



PLANS OF PROPOSED IMPROVEMENT ON THE
**PRIMARY ROAD SYSTEM
BREMER COUNTY
RCB CULVERT EXTENSION**
US 63 - Crane Creek 1.5 mi S of IA 188 (SB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

57

PROJECT IDENTIFICATION NUMBER

19-09-063-010

PROJECT NUMBER

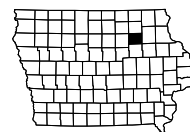
BRFN-063-7(107)--39-09

R.O.W. PROJECT NUMBER

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
* A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	US 63
F Sheets	Detour or Temporary Pavement Sheets
* F.1 - 2	Detour Plan and Profile Sheets
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
V Sheets	Bridge and Culvert Situation Plans
* V.1	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 21	Mainline Cross Sections
Y Sheets	Ramp Cross Sections
Y.1 - 24	Ramp Cross Sections
	* Color Plan Sheets

H Sheets

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



DESIGN DATA RURAL			
2024	AADT	6,100	V.P.D.
2044	AADT	7,900	V.P.D.
2044	DHV	820	V.P.H.
	TRUCKS	19	%
	Total Design ESALs	--	

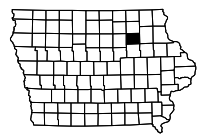
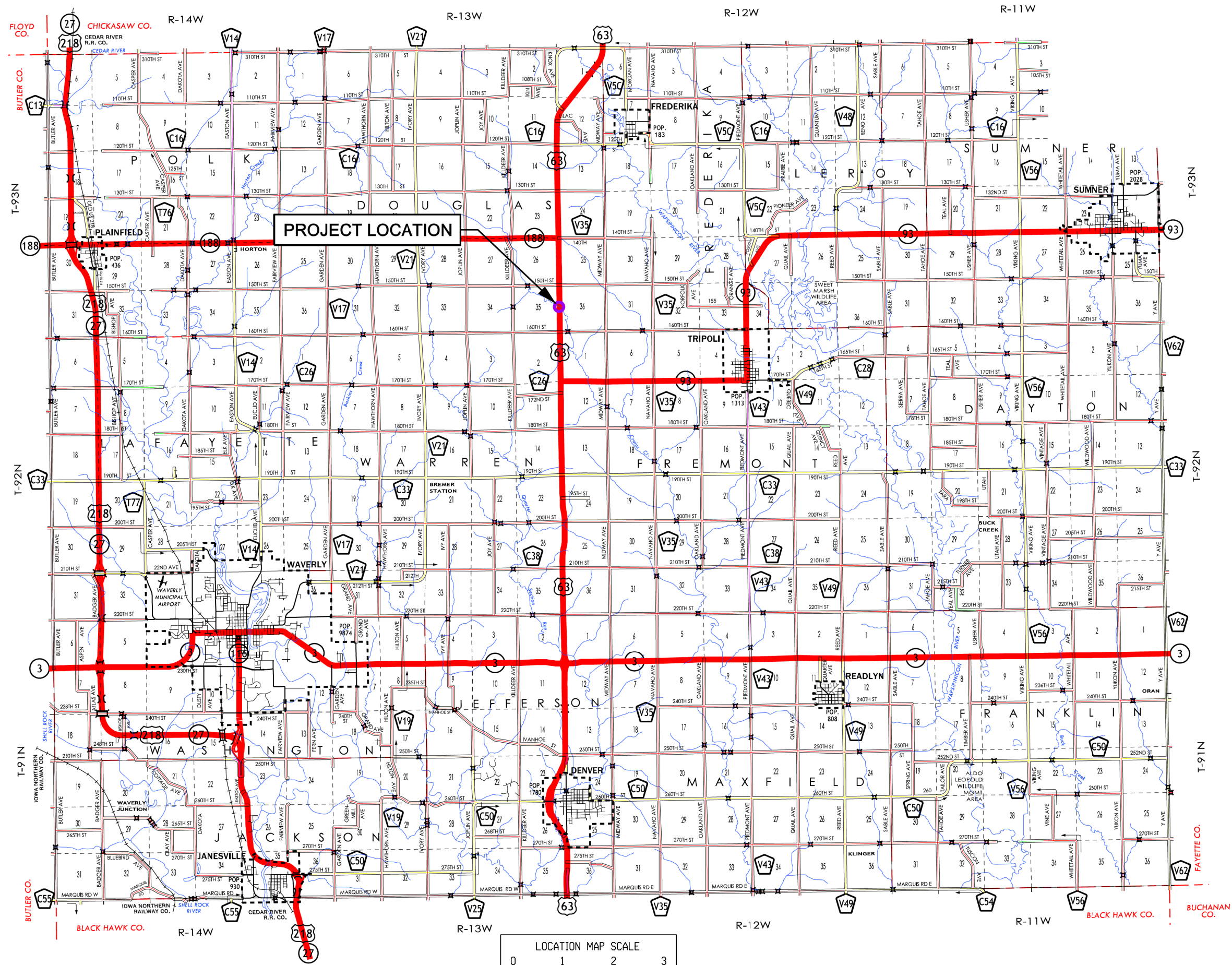
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Michael J. Janecek	Primary Signature Block
V.1	Phillip M. Harpole	Hydraulic Design

D4 PLAN - July 23, 2024

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - October 15, 2021



FILE NO. 31933

ENGLISH DESIGN TEAM Iowa DOT \ Shive-Hattery

BREMER COUNTY

PROJECT NUMBER

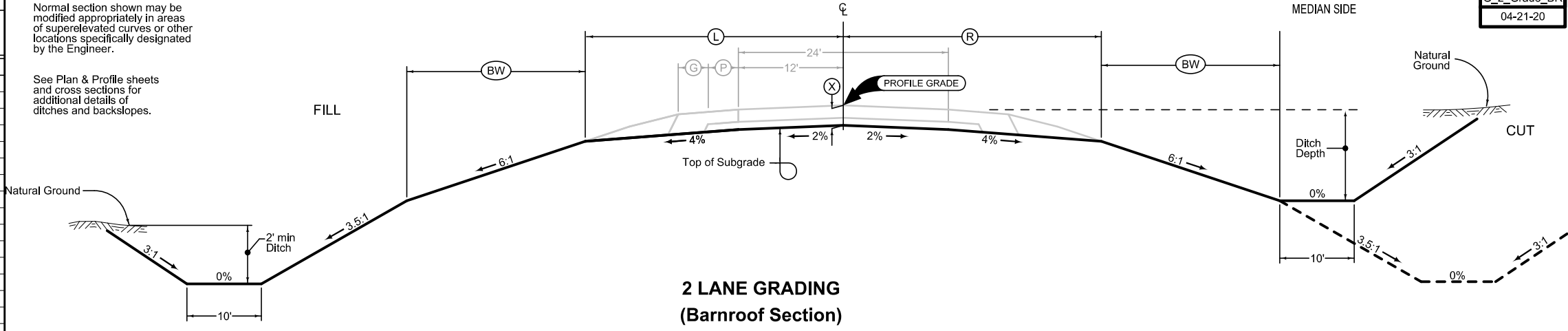
BRFN-063-7(107)-39-09

SHEET NUMBER A.2

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	Ⓐ Feet	Ⓑ Feet	ⓧ Inches	Ⓑ _w Feet
US 63	406+75 423+90	13.76	29.20	22	13.76

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

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

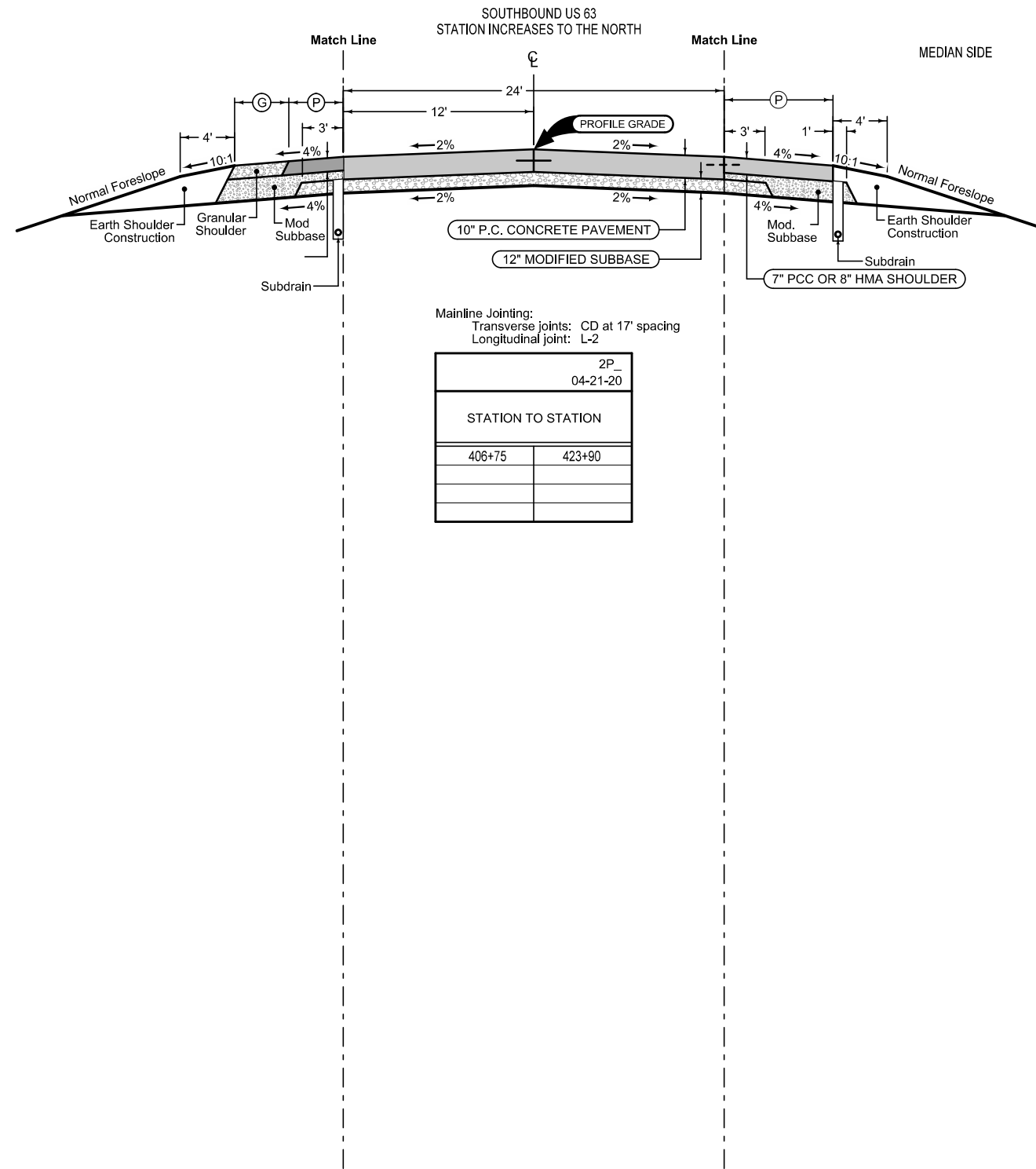


G_2_Grade_BR
04-21-20

Combination Shoulder with Paved Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 17' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

2_C_			
04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
406+75	423+90	6	4



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

2P_	
04-21-20	
STATION TO STATION	
406+75	423+90

Paved Shoulder Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 17' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

2_P_ALT_		
04-21-20		
STATION TO STATION		(P) Feet
406+75	423+90	6

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

US 63

SURVEY SYMBOLS

- CP Control Point
- ▲ SCR Section Corner
- △ ROW Right of Way Mark
- △ BM Bench Mark
- EW Edge of Water
- WC Wild Card (Misc. Field Shot)
- GR Ground Shot
- ← DU Centerline Draw or Stream (Up)
- BL Topo Breakline
- SNP Unpaved Shoulder
- SH Paved Shoulder
- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- LIN Miscellaneous Line
- ↓ PLG Location of General Photo
- D Centerline Draw or Stream (Down)
- △△△△△ RIP Rip-Rap
- BNK Stream Bank
- PPA Power Pole Co. 1
- PIP Pipe Culvert
- CON Concrete or A/C Slab
- CUL Culvert
- SOP Size of Pipe or Culvert
- SBR Size of Bridge
- BRG Bridge
- GDL Guard Rail Steel
- BD Bridge Deck
- BCL Bridge Centerline
- BLS Bridge Low Steel
- OUT Tile Outlet

UTILITY LEGEND

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

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

● PPA Power Pole Alliant Energy
 800-255-4268
 locate_IPL@alliantenergy.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

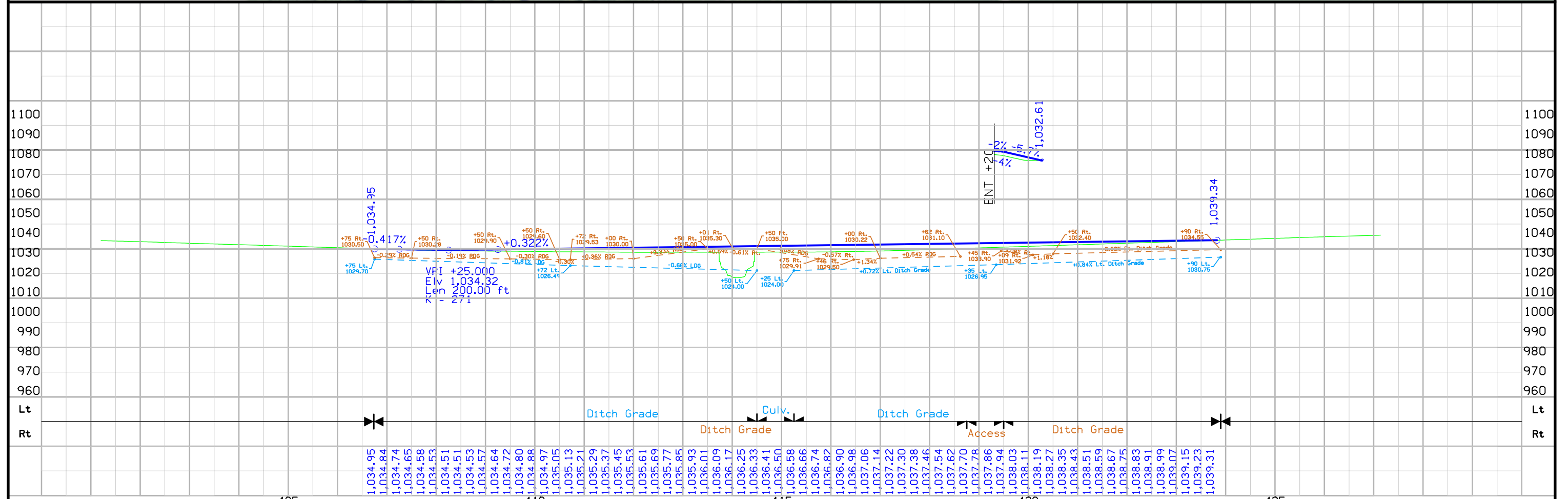
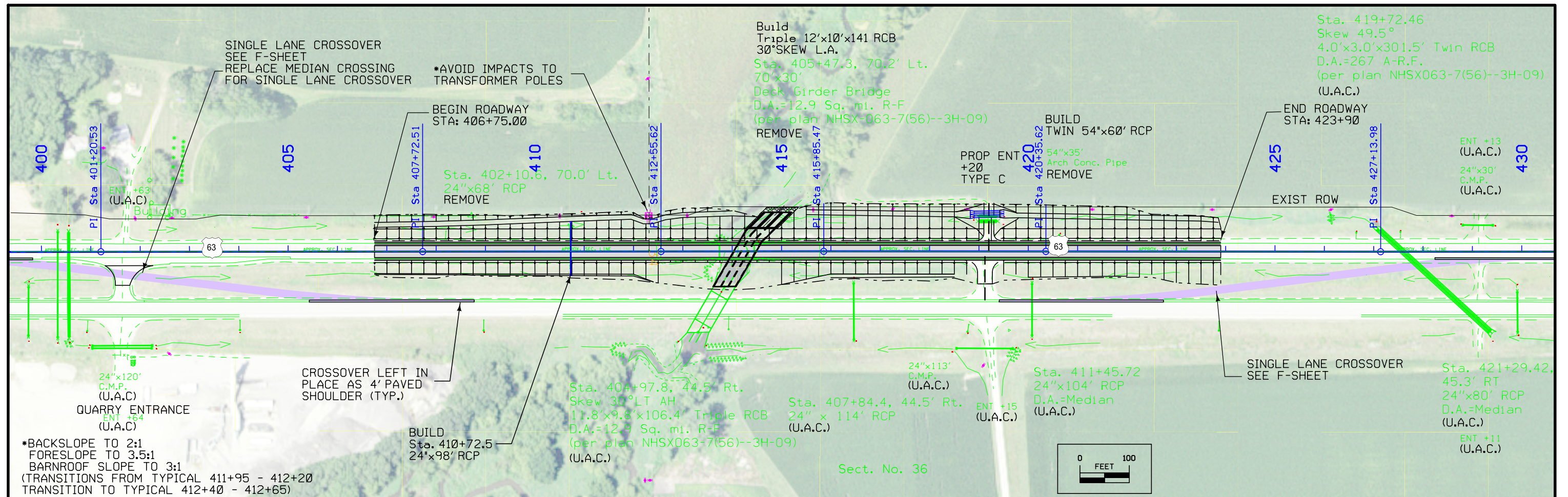
LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

- Reference Point
- Station
- ▲ Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- ▨ Pavement Removal
- ▩ Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

- ▲ Proposed Right-of-Way
- △ Existing Right of Way
- ▲ Existing and Proposed Right-of-Way
- ▲ Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- ← Property Line

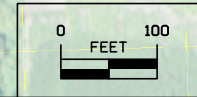
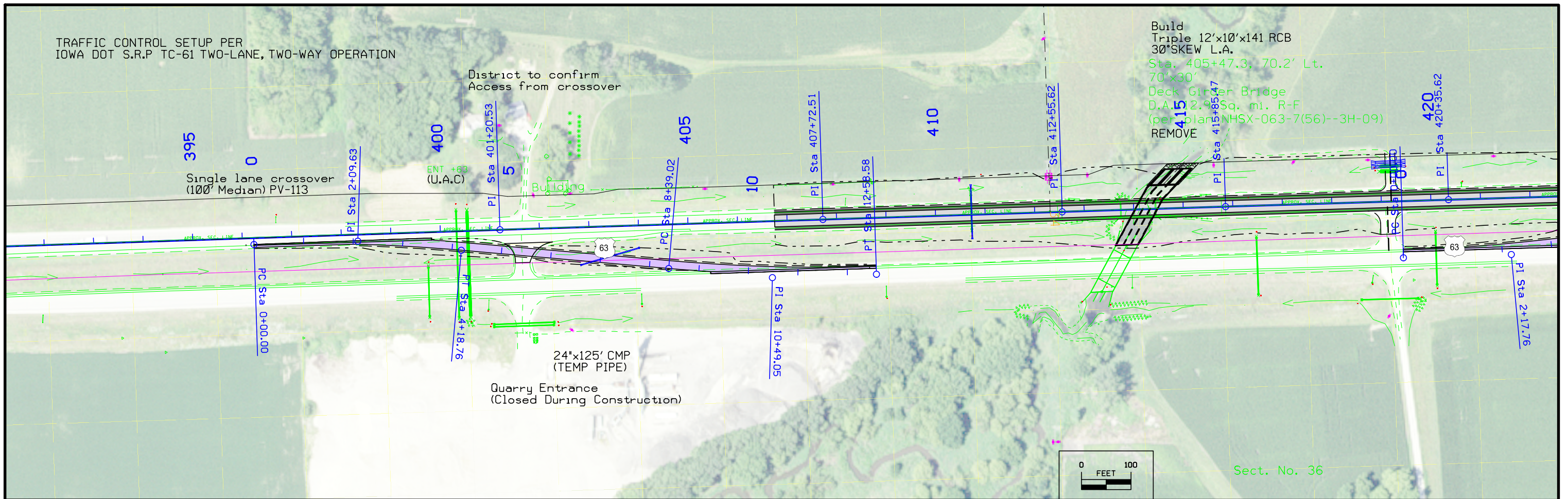
PLAN AND PROFILE
 LEGEND AND SYMBOL
 INFORMATION SHEET
 (COVERS SHEET SERIES D, E, F, & K)



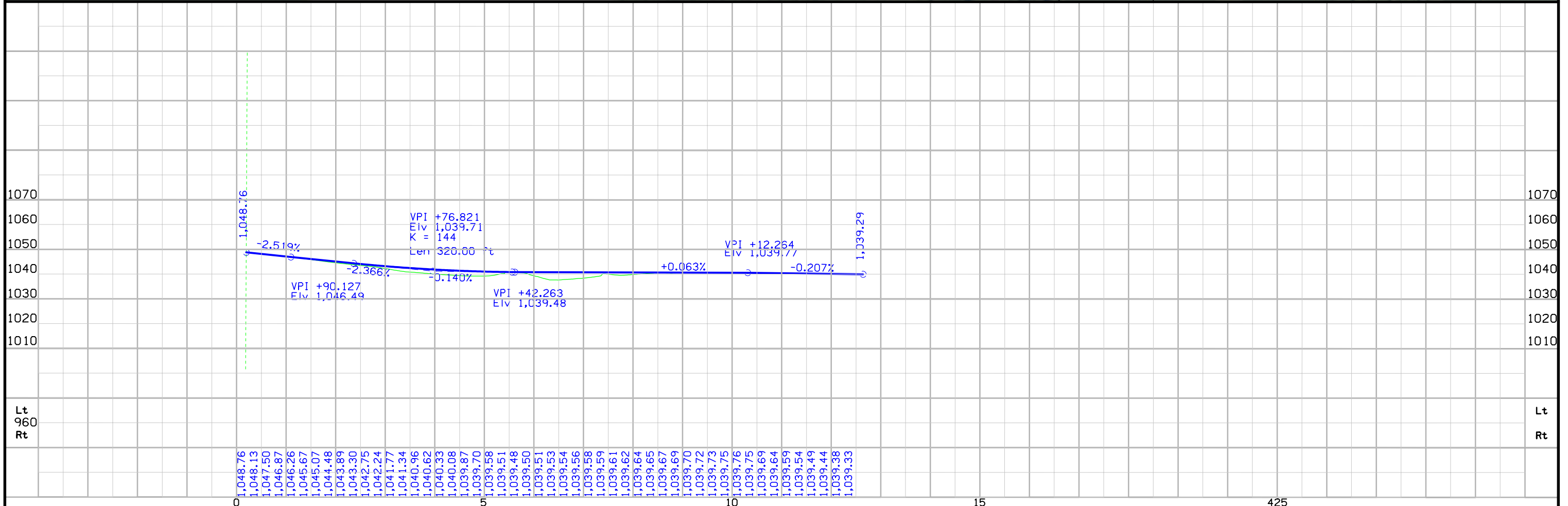
TRAFFIC CONTROL SETUP PER
IOWA DOT S.R.P TC-61 TWO-LANE, TWO-WAY OPERATION

District to confirm
Access from crossover

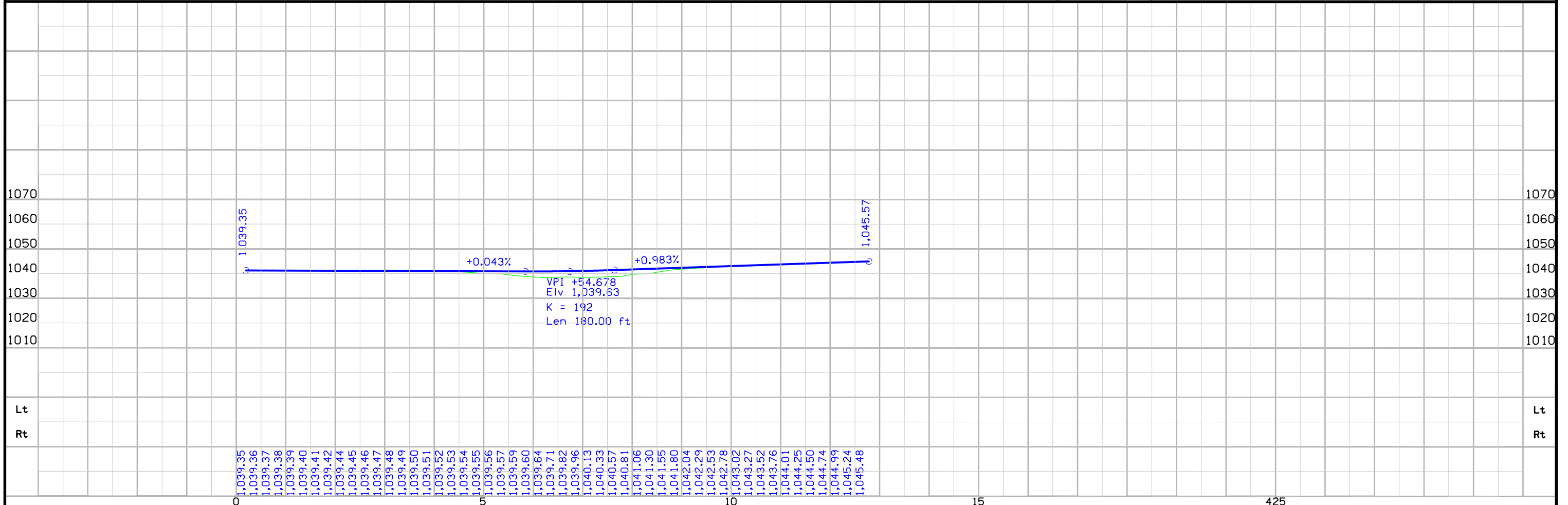
Build
Triple 12'x10'x141 RCB
30°SKEW L.A.
Sta. 405+47.3, 70.2' Lt.
70'x30'
Deck Girder Bridge
D.A. 2.98 Sq. mi. R-F
(per plan NHSX-063-7(56)--3H-09)
REMOVE



Sect. No. 36



TRAFFIC CONTROL SETUP PER
IOWA DOT S.R.P TC-61 TWO-LANE, TWO-WAY OPERATION



Survey Information

Bremer County
BRFN-063-7(107)—39-09
Crane Creek 1.5 mi S of IA 188
Bridge-Unspecified
PIN 19-09-063-010
Sap-168.1

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge replacement and reconstruction of South bound lanes U.S. Highway 63. Project datum and control information is provided by Design Survey Office. This project is a Full Field Concept survey with Photo control. This survey request was for the U.S Hwy. 63 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12B). GRS80 Ellipsoidal Height was computed at project control Pts. 631859, 631864, 631868, 99-009, 99-011, and DETTMER by conducting three concurrent six-hour static observations. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup relative to Pt. 631864 and Pts. 631859 and 631868. Two observations with a minimum of four-hours between were collected and used in a weighted average.

This survey observed 3 local area county Control Monuments with published NAVD88 heights to compare to local ground control:

Bremer County Control mark 304 designated CBN control station "DETTMER" PID NK0514 has a published Elev. of 1060.71
Survey Elev. = 1060.62

Bremer County GPS Control Pt 99-009 has a published Elev. of 1032.27
Survey Elev. = 1032.21

Bremer County GPS Control Pt 99-011 has a published Elev. of 1033.96
Survey Elev. = 1033.95

This survey observed 1 As-Built plan benchmark to compare to local ground control:

BM 541B As-Built Plan Project No. NHSX-063-7(56)—3H-09 Metric Elev. 315.176 =
English Elev. 1034.04
English Survey Elev. 1033.82 = Metric Survey Elev. 315.109

The vertical difference is -0.22 feet = -0.067 meters to be applied to as built plan elevations.

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 5 (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 three concurrent six-hour static observations at project control Pts. 631859, 631864, 631868, 99-009, 99-011, and DETTMER.

