

MAHASKA CO.

BRIDGE AND APPROACHES-PPCB

BRF-092-7(52)--39-62

LETTING DATE
11-16-2021



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

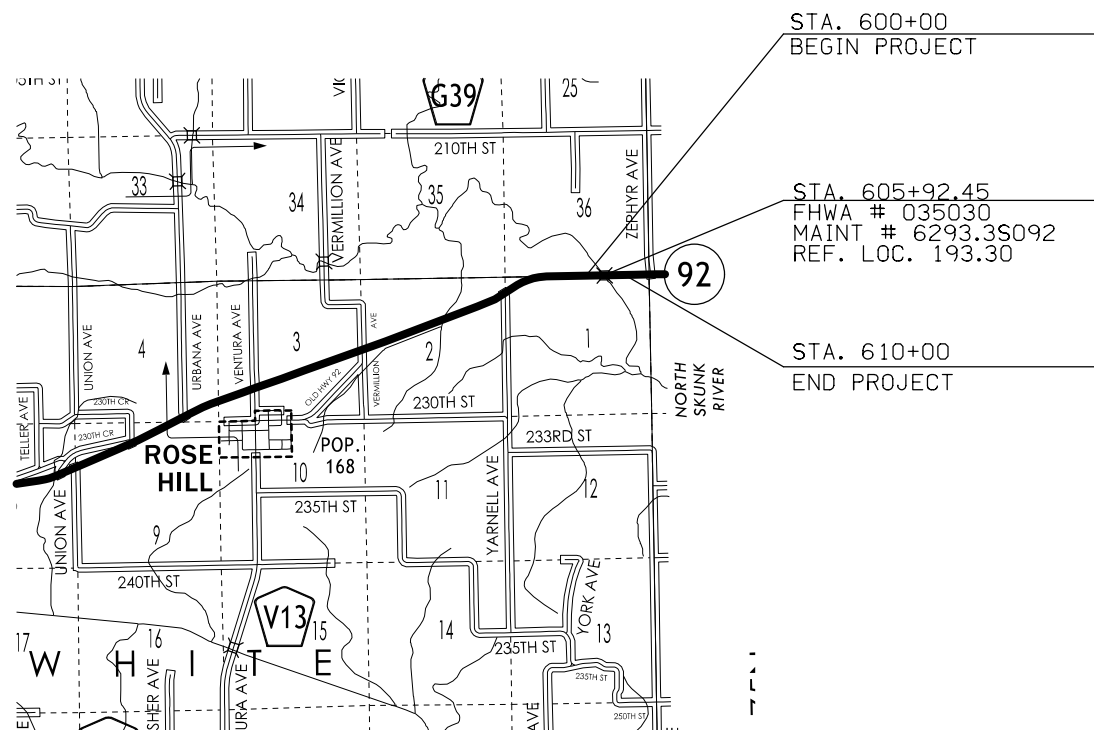
**PRIMARY ROAD SYSTEM
MAHASKA COUNTY
BRIDGE AND APPROACHES-PPCB**

North Skunk River 2.6 mi E of E Jct Co Rd V13

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



STA. 600+00
BEGIN PROJECT

STA. 605+92.45
FHWA # 035030
MAINT # 6293.3S092
REF. LOC. 193.30

STA. 610+00
END PROJECT

DESIGN DATA RURAL

2022	AADT	2829	V.P.D.
2042	AADT	3250	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	15	%
	Total		
	Design ESALs	--	

REVISIONS

TOTAL

26

PROJECT IDENTIFICATION NUMBER

17-62-092-010

PROJECT NUMBER

BRF-092-7(52)--39-62

R.O.W. PROJECT NUMBER

NHSN-092-7(53)--2R-62

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 3	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 5	IA 92
G Sheets	Survey Sheets
G.1	Survey Information
G.2	Control Point Vicinity Map
G.3	Horizontal and Vertical Control Coordinate Listing
G.4	Horizontal Alignment Coordinates
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes Stage
* J.2	Detour Map
V Sheets	Bridge and Culvert Situation Plans
V.1	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1 - 10	Mainline Cross Sections
	* Color Plan Sheets

D4 PLAN - 07-20-2021

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - 12-16-2019

FILE NO.

ENGLISH

DESIGN TEAM **Flattery \ Carlson**

MAHASKA COUNTY

PROJECT NUMBER

BRF-092-7(52)--39-62

SHEET NUMBER

A.1

10:06:07 AM 4/10/2020

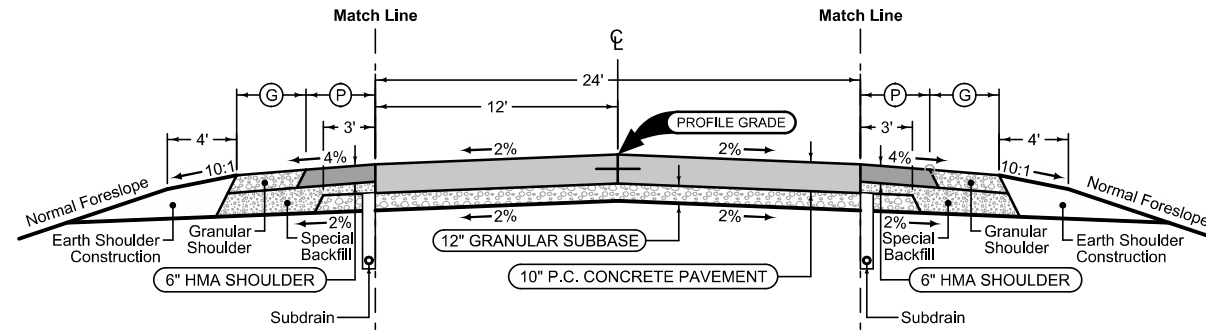
pccarl2

pw:\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\6209201017\Design\CADD_Files\Sheet_Files\62092052_A01.dgn

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		2_C_ 10-15-13	
		(P) Feet	(G) Feet
600+00.00	603+67.43	4	6
Bridge and Approaches			
608+09.13	610+00.00	4	6



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

STATION TO STATION		2P_ MODIFIED	
600+00.00	603+67.43		
Bridge and Approaches			
608+09.13	610+00.00		

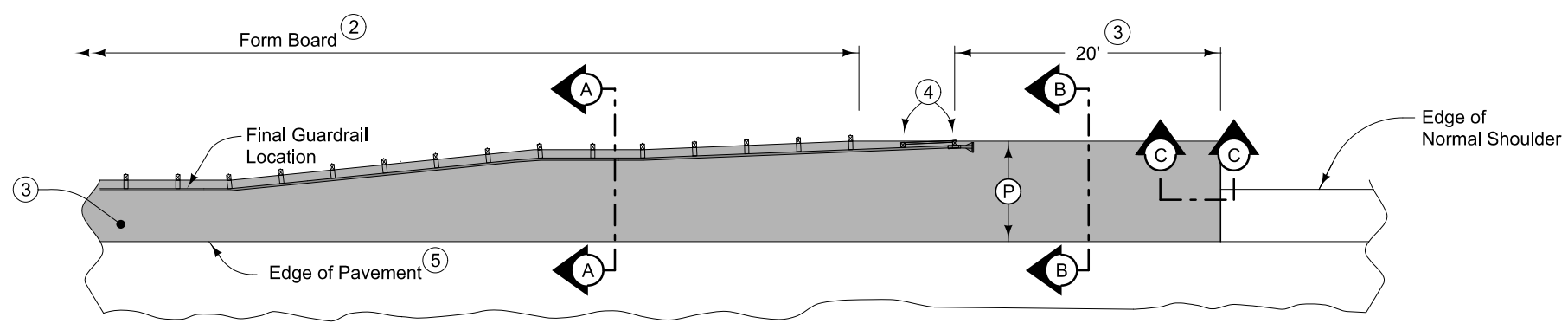
Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		2_C_ 10-15-13	
		(P) Feet	(G) Feet
600+00.00	603+67.43	4	6
Bridge and Approaches			
608+09.13	610+00.00	4	6

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

IA 92



PLAN VIEW

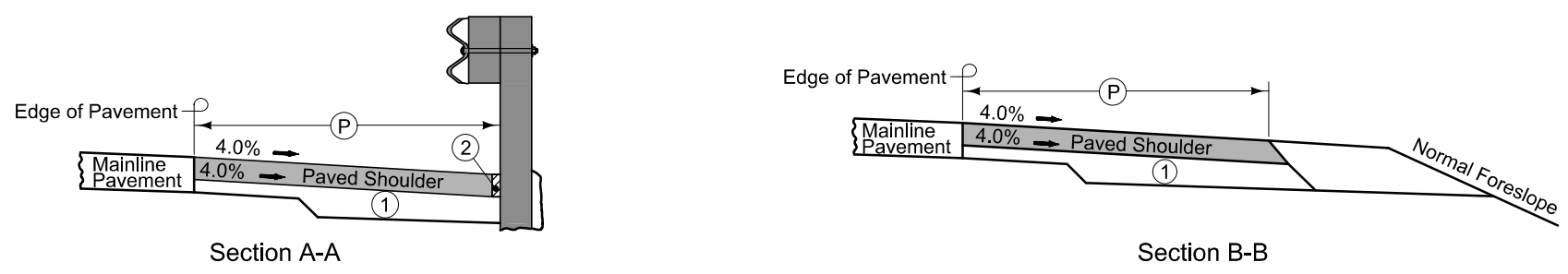
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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

