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A.1	Title Sheet
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B.1	Roadway Sheets
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PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**VAN BUREN COUNTY**  
Deck Joint Repair  
IA 1 over Des Moines River  
3.9 mi. N of Jct. IA 2

Revisions

TOTAL
24
PROJECT IDENTIFICATION NUMBER 23-89-001-010
CONTRACT ID NUMBER
PROJECT NUMBER MB-001-5(502)4--77-89
R.O.W. PROJECT NUMBER
PROJECT DIRECTORY NUMBER 8900101023

Refer to the Plan Sheets for list of applicable specifications.

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

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series 2015, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.



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

**Standard Road Plans**  
Standard Road Plans are listed on C.1

**Design Data Rural**  
2021 AADT \_\_\_\_\_ 2580 V.P.D.  
TRUCKS \_\_\_\_\_ 13 %

Index Of Seals		
Sheet No.	Name	Type
V.1-V.13	Robert J. Tipton	Structural Design
B.1, C.1-3, D.1 & J.1-4	Robert J. Tipton	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: Robert J. Tipton Date: 05-12-2023

Printed or Typed Name: \_\_\_\_\_

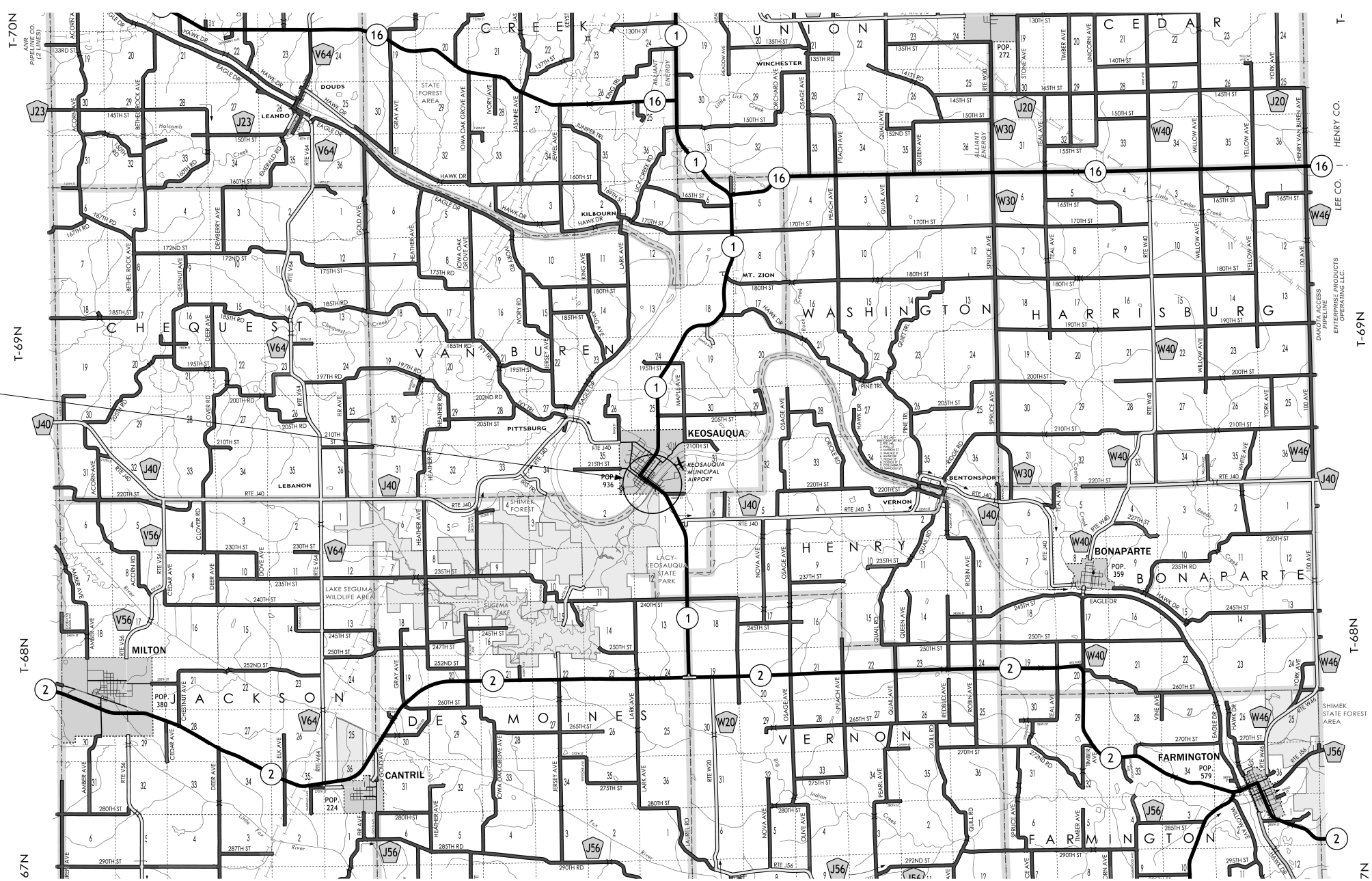
My license renewal date is December 31, 2024

Pages or sheets covered by this seal: A.1-A.2, V.1-V.13, B.1, C.1-3, D.1, J.1-4

*Preliminary Not for Construction*

LEGEND

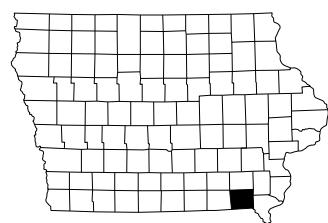
- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
  
- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (237)
- COUNTY HIGHWAY (527)
  
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
  
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES
- UNINCORPORATED PLACE
  
- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND



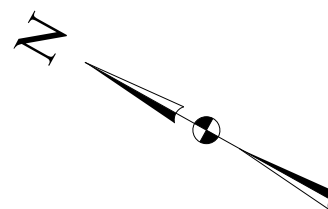
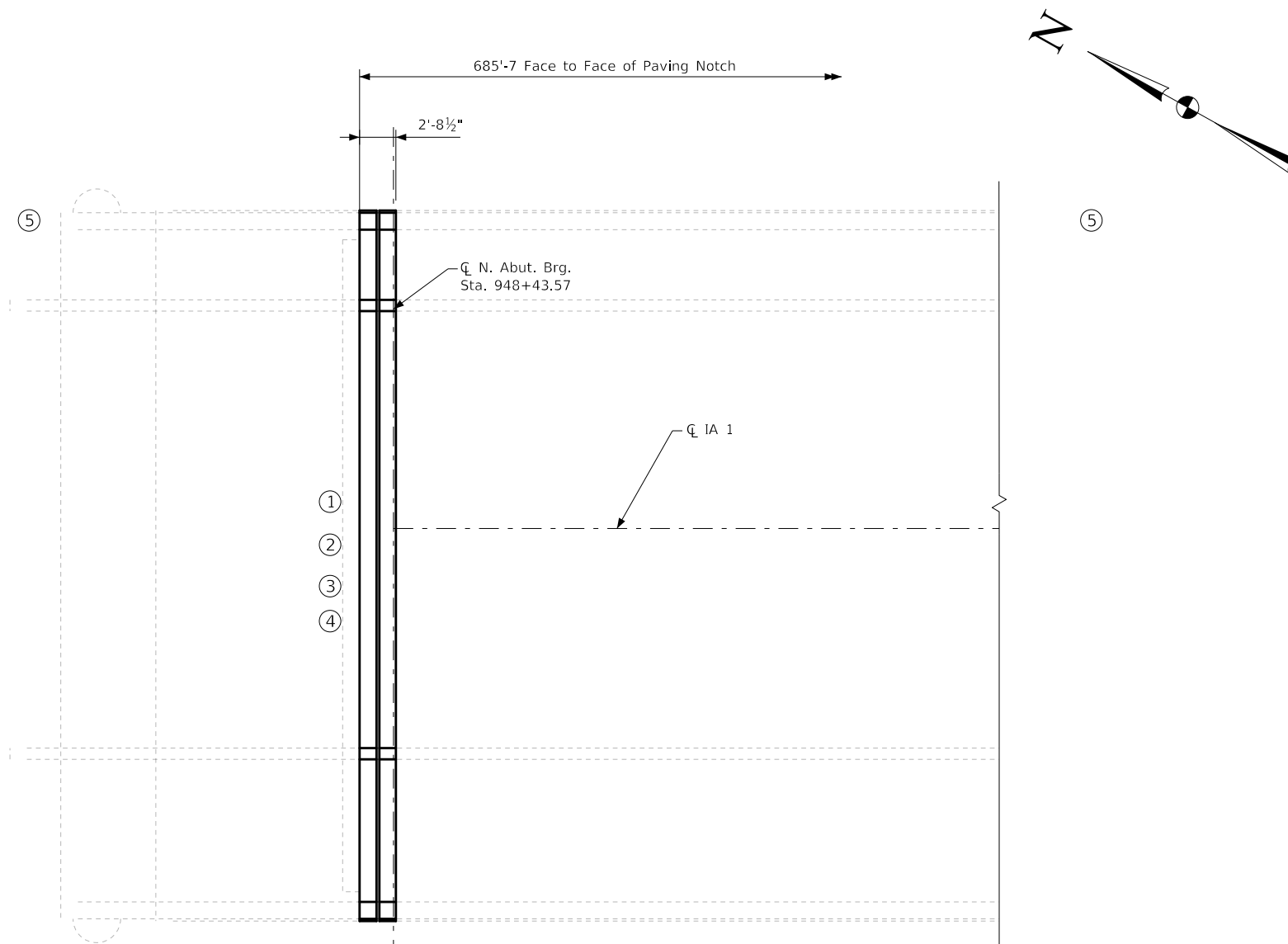
Design No. 124  
FHWA No. 50181

Van Buren County Location Map

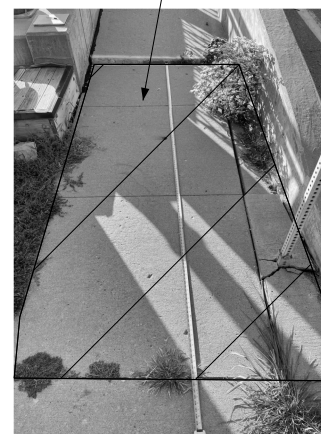
Not To Scale







Remove and Replace Sidewalk within hatching (See Roadway Plans). Hazard sign to be recast when pouring sidewalk. Cost included with sidewalk.



Sidewalk Removal and Replacement at Northeast Corner

Remove and Replace Sidewalk within hatching. Cost included with Sidewalk, see Roadway Plans.



Sidewalk Removal and Replacement at Southeast Corner

**Situation Plan**

(North end of bridge shown, no joint replacement at south end of bridge)

**Repairs Shall Consist Of:**

- ① Remove end of deck, backwall, traffic separation barrier, and parapet 1'-3" from each end of strip seal joint at North Abutment. Remove deck to 8" below top of pavement, and backwall to paving support to allow removal of the steel extrusion joint with neoprene gland.
- ② Remove existing strip seal joint at North Abutment.
- ③ Install Strip Seal Expansion Joints at North Abutment. Install new barrier and sidewalk cover plates.
- ④ Pour concrete deck, backwall, traffic separation barrier, and parapet in area of removal.
- \*⑤ Repalce panels as shown on the Northeast and Southeast Roadway Sidewalk adjacent to approach slab.

\* Note: See Roadway plans for additional information.

