

11-04-2016 LETTING ITEM 037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* 29 + 1 = 30 TOTAL SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR(BR)	WILL	29	1
		ILLINOIS	CONTRACT NO. 62B79	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

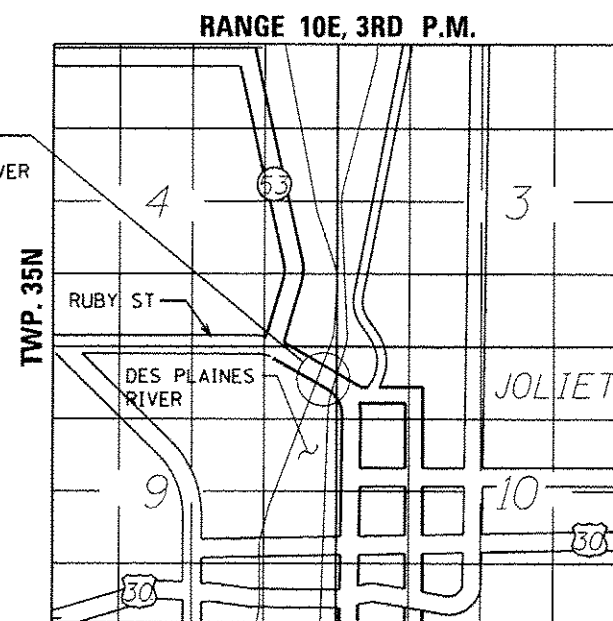
THIS IMPROVEMENT IS LOCATED
IN THE CITY OF JOLIET

**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 112: IL 53 (RUBY STREET)
OVER DES PLAINES RIVER
SECTION M-BDR(BR)
BRIDGE REPAIR
WILL COUNTY

C-91-138-16

LOCATION
IL53 (RUBY STREET)
OVER DES PLAINES RIVER
S.N. 099-9901



JOLIET TOWNSHIP

LOCATION MAP
NOT TO SCALE

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

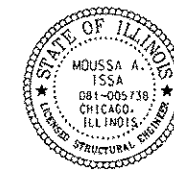
PROJECT MANAGER: ISSAM RAYYAN, P.E. (847) 705-4178
PROJECT ENGINEER: RAGHAD ADEIS-DAHMAN, P.E., S.E. (847) 705-5183

CONTRACT NO. 62B79

GROSS LENGTH = 394.53 FT. = 0.075 MILE
NET LENGTH = 394.53 FT. = 0.075 MILE



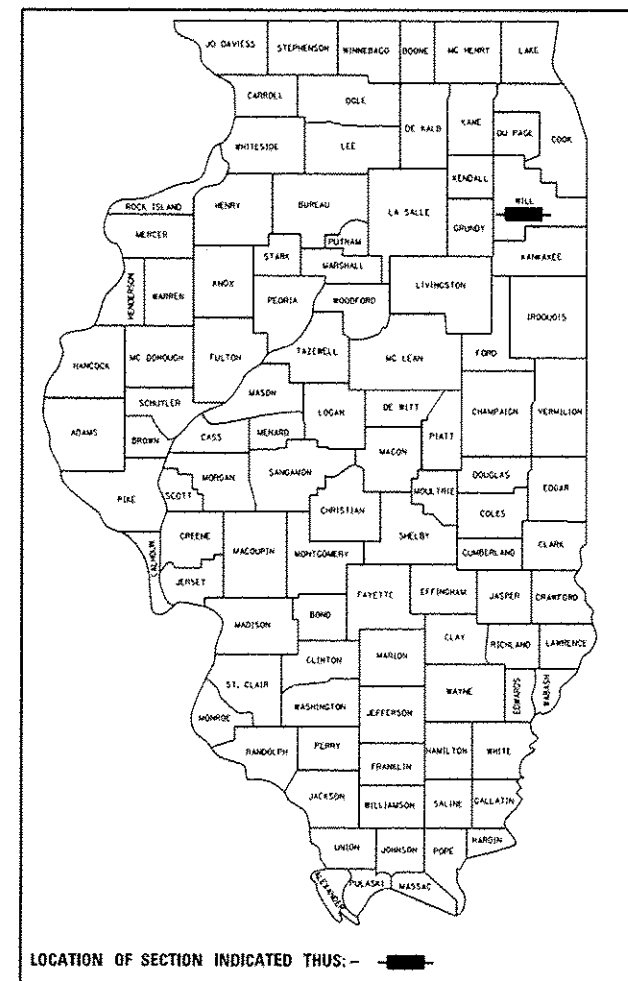
Signed Joseph M. Glennon
Joseph Glennon, P.E.
Il. Lic. No. 062-046610
Expires 11-30-2017
Date August 8, 2016



Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E.
Il. Lic. No. 081-005738
Expires 11-30-2016
Date August 08, 2016

PREPARED BY

HBM
ENGINEERING GROUP, LLC
CONSULTING & DESIGN
INSPECTION & RATING
RESEARCH & TESTING
4415 WEST HARRISON ST.
SUITE 231
HILLSDALE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901



FUNCTIONAL CLASSIFICATION
OTHER PRINCIPAL ARTERIAL
2015 ADT = 19900
POSTED SPEED LIMIT = 30 MPH

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED August 9, 2016

John P. ... REGIONAL ENGINEER

Sept 30 2016 Moussa A. Issa ENGINEER OF DESIGN AND ENVIRONMENT

Sept 30 2016 ... DIRECTOR OF PROGRAM DEVELOPMENT

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS, STATE STANDARDS AND GENERAL NOTES
3	SUMMARY OF QUANTITIES
* 4-27	STRUCTURAL PLANS
28	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS (ITC-10)
29	ARTERIAL ROAD INFORMATION SIGN (ITC-22)

* INCLUDES SHEET IIA.

LIST OF HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
701502-06	URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
701606-10	URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701801-06	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901-05	TRAFFIC CONTROL DEVICES

GENERAL NOTES

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR WORK.

WORK ON THE STRUCTURE SHALL BE DONE IN SUCH A MANNER THAT THE CLOSURE OF THE BRIDGE TO RIVER TRAFFIC (PERIODS WHERE THE BRIDGE IS RESTRICTED TO THE DOWN POSITION) IS PROHIBITED. RIVER TRAFFIC IS TO BE MAINTAINED AT ALL TIMES.

ANY TRAFFIC CONTROL DEVICES ON THE BASCULE BRIDGE SHALL BE EITHER SECURED TO THE GRID DECK OR REMOVED AND RESET EACH TIME THE BRIDGE IS RAISED FOR RIVER TRAFFIC.

THE CONTRACTOR IS NOT ALLOWED TO CLOSE BOTH SIDEWALKS AT THE SAME TIME. IF A SIDEWALK IS CLOSED, PEDESTRIANS SHALL BE DETOURED TO THE ADJACENT SIDEWALK AT THE NEAREST CROSSWALK TO THE WORK ZONE ACCORDING TO STANDARD 701801.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, AS REQUIRED, PRIOR TO COMMENCING WITH CONSTRUCTION.

THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE THAT NO DEBRIS FALL IN THE DES PLAINES RIVER. THE COST OF THIS WORK SHALL BE INCLUDED WITH STRUCTURAL STEEL REPAIR.

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT (800) 892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. 48 HOUR NOTIFICATION IS REQUIRED.

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, AND THE CITY OF JOLIET.

THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847)705-4470 A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

THE CONTRACTOR SHALL OBTAIN COAST GUARD APPROVAL FOR ANY WORK THAT MAY INTERFERE WITH NAVIGATIONAL OPERATIONS OF THE NAVIGABLE WATERS. A WORK PLAN SHALL BE PREPARED BY THE CONTRACTOR, REVIEWED AND APPROVED BY THE ENGINEER AND BE SUBMITTED BY THE ENGINEER TO THE COAST GUARD AT THE ADDRESS LISTED BELOW FOR APPROVAL:

BRIDGE ADMINISTRATOR
US COAST GUARD
EIGHTH COAST GUARD DISTRICT
1222 SPRUCE ST
ST. LOUIS, MO 63103-2832

WESTBOUND LANE CLOSURES SHALL BE PER STANDARD 701606. EASTBOUND LANE CLOSURES SHALL BE PER STANDARD 701502 USING THE STRIPED MEDIAN AS A BIDIRECTIONAL LEFT TURN LANE AS SHOWN IN THE STANDARD.

HBM ENGINEERING GROUP, LLC CONSULTING & DESIGN INSPECTION & TESTING RESEARCH & TESTING 4415 WEST HARRISON ST. SUITE 201 HILLSDALE, IL 60162 PHONE: (708) 236-0900 FAX: (708) 236-0901	USER NAME : robert.lboro	DESIGNED - RTB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STATE STANDARDS AND GENERAL NOTES RUBY STREET OVER DES PLAINES RIVER	SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE : 2:0.0265' = 1" = 1/4"	DRAWN - KJD, AI	REVISED -									112	M-BOR (BRI)	WILL	29	2
	PLOT DATE : 9/8/2016	CHECKED - RTB, MAI	REVISED -									CONTRACT NO. 62B79				
		DATE - 6/3/2016	REVISED -									ILLINOIS FED. AID PROJECT				

8

GENERAL NOTES:

1. Fasteners shall be high strength bolts. Bolts ⁷/₈" diameter, open holes ¹⁵/₁₆" diameter, unless otherwise noted.
2. Calculated weight of Structural Steel AASHTO M270, Grade 36 = 22,790 lb.
Calculated weight of Structural Steel ASTM A500, Grade B = 2,980 lb.
Estimated Structural Steel Removal is 20,800 lb.
3. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for work.
4. All new and repair structural steel shall be AASHTO M270, Grade 36; all structural steel for bridge railing posts shall be ASTM A500, Grade B.
5. Field welding of construction accessories will not be permitted to the tension flange or web of beams or girders. Field welding in other areas will be permitted only when approved by the Engineer.
6. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
7. The Contractor shall submit a detailed plan of proposed construction procedures and sequences for the proposed work on the bascule span to the Engineer for review and approval prior to commencing this work. Approval shall not relieve the Contractor of any responsibility for the stability of the bridge during the removal and replacement operations.
8. All work shall be performed with the bascule leafs in the lowered position; however, work on the structure shall be done in such a manner that the closure of the bridge to river traffic (periods where the bridge is restricted to the down position) is prohibited. River traffic is to be maintained at all times.
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
10. Existing Structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
11. All new structural steel shall be shop painted according to the requirements of paint System I-OZ/E/U. The color of the final finish coat shall match the existing paint color, see Paint Detail. The color for all steel truss surfaces, including handrails, shall be Blue Munsell No. 10B 3/6. The color for the remaining steel floor system, including catwalk, cross frames and lateral bracing, shall be Gray, Munsell No. 5B 7/1.
12. The Contractor shall take all necessary measures to ensure that no debris falls in the Des Plaines River or endangers or interferes with river traffic beneath the bridge. The cost of this work shall be included with Structural Steel Repair.
13. Elements of this structure may require removal and re-installation due to the proposed repairs. Such removal and re-installation shall not be paid separately and shall be included in the cost of Structural Steel Repair.
14. Field reaming of bolt holes in plates shall only be allowed with the approval of the Engineer.

INDEX OF SHEETS

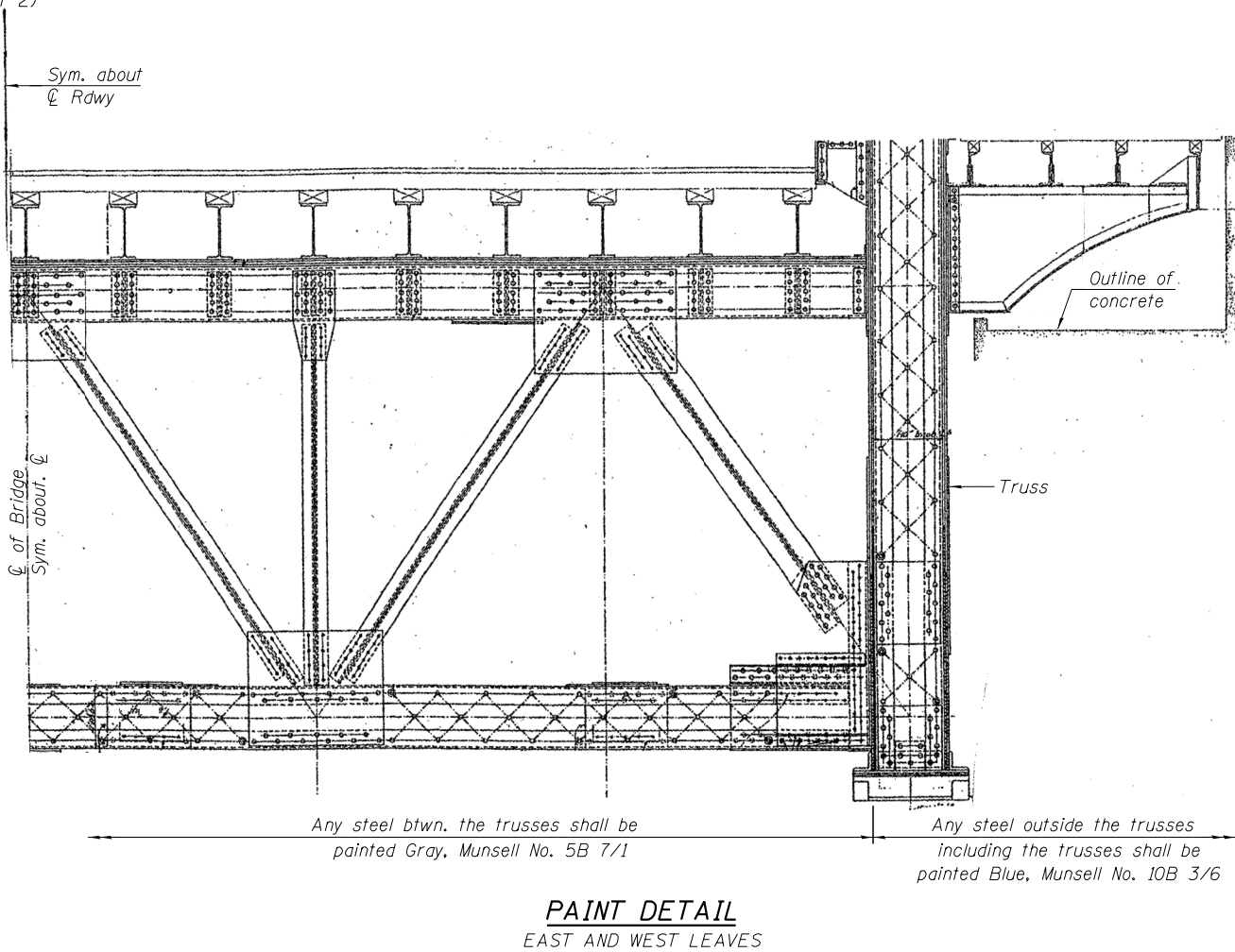
- S-01 General Plan and Elevation
S-02 General Notes, Index of Sheets and Total Bill of Material
S-03 Framing Plan - Structural Steel Repairs
S-04 Floorbeam 1 Repair Details
S-05 Floorbeam 2 Repair Details
S-06 Floorbeam 6 Repair Details
S-07 Bottom Diagonal Lateral Bracing Removal and Replacement
S-08 Strut Removal and Replacement
S-08A Strut End Plate Details
S-09 Floorbeam and Bottom Lateral Bracing Gusset Plates Removal and Replacement (Sheet 1 of 4)
S-10 Floorbeam and Bottom Lateral Bracing Gusset Plates Removal and Replacement (Sheet 2 of 4)
S-11 Floorbeam and Bottom Lateral Bracing Gusset Plates Removal and Replacement (Sheet 3 of 4)
S-12 Floorbeam and Bottom Lateral Bracing Gusset Plates Removal and Replacement (Sheet 4 of 4)
S-13 Strut and Floorbeam Connection Angles Removal and Replacement (Sheet 1 of 2)
S-14 Strut and Floorbeam Connection Angles Removal and Replacement (Sheet 2 of 2)
S-15 Bottom Counterweight Bracing Removal and Replacement
S-16 Member M0 -L1 Repairs - East Leaf (Sheet 1 of 2)
S-17 Member M0 -L1 Repairs - East Leaf (Sheet 2 of 2)
S-18 Member M0 -L1 Repairs - West Leaf (Sheet 1 of 2)
S-19 Member M0 -L1 Repairs - West Leaf (Sheet 2 of 2)
S-20 Sidewalk Post and Floorbeam Brackets Repairs
S-21 Existing Catwalk Removal and Replacement
S-22 Framing Plan - Miscellaneous Repairs
S-23 Miscellaneous Repairs Details (Sheet 1 of 2)
S-24 Miscellaneous Repairs Details (Sheet 2 of 2)

TOTAL BILL OF MATERIAL

Pay Item	Unit	Super.	Sub.	Total
Floor Drain Extension	Each	2	-	2
Structural Steel Repair	Pound	25,770	-	25,770
Bridge Balancing	L.Sum	1	-	1

REFERENCE DRAWINGS KEY

I343-xx	Original Design Plans
5075-xx	Shop Drawings
80071-xx	Rehabilitation Plans
M-BDR-4-I(82)-xx	Rehabilitation Plans
60193-xx	Rehabilitation Plans
62714-xx	Rehabilitation Plans



REFERENCE DRAWINGS:

Drawing	Sheet No.
General Paint Notes	62714-04

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

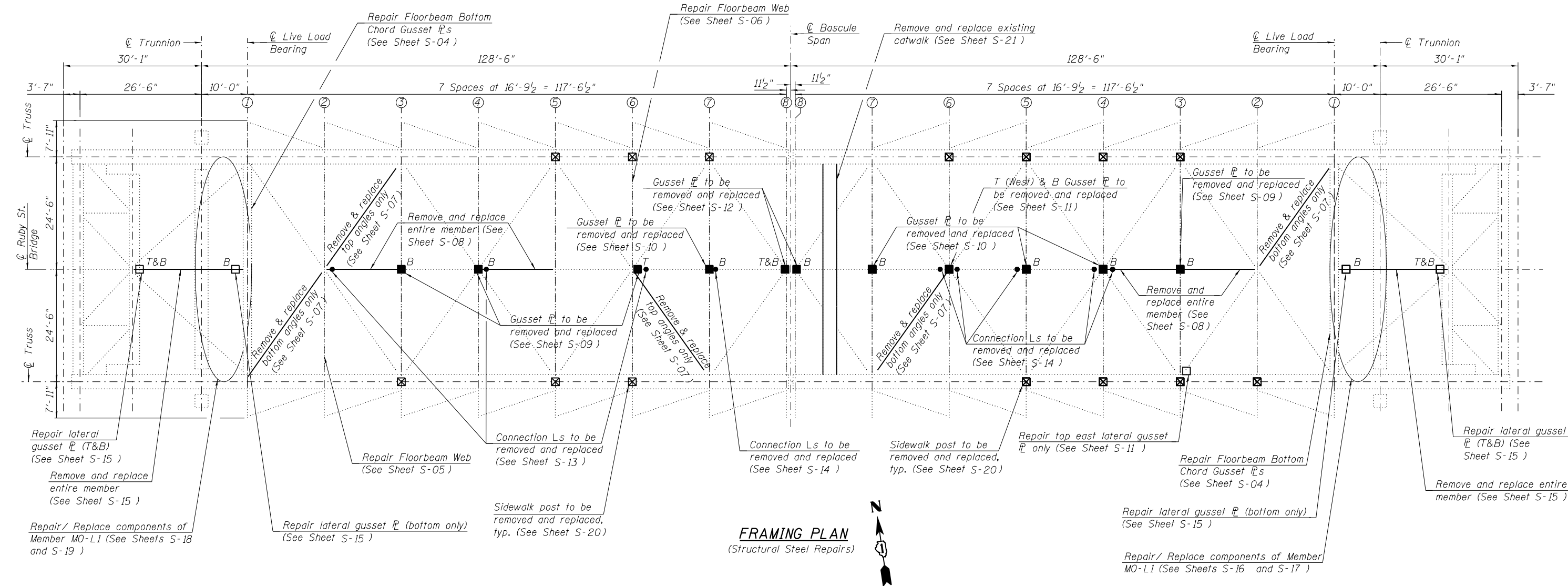
GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
RUBY STREET OVER DES PLAINES RIVER – SN 099-9901

SHEET S-02 OF S-24 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	5
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				

HBM
ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JJS	REVISED -
	CHECKED - RTB, MI	REVISED -
PLOT SCALE =	DRAWN - FA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -



LEGEND:

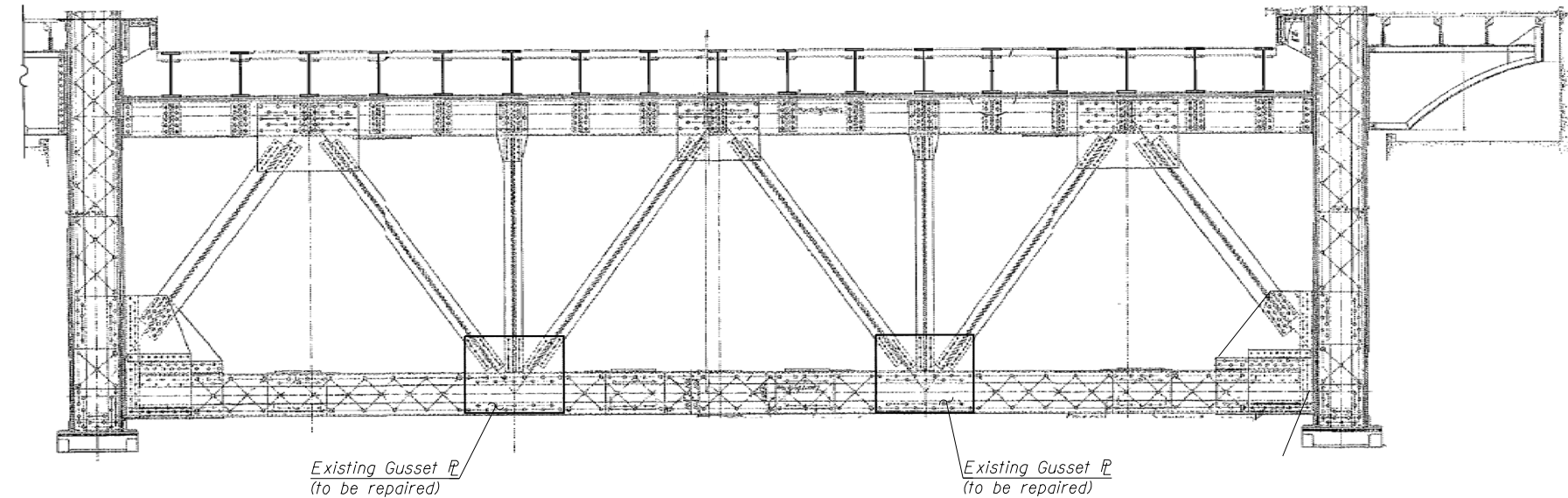
- Existing member to remain
- Member to be removed and replaced
- Gusset Pl to be repaired
- Gusset Pl to be removed and replaced
- ⊗ Sidewalk Post to be removed and replaced
- Connection angle from lateral bracing to floorbeam to be removed and replaced
- T Top gusset Pl to be repaired or removed and replaced
- B Bottom gusset Pl to be repaired or removed and replaced

NOTES:

- Locations of repair and/or replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.