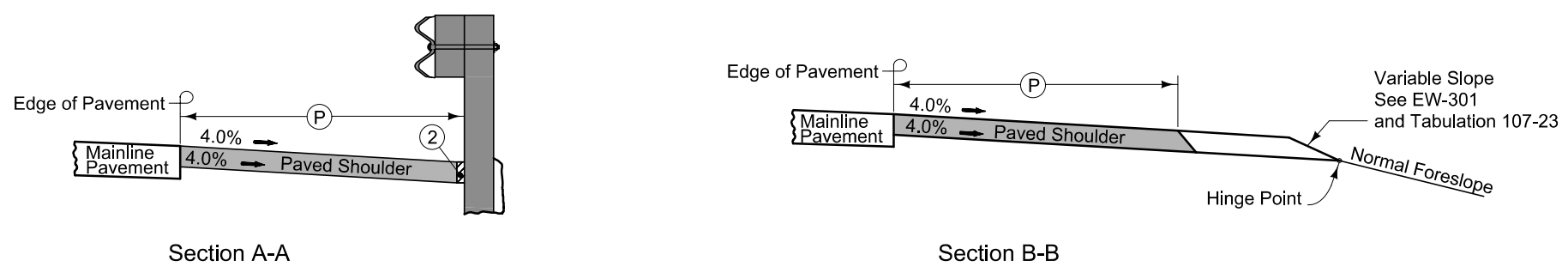
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

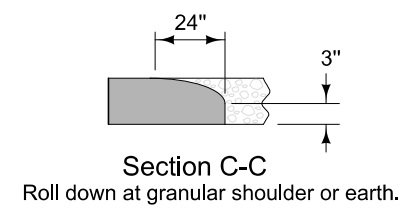
- ① For subgrade treatment, refer to other details in the plan.
- ② PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to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



NEW CONSTRUCTION



EXISTING SHOULDER
















PAVED SHOULDER AT GUARDRAIL







SURVEY SYMBOLS













UTILITY LEGEND









PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND	
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

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

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

Monroe TWP.
T-76N R-14W
SEC. 36



STA. 600+00
BEGIN PROJECT

595

18"x53"
C.M.P.
(UAC)

600

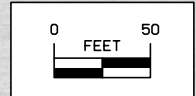
24"x44"
R.C.P.
(UAC)

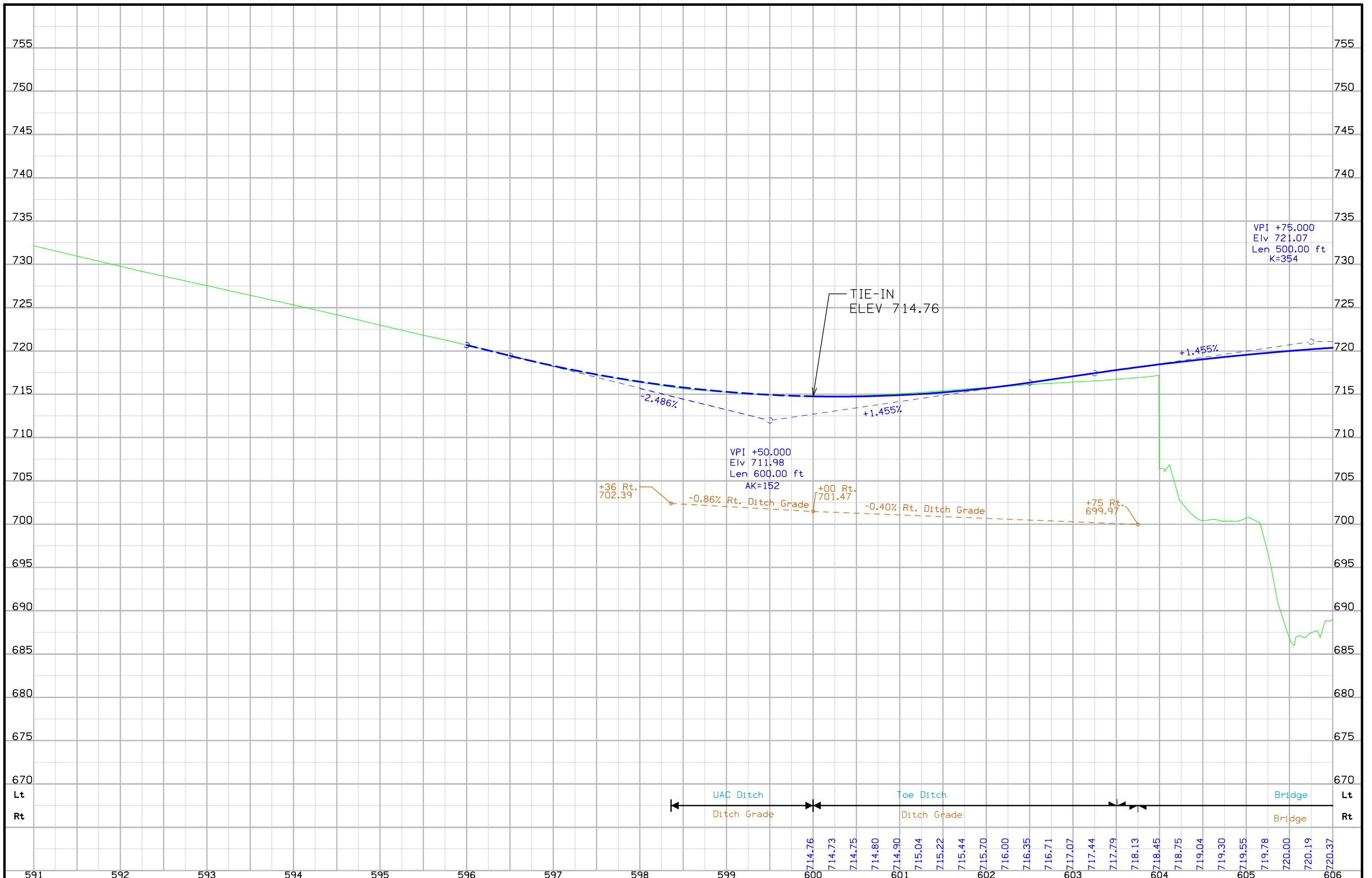
24"x19"
C.M.P.

605

Sta. 592+32.71 (SUR)
Skew 45deg R-AH
30"x125' RCP
D.A.=12 AC-H (From Plan)
(U.A.C.)

605+92.45 (SUR)
Skew 35 deg
385'x30' Continuous Welded Girder Bridge
D.A.=606 Sq Miles (From Plan)
(Remove)





Monroe TWP.
T-76N R-14W
SEC. 36



STA. 610+00
END PROJECT

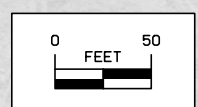
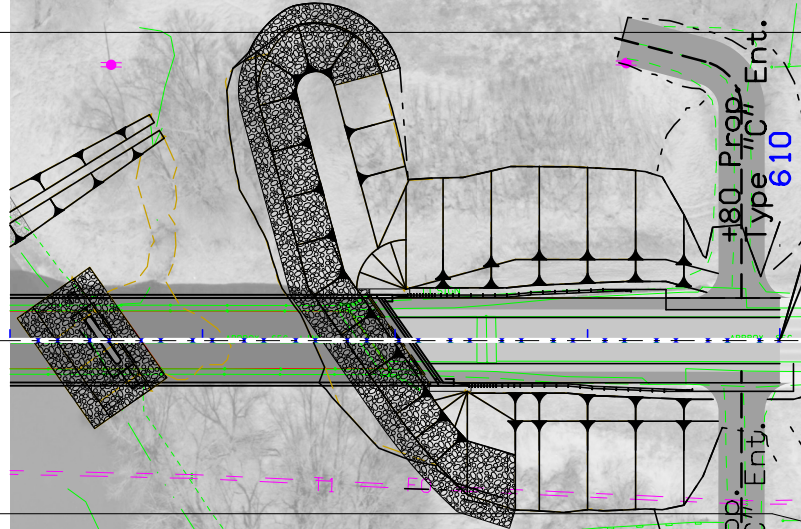
615

