

Standard Road Plans

Standard Road Plans are listed on Sheet Number C.5

Design Data Rural

2024 AADT 1,810 V.P.D.  
TRUCKS 13 %

Iowa DOT Bridges and Structures  
Consultant Reviewer: Bryant Thelen

Index of Seals

| Sheet No. | Name               | Type              |
|-----------|--------------------|-------------------|
| A.1       | Mitch F. Ginther * | Structural Design |
| A.3       | Dung T. Ta **      | Roadway Design    |
|           |                    |                   |
|           |                    |                   |
|           |                    |                   |
|           |                    |                   |
|           |                    |                   |

\* Stanley Consultants  
\*\* Iowa DOT

Structural Design



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*Mitchell Ginther* 7-29-2026  
Signature Mitch F. Ginther Date  
Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.1, A.2, V.1-V.10

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|                 |                                    |



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**KEOKUK COUNTY**  
**Bridge Deck Overlay**

IA 149 over South Fork English River  
1.3 mi. N of Iowa 22

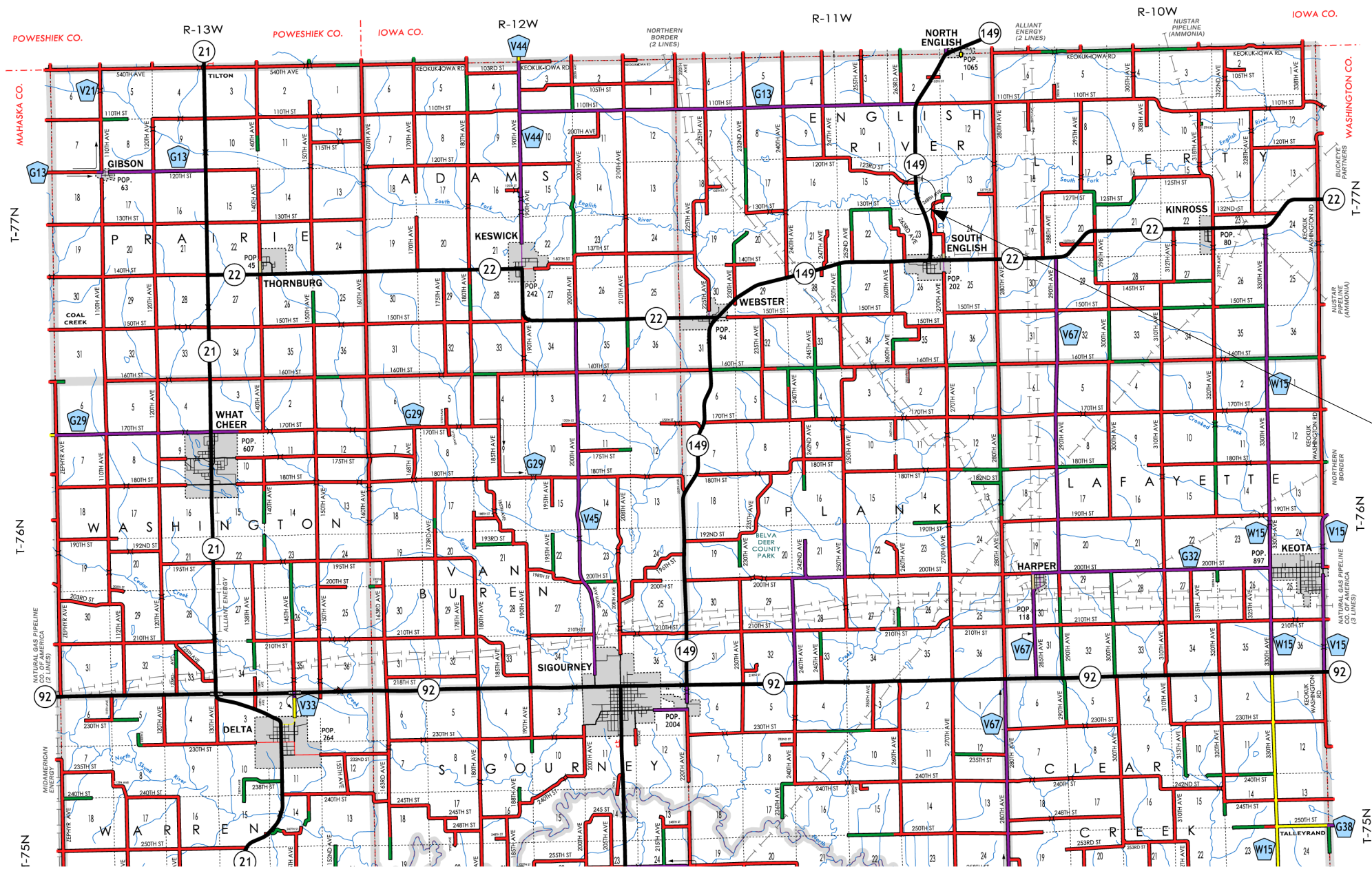
Refer to the Plan Sheets for list of applicable specifications.

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



Revisions

|                               |       |
|-------------------------------|-------|
|                               | TOTAL |
|                               | 39    |
| PROJECT IDENTIFICATION NUMBER |       |
| 23-54-149-010                 |       |
|                               |       |
| PROJECT NUMBER                |       |
| BRF-149-1(098)--38-54         |       |
| R.O.W. PROJECT NUMBER         |       |
|                               |       |
| PROJECT DIRECTORY NUMBER      |       |
| 5414901023                    |       |



Keokuk County Location Map

Not To Scale

LEGEND

INTERSTATE HIGHWAY

PRIMARY HIGHWAY-DIVIDED

PRIMARY HIGHWAY

PORTLAND CEMENT CONCRETE ROAD

ASPHALT ROAD

BITUMINOUS ROAD

GRAVEL ROAD

EARTHEN ROAD

INTERSTATE HIGHWAY

UNITED STATES HIGHWAY

STATE HIGHWAY

COUNTY HIGHWAY

RAILROAD

PIPELINE

AIRPORT

HYDROLOGY

BRIDGE

STATE BOUNDARY

COUNTY BOUNDARY

CORPORATE BOUNDARY

TOWNSHIP LINE

SECTION LINE

ROAD NAMES

UNINCORPORATED PLACE

STATE PARKS

STATE INSTITUTIONS

FEDERAL LAND

80

65

237

27

+

+

+

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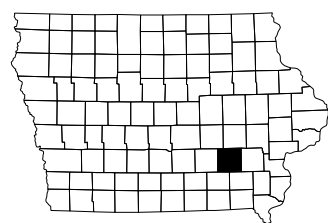
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ABBEY ROAD

ELWOOD

Design No. 0128  
FHWA No. 032791



| Estimate Bridge Repair Quantities and Reference Notes - Design No. 0128 |              |                                                 |      |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------|--------------|-------------------------------------------------|------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item No.                                                                | Item Code    | Item                                            | Unit | Quantities Estimated Design No. 0128 | Estimate Reference Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1                                                                       | 2104-2710020 | Excavation, Class 10, Channel                   | CY   | 15.0                                 | Consists of excavation required to shape the bridge berms. Includes cost of furnishing and placing suitable material to fill erosion rivulets as needed on this project. Suitable soils shall be as defined by Article 2102.02, D, 2 of the Standard Specifications. No payment for overhaul shall be made on this project. Payment will be at the unit price bid for the quantity shown in the contract documents. Quantity will be measured in cubic yards. It is estimated that each abutment will require approximately 7.5 CY to repair rivulet. |
| 2                                                                       | 2401-6750001 | Removals, as per Plan                           | LS   | 1.0                                  | Includes all work for partially removing barrier end sections and off-site disposal. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state.                                                                                                                                                                                                                          |
| 3                                                                       | 2403-0100000 | Structural Concrete (Misc.)                     | CY   | 1.5                                  | Includes furnishing and installing 1 inch diameter plastic conduit in barrier end sections.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4                                                                       | 2404-7775005 | Reinforcing Steel, Epoxy Coated                 | LB   | 328                                  | ----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5                                                                       | 2413-0698074 | Deck Repair, Class A                            | SY   | 47.6                                 | ----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6                                                                       | 2499-0800000 | Paving Notch Replacement                        | LF   | 83.2                                 | Includes 5.8 cu yd of structural concrete Class C, 1331 lbs of epoxy-coated reinforcing steel, excavation, removing and disposing of the existing paving notch and concrete removed to form the shear keyways, drilling holes for dowel bars, and polymer grout material.                                                                                                                                                                                                                                                                             |
| 7                                                                       | 2533-4980005 | Mobilization                                    | LS   | 1.0                                  | ----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Alternate AA Option 1                                                   |              |                                                 |      |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8                                                                       | 2413-0698066 | Deck Overlay (Class O PCC)                      | SY   | 982.7                                | Includes cleaning existing concrete at barriers. Includes furnishing and placing concrete sealer at barriers.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Alternate AA Option 2                                                   |              |                                                 |      |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9                                                                       | 2403-1000010 | Trial Batch and Test Placement (FRC)            | LS   | 1.0                                  | Refer to Developmental Specification for Fiber Reinforcement for Structural Concrete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 10                                                                      | 2413-0698067 | Deck Overlay (Fiber-Reinforced Class HPC-O PCC) | SY   | 982.7                                | Includes cleaning existing concrete at barriers. Includes furnishing and placing concrete sealer at barriers. Refer to Developmental Specification for Fiber Reinforcement for Structural Concrete.                                                                                                                                                                                                                                                                                                                                                   |
| 11                                                                      | 2413-1000005 | Fiber Reinforcement for Concrete Repair/Overlay | SY   | 982.7                                | Refer to Developmental Specification for Fiber Reinforcement for Structural Concrete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                         |              |                                                 |      |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                         |              |                                                 |      |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Roadway Quantities shown elsewhere in these plans.

Design For Repairs to a 15° Skew (R.A.), 1°30' Curve

218'-0" x 40'-0" Pretensioned  
Prestressed Concrete Beam Bridge

68'-3" End Spans81'-6" Interior Span

Estimated Bridge Quantities

STA. 679+65.00 (IA 149)Turn-in Date: Aug 2026

Keokuk County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0128Design Sheet No. 1 of 11FHWA No. 032791

General Notes:

This design is for repairs to the existing 218'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge located on IA 149 over South Fork English River in Kokuk County. Electronic copies of original design plans will be made available to the Contractor as part of the e-files supplied with the contract documents.

See Design Sheet 3 for list of repairs.

Faint lines on plans indicate the existing structure.

All alignments, stationing, connecting dimensions, and elevations used in the new details in these plans were developed based on the existing bridge plans. The bridge Contractor shall field verify these details before starting construction.

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

These bridge plans label all reinforcing steel with english notation (5a1 is 5/8 inch diameter bar). English reinforcing steel received in the field may display the following "Bar Designation". The "Bar Designation" is the stamped impression on the reinforcing bars, and is equivalent to the bar diameter in millimeters.

|                 |    |    |    |    |    |    |    |    |    |
|-----------------|----|----|----|----|----|----|----|----|----|
| English Size    | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| Bar Designation | 10 | 13 | 16 | 19 | 22 | 25 | 29 | 32 | 36 |

All reinforcing bars and bars noted as dowels supplied for this structure shall be deformed reinforcement unless otherwise noted or shown.

The top and interior faces of the existing concrete railing are to be cleaned and sealed in accordance with Article 2403.03, P, of the Standard Specifications. If new sections of rail are constructed, the new sections shall not be sealed. All costs associated with cleaning and sealing of the concrete rails shall be include in the unit price bid item "Deck Overlay (Class O PCC)" and "Deck Overlay (Class HPC-O PCC)".

Keyway dimensions shown on the plans are based on nominal dimensions unless stated otherwise. In addition, the bevel used on the keyway shall be limited to a maximum of 10 degrees from vertical.

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing portions of the barrier end sections. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to any steel or concrete not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.

Present deck thickness is about 8 inches. The Contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

Plan quantity of deck repair is based on the "Survey Plot" as shown in these plans. Hatched portions represent Class A Bridge Deck Repair. Cross hatched portions, if shown, represent Class B Bridge Deck Repair. The plan quantity for "Class A Deck Repair" is estimated as 47.6 sy based on automatic sounding of the deck plus 25% increase for estimating purposes. Actual spalled and hollow areas as determined by the Engineer at the time of construction, shall be repaired.

Surface raise, as shown on the plans, shall be considered a minimum. In order to limit the additional dead load surface raise shall be restricted to a maximum of 1/2" more than shown on the plans. Profile may be adjusted to the extent possible within these limits.

Ready mix trucks are not allowed on the prepared portion of the bridge deck.

Surface preparation shall be according to article 2413.03, B and C of the standard specifications. The contractor shall ensure the vertical edge of the stage 1 overlay is prepared for placement of the new concrete for stage 2 by sandblasting or shot blasting, followed by an air blast. Ensure this cleaning removes all dirt, oil, and other foreign material. Ensure it removes all unsound concrete, laitance, or loose material from the surface and edges against which the surface mixture is to be placed. The cleaning should roughen the surface in order to provide satisfactory bond with the surfacing mixture.

Screed extension or overlay beyond the longitudinal construction joint may be less than the 6 inches required by article 2413.03, A, 4, of the standard specifications. The Engineer may require additional vibration or special finishing procedures adjacent to the longitudinal construction joint.

Construction shall be done in stages with at least one lane traffic maintained at all times in accordance with "Traffic Control Plan" note.

Construction Stages I & II as detailed on these plans may be reversed at the Contractor's option subject to the Engineer's approval.

Utility Companies whose facilities are known to be within the construction limits shall be notified by the bridge contractor of the starting date.

Upon completion of the removal of concrete down to the classification line, the Engineer shall determine the areas of bridge deck to be repaired as "Deck Repair, Class A". Actual hollow areas, as determined by the Engineer, shall be repaired.

Specifications:

Design:  
AASHTO series of 2002.

Construction:  
Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.

- Developmental Specifications for Fiber Reinforcement for Structural Concrete

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO Standard Specifications for Highway Bridges, Series of 2002.

Reinforcing steel in accordance with Section 8, Grade 60.  
Concrete in accordance with Section 8, f'c = 4.0 ksi.

