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A.2	Location Map Sheet
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C.2	Standard Plans - Road



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
MARION COUNTY
Bridge Deck Overlay
 IA 14 over Des Moines River and Reservoir
 1.2 mi. N. of Co. RD. G40

Revisions

TOTAL	
PROJECT IDENTIFICATION NUMBER	36
20-63-014-010	
CONTRACT ID NUMBER	
63-0143-060	
PROJECT NUMBER	
BRF-014-3(060)--38-63	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
6301401020	

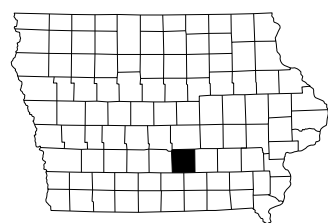
Refer to the Plan Sheets for list of applicable specifications.

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



Preliminary
Not For Construction

Revisions to this Design Plan and/or Project Specifications should be submitted by _____



Standard Road Plans
Standard Road Plans are listed on Sheet C.2.

Design Data Rural	
2022 AADT	3820 V.P.D.
TRUCKS	11 %

Index Of Seals		
Sheet No.	Name	Type
A.1	Kelsey M. Berens	Structural Design
A.3	Gregory S. Shuger	Roadway Design

Structural Design

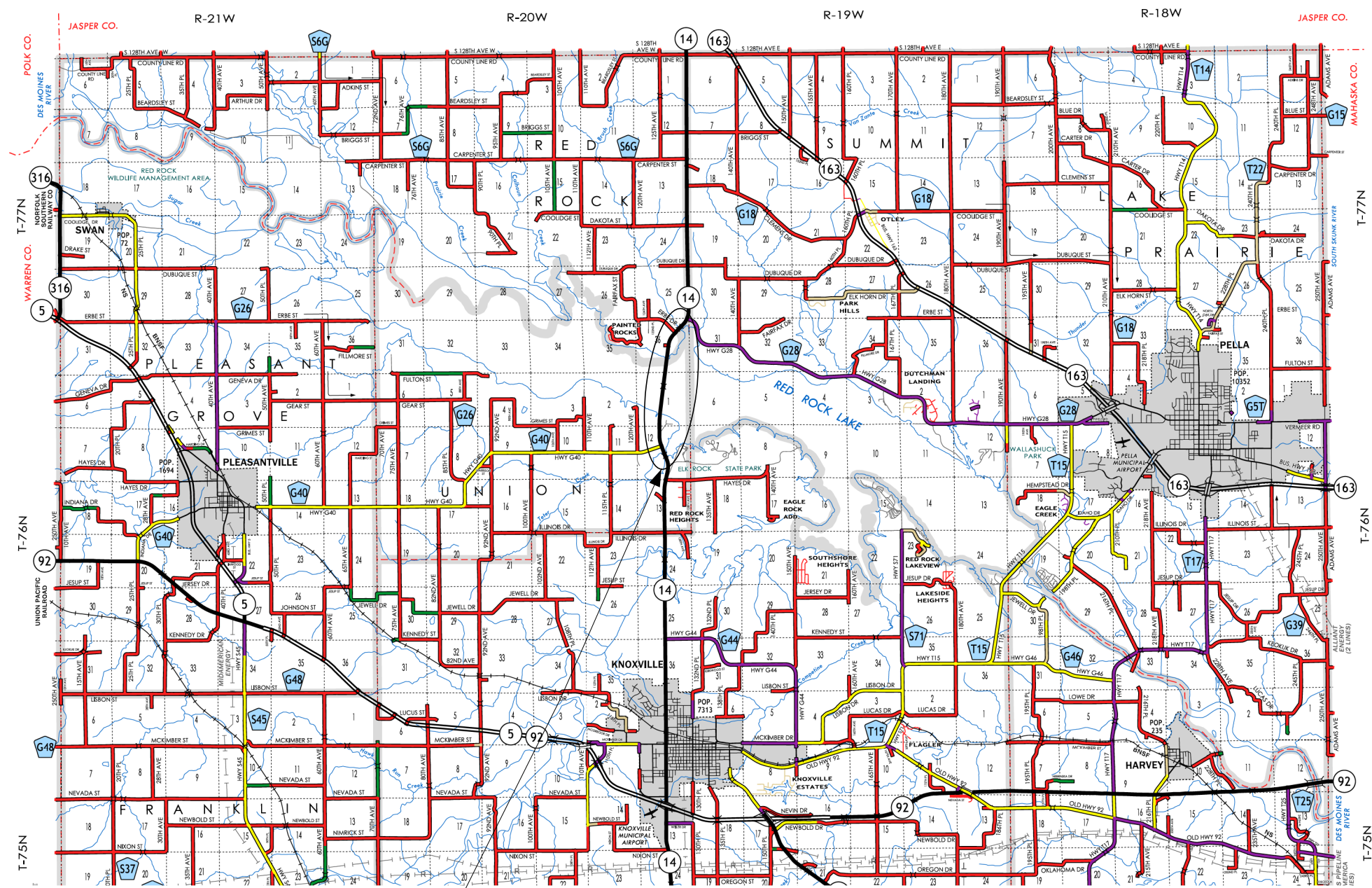
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Kelsey M. Berens Date XX-XX-XXXX

Printed or Typed Name

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: XXXX



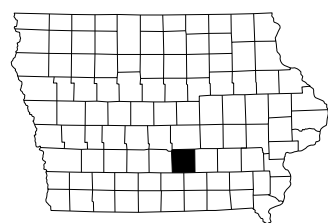
LEGEND

- 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

Design No. 425
FHWA No. 35200

Marion County Location Map

Not To Scale



Estimate Project Quantities and Reference Notes - Design No. 425

Item No	Item Code	Item	Unit	Quantities Estimated			Total	Estimate Reference Notes
				Design No. 0425-Marion	Design No. 425-Marion Alternate AA Option 1	Design No. 425-Marion Alternate AA Option 2		
1	2401-6745635	REMOVAL OF EXISTING HANDRAIL	LS	1			1	Includes reinstalling steel handrail after concrete curb replacement on east edge of bridge. The price shall include furnishing all material, including anchor rods and neoprene bearing pads, and all equipment and labor required to remove and erect the rail in accordance with these plans and specifications.
2	2401-6750001	REMOVALS, AS PER PLAN	LS	1			1	Includes all work for removal and off-site disposal of existing finger raise plates and removal of old welds and rust before installing the new finger raise plates. Includes all work for removal and off-site disposal of the existing drainage systems at the expansion joints, and the removal of the east curb. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. 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 (MISCELLANEOUS)	CY	560.5			560.5	----
4	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	24,865			24,865	----
5	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	14,550			14,550	Includes installation cost of dowel bars
6	2408-7800000	STRUCTURAL STEEL	LB	1,507			1,507	Includes all costs associated with furnishing and installing 350 finger raise plates across the bridge. Painting of steel finger raise plates will not be required.
7	2413-0698066	DECK OVERLAY (CLASS O PCC)	SY		18,844.7		18,844.7	Includes cleaning existing concrete at curbs, abutment seats, abutment wash areas, and abutment backwalls. Includes furnishing and placing concrete sealer at curbs, abutment seats, abutment wash areas, and abutment backwalls. Includes cost to clean out existing deck drains.
8	2413-0698074	DECK REPAIR, CLASS A	SY	3,768.9			3,768.9	Includes cost to remove epoxy exposed during deck repair from existing epoxy-injection.
9	2423-6772016	CONCRETE REPAIR	SF	2,702.4			2,702.4	Includes concrete repair to the west curb in 17 spans labeled on situation plan plus an additional 15% to be field verified.
10	2499-0800000	PAVING NOTCH REPLACEMENT	LF	30.6			30.6	Includes 43.4 cu.yd. of structural concrete Class C, 496 lbs. of epoxy-coated reinforcing steel, 160 lbs. of stainless steel 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.
11	2508-0970000	CONTAINMENT	LS	1			1	----
12	2508-0991000	PAINTING OF STRUCTURAL STEEL	LS	1			1	Includes blast cleaning of girders, diaphragms, and bearings.
13	2510-6745640	REMOVAL OF EXISTING P.C. OVERLAY	SY	18,844.7			18,844.7	----
14	2533-4980005	MOBILIZATION	LS	1			1	----
15	2599-9999005	(*EACH ITEM) TRIAL BATCH AND TEST REPLACEMENT	EACH			1	1	----
16	2599-9999010	(*LUMP SUM ITEM) EXPANSION JOINT DRAINAGE SYSTEM	LS	1			1	Includes full compensation for furnishing, installing, and testing the drainage system under the finger joints as detailed and noted in these plans. Includes all necessary structural steel, hardware, and accessories. Includes all costs associated with fabricating, furnishing, and installing the drainage systems.
17	2599-9999018	(*SQUARE YARDS ITEM) DECK OVERLAY (FIBER-REINFORCED CLASS HPC-O PCC)	SY		18,844.7		18,844.7	Includes cleaning existing concrete at curbs, abutment seats, abutment wash areas, and abutment backwalls. Includes furnishing and placing concrete sealer at curbs, abutment seats, abutment wash areas, and abutment backwalls. Includes cost to clean out existing deck drains.

Roadway Quantities shown elsewhere in these plans.

Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
Estimated Project Quantities
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 1 of 22 FHWA No. 035200

General Notes:

This design is for repairs to the existing 5645'-6" x 30'-0" continuous welded girder bridge located on Iowa Highway 14 over the Des Moines River and Reservoir in Marion 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 V.3 for list of repairs.

Faint lines on plans indicate the existing structure.

All dimensions and details shown on these plans pertinent to new construction shall be verified in the field by the Contractor before starting construction.

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 "Bridge Deck Overlay".

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.

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 the designated finger plates, existing welds and rust, existing drainage system at the expansion joints and abutments, and removing the east curb. 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 3/4 inches, including existing overlay. The Contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

No preliminary deck survey is shown. The plan quantity for "Class A Bridge Deck Repair" is estimated as 20% of the total deck area. The actual quantity is determined by the Engineer after the P.C. Overlay has been removed. Actual spalled and hollow areas as determined by the Engineer shall be repaired.

The lump sum bid for "Painting Structural Steel" shall include the cost of preparing all the existing structural steel for painting (including bearings) and field painting existing structural steel as noted in these plans. Cleaning and painting shall be in accordance with Section 2508, of the Standard Specifications. An epoxy paint system shall be used.

A scrape sample was taken from an area of this bridge to get an indication of the existence of and level of total lead and total chromium. Analysis of total lead on this sample was ?_? parts per million (ppm). Analysis of total chromium on this sample was ?_? 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.

Containment and disposal of waste shall be in accordance with Section 2508, of the Standard Specifications. All costs associated with hauling and depositing of waste at the designated site/facility shall be the responsibility of the Contractor and included in the contract price bid for the "Containment" item.

The bridge deck is covered with a 1 3/4" inch thick portland cement concrete overlay. The Contractor shall note the redefining of the classification line (boundary between repair and overlay) for this project due to the existing 1 3/4" inch overlay. The classification line will be defined as 2 inches below the top of existing overlay. This will necessitate the removal of the existing bridge deck overlay before placing the proposed new bridge deck overlay.

The bridge deck may have been epoxy-injected. The Contractor shall remove all exposed epoxy. Removal of epoxy is incidental to "Removal of Existing P.C.C. Overlay" and "Deck Repair, Class A" as appropriate.

All costs associated with the removal of the existing overlay shall be included in the bid item "Removal of Existing P.C.C. Overlay". Removal of existing overlay shall be computed in square yards from the measurement of areas removed. The Contractor will be paid the contract price per square yard for furnishing all equipment and labor necessary to remove the concrete to within 1/4 inch above the classification line. All costs, including furnishing equipment and labor, associated with removal of the next 1/4 inch of concrete (to the classification line) shall be included in the bid item "Deck Overlay".

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.

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

Utility Companies whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the starting date.

In addition to the requirements of Article 2413.03, G, of the Standard Specifications, both exposed abutment bridge seats and wash surfaces shall have an application of concrete sealer in accordance with Article 2403.03, P, 3, of the Standard Specifications.

Abutment bearings (sole plates and masonry plates) are to be cleaned and painted. Cleaning by vacuum blasting or by a non-blasting method is required. Surface to be painted shall be prepared in accordance with Steel Structures Painting Council (SSPC) SP3. Surfaces of the abutment bearings are to be given one coat of both a rust inhibitor type primer and final coat as approved by the Engineer. The color of the dry paint should approximate the color of concrete. This work shall be measured and paid for at the contract unit price per lump sum for the bid item, "Painting of Structural Steel".

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.

Special Provision for Fiber Reinforced HPC-O Concrete Bridge Deck Overlay

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.
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).

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	Raised Finger Plates	(060)_Marion425_RaisedFingerPlates.pdf	No
2	Drainage System	(060)_Marion425_DrainageSystem.pdf	No
3	Anchor Bolts	(060)_Marion425_AnchorBolts.pdf	No
X			
X			
No.	Calculation Description	Calculation File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
X			
X			
X			
X			

Design History at this Site

(Includes this Design)

Des. No.	Type of Work
663	Piers
663A	Abutment and Superstructure
180	Steel Girder Repair
187	Bridge Floor Overlay
501	New Concrete Rail End Section
210	New Steel Rail
114	Raise Plate Repair
217	Bridge Repair - Railing
420	Raise Plate Repair
425	Bridge Deck Overlay

Traffic Control Plan

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

Design For 0° Skew
5645'-6" x 30'-0" Continuous Welded Plate Girder Bridge

112'-9" End Spans 142'-6" Interior Spans

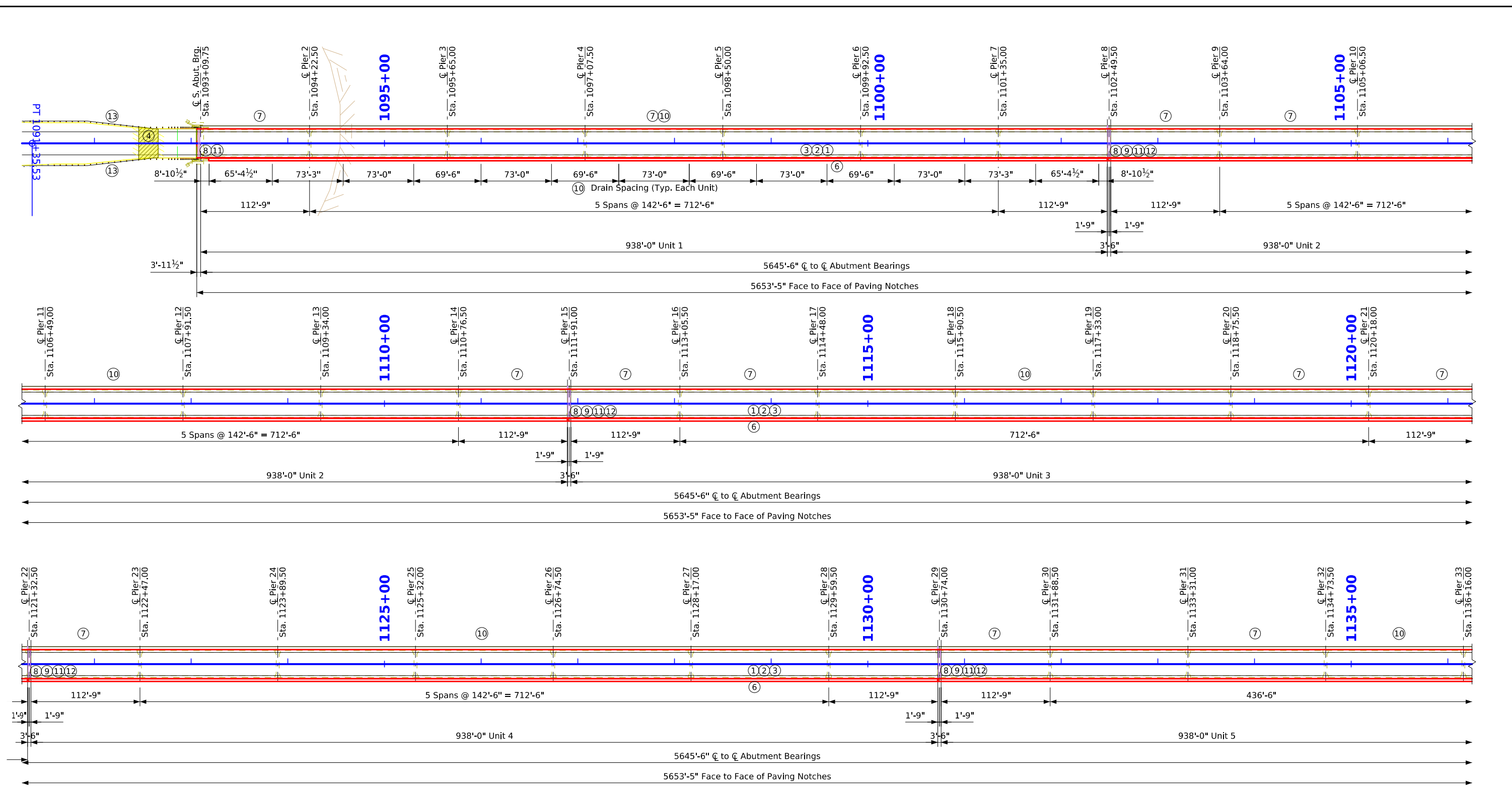
General Notes

STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024

Marion County

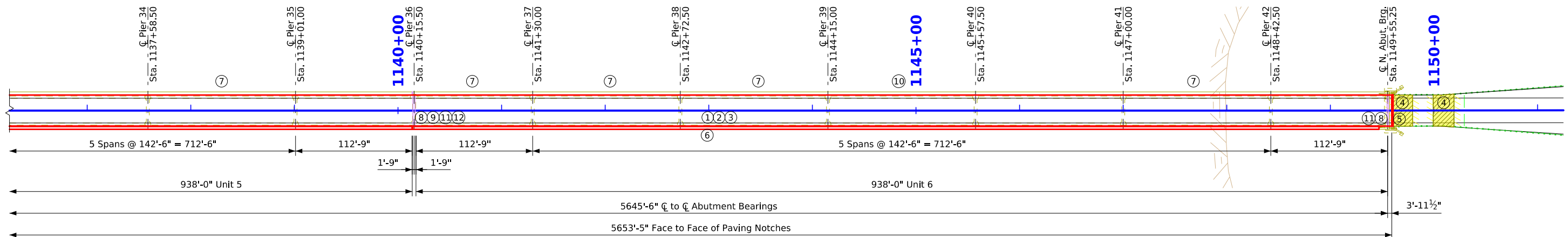
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0425 Design Sheet No. 2 of 22 FHWA No. 035200

FILE NO. 32123	ENGLISH	DESIGN TEAM Stanley Consultants	MARION COUNTY	PROJECT NUMBER BRF-014-3(060)--38-63	SHEET NUMBER V.2
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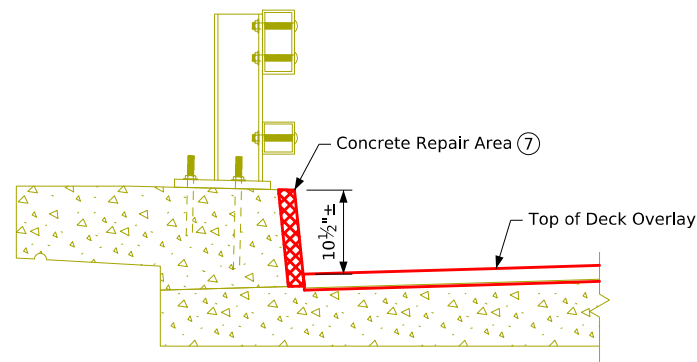
Note:
See Design Sheet 4 for list of repairs

Design For 0° Skew
**5645'-6" × 30'-0" Continuous
 Welded Plate Girder Bridge**
 112'-9" End Spans 142'-6" Interior Spans
Situation Plan
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 3 of 22 FHWA No. 035200

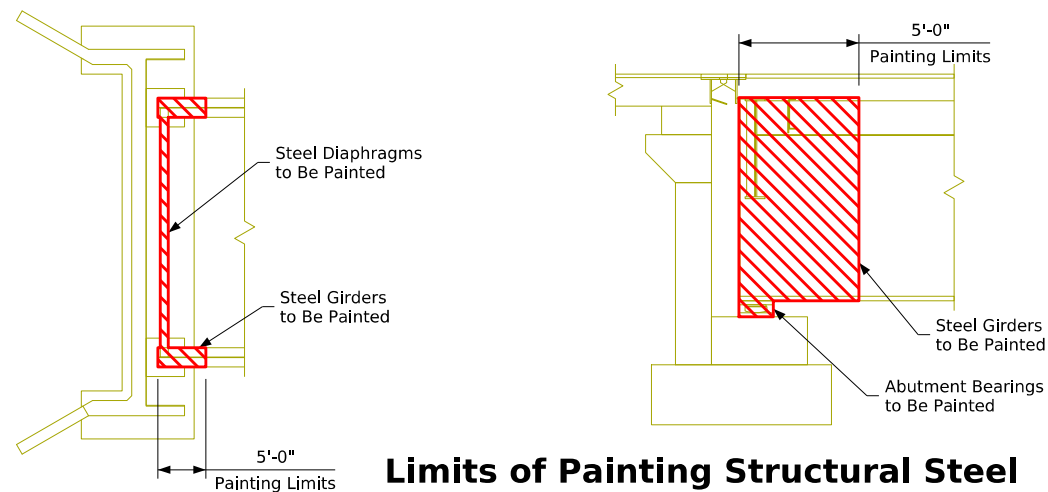


Repairs shall consist of:

- ① Remove existing P.C. overlay
- ② Deck repairs, Class A
- ③ Overlay bridge with P.C.C.
- ④ Remove and replace the first and third panels north of the bridge deck and the third panel south of the bridge deck.
- ⑤ Replace north existing paving notch with 1'-3" constant depth notch.
- ⑥ Remove and replace the existing east curb and remove and reinstall the metal railing.
- ⑦ Perform concrete repairs to the existing west curb.
- ⑧ Retrofit the finger plate by fully welding the risers. Remove and replace the existing troughs and drain pints under the finger plate joints. (7 locations)
- ⑨ Clean and paint the girder ends and bearings under expansion joints
- ⑩ Clean out the drains.
- ⑪ Seal both abutment seats and backwalls and bridge seats for piers under expansion joints.
- ⑫ Perform concrete repairs on piers.
- ⑬ Remove and replace the existing guardrails on the south approach in accordance with current standards.