**Traffic Estimate**

2021 AADT	2580 V.P.D.
TRUCKS	13 %

**Utilities:**

Electrical: Alliant Energy  
 Communications: Century Link  
 City of Keosauqua  
 Communications: Iowa Communications Network  
 Electrical: Keosauqua Light & Power  
 Communications: Van Buren Telephone Company

**Location**

IA 1 over the Des Moines River  
 T-69N R-10W  
 Section 36  
 Van Buren Township  
 Van Buren County  
 FHWA No. 050181  
 Bridge Maint. No. 8903.85001  
 Latitude 40.727641495°  
 Longitude -91.95956774°

Design For 0 Degree

**680'-0 x 32'-2 Haunched Steel  
 Girder Bridge w/10'6 BP./5'-2 SDWK**

210'-0" End Spans 260'-0" Interior Span

**Situation Plan**

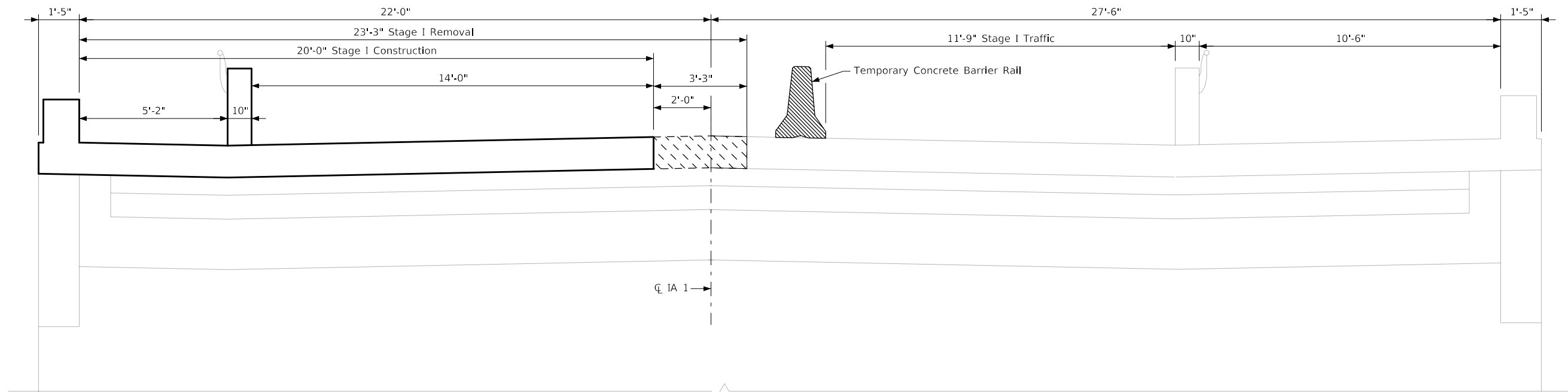
STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023

**Van Buren County**

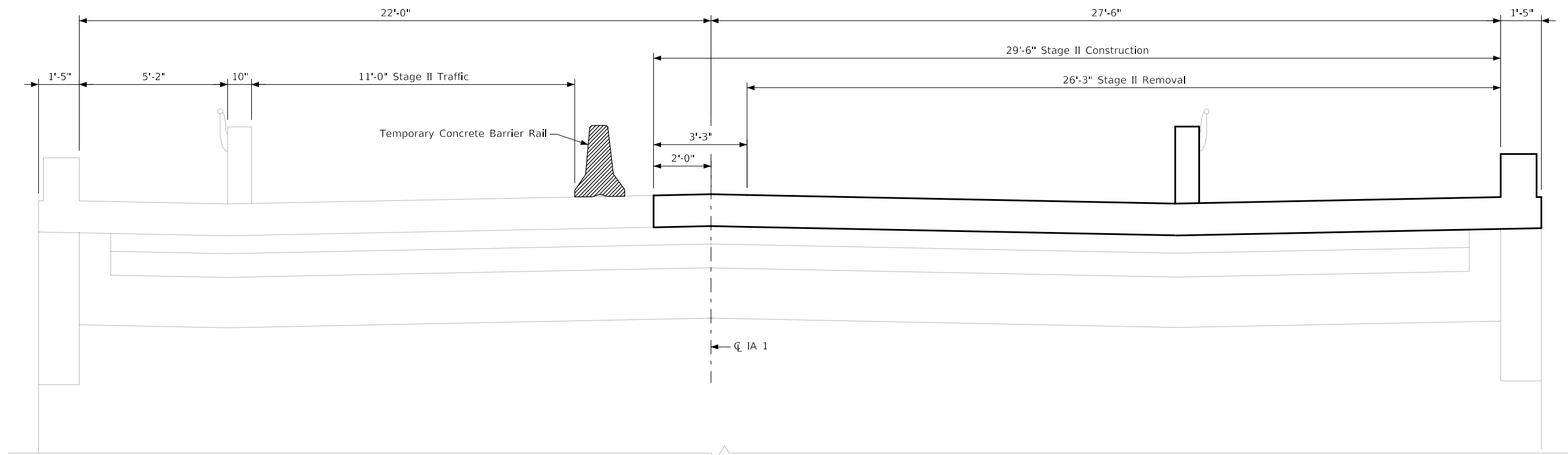
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 2 of 13 FHWA No. 50181



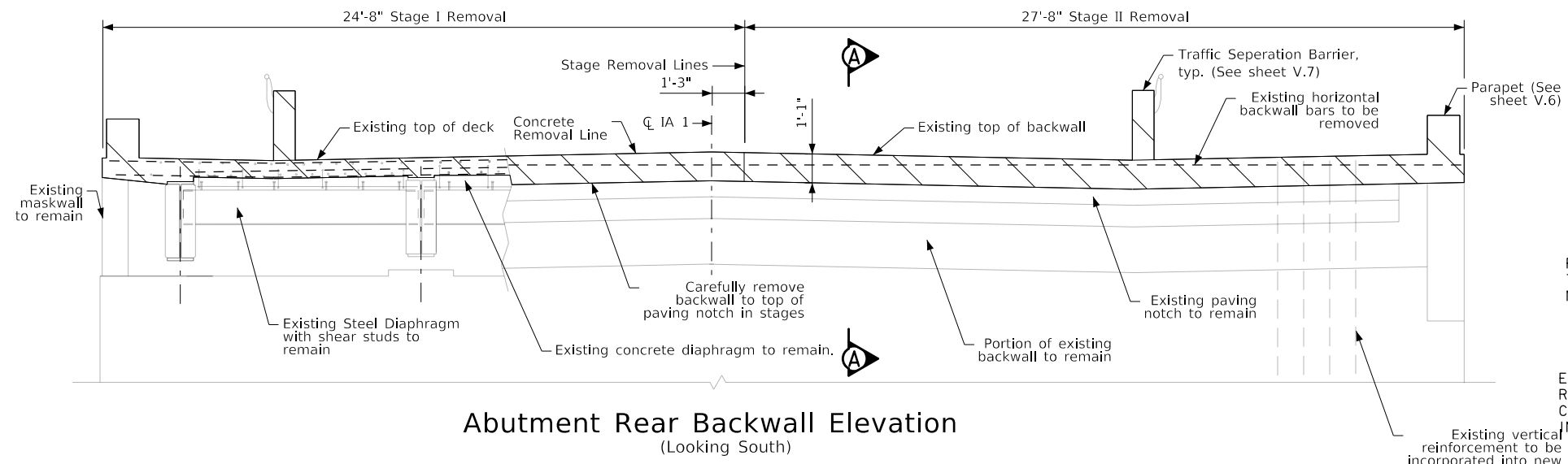


Typical Section Stage I Construction at Abutment Expansion Joint  
(Looking South)

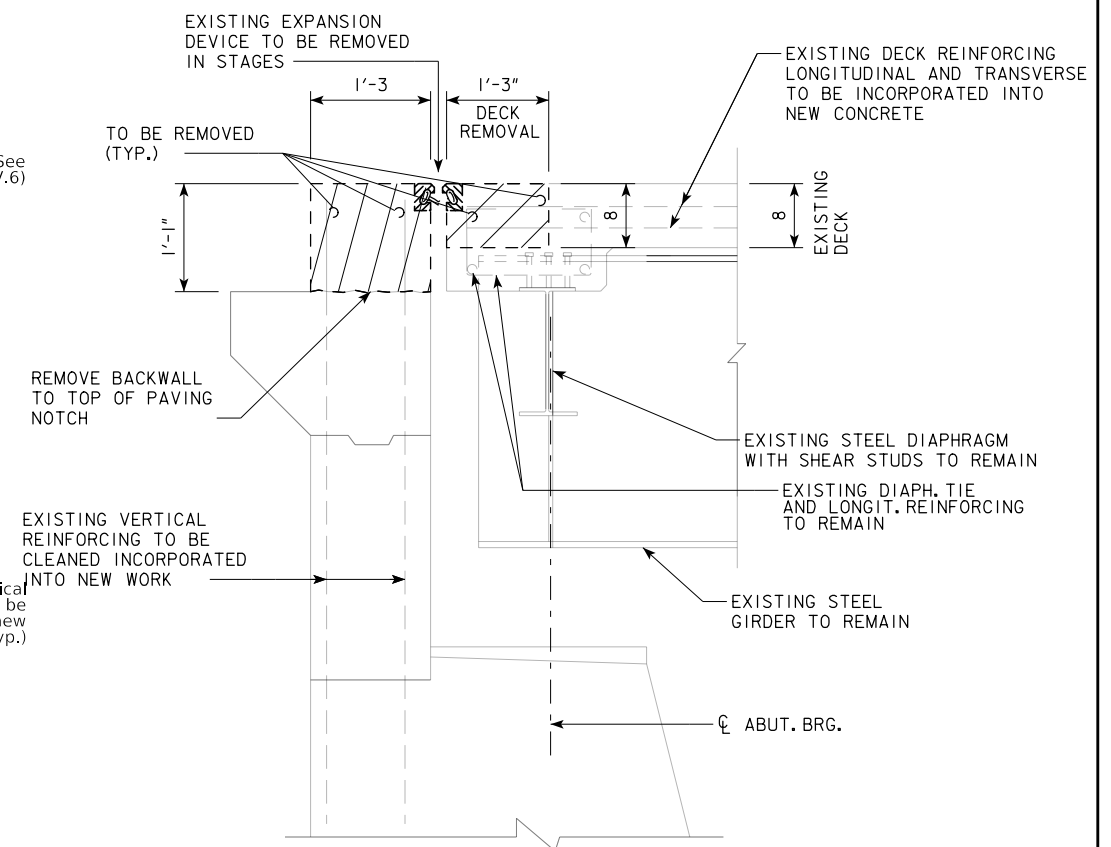


Typical Section Stage II Construction at Abutment Expansion Joint  
(Looking South)

Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel**  
**Girder Bridge w/10'6 BP./5'-2 SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Staging Details**  
 STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 3 of 13 FHWA No. 50181



**Abutment Rear Backwall Elevation**  
(Looking South)

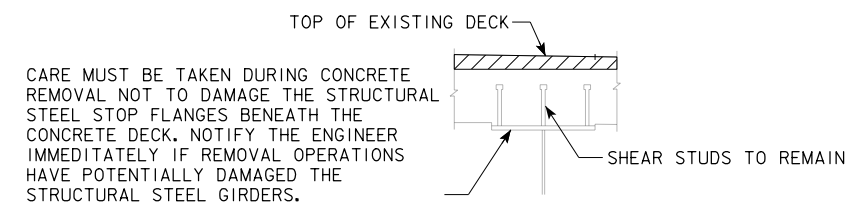


**SECTION A-A**

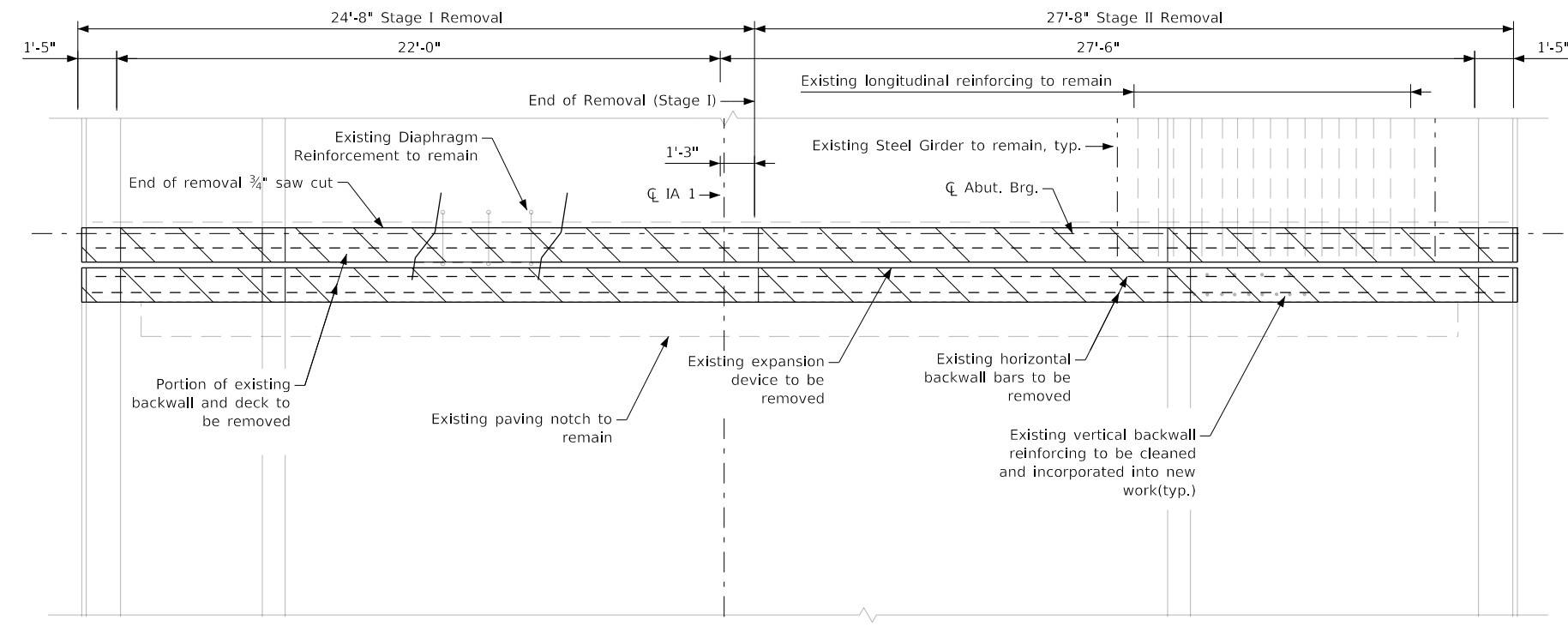
**REMOVAL NOTES:**

HATCHED AREAS INDICATE CONCRETE REMOVALS.