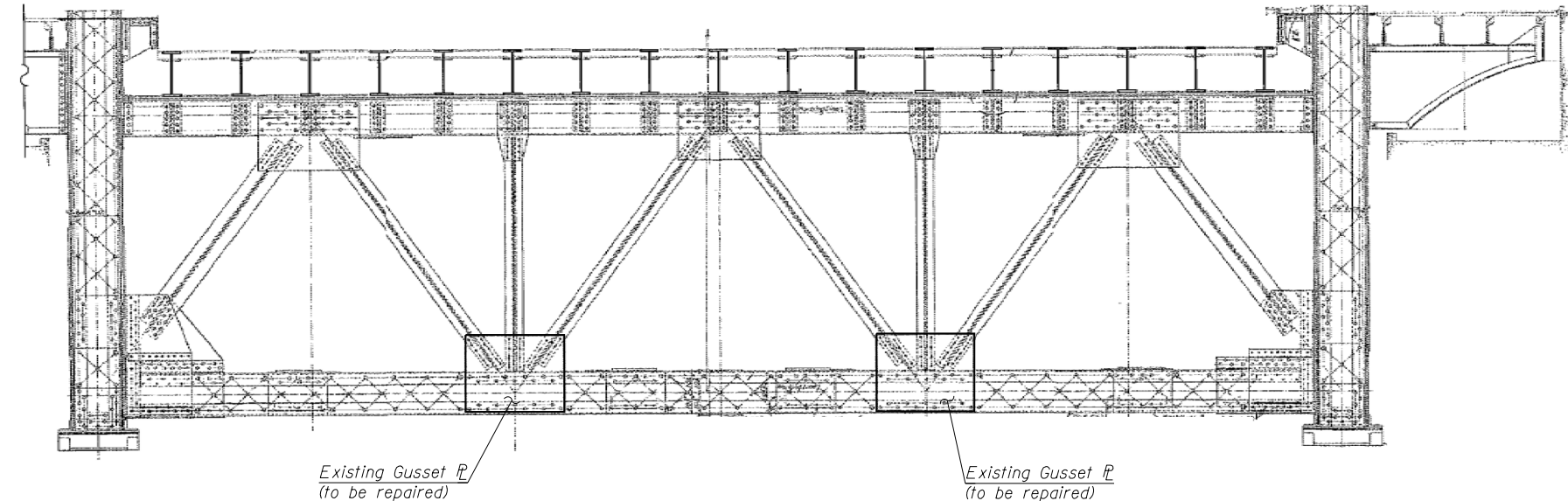
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	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - MAA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	6
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				



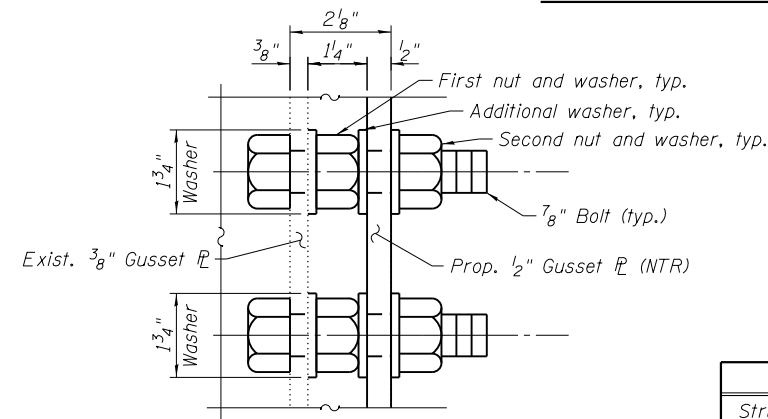
FLOORBEAM F1 BOTTOM CHORD GUSSET P REPAIRS

WEST LEAF
(Looking West)



FLOORBEAM F1 BOTTOM CHORD GUSSET P REPAIRS

EAST LEAF
(Looking East)



DETAIL 1

REFERENCE DRAWINGS:

Drawing	Sheet No.
Bottom Chords of Floorbeam F1	5075-33
Floorbeams F1 to F2-Bascule Span	1343-39
Floorbeams F1 & F2 Details	60193-25

BILL OF MATERIAL

Pay Item	Unit	Quantity
Structural Steel Repair	Pound	1,090

LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain
- ◆ New bolt in existing or new steel. Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

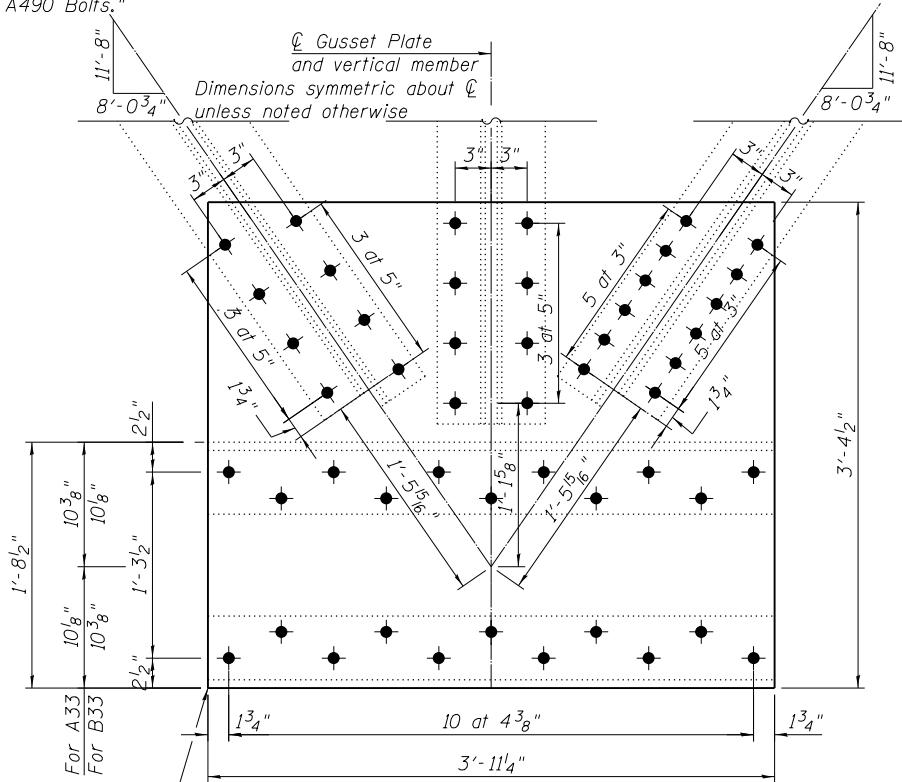
*New gusset plates to match existing gusset plates in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed 7/8" ϕ H.S. bolts shall match existing holes. Contractor shall use existing plates as templates.

CONSTRUCTION SEQUENCE FOR P STIFFENING:

- Clean exterior faces of existing steel (angles, plates and gusset plates) according to the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."
- Remove existing gusset plate rivet/bolt and replace with proposed H.S. bolts. Existing bolts/rivets shall be replaced one at a time. As each rivet/bolt is replaced with a H.S. bolt, the first washer and nut shall be installed and fully tightened as shown in Detail 1 on this sheet.
- Construct template for location of newly installed H.S. bolts to determine if field reaming of fill or repair plates is required.
- Install additional washer as shown in Detail 1 on this sheet.
- Place repair plate with holes centered with centerline of new H.S. bolts. Install second washer and nut and fully tighten.

NOTES:

- Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
- Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
- Existing gusset plate rivets/bolts shall be replaced with 7/8" ϕ H.S. bolts according to the "Construction Sequence for P Stiffening" presented on this sheet. At no time shall there be more than one empty fastener hole.
- 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 1, 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 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. bolt for the gusset plate repair as shown in Detail 1.
- 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 1, 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 regualified as specified in Section 7 of the 2004 RCSC "Specification for Structural Joints using ASTM A325 or A490 Bolts."



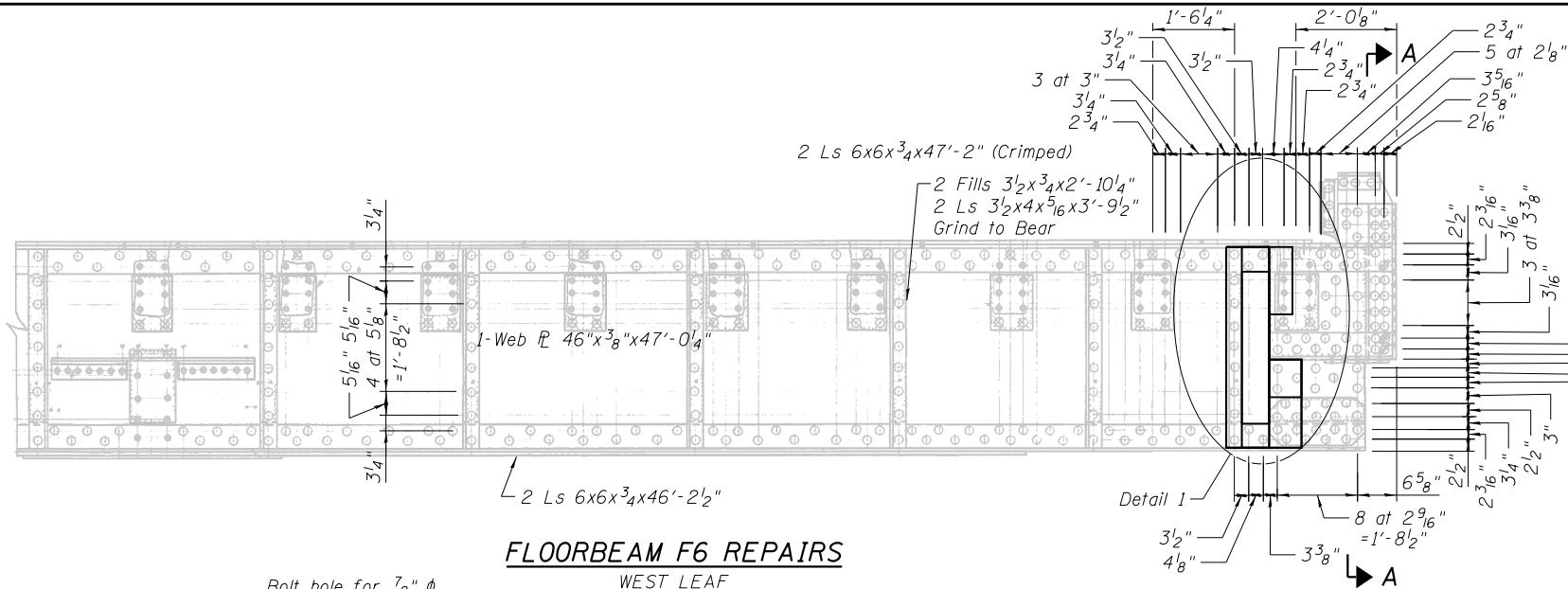
GUSSET P REPAIR PLATE

Floorbeam Bottom Chord - A33 (West Leaf) (2 required)
Floorbeam Bottom Chord - B33 (East Leaf) (2 required)

*P - 40 1/2"x1/2"x3'-11 1/4" (NTR).
See "Construction Sequence for P Stiffening" for installation procedure

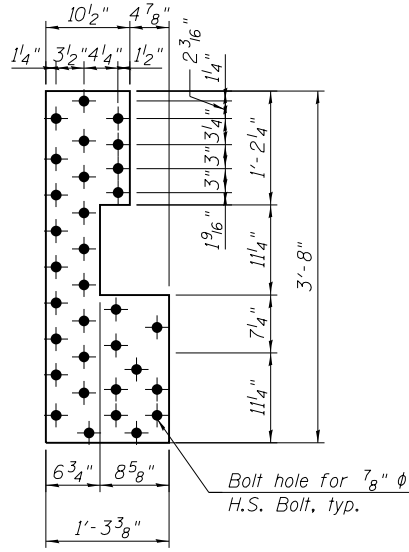
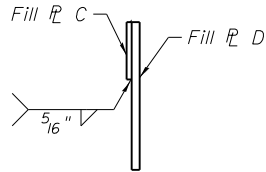
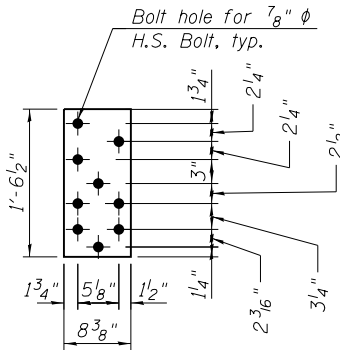
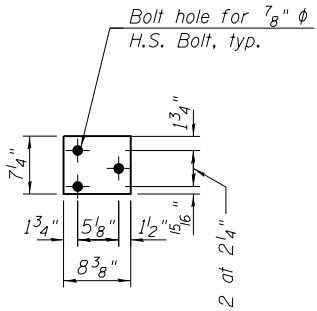
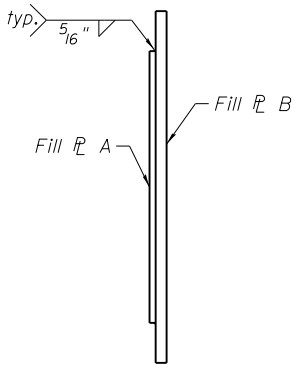
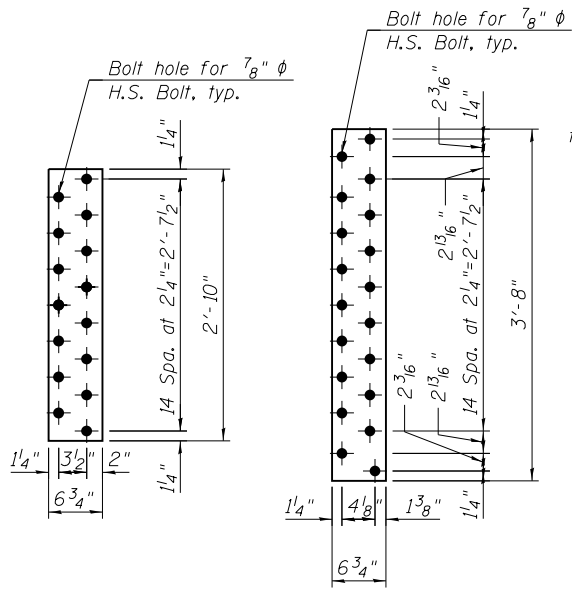
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PLOT SCALE =	CHECKED - MI, MAI	REVISED -
PLOT DATE =	DRAWN - LAB	REVISED -
	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	7
CONTRACT NO. 62B79				



FLOORBEAM F6 REPAIRS

WEST LEAF
(Looking West)



FILL R A

2'-10"x6 3/4"x3/4" R
(2 required-see
Fabrication Detail 1)

FILL R B

3'-8"x6 3/4"x1 3/8" R
(2 required-see
Fabrication Detail 1)

FABRICATION DETAIL 1

(FILL R AB)

FILL R C

8 3/8"x7 1/4"x5/8" R
(2 required-see
Fabrication Detail 2)

FILL R D

8 3/8"x1'-6 1/2"x1" R
(2 required-see
Fabrication Detail 2)

FABRICATION DETAIL 2

(FILL R CD)

REPAIR R

3'-8"x1'-3 3/8"x3/8" (NTR)
(2 required)

NOTES:

- Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
- Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
- When required to completely remove and replace members, remove rivets (and/ or existing bolts) and replace with 7/8" diameter high strength bolts, unless noted otherwise.
- "Replace" indicates: remove existing members, furnish and install new member as shown.
- The assembly of fill R's presented in Fabrication Details 1 and 2, and the erection sequence of plates AB, CD and repair plate presented in the "Construction Sequence for Floorbeam 6 Repair" is a suggested option. The Contractor may, at his discretion, and upon the approval of the Engineer, elect to substitute an alternative assembly and/or construction sequence for Floorbeam 6 repair. In either option, it shall be the Contractor's responsibility to ensure the integrity of the structure during construction. Engineer approval of alternative assembly and/or construction sequence shall in no way relieve the Contractor of responsibility for the integrity of the structure, fit up of materials or adequacy of repair.
- No field welding is permitted.

CONSTRUCTION SEQUENCE FOR FLOORBEAM 6 REPAIR:

- Clean exterior faces of existing steel (angles, plates and gusset plates) according to the special provision Cleaning and Painting Contact Surface Areas of Existing Steel Structures.
- Construct template for location of existing rivets/bolts and fabrication of fill and repair plates.
- Place Fill R AB (see Fabrication Detail 1) with holes centered with centerline of existing rivets/bolts.
- Field drill holes as required and secure Fill R AB to Floorbeam using erection pins/rods.
- Place Fill R CD (see Fabrication Detail 2) with holes centered with centerline of existing rivets/bolts. Remove two rivets at top of R and 2 rivets at bottom of R and secure Fill R CD using erection pins/rods.
- Place Repair R with holes centered with centerline of existing rivets/bolts and erection pins/rods.
- Secure Repair R with existing erection pins/rods.
- Starting at one end, remove one rivet/bolt/erection pin/rod at a time and replace with a 7/8" phi H.S. bolt. Proceed until all rivets/bolts/erection pins (or rods) are replaced.

LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain
- ✦ New bolt in existing or new steel. Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

REFERENCE DRAWINGS:

Drawing	Sheet No.
Floorbeam F4 & F6 (West Leaf)	5075-50

BILL OF MATERIAL

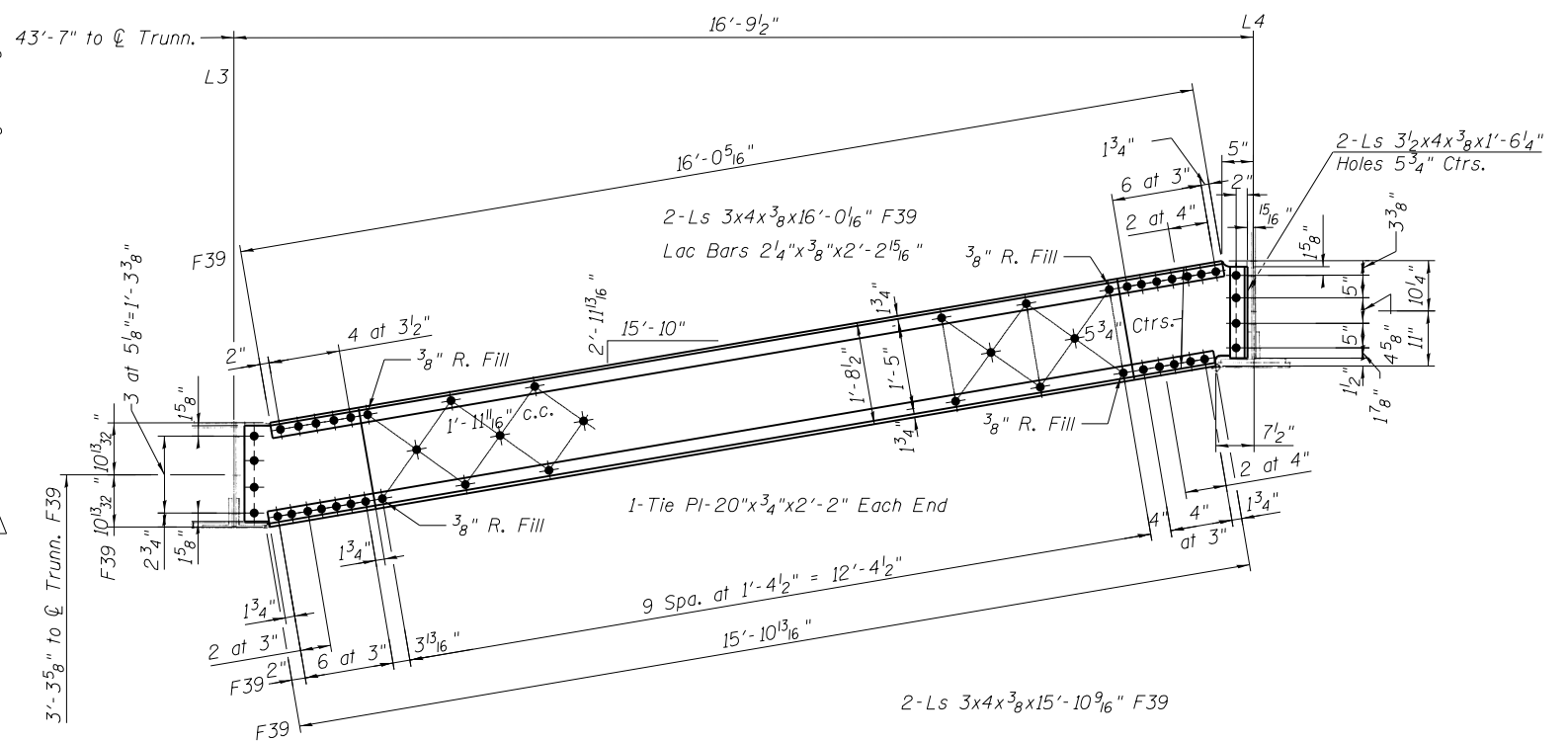
Pay Item	Unit	Quantity
Structural Steel Repair	Pound	590

USER NAME =	DESIGNED - JJS, LAB	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - SK, LAB	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	9
				CONTRACT NO. 62B79
ILLINOIS FED. AID PROJECT				



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	10
		CONTRACT NO. 62B79		
		ILLINOIS FED. AID PROJECT		



L2-L3 WEST LEAF (C39)
L2-L3 EAST LEAF (D39)
(2 required)

L3-L4 EAST LEAF
(1 required)

1. Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
2. Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
3. When required to completely remove and replace members, remove rivets (and/or existing bolts) and replace with 7/8" diameter high strength bolts, unless noted otherwise.
4. "Replace" indicates: remove existing members, furnish and install new member as shown.
5. New strut angles, associated plates and lacing bars to match existing angles, plates and bars in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed 7/8" diameter H.S. bolts shall match existing holes. Contractor shall use existing members for a template.
6. For Strut tie/end plate dimensions and details, see Sheet S-08A



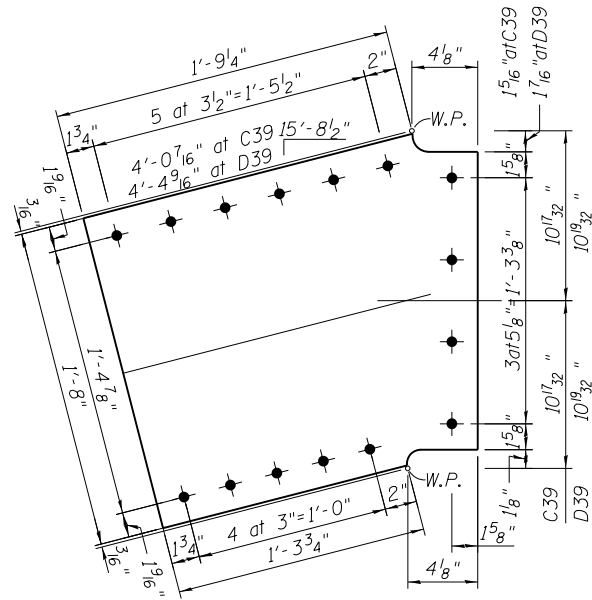
- *New Member*
- or ● *Exist. bolt or rivet to remain.*
- ✦ *New bolt in existing or new steel.
Remove existing rivet or bolt and replace with
new $\frac{7}{8}$ " diameter H.S. bolt, unless noted otherwise*

<i>Pay Item</i>	<i>Unit</i>	<i>Quantity</i>
<i>Structural Steel Repair</i>	<i>Pound</i>	<i>3,500</i>

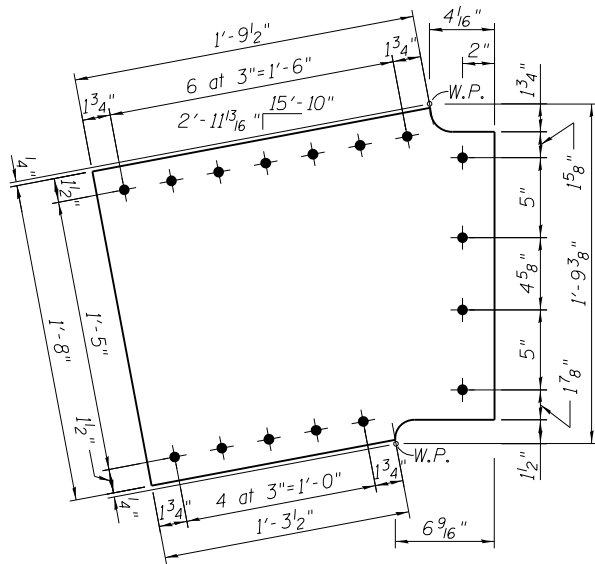
<u>Drawing</u>	<u>Sheet No.</u>
Struts	5075-39

USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - SK	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

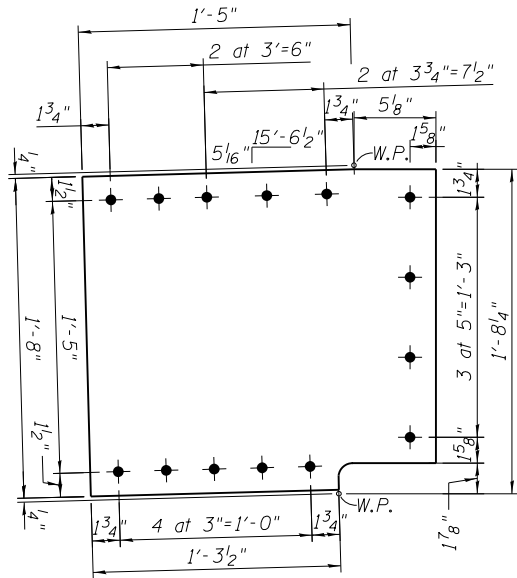
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	11
		CONTRACT NO. 62B79		
		ILLINOIS FED. AID PROJECT		



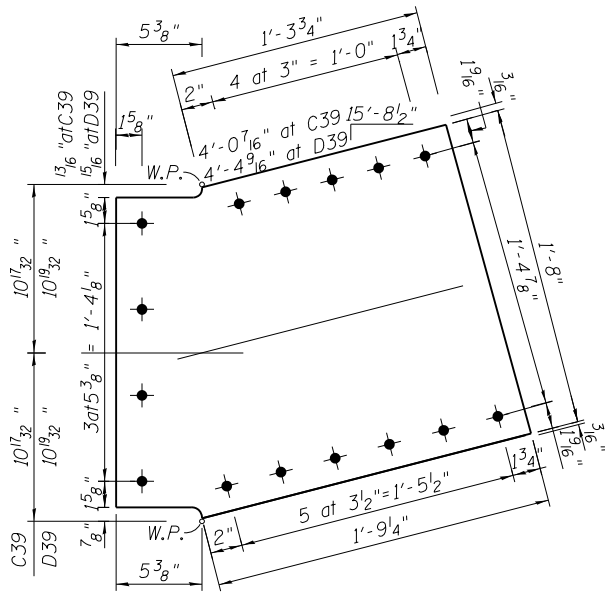
STRUT C39&D39 - UPPER END PLATE
(2 required)



