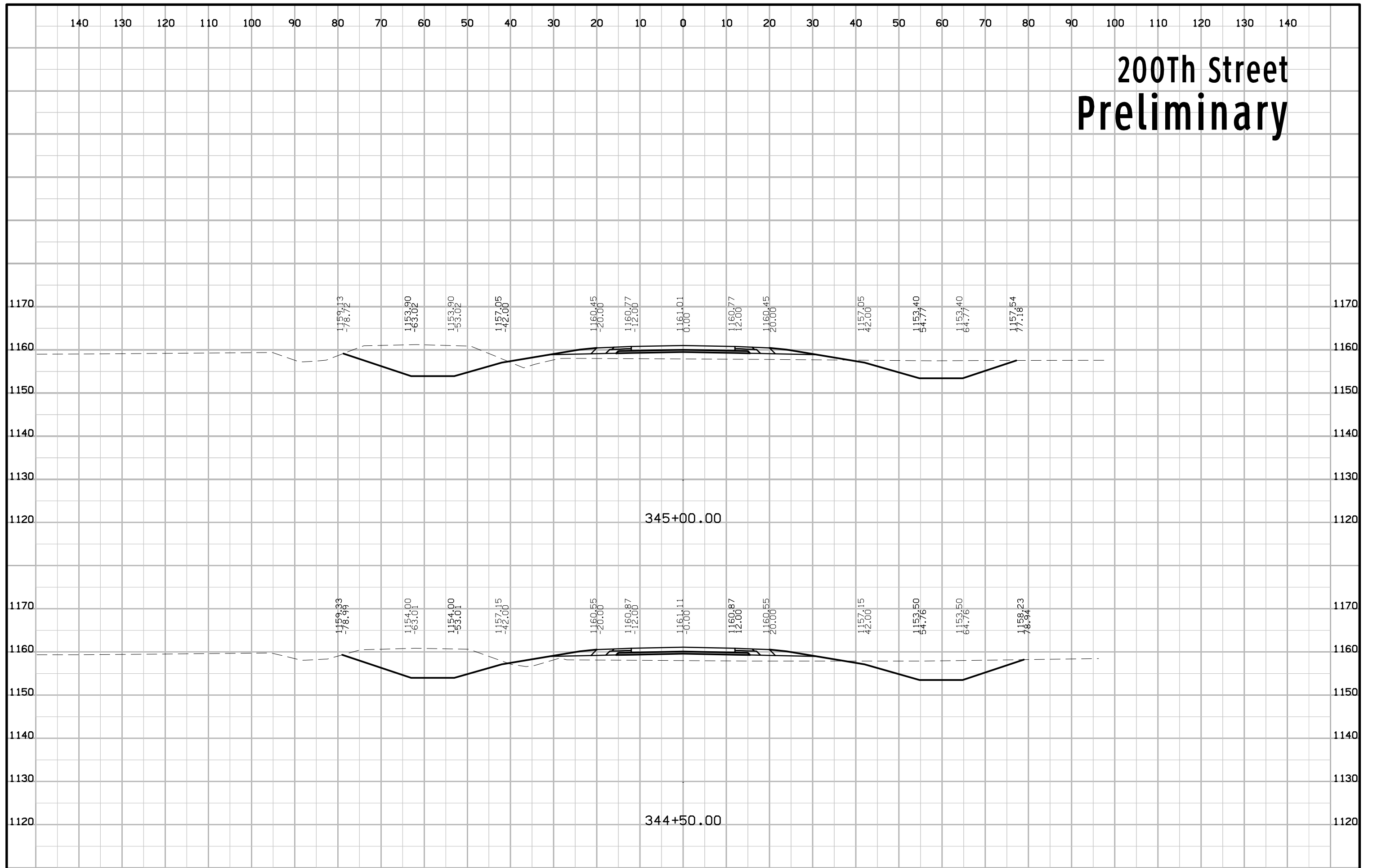
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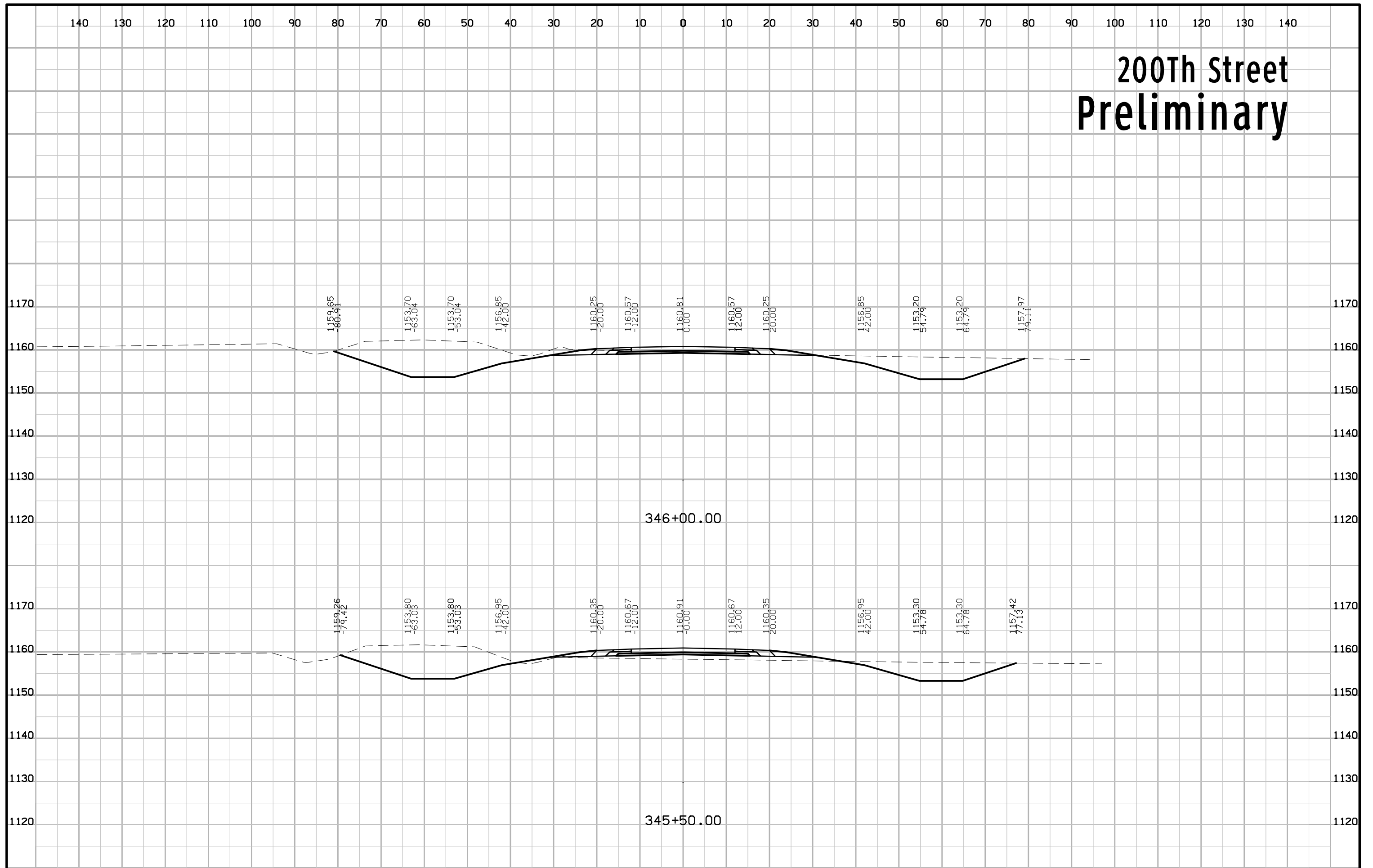
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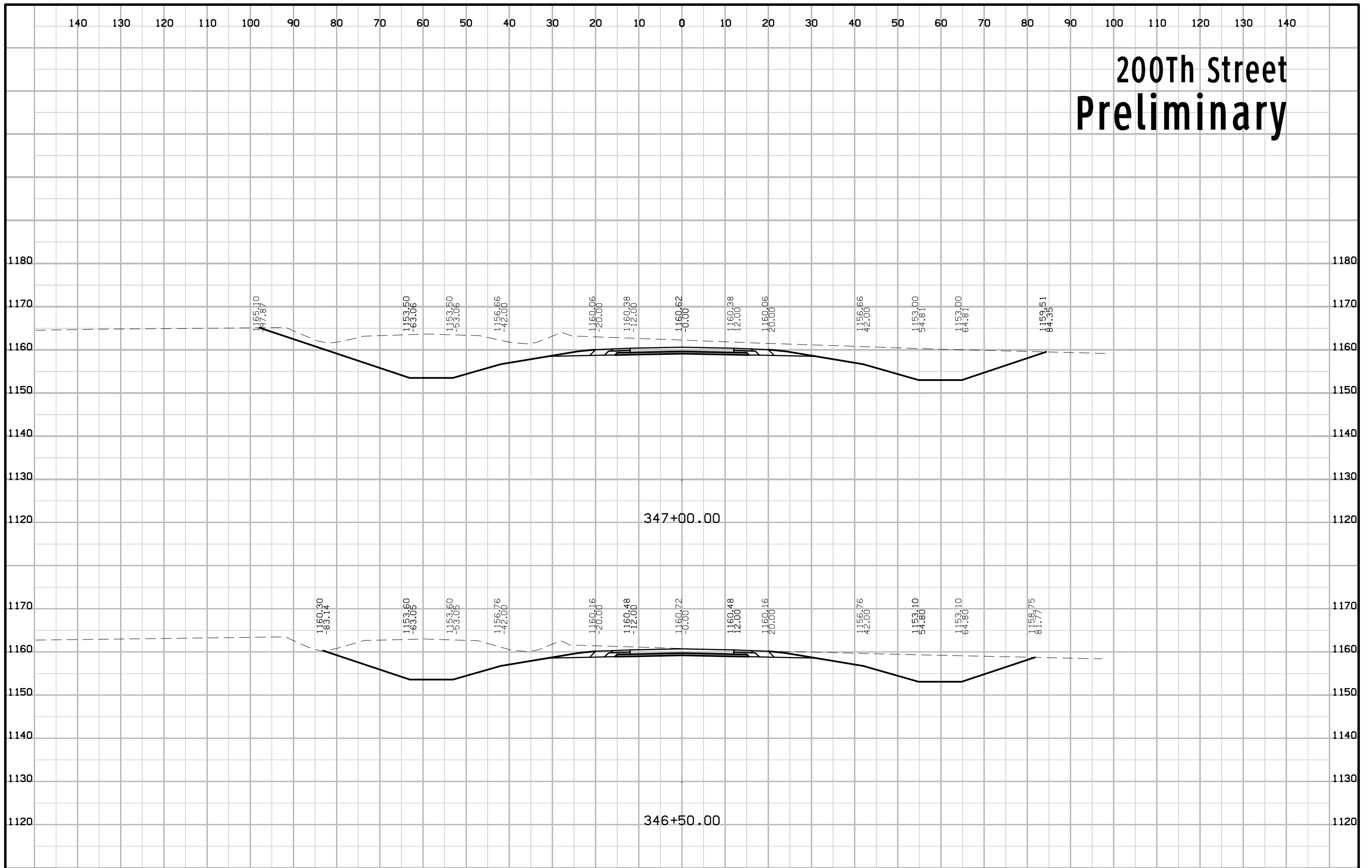
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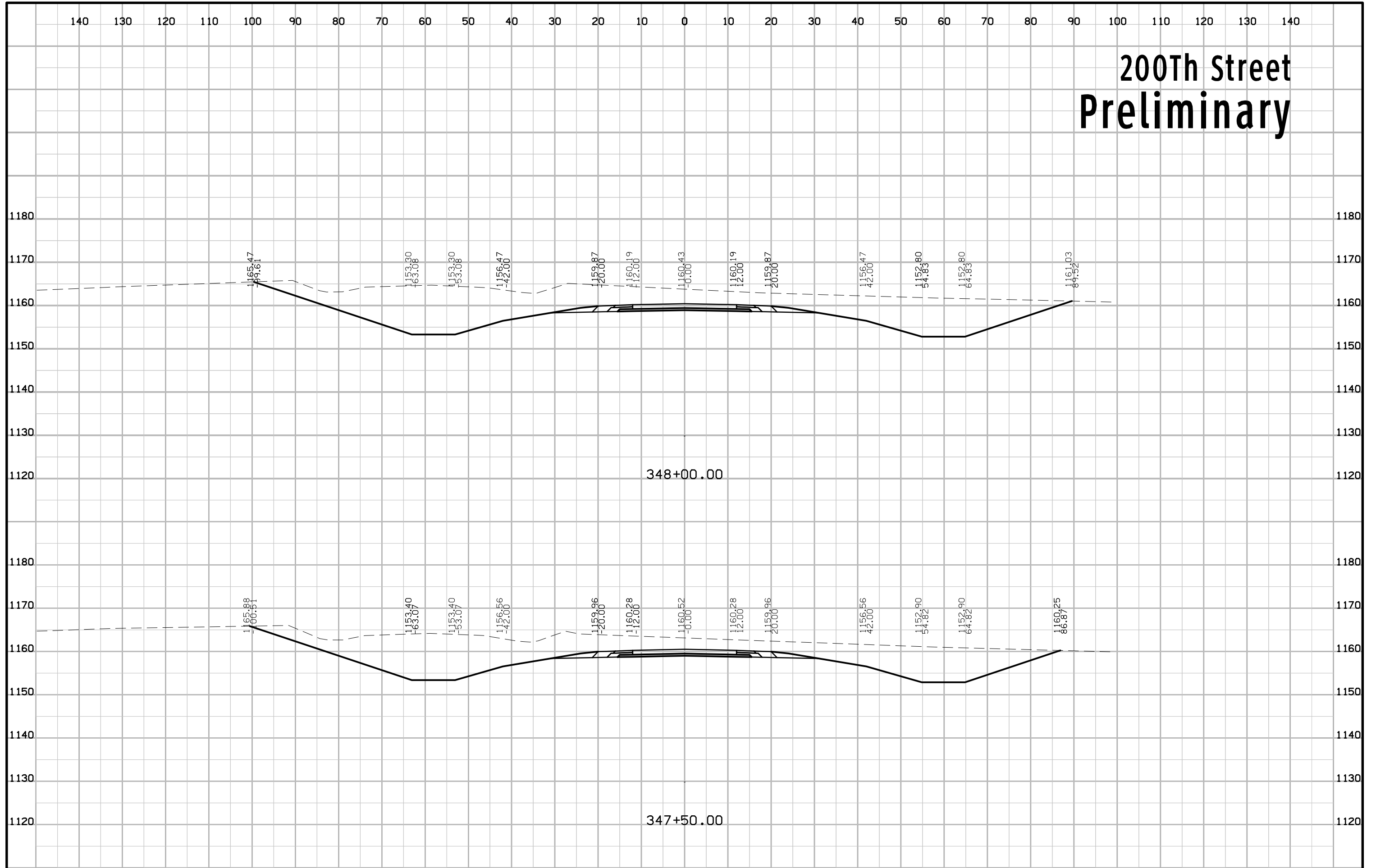
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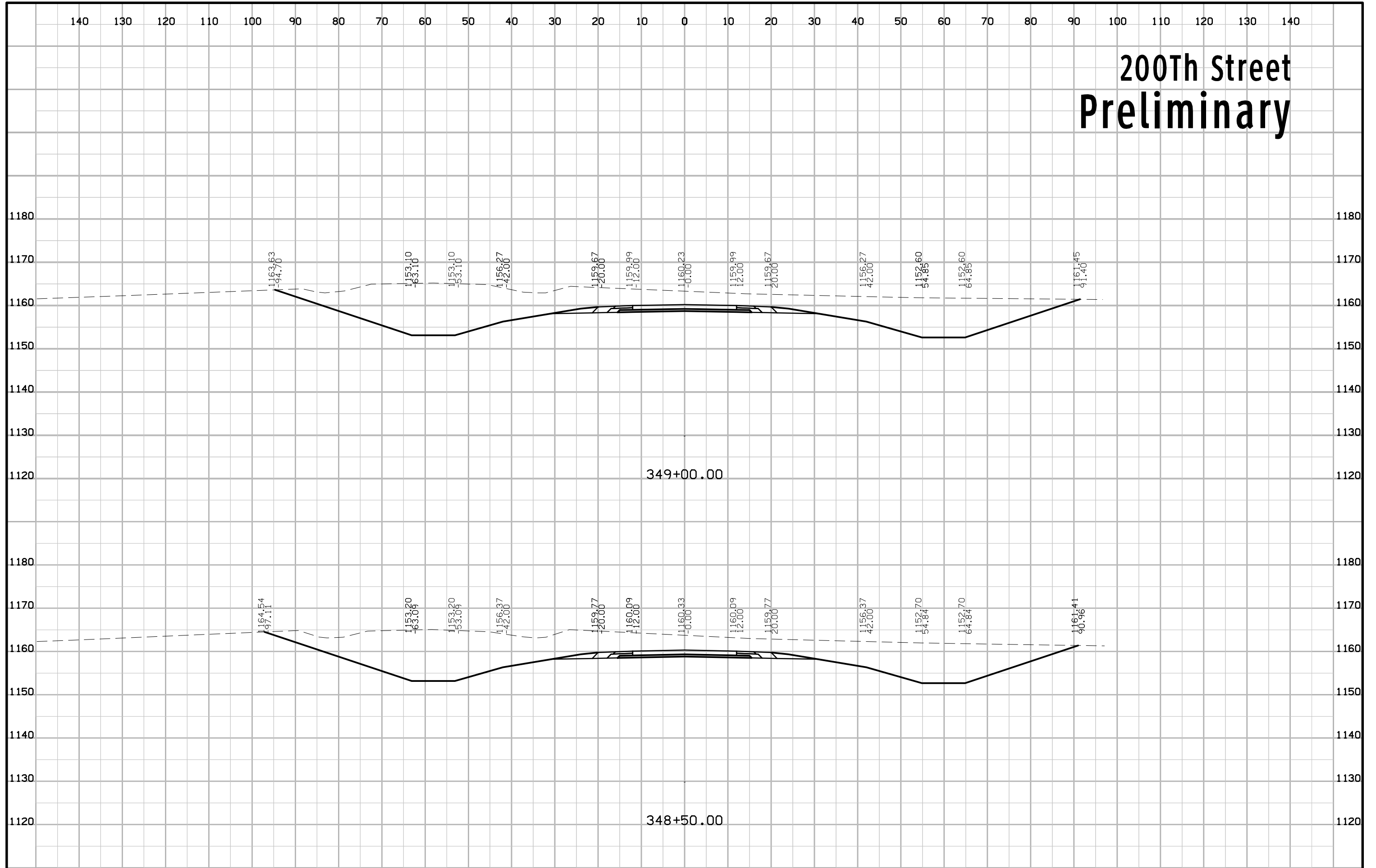


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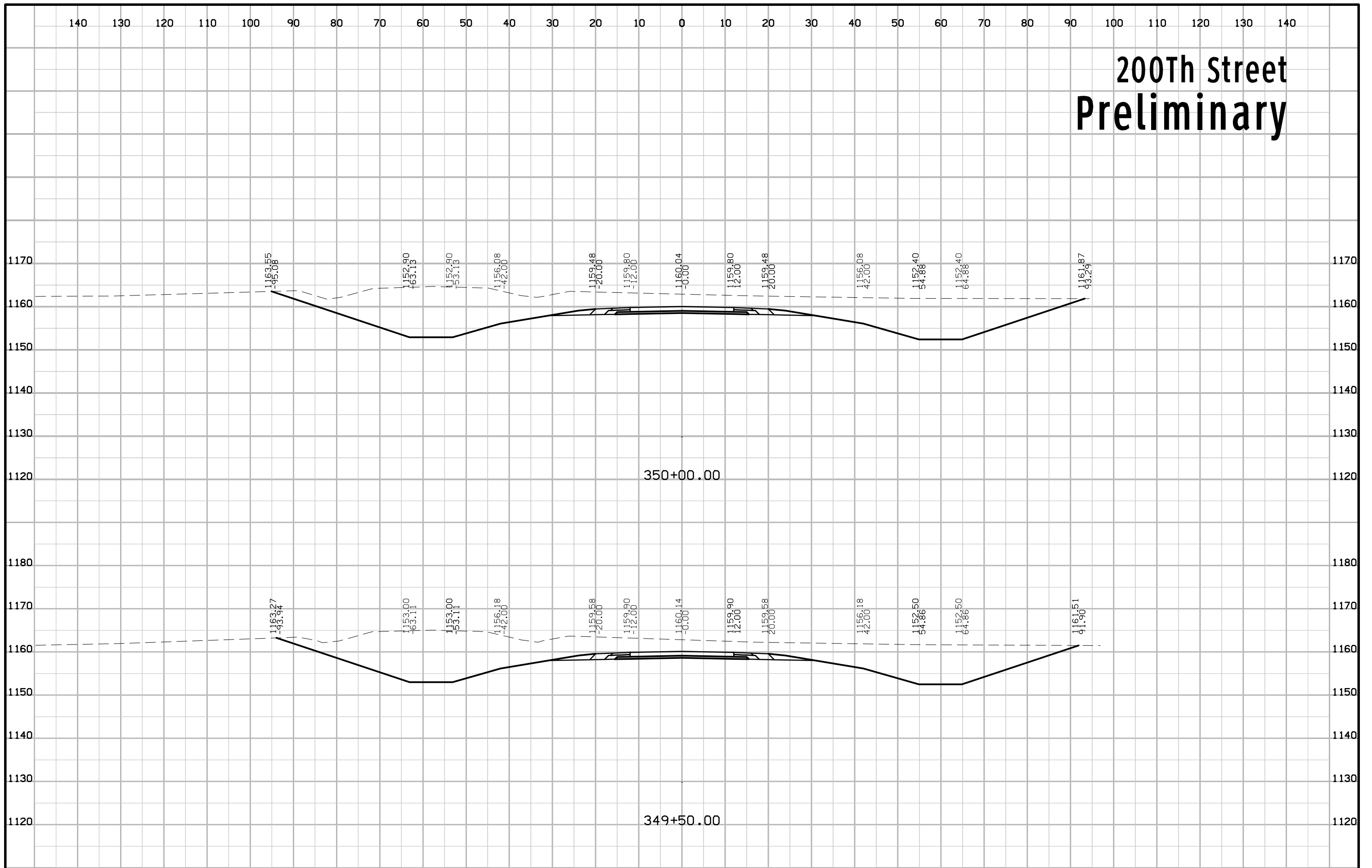