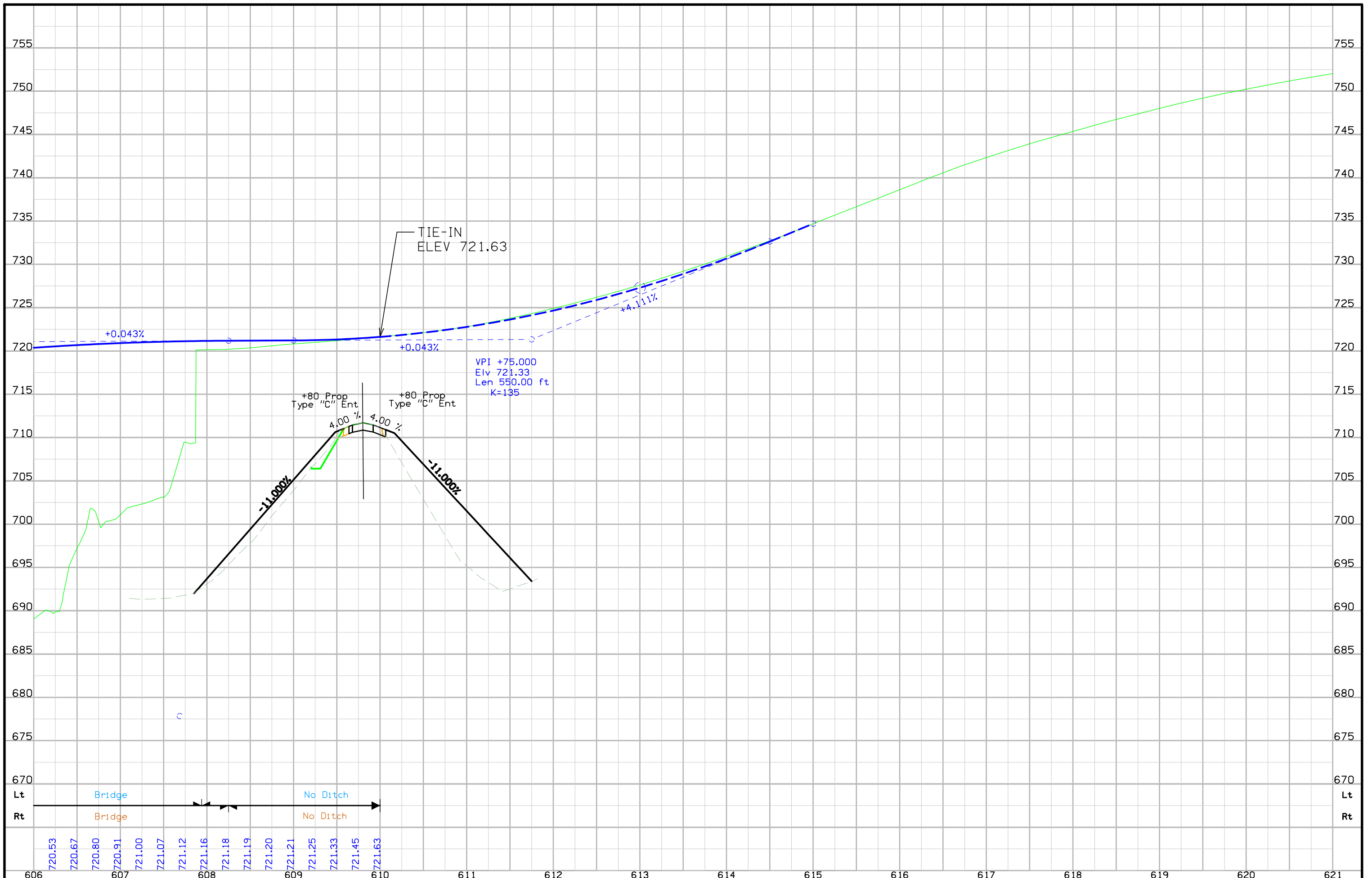
620

+80 Prop. Type "C" Ent. 610

+80 Prop. Type "C" Ent.

Proposed 24" Entrance Pipe





Survey Information

SAP932.2
County: Mahaska
PIN: 17-62-092-010
Project Number: BRFN-092-7(52)--39-62
Location: North Skunk River 2.2 mi E of E Jct Co Rd V13
Type of Work: Bridge-Unspecified
Project Directory: 6209201017

Party Personnel

Nels Sutherland- Party Chief
Myron Fox- Assistant Survey Party Chief

Date(s) of Survey

Begin Date 10/17/2018
End Date 04/18/2019

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction over the North Skunk River and reconstruction of County Road IA 92. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM with Photo control. This survey request was for the IA 92 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12B). Benchmarks were placed throughout the project using post processed static observations relative to laRTN Base Network. A minimum of 6hrs of data was simultaneously collected on each of these primary control points.

FENO1 CP 2356FT E ON HWY92 FROM CL BRG OVER N SKUNK RIVER THEN N 35FT FROM CL HWY92 4IN BELOW SURFACE

FENO2 CP 320FT E FROM INTERSECTION ZEPHYR AVE AND HWY92 THEN 53FT S OF CL HWY92 4IN BELOW SURFACE

Horizontal Control

The project coordinate system for this survey is laRCS Zone 9 (U.S. Survey Feet). This survey control is relative to laRTN reference stations. laRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans FN Project No.70 and information found in the Mahaska Co. field book at the IDOT District 5 Land Surveyors office in Fairfield, Ia. Survey stationing was equated to the plan ST at STA 586+45.10 and ran ahead without equation throughout the survey.

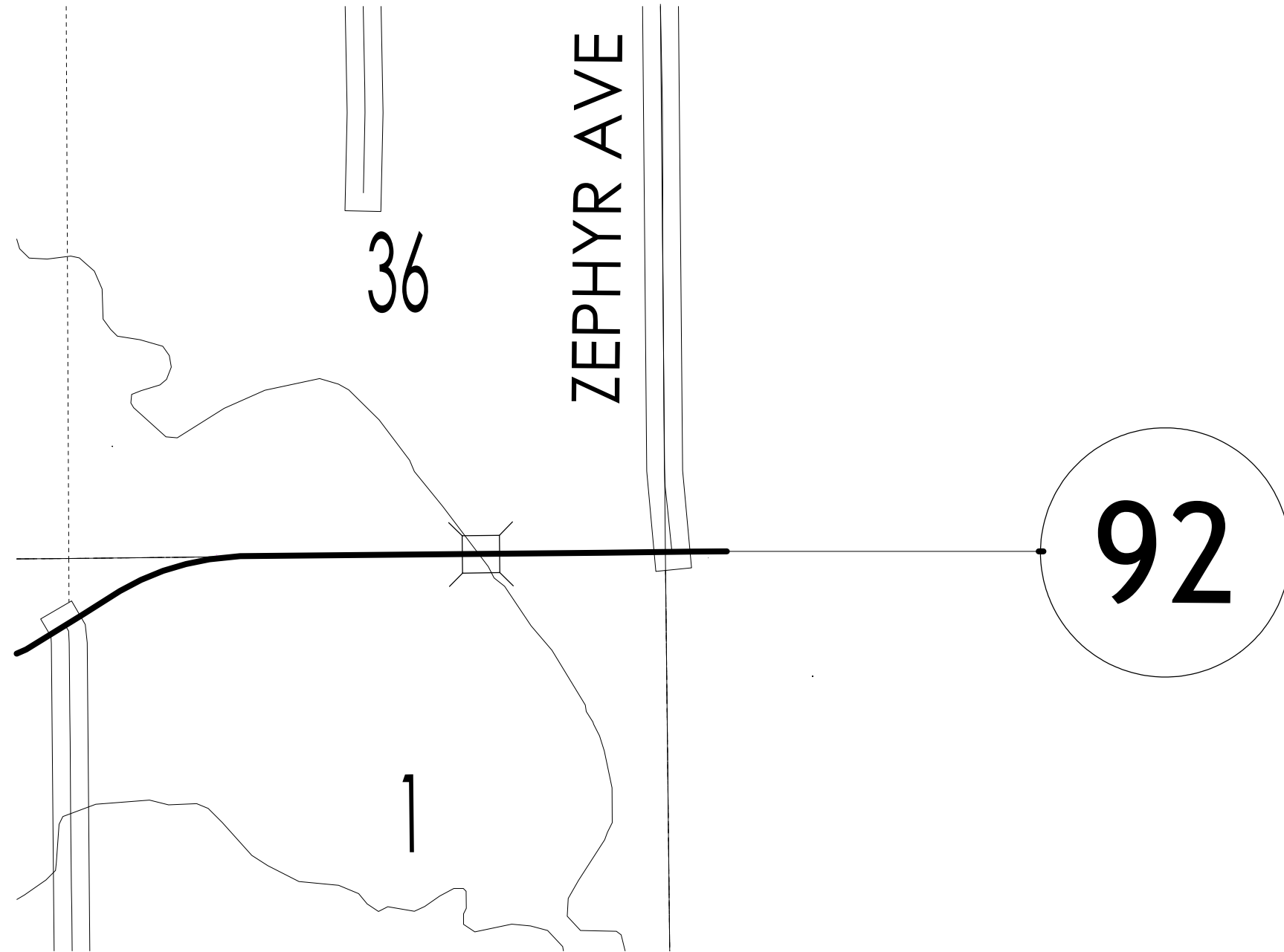
Survey stationing relates to as built plan stationing as follows:

ST Sta. 586+45.10 As-built Plans FN Project No.7.
Survey ST Sta. 586+45.10

PI Sta. 622+10 As-built Plans FN Project No.7.
Survey PI Sta. 622+05.97

CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 9

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 9

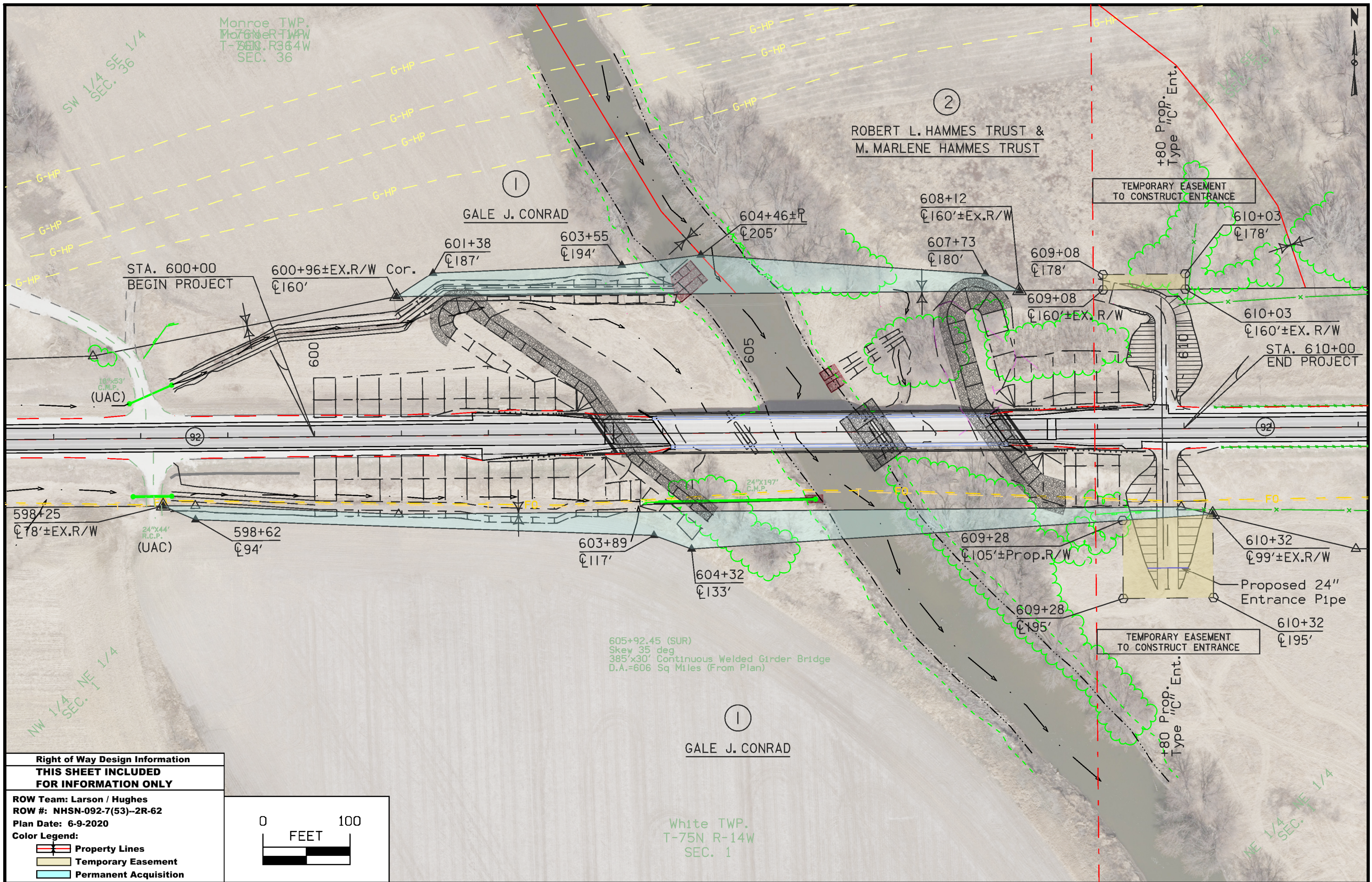
Point Name	Northing	Easting	Elevation	Feature Code-Description
FENO 1	7595963.004	19607393.77	748.52	FENO1 CP 2356FT E ON HWY92 FROM CL BRG OVER N SKUNK RIVER THEN N 35FT FROM CL HWY92 4IN BELOW SURFACE
FENO 2	7595938.378	19611736.65	752.971	FENO2 CP 320FT E FROM INTERSECTION ZEPHYR AVE AND HWY92 THEN 53FT S OF CL HWY92 4IN BELOW SURFACE

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	ML092	586+45.10 R1	7595954.14	19607799.43															
2	ML092	622+05.97 R1	7595987.75	19611360.14															
3	ML092	624+15.36 R1	7595989.81	19611569.52															

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED.



Monroe TWP.
T-76N R-14W
SEC. 36

SW 1/4 SE 1/4
SEC. 36

NW 1/4 NE 1/4
SEC. 1

White TWP.
T-75N R-14W
SEC. 1

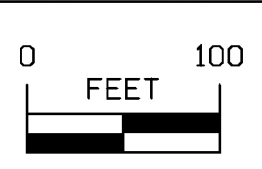
NE 1/4 NE 1/4
SEC. 1

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Larson / Hughes
 ROW #: NHSN-092-7(53)-2R-62
 Plan Date: 6-9-2020

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition



108-26A
08-01-08

STAGING NOTES

Stage 1
With IA 92 traffic using normal traffic pattern, sign detour layout.

Stage 2
With IA 92 traffic using signed detour, construct new bridge and pavement.

Stage 3
Open IA 92 traffic to normal two way two lane operation.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1) IA 92 traffic shall be detoured using the following routes:
From IA 92 the detour will follow IA 23 south to the junction of IA 149, then east on IA 149 to the junction of IA 21, then north on IA 21 back to US 92. Out of distance travel is 18.5 miles.

2) Contractor will furnish, install, maintain and remove detour signs. These functions will be included in the Traffic Control Bid Item. See J sheets for detour location and signing layout.

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No travel restrictions expected at this time.									

