

JOHNSON CO.
BRIDGE REPLACEMENT-PPCB
BRF-001-5(110)--38-52

LETTING DATE
 OCT. 15, 2019



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
JOHNSON COUNTY
BRIDGE REPLACEMENT-PPCB

Old Mans Creek 1.5 mi S of Co Rd F52

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

24

PROJECT IDENTIFICATION NUMBER

15-52-001-010-01

PROJECT NUMBER

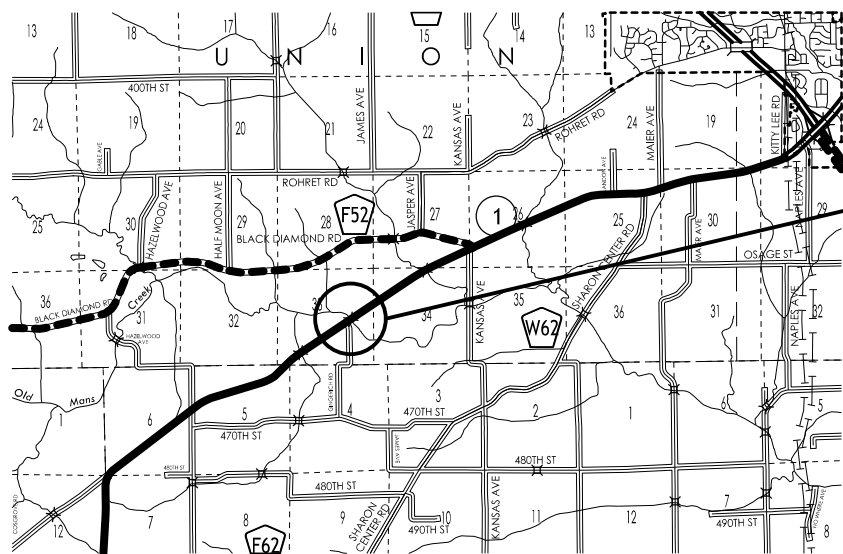
BRF-001-5(110)--38-52

R.O.W. PROJECT NUMBER

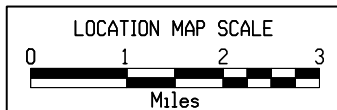
NHSN-001-5(111)--2R-52

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet & Location Map
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	IA 1
E Sheets	Side Road Plan and Profile Sheets
* E.1	Gingerich Road
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
J Sheets	Traffic Control and Staging Sheets
* J.1	Traffic Control Plan & Staging Notes
* J.2	Detour Map and Details
W Sheets	Mainline Cross Sections
W.1 - 10	IA 1
X Sheets	Side Road Cross Sections
X.1 - 2	Gingerich Road
	* Color Plan Sheets



Project Location
 Maint. No. 5278.0S001
 FHWA No. 31680



CUT (ML+SR) 2,850 CY
 FILL+30% (ML+SR) 13,100 CY
 CONTRACTOR FURNISH 10,250 CY

DATES:
 D5 PLAN - FEB. 2, 2018
 D4 PLAN - JUNE 18, 2019

Iowa Highway 1			
DESIGN DATA RURAL			
2018	AADT	7100	V.P.D.
2038	AADT	8200	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	7	%
	Total		
	Design ESALs	--	

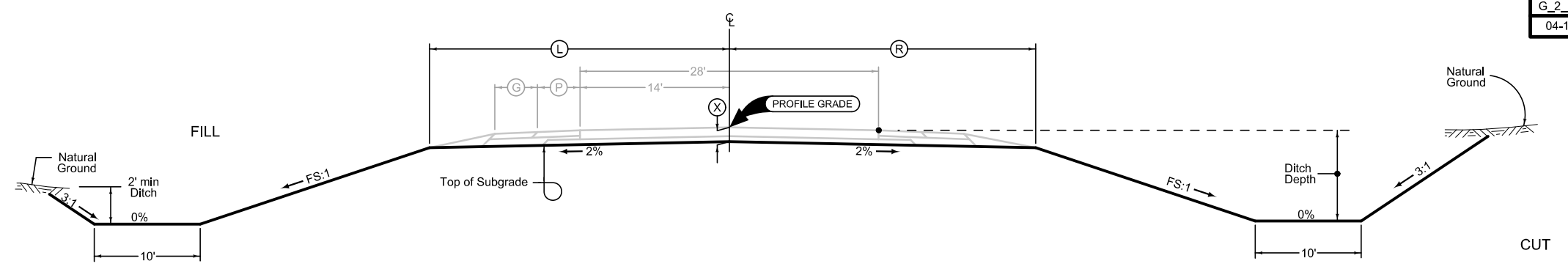
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Kelly C. Bell	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D3 PLAN - Date: December 4, 2017

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS
IA 1	547+75.00	552+10.00		30.2	21.5	3:1
Bridge	552+10.00	555+09.50				
IA 1	555+09.50	556+00.00		30.2	21.5	3:1
IA 1	556+00.00	556+50.00		30.2-31.7	21.5	3:1-4:1
IA 1	556+50.00	559+25.00		31.7	21.5	4:1
IA 1	547+75.00	550+00.00		31.7	21.5	4:1
IA 1	550+00.00	550+50.00		31.7-30.2	21.5	4:1-3:1
IA 1	550+50.00	552+10.00		30.2	21.5	3:1
Bridge	552+10.00	555+09.50				
IA 1	555+09.50	559+25.00		30.2	21.5	3:1



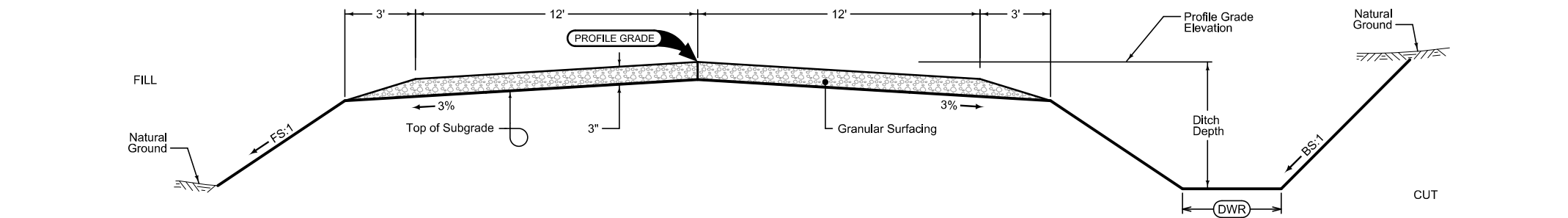
Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

2 LANE GRADING

G_2_Grade
04-15-14

LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		FS	BS	(DWL) Feet	(DWR) Feet
Gingerich Road SW	1549+00.00	1549+84.96	6	3	0	5



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

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

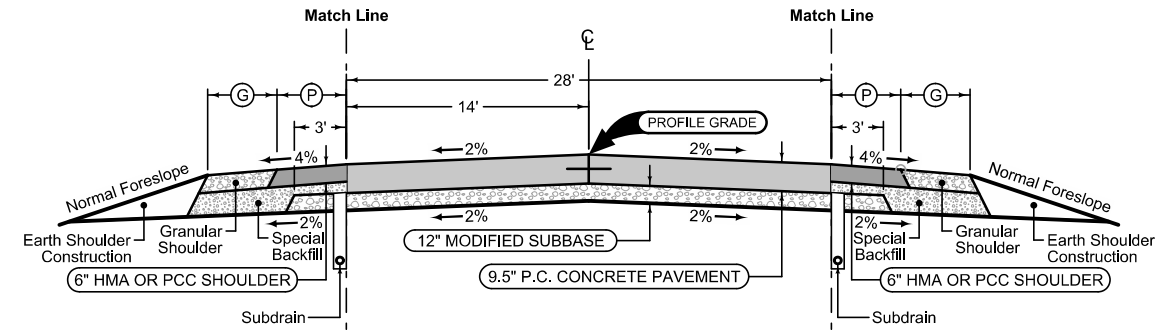
GRADING AND GRANULAR SURFACING

G_2_GradeGran
Modified

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		2_C_ 10-15-13	
		(P) Feet	(G) Feet
547+75.00	552+10.00	4.0	4.0
Bridge			
555+09.50	559+25.00	4.0	4.0



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

STATION TO STATION		2P_ 10-19-10	
		(P) Feet	(G) Feet
547+75.00	552+10.00		
Bridge			
555+09.50	559+25.00		

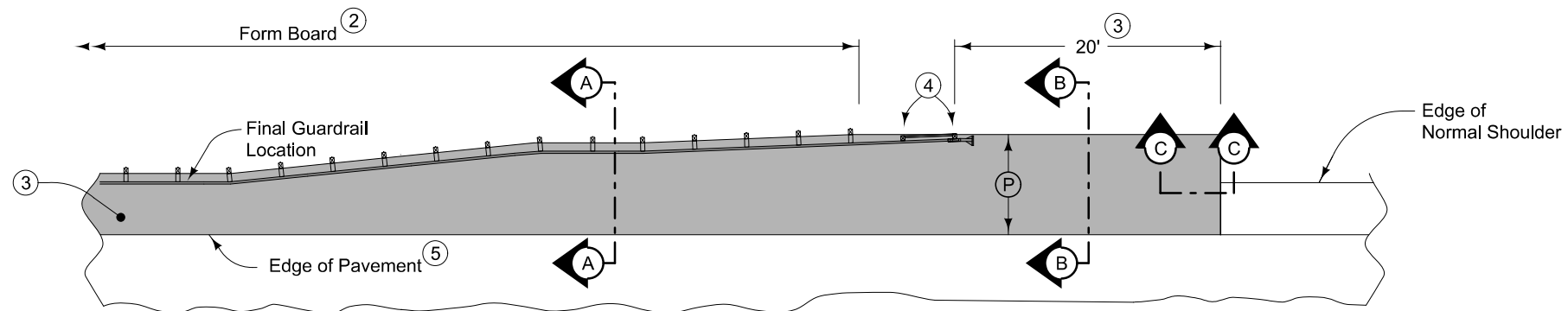
Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		2_C_ 10-15-13	
		(P) Feet	(G) Feet
547+75.00	552+10.00	4.0	4.0
Bridge			
555+09.50	559+25.00	4.0	4.0

