

Standard Road Plans

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

Design Data Urban

I-380 S.B.
2024 AADT 27,750 V.P.D.
TRUCKS 13 %

Iowa DOT Bridges and Structures
Consultant Coordinator Contact:
Michael Vander Wert

Index of Seals		
Sheet No.	Name	Type
A.1	Travis L. Wallen	Structural Design
A.3	Tom Rhoads	Roadway Design

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.

05-20-2026

Signature Travis L. Wallen 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.13

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No.	Description
Bridge Plan	
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design 627
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Road Plan	
A.3 - J.13	Road Plans
C.1	Estimated Quantities - Road
C.3	Standard Plans - Road

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM LINN COUNTY

Deck Joint Repair

I-380 S.B. over Bus. US 151 and Local Streets
At Bus. US 151 Interchange in Cedar Rapids

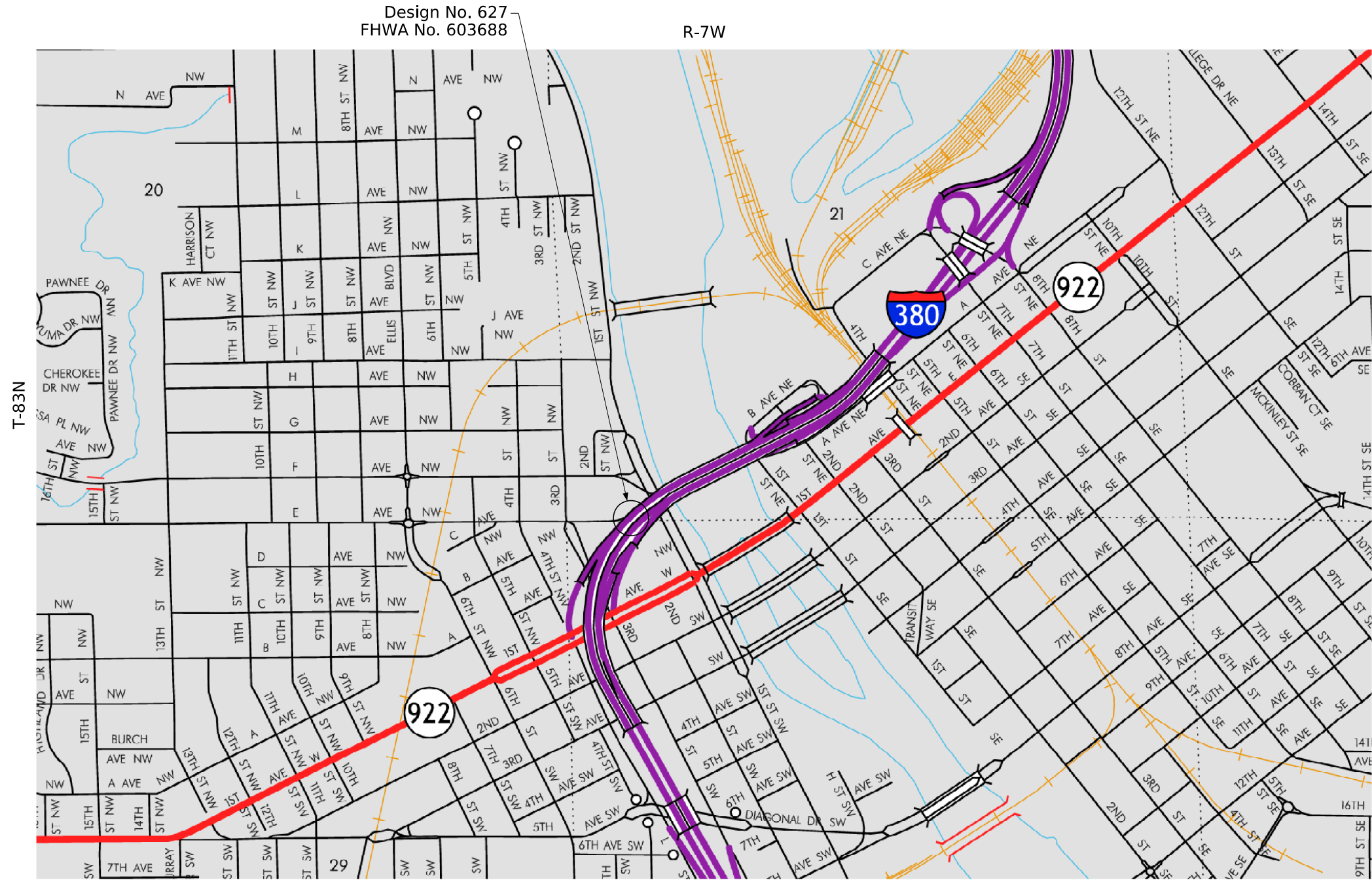
Refer to the Plan Sheets for list of applicable specifications.

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

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Revisions

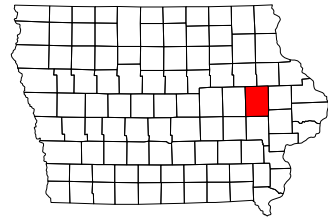
	TOTAL
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PROJECT IDENTIFICATION NUMBER	
26-57-380-070	
PROJECT NUMBER	
IMN-380-6(507)20--0E-57	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
5738007026	



LEGEND	
INTERSTATE ROUTE	
FREEWAY OR EXPRESSWAY ROUTE	
U.S. NUMBERED ROUTE	
BUSINESS ROUTE	
STATE NUMBERED ROUTE	
UNSIGNED ROUTE	
COUNTY NUMBERED ROUTE	
SECONDARY ROAD OR ADJOINING CITY STREET	
CITY STREET	
PARK, INSTITUTION, OR FEDERAL ROAD	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL-DE-SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-81N, R-30W

Part of City of Cedar Rapids Location Map

Not To Scale



Estimated Bridge Repair Quantities and Reference Notes - Design 627					
Item No.	Item Code	Item	Unit	Quantities Estimated	Estimate Reference Notes
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1	Includes all work for removal and off-site disposal of deck, barrier rail, reinforcing bars, drain components, and expansion devices. 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 repairs at no extra cost to the state.
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	1.0	Includes concrete for barrier rail and curb. See Design Sheet No. 10 for details.
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	3,346	Includes all mechanical splices required.
4	2408-7800000	STRUCTURAL STEEL	LB	98	Includes structural steel required to assemble the deck drain. See Design Sheet No. 13 for details. Includes filling existing holes in top flange of girders with bolts.
5	2413-1200000	STEEL EXTRUSION JOINT WITH NEOPRENE	LF	66.8	Includes all necessary hardware and accessories including the anchorage system, temporary erection material and the 3⁄8" barrier plates with their anchorage system. Excludes installation of neoprene gland.
6	2413-1200100	NEOPRENE GLAND INSTALLATION AND TESTING	LF	66.8	Includes installation of neoprene gland and water testing of joint.
7	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	--
8	2533-4980005	MOBILIZATION	LS	1	--
9	2599-9999003	POLYESTER POLYMER CONCRETE	CY	13.2	Includes concrete for deck and diaphragm adjacent to joint. See "Special Provisions for Polyester Polymer Concrete with High Molecular Weight Methacrylate Resin Primer for Joint Replacement".

Roadway Quantities shown elsewhere in these plans.

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

Estimated Quantities

STA. 322+81.95 (☒ I-380)Turn-In Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627Design Sheet No. 1 of 13FHWA No. 603688

General Notes:

This design is for repairs to the existing 2260'-8" x Var. Width Continuous Welded Plate Girder Bridge on I-380 S.B. over Bus. US 151 and local streets. Electronic copies of original design plans will be made available to the contractor as part of the e-files supplied with the contract documents.

- Repairs shall consist of:
1. Removal of Sliding Plate Joint System and Installation of Extrusion Joint System at Joint 5S. Includes removal and replacement of partial deck and barrier rail near Joint 5S.
 2. Modify deck drain system at west edge of Joint 5S.

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.

- "Removals, as Per Plan" include all costs associated with removing the following:
1. Removal of sliding plate expansion device at Joint 5S.
 2. Partial removal of bridge deck, curb and barrier rail concrete and reinforcing steel to the dimensions shown.
 3. Removal of portions of portions of the existing deck drain near Joint 5S to the dimensions shown.

Removals shall be in accordance with Section 2401 of the Standard Specifications. Any damage to other portions of the existing structure not noted for removal shall be the responsibility of the Bridge Contractor and shall be repaired at no extra cost to the State.

It is the intent of this design to reuse the existing structural steel girders and steel diaphragms as constructed. The Bridge Contractor is to use extreme care when removing the deck concrete to avoid damage to the structural steel girders, steel diaphragms, and shear studs.

Concrete removal shall be initiated with a ¾" saw cut wherever possible.

This design designates certain existing reinforcing bars to be reused in the new construction. Care shall be taken when exposing existing reinforcing so the bond to the existing concrete is not broken at the concrete break lines. Existing Reinforcing bars to be saved shall be cleaned and straightened.

These bridge plans label all reinforcing steel with english notation (5a1 is ⅝ 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.

Faint lines on plans indiciate existing portions of the bridge.

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

Unless otherwise noted, exposed existing reinforcing not incorporated into new work is to be cut flush with or just below concrete surface and repaired with an approved repair/patch compound per Materials I.M. 451.03B, Appendix B.

All new epoxy reinforcing that is field trimmed shall be repaired with an approved repair/patch compound per Materials I.M. 451.03B, Appendix B.

Construction shall be done in stages with at least two lanes of traffic maintained at all times in accordance with the Traffic Control Plan.

Trim existing reinforcing to 2" clear of new concrete as needed.

The Bridge Contractor is to provide a method of removal that will prevent feather edging at the bottom of existing deck.

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 city and utility company whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the construction starting date.

The Contractor shall dress up any surfaces underneath the bridge which are disturbed during construction. This work shall be considered incidental and no extra payment will be made.

All dimensions required to fabricate new structural steel shall be field verified by the Contractor.

Three scrape samples were taken from areas of this bridge to get an indication of the existence of and level of total lead and total chromium. These three samples were taken at the right side of the bridge (1993), left side of the bridge (1993), and girder (2011). Analysis of total lead on the first sample (Right side of bridge) was 240 parts per million (ppm). Analysis of total lead on the second sample (Left side of bridge) was 250 parts per million (ppm). Analysis of total lead on the third sample (Girder) was 19,900 parts per million (ppm). Analysis of total chromium on the first sample was 150 ppm. Analysis of total chromium on the second sample was 220 ppm. Analysis of total chromium on the third sample was 61.8 ppm. These analyses show the existence of these two toxic constituents. Levels indicated by these tests could create conditions above regulatory limits for health and safety requirements. No other constituents were analyzed. The Bidder should not rely on the Iowa DOT's testing and analysis for any purpose other than as an indication of the existence of these two toxic constituents.

Working Drawing and Calculation Submittals

Working drawings and calculations shall be submitted for the following items shown in the table below. (Note additional working drawings and calculations may be required in accordance with Article 1105.03 of the Standard Specifications.)

Submittal requirements for working drawings and calculations shall be in accordance with 1105.03 of the Standard Specifications for Highway and Bridge Construction of the Iowa Department of Transportation. The absence of a certification requirement for a submittal does not relieve the Contractor of the responsibility to attain certification.

Calculation submittals in this table which are associated with working drawing submittals shall be submitted on the same day. Review time for calculation submittals shall be of the same duration as and run concurrently with review time for associated working drawings. The calculation submittals listed in the table are not meant to be an exhaustive list and do not relieve the Contractor from providing additional calculation submittals if requested by the Engineer.

No.	Working Drawing Description	Working Drawing File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Steel Extrusion Expansion Device and Curb Plates	(507)_Linn_Design627_SteelExtrusionExpansionDeviceCurbPlates.pdf	No
2	Polymer Concrete Placement Plan	(507)_Linn_Design627_PolymerConcretePlacementPlan.pdf	No
3	Structural Steel for Drain	(507)_Linn_Design627_StructuralSteelDrain.pdf	No
No.	Calculation Description	Calculation File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)

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:
-Special Provisions for Polyester Polymer Concrete with High Molecular Weight Methacrylate Resin Primer for Joint Replacement

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.

Polyester polymer concrete in accordance with Special Provisions.

Structural steel in accordance with Section 10. ASTM A709 Grade 36, Grade 50, and Grade 50W (AASHTO M270 Grade 36, Grade 50, and Grade 50W).

Location

I-380 S.B. over Bus. US 151
In City of Cedar Rapids
T-83N R-7W
Section 28
Rapids Township
Linn County
FHWA No. 603688
Bridge Maint. No. 5719.7L380
Latitude 41.978494°
Longitude -91.674080°

Design History at this Site

(Includes this Design)

Des. No.	Type of Work
1276	Original Design
1786	Surface Repair
---	Bridge Washing
---	Bridge Washing
102	Joint Replacement Construction
---	Bridge Painting
510	Barrier Rail Retrofit Construction
---	Bridge Painting
627	Deck Joint Repair

Traffic Control Plan

The roadway will be open to thru traffic. Refer to the Traffic Control Plan on Sheet J.3.

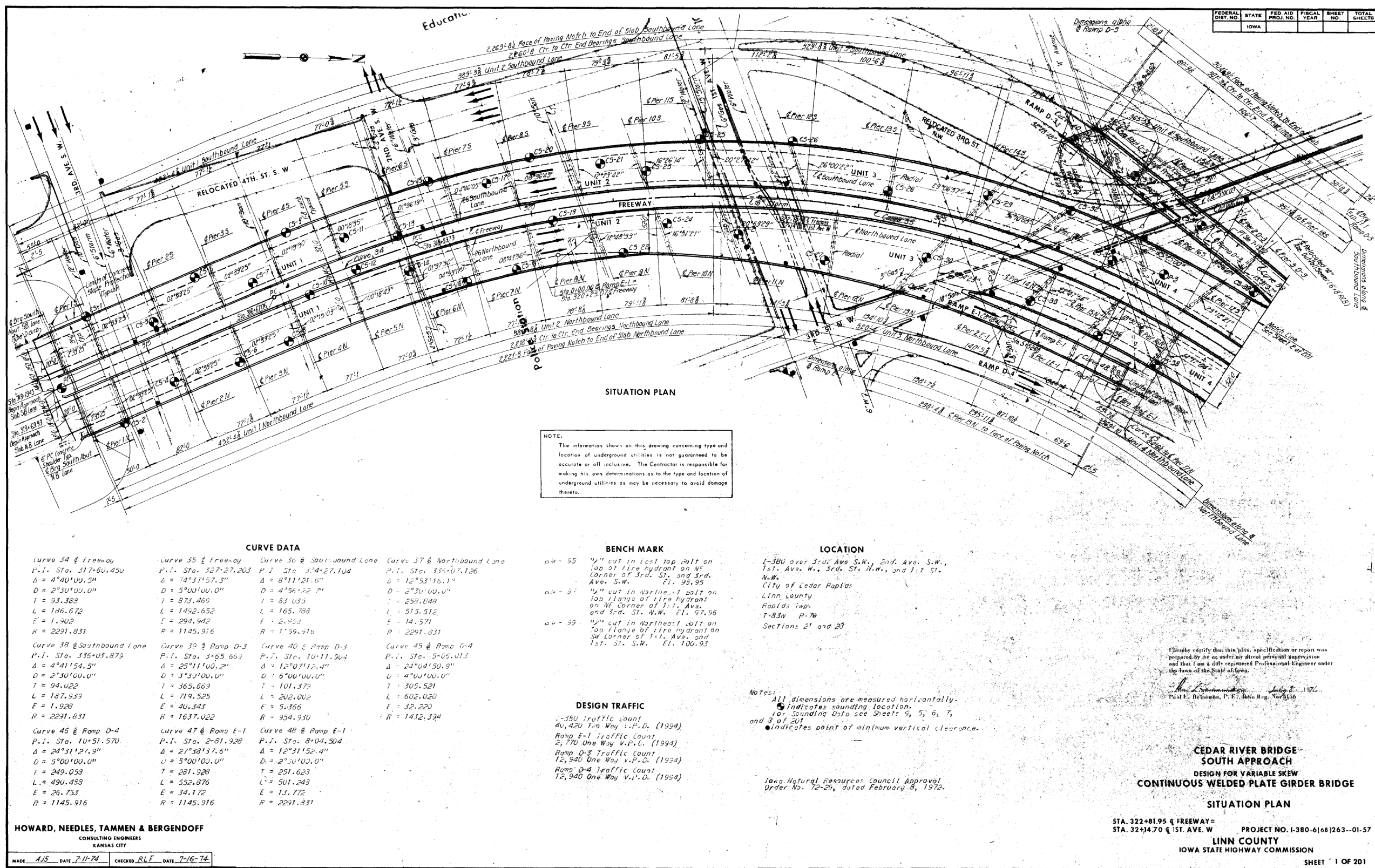
Design For Repairs to 0° Skew, Radius = 1145.916'
2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

General Notes

STA. 322+81.95 (Ç I-380) Turn-in Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION
Design No. 627 Design Sheet No. 2 of 13 FHWA No. 603688



Design No. 1276
File No. 23191
Design Sheet No. 1

This Sheet from Original
Design Plans is Included
For Information Only.