111-01
04-17-12

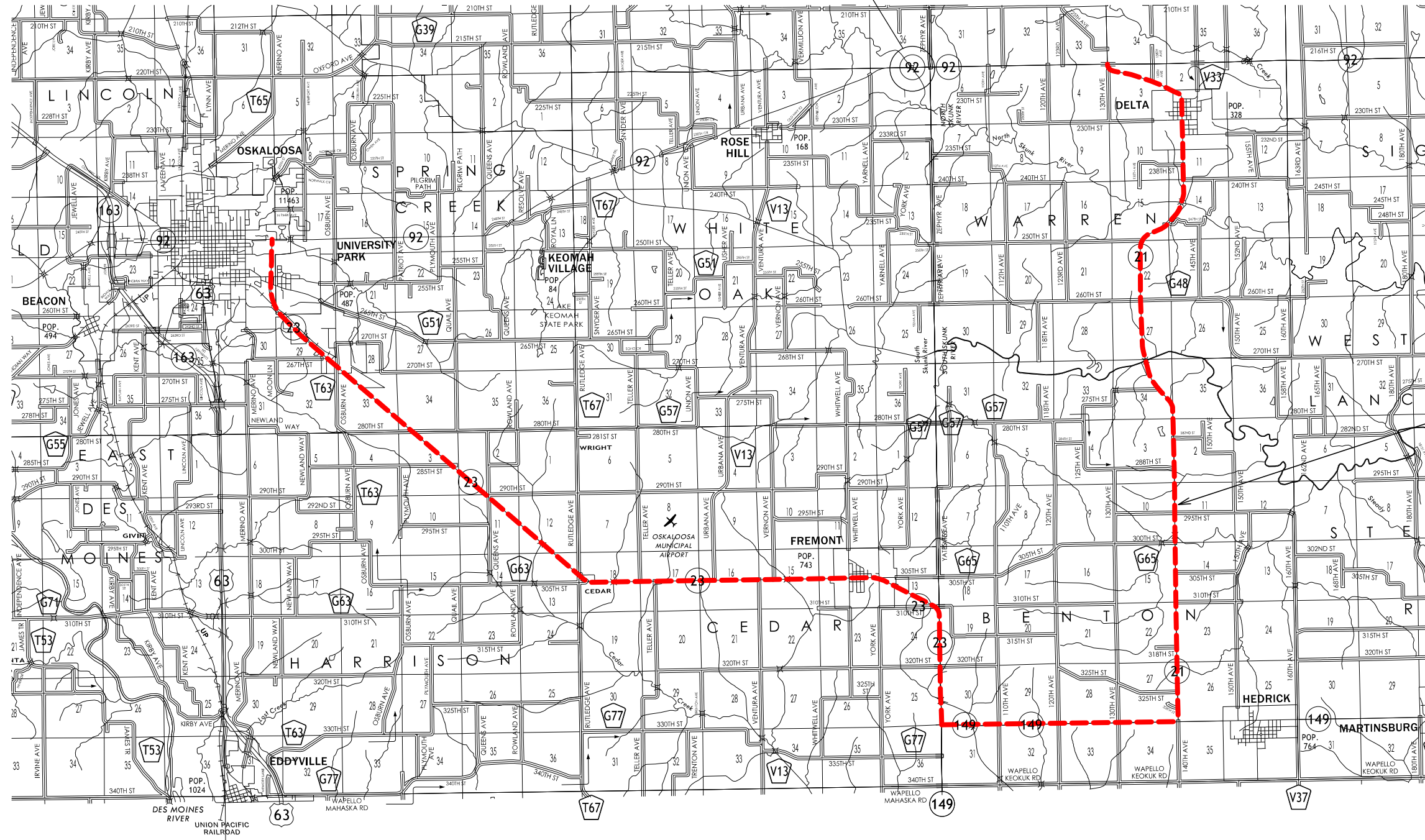
COORDINATED OPERATIONS

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 Provided	

DETOUR ROUTE MAP

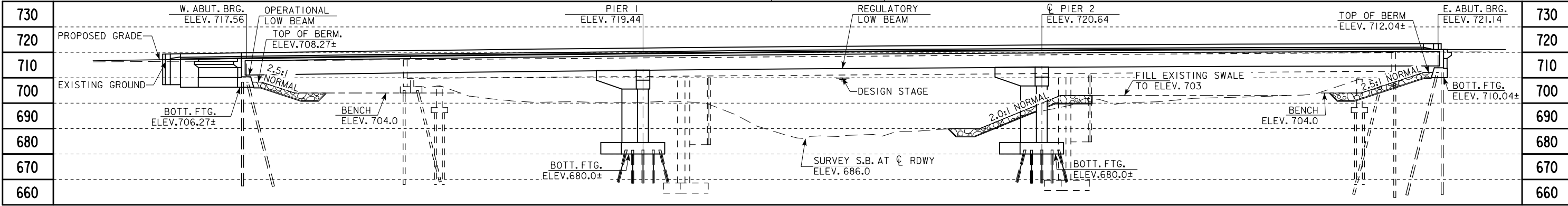
PROJECT LOCATION
REF. LOC. NO.193.3



PROPOSED
DETOUR

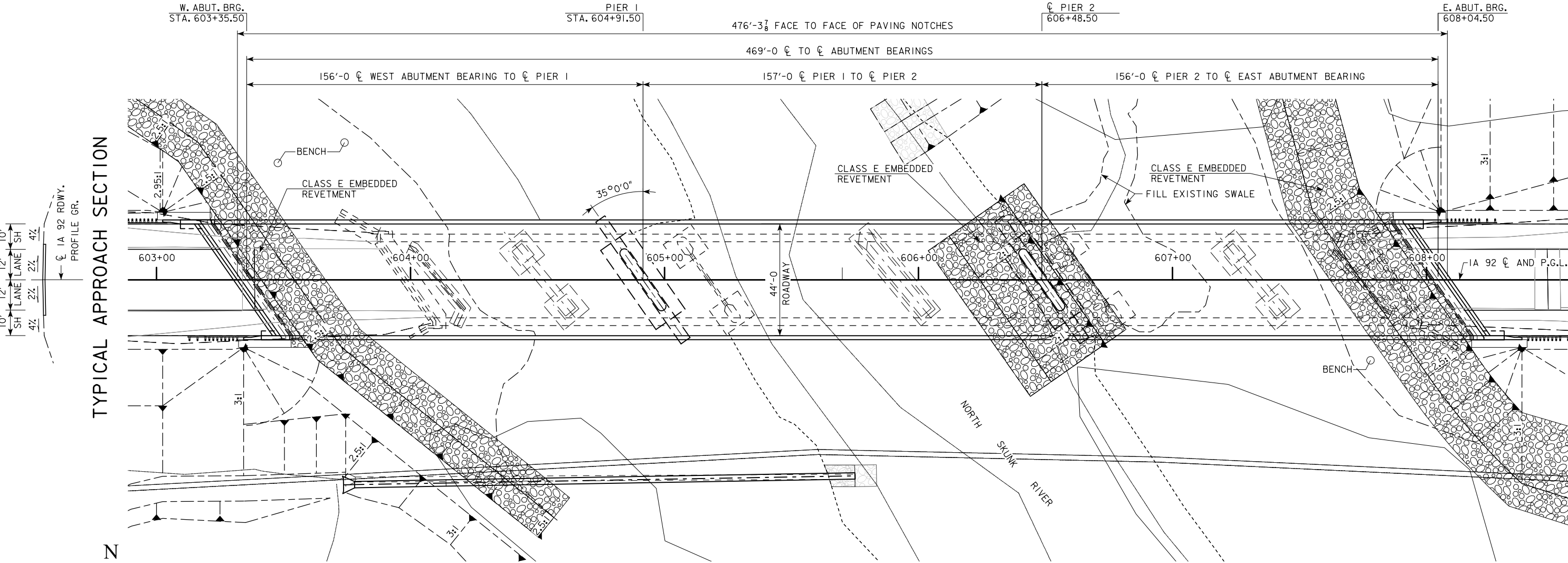
DETOUR ROUTE - - - - -

BENCH MARK: NORTHING 7595963.004, EASTING 19607393.77, ELEV. 748.52 FENO 1 CP 2356FT E ON HWY92 FROM CL BRG OVER N SKUNK RIVER THEN N 35FT FROM CL HWY92 4IN BELOW SURFACE



- NOTES:
 1. TOP OF BRIDGE DECK CROWN 0.03 BELOW PROFILE GRADE.
 2. DESIGN 923 PIER REMNANTS NOT SHOWN IN THE LONGITUDINAL SECTION.

LONGITUDINAL SECTION ALONG CL APPROACH ROADWAY



G1=+1.455% G2=+0.043%

VPI STA = 605+75.000 VC = 500.00'
 VPI ELEV = 721.075

PROPOSED PROFILE
 GRADE IA 92

SITUATION PLAN

TRAFFIC ESTIMATE

2022 AADT	2829	V.P.D.
2042 AADT	3250	V.P.D.
202_ DHV	-	V.P.H.
TRUCKS	15	%
TOTAL DESIGN ESALs	-	

LOCATION

IA 92 OVER N. SKUNK RIVER
 T-76&75N R-14W
 SECTION 36&1
 MONROE AND WHITE OAK TOWNSHIP
 MAHASKA COUNTY
 FHWA NO. 35031
 BRIDGE MAINT. NO. 6293.35092
 LATITUDE 41.336109°
 LONGITUDE -92.417138°

PRELIMINARY
 DESIGN FOR 35° SKEW (R.A.)
 469'-0 x 44'-0 PRETENSIONED PRESTRESSED
 CONCRETE BEAM BRIDGE

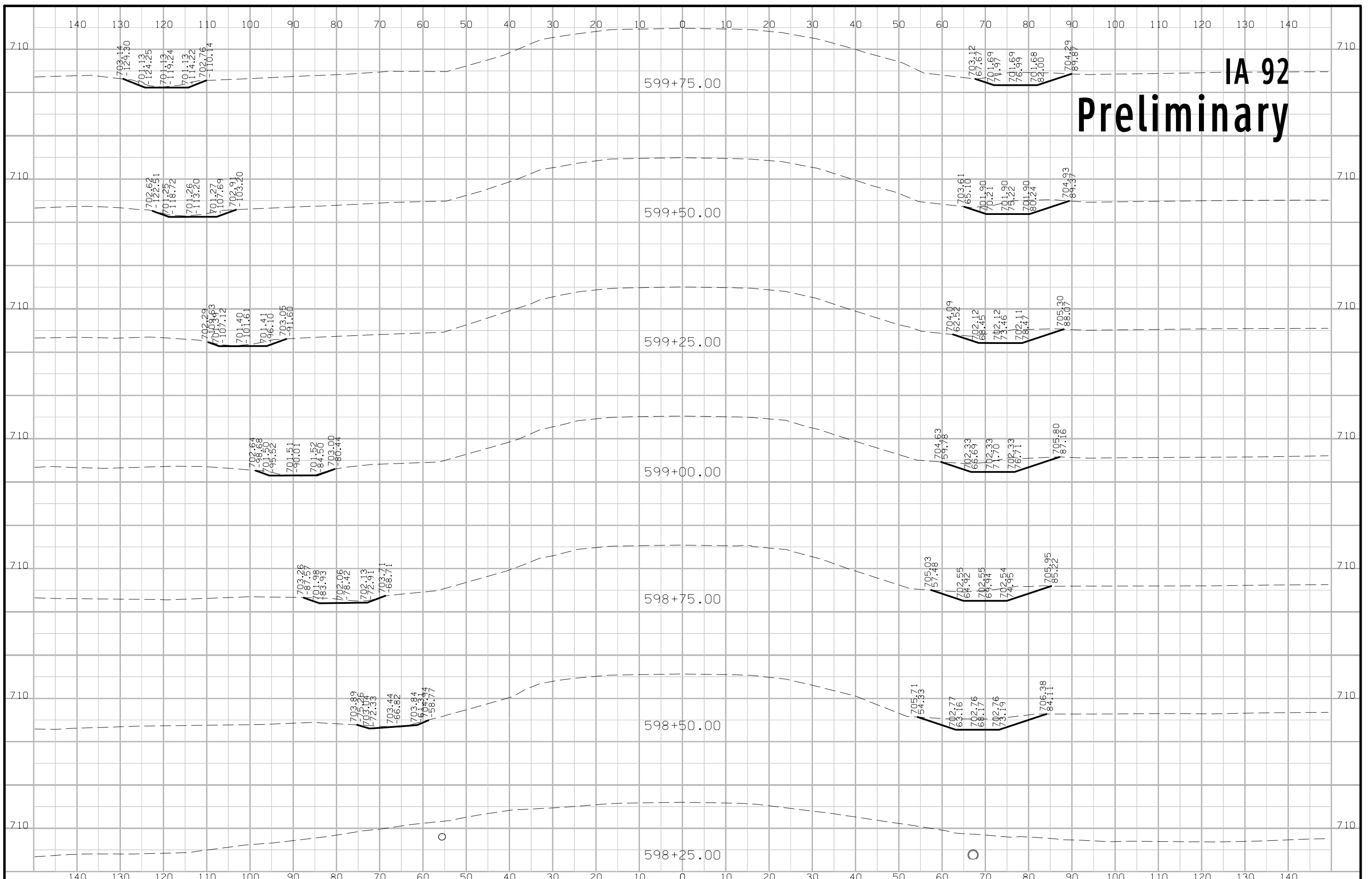
156'-0 END SPANS (BTE BEAM TYPE) 157'-0 INTERIOR SPAN