Traffic Control Plan  
The roadway will be open to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

| Design History at this Site |                     |
|-----------------------------|---------------------|
| (Includes this Design)      |                     |
| Des. No.                    | Type of Work        |
| 385                         | Original Design     |
| 0128                        | Bridge Deck Overlay |

Design For Repairs to a 15° Skew (R.A.), 1°30' Curve

218'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge

68'-3" End Spans81'-6" Interior Span

General Notes

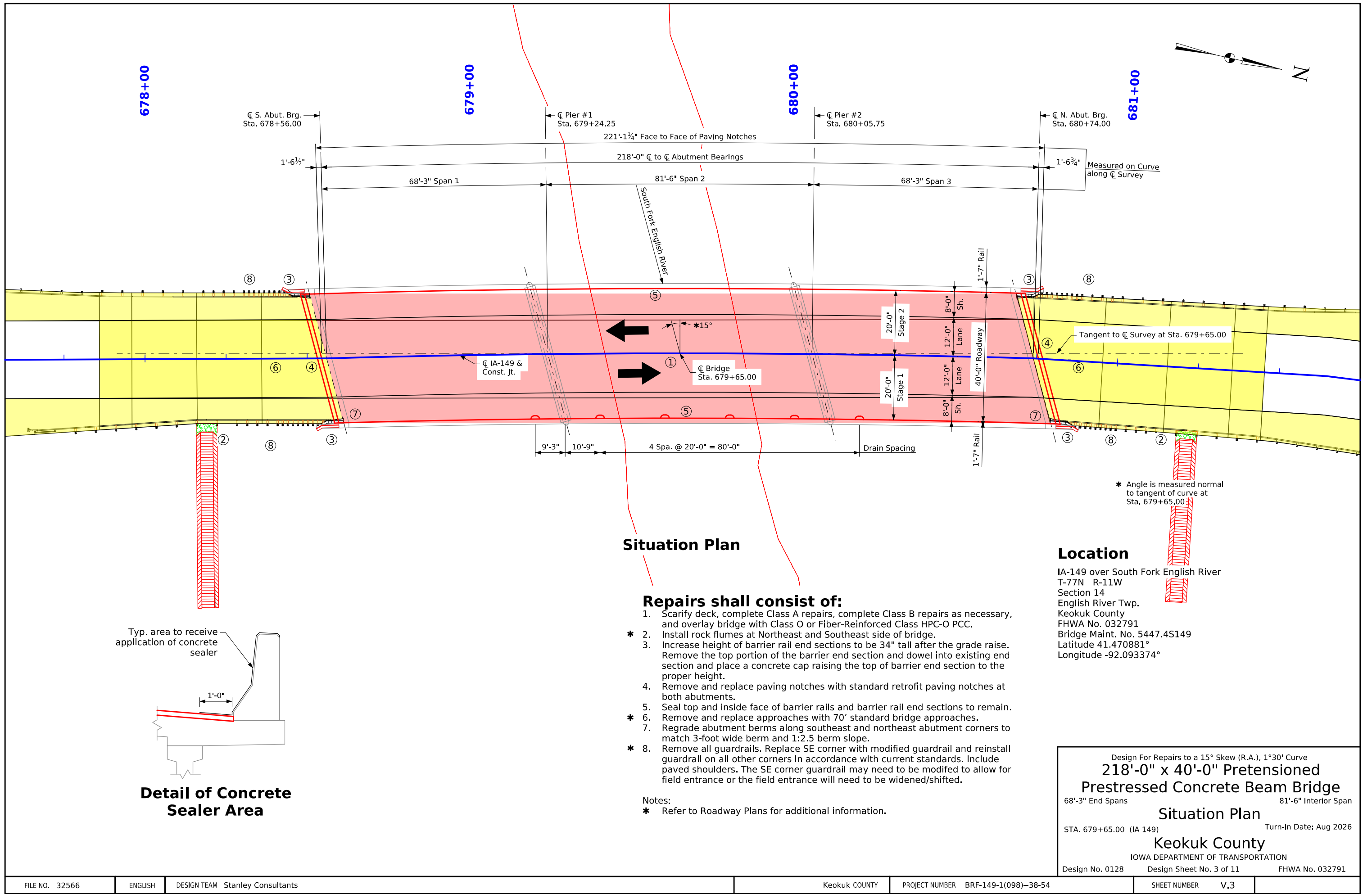
STA. 679+65.00 (IA 149)Turn-in Date: Aug 2026

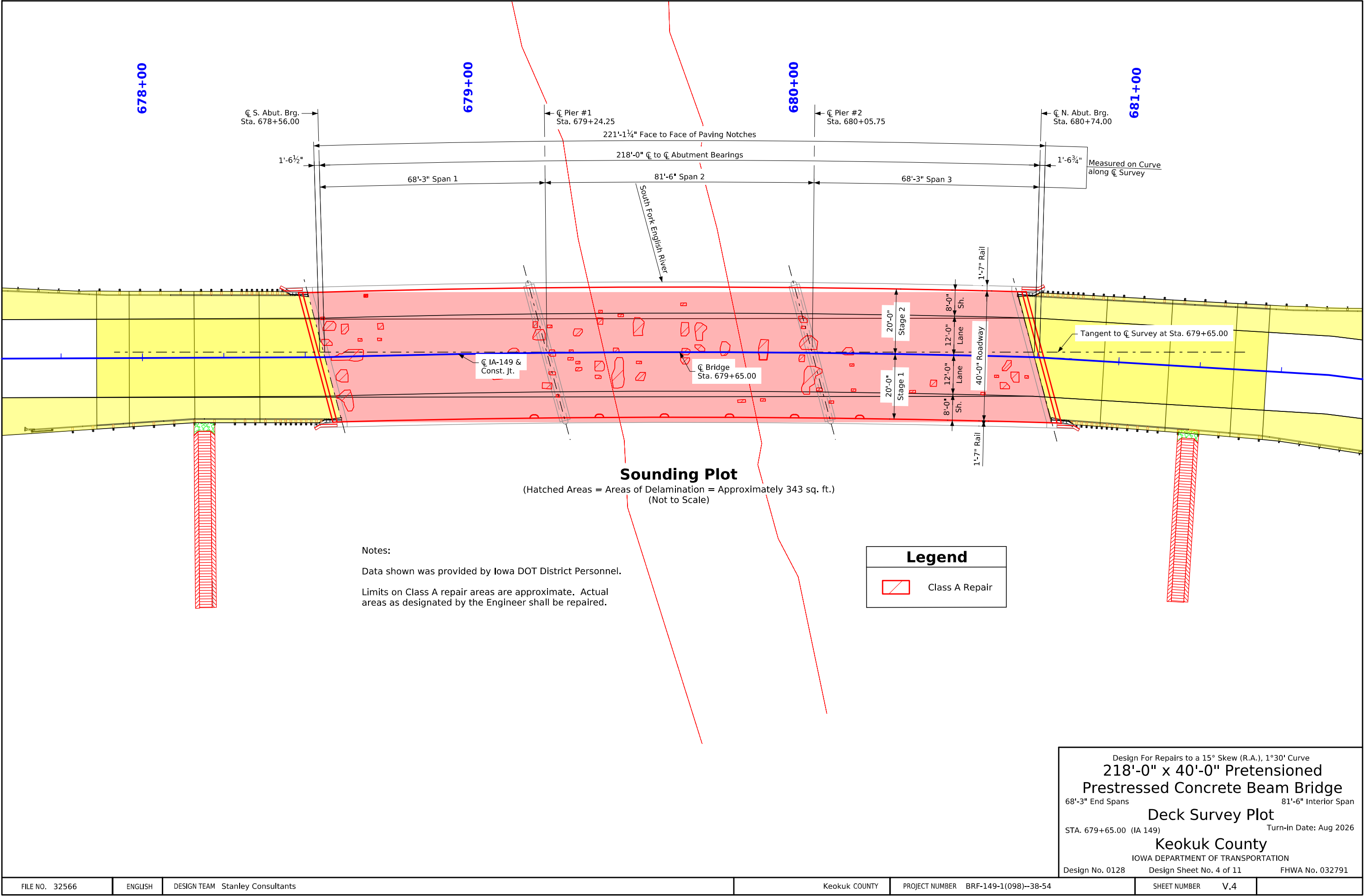
Keokuk County

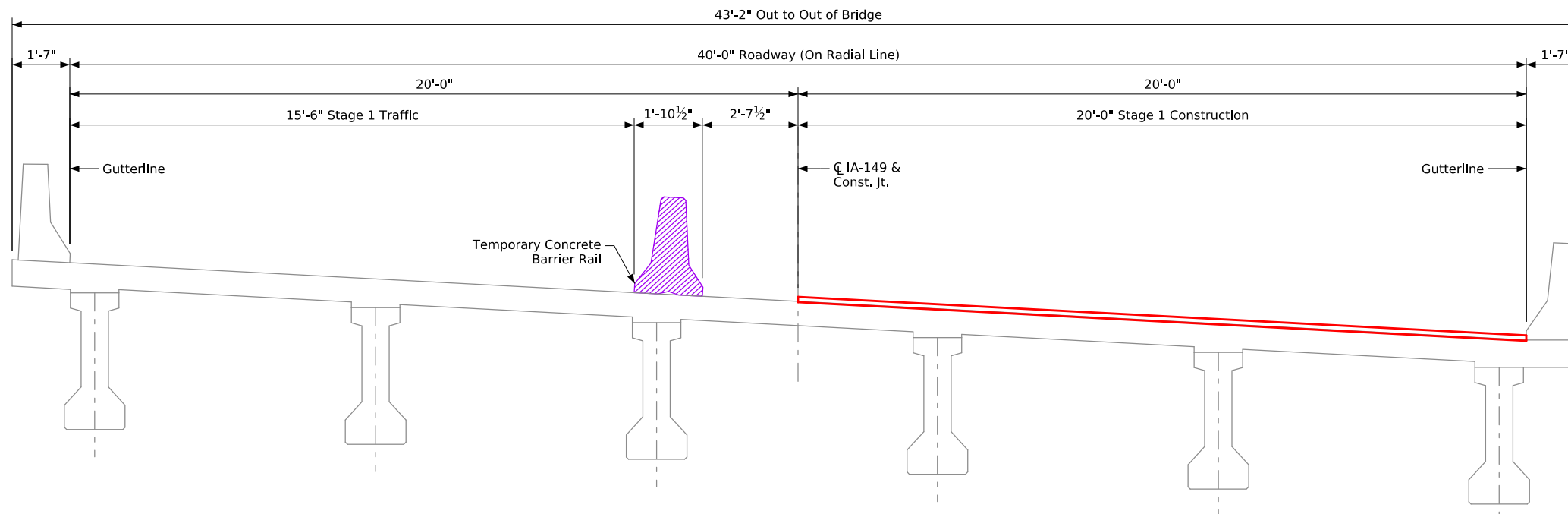
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0128Design Sheet No. 2 of 11FHWA No. 032791

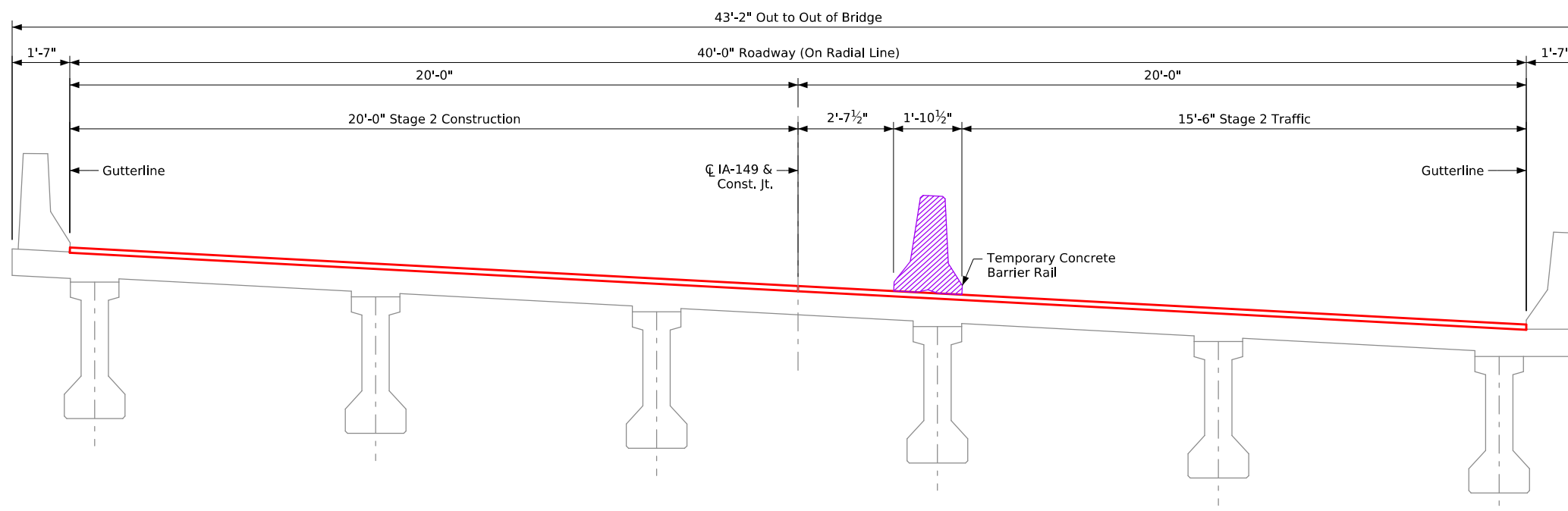






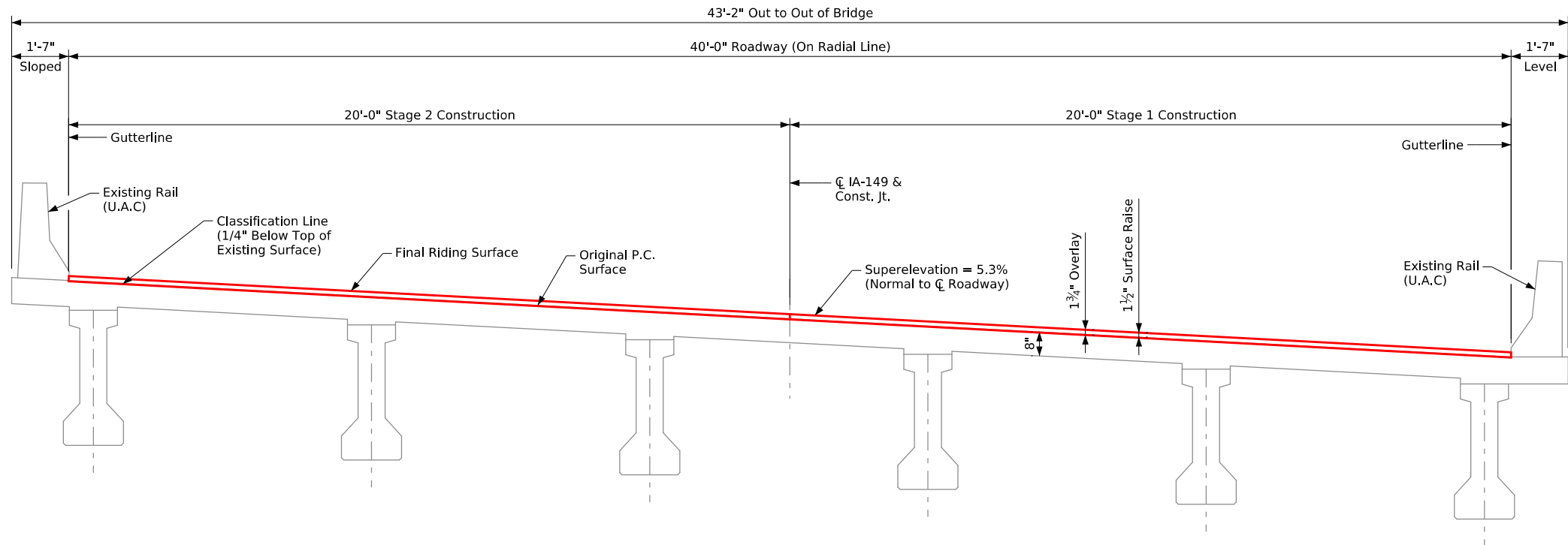


**Typical Section Stage 1 Construction**  
(Looking North)

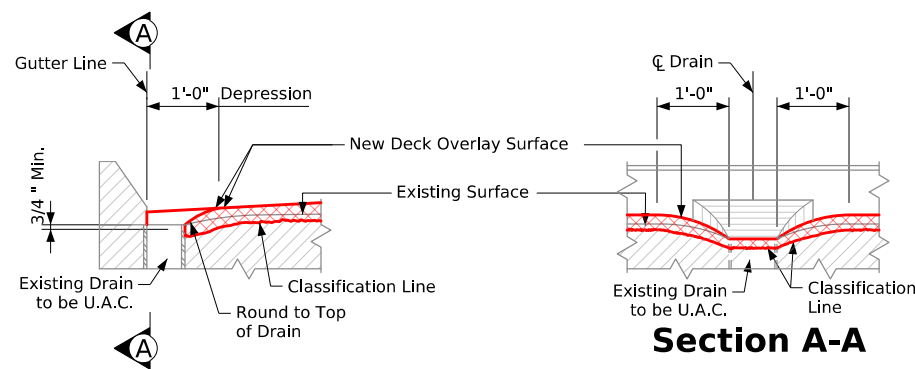


**Typical Section Stage 2 Construction**  
(Looking North)

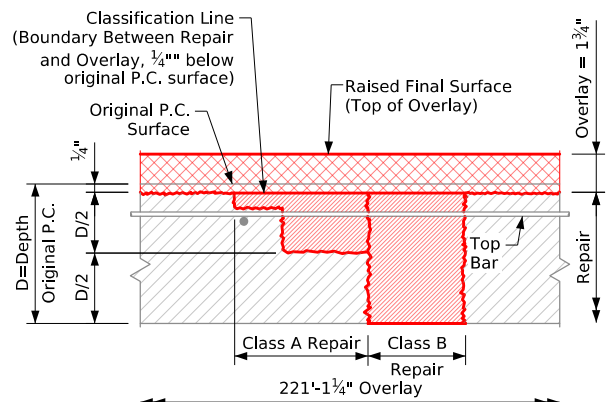
Design For Repairs to a 15° Skew (R.A.), 1°30' Curve  
**218'-0" x 40'-0" Pretensioned**  
**Prestressed Concrete Beam Bridge**  
 68'-3" End Spans 81'-6" Interior Span  
**Staging Details**  
 STA. 679+65.00 (IA 149) Turn-in Date: Aug 2026  
**Keokuk County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0128 Design Sheet No. 5 of 11 FHWA No. 032791



