

DESIGNER: CLARK JONES
PHONE: (309)671-3452

PROJECT ENGINEER: JIM MILLER
PHONE: (309)671-3451

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

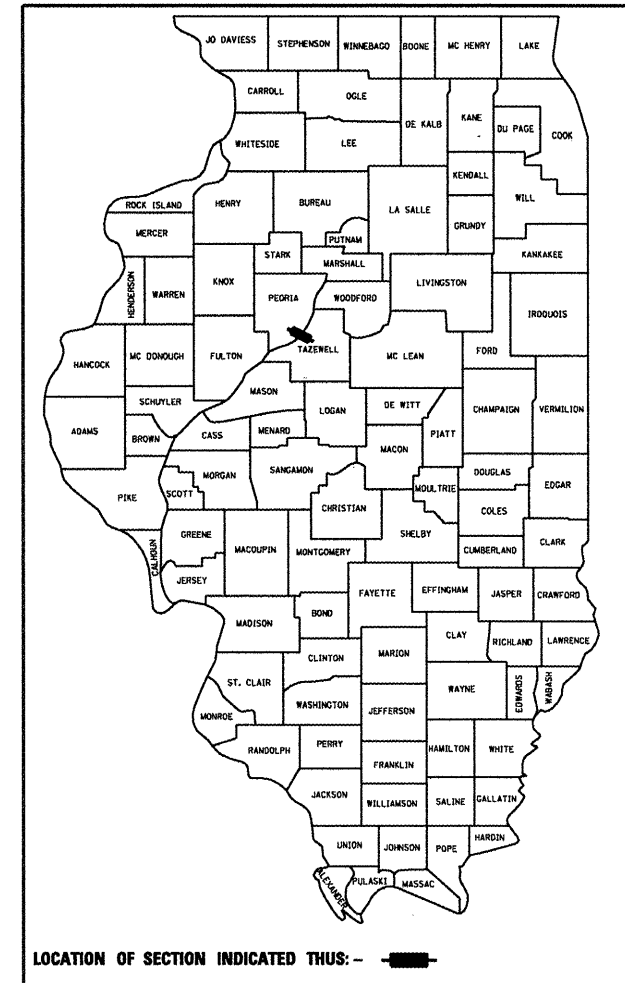
**PROPOSED
HIGHWAY PLANS**

FAP 669 (IL. 29/116)
SECTION 103B-1-6
MISC. STEEL REPAIRS
PEORIA COUNTY
C-94-107-10

R 8E

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
669	103B-1-6	PEO./	8	1
FED. ROAD DIST. NO. 4		ILLINOIS	CONTRACT NO. 68987	

D-94-052-10

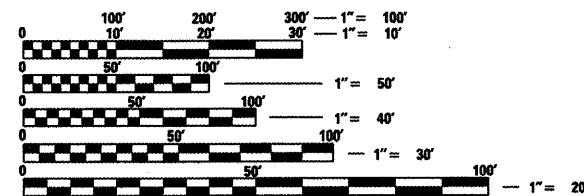


INDEX OF SHEETS:

1. COVER SHEET
2. COMMITMENTS & GENERAL NOTES
3. SUMMARY OF QUANTITIES
4. SCHEDULE OF QUANTITIES
5. PROPOSED TRAFFIC CONTROL
6. GENERAL PLAN & ELEVATION
7. GENERAL DATA
- 8-9. FLOOR BEAM REPAIR DETAILS
- 10-11. L17N GUSSET REPAIR DETAILS
- 12-13. L10'S GUSSET REPAIR DETAILS
- 14-18. REPAIR DETAILS

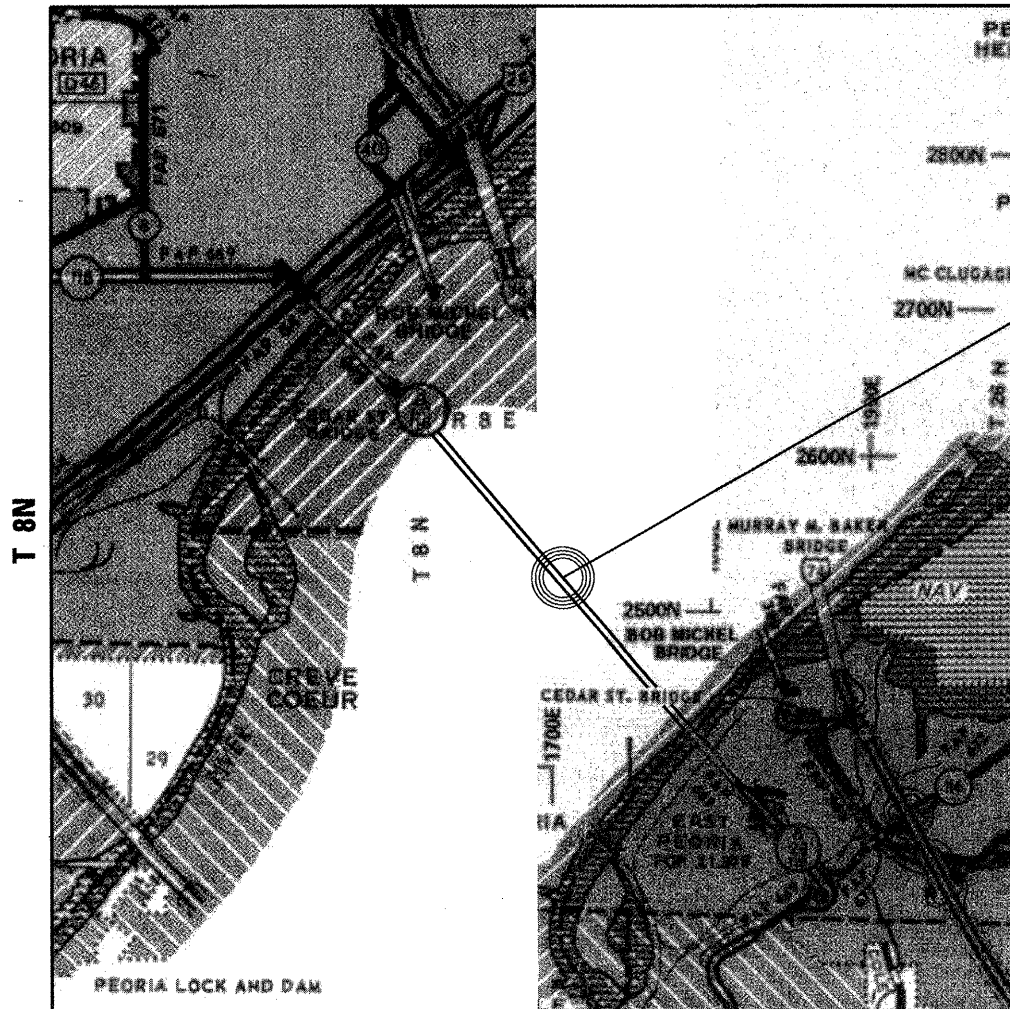
STANDARDS:

- 442201-03 704001-06
- 482011-03 780001-02
- 642001-01 701901-01
- 701606-06



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811



LOCATION MAP

SN.090-0030

MISCELLANEOUS STEEL REPAIRS ON STRUCTURE CARRYING CEDAR STREET OVER THE ILLINOIS RIVER (SN. 090-0030), IN PEORIA/TAZEWELL COUNTIES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 3/30/2010
Scott E. Sutt
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 7 2010
Scott E. Sutt, P.E.
acting ENGINEER OF DESIGN AND ENVIRONMENT

May 7 2010
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

SUMMARY OF QUANTITIES

URBAN
100% STATE SFTY-2A
PEORIA COUNTY

CODE NO.	ITEM	UNIT	TOTAL	URBAN
50501130	STRUCTURAL STEEL REPAIR	POUND	10,050	10,050
X7012679	TRUSS MODIFICATIONS	L SUM	1	1
G7100100	MOBILIZATION	L SUM	1	1
70101800	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LSUM	1	1
Z0073200	TEMPORARY SHORING AND CRIBBING	EACH	1	1

S:\GEN\URB\ST\PLNS\SOQ\A\BRIDGE CONTRACT\STEEL BEAM REPAIR\SftQty-0030-0030.dgn

SN.090-0030 CEDAR ST. BRIDGE OVER IL. RIVER

FILE NAME = SN090-0030.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.P. RTE. 669	SECTION 1038-1-6	COUNTY PEOR.	TOTAL SHEETS 18	SHEET NO. 3
PLOT SCALE = 1/8" = 1'-0" IN.	CHECKED - DH	REVISED - ---	MISC. STEEL TRUSS REPAIRS			CONTRACT NO. 68987				
PLOT DATE = 3/25/2010	DATE - 01/08/2010	REVISED - ---	FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT							
SCALE: _____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____										

SCHEDULE OF QUANTITIES

MOBILIZATION

LOCATION	LSUM
CEDAR STREET BRIDGE REPAIRS	1
TOTAL	1

TEMPORARY SHORING AND CRIBBING

LOCATION	EACH
PROJECT TRUSS LOCATIONS	1
TOTAL	1

STRUCTURAL STEEL REPAIR

LOCATION	POUND
AS SHOWN ON DETAIL SHEETS	10050
TOTAL	10050

TRUSS MODIFICATIONS

LOCATION	LSUM
PROJECT TRUSS LOCATIONS	1
TOTAL	1

TRAFFIC CONTROL AND PROTECTION (SPECIAL)

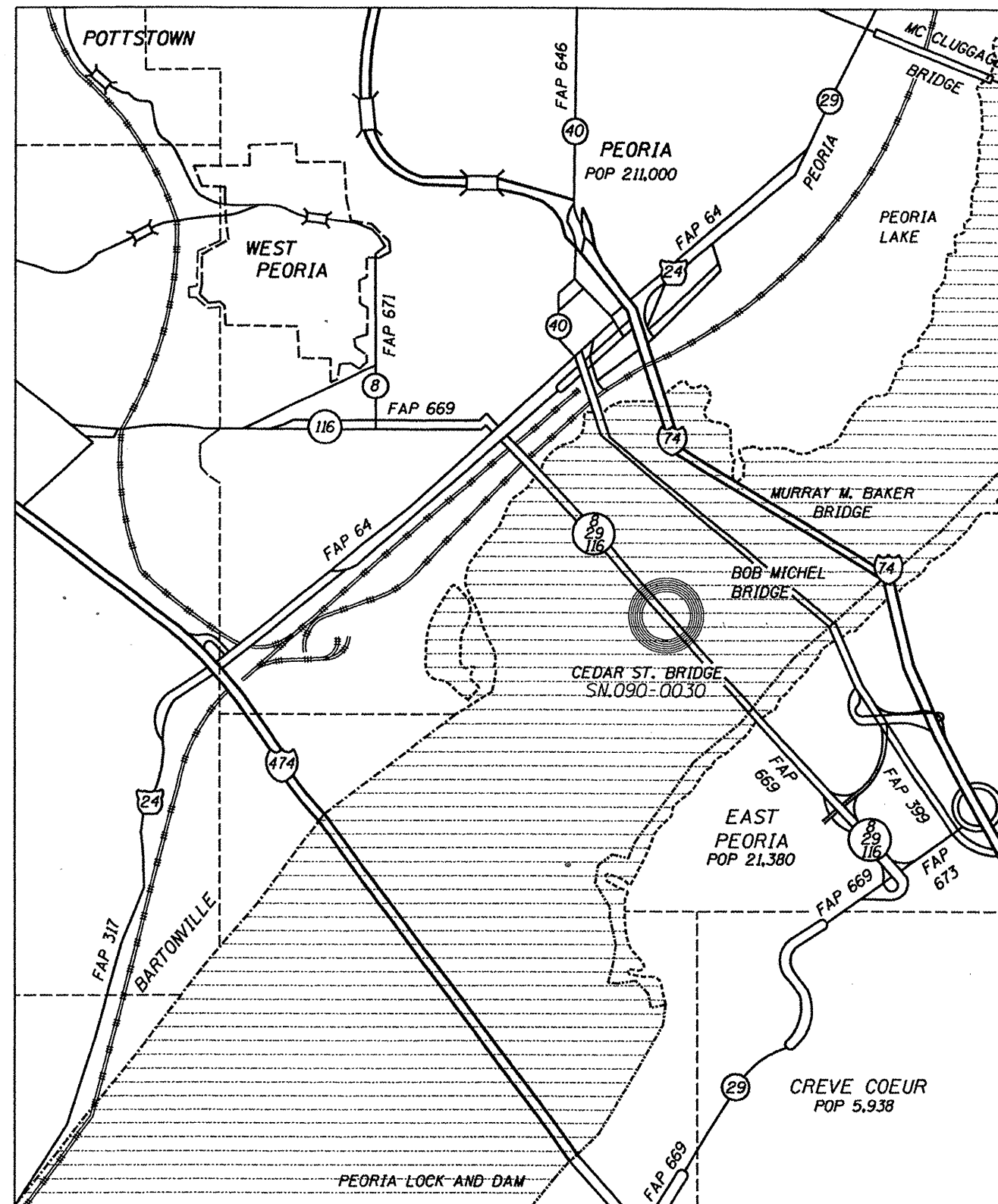
LOCATION	Detour Signage	T.C.&P. STANDARD SPECIAL (LSUM)	CHANGEABLE MESSAGE SIGN
PROPOSED DETOUR AREA		1	2
TOTAL		1	2

S:\CEN\GRAF\ASTD\PLUS\5014\BRIDGE CONTRACT'S STEEL BEAM REPAIR\Cedar-Sub-udg SN1910-2010\510910-2010.dgn

SN.090-0030 CEDAR ST.
BRIDGE OVER IL. RIVER

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCHEDULE OF QUANTITIES	F.A.P. RTE. 669	SECTION 103B-1-6	COUNTY PEO.	TOTAL SHEETS 18	SHEET NO. 4
	PLOT SCALE = #SCALE#	CHECKED - ---	REVISED - ---		SCALE: -----	SHEET NO. --- OF --- SHEETS	STA. ----- TO STA. -----	MISC. STEEL TRUSS REPAIRS	CONTRACT NO. 68987	
	PLOT DATE = #DATE#	DATE - 03/26/2010	REVISED - ---		FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT					

TRAFFIC CONTROL AREA



NOTE:
 Refer to Highway Standards 701606 for exact placement of traffic management devices and other clarifications as construction symbols and dimensioning were duplicated off of this standard. See "Traffic Control And Protection Special" for detour and signage instructions.

S:\GEN\DRFT\STDA\LVN\SQUAD\4\BRIDGE CONTRACT\STEEL BEAM - REP\Cedar-St-Bridge-SN.090-0030.dgn

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		DRAWN - CEJ	REVISED - ----
		CHECKED - ---	REVISED - ----
		DATE - 05/11/2010	REVISED - ----

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

PROPOSED TRAFFIC CONTROL

SCALE: _____ SHEET NO. ____ OF ____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE. 669	SECTION 103B-1-6	COUNTY PEO.	TOTAL SHEETS 15	SHEET NO. 5
MISC. STEEL TRUSS REPAIRS			CONTRACT NO. 68987	
FED. ROAD DIST. NO. 4 [ILLINOIS] FED. AID PROJECT				

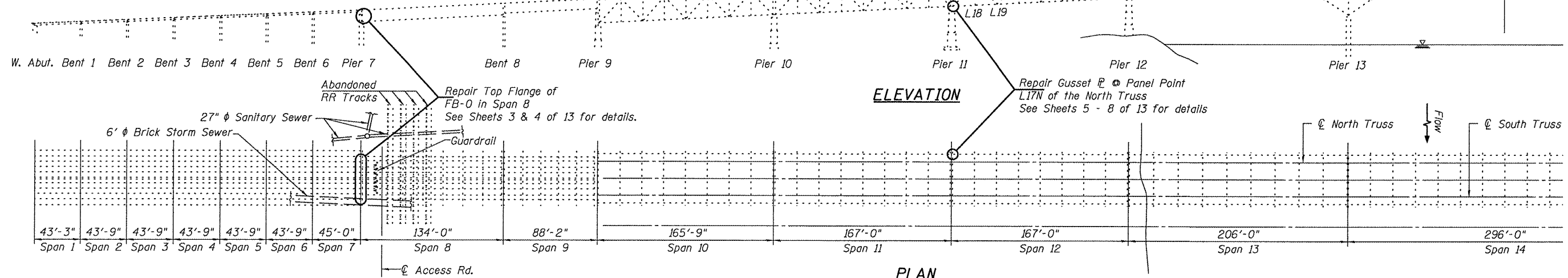
SN.090-0030 CEDAR ST. BRIDGE OVER IL. RIVER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Benchmark: Not Required

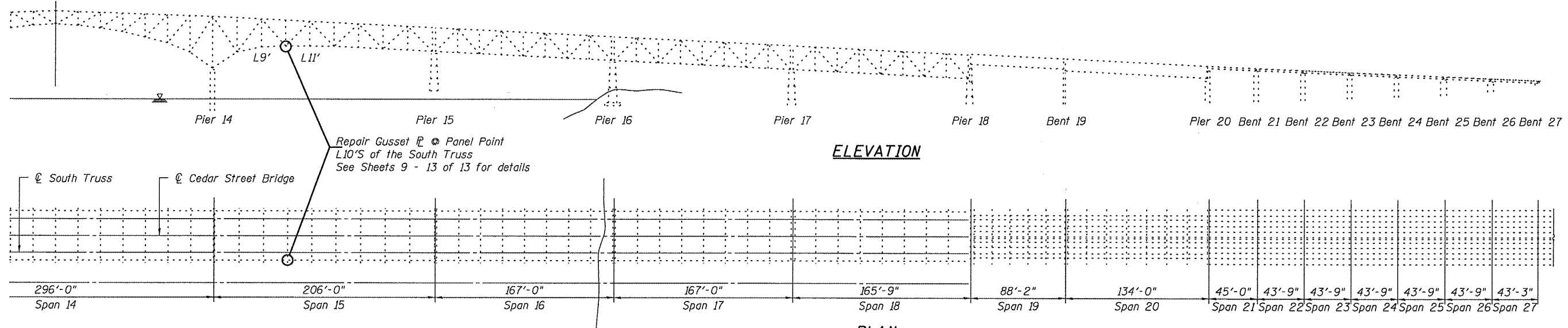
Existing Structure: Structure No. 090-0030. Completed in 1932: Thirty four spans. 7 simple multibeam, 17 simple riveted two plate girder spans; 7 simple deck truss and 3 haunched cantilever truss units. Total length = 3700' back to back abuts. 49'-2" roadway. Bridge to be closed to traffic during repairs.