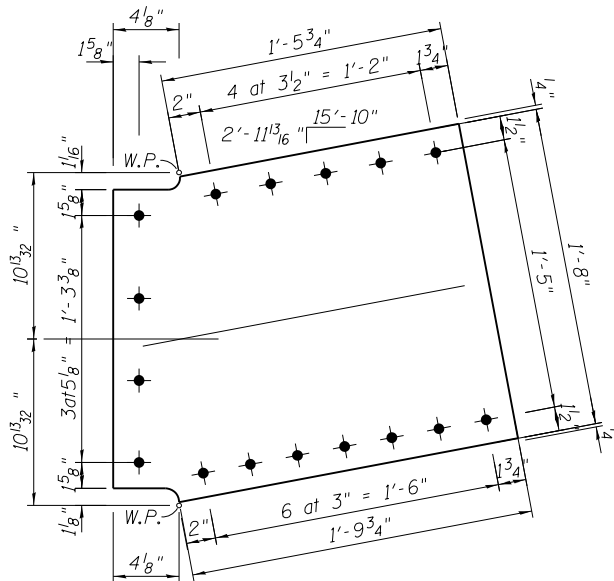
STRUT F39 - UPPER END PLATE
(1 required)



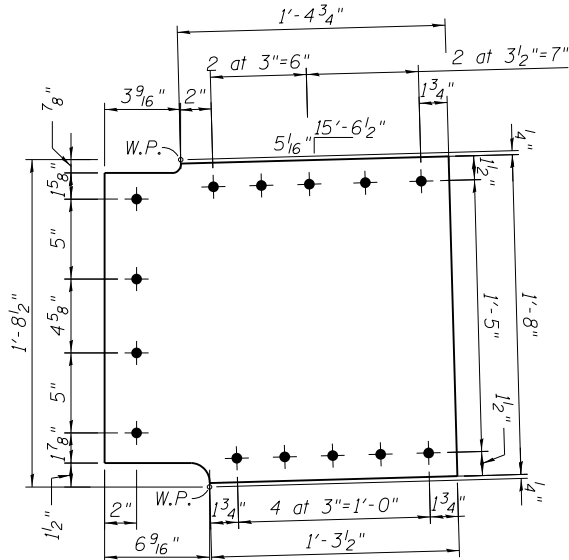
STRUT G39 - UPPER END PLATE
(1 required)



STRUT C39&D39 - LOWER END PLATE
(2 required)



STRUT F39 - LOWER END PLATE
(1 required)



STRUT G39 - LOWER END PLATE
(1 required)

LEGEND:

— New Member

○ or ● Exist. bolt or rivet to remain

✦ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with
new 7/8" diameter H.S. bolt, unless noted otherwise

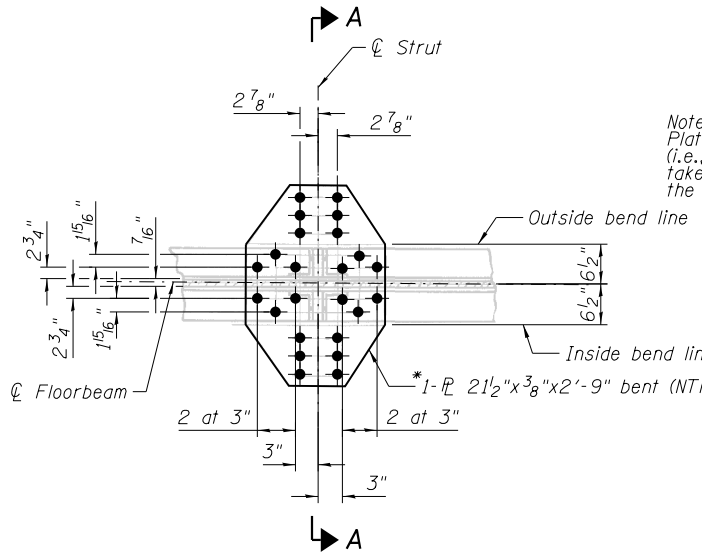
REFERENCE DRAWINGS:

Drawing
Struts

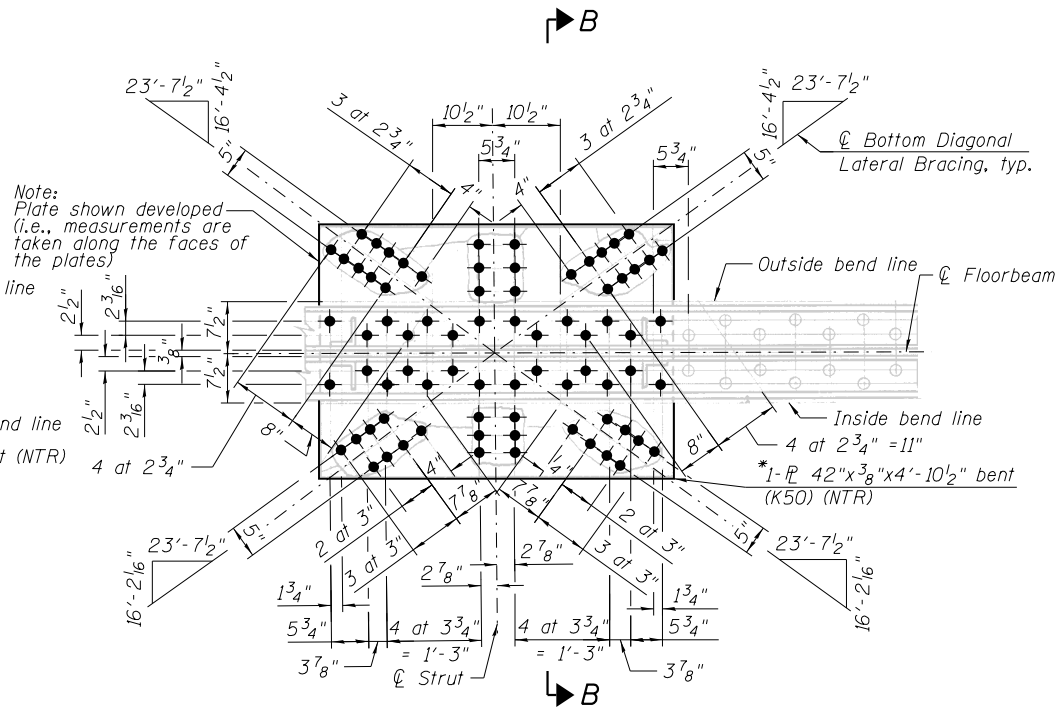
Sheet No.
5075-39

USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - SK	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

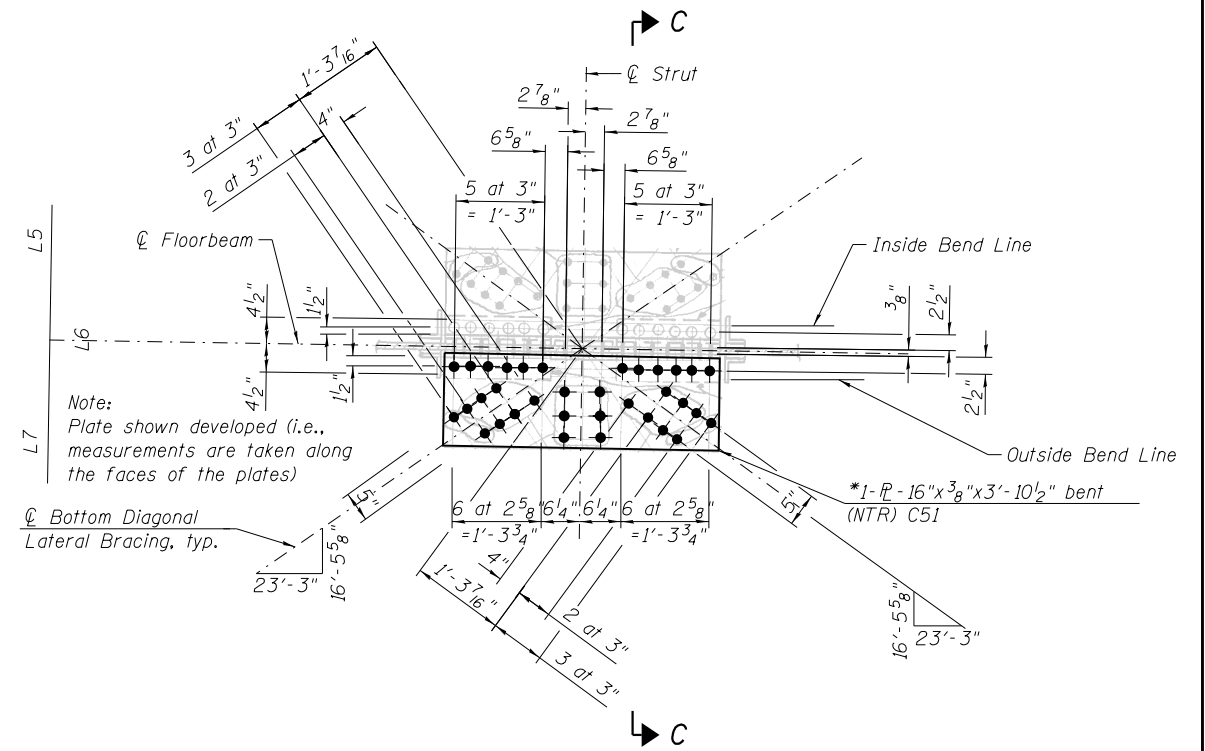
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	11
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				



PLAN - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 3)
EAST AND WEST LEAVES
(2 required)



PLAN - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 4)
WEST LEAF
(1 required)



PLAN - LATERAL BRACING TOP GUSSET PL
(AT CL OF FLOORBEAM 6)
WEST LEAF
(1 required - Replace Plate C51 only)

LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain.
- ◆ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

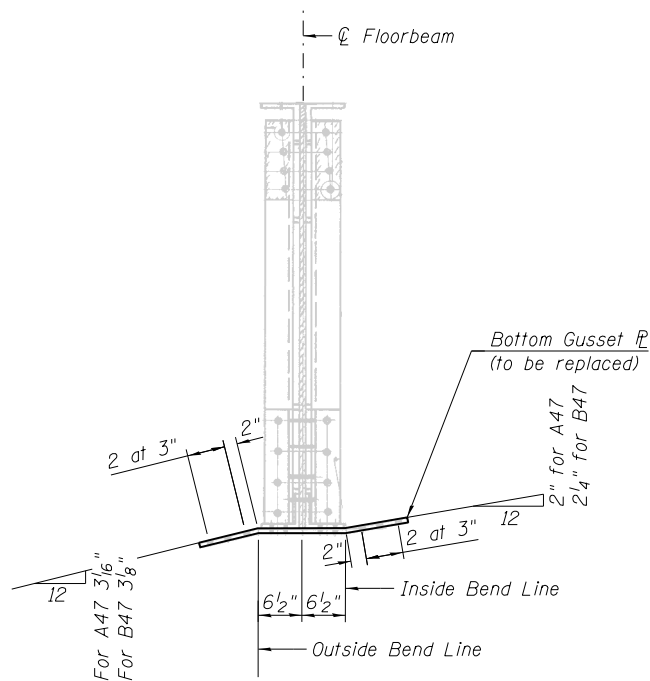
NOTES:

- Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
- Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
- When required to completely remove and replace members, remove rivets (and/or existing bolts) and replace with 7/8" diameter high strength bolts, unless noted otherwise.
- "Replace" indicates: remove existing members, furnish and install new member as shown.
- New gusset plates to match existing plates in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed 7/8" ϕ H.S. bolts shall match existing holes. Contractor shall use existing plates for a template.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
- For Bill of Material, see Sheet S-12.

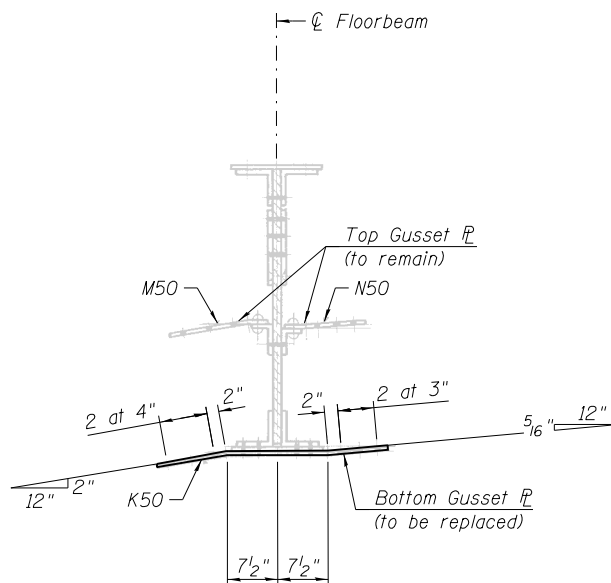
REFERENCE DRAWINGS:

Drawing	Sheet No.
Floor Beam F3 (East and West Leaves)	5075-47
Floor Beams F4 & F6 (West Leaf)	5075-50
Lateral Plates for F6 (West Leaf)	5075-51

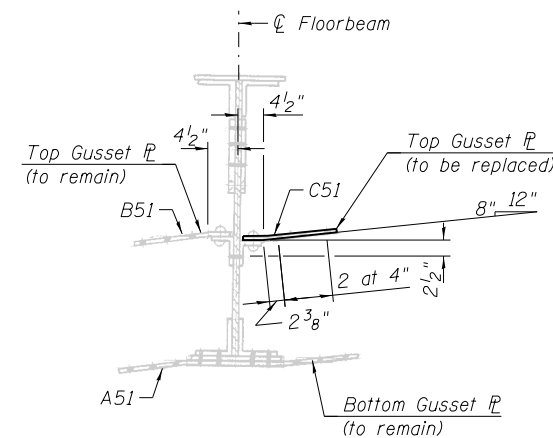
* See Note 5



SECTION A-A - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 3)
EAST AND WEST LEAVES
(LOOKING SOUTH FOR EAST LEAF)
(LOOKING NORTH FOR WEST LEAF)



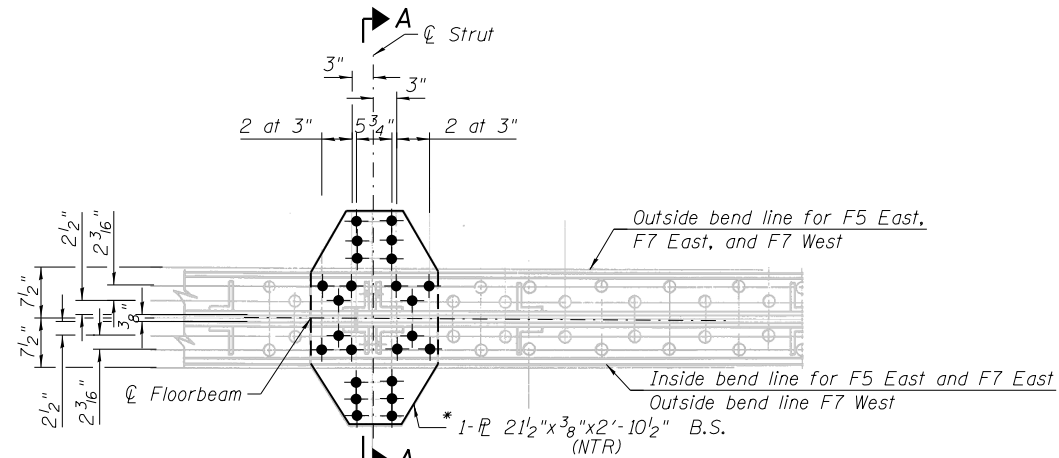
SECTION B-B - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 4)
WEST LEAF (LOOKING NORTH)



SECTION C-C - LATERAL BRACING TOP GUSSET PL
(AT CL OF FLOORBEAM 6)
WEST LEAF (LOOKING NORTH)

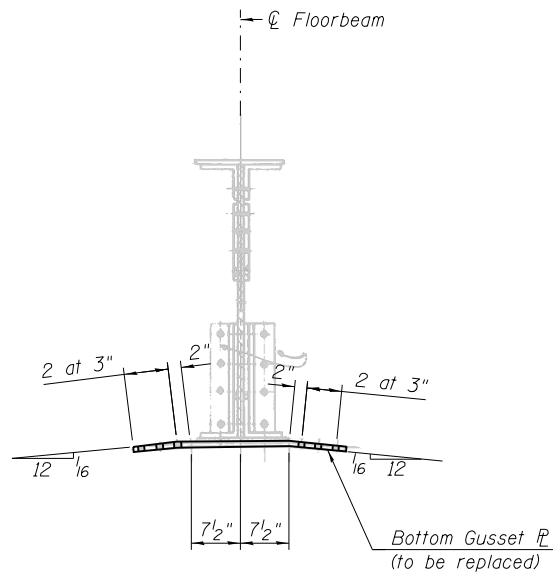
USER NAME =	DESIGNED - LAB, JJS	REVISED -
PLOT SCALE =	CHECKED - MI, MAI	REVISED -
PLOT DATE =	DRAWN - LAB	REVISED -
	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	12
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				



PLAN - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAMS 5 AND 7)

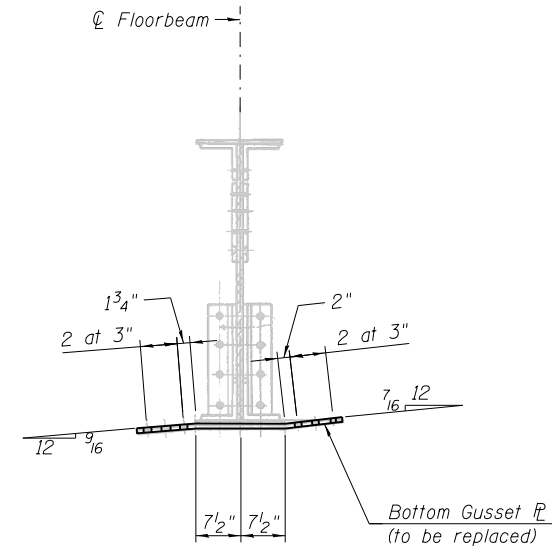
EAST LEAF (Floorbeam 5)
EAST AND WEST LEAVES (Floorbeam 7)



For B56 (F7-West)

SECTION A-A - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 7)

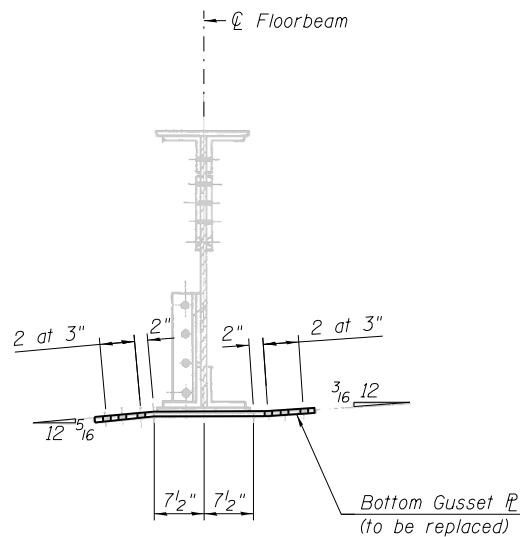
WEST LEAF (Looking North)
(1 required)



For C56 (F5-East)

SECTION A-A - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 5)

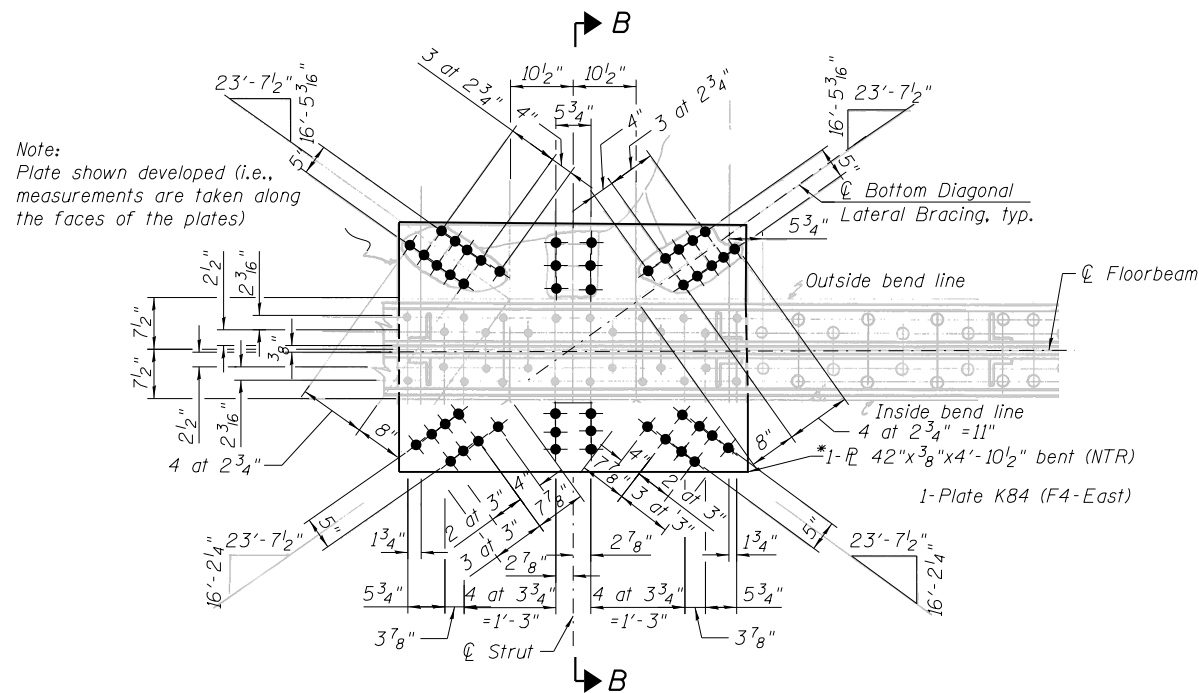
EAST LEAF (Looking South)
(1 required)



For D56 (F7-East)

SECTION A-A - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 7)

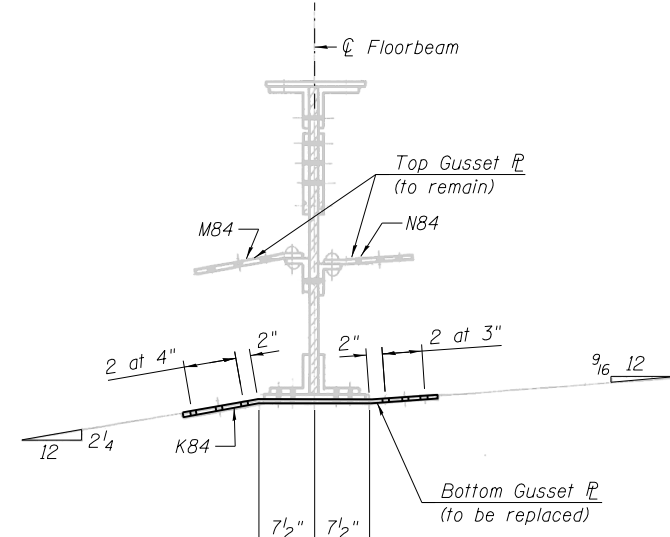
EAST LEAF (Looking South)
(1 required)



Note:
Plate shown developed (i.e.,
measurements are taken along
the faces of the plates)

PLAN - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 4)

EAST LEAF



For A84 (F4-East)

SECTION B-B - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 4)

EAST LEAF (Looking South)
(1 required)

LEGEND:

— New Member

○ or ● Exist. bolt or rivet to remain

✦ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with
new 7/8" diameter H.S. bolt, unless noted otherwise

REFERENCE DRAWINGS:

Drawing	Sheet No.
Floor Beams (F5-7 West) (F5-7 East)	5075-56
Floor Beams F4 & F6 (East Leaf)	5075-84

NOTES:

- For Bill of Material, see Sheet S-12.
- For additional notes, see Sheet S-09.