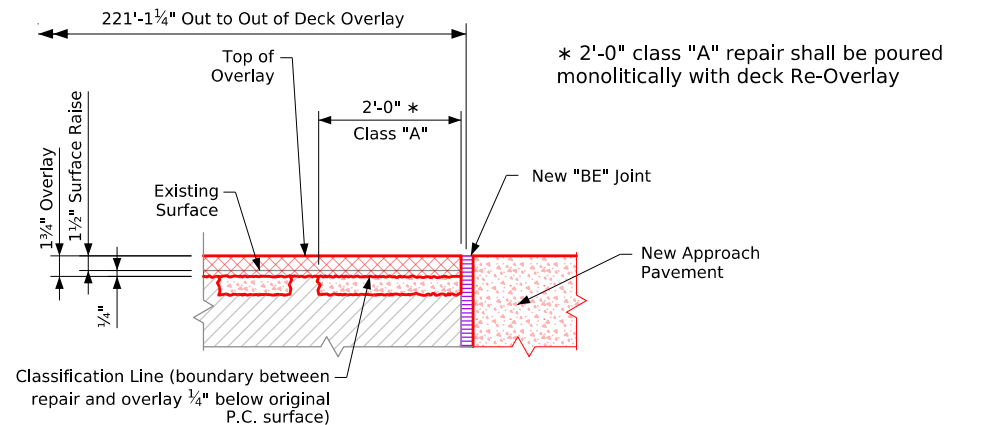
**Typical Section**  
(Looking North)



**Deck Repair Detail at Drain**  
(Required at 6 Locations)



**Repair and Overlay Definition**

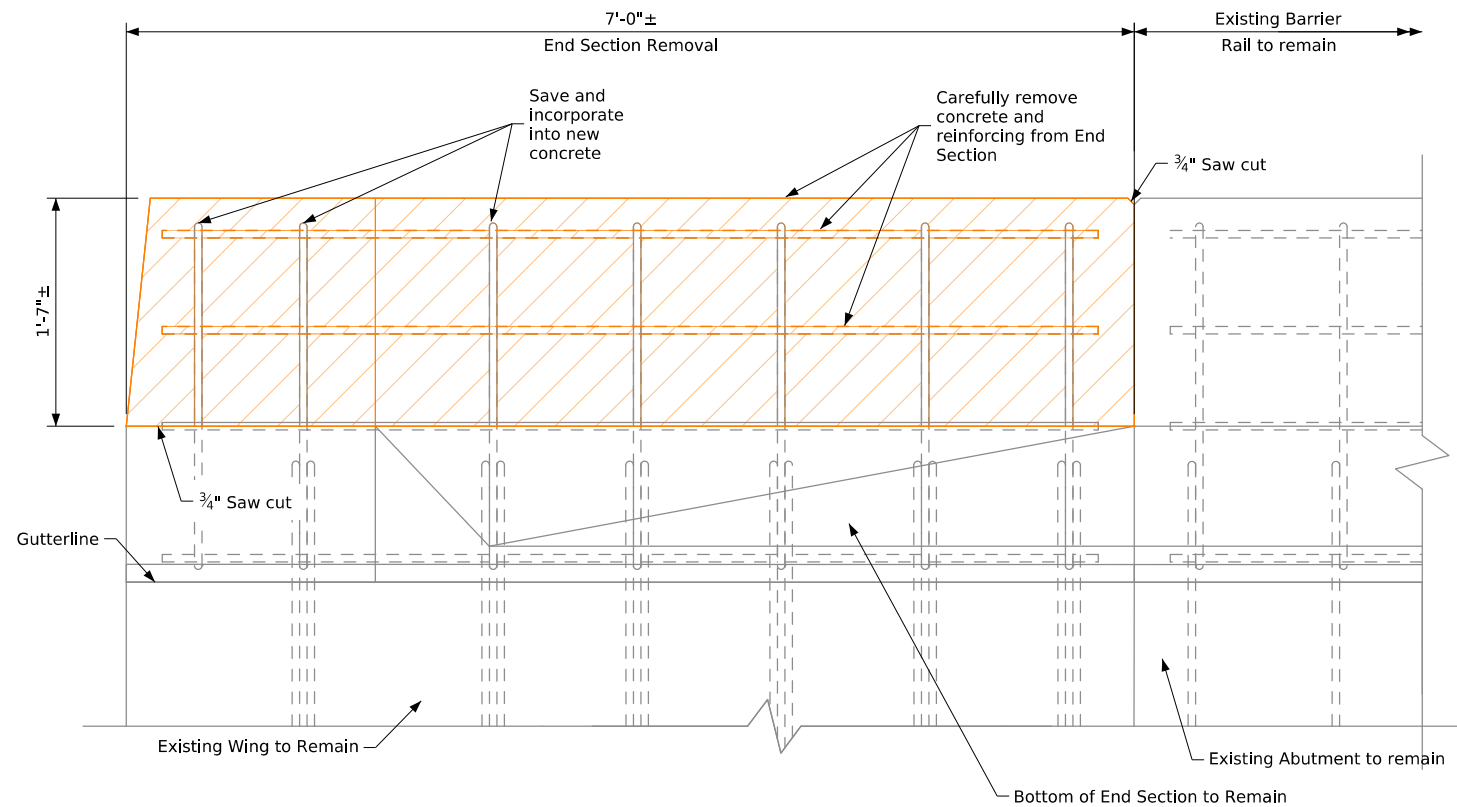


**Part Longitudinal Section Along Roadway**

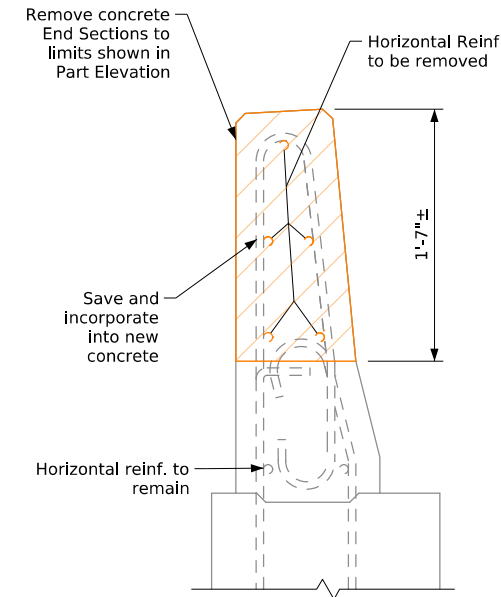
Both Abutments

Note: The 2'-0" Class "A" repair area shown at the joint shall be removed to a minimum depth 1" below the existing top mat of reinforcing. The existing bridge deck reinforcing bars shall be carefully exposed and incorporated into the new construction work.

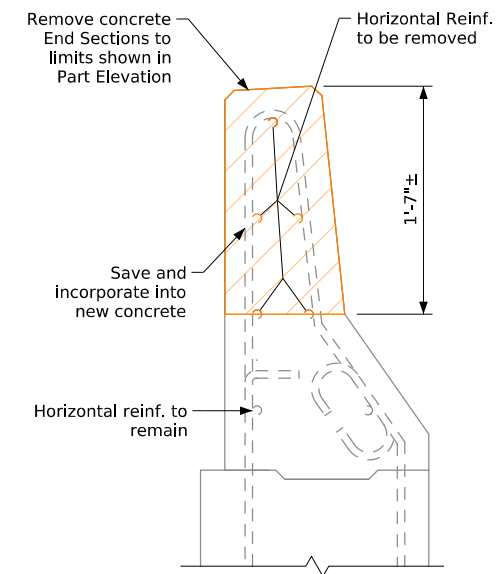
Design For Repairs to a 15° Skew (R.A.), 1°30' Curve  
**218'-0" x 40'-0" Prestressed Concrete Beam Bridge**  
 68'-3" End Spans 81'-6" Interior Span  
**Deck Repair Details**  
 STA. 679+65.00 (IA 149) Turn-in Date: Aug 2026  
**Keokuk County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0128 Design Sheet No. 6 of 11 FHWA No. 032791



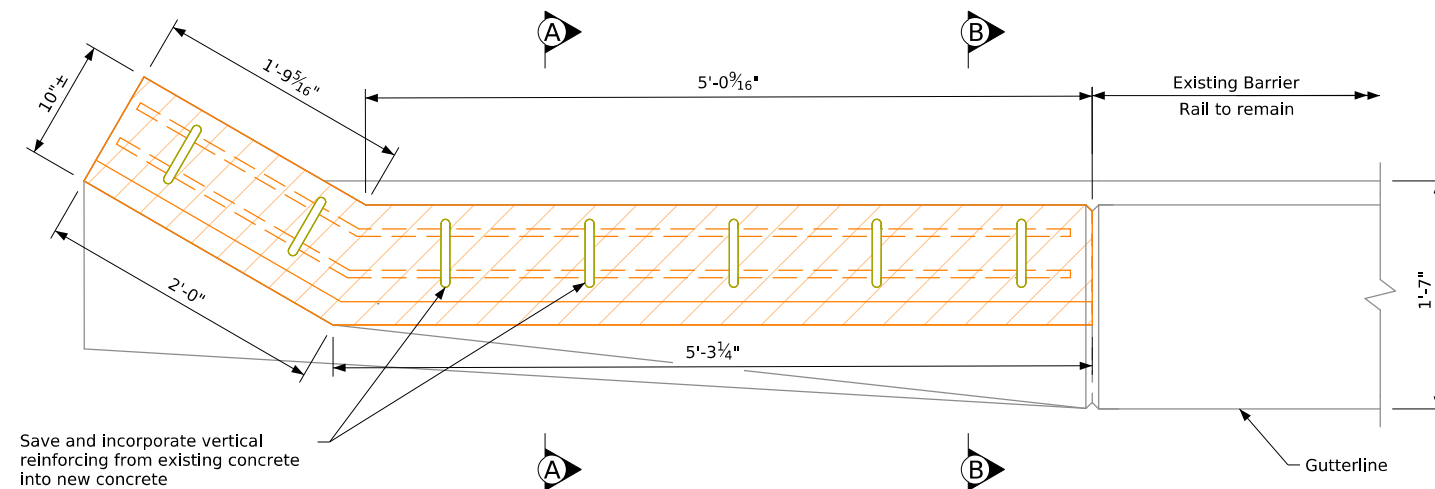
**Part Elevation**



**Section A-A**



**Section B-B**



**Part Plan**

## Removal Notes

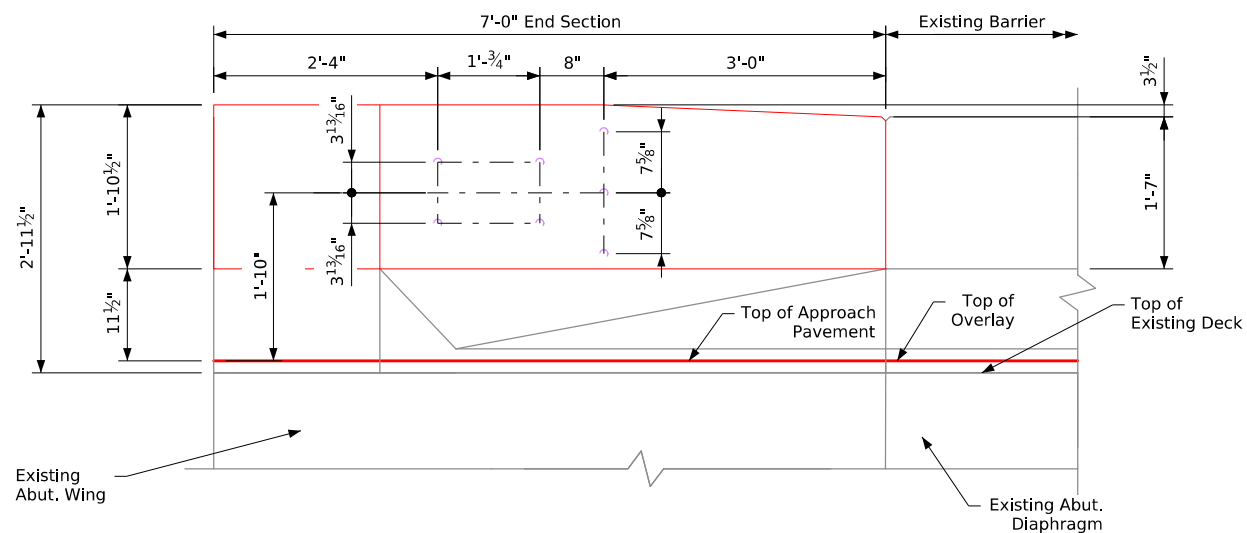
Hatched areas indicate concrete removal.

This sheet shows details of the partial barrier end section removal on the existing bridge. All partial removals shall be in accordance with Section 2401 of the Standard Specifications. All such removals shall be to neat saw cuts to provide clean straight surfaces at interfaces between new concrete and remaining concrete. The removal shall be done in a manner which will prevent any damage to the existing structure to remain. The Contractor shall assume full responsibility for any damage caused, and shall repair any damaged area to its original condition as directed by the Engineer, at the Contractor's expense. Any existing reinforcing steel which is to be "saved" that is exposed during removal operations is to be carefully protected, cleaned, and incorporated into new construction unless noted otherwise.

Start all removals with 3/4" saw cut.

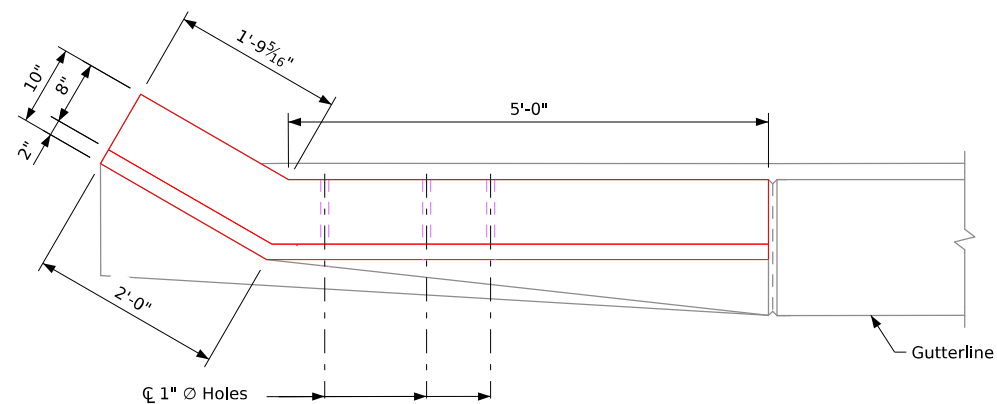
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| Design For Repairs to a 15° Skew (R.A.), 1°30' Curve |                          |                 |
| 218'-0" x 40'-0" Prestensioned                       |                          |                 |
| Prestressed Concrete Beam Bridge                     |                          |                 |
| 68'-3" End Spans                                     | 81'-6" Interior Span     |                 |
| End Section Removals                                 |                          |                 |
| STA. 679+65.00 (IA 149)                              | Turn-in Date: Aug 2026   |                 |
| Keokuk County                                        |                          |                 |
| IOWA DEPARTMENT OF TRANSPORTATION                    |                          |                 |
| Design No. 0128                                      | Design Sheet No. 7 of 11 | FHWA No. 032791 |



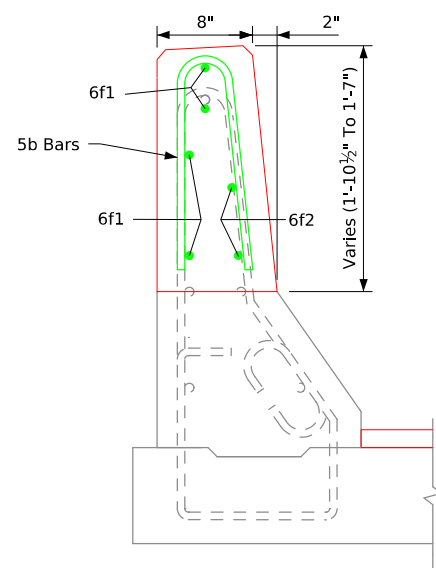


### Part Elevation View

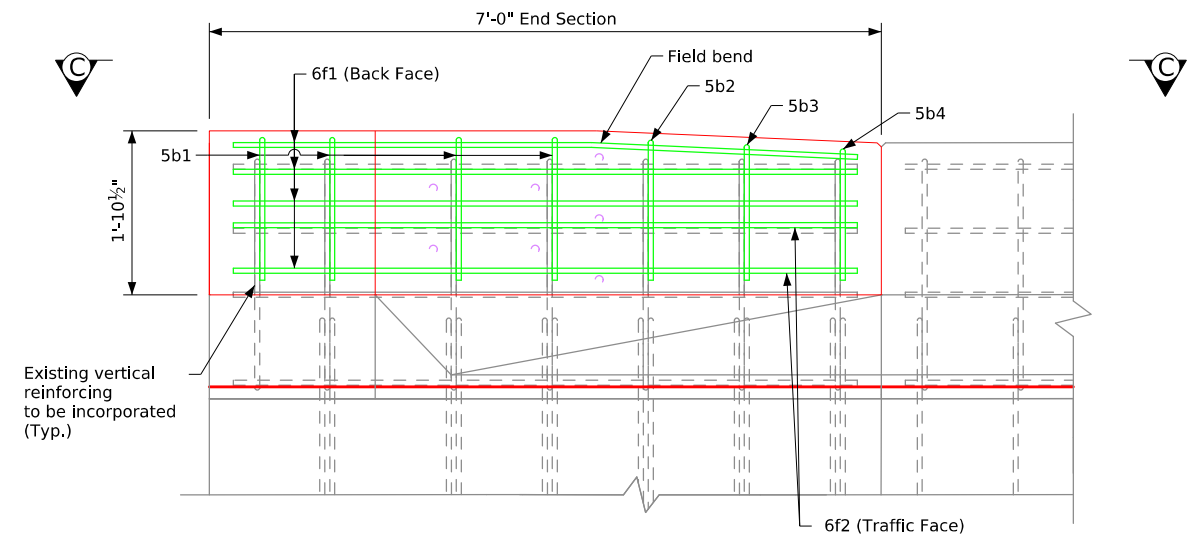
Provide 7 holes formed with 1"Ø plastic conduit. Cost to be included in price bid for "Structural Concrete (Misc.)"



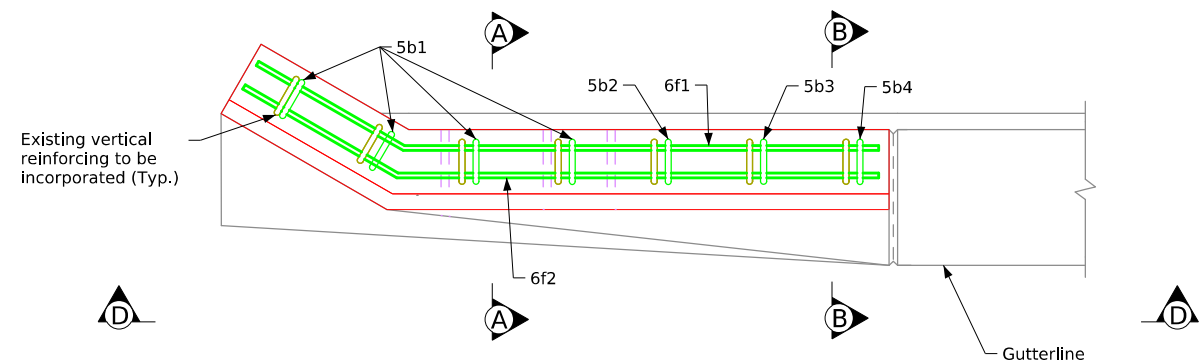
### Section A-A



### Section B-B



### Part View D-D



### Part View C-C

NOTE:

Top of End Section concrete to remain shall be rough concrete.

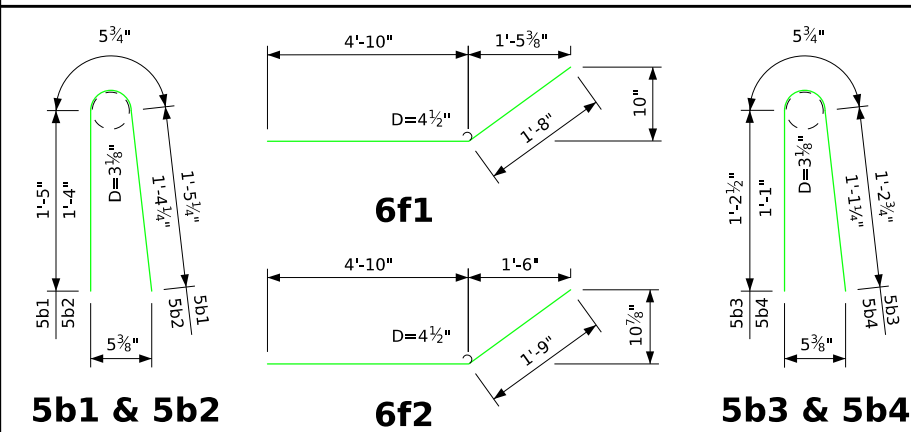
|                                                          |                                          |
|----------------------------------------------------------|------------------------------------------|
| Design For Repairs to a 15° Skew (R.A.), 1°30' Curve     |                                          |
| <b>218'-0" x 40'-0" Prestressed Concrete Beam Bridge</b> |                                          |
| 68'-3" End Spans                                         | 81'-6" Interior Span                     |
| <b>End Section Details</b>                               |                                          |
| STA. 679+65.00 (IA 149)                                  | Turn-in Date: Aug 2026                   |
| <b>Keokuk County</b>                                     |                                          |
| IOWA DEPARTMENT OF TRANSPORTATION                        |                                          |
| Design No. 0128                                          | Design Sheet No. 8 of 11 FHWA No. 032791 |

| Epoxy Reinforcing Steel - One End Section |                      |                                                                                     |     |        |        |
|-------------------------------------------|----------------------|-------------------------------------------------------------------------------------|-----|--------|--------|
| Bar                                       | Location             | Shape                                                                               | No. | Length | Weight |
| 5b1                                       | Vertical End Section |  | 4   | 3'-4"  | 14     |
| 5b2                                       | Vertical End Section |  | 1   | 3'-2"  | 3      |
| 5b3                                       | Vertical End Section |  | 1   | 2'-11" | 3      |
| 5b4                                       | Vertical End Section |  | 1   | 2'-8"  | 3      |
|                                           |                      |                                                                                     |     |        |        |
| 6f1                                       | Horizontal Back Face |  | 4   | 6'-6"  | 39     |
| 6f2                                       | Horizontal Back Face |  | 2   | 6'-7"  | 20     |
| Total Weight (lbs.)                       |                      |                                                                                     |     |        | 82     |

Concrete Placement Summary - One End Section

| Location                     | CY   |
|------------------------------|------|
| Barrier Rail One End Section | 0.37 |
| Total (CY)                   | 0.37 |

Bent Bar Details



Note: All dimensions are out to out. D = pin diameter

Design For Repairs to a 15° Skew (R.A.), 1°30' Curve

218'-0" x 40'-0" Pretensioned

Prestressed Concrete Beam Bridge

68'-3" End Spans81'-6" Interior Span

End Section Details

STA. 679+65.00 (IA 149)Turn-in Date: Aug 2026

Keokuk County

IOWA DEPARTMENT OF TRANSPORTATION

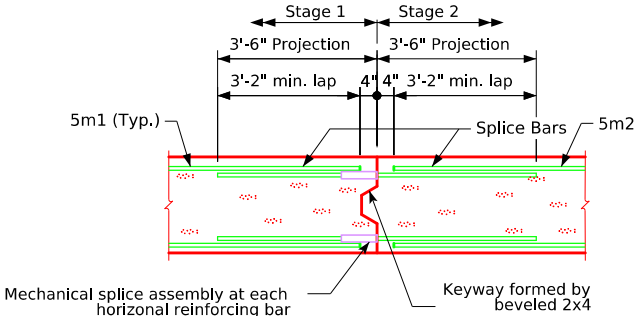
Design No. 0128Design Sheet No. 9 of 11FHWA No. 032791

Mechanical Splice Assembly Notes:

The 5m1 & 5m2 bars in the paving support shall be spliced at the locations shown usinjd mechanical splice assemblies. Mechanical splice assemblies consist of mechanical splicers and reinforcing splice bars as required to facilitate the use of the mechanical splicer. The mechanical splice assembly used shall meet the requirements of Materials I.M. 451 Appendix E. Reinforcing splice bars shall be a minimum of 5/8 inch dia.

All mechanical splice assemblies to be used shall be epoxy coated.

The cost of all splice assemblies is to be included in the price bid for "Paving Notch Replacement" and no separate payment will be made. A total of 8 epoxy coated splice assemblies will be required



Mechanical Splice Detail

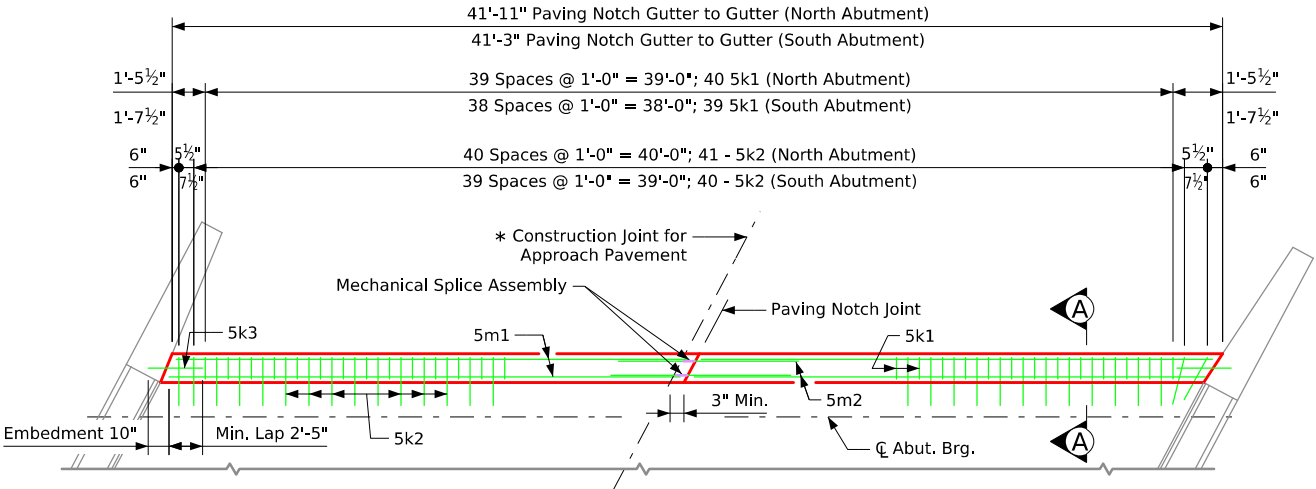
\* Construction joint for notch repair to extend a minimum of 3 inches past construction joint for pavement.

Paving Notch Replacement Notes:

The Paving Notch Replacement is to be Class "C" structural concrete. Minimum clear distance from face of concrete to near reinforcing bar is to be 2", unless otherwise noted or shown. The bid item "Paving Notch Replacement" linear feet, shall include all costs of labor and materials associated with excavation, removing, and disposing of the existing paving notch, granular backfill and compaction as needed, and installing the new paving notch. This work shall include, cutting of the existing #4 bars, removing the concrete for the shear keyways, drilling the holes for the deformed dowels, and constructing the new notch to the dimensions shown. The new notch is estimated at 0.07 cubic yards per foot of structural concrete and 16.0 pounds of epoxy coated reinforcing steel per foot. Removals shall be in accordance with Section 2401, of the Standard Specifications.

Dowel Setting Note:

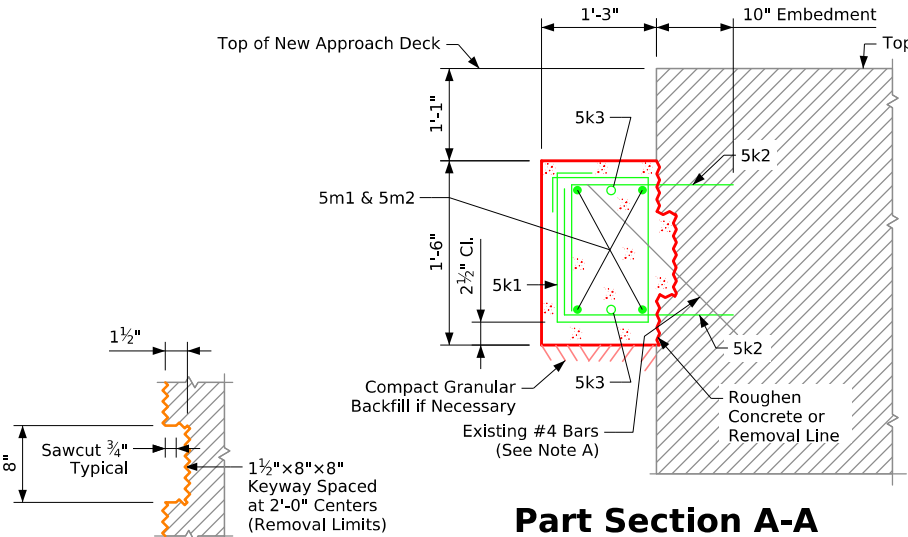
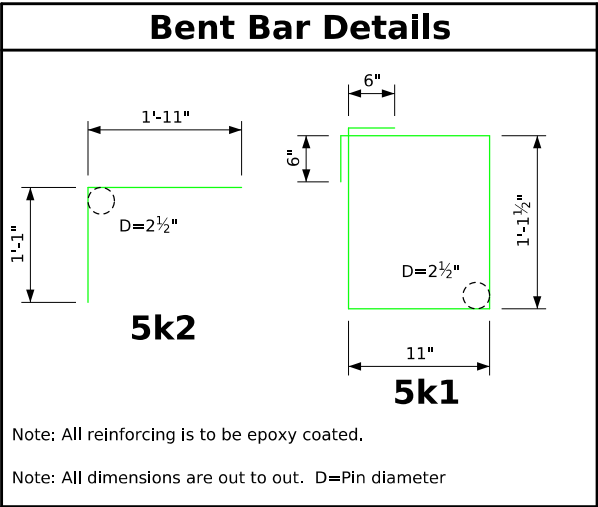
The deformed 5k2 & 5k3 bars shall be set as dowels in drilled holes. Holes are to be 10" deep. Polymer grout system shall be used to install the deformed dowel bars in accordance with Article 2301.03,E, of the Standard Specifications and the Grout Manufacturer's recommendations.



Note: 5k3 bars shall be set as dowels embedding 10 inches minimum into the existing bridge wingwalls and extending a minimum of 2'-5" into the new paving notch replacement.

Part Plan View At Abutment

Note: New Paving Notch Replacement should extend from bridge wingwall to bridge wingwall.



Note A: The bottom portion of the existing #4 bars shall be carefully exposed and incorporated into new work. The bar shall be cut off to provide 2 inches of cover from the top of the new paving notch. The top portion of the bar shall be cut off flush or slightly below the concrete surface and the ends painted with 2 coats of zinc rich paint.

Part Section A-A

Note: Dowels shall be placed to miss any existing reinforcing steel exposed during removals.

1 1/2"x8" Keyway Detail

Design For Repairs to a 15° Skew (R.A.), 1°30' Curve

218'-0" x 40'-0" Prestensioned

Prestressed Concrete Beam Bridge

68'-3" End Spans81'-6" Interior Span

Paving Notch Replacement

STA. 679+65.00 (IA 149)Turn-in Date: Aug 2026

Keokuk County

IOWA DEPARTMENT OF TRANSPORTATION

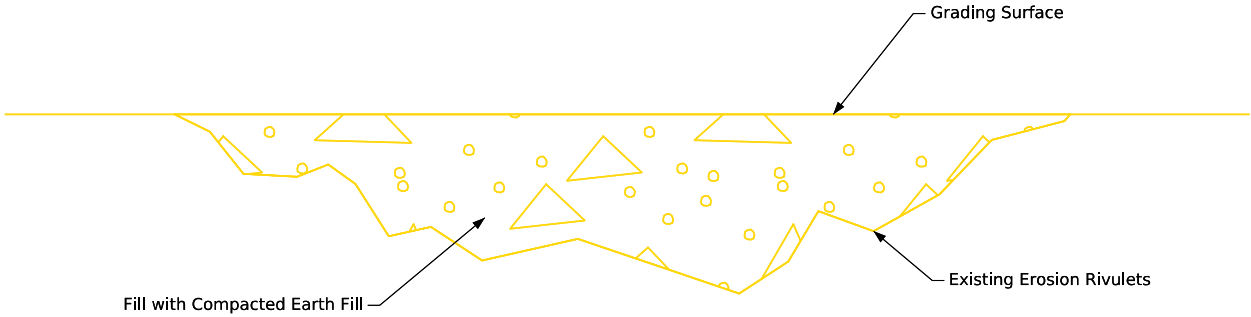
Design No. 0128Design Sheet No. 10 of 11FHWA No. 032791



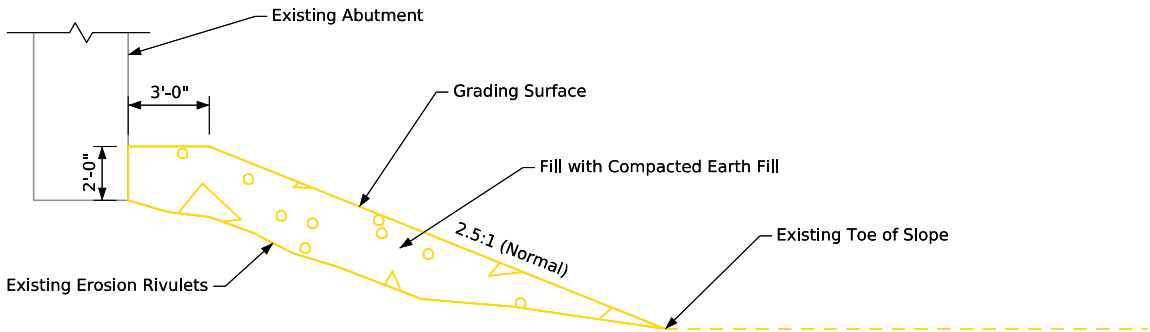


Erosion in Southeast Corner

Erosion Rivulet, Fill with Compacted Fill as detailed



Typical Cross Section Thru Rivulet



Typical Section Thru Rivulet



Erosion in Northeast Corner

Erosion Rivulet, Fill with Compacted Fill as detailed

Design For Repairs to a 15° Skew (R.A.), 1°30' Curve

218'-0" x 40'-0" Prestensioned

Prestressed Concrete Beam Bridge

68'-3" End Spans81'-6" Interior Span

Berm Repair Details

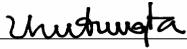
STA. 679+65.00 (IA 149)Turn-in Date: Aug 2026

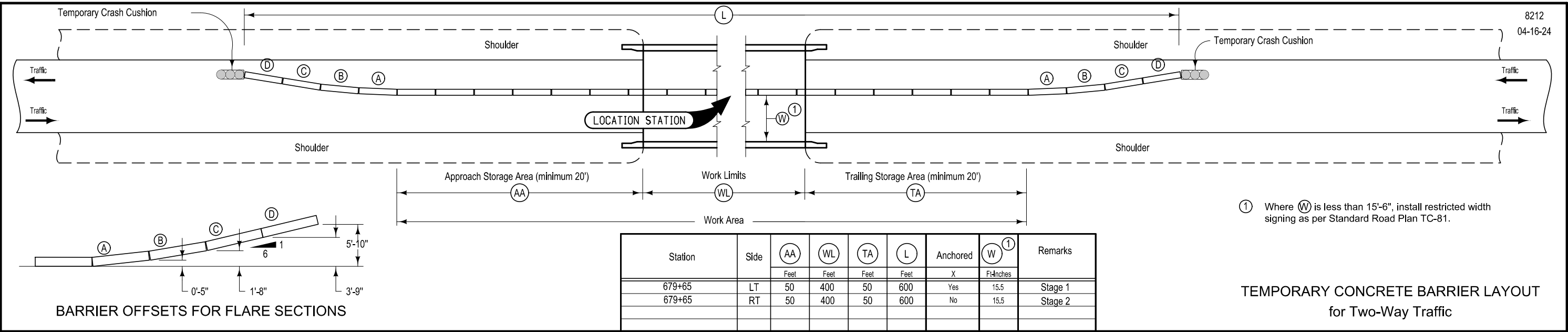
Keokuk County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0128Design Sheet No. 11 of 11FHWA No. 032791

| INDEX OF SHEETS |                                                     |
|-----------------|-----------------------------------------------------|
| No.             | DESCRIPTION                                         |
| <b>A Sheets</b> | <b>Title Sheets</b>                                 |
| A.3             | Title Sheet                                         |
| <b>B Sheets</b> | <b>Typical Cross Sections and Details</b>           |
| B.1 - 2         | Typical Cross Sections and Details                  |
| <b>C Sheets</b> | <b>Quantities and General Information</b>           |
| C.1 - 3         | Estimate Project Quantities & Reference Information |
| C.4             | Index of Tabulations                                |
| C.5             | Standard Road Plans                                 |
| C.6 - 17        | Tabulations                                         |
| <b>D Sheets</b> | <b>Mainline Plan and Profile Sheets</b>             |
| D.1             | Plan & Profile Legend & Symbol Information Sheet    |
| D.2             | ML-IA 149                                           |
| <b>J Sheets</b> | <b>Traffic Control and Staging Sheets</b>           |
| J.1 - 4         | Traffic Control Plan                                |

| ROADWAY DESIGN                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div></div> | <div>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</div> <div><div><div>Signature</div><div></div></div><div><div>Dung T. Ta</div><div>Printed or Typed Name</div></div><div><div>Date</div><div>01-23-2026</div></div></div> <div>My license renewal date is December 31, 20 26</div> |
| Pages or sheets covered by this seal: A.3, B.1-2, C.1-17, D.1-2, J.1-4                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



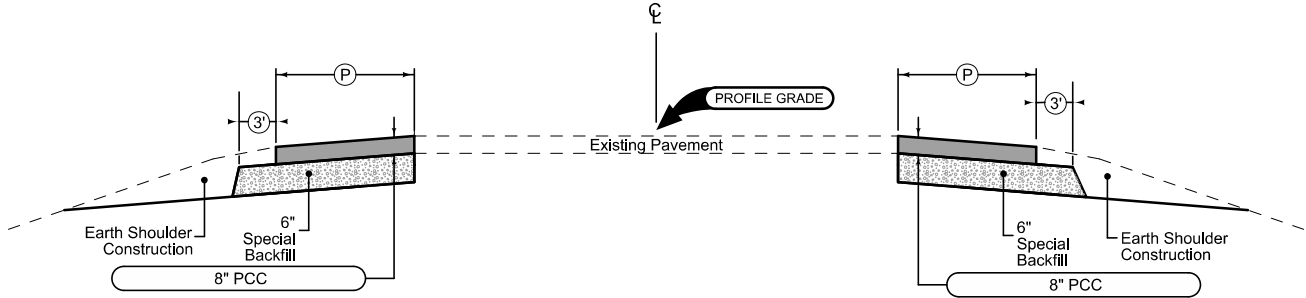
NOTE: Anchor on old bridge. Do not anchor on newly overlaid bridge.

**Shoulder Strengthening**

**Full Depth PCC Shoulder**

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

| 2_P_Guard_04-21-20 |           |             |
|--------------------|-----------|-------------|
| STATION TO STATION |           | (P)<br>Feet |
| 672+90.00          | 677+26.71 | 8           |
| 682+17.76          | 685+40.00 | 8           |
|                    |           |             |
|                    |           |             |



**Shoulder Strengthening**

**Full Depth PCC Shoulder**

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

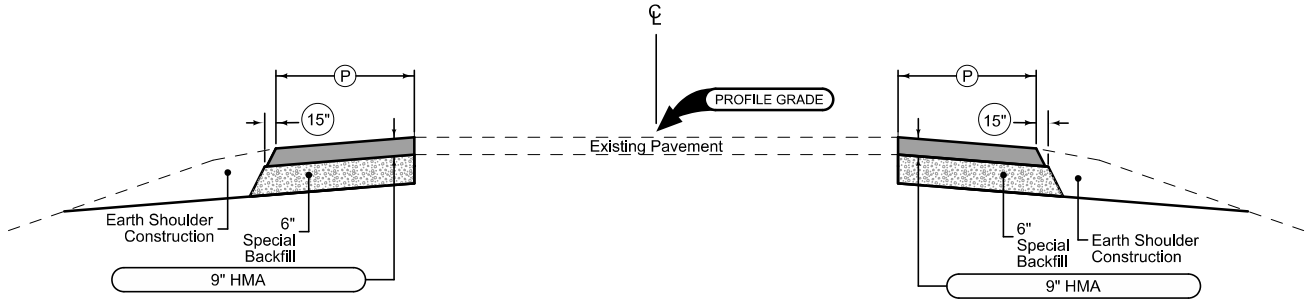
| 2_P_Guard_04-21-20 |           |             |
|--------------------|-----------|-------------|
| STATION TO STATION |           | (P)<br>Feet |
| 672+90.00          | 677+44.36 | 8           |
| 682+06.30          | 685+40.00 | 8           |
|                    |           |             |
|                    |           |             |

**Shoulder Strengthening**

**Full Depth HMA Shoulder**

HMA Shoulder Jointing:  
Longitudinal joint: B

| 2_P_Guard_04-21-20 |           |             |
|--------------------|-----------|-------------|
| STATION TO STATION |           | (P)<br>Feet |
| 672+90.00          | 677+26.71 | 8           |
| 682+17.76          | 685+40.00 | 8           |
|                    |           |             |
|                    |           |             |



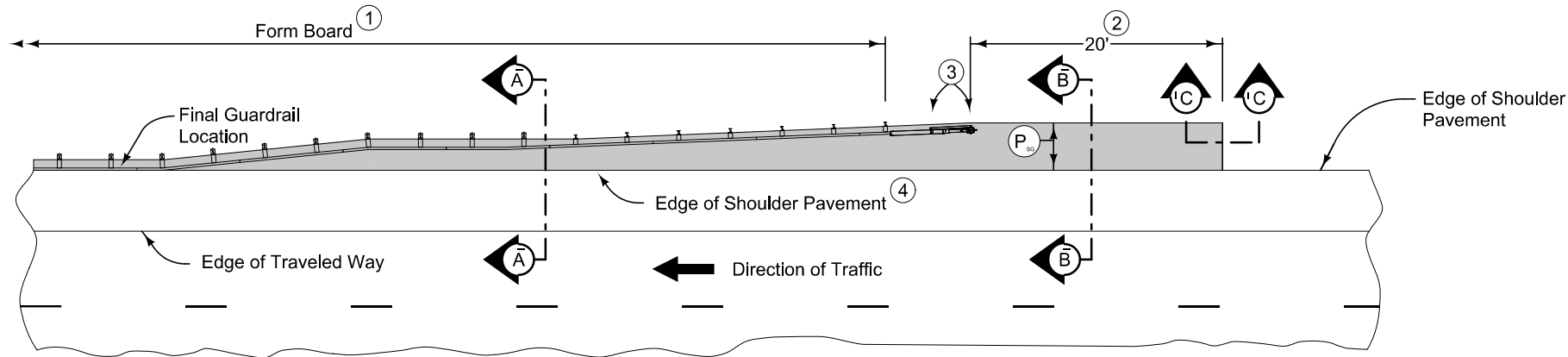
**Shoulder Strengthening**

**Full Depth HMA Shoulder**

HMA Shoulder Jointing:  
Longitudinal joint: B

| 2_P_Guard_04-21-20 |           |             |
|--------------------|-----------|-------------|
| STATION TO STATION |           | (P)<br>Feet |
| 672+90.00          | 677+44.36 | 8           |
| 682+06.30          | 685+40.00 | 8           |
|                    |           |             |
|                    |           |             |





PLAN VIEW

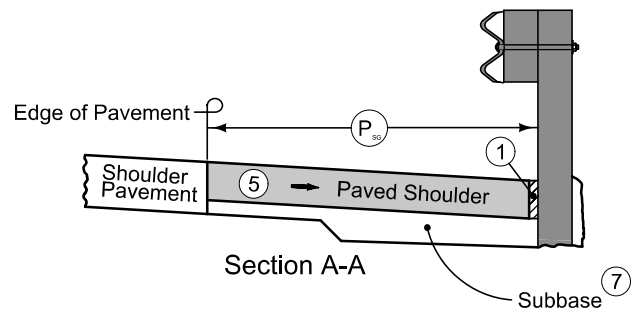
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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

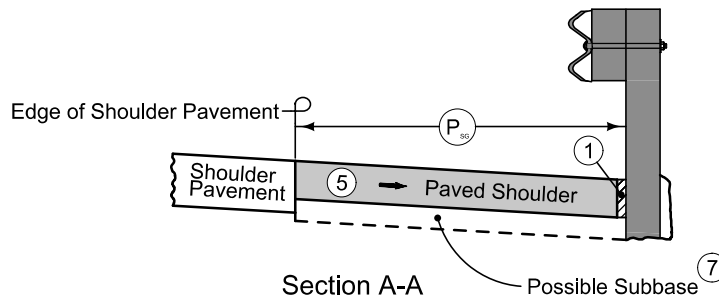
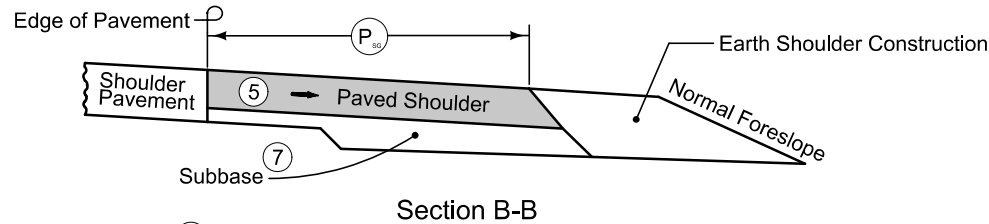
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

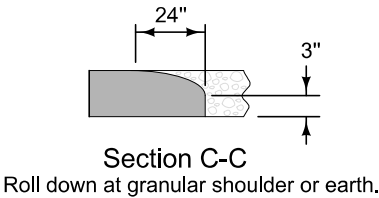
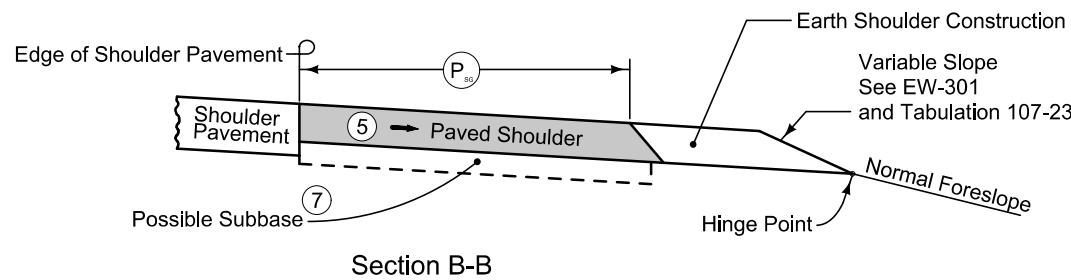
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'BT' (per PV-101) joint for PCC shoulder.  
'B' (per PV-101) joint for HMA shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the full width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.



