

| INDEX OF SHEETS |                                                  |
|-----------------|--------------------------------------------------|
| No.             | DESCRIPTION                                      |
| <b>A Sheets</b> | <b>Title Sheets</b>                              |
| * A.1           | Title Sheet                                      |
| * A.2           | 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           | Northbound IA Highway 149                        |
| * D.3           | Southbound IA Highway 149                        |
| <b>F Sheets</b> | <b>Detour or Temporary Pavement Sheets</b>       |
| * F.1 - 2       | Temporary Pavement Plan and Profile Sheets       |
| <b>G Sheets</b> | <b>Survey Sheets</b>                             |
| G.1 - 3         | Survey Information                               |
| G.4 - 9         | Project Alignments                               |
| G.10            | Alignment Coordinates                            |
| G.11            | Circular Curve Data                              |
| <b>H Sheets</b> | <b>Right-of-Way Sheets</b>                       |
| * H.1 - 2       | IA Highway 149                                   |
| <b>J Sheets</b> | <b>Traffic Control and Staging Sheets</b>        |
| J.1             | Traffic Control Plan                             |
| J.2             | 511 Travel Restrictions                          |
| J.3             | Staging Notes                                    |
| J.4             | Coordinated Operations                           |
| * J.5           | Traffic Control and Staging Legend               |
| * J.6 - 11      | Stage 1 Traffic Control Plans                    |
| * J.12 - 17     | Stage 2 Traffic Control Plans                    |
| * J.18 - 23     | Stage 3 Traffic Control Plans                    |
| * J.24 - 29     | Stage 4 Traffic Control Plans                    |
| <b>U Sheets</b> | <b>500 Series, Mod.Stds. and Detail Sheets</b>   |
| U.1 - 3         | Removal Plans                                    |
| <b>V Sheets</b> | <b>Bridge and Culvert Situation Plans</b>        |
| * V.1 - 4       | Southbound Bridge Situation Plans                |
| * V.5 - 8       | Northbound Bridge Situation Plans                |
| <b>W Sheets</b> | <b>Mainline Cross Sections</b>                   |
| * W.1           | Cross Sections Legend & Symbol Information Sheet |
| * W.2 - 19      | Mainline Cross Sections                          |
|                 | * Color Plan Sheets                              |



PLANS OF PROPOSED IMPROVEMENT ON THE  
PRIMARY ROAD SYSTEM  
WAPELLO COUNTY  
Bridge - Unspecified  
DME RR 3.9 mi N of US 34 (NB/SB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



| MILEAGE SUMMARY |                                            |          |          |
|-----------------|--------------------------------------------|----------|----------|
|                 |                                            |          | 105-1    |
|                 |                                            |          | 09-27-94 |
| Div.            | Location                                   | Lin. Ft. | Miles    |
| 1               | IA 149 ML<br>Sta. 1203+84.95 to 1214+00.95 | 1,016.00 | 0.192    |

| DESIGN DATA URBAN |      |       |        |
|-------------------|------|-------|--------|
| 20 27             | AADT | 6,200 | V.P.D. |
| 20 47             | AADT | 6,800 | V.P.D. |
| 20 -              | DHV  | -     | V.P.H. |
| TRUCKS            |      | 11    | %      |
| Total             |      |       |        |
| Design ESALs      |      | -     |        |

REVISIONS

| TOTAL                         |  |
|-------------------------------|--|
| 81                            |  |
| PROJECT IDENTIFICATION NUMBER |  |
| 22-90-149-030                 |  |
| PROJECT NUMBER                |  |
| BRF-149-1(096)--38-90         |  |
| R.O.W. PROJECT NUMBER         |  |
| STPN-149-1(097)-2J--90        |  |
|                               |  |
|                               |  |

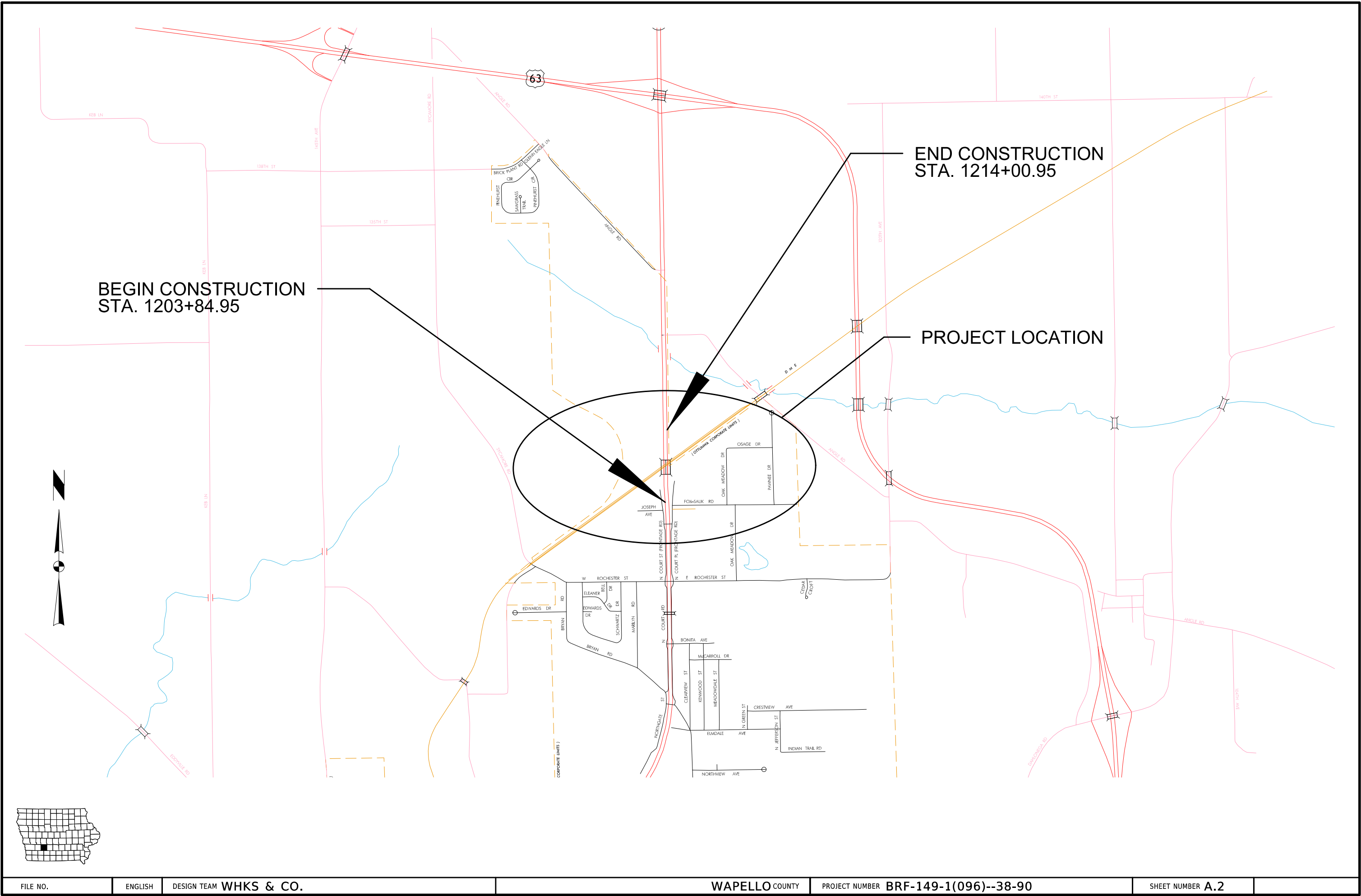
Revisions from 2/28/2025 Submittal:

- Slight revisions to both profiles, including extending southbound limits to the north.
- Inserted TS&L sheets (8 total)
- NO CHANGES TO ORIGINAL ROW NEEDS: No ROW is necessary for the project.

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 3/21/2025







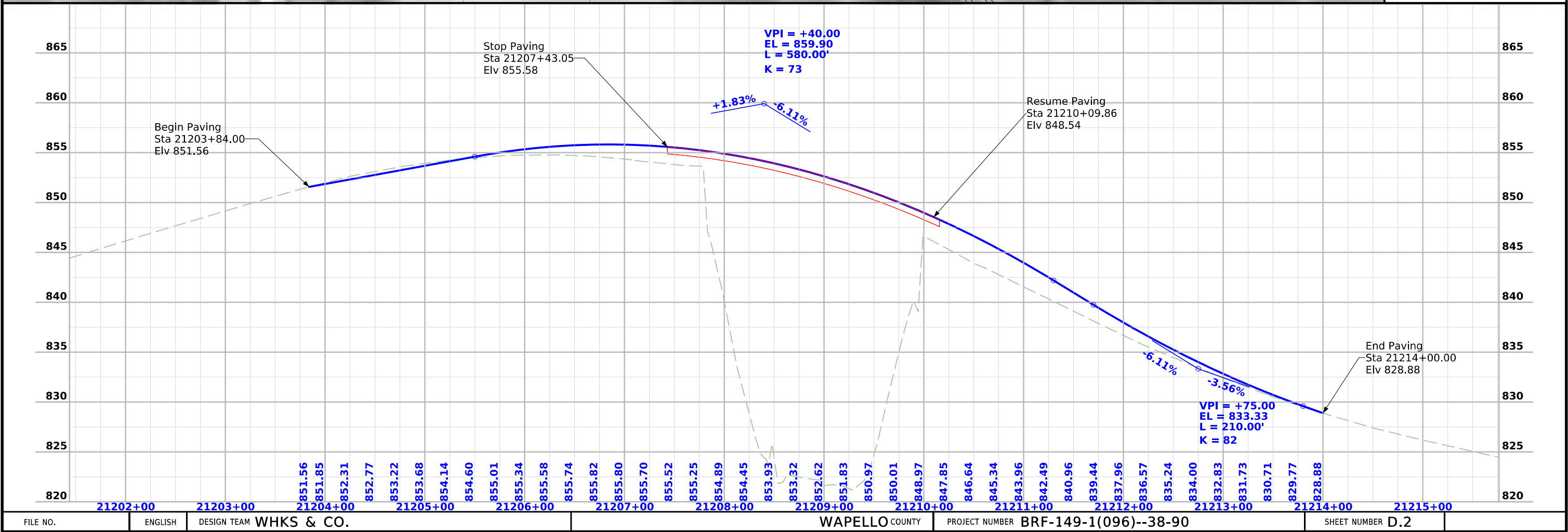
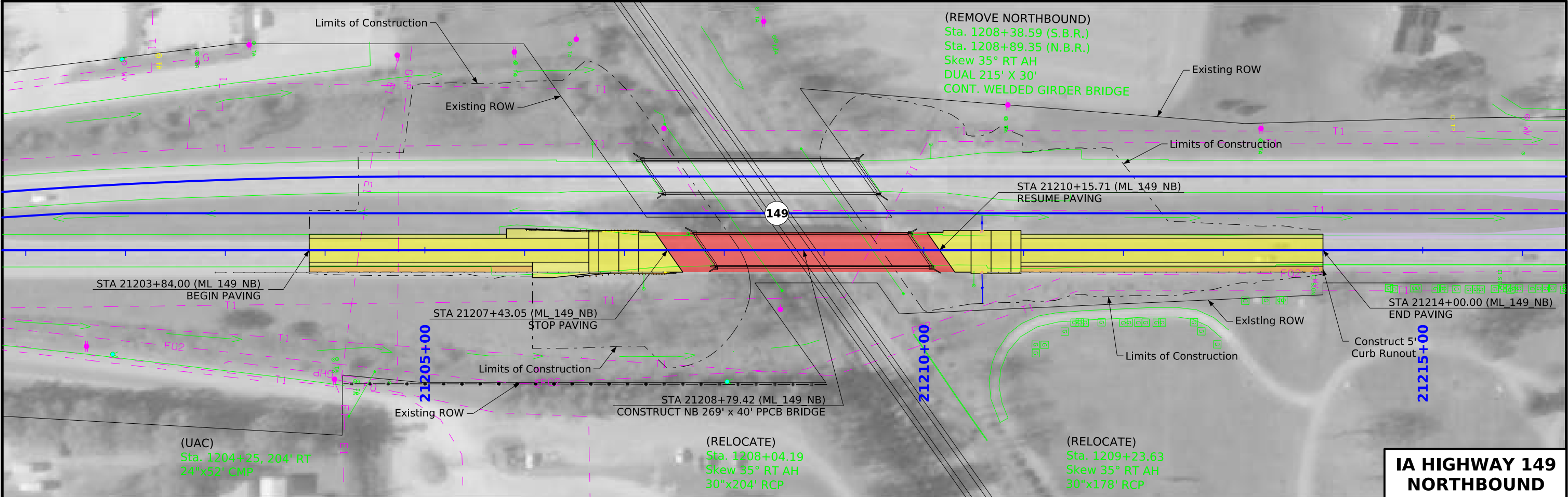
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal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

Refer to Tabulation 112-9 for shoulder quantities.

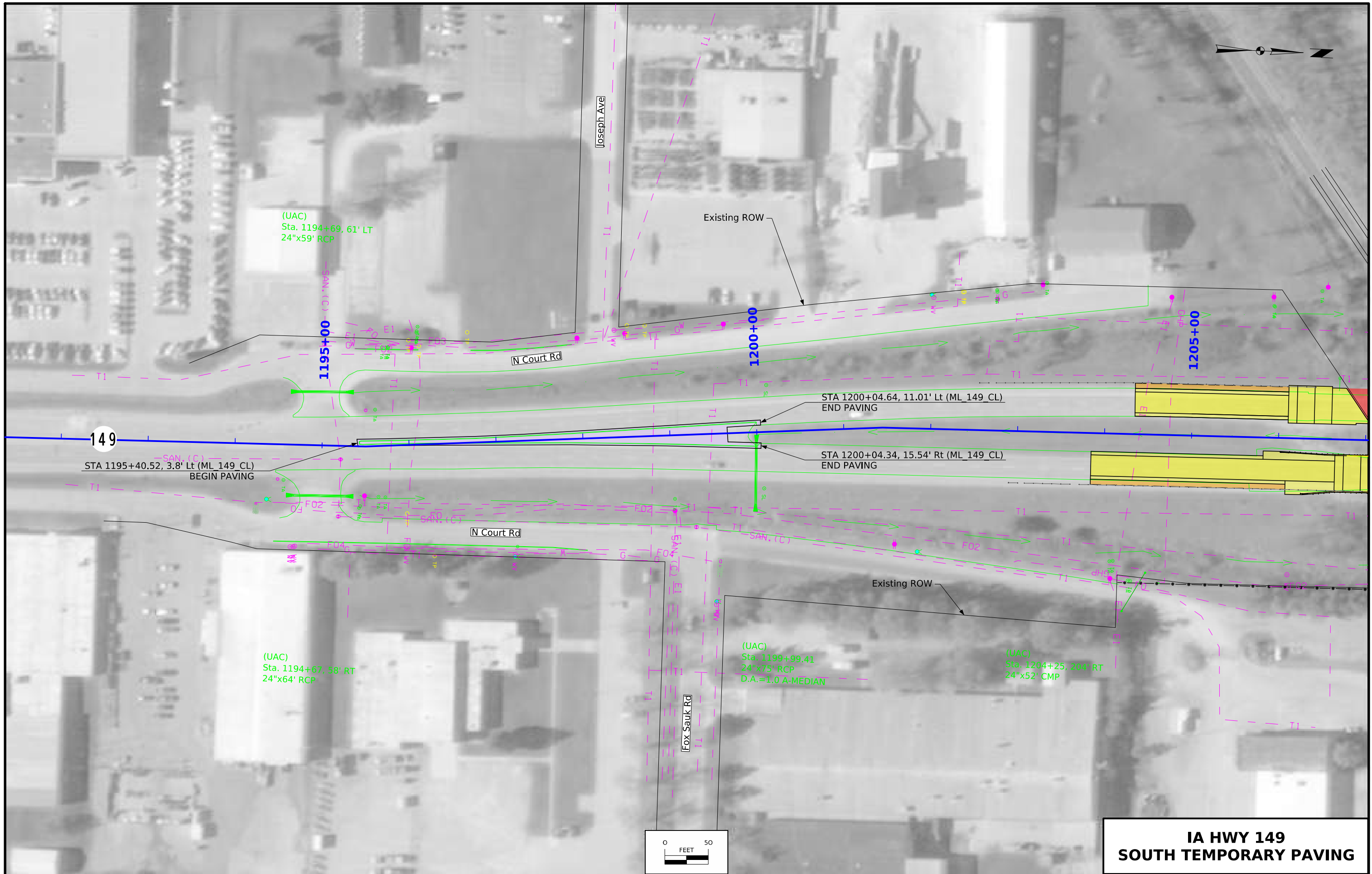
- ⑦ Refer to other details in the plan.



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| SURVEY SYMBOLS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |             | UTILITY LEGEND |                |                | PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS                                                                     |                |                |                       |              |     |          |  |            |  |         |  |                                                                                                                       |  |  |
| <div><div><div><div><div><div></div><div></div></div><div>Interstate Highway Symbol</div></div><div><div><div><div></div><div></div></div><div>U.S. Highway Symbol</div></div><div><div><div><div></div><div></div></div><div>Iowa Highway Symbol</div></div><div><div><div><div></div><div></div></div><div>County Road Highway Symbol</div></div><div><div><div><div></div><div></div></div><div>Evergreen Tree</div></div><div><div><div><div></div><div></div></div><div>Deciduous Tree</div></div><div><div><div><div></div><div></div></div><div>Fruit Tree</div></div><div><div><div><div></div><div></div></div><div>Shrub (Bushes)</div></div><div><div><div><div></div><div></div></div><div>Timber</div></div><div><div><div><div></div><div></div></div><div>Hedge</div></div><div><div><div><div></div><div></div></div><div>Stump</div></div><div><div><div><div></div><div></div></div><div>Swamp</div></div><div><div><div><div></div><div></div></div><div>Rock Outcrop</div></div><div><div><div><div></div><div></div></div><div>Broken Concrete</div></div><div><div><div><div></div><div></div></div><div>Revetment (Rip Rap)</div></div><div><div><div><div></div><div></div></div><div>Cemetery</div></div><div><div><div><div></div><div></div></div><div>Grave</div></div><div><div><div><div></div><div></div></div><div>Cave</div></div><div><div><div><div></div><div></div></div><div>Sink Hole</div></div><div><div><div><div></div><div></div></div><div>Board Fence</div></div><div><div><div><div></div><div></div></div><div>Chain Link or Security Fence</div></div><div><div><div><div></div><div></div></div><div>Wire Fence</div></div><div><div><div><div></div><div></div></div><div>Terrace</div></div><div><div><div><div></div><div></div></div><div>Earth Dam or Dike (Existing)</div></div><div><div><div><div></div><div></div></div><div>Tile Outlet</div></div><div><div><div><div></div><div></div></div><div>Edge of Water</div></div><div><div><div><div></div><div></div></div><div>Existing Drainage</div></div><div><div><div><div></div><div></div></div><div>Right of Way Rail or Lot Corner</div></div><div><div><div><div></div><div></div></div><div>Concrete Monument</div></div><div><div><div><div></div><div></div></div><div>Well</div></div><div><div><div><div></div><div></div></div><div>Windmill</div></div><div><div><div><div></div><div></div></div><div>Beehive Intake</div></div><div><div><div><div></div><div></div></div><div>Existing Intake</div></div><div><div><div><div></div><div></div></div><div>Existing Utility Access (Manhole)</div></div><div><div><div><div></div><div></div></div><div>Fire Hydrant</div></div><div><div><div><div></div><div></div></div><div>Water Hydrant (Rural)</div></div></div></div></div><div><div><div><div></div><div></div></div><div>Septic Tank</div></div><div><div><div><div></div><div></div></div><div>Cistern</div></div><div><div><div><div></div><div></div></div><div>L.P. Gas Tank (No Footing)</div></div><div><div><div><div></div><div></div></div><div>Underground Storage Tank</div></div><div><div><div><div></div><div></div></div><div>Latrine</div></div><div><div><div><div></div><div></div></div><div>Satellite TV Dish</div></div><div><div><div><div></div><div></div></div><div>Water Hook Up</div></div><div><div><div><div></div><div></div></div><div>Radio Tower</div></div><div><div><div><div></div><div></div></div><div>Tower Anchor</div></div><div><div><div><div></div><div></div></div><div>Guardrail (Beam or Cable)</div></div><div><div><div><div></div><div></div></div><div>Guard Post (one or two)</div></div><div><div><div><div></div><div></div></div><div>Guard Post (over two)</div></div><div><div><div><div></div><div></div></div><div>Filler Pipe</div></div><div><div><div><div></div><div></div></div><div>Gas Valve</div></div><div><div><div><div></div><div></div></div><div>Water Valve</div></div><div><div><div><div></div><div></div></div><div>Speed Limit Sign</div></div><div><div><div><div></div><div></div></div><div>Mile Marker Post</div></div><div><div><div><div></div><div></div></div><div>Sign</div></div><div><div><div><div></div><div></div></div><div>Traffic Signal Control Box</div></div><div><div><div><div></div><div></div></div><div>Rail Road Signal Control Box</div></div><div><div><div><div></div><div></div></div><div>Telephone Switch Box</div></div><div><div><div><div></div><div></div></div><div>Electric Box</div></div></div></div></div><div><div><div><div></div><div></div></div><div>E1</div><div>EL1D, Alliant Energy - Quality D</div></div><div><div><div></div><div></div></div><div>F0</div><div>FO1D, LTSD / LISCO - Quality D</div></div><div><div><div></div><div></div></div><div>F02</div><div>FO2D, Iowa Communications Network - Quality D (From Maps)</div></div><div><div><div></div><div></div></div><div>F03</div><div>FO3D, Qwest - Quality D</div></div><div><div><div></div><div></div></div><div>F04</div><div>FO4D, Aureon - Quality D (From Maps)</div></div><div><div><div></div><div></div></div><div>GHP</div><div>GH1D, MidAmerican Energy - Quality D</div></div><div><div><div></div><div></div></div><div>G</div><div>GL1D, MidAmerican Energy - Quality D</div></div><div><div><div></div><div></div></div><div>SAN, (C)</div><div>SA1C, City of Ottumwa- Quality C</div></div><div><div><div></div><div></div></div><div>T1</div><div>TL1D, Century Link - Quality D (From Maps)</div></div><div><div><div></div><div></div></div><div>TV</div><div>TV1D, Mediacom - Quality D</div></div><div><div><div></div><div></div></div><div>W</div><div>WL1D, City of Ottumwa - Quality D</div></div><div><div><div></div><div></div></div><div></div><div>PPA, Alliant Energy</div></div></div></div><div><div><div><div><div><div></div><div></div></div><div>LINEWORK</div><div>Design Color No.</div></div><div><div><div><div></div><div></div></div><div>Green</div><div>(2)</div><div>Existing Topographic Features and Labels</div></div><div><div><div><div></div><div></div></div><div>Blue</div><div>(1)</div><div>Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation</div></div><div><div><div><div></div><div></div></div><div>Magenta</div><div>(5)</div><div>Existing Utilities</div></div></div><div><div><div><div><div><div></div><div></div></div><div>SHADING</div><div>Design Color No.</div></div><div><div><div><div></div><div></div></div><div>Lavender</div><div>(9)</div><div>Temporary Pavement Shading</div></div><div><div><div><div></div><div></div></div><div>Yellow</div><div>(4)</div><div>Proposed Pavement Shading</div></div><div><div><div><div></div><div></div></div><div>Orange</div><div>(6)</div><div>Proposed Granular Shading</div></div><div><div><div><div></div><div></div></div><div>Orange</div><div>(70)</div><div>Proposed Shoulder Granular Shading</div></div><div><div><div><div></div><div></div></div><div>Yellow</div><div>(68)</div><div>Proposed Shoulder Paved Full Depth Shading</div></div><div><div><div><div></div><div></div></div><div>Yellow</div><div>(132)</div><div>Proposed Shoulder Paved Partial Depth Shading</div></div><div><div><div><div></div><div></div></div><div>Gray, Dark</div><div>(112)</div><div>Proposed Grade and Pave Shading "In conjunction with a paving project"</div></div><div><div><div><div></div><div></div></div><div>Brown, Light</div><div>(236)</div><div>Grading Shading</div></div><div><div><div><div></div><div></div></div><div>Orange, Light</div><div>(134)</div><div>Proposed Granular Entrance Shading</div></div><div><div><div><div></div><div></div></div><div>Yellow</div><div>(220)</div><div>Proposed Paved Entrance Shading</div></div><div><div><div><div></div><div></div></div><div>Tan</div><div>(8)</div><div>Proposed Sidewalk Shading</div></div><div><div><div><div></div><div></div></div><div>Blue, Light</div><div>(230)</div><div>Proposed Sidewalk Landing Shading</div></div><div><div><div><div></div><div></div></div><div>Pink</div><div>(11)</div><div>Proposed Sidewalk Ramp Shading</div></div><div><div><div><div></div><div></div></div><div>Green, Light</div><div>(225)</div><div>Existing Pavement Shading</div></div><div><div><div><div></div><div></div></div><div>Red</div><div>(3)</div><div>Proposed Structure Shading</div></div><div><div><div><div></div><div></div></div><div>Red</div><div>(3)</div><div>Delineates Restricted Areas</div></div></div></div></div><div><div><div><div><div><div></div><div></div></div><div>PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS</div><div><div><div><div><div><div></div><div></div></div><div>LINEWORK</div><div>Design Color No.</div></div><div><div><div><div></div><div></div></div><div>Green</div><div>(10)</div><div>Existing Ground Line Profile</div></div><div><div><div><div></div><div></div></div><div>Blue</div><div>(1)</div><div>Proposed Profile and Annotation</div></div><div><div><div><div></div><div></div></div><div>Magenta</div><div>(5)</div><div>Existing Utilities</div></div><div><div><div><div></div><div></div></div><div>Blue, Light</div><div>(230)</div><div>Proposed Ditch Grades, Left</div></div><div><div><div><div></div><div></div></div><div>Black</div><div>(0)</div><div>Proposed Ditch Grades, Median</div></div><div><div><div><div></div><div></div></div><div>Rust</div><div>(14)</div><div>Proposed Ditch Grades, Right</div></div></div></div></div><div><div><div><div><div><div></div><div></div></div><div>Reference Point</div><div>Station</div><div>Survey Line</div><div>Section Corner</div><div>Ground Line Intercept</div><div>Saw Cut</div><div>Guardrail</div><div>Trench Drain</div><div>HighTension Cable Guardrail</div><div>Sheet Pile</div><div>Pavement Removal</div><div>Clearing &amp; Grubbing Area</div></div><div><div><div><div><div><div></div><div></div></div><div>RIGHT-OF-WAY LEGEND</div><div><div><div><div></div><div></div></div><div>Proposed Right-of-Way</div><div><div><div><div></div><div></div></div><div>Existing Right of Way</div><div><div><div><div></div><div></div></div><div>Existing and Proposed Right-of-Way</div><div><div><div><div></div><div></div></div><div>Easement and Existing Right-of-Way</div><div><div><div><div></div><div></div></div><div>Easement (Temporary)</div><div><div><div><div></div><div></div></div><div>Easement</div><div><div><div><div></div><div></div></div><div>C/A</div><div>Access Control</div><div><div><div><div></div><div></div></div><div>Property Line</div><div><div><div><div></div><div></div></div><div>ROW Line</div></div></div></div></div></div></div><div><div><div><div><div><div></div><div></div></div><div>PLAN AND PROFILE<br/>LEGEND AND SYMBOL<br/>INFORMATION SHEET</div><div>(COVERS SHEET SERIES D, E, F, &amp; K)</div></div></div></div></div><tr><td>FILE NO.</td><td>ENGLISH</td><td>DESIGN TEAM</td><td>WHKS &amp; CO.</td><td>WAPELLO COUNTY</td><td>PROJECT NUMBER</td><td>BRF-149-1(096)--38-90</td><td>SHEET NUMBER</td><td>D.1</td></tr><tr><td colspan="2">08:58:36</td><td colspan="2">19/03/2025</td><td colspan="2">skoontz</td><td colspan="3">pw:\\projectwise.dot.int.lan:PWM\\Documents\\Projects\\9014903022\\Design\\CADD_Files\\Sheet_Files\\LEGEND_SHEETS.dgn</td></tr></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div> |         |             | FILE NO.       | ENGLISH        | DESIGN TEAM    | WHKS & CO.                                                                                                            | WAPELLO COUNTY | PROJECT NUMBER | BRF-149-1(096)--38-90 | SHEET NUMBER | D.1 | 08:58:36 |  | 19/03/2025 |  | skoontz |  | pw:\\projectwise.dot.int.lan:PWM\\Documents\\Projects\\9014903022\\Design\\CADD_Files\\Sheet_Files\\LEGEND_SHEETS.dgn |  |  |
| FILE NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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                                               |  |  |
| 08:58:36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         | 19/03/2025  |                | skoontz        |                | pw:\\projectwise.dot.int.lan:PWM\\Documents\\Projects\\9014903022\\Design\\CADD_Files\\Sheet_Files\\LEGEND_SHEETS.dgn |                |                |                       |              |     |          |  |            |  |         |  |                                                                                                                       |  |  |



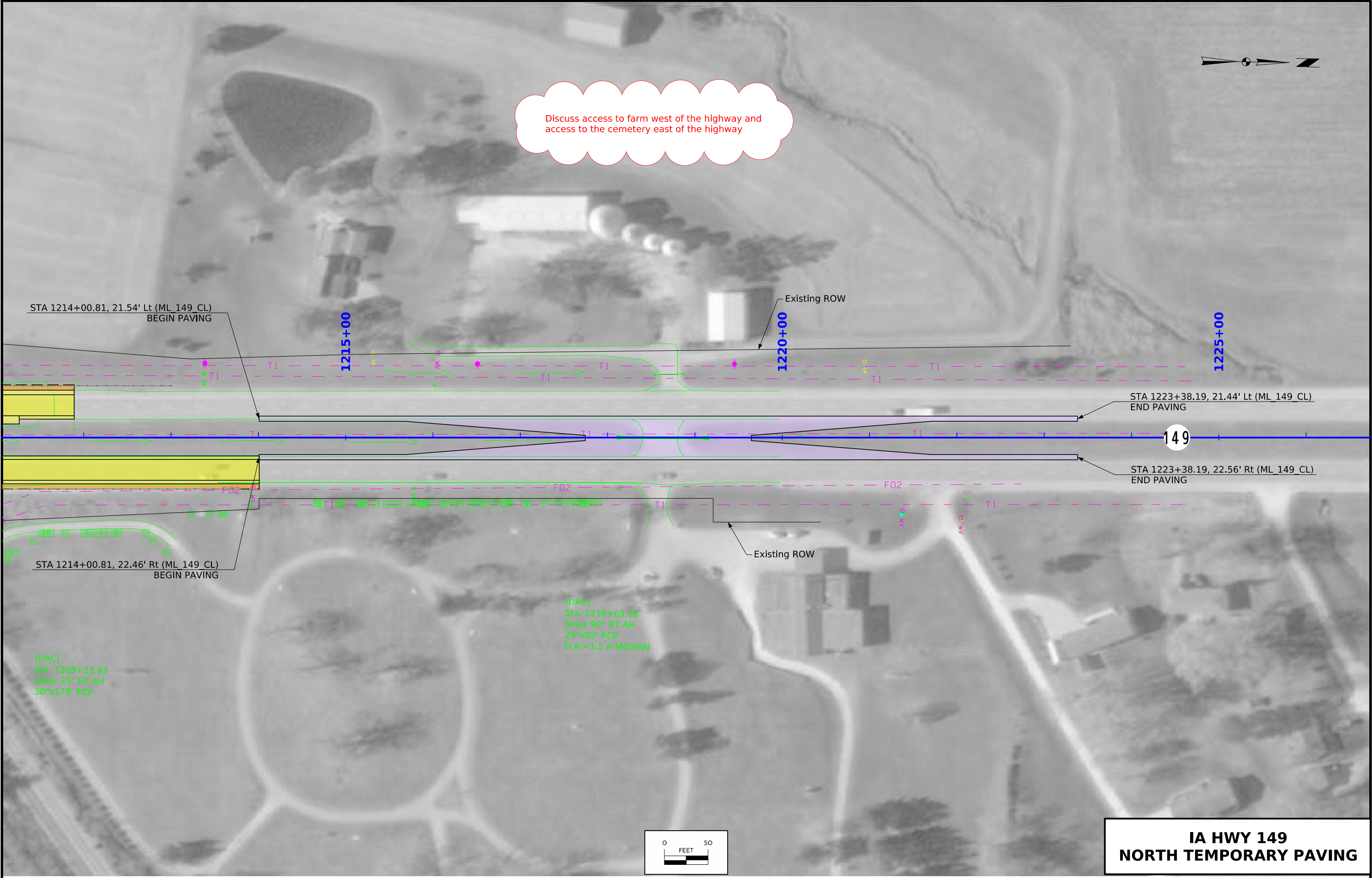




**IA HWY 149  
SOUTH TEMPORARY PAVING**

|          |         |                                   |                |                                             |                         |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>F.1</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|

09:53:48 19/03/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\\Documents\\Projects\\9014903022\\Design\\CADD\_Files\\Sheet\_Files\\SHT\_90149096\_F01.dgn



|          |         |                                   |                |                                             |                         |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>F.2</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|

Survey Information

**SURVEY INDEX**  
**County: Wapello**  
**PIN: 22-90-149-030**  
**Project Number: BRF-149-1(96)—38-90**  
**Location: DME Railroad 3.9 miles North of US 34 (NB/SB)**  
**Type of Work: Bridge Replacement**  
**Project Directory: 9014903022**

**Survey Personnel**

Jeremy Leemon      Survey Project Manager / Party Chief  
Chris Ries          Assistant Survey Project Manager  
Jacob Powers        Instrument

**Date(s) of Survey**

Begin Date            01/08/2024  
End Date              01/22/2024

**General Information**

This survey is for replacement of dual bridges on Iowa Highway 149 over Dakota, Minnesota and Eastern Railroad in Ottumwa. This project is a Full Field DTM survey. Measurement units for this survey are US survey feet.

**Utility Information**

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

**Project Control**

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Two 3-minute observations were taken with appropriate time spans between and used in a weighted average to obtain final coordinate values. The Horizontal Scale Factor is: 0.9999992580. Additional control was established from the calibration along the site. For additional details of the control survey, contact the Preliminary Survey

**PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)**  
**COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 12**  
**(U.S. SURVEY FOOT)**  
**VERTICAL DATUM: NAVD88**  
**GEOID MODEL: 2018u3**

**Alignment Information**

The horizontal alignment for IA Hwy 149 this survey is a retrace of As-built Plans Project No. U-U.G-F-159(6). Survey stationing was equated to the plan POT at Sta. 1207+39.4 and carried back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

**SURVEY ALIGNMENT**

PI Sta. 1181+76.5 As-built Plans Project No. U-U.G-F-159(6)  
=Survey POT Sta. 1181+76.50

PI Sta. 1195+50 As-built Plans Project No. U-U.G-F-159(6)  
=Survey PI Sta. 1195+50.00

POT Sta. 1207+39.4 As-built Plans Project No. U-U.G-F-159(6)  
=Survey POT Sta. 1207+39.40

POT Sta. 1229+61.3 As-built Plans Project No. U-U.G-F-159(6)  
=Survey POT Sta. 1229+61.30

**NORTH BOUND ROAD ALIGNMENT**

PC N.B.R. Sta. 1193+13.9 As-built Plans Project No. U-U.G-F-159(6)  
=Survey N.B.R. PC Sta. 1193+13.90

PT N.B.R. Sta. 1195+13.9 As-built Plans Project No. U-U.G-F-159(6)  
=Survey N.B.R. PT Sta. 1195+13.90

PT N.B.R. Sta. 1199+15.0 As-built Plans Project No. U-U.G-F-159(6)  
=Survey N.B.R. PT Sta. 1199+15.00

**SOUTH BOUND ROAD ALIGNMENT**

PC S.B.R. Sta. 1193+13.9 As-built Plans Project No. U-U.G-F-159(6)  
=Survey S.B.R. PC Sta. 1193+13.90

PT S.B.R. Sta. 1198+17.2 As-built Plans Project No. U-U.G-F-159(6)  
=Survey S.B.R. PT Sta. 1198+17.20

PT S.B.R. Sta. 1205+00.7 As-built Plans Project No. U-U.G-F-159(6)  
=Survey S.B.R. PT Sta. 1205+00.70

## 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.



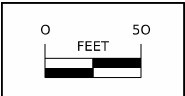
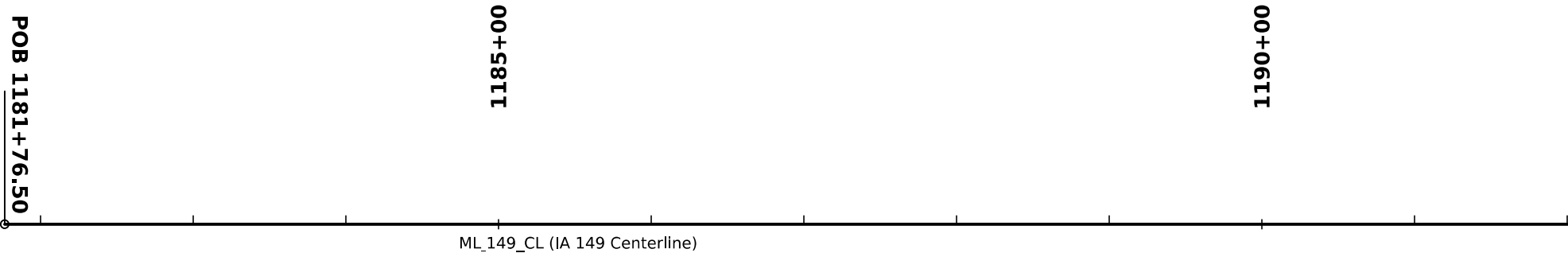
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 12 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

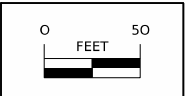
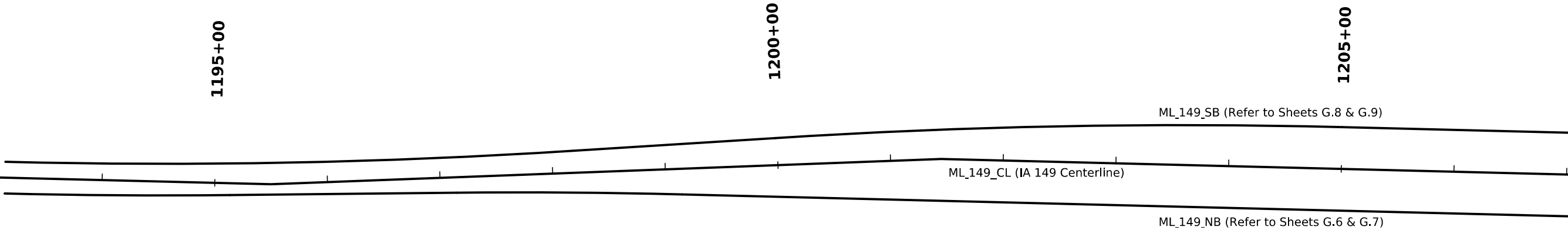
Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

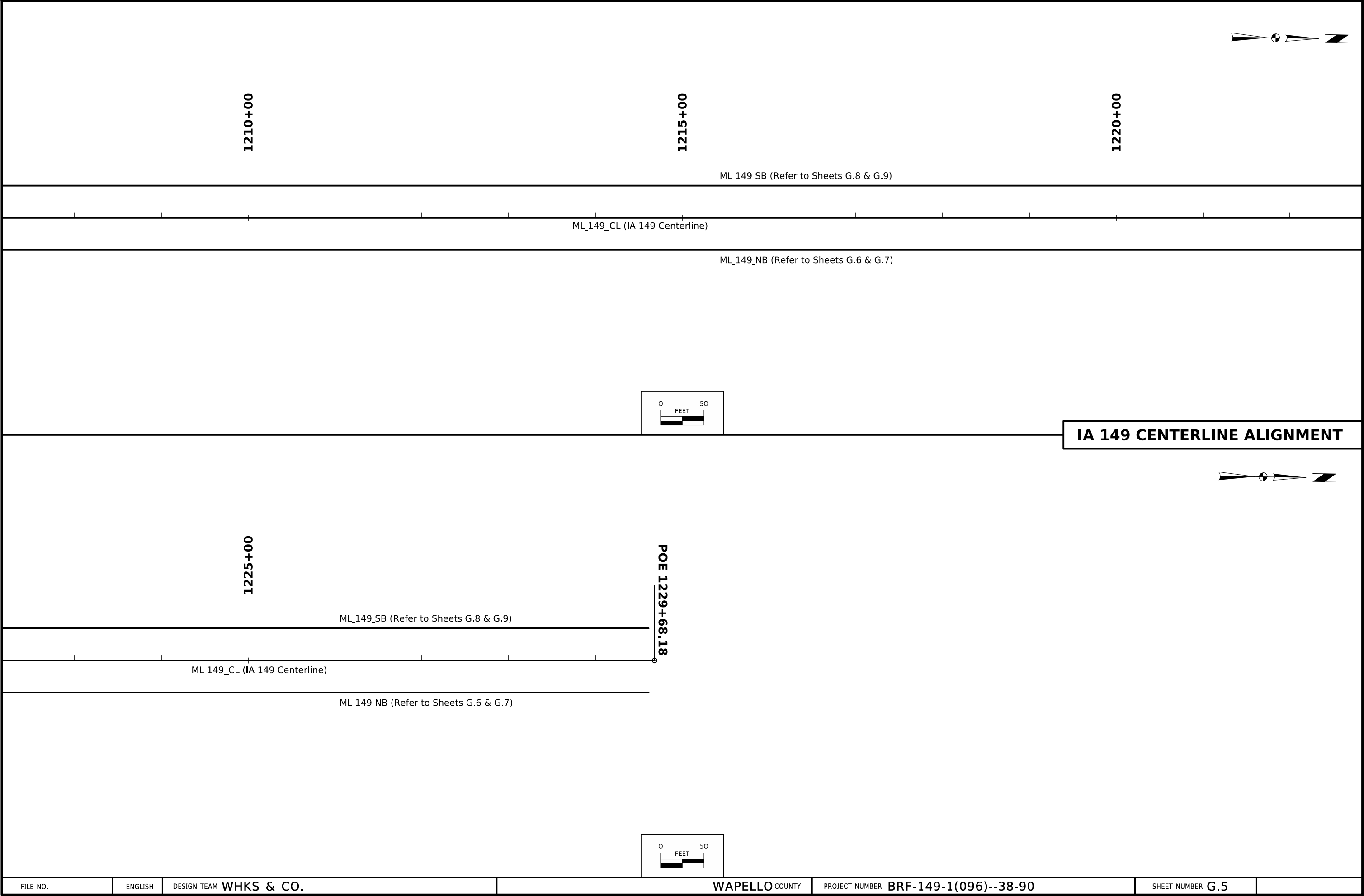
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING  
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (laRTN 2019 Adjustment)  
la. Regional Coordinate System Zone 12 (U.S. Survey Foot)  
VERT. DATUM: NAVD88  
Geoid Model: 2018u3

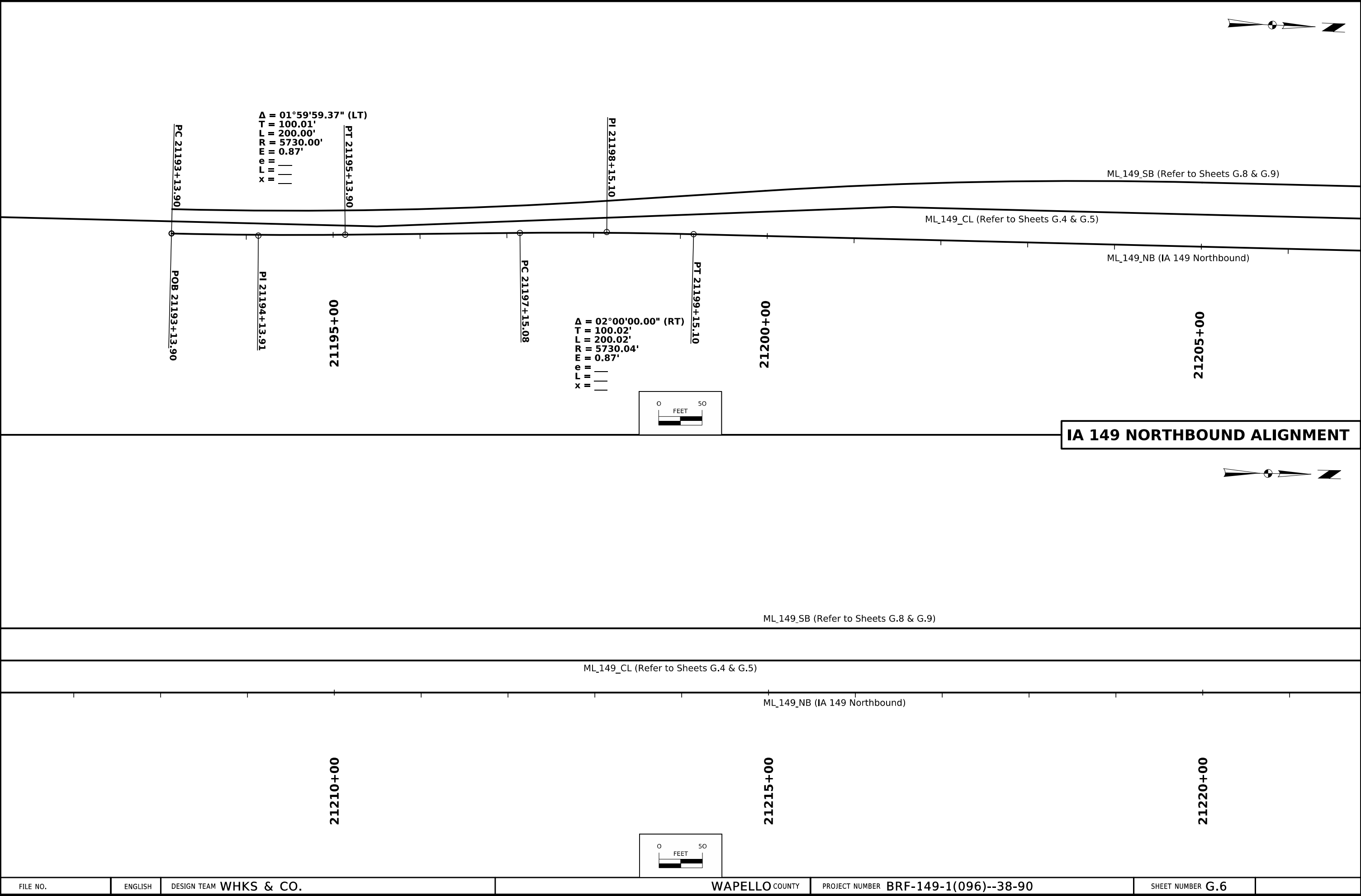
| Point Name | Northing   | Easting     | Elevation | Feature Definition - Description                                                   |
|------------|------------|-------------|-----------|------------------------------------------------------------------------------------|
| 101        | 6256278.66 | 22869467.99 | 832.42    | Set Feno Style Monument 1000mm W/ Brass Cap 28' West of N Ct St CL                 |
|            |            |             |           |                                                                                    |
| 502        | 6257623.04 | 22869500.84 | 853.04    | Fd IHC Monument SE Wing of Bridge                                                  |
|            |            |             |           |                                                                                    |
| 501        | 6257655.58 | 22869536.64 | 853.72    | Fd IHC Monument SW Wing of Bridge                                                  |
|            |            |             |           |                                                                                    |
| 504        | 6257840.78 | 22869497.35 | 847.01    | Fd IHC Monument NE Wing of Bridge                                                  |
|            |            |             |           |                                                                                    |
| 503        | 6257872.85 | 22869533.28 | 847.13    | Fd IHC Monument NW Wing of Bridge                                                  |
|            |            |             |           |                                                                                    |
| 102        | 6259035.43 | 22869584.71 | 805.44    | Set Feno Style Monument 1000mm W/ Brass Cap 20' South of private entrance pavement |



**IA 149 CENTERLINE ALIGNMENT**









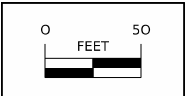
ML\_149\_SB (Refer to Sheets G.8 & G.9)

ML\_149\_CL (Refer to Sheets G.4 & G.5)

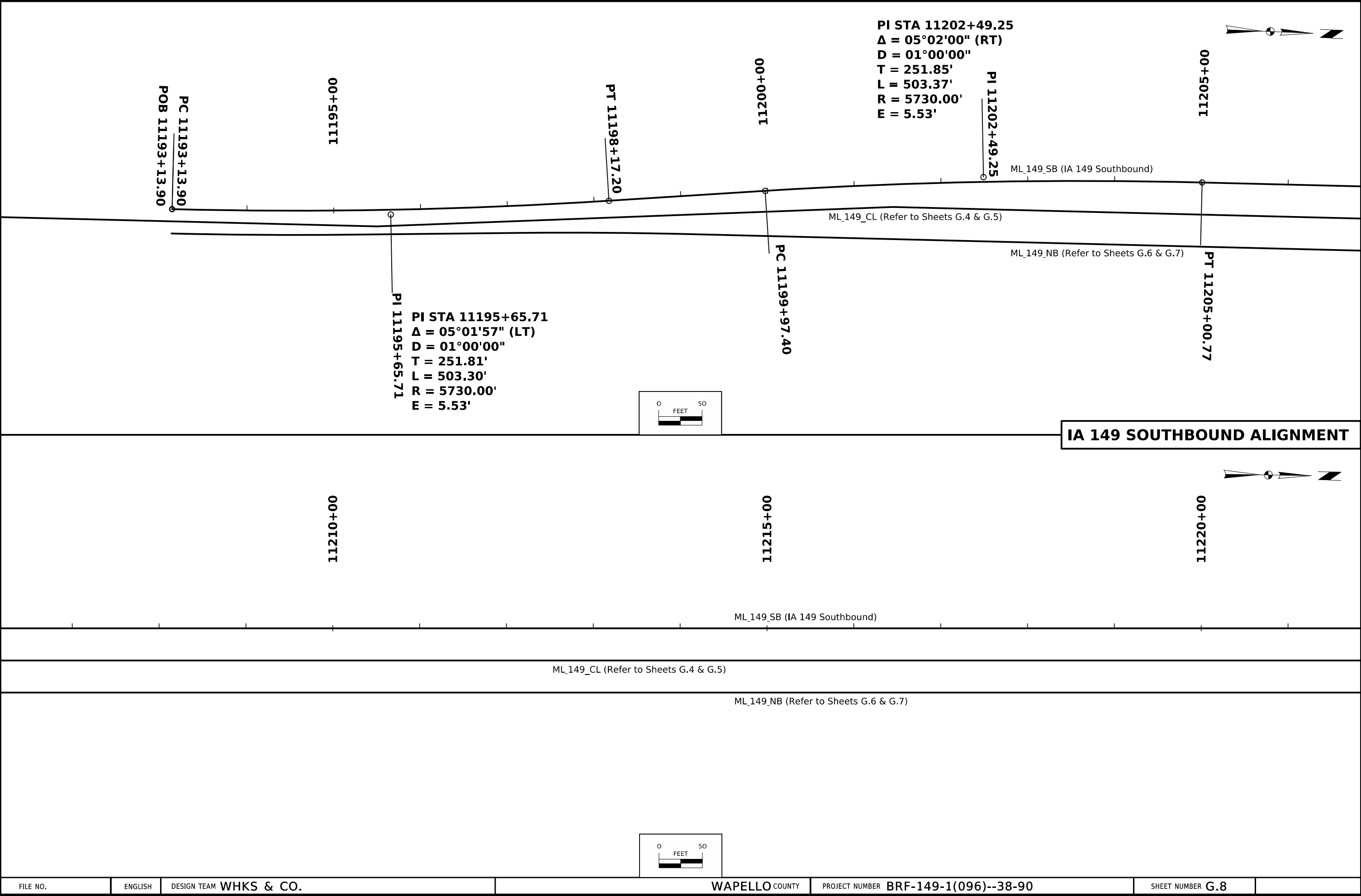
ML\_149\_NB (IA 149 Northbound)

21225+00

POE 21229+60.35



IA 149 NORTHBOUND ALIGNMENT





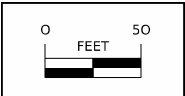
11225+00

POE 11229+62.21

ML\_149\_SB (IA 149 Southbound)

ML\_149\_CL (Refer to Sheets G.4 & G.5)

ML\_149\_NB (Refer to Sheets G.6 & G.7)

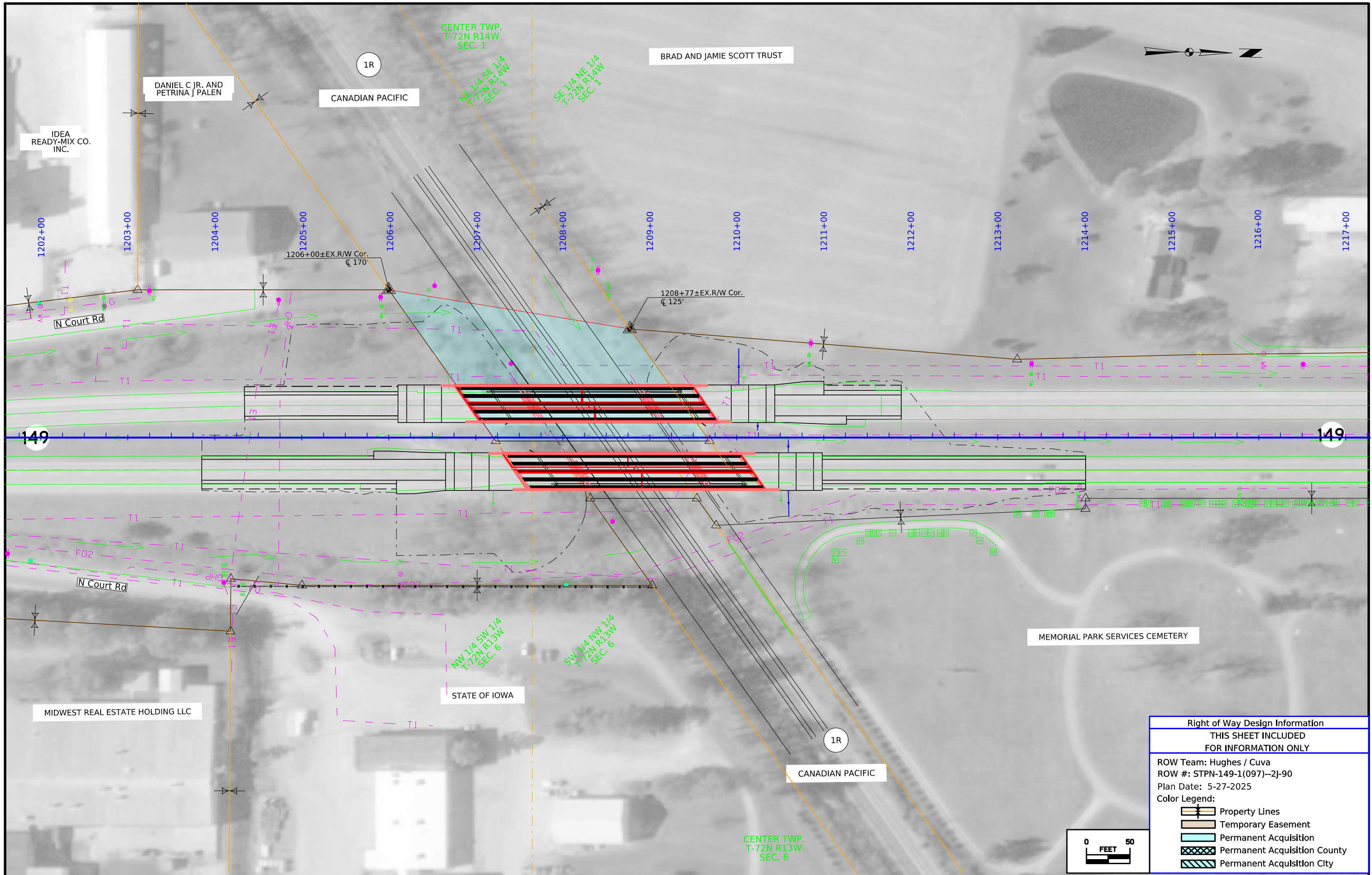


IA 149 SOUTHBOUND ALIGNMENT

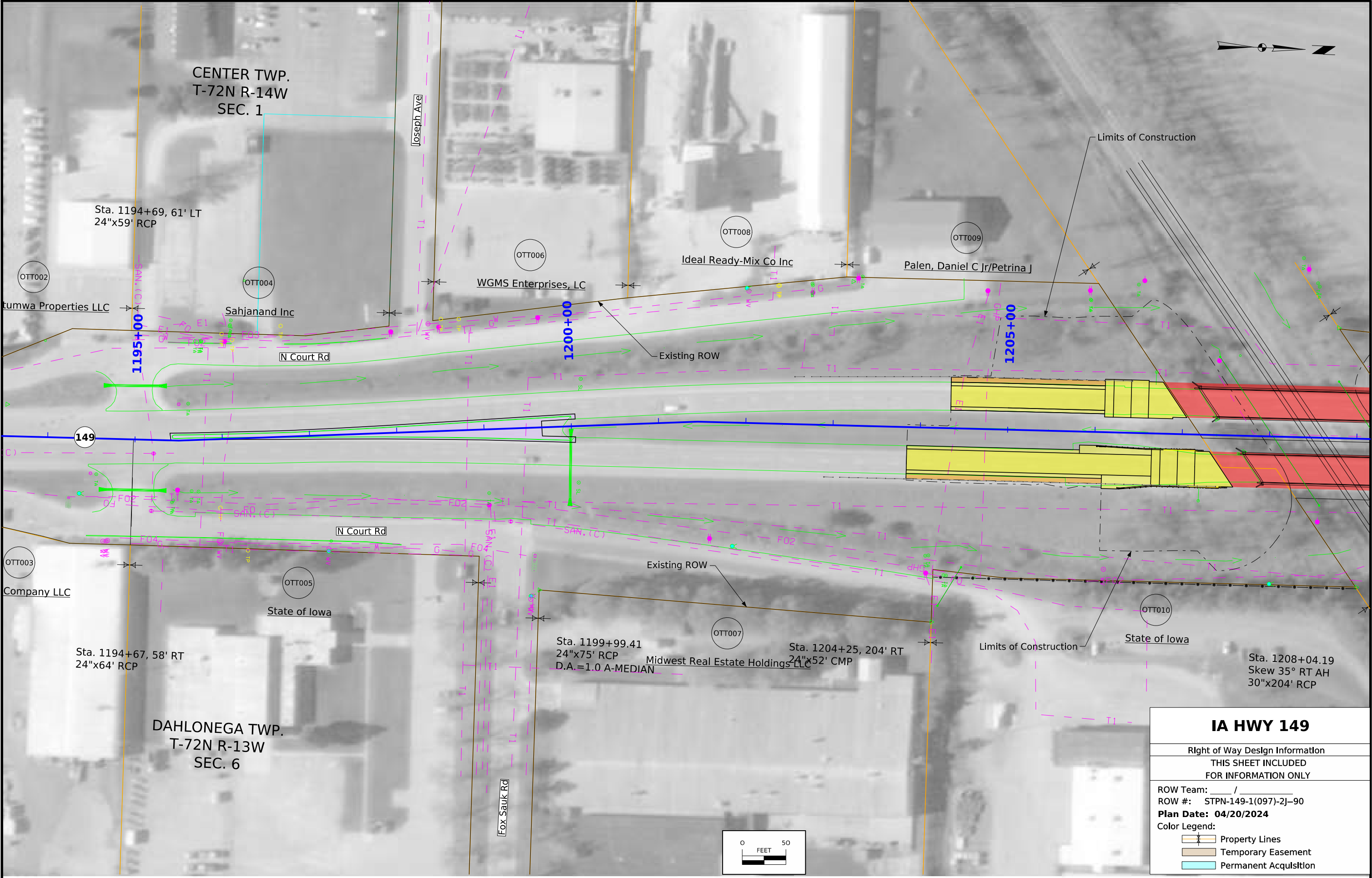
| 101_16<br>10/25/24    |           |           |                          |                             |                            |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
|-----------------------|-----------|-----------|--------------------------|-----------------------------|----------------------------|----------------------|-------------------------|------------------------|---------------------|------------------------|-----------------------|--------------------------------------|-----------------------------------------|----------------------------------------|-------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|
| ALIGNMENT COORDINATES |           |           |                          |                             |                            |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
| Line No.              | Name      | Location  | Point on Tangent Station | Point on Tangent Y Northing | Point on Tangent X Easting | Begin Spiral Station | Begin Spiral Y Northing | Begin Spiral X Easting | Begin Curve Station | Begin Curve Y Northing | Begin Curve X Easting | Simple Curve PI or Master PI Station | Simple Curve PI or Master PI Y Northing | Simple Curve PI or Master PI X Easting | End Curve Station | End Curve Y Northing | End Curve X Easting | End Spiral Station | End Spiral Y Northing | End Spiral X Easting |
| 1.1                   | ML IA 149 | ML_149_CL | 1181+76.50               | 6255062.643                 | 22869598.75                |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
| 1.2                   | ML IA 149 | ML_149_CL | 1195+50.00               | 6256435.951                 | 22869575.81                |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
| 1.3                   | ML IA 149 | ML_149_CL | 1201+44.80               | 6257028.898                 | 22869528.89                |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
| 1.4                   | ML IA 149 | ML_149_CL | 1229+68.18               | 6259851.884                 | 22869481.731               |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
| 2.1                   | NB IA 149 | ML_149_NB |                          |                             |                            |                      |                         |                        | 21193+13.90         | 6256200.118            | 22869593.75           | 21194+13.91                          | 6256300.113                             | 22869592.08                            | 21195+13.90       | 6256399.988          | 22869586.92         |                    |                       |                      |
| 2.2                   | NB IA 149 | ML_149_NB |                          |                             |                            |                      |                         |                        | 21197+15.08         | 6256600.906            | 22869576.54           | 21198+15.10                          | 6256700.791                             | 22869571.38                            | 21199+15.10       | 6256800.795          | 22869569.71         |                    |                       |                      |
| 2.3                   | NB IA 149 | ML_149_NB | 21229+60.35              | 6259845.623                 | 22869518.84                |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |
| 3.1                   | SB IA 149 | ML_149_SB |                          |                             |                            |                      |                         |                        | 11193+13.90         | 6256199.65             | 22869565.75           | 11195+65.71                          | 6256451.427                             | 22869561.54                            | 11198+17.20       | 6256701.864          | 22869535.26         |                    |                       |                      |
| 3.2                   | SB IA 149 | ML_149_SB |                          |                             |                            |                      |                         |                        | 11199+97.40         | 6256881.111            | 22869516.46           | 11202+49.25                          | 6257131.583                             | 22869490.17                            | 11205+00.77       | 6257383.395          | 22869485.97         |                    |                       |                      |
| 3.3                   | SB IA 149 | ML_149_SB | 11229+62.21              | 6259844.387                 | 22869444.85                |                      |                         |                        |                     |                        |                       |                                      |                                         |                                        |                   |                      |                     |                    |                       |                      |

| SPIRAL OR CIRCULAR CURVE DATA |      |           |     |   |    |    |    |    |    |      |      |       |         |         |           |       | 101_17<br>1/17/24 |
|-------------------------------|------|-----------|-----|---|----|----|----|----|----|------|------|-------|---------|---------|-----------|-------|-------------------|
| Line No.                      | Name | Location  | SCS | S | Ls | Ts | Es | Xc | Yc | L.T. | S.T. | C     | T       | L       | R         | E     | Remarks           |
| 1.1                           | C1   | ML_149_NB |     |   |    |    |    |    |    |      |      | 2.000 | 100.009 | 199.997 | 55730.000 | 0.873 |                   |
| 1.2                           | C2   | ML_149_NB |     |   |    |    |    |    |    |      |      | 2.000 | 100.018 | 200.016 | 5730.037  | 0.873 |                   |
| 2.1                           | C1   | ML_149_SB |     |   |    |    |    |    |    |      |      | 5.033 | 251.847 | 503.300 | 5730.000  | 5.530 |                   |
| 2.2                           | C2   | ML_149_SB |     |   |    |    |    |    |    |      |      | 5.033 | 251.847 | 503.370 | 5730.000  | 5.532 |                   |
|                               |      |           |     |   |    |    |    |    |    |      |      |       |         |         |           |       |                   |

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



| Right of Way Design Information             |                              |
|---------------------------------------------|------------------------------|
| THIS SHEET INCLUDED<br>FOR INFORMATION ONLY |                              |
| ROW Team: Hughes / Cuva                     |                              |
| ROW #: STPN-149-1(097)--2J-90               |                              |
| Plan Date: 5-27-2025                        |                              |
| Color Legend:                               |                              |
|                                             | Property Lines               |
|                                             | Temporary Easement           |
|                                             | Permanent Acquisition        |
|                                             | Permanent Acquisition County |
|                                             | Permanent Acquisition City   |



IA HWY 149

Right of Way Design Information

THIS SHEET INCLUDED  
FOR INFORMATION ONLY

ROW Team: \_\_\_\_\_ / \_\_\_\_\_

ROW #: STPN-149-1(097)-2J-90

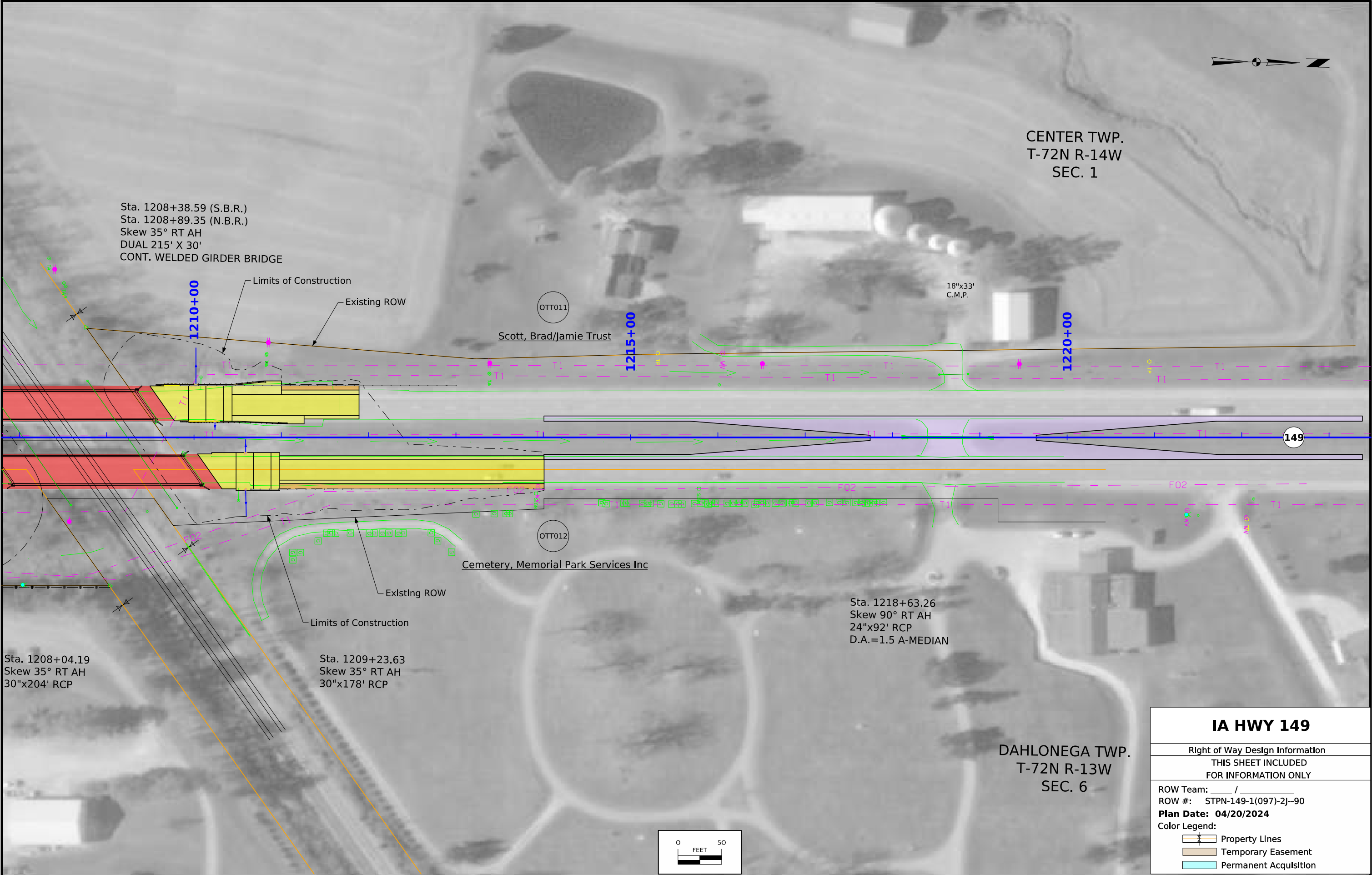
Plan Date: 04/20/2024

Color Legend:

Property Lines

Temporary Easement

Permanent Acquisition



CENTER TWP.  
T-72N R-14W  
SEC. 1

Sta. 1208+38.59 (S.B.R.)  
Sta. 1208+89.35 (N.B.R.)  
Skew 35° RT AH  
DUAL 215' X 30'  
CONT. WELDED GIRDER BRIDGE

Limits of Construction

Existing ROW

OTT011

Scott, Brad/Jamie Trust

18"x33'  
C.M.P.

1215+00

1220+00

149

OTT012

Cemetery, Memorial Park Services Inc

Existing ROW

Limits of Construction

Sta. 1218+63.26  
Skew 90° RT AH  
24"x92' RCP  
D.A.=1.5 A-MEDIAN

Sta. 1208+04.19  
Skew 35° RT AH  
30"x204' RCP

Sta. 1209+23.63  
Skew 35° RT AH  
30"x178' RCP

DAHLONEGA TWP.  
T-72N R-13W  
SEC. 6

IA HWY 149

Right of Way Design Information  
THIS SHEET INCLUDED  
FOR INFORMATION ONLY

ROW Team: \_\_\_\_\_ / \_\_\_\_\_  
ROW #: STPN-149-1(097)-2J--90  
Plan Date: 04/20/2024

Color Legend:  
Property Lines  
Temporary Easement  
Permanent Acquisition



108\_23A  
8/15/22

TRAFFIC CONTROL PLAN

- 1. Through traffic on IA 149 shall be maintained at all times. Maintain a minimum of one lane of traffic, in each direction, at all times during construction.
- 2. Access to all properties shall be maintained at all times.

## 511 TRAVEL RESTRICTIONS

| Line No. | Route  | Direction | County  | Location Description | Feature Crossed | Object Type            | Maint. Bridge No.<br>or Structure ID<br>or FHWA No. | Type of<br>Restriction | Existing<br>Measurement | Construction<br>Measurement | Construction<br>Measurement as<br>Signed | Projected As<br>Built<br>Measurement | Remarks |
|----------|--------|-----------|---------|----------------------|-----------------|------------------------|-----------------------------------------------------|------------------------|-------------------------|-----------------------------|------------------------------------------|--------------------------------------|---------|
| 1.0      | IA 149 | NB        | Wapello | In Ottumwa           | DME Railroad    | Traffic Control Device | 9003.9R149                                          | Horizontal             | N/A                     | 14.5                        | 13.5                                     | N/A                                  |         |
| 2.0      | IA 149 | SB        | Wapello | In Ottumwa           | DME Railroad    | Traffic Control Device | 9003.9L149                                          | Horizontal             | N/A                     | 14.5                        | 13.5                                     | N/A                                  |         |

STAGING NOTES

Any requests to change the staging shall follow Article 1105.15 of the Standard Specifications. Maintenance of traffic shall be per Tab. 108-23A and the traffic control details described within. No Value Engineering proposals will be accepted that deviate from the intent of the traffic control shown in the plans.

Stage 1 Construction

- Construct temporary pavement south of the bridge and north of the bridge.

Stage 1 Traffic Control

- Close inside lanes per TC-418 and TC-419.

Stage 2 Construction

- Remove bullnose guardrail on both sides of the existing bridges. Install TBR and temporary crash cushions for approach side of southbound bridge.

- Construct northbound bridge and associated roadway work.

Stage 2 Traffic Control

- Shift southbound traffic to the outside, southbound lane using TC-418.
- Shift northbound traffic to the inside, southbound lane using TC-61.

Stage 3 Construction

- Construct southbound bridge and associated roadway work.

Stage 3 Traffic Control

- Shift northbound traffic to the outside, northbound lane using TC-418.
- Shift southbound traffic to the inside, northbound lane using TC-61.

Stage 4 Construction

- Remove temporary pavement south of the bridge and north of the bridge.

Stage 4 Traffic Control

- Close inside lanes per TC-418 and TC-419.

111\_01  
10/14/22

| 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                     |
| STP-149-1(88)--2C-90                                                                                                                                                                            | PCC Pavement - Grade and Replace |
|                                                                                                                                                                                                 |                                  |

| CROSS SECTION VIEW COLOR LEGEND<br>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<br>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<br>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

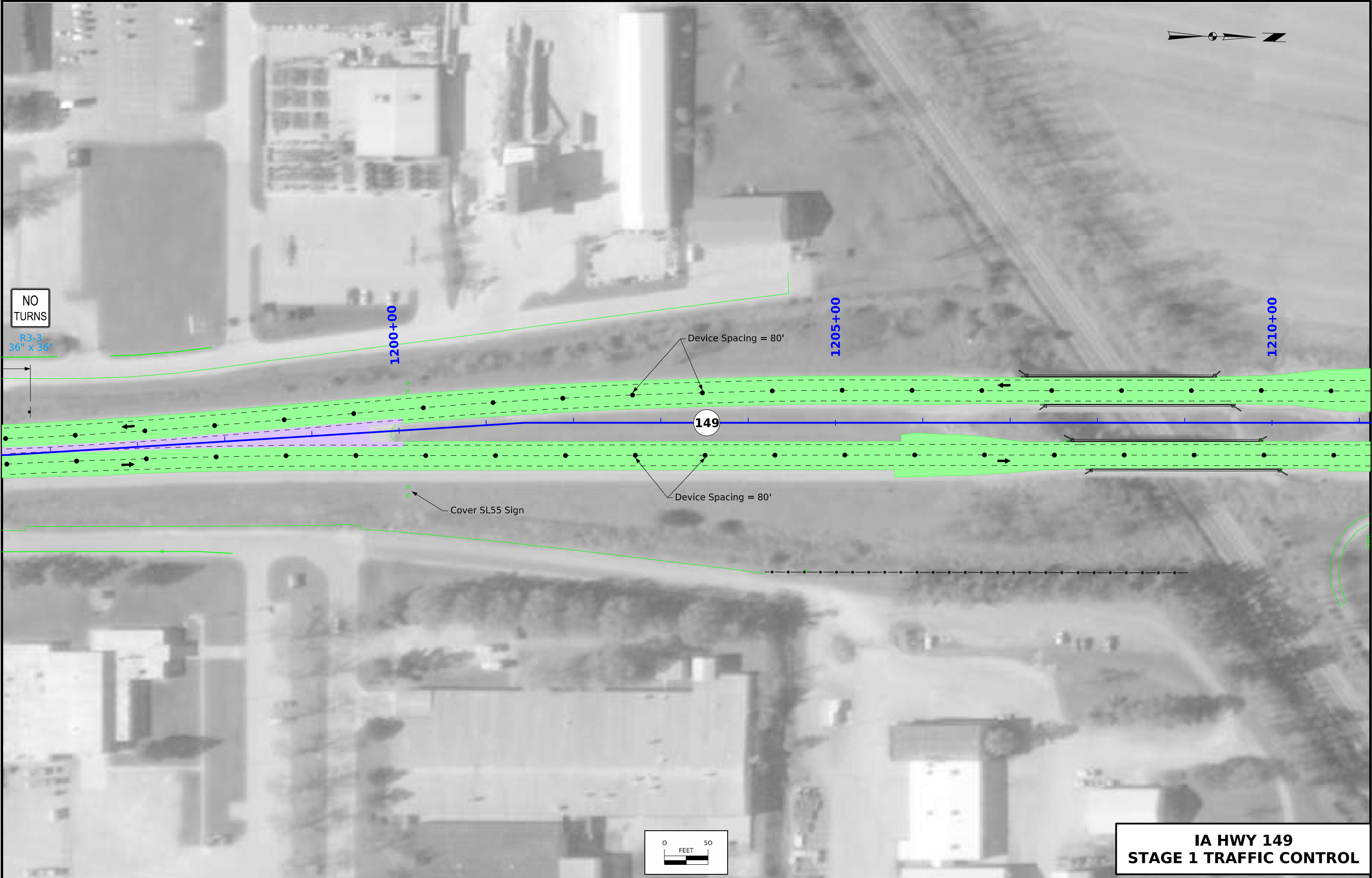
(COVERS SHEET SERIES J)

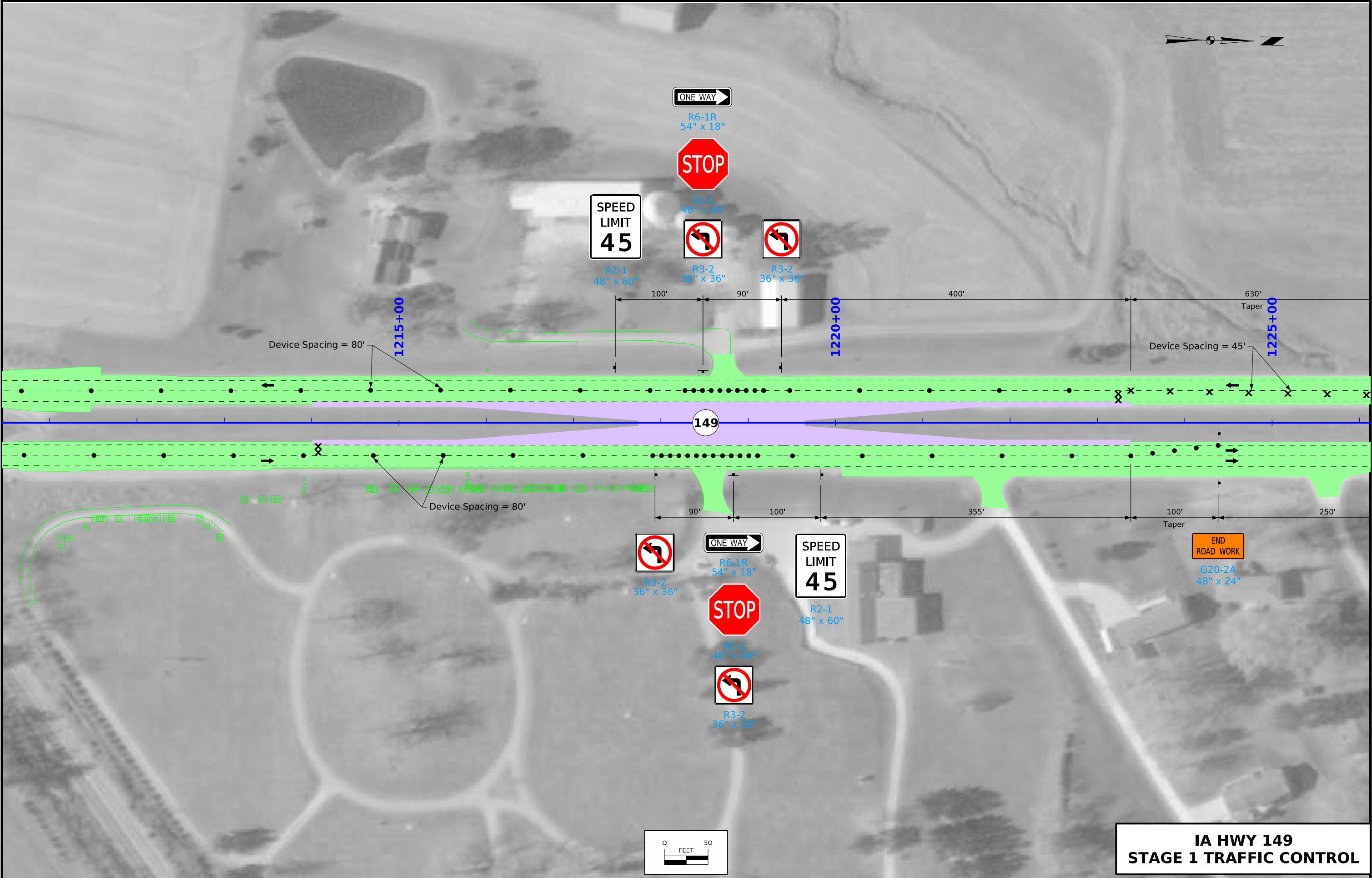


|          |         |                                   |                |                                             |                         |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.6</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|



|          |         |                                   |                |                                             |                         |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.7</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|-------------------------|







|          |         |                        |                |                                      |                   |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|
| FILE NO. | ENGLISH | DESIGN TEAM WHKS & CO. | WAPELLO COUNTY | PROJECT NUMBER BRF-149-1(096)--38-90 | SHEET NUMBER J.10 |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|



|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.11</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|



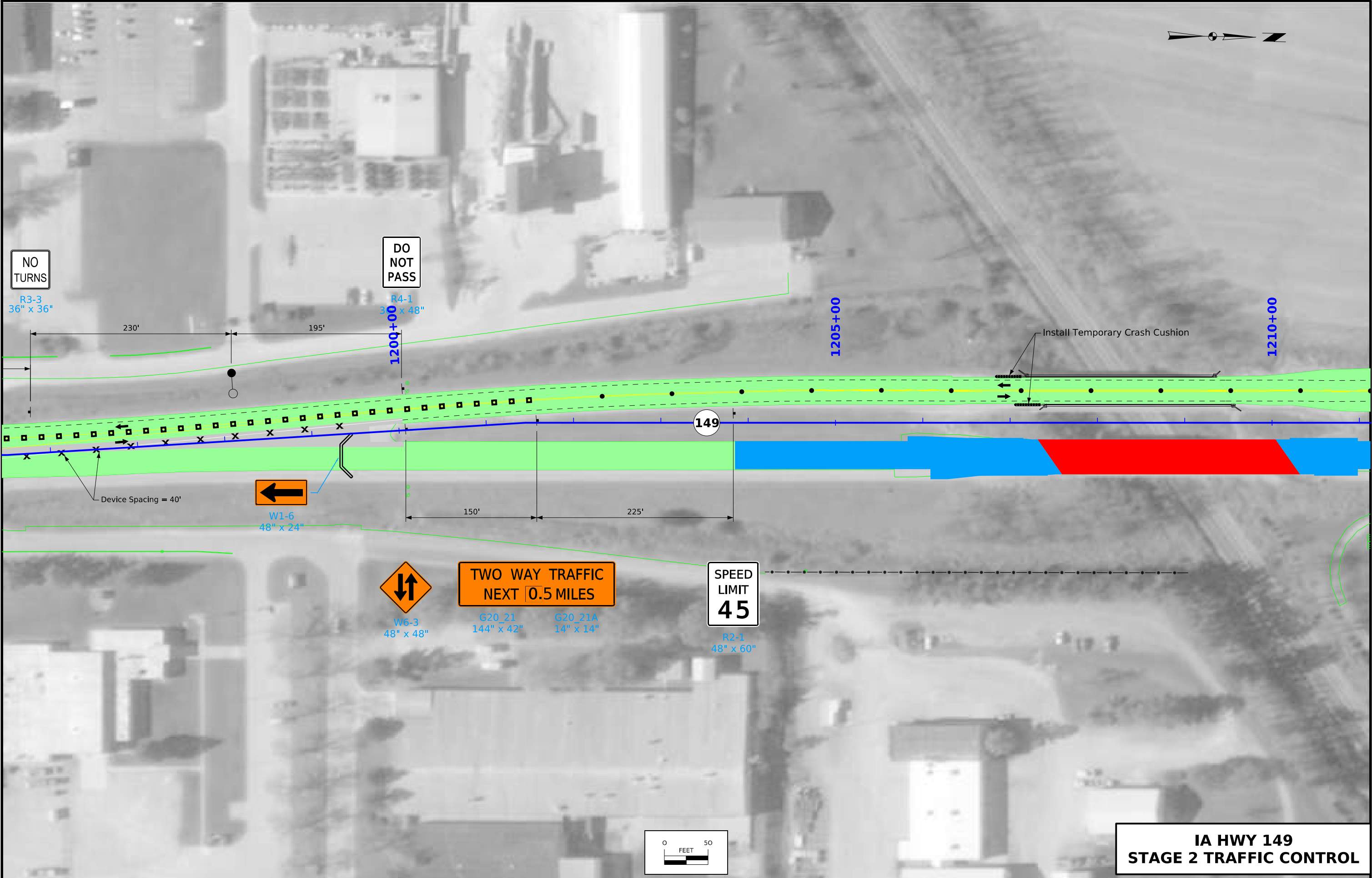
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|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|

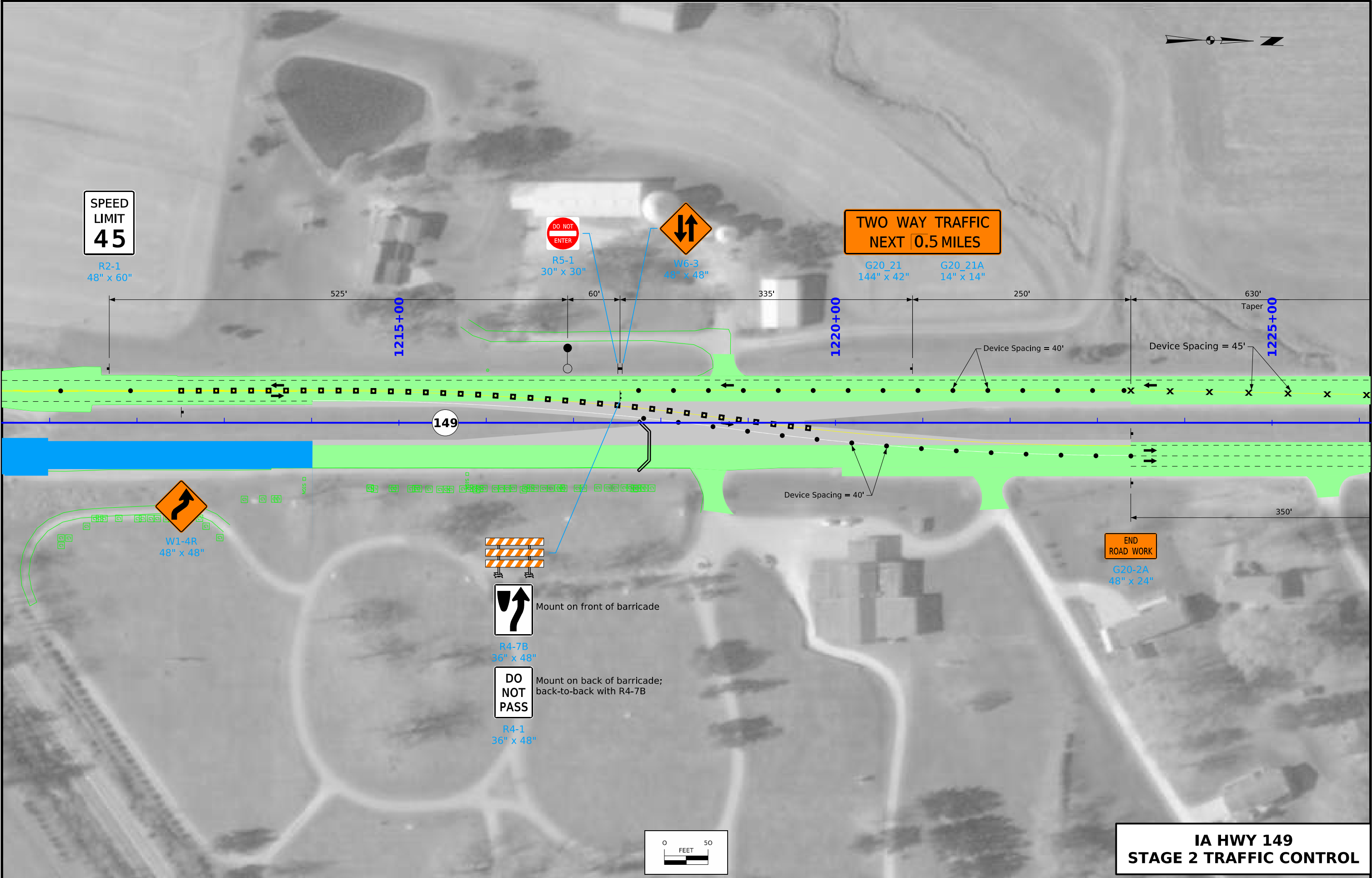
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|          |         |                        |                |                                      |                   |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|
| FILE NO. | ENGLISH | DESIGN TEAM WHKS & CO. | WAPELLO COUNTY | PROJECT NUMBER BRF-149-1(096)--38-90 | SHEET NUMBER J.13 |
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**IA HWY 149  
STAGE 2 TRAFFIC CONTROL**

|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.16</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|



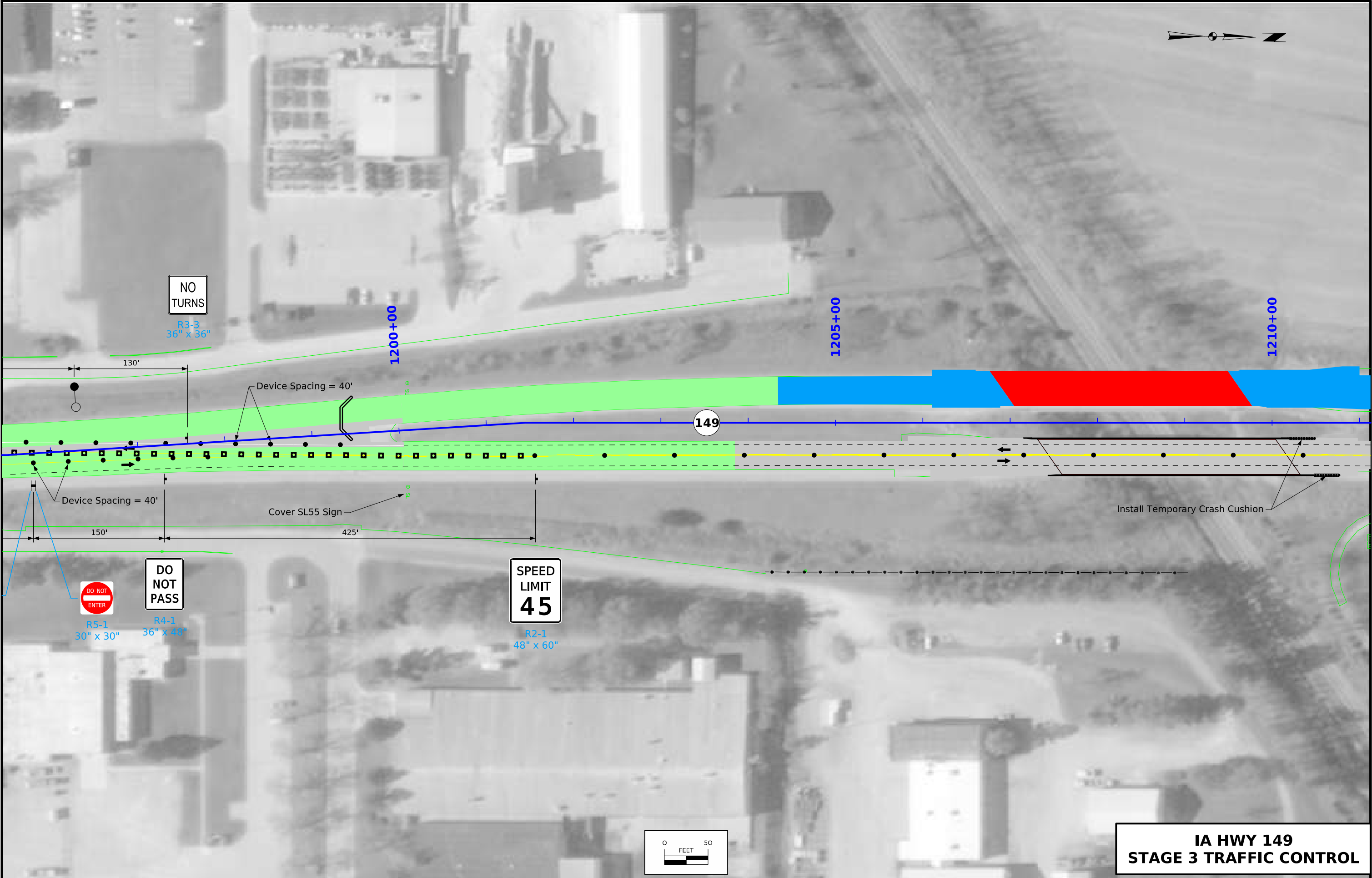
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|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.17</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|



|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.18</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|



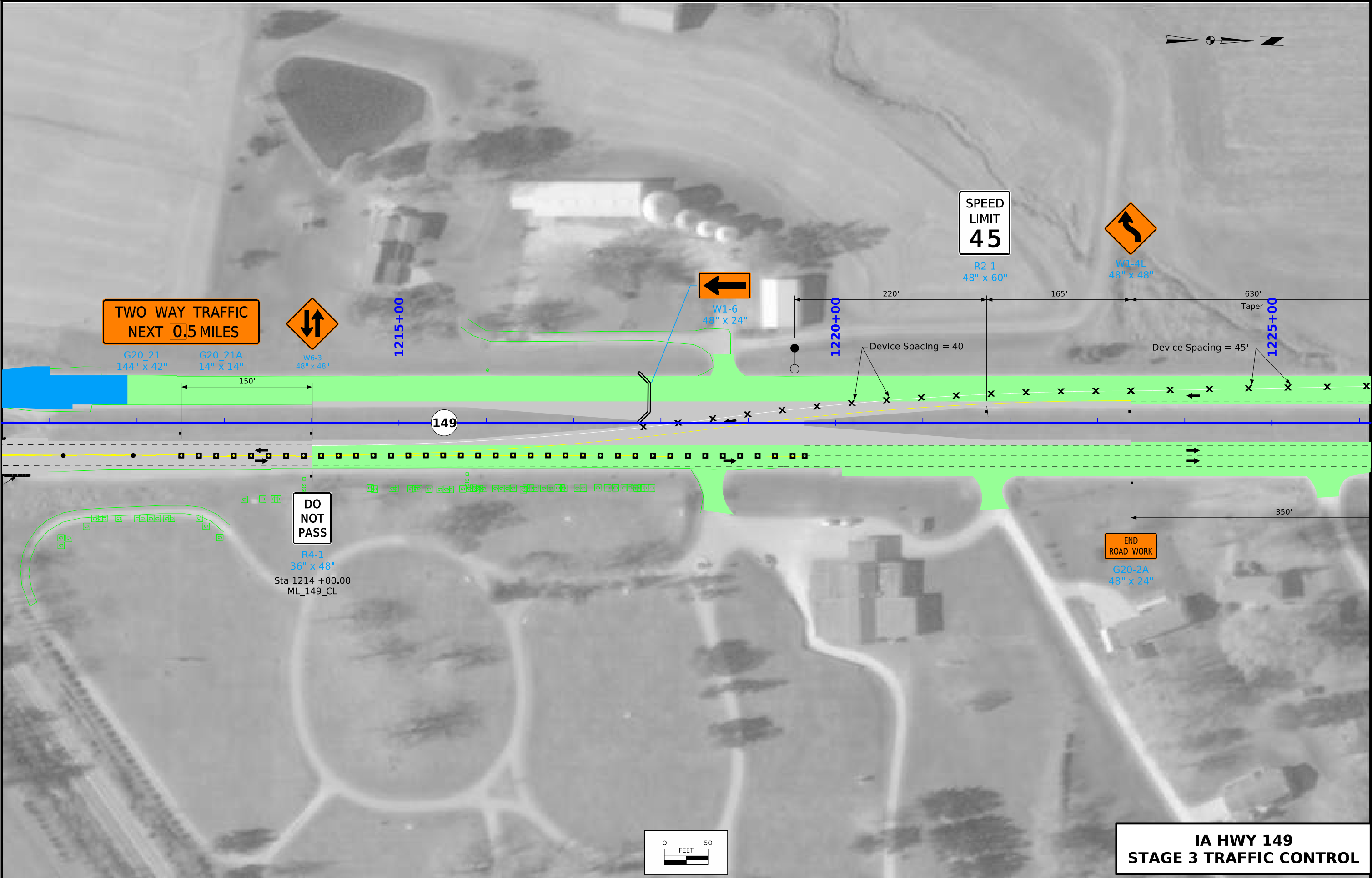
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**IA HWY 149  
STAGE 3 TRAFFIC CONTROL**

|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.20</b> |
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|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.21</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|

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|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.23</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|

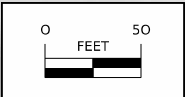
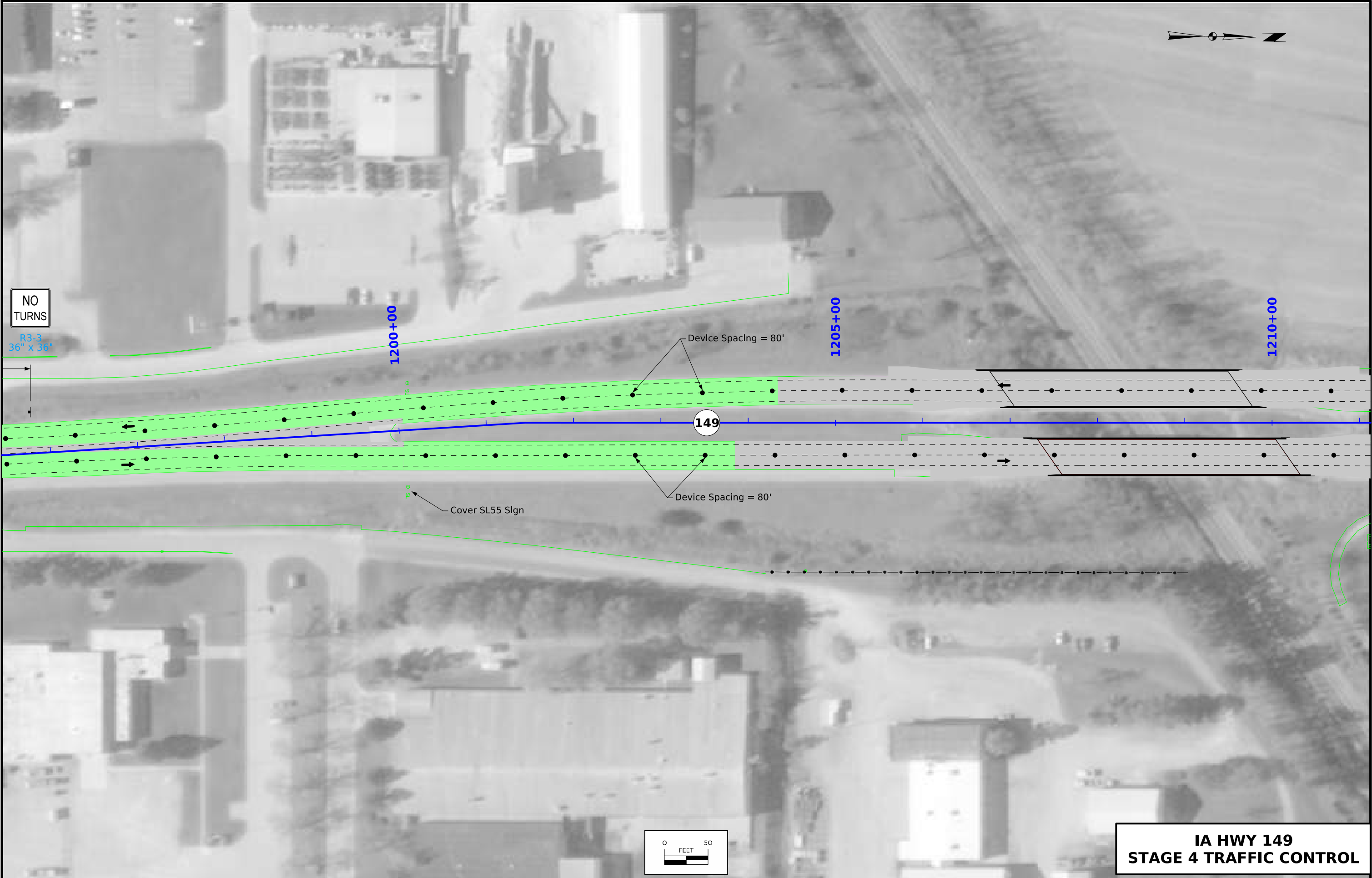


|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.24</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|

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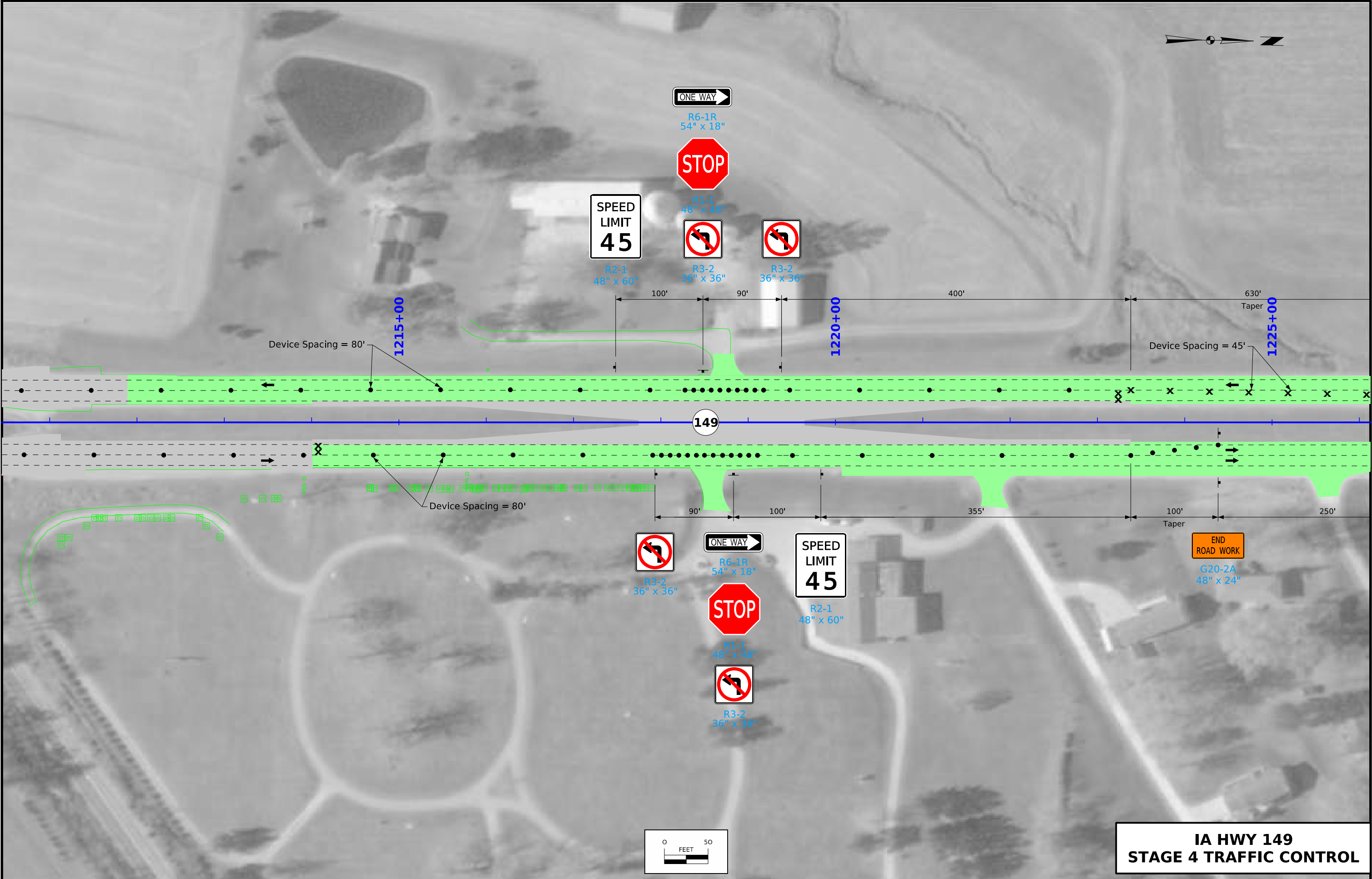
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| FILE NO. | ENGLISH    | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY                                                                                                               | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.25</b> |
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**IA HWY 149  
STAGE 4 TRAFFIC CONTROL**

|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.26</b> |
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11:10:48 19/03/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\\Documents\\Projects\\9014903022\\Design\\CADD\_Files\\Sheet\_Files\\SHT\_90149096\_J24.dgn



|          |         |                        |                |                                      |                   |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|
| FILE NO. | ENGLISH | DESIGN TEAM WHKS & CO. | WAPELLO COUNTY | PROJECT NUMBER BRF-149-1(096)--38-90 | SHEET NUMBER J.27 |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|

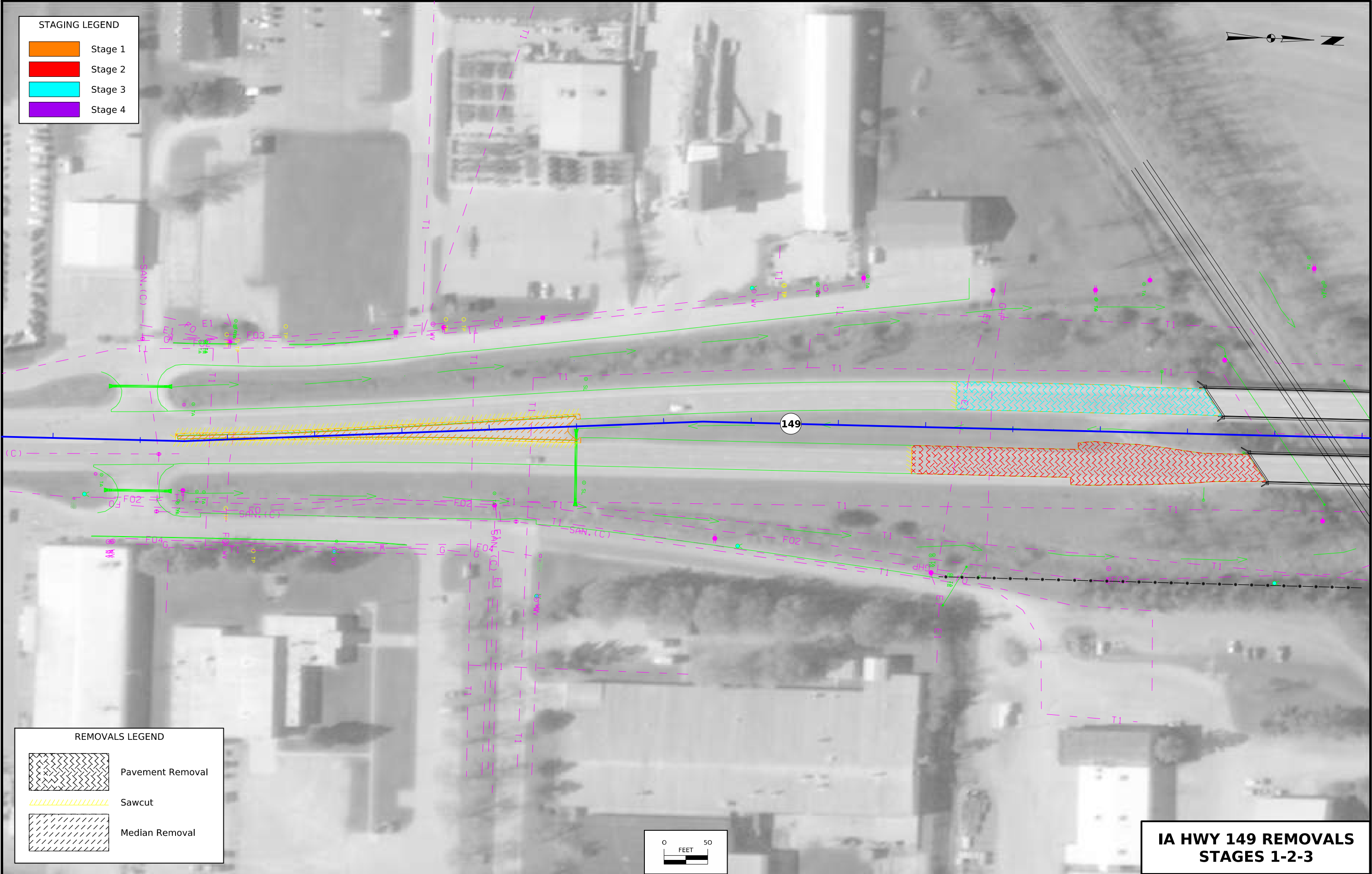
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|          |         |                        |                |                                      |                   |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|
| FILE NO. | ENGLISH | DESIGN TEAM WHKS & CO. | WAPELLO COUNTY | PROJECT NUMBER BRF-149-1(096)--38-90 | SHEET NUMBER J.28 |
|----------|---------|------------------------|----------------|--------------------------------------|-------------------|

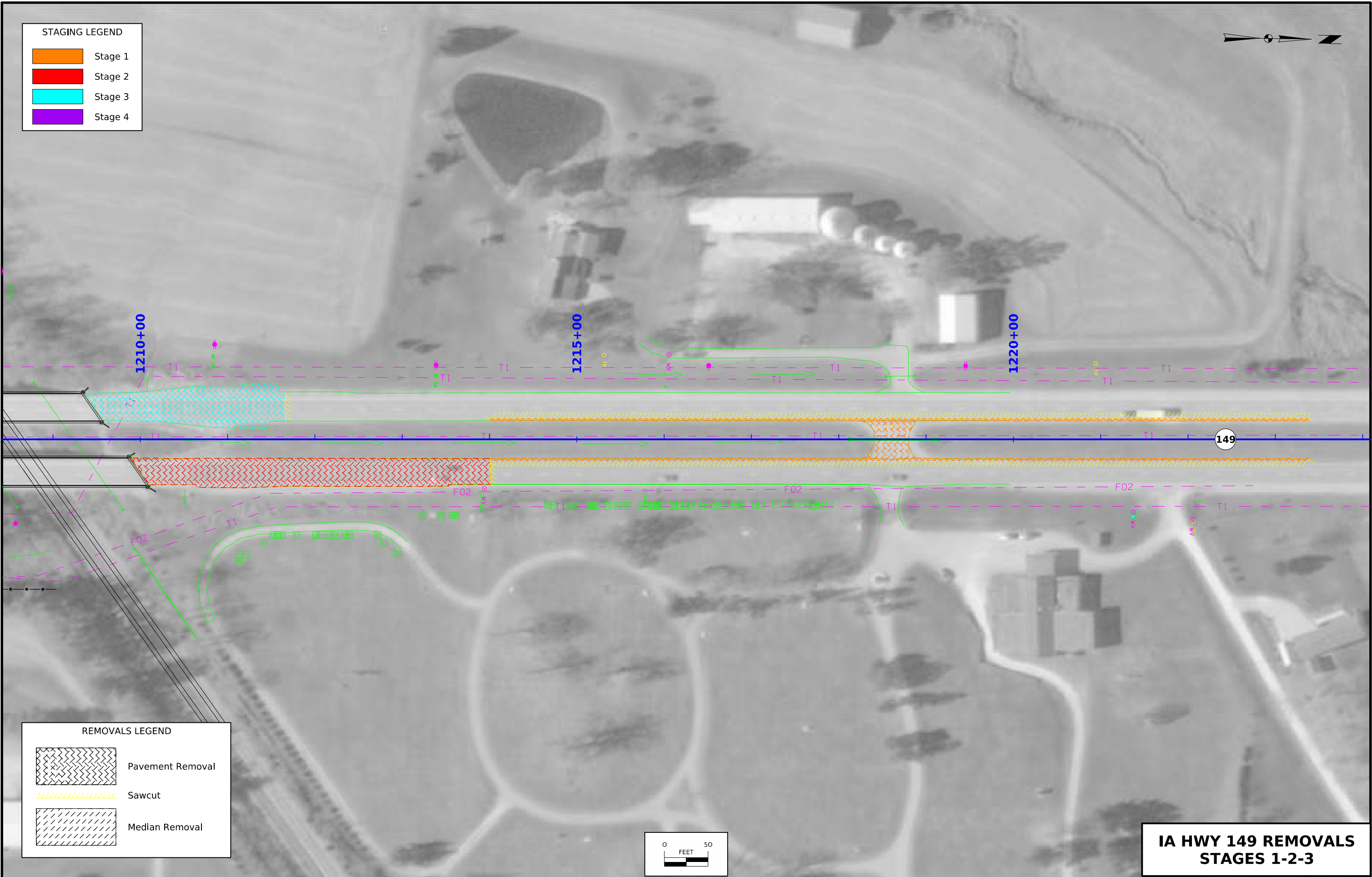


|          |         |                                   |                |                                             |                          |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM <b>WHKS &amp; CO.</b> | WAPELLO COUNTY | PROJECT NUMBER <b>BRF-149-1(096)--38-90</b> | SHEET NUMBER <b>J.29</b> |
|----------|---------|-----------------------------------|----------------|---------------------------------------------|--------------------------|



STAGING LEGEND

|            |         |
|------------|---------|
| Orange box | Stage 1 |
| Red box    | Stage 2 |
| Cyan box   | Stage 3 |
| Purple box | Stage 4 |



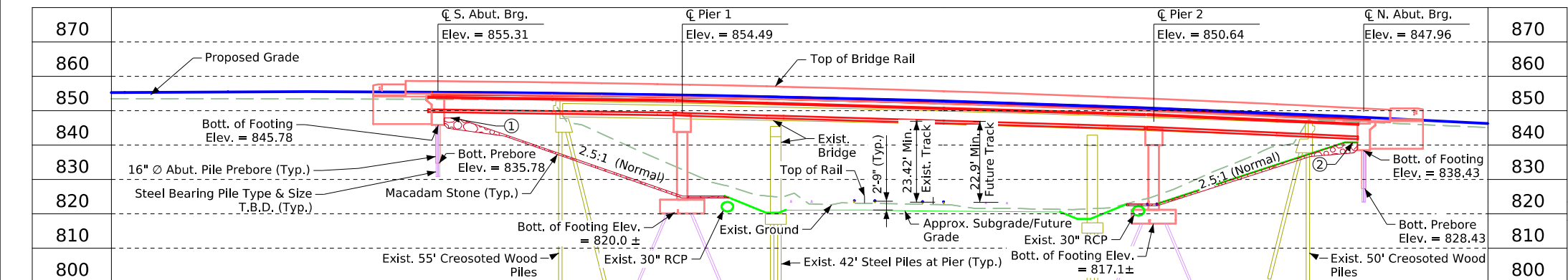
REMOVALS LEGEND

|                       |                  |
|-----------------------|------------------|
| Wavy line pattern     | Pavement Removal |
| Yellow dashed line    | Sawcut           |
| Diagonal line pattern | Median Removal   |

**IA HWY 149 REMOVALS  
STAGES 1-2-3**



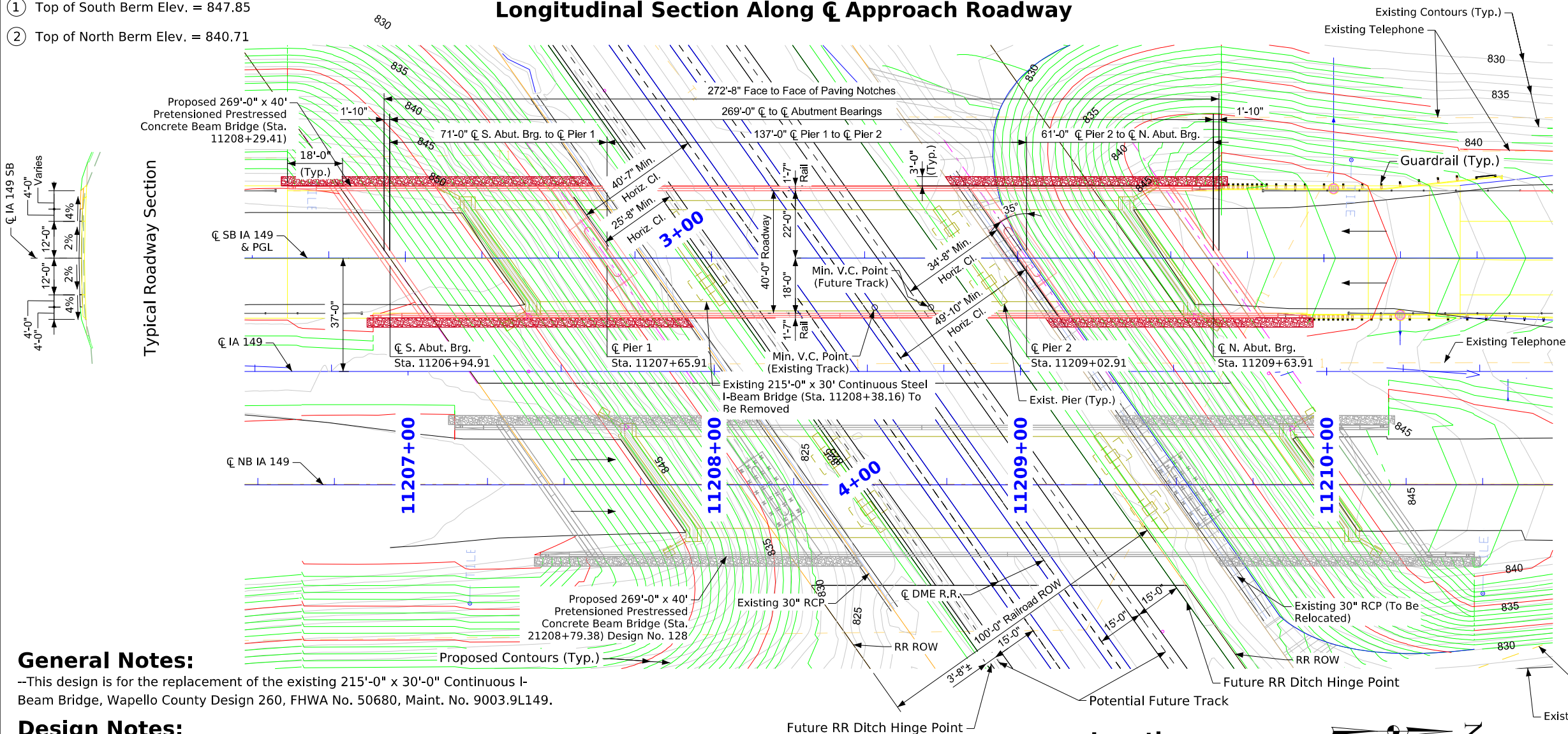
Control Point: 501 Fd IHC Monument SW Wing of Bridge, N=6257655.58, E=22869536.64, EL=853.72  
503 Fd IHC Monument NW Wing of Bridge, N=6257872.85, E=22869533.28, EL=847.13



① Top of South Berm Elev. = 847.85

② Top of North Berm Elev. = 840.71

### Longitudinal Section Along C Approach Roadway



**General Notes:**

--This design is for the replacement of the existing 215'-0" x 30'-0" Continuous I-Beam Bridge, Wapello County Design 260, FHWA No. 50680, Maint. No. 9003.9L149.

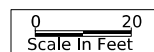
### Design Notes:

- TL-5 Single Slope Bridge Railing Proposed
- Pier Type - T-Pier (2'-6" Assumed Column Thickness)
- Two conduits should be provided in the outside rail for future use
- Final Design shall consider the need for temporary shoring adjacent to railroad for pier footing construction.
- Non-Standard Abutment Wing Walls
- Pier 1 is located within railroad ROW. Railroad insurance provisions and flaggers required. AREMA heavy construction requirements are required by CPKC railroad even though pier is greater than 25' from nearest track.
- There is a potential for conflicts with the existing Pier 2 foundations. Final designer shall review footing/pile layout and make necessary adjustments to minimize conflicts.

### Plan Notes:

- Top of bridge deck at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.
- Proposed bridge will not effect flow in existing railroad ditches or drainage structures.
- Faint lines indicate existing structures or contours.

## Situation Plan



## Location

SB IA 149 over DME RR  
T-72N R-13 & 14W  
Section 1 & 6  
Center Township  
Wapello County  
City of Ottumwa  
FHWA No. 50680 (Existing)  
FHWA No. 50681 (Proposed)  
Bridge Maint. No. 9003.9L149  
Latitude 41.067479°  
Longitude -92.410135°  
FRA No. 375788T

## Traffic Estimate

|           |              |
|-----------|--------------|
| 2027 AADT | 6,200 V.P.D. |
| 2047 AADT | 6,800 V.P.D. |
| TRUCKS    | 11 %         |



### Utilities Note:

Utilities shown on this sheet are for information only.  
See Road Design sheets for utility information.

### General Utility Symbols:

T - Telephone Line  
● - Power Poles

## Minimum Vertical Clearance

(Existing North Track)  
Overhead Station = 11208+53.29, Offset 16.08' Rt.  
Overhead Elevation = 852.08  
Depth of Superstructure = 64.5 in.  
Deck Thickness = 8.5 in.  
Estimated Haunch = 2 in.  
Beam Depth = 54 in.  
Underpass Station = 3+57.43, Offset 0  
Underpass Elevation = 823.29  
Minimum Vertical Clearance = 23.42'

## Minimum Vertical Clearance

(Future North Track)  
Overhead Station = 11208+71.66, Offset 16.08' Rt.  
Overhead Elevation = 851.49  
Depth of Superstructure = 64.5 in.  
Deck Thickness = 8.5 in.  
Estimated Haunch = 2 in.  
Beam Depth = 54 in.  
Underpass Station = 3+68.16, Offset 0  
Underpass Elevation = 823.21  
Minimum Vertical Clearance = 22.90'

$g_1 = 2.57\%$        $g_2 = -5.04\%$

VPI Sta. = 11207+35.00  
VPI Elev. = 859.54  
VC = 480.00'

Proposed Profile  
Grade 4 SB IA 149

## Preliminary

Design For 35° Skew RA

**269'-0" x 40'-0" Pretensioned  
Prestressed Concrete Beam Bridge**

71'-0" & 61'-0" End Spans      BTD Beams      137'-0" Interior Span

**Situation Plan**

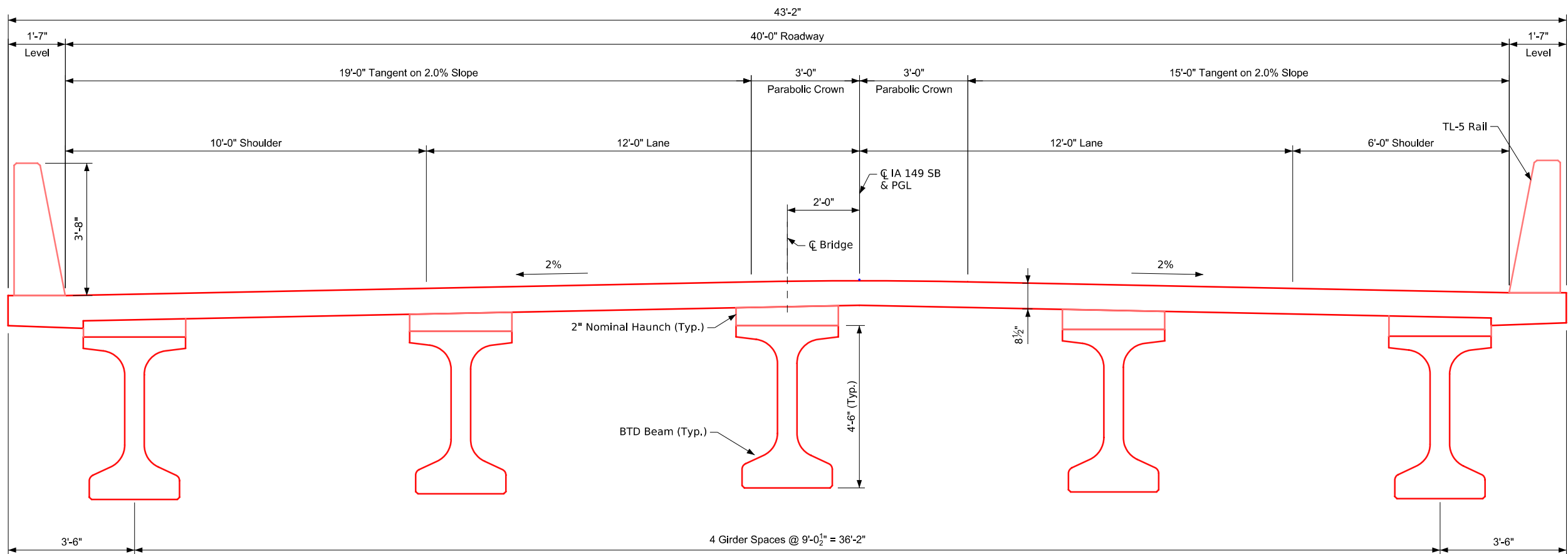
STA. 11208+29.41 (SB IA 149)      March, 2025

**Wapello County**

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 228      Design Sheet No. 1 of 4      FHWA No. 50681

|            |            |          |             |         |                |                |                        |              |   |
|------------|------------|----------|-------------|---------|----------------|----------------|------------------------|--------------|---|
| FILE NO.   | 32549      | ENGLISH  | DESIGN TEAM | JJO/BRH | Wapello COUNTY | PROJECT NUMBER | BRF-149-1(096)- -38-90 | SHEET NUMBER | 1 |
| SYSTEMTIME | SYSTEMDATE | USERNAME | DGNSPEC     |         |                |                |                        |              |   |



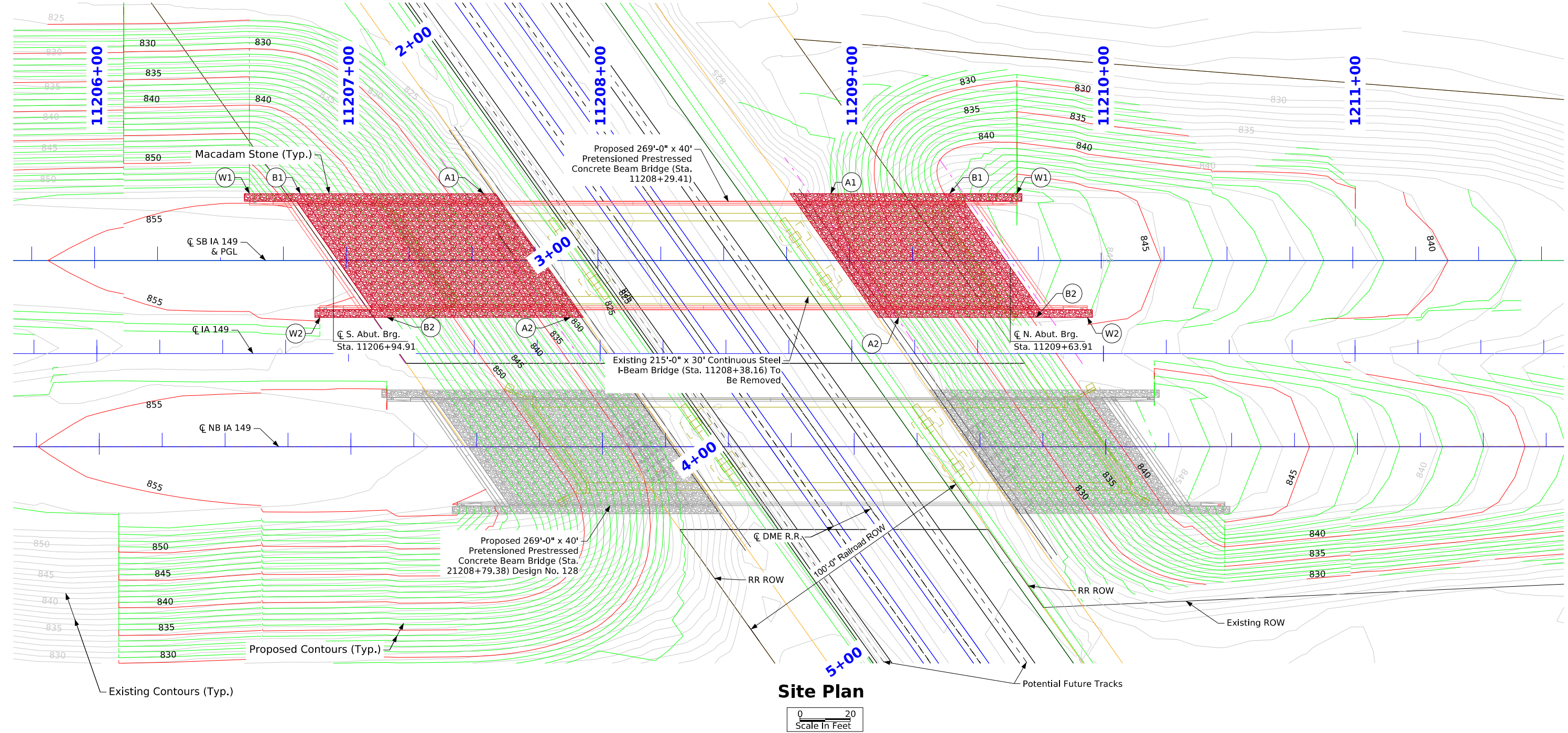
**Transverse Section**

(Looking North)

Preliminary

Design For 35° Skew RA  
**269'-0" x 40'-0" Pretensioned  
Prestressed Concrete Beam Bridge**  
71'-0" & 61'-0" End Spans      BTD Beams      137'-0" Interior Span  
**Situation Plan - Misc.**  
STA. 11208+29.41 (SB IA 149)      March, 2025  
**Wapello County**  
IOWA DEPARTMENT OF TRANSPORTATION  
Design No. 228      Design Sheet No. 2 of 4      FHWA No. 50681

Control Point: 501 Fd IHC Monument SW Wing of Bridge, N=6257655.58, E=22869536.64, EL=853.72  
503 Fd IHC Monument NW Wing of Bridge, N=6257872.85, E=22869533.28, EL=847.13



**Berm Slope Location Table**

| Points | South Abutment |            |        | North Abutment |            |        |
|--------|----------------|------------|--------|----------------|------------|--------|
|        | Station        | Offset     | Elev.  | Station        | Offset     | Elev.  |
| A1     | 11207+54.70    | 26.58' LT. | 825.16 | 11208+92.59    | 26.58' LT. | 822.81 |
| A2     | 11207+89.13    | 22.58' RT. | 825.16 | 11209+19.60    | 22.58' RT. | 822.81 |
| B1     | 11206+81.79    | 26.58' LT. | 847.85 | 11209+39.80    | 26.58' LT. | 840.71 |
| B2     | 11207+16.22    | 22.58' RT. | 847.85 | 11209+74.23    | 22.58' RT. | 840.71 |
| W1     | 11206+61.51    | 26.58' LT. | 854.86 | 11209+66.51    | 26.58' LT. | 847.61 |
| W2     | 11206+89.51    | 22.58' RT. | 855.19 | 11209+94.51    | 22.58' RT. | 845.95 |

Berm slope elevations reflect the grading surface.

Preliminary

Design For 35° Skew RA

**269'-0" x 40'-0" Pretensioned  
Prestressed Concrete Beam Bridge**

71'-0" & 61'-0" End Spans      BTD Beams      137'-0" Interior Span

**Situation Plan - Site**

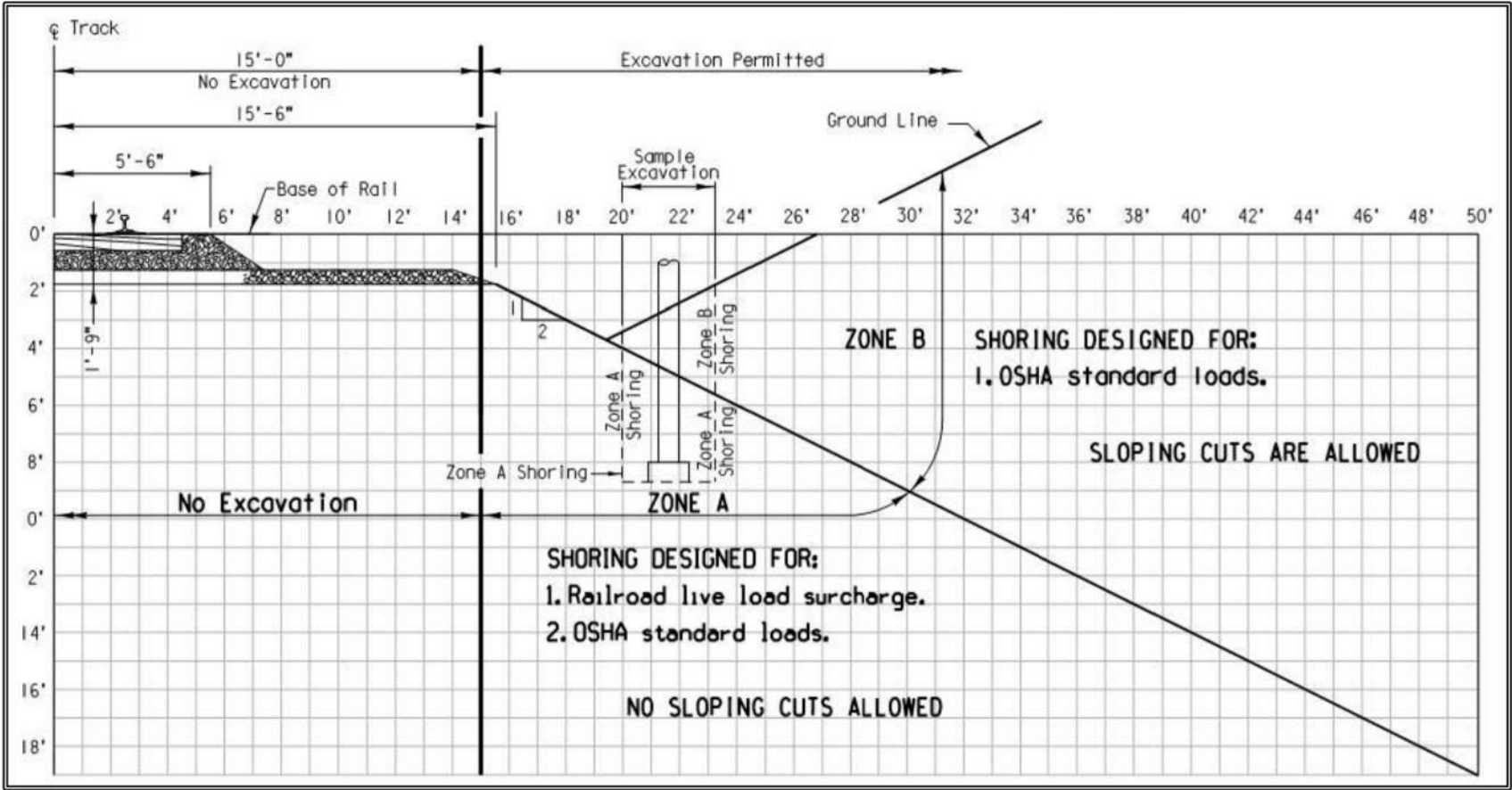
STA. 11208+29.41 (SB IA 149)      March, 2025

**Wapello County**

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 228      Design Sheet No. 3 of 4      FHWA No. 50681

Revised 07-2019: For UPRR, Changed Horizontal Distance of Minimum Construction Clearance Envelope to 15'-0" (Was 12'-0").  
Revised 03-2022: Updated "General Excavation Zones" Detail and "General Shoring Notes" to Follow the "UPRR & BNSF Guidelines for Temporary Shoring, 2021".  
Issued 12-2008.  
MiscellaneousBridges.dgn - 1067 - This Sheet Re-Issued 11-2023. Sheet Format Update.



**General Excavation Zones**  
Source: UPRR & BNSF Guideline for Temporary Shoring, 2021

**Railroad General Notes:**

Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the railroad's ditches and/or drainage structures.

The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the railroad prior to construction.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the railroad.

All shoring systems that impact the railroad's operations and/or supports the railroad's embankment shall be designed and constructed per current railroad guidelines for temporary shoring.

All demolitions within the railroad's right-of-way and/or demolition that may impact the railroad's tracks or operations shall be in compliance with the railroad's demolition guidelines.

Erection over the railroad's right-of-way shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

All construction phasing that may impact the railroad operations shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

False-work clearances shall comply with minimum construction clearances.

All permanent clearances shall be verified before project closing.

For railroad coordination please refer to the railroad coordination requirements as part of special provisions.

**General Shoring Notes:**

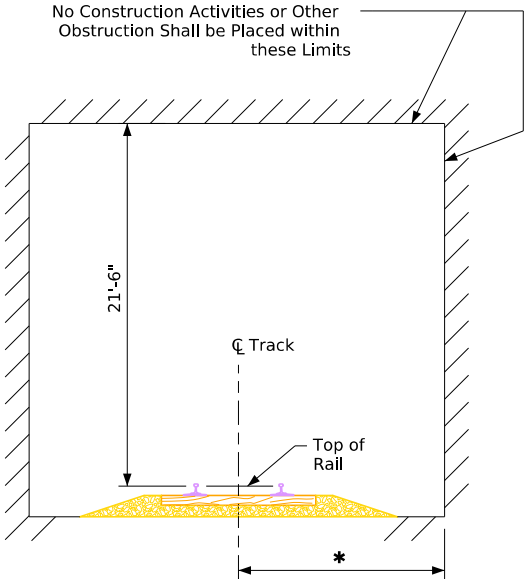
All dimensions are measured perpendicular to track.

Prior to commencing any work, the Contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The Contractor shall install the temporary shoring system per the approved plans.

Design of the temporary shoring system to comply with UPRR & BNSF Guidelines for Temporary Shoring.

For excavations which encroach into Zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the State of Iowa.

Note:  
BNSF = Burlington Northern Santa Fe Railroad  
UPRR = Union Pacific Railroad



**Minimum Construction Clearance Envelope**  
(Normal To Railroad)

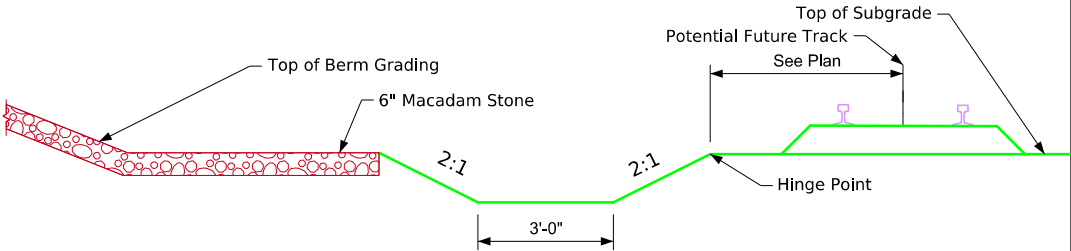
\* 15'-0" for BNSF and 15'-0" for UPRR

**Top Of Rail Elevations**

(Stations Increase with Milepost Increase)

| South Rail Line      |           |                       |           |
|----------------------|-----------|-----------------------|-----------|
| Alignment: Left Rail |           | Alignment: Right Rail |           |
| Station              | Elevation | Station               | Elevation |
| 0+00                 | 825.021   | 0+00                  | 825.042   |
| 0+50                 | 824.886   | 0+50                  | 824.838   |
| 1+00                 | 824.697   | 1+00                  | 824.668   |
| 1+50                 | 824.509   | 1+50                  | 824.523   |
| 2+00                 | 824.302   | 2+00                  | 824.324   |
| 2+50                 | 824.102   | 2+50                  | 824.119   |
| 3+00                 | 823.895   | 3+00                  | 823.881   |
| 3+50                 | 823.573   | 3+50                  | 823.595   |
| 4+00                 | 823.351   | 4+00                  | 823.359   |
| 4+50                 | 823.162   | 4+50                  | 823.156   |
| 5+00                 | 822.982   | 5+00                  | 822.955   |
| 5+50                 | 822.674   | 5+50                  | 822.716   |
| 6+00                 | 822.435   | 6+00                  | 822.467   |
| 6+50                 | 822.228   | 6+50                  | 822.153   |
| 7+00                 | 821.974   | 7+00                  | 821.963   |
| 7+50                 | 821.807   | 7+50                  | 821.752   |
| 7+92.89              | 821.661   | 7+92.76               | 821.678   |

| North Rail Line      |           |                       |           |
|----------------------|-----------|-----------------------|-----------|
| Alignment: Left Rail |           | Alignment: Right Rail |           |
| Station              | Elevation | Station               | Elevation |
| 0+00                 | 824.621   | 0+00                  | 824.666   |
| 0+50                 | 824.482   | 0+50                  | 824.476   |
| 1+00                 | 824.291   | 1+00                  | 824.299   |
| 1+50                 | 824.107   | 1+50                  | 824.148   |
| 2+00                 | 823.958   | 2+00                  | 823.926   |
| 2+50                 | 823.746   | 2+50                  | 823.739   |
| 3+00                 | 823.568   | 3+00                  | 823.589   |
| 3+50                 | 823.329   | 3+50                  | 823.347   |
| 4+00                 | 822.977   | 4+00                  | 822.989   |
| 4+50                 | 822.722   | 4+50                  | 822.753   |
| 5+00                 | 822.624   | 5+00                  | 822.638   |
| 5+50                 | 822.493   | 5+50                  | 822.548   |
| 6+00                 | 822.289   | 6+00                  | 822.355   |
| 6+50                 | 821.969   | 6+50                  | 822.059   |
| 7+00                 | 821.737   | 7+00                  | 821.848   |
| 7+50                 | 821.563   | 7+50                  | 821.634   |
| 7+93.43              | 821.352   | 7+93.26               | 821.468   |



**Typical RR Ditch Grading**  
Perpendicular to RR Tracks

Preliminary

Design For 35° Skew RA

**269'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge**

71'-0" & 61'-0" End Spans    BTD Beams    137'-0" Interior Span

**Railroad General Notes & Shoring**

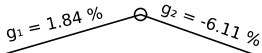
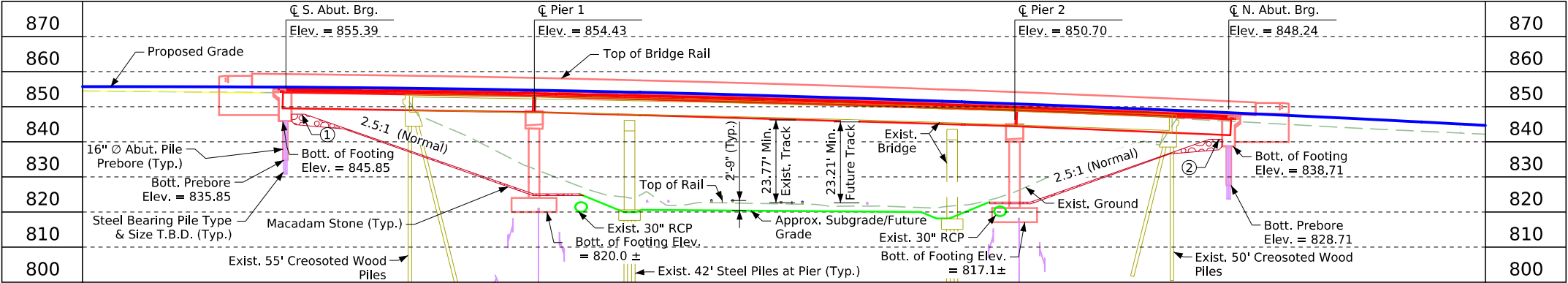
STA. 11208+29.41 (SB IA 149)    Turn-in Date: March, 2025

**Wapello County**

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 228    Design Sheet No. 4 of 4    FHWA No. 50681

Control Point: 501 Fd IHC Monument SW Wing of Bridge, N=6257655.58, E=22869536.64, EL=853.72  
503 Fd IHC Monument NW Wing of Bridge, N=6257872.85, E=22869533.28, EL=847.13



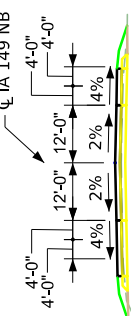
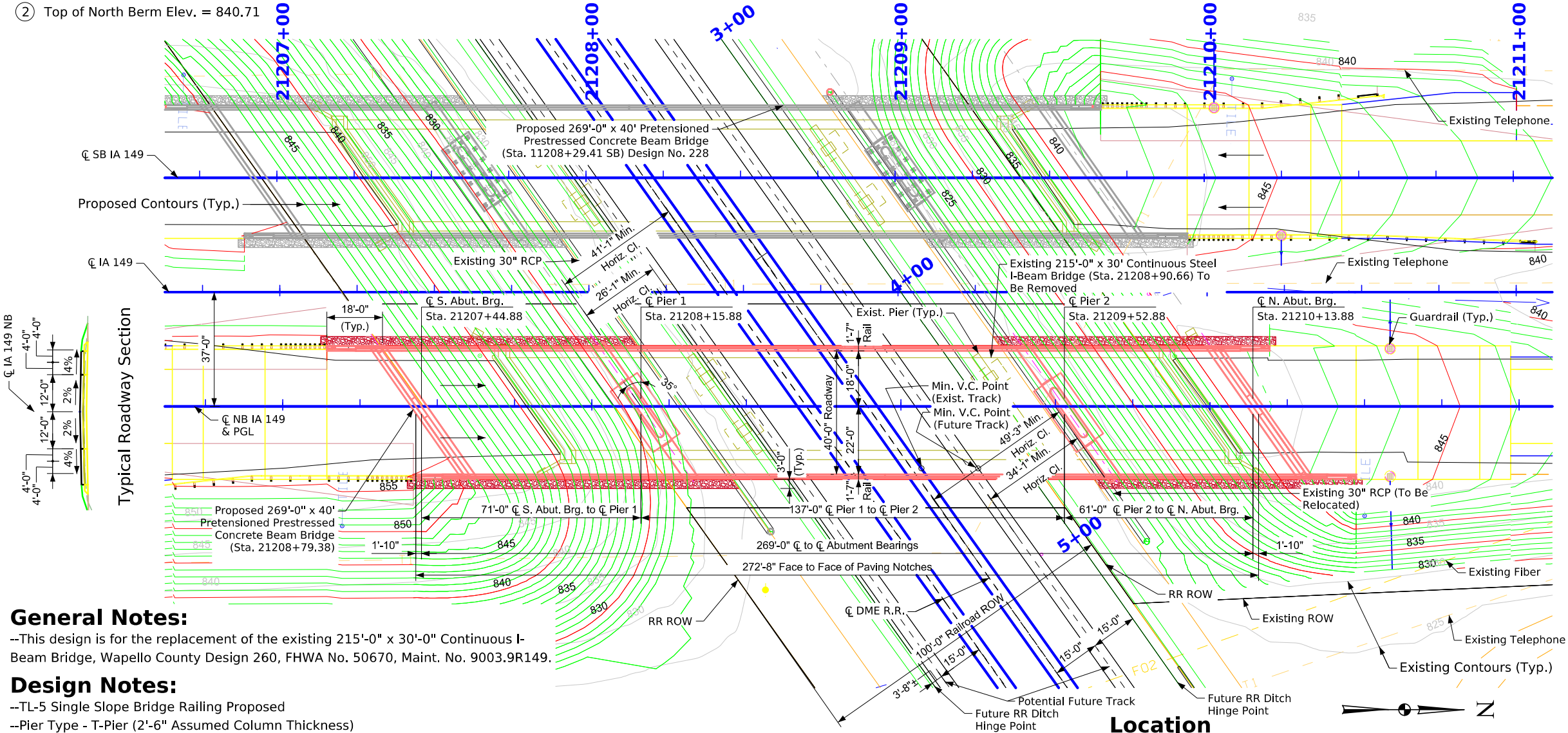
VPI Sta. = 21208+40.00  
VPI Elev. = 859.950  
VC = 600.00'

Proposed Profile  
Grade  $\bar{C}$  NB IA 149

① Top of South Berm Elev. = 847.85

② Top of North Berm Elev. = 840.71

### Longitudinal Section Along $\bar{C}$ Approach Roadway



### General Notes:

--This design is for the replacement of the existing 215'-0" x 30'-0" Continuous I-Beam Bridge, Wapello County Design 260, FHWA No. 50670, Maint. No. 9003.9R149.

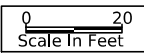
### Design Notes:

- TL-5 Single Slope Bridge Railing Proposed
- Pier Type - T-Pier (2'-6" Assumed Column Thickness)
- Two conduits should be provided in the outside rail for future use
- Final Design shall consider the need for temporary shoring adjacent to railroad for pier footing construction.
- Non-Standard Abutment Wing Walls
- Pier 1 is located within railroad ROW. Railroad insurance provisions and flaggers required. AREMA heavy construction requirements are required by CPKC railroad even though pier is greater than 25' from nearest track.
- There is a potential for conflicts with the existing Pier 2 foundations. Final designer shall review footing/pile layout and make necessary adjustments to minimize conflicts.

### Plan Notes:

- Top of bridge deck at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.
- Proposed bridge will not effect flow in existing railroad ditches or drainage structures.
- Faint lines indicate existing structures or contours.

### Situation Plan



### Location

NB IA 149 over DME RR  
T-72N R-13 & 14W  
Section 1 & 6  
Center Township  
Wapello County  
City of Ottumwa  
FHWA No. 50670 (Existing)  
FHWA No. 50671 (Proposed)  
Bridge Maint. No. 9003.9R149  
Latitude 41.066988°  
Longitude -92.409861°  
FRA No. 375788T

### Traffic Estimate

|           |              |
|-----------|--------------|
| 2027 AADT | 6,200 V.P.D. |
| 2047 AADT | 6,800 V.P.D. |
| TRUCKS    | 11 %         |

### Minimum Vertical Clearance

(Existing North Track)  
Overhead Station = 21209+06.66, Offset 20.08' Rt.  
Overhead Elevation = 851.87  
Depth of Superstructure = 64.5 in.  
Deck Thickness = 8.5 in.  
Estimated Haunch = 2 in.  
Beam Depth = 54 in.  
Underpass Station = 4+53.00, Offset 0  
Underpass Elevation = 822.72  
Minimum Vertical Clearance = 23.77'

### Minimum Vertical Clearance

(Future North Track)  
Overhead Station = 21209+25.00, Offset 20.08' Rt.  
Overhead Elevation = 851.29  
Depth of Superstructure = 64.5 in.  
Deck Thickness = 8.5 in.  
Estimated Haunch = 2 in.  
Beam Depth = 54 in.  
Underpass Station = 4+63.70, Offset 0  
Underpass Elevation = 822.71  
Minimum Vertical Clearance = 23.21'

### Utilities Note:

Utilities shown on this sheet are for information only.  
See Road Design sheets for utility information.

### General Utility Symbols:

T - Telephone Line    FO - Fiber Optic Line  
● - Power Poles

Preliminary

Design For 35 Skew RA

269'-0" x 40'-0" Pretensioned  
Prestressed Concrete Beam Bridge

71'-0" & 61'-0" End Spans    BTD Beams    137'-0" Interior Span

Situation Plan

STA. 21208+79.38 (NB IA 149)    March, 2025

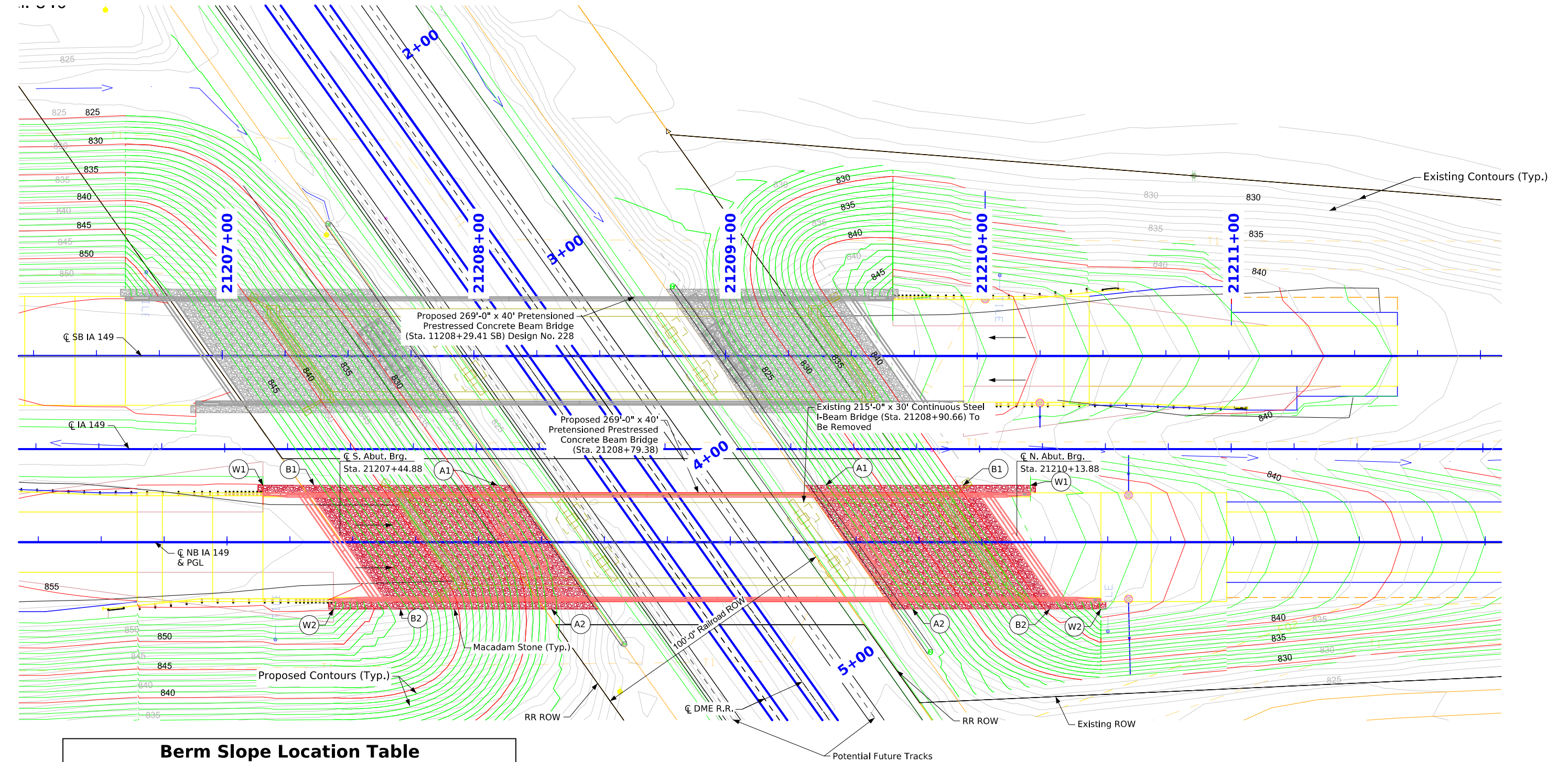
Wapello County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 128    Design Sheet No. 1 of 4    FHWA No. 50671



Control Point: 501 Fd IHC Monument SW Wing of Bridge, N=6257655.58, E=22869536.64, EL=853.72  
503 Fd IHC Monument NW Wing of Bridge, N=6257872.85, E=22869533.28, EL=847.13



**Berm Slope Location Table**

| Points | South Abutment |            |        | North Abutment |            |        |
|--------|----------------|------------|--------|----------------|------------|--------|
|        | Station        | Offset     | Elev.  | Station        | Offset     | Elev.  |
| A1     | 21208+07.46    | 22.58' LT. | 825.16 | 21209+37.93    | 22.58' LT. | 822.81 |
| A2     | 21208+28.93    | 26.58' RT. | 825.16 | 21209+72.36    | 26.58' RT. | 822.81 |
| B1     | 21207+34.55    | 22.58' LT. | 847.85 | 21209+92.58    | 22.58' LT. | 840.71 |
| B2     | 21207+68.98    | 26.58' RT. | 847.85 | 21210+27.00    | 26.58' RT. | 840.71 |
| W1     | 21207+14.28    | 22.58' LT. | 855.11 | 21210+19.28    | 22.58' LT. | 847.85 |
| W2     | 21207+42.29    | 26.58' RT. | 855.18 | 21210+47.29    | 26.58' RT. | 846.13 |

Berm slope elevations reflect the grading surface.

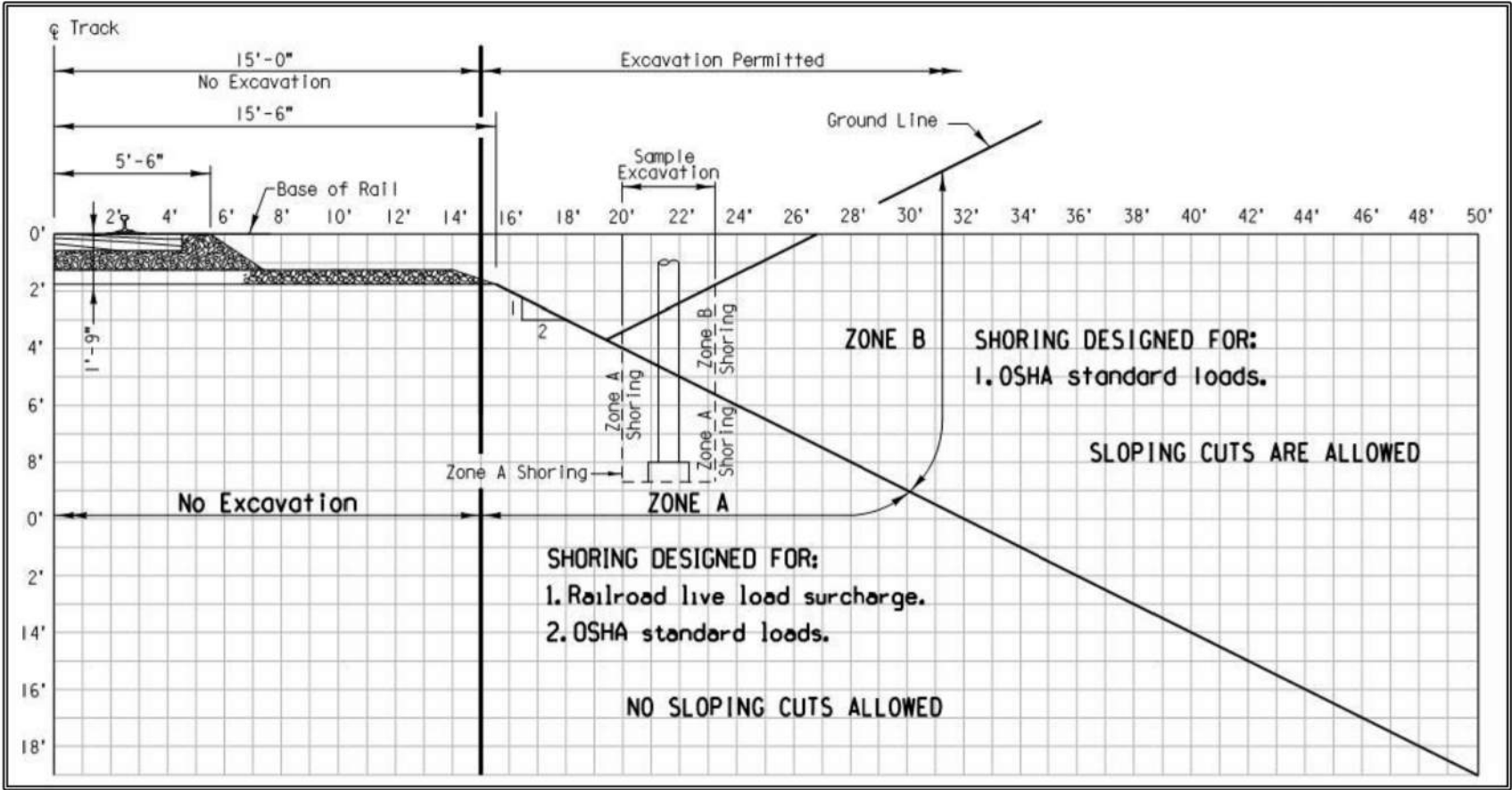
**Site Plan**



Preliminary

Design For 35 Skew RA  
**269'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge**  
71'-0" & 61'-0" End Spans      BTB Beams      137'-0" Interior Span  
**Situation Plan - Site**  
STA. 21208+79.38 (NB IA 149)      March, 2025  
**Wapello County**  
IOWA DEPARTMENT OF TRANSPORTATION  
Design No. 128      Design Sheet No. 3 of 4      FHWA No. 50671

Revised 07-2019: For UPRR, Changed Horizontal Distance of Minimum Construction Clearance Envelope to 15'-0" (Was 12'-0").  
Revised 03-2022: Updated "General Excavation Zones" Detail and "General Shoring Notes" to Follow the "UPRR & BNSF Guidelines for Temporary Shoring, 2021".  
Issued 12-2008.  
MiscellaneousBridges.dgn - 1067 - This Sheet Re-Issued 11-2023. Sheet Format Update.



### General Excavation Zones

Source: UPRR & BNSF Guideline for Temporary Shoring, 2021

### Railroad General Notes:

Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the railroad's ditches and/or drainage structures.

The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the railroad prior to construction.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the railroad.

All shoring systems that impact the railroad's operations and/or supports the railroad's embankment shall be designed and constructed per current railroad guidelines for temporary shoring.

All demolitions within the railroad's right-of-way and/or demolition that may impact the railroad's tracks or operations shall be in compliance with the railroad's demolition guidelines.

Erection over the railroad's right-of-way shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

All construction phasing that may impact the railroad operations shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

False-work clearances shall comply with minimum construction clearances.

All permanent clearances shall be verified before project closing.

For railroad coordination please refer to the railroad coordination requirements as part of special provisions.

### General Shoring Notes:

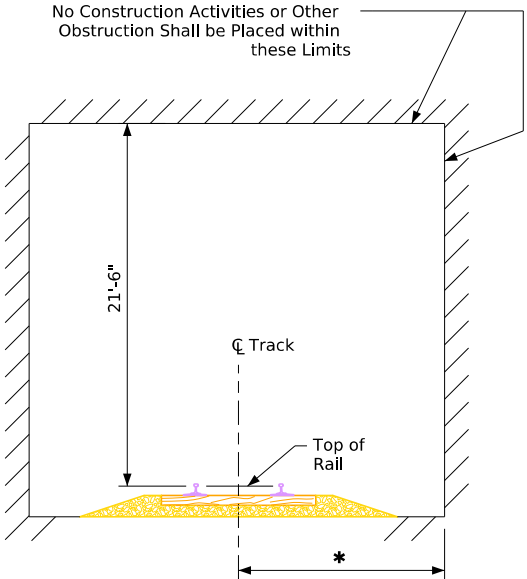
All dimensions are measured perpendicular to track.

Prior to commencing any work, the Contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The Contractor shall install the temporary shoring system per the approved plans.

Design of the temporary shoring system to comply with UPRR & BNSF Guidelines for Temporary Shoring.

For excavations which encroach into Zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the State of Iowa.

Note:  
BNSF = Burlington Northern Santa Fe Railroad  
UPRR = Union Pacific Railroad



### Minimum Construction Clearance Envelope

(Normal To Railroad)

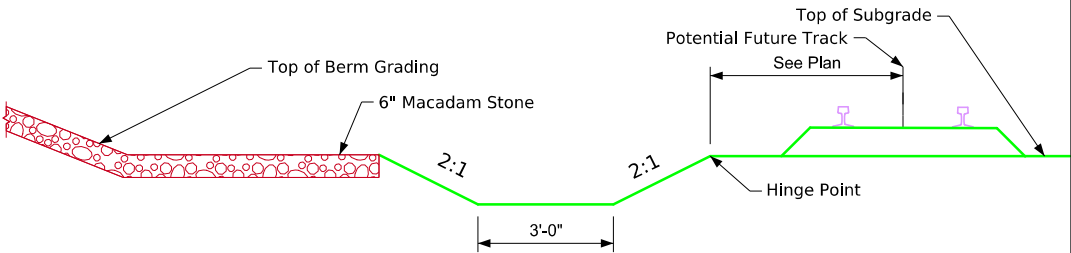
\* 15'-0" for BNSF and 15'-0" for UPRR

### Top Of Rail Elevations

(Stations Increase with Milepost Increase)

| South Rail Line      |           |                       |           |
|----------------------|-----------|-----------------------|-----------|
| Alignment: Left Rail |           | Alignment: Right Rail |           |
| Station              | Elevation | Station               | Elevation |
| 0+00                 | 825.021   | 0+00                  | 825.042   |
| 0+50                 | 824.886   | 0+50                  | 824.838   |
| 1+00                 | 824.697   | 1+00                  | 824.668   |
| 1+50                 | 824.509   | 1+50                  | 824.523   |
| 2+00                 | 824.302   | 2+00                  | 824.324   |
| 2+50                 | 824.102   | 2+50                  | 824.119   |
| 3+00                 | 823.895   | 3+00                  | 823.881   |
| 3+50                 | 823.573   | 3+50                  | 823.595   |
| 4+00                 | 823.351   | 4+00                  | 823.359   |
| 4+50                 | 823.162   | 4+50                  | 823.156   |
| 5+00                 | 822.982   | 5+00                  | 822.955   |
| 5+50                 | 822.674   | 5+50                  | 822.716   |
| 6+00                 | 822.435   | 6+00                  | 822.467   |
| 6+50                 | 822.228   | 6+50                  | 822.153   |
| 7+00                 | 821.974   | 7+00                  | 821.963   |
| 7+50                 | 821.807   | 7+50                  | 821.752   |
| 7+92.89              | 821.661   | 7+92.76               | 821.678   |

| North Rail Line      |           |                       |           |
|----------------------|-----------|-----------------------|-----------|
| Alignment: Left Rail |           | Alignment: Right Rail |           |
| Station              | Elevation | Station               | Elevation |
| 0+00                 | 824.621   | 0+00                  | 824.666   |
| 0+50                 | 824.482   | 0+50                  | 824.476   |
| 1+00                 | 824.291   | 1+00                  | 824.299   |
| 1+50                 | 824.107   | 1+50                  | 824.148   |
| 2+00                 | 823.958   | 2+00                  | 823.926   |
| 2+50                 | 823.746   | 2+50                  | 823.739   |
| 3+00                 | 823.568   | 3+00                  | 823.589   |
| 3+50                 | 823.329   | 3+50                  | 823.347   |
| 4+00                 | 822.977   | 4+00                  | 822.989   |
| 4+50                 | 822.722   | 4+50                  | 822.753   |
| 5+00                 | 822.624   | 5+00                  | 822.638   |
| 5+50                 | 822.493   | 5+50                  | 822.548   |
| 6+00                 | 822.289   | 6+00                  | 822.355   |
| 6+50                 | 821.969   | 6+50                  | 822.059   |
| 7+00                 | 821.737   | 7+00                  | 821.848   |
| 7+50                 | 821.563   | 7+50                  | 821.634   |
| 7+93.43              | 821.352   | 7+93.26               | 821.468   |



### Typical RR Ditch Grading

Perpendicular to RR Tracks

Preliminary

Design For 35 Skew RA

**269'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge**

71'-0" & 61'-0" End Spans    BTD Beams    137'-0" Interior Span

**Railroad General Notes & Shoring**

STA. 21208+79.38 (NB IA 149)    Turn-in Date: March, 2025

**Wapello County**

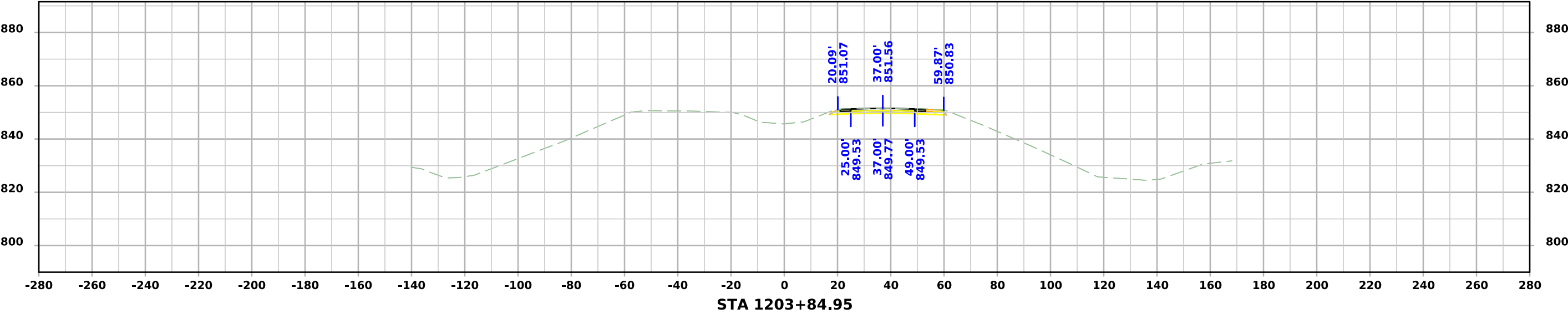
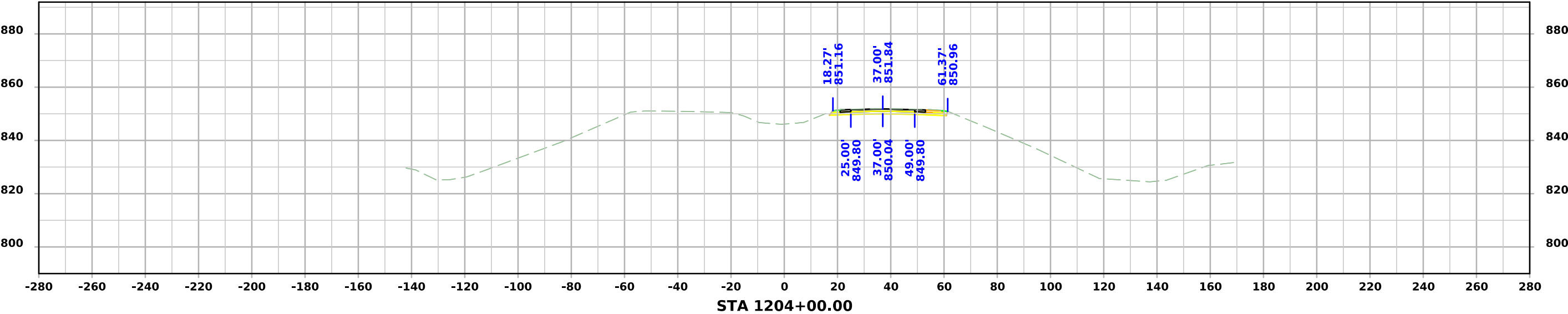
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 128    Design Sheet No. 4 of 4    FHWA No. 50671