Salvage: None



ELEVATION

PLAN



ELEVATION

PLAN

INDEX OF SHEETS

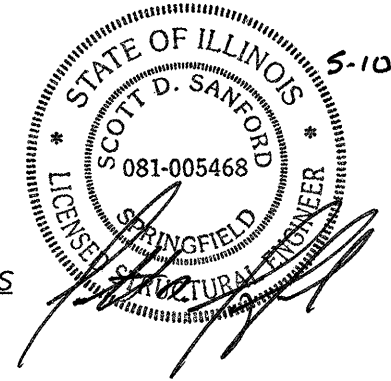
1. General Plan and Elevation
2. General Data
3. & 4. Span 8 FBO Repair Details
- 5.-8. Span 12 L17N Gusset Repair Details
9. & 10. Span 15 L10'S Gusset Repair Details
11. Span 15 L10'S Gusset Truss Modifications
12. & 13. Span 15 L10'S Gusset Repair Details

DESIGN SPECIFICATIONS

NEW CONSTRUCTION
2002 AASHTO Standard
Specifications - 17th Edition

DESIGN STRESSES

NEW CONSTRUCTION
FIELD UNITS
fs = 20,000 psi (AASHTO M270 Grade 36)



GENERAL PLAN AND ELEVATION
CEDAR STREET BRIDGE
OVER THE ILLINOIS RIVER
PUBLIC WATERS
SEC. 103B-1-5
PEORIA COUNTIES
S.N. 090-0030

DESIGNED - SDS
CHECKED - FLL
DRAWN - DLH
CHECKED - SDS

WHKS & CO.
ENGINEERING
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

SHEET NO. 1 13 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	669	103B-1-5	**	18	6
				CONTRACT NO. 68987	
ILLINOIS FED. AID PROJECT					

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 Operator: gjameson

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36.

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

Materials, fabrication and non-destructive testing for the members identified as Fracture Critical Members (FCM) in the contract plans shall conform to the requirements of Section 12 of the current ANSI / AASHTO / AWS D 1.5 Bridge Welding Code.

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ in. ϕ , holes $\frac{15}{16}$ in. ϕ , unless noted otherwise.

No field welding is permitted except as specified in the contract documents.

Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans.

Removal and disposal of all structural steel necessary to complete the work as detailed on the plans shall be performed in accordance with Section 501 of the Standard Specifications and included in the cost of the associated work.

Burning of existing rivets or bolts will not be permitted when the subject fasteners are installed in existing structural steel to remain in place. Such rivets and bolts shall have the head of the fastener sheared off and the shank driven or drilled out. Extreme care shall be exercised when removing such fasteners so as not to damage the existing structural steel to remain. Removal of such fasteners will not be measured for payment but shall be included in the cost of the associated work. Any damage to the existing structural steel to remain in place due to the removal of such fasteners shall be repaired or replaced to the satisfaction of the Engineer at no additional cost to the Department.

The Contractor shall submit Structural Assessment Report(s) as required for the contractor's means and methods of construction. See Special Provisions.

The Contractor shall retain the services of an engineering firm, prequalified in the IDOT consultant selection category of Highway Bridges (Advanced Typical), for preparation of the Structural Assessment Report(s). Contractor's pre-approval shall not be applicable for this project.

The Contractor is advised that the existing structure contains members that are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the existing structure when developing construction procedures for the complete or partial removal, or replacement of the structure. An Existing Structure Information Package is available upon request as noted in the special provisions. See special Provision.

For traffic control see Roadway Plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	POUND	10,050
Temporary Shoring and Cribbing	Each	1
Truss Modifications	L. Sum	1

Current Ratings on File for Existing Structure

Inventory: HS 4.9
Operating: HS 9.0
Live Load Restrictions: 15 tons

Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration. Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

GENERAL DATA
STRUCTURE NO. 090-0030

** PEORIA

SHEET NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2	669	103B-1-5	**	18	7
13 SHEETS			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

DESIGNED - SDS
CHECKED - FLL
DRAWN - DLH
CHECKED - SDS

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ENGINEERING

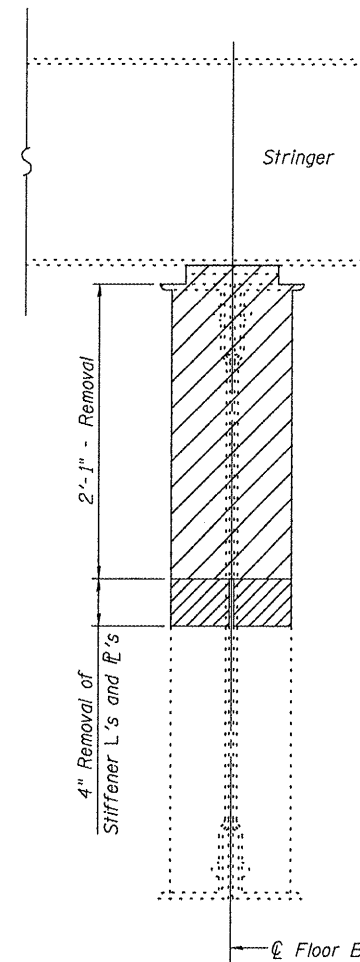
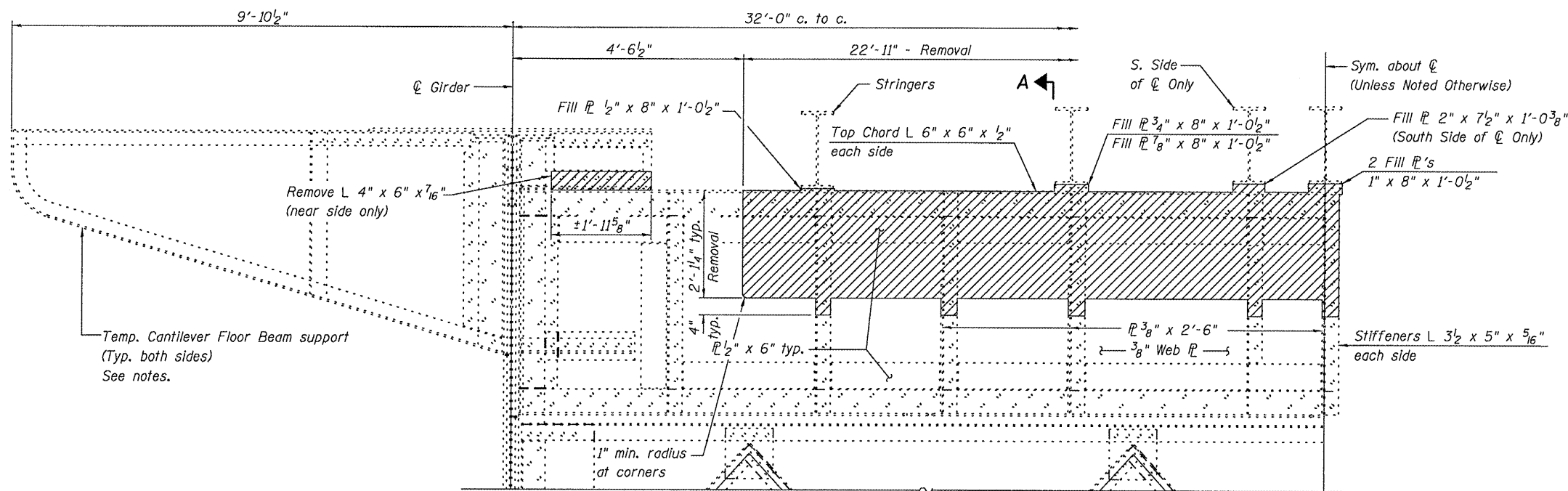
7018 KINGSMILL CT.
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Notes:
Hatched areas indicate removal of existing structural steel. Cost included with "Structural Steel Repair".

After removal of existing structural steel all removed edges of steel to remain in place shall be ground smooth.

Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

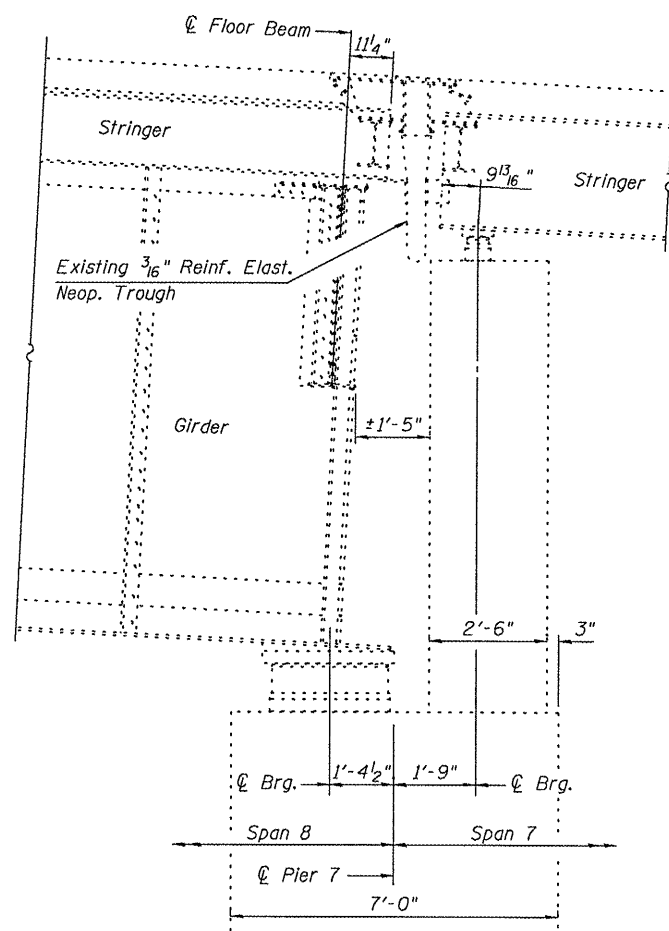
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

Temporary shoring of the existing stringers will be required to permit repair of the floor beam. Estimated dead load per stringer = 9.1 kips. Cost included with "Temporary Shoring and Cribbing".

Cantilever Floor Beams shall be temporarily supported during repair of the interior floor beam. Temporary support shall be installed prior to removal of any portion of the existing floor beam and shall remain in place until floor beam repair is complete. Estimated Dead load = 2.2 kips per foot length of cantilever. Cost included with "Temporary Shoring and Cribbing".

At the Contractor's option, the existing 3/16" Reinforced Elastomeric Neoprene Trough may be removed as needed to gain access to the floor beam repair area. If the Contractor elects to remove the trough, the removal, storage and reinstallation shall be done so in a manner that will not result in damage to the trough. After floor beam repair is complete, the trough shall be reinstalled to the satisfaction of the Engineer. If the trough is damaged during removal, storage, or reinstallation the Contractor shall repair or replace the trough at no additional cost to the Department. Cost of temporary removal, storage and reinstallation of the trough is included in the cost of "Structural Steel Repair".

HALF ELEVATION A
(Looking West)



SECTION AT PIER 7

SPAN 8 FBO REPAIR DETAILS
STRUCTURE NO. 090-0030

DESIGNED - SDS
CHECKED - FLL
DRAWN - DLH
CHECKED - SDS

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SPRINGFIELD, IL
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DESIGN FIRM #184001036

•• PEORIA

SHEET NO. 3	F.A. RTE. 669	SECTION 103B-I-5	COUNTY ••	TOTAL SHEETS 18	SHEET NO. 8
13 SHEETS			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

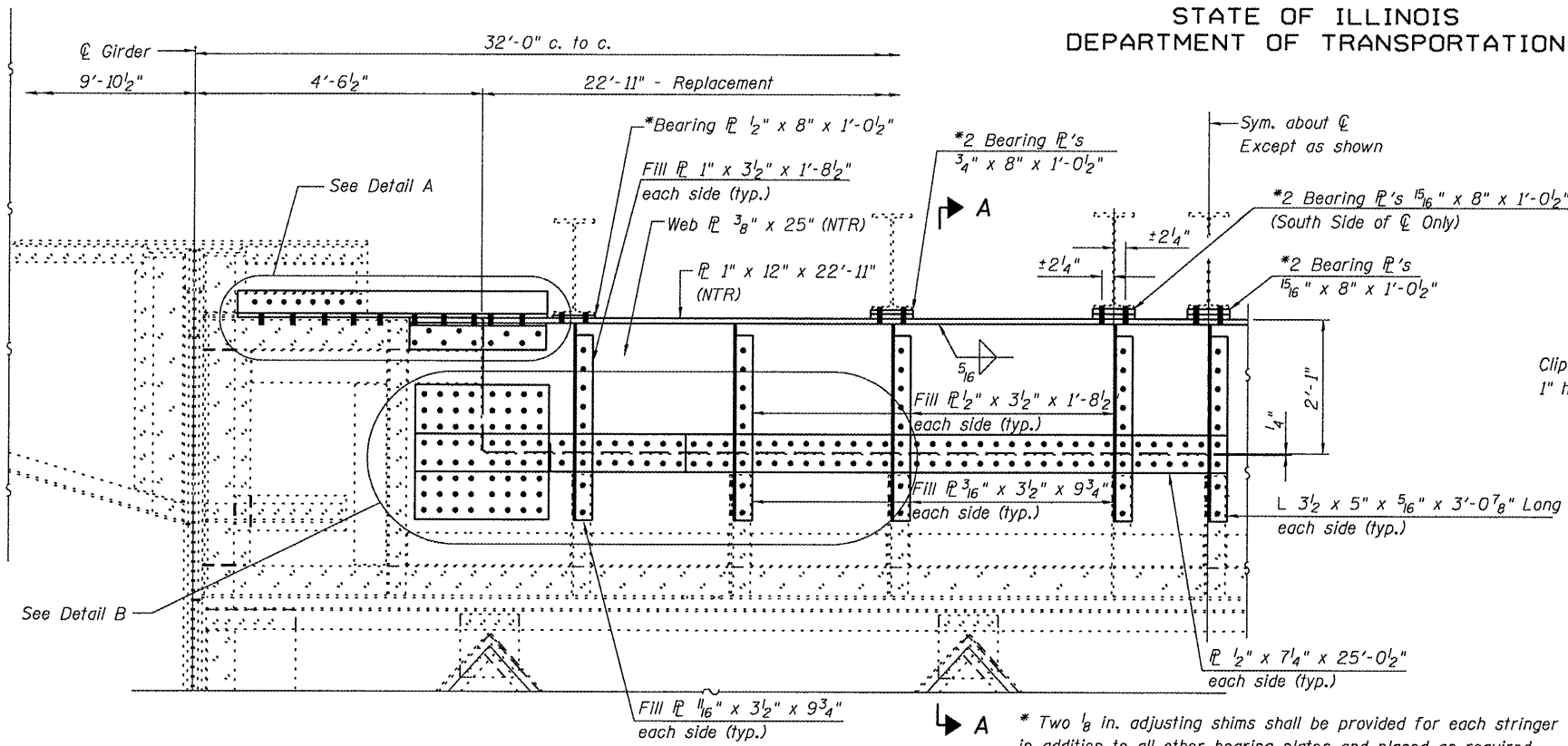
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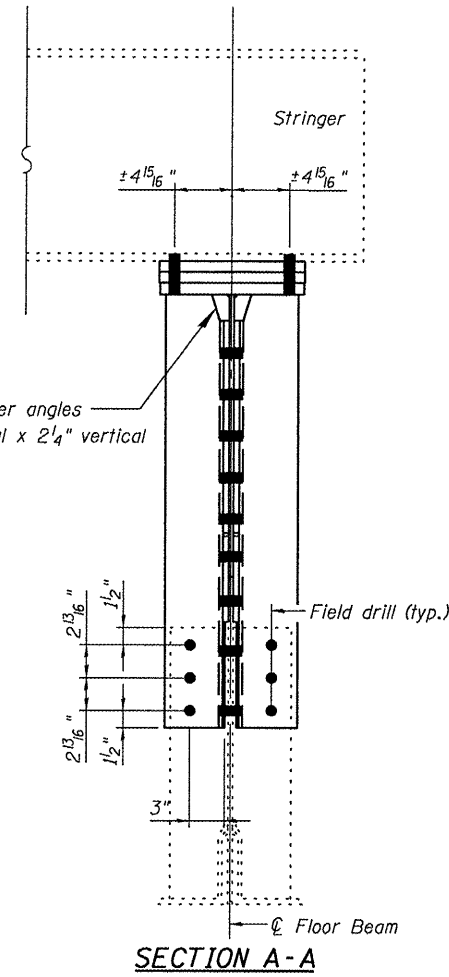
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



HALF ELEVATION
(Looking West)

* Two 1/8 in. adjusting shims shall be provided for each stringer in addition to all other bearing plates and placed as required to maintain the existing elevation of the stringers.

