

PRODUCTION SCHEDULE		
EVENT	Proposed Date	Completed Date
D-1 Survey	04-14-2014	01-14-2013
D-2 Field Exam	08-14-2014	09-24-2014
D-3 To Prelim. Culverts	09-15-2014	12-11-2014
B-1 Structures Layout	02-16-2015	02-18-2015
D-5 To Right of Way	03-06-2015	02-23-2015
D-4 Design Plans to Bridge	08-23-2016	



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
KOSSUTH COUNTY
BRIDGE AND APPROACHES - PPCB

Over Mud Creek 0.3 miles S. of Co. Rd. A-40

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.



REVISIONS

TOTAL

42

PROJECT IDENTIFICATION NUMBER

13-55-169-010

PROJECT NUMBER

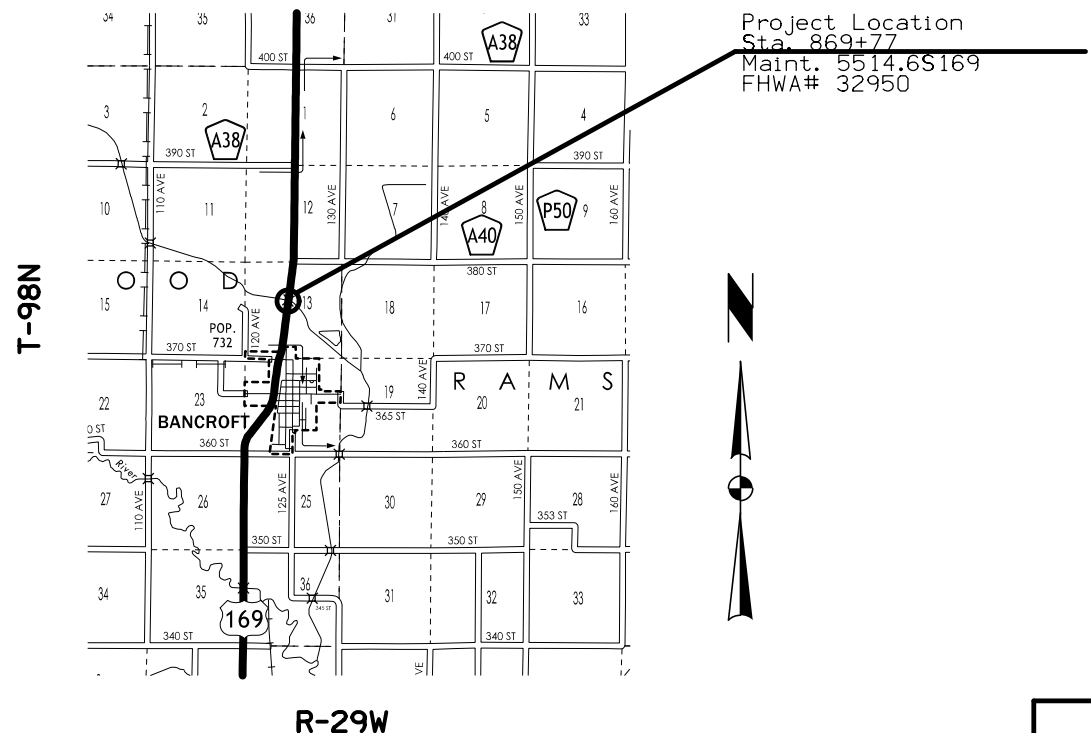
BRF-169-8(57)--38-55

R.O.W. PROJECT NUMBER

NHSN-169-8(58)--2R-55

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 3	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	US 169
G Sheets	Survey Sheets
G.1 - 2	Reference Ties and Bench Marks
G.3 - 4	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes Stage
J.1	511 Travel Restrictions
* J.2	Detour Map
V Sheets	Bridge and Culvert Situation Plans
V.1	D5 Preliminary Bridge TS&L
V.2	D5 Preliminary Bridge TS&L Site Plan
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 22	Mainline Cross Sections
X Sheets	Channel Cross Sections
X.1 - 6	Channel Cross Sections
	* Color Plan Sheets



Roadway Cut = 1956
 Embankment in Place = 2390
 Class 13 Channel = 3146

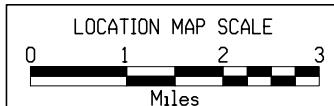
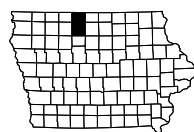
DESIGN DATA RURAL			
2017	AADT	1600	V.P.D.
2037	AADT	1700	V.P.D.
2037	DHV	176	V.P.H.
	TRUCKS	22	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Paul W. Flattery	Primary Signature Block
X	X	X

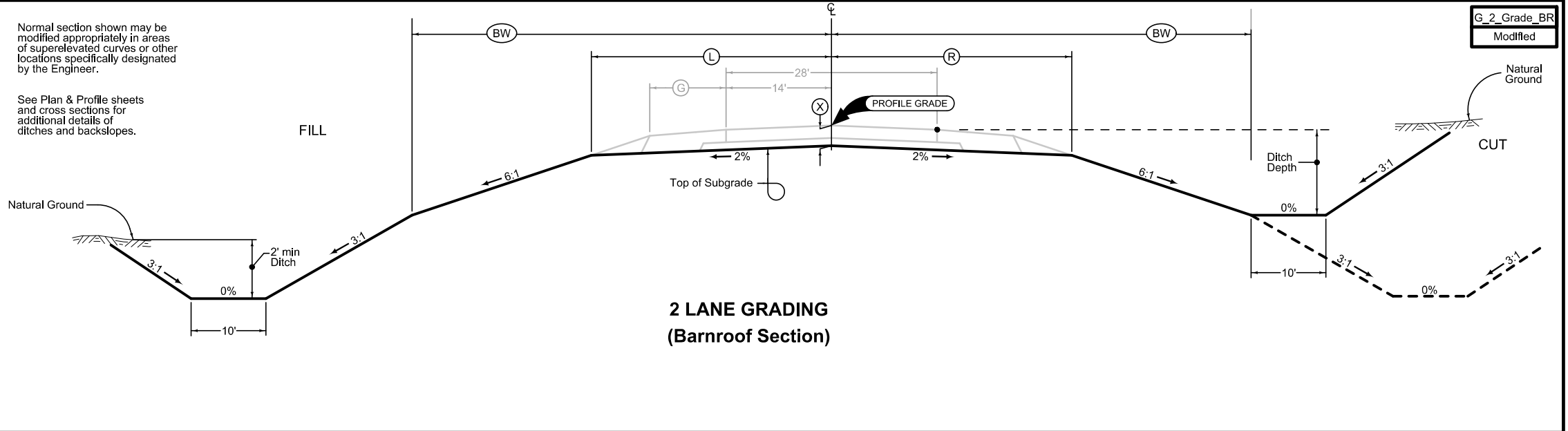
PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 2-23-2015



LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		L	R	X	BW
			Feet	Feet	Inches	Feet
US 169	862+50	874+00	33.41	33.41	22	42



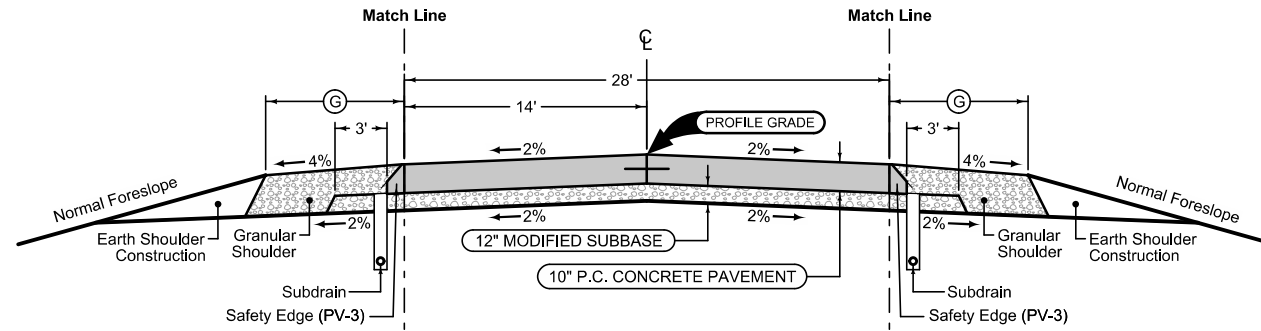
G_2_Grade_BR
Modified

Granular Shoulder with Safety Edge

2_G_		Feet
10-21-14		
STATION TO STATION		8
862+50.0	868+19.6	
871+61.4	874+00.0	8

Granular Shoulder with Safety Edge

2_G_		Feet
10-21-14		
STATION TO STATION		8
862+50.0	867+94.6	
971.36.4	874+00.0	8



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

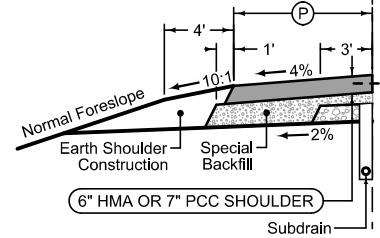
2P_	
10-19-10	
STATION TO STATION	
862+50.0	874+00.0

Paved Shoulder at Guardrail

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

2_P_Guard_		Feet
10-21-14		
STATION TO STATION		(1)
868+19.6	869+05.5	
870+70.5	871+61.4	(1)

(1) See Typ. 7156 and Tab. 112-9 for additional details.



Paved Shoulder at Guardrail

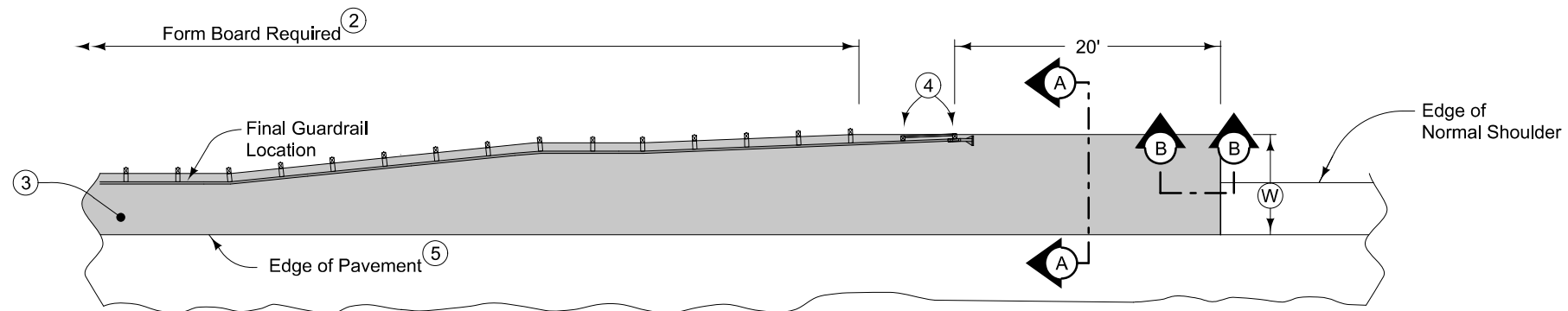
PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 20' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

2_P_Guard_		Feet
10-21-14		
STATION TO STATION		(1)
867+94.6	869+05.5	
871+36.4	871+61.4	(1)

(1) See Typ. 7156 and Tab. 112-9 for additional details.

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

ROADWAY IDENTIFICATION

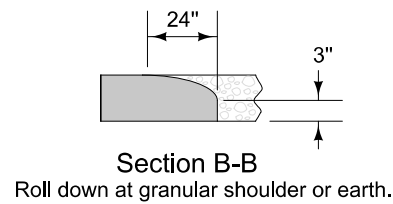
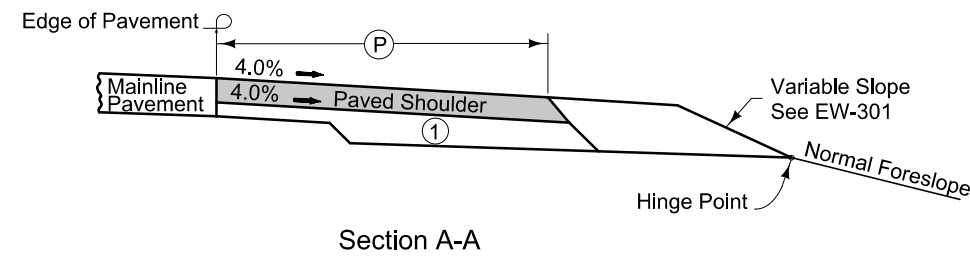
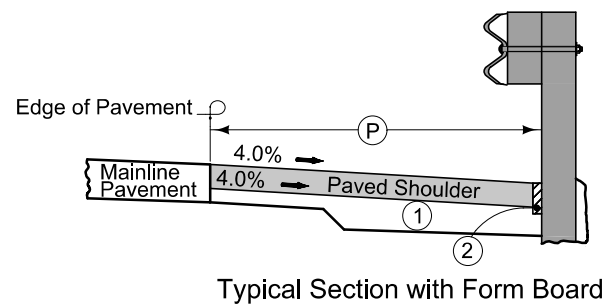


6" HMA Paved Shoulder at guardrail. 7" PCC may be substituted with the following jointing layout:

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

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

Refer to Shoulder tabulation (112-9) for quantities.



- ① 6" subgrade treatment.
- ② When guardrail posts are installed prior to construction of paved shoulder, nail 1" x 6" untreated form boards along the face of guardrail posts for the length shown. This board is to prevent shoulder material from contacting the sides of the posts and altering the function of the guardrail. Form board not required for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20' beyond the end of guardrail.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement.
- ⑤ 'KT-1' joint for PCC shoulder.
'B' joint for HMA shoulder.

PAVED SHOULDER AT GUARDRAIL

SURVEY SYMBOLS

- BRG Bridge
- x — FW Wire Fence
- PPA Power Pole Co. 1
- UB Utility Box
- LIN Miscellaneous Line
- GDL Guard Rail Steel
- SIGN SI Sign
- PIP Pipe Culvert
- T1le — TIL Tile Line
- OUT Tile Outlet
- EW Edge of Water
- DU Centerline Draw or Stream (Up)
- RIP Rip-Rap
- BNK Stream Bank
- CON Concrete or A/C Slab
- D Centerline Draw or Stream (Down)
- SP Stream Profile
- SNP Unpaved Shoulder
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- EP Edge of Paved Roads (ML or SR)
- FO — FOA Underground Fiber Optic Co. 1
- T1 — TLA Underground Telephone Line Co. 1
- BD Bridge Deck
- TW Top of Water
- BLS Bridge Low Steel
- BCL Bridge Centerline
- SBR Size of Bridge
- SOP Size of Pipe or Culvert

UTILITY LEGEND

This is a Non-Point 25 Project

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
- FO — Heartland Telecom Hickory Tech (QLD)
- T1 — Mediacom (QLD)
- City of Bancroft

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
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

CONVENTIONAL SIGNS

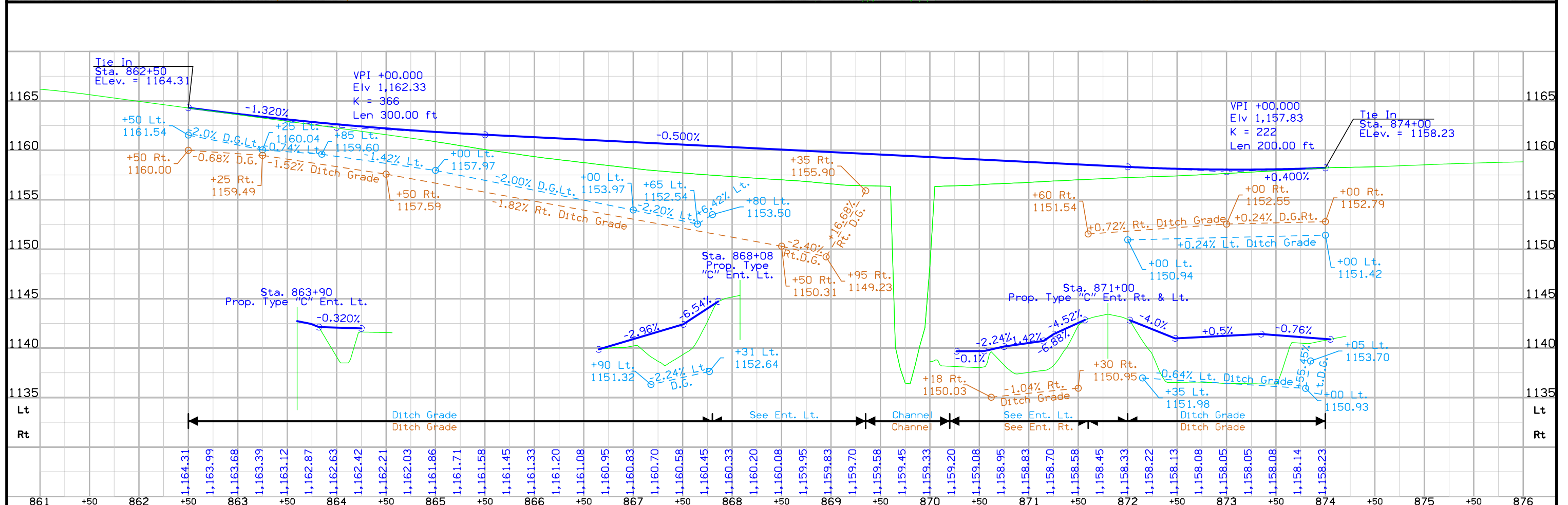
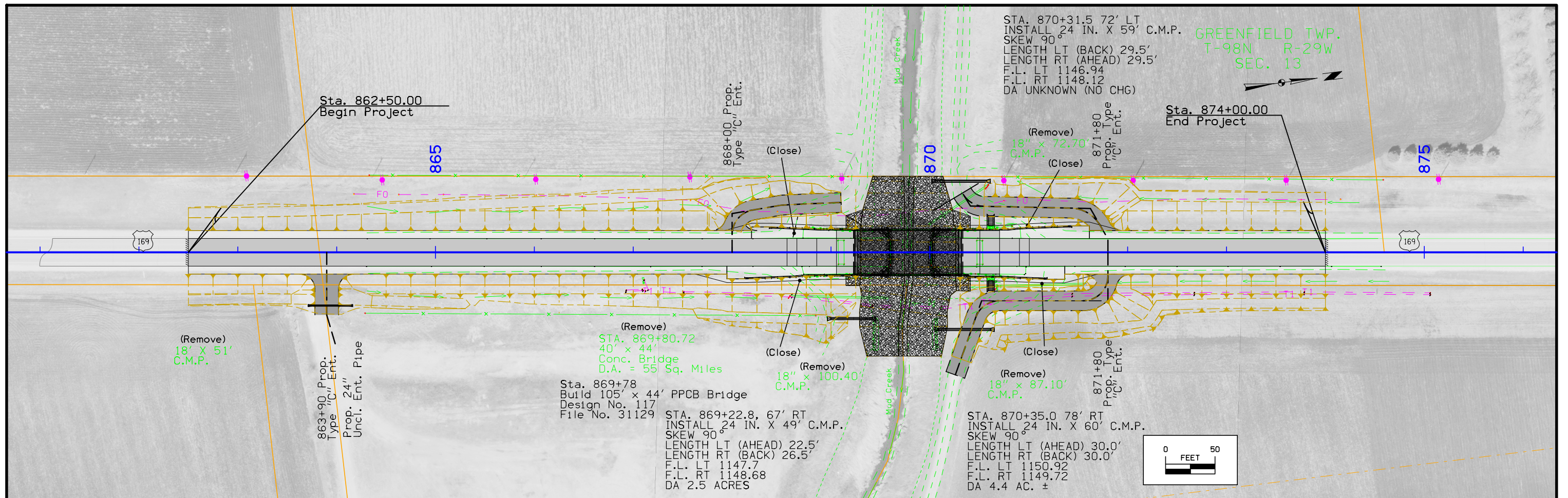
- Reference Point
- Station
- ▲ Section Corner
- Ground Line Intercept
- //// Saw Cut
- Guardrail
- ▨ Clearing & Grubbing Area
- ▩ Pavement Removal

RIGHT-OF-WAY LEGEND

- ▲ Proposed Right-of-Way
- ▲ Existing and Proposed Right-of-Way
- ▲ Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- X Excess
- A/C Access Control

**PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET**

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



Survey Information

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction along US Highway 169 over Mud Creek. Project datum and control information is provided by Design Survey Office. This project is a Full DTM without Photo control.

Vertical Control

Project ellipsoidal height was established at Pt. 1 by averaging a minimum of five la RTN RTK observations with 1 hour or greater time span between each observation. NAVD88 height was computed at Pt. 1 using Geoid 09. The relative network error of height observations was less than 0.02 ft. at 95% confidence level. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup at Pt. 1. A minimum of three observations were collected with 1 hour or greater time span between each observation. The local error of these observations relative to Pt. 1 was less than 0.01 ft. at 95% confidence level.

This survey observed 1 NGS Control Monument with published NAVD88 height to compare with observed survey height: Mark K1 is located 5.5 miles south of the project.
 NGS 1st. order class II mark designated K1 published height = 1152.30
 laRTN NAVD88 height computed using Geoid 09 = 1152.24
 The relative network error of the height observations was less than 0.02 ft. at 95% confidence level.

This survey also observed 1 Kossuth County Control Monument with published NAVD88 height to compare with observed survey height: Mark 528 is located 5.5 miles north of the project.
 Kossuth County Control mark GPS 528 published height = 1157.89
 laRTN NAVD88 height computed using Geoid 09 = 1157.89
 The relative network error of the height observations was less than 0.03 ft. at 95% confidence level

Horizontal Control

The project coordinate system is modified Iowa State Plane North Zone (U.S. Survey Feet) scaled around Pt. 1 at 3942468.178 N, 4730566.203 E, 1162.056 Height. Horizontal datum is NAD83(1996CORS) (Epoch 2002.00). Project coordinates were established at Pt. 1 by averaging a minimum of five la RTN RTK observations with 1 hour or greater time span between each observation. The relative network error of observations was less than 0.02 ft. at 95% confidence level. Additional control points were placed throughout the project using a GNSS Base-Rover setup at Pt. 1. A minimum of three observations were collected with 1 hour or greater time span between each observation. The local error of these observations relative to Pt. 1 was less than 0.02ft. at 95% confidence level.

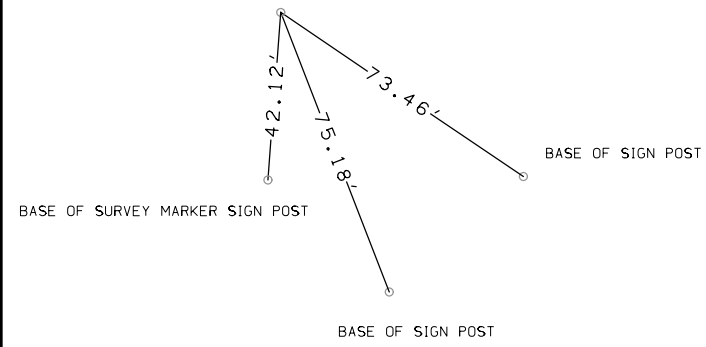
1/Combined Scale Factor of project (State plane grid modified to ground) = 1.00004225

The 1/Combined Scale Factor scaled at Pt. 1 will be used for GPS/GNSS stakeout and location survey in the Project Coordinate system. A scale factor of 1 will be used for total station stakeout and location survey in the Project Coordinate system.

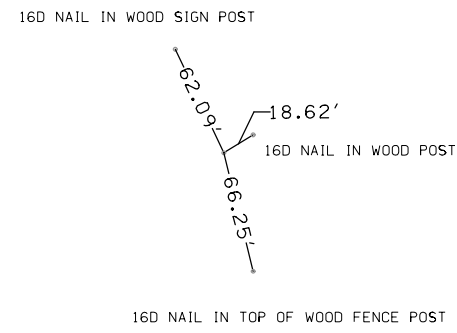
VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
1	3942468.178	4730566.203	1162.056	Off Chain	Off Chain	CP	SET FENO TYPE MONUMENT
500	3940226.151	4730249.052	1158.423	870+22.04	23.744	BM	FD CUT SQUARE NE SIDE BRIDGE WING

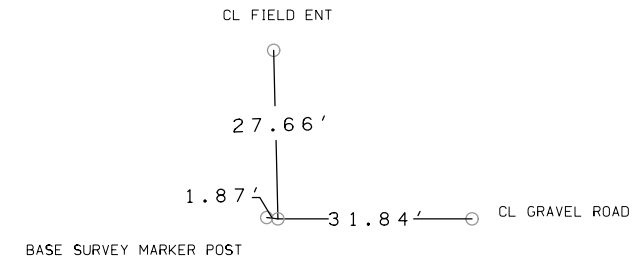
C.P. OFF CHAIN
 C.P. K1, FD NGS MONUMENT
 N= 3910833.121, E= 4728986.173



C.P. OFF CHAIN
 C.P. 1, SET FENO TYPE MONUMENT
 N= 3942468.178, E= 4730566.203



C.P. OFF CHAIN
 C.P. 528, FD COUNTY GPS MONUMENT
 N= 3970303.461, E= 4733394.683



ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
SUR169	Survey US169																		
100		859+79.00	3,939,194.94	4,730,090.58															
104		880+00.00	3,941,198.96	4,730,352.02															
US169	US169																		
BP1		849+79.00	3,938,203.35	4,729,961.21															
100		859+79.00	3,939,194.94	4,730,090.58															
104		880+00.00	3,941,198.96	4,730,352.02															
ENTR863	ENT@863+90 Rt.																		
ENT8631		400+00.00	3,939,602.49	4,730,143.74															
ENT8632		400+63.32	3,939,594.30	4,730,206.53															
ENT8633		400+96.14	3,939,599.35	4,730,238.96															
ENTL868	ENT@868+00 Lt.																		
ENT8680		100+00.00	3,940,009.05	4,730,196.78															
ENT8682								100+18.13	3,940,011.39	4,730,178.80	100+39.20	3,940,014.12	4,730,157.91	100+53.14	3,940,035.17	4,730,157.06			
ENT8683		100+57.44	3,940,039.46	4,730,156.88															
ENT8684								100+81.28	3,940,063.28	4,730,155.92	100+82.81	3,940,064.81	4,730,155.85	100+84.34	3,940,066.34	4,730,155.98			
ENT8685		101+07.84	3,940,089.75	4,730,157.90															
ENT8686		101+43.01	3,940,124.79	4,730,161.02															
ENTL871	ENT@871+80 Lt.																		
ENTL8710		300+00.00	3,940,385.85	4,730,245.94															
ENTL8711		300+13.57	3,940,387.61	4,730,232.49															
ENTL8712								300+29.37	3,940,381.54	4,730,217.89	300+49.12	3,940,373.97	4,730,199.66	300+65.33	3,940,354.44	4,730,196.71			
ENTL8713								301+53.12	3,940,267.63	4,730,183.62	301+66.94	3,940,253.97	4,730,181.56	301+78.36	3,940,248.45	4,730,168.89			
ENTL8714		301+79.73	3,940,247.90	4,730,167.65															
ENTR871	ENT@871+80 Rt.																		
ENTR8711		200+00.00	3,940,385.85	4,730,245.94															
ENTR8712								200+24.00	3,940,382.75	4,730,269.74	200+49.00	3,940,379.51	4,730,294.53	200+63.27	3,940,354.72	4,730,291.30			
ENTR8713								201+48.27	3,940,270.43	4,730,280.30	201+65.93	3,940,252.92	4,730,278.01	201+79.02	3,940,244.92	4,730,293.75			
ENTR8714		202+40.94	3,940,216.85	4,730,348.94															
CHANNEL	D.D. Channel																		
CHAN1		500+00.00	3,940,193.61	4,730,160.35															
CHAN2		500+86.58	3,940,182.11	4,730,246.17															
CHAN3		501+35.33	3,940,170.26	4,730,293.45															
CHAN4		501+65.34	3,940,167.39	4,730,323.33															

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

Name	Location	Δ_{scs}	Horizontal Alignment Data													Remarks		
			Spiral Data						Curve Data									
			θ_s	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ_c	T	L	R	E			
ENTL868	ENT@868+00 Lt.																	
ENT8682											80° 14' 26.23" RT	21.07'	35.01'	25.00'	7.69'			
ENT8684											7° 00' 40.65" RT	1.53'	3.06'	25.00'	0.05'			
ENTL871	ENT@871+80 Lt.																	
ENTL8712											58° 51' 15.25" LT	19.74'	35.95'	35.00'	5.18'			
ENTL8713											57° 51' 23.33" RT	13.82'	25.24'	25.00'	3.56'			
ENTR871	ENT@871+80 Rt.																	
ENTR8712											90° 00' 00.00" RT	25.00'	39.27'	25.00'	10.36'			
ENTR8713											70° 28' 21.05" LT	17.66'	30.75'	25.00'	5.61'			

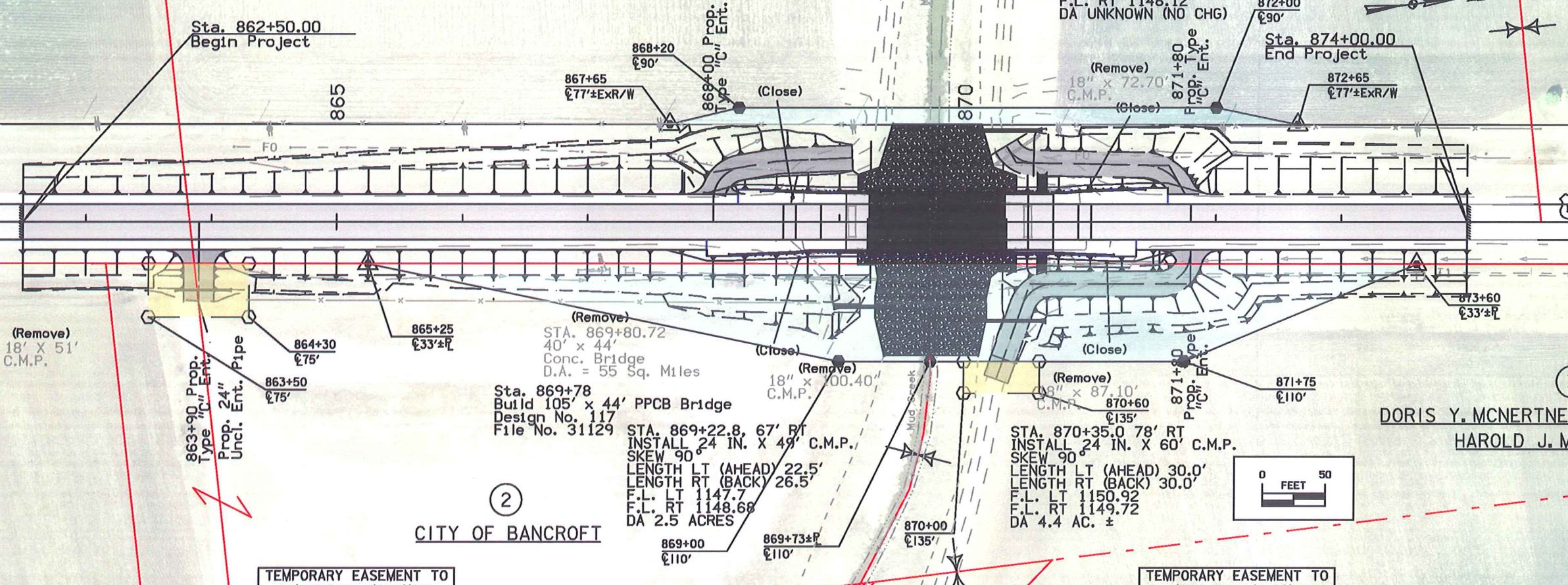
①
 THOMAS J. & JUDITH M.
 GOCHE

2/2014

STA. 870+31.5 72' LT
 INSTALL 24 IN. X 59' C.M.P. GREENFIELD TWP.
 SKEW 90 T-98N R-29W
 LENGTH LT (BACK) 29.5' SEC. 13
 LENGTH RT (AHEAD) 29.5'
 F.L. LT 1146.94
 F.L. RT 1148.12
 DA UNKNOWN (NO CHG)

Sta. 862+50.00
 Begin Project

Sta. 874+00.00
 End Project



(Remove)
 18' X 51'
 C.M.P.

(Remove)
 STA. 869+80.72
 40' x 44'
 Conc. Bridge
 D.A. = 55 Sq. Miles

Sta. 869+78
 Build 105' x 44' PPCB Bridge
 Design No. 117
 File No. 31129

STA. 869+22.8 67' RT
 INSTALL 24 IN. X 49' C.M.P.,
 SKEW 90
 LENGTH LT (AHEAD) 22.5'
 LENGTH RT (BACK) 26.5'
 F.L. LT 1147.7
 F.L. RT 1148.68
 DA 2.5 ACRES

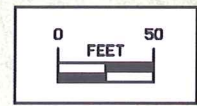
STA. 870+35.0 78' RT
 INSTALL 24 IN. X 60' C.M.P.
 SKEW 90
 LENGTH LT (AHEAD) 30.0'
 LENGTH RT (BACK) 30.0'
 F.L. LT 1150.92
 F.L. RT 1149.72
 DA 4.4 AC. ±

③
 DORIS Y. MCNERTNEY REV LIVING TRUST
 HAROLD J. MCNERTNEY, LE

②
 CITY OF BANCROFT

TEMPORARY EASEMENT TO
 CONSTRUCT ENTRANCE

TEMPORARY EASEMENT TO
 CONSTRUCT ENTRANCE



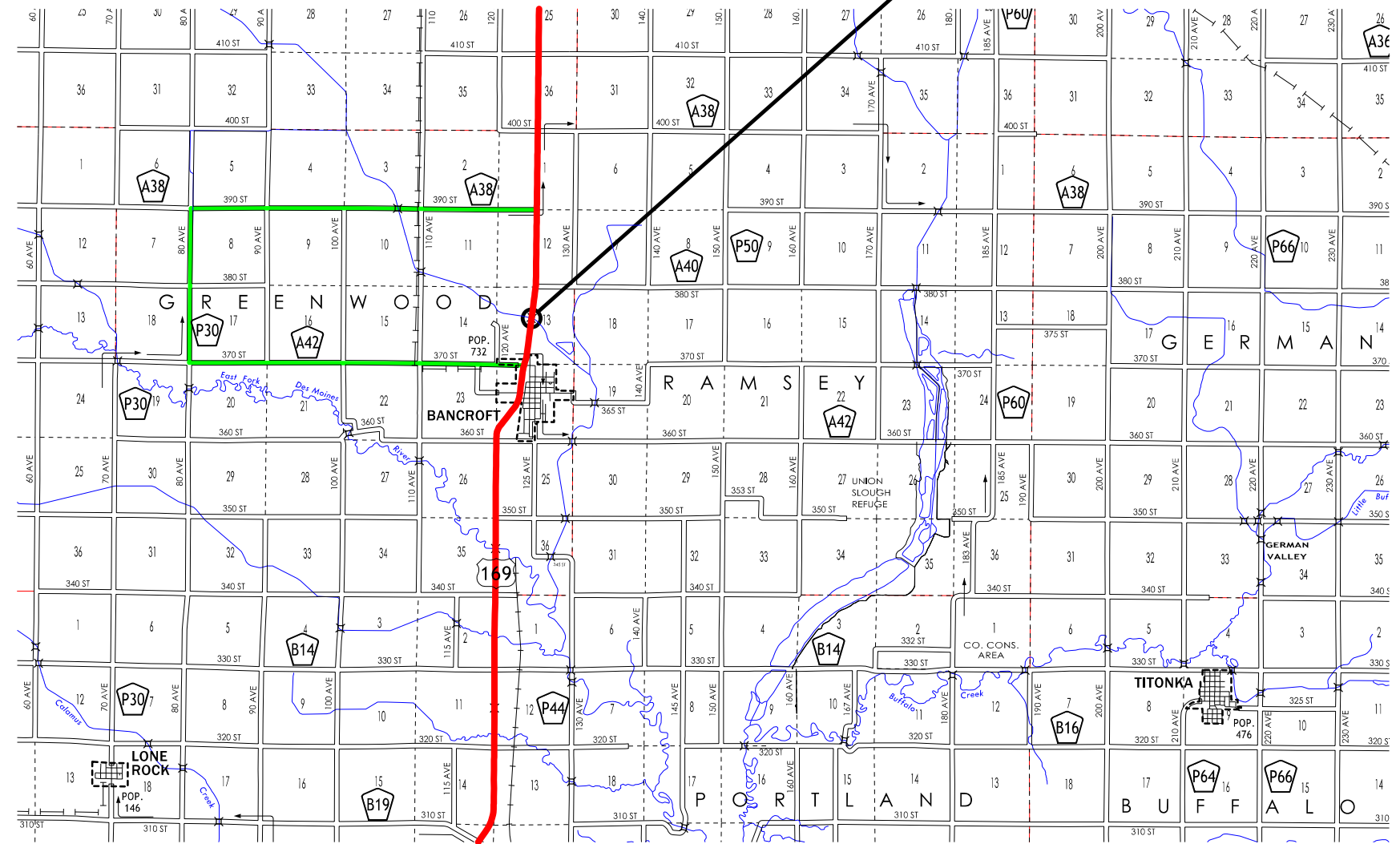
Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Cuva /Dumdei/Gogerty
 ROW #: NHSN-169-8(58)--2R-55
 Plan Date: 3/4/15

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

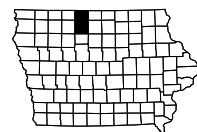
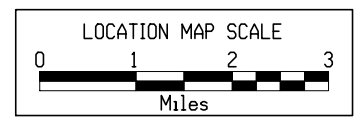
Project Location
 Sta. 869+77
 Maint. 5514.6S169
 FHWA# 32950

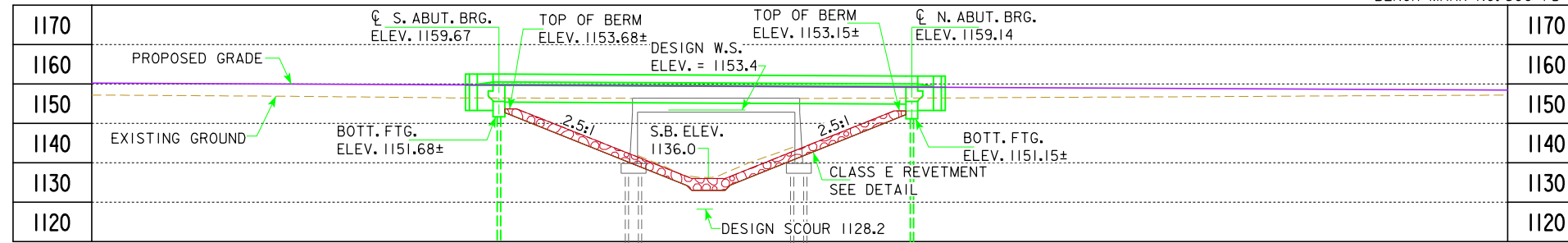
T-98N



R-29W

Detour Route ———





LONGITUDINAL SECTION ALONG CL APPROACH ROADWAY

- NOTES:
1. TOP OF BRIDGE DECK CROWN '0.03' BELOW PROFILE GRADE.
 2. TL-4 BRIDGE RAILING PROPOSED.
 3. BERM, BANK AND CHANNEL LINING WITH CLASS E REVETMENT UNDERLAIN WITH ENGINEERING FABRIC.

G = -0.5000%

VPT STA = 865+50.000 VPC STA = 872+00.000
 VPT ELEV = 1161.577 VPC ELEV = 1158.327

PROPOSED PROFILE GRADE U.S. 169

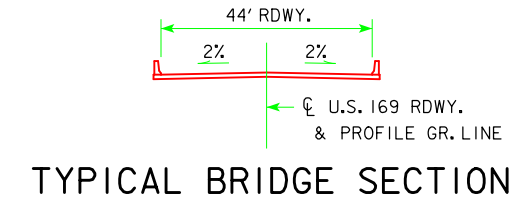
HYDRAULIC DATA

DRAINAGE AREA = 54 SQ. MI.
 STREAM SLOPE = 3.6 FT./MI.
 AVG. LOW WATER STAGE = 1136.7

Q₅₀ = 3120 CFS
 STAGE = 1153.4
 BACKWATER = 0.04 FT.
 AVG. BRIDGE VELOCITY = 3.5 FPS

Q₁₀₀ = 3740 CFS
 STAGE = 1154.8
 BACKWATER = 0.04 FT.

Q₂₀₀ = 4420 CFS
 STAGE = 1155.7
 CALCULATED DESIGN SCOUR = 1128.2*



TYPICAL BRIDGE SECTION

Q₅₀₀ = 5330 CFS
 STAGE = 1156.6
 CALCULATED CHECK SCOUR = 1119.1*

ROADWAY OVERTOP 1158.05
 STA. 873+11.11

* TO BE CONFIRMED AFTER SOIL BORINGS ARE COMPLETE. VERY FIRM SANDY GLACIAL CLAY LAYER AT ELEVATION 1134.0±.

TRAFFIC ESTIMATE

2017 AADT	1600	V.P.D.
2037 AADT	1700	V.P.D.
2037 DHV	176	V.P.H.
TRUCKS	22	%
TOTAL DESIGN ESALs		

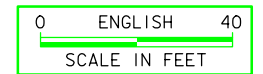
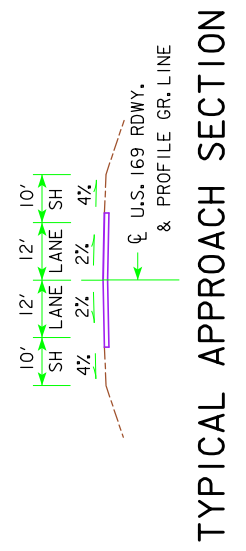
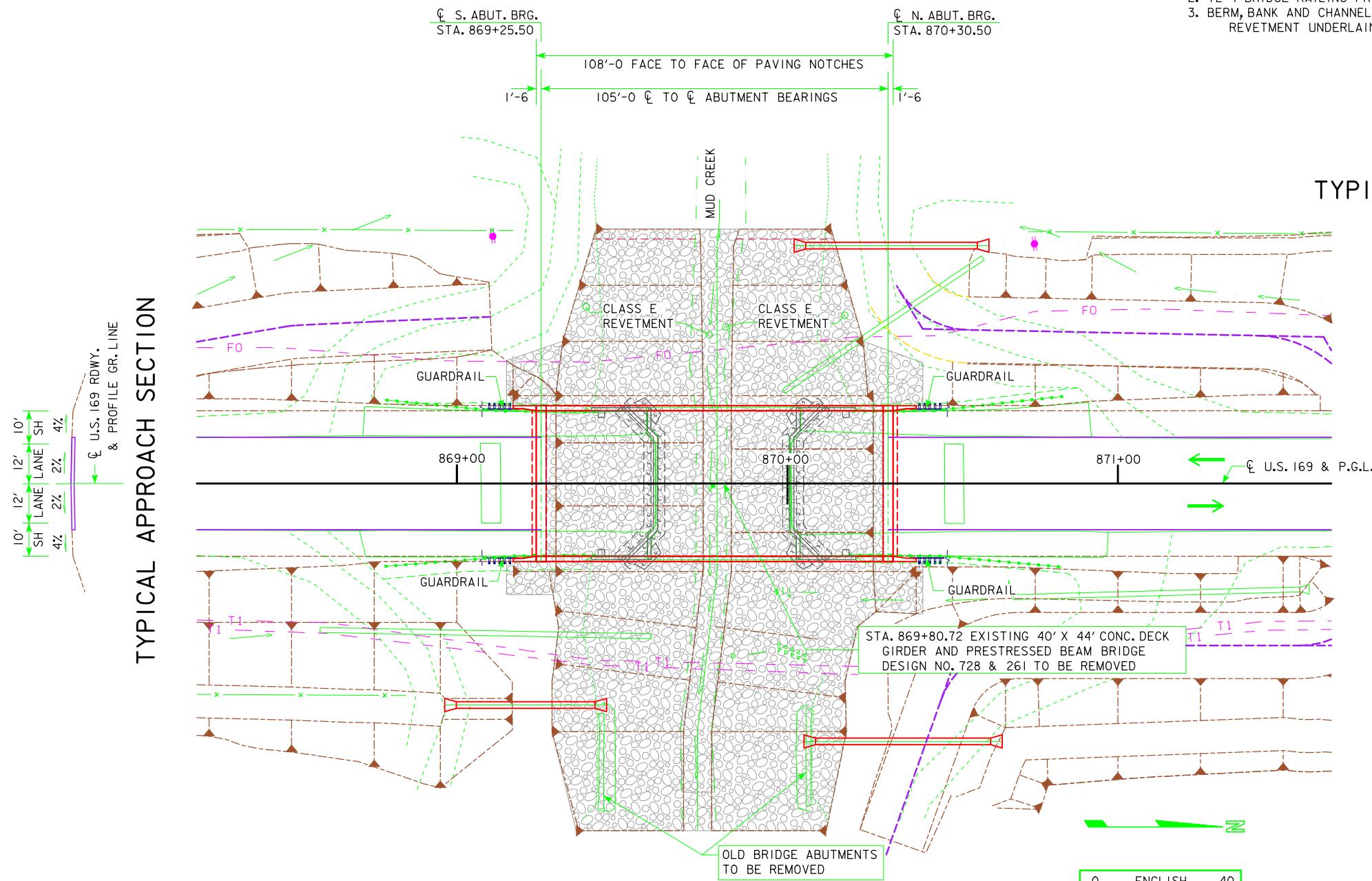
LOCATION

U.S. 169 OVER MUD CREEK
 T-98N R-29W
 SECTION 13
 GREENWOOD TOWNSHIP
 KOSSUTH COUNTY
 BRIDGE MAINT. NO. 5514.6S169
 FHWA NO. 32951
 LATITUDE 43.307007°
 LONGITUDE -94.217658°

PRELIMINARY

DESIGN FOR 0° SKEW
105'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 105'-0 SPAN (BTB BEAM)

SITUATION PLAN
 STATION 869+78.0 FEBRUARY 2015
KOSSUTH COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 2 FILE NO. 31129 DESIGN NO. 117



UTILITIES LEGEND:

- FO - BURIED FIBER OPTIC LINE MEDIACOM
- TI - BURIED TELEPHONE LINE - ENVENTIS
- PP - POWER POLE - CITY OF BANCROFT

SITUATION PLAN

BERM SLOPE LOCATION TABLE

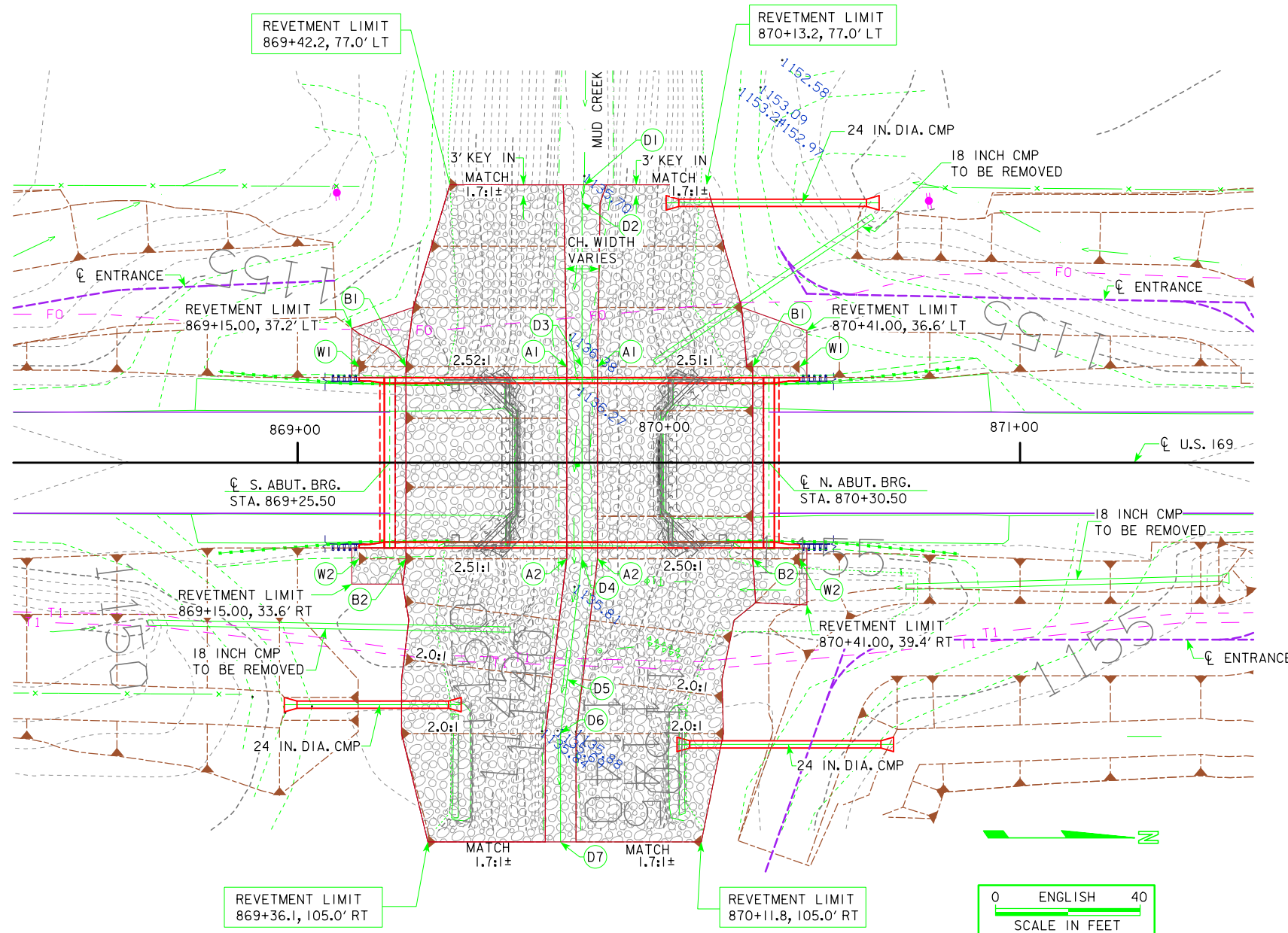
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	869+74.50	26.58' LT	1136.02	869+83.00	26.58' LT	1136.02
A2	869+74.50	26.58' RT	1135.98	869+83.00	26.58' RT	1135.98
B1	869+30.00	26.58' LT	1153.68	870+26.00	26.58' LT	1153.15
B2	869+30.00	26.58' RT	1153.68	870+26.00	26.58' RT	1153.15
W1	869+17.00	26.58' LT	1159.15	870+39.00	26.58' LT	1158.54
W2	869+17.00	26.58' RT	1159.15	870+39.00	26.58' RT	1158.54

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

ESTIMATED BERM ARMORING QUANTITIES

LOCATION	REVETMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM AND BANK LINING - SOUTH	1050.7	0.0	1005.8	668.2
BERM AND BANK LINING - NORTH	1035.7	0.0	991.5	658.8
CHANNEL LINING	283.9	0.0	177.5	177.4
TOTALS	2370.3	0.0	2174.8	1504.4

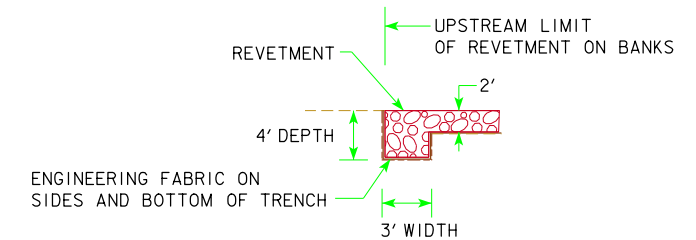
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES INCLUDE WING ARMORING



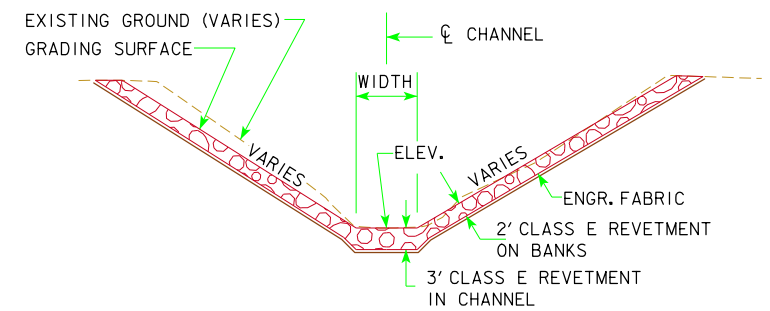
SITE PLAN

GRADING CONTROL POINTS AT CHANNEL-

- D1: 869+79.50, 77.00' LT, 1136.05, CH. WIDTH = 12.0'
- D2: 869+78.75, 72.00' LT, ELEV. 1136.05, CH. WIDTH = 10.0'
- D3: 869+78.75, 26.58' LT, ELEV. = 1136.02, CH. WIDTH = 8.5'
- D4: 869+78.75, 26.58' RT, ELEV. = 1135.98, CH. WIDTH = 8.5'
- D5: 869+74.65, 60.00' RT, ELEV. = 1135.73, CH. WIDTH = 8.5'
- D6: 869+72.81, 75.00' RT, ELEV. = 1135.62, CH. WIDTH = 8.5'
- D7: 869+72.81, 105.00' RT, ELEV. = 1135.40, CH. WIDTH = 8.5'



SECTION THROUGH KEY-IN TRENCH



TYPICAL SECTION THROUGH EMBEDDED REVETMENT

PRELIMINARY
 DESIGN FOR 0° SKEW
105'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 105'-0 SPAN (BTB BEAM)
SITUATION PLAN - SITE
 STATION 869+78.0 FEBRUARY 2015
KOSSUTH COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 2 FILE NO. 31129 DESIGN NO. 117

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)
- TS A——— Topsoil (Type A Disposal)
- TS B——— Topsoil (Type B Disposal)
- TS C——— Topsoil (Type C Disposal)
- 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.

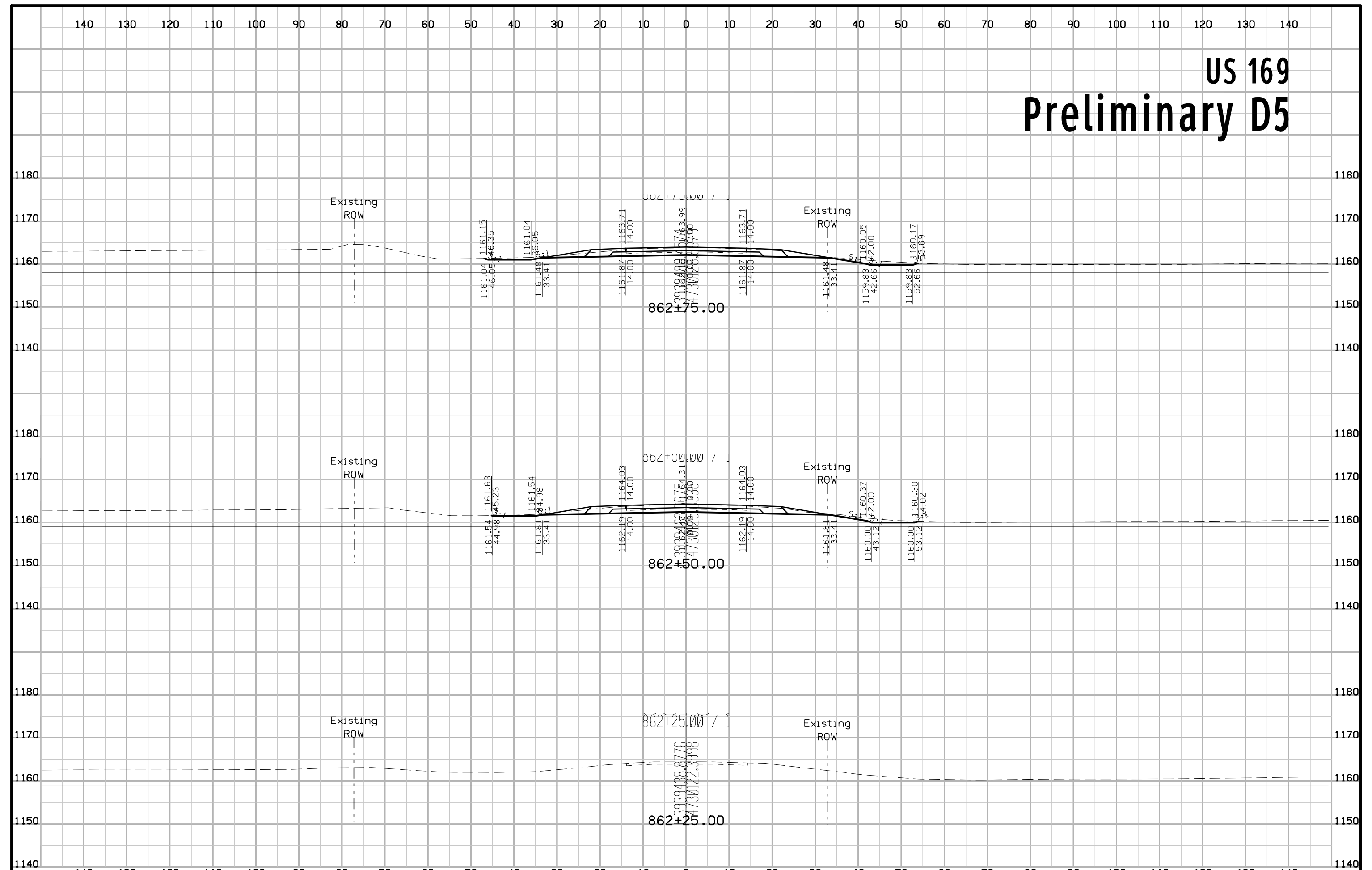
Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

