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## Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

# PRIMARY ROAD SYSTEM ALLAMAKEE COUNTY BRIDGE REPLACEMENT

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



IA 9/Wis 82  
(East of IA 26 Intersection)

### DESIGN DATA URBAN

2025 AADT	2,900	V.P.D.
2045 AADT	3,000	V.P.D.
2045 DHV	310	V.P.H.
TRUCKS	9	%
Total		
Design ESALs	1,400	

IA 9/IA 26  
(AKA Second St., Lansing)

### DESIGN DATA URBAN

2025 AADT	1,400	V.P.D.
2045 AADT	1,500	V.P.D.
2045 DHV	160	V.P.H.
TRUCKS	14	%
Total		
Design ESALs	1,300	

### PRELIMINARY EARTHWORK QUANTITY SUMMARY

Excavation (CY)	Embankment In Place (CY)
13,800	12,800

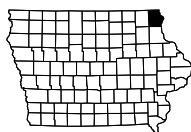
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
V.4	Kevin R. Eisenbeis	Hydraulic Signature Block
V.8	Kevin R. Eisenbeis	Hydraulic Signature Block

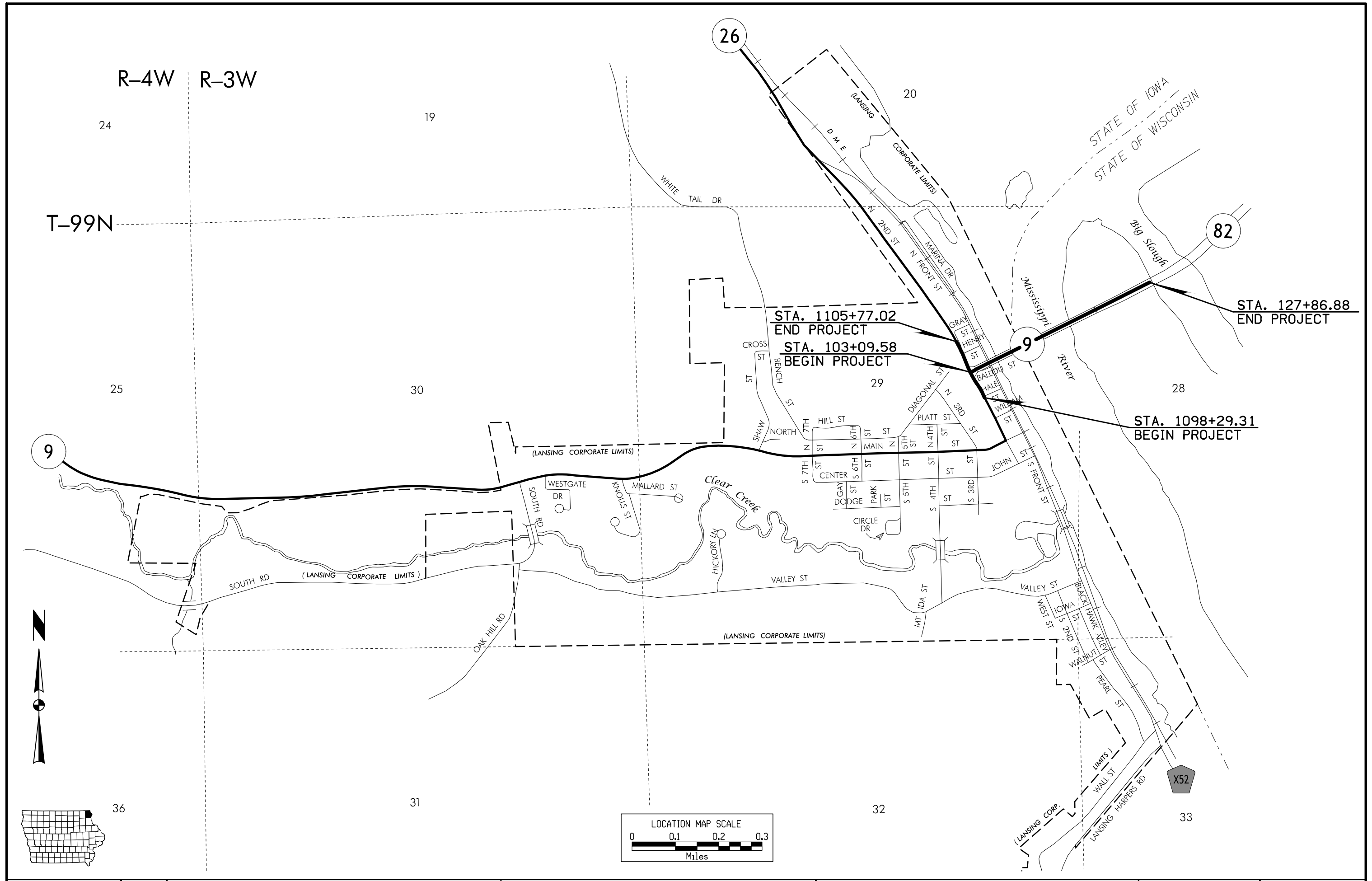
## PRELIMINARY PLANS

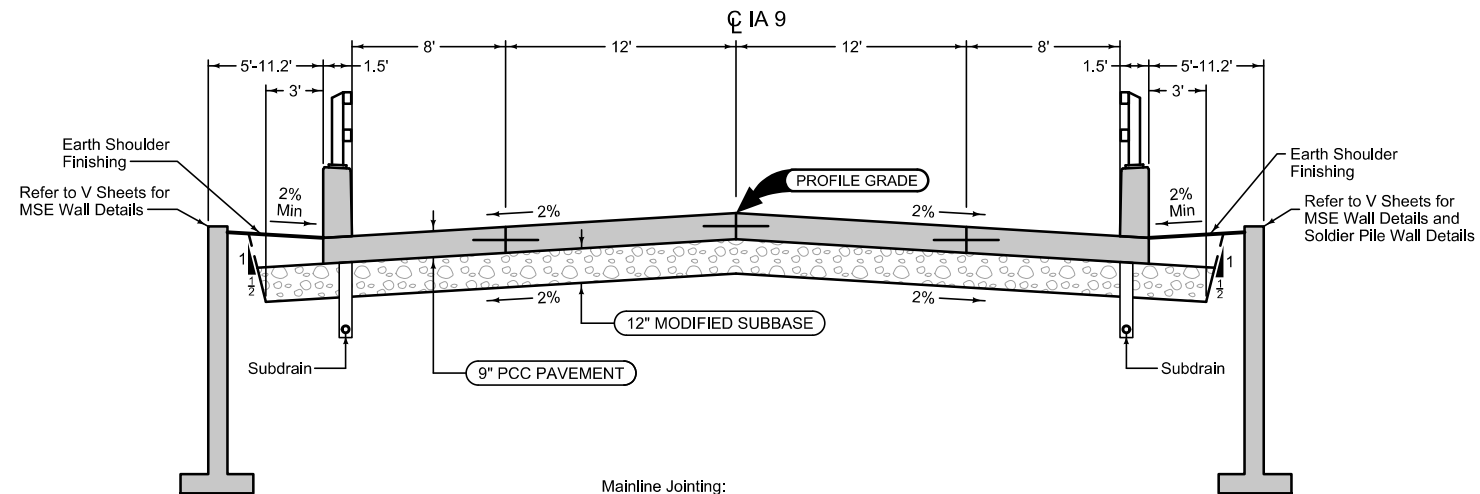
Subject to change by final design.

D5 PLAN - Date: Dec. 1, 2020

REVISIONS	TOTAL
	125
PROJECT IDENTIFICATION NUMBER	
16-03-009-010	
PROJECT NUMBER	
BRF-009-9(73)--38-03	
R.O.W. PROJECT NUMBER	
STPN-009-9(85)--2J-03	







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

BEGIN STATION	END STATION
103+09.58	104+10.17

Refer to V Sheets for Limits of Bridge Construction, Sta. 104+10.17 - Sta. 121+32.26

Refer to S.R.P. BR-203 for Bridge Approach Pavement details.

IA 9

**Paved Shoulder at Guardrail**

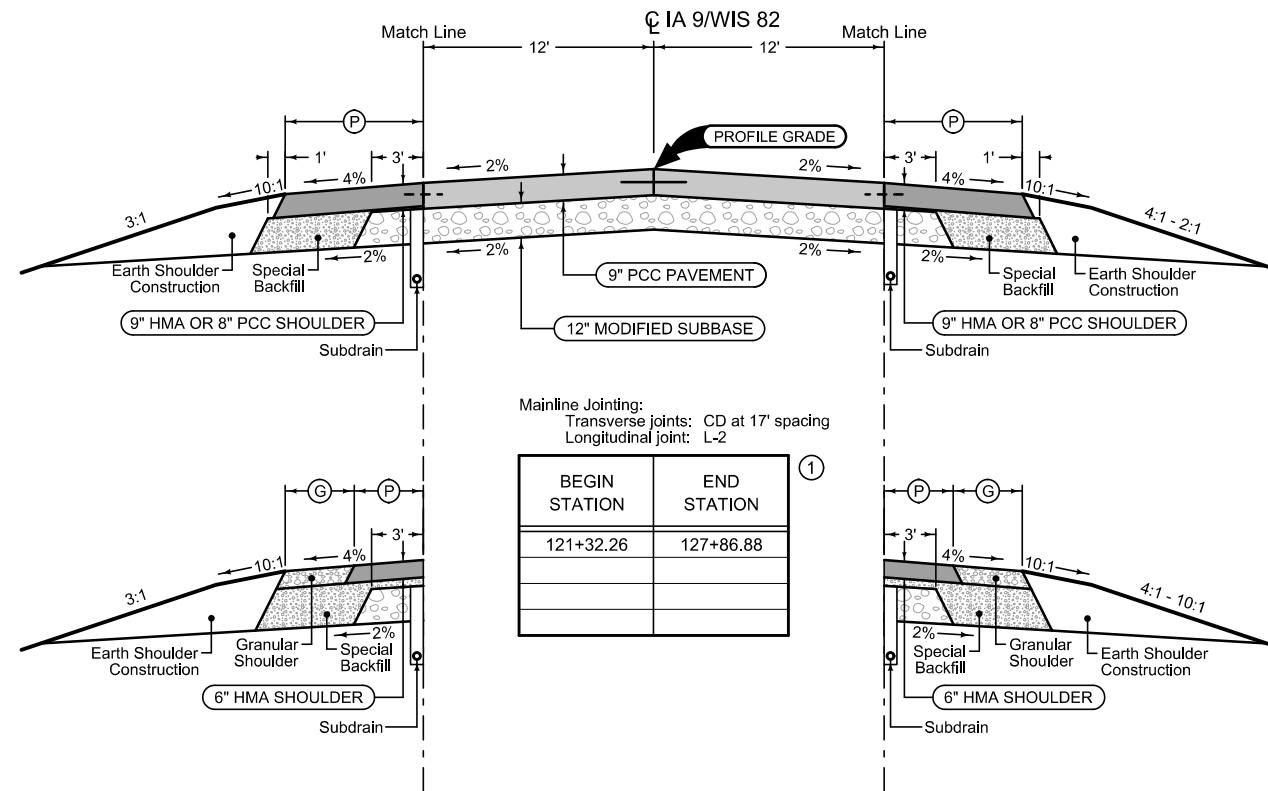
PCC Shoulder Jointing:  
 Longitudinal joint: BT-1 or BT-5  
 Transverse joints: C at mainline spacing  
 HMA Shoulder Jointing:  
 Longitudinal joint: B

2_P_Guard_ 10-17-17		
STATION TO STATION		(P) Feet
121+32.26	122+51.51	8.0-10.6
126+95.60	127+86.88	3.3-2.0

**Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: B

2_C_ 10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
122+51.51	126+75.54	2	6
126+75.54	126+95.60	3.3	4.7



**Paved Shoulder at Guardrail**

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

2_P_Guard_ 10-17-17		
STATION TO STATION		(P) Feet
121+32.26	122+56.90	8.0-10.6
124+43.21	127+86.88	11.8-2.0

**Combination Shoulder**

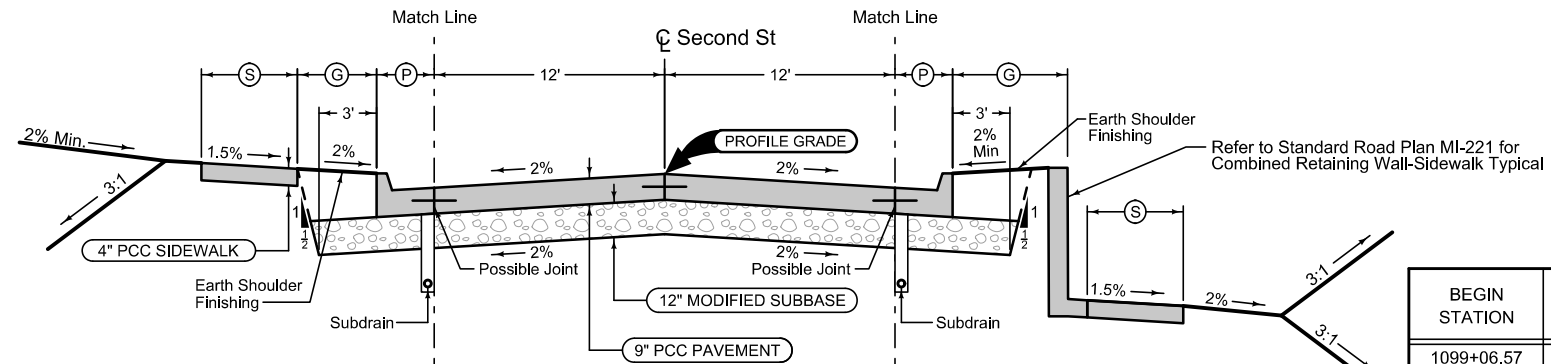
Shoulder Jointing:  
 Longitudinal joint: B

2_C_ 10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
122+56.90	124+43.21	2	6

- Notes:
- Normal Section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.
  - Refer to S.R.P. BR-203 for Bridge Approach Pavement details.

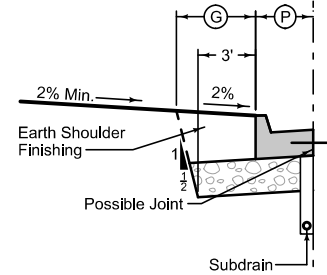
**IA 9/WIS 82**

BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1098+29.31	1098+43.00	4.1-4.6	1.3-2.2	4.7-4.0	6" Stnd
1099+18.86	1103+22.85	5	4	3	6" Stnd
1104+25.00	1104+50.33	5	4	3	6" Stnd

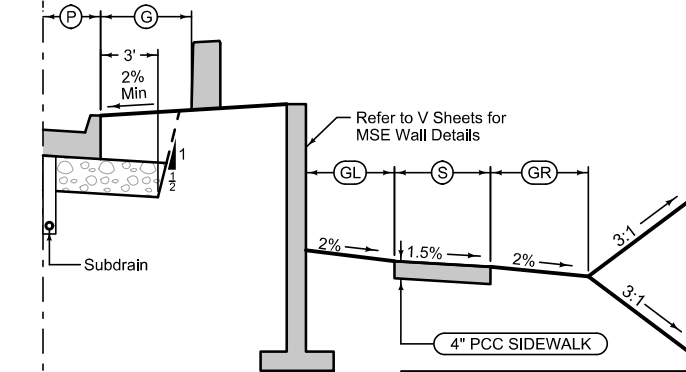


BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1099+06.57	1100+12.16	5	3-11.2	3	6" Stnd
1103+82.93	1104+43.47	5	7.7-6.8	12-8	6" Stnd

BEGIN STATION	END STATION	(G) Feet	(P) Feet	Curb Type See PV-102
1104+50.33	1105+59.32	4	3	6" Stnd

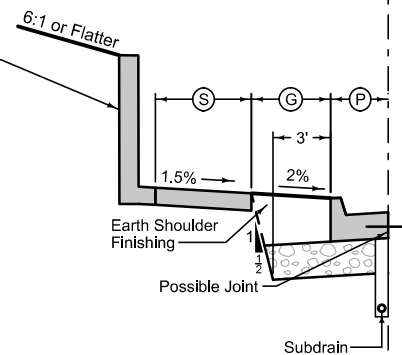


BEGIN STATION	END STATION
1098+29.31	1105+77.02

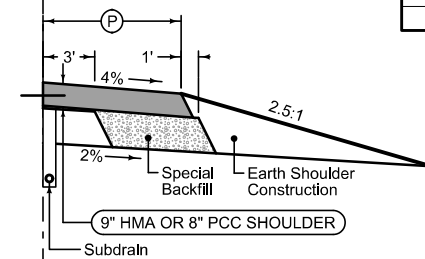


BEGIN STATION	END STATION	(S) Feet	(GL) Feet	(GR) Feet	Curb Type See PV-102
1100+12.16	1101+93.83	5	1-11.3	1-5	6" Stnd
1101+93.83	1103+82.93	0	0	Varies	6" Stnd

Refer to Standard Road Plan MI-221 for Combined Retaining Wall-Sidewalk Typical

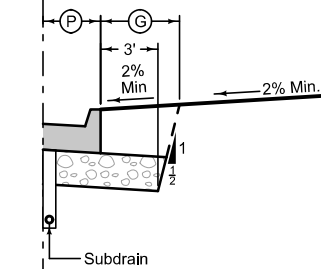
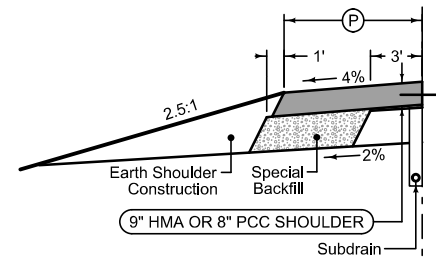


BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1098+43.00	1099+18.86	4.6-6.8	1.5-3.0	4.2-3.0	6" Stnd
1103+22.85	1104+25.00	5	4	3	6" Stnd



BEGIN STATION	END STATION	(P) Feet
1105+59.32	1105+77.02	4-3.3

BEGIN STATION	END STATION	(P) Feet
1105+59.32	1105+77.02	3-3.8



BEGIN STATION	END STATION	(G) Feet	(P) Feet	Curb Type See PV-102
1098+29.31	1098+52.88	4	5.1-3.2	6" Stnd

BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1098+52.88	1098+68.60	4.5-5	4	3.2-3	6" Stnd

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

## SECOND STREET

### Curbed Shoulder

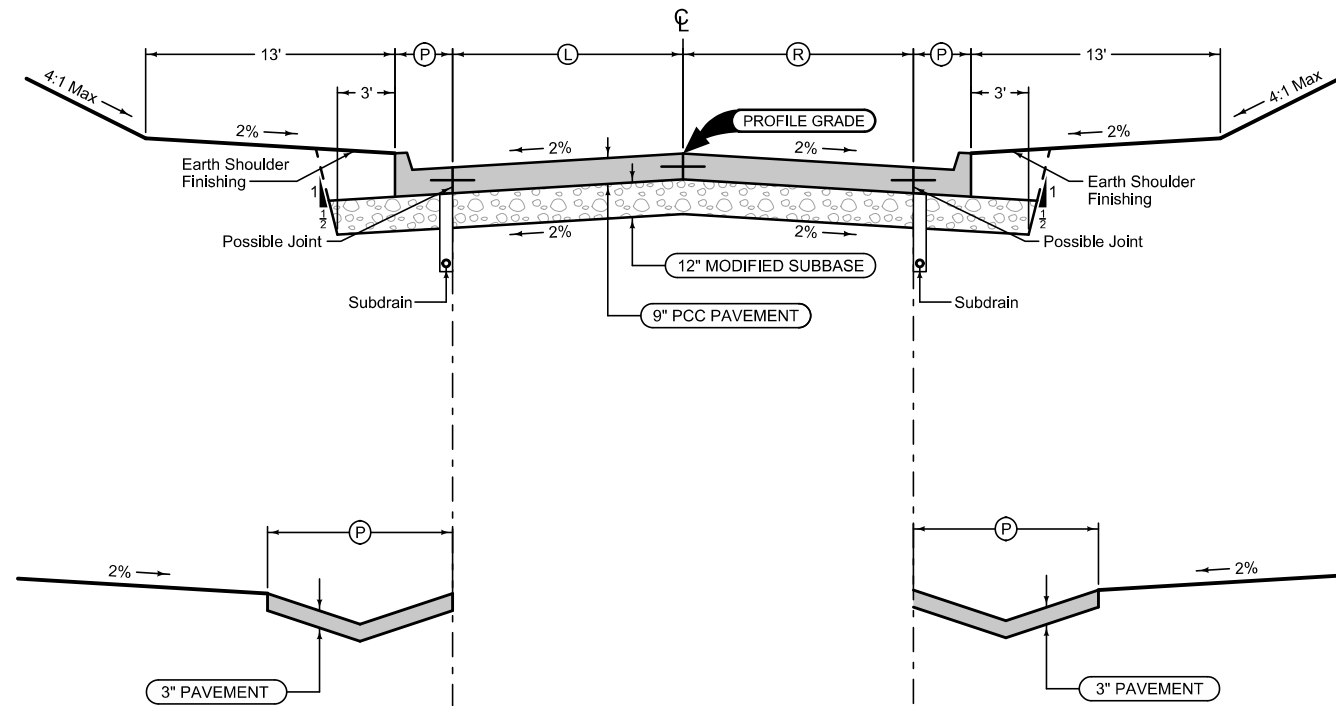
Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
 Staged : KT-2  
 Transverse:C at 17' spacing

2_Curb_MODIFIED				
ROAD	STATION TO STATION		(P) Feet	Curb Type See PV-102
Hale Street	2098+95.70	2099+27.45	2.4	6" Stnd
Henry Street	3104+78.15	3105+17.74	2.5-3.7	6" Stnd

### Paved Ditch

ROAD	BEGIN STATION	END STATION	(P) Feet
Henry Street	3105+17.74	3105+25.00	10



### Curbed Shoulder

Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
 Staged : KT-2  
 Transverse:C at 17' spacing

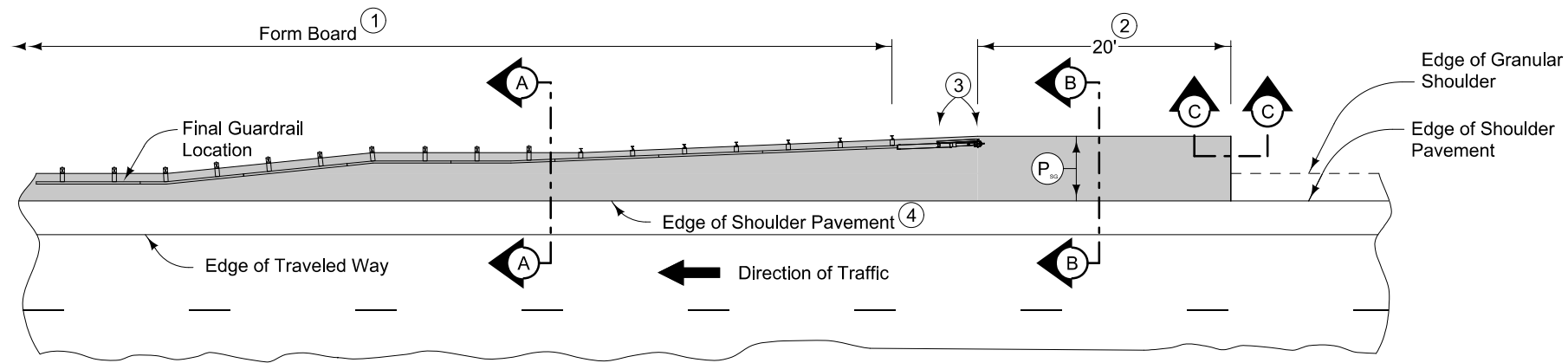
2_Curb_MODIFIED				
ROAD	STATION TO STATION		(P) Feet	Curb Type See PV-102
Hale Street	2098+95.70	2099+27.45	2.9-2.4	6" Stnd
Henry Street	3104+78.15	3105+25.00	1.5-4.0	6" Stnd

### Paved Ditch

ROAD	BEGIN STATION	END STATION	(P) Feet
Henry Street	3105+25.00	3105+29.58	3.9-4.5

ROAD	BEGIN STATION	END STATION	(L) Feet	(R) Feet
Hale Street	2098+95.70	2099+27.45	12	12
Henry Street	3104+78.15	3105+25.00	10	10

**HALE STREET  
HENRY STREET**



PLAN VIEW

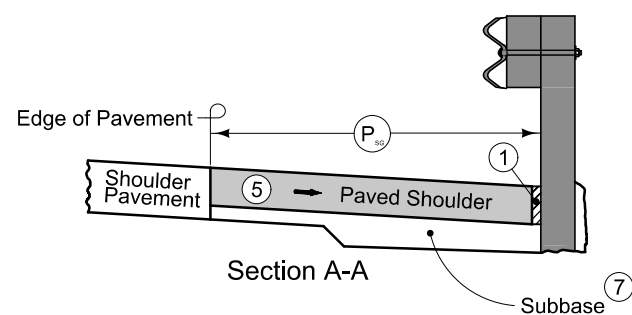
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

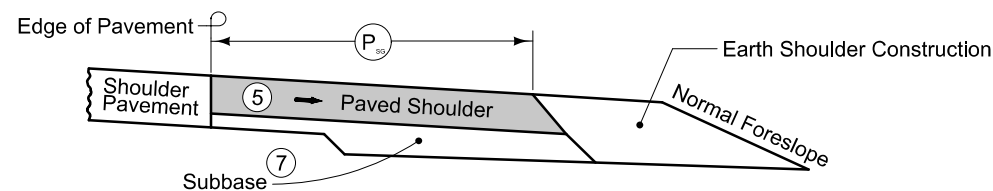
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- ① 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.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT-1 joint for PCC shoulder. 'B' joint for HMA shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.

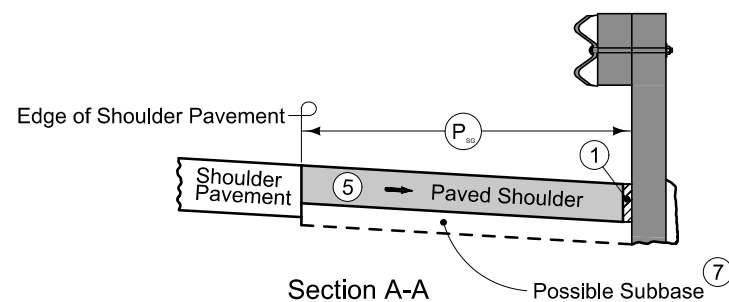


Section A-A

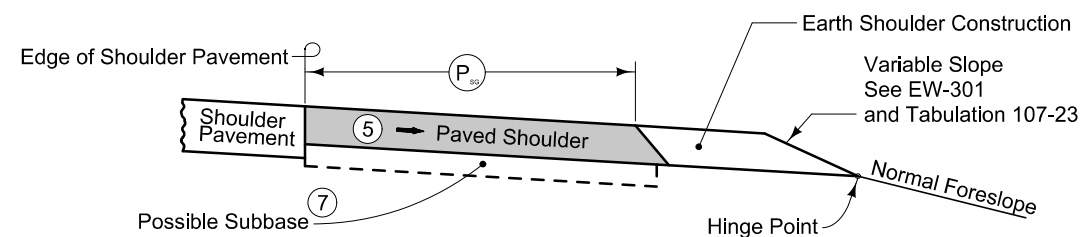


Section B-B

NEW CONSTRUCTION

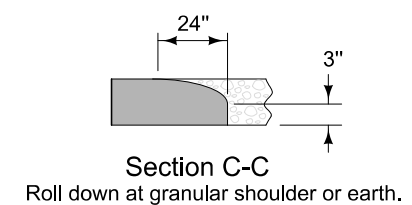


Section A-A



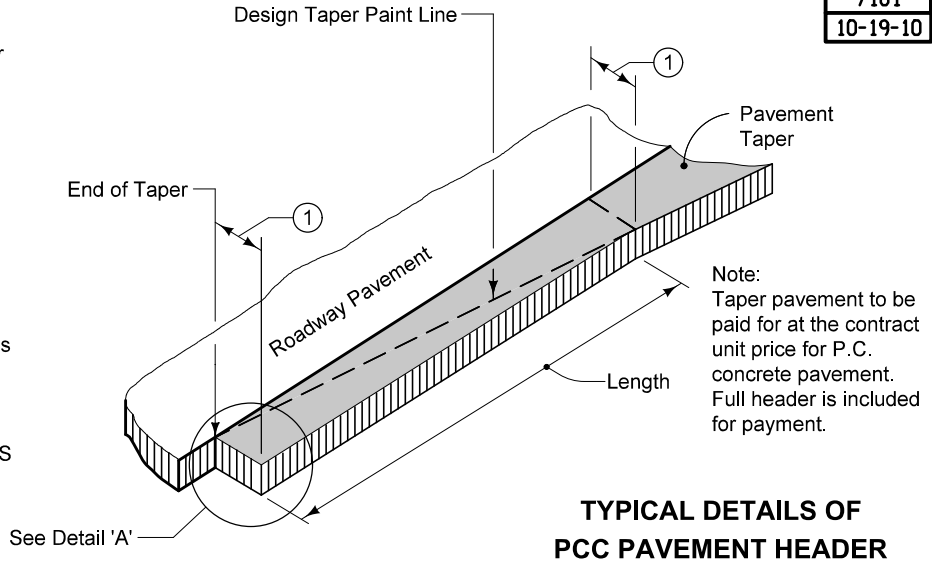
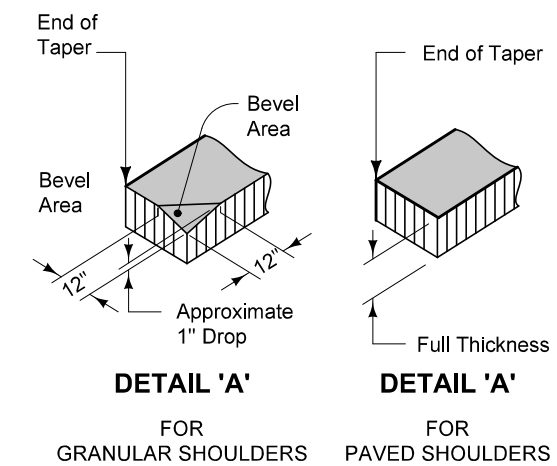
Section B-B

EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL  
(ADJACENT TO PARTIAL WIDTH PAVED SHOULDER)

7101  
10-19-10



① Normal width is 2'-0". Construct 4'-0"  
width when butting into 4' wide HMA  
shoulders (See Typical 7154A).





### SURVEY SYMBOLS

- CP Control Point
- ✕ PCT Photo Control Target
- △ BM Bench Mark
- GR Ground Shot (All Survey Points)
- △ ROW Right of Way Mark
- SIGN
- GP Guard Post (Less Than 4 Posts)
- LP L.P. Tank
- FLG Flag Poles
- BB Billboard
- TDC Tree Deciduous
- TEV Evergreen Tree
- PPA Power Pole (Alliant Energy)
- PR Electric Riser Pole
- EB Electrical Box
- LUM Luminaire
- WHD Water Hydrant
- WV Water Valve
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- TPD Telephone Pedestal

- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- SH Paved Shoulder
- SNP Unpaved Shoulder
- BL Topo Breakline
- GU Gutter In Front of Curb
- CU Back of Curb
- BRG Bridge
- RET Retaining Walls
- RIP Rip-Rap
- D Centerline Draw or Stream (Down)
- TER Terrace
- BLD Building or Foundation
- FW Wire Fence
- GDL Guard Rail Steel
- CON Concrete or A/C Slab
- PIP Pipe Culvert
- TLNL Tree Line Left
- SWK Sidewalk
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- FCL Chain Link and Security Fence
- ENP Edge Paved Entrance & Park Lot
- FWD Wood Fence
- RR Centerline of Railroad Tracks
- EW Edge of Water
- TW Top of Water
- BNK Stream Bank
- EG Edge of Gravel Road

### SURVEYED UTILITY OWNER SYMBOLS

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

#### Remark Abbreviations

- QLA Quality Level A Highest guideline quality level
- QLD Quality Level D Lowest guideline quality level

- PPA Alliant Energy
- EL1C Alliant Energy - Quality C
- WL1C City of Lansing (People's Service) - Quality C
- WL1D City of Lansing (People's Service) - Quality D
- ST1C City of Lansing (People's Service) - Quality C
- SA1C City of Lansing (People's Service) - Quality C
- TV1C Mediacom - Quality C
- TL1C Century Link - Quality C
- FO1C Mediacom - Quality C

### UTILITY LEGEND

- Alliant Energy  
Laura Barr  
200 1st St. S.E. #1901  
Cedar Rapids, IA 52401  
319-286-1315
- Centurylink  
Tom Sturmer  
700 W. Mineral  
Littleton, CO 80120  
720-578-8090
- Mediacom  
Brandon Thies  
115 South Marquette  
Prairie Du Chien, WI 53821  
608-380-1083
- Alliant Energy  
Laura Barr  
200 1st St. S.E. #1901  
Cedar Rapids, IA 52401  
319-286-1315
- City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624
- City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624
- City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624

### 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
- Obliterate Old Roadbed

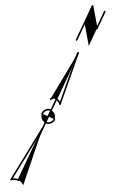
### RIGHT-OF-WAY LEGEND

- 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, E, F, & K)

The Restricted Areas shall be marked off with orange snow fence and no ground disturbance is permissible within these areas. If the contractor has questions they can contact the construction engineer or Iowa DOT Location and Environment staffer Brennan Dolan at (515) 239-1795.



Restricted Area

Restricted Area

Restricted Area

Restricted Area

Restricted Area

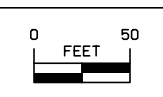
Restricted Area

Do Not Disturb Existing Retaining Wall

Do Not Disturb Existing Deck/Porch

Do Not Disturb Existing Stairs

For Side Road Details Refer to Sheets No. E.1 - E.4



POT Sta 102+97.58 (IA 9)  
=POC Sta 1102+97.58 (Second St.)

Sta. 103+09.58  
Begin Construction

Second St. (SRSECOND)

N. Front St.

Hale St. (SRHALE)

Henry St. (SRHENRY)

105

110

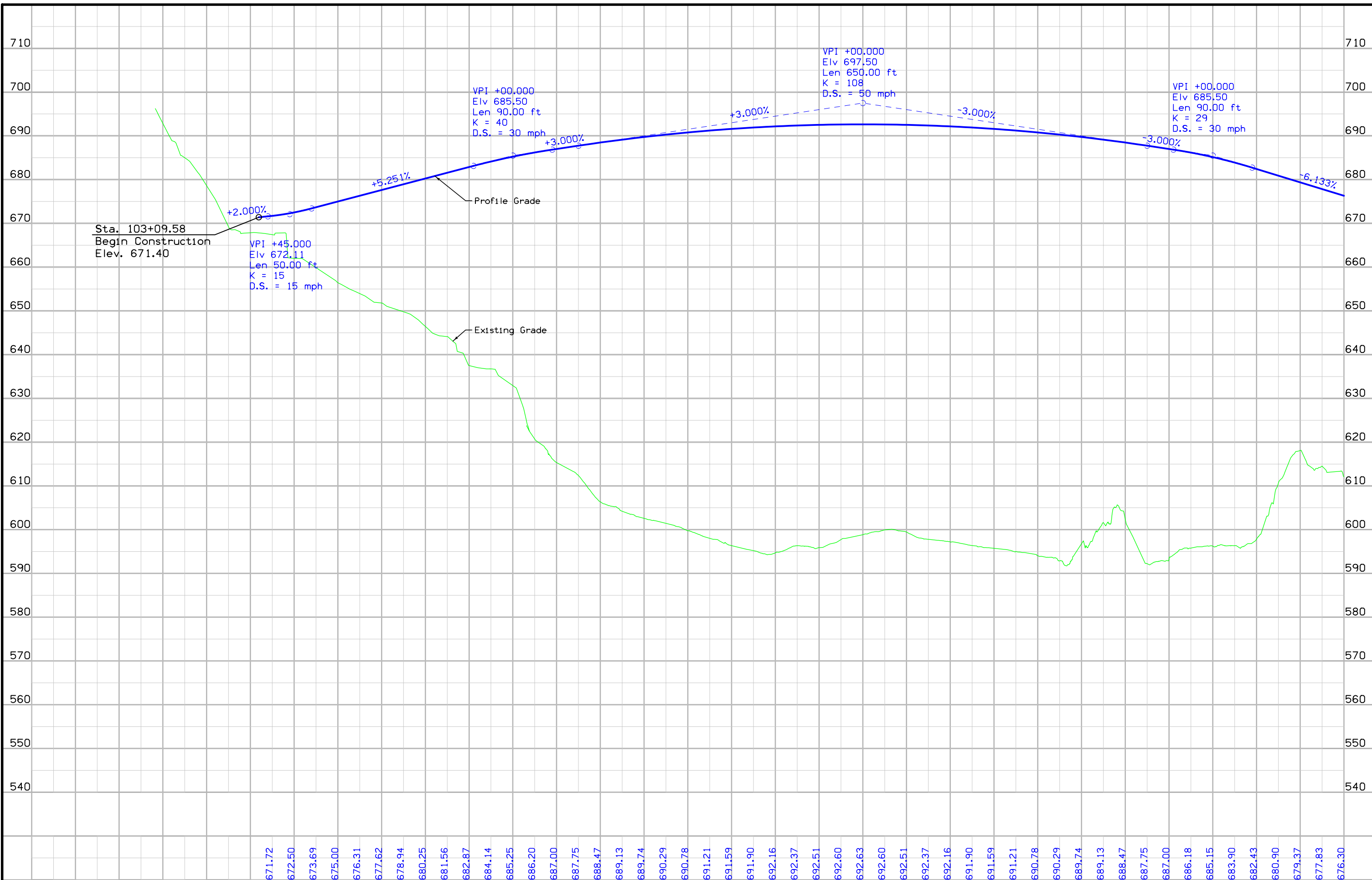
115

IA 9 (ML009)

Existing Bridge

Mississippi River

Mississippi River



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT \ Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	D.3
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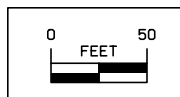
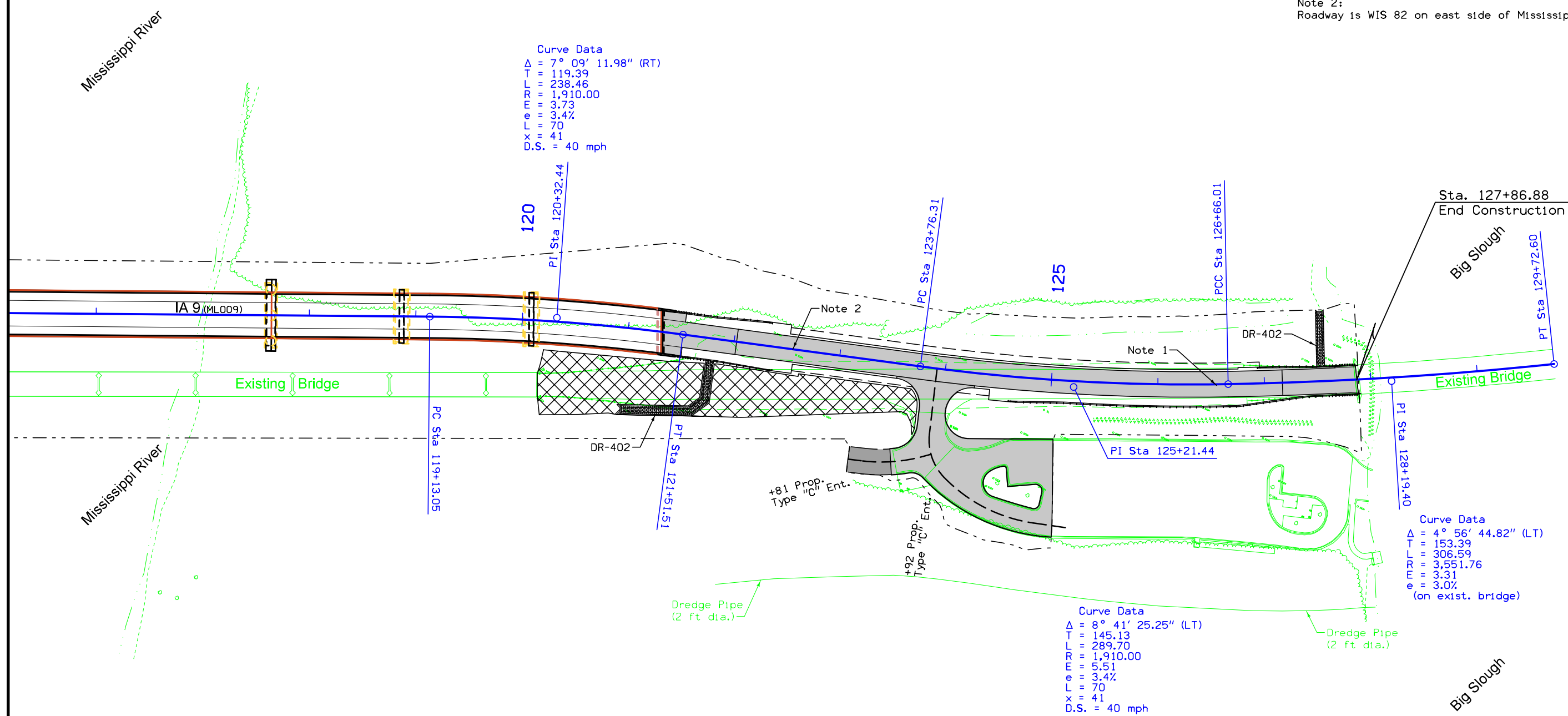
Note 1:  
 Transition superelevation of both lanes at  
 constant rate between stations as follows:  
 Sta. 126+52.00, e = 3.4%  
 Sta. 126+79.00, e = 3.0%

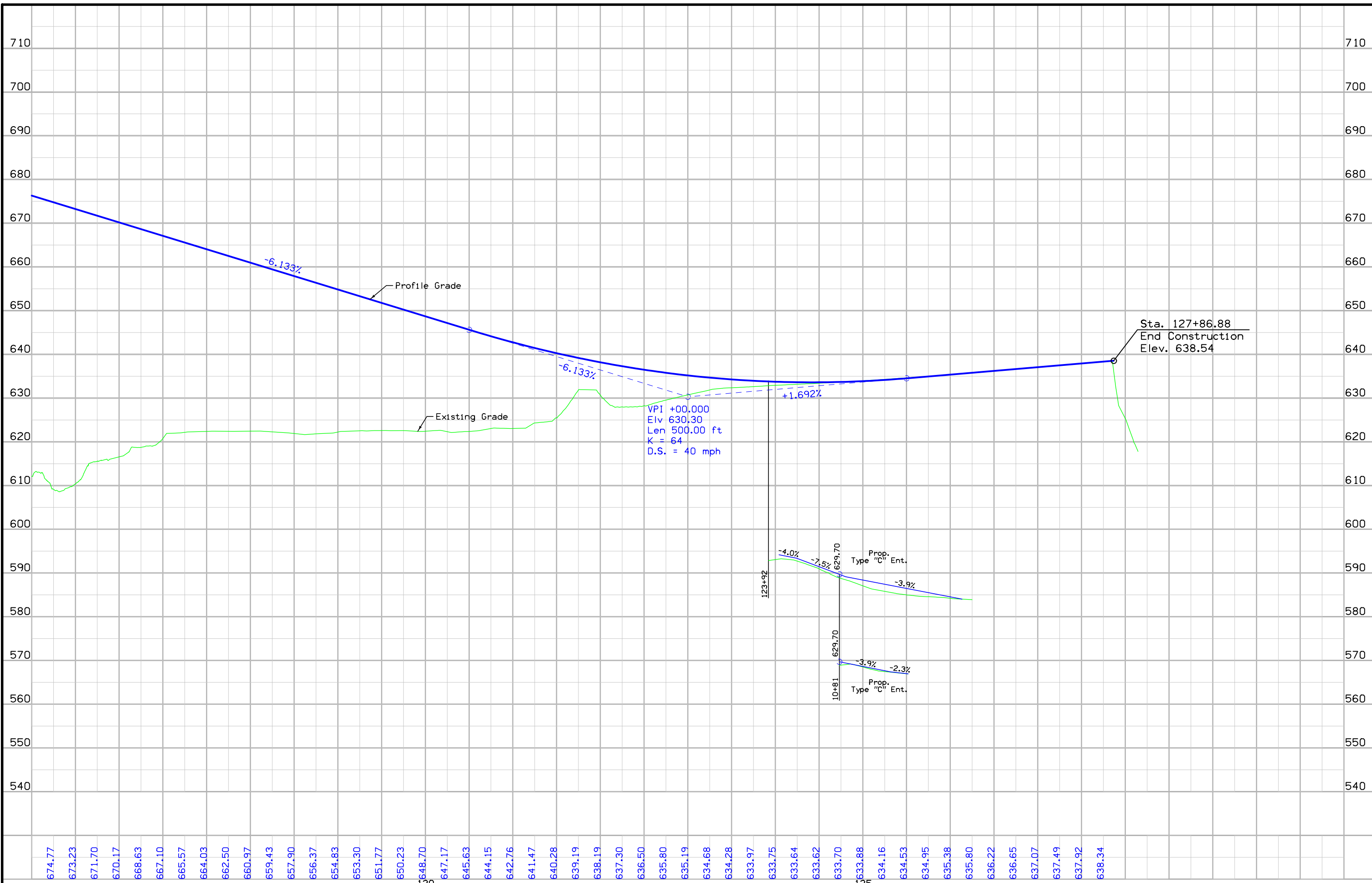
Note 2:  
 Roadway is WIS 82 on east side of Mississippi River.

Curve Data  
 $\Delta = 7^\circ 09' 11.98''$  (RT)  
 T = 119.39  
 L = 238.46  
 R = 1,910.00  
 E = 3.73  
 e = 3.4%  
 L = 70  
 X = 41  
 D.S. = 40 mph

Curve Data  
 $\Delta = 4^\circ 56' 44.82''$  (LT)  
 T = 153.39  
 L = 306.59  
 R = 3,551.76  
 E = 3.31  
 e = 3.0%  
 (on exist. bridge)

Curve Data  
 $\Delta = 8^\circ 41' 25.25''$  (LT)  
 T = 145.13  
 L = 289.70  
 R = 1,910.00  
 E = 5.51  
 e = 3.4%  
 L = 70  
 X = 41  
 D.S. = 40 mph

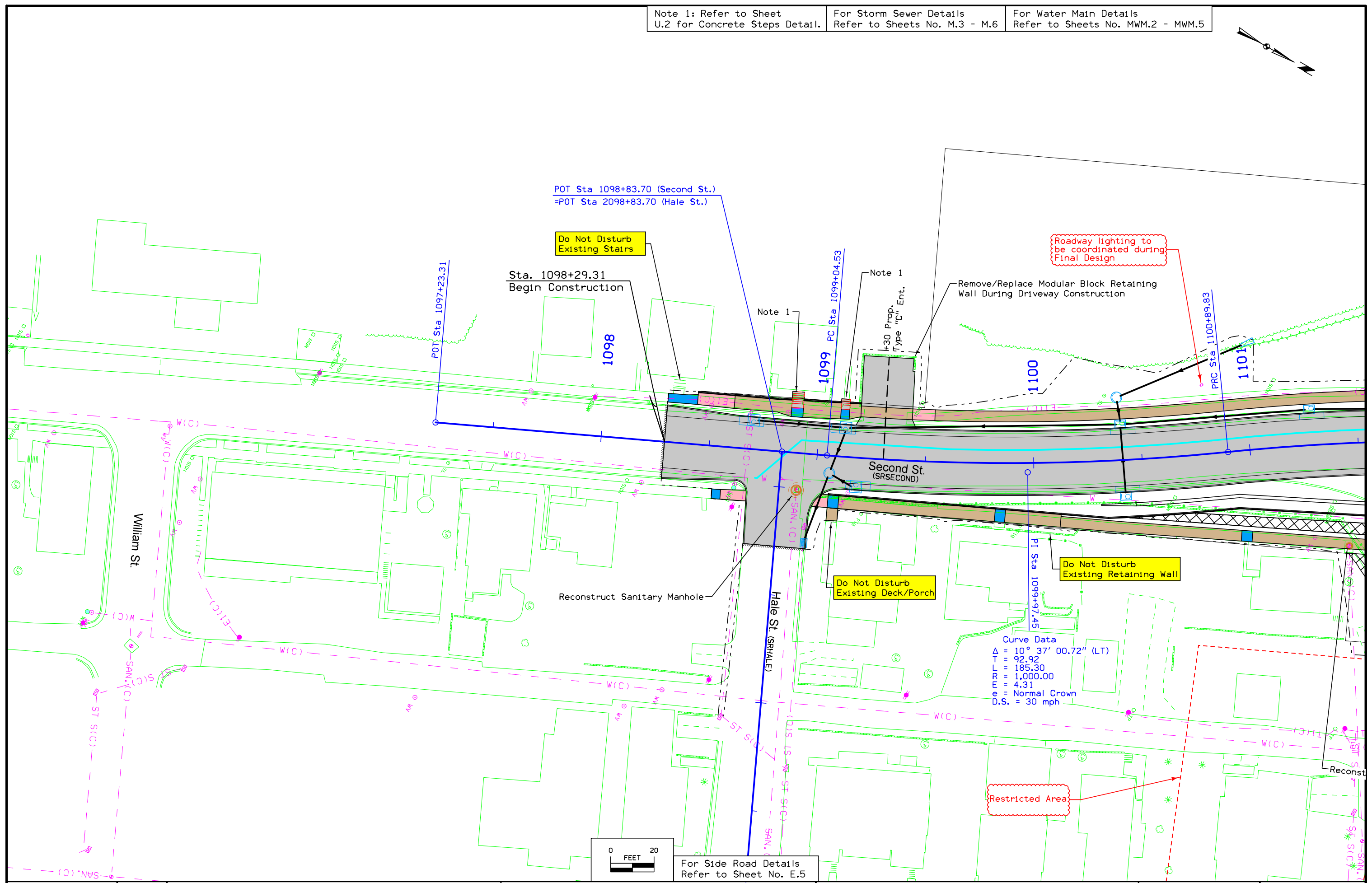
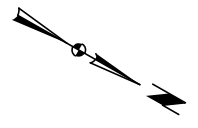




Note 1: Refer to Sheet U.2 for Concrete Steps Detail.

For Storm Sewer Details Refer to Sheets No. M.3 - M.6

For Water Main Details Refer to Sheets No. MWM.2 - MWM.5



POT Sta 1098+83.70 (Second St.)  
=POT Sta 2098+83.70 (Hale St.)

Do Not Disturb Existing Stairs

Sta. 1098+29.31  
Begin Construction

1098

1099 PC Sta 1099+04.53

Note 1

Note 1  
#30 Prop. Type "C" Ent.

Remove/Replace Modular Block Retaining Wall During Driveway Construction

Roadway lighting to be coordinated during Final Design

1100

1101 PRC Sta 1100+89.83

Second St. (SRSECOND)

William St.

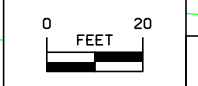
Reconstruct Sanitary Manhole

Do Not Disturb Existing Deck/Porch

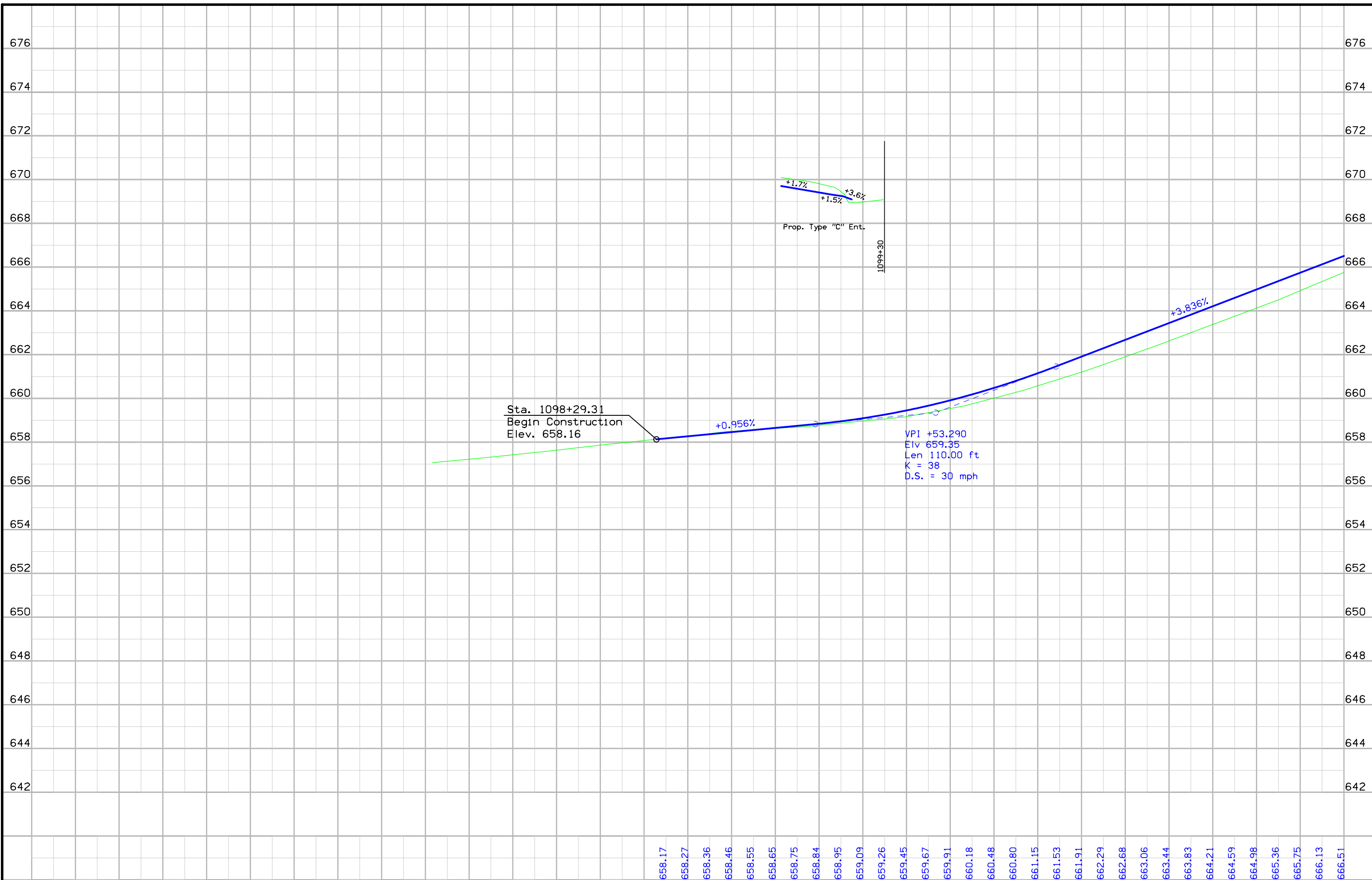
Do Not Disturb Existing Retaining Wall

Curve Data  
Δ = 10° 37' 00.72" (LT)  
T = 92.92  
L = 185.30  
R = 1,000.00  
e = 4.31  
e = Normal Crown  
D.S. = 30 mph

Restricted Area

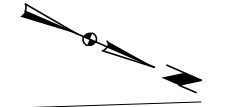


For Side Road Details Refer to Sheet No. E.5





For Storm Sewer Details Refer to Sheets No. M.3 - M.6  
 For Water Main Details Refer to Sheets No. MWM.2 - MWM.5



Note 1:  
 Transition superelevation of NB lane as follows:  
 Sta. 1101+75.00, e = -2.0%  
 Sta. 1102+25.00, e = +2.0%

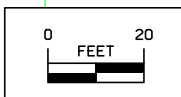
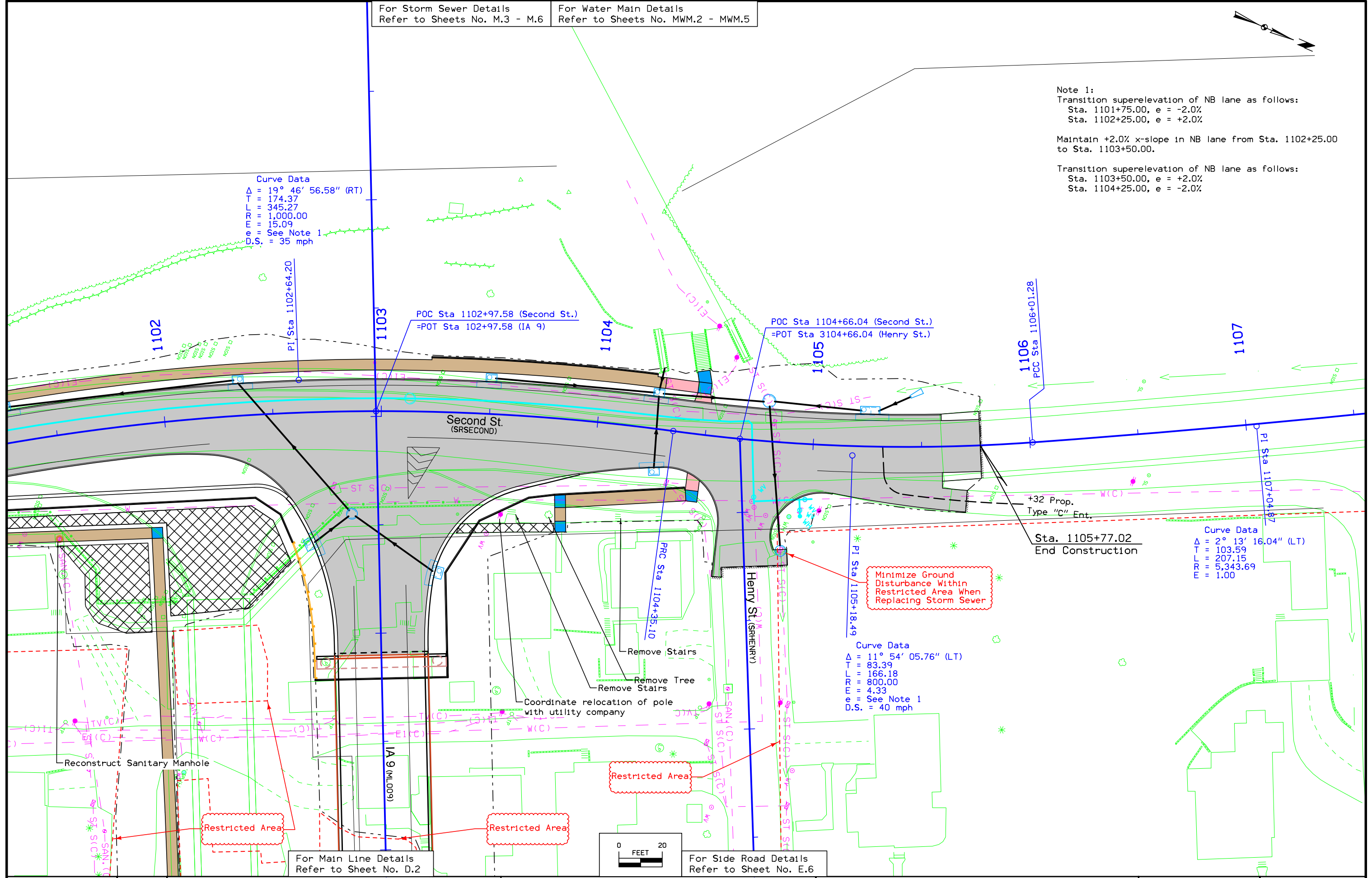
Maintain +2.0% x-slope in NB lane from Sta. 1102+25.00 to Sta. 1103+50.00.

