

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-1B-I-5	MADISON	9	1
		ILLINOIS	CONTRACT NO. 76E58	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAI ROUTE 270 (I-270)

SECTION 60-1B-I-5

BRIDGE REPAIR

MADISON COUNTY

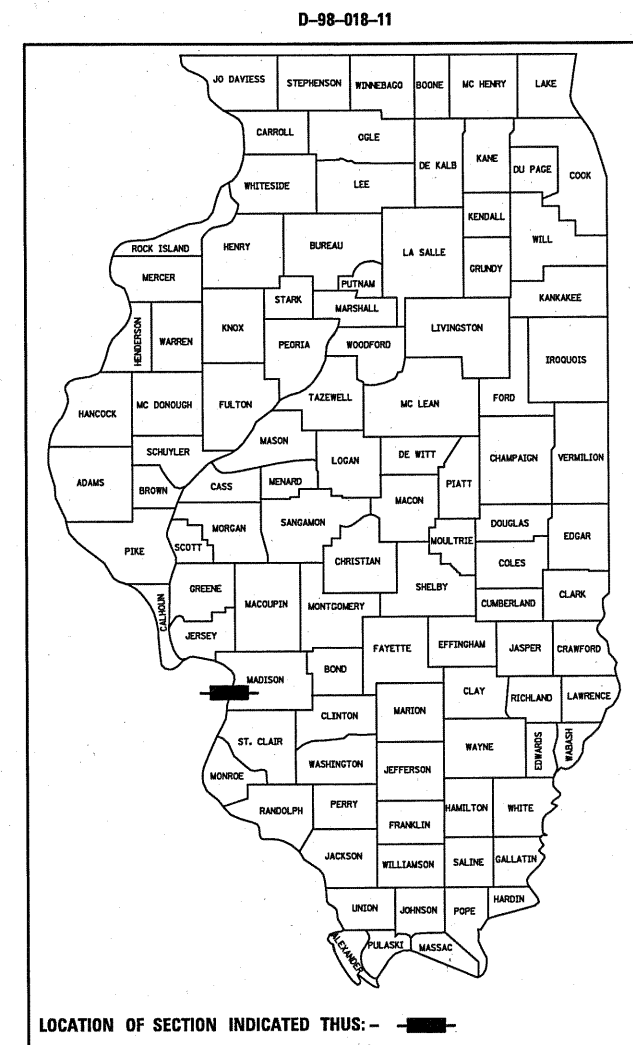
C-98-017-11

FOR INDEX OF SHEETS

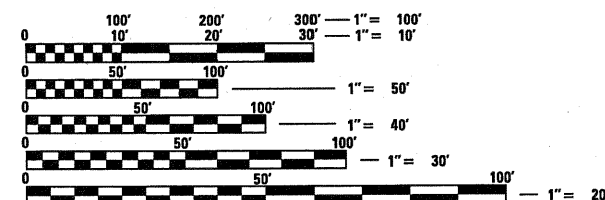
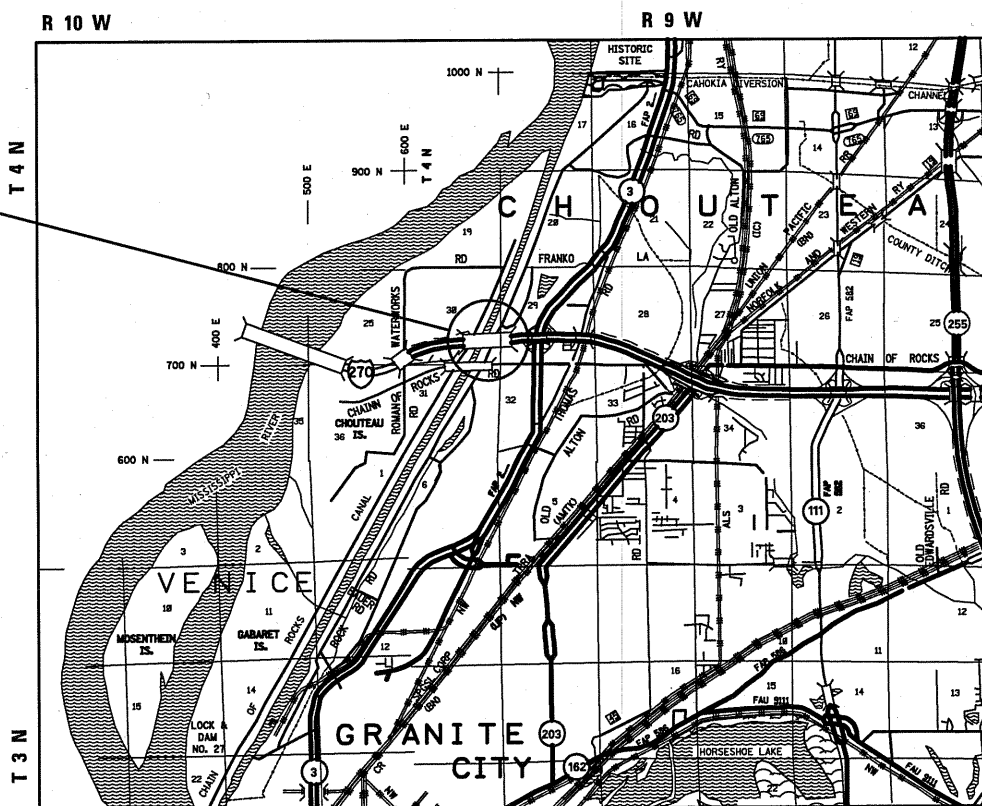
- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES, GENERAL NOTES & COMMITMENTS
- 3 CHANGEABLE MESSAGE SIGN PLAN
- 4-9 BRIDGE REPAIR PLANS