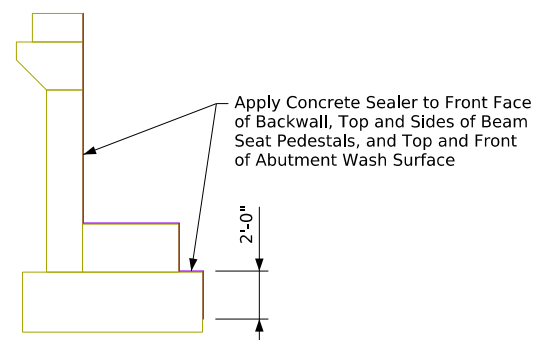


Detail of Concrete West Curb Repair



Limits of Painting Structural Steel
(Abutment shown, limits at piers similar)

Note:
Clean and zone paint the beam ends, diaphragms, and bearings at each expansion joint. The painting zone should extend 5'-0" from the beam ends.



Abutment Concrete Sealer Details

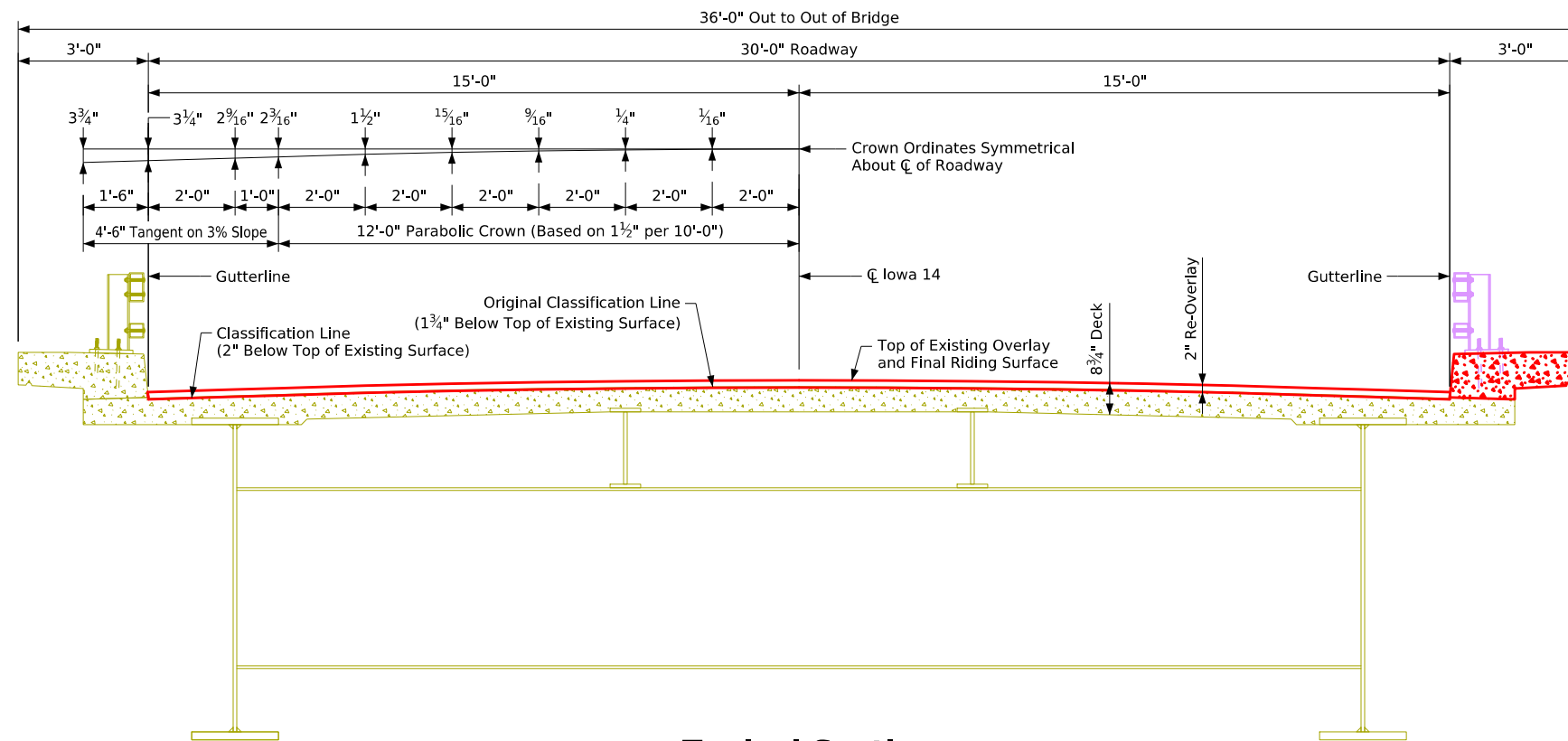
Location

Iowa 14 over Des Moines River & Reservoir
T-76 & 77N R-20W
Sections 1 & 36
Union & Red Rock Townships
Marion County
FHWA No. 35200
Bridge Maint. No. 6350.45014
Latitude 41.410389°
Longitude -93.111166°

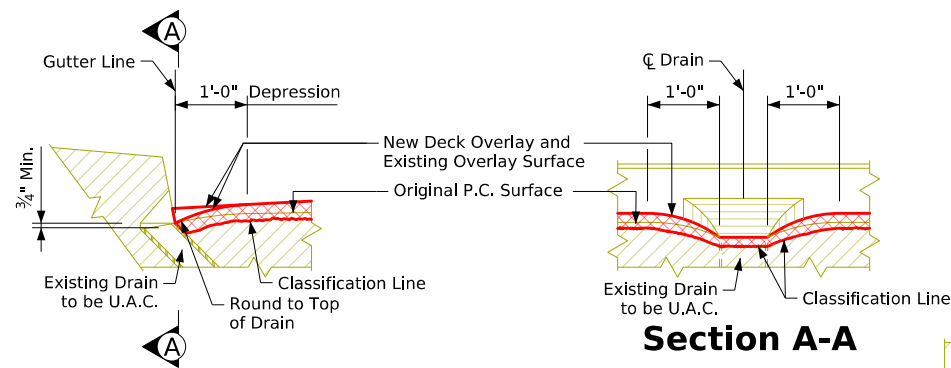
Traffic Estimate

2022 AADT	3820	V.P.D.	
TRUCKS		%	11 %

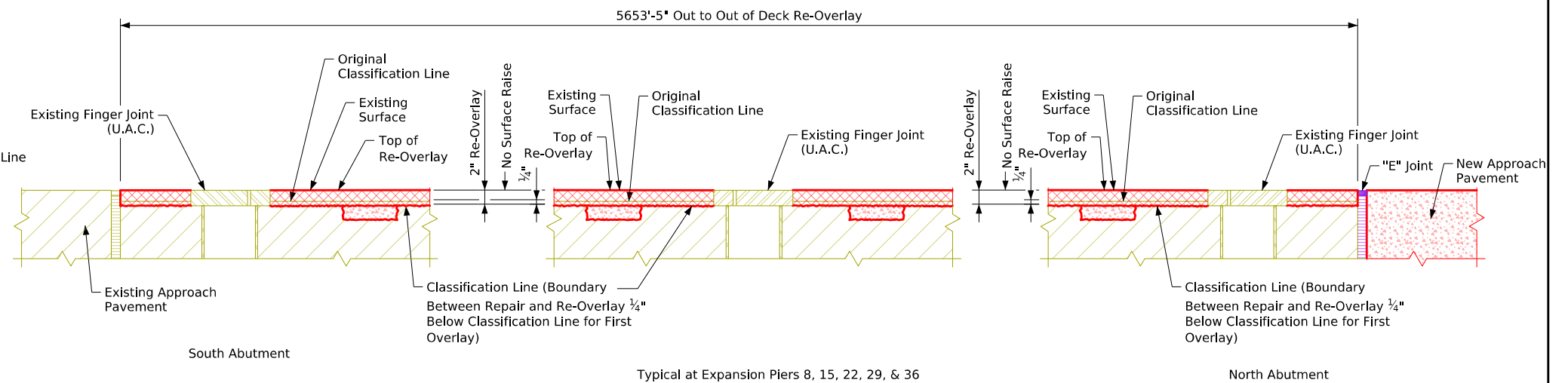
Design For 0° Skew	
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge	
112'-9" End Spans	142'-6" Interior Spans
Situation Plan	
STA. 1121+32.50 (Iowa 14)	Turn-in Date: Sept 02 2024
Marion County	
IOWA DEPARTMENT OF TRANSPORTATION	
Design No. 0425	Design Sheet No. 4 of 22 FHWA No. 035200



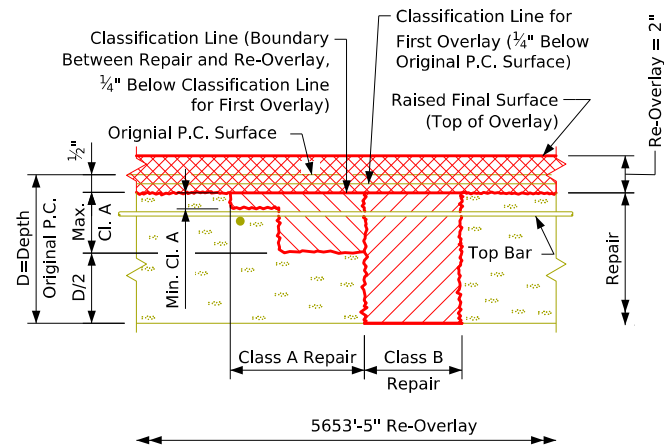
Typical Section
(Looking North)



Deck Repair Detail at Drain
(Required at 84 Locations)

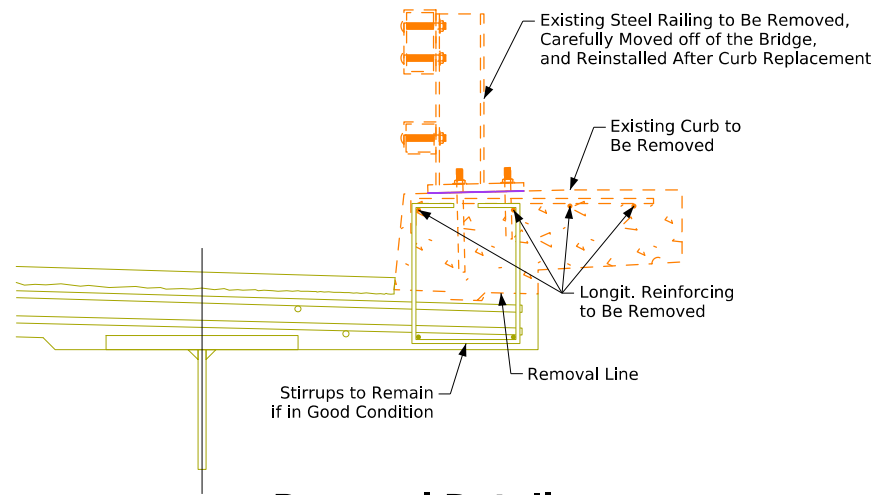


Part Longitudinal Section Along Roadway

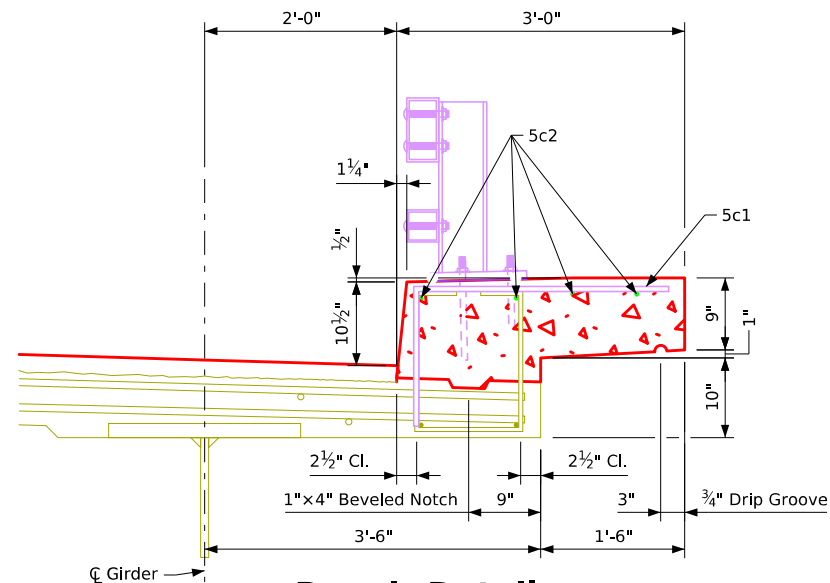


Repair and Overlay Definition

Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
Deck Repair Details
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 5 of 22 FHWA No. 035200



Removal Detail



Repair Detail

Stainless Steel Reinf. Steel - One Bridge

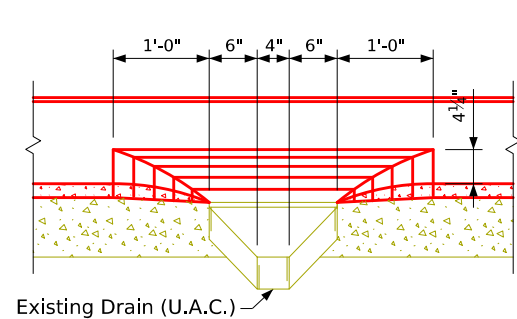
Bar	Location	Shape	No.	Length	Weight
5c1	Curb, Transverse		3,720	3'-9"	14,550
Reinforcing Steel Stainless Steel - Total (lb.)					14,550

Epoxy Coated Reinf. Steel - One Bridge

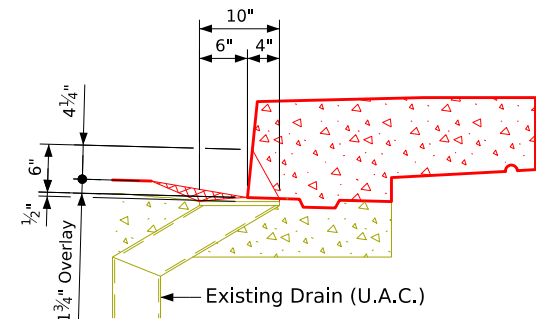
Bar	Location	Shape	No.	Length	Weight
5c2	Curb Longitudinal		596	40'-0"	24,865
Reinforcing Steel Epoxy Coated - Total (lb.)					24,865

Concrete Placement Summary

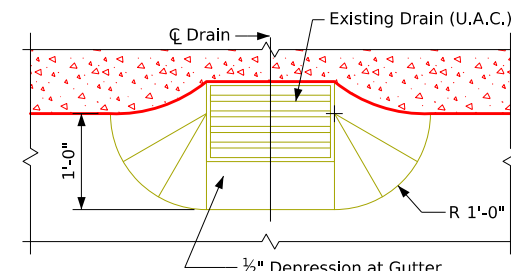
Section	Total
Deck/Overhang	560.5
Total (cu. yd.)	560.5



Section at Gutter

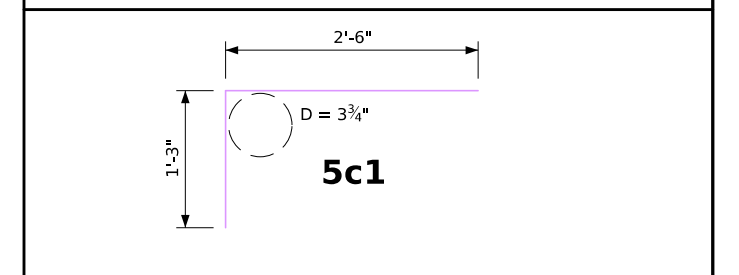


**Part Elevation at Gutter
Drain Details**

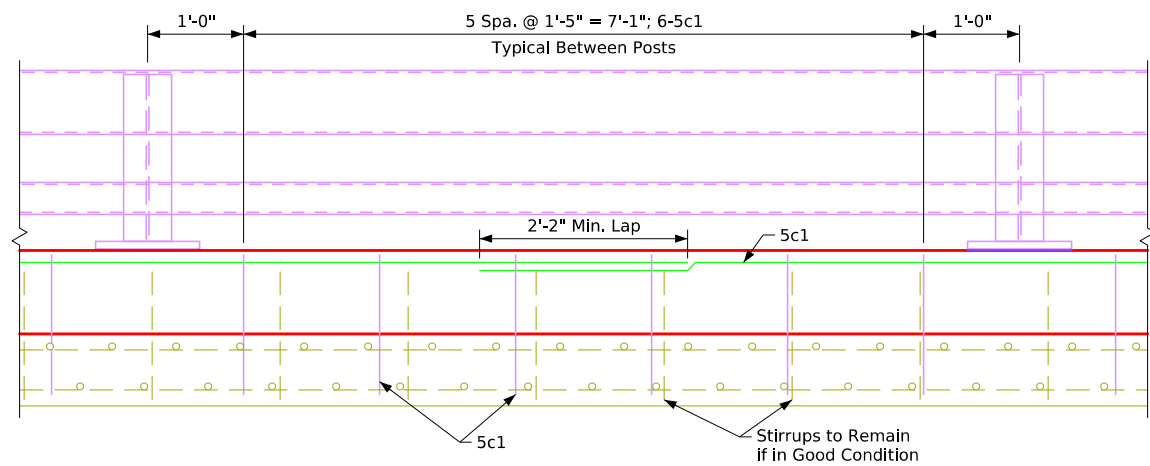


Partial Plan View

Bent Bar Details



Note: All dimensions are out to out. D = Pin Diameter



Partial Longit. View

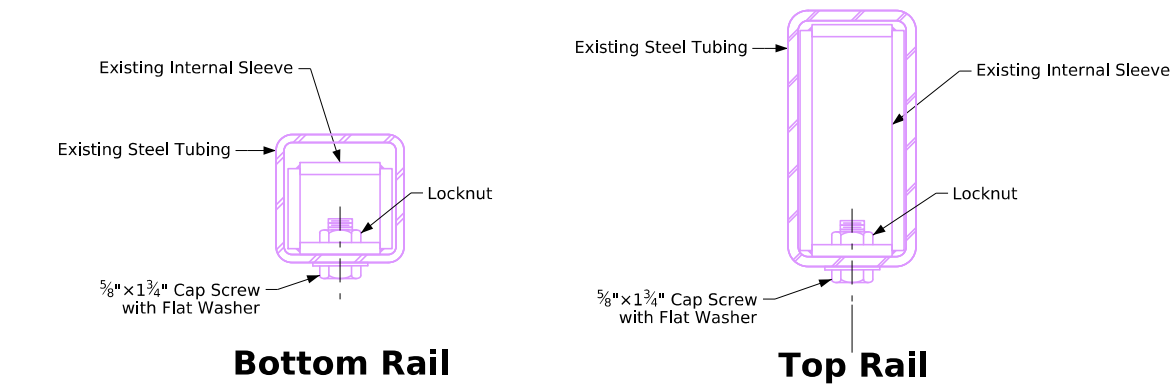
Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
East Curb Replacement Details
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 6 of 22 FHWA No. 035200

Steel Rail Assembly Notes

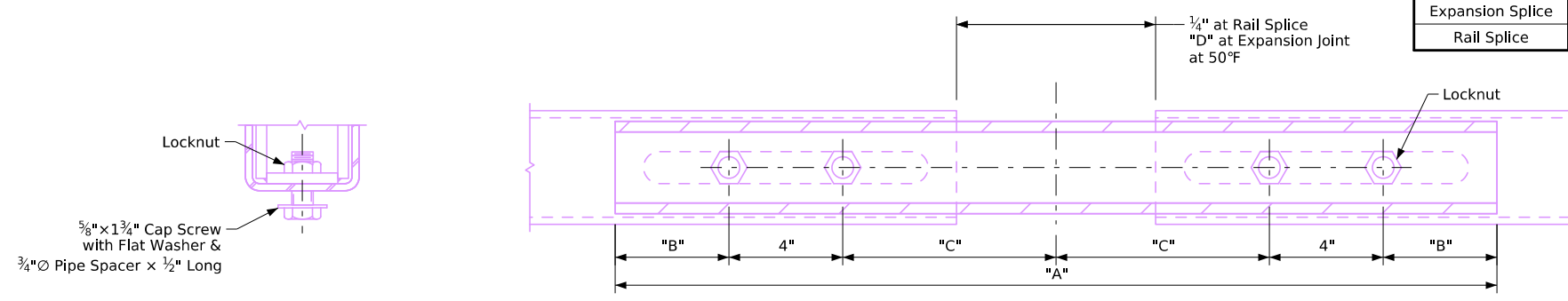
1. The price bid for "Removal of Existing Handrail" shall be full compensation for removing and replacing existing rail on east curb. The price shall include furnishing all material, including anchor rods and neoprene bearing pads, and all equipment and labor required to remove and erect the rail in accordance with these plans and specifications.
2. Bridge rail expansion joints shall be provided between the two posts which span expansion joints at piers 8, 15, 22, 29, and 36. Expansion joint re-installation width shall be "D" and adjusted for installation temperature.
3. The H.S. threaded anchor rods shall be set as dowels in drilled holes. Traffic side holes are to be 10" deep. Back holes are to be 6" deep. The anchor rods shall be installed in accordance with the manufacturer's recommendations. Bonding agent shall be epoxy grout system in accordance with Standard Specifications Article 2301.03,E.



TL-4 Steel Rail Post Assembly



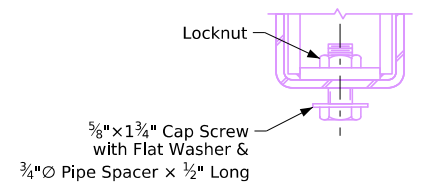
Section at Rail Splice



Plan Bottom Splice (Typ.)

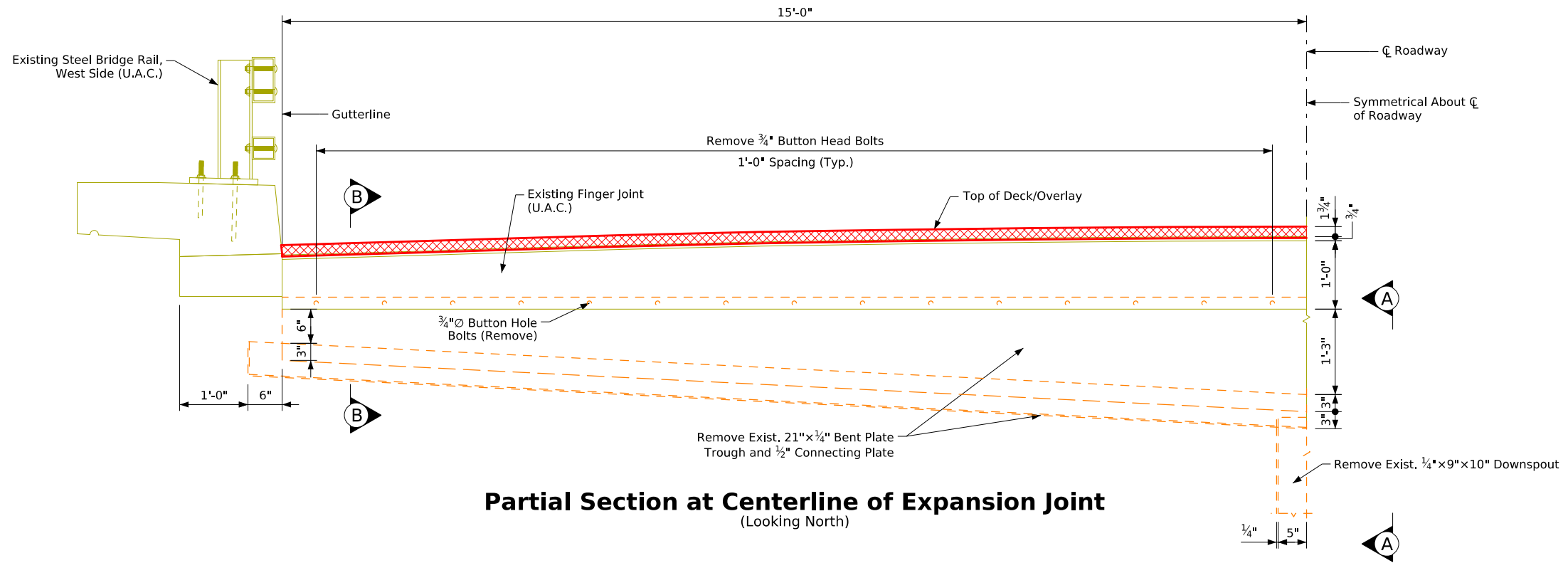
Rail Splice Dimensions				
Type of Splice	"A"	"B"	"C"	"D"
Expansion Splice	2'-7"	4"	7 1/2"	
Rail Splice	1'-8"	2"	4"	1/4"

Expansion Table	
Temperature °F	"D"
10	8 7/8"
50	6"
90	3 1/8"

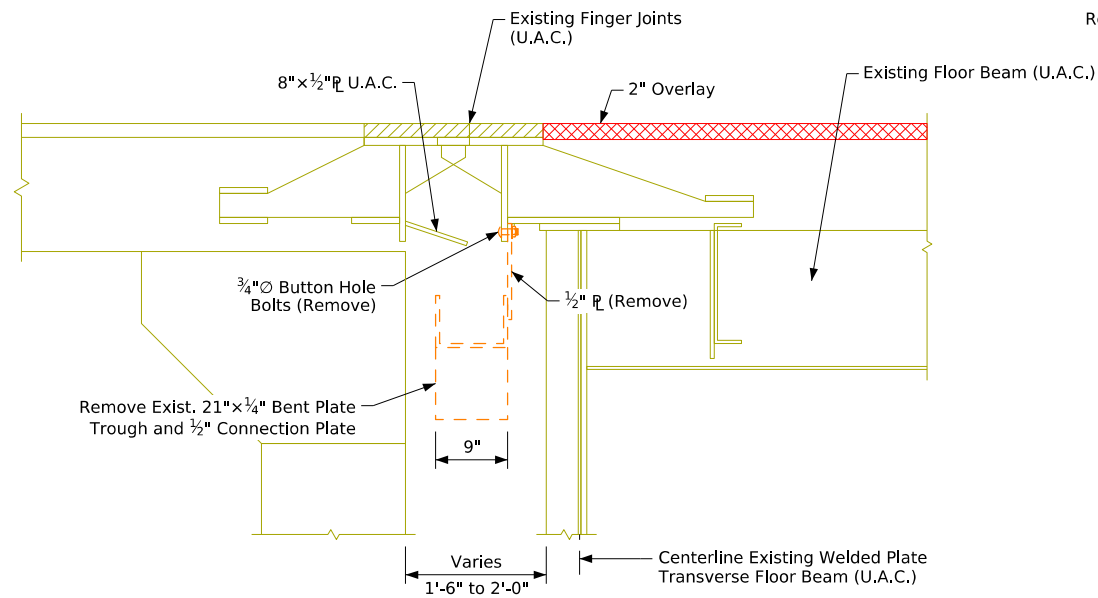


Rail Splice Connection at Expansion Joint

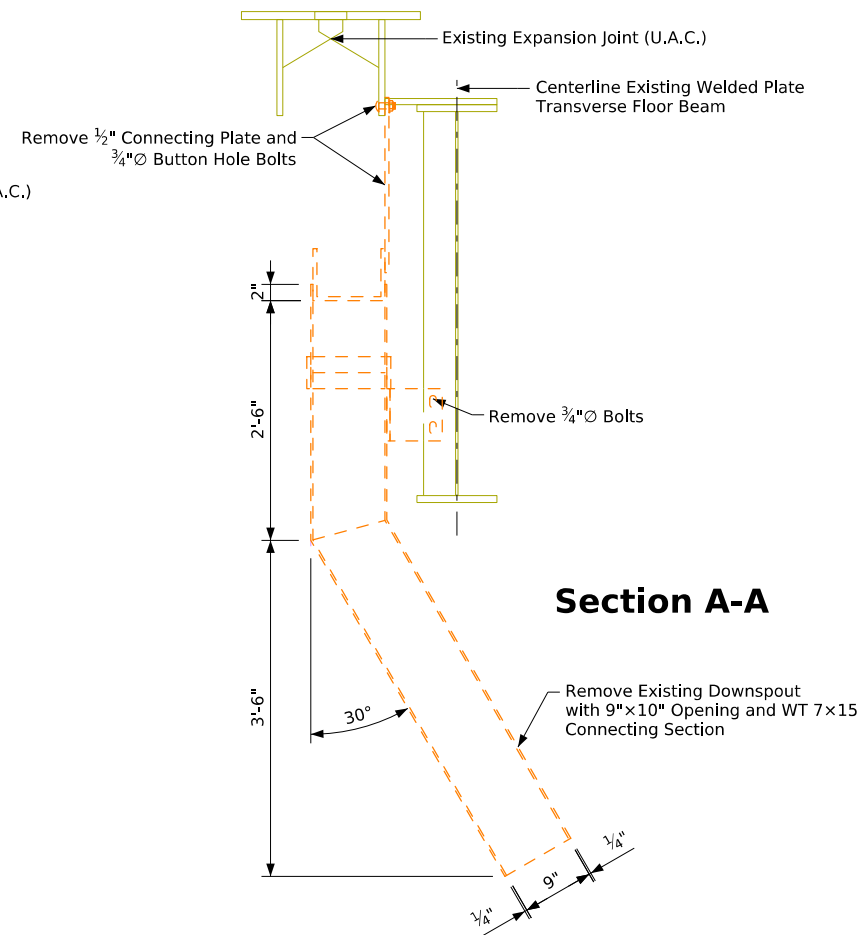
Design For 0° Skew
5645'-6" x 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
East Curb Replacement Details
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 7 of 22 FHWA No. 035200



Partial Section at Centerline of Expansion Joint
(Looking North)

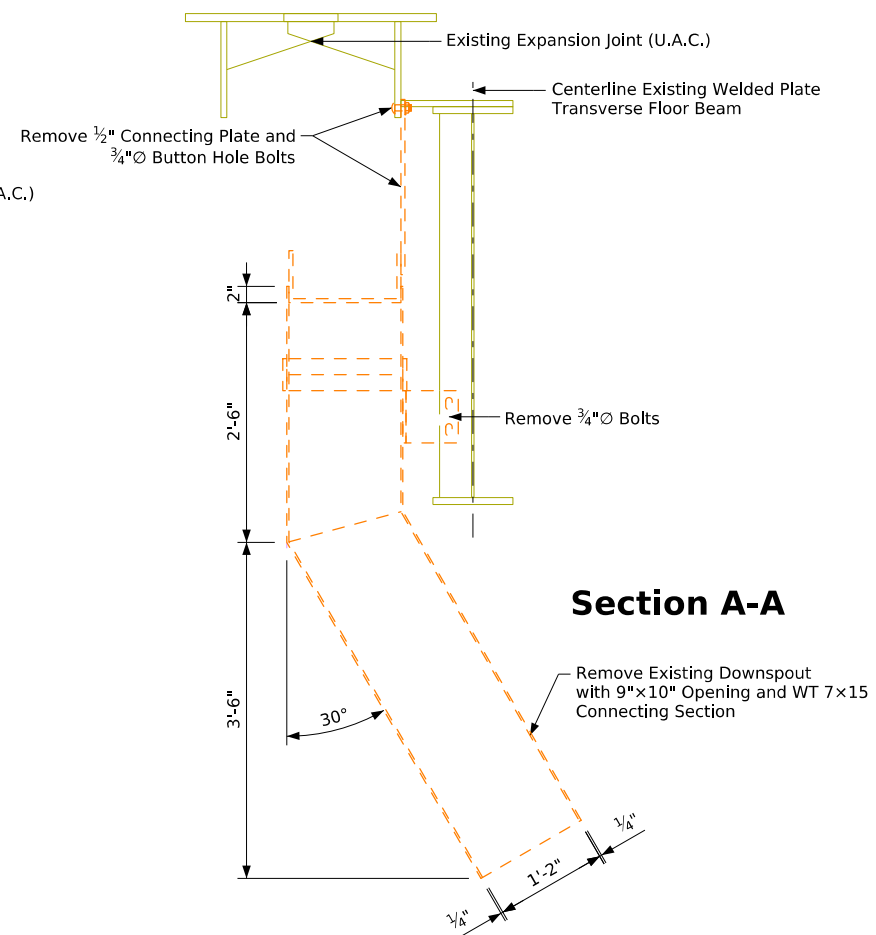
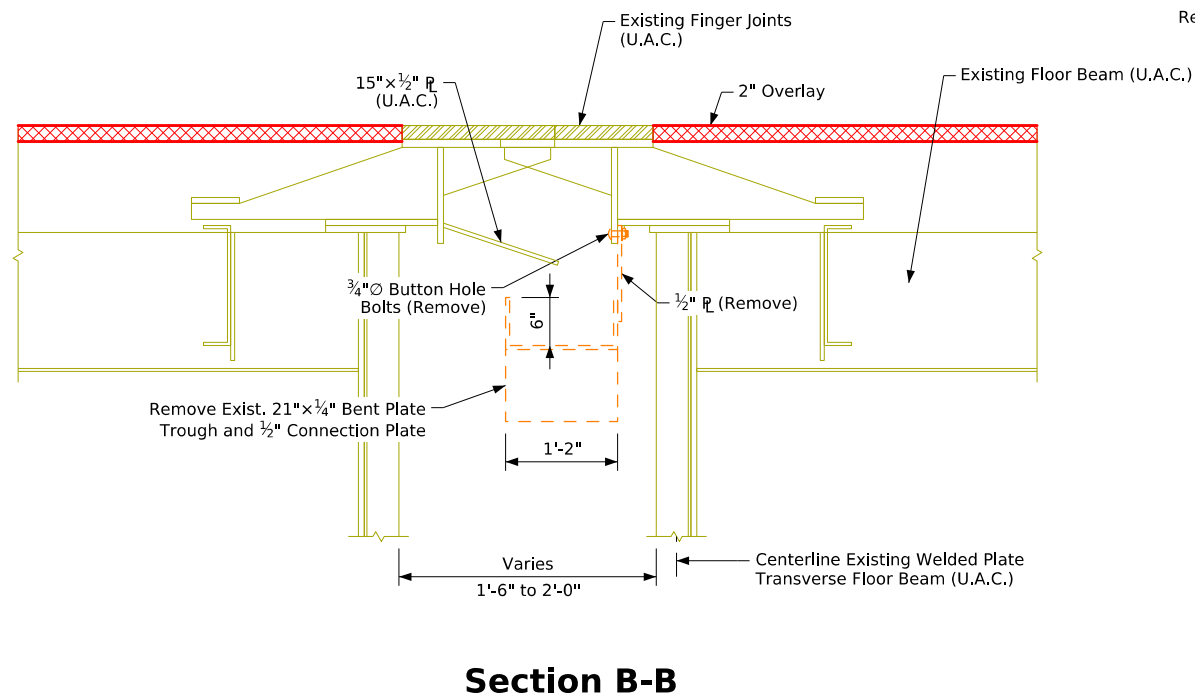
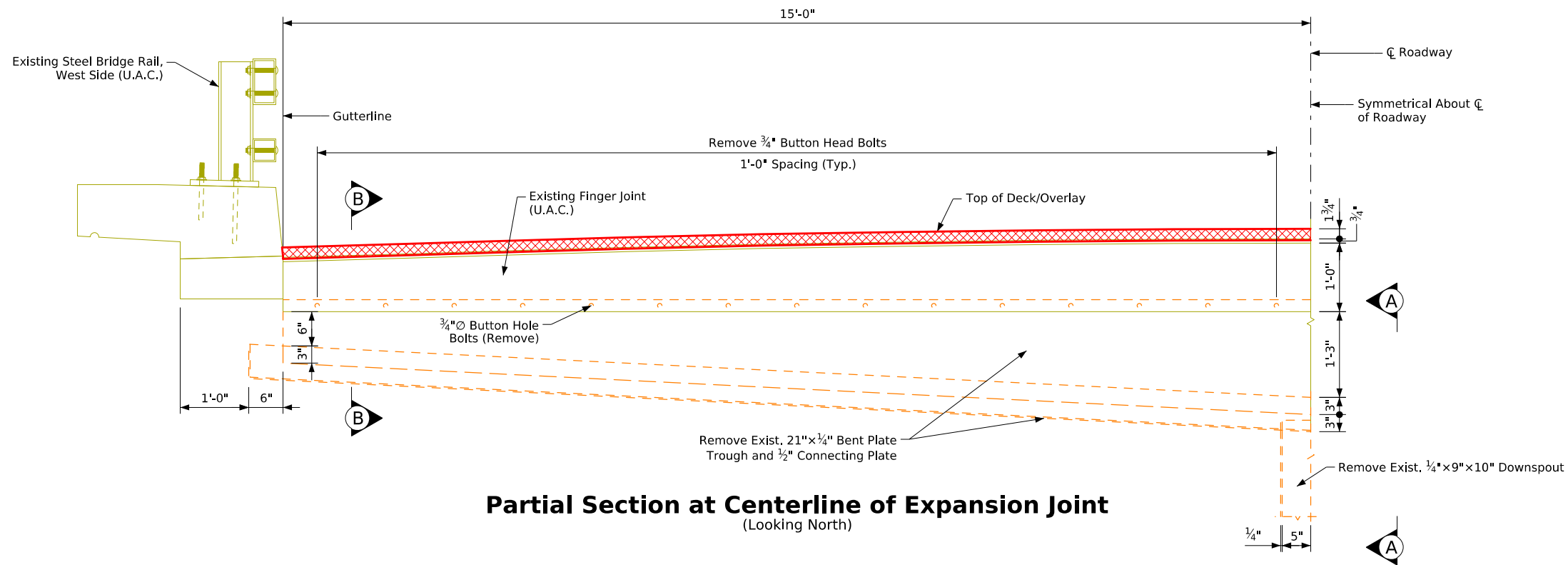


Section B-B



Section A-A

Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
Drain Removals at Abutments
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 8 of 22 FHWA No. 035200



Design For 0° Skew

5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge

112'-9" End Spans 142'-6" Interior Spans

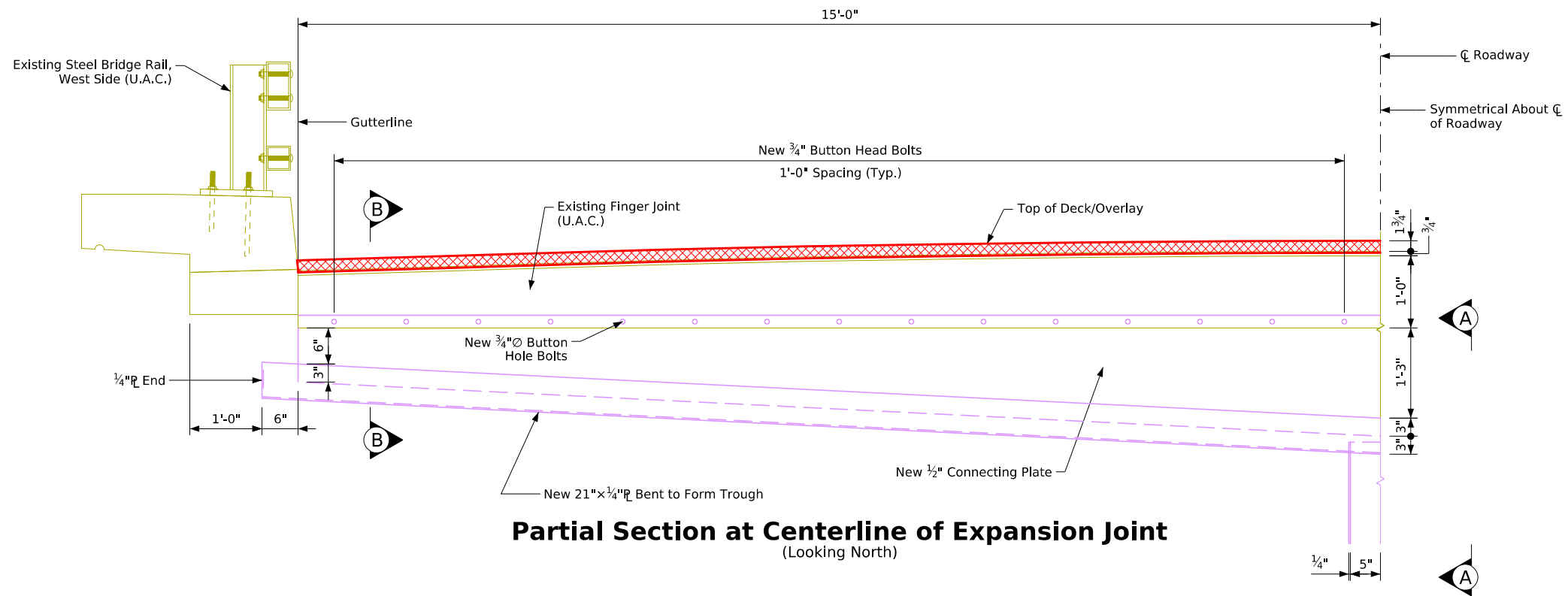
Drain Removals at Piers

STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024

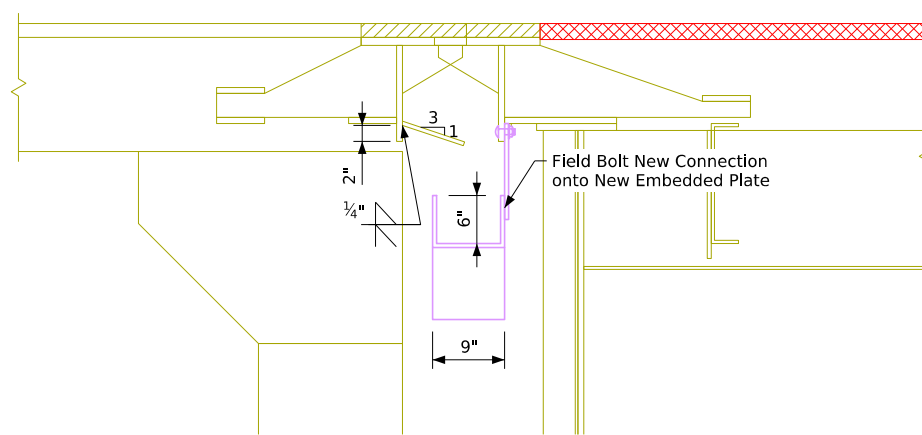
Marion County

IOWA DEPARTMENT OF TRANSPORTATION

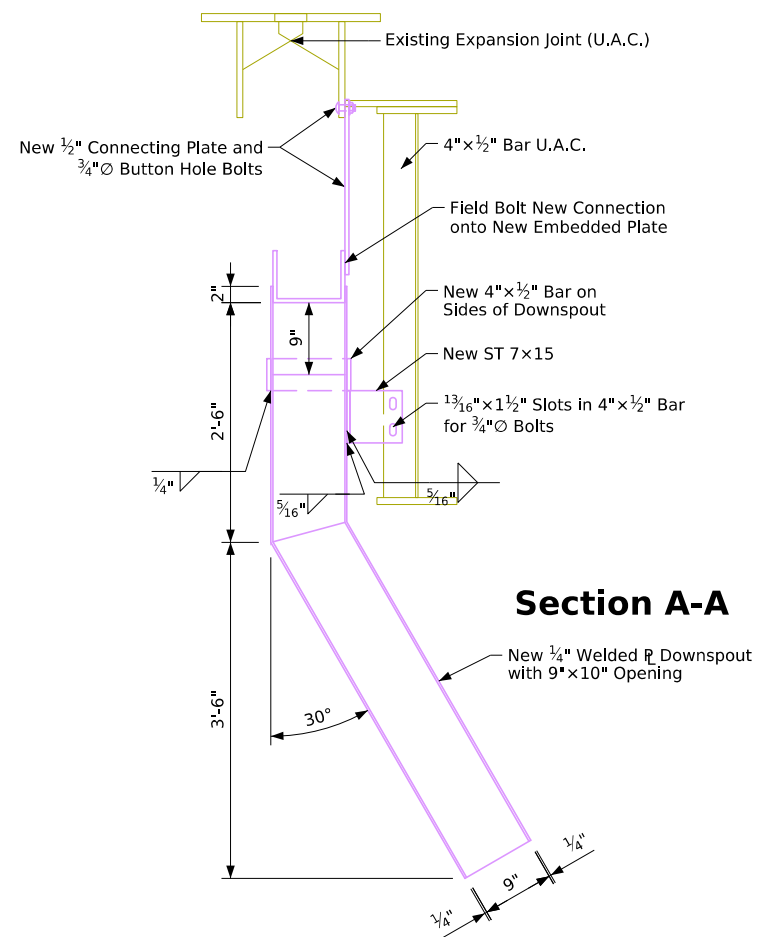
Design No. 0425 Design Sheet No. 9 of 22 FHWA No. 035200



Partial Section at Centerline of Expansion Joint
(Looking North)

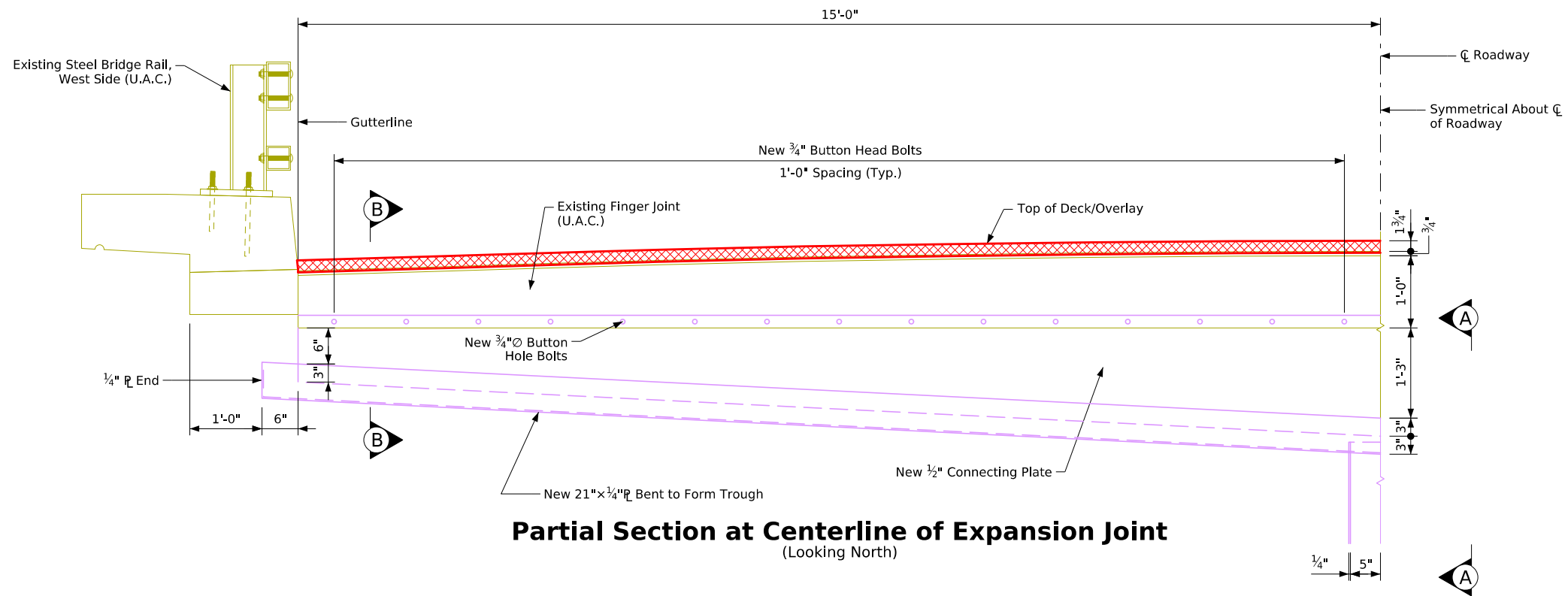


Section B-B

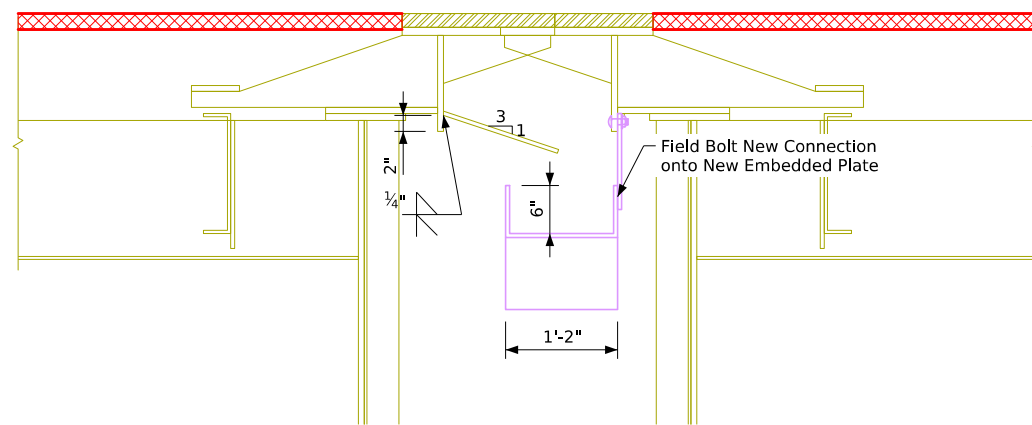


Section A-A

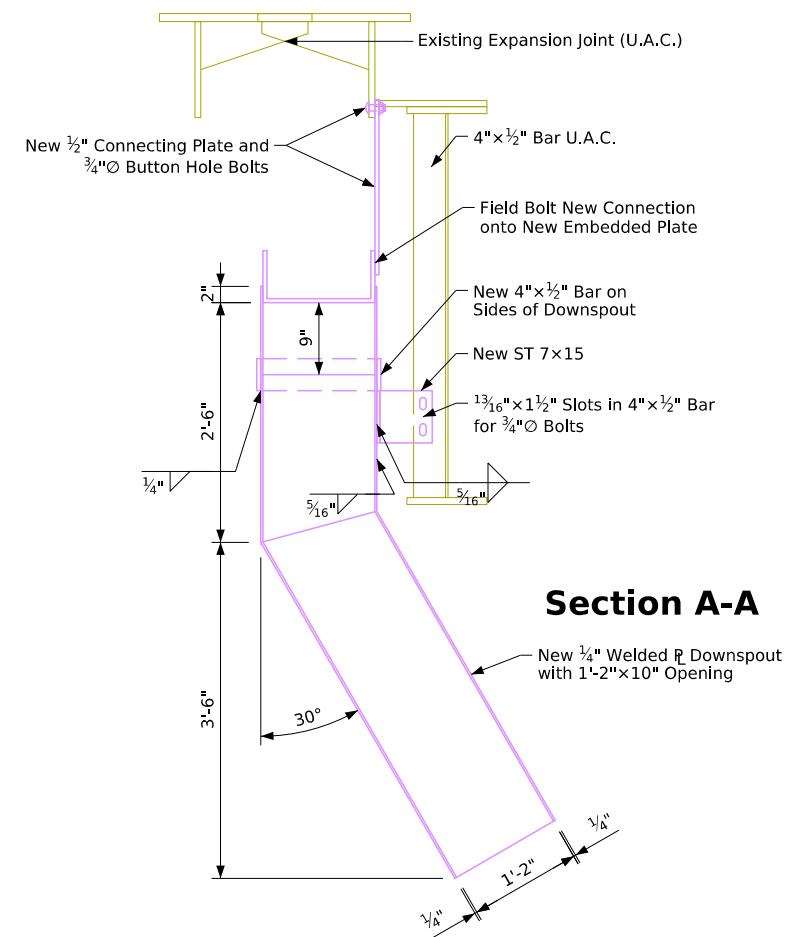
Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
Drain Replacement at Abutments
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 10 of 22 FHWA No. 035200



Partial Section at Centerline of Expansion Joint
(Looking North)

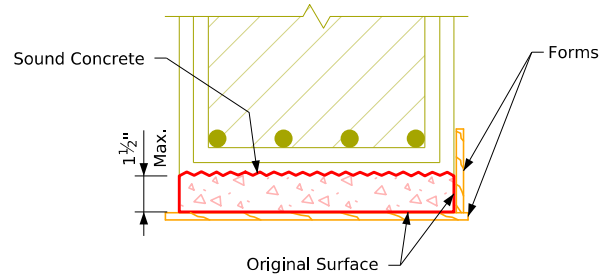


Section B-B

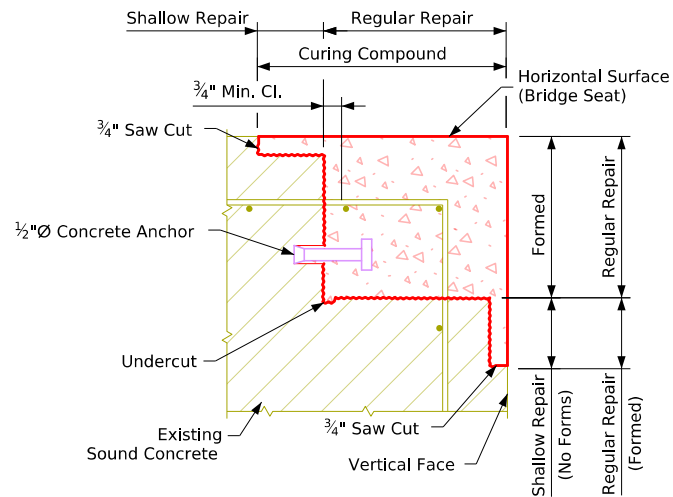


Section A-A

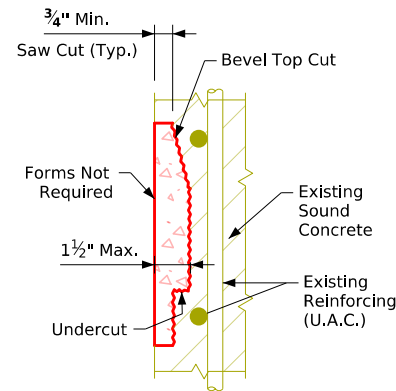
Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
Drain Replacements at Piers
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 11 of 22 FHWA No. 035200



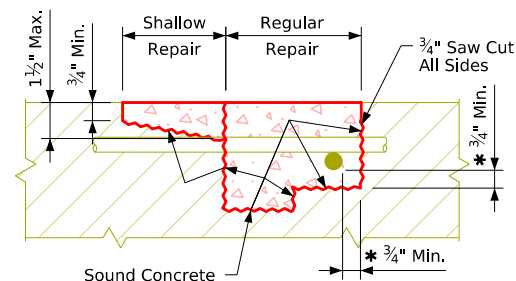
**Shallow Repair
Bottom Surface**



Corner Repair

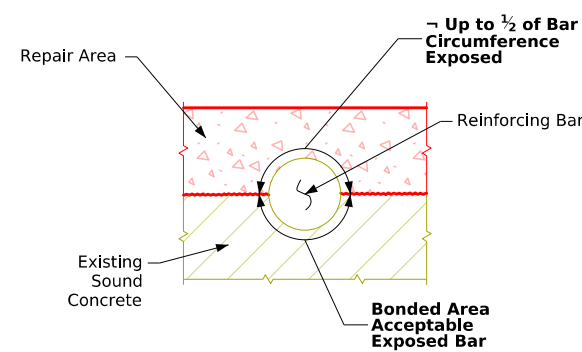


**Shallow Repair
Vertical Face**

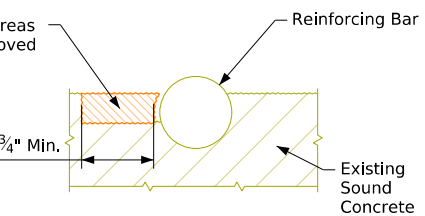


Repair Definition

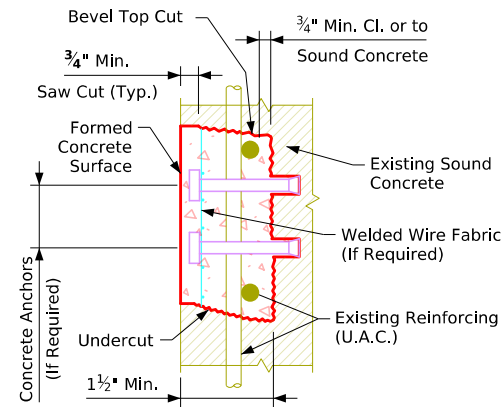
* Indicates Clearance for an Un-Bonded Rebar.



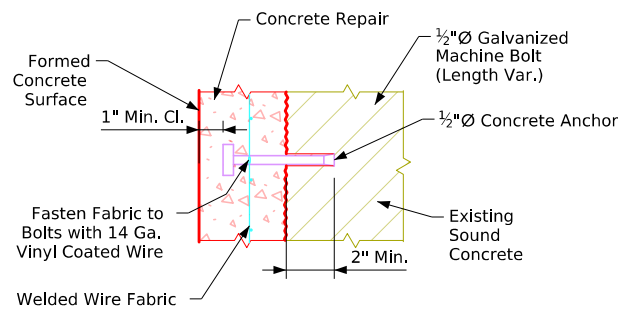
- Up to 1/2 of Bar Circumference Exposed



**Concrete Removal
Adjacent to Reinforcing**



**Regular Repair
Vertical Face**



Anchor Detail

For Spacing and Use of Concrete Anchors and WWF See the Repair Notes.

Repair Notes:

- The spalled and hollow areas of this bridge as noted and shown in these plans shall be repaired as follows:
- All the costs of equipment and materials required to repair the spalled and hollow areas of this bridge shall be included in the price bid for "Concrete Repair".
- The price bid for "Concrete Repair" shall include the cost of all concrete anchors and welded wire fabric required by the plans.
- The Engineer shall determine and outline by visual and audible inspection the actual areas of the concrete repairs. The Contractor shall be paid for the actual amount of repairs made on a square foot basis based on the price bid per square foot.
- All existing reinforcing bars that are exposed by the concrete removal shall be cleaned and carefully incorporated into the new work, except badly deteriorated existing reinforcing which shall be replaced as directed by the Engineer.
- The concrete anchors required shall have a minimum pull out of 5,000 lbs based on 4,000 psi concrete. An anchor meeting the requirements of Iowa D.O.T. Materials I.M. 453.09 and the pull out load above is required. The anchors shall be galvanized and shall be installed according to recommendations of the Manufacturer. The cost of furnishing and installing the concrete anchors shall be included in the price bid for "Concrete Repair".
- The welded wire fabric shall be ASTM A185 and galvanized as per ASTM A-641. The WWF wires shall be spaced 3x3 or 4x4 and the wires shall have a nominal area of 0.014 to 0.029 sq in inclusive, example "WWF 3x3 - W1.4xW2.9".
- Where reinforcement has been exposed and clearance around the periphery of the existing bar is provided, no supplemental reinforcing is required, except where existing reinforcement density and pattern are such that individual open spaces between bars are of 1.5 sq ft or larger. For this condition 1/2" concrete anchors and welded wire fabric shall be installed at the rate of one concrete anchor with WWF per each 1.5 sq ft of area within each open space.
- Repairing the structural concrete shall be in accordance with Section 2426, of the Standard Specifications.