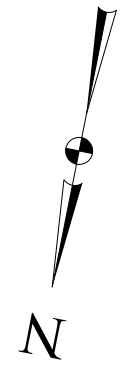
THIS SHEET SHOWS DETAILS OF THE PARTIAL ABUTMENT AND SUPERSTRUCTURE REMOVAL ON THE EXIST. BRIDGE. ALL PARTIAL REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ALL SUCH REMOVALS SHALL BE TO NEAT SAW CUTS TO PROVIDE CLEAN STRAIGHT SURFACES AT INTERFACES BETWEEN NEW CONCRETE AND REMAINING CONCRETE. THE REMOVAL SHALL BE DONE IN A MANNER WHICH WILL PREVENT ANY DAMAGE TO THE EXISTING STRUCTURE TO REMAIN. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE CAUSED, AND SHALL REPAIR ANY DAMAGED AREA TO ITS ORIGINAL CONDITION, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE. ANY EXISTING REINFORCING STEEL WHICH IS TO BE "SAVED" THAT IS EXPOSED DURING REMOVAL OPERATIONS IS TO BE CAREFULLY PROTECTED, CLEANED AND INCORPORATED INTO NEW CONSTRUCTION UNLESS NOTED OTHERWISE.



**SHEAR STUD DETAIL**

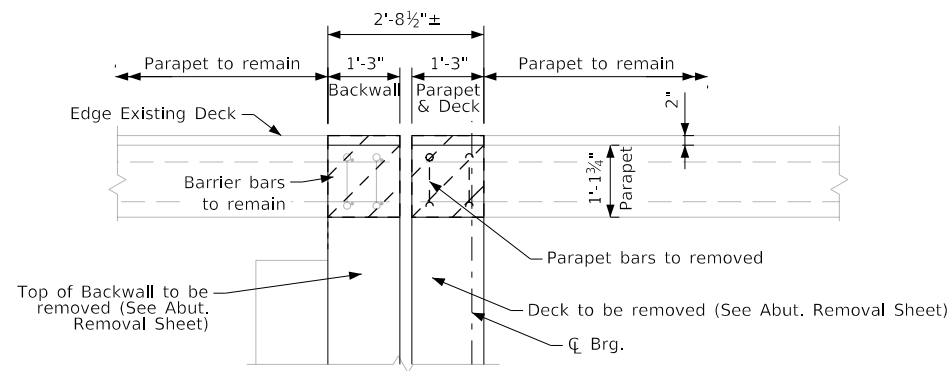


**North Abutment Plan View**  
(Looking South)

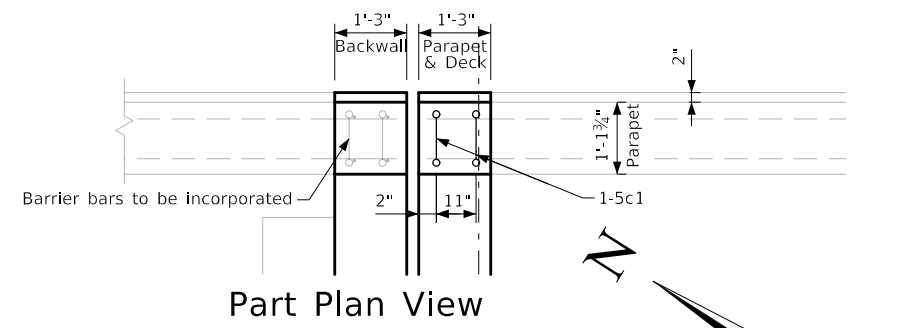


Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel Girder Bridge w/10'6 BP./5'-2 SDWK**  
 210'-0" End Spans      260'-0" Interior Span  
**Abutment Removal Plans**  
 STA. 945+03.57 (CL IA 1)      Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124      Design Sheet No. 4 of 13      FHWA No. 50181

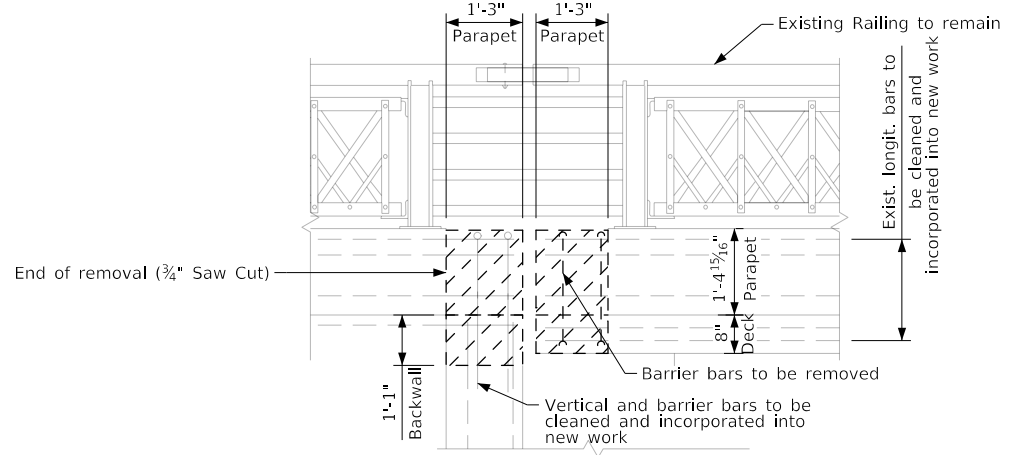




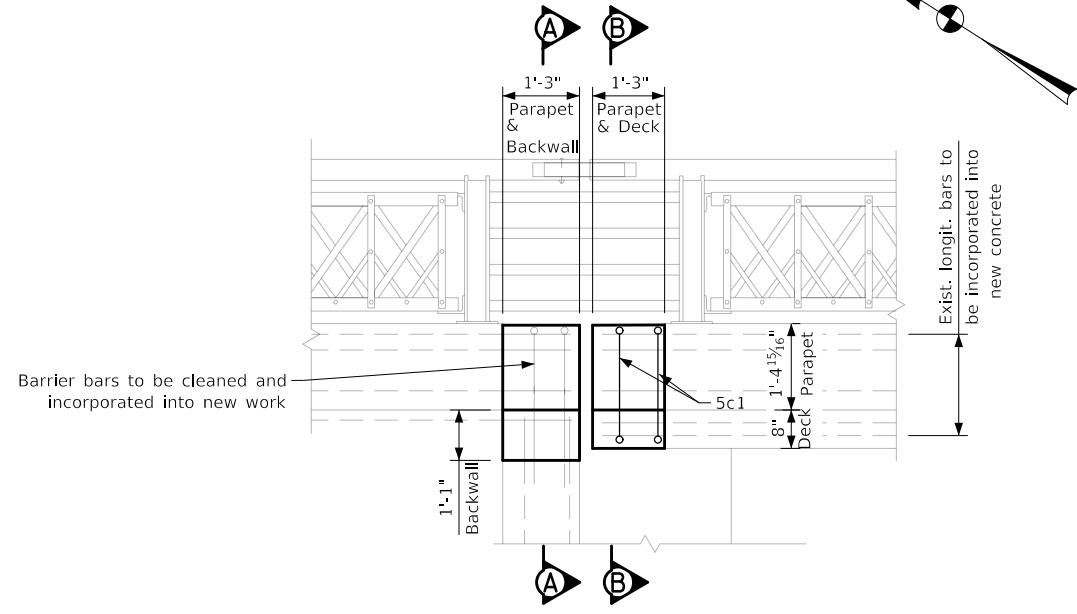
Part Removal Plan



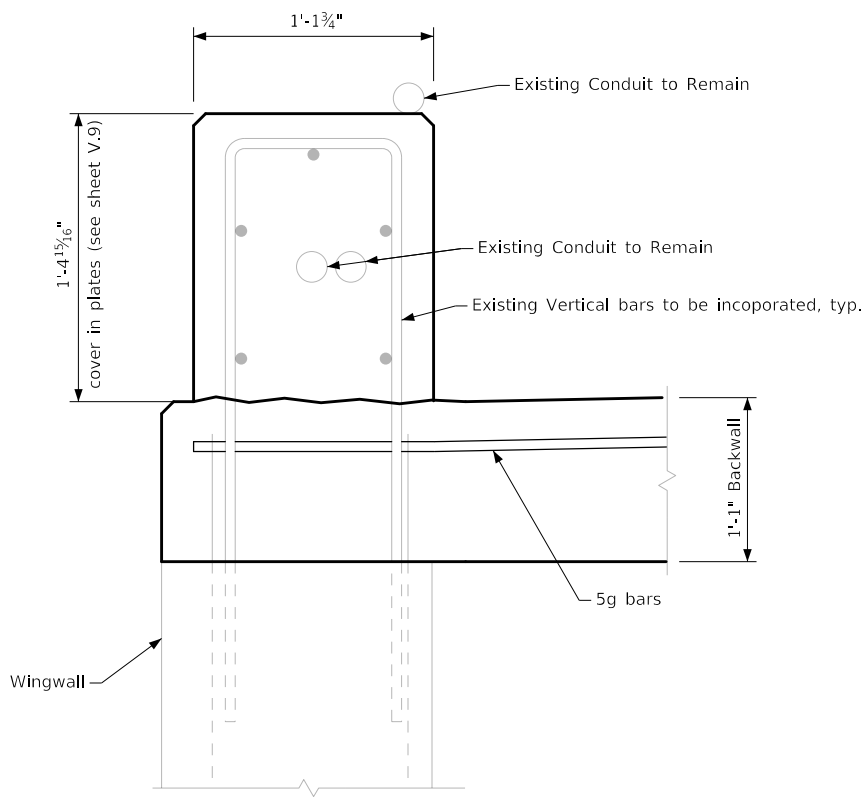
Part Plan View



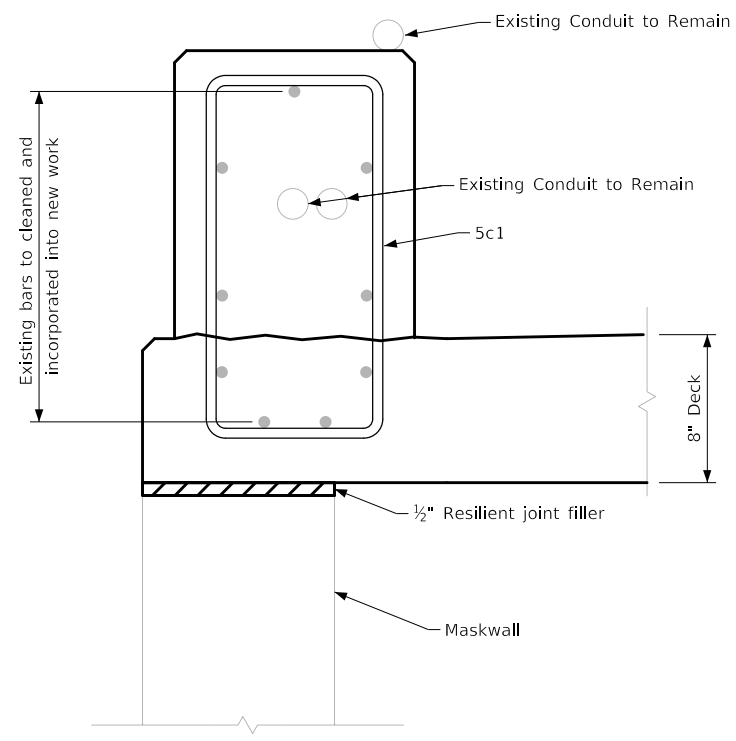
Part Removal Elevation



Part Elevation View



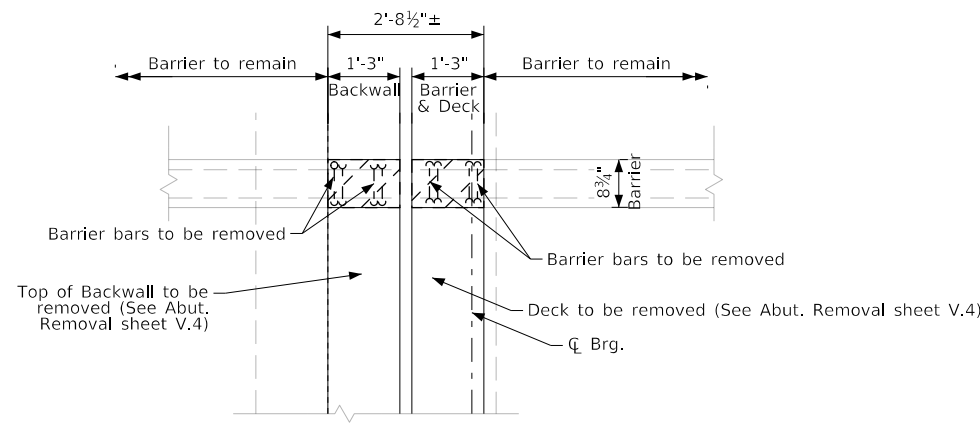
Section A-A



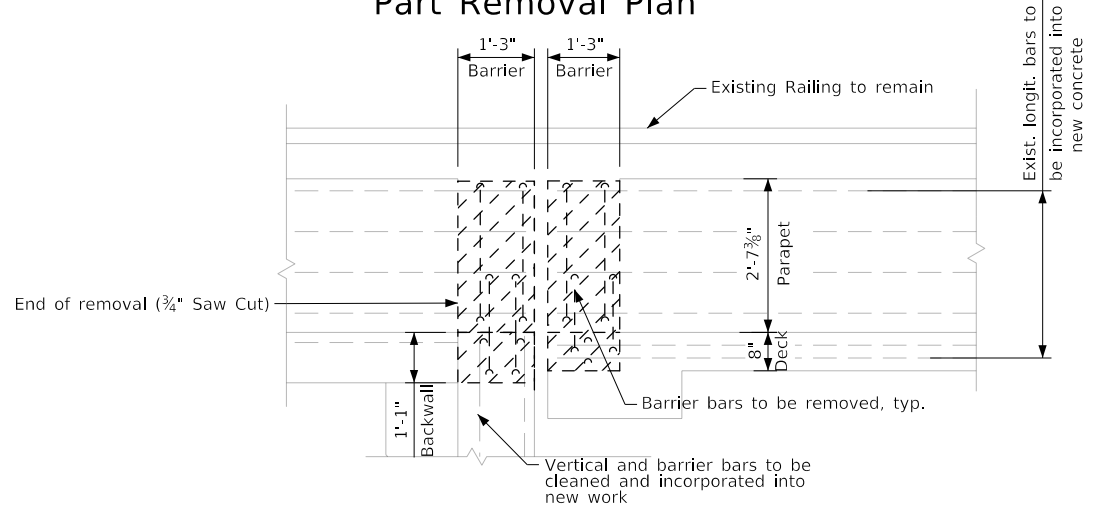
Section B-B

- NOTES:
1. VIEWS AND SECTIONS FOR THIS SHEET ARE FOR THE EAST CORNER OF THE NORTH ABUTMENT. THE WEST CORNER OF THE NORTH ABUTMENT IS SIMILAR.
  2. SEE SHEET V.7 FOR SEPERATION BARRIER DETAILS.
  3. INCORPORATE EXISTING REINFORCING INTO NEW WORK WHERE POSSIBLE. CUT EXISTING REINFORCING AS REQUIRED TO MAINTAIN 2" CLEAR COVER.
  4. THE CONSTRUCTION JOINT UNDER THE BARRIER SHALL BE INTENTIONALLY ROUGHENED PRIOR TO PLACEMENT OF NEW CONCRETE.
  5. SEE DESIGN SHEET V.13 FOR DOWEL SETTING NOTES, REINFORCING AND BENT BAR DETAILS.

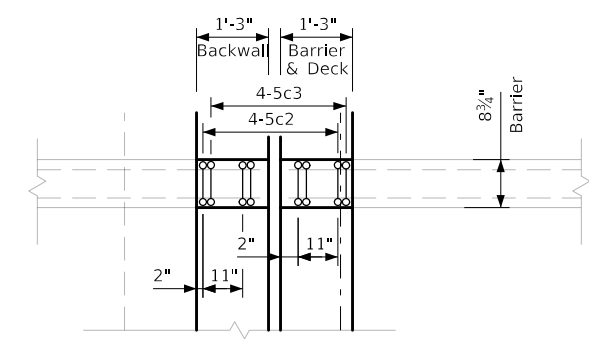
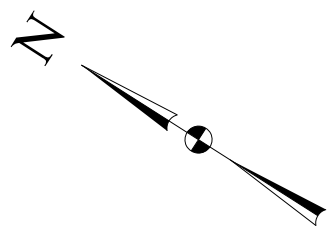
Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel Girder Bridge w/10'6 BP./5'-2 SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Parapet Details**  
 STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 6 of 13 FHWA No. 50181



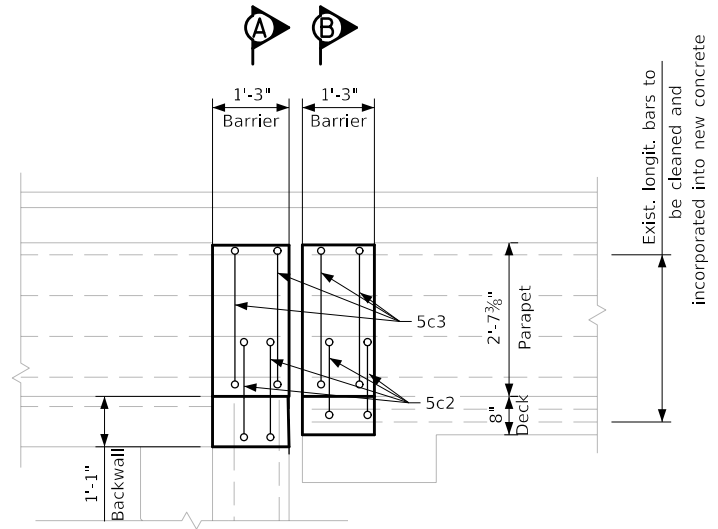
Part Removal Plan



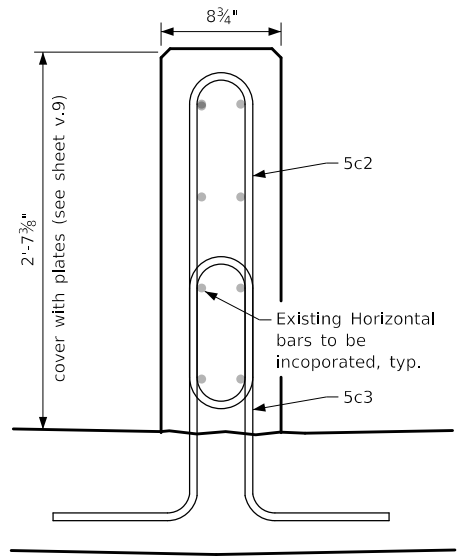
Part Removal Elevation



Part Plan View

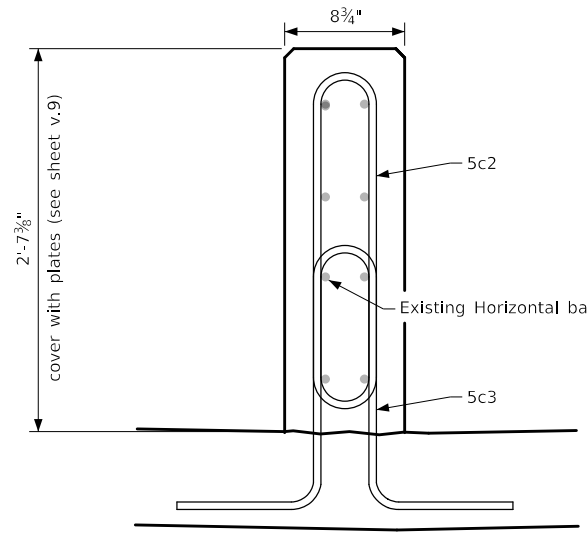


Part Elevation View



Section A-A

(Railing and Cover Plates not shown for clarity)

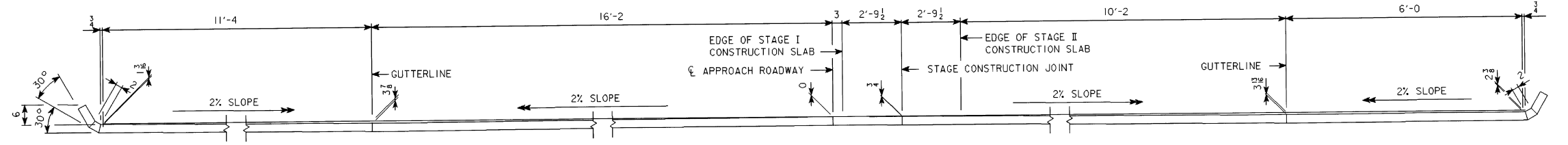


Section B-B

(Railing and Cover Plates not shown for clarity)

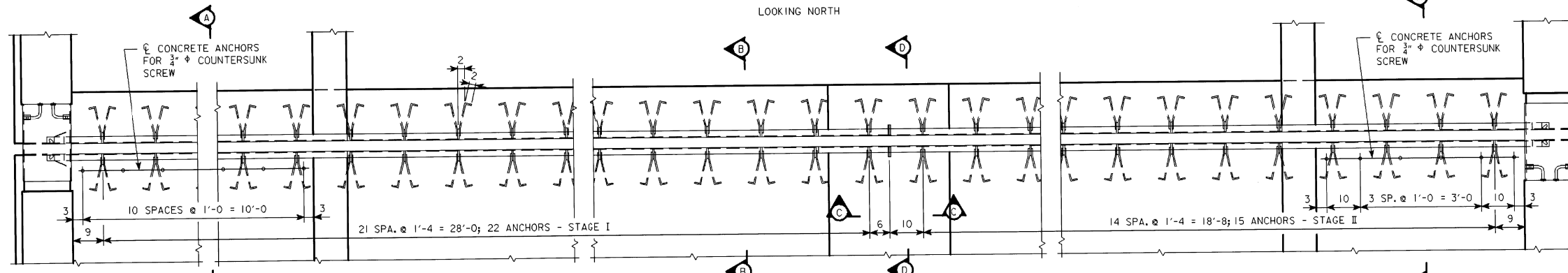
- NOTES:
- 1.VIEWS AND SECTIONS FOR THIS SHEET IS FOR THE EAST SIDE OF THE NORTH ABUTMENT. WEST SIDE OF THE NORTH ABUTMENT SIMILAR.
  - 2.INCORPORATE EXISTING REINFORCING INTO NEW WORK WHERE POSSIBLE. CUT EXISTING REINFORCING AS REQUIRED TO MAINTAIN 2" CLEAR COVER.
  - 3.THE CONSTRUCTION JOINT UNDER THE TRAFFIC SEPERATION BARRIER SHALL BE INTENTIONALLY ROUGHENED PRIOR TO PLACING NEW CONCRETE.
  - 4.SEE DESIGN SHEET V.13 FOR ABUTMENT NOTES, REINFORCING AND BENT BAR DETAILS.

Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel**  
**Girder Bridge w/10'6 BP./5'-2 SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Traffic Seperation Barrier**  
 STA. 945+03.57 (CL IA 1) Turn-in Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 7 of 13 FHWA No. 50181



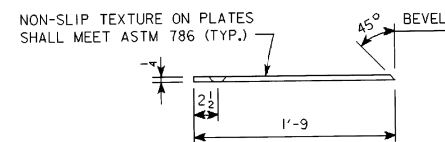
ELEVATION OF EXTRUSION

LOOKING NORTH

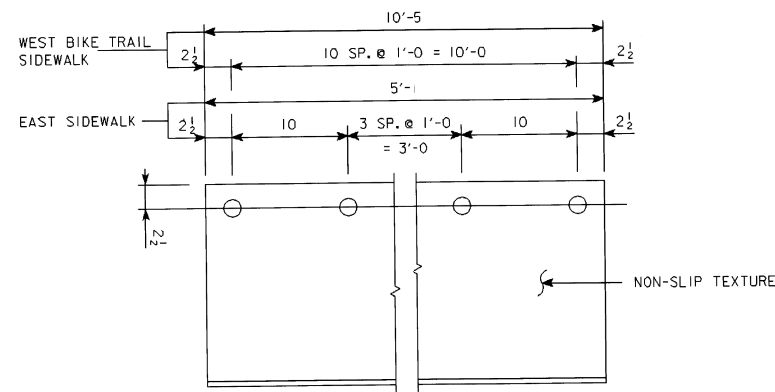


PLAN VIEW OF EXPANSION DEVICE

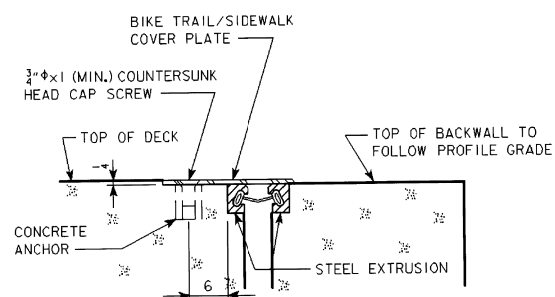
(BIKE TRAIL AND SIDEWALK COVER PLATES NOT SHOWN)



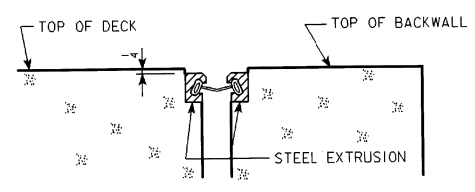
ELEVATION OF SIDEWALK COVER PLATE



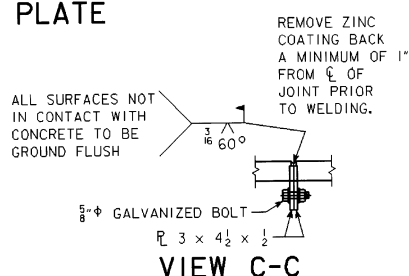
PLAN VIEW OF SIDEWALK COVER PLATE



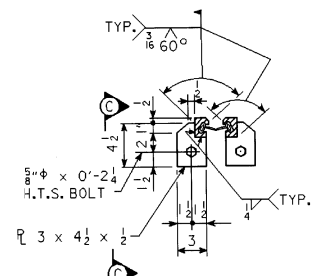
SECTION A-A



SECTION B-B



VIEW C-C



SECTION D-D

STAGE CONSTRUCTION NOTES

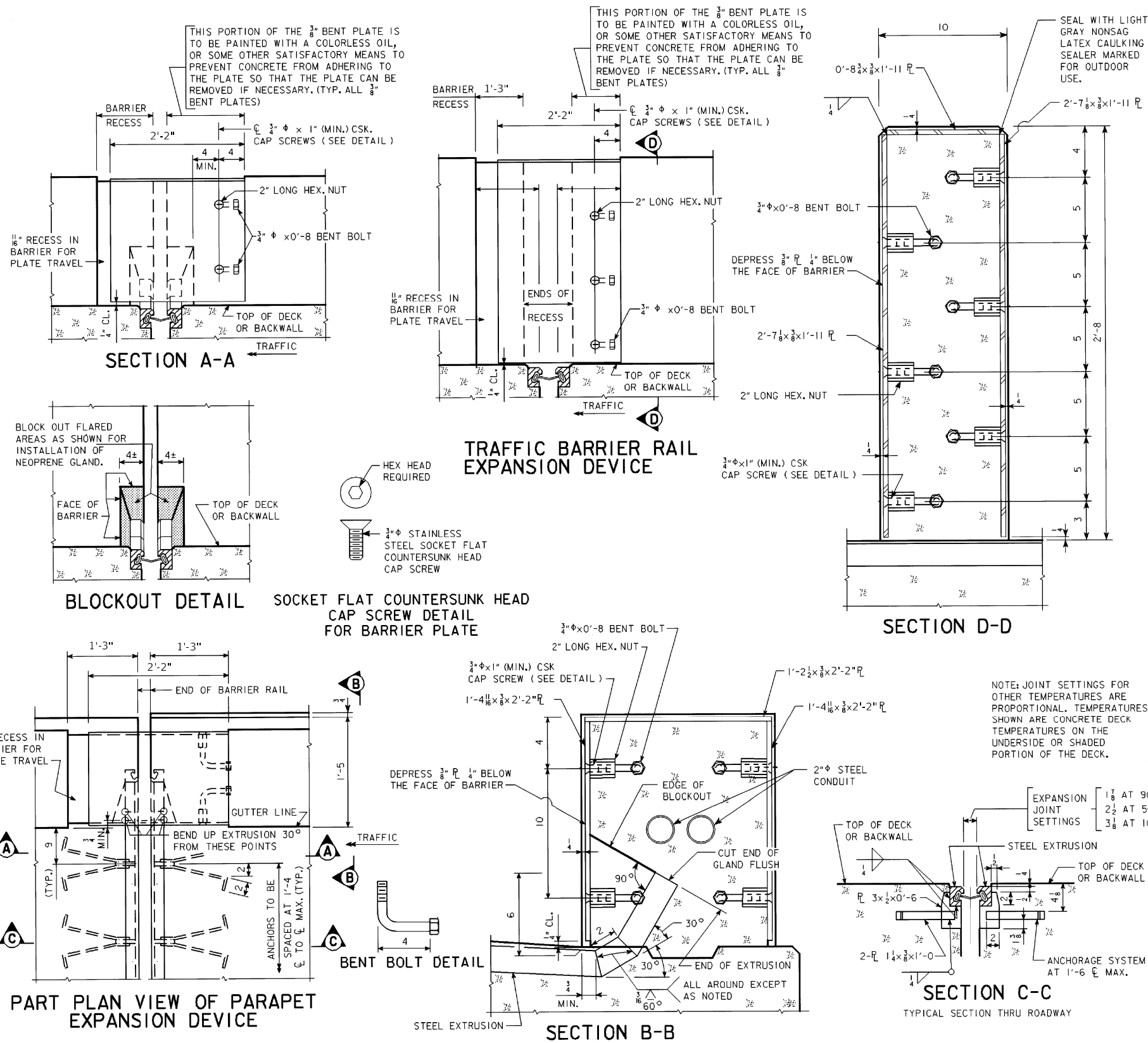
FIELD SPLICES IN THE STEEL EXTRUSION SHALL BE MADE AT THE LOCATION DETAILED. PIECES SHALL BE JOINED WITH A PRE-QUALIFIED PARTIAL PENETRATION SINGLE-V-GROOVE WELD AS DETAILED. ALL SURFACES NOT IN CONTACT WITH CONCRETE ARE TO BE GROUND FLUSH. NO WELD SHALL BE PERMITTED IN THE INTERNAL SECTION OF THE EXTRUSION WHERE THE NEOPRENE GLAND IS TO BE LOCATED. STEEL EXTRUSIONS ARE TO BE INSTALLED IN STAGES. THE STEEL EXTRUSIONS FOR EACH STAGE ARE TO BE IN PLACE BEFORE THE NEW BRIDGE DECK FOR THAT STAGE IS PLACED. FIELD WELDS ON GALVANIZED ITEMS SHALL BE COATED WITH A ZINC RICH MATERIAL APPROVED BY THE ENGINEER. ALL CURB PLATES INCLUDING THEIR ANCHORAGES SHALL BE GALVANIZED.

DESIGNED BY S. S. NIELSEN / KMO, CHECKED BY H. L. ADCOCK  
 DETAILED BY D. A. WRIGHT, CADD FILE  
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VAN BUREN COUNTY PROJECT NUMBER BRF-001-1(2)

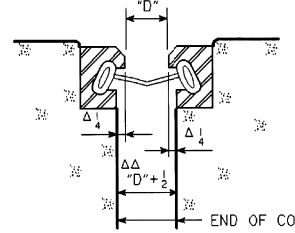
Design For 0 Degree  
**680'-0" x 32'-2" Haunched Steel Girder Bridge w/10'6" BP./5'-2" SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Expansion Details 1 of 2**  
 STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 8 of 13 FHWA No. 50181

THIS SHEET IS FROM THE ORIGINAL DESIGN. USE THIS FOR SHOP DRAWINGS TO REPRODUCE ORIGINAL DETAIL



**STEEL EXTRUSION W/NEOPRENE JT. NOTES**

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS OF THE EXPANSION DEVICE SHOWING LAYOUT, MATERIAL TO BE USED, AND PROVISIONS FOR HOLDING DEVICES DURING PLACEMENT OF CONCRETE.  
 THE EXPANSION DEVICE SHALL BE GALVANIZED AFTER WELDING.  
 THE EXPANSION DEVICE IS TO BE PARALLEL TO GRADE.  
 CAP SCREWS SHALL BE COUNTERSUNK 1/8" BELOW TOP OF PLATES.  
 THE NEOPRENE GLAND IS TO BE PLACED AS ONE CONTINUOUS PIECE FROM END TO END OF THE STEEL EXTRUSIONS.  
 THE MINIMUM GRADE OF STRUCTURAL STEEL FOR THE EXPANSION DEVICE SHALL BE ASTM A-36.  
 THE NEOPRENE GLAND SHALL CONFORM TO ASTM D-2628 MODIFIED TO EXCLUDE RECOVERY TESTS AND COMPRESSION SET.  
 BLOCKOUT DETAILS MAY BE ALTERED FROM THOSE SHOWN PROVIDED THE GLAND CAN BE INSTALLED AND REMOVED IF NECESSARY.  
 THE CONTRACT UNIT PRICE BID FOR "STEEL EXTRUSION JOINT WITH NEOPRENE" SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING THE EXPANSION JOINTS. THIS WORK WILL CONSIST OF FURNISHING ALL REQUIRED MATERIALS, (INCLUDING THE 3/8" PLATES AT THE BARRIERS AND THEIR ANCHORAGE SYSTEMS), AND THE INSTALLATION AND ADJUSTMENT OF THE EXPANSION JOINTS IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE FURNISHING AND INSTALLATION OF ALL NECESSARY HARDWARE AND ACCESSORIES AS SUPPLIED BY THE EXPANSION JOINT MANUFACTURER ARE TO BE INCLUDED IN THIS WORK, INCLUDING THE ANCHORAGE SYSTEM AND ANY TEMPORARY ERECTION MATERIAL. ALL WORK AND MATERIALS FOR THE INSTALLATION OF THE EXPANSION JOINTS ARE TO COMPLY WITH THE WRITTEN RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER.



**EXPANSION OPENING DETAIL**

THIS DIMENSION MAY VARY SLIGHTLY DEPENDING ON MANUFACTURER FURNISHING THE JOINT.  
 USED FOR ALL OUT TO OUT DIMENSIONS OF SLAB. THE DIMENSION MAY VARY SLIGHTLY DEPENDING ON MANUFACTURER FURNISHING THE JOINT.

**TABLE OF APPROVED EXPANSION DEVICES**

MANUFACTURER	TYPE OF STEEL EXTRUSION	NEOPRENE GLAND
WATSON-BOWMAN & ACME CORP.	A	SE-400
D.S. BROWN CO.	SSA2	A2R-400
APPROVED EQUAL		

**BARRIER PLATE NOTES**

CONTRACTOR SHALL ALWAYS PLACE THE CAP SCREW ANCHORAGE SYSTEM FOR 3/8" BARRIER PLATES ON THE ONCOMING TRAFFIC SIDE.  
 IT IS INTENDED THAT THE 1/8" RECESSED AREA BE FORMED SO THAT WHEN THE 3/8" PLATE IS INSTALLED THE PLATE WILL BE ABLE TO MOVE FREELY IN THIS RECESSED AREA.

Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel Girder Bridge w/10'6 BP./5'-2 SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Expansion Details 2 of 2**  
 STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 9 of 13 FHWA No. 50181

**THIS SHEET IS FROM THE ORIGINAL DESIGN. USE THIS FOR SHOP DRAWINGS TO REPRODUCE ORIGINAL DETAIL**

DESIGNED BY S. S. NIELSEN / KMO CHECKED BY H. L. ADCOCK  
 DETAILED BY D. A. WRIGHT CADD FILE

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VAN BUREN COUNTY PROJECT NUMBER BRF-001-1(24)



**STEEL EXTRUSION NOTES:**

SEE SHEET V.8 & V.9 FOR STEEL EXTRUSION, COVER PLATE DETAILS, AND STAGE CONSTRUCTION DETAILS.

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS OF THE EXPANSION DEVICES SHOWING LAYOUT, MATERIAL TO BE USED, AND PROVISIONS FOR THE HOLDING DEVICE DURING PLACEMENT OF CONCRETE.

THE EXPANSION DEVICE SHALL BE GALVANIZED AFTER WELDING. ALL CURB PLATES INCLUDING THEIR ANCHORAGES SHALL BE GALVANIZED.

THE EXPANSION DEVICE IS TO BE PARALLEL TO GRADE.

CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF THE PLATE. THE MINIMUM GRADE OF STRUCTURAL STEEL FOR THE EXPANSION DEVICE SHALL BE ASTM A36.

BLOCKOUT DETAILS MAY BE ALTERED FROM THOSE SHOWN PROVIDED THE GLAND MAY BE INSTALLED AND REMOVED IF NECESSARY AND THE CURB AREA REMAINS WATERTIGHT.

SHOP SPLICES OF THE STEEL EXTRUSION WILL BE PERMITTED. PRIOR TO MAKING SHOP SPLICES STEEL EXTRUSION PIECES SHALL HAVE A MINIMUM LENGTH OF 15 FEET. THE INDIVIDUAL LENGTH OF PIECES SHALL BE CHOSEN SO THAT A MINIMUM NUMBER OF SPLICES IS REQUIRED. ALL PIECES SHALL BE JOINED WITH A PREQUALIFIED PARTIAL PENETRATION SINGLE GROOVE WELD DETAILED ON THE SHOP DRAWING. ALL SURFACES NOT IN CONTACT WITH CONCRETE ARE TO BE GROUND FLUSH. NO WELD SHALL BE PERMITTED IN THE INTERNAL SECTION OF THE EXTRUSION WHERE THE NEOPRENE GLAND IS TO BE INSTALLED.

THE NUMBER OF FEET OF STEEL EXTRUSION INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL INCLUDE THE COST OF FURNISHING BUT NOT THE COST OF INSTALLING THE NEOPRENE GLAND. THE CONTRACT PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING STEEL EXTRUSIONS. THIS WORK WILL CONSIST OF FURNISHING ALL REQUIRED MATERIALS, (INCLUDING THE 3/8" PLATES AT THE BARRIERS AND THEIR ANCHORAGE SYSTEMS), AND THE INSTALLATION AND ADJUSTMENT OF THE EXPANSION JOINTS IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE FURNISHING AND INSTALLATION OF ALL NECESSARY HARDWARE AND ACCESSORIES AS SUPPLIED BY THE EXPANSION JOINT MANUFACTURER ARE TO BE INCLUDED IN THIS WORK, INCLUDING THE ANCHORAGE SYSTEM AND ANY TEMPORARY ERECTION MATERIAL. ALL WORK AND MATERIALS FOR THE INSTALLATION OF THE EXPANSION JOINTS ARE TO COMPLY WITH THE WRITTEN RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER.

**Neoprene Gland Notes:**

Clean all debris and oil from extrusion cavity to ensure that the new neoprene gland is properly sealed.

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

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

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

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

**Watertight Integrity Testing and Repair Notes:**

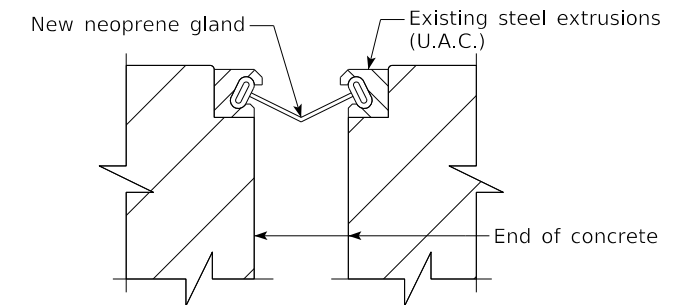
After installation of each neoprene gland, the Contractor shall perform watertight integrity tests at the deck level to detect any leakage. The tests are to check for leakage at the upturned ends of the expansion device and for leakage along the expansion device across the deck and any medians or sidewalks.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

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

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

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

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



**Expansion Opening Detail**

(Typ. at both abutments)

Table of Approved Expansion Devices				
Manufacturer	Type of Steel Extrusion	Neoprene Gland	Minimum Opening for Gland Installation	Corresponding Maximum Deck Temperature *
			N. ABUT.	N. ABUT.
Watson-Bowman	A	SE-400	1 1/2"	90°
D.S. Brown	SSA2	ASR-400	2"	90°
Approved Equal				

\* Based on Existing Plans

Design For 0 Degree

**680'-0 x 32'-2 Haunched Steel Girder Bridge w/10'6 BP./5'-2 SDWK**

210'-0" End Spans 260'-0" Interior Span

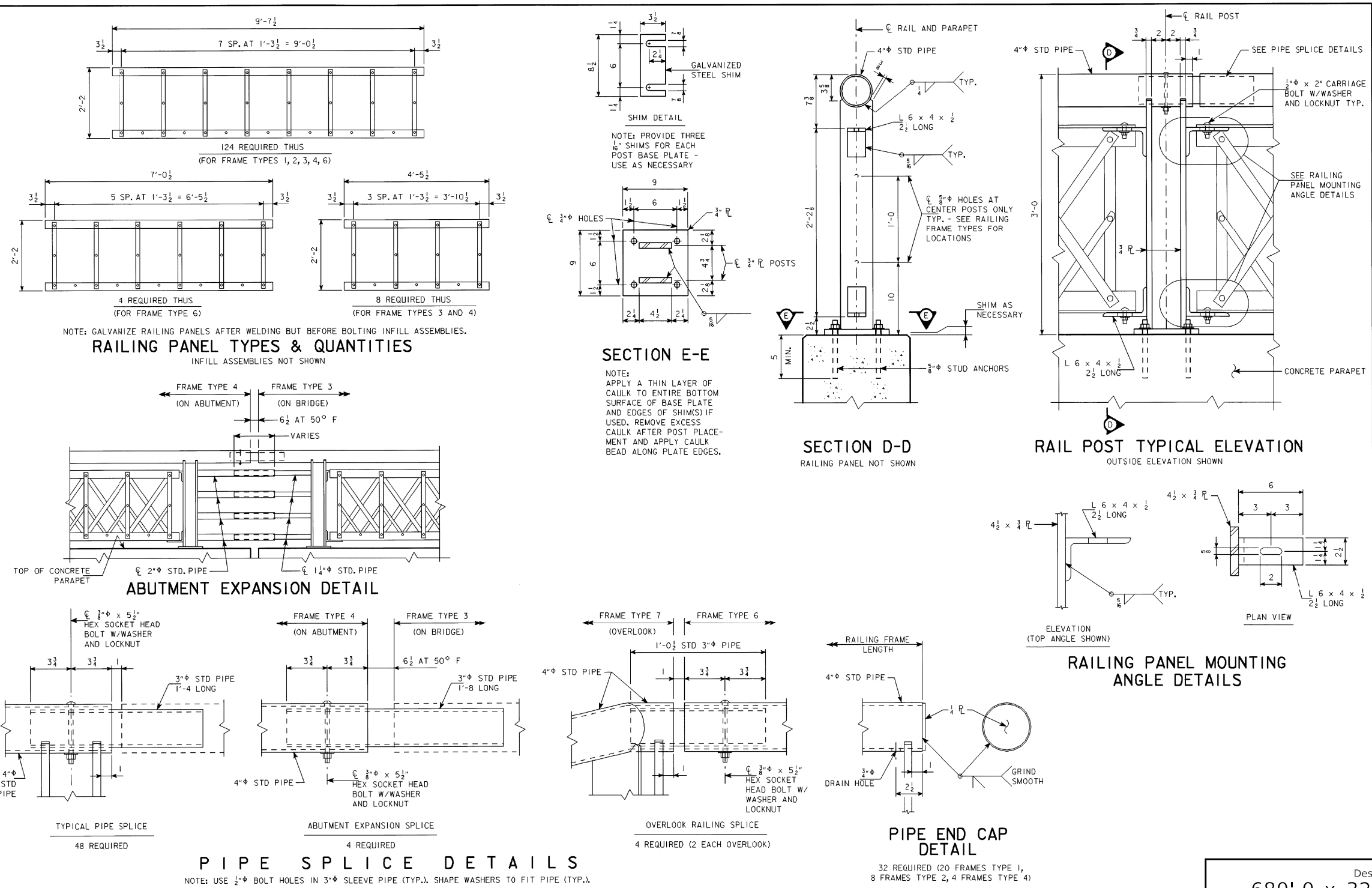
**Expansion Device Detail**

STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023

**Van Buren County**

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 10 of 13 FHWA No. 50181



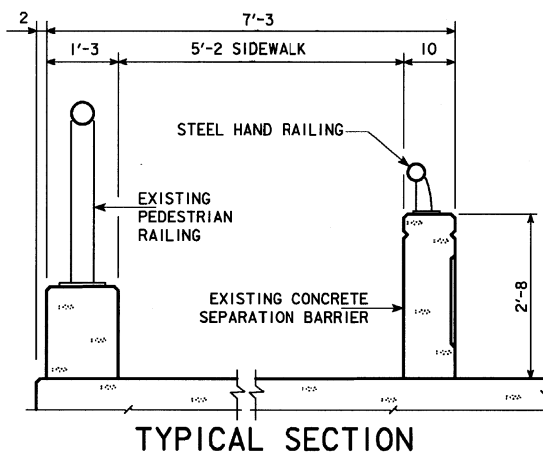
DESIGNED BY S. S. NIELSEN / KMO CHECKED BY H. L. ADCOCK  
 DETAILED BY D. A. WRIGHT / KMO CADD FILE

01-AUG-2005 09:48 dwrlgh2 w:\projects\89001010098\BRFinal\h890105.s73 \NPLTSVR1\Bridg1T1f

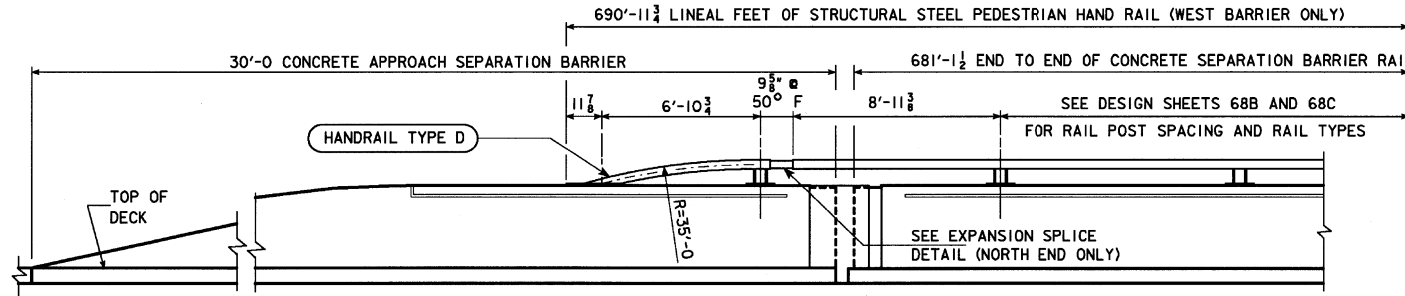
VAN BUREN COUNTY PROJECT NUMBER BRF-001-112

Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel Girder Bridge w/10'6 BP/5'-2 SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Parapet Railing Detail**  
 STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 11 of 13 FHWA No. 50181

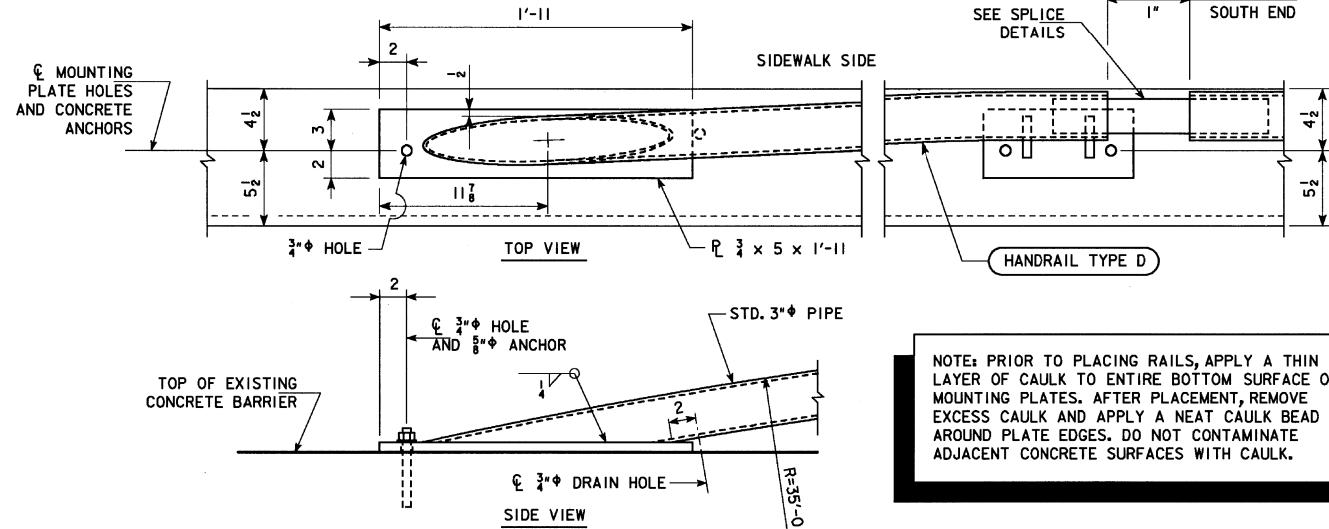
**THIS SHEET IS FROM THE ORIGINAL DESIGN. FOR INFORMATION ONLY.**



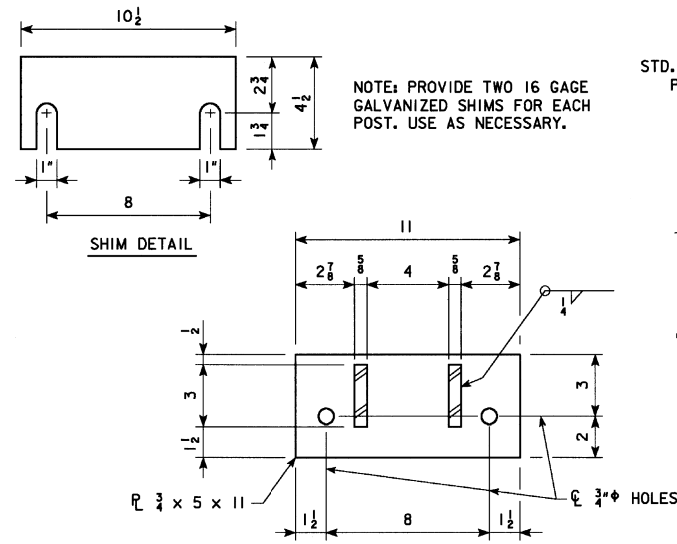
TYPICAL SECTION



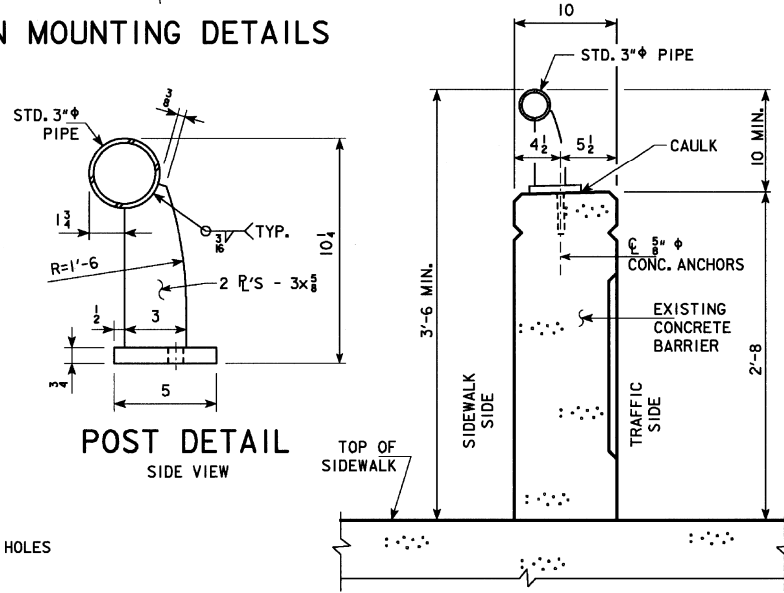
ELEVATION OF SIDEWALK BARRIER RAIL AND STEEL PIPE SIDEWALK RAILING  
LOOKING EAST, NORTH END OF RAILING SHOWN