Design For Repairs to 0° Skew, Radius = 1145.916'
2260'-8" x Var. Width Continuous
Welded Plate Girder Bridge

Situation Plan

STA. 322+81.95 (C 1-380) Turn-In Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627 Design Sheet No. 3 of 13 FHWA No. 603688

FILE NO. 32952

ENGLISH

DESIGN TEAM JEO Consulting Group

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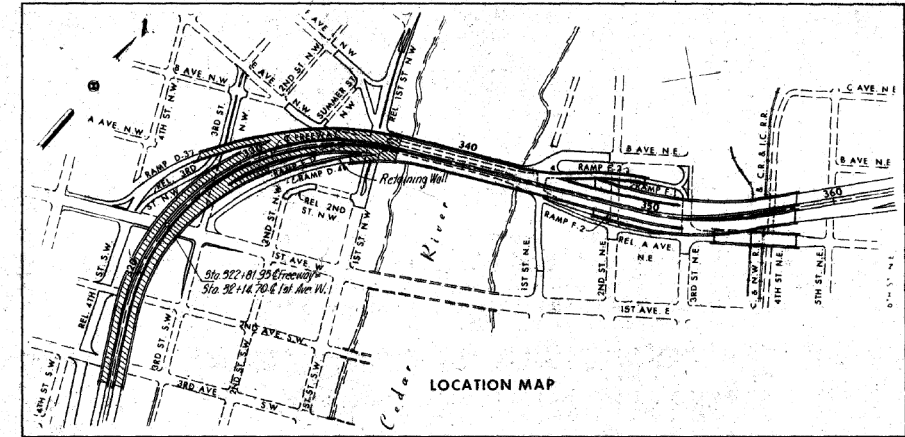
LINN COUNTY

PROJECT NUMBER IMN-380-6(507)20--0E-57

SHEET NUMBER V.3

DESIGN NO. 1276 LINN COUNTY FILE 23191 SHEET 3 OF 203-0

2263'6" Edge of Paving Match to End of Slab Southbound Lane
Sta 0+00 Ramps D-3



SITUATION PLAN

- Location of Repairs to Expansion Joint 5S



**CEDAR RIVER BRIDGE
SOUTH APPROACH
DESIGN FOR VARIABLE SKEW
CONTINUOUS WELDED PLATE GIRDER BRIDGE**

SITUATION PLAN

SHEET 2 OF 201

DESIGN NO. 1276 LINN COUNTY FILE 23191 SHEET 4 OF 203-0

**This Sheet from Original
Design Plans is Included
For Information Only.**

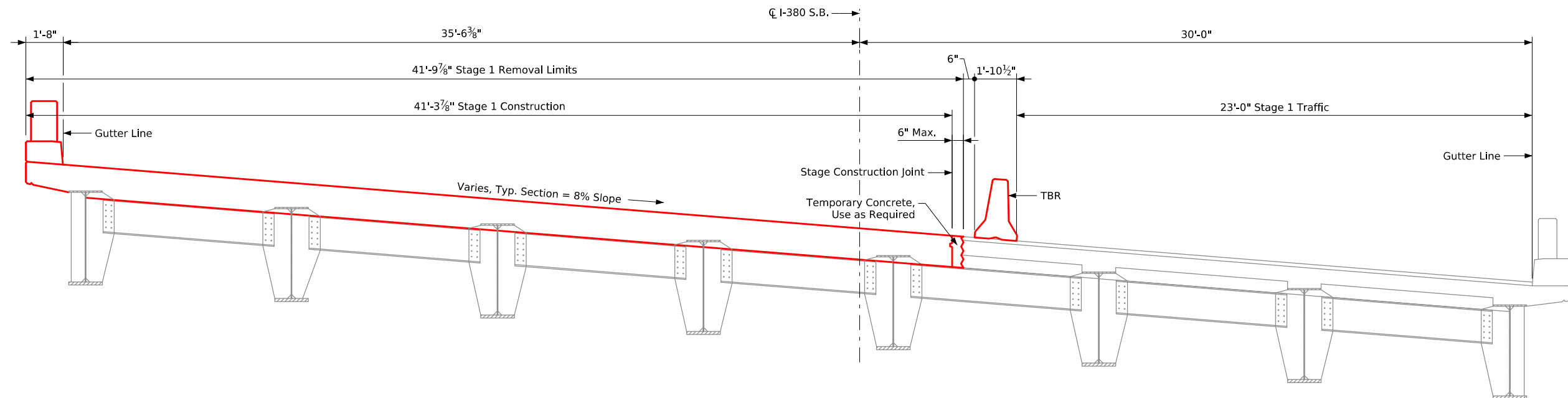
Situation Plan

STA. 322+81.95 (C I-380) Turn-in Date: May 2026

Linn County

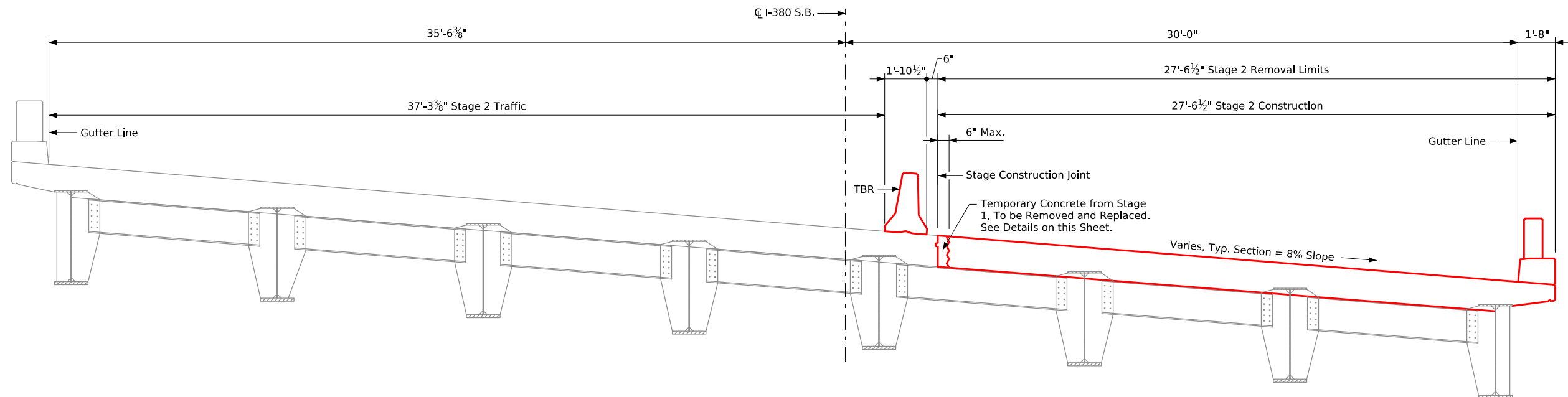
Design No. 627 Design Sheet No. 4 of 13 FHWA No. 603688

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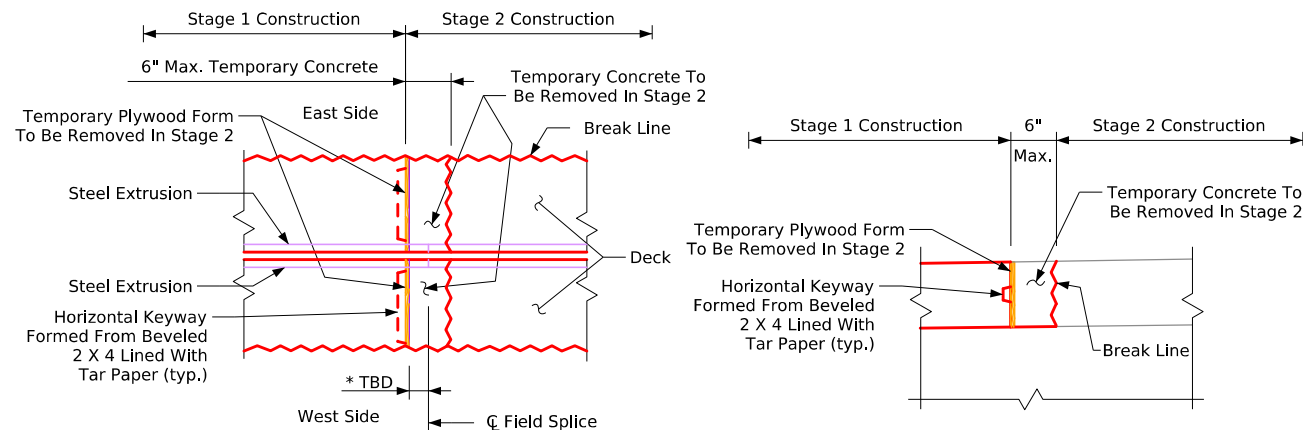


Note: Dimensions shown are at CL of bearing at Expansion Joint 5S. Actual dimensions may vary due to radius and skew.

Stage 1 Joint 5S, Looking Northeast



Stage 2 Joint 5S, Looking Northeast



Temporary Concrete Details

* - The Contractor shall determine the location of the steel extrusion field splice to facilitate the construction of the expansion device from Stage 1 to Stage 2. The Contractor is not required to place temporary concrete as long as their construction method facilitates traffic between stages. The Contractor shall have any construction method that varies from this plan approved by the Engineer prior to work taking place.

Note: The Contractor shall place a temporary plywood form between the temporary concrete and permanent concrete placed during Stage 1 as shown in Temporary Concrete Details. This will prevent bond and assist in Stage 2 removals and construction. The temporary plywood form shall be removed with Stage 2 removals.

The Contractor shall prevent concrete from entering the internal section of the extrusion where the neoprene gland is to be located.

The intent of the Temporary Concrete Details is for when the TBR is removed from the bridge between Stage 1 and 2 and traffic is allowed to travel over the stage construction joint. Polyester polymer concrete shall be cured to specification prior to opening to traffic.

See Design Sheet No. 11 and 13 for Expansion Device Details.

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous
Welded Plate Girder Bridge

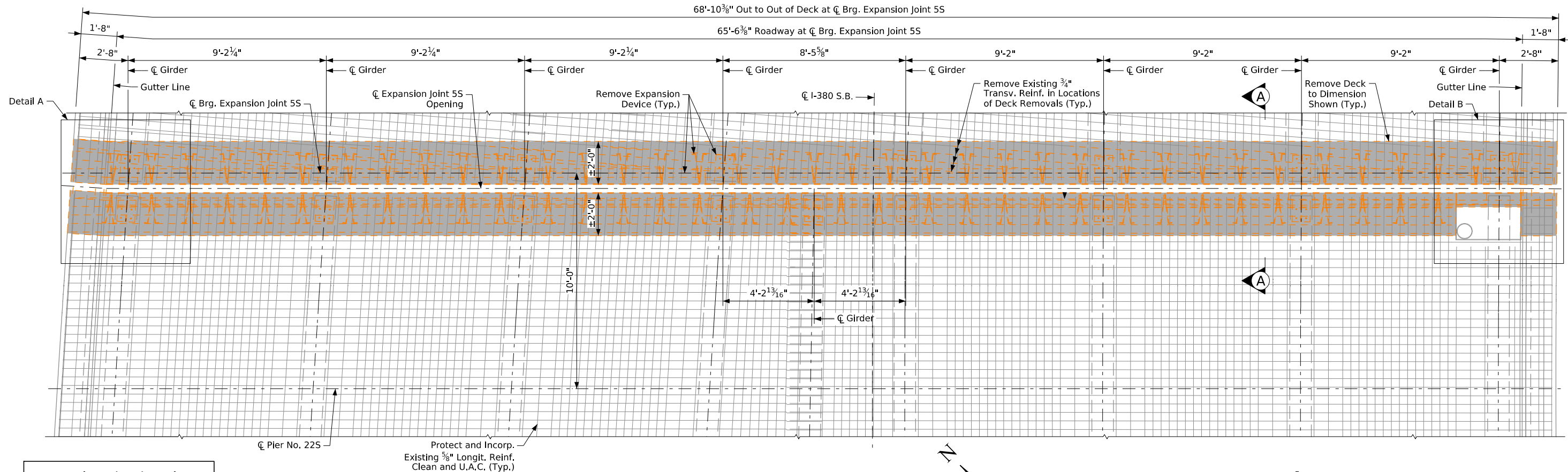
Stage Construction Details

STA. 322+81.95 (CL-380) Turn-In Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627 Design Sheet No. 5 of 13 FHWA No. 603688



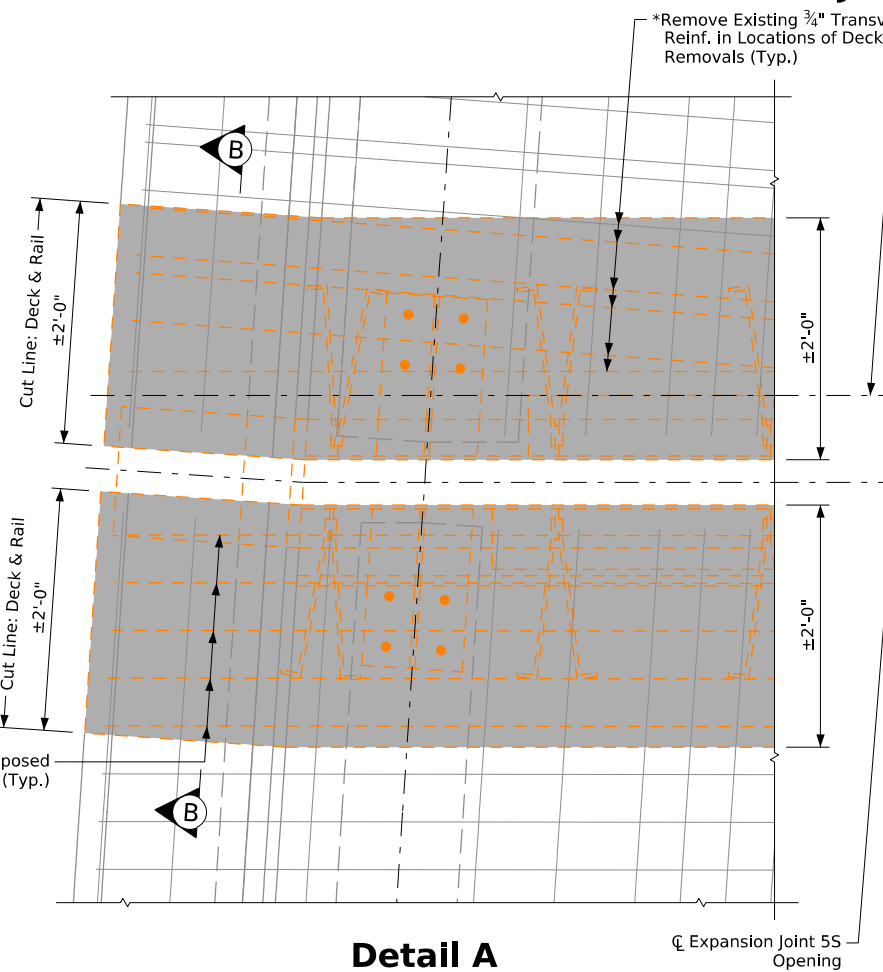
Removals to be done in stages. See Staging Details Elsewhere in these Plans.

Legend

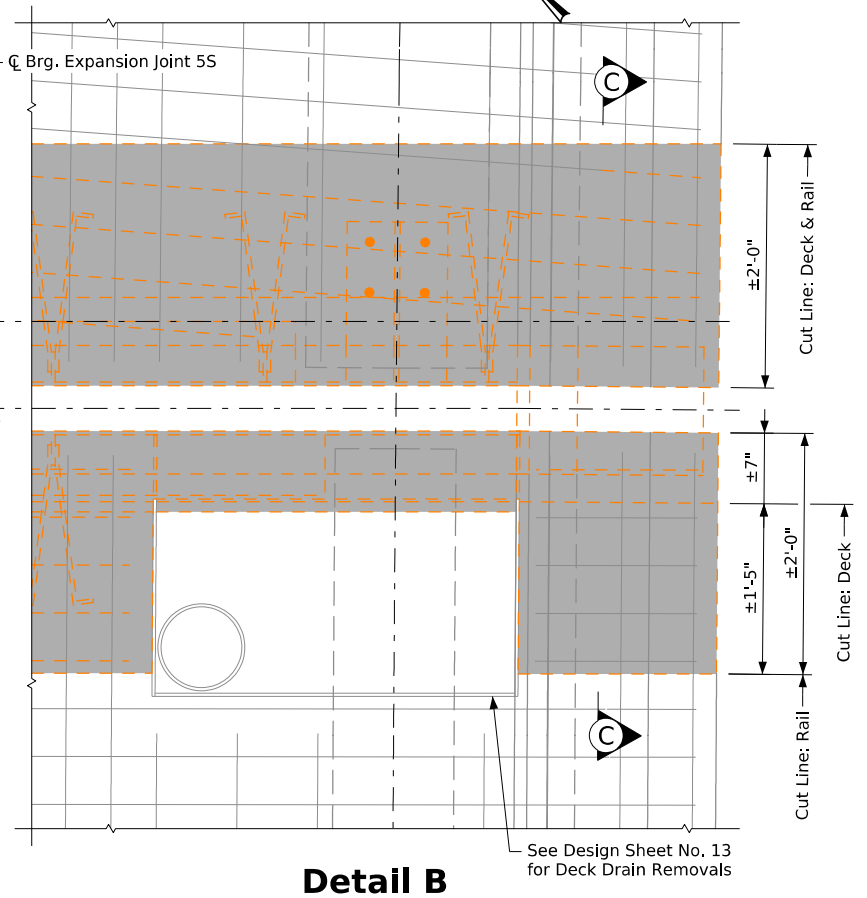
 Indicates Removal

* Partially exposed existing reinforcing shall be cut back so that 3'-0" of existing reinforcing extends beyond location of concrete removals.

Note: For Sections A-A, B-B, & C-C, See Design Sheet No. 7.



Detail A



Detail B

Removal Notes:

All removals required to allow for installation of the strip seal joint system are to be considered incidental to "Removals, As Per Plan."

All removals shall be in accordance with section 2401 of the Standard Specifications.

All concrete removals shall be to neat saw cuts to provide clean straight surfaces at interfaces between new concrete and remaining concrete. Upon completion of the noted removals, the contact surfaces between existing and new concrete shall be cleaned and roughened by sandblasting or other approved methods to provide a suitable bond between the new and existing concrete in accordance with Article 2403.03,I of the Standard Specifications.