Alignment Information

The horizontal alignment for the South bound lanes (Old U.S. 63) is a retrace of As-built Plans Project No. F-63-7(13)—20-09. Survey stationing was equated to the plan PI at Sta. 403+69.98 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 368+34.74 As-built Plans Project No. F-63-7(13)—20-09
Survey PI Sta. 368+34.74

PI Sta. 385+75.82 As-built Plans Project No. F-63-7(13)—20-09
Survey PI Sta. 385+75.82

PI Sta. 403+69.98 As-built Plans Project No. F-63-7(13)—20-09
Survey PI Sta. 403+69.98

PI Sta. 430+27.97 As-built Plans Project No. F-63-7(13)—20-09
Survey PI Sta. 430+27.70

Bridge Sta. 405+48 As-built Plans Project No. F-63-7(13)—20-09
Survey Bridge Sta. 405+47.72

The horizontal alignment for the Relocated U.S. Hwy. 63 center line is a retrace of As-built Plans Project No. NHSX-063-7(59)—3H-09. Survey stationing was equated to the plan PI at Metric Sta. 133+95.994 and run ahead without equation throughout the survey. The plan metric stationing was converted to English As-built Plans Project No. F-63-7(13)—20-09 stationing at plan PI Sta. 133+95.994 and run ahead without equation throughout the survey.

PI Sta. 133+95.994 As-built Plans Project No. NHSX-063-7(59)—3H-09
Metric Survey PI Sta. 133+95.994 = English Survey PI Sta. 368+34.68

PI Sta. 139+26.699 As-built Plans Project No. NHSX-063-7(59)—3H-09
Metric Survey PI Sta. 139+26.689 = English Survey PI Sta. 385+75.80

PI Sta. 152+83.633 As-built Plans Project No. NHSX-063-7(59)—3H-09
Metric Survey PI Sta. 152+83.612 = English Survey PI Sta. 430+27.64

CONTROL POINT VICINITY MAP

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

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 5

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

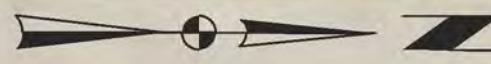
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 5

Point Name	Northing	Easting	Elevation	Code	Description
631859	8962185.200	15476728.764	1046.567	BM	SET FENO MONUMENT 795 FT N OF CTR 160TH ST_80 FT E OF CTR N BOUND US 63_810 FT S OF CTR QUARRY ENT
631864	8964793.801	15476693.515	1036.470	BM	SET FENO MONUMENT 0.64 MI N OF 160TH ST_46 FT E OF CTR N BOUND US 63_43 FT N OF CTR PRVT DRV ENT_88 FT NW OF A POW POLE
631868	8966777.230	15476727.429	1046.385	BM	SET FENO MONUMENT 55 FT N OF CTR 150TH ST_78 FT E OF CTR N BOUND US 63_119 FT NW OF A POW POLE
99-009	8944552.034	15481843.220	1032.212	BM	FD BREMER CO GPS CONTROL POINT 99-009 23FT EAST OF CTR MIDWAY AVE AND 463FT SOUTH OF 190TH ST
99-011	8977286.132	15481768.315	1033.946	BM	FD BREMER CO GPS CONTROL POINT 99-011 22FT SOUTH OF CTR 130TH ST AND 110FT WEST OF MIDWAY AVE
DETTMER	8960375.843	15465959.057	1060.621	BM	FD NGS CBN CONTROL STATION DETTMER WITH HARN WITNESS POST 0.2MI SOUTH OF 160TH ST AND 33FT WEST OF CTR JOPLIN AVE



DAVID L. &
PHOEBE J. DRAPE

SINGLE LANE CROSSOVER
SEE F-SHEET
REPLACE MEDIAN CROSSING
FOR SINGLE LANE CROSSOVER

Douglas TWP.
T-93N R-13W
SEC. 35

SE1/4 SE1/4
SEC. 35

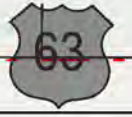
TERRY & PAMELA HENNINGS

400

NE1/4 SE1/4
SEC. 35

Sta. 391+93.72
42"x210' ARCH RCP
D.A.=17.3 A-R
(per plan NHSX063-7(56)--3H-09)

ENT +63
(U.A.C)



Sta. 391+11.89,
45.4' RT
24"x98' CMP
D.A.=Median

5

SW1/4 SW1/4
SEC. 36

SW1/4 SW1/4
SEC. 36

(U.A.C)

QUARRY ENTRANCE
(Closed During Construction)
ENT +64

(U.A.C)
24"x120'
C.M.P.

(U.A.C)
24"x120'
C.M.P.

BMC AGGREGATES L.C.

Douglas TWP.
T-93N R-13W
SEC. 36

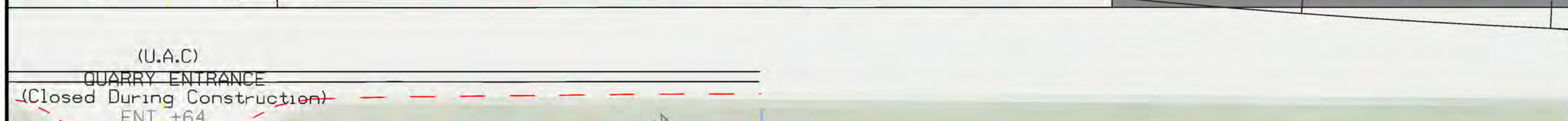
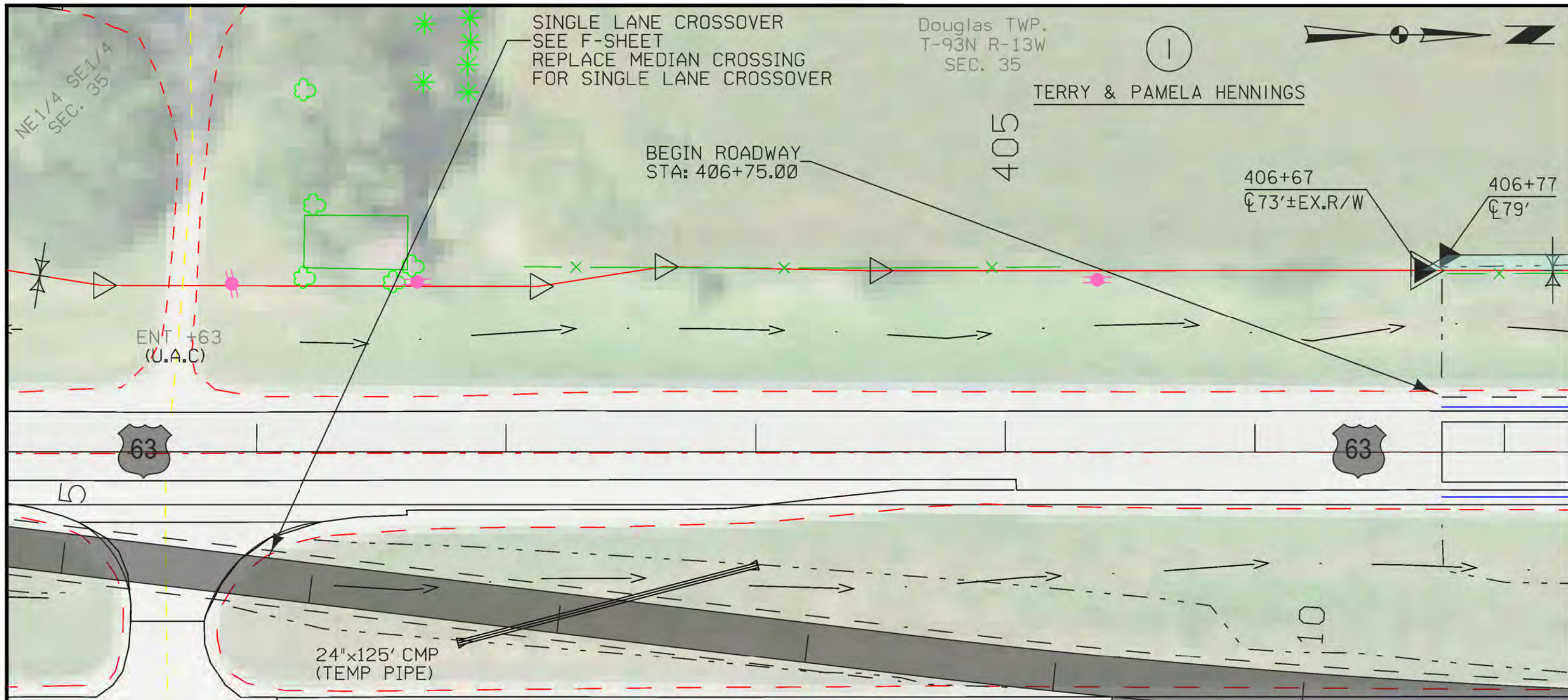
Sta. 391+71.16
24"x213' RCP
D.A.=17.3 A-R
(per plan NHSX063-7(56)--3H-09)

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

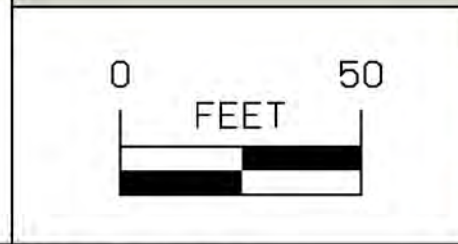
ROW Team: Larson / Hughes
ROW #: NHSN-063-7(108)--2R09
Plan Date: 11-16-2021

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





Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY
 ROW Team: Larson / Hughes
 ROW #: NHSN-063-7(108)--2R09
 Plan Date: 11-16-2021
 Color Legend:
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 - Permanent Acquisition



SW 1/4 SW 1/4
 SEC. 36

BMC AGGREGATES L.C.

Douglas TWP.
 T-93N R-13W
 SEC. 36



BEGIN ROADWAY
STA: 406+75.00

Douglas TWP.
T-93N R-13W
SEC. 35

*AVOID IMPACTS TO
TRANSFORMER POLES

406+77
CL 79'
406+67
CL 73'±EX.R/W

NE 1/4 SE 1/4
SEC. 35

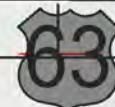
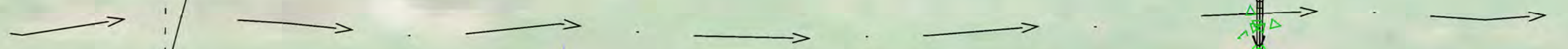
TERRY & PAMELA HENNINGS

410

412+20
CL 74'±EX.R/W

411+95
87'

410+00
CL 80'



10

BUILD
Sta. 410+72.5
24"x98' RCP

CROSSOVER LEFT IN
PLACE AS 4' PAVED
SHOULDER (TYP.)

Douglas TWP.
T-93N R-13W
SEC. 36

BMC AGGREGATES L.C.

SW 1/4 SW 1/4
SEC. 36

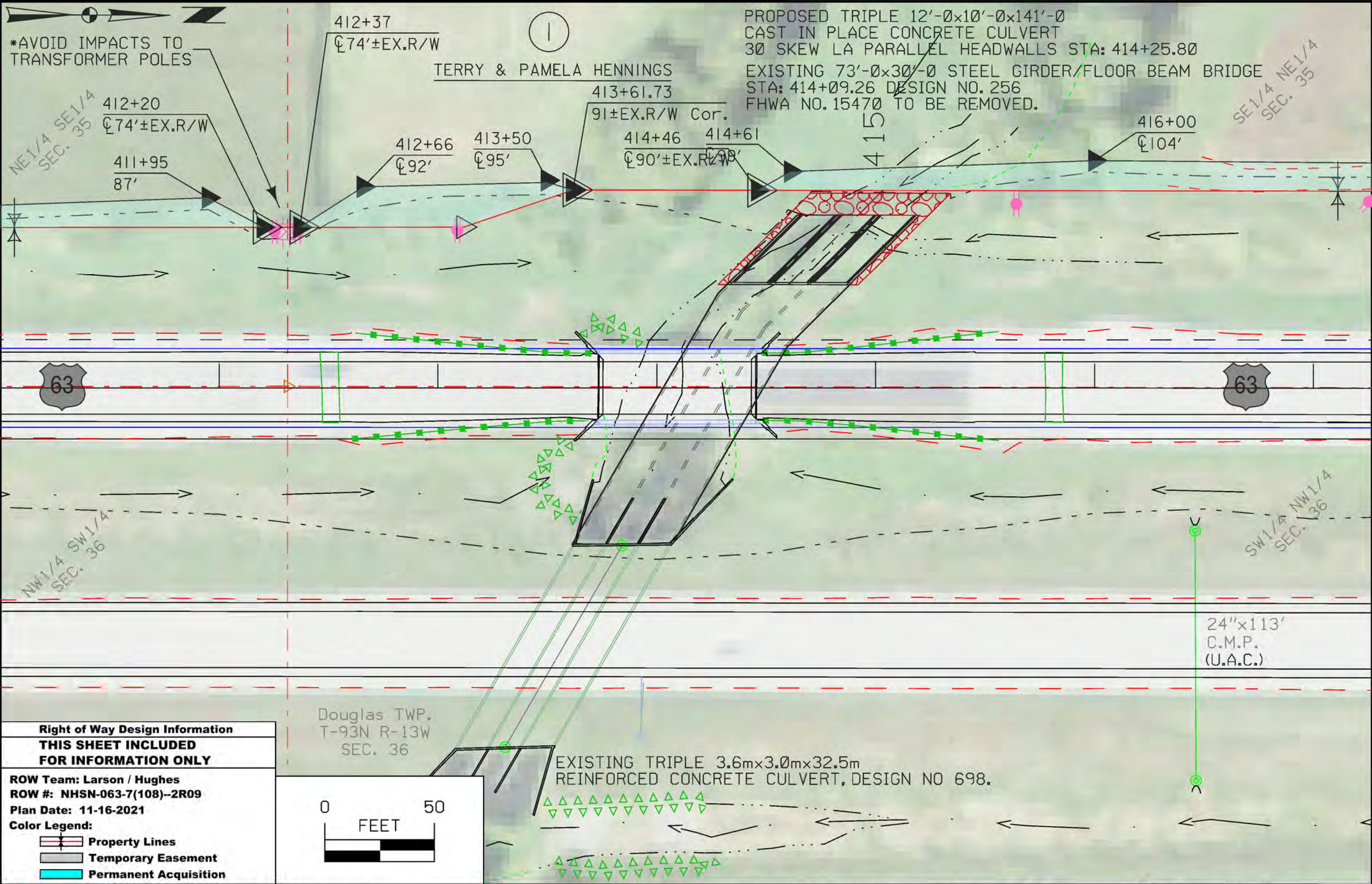
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Plan Date: 11-16-2021

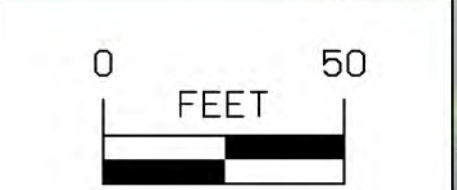
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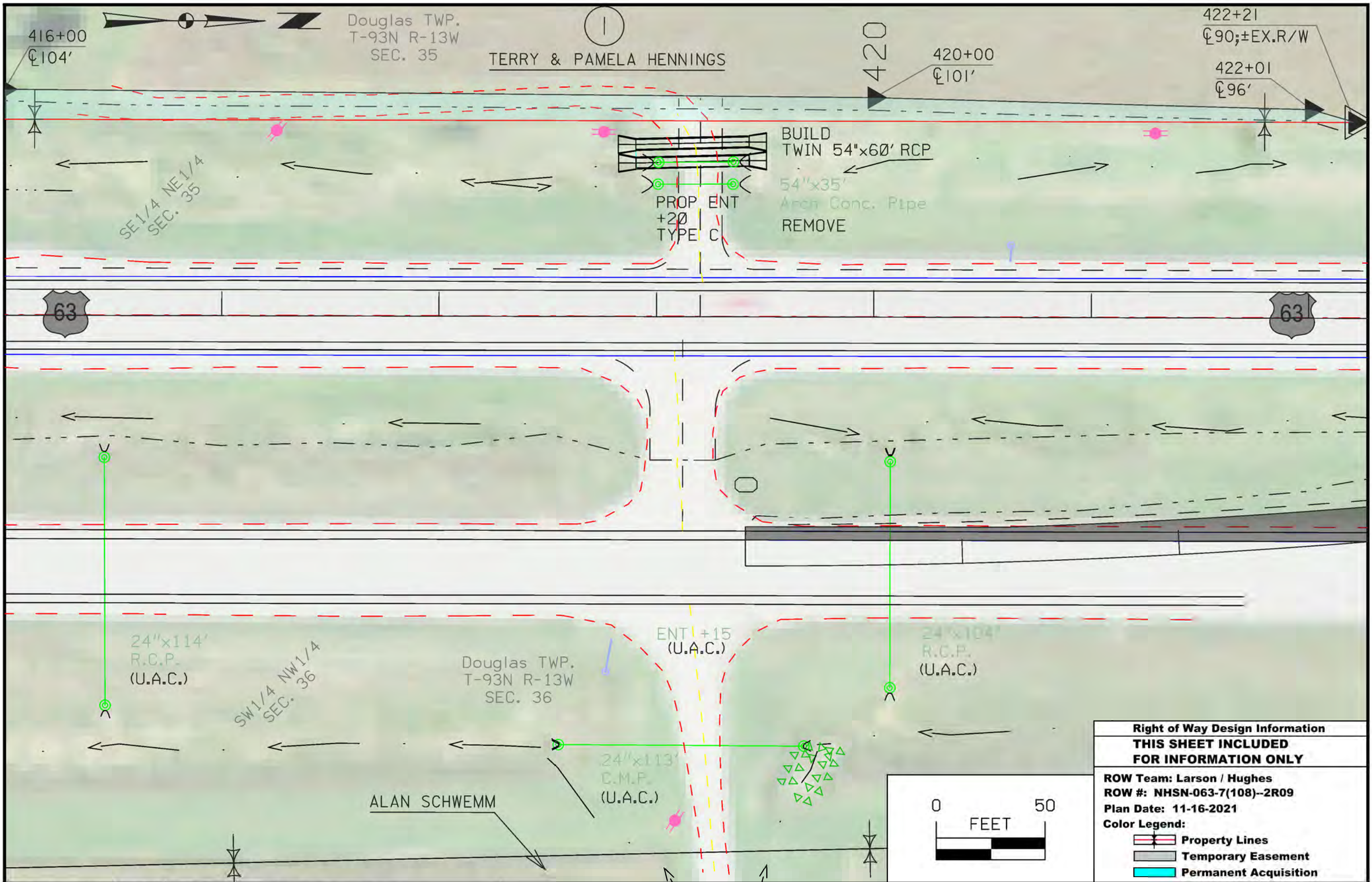
- Property Lines
- Temporary Easement
- Permanent Acquisition



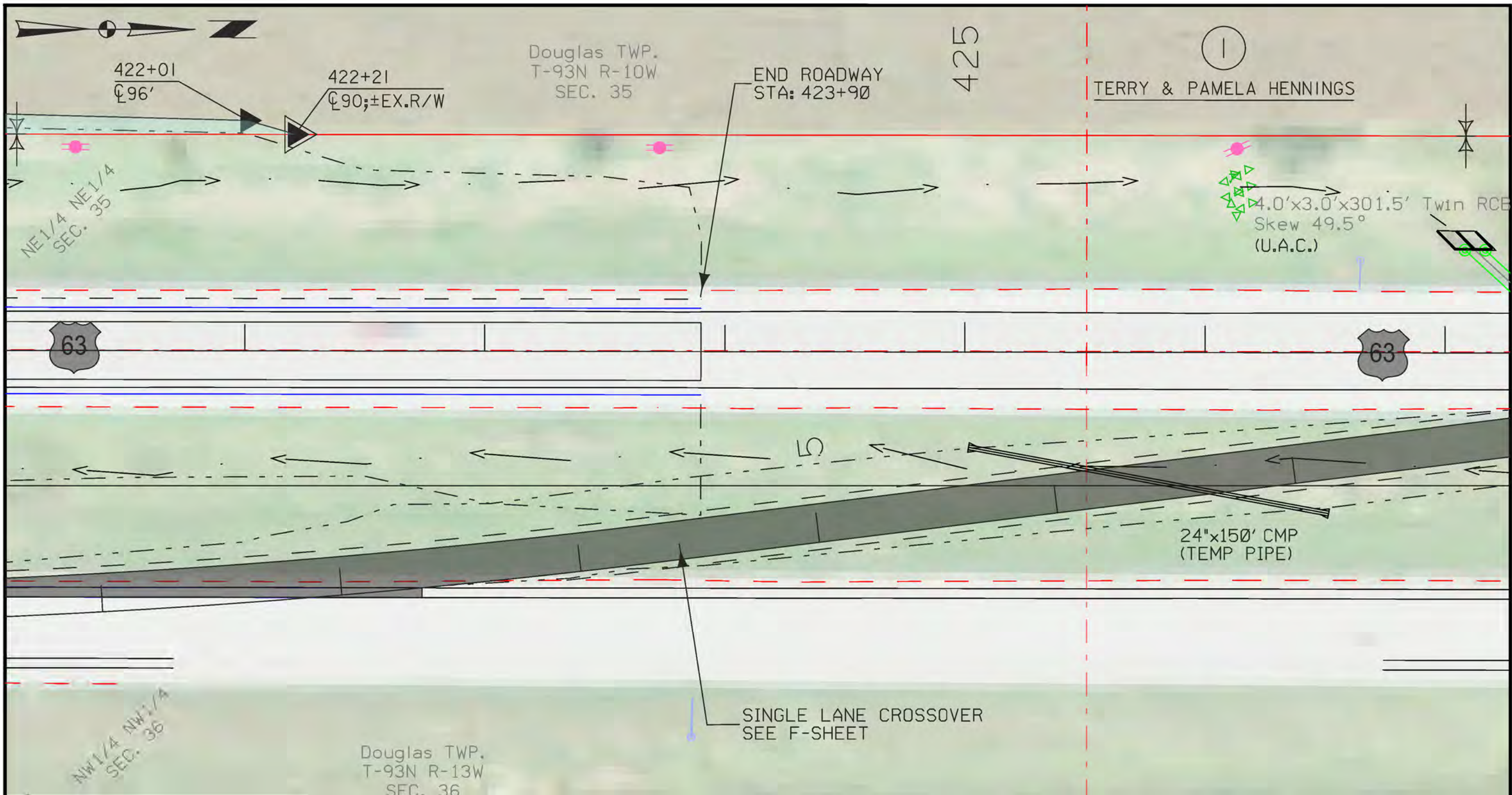


Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY
 ROW Team: Larson / Hughes
 ROW #: NHSN-063-7(108)--2R09
 Plan Date: 11-16-2021
 Color Legend:
 [Red Line] Property Lines
 [Grey Area] Temporary Easement
 [Cyan Area] Permanent Acquisition





Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
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ROW #: NHSN-063-7(108)--2R09	
Plan Date: 11-16-2021	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

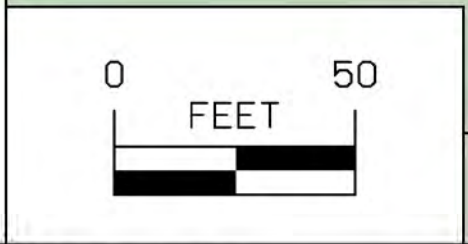


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Color Legend:

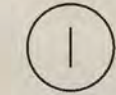
- Property Lines
- Temporary Easement
- Permanent Acquisition





Douglas TWP.
T-93N R-10W
SEC. 35

430



TERRY & PAMELA HENNINGS

NE 1/4 NE 1/4
SEC. 35

24"x30'
C.M.P.
(U.A.C.)

4.0'x3.0'x301.5' Twin RCB
Skew 49.5°
(U.A.C.)

ENT +13
(U.A.C.)



24"x150' CMP
(TEMP PIPE)

24"x80' RCP
45.3' RT
(U.A.C.)

SINGLE LANE CROSSOVER
SEE F-SHEET

ENT +11
(U.A.C.)

NW 1/4 NW 1/4
SEC. 36

Douglas TWP.
T-93N R-13W
SEC. 36

ALAN SCHWEMM

Right of Way Design Information
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FOR INFORMATION ONLY

ROW Team: Larson / Hughes
ROW #: NHSN-063-7(108)--2R09
Plan Date: 11-16-2021

Color Legend:

-  Property Lines
-  Temporary Easement
-  Permanent Acquisition



108-23A 08-01-08	TRAFFIC CONTROL PLAN
<p>1) While southbound lanes are being reconstructed, southbound US 63 traffic will be shifted to the inside northbound lane by means of median crossover. (TC-61)</p> <p>2) Northbound and Southbound US 63 traffic through the work area will be reduced to one lane in each direction (Per TC-61)</p> <p>3) US 63 traffic will return to normal operation with shoulder closures as necessary to remove median crossover.</p>	

108-26A 08-01-08	STAGING NOTES
<p>Stage 1: Construct median crossovers.</p> <p>Stage 2: Remove southbound US 63 lanes with traffic routed on northbound US 63 lanes. Construct culvert and replace roadway.</p> <p>Stage 3: With US 63 traffic under normal operation, remove median crossovers and restore median.</p>	

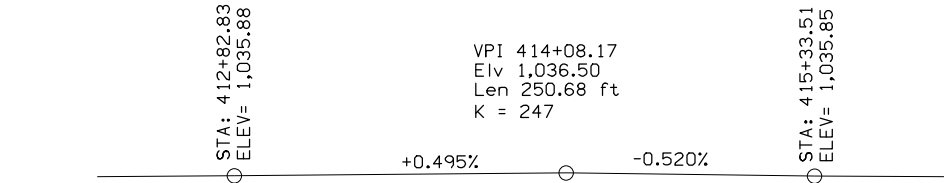
108-25 10-21-14	511 TRAVEL RESTRICTIONS
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Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
US 63	Both	Bremer	1.5 Miles South of IA 188	Crane Creek			None					

111-01 04-17-12	COORDINATED OPERATIONS
<p>Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.</p>	
Project	Type of Work
None Provided	

1050	EXISTING 73'-0x30'-0 STEEL GIRDER/FLOOR BEAM BRIDGE TO BE REMOVED.	1050
1040	DESIGN H.W. ELEV.= 1032.98	1040
1030	CLASS "E" REVETMENT UNDERLAIN WITH ENGINEERING FABRIC ELEV.= 1022.20	1030
1020	EXISTING GROUND	1020
1010	F.L.ELEV.= 1022.20	1010
1000	FLARED HEADWALLS TO BE REMOVED	1000

BENCH MARK NO. 631864, SET FENO MONUMENT 0.64 MI N OF 160TH ST, 46 FEET E OF CENTERLINE NB US63, 43 FEET N OF CENTERLINE PRIVATE DRIVE ENTRANCE, 88 FEET NW OF A POWER POLE. ELEVATION = 1036.38



PROPOSED PROFILE GRADE U.S.63

NOTES:
 GENERAL NOTES
 1. THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 73'-0x30'-0 STEEL GIRDER/FLOOR BEAM BRIDGE, BREMER DESIGN NO. 256, FHWA NO. 15470, MAINT. NO. 0986.3L063.

DESIGNER NOTES:
 1. FLOW LINE OF CULVERT NOT NOMINALLY BURIED 1.0 FOOT.
 2. FINAL DESIGN TO CONSIDER A TRANSITION AREA AT THE INTERIOR WALL FACES BETWEEN THE EXISTING METRIC DIMENSIONS AND THE PROPOSED CAST IN PLACE CULVERT DIMENSIONS. SEE BDM7.2.4.9.

PLAN NOTES
 1. DRAINAGE THROUGH EXISTING CULVERT/CHANNEL MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.