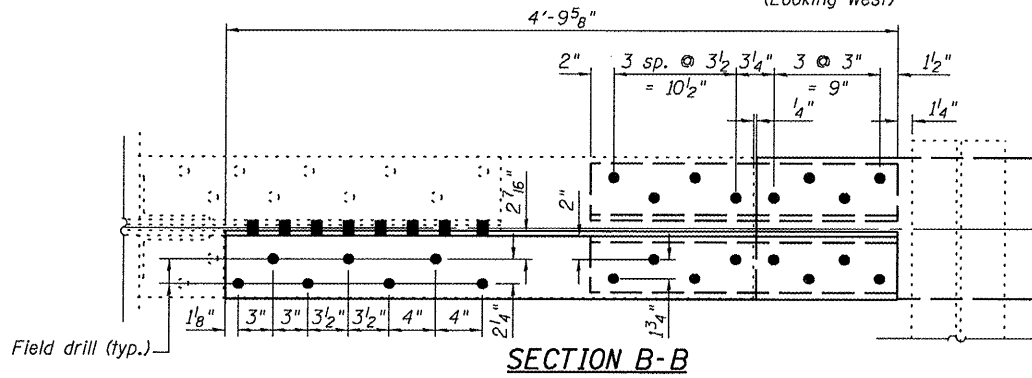


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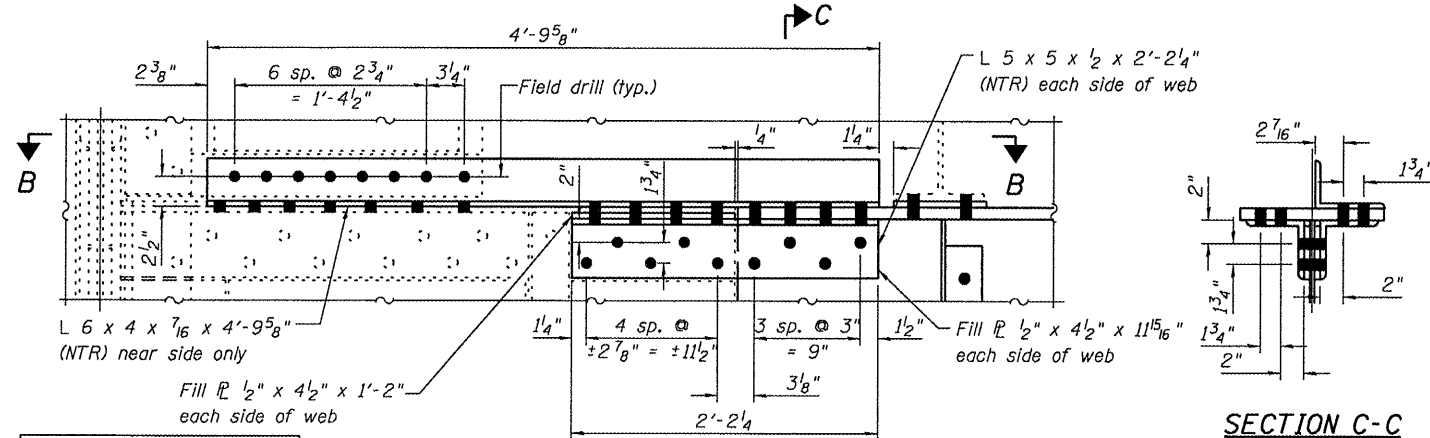
All fasteners shall be 7/8" φ H.S. bolts in 15/16" φ shop drilled holes. Where noted, holes shall be drilled in the field using holes in the existing members as a template. At the contractor's option, holes specified to be field drilled may be sub-drilled in the shop and reamed to the final specified size during assembly.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	Pound	4,660

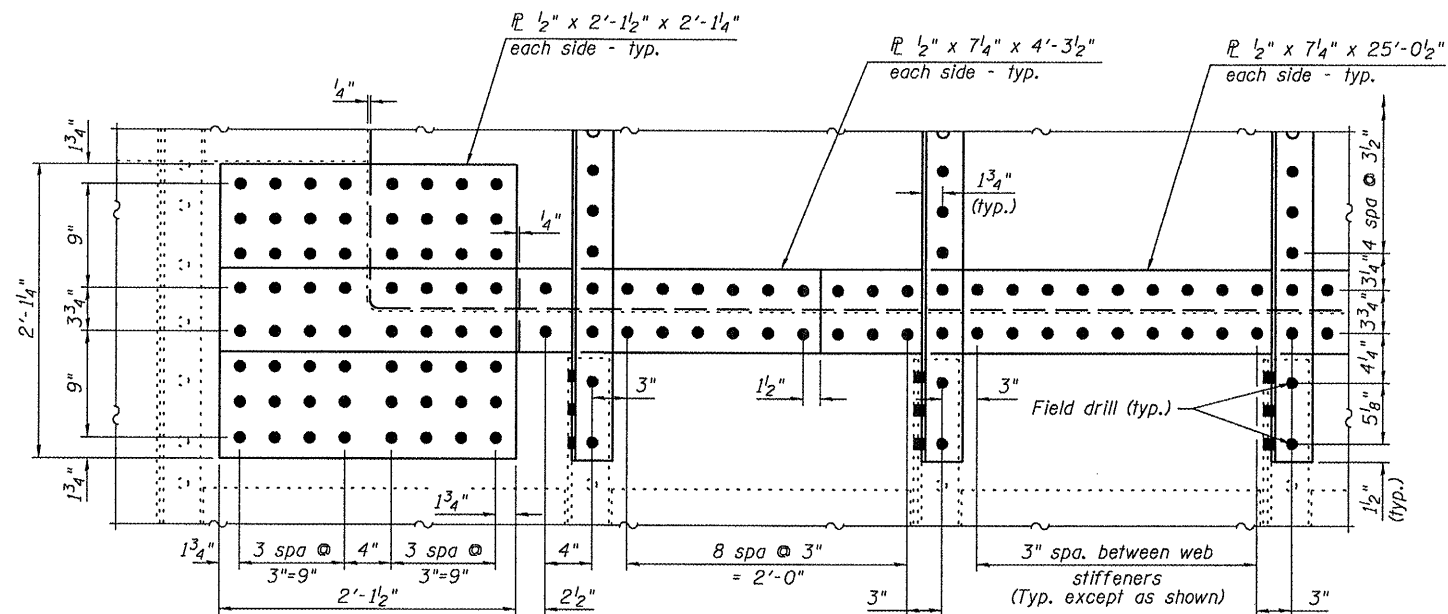


SECTION B-B



DETAIL A

SECTION C-C



DETAIL B

SPAN 8 FBO REPAIR DETAILS
STRUCTURE NO. 090-0030

DESIGNED - SDS
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DRAWN - DLH
CHECKED - SDS

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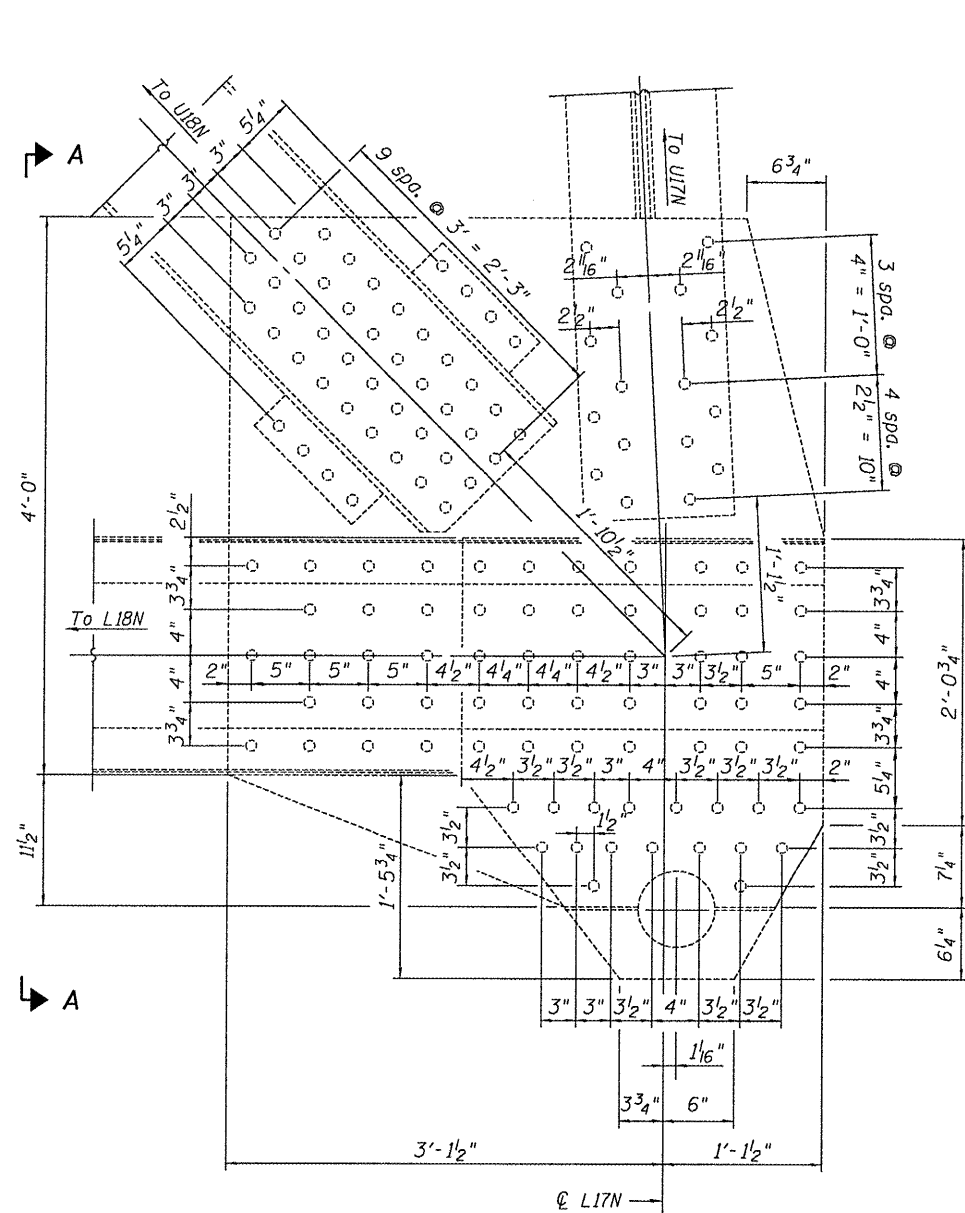
•• PEORIA.

SHEET NO. 4	F.A. RTE. 669	SECTION 103B-1-5	COUNTY **	TOTAL SHEETS 18	SHEET NO. 9
13 SHEETS				CONTRACT NO. 68987	
ILLINOIS FED. AID PROJECT					

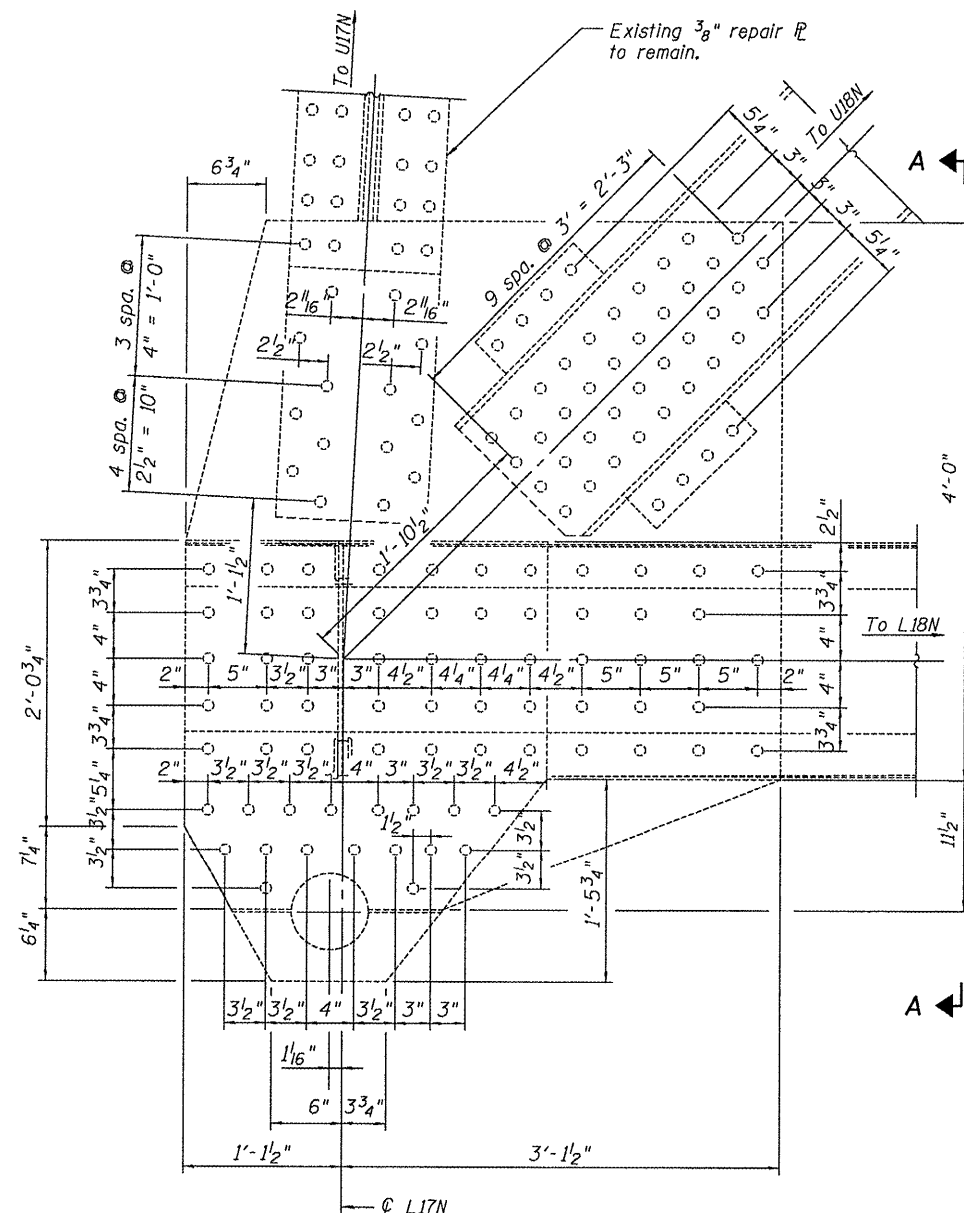
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GUSSET PLATE REPAIR PROCEDURE

1. Disconnect the lateral bracing members at L17N and temporarily support the disconnected members.
2. Remove existing lateral bracing connection plates and angles at L17N. Rivets extending through the inside gusset plate and into the lateral bracing connection angles to be removed, shall be removed and replaced with H.S. bolts one at a time. After removal of the lateral bracing connection angles, the first nut and washer, as shown in Detail "A" on sheet 8 of 13, shall be installed and fully tightened.
3. Cut the ends of the existing lateral bracing members to remain in place as indicated on sheet 6 of 13.
4. Remove the remaining existing gusset plate rivets and replace with H.S. bolts. Existing rivets shall be replaced with H.S. bolts one at a time. As each rivet is replaced with a H.S. bolt, the first washer and nut, as shown in Detail "A" on sheet 8 of 13, shall be installed and fully tightened.
5. Clean and paint the existing gusset plates as detailed on sheet 8 of 13.
6. Field verify the layout of the proposed H.S. bolts and order and install new gusset plates, connection plates and connection angles as indicated on sheet 7 and 8 of 13.
7. Install second washer and nut on double-nut gusset plate bolts and fully tighten.
8. Reconnect lateral bracing members.