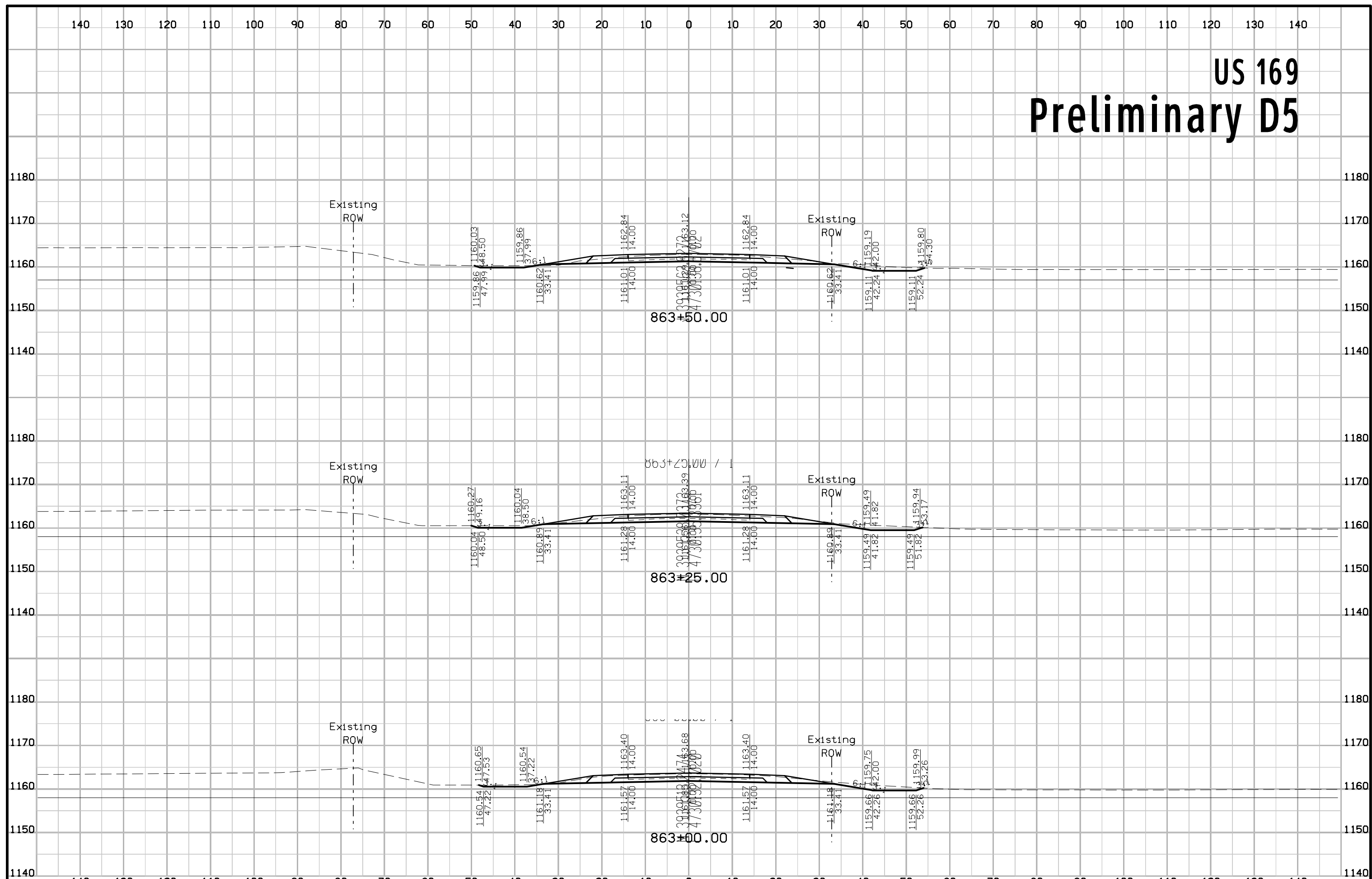
- Existing ROW
|
Existing Right-of-Way Limit
- Proposed ROW
|
Proposed Right-of-Way Limit
- Temporary ROW
|
Temporary Right-of-Way Limit

