

Standard Road Plans

Standard Road Plans are listed on Sheet No. C.3.

Design Data Urban

Emmons St.

2019 AADT 3,660 V.P.D.  
TRUCKS Unknown %

Design Data Urban

I-380

2024 AADT 43,700 V.P.D.  
TRUCKS 16 %

Iowa DOT Bridges and Structures  
Consultant Coordinator Contact:  
Lili Yang

Index of Seals

| Sheet No. | Name             | Type                        |
|-----------|------------------|-----------------------------|
| A.1       | Travis L. Wallen | Structural & Roadway Design |
|           |                  |                             |
|           |                  |                             |
|           |                  |                             |
|           |                  |                             |
|           |                  |                             |
|           |                  |                             |

Structural & Roadway 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.

Signature  Date 03-12-2026

Printed or Typed Name Travis L. Wallen

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: All Sheets (A.1 - J.4)



PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM  
LINN COUNTY

Bridge Repair

On Emmons St. over I-380  
0.9 mi. N. of IA 100

Refer to the Plan Sheets for list of applicable specifications.

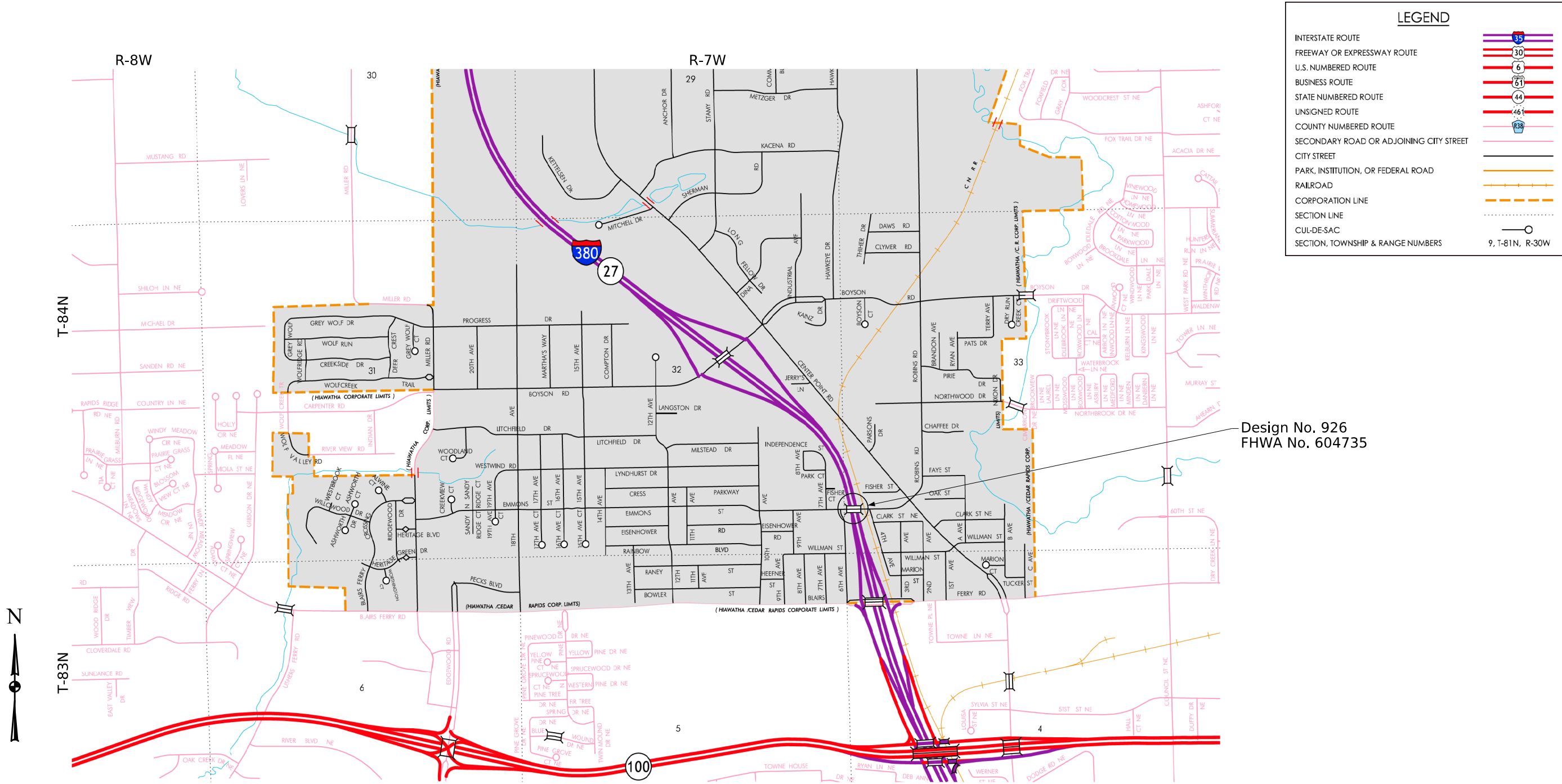
Value Engineering Saves. Refer to Article 1105.13 of the Specifications.