NEW CONSTRUCTION



EXISTING SHOULDER



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

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

| Item no. | Item Code    | Item                                                    | Unit | Quantities    | Estimate Reference Notes                                                                                                                                                                                                  |
|----------|--------------|---------------------------------------------------------|------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |              |                                                         |      | Estimated     |                                                                                                                                                                                                                           |
|          |              |                                                         |      | Roadway Items |                                                                                                                                                                                                                           |
| 1        | 2102-0425070 | SPECIAL BACKFILL                                        | TON  | 733.258       | Refer to D sheets and Tab 112-09 in the C sheets for details.<br><br>Special Backfill PCC 733.258 Tons or Special Back fill HMA 635.68 Tons                                                                               |
| 2        | 2102-2713090 | EXCAVATION, CLASS 13, WASTE                             | CY   | 701.1         | Refer to Tab 112-09 in the C sheets for details. This quantity is included in the Detail 7158 "Paved shoulder at Guardrail"<br><br>Dispose of excess material according to Article 1106.07 of the current specifications. |
| 3        | 2301-0690203 | BRIDGE APPROACH, BR-203                                 | SY   | 631.1         | Refer to Tab 112-06.                                                                                                                                                                                                      |
| 4        | 2304-0100000 | DETOUR PAVEMENT                                         | SY   | 1,656.9       | Refer to sheet B.1 and Tab. 112-9 in the C sheets for details.<br><br>This quantity is included in the quantity of "Paved Shoulder and Paved shoulder at guardrail" will be bid as detour pavement.                       |
| 5        | 2412-0000100 | LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK          | SY   | 1,530.7       | Refer to Tab 100-28 in the C sheet for details.                                                                                                                                                                           |
| 6        | 2503-0500402 | BRIDGE END DRAIN, DR-402                                | EACH | 2             | Refer to Tab. 104-08A in the C sheets for details.                                                                                                                                                                        |
| 7        | 2505-4008300 | STEEL BEAM GUARDRAIL                                    | LF   | 12.5          | Refer to Tab. 108-08A in the C sheets for details.                                                                                                                                                                        |
| 8        | 2505-4008410 | STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201 | EACH | 1             |                                                                                                                                                                                                                           |
| 9        | 2505-4021010 | STEEL BEAM GUARDRAIL END ANCHOR, BOLTED                 | EACH | 1             |                                                                                                                                                                                                                           |
| 10       | 2505-4021721 | STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206        | EACH | 1             |                                                                                                                                                                                                                           |

| Item no. | Item Code    | Item                                                   | Unit | Quantities    | Estimate Reference Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|--------------|--------------------------------------------------------|------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |              |                                                        |      | Estimated     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|          |              |                                                        |      | Roadway Items |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 11       | 2505-6765006 | REMOVE AND REINSTALL FORMED STEEL BEAM GUARDRAIL       | LF   | 343.6         | <p>The intent of this work is to remove and reinstall only 3 sides the SW, NW and NE Corner steel beam guardrail for placement of pavement.</p> <p>Carefully remove and stockpile steel beam guardrail for reinstallation. The Contractor has the option to leave the posts in place, or to remove and reinstall the posts at no additional cost to the Contracting Authority. Replace steel beam rail and posts damaged by the Contractor's operations at no additional cost to the Contracting Authority.</p> <p>Posts, delineators, and object markers are to remain in place. Replace posts, delineators, and object markers damaged by the Contractors operations at no additional cost to the Contracting Authority.</p> <p>Ensure that all posts are firm and plum prior to reinstalling the guardrail.</p> <p>Restore the area disturbed by removal and reinstallation operations to an acceptable condition.</p> <p>Method of Measurement: Measurement will be in linear feet, measured along the front of the rail, of steel beam guardrail (includes W-beam and Thrie-beam guardrail) removed and reinstalled.</p> <p>Basis of Payment: Payment will be at the contract unit price per linear foot of steel beam guardrail removed and reinstalled. Payment includes all labor, equipment, and materials required to remove and reinstall the steel beam guardrail.</p> |
| 12       | 2510-6745850 | REMOVAL OF PAVEMENT                                    | SY   | 1,597.2       | <p>A. Refer to Tabs.110-01 and on D Sheet for details.</p> <p>Sawcut line will be along the guardrail shoulder line (12' offset from centerline)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 13       | 2527-9263181 | PAVEMENT MARKINGS REMOVED                              | STA  | 28.09         | Refer to Tab. 108_22 in the C sheets for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 14       | 2527-9263209 | PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED | STA  | 29.09         | Refer to Tab. 108_22 in the C sheets for details. Apply 6" wide pavement markings on IA 149.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 15       | 2527-9263231 | REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE           | STA  | 17.44         | Refer to Tab. 108_22 in the C sheets for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 16       | 2528-8400048 | TEMPORARY BARRIER RAIL, CONCRETE                       | LF   | 1,200         | <p>Refer to Tab. 108-33 in the C sheets for details.</p> <p>All temporary barrier rail shall be nominal 12'-6 long concrete units.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 17       | 2528-8400256 | TEMPORARY TRAFFIC SIGNALS                              | EACH | 2             | Refer to Tab. 108-28 in the C Sheets for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 18       | 2528-8445110 | TRAFFIC CONTROL                                        | LS   | 1             | <p>Refer to Traffic Control Plan in J sheets.</p> <p>Refer to Tab 108-26A for details.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 19       | 2528-8445113 | FLAGGERS                                               | EACH | 0             | See Proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Item no. | Item Code    | Item                                     | Unit | Quantities    | Estimate Reference Notes                                                                                                                                                                                                                                 |
|----------|--------------|------------------------------------------|------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |              |                                          |      | Estimated     |                                                                                                                                                                                                                                                          |
|          |              |                                          |      | Roadway Items |                                                                                                                                                                                                                                                          |
| 20       | 2551-0000110 | TEMP CRASH CUSHION                       | EACH | 4             | Refer to Tab. 108-30 in the C sheets for details.                                                                                                                                                                                                        |
| 21       | 2555-0000010 | DELIVER AND STOCKPILE SALVAGED MATERIALS | LS   | 1             | Refer to Tab. 110-13 in the C sheets for details.<br><br>SE Guardrail only will be delivered to: Iowa DOT Sigourney maintenance garage; 23301 Iowa 149, Sigourney, IA 52591; Martin Scharff Highway Maintenance Supervisor (641) 622-3170 (641) 777-8423 |
|          |              |                                          |      |               |                                                                                                                                                                                                                                                          |
|          |              |                                          |      |               |                                                                                                                                                                                                                                                          |
|          |              |                                          |      |               |                                                                                                                                                                                                                                                          |

| INDEX OF TABULATIONS |                                                                     |           | 111_25<br>4/21/26 |
|----------------------|---------------------------------------------------------------------|-----------|-------------------|
| Tabulation           | Tabulation Title                                                    | Sheet No. |                   |
| 111_25               | INDEX OF TABULATIONS                                                | C.4       |                   |
| 105_04               | STANDARD ROAD PLANS                                                 | C.5       |                   |
| 100_28               | LONGITUDINAL GROOVING                                               | C.6       |                   |
| 104_08               | BRIDGE END DRAINS                                                   | C.7       |                   |
| 108_08A              | STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION | C.8       |                   |
| 108_22               | PAVEMENT MARKING LINE TYPES                                         | C.9       |                   |
| 108_28               | TEMPORARY TRAFFIC SIGNALS                                           | C.10      |                   |
| 108_30               | CRASH CUSHIONS                                                      | C.11      |                   |
| 108_33               | TEMPORARY BARRIER RAIL                                              | C.12      |                   |
| 110_01               | REMOVAL OF PAVEMENT                                                 | C.13      |                   |
| 110_07A              | REMOVAL OF STEEL BEAM GUARDRAIL                                     | C.14      |                   |
| 110_13               | DELIVERY AND STOCKPILING                                            | C.15      |                   |
| 112_06               | BRIDGE APPROACH SECTION                                             | C.16      |                   |
| 112_09               | SHOULDERS                                                           | C.17      |                   |
|                      |                                                                     |           |                   |



| <div>105_04<br/>4/21/26</div> <div>STANDARDS</div> <div>The following Standards apply to construction work on this project.</div> |          |                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------|
| Number                                                                                                                            | Date     | Title                                                         |
| BA-200                                                                                                                            | 04-21-26 | Steel Beam Guardrail Components                               |
| BA-201                                                                                                                            | 10-18-22 | Steel Beam Guardrail Barrier Transition Section (MASH TL-3)   |
| BA-202                                                                                                                            | 04-15-25 | Steel Beam Guardrail Bolted End Anchor                        |
| BA-206                                                                                                                            | 10-19-21 | Steel Beam Guardrail Flared End Terminal For Cable Connection |
| BA-401                                                                                                                            | 04-20-21 | Temporary Barrier Rail (Precast Concrete)                     |
| BA-500                                                                                                                            | 04-20-21 | Temporary Crash Cushions Sand Barrel                          |
| BR-203                                                                                                                            | 04-21-26 | Double Reinforced 12in Approach                               |
| BR-211                                                                                                                            | 04-21-26 | Bridge Approach (Abutting PCC or Composite Pavement)          |
| DR-402                                                                                                                            | 04-16-24 | Rock Flume for Bridge End Drain                               |
| PM-110                                                                                                                            | 10-15-24 | Line Types                                                    |
| PV-101                                                                                                                            | 10-21-25 | Joints                                                        |
| PM-115                                                                                                                            | 04-15-25 | Grooving for Line Types                                       |
| SI-173                                                                                                                            | 04-19-16 | Object Markers                                                |
| SI-211                                                                                                                            | 10-18-22 | Object Marker and Delineator Placement with Guardrail         |
| TC-1                                                                                                                              | 10-15-19 | Work Not Affecting Traffic (Two-Lane or Multi-Lane)           |
| TC-202                                                                                                                            | 04-18-23 | Work Within 15 ft of Traveled Way                             |
| TC-213                                                                                                                            | 04-18-23 | Lane Closure with Flaggers                                    |
| TC-217                                                                                                                            | 10-21-25 | Lane Closure with Signals and TBR                             |
|                                                                                                                                   |          |                                                               |

| LONGITUDINAL GROOVING |            |                |
|-----------------------|------------|----------------|
| Location              | Total (SY) | Remarks        |
| 679+65.00             | 312.9      | North Approach |
| 679+65.00             | 312.9      | South Approach |
| 679+65.00             | 904.9      | Bridge Deck    |
| Total:                |            | 1530.7         |

100\_28  
8/15/22

| SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN |               |                            |                       |                                                       |                                              |                            |                           |                         |                     | 104_08A<br>8/15/22 |
|-----------------------------------------------------|---------------|----------------------------|-----------------------|-------------------------------------------------------|----------------------------------------------|----------------------------|---------------------------|-------------------------|---------------------|--------------------|
| Refer to Standard Road Plan DR-401 and DR-402       |               |                            |                       |                                                       |                                              |                            |                           |                         |                     |                    |
| Bridge Station                                      | Bridge Corner | Distance DI-1 or DI-2 (FT) | Bridge End Drain Type | Special Ditch Control, Wood Excelsior Mat EC-101 (SQ) | Turf Reinforced Mat (TRM) Type 2 EC-104 (SQ) | Transition Mat EC-105 (SF) | Macadam Stone Base (TONS) | Engineering Fabric (SY) | Erosion Stone (TON) | Remarks            |
| 679+65.00                                           | SE            | 42.0                       | DR-402                |                                                       |                                              |                            | 1.400                     | 73.0                    | 96.480              | SE corner          |
| 679+65.00                                           | NE            | 42.0                       | DR-402                |                                                       |                                              |                            | 1.400                     | 67.7                    | 89.280              | NE corner          |
| Total:                                              |               |                            |                       |                                                       |                                              |                            | 2.8                       |                         |                     |                    |

Note: 2.8 Ton of Macadam Stone Base add another 30% to this quantity for irregularity's found in the field. Total = 3.64 Ton of Macadam Stone

108\_08A

4/25/25

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-209, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.

(2) Not a bid item. Incidental to guardrail installation.

| Line No. | Direction of Travel (1) | Side  | Station   | Offset (FT) | Barrier Transition Section | Barrier Transition Section (EA) | End Terminal | End Terminal Count (EA) | VT1 (LF) | VF (LF) | VT2 (LF) | ET (LF) | BA-211 Station | BA-211 (Type) | SI-211 (Type) (2) | Delineator SI-172 Type 1 (EA) (2) | Object Marker Type 2 (EA) (2) | Object Marker Type 3 Lt (EA)(2) | Object Marker Type 3 Rt (EA)(2) | Bolted End Anchor BA-202 (Type) | Bolted End Anchor BA-202 (EA) | Post Adapter BA-210 (EA) | Steel Beam Guardrail BA-200 (LF) | Remarks   |
|----------|-------------------------|-------|-----------|-------------|----------------------------|---------------------------------|--------------|-------------------------|----------|---------|----------|---------|----------------|---------------|-------------------|-----------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|--------------------------|----------------------------------|-----------|
|          | NB                      | Right | 678+61.20 | 20.0        | BA-201                     | 1                               | BA-206       | 1                       | 53.125   |         |          | 37.50   |                |               | 3                 |                                   |                               |                                 | 1                               | C                               | 1                             |                          | 12.5                             | SE Corner |
|          |                         |       |           |             |                            |                                 |              |                         |          |         |          |         |                |               |                   |                                   |                               |                                 |                                 |                                 |                               |                          |                                  |           |