*See Note 5 on Sheet S-09.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FLOORBEAM AND BOTTOM LATERAL BRACING GUSSET PLATES
REMOVAL AND REPLACEMENT (SHEET 2 OF 4)
RUBY STREET OVER DES PLAINES RIVER - SN 099-9901

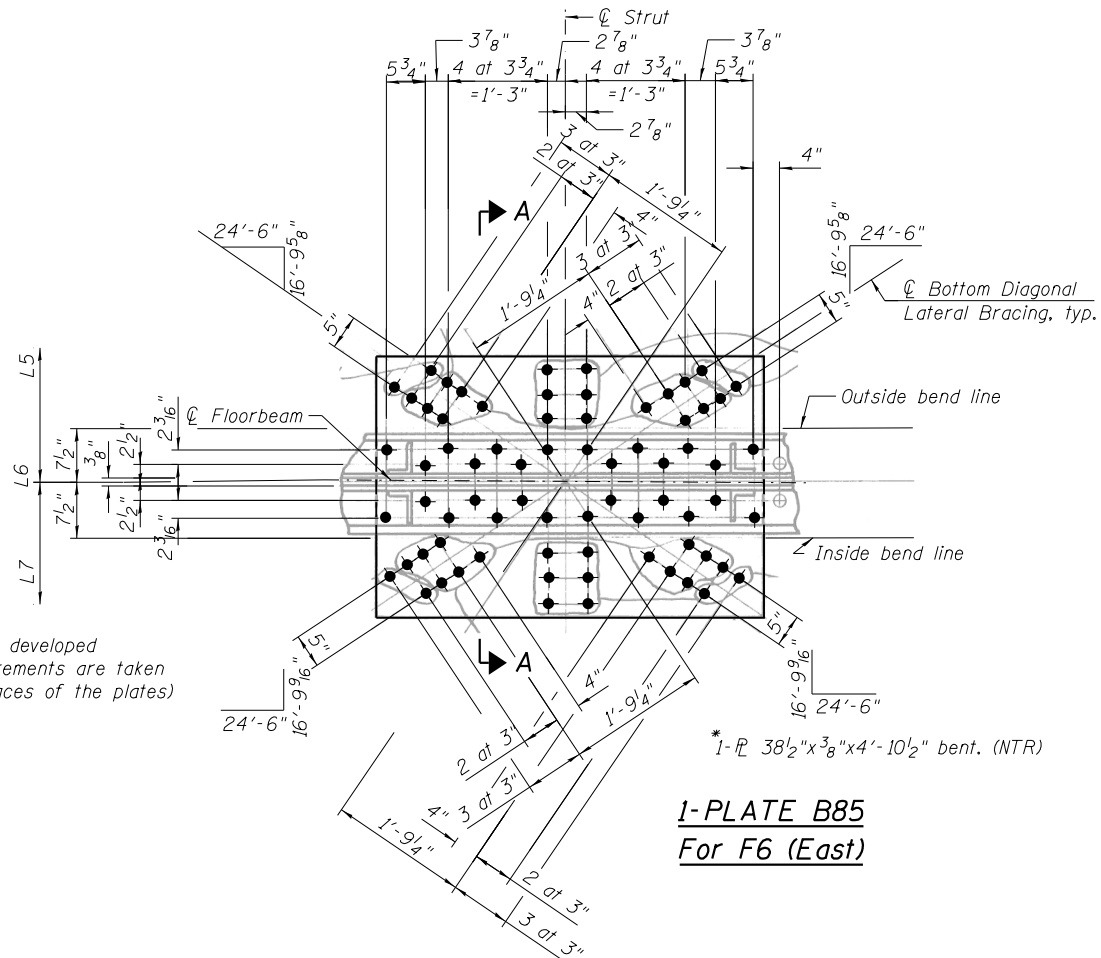
SHEET S-10 OF S-24 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	13
CONTRACT NO. 62B79				

ILLINOIS FED. AID PROJECT

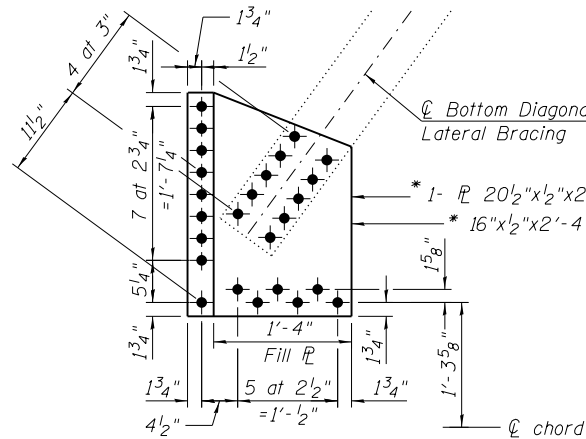
HBM
ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - MAA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -



PLAN - LATERAL BRACING BOTTOM GUSSET PLATE
(AT CL OF FLOORBEAM 6)

EAST LEAF
(1 required)

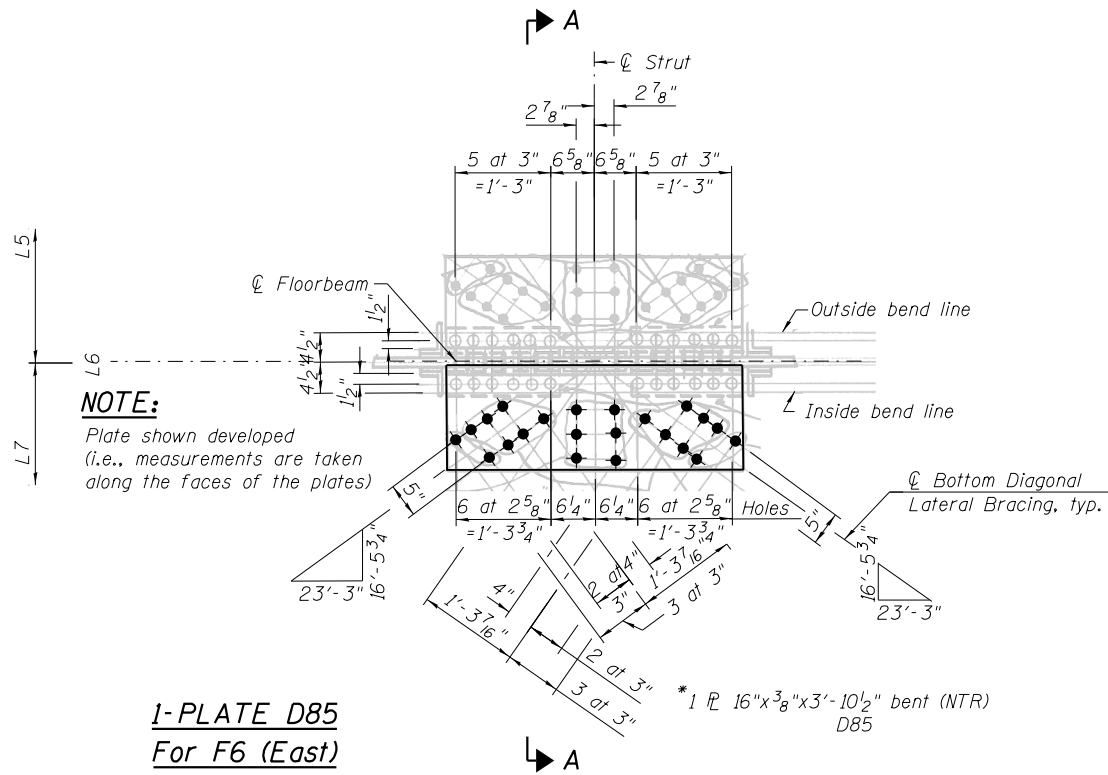


PLAN - FLOORBEAM-TO-BOTTOM CHORD
TOP EAST GUSSET PLATE
(AT L3 SOUTH TRUSS)

EAST LEAF
(1 required)

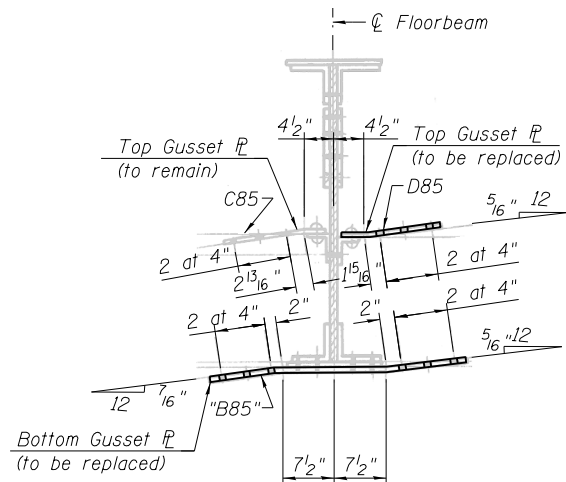
LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain
- ★ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with
new 7/8" diameter H.S. bolt, unless noted otherwise



PLAN - LATERAL BRACING TOP GUSSET PLATE
(AT CL OF FLOORBEAM 6)

EAST LEAF
(1 required - Replace Plate D85 only)



SECTION A-A - LATERAL BRACING
TOP AND BOTTOM GUSSET PLATES
(AT CL OF FLOORBEAM 6)

EAST LEAF (LOOKING SOUTH)

REFERENCE DRAWINGS:

Drawing	Sheet No.
Sections For Floor Beams F4-F6-F8 (East)	5075-85
Laterals East Leaf	5075-103

*See Note 5 on Sheet S-09.

CONSTRUCTION SEQUENCE FOR PLATE STIFFENING AT L3:

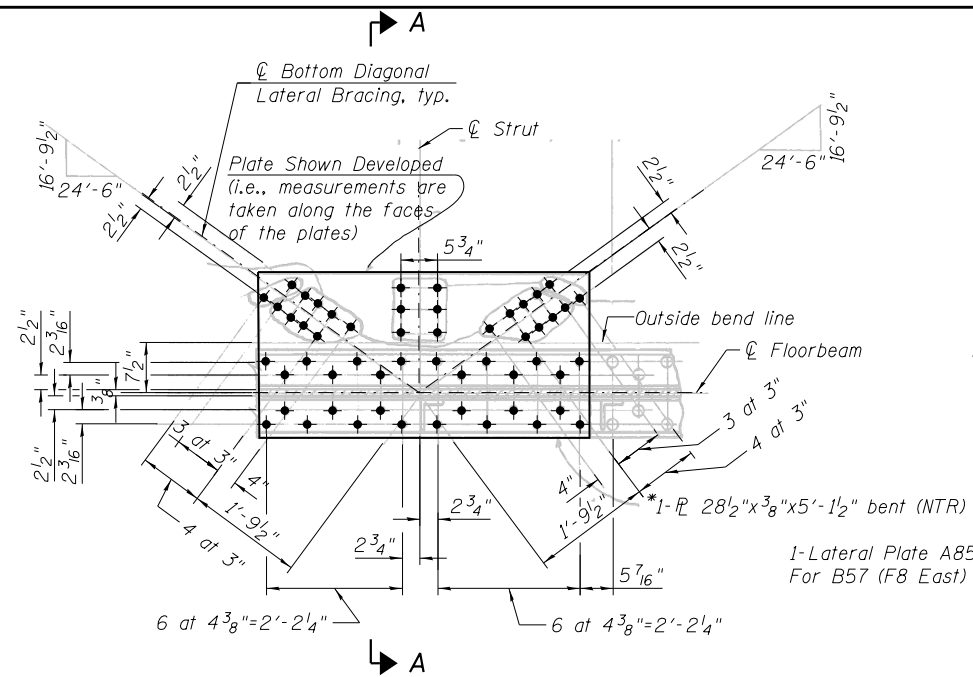
1. Clean exterior faces of existing steel (angles, plates and gusset plates) according to the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."
2. Remove existing gusset plate rivet/bolt and replace with proposed H.S. bolts. Existing bolts/rivets shall be replaced one at a time. As each rivet/bolt is replaced with a H.S. bolt, the first washer and nut shall be installed and fully tightened as shown in Detail 1 on Sheet S-04.
3. Construct template for location of newly installed H.S. bolts to determine if field reaming of fill or repair plates is required.
4. Install additional washer as shown in Detail 1 on Sheet S-04.
5. Place repair plate with holes centered with centerline of new H.S. bolts. Install second washer and nut and fully tighten.

NOTES:

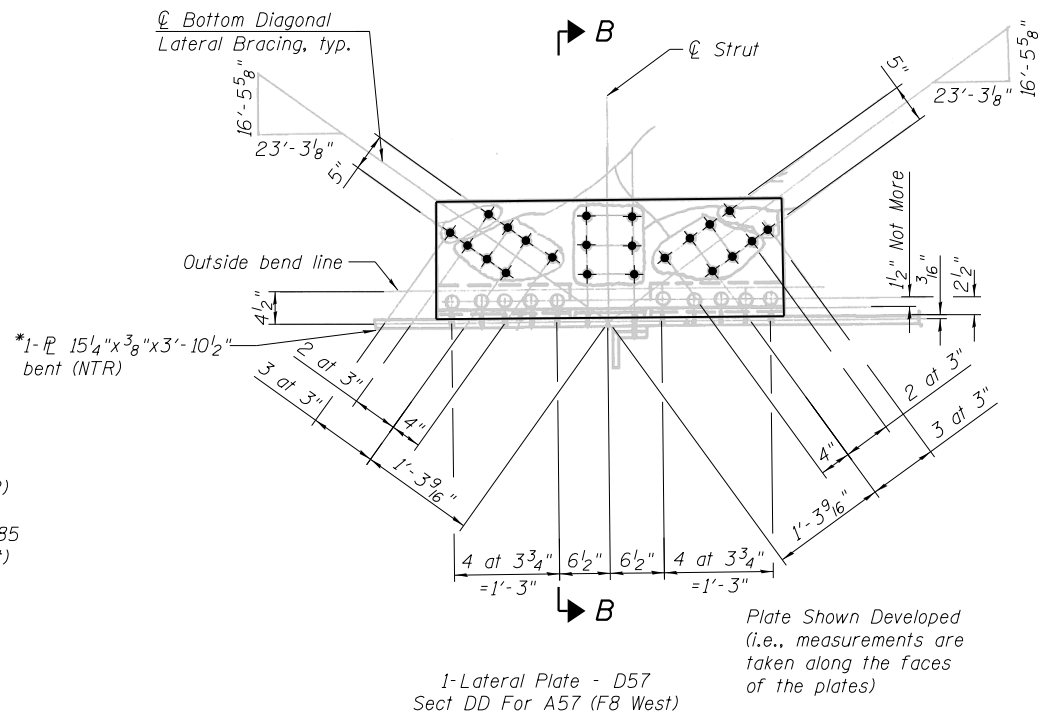
1. For Bill of Material, see Sheet S-12.
2. For additional notes, see Sheet S-09.
3. The Contractor may, at his/her option, elect to field drill holes in the proposed plates.
4. See also notes 3 thru 7 on Sheet S-04.
5. For details of plate stiffening, see Detail 1 on Sheet S-04.

USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - LAB, MAA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

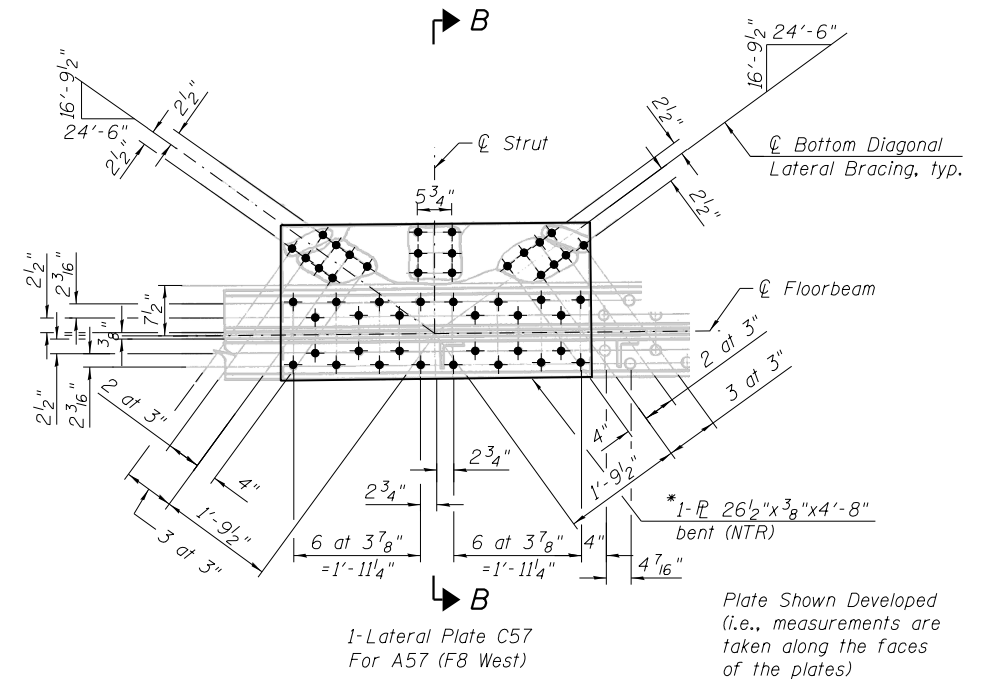
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	14
CONTRACT NO. 62B79				



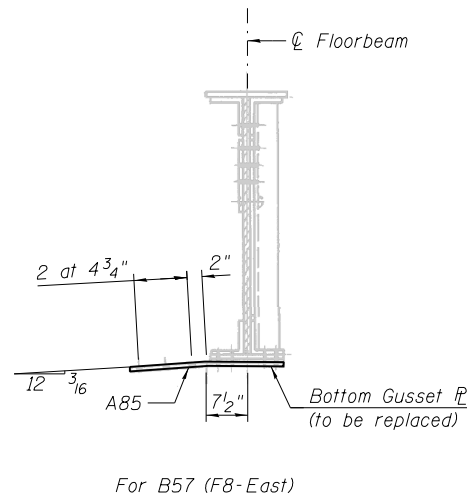
PLAN - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 8)
EAST LEAF
(1 required)



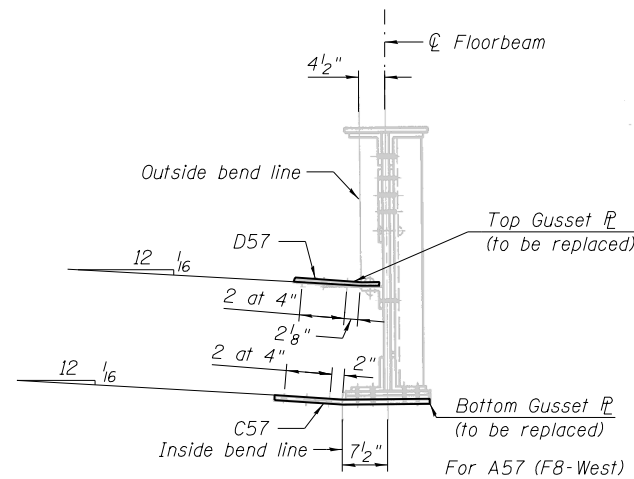
PLAN - LATERAL BRACING TOP GUSSET PL
(AT CL OF FLOORBEAM 8)
WEST LEAF
(1 required)



PLAN - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 8)
WEST LEAF
(1 required)



SECTION A-A - LATERAL BRACING BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 8)
EAST LEAF (LOOKING SOUTH)



SECTION B-B - LATERAL BRACING TOP AND BOTTOM GUSSET PL
(AT CL OF FLOORBEAM 8)
WEST LEAF (LOOKING NORTH)

*See Note 5 on Sheet S-09.

LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain.
- ✦ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

BILL OF MATERIAL

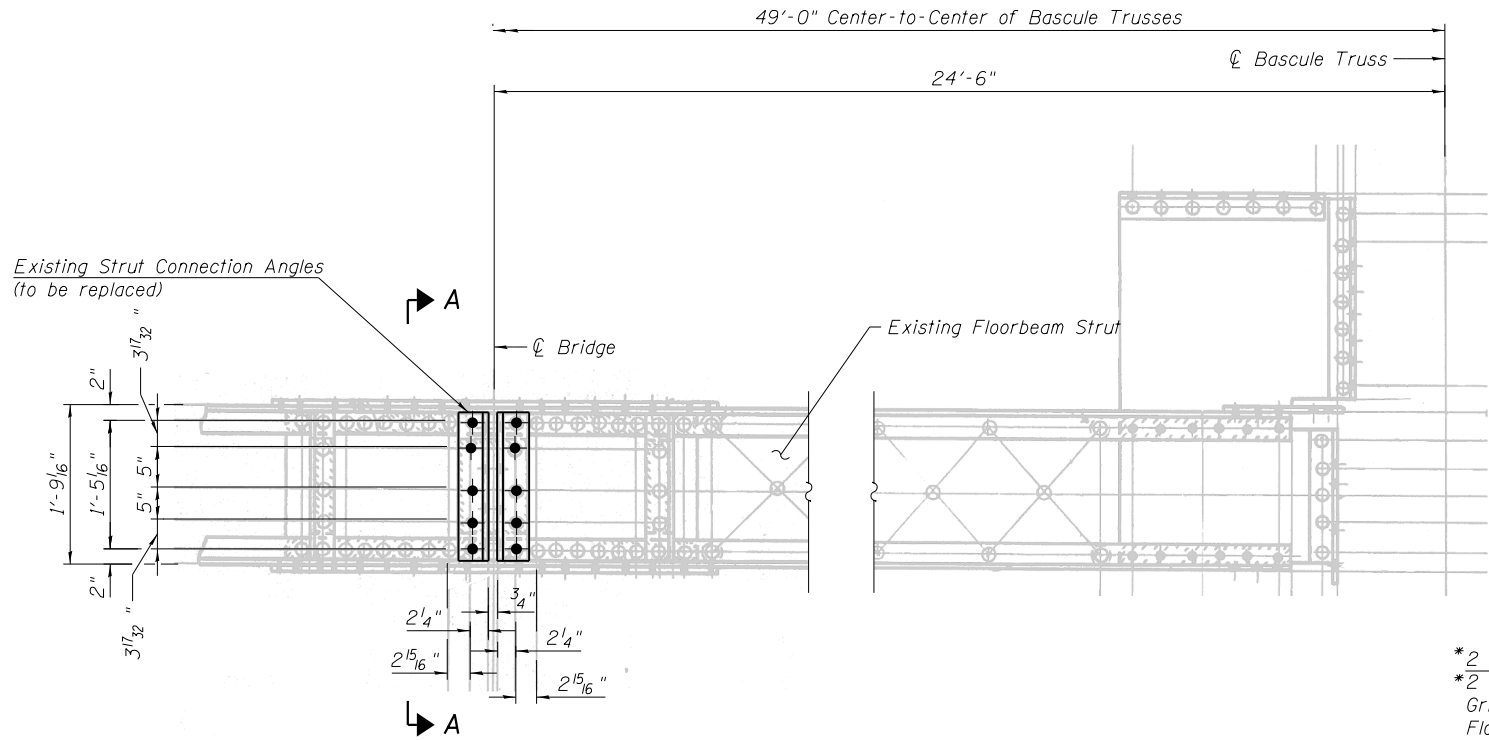
Pay Item	Unit	Quantity
Structural Steel Repair	Pound	1,980

NOTES:

- For additional notes, see Sheet S-09.
- The Contractor may, at his/her option, elect to field drill holes in the proposed plates.