Transition superelevation of NB lane as follows:  
 Sta. 1103+50.00, e = +2.0%  
 Sta. 1104+25.00, e = -2.0%

Curve Data  
 $\Delta = 19^\circ 46' 56.58''$  (RT)  
 T = 174.37  
 L = 345.27  
 R = 1,000.00  
 E = 15.09  
 e = See Note 1  
 D.S. = 35 mph

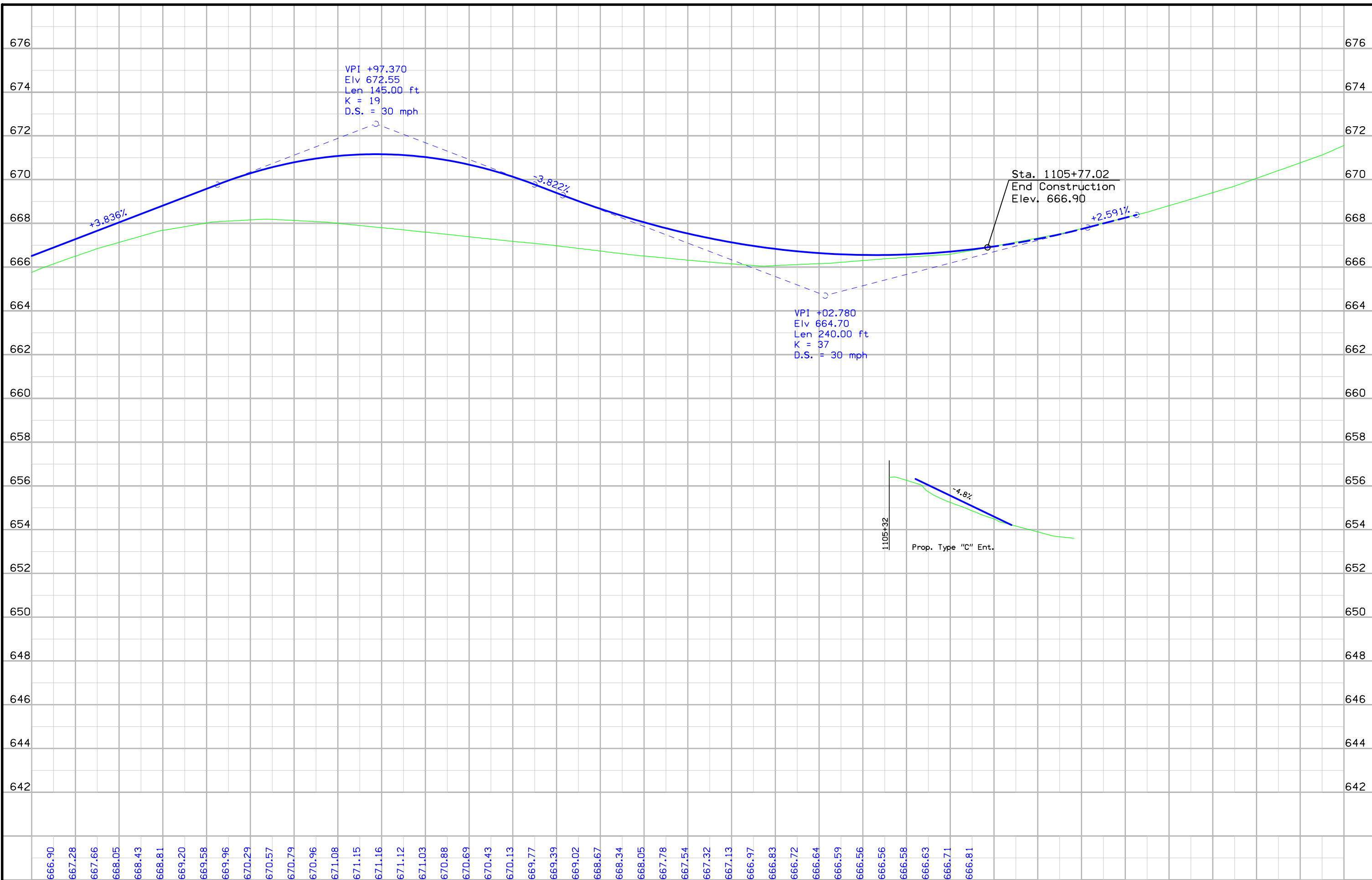
Curve Data  
 $\Delta = 2^\circ 13' 16.04''$  (LT)  
 T = 103.59  
 L = 207.15  
 R = 5,343.69  
 E = 1.00

Curve Data  
 $\Delta = 11^\circ 54' 05.76''$  (LT)  
 T = 83.39  
 L = 166.18  
 R = 800.00  
 E = 4.33  
 e = See Note 1  
 D.S. = 40 mph

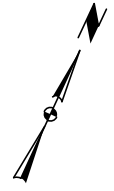


For Main Line Details Refer to Sheet No. D.2

For Side Road Details Refer to Sheet No. E.6



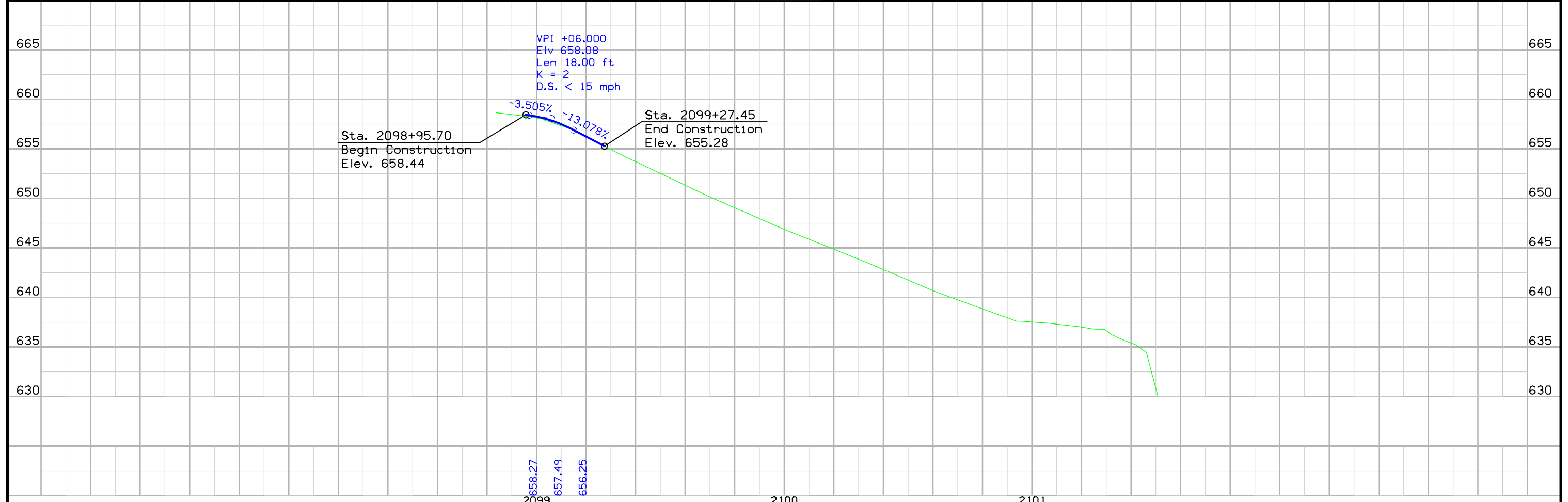
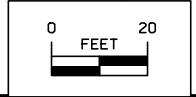
For Side Road Details  
Refer to Sheets No. E.1 - E.4

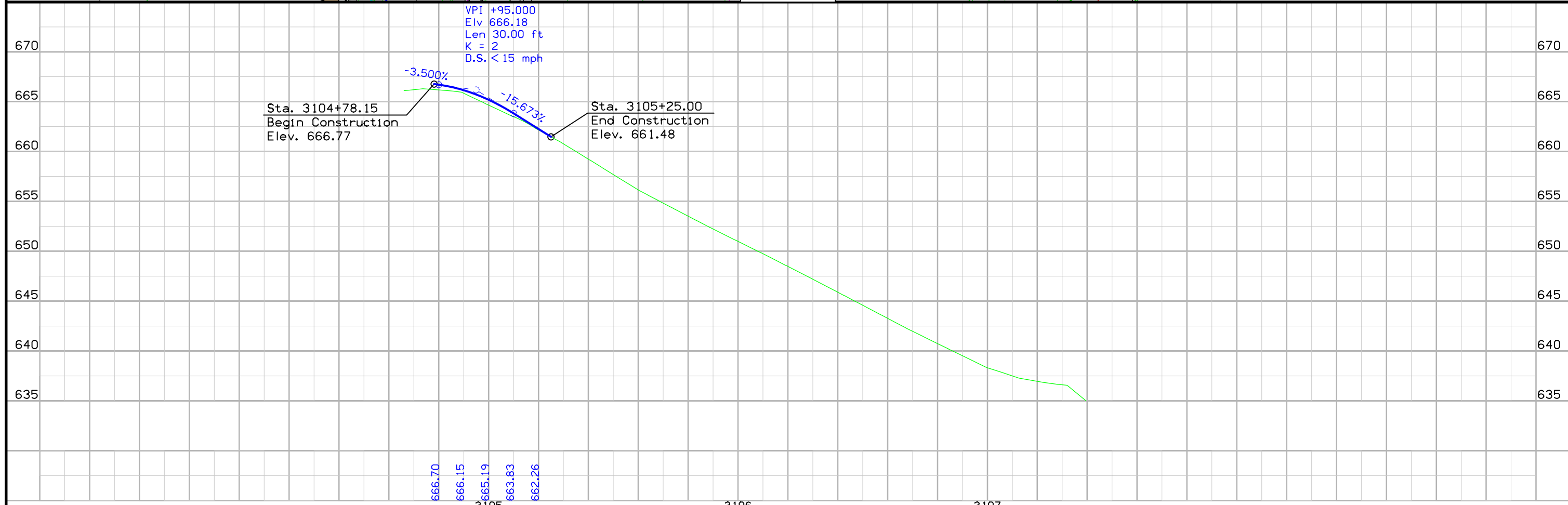
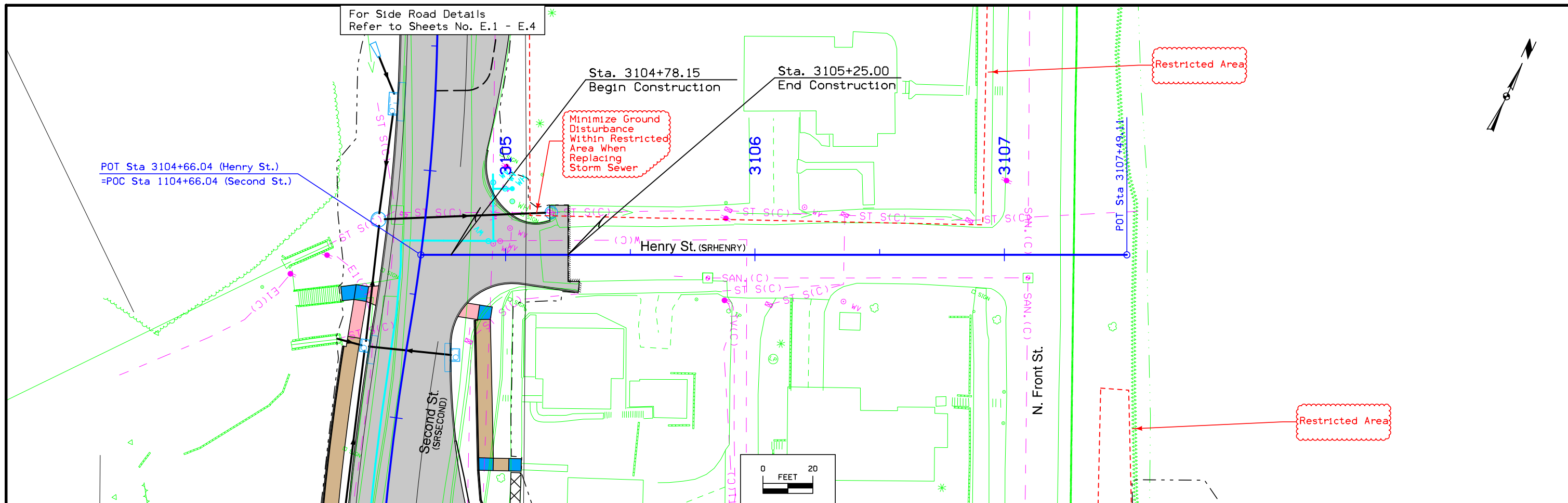


POT Sta 2098+83.70 (Hale St.)  
=POT Sta 1098+83.70 (Second St.)

Sta. 2098+95.70  
Begin Construction

Sta. 2099+27.45  
End Construction





## Survey Information

**ALLAMAKEE COUNTY**  
**BRF-009-9(73)--38-03**  
**MISSISSIPPI RIVER BRIDGE**  
**LANSING, IOWA**  
**PIN 16-03-009-010**  
**SAP #414.6**

### Contact Information

Fieldwork performed by: Martin & Whitacre, Surveyors & Engineers, Inc.  
1508 Bidwell Road  
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POC: Matt Krause, P.L.S. 563-263-7691  
EMAIL: MKRAUSE@MARTIN-WHITACRE.COM

Survey Data Submitted to: Burns & McDonnell  
9400 Ward Parkway  
Kansas City, Mo 64114  
POC: Jonathon Tronson, P.E. 816-448-7491  
EMAIL: JSTRONSON@BURNSMCD.COM

### Party Personnel

Project Manager - Matt Krause, PLS  
Field Supervisor - Seth Whitacre, PLS  
Party Chiefs - Mike Sandsness, Joel Proffitt  
Rodmen - Eric Allison

### Date(s) of Survey

SAP#414.6 –Begin Date           April 2019  
  End Date                 October 2019

### General Information

This survey was completed to provide topographic survey information for the design of a new bridge over the Mississippi River at Lansing, Iowa.

### Horizontal Control

The coordinate system used is NAD83(2011) (Epoch 2010.00) Iowa Regional Coordinate System Zone 3 – Elkader, U. S. Survey Feet.

Three Allamakee County GPS Monuments (#235, #236 & #228) were checked for this project using the Iowa RTN and IASPC North Zone NAD83(1996). Their published coordinate values were established in 2002 as part of the Allamakee County wide GPS Control Network. The average horizontal error of the published versus observed Northings was 0.11'. The average horizontal error of the published versus observed Eastings was .01'. Each of these monuments were observed with GPS for a 5 minute window using the Iowa RTN. Sixteen on-site control points were set on the Iowa side of the river and four on-site control points were set on the Wisconsin side of the river. The twenty on-site control points were observed with GPS for 3 minute windows on 4 separate occasions, with appropriate time spans in-between, using the Iowa RTN. All new Control Points were held at the observed Horizontal Positions.

### Vertical Control

The vertical datum used is NAVD88 computed from GPS Observations and Geoid 12A.

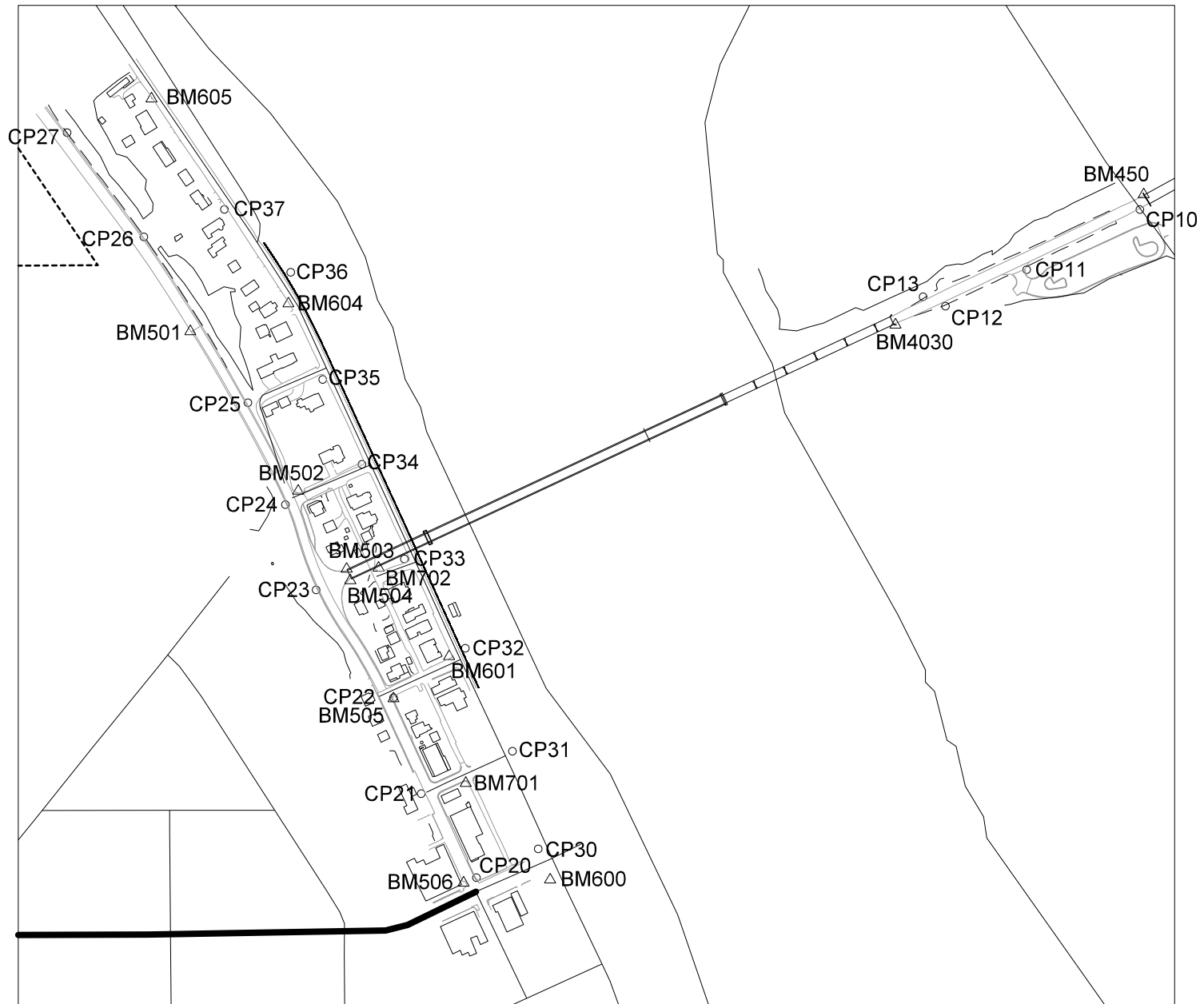
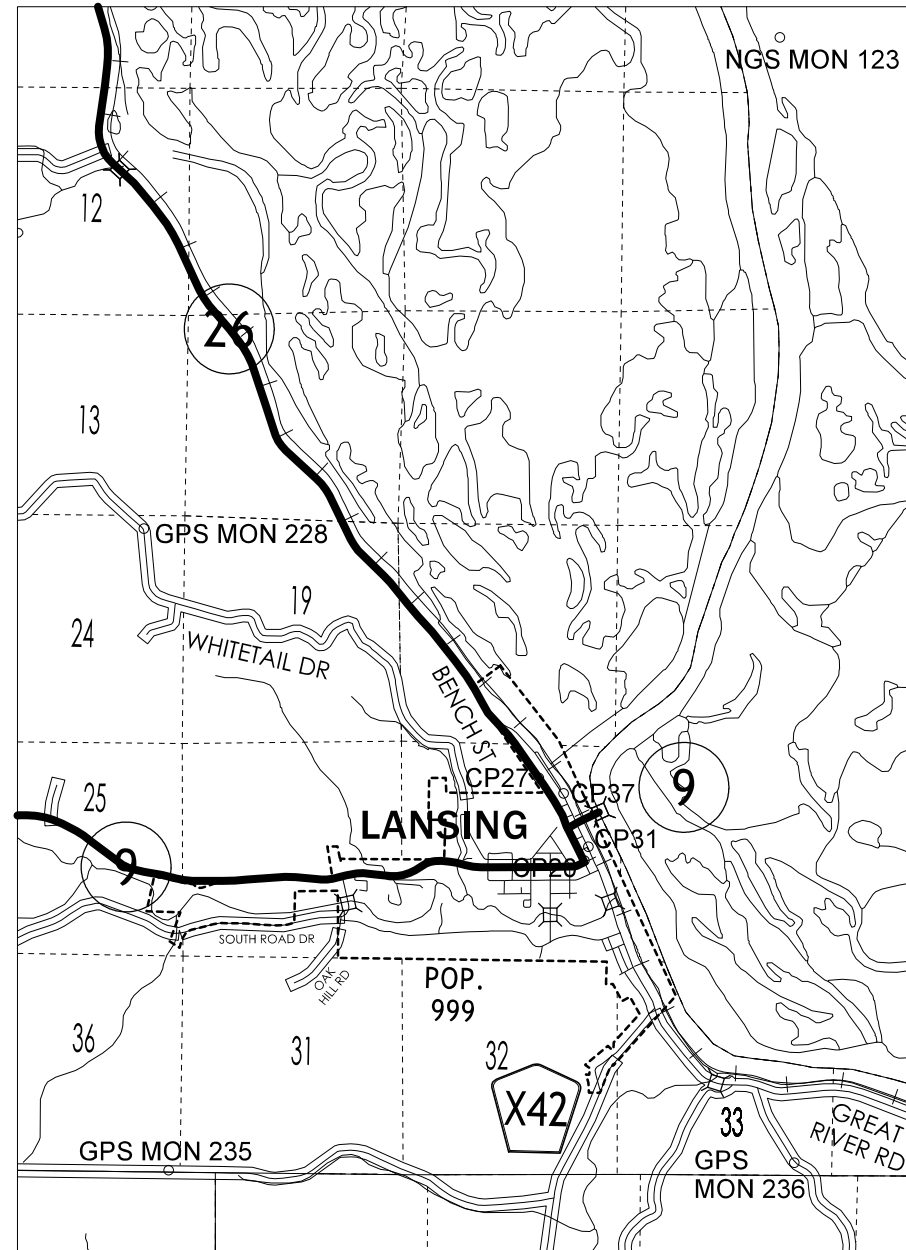
Benchmarks checked this project consisted of 1 NGS Benchmark (H123) and 3 Allamakee County GPS Monuments (#235, #236 & #228). The vertical error on the NGS Benchmark was -.07', and the average vertical error on the 3 County Monuments was -0.15'. Eleven Benchmarks were established on the Iowa side and 2 Benchmarks were established on the Wisconsin side of the river. The observed GPS elevations were "held" at 4 on-site control points, 2 on the Iowa Side and 2 on the Wisconsin side of the river. The elevations of these 4 Control Points were "held" based on the average differences between the Observed GPS elevations and the leveled elevations. Elevations were then transferred to the other 16 on-site Control Points and the 13 newly established Benchmarks with 3 dependent differential level loops. The maximum error of closure of these 3 loops was .005'.

### Alignment Information

No horizontal alignments for the existing roadways were computed for this survey.

## CONTROL POINT VICINITY MAPS

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 3

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 3

Point #	Northing	Easting	Elevation	Description
10	9,435,956.03	13,497,654.58	638.47	FD 3/4" RBR W/WISC. DOT RED CAP
11	9,435,792.02	13,497,346.39	632.16	FD WISC DOT ALUM CAP
12	9,435,692.52	13,497,125.43	631.83	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
13	9,435,718.27	13,497,063.98	632.34	FD 3/4" RBR W/WISC. DOT RED CAP
20	9,434,136.03	13,495,847.64	650.90	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
21	9,434,364.89	13,495,697.40	656.86	SET CUT X IN CONC WALK
22	9,434,626.10	13,495,621.84	657.29	SET 1/2" x 36" REBAR
23	9,434,920.03	13,495,411.07	668.52	SET 1/2" x 36" REBAR
24	9,435,151.80	13,495,327.20	666.45	SET 1/2" x 36" REBAR
25	9,435,429.56	13,495,225.42	671.11	SET 1/2" x 36" REBAR
26	9,435,881.64	13,494,941.70	695.34	SET 1/2" x 36" REBAR
27	9,436,165.15	13,494,732.92	697.47	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
30	9,434,214.17	13,496,016.31	638.99	FOUND PROPERTY CORNER, ALUM CAP #20165
31	9,434,480.02	13,495,945.80	635.66	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
32	9,434,760.92	13,495,817.75	636.18	SET 1/2" x 36" REBAR
33	9,435,004.23	13,495,651.34	639.48	SET 1/2" x 36" REBAR
34	9,435,262.03	13,495,536.06	638.96	SET CUT X IN CONC WALK
35	9,435,492.74	13,495,429.12	639.22	SET CUT X IN CONC WALK
36	9,435,785.29	13,495,341.98	634.05	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
37	9,435,956.41	13,495,161.08	635.66	SET 1/2" x 36" REBAR
123	9454318.76	13500640.81	637.63	NGS MON H123
228	9442279.19	13485049.14	1122.87	COUNTY GPS MON 228
235	9426548.95	13485653.65	1118.11	COUNTY GPS MON 235
236	9426732.07	13500994.82	786.77	COUNTY GPS MON 236
450	9,435,996.52	13,497,665.24	638.64	CUT SQR ON NW BRIDGE ABUT, SLOUGH BRIDGE
501	9,435,623.92	13,495,068.53	688.10	IDOT BUTTON IN TOP OF BARRIER WALL
502	9,435,189.13	13,495,362.24	666.68	BOLT IN "CHATTANOOGA" ON HYD NE QUAD HENRY/2ND ST
503	9,434,976.61	13,495,494.34	672.11	BRASS DISC IN N. SIDE BRIDGE ABUT, IA END MISS. RIVER BRIDGE
504	9,434,945.42	13,495,504.18	671.69	CUT X IN S. SIDE BRIDGE ABUT, IA END MISS. RIVER BRIDGE
505	9,434,623.60	13,495,621.92	659.72	ARROW ON HYD SE QUAD HALE/2ND ST.
506	9,434,121.67	13,495,812.74	653.56	SW BOLT W/TAG ON HYD NW QUAD MAIN/2ND ST.
600	9,434,130.09	13,496,048.51	639.96	BOLT IN "MUELLER" ON HYD SW QUAD MAIN/FRONT ST.
601	9,434,738.59	13,495,773.35	638.76	YELLOW BENCH TIE IN PP, NW QUAD HALE/FRONT ST
604	9,435,699.71	13,495,335.54	638.60	ARROW ON HYD @ 541 N. FRONT ST.
605	9,436,257.85	13,494,962.84	636.74	SW BOLT W/TAG ON HYD AT 691 FRONT ST.
701	9,434,393.23	13,495,818.72	648.23	NE BOLT ON HYD SW QUAD WILLIAM/ALLEY
702	9,434,979.47	13,495,581.33	650.36	SE BOLT ON HYD UNDER BRIDGE
4030	9,435,642.17	13,496,989.16	636.86	CUT X IN SE WING WALL, WI END MISS. RIVER BRIDGE

**ALIGNMENT COORDINATES**

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML009	100+00.00	9434870.65	13495122.36															
2	ML009						119+13.05	9435668.24	13496861.21	120+32.44	9435718.02	13496969.73	121+51.51	9435753.89	13497083.60				
3	ML009						123+76.31	9435821.44	13497298.00	125+21.44	9435865.05	13497436.42	126+66.01	9435929.07	13497566.67				
4	ML009						126+66.01	9435929.07	13497566.67	128+19.40	9435996.74	13497704.32	129+72.60	9436076.03	13497835.63				
1	SRSECOND	1097+23.31	9434489.49	13495663.49															
2	SRSECOND						1099+04.53	9434654.03	13495587.54	1099+97.45	9434738.39	13495548.59	1100+89.83	9434814.13	13495494.78				
3	SRSECOND						1100+89.83	9434814.13	13495494.78	1102+64.20	9434956.27	13495393.78	1104+35.10	9435124.21	13495346.85				
4	SRSECOND						1104+35.10	9435124.21	13495346.85	1105+18.49	9435204.52	13495324.41	1106+01.28	9435278.48	13495285.88				
5	SRSECOND						1106+01.28	9435278.48	13495285.88	1107+04.87	9435370.35	13495238.03	1108+08.43	9435460.30	13495186.65				
1	SRHale	2098+83.70	9434635.11	13495596.27															
2	SRHale	2101+55.37	9434748.97	13495842.93															
1	SRHENRY	3104+66.05	9435153.84	13495337.95															
2	SRHENRY	3107+49.11	9435274.69	13495593.92															
1	EntR123	10+00.00	9435826.27	13497313.12															
2	EntR123						10+61.93	9435767.52	13497332.70	10+85.60	9435745.07	13497340.19	11+06.14	9435736.62	13497362.30				
3	EntR123						11+06.14	9435736.62	13497362.30	11+55.83	9435718.90	13497408.72	12+01.88	9435733.37	13497456.25				
4	EntR123	12+32.74	9435742.36	13497485.78															
1	Ent10	20+00.00	9435713.75	13497273.54															
2	Ent10						20+13.76	9435718.10	13497286.61	20+42.87	9435727.29	13497314.22	20+71.27	9435746.14	13497336.40				
3	Ent10	20+78.68	9435750.95	13497342.05															
1	RETWALL01	20+00.00	9434743.23	13495566.18															
2	RETWALL01	20+41.89	9434781.26	13495548.63															
3	RETWALL01	21+02.63	9434831.70	13495514.79															
4	RETWALL01	22+45.20	9434959.58	13495451.74															
5	RETWALL01	22+58.89	9434973.04	13495454.18															
6	RETWALL01	22+73.15	9434983.43	13495463.96															
7	RETWALL01	22+80.88	9434988.75	13495469.58															
8	RETWALL01	22+88.86	9434993.85	13495475.70															
9	RETWALL01	22+96.85	9434998.64	13495482.10															
10	RETWALL01	23+04.82	9435003.07	13495488.72															
11	RETWALL01	23+12.79	9435007.15	13495495.58															
12	RETWALL01	23+20.77	9435010.86	13495502.64															
13	RETWALL01	23+37.83	9435018.13	13495518.07															
14	RETWALL01	23+99.26	9435073.97	13495492.46															
15	RETWALL01	24+47.62	9435053.80	13495448.50															
16	RETWALL01	24+76.21	9435058.76	13495420.34															
17	RETWALL01	25+01.21	9435075.38	13495401.66															
18	RETWALL01	25+13.11	9435085.69	13495395.73															

**SPIRAL OR CIRCULAR CURVE DATA**

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks				
			Spiral Data						Curve Data										
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E			
C1	ML009																		
C2	ML009																		
C3	ML009																		
C1	SRSecond																		
C2	SRSecond																		
C3	SRSecond																		
C4	SRSecond																		
C1	EntR123																		
C2	EntR123																		
C1	Ent10																		



**SUPERELEVATION DATA**

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e %	L FT	x FT														
ML009	C1	1910	3.4	70	41	PV-301	118+22.88 122+41.69	118+64.05 122+00.51	119+05.23 121+59.34	119+34.05 121+30.51			119+13.05 121+51.51						
ML009	C2	1910	3.4	70	41	PV-301	122+86.13	123+27.31	123+68.49	123+97.31			123+76.31						Refer to Sheet D.4 for superelevation transition at end ML009 curve C2 (PCC Sta. 126+66.01)
SRSECOND	C1	1000																	Normal Crown
SRSECOND	C2	1000																	Refer to Sheet E.3 for superelevation transition
SRSECOND	C3	800																	Refer to Sheet E.3 for superelevation transition

**TRAFFIC CONTROL PLAN**

Second Street  
 -Maintain traffic during Stage 1.  
 -Close from Hale Street to north of Henry Street using TC-252 during Stage 2.

Front Street  
 -Close during construction of spans 2-6 in Stage 1  
 -Maintain traffic during Stage 2  
 -Close during demolition of existing bridge span 1 in Stage 3

WI-82  
 -Place temporary barrier rail (precast concrete) on north shoulder using Standard Road Plan TC-202 and BA-401 during Stage 1.  
 -Close using Standard Road Plan TC-252 during Stage 2.

Existing bridge, IA 9  
 -Maintain traffic during Stage 1.  
 -Close to traffic during Stage 2.  
 -Demo in Stage 3

Private entrances  
 -Maintain access via local road network for the duration of the project.

**STAGING NOTES**

Stage 1:  
 -Existing bridge and all roadways remain open to traffic during construction of spans 2-6.  
 -Front street closed during construction of span 1 (west end of bridge).  
 -Place temporary barrier rail (precast concrete) on north side of WI-82 using Standard Road Plan TC-202 and BA-401.  
 -Detour Pedestrian Traffic as shown in Standard Road Plan TC-601.  
 -Construct new bridge adjacent to existing bridge, including both abutments and a portion of the new retaining wall on the Iowa approach to the new bridge, as shown on sheet J.4.

Stage 2:  
 -Place temporary barrier rail (precast concrete) on north side of WI-82 using Standard Road Plan TC-202 and BA-401.  
 Closures of Front Street between Henry Street and Hale Street shall not be allowed concurrent with closure of Second Street.  
 -Detour traffic using detours identified in sheets J.7 through J.8.  
 -Detour Pedestrian Traffic as shown in Standard Road Plan TC-601.  
 -Construct Second Street improvements, Iowa bridge approach, Wisconsin bridge approach, roadway tie-in to WI-82, and Big Slough Landing improvements as shown on sheet J.5.  
 -Remove traffic control and open all lanes and new bridge to traffic.

Stage 3:  
 -Front street closed during demolition of existing bridge span 1.  
 -Detour Pedestrian Traffic as shown in Standard Road Plan TC-601.  
 -Demo existing bridge as shown on sheet J.6.  
 -Remove traffic control and open all lanes to traffic.

**COORDINATED OPERATIONS**

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.

Project	Type of Work
None.	

**PEDESTRIAN PATH CLOSURES**

Refer to TC-601.










\*Assumes 6 foot wide barricade.  
 Closures may need to be removed and re-established.

Location	Side	Type III Barricades*	Remarks
		No.	
Second Street, northbound	East	1	Stage 1, detour to west side of Second Street
Second Street, southbound	East	1	Stage 1, detour to west side of Second Street
Front Street, northbound	West	1	Stage 1, detour to west side of Second Street
Front Street, southbound	West	1	Stage 1, detour to west side of Second Street
Second Street, northbound	East	1	Stage 2, detour to Front Street
Second Street, southbound	East	1	Stage 2, detour to Front Street
Second Street, northbound	West	1	Stage 2, detour to Front Street
Second Street, southbound	West	1	Stage 2, detour to Front Street
Front Street, northbound	West	1	Stage 3, detour to west side of Second Street
Front Street, southbound	West	1	Stage 3, detour to west side of Second Street

**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

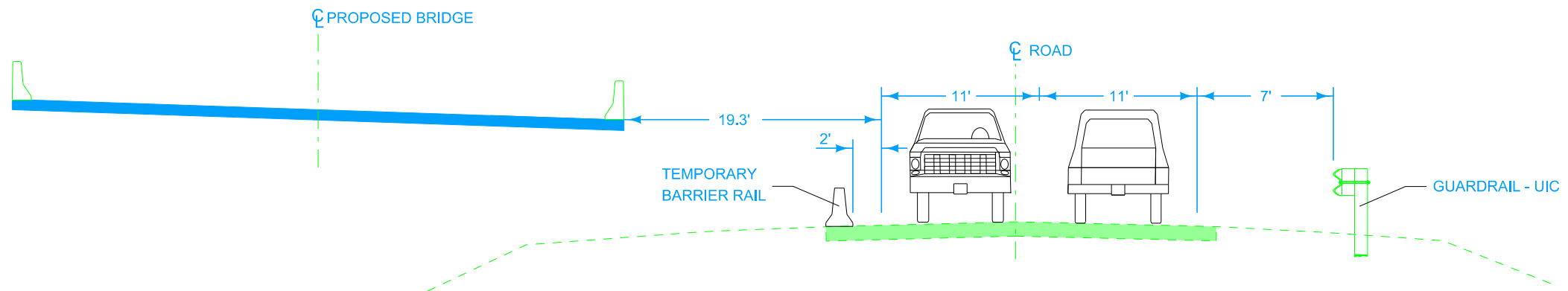
**PLAN VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

	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

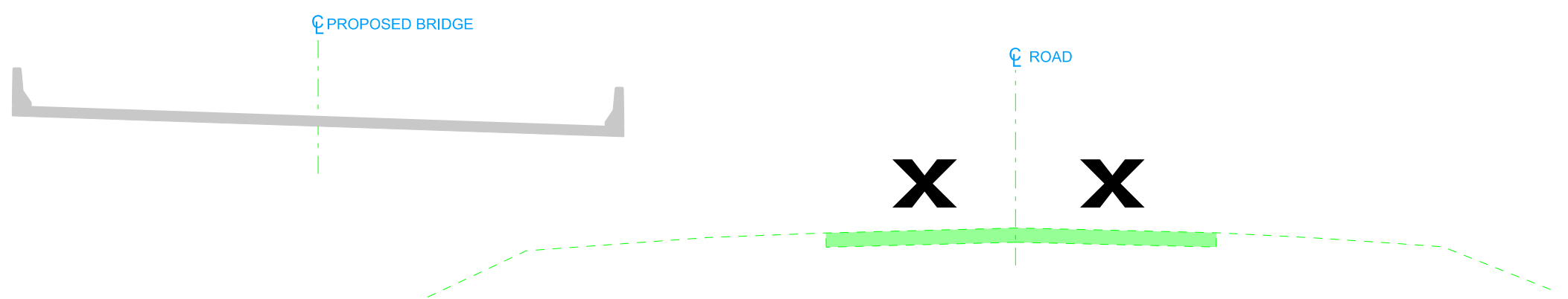
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

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

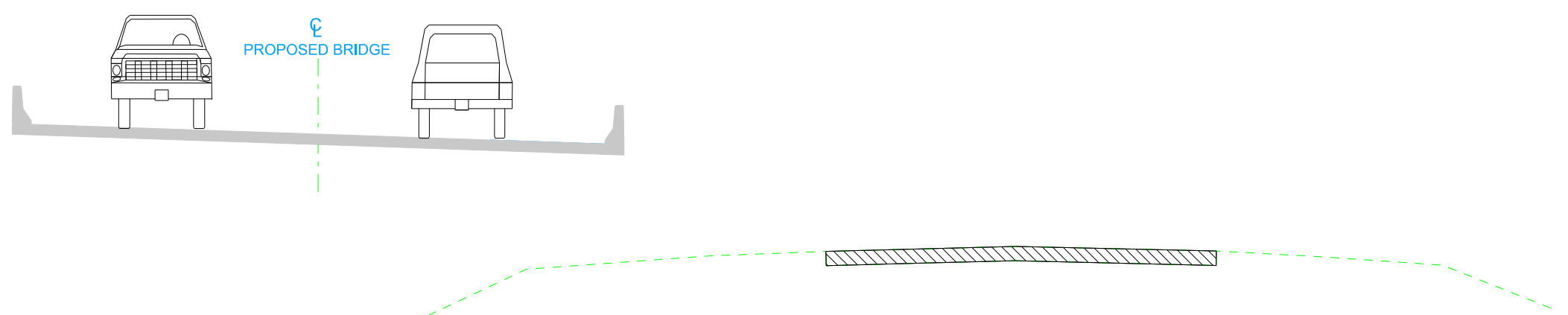
(COVERS SHEET SERIES J)



SECTION A-A  
STAGE 1 - STA 121+29.24



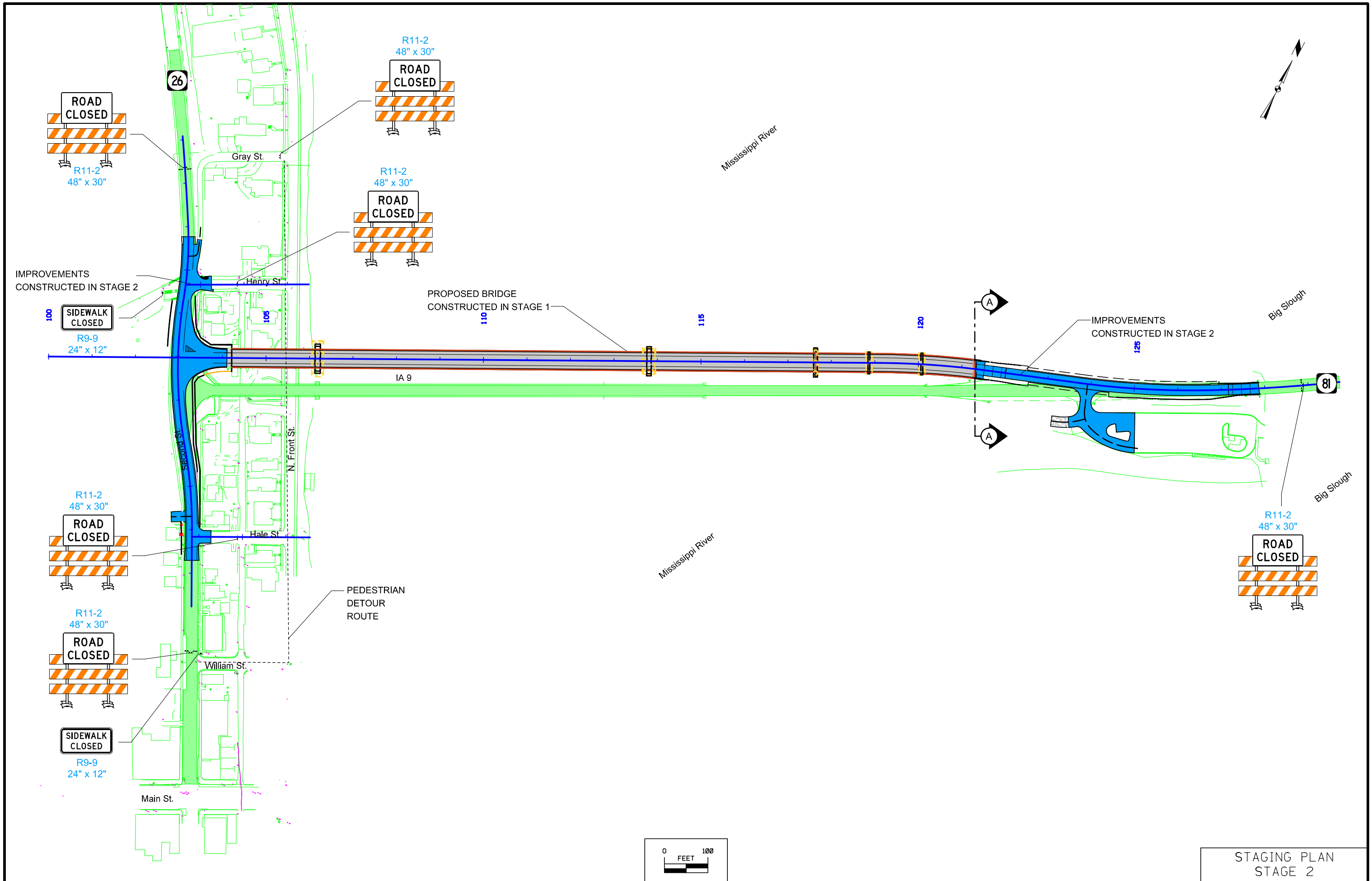
SECTION A-A  
STAGE 2 - STA 121+29.24



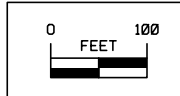
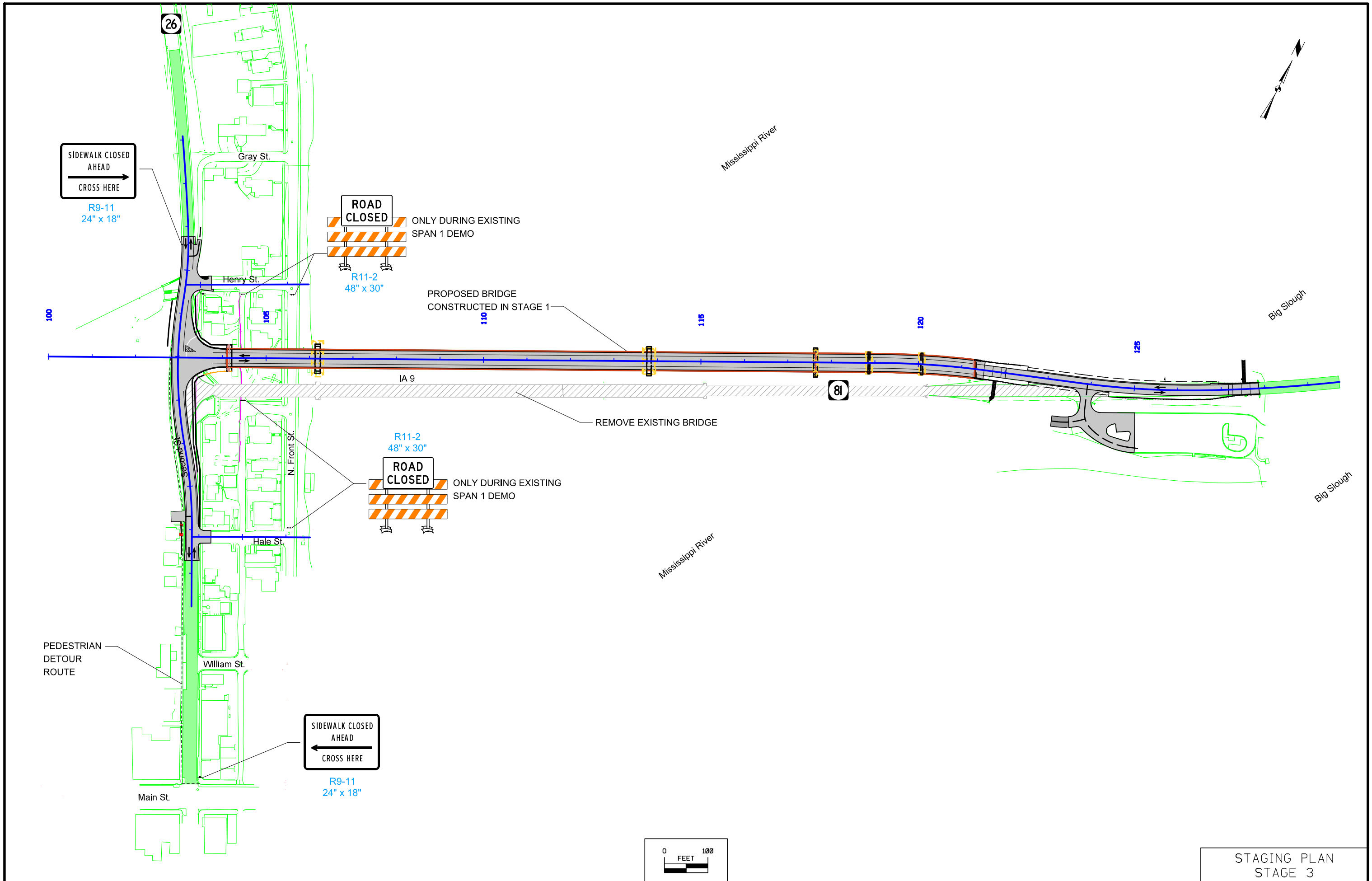
SECTION A-A  
STAGE 3 - STA 121+29.24

SECTION VIEW





STAGING PLAN  
STAGE 2

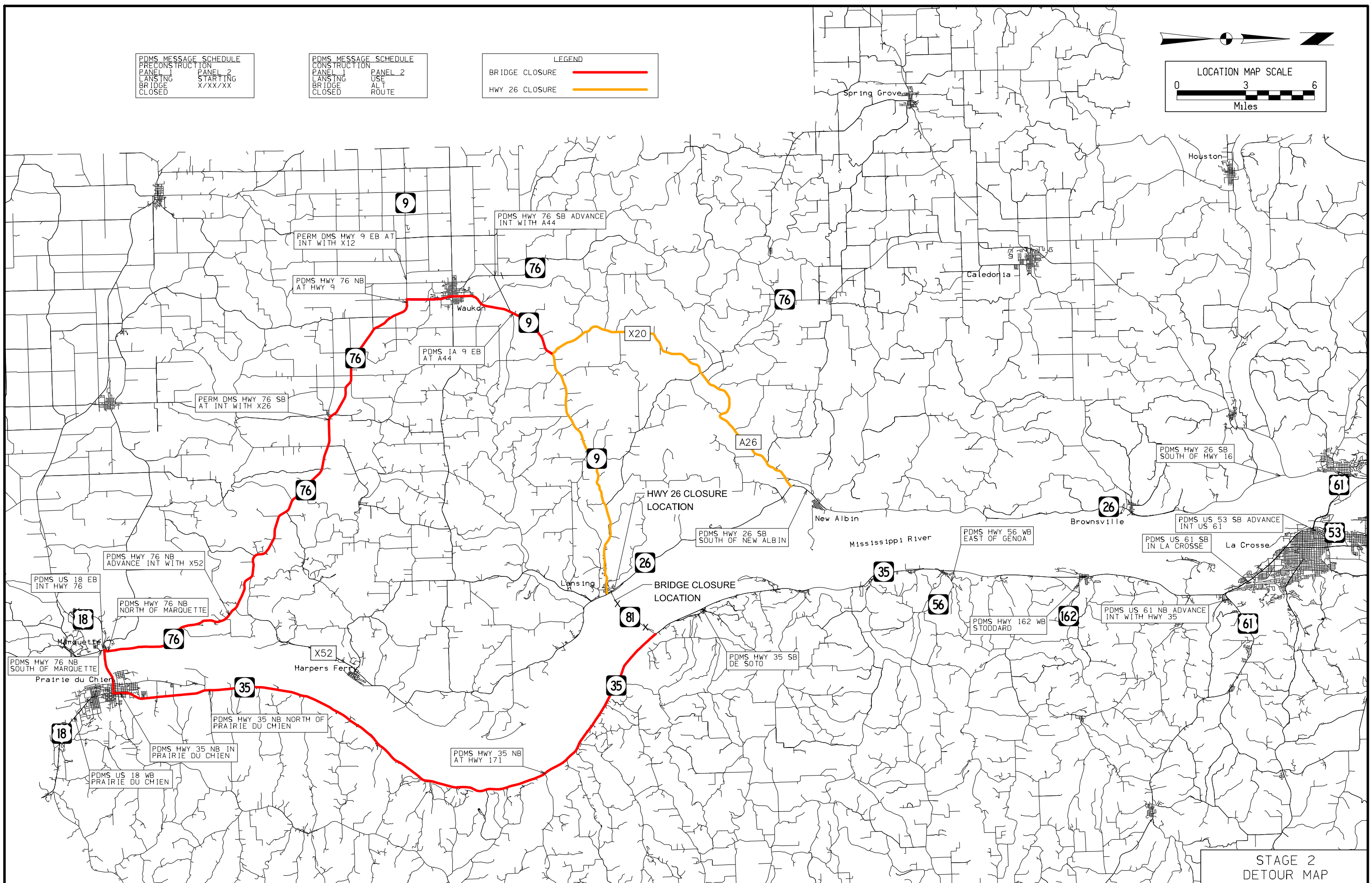
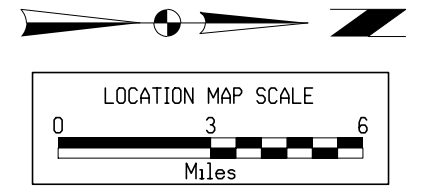


STAGING PLAN  
STAGE 3

PDMS MESSAGE SCHEDULE  
 PRECONSTRUCTION PANEL 1  
 LANSING BRIDGE CLOSED  
 PRECONSTRUCTION PANEL 2  
 STARTING X/XX/XX

PDMS MESSAGE SCHEDULE  
 CONSTRUCTION PANEL 1  
 LANSING BRIDGE CLOSED  
 CONSTRUCTION PANEL 2  
 USE ALT ROUTE

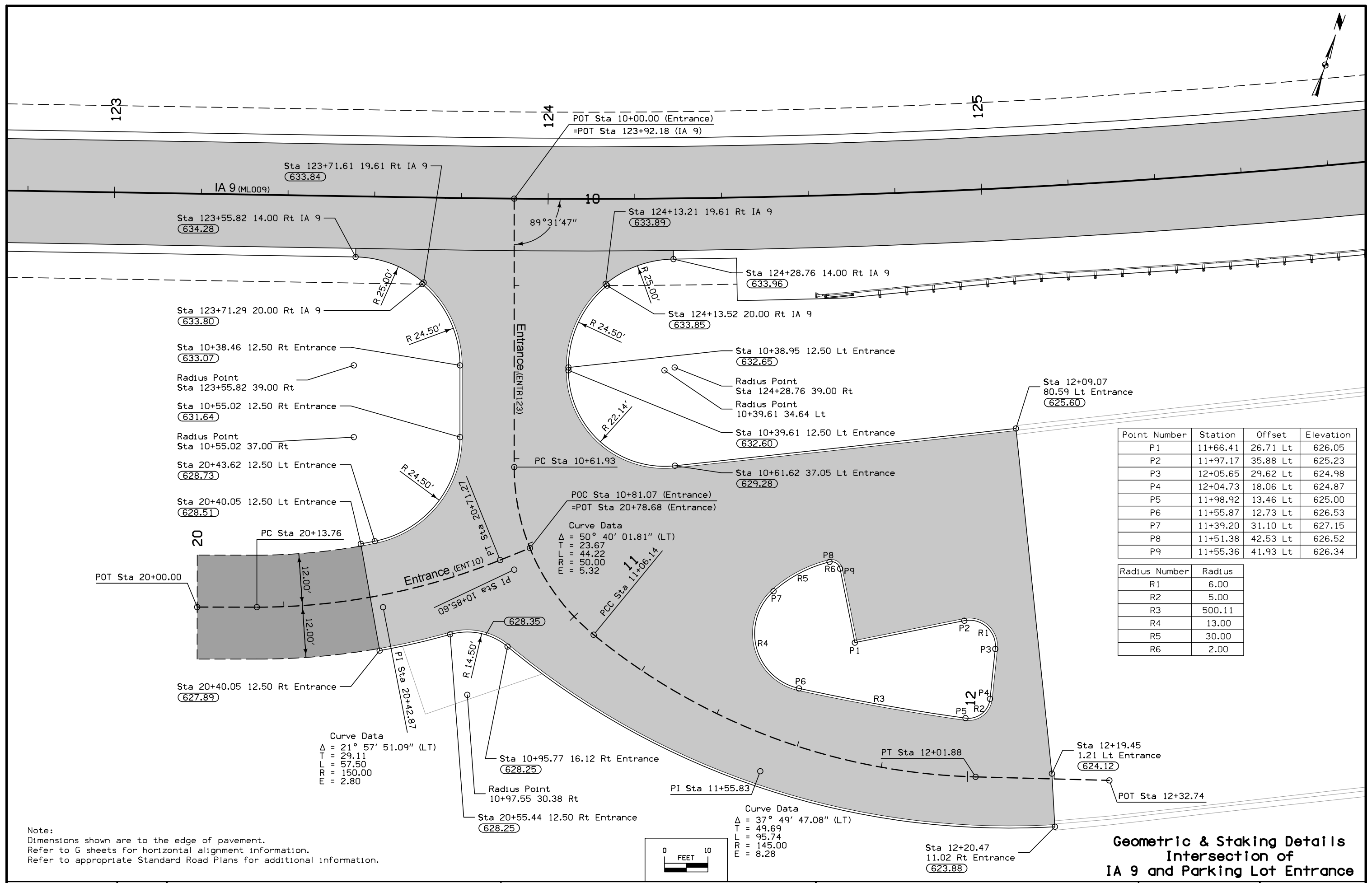
LEGEND  
 BRIDGE CLOSURE  
 HWY 26 CLOSURE



STAGE 2  
 DETOUR MAP



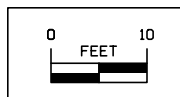




Point Number	Station	Offset	Elevation
P1	11+66.41	26.71 Lt	626.05
P2	11+97.17	35.88 Lt	625.23
P3	12+05.65	29.62 Lt	624.98
P4	12+04.73	18.06 Lt	624.87
P5	11+98.92	13.46 Lt	625.00
P6	11+55.87	12.73 Lt	626.53
P7	11+39.20	31.10 Lt	627.15
P8	11+51.38	42.53 Lt	626.52
P9	11+55.36	41.93 Lt	626.34

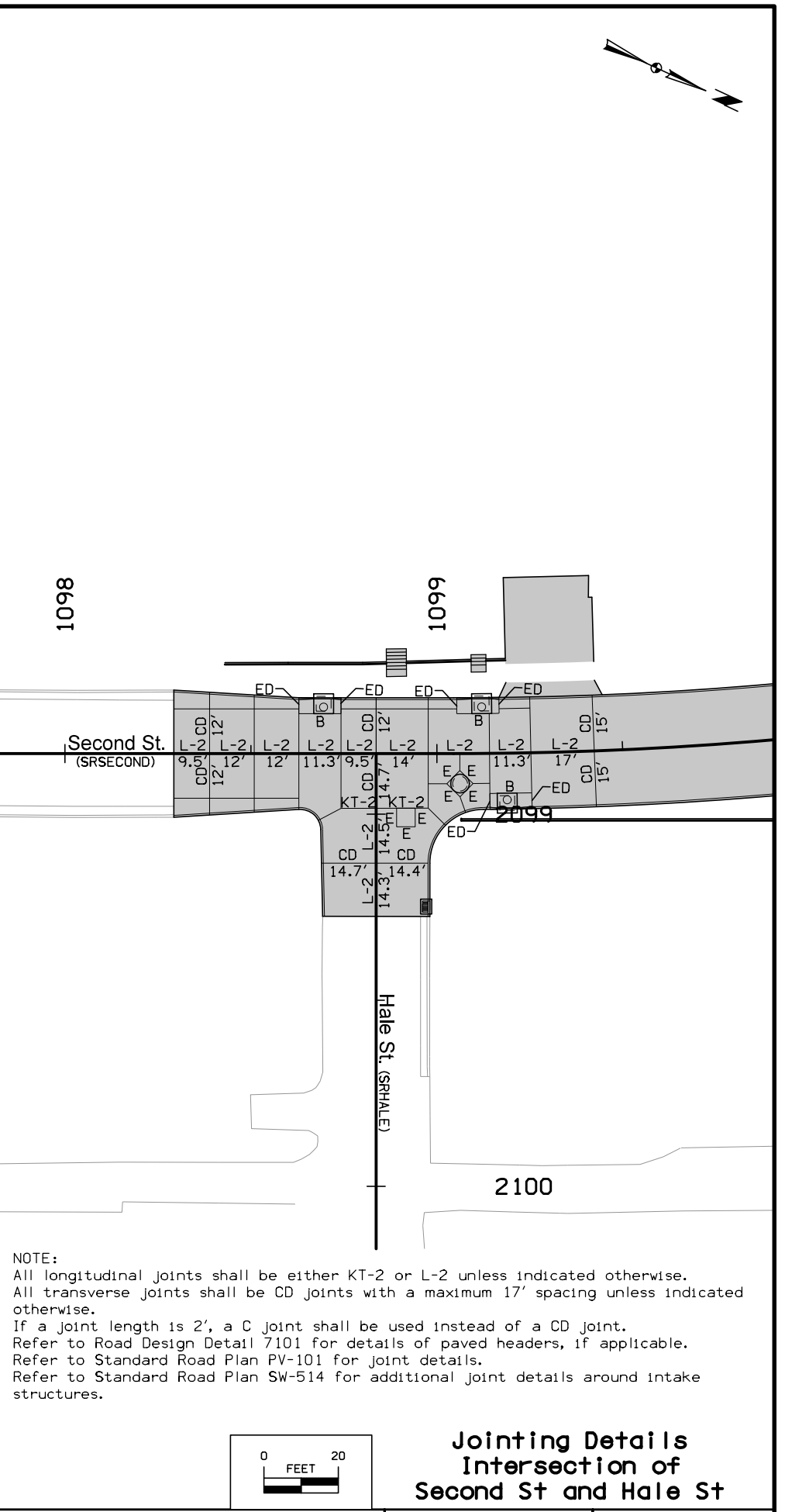
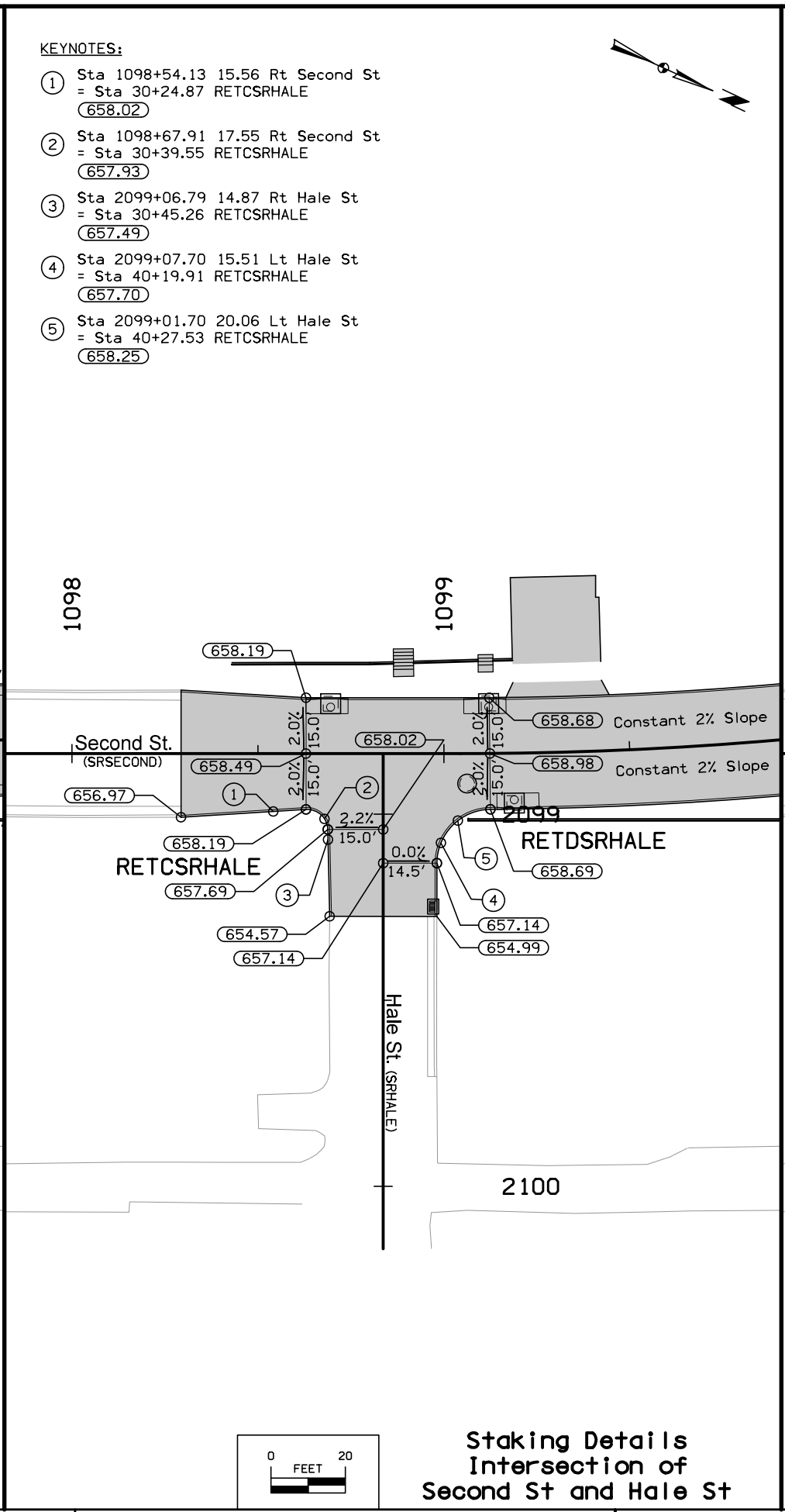
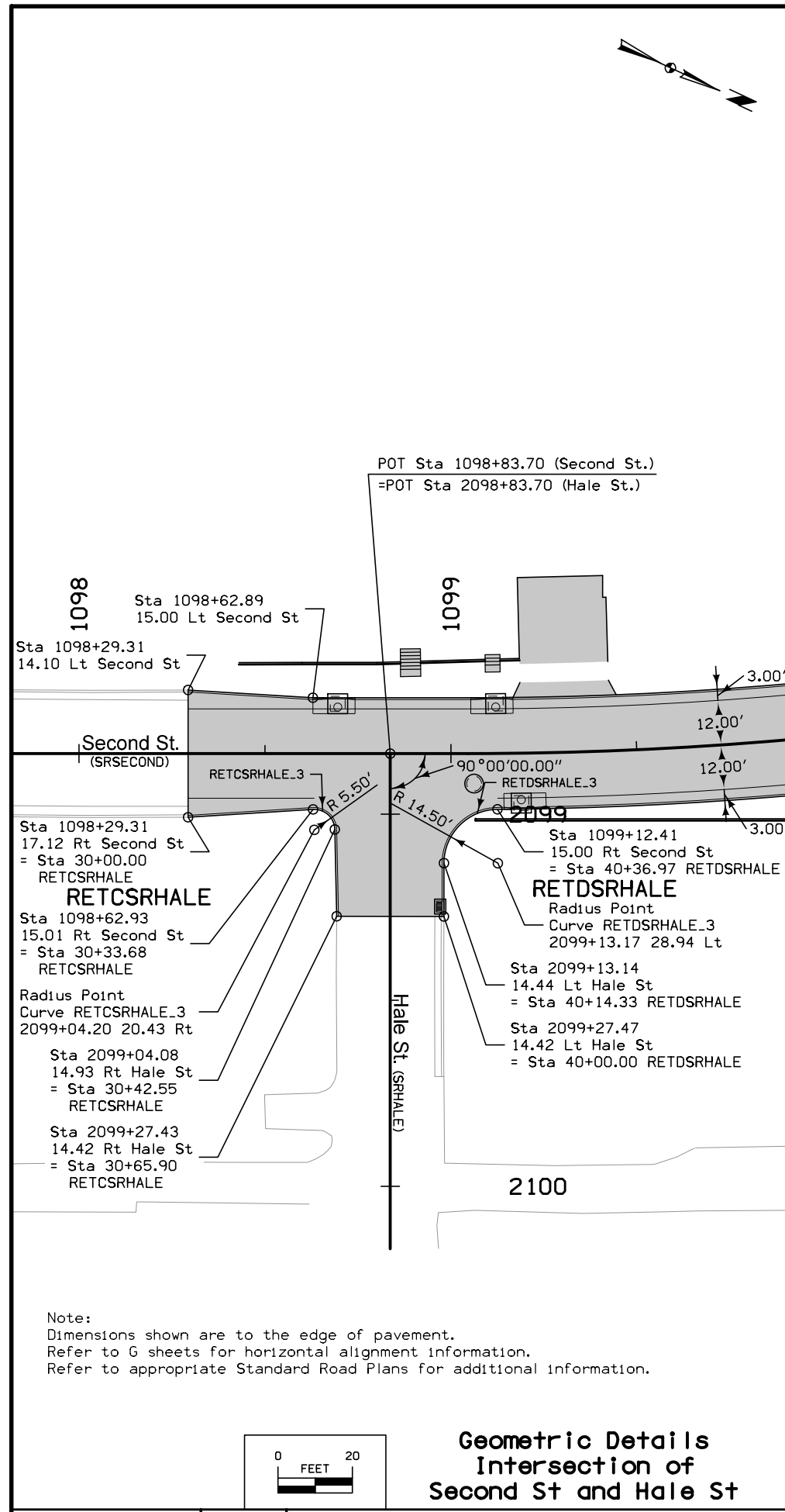
Radius Number	Radius
R1	6.00
R2	5.00
R3	500.11
R4	13.00
R5	30.00
R6	2.00

Note:  
 Dimensions shown are to the edge of pavement.  
 Refer to G sheets for horizontal alignment information.  
 Refer to appropriate Standard Road Plans for additional information.



**Geometric & Staking Details  
 Intersection of  
 IA 9 and Parking Lot Entrance**

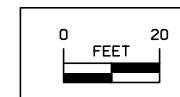
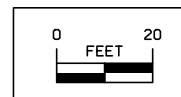
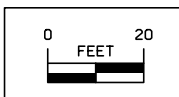




- KEYNOTES:**
- ① Sta 1098+54.13 15.56 Rt Second St  
= Sta 30+24.87 RETCSRHALE  
(658.02)
  - ② Sta 1098+67.91 17.55 Rt Second St  
= Sta 30+39.55 RETCSRHALE  
(657.93)
  - ③ Sta 2099+06.79 14.87 Rt Hale St  
= Sta 30+45.26 RETCSRHALE  
(657.49)
  - ④ Sta 2099+07.70 15.51 Lt Hale St  
= Sta 40+19.91 RETCSRHALE  
(657.70)
  - ⑤ Sta 2099+01.70 20.06 Lt Hale St  
= Sta 40+27.53 RETCSRHALE  
(658.25)

Note:  
 Dimensions shown are to the edge of pavement.  
 Refer to G sheets for horizontal alignment information.  
 Refer to appropriate Standard Road Plans for additional information.

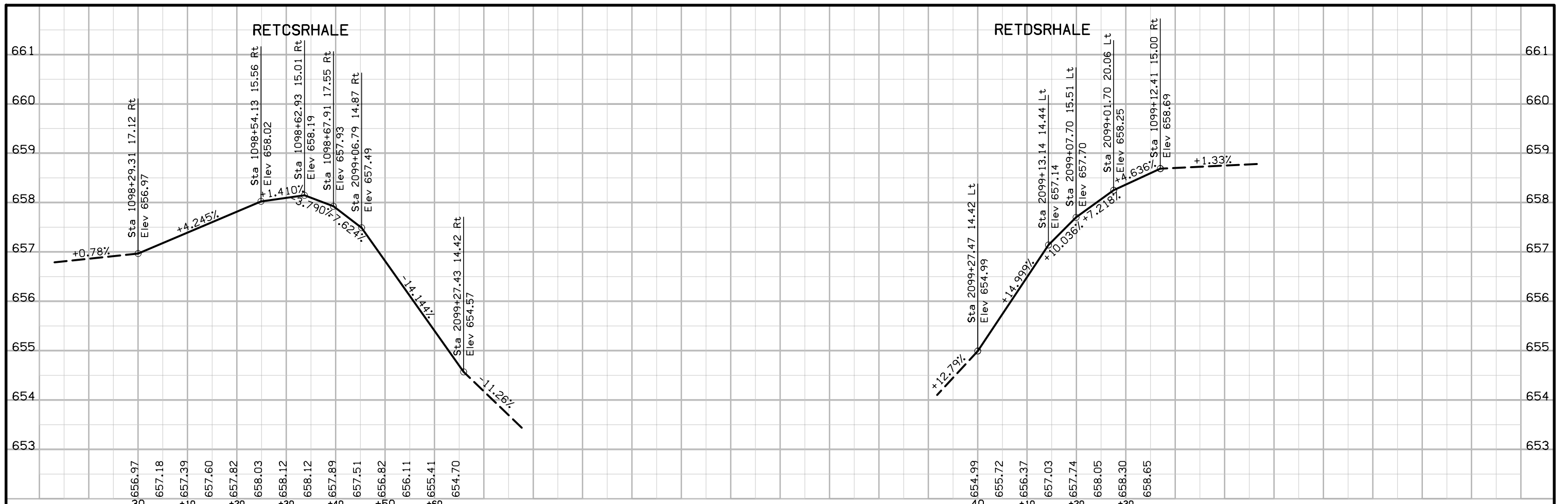
NOTE:  
 All longitudinal joints shall be either KT-2 or L-2 unless indicated otherwise.  
 All transverse joints shall be CD joints with a maximum 17' spacing unless indicated otherwise.  
 If a joint length is 2', a C joint shall be used instead of a CD joint.  
 Refer to Road Design Detail 7101 for details of paved headers, if applicable.  
 Refer to Standard Road Plan PV-101 for joint details.  
 Refer to Standard Road Plan SW-514 for additional joint details around intake structures.



**Geometric Details  
 Intersection of  
 Second St and Hale St**

**Staking Details  
 Intersection of  
 Second St and Hale St**

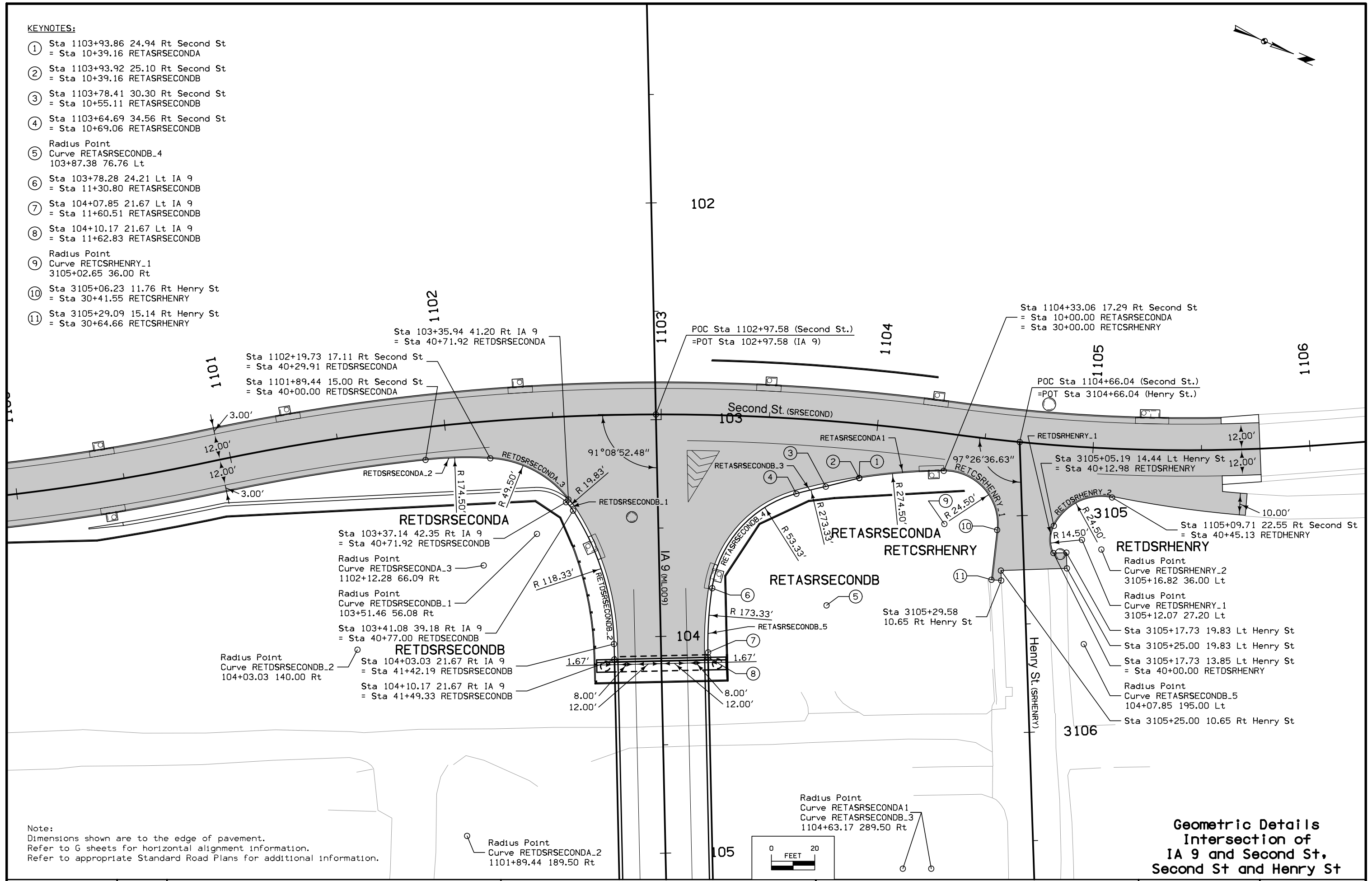
**Jointing Details  
 Intersection of  
 Second St and Hale St**



Edge Return Profiles  
Intersection of  
Second St and Hale St

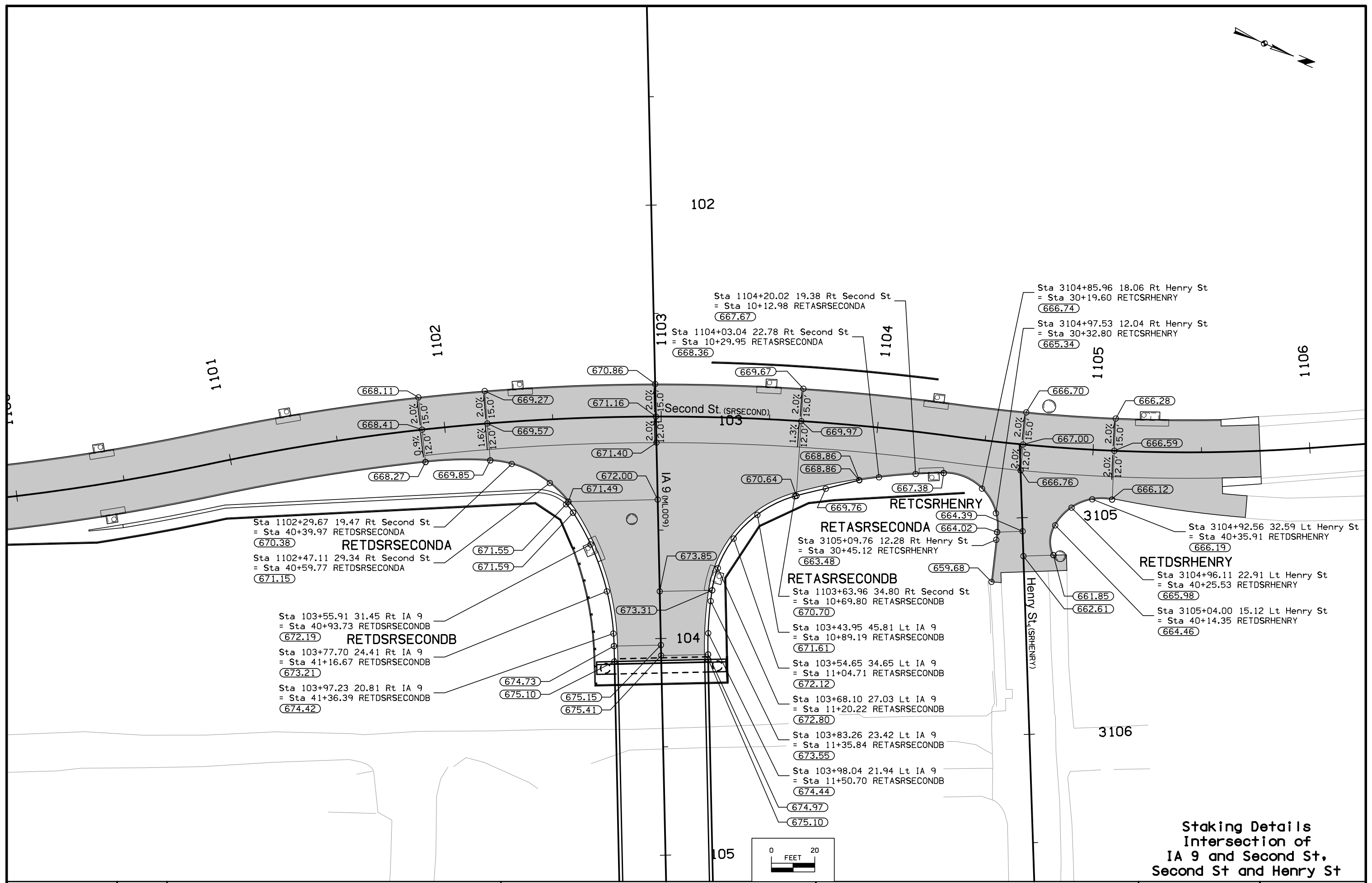
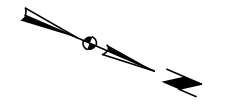
**KEYNOTES:**

- ① Sta 1103+93.86 24.94 Rt Second St  
= Sta 10+39.16 RETASRSECONDA
- ② Sta 1103+93.92 25.10 Rt Second St  
= Sta 10+39.16 RETASRSECONDB
- ③ Sta 1103+78.41 30.30 Rt Second St  
= Sta 10+55.11 RETASRSECONDB
- ④ Sta 1103+64.69 34.56 Rt Second St  
= Sta 10+69.06 RETASRSECONDB
- Radius Point  
Curve RETASRSECONDB.4  
103+87.38 76.76 Lt
- ⑤ Sta 103+78.28 24.21 Lt IA 9  
= Sta 11+30.80 RETASRSECONDB
- ⑦ Sta 104+07.85 21.67 Lt IA 9  
= Sta 11+60.51 RETASRSECONDB
- ⑧ Sta 104+10.17 21.67 Lt IA 9  
= Sta 11+62.83 RETASRSECONDB
- Radius Point  
Curve RETCSRHENRY\_1  
3105+02.65 36.00 Rt
- ⑩ Sta 3105+06.23 11.76 Rt Henry St  
= Sta 30+41.55 RETCSRHENRY
- ⑪ Sta 3105+29.09 15.14 Rt Henry St  
= Sta 30+64.66 RETCSRHENRY

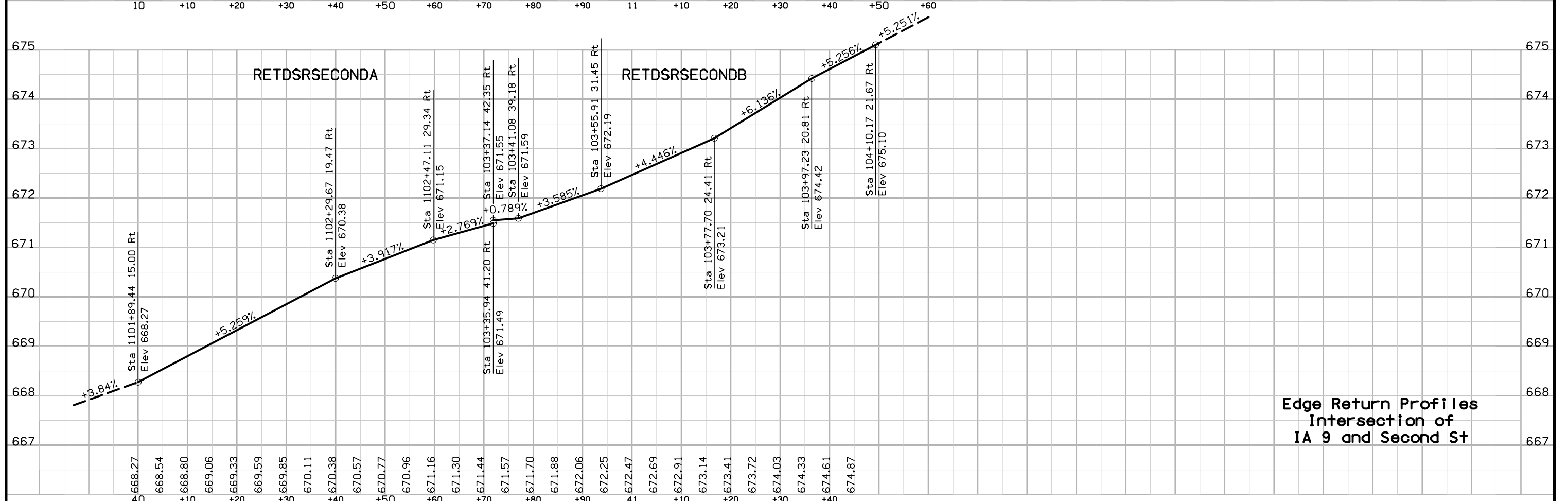
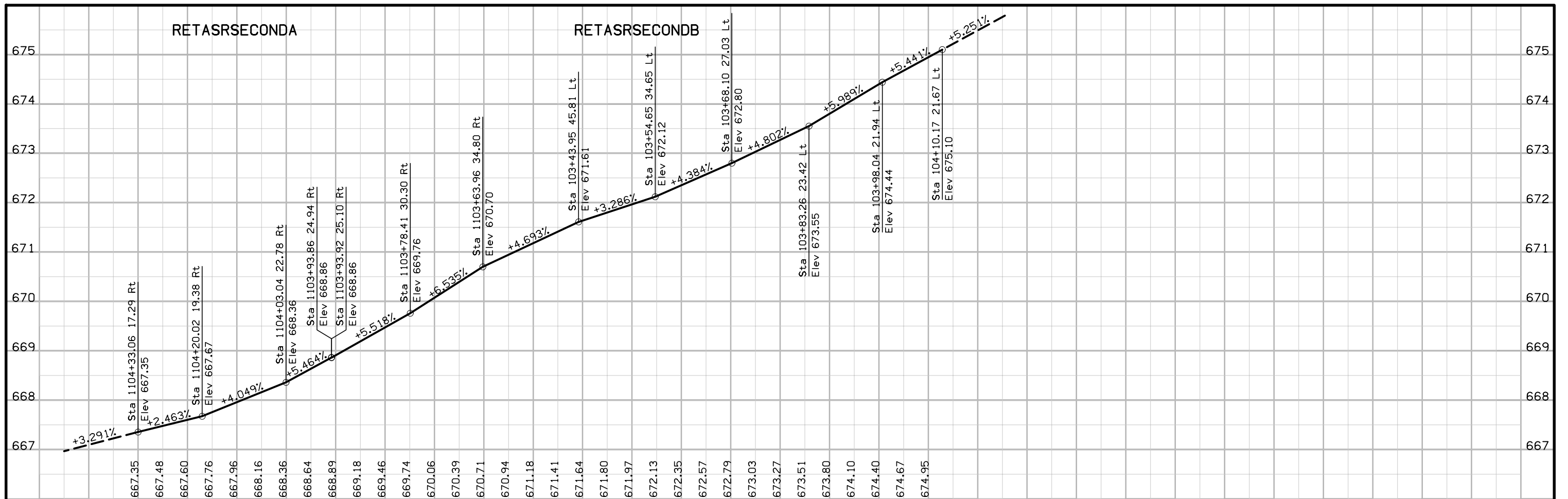


Note:  
Dimensions shown are to the edge of pavement.  
Refer to G sheets for horizontal alignment information.  
Refer to appropriate Standard Road Plans for additional information.

**Geometric Details  
Intersection of  
IA 9 and Second St,  
Second St and Henry St**

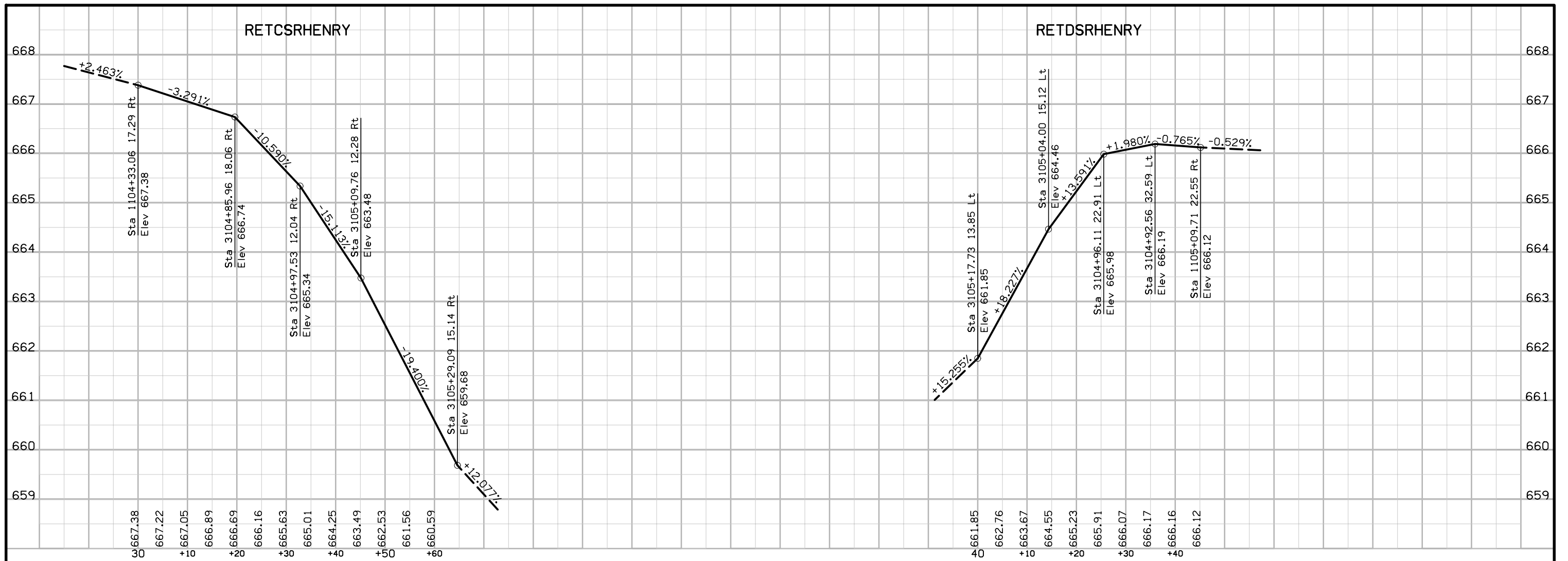


Staking Details  
Intersection of  
IA 9 and Second St,  
Second St and Henry St

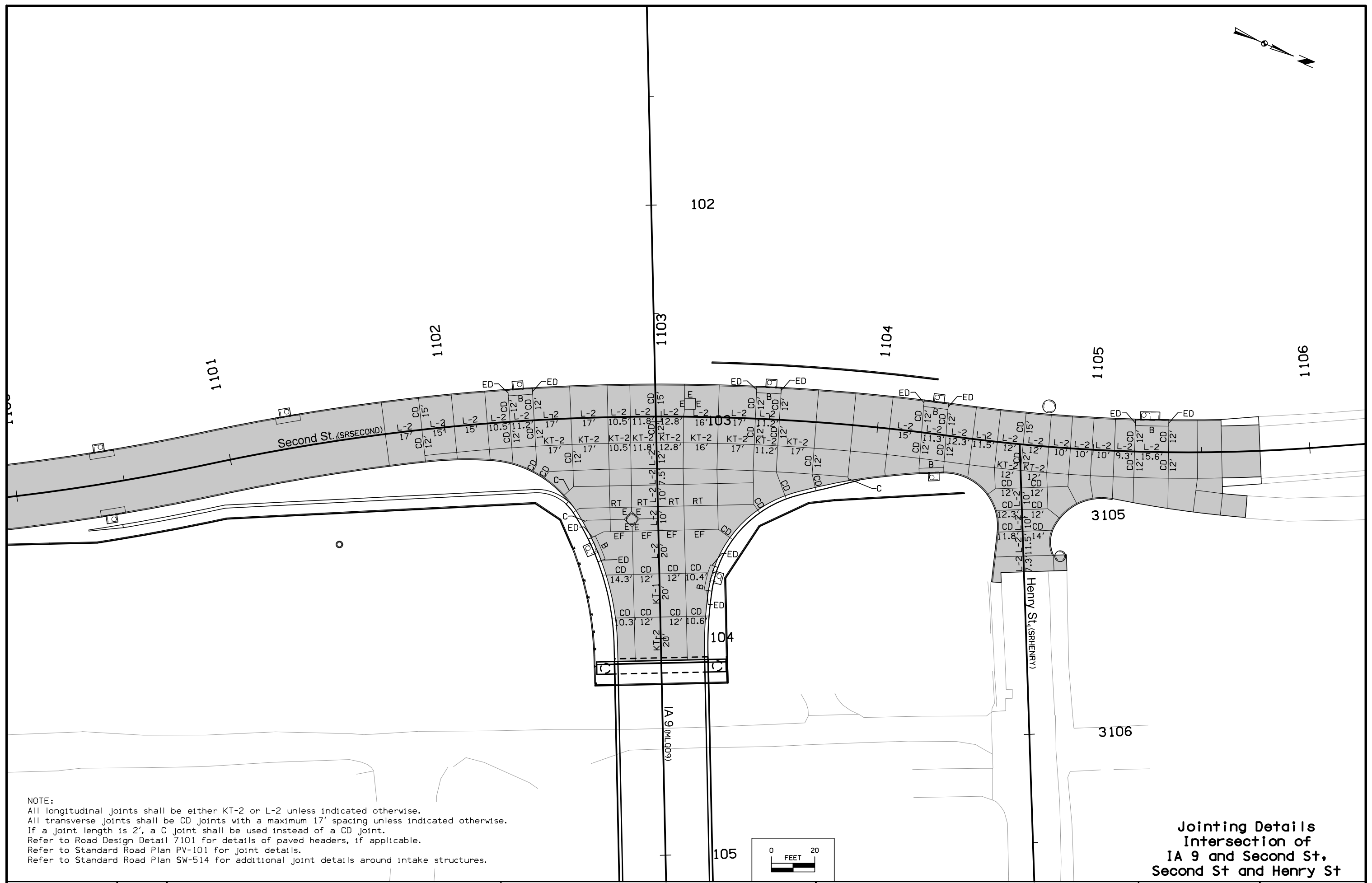


Edge Return Profiles  
Intersection of  
IA 9 and Second St





Edge Return Profiles  
Intersection of  
Second St and Henry St



NOTE:  
 All longitudinal joints shall be either KT-2 or L-2 unless indicated otherwise.  
 All transverse joints shall be CD joints with a maximum 17' spacing unless indicated otherwise.  
 If a joint length is 2', a C joint shall be used instead of a CD joint.  
 Refer to Road Design Detail 7101 for details of paved headers, if applicable.  
 Refer to Standard Road Plan PV-101 for joint details.  
 Refer to Standard Road Plan SW-514 for additional joint details around intake structures.

**Jointing Details  
 Intersection of  
 IA 9 and Second St.,  
 Second St and Henry St**

① Diameter or equivalent diameter

\* Bid Item  
\*\* For SW-545

### STORM SEWER

#### INTAKES AND UTILITY ACCESSES

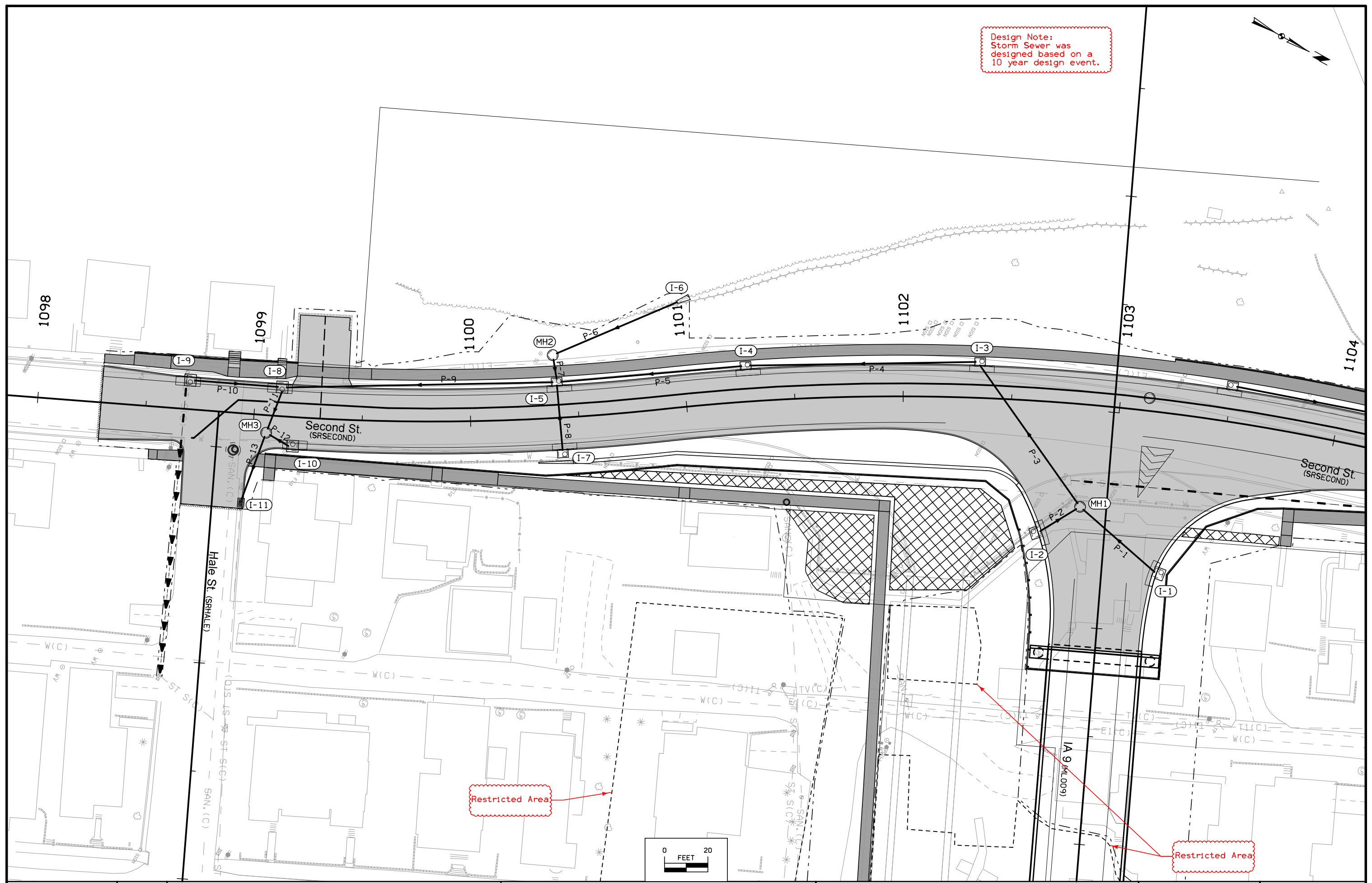
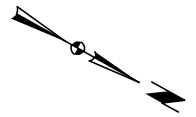
#### PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

No.	Location Station and Offset	*Type or Standard Road Plan	Form	Bottom	Extension	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe Size	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121)	Flow Lines			Pipe Profile Sheet No.	Notes	
			Elev.	Elev.	Length**			From	To							Inlet Elevation	Outlet Elevation	Other Elevation			
			Elev.	Elev.	FT			IN	FT							FT	Type	Elevation			Elevation
I-1	103+72 24.5 Lt	SW-546R	672.46	667.50			P-1	I-1	MH1	2000	15	50	45.7	3.3							
I-2	103+57 29.6 Rt	SW-546L	672.28	666.50			P-2	I-2	MH1	2000	15	26	21.6	2.3			668.00	666.50			
I-3	1102+35 15 Lt	SW-507R	670.48	663.50			P-3	MH1	I-3	2000	15	85	80.4	2.4			667.00	666.50			
I-4	1101+28 15 Lt	SW-507R	665.76	661.50			P-4	I-3	I-4	2000	15	109	104.2	1.8			666.00	664.10			
I-5	1100+40 15 Lt	SW-507R	662.42	656.50			P-5	I-4	I-5	2000	15	88	83.4	4.4			664.00	662.10			
I-6	1101+00 48 Lt	DR-201	670.62	666.18			P-6	I-4	I-5	2000	15	88	83.4	4.4			662.00	658.30			
I-7	1100+41 15 Rt	SW-507L	662.42	660.10			P-7	I-6	MH2	2000	15	65	60.3	13.6			666.70	658.50			
I-8	1099+12 15 Lt	SW-541L	658.68	653.65			P-8	MH2	I-5	2000	15	14	9.1	9.9			658.40	657.50			
I-9	1098+70 15 Lt	SW-541L	658.25	655.00			P-9	I-7	I-5	2000	15	34	30.0	1.3			657.50	657.10			
I-10	1099+19 15 Rt	SW-541R	658.78	653.00			P-10	I-5	I-8	2000	15	127	122.7	2.2			657.00	654.30			
I-11	2099+25 14.5 Lt	SW-501	655.50	651.50			P-11	I-9	I-8	2000	15	43	38.5	3.2			655.50	654.25			
MH1	103+45 12.12 Rt	SW-401 (48 in.)	672.09	665.50			P-12	I-8	MH3	2000	15	23	18.4	6.0			654.20	653.10			
MH2	1100+40 29 Lt	SW-401 (48 in.)	662.71	658.30			P-13	I-10	MH3	2000	15	14	9.9	4.0			653.50	653.10			
MH3	1099+06 8.0 Rt	SW-401 (48 in.)	658.85	652.50			P-14	MH3	I-11	2000	15	35	30.5	2.0			653.00	652.40			
I-12	1103+50 15 Lt	SW-507L	670.13	664.40			P-15	I-12	I-13	2000	15	78	73.7	2.4							
I-13	1104+27 15 Lt	SW-507L	668.07	662.50			P-16	I-14	I-13	2000	15	38	33.1	2.7			664.90	663.10			
I-14	1104+28 18 Rt	SW-507R	667.48	662.68			P-17	I-13	MH4	2000	15	51	46.5	6.2			664.00	663.10			
I-15	1105+45 23 Lt	DR-201	666.60	661.80			P-18	I-15	I-16	2000	15	20	15.9	5.0			663.00	660.10			
I-16	1105+26 15 Lt	SW-509R	666.25	660.40			P-19	I-16	MH4	2000	15	45	40.3	2.0			661.80	661.00			
MH4	1104+78 20 Lt	SW-401 (60 in.)	667.15	659.00			P-20	MH4	MH5	2000	15	69	64.3	1.4			660.90	660.10			
MH5	1104+88 50 Rt	SW-401 (48 in.)	662.00	658.00													660.00	659.10			Tie into existing flume
																	667.00	664.00			

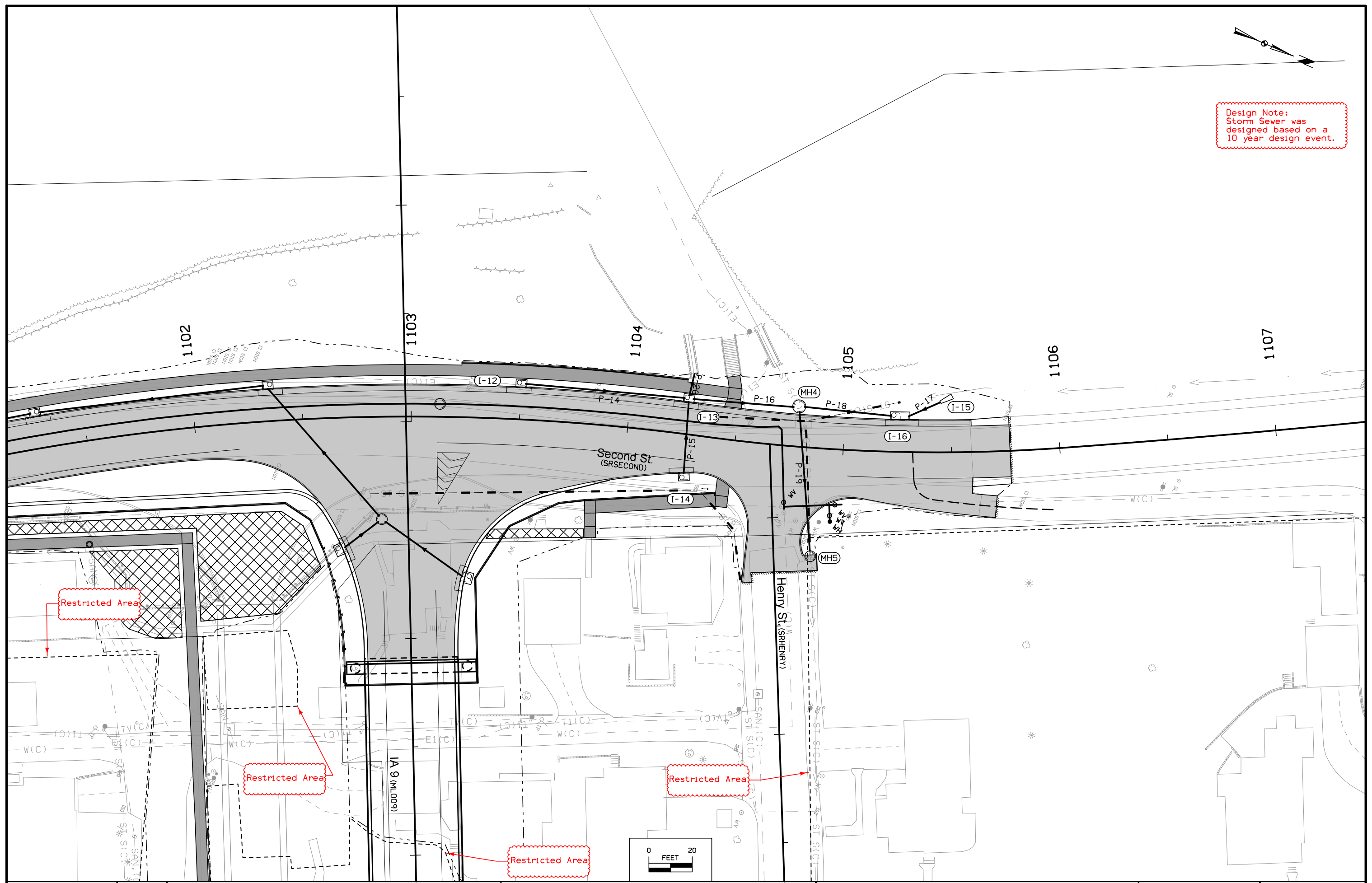


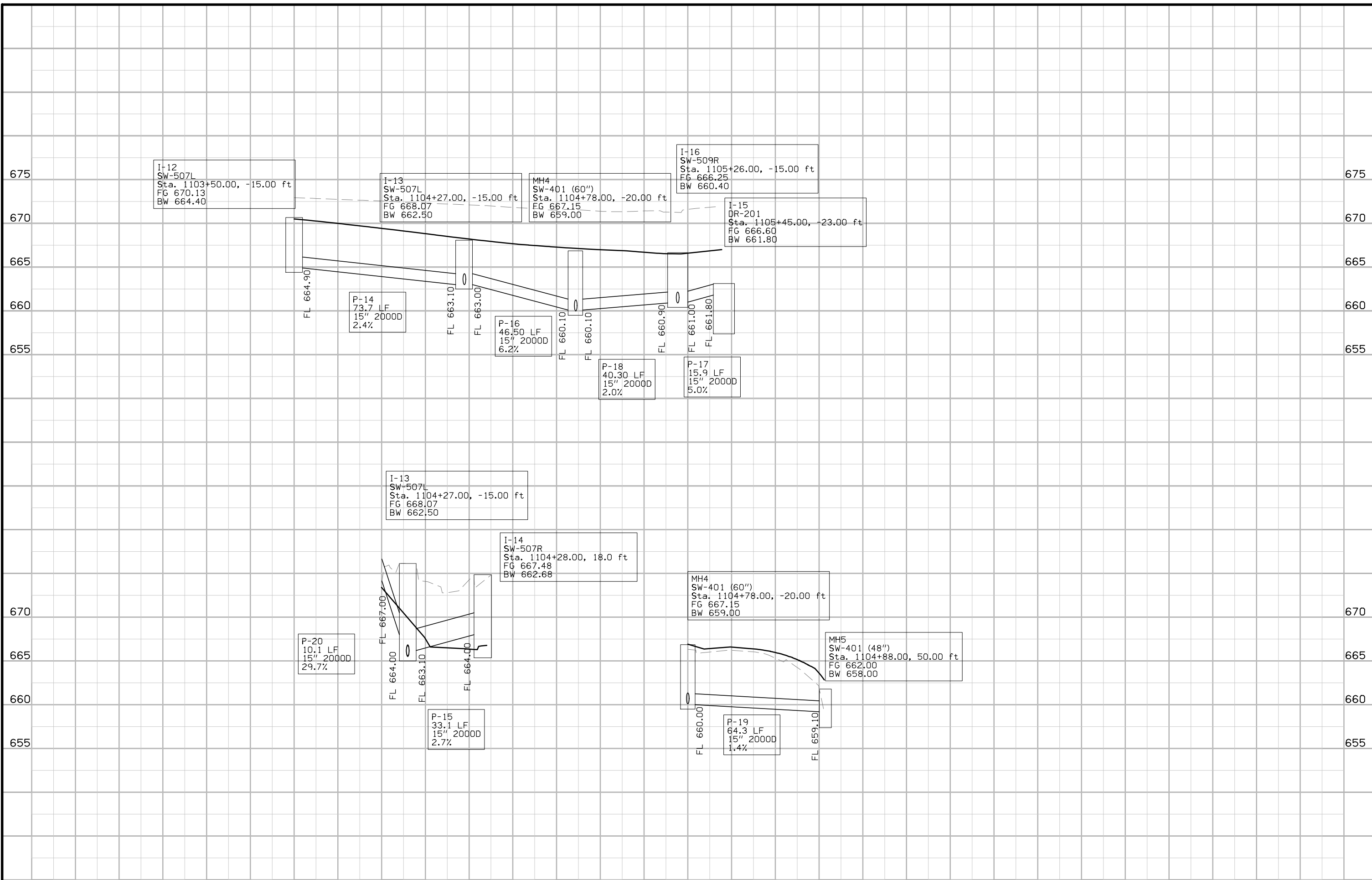
Design Note:  
Storm Sewer was  
designed based on a  
10 year design event.





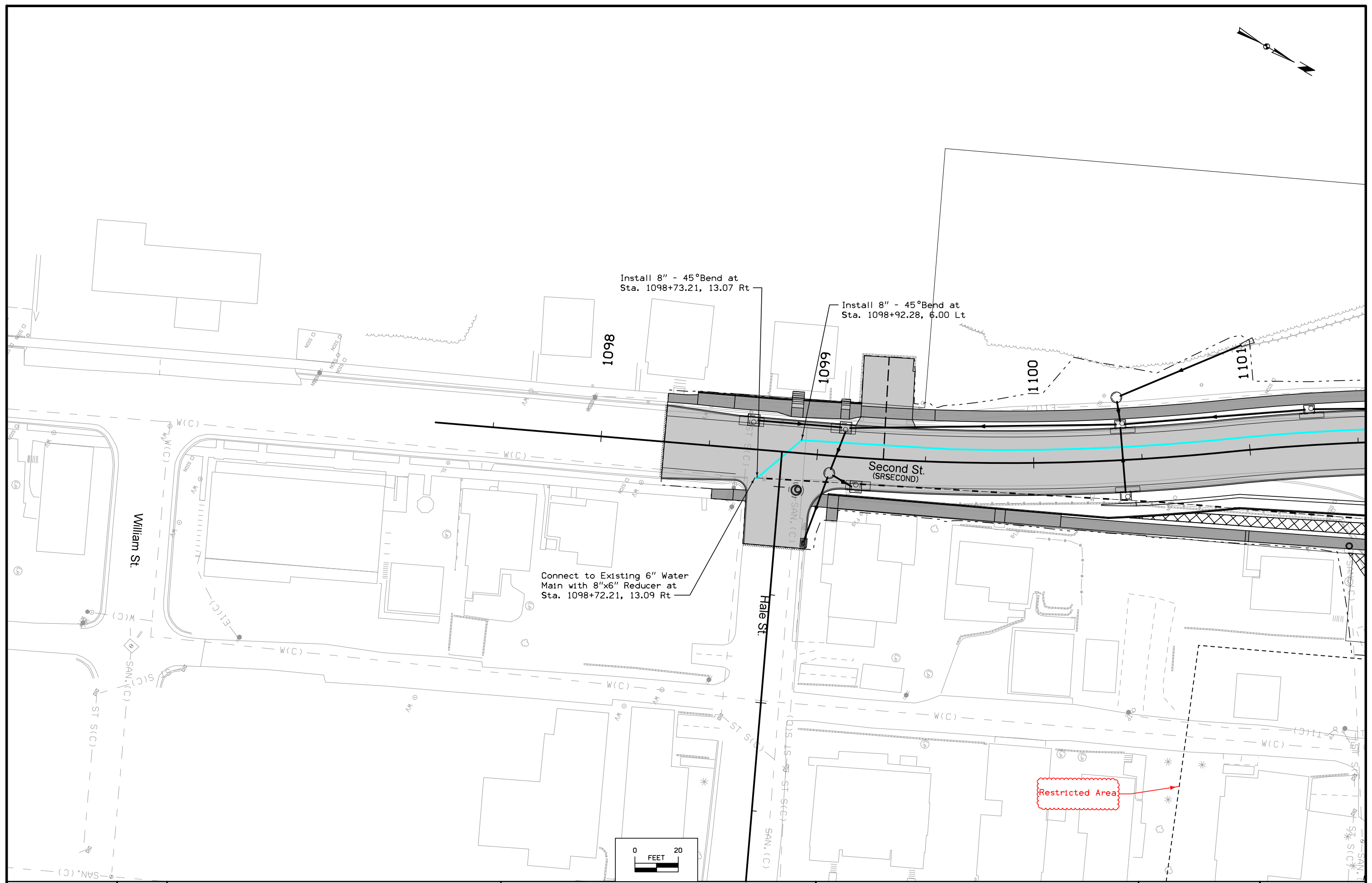
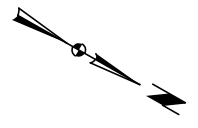
Design Note:  
Storm Sewer was  
designed based on a  
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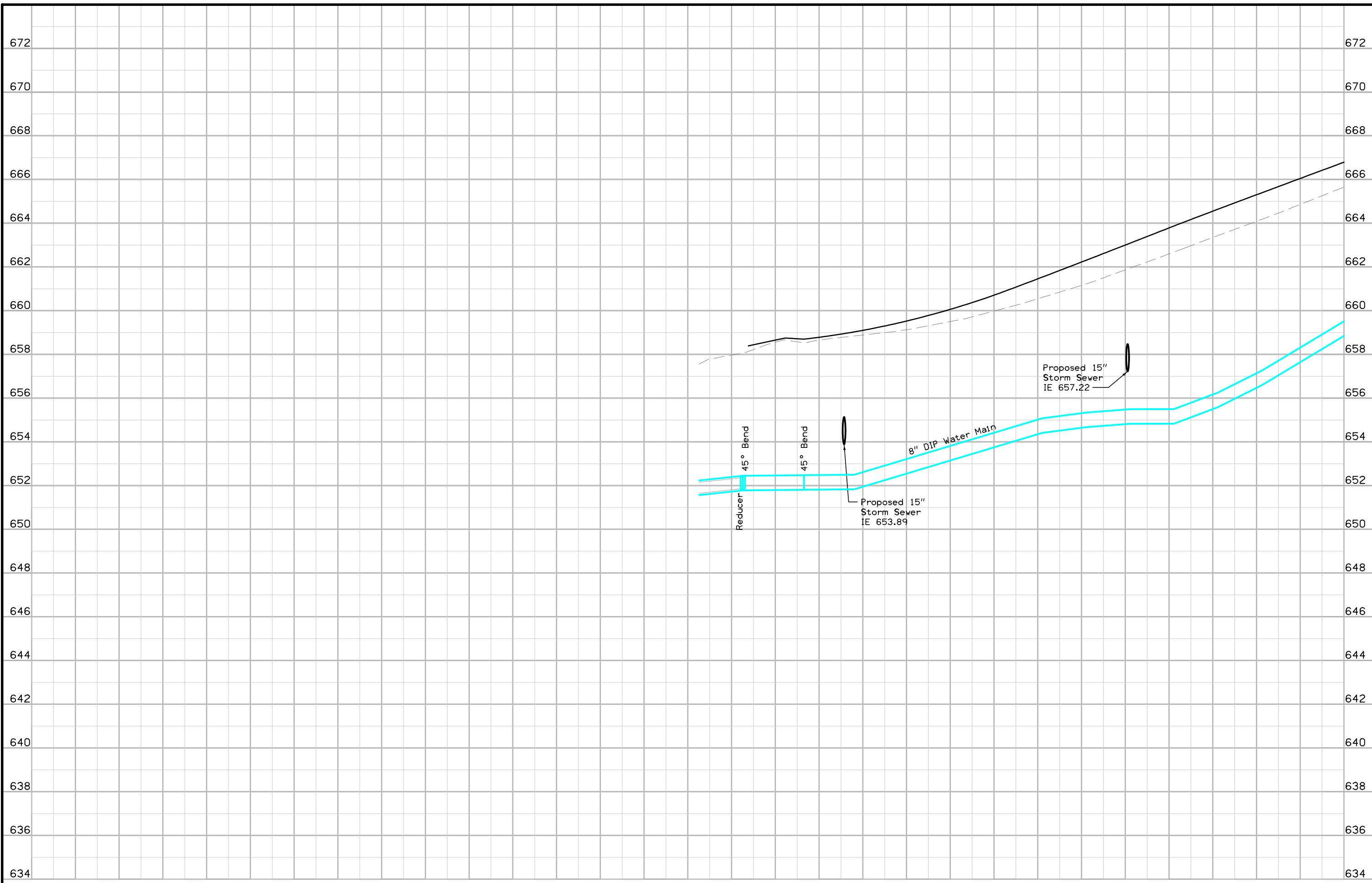


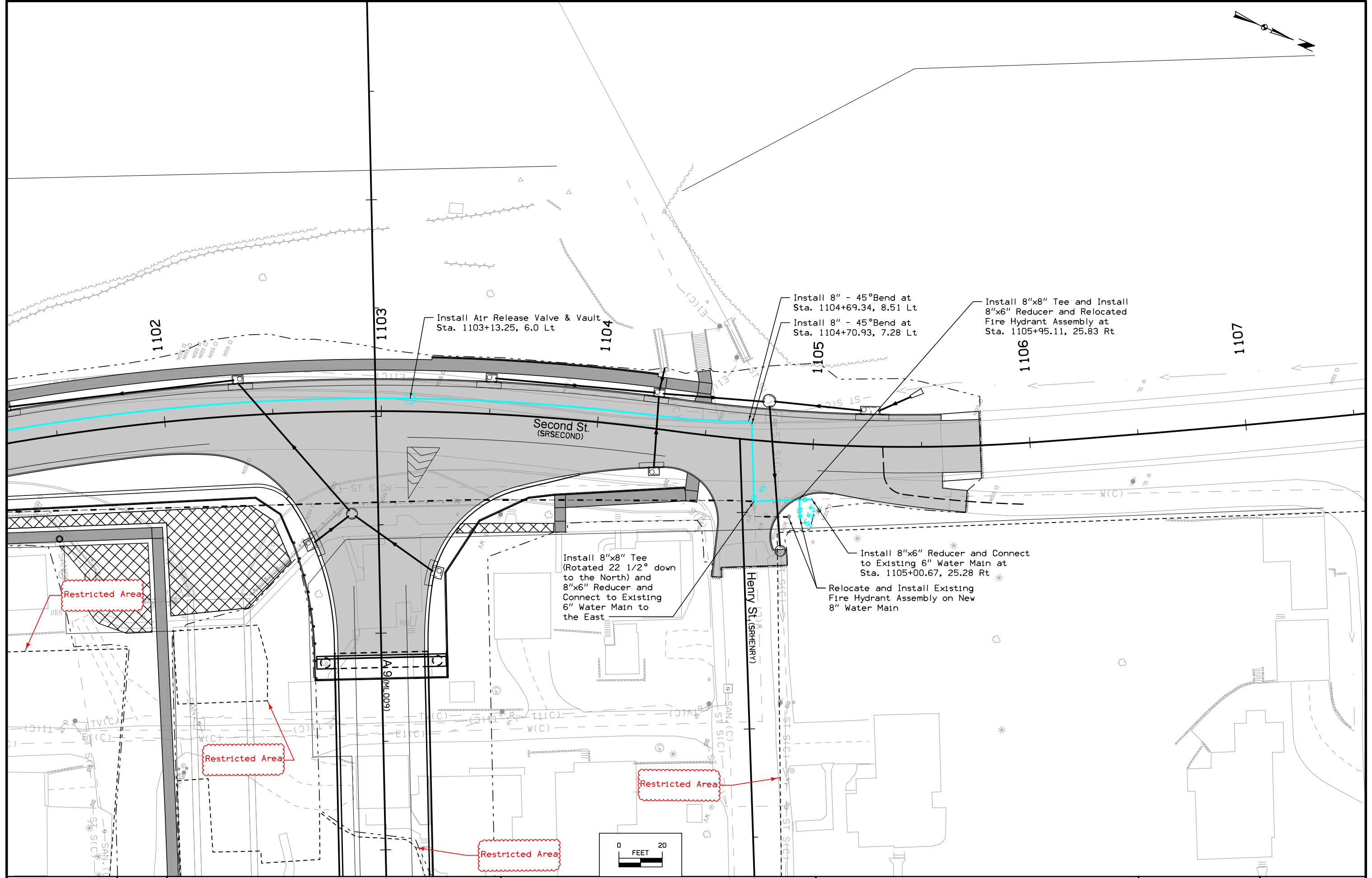
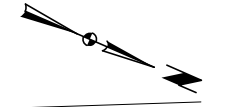












Install Air Release Valve & Vault  
Sta. 1103+13.25, 6.0 Lt

Install 8" - 45° Bend at  
Sta. 1104+69.34, 8.51 Lt  
Install 8" - 45° Bend at  
Sta. 1104+70.93, 7.28 Lt

Install 8"x8" Tee and Install  
8"x6" Reducer and Relocated  
Fire Hydrant Assembly at  
Sta. 1105+95.11, 25.83 Rt

Install 8"x8" Tee  
(Rotated 22 1/2° down  
to the North) and  
8"x6" Reducer and  
Connect to Existing  
6" Water Main to  
the East

Install 8"x6" Reducer and Connect  
to Existing 6" Water Main at  
Sta. 1105+00.67, 25.28 Rt

Relocate and Install Existing  
Fire Hydrant Assembly on New  
8" Water Main

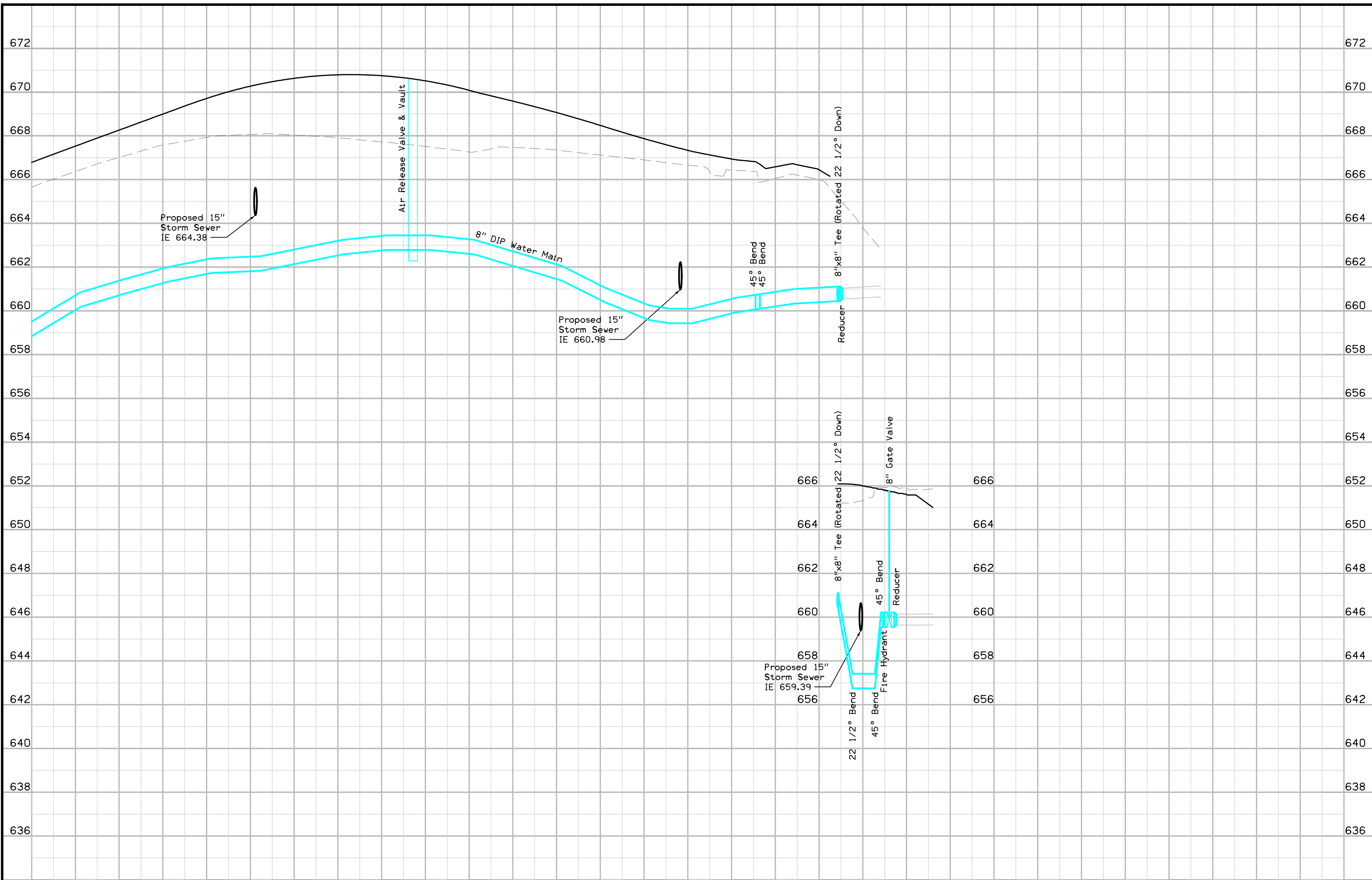
Restricted Area

Restricted Area

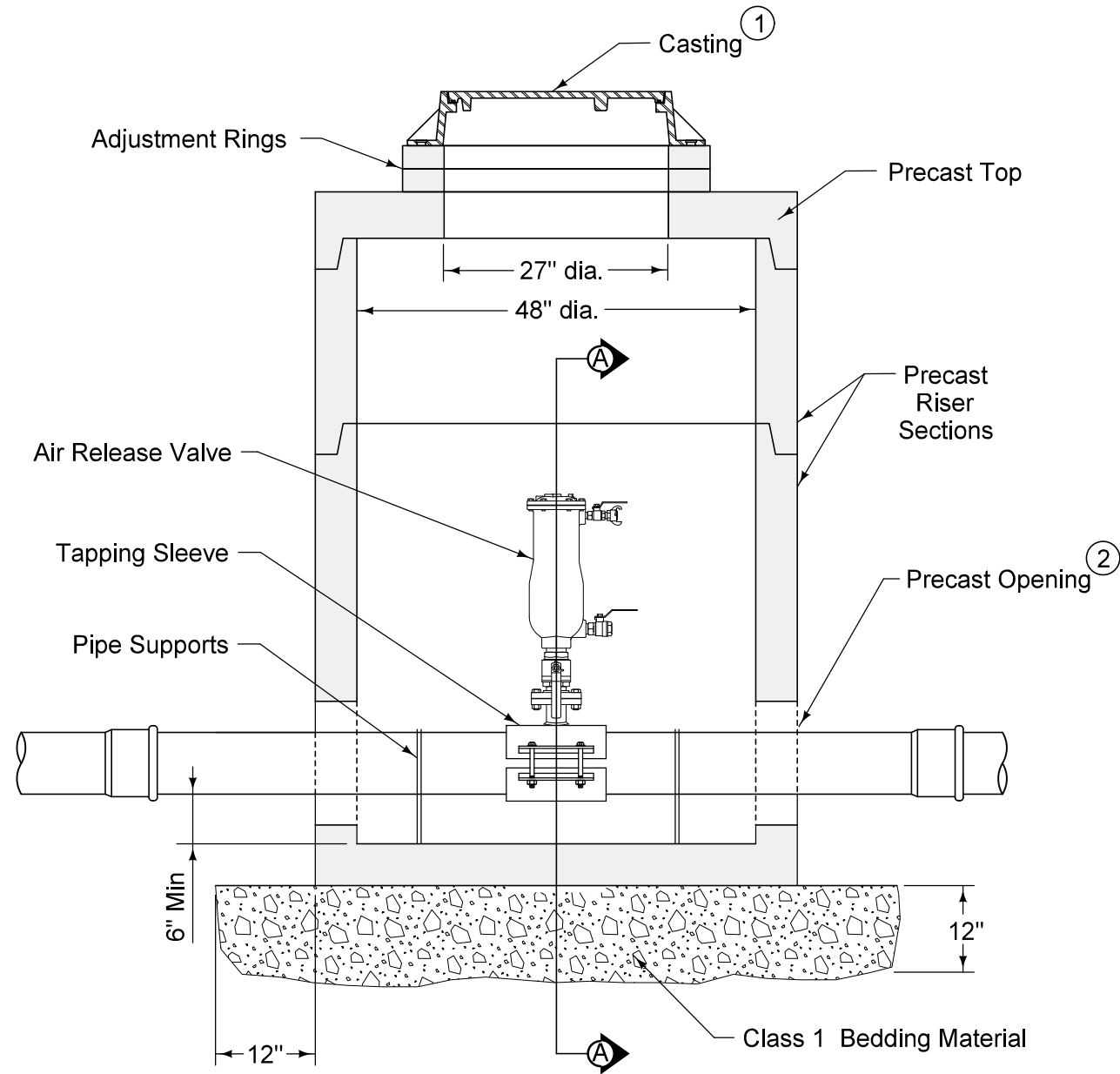
Restricted Area

Restricted Area

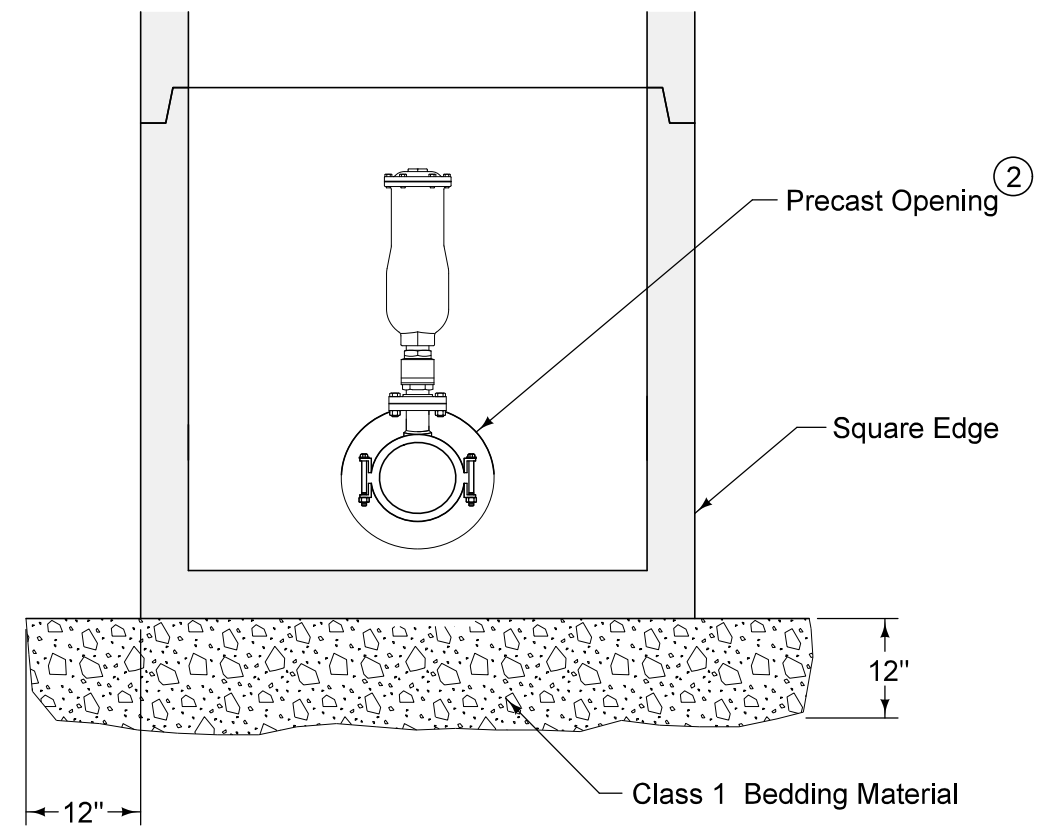




- ① SW-601 Type C casting with the word "WATER" on the cover.
- ② Prevent riser from bearing on pipe by providing a precast opening with a diameter up to 6 inches larger than pipe diameter.



TYPICAL SECTION



SECTION A-A

**AIR RELEASE  
VALVE & VAULT**

100-19  
04-19-16

**PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE**

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
1098+29.31	1105+77.02	L		942.5		
1098+29.31	1098+66.22	R		57.2		
1098+98.00	1101+70.00	R		788.1		
1099+12.00	1102+75.00	R		426.7		
1101+33.76	1103+75.67	R		173.4		
1103+26.00	1104+43.00	R		170.0		
1103+57.00	1104+60.00	R		181.6		
1104+53.00	1104+59.00	R		28.9		
1104+92.00	1105+66.00	R		149.7		
121+32.26	127+86.88	L			1346.0	
121+32.26	123+20.00	R		603.6		
123+21.05	125+09.00	R		311.1		
125+05.00	127+86.88	R			846.0	
			Totals	3832.7	2192.0	

100-34  
10-17-17

**STORMWATER DRAINAGE BASIN AND STORAGE**

Refer to EC Standards and 570s Details.

Drainage Basin Location						Summary of Stormwater Storage							Remarks
Basin No.	Station to Station		Side	Discharge Point		Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Best Management Practice	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	
				Station	Side					Acres	Acres	Acres	
	1	1098+29.31	1098+66.89	Both	1098+29.31	Both	0.1	0.0		0.1	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	
2	1098+66.89	1102+97.00	Both	2099+27.45	LT	0.7	0.0	0.7	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
3	1102+97.00	1105+09.71	Both	3105+25.00	LT	0.4	0.0	0.4	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
4	1105+09.71	1105+77.02	RT	1105+69.28	RT	0.1	0.0	0.1	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
5	1098+99.21	1102+57.21	RT	1101+74.47	RT	0.2	0.0	0.2	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
6	1103+35.15	1104+59.90	RT	1103+45.55	RT	0.1	0.0	0.1	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
7	121+30.88	123+92.18	RT	121+30.88	RT	0.6	0.0	0.6	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
8	122+00.51	127+86.88	LT	122+00.51	LT	1.0	0.0	1.0	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	
9	123+92.18	127+86.88	RT	127+86.88	RT	0.5	0.0	0.5	Perimeter & Slope Sediment Control Devices (EC-204)	0.0	0.0	N/A	

100-36  
10-16-18

**OPEN-THROAT CURB INTAKE  
SEDIMENT FILTER**

Possible Standard: EC-602

Location Station	Side	Installation	Maintenance	Removal	Remarks
		LF	EACH	EACH	
103+72	Lt	4.0	1	1	
103+57	Rt	4.0	1	1	
1102+35	Lt	4.0	1	1	
1101+28	Lt	4.0	1	1	
1100+40	Lt	4.0	1	1	
1100+41	Rt	4.0	1	1	
1099+12	Lt	4.0	1	1	
1098+70	Lt	4.0	1	1	
1099+19	Rt	4.0	1	1	
1103+50	Lt	4.0	1	1	
1104+35	Lt	4.0	1	1	
1104+28	Rt	4.0	1	1	
1105+26	Lt	8.0	1	1	

100-37  
04-18-17

**GRATE INTAKE SEDIMENT FILTER BAG**

Possible Detail: 570-7

Location Station	Side	Installation	Maintenance	Removal	Remarks
		EACH	EACH	EACH	
2099+25.00	Lt	1	1	1	

### POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

#### I. ROLES AND RESPONSIBILITIES

- A. Designer:
  1. Prepares Base PPP included in the project plan.
  2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
  3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.
- B. Contractor:
  1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
  3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
  4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
  5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
  6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
  7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
  8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.
- C. Subcontractors:
  1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or performing work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Implement good housekeeping practices according to Paragraph III, C, 2.
- D. RCE/Project Engineer:
  1. Is Project Storm Water Manager.
  2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
  3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
  4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
  5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
  6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
  7. Is familiar with the Project PPP and storm water site map.
  8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
  9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
  10. Is signature authority on Notice of Discontinuation.
  11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
  12. Makes information to determine permit compliance available to the DNR upon their request.
- E. Inspector:
  1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
  2. Makes information to determine permit compliance available to the DNR upon their request.
  3. Conducts joint required inspections of the site with the contractor/subcontractor.
  4. Completes an inspection report after each inspection.
  5. Is signature authority on storm water inspection reports.