Revisions

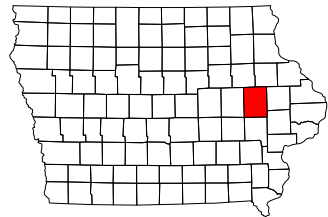
| Index of Sheets |                                   |
|-----------------|-----------------------------------|
| No.             | Description                       |
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| V.1             | Estimated Quantities - Design 926 |
| V.1 - V.5       | Design 926                        |
|                 |                                   |
| Road Sheets     | Road Plan                         |
| A.1 - J.4       | Road Plans                        |
| C.1             | Estimated Quantities - Road       |
| C.3             | Standard Plans - Road             |
|                 |                                   |
|                 |                                   |
|                 |                                   |

|                               |       |
|-------------------------------|-------|
|                               | TOTAL |
|                               | 15    |
| PROJECT IDENTIFICATION NUMBER |       |
| 26-57-380-050                 |       |
|                               |       |
| PROJECT NUMBER                |       |
| IMN-380-6(499)25--0E-57       |       |
| R.O.W. PROJECT NUMBER         |       |
|                               |       |
| PROJECT DIRECTORY NUMBER      |       |
| 5738005026                    |       |



City of Hiawatha Location Map

Not To Scale





| Estimated Bridge Repair Quantities and Reference Notes - Design 926 |              |                          |      |                      |  |
|---|--------------|--------------------------|------|----------------------|--|
| Item No.  | Item Code    | Item                     | Unit | Quantities Estimated | Estimate Reference Notes   |
| 1   | 2426-6772010 | BEAM REPAIR, AS PER PLAN | LS   | 1                    | Work shall be completed as specified on Design Sheets 4 and 5. All costs associated with repairing the prestressed concrete beams shall be included in the price bid for "Beam Repair, As Per Plan". Any other areas determined to need repair, if directed by the Engineer, will be paid for as extra work. |
| 2   | 2533-4980005 | MOBILIZATION             | LS   | 1                    | - - -  |

General Notes:

This design is for repairs to the existing 241'-3<sup>3</sup>/<sub>8</sub>" x 32'-0" Pretensioned Prestressed Concrete Beam Bridge on Emmons St. over I-380. 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 No. 2 for list of repair items.

All alignment, 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.

The Contractor shall restore any surfaces disturbed by construction to their original condition. This includes any grading, mulching, seeding, and fertilizing necessary. Seeding shall be rural seeding and shall be in accordance with Section 2601 of the Standard Specifications. Cost for this work shall be included in the "Mobilization" bid item.

Faint lines on plans indicate existing structure.

Beam Repair Notes:

Refer to Article 2426 of the Standard Specifications for materials and construction methods that are adequate for structural concrete repair of the damaged beams. Bonding grout will not be required.

Refer to Article 2426.03, B of the Standard Specifications for surface preparation requirements when the reinforcing steel has been exposed as a result of concrete spalling or removal of loose and unsound concrete.

Prepare the surface of the old concrete by removing all loose, disintegrated or unsound concrete from the beam as shown on these plans and as designated by the Engineer. All concrete removals shall be complete before commencing placement of new concrete. The edge of repair area shall be sawcut <sup>3</sup>/<sub>4</sub>" deep.

Utilize fast-setting repair mortar without forms. The mortar must adhere to Materials I.M. 491.08 for vertical and overhead use. Follow the concrete surface preparation according to the repair mortar manufacturer's recommendations. Place and cure the repair mortar in line with the manufacturer's guidelines.