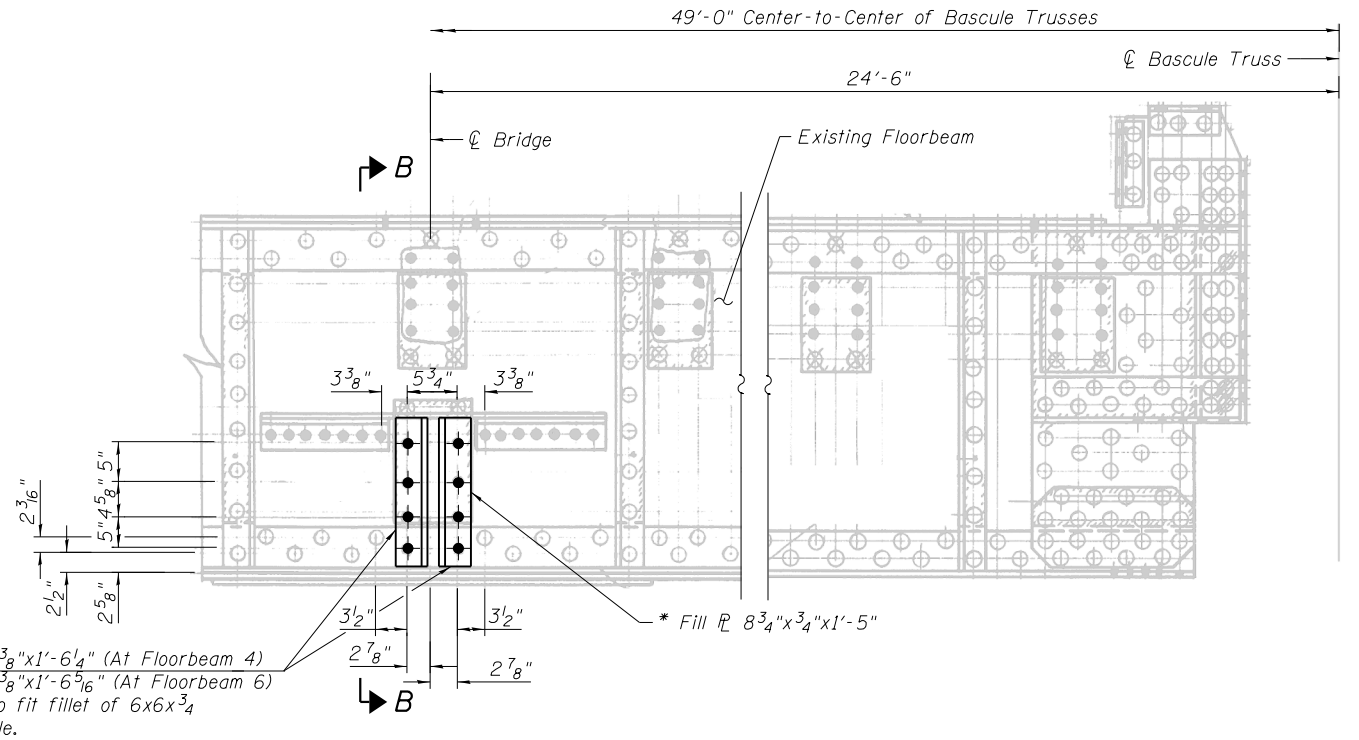
REFERENCE DRAWINGS:

Drawing	Sheet No.
Floor Beams F8 East & West Leaves	5075-57
Sections for Floor Beams F4-F6-F8 (East)	5075-85



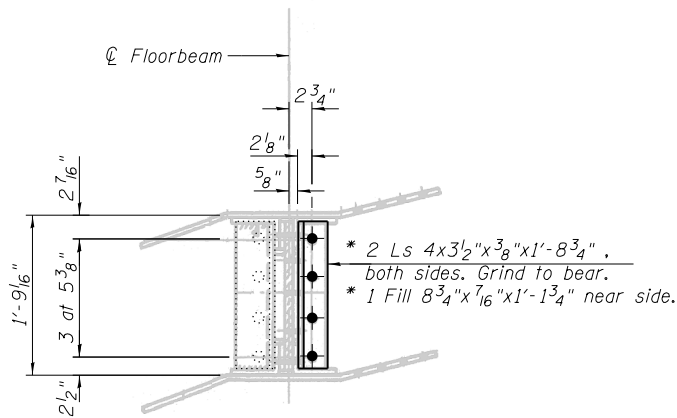
STRUT CONNECTION ANGLES (AT CL FLOORBEAM 2)

WEST LEAF
(2-Ls and 1 fill PL required at East face F2)

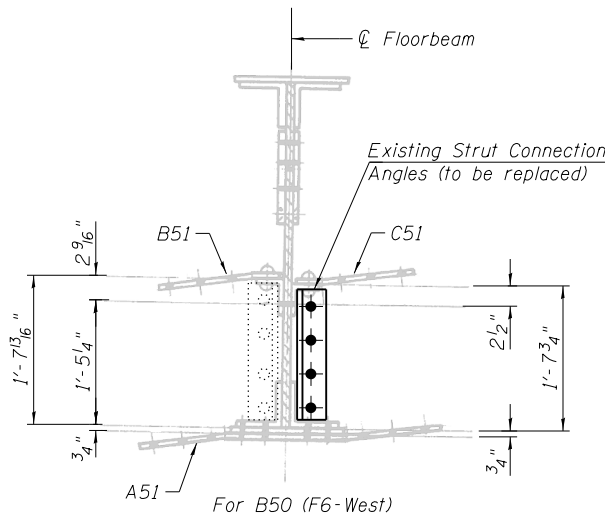


STRUT CONNECTION ANGLES (AT CL FLOORBEAMS 4 AND 6)

(2-Ls and 1 fill PL required at East face F4, WEST LEAF)
(2-Ls and 1 fill PL required at East face F6, WEST LEAF)

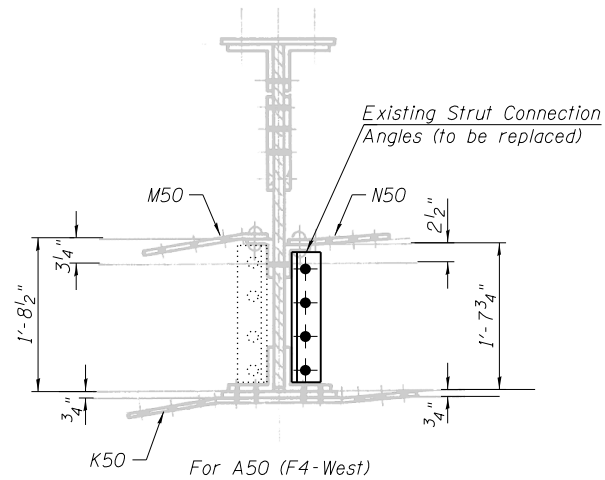


SECTION A-A



SECTION B-B

(At Floorbeam 6 (B50) - WEST LEAF)



SECTION B-B

(At Floorbeam 4 (A50) - WEST LEAF)

NOTES:

- Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
- Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
- When required to completely remove and replace members, remove rivets (and/or existing bolts) and replace with 7/8" diameter high strength bolts, unless noted otherwise.
- "Replace" indicates: remove existing members, furnish and install new member as shown.
- New connection angles and fill plates to match existing angles and fill plates in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed 7/8" ϕ H.S. bolts shall match existing holes. Contractor shall use existing angles and plates for a template.
- For locations of connection angle replacement, see Sheet S-03.
- For Bill of Material, see Sheet S-14.

* See Note 5.

LEGEND:

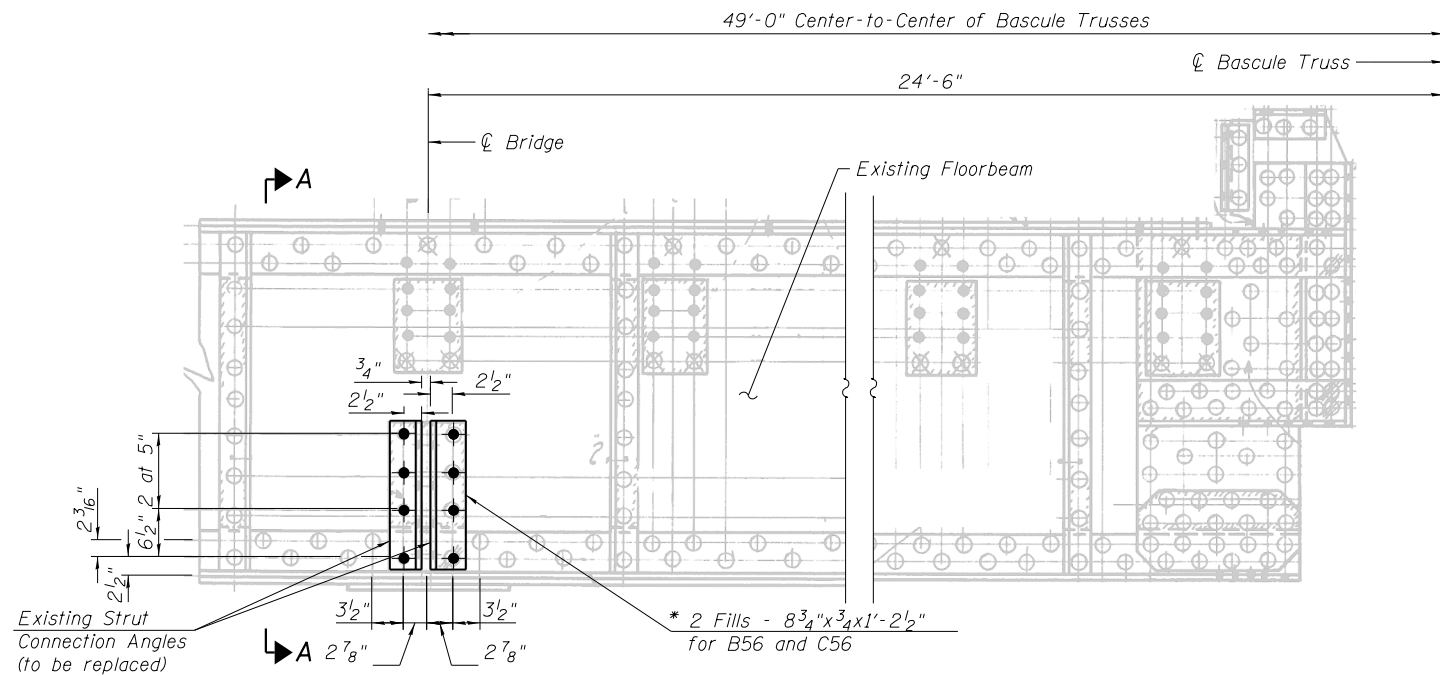
- New Member
- or ● Exist. bolt or rivet to remain.
- ✦ New bolt in existing or new steel. Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

REFERENCE DRAWINGS:

Drawing	Sheet No.
Strut at F2 (West Leaf)	5075-45
Floor Beams F4 & F6 (West Leaf)	5075-50
Lateral Plates for F6 (West Leaf)	5075-51

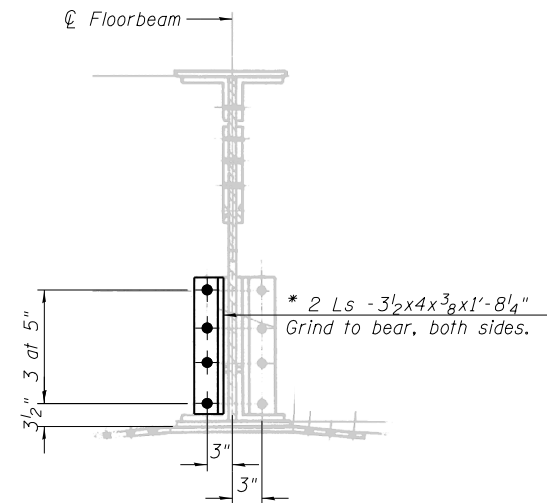
USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - FA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	16
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				



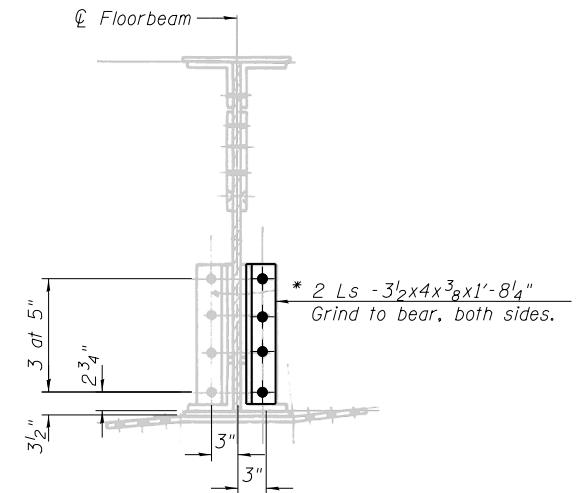
STRUT CONNECTION ANGLES (AT ϕ FLOORBEAMS 5 AND 7)

(2-Ls and 1 fill ϕ required at West face F5, EAST LEAF)
(2-Ls and 1 fill ϕ required at East face F7, WEST LEAF)



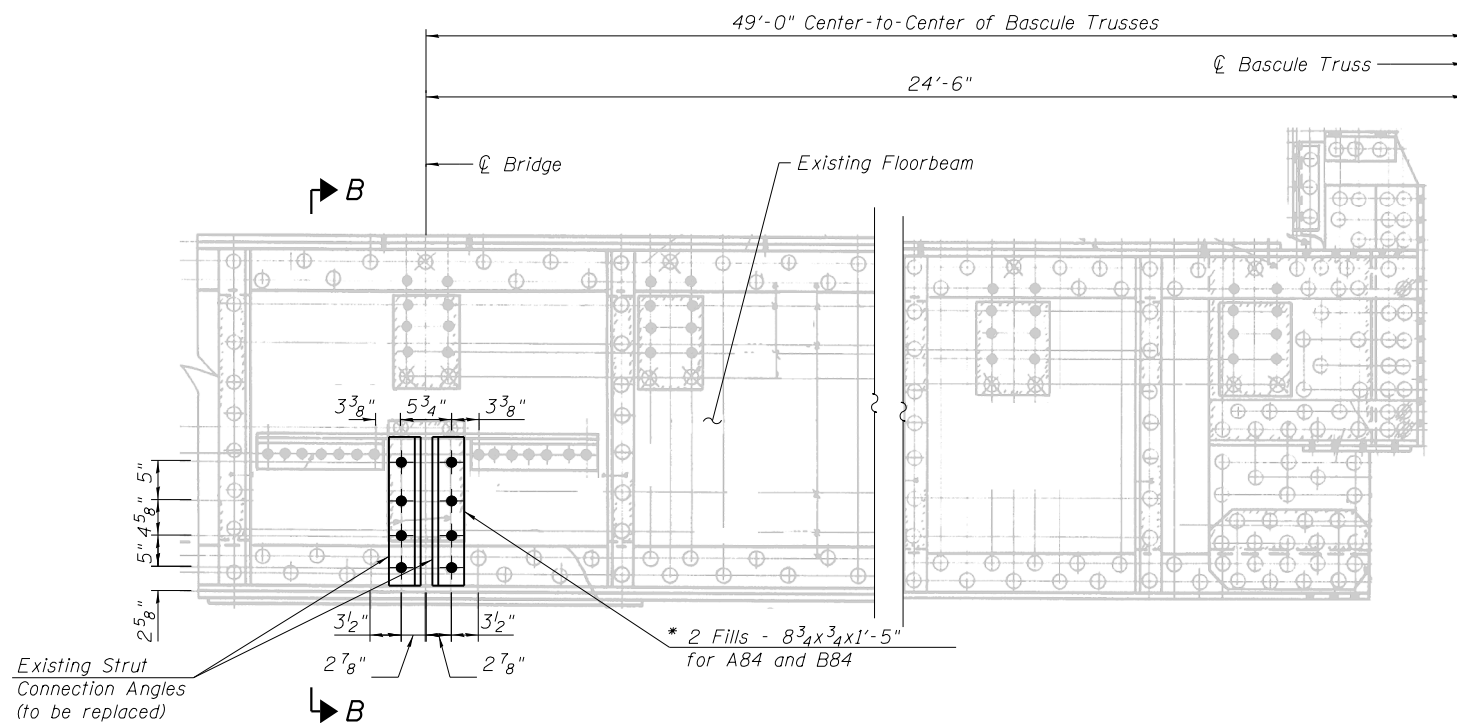
SECTION A-A

(At Floorbeam 7 (B56) - WEST LEAF)



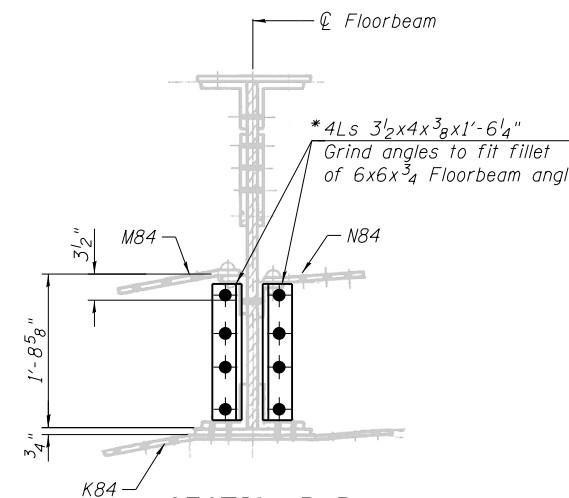
SECTION A-A

(At Floorbeam 5 (C56) - EAST LEAF)



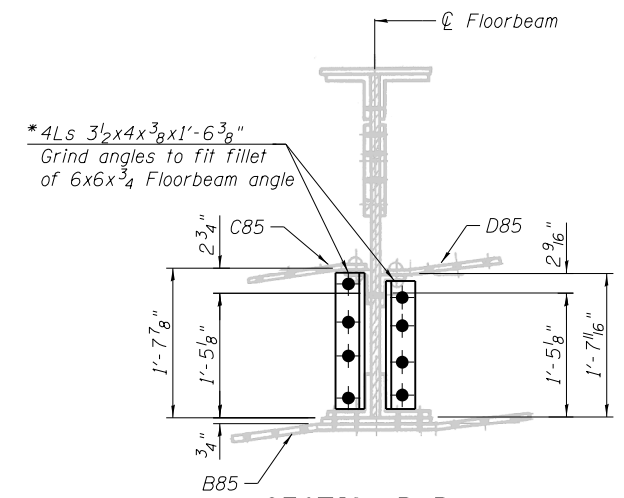
STRUT CONNECTION ANGLES (AT ϕ FLOORBEAMS 4 AND 6)

(4-Ls and 2 fill ϕ required at F4, EAST LEAF)
(4-Ls and 2 fill ϕ required at F6, EAST LEAF)



SECTION B-B

(At Floorbeam 4 (A84) - EAST LEAF)



SECTION B-B

(At Floorbeam 6 (B84) - EAST LEAF)

BILL OF MATERIAL

Pay Item	Unit	Quantity
Structural Steel Repair	Pound	520

LEGEND:

— New Member

○ or ● Exist. bolt or rivet to remain.

✦ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

* See Note 5 on Sheet S-13.

REFERENCE DRAWINGS:

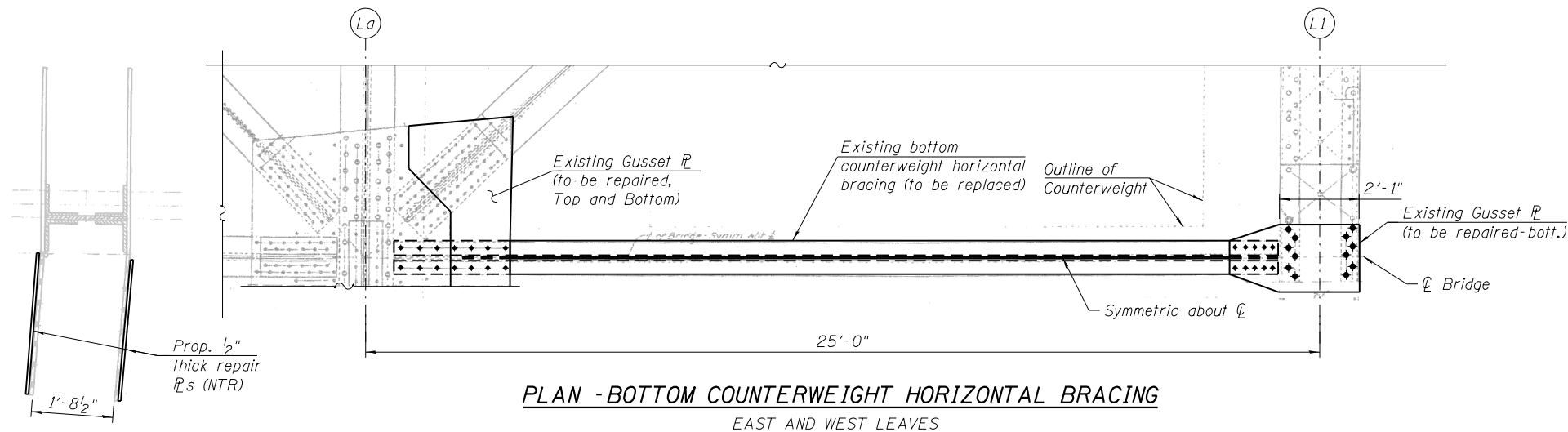
Drawing	Sheet No.
Floor Beams (F5-7 West) (F5-7 East)	5075-56
Floor Beams F4 & F6 (East Leaf)	5075-84
Sections for Floor Beams F4-F6-F8 (East)	5075-85

NOTES:

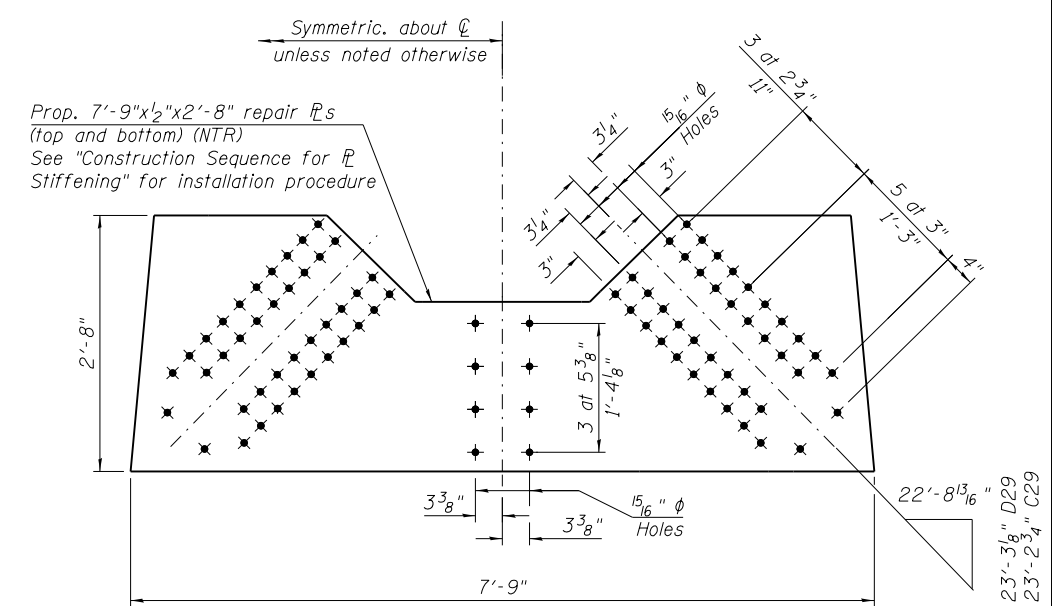
- For Notes, see Sheet S-13.
- The Contractor may, may at his or her option, elect to field drill holes in the proposed angle.

USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - FA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	17
CONTRACT NO. 62B79				



SECTION B-B



BOTTOM COUNTERWEIGHT HORIZONTAL GUSSET PLATE REPAIR (AT Ld)

(EAST AND WEST LEAVES)
(4 Required)

* See Note 5

CONSTRUCTION SEQUENCE FOR PL STIFFENING:

1. Clean exterior faces of existing steel (angles, plates and gusset plates) according to the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."
2. Remove existing gusset plate rivet/bolt and replace with proposed H.S. bolts. Existing bolts/rivets shall be replaced one at a time. As each rivet/bolt is replaced with a H.S. bolt, the first washer and nut shall be installed and fully tightened as shown in Detail 1 on Sheet S-04.
3. Construct template for location for newly installed H.S. bolts to determine if field reaming of fill or repair plates is required.
4. Install additional washer as shown in Detail 1 on Sheet S-04.
5. Place repair plate with holes centered with centerline of new H.S. bolts. Install second washer and nut and fully tighten.

NOTES:

1. Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
2. Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
3. When required to completely remove and replace members, remove rivets (and/or existing bolts) and replace with 7/8" diameter high strength bolts, unless noted otherwise.
4. "Replace" indicates: remove existing members, furnish and install new member as shown.
5. New plates, angles and lacing bars to match existing plates, angles and bars in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed 7/8" ϕ H.S. bolts shall match existing holes. Contractor shall use existing plates, angles and bars for templates.
6. For details of plate stiffening, See Detail 1 on Sheet S-04.
7. See also notes 3 thru 7 on Sheet S-04.