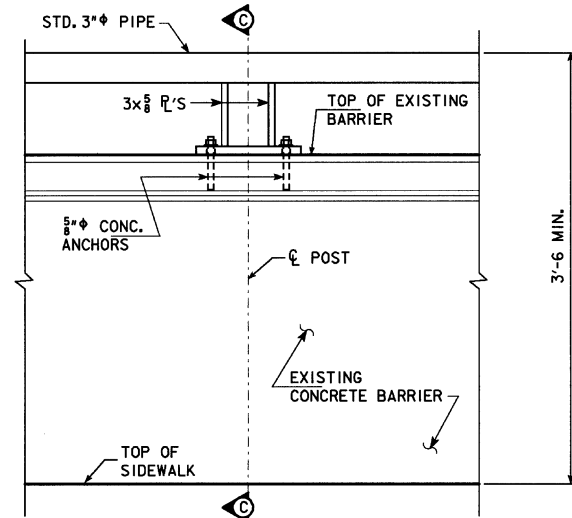
HAND RAILING END SECTION MOUNTING DETAILS



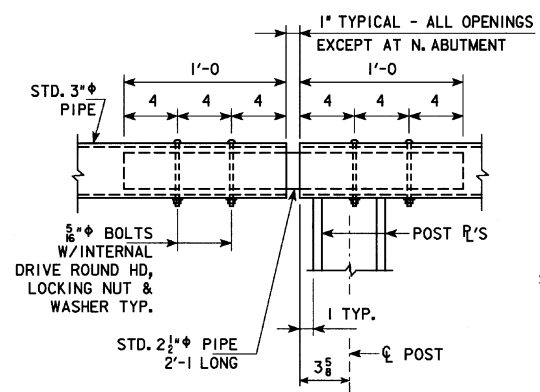
POST MOUNTING PLATE DETAILS



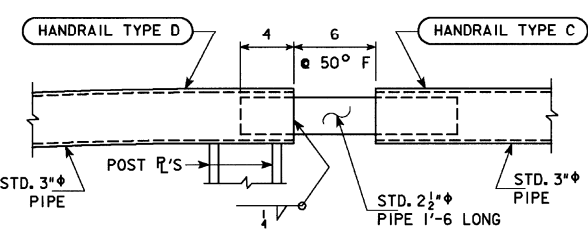
SECTION C-C



PART ELEVATION



TYPICAL PIPE SPLICE DETAIL  
25 REQUIRED



N. ABUT. EXPANSION SPLICE DETAIL  
1 REQUIRED AT NORTH END OF RAILING ONLY

RAILING QUANTITIES		
ITEM	UNIT	QUANTITY
STEEL PIPE PEDESTRIAN HAND RAILING	LF	691.0

STEEL PIPE RAILING NOTES

THE STEEL PIPE RAILING IS TO BE BID ON A LINEAL FOOT BASIS MEASURED END TO END OF RAILING. THE PRICE BID FOR "STEEL PIPE PEDESTRIAN HAND RAILING" SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, INCLUDING ANCHOR BOLTS AND SHIMS, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.

THE MATERIAL FOR PIPE RAILS AND SPLICE PIPES SHALL BE STANDARD STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, TYPE E OR S, GRADE B. BASE PLATES, POSTS AND SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A-36. PANELS AND END SECTIONS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A-123.

ENDS OF RAIL SECTIONS ARE TO BE SAWED OR MILLED. ALL CUT ENDS ARE TO BE TRUE, SMOOTH, AND FREE OF BURRS OR RAGGED EDGES.

AFTER GALVANIZING, THE STEEL PIPE RAILING SHALL BE STRAIGHT AND TRUE WITHIN 0.125 INCH IN 10 FEET.

THE STUD CONCRETE ANCHORS SHALL BE GALVANIZED AND HAVE A MINIMUM PULL OUT STRENGTH OF 8000 POUNDS BASED ON 4000 PSI CONCRETE.

THE RAILING COMPONENTS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A 123. FOLLOW GOOD STANDARD PRACTICES IN ACCORDANCE WITH ASTM A 143 AND ASTM A 384. PREPARE THE FABRICATED RAILING SURFACES BY ABRASIVE BLAST CLEANING TO A MINIMUM OF SSPC-SP 6 "COMMERCIAL BLAST CLEANING" PRIOR TO HOT-DIP GALVANIZING.

PAINT ALL STRUCTURAL STEEL RAILING COMPONENTS AFTER GALVANIZING AS SHOWN IN THE PLANS IN ACCORDANCE WITH THE SUPPLEMENTAL SPECIFICATION "CLEANING, SURFACE PREPARATION AND PAINTING OF GALVANIZED SURFACES". PAINT COLOR IS TO MATCH FEDERAL STANDARD NO. 595B COLOR NO. 20111 (SEMI-GLOSS RED-BROWN). SUBMIT PAINT COLOR SAMPLE TO THE IOWA DEPARTMENT OF TRANSPORTATION, BRIDGES AND STRUCTURES, FOR APPROVAL PRIOR TO GALVANIZING AND PAINTING.

PROTECT ALL PAINTED SURFACES IMMEDIATELY AFTER PAINT HAS CURED. PROTECTION METHOD SHALL BE ADEQUATE TO PREVENT DAMAGE DURING STORAGE, HANDLING, SHIPPING TO THE INSTALLATION SITE, AND DURING THE INSTALLATION OF THE RAILING. DO NOT REMOVE THE PROTECTION UNTIL POTENTIAL DAMAGE TO THE PAINT IS LIMITED TO FINAL ASSEMBLY SURFACES ONLY. PERFORM TOUCH-UP REPAIR OF PAINT IN ACCORDANCE WITH ALL REQUIREMENTS LISTED IN THE SUPPLEMENTAL SPECIFICATION "CLEANING, SURFACE PREPARATION AND PAINTING OF GALVANIZED SURFACES". DO NOT PAINT ANCHORAGES OR FINAL INSTALLATION HARDWARE.

CAULK SHALL BE LIGHT GREY, NONSAG LATEX MARKETED FOR OUTDOOR USE. NO OTHER SPECIFICATIONS APPLY TO CAULK.

SUBMIT SHOP DRAWINGS OF ALL COMPONENTS OF THE RAILING ALONG WITH A DESCRIPTION OF THE FABRICATION, GALVANIZING, AND PAINTING SEQUENCE FOR APPROVAL.

NOTE: PRIOR TO PLACING RAILS, APPLY A THIN LAYER OF CAULK TO ENTIRE BOTTOM SURFACE OF MOUNTING PLATES. AFTER PLACEMENT, REMOVE EXCESS CAULK AND APPLY A NEAT CAULK BEAD AROUND PLATE EDGES. DO NOT CONTAMINATE ADJACENT CONCRETE SURFACES WITH CAULK.

REVISED 1/15/08; THIS SHEET ADDED

Design For 0 Degree  
**680'-0" x 32'-2" Haunched Steel Girder Bridge w/10'6" BP./5'-2" SDWK**  
 210'-0" End Spans 260'-0" Interior Span  
**Sidewalk Railing Detail**  
 STA. 945+03.57 (CL IA 1) Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 12 of 13 FHWA No. 50181

THIS SHEET IS FROM THE ORIGINAL DESIGN. FOR INFORMATION ONLY.

DESIGNED BY KMO CHECKED BY S. S. NIELSEN  
 DETAILED BY KMO CADD FILE

VAN BUREN COUNTY PROJECT NUMBER BRF-001-1(24)

REINFORCING BAR LIST -		EAST ABUTMENT AND ONE DECK END			
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
7a1	Deck Transverse Top & Bottom - Stage 1	—	2	24'-5"	100
7a2	Deck Transverse Top & Bottom - Stage 2	—	2	30'-8"	125
5a3	Deck East and West End	⊔	4	4'-11"	21
4b1	Abutment Backwall Dowel	┌	53	2'-6"	89
5c1	Parapet Bars	⊔	4	6'-8"	28
5c2	Seperation Barrier Dowel	⊔	8	6'-2"	51
5c3	Seperation Barrier Vertical	⊔	8	5'-9"	48
5e1	Deck Diaphragm - Stage 1	—	1	24'-5"	25
5e2	Deck Diaphragm - Stage 2	—	1	30'-8"	32
5g1	Abutment Backwall Longit. - Stage 1	—	2	24'-5"	51
5g2	Abutment Backwall Longit. - Stage 2	—	2	30'-8"	64
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					634

**DOWEL SETTING NOTES:**

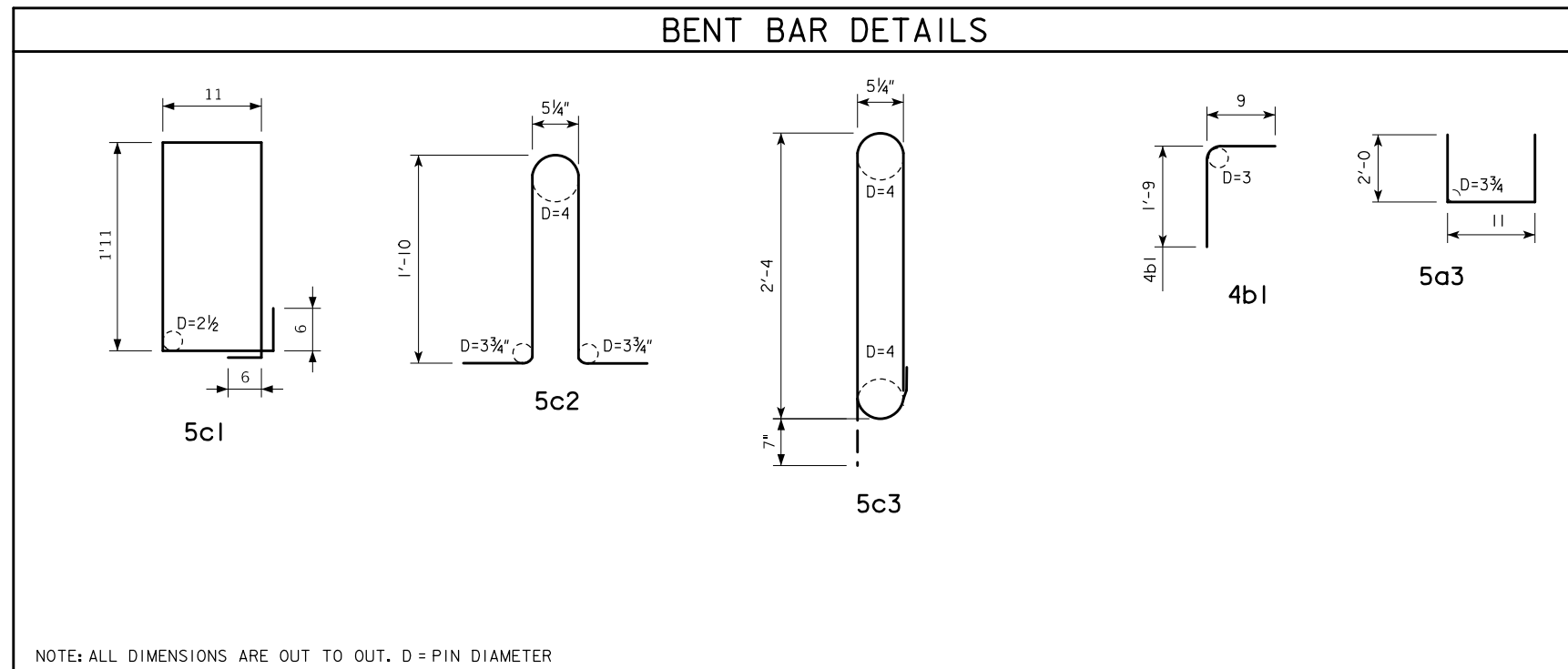
THE 4b1 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE GROUT MANUFACTURER'S RECOMMENDATIONS. EITHER OF THE FOLLOWING SYSTEMS MAY BE USED AS A BONDING AGENT FOR VERTICAL DOWELS, BUT ONLY SYSTEM "A" MAY BE USED FOR HORIZONTAL DOWELS:

- A. POLYMER GROUT SYSTEM IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS.
- B. HYDRAULIC CEMENT GROUT SYSTEMS. DRILLED HOLES ARE TO BE 2½ TIMES THE DOWEL DIAMETER AND ARE TO BE BLOWN CLEAN WITH COMPRESSED AIR IMMEDIATELY PRIOR TO PLACING GROUT. THE HYDRAULIC CEMENT GROUT SHALL BE ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

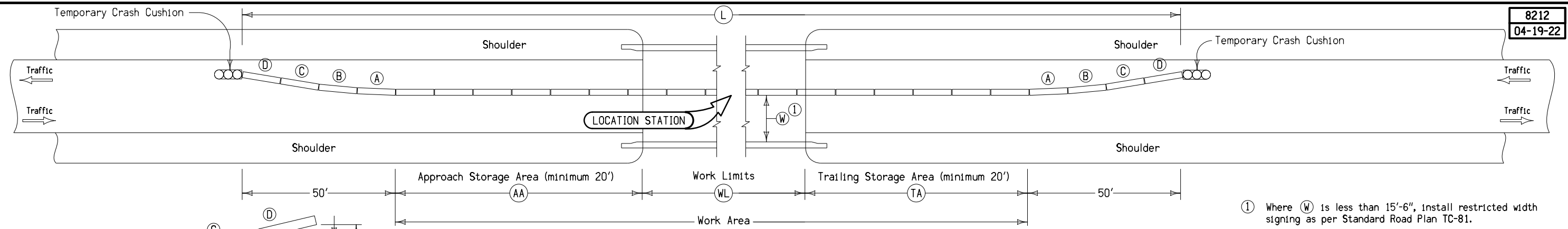
THE PRICE BID FOR "HIGH PERFORMANCE STRUCTURAL CONCRETE" INCLUDE THE COSTS OF SETTING BARS AT DOWELS IN THE ABUTMENT BACKWALL.