Existing reinforcing steel designated to be "U.A.C." shall be protected during removals and shall be cleaned and incorporated into new construction.

If more than half of a single parallel rebar is exposed at the design concrete breakline, concrete removals shall be extended at the rebar to remove a minimum 1 1/2" of clear space between all sides of the bar and existing concrete.

Removals shall be done in a manner which will prevent 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.

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

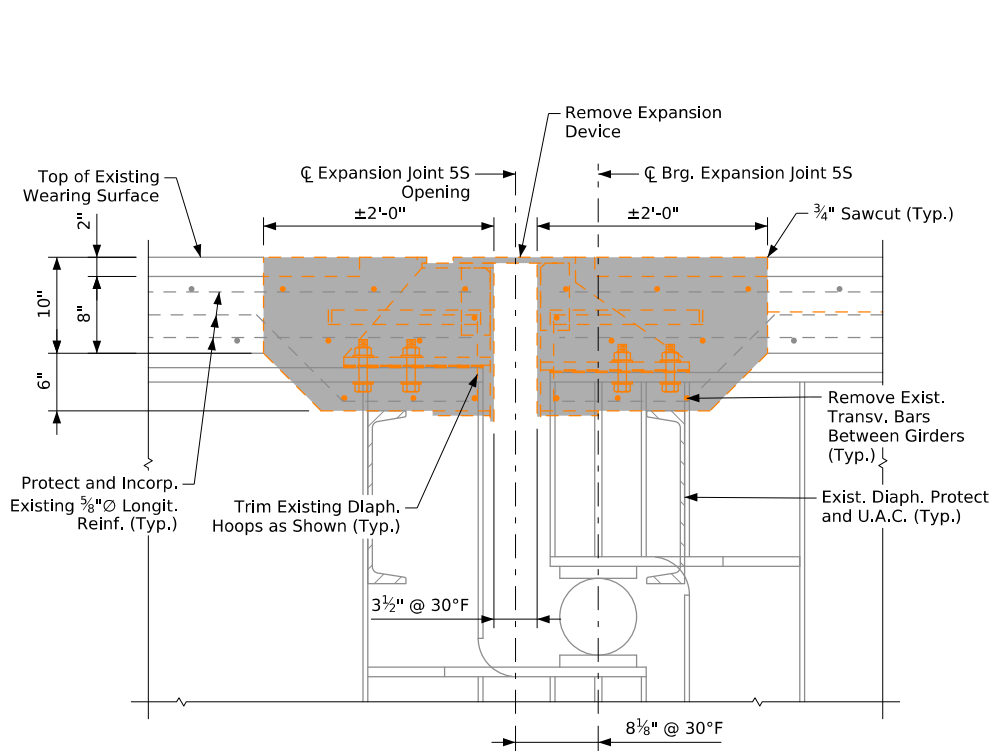
Joint 5S Removal Plan

STA. 322+81.95 (CL I-380) Turn-In Date: May 2026

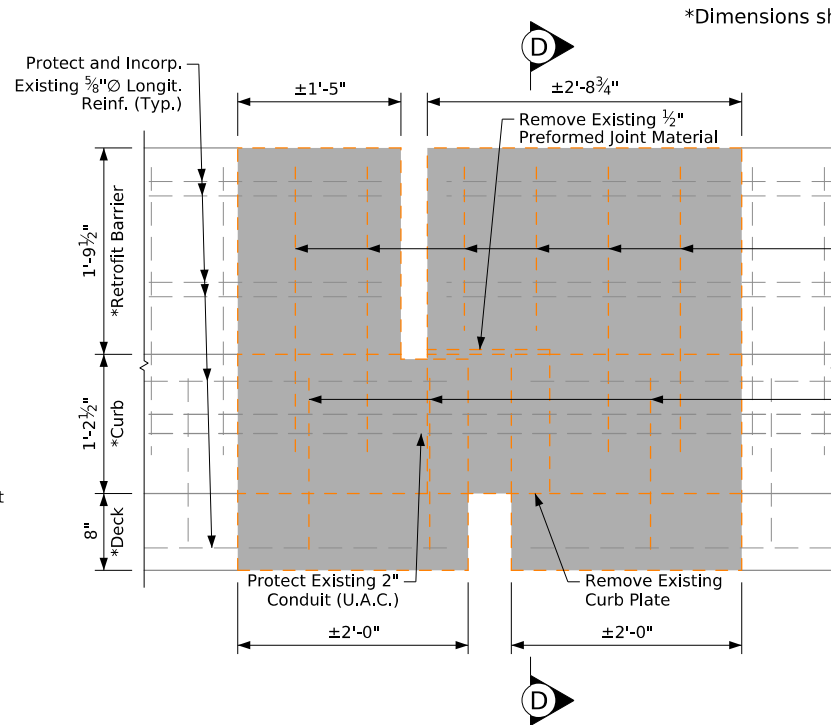
Linn County

IOWA DEPARTMENT OF TRANSPORTATION

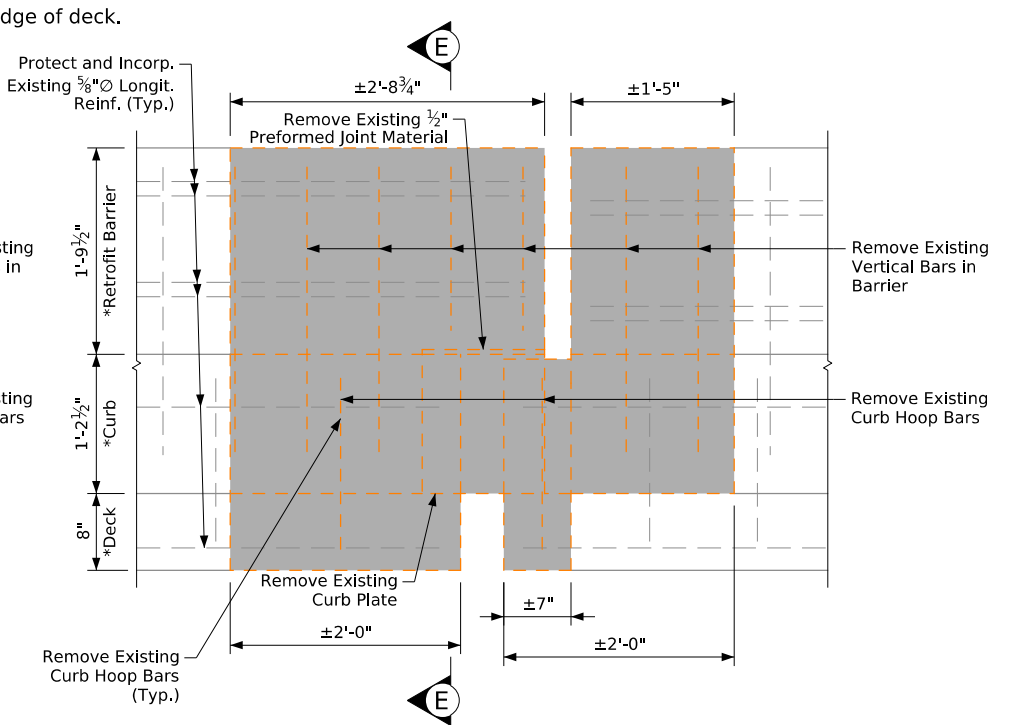
Design No. 627 Design Sheet No. 6 of 13 FHWA No. 603688



Section A-A



Section B-B

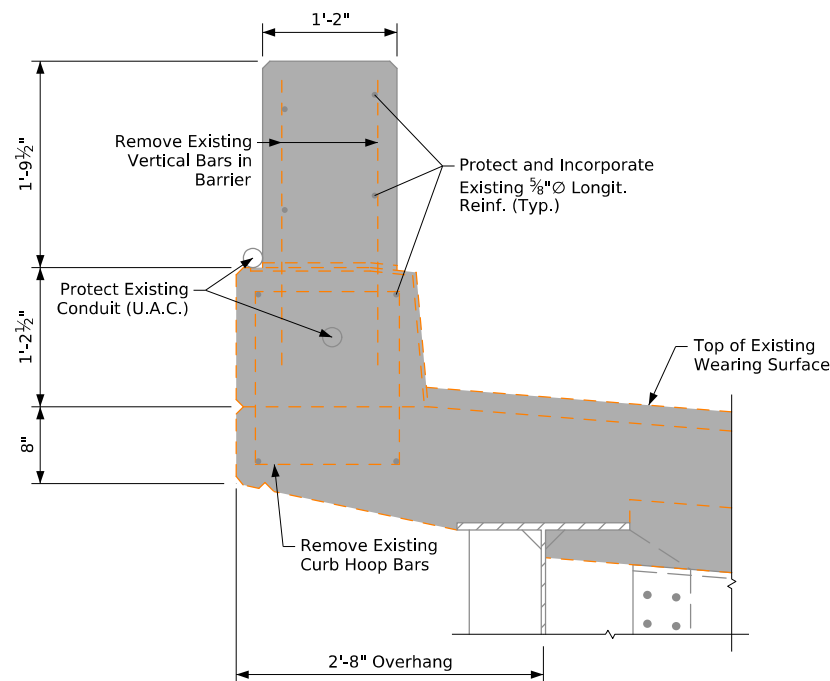


Section C-C

Removals to be done in stages. See Staging Details Elsewhere in these Plans.

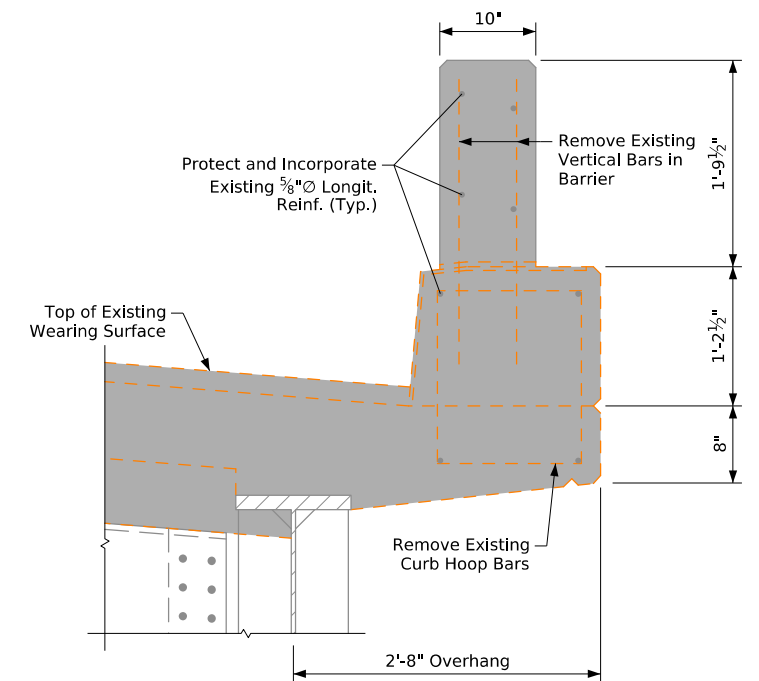
Legend

Indicates Removal



Section D-D

Existing Deck Reinforcing Not Shown for Clarity



Section E-E

Existing Deck Reinforcing Not Shown for Clarity

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

Joint 5S Removal Details

STA. 322+81.95 (± I-380)

Turn-in Date: May 2026

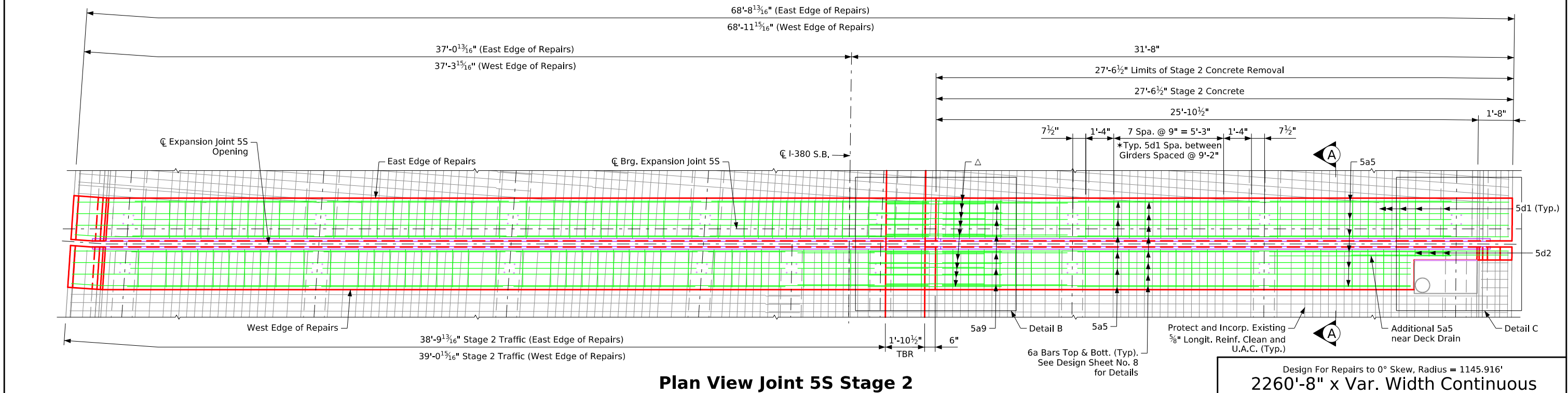
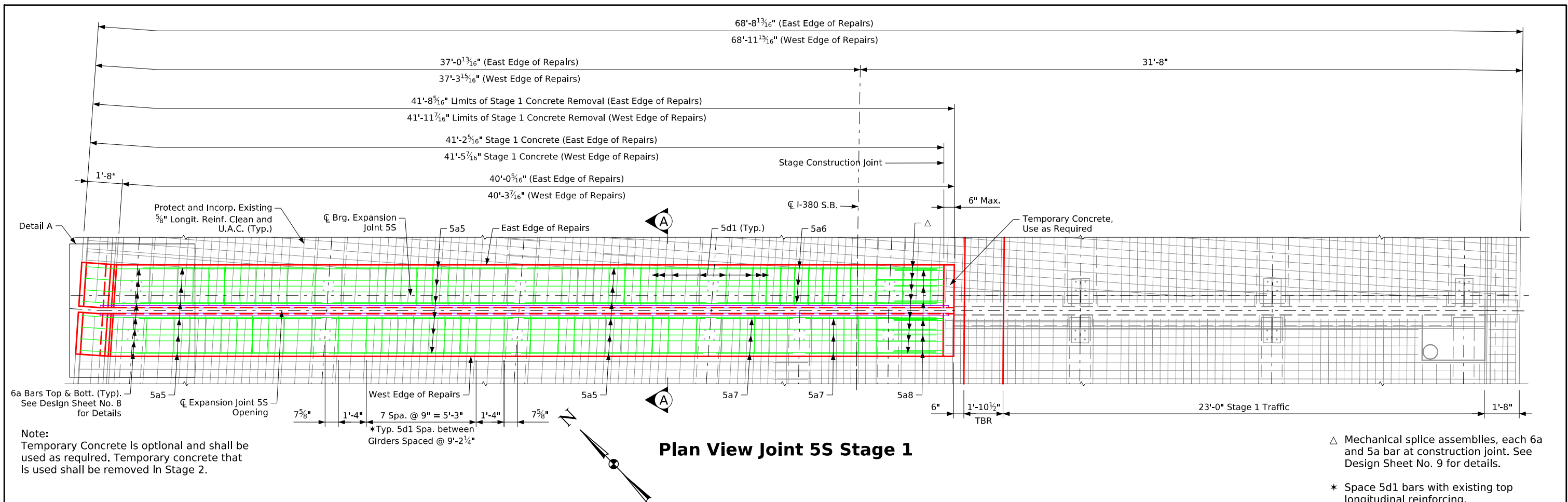
Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627

Design Sheet No. 7 of 13

FHWA No. 603688



Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

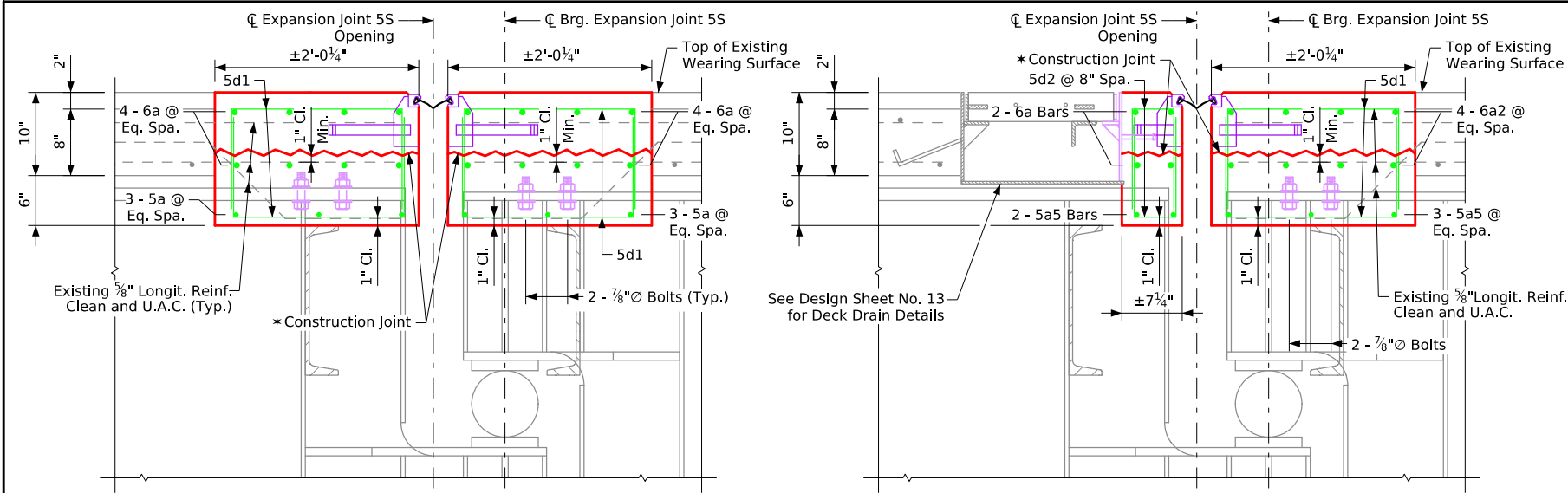
Joint 5S Repair Plan

STA. 322+81.95 (CL I-380) Turn-In Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