REFERENCE DRAWINGS:

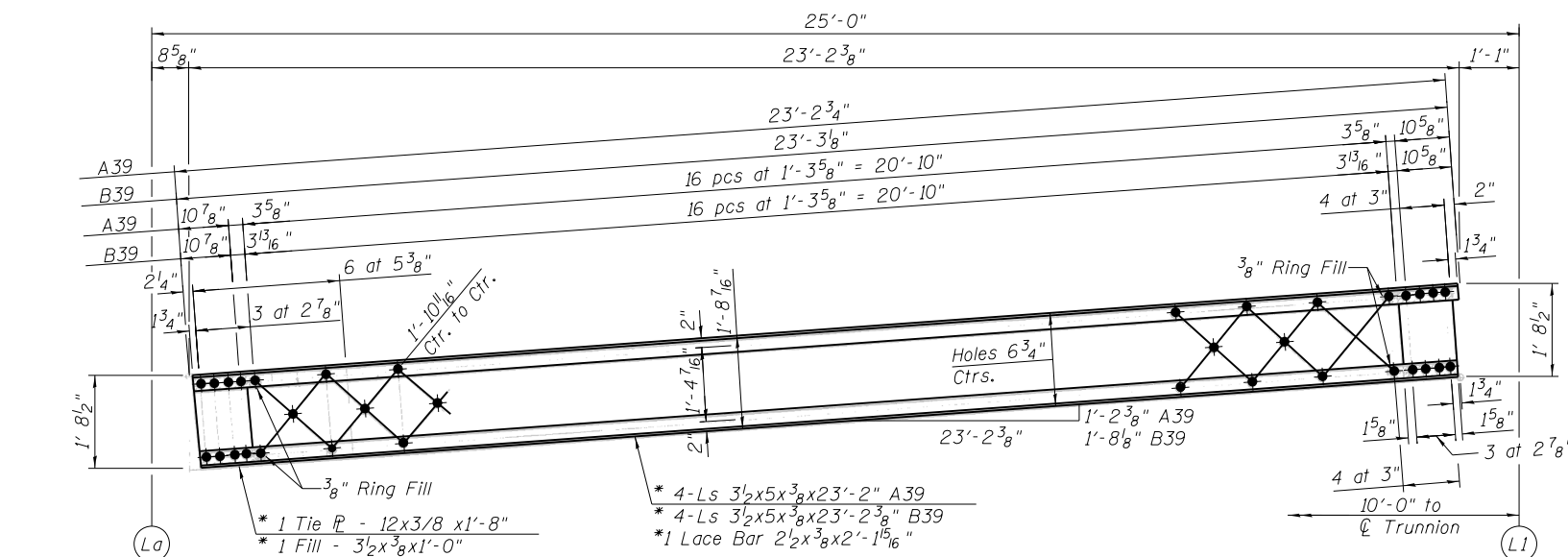
Drawing	Sheet No.
Counterweight Supports	1343-36
Detail of C/Wt. Truss "A" For West & East Side	5075-29
Bottom Chords Of Floor Beam "F1"	5075-33
Struts	5075-39

LEGEND:

—	New Member
○ or ●	Exist. bolt or rivet to remain.
+	New bolt in existing or new steel. Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

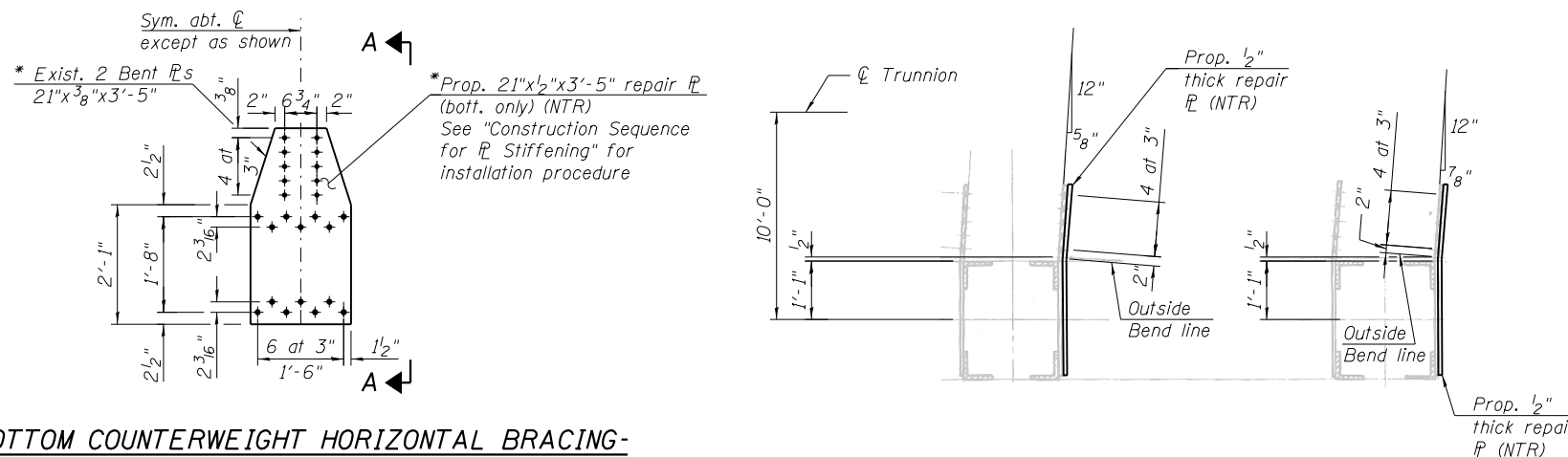
BILL OF MATERIAL

Pay Item	Unit	Quantity
Structural Steel Repair	Pound	4,190



ELEVATION - BOTTOM COUNTERWEIGHT HORIZONTAL BRACING

FOR A39 WEST LEAF AND B39 EAST LEAF



BOTTOM COUNTERWEIGHT HORIZONTAL BRACING- GUSSET PLATE REPAIR (AT L1)

EAST AND WEST LEAVES
(2 Required)

SECTION A-A

FOR A39
WEST LEAF

SECTION A-A

FOR B39
EAST LEAF

HBM
ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - JJS, MI	REVISED -
PLOT SCALE =	CHECKED - MI, MAI	REVISED -
PLOT DATE =	DRAWN - MAA, FA	REVISED -
	CHECKED - JJS, MI	REVISED -

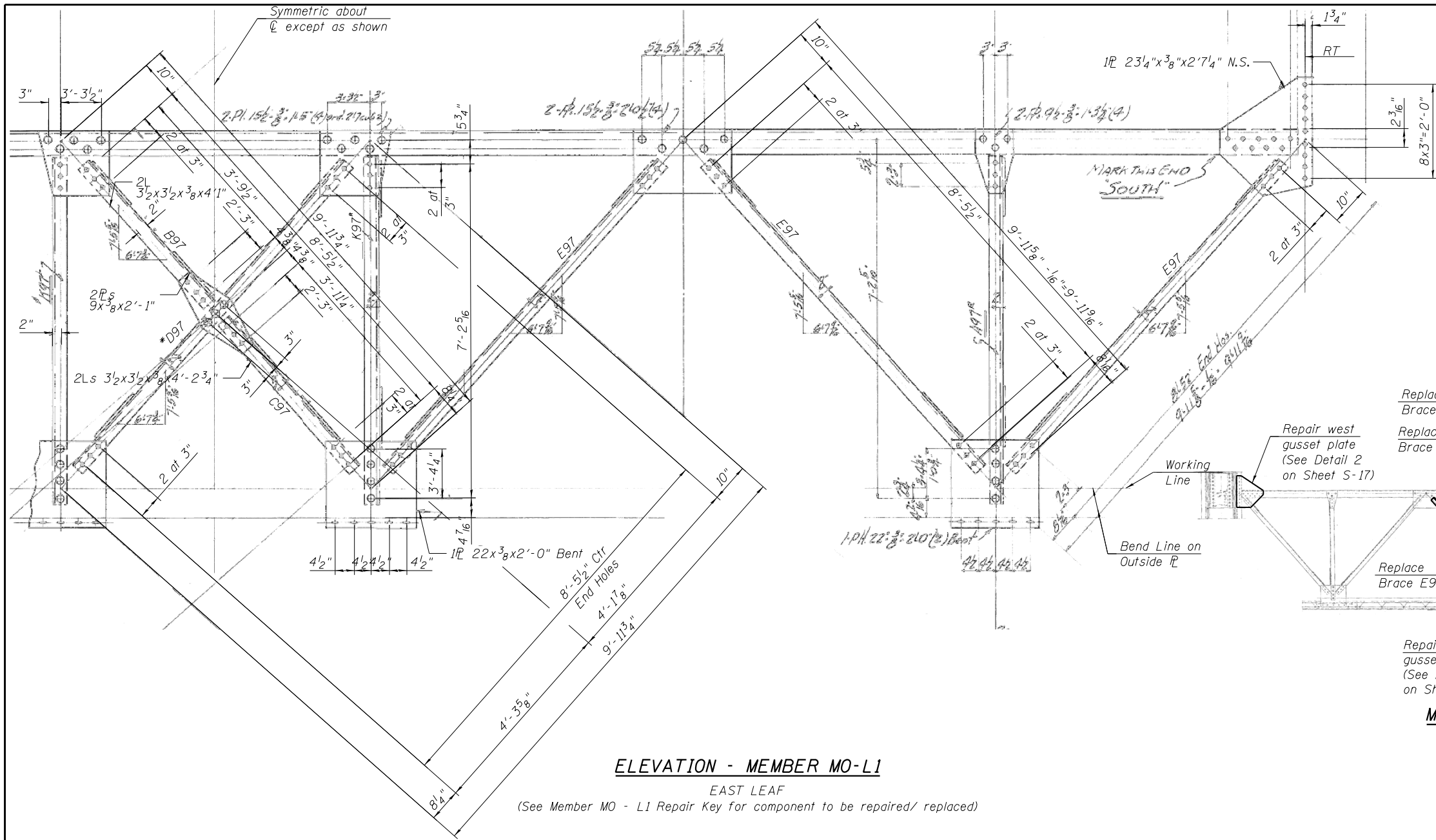
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BOTTOM COUNTERWEIGHT BRACING REMOVAL AND REPLACEMENT
RUBY STREET OVER DES PLAINES RIVER - SN 099-9901

SHEET S-15 OF S-24 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	18
CONTRACT NO. 62B79				

ILLINOIS FED. AID PROJECT



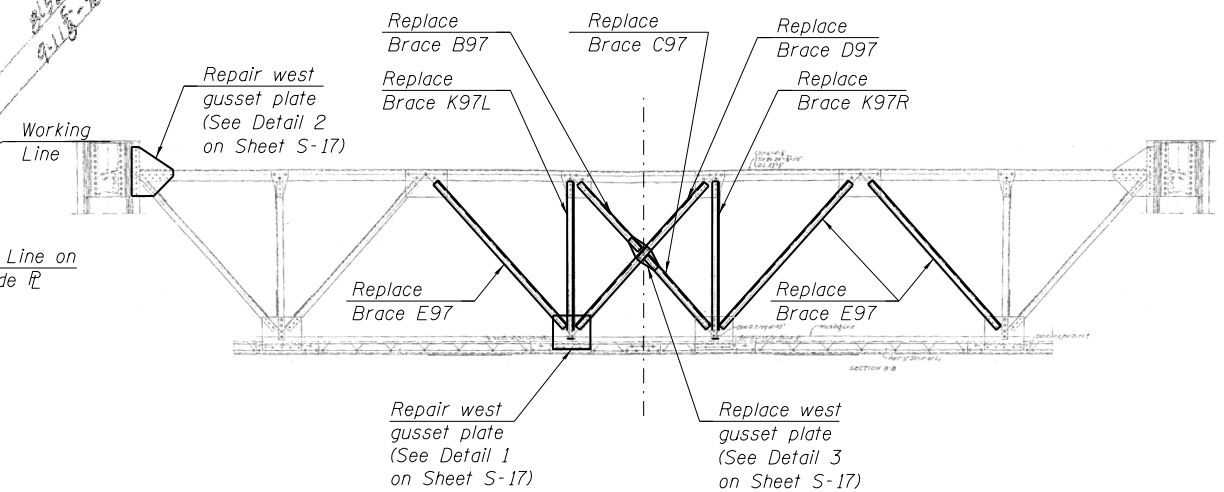
ELEVATION - MEMBER MO-L1

EAST LEAF
(See Member MO - L1 Repair Key for component to be repaired/ replaced)

LEGEND:

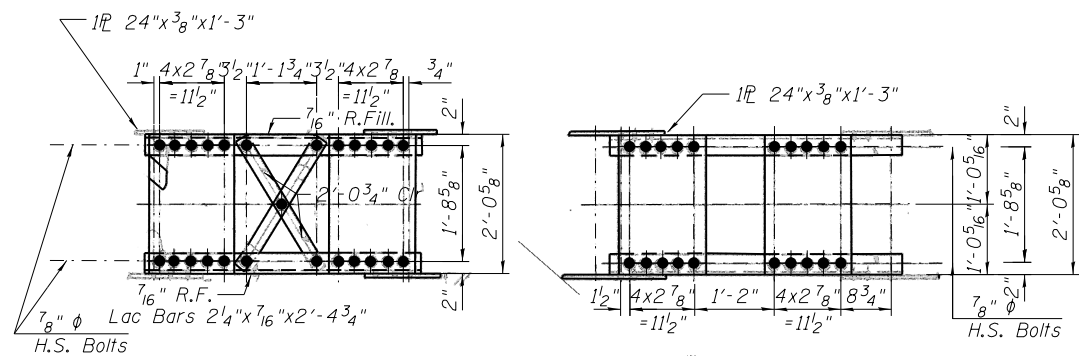
- New Member
- or ● Exist. bolt or rivet to remain.
- ✦ New bolt in existing or new steel.
Remove existing rivet or bolt and replace
with new 7/8\" diameter H.S. bolt,
unless noted otherwise

* Contractor shall replace Entire Member including Angles,
Lacing Bars and Web Plates. See Note 5 on Sheet S-17.



MEMBER MO-L1 REPAIR KEY

EAST LEAF
(Looking East)

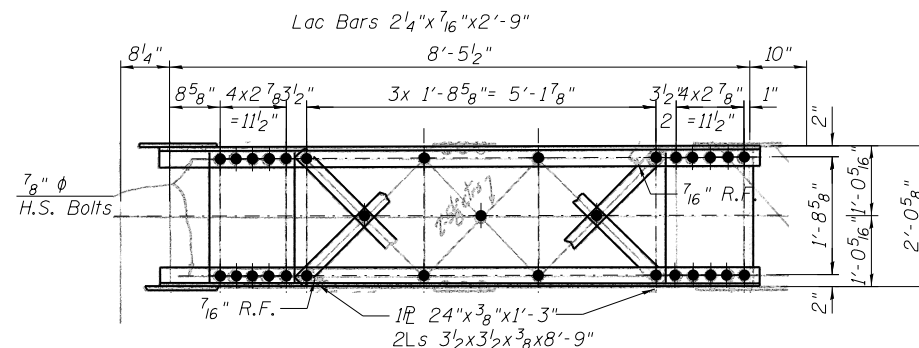


***BRACE B97**

EAST LEAF
(1 required)

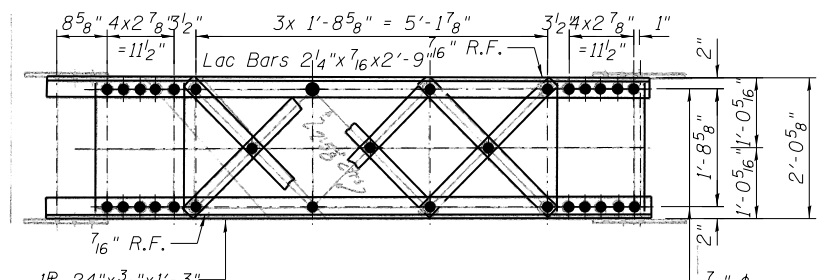
***BRACE C97**

EAST LEAF
(1 required)



***BRACE D97**

EAST LEAF
(1 required)



***BRACE E97**

EAST LEAF
(3 required)

USER NAME =	DESIGNED - JJS, LAB	REVISED -
PLOT SCALE =	CHECKED - MI, MAI	REVISED -
PLOT DATE =	DRAWN - FA	REVISED -
	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	19
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				

USER NAME =	DESIGNED - JJS, LAB	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - FA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	20
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				

NOTES:

- Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
- Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
- When required to completely remove and replace members, remove rivets (and/or existing bolts) and replace with $\frac{7}{8}$ " diameter high strength bolts, unless noted otherwise.
- "Replace" indicates: remove existing members, furnish and install new member as shown.
- New plates, angles and other components of Member MO-L1 shall match existing plates, angles and components in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed $\frac{7}{8}$ " ϕ H.S. bolts shall match existing holes. Contractor shall use existing plates, angles and components as templates.
- Punch all holes for field connections full size except holes marked "RT" which are to be reamed to a steel template in shop.
- For Bill of Material, see Sheet S-18.
- For details of plate stiffening, see Detail 1 on Sheet S-04.
- Existing gusset plate rivets/bolts shall be replaced with $\frac{7}{8}$ " ϕ H.S. bolts according to the "Construction Sequence for \bar{P} Stiffening" presented on this sheet. At no time shall there be more than one empty fastener hole.
- 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 1 on Sheet S-04, 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 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. bolt for the gusset plate repair as shown in Detail 1 on Sheet S-04.
- 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 1 on Sheet S-04, to paint, dirt, moisture or other foreign material that may alter their as-recieved 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."

CONSTRUCTION SEQUENCE FOR \bar{P} STIFFENING:

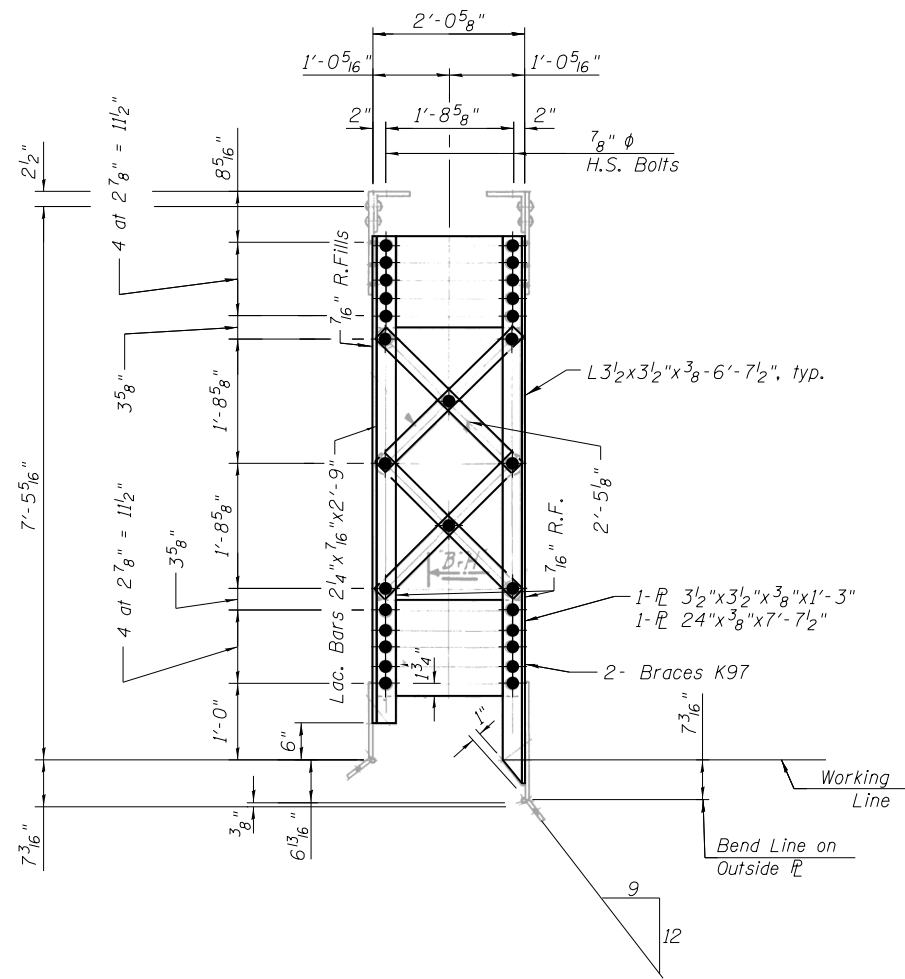
- Clean exterior faces of existing steel (angles, plates and gusset plates) according to the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."
- Remove existing gusset plate rivet/bolt and replace with proposed H.S. bolts. Existing bolts/rivets shall be replaced one at a time. As each rivet/bolt is replaced with a H.S. bolt, the first washer and nut shall be installed and fully tightened as shown in Detail 1 on Sheet S-04.
- Construct template for location for newly installed H.S. bolts to determine if field reaming of fill or repair plates is required.
- Install additional washer as shown in Detail 1 on Sheet S-04.
- Place repair plate with holes centered with centerline of new H.S. bolt. Install second washer and nut and fully tighten.

LEGEND:

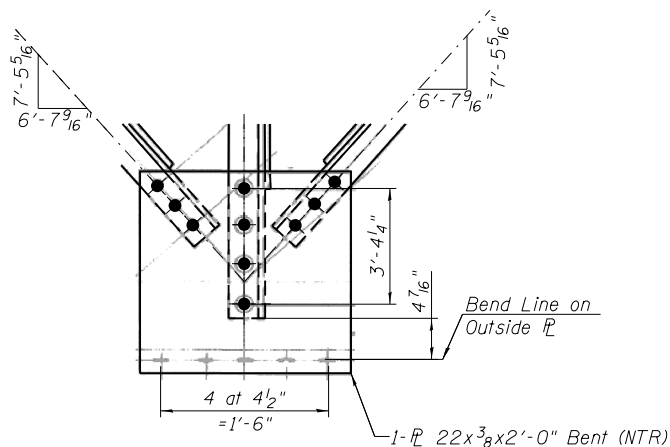
- _____ New Member
- or ● Exist. bolt or rivet to remain.

REFERENCE DRAWINGS:

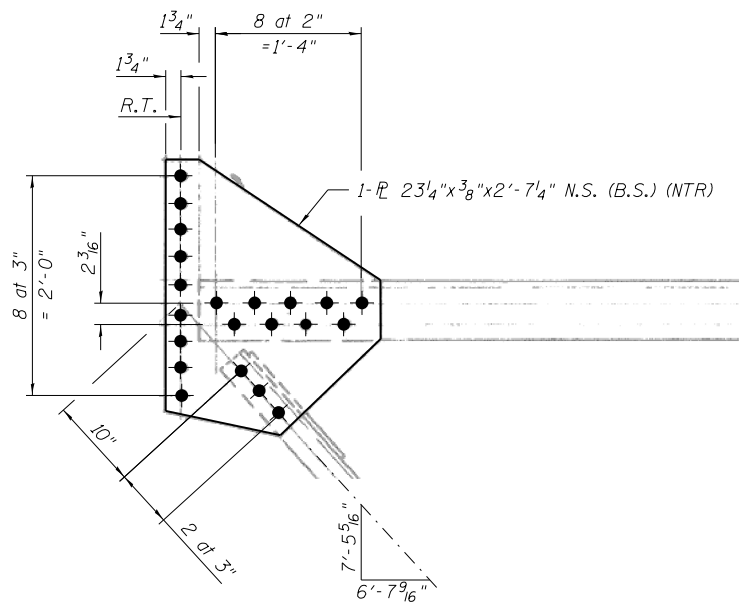
Drawing	Sheet No.
Horizontal Girder and Bracing MO-L1	1343-40
Bracing at MO-L1 (East Leaf)	5075-97
New bolt in existing or new steel. Remove existing rivet or bolt and replace with new $\frac{7}{8}$ " diameter H.S. bolt, unless noted otherwise	



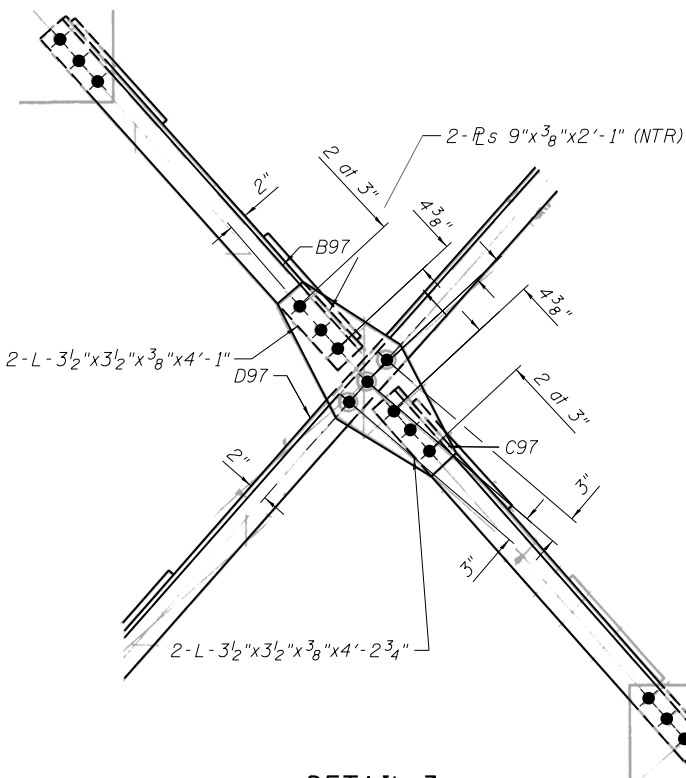
BRACE K97
EAST LEAF
(2 required - 1 Brace K97^R and 1 Brace K97^L)



DETAIL 1
EAST LEAF
(1 required)



DETAIL 2
EAST LEAF
(1 required)



DETAIL 3
EAST LEAF
(1 required)

BILL OF MATERIAL

Pay Item	Unit	Quantity
Structural Steel Repair	Pound	4040

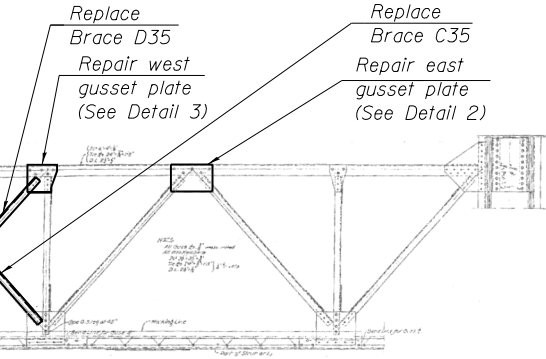
*Contractor shall replace Entire Member including Angles, Lacing Bars and Web Plates. See Note 5 on Sheet S-17.