HYDRAULIC DATA

DRAINAGE AREA = 11.90 SQ. MI.
 Q₅₀ = 2,930 CFS
 HW ELEV. = 1032.98
 STREAM SLOPE = 9.44 FT./MI.
 Q₁₀₀ = 3,360 CFS
 HWE = 1033.79
 Q₅₀₀ = 4,420 CFS
 HWE = 1035.97

UTILITIES LEGEND:

UTILITY POLE
 UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

LOCATION

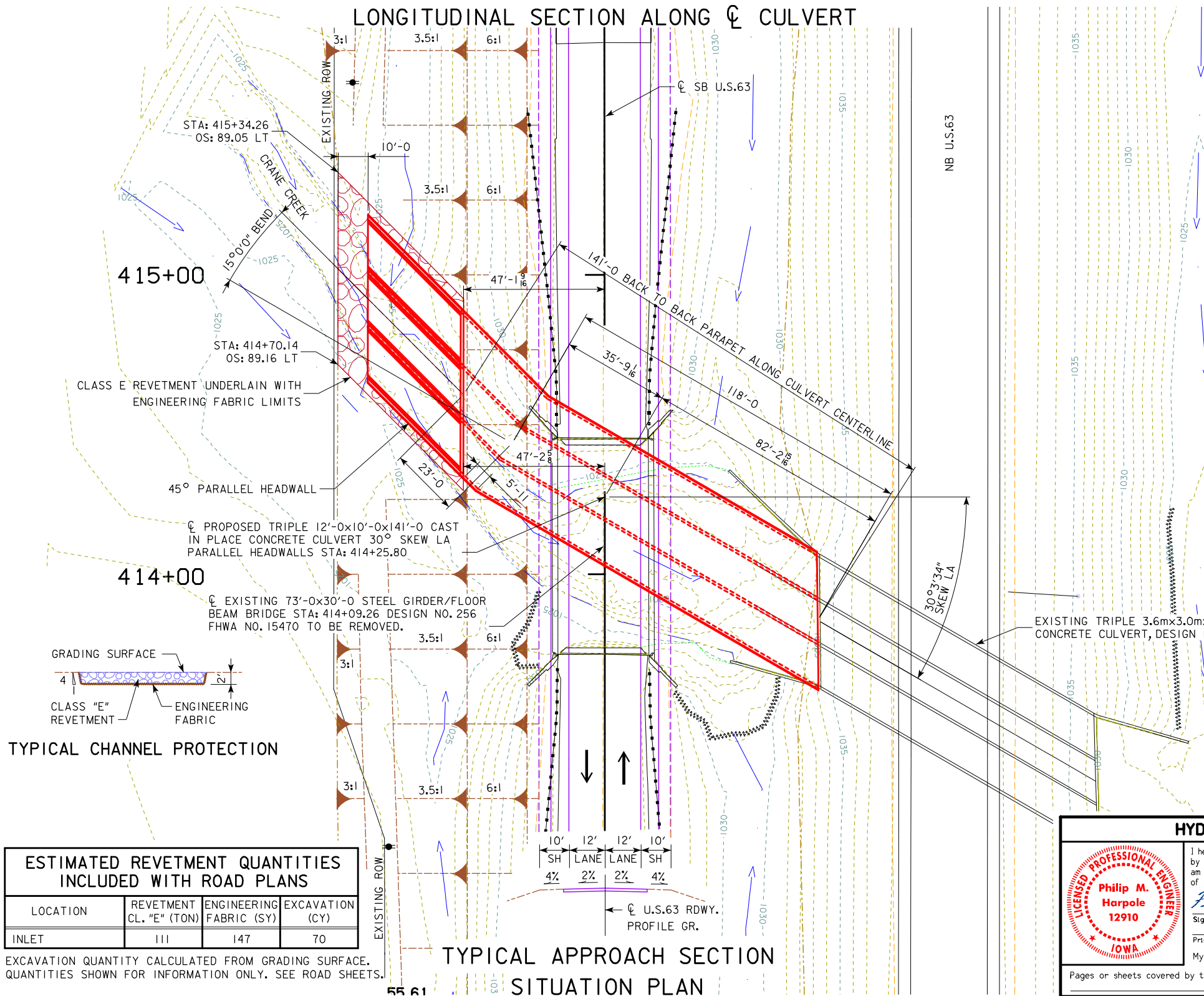
US 63 OVER CRANE CREEK
 T-93N R-13W
 SECTION 35 & 36
 DOUGLAS TOWNSHIP
 BREMER COUNTY
 FHWA NO. 15471
 BRIDGE MAINT. NO. 0986.3L063
 LATITUDE 42.826378°
 LONGITUDE -92.337481°

TRAFFIC ESTIMATE

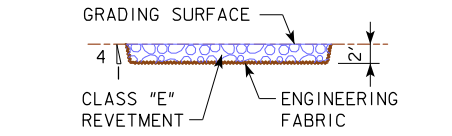
2024 AADT	6100	V.P.D.
T-93N R-13W	7900	V.P.D.
SECTION 35 & 36	820	V.P.H.
DOUGLAS TOWNSHIP	19	%
BREMER COUNTY		
TRUCKS		
TOTAL DESIGN ESALS		

PRELIMINARY
 DESIGN FOR 30° SKEW L.A.
TRIPLE 12'-0x10'-0 CAST IN PLACE CONCRETE CULVERT
SITUATION PLAN
 STA: 414+25.80 SEPTEMBER 2021
BREMER COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION
 DESIGN SHEET NO. 1 OF 1 FILE NO. 31933 DESIGN NO. 124

LONGITUDINAL SECTION ALONG CULVERT



TYPICAL CHANNEL PROTECTION



ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	111	147	70

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

TYPICAL APPROACH SECTION SITUATION PLAN

HYDRAULIC DESIGN

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

Philip M. Harpole 10-5-2021
 Signature Date
 Philip M Harpole
 Printed or Typed Name
 My license renewal date is December 31, 2021
 V.1
 Pages or sheets covered by this seal: 1

LINE SURVEY SYMBOLS OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- Topsoil (Class 10)
- Slope Dressing Only
- Class 10 Materials
- Select Loams And Clay-Loams
- Select Sand
- Unsuitable Type A Disposal
- Unsuitable Type B Disposal
- Unsuitable Type C Disposal
- Shale
- Waste
- Broken and Weathered Rock
- Solid Rock
- 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

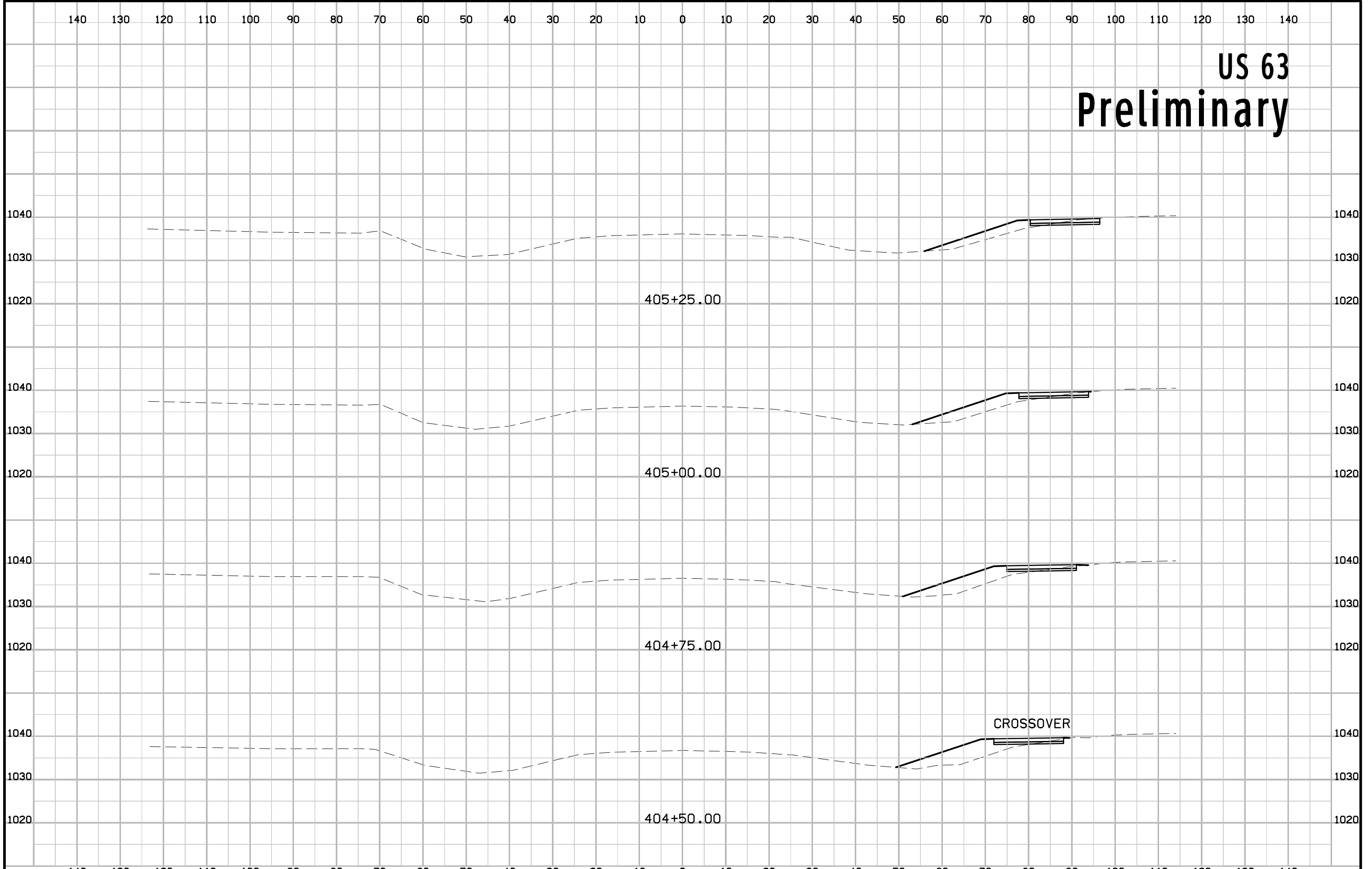
- Existing ROW
|
- - - - - Existing Right-of-Way Limit
- Proposed ROW
|
- - - - - Proposed Right-of-Way Limit
- Temporary ROW
|
- - - - - Temporary Right-of-Way Limit

UTILITY LEGEND

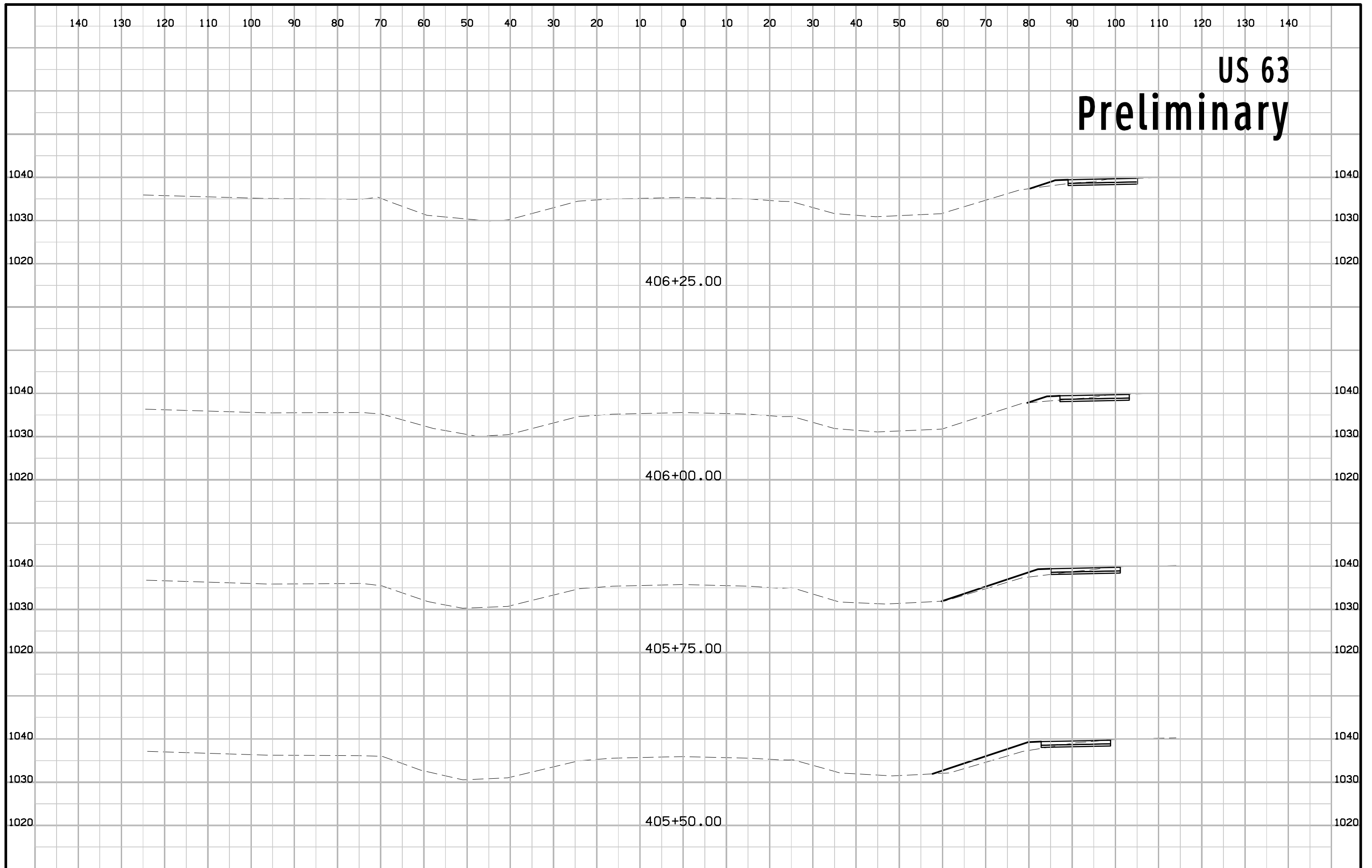
**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

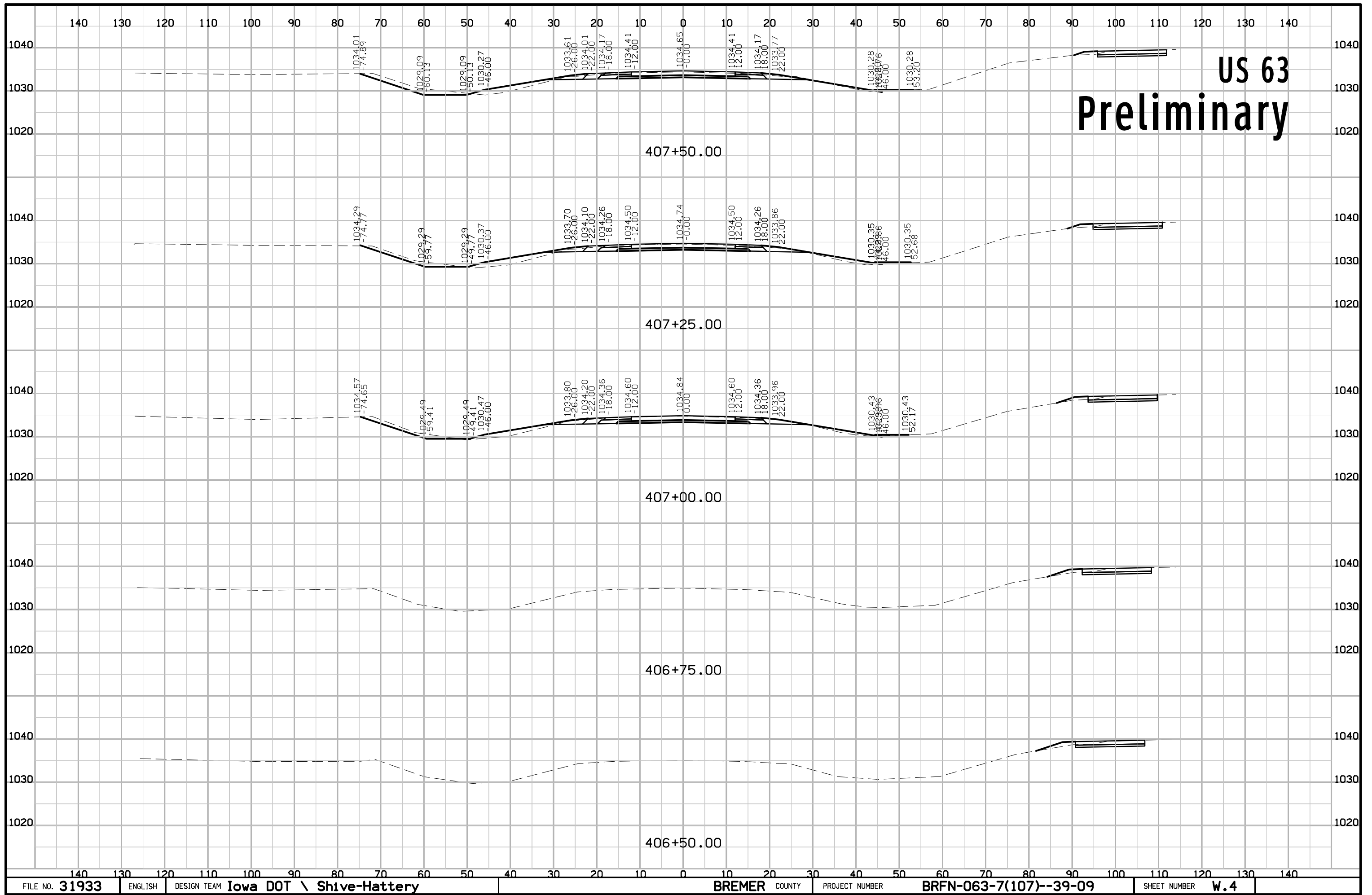
(COVERS SHEET SERIES W, X, Y, & Z)

