

LETTING DATE  
12-20-2022

BRIDGE REPLACEMENT-PPCB  
BRFN-014-4(67)--39-50

JASPER CO.



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
**JASPER COUNTY**  
BRIDGE REPLACEMENT-PPCB

Alloway Creek 1.6 mi W of IA 224

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

PROJECT IDENTIFICATION NUMBER

18-50-014-010

PROJECT NUMBER

BRFN-014-4(67)--39-50

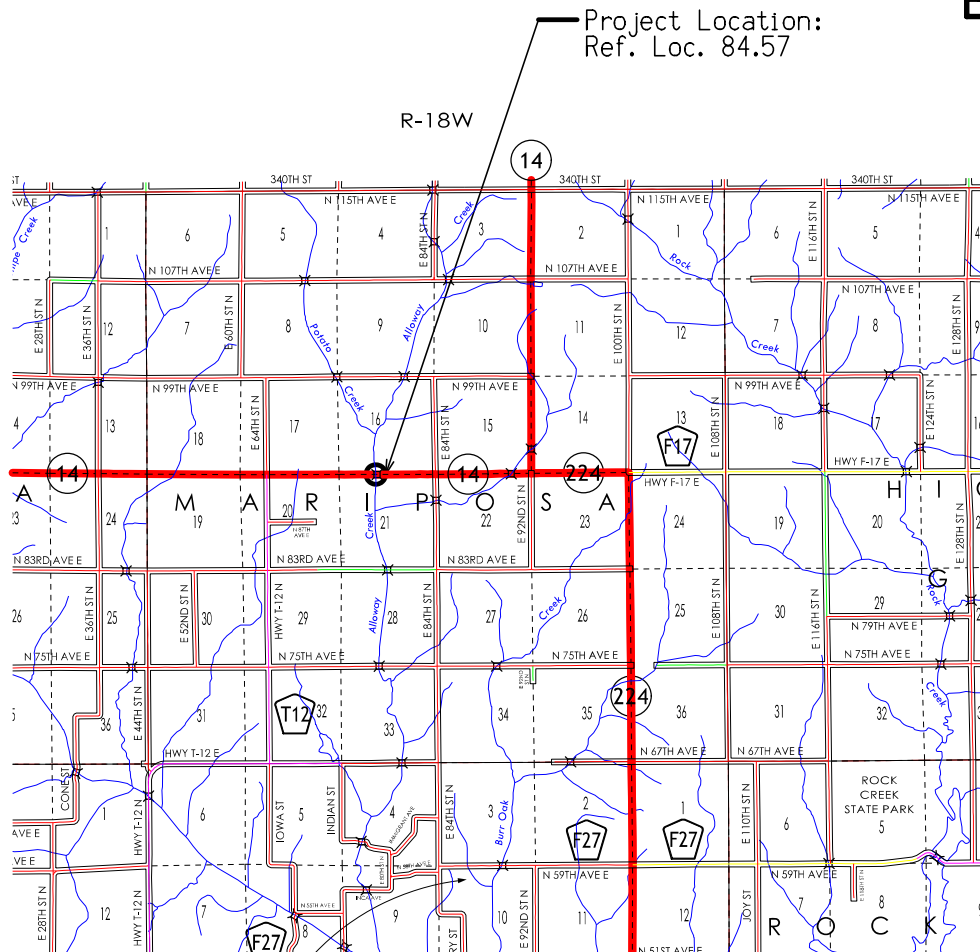
R.O.W. PROJECT NUMBER

NHSN-014-4(68)--2R-50

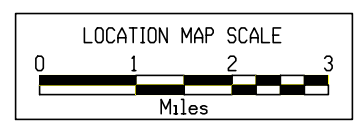
INDEX OF SHEETS

| No.             | DESCRIPTION                                      |
|-----------------|--|
| <b>A Sheets</b> | <b>Title Sheets</b>                              |
| A.1             | Title Sheet                                      |
| A.1             | Location Map Sheet                               |
| <b>B Sheets</b> | <b>Typical Cross Sections and Details</b>        |
| B.1 - 2         | Typical Cross Sections and Details               |
| <b>D Sheets</b> | <b>Mainline Plan and Profile Sheets</b>          |
| * D.1           | Plan & Profile Legend & Symbol Information Sheet |
| * D.2 - 5       | "Iowa Highway 14"                                |
| <b>G Sheets</b> | <b>Survey Sheets</b>                             |
| G.1 - 3         | Reference Ties and Bench Marks                   |
| <b>J Sheets</b> | <b>Traffic Control and Staging Sheets</b>        |
| * J.1           | Traffic Control Plan                             |
| * J.1           | Staging Notes Stage                              |
| * J.2           | Detour Map                                       |
| <b>V Sheets</b> | <b>Bridge and Culvert Situation Plans</b>        |
| V.1 - 2         | Bridge and Culvert Situation Plans               |
| <b>W Sheets</b> | <b>Mainline Cross Sections</b>                   |
| W.1 - 11        | Mainline Cross Sections                          |
|                 | * Color Plan Sheets                              |

H Sheets



Project Location:  
Ref. Loc. 84.57



D4 PLAN - Date: 8-23-2022  
B3 PLAN - Date: 10-4-2022

**PRELIMINARY PLANS**

Subject to change by final design.

D5 PLAN - Date: 2-3-2021

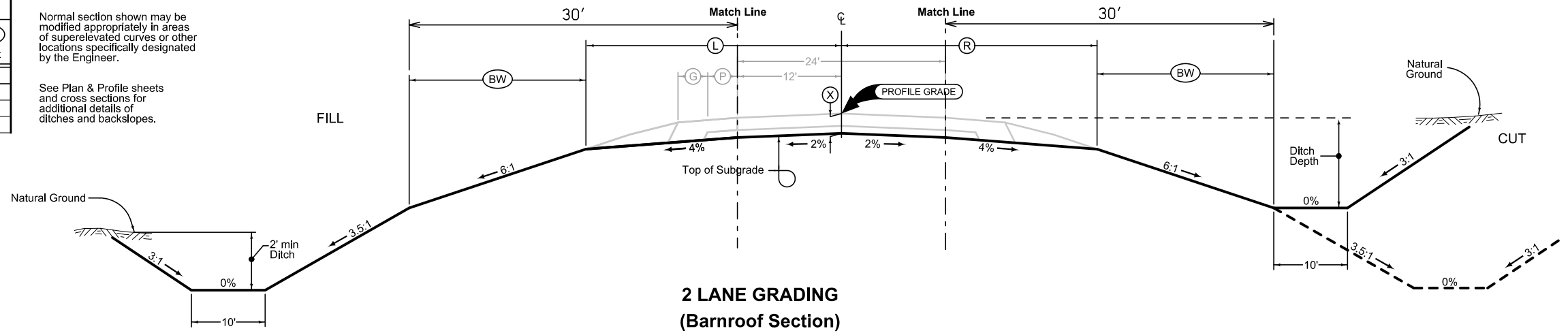
| DESIGN DATA RURAL |              |      |        |
|-------------------|--------------|------|--------|
| 2023              | AADT         | 1520 | V.P.D. |
| 2043              | AADT         | 1720 | V.P.D. |
| 20                | DHV          |      | V.P.H. |
|                   | TRUCKS       | 17   | %      |
|                   | Total        |      |        |
|                   | Design ESALs |      |        |

| INDEX OF SEALS |      |                         |
|----------------|------|-------------------------|
| SHEET NO.      | NAME | TYPE                    |
| A.1            | X    | Primary Signature Block |
| X              | X    | X                       |
|                |      |                         |
|                |      |                         |
|                |      |                         |

| LOCATION            |                       | DIMENSIONS  |             |               |              |
|---------------------|-----------------------|-------------|-------------|---------------|--------------|
| ROAD IDENTIFICATION | STATION TO STATION    | (L)<br>Feet | (R)<br>Feet | (X)<br>Inches | (BW)<br>Feet |
| Iowa 14             | 675+94.18   685+24.18 |             |             | 21            |              |
|                     |                       |             |             |               |              |
|                     |                       |             |             |               |              |

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

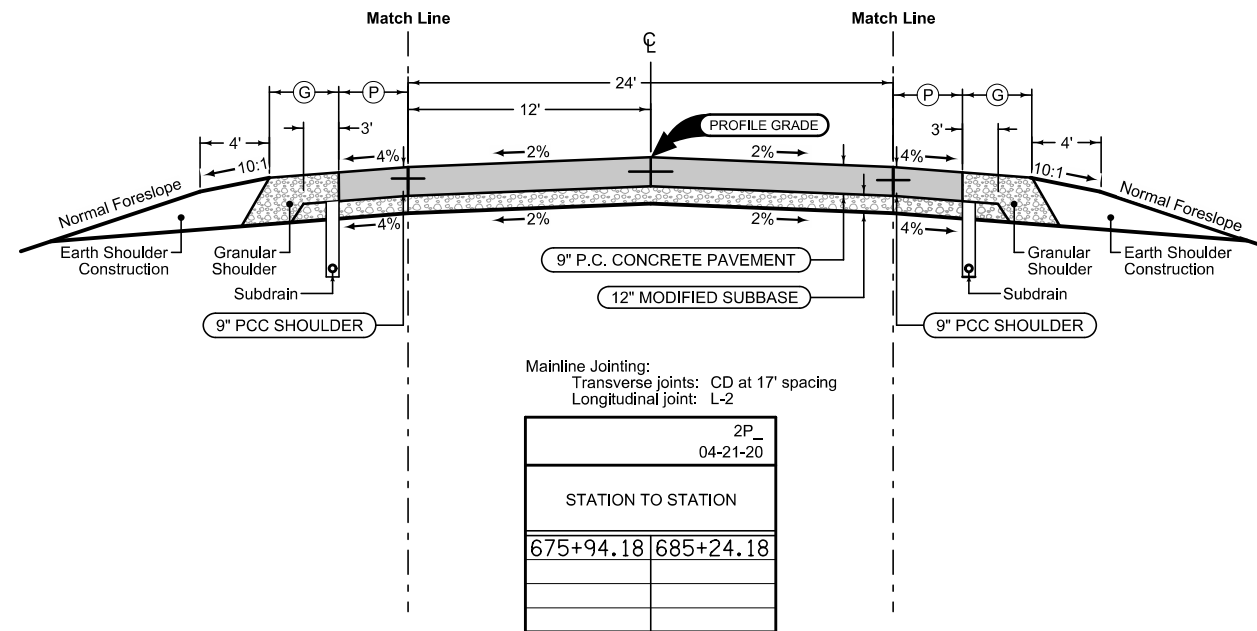
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



**Full Depth PCC Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: L-2 or KT-2  
Transverse joints: C at 17' spacing

| 2_C_FullPCC_04-21-20  |             |             |  |
|-----------------------|-------------|-------------|--|
| STATION TO STATION    | (P)<br>Feet | (G)<br>Feet |  |
| 675+94.18   685+24.18 | 4           | 6           |  |
|                       |             |             |  |
|                       |             |             |  |



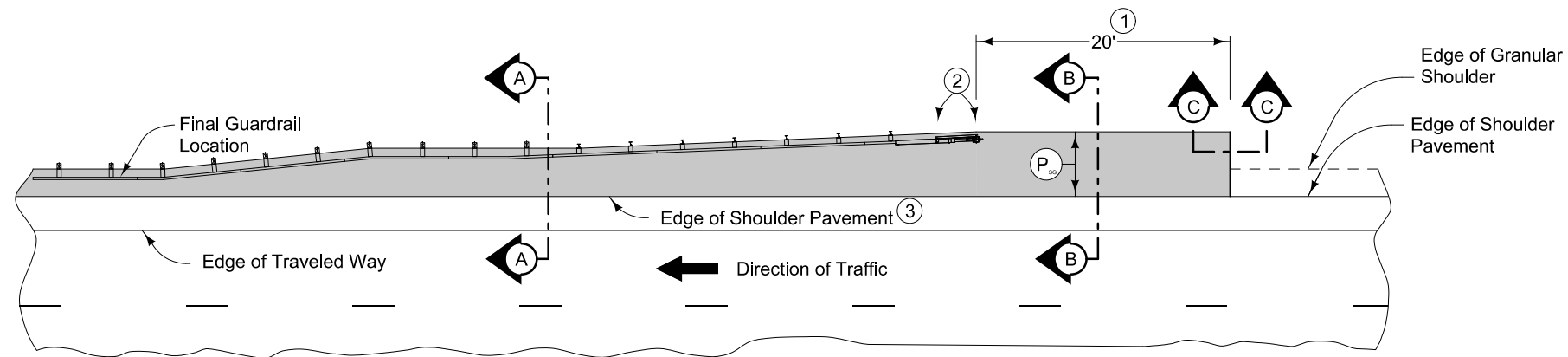
Mainline Jointing:  
Transverse joints: CD at 17' spacing  
Longitudinal joint: L-2

| 2P_04-21-20           |  |
|-----------------------|--|
| STATION TO STATION    |  |
| 675+94.18   685+24.18 |  |
|                       |  |
|                       |  |

**Full Depth PCC Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: L-2 or KT-2  
Transverse joints: C at 17' spacing

| 2_C_FullPCC_04-21-20  |             |             |  |
|-----------------------|-------------|-------------|--|
| STATION TO STATION    | (P)<br>Feet | (G)<br>Feet |  |
| 675+94.18   685+24.18 | 4           | 6           |  |
|                       |             |             |  |
|                       |             |             |  |



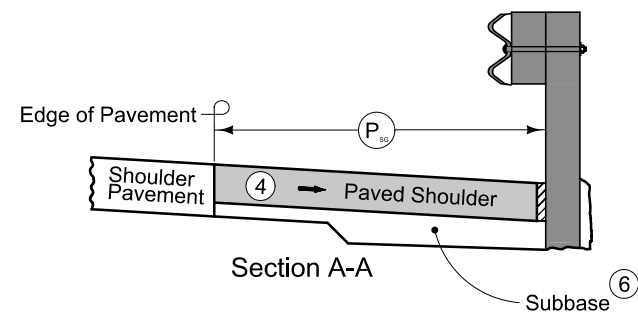
PLAN VIEW

8" HMA Paved Shoulder at guardrail.