#### II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the construction of a bridge over the Mississippi River and associated roadway pavements.
- B. This PPP covers approximately 4.2 acres with an estimated 3.87 acres being disturbed. The portion of the PPP covered by this contract has 3.87 acres disturbed.
- C. The PPP is located in an area of 1 soil association (Downs - Fayette - Nordness). The estimated weighted average runoff coefficient number for this PPP after completion will be 0.5.
- D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.
- E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been

### POLLUTION PREVENTION PLAN

installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.  
F. Runoff from this work will flow into storm sewers and the Mississippi River.

#### III. CONTROLS

- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
  - B. Preserve vegetation in areas not needed for construction.
  - C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.
- #### 1. EROSION AND SEDIMENT CONTROLS
- a. Stabilization Practices
    - 1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
    - 2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
      - a) Permanently ceased on any portion of the site, or
      - b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
    - 3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
    - 4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
    - 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
    - 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.
  - b. Structural Practices
    - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
    - 2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.
  - c. Storm Water Management
 

Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
- #### 2. OTHER CONTROLS
- Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
- a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
  - b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
  - c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
  - d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
  - e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
  - f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
  - g. Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
  - h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environmental laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
  - i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
  - j. Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
- #### 3. APPROVED STATE OR LOCAL PLANS
- During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.



### POLLUTION PREVENTION PLAN

IV. MAINTENANCE PROCEDURES

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
  1. Date of the inspection.
  2. Summary of the scope of the inspection.
  3. Name and qualifications of the personnel making the inspection.
  5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
  6. Major observations related to the implementation of the PPP.
  7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
- C. Fieldbook Entries - This contains the inspector's daily diary and bid item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
- E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT





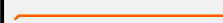


I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed or Typed Name

\_\_\_\_\_  
Signature

### LINE STYLE LEGEND OF EROSION CONTROL SHEETS










-  Silt Fence
-  Perimeter and Slope Sediment Control Device (9")
-  Perimeter and Slope Sediment Control Device (12")
-  Perimeter and Slope Sediment Control Device (20")
-  Open-Throat Curb Intake Sediment Filter
-  Concentrated Flow
-  Sheet Flow

### PLAN VIEW COLOR LEGEND OF EROSION CONTROL 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
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%

### CELL LEGEND OF EROSION CONTROL SHEETS

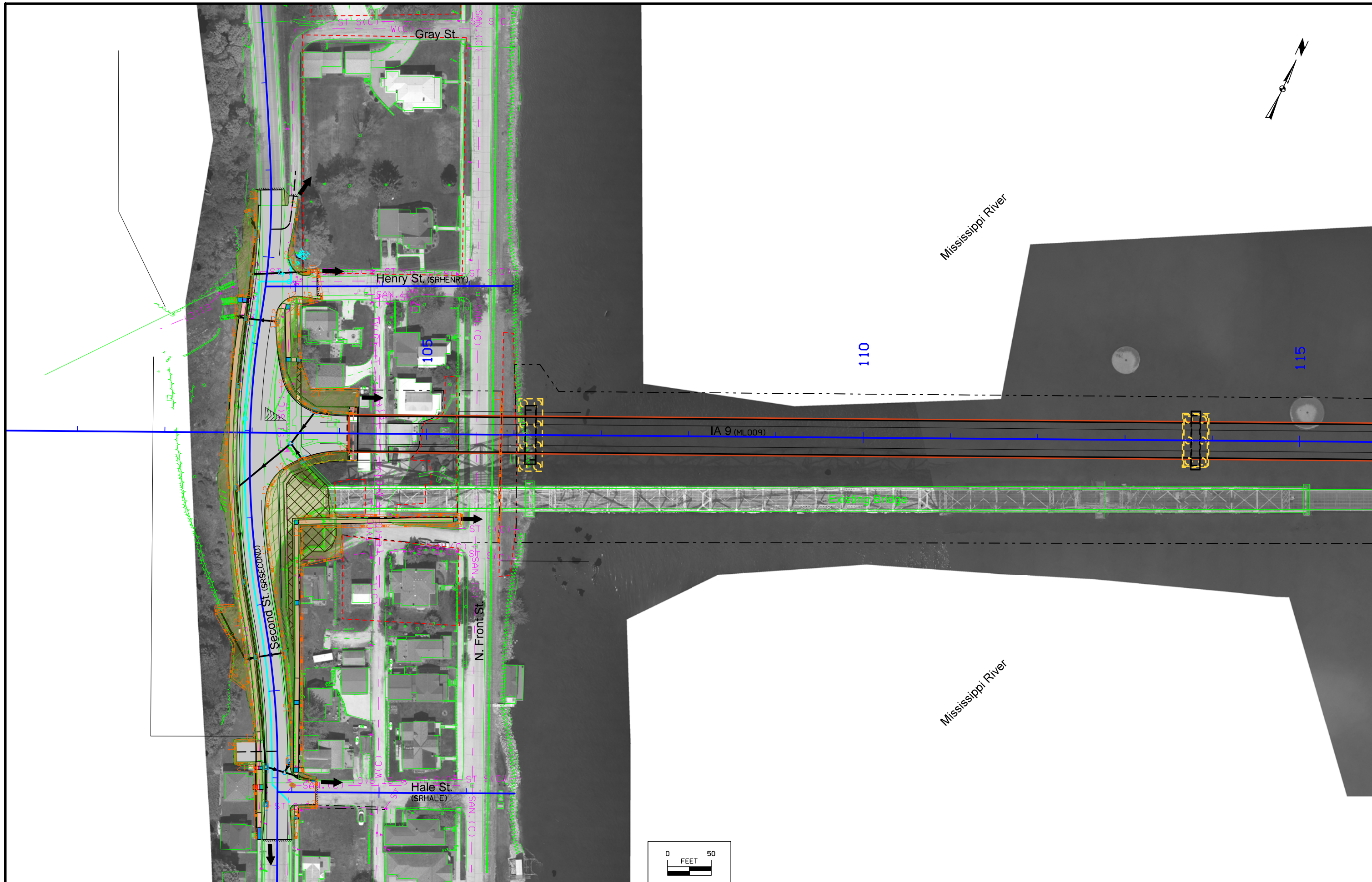
-  Temporary Sediment Control basin
-  Erosion Control for Circular Intake or Manhole Well
-  Erosion Control for Rectangular Intake or Manhole Well
-  Grate Intake Sediment Filter Bag
-  Silt Basin
-  Silt Fence Tail
-  Stormwater Drainage Basin Discharge Point
-  Silt Fence for Ditch Checks
-  Rock Check Dam

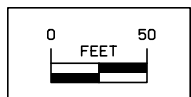
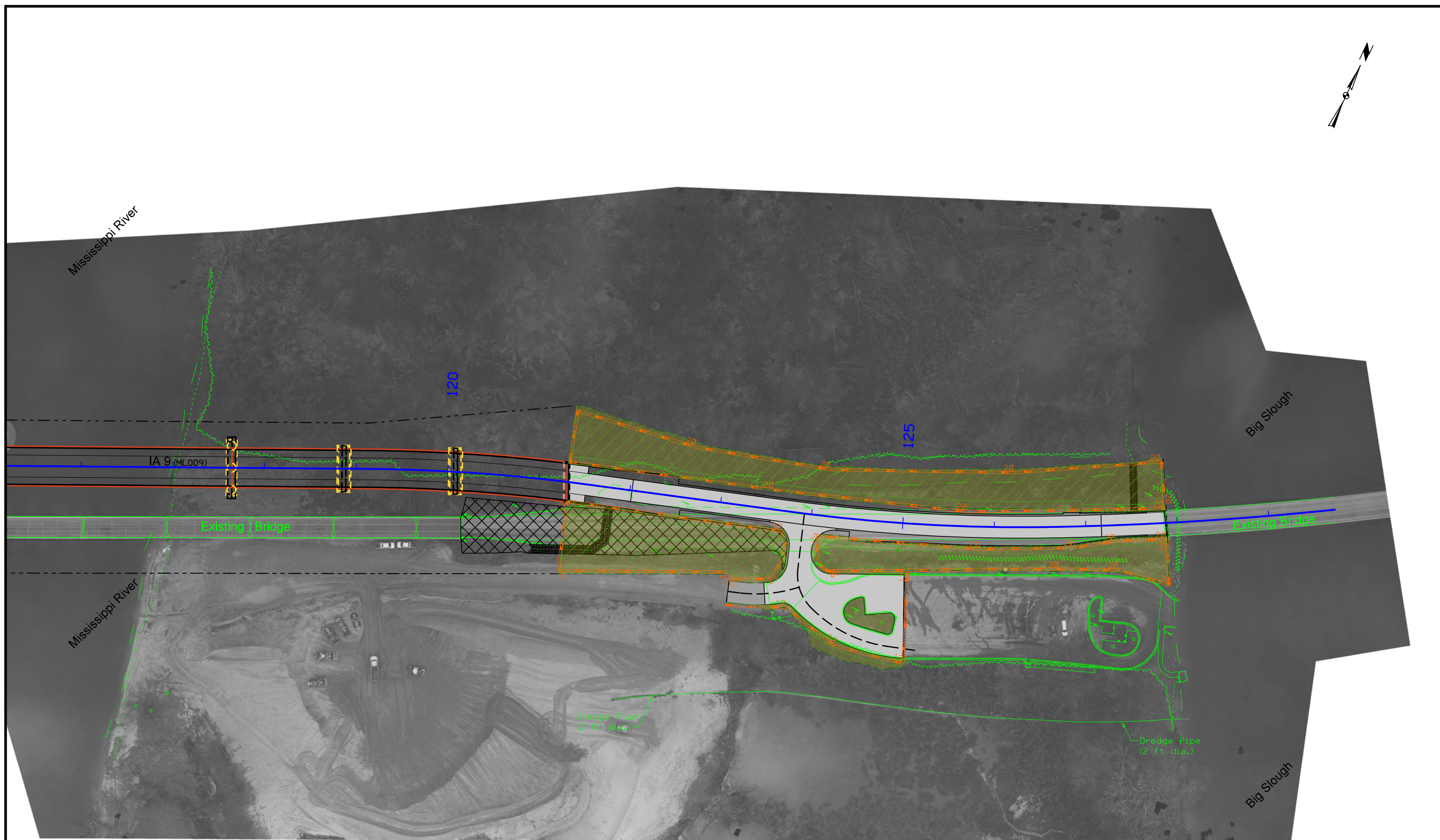
### PATTERN LEGEND OF EROSION CONTROL SHEETS

-  Seeding and Fertilizing
-  Seeding and Fertilizing (Rural)
-  Seeding and Fertilizing (Urban)
-  Native Grass Seeding
-  Salt Tolerant Seeding
-  Wetland Grass Seeding
-  Wildflower Seeding
-  Sodding
-  Turf Reinforcement Mat Type 1
-  Turf Reinforcement Mat Type 2
-  Turf Reinforcement Mat Type 3
-  Turf Reinforcement Mat Type 4
-  Slope Protection, Wood Excelsior Mat
-  Transition Mat
-  Rock Features, Permanent
-  Rock Features, Temporary
-  Tied Concrete Block Mat

## EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

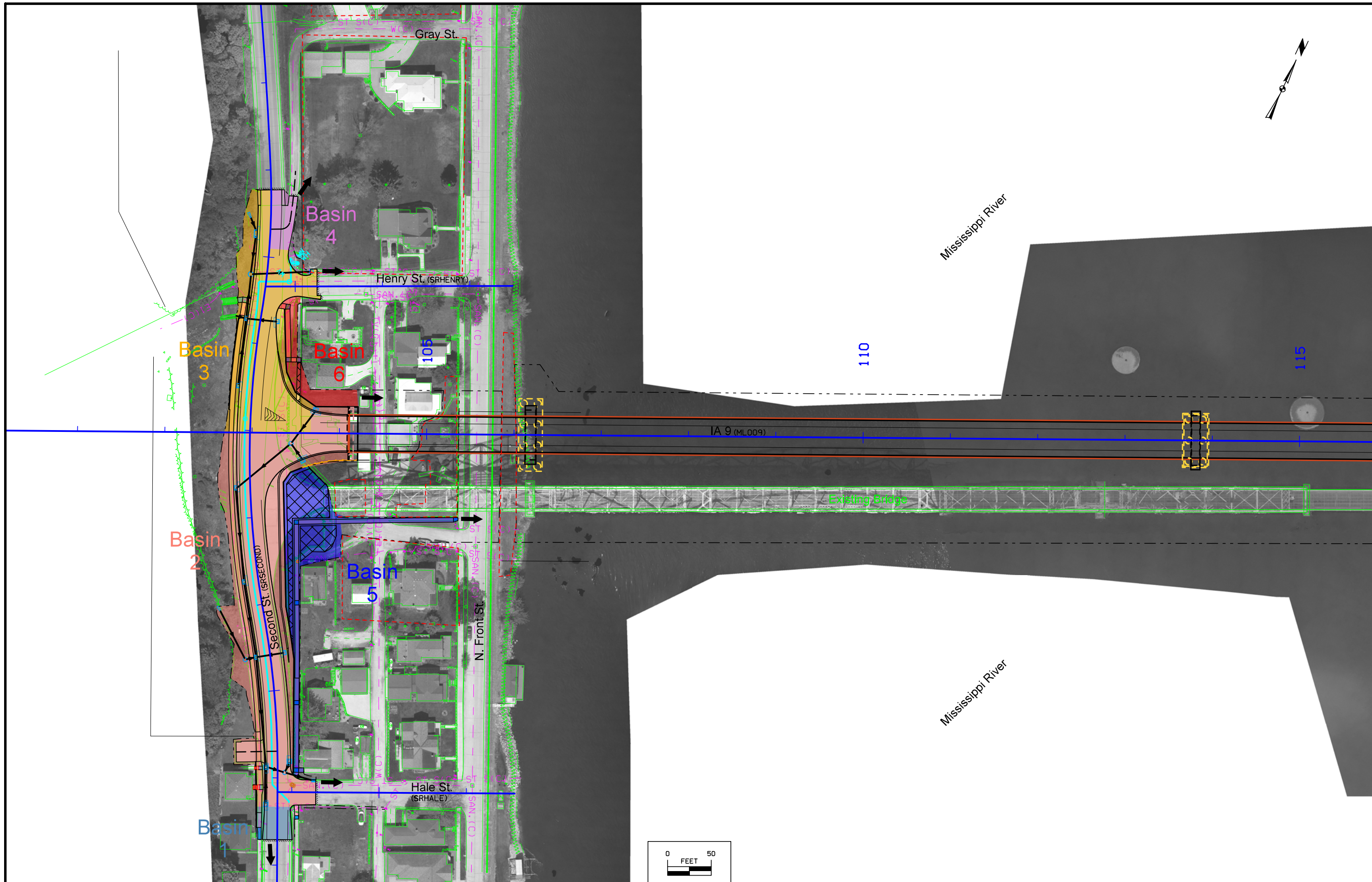
(COVERS SHEET SERIES R)





FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT \ Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	RR.3
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### SURVEY SYMBOLS

- CP Control Point
- ✕ PCT Photo Control Target
- △ BM Bench Mark
- GR Ground Shot (All Survey Points)
- △ ROW Right of Way Mark
- SIGN SI Sign
- GP GP Guard Post (Less Than 4 Posts)
- ⊙ LP L.P. Tank
- ⊙ FLG FLG Flag Poles
- BB BB Billboard
- ⊙ TDC Tree Deciduous
- ✱ TEV Evergreen Tree
- ⊙ PPA Power Pole (Alliant Energy)
- ⊙ PR Electric Riser Pole
- EB EB Electrical Box
- ⊙ LUM Luminaire
- ⊙ WHD Water Hydrant
- ⊙ WV Water Valve
- ⊙ IN Storm Sewer Intake
- ⊙ MH Utility Access (Manhole)
- ⊙ TPD Telephone Pedestal

- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- SH Paved Shoulder
- SNP Unpaved Shoulder
- BL Topo Breakline
- GU Gutter In Front of Curb
- CU Back of Curb
- BRG Bridge
- ▤ RET Retaining Walls
- \*\*\*\*\* RIP Rip-Rap
- D Centerline Draw or Stream (Down)
- TER Terrace
- BLD Building or Foundation
- x— FW Wire Fence
- GDG Guard Rail Steel
- CON Concrete or A/C Slab
- PIP Pipe Culvert
- TLNL Tree Line Left
- SWK Sidewalk
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- FCL Chain Link and Security Fence
- ENP Edge Paved Entrance & Park Lot
- FWD Wood Fence
- ▤ RR Centerline of Railroad Tracks
- EW Edge of Water
- ⊙ TW Top of Water
- BNK Stream Bank
- EG Edge of Gravel Road

### SURVEYED UTILITY OWNER SYMBOLS

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

#### Remark Abbreviations

- QLA Quality Level A Highest guideline quality level
- QLD Quality Level D Lowest guideline quality level

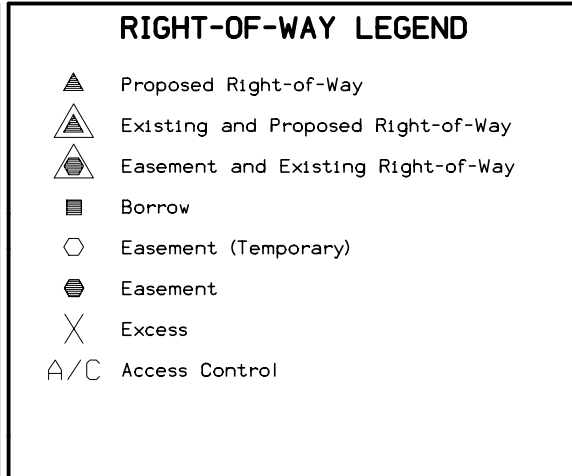
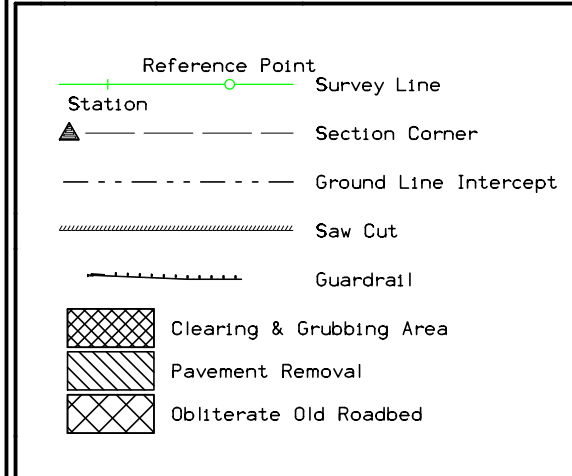
- ⊙ PPA Alliant Energy
- E1(C) — EL1C Alliant Energy - Quality C
- W(C) — WL1C City of Lansing (People's Service) - Quality C
- W — WL1D City of Lansing (People's Service) - Quality D
- ST S(C) — ST1C City of Lansing (People's Service) - Quality C
- SAN.(C) — SA1C City of Lansing (People's Service) - Quality C
- TV(C) — TV1C Mediacom - Quality C
- T1(C) — TL1C Century Link - Quality C
- F0(C) — FO1C Mediacom - Quality C

### UTILITY LEGEND

- ⊙ Alliant Energy  
Laura Barr  
200 1st St. S.E. #1901  
Cedar Rapids, IA 52401  
319-286-1315
- T1(C) — Centurylink  
Tom Sturmer  
700 W. Mineral  
Littleton, CO 80120  
720-578-8090
- F0(C) — Mediacom  
Brandon Thies  
115 South Marquette  
Prairie Du Chien, WI 53821  
608-380-1083
- TV(C) — Alliant Energy  
Laura Barr  
200 1st St. S.E. #1901  
Cedar Rapids, IA 52401  
319-286-1315
- E1(C) — Alliant Energy  
Laura Barr  
200 1st St. S.E. #1901  
Cedar Rapids, IA 52401  
319-286-1315
- W(C) — City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624
- W — City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624
- ST S(C) — City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624
- SAN.(C) — City of Lansing (People's Service)  
Duane Estebo  
P.O. Box 239  
Lansing, IA 52151  
563-277-2624

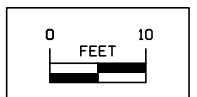
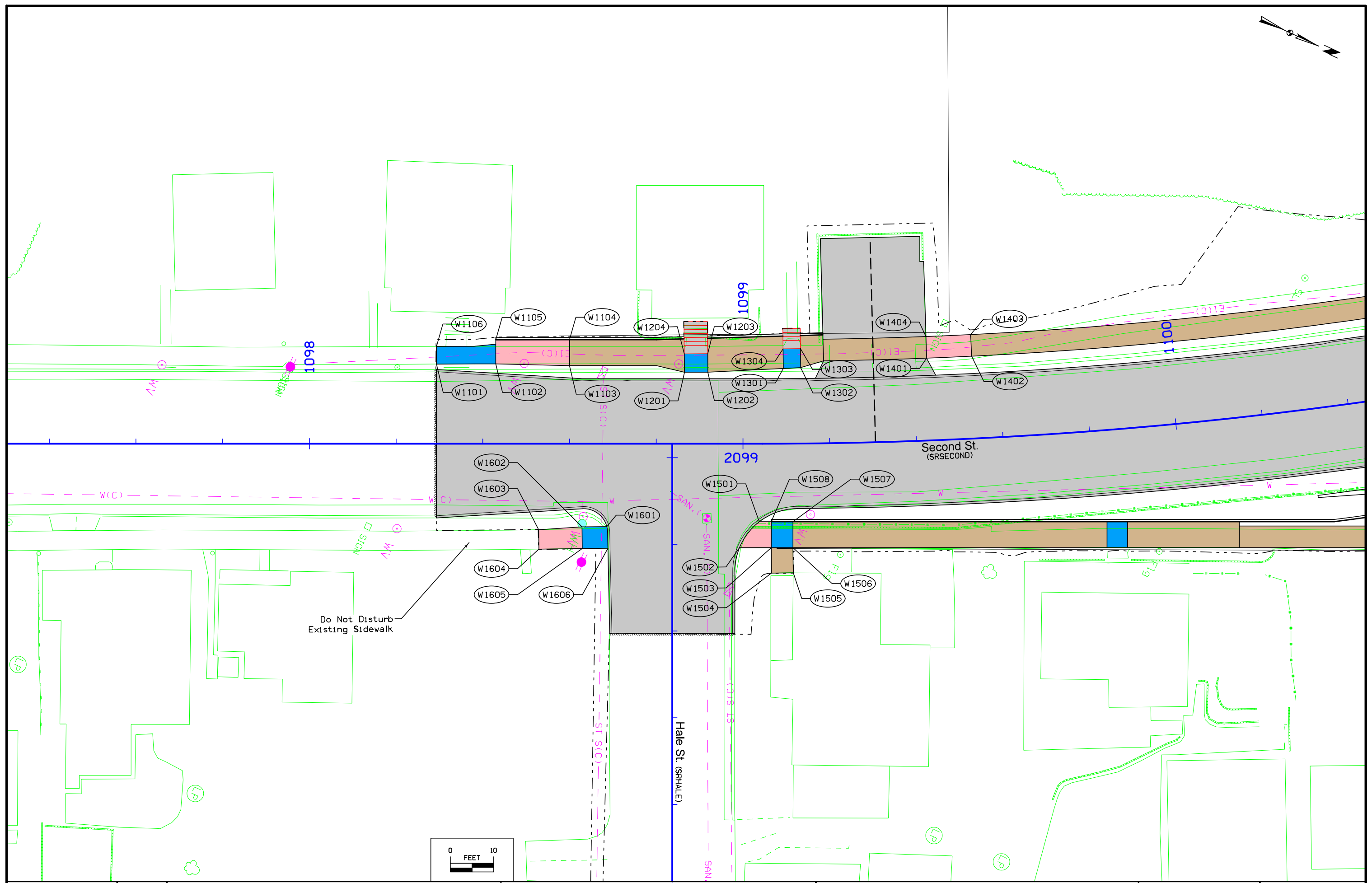
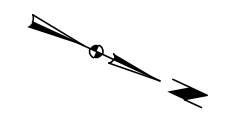
### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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.	
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Magenta	(5)		Detectable Warning
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

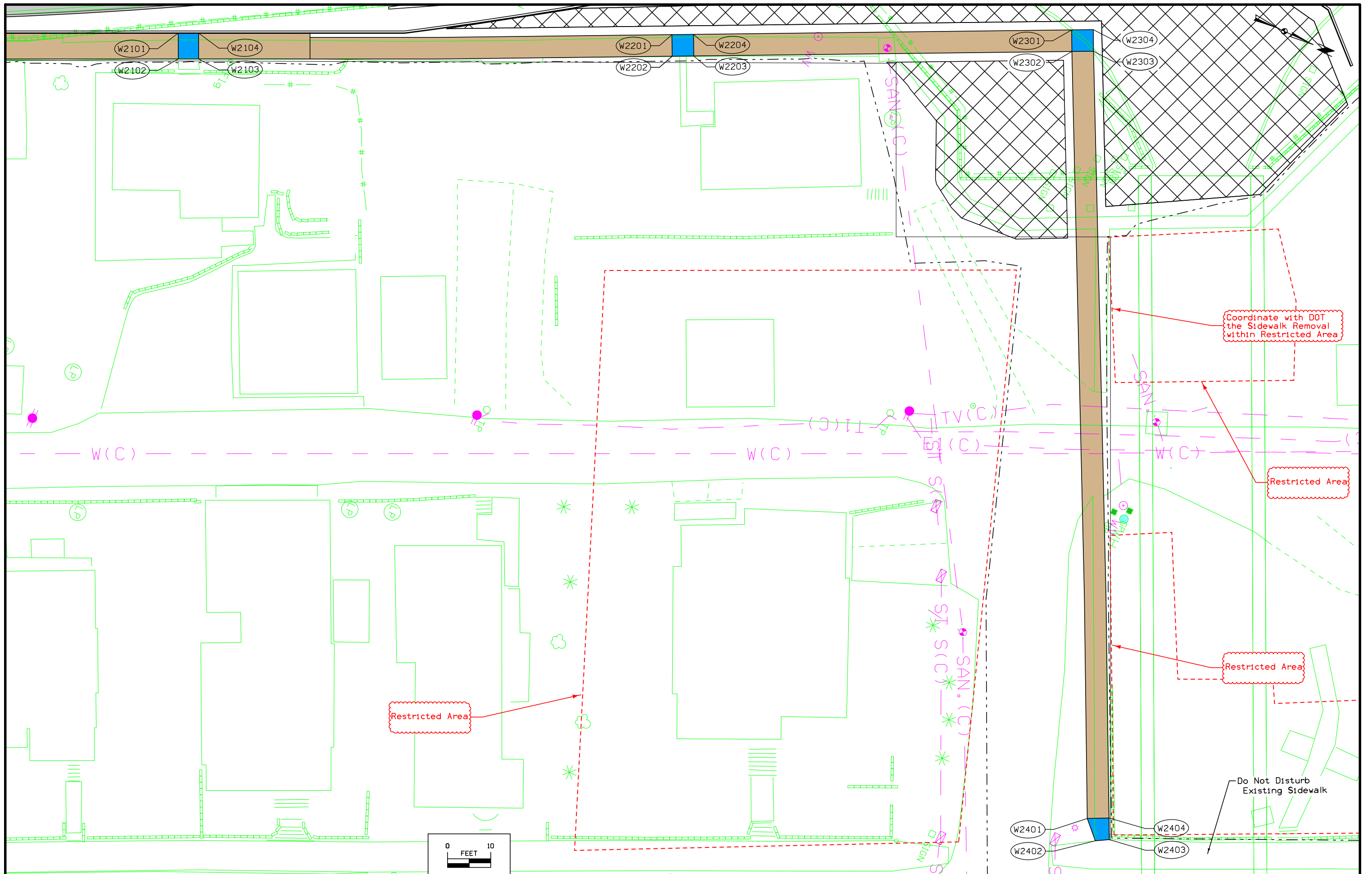


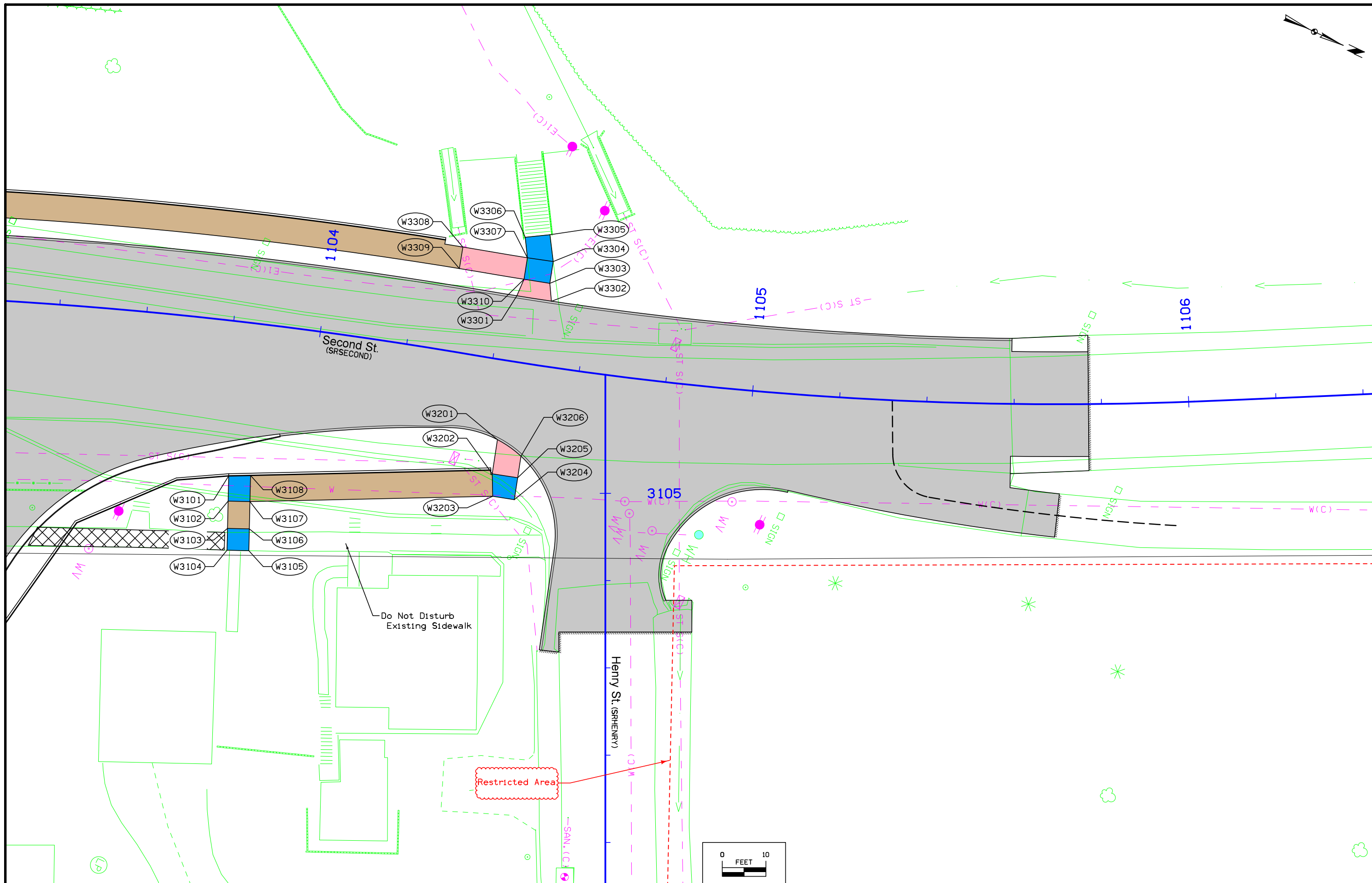
## SIDEWALK LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES S)









### SIDEWALK COMPLIANCE

See S Sheets

- \* Does not include curb
- ① Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.
- ② Refer to tabulation 113-01 for bid quantities.

Point to Point	Sidewalk Designation	" PCC Sidewalk ②	Distance* FT	Δ Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? ①	Measured Slope %	Initials	Remarks	FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
											Point	Station	Offset	Elevation
											W1101	W1102	Landing/Turning Space	4
W1101	W1106	Match Existing Cross Slope	4	4.08	0.06	1.5%	Match Existing				W1102	1098+43.00	-18.41	660.05
W1102	W1103	Ramp Running Slope	4	17.00	-1.33	-7.8%	0.5% to 8.3%	Yes			W1103	1098+60.00	-18.00	658.72
W1102	W1105	Landing/Turning Space	4	5.50	0.07	1.3%	0.1% to 2.0%				W1104	1098+60.00	-24.00	658.80
W1103	W1104	Ramp Cross Slope	4	6.00	0.08	1.3%	0.1% to 2.0%				W1105	1098+43.00	-23.96	660.12
W1104	W1105	Ramp Running Slope	4	17.00	1.32	7.8%	0.5% to 8.3%	Yes			W1106	1098+29.31	-22.45	660.03
W1105	W1106	Landing/Turning Space	4	13.71	-0.09	-0.7%	0.1% to 2.0%							
W1201	W1202	Landing/Turning Space	4	5.40	0.04	0.7%	0.1% to 2.0%				W1201	1098+86.53	-16.50	658.95
W1201	W1204	Landing/Turning Space	4	4.20	0.06	1.4%	0.1% to 2.0%				W1202	1098+91.93	-16.50	658.99
W1202	W1203	Landing/Turning Space	4	4.27	0.06	1.4%	0.1% to 2.0%				W1203	1098+91.88	-20.78	659.05
W1203	W1204	Landing/Turning Space	4	5.40	-0.04	-0.7%	0.1% to 2.0%				W1204	1098+86.48	-20.71	659.01
W1301	W1302	Landing/Turning Space	4	4.00	0.03	0.7%	0.1% to 2.0%				W1301	1099+09.40	-17.34	659.12
W1301	W1304	Landing/Turning Space	4	4.54	0.07	1.5%	0.1% to 2.0%				W1302	1099+13.47	-17.51	659.15
W1302	W1303	Landing/Turning Space	4	4.40	0.07	1.6%	0.1% to 2.0%	Yes			W1303	1099+13.45	-21.90	659.22
W1303	W1304	Landing/Turning Space	4	4.00	-0.03	-0.7%	0.1% to 2.0%				W1304	1099+09.36	-21.87	659.19
W1401	W1402	Ramp Running Slope	4	10.40	0.58	5.6%	0.5% to 8.3%				W1401	1099+43.09	-19.00	659.45
W1401	W1404	Ramp Cross Slope	4	5.00	0.08	1.6%	0.1% to 2.0%	Yes			W1402	1099+53.71	-19.00	660.03
W1402	W1403	Ramp Cross Slope	4	5.00	0.08	1.6%	0.1% to 2.0%	Yes			W1403	1099+53.71	-24.00	660.11
W1403	W1404	Ramp Running Slope	4	10.32	-0.58	-5.6%	0.5% to 8.3%				W1404	1099+43.14	-24.00	659.53
W1501	W1502	Crosswalk Cross Slope - Yield Condition	6	7.53	-0.55	-7.3%	0.0% to 2.0%				W1501	1099+03.77	18.00	658.25
W1501	W1508	Ramp Running Slope	6	2.80	-0.20	-7.1%	0.5% to 8.3%				W1502	1098+99.21	24.00	657.70
W1502	W1503	Ramp Running Slope	6	7.33	0.25	3.4%	0.5% to 8.3%				W1503	1099+06.49	24.00	657.95
W1503	W1504	Sidewalk Running Slope	4	5.90	-0.50	-8.5%	0.5% to 9.5%				W1504	1099+06.50	29.87	657.45
W1503	W1508	Ramp Cross Slope	6	6.00	0.10	1.7%	0.1% to 2.0%	Yes			W1505	1099+11.38	29.81	657.50
W1504	W1505	Match Existing Cross Slope	4	5.00	0.05	1.0%	Match Existing				W1506	1099+11.37	24.02	657.90
W1505	W1506	Sidewalk Running Slope	4	5.80	0.40	6.9%	0.5% to 7.9%				W1507	1099+11.41	18.00	658.00
W1506	W1507	Landing/Turning Space	4	6.00	0.10	1.7%	0.1% to 2.0%	Yes			W1508	1099+06.50	18.00	658.05
W1507	W1508	Landing/Turning Space	4	5.00	0.05	1.0%	0.1% to 2.0%							
W1503	W1506	Landing/Turning Space	4	5.00	-0.05	-1.0%	0.1% to 2.0%							
W1601	W1602	Ramp Running Slope	6	5.70	-0.23	-4.0%	0.5% to 8.3%				W1601	1098+68.59	19.12	657.45
W1601	W1606	Crosswalk Cross Slope - Yield Condition	6	5.00	-0.10	-2.0%	0.0% to 2.0%				W1602	1098+56.88	19.79	657.22
W1602	W1603	Landing/Turning Space	4	10.00	-0.10	-1.0%	0.1% to 2.0%				W1603	1098+52.88	19.84	657.12
W1602	W1605	Landing/Turning Space	4	5.00	-0.02	-0.4%	0.1% to 2.0%				W1604	1098+52.88	24.31	657.10
W1603	W1604	Match Existing Cross Slope	4	4.50	-0.02	-0.4%	Match Existing				W1605	1098+56.88	24.26	657.20
W1604	W1605	Landing/Turning Space	4	10.00	0.10	1.0%	0.1% to 2.0%				W1606	1098+68.85	24.11	657.35
W1605	W1606	Ramp Running Slope	6	5.90	0.15	2.5%	0.5% to 8.3%							
W2101	W2102	Landing/Turning Space	4	6.00	-0.09	-1.5%	0.1% to 2.0%				W2101	1099+82.43	21.00	658.00
W2101	W2104	Landing/Turning Space	4	4.72	0.07	1.5%	0.1% to 2.0%				W2102	1099+81.97	27.05	657.91
W2102	W2103	Match Existing Cross Slope	4	4.72	0.07	1.5%	Match Existing				W2103	1099+86.53	27.45	657.98
W2103	W2104	Landing/Turning Space	4	6.00	0.09	1.5%	0.1% to 2.0%				W2104	1099+87.01	21.47	658.07
W2201	W2202	Landing/Turning Space	4	6.00	-0.08	-1.3%	0.1% to 2.0%				W2201	1100+92.68	36.88	658.77
W2201	W2204	Landing/Turning Space	4	5.00	0.05	1.0%	0.1% to 2.0%				W2202	1100+91.80	41.52	658.69
W2202	W2203	Match Existing Cross Slope	4	5.00	0.05	1.0%	Match Existing				W2203	1100+96.94	42.36	658.74
W2203	W2204	Landing/Turning Space	4	6.00	0.08	1.3%	0.1% to 2.0%				W2204	1100+97.80	37.43	658.82
W2301	W2302	Landing/Turning Space	4	5.00	-0.08	-1.6%	0.1% to 2.0%	Yes			W2301	1101+88.59	47.91	656.56
W2301	W2304	Landing/Turning Space	4	5.00	-0.06	-1.2%	0.1% to 2.0%				W2302	1101+88.20	52.89	656.48
W2302	W2303	Landing/Turning Space	4	5.00	-0.03	-0.6%	0.1% to 2.0%				W2303	1101+93.47	53.25	656.45
W2303	W2304	Landing/Turning Space	4	5.00	0.05	1.0%	0.1% to 2.0%				W2304	1101+93.83	48.26	656.50
W2401	W2402	Landing/Turning Space	4	5.50	-0.10	-1.8%	0.1% to 2.0%	Yes			W2401	1101+72.74	230.03	639.63
W2401	W2404	Landing/Turning Space	4	5.00	0.02	0.4%	0.1% to 2.0%				W2402	1101+74.47	235.36	639.53
W2402	W2403	Match Existing Cross Slope	4	3.26	0.02	0.6%	Match Existing				W2403	1101+78.74	235.40	639.55
W2403	W2404	Landing/Turning Space	4	5.00	0.10	2.0%	0.1% to 2.0%	Yes			W2404	1101+79.27	230.41	639.65
W3101	W3102	Landing/Turning Space	4	5.79	-0.08	-1.4%	0.1% to 2.0%				W3101	1103+82.98	35.40	665.05
W3101	W3108	Landing/Turning Space	4	5.00	0.07	1.4%	0.1% to 2.0%				W3102	1103+83.54	41.16	664.97
W3102	W3103	Sidewalk Running Slope	4	6.25	-0.10	-1.6%	0.5% to 5.0%				W3103	1103+84.16	47.39	664.87
W3102	W3107	Landing/Turning Space	4	5.00	0.03	0.6%	0.1% to 2.0%				W3104	1103+84.67	52.36	664.80
W3103	W3104	Landing/Turning Space	4	5.00	-0.07	-1.4%	0.1% to 2.0%				W3105	1103+89.92	51.87	664.72
W3103	W3106	Landing/Turning Space	4	5.00	-0.07	-1.4%	0.1% to 2.0%				W3106	1103+89.39	46.90	664.80
W3104	W3105	Landing/Turning Space	4	5.00	-0.08	-1.6%	0.1% to 2.0%	Yes			W3107	1103+88.73	40.67	665.00
W3105	W3106	Landing/Turning Space	4	5.00	0.08	1.6%	0.1% to 2.0%	Yes			W3108	1103+88.11	34.70	665.12
W3106	W3107	Sidewalk Running Slope	4	6.25	0.20	3.2%	0.5% to 5.0%							
W3107	W3108	Landing/Turning Space	4	6.00	0.12	2.0%	0.1% to 2.0%	Yes						
W3201	W3202	Ramp Running Slope	6	7.92	0.11	1.4%	0.5% to 8.3%				W3201	1104+43.96	18.25	667.02
W3201	W3206	Crosswalk Cross Slope - No Yield Condition	6	6.60	-0.21	-3.2%	0.0% to 5.0%				W3202	1104+43.99	26.17	667.13
W3202	W3203	Landing/Turning Space	4	5.16	-0.08	-1.6%	0.1% to 2.0%	Yes			W3203	1104+44.87	31.24	667.05

**SIDEWALK COMPLIANCE**

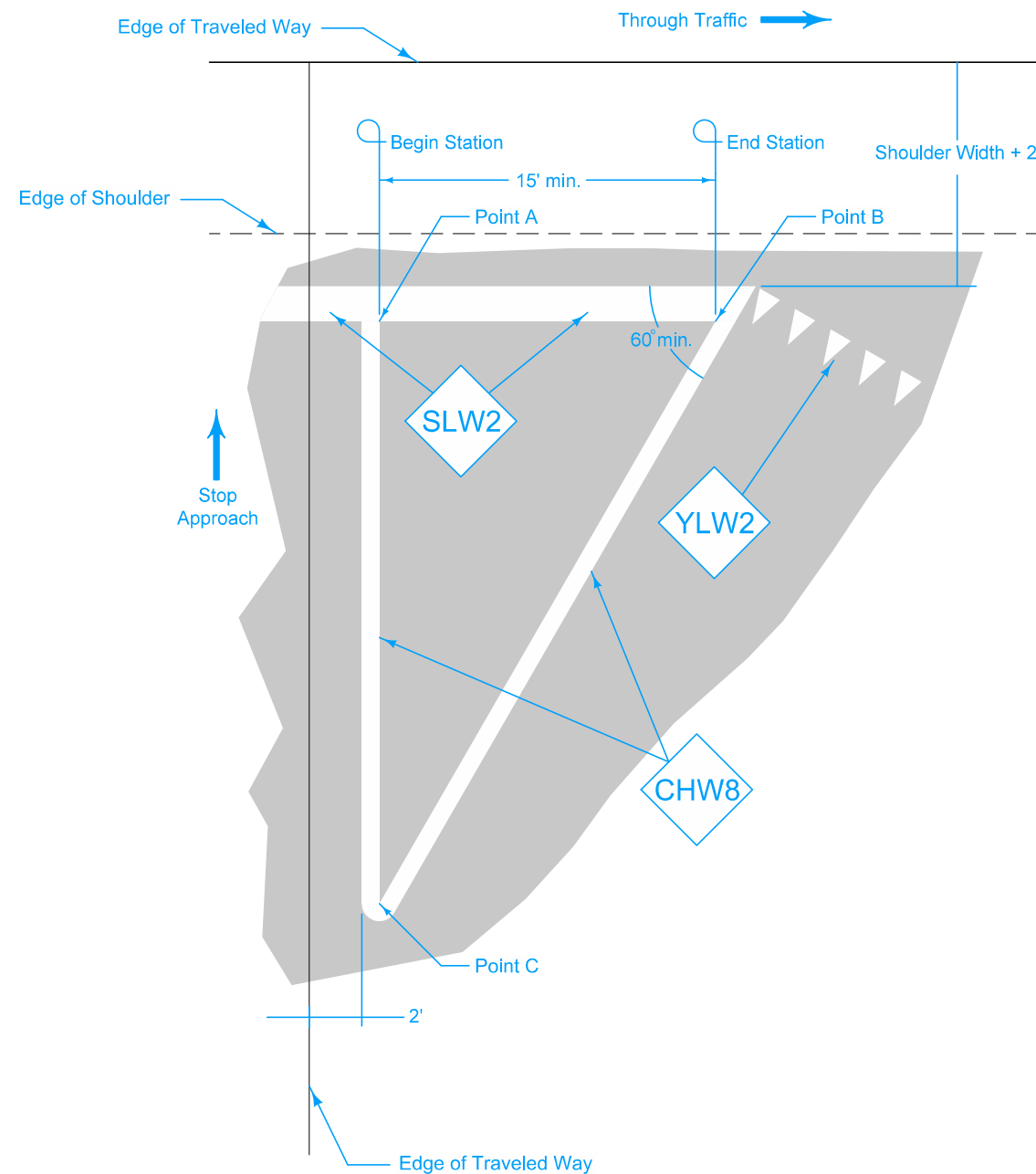
See S Sheets

- \* Does not include curb
- ① Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.
- ② Refer to tabulation 113-01 for bid quantities.

Point to Point		Sidewalk Designation	" PCC Sidewalk ②	Distance* FT	Δ Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? ①	Measured Slope %	Initials	Remarks	FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
W3202	W3205	Landing/Turning Space	4	5.90	-0.08	-1.4%	0.1% to 2.0%					W3204	1104+49.70	31.24	667.02
W3203	W3204	Landing/Turning Space	4	5.00	-0.03	-0.6%	0.1% to 2.0%					W3205	1104+49.70	26.16	667.05
W3204	W3205	Landing/Turning Space	4	5.08	0.03	0.6%	0.1% to 2.0%					W3206	1104+49.70	21.16	666.81
W3205	W3206	Ramp Running Slope	6	5.00	-0.24	-4.8%	0.5% to 8.3%								
W3301	W3302	Crosswalk Cross Slope - No Yield Condition	6	8.00	-0.16	-2.0%	0.0% to 5.0%					W3301	1104+43.17	-15.00	667.16
W3301	W3310	Ramp Running Slope	6	4.12	0.11	2.7%	0.5% to 8.3%					W3302	1104+51.31	-15.00	667.00
W3302	W3303	Ramp Running Slope	6	4.12	0.24	5.8%	0.5% to 8.3%					W3303	1104+50.33	-19.00	667.24
W3303	W3304	Landing/Turning Space	4	5.00	0.10	2.0%	0.1% to 2.0%	Yes				W3304	1104+50.33	-24.00	667.34
W3303	W3310	Landing/Turning Space	4	6.00	0.03	0.5%	0.1% to 2.0%					W3305	1104+48.65	-30.00	667.46
W3304	W3305	Landing/Turning Space	4	6.20	0.12	1.9%	0.1% to 2.0%	Yes				W3306	1104+42.92	-28.54	667.46
W3304	W3307	Landing/Turning Space	4	6.00	0.03	0.5%	0.1% to 2.0%					W3307	1104+44.19	-24.00	667.37
W3305	W3306	Match Existing Cross Slope	4	5.66	0.00	0.0%	Match Existing					W3308	1104+29.09	-24.00	668.16
W3306	W3307	Landing/Turning Space	4	4.70	-0.09	-1.9%	0.1% to 2.0%	Yes				W3309	1104+29.09	-19.00	668.08
W3307	W3308	Ramp Running Slope	4	15.00	0.79	5.3%	0.5% to 8.3%					W3310	1104+44.19	-19.00	667.27
W3307	W3310	Landing/Turning Space	4	5.00	-0.10	-2.0%	0.1% to 2.0%	Yes							
W3308	W3309	Ramp Cross Slope	4	5.00	-0.08	-1.6%	0.1% to 2.0%	Yes							
W3309	W3310	Ramp Running Slope	4	15.00	-0.81	-5.4%	0.5% to 8.3%								


For pavement marking line types, see PM-110.

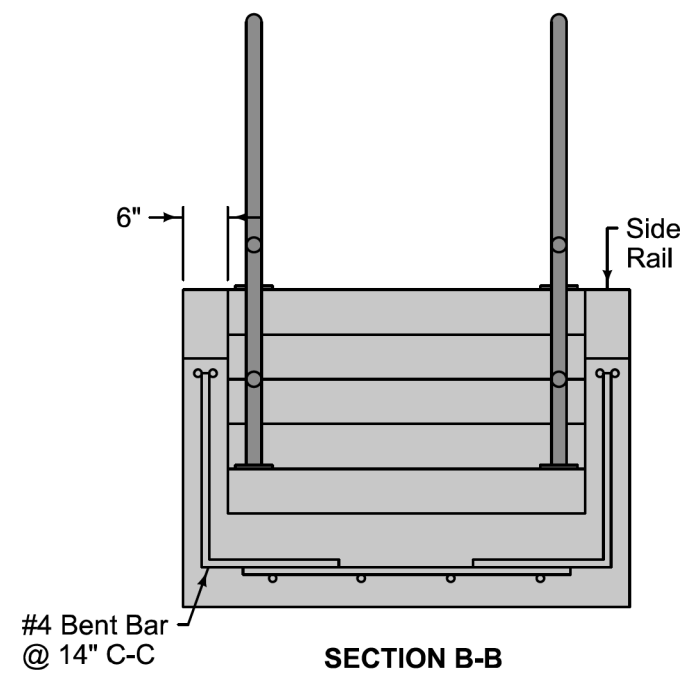
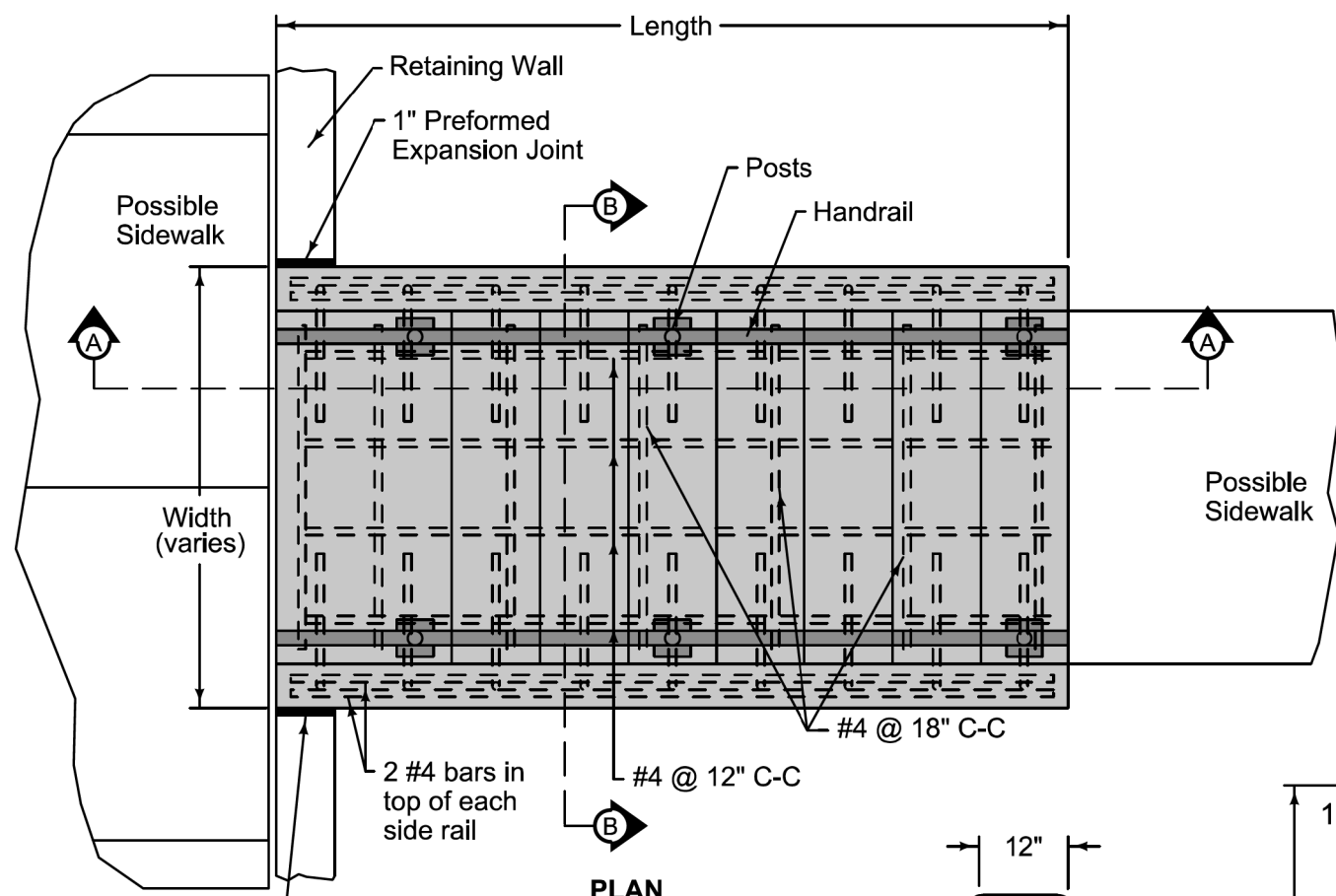
For stop line information, see PM-120.



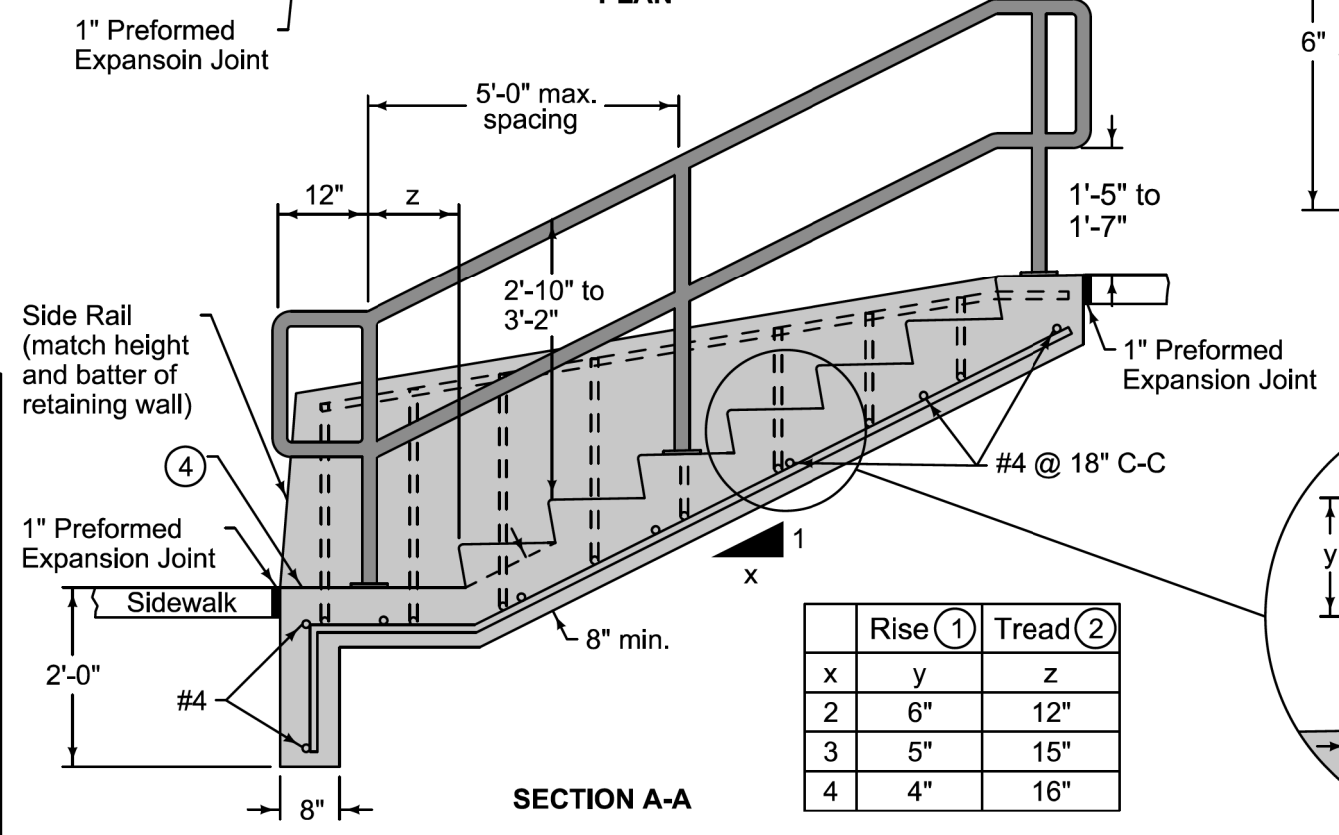
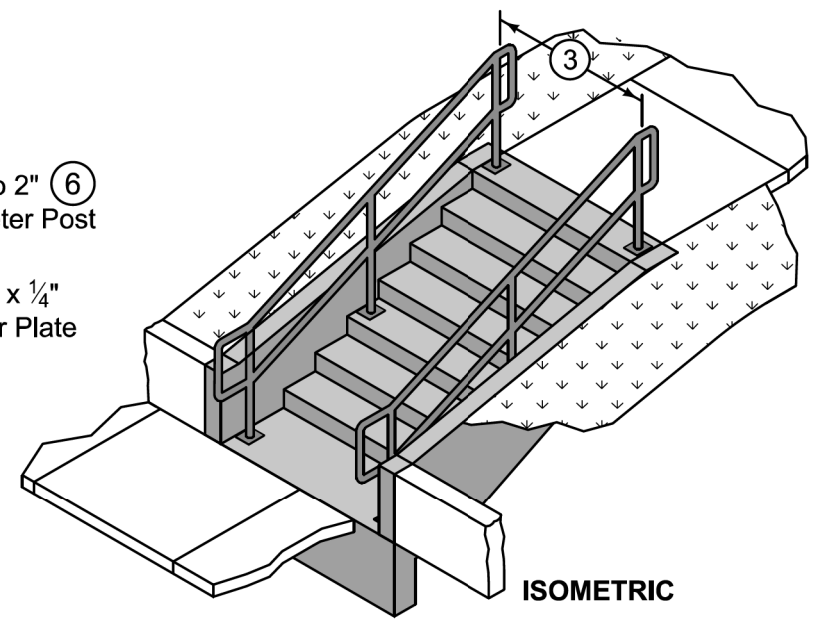
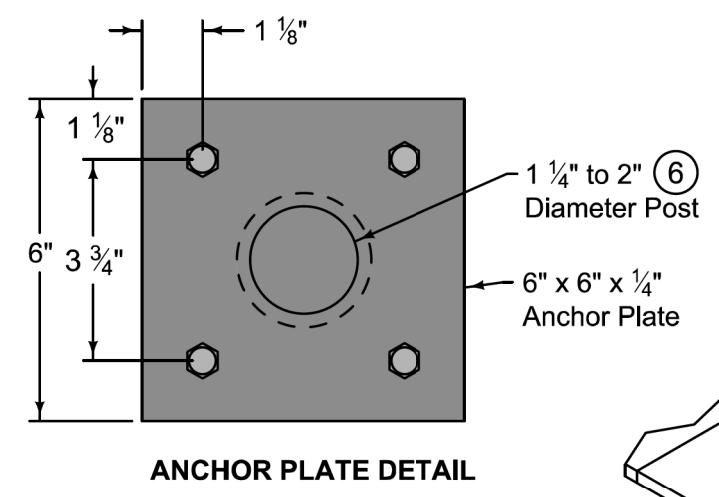
Possible Contract Item:  
Pavement Marking Line Items

Possible Tabulations:  
101-10  
108-22

	REVISION	
	1	04-21-20
<b>ROAD DESIGN DETAIL</b>	<b>560-5</b>	
	SHEET 1 of 1	
REVISIONS: Added SLW2 and YLW2.		
<b>PAINTED ISLANDS</b>		



- Provide a minimum of 2 inches of cover for all reinforcing.
- Ensure all risers are an equal height and all treads are an equal depth within a flight of stairs.
- ① Minimum riser height is 4 inches. Maximum riser height is 7 inches.
  - ② Minimum tread depth is 11 inches.
  - ③ Match existing sidewalk width.
  - ④ Construct cross slope of landing to match adjacent sidewalk.
  - ⑤ Slope tread 1% minimum to 2% maximum in any direction.
  - ⑥ Weld post to anchor plate with 1/4 inch weld. Grind weld to provide smooth surface, free of burrs.



	Rise ①	Tread ②
x	y	z
2	6"	12"
3	5"	15"
4	4"	16"

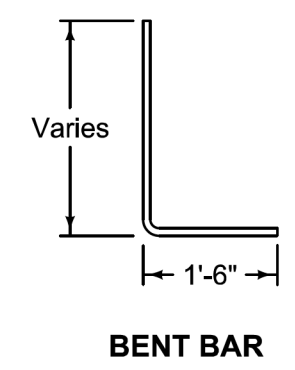
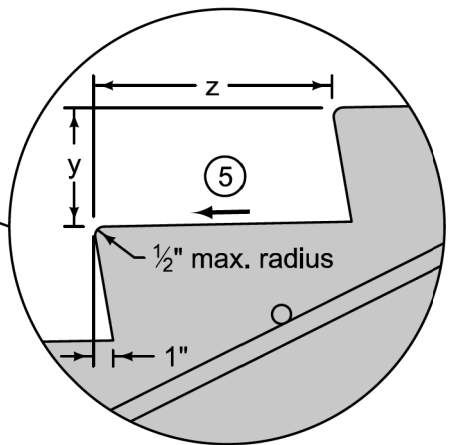


FIGURE 9080.102 SHEET 1 OF 1

<b>SUDAS</b> SUDAS Standard Specifications	REVISION 2 10-16-18
	<b>9080.102</b>
	SHEET 1 of 1
<b>TYPE B CONCRETE STEPS WITH HANDRAIL</b>	

## GENERAL NOTES:

THIS DESIGN IS FOR A NEW 1350'-10x40'-0 STEEL THROUGH-TRUSS BRIDGE ON IA 9 OVER N. FRONT ST., CANADIAN PACIFIC RAILROAD AND THE MISSISSIPPI RIVER. THIS DESIGN INCLUDES CONSTRUCTION OF PIERS 1-3, WEST ABUTMENT, AND SUPERSTRUCTURE SPANS 1-3.

WORK UNDER THIS DESIGN SHALL INCLUDE REMOVAL OF EXISTING 31'-4 1/4 DIA. STEEL SHEET PILE DOLPHIN, ALLAMAKEE COUNTY DESIGN NO. 512, AND REMOVAL OF EXISTING 38'-8 DIA STEEL SHEET PILE DOLPHIN, ALLAMAKEE COUNTY DESIGN NO. 412.

DEPTH OF REMOVAL FOR EXISTING WEST DOLPHIN TO BE CONFIRMED WITH USACE AND USCG DURING FINAL DESIGN.

MAINTAIN TRAFFIC ON EXISTING BRIDGE WHILE NEW BRIDGE IS CONSTRUCTED.

USCG PRE-APPROVAL IS REQUIRED FOR WORK WHICH AFFECTS RIVER NAVIGATION.

## DESIGN NOTES:

PennDOT PA TL-5 BRIDGE BARRIER PROPOSED.

PIER TYPE: AESTHETIC PIERS

SUPERSTRUCTURE TYPE: SIMPLE-SPAN THROUGH-TRUSS - SPAN 1  
CONTINUOUS THROUGH-TRUSS - SPANS 2 & 3

UPPER CHORD CONNECTION BETWEEN SPAN 1 AND SPAN 2 SHALL BE DISCONTINUOUS IN FINAL CONDITION AND IS PROVIDED FOR AESTHETICS.