Specifications for fiber reinforced polymer (FRP) repair of beams are included in the Developmental Specifications for "Fiber Reinforced Polymer Repair for Concrete Containment of Collision Damaged Pretensioned Prestressed Concrete Beams". The manufacturer of FRP laminates should be present to advise the Bridge Contractor on application and placement of FRP laminates.

All costs associated with the following shall be included in the price bid for "Beam Repair, As Per Plan":

- Removal of unsound or loose concrete, preparing, and cleaning repair areas.
- Restoring beam to its original cross sectional dimensions with fast-setting repair mortar as noted and shown in the plans.
- Application of fiber reinforced polymer laminates to the beam as shown in the plans and Developmental Specifications for "Fiber Reinforced Polymer Repair for Concrete Containment of Collision Damaged Pretensioned Prestressed Concrete Beams."

The cure time for the repairs shall follow what is recommended by the FRP manufacturer.

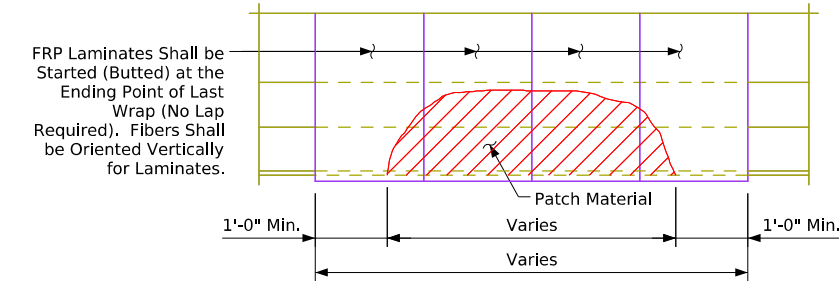
Specifications:

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 including:

- Developmental Specification for Fiber Reinforced Polymer Repair for Concrete Containment of Collision Damage Pretensioned Prestressed Concrete Beams



Impact Area Repair Detail

Design History at this Site

(Includes this Design)

| Des. No. | Type of Work                            |
|----------|---|
| 1079     | Original Design                         |
| ---      | Concrete Median for Railroad Quiet Zone |
| 424      | Slope Protection                        |
| 926      | Bridge Repair                           |
|          |   |

Note:  
Roadway Quantities are shown elsewhere in these plans.

Note:  
The roadway will be open to thru traffic. Refer to the traffic control plan shown elsewhere in these plans.

Design For Repairs to 12°52'31" Skew (R.A.)

241'-3<sup>3</sup>/<sub>8</sub>" x 32'-0" Pretensioned Prestressed Concrete Beam Bridge

30'-9" & 51'-7" End Spans

81'-6" & 77'-5<sup>3</sup>/<sub>8</sub>" Interior Span

General Notes and Estimated Quantities

STA. 2939+81.83 (Emmons St.)