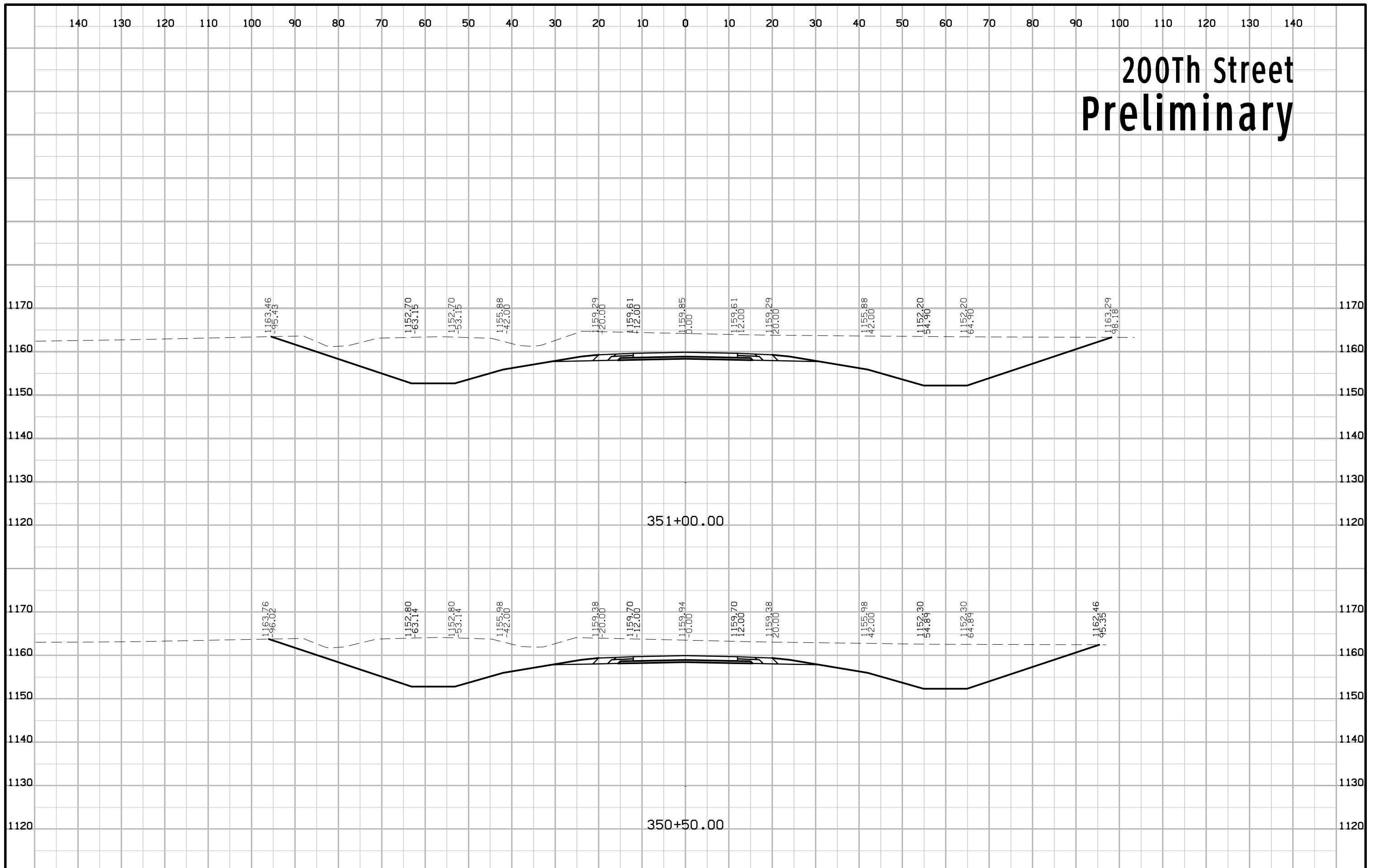
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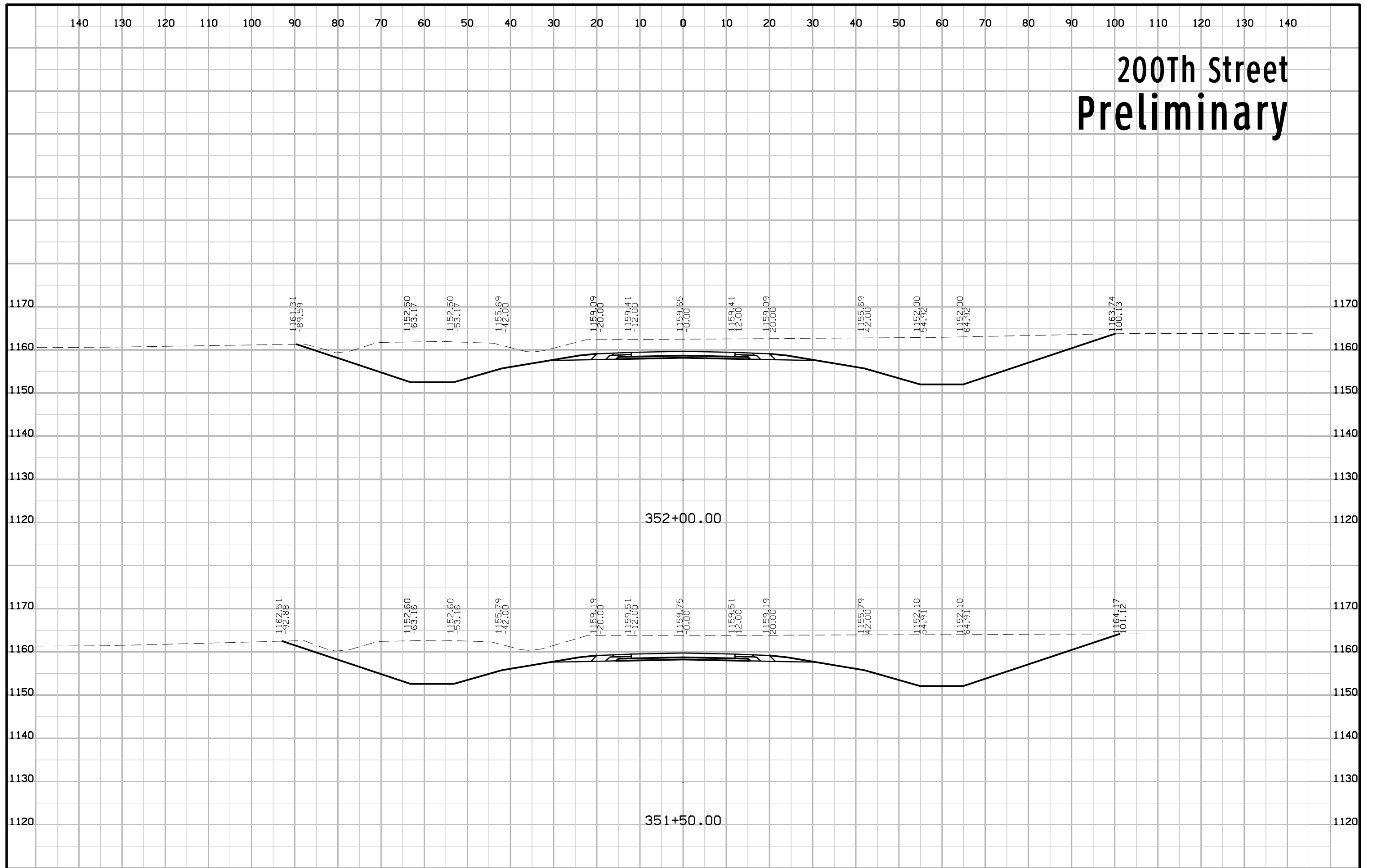
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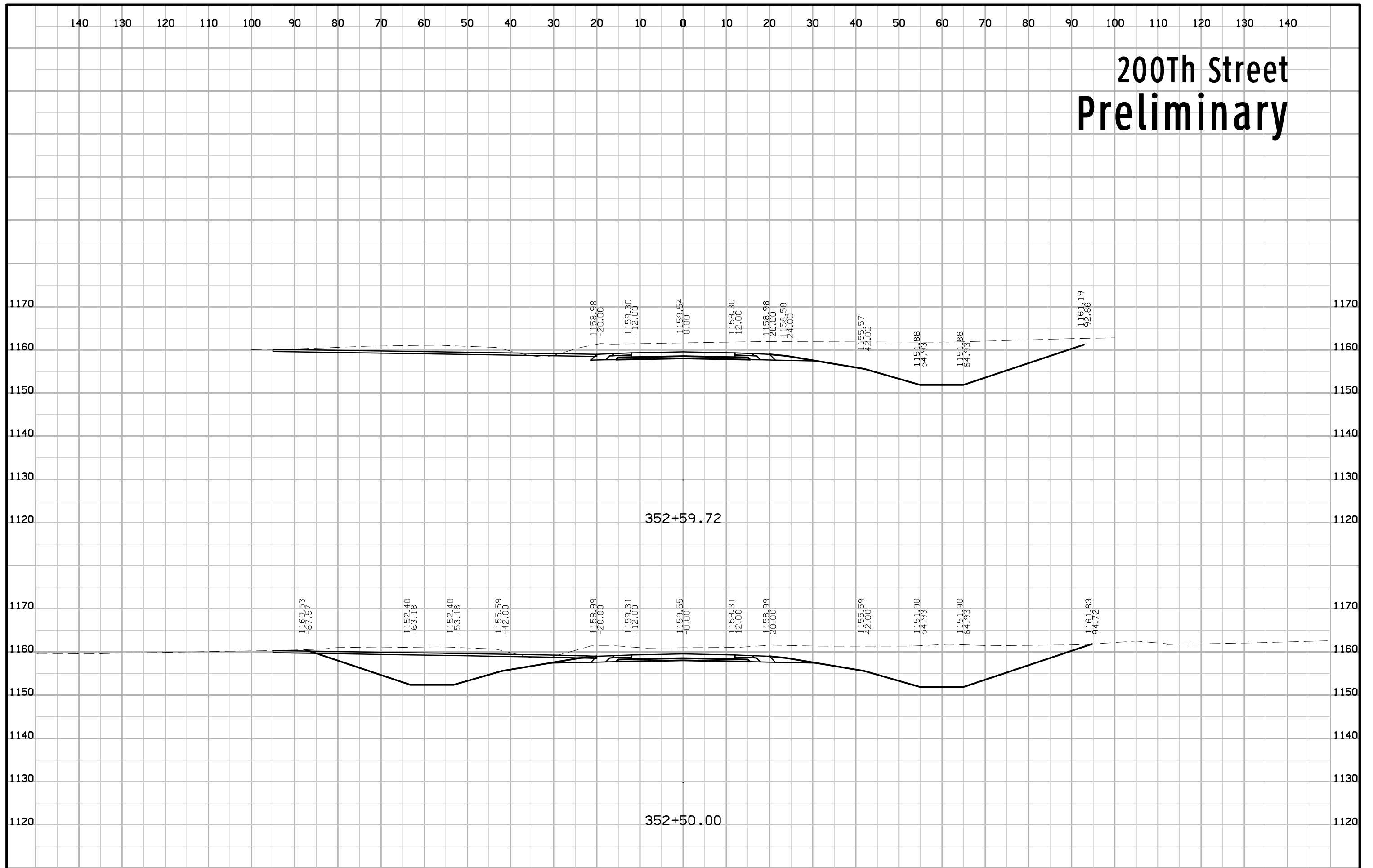
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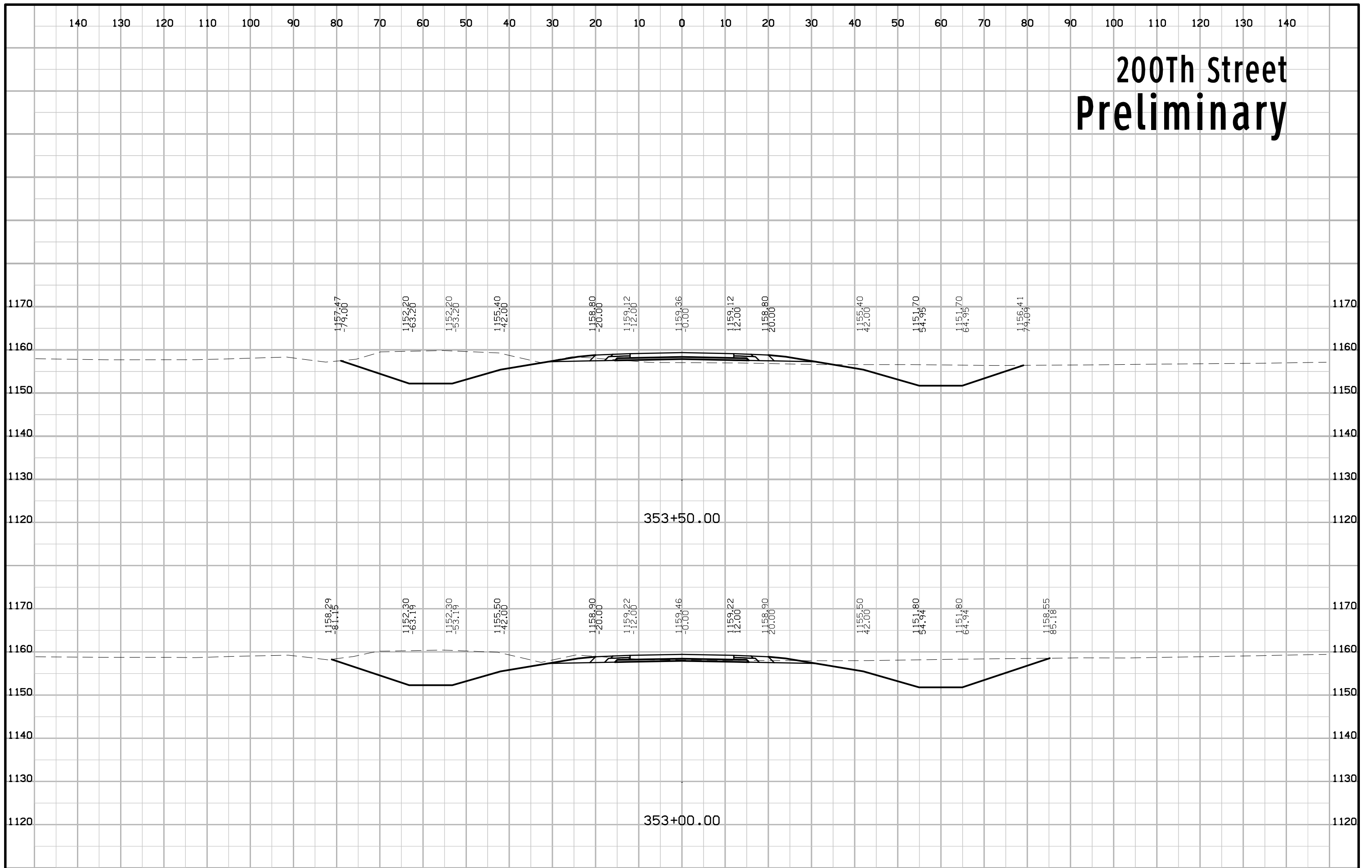
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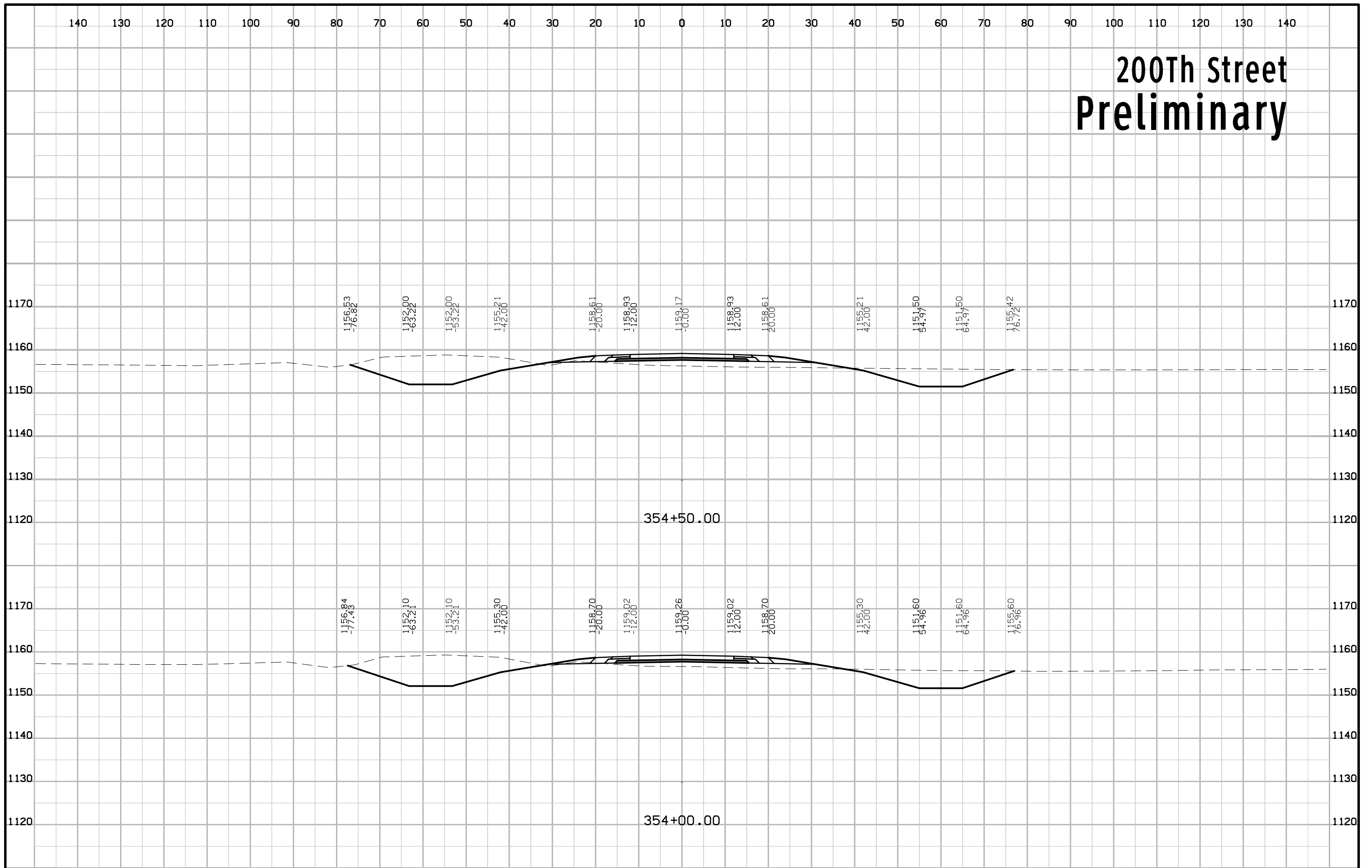
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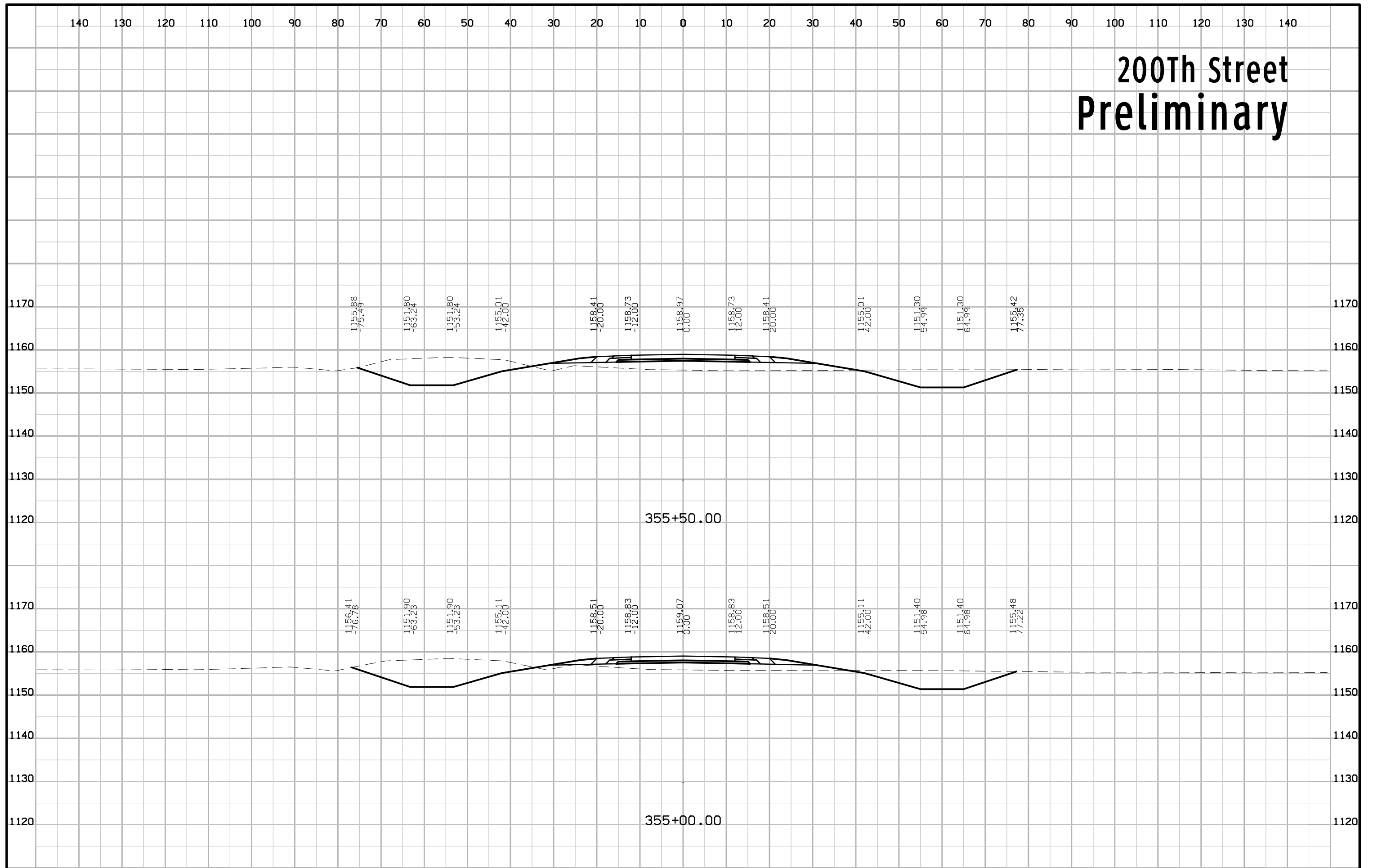
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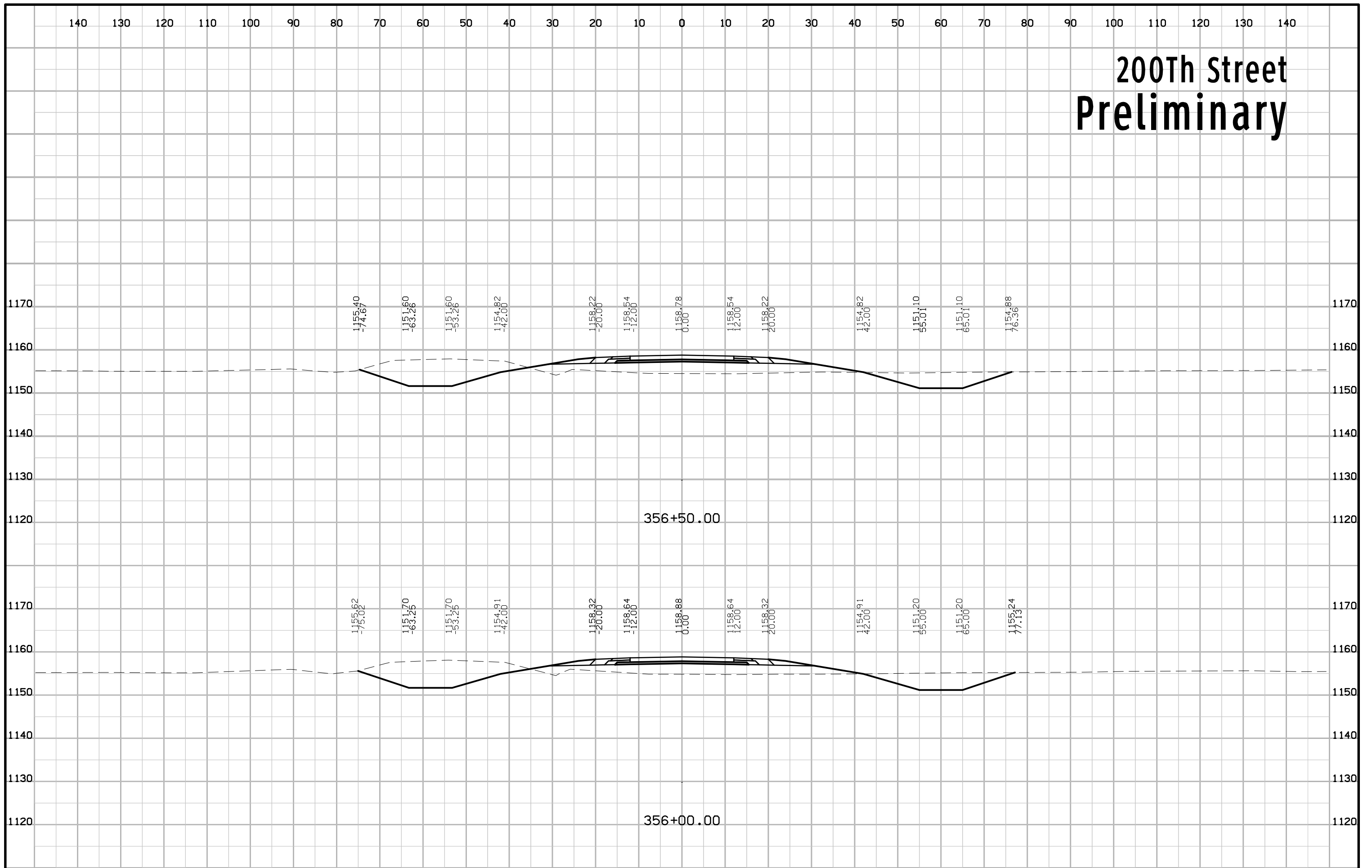


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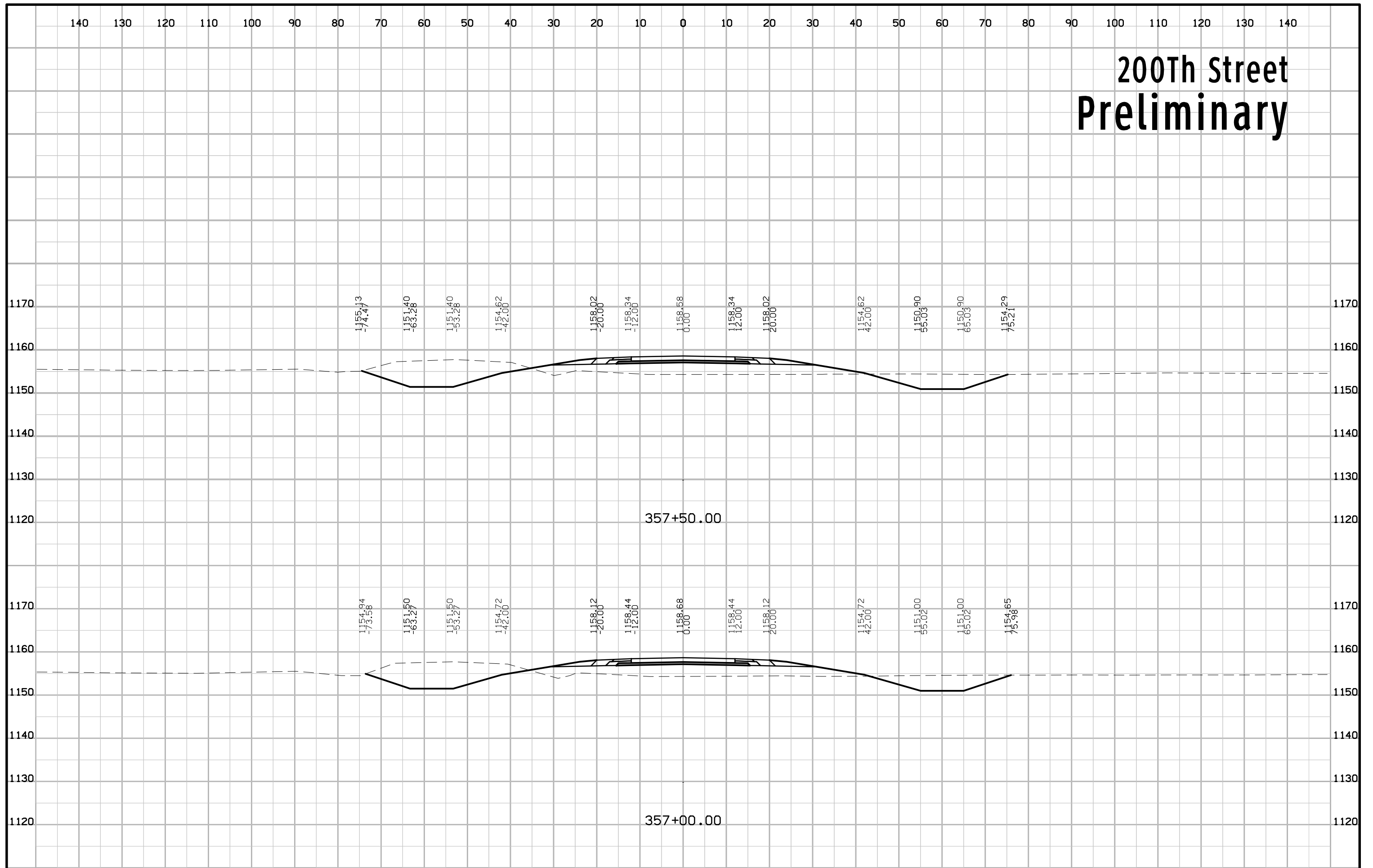




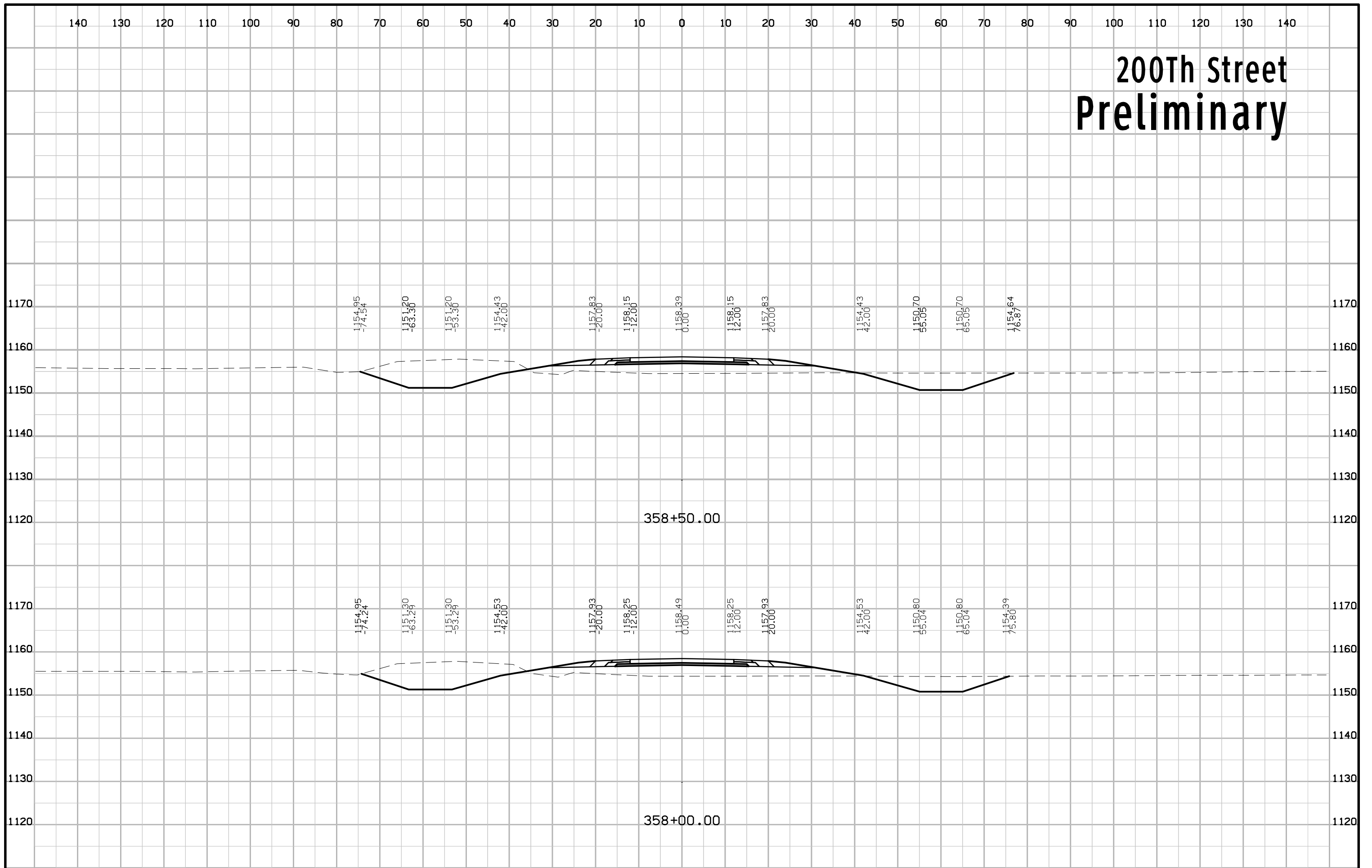
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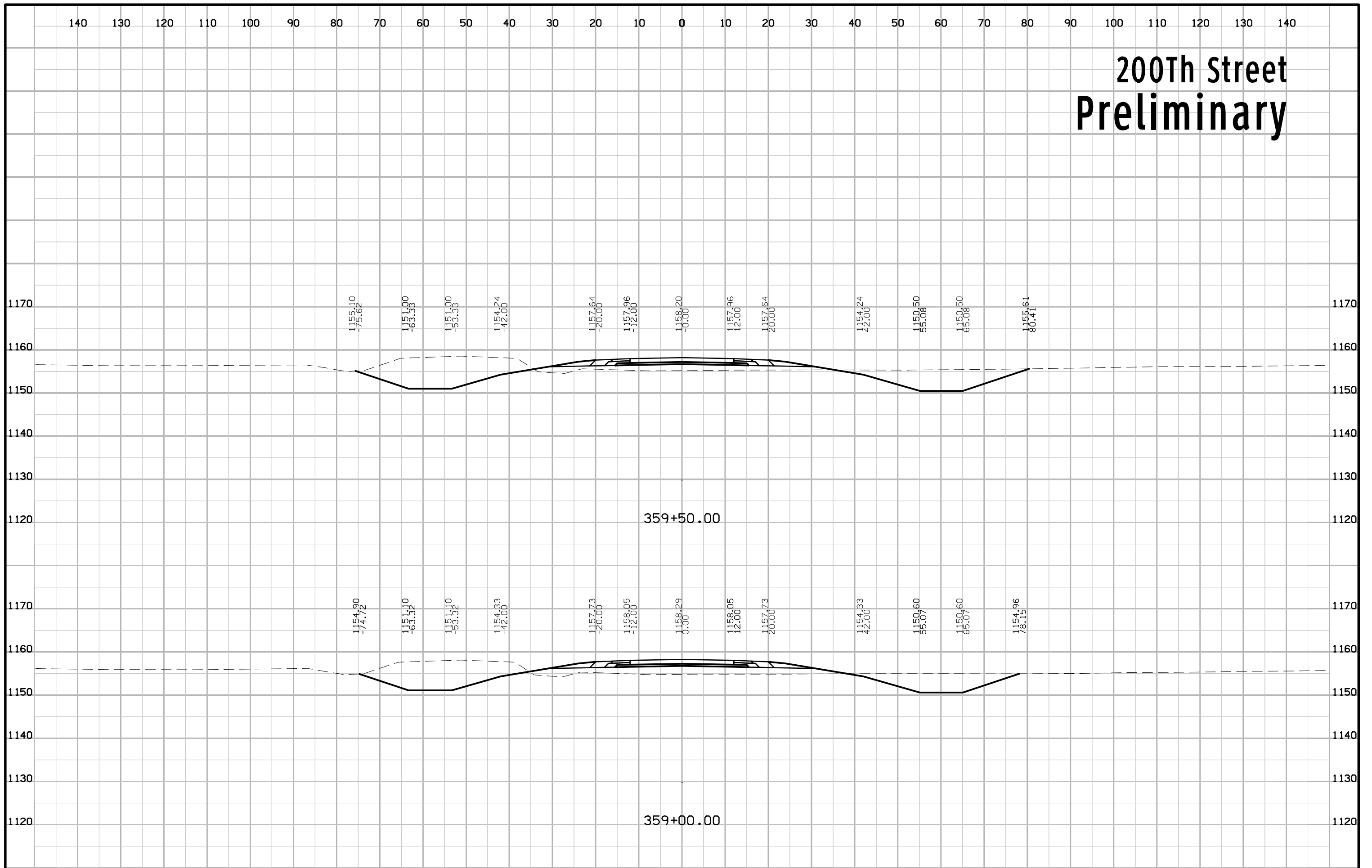
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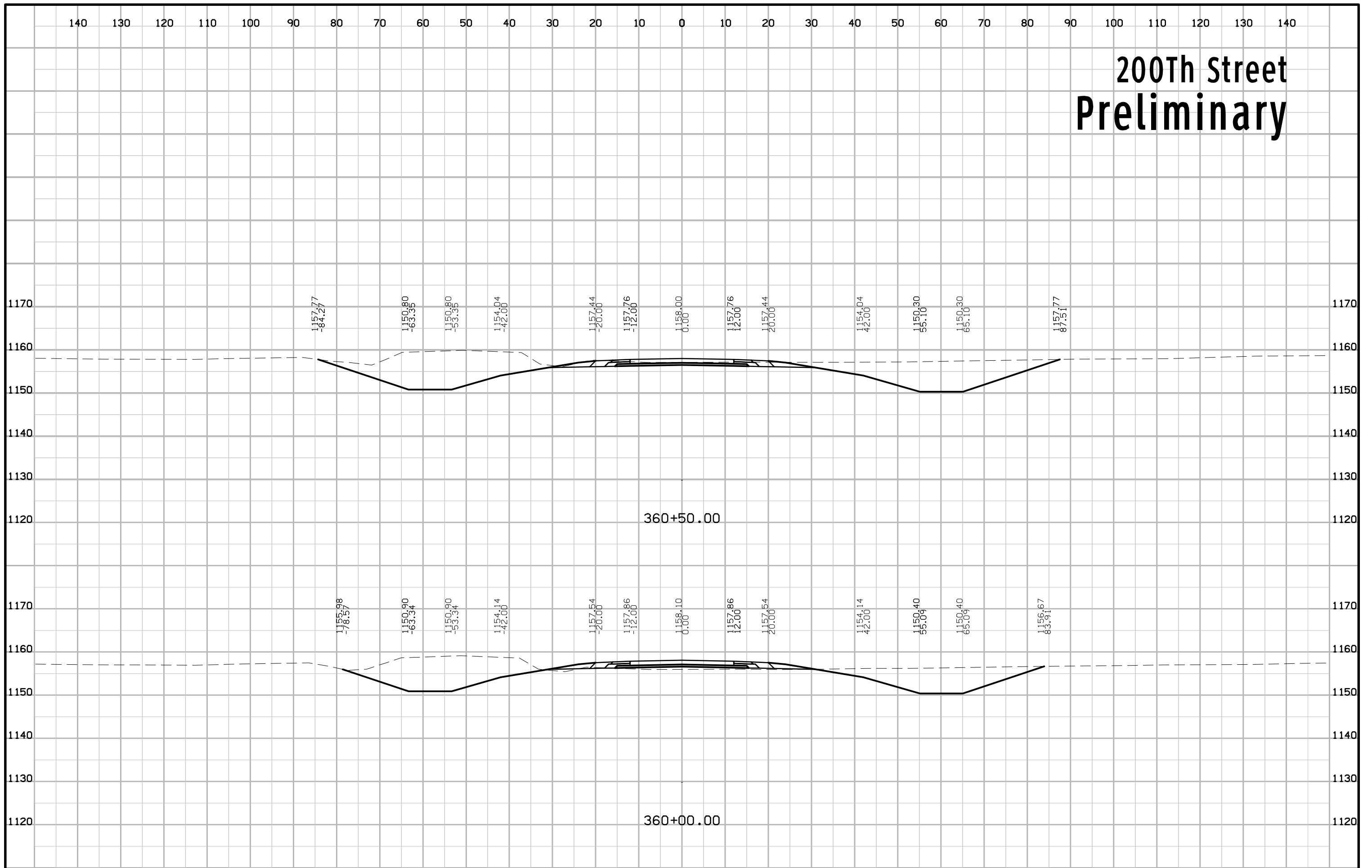
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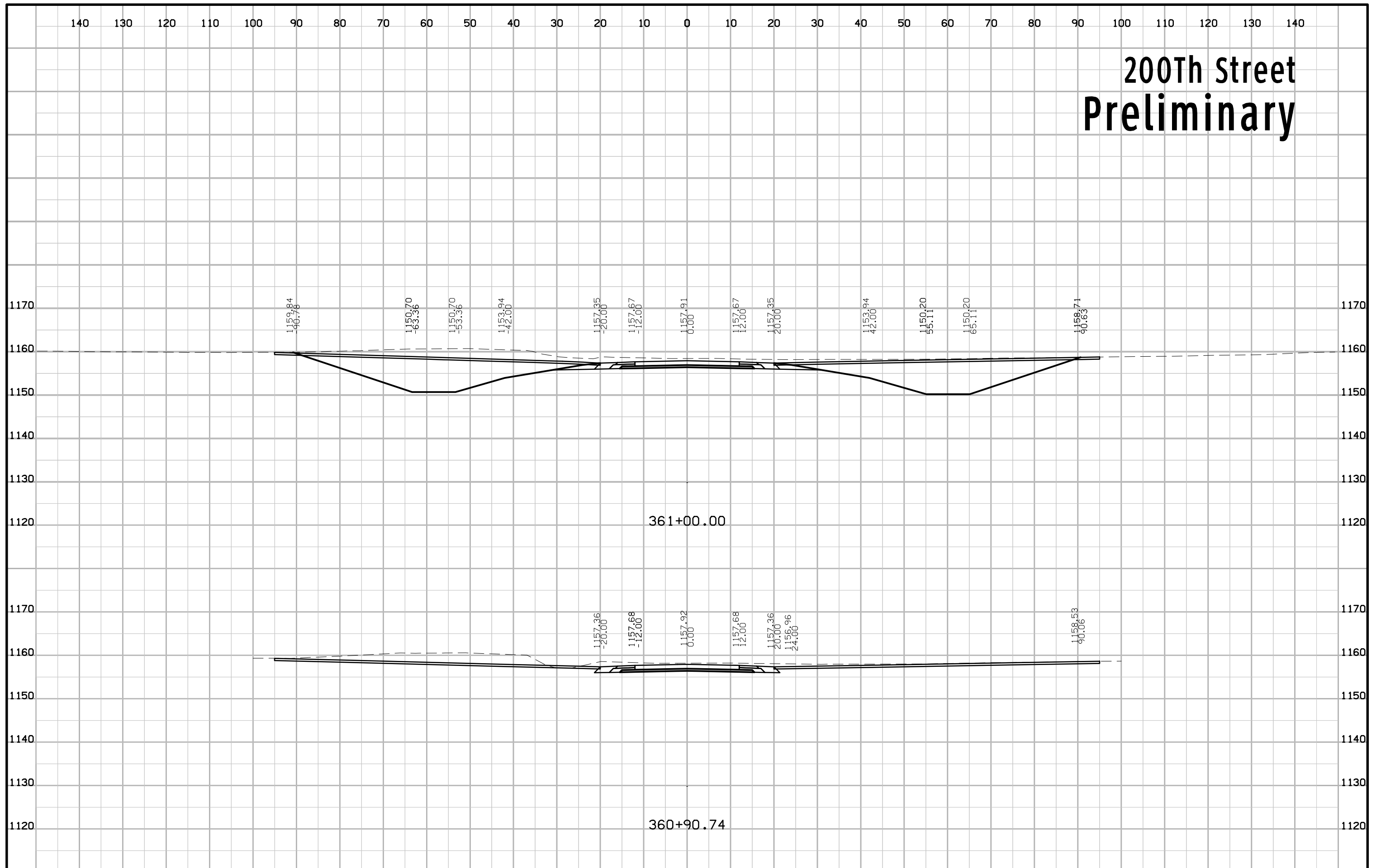
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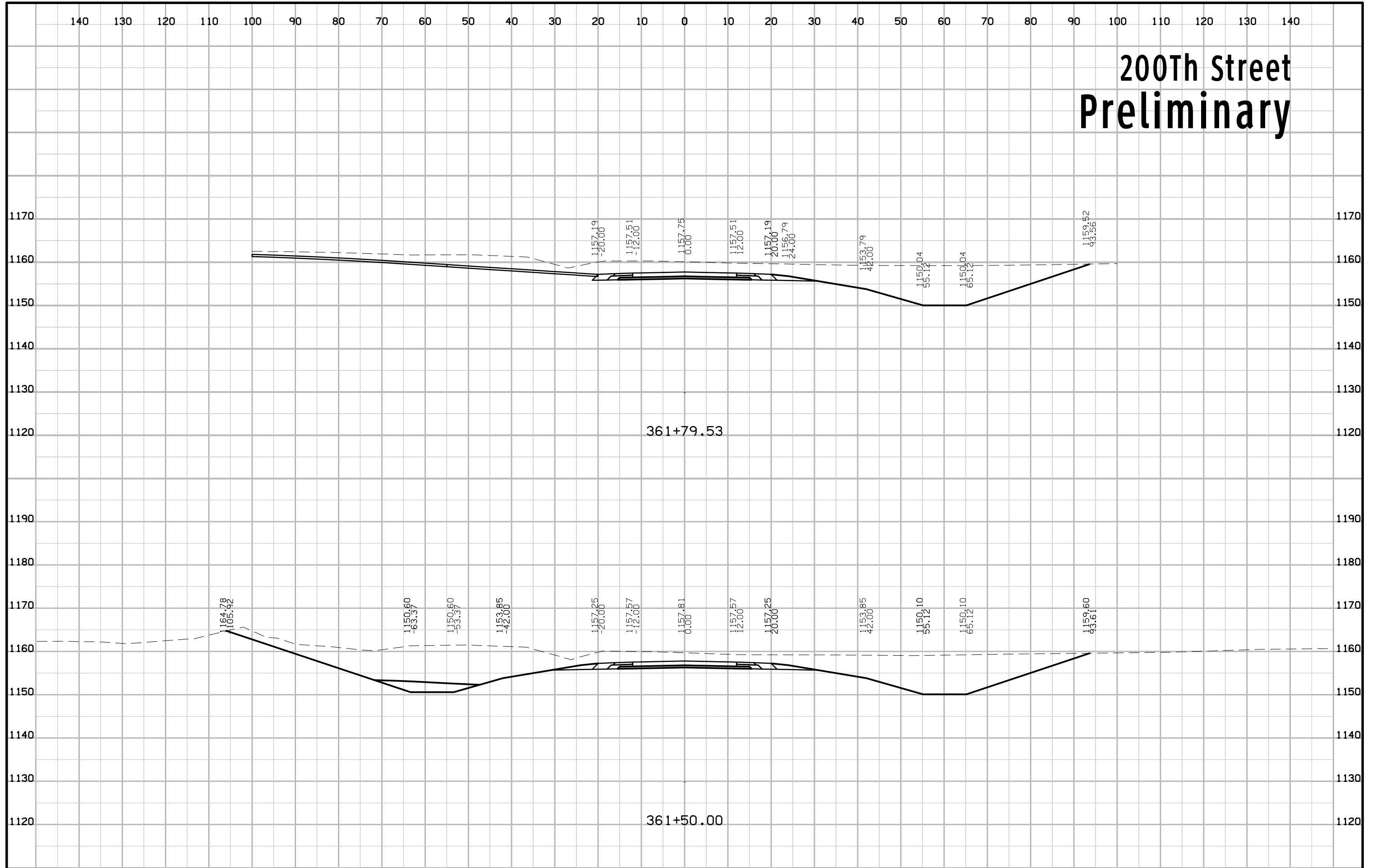
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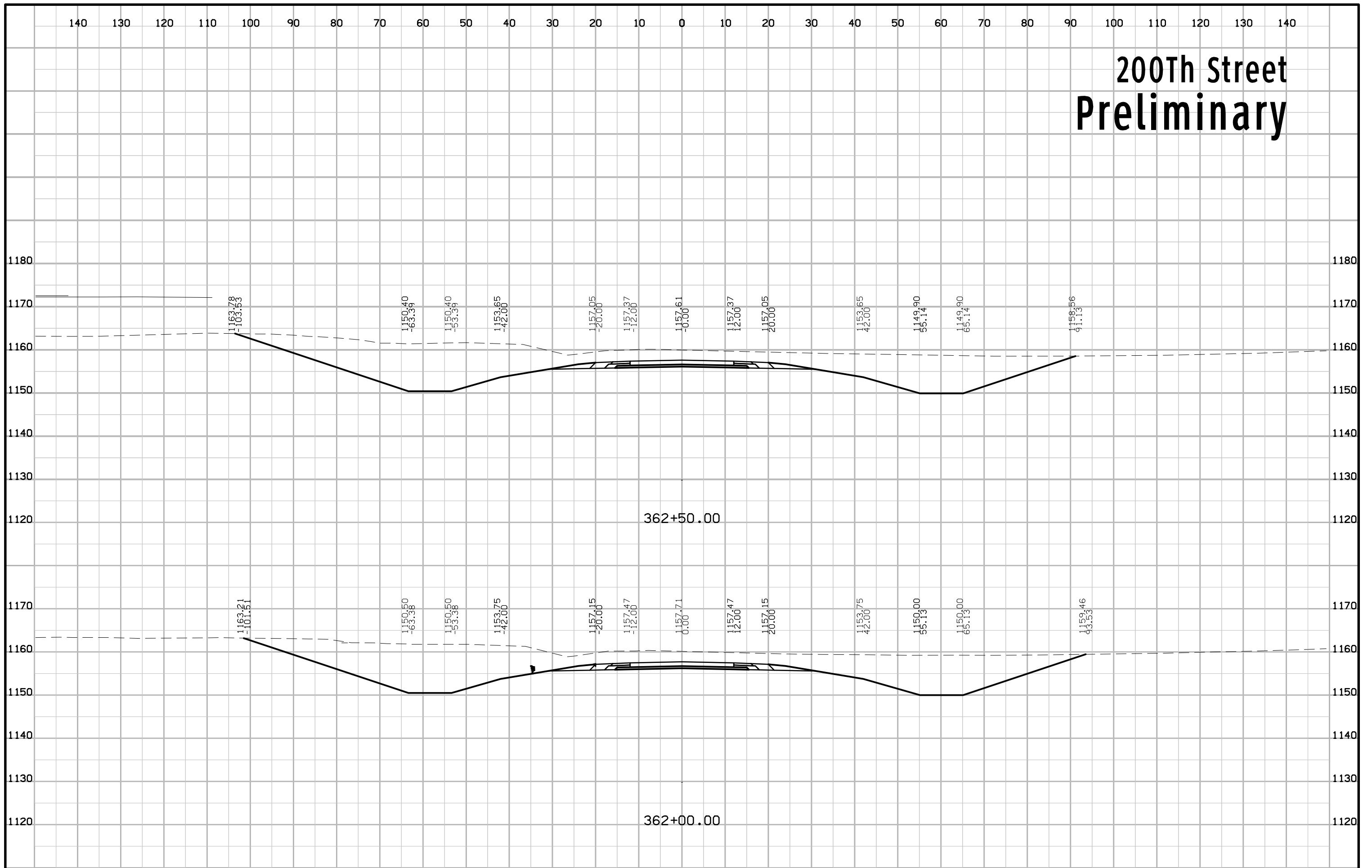
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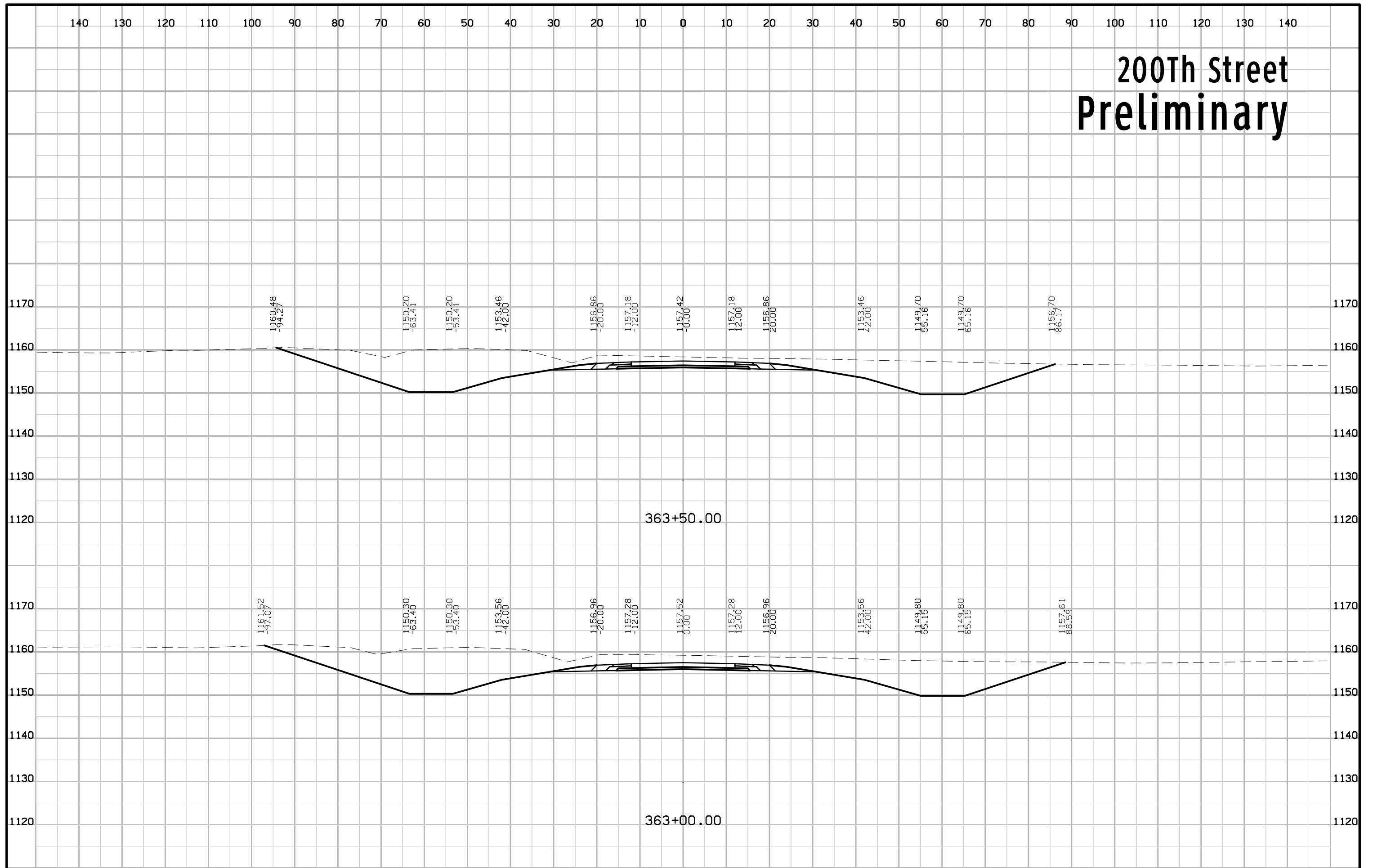


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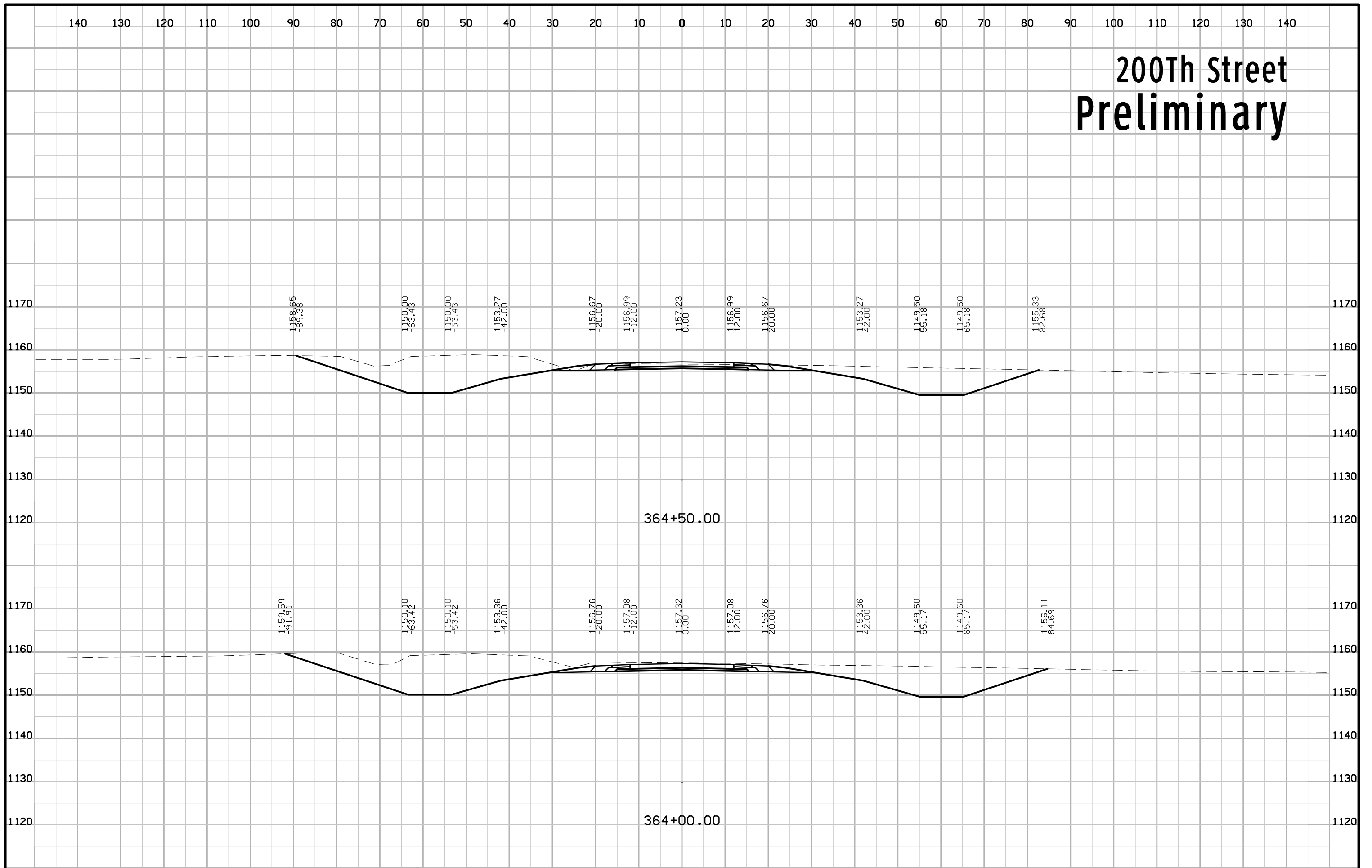




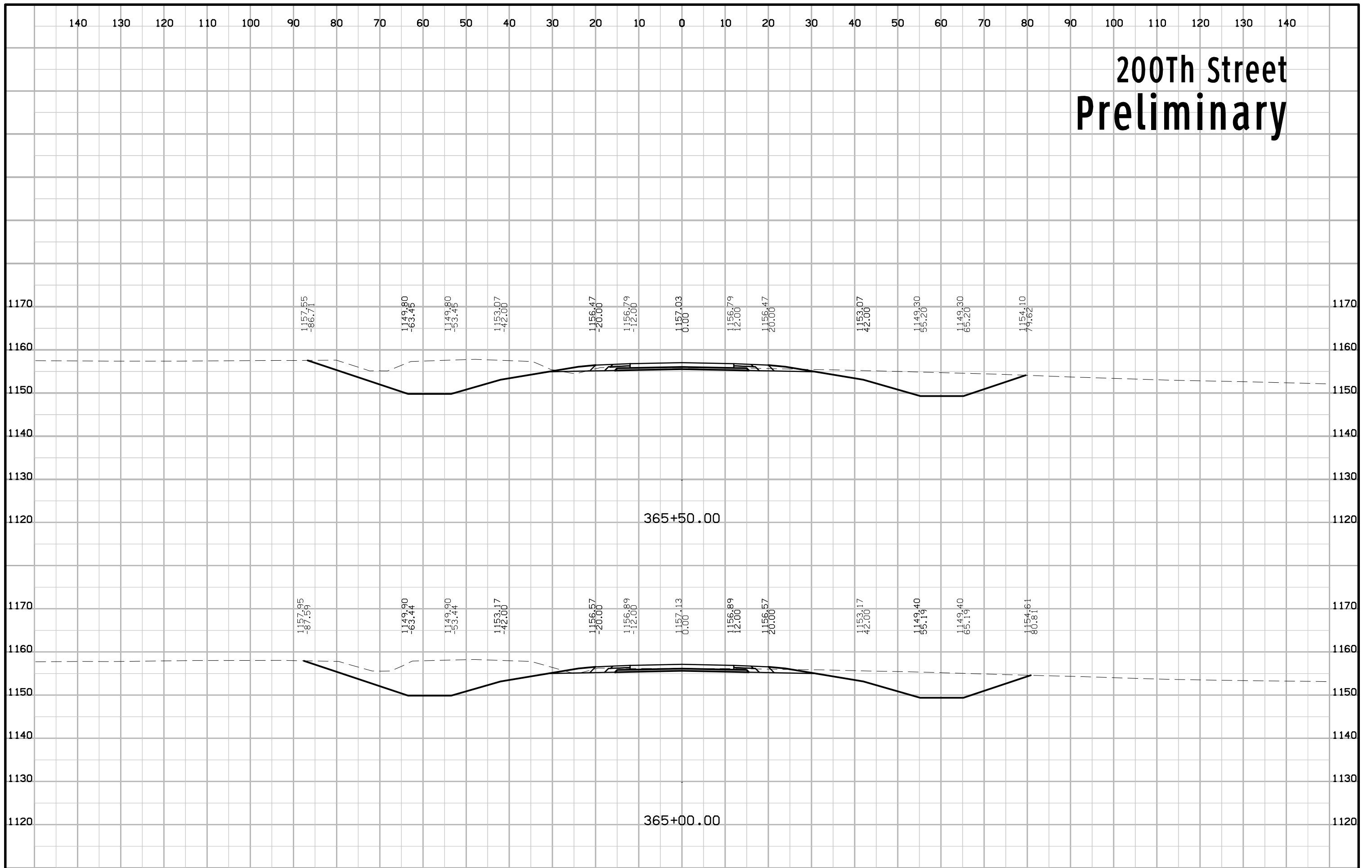
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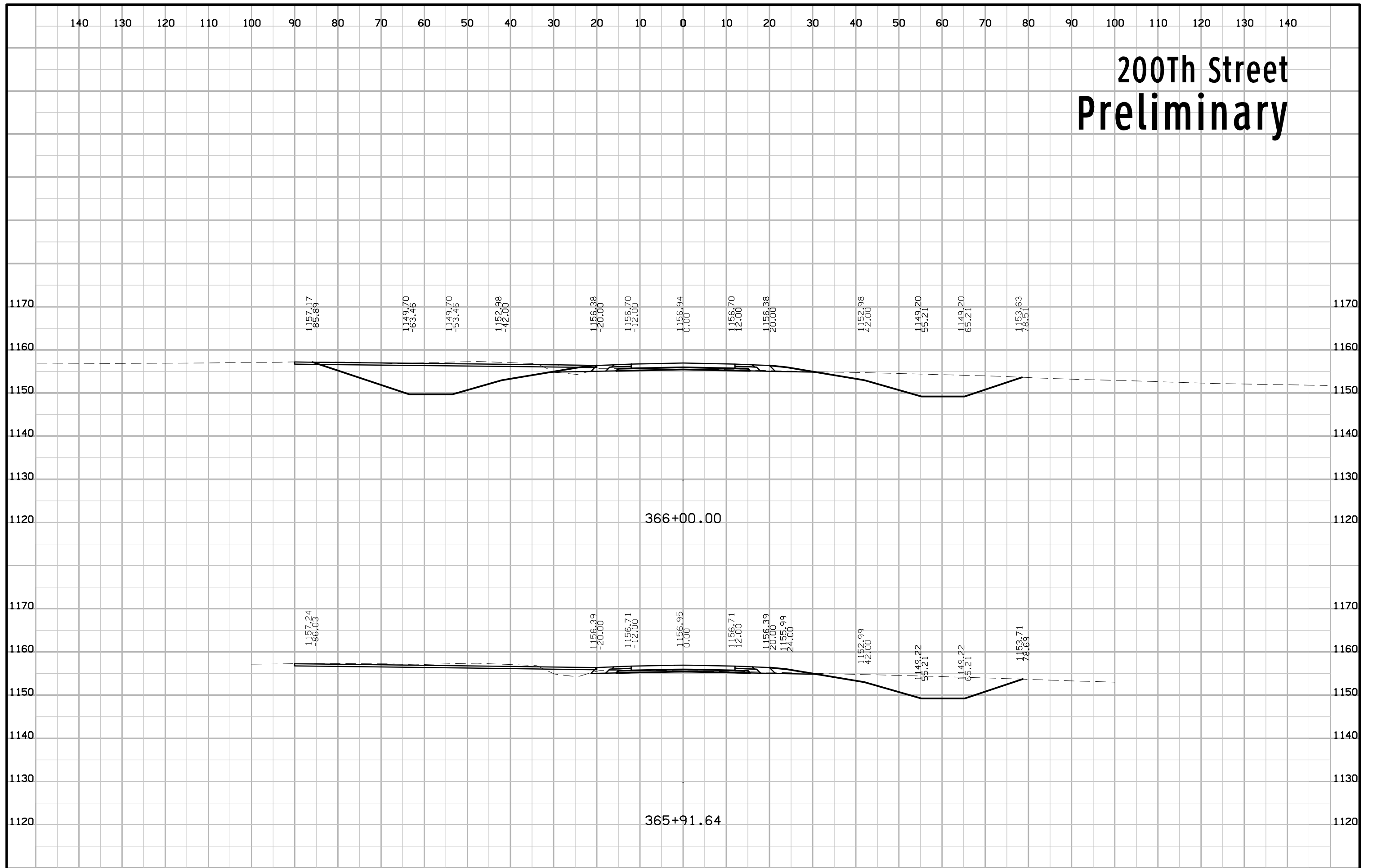
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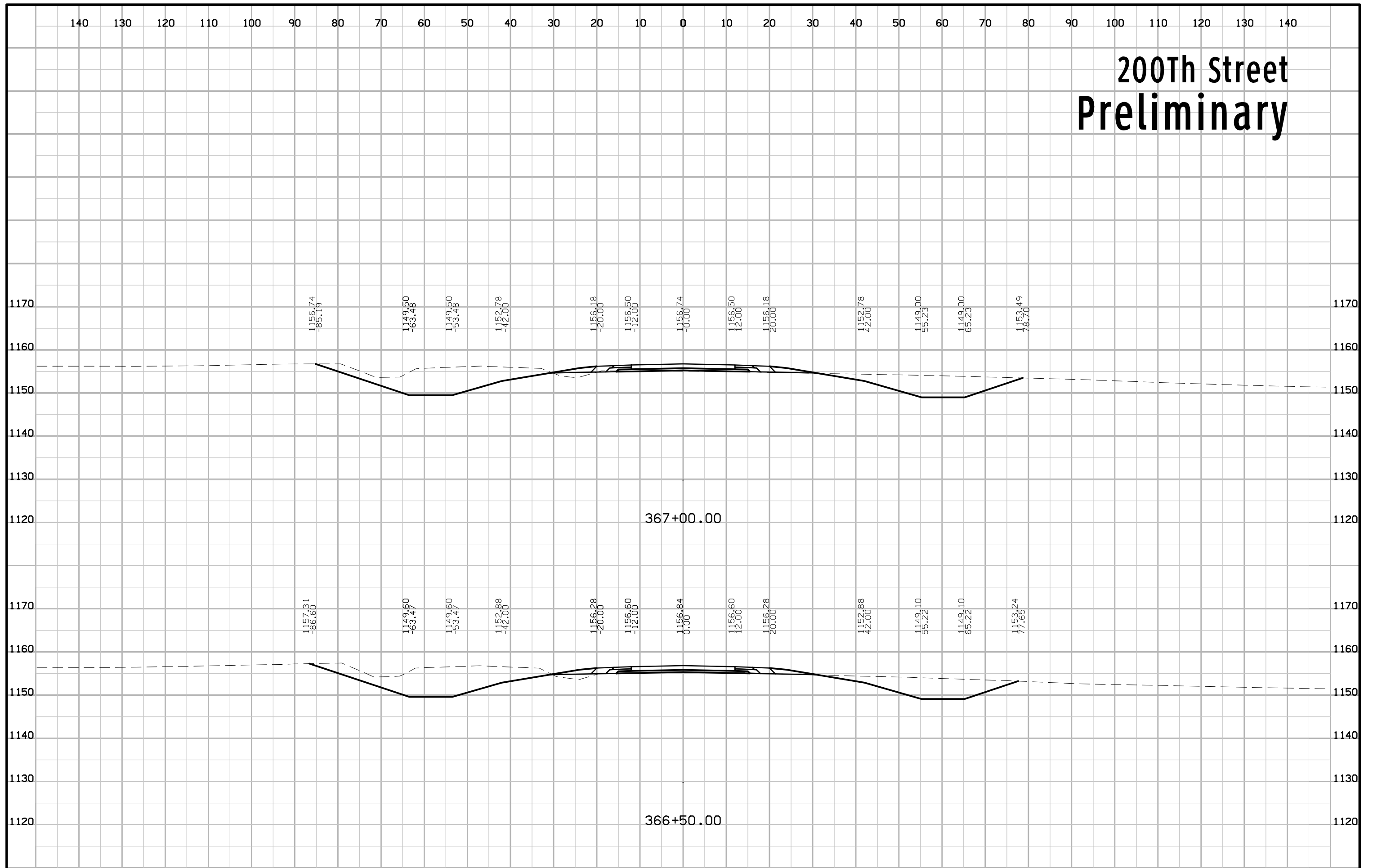
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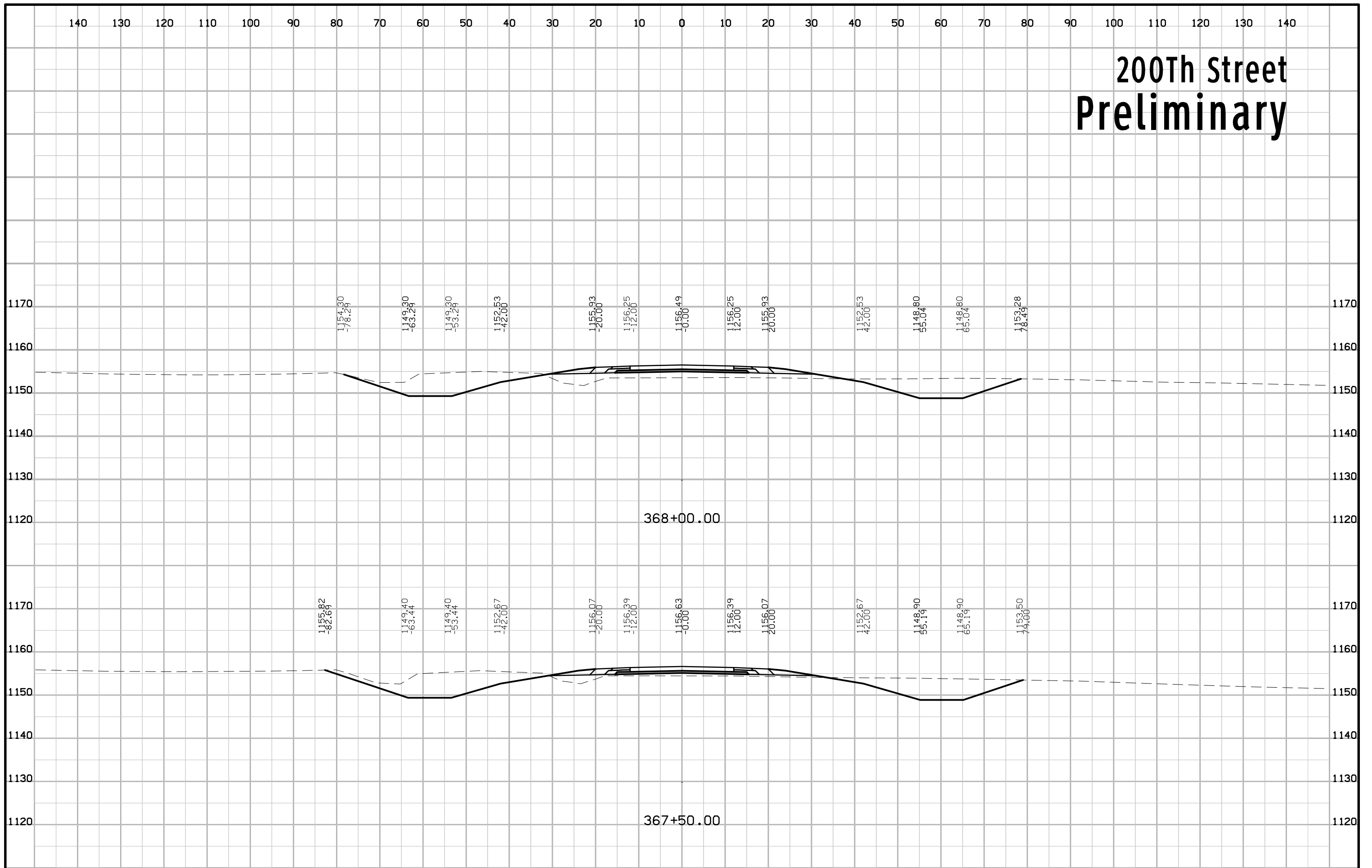
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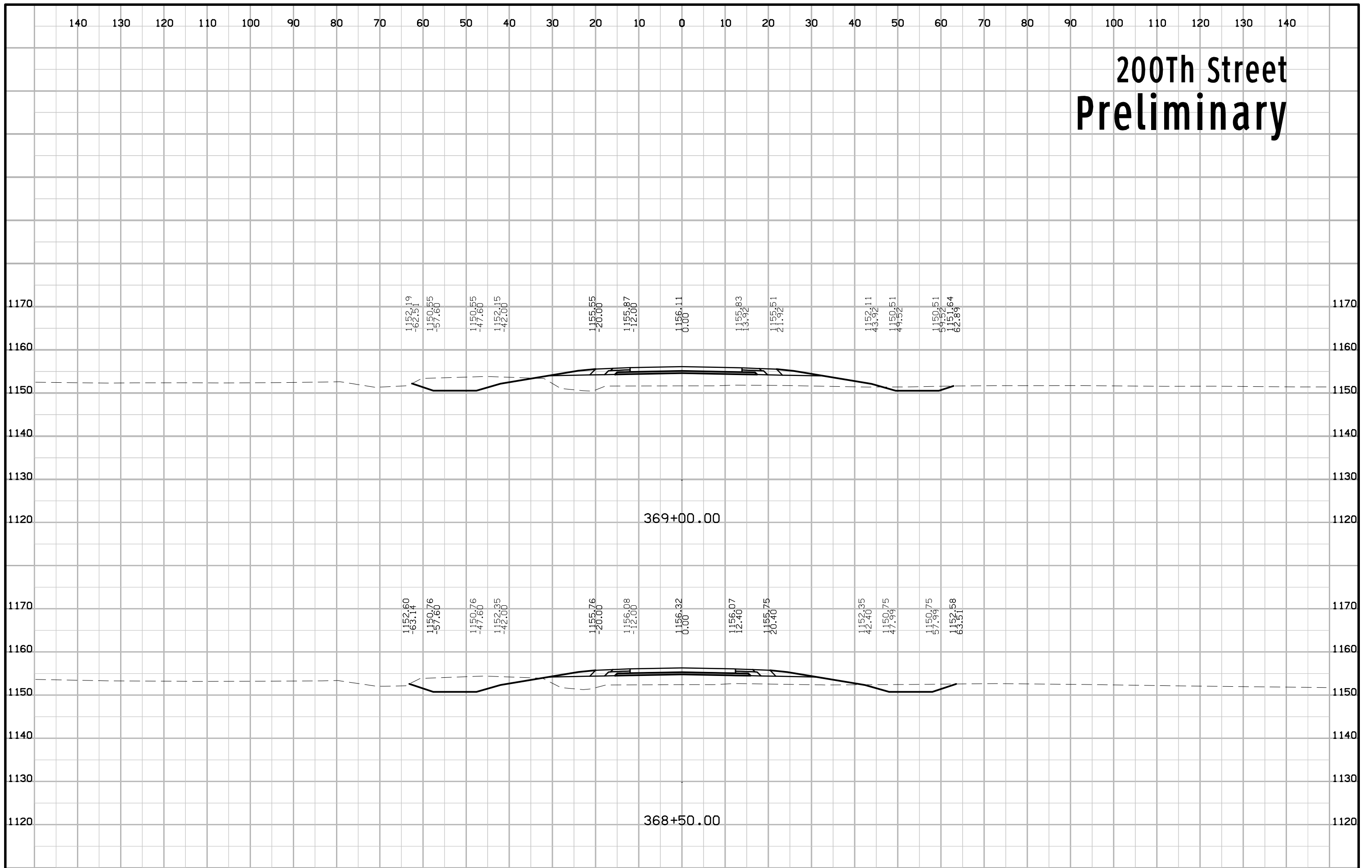
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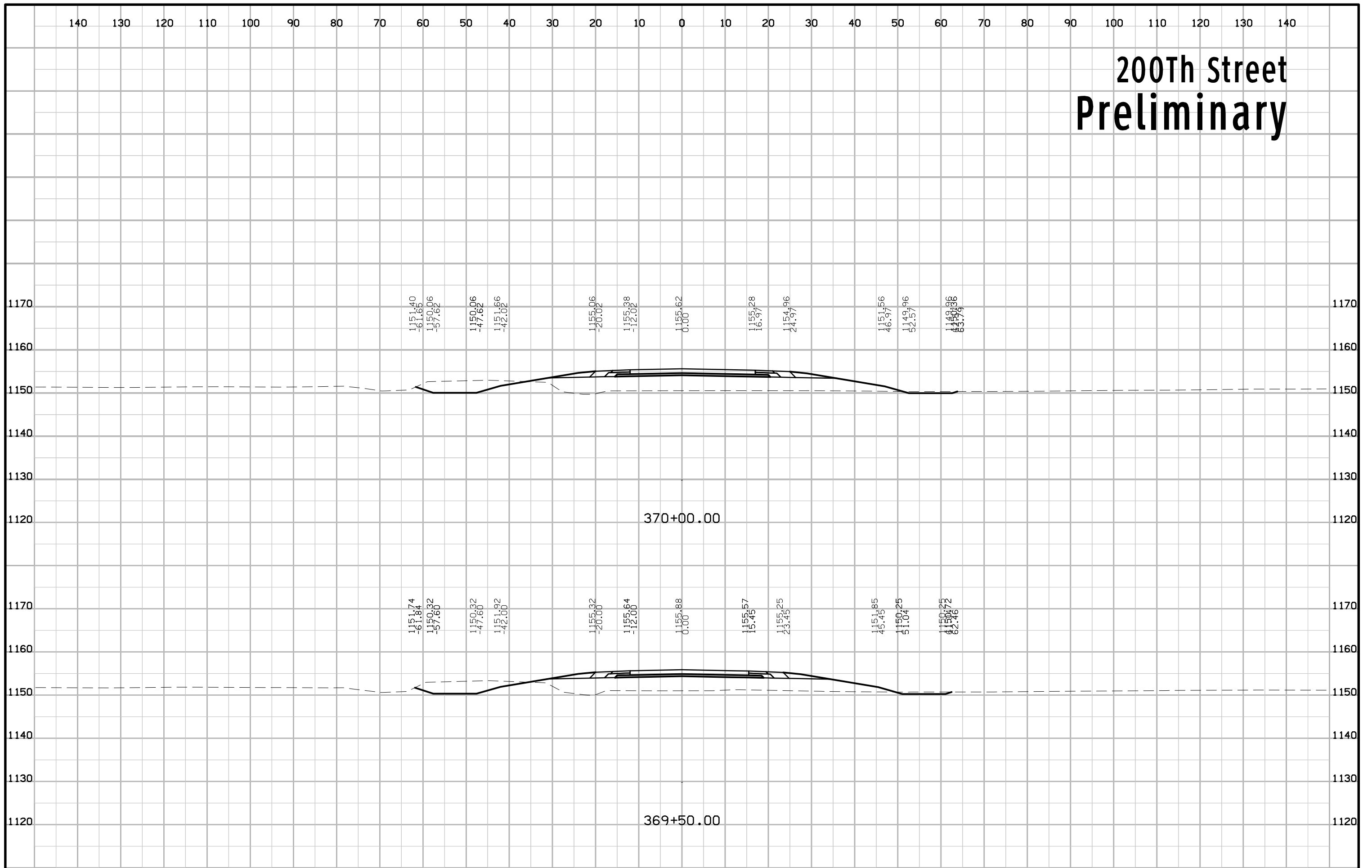
# 200Th Street Preliminary