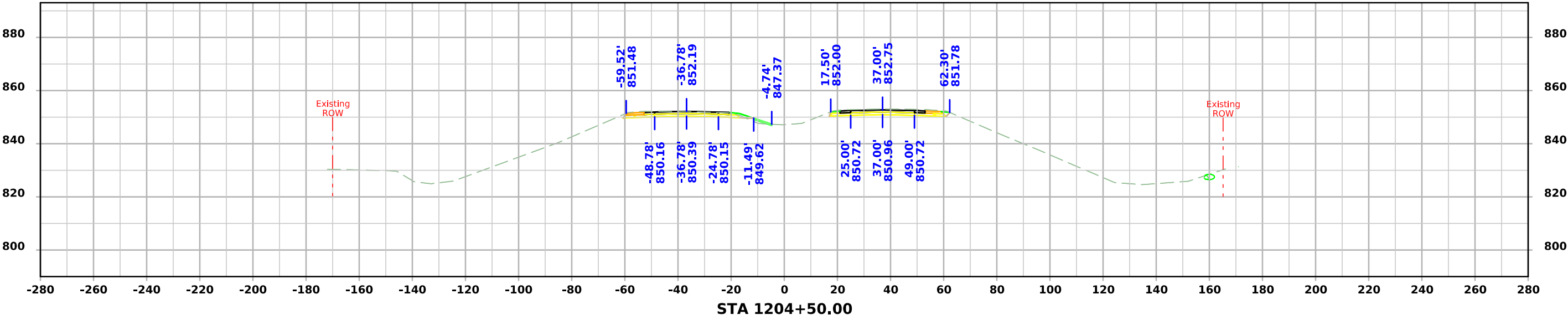
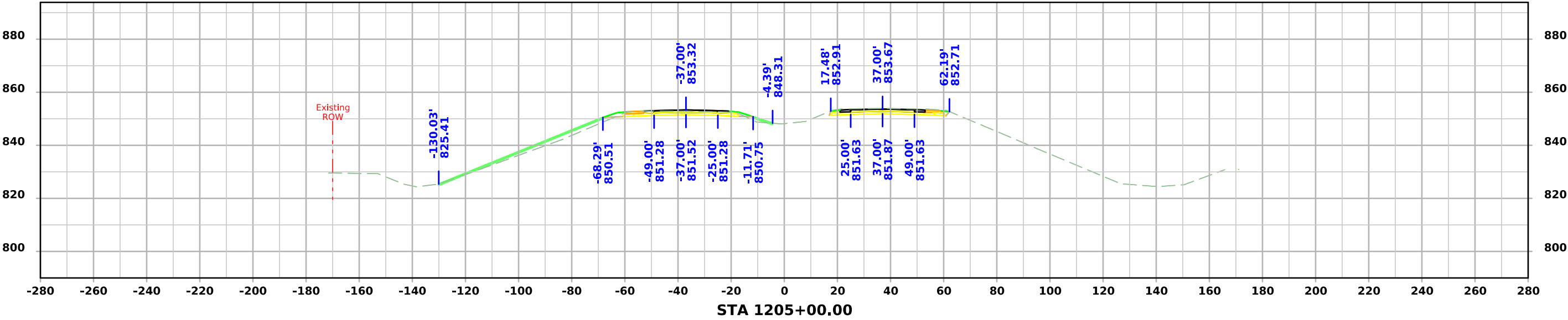
| CROSS SECTION VIEW COLOR LEGEND |                           |                    |                                 |
|---------------------------------|---------------------------|--------------------|---------------------------------|
| Design Color No.                | Feature                   | Design Color No.   | Feature                         |
| Aggregate                       |                           | Structural         |                                 |
| (64)                            | Choke Stone               | (112)              | Noise Wall                      |
| (42)                            | Engineering Fabric        | (112)              | Noise Wall Footing              |
| (8)                             | Flooded Backfill          | (112)              | Retaining Wall Back             |
| (92)                            | Macadam Stone             | (112)              | Retaining Wall Back Excavate    |
| (20)                            | Modified                  | (112)              | Retaining Wall Face             |
| (12)                            | Plowing Shaping           | (112)              | Retaining Wall Front Excavate   |
| (14)                            | Porous Backfill           | (112)              | Retaining Wall Front Footing    |
| (8)                             | Revetment Class A         | (112)              | Retaining Wall MSE Gutter       |
| (6)                             | Revetment Class B         | (112)              | Retaining Wall Reinforced Earth |
| (62)                            | Revetment Class C         | Grading            |                                 |
| (188)                           | Revetment Class D         | (8)                | Behind Curb Cut                 |
| (28)                            | Revetment Class E         | (6)                | Granular                        |
| (12)                            | Shoulder Special Backfill | (13)               | Granular Back Fill              |
| (12)                            | Special Backfill          | (48)               | Rock Undercut                   |
| (20)                            | Subbase                   | (8)                | Shoulder Earth Fill             |
| (20)                            | Subbase Lower             | (2)                | Side Slopes                     |
| (20)                            | Subbase Upper             | (226)              | Side Slopes Dressing            |
| (118)                           | Subgrade Treatment        | Substrata          |                                 |
| Asphalt                         |                           | (128)              | Boulder Substrata               |
| (207)                           | HMA Base Course           | (48)               | Broken Weathered Substrata      |
| (207)                           | HMA Interim Course        | (3)                | Core Out Substrata              |
| (207)                           | HMA Surface Course        | (203)              | Existing Pavement Substrata     |
| Concrete                        |                           | (6)                | Loam Substrata                  |
| (0)                             | Barrier Concrete          | (80)               | Rock Substrata                  |
| (0)                             | Barrier Concrete Footing  | (4)                | Select Sand Substrata           |
| (0)                             | Curb Gutter               | (3)                | Shale Substrata                 |
| (48)                            | Flowable Mortar           | (10)               | Topsoil Substrata               |
| (0)                             | Median Concrete           | Unsuitable / Waste |                                 |
| (0)                             | PCC Pavement              | (3)                | Unsuitable Type A               |
| (0)                             | Sidewalk                  | (13)               | Unsuitable Type B               |
| Shoulder                        |                           | (11)               | Unsuitable Type C               |
| (209)                           | Shoulder HMA              | (3)                | Waste                           |
| (0)                             | Shoulder PCC              |                    |                                 |
| (6)                             | Shoulder Granular         |                    |                                 |
| Existing                        |                           |                    |                                 |
| (0)                             | Existing Pavement         |                    |                                 |

CROSS SECTIONS  
LEGEND AND INFORMATION SHEET  
(COVERS SHEET SERIES W, X, Y, & Z)

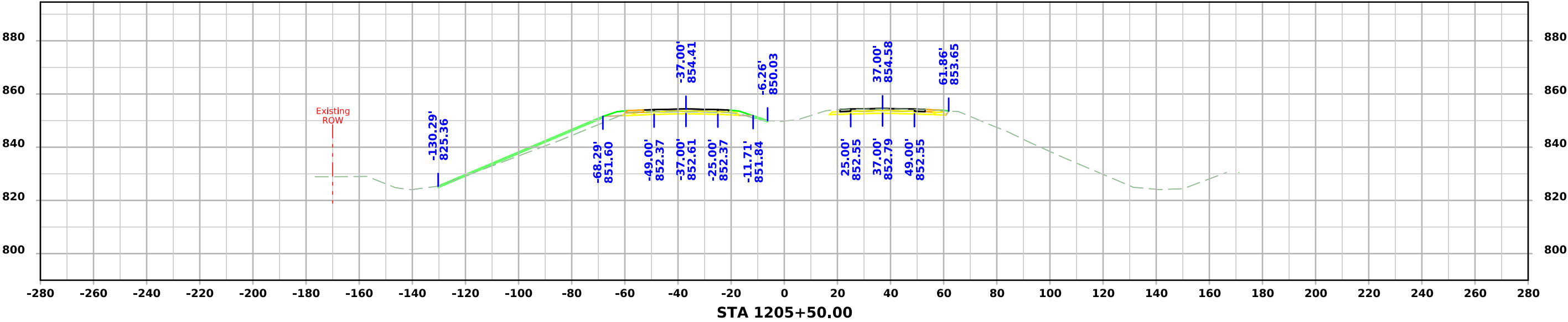
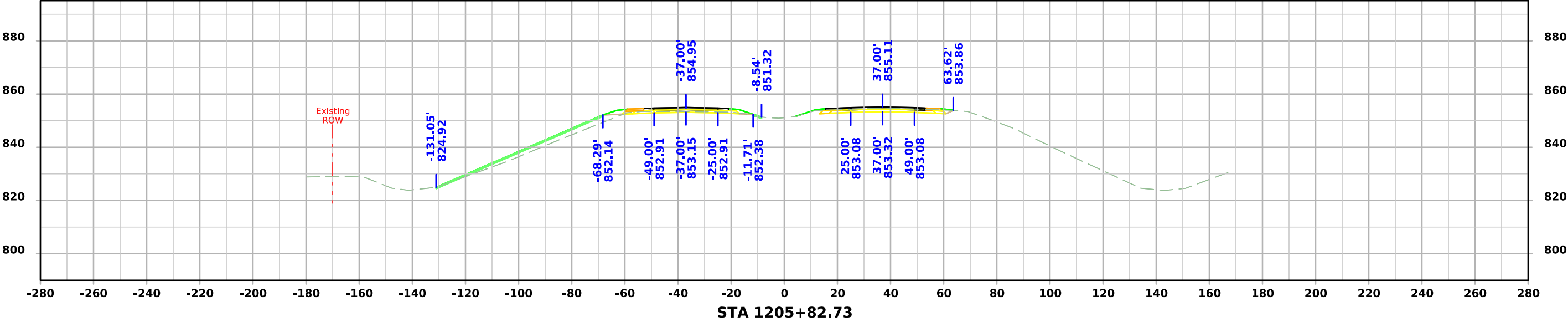
IA HWY 149



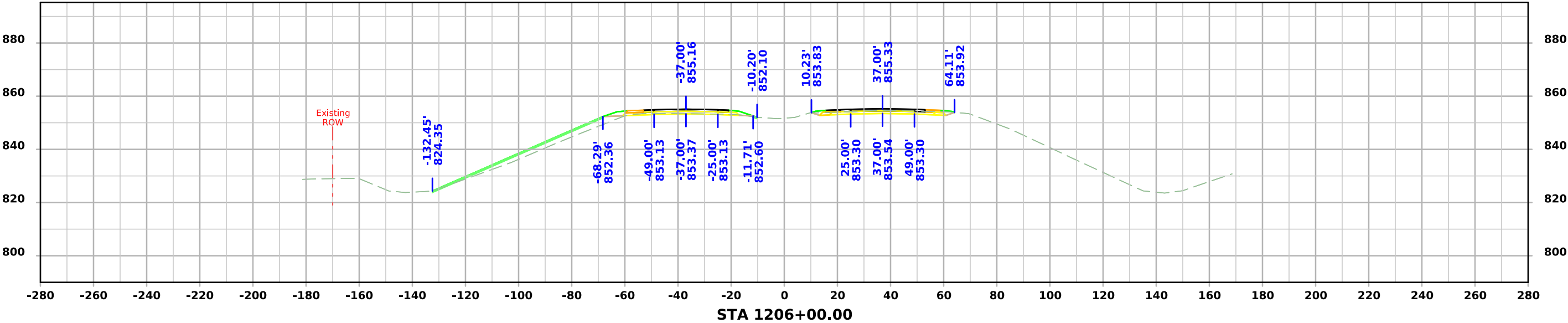
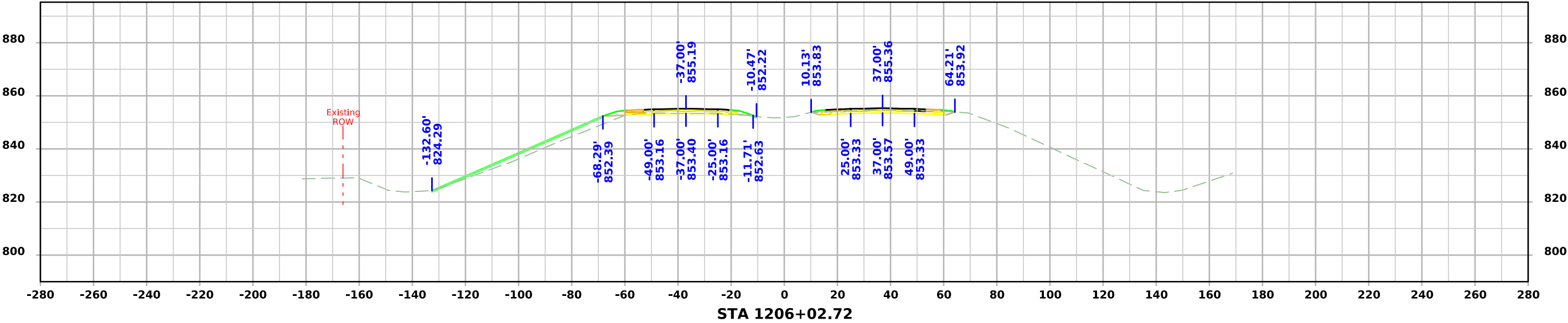
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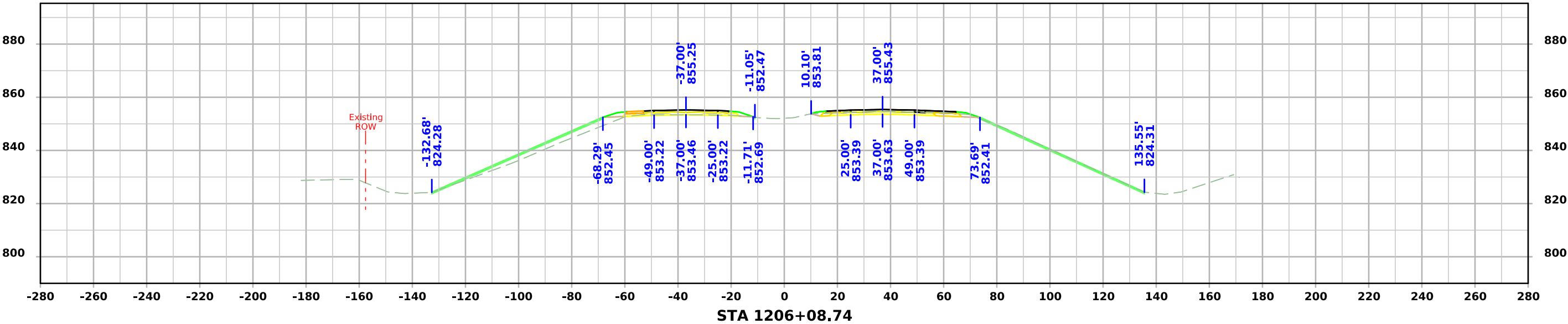
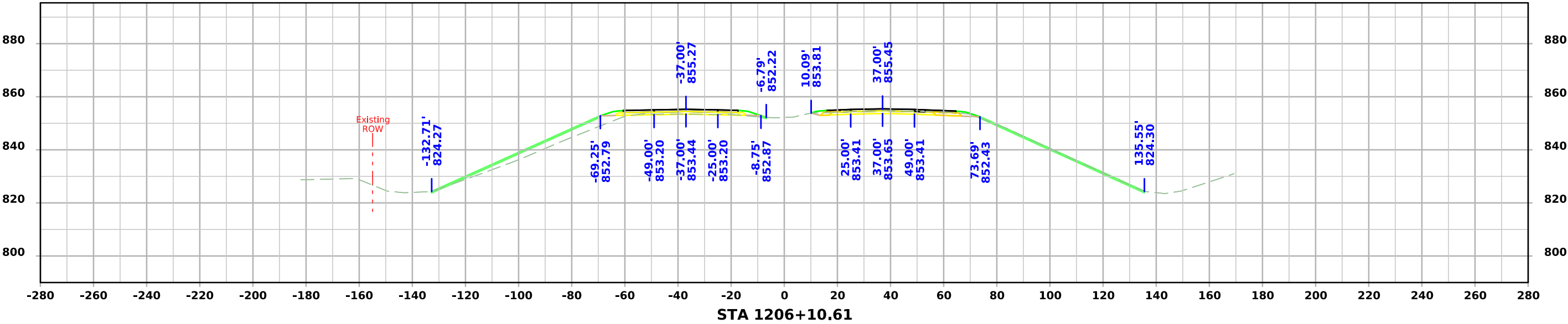
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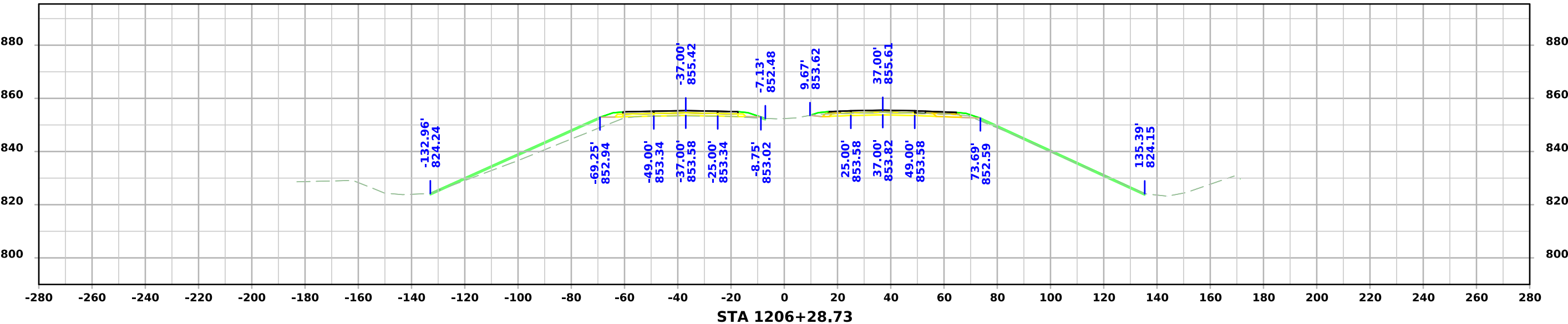
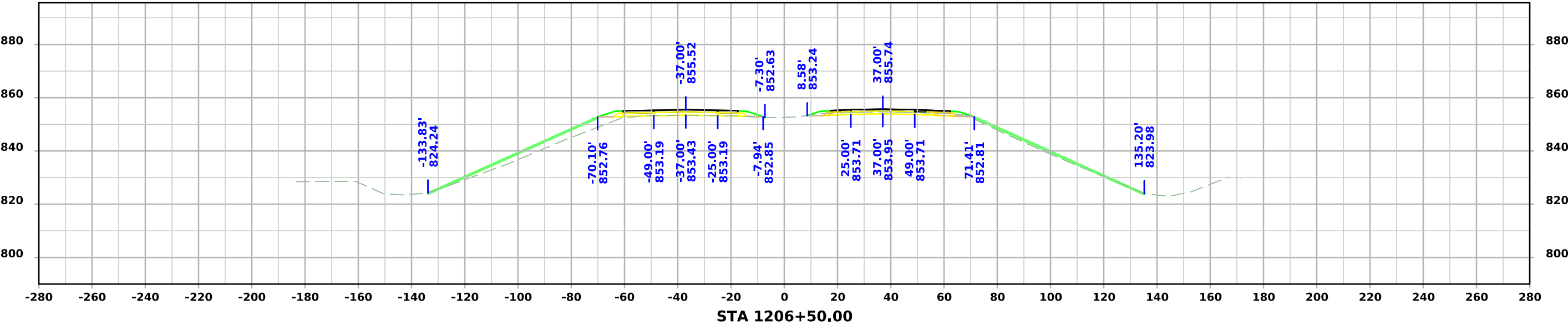
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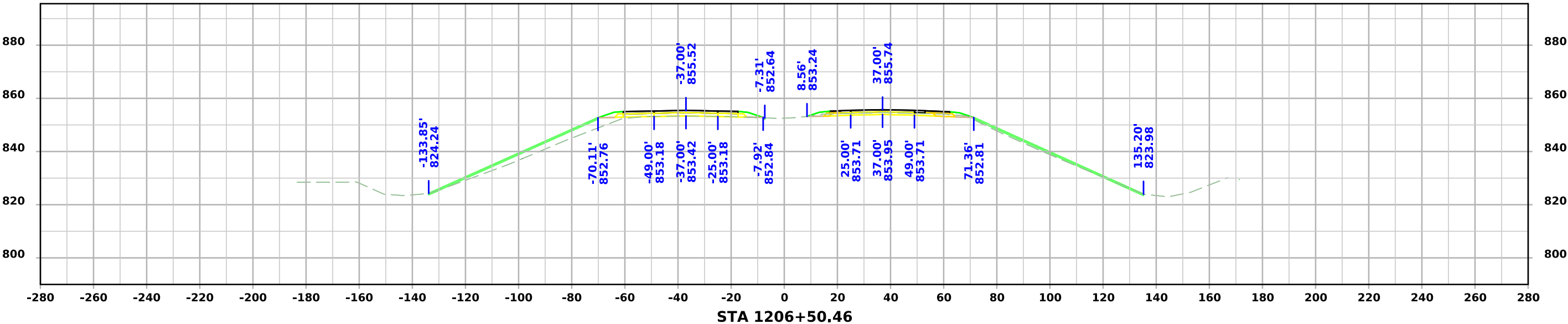
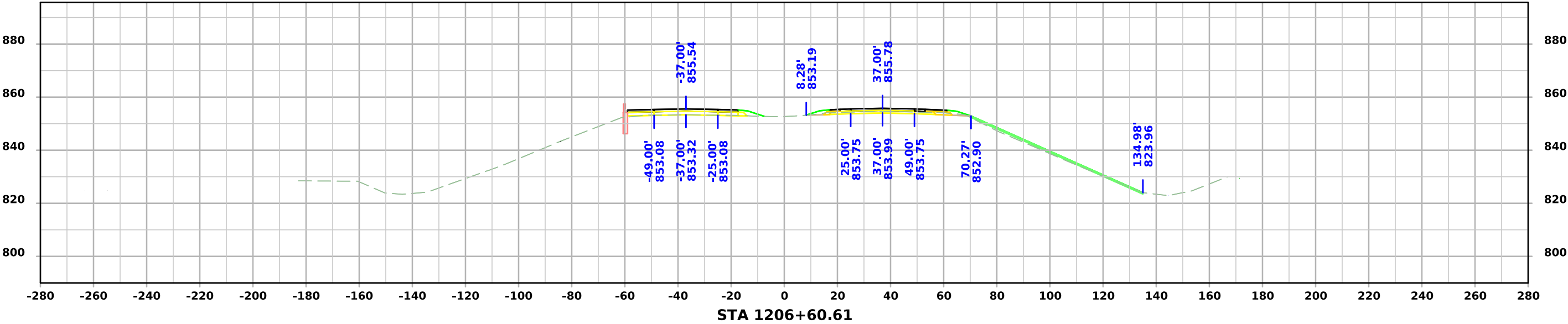
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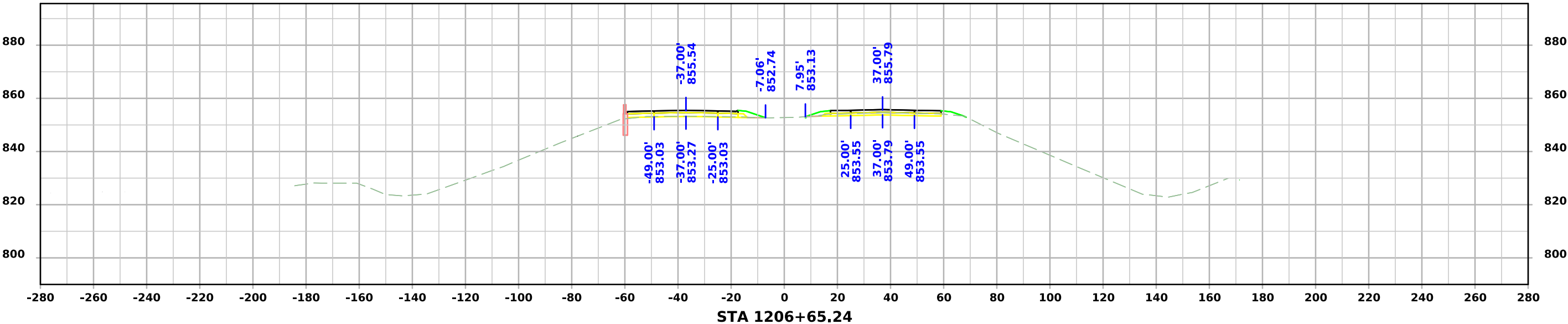
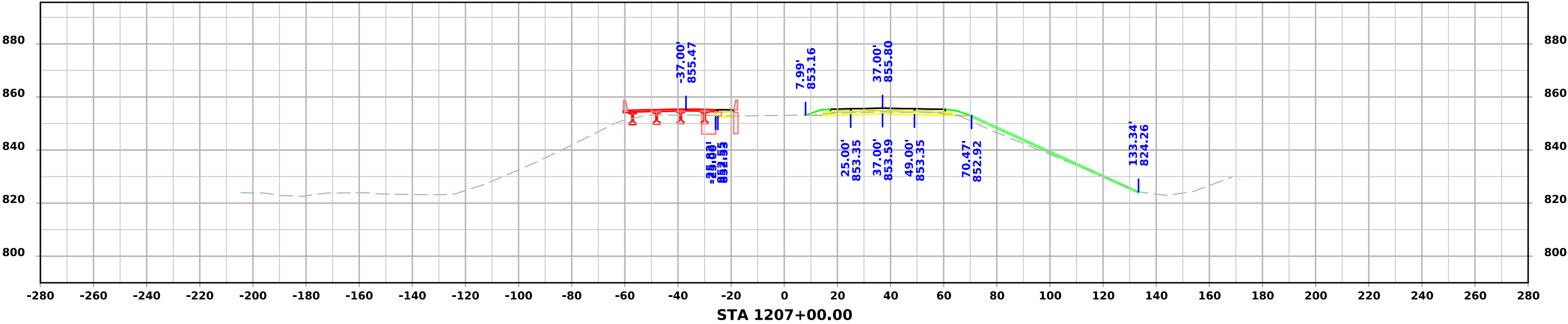
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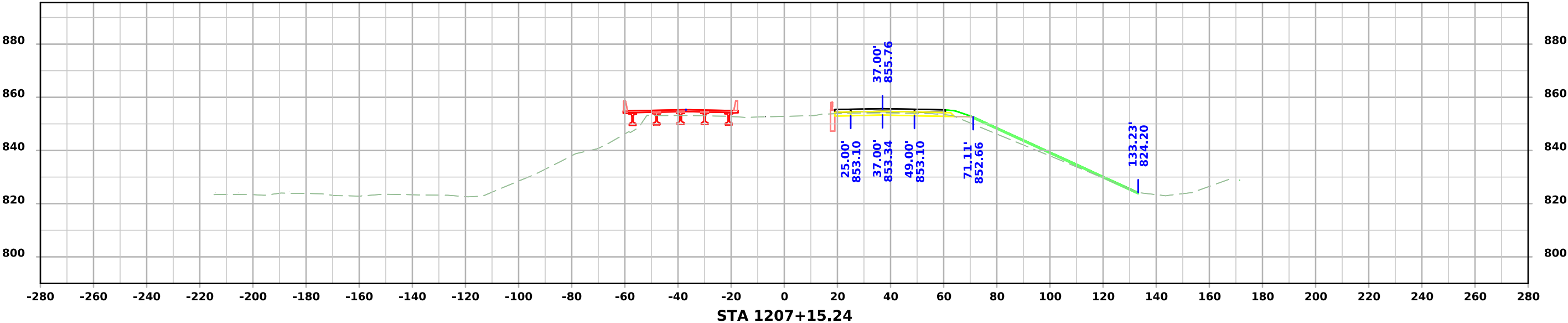
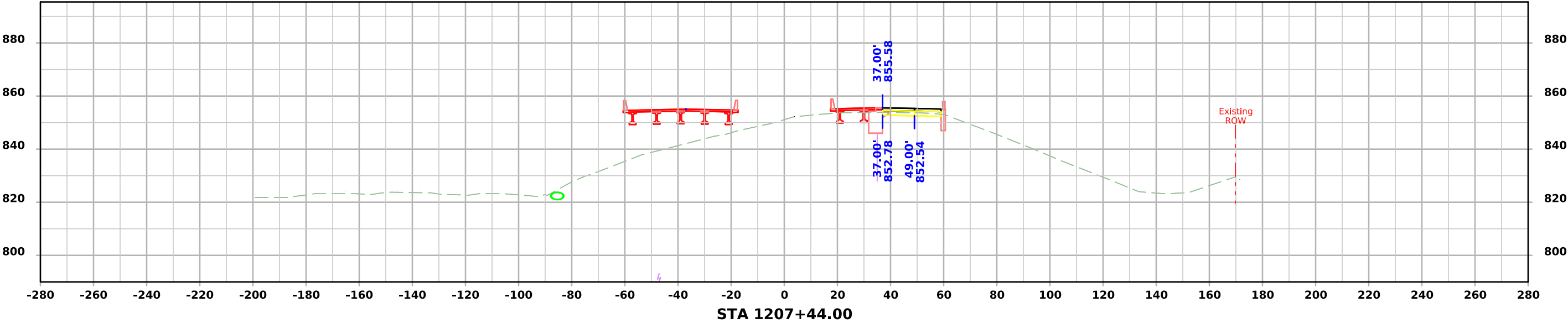
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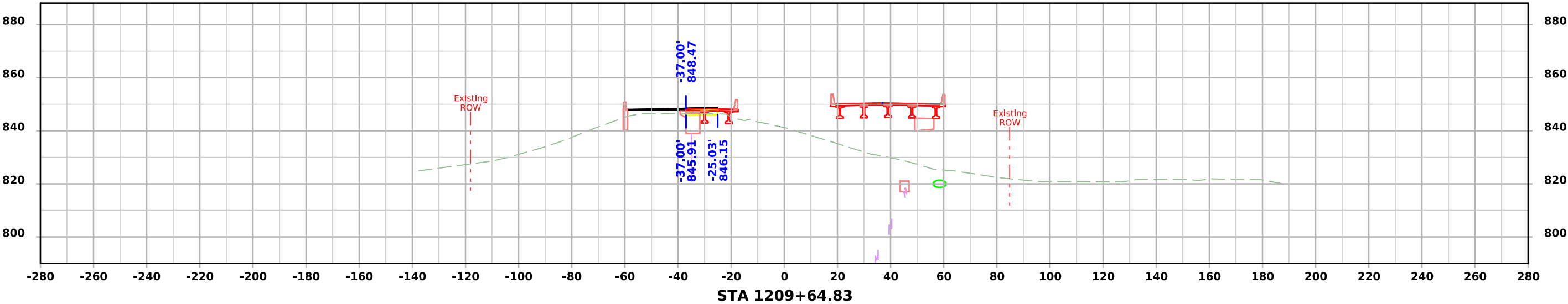
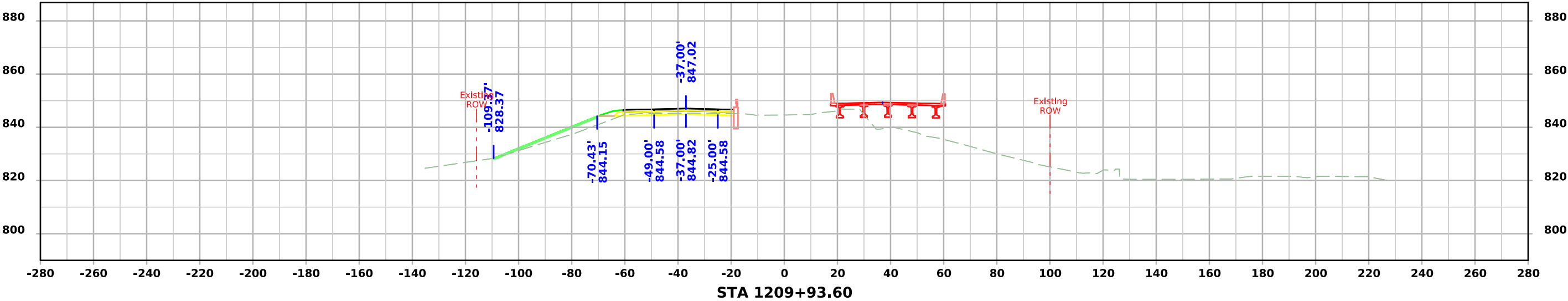
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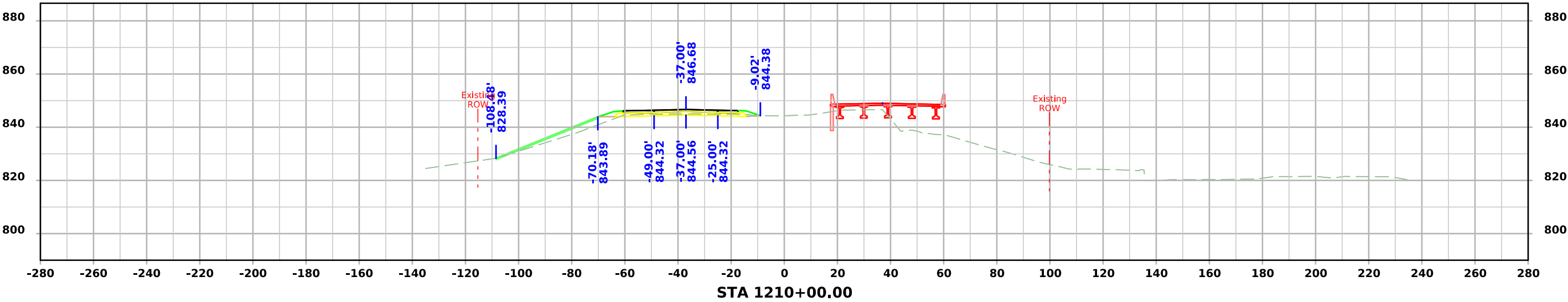
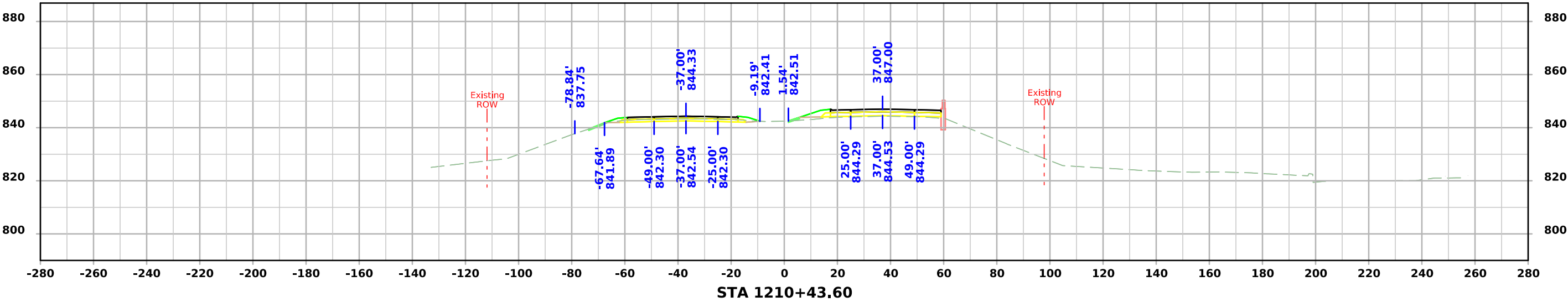
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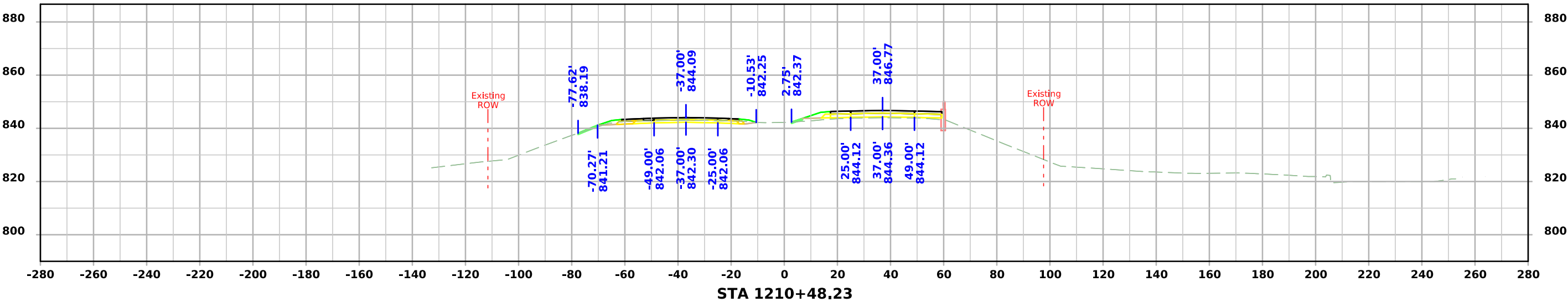
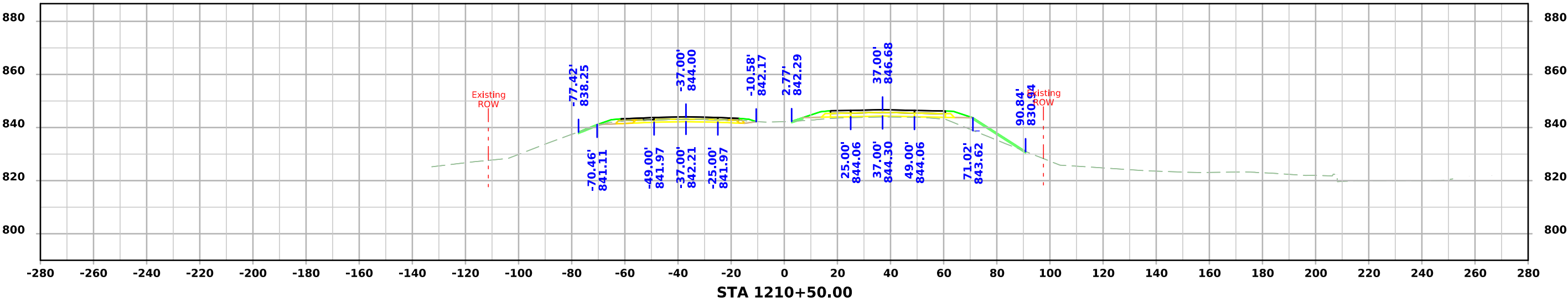
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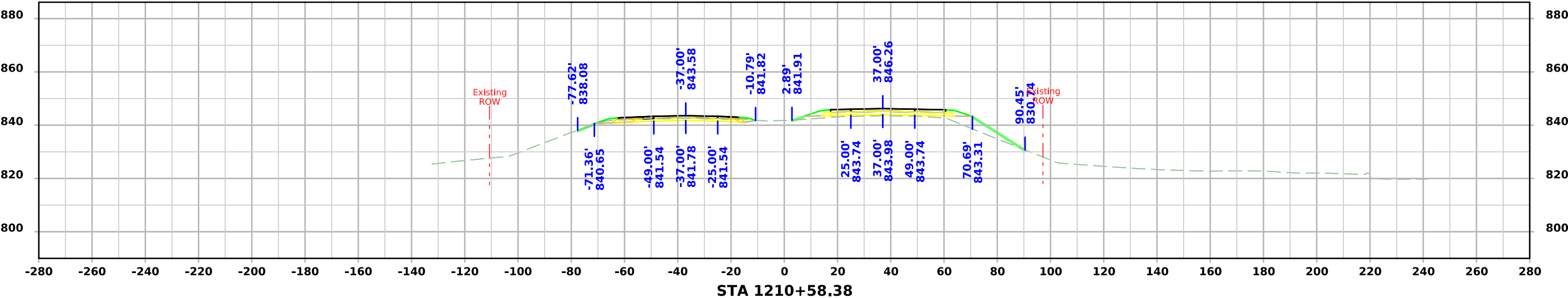
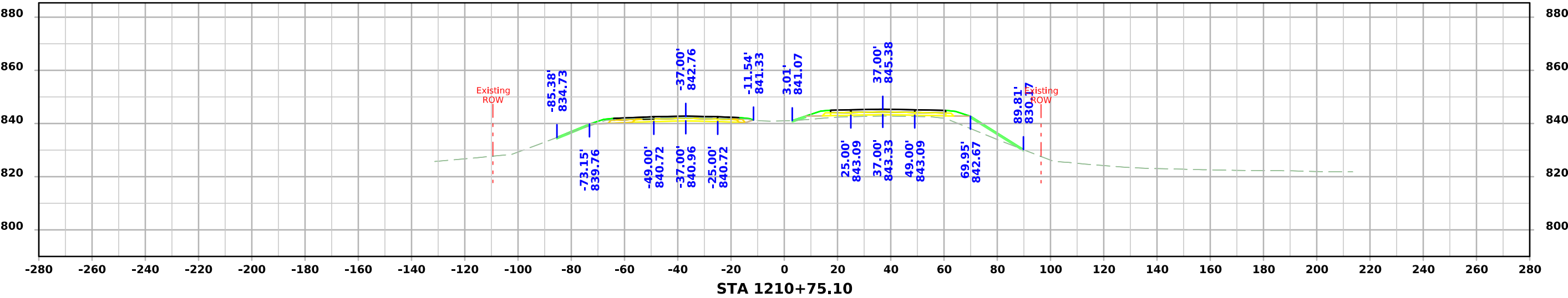
IA HWY 149