HIGHWAY STANDARDS

- 000001-06
- 701400-05
- 701401-06
- 701411-07
- 701901-01



BRIDGE REPAIRS TO  
I-270 STRUCTURE OVER  
CHAIN OF ROCKS CANAL  
SN 060-0036 & 0037  
1989'-11" BK TO BK ABUTMENTS



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.

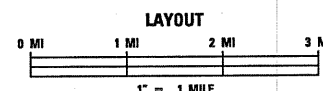
J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT ENGINEER PATTI LeBEAU 618-346-3179  
PROJECT MANAGER BILLIE OWEN 618-346-3189

CONTRACT NO. 76E58

TRAFFIC DATA

ADT = 54,700 (2007)  
ADT = 68,800 (2030)  
SU = 2.7 %  
MU = 17.1 %



LATITUDE: 38.76547  
LONGITUDE: 90.13794

GROSS LENGTH = 0.377 MILE  
NET LENGTH = 0.377 MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED October 26 2010

May C Jamie  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

Dec 10 2010  
Scott E. Stitt, P.E.  
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 10 2010  
Christine M. Reed  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**

SUMMARY OF QUANTITIES			100% STATE	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	0014		
67100100	MOBILIZATION	L SUM	1	1		
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	1	1		
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	L SUM	1	1		
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	12	12		
Z0001905	STRUCTURAL STEEL REPAIR	POUND	1000	1000		
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	185.1	185.1		
Z0032300	JACKING EXISTING SUPERSTRUCTURE	L SUM	1	1		

**GENERAL NOTES:**

1. THE STANDARDS AND REVISION NUMBERS SHALL APPLY TO THIS PROJECT.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.
3. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
  - AMERENCIPS (ELECTRIC)
  - AMERENIP (ELECTRIC & ELECTRIC TRANSMISSION)
  - AT&T ILLINOIS
  - BUCKEYE PARTNERS L.P. - WOOD RIVER PIPELINE
  - CENTERPOINT ENERGY (PIPELINE)
  - CHARTER COMMUNICATIONS, INC.
  - CITY OF EDWARDSVILLE (SANITARY SEWER)
  - EXPLORER PIPELINE COMPANY
  - CITY OF GRANITE CITY (SANITARY SEWER)
  - ILLINOIS AMERICAN WATER CO.
  - LACLEDE PIPELINE COMPANY
  - LEVEL 3 COMMUNICATIONS, LLC
  - CITY OF MADISON (SANITARY SEWER)
  - MADISON COUNTY SPECIAL SERVICE AREA #1 (SANITARY SEWER)
  - MITCHELL PUBLIC WATER DISTRICT

MEMBERS OF J.U.L.I.E. (800) 892-0123 OR 811 ARE INDICATED BY AN \*.  
NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
4. "ROAD CONSTRUCTION AHEAD" SIGNS SHALL BE PLACED AT EACH END OF THE PROJECT AND ALL INTERSECTING SIDE ROADS AND WILL BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS. ALL CONSTRUCTION SIGNS SHALL BE FLOURESCENT ORANGE, 48".
5. ADDITIONAL CHANGEABLE MESSAGE SIGNS SHALL BE PLACED OUTSIDE OF THE PROJECT LIMITS. SEE PLANS FOR PLACEMENT AND DURATION. THESE SIGNS WILL BE PAID FOR AS "CHANGEABLE MESSAGE SIGNS".

**COMMITMENTS**

NONE

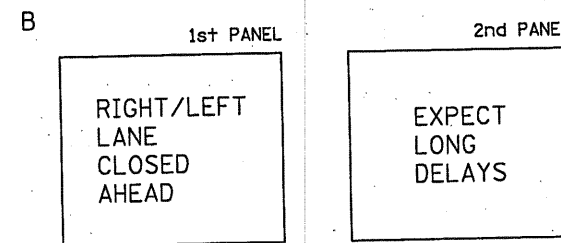
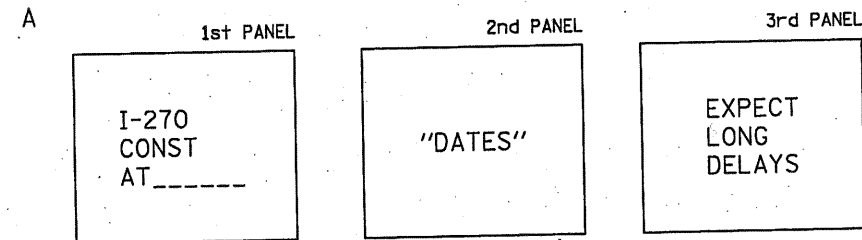
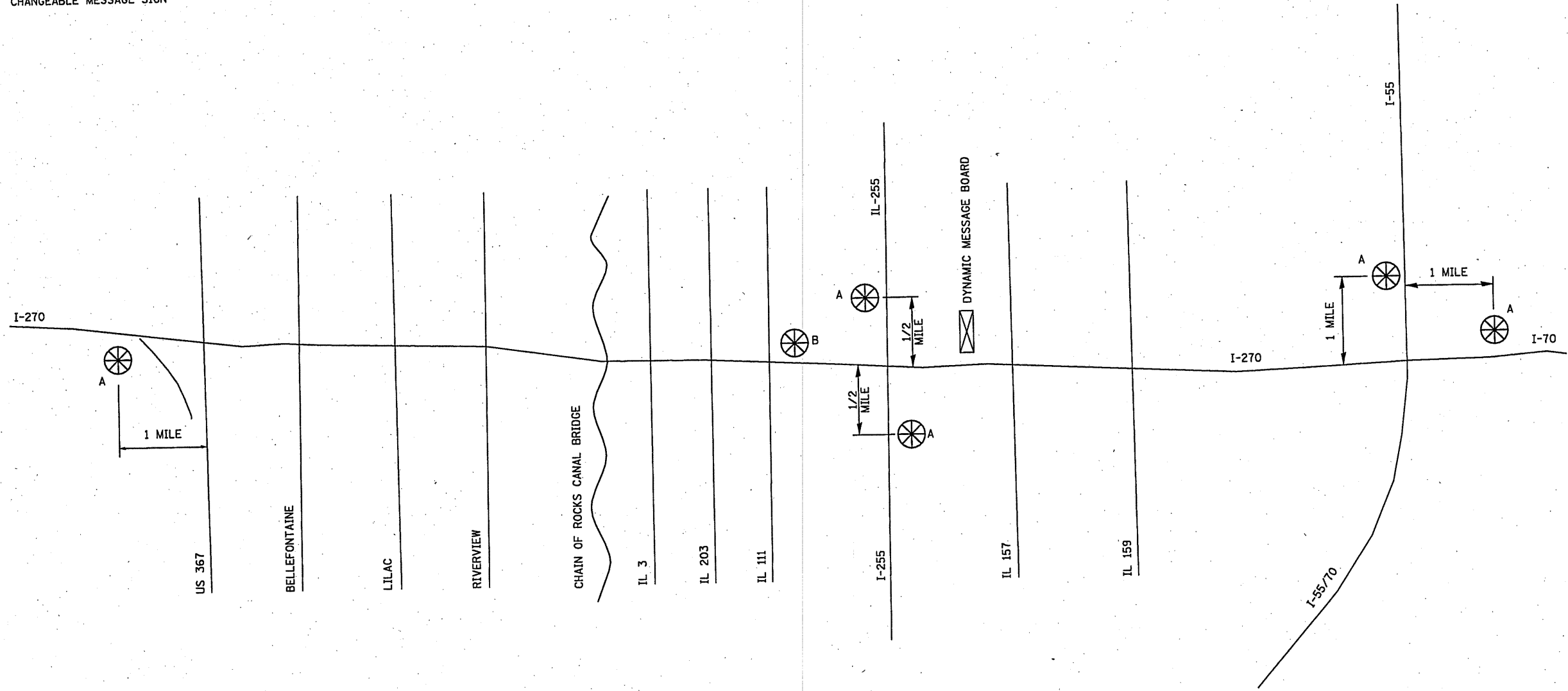
**LANE RESTRICTIONS SCHEDULE**

SUNDAY				MONDAY				TUESDAY				WEDNESDAY				THURSDAY				FRIDAY				SATURDAY																																							
LANE RESTRICTIONS PERMITTED	NO LANE RESTRICTIONS PERMITTED			LANE RESTRICTIONS PERMITTED	NO LANE RESTRICTIONS PERMITTED			LANE RESTRICTIONS PERMITTED	NO LANE RESTRICTIONS PERMITTED			LANE RESTRICTIONS PERMITTED	NO LANE RESTRICTIONS PERMITTED			LANE RESTRICTIONS PERMITTED	NO LANE RESTRICTIONS PERMITTED			LANE RESTRICTIONS PERMITTED	NO LANE RESTRICTIONS PERMITTED							LANE RESTRICTIONS PERMITTED																																			
12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P	12A	3A	5A	9A	12P	3P	6P	9P

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES, GENERAL NOTES AND COMMITMENTS</b>				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILEL#		DRAWN -	REVISED -						270	60-1B-1-5	MADISON	9	2
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -		SCALE: _____ SHEET NO. ___ OF ___ SHEETS STA. _____ TO STA. _____				FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				
	PLOT DATE = #DATE#	DATE -	REVISED -		CONTRACT NO. 76E58								



CHANGEABLE MESSