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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
MUSCATINE COUNTY
Bridge Repair
IA 92 over the Mississippi River
in Muscatine

FRA No. 607203K

Refer to the Plan Sheets for list of applicable specifications.

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

Revisions

	TOTAL
	15
PROJECT IDENTIFICATION NUMBER	
19-70-092-010	
CONTRACT ID NUMBER	
70-0929-157	
PROJECT NUMBER	
BRFN-092-9(157)--39-70	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
7009201019	

Standard Road Plans

Standard road plans are listed on sheet number C.3

Design Data Rural

2021 AADT	3670	V.P.D.
% Trucks	8	%
Total 20-Yr ESALs	900,000	

Index Of Seals

Sheet No.	Name	Type
1	Michael J. Rosenthal	Structural Design
A.1	Brian J. Birkland	Roadway Design

Structural Design



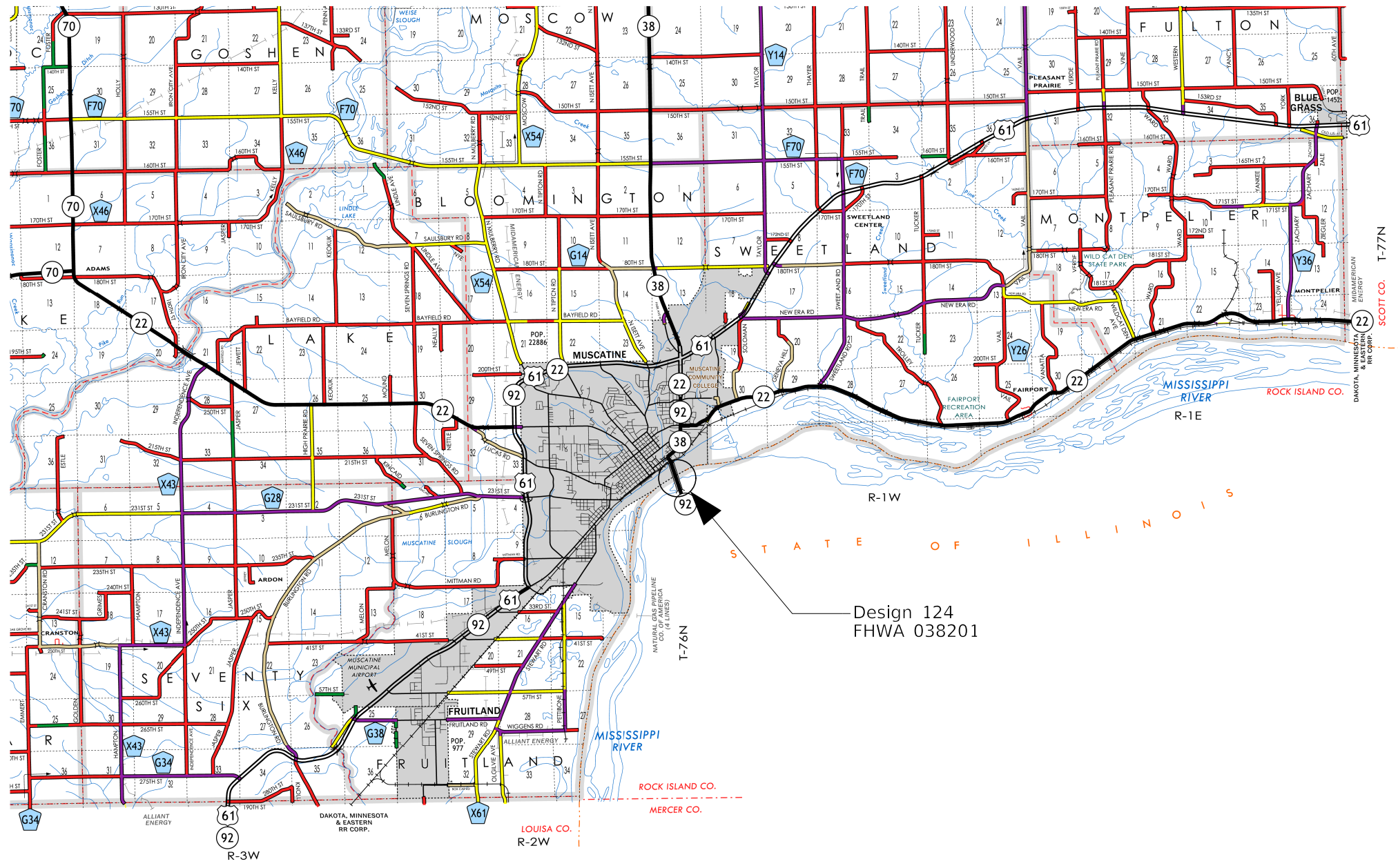
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Michael J. Rosenthal Date August 17, 2023

Printed or Typed Name

My license renewal date is December 31, 2023

Pages or sheets covered by this seal: 1-6 of 15

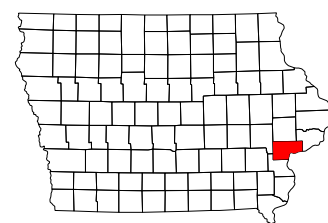


- LEGEND**
- INTERSTATE HIGHWAY
 - PRIMARY HIGHWAY-DIVIDED
 - PRIMARY HIGHWAY
 - PORTLAND CEMENT CONCRETE ROAD
 - ASPHALT ROAD
 - BITUMINOUS ROAD
 - GRAVEL ROAD
 - EARTHEN ROAD
 - INTERSTATE HIGHWAY
 - UNITED STATES HIGHWAY
 - STATE HIGHWAY
 - COUNTY HIGHWAY
 - RAILROAD
 - PIPELINE
 - AIRPORT
 - HYDROLOGY
 - BRIDGE
 - STATE BOUNDARY
 - COUNTY BOUNDARY
 - CORPORATE BOUNDARY
 - TOWNSHIP LINE
 - SECTION LINE
 - ROAD NAMES
 - UNINCORPORATED PLACE
 - STATE PARKS
 - STATE INSTITUTIONS
 - FEDERAL LAND

Design 124
FHWA 038201

Muscatine County Location Map

Not To Scale



ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Repairs to a 3018' x 32'
Design No. 0124-Muscatine: Steel Thru Truss Bridge
(50/50 Cost Share)

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Design No. 0124-Muscatine	
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1	Includes all work for removal and off-site disposal of existing angles and associated connections. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state. Includes any coordination with the City of Muscatine and work required for the temporary removal or relocation of any component to or support for the lighting system.
2	2426-6772120	BRIDGE REPAIR	LS	1	Includes costs of material and installation of 14 - 5x5x1/2 galvanized angles, 3/4" Ø A325 bolts, nuts, and washers and field drilling holes in the existing truss chord. Charpy V-notch testing is required for the angles.
3	2508-0804000	BRIDGE CLEANING FOR PAINTING	LS	1	
4	2508-0805000	BLAST CLEANING OF STRUCTURAL STEEL	LS	1	
5	2508-0970000	CONTAINMENT	LS	1	
6	2508-0990000	PAINT WASTE TRANSPORT AND DISPOSAL	LS	1	
7	2508-0991000	PAINTING OF STRUCTURAL STEEL	LS	1	
8	2528-8445110	TRAFFIC CONTROL	LS	0.8	Refer to Traffic Control Plan on Sheet J.1. Quantity is estimated ratio of cost of work in this division.
9	2528-8445113	FLAGGERS	EACH	0	See Proposal.
10	2533-4980005	MOBILIZATION	LS	1	--

Note:
Roadway quantities shown
elsewhere in these plans



Design For Repair to 0° Skew
3018' x 32'-0" Steel
Thru Truss Bridge
Variable End Spans 512'-0" Main Span
Estimated Quantities
STA. 17+50.88 (IA 92) Turn-In Date: Sept. 2023
Muscatine County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 124 Design Sheet No. 001 of 4 FHWA No. 038201

Truss Retrofit Notes:

The existing bottom chord (downstream side only) is to be reinforced with new steel angles in accordance with the following construction sequence:

1.

The area of the existing truss chord which will be under the angles and at least one inch outside the areas shall be blast cleaned to a near-white condition in accordance with Section 2508, of the Standard Specifications. Vacuum blast shall be used. If the contractor recycles the blast material, in no case shall the recycling process utilize a wet separation method. Containment and disposal of wastes shall be in accordance with Section 2508, of the Standard Specifications. Pack rust shall be removed around separated areas before blast cleaning using hand tools.
2.

The portion of the blast-cleaned surfaces which will be under the angles and an additional one inch outside these areas shall be given a prime coat of zinc silicate paint in accordance with Section 2508, of the Standard Specifications. The angles shall be galvanized per the Standard Specifications. The zinc silicate paint shall meet the requirements of Materials IM. 482.02 appendix A. Care shall be taken that zinc silicate primer is applied only on blast-cleaned steel surfaces and that none is applied over old primer or paint.
3.

Restrict traffic to one lane of two-way traffic on the side of the bridge away from the downstream truss chord.
4.

Where no repairs exist, field drill the existing truss chord for ¾" Ø H.S. bolts using the shop drilled holes in the angles as a template. Where existing repair holes exist, field measurements shall be required to determine hole locations in repair angles.
5.

After drilling, remove angles and clean all burrs and cuttings from the angles and truss-chord members.
6.

Bolt the angle to the truss chord with ¾" Ø H.S. bolts. Fully tighten all bolts for a friction type connection. During the tightening of bolts, all possible efforts shall be made by the contractor to minimize the amount of equipment and supplies stored on the bridge deck as directed by the engineer. Traffic may be restored after all bolts are tightened.
7.

Paint the bolts, nuts, angles, and the blast-cleaned area around it in accordance with Section 2508, of the Standard Specifications, and with the following additions/exceptions:

a.

Remove any silicate primer applied (in step 2 above) over old primer or paint.

b.

Apply epoxy aluminum primer to the attached angles and an additional 3 inches outside the angles.

c.

Apply waterborne acrylic paint finish coat over the epoxy aluminum primer. Final paint coat shall match the color of the existing paint.

Any damage by the contractor to portions of the structure and its paint system not specifically covered by the scope of these plans shall be repaired or replaced by the contractor at the contractor's expense.

No drilling new bolt holes in the truss bottom chord may be performed if the air and steel temperature are below 40°F.

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

Angles shall meet requirements of ASTM A709, Grade 36.

Angles are to be galvanized after fabrication. Bolts, nuts, and washers are to be galvanized per Standard Specifications.

All new bolts are to be ¾" Ø H.S. bolts. Holes are to be 1⅜" Ø in the existing truss chord and 7/8"Ø in the angle. Bolts shall be installed in accordance with the Standard Specifications.

The price bid for "Bridge Repair" shall include all costs associated with furnishing and installing angles (including field drilling the existing truss chord) as noted above except for items included in the bid items for “Bridge Cleaning for Painting”, “Blast Cleaning of Structural Steel”, “Containment”, and "Painting of Structural Steel". Charpy V notch testing is required for the angles.



General Notes:

This design is for repairs to the existing 512'-0" x 32'-0" main span steel thru truss bridge on IA 92 over the Mississippi River in Muscatine. Electronic copies of original design plans will be made available to the contractor as part of the e-files supplied with the contract documents.

See design sheet 3 for list of repair items.

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 city and 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 construction starting date.

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

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing the existing retrofit angles attached to the downstream (Southwest typ.) bottom chord at panels L4-L5 and L6'-L5'. 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 cost to the state.

Aesthetic truss lighting is operated by the City of Muscatine. The contractor shall coordinate with the City for removal and reinstallation of the lighting and/or platforms as needed for installation of the retrofit angles.

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 lump sum bid items for “Bridge Cleaning for Painting”, “Blast Cleaning of Structural Steel”, and “Painting of Structural Steel” shall include the costs of cleaning, blast cleaning and field painting of the existing structural steel area where the angles will be installed. The bid items shall be in accordance with Section 2508, of the Standard Specifications. The paint system required is described in the “Truss Retrofit Notes” in these plans.

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 276,000 parts per million (ppm). Analysis of total chromium on this sample was 4,710 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.

The contractor shall conduct their operations in such a manner that any paint removed during demolition is contained, collected, and disposed of in accordance with Section 2508, of the Standard Specifications. Before delivery of any scrap steel the contractor shall provide a written notice to the receiving facility. This notice shall at a minimum include:

1.

A notice that the scrap steel is coated with paint that has regulated materials at levels which could be hazardous to employees or the environment.
2.

A copy of the scrape sample provided in the contract documents.
3.

A signature block for the receiving facility to confirm their receipt of this information.

A copy of this notice, signed by the receiving facility, shall be returned to the engineer before any scrap steel is removed from the project.

Specifications:

Design: AASHTO Series 2002.

Construction: Iowa Department of Transportation Standard Specifications for Highway and Bridge Constrution, Series 2023, plus applicable general supplemental specifications, developmental specifications, supplemental specifications and special provisions shall apply to construction work on this project.

Design Stresses:

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

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).

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

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	Bottom Chord Retrofit Angle	(157)_Muscatine_Des124_RetrofitAngle.pdf	No
--	--	--	--
--	--	--	--
--	--	--	--

Design History at This Site (Includes This Design)	
Des. No.	Type of Work
170	Original Design
694	Bridge Deck Overlay
197	Zone Painting, Girder/Beam Repair
N/A	Roadway Lighting (2006)
N/A	Bridge Lighting (2008)
213	Girder & Abutment Repair
N/A	Bridge Painting (2017)
124	Bridge Repair

Design For Repair to 0° Skew

3018' x 32'-0" Steel Thru Truss Bridge

Variable End Spans512'-0" Main Span

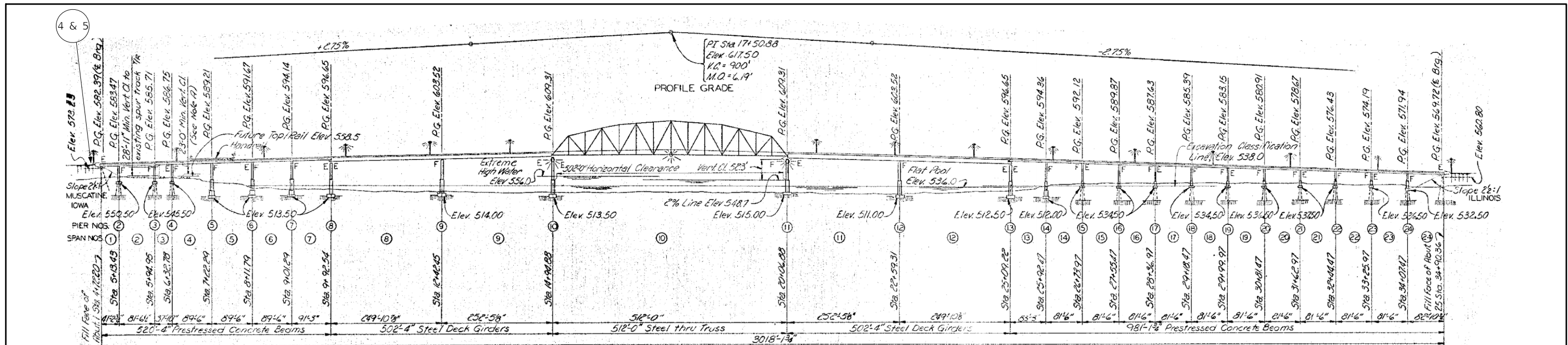
General Notes

STA. 17+50.88 (IA 92)Turn-In Date: Sept. 2023

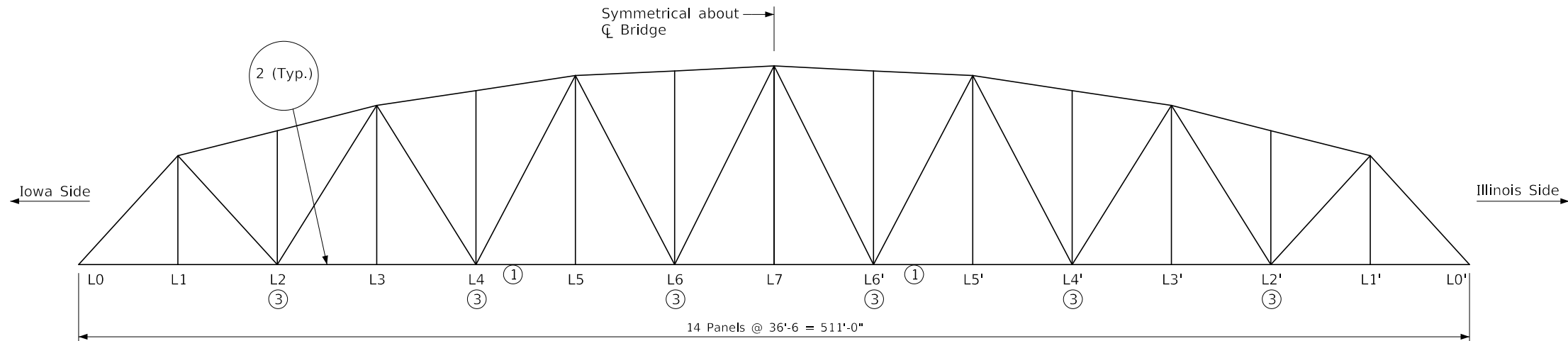
Muscatine County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124Design Sheet No. 002 of 4FHWA No. 038201



Overall Bridge Elevation
For Information Only (From Original Plans Design 170)



Downstream Truss Elevation
(Southwest side of bridge, looking Northeast)

Repairs shall consist of:

1. Remove the existing retrofit angles at downstream side truss bottom chord between panels L4-L5 and L6'-L5'.
2. Remove all pack rust and blast clean the area to be covered with new angles. Install full-length angles at the downstream truss bottom chord. Paint the angle and blast cleaned area after installation.
3. City of Muscatine will remove and reinstall the aesthetic truss lighting as needed.
4. Install EF joint patch on Iowa side. (100% Iowa Cost)
5. Replace Iowa Side Guardrail (100% Iowa Cost)

Traffic Estimate

2021 AADT	3,760	V.P.D.
Trucks	8	%
Total 20-Yr ESALs	900,000	

Location

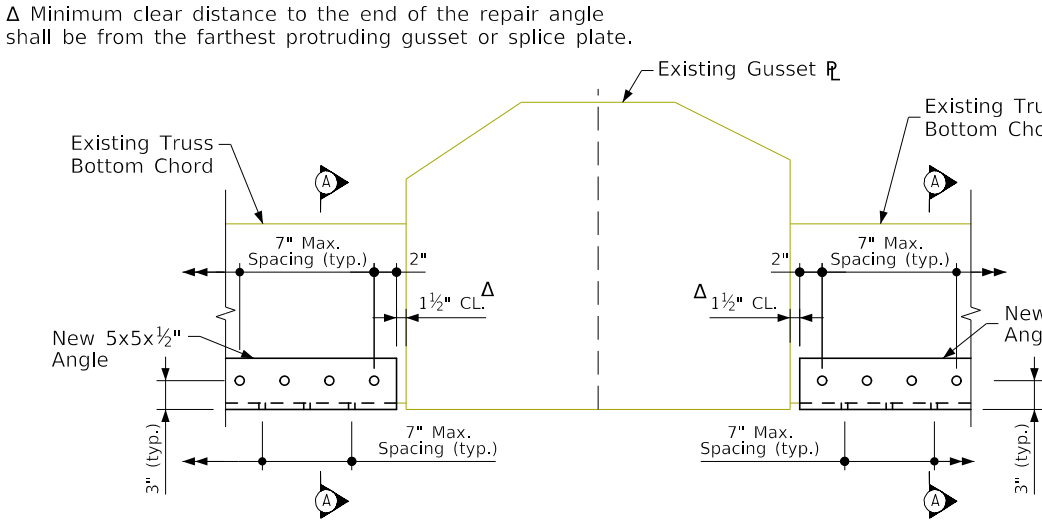
IA 92 over
Mississippi River & R.R.
T-77N R-2W
Section 35
City of Muscatine
Muscatine Township
Muscatine County, Iowa
Rock Island County, Illinois
FRA No. 607203K
Bridge Maint. No. 7075.75092
FHWA No. 038201
Latitude 41.426536°
Longitude -91.035832°

Design For Repair to 0° Skew
3018' x 32'-0" Steel
Thru Truss Bridge

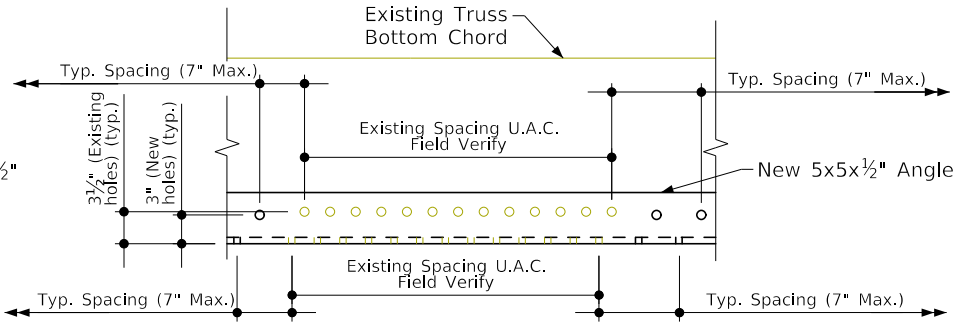
Situation Plan

Variable End Spans	512'-0" Main Span
STA. 17+50.88 (IA 92)	Turn-In Date: Sept. 2023
Muscatine County	
IOWA DEPARTMENT OF TRANSPORTATION	
Design No. 124	Design Sheet No. 003 of 4 FHWA No. 038201

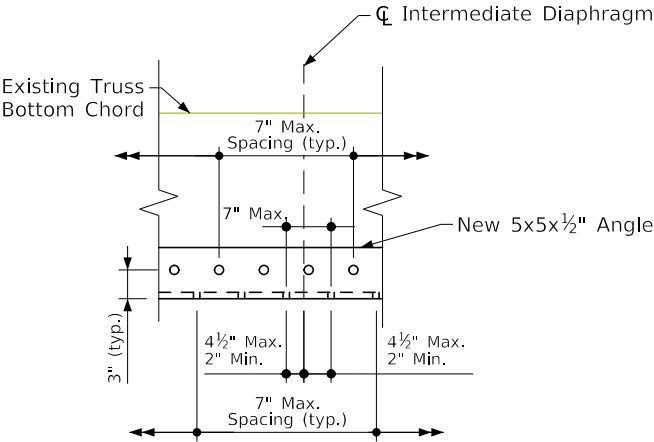




Typical Elevation at Gusset Plate
(Southwest side of bridge, looking Northeast)

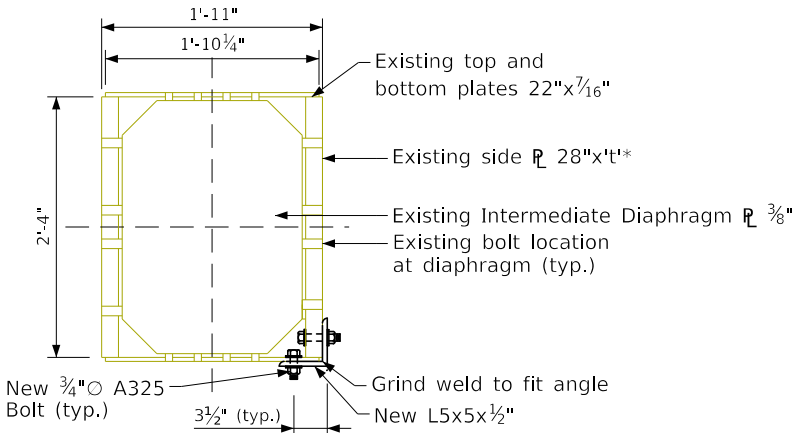


Typical Elevation at Existing Repair Angle
(Southwest side of bridge, looking Northeast)



Typical Elevation at Diaphragm
(Southwest side of bridge, looking Northeast)

*Thickness, t, is $\frac{3}{4}$ " for L0-L2, $1\frac{1}{2}$ " for L2-L4, and $1\frac{3}{4}$ " for L4-L7. Thicknesses are symmetric about the $\bar{C}$ of the truss.



Section A-A Truss Bottom Chord Box Section



Photo of Existing Repair Angle at L6'-L5'



Photo of Existing Crack at L5'-L4'

Notes:
See design sheet 2 for additional repair notes.

Drilled holes in the angle shall be $\frac{7}{8}$ " $\bar{O}$ and the drilled holes in the side plate of the box beam shall be $1\frac{3}{16}$ " $\bar{O}$.

Stagger bottom bolts approximately halfway between bolts through side plate.

Design For Repair to 0° Skew
3018' x 32'-0" Steel
Thru Truss Bridge

Variable End Spans 512'-0" Main Span

Repair Details

STA. 17+50.88 (IA 92) Turn-in Date: Sept. 2023

Muscatine County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 004 of 4 FHWA No. 038201



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C.3	Standard Road Plans
C.3	Index of Tabulations
C.3	General Notes
C.4 - 5	Tabulations
D Sheets	Mainline Plan and Profile Sheets
* D.1	IA 92
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes Stage
J.1	511 Traffic Restrictions
J.2	Staging Typical Sections
	* Color Plan Sheets

ROADWAY DESIGN	
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.  8/22/2023 Signature Brian J. Birkland Date Printed or Typed Name My license renewal date is December 31, 2024
Pages or sheets covered by this seal: A.1, C.1-C.5, D.1, J.1-J.2	

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Iowa Side Roadway Items : 100% Iowa Cost

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Iowa Side Roadway Items	
1	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	2	Refer to Tabulation 102-6C.
2	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	137.5	Refer to Tab. 110-7A.
3	2505-4008300	STEEL BEAM GUARDRAIL	LF	50	Refer to Tab. 108-8A.
4	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	2	
5	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	2	
6	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	2	
7	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	1	Refer to Tab. 190-62. The Contractor shall remove each sign and the hardware used to secure the sign to another sign, posts, or sign support structure. For signs mounted directly to posts, removal of the sign shall include removal of the posts. Posts may be either wood posts or steel breakaway sign posts. The removal of concrete footings for steel breakaway sign posts will be measured and paid for separately. The Contractor shall furnish all necessary hardware to install the signs. When the new installation is similar to the original installation, unless otherwise noted, the existing hardware may be used to reinstall the sign. Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials shall be new. The DOT will furnish all details necessary for fabrication of the replacement materials. METHOD OF MEASUREMENT: The Engineer will count each sign removed and reinstalled. BASIS OF PAYMENT: For each sign removed and reinstalled, the Contractor shall be paid the contract unit price.
8	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	1.8	Refer to Tab. 108-22.
9	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	1	Refer to Tab. 108-28.
10	2528-8445110	TRAFFIC CONTROL	LS	0.2	Quantity is estimated ratio of cost of work in this division for the traffic control related to the construction for the Iowa side including Standard Road Plan TC-215 (Lane Closure with Signals (Up to Three Days)) for EF Joint Patch and Guardrail Construction on the Iowa side. Refer to the Traffic Control Plan on Sheet J.1.
11	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	34.4	Patches shall consist of an 'M' mix. Refer to Tab. 102-6C.
12	2529-8174020	SUBBASE PATCH WITH EF JOINT	SY	34.4	Refer to Tab. 102-6C.
13	2529-8174050	PATCH SUBDRAIN	EACH	1	
14	2529-8201000	JOINT ASSEMBLY, EF	EACH	2	

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Iowa Side Roadway Items	
15	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	280	Refer to Tab. 100-19. 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	280	Refer to Tab. 100-19.
17	2602-0000500	OPEN-THROAT CURB INTAKE SEDIMENT FILTER, EC-602	LF	4	Refer to Tab. 100-36.
18	2602-0000510	MAINTENANCE OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER	EACH	1	
19	2602-0000520	REMOVAL OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER	EACH	1	

FULL-DEPTH PATCHES

Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105, and PR-140.

Location				Dimension			PCC Patches				HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'L-3' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels										
							PR-103	PR-102	PR-104	PR-105										
							L, R, or B	FT	FT	IN										
2	4+12.00		B	10.0	31.0	10.0	34.4						34.4	1		2	1		Loc. Station at Center of Patch; Includes Curb Section & 'L-3' Longitudinal Joint for Matching Into Existing Curb Section	

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	
4+07.00	4+17.00	Both	PCC	34.4	62.0	

OPEN-THROAT CURB INTAKE SEDIMENT FILTER

Possible Standard: EC-602

Location Station	Side	Installation	Maintenance	Removal	Remarks
		LF	EACH	EACH	
3+88.00	Lt.	4.0	1	1	

TEMPORARY TRAFFIC SIGNALS

No.	Location Station	Type			Remarks
		One Lane Traffic	Haul Road	Intersection	
1	3+04.63	X			
1	5+73.20	X			

EXISTING SIGNS TO BE REMOVED

[illegible]

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

[illegible]

PAVEMENT MARKING LINE TYPES

See PM-110

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

*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.**

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
ELY4: Edge Line Left (Yellow) @ 1.00	SLW2: Stop Line (White) @ 6.00		ELW4: Edge Line Right (White) @ 1.00

[illegible]

108-8A

10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

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

② Not a bid item. Incidental to guardrail installation.

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.

No.	Direction of Traffic	Location		Station	Offset	Layout Lengths				Long-Span System	Delineators and Object Markers ②				Bid Items												Remarks																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		① Side O = Outside M = Median				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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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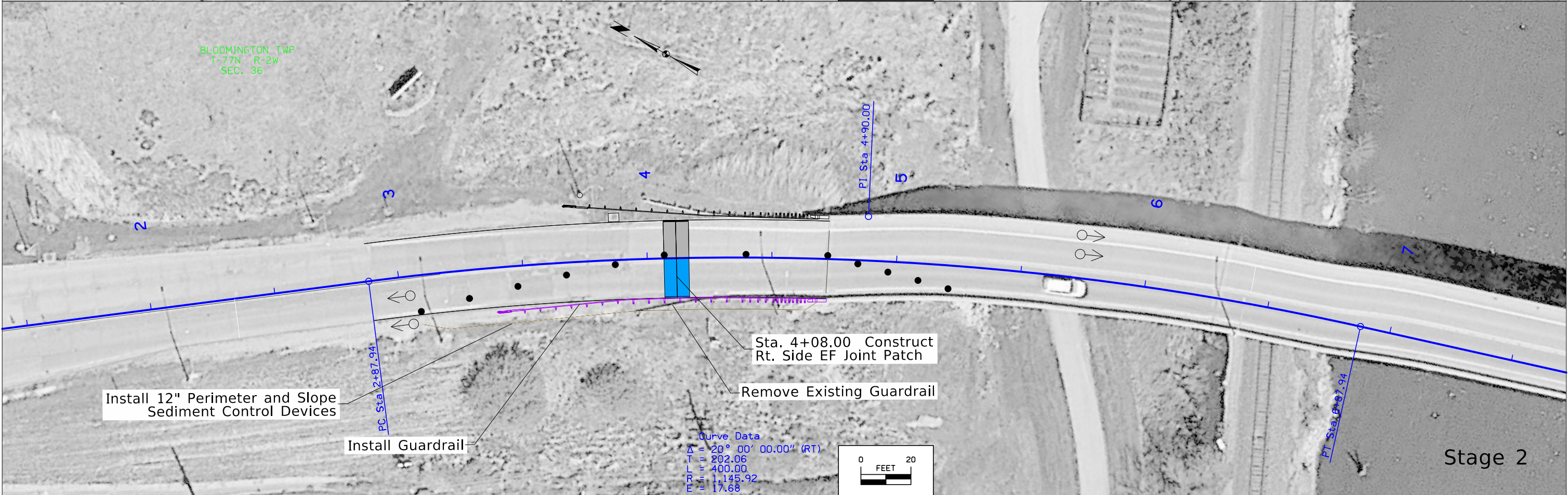
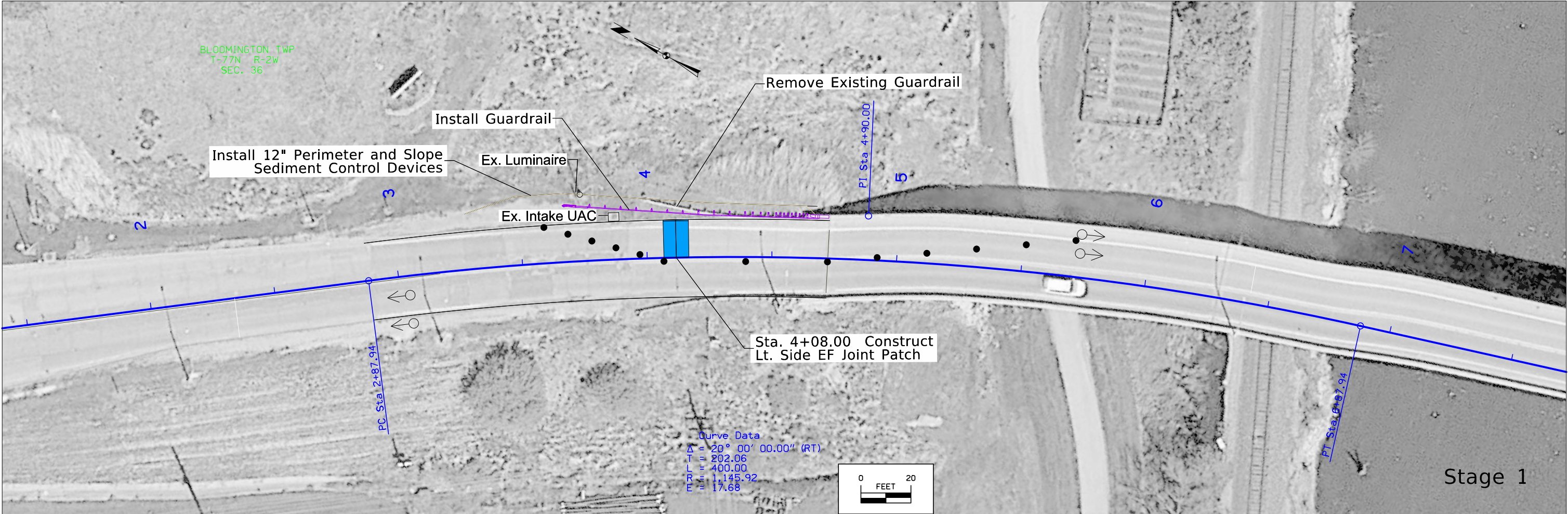
GRADING FOR GUARDRAIL INSTALLATIONS																	107-23 10-18-11	
① Lane(s) to which the installation is adjacent.																	Refer to EW-301	
Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks		
No.	① Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place			
														CY	CY			
1	NB	4+62.50	Lt.		3.2:1	41.2	6.6	41.2	6.6	41.2	6.6	98.3	12.3	70.0				Minor shaping for guardrail placement
2	SB	4+62.50	Rt.	2.3:1	73.0	5.0	73.0	5.0	73.0	5.0	124.0	6.9	45.0			Minor shaping for guardrail placement		

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL

① Lane(s) to which the installation is adjacent.
② Includes length of End Terminals and End Anchors.

Location							Removal of Guardrail ②
No.	① Direction of Traffic	Station to Station		Side	LF		
1	NB	3+98.25	4+67.00	Lt.		68.8	
2	SB	3+98.25	4+67.00	Rt.		68.8	



108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic in IA 92 shall be maintained at all times utilizing applicable Standard Road Plans listed on Tab. 105-4 on Sheet C.3.

Bridge repair work shall be completed in accordance with Standard Road Plan TC-213, Lane Closure with Flaggers.

EF joint patch and guardrail construction on the Iowa side shall be completed one side at a time in accordance with Standard Road Plan TC-215, Lane Closure with Signals (Up to Three Days). TC-213, Lane Closure with Flaggers may not be operated for work areas within 1000 feet of work areas for Standard Road Plan TC-215, Lane Closure with Signals (Up to Three Days).

Because of the close proximity to Business US 61 to the north, Road Work Ahead signs and End Road Work signs shall be placed to the east and west of the intersection on Business US 61. The W20-4 and the W3-3 signs shall be placed 130 and 65 feet respectively from the temporary signal stop line.

108-26A
08-01-08

STAGING NOTES

Stage 1:

Traffic: Shift traffic to the southbound lane using TC-215, Lane Closure with Signals (Up to 3 Days).

Construction: Patch the left side of the EF Joint patch.
Remove and replace the left side guardrail (Iowa end of bridge).

Stage 2:

Traffic: Shift traffic to the northbound lane using TC-215, Lane Closure with Signals (Up to 3 Days).

Construction: Patch the right side of the EF Joint patch.
Remove and replace the right side guardrail (Iowa end of bridge).

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
IA 92	Both	Muscatine	Bridge over the Mississippi River	Mississippi River	Temporary Signal	FHWA No. 38201	Vertical	N/A	15'	14'	N/A	
IA 92	Both	Muscatine	Bridge over the Mississippi River	Mississippi River	Traffic Control Device	FHWA No. 38201	Horizontal	N/A	14.5'	N/A	N/A	

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
Maint. Proj. by others (Iowa side)	PCC Patching

FILE NO. 31968

ENGLISH

DESIGN TEAM WHKS & CO.

MUSCATINE COUNTY

PROJECT NUMBER BRFN-092-9(157)--39-70

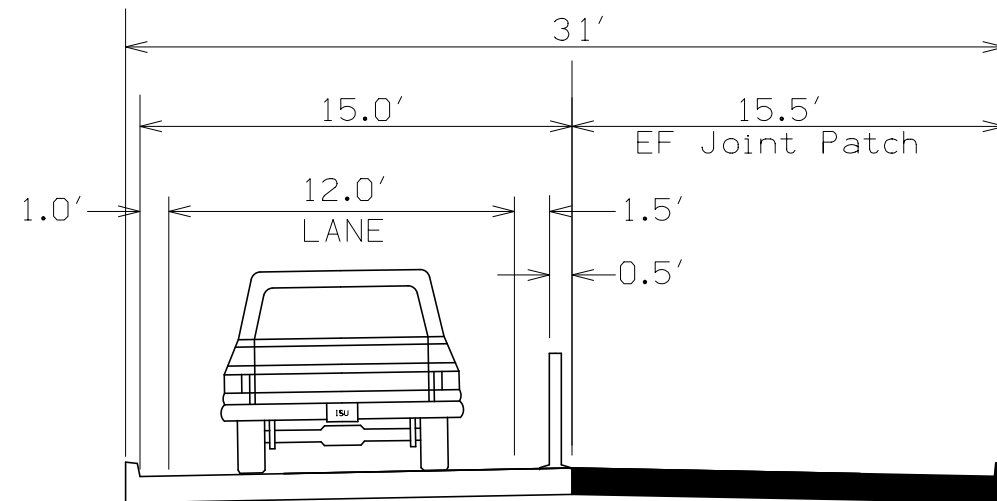
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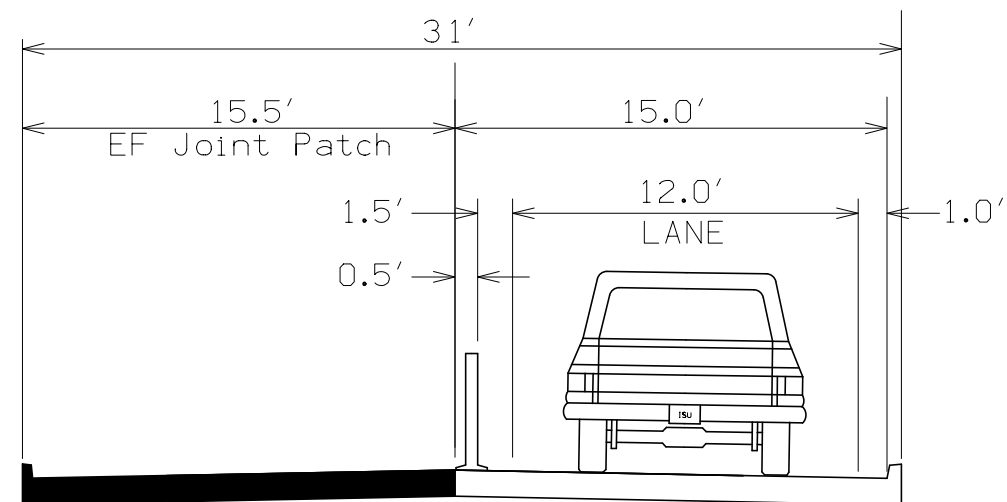
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STAGE 2
(Looking South)



STAGE 1
(Looking South)

TYPICAL CONSTRUCTION SECTIONS