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

Iowa Highway 1



PLAN VIEW

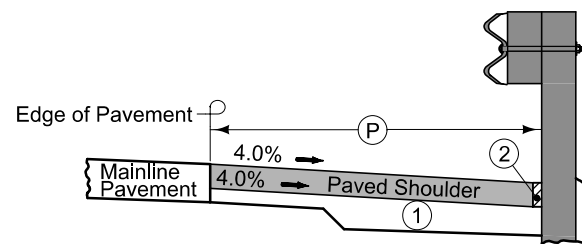
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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 P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

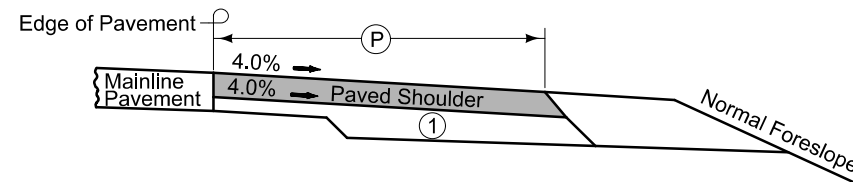
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- ① For subgrade treatment, refer to other details in the plan.
- ② PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ⑤ 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.

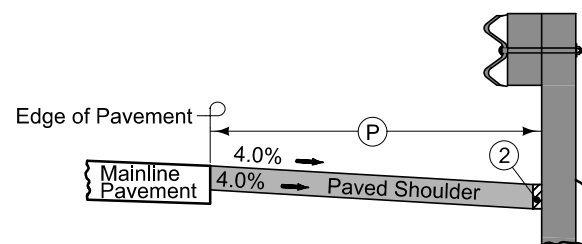


Section A-A

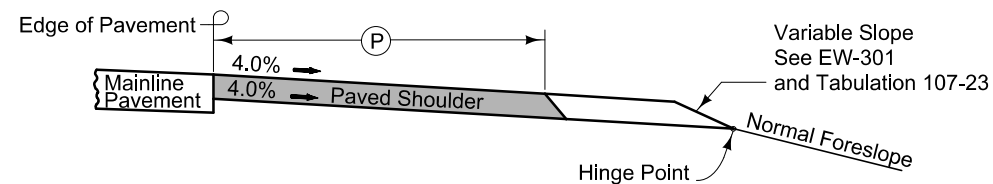


Section B-B

NEW CONSTRUCTION

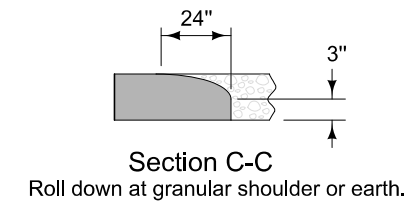


Section A-A



Section B-B

EXISTING SHOULDER



Section C-C

Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL

SURVEY SYMBOLS

- BL Topo Breakline
- SI Sign
- Guardrail
- TDC Tree Deciduous
- SHR Shrub
- FW Wire Fence
- TLNR Tree Line Right
- TLNL Tree Line Left
- D Centerline Draw or Stream (Down)
- BNK Stream Bank
- DU Centerline Draw or Stream (Up)
- RIP Rip-Rap
- Existing Guardrail

UTILITY LEGEND

- F02 - (KAT) KALONA COOPERATIVE TELEPHONE
- F0 - (ICN) IOWA COMMUNICATIONS NETWORK
- T1 - Sharon Telephone

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

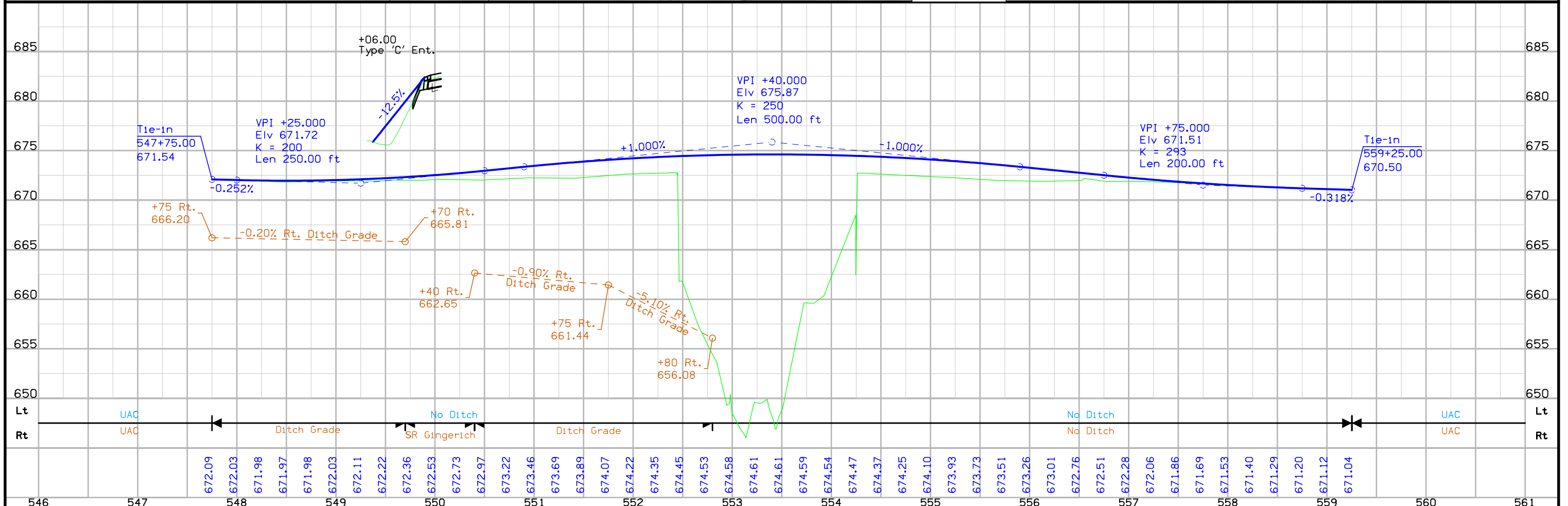
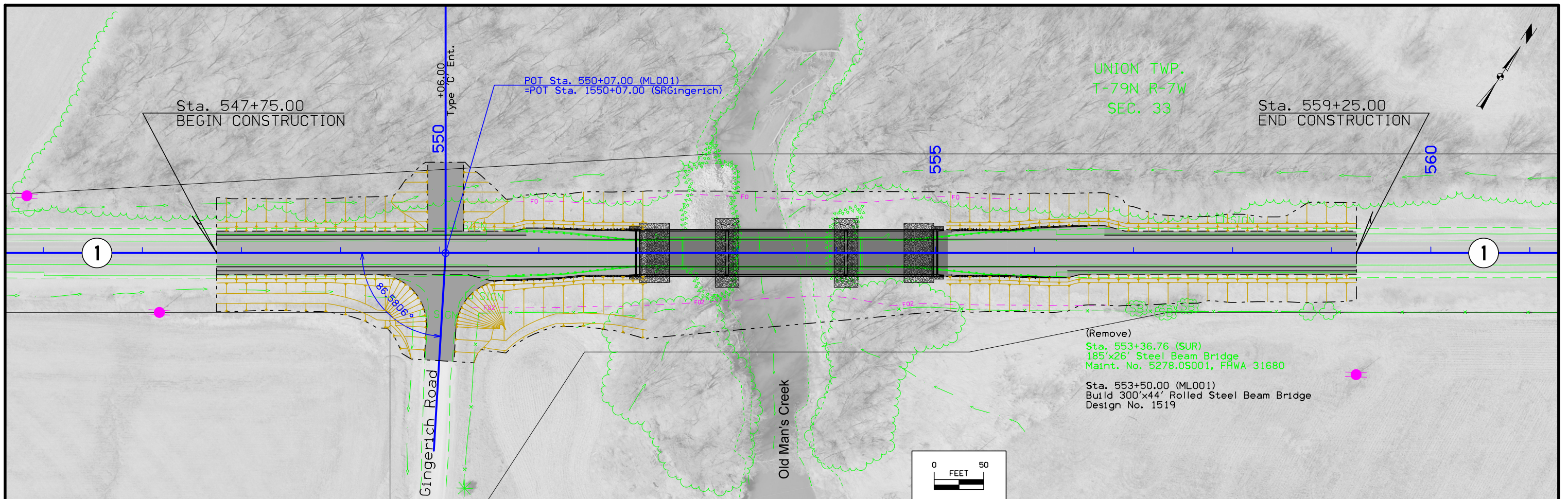
LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