SITUATION PLAN
 STATION 605+70.00 (IA 92)
 MAHASKA COUNTY

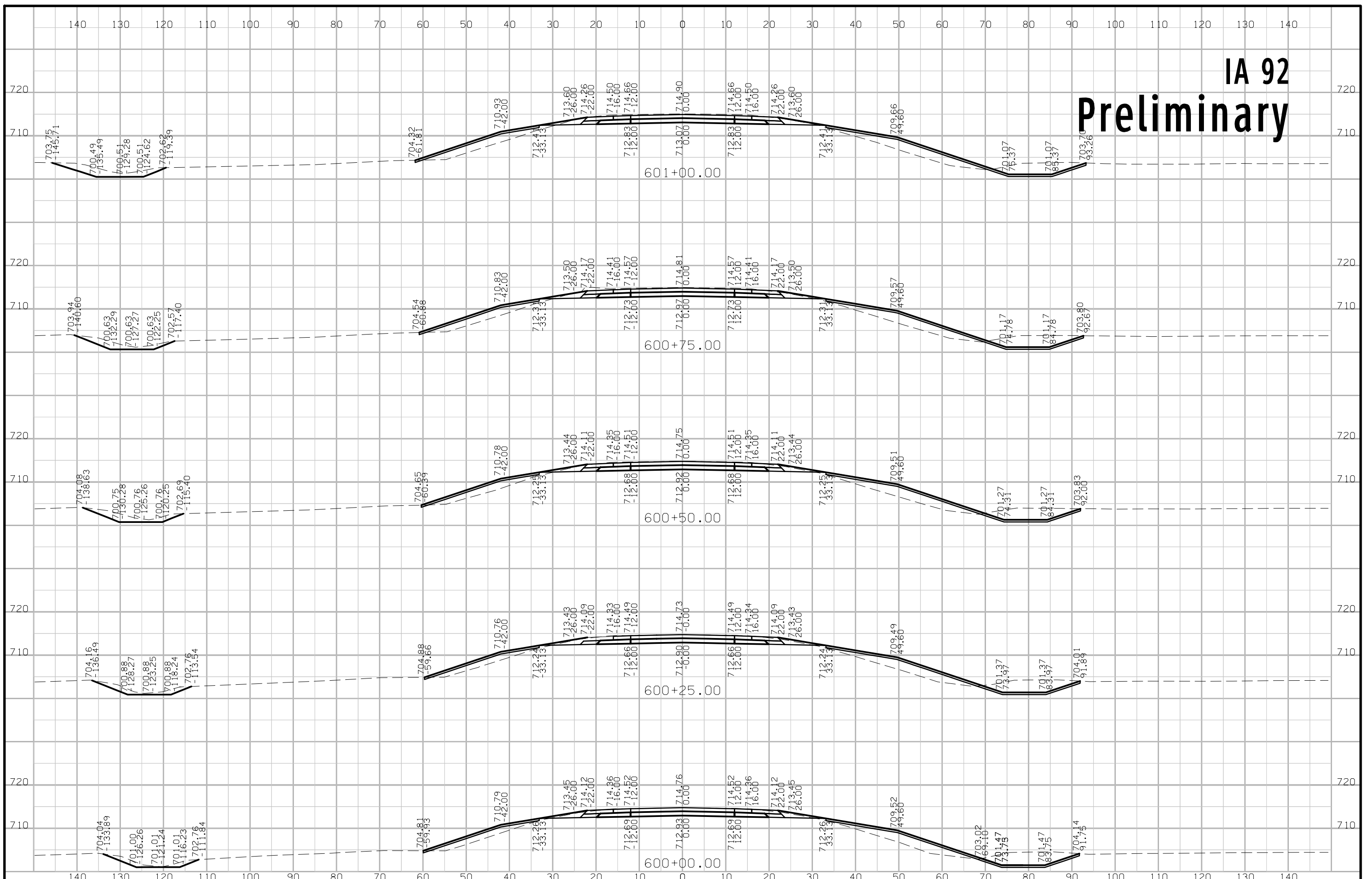
MARCH 2020

1 3 31899 122

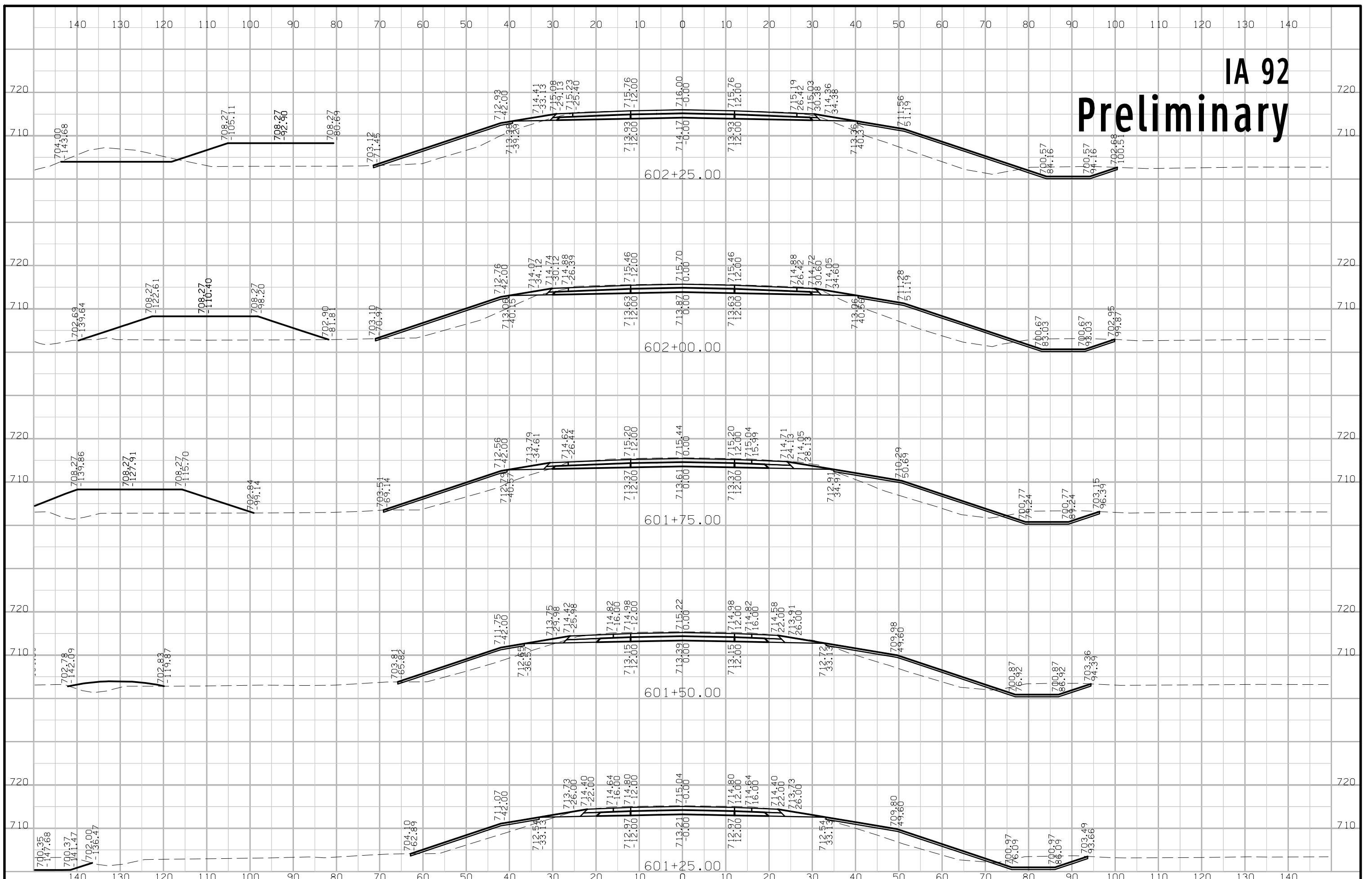
IA 92 Preliminary