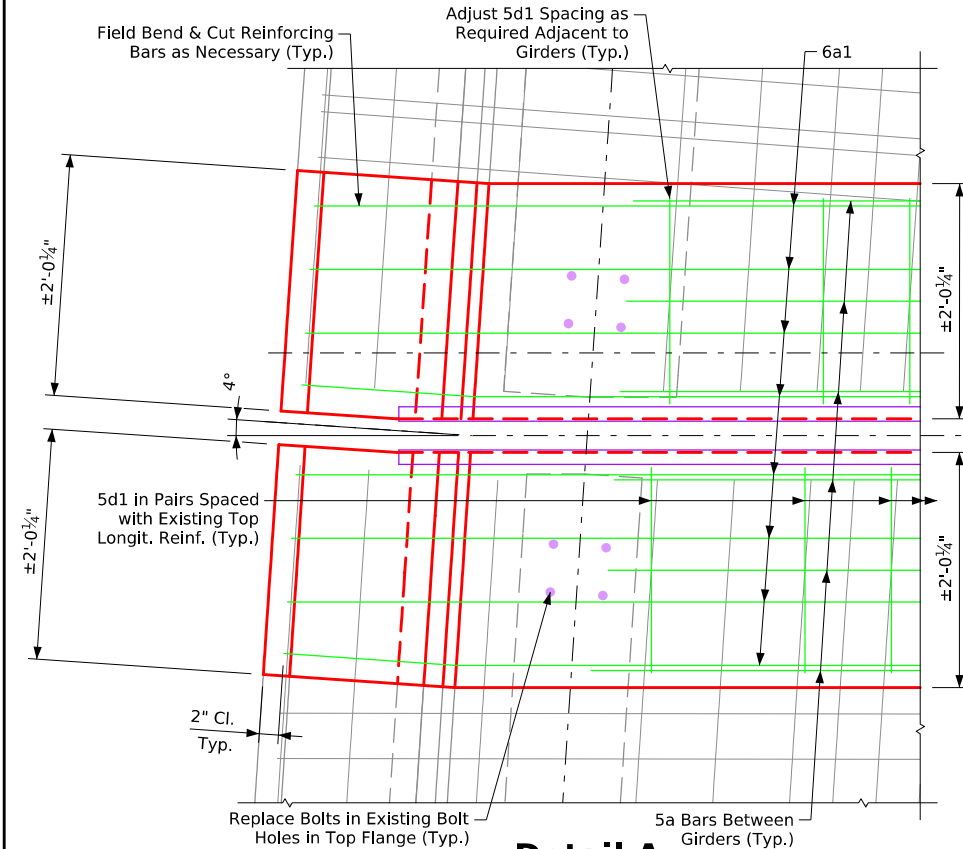
Design No. 627 Design Sheet No. 8 of 13 FHWA No. 603688



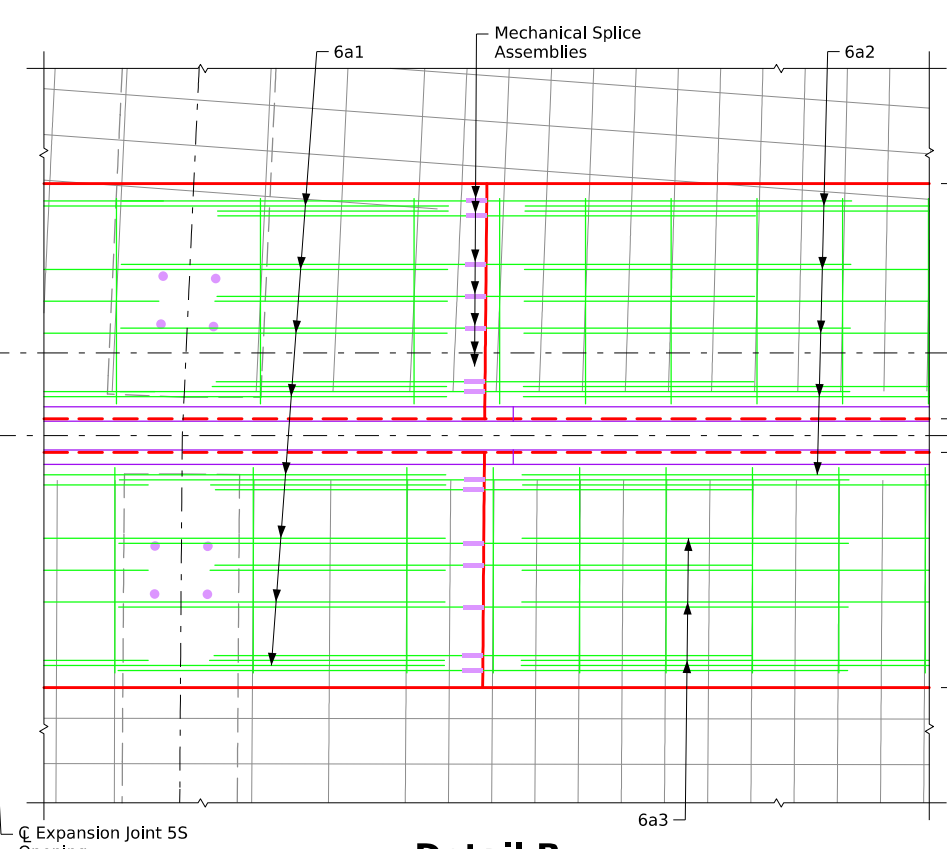
Section A-A

Section B-B

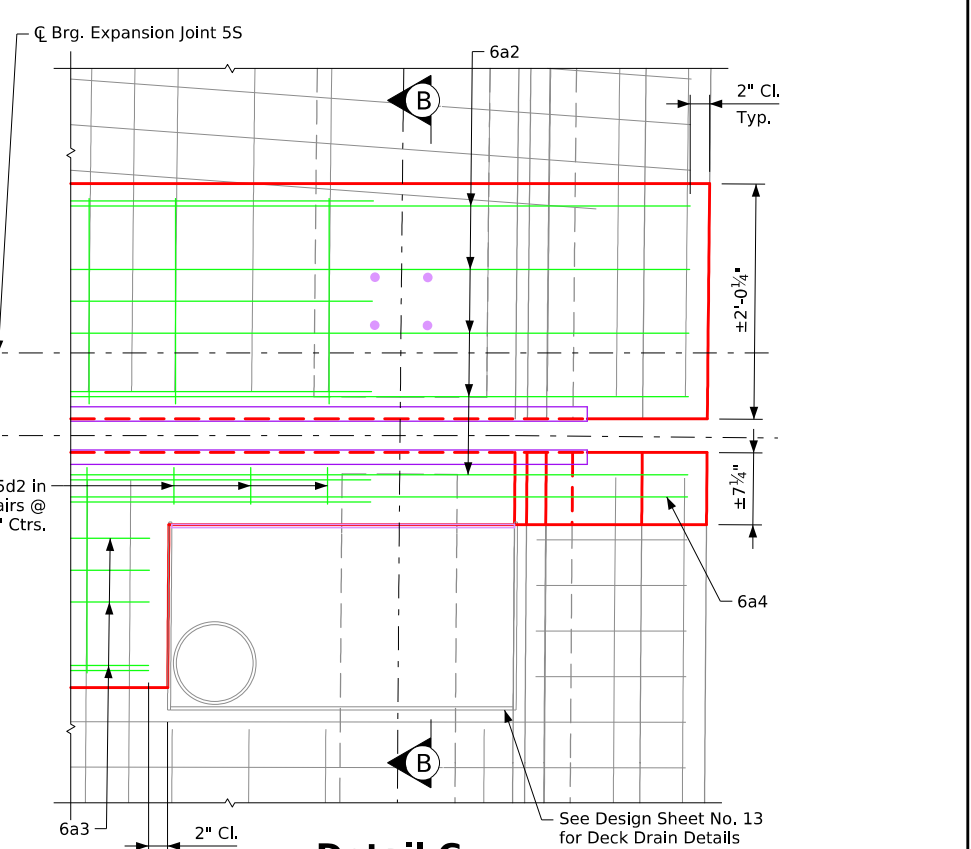
Bent Bar Details		Epoxy Coated Reinforcing Steel - Joint 5S				
Bar	Location	Shape	No.	Length	Weight	
6a1	Deck, Transverse, Top & Bott., Stage 1		16	41'-0"	985	
6a2	Deck, Transverse, Top & Bott., Stage 2		10	27'-1"	407	
6a3	Deck, Transverse, Top & Bott., Stage 2		6	22'-5"	202	
6a4	Deck, Transverse, Top & Bott., Stage 2		2	7'-6"	23	
5a5	Diaph., Transv., Bott. Between Girders		31	8'-8"	280	
5a6	Diaph., Transv., Bott. Between Girders		3	7'-11"	25	
5a7	Diaph., Transv., Bott. Between Girders		6	3'-8"	23	
5a8	Diaph., Transv., Bott. Between Girders, Stage 1		6	2'-0"	13	
5a9	Diaph., Transv., Bott. Between Girders, Stage 2		6	6'-0"	38	
5d1	Deck, Hoops		276	3'-8"	1,056	
5d2	Deck, Hoops		6	2'-4"	15	
Epoxy Reinforcing Total Weight (lbs.)					3,067	
5a Bar Locations		PPC Placement Summary				
Girder Spacing	Bar	Section			Total (CY)	
9'-2 1/4"	5a5	Deck and Diaphragm W. of Joint Opening (Stage 1)			4.1	
9'-2"	5a5	Deck and Diaphragm E. of Joint Opening (Stage 1)			4.1	
8'-5 5/8"	5a6	Deck and Diaphragm W. of Joint Opening (Stage 2)			2.4	
4'-2 1/16"	5a7	Deck and Diaphragm E. of Joint Opening (Stage 2)			2.7	
At Stage Construction Joint	5a8 & 5a9				Total (CY)	13.2



Detail A



Detail B



Detail C

Mechanical Splice Assemblies:

The 6a1, 6a2, 6a3, 5a8, and 5a9 Joint 5S deck header bars shall be spliced at the locations shown using 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 IM 451 Appendix E. Reinforcing splice bars shall be a minimum of 3/4" diameter.

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 "Reinforcing Steel, Epoxy Coated" and no separate payment will be made. The weight of mechanical splice assemblies is not included in the quantity shown for "Reinforcing Steel, Epoxy Coated". A total of 22 epoxy coated splice assemblies will be required.

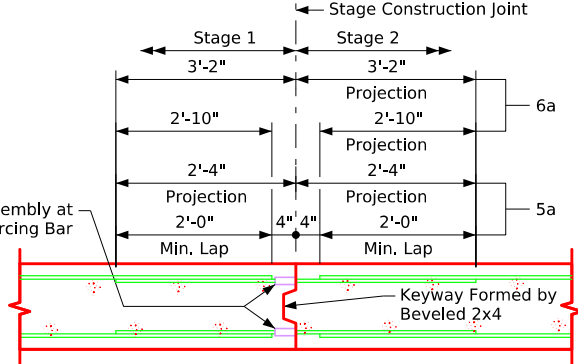
Notes:

*Polyester Polymer Concrete (PPC) shall be placed in two lifts. PPC lift depths shall be determined by the PPC manufacturer.

For joint opening details, see Design Sheet No. 11.

For locations of Detail A, Detail B, Detail C, & Section A-A, see Design Sheet No. 8.

All new bolts, nuts, and washers in top flanges of girders shall be non-high strength and shall be galvanized in accordance with Section 4153.06 of the Standard Specifications.



Mechanical Splice Detail

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

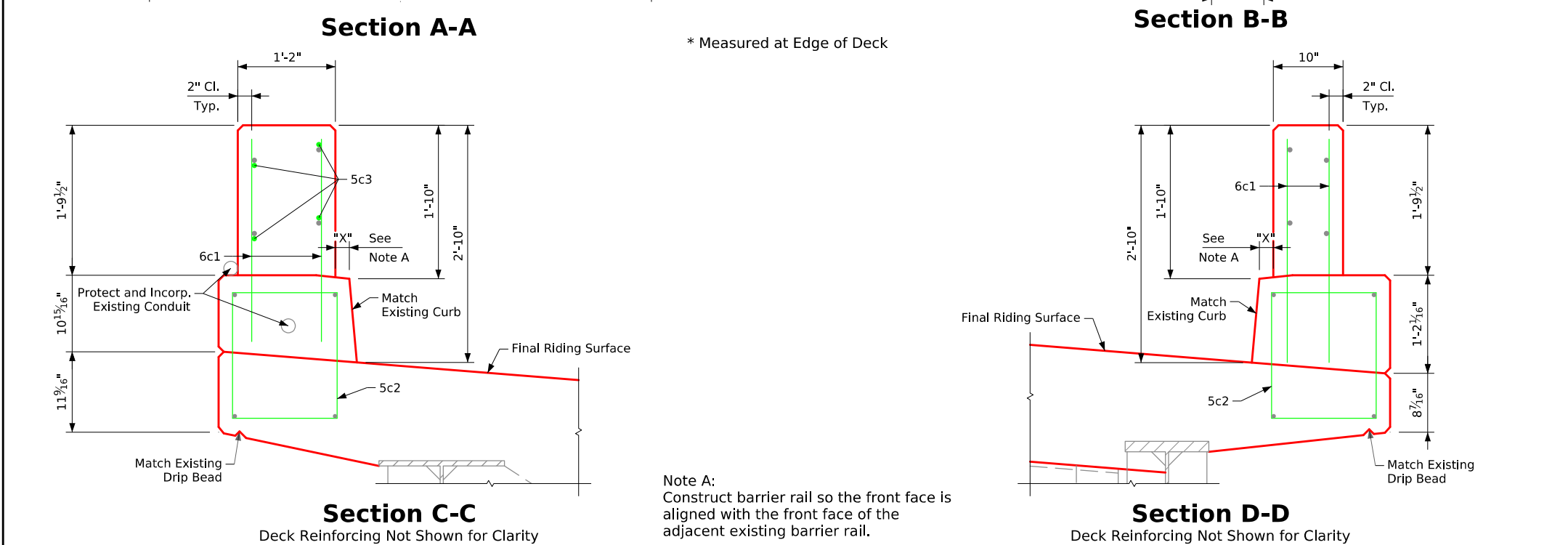
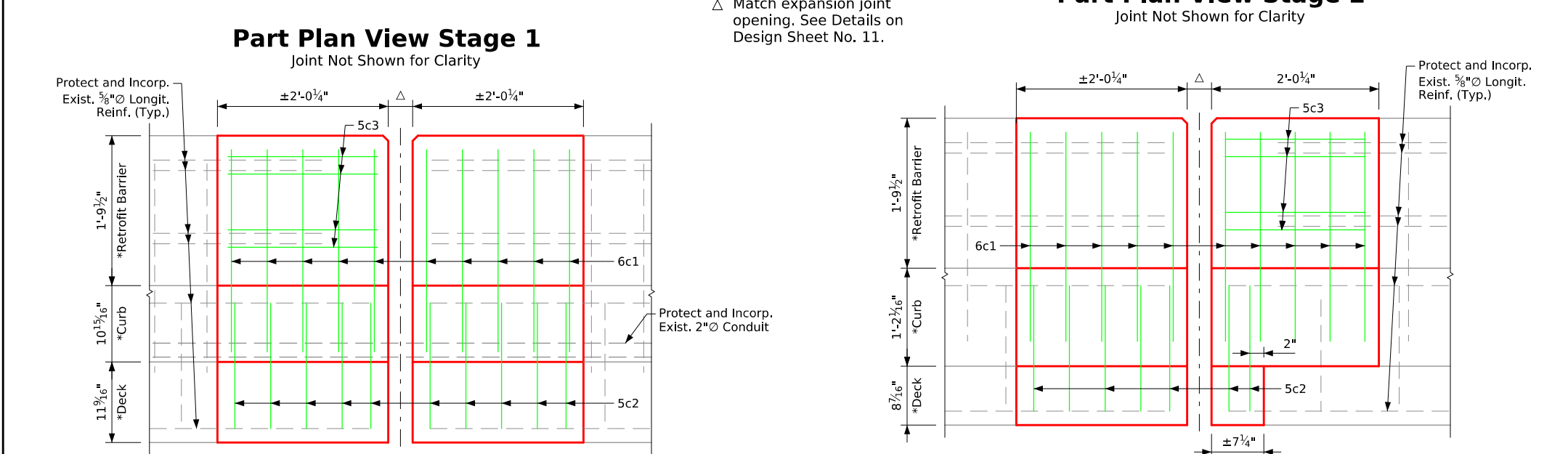
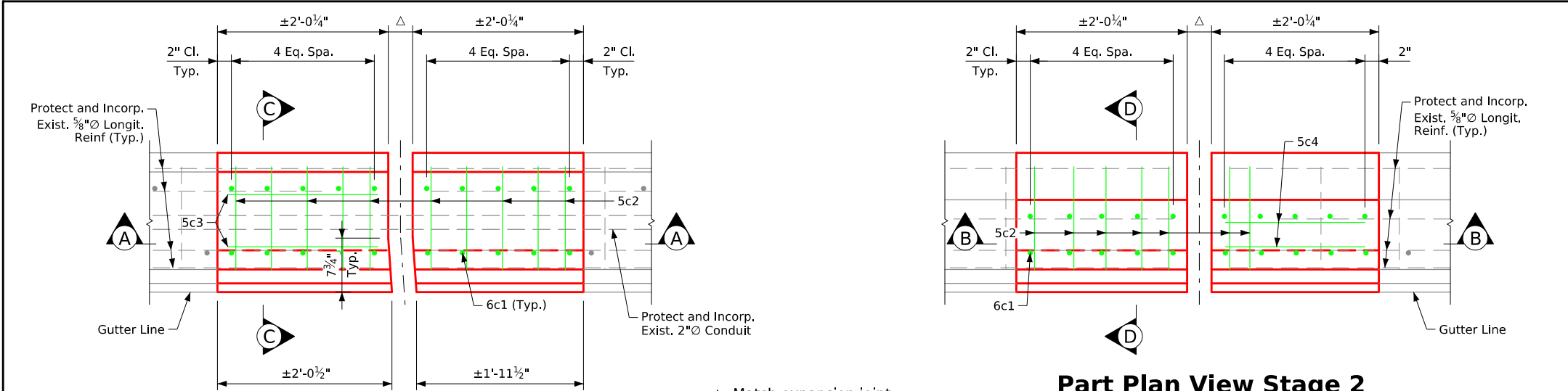
Joint 5S Repair Details

STA. 322+81.95 (CL 1-380) Turn-In Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 627 Design Sheet No. 9 of 13 FHWA No. 603688

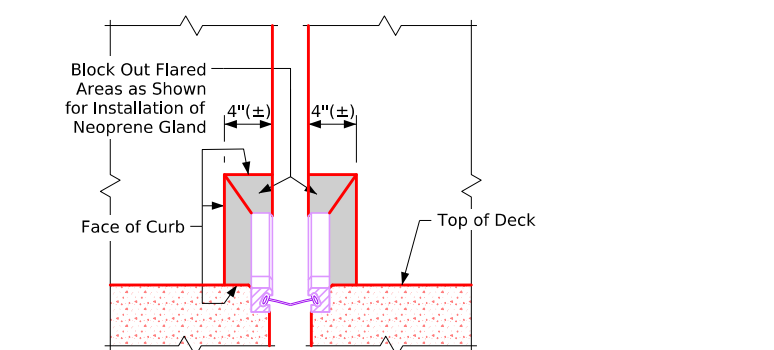


Epoxy Coated Reinforcing Steel - Joint 5S					
6c1	Vertical, Barrier Rail		40	2'-6"	150
5c2	Curb, Hoops		17	6'-6"	115
5c3	Horizontal, Barrier Rail		8	1'-8"	14
			Epoxy Reinforcing Total Weight (lbs.)		279
Concrete Placement Summary					
Section					Total (CY)
Bridge Rail & Curb (Stage 1)					0.5
Bridge Rail & Curb (Stage 2)					0.5
Total (CY)					1.0
Bent Bar Details					
<div><p>Diagram illustrating the bent bar details for 5c2. The bar is bent into a U-shape. The dimensions shown are:</p><ul style="list-style-type: none">Horizontal offset: 6"Vertical length: 1'-6"Horizontal length: 1'-3"Vertical offset: 6"Bar diameter: D = 2½"<p>5c2</p></div>					
Note: All dimensions are out to out. D = Pin Diameter					

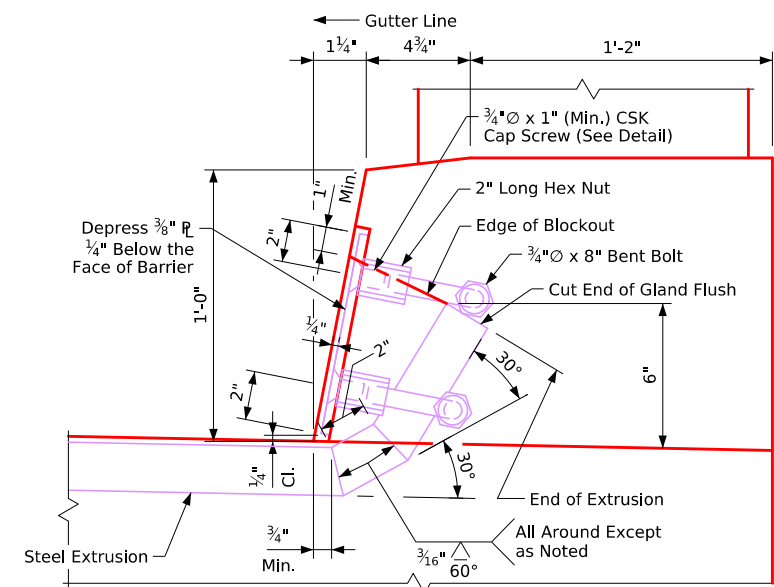
Notes:

Existing longitudinal reinforcing shall be trimmed as required to maintain 2" clearance.

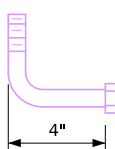
All exposed corners of the top of the barrier rail and all other corners 90° or sharper to be filleted with a 3/4" dressed and beveled strip.



Blockout Detail
(Not Showing Curb Cover Plate)

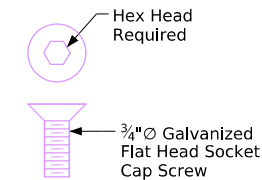


Section B-B

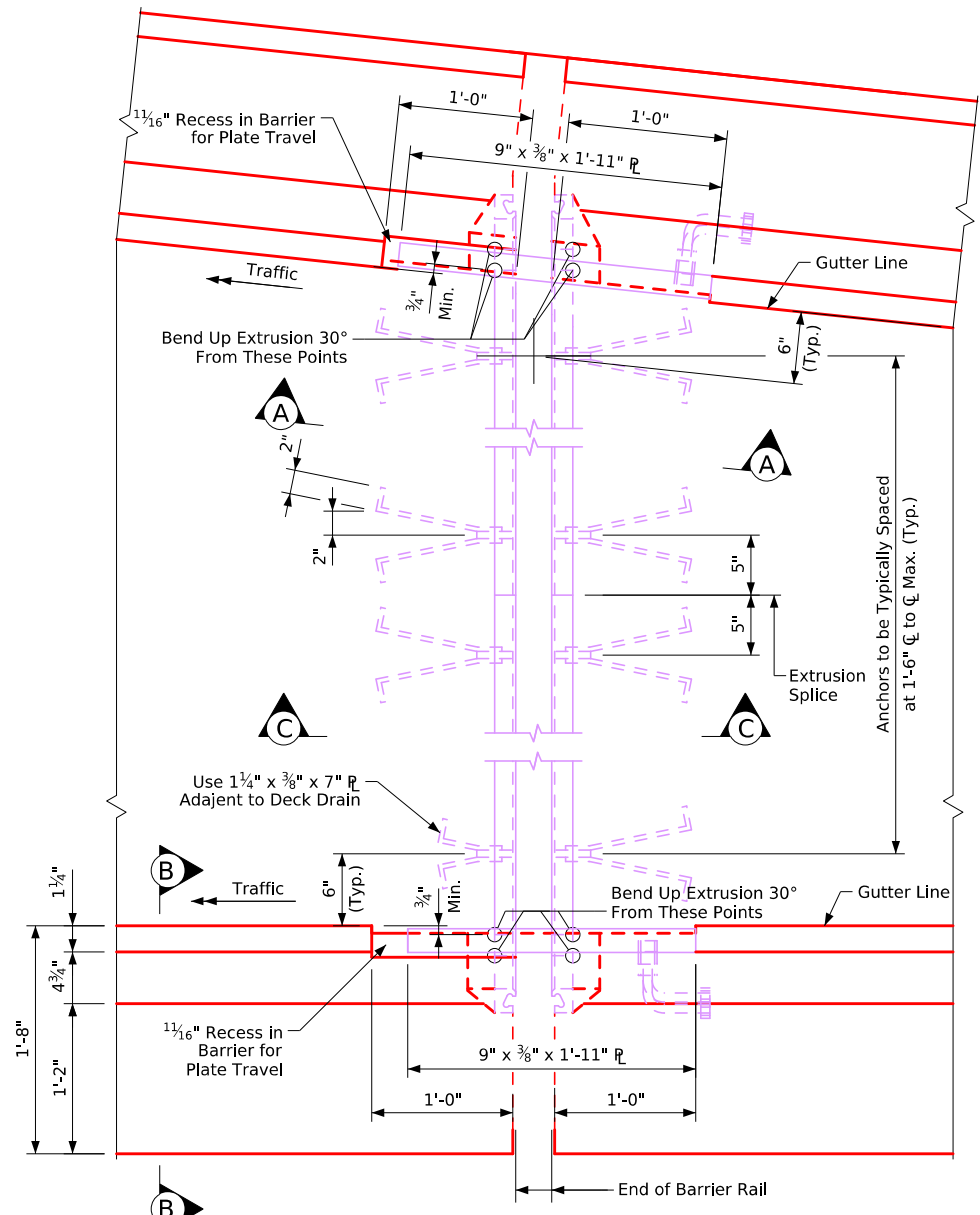


Bent Bolt Detail

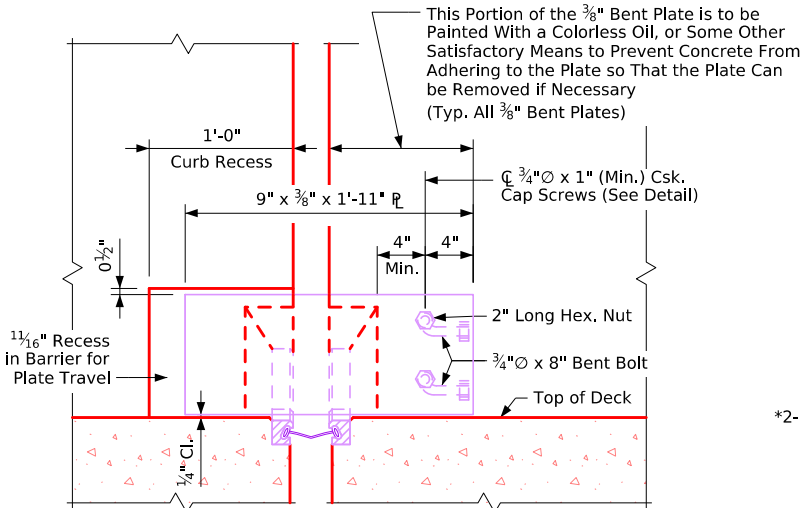
Contractor to note that the cap screw anchorage system for the 3/8 inch barrier plates are always to be placed on the oncoming traffic side.



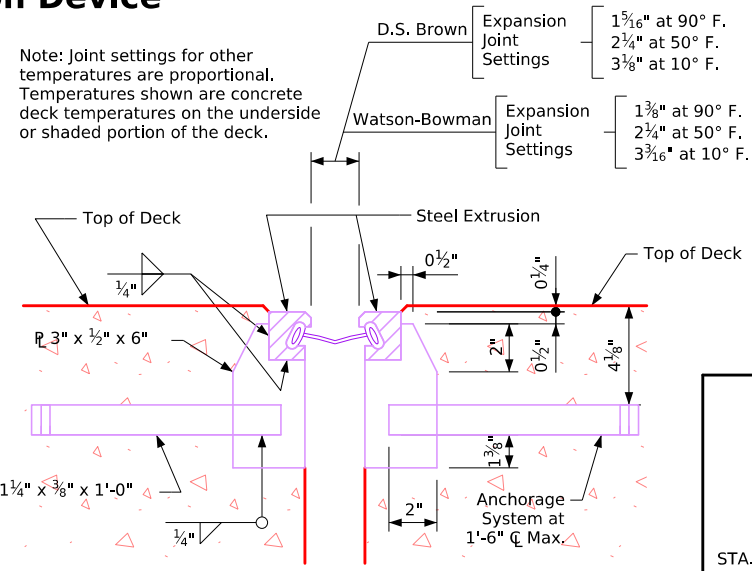
Cap Screw Detail



Part Plan View of Expansion Device



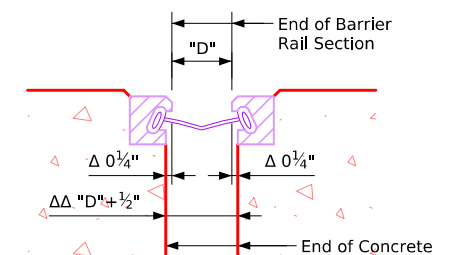
Section A-A



Section C-C

Curb Plate Note:

The material used for the curb plates is to be ASTM A36 steel. The bolts shall meet the requirements of ASTM A307. The plates, bolts, nuts and cap screws are to be galvanized in accordance with Article 4100.07 of the Standard Specifications.



Expansion Opening Detail

- Δ This dimension may vary slightly depending on manufacturer furnishing the joint.
- ΔΔ Used for all out to out dimensions of deck. The dimensions may vary slightly depending manufacturer furnishing the joint.

Table of Approved Expansion Devices

Manufacturer	Type of Steel Extrusion	Neoprene Gland	Minimum Opening for Gland Installation	Corresponding Maximum Deck Temperature
Watson-Bowman & Acme Corp.	A	SE-400	1 1/2"	85°F
D.S. Brown Co.	SSA2	A2R-400	2"	60°F
Approved Equal				

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous Welded Plate Girder Bridge

Expansion Device Details

STA. 322+81.95 (CL-380) Turn-in Date: May 2026

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

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Steel Extrusion Notes:

The Contractor shall submit for approval shop drawings of the expansion devices showing layout, material to be used, and provisions for the holding device during placement of concrete.

The expansion device shall be galvanized after welding. All curb plates including their anchorages shall be galvanized.

The expansion device is to be parallel to grade.

Cap screws shall be countersunk 1/16" below top of the plate. The minimum grade of structural steel for the expansion device shall be ASTM A36.

Blockout details may be altered from those shown provided the gland may be installed and removed if necessary and the curb area remains watertight.

Shop splices of the steel extrusion will be permitted. Prior to making shop splices steel extrusion pieces shall have a minimum length of 15 feet. The individual length of pieces shall be chosen so that a minimum number of splices is required. All pieces shall be joined with a prequalified partial penetration single groove weld detailed on the shop drawing. All surfaces not in contact with concrete are to be ground flush. No weld shall be permitted in the internal section of the extrusion where the neoprene gland is to be installed.

The number of feet of steel extrusion installed shall be paid for at the contract price per foot based on plan quantities. The price bid for "Steel Extrusion Joint w/Neoprene" shall include the cost of furnishing but not the cost of installing the neoprene gland. The contract price bid for "Steel Extrusion Joint w/Neoprene" shall be full compensation for furnishing and installing steel extrusions. This work will consist of furnishing all required materials, (including the 3/8" plates at the curbs and their anchorage systems), and the installation and adjustment of the expansion joints in accordance with the details shown on the plans and as directed by the Engineer. The furnishing and installation of all necessary hardware and accessories as supplied by the Expansion Joint Manufacturer are to be included in this work, including the anchorage system and any temporary erection material. All work and materials for the installation of the expansion joints are to comply with the written recommendations of the Expansion Joint Manufacturer.

Field Construction Notes:

If the steel extrusion is spliced in the field, the splice location shall be detailed on the shop drawings. The connection details shall include tab plates and prepared ends to accommodate the necessary welding. See details in these plans.

Galvanized coating damage by field welding shall be repaired in accordance with Construction and Materials I.M. 410.

Neoprene Gland Notes:

The neoprene gland is to be placed as one continuous piece from end to end of the steel extrusion.

The neoprene gland shall conform to ASTM-2628 modified to exclude recover test and compression set.

The Contractor shall install the gland above the minimum temperature of 45° and the minimum joint opening and corresponding maximum deck temperature shown in these plans. The deck temperature shall be measured by recording the surface temperatures on the underside of the deck adjacent to the joints. If the deck temperature does not fall within the specified temperature range before the Contractor has completed all other required work, it will be necessary for the Contractor to return to the project site to complete installation and testing of the neoprene gland. If the Contractor is required to return to the project site after all other required work has been completed, the Contractor shall complete installation and testing of neoprene gland at no extra charge to the State.

The number of feet of neoprene gland installed shall be paid for at the contract price per foot based on plan quantities. The price for "Neoprene Gland Installation and Testing" shall be full compensation for installing and testing of the new neoprene gland. This work will consist of cleaning the extrusion, installation of the neoprene gland and water tight testing of the expansion joint system. All work and materials necessary for the installation of the neoprene gland shall comply with the recommendations of the Expansion Joint Manufacturer. The price bid for "Neoprene Gland Installation and Testing" shall include all watertight integrity testing, leak repairs as directed by the Engineer, and subsequent watertight testing until a leak free installation is achieved.

Watertight Integrity Testing And Repair Notes:

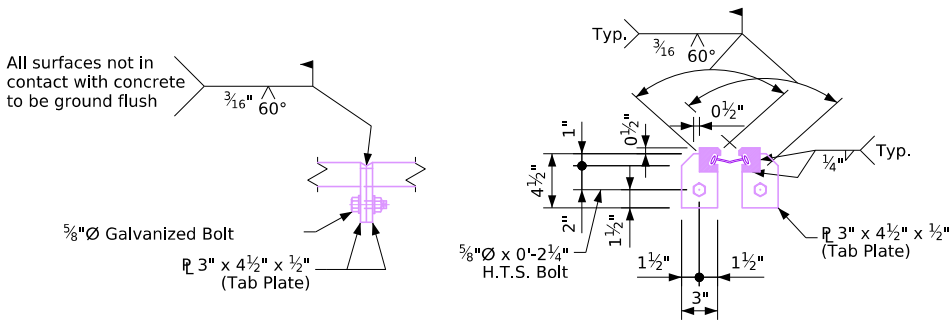
After installation of each neoprene gland, the Contractor shall perform watertight integrity tests at the deck level to detect any leakage. The tests are to check for leakage at the upturned ends of the expansion device and for leakage along the expansion device across the deck and any medians or sidewalks. The Contractor may conduct a single test of the entire device including upturned ends or may conduct separate tests of upturned ends and one or more tests of overlapping lengths between the upturned ends.