DRILLED SHAFTS AT PIERS SHALL BE DESIGNED TO BE FULLY EXPOSED TO THE DESIGN SCOUR LEVEL SHOWN IN THE PLANS.

FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.

FOR CLARITY, EXISTING STRUCTURES NOT SHOWN ON LONGITUDINAL SECTION.

AN IOWA DNR FLOOD PLAIN CONSTRUCTION PERMIT IS REQUIRED.

AN IOWA DNR SOVEREIGN LANDS PERMIT IS REQUIRED; THEREFORE, BID ITEM REFERENCE NOTES SHALL RESTRICT BROKEN CONCRETE AS A SUBSTITUTE FOR REVETMENT. [BDM 3.2.7.3.5]

ALL SUPERSTRUCTURE ELEMENTS SHALL BE LOCATED BEYOND ZONE OF INTRUSION FOR PENNDOT PA TL-5 BARRIER (4'-4 BEYOND TRAFFIC FACE OF BARRIER).

SUPERSTRUCTURE DRAINAGE ASSUMED AS FREE FALLING. IF A COLLECTION SYSTEM IS NEEDED, FINAL DESIGNER TO CONSIDER DRAINAGE PIPING MOUNTED TO MSE WALL AT ABUTMENT.

## DESIGN CRITERIA

### 1. GENERAL

THE DESIGN CRITERIA DEFINED HEREIN PERTAIN TO THE FINAL DESIGN PHASE OF THE SIMPLE-SPAN TRUSS BRIDGE, DENOTED AS SPAN 1, AND THE CONTINUOUS TRUSS BRIDGE, DENOTED AS SPAN 2 & 3, SPANNING THE MISSISSIPPI RIVER.

### 2. CLEARANCES

THE MINIMUM VERTICAL CLEARANCE OVER THE BRIDGE DECK SHALL BE 18'-0, MEASURED VERTICALLY ACROSS THE ENTIRE DECK, FROM INSIDE FACE OF BARRIER TO INSIDE FACE OF BARRIER.

THE NAVIGATIONAL MINIMUM VERTICAL CLEARANCE FROM THE NORMAL POOL ELEVATION OF 619.3 (NAVD 88) SHALL BE 60 FEET, AS MEASURED 25' IN FROM FACE OF PIERS 1 & 2; AND 64 FEET AT MIDSPAN.

THE NAVIGATIONAL MINIMUM HORIZONTAL CLEARANCE MEASURED PARALLEL TO THE EXISTING BRIDGE SHALL BE 750 FEET.

THE MINIMUM DRAFT REQUIRED OVER THE TOP OF FOUNDATION ELEMENTS WITHIN THE NAVIGATION CHANNEL AT NORMAL POOL SHALL BE 12 FT. (TO BE CONFIRMED BY THE USCG).

### 3. DESIGN SPECIFICATIONS

IOWA DOT BRIDGES AND STRUCTURES BUREAU, LRFD BRIDGE DESIGN MANUAL

IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT

IOWA DOT SUPPLEMENTAL SPECIFICATIONS

IOWA DOT MATERIALS INSTRUCTIONAL MEMORANDUM

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, NINTH EDITION, 2020

AASHTO/AWS D1.5M/D1.5: 2015, SEVENTH EDITION, WITH 2019 INTERIM REVISIONS

AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS, 6TH EDITION, 2013, WITH 2015, 2019 & 2020 INTERIM REVISIONS

FHWA HYDRAULIC ENGINEERING CIRCULAR (HEC-18) "EVALUATING SCOUR AT BRIDGES", FIFTH EDITION, 2012

FHWA HYDRAULIC ENGINEERING CIRCULAR (HEC-20) "STREAM STABILITY AT HIGHWAY STRUCTURES", FOURTH EDITION, 2012

GUIDE SPECIFICATIONS FOR SERVICE LIFE DESIGN OF HIGHWAY BRIDGES, FIRST EDITION, 2020

AASHTO GUIDE SPECIFICATIONS FOR ANALYSIS AND IDENTIFICATION OF FRACTURE CRITICAL MEMBERS AND SYSTEM REDUNDANT MEMBERS, FIRST EDITION, 2018

### 4. DESIGN METHOD

THE LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD)

### 5. SERVICE LIFE

THE BRIDGE SERVICE LIFE SHALL BE 'ENHANCED'. THIS CORRELATES TO A 100-YEAR PROBABILISTIC CALIBRATION IN THE GUIDE SPECIFICATIONS FOR SERVICE LIFE DESIGN OF HIGHWAY BRIDGES.

### 6. DESIGN UNITS

ALL UNITS ARE U.S. CUSTOMARY.

### 7. DIMENSIONS AND ELEVATIONS

NORMAL POOL ELEVATION: 619.3  
CESSATION OF NAVIGATION: 630.3  
2% FLOW LINE: 630.3  
100-YEAR FLOOD: 632.6  
500-YEAR FLOOD: 635.3  
HIGH WATER OF RECORD: 634.1    APRIL 1965

THESE ELEVATIONS USE THE NAVD 88 DATUM, CONVERSIONS ARE:  
NAVD 88 = MSL 1912 - 0.7 FT.

### 8. DESIGN LOADS

#### I. DEAD LOADS

UNIT WEIGHTS SHALL BE IN ACCORDANCE WITH AASHTO LRFD. THE NEED FOR A FUTURE WEARING SURFACE SHALL BE DETERMINE DURING FINAL DESIGN PHASE. ORIGINAL WEARING SURFACE SHALL BE CONSIDERED A DC LOADING APPLIED TO LONG TERM COMPOSITE SECTIONS WHERE APPLICABLE.

II. VEHICULAR LIVE LOADS AND FATIGUE LIVE LOADS  
IN ACCORDANCE WITH AASHTO LRFD

III. WIND LOADS  
IN ACCORDANCE WITH AASHTO LRFD

IV. SNOW, ICE AND SEISMIC LOADS  
IN ACCORDANCE WITH AASHTO LRFD

#### V. VESSEL COLLISION LOADS

THE FULLY LOADED VESSEL COLLISION IMPACT FORCE USED FOR THE DESIGN OF THE BRIDGE PIERS ADJACENT TO THE NAVIGATION CHANNEL IS 4,500 KIPS. IN ADDITION, FINAL DESIGN OF PIER 1 SHALL UTILIZE FINITE ELEMENT ANALYSIS TO CONSIDER THE DYNAMIC EFFECTS OF 3 LINES OF 5 FULLY-LOADED HOPPER BARGES, AND 2 LINES OF 3 FULLY-LOADED TANKER BARGES, IMPACTING AT AN ANGLE OF 50 DEGREES FROM THE BRIDGE CENTERLINE. FOR MORE INFORMATION, SEE THE MEMO ENTITLED: VESSEL COLLISION LOADS FOR THE MISSISSIPPI RIVER BRIDGE AT LANSING, IOWA BY BURNS & MCDONNELL.

#### VI. VEHICLE COLLISION LOADS

ANY STRUCTURAL ELEMENT ENCROACHING ON A ZONE OF INTRUSION 4'-4" OUTBOARD FROM THE FACE OF THE TRAFFIC BARRIER TO A HEIGHT OF 13'-6" SHALL EITHER BE DESIGNED FOR AN IMPACT LOAD OF A VEHICLE ROLLING OVER THE BARRIER, OR SHALL BE REDUNDANT.

#### VII. CONSTRUCTION LOADS

CONSTRUCTION LIVE LOAD SHALL BE TAKEN AS 10 PSF ON THE DECK AREA. CHECKING OF ANY ADDITIONAL CONSTRUCTION LOADS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

#### VIII. THERMAL LOADS

THE CONSTRUCTION TEMPERATURE IS ASSUMED TO BE 50 DEGREES FAHRENHEIT, WITH A MAXIMUM RISE OF 65 AND A MAXIMUM FALL OF 65 DEGREES FAHRENHEIT. THERMAL GRADIENT LOADS SHALL BE AS SPECIFIED IN AASHTO LRFD.

### 9. LOAD AND RESISTANCE FACTORS

#### LOAD MODIFIERS

DUCTILITY - 1.00 FOR ALL ELEMENTS  
REDUNDANCY - 1.05 FOR PERTINENT COMPONENTS OF THE TRUSS, OTHERWISE 1.00 FOR ALL OTHER ELEMENTS  
OPERATIONAL IMPORTANCE - 1.00 FOR ALL ELEMENTS

#### LOAD FACTORS

FOR ALL LOAD CASES, THE LOAD FACTORS ARE AS SPECIFIED IN AASHTO LRFD

#### RESISTANCE FACTORS

FOR ALL MEMBERS, THE RESISTANCE FACTORS ARE AS SPECIFIED IN AASHTO LRFD

### 10. DESIGN LOAD COMBINATIONS

AS SPECIFIED IN AASHTO LRFD

#### LIVE LOAD DEFLECTIONS

THE LIVE LOAD DEFLECTIONS SHALL BE LIMITED TO THE OPTIONAL AASHTO LRFD CRITERIA FOR DEFLECTIONS, ARTICLE 2.5.2.6.2. UPLIFT AT PIER 3 SHALL BE ADDRESSED BY COUNTERWEIGHTING. USE OF TIE-DOWNS SHALL BE AVOIDED.

#### FATIGUE DESIGN

FATIGUE DESIGN SHALL BE IN ACCORDANCE WITH AASHTO LRFD, WITH THE EXCEPTIONS LISTED HEREIN. DESIGN SHALL BE BASED ON INFINITE LIFE CRITERIA, UNLESS IT IS UNECONOMICAL TO PROVIDE FOR INFINITE LIFE, IN WHICH CASE, A FINITE LIFE OF 100 YEARS SHALL BE USED, BASED ON AN ADTT WHICH REFLECTS THE TRAFFIC ESTIMATE PROJECTED OUT TO THE ANTICIPATED SERVICE LIFE OF THE BRIDGE.

### 11. MATERIALS

FINAL DESIGN ENGINEER SHALL DEFINE MATERIALS TO BE USED FOR STRUCTURAL STEEL, HIGH STRENGTH BOLTS, SHEAR STUDS, STRUCTURAL CONCRETE, MAIN BEARING ANCHOR BOLTS, BARRIER RAIL, REINFORCING STEEL, PAINT, ETC.

### 12. BRIDGE DECK

THE BRIDGE DECK SHALL BE AN 8 INCH STRUCTURAL DECK. THE CLEAR COVER TO THE REINFORCEMENT IN THE TOP MAT SHALL BE 2.5 INCHES. THE 8 INCH STRUCTURAL DECK SHALL BE COMPOSITE WITH THE STRINGERS AND FLOORBEAMS.

### 13. TRAFFIC BARRIER

THE TRAFFIC BARRIER USED ON THE MAIN BRIDGE ROADWAY SHALL BE THE PENNDOT PA BARRIER, RATED MASH TL-5, CONSISTING OF A 2'-0" CONCRETE PARAPET AND A 2'-2" TWO-TUBE STEEL RAILING.

### 14. FRACTURE CRITICAL MEMBERS (FCM)

THE FINAL DESIGN ENGINEER SHALL AVOID THE USE OF FRACTURE CRITICAL MEMBERS IN THE DESIGN OF THE TRUSS AND INSTEAD TARGET THE USE OF SYSTEM REDUNDANT MEMBERS (SRM) DETERMINED THROUGH A REFINED ANALYSIS, WHERE FEASIBLE.

### 15. INSPECTION AND MAINTENANCE

ACCESS FOR INSPECTION AND MAINTENANCE SHALL BE DEFINED BY THE FINAL DESIGN ENGINEER.

### 16. ELECTRICAL COMPONENTS

NAVIGATION LIGHTING AND ARCHITECTURAL LIGHTING SHALL BE DESIGNED IN CONFORMANCE WITH THE NATIONAL ELECTRIC CODE AND THE IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION. NAVIGATION LIGHTING SHALL BE PROVIDED ON BOTH THE UPSTREAM AND DOWNSTREAM FACES OF THE MAIN SPAN.

OBSTRUCTION LIGHTING IS NOT REQUIRED FOR THE BRIDGE PER CONFIGURATION SHOWN ON PRELIMINARY PLANS. IF STRUCTURE HEIGHT, LOCATION, OR CONFIGURATION ARE SIGNIFICANTLY MODIFIED DURING FINAL DESIGN, THE NEED FOR OBSTRUCTION LIGHTING SHALL BE RE-EVALUATED.

PRELIMINARY

DESIGN FOR 0° SKEW

**1350'-10 x 40'-0 STEEL  
THROUGH-TRUSS BRIDGE**

205'-10 & 383'-0 END SPANS

762'-0 INTERIOR SPAN

**DESIGN CRITERIA**

IA 9 STA. 112+71.21

FEBRUARY 2021

**ALLAMAKEE COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 6 FILE NO. 31473 DESIGN NO. 124



BURNS & MCDONNELL ENGINEERING CO., INC.

9400 WARD PARKWAY      CERTIFICATE OF AUTHORITY  
KANSAS CITY, MISSOURI 64114      NO. : 000165  
816-333-9400      BMCD PROJECT NO. 98920

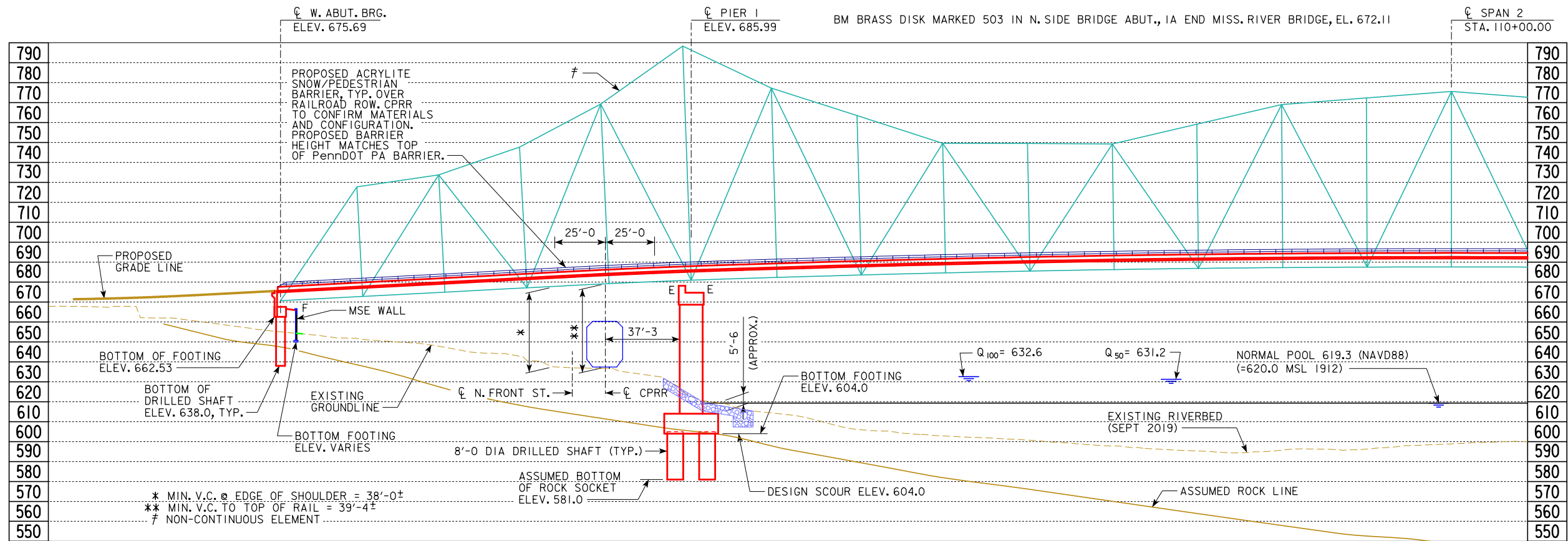
DESIGN TEAM    BURNS & MCDONNELL

ALLAMAKEE COUNTY

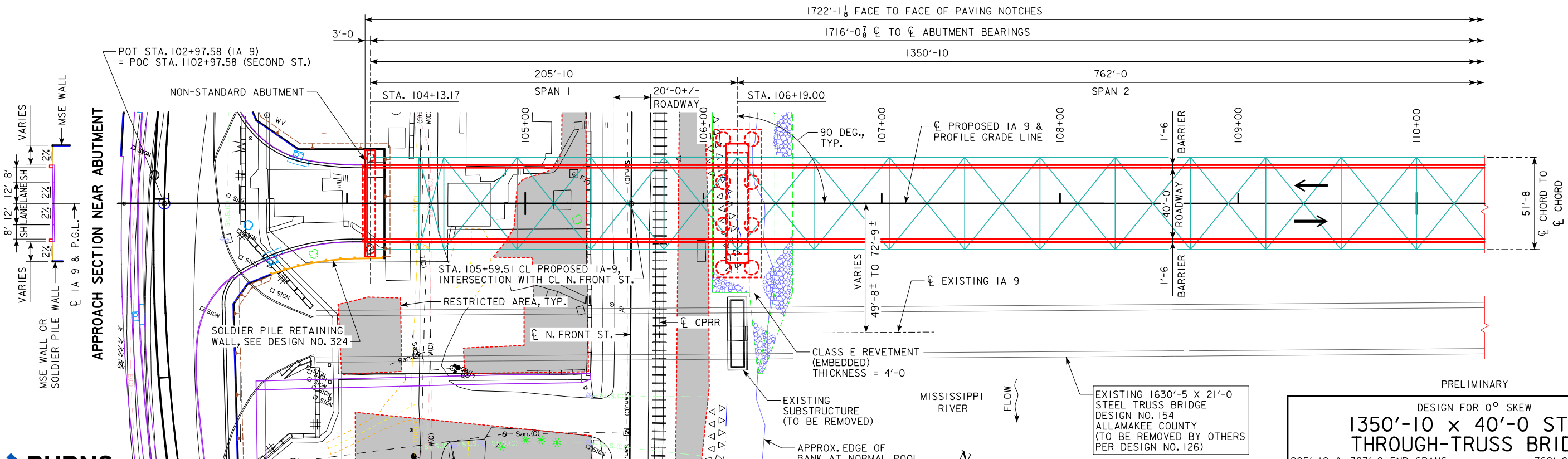
PROJECT NUMBER

BRF-009-9(73)--38-03

SHEET NUMBER    V.I



LONGITUDINAL SECTION ALONG CL IA 9



UTILITIES LEGEND:

- TV(C) — TV
- T(C) — TELEPHONE
- E(C) — ELECTRIC
- W(C) — WATER
- S(C) — SANITARY SEWER

SITUATION PLAN

EXISTING 1630'-5 X 21'-0 STEEL TRUSS BRIDGE  
 DESIGN NO. 154  
 ALLAMAKEE COUNTY  
 (TO BE REMOVED BY OTHERS  
 PER DESIGN NO. 126)

PRELIMINARY

DESIGN FOR 0° SKEW

## 1350'-10 x 40'-0 STEEL THROUGH-TRUSS BRIDGE

205'-10 & 383'-0 END SPANS      762'-0 INTERIOR SPAN

### SITUATION PLAN

IA 9 STA. 112+71.21      NOVEMBER 2020

## ALLAMAKEE COUNTY

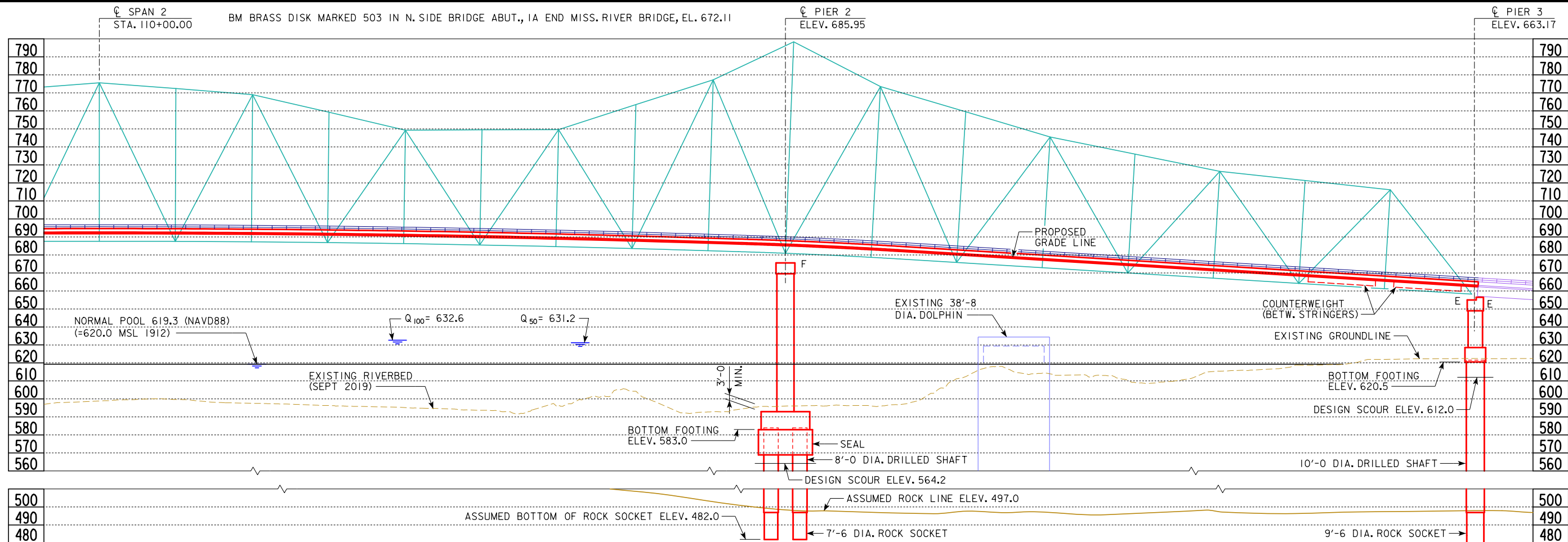
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 6    FILE NO. 31473    DESIGN NO. 124



**BURNS & McDONNELL ENGINEERING CO., INC.**  
 9400 WARD PARKWAY      CERTIFICATE OF AUTHORITY  
 KANSAS CITY, MISSOURI 64114      NO. : 000165  
 816-333-9400      BMCD PROJECT NO. 98920

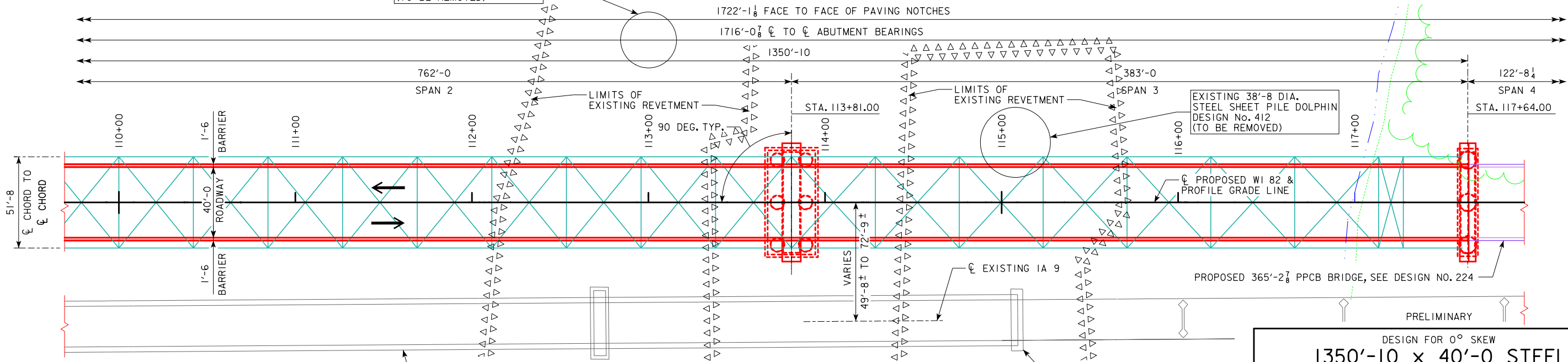




**LONGITUDINAL SECTION ALONG CL IA 9**

DESIGN SCOUR ELEV. = 200 YEAR, CHECK  
SCOUR ELEV. = 500 YEAR, EXCEPT AS NOTED.

EXISTING 31'-4 1/4\"/>

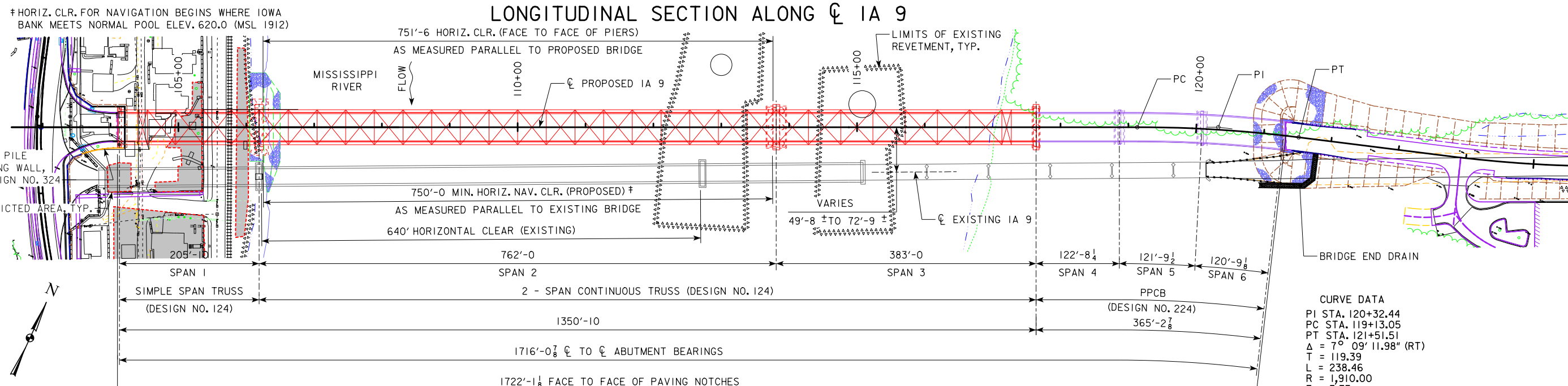
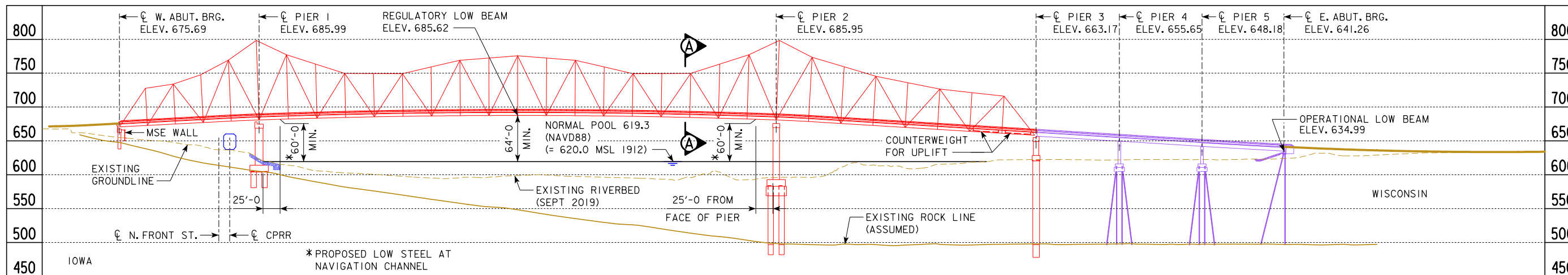
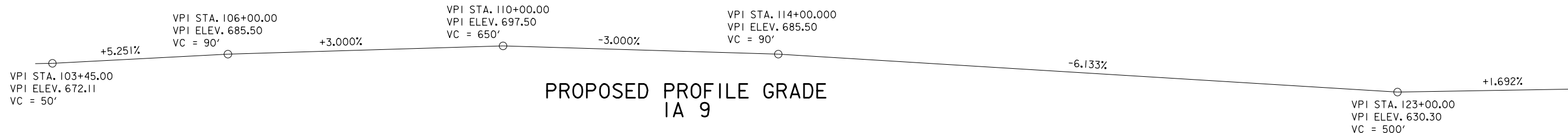


**SITUATION PLAN**

DESIGN FOR 0° SKEW  
**1350'-10 x 40'-0 STEEL THROUGH-TRUSS BRIDGE**  
 205'-10 & 383'-0 END SPANS 762'-0 INTERIOR SPAN  
**SITUATION PLAN**  
 IA 9 STA. 112+71.21 NOVEMBER 2020  
**ALLAMAKEE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 3 OF 6 FILE NO. 31473 DESIGN NO. 124

**BURNS & McDONNELL**  
 BURNS & McDONNELL ENGINEERING CO., INC.  
 9400 WARD PARKWAY CERTIFICATE OF AUTHORITY  
 KANSAS CITY, MISSOURI 64114 NO. : 000165  
 816-333-9400 BMCD PROJECT NO. 98920





**PLAN NOTES:**

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 TOP OF DECK ELEVATIONS AT CL ARE 0.03' LOWER THAN THE PGL TO ACCOUNT FOR CROWN ROUNDING.  
 VERTICAL DATUM NAVD 88.  
 CLASS E REVETMENT STONE IS EMBEDDED.  
 THE BRIDGE WILL BE DESIGNED TO WITHSTAND THE APPLICABLE EFFECTS OF ICE AND THE HORIZONTAL STREAM LOADS ASSOCIATED WITH THE Q100. [BDM 3.2.2.4]



BURNS & McDONNELL ENGINEERING CO., INC.  
 9400 WARD PARKWAY CERTIFICATE OF AUTHORITY  
 KANSAS CITY, MISSOURI 64114 NO. : 000165  
 816-333-9400 BMCD PROJECT NO. 98920

**HYDRAULIC DATA**

DRAINAGE AREA = 65130 SQ. MI.  
 STREAM SLOPE = 0.249 FT./MI.  
 AVG. LOW WATER STAGE = 619.3  
 Q<sub>25</sub> = 197,200 CFS STAGE = 629.7  
 Q<sub>50</sub> = 225,200 CFS STAGE = 631.2  
 REGULATORY LOW BEAM = 685.62  
 BACKWATER = 0.1 FT.  
 Q<sub>100</sub> = 250,100 CFS STAGE = 632.6  
 OPERATIONAL LOW BEAM = 635.0  
 BACKWATER = 0.1 FT.  
 AVG. BRIDGE VELOCITY = 4.0 FPS

**GENERAL 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.

*Kevin R. Eisenbeis* October 2, 2020  
 Signature Date  
 Printed or Typed Name  
 My license renewal date is December 31, 2020

Pages or sheets covered by this seal: V.1 through V.6

**LOCATION**

IA 9 OVER MISSISSIPPI RIVER  
 T-99N R-3W  
 SECTION 29  
 LANSING TOWNSHIP  
 ALLAMAKEE COUNTY, IA  
 CRAWFORD COUNTY, WI  
 CITY OF LANSING  
 FRA NO. 376210E  
 LATITUDE: 43.36569° N  
 LONGITUDE: 91.21400° W  
 FHWA NO. 13521  
 BRIDGE MAINT. NO. 0361.IS009

**TRAFFIC ESTIMATE**

2025 AADT	2900	V.P.D.
2045 AADT	3000	V.P.D.
TRUCKS	9	%

DESIGN FOR 0° SKEW  
**1350'-10 x 40'-0 STEEL THROUGH-TRUSS BRIDGE**  
 205'-10 & 383'-0 END SPANS 762'-0 INTERIOR SPAN  
**GENERAL PLAN**  
 IA 9 STA. 112+71.21 NOVEMBER 2020  
**ALLAMAKEE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 4 OF 6 FILE NO. 31473 DESIGN NO. 124

BM BRASS DISK MARKED 503 IN N. SIDE BRIDGE ABUT., IA END MISS. RIVER BRIDGE, EL. 672.11

THE RESTRICTED AREAS SHALL BE MARKED OFF WITH ORANGE SNOW FENCE AND NO GROUND DISTURBANCE IS PERMISSIBLE WITHIN THESE AREAS. IF THE CONTRACTOR HAS QUESTIONS THEY CAN CONTACT THE CONSTRUCTION ENGINEER OR IOWA DOT LOCATION AND ENVIRONMENT STAFFER BRENNAN DOLAN AT (515) 239-1795.

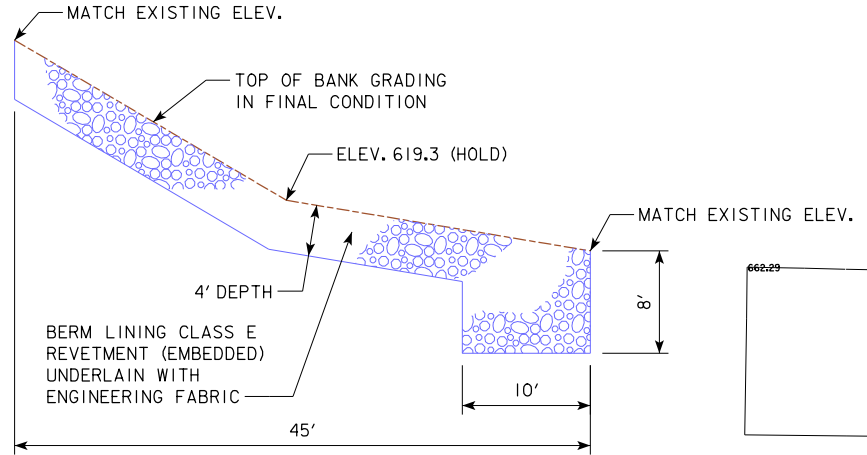
### BANK STABILIZATION LOCATION TABLE

POINTS	STATION	OFFSET	ELEVATION
R1	106+30.45	95.56' RT.	619.30
R2	106+25.75	50.00' RT.	619.30
R3	106+25.75	80.00' LT.	619.30
R4	106+05.00	50.00' RT.	633.00
R5	106+05.00	80.00' LT.	626.30

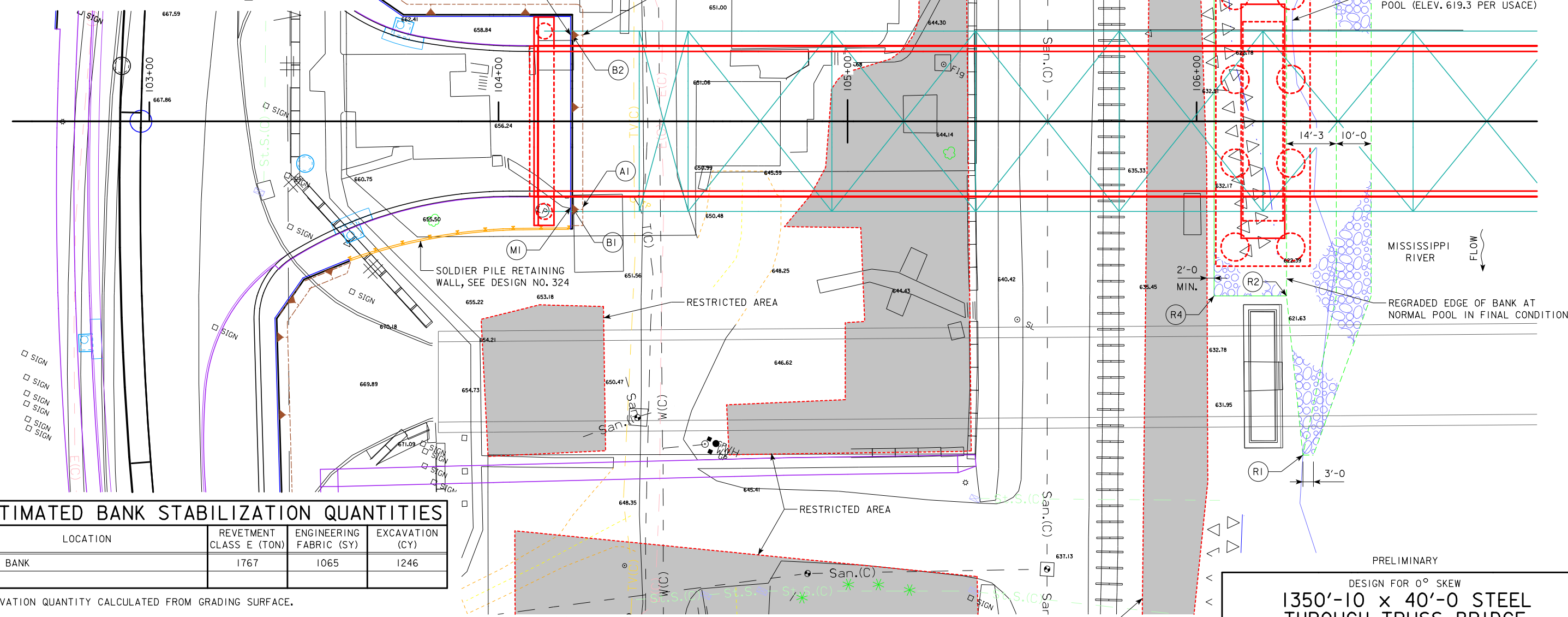
### BERM SLOPE LOCATION TABLE

POINTS	STATION	OFFSET	ELEVATION
A1	104+24.17	24.67' RT.	653.10
A2	104+24.17	24.67' LT.	654.70
B1	104+21.17	24.67' RT.	653.40
B2	104+21.17	24.67' LT.	655.00
M1	104+20.67	24.67' RT.	668.00
M2	104+20.67	24.67' LT.	668.00

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



SECTION THRU EMBEDDED REVETMENT BANK STABILIZATION @ PIER 1



### ESTIMATED BANK STABILIZATION QUANTITIES

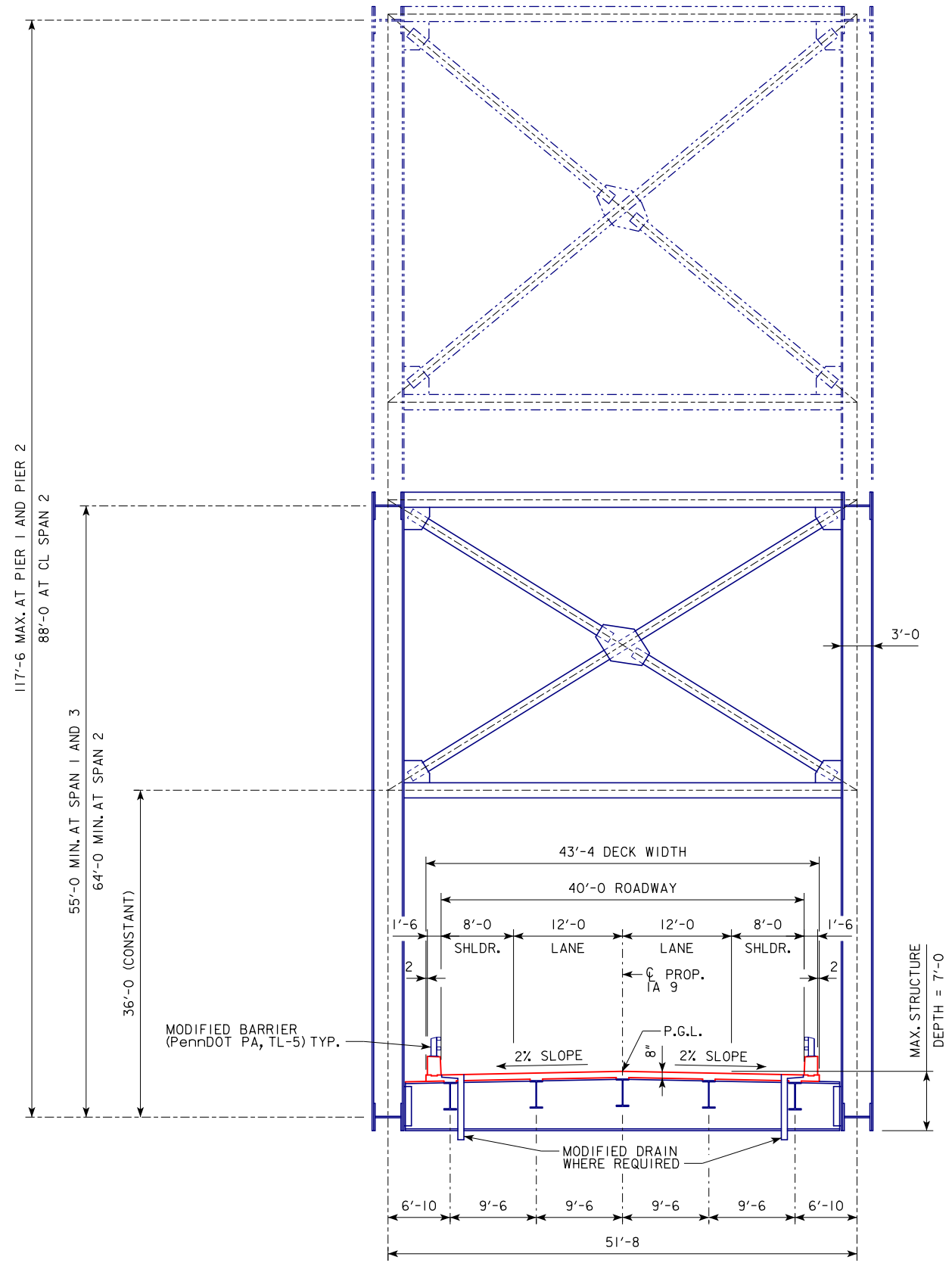
LOCATION	REVTMENT CLASS E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
IOWA BANK	1767	1065	1246

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

**BURNS & McDONNELL**  
 BURNS & McDONNELL ENGINEERING CO., INC.  
 9400 WARD PARKWAY  
 KANSAS CITY, MISSOURI 64114  
 816-333-9400

CERTIFICATE OF AUTHORITY  
 NO. : 000165  
 BMCD PROJECT NO. 98920

PRELIMINARY  
 DESIGN FOR 0° SKEW  
**1350'-10 x 40'-0 STEEL THROUGH-TRUSS BRIDGE**  
 205'-10 & 383'-0 END SPANS 762'-0 INTERIOR SPAN  
**SITUATION PLAN - SITE**  
 IA 9 STA. 112+71.21 NOVEMBER 2020  
**ALLAMAKEE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 5 OF 6 FILE NO. 31473 DESIGN NO. 124



**TRUSS SECTION A-A**  
(LOOKING UPSTATION)



PRELIMINARY

DESIGN FOR 0° SKEW

**1350'-10 x 40'-0 STEEL THROUGH-TRUSS BRIDGE**

205'-10 & 383'-0 END SPANS      762'-0 INTERIOR SPAN

**TRUSS TYPICAL SECTION**

IA 9 STA. 112+71.21      NOVEMBER 2020

**ALLAMAKEE COUNTY**

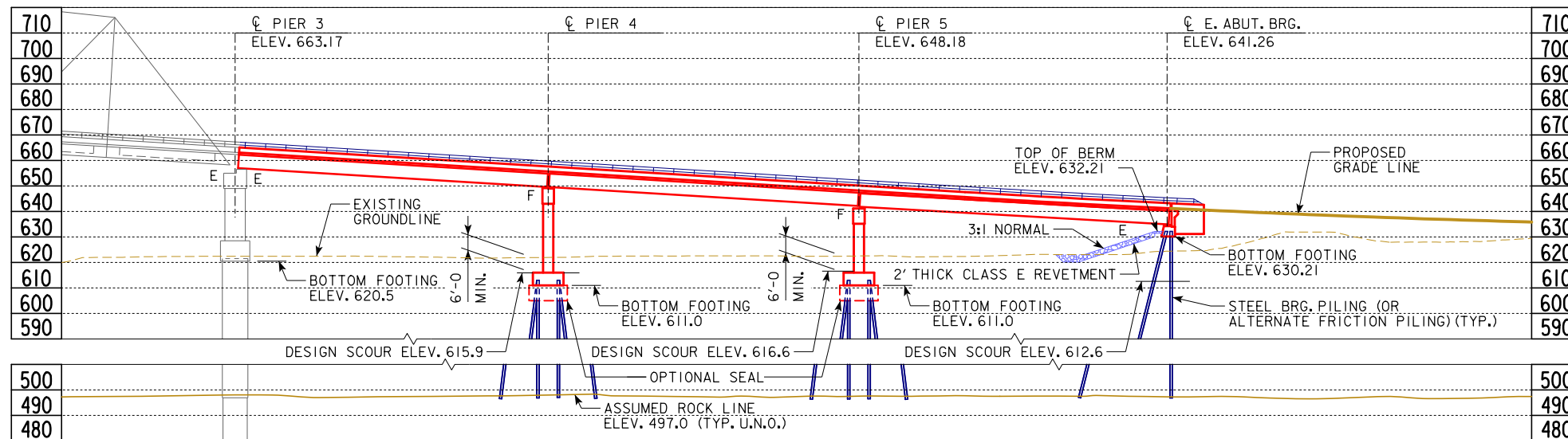
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 6    FILE NO. 31473    DESIGN NO. 124

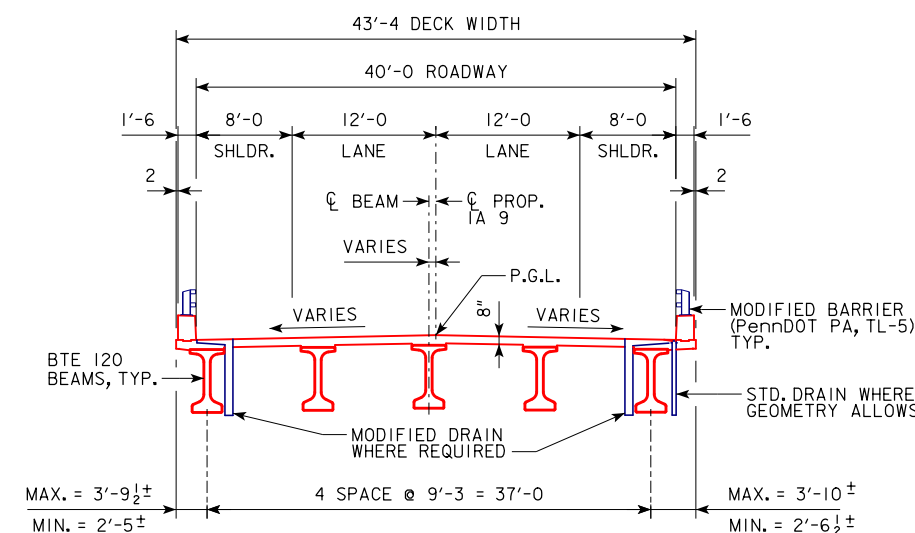
**BURNS & McDONNELL**

BURNS & McDONNELL ENGINEERING CO., INC.  
9400 WARD PARKWAY    CERTIFICATE OF AUTHORITY  
KANSAS CITY, MISSOURI 64114    NO. : 000165  
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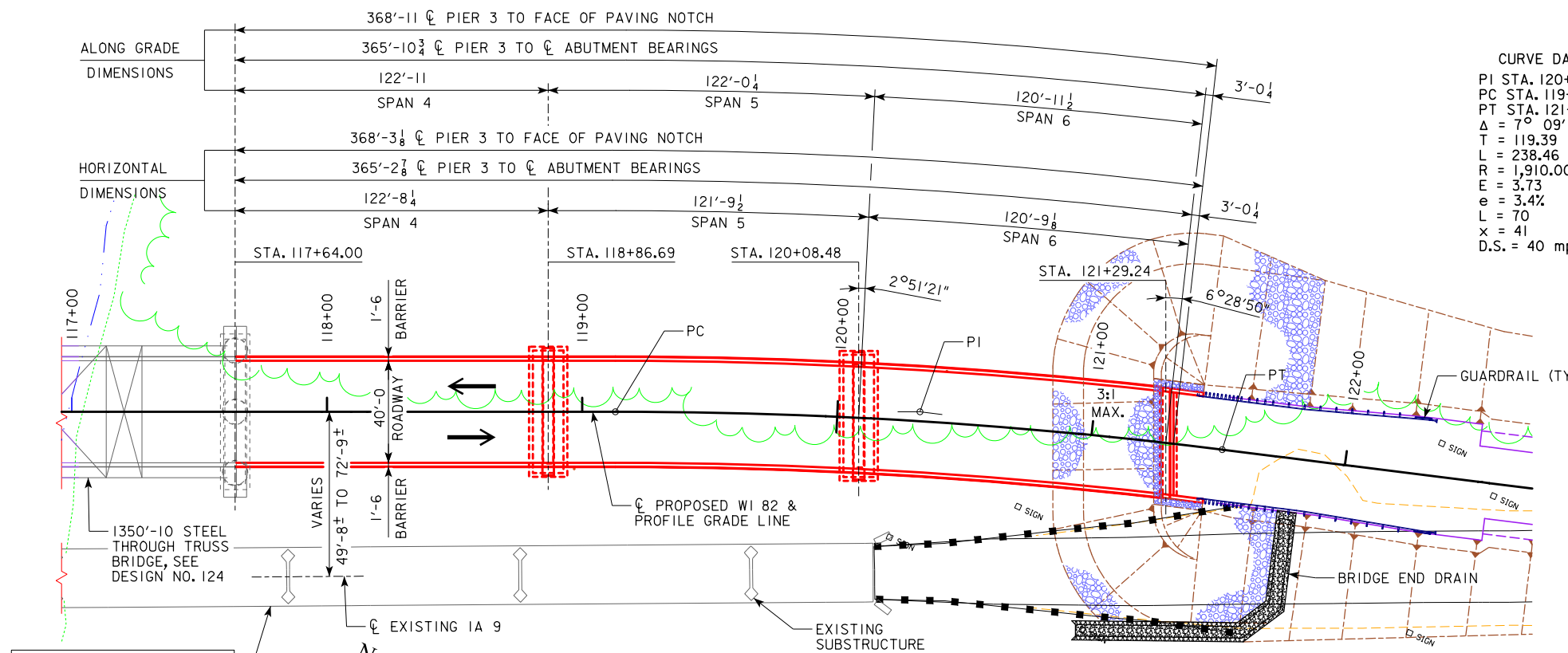
BM CUT X MARKED 4030 IN SE WING WALL, WI END MISS. RIVER BRIDGE, EL. 636.86



LONGITUDINAL SECTION ALONG CL IA 9



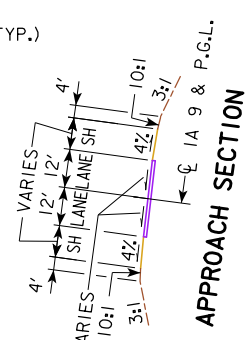
TYPICAL SECTION  
(LOOKING UPSTATION)



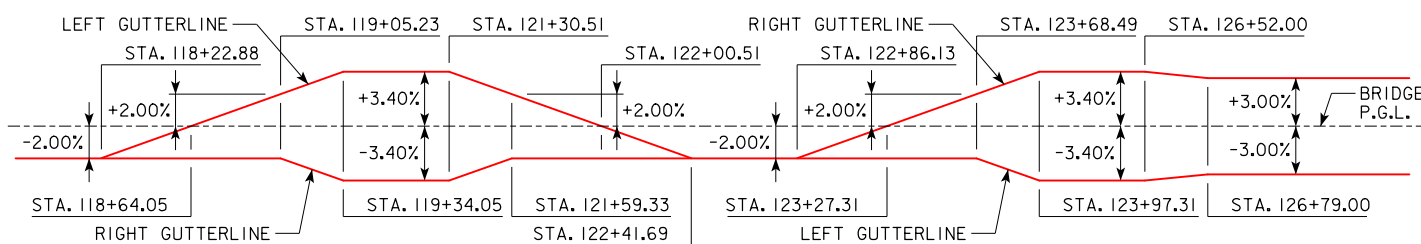
SITUATION PLAN

EXISTING 1630'-5 X 21'-0 STEEL TRUSS BRIDGE DESIGN NO. 154 ALLAMAKEE COUNTY (TO BE REMOVED BY OTHERS PER DESIGN NO. 126)

CURVE DATA  
 PI STA. 120+32.44  
 PC STA. 119+13.05  
 PT STA. 121+51.51  
 $\Delta = 7^\circ 09' 11.98''$  (RT)  
 T = 119.39  
 L = 238.46  
 R = 1,910.00  
 E = 3.73  
 e = 3.4%  
 L = 70  
 x = 41  
 D.S. = 40 mph



APPROACH SECTION



SUPERELEVATION DIAGRAM  
(SLOPES ARE NORMAL TO BRIDGE P.G.L.)

- GENERAL NOTES:**  
 THIS DESIGN IS FOR A NEW 365'-2<sup>7</sup>/<sub>8</sub> X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON IA 9 OVER THE MISSISSIPPI RIVER. THIS DESIGN INCLUDES CONSTRUCTION OF PIERS 4&5, EAST ABUTMENT, AND SUPERSTRUCTURE SPANS 4-6.  
 MAINTAIN TRAFFIC ON EXISTING BRIDGE WHILE NEW BRIDGE IS CONSTRUCTED.
- DESIGN NOTES:**  
 PennDOT PA TL-5 BRIDGE BARRIER PROPOSED.  
 PIER TYPE: AESTHETIC PIERS  
 BEAM TYPE: BTE-120 BEAMS  
 FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.  
 BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.  
 FOR CLARITY, EXISTING STRUCTURES NOT SHOWN ON LONGITUDINAL SECTION.  
 AN IOWA DNR FLOOD PLAIN CONSTRUCTION PERMIT IS REQUIRED.  
 AN IOWA DNR SOVEREIGN LANDS PERMIT IS REQUIRED; THEREFORE, BID ITEM REFERENCE NOTES SHALL RESTRICT BROKEN CONCRETE AS A SUBSTITUTE FOR REVETMENT. [BDM 3.2.7.3.5]  
 FINAL DESIGN OF DECK SHALL ACCOUNT FOR NON-STANDARD BRIDGE BARRIER, HAUNCH THICKNESS AND NON-STANDARD OVERHANG ON CURVE.

**BURNS & McDONNELL**  
 BURNS & McDONNELL ENGINEERING CO., INC.  
 9400 WARD PARKWAY  
 KANSAS CITY, MISSOURI 64114  
 816-333-9400  
 CERTIFICATE OF AUTHORITY  
 NO. : 000165  
 BMCD PROJECT NO. 98920

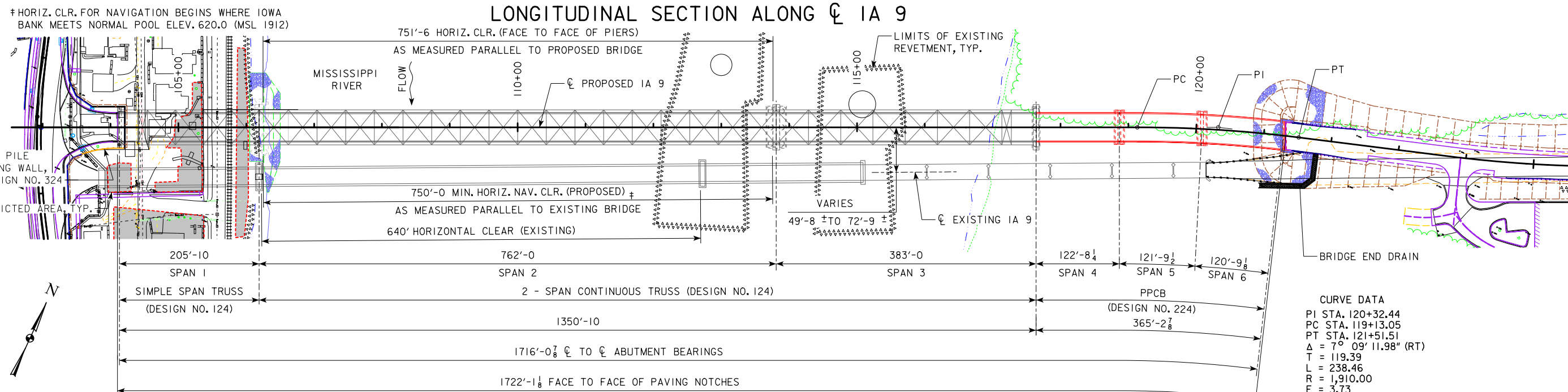
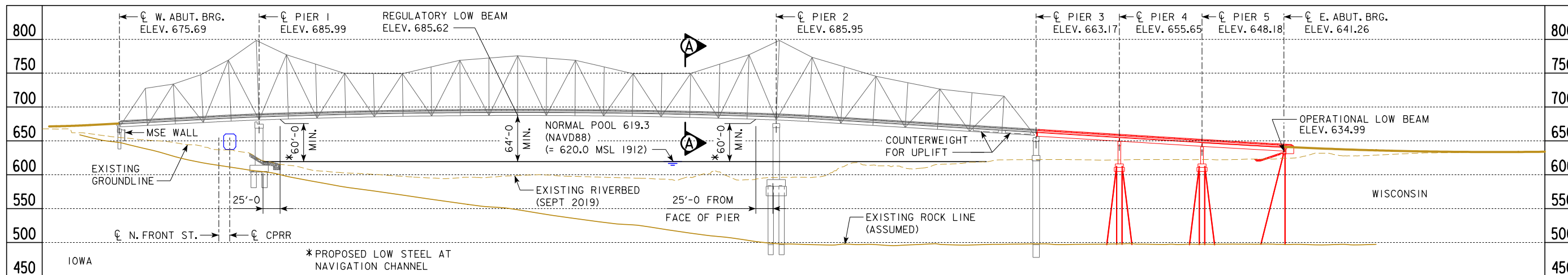
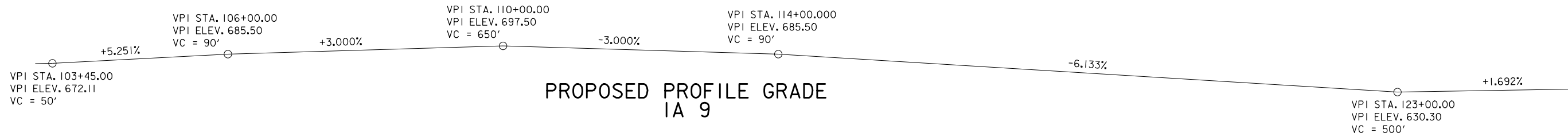


PRELIMINARY

DESIGN FOR VARIABLE SKEW (RA)  
**365'-2<sup>7</sup>/<sub>8</sub> X 40'-0 PPCB BRIDGE**

122'-8<sup>1</sup>/<sub>4</sub> & 120'-9<sup>1</sup>/<sub>8</sub> END SPANS      122'-0<sup>3</sup>/<sub>8</sub> INTERIOR SPAN

**SITUATION PLAN**  
 IA 9 STA. 112+71.21      RADIUS = 1910'      NOVEMBER 2020  
**ALLAMAKEE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 3      FILE NO. 31473      DESIGN NO. 224



**PLAN NOTES:**  
 ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
 TOP OF DECK ELEVATIONS AT CL ARE 0.03' LOWER THAN THE PGL TO ACCOUNT FOR CROWN ROUNDING.  
 VERTICAL DATUM NAVD 88.  
 CLASS E REVETMENT STONE IS EMBEDDED.  
 THE BRIDGE WILL BE DESIGNED TO WITHSTAND THE APPLICABLE EFFECTS OF ICE AND THE HORIZONTAL STREAM LOADS ASSOCIATED WITH THE Q100. [BDM 3.2.2.4]

**HYDRAULIC DATA**

DRAINAGE AREA = 65130 SQ. MI.	Q <sub>200</sub> = 272,900 CFS
STREAM SLOPE = 0.249 FT./MI.	STAGE = 633.7
AVG. LOW WATER STAGE = 619.3	Q <sub>500</sub> = 307,900 CFS
Q <sub>25</sub> = 197,200 CFS	STAGE = 635.3
STAGE = 629.7	AVG. BRIDGE VELOCITY = 4.4 FPS
Q <sub>50</sub> = 225,200 CFS	ROADWAY OVERTOP ELEV 634.03
STAGE = 631.2	STA. 124+41.87
REGULATORY LOW BEAM = 685.62	EXTREME HW STAGE = 634.1
BACKWATER = 0.1 FT.	DATE = 04/24/1965
Q <sub>100</sub> = 250,100 CFS	
STAGE = 632.6	
OPERATIONAL LOW BEAM = 635.0	
BACKWATER = 0.1 FT.	
AVG. BRIDGE VELOCITY = 4.0 FPS	

**GENERAL 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.

*Kevin R. Eisenbeis* October 2, 2020  
 Signature Date  
 Kevin R. Eisenbeis  
 Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: V.7 through V.9

**LOCATION**  
 IA 9 OVER MISSISSIPPI RIVER  
 T-99N R-3W  
 SECTION 29  
 LANSING TOWNSHIP  
 ALLAMAKEE COUNTY, IA  
 CRAWFORD COUNTY, WI  
 CITY OF LANSING  
 FRA NO. 376210E  
 LATITUDE: 43.36569° N  
 LONGITUDE: 91.21400° W  
 FHWA NO. 13521  
 BRIDGE MAINT. NO. 0361.IS009

**TRAFFIC ESTIMATE**

2025 AADT	2900	V.P.D.
2045 AADT	3000	V.P.D.
TRUCKS	9	%

PRELIMINARY

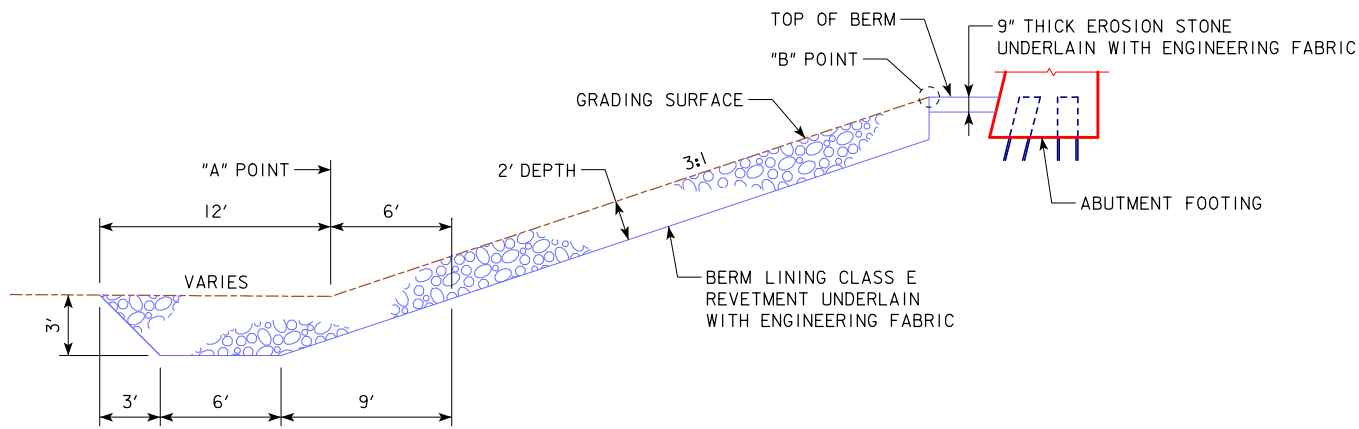
DESIGN FOR VARIABLE SKEW (RA)  
**365'-2 7/8" x 40'-0" PPCB BRIDGE**

122'-8 1/4" & 120'-9 1/8" END SPANS      122'-0 3/8" INTERIOR SPAN

**GENERAL PLAN**  
 IA 9 STA. 112+71.21      RADIUS = 1910'      NOVEMBER 2020  
**ALLAMAKEE COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 3      FILE NO. 31473      DESIGN NO. 224

**BURNS & McDONNELL**  
 BURNS & McDONNELL ENGINEERING CO., INC.  
 9400 WARD PARKWAY      CERTIFICATE OF AUTHORITY  
 KANSAS CITY, MISSOURI 64114      NO. : 000165  
 816-333-9400      BMCD PROJECT NO. 98920

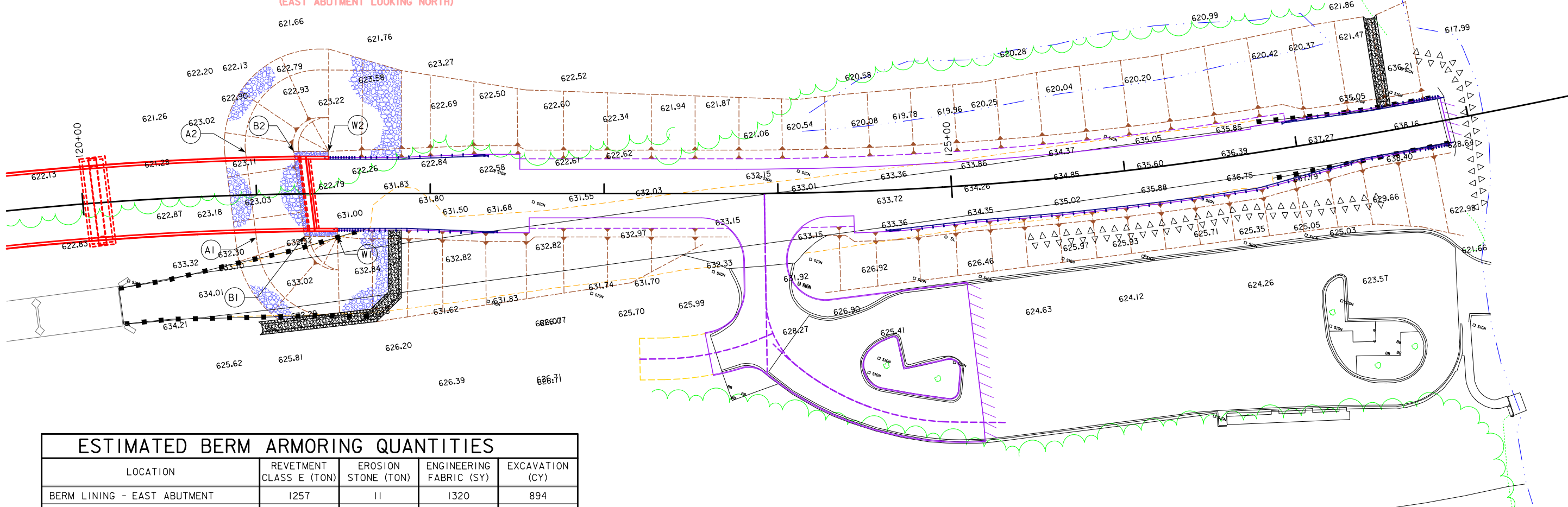
BM CUT X MARKED 4030 IN SE WING WALL, WI END MISS. RIVER BRIDGE, EL. 636.86