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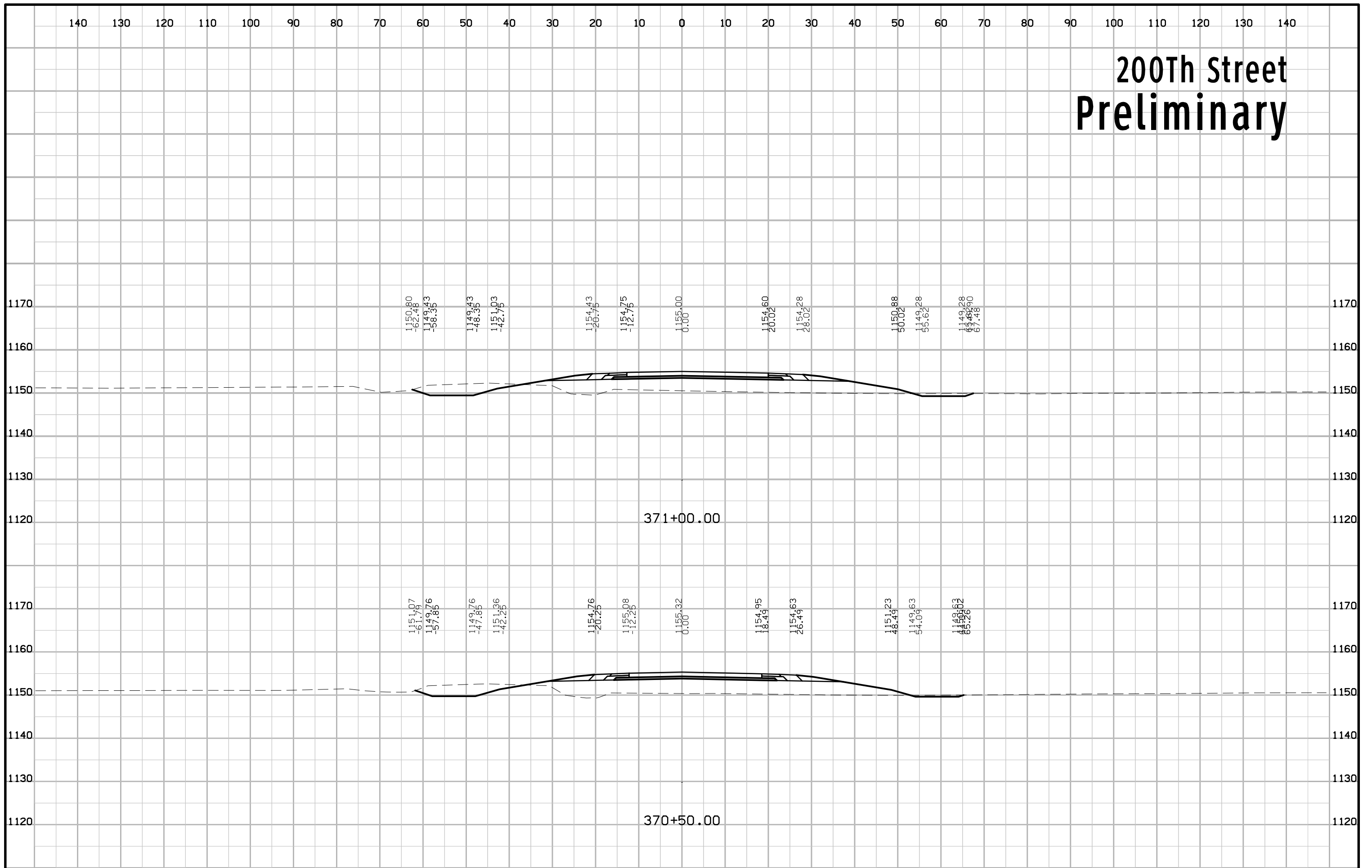


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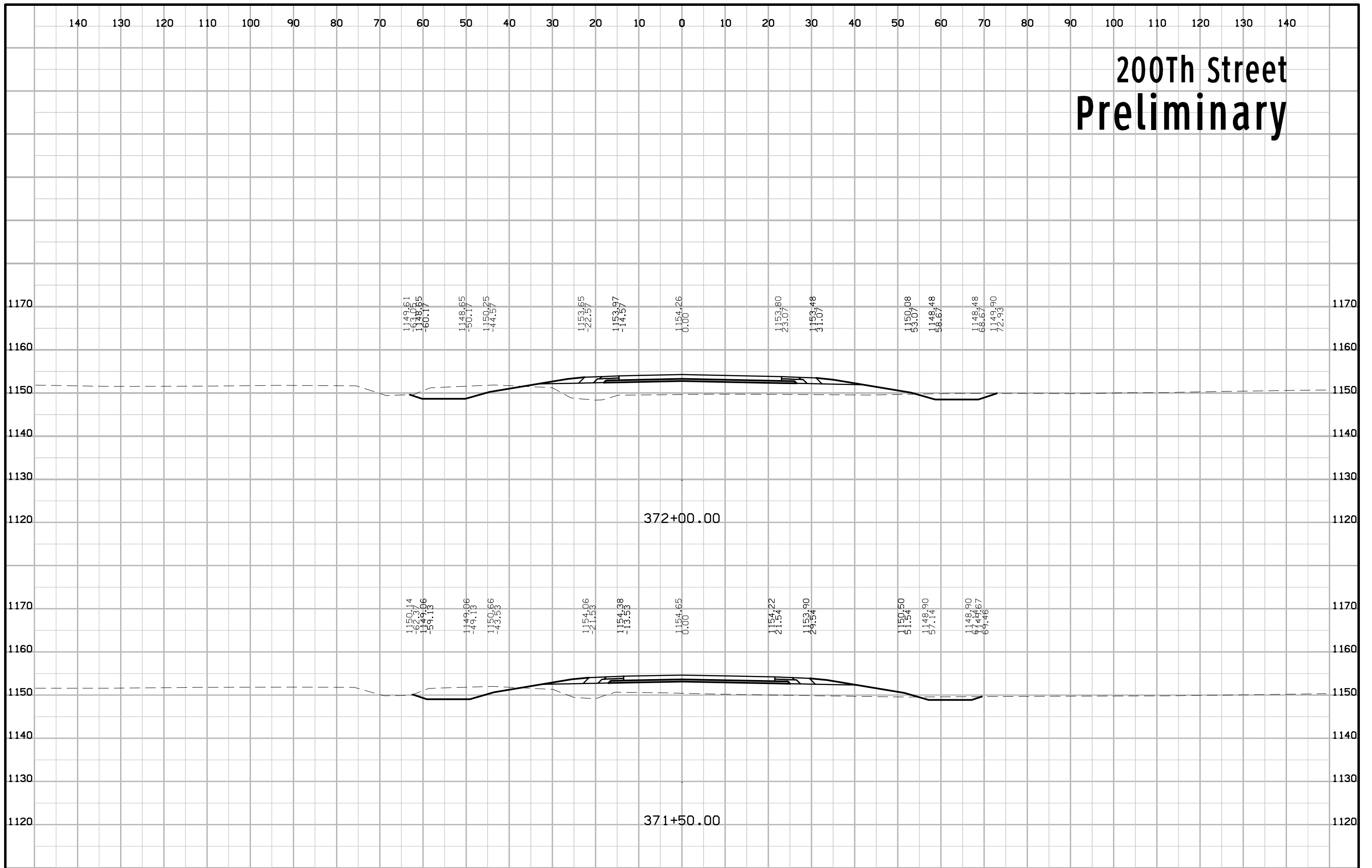




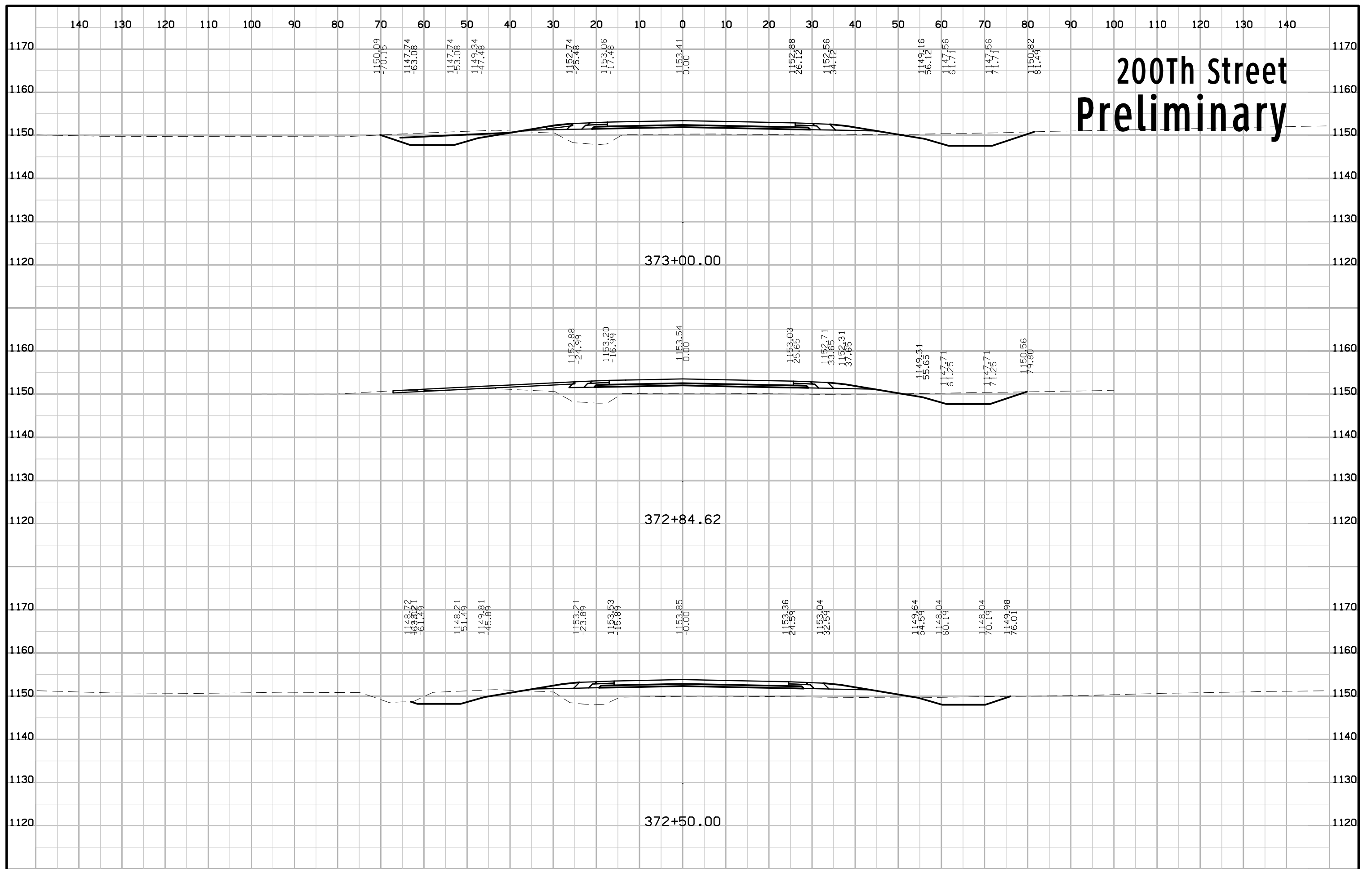
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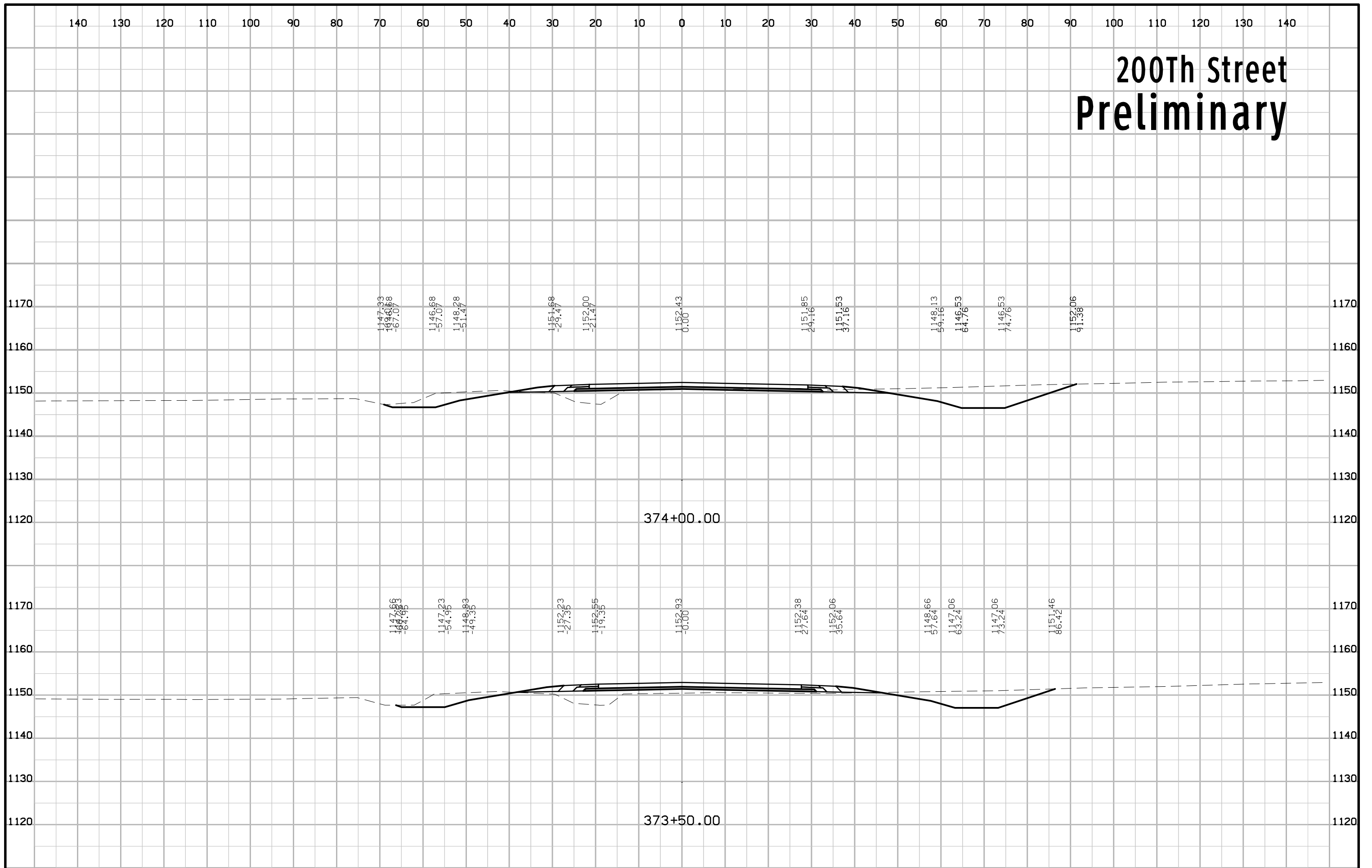
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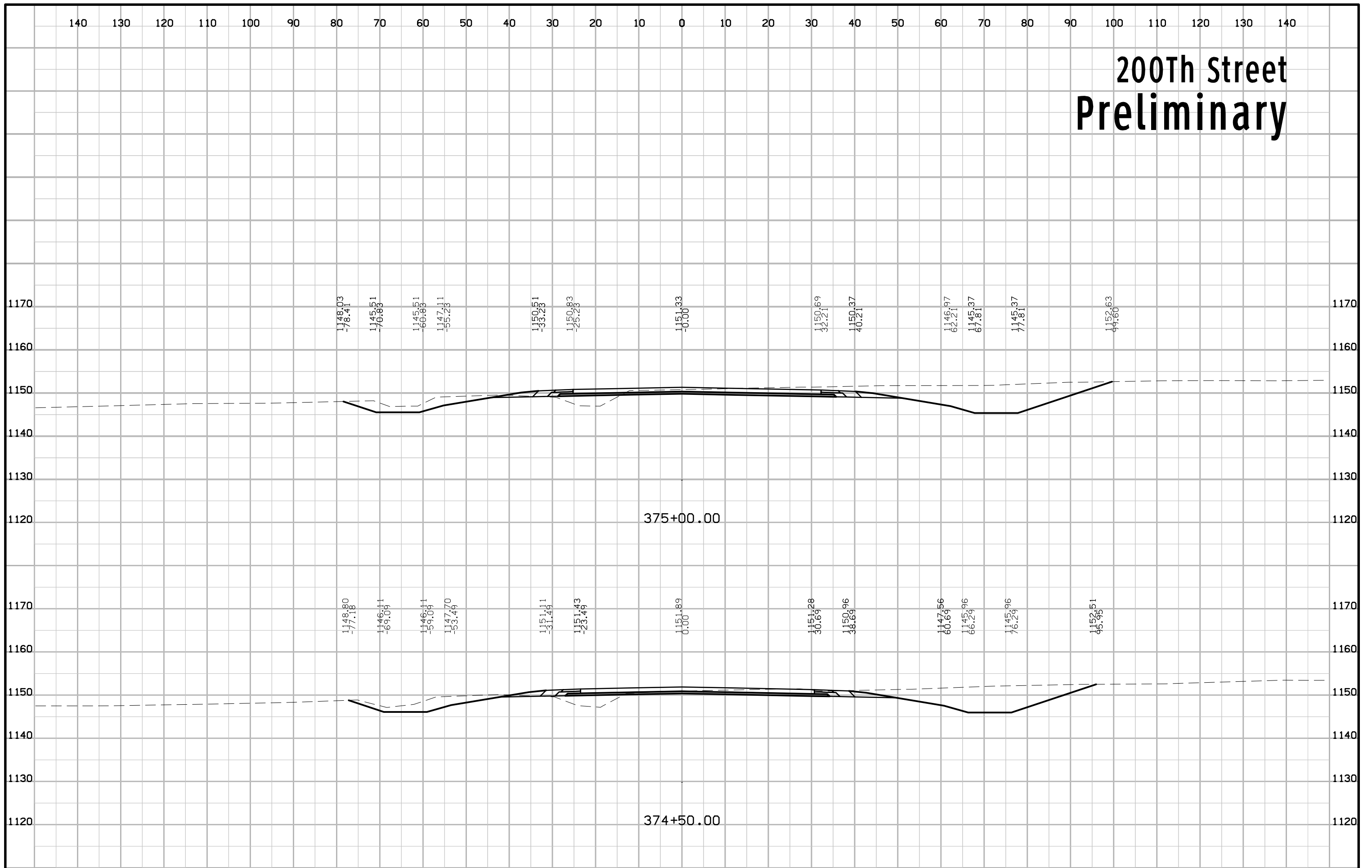
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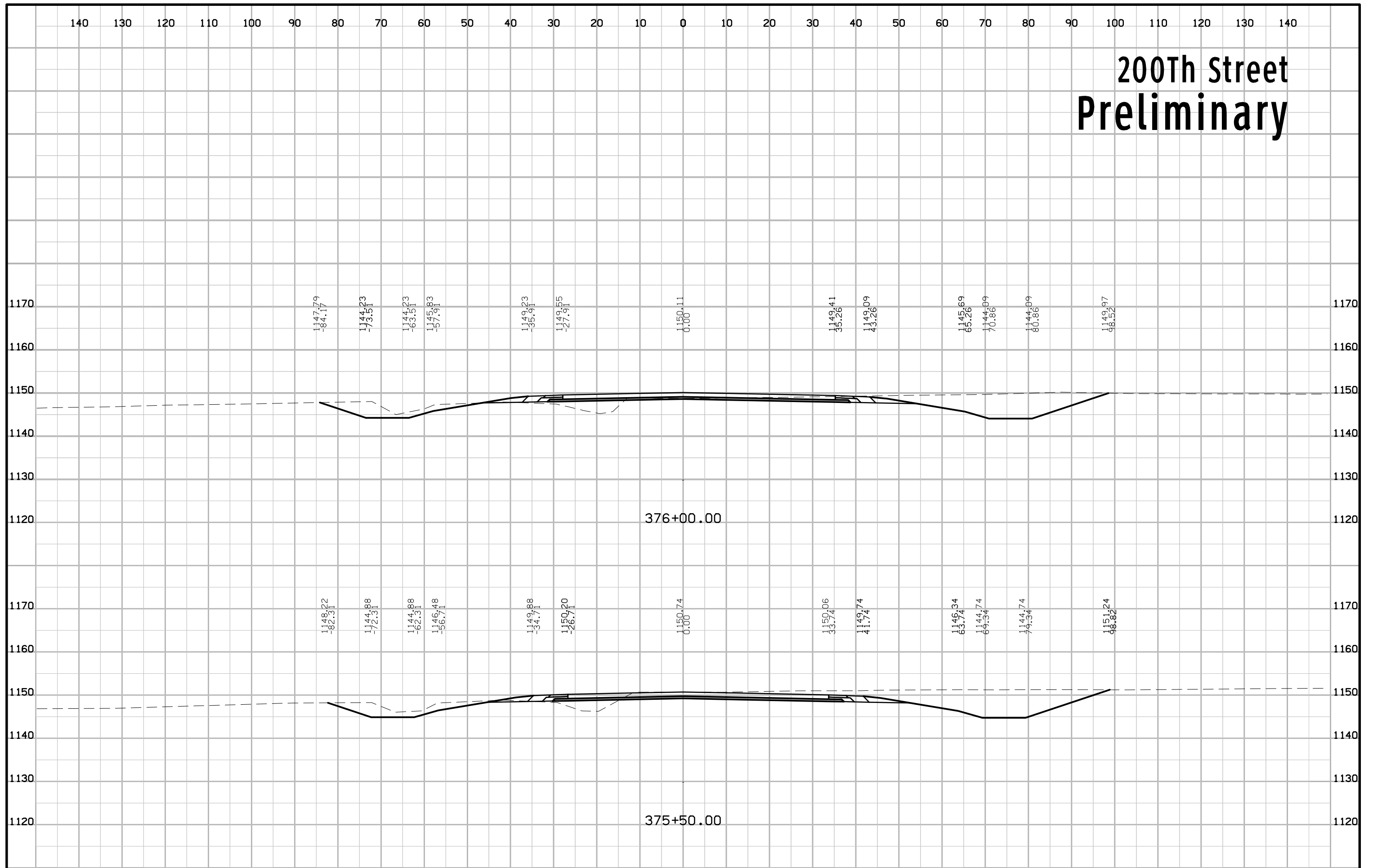
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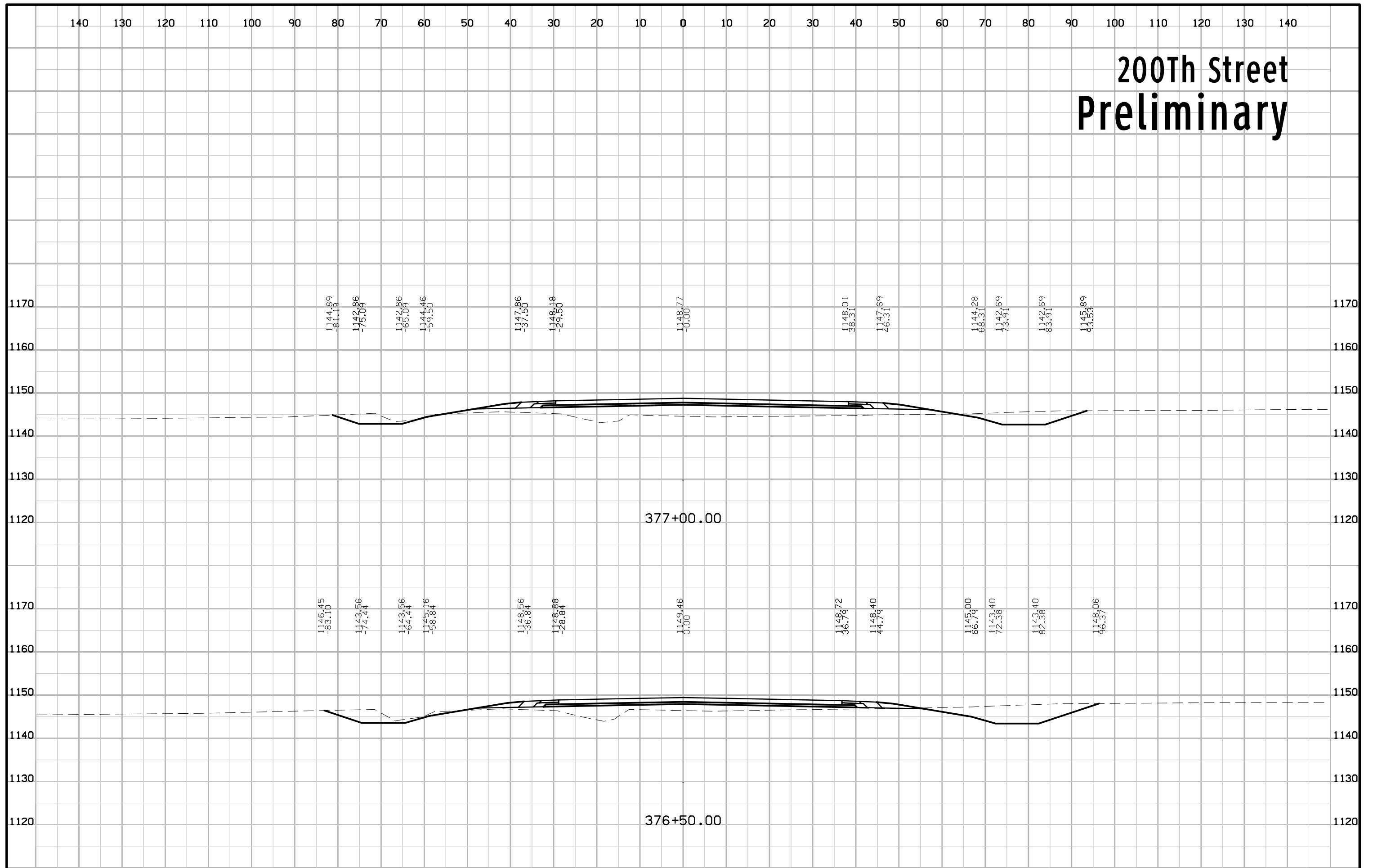
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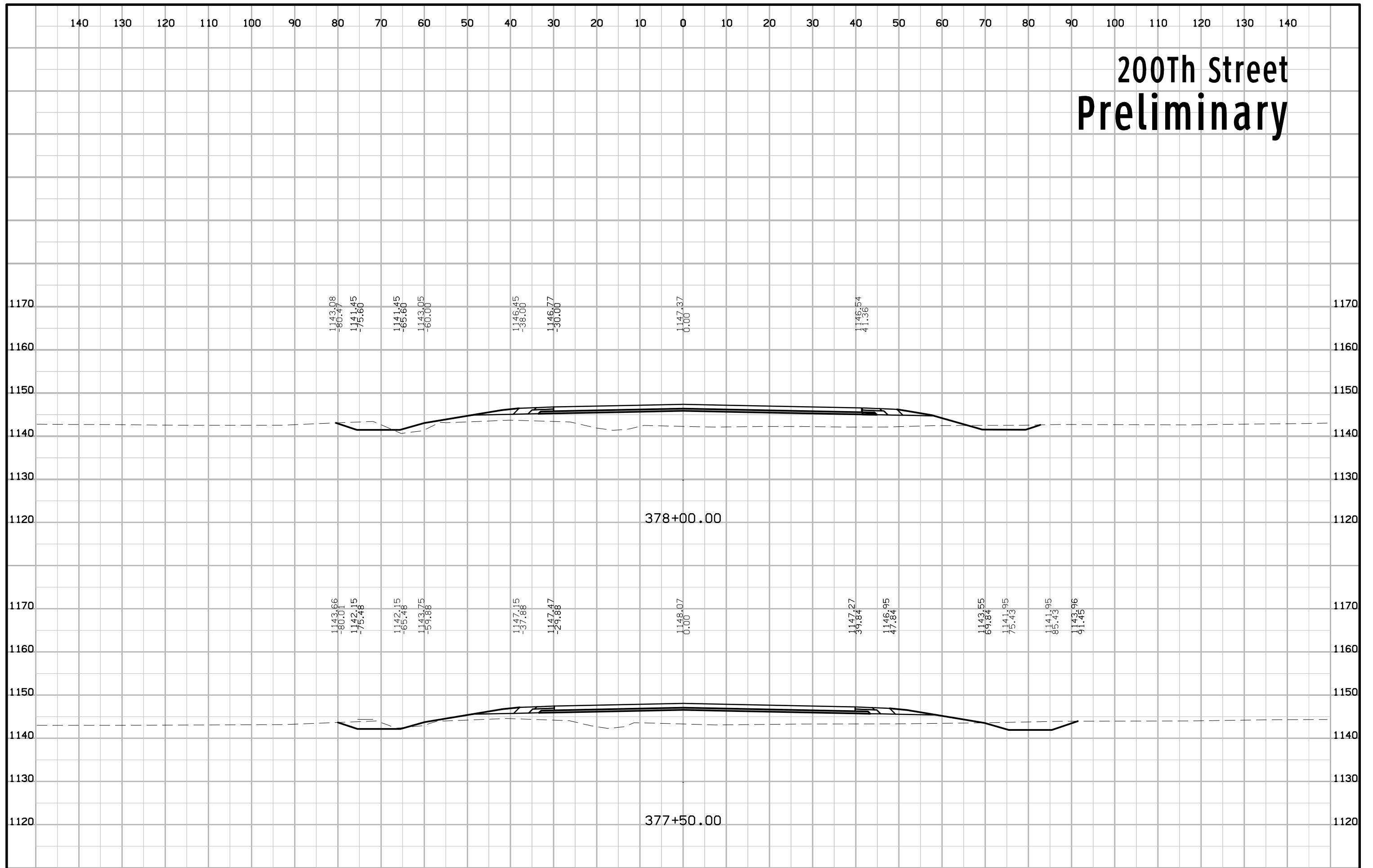
# 200Th Street Preliminary