At each upturned end of the expansion device, the Contractor shall block out on the deck at least 3 feet of the expansion device leading to the upturned end and flood the area. A minimum water depth of 3" shall be maintained at the gutter line for at least 30 minutes. During the test, the Inspector shall observe for any overflow at the upturned end. At the conclusion of the test the Inspector will examine the underside of the joint for leakage. The expansion device is considered watertight if the Inspector observes no overflow during the test and if no dripping water or water droplets are visible in the under deck areas near the upturned end.

The Contractor shall test the expansion device between upturned ends by blocking out and covering the device with ponded or flowing water to a depth of at least 1" at all points, for at least 30 minutes. Vertical curb surfaces may be tested with an unnozzled hose delivering approximately one gallon per minute directed to flow over the entire curb height for 30 minutes. At the conclusion of the test, the inspector will examine the underside of the joint for leakage. The expansion device is considered watertight if no dripping water or water droplets are visible in the under deck areas along the full length of the expansion joint. Damp concrete that does not show dripping water or water droplets is not considered a sign of leakage.

If the expansion device leaks at an upturned end or along its length, the Contractor shall locate the leak(s) and take repair measures to stop the leakage. The repair measures shall be as recommended by the Manufacturer and approved by the Engineer prior to beginning corrective work.

If measures to eliminate leakage are taken, the Contractor shall perform subsequent watertight integrity tests subject to the same conditions as the original test.



End View

Section Thru Extrusion

Field Splice Detail

Design For Repairs to 0° Skew, Radius = 1145.916'

2260'-8" x Var. Width Continuous
Welded Plate Girder Bridge

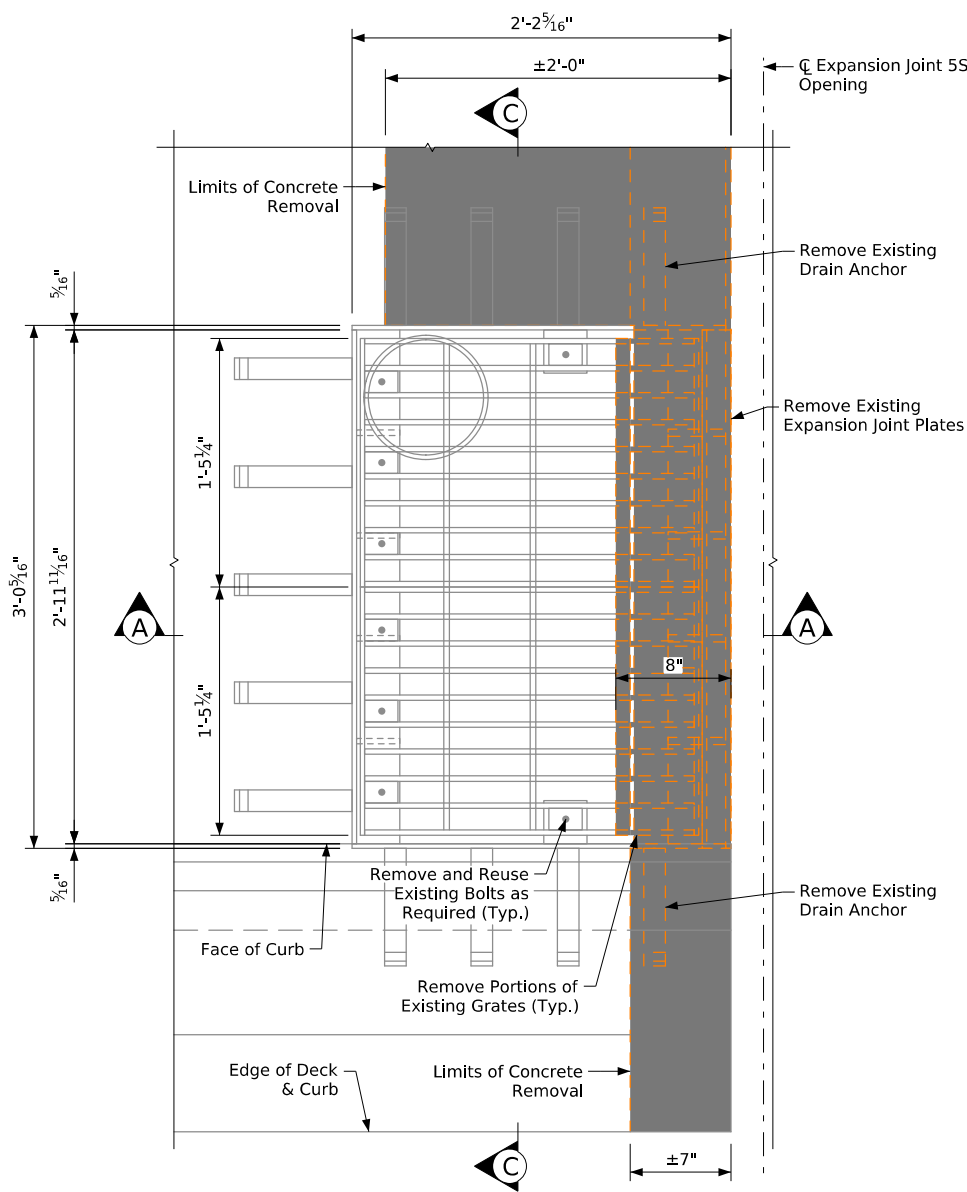
Expansion Device Notes

STA. 322+81.95 (C I-380)Turn-in Date: May 2026

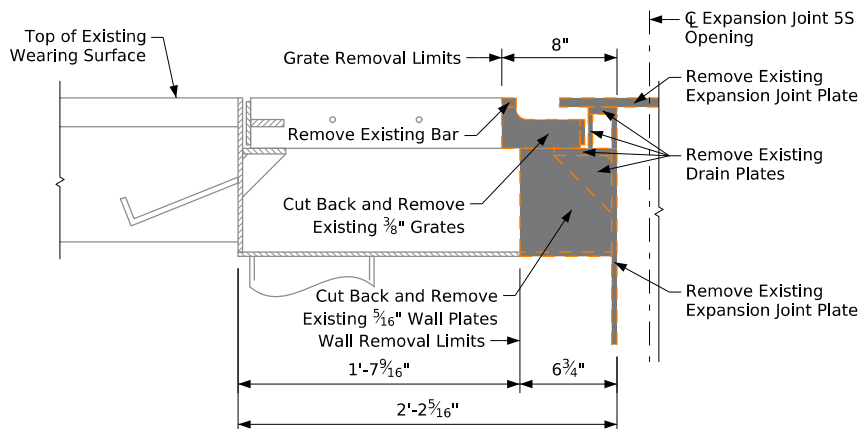
Linn County

IOWA DEPARTMENT OF TRANSPORTATION

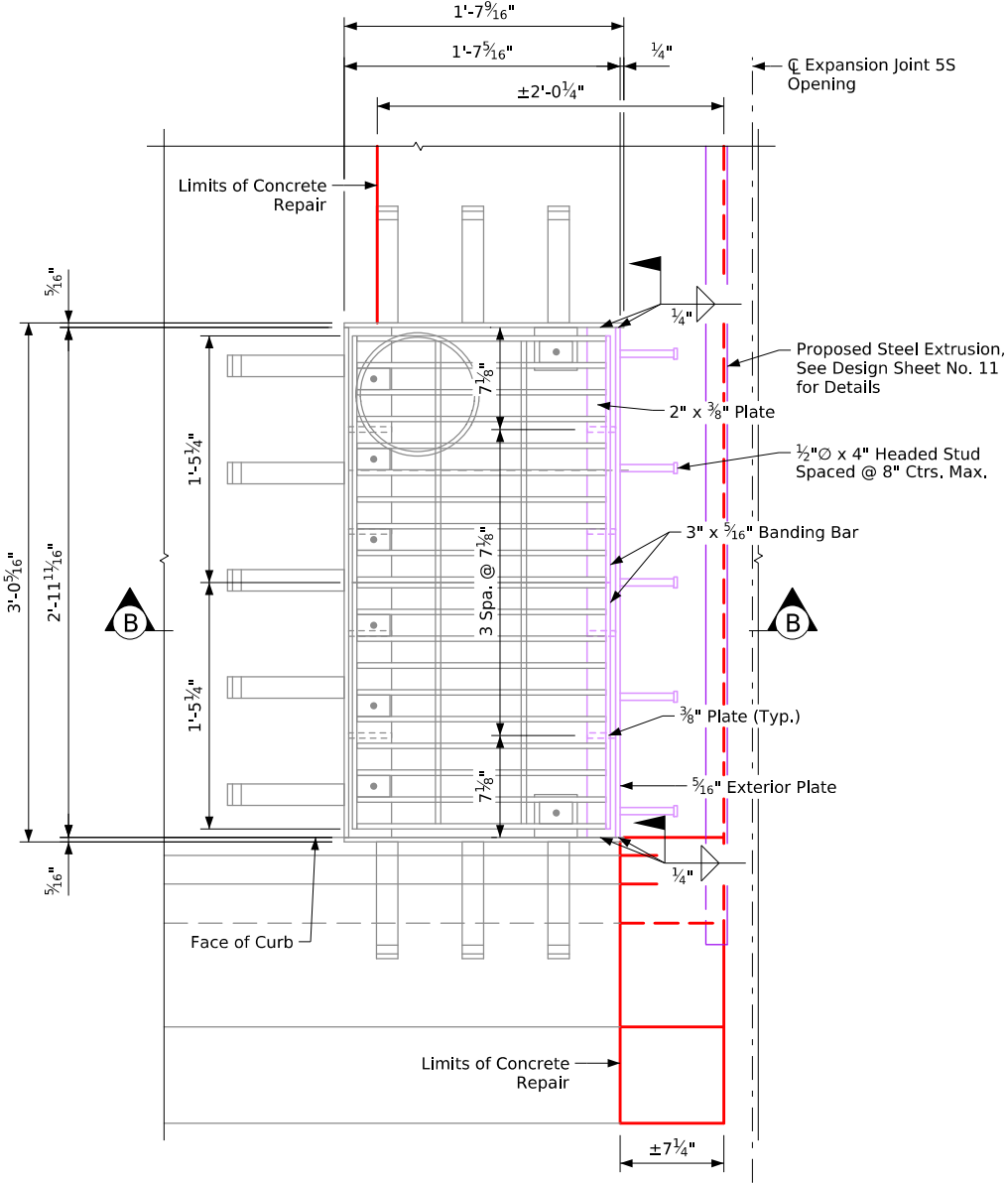
Design No. 627Design Sheet No. 12 of 13FHWA No. 603688



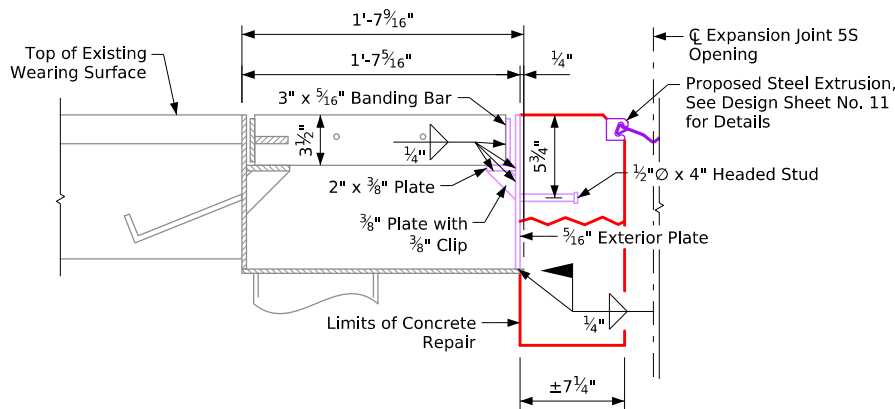
Drain Removal Plan



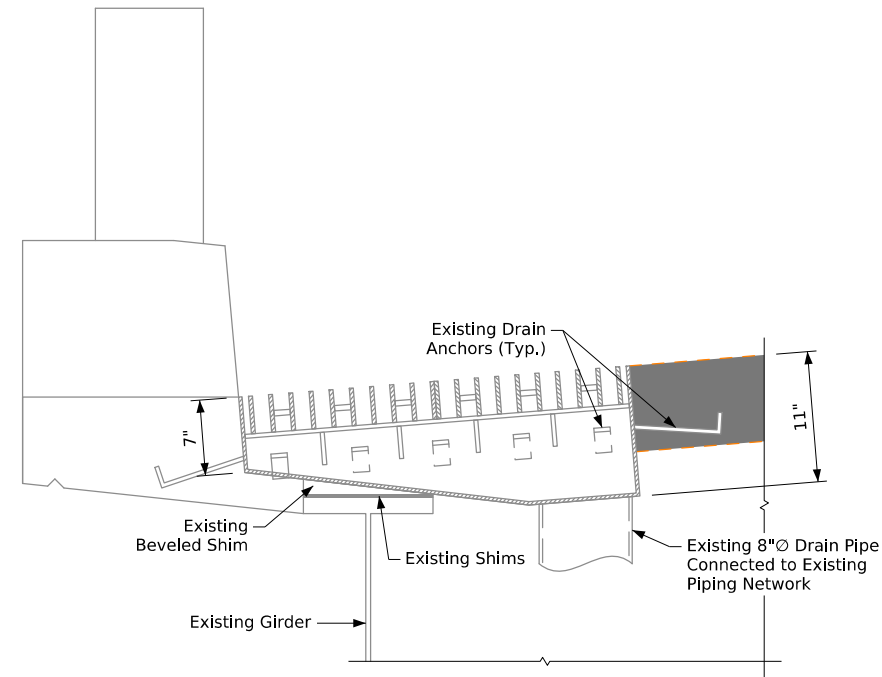
Section A-A
Reinforcing Not Shown for Clarity



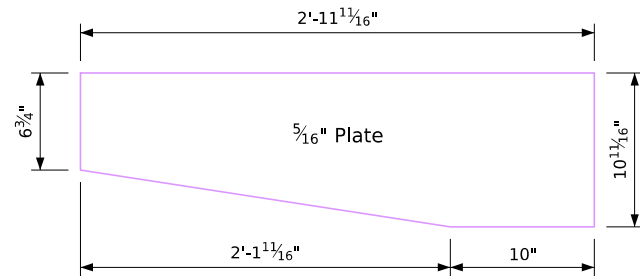
Drain Repair Plan



Section B-B
Reinforcing Not Shown for Clarity



Section C-C



Proposed Exterior Plate

Notes:

All proposed plates shall be galvanized after fabrication. All existing and new galvanized items impacted from drain modifications/removals and all field welded areas shall be repaired in accordance with Construction and Materials I.M. 410.

Plates shall meet the requirements of ASTM A709 Grade 36.

Headed studs shall be in accordance with Section 4152.03 of the Standard Specifications.

All work required to disassemble the existing drain system shall be paid for by the bid item "Removals, As Per Plan". All work required to construct the proposed drain, including labor, furnishing materials, galvanizing, and welding, shall be paid for by the bid item "Structural Steel".

Design For Repairs to 0° Skew, Radius = 1145.916'
**2260'-8" x Var. Width Continuous
Welded Plate Girder Bridge**

Deck Drain Details



STA. 322+81.95 (C I-380) Turn-In Date: May 2026

Linn County

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Design No. 627 Design Sheet No. 13 of 13 FHWA No. 603688

Index of Sheets	
No.	Description
A Sheets	Title Sheets
A.3	Index of Sheets
B Sheets	Road Design Details
B.1	Temporary Concrete Barrier Layout
C Sheets	Quantities and General Information
C.1	Estimated Roadway Quantities and Estimate Reference Information
C.2	Index of Tabulations
C.3	Standards
C.2 - C.10	Tabulations
J Sheets	Traffic Control Sheets
J.1 - J.13	Traffic Control Plan and Details

Roadway Design	
	<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><div>5/20/2026</div></div> <div>Signature _____ Date _____</div> <div>Printed or Typed Name Tom Rhoads</div> <div>My license renewal date is December 31, <u>2027</u></div> <div>Pages or sheets covered by this seal: <u>A.3 - J.13</u></div>

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Iowa DOT State Funds

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	8	Refer to Tab. 108-22 in the C Sheets for details.
2	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	506.7	
3	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	8	Refer to Tab. 108-29 in the C Sheets for details.
4	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	351.96	Refer to Tab. 108-22 in the C Sheets for details.
5	2527-9263216	PAINTED PAVEMENT MARKINGS, MULTI-COMPONENT LIQUID	STA	185.19	Refer to Tab. 108-22 in the C Sheets for details. Grooving for pavement markings will not be performed as part of this project. Place permanent multi-component pavement markings in existing grooves.
6	2527-9263231	REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE	STA	52.8	Refer to Tab. 108-22 in the C Sheets for details.
7	2528-2518000	SAFETY CLOSURE	EACH	3	Refer to Tab. 108-13A in the C Sheets for details.
8	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	2,100	Refer to B Sheets, J Sheets, and Tab. 108-33 in the C Sheets for details.
9	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to J Sheets for details. Cover, temporarily remove, or use an "Exit Closed" sign overlay for conflicting signs during construction. Replace signs damaged by the Contractor at no additional cost to the Contracting Authority.
10	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	0	Use PDMs to provide advanced warning for traffic pattern changes and detours. Place PDMS as shown on Standard Plans or as directed by the Engineer. See proposal for additional information.
11	2551-0000110	TEMP CRASH CUSHION	EACH	2	Refer to Tab. 108-30 in the C Sheets for details.