BERM SLOPE LOCATION TABLE			
POINTS	STATION	OFFSET	ELEVATION
A1	120+99.20	24.67' RT.	623.06
A2	120+94.44	24.67' LT.	623.06
B1	121+27.19	24.67' RT.	632.21
B2	121+21.74	24.67' LT.	632.21
W1	121+46.52	24.67' RT.	639.13
W2	121+41.62	24.67' LT.	639.13

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

SECTION THRU EMBEDDED REVETMENT BERM  
(EAST ABUTMENT LOOKING NORTH)



ESTIMATED BERM ARMORING QUANTITIES				
LOCATION	REVETMENT CLASS E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING - EAST ABUTMENT	1257	11	1320	894

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

SITE PLAN



BURNS & McDONNELL ENGINEERING CO., INC.  
9400 WARD PARKWAY CERTIFICATE OF AUTHORITY  
KANSAS CITY, MISSOURI 64114 NO. : 000165  
816-333-9400 BMCD PROJECT NO. 98920



PRELIMINARY

DESIGN FOR VARIABLE SKEW (RA)

**365'-2<sup>7</sup>/<sub>8</sub> x 40'-0 PPCB BRIDGE**

122'-8<sup>1</sup>/<sub>4</sub> & 120'-9<sup>3</sup>/<sub>8</sub> END SPANS      122'-0<sup>3</sup>/<sub>8</sub> INTERIOR SPAN

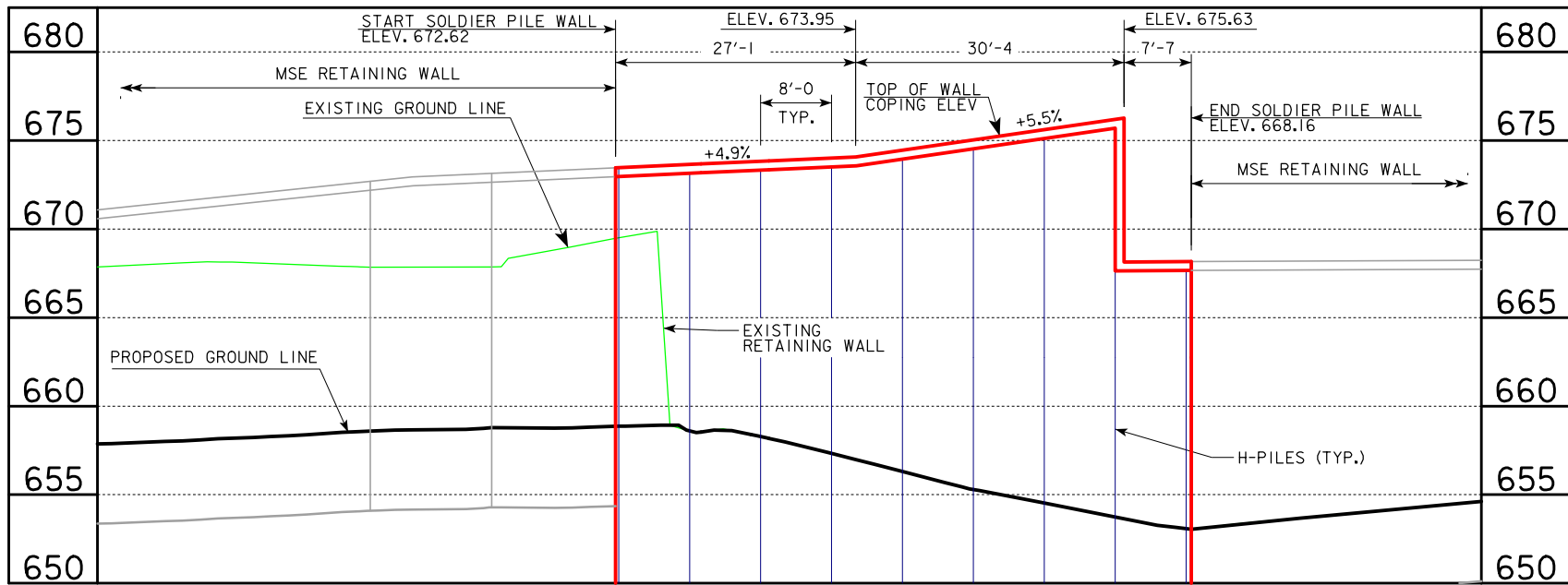
**SITUATION PLAN - SITE**

IA 9 STA. 112+71.21      RADIUS = 1910'      NOVEMBER 2020

**ALLAMAKEE COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3      FILE NO. 31473      DESIGN NO. 224



**GENERAL NOTES:**

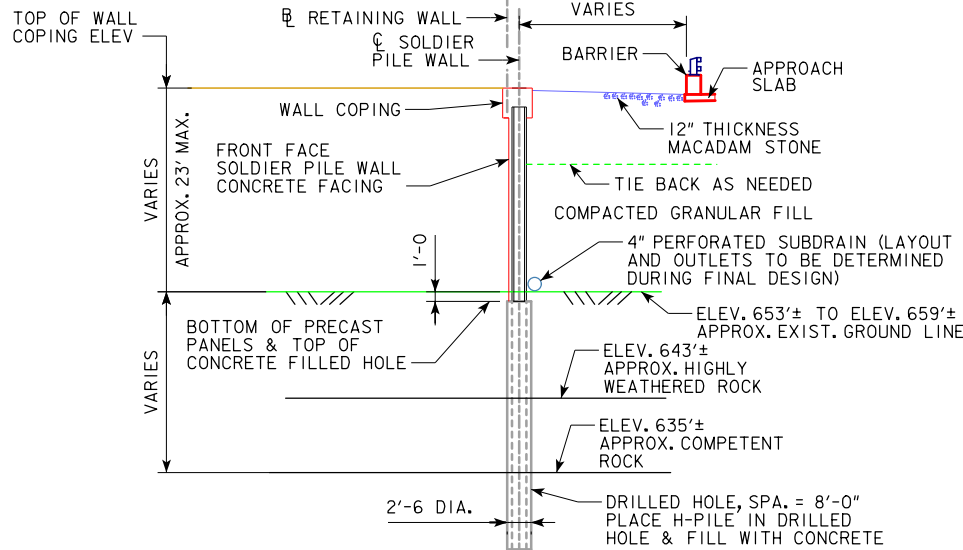
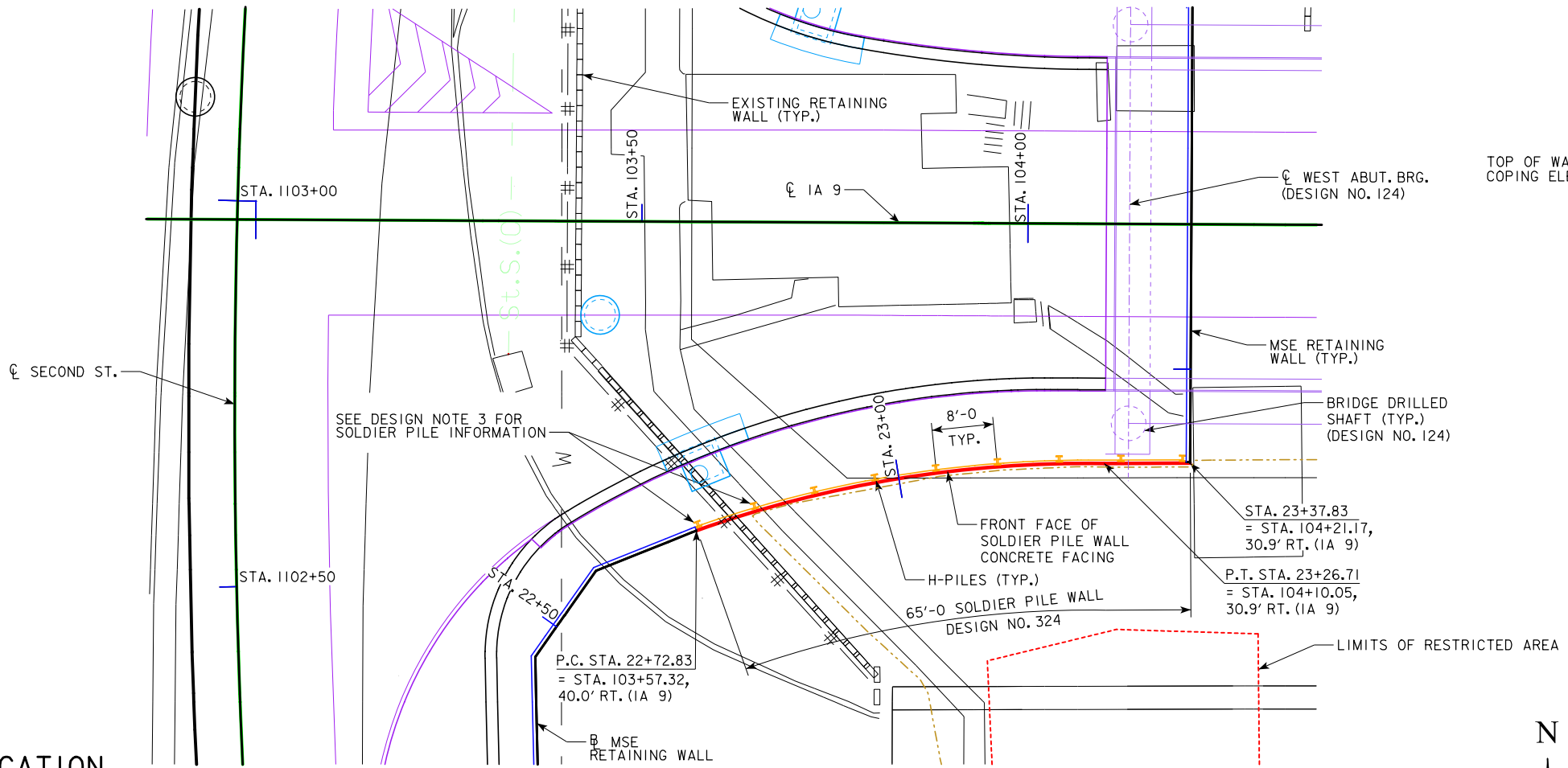
1. THE DESIGN IS FOR A NEW 65'-0 SOLDIER PILE RETAINING WALL. THIS DESIGN INCLUDES TIE-IN DETAILS TO ADJACENT MSE WALLS AND TIE-IN DETAILS TO ADJACENT WEST ABUTMENT.
2. THE RESTRICTED AREAS SHALL BE MARKED OFF WITH ORANGE SNOW FENCE AND NO GROUND DISTURBANCE IS PERMISSIBLE WITHIN THESE AREAS. IF THE CONTRACTOR HAS QUESTIONS THEY CAN CONTACT THE CONSTRUCTION ENGINEER OR IOWA DOT LOCATION AND ENVIRONMENT STAFFER BRENNAN DOLAN AT (515)-239-1795.
3. SEE SHEET V.11 FOR HORIZONTAL AND VERTICAL GEOMETRY. SEE SHEETS E.1 AND E.3 FOR SECOND ST. GEOMETRY.

**DESIGN NOTES:**

1. 8' PILE SPACING AND NEED FOR TIE BACKS TO BE CONFIRMED DURING FINAL DESIGN.
2. CONCRETE FACING AND WALL COPING TO MATCH LOOK OF MSE WALLS FOR CONSISTENCY.
3. SOLDIER PILES WILL LIKELY CONFLICT WITH EXISTING RETAINING WALL FOOTING. NEEDS FOR ADJUSTMENT TO BE DETERMINED DURING FINAL DESIGN.
4. LIMITS OF RESTRICTED AREA AS SHOWN HAVE BEEN ADJUSTED. WALL TYPE SHALL BE RE-EVALUATED DURING FINAL DESIGN.

**PLAN NOTES:**

1. SEE SHEET V.11 FOR MSE WALL LAYOUT AND ELEVATION.
2. SEE SHEETS V.12 AND V.13 FOR DETAILS AT WALL CORNERS.



**LOCATION**

IA 9 OVER MISSISSIPPI RIVER  
 T-99N R-3W  
 SECTION 29  
 LANSING TOWNSHIP  
 ALLAMAKEE COUNTY  
 FHWA NO. 13521  
 BRIDGE MAINT. NO. 0361.1S009  
 LATITUDE: 43.36569° N  
 LONGITUDE: 91.21400° W

**TRAFFIC ESTIMATE**

2025 AADT	2900	V.P.D.
2045 AADT	3000	V.P.D.
TRUCKS	9	%

**CURVE DATA**  
 PC STA. 22+72.83  
 PT STA. 23+26.71  
 $\Delta = 20^{\circ}50'57.8''$   
 T = 54.61  
 L = 108.00  
 R = 296.8  
 E = 27.08



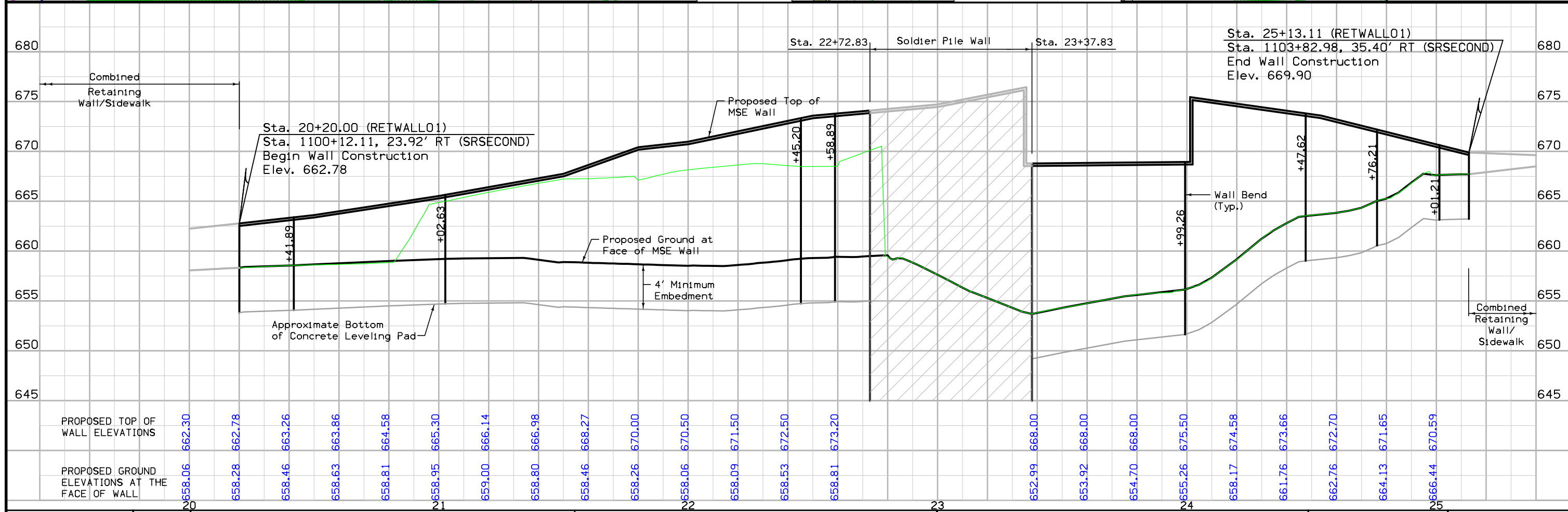
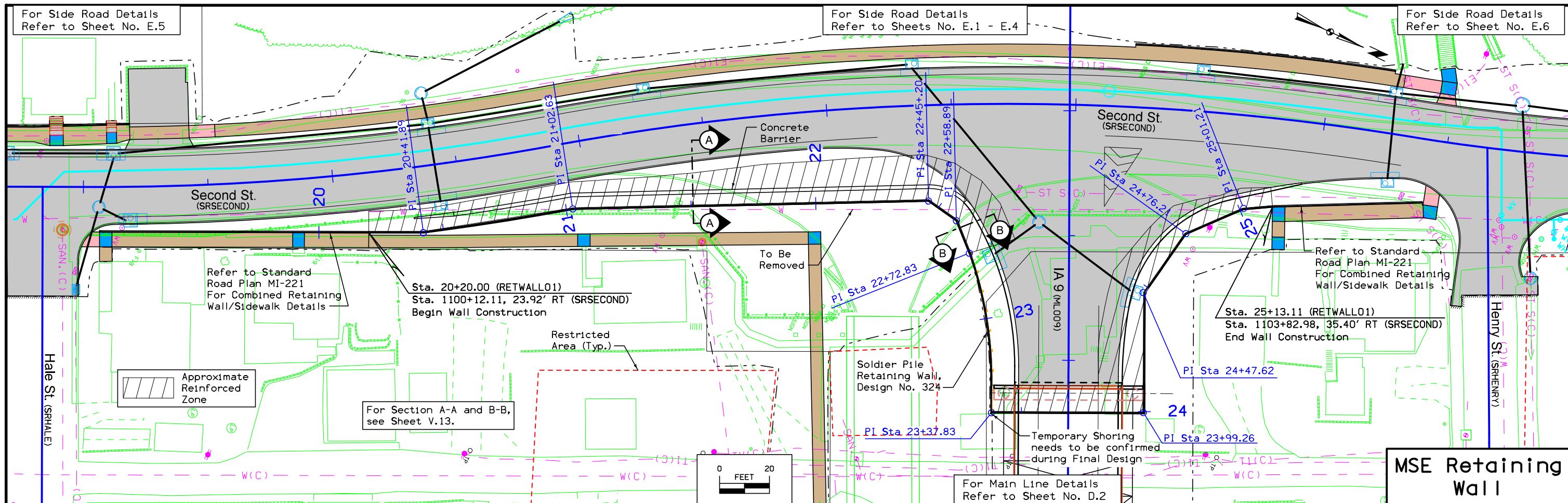
PRELIMINARY

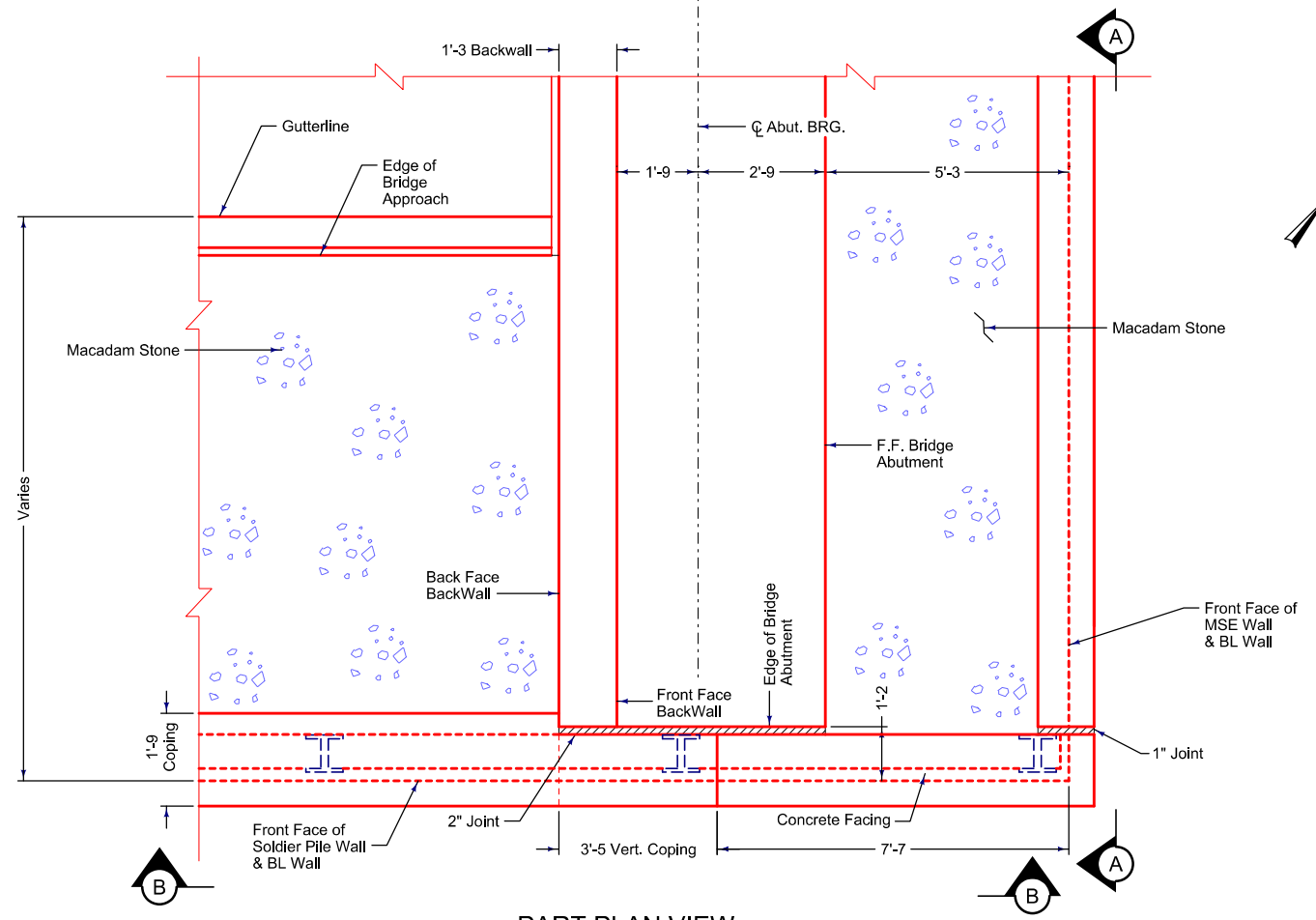
**65'-0 X VARIABLE HEIGHT SOLDIER PILE RETAINING WALL**

**SITUATION PLAN**

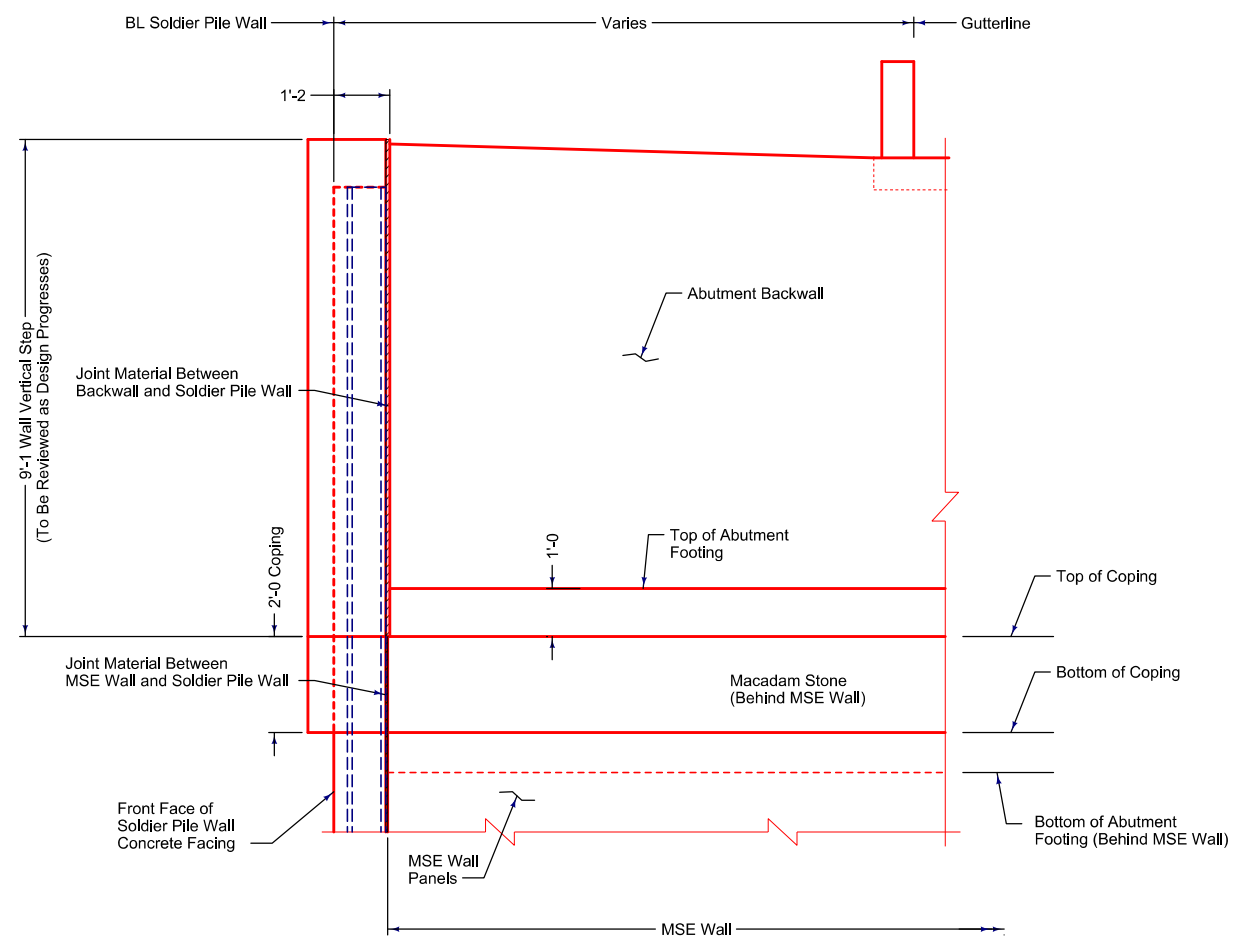
STA. 23+05.33 NOVEMBER 2020  
 ALLAMAKEE COUNTY  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 1 FILE NO. 31473 DESIGN NO. 324





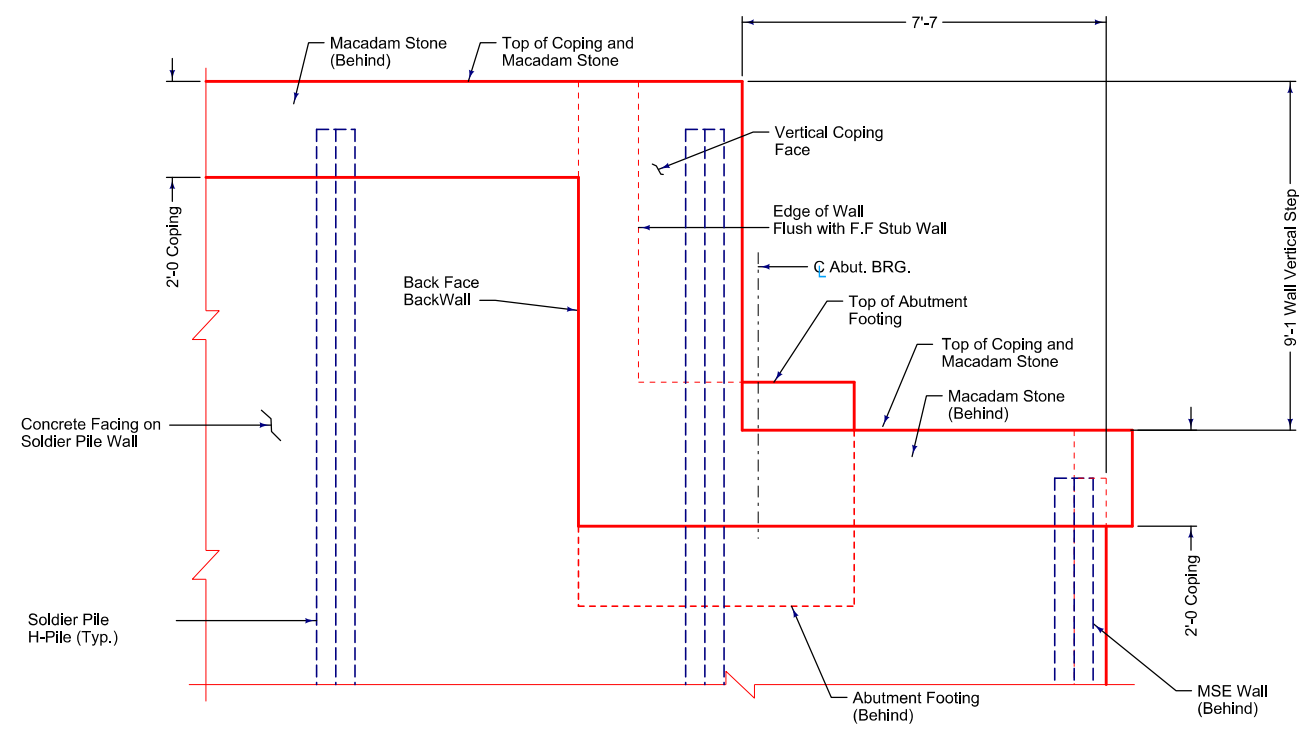


**PART PLAN VIEW**  
At South Edge of West Abutment



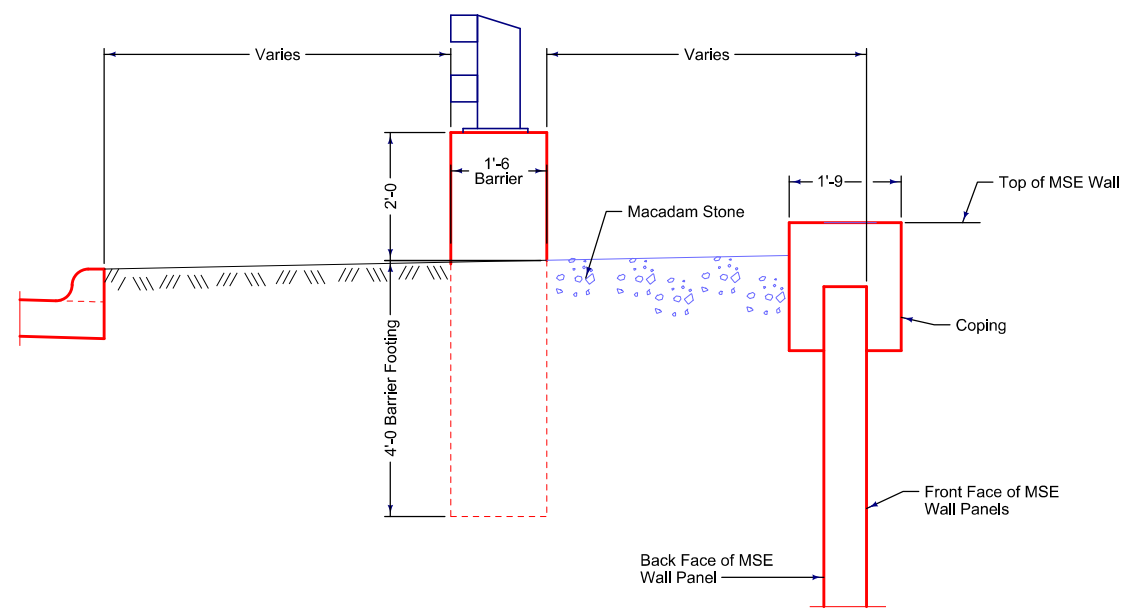
**VIEW A-A**

General Note:  
Include Copping along horizontal and vertical edge of soldier pile wall as shown to match look of MSE Wall.

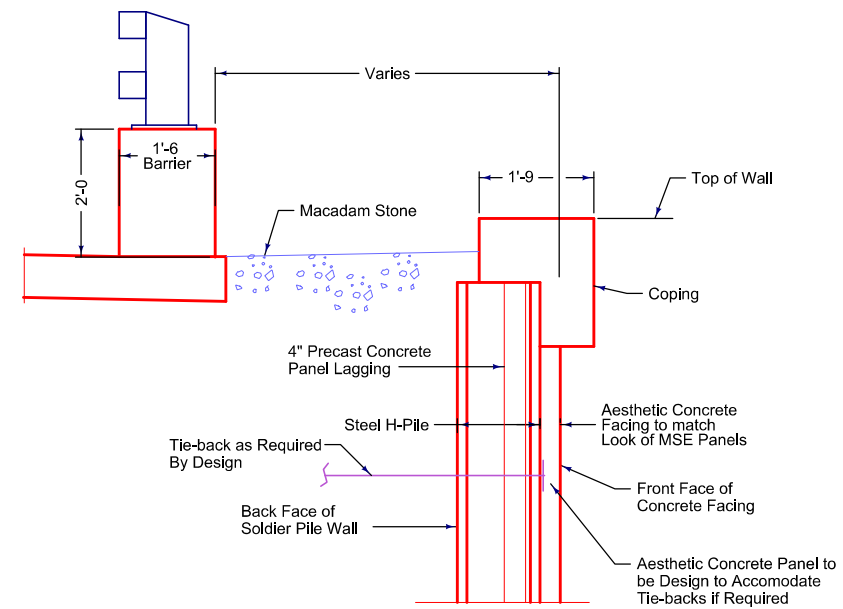


**VIEW B-B**

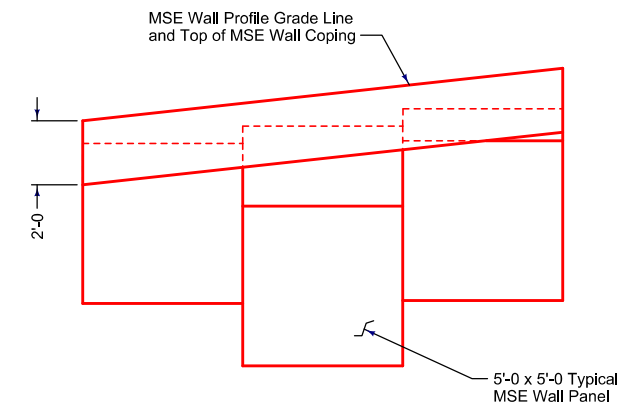
**RETAINING WALL CORNER DETAILS  
NOT INCLUDED FOR FINAL DESIGN**



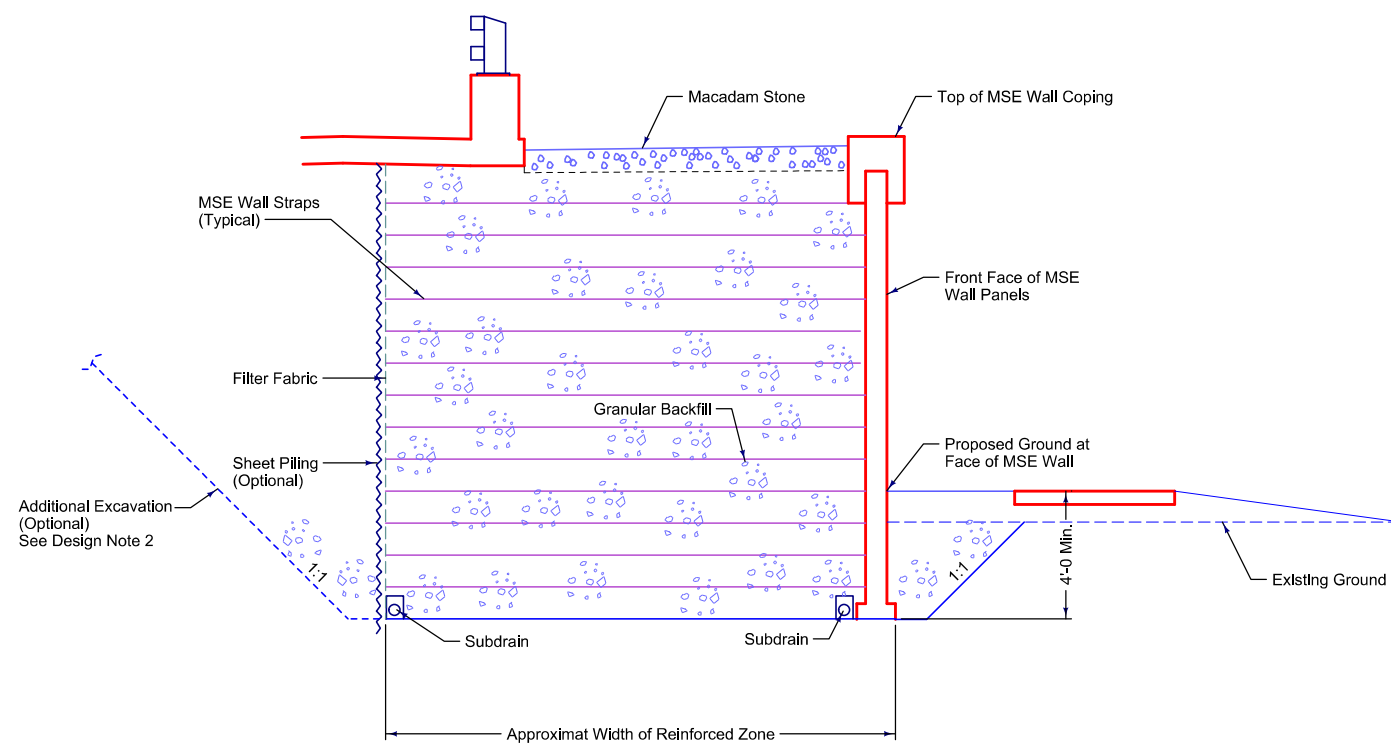
SECTION A-A



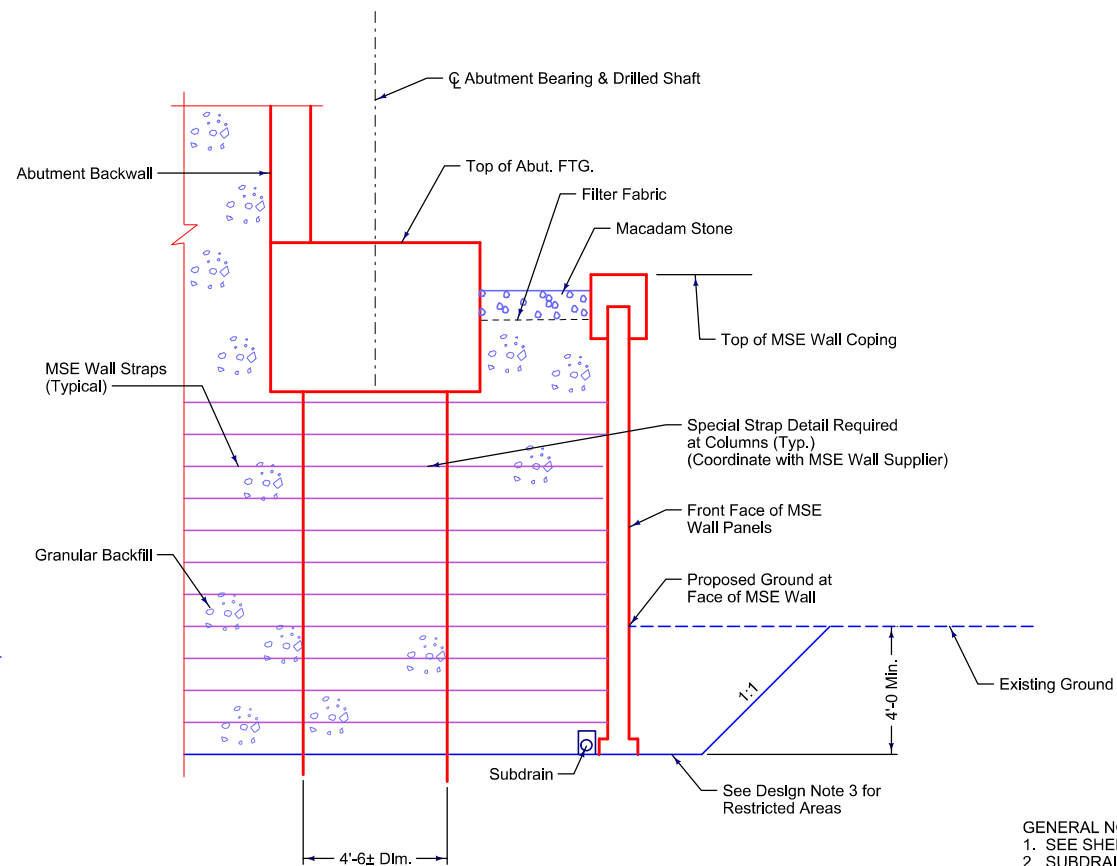
SECTION B-B



MSE WALL COPING ELEVATION DETAIL



TYPICAL MSE WALL CROSS SECTION



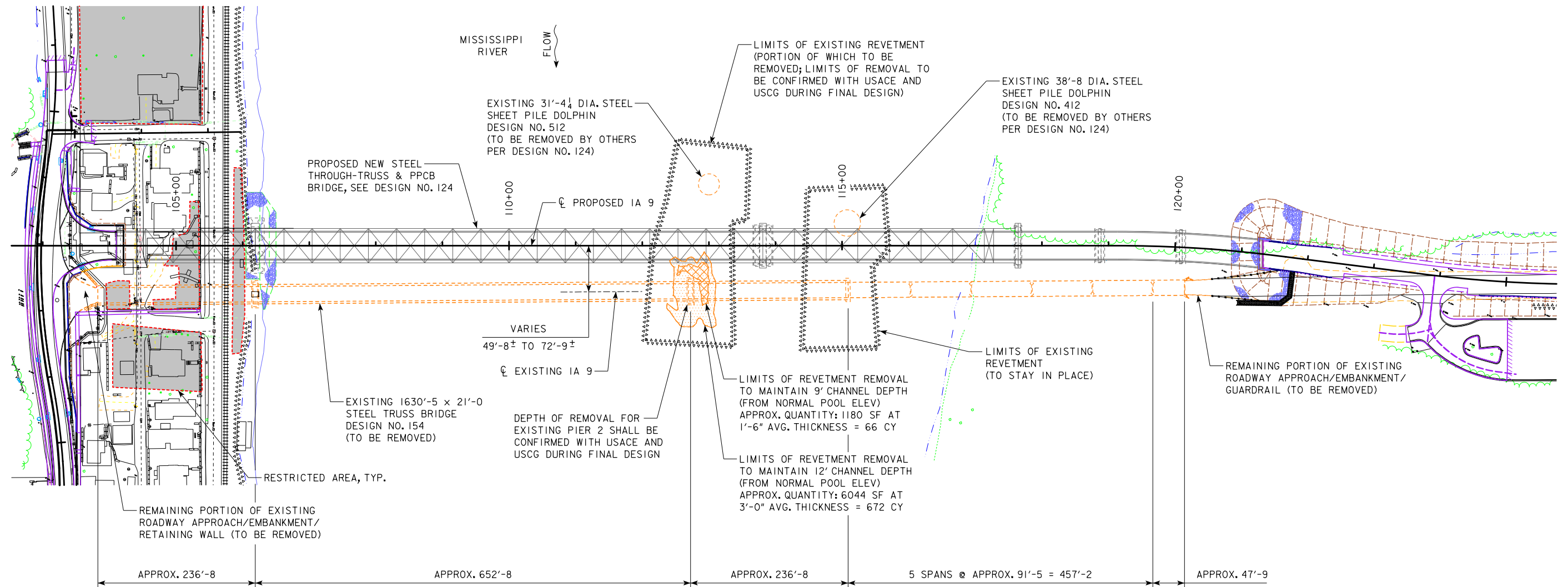
SECTION UNDER BRIDGE

GENERAL NOTES:  
 1. SEE SHEET V.11 FOR LOCATIONS OF SECTIONS A-A AND B-B.  
 2. SUBDRAIN OUTLET DETAILS TO BE DETERMINED.

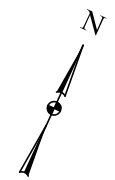
DESIGN NOTES:  
 1. MSE WALL PANELS TO HAVE AESTHETIC FORMLINER. DESIGN OPTIONS HAVE BEEN DEVELOPED BY PRELIMINARY DESIGN PROJECT TEAM WHICH COMPLEMENT THE AESTHETIC THEME OF THE PIERS, AVAILABLE UPON REQUEST.  
 2. OPTIONAL SHEET PILING OR ADDITIONAL EXCAVATION AT CONTRACTOR'S OPTION.  
 3. NEEDS FOR TEMPORARY SHORING NEAR RESTRICTED AREAS TO BE DETERMINED DURING FINAL DESIGN.

**RETAINING WALL SECTION VIEWS  
 NOT INCLUDED FOR FINAL DESIGN**

THE RESTRICTED AREAS SHALL BE MARKED OFF WITH ORANGE SNOW FENCE AND NO GROUND DISTURBANCE IS PERMISSIBLE WITHIN THESE AREAS. IF THE CONTRACTOR HAS QUESTIONS THEY CAN CONTACT THE CONSTRUCTION ENGINEER OR IOWA DOT LOCATION AND ENVIRONMENT STAFFER BRENNAN DOLAN AT (515) 239-1795.



REMOVAL PLAN



GENERAL NOTES:

WORK UNDER THIS DESIGN SHALL INCLUDE REMOVAL OF EXISTING 1630'-5 X 21'-0 STEEL TRUSS BRIDGE, ALLAMAKEE COUNTY DESIGN NO. 154, FHWA NO. 013520, MAINT. NO. 1396.IS009. INCLUDES REMOVAL OF SUPERSTRUCTURE, ALL SUBSTRUCTURE UNITS, AND A PORTION OF THE EXISTING REVETMENT IN CHANNEL.

USCG PRE-APPROVAL IS REQUIRED FOR WORK WHICH AFFECTS RIVER NAVIGATION.

PLAN NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.  
VERTICAL DATUM NAVD 88.

LOCATION

IA 9 OVER MISSISSIPPI RIVER  
T-99N R-3W  
SECTION 29  
LANSING TOWNSHIP  
ALLAMAKEE COUNTY, IA  
CRAWFORD COUNTY, WI  
CITY OF LANSING  
FRA NO. 376210E  
LATITUDE: 43.36569° N  
LONGITUDE: 91.21400° W  
FHWA NO. 13521  
BRIDGE MAINT. NO. 0361.IS009



BURNS & McDONNELL ENGINEERING CO., INC.  
9400 WARD PARKWAY CERTIFICATE OF AUTHORITY  
KANSAS CITY, MISSOURI 64114 NO. : 000165  
816-333-9400 BMCD PROJECT NO. 98920



PRELIMINARY

DESIGN FOR VARIABLE SKEW (RA)

**1716'-0<sup>7</sup>/<sub>8</sub> x 40'-0 STEEL THROUGH-TRUSS AND PPCB BRIDGE**

205'-10 & 120'-9<sup>1</sup>/<sub>2</sub> END SPANS MULTIPLE LENGTH INTERIOR SPANS

**REMOVAL PLAN**

IA 9 STA. 112+71.21 RADIUS = 1910' NOVEMBER 2020

**ALLAMAKEE COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 31473 DESIGN NO. 126

**LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)**

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

**LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)**

- TS ----- Topsoil (Class 10)
- SLOPE DRESSING ----- Slope Dressing Only
- CL 10 ----- Class 10 Materials
- SEL LO ----- Select Loams And Clay-Loams
- SEL SA ----- Select Sand
- UNS A ----- Unsuitable Type A Disposal
- UNS B ----- Unsuitable Type B Disposal
- UNS C ----- Unsuitable Type C Disposal
- SHALE ----- Shale
- WASTE ----- Waste
- B&W LS ----- Broken and Weathered Rock
- ROCK ----- Solid Rock
- BLDRS ----- Boulders

Note: All layer lines and descriptions identify layers above the line.

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

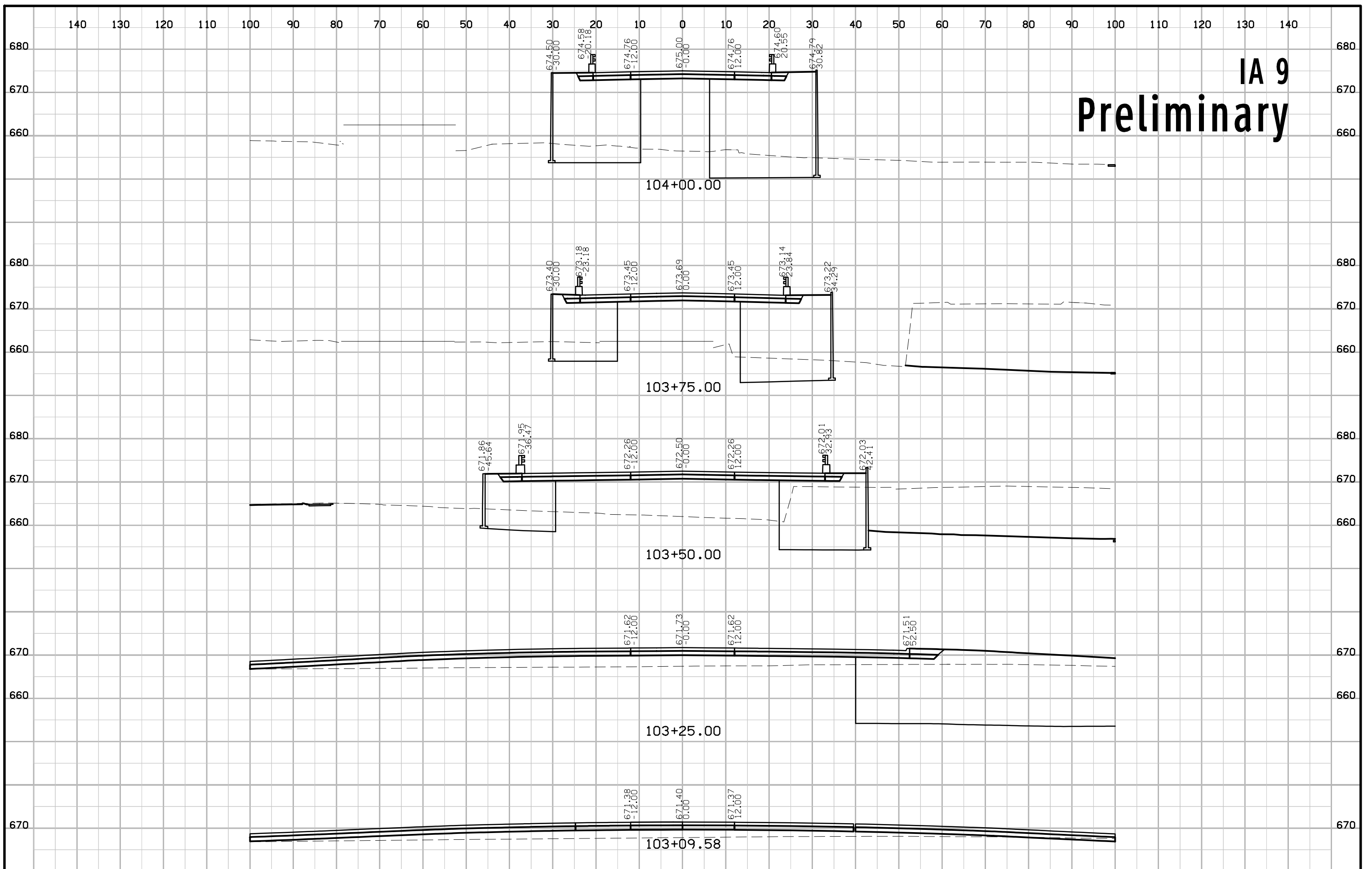
**SYMBOL LEGEND OF CROSS SECTION SHEETS**

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

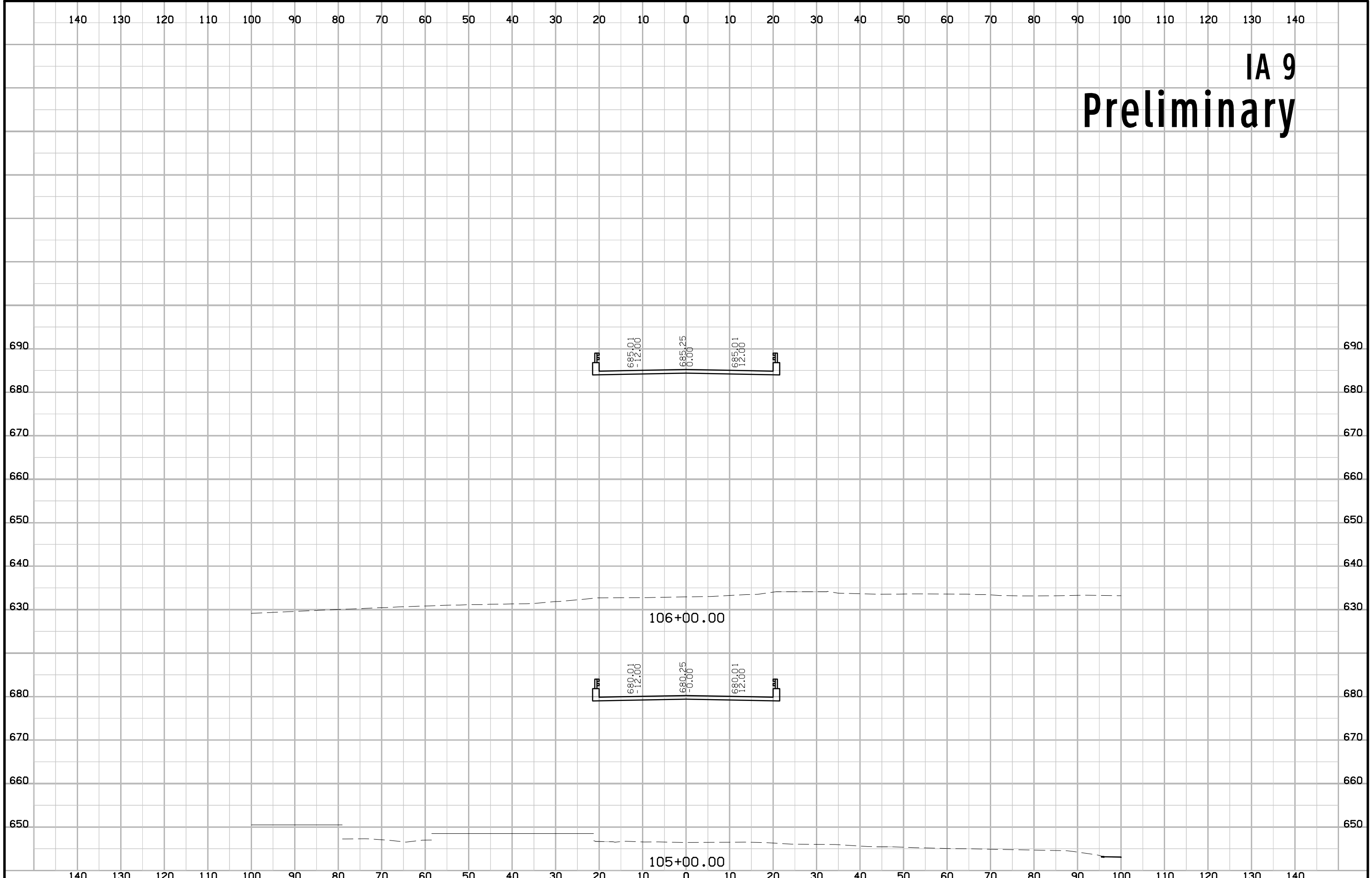
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

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

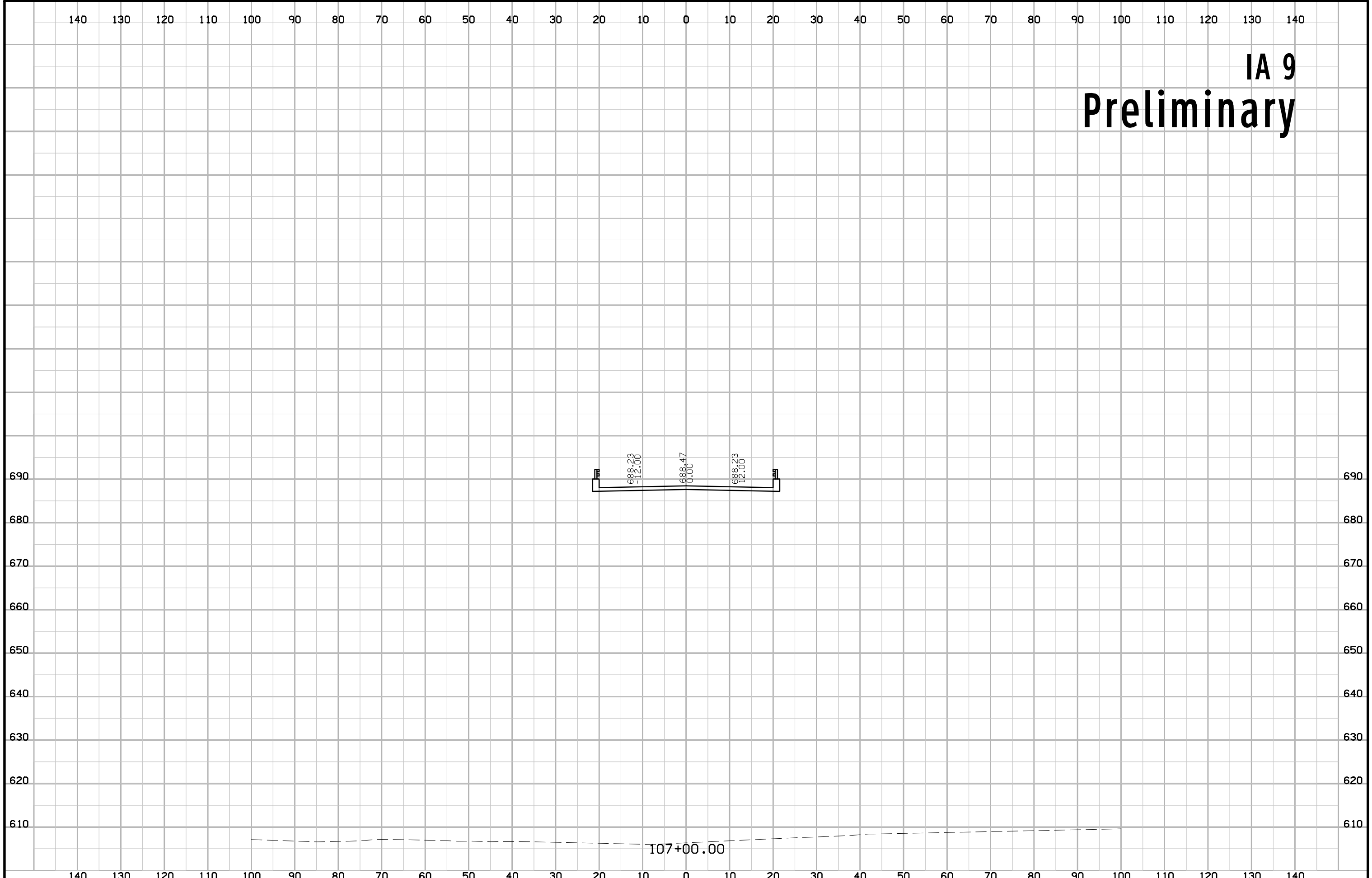
# IA 9 Preliminary



# IA 9 Preliminary

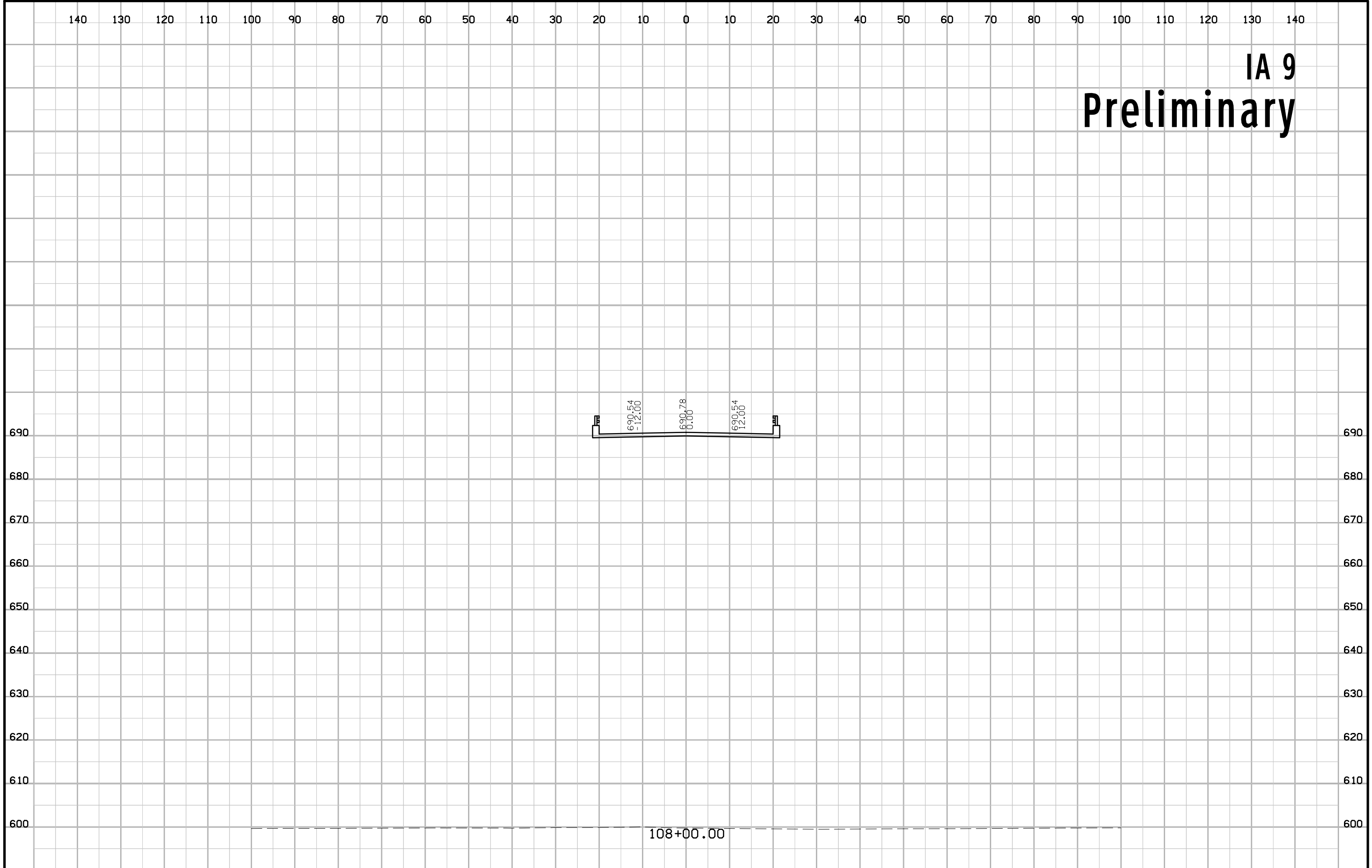


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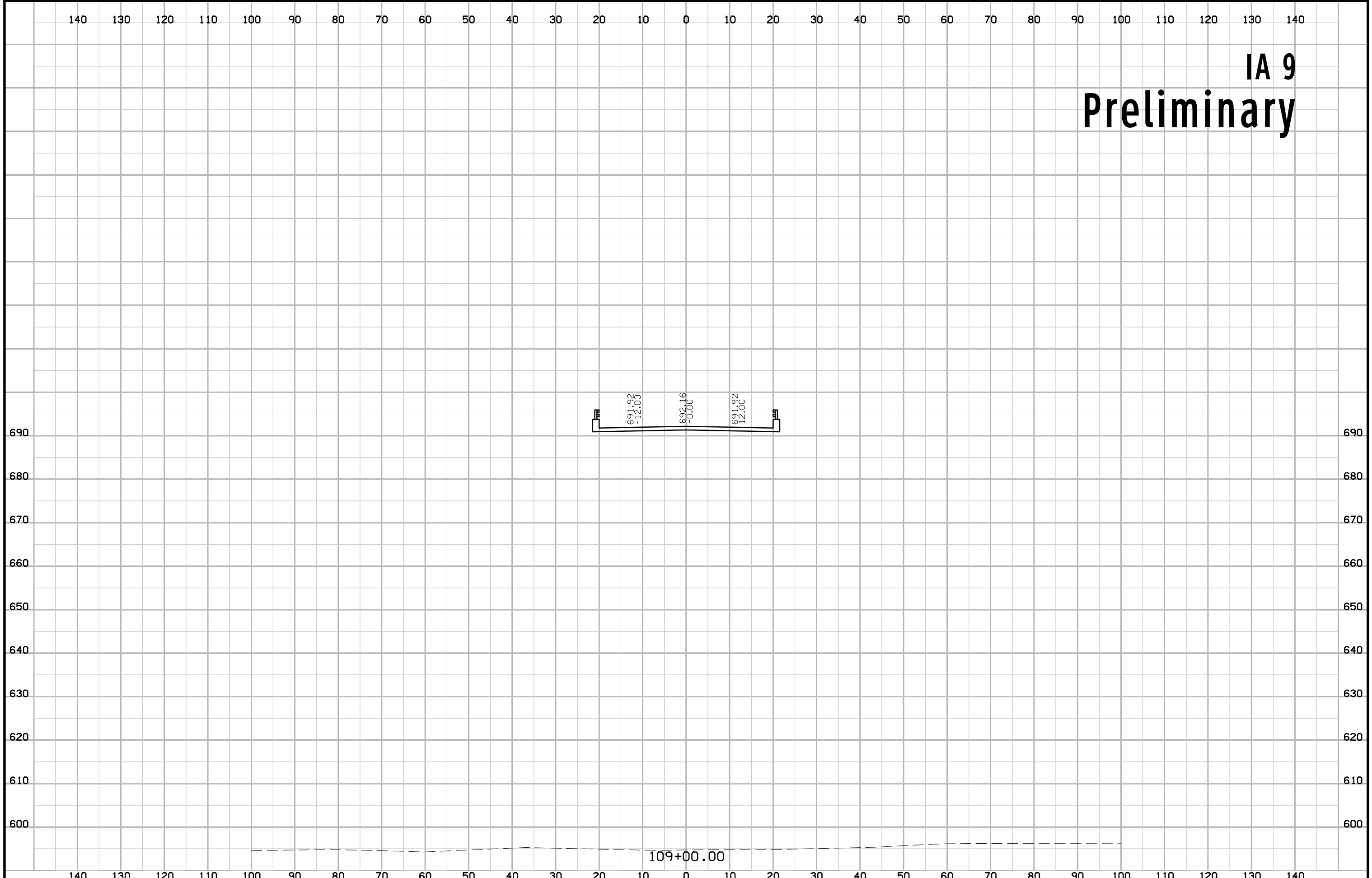




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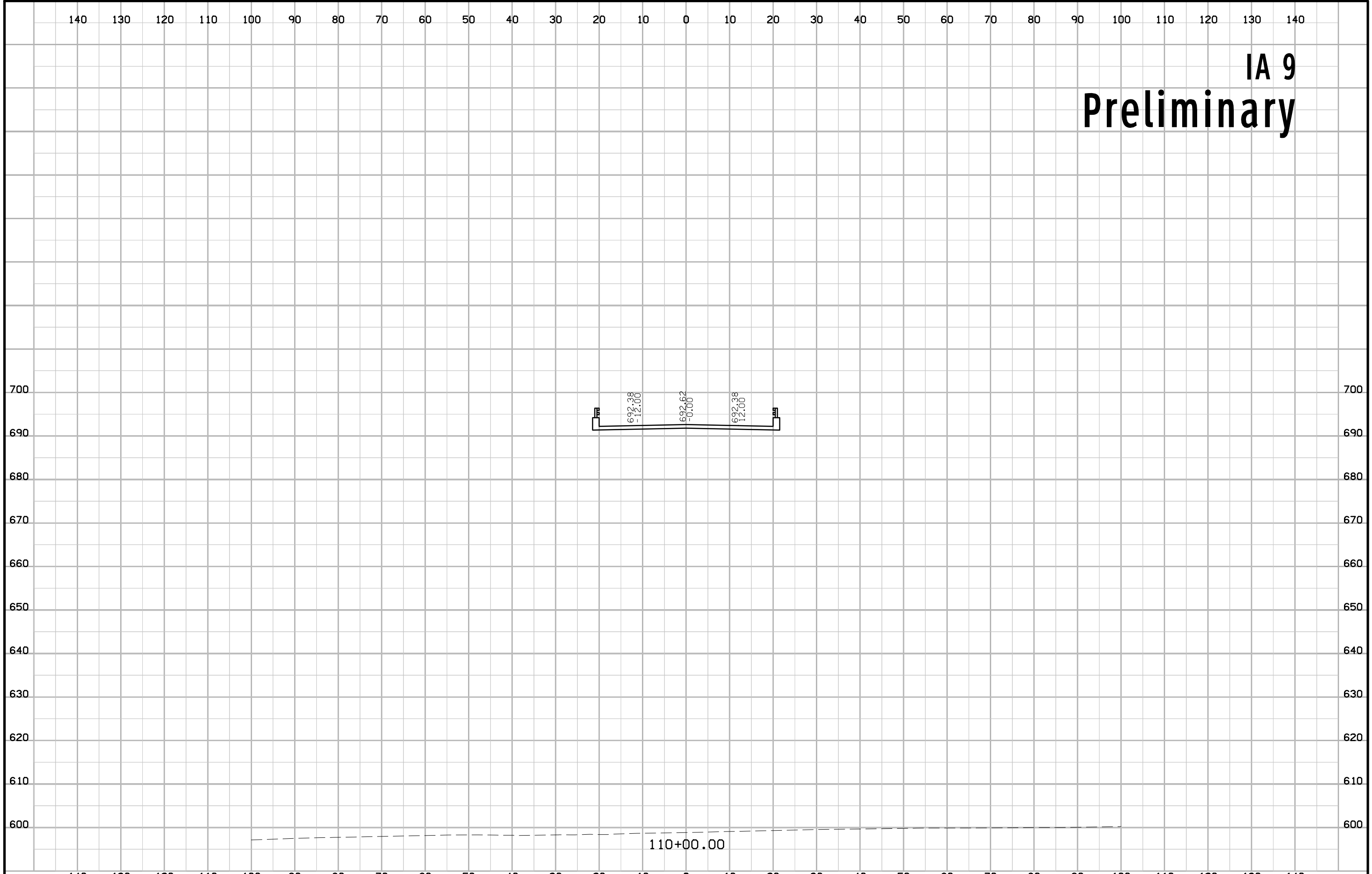


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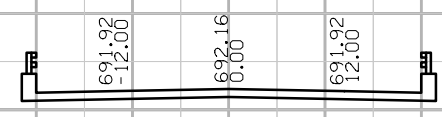


109+00.00

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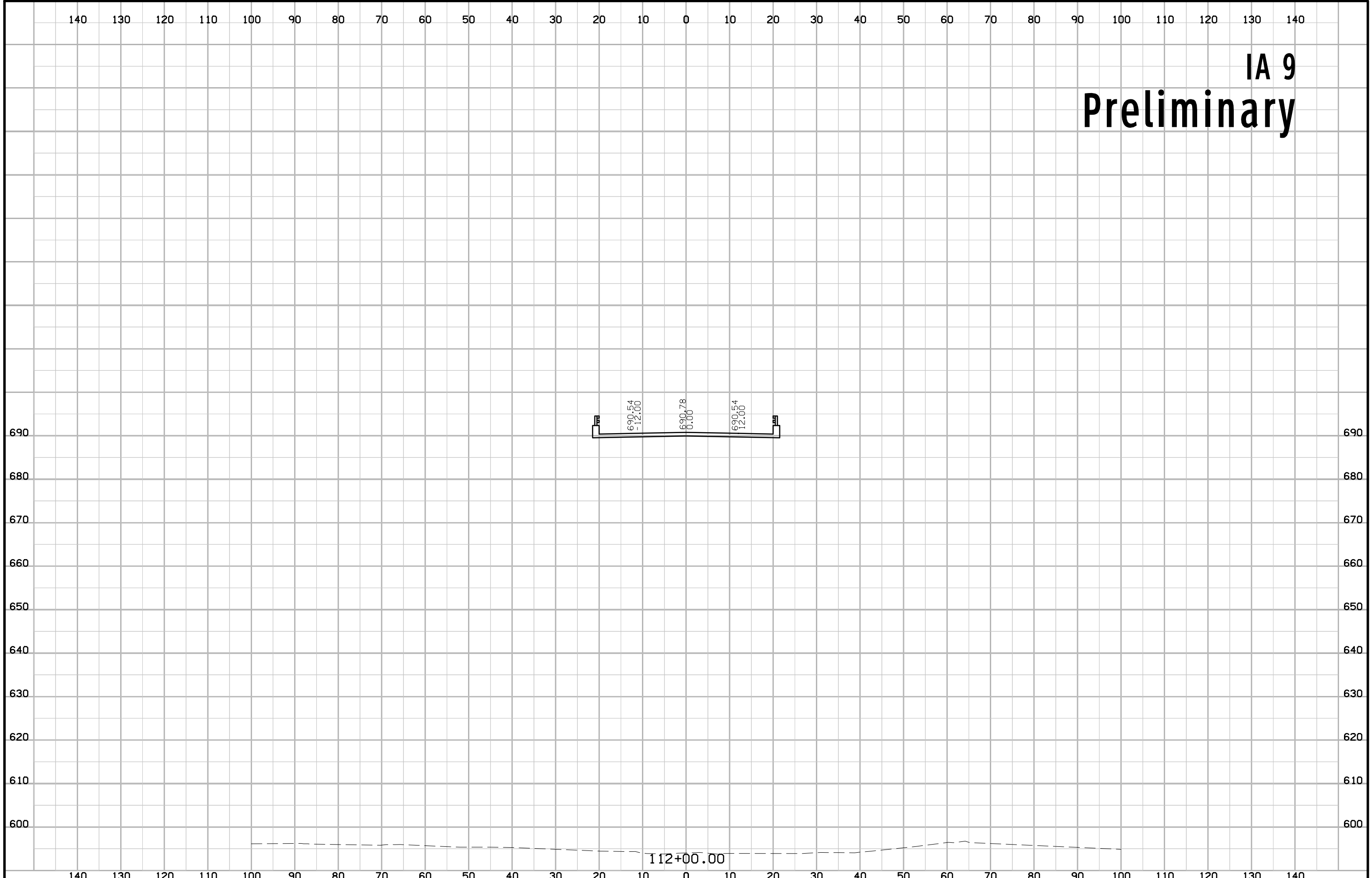


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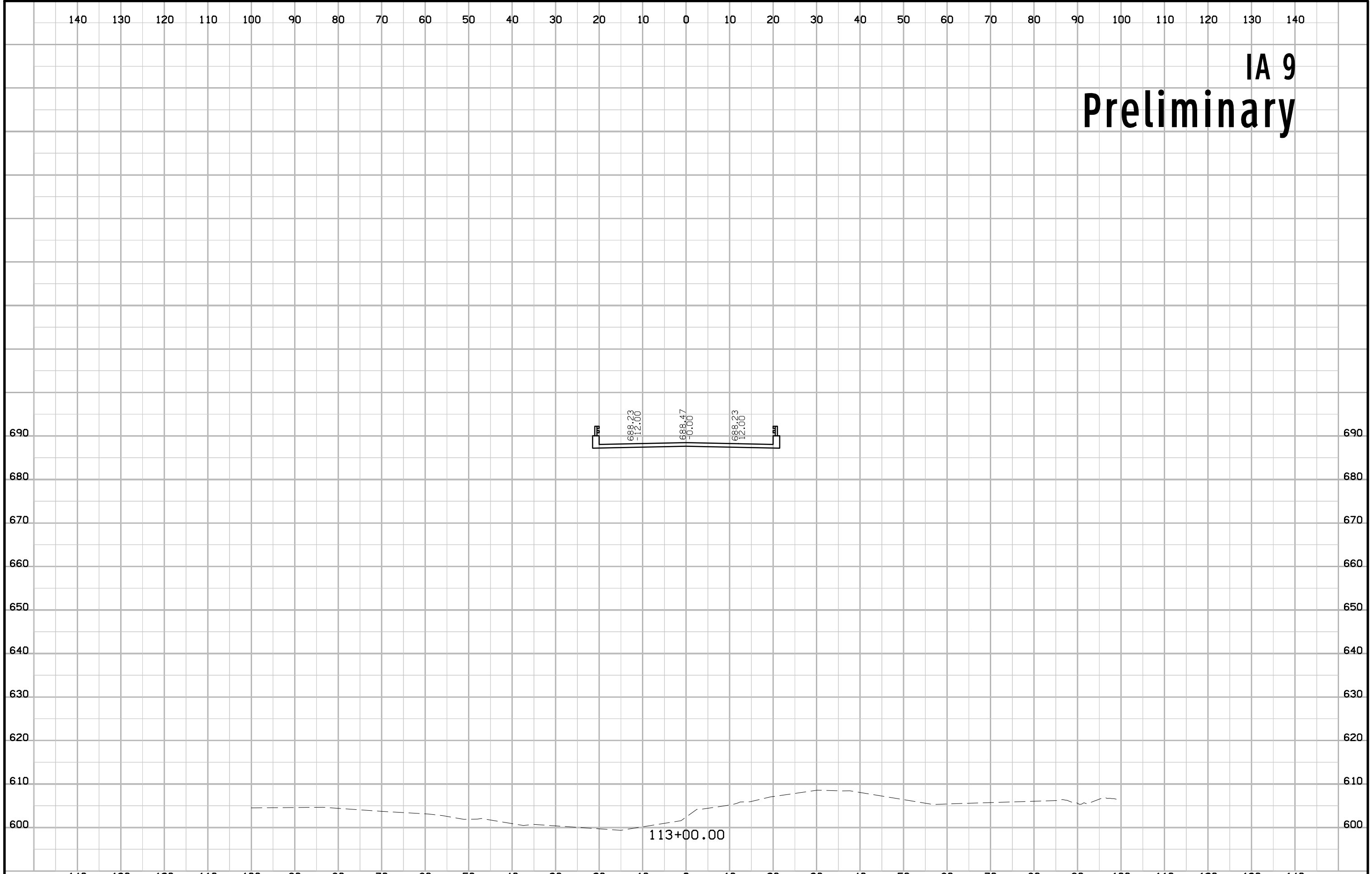


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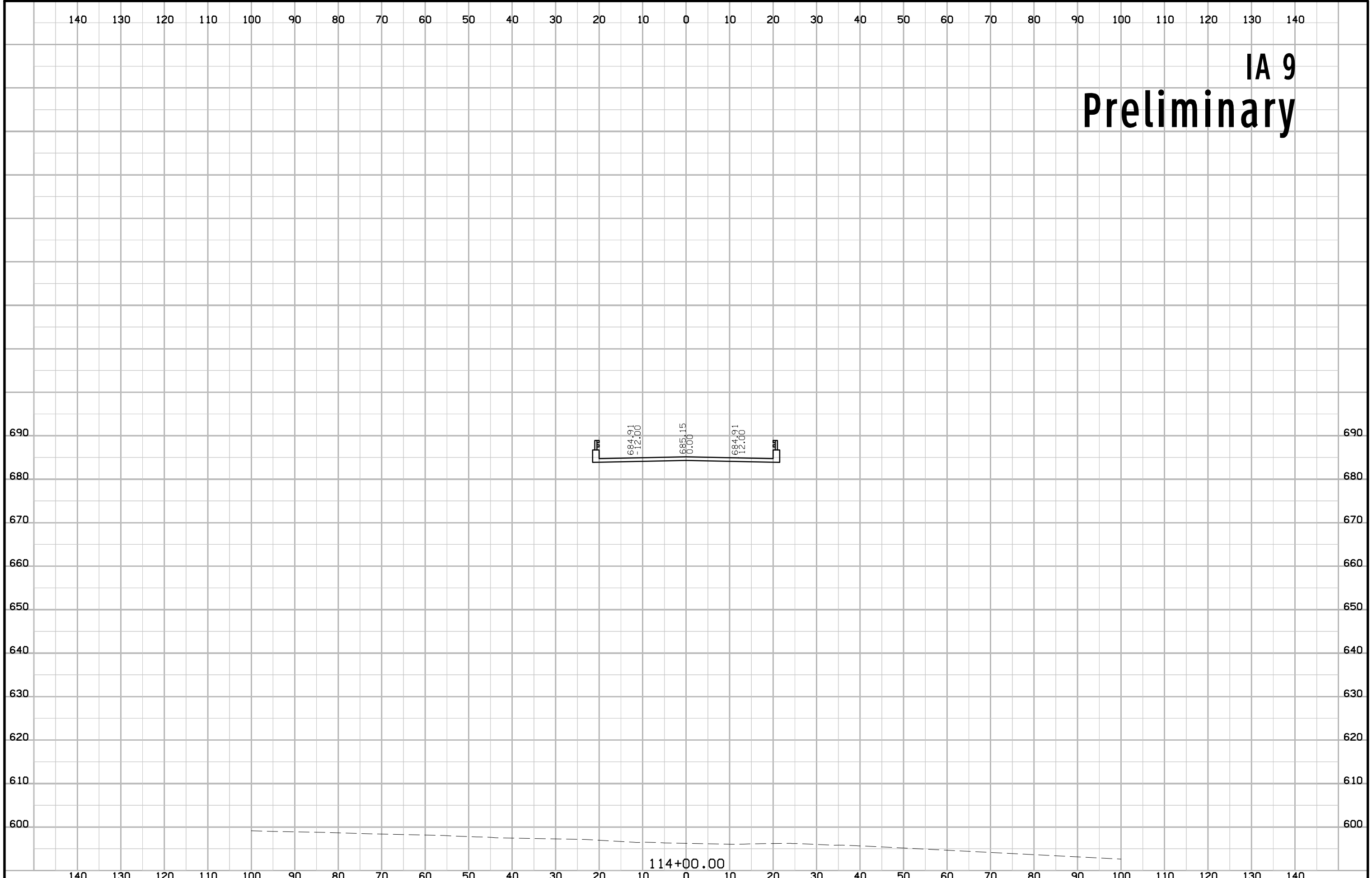
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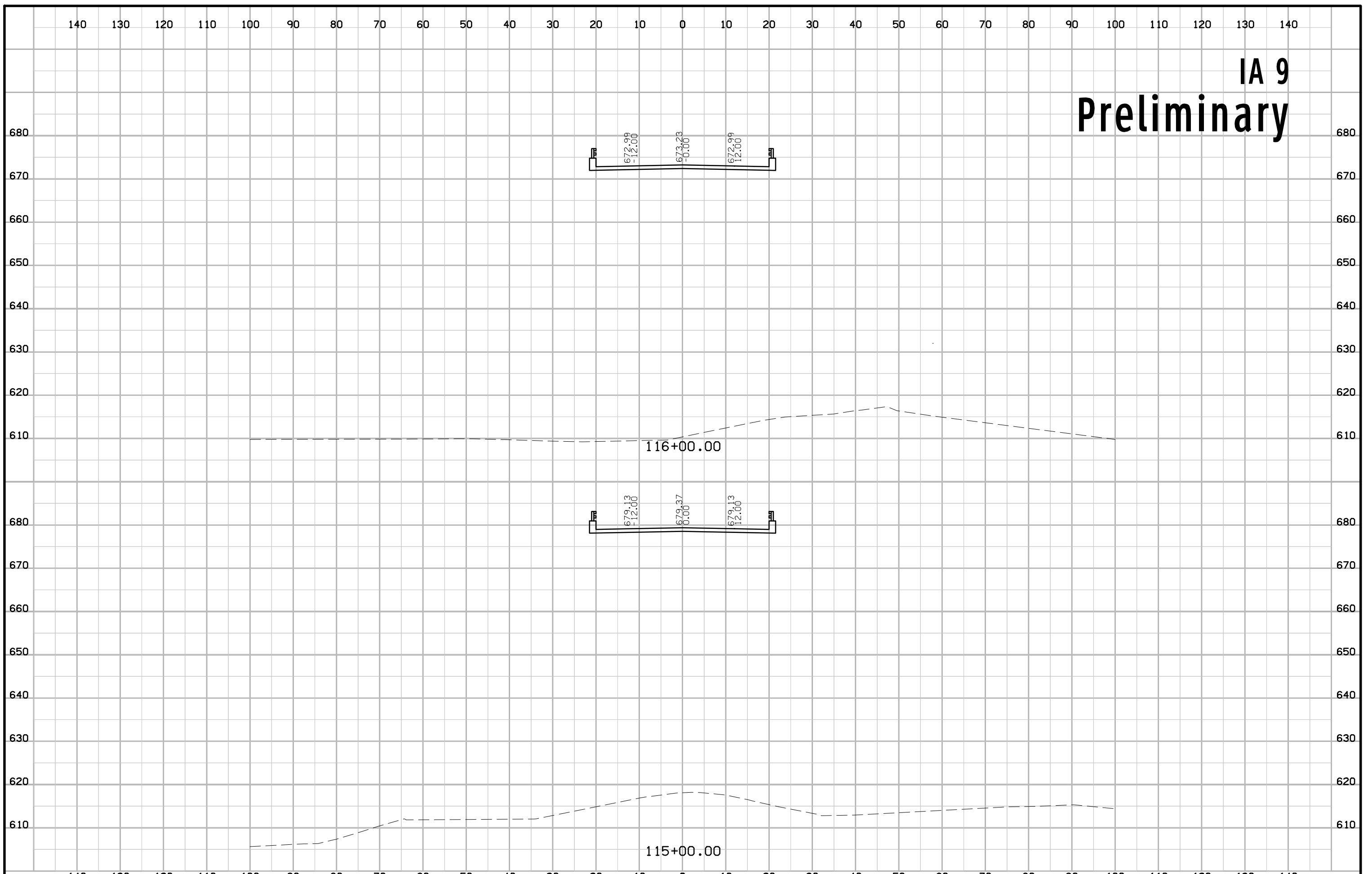
# IA 9 Preliminary



# IA 9 Preliminary

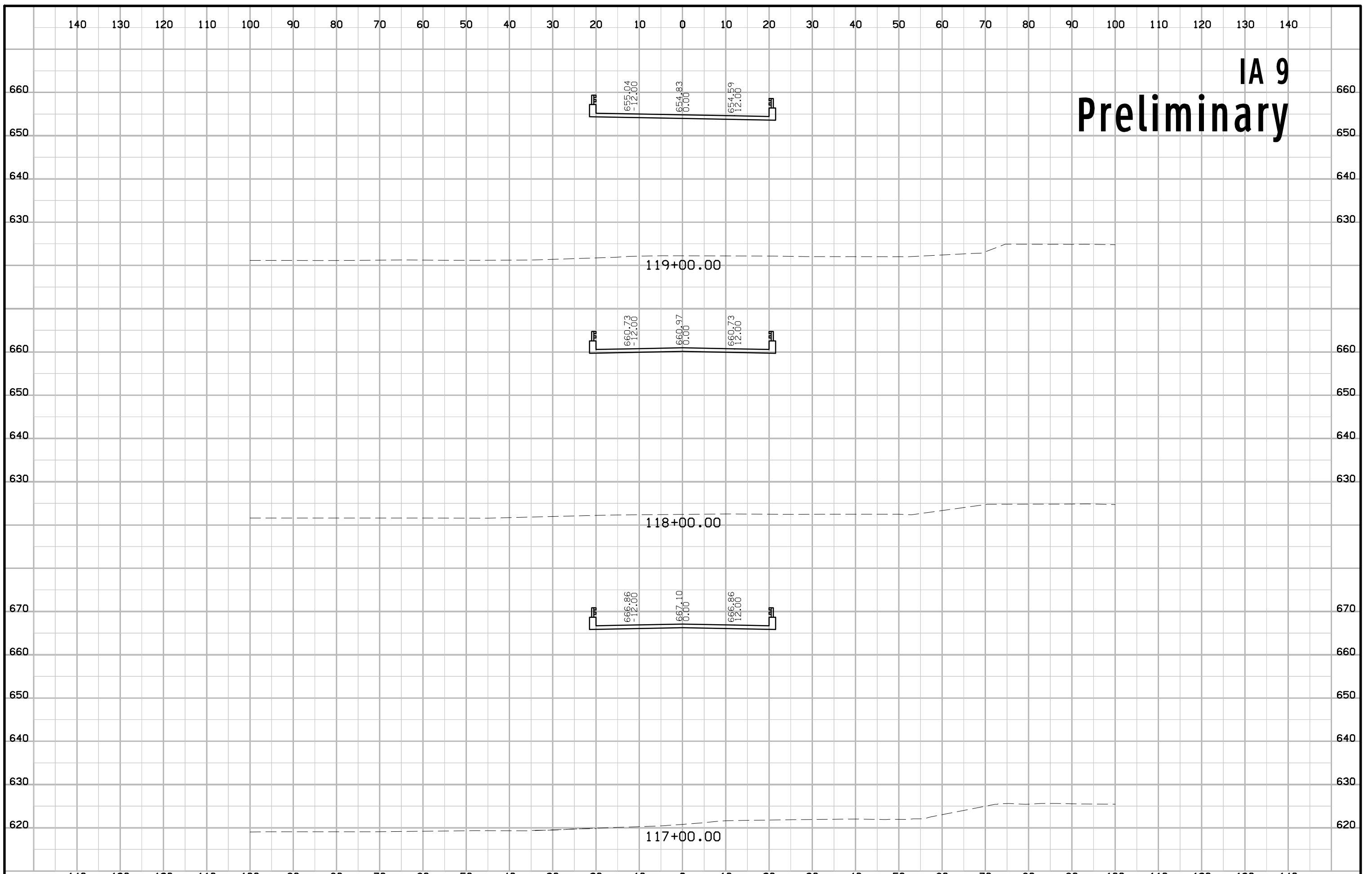


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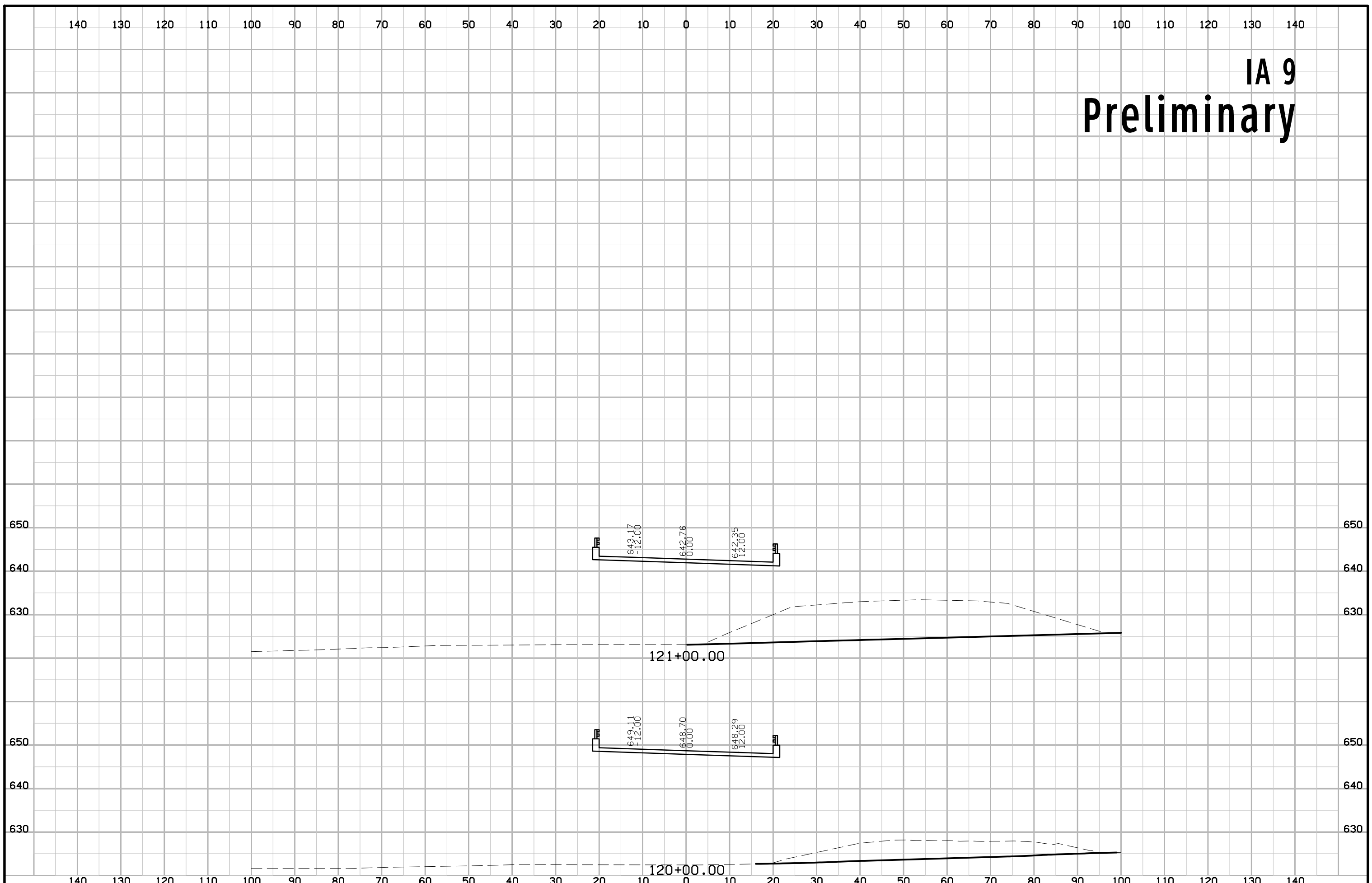




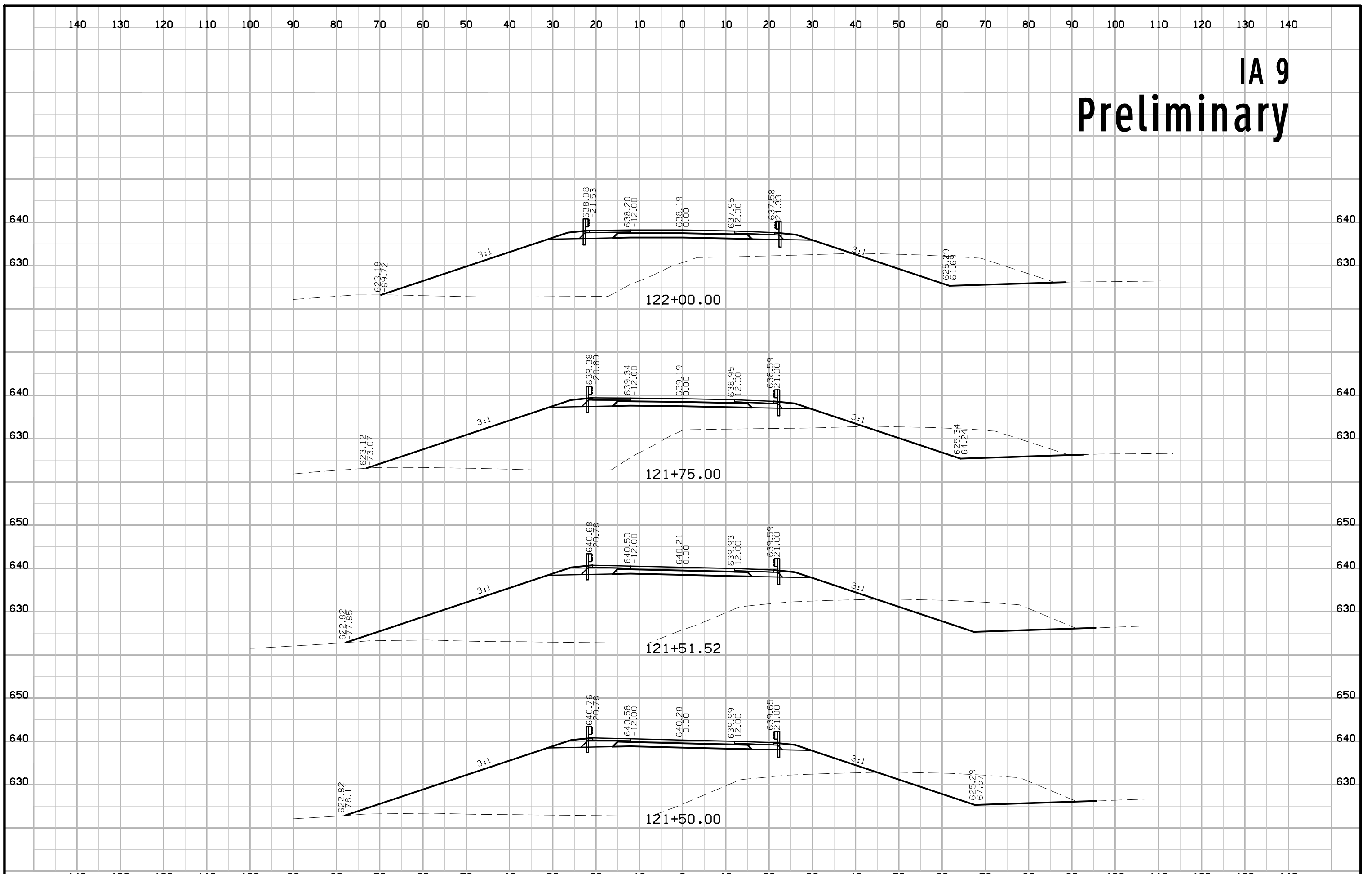
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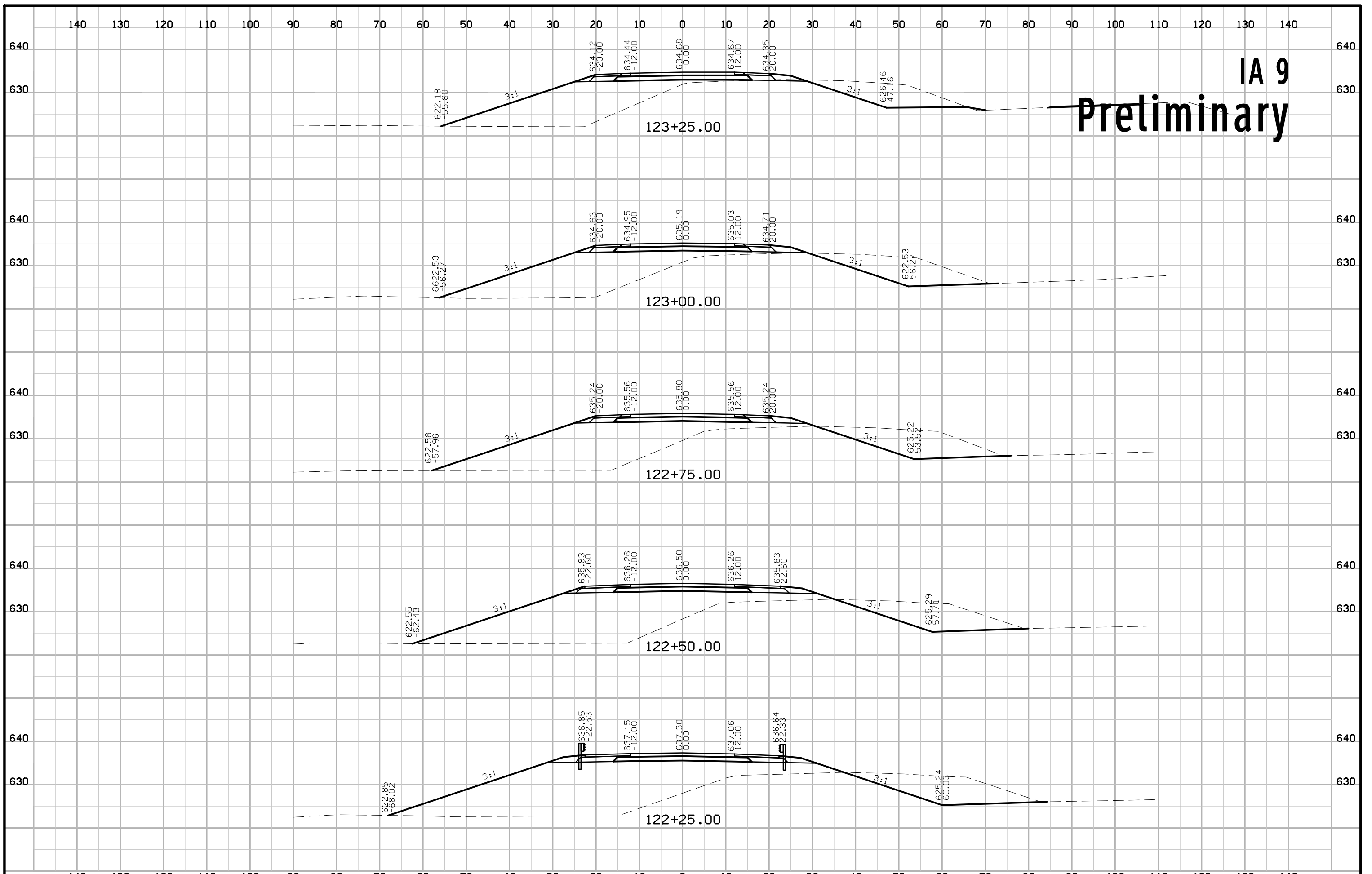
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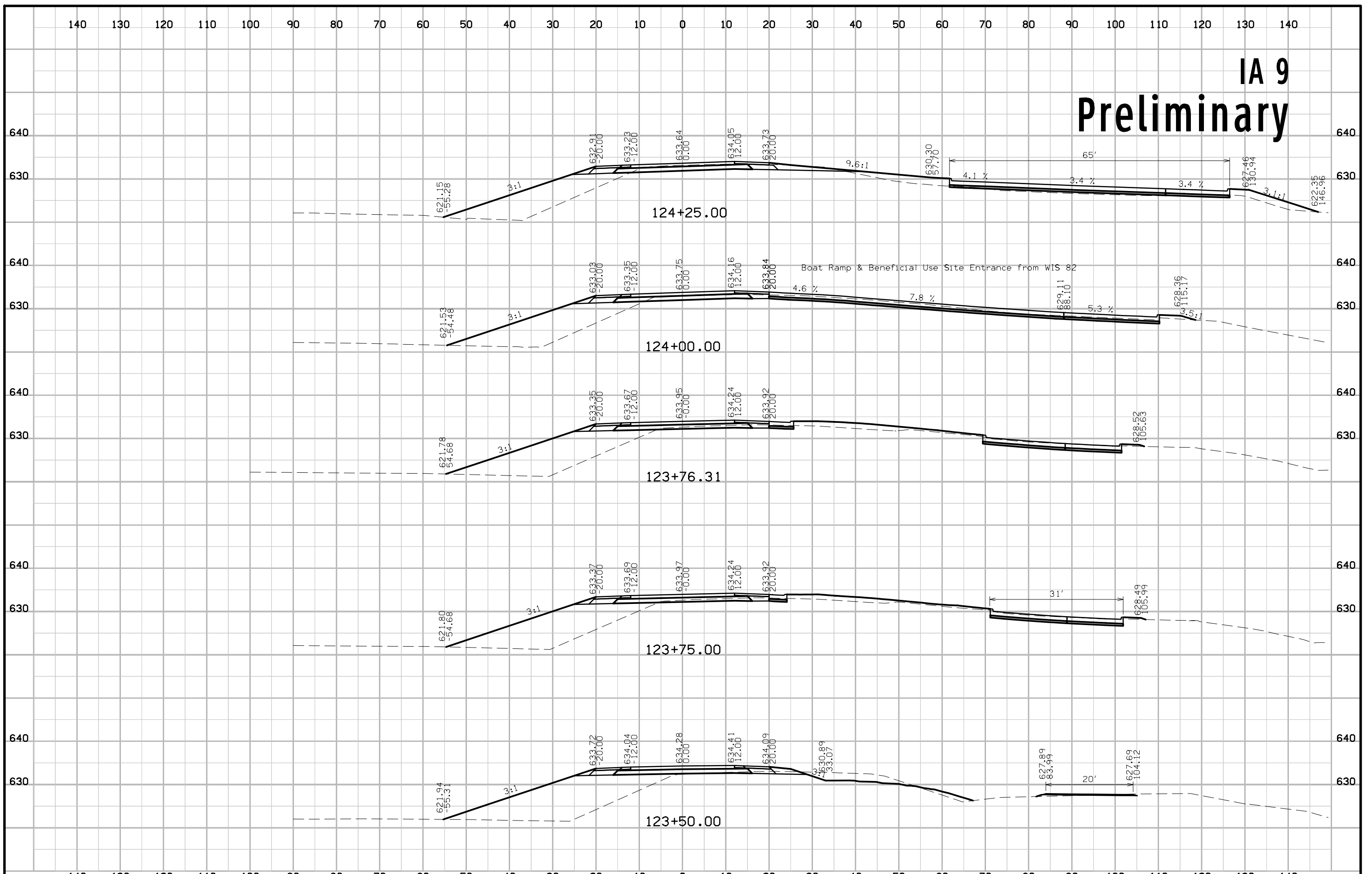
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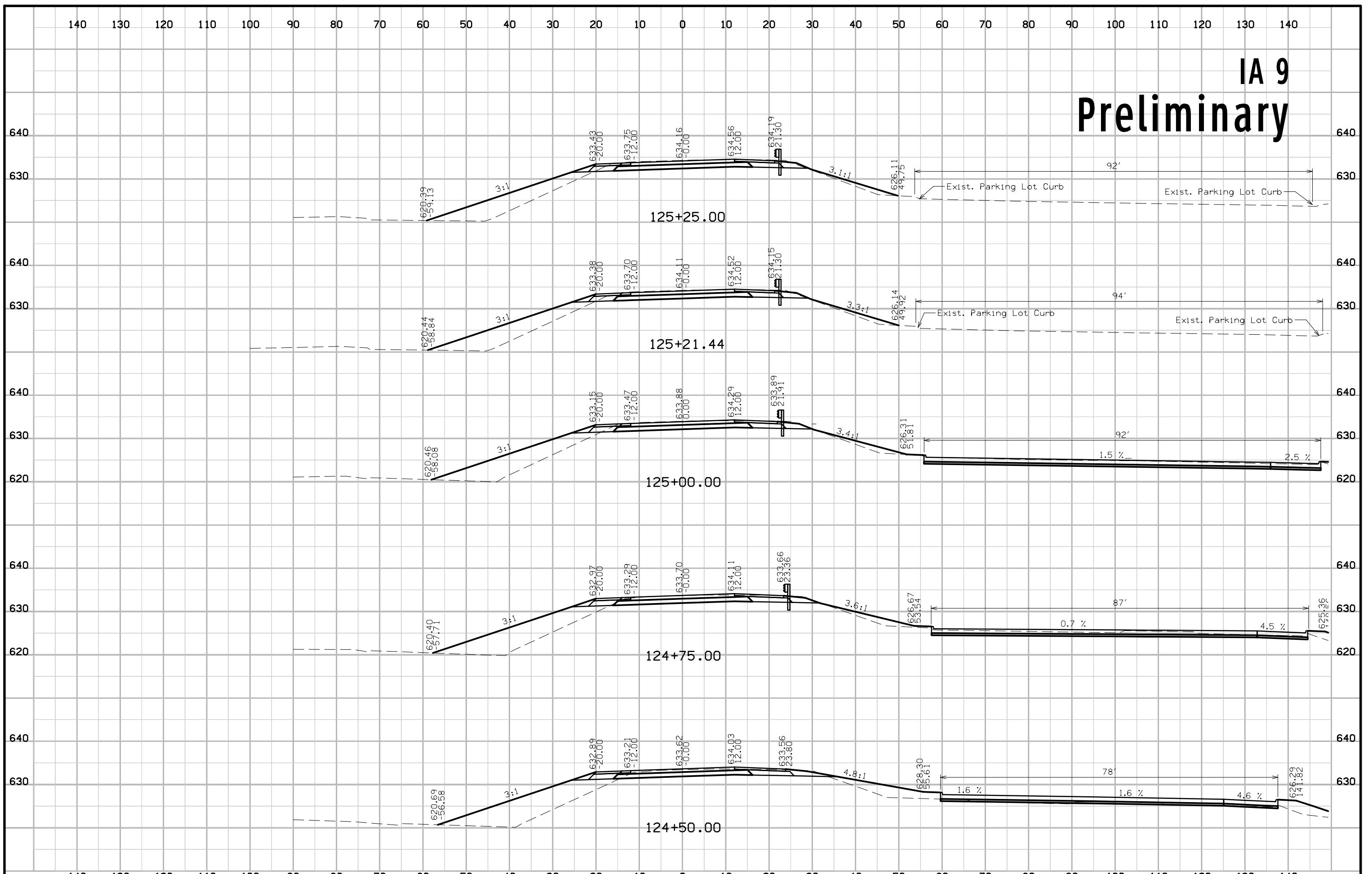
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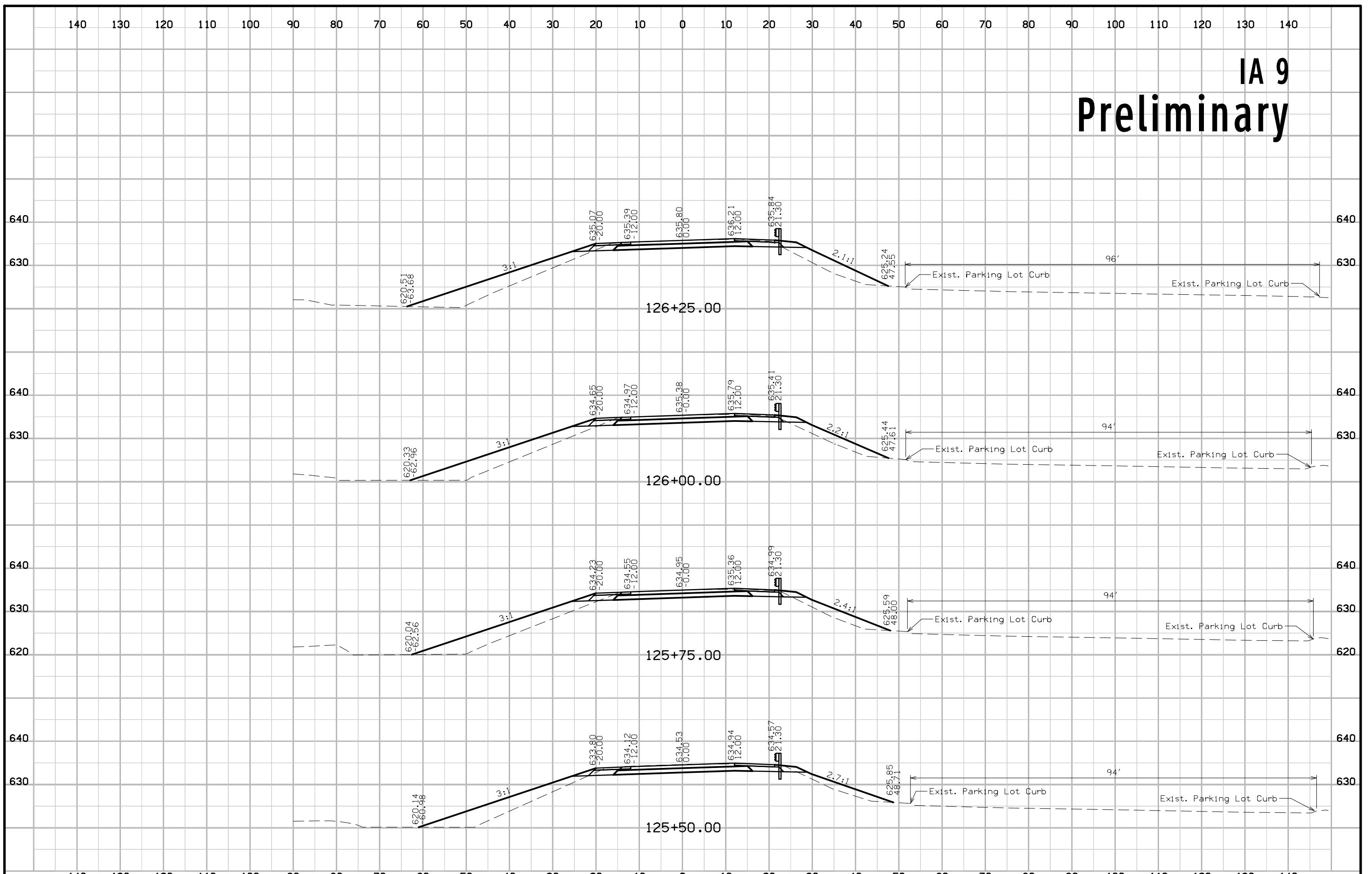
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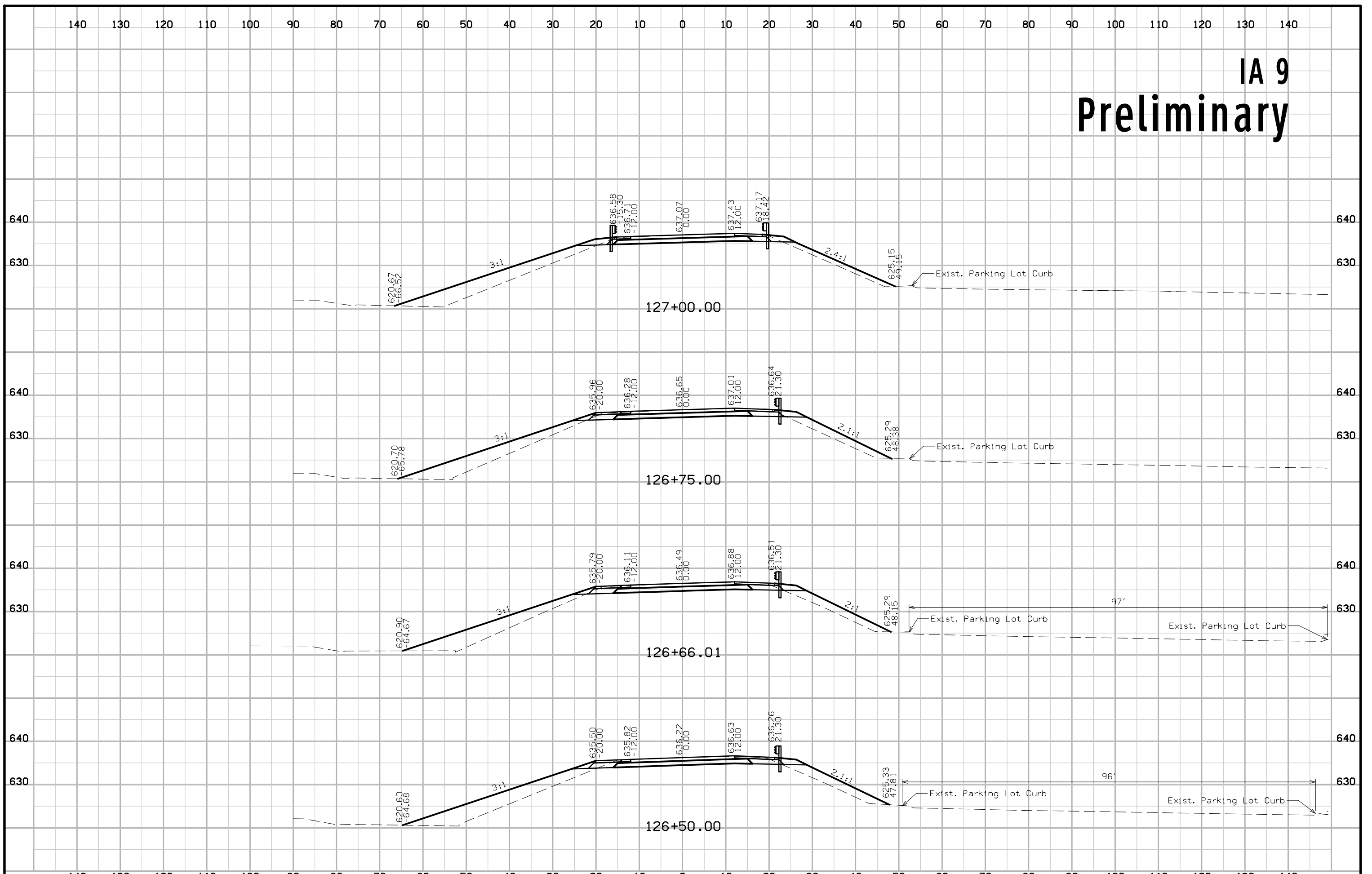
# IA 9 Preliminary



# IA 9 Preliminary

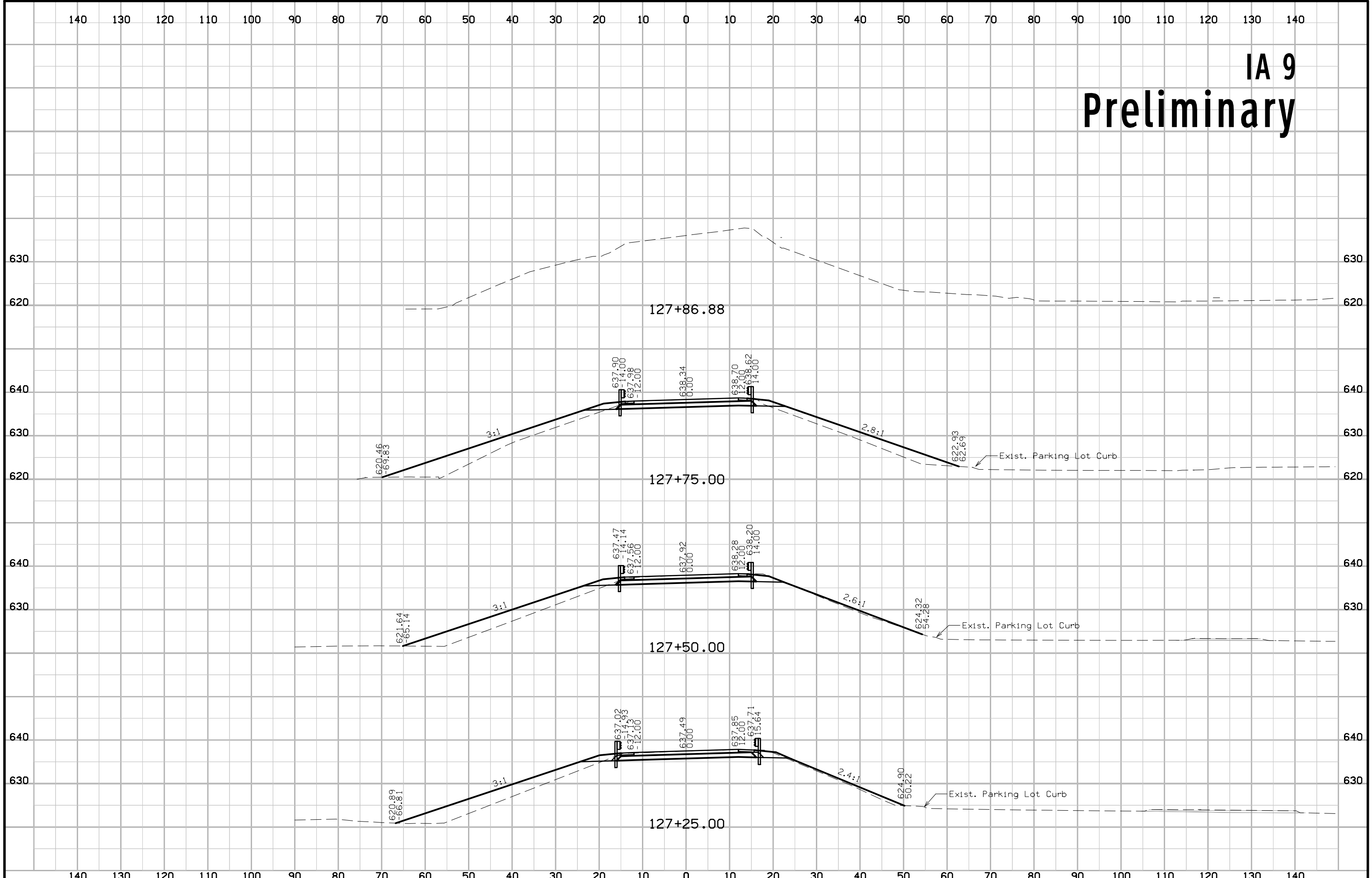


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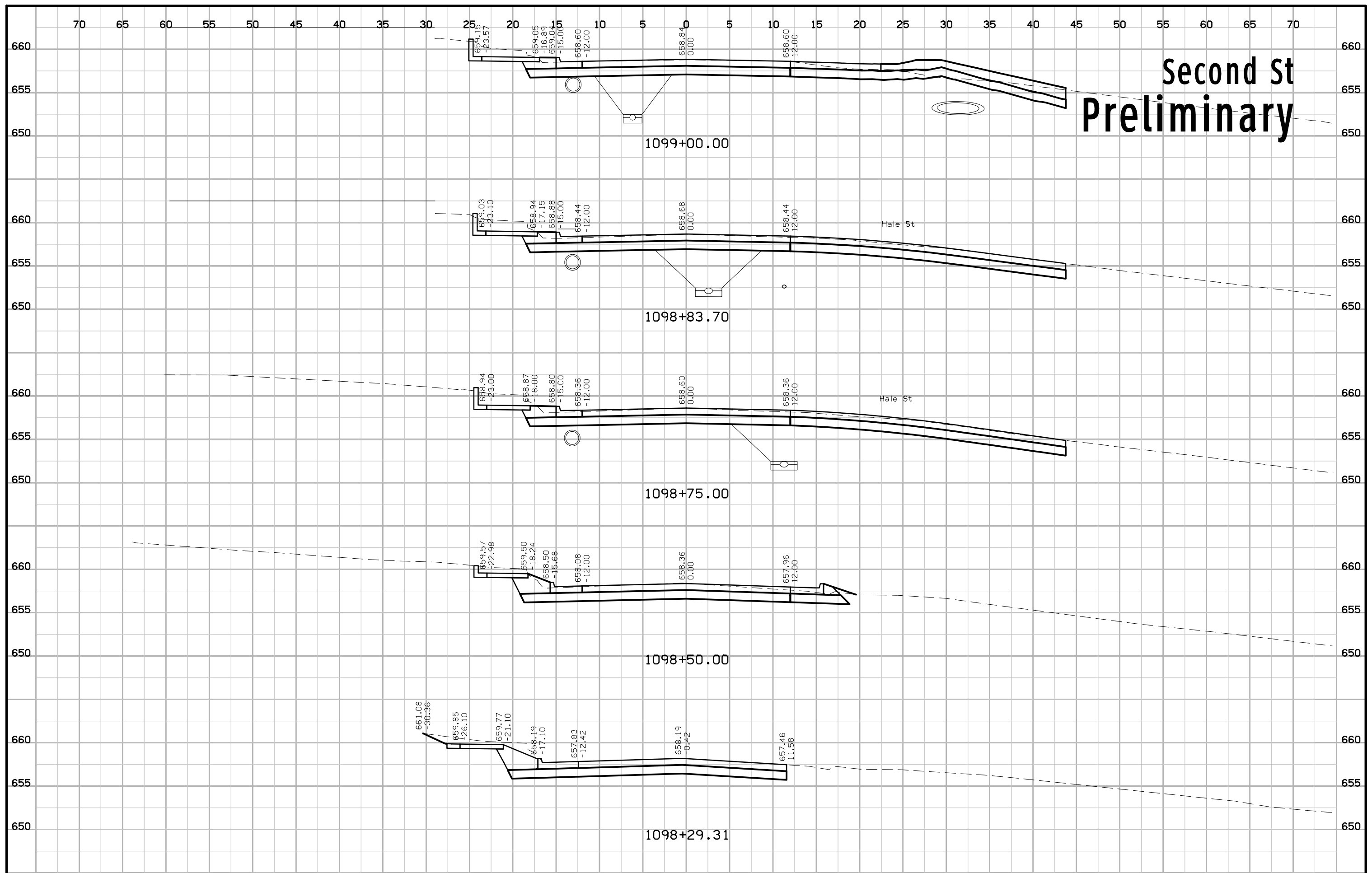