Turn-in Date: April 2026

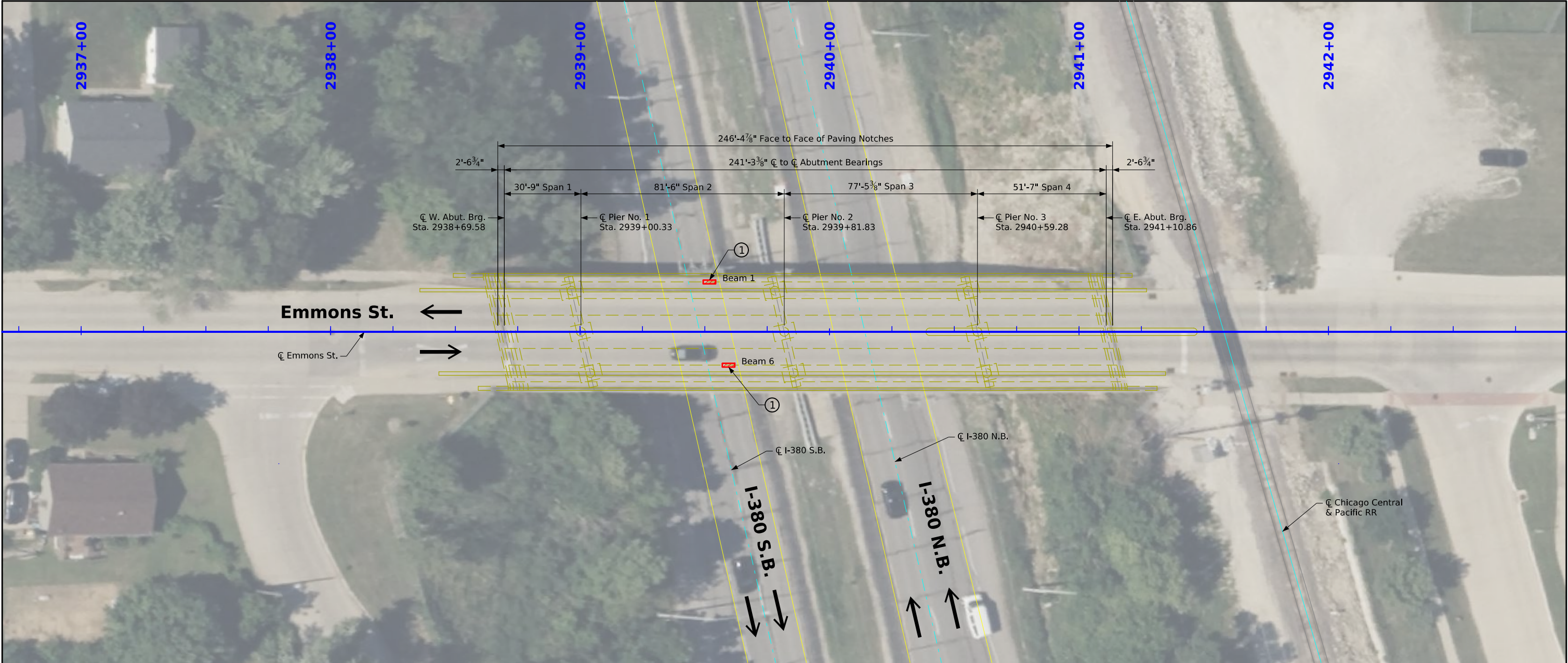
Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 926

Design Sheet No. 1 of 5

FHWA No. 604735



 Estimated Repair.  
Actual areas as designated by  
the Engineer shall be repaired.

**Repairs Shall Consist Of:**

1. Patch and FRP wrap beams 1 and 6 in span 2 over I-380 S.B.  
See details on Design Sheets 4 & 5.

**Location**

Emmons St. over I-380  
In City of Hiawatha  
T-84N R-7W  
Section 33  
Rapids Township  
Linn County  
FHWA No. 604735  
Bridge Maint. No. 5724.70380  
Latitude 42.038761°  
Longitude -91.677645°



**Traffic Estimate**

Emmons St.  
2019 AADT 3,660 V.P.D.  
TRUCKS Unknown %

**Traffic Estimate**

I-380  
2024 AADT 43,700 V.P.D.  
TRUCKS 16 %

Design For Repairs to 12°52'31" Skew (R.A.)

241'-3 3/8" x 32'-0" Prestensioned  
Prestressed Concrete Beam Bridge

30'-9" & 51'-7" End Spans81'-6" & 77'-5 3/8" Interior Span

Situation Plan

STA. 2939+81.83 (Emmons St.)Turn-in Date: April 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 926Design Sheet No. 2 of 5FHWA No. 604735





**Span 2 Beam 1 Damage**  
(Looking West)



**Span 2 Beam 1 Damage**  
(Looking South)



**Span 2 Beam 1  
Upper Face Damage**  
(Looking South)



**Span 2 Beam 1 Lower Face Damage**  
(Looking Up)



**Span 2 Beam 6 Damage**  
(Looking West)



**Span 2 Beam 6 Damage**  
(Looking South)



**Span 2 Beam 6 Damage**  
(Looking South)



**Span 2 Beam 6 Lower Face Damage**  
(Looking Up)

Design For Repairs to 12°52'31" Skew (R.A.)