108\_22  
11/25/25

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.  
\*BCY4 - Place on the same side of the roadway to match existing markings near the project.  
\*\*NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.  
\*\*\*MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.  
BCY4: Broken Centerline (Yellow) @ 0.17    BCY6: Broken Centerline (Yellow) @ 0.25    BLC6: Broken Line Contrast (White/Black) @ 0.50    BLW4: Broken Lane Line (White) @ 0.17    BLW6: Broken Lane Line (White) @ 0.25  
CBW6: Crosswalk Bar (White) @ 10.00    CHW8: Channelizing Line (White) @ 1.33    CHW10: Channelizing Line (White) @ 1.67    CHY8: Channelizing Line (Yellow) @ 1.33    CHY10: Channelizing Line (Yellow) @ 1.67  
CLW6: Crosswalk Line (White) @ 2.00    DCY4: Double Centerline (Yellow) @ 1.34    DCY6: Double Centerline (Yellow) @ 2.00    DDY4: Double Dotted Line (Yellow) @ 0.44    DDY6: Double Dotted Line (Yellow) @ 0.67  
DLW4: Dotted Line (White) @ 0.22    DLW6: Dotted Line (White) @ 0.33    DLY4: Dotted Line (Yellow) @ 0.22    DLY6: Dotted Line (Yellow) @ 0.33    ELW4: Edge Line Right (White) @ 0.67  
ELW6: Edge Line Right (White) @ 1.00    ELY4: Edge Line Left (Yellow) @ 0.67    ELY6: Edge Line Left (Yellow) @ 1.00    LDW8: Lane Drop (White) @ 0.33    LDW10: Lane Drop (White) @ 0.42  
MNY6: Median Nose (Yellow) @ 1.00    NPY4: No Passing Zone Line (Yellow) @ 0.84    NPY6: No Passing Zone Line (Yellow) @ 1.25    RLW4: Ramp Edge Line Right (White) @ 0.67    RLW6: Ramp Edge Line Right (White) @ 1.00  
RLY4: Ramp Edge Line Left (Yellow) @ 0.67    RLY6: Ramp Edge Line Left (Yellow) @ 1.00    SLW2: Stop Line (White) @ 4.00    SLW4: Solid Lane Line (White) @ 0.67    SLW6: Solid Lane Line (White) @ 1.00  
SPW4: Sloped Curb 4" (White) @ 2.16    SPW6: Sloped Curb 6" (White) @ 2.28    SPY4: Sloped Curb 4" (Yellow) @ 2.16    SPY6: Sloped Curb 6" (Yellow) @ 2.28    STW6: Standard Curb 6" (Yellow) @ 2.03  
STY6: Standard Curb 6" (Yellow) @ 2.03    YLW2: Yield Line (White) @ 1.15

| Road ID                                          | Station From | Station To | Lane   | Marking Type                       | Left | Center | Right | Groove Marking Needed? | Groove Qty. (STA) | BCY4* (STA) | BCY4* Factored (STA) | BCY6 (STA) | BCY6 Factored (STA) | ELW4 (STA) | ELW4 Factored (STA) | ELW6 (STA) | ELW6 Factored (STA) | SLW2 (STA) | SLW2 Factored (STA) | Remarks                    |
|--------------------------------------------------|--------------|------------|--------|------------------------------------|------|--------|-------|------------------------|-------------------|-------------|----------------------|------------|---------------------|------------|---------------------|------------|---------------------|------------|---------------------|----------------------------|
| IA 149                                           | 672+90.00    | 685+40.00  | Center | Removal of Paint                   |      | X      |       |                        |                   | 12.50       | 2.13                 |            |                     |            |                     |            |                     |            |                     | Remove Existing Centerline |
| IA 149                                           | 672+90.00    | 685+40.00  | Both   | Removal of Paint                   | X    |        | X     |                        |                   |             |                      |            |                     |            |                     | 25.00      | 25.00               |            |                     |                            |
| IA 149                                           | 673+90.00    | 673+90.00  | NB     | Removal of Paint                   |      |        | X     |                        |                   |             |                      |            |                     |            |                     |            |                     | 0.12       | 0.48                | Stop Line                  |
| IA 149                                           | 685+40.00    | 685+40.00  | SB     | Removal of Paint                   |      |        | X     |                        |                   |             |                      |            |                     |            |                     |            |                     | 0.12       | 0.48                | Stop Line                  |
| 2.13250.96                                       |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| Marking Type Removal of Paint:                   |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| IA 149                                           | 673+90.00    | 676+30.00  | NB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 676+30.00    | 677+15.00  | NB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 682+15.00    | 683+00.00  | NB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 683+00.00    | 685+40.00  | NB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 673+90.00    | 676+30.00  | SB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 676+30.00    | 677+15.00  | SB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 682+15.00    | 683+00.00  | SB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 683+00.00    | 685+40.00  | SB     | Removal of Removable Tape          | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (* See Note)         |
| 17.44                                            |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| Marking Type Removal of Removable Tape:          |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| IA 149                                           | 672+90.00    | 685+40.00  | Both   | Waterborne/Solvent Paint           | X    |        | X     | Yes                    | 25.00             |             |                      |            |                     |            |                     | 25.00      | 25.00               |            |                     |                            |
| IA 149                                           | 672+90.00    | 685+40.00  | Center | Waterborne/Solvent Paint           |      | X      |       | Yes                    | 3.13              |             |                      | 12.50      | 3.13                |            |                     |            |                     |            |                     |                            |
| IA 149                                           | 673+90.00    | 673+90.00  | NB     | Waterborne/Solvent Paint           |      |        | X     | Yes                    | 0.48              |             |                      |            |                     |            |                     |            |                     | 0.12       | 0.48                | Stop Line                  |
| IA 149                                           | 685+40.00    | 685+40.00  | SB     | Waterborne/Solvent Paint           |      |        | X     | Yes                    | 0.48              |             |                      |            |                     |            |                     |            |                     | 0.12       | 0.48                | Stop Line                  |
| 29.093.13250.96                                  |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| Marking Type Waterborne/Solvent Paint:           |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| IA 149                                           | 673+90.00    | 676+30.00  | NB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (*See Note)          |
| IA 149                                           | 676+30.00    | 677+15.00  | NB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 682+15.00    | 683+00.00  | NB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 683+00.00    | 685+40.00  | NB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 673+90.00    | 676+30.00  | SB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (*See Note)          |
| IA 149                                           | 676+30.00    | 677+15.00  | SB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 682+15.00    | 683+00.00  | SB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 1.70       | 1.14                |            |                     |            |                     | Stage (* See Note)         |
| IA 149                                           | 683+00.00    | 685+40.00  | SB     | Wet Retroreflective Removable Tape | X    |        |       |                        |                   |             |                      |            |                     | 4.80       | 3.22                |            |                     |            |                     | Stage (* See Note)         |
| 17.44                                            |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| Marking Type Wet Retroreflective Removable Tape: |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |
| Total:29.092.133.1334.88501.92                   |              |            |        |                                    |      |        |       |                        |                   |             |                      |            |                     |            |                     |            |                     |            |                     |                            |

Waterborne Solvent Paint Total 29.09  
Wet Retroreflective Removable Tape Total 17.44  
Removal of Removable Tape Total 17.44  
Removal of Paint Total 28.09  
\* Length was doubled because tape should be 8" (two 4" strips side by side)

FILE NO.32566ENGLISHDESIGN TEAMTa/McClanahan

KEOKUK COUNTYPROJECT NUMBERBRF-149-1(098)--38-54

SHEET NUMBERC.9

5/1/2026 9:21:26 AMsherrrie.mccclanahan@iowadot.us

| TEMPORARY TRAFFIC SIGNALS |           |                  |                 |
|---------------------------|-----------|------------------|-----------------|
| Item No.                  | Station   | Signal Type      | Remarks         |
| 1                         | 674+90.00 | One Lane Traffic | South of Bridge |
| 1                         | 684+40.00 | One Lane Traffic | North of Bridge |

108\_28  
8/15/22



CRASH CUSHIONS

108\_30  
4/16/24

- \* Bid Item  
1. Lane(s) to which the installation is adjacent.  
2. Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500.

| Line No. | Lane | Station   | Side  | Obstacle Width (FT) | Crash Cushion Type | Crash Cushion Quantity | V (FT) (2) | W (FT) (2) | X (FT) (2) | Y (FT) (2) | Z (FT) (2) | Excavation Class 10* (CY) | Embankment in Place* (CY) | Obstacle Description | Remarks |
|----------|------|-----------|-------|---------------------|--------------------|------------------------|------------|------------|------------|------------|------------|---------------------------|---------------------------|----------------------|---------|
|          |      |           |       |                     |                    |                        |            |            |            |            |            |                           |                           |                      |         |
| 1.0      | NB   | 679+65.00 | Right | 2.0                 | Temporary          | 2                      |            |            |            |            |            |                           |                           | TBR                  |         |
| 2.0      | SB   | 679+65.00 | Left  | 2.0                 | Temporary          | 2                      |            |            |            |            |            |                           |                           | TBR                  |         |

| <div>108_33<br/>8/15/22</div> <div>TEMPORARY BARRIER RAIL</div> <div>Possible Standard: BA-401 Possible Detail: 560-7</div> <div>* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.</div> |            |             |                   |           |                             |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------------|-----------|-----------------------------|-----------------------------------|
| Station From                                                                                                                                                                                                                                                                                                                                       | Station To | Length (FT) | Barrier Rail Type | Anchored* | Modular Glare Screen System | Remarks                           |
| 676+65.00                                                                                                                                                                                                                                                                                                                                          | 682+65.00  | 600.0       | Concrete BA-401   | Yes       | No                          | Stage Traffic on North Bound Lane |
| 676+65.00                                                                                                                                                                                                                                                                                                                                          | 682+65.00  | 600.0       | Concrete BA-401   | No        | No                          | Stage Traffic on South Bound Lane |

\* Note: See Anchor note in the B.1 sheet.

| <div>REMOVAL OF PAVEMENT</div> <div>Refer to Tabulation 102-5.</div> |              |            |      |               |           |               | 110_01<br>4/5/24       |
|----------------------------------------------------------------------|--------------|------------|------|---------------|-----------|---------------|------------------------|
| * Not a bid item.                                                    |              |            |      |               |           |               |                        |
| Line No.                                                             | Station From | Station To | Side | Pavement Type | Area (SY) | Saw Cut* (LF) | Remarks                |
| 0.5                                                                  | 677+85.96    | 678+56.00  | Both | PCC           | 316.0     | 24.0          | South Approach         |
| 0.6                                                                  | 680+74.00    | 681+45.40  | Both | PCC           | 318.9     | 24.0          | North Approach         |
| 1.0                                                                  | 677+44.36    | 677+85.96  | NB   | PCC           | 49.5      | 42.0          | Guardrail Paving South |
| 2.0                                                                  | 681+45.40    | 682+06.30  | NB   | PCC           | 73.1      | 71.0          | Guardrail Paving North |
| 3.0                                                                  | 677+26.71    | 677+85.96  | SB   | PCC           | 67.8      | 60.0          | Guardrail Paving South |
| 4.0                                                                  | 681+45.40    | 682+17.76  | SB   | PCC           | 84.4      | 72.0          | Guardrail Paving North |
| 5.0                                                                  | 672+90.00    | 677+26.71  | SB   | HMA           | 194.1     | 436.7         |                        |
| 6.0                                                                  | 672+90.00    | 677+44.36  | NB   | HMA           | 201.9     | 454.4         |                        |
| 7.0                                                                  | 682+06.30    | 685+40.00  | NB   | HMA           | 148.3     | 333.7         |                        |
| 8.0                                                                  | 682+17.76    | 685+40.00  | SB   | HMA           | 143.2     | 322.2         |                        |
| Total:                                                               |              |            |      |               | 1597.2    | 1840          |                        |

\*Sawcut line will be along the shoulder line East and West of the Approach (12' offset from centerline) and across roadway at North and South Approach.

110\_07A  
8/15/22

| REMOVAL OF STEEL BEAM GUARDRAIL                       |                                |                 |               |       |                                     |
|-------------------------------------------------------|--------------------------------|-----------------|---------------|-------|-------------------------------------|
| (1) Lane(s) to which the installation is adjacent.    |                                |                 |               |       |                                     |
| (2) Includes length of End Terminals and End Anchors. |                                |                 |               |       |                                     |
| No.                                                   | Direction<br>of Traffic<br>(1) | Station<br>From | Station<br>To | Side  | Removal of<br>Guardrail (2)<br>(LF) |
| IA 149                                                | NB                             | 677+55.00       | 678+61.00     | Right | 115.0                               |
| IA 149                                                | NB                             | 680+80.00       | 720+27.00     | Right | 117.0                               |
| IA 149                                                | SB                             | 680+68.00       | 682+00.00     | Right | 142.0                               |
| IA 149                                                | SB                             | 677+45.00       | 678+50.00     | Right | 142.0                               |
| Total:                                                |                                |                 |               |       | 516                                 |

The intent of this work is to remove and reinstall only 3 sides the SW, NW and NE Corner steel beam guardrail for placement of pavement.  
Replace the SE corner with modified guardrail.

|                          |                  |          |                   |                   |              |                |                   |
|--------------------------|------------------|----------|-------------------|-------------------|--------------|----------------|-------------------|
| DELIVERY AND STOCKPILING |                  |          |                   |                   |              |                | 110_13<br>8/15/22 |
| Line No.                 | Item Description | Quantity | Quantity<br>Units | Delivery Location | Contact Name | Contact Number | Remarks           |
|                          |                  |          |                   |                   |              |                |                   |

112\_06  
2/22/24

| BRIDGE APPROACH SECTION |     |                           |                            |                    |                 |                      |                         |                         |              |                   |                       |                               |                         |                        |                        |                                         |                          |                     |                          |                |  |  |
|-------------------------|-----|---------------------------|----------------------------|--------------------|-----------------|----------------------|-------------------------|-------------------------|--------------|-------------------|-----------------------|-------------------------------|-------------------------|------------------------|------------------------|-----------------------------------------|--------------------------|---------------------|--------------------------|----------------|--|--|
| Refer to the BR Series. |     |                           |                            |                    |                 |                      |                         |                         |              |                   |                       |                               |                         |                        |                        |                                         |                          |                     |                          |                |  |  |
| * Not a bid item        |     |                           |                            |                    |                 |                      |                         |                         |              |                   |                       |                               |                         |                        |                        |                                         |                          |                     |                          |                |  |  |
| Bridge Station          | End | Skew Ahead Left (Degrees) | Skew Ahead Right (Degrees) | (T) Thickness (IN) | Pay Length (FT) | Non-Reinf. Area (SY) | Single-Reinf. Area (SY) | Double-Reinf. Area (SY) | SRP Approach | SRP Abutment Type | SRP Abutting Pavement | Perforated * 4" Subdrain (LF) | Subdrain * Outlet (STA) | Subdrain * Outlet Side | Porous * Backfill (CY) | Class 'A' * Crushed Stone Backfill (CY) | Modified * Subbase (TON) | Polymer * Grid (SY) | Special * Backfill (TON) | Remarks        |  |  |
| 679+65.00               | N   |                           | 15.0                       | 12.0               | 70.4            | 133.4                | 89.4                    | 93.1                    | BR-203       | Movable           | BR-211                | 52.0                          | 681+34.36               | Right                  | 1.5                    | 0.2                                     | 325.000                  | 352.5               |                          | North Approach |  |  |
| 679+65.00               | S   |                           | 15.0                       | 12.0               | 70.4            | 137.7                | 89.3                    | 88.2                    | BR-203       | Movable           | BR-211                | 52.0                          | 677+95.64               | Right                  | 1.5                    | 0.2                                     | 325.000                  | 352.5               |                          | South Approach |  |  |
| Total:                  |     |                           |                            |                    | 140.8           | 271.1                | 178.7                   | 181.3                   |              |                   |                       |                               |                         |                        |                        | 3                                       | 0.4                      | 650                 | 705                      |                |  |  |

Nonreinforced        271.1 SY  
Single Reinforced   178.7 SY  
Double Reinforced   181.3 SY  
Total                    631.1 SY



112.09  
4/21/26

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.  
(2) See Typ. 7156, 7157, or 7158.  
(3) Bid Item.  
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.  
(5) Bid Item. Typ. 7156, 7157, or 7158.  
(6) Does not include shrink.  
(7) Paved shoulder thickness specified in Remarks.  
(8) Subbase type specified in Remarks.