INDEX OF TABULATIONS				111_25 4/21/26
Line No.	Tabulation	Tabulation Title	Sheet No.	
		C Sheets		
1.0	105_04	STANDARD ROAD PLANS	C.3	
2.0	108_13A	SAFETY CLOSURES	C.4	
3.0	108_22	PAVEMENT MARKING LINE TYPES	C.5-6	
4.0	108_29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.7	
5.0	108_30	CRASH CUSHIONS	C.8	
6.0	108_33	TEMPORARY BARRIER RAIL	C.9	
8.0	262_06	UTILITIES (NOT A POINT 25 PROJECT)	C.10	
9.0		J Sheets		
10.0	111_01	COORDINATED OPERATIONS	J.2	
11.0	108_23A	TRAFFIC CONTROL PLAN	J.3	
12.0	108_25	511 TRAVEL RESTRICTIONS	J.4	
13.0	108_26A	STAGING NOTES	J.5	

105_04
4/21/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-401	04-20-21	Temporary Barrier Rail (Precast Concrete)
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-417	04-21-20	Ramp Closure
TC-418	04-18-23	Lane Closure on Divided Highway
TC-420	10-16-18	Lane Closure at Ramps
TC-421	10-21-25	Lane Closure with TBR
TC-422	04-18-23	Closure of Two Adjacent Lanes on Divided Highway
TC-433	10-17-17	Pavement Marking Operations
PM-110	10-15-24	Line Types
PM-111	04-21-20	Symbols and Legends
SI-881	04-16-19	Special Signs for Workzones

SAFETY CLOSURES			
Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
			TOTAL
344+70.00	1		B Ave NE On-Ramp
351+05.00	1		B Ave NE On-Ramp
351+70.00	1		B Ave NE On-Ramp
	3		

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

Line No.	Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	BLC6 Factored (STA)	BLW6 Factored (STA)	CHW10 Factored (STA)	DLW6 Factored (STA)	ELW6 Factored (STA)	ELY6 Factored (STA)	RLW6 Factored (STA)	SLW6 Factored (STA)	Remarks
100.0	STAGE 1:																
101.0	I-380 SB	325+50.00	379+50.00	Left	Removal of Paint	X								54.00			
102.0	I-380 SB	325+50.00	379+50.00	Center	Removal of Paint		X			27.00							Lane Lines (2)
103.0	I-380 SB	325+50.00	379+50.00	Right	Removal of Paint			X			21.54	8.45	19.00				Includes Ramp Gores
104.0	I-380 SB	331+94.00	343+73.00	Aux.	Removal of Paint								11.50		0.50		Aux Lane 1
105.0	I-380 SB	353+61.00	369+90.00	Aux.	Removal of Paint								14.60		1.60		Aux Lane 2
106.0	I-380 SB	325+50.00	328+80.00	Left	Wet Retroreflective Removable Tape	X								3.30			Taper 1
107.0	I-380 SB	325+50.00	328+80.00	Center	Wet Retroreflective Removable Tape		X									6.60	Taper 1 Lane Lines (2)
108.0	I-380 SB	325+50.00	328+80.00	Right	Wet Retroreflective Removable Tape			X					3.30				Taper 1
109.0	I-380 SB	328+80.00	376+20.00	Left	Waterborne/Solvent Paint	X								47.40			
110.0	I-380 SB	328+80.00	376+20.00	Center	Waterborne/Solvent Paint		X									94.80	Lane Lines (2)
111.0	I-380 SB	328+80.00	376+20.00	Right	Waterborne/Solvent Paint			X			3.46	6.86	13.10				Includes Ramp Gores
112.0	I-380 SB	331+94.00	343+73.00	Aux.	Waterborne/Solvent Paint								7.60		2.78		Aux Lane 1
113.0	I-380 SB	331+94.00	343+73.00	Aux.	Waterborne/Solvent Paint								12.17		4.30		Aux Lane 2
114.0	I-380 SB	376+20.00	379+50.00	Left	Wet Retroreflective Removable Tape	X								3.30			Taper 2
115.0	I-380 SB	376+20.00	379+50.00	Center	Wet Retroreflective Removable Tape		X									6.60	Taper 2 Lane Lines (2)
116.0	I-380 SB	376+20.00	379+50.00	Right	Wet Retroreflective Removable Tape			X					3.30				Taper 2
117.0																	
200.0	STAGE 2:																
201.0	I-380 SB	325+50.00	328+80.00	All	Removal of Removable Tape	X	X	X					3.30	3.30		6.60	Removal of Stage 1 Taper 1
202.0	I-380 SB	328+80.00	376+20.00	All	Removal of Paint	X	X	X			3.46	6.86	32.87	47.40	0.87	94.80	Removal of Stage 1 Paint
203.0	I-380 SB	376+20.00	379+50.00	All	Removal of Removable Tape	X	X	X					3.30	3.30		6.60	Removal of Stage 1 Taper 2
204.0	I-380 SB	325+50.00	328+80.00	Center	Wet Retroreflective Removable Tape		X							3.30		3.30	Includes Lane Line
205.0	I-380 SB	325+50.00	328+80.00	Right	Wet Retroreflective Removable Tape			X					3.30				
206.0	I-380 SB	328+80.00	345+05.00	Center	Waterborne/Solvent Paint		X							16.25		16.25	Includes Lane Line
207.0	I-380 SB	328+80.00	345+05.00	Right	Waterborne/Solvent Paint			X			2.76	0.90	12.01		1.33		
208.0	I-380 SB	345+05.00	348+35.00	Center	Wet Retroreflective Removable Tape		X							3.30		3.30	Includes Lane Line
209.0	I-380 SB	345+05.00	348+35.00	Right	Wet Retroreflective Removable Tape			X					3.30				
210.0	I-380 SB	348+35.00	371+00.00	Center	Waterborne/Solvent Paint		X							22.65		22.65	Includes Lane Line
211.0	I-380 SB	348+35.00	379+50.00	Right	Waterborne/Solvent Paint			X			9.67	4.64	12.36				Includes Ramp Gores
212.0	I-380 SB	352+05.00	370+45.00	Aux.	Waterborne/Solvent Paint								12.81		3.50		Aux Lane 2
213.0	I-380 SB	371+00.00	377+60.00	Left	Wet Retroreflective Removable Tape	X								6.60			Left Lane Merge
214.0	I-380 SB	371+00.00	379+50.00	Center	Waterborne/Solvent Paint		X					2.81				17.00	Lane Lines (2)
215.0	I-380 SB	377+60.00	379+50.00	Left	Waterborne/Solvent Paint	X								1.90			
221.0																	
300.0	STAGE 3:																
301.0	I-380 SB	325+50.00	328+80.00	All	Removal of Removable Tape		X	X					3.30	3.30		3.30	Removal of Stage 2 Taper 1
302.0	I-380 SB	328+80.00	345+05.00	All	Removal of Paint		X	X			2.76	0.90	12.01	16.25	1.33	16.25	
303.0	I-380 SB	345+05.00	348+35.00	All	Removal of Removable Tape		X	X					3.30	3.30		3.30	Removal of Stage 2 Taper 2
304.0	I-380 SB	348+35.00	379+50.00	All	Removal of Paint	X	X	X			9.67	7.45	25.17	24.55	3.50	39.65	
305.0	I-380 SB	371+00.00	377+60.00	Left	Removal of Removable Tape	X								6.60			Removal of Stage 2 Merge
306.0	I-380 SB	325+50.00	379+50.00	Left	Multi-Component Liquid Material	X								54.00			
307.0	I-380 SB	325+50.00	379+50.00	Center	Multi-Component Liquid Material		X		54.00								Lane Lines (2)

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

CBW6: Crosswalk Bar (White) @ 10.00

CLW6: Crosswalk Line (White) @ 2.00

DLW4: Dotted Line (White) @ 0.22

ELW6: Edge Line Right (White) @ 1.00

MNY6: Median Nose (Yellow) @ 1.00

RLY4: Ramp Edge Line Left (Yellow) @ 0.67

SPW4: Sloped Curb 4" (White) @ 2.16

STY6: Standard Curb 6" (Yellow) @ 2.03

BCY6: Broken Centerline (Yellow) @ 0.25

CHW8: Channelizing Line (White) @ 1.33

DCY4: Double Centerline (Yellow) @ 1.34

DLW6: Dotted Line (White) @ 0.33

ELY4: Edge Line Left (Yellow) @ 0.67

NPY4: No Passing Zone Line (Yellow) @ 0.84

RLY6: Ramp Edge Line Left (Yellow) @ 1.00

SPW6: Sloped Curb 6" (White) @ 2.28

YLW2: Yield Line (White) @ 1.15

BLC6: Broken Line Contrast (White/Black) @ 0.50

CHW10: Channelizing Line (White) @ 1.67

DCY6: Double Centerline (Yellow) @ 2.00

DLY4: Dotted Line (Yellow) @ 0.22

ELY6: Edge Line Left (Yellow) @ 1.00

NPY6: No Passing Zone Line (Yellow) @ 1.25

SLW2: Stop Line (White) @ 4.00

SPY4: Sloped Curb 4" (Yellow) @ 2.16

BLW4: Broken Lane Line (White) @ 0.17

CHY8: Channelizing Line (Yellow) @ 1.33

DDY4: Double Dotted Line (Yellow) @ 0.44

DLY6: Dotted Line (Yellow) @ 0.33

LDW8: Lane Drop (White) @ 0.33

RLW4: Ramp Edge Line Right (White) @ 0.67

SLW4: Solid Lane Line (White) @ 0.67

SPY6: Sloped Curb 6" (Yellow) @ 2.28

BLW6: Broken Lane Line (White) @ 0.25

CHY10: Channelizing Line (Yellow) @ 1.67

DDY6: Double Dotted Line (Yellow) @ 0.67

ELW4: Edge Line Right (White) @ 0.67

LDW10: Lane Drop (White) @ 0.42

RLW6: Ramp Edge Line Right (White) @ 1.00

SLW6: Solid Lane Line (White) @ 1.00

STW6: Standard Curb 6" (Yellow) @ 2.03

Line No.	Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	BLC6 Factored (STA)	BLW6 Factored (STA)	CHW10 Factored (STA)	DLW6 Factored (STA)	ELW6 Factored (STA)	ELY6 Factored (STA)	RLW6 Factored (STA)	SLW6 Factored (STA)	Remarks
308.0	I-380 SB	325+50.00	379+50.00	Right	Multi-Component Liquid Material			X			21.54	8.45	19.00				Includes Ramp Gores
309.0	I-380 SB	331+94.00	343+73.00	Aux.	Multi-Component Liquid Material								11.50		0.50		Aux Lane 1
310.0	I-380 SB	353+61.00	369+90.00	Aux.	Multi-Component Liquid Material								14.60		1.60		Aux Lane 2
311.0																	
400.0	FACTORED TOTALS:																
411.0	Factored Total				Removal of Paint					27.00	40.19	23.66	115.15	142.20	7.80	150.70	
412.0	Factored Total				Removal of Removable Tape								13.20	19.80		19.80	
413.0	Factored Total				Multi-Component Liquid Material				54.00		21.54	8.45	45.10	54.00	2.10		
414.0	Factored Total				Waterborne/Solvent Paint						15.89	15.21	70.05	88.20	11.91	150.70	
415.0	Factored Total				Wet Retroreflective Removable Tape								13.20	19.80		19.80	

Total Removal of Paint: 506.7

Total Removal of Removable Tape: 52.8

Total Multi-Component Liquid Material: 185.19

Total Waterborne/Solvent Paint: 351.96

Total Wet Retroreflective Removable Tape: 52.8

108_29
4/15/25

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Line No.	Roadway Identification	Station	Side	Pavement Symbol	Quantity (EA)	Groove Marking Needed?	Remarks
	Stage 1B						
1.0	I-380 SB	355+10.00	Right	RLRW	1	No	
2.0	I-380 SB	356+10.00	Right	RLRW	1	No	
3.0	I-380 SB	365+10.00	Right	RLRW	1	No	
4.0	I-380 SB	366+10.00	Right	RLRW	1	No	
5.0							
6.0	Stage 2A						
7.0	I-380 SB	381+75.00	Left	LLRW	1	No	
8.0	I-380 SB	382+75.00	Left	LLRW	1	No	
9.0	I-380 SB	391+75.00	Left	LLRW	1	No	
10.0	I-380 SB	392+75.00	Left	LLRW	1	No	

Total RLRW: 4
Total LLRW: 4

CRASH CUSHIONS													108_30 4/16/24
<div>* Bid Item</div> <div>1. Lane(s) to which the installation is adjacent.</div> <div>2. Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500.</div>													
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)	Obstacle Description	Remarks
1.0	SB	339+86.15	Right	2.0	Temporary	1						TBR	
2.0	SB	339+36.23	Left	2.0	Temporary	1						TBR	Relocated from Stage 1

Total Crash Cushions (Temporary): 2

<div>108_33 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>								
Line No.	No.	Station From	Station To	Length (FT)	Barrier Rail Type	Anchored*	Modular Glare Screen System	Remarks
1.0	Stage 1	329+02.00	339+56.00	1075.0	Concrete BA-401	Yes	No	
2.0	Stage 2	329+02.00	339+06.00	1025.0	Concrete BA-401	Yes	No	Relocated from Stage 1










Total Concrete BA-401: 2,100.0

262_06
9/28/22

UTILITIES (NOT A POINT 25 PROJECT)
























This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS		
SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
LINEWORK	Design Color No.		
Green	(2)	Existing Topographic Features and Labels	
Magenta	(5)	Pavement Marking Call Outs	
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation	
Yellow	(4)	Pavement Markings, Yellow	
Off White	(254)	Pavement Markings, White	
Violet	(15)	Temporary barrier rail, Unpinned	
Flush Orange	(228)	Temporary barrier rail, Pinned	

SHADING	Design Color No.		
Green, Light	(225)	Existing Pavement Shading	
Gray, Light	(48)	Previously Constructed Pavement Shading	
Orange	(6)	Proposed Granular Surface Shading	
Gray, Med	(80)	Previously Constructed Granular Surface Shading	
Blue, Light	(230)	Proposed Pavement Shading	
Pink, Dark	(13)	Temporary Pavement Shading	
Brown, Light	(236)	Proposed Grading Limits Shading	
Cyan	(7)	Proposed MSE or CIP Wall Shading	
Red	(3)	Proposed Bridge Shading and Sign Trusses	
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure	

PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS			
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification
	Work Area		Arrow Board
	Speed Feedback Sign		

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET

(COVERS SHEET SERIES J)

<div>111_01 10/14/22</div> <div>COORDINATED OPERATIONS</div> <div>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.</div>	
Project	Type of Work
MBIN-380-6(570)21--OM-57	Bridge Repair
MPIN-380-6(737)22--ON-57	HMA Crack Filling
MPIN-380-6(721)0--ON-52	PCC Patching

TRAFFIC CONTROL PLAN

Maintain traffic on I-380 and all corresponding ramps except as noted in this tabulation.

Double lane closures in Stage 1B and Stage 2 for TBR placement and TBR removal only allowable beginning Friday at 8 pm and ending Monday at 6 am. Single lane closures in Stage 1A and Stage 3 for pavement marking operations only allowable beginning Friday at 8 pm and ending Monday at 6 am. Traffic control in Stage 1A may be in place for up to 7 days prior to starting work in Stage 1B. Traffic control in Stage 1B is limited to one weekend beginning Friday at 8 pm and ending Monday at 6 am. Traffic control in Stage 2 is limited to 7 days. Nighttime single and double lane closures for other work activities not previously listed are allowed during the following days and times: Sunday 9 pm to 6 am and Mon - Thurs 8 pm to 6 am.

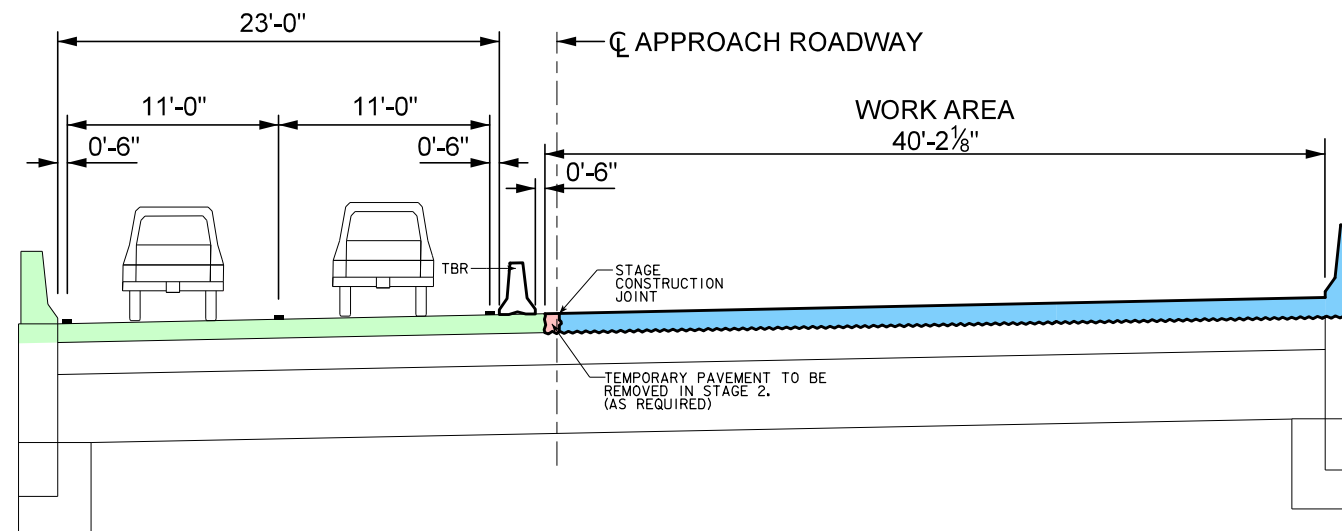
To the extent practicable, avoid closures during special events. Request approval of work windows by the Engineer 10 business days prior to starting work.