ELEVATION - EXISTING
(Looking South at outside gusset)



ELEVATION - EXISTING
(Looking North at inside gusset)
(Lateral bracing not shown for clarity)

Notes:

The existing rivet spacings and gusset plate dimensions are shown for information only. The Contractor shall field verify prior to ordering materials.

Temporary support of the existing lateral bracing members during repair of the existing inside gusset plate is required. Cost included with "Structural Steel Repair".

Work this sheet with sheet 6 thru 8 of 13.

SPAN 12 L17N GUSSET P REPAIR DETAILS
STRUCTURE NO. 090-0030

DESIGNED - SDS
CHECKED - FLL
DRAWN - DLH
CHECKED - SDS

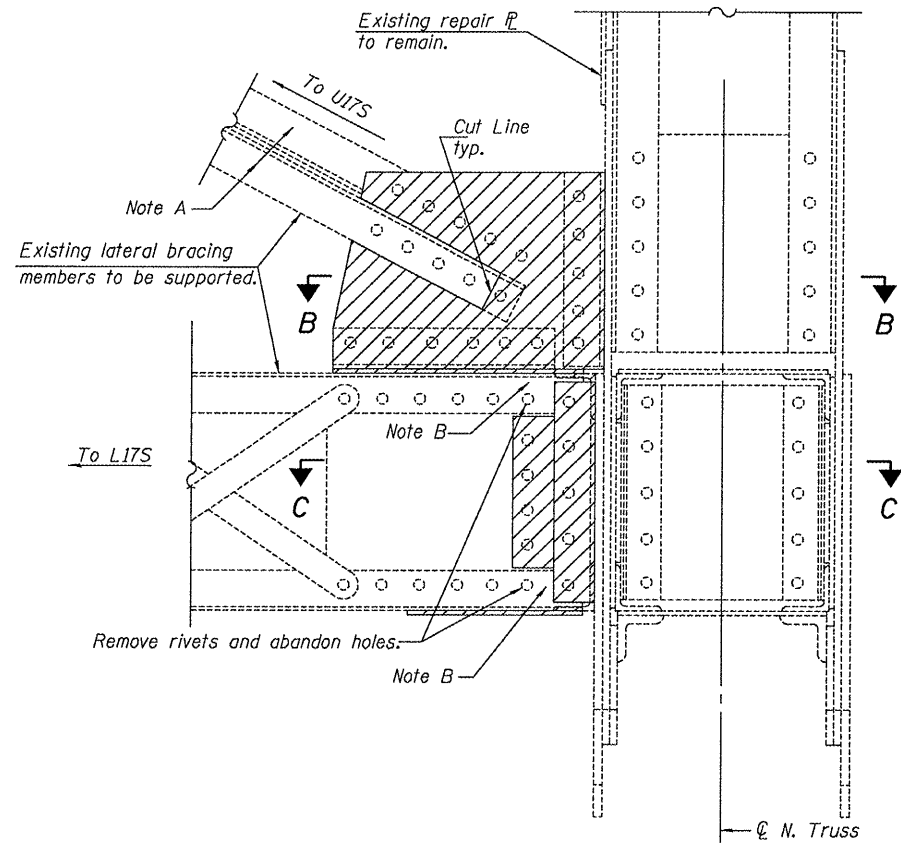
WHKS & CO.
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DESIGN FIRM #184001036

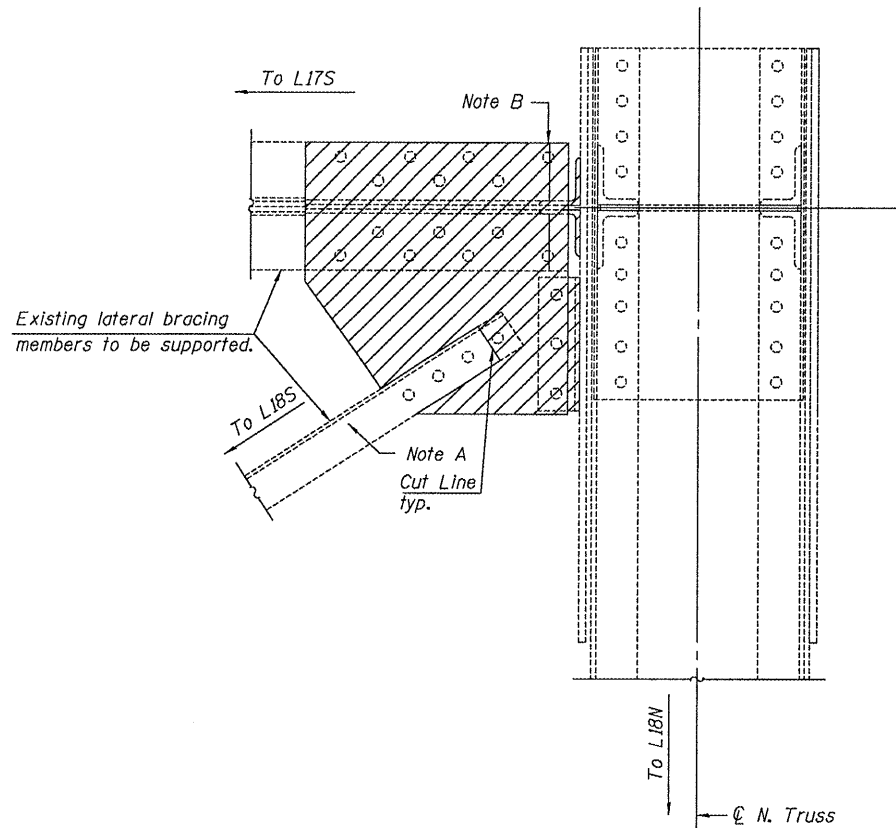
•• PEORIA

SHEET NO. 5 13 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	669	103B-I-5	••	18	10
			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

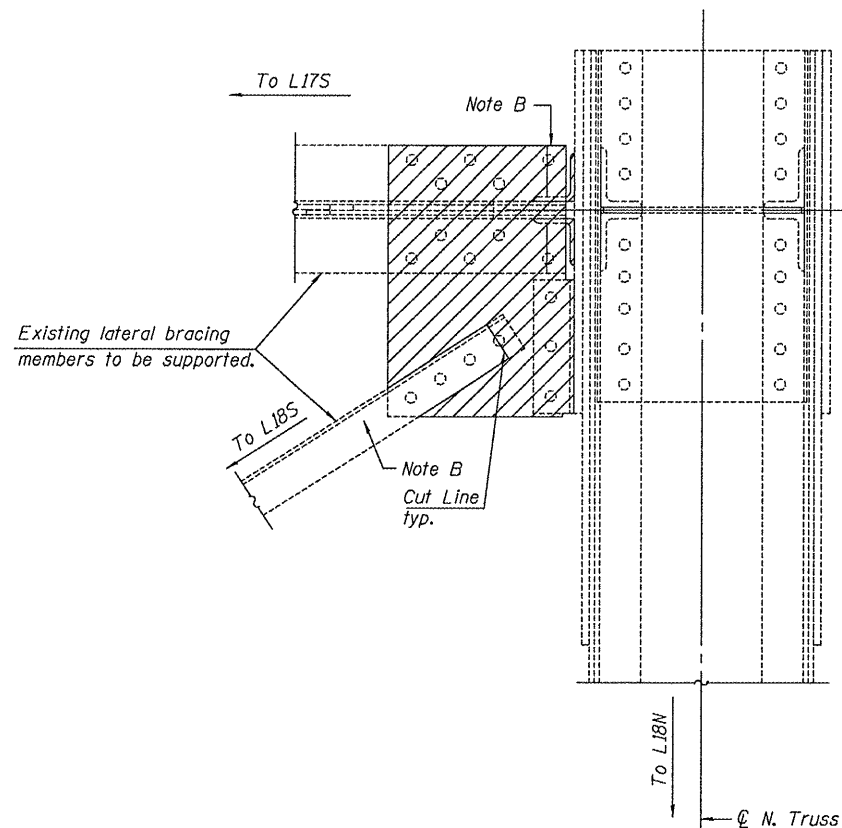
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A



SECTION B-B



SECTION C-C

Notes:

Hatched areas indicate removal of existing Structural Steel. Cost included with "Structural Steel Repair".

Work this sheet with sheet 5, 7 and 8 of 13.

Note A:

Cut and remove 2³/₈" from end of existing lateral bracing member to remain in place after removal of existing connection angles and plates. See Gusset Plate Repair Procedure step 3. Cut ends shall be ground smooth, cleaned and painted. Cost included with "Structural Steel Repair".

Note B:

Cut and remove 1⁵/₈" from end of existing lateral bracing member to remain in place after removal of existing connection angles and plates. See Gusset Plate Repair Procedure step 3. Cut ends shall be ground smooth, cleaned and painted. Cost included with "Structural Steel Repair".

SPAN 12 L17N GUSSET P REPAIR DETAILS
STRUCTURE NO. 090-0030

DESIGNED - SDS
CHECKED - FLL
DRAWN - DLH
CHECKED - SDS

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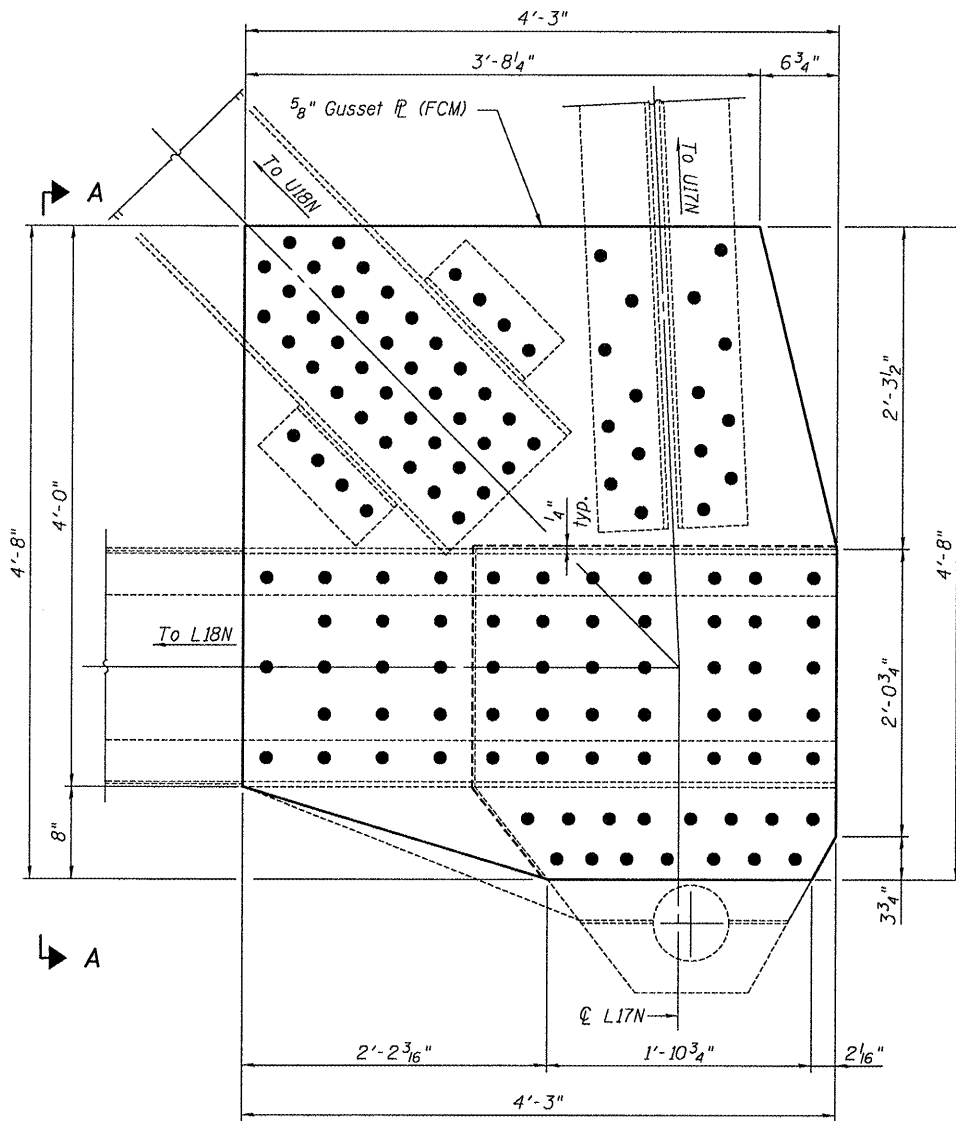
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

•• PEORIA

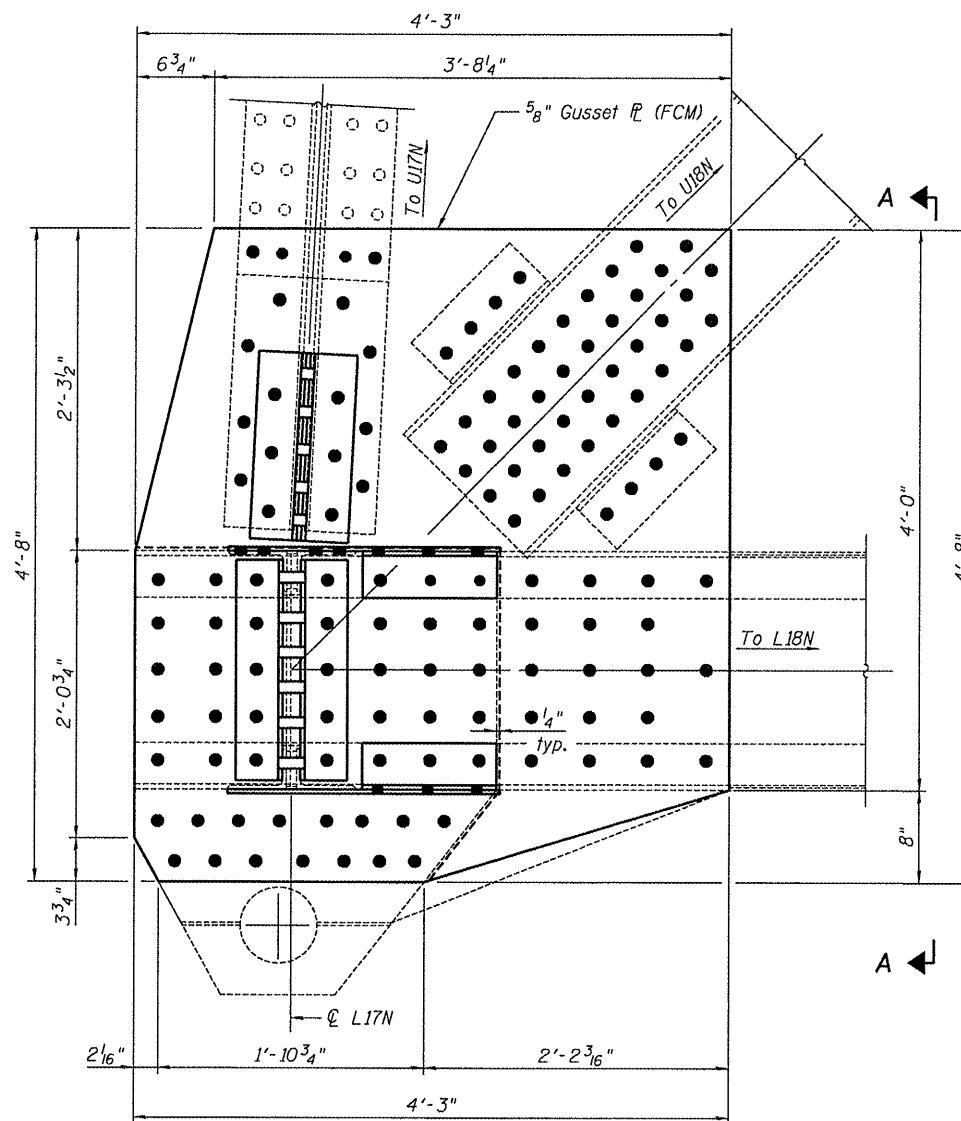
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	669	103B-I-5	**	18	11
			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Operator: gjameson
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ELEVATION - PROPOSED
(Looking South at outside gusset)



ELEVATION - PROPOSED
(Looking North at inside gusset)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	Pound	2,530

Notes:

Dimensions of the proposed gusset plates shall match the existing gusset plates. Contractor shall field verify dimensions prior to ordering materials.