**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET
(COVERS SHEET SERIES W, X, Y, & Z)**

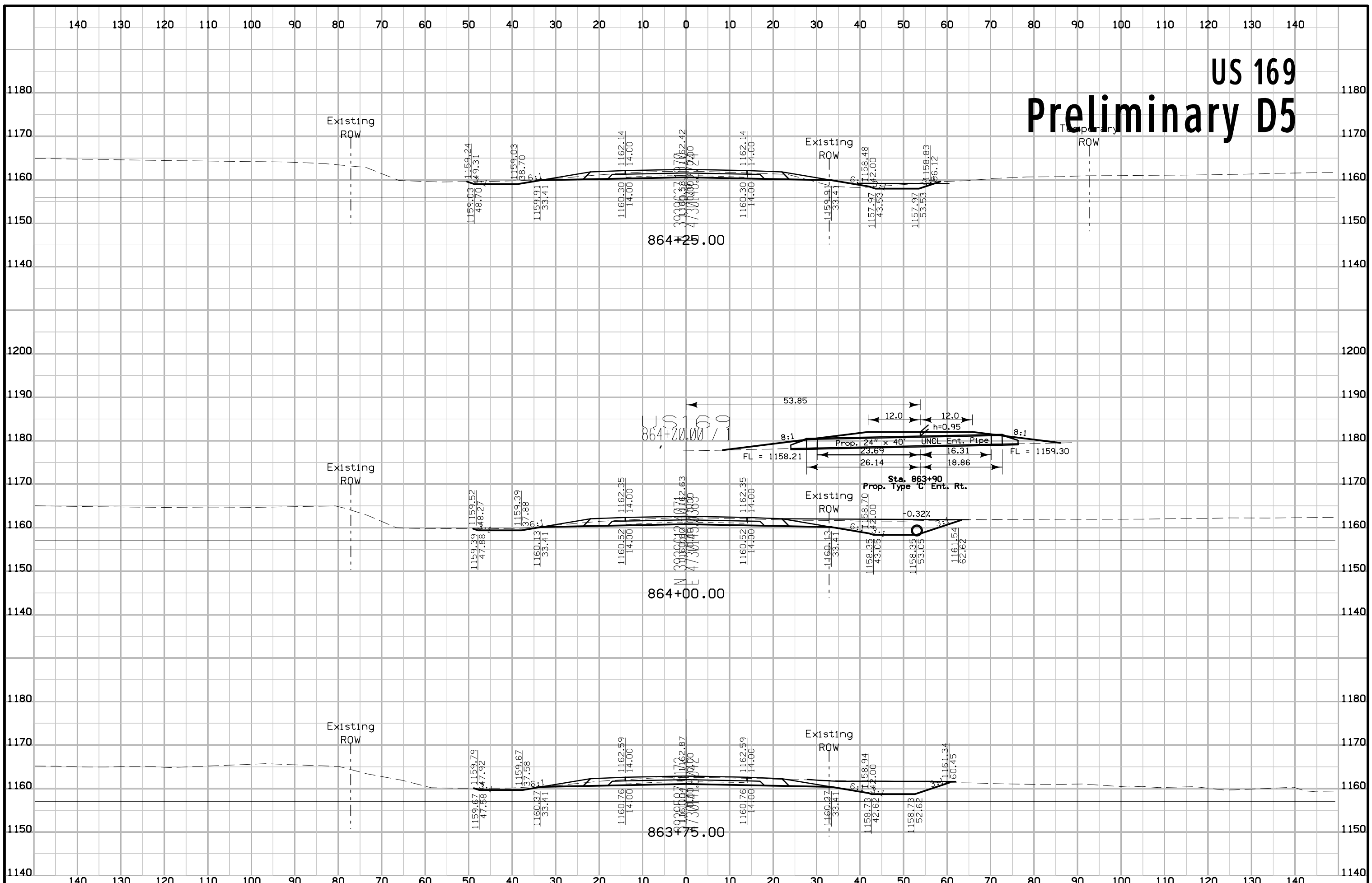
US 169 Preliminary D5



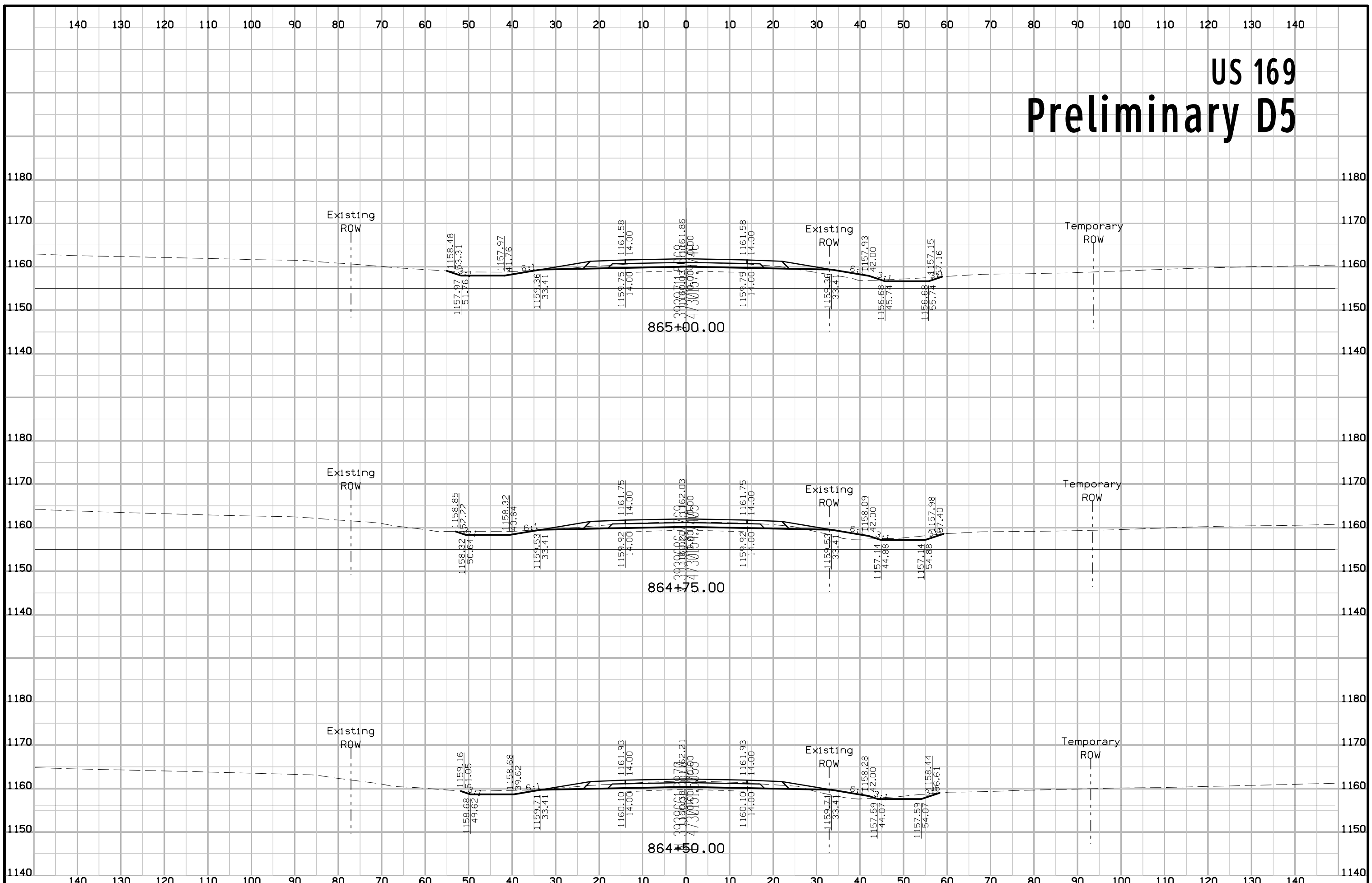
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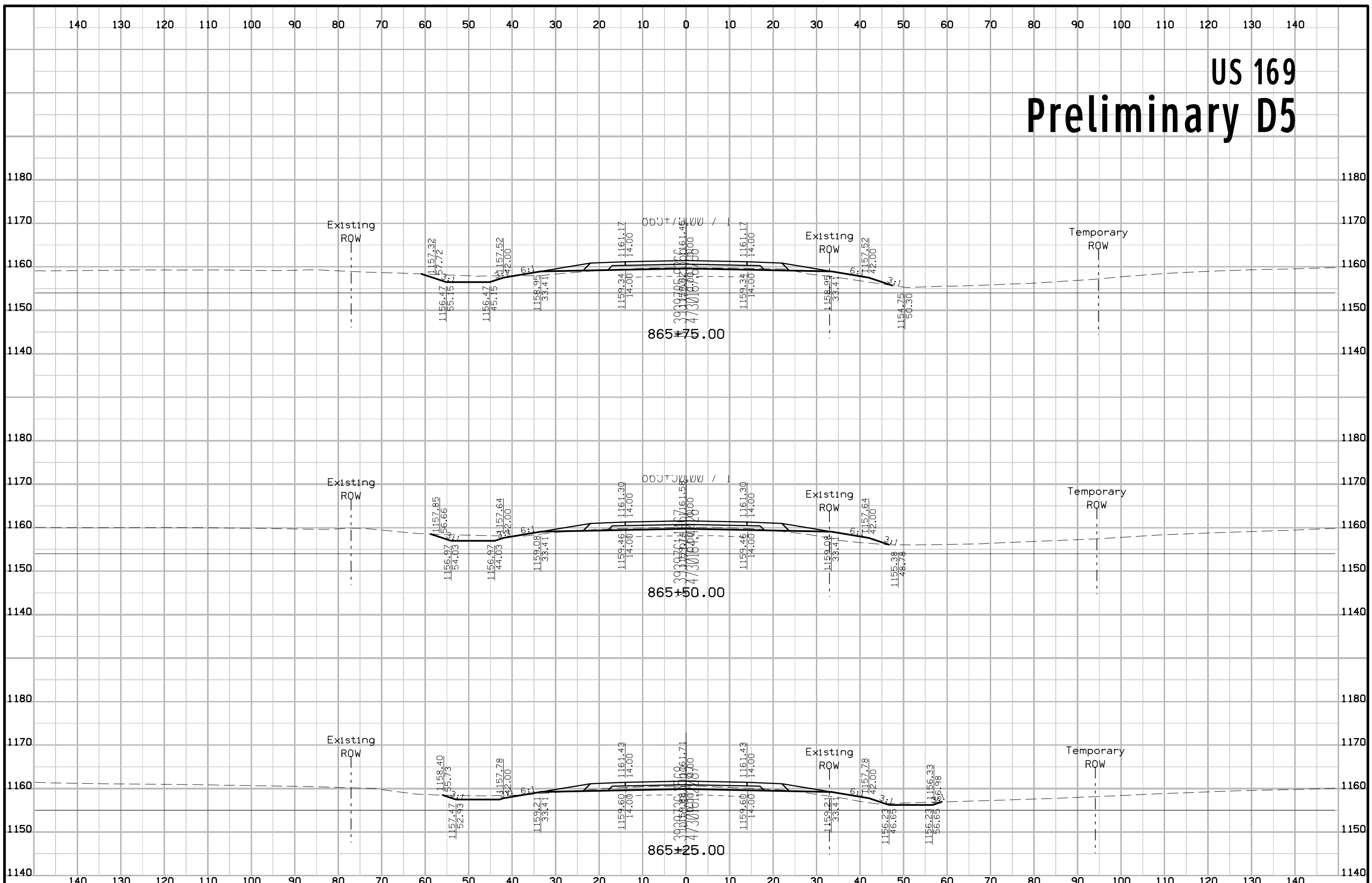
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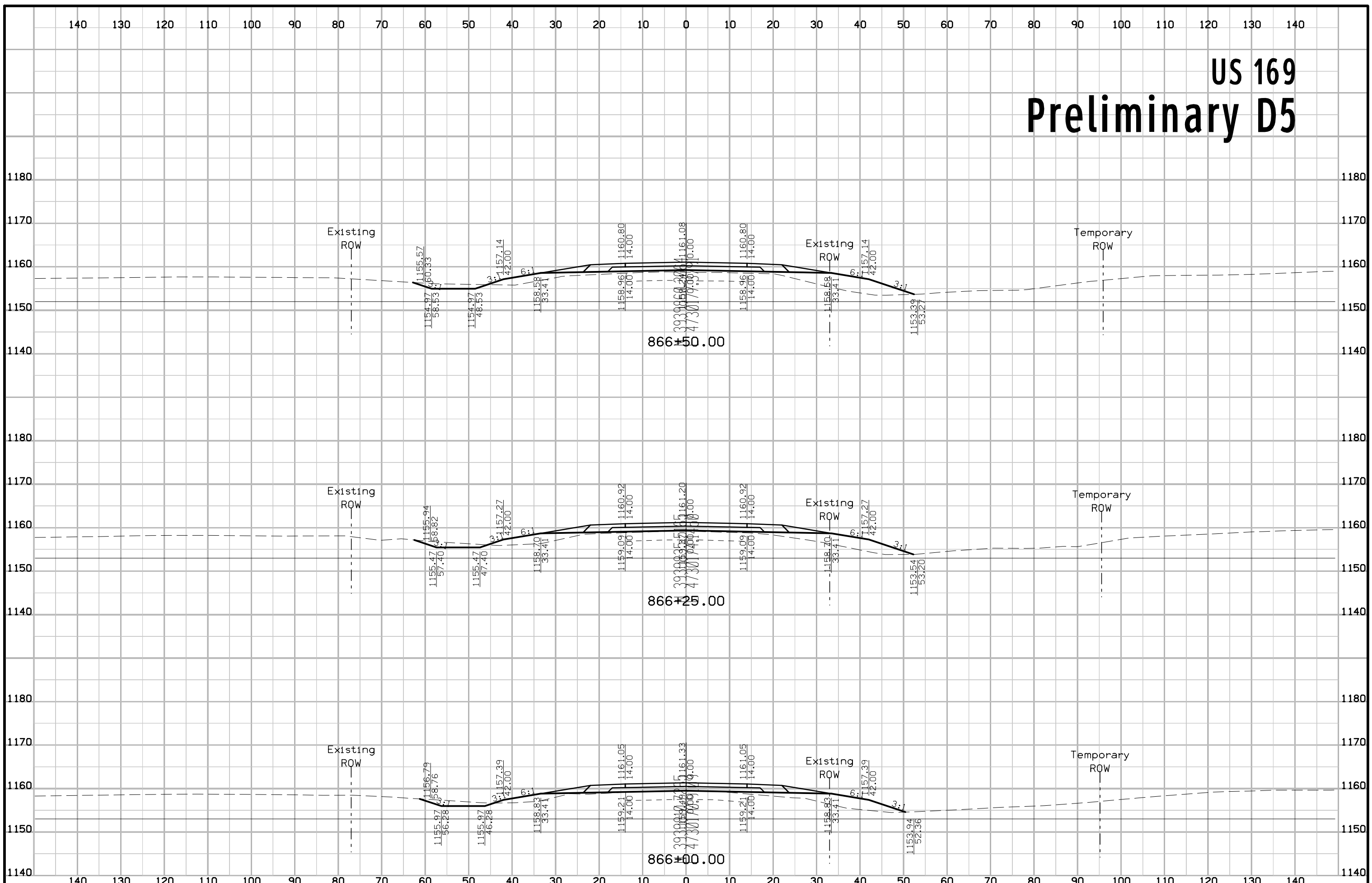
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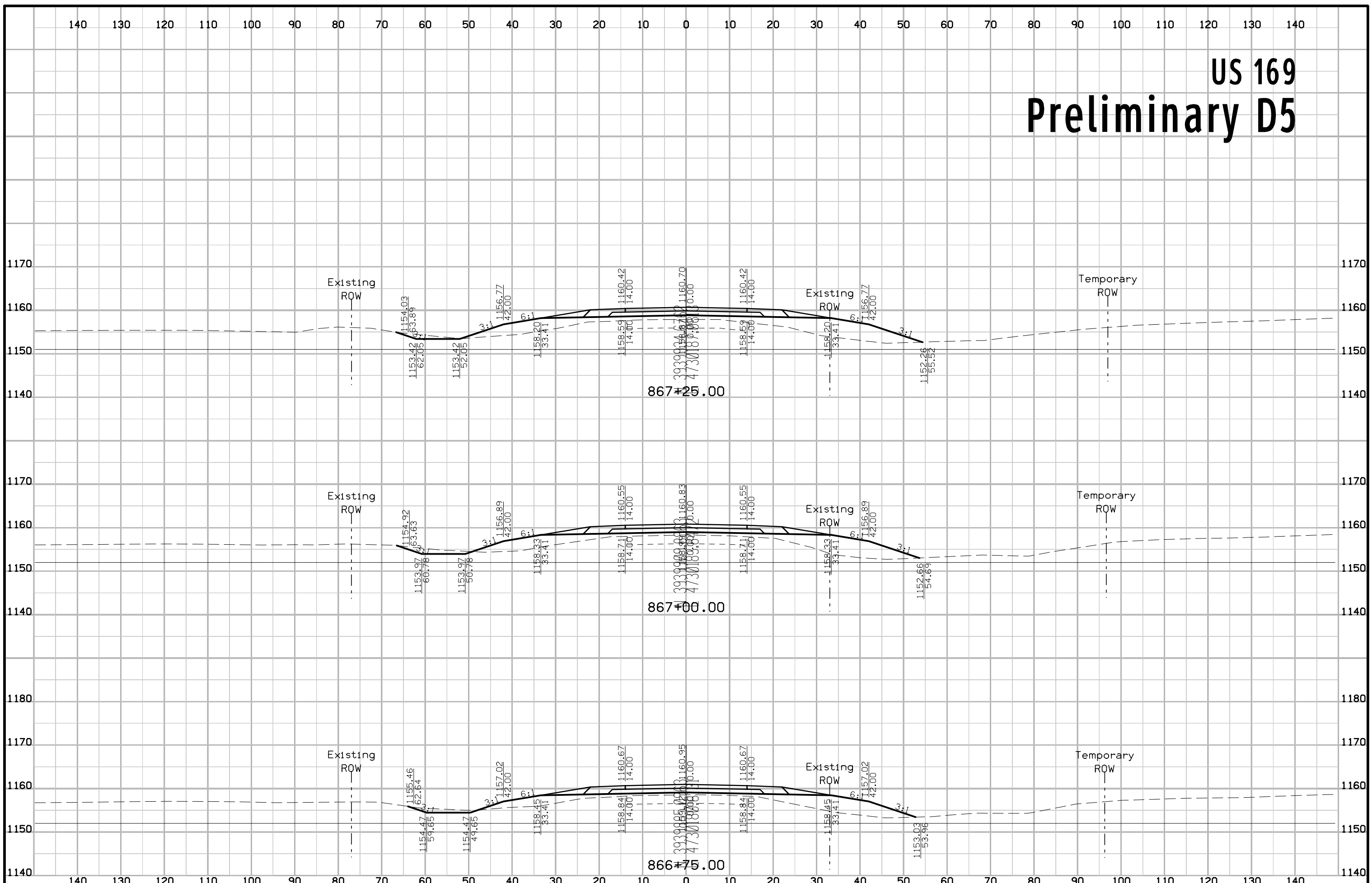
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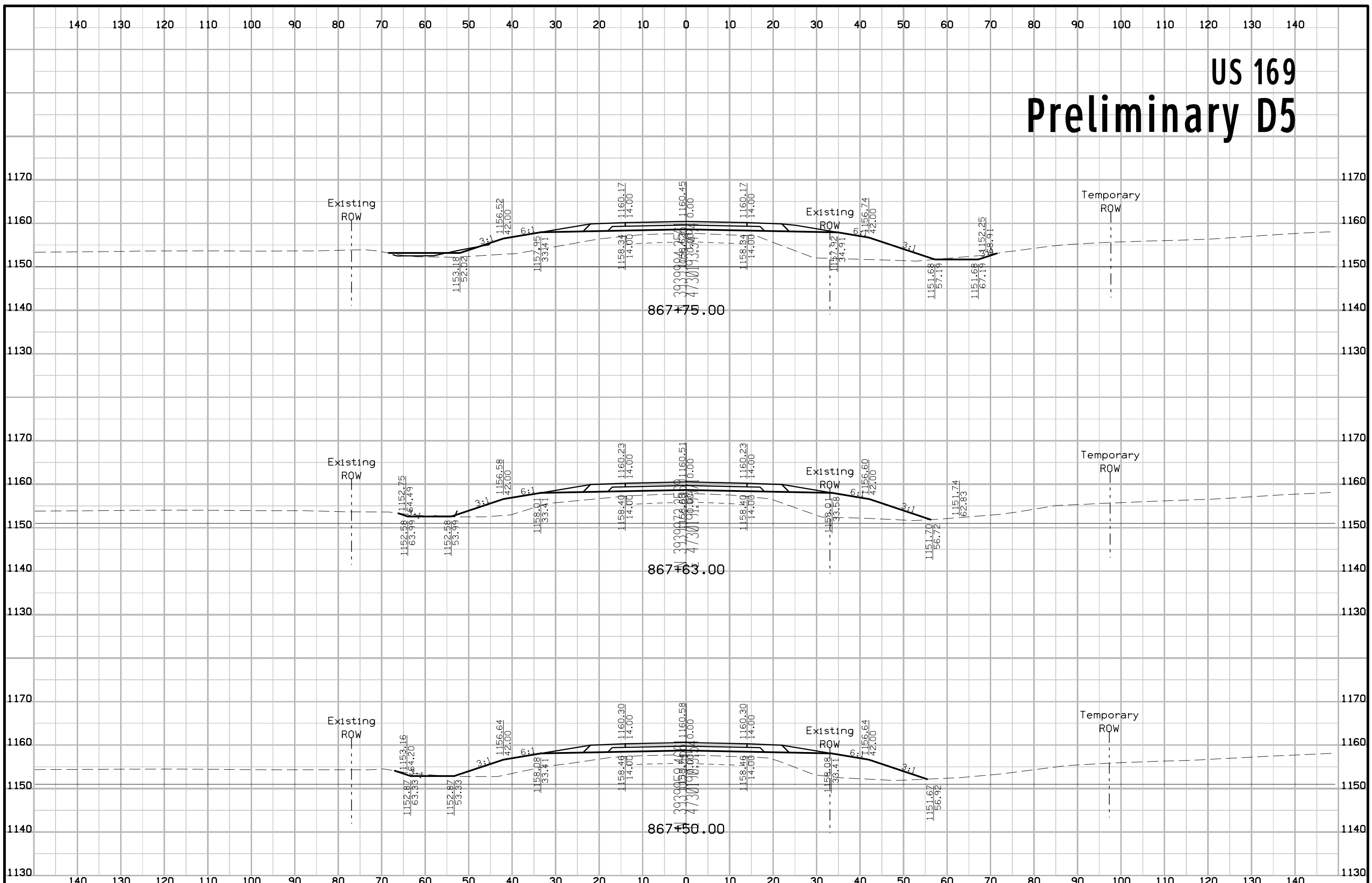
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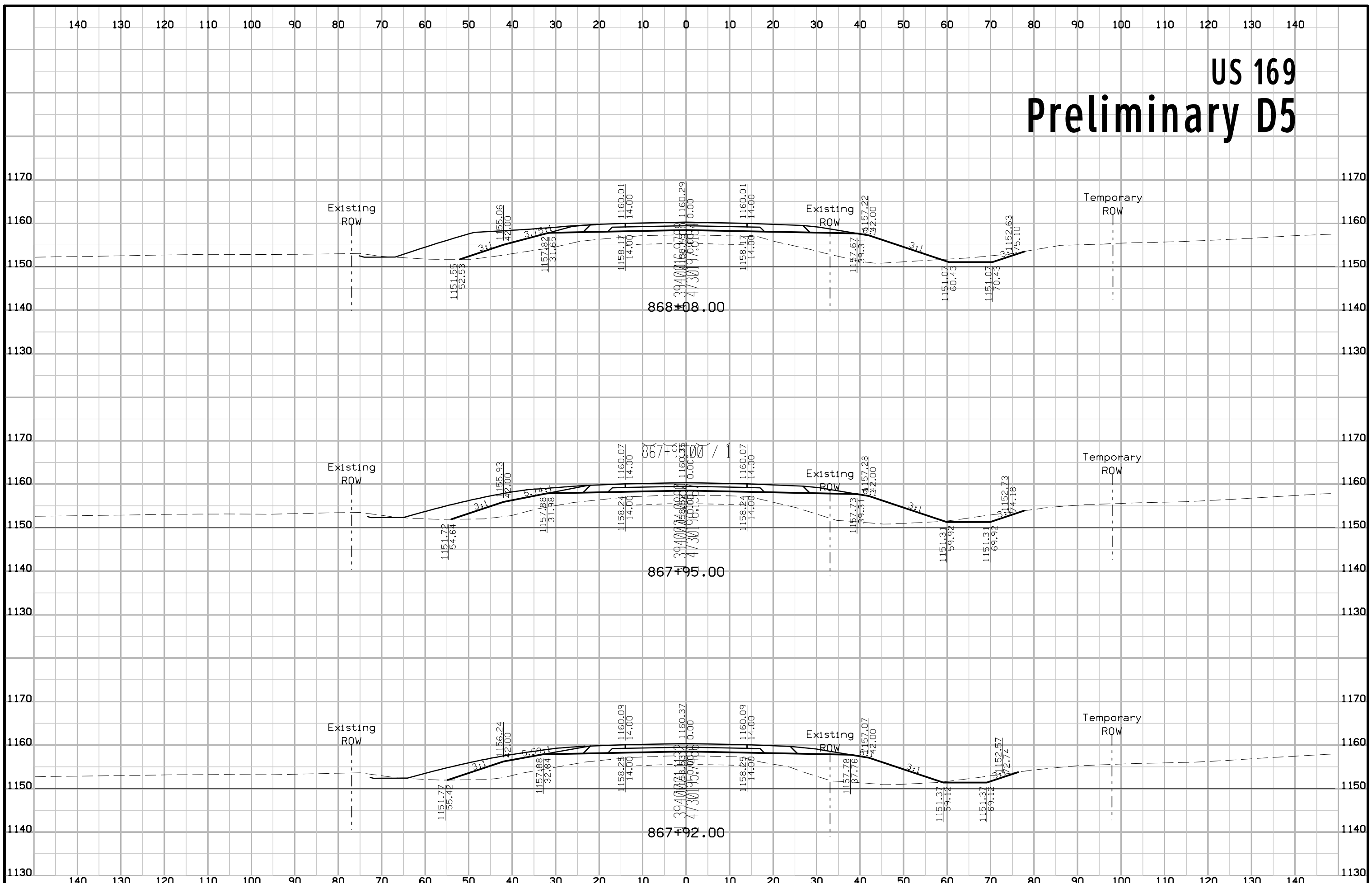