Concrete Placement Quantities			
Mark	Type	Units	Quantity
①	Shallow repair	Sq. Ft.	0
②	Regular repair	Sq. Ft.	2702.4
		Total (Sq. Ft.)	2702.4

Estimated Concrete Repair Quantities			
Description	Units	Amount	
Concrete Repair	Sq. Ft.	2702.4	

Design For 0° Skew
**5645'-6" × 30'-0" Continuous
 Welded Plate Girder Bridge**
 112'-9" End Spans 142'-6" Interior Span
Concrete Repairs
 STA. 1121+32.50 (Iowa 14) Letting Date Nov 19 2024
Marion County
 Iowa Department of Transportation
 Design No. 0425 Design Sheet No. 12 of 22 FHWA No. 035200

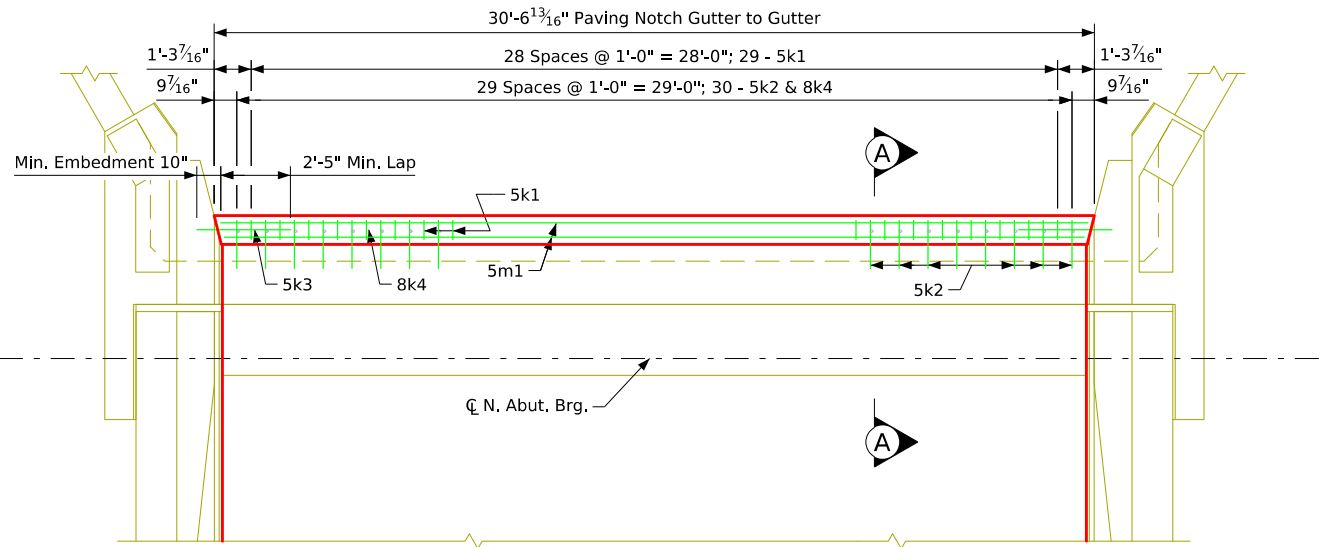
Revised 10-2014 - Deleted All References to Grout. Section 2426 Covers this Requirement and Doesn't Need to be Stated on the Plans.
 RepairRetrofitBridges.dgn - 1045 - This Sheet Redrawn 09-27-1990.
 RepairRetrofitBridges.dgn - 1045 - This Sheet Re-Issued 07-23.

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 #5 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 43.4 cubic yards of structural concrete, 496 pounds of epoxy coated reinforcing steel, and 160 pounds of stainless steel reinforcing steel.
 Removals shall be in accordance with Section 2401, of the Standard Specifications.

Dowel Setting Note:

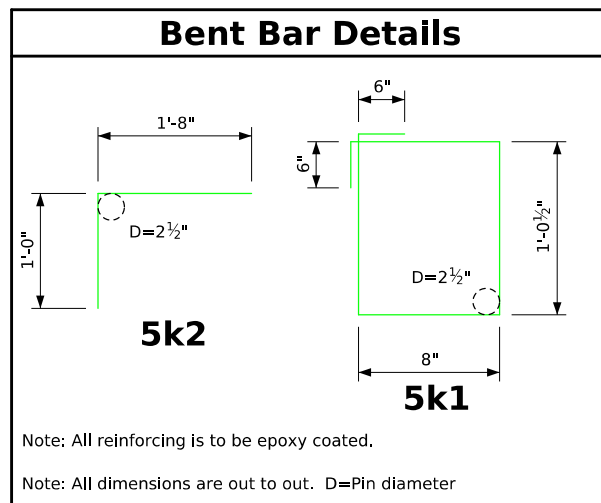
The deformed 5k2 & 5k3 bars shall be set as dowels in drilled holes. Holes are to be 10" deep. Polymer grout system shall be used to install the deformed dowel bars in accordance with Article 2301.03,E, of the Standard Specifications and the Grout Manufacturer's recommendations.



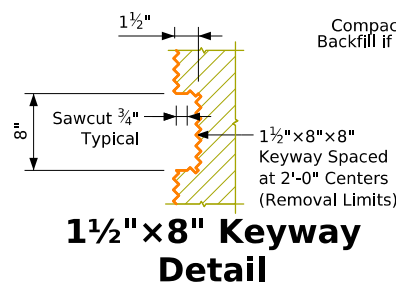
Part Plan View At Abutment

Note: New paving notch replacement should extend from bridge wingwall to bridge wingwall.

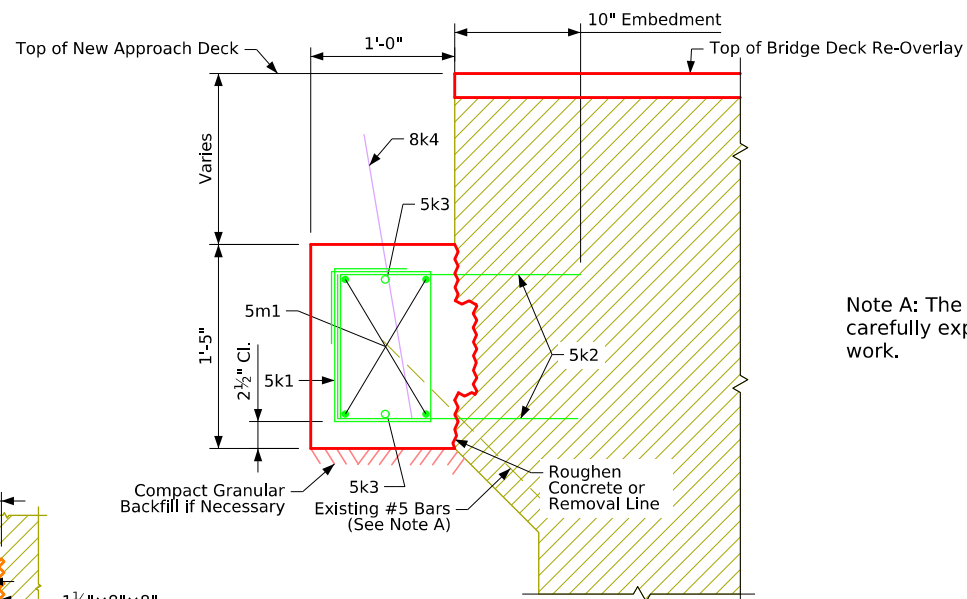
Note: 5k3 bars shall be set as dowels embedding 10" minimum into the existing bridge wingwalls and extending a minimum of 2'-5" into the new paving notch replacement.



Note: All reinforcing is to be epoxy coated.
 Note: All dimensions are out to out. D=Pin diameter



1 1/2" x 8" Keyway Detail

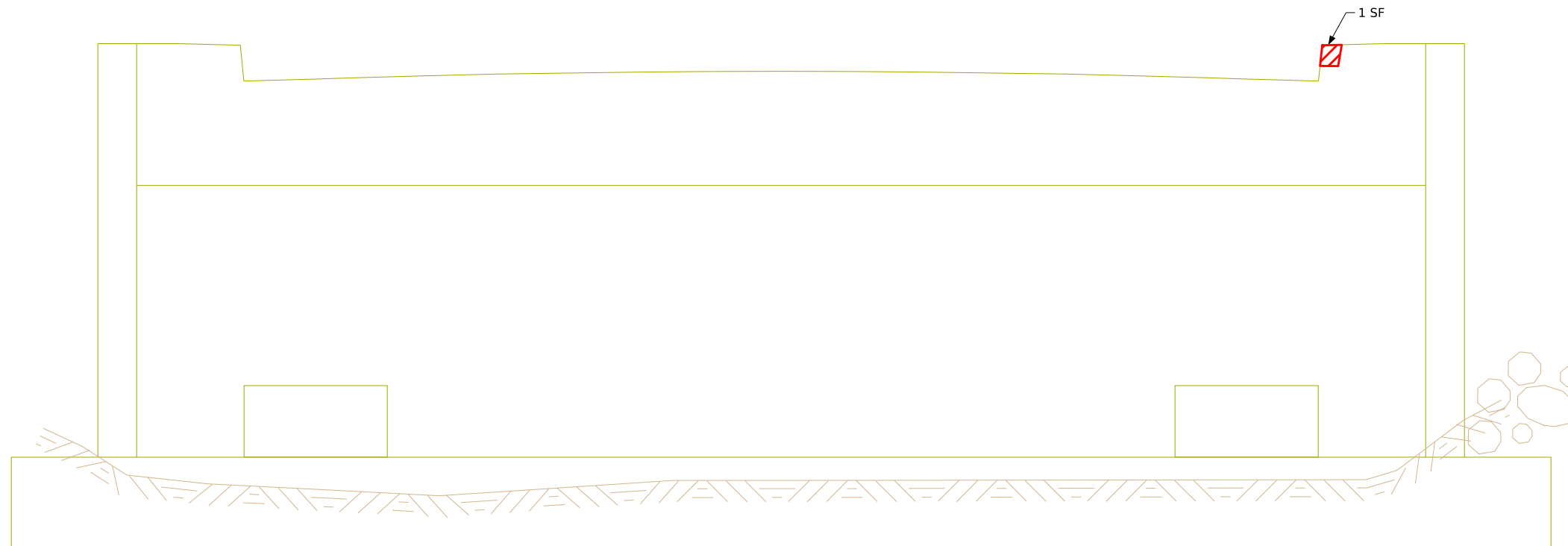


Part Section A-A

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

Note A: The bottom portion of the existing #5 bars shall be carefully exposed and incorporated into new work.

Design For 0° Skew
5645'-6" x 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Span
Paving Notch Replacement
 STA. 1121+32.50 (Iowa 14) Turn-In Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 13 of 22 FHWA No. 035200



South Abutment
(Looking South)

Concrete Repair Quantities		
Type	Unit	Qty
Normal Repair	SF	1


Legend	
	Indicates Normal Repair

Design For 0° Skew
**5645'-6" × 30'-0" Continuous
 Welded Plate Girder Bridge**
 112'-9" End Spans 142'-6" Interior Spans
South Abutment Repairs
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 14 of 22 FHWA No. 035200



North Abutment
(Looking North)

Concrete Repair Quantities		
Type	Unit	Qty
Normal Repair	SF	6

Legend	
	Indicates Normal Repair

Design For 0° Skew

**5645'-6" × 30'-0" Continuous
Welded Plate Girder Bridge**

112'-9" End Spans 142'-6" Interior Spans

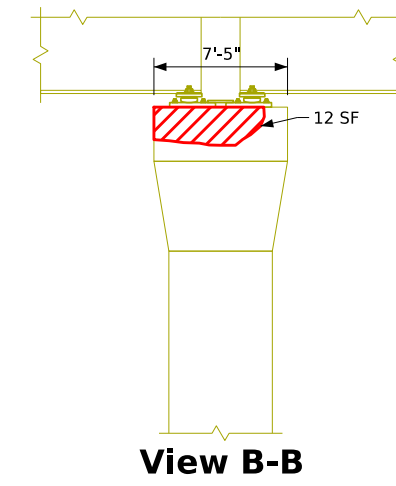
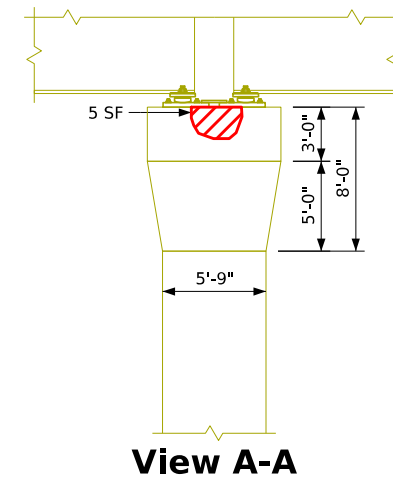
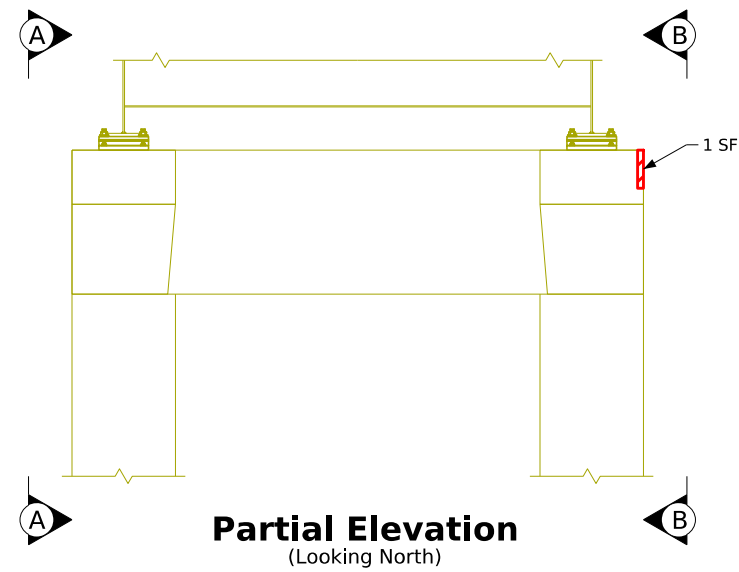
North Abutment Repairs

STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024

Marion County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0425 Design Sheet No. 15 of 22 FHWA No. 035200



Concrete Repair Quantities		
Type	Unit	Qty
Normal Repair	SF	18

Legend

 Indicates Normal Repair

Design For 0° Skew

**5645'-6" × 30'-0" Continuous
Welded Plate Girder Bridge**

112'-9" End Spans 142'-6" Interior Spans

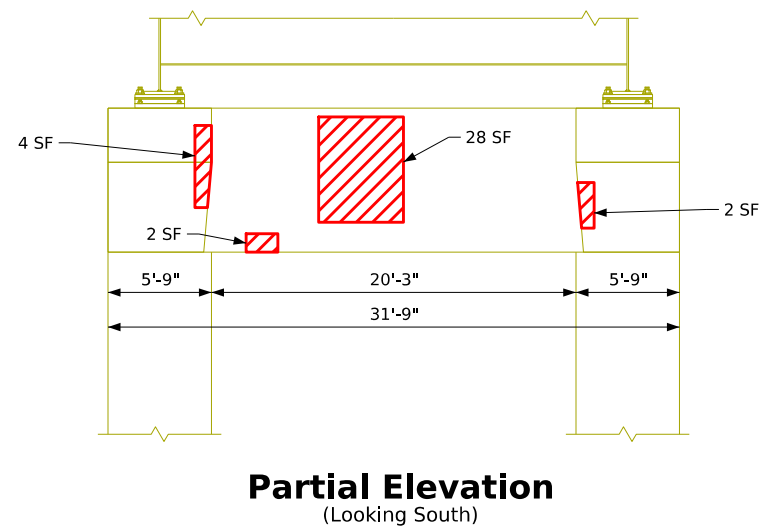
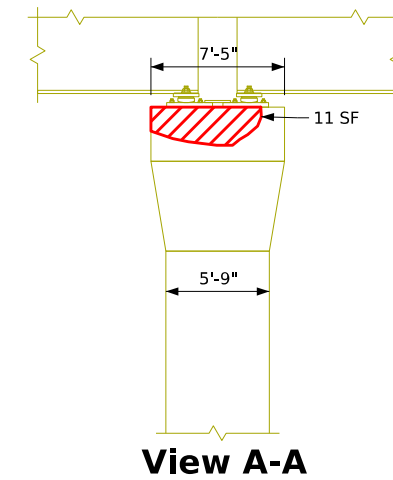
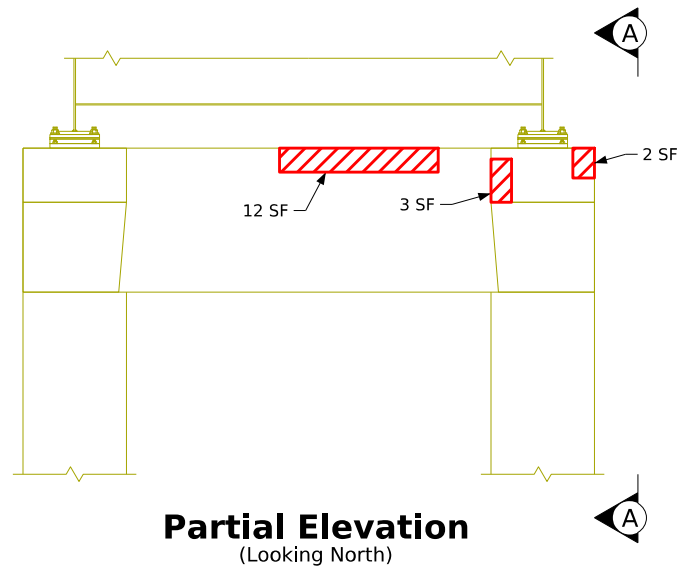
Pier Cap Repairs – Pier 8

STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024

Marion County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0425 Design Sheet No. 16 of 22 FHWA No. 035200



Concrete Repair Quantities		
Type	Unit	Qty
Normal Repair	SF	64

Legend	
	Indicates Normal Repair

Design For 0° Skew

**5645'-6" × 30'-0" Continuous
Welded Plate Girder Bridge**

112'-9" End Spans 142'-6" Interior Spans

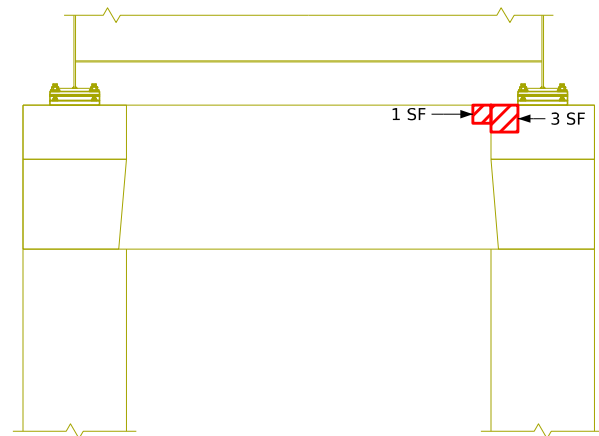
Pier Cap Repairs – Pier 15

STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024

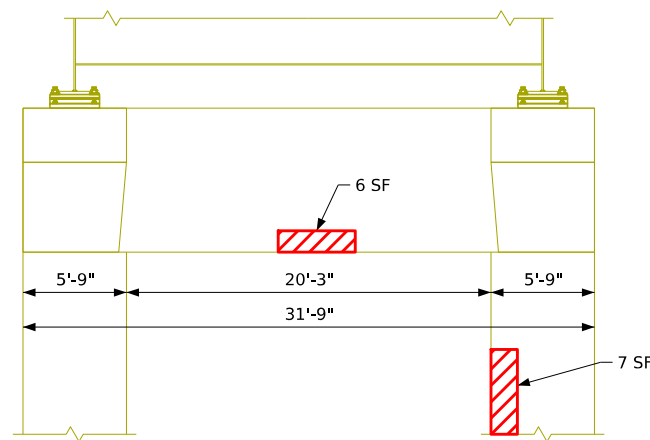
Marion County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0425 Design Sheet No. 17 of 22 FHWA No. 035200



Partial Elevation
(Looking North)



Partial Elevation
(Looking South)

Concrete Repair Quantities

Type	Unit	Qty
Normal Repair	SF	17

Legend

 Indicates Normal Repair

Design For 0° Skew

**5645'-6" × 30'-0" Continuous
Welded Plate Girder Bridge**

112'-9" End Spans 142'-6" Interior Spans

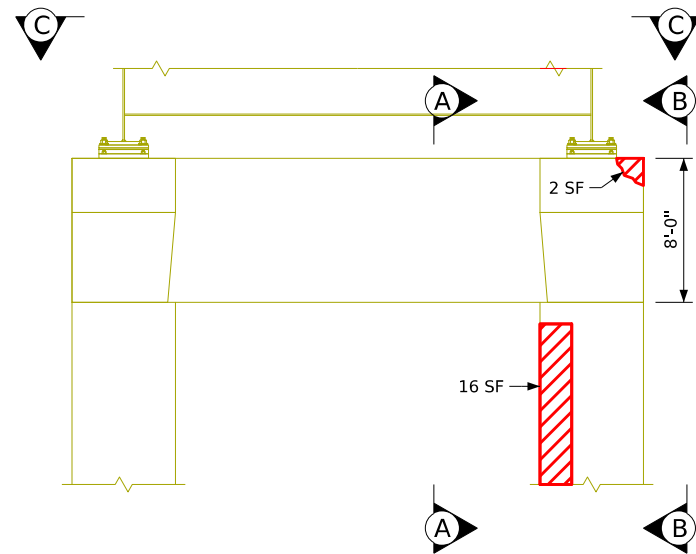
Pier Cap Repairs – Pier 22

STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024

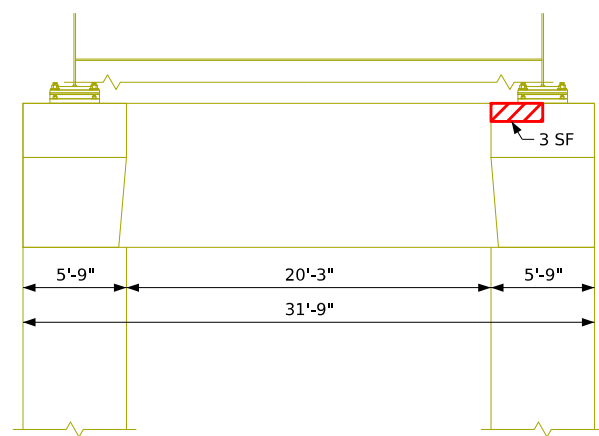
Marion County

IOWA DEPARTMENT OF TRANSPORTATION

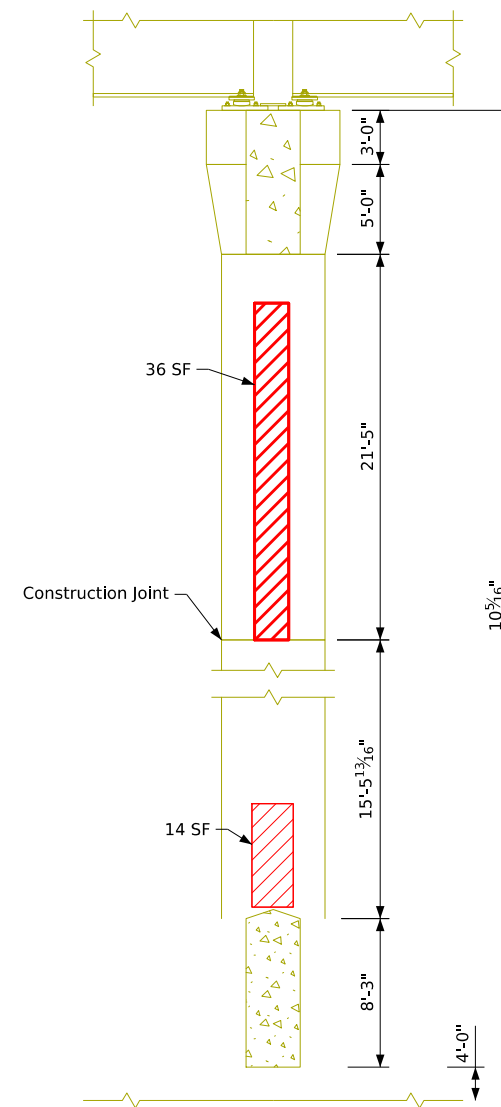
Design No. 0425 Design Sheet No. 18 of 22 FHWA No. 035200