US 63 Preliminary

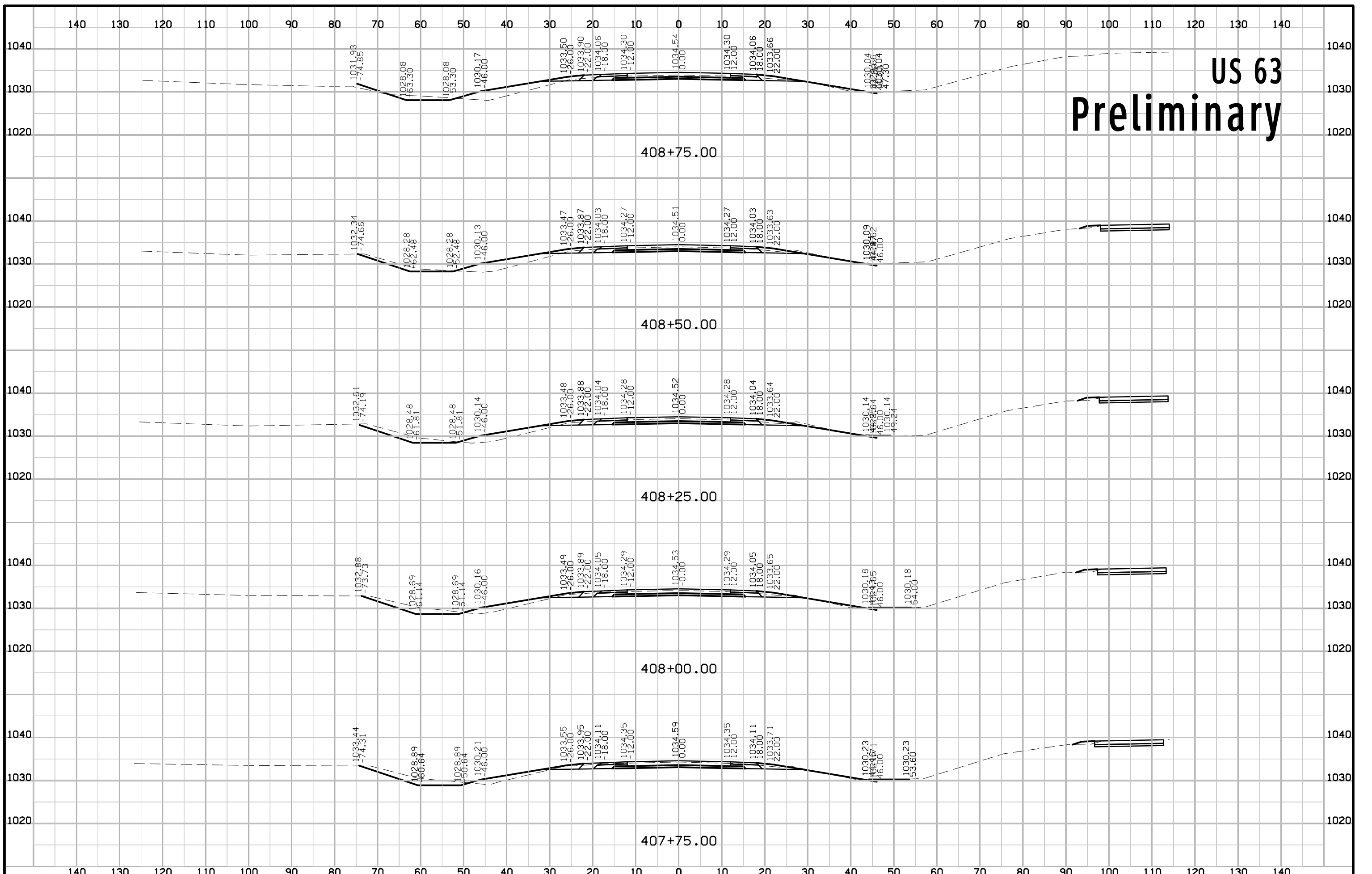


US 63 Preliminary

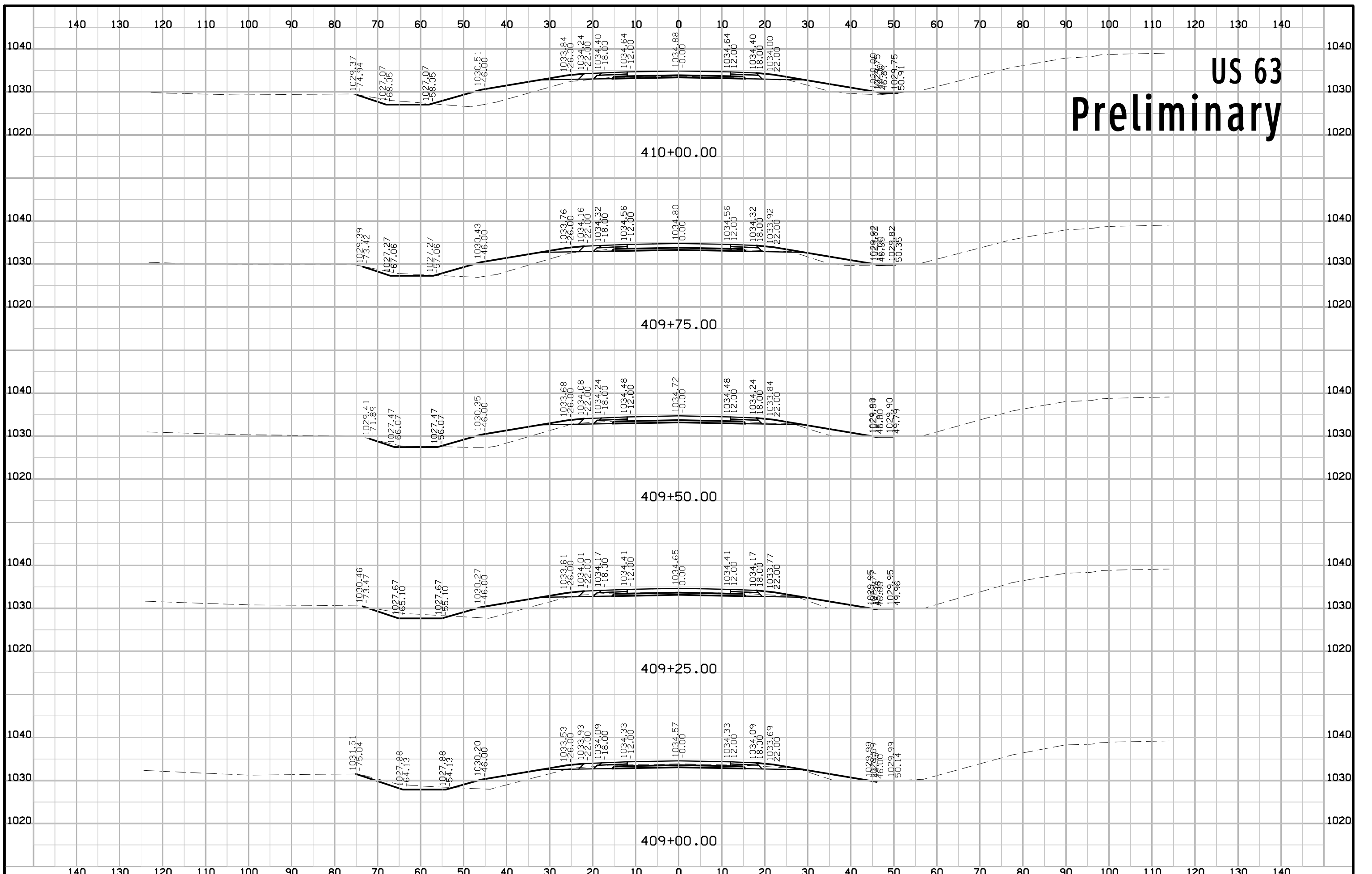




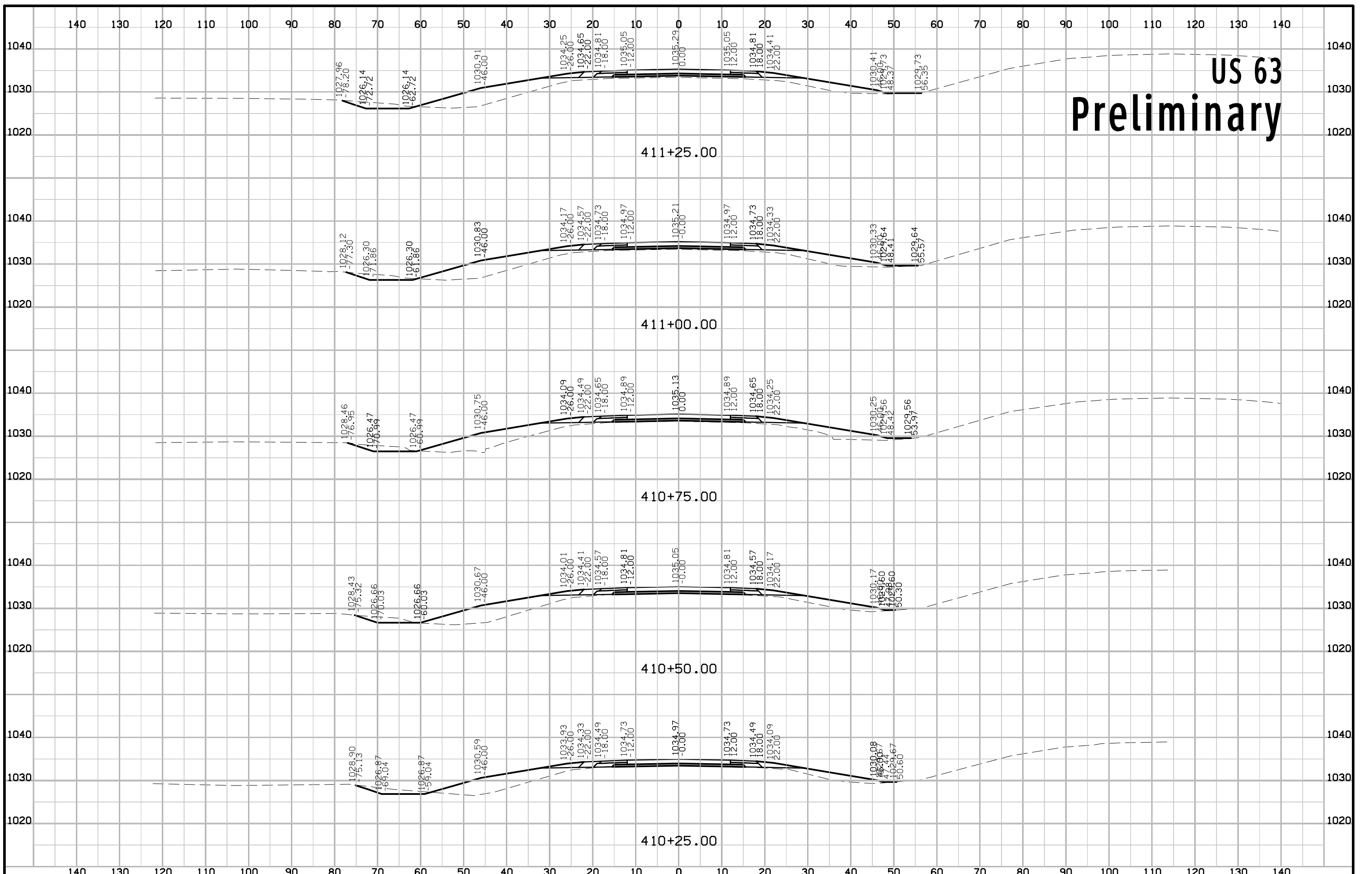
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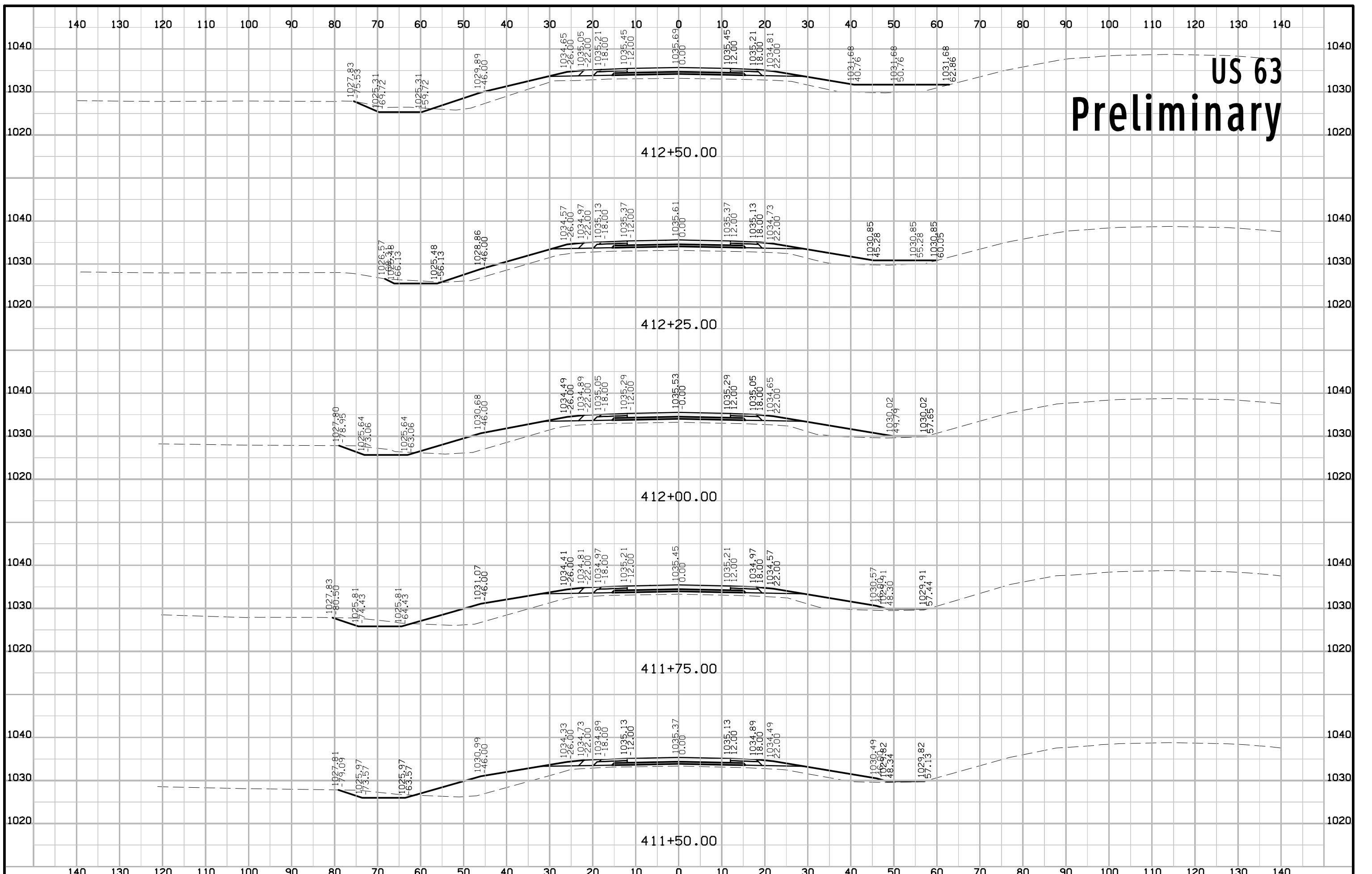
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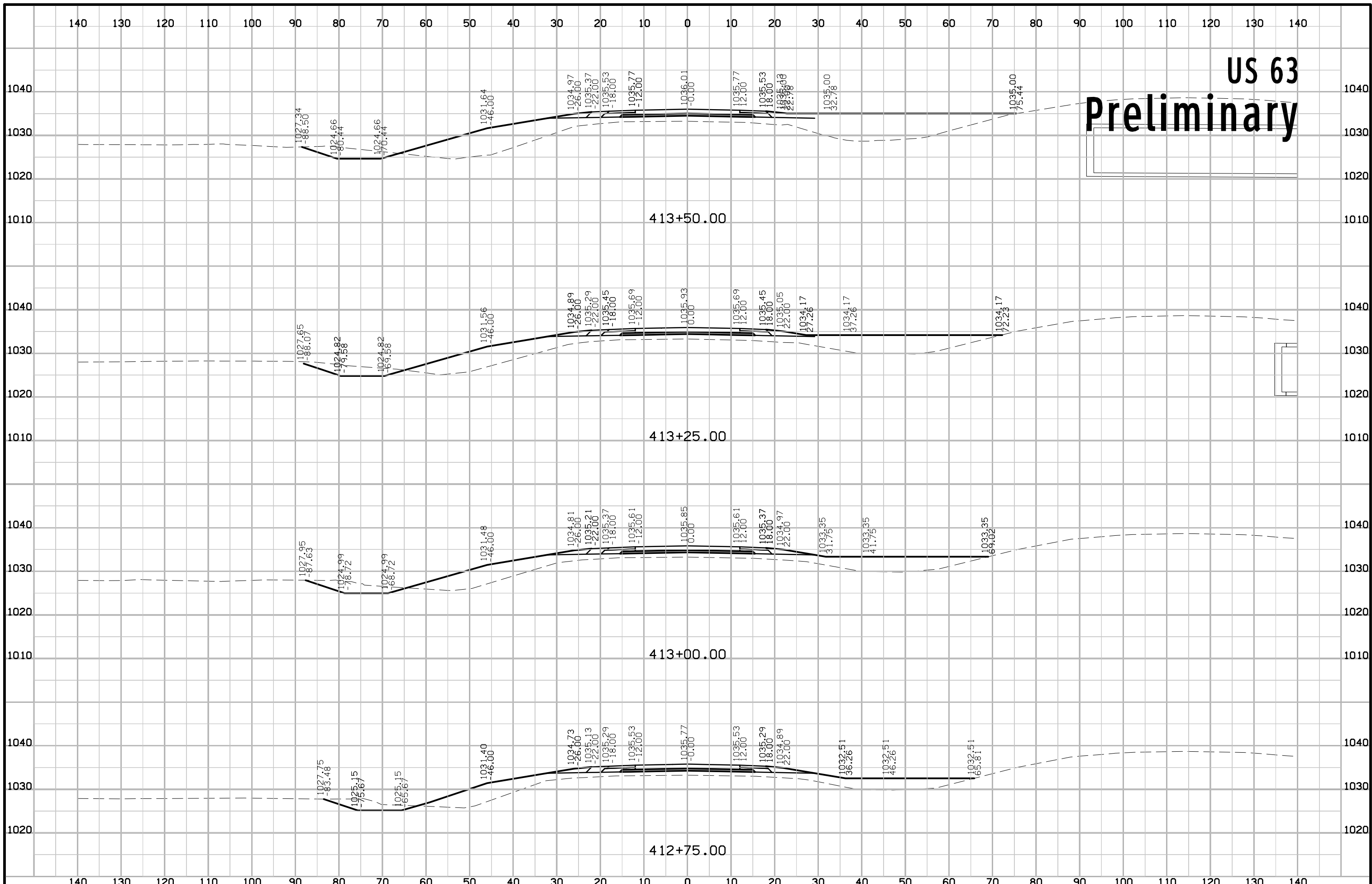


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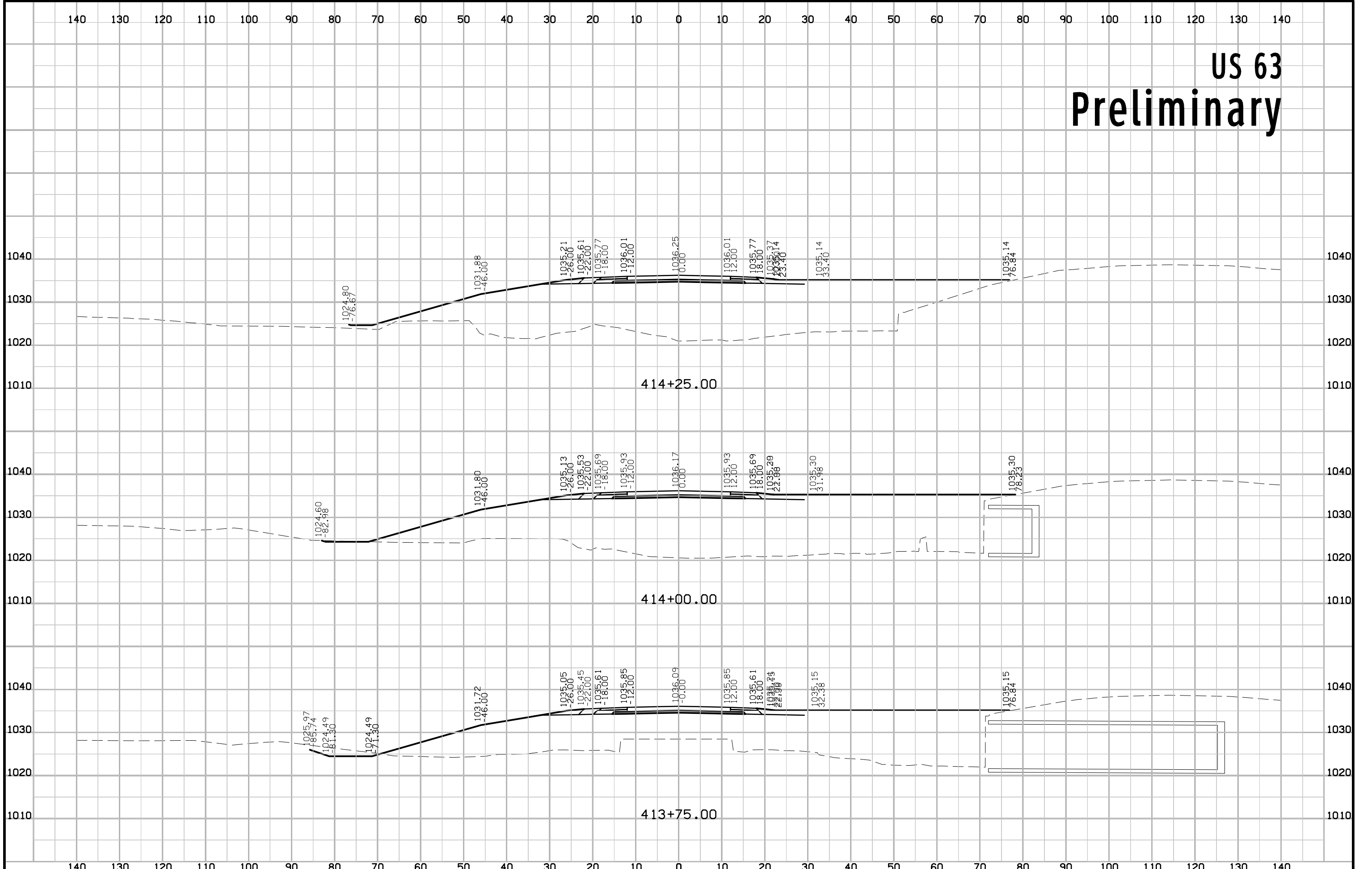


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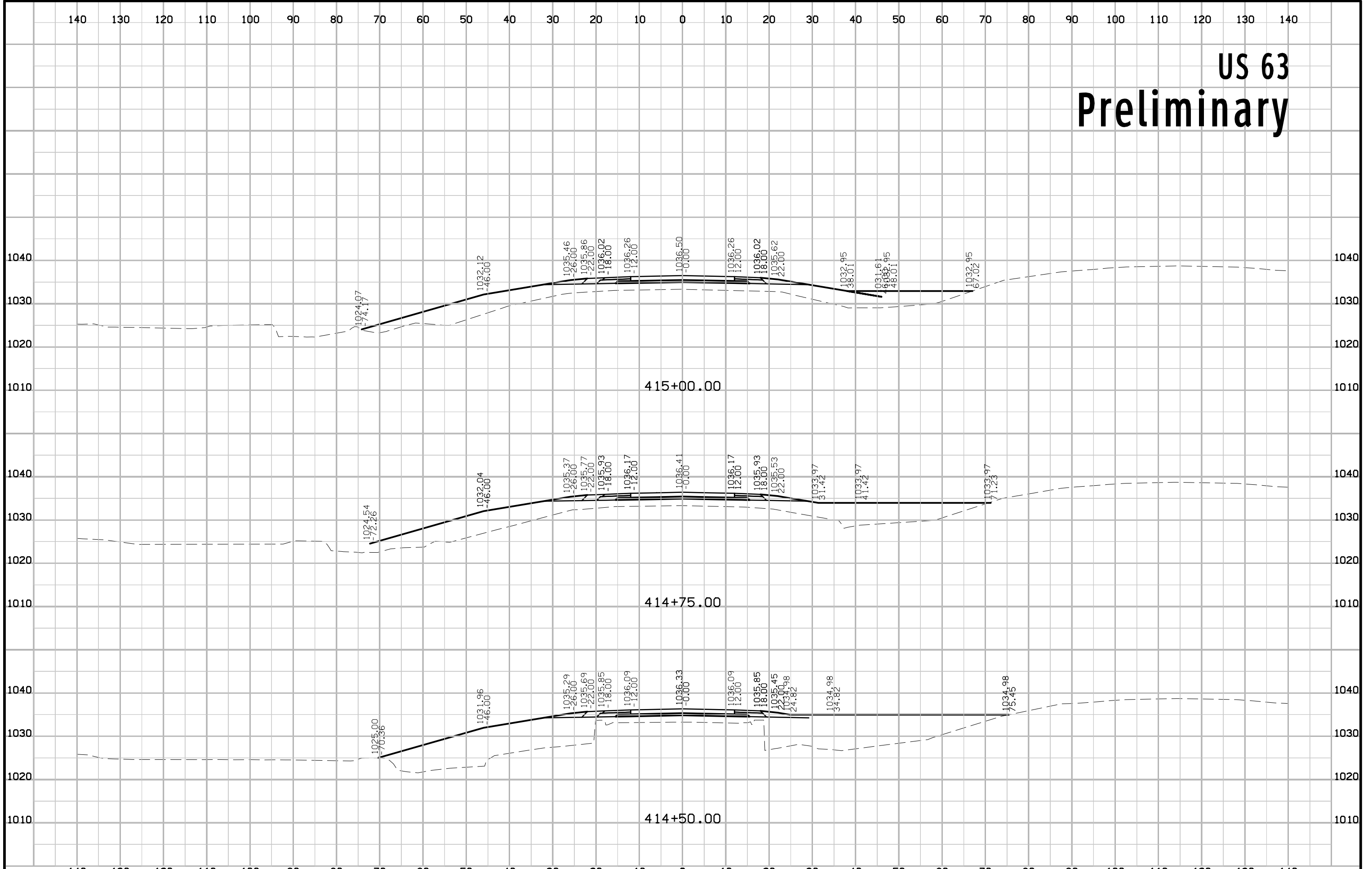




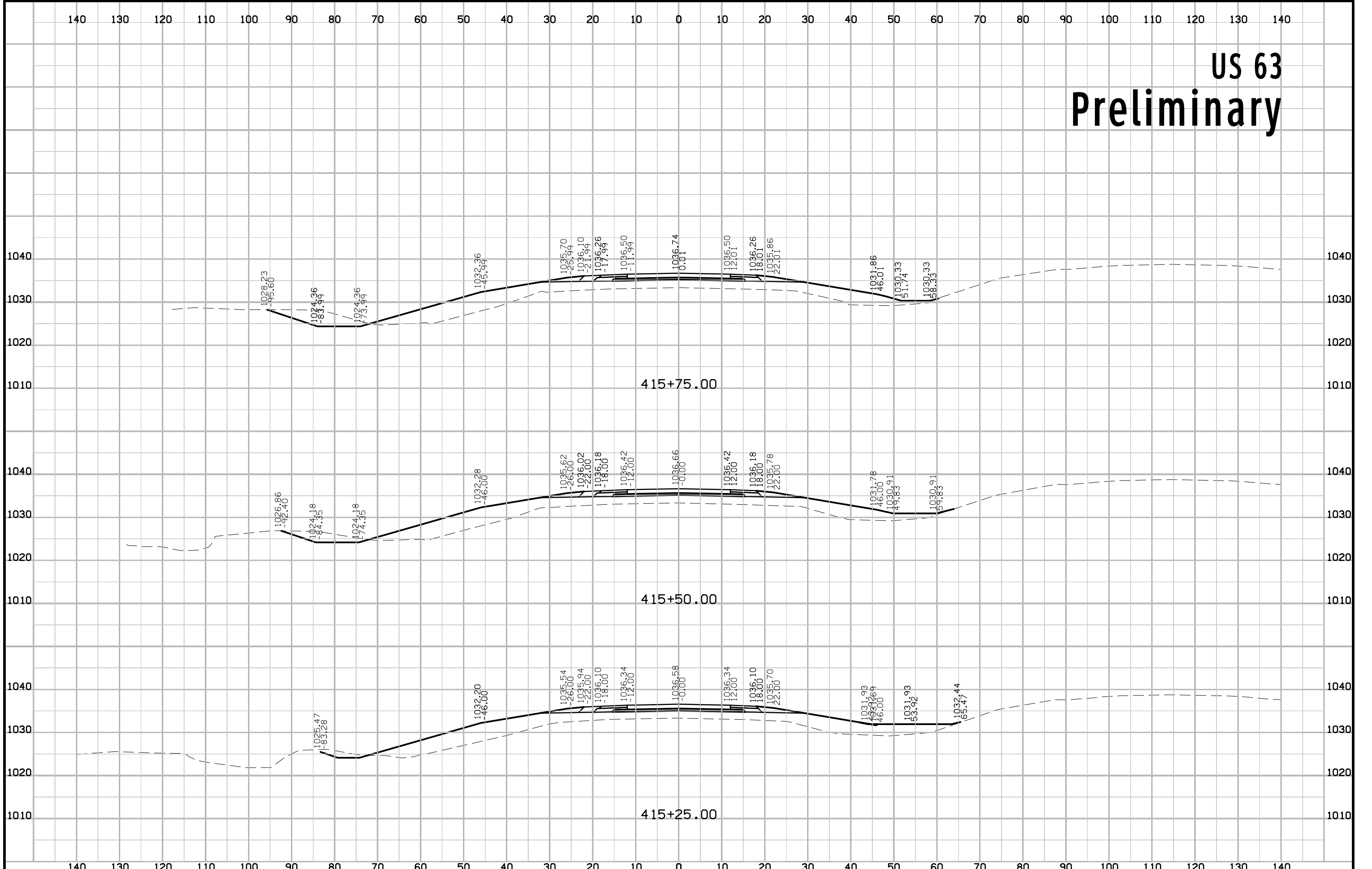
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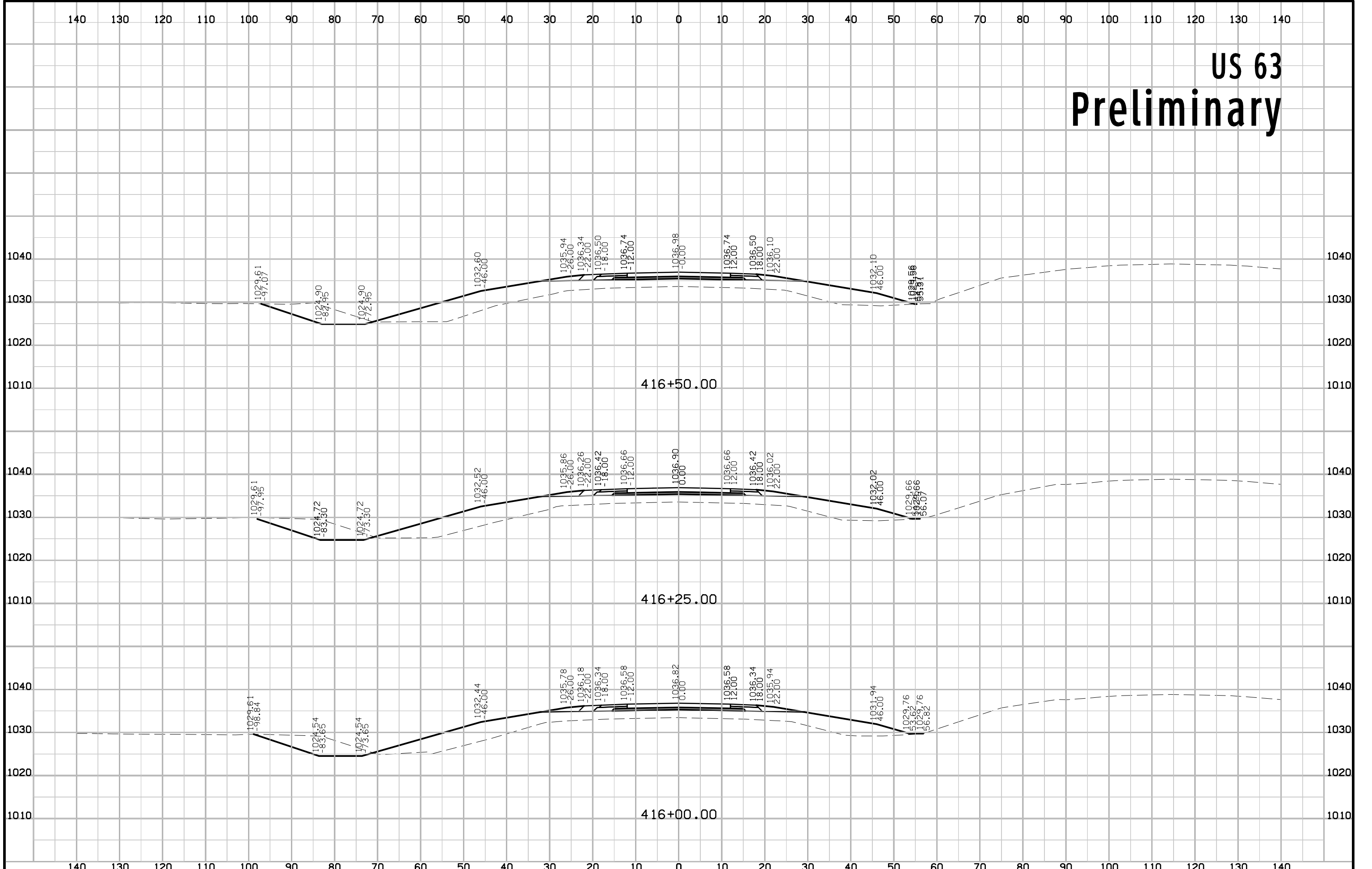
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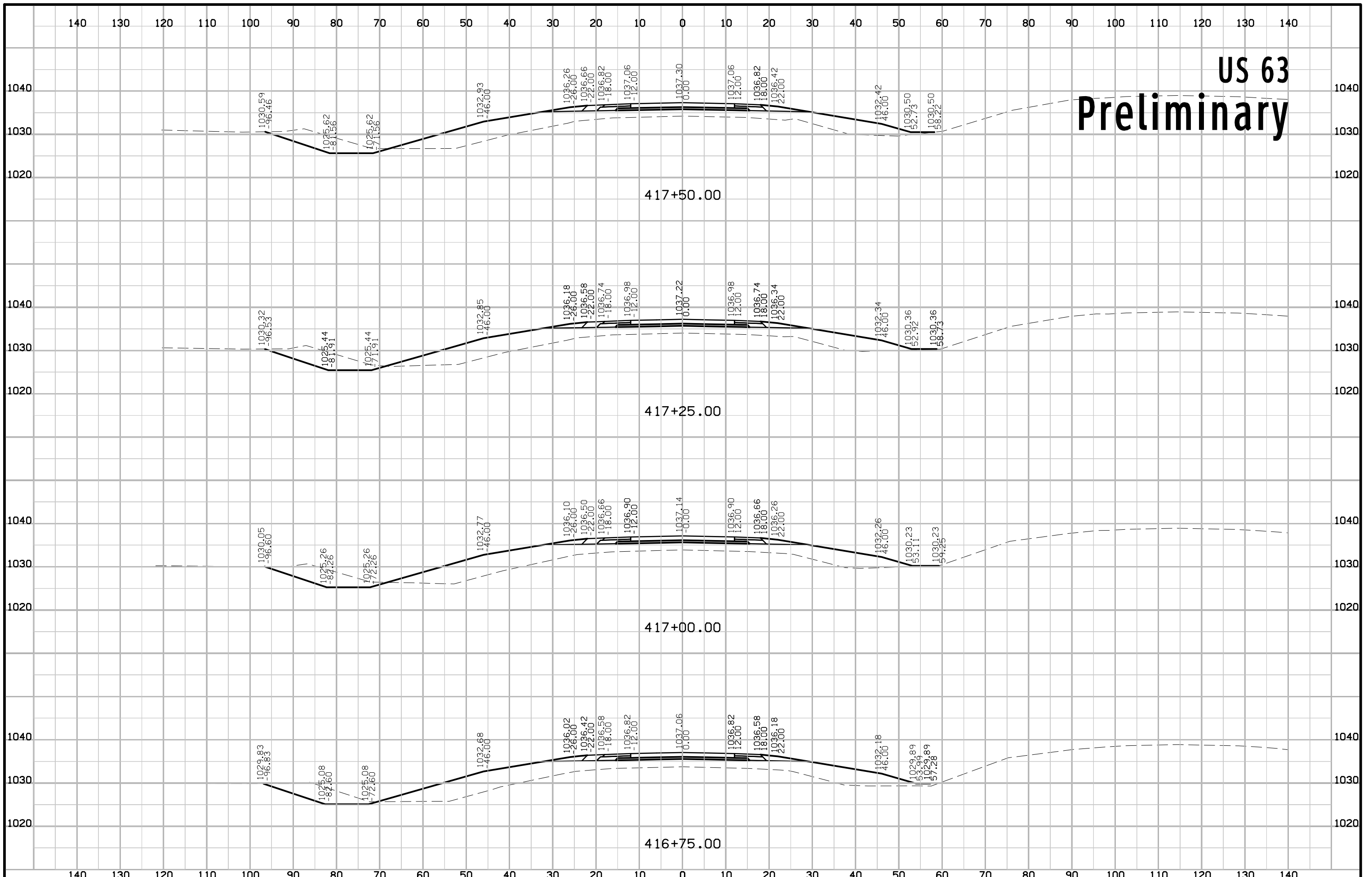