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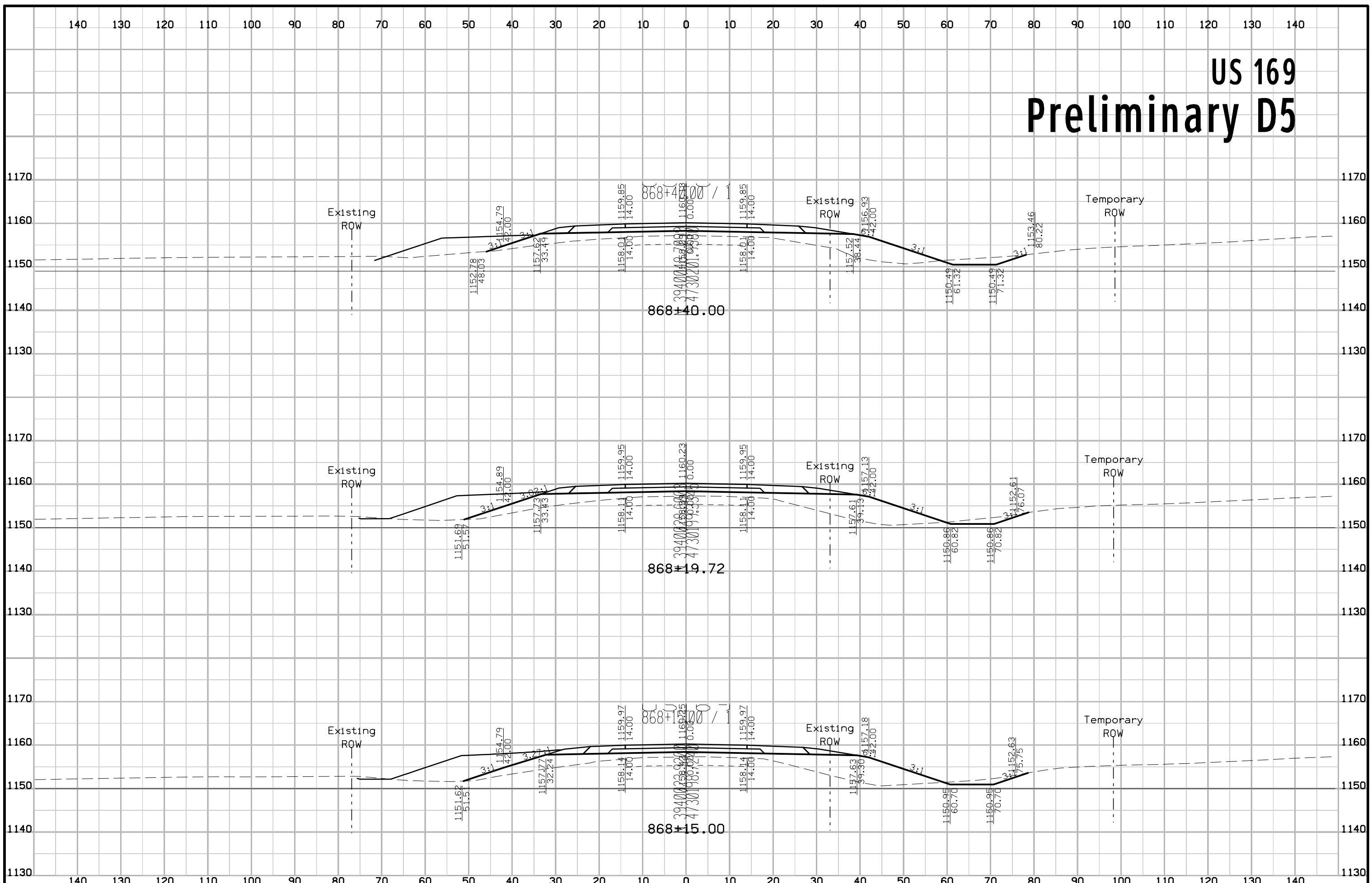
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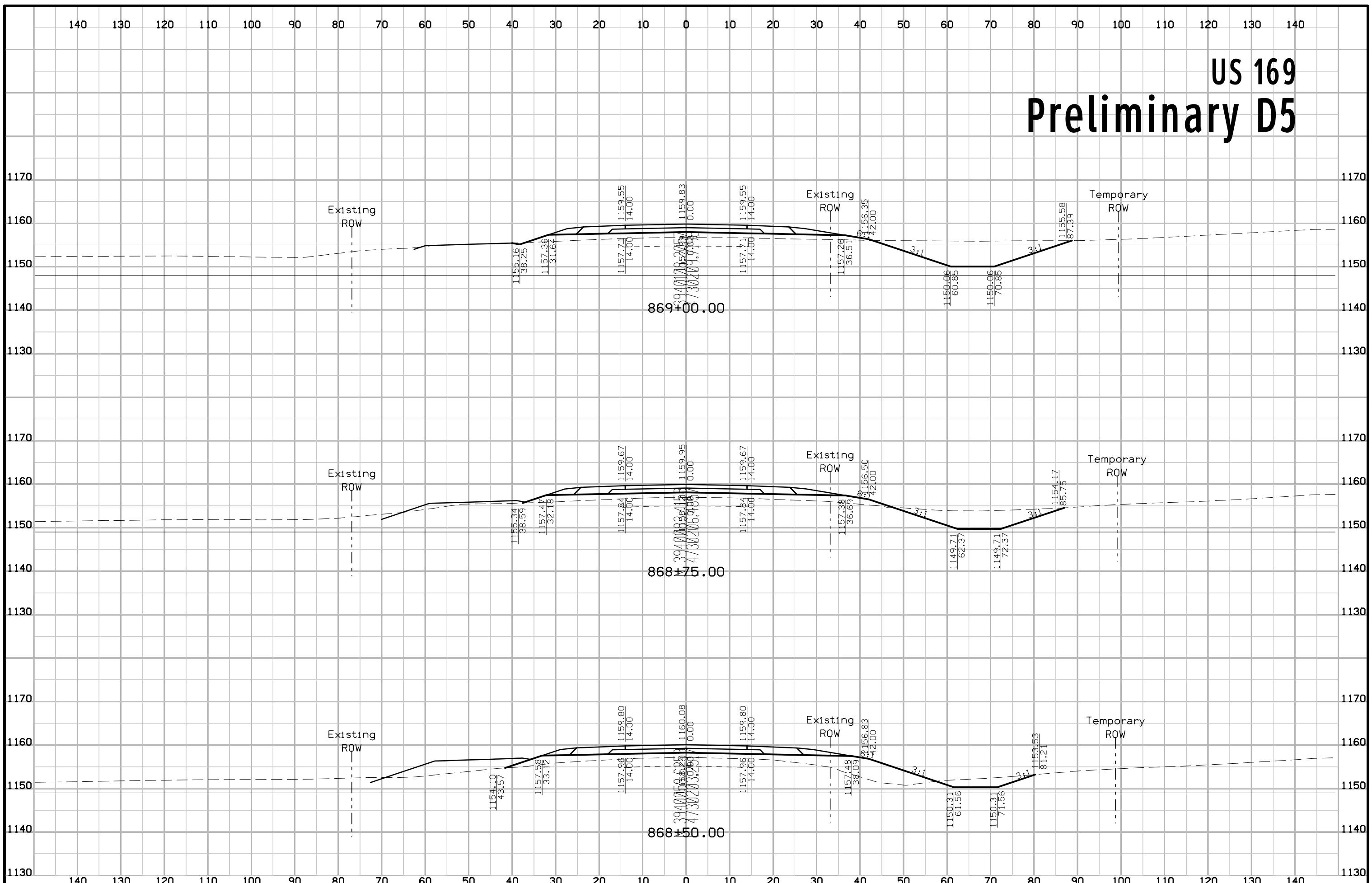
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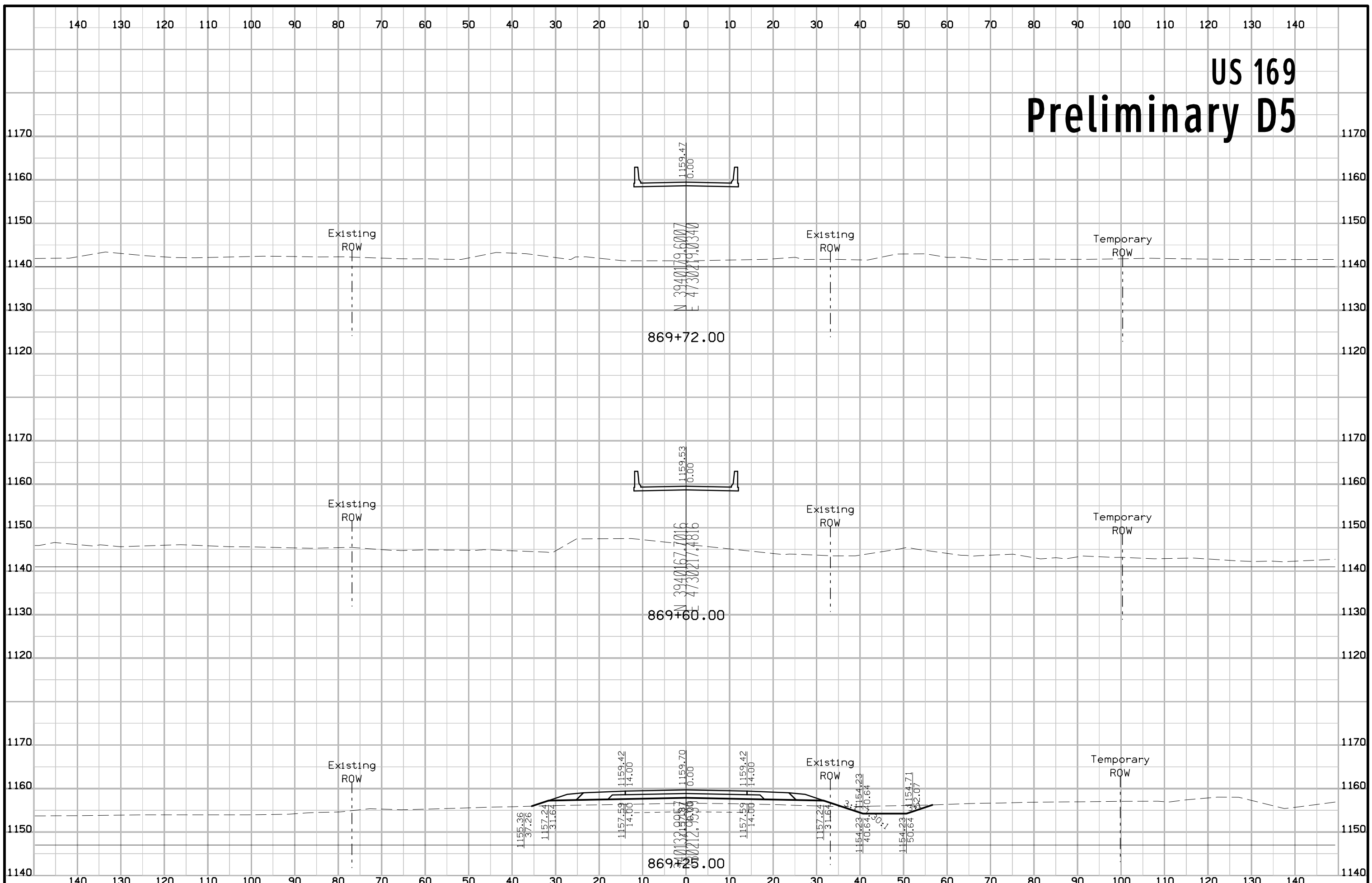
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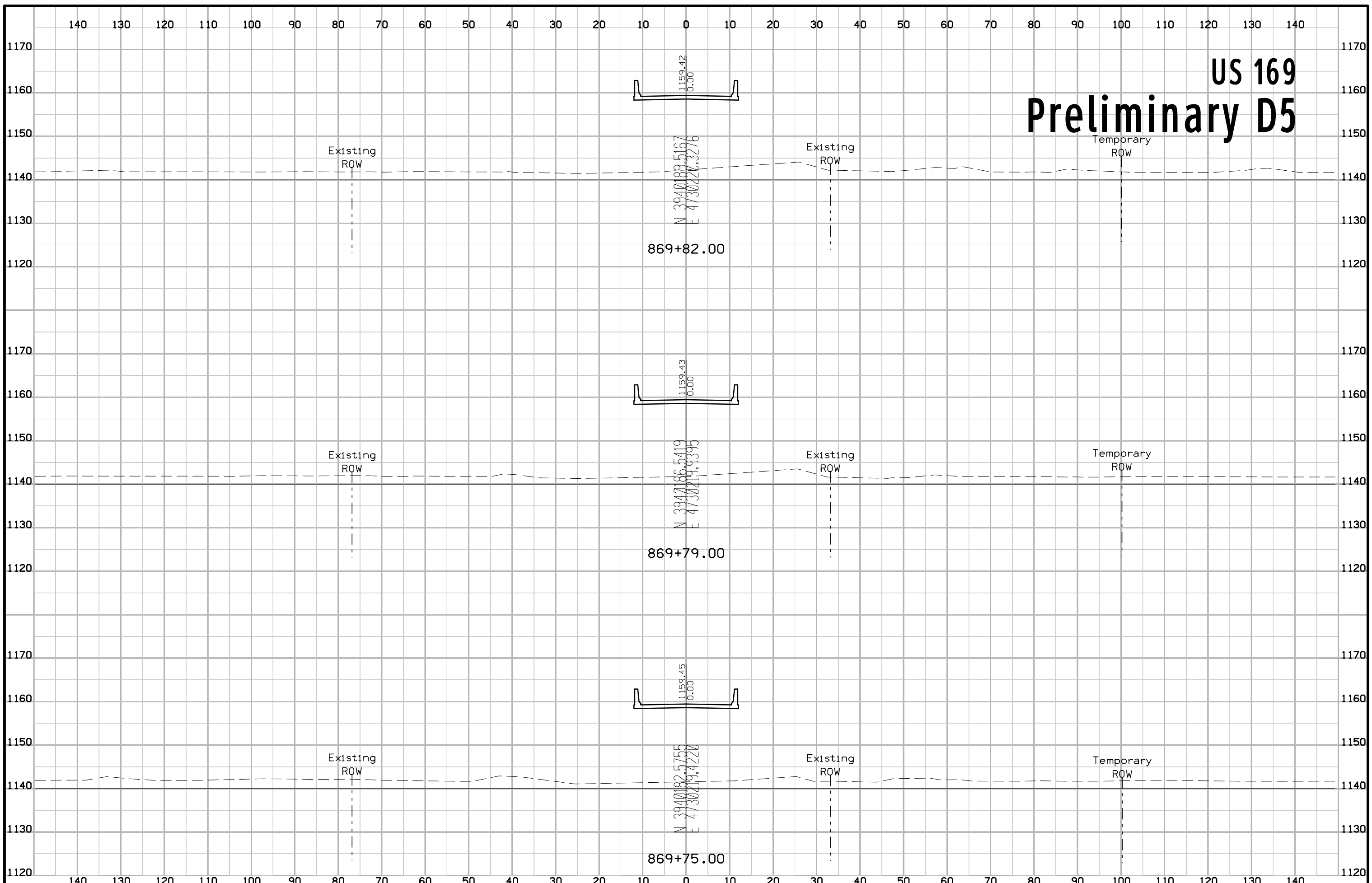
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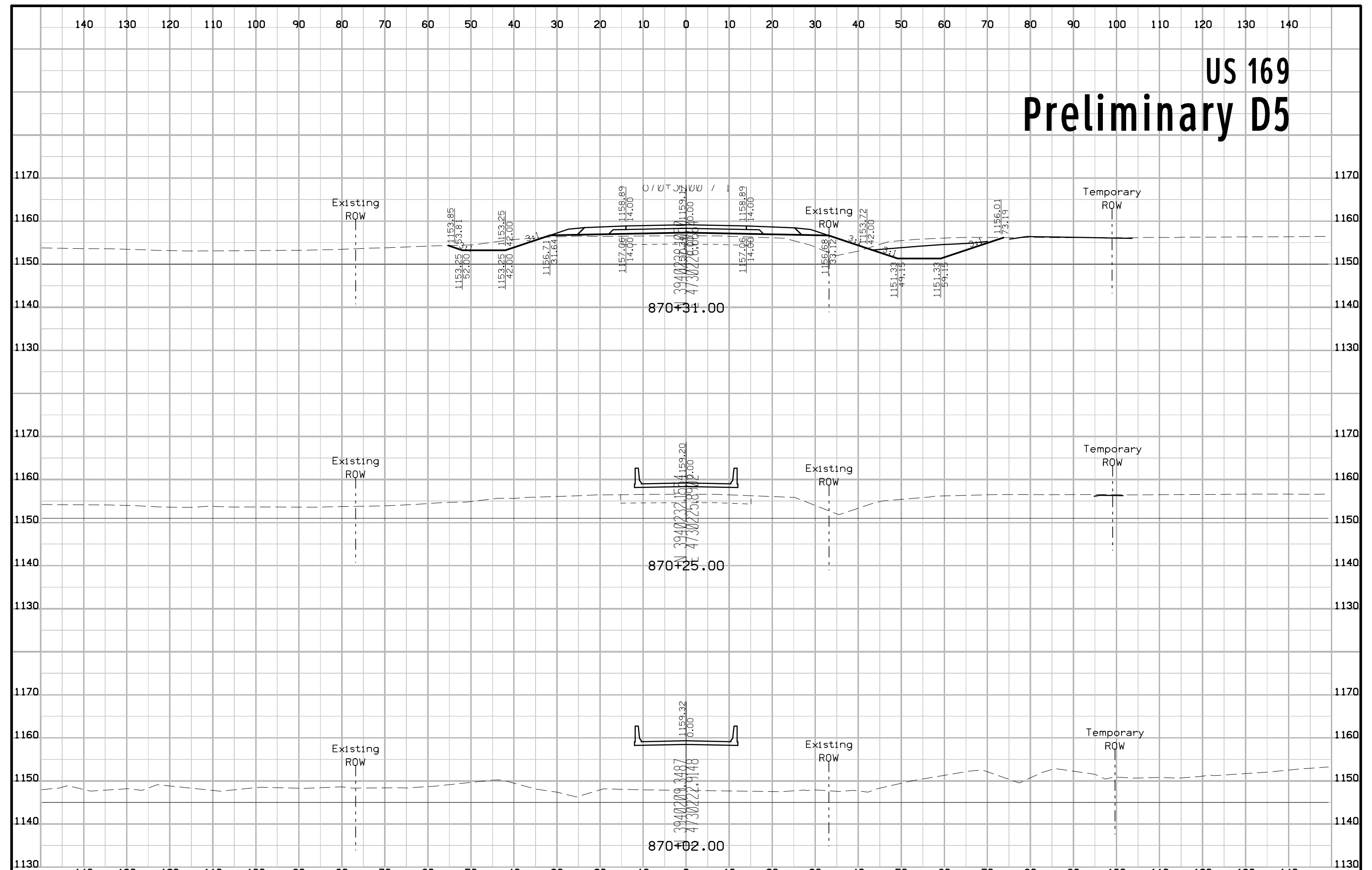
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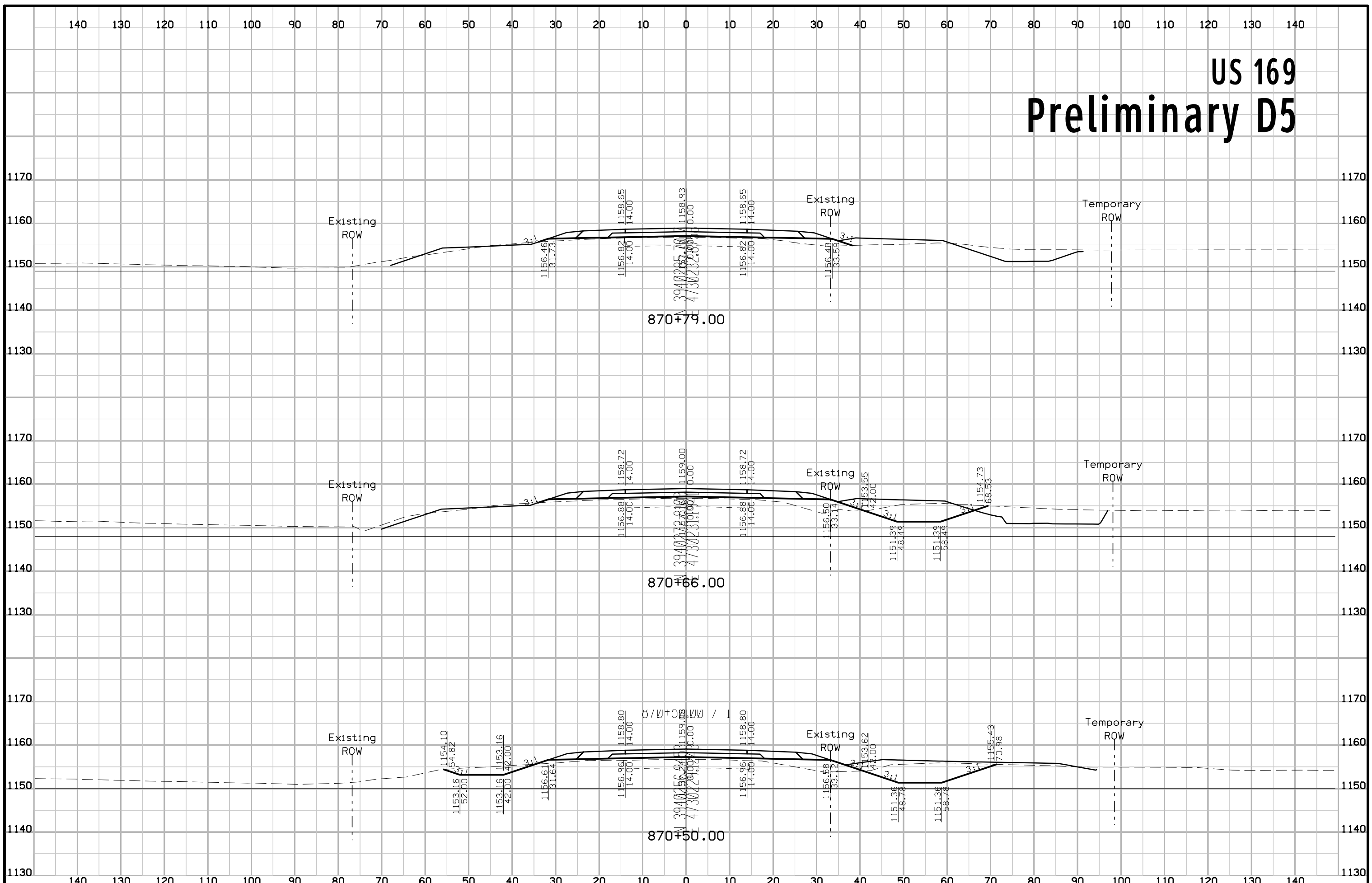
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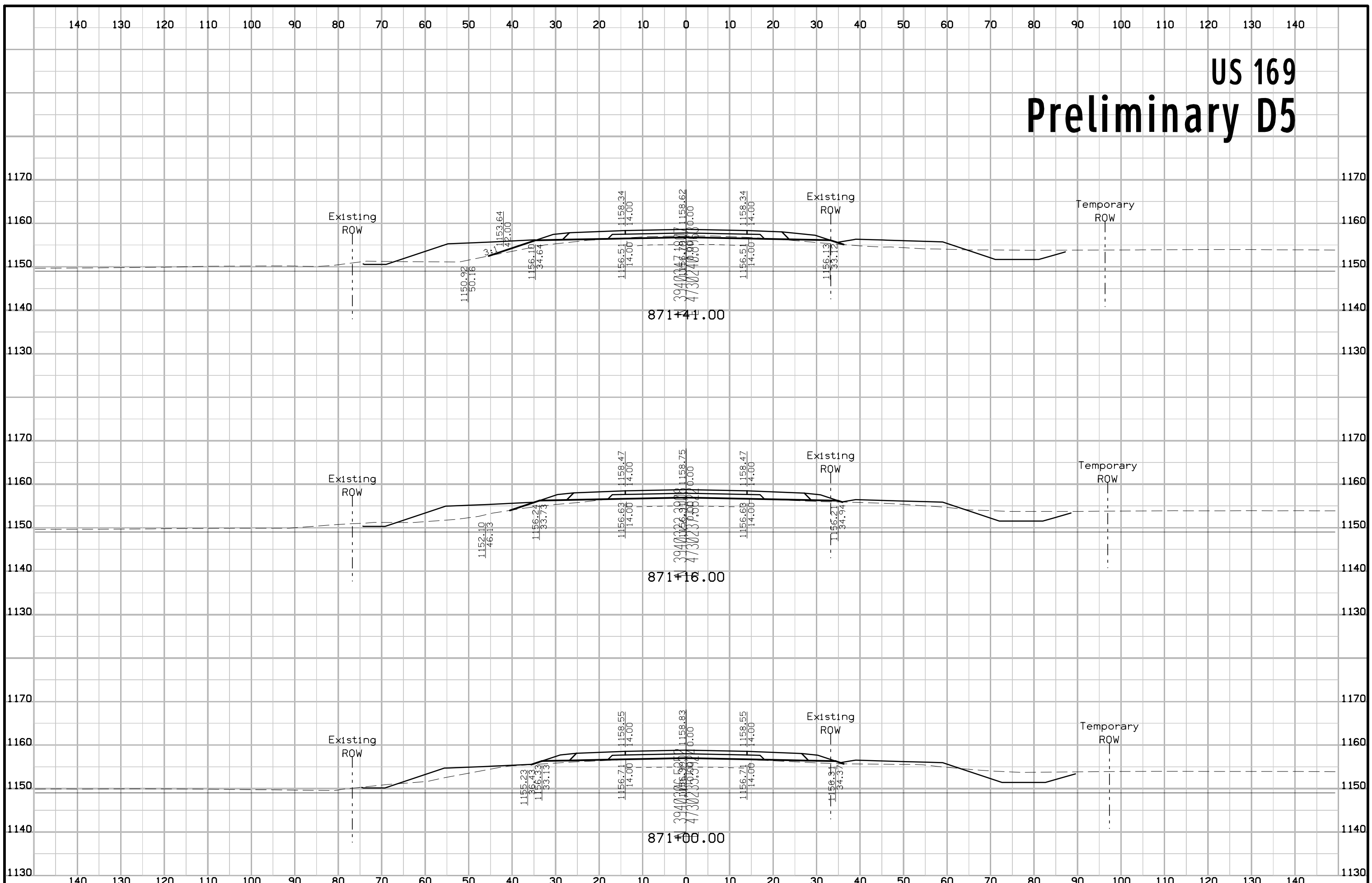
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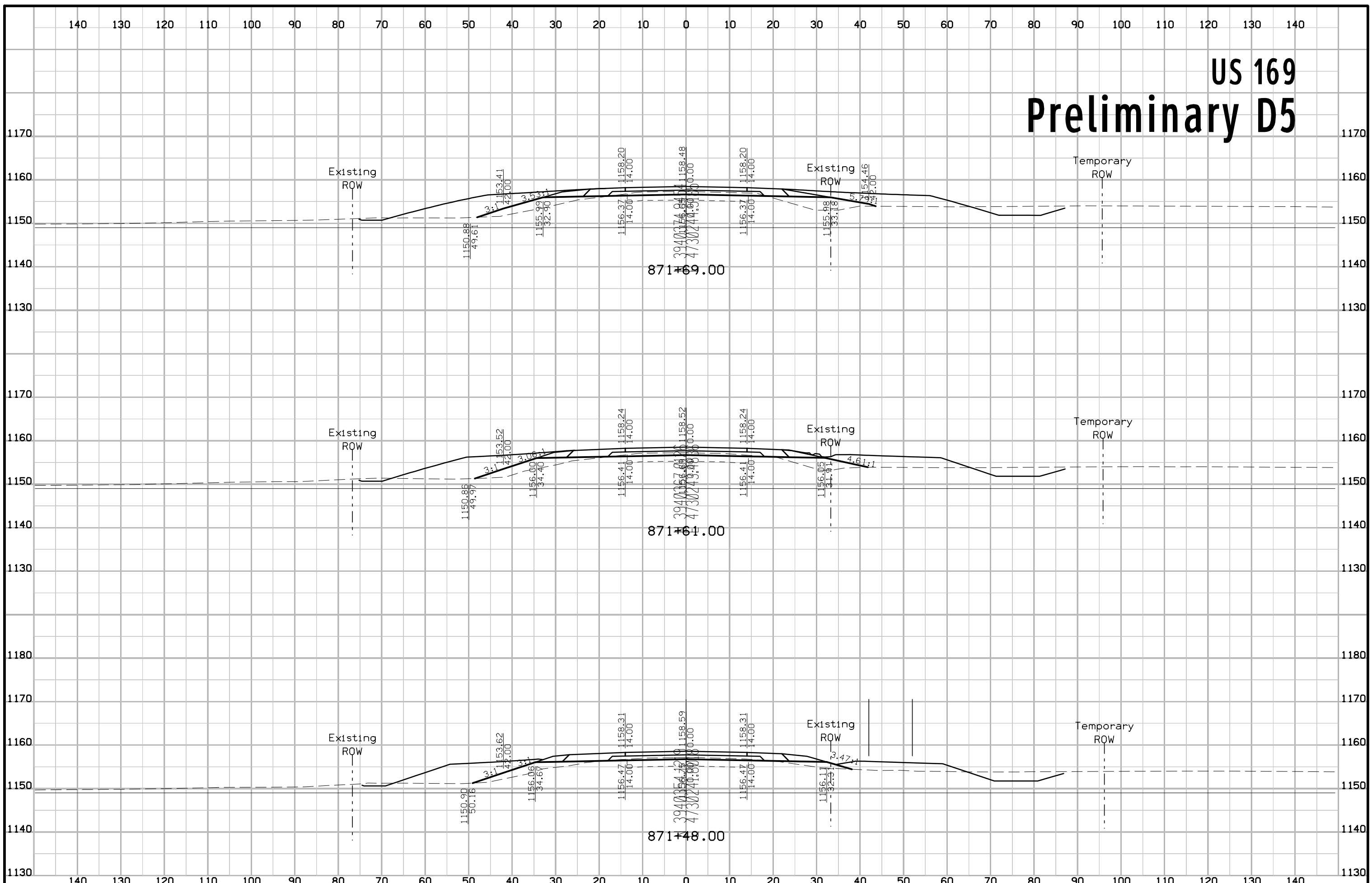