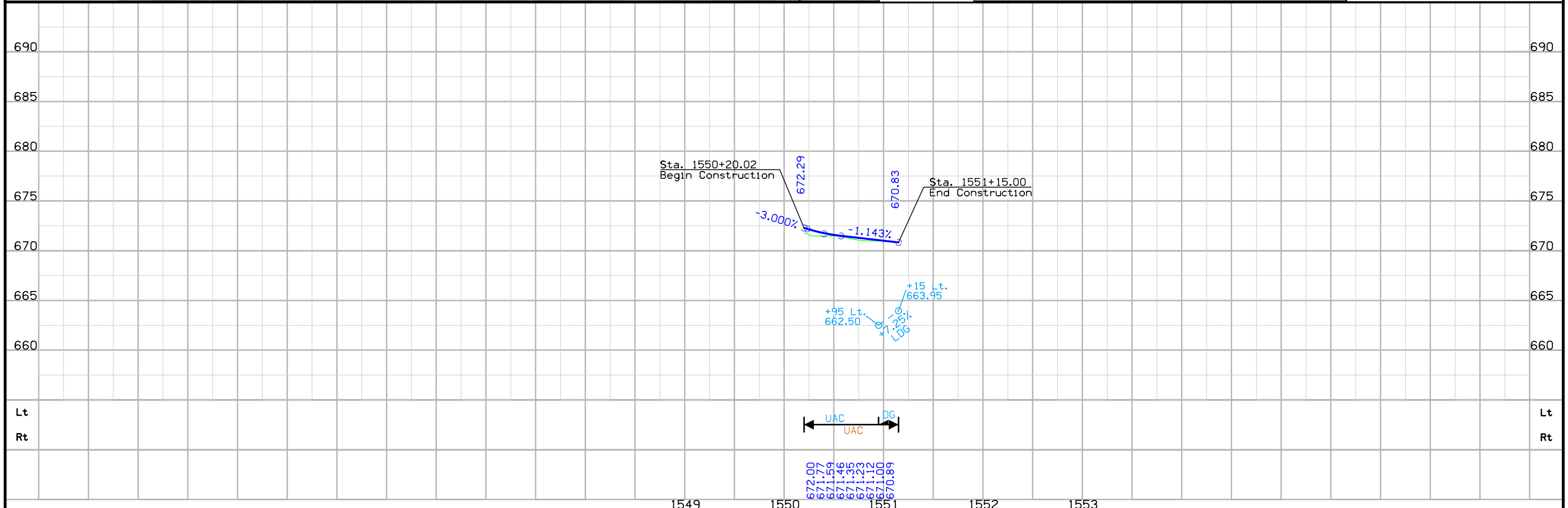
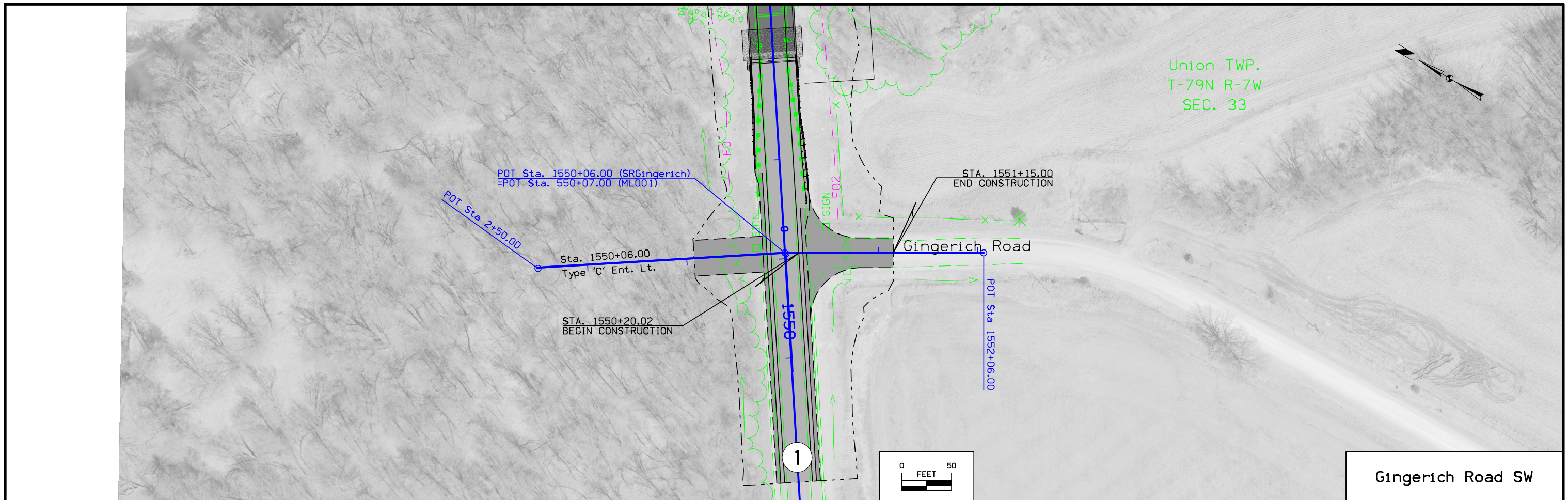
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- High Tension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

- ### 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
 - Access Control
 - Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D)





Survey Information

SAP 843.2
County: Johnson
PIN: 15-52-001-020
Project Number: BRF-001-5(110)--38-52
Location: Old Mans Creek 1.5 mi S of Co Rd F52
Type of Work: Bridge-Unspecified
Project Directory: 5200102015

General Information

Measurement units for this survey are US survey feet. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM with Photo control.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12A). Benchmarks were placed throughout the project using post processed static observations relative to Pts. 1 and Johnson County Pt. 220. A minimum of 6hrs of data was simultaneously collected on each of these primary control points.

This survey observed 1 Johnson County Control Monument with published NAVD88 Geoid03 heights to compare to local ground control:
Point name 220 Elev. of 758.49'
Survey Elev. = 758.46'

Horizontal Control

The project coordinate system for this survey is Modified Iowa State Plane South Zone (U.S. Survey Feet). This survey control is relative to laRTN reference stations. laRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00.

The project coordinate system is modified from Iowa State Plane South at project point 1 project coordinates of N= 591605.026, E= 2144428.984 (US ft.) All project points are scaled about this point using a scale factor of 1.000052919307.

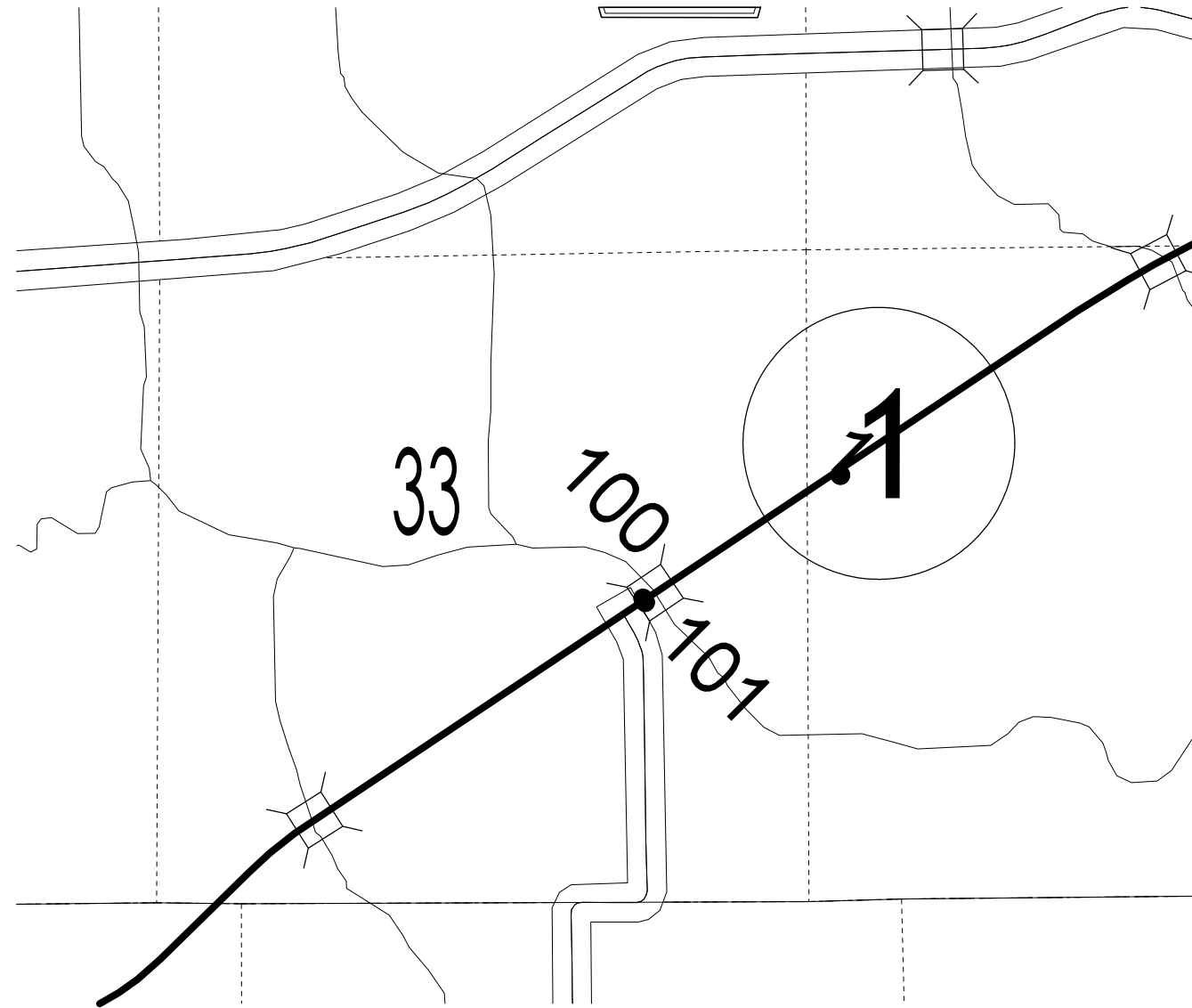
Additional control points were placed throughout the project using post processed static observations relative to Pts. 1 and 2. A minimum of 6hrs of data was simultaneously collected on each point.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No F-9(7) .Survey stationing was equated to the plan PC station 493+15.7 and run ahead without equation throughout the survey.