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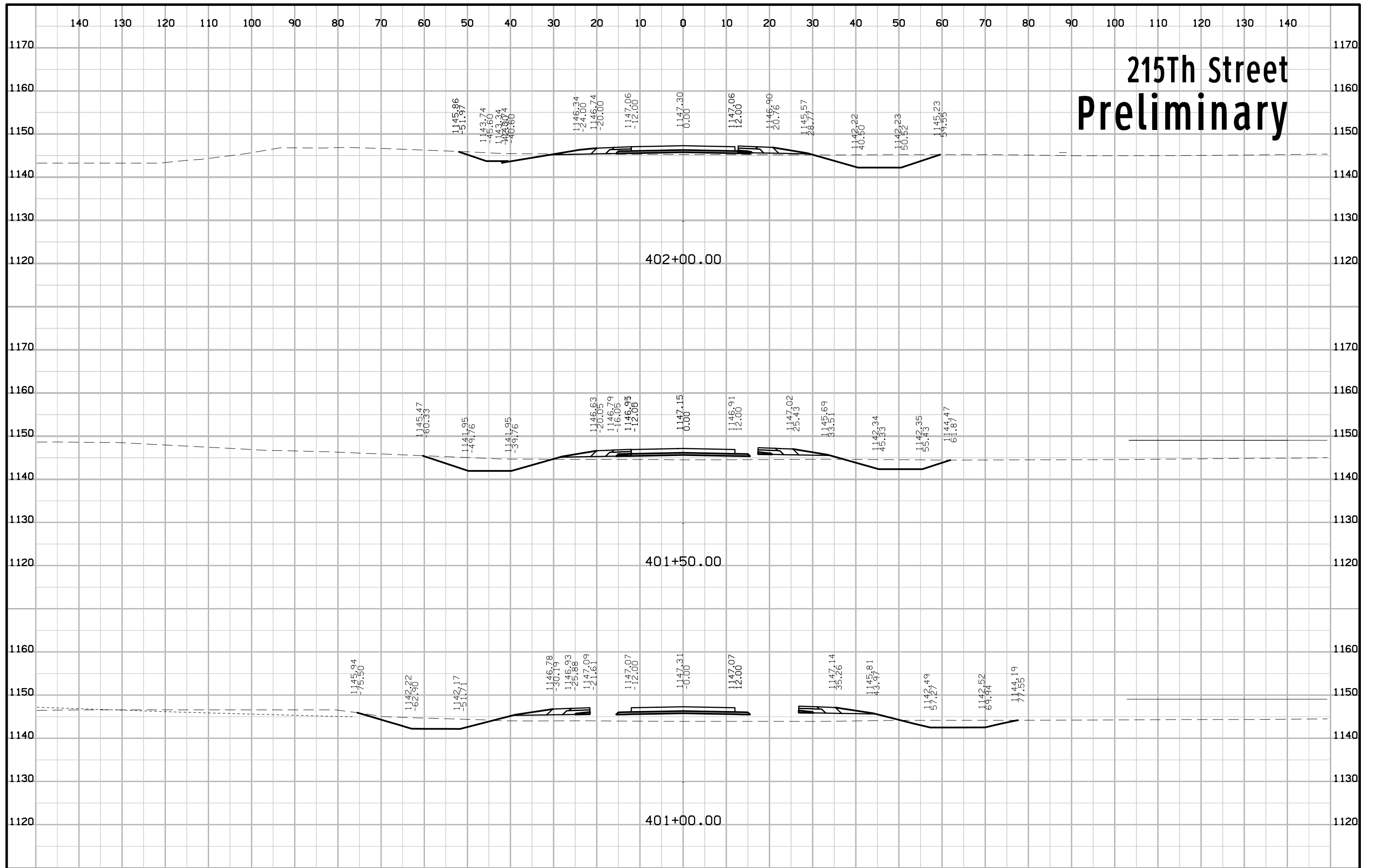


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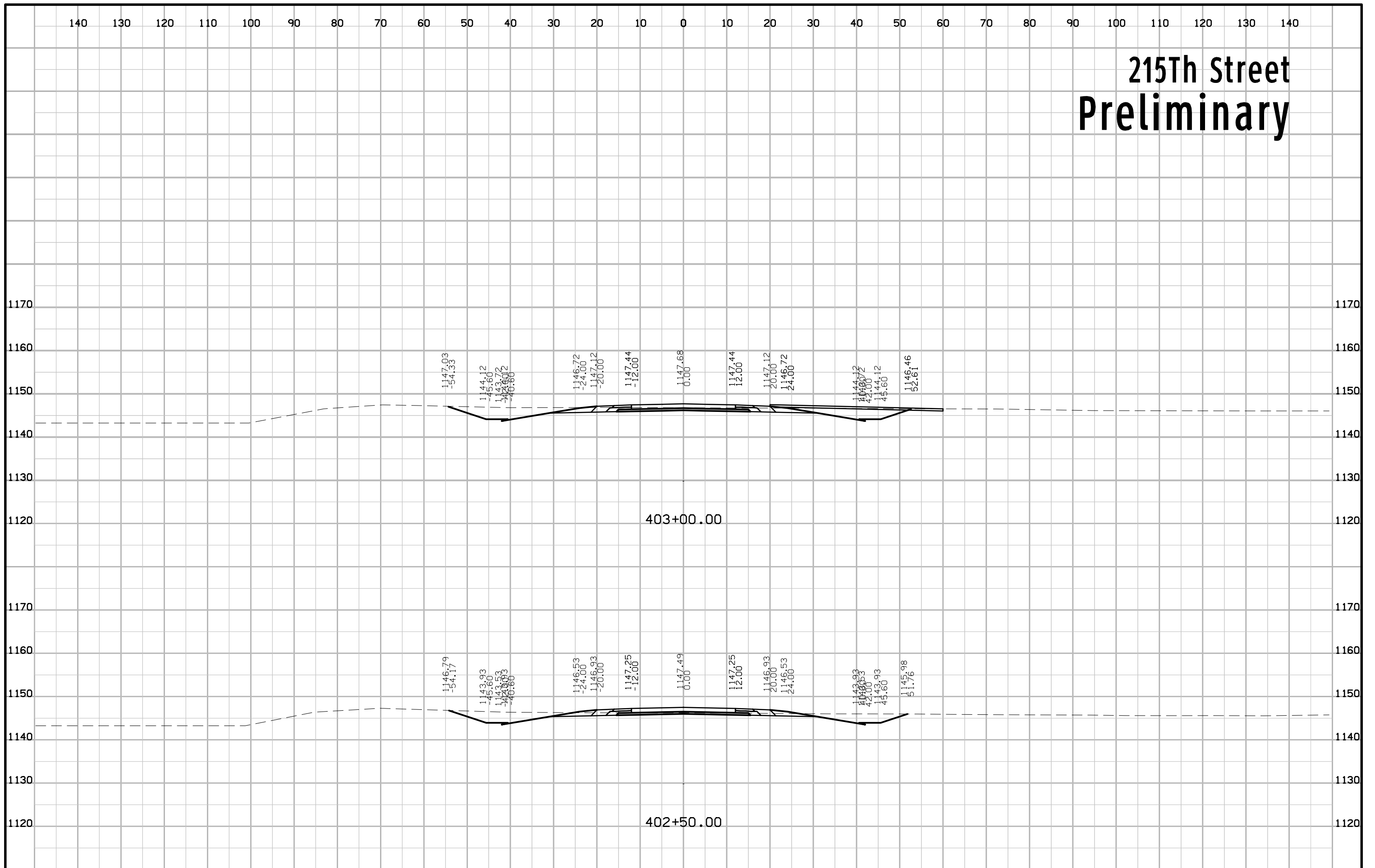




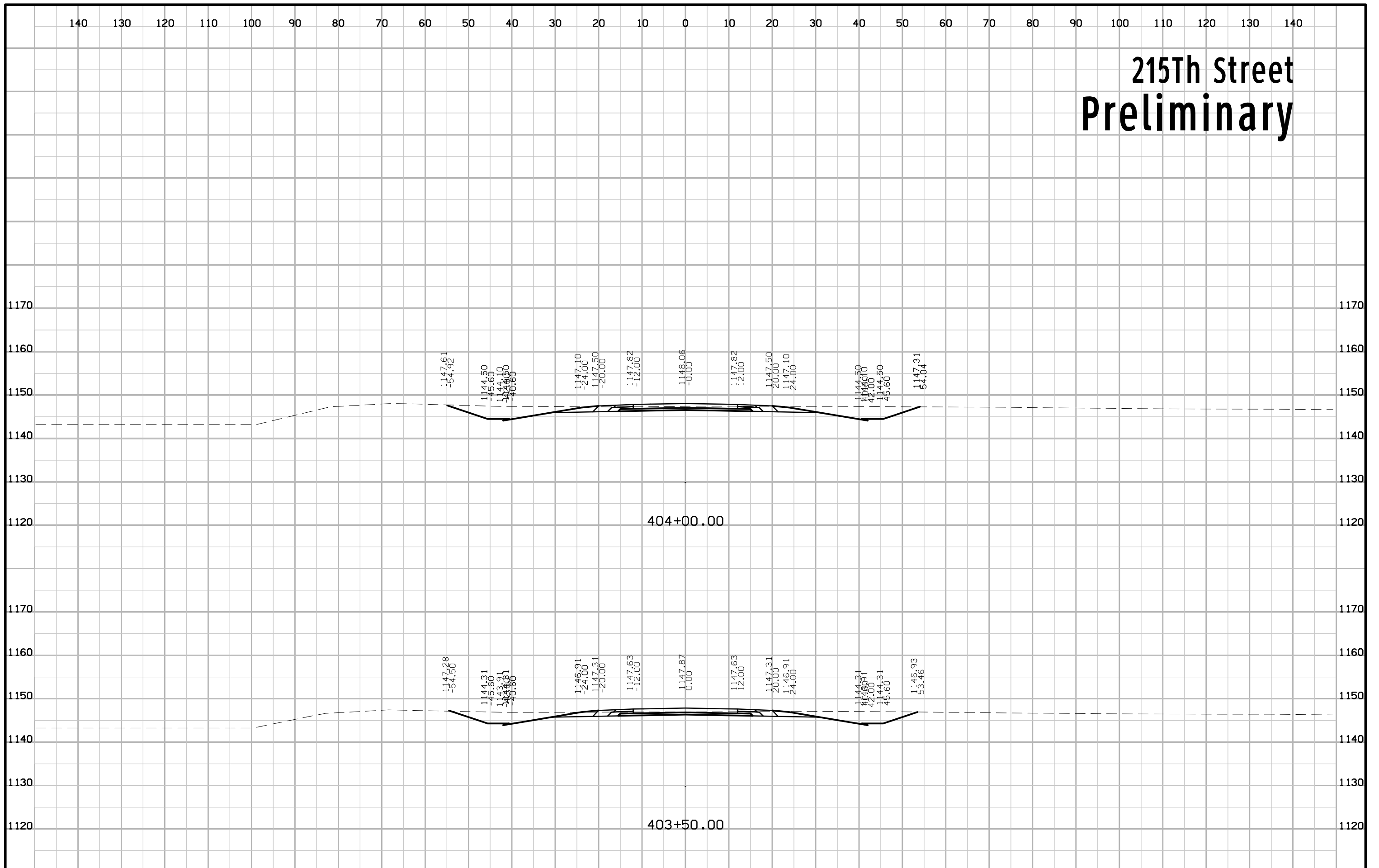
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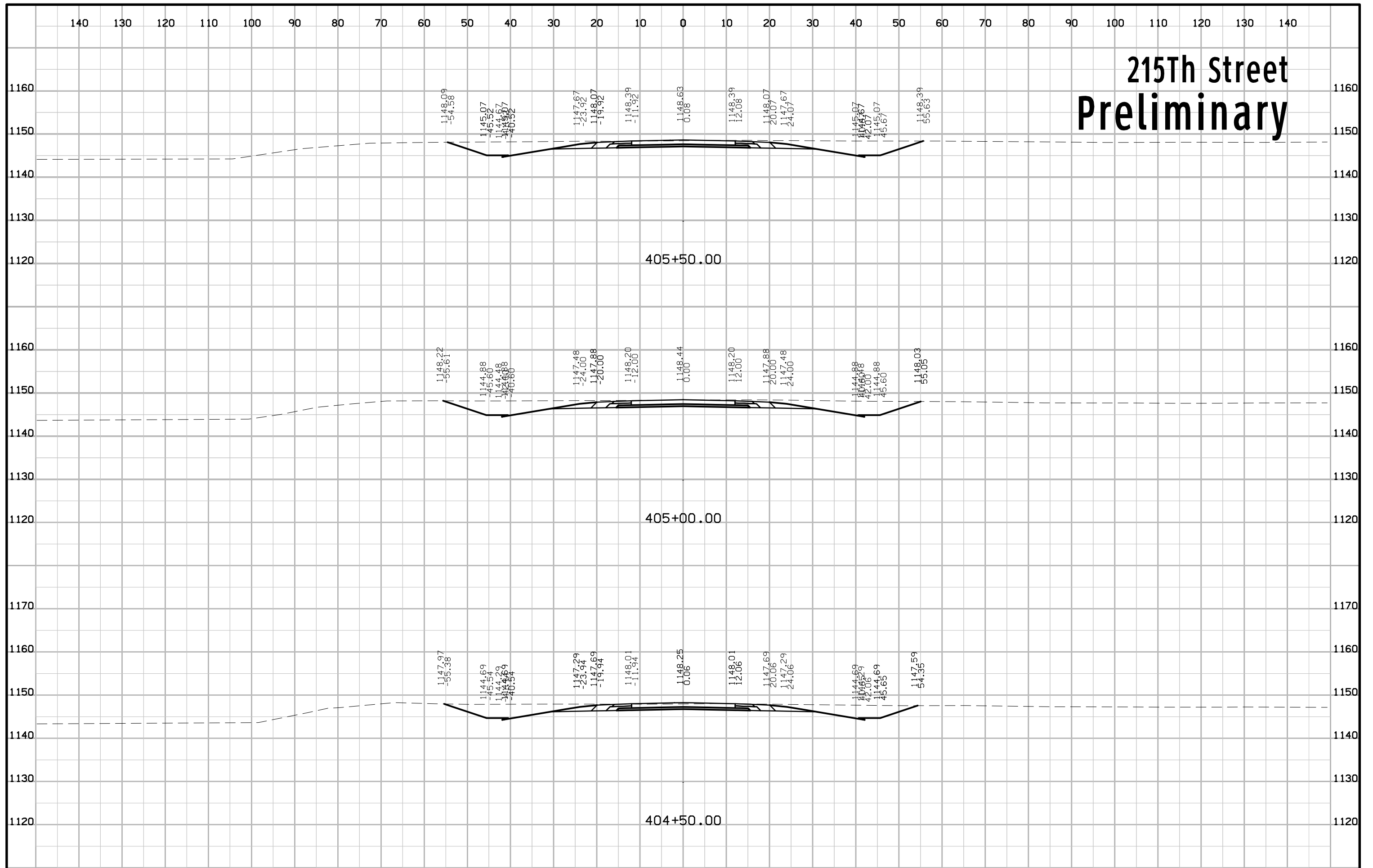
# 215Th Street Preliminary