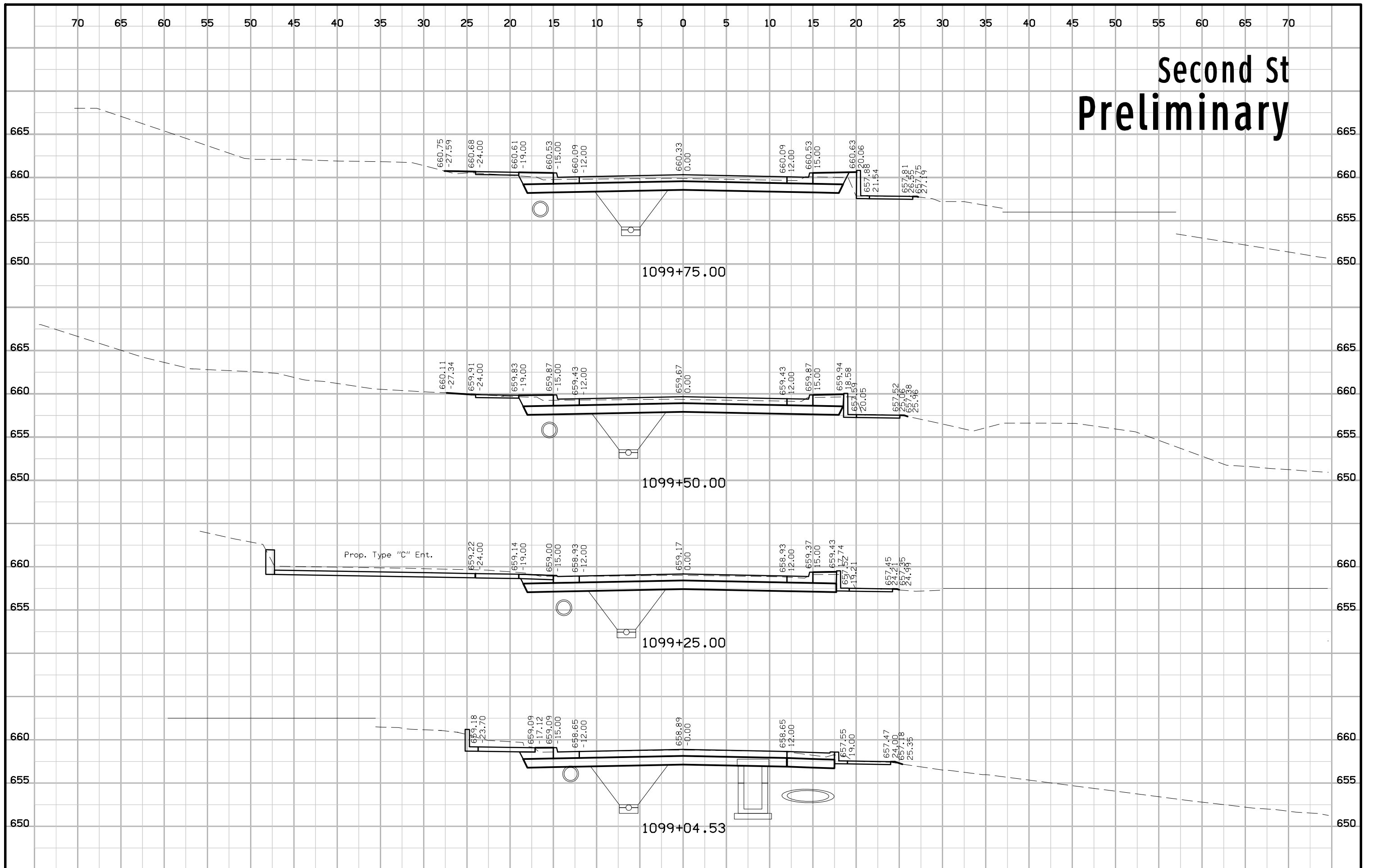
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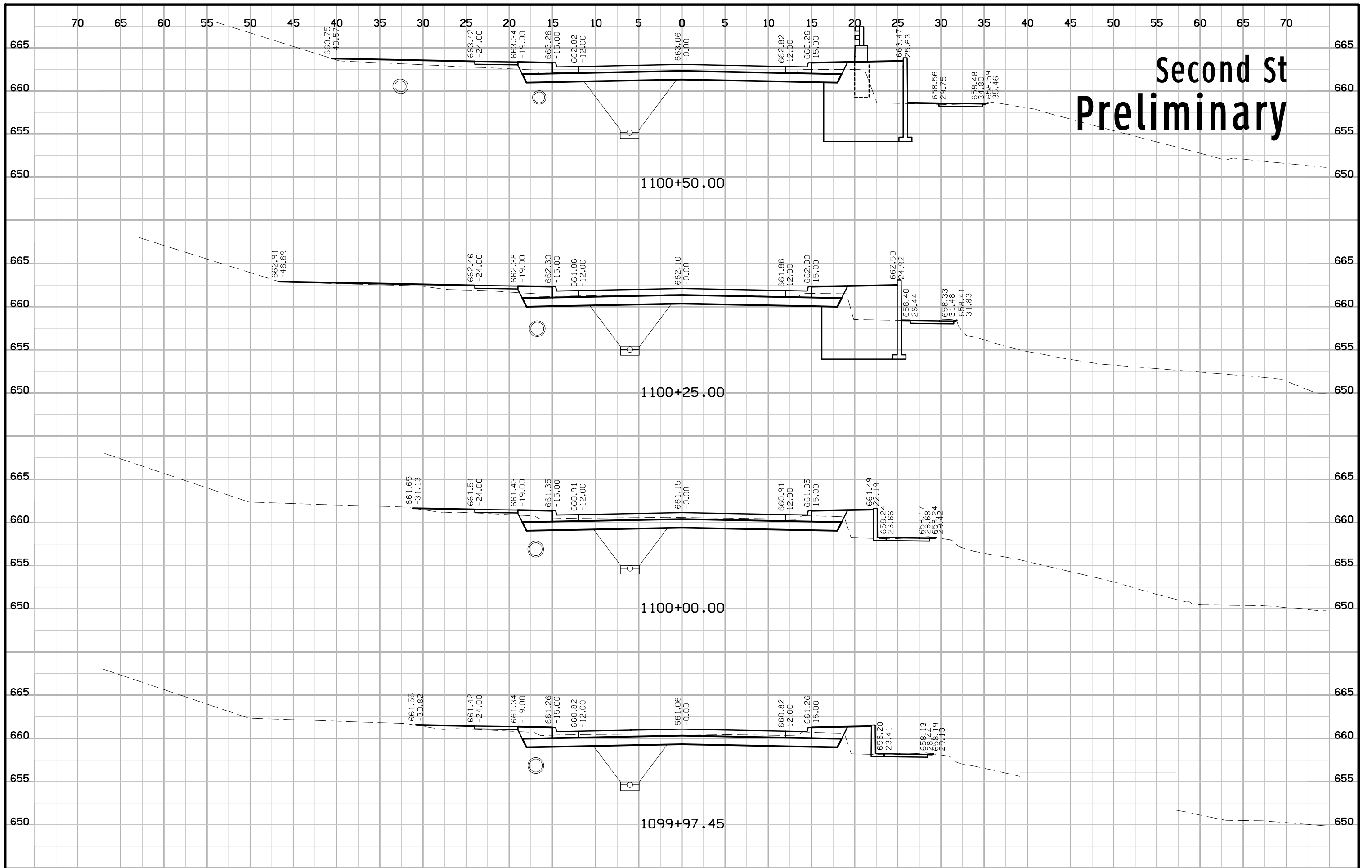
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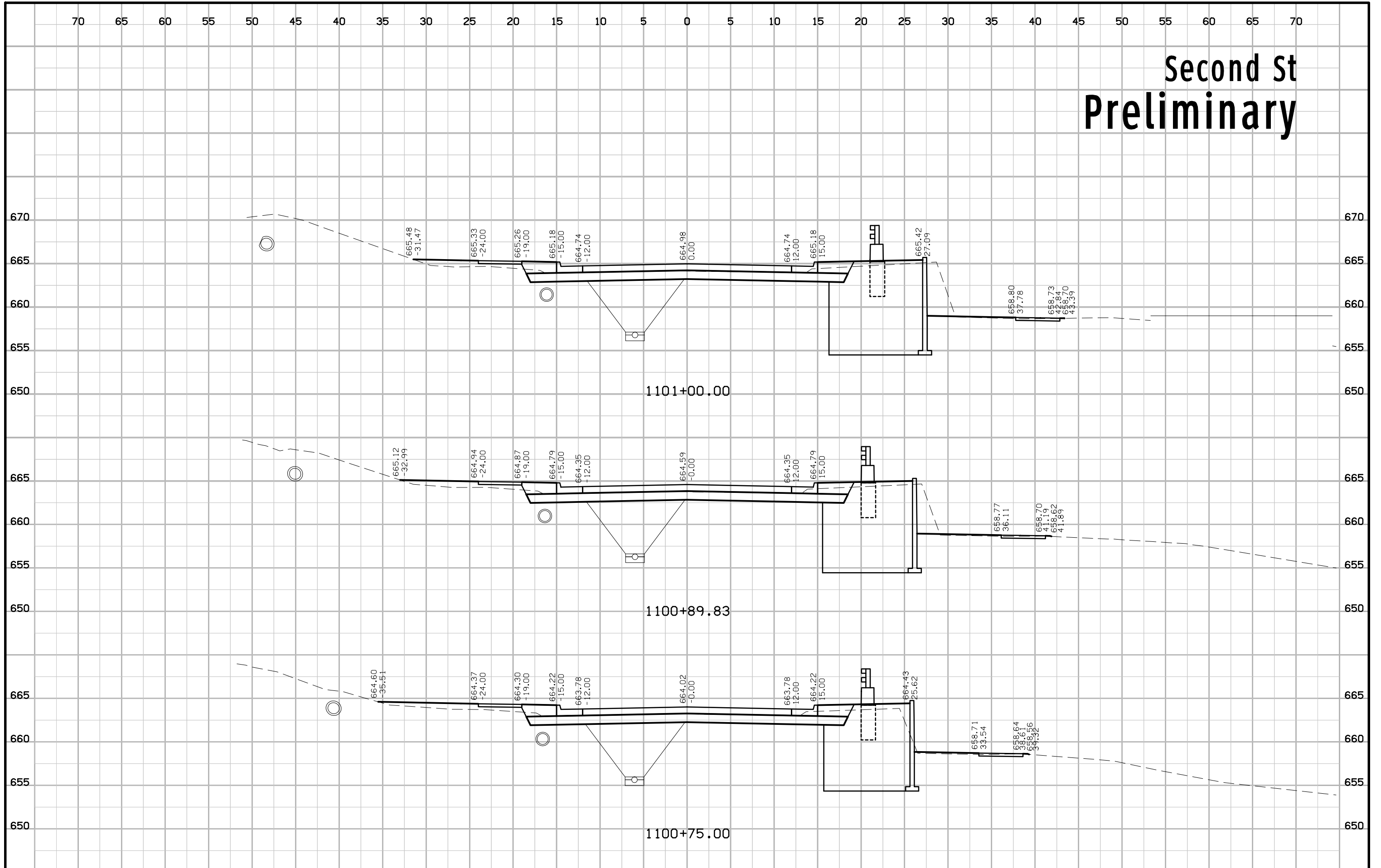
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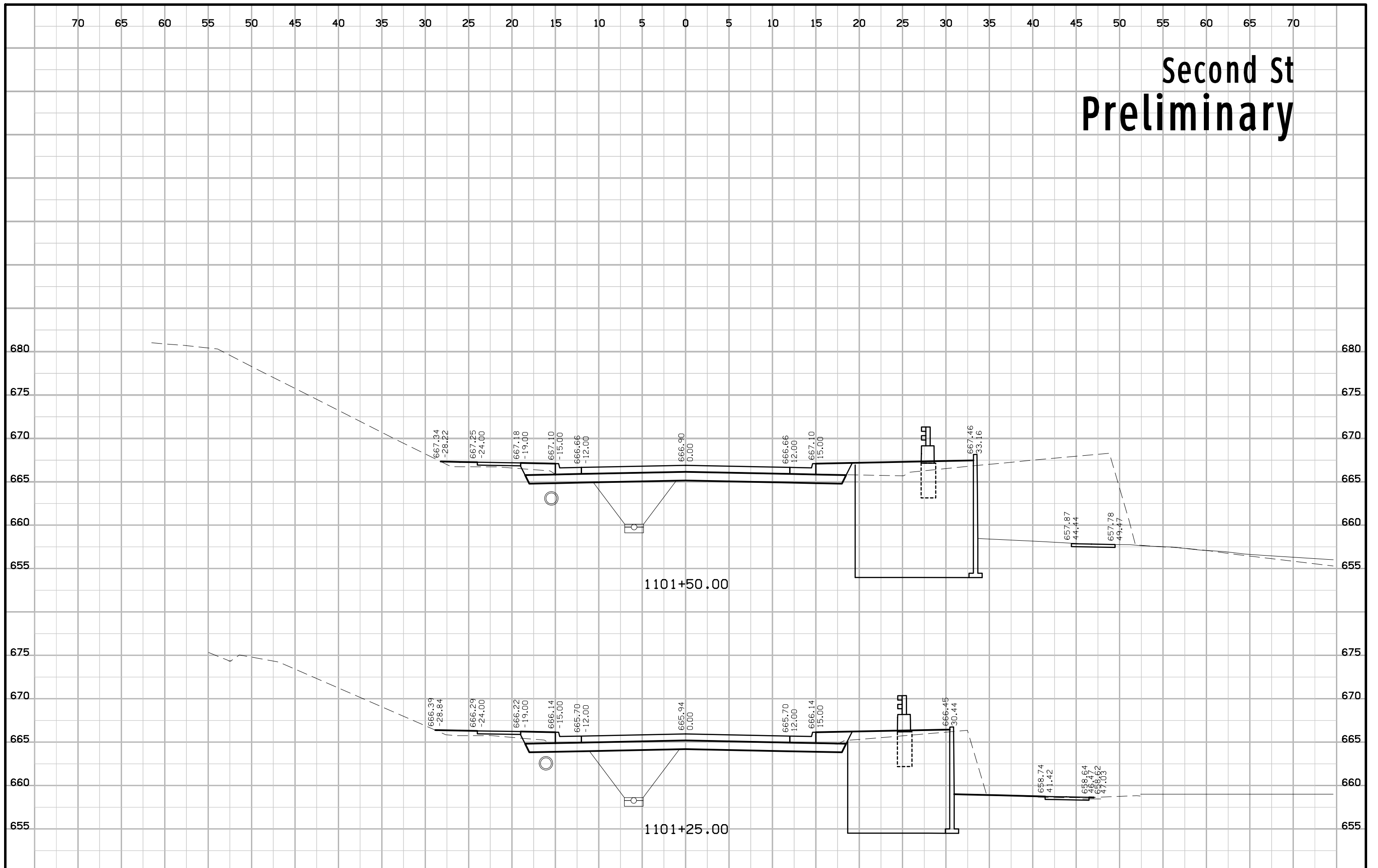
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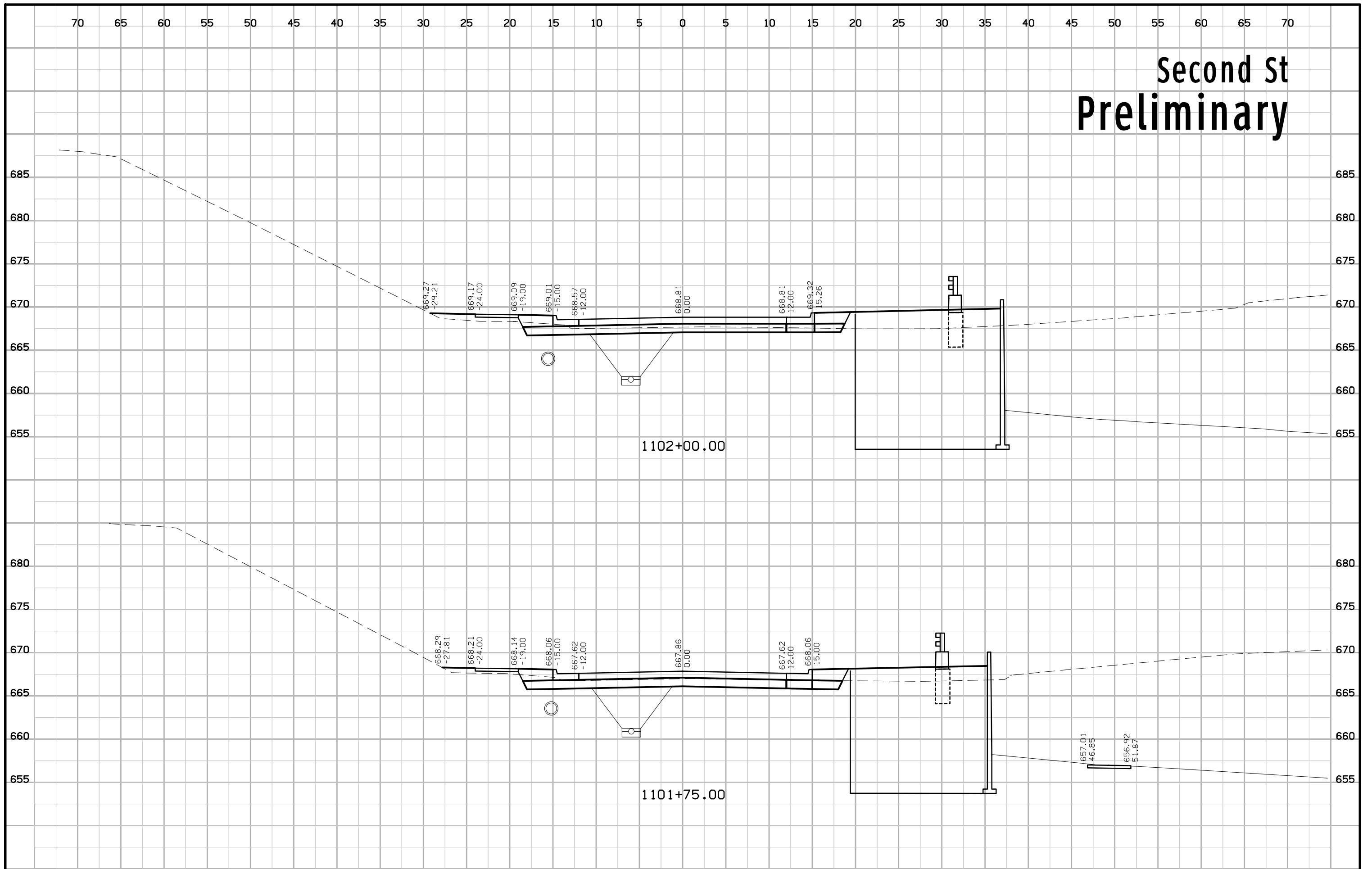
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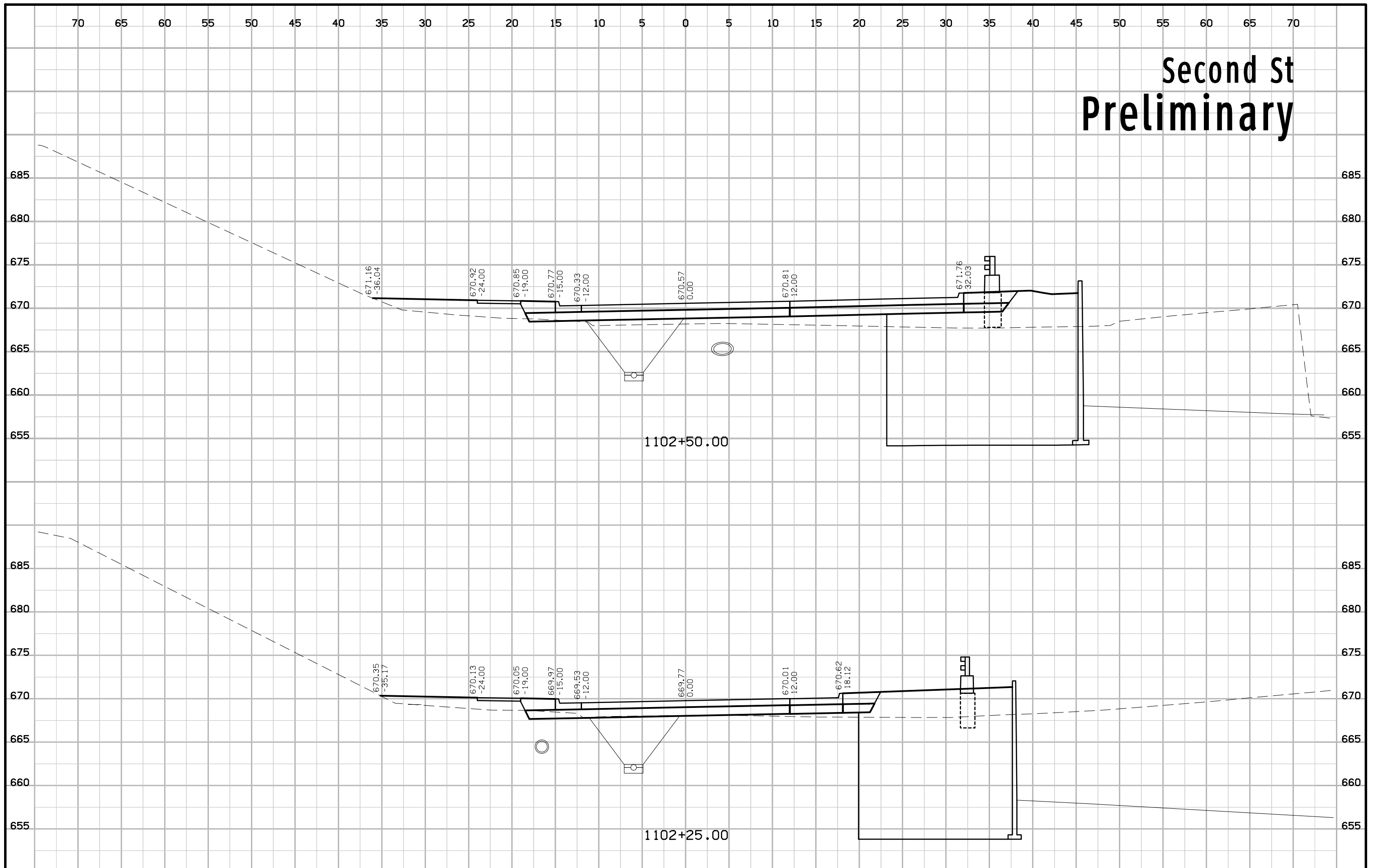
# Second St Preliminary



# Second St Preliminary

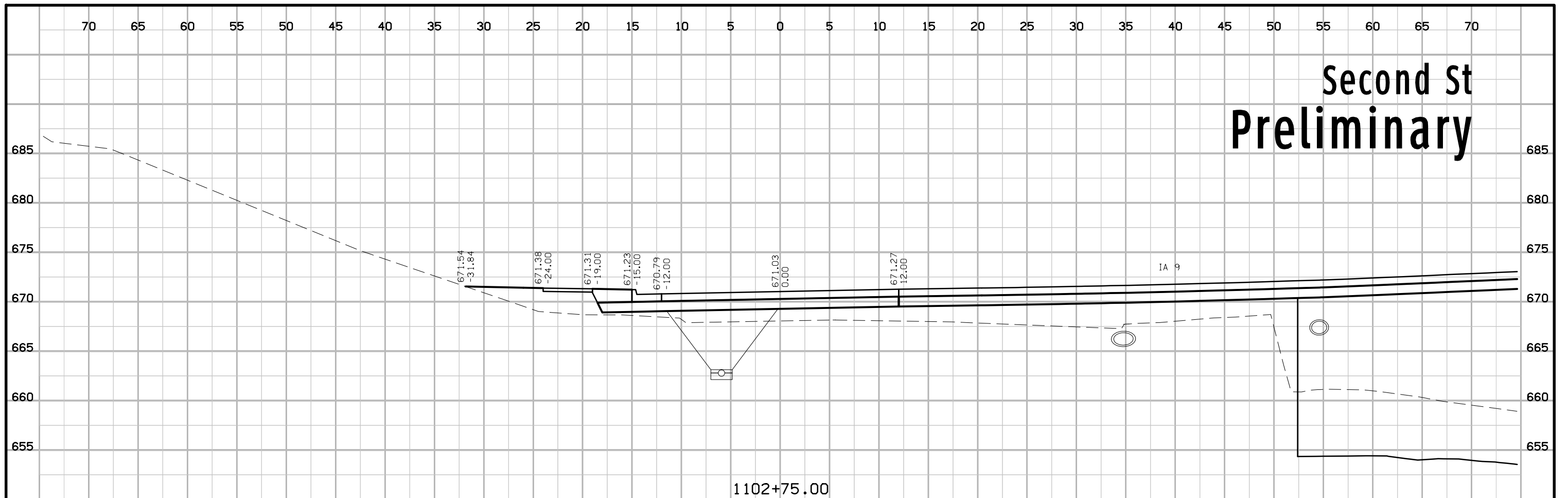


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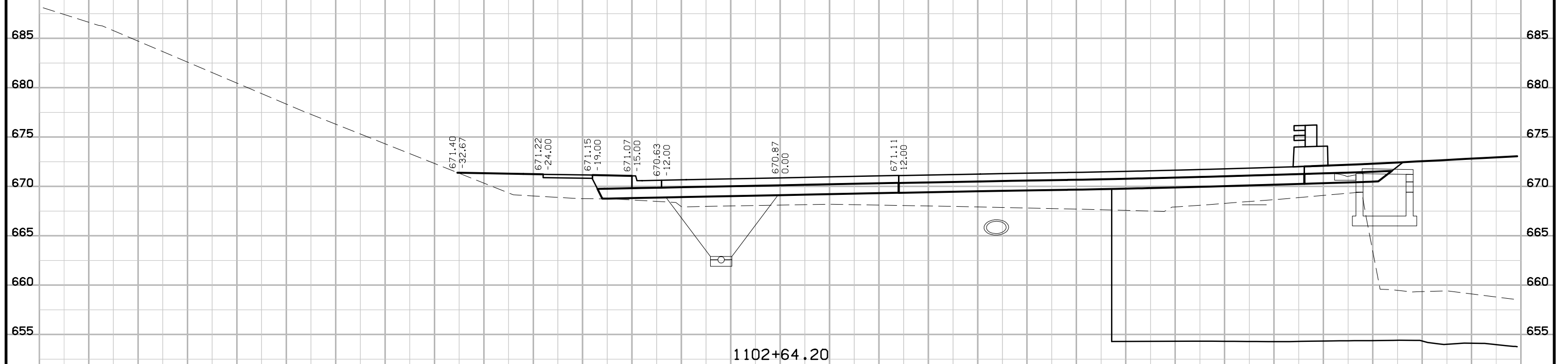




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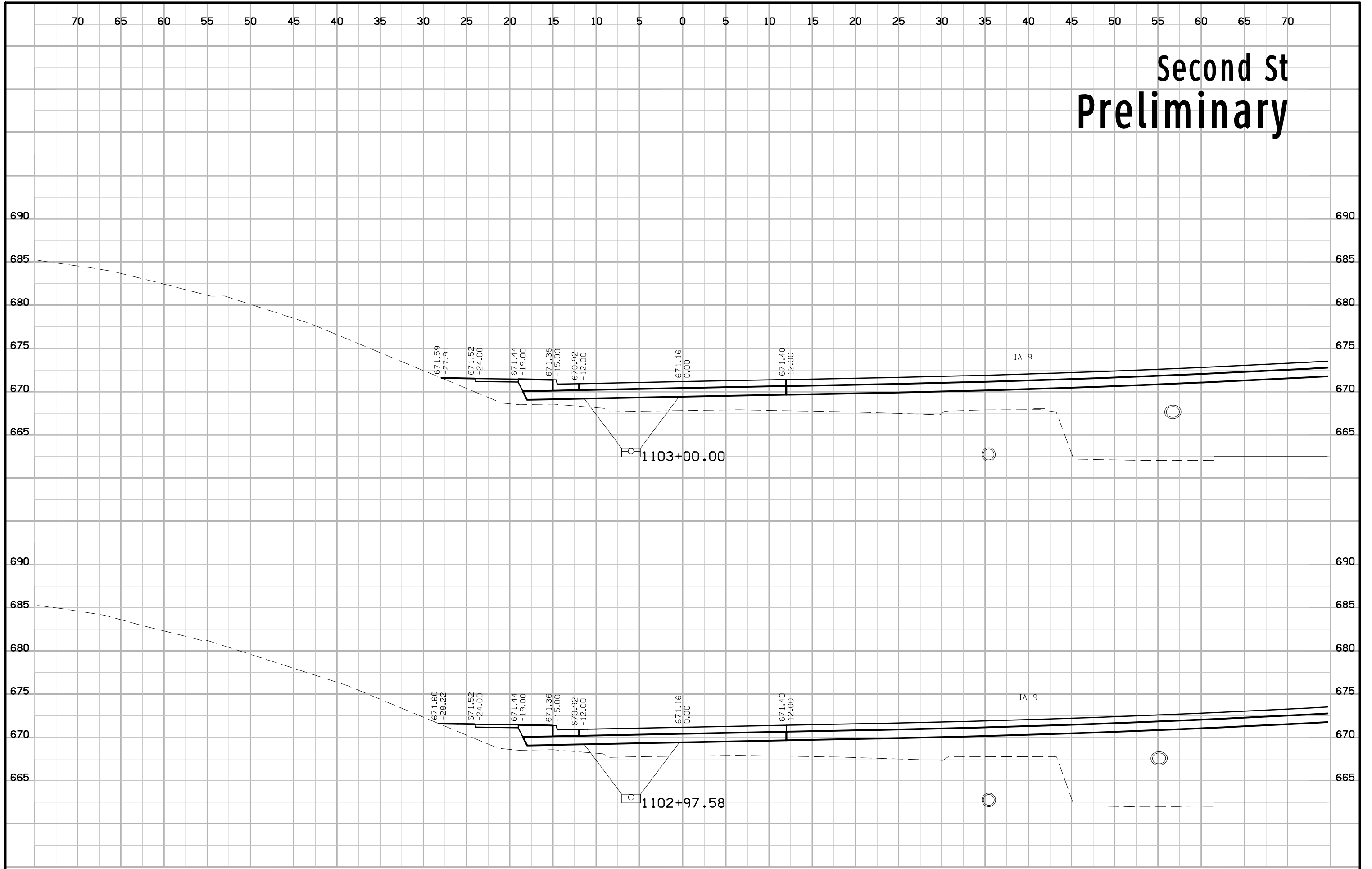


1102+75.00

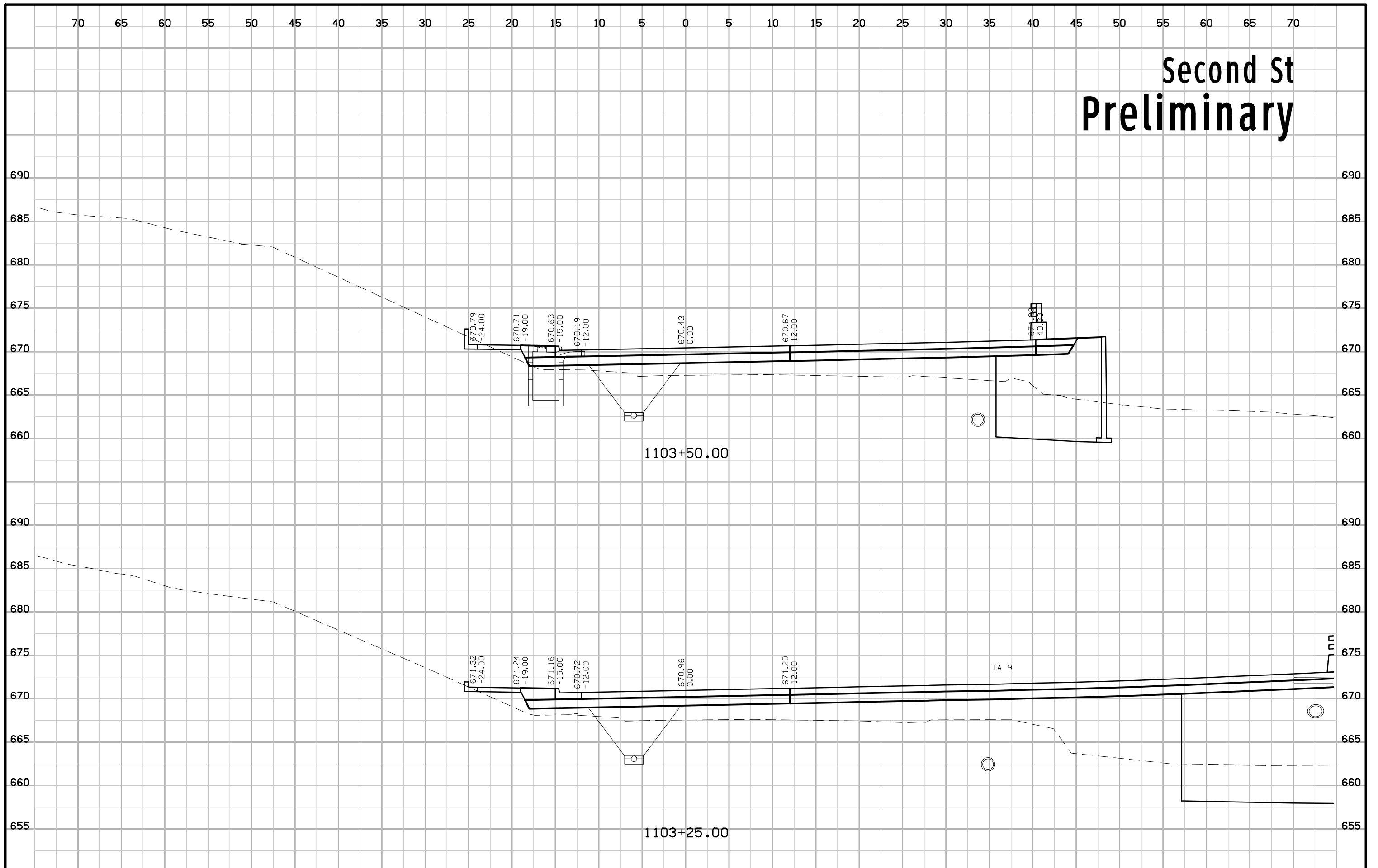


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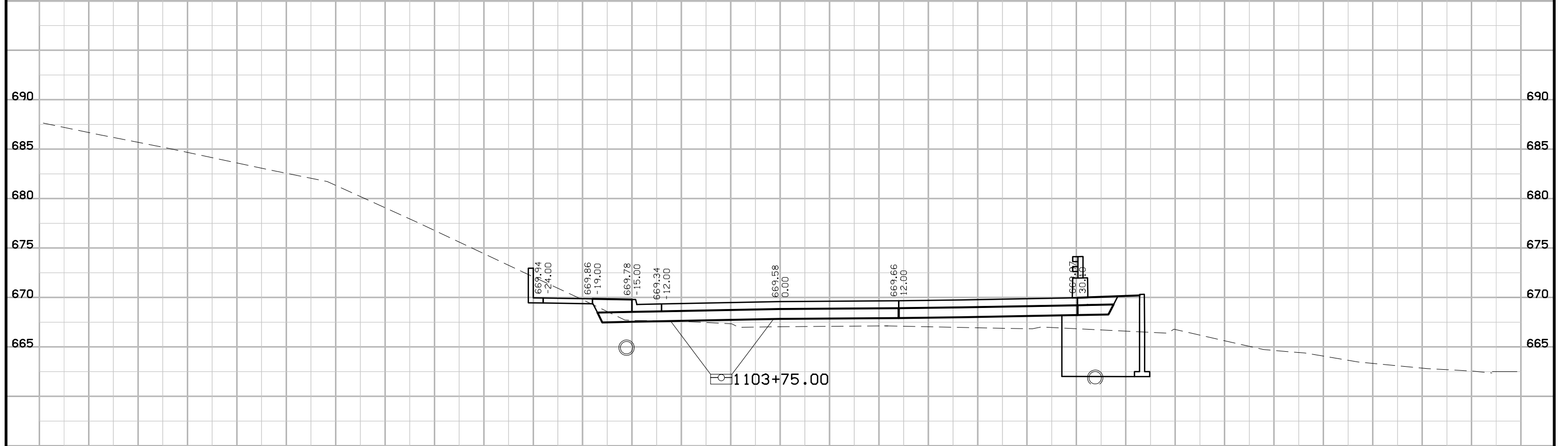
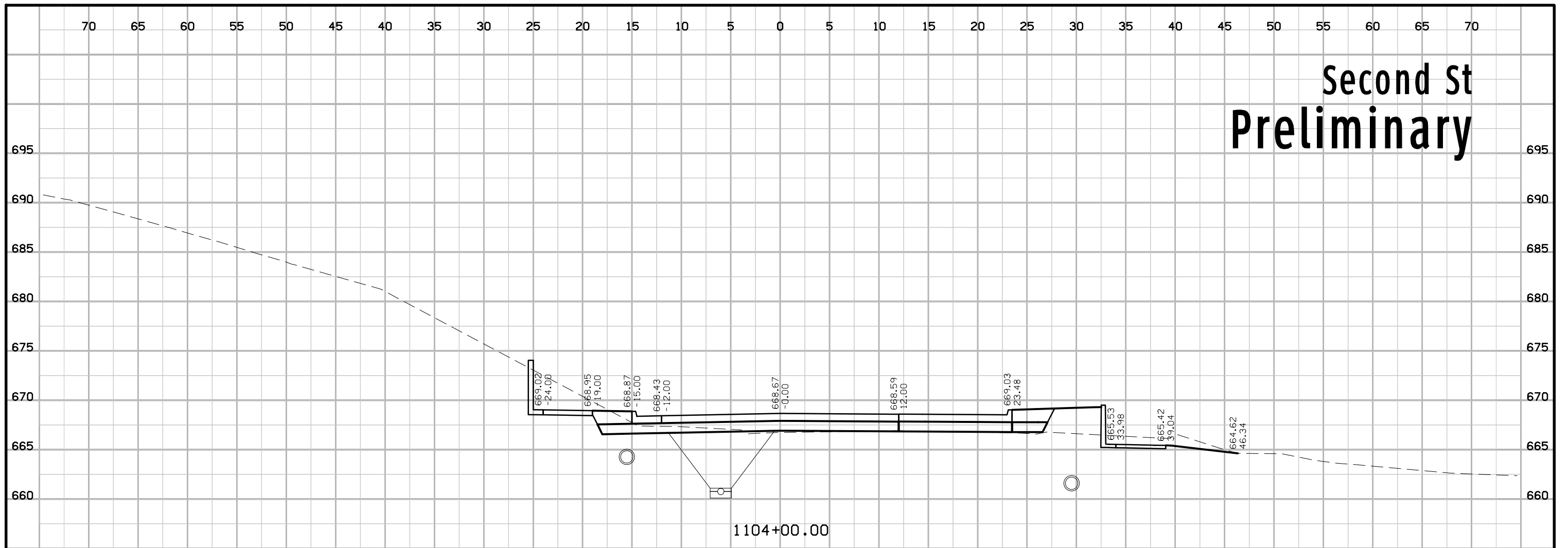
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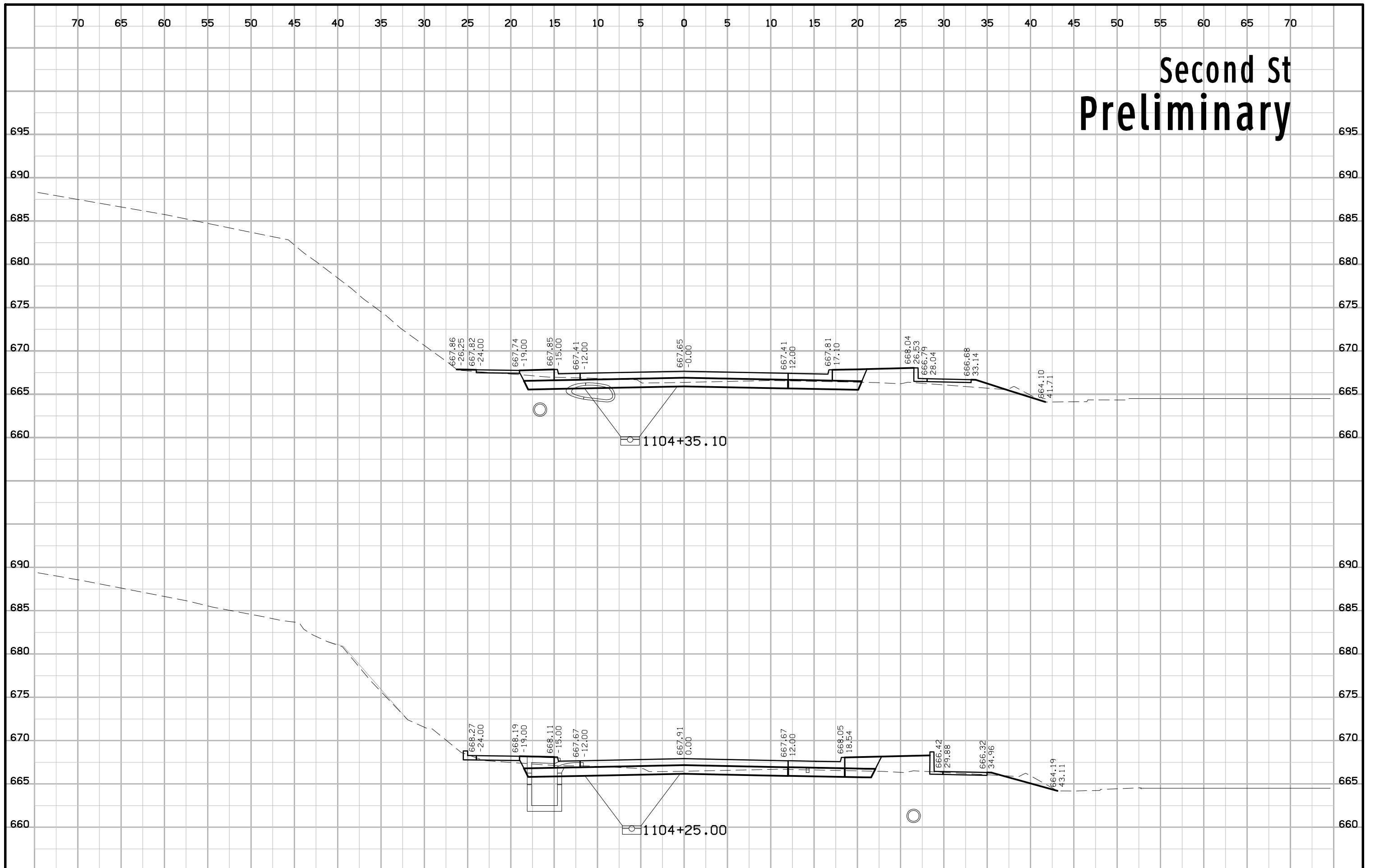
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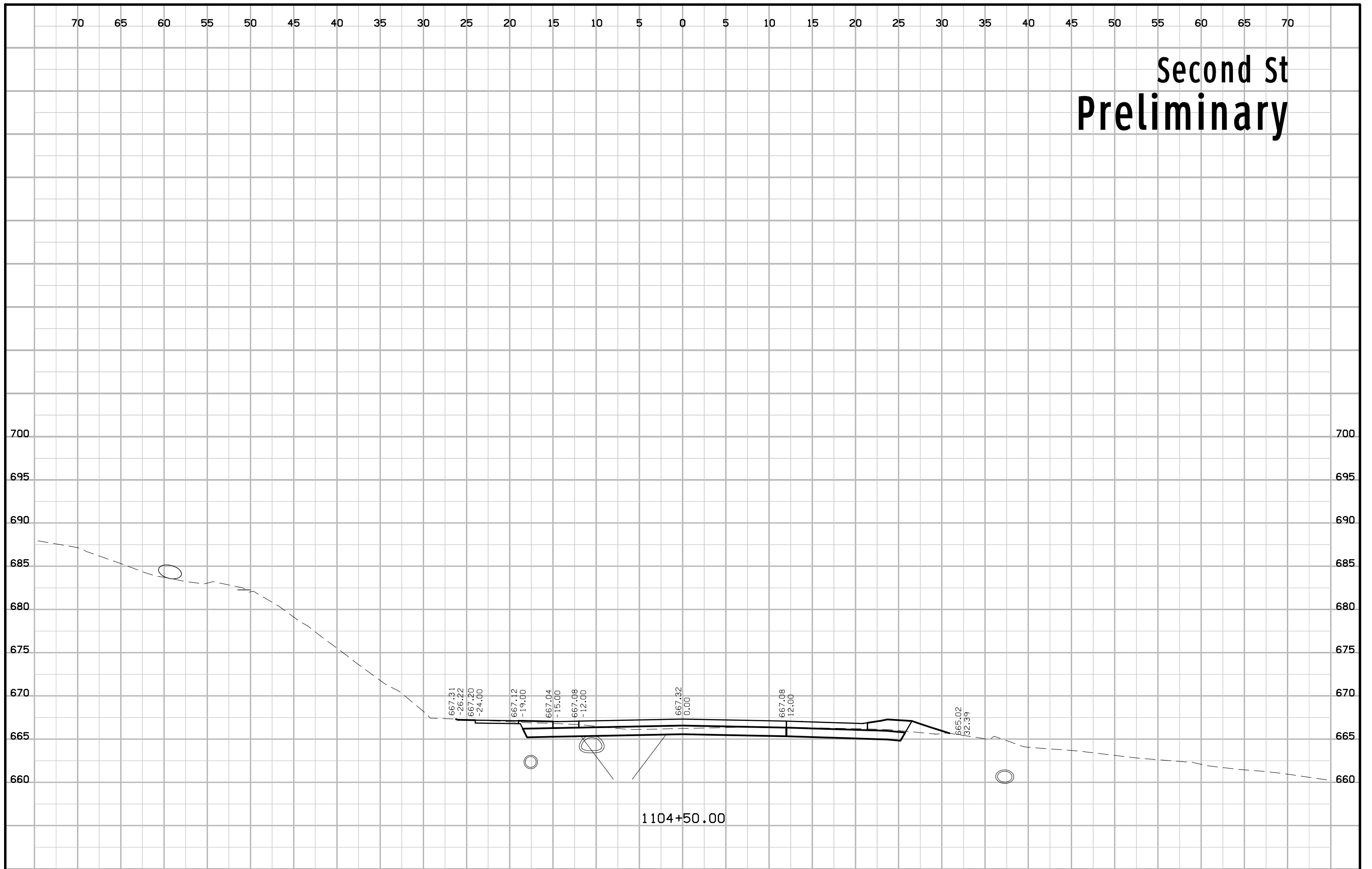
# Second St Preliminary



# Second St Preliminary

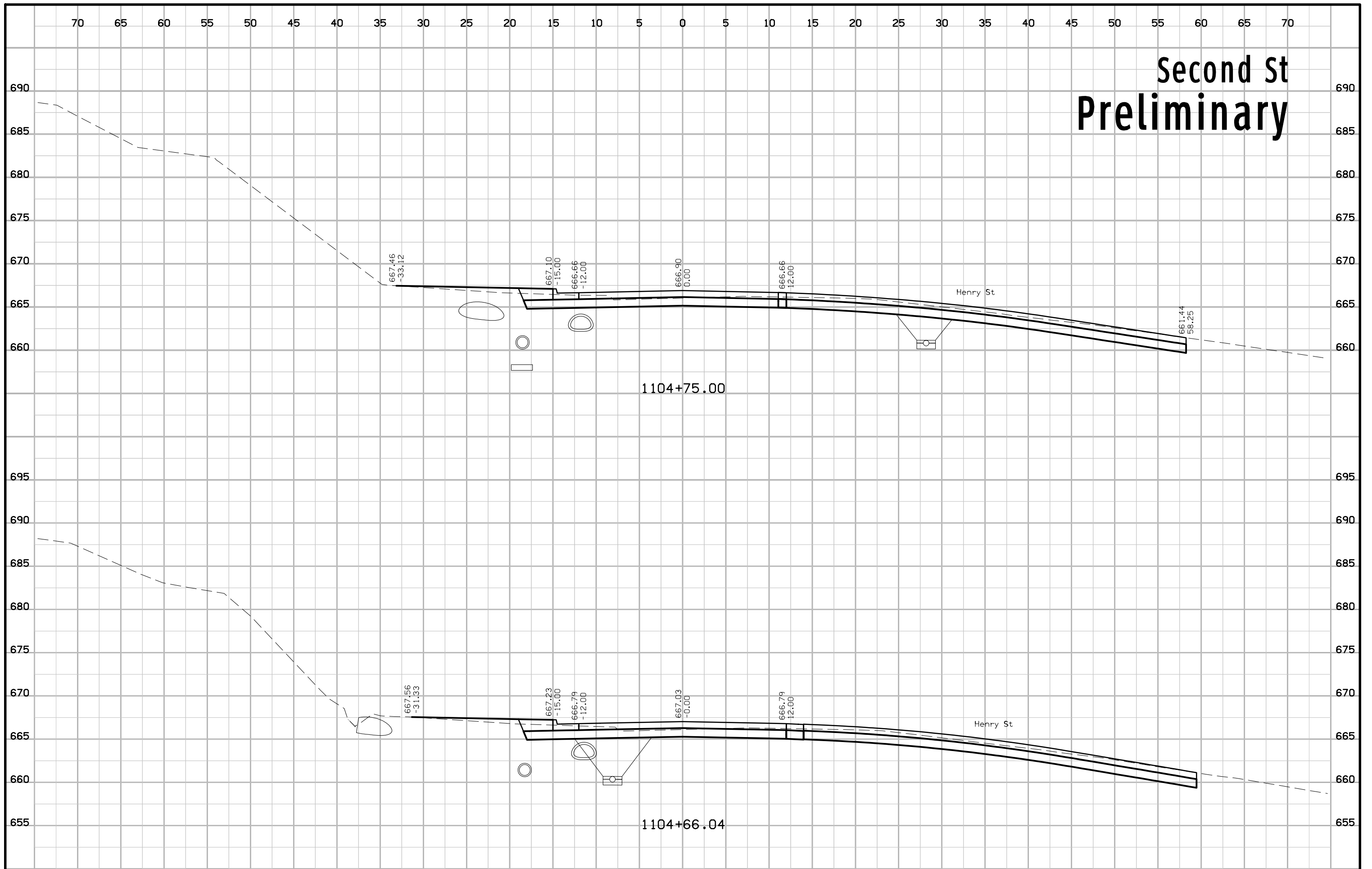


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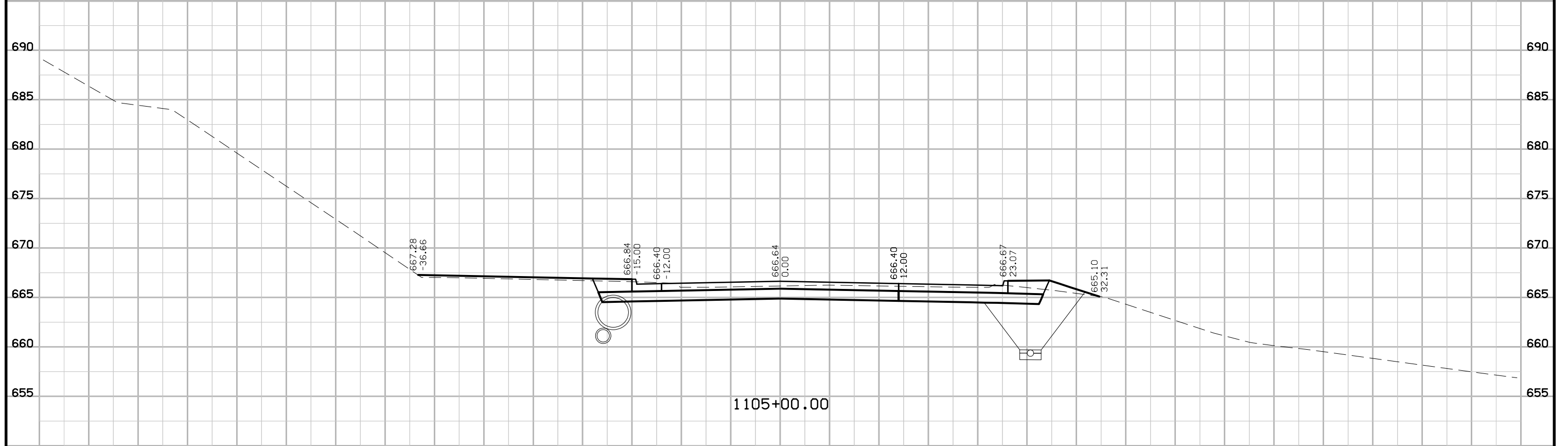
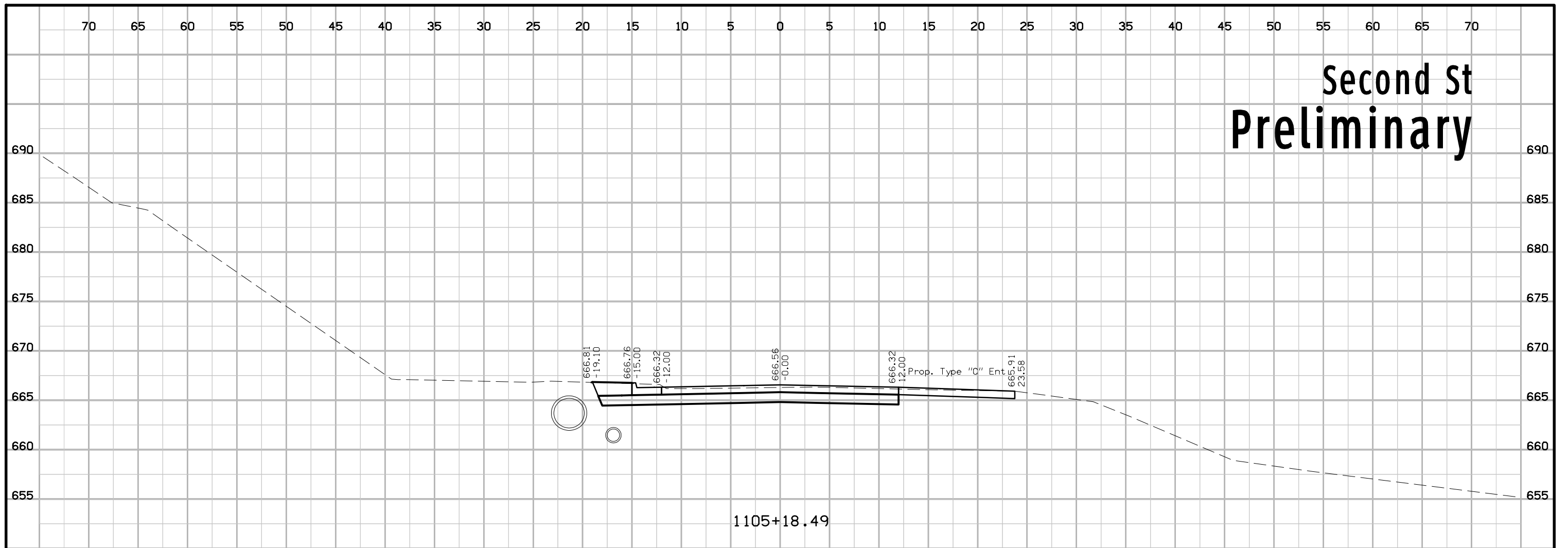


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# Second St Preliminary

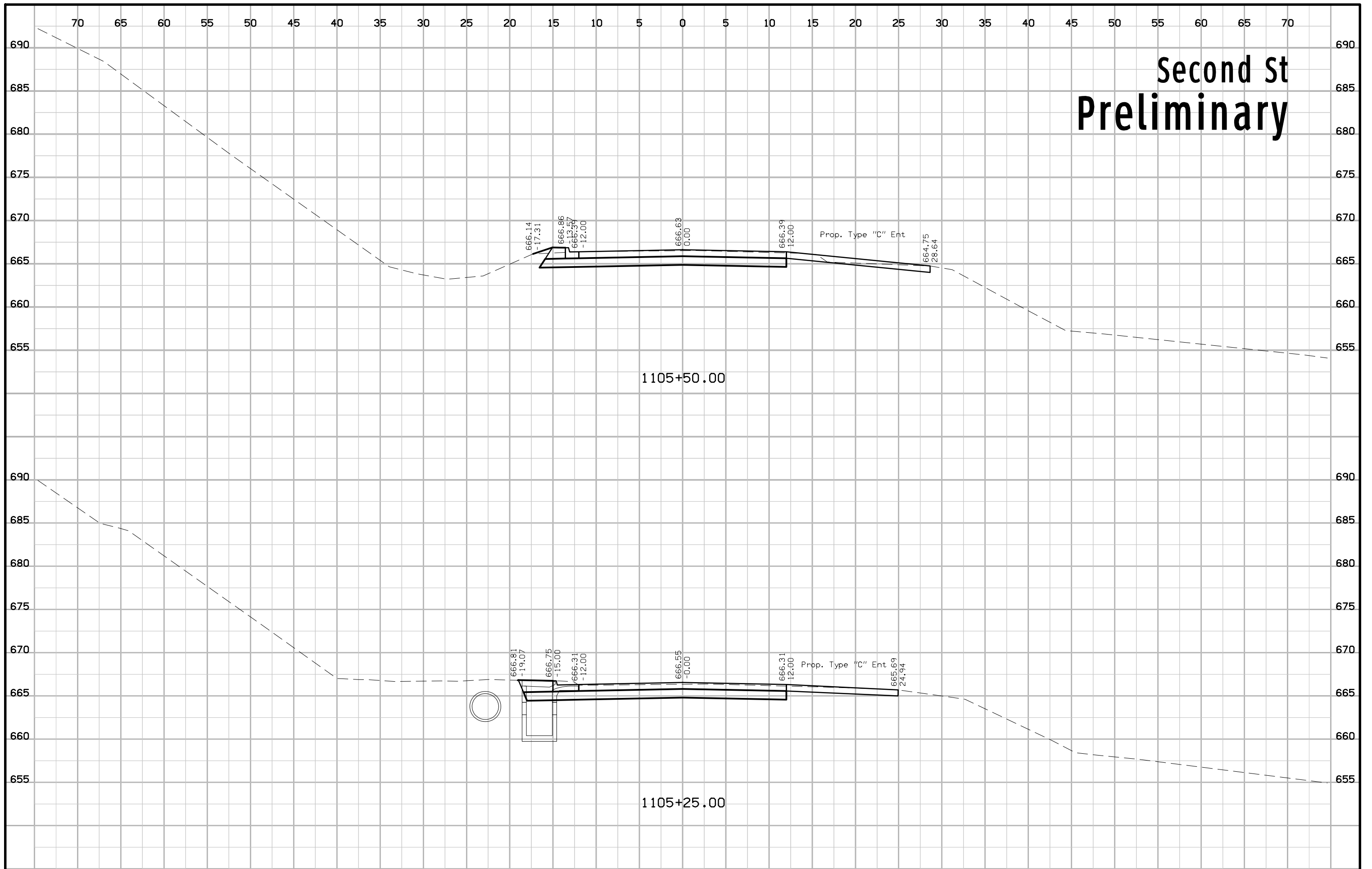


# Second St Preliminary

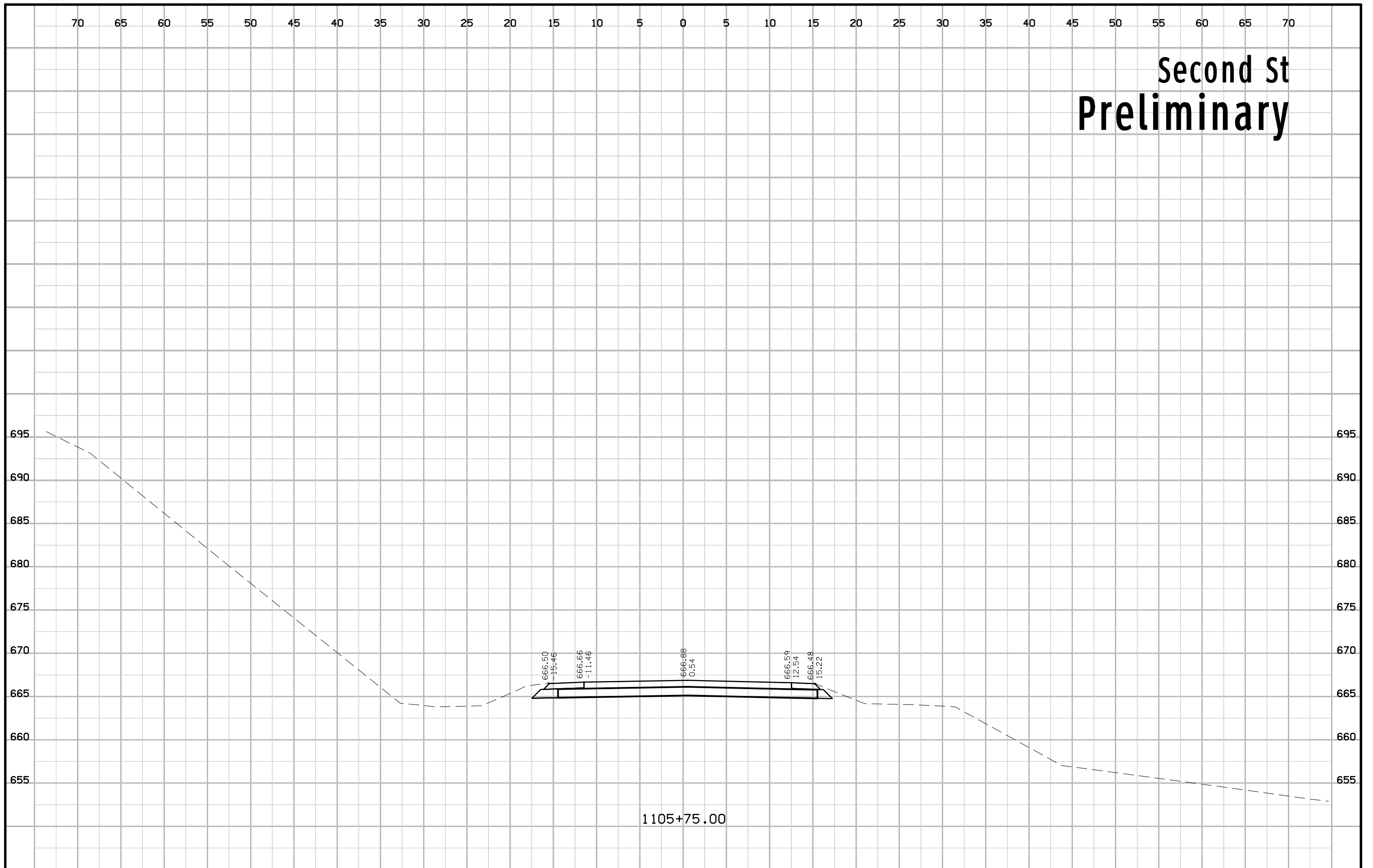




# Second St Preliminary

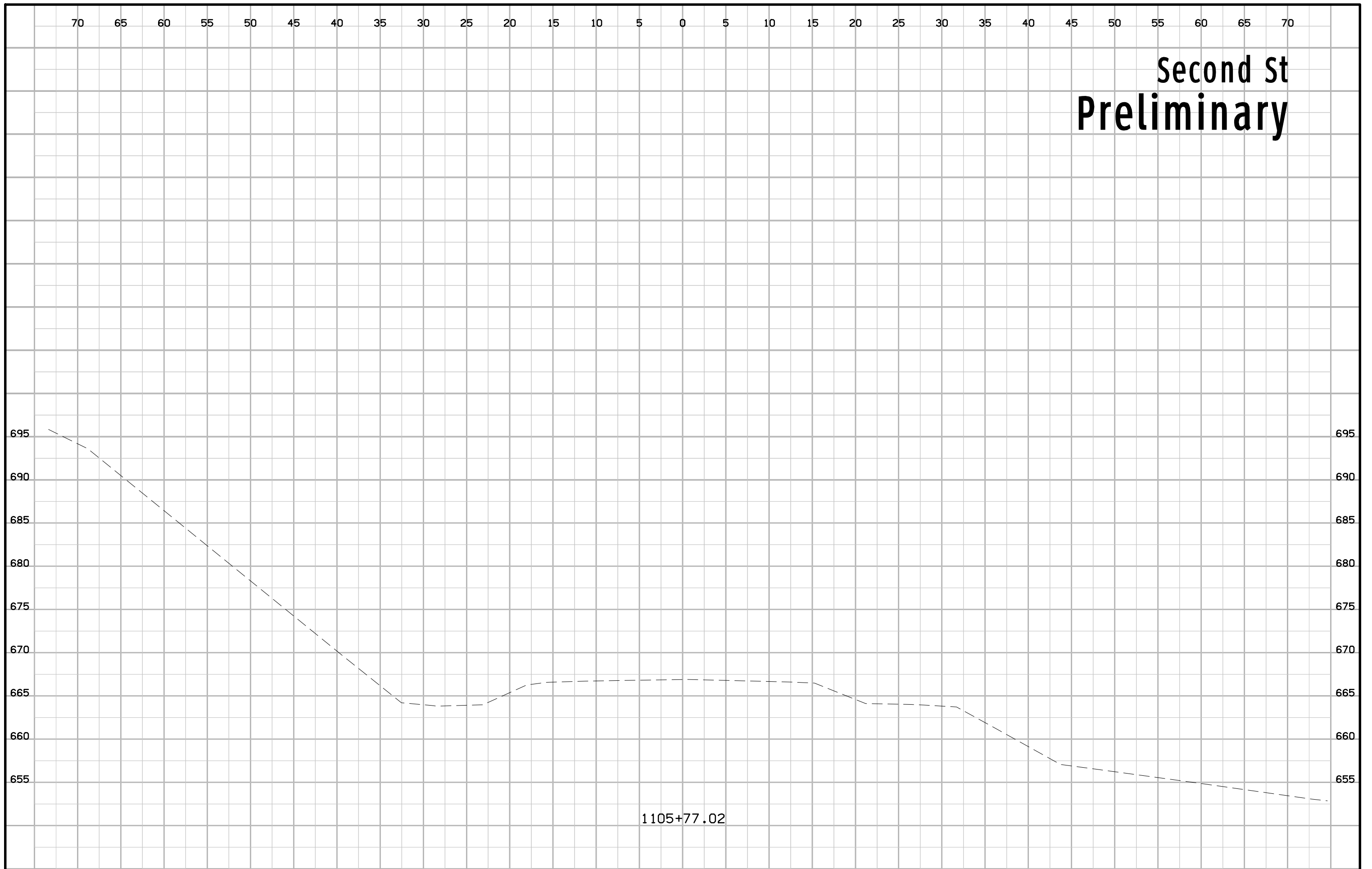


# Second St Preliminary



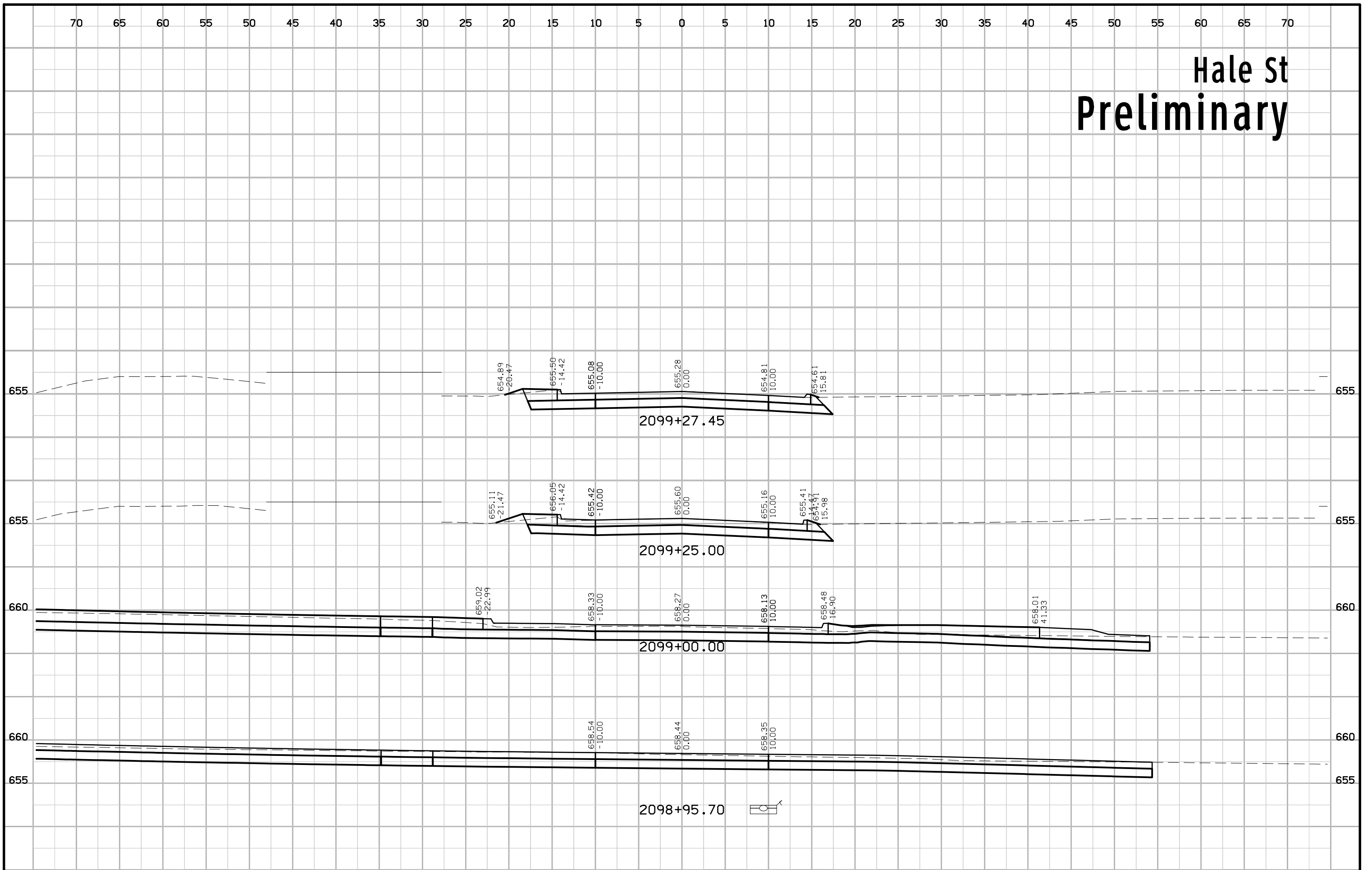
1105+75.00

# Second St Preliminary



1105+77.02

# Hale St Preliminary



# Henry St Preliminary