241'-3<sup>3</sup>/<sub>8</sub>" x 32'-0" Prestressed  
Prestressed Concrete Beam Bridge

30'-9" & 51'-7" End Spans81'-6" & 77'-5<sup>3</sup>/<sub>8</sub>" Interior Span

Photo Sheet

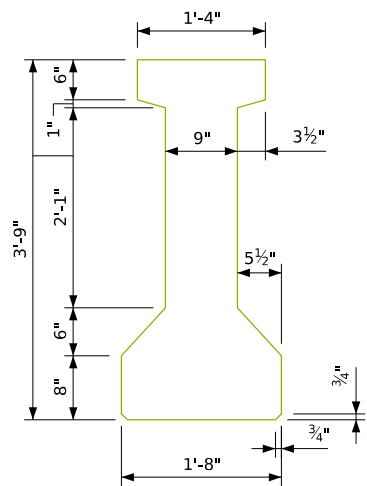
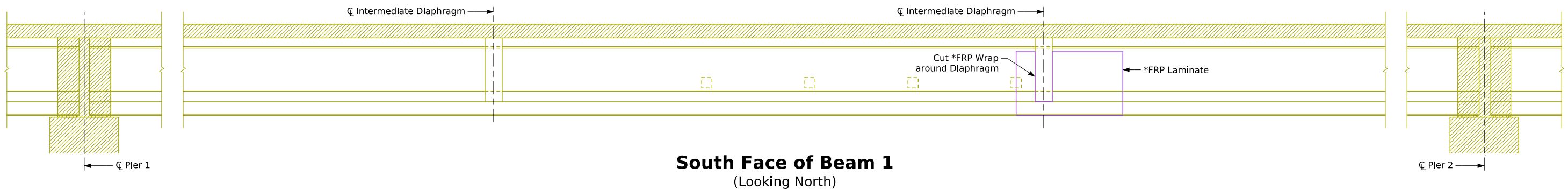
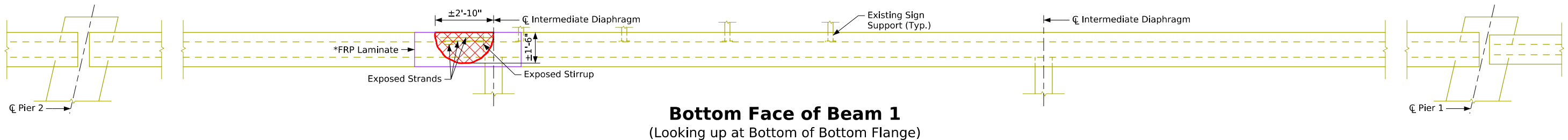
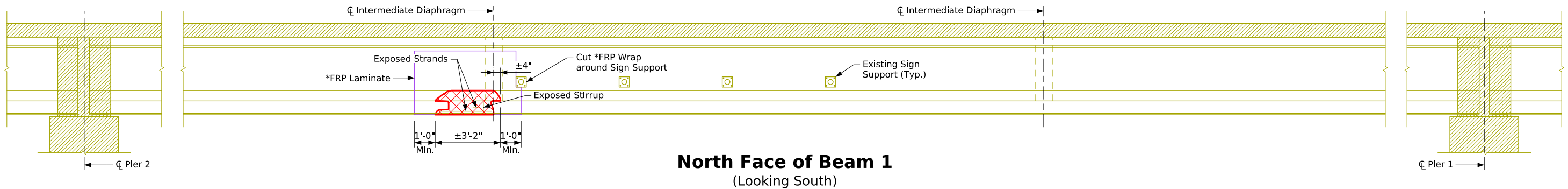
STA. 2939+81.83 (Emmons St.)Turn-in Date: April 2026

Linn County

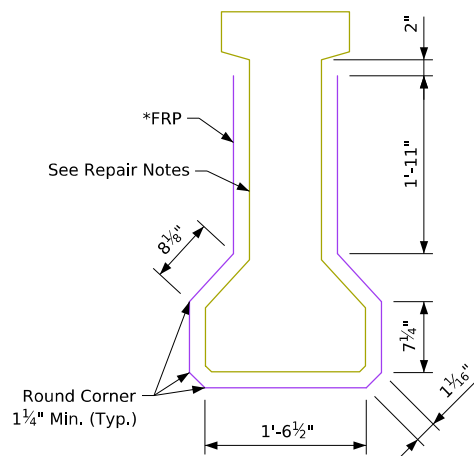
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 926Design Sheet No. 3 of 5FHWA No. 604735