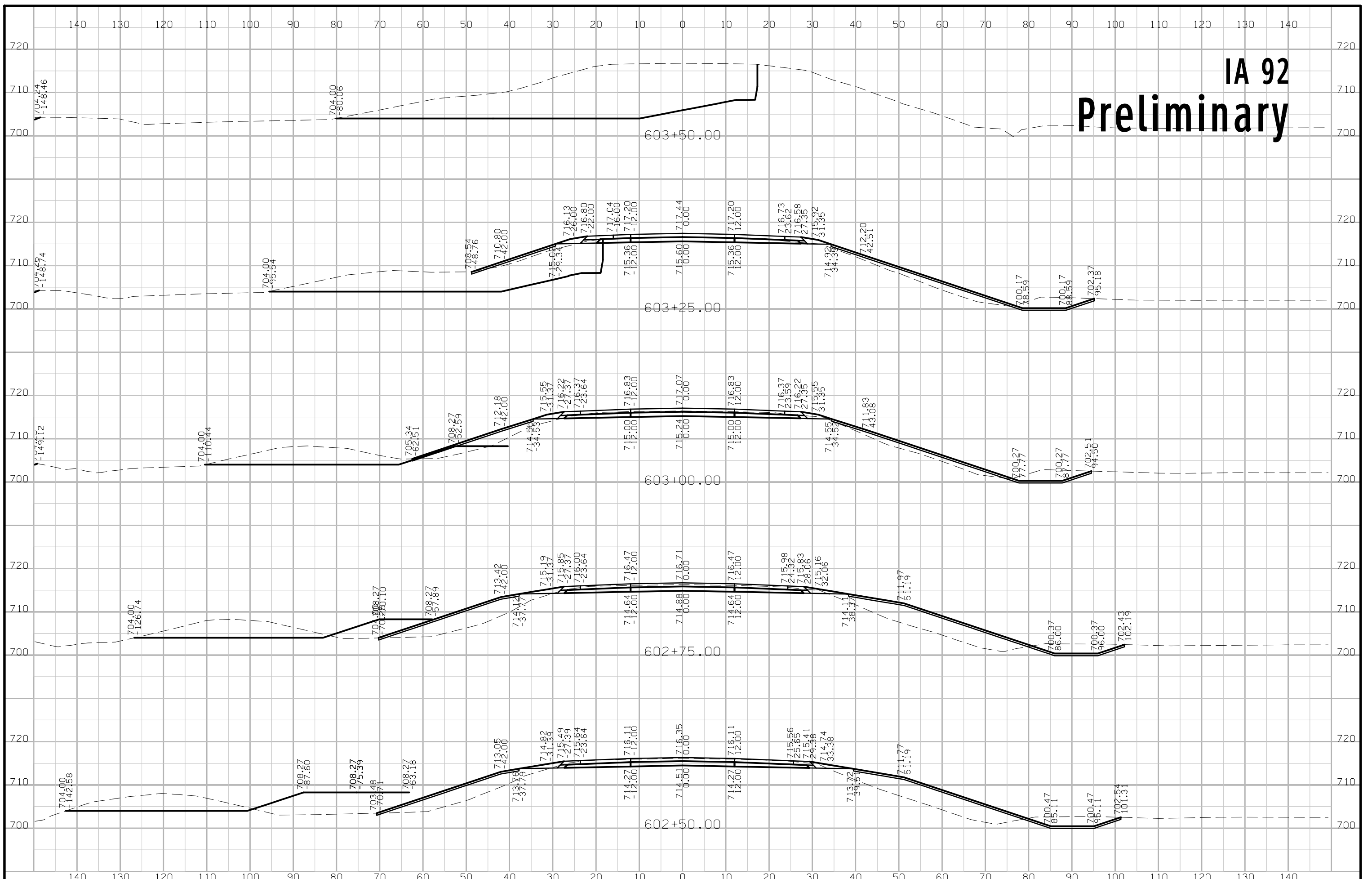
IA 92 Preliminary



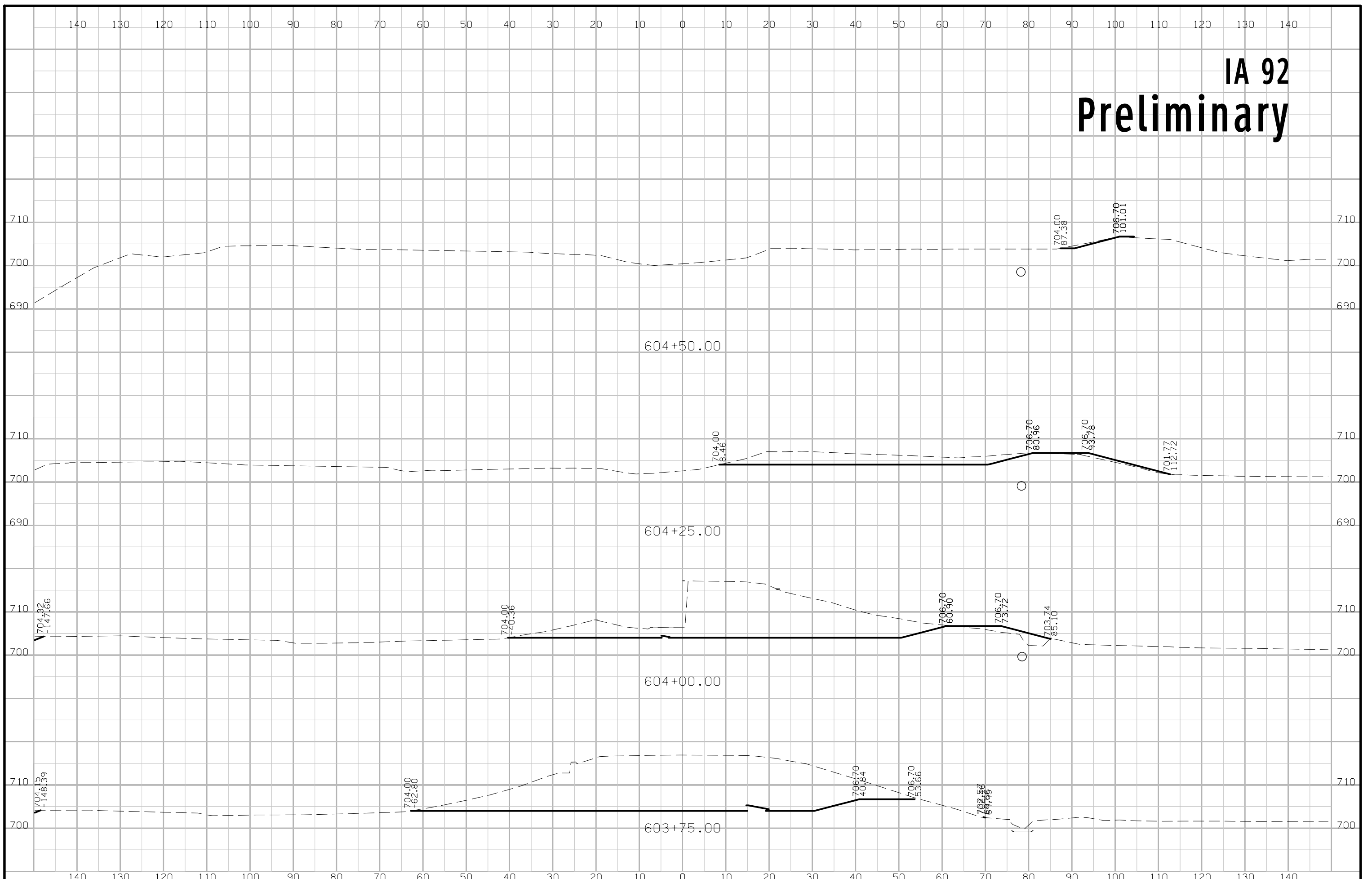
IA 92 Preliminary

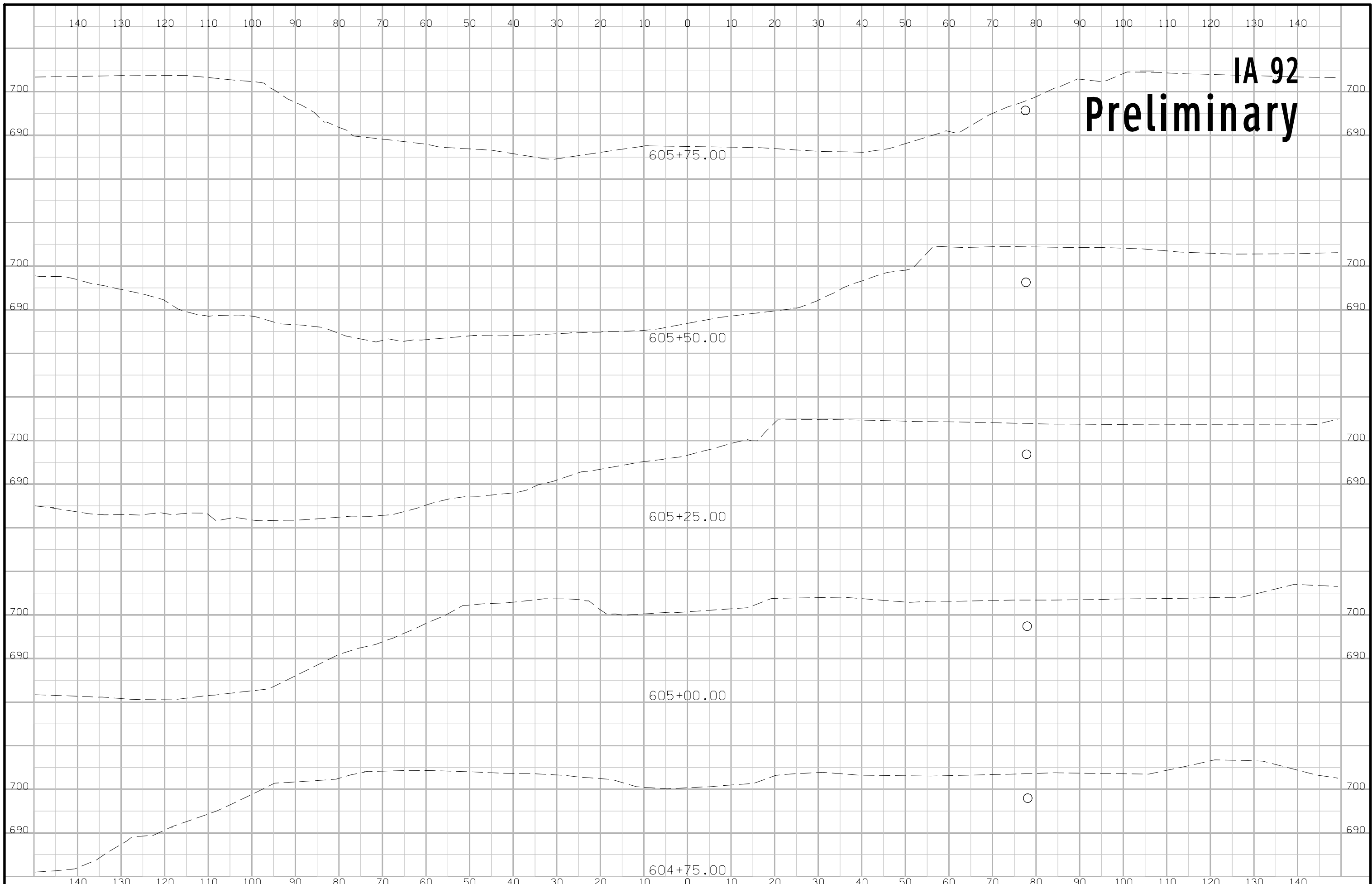


IA 92 Preliminary

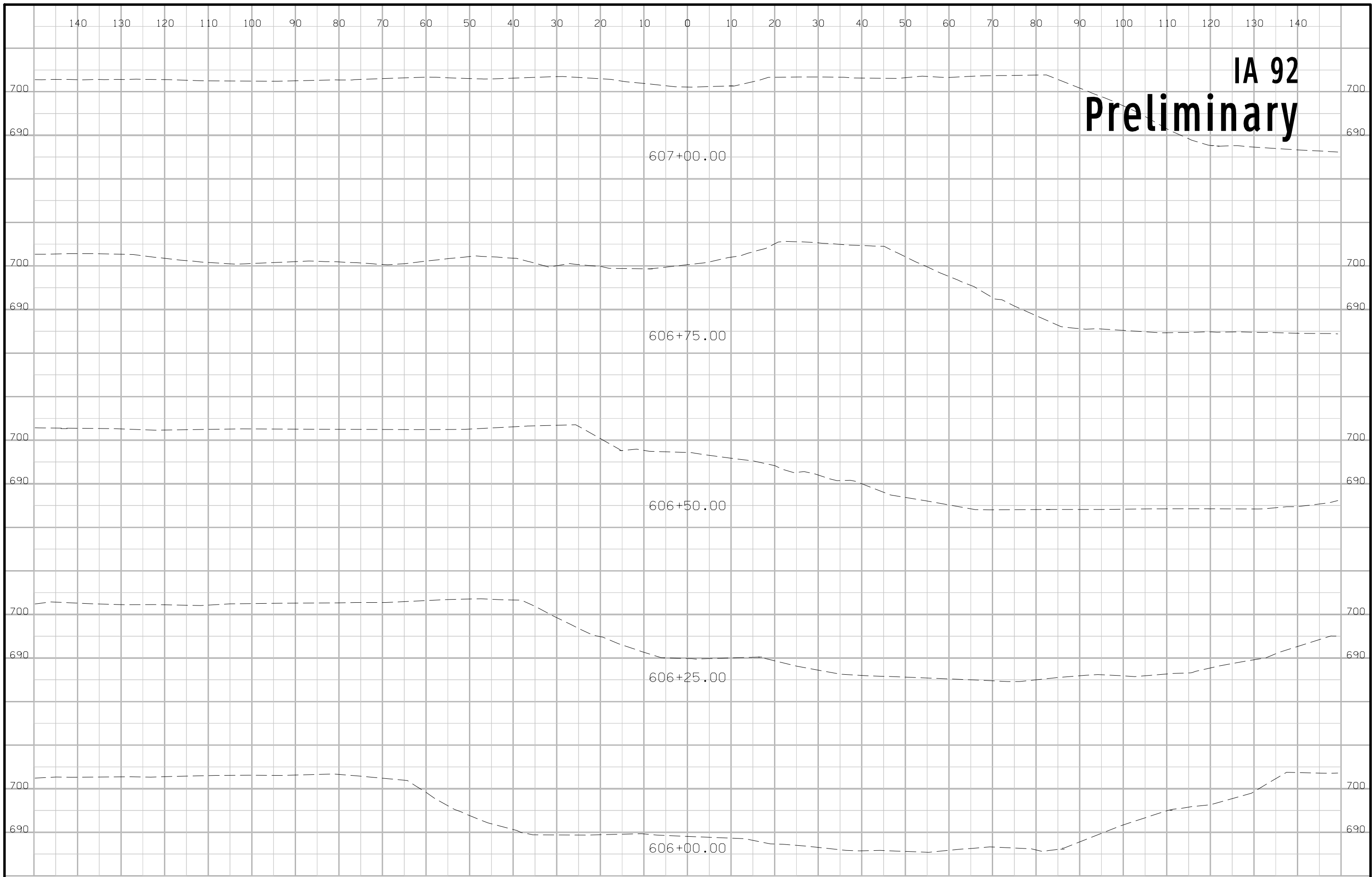