NOTE:

1. For Notes and "Construction Sequence for R Stiffening", see Sheet S-17.

REFERENCE DRAWINGS:

Drawing	Sheet No.
Horizontal Girder and Bracing MO-L1	1343-40
Bracing at MO-L1 (West Leaf)	5075-35



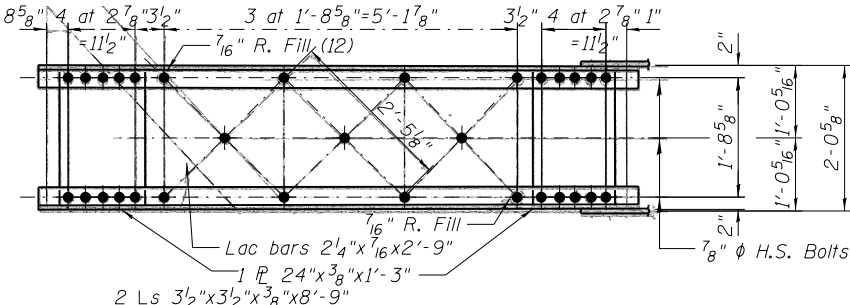
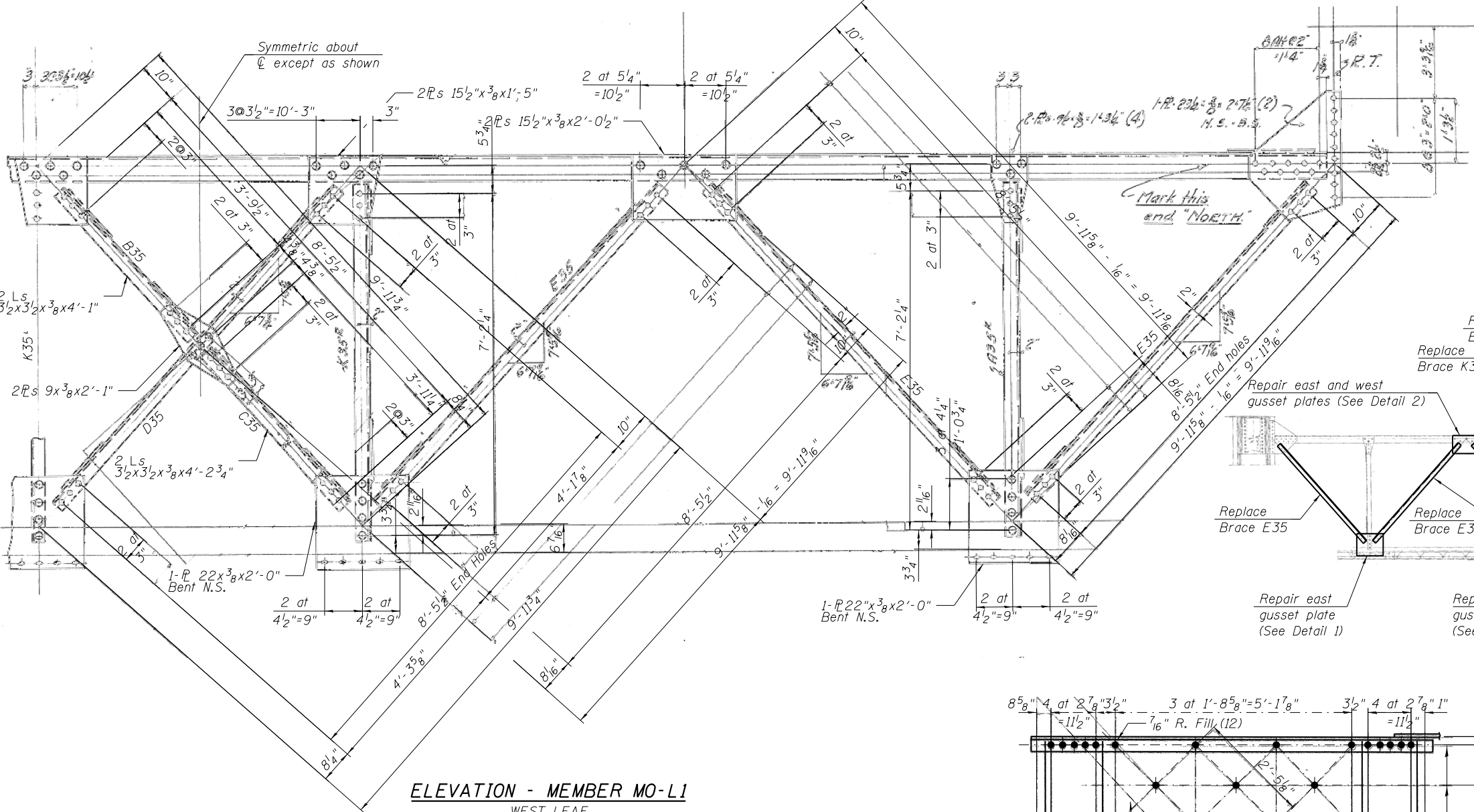
LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain.
- ◆ New bolt in existing or new steel. Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

ELEVATION - MEMBER MO-L1

WEST LEAF

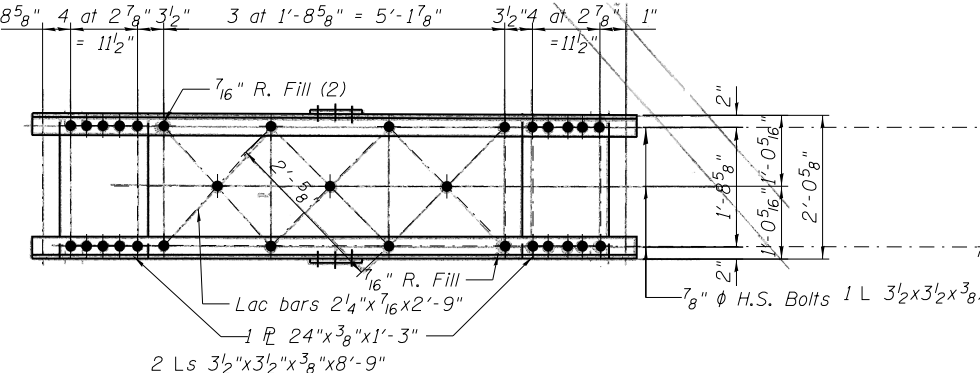
(See Member MO-L1 Repair Key for components to be repaired/ replaced)



*BRACE E35

WEST LEAF

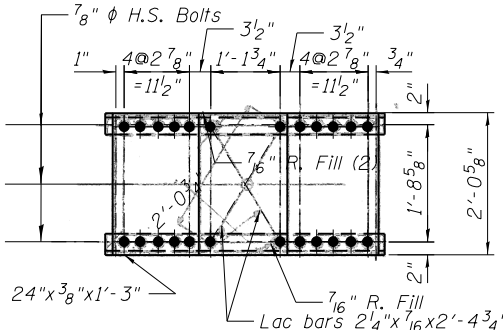
(3 required)



*BRACE D35

WEST LEAF

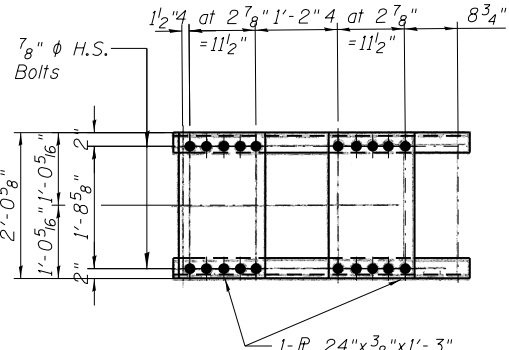
(1 required)



*BRACE B35

WEST LEAF

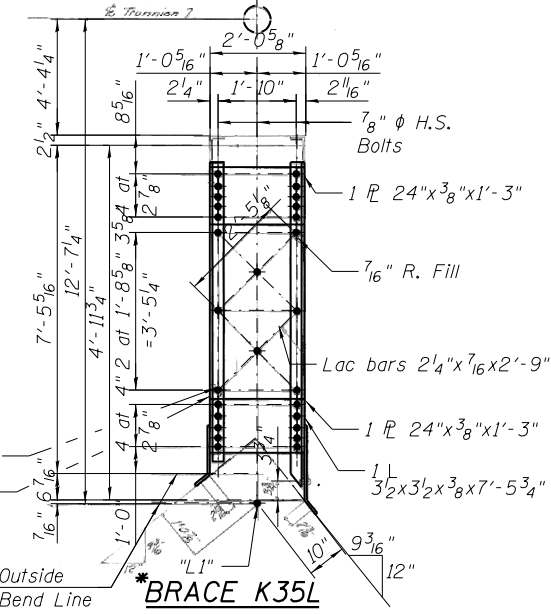
(1 required)



*BRACE C35

WEST LEAF

(1 required)



*BRACE K35L

WEST LEAF

(1 required)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MEMBER MO-L1 REPAIRS - WEST LEAF (SHEET 1 OF 2)
RUBY STREET OVER DES PLAINES RIVER - SN 099-9901

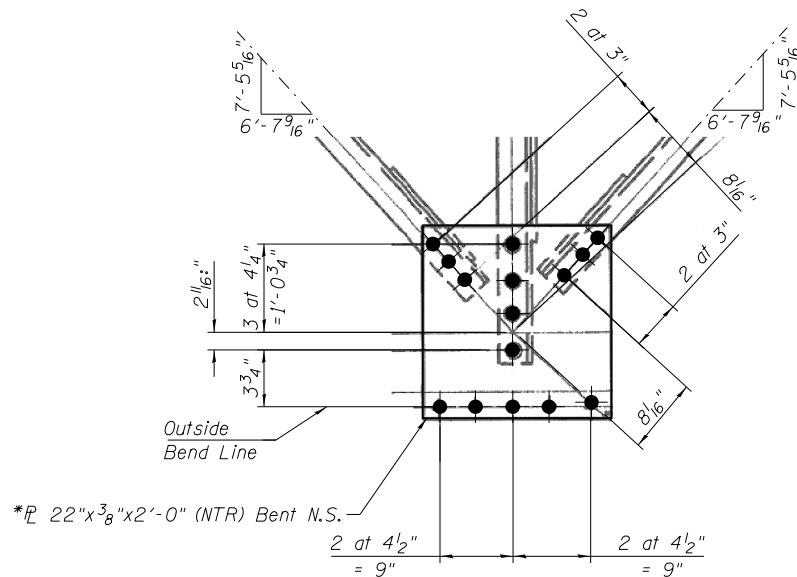
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	21
CONTRACT NO. 62B79				

SHEET S-18 OF S-24 SHEETS

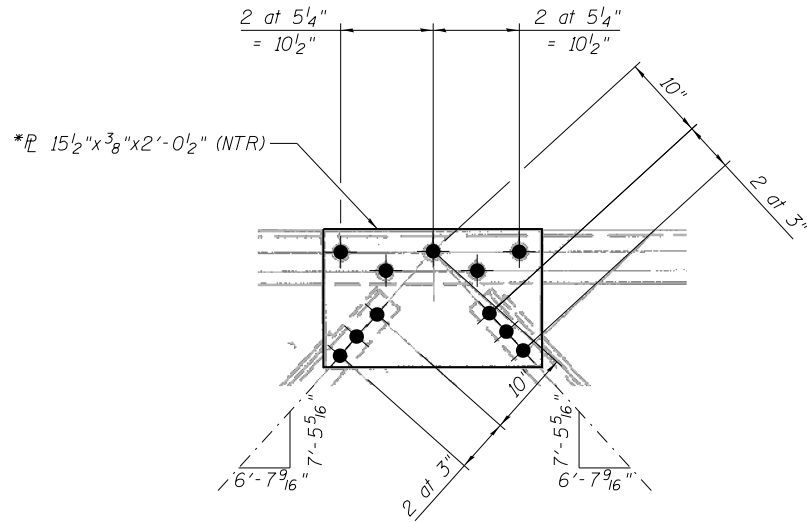
ILLINOIS FED. AID PROJECT

HBM
ENGINEERING GROUP, LLC

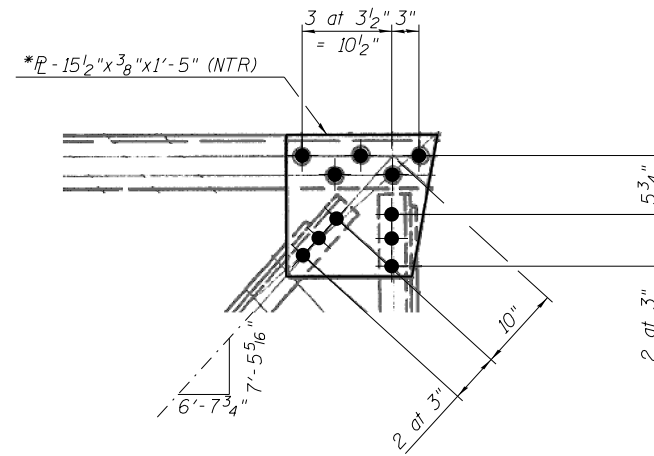
USER NAME =	DESIGNED - JJS, LAB	REVISED -
PLOT SCALE =	CHECKED - MI, MAI	REVISED -
PLOT DATE =	DRAWN - FA	REVISED -
	CHECKED - JJS, MI	REVISED -



DETAIL 1
WEST LEAF
(1 required)



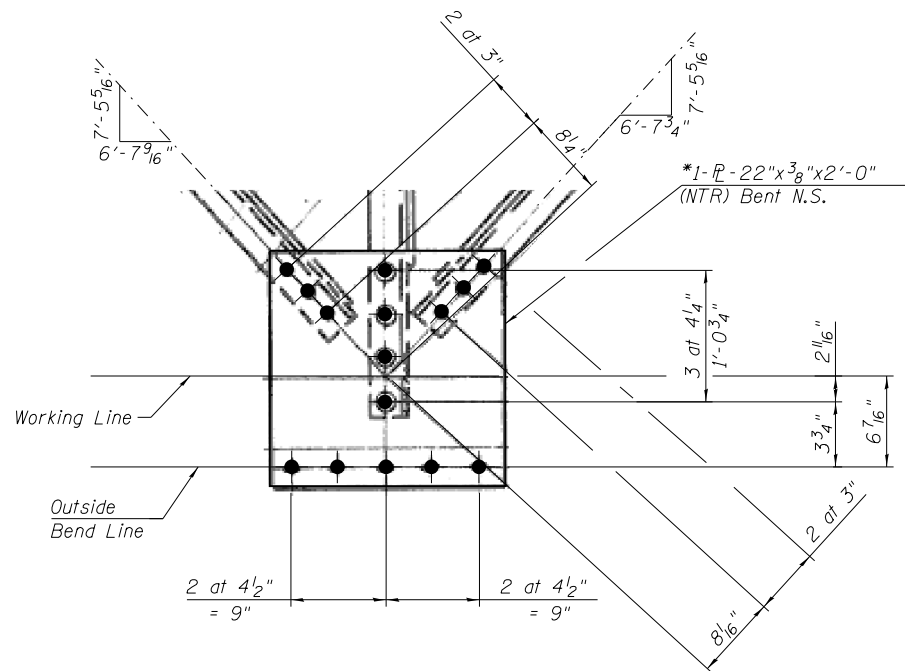
DETAIL 2
WEST LEAF
(3 required)



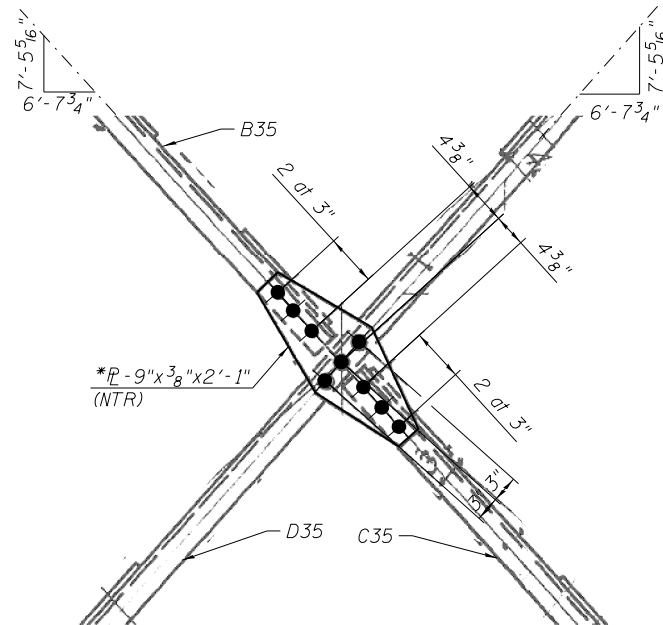
DETAIL 3
WEST LEAF
(1 required)

NOTE:
1. For Notes and "Construction Sequence for
P Stiffening", see Sheet S-17.

* See Note 5 on Sheet S-17



DETAIL 4
WEST LEAF
(1 required)



DETAIL 5
WEST LEAF
(1 required)

LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain.
- ⬤ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with
new 7/8" diameter H.S. bolt, unless noted otherwise

USER NAME =	DESIGNED - JJS, LAB	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - FA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	22
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				

BILL OF MATERIAL

Pay Item	Unit	Quantity
Structural Steel Repair	Pound	2,980

NOTES:

1. For locations of sidewalk railing posts to be replaced, see Sheet S-03.
2. Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
3. Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
4. When required to completely remove and replace members, remove rivets (and/ or existing bolts) and replace with 7/8" diameter high strength bolts, unless noted otherwise.
5. "Replace" indicates: remove existing members, furnish and install new member as shown.
6. Replacement posts shall be ASTM A500, Grade B.
7. New repair railing posts and other components shall match existing repaired railing posts and components in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed 7/8" ϕ H.S. bolts shall match existing holes. Contractor shall use existing plates, angles and components as templates.


REFERENCE DRAWINGS:

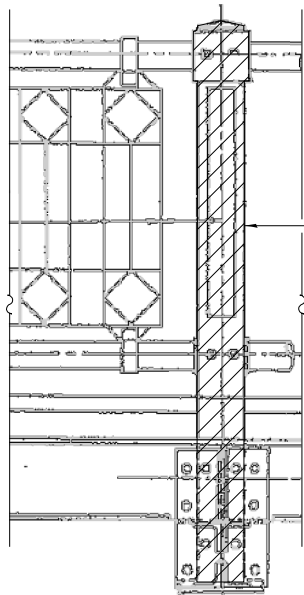
Drawing	Sheet No.
Ornamental Railing Repairs-Bascule Span	M-BDR-4-I(82) S-10
Ornamental Railing Repairs-Approaches	M-BDR-4-I(82) S-11

LEGEND:

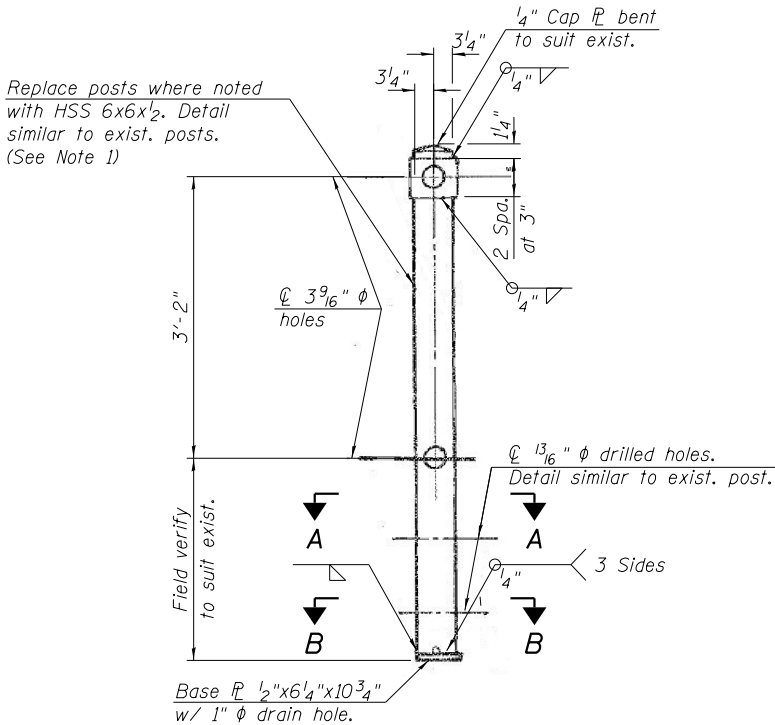
- New Member
- or ● Exist. bolt or rivet to remain.
- ◆ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with new 7/8" diameter H.S. bolt, unless noted otherwise

LEGEND

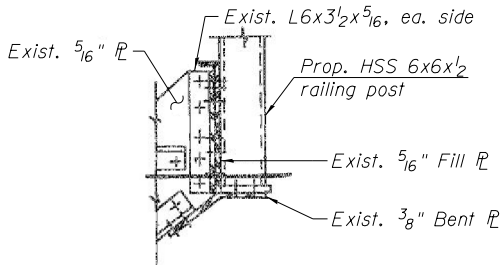
-  Existing railing post to be removed



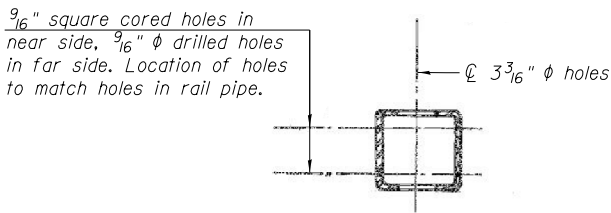
ELEVATION -TYPICAL EXISTING
RAILING POST REMOVAL
EAST AND WEST LEAVES



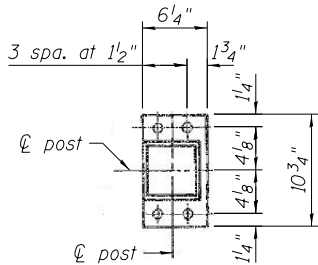
TYPICAL PROPOSED RAILING POST DETAIL
EAST AND WEST LEAVES
(14 Required)
(Connection to Bent PL not shown for clarity)



PROPOSED RAILING POST TO EXISTING BENT PL
CONNECTION DETAIL



SECTION A-A



SECTION B-B

USER NAME =	DESIGNED - JJS, LAB	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - FA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	23
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				

BILL OF MATERIAL

Pay Item	Unit	Quantity
Structural Steel Repair	Pound	2,320


NOTES:

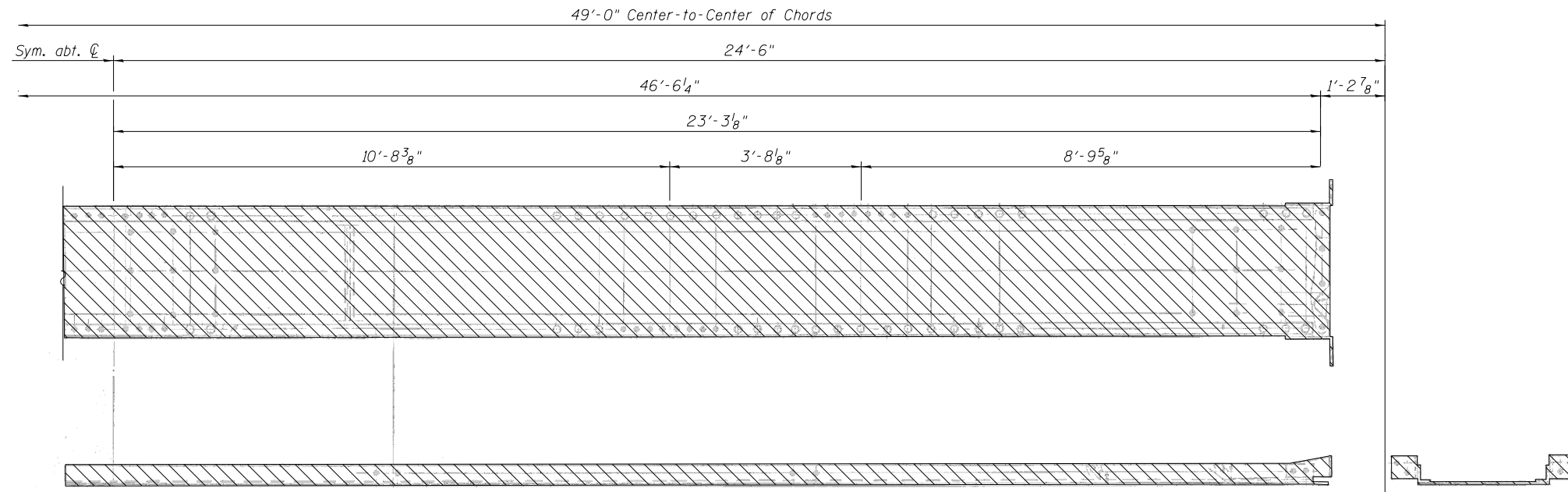
1. Portions of this drawing are extracted from the original drawing for this bridge. Details shown are provided to illustrate the work to be performed.
2. Repairs and replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
3. When required to completely remove and replace members, remove rivets (and/or existing bolts) and replace with $\frac{7}{8}$ " diameter high strength bolts, unless noted otherwise.
4. "Replace" indicates: remove existing members, furnish and install new member as shown.
5. New plates, angles and other components of the proposed catwalk to match existing plates, angles and components in shape, size and hole locations. Existing dimensions are shown for information only. The Contractor shall verify all dimensions in field prior to ordering materials. The number and spacing for proposed $\frac{7}{8}$ " ϕ H.S. bolts shall match existing holes. Contractor shall use existing plates, angles and components as templates.