| Roadway<br>Identifi-<br>cation | Direct<br>ion of<br>Travel<br>(1) | Station<br>From | Station<br>To | Side  | P<br>Start<br>Width<br>(FT) | P End<br>Width<br>(FT) | P<br>Width<br>(FT) | P_SG<br>Start<br>Width<br>(FT) | P_SG<br>End<br>Width<br>(FT) | P SG<br>Width<br>(2)<br>(FT) | L<br>Length<br>(FT) | Class 13<br>Excavation<br>(CY)(3)(4) | Cross<br>Secti-<br>on<br>Area | HMA<br>(TON) | HMA<br>(TON/<br>STA) | Binder<br>(TONS) | Paved<br>Shoulder<br>(3) (SY) | Shoulder<br>at<br>Grdrail<br>(5)(7) | Backfill<br>Cross<br>Section<br>Area HMA | Backfill<br>Cross<br>Section<br>Area PCC | Backfill<br>HMA Alt.<br>(3)<br>(TON) | Backfill<br>HMA Alt.<br>(TON/<br>STA) | Backfill<br>PCC Alt.<br>(3)<br>(TON) | Backfill<br>PCC Alt.<br>(TON/<br>STA) | Const.<br>Cross<br>Section<br>Area HMA | Const.<br>Cross<br>Section<br>Area PCC | Shoulder<br>Const.<br>Alt (3)<br>(STA) | Shoulder<br>Const.<br>Alt HMA<br>(6) (CY) | Shoulder<br>Const.<br>Alt PCC<br>(6) (CY) | Remarks            |
|--------------------------------|-----------------------------------|-----------------|---------------|-------|-----------------------------|------------------------|--------------------|--------------------------------|------------------------------|------------------------------|---------------------|--------------------------------------|-------------------------------|--------------|----------------------|------------------|-------------------------------|-------------------------------------|------------------------------------------|------------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|-------------------------------------------|-------------------------------------------|--------------------|
| IA 149                         | NB                                | 672+90.00       | 677+44.36     | Right | 8.0                         | 8.0                    | 8.0                | 0.0                            | 0.0                          |                              | 454.36              | 168.3                                | 6.26                          | 199.101      | 43.820               | 11.946           | 403.9                         |                                     | 4.85                                     | 5.63                                     | 154.255                              | 33.950                                | 179.063                              | 39.410                                | 7.34                                   | 5.95                                   | 4.54                                   | 123.52                                    | 100.13                                    | Strengthening *    |
| IA 149                         | NB                                | 682+06.30       | 685+40.00     | Right | 8.0                         | 8.0                    | 8.0                | 0.0                            | 0.0                          |                              | 333.70              | 123.7                                | 6.26                          | 146.227      | 43.820               | 8.774            | 296.6                         |                                     | 4.85                                     | 5.63                                     | 113.291                              | 33.950                                | 131.511                              | 39.410                                | 7.34                                   | 5.95                                   | 3.34                                   | 90.72                                     | 73.54                                     | Strengthening *    |
| IA 149                         | SB                                | 672+90.00       | 677+26.71     | Left  | 8.0                         | 8.0                    | 8.0                | 0.0                            | 0.0                          |                              | 436.71              | 161.7                                | 6.26                          | 191.366      | 43.820               | 11.482           | 388.2                         |                                     | 4.85                                     | 5.63                                     | 148.263                              | 33.950                                | 172.107                              | 39.410                                | 7.34                                   | 5.95                                   | 4.37                                   | 118.72                                    | 96.24                                     | Strengthening *    |
| IA 149                         | SB                                | 682+17.76       | 685+40.00     | Left  | 8.0                         | 8.0                    | 8.0                | 0.0                            | 0.0                          |                              | 322.24              | 119.3                                | 6.26                          | 141.206      | 43.820               | 8.472            | 286.4                         |                                     | 4.85                                     | 5.63                                     | 109.400                              | 33.950                                | 126.995                              | 39.410                                | 7.34                                   | 5.95                                   | 3.22                                   | 87.60                                     | 71.01                                     | Strengthening *    |
| IA 149                         | NB                                | 677+44.36       | 677+85.96     | Right | 0.0                         | 0.0                    |                    | 12.0                           | 9.7                          | 11                           | 41.60               | 21.2                                 | 8.50                          | 24.752       | 59.500               | 1.485            |                               | 50.2                                | 6.33                                     | 7.13                                     | 18.433                               | 44.310                                | 20.763                               | 49.910                                | 7.34                                   | 5.95                                   | 0.42                                   | 11.31                                     | 9.17                                      | Guardrail Paving * |
| IA 149                         | NB                                | 681+45.40       | 682+06.30     | Right | 0.0                         | 0.0                    |                    | 9.0                            | 13.0                         | 12                           | 60.90               | 33.8                                 | 9.25                          | 39.433       | 64.750               | 2.366            |                               | 74.4                                | 6.83                                     | 7.63                                     | 29.116                               | 47.810                                | 32.527                               | 53.410                                | 7.34                                   | 5.95                                   | 0.61                                   | 16.56                                     | 13.42                                     | Guardrail Paving * |
| IA 149                         | SB                                | 677+26.71       | 677+85.96     | Left  | 0.0                         | 0.0                    |                    | 12.8                           | 8.7                          | 12                           | 59.25               | 32.9                                 | 9.25                          | 38.364       | 64.750               | 2.302            |                               | 70.8                                | 6.83                                     | 7.63                                     | 28.327                               | 47.810                                | 31.645                               | 53.410                                | 7.34                                   | 5.95                                   | 0.59                                   | 16.11                                     | 13.06                                     | Guardrail Paving * |
| IA 149                         | SB                                | 681+45.40       | 682+17.76     | Left  | 0.0                         | 0.0                    |                    | 8.3                            | 13.2                         | 12                           | 72.36               | 40.2                                 | 9.25                          | 46.853       | 64.750               | 2.811            |                               | 86.4                                | 6.83                                     | 7.63                                     | 34.595                               | 47.810                                | 38.647                               | 53.410                                | 7.34                                   | 5.95                                   | 0.72                                   | 19.67                                     | 15.95                                     | Guardrail Paving * |
| Total:                         |                                   |                 |               |       |                             |                        |                    |                                |                              |                              | 1781.12             | 701.1                                |                               | 827.302      | 429.03               | 49.638           | 1375.1                        | 281.8                               | 46.22                                    | 52.54                                    | 635.68                               |                                       | 733.258                              |                                       | 58.72                                  | 47.6                                   | 17.81                                  | 484.21                                    | 392.52                                    |                    |

\*

Paved PCC Shoulder

Total = 1375.1

Paved PCC Shoulder at Guardrail

Total = 281.8

Total

1656.9

Paved HMA Shoulder

Total = 1375.1

Paved HMA Shoulder at Guardrail

Total = 281.8

Total

1656.9

SURVEY SYMBOLS

|  |                                   |  |                              |
|--|-----------------------------------|--|------------------------------|
|  | Interstate Highway Symbol         |  | Septic Tank                  |
|  | U.S. Highway Symbol               |  | Cistern                      |
|  | Iowa Highway Symbol               |  | L.P. Gas Tank (No Footing)   |
|  | County Road Highway Symbol        |  | Underground Storage Tank     |
|  | Evergreen Tree                    |  | Latrine                      |
|  | Deciduous Tree                    |  | Satellite TV Dish            |
|  | Fruit Tree                        |  | Water Hook Up                |
|  | Shrub (Bushes)                    |  | Radio Tower                  |
|  | Timber                            |  | Tower Anchor                 |
|  | Hedge                             |  | Guardrail (Beam or Cable)    |
|  | Stump                             |  | Guard Post (one or two)      |
|  | Swamp                             |  | Guard Post (over two)        |
|  | Rock Outcrop                      |  | Filler Pipe                  |
|  | Broken Concrete                   |  | Gas Valve                    |
|  | Revetment (Rip Rap)               |  | Water Valve                  |
|  | Cemetery                          |  | Speed Limit Sign             |
|  | Grave                             |  | Mile Marker Post             |
|  | Cave                              |  | Sign                         |
|  | Sink Hole                         |  | Traffic Signal Control Box   |
|  | Board Fence                       |  | Rail Road Signal Control Box |
|  | Chain Link or Security Fence      |  | Telephone Switch Box         |
|  | Wire Fence                        |  | Electric Box                 |
|  | Terrace                           |  |                              |
|  | Earth Dam or Dike (Existing)      |  |                              |
|  | Tile Outlet                       |  |                              |
|  | Edge of Water                     |  |                              |
|  | Existing Drainage                 |  |                              |
|  | Right of Way Rail or Lot Corner   |  |                              |
|  | Concrete Monument                 |  |                              |
|  | Well                              |  |                              |
|  | Windmill                          |  |                              |
|  | Beehive Intake                    |  |                              |
|  | Existing Intake                   |  |                              |
|  | Existing Utility Access (Manhole) |  |                              |
|  | Fire Hydrant                      |  |                              |
|  | Water Hydrant (Rural)             |  |                              |

UTILITY LEGEND

( MDC ) MODERN COOPERATIVE TELEPHONE  
Contact Name: Jeff Brower  
Contact Phone: 6412249702  
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( NEG ) NORTH ENGLISH COOP TELEPHONE  
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PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

| LINEWORK      | Design Color No. |  |                                                                     |
|---------------|------------------|--|---------------------------------------------------------------------|
| Green         | (2)              |  | Existing Topographic Features and Labels                            |
| Blue          | (1)              |  | Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation |
| Magenta       | (5)              |  | Existing Utilities                                                  |
| SHADING       | Design Color No. |  | Transparency                                                        |
| Pink, Dark    | (13)             |  | Temporary Pavement Shading 50%                                      |
| Yellow        | (4)              |  | Proposed Pavement Shading 50%                                       |
| Orange        | (6)              |  | Proposed Granular Shading 50%                                       |
| Orange        | (70)             |  | Proposed Shoulder Granular Shading 50%                              |
| Yellow        | (68)             |  | Proposed Shoulder Paved Full Depth Shading 50%                      |
| Yellow        | (132)            |  | Proposed Shoulder Paved Partial Depth Shading 50%                   |
| Brown, Light  | (236)            |  | Grading Shading 50%                                                 |
| Orange, Light | (134)            |  | Proposed Granular Entrance Shading 50%                              |
| Yellow        | (220)            |  | Proposed Paved Entrance Shading 50%                                 |
| Tan           | (8)              |  | Proposed Sidewalk Shading 50%                                       |
| Blue, Light   | (230)            |  | Proposed Sidewalk Landing Shading 50%                               |
| Pink          | (11)             |  | Proposed Sidewalk Ramp Shading 50%                                  |
| Red           | (3)              |  | Proposed Structure Shading 50%                                      |
| Red           | (3)              |  | Delineates Restricted Areas 0%                                      |

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

| LINEWORK    | Design Color No. |  |                                 |
|-------------|------------------|--|---------------------------------|
| Green       | (10)             |  | Existing Ground Line Profile    |
| Blue        | (1)              |  | Proposed Profile and Annotation |
| Magenta     | (5)              |  | Existing Utilities              |
| Blue, Light | (230)            |  | Proposed Ditch Grades, Left     |
| Black       | (0)              |  | Proposed Ditch Grades, Median   |
| Rust        | (14)             |  | Proposed Ditch Grades, Right    |

|  |                             |  |
|--|-----------------------------|--|
|  | Reference Point             |  |
|  | Station                     |  |
|  | Survey Line                 |  |
|  | Section Corner              |  |
|  | Ground Line Intercept       |  |
|  | Saw Cut                     |  |
|  | Guardrail                   |  |
|  | Trench Drain                |  |
|  | HighTension Cable Guardrail |  |
|  | Sheet Pile                  |  |
|  | Pavement Removal            |  |
|  |                             |  |

RIGHT-OF-WAY LEGEND

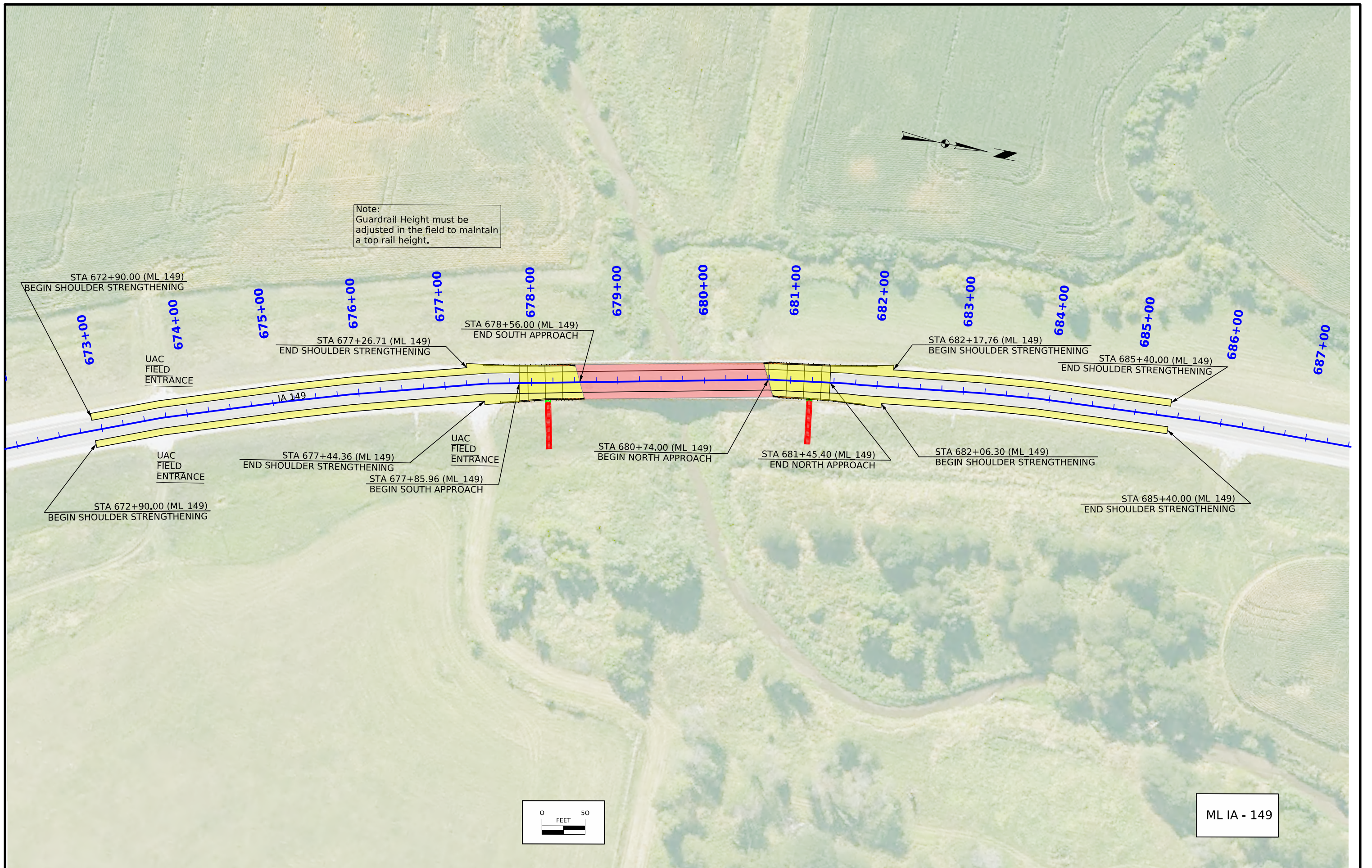
|  |                                    |
|--|------------------------------------|
|  | Proposed Right-of-Way Symbol       |
|  | Proposed Right-of-Way Line         |
|  | Existing Right of Way              |
|  | Existing and Proposed Right-of-Way |
|  | Easement and Existing Right-of-Way |
|  | Easement (Temporary) Symbol        |
|  | Easement (Temporary) Line          |
|  | Easement                           |
|  | C/A Access Control                 |
|  | Property Line Symbol               |
|  | Property Line                      |

PLAN AND PROFILE  
LEGEND AND SYMBOL  
INFORMATION SHEET

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

Drawing  
CUSTOM.DWG







108\_23A  
8/15/22

TRAFFIC CONTROL PLAN

Traffic on IA 149 shall be maintained at all times except as noted below.

Traffic control on this project shall be in accordance with the Standard Road Plans in Tabulation 105-4 and Tabulation 108-26A.

| 511 TRAVEL RESTRICTIONS |           |        |                          |                                      |                        |                                                     |                        |                         |                             |                                          |                                      | 108.25<br>3/28/24 |
|-------------------------|-----------|--------|--------------------------|--------------------------------------|------------------------|-----------------------------------------------------|------------------------|-------------------------|-----------------------------|------------------------------------------|--------------------------------------|-------------------|
| 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           |
| IA 149                  | NB        | Keokuk | IA 149 1.3 mi N of IA 22 | Bridge over South Fork English River | Traffic Control Device | 5447.45149                                          | Horizontal             | 40 Roadway              |                             |                                          |                                      | Stage 1           |
| IA 149                  | SB        | Keokuk | IA 149 1.3 mi N of IA 22 | Bridge over South Fork English River | Traffic Control Device | 5447.45149                                          | Horizontal             | 40 Roadway              |                             |                                          |                                      | Stage 2           |
|                         |           |        |                          |                                      |                        |                                                     |                        |                         |                             |                                          |                                      |                   |

108\_26A  
8/15/22

STAGING NOTES

Traffic on IA 149 shall be maintained at all times.

Shoulder strengthening will be constructed first. To shift traffic before stage 1.

Pavement Marking will be done during lane closure staging.

The staging typical are shown on the V sheets.

Construction: Bridge work and road work, Install rock flumes,  
Remove all Guardrails. Replace SE corner with modified guardrail to allow for field entrance and  
reinstall guardrail on all other corners in accordance with current standards.

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  |
|         | None Provided |
|         |               |