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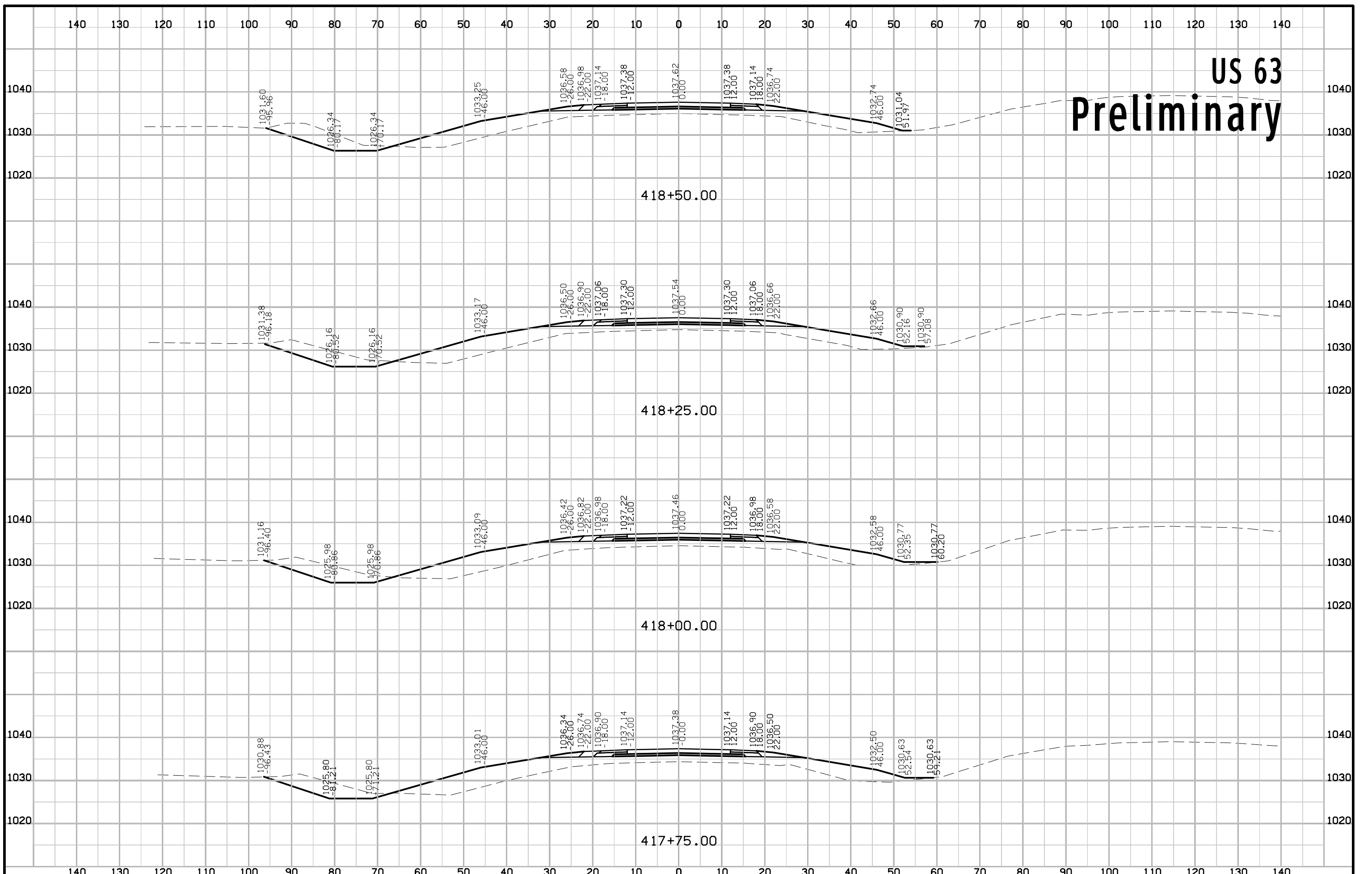


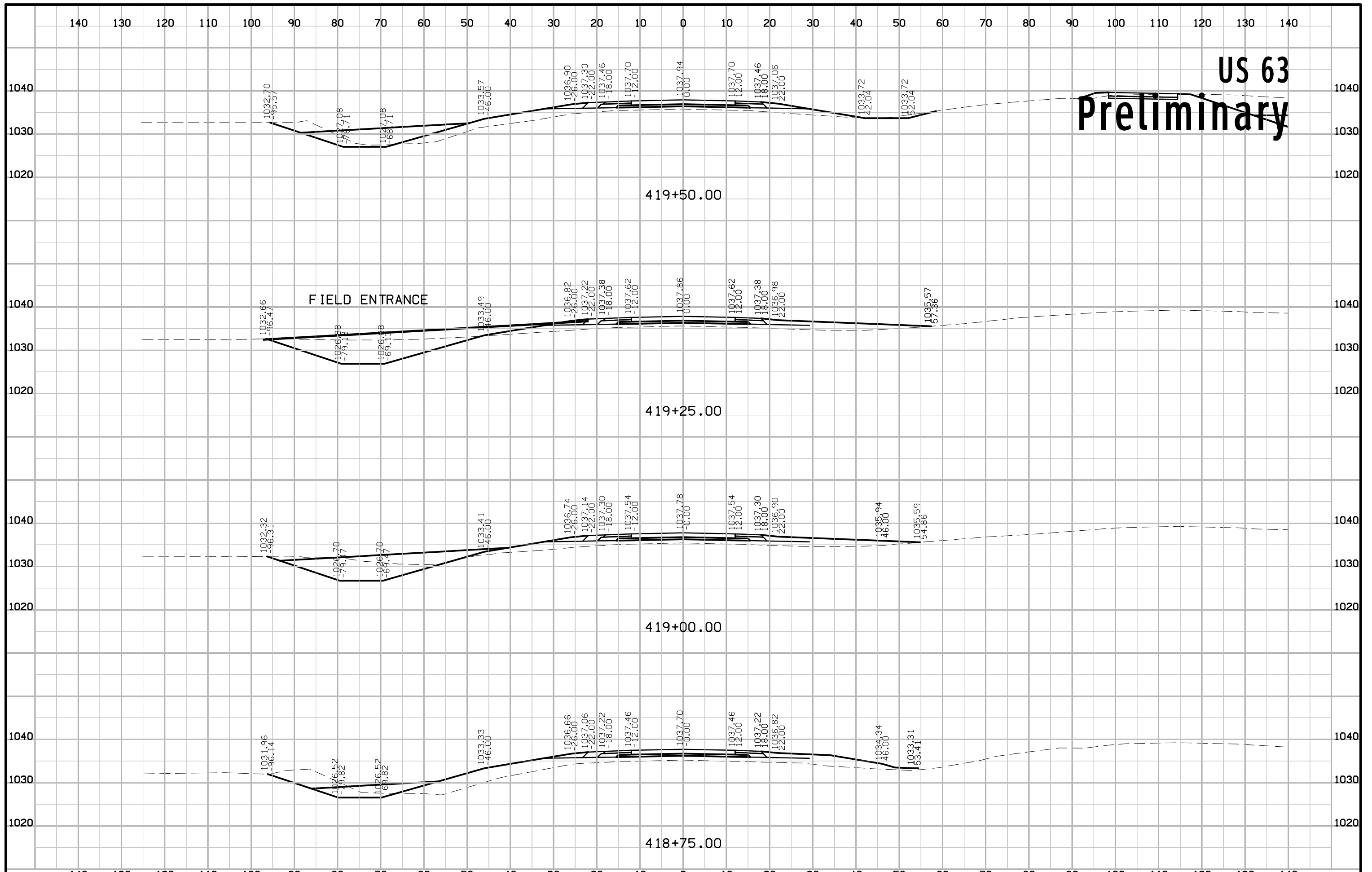
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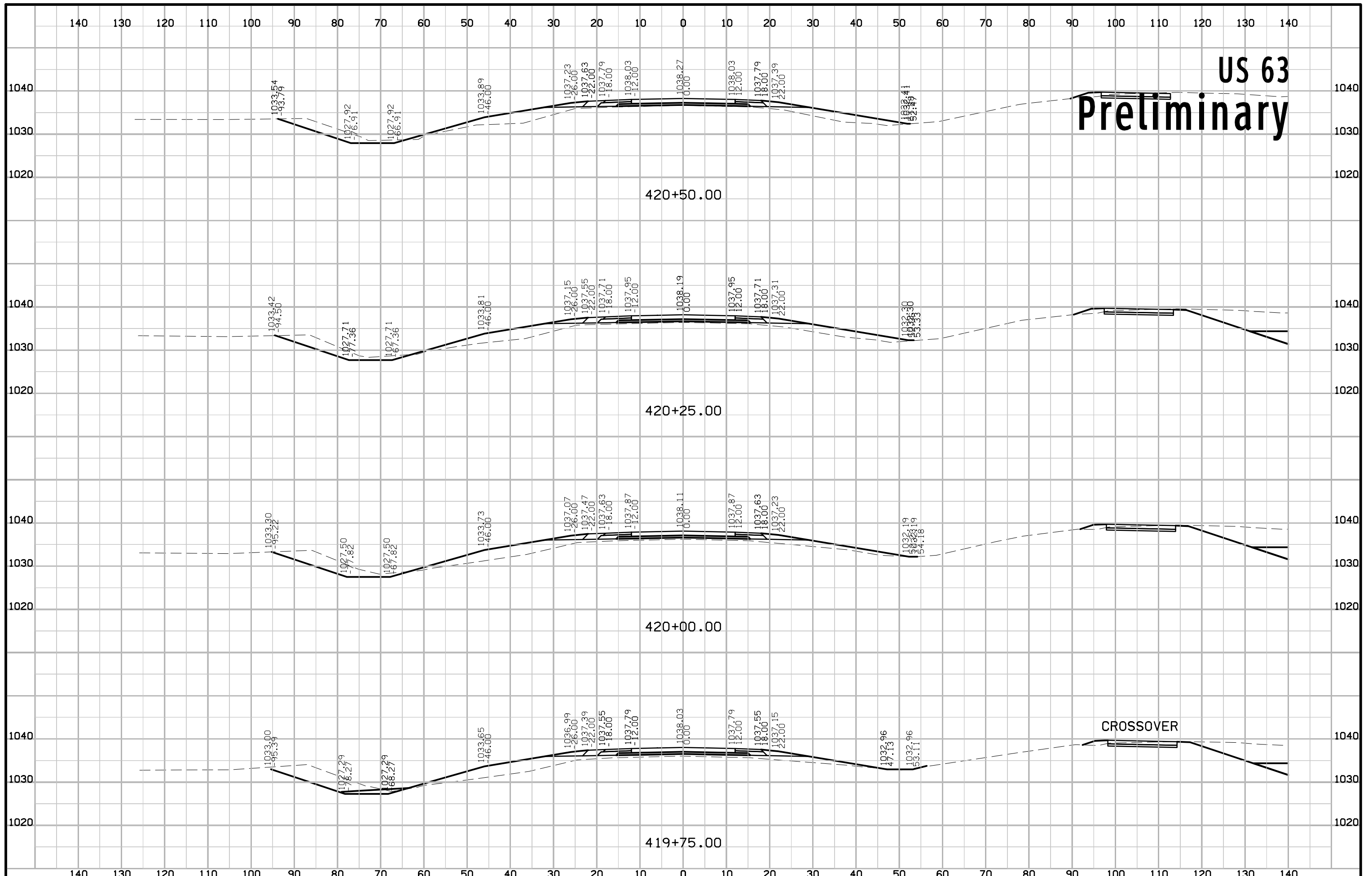


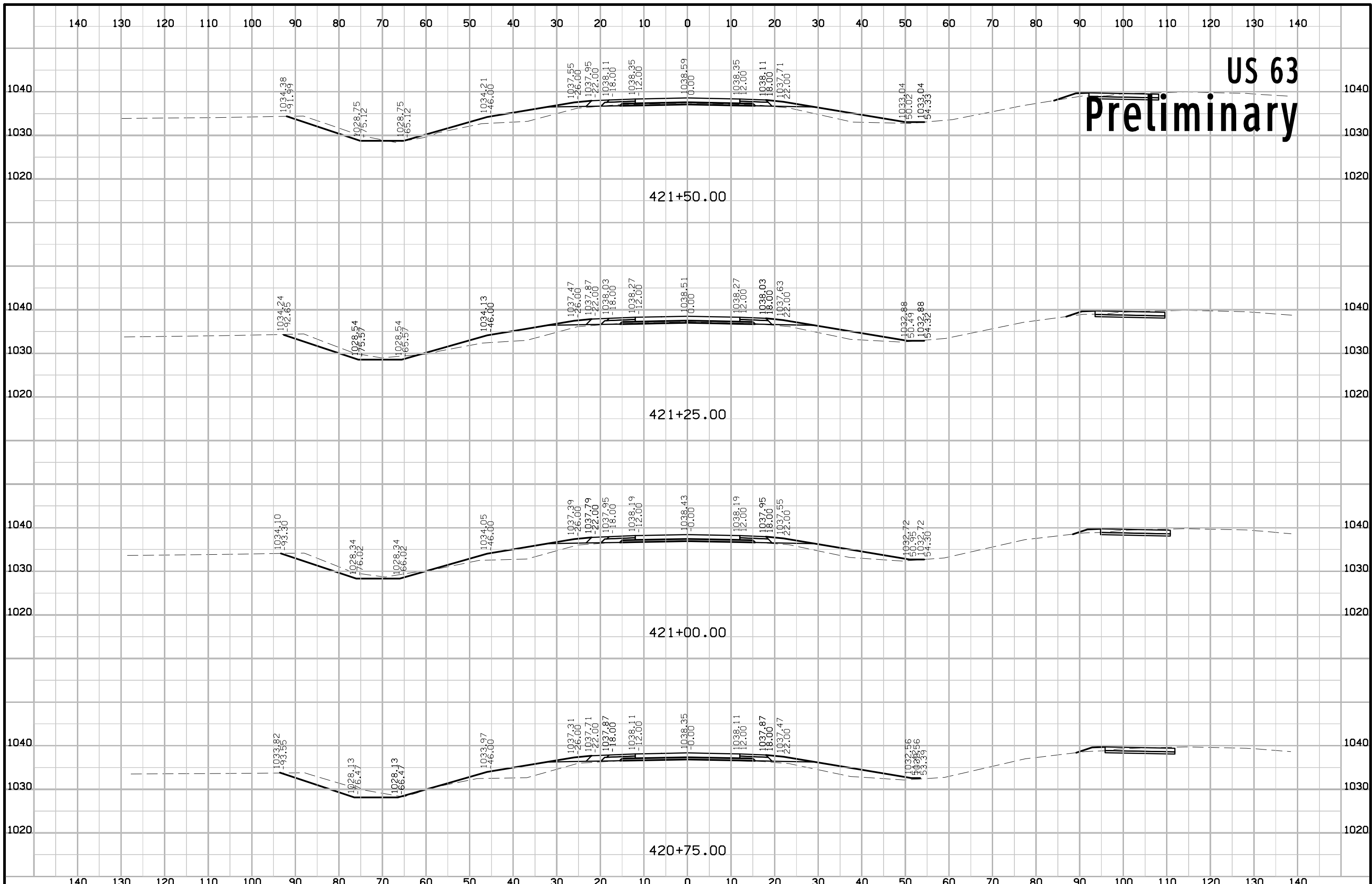


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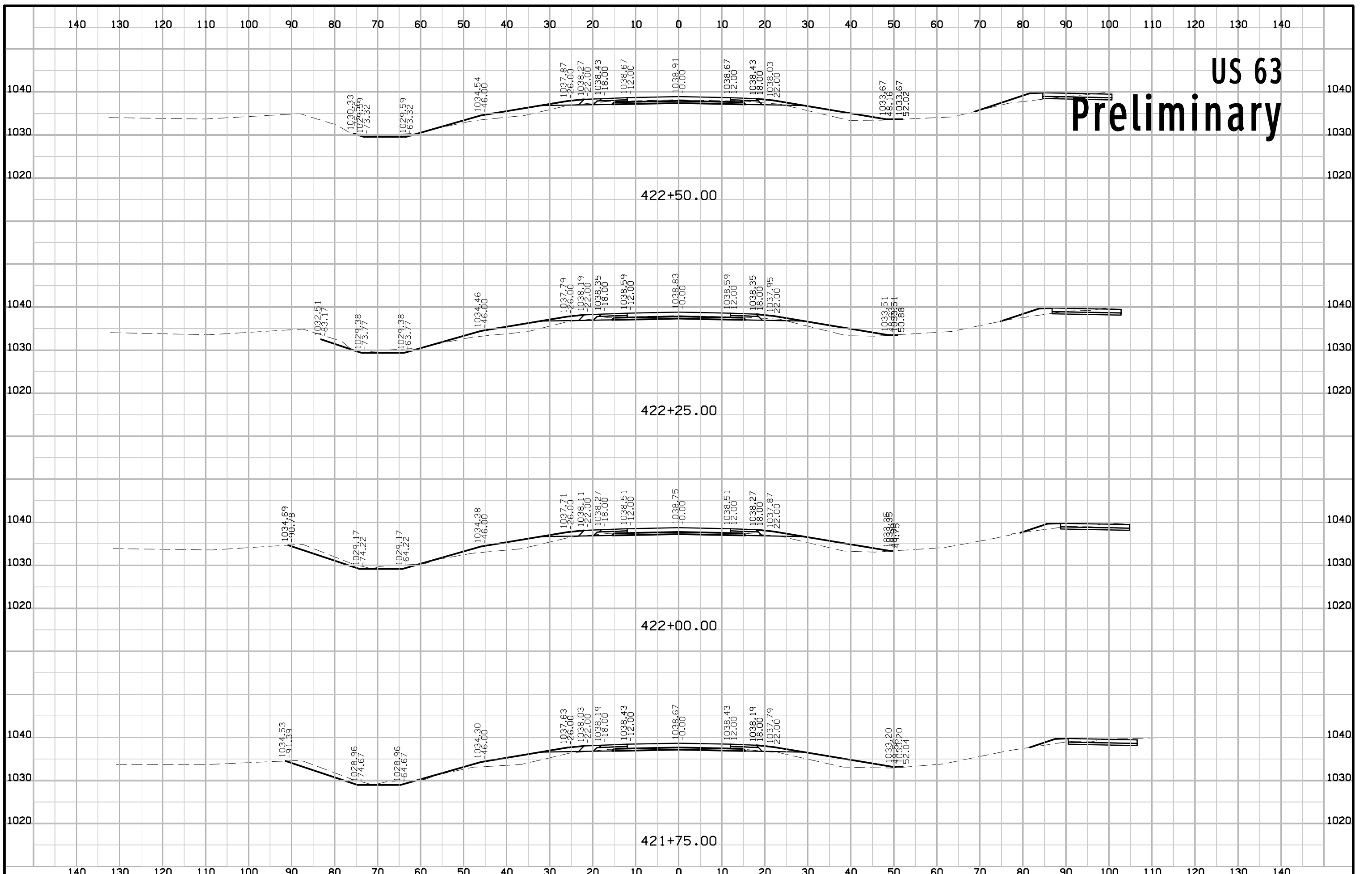