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

State Plane South

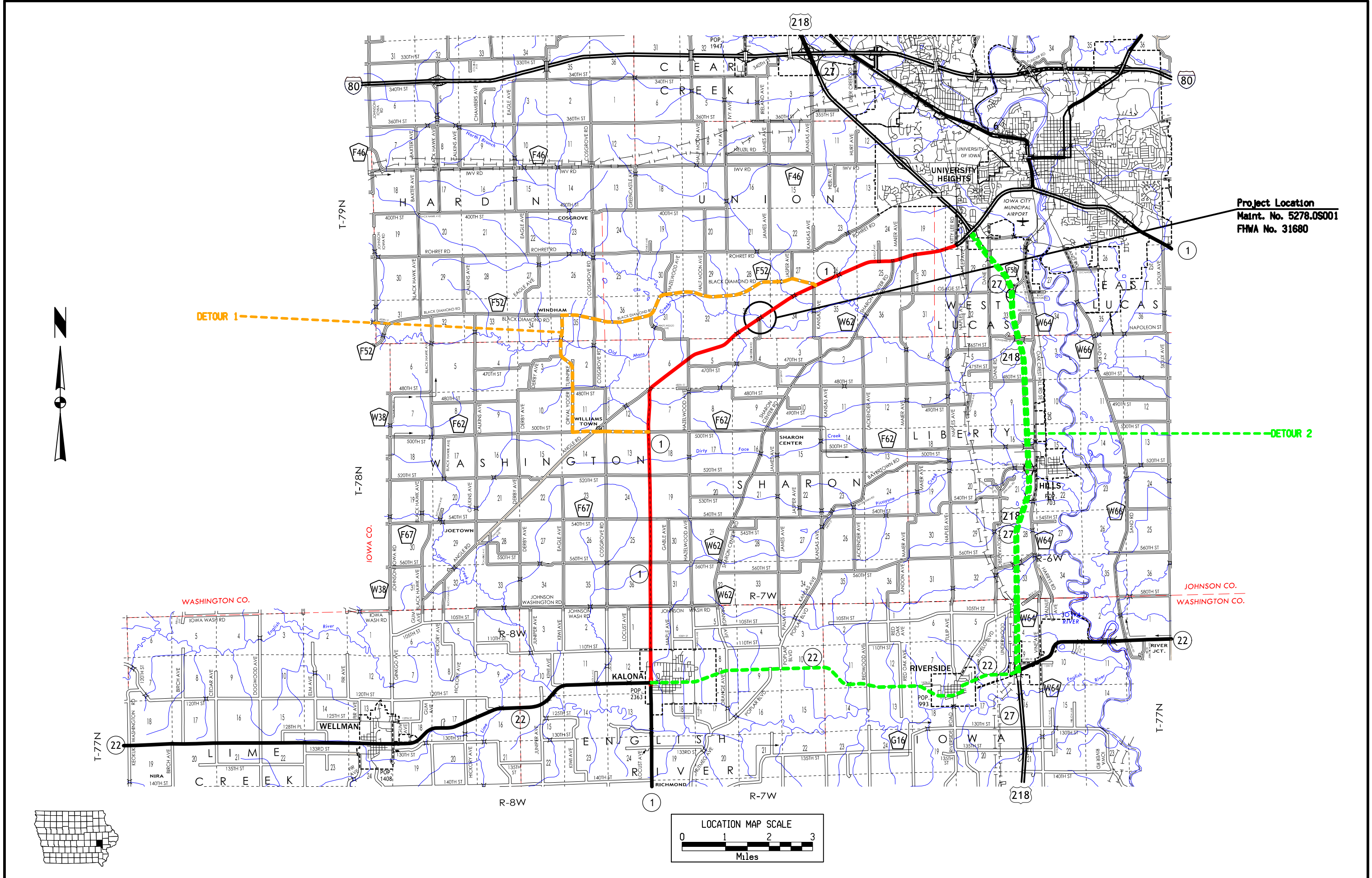
Coordinate listing from next sheet will be used with laRTN for monument
recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88
State Plane South

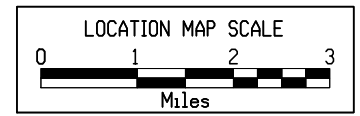
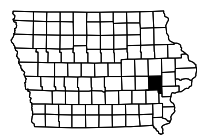
Point Name	Northing	Easting	Elevation	Feature Definition
1	591605.030	2144428.980	663.56	CP
100	590607.049	2142829.056	670.84	CP
101	590574.147	2142848.141	670.87	CP



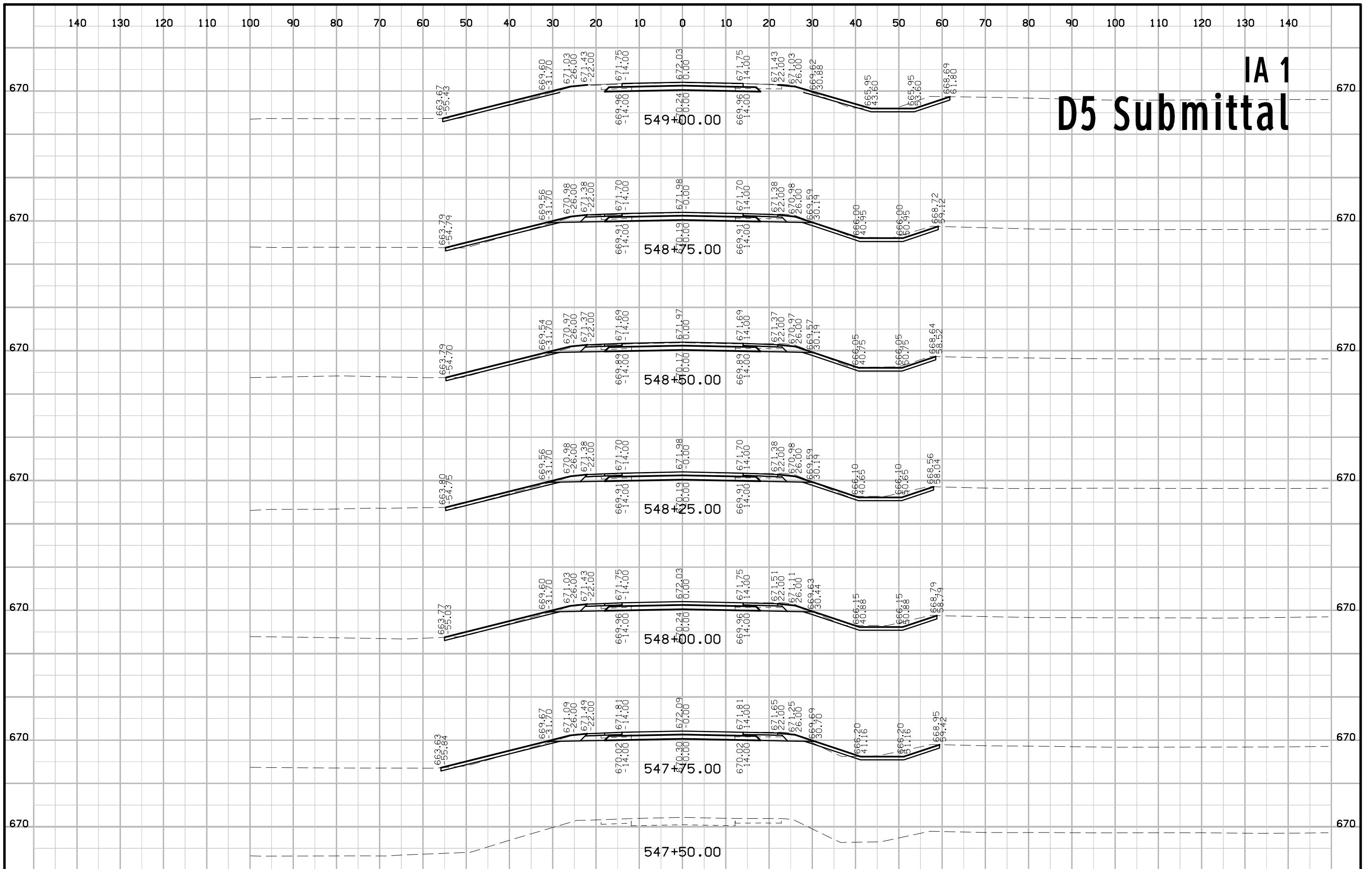
Project Location
 Maint. No. 5278.0S001
 FHWA No. 31680

DETOUR 1

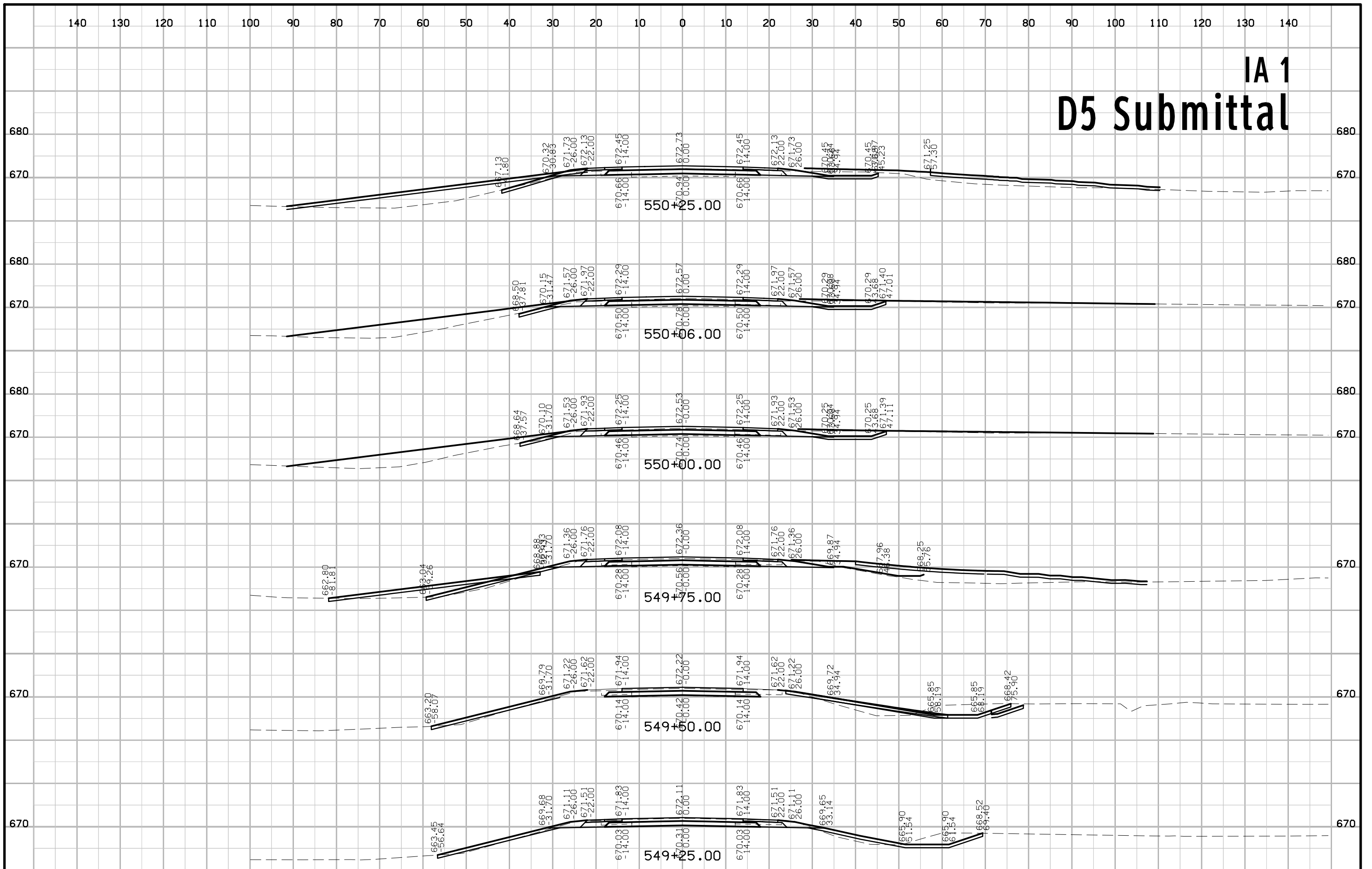
DETOUR 2



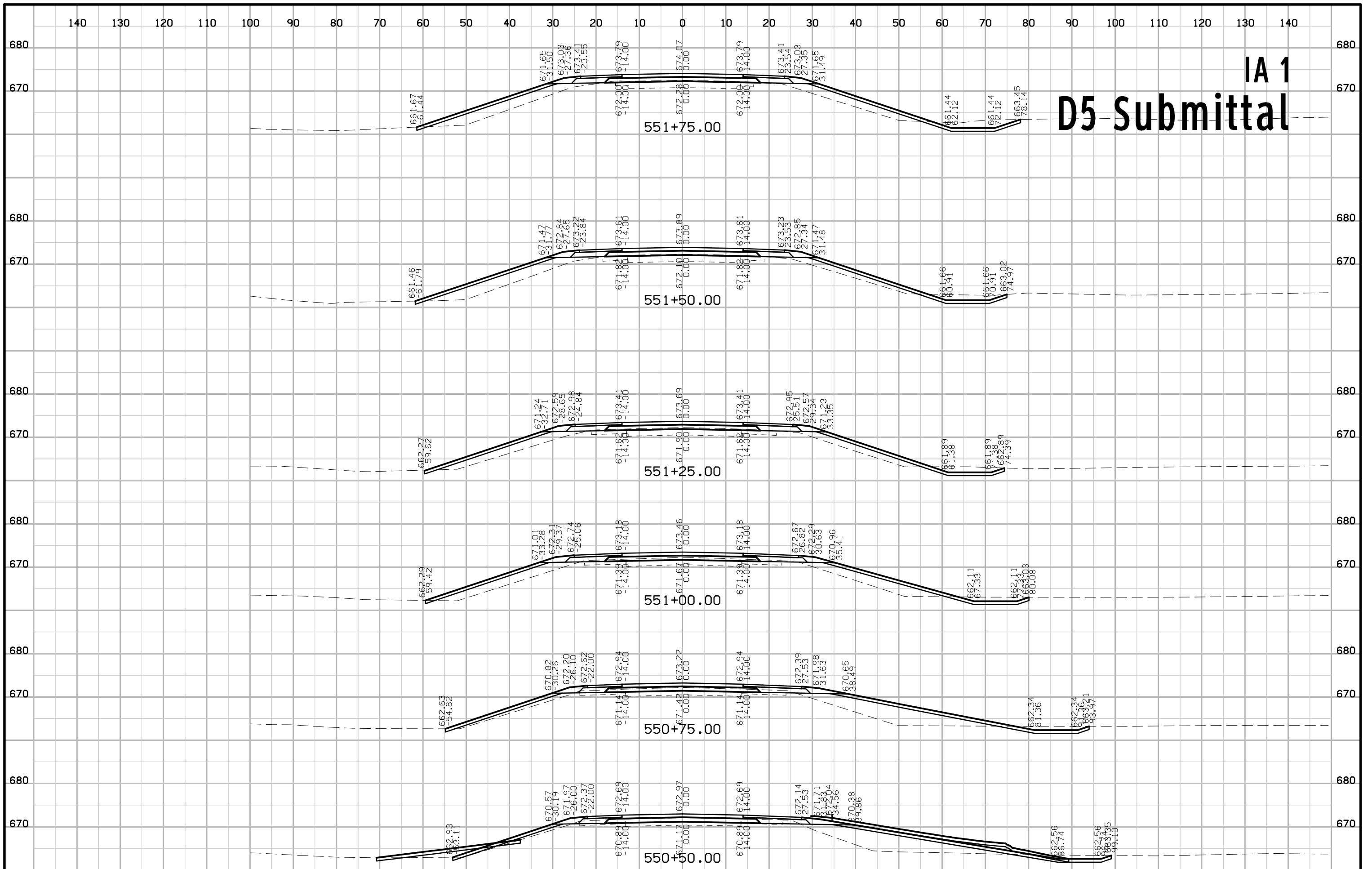
IA 1 D5 Submittal



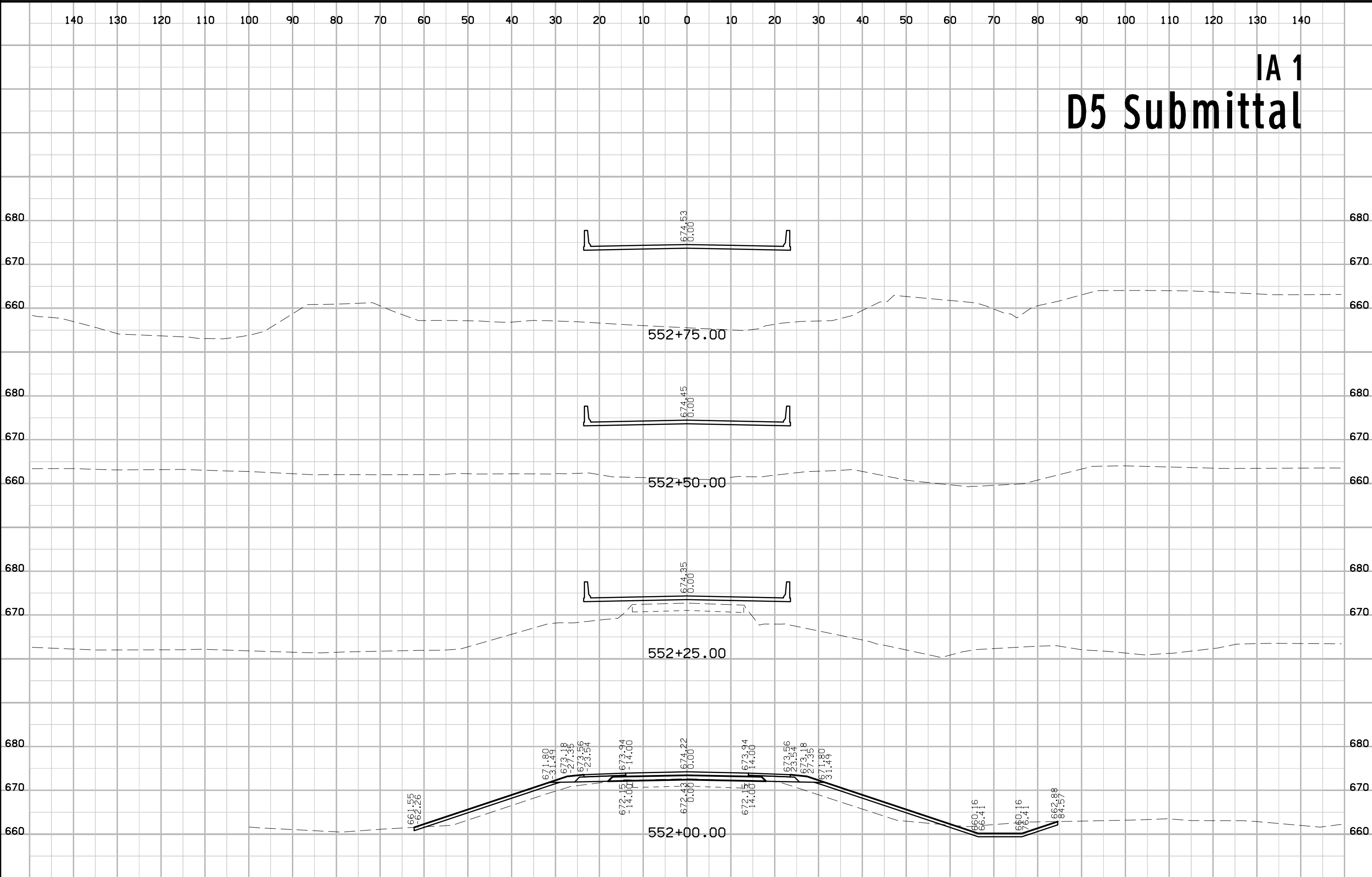
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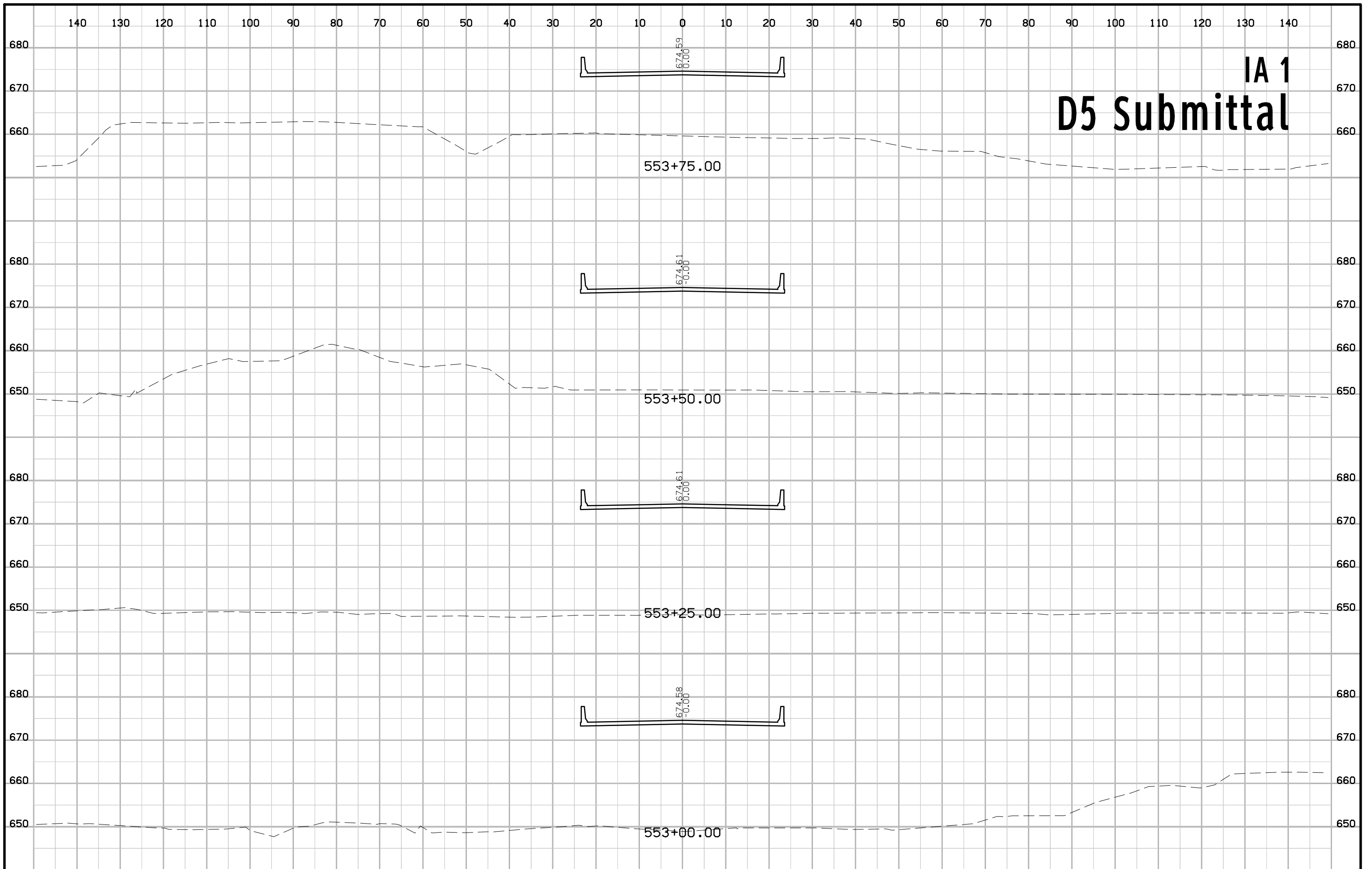
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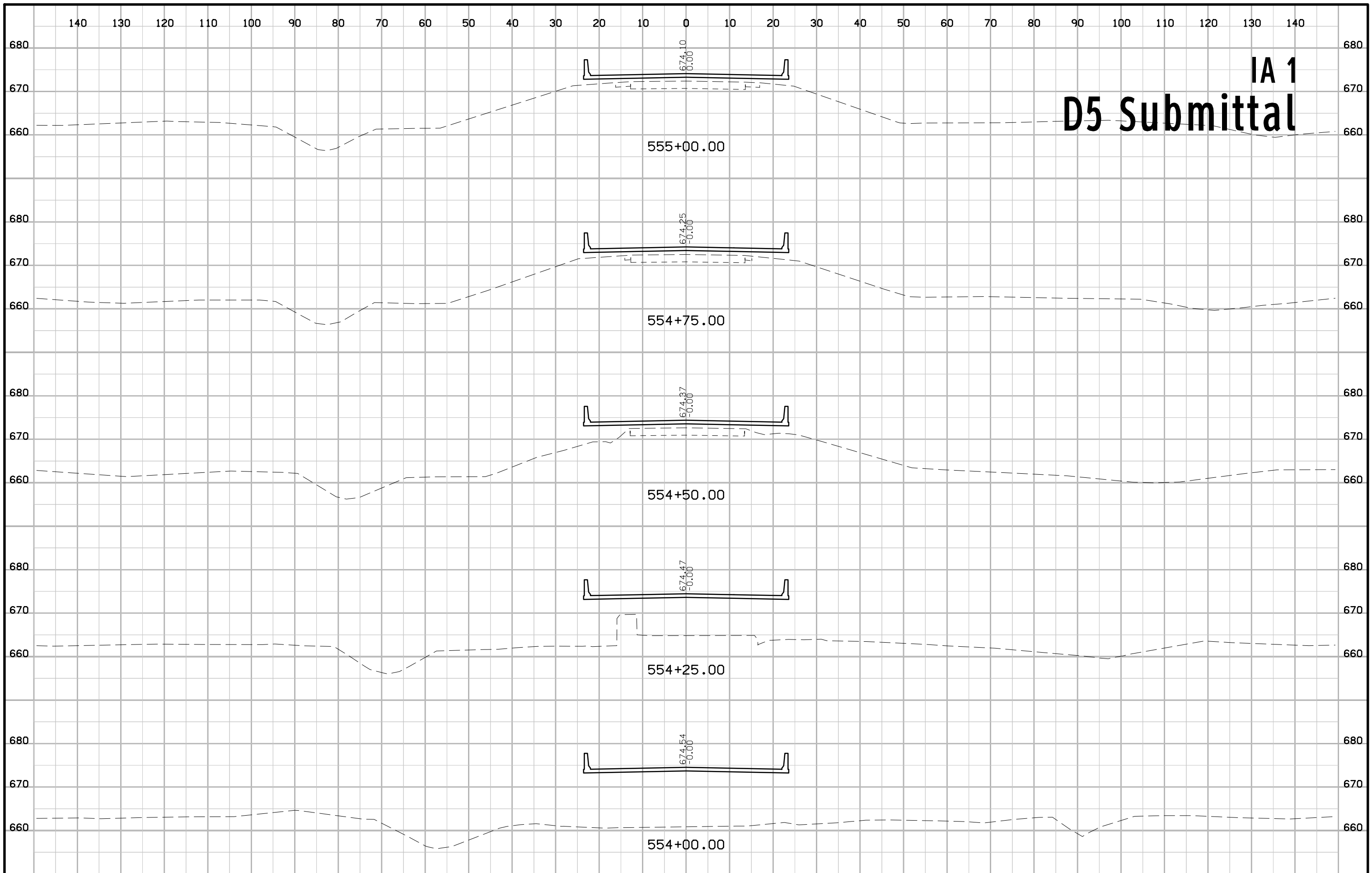