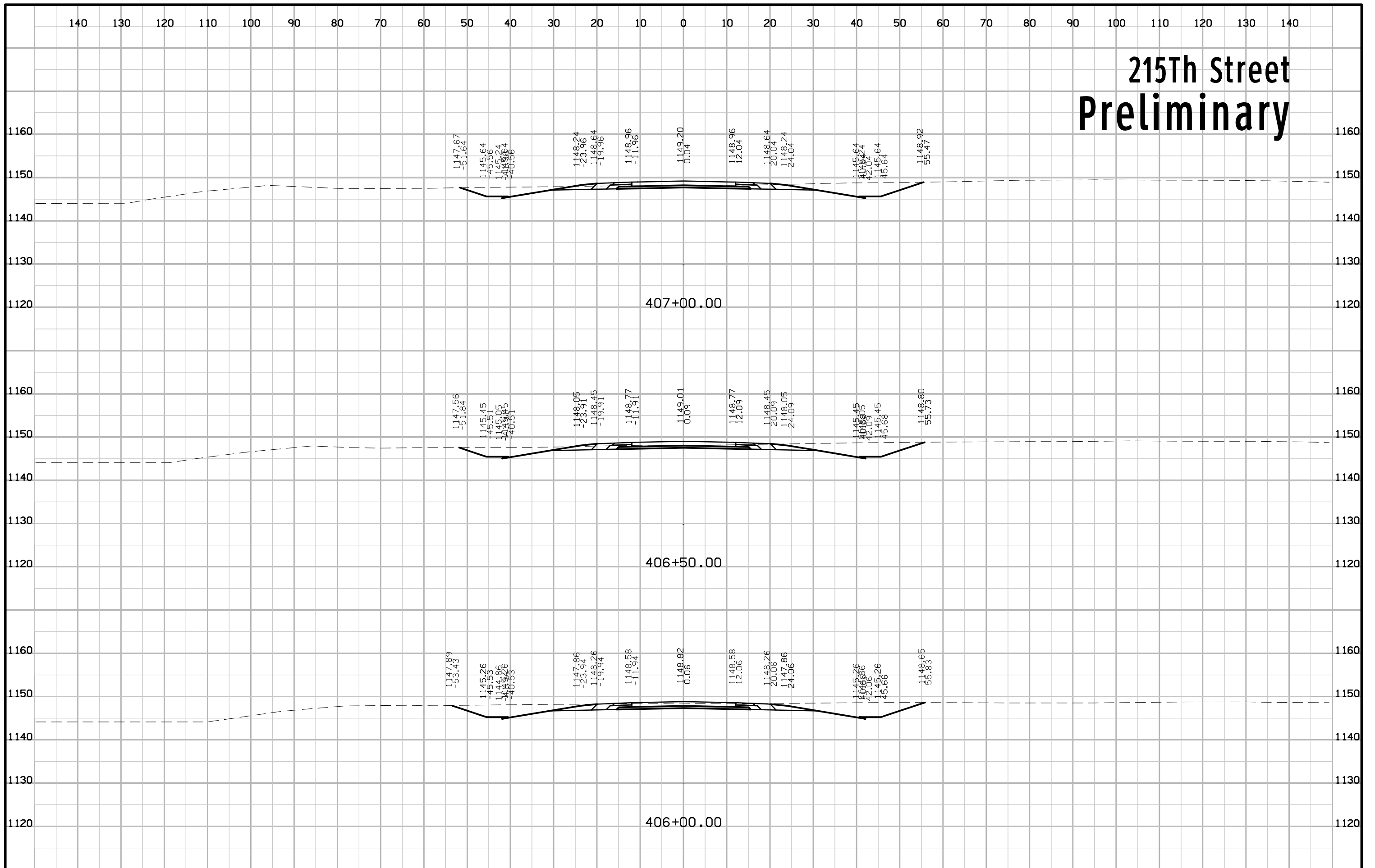
# 215Th Street Preliminary



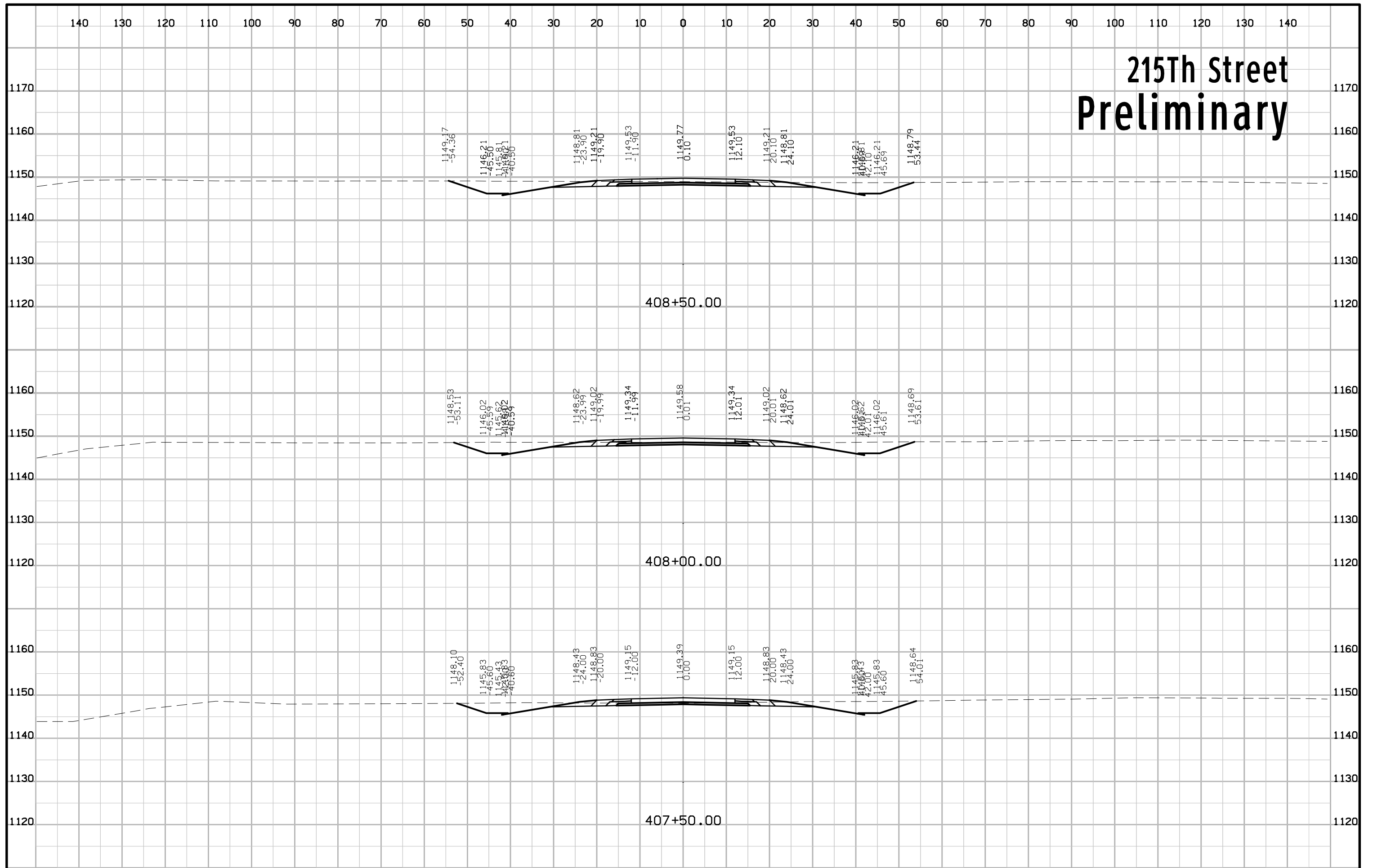
# 215Th Street Preliminary



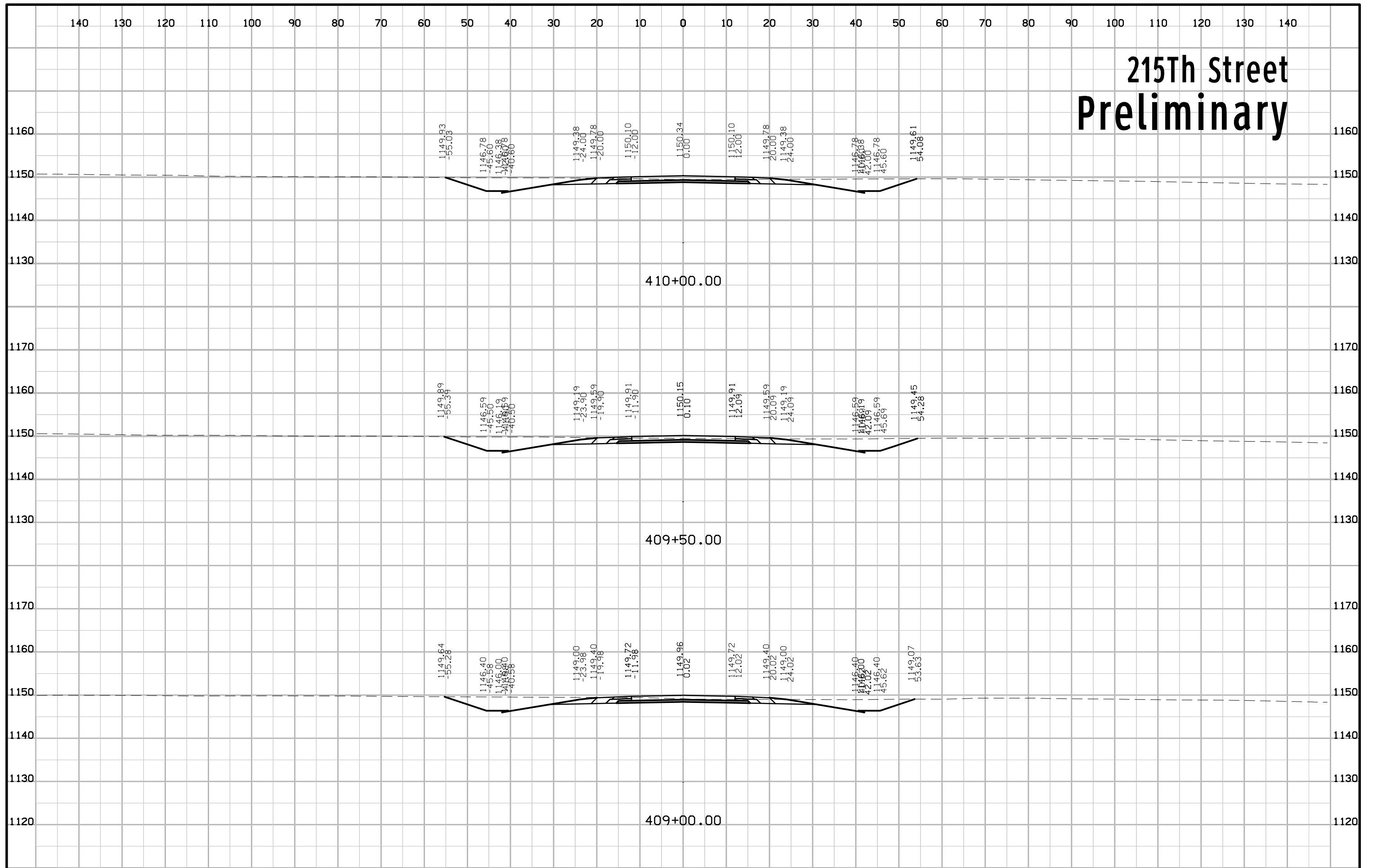
# 215Th Street Preliminary



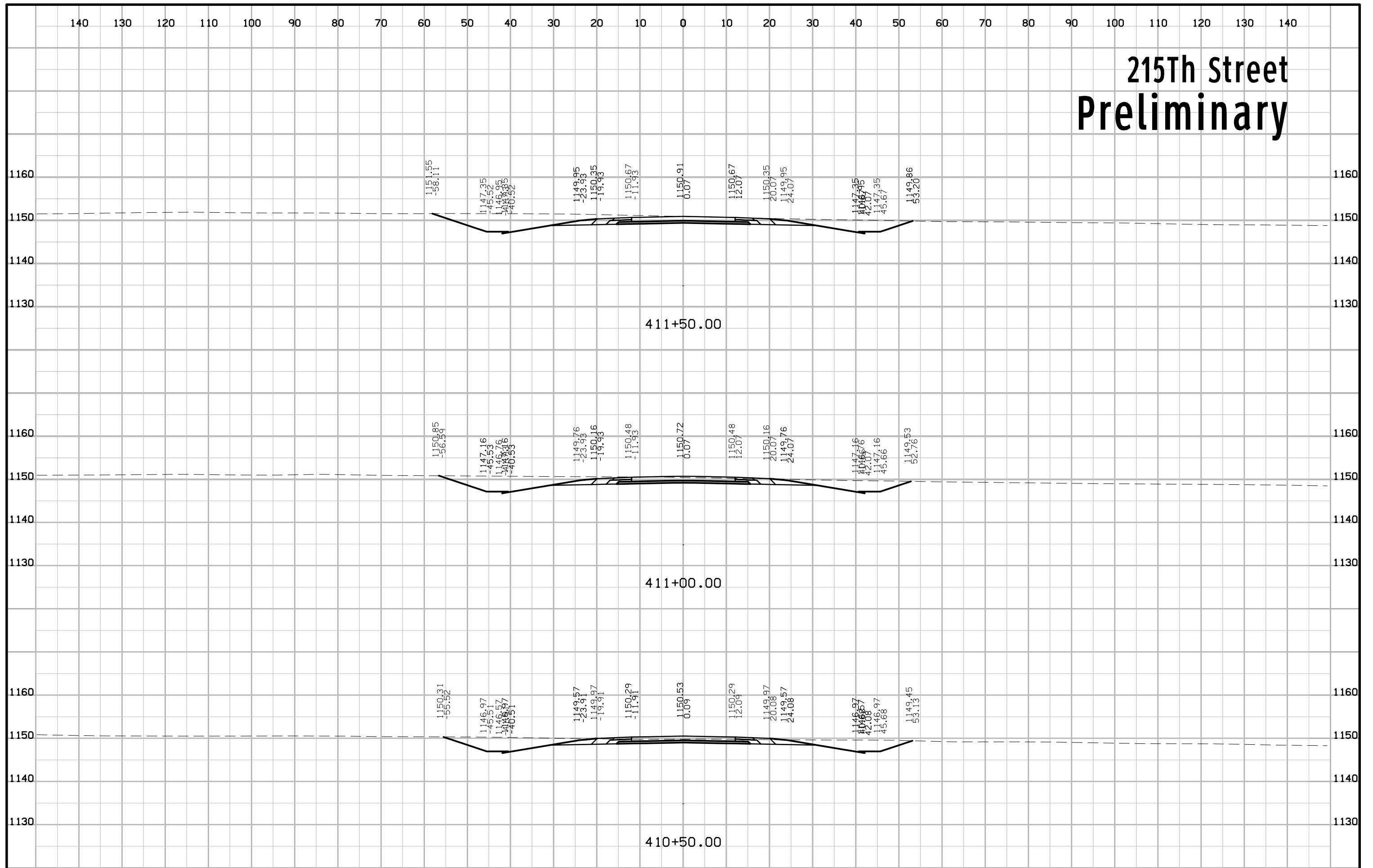
# 215Th Street Preliminary



# 215Th Street Preliminary

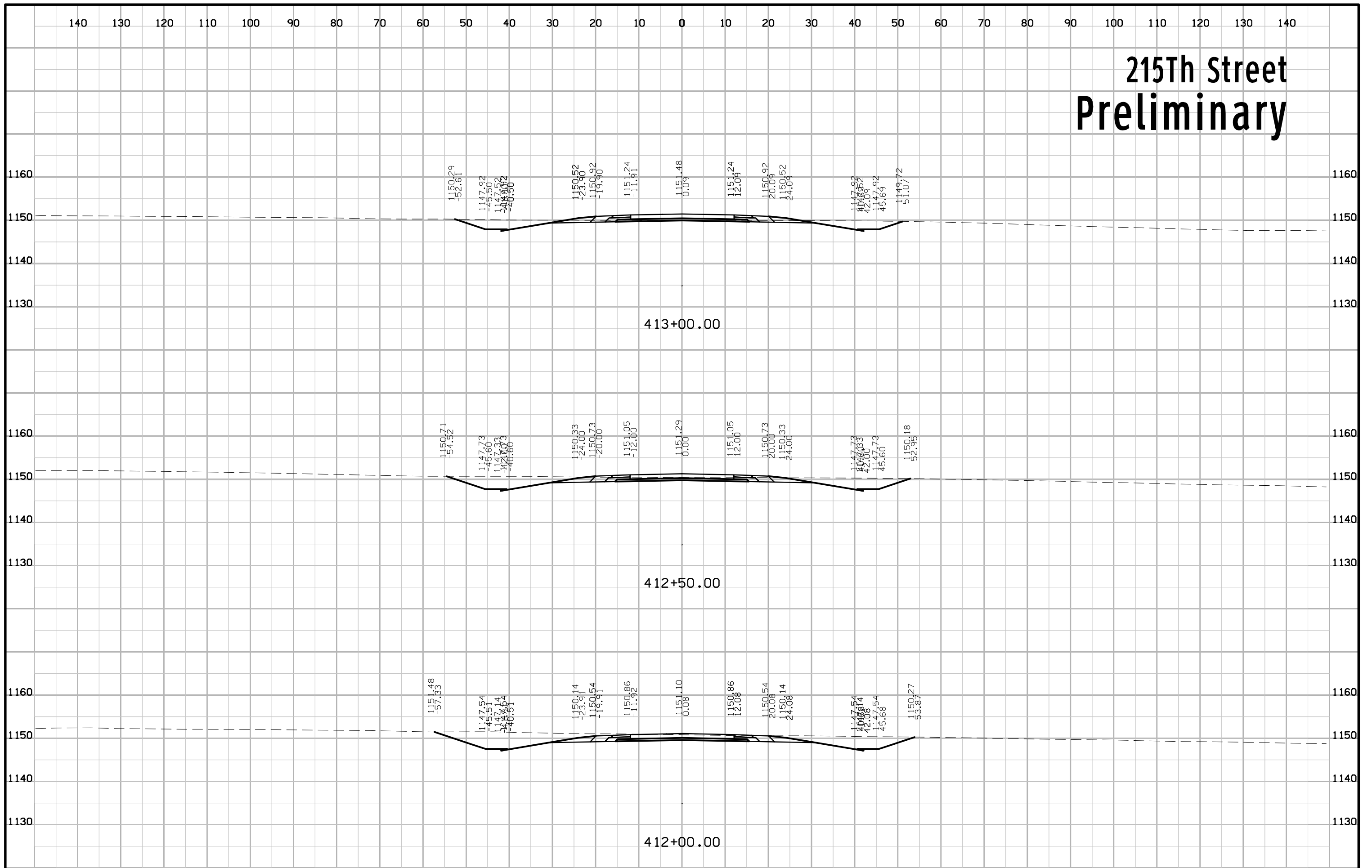


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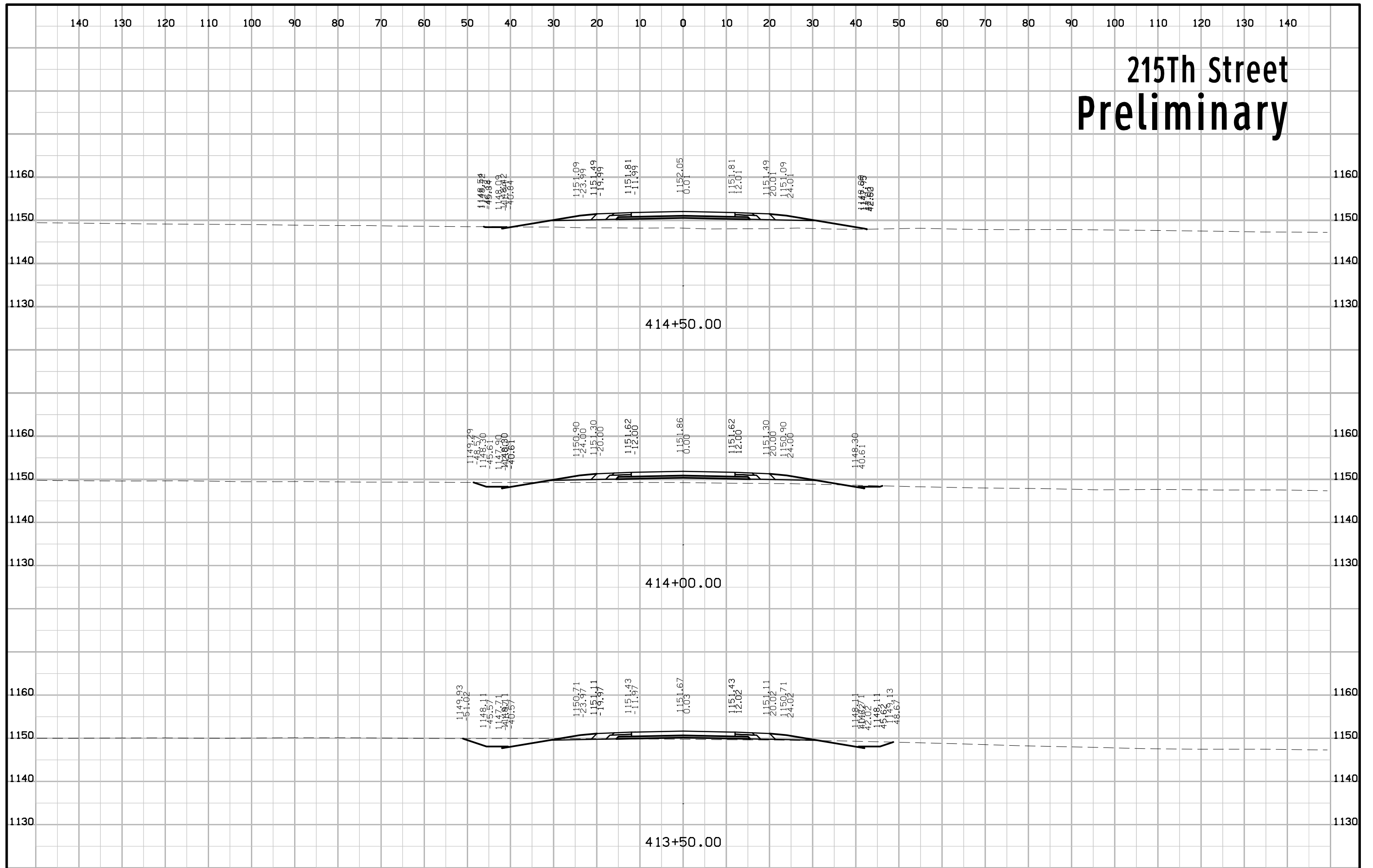