**Original Beam Dimensions**



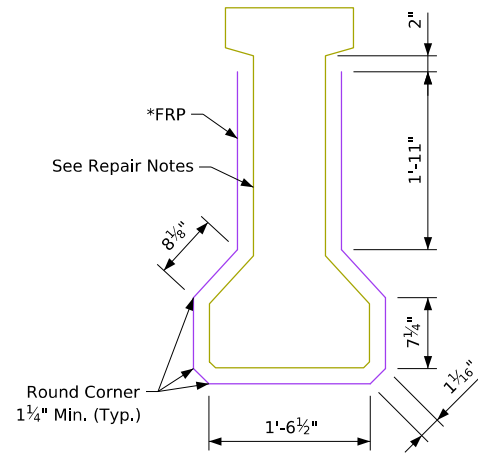
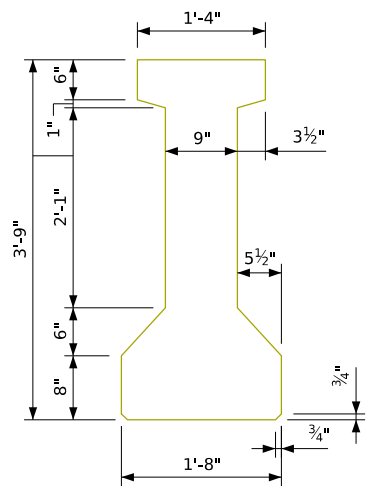
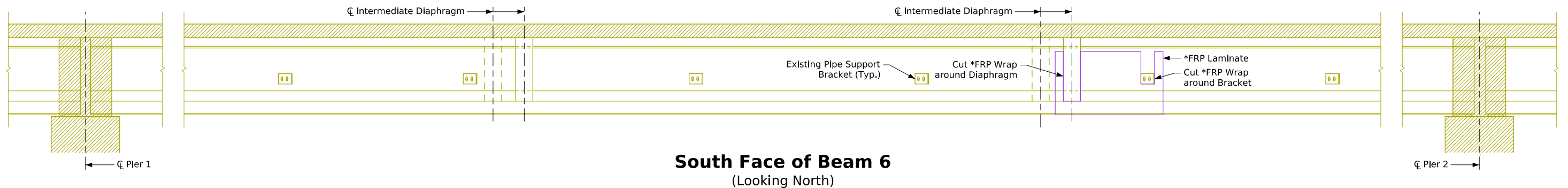
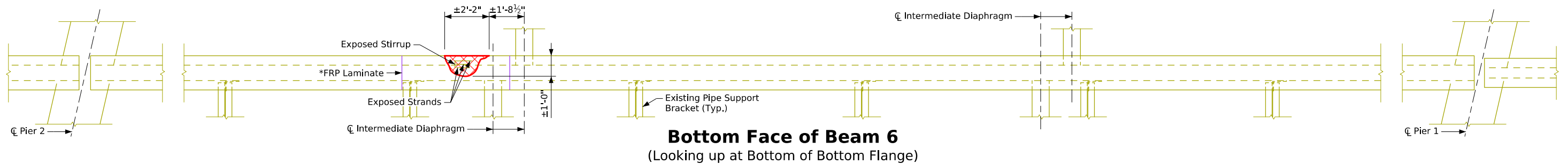
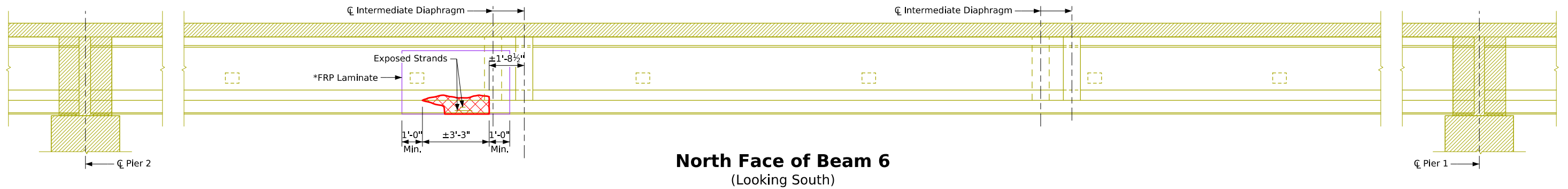
**Typical Section Thru  
Wrapped Beam**