Lane closure hours may be modified by the Engineer due to unexpected heavy traffic.

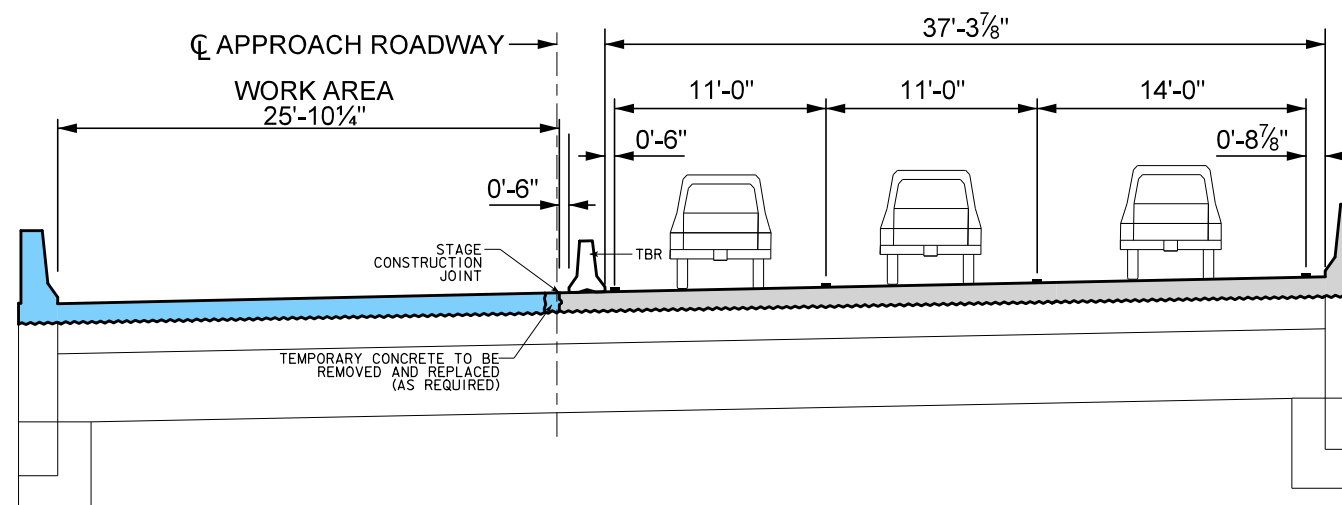
Use PDMS signs and existing ITS message boards to provide a minimum of 7 days advanced warning to the traveling public for traffic pattern changes and work activities. Coordinate PDMS messaging plan with the RCE Office 10 business days prior to closing the I-380 SB Exit ramps to B Avenue and 1st Avenue SW.

Cover or temporarily remove conflicting signs during construction.

108_26A 8/15/22	
STAGING NOTES	
<p>Stage 1A (Night Work):</p> <p>Traffic: Allowable lane reductions as noted in Tab 108_23A. Once temporary pavement markings are in place, maintain 3 lanes of I-380 southbound traffic shifted onto the median shoulder.</p> <p>Construction: Remove or cover existing permanent pavement markings and install temporary pavement markings and traffic control devices, including official detour route signing for the B Avenue to I-380 southbound ramp closure in Stage 1B. Cover detour signs until ramp closure in Stage 1B.</p> <p>Stage 1B (Weekend Work):</p> <p>Traffic: Reduce I-380 southbound to 2 lanes, close B Avenue to I-380 southbound ramp, close I-380 southbound ramp to 1st Avenue SW. Closure of I-380 SB ramp to 1st Avenue SW only allowable during Stage 1B.</p> <p>Construction: TBR and traffic control devices. Bridge joint repair.</p> <p>Stage 2 (Weekend Work):</p> <p>Traffic: Reduce I-380 southbound to 2 lanes shifted to the outside and close B Avenue to I-380 southbound ramp.</p> <p>Construction: Temporary pavement markings, traffic control devices, and TBR. Bridge joint and drainage structure repair.</p> <p>Stage 3 (Night Work):</p> <p>Traffic: Allowable lane reductions as noted in Tab 108_23A.</p> <p>Construction: Removal of temporary pavement markings. Place permanent pavement markings in existing grooves.</p> <p>Sage 4 (No Work):</p> <p>Traffic: Traffic returned to normal operations.</p> <p>Construction: No work.</p>	



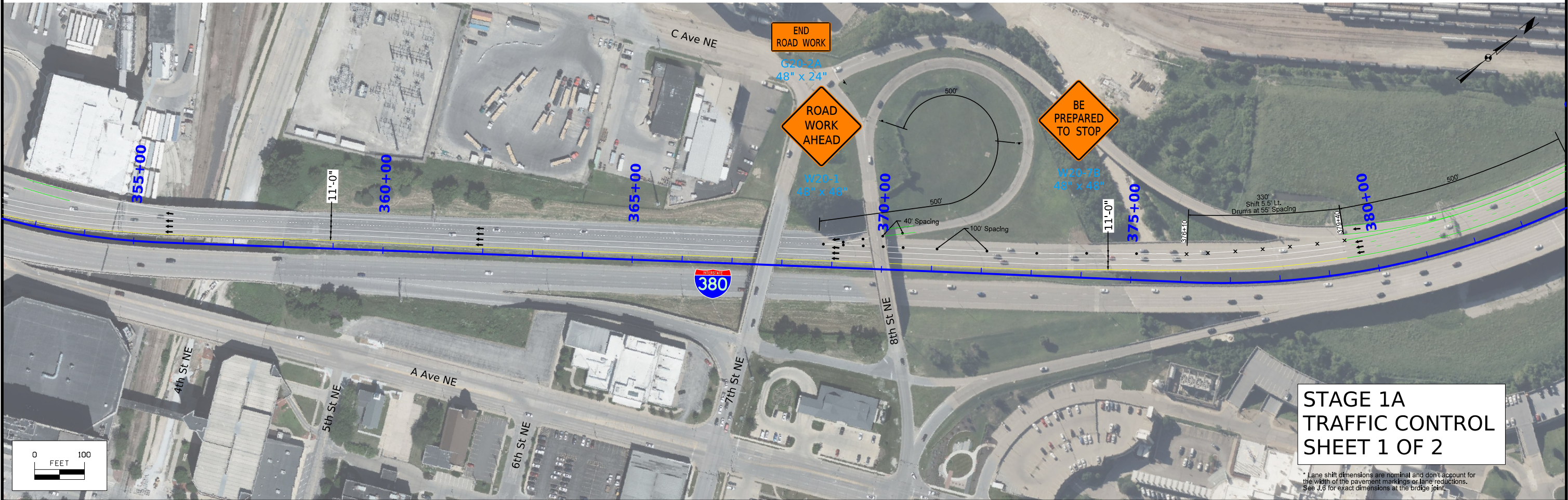
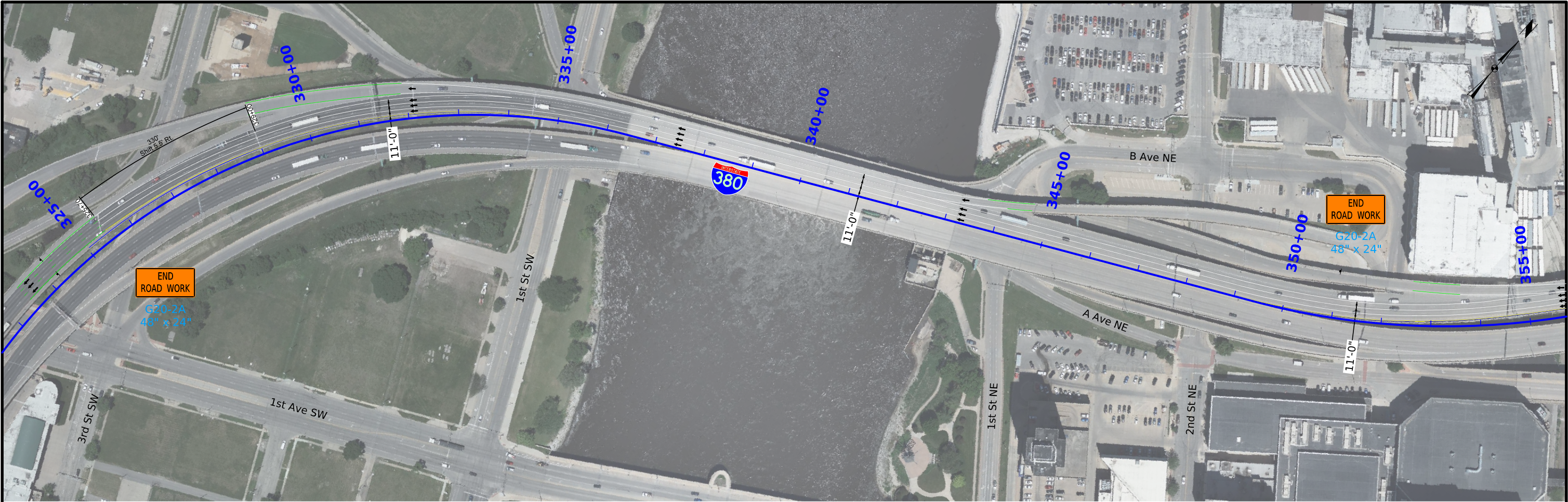
STAGE I - LOOKING SOUTHWEST

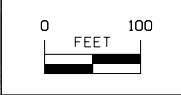


STAGE 2 - LOOKING SOUTHWEST

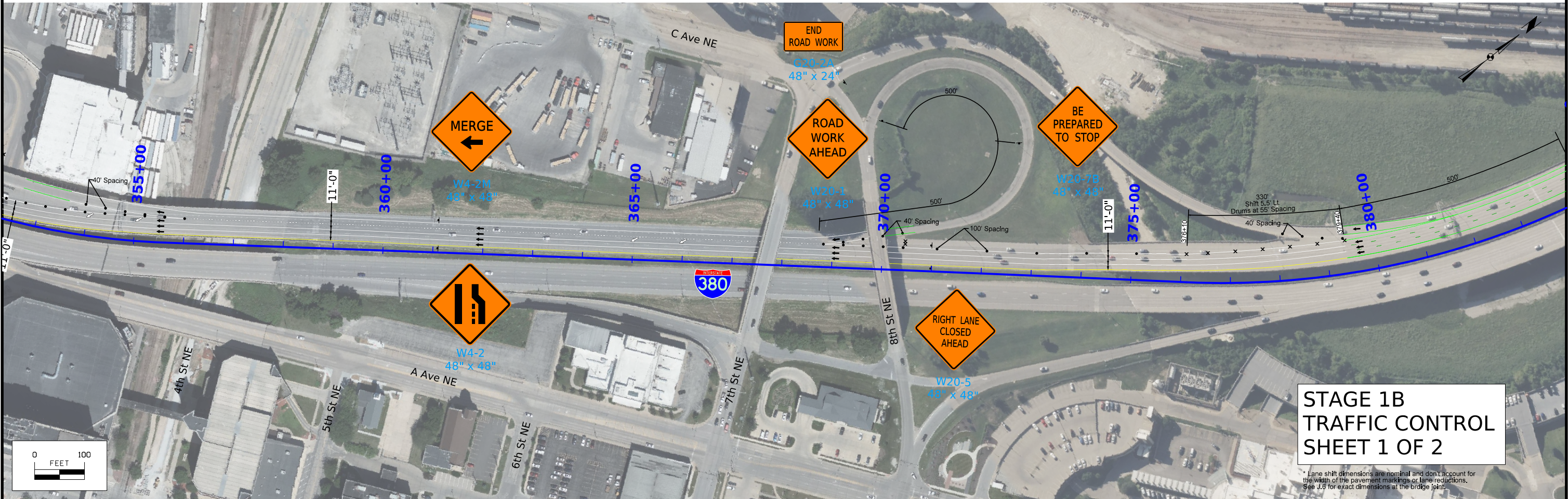
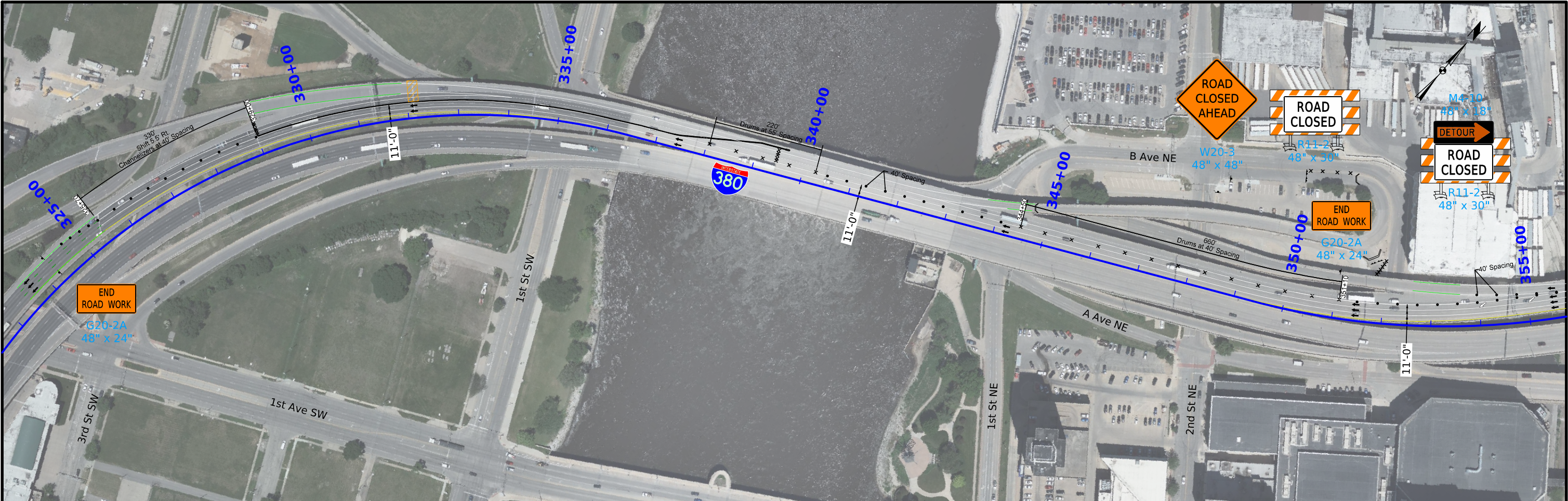
NOTE: Staging details shown on sheet V.5 are looking northeast.

NOTE: Dimensions shown are at CL of bearing at Expansion Joint 5S.



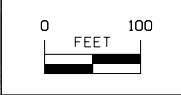


STAGE 1A
TRAFFIC CONTROL
SHEET 2 OF 2

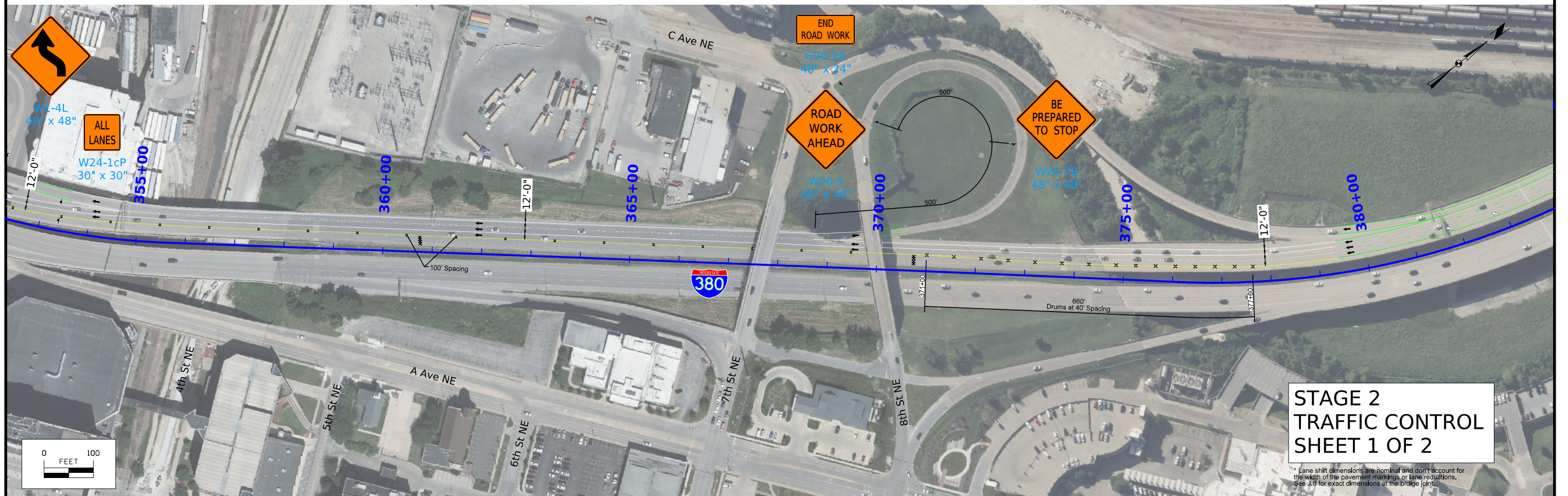


STAGE 1B
TRAFFIC CONTROL
SHEET 1 OF 2

* Lane shift dimensions are nominal and don't account for the width of the pavement markings or lane reductions. See J.6 for exact dimensions at the bridge joint.

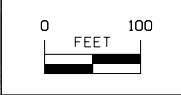


STAGE 1B
TRAFFIC CONTROL
SHEET 2 OF 2



STAGE 2
TRAFFIC CONTROL
SHEET 1 OF 2

* Lane shift dimensions are nominal and don't account for the width of the pavement markings or lane reductions. See J.6 for exact dimensions at the bridge joint.



STAGE 2
TRAFFIC CONTROL
SHEET 2 OF 2