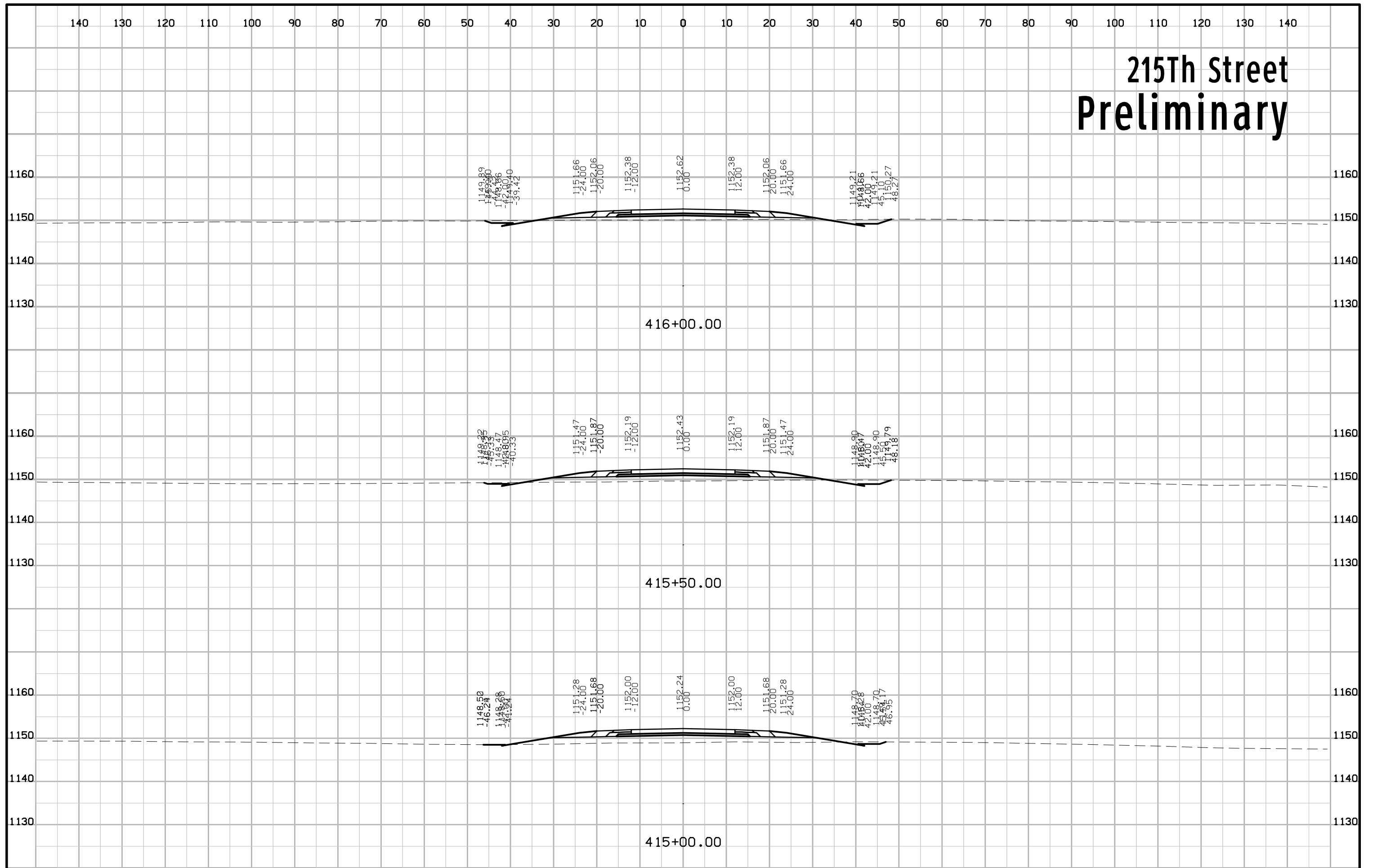
# 215Th Street Preliminary



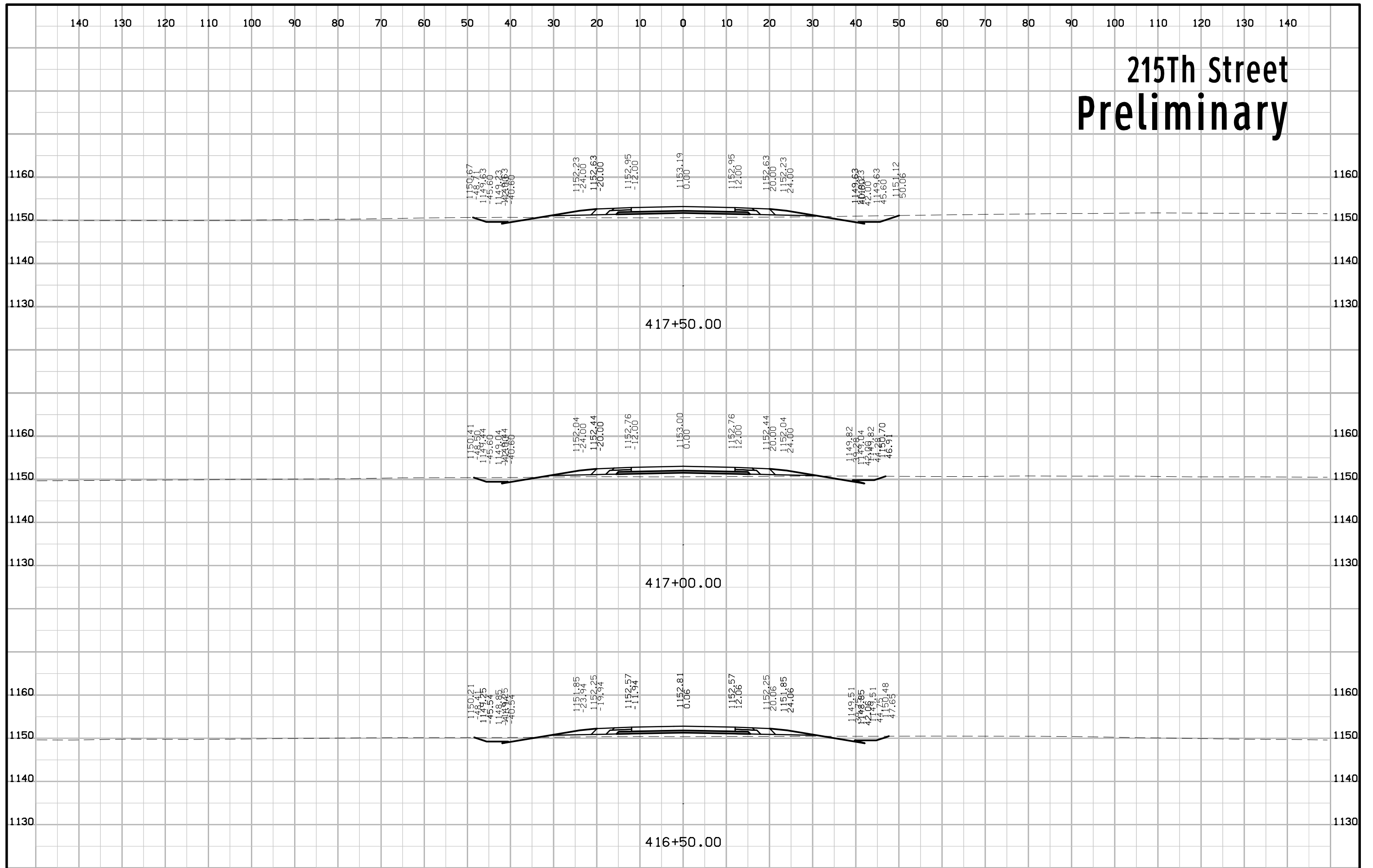
# 215Th Street Preliminary



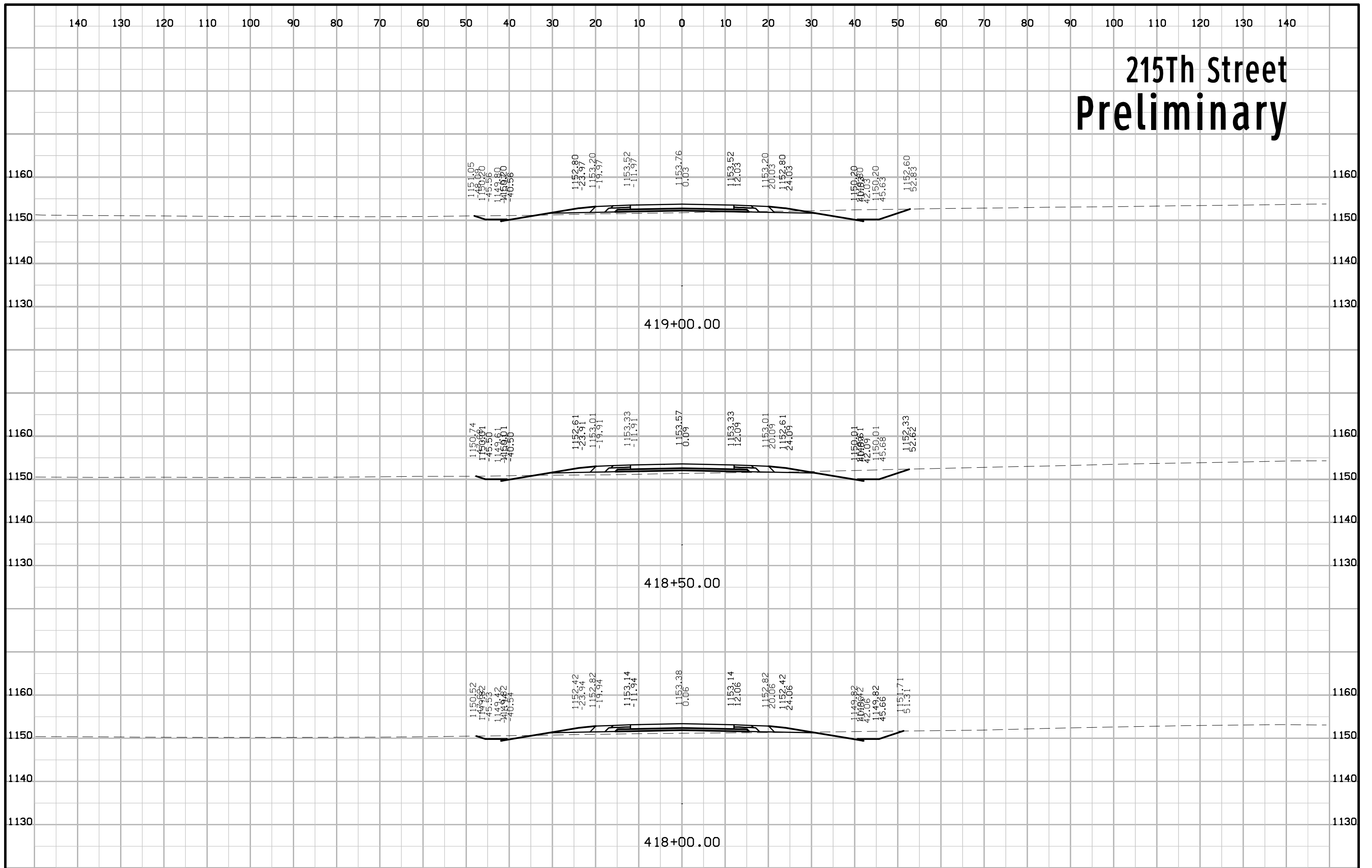
# 215Th Street Preliminary



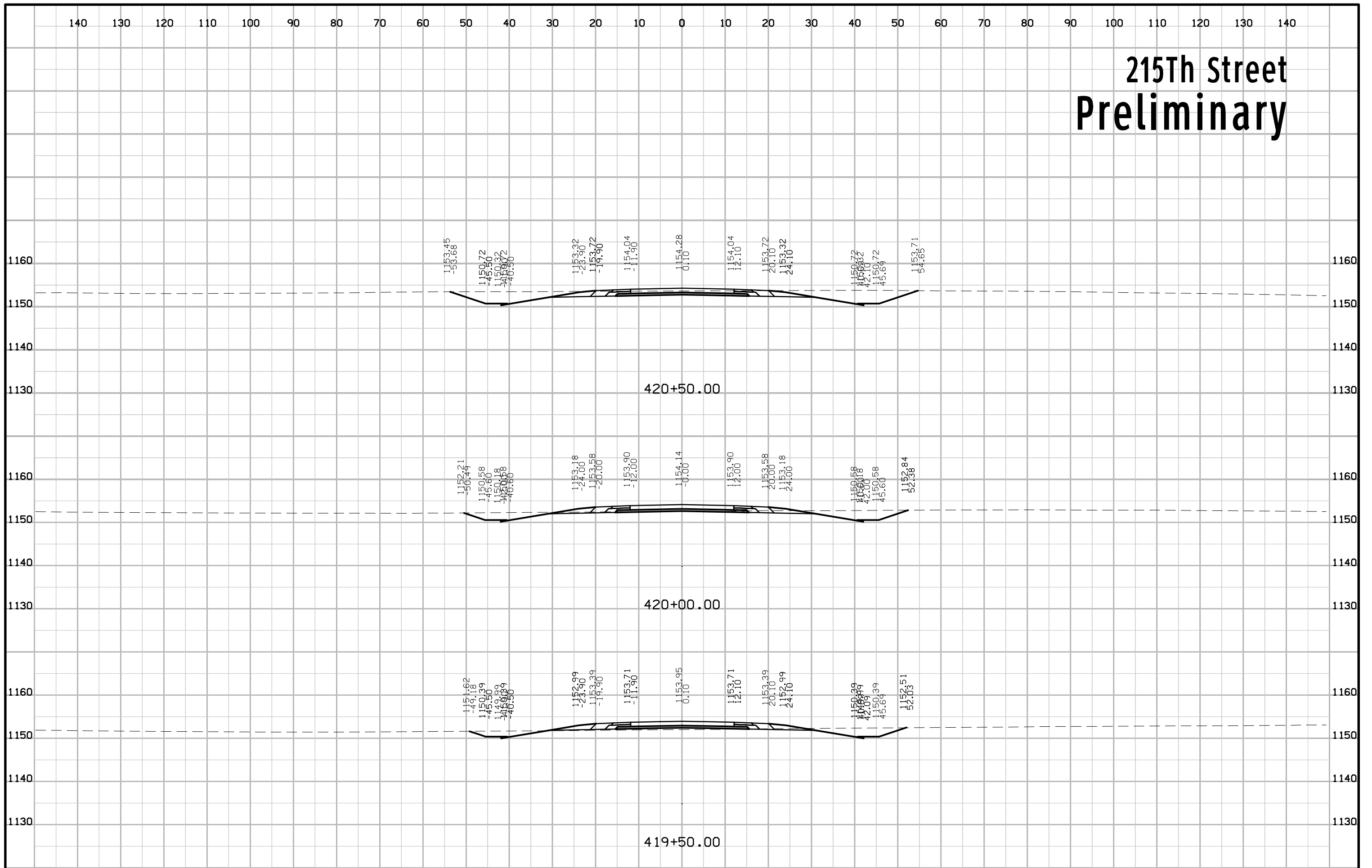
# 215Th Street Preliminary



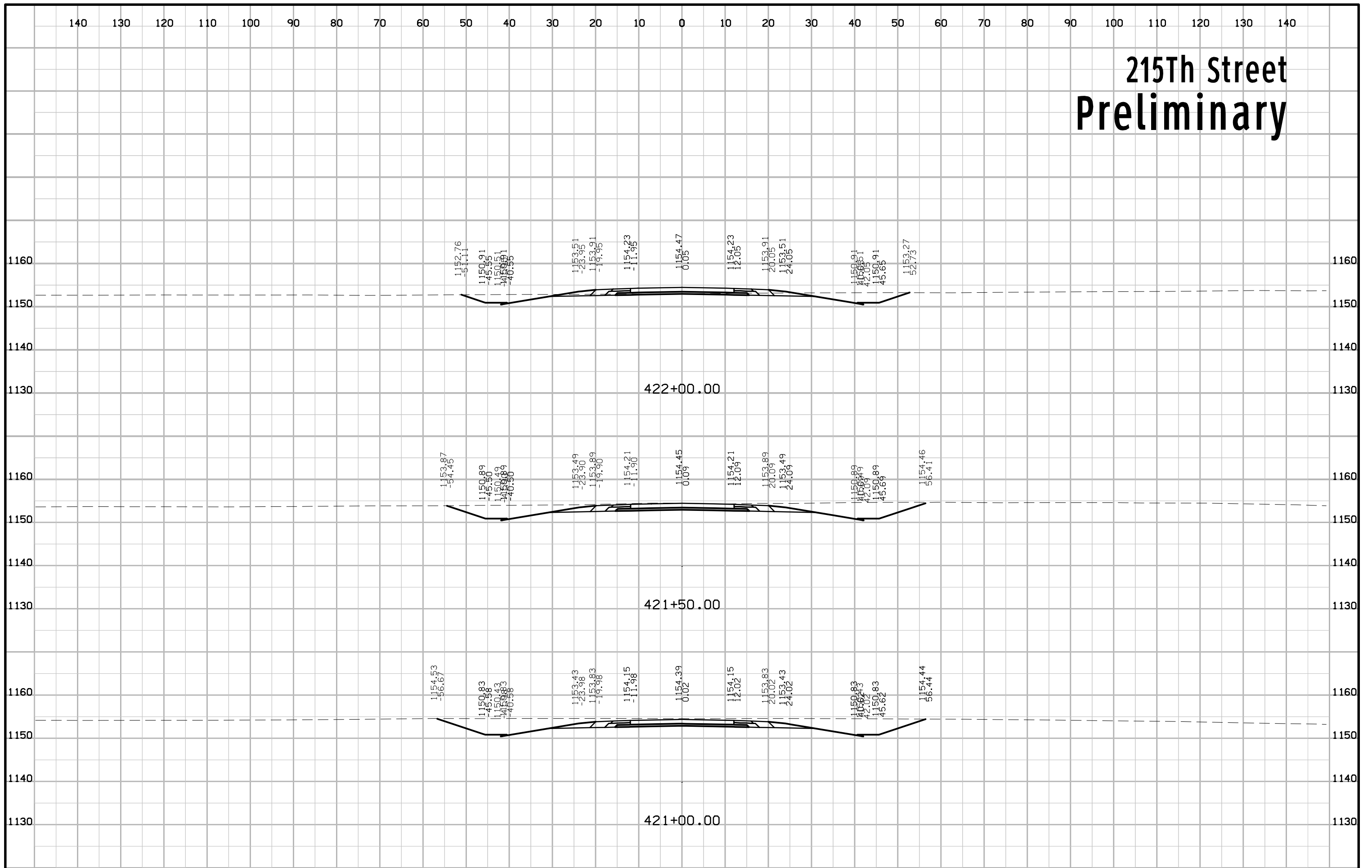
# 215Th Street Preliminary



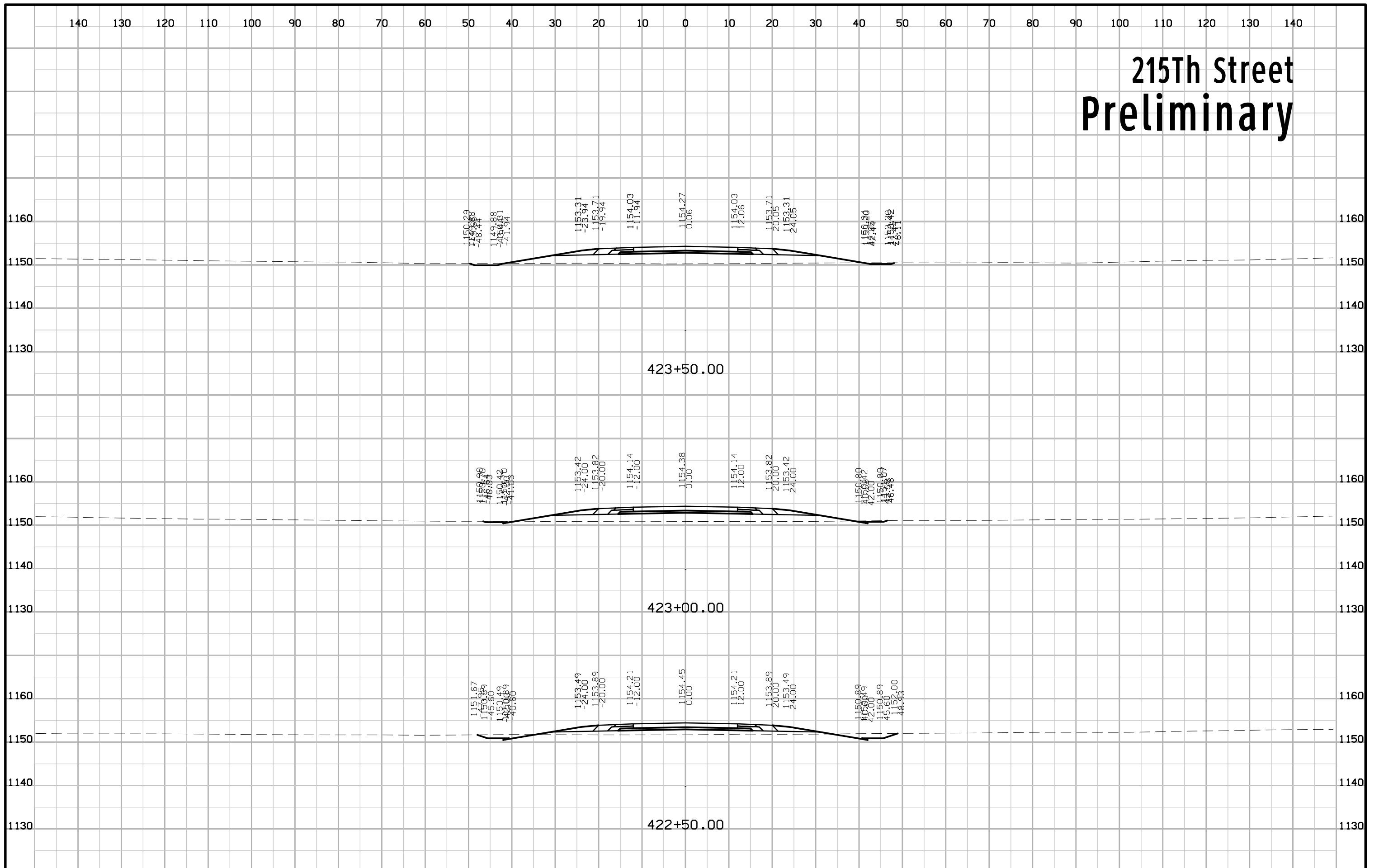
# 215Th Street Preliminary



# 215Th Street Preliminary

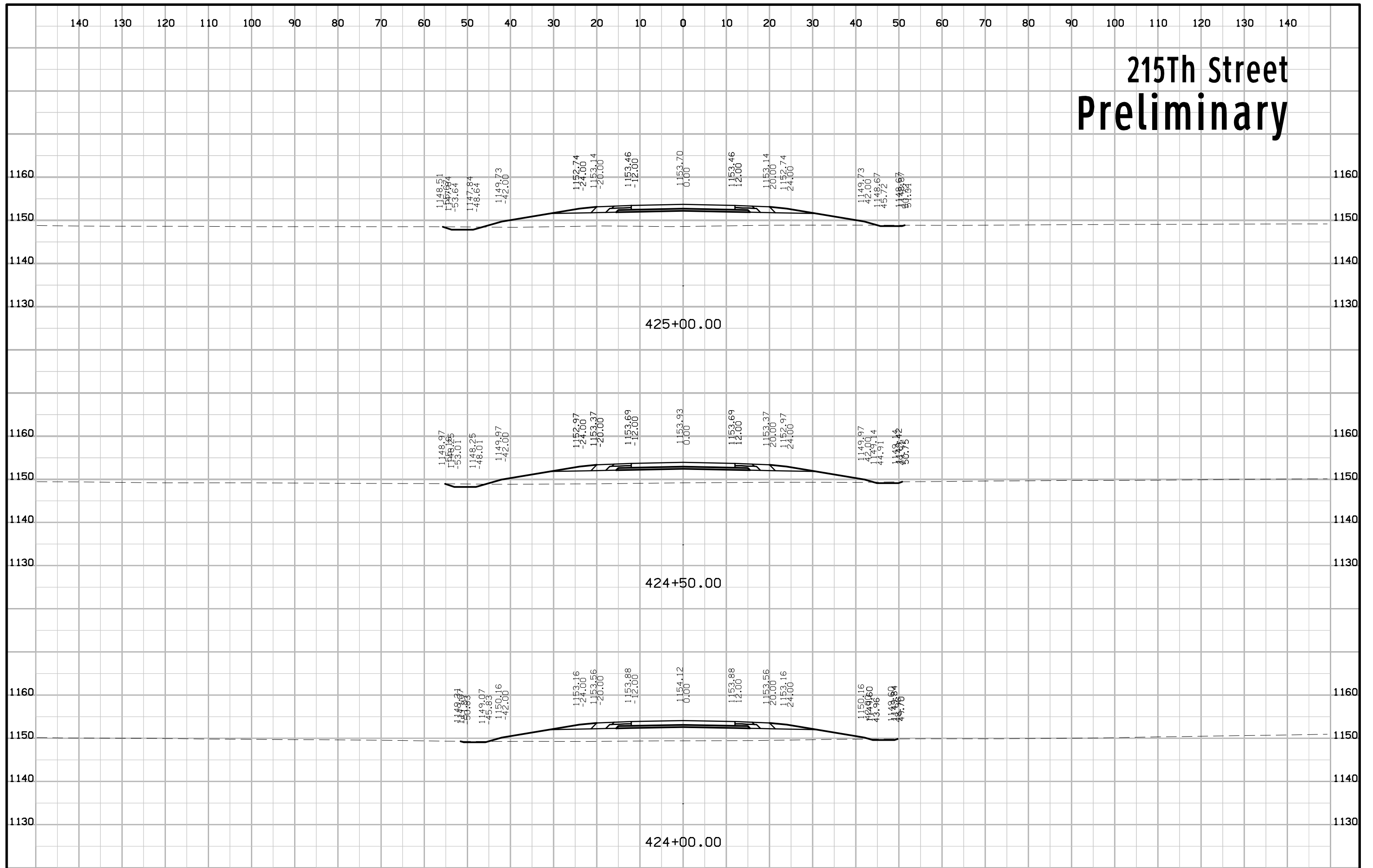


# 215Th Street Preliminary

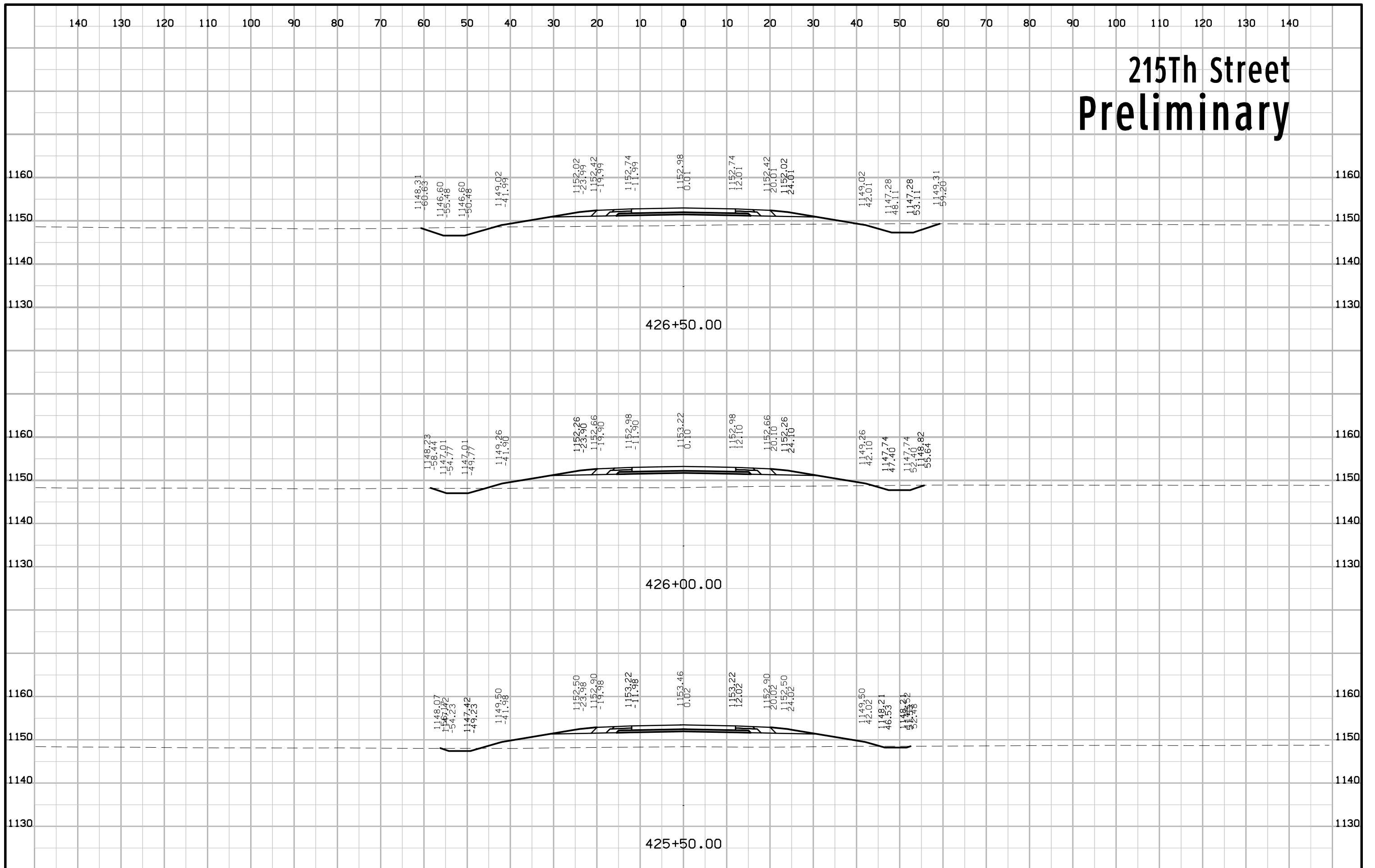




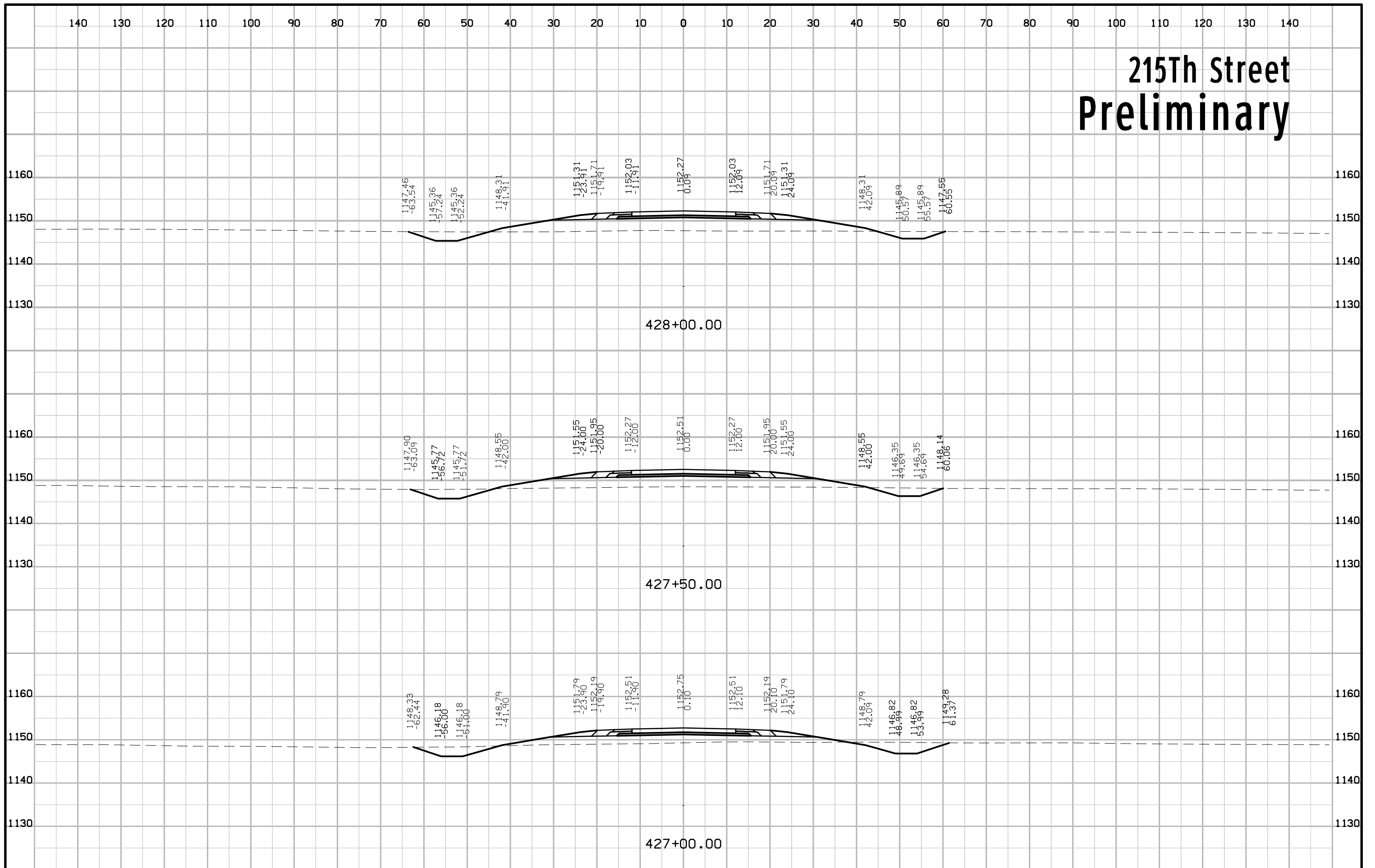
# 215Th Street Preliminary



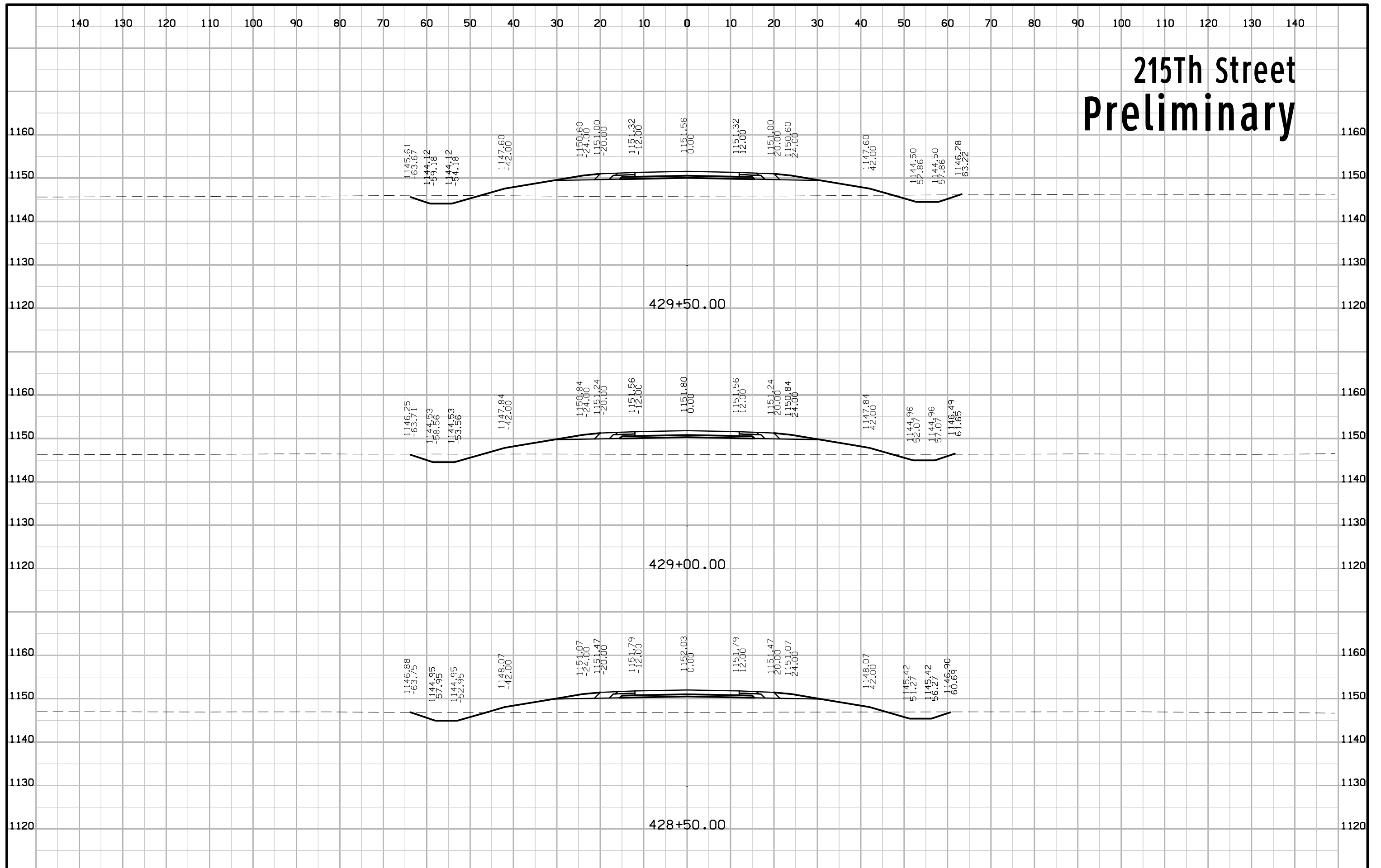
# 215Th Street Preliminary



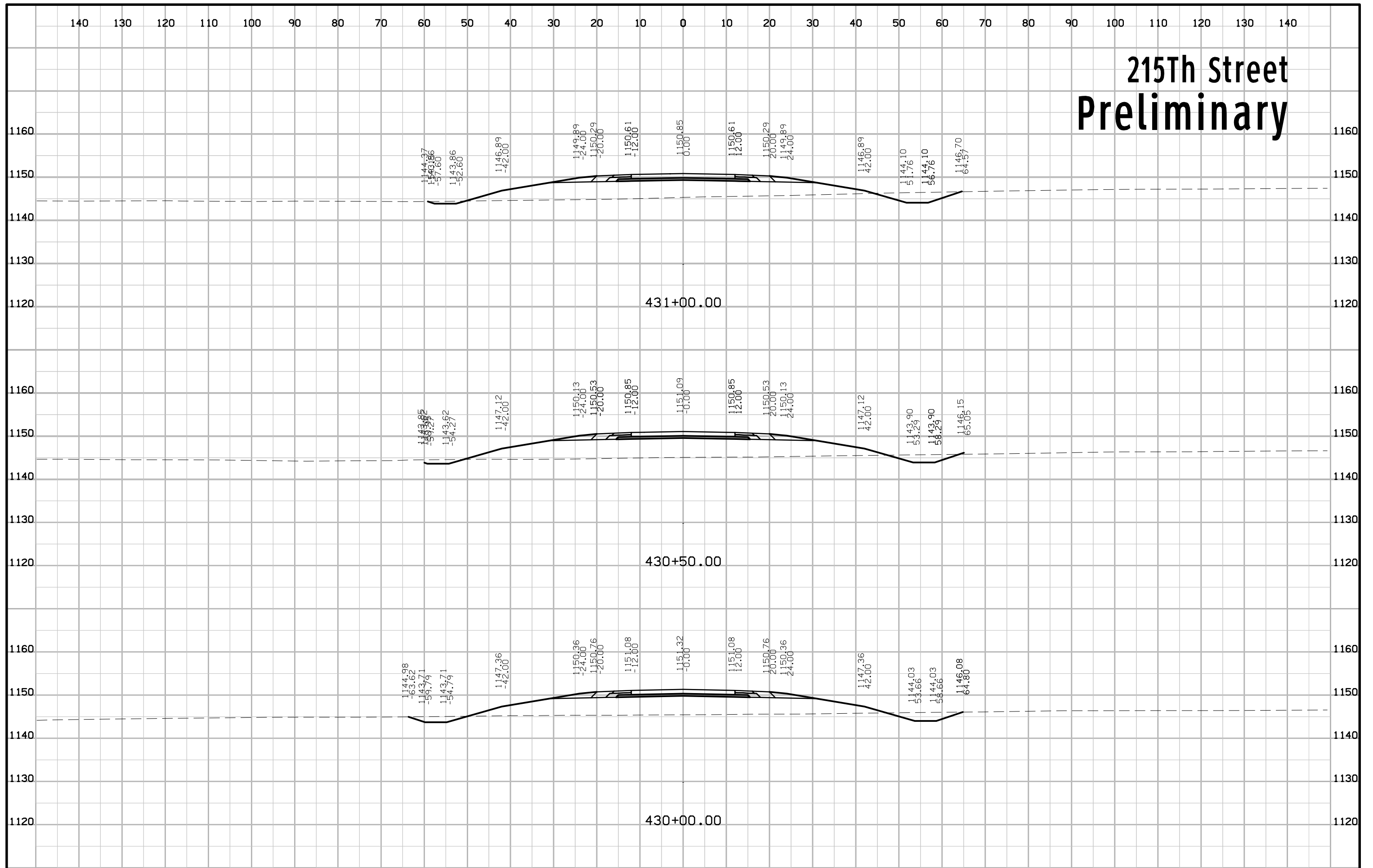
# 215Th Street Preliminary



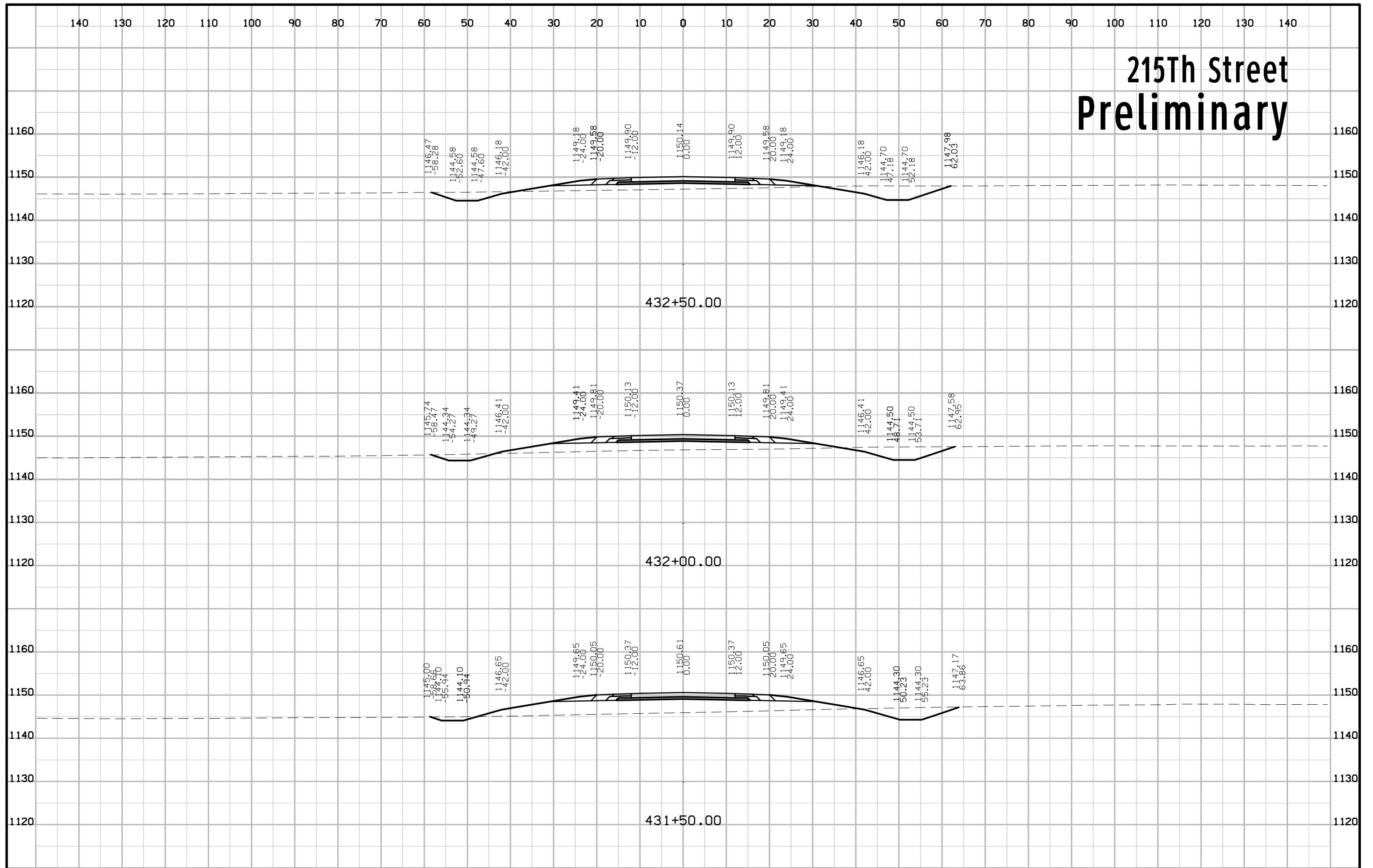
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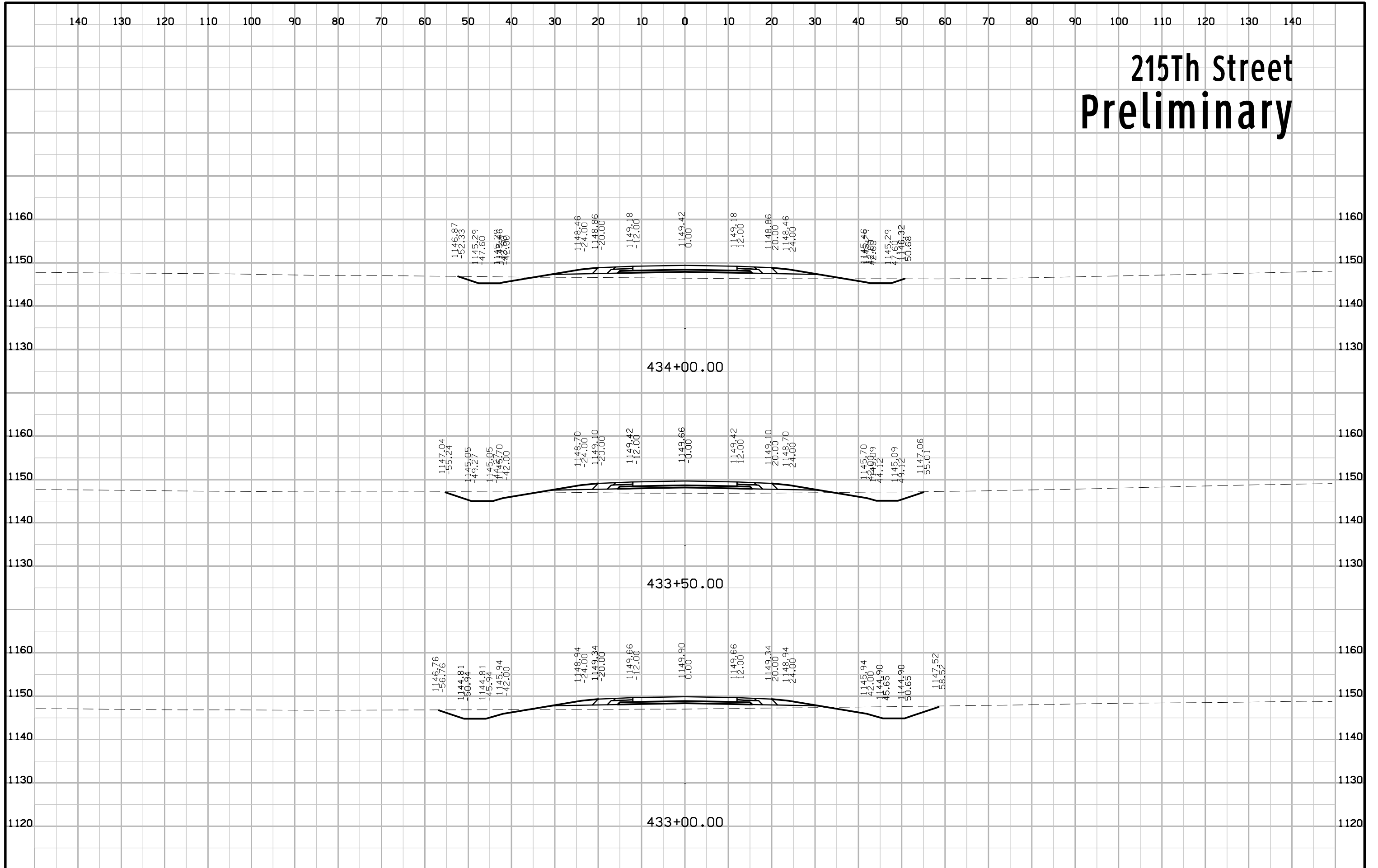
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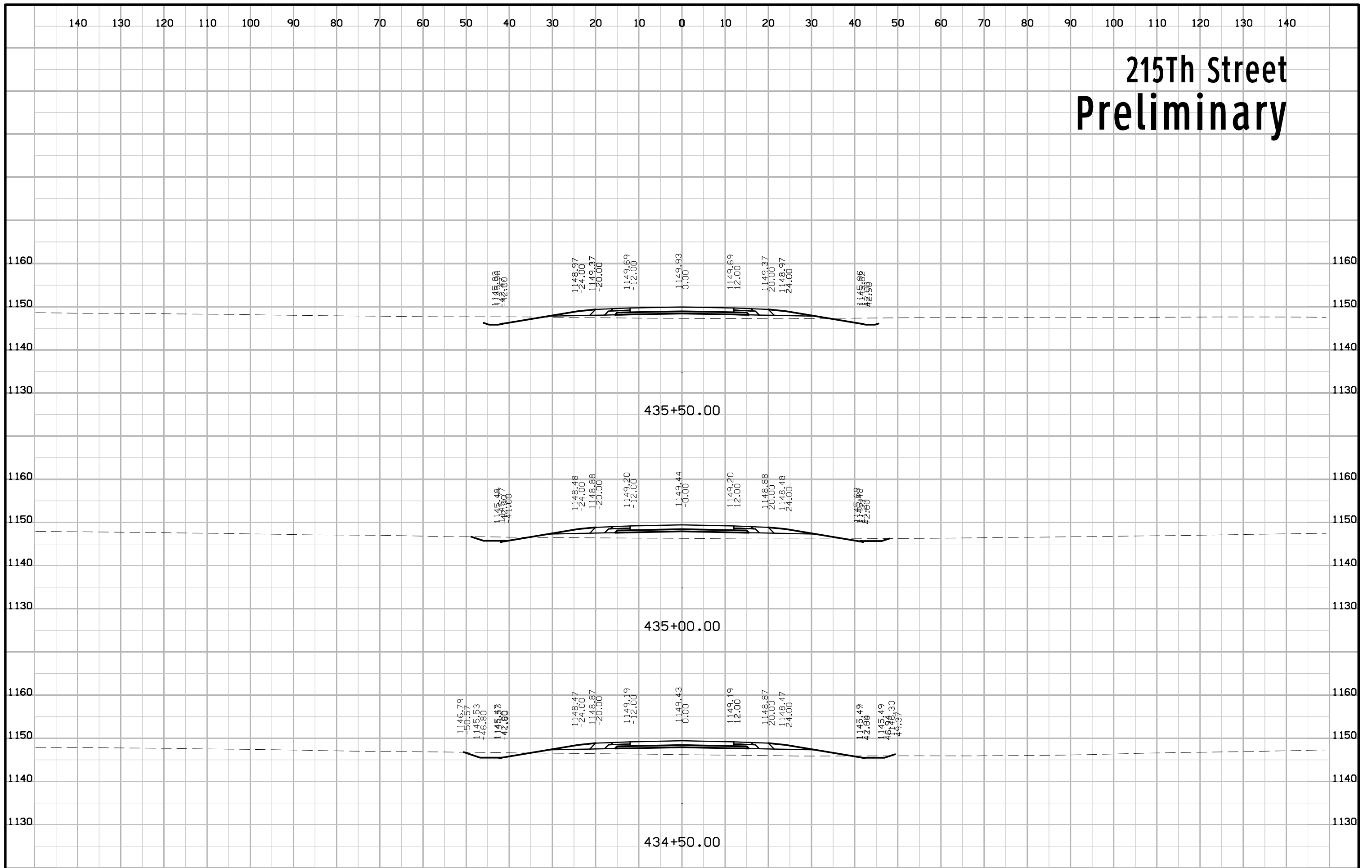
# 215Th Street Preliminary