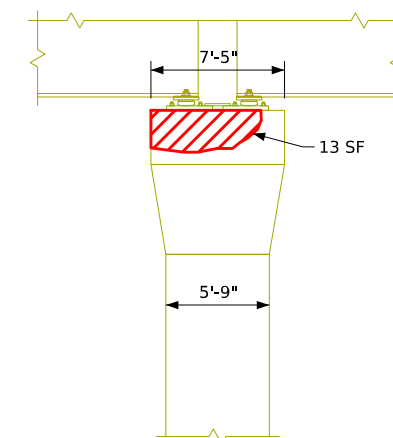
Partial Elevation
(Looking North)



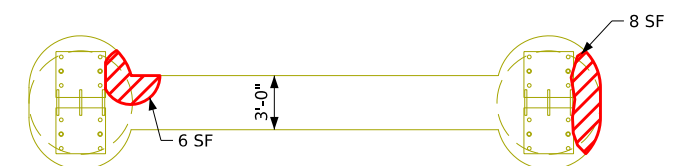
Partial Elevation
(Looking South)



Section A-A



View B-B




View C-C

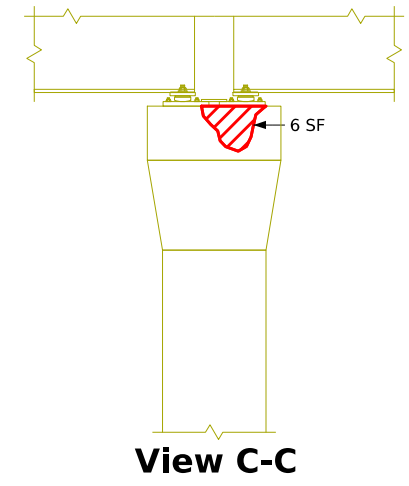
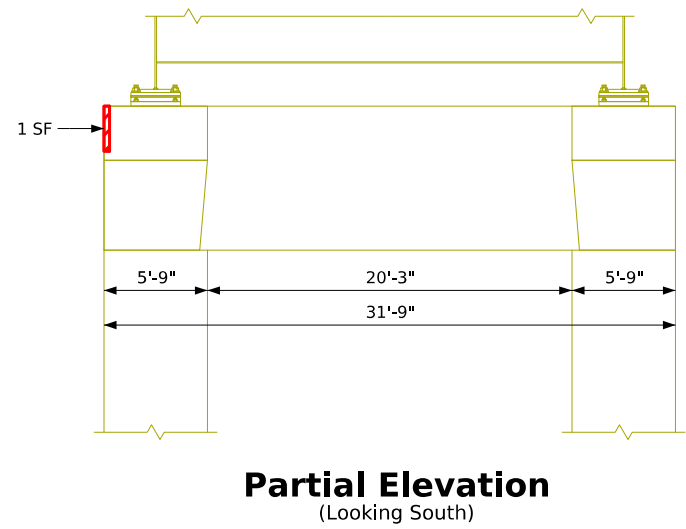
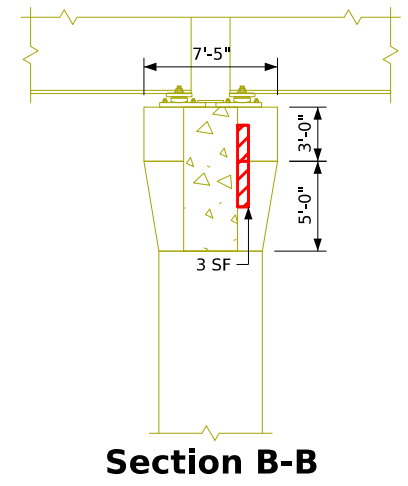
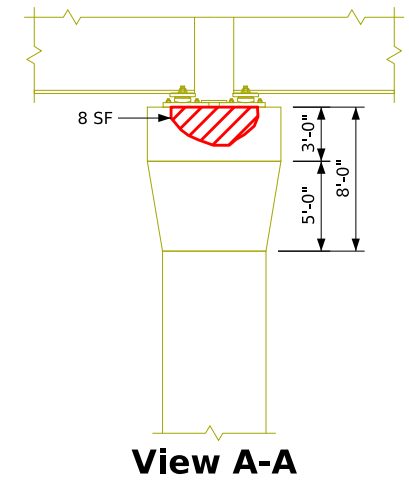
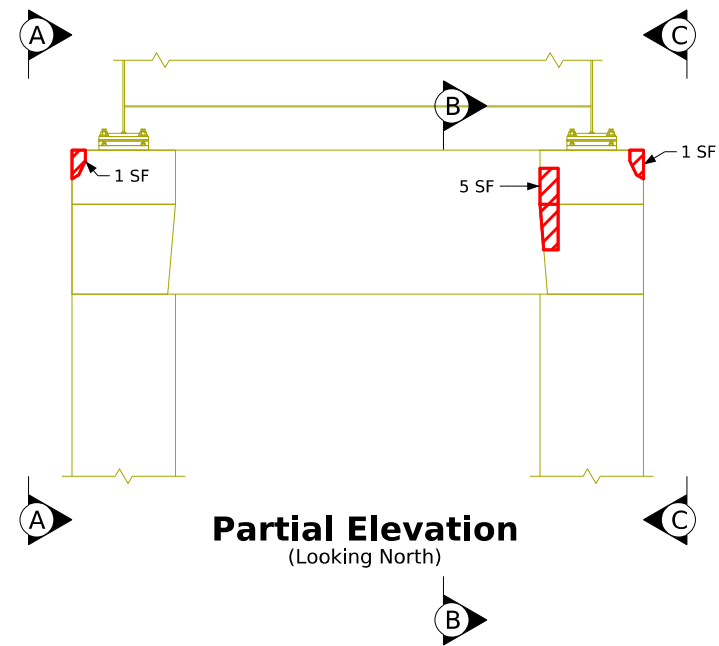
Concrete Repair Quantities

Type	Unit	Qty
Normal Repair	SF	98

Legend

 Indicates Normal Repair

Design For 0° Skew
**5645'-6" × 30'-0" Continuous
 Welded Plate Girder Bridge**
 112'-9" End Spans 142'-6" Interior Spans
Pier Cap Repairs – Pier 29
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
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 Design No. 0425 Design Sheet No. 19 of 22 FHWA No. 035200



Concrete Repair Quantities		
Type	Unit	Qty
Normal Repair	SF	25

Legend	
	Indicates Normal Repair

Design For 0° Skew
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge
 112'-9" End Spans 142'-6" Interior Spans
Pier Cap Repairs – Pier 36
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 20 of 22 FHWA No. 035200

Finger Joint Raise Plate Repair Notes

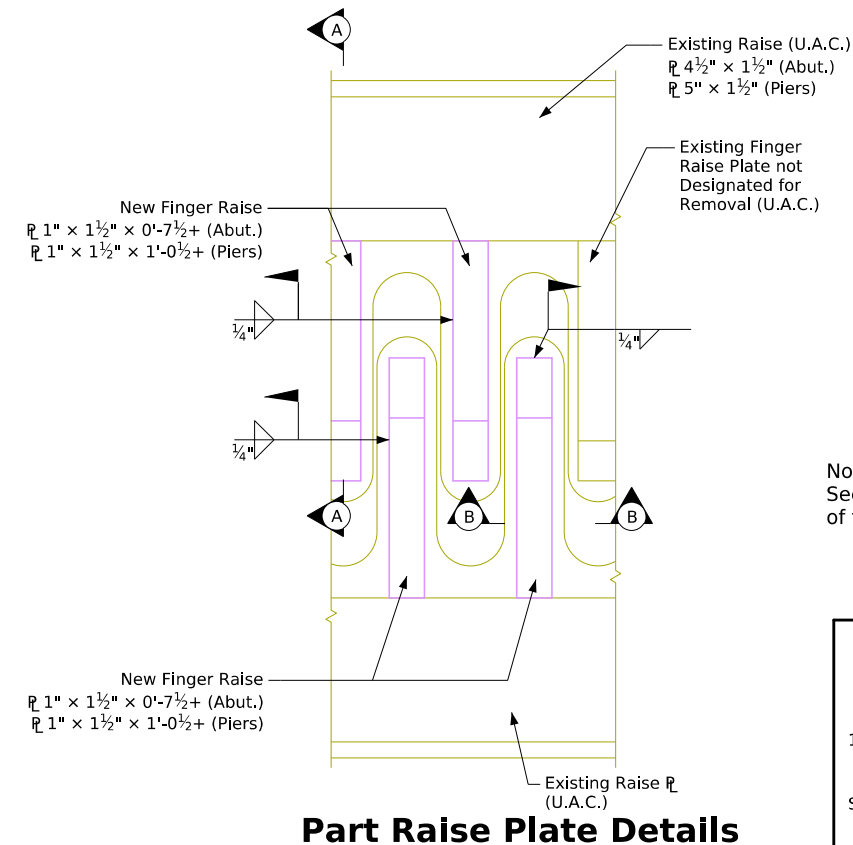
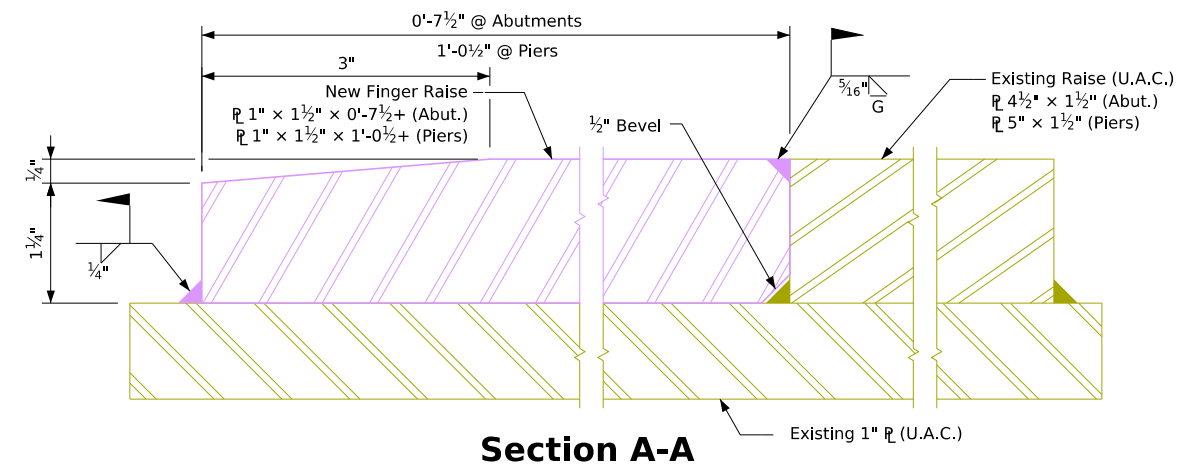
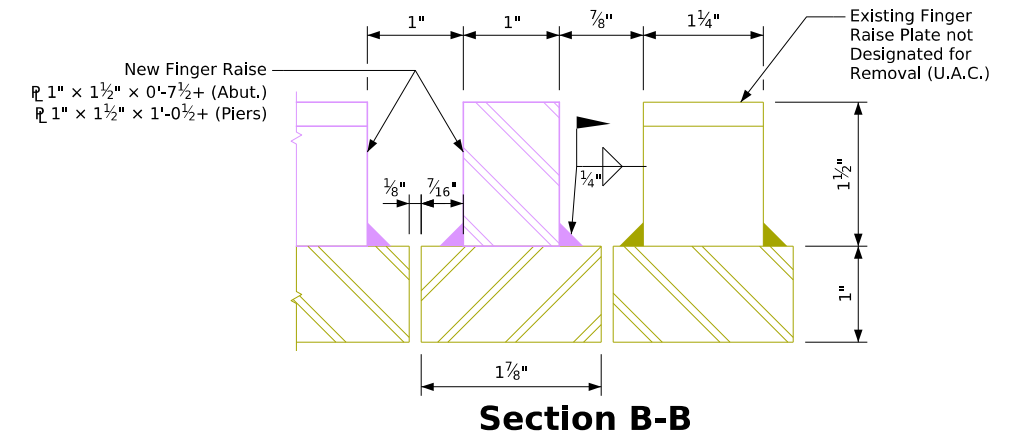
Repairs Shall consist of the Following:

1. Removal of 150 existing finger raise plates at the abutments and 200 existing finger raise plates at the piers designated by the Engineer and installation of new finger raise plates. The number of finger raise plates to remove and replace is estimated and is subject to change as designated by the Engineer.

The lump sum bid for "Removals as Per Plan" shall include all costs associated with removing the designated finger raise plates, and existing welds and rust prior to installing new finger raise plates. Removals 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 shall be repaired at no extra cost to the State.

Surface preparation of base metal and preheat shall be in accordance with the Standard Specifications.

This bridge is eligible for listing on the National Register of Historic Places. All construction activities will follow "The Secretary of the Interior's Standards for Rehabilitation".



Note:
See Design Sheet No. 9 for location
of finger jointing raise plate repairs.

Design For 0° Skew	
5645'-6" × 30'-0" Continuous Welded Plate Girder Bridge	
112'-9" End Spans	142'-6" Interior Spans
Finger Joint Raise Plate Details	
STA. 1121+32.50 (Iowa 14)	Turn-in Date: Sept 02 2024
Marion County	
IOWA DEPARTMENT OF TRANSPORTATION	
Design No. 0425	Design Sheet No. 21 of 22
FHWA No. 035200	

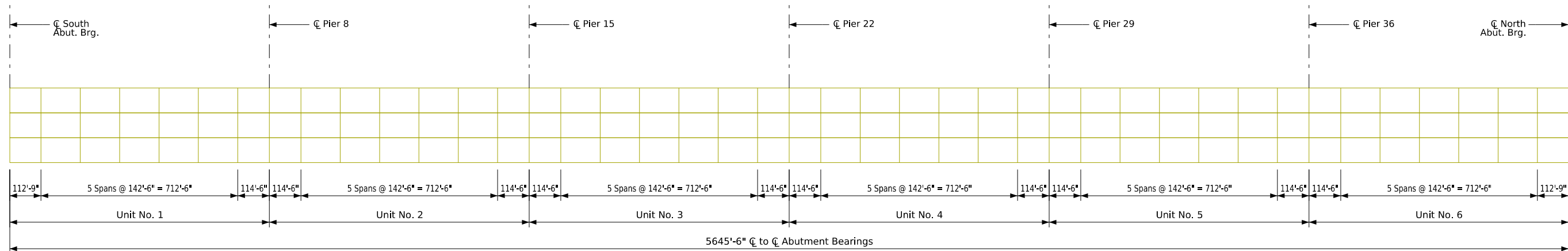



Table of Finger Raise Repair Locations

Location	Remove and Replace
South Abutment	75
Pier 8	40
Pier 15	40
Pier 22	40
Pier 29	40
Pier 36	40
North Abutment	75

Design For 0° Skew
**5645'-6" × 30'-0" Continuous
 Welded Plate Girder Bridge**
 112'-9" End Spans 142'-6" Interior Spans
Finger Joint Repairs
 STA. 1121+32.50 (Iowa 14) Turn-in Date: Sept 02 2024
Marion County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0425 Design Sheet No. 22 of 22 FHWA No. 035200

INDEX OF SHEETS

NO.	DESCRIPTION
A Sheets	Title Sheets
A.3	Index of Sheets
C Sheets	Quantities and General Information
*C.1	Estimated Project Quantities and Reference Notes
C.2	Project Description
C.2	Index of Tabulations
C.2	Standard Road Plans
C.2 - C.4	Tabulations
D Sheets	Mainline Plan and Profile Sheets
*D.1	Plan and Profile Legend & Symbol Information Sheet
*D.2 - D.3	IA 14
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan and Staging Notes
U Sheets	Modified Standard Road Plans
*U.1 - U.3	Modified Approach Pavement Standard Road Plans
	* Color Plan Sheets

	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.
	3/1/2024 Date
	Signature
	Printed or Typed Name My license renewal date is December 31, 20 25
Pages or sheets covered by this seal: A.3, C.1-C.4, D.1-D.3, J.1, U.1-U.3	

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway : Roadway Items
Non-Participating : Non-Federal Aid Items

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway	Non-Participating	Total	
1	2301-0685550	BRIDGE APPROACH PAVEMENT, AS PER PLAN	SY	204.9		204.9	Refer to Tab. 112-6 in C sheets. Refer also to D sheets and U sheets.
2	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK	SY	16,959		16,959	Refer to Tab. 100-28 in C sheets for locations and additional details.
3	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	431		431	Refer to Tab 110-7A in C sheets for locations and additional details. Refer also to item DELIVER AND STOCKPILE SALVAGED MATERIALS. The guardrail, including end anchors, shall be salvaged by unbolting all sections; the guardrail shall not be cut. The posts shall become property of the Contractor.
4	2505-4008300	STEEL BEAM GUARDRAIL	LF	250		250	Refer to Tab. 108-8A in C sheets for locations and additional details.
5	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	2		2	
6	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	2		2	
7	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	2		2	
8	2510-6745850	REMOVAL OF PAVEMENT	SY	204.8		204.8	Refer to Tabs 110-1 and 102-5 in C sheets for locations and additional details.
9	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	131.63		131.63	Refer to Tab. 108-22 in C sheets for locations and additional details.
10	2528-2518000	SAFETY CLOSURE	EACH	2		2	Refer to Tab. 108-13A in C sheets for locations and additional details.
11	2528-8445110	TRAFFIC CONTROL	LS	1		1	Refer to Traffic Control Plan in J sheets.
12	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	0		0	See Proposal.
13	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS		1	1	Refer to Tab. 110-13 in C sheets for details.
14	2557-0000100	LONGITUDINAL GROOVING IN CONCRETE, PAVEMENT	SY	166.7		166.7	Refer to Tab. 100-28 in C sheets for locations and additional details.
15	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	780		780	Refer to Tab. 100-19 in C sheets for details and locations. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
16	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	780		780	Refer to Tab. 100-19 in C sheets for details and locations. Bid item includes 25% additional quantity for field adjustments and replacements.

100-1D 10-18-05
PROJECT DESCRIPTION
This project includes a bridge deck overlay, approach work, and guardrail replacement on IA 14 over the Des Moines River and Reservoir, located 1.2 miles north of Co. Rd. G40.