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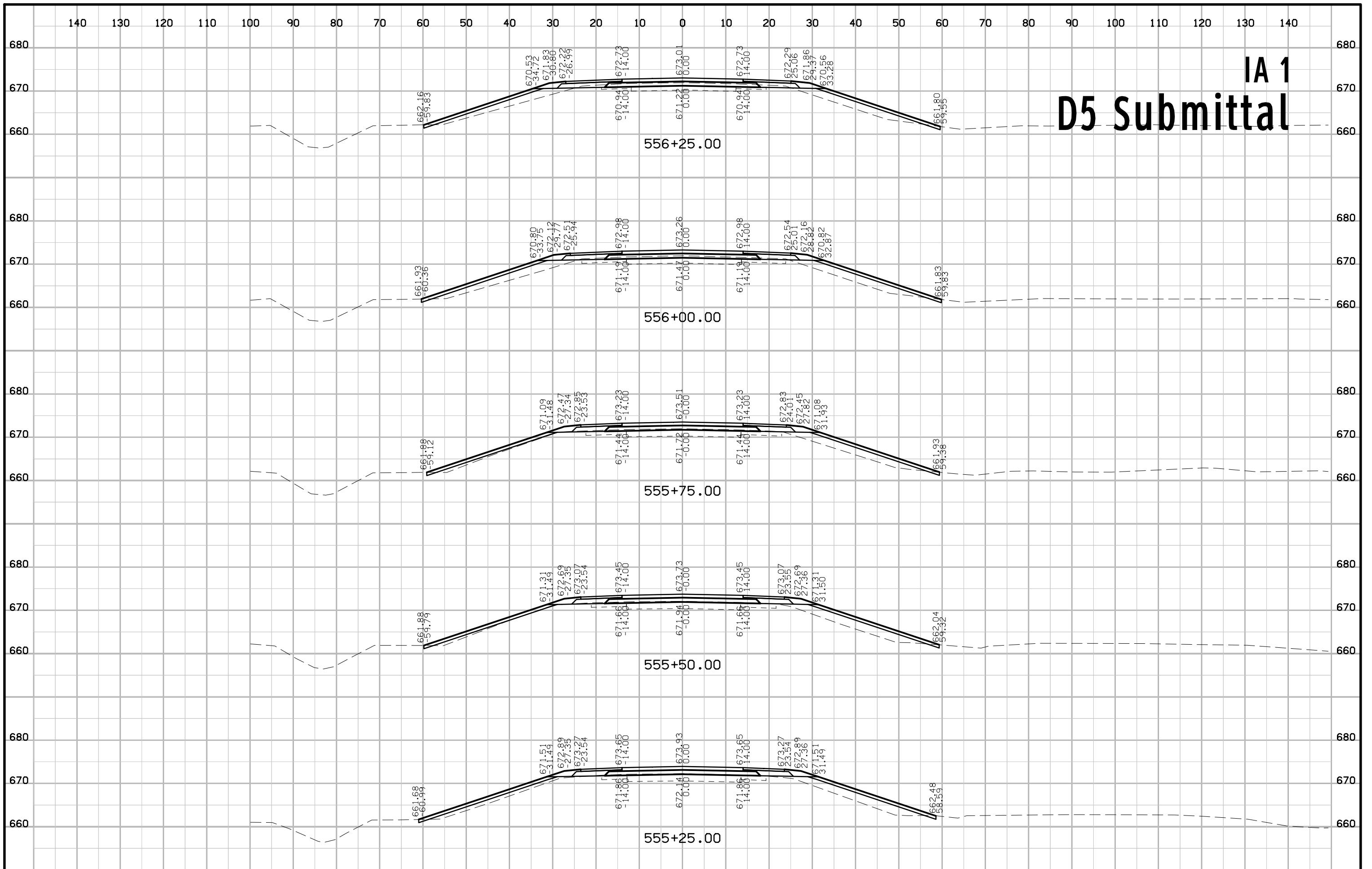
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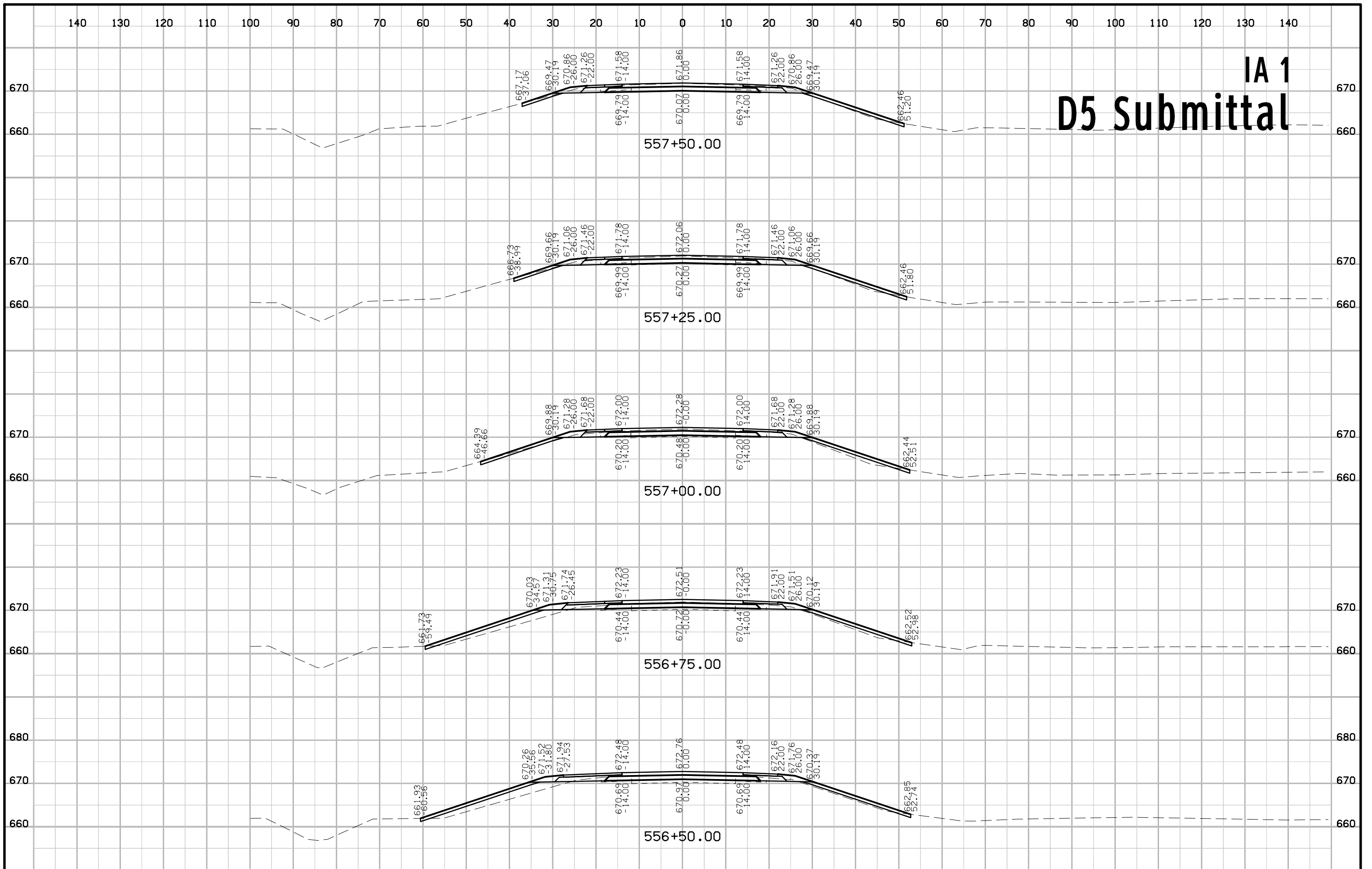