# 215Th Street Preliminary

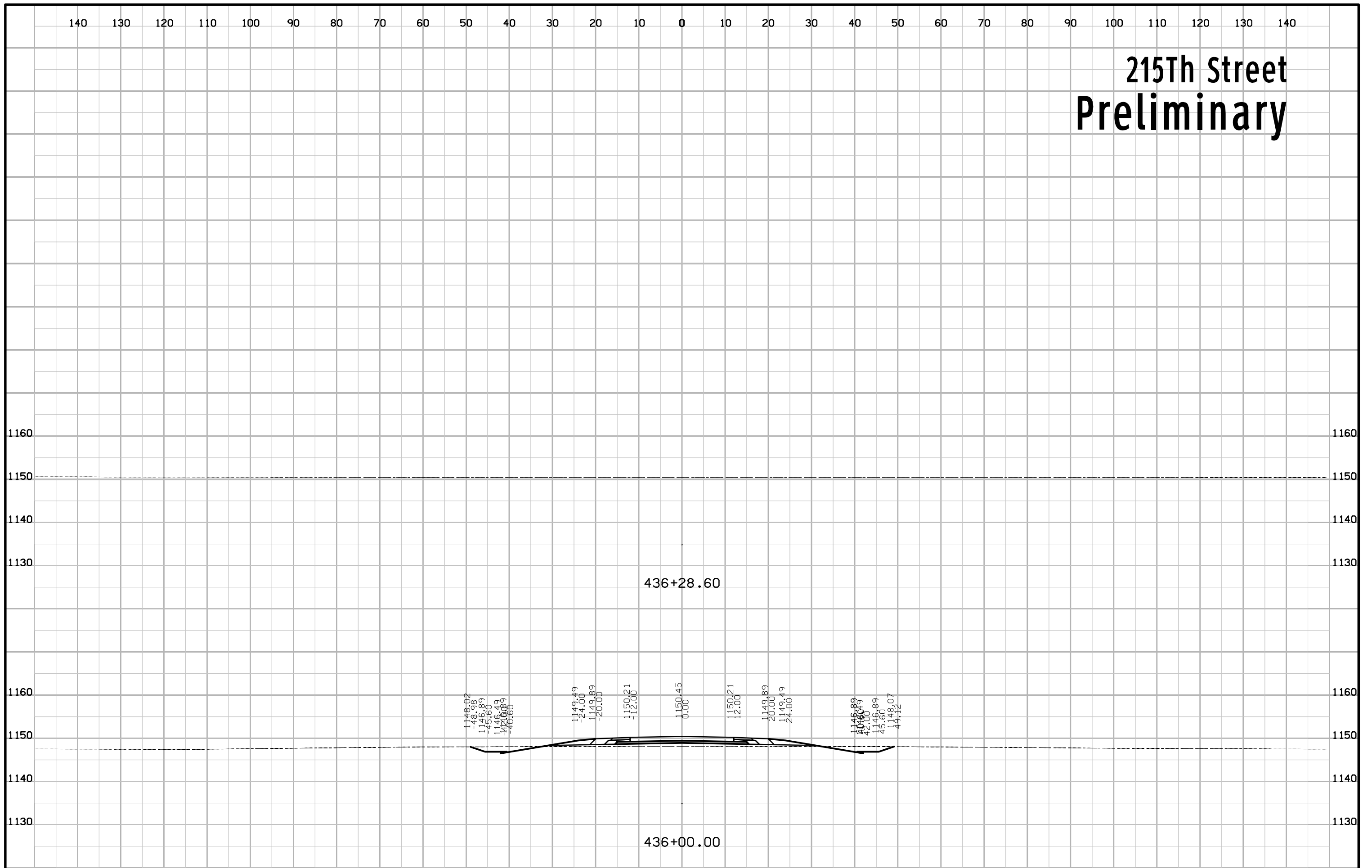


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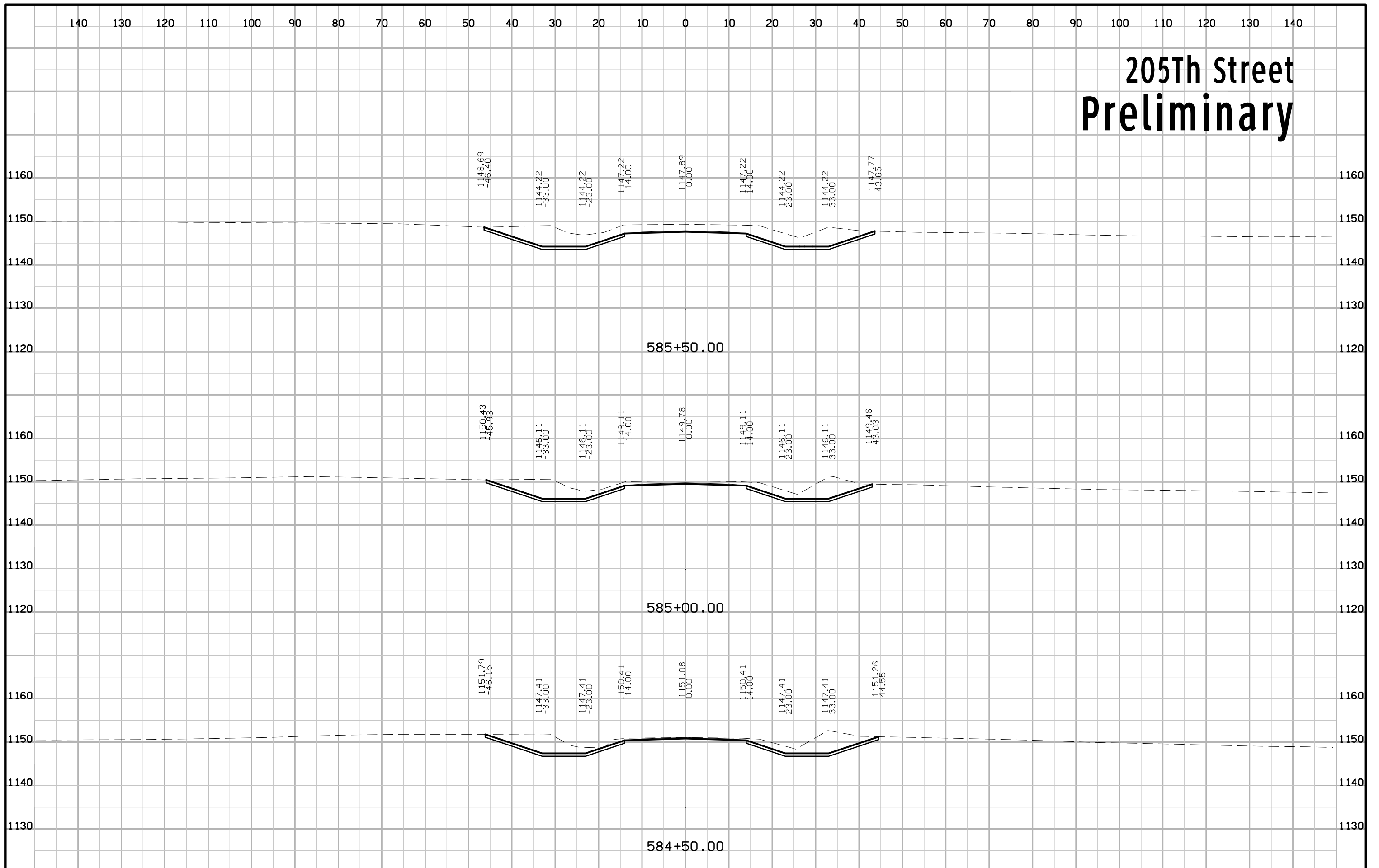




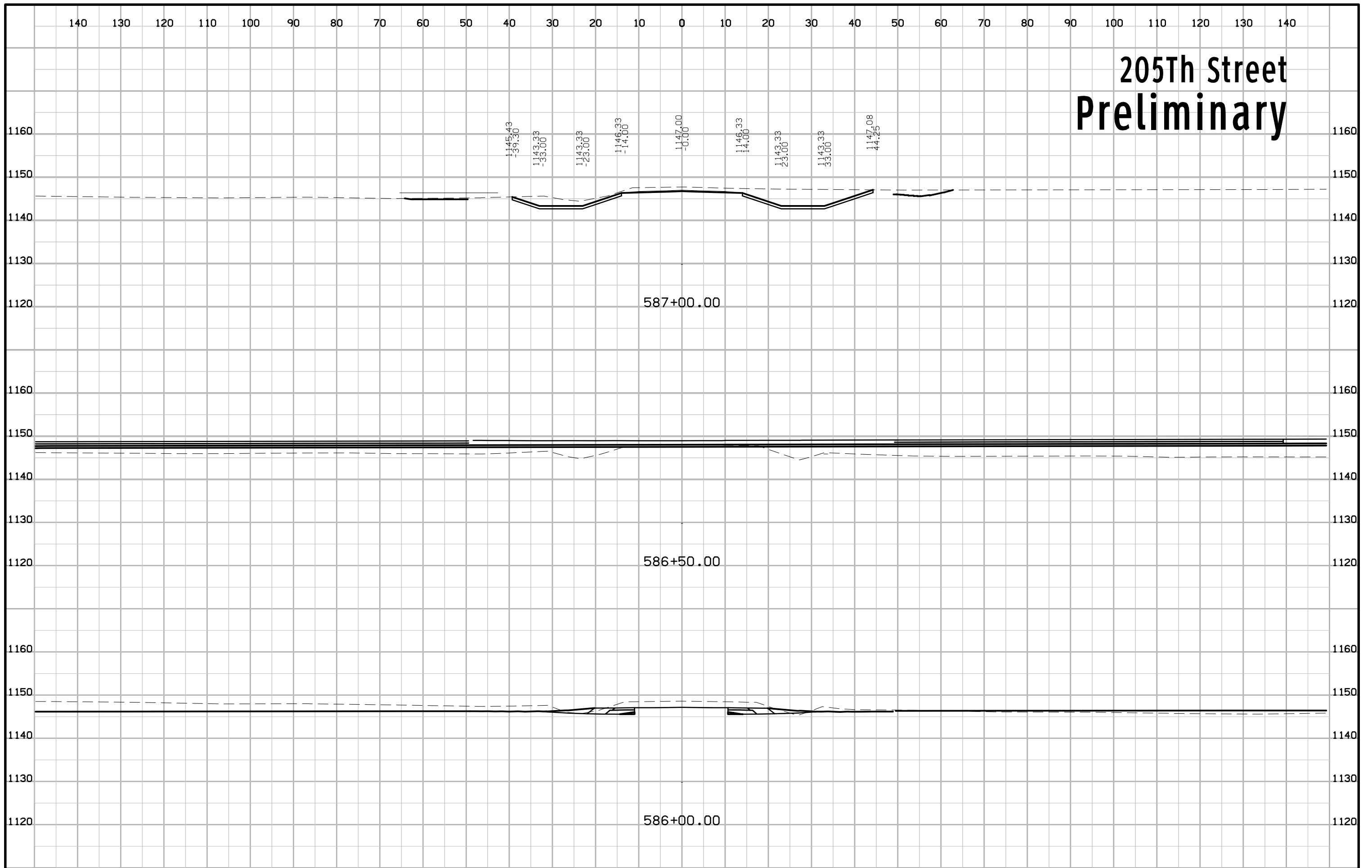
# 215Th Street Preliminary



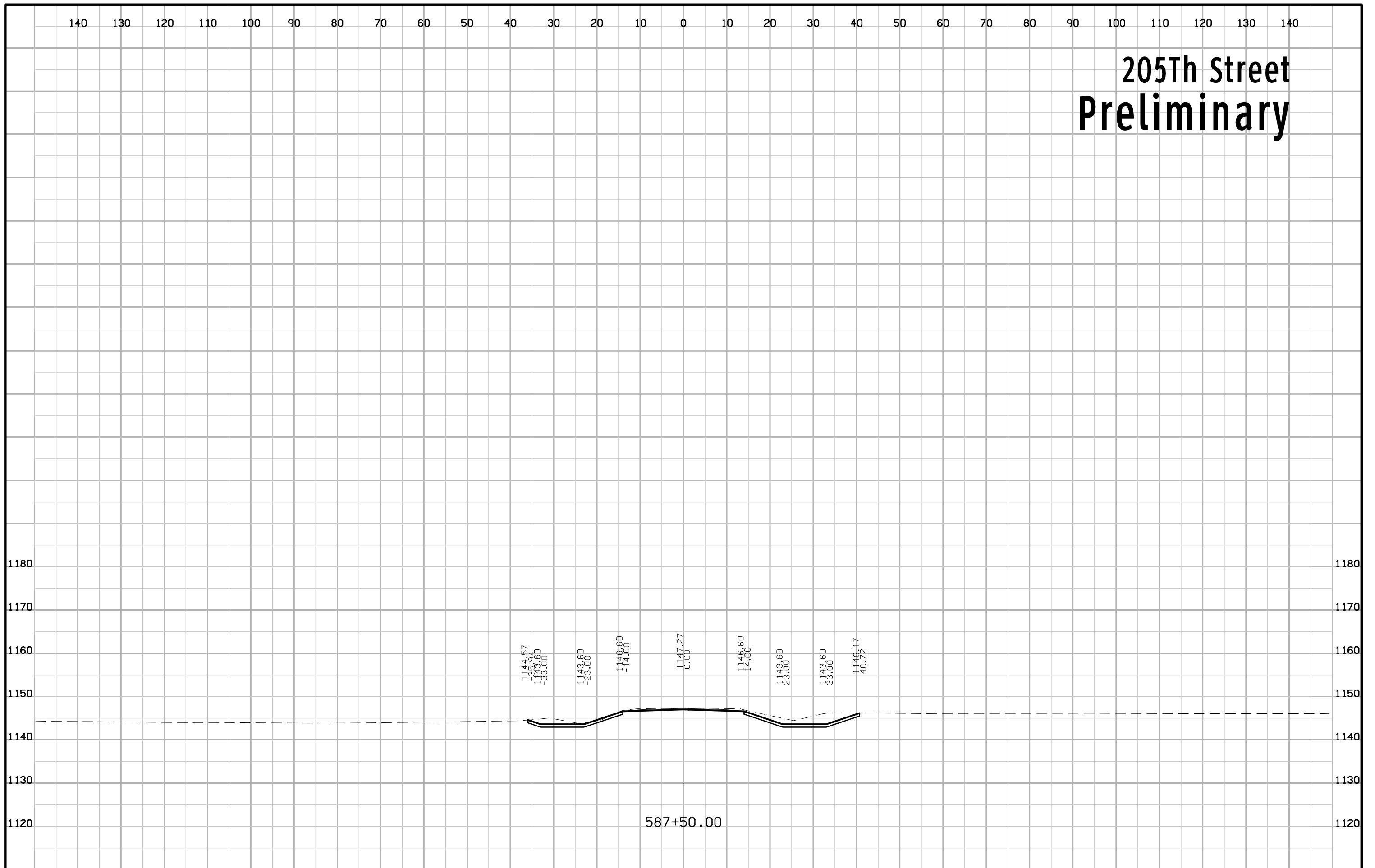
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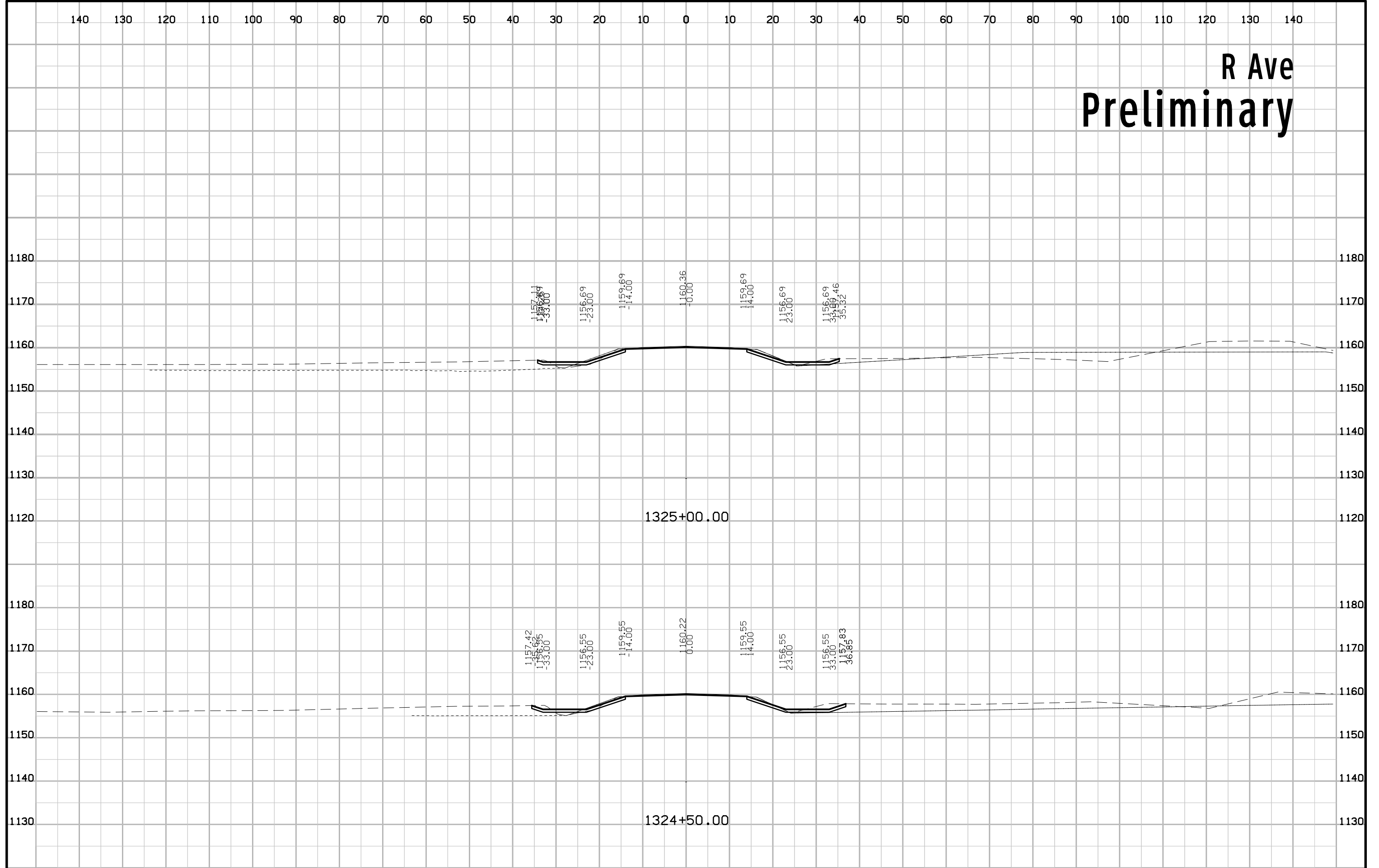
# 205Th Street Preliminary



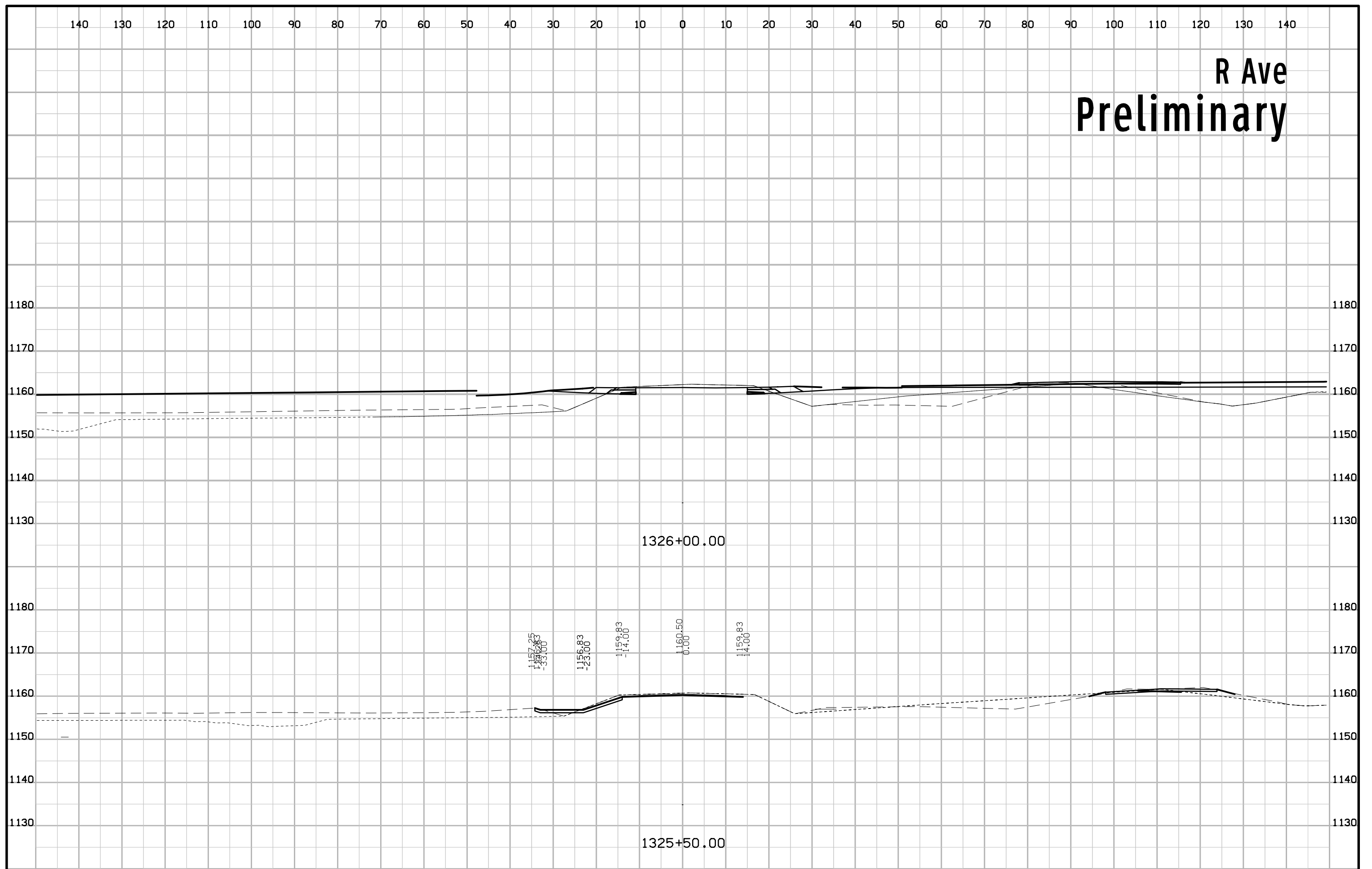
# 205Th Street Preliminary



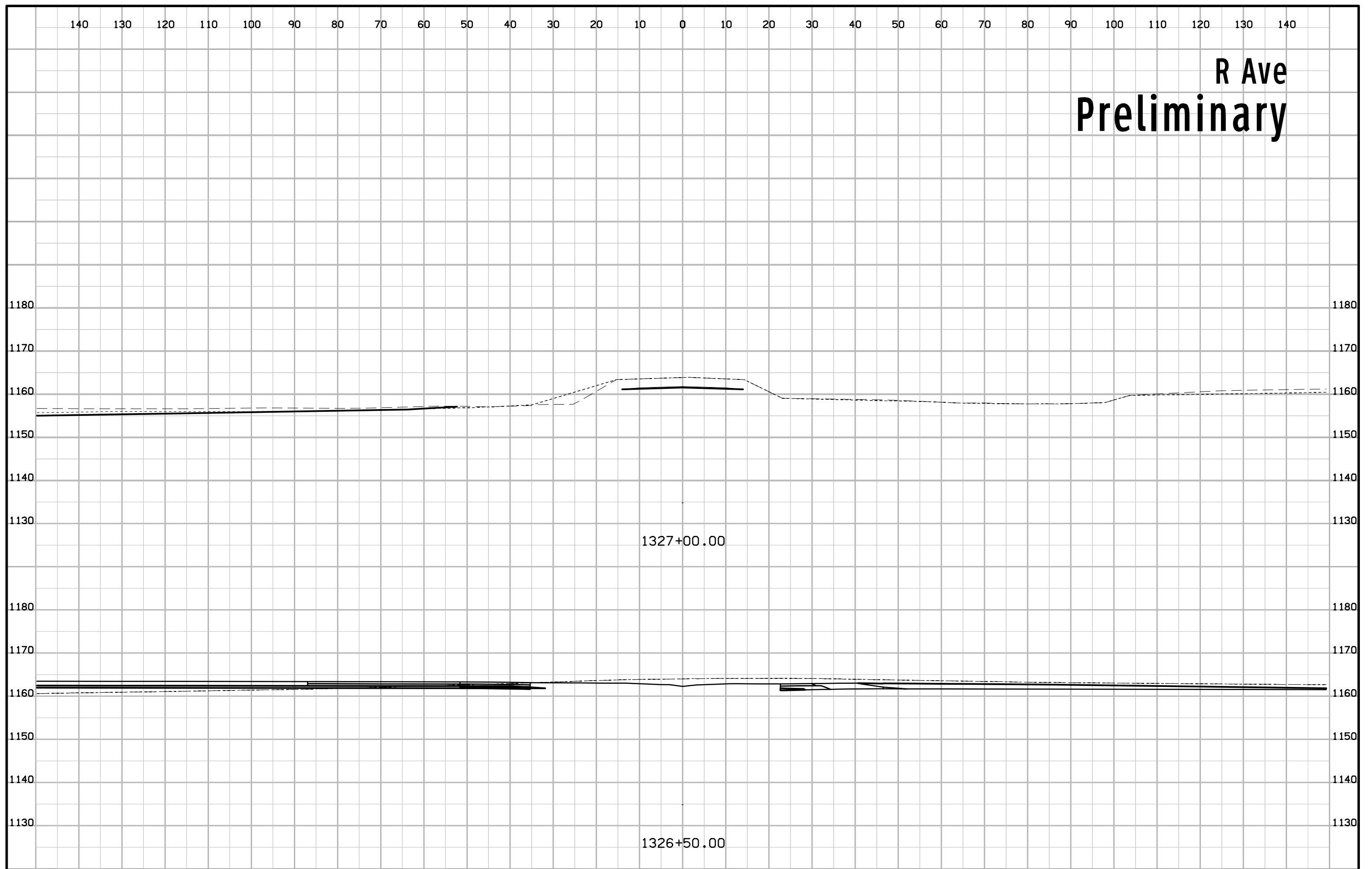
# R Ave Preliminary



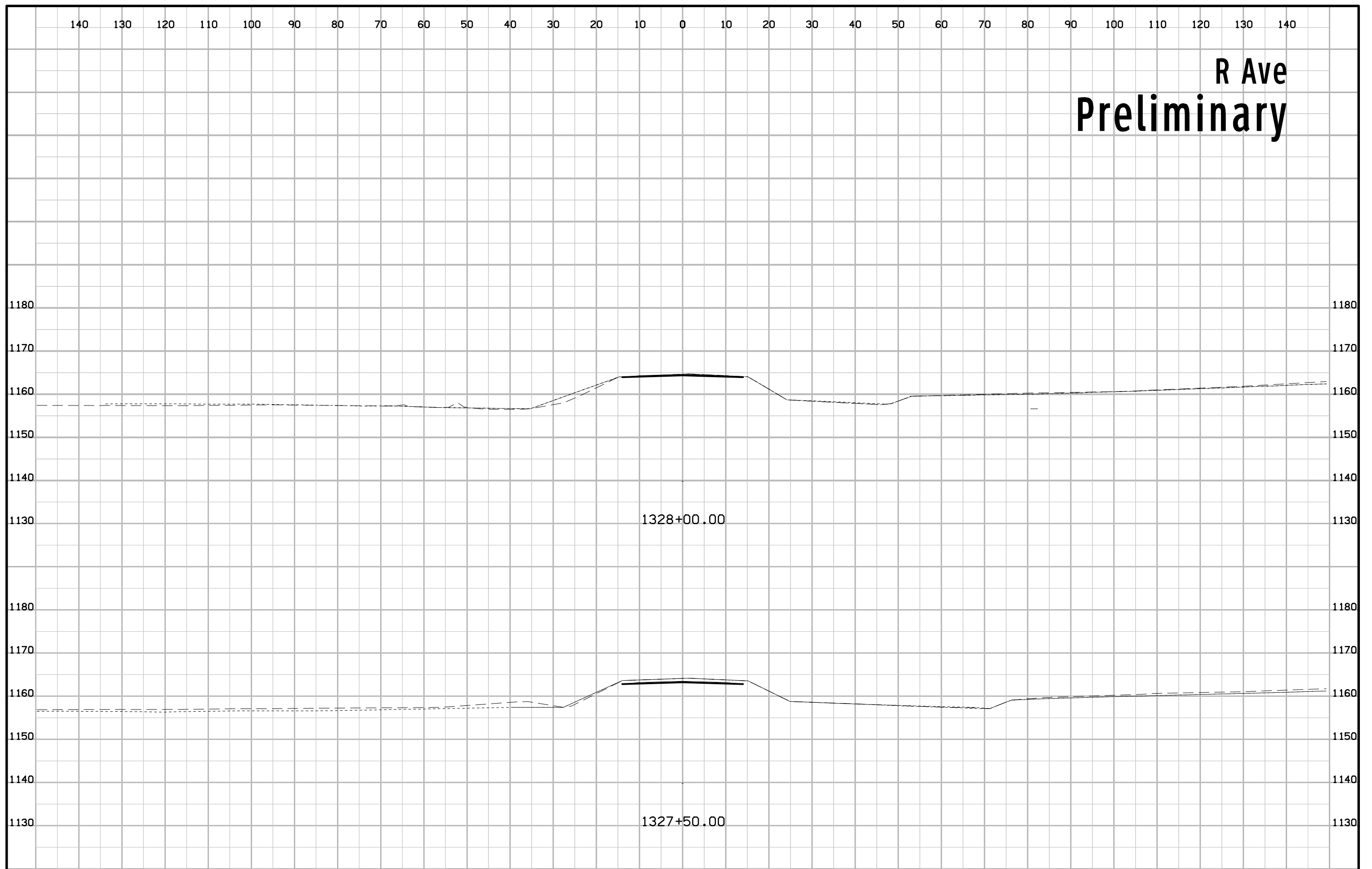
# R Ave Preliminary



# R Ave Preliminary



# R Ave Preliminary





# S Ave Preliminary