\*FRP - Fiber-Reinforced Polymer  
**Legend of Bridge Damage:**  
 = Concrete Repair  
 = Concrete Crack

**Beam Repairs Notes:**


1. Spalled areas shown with hatching shall be repaired to original beam dimensions. The locations and extent of damage are approximate. Actual repair areas shall be as determined by the Engineer in the field.
2. See beam repair notes on Design Sheet No. 1.
3. FRP laminate should be applied according to plan dimensions unless the Engineer designates otherwise.
4. All interior corners shall be ground smooth to ensure proper adhesion between FRP laminate and concrete surface.


Design For Repairs to 12°52'31" Skew (R.A.)  
**241'-3<sup>3</sup>/<sub>8</sub>" x 32'-0" Pretensioned  
Prestressed Concrete Beam Bridge**  
 30'-9" & 51'-7" End Spans 81'-6" & 77'-5<sup>3</sup>/<sub>8</sub>" Interior Span  
**Beam 1 Span 2 - Repair Details**  
 STA. 2939+81.83 (Emmons St.) Turn-in Date: April 2026  
**Linn County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 926 Design Sheet No. 4 of 5 FHWA No. 604735



\*FRP - Fiber-Reinforced Polymer

**Legend of Bridge Damage:**

 = Concrete Repair

 = Concrete Crack

### Beam Repairs Notes:

1. Spalled areas shown with hatching shall be repaired to original beam dimensions. The locations and extent of damage are approximate. Actual repair areas shall be as determined by the Engineer in the field.
2. See beam repair notes on Design Sheet No. 1.
3. FRP laminate should be applied according to plan dimensions unless the Engineer designates otherwise.
4. All interior corners shall be ground smooth to ensure proper adhesion between FRP laminate and concrete surface.

Design For Repairs to 12°52'31" Skew (R.A.)

**241'-3 3/8" x 32'-0" Prestressed Concrete Beam Bridge**

30'-9" & 51'-7" End Spans 81'-6" & 77'-5 3/8" Interior Span

**Beam 6 Span 2 - Repair Details**

STA. 2939+81.83 (Emmons St.) Turn-in Date: April 2026

**Linn County**

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 926 Design Sheet No. 5 of 5 FHWA No. 604735



| Index of Sheets |   |
|-----------------|---|
| No.             | Description   |
| A Sheets        | Title Sheets  |
| A.3             | Index of Sheets   |
|                 |   |
| C Sheets        | Quantities and General Information                              |
| C.1             | Estimated Roadway Quantities and Estimate Reference Information |
| C.2             | Project Description   |
| C.3             | Standard Road Plans   |
|                 |   |
| J Sheets        | Traffic Control Sheets  |
| J.1             | Traffic Control Plan  |
| J.2             | 511 Travel Restrictions   |
| J.3             | Coordinated Operations  |
| J.4             | Allowable Interstate Closure Map                                |
|                 |   |

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

| Item no. | Item Code    | Item                                 | Unit | Quantities    | Estimate Reference Notes                    |
|----------|--------------|--------------------------------------|------|---------------|---|
|          |              |                                      |      | Estimated     |   |
|          |              |                                      |      | Roadway Items |   |
| 1        | 2528-8445110 | TRAFFIC CONTROL                      | LS   | 1             | Refer to Traffic Control Plan on Sheet J.1. |
| 2        | 2528-9290050 | PORTABLE DYNAMIC MESSAGE SIGN (PDMS) | CDAY | 10            | Refer to Traffic Control Plan in J Sheets.  |
|          |              |                                      |      |               |   |

100\_01D  
8/15/22

PROJECT DESCRIPTION

This project is for the repairs to the existing 241'-3 3/8" x 32'-0" Pretensioned Prestressed Concrete Beam Bridge (Design 926) on Emmons St. over I-380, 0.9 mi. north of IA 100. The repair work shall include repairing the damage to Beams 1 and 6 in Span 2.