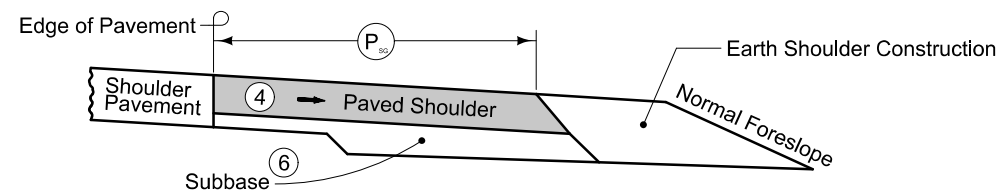
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

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

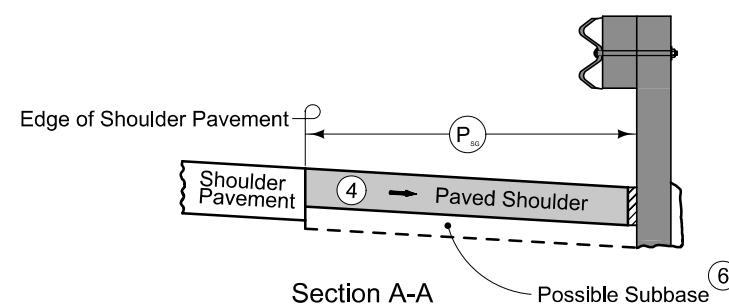


Section A-A

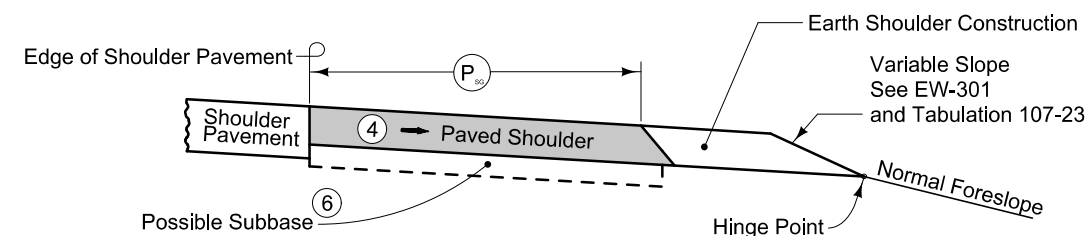


Section B-B

NEW CONSTRUCTION

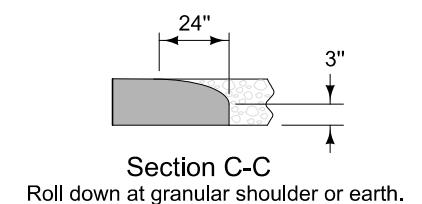


Section A-A



Section B-B

EXISTING SHOULDER



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

**SURVEY SYMBOLS**

**SURVEY SYMBOLS**

- ▲ PCP Photo Control Point
- FENO FENO Monument
- EP Edge of Paved Roads (ML or SR)
- WC Wild Card (Misc. Field Shot)
- ▲ SCR Section Corner
- REF Reference Tie Point
- BRG Bridge
- ENT Centerline BL of Entrance
- SOP Size of Pipe or Culvert
- PIP Pipe Culvert
- BLS Bridge Low Steel
- BL Topo Breakline
- LIN Miscellaneous Line
- D Centerline Draw or Stream (Down)
- DTM Photogrammetry Elv Control Check
- ▲ RIP Rip-Rap
- PLG Location of General Photo
- SNP Unpaved Shoulder
- C Centerline BL of Road (ML or SR)
- ENU Edge Unpaved Entrance & Parking
- CP Control Point
- BNK Stream Bank
- PPA Power Pole Co. 1
- TA TA Tower Anchor
- ⊕ MH Utility Access (Manhole)
- SP Stream Profile
- TW Top of Water
- TP TPD Telephone Pedestal
- SH Paved Shoulder
- GU Gutter In Front of Curb
- CU Back of Curb
- GDL Guard Rail Steel
- OUT Tile Outlet
- TILE Tile Line
- ← DU Centerline Draw or Stream (Up)
- CON Concrete or A/C Slab
- EW Edge of Water
- BCL Bridge Centerline
- BD Bridge Deck
- SBR Size of Bridge
- T1 TL1D Telephone Line Co. 1 - Quality D
- W WL1D Water Line Co. 1 - Quality D
- F0 FO1D Fiber Optic Co. 1 - Quality D
- F02 FO2D Fiber Optic Co. 2 - Quality D

**UTILITY LEGEND**

This is a POINT 25 Project and is subject to the provisions of IAC 761-115.25.

- T1- Centurylink  
Steve Parker  
2103 E. University Ave.  
Des Moines, IA 50317  
(515) 265-0968  
Steven.Parker4@centurylink.com
- F0- Heart of Iowa Communications Cooperative  
Jay Duncan  
502 Main Street  
Union, IA 50258-0130  
(641) 486-2211  
jduncan@heartofiowa.coop
- F02- Partner Communications Cooperative  
Mr. Tracy Decker  
101 E Church Street  
Gilman, IA 50106-0008  
(641) 498-3111  
tdecker@pcctel.net
- W- Iowa Regional Utilities Association  
Matt Mahler  
1351 Iowa Speedway Drive  
Newton, IA 50208  
(800) 400-6066  
mmahler@irua.net

**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    |

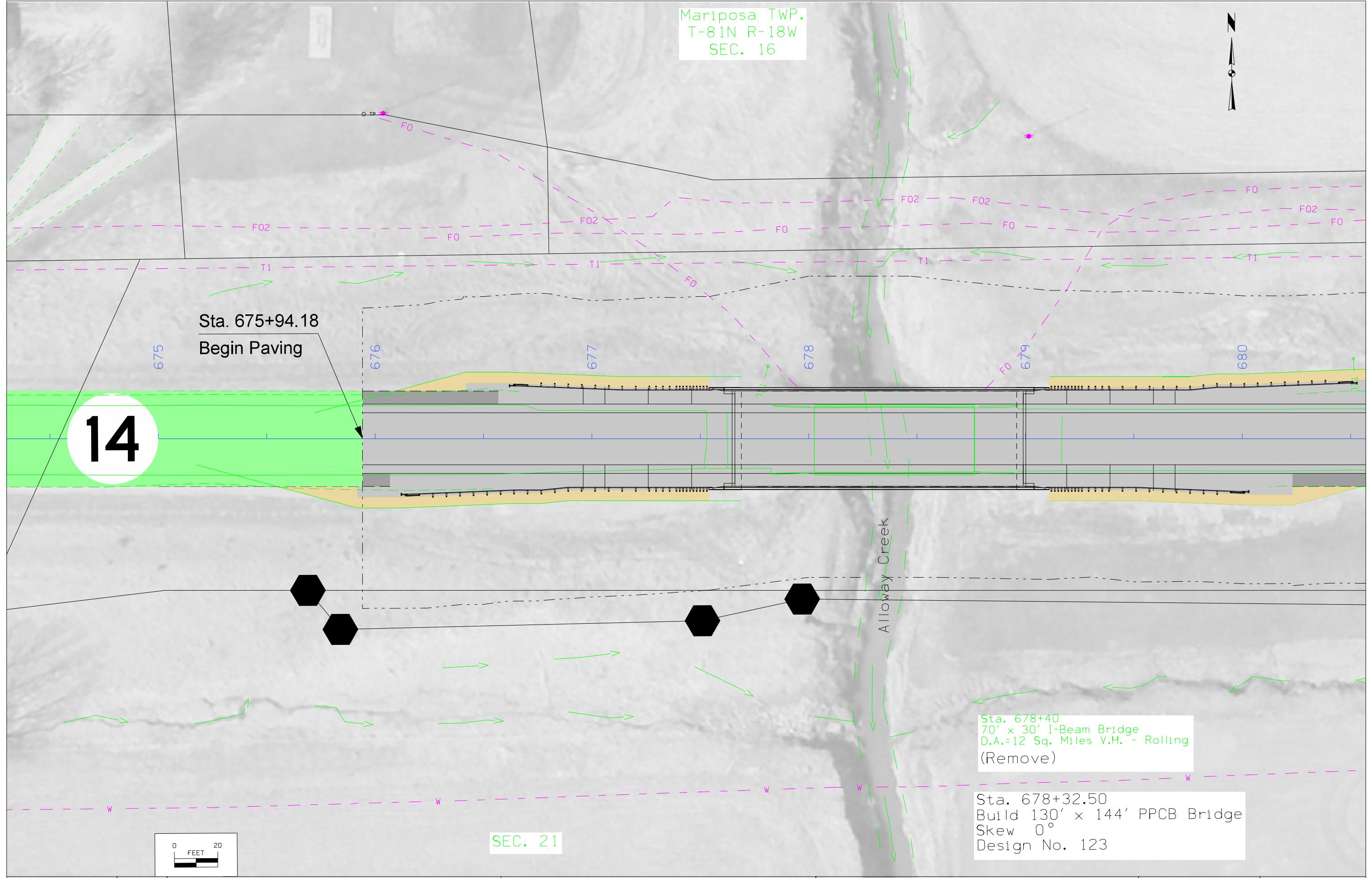
- Reference Point**
- Station
  - Survey Line
  - Section Corner
  - Ground Line Intercept
  - Saw Cut
  - Guardrail
  - Trench Drain
  - HighTension Cable Guardrail
  - Sheet Pile
  - Pavement Removal
  - Clearing & Grubbing Area

- 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
  - C/A Access Control
  - Property Line

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

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

Mariposa TWP.  
T-81N R-18W  
SEC. 16

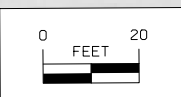


Sta. 675+94.18  
Begin Paving

14

Sta. 678+40  
70' x 30' I-Beam Bridge  
D.A.=12 Sq. Miles V.H. - Rolling  
(Remove)

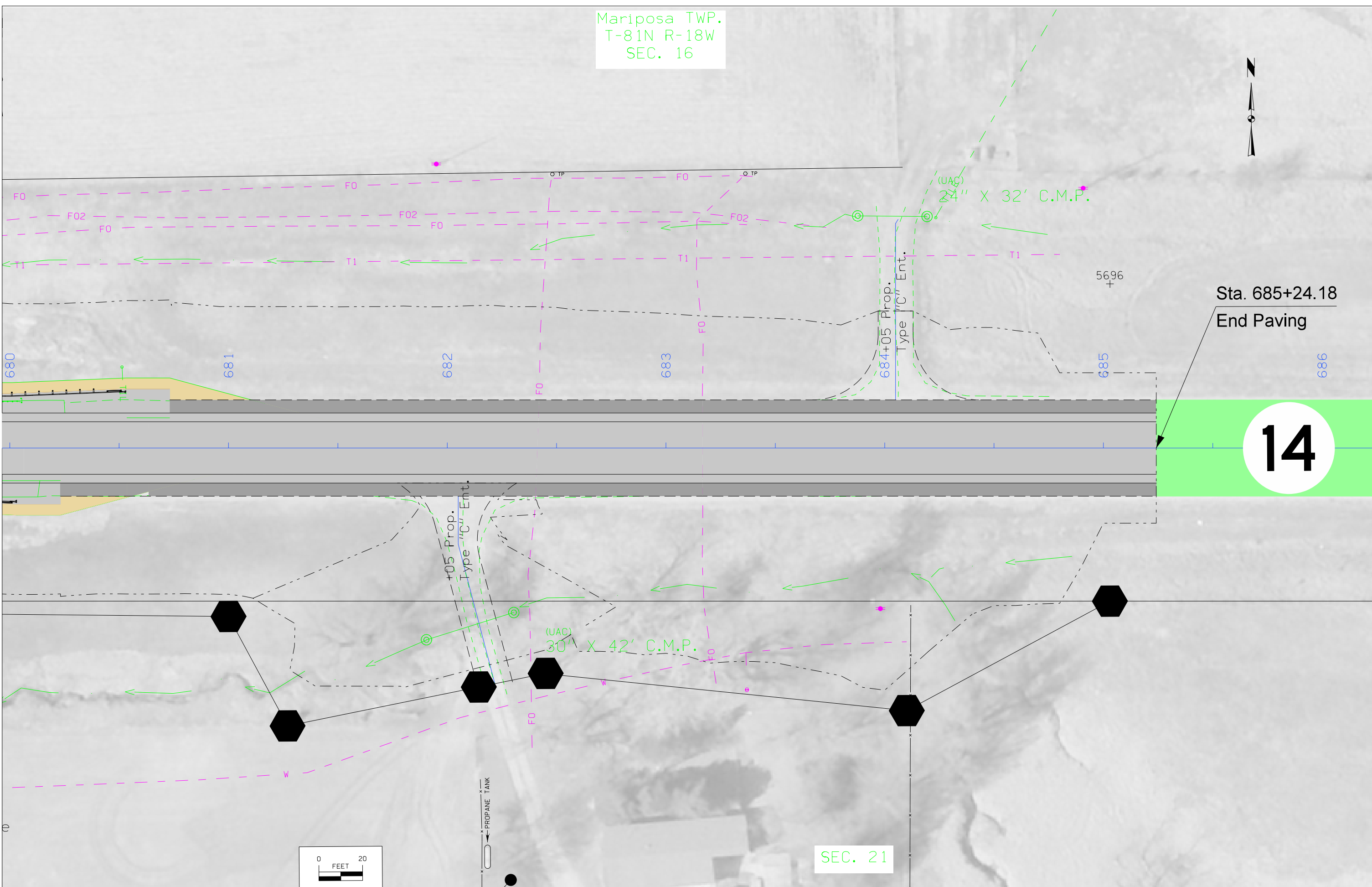
Sta. 678+32.50  
Build 130' x 144' PPCB Bridge  
Skew 0°  
Design No. 123



SEC. 21



Mariposa TWP.  
T-81N R-18W  
SEC. 16



Sta. 685+24.18  
End Paving

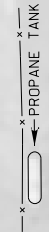
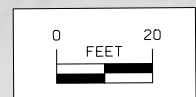
14

+05 Prop.  
Type "C" Ent.

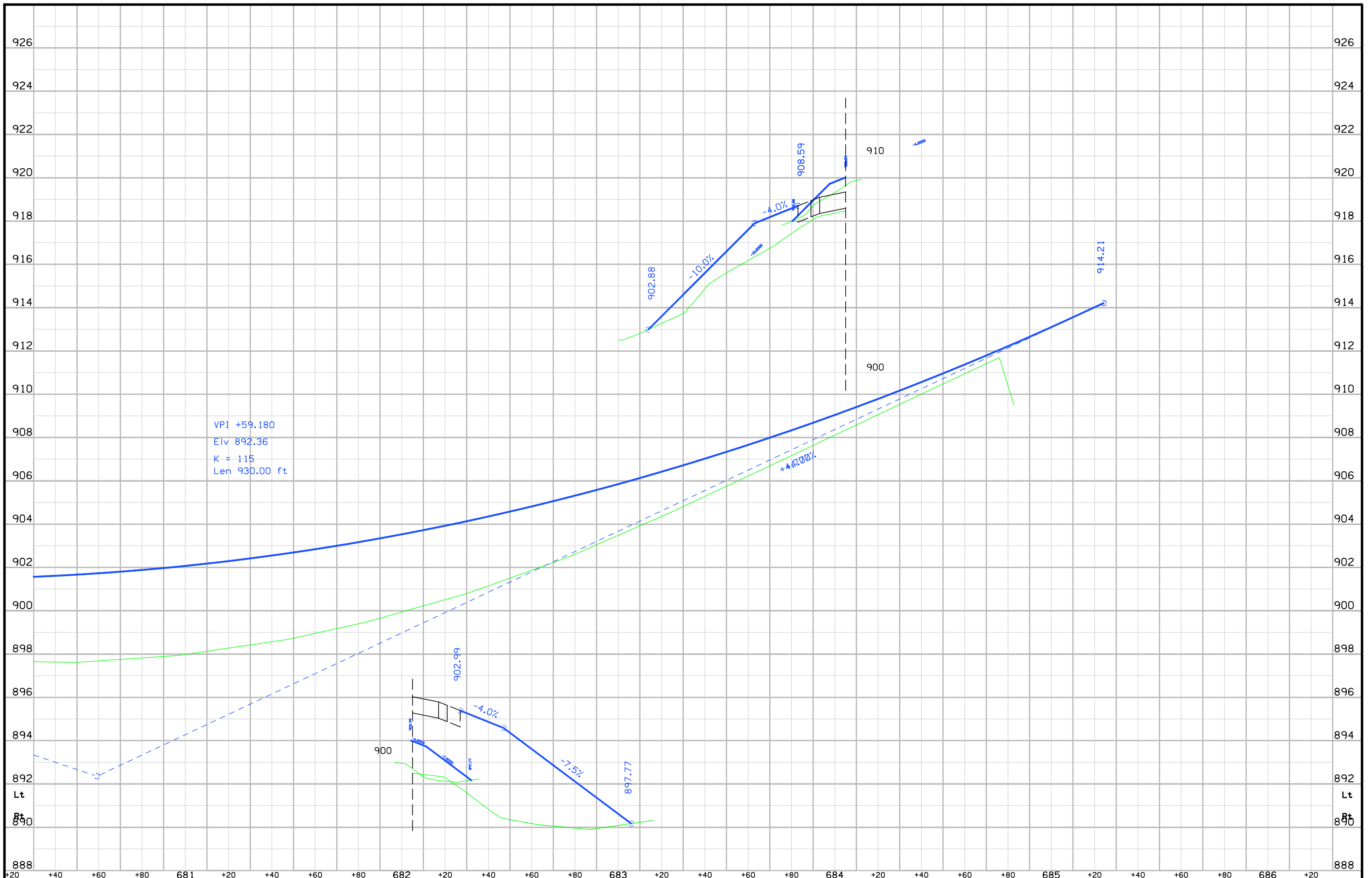
684+05 Prop.  
Type "C" Ent.

(UAC)  
30" X 42' C.M.P.

(UAC)  
24" X 32' C.M.P.



SEC. 21





## Survey Information

Jasper County  
BRFN-014-4(67)--39-50  
Alloway Creek 1.6 mi S of IA 224  
18-50-014-010  
Sap-822.2

### Date(s) of Survey

Begin Date 02/26/2019  
End Date 07/02/2019

### General Information

Measurement units for this survey are US survey feet. This survey is for unspecified bridge work @ Alloway Creek 1.6 mi S of IA 224. Project datum and control information is provided by Design Survey Office. This project is a partial field survey supplemented with photo control.

### Vertical Control

Vertical Control was established on this project by 6 hour static sessions. Vertical datum for this survey is relative to NAVD88. Geoid 12 B was used in processing. GRS80 Ellipsoidal Height was computed at project Pts. CP 4 and CP 5. Vertical control was checked with IARTN checks.

This survey observed a Bridge Seat Elevation to compare to local ground control:

West Bridge Seat @ Alloway Creek Project # 764 (2) Elev. = 452.79  
= West Bridge Seat @ Alloway Creek Creek Survey Elev. = 897.55

### Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 9 (U.S. Survey Feet). This survey control is relative to IARTN reference stations. IARTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011). Coordinates were determined by conducting six hour static observations. Additional control points were placed throughout the project using a GNSS Base-Rover setups. A minimum of three observations were collected with 1 hour or greater time span between each observation. Horizontal control was checked with IARTN checks.

| Point Name | Northing    | Easting      | Elevation | Description   |
|------------|-------------|--------------|-----------|---------------|
| CP 2       | 7771904.517 | 19471126.737 | 946.282   | FENO MONUMENT |
| CP 4       | 7771998.223 | 19464826.273 | 971.980   | FENO MONUMENT |
| CP 5       | 7771964.772 | 19459666.611 | 994.969   | FENO MONUMENT |

### Alignment Information

#### IA Hwy 14

The horizontal alignment for this survey is created from As-built Plans Project # 764 B. Survey stationing was equated to the Plan PI @ Sta. 727+29.70 and run back and ahead without equation throughout the survey.

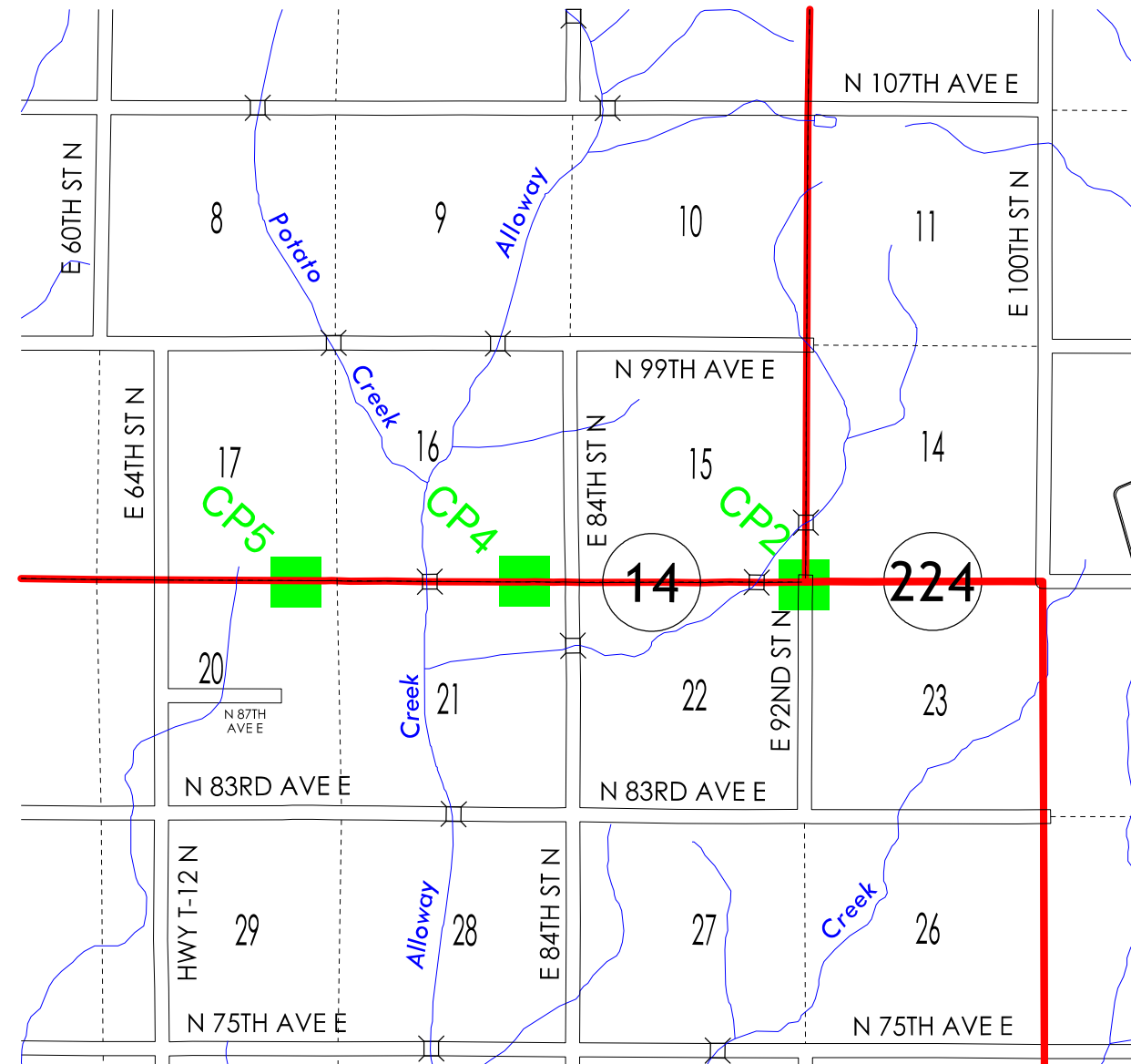
Survey stationing relates to as built plan stationing as follows:

PI Sta. 596+28.10 As-built Plans Project No. 764 B  
= PI Sta. 596+35.37 this survey

PI Sta. 727+29.70 As-built Plans Project No. 764 B  
= PI Sta. 727+29.70 this survey

## CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) EPOCH 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

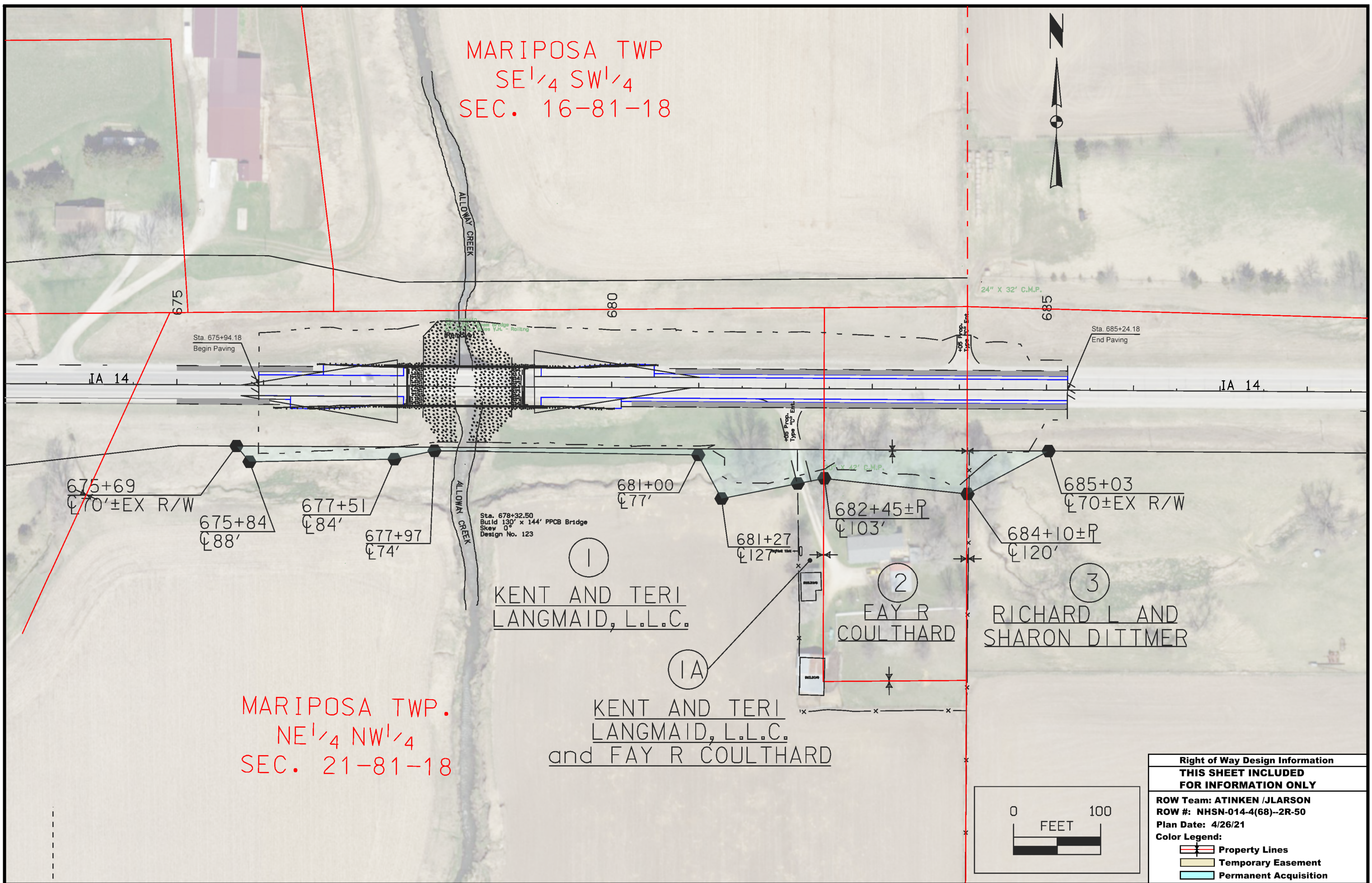
Ia. Regional Coordinate System Zone 9

| Point Name | North      | East        | Elevation | Feature Definition | Description  |
|------------|------------|-------------|-----------|--------------------|--|
| CP2        | 7771904.52 | 19471126.74 | 946.28    | FENO               | SET FENO MONUMENT__Stamped IOWA DEPT OF TRANS SURVEY MARKER_Set near the W. shoulder of 92nd St._.5' below ground_70' SW of intersection IA Hwy 14 & E 92nd St._64' S. of IA Hwy 14_29' W. of E 92nd St._56' N. of N. corner of HDWL of box culvert. |
| CP4        | 7771998.22 | 19464826.27 | 971.98    | FENO               | SET FENO MONUMENT__Stamped IOWA DEPT OF TRANS SURVEY MARKER_Set near the shoulder N. of IA Hwy 14,_5' below ground,_28' N. of Hwy 14,_86' S. of fence_76' NW mile marker 85 sign_136' E of top inlet conc pipe.                                      |
| CP5        | 7771964.77 | 19459666.61 | 994.97    | FENO               | SET FENO MONUMENT__Stamped IOWA DEPT OF TRANS SURVEY MARKER_Set near the toe slope, S. of IA Hwy 14,_5' below ground,_69' SW of address sign 7294 IA Hwy 14_37' S. of IA Hwy 14, 45' N. of fence_64' E. mile marker 84 sign_105' E. of power pole.   |



NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

MARIPOSA TWP  
SE 1/4 SW 1/4  
SEC. 16-81-18



MARIPOSA TWP.  
NE 1/4 NW 1/4  
SEC. 21-81-18

①  
KENT AND TERI  
LANGMAID, L.L.C.

②  
FAY R  
COULTHARD

③  
RICHARD L AND  
SHARON DITTMER

①A  
KENT AND TERI  
LANGMAID, L.L.C.  
and FAY R COULTHARD

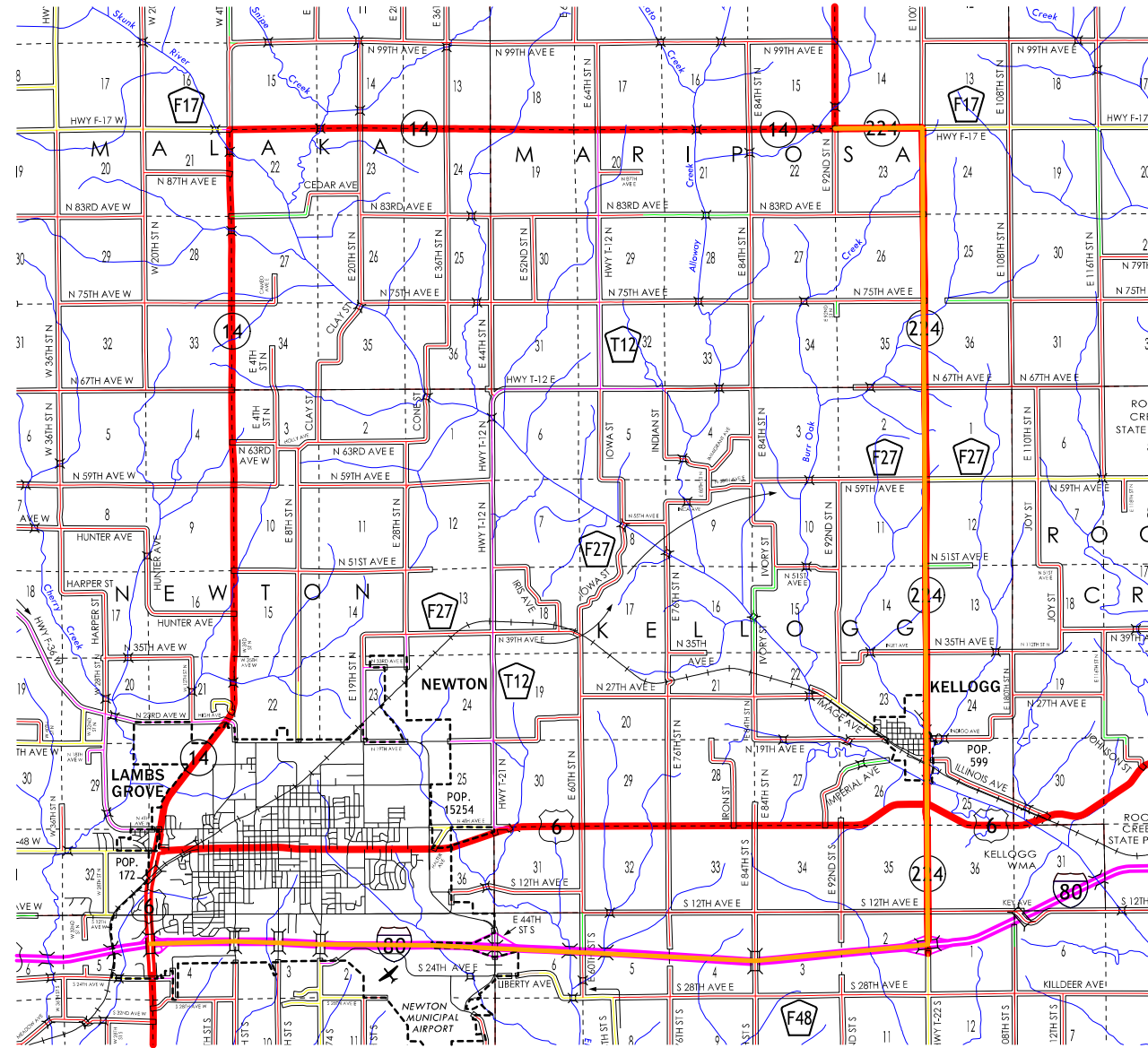
|   |                       |
|---|-----------------------|
| <b>Right of Way Design Information</b>          |                       |
| <b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b> |                       |
| ROW Team: ATINKEN /JLARSON                      |                       |
| ROW #: NHSN-014-4(68)--2R-50                    |                       |
| Plan Date: 4/26/21                              |                       |
| Color Legend:                                   |                       |
|   | Property Lines        |
|   | Temporary Easement    |
|   | Permanent Acquisition |

**511 TRAVEL RESTRICTIONS**

| Route | Direction | County | Location Description                                     | Feature Crossed              | Object Type | Maint. Bridge No.,<br>Structure ID,<br>or FHWA No. | Type of<br>Restriction | Existing<br>Measurement | Construction<br>Measurement | Construction<br>Measurement<br>as Signed | Projected<br>As Built<br>Measurement | Remarks |
|-------|-----------|--------|--|------------------------------|-------------|--|------------------------|-------------------------|-----------------------------|--|--------------------------------------|---------|
| IA 14 | Both      | Jasper | 1.6 Miles west of Iowa 224 on Iowa 14, in Jasper County. | Alloway Creek                |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  | No Restrictions anticipated. |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |
|       |           |        |  |                              |             |  |                        |                         |                             |  |                                      |         |

**TRAFFIC CONTROL PLAN**

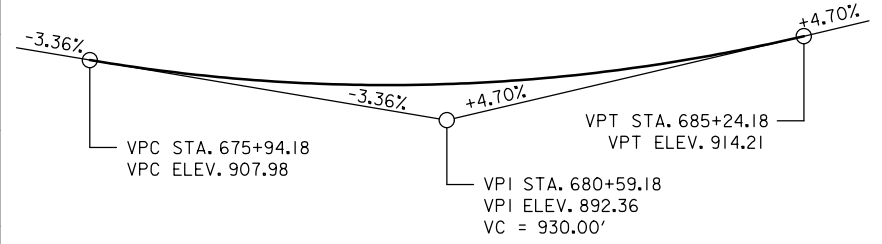
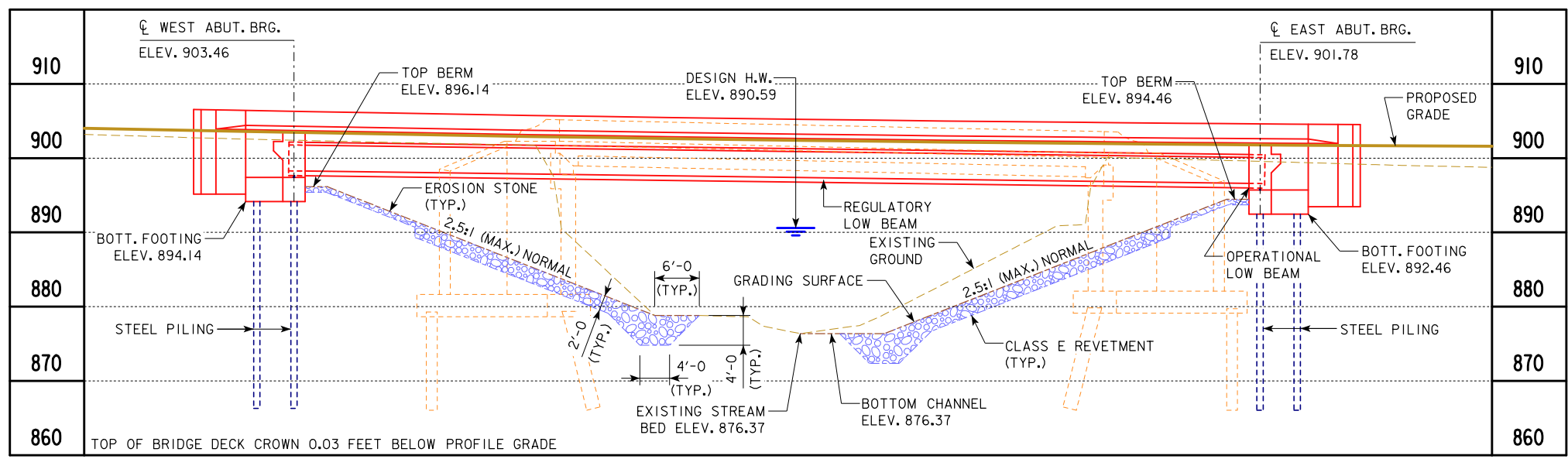
Iowa 14 will be closed to traffic during construction. The proposed detour route will be the same as the route used during replacement of the bridge over Snipe Creek in 2009. The detour followed I-80 east of Iowa 224, then north and west to Iowa 14. No county roads will be utilized with this detour. See detour map on sheet J.2.



 Detour Route



CONTROL POINT 4: NORTHING 7771998.22 EASTING 19464826.27 ELEVATION 971.98  
 DESCRIPTION: SET FENO MONUMENT STAMPED IOWA DEPT OF TRANS SURVEY MARKER.  
 SET NEAR SHOULDER N. OF IA HWY 14, .5' BELOW GROUND, .28' N. OF HWY 14, .86' S.  
 OF FENCE, .76' NW MILE MARKER 85 SIGN, 136' E OF TOP INLET CONC PIPE.



**PROPOSED PROFILE GRADE ON IOWA HIGHWAY 14**

**HYDRAULIC DATA**

DRAINAGE AREA = 12.20 SQ. MI.  
 STREAM SLOPE = 12.12 FT./MI.  
 Q<sub>50</sub> (DESIGN) = 3,840 CFS  
 STAGE = 890.59 FT.  
 REGULATORY LOW BEAM = 896.62 FT.  
 BACKWATER = 0.19 FT.  
 AVG. BRIDGE VELOCITY = 3.90 FPS

**TRAFFIC ESTIMATE**

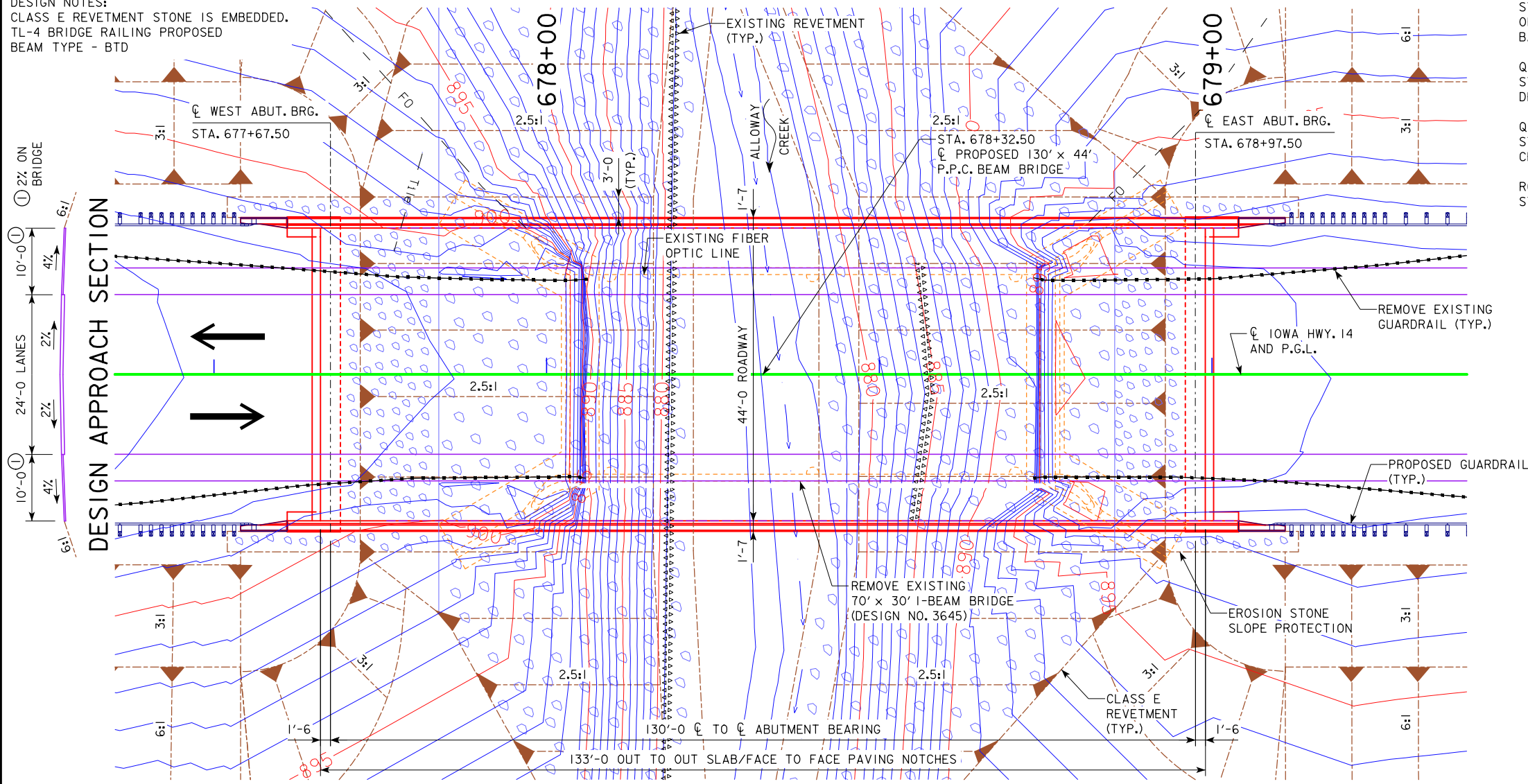
|               |      |        |
|---------------|------|--------|
| 2023 AADT     | 1520 | V.P.D. |
| 2043 AADT     | 1720 | V.P.D. |
| 2043 DHV      | 180  | V.P.H. |
| TRUCKS (2023) | 15   | %      |
| TRUCKS (2043) | 17   | %      |

Q<sub>100</sub> = 4,630 CFS  
 STAGE = 890.92 FT.  
 OPERATIONAL LOW BEAM = 895.97 FT.  
 BACKWATER = 0.35 FT.  
 Q<sub>200</sub> = 5,230 CFS  
 STAGE = 891.14  
 DESIGN SCOUR ELEVATION = 875.76  
 Q<sub>500</sub> = 6,120 CFS  
 STAGE = 891.41  
 CHECK SCOUR ELEVATION = 872.22  
 ROADWAY OVERTOP 901.47  
 STA. 679+81.91

**LOCATION**

IOWA 14 OVER ALLOWAY CREEK  
 T-81N R-18W  
 SECTION 16 & 21  
 MARIPOSA TOWNSHIP  
 JASPER COUNTY  
 FHWA NO. 30691  
 BRIDGE MAINT. NO. 5084.5S014  
 LATITUDE 41.819743°  
 LONGITUDE -92.953566°

DESIGN NOTES:  
 CLASS E REVETMENT STONE IS EMBEDDED.  
 TL-4 BRIDGE RAILING PROPOSED  
 BEAM TYPE - BTD



**UTILITY LEGEND**

|         |                   |                                   |
|---------|-------------------|-----------------------------------|
| --E--   | OVERHEAD ELECTRIC | CONSUMERS ENERGY                  |
| --FO--  | FIBER OPTIC LINE  | HEART OF IOWA COMMUNICATIONS      |
| --F02-- | FIBER OPTIC LINE  | PARTNER COMMUNICATIONS            |
| --T--   | TELEPHONE LINE    | CENTURY LINK                      |
| --W--   | WATER LINE        | IOWA REGIONAL UTILITY ASSOCIATION |
| ●       | POWER POLE        |                                   |

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

**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.

*Steven A. Klocke* 1-6-2020  
 Signature Date  
 Printed or Typed Name **Steven A. Klocke**  
 My license renewal date is December 31, 2021

Pages or sheets covered by this seal: 2 & 3 (HYDRAULIC DATA, CHANNEL GRADING AND REVETMENT)

PRELIMINARY  
 DESIGN FOR 0° SKEW  
**130' x 44' PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE**  
 130'-0 SINGLE SPAN  
**SITUATION PLAN**  
 STA. 678+32.50 (IA 14) DECEMBER 2020  
**JASPER COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 2 FILE NO. 31710 DESIGN NO. 123



**SITUATION PLAN**

GENERAL NOTE:  
 THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 70' x 30' I-BEAM BRIDGE, JASPER DESIGN NO. 3645, FHWA NO. 30690, MAINTENANCE NO. 5084.5S014.



CONTROL POINT 4: NORTHING 7771998.22 EASTING 19464826.27 ELEVATION 971.98  
 DESCRIPTION: SET FENO MONUMENT STAMPED IOWA DEPT OF TRANS SURVEY MARKER.  
 SET NEAR SHOULDER N. OF IA HWY 14, .5' BELOW GROUND, .28' N. OF HWY 14, .86' S.  
 OF FENCE .76' NW MILE MARKER 85 SIGN, 136' E OF TOP INLET CONC PIPE.

| REVETMENT QUANTITIES                  |                       |                     |                         |                 |
|---------------------------------------|-----------------------|---------------------|-------------------------|-----------------|
| LOCATION                              | REVETMENT CL. E (TON) | EROSION STONE (TON) | ENGINEERING FABRIC (SY) | EXCAVATION (CY) |
| BERM LINING/STONE TOE - WEST ABUTMENT | 720                   | -                   | 740                     | 450             |
| SLOPE PROTECTION - WEST ABUTMENT      | -                     | 40                  | 100                     | 25              |
| BERM LINING/STONE TOE - EAST ABUTMENT | 768                   | -                   | 780                     | 480             |
| SLOPE PROTECTION - EAST ABUTMENT      | -                     | 32                  | 80                      | 20              |
| TOTALS                                | 1488                  | 72                  | 1700                    | 975             |

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.  
 REVETMENT AND EROSION STONE ESTIMATED AT 1.6 TON/CY.  
 BRIDGE WING ARMORING QUANTITIES ARE NOT INCLUDED ABOVE.

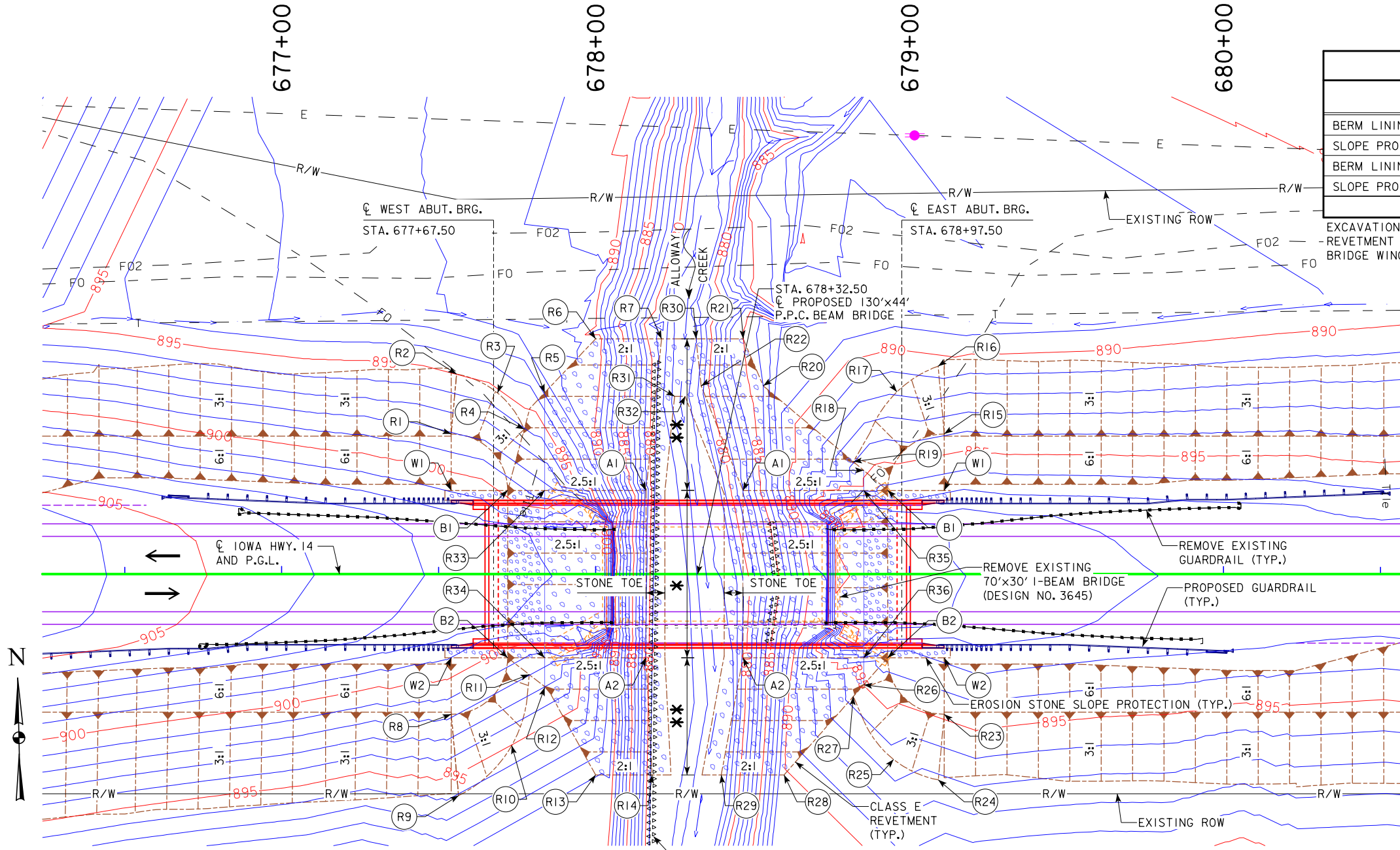
| BERM SLOPE LOCATION TABLE |               |            |        |               |            |        |
|---------------------------|---------------|------------|--------|---------------|------------|--------|
| POINTS                    | WEST ABUTMENT |            |        | EAST ABUTMENT |            |        |
|                           | STATION       | OFFSET     | ELEV.  | STATION       | OFFSET     | ELEV.  |
| A1                        | 678+16.05     | 26.67' LT. | 878.82 | 678+46.94     | 26.67' LT. | 876.37 |
| A2                        | 678+16.05     | 26.67' RT. | 878.82 | 678+46.94     | 26.67' RT. | 876.37 |
| B1                        | 677+72.00     | 26.67' LT. | 896.14 | 678+93.00     | 26.67' LT. | 894.46 |
| B2                        | 677+72.00     | 26.67' RT. | 896.14 | 678+93.00     | 26.67' RT. | 894.46 |
| W1                        | 677+54.00     | 26.67' LT. | 903.13 | 679+11.00     | 26.67' LT. | 901.10 |
| W2                        | 677+54.00     | 26.67' RT. | 903.13 | 679+11.00     | 26.67' RT. | 901.10 |

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

**REVETMENT LAYOUT**

(STATIONS AND OFFSETS MEASURED ALONG CL IOWA HWY. 14)

- (R1) 677+54.00, 44.67' LT.
- (R2) 677+55.70, 63.74' LT.
- (R3) 677+68.74, 57.75' LT.
- (R4) 677+77.26, 46.20' LT.
- (R5) 677+83.79, 57.83' LT.
- (R6) 678+00.00, 75.00' LT. Δ
- (R7) 678+21.00, 75.00' LT. BEG. STONE TOE
- (R8) 677+54.00, 44.67' RT.
- (R9) 677+56.36, 70.55' RT.
- (R10) 677+73.27, 54.63' RT.
- (R11) 677+78.85, 32.01' RT.
- (R12) 677+83.79, 36.11' RT.
- (R13) 678+00.00, 64.00' RT. Δ
- (R14) 678+18.00, 64.00' RT. BEG. STONE TOE
- (R15) 679+11.00, 44.67' LT.
- (R16) 679+09.10, 66.27' LT.
- (R17) 678+95.98, 58.09' LT.
- (R18) 678+85.40, 33.06' LT.
- (R19) 678+82.29, 35.68' LT.
- (R20) 678+53.39, 60.01' LT.
- (R21) 678+47.00, 75.00' LT. Δ
- (R22) 678+53.39, 60.00' LT. BEG. STONE TOE
- (R23) 679+11.00, 44.67' RT.
- (R24) 679+09.14, 65.56' RT.
- (R25) 678+94.94, 59.07' RT.
- (R26) 678+85.40, 35.27' RT.
- (R27) 678+82.09, 39.01' RT.
- (R28) 678+60.00, 64.00' RT. Δ
- (R29) 678+40.00, 64.00' RT. BEG. STONE TOE
- (R30) 678+32.00, 75.00' LT. BEG. STONE TOE
- (R31) 678+25.15, 56.67' LT.
- (R32) 678+28.48, 56.67' LT.
- (R33) 677+83.79, 26.67' LT. ΔΔ
- (R34) 677+83.79, 26.67' RT. ΔΔ
- (R35) 678+85.40, 26.67' LT. ΔΔ
- (R36) 678+85.40, 26.67' RT. ΔΔ

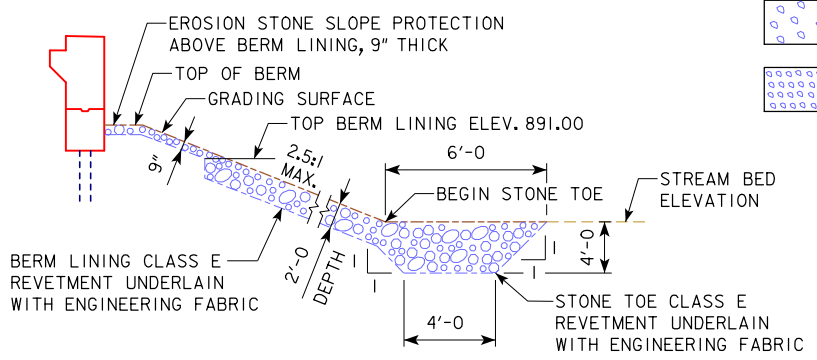


- \* LIMITS OF 2.5:1 BRIDGE BERM SLOPES
- \*\* LIMITS OF TRANSITION FROM 2.5:1 BRIDGE BERMS TO 2:1 STREAM BANKS

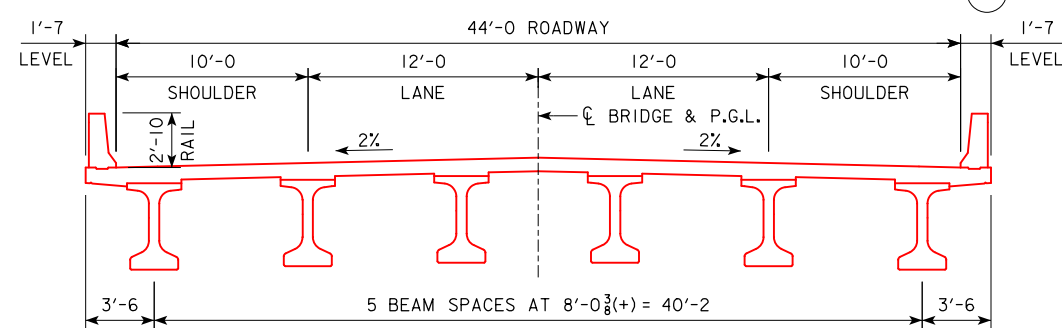
**SITE PLAN**

NOTES:  
 Δ POINTS R6, R7, R30, R21, R13, R14, R29 AND R28 DEFINE THE TRANSITION FROM EXISTING STREAM BANK SLOPES TO 2:1 SLOPES.  
 ΔΔ POINTS R33, R34, R35 AND R36 DEFINE THE TRANSITION OF EROSION STONE SLOPE PROTECTION TO CLASS E REVETMENT.

- INDICATES AREA OF CLASS E REVETMENT
- INDICATES AREA OF EROSION STONE



**SECTION THROUGH STONE TOE AND BERM LINING**



**TYPICAL SECTION (BTD BEAMS)**



PRELIMINARY

DESIGN FOR 0° SKEW

**130' x 44' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE**

130'-0 SINGLE SPAN

**SITUATION PLAN - SITE**

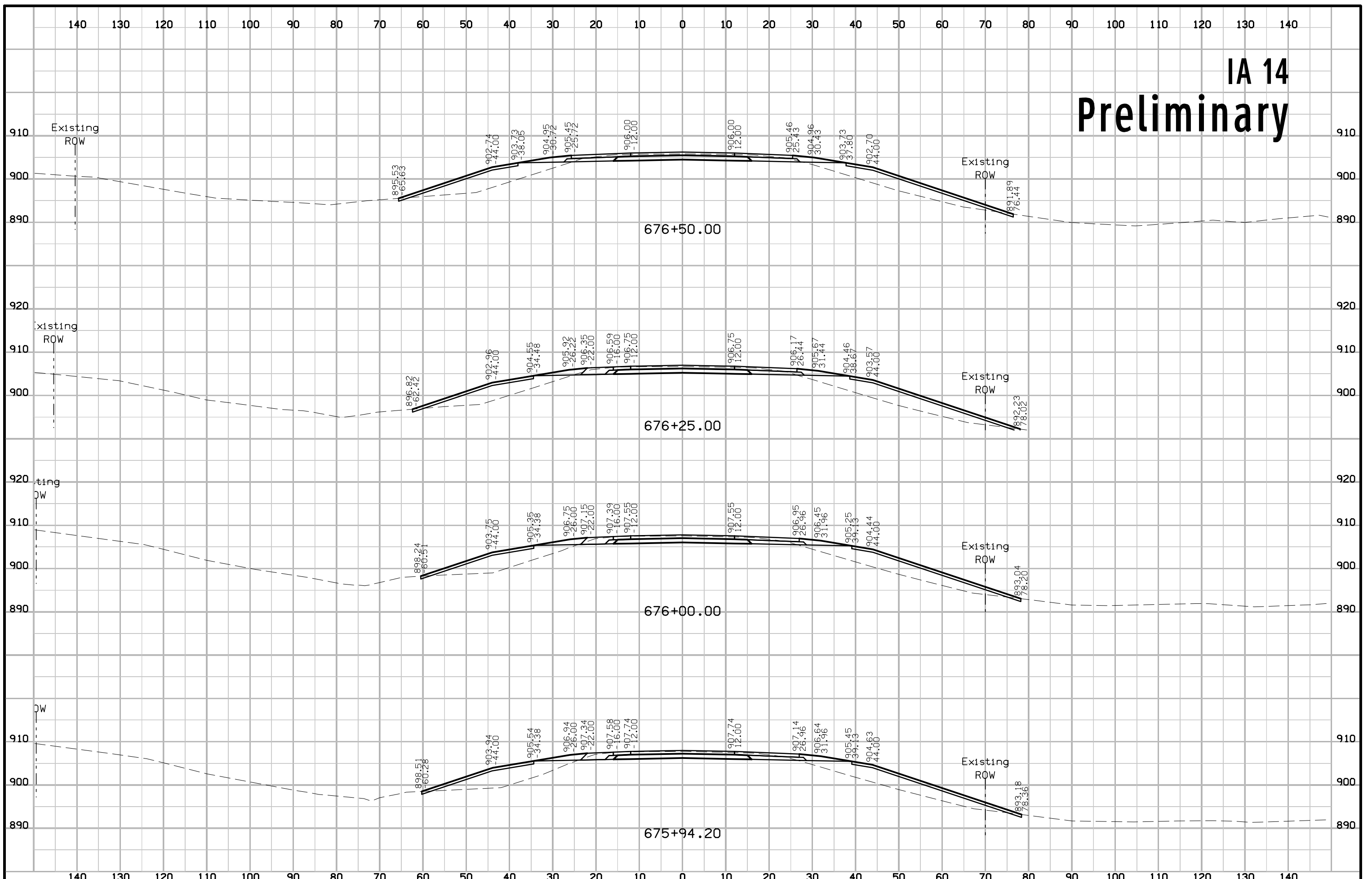
STA. 678+32.50 (IA 14) DECEMBER 2020

**JASPER COUNTY**

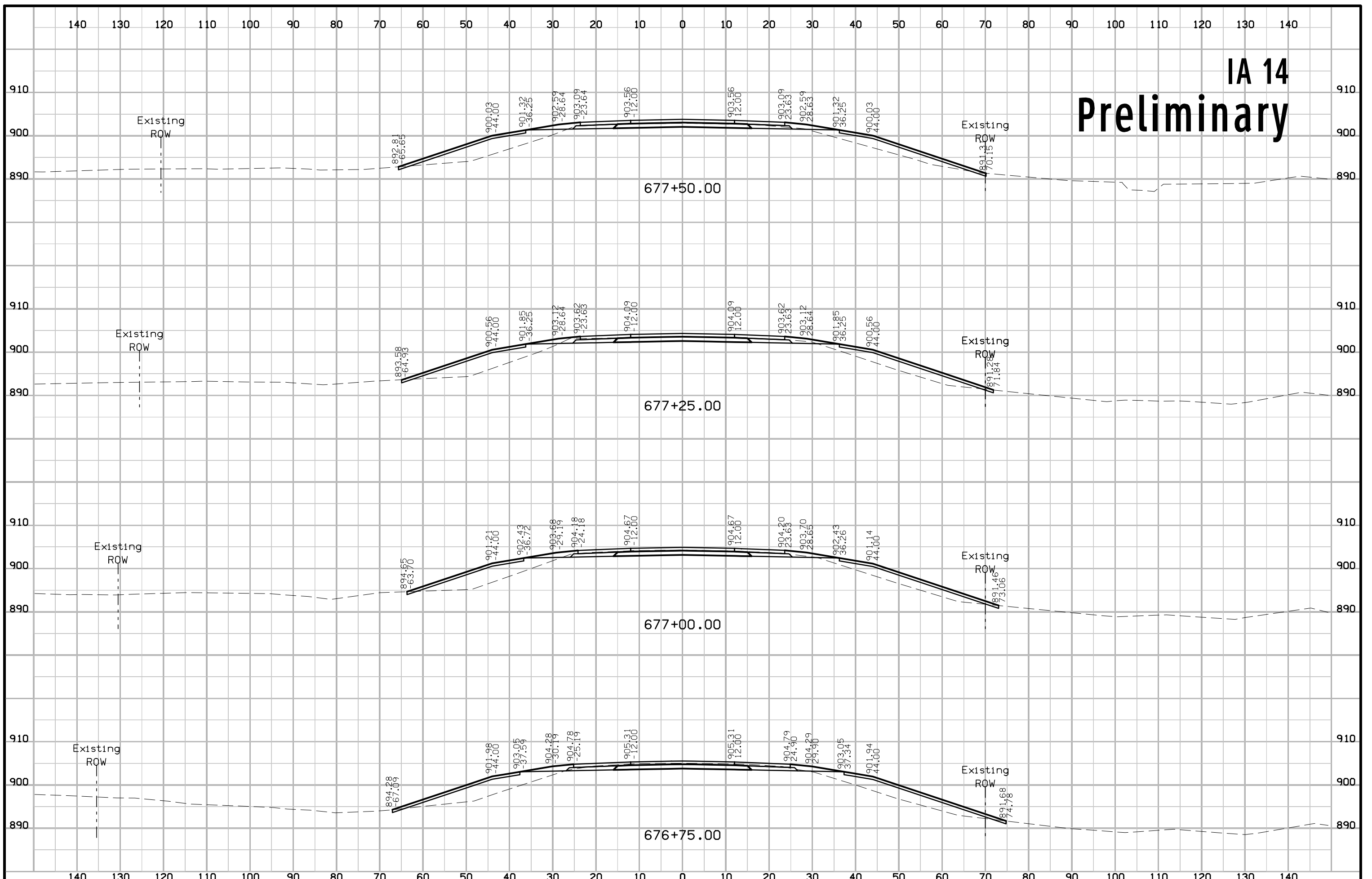
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. 31710 DESIGN NO. 123

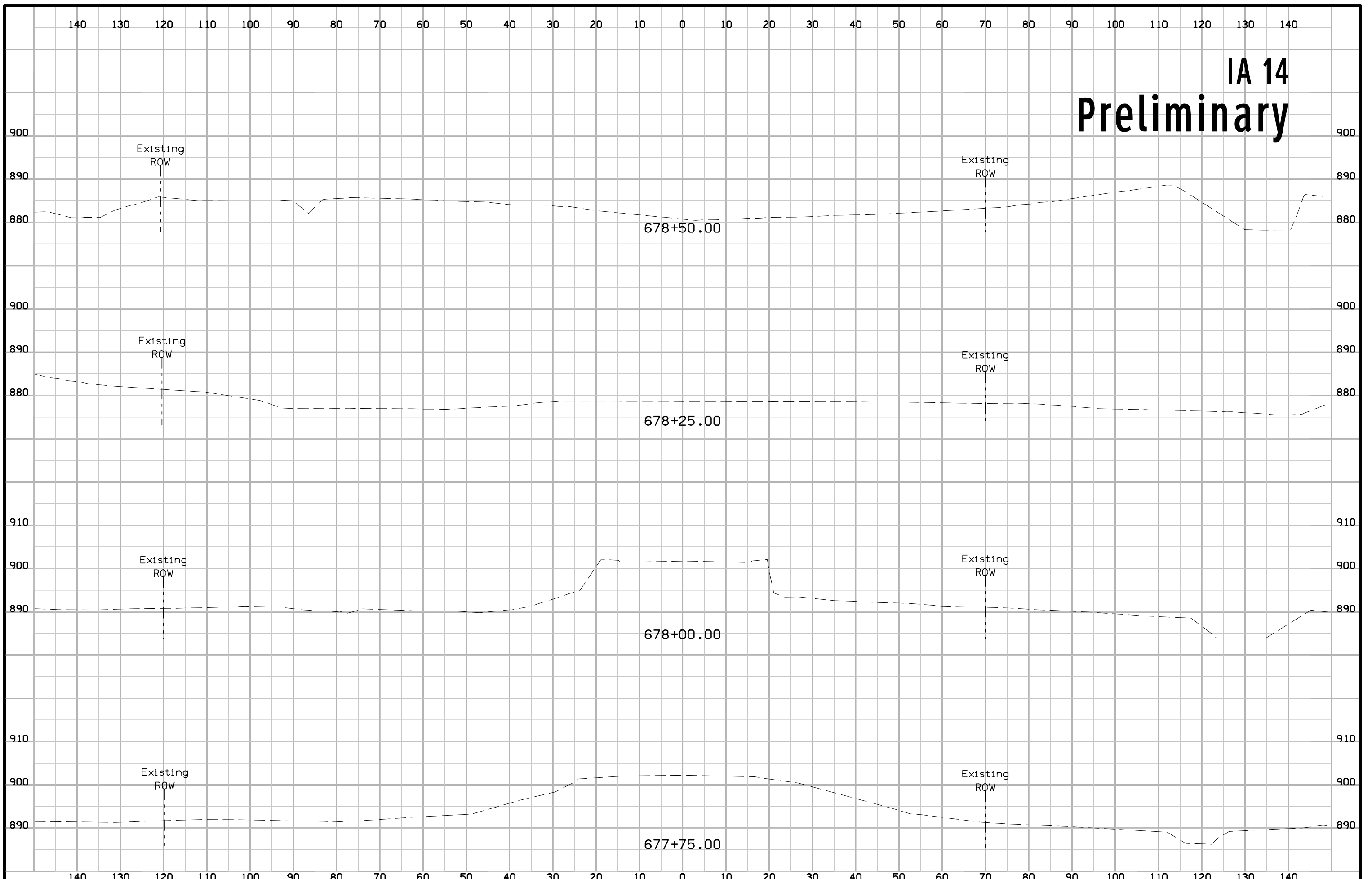
# IA 14 Preliminary



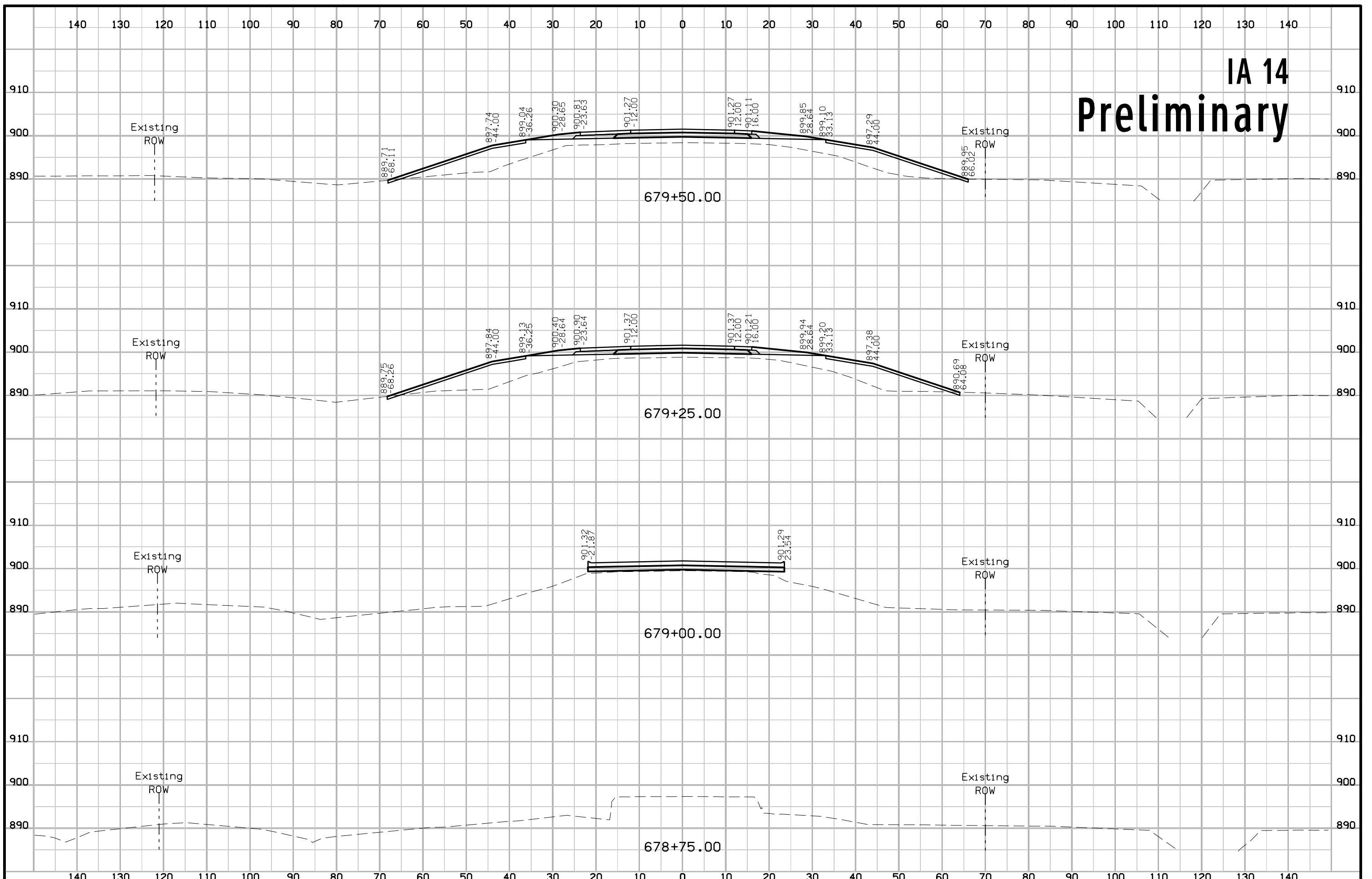
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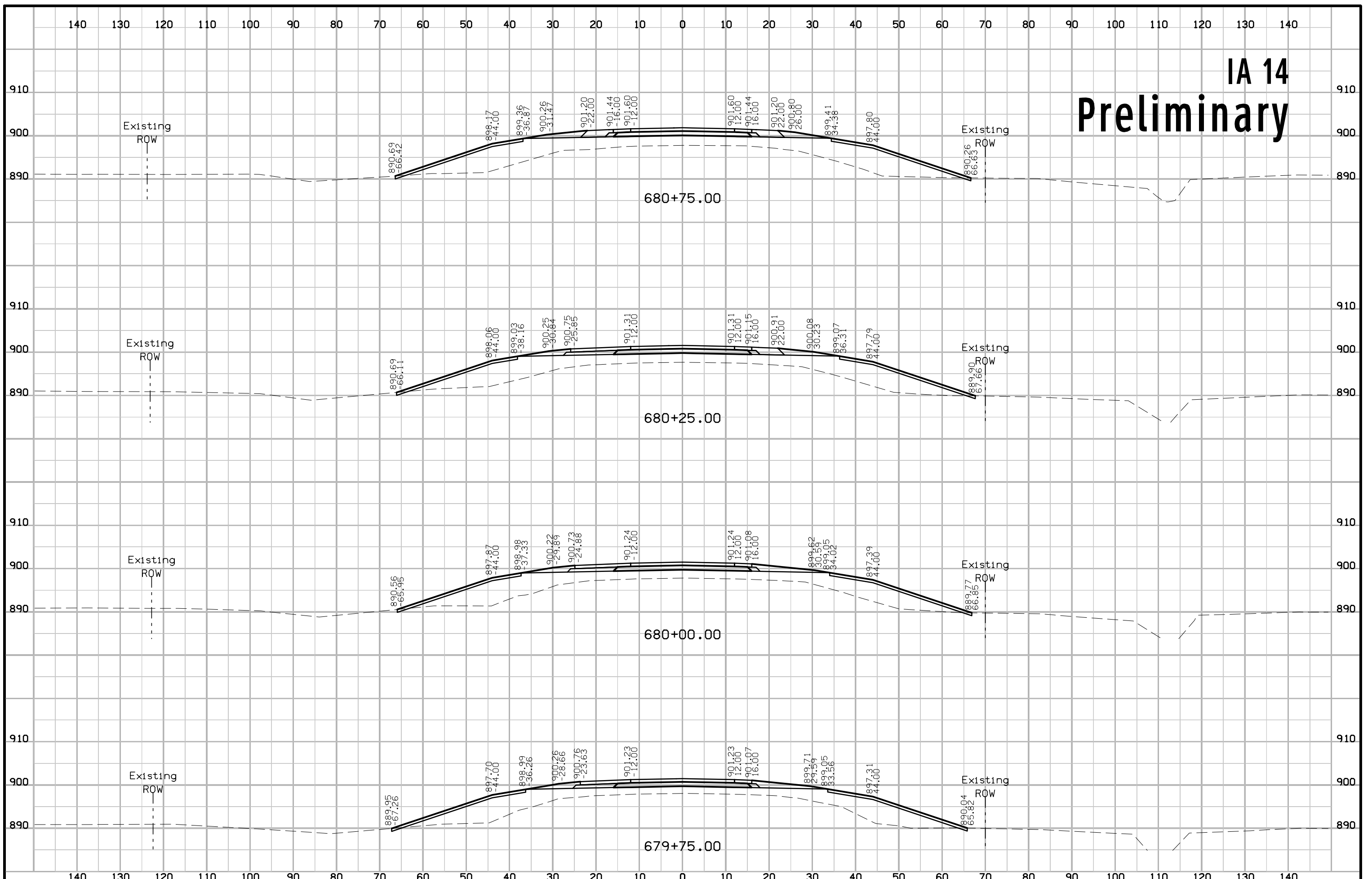
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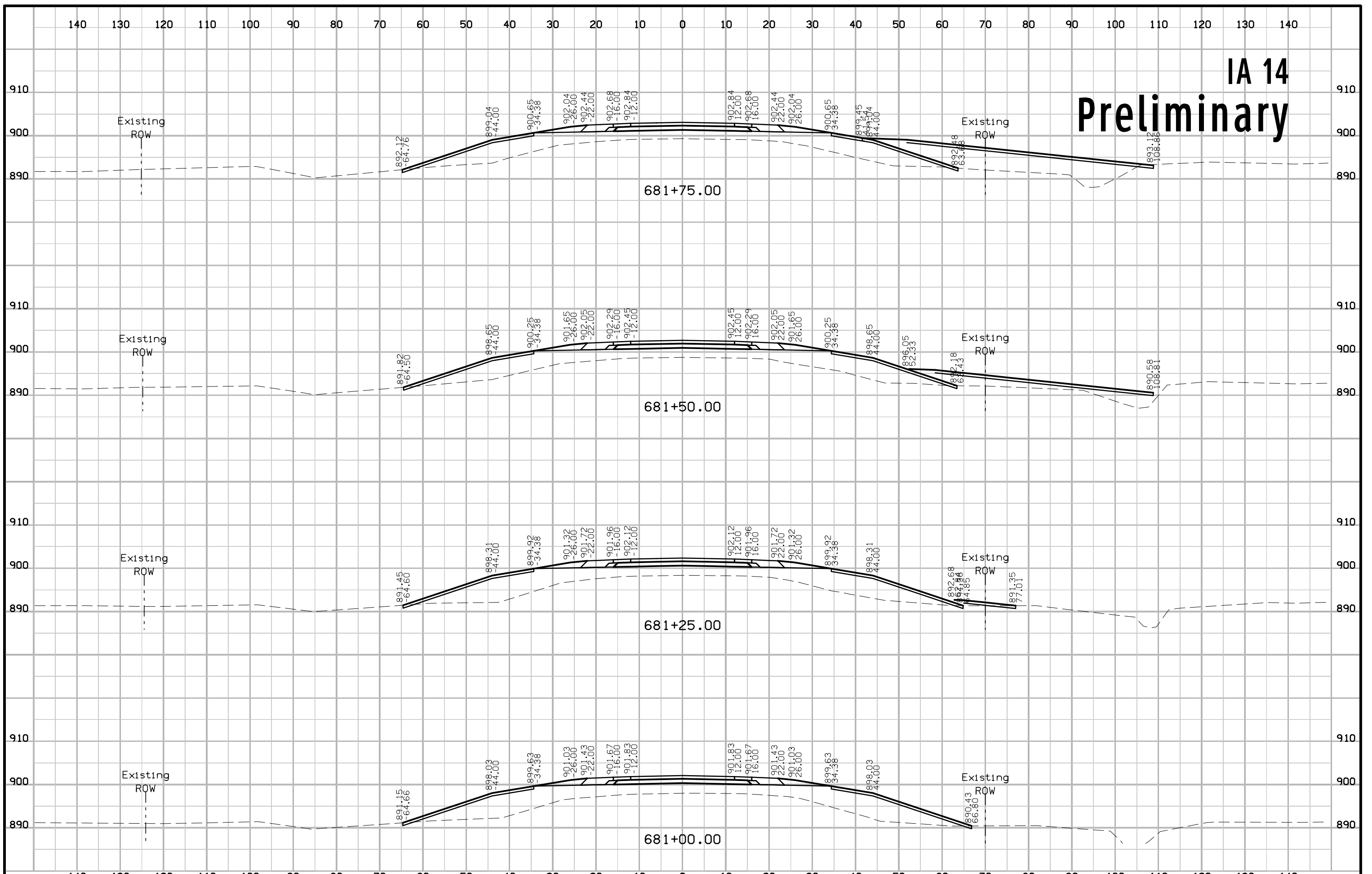
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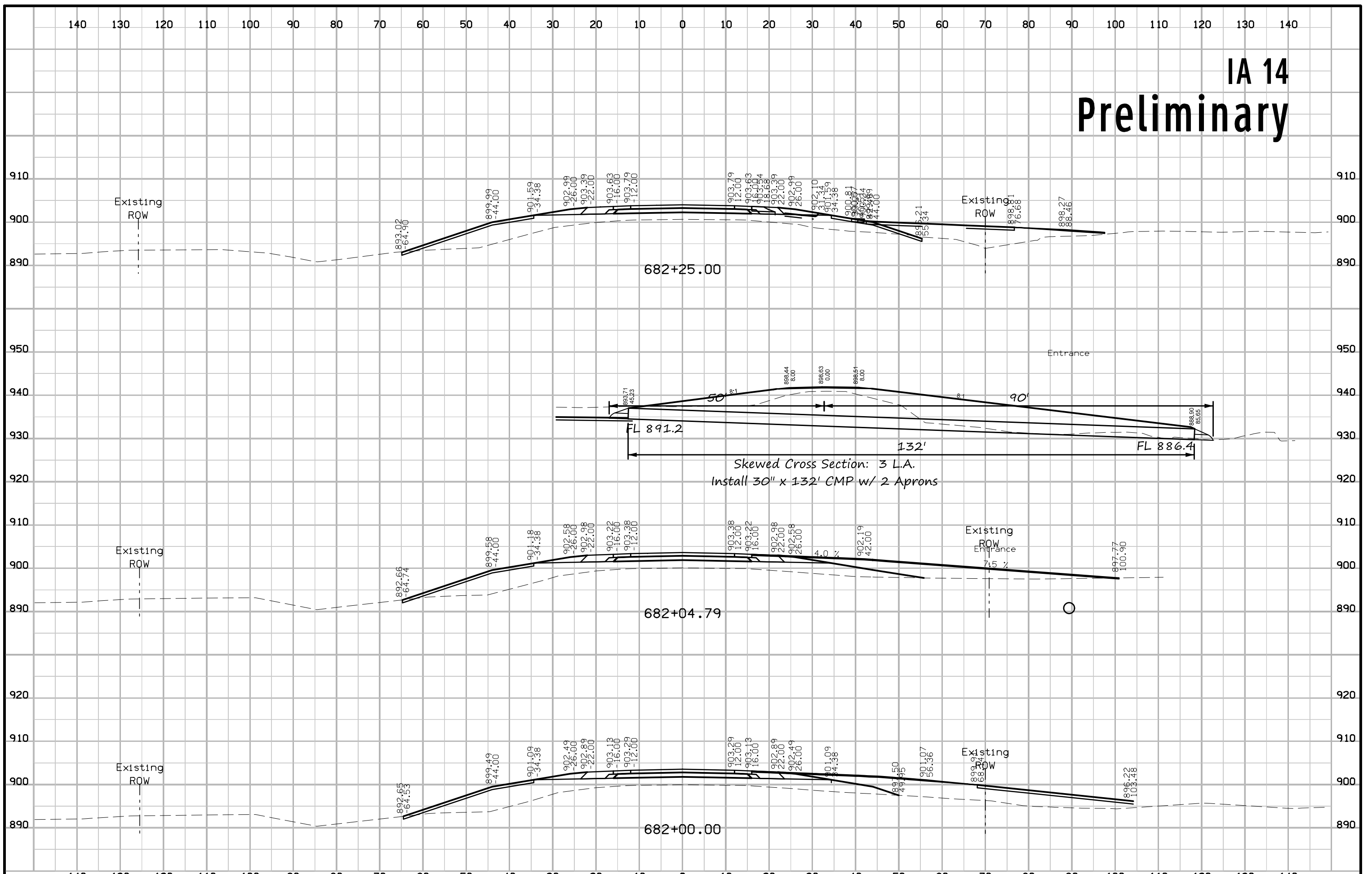


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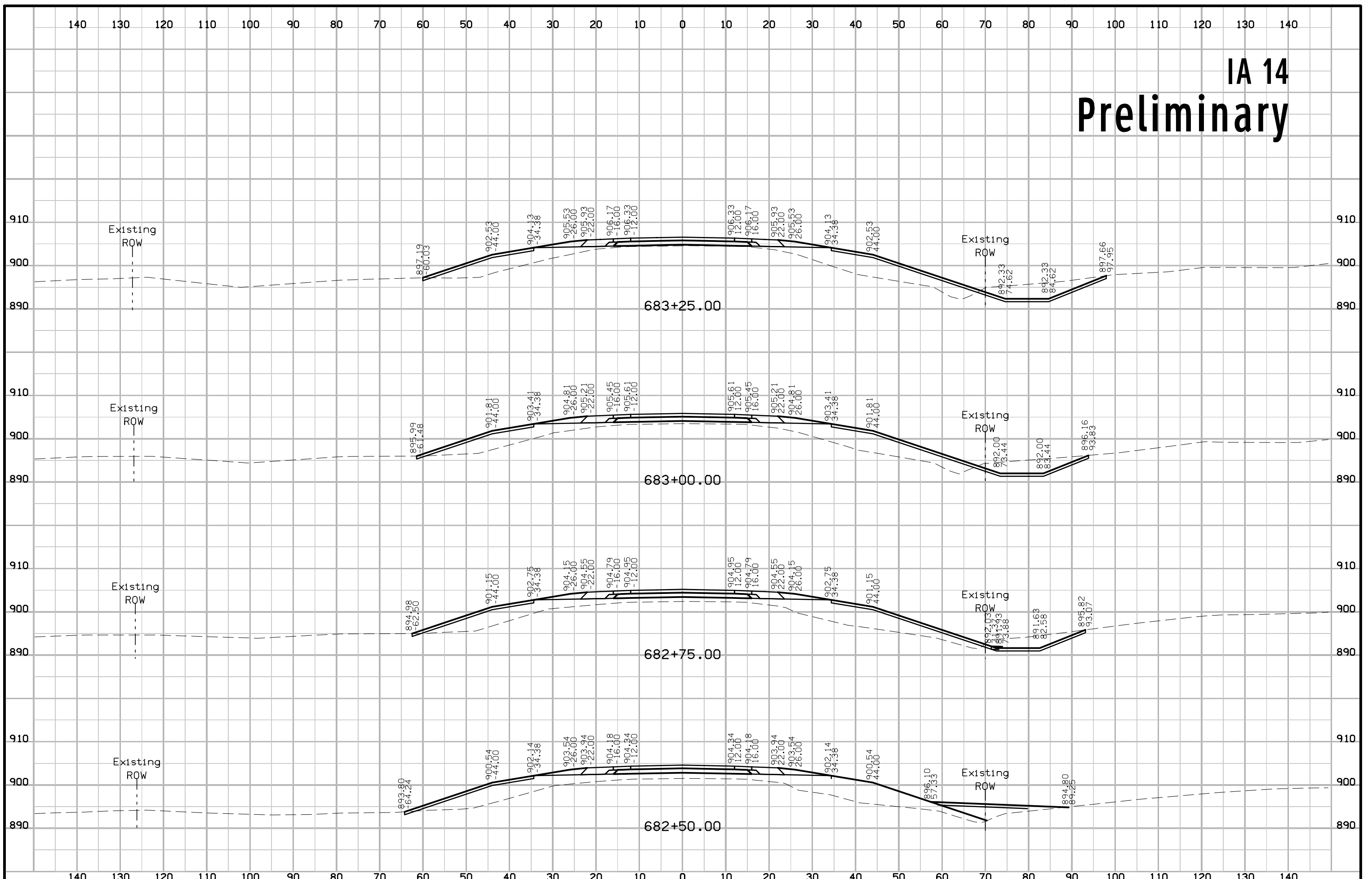




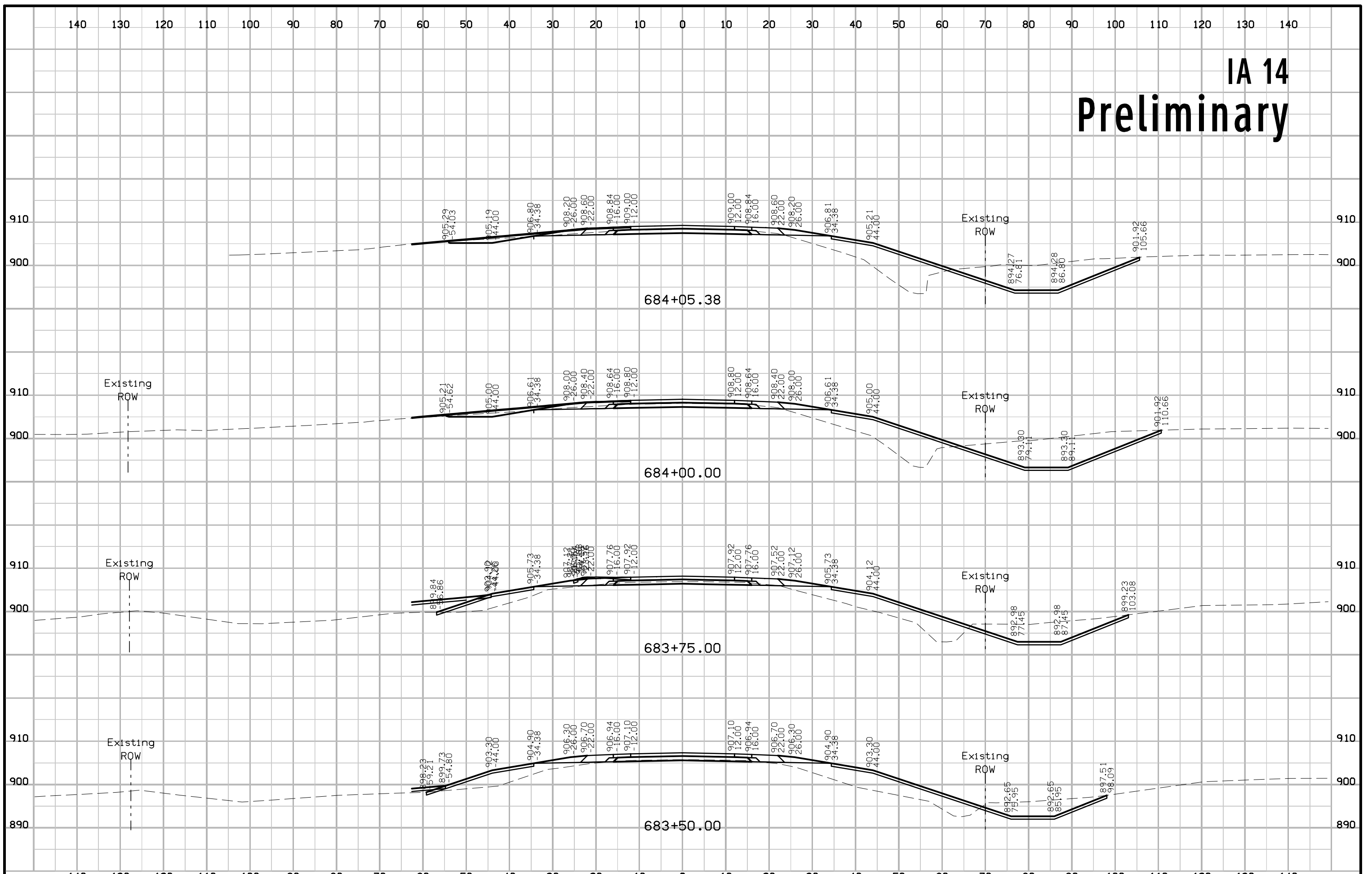
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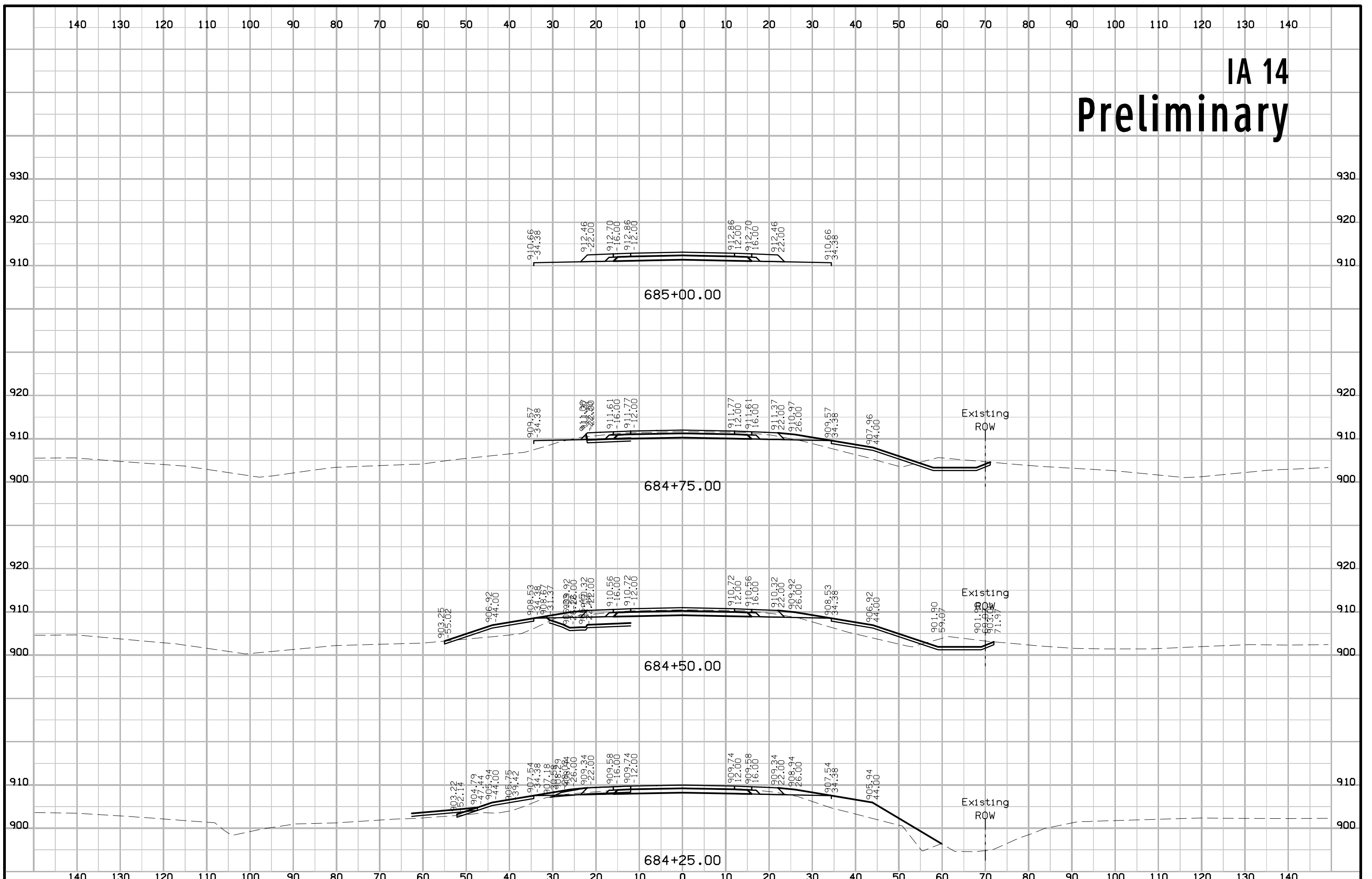
# IA 14 Preliminary



# IA 14 Preliminary



# IA 14 Preliminary



# IA 14 Preliminary