IA 1
D5 Submittal

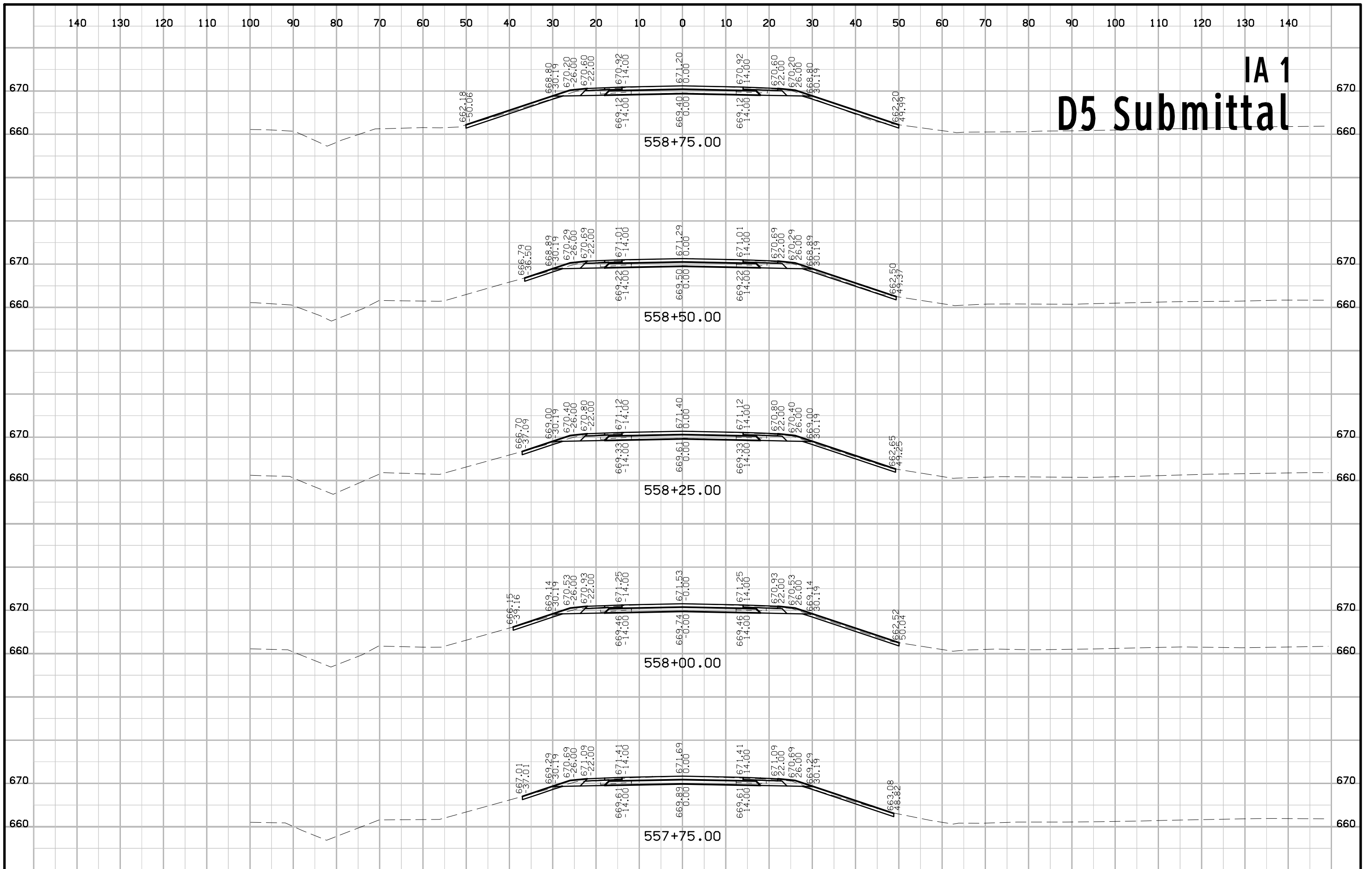
IA 1 D5 Submittal



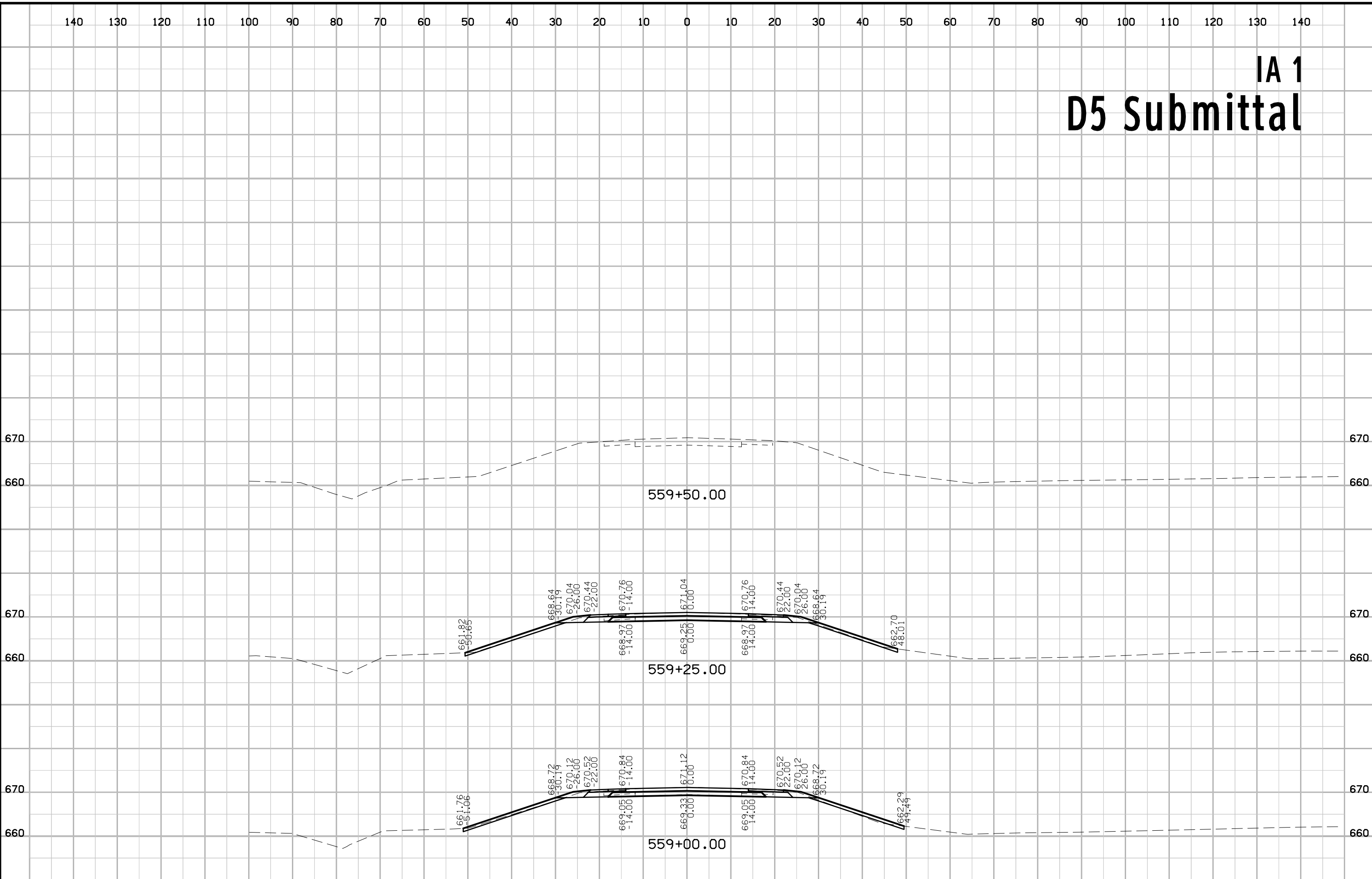
IA 1 D5 Submittal



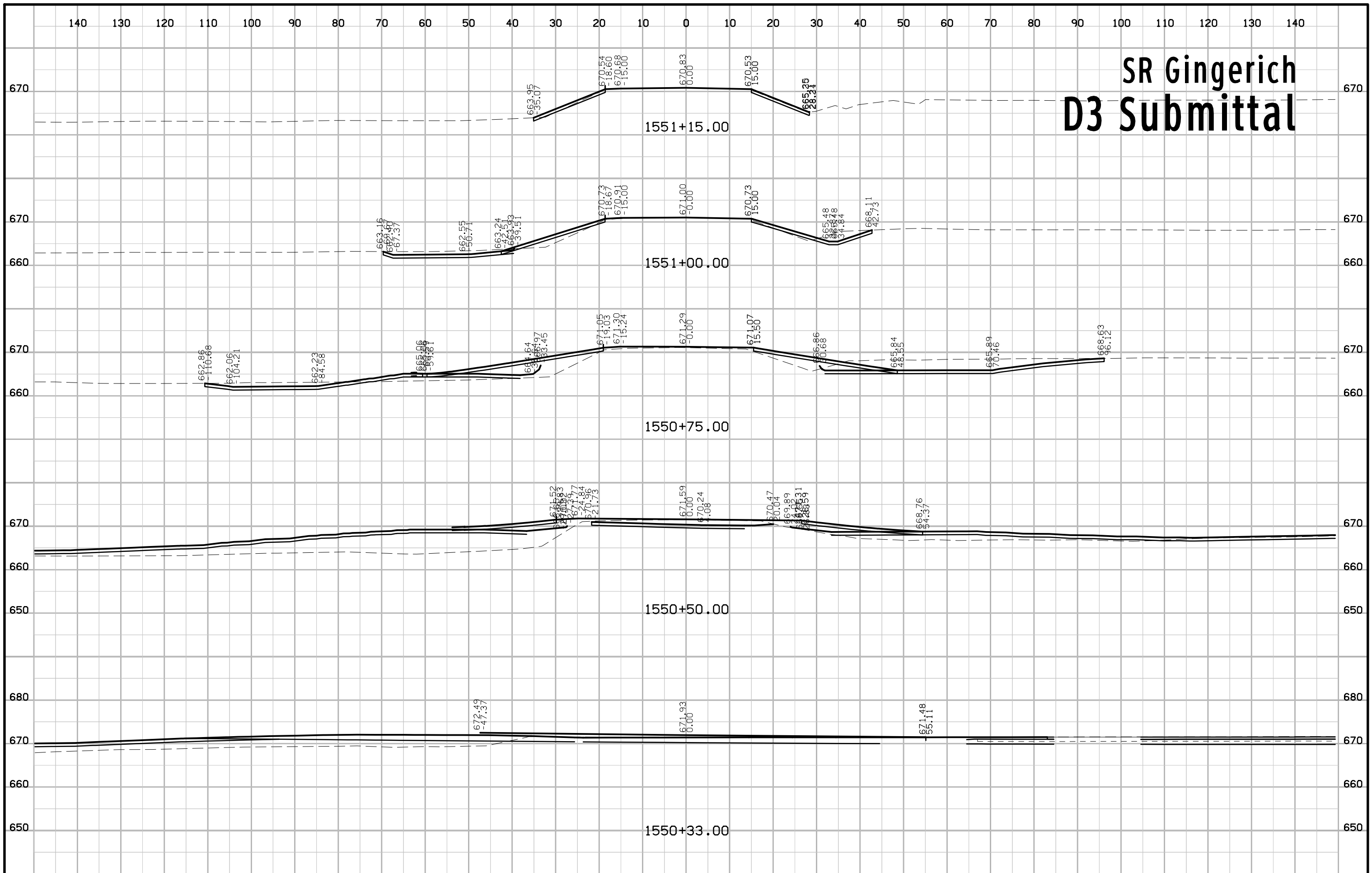
IA 1 D5 Submittal



IA 1 D5 Submittal

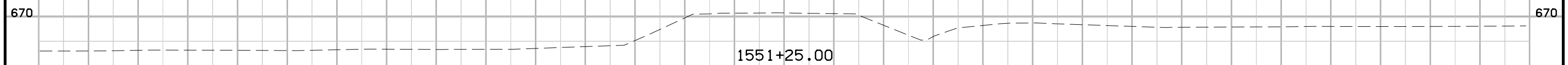


SR Gingerich D3 Submittal



140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

SR Gingerich D3 Submittal



FILE NO.	ENGLISH	DESIGN TEAM	Flattery \ Bell	JOHNSON COUNTY	PROJECT NUMBER	BRF-001-5(110)--38-52	SHEET NUMBER	X.2
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