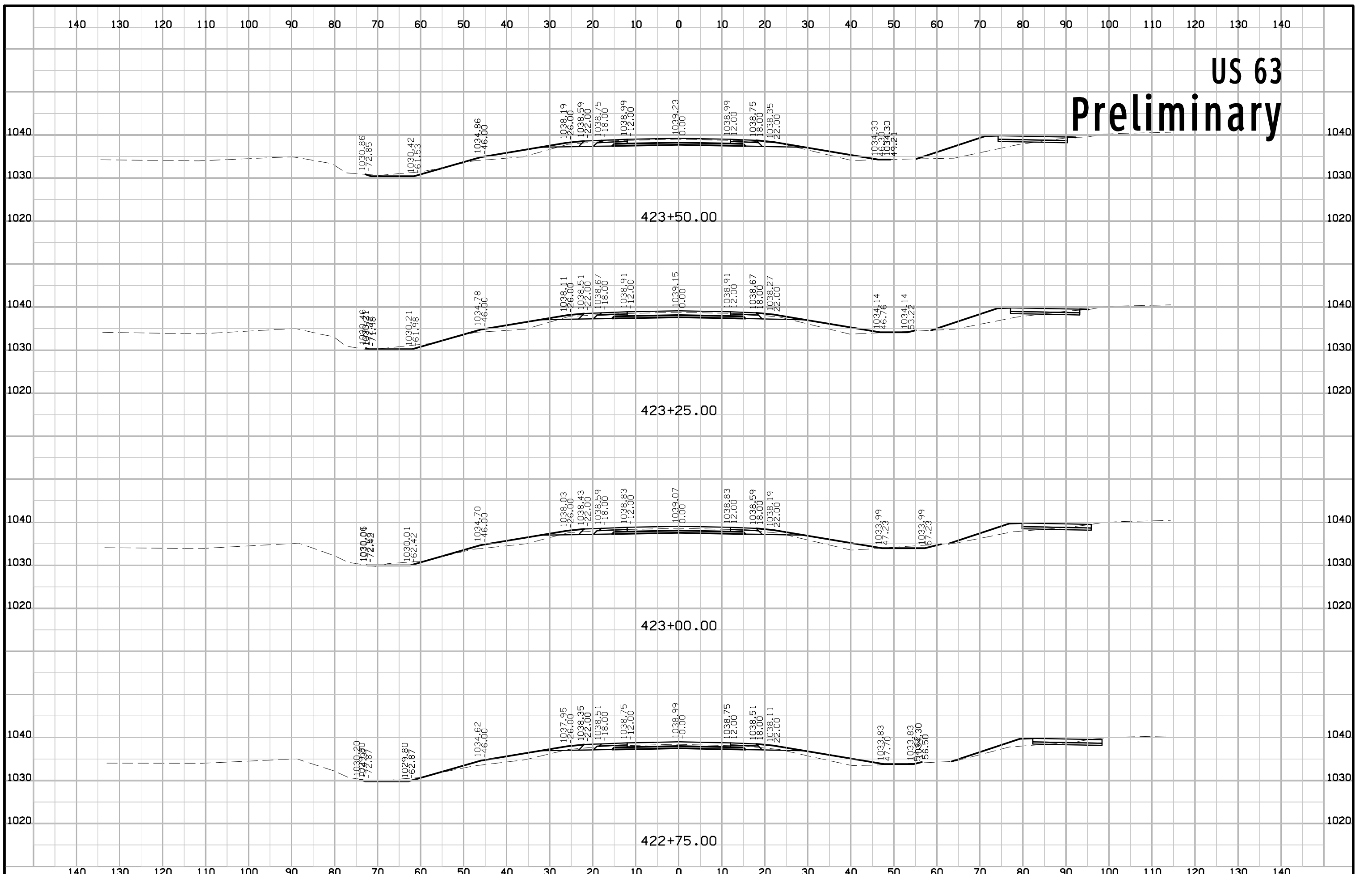




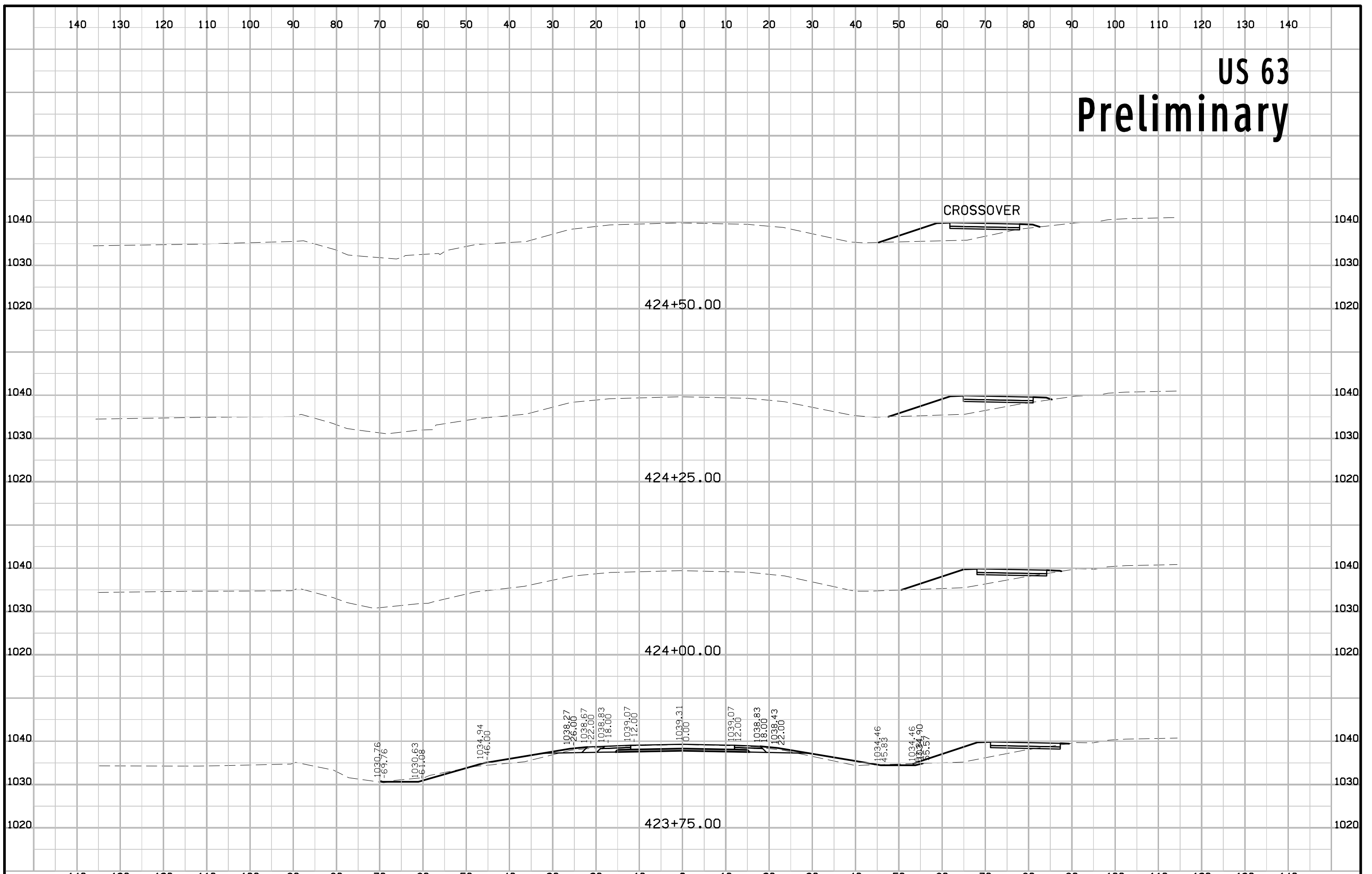
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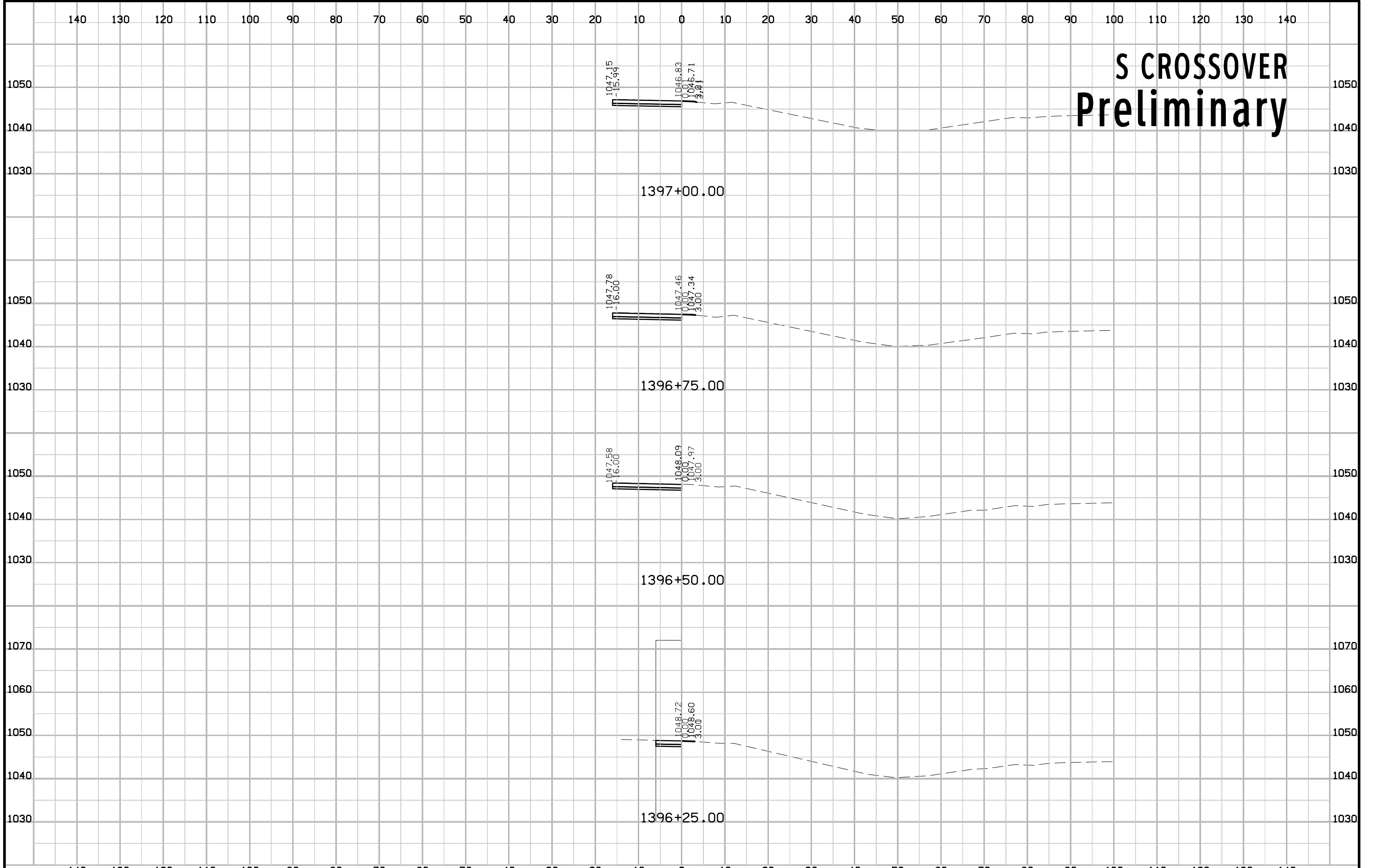
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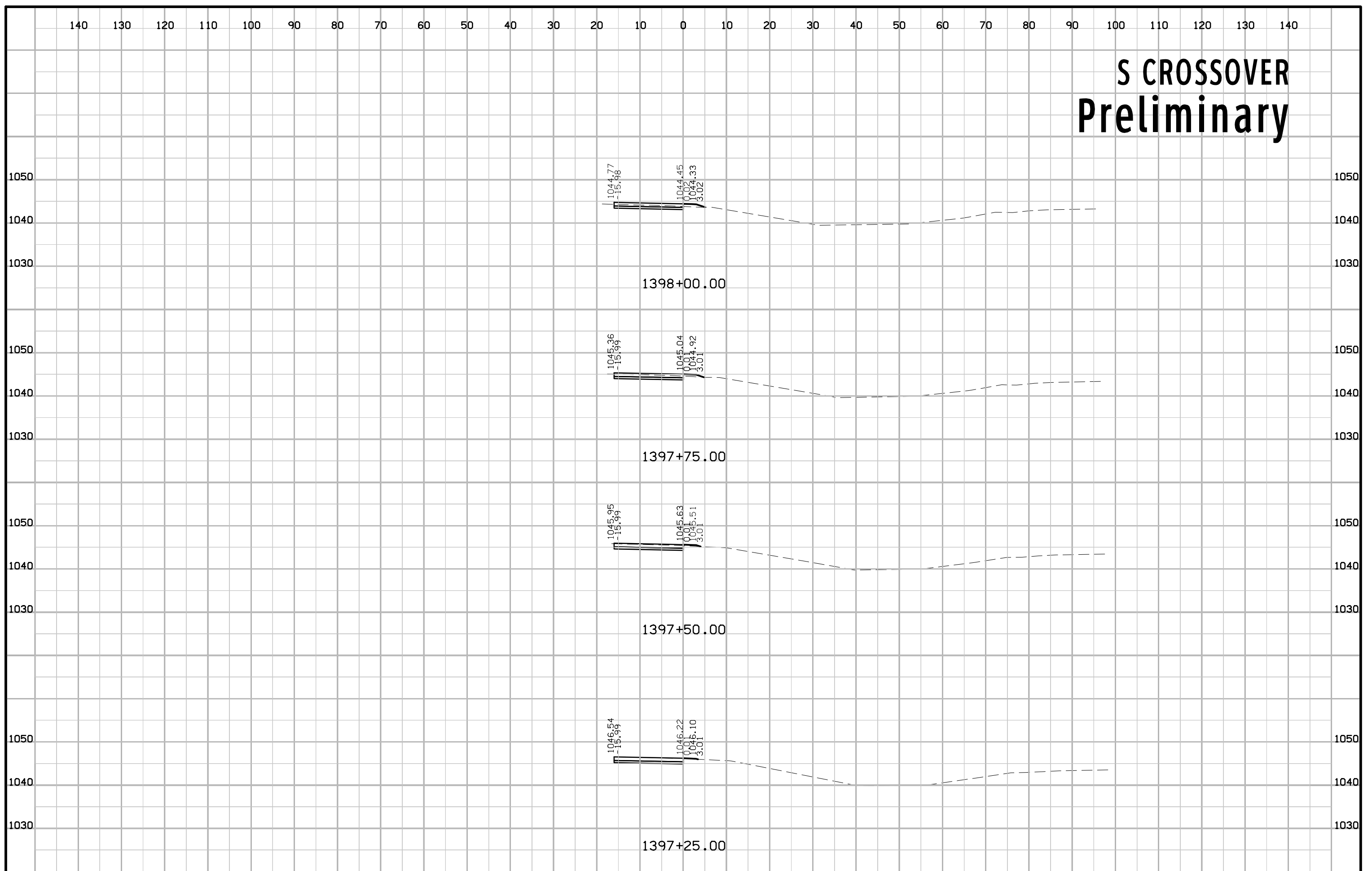
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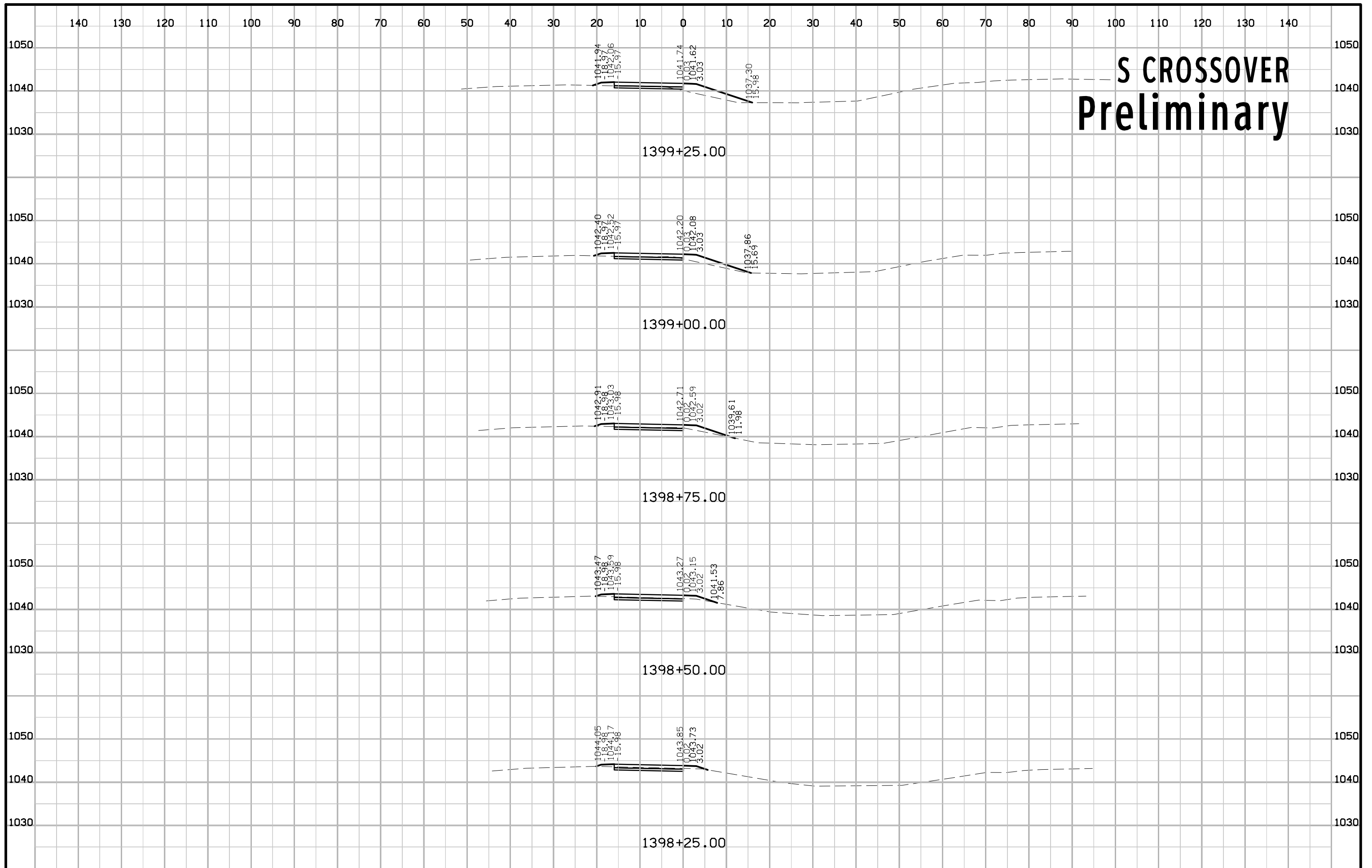
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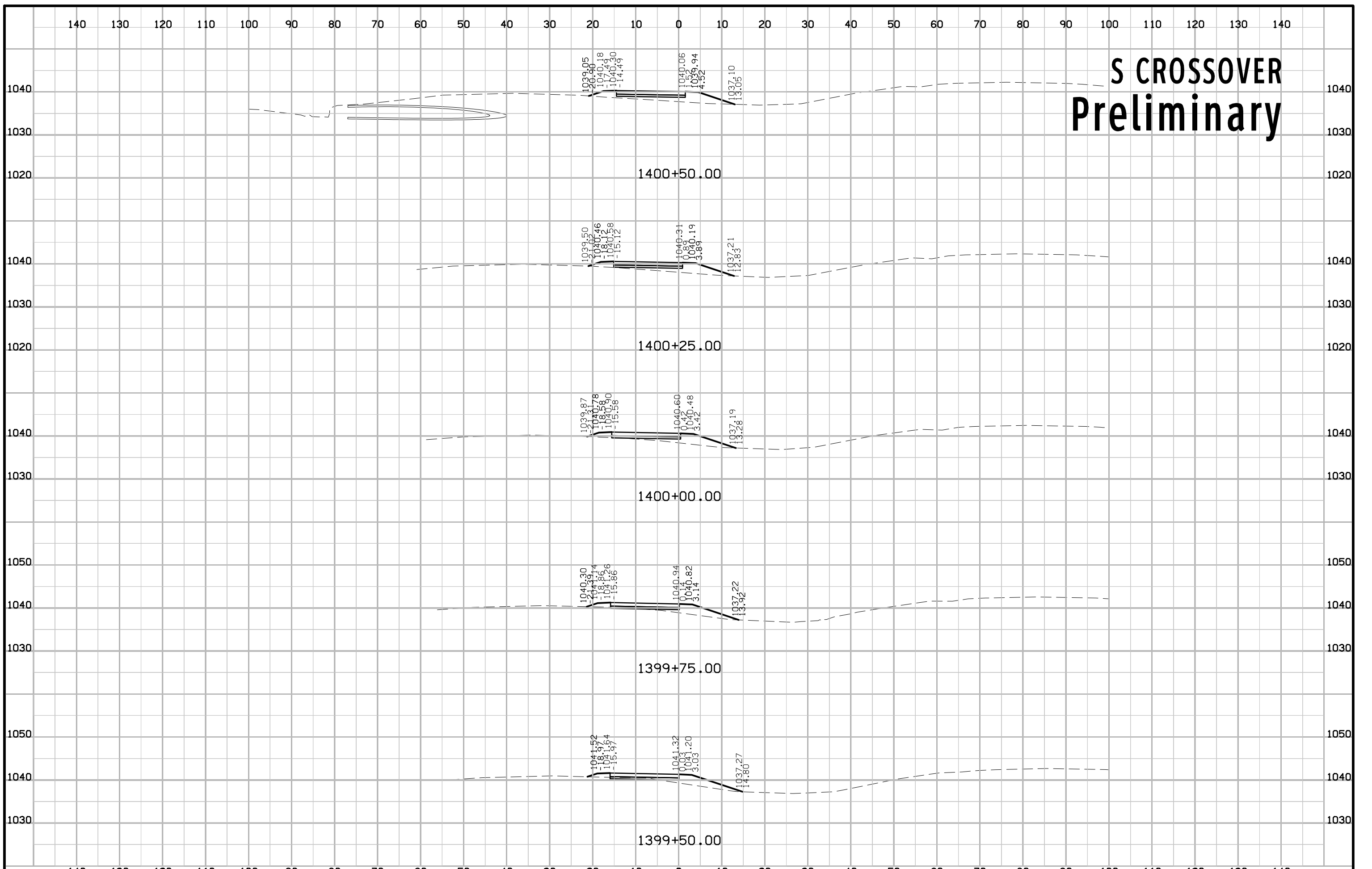
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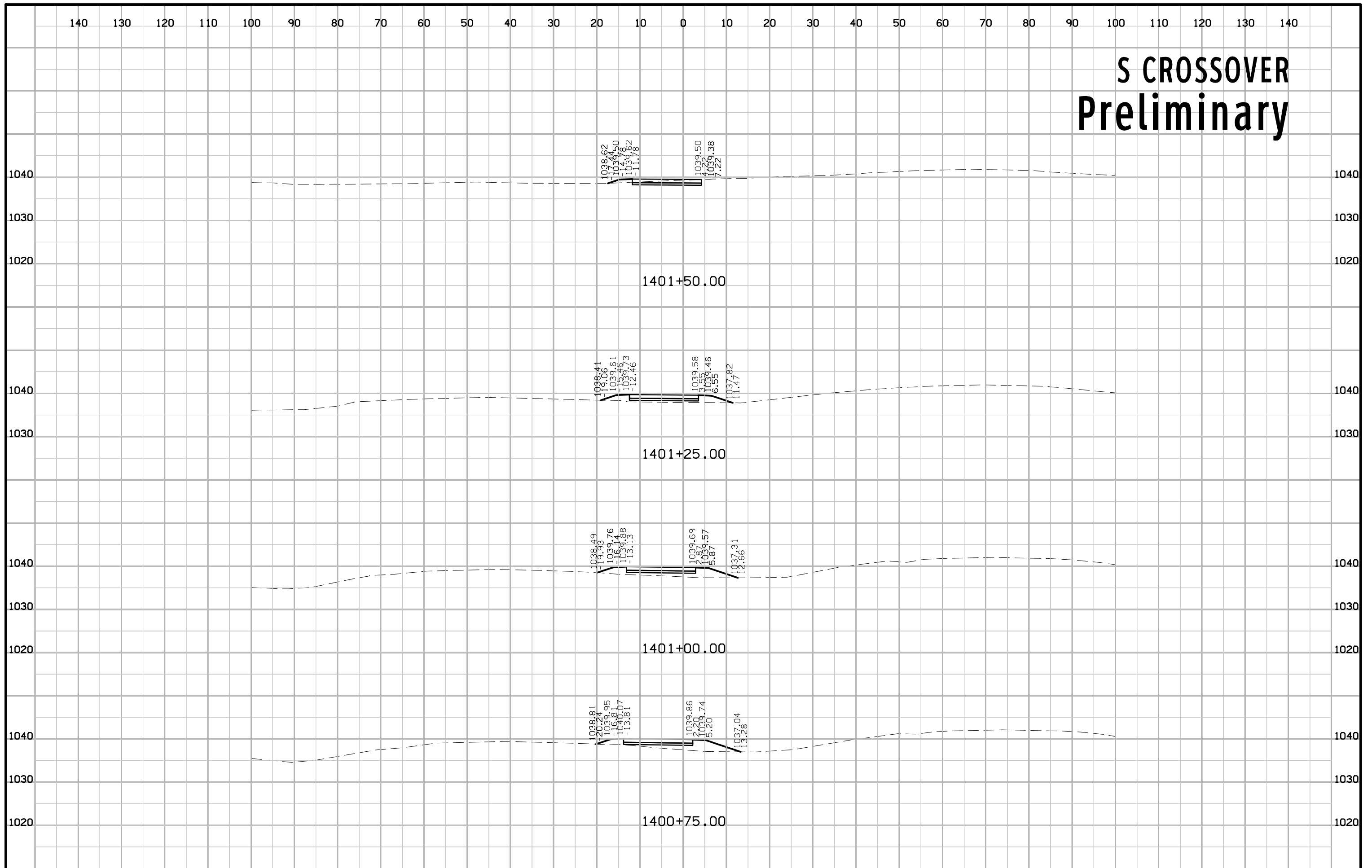
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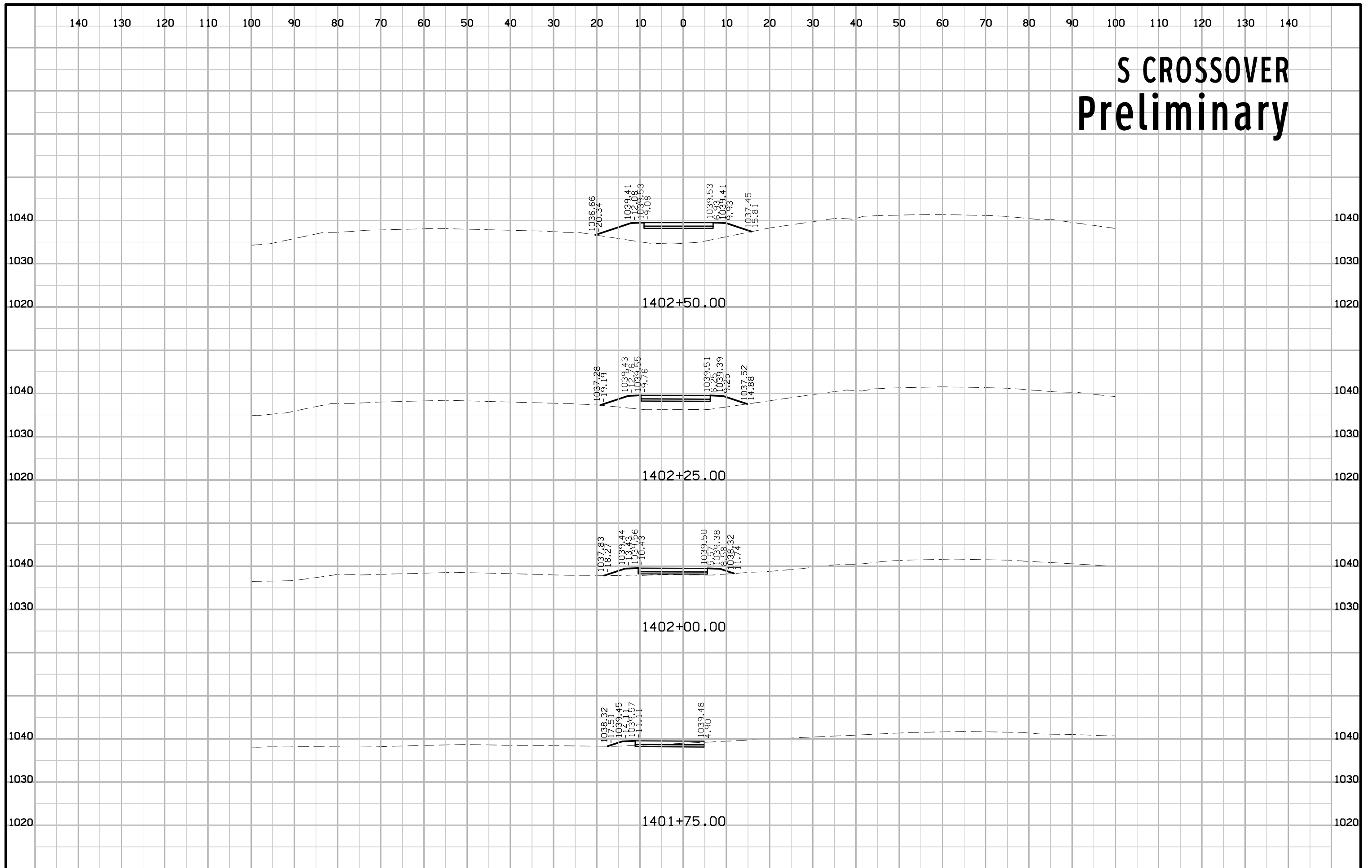
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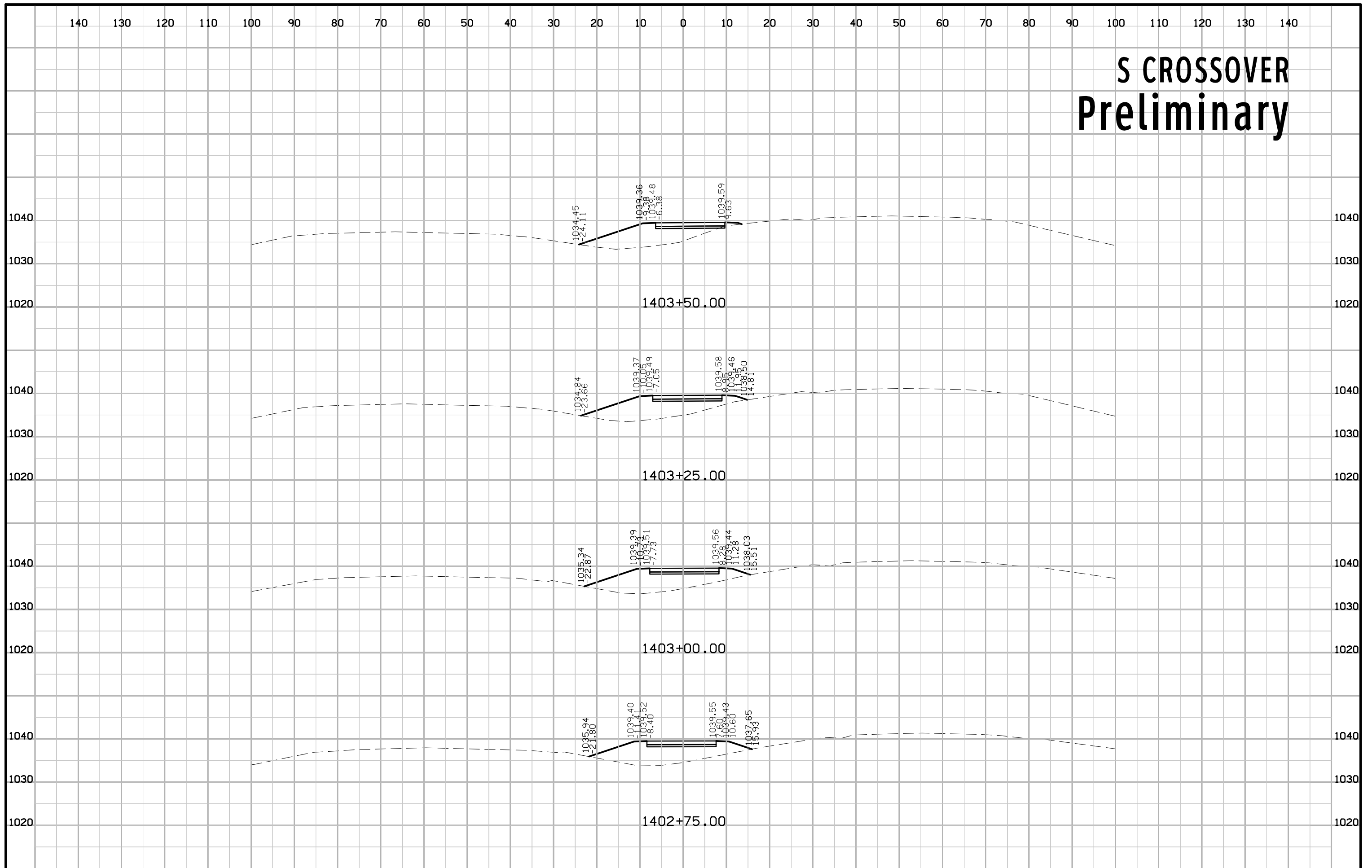
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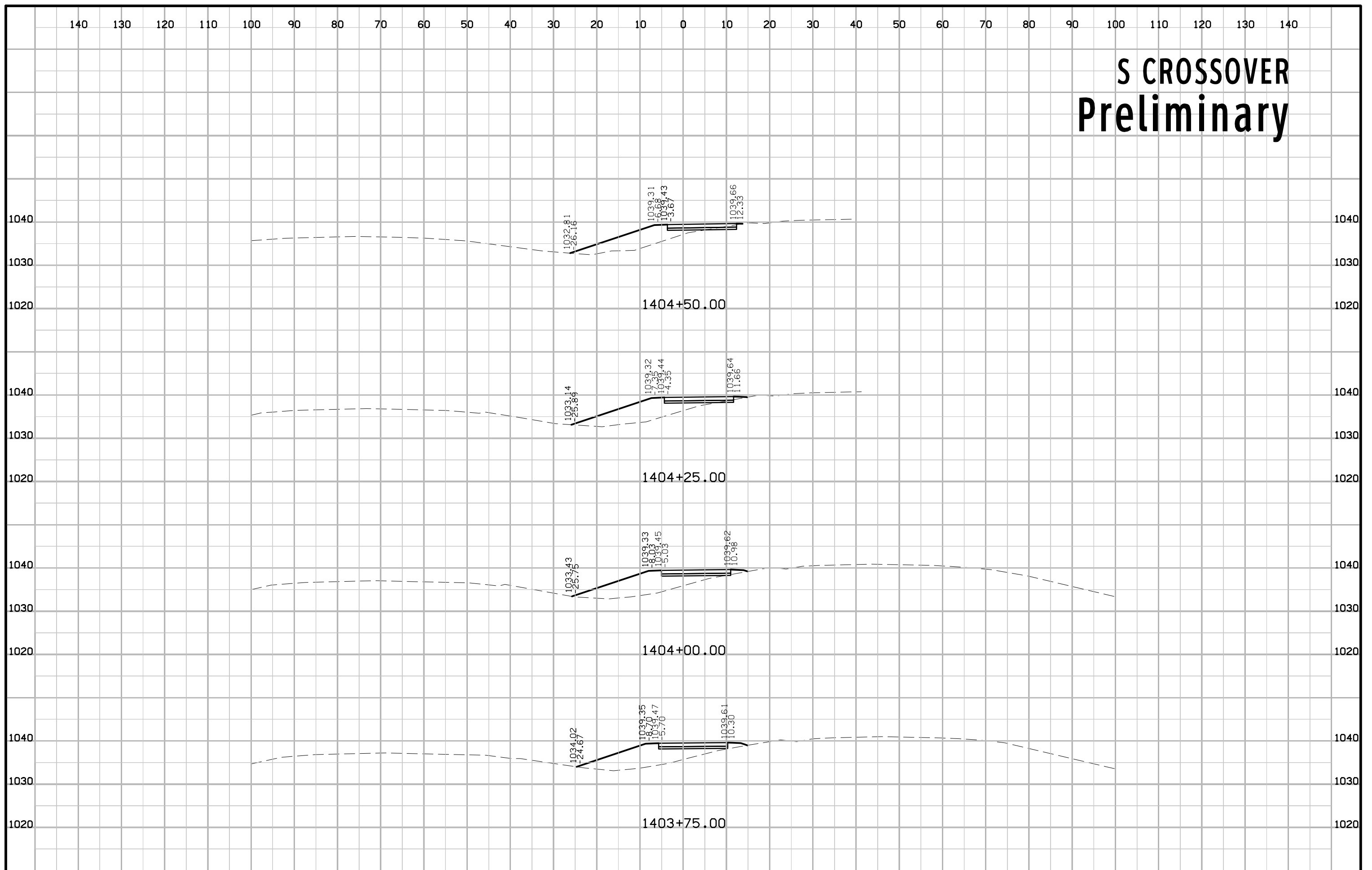
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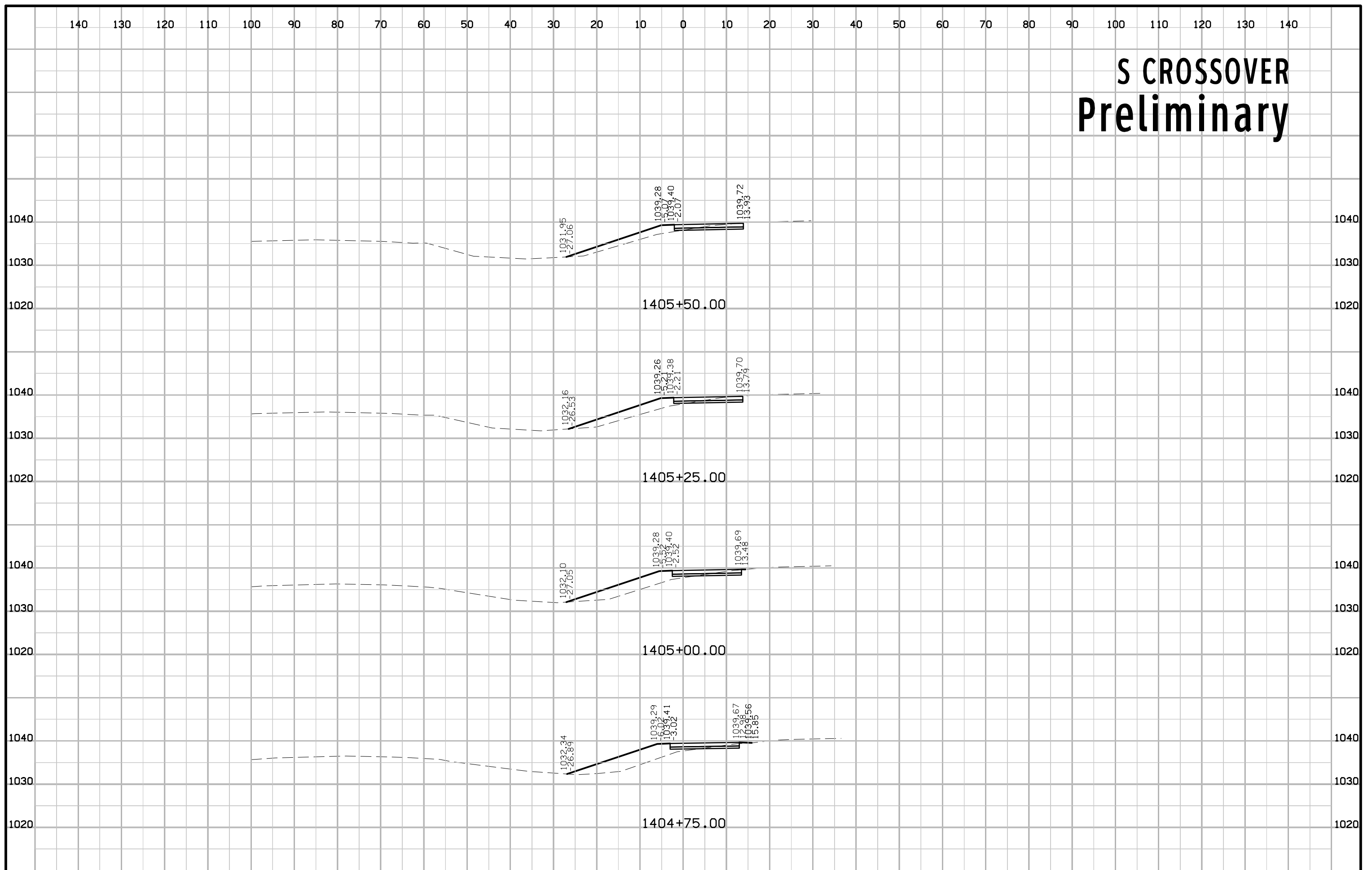
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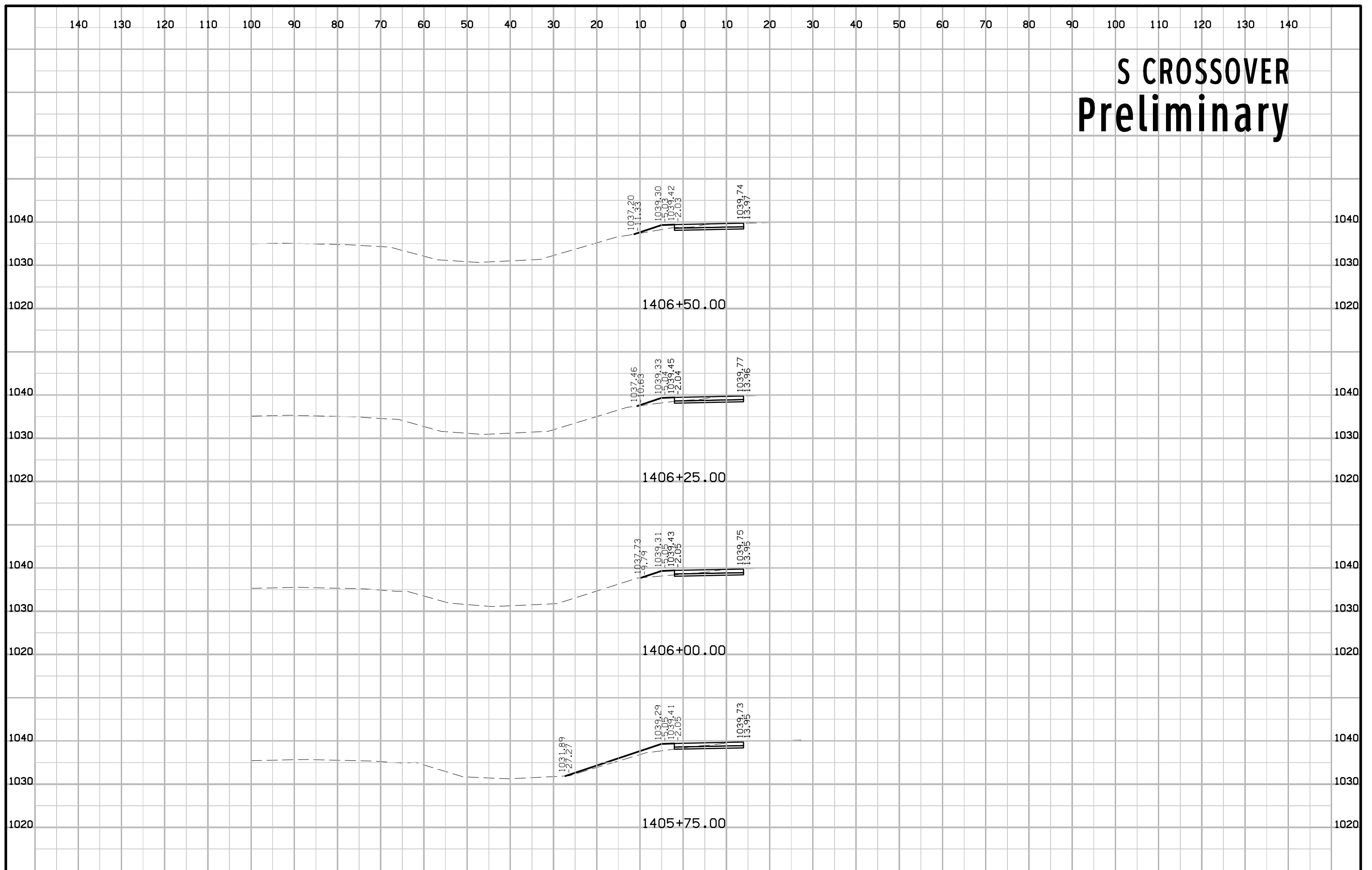