CONCRETE PLACEMENT QUANTITIES		
LOCATION	NORTH ABUT.	
ABUTMENT BACKWALL	2.6	
DECK END	1.7	
BARRIER & PARAPET	0.8	
TOTAL (C.Y.)	5.1	

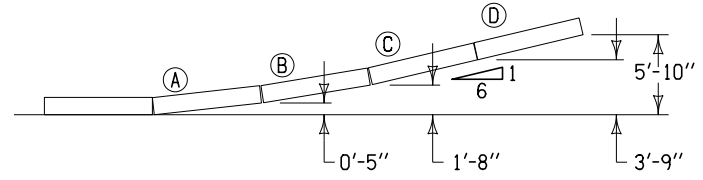


NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER

Design For 0 Degree  
**680'-0 x 32'-2 Haunched Steel Girder Bridge w/10'6 BP./5'-2 SDWK**  
 210'-0" End Spans      260'-0" Interior Span  
**Bar Details**  
 STA. 945+03.57 (CL IA 1)      Turn-In Date: Oct 2023  
**Van Buren County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124      Design Sheet No. 13 of 13      FHWA No. 50181



① Where (W) is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.



**BARRIER OFFSETS FOR FLARE SECTIONS**

Station	Side	AA	WL	TA	L	Anchored	W <sup>①</sup>	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
947+65.40	Rt.	26	42	22	190	X	11-9.0	Stage 1
947+67.00	Lt.	24	32	34	190	X	11-0.0	Stage 2

**TEMPORARY CONCRETE BARRIER LAYOUT  
for Two-Way Traffic**

<b>100-1D</b> 10-18-05
<b>PROJECT DESCRIPTION</b>
This project is for bridge and roadway work along IA over Des Moines River, 3.9 miles north of the junction with IA 2. It will involve replacement of strip seal joint at north abutment, replacement of concrete deck in area of strip seal joint removal, and replacement of sidewalk panels on the northeast and northwest roadway adjacent to the approach slab.

<b>105-4</b> 10-18-11		
<b>STANDARD ROAD PLANS</b>		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
BA-401	04-20-21	Temporary Barrier Rail (Precast Concrete)
BA-500	04-20-21	Temporary Crash Cushions Sand Barrel
PM-110	04-21-20	Line Types
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-81	04-18-23	Restricted Width Signage (Less than 15.5 feet)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-217	04-18-23	Lane Closure with Signals and TBR
TC-252	04-21-20	Routes Closed to Traffic

<b>100-0A</b> 10-28-97					
<b>ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)</b>					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2511-6745900	REMOVAL OF SIDEWALK	SY	14.4	
2	2511-7526004	SIDEWALK, P.C. CONCRETE, 4 IN.	SY	14.4	
3	2527-9263109	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	23.67	
4	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	3.84	
5	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	23.67	
6	2528-2518000	SAFETY CLOSURE	EACH	2	
7	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	380	
8	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	2	
9	2528-8445110	TRAFFIC CONTROL	LS	1.0	
10	2551-0000110	TEMP CRASH CUSHION	EACH	4	

<b>111-25</b> 10-18-11		
<b>INDEX OF TABULATIONS</b>		
Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-0A	ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)	C.1
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.1
105-4	STANDARD ROAD PLANS	C.1
108-13A	SAFETY CLOSURES	C.1
108-22	PAVEMENT MARKING LINE TYPES	C.2
108-28	TEMPORARY TRAFFIC SIGNALS	C.1
108-30	CRASH CUSHIONS	C.2
108-33	TEMPORARY BARRIER RAIL	C.1
110-5	SIDEWALK REMOVAL	C.3
111-25	INDEX OF TABULATIONS	C.1
113-1	SIDEWALKS	C.3
262-6	UTILITIES (NOT A POINT 25 PROJECT)	C.1

<b>100-4A</b> 10-29-02		
<b>ESTIMATE REFERENCE INFORMATION</b>		
Item No.	Item Code	Description
1	2511-6745900	REMOVAL OF SIDEWALK Refer to Tab 110-5 in the C sheets for details.
2	2511-7526004	SIDEWALK, P.C. CONCRETE, 4 IN. Refer to Tab 113-1 in the C sheets for details.
3	2527-9263180	PAVEMENT MARKINGS REMOVED
4	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
5	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS Refer to Tab 108-22 in the C sheets for details.
6	2528-2518000	SAFETY CLOSURE Refer to J-Sheets for details.
7	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE Refer to J-Sheets for details.
8	2528-8400256	TEMPORARY TRAFFIC SIGNALS Refer to J-Sheets for details.
9	2528-8445110	TRAFFIC CONTROL Refer to J-Sheets for details.
10	2551-0000110	TEMP CRASH CUSHION Refer to J-Sheets for details.

<b>108-28</b> 08-01-08					
<b>TEMPORARY TRAFFIC SIGNALS</b>					
No.	Location Station	Type			Remarks
		One Lane Traffic	Haul Road	Intersection	
1	946+41.40	X			South Signal
2	951+42.56	X			North Signal

<b>262-6</b> 10-18-05
<b>UTILITIES (NOT A POINT 25 PROJECT)</b>
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

<b>108-13A</b> 08-01-08			
<b>SAFETY CLOSURES</b>			
Refer to Section 2518 of the Standard Specifications			
Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
950+85.00	1		Closure of Park St West of IA 1 at Bridge
950+85.00	1		Closure of Park St East of IA 1 at Bridge
	2		TOTAL

<b>108-33</b> 10-15-19							
<b>TEMPORARY BARRIER RAIL</b>							
Possible Standard: BA-401 Possible Detail: 560-7							
* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.							
No.	Station to Station	Length	(Select One)		Anchored*	Modular Glare Screen System	Remarks
			Concrete BA-401	Steel 560-7			
1	947+65.40	949+55.03	190.0	X	Yes	No	Stage 1
2	947+67.00	949+56.30	190.0	X	Yes	No	Stage 2

**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.  
 BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00  
 ELY4: Edge Line Left (Yellow) @ 1.00

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

NPY4: No Passing Zone Line (Yellow) @ 1.25

BLW4: Broken Lane Line (White) @ 0.25

ELW4: Edge Line Right (White) @ 1.00

Road ID	Location			Marking Type	Side			Length by Line Type (Unfactored)												Remarks				
	Station to Station		Dir. of Travel		L	C	R	BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4											
					STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA		STA	STA	STA	STA
IA 1	945+71.40	950+50.00	BOTH				X	X	X	4.79					9.57									
IA 1	945+71.40	-	NB																					
IA 1	952+16.00	-	SB																					
IA 1	945+71.40	947+36.47	NB												1.65									Stage 1
IA 1	947+36.47	948+21.44	NB												0.85									Stage 1
IA 1	945+71.40	950+50.00	SB												4.79									Stage 1
IA 1	945+71.40	947+36.47	NB												1.65									
IA 1	947+36.47	948+21.44	NB												0.85									
IA 1	945+71.40	950+50.00	SB												4.79									
IA 1	948+93.00	949+97.00	SB												1.04									Stage 2
IA 1	949+97.00	952+16.00	SB												2.19									Stage 2
IA 1	945+71.40	950+50.00	NB												4.79									Stage 2
IA 1	945+71.40	-	NB																					
IA 1	952+16.00	-	SB																					
IA 1	948+93.00	949+97.00	SB												1.04									
IA 1	949+97.00	952+16.00	SB												2.19									
IA 1	945+71.40	950+50.00	NB												4.79									
IA 1	945+71.40	950+50.00	BOTH				X	X	X	4.79					9.57									
										Factored Total: Waterborne/Solvent Paint	1.20	-	-	-	21.03	-	1.44							
										Factored Total: Wet Retroreflective Removable Tape	-	-	-	-	3.84	-	-							
										Factored Total: Removal of Paint	1.20	-	-	-	21.03	-	1.44							
										Factored Total: Removal of Removable Tape	-	-	-	-	3.84	-	-							
										Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based						23.67								
										Bid Quantity: Wet Retroreflective Removable Tape Markings						3.84								
										Bid Quantity: Pavement Markings Removed						23.67								
										Incidental Removal of Removable Tape						3.84								

**CRASH CUSHIONS**

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

No.	Direction of Traffic	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details ②					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks	
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V	W	X	Y	Z	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use			
										Length	Length	Length	Length	Length							FT
1	Both	947+35.40	RT	2.00	1															TBR	
2	Both	949+55.03	RT	2.00	1															TBR	
3	Both	947+37.00	LT	2.00	1															TBR	
4	Both	949+56.30	LT	2.00	1															TBR	



110-5 08-01-08			
SIDEWALK REMOVAL			
Street	Quadrant	Area	Remarks
		SY	
IA 1	NE	8.6	
IA 1	NW	5.8	

113-1 04-16-13											
SIDEWALKS See MI-220 and S Sheets											
Road Identification	Station to Station		Side	A	B	S	4" PCC Sidewalk	6" PCC Sidewalk	Earthwork	Detectable Warnings	Remarks
				FT	FT	%	SY	SY	CY	SF	
IA 1	948+67.93	948+82.93	NE	0.00	5'-2"	2.00%	8.6				
IA 1	948+67.95	948+72.95	NW	0.00	10'-6"	2.00%	5.8				
						Total	14.4	0.0	0.0	0	



108-23A  
08-01-08

**TRAFFIC CONTROL PLAN**

Traffic on IA 1 shall be maintained at all times except as noted below.  
Single lane closures with one lane, two way traffic operations as per TC-217 will be allowed during construction.

108-26A  
08-01-08

**STAGING NOTES**

STAGE 1  
Install lane closure using temporary signals and complete strip seal joint replacement and sidewalk replacement for westbound lane and sidewalk at north abutment.  
  
STAGE 2  
Install lane closure using temporary signals and complete strip seal joint replacement and sidewalk replacement for eastbound lane and sidewalk at north abutment.

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
			No restrictions expected.									

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
None Provided	

113-2  
04-16-13

**PEDESTRIAN PATH CLOSURES**

Refer to TC-601.

\*Assumes 6 foot wide barricade.  
Closures may need to be removed and re-established.

Location	Side	Type III Barricades*	Remarks
		No.	
Station 941+67.00	RT	1	Westbound sidewalk at south end of Bridge
Station 948+83.00	RT	1	Westbound sidewalk at north end of Bridge
Station 941+40.00	LT	1	Eastbound sidewalk at south end of Bridge
Station 948+83.00	LT	1	Eastbound sidewalk at north end of Bridge

**CROSS SECTION VIEW COLOR LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

**PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS**

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

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

**PLAN VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

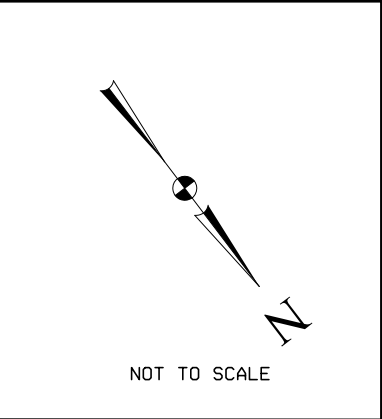
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

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

**TRAFFIC CONTROL  
AND  
STAGING  
LEGEND AND SYMBOL  
INFORMATION SHEET**

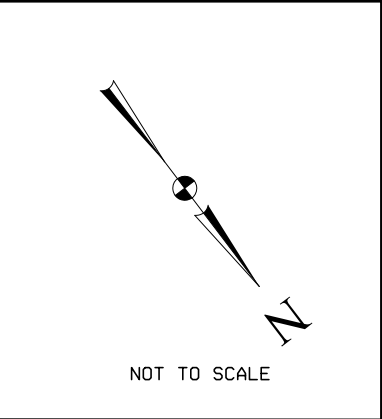
(COVERS SHEET SERIES J)





SIGN    TRAFFIC FLOW  
 WORK AREA





SIGN    TRAFFIC FLOW  
 WORK AREA

TRAFFIC CONTROL  
STAGE 2