105\_04  
4/21/26

STANDARDS

The following Standards apply to construction work on this project.

| Number | Date     | Title   |
|--------|----------|---|
| SI-881 | 04-16-19 | Special Signs for Workzones                         |
| TC-1   | 10-15-19 | Work Not Affecting Traffic (Two-Lane or Multi-Lane) |
| TC-402 | 04-18-23 | Work Within 15 ft of Traveled Way                   |
| TC-415 | 04-18-23 | Stort Term Lane Closure with TMA                    |
| TC-418 | 04-18-23 | Lane Closure on Divided Highway                     |

|  |  |                    |
|--|--|--------------------|
| TRAFFIC CONTROL PLAN   |  | 108_23A<br>8/15/22 |
| Traffic control on this project shall be in accordance with the Standard Road Plans shown in Tabulation 105-4 and the specific layouts shown in the plans. See Allowable Closure Map on Sheet J.4. For additional complementary information, refer to Part 6 of the Manual of Uniform Traffic Control Devices (MUTCD) and the current Standard Specifications and Supplemental Specifications.   |  |                    |
| The Contractor shall coordinate traffic control with other projects in the area. These projects include, but are not limited to those shown in Tabulation 111-01.  |  |                    |
| Provide Portable Dynamic Message Sign (PDMS) along I-380 S.B. for three (3) calendar days prior to beginning construction through the duration of the project to inform the traffic of the nightly lane closures.  |  |                    |
| Nighttime Construction Traffic Control:<br>Close the inside lane of I-380 S.B. in accordance with Standard Road Plan TC-415. Provide temporary mobile speed feedback sign. Lane closures shall occur between 7 P.M. and 6 A.M. Sunday through Thursday per the Allowable Closure Map on Sheet J.4. Shift traffic partially onto outside shoulder. Maintain minimum 14.5' wide temporary lane. Normal traffic operations shall be maintained on Emmons Street and all adjacent interchange ramps. |  |                    |
| Daytime Non-Work Hours Site Traffic Control:<br>Normal traffic operations shall be maintained at all times on I-380, Emmons Street, and all adjacent interchange ramps.  |  |                    |
| All traffic control devices shall be furnished, erected, maintained, cleaned, and removed by the Contractor. All traffic control will remain the sole responsibility of the Contractor. The Contractor shall check traffic control devices daily and repair or replace damaged devices properly.   |  |                    |
| The Contractor shall maintain clean pavement in and out of the work area at all times.   |  |                    |
| The Contractor will be responsible for securing a safe storage area for equipment and materials to be used on the project.   |  |                    |



108\_25  
3/28/24

| 511 TRAVEL RESTRICTIONS |            |           |        |                             |                 |                        |   |                        |                         |                             |  |                                      |                                     |
|-------------------------|------------|-----------|--------|-----------------------------|-----------------|------------------------|---|------------------------|-------------------------|-----------------------------|--|--------------------------------------|-------------------------------------|
| Line No.                | Route      | Direction | County | Location Description        | Feature Crossed | Object Type            | Maint. Bridge No.<br>or Structure ID<br>or FHWA No. | Type of<br>Restriction | Existing<br>Measurement | Construction<br>Measurement | Construction<br>Measurement as<br>Signed | Projected As<br>Built<br>Measurement | Remarks                             |
| 1.0                     | I-380      | SB        | Linn   | I-380 S.B. under Emmons St. | Emmons St.      | Traffic Control Device |   | Horizontal             | 40'                     | 22'                         | N/A                                      | 40'                                  | Night Closures Only. See Sheet J.4. |
| 2.0                     | I-380      | NB        | Linn   | I-380 N.B. under Emmons St. | Emmons St.      |                        |   | N/A                    |                         |                             |  |                                      | No Travel Restriction Expected      |
| 3.0                     | Emmons St. | Both      | Linn   | Emmons St. over I-380       | I-380           |                        | 604735  | N/A                    |                         |                             |  |                                      | No Travel Restriction Expected      |

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              |
|---------------------------|---------------------------|
| IM-380-6(359)25--13-57    | Bridge Replacement        |
| IM-380-6(358)25--13-57    | Reconstruction            |
| IHSIPX-380-6(490)6--08-52 | Pavement Marking          |
| MPIN-380-6(721)0--0N-52   | PCC Patching              |
| MPIN-380-6(738)17--0N-57  | Fencing                   |
| MPIN-380-6(737)22--0N-57  | HMA Crack Filling         |
| MP-922-6(729)4--76-57     | HMA Joint & Crack Sealing |