REFERENCE DRAWINGS:

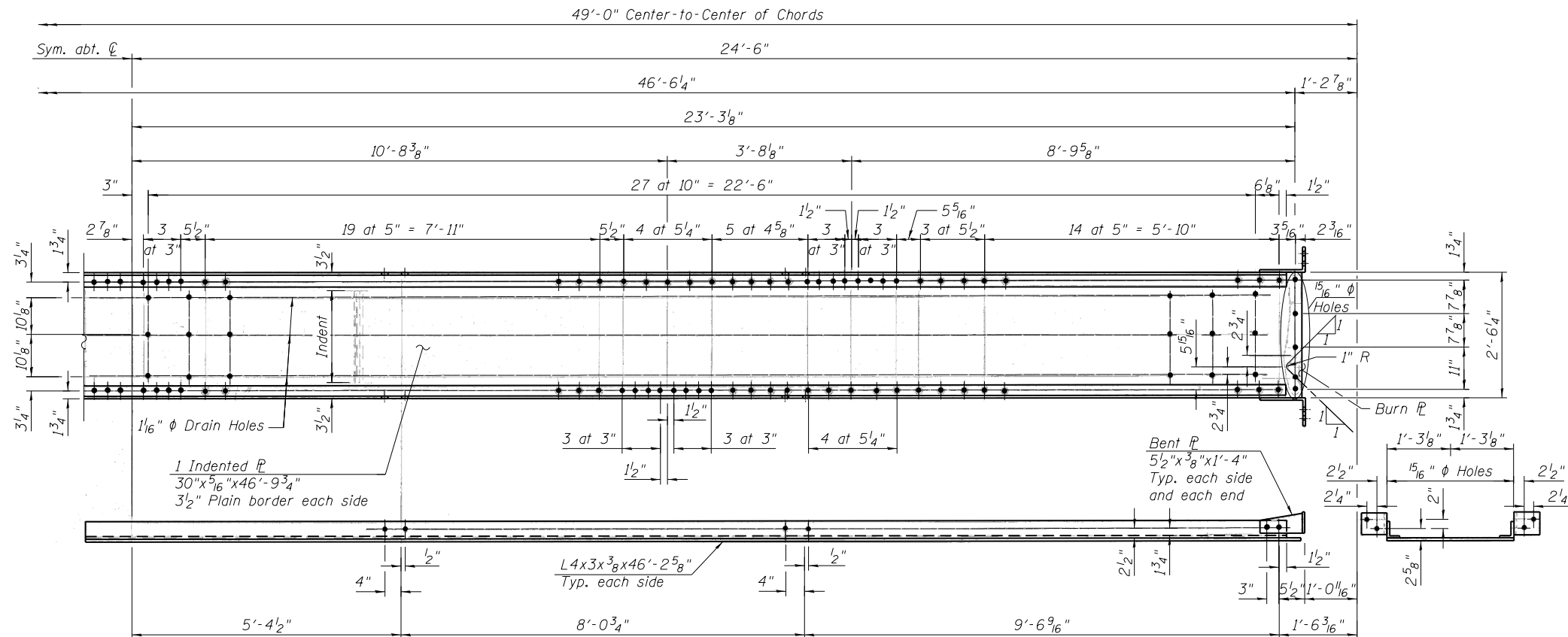
Drawing	Sheet No.
Laterals and Walkway at L7-L8 East	5075-106

LEGEND:

- New Member
- or ● Exist. bolt or rivet to remain.
- ✦ New bolt in existing or new steel.
Remove existing rivet or bolt and replace with new $\frac{7}{8}$ " diameter H.S. bolt, unless noted otherwise
-  Steel Removal



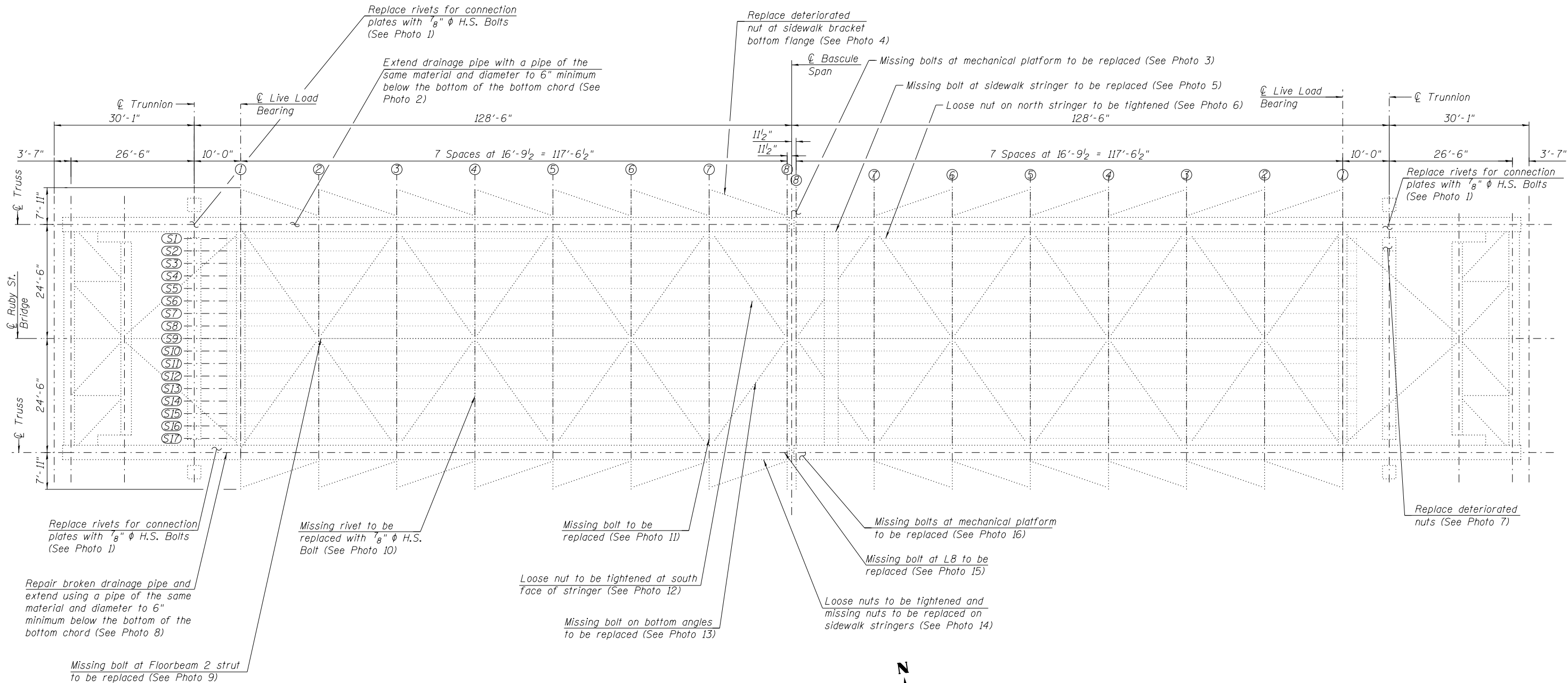
CATWALK REMOVAL
(Between L7 and L8, EAST LEAF)



CATWALK REPLACEMENT
(Between L7 and L8, EAST LEAF)
(See Note 5)

USER NAME =	DESIGNED - LAB, JJS	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - SK	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	24
CONTRACT NO. 62B79				



NOTES:

- Locations of repair and/or replacement shown are based on field inspection. Conditions in field may have changed. Contractor to verify all components for repair or replacement as directed by the Engineer.
- When required to replace deteriorated and/or missing rivets, replace with 7/8" ϕ H.S. bolts unless noted otherwise.
- Costs associated with removal and/or replacement of deteriorated and missing rivets, nuts and bolts, as well as tightening of loose nuts, shall be included with Structural Steel Repair.
- Broken drainage pipe to be repaired and extended shall be paid for as Floor Drain Extension.
- For Photos 1 thru 9, see Sheet S-23.
- For Photos 10 thru 16, see Sheet S-24.

BILL OF MATERIAL

Pay Item	Unit	Quantity
Floor Drain Extension	Each	2
Structural Steel Repairs	Pound	310

LEGEND:

..... Existing Member to Remain



PHOTO 1: NORTH TRUSS CONNECTION PLATE
(NW corner shown, SW corner and NE corner similar)

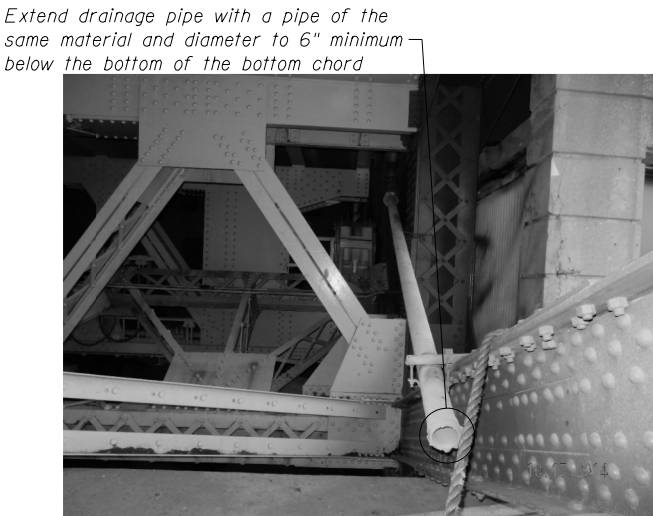


PHOTO 2: NW BRIDGE DRAINAGE PIPE
(Between Floorbeams 1 and 2 - WEST LEAF)

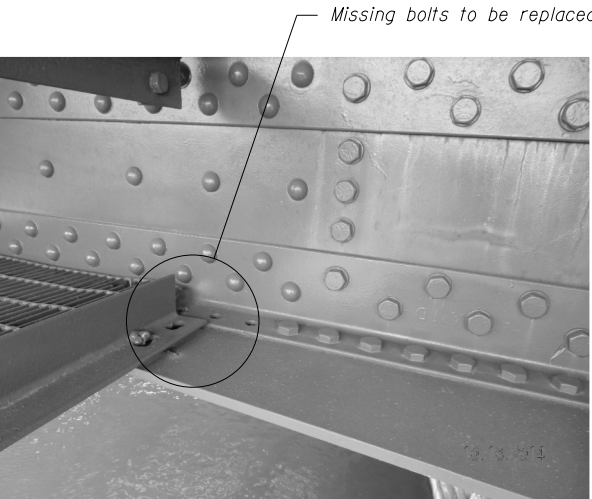


PHOTO 3: NORTH MECHANICAL PLATFORM
(Near Floorbeam 8 - EAST LEAF)



PHOTO 4: FLOORBEAM 7 NORTH BRACKET
(North Truss - WEST LEAF)



PHOTO 5: NORTH SIDEWALK STRINGER
(Between Floorbeams 7 and 8 - EAST LEAF)



PHOTO 6: STRINGER 1 CONNECTION AT FLOORBEAM 7
(East Face of Floorbeam 7 - EAST LEAF)



PHOTO 7: TRUNNION GIRDER BEARING DETERIORATED NUTS
(Northeast Bearing - EAST LEAF)

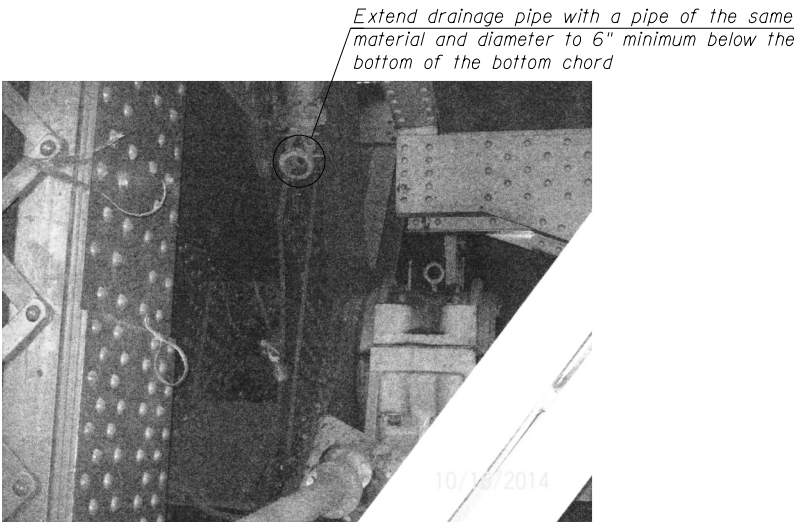


PHOTO 8: SW BRIDGE DRAINAGE PIPE
(Near Floorbeam 1 - WEST LEAF)



PHOTO 9: FLOORBEAM 2 BRACING CONNECTION
(East Face of Floorbeam 2 - WEST LEAF)

NOTES:
1. For notes, see Sheet S-22.

9/27/2016 4:34:49 PM P:\1501-630 IDOT PTB 172 Item 10 (Various-Various)\WO#6A\Structural\S-23 - Misc Repairs Det.1.dgn



USER NAME =	DESIGNED - LAB	REVISED -
	CHECKED - MI, MAI	REVISED -
PLOT SCALE =	DRAWN - MAA	REVISED -
PLOT DATE =	CHECKED - JJS, MI	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS REPAIRS DETAILS (SHEET 1 OF 2)
RUBY STREET OVER DES PLAINES RIVER - SN 099-9901

SHEET S-23 OF S-24 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	M-BDR (BR)	WILL	29	26
CONTRACT NO. 62B79				
ILLINOIS FED. AID PROJECT				



PHOTO 10: FLOORBEAM 4 TOP FLANGE
(East Face of Floorbeam 4 - WEST LEAF)



PHOTO 11: STRINGER 17 CONNECTION AT FLOORBEAM 7
(South Truss - WEST LEAF)



PHOTO 12: STRINGER 6 TOP FLANGE
(Between Floorbeams 7 and 8 - WEST LEAF)



PHOTO 13: BOTTOM DIAGONAL LATERAL BRACING ANGLE CONNECTION
(Between Floorbeams 7 and 8 - WEST LEAF)

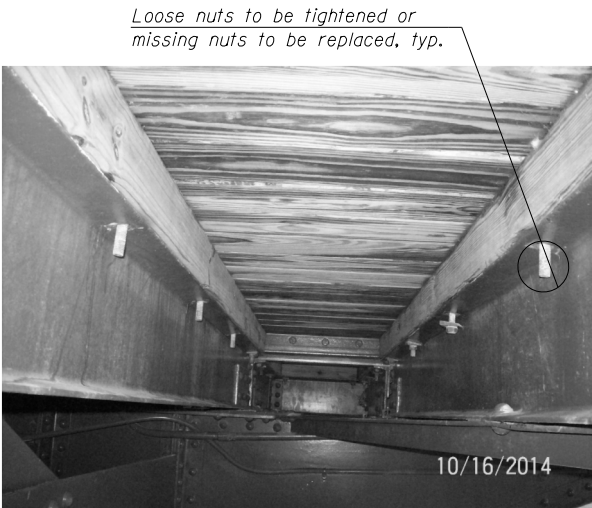


PHOTO 14: SW SIDEWALK STRINGER
(Between Floorbeams 7 and 8 - WEST LEAF)



PHOTO 15: SW SIDEWALK STRINGER
(At Floorbeam 8 - WEST LEAF)

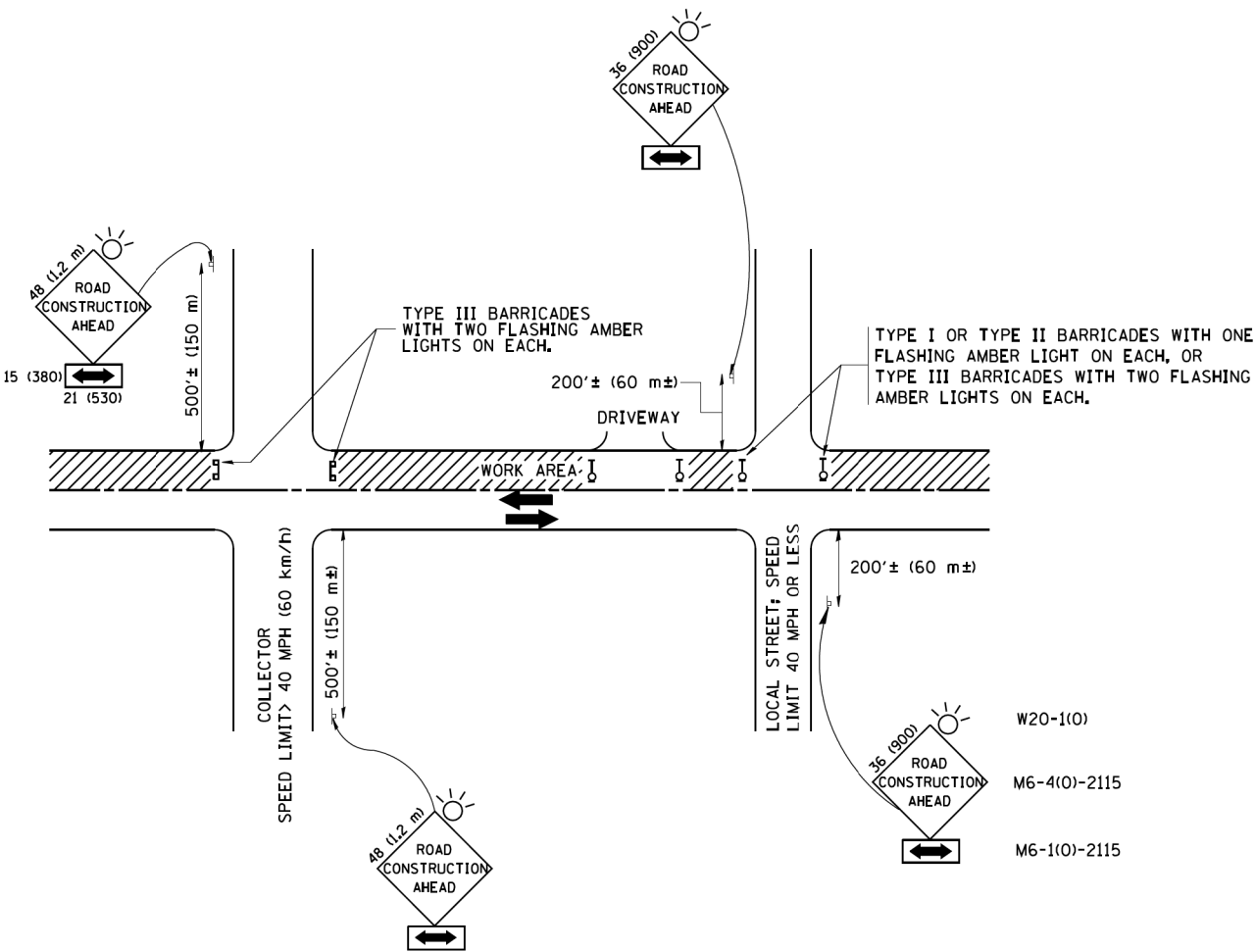


PHOTO 16: SOUTH MECHANICAL PLATFORM
(Between Floorbeams 7 and 8 - EAST LEAF)

NOTES:
1. For notes, see Sheet S-22.

9/27/2016 4:34:55 PM P:\1501-630 IDOT PTB 172 Item 10 (Various-Various)\WO#6A\Structural\S-24 - Misc Repairs Det.2.dgn

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - LAB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MISCELLANEOUS REPAIRS DETAILS (SHEET 2 OF 2) RUBY STREET OVER DES PLAINES RIVER - SN 099-9901 SHEET S-24 OF S-24 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - MI, MAI	REVISED -			112	M-BDR (BR)	WILL	29	27
	PLOT DATE =	DRAWN - MAA	REVISED -			CONTRACT NO. 62B79				
		CHECKED - JJS, MI	REVISED -			ILLINOIS FED. AID PROJECT				



TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS**

 - SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - ONE **ROAD CONSTRUCTION AHEAD** SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
 - THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
 - SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - ONE **ROAD CONSTRUCTION AHEAD** SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
 - THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
 - WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:**

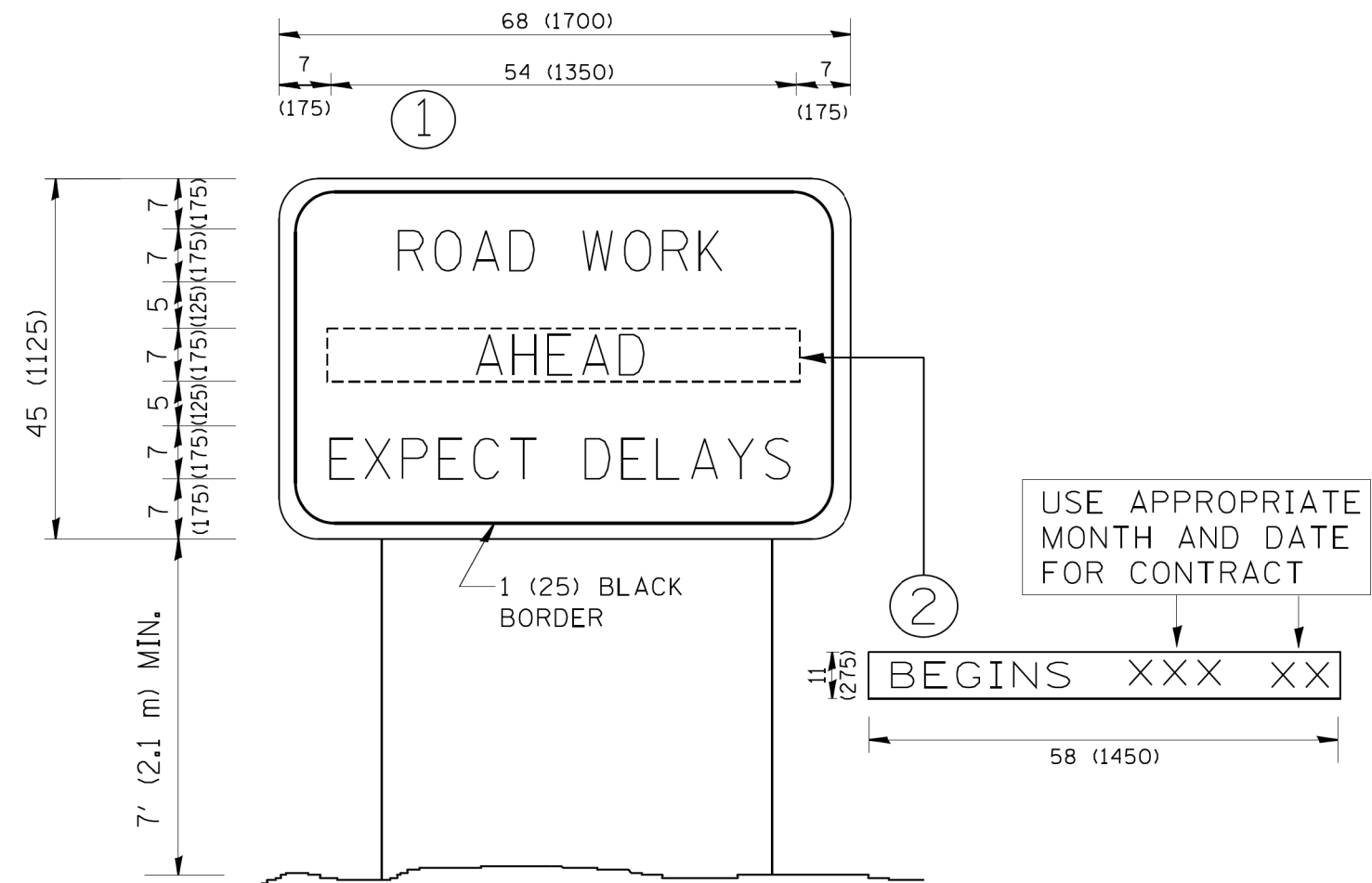
USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.

C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.

D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in millimeters (Inches) unless otherwise shown.

FILE NAME = W:\distata\22x34\tcl0.dgn	USER NAME = geglennobt	DESIGNED - RTB	REVISED - J. OBERLE 10-18-95	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - KJD	REVISED - A. HOUSEH 03-06-96					112	M-BDR (BR)	WILL	29	28
	PLOT SCALE = 50.000 ' / IN.	CHECKED - RTB, MAI	REVISED - A. HOUSEH 10-15-96					TC-10		CONTRACT NO. 62B79		
	PLOT DATE = 1/4/2008	DATE - 6/3/2016	REVISED -T. RAMMACHER 01-06-00					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
					SCALE: NONE	SHEET NO. 1	OF 1 SHEETS	STA.	TO STA.			



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = geglianobt	DESIGNED - RTB	REVISED - R. MIRS 09-15-97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARTERIAL ROAD INFORMATION SIGN			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - KJD	REVISED - R. MIRS 12-11-97					112	M-BDR (BR)	WILL	29	29
	PLOT SCALE = 50.000 ' / IN.	CHECKED - RTB, MAI	REVISED - T. RAMMACHER 02-02-99					TC-22		CONTRACT NO. 62B79		
	PLOT DATE = 1/4/2008	DATE - 6/3/2016	REVISED - C. JUCIUS 01-31-07		SCALE: NONE	SHEET NO. 1	OF 1 SHEETS	STA.	TO STA.		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	