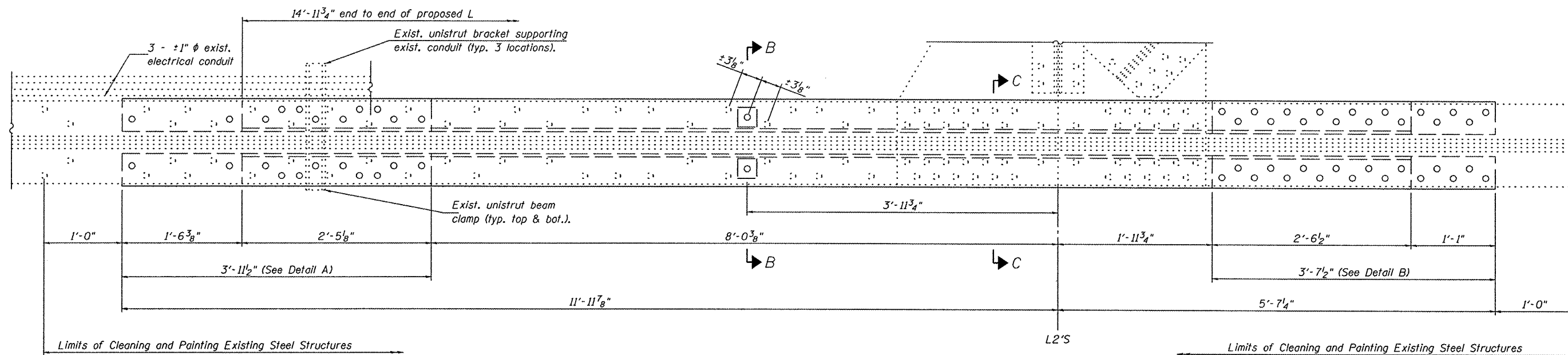


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



REPAIR DETAIL ELEVATION  
(Span 4 - Looking North)

Notes:

The Contractor shall field verify the layout of the existing and proposed holes for the connections of the proposed structural steel angles and plates prior to ordering materials. It is recommended that the centers of the existing holes be exposed and located by shearing off the heads of the subject rivets. The minimum distance between the centers of any of the holes in any direction shall not be less than 2 5/8". The Bureau of Bridges and Structures shall be contacted for further disposition if the field measurements indicate that the location of the existing fasteners result in a center-to-center spacing of the subject holes less than the minimum specified.

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

Structural steel angles shall conform to the requirements of AASHTO M 270, Grade 50. Structural steel plates shall conform to the requirements of AASHTO M 270, Grade 36.

The existing bottom chord shall be cleaned and painted within the limits shown according to the special provision "Cleaning and Painting Existing Steel Structures". The entire specified area shall be cleaned per the requirements for Near White Blast Cleaning SSPC-SP10 and painted according to the requirements of Paint System 1 - OZ/E/U. All contact surfaces between the proposed and existing structural steel shall be masked off and protected from the application of the intermediate and top coats. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. Cleaning and painting shall be performed prior to the final installation of the proposed structural steel. Cost included with Cleaning and Painting Structural Steel, Location No. 1.

The proposed structural steel shall receive a full shop application of the Organic Zinc Rich Primer / Epoxy / Urethane Paint System. All contact surfaces of the proposed structural steel sections shall be masked off and protected from the application of the intermediate and top coats. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See special provision for Cleaning and Painting New Metal Structures.

All work necessary to complete the truss chord strengthening shall be performed in accordance with Sections 501 and 505 of the Standard Specifications except as indicated in the plans and be paid for at the contract unit price per pound for Structural Steel Repair. This price shall include all material, labor, and equipment necessary to strengthen members as indicated in the plans.

Existing electrical conduit within the truss chord strengthening area shall be temporarily supported and the existing unistrut beam clamps loosened and removed. Methods of temporary support shall be submitted to the Engineer for review and approval prior to loosening unistrut beam clamps. Additional conduit supports may be loosened to provide necessary clearance for drilling holes in existing truss chord. Location of unistrut brackets may be adjusted horizontally as necessary to accommodate proposed H.S. bolts required for the truss chord strengthening. Unistrut brackets shall be reinstalled on existing truss chord with new beam clamps capable of accommodating proposed structural steel angles and plates. Cost included with Structural Steel Repair.

Existing rivet holes specified in the plans to be abandoned shall be sealed on the exterior surface of the chord with a silicone sealant suitable for structural steel after the proposed structural steel members are installed. The silicone sealant shall be approved for prolonged exterior exposure without losing flexibility or adhesion to painted surfaces and shall be subject to approval of the Engineer. Cost included with Structural Steel Repair.

Note A:

Holes in existing steel shall be field drilled using holes in proposed angles and plates as a template. Holes in existing steel may be subdrilled using a template and reamed to the final specified size in assembly at the Contractor's discretion.

Note B:

Holes in proposed angles and plates shall be field drilled using holes in existing steel as a template. Holes in proposed angles and plates may be subdrilled in the shop and reamed to the final specified size in assembly at the Contractor's discretion.

Note C:

7/8" Ø threaded rods conforming to ASTM A449 shall be installed in the locations specified. Upon installation of the rods, interior nuts shall be snug tightened against the inside surface of the proposed angle legs. After snug tightening the interior nuts, the exterior nuts shall be tightened using the turn-of-the-nut method outlined in Article 505.04(f) of the Standard Specifications. Washers shall be provided under all nuts. Nuts, washers, and the entire length of the threaded rods shall be galvanized according to the requirements of AASHTO M 232. Threaded rod assemblies for Details A and B similar to those shown in Section B-B. Number of threaded rods required is 10.

Note D:

Existing 7/8" Ø H.S. bolts shall be replaced with shorter 7/8" Ø H.S. bolts to provide the necessary clearance for installation of the proposed angles. The proposed H.S. bolts shall be 2 1/2" long (excluding the height of the bolt head) and shall be secured with a standard hex nut. The existing bolts shall be removed and replaced one at a time and the proposed bolts shall only be required to be snug tightened. Loctite 262 or Loctite 271 Threadlocker compound shall be applied to the threads of the bolts. Cost of Loctite shall be included with Structural Steel Repair. Number of existing bolts to be replaced is 10.

Work this sheet with sheet 12 of 25.

TRUSS CHORD STRENGTHENING PROCEDURE

1. Field verify the layout of the existing and proposed fastener holes.
2. Loosen and remove unistrut brackets and temporarily support electrical conduit.
3. Remove and replace existing H.S. bolts as indicated in Section C-C and Note D.
4. Remove existing fasteners in the vertical legs of the truss chord within the limits of Details A and B.
5. Clean and paint the existing bottom truss chord within the limits shown in the plans.
6. Locate and field drill holes in existing and proposed steel members per Notes A and B.
7. Install proposed angles and structural plates. Steps 6 and 7 shall be completed one angle at a time. Threaded tie rod assemblies shall not be installed until the proposed members at each end of the tie rods are in place.
8. Reattach existing electrical conduit and unistrut brackets to bottom truss chord.
9. Seal abandoned holes in bottom truss chord.

SPAN 4 TRUSS CHORD  
STRENGTHENING DETAILS  
ILLINOIS ROUTES 100 & 106 OVER  
ILLINOIS RIVER  
PUBLIC WATERS

DESIGNED - CEH
CHECKED - SDS
DRAWN - DLH
CHECKED - CEH, SDS

**WHKS & CO.**  
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(217) 483-9457  
DESIGN FIRM #184001036

SHEET NO. 11 OF 25 SHEETS	F.A.P. RTE. 757	SECTION 20BR-2	COUNTY SCOTT/PIKE	TOTAL SHEETS 30	SHEET NO. 16
	SN 086-0001		CONTRACT NO. 72C39		
FED. ROAD DIST. NO. -		ILLINOIS FED. AID PROJECT			