111-25 10-18-11																																																
INDEX OF TABULATIONS																																																
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Tabulation</th> <th style="width:80%;">Tabulation Title</th> <th style="width:10%;">Sheet No.</th> </tr> </thead> <tbody> <tr> <td colspan="3">C Sheets</td> </tr> <tr> <td>100-1D</td> <td>PROJECT DESCRIPTION</td> <td>C.2</td> </tr> <tr> <td>100-19</td> <td>PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES</td> <td>C.3</td> </tr> <tr> <td>100-26</td> <td>INCIDENTAL ITEMS</td> <td>C.2</td> </tr> <tr> <td>100-28</td> <td>LONGITUDINAL GROOVING</td> <td>C.3</td> </tr> <tr> <td>102-5</td> <td>EXISTING PAVEMENT</td> <td>C.3</td> </tr> <tr> <td>105-4</td> <td>STANDARD ROAD PLANS</td> <td>C.2</td> </tr> <tr> <td>108-8A</td> <td>STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION</td> <td>C.3</td> </tr> <tr> <td>108-13A</td> <td>SAFETY CLOSURES</td> <td>C.4</td> </tr> <tr> <td>108-22</td> <td>PAVEMENT MARKING LINE TYPES</td> <td>C.3</td> </tr> <tr> <td>110-1</td> <td>REMOVAL OF PAVEMENT</td> <td>C.4</td> </tr> <tr> <td>110-7A</td> <td>REMOVAL OF STEEL BEAM GUARDRAIL</td> <td>C.4</td> </tr> <tr> <td>110-13</td> <td>DELIVERY AND STOCKPILING</td> <td>C.4</td> </tr> <tr> <td>111-25</td> <td>INDEX OF TABULATIONS</td> <td>C.2</td> </tr> <tr> <td>112-6</td> <td>BRIDGE APPROACH SECTION</td> <td>C.4</td> </tr> </tbody> </table>	Tabulation	Tabulation Title	Sheet No.	C Sheets			100-1D	PROJECT DESCRIPTION	C.2	100-19	PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES	C.3	100-26	INCIDENTAL ITEMS	C.2	100-28	LONGITUDINAL GROOVING	C.3	102-5	EXISTING PAVEMENT	C.3	105-4	STANDARD ROAD PLANS	C.2	108-8A	STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION	C.3	108-13A	SAFETY CLOSURES	C.4	108-22	PAVEMENT MARKING LINE TYPES	C.3	110-1	REMOVAL OF PAVEMENT	C.4	110-7A	REMOVAL OF STEEL BEAM GUARDRAIL	C.4	110-13	DELIVERY AND STOCKPILING	C.4	111-25	INDEX OF TABULATIONS	C.2	112-6	BRIDGE APPROACH SECTION	C.4
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105-4 10-18-11		
STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
BA-200	04-20-21	Steel Beam Guardrail Components
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	04-16-24	Steel Beam Guardrail Bolted End Anchor
BA-205	10-17-23	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-250	04-20-21	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BR-211	10-18-22	Bridge Approach (Abutting PCC or Composite Pavement)
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-502	04-21-15	Seeding in Rural Areas
PM-110	04-16-24	Line Types
PV-101	04-19-22	Joints
PV-102	04-21-20	PCC Curb Details
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-252	04-21-20	Routes Closed to Traffic

232-3A 10-19-21
EROSION CONTROL (RURAL SEEDING)
<p>Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.</p> <p>Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:</p> <p>Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.</p> <p>Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.</p> <p>Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.</p>

232-3C 10-19-21
EROSION CONTROL (NATIVE GRASS SEEDING)
<p>Area to be seeded is estimated to be less than 1 acre. If the Contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.</p> <p>Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:</p> <p>SEED MIX: Big bluestem (<i>Andropogon gerardii</i>) 6 lbs. PLS/Acre (7.0 kg/ha) Indiangrass (<i>Sorghastrum nutans</i>) 6 lbs. PLS/Acre (7.0 kg/ha) Little bluestem (<i>Schizachyrium scoparium</i>) 6 lbs. PLS/Acre (7.0 kg/ha) Partridge Pea (<i>Chamaecrista fasciculata</i>) 4 lbs. PLS/Acre (4.5 kg/ha) Sideoats grama (<i>Bouteloua curtipendula</i>) 4 lbs. PLS/Acre (4.5 kg/ha) Canada wildrye (<i>Elymus canadensis</i>) 2 lbs. PLS/Acre (2.2 kg/ha) Switchgrass (<i>Panicum virgatum</i>) 1 lbs. PLS/Acre (1.1 kg/ha) Oats (<i>Avena sativa</i>) 32 lbs./Acre (36.0 kg/ha)</p> <p>Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debarbed or equal to facilitate the application of seed.</p> <p>Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.</p> <p>Place seed according to the requirements of Article 4169.02 of the Standard Specifications.</p> <p>Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.</p> <p>Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.</p>

232-11 10-19-21
EROSION CONTROL (STABILIZING CROP SEEDING)
<p>Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.</p> <p>If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:</p> <p>Place seed and fertilize according to the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications.</p> <p>Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.</p> <p>Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are incidental to mobilization and will not be paid for separately.</p>

262-6 10-18-05
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.

100-26 10-15-13					
INCIDENTAL ITEMS					
Special or unique items where method of measurement / basis of payment is not indicated in the specifications or other contract documents.					
No.	Incidental Item	Unit	Quantity	Incidental To	Remarks
1	Seeding, Fertilizing, & Mulching	ACRE	0.3	2533-4980005 Mobilization	(1)
(1) Refer to Standard Notes 232-3A, 232-3C, and 232-11 on C sheets for details.					

100-19
10-19-21

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Location			Perimeter and Slope			Ditch Check			Remarks
Begin Station	End Station	Side	Length of Installation			Length of Installation			
			9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia	20 inch Dia		
			LF	LF	LF	LF	LF		
1090+70.00	1093+10.00	Lt		240					
1090+90.00	1093+10.00	Rt		220					
1149+50.00	1150+30.00	Lt		80					
1149+50.00	1150+30.00	Rt		80					
Total:				620					

100-28
10-19-10

LONGITUDINAL GROOVING

Location	Total	Remarks
	SY	
1092+55.00	53.33	South Approach Pavement
1121+33.00	16959.00	Bridge
1149+70.00	60.00	North Approach, 1st Panel
1150+10.00	53.33	North Approach, 3rd Panel
Bridge Total:	16959.0	
Pavement Total:	166.7	

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks			
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source			Type	Durability Class	Type
1	63	IA-14	Both	48.42	50.97	2001		STP-14-3(35)--2C-63	AAC	2	AAC	2	BAC	4		DURHAM MINE ?	C.LST.							
						1965		P-1114(1)	PCC	9														
2	63	IA-14	Both	50.97	52.04	2001		STP-14-3(35)--2C-63	AAC	2	AAC	2	BAC	4		DURHAM MINE	C.LST.							
						1955		FN-231	PC8	8.5						WEST DES MOI	GRAVEL	2						

108-8A
10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, 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.

No.	Direction of Traffic	Side O = Outside M = Median	Station	Offset	Layout Lengths				Long-Span System	Delineators and Object Markers ②					Bid Items								Remarks				
					BA-250, BA-260, LS-630, or LS-635					SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor	Post Adapter	Steel Beam Guardrail	Barrier Transition Section	BA-250 or LS-630					BA-260 or LS-635			
					VT1	VF	VT2	ET				Type 1	Type 2	Type 3					BA-202	BA-210	BA-200	BA-201		End Terminal		Barrier Transition Section	End Terminal
																								Tangent	Flared		
STATION	TYPE	TYPE	TYPE	TYPE	EACH	EACH	EACH	EACH	EACH	EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH									
1	NB		1093+03.00	15.8' Rt	53.125	62.50	37.50	47.7		2		7		1	B	1		112.5	1	1							
2	SB		1093+03.00	15.8' Lt	53.125	62.50	62.50	47.7		2		8	1		B	1		137.5	1	1							
Totals:							15	1	1	2								250.0	2	2							

108-22
04-16-13

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00

Road ID	Station to Station	Dir. of Travel	Marking Type	Side	BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	Length by Line Type (Unfactored)										Remarks				
											L	C	R	STA	STA	STA	STA	STA	STA	STA		STA	STA		
IA 14	1092+00.00	1150+50.00	NB	Waterborne/Solvent Paint																					
IA 14	1092+00.00	1150+50.00	SB	Waterborne/Solvent Paint																					
Factored Total: Waterborne/Solvent Paint					14.63	-	-	-	117.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based								131.63																	

REMOVAL OF PAVEMENT							110-1 04-16-13
Refer to Tabulation 102-5							
* Not a Bid Item							
Begin Station	End Station	Side	Pavement Type	Area		Remarks	
				SY	LF		
1092+45.79	1092+65.79	Both	PCC	70.11	65.00		
1149+59.21	1149+79.21	Both	PCC	66.67	60.00		
1149+99.21	1150+19.21	Both	PCC	68.03	65.00		
Totals:				204.8	190.0		

SAFETY CLOSURES				108-13A 10-18-22
Refer to Section 2528 of the Standard Specifications				
Station	Closure Type		Remarks	
	Road Qty.	Hazard Qty.		
1090+00.00	1		South End of Bridge	
1151+00.00	1		North End of Bridge	
Total:		2		

REMOVAL OF STEEL BEAM GUARDRAIL						110-7A 04-17-12
Refer to Section 2528 of the Standard Specifications						
① Lane(s) to which the installation is adjacent. ② Includes length of End Terminals and End Anchors.						
No.	Direction of Traffic	Location			Removal of Guardrail	
		Station to Station	Side	LF		
1	NB	1091+04.00	1093+05.00	Rt	203.0	
2	SB	1090+80.00	1093+05.00	Lt	228.0	
Total:					431.0	

DELIVERY AND STOCKPILING						110-13 04-20-10
Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks	
Steel Beam Guardrail & Components	431	LF	IADOT Knoxville Maintenance Garage	Mike Kingery Supervisor 641-842-4714	300 Weiler Drive Knoxville, IA 50138	

BRIDGE APPROACH SECTION																		112-6 04-18-17		
Refer to the BR Series.																				
* Not a bid item																				
Bridge Station	End	Location		T Thickness	Approach Pavement			Standard Road Plans BR Series			Subdrain						Remarks			
		Skew Ahead			Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	Perforated Subdrain 4"	Subdrain Outlet		Porous Backfill	Class 'A' Crushed Stone Backfill		Modified Subbase	Polymer Grid	Special Backfill
		LEFT	RIGHT										INCHES	FT						
1121+33.00	South	0		12.0	20.0	70.11	0.00	0.00	Modified	Fixed	BR-211								See Note 1. See D sheets and U sheets.	
1121+33.00	North	0		12.0	20.0	0.00	0.00	66.67	Modified	Fixed	BR-211								See Note 1. See D sheets and U sheets.	
1121+33.00	North	0		12.0	20.0	68.11	0.00	0.00	Modified	Fixed	BR-211								See Note 1. See D sheets and U sheets.	
				Subtotals:		138.22	0.00	66.67												
				Totals:		204.9													Note 1: Bid item = BRIDGE APPROACH P'VMT, AS PER PLAN.	

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

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.
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

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

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

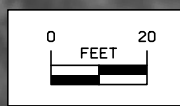
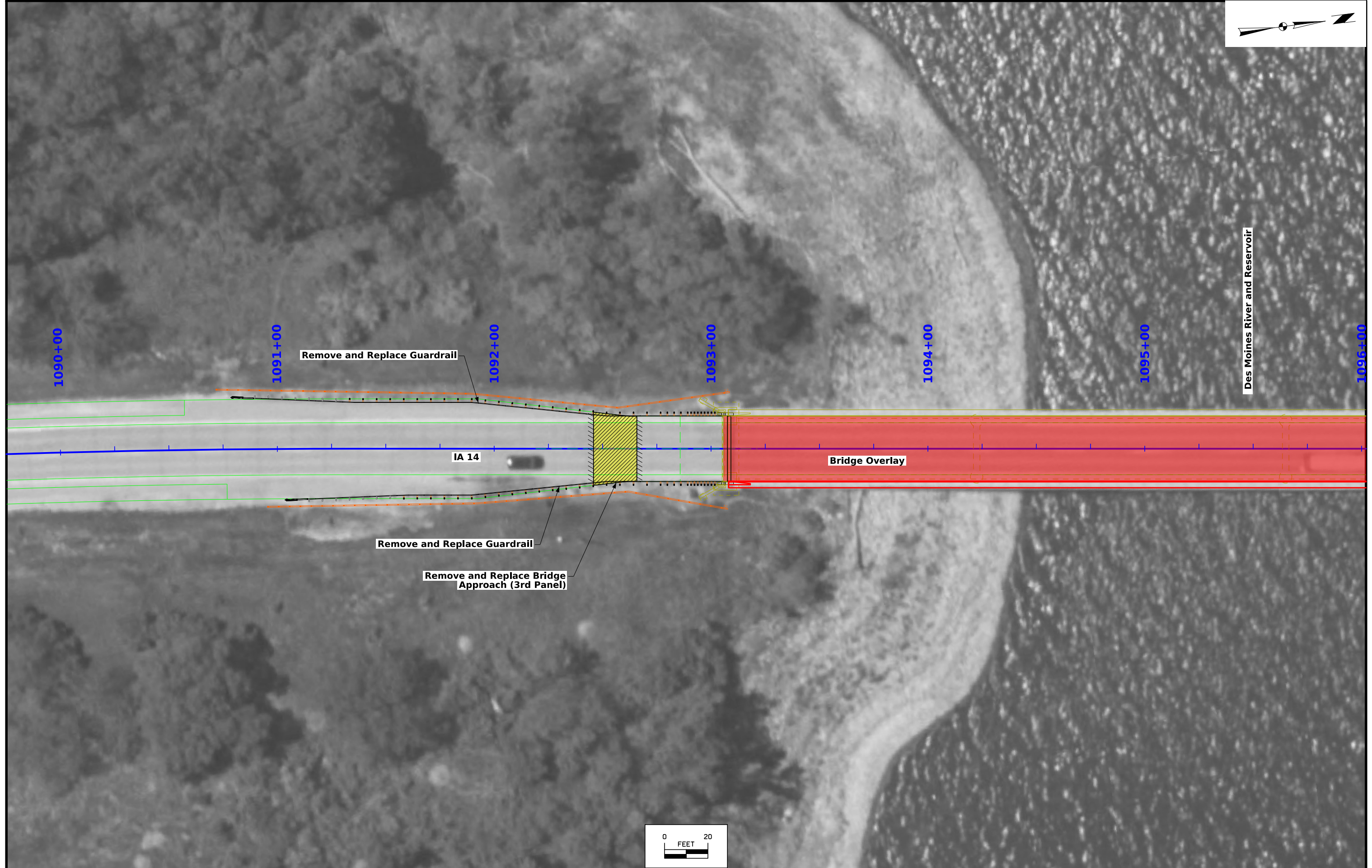
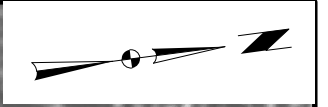
RIGHT-OF-WAY LEGEND	
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

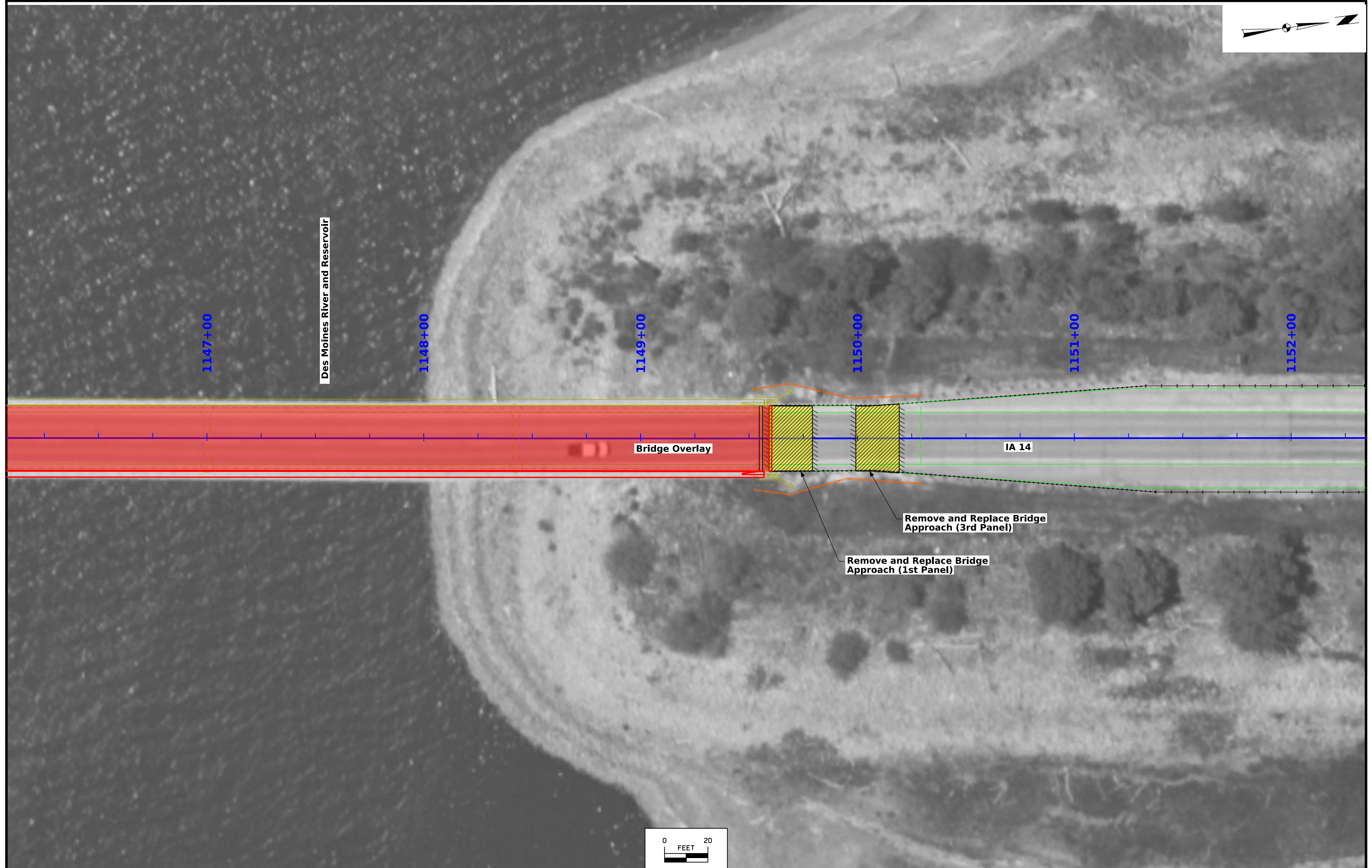
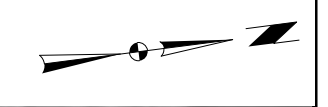
LINE STYLE LEGEND OF EROSION CONTROL

LINESTYLE	Design Element
	Perimeter and Slope Sediment Control Device (12")

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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





Des Moines River and Reservoir

1147+00

1148+00

1149+00

1150+00

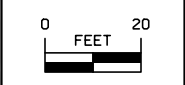
1151+00

1152+00

Bridge Overlay

IA 14

Remove and Replace Bridge Approach (3rd Panel)
Remove and Replace Bridge Approach (1st Panel)

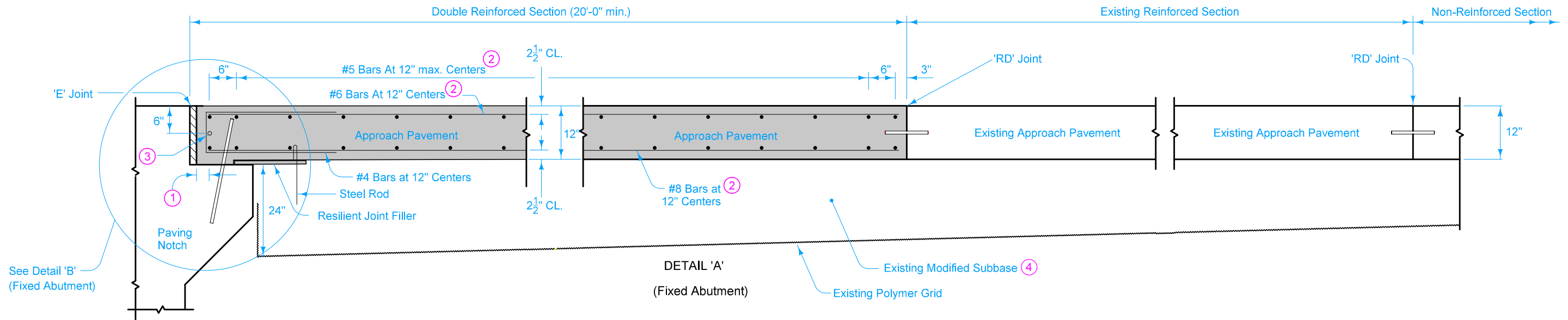


108-23A 08-01-08
TRAFFIC CONTROL PLAN
Refer to J Sheets on project BRF-014-3(056)--38-63 for Traffic Control Plans. Traffic will be detoured for the entire project. Detour will be as follows: NB and SB IA 14 traffic will be detoured as follows: Southeast on CO RD G28 for 8.1 miles to CO RD T15, southwest on CO RD T15 for 10.0 miles to CO RD G44, northwest on CO RD G44 for 4.5 miles to IA 14.