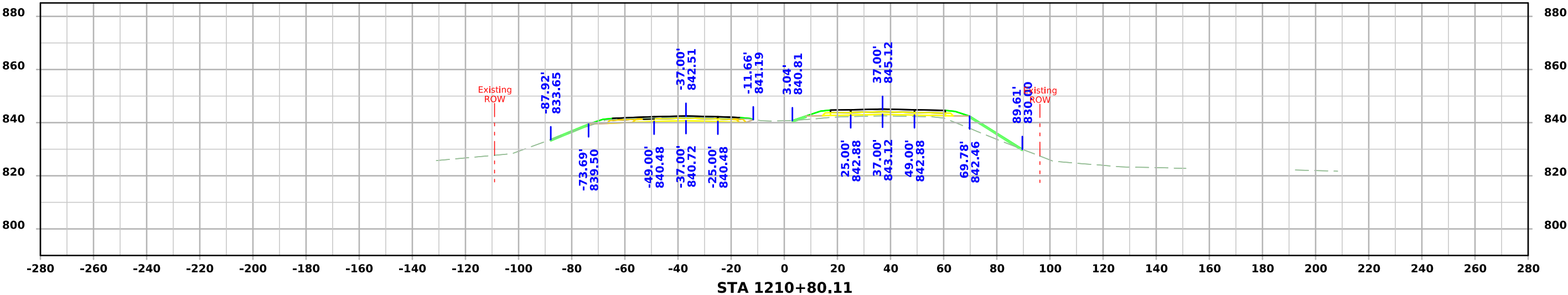
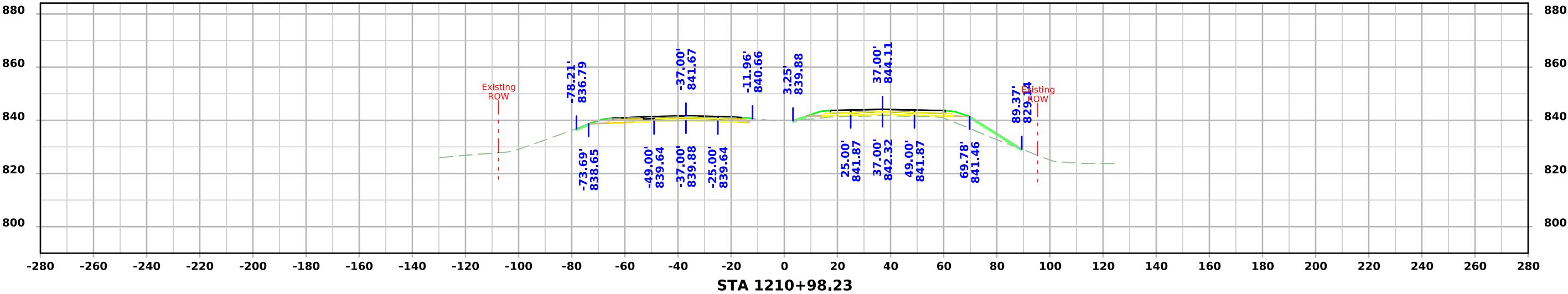
IA HWY 149

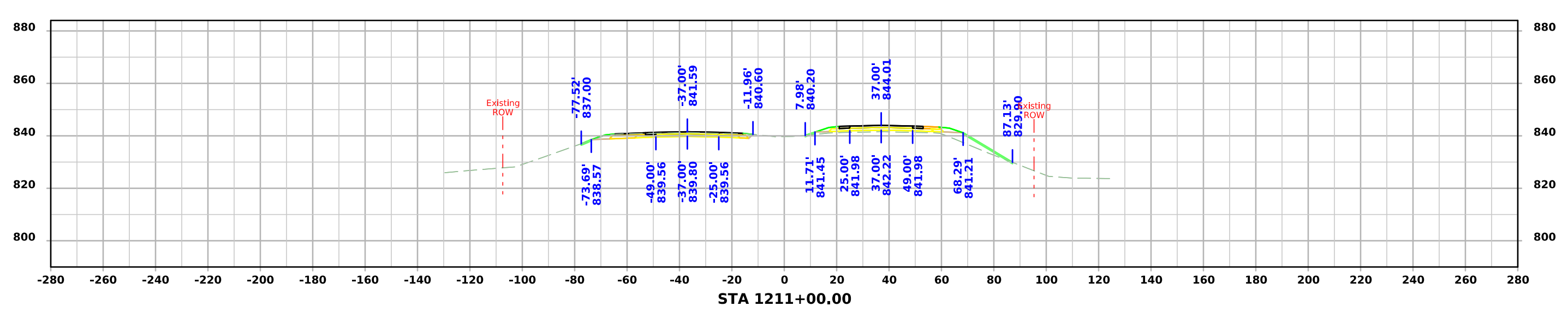
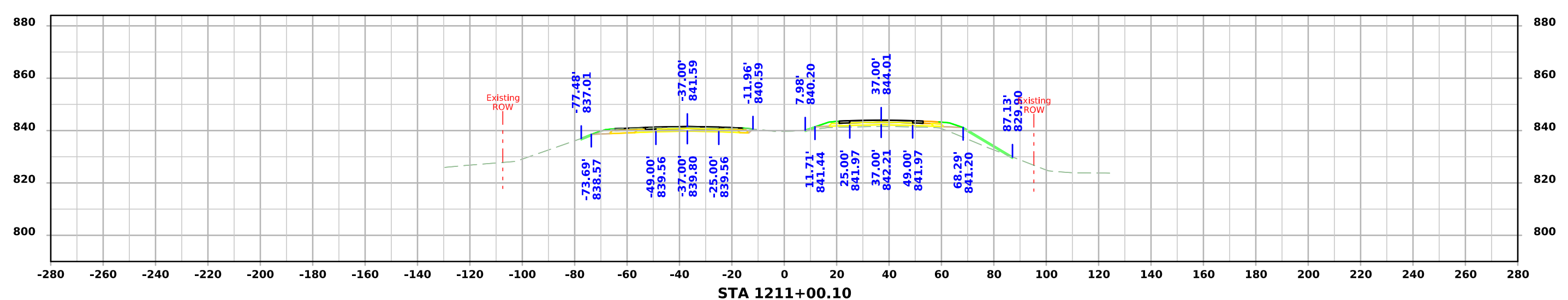
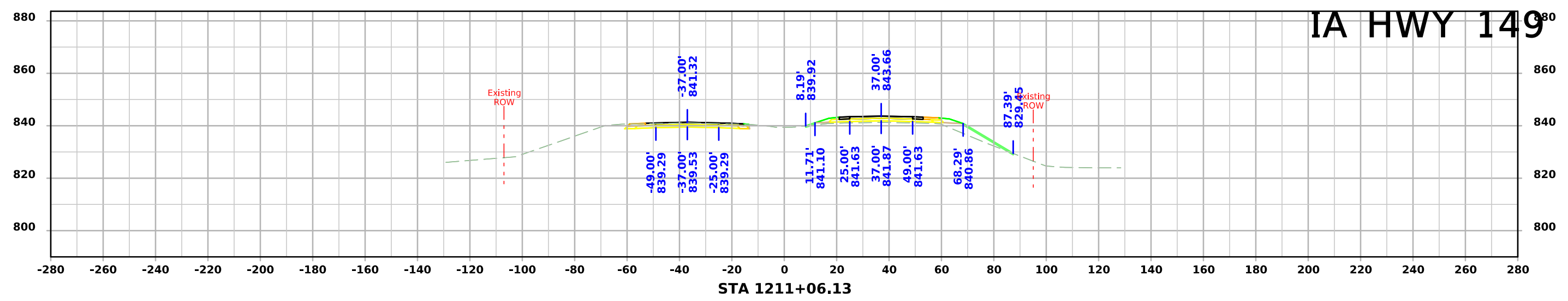


IA HWY 149

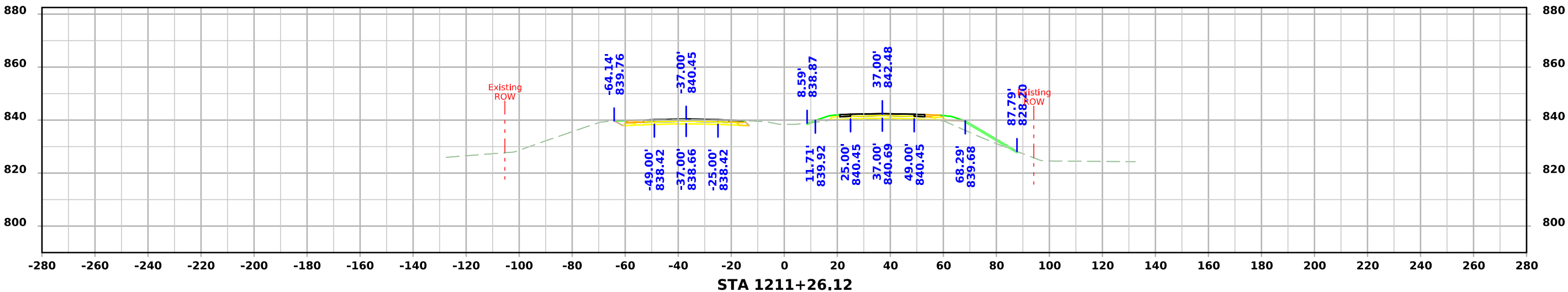
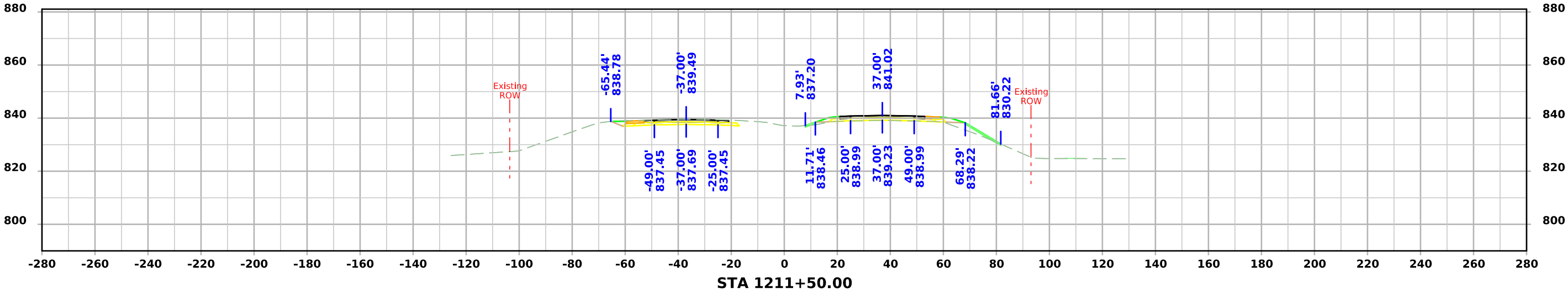
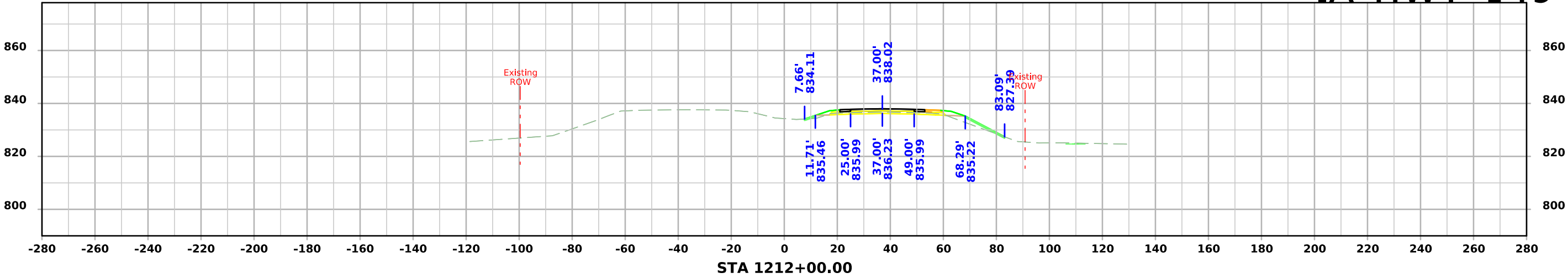


IA HWY 149

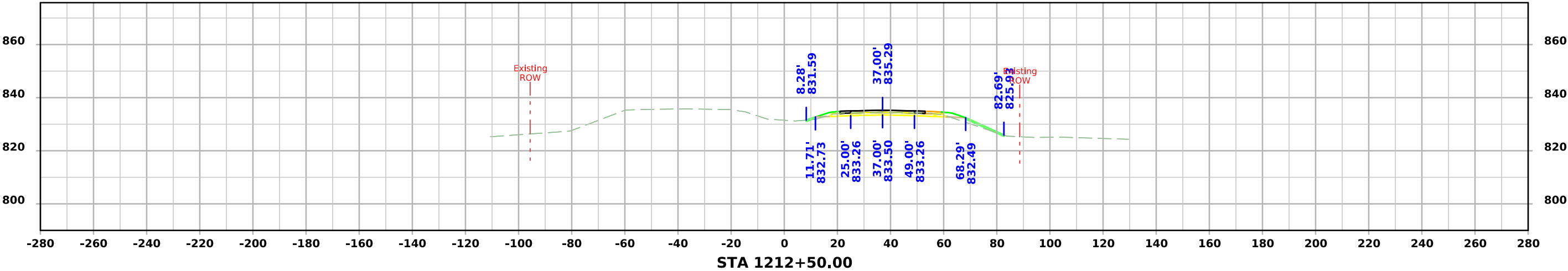
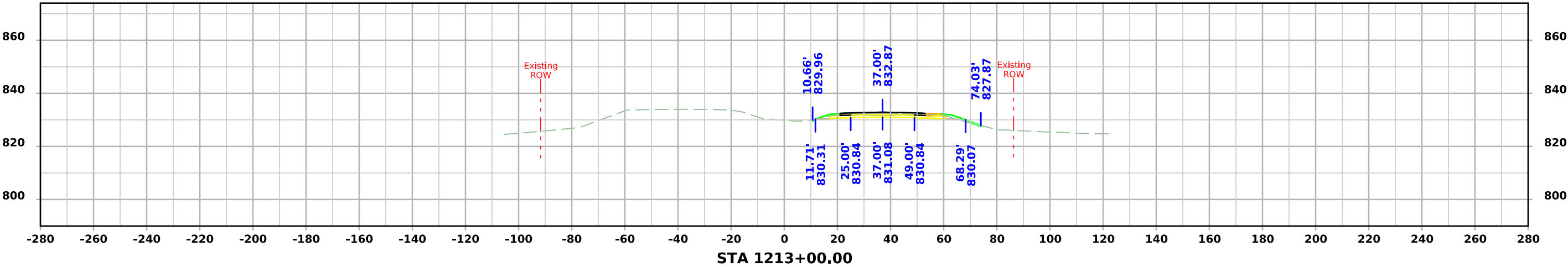
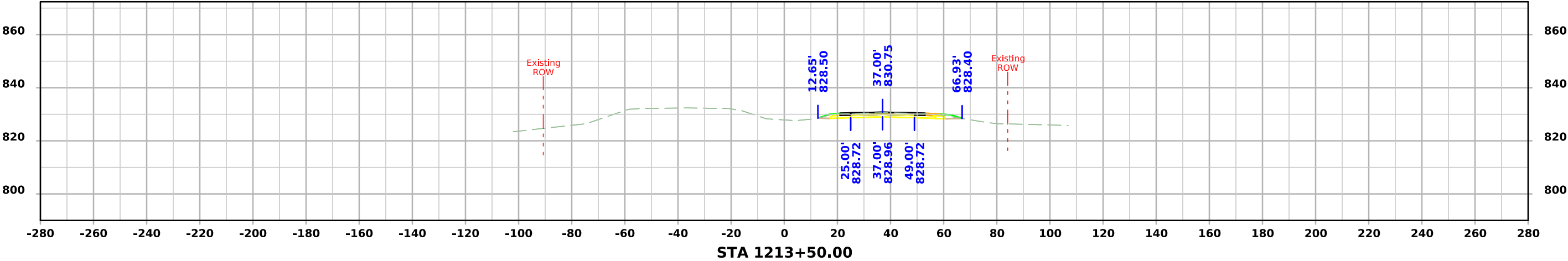




IA HWY 149



IA HWY 149



IA HWY 149