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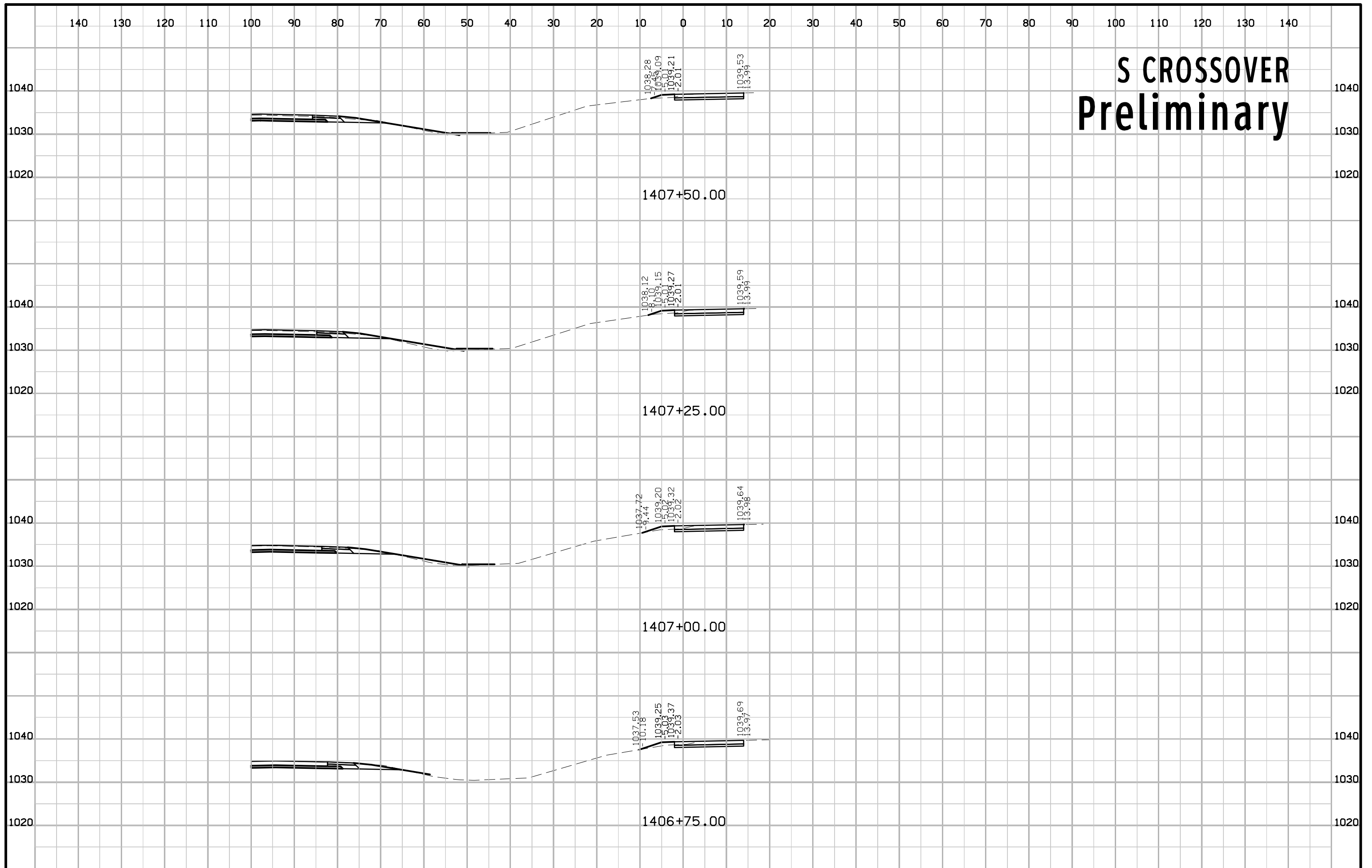
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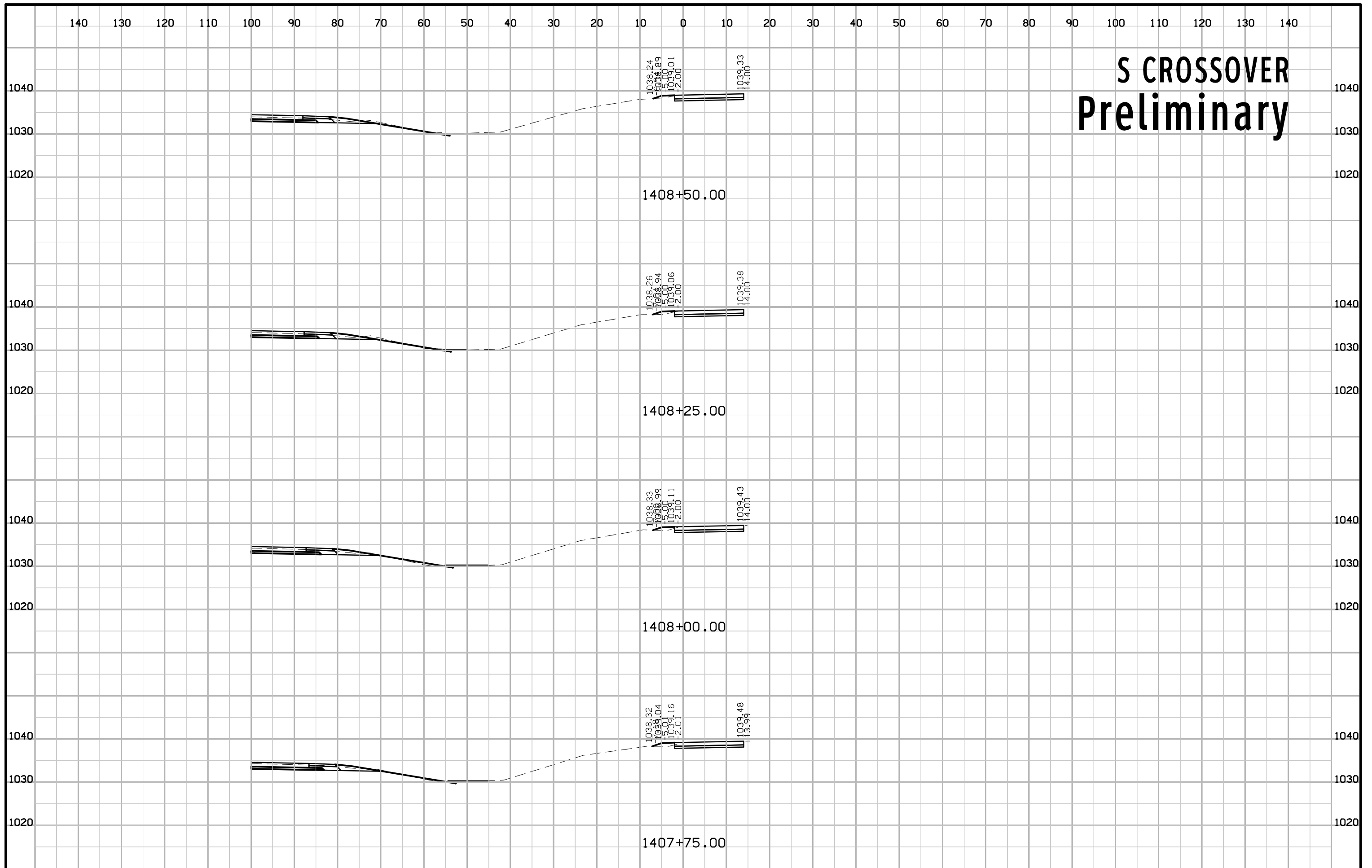
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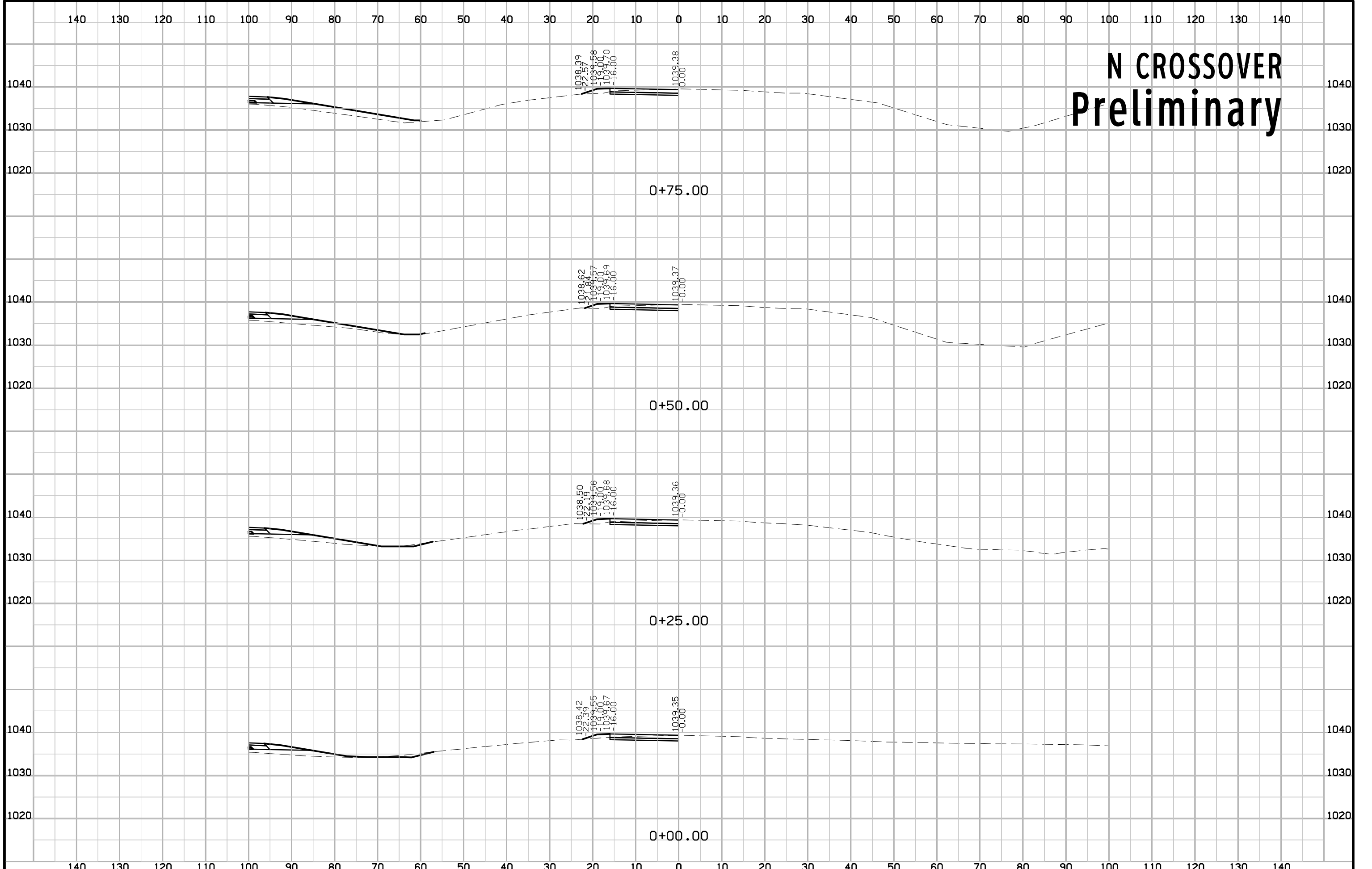
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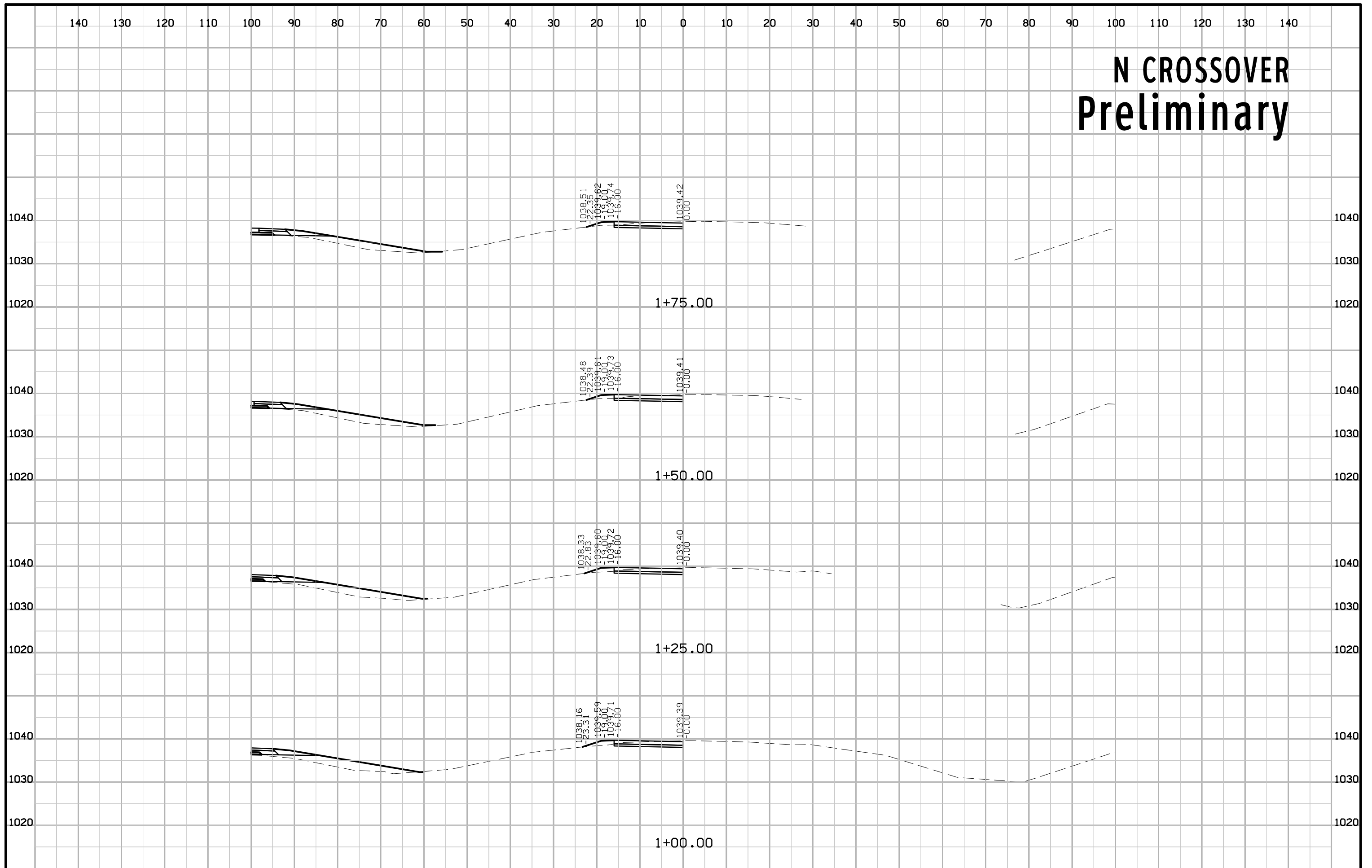
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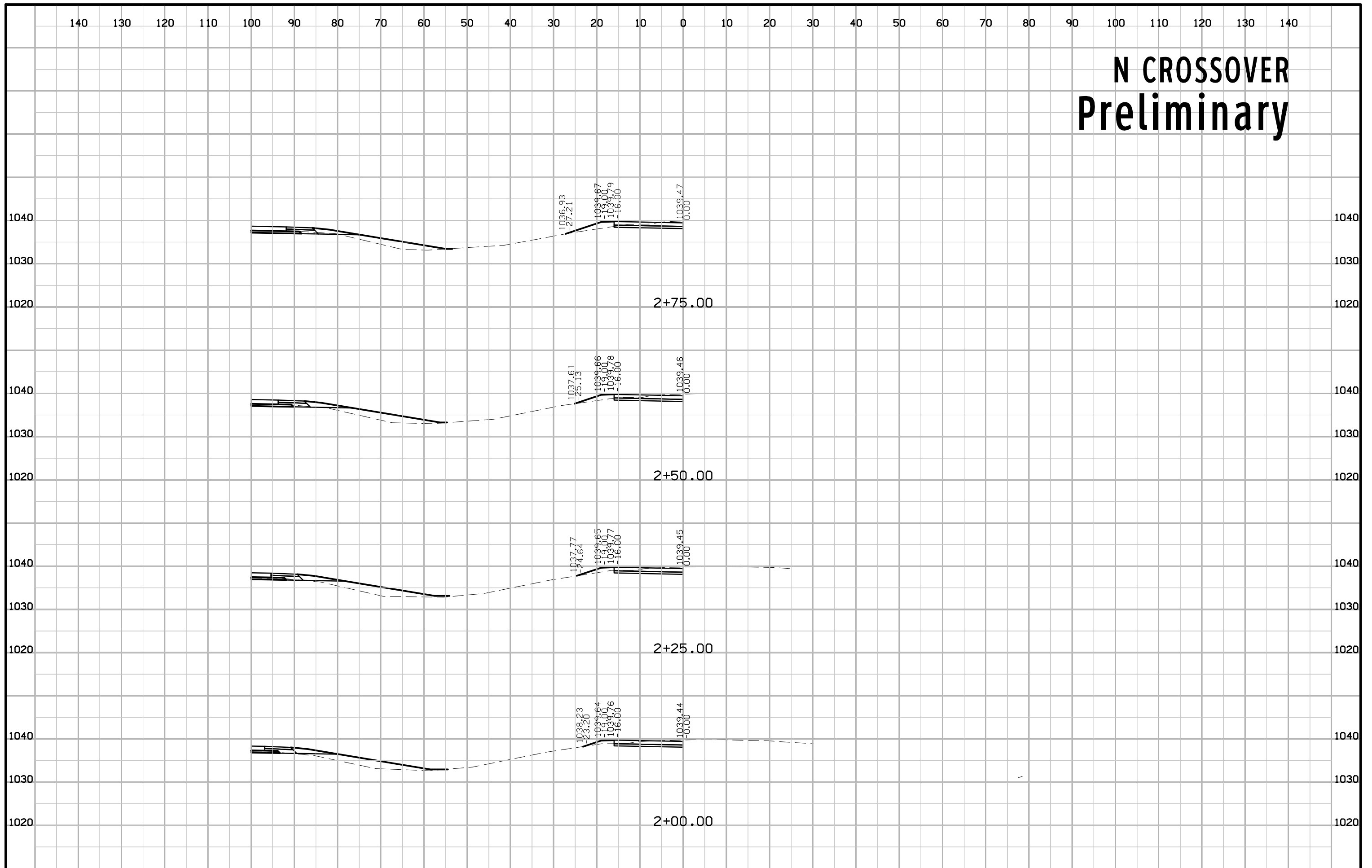
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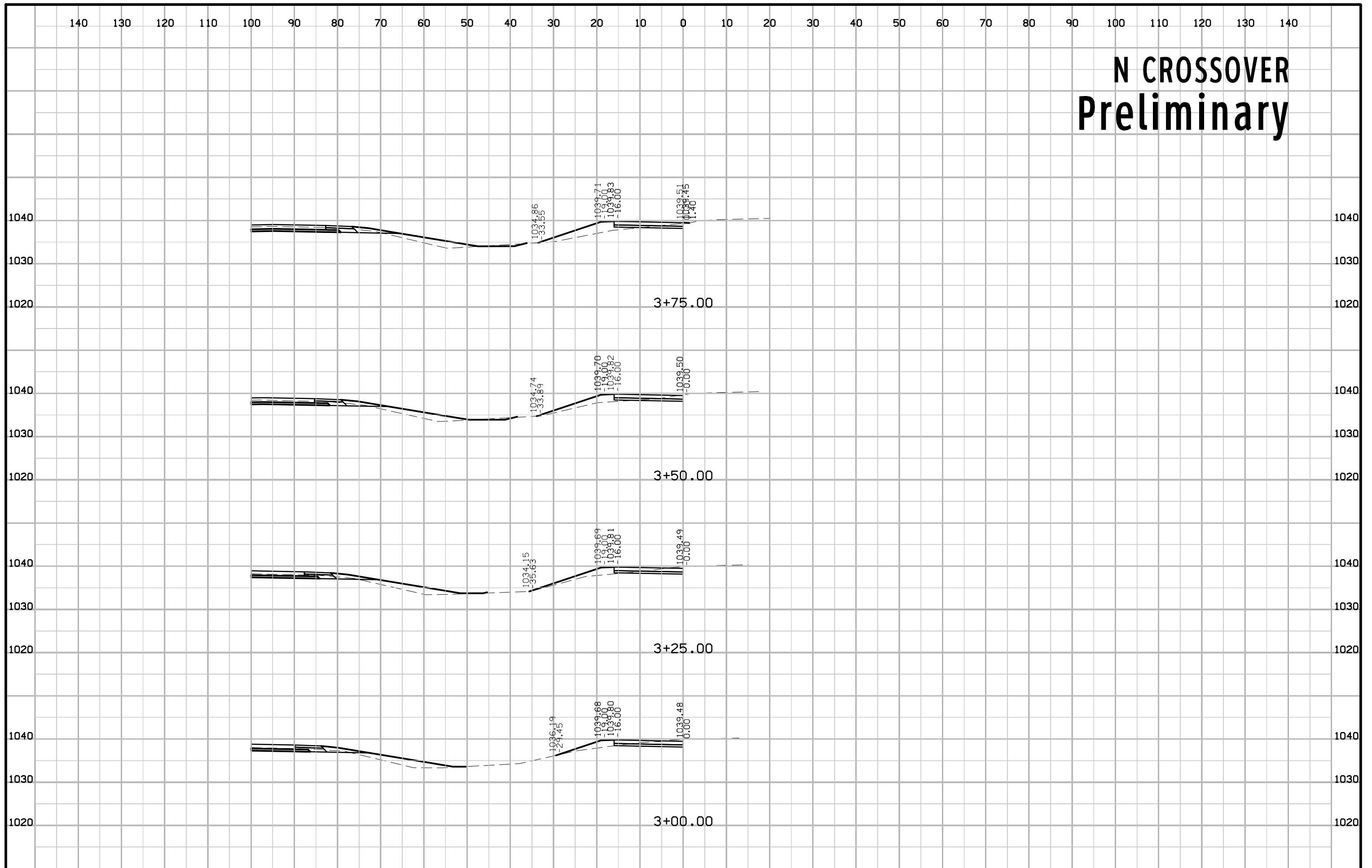
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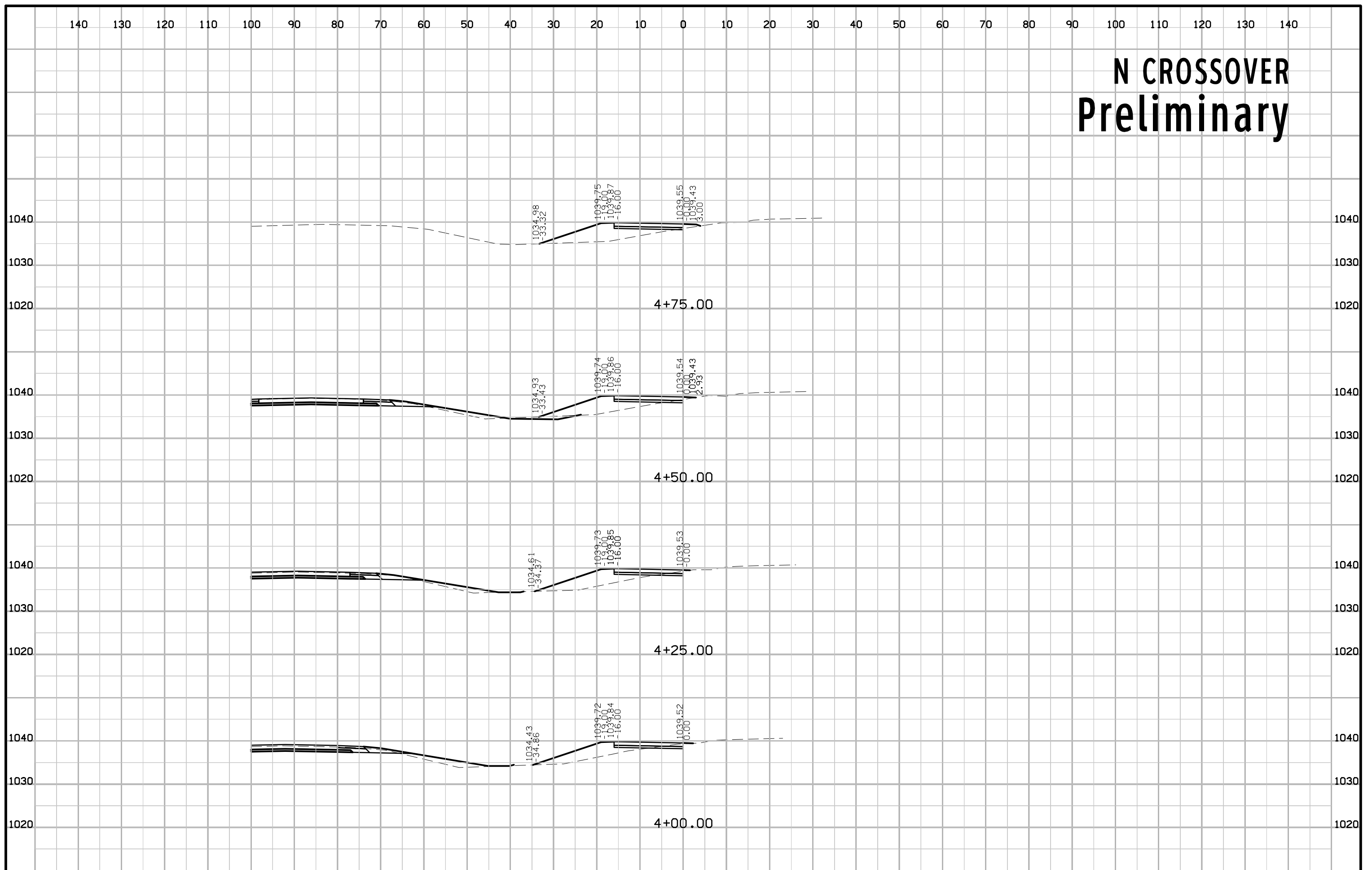
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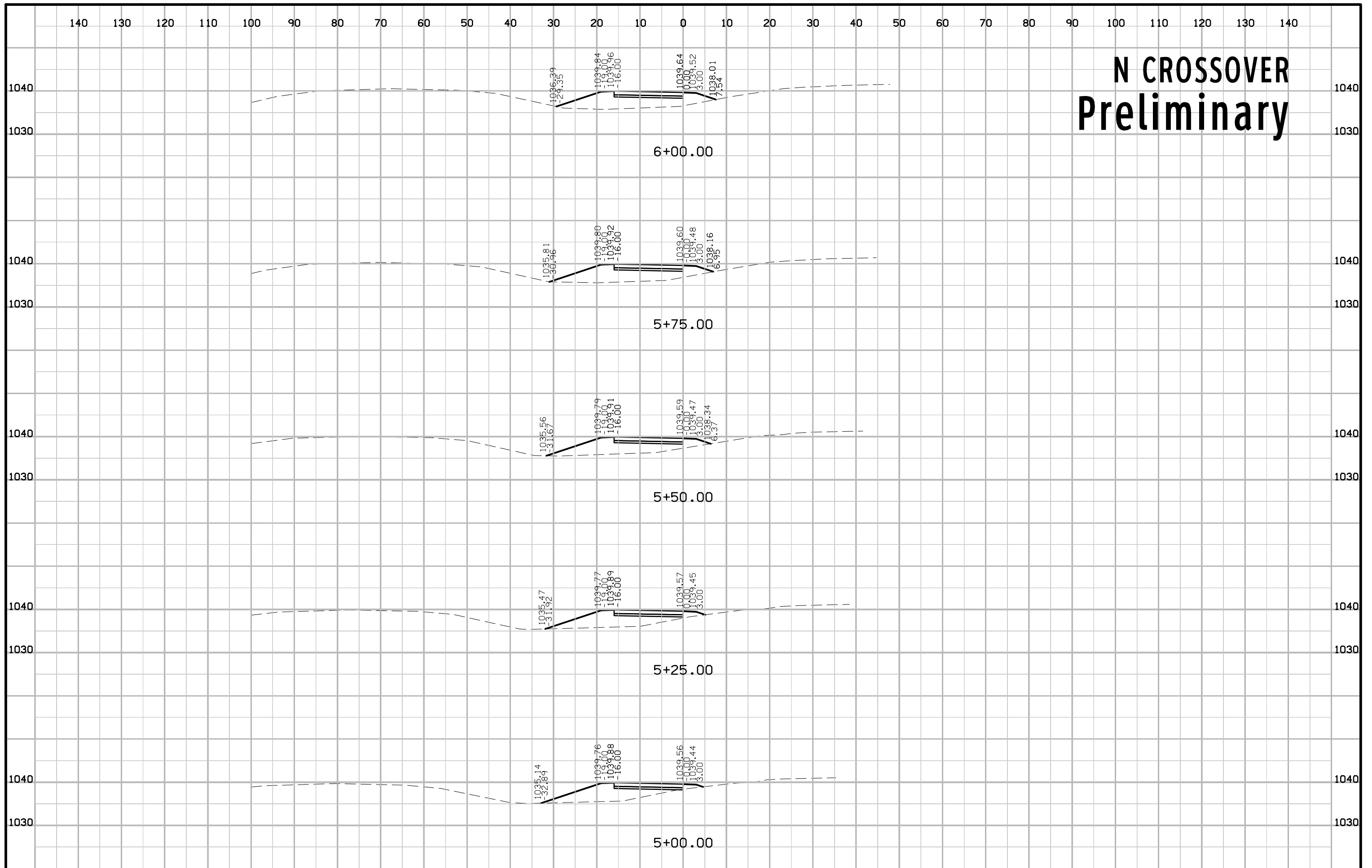
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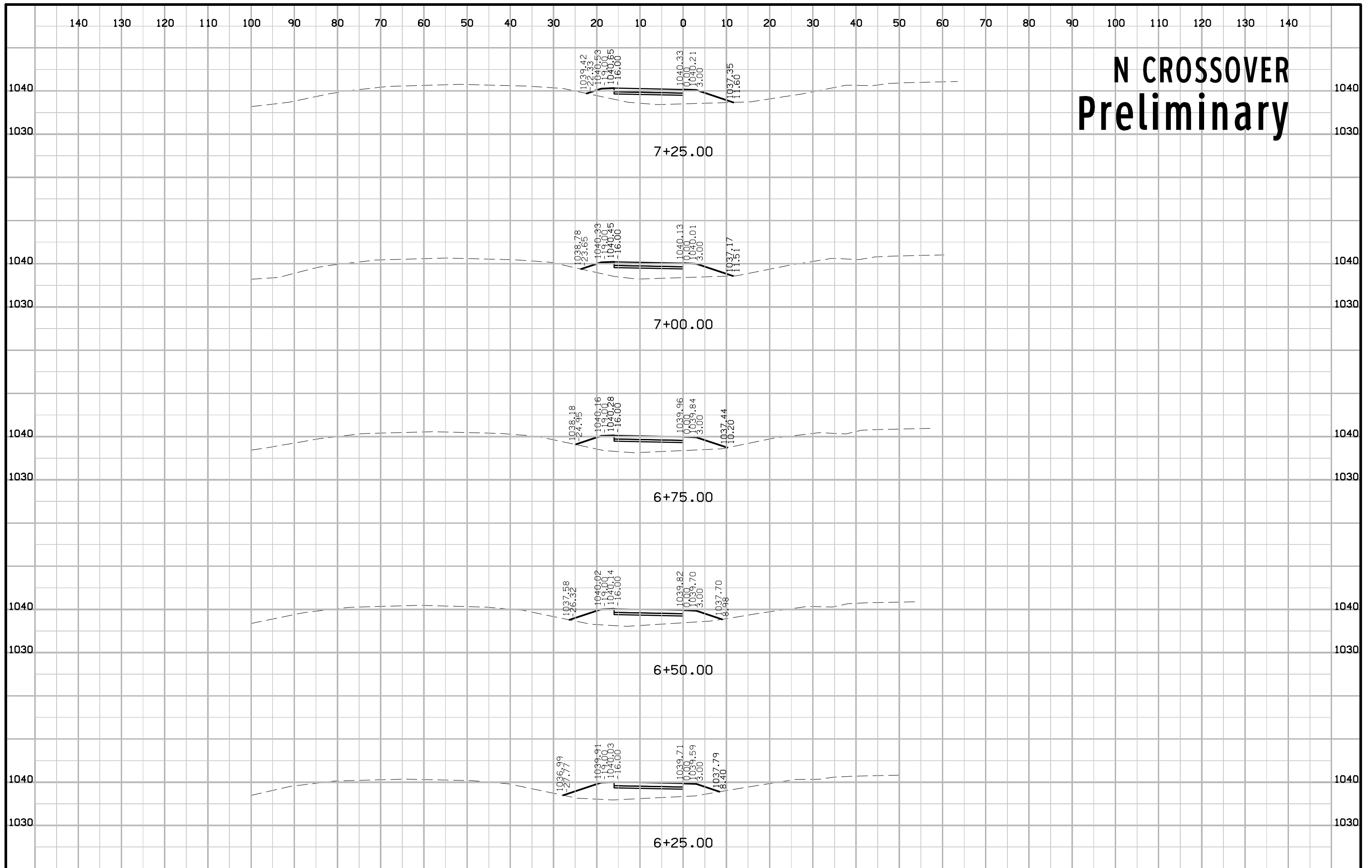
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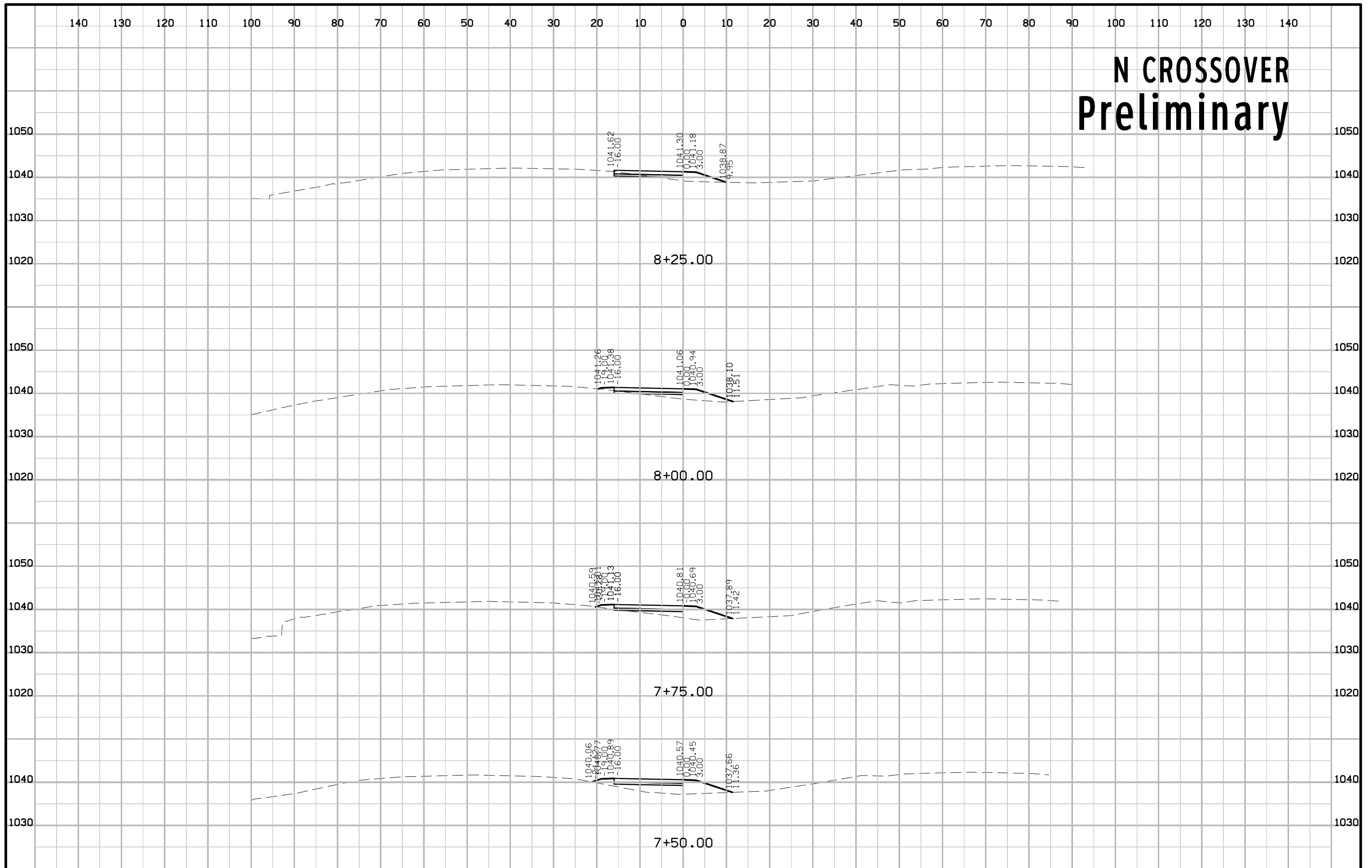
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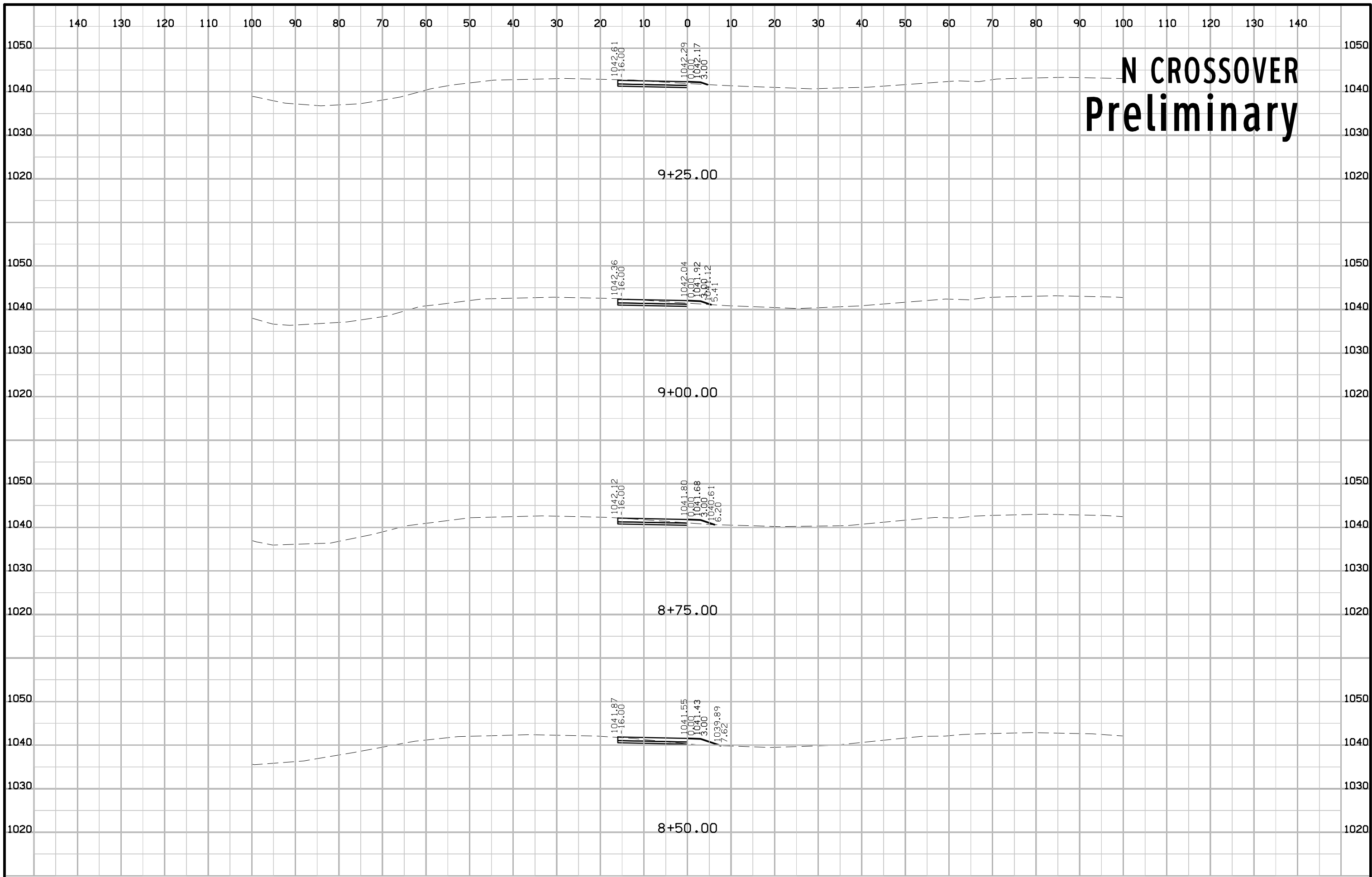