IA 92 Preliminary

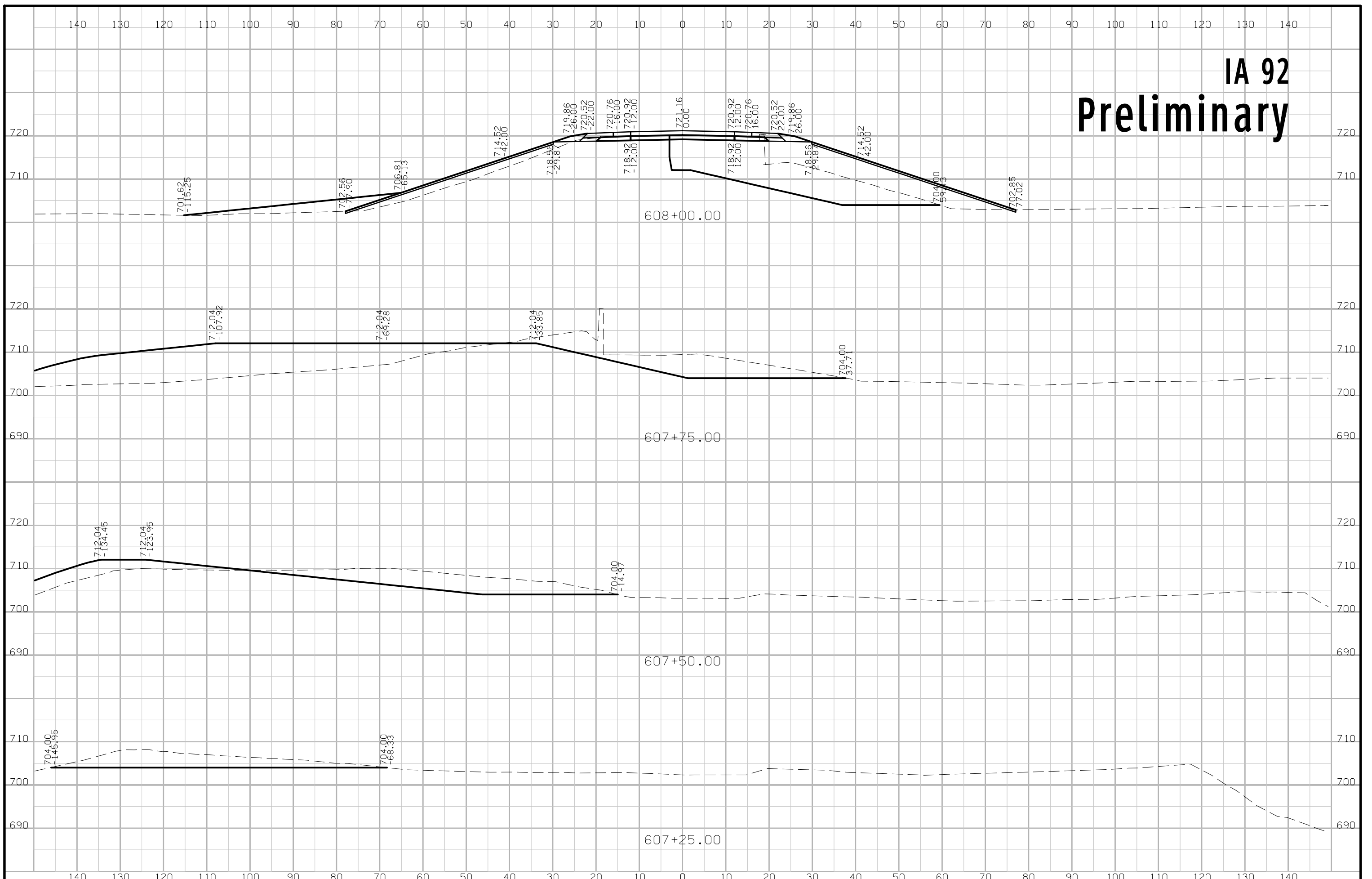




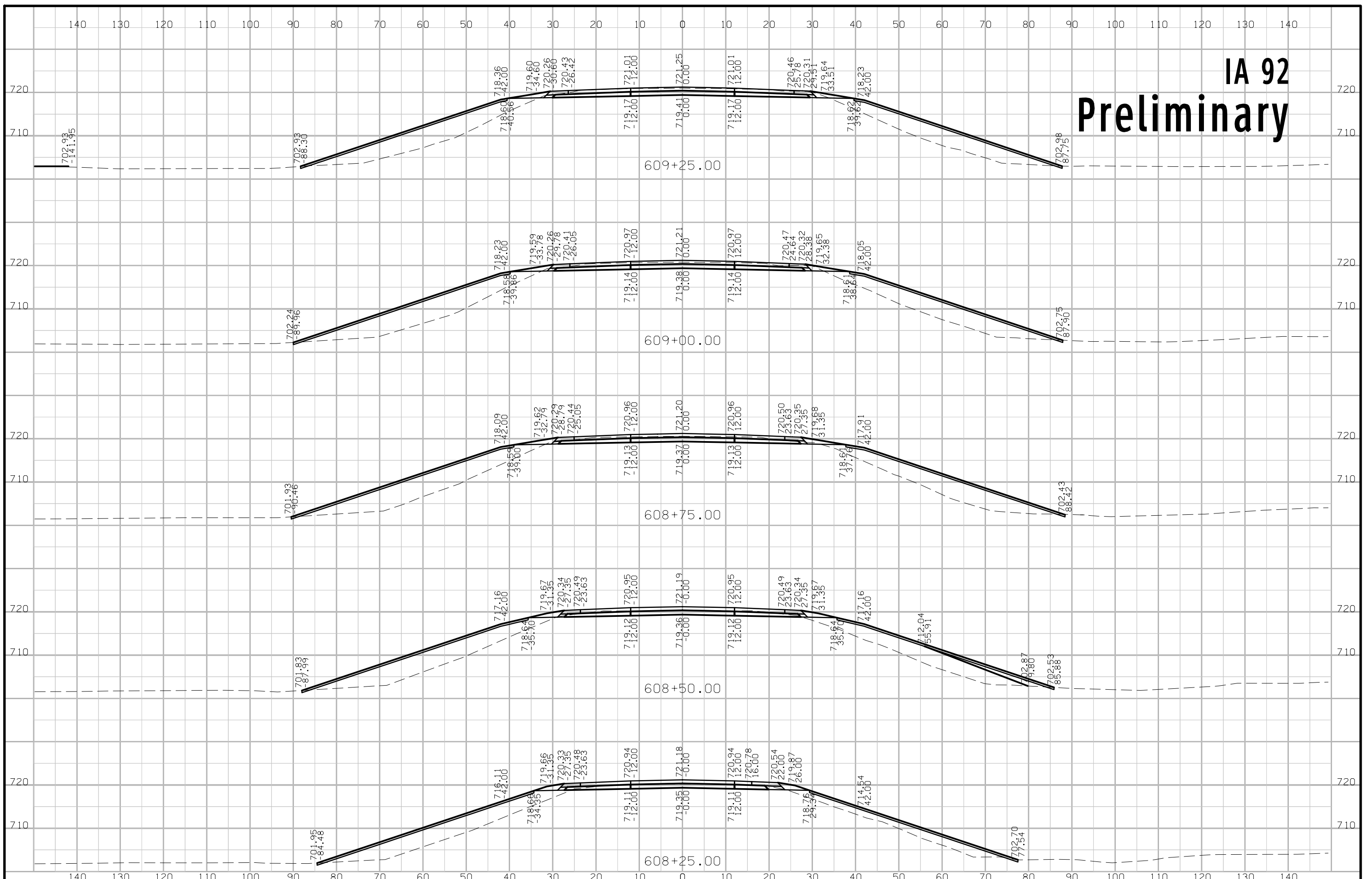
IA 92
Preliminary



IA 92 Preliminary



IA 92 Preliminary



IA 92 Preliminary