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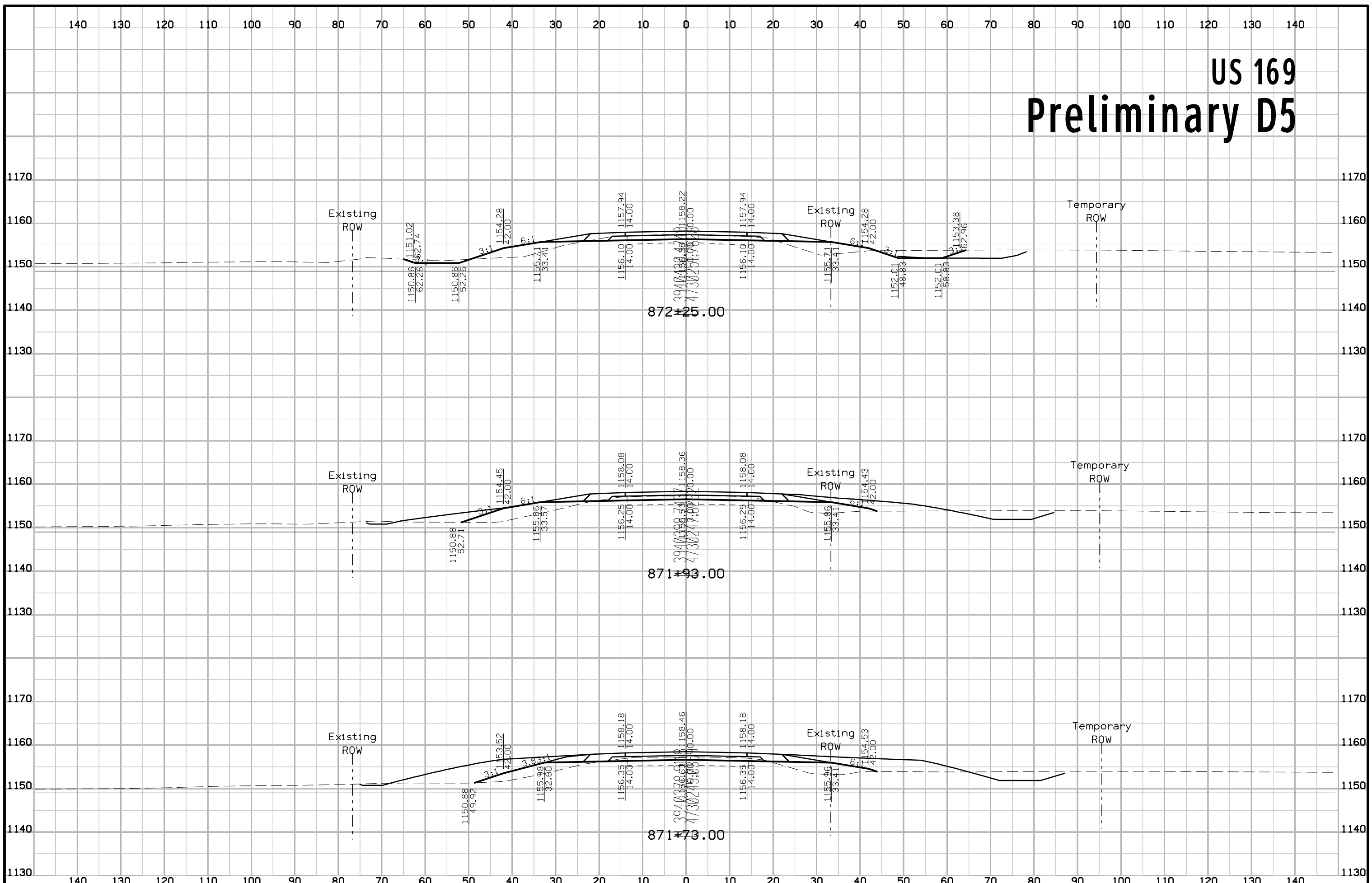
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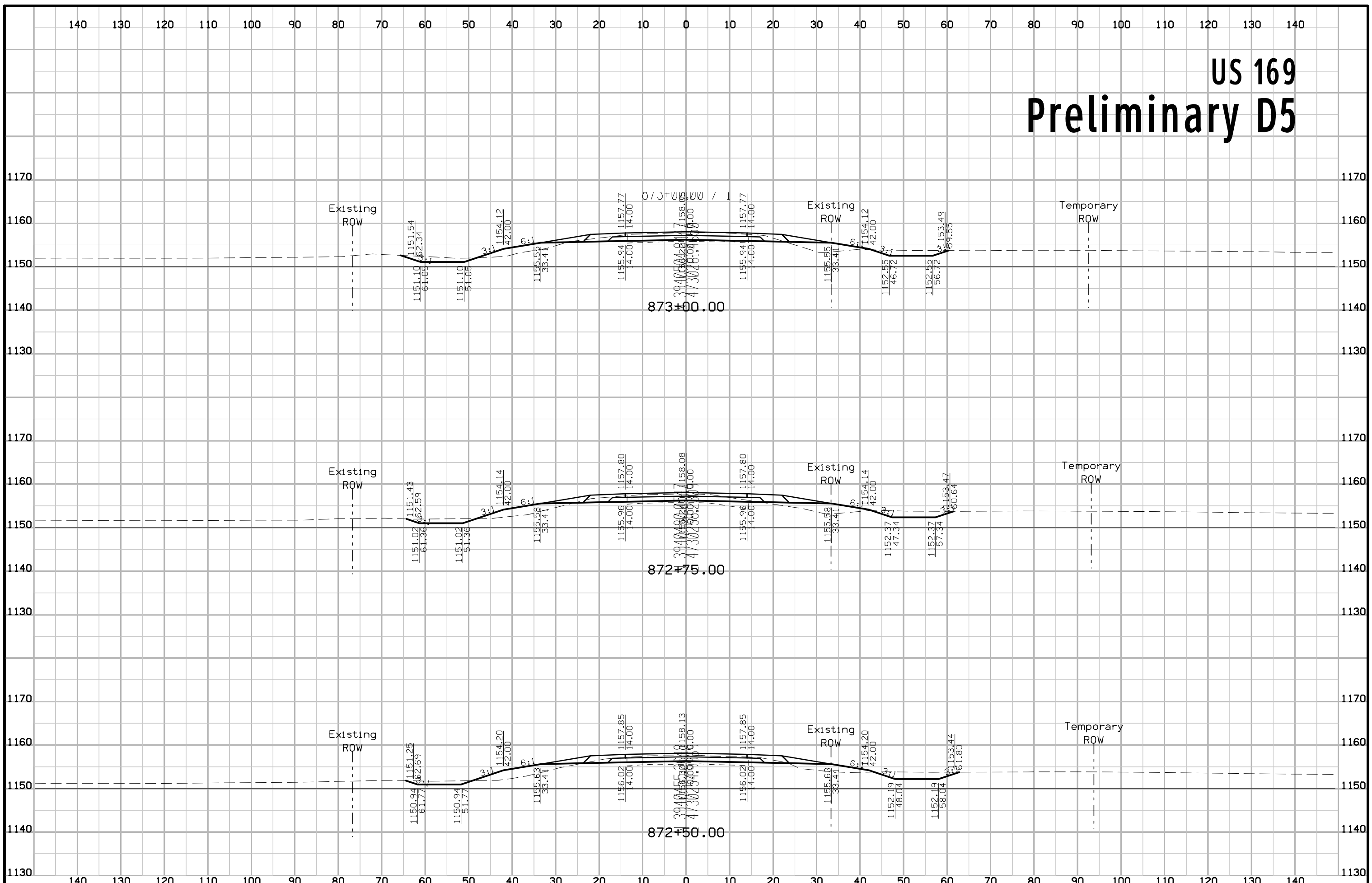
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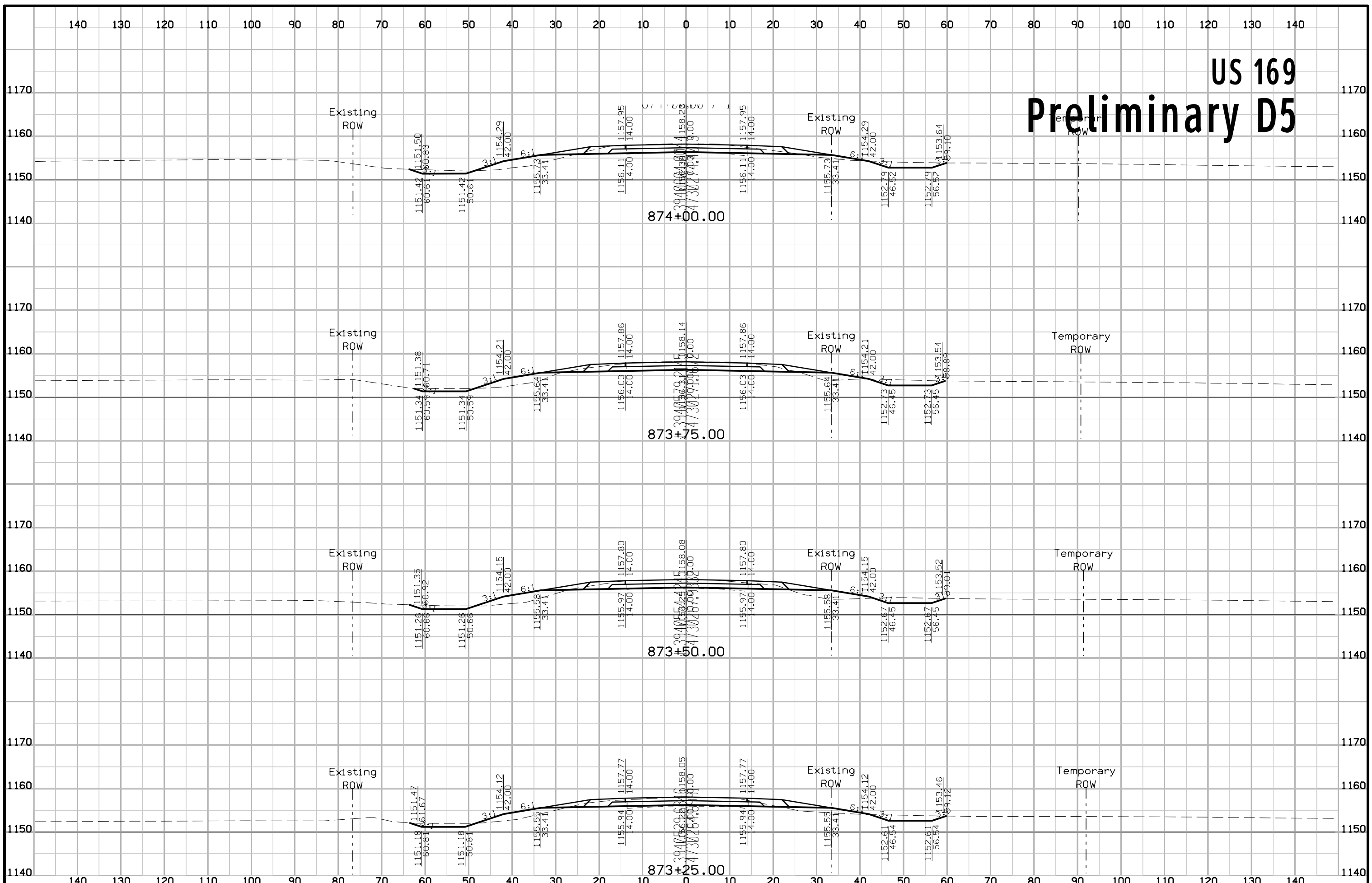
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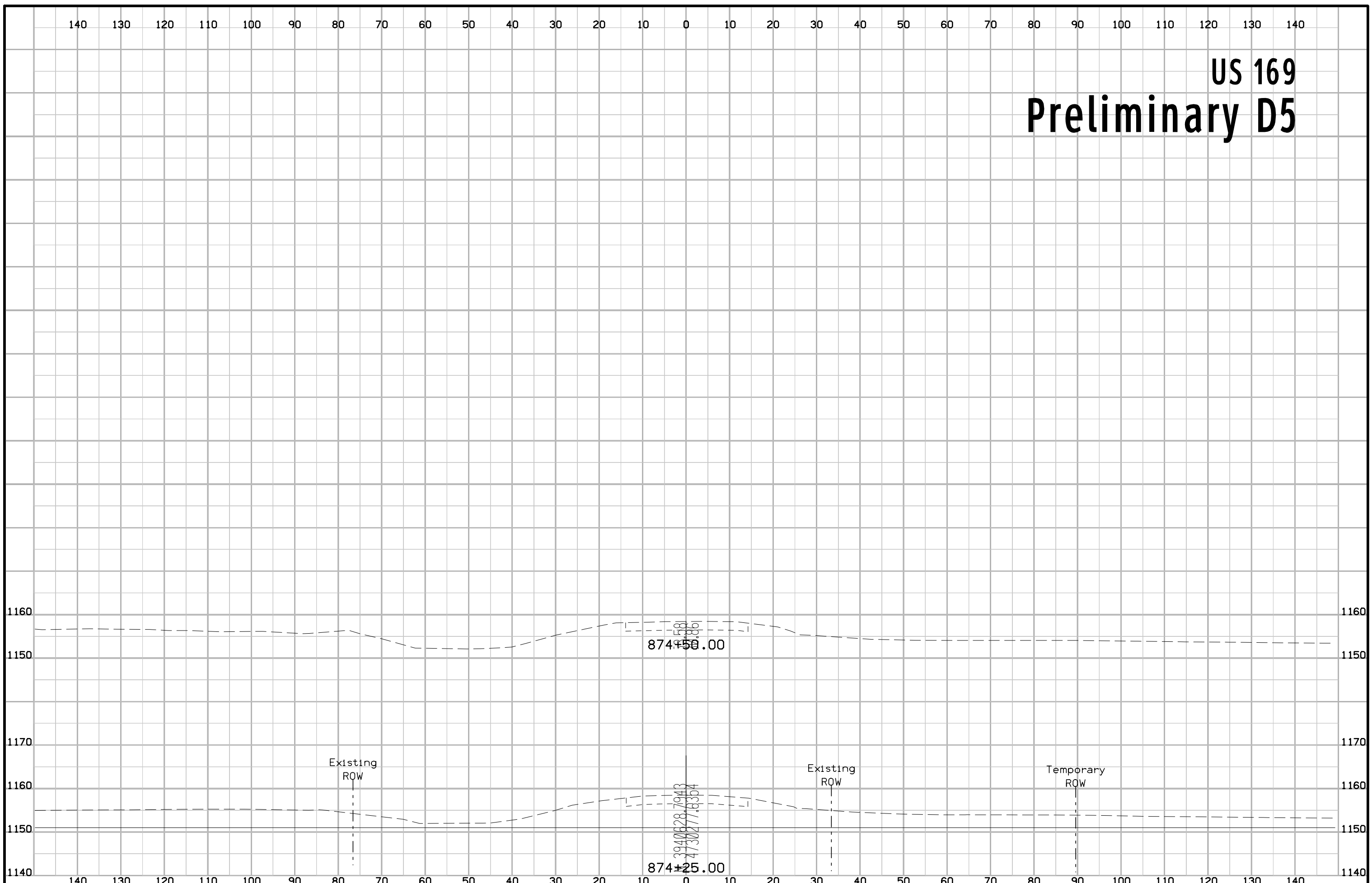
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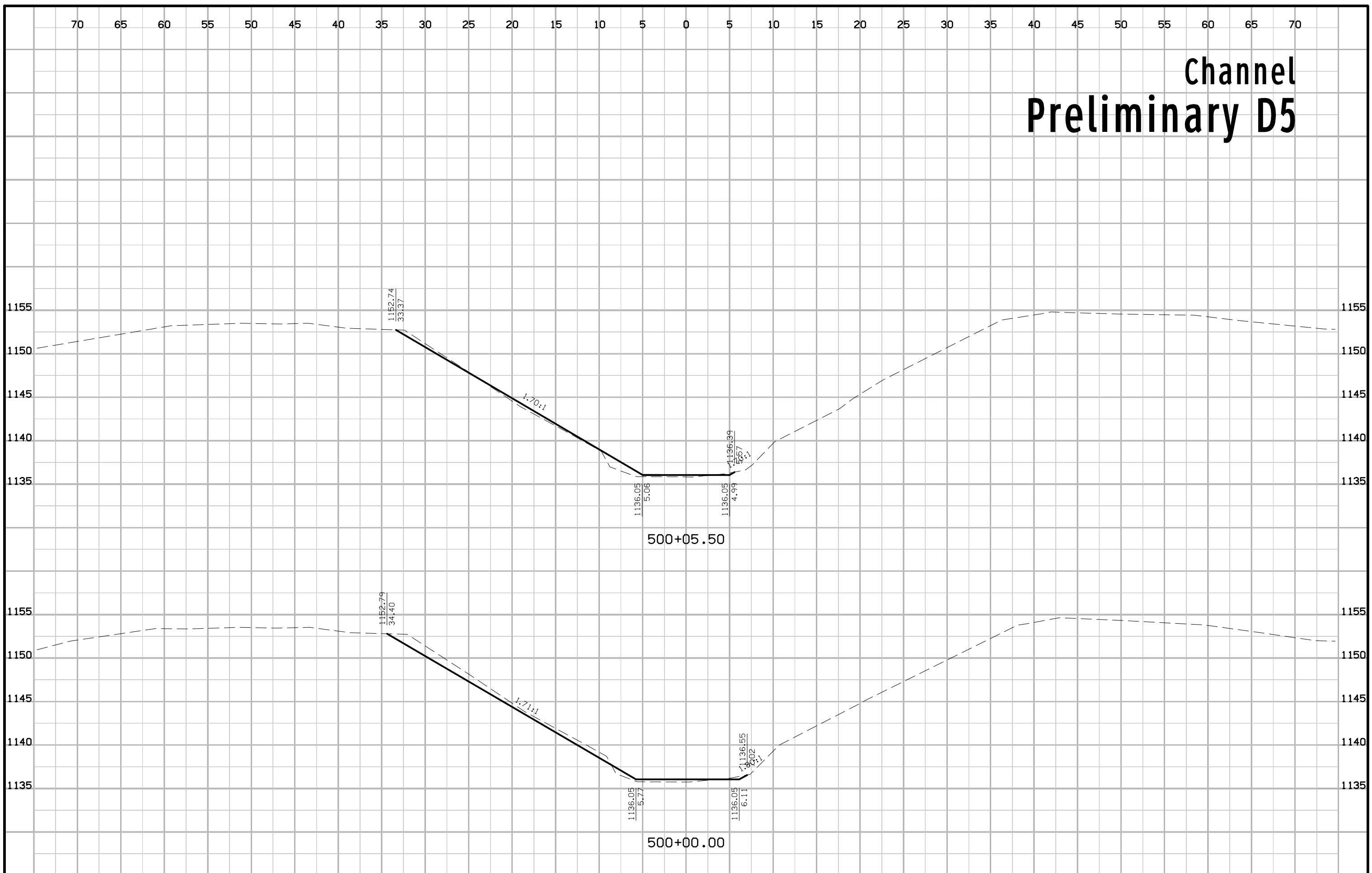
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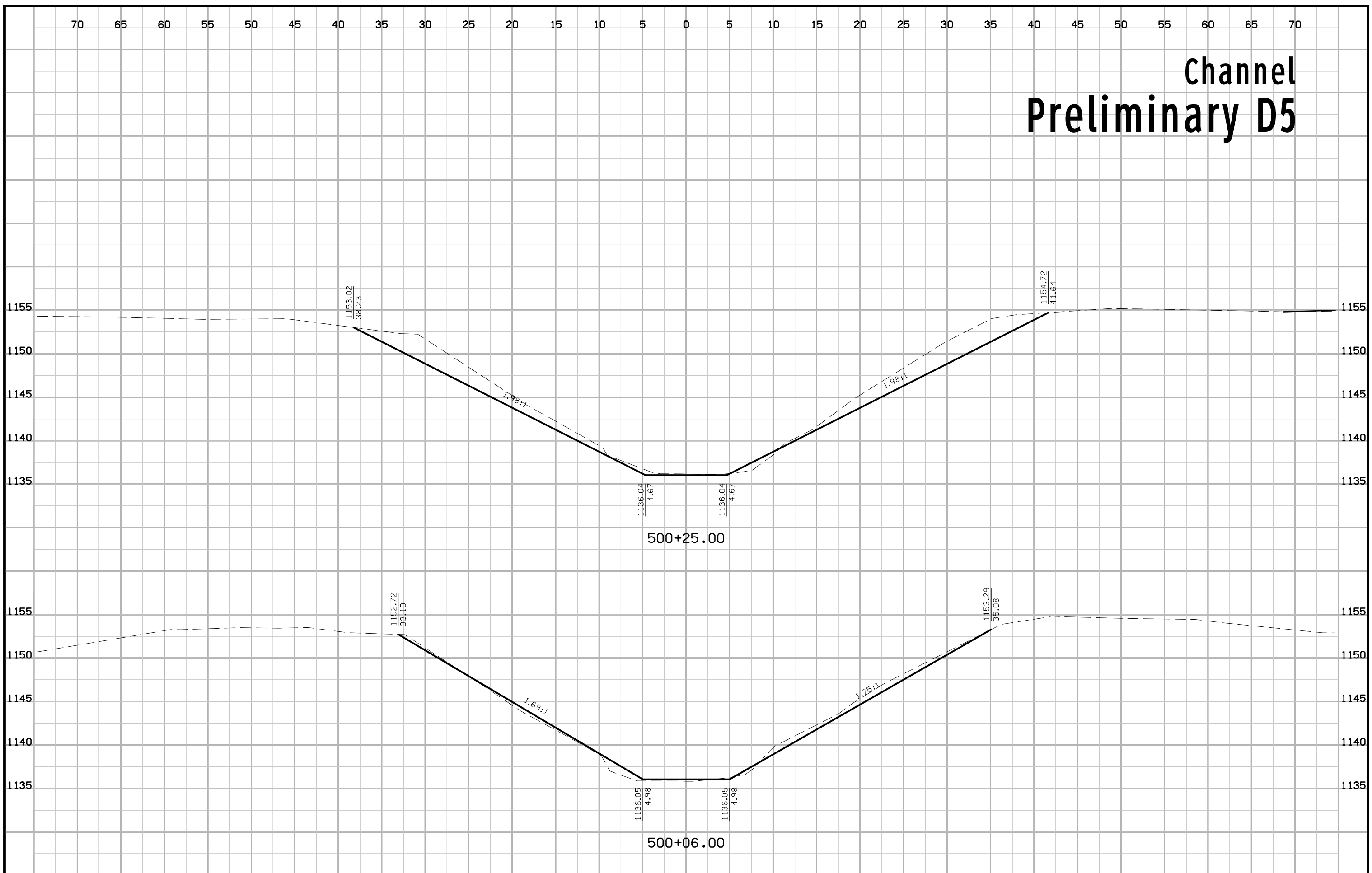
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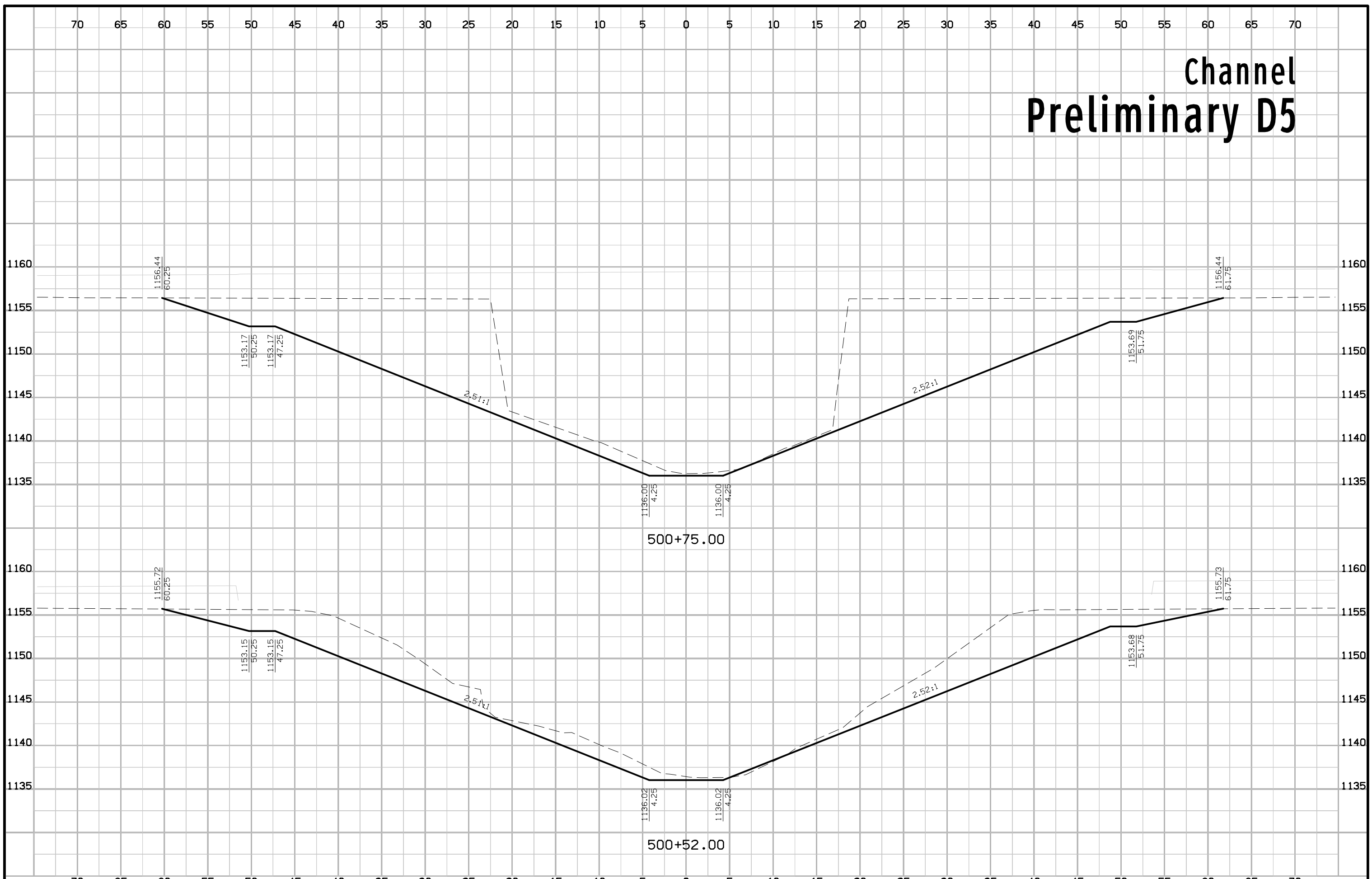
Channel Preliminary D5