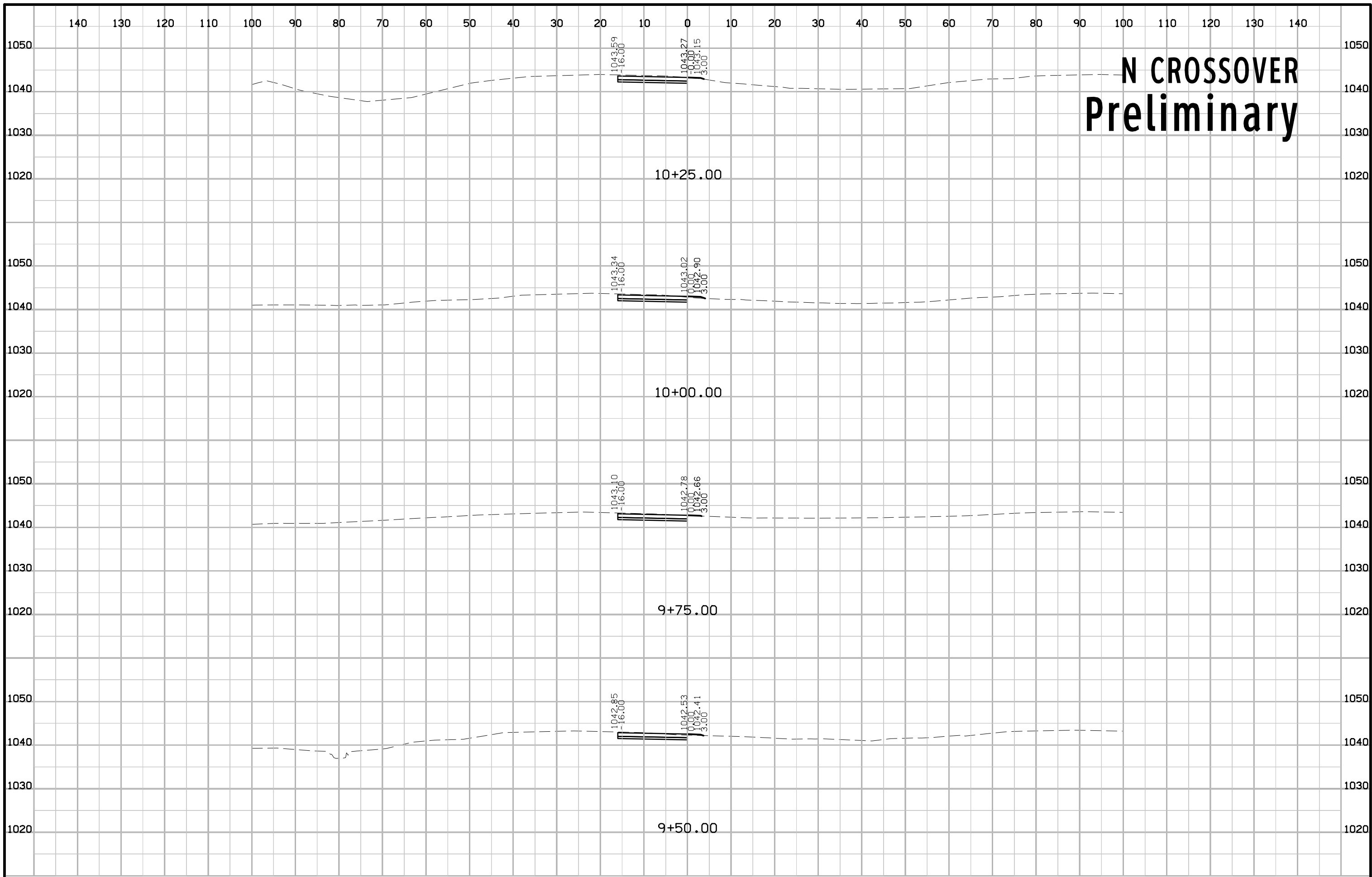
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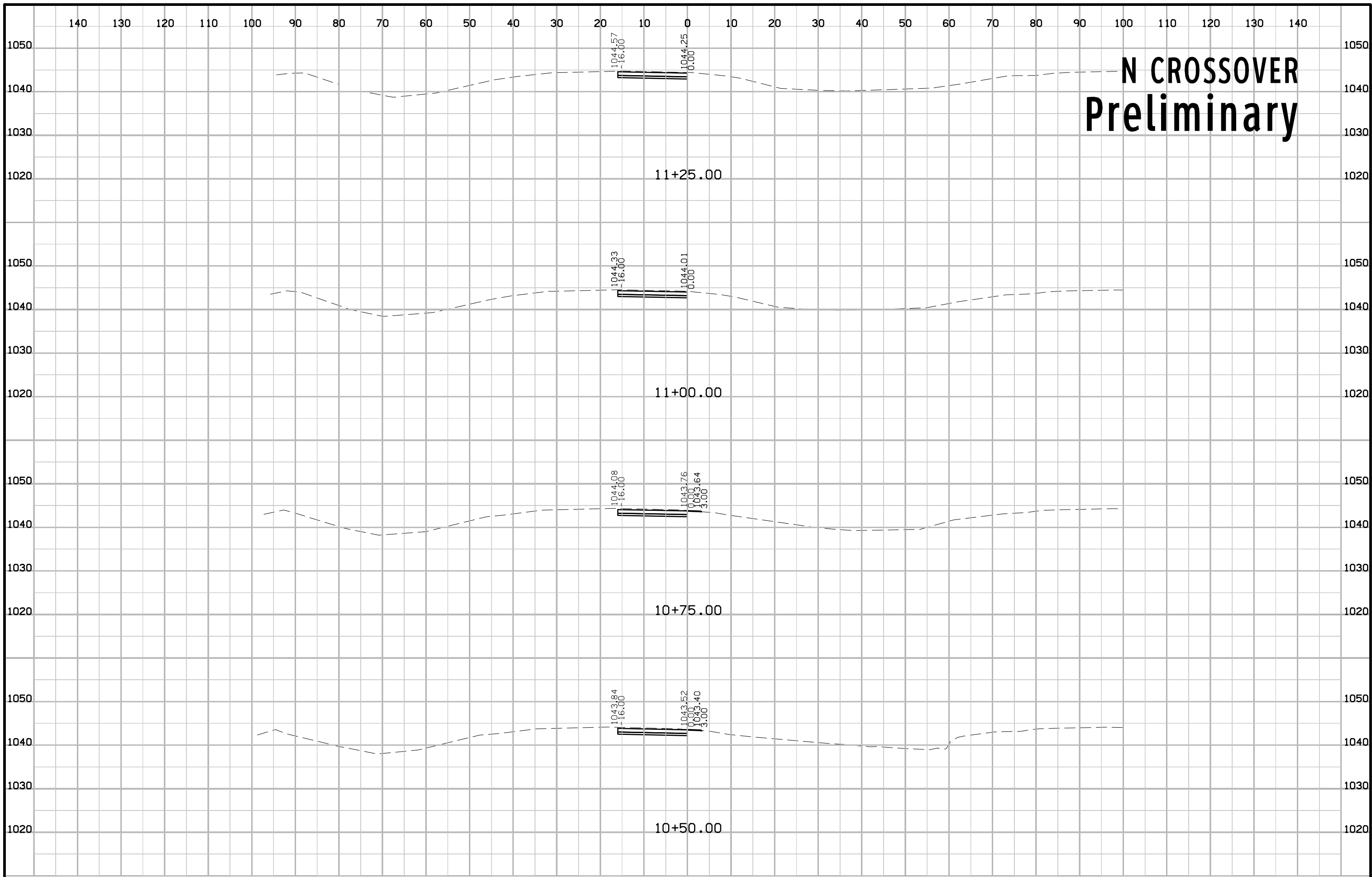


N CROSSOVER Preliminary









N CROSSOVER Preliminary

N CROSSOVER Preliminary