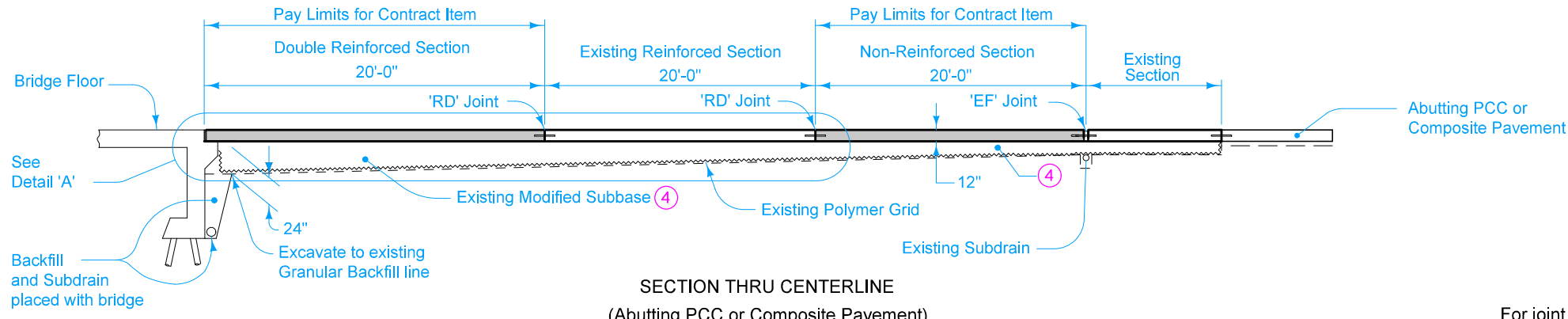
108-26A 08-01-08
STAGING NOTES
Traffic: All IA 14 traffic will be detoured offsite per project BRF-014-3(056)--38-63 Traffic Control Plans. Construction: Bridge repair, deck overlay, approach and guardrail work.

108-25 10-21-14												
511 TRAVEL RESTRICTIONS												
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
None.												

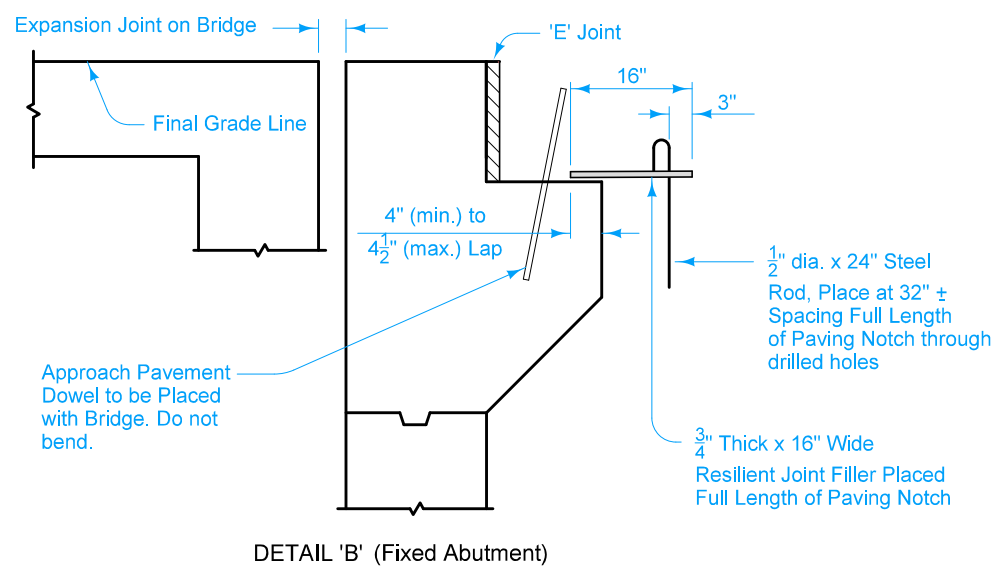
111-01 04-17-12	
COORDINATED OPERATIONS	
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.	
Project	Type of Work
BRF-014-3(056)--38-63	IA 14 Bridge Replacement over Brush Creek



DETAIL 'A'
(Fixed Abutment)



SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)

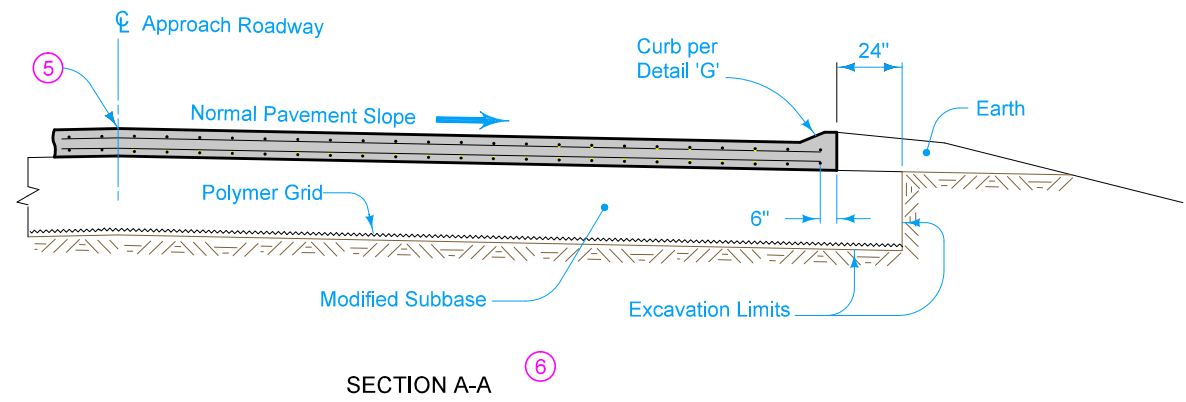


DETAIL 'B' (Fixed Abutment)

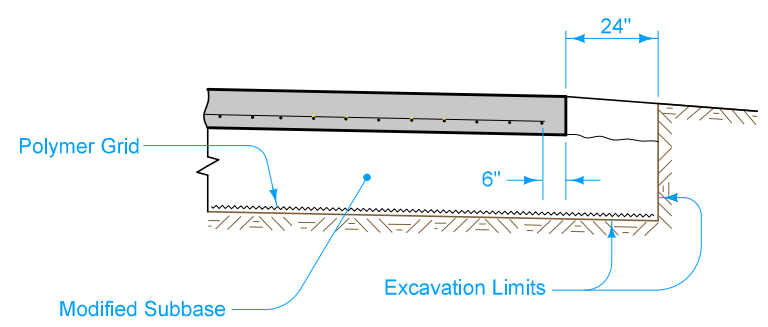
For joint details, refer to **PV-101**.
 For curb details, see Detail 'G'.
 All transverse bars are #5.
 Contract Item:
 Bridge Approach Pavement, As Per Plan
 Tabulation:
 112-6

- ① 2" min. to 2 1/2" max. clear to bent bar.
- ② Minimum lap length: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"
- ③ If bridge is skewed, place additional #5 bar parallel to skewed face.
- ④ Following removal of existing PCC approach panels, add modified subbase as needed to bring to final grade.

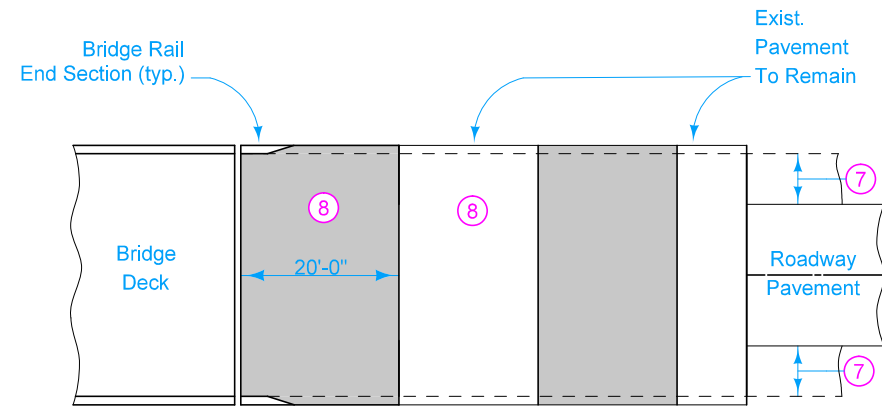
MODIFIED STANDARD ROAD PLAN	REVISION	
	3	4-16-24
BR-203		
SHEET 1 of 2		
MODIFICATIONS: Changed to show reconstruction of the first (double reinforced) and third (non-reinforced) panels only.		
NORTH ABUTMENT DOUBLE REINFORCED 12" APPROACH		



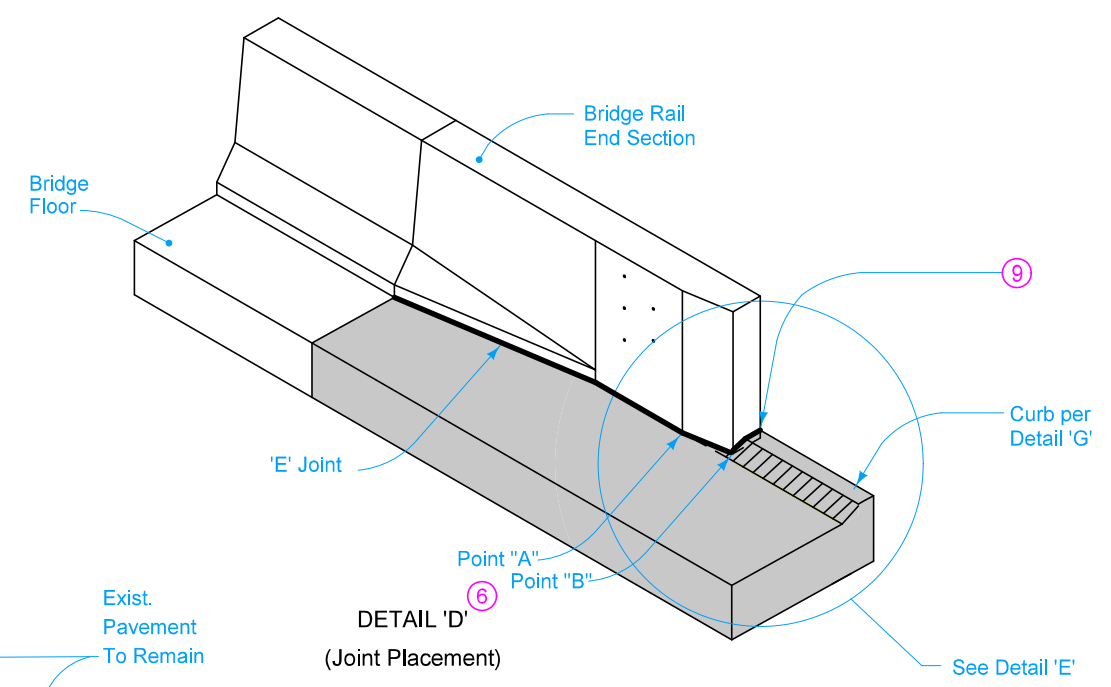
SECTION A-A (6)



SECTION B-B (6)



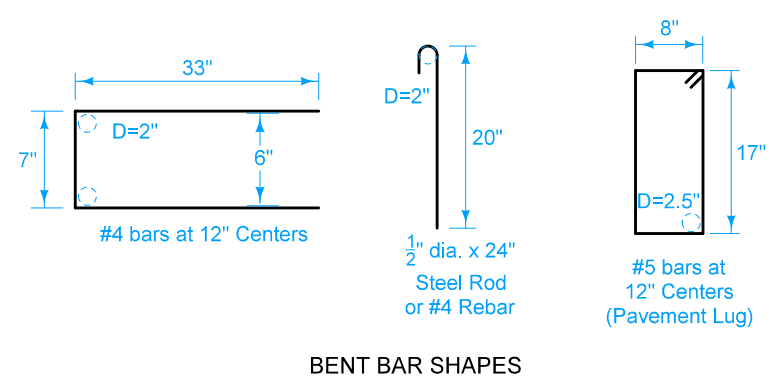
APPROACH PAVEMENT LAYOUT



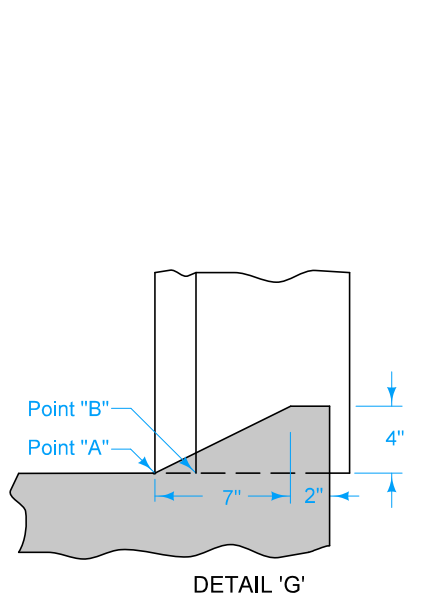
DETAIL 'D' (Joint Placement) (6)

- (5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' joint.
- (6) Refer to BR-211.
- (7) Design shoulder width.
- (8) Reinforced bridge approach section.
- (9) Expansion joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B of PV-101. Seal joint per Detail F of PV-101.

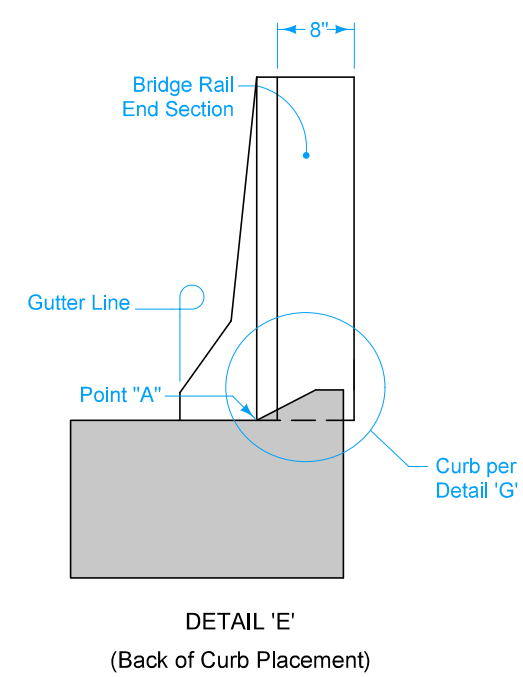
- Fixed Abutment Bridges: Type 'E' joint.



BENT BAR SHAPES

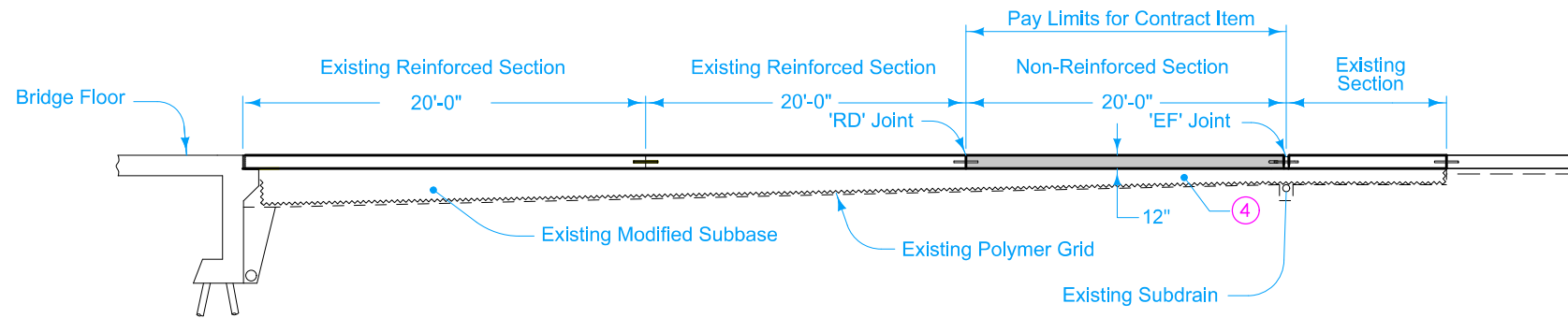


DETAIL 'G'

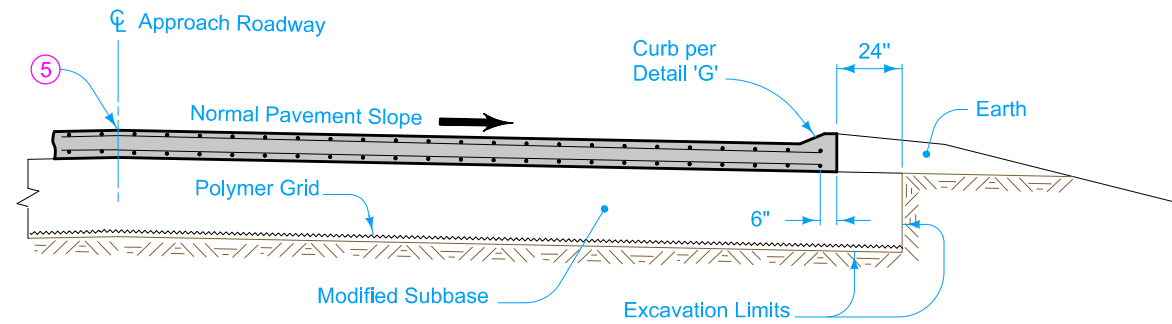


DETAIL 'E' (Back of Curb Placement)

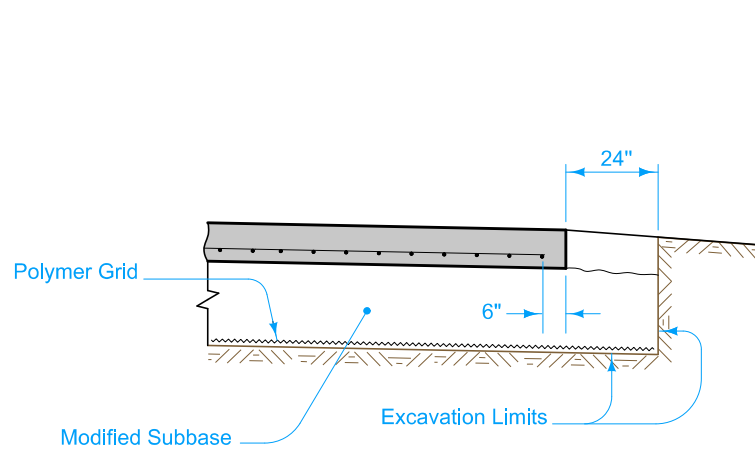
MODIFIED STANDARD ROAD PLAN	REVISION	
	3	4-16-24
BR-203		
SHEET 2 of 2		
MODIFICATIONS: Changed to show reconstruction of the first (double reinforced) and third (non-reinforced) panels only.		
NORTH ABUTMENT DOUBLE REINFORCED 12" APPROACH		



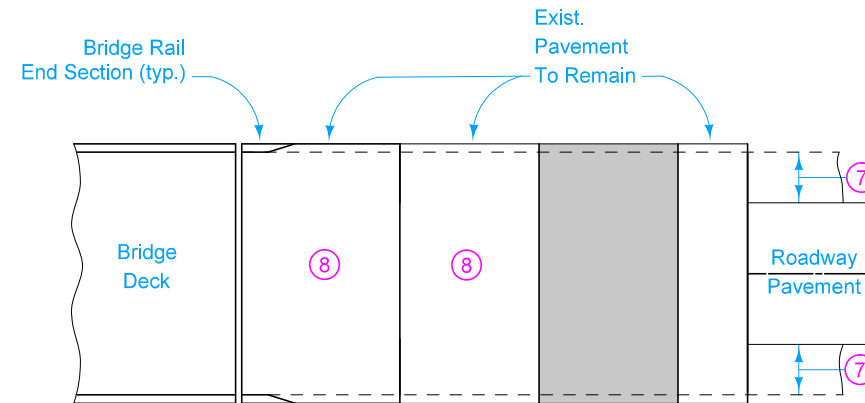
SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)



SECTION A-A



SECTION B-B



APPROACH PAVEMENT LAYOUT

For joint details, see PV-101.

- ④ Following removal of existing PCC approach panels, add modified subbase as needed to bring to final grade.
- ⑤ Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' Joint.
- ⑥ Refer to BR-211.
- ⑦ Design shoulder width.
- ⑧ Reinforced bridge approach section.

Contract Item:
Bridge Approach Pavement, As Per Plan

Tabulation:
112-6

MODIFIED	REVISION	
	3	4-16-24
STANDARD ROAD PLAN		BR-204
		SHEET 1 of 1

MODIFICATIONS: Changed to show reconstruction of the third (non-reinforced) panel only.

SOUTH ABUTMENT
DOUBLE REINFORCED 12" APPROACH WITH
EXISTING VARIABLE DEPTH PAVING NOTCH