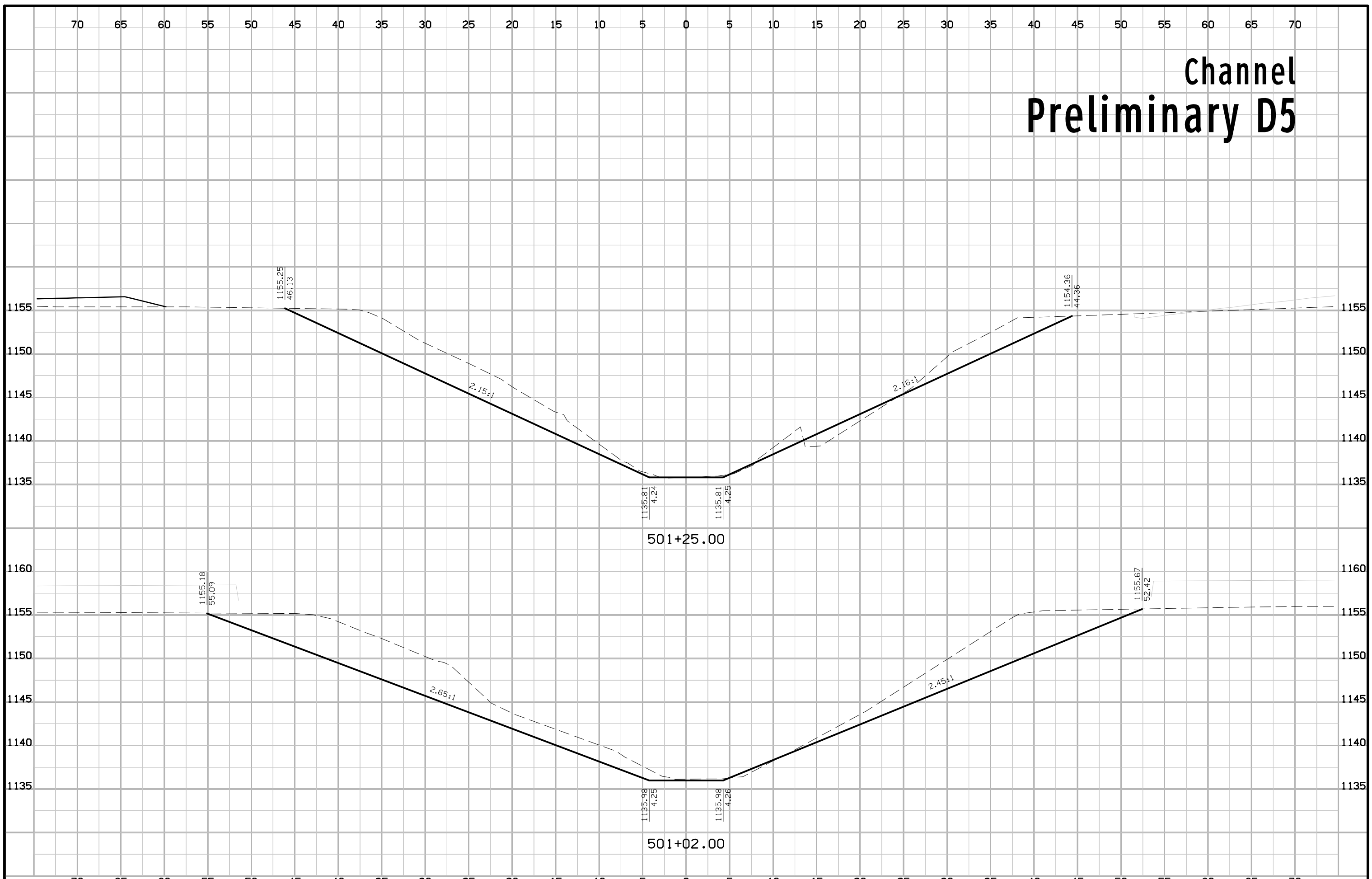
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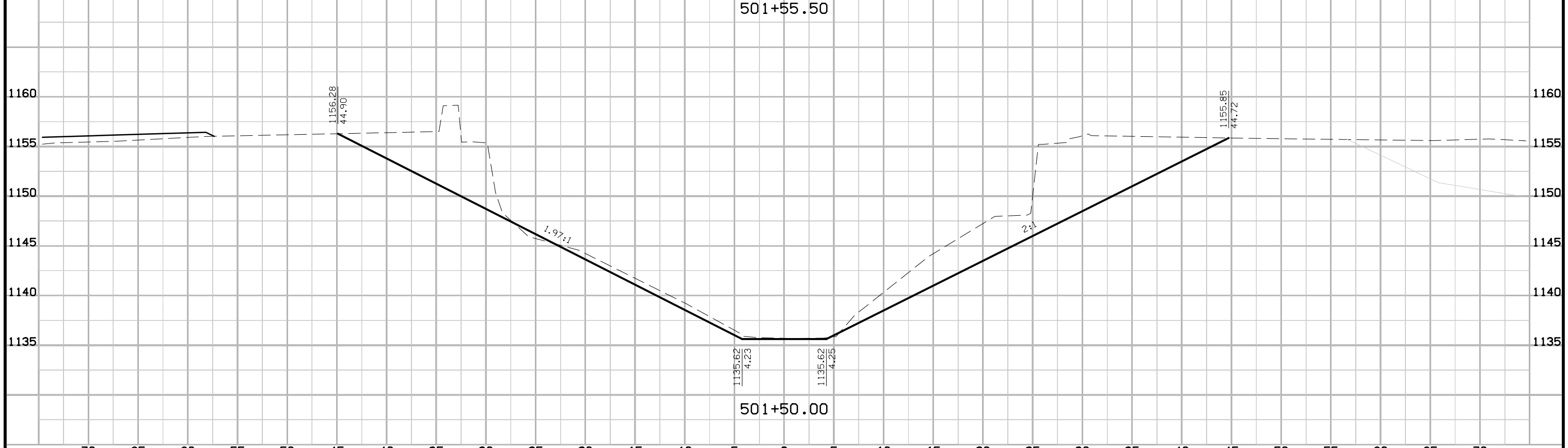
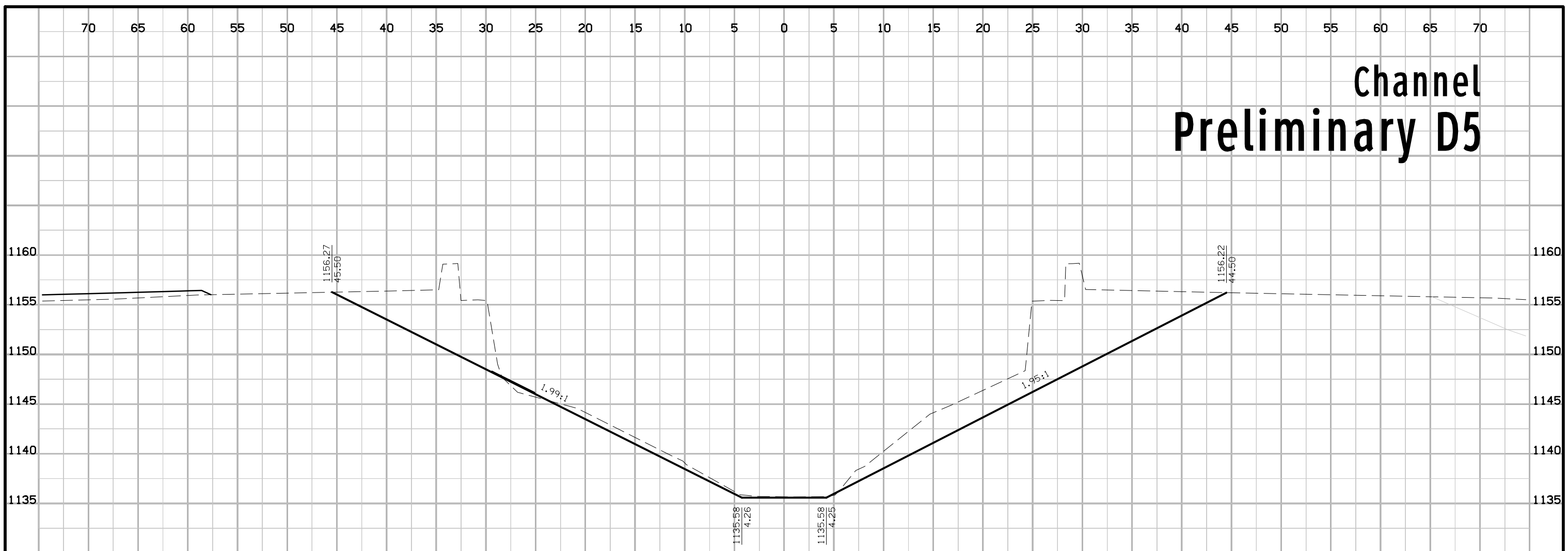
Channel Preliminary D5



Channel Preliminary D5



Channel Preliminary D5



Channel Preliminary D5