Work this sheet with sheet 8 of 13.

SPAN 12 L17N GUSSET PLATE REPAIR DETAILS
STRUCTURE NO. 090-0030

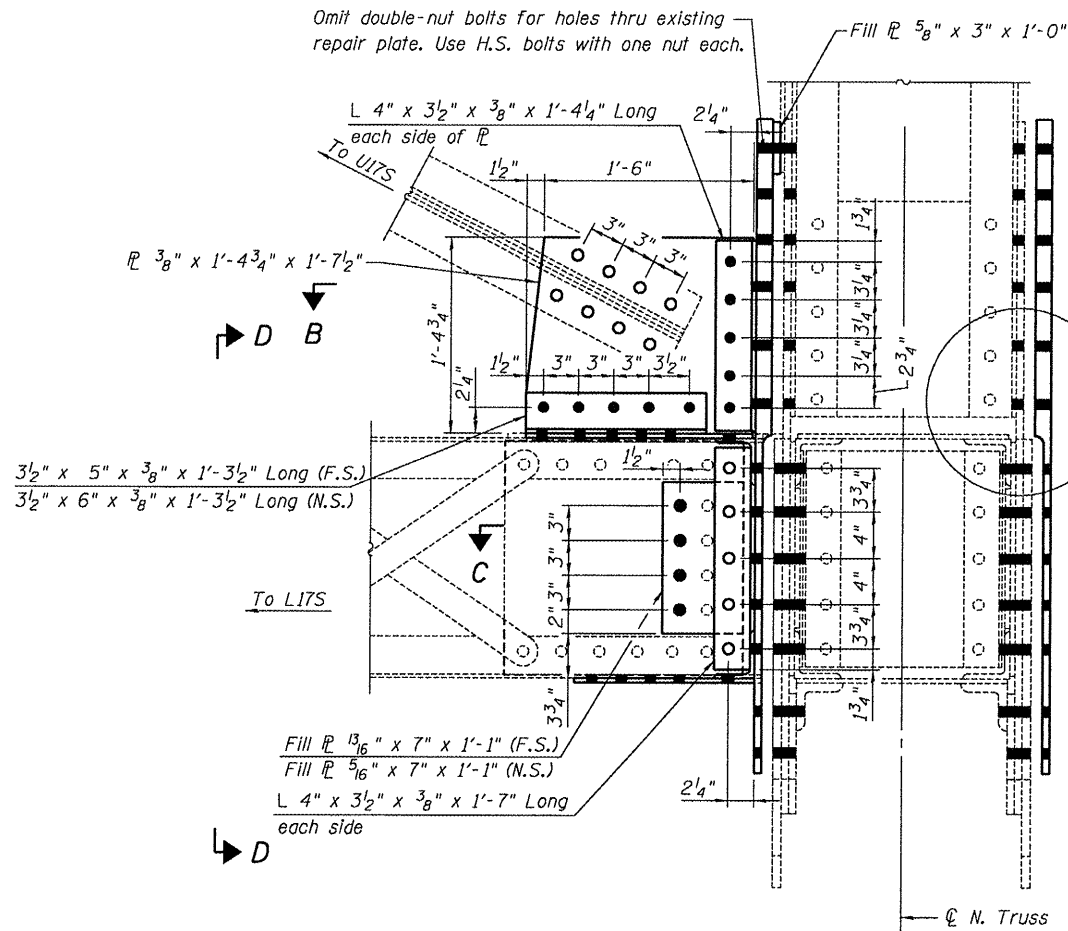
DESIGNED - SDS
CHECKED - FLL
DRAWN - DLH
CHECKED - SDS

WHKS & CO.
ENGINEERING
 7018 KINGSMILL CT.,
 SPRINGFIELD, IL
 (217) 483-9457
 DESIGN FIRM #184001036

•• PEORIA

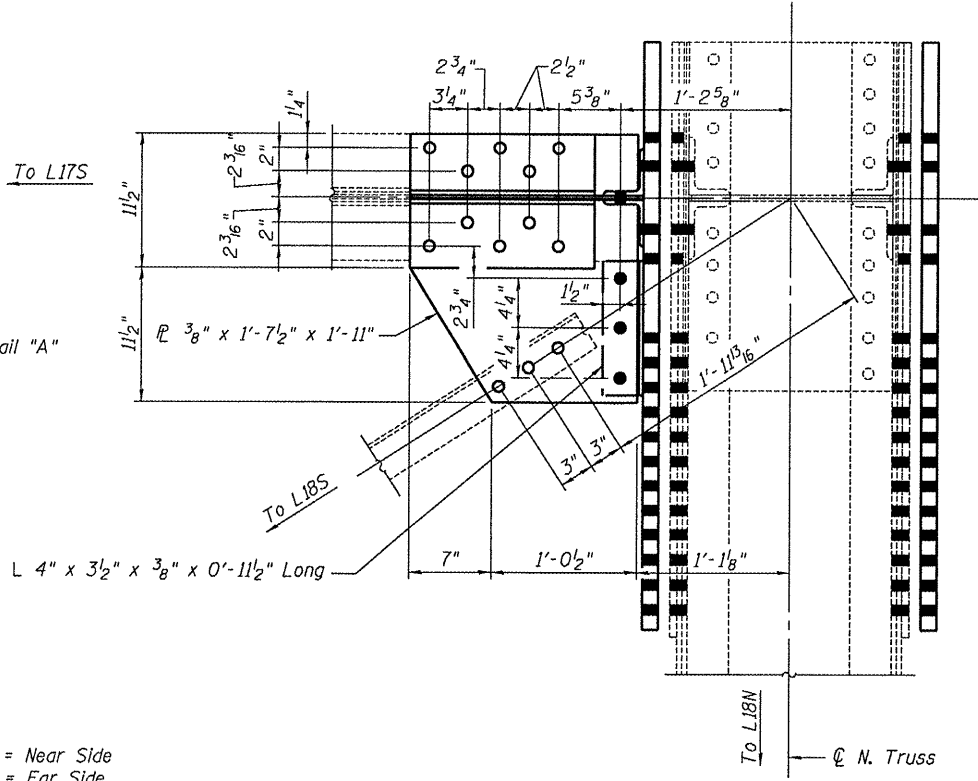
SHEET NO. 7	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
13 SHEETS	669	103B-1-5	••	18	12
			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

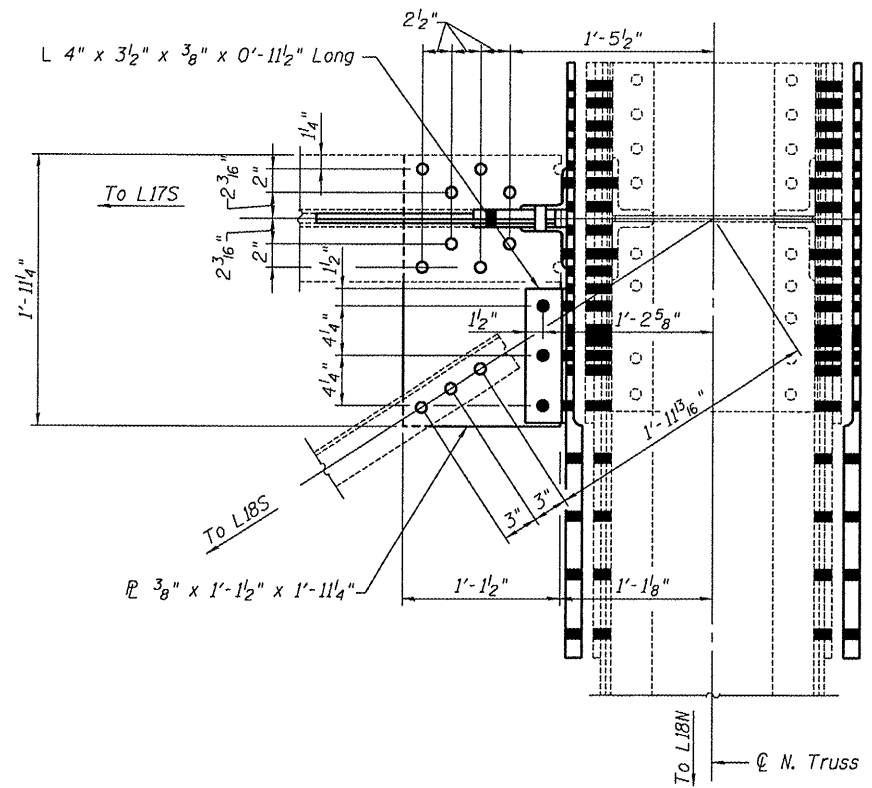


SECTION A-A

N.S. = Near Side
F.S. = Far Side



SECTION B-B



SECTION C-C

- Indicates 15/16" shop drilled holes for 7/8" H.S. bolts. Contractor may elect to field drill holes.
- Indicates 15/16" field drill holes for 7/8" H.S. bolts. Holes shall be field drilled using holes in the existing members as a template.

Notes:

The contractor shall field verify the dimensions of the proposed gusset plates, connection plates, connection angles and the layout of the fastener holes prior to ordering materials. The minimum distance between the centers of any of the holes in any direction shall not be less than 2 5/8".

Existing gusset plate rivets are to be replaced one at a time with High Strength bolts. At no time shall there be more than one empty fastener hole, however removal and replacement of the rivets for the inside and outside gusset plates may be done simultaneously.

Contractor shall field verify the required bolt length and length of thread necessary to install all bolts in accordance with the Standard Specifications and Section 8.2.1 of the 2004 RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

For tightening of the double-nut H.S. bolts for the gusset plate repair, as shown in Detail "A", using Turn-Of-The-Nut Method in accordance with Section 505.04(f)(2)d of the Standard Specifications and Section 8.2.1 of the 2004 RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts", the bolt length used to determine the amount of nut rotation from the snug-tight condition shall be taken as the following. For tightening of the first nut, the length shall be from the underside of the head to the far side of the first nut. For tightening of the second nut, the length shall be from the inside face of the proposed gusset plate to the far side of the second nut.

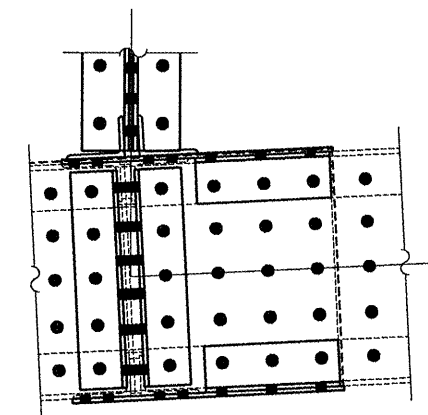
Twist-off type fastener systems will not be permitted for the double-nut H.S. bolts for the gusset plate repair as shown in Detail "A".

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". The exterior surfaces of the existing gusset plates shall be cleaned per Power Tool Cleaning - Modified SSPC-SP3. The designated areas cleaned per Power Tool Cleaning - Modified SSPC-SP3 shall be painted according to the requirements of Paint System 2 - PS/EM/U. The color of the final finish coat shall be Gray, Munsell No 5B 7/1.

The Organic Zinc Rich Primer/Epoxy/Urethane paint system shall be used for painting of new structural steel except where otherwise noted. For gusset plate surfaces inaccessible after erection, the entire system shall be shop applied. The color of the final finish coat for all surfaces shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

The Contractor shall take care to avoid exposing the threads, nuts and washers of the double-nut H.S. bolts for the gusset plate repair, as shown in Detail "A", to paint, dirt, moisture or other foreign material that may alter their as-received condition. Fastener components that accumulate rust, dirt or debris shall not be incorporated in the work unless they are requalified as specified in Section 7 of the 2004 RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

Work this sheet with sheets 5 thru 7 of 13.



SECTION D-D

SPAN 12 L17N GUSSET P REPAIR DETAILS
STRUCTURE NO. 090-0030

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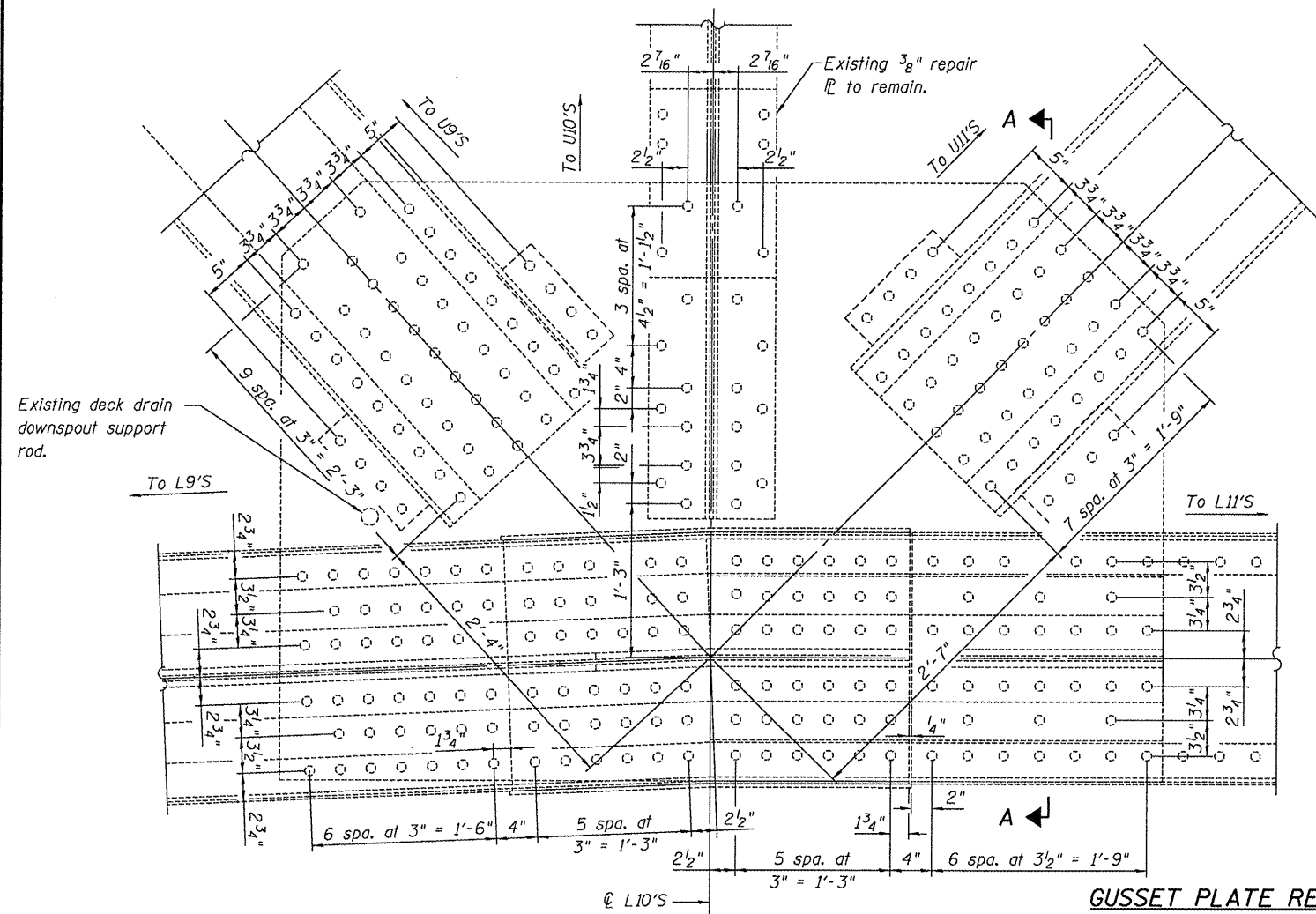
DESIGNED - SDS
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DRAWN - DLH
CHECKED - SDS

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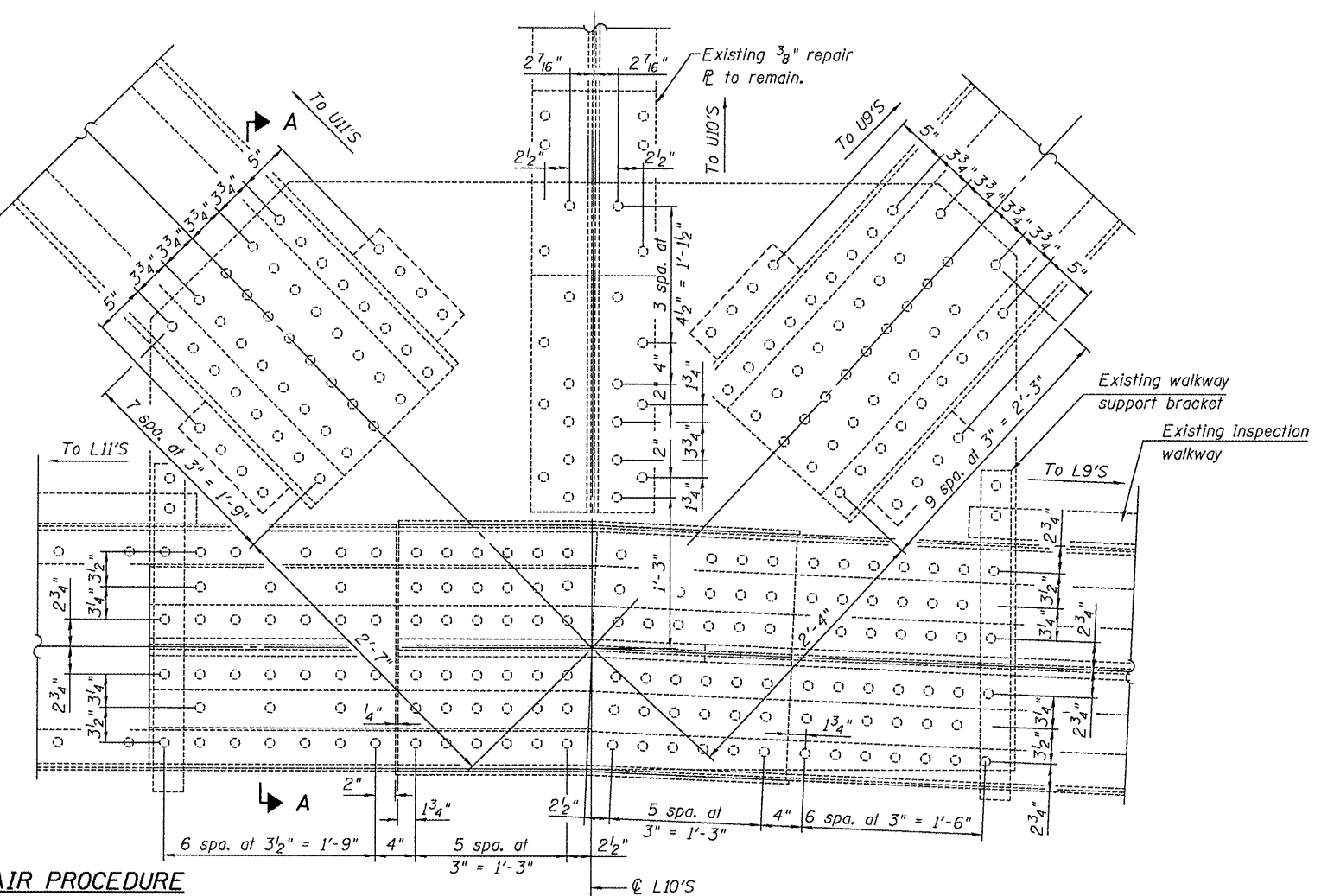
SHEET NO. 8	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	669	103B-I-5	**	18	13
13 SHEETS			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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 Date: 6/10/2010 2:36:45 PM
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ELEVATION - EXISTING
(Looking North at outside gusset)



ELEVATION - EXISTING
(Looking South at inside gusset)
(Lateral Bracing not shown for clarity)

GUSSET PLATE REPAIR PROCEDURE

1. Remove diagonal member extending from L10'S to U10'N as indicated in Section A-A on sheet 10 of 13 and replace with new full-length angles as indicated on sheet 11 of 13.
2. Temporarily support diagonal brace extending from L10'S to center gusset plate as indicated in Section A-A on sheet 10 of 13. Contractor has the option of removing diagonal brace and reinstalling after gusset plate repair is complete.
3. Install Temporary Lateral Bracing System as indicated on sheet 11 of 13.
4. Remove existing lateral bracing connection plates and angles at L10'S. Rivets extending through the inside gusset plate and into the lateral bracing connection angles to be removed, as indicated on sheet 10 of 13, shall be removed and replaced with a H.S. Bolt one at a time. After removal of the lateral bracing connection angles, the first nut and washer, as shown in Detail "A" on sheet 13 of 13 shall be installed and fully tightened.
5. Cut the ends of the existing lateral bracing members to remain in place as indicated on sheet 10 of 13.
6. Remove existing walkway support brackets and deck drain downspout support rod connected to existing gusset plates.
7. Remove existing gusset plate rivets and replace with H.S. bolts. Existing rivets shall be replaced with H.S. bolts one at a time. As each rivet is replaced with a H.S. bolt, the first washer and nut, as shown in Detail A on sheet 13 of 13, shall be installed and fully tighten.
8. Clean and paint the existing gusset plates as detailed on sheet 13 of 13.
9. Field verify the layout of the proposed H.S. bolts and order and install new gusset plates, connection plates and connection angles as indicated on sheet 12 and 13 of 13.
10. Install second washer and nut on double-nut gusset plate bolts and fully tighten.
11. Reconnect lateral bracing members, reinstall existing walkways, support brackets and downspout support rod.
12. Remove Temporary Lateral Bracing System.

Notes:
 The existing rivet spacings and gusset plate dimensions are shown for information only. The Contractor shall field verify prior to ordering materials.
 Temporary support of the existing lateral bracing members during repair of existing inside gusset plate is required. Cost included with "Temporary Support System".
 Work this sheet with sheet 10 thru 13 of 13.

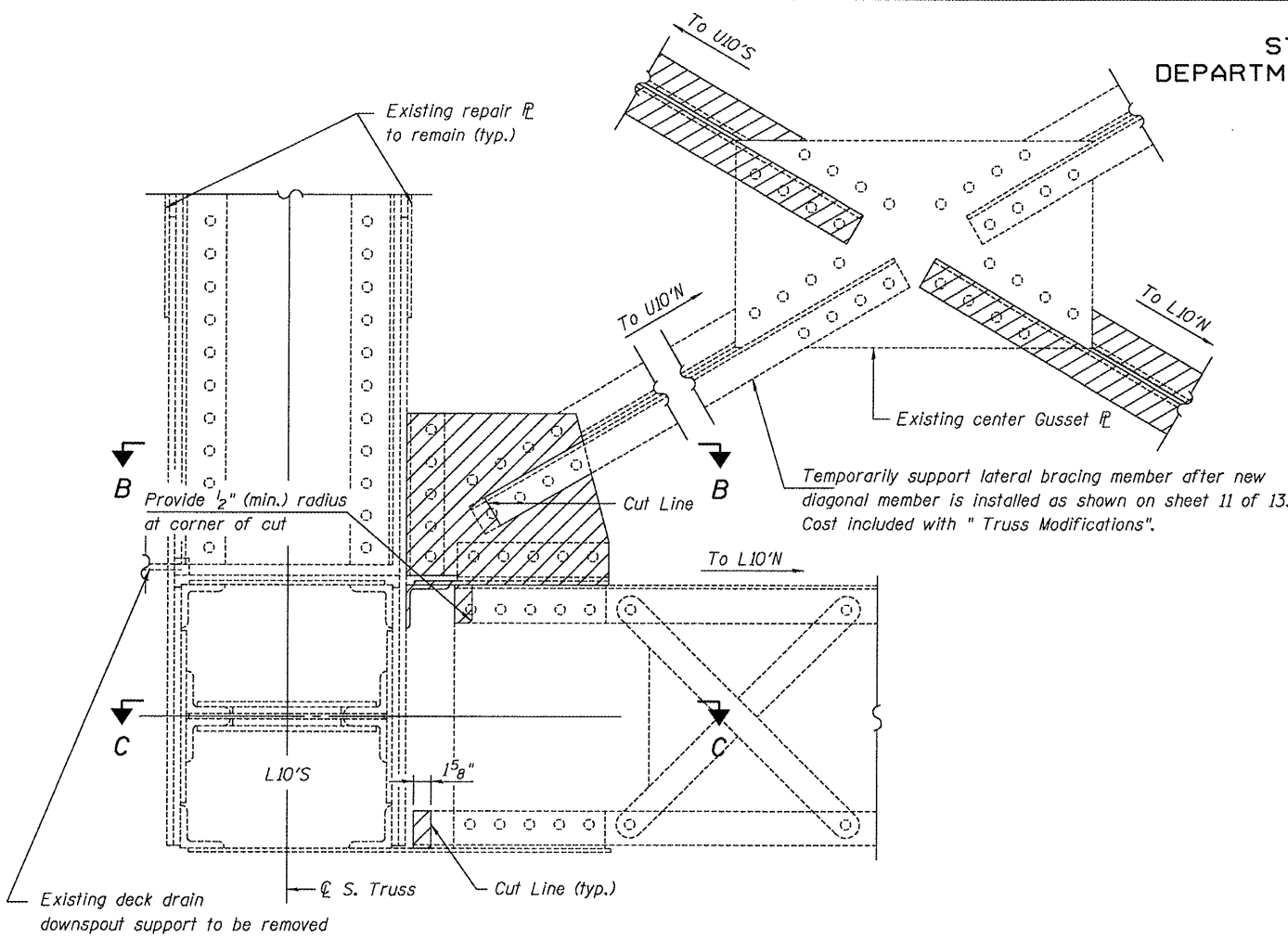
SPAN 15 L10'S GUSSET P. REPAIR DETAILS
STRUCTURE NO. 090-0030

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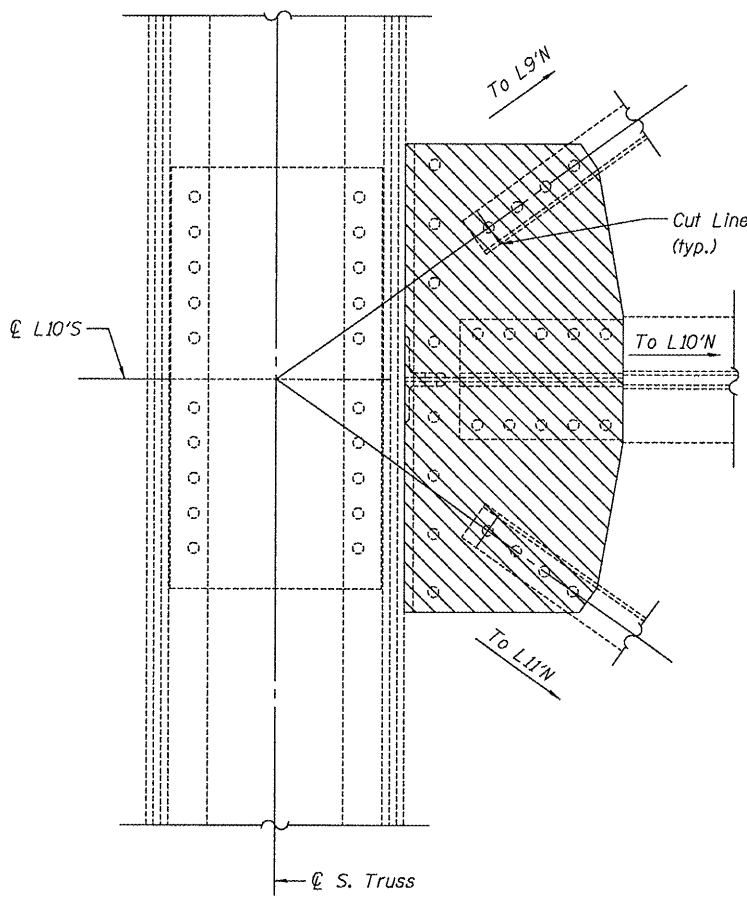
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DESIGN FIRM #184001036

•• PEORIA		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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13 SHEETS		CONTRACT NO. 68987			ILLINOIS FED. AID PROJECT	

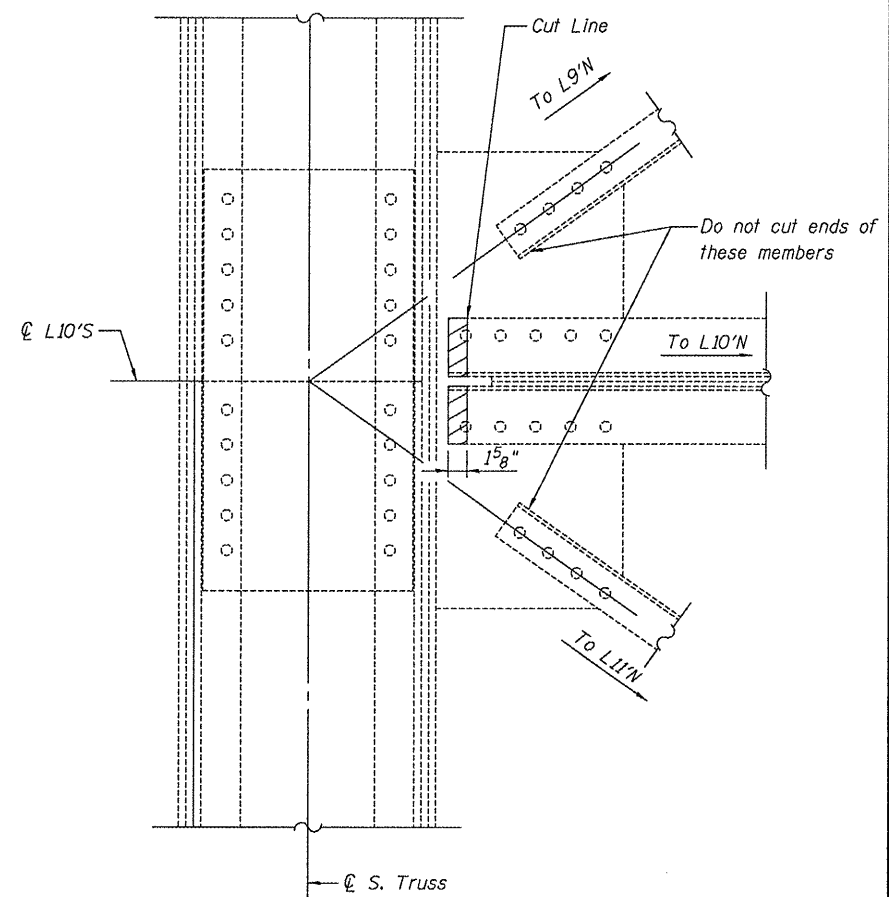
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SECTION A-A



SECTION B-B



SECTION C-C

Notes:

Cut and remove 1 5/8" from end of existing lateral bracing member to remain in place after removal of existing connection angles and plates except as shown. Cut ends shall be ground smooth, cleaned and painted.

Hatched areas indicate removal of existing structural steel. Cost included with "Truss Modifications".

Work this sheet with sheet 9 and 11 thru 13 of 13.

**SPAN 15 L10'S GUSSET P REPAIR DETAILS
STRUCTURE NO. 090-0030**

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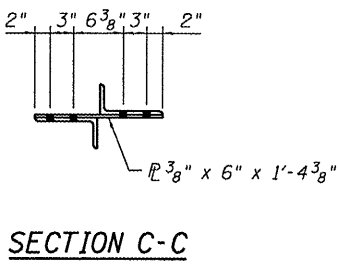
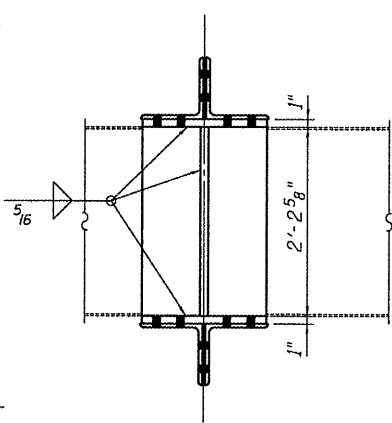
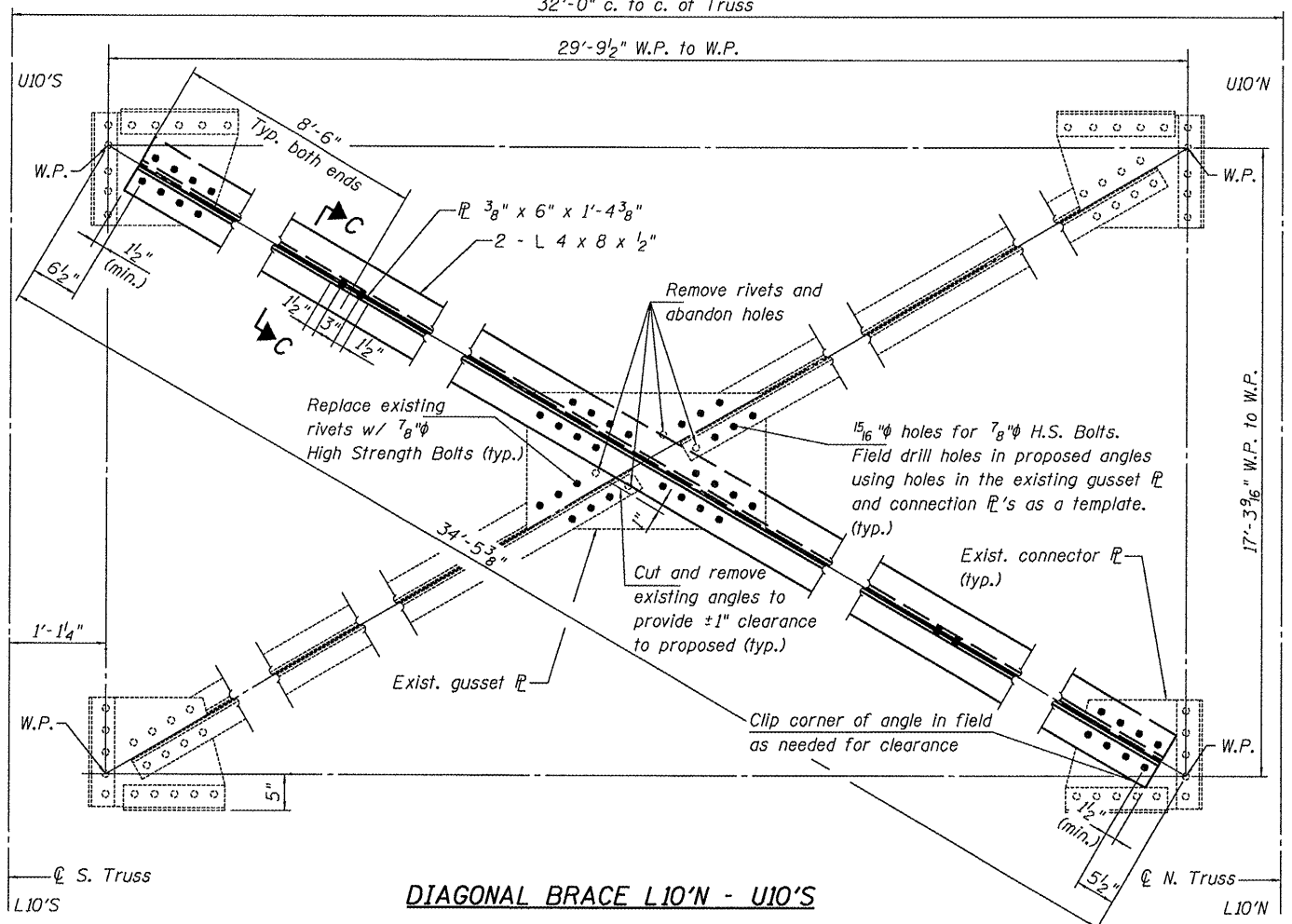
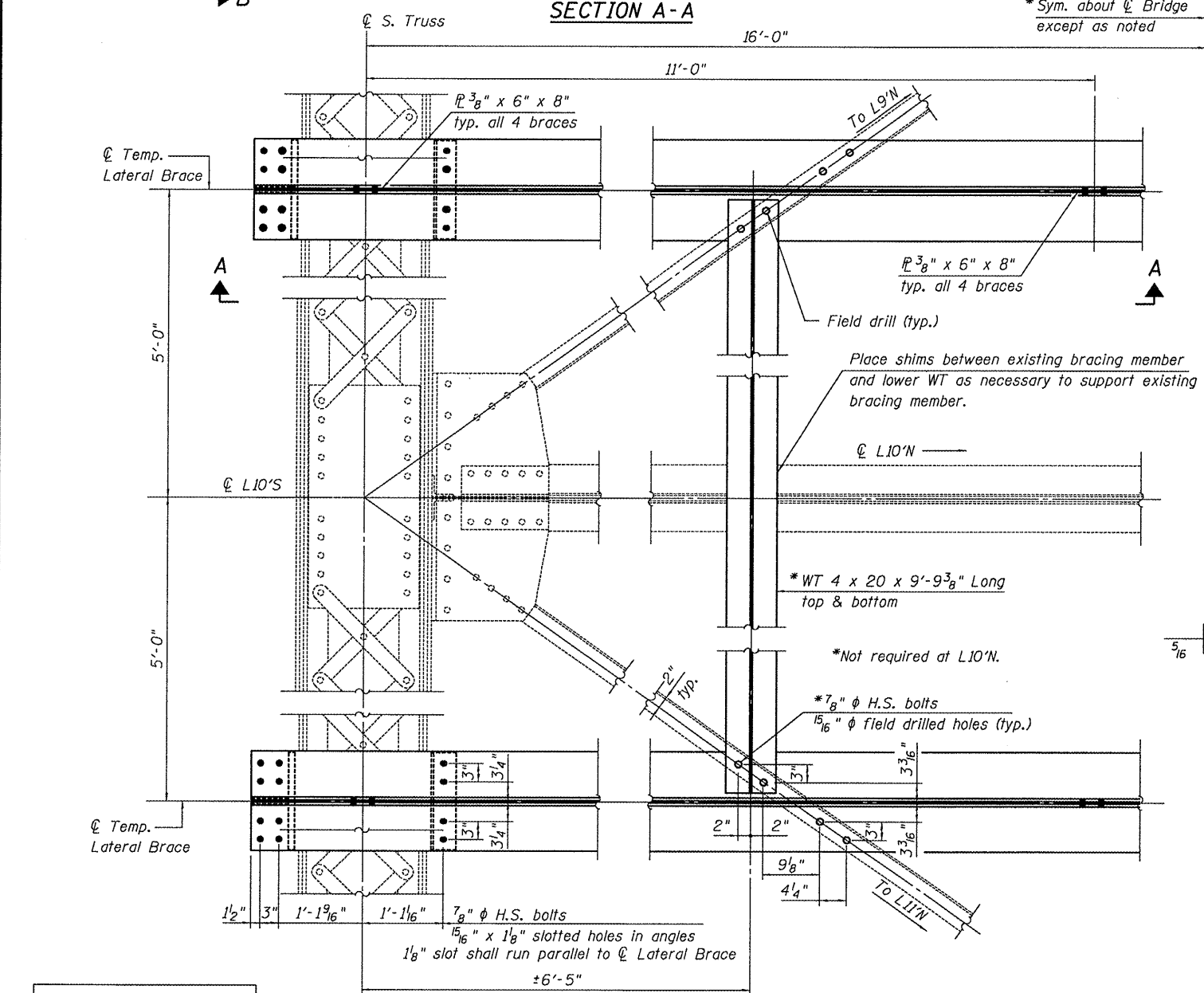
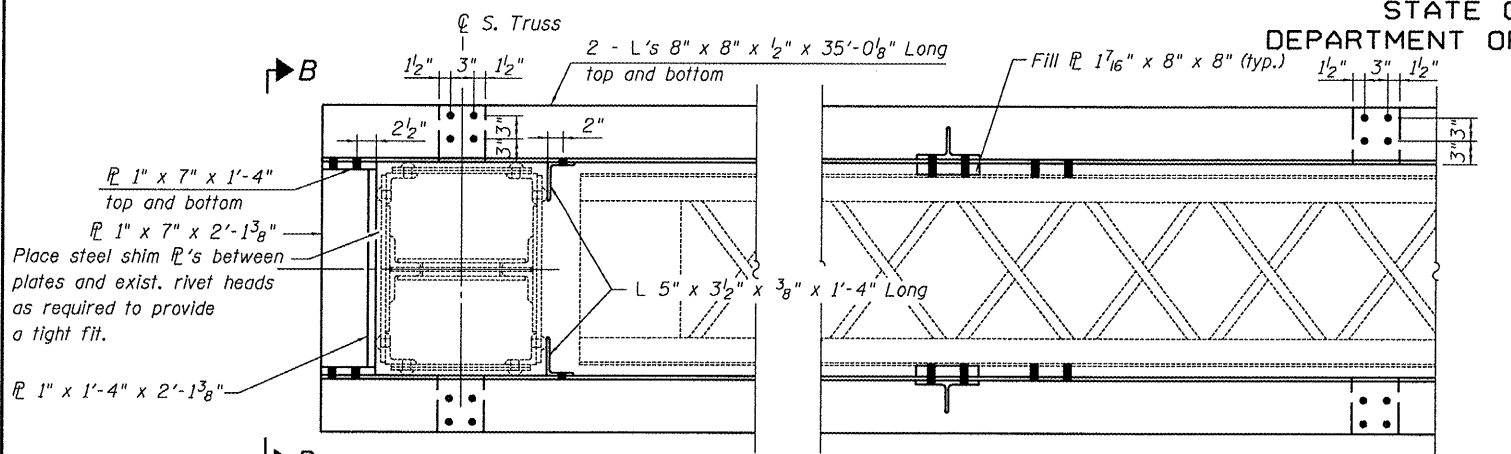
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ILLINOIS FED. AID PROJECT					

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Notes:

Installation and removal of the Temporary Lateral Braces and the removal and replacement of the Diagonal Brace L10'N-U10'S shall be paid for as "Truss Modifications". See Special Provisions.

Holes in the Temporary Lateral Braces and the existing diagonal braces between panel point L10'S and L9'N and between panel point L10'S and L11'N shall be field drilled. The holes in the existing diagonal braces shall be filled with H.S. bolts after removal of the Temporary Lateral Braces.

Existing structural steel shall only be cleaned and painted as required by the Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel for the Diagonal Brace. The color of the final finish coat for surfaces shall be gray, Munsell No 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

The structural steel for the Temporary Lateral Brace need not be painted. Any areas of paint on the existing structure damaged by the installation or removal of the Temporary Lateral Brace shall be cleaned and painted according to the Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures". The surface shall be prepared as required for secondary connections.

Estimated weight of structural steel required for "Truss Modifications" = 9,990 lb.

SPAN 15 L10'S TRUSS MODIFICATIONS
STRUCTURE NO. 090-0030

DESIGNED - SDS
CHECKED - FLL
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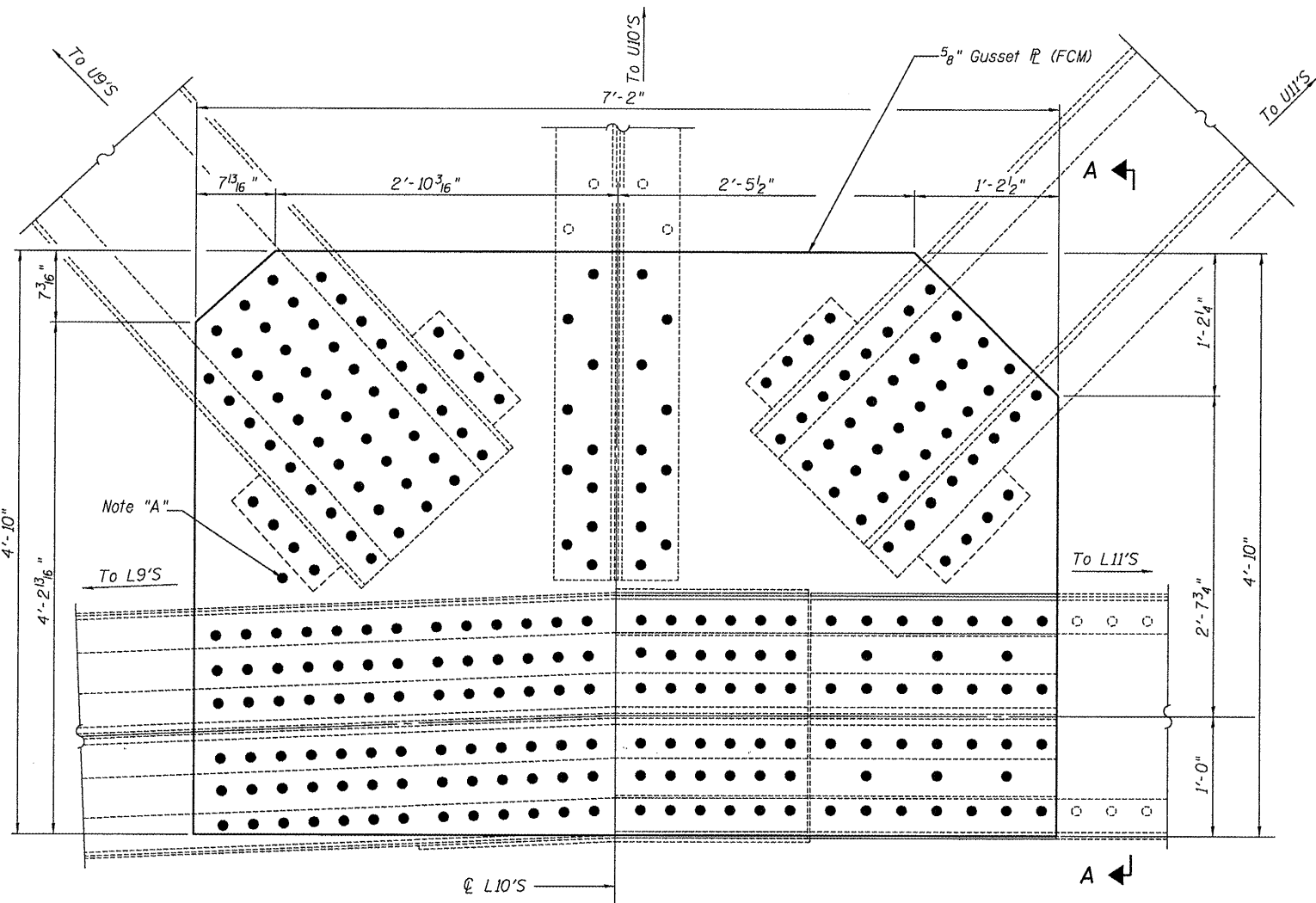
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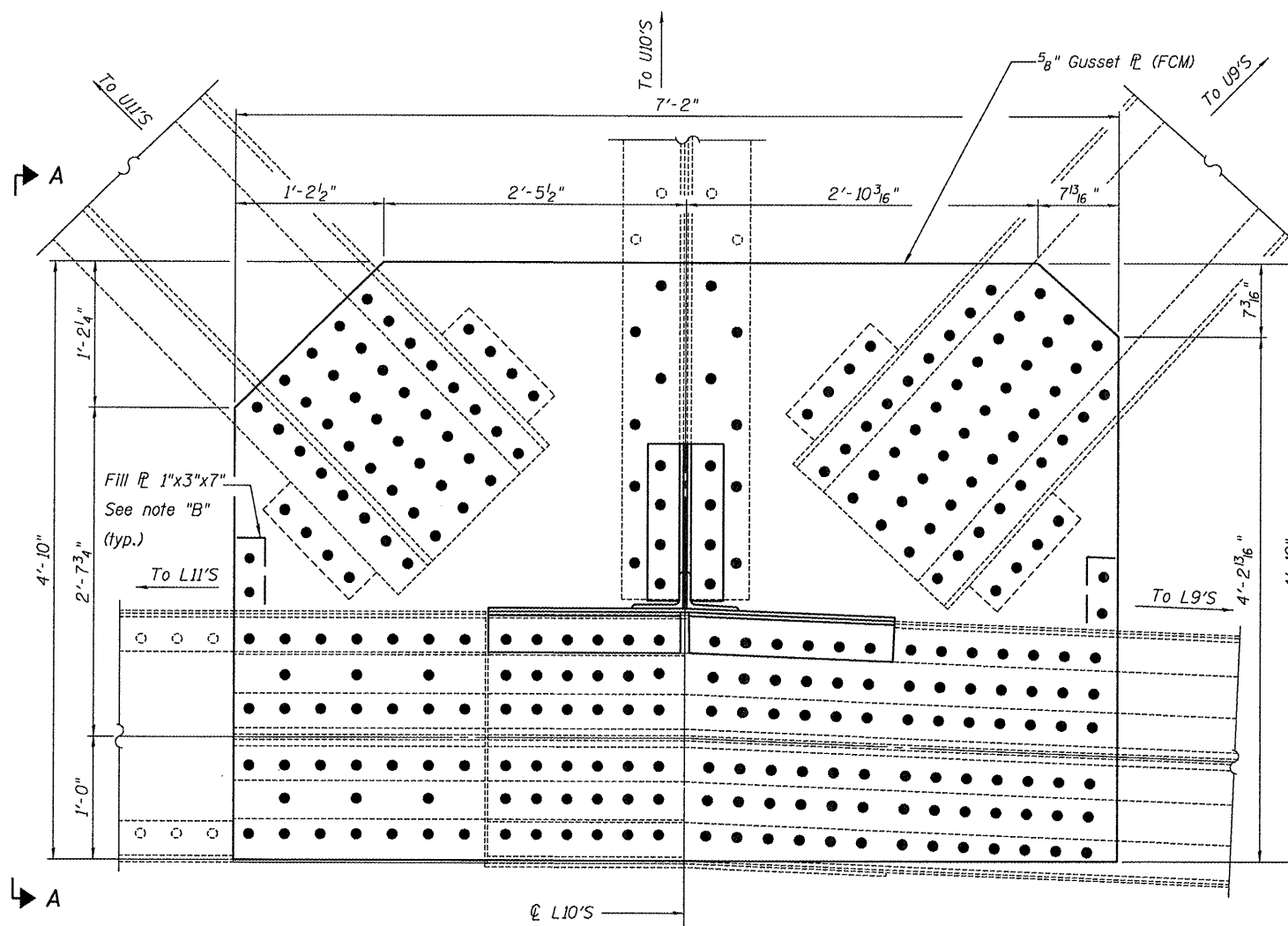
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SHEET NO. 11	F.A. RTE. 669	SECTION 103B-I-5	COUNTY **	TOTAL SHEETS 18	SHEET NO. 16
13 SHEETS			CONTRACT NO. 68987		
ILLINOIS FED. AID PROJECT					

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ELEVATION - PROPOSED
(Looking North at outside gusset)



ELEVATION - PROPOSED
(Looking South at inside gusset)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	Pound	2,860

Notes:

Dimensions of the proposed gusset plates shall match the existing gusset plates. Contractor shall field verify dimensions prior to ordering materials.

Work this sheet with sheets 9 thru 11 of 13.

Note A:

Field drill 2" ϕ hole in proposed gusset plate for deck drain downspout support rod. Extend support rod through holes in proposed and existing gusset plates and install new nut on threaded rod on the inside face of the existing gusset plate.

Note B:

Field drill 1 5/16" ϕ holes for the existing walkway supports in the proposed gusset plate to match holes in the existing gusset plate. Place fill plate between new and proposed gusset plates prior to reattaching the existing walkway supports.

SPAN 15 L10'S GUSSET P REPAIR DETAILS
STRUCTURE NO. 090-0030

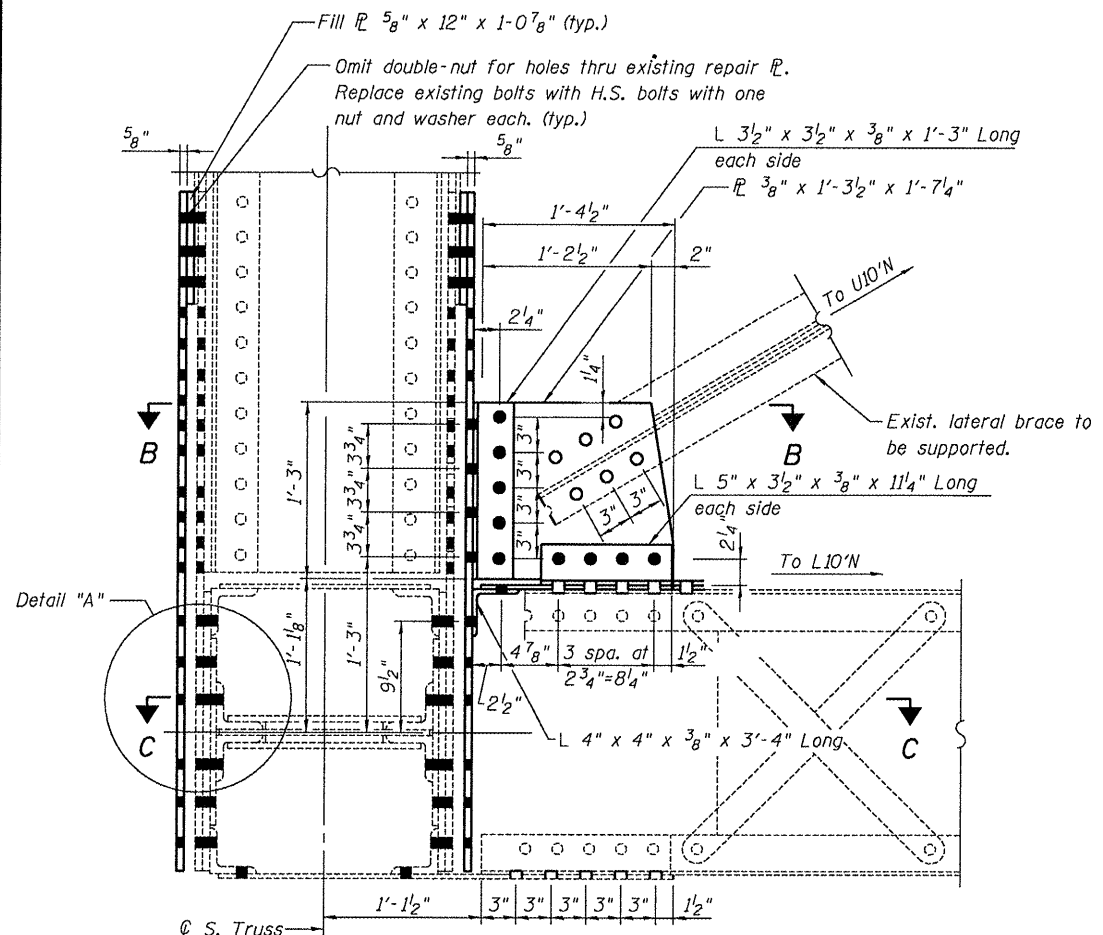
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SHEET NO. 12	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
13 SHEETS	669	103B-I-5	••	18	17
				CONTRACT NO. 68987	
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SECTION A-A

Notes:

The contractor shall field verify the dimensions of the proposed gusset plates, connection plates, connection angles and the layout of the fastener holes prior to ordering materials. The minimum distance between the centers of any of the holes in any direction shall not be less than $2\frac{5}{8}$ ". 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 holes in the proposed gusset plates less than the minimum specified.

Existing gusset plate rivets are to be replaced one at a time with High Strength bolts. At no time shall there be more than one empty fastener hole, however removal and replacement of the rivets for the inside and outside gusset plates may be done simultaneously.

Contractor shall field verify the required bolt length and length of thread necessary to install all bolts in accordance with the Standard Specifications and Section 8.2.1 of the 2004 RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

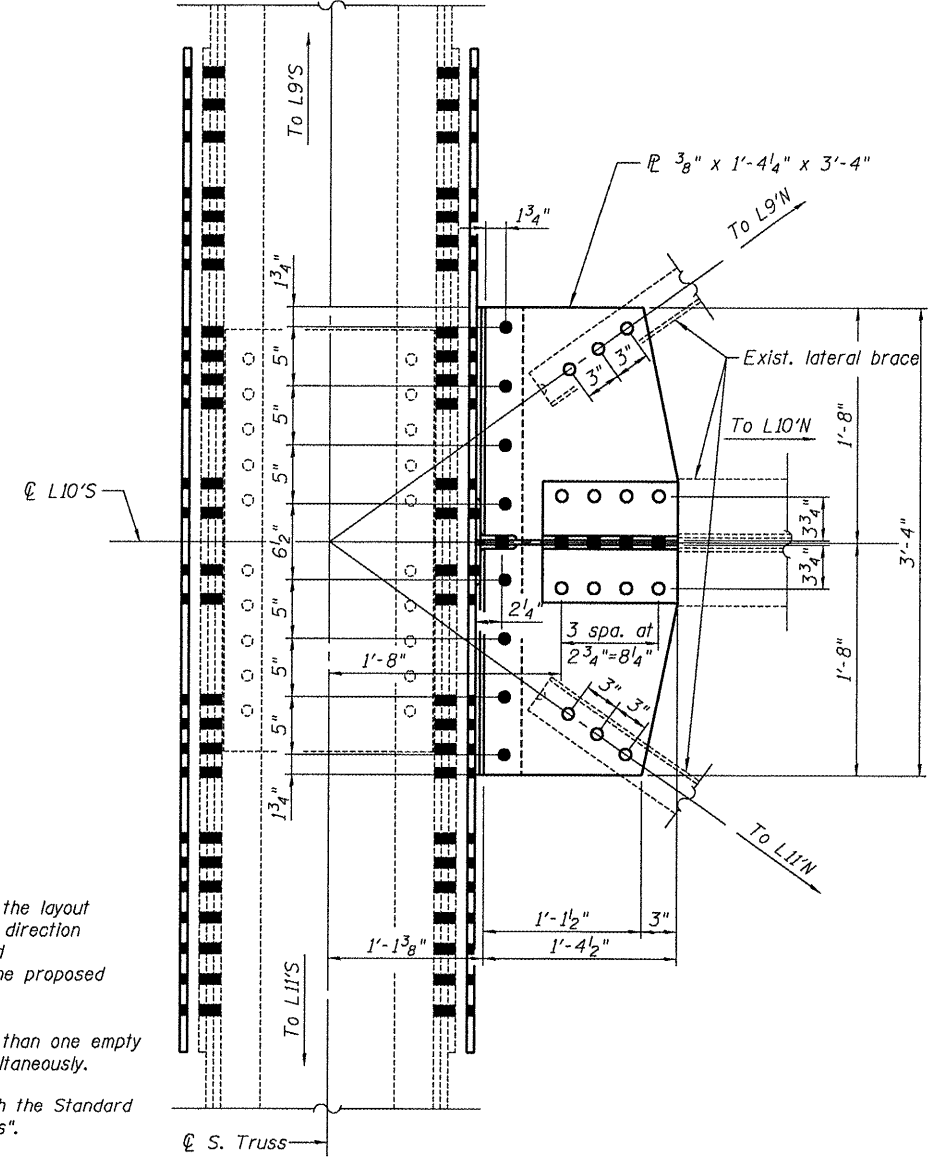
For tightening of the double-nut H.S. bolts for the gusset plate repair, as shown in Detail "A", using Turn-Of-The-Nut Method in accordance with Section 505.04(f)(2)d of the Standard Specifications and Section 8.2.1 of the 2004 RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts", the bolt length used to determine the amount of nut rotation from the snug-tight condition shall be taken as the following. For tightening of the first nut, the length shall be from the underside of the head to the far side of the first nut. For tightening of the second nut, the length shall be from the inside face of the proposed gusset plate to the far side of the second nut.

Twist-off type fastener systems will not be permitted for the double-nut H.S. bolts for the gusset plate repair as shown in Detail "A".

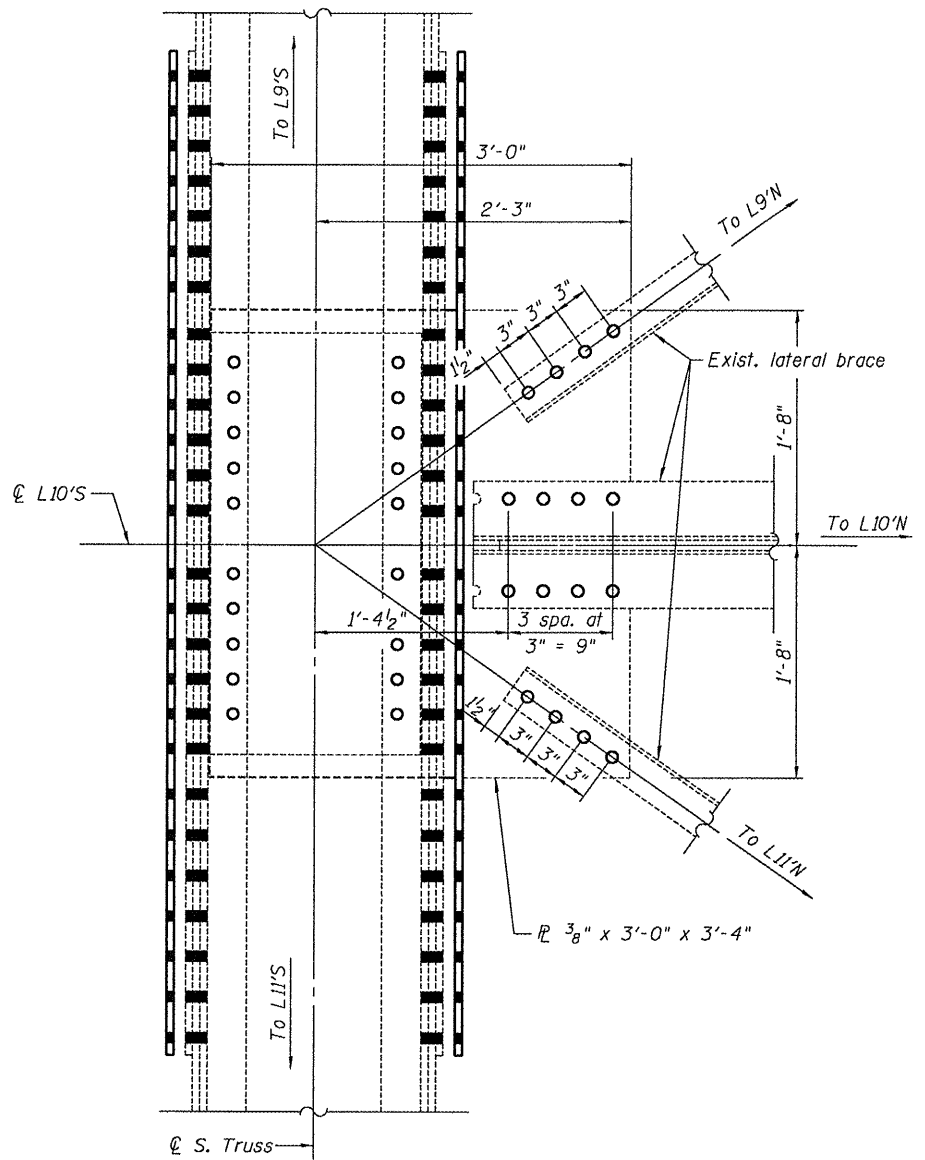
Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". The exterior surfaces of the existing gusset plates shall be cleaned per Power Tool Cleaning - Modified SSPC-SP3. The designated areas cleaned per Power Tool Cleaning - Modified SSPC-SP3 shall be painted according to the requirements of Paint System 2 - PS/EM/U. The color of the final finish coat shall be Gray, Munsell No 5B 7/1.

The Organic Zinc Rich Primer/Epoxy/Urethane paint system shall be used for painting of new structural steel except where otherwise noted. For gusset plate surfaces inaccessible after erection, the entire system shall be shop applied. The color of the final finish coat for all surfaces shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

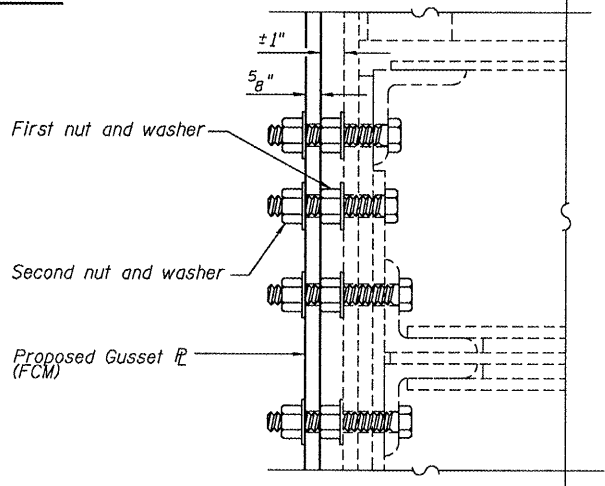
The Contractor shall take care to avoid exposing the threads, nuts and washers of the double-nut H.S. bolts for the gusset plate repair, as shown in Detail "A", to paint, dirt, moisture or other foreign material that may alter their as-received condition. Fastener components that accumulate rust, dirt or debris shall not be incorporated in the work unless they are requalified as specified in Section 7 of the 2004 RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".



SECTION B-B



SECTION C-C



DETAIL "A"

(Outside gusset P shown, Inside gusset P similar)

- Indicates $\frac{15}{16}$ " ϕ shop drilled holes for $\frac{7}{8}$ " ϕ H.S. bolts. Contractor may elect to field drill holes.
 - Indicates $\frac{15}{16}$ " ϕ field drill holes for $\frac{7}{8}$ " ϕ H.S. bolts. Holes shall be field drilled using holes in the existing members as a template.
- Work this sheet with sheets 9 thru 12 of 13.

SPAN 15 L10'S GUSSET P REPAIR DETAILS
STRUCTURE NO. 090-0030

•• PEORIA

DESIGNED	- SDS
CHECKED	- FLL
DRAWN	- DLH
CHECKED	- SDS

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SHEET NO. 13 13 SHEETS	F.A. RTE. 669	SECTION 103B-I-5	COUNTY ••	TOTAL SHEETS 18	SHEET NO. 18
	CONTRACT NO. 68987				
ILLINOIS FED. AID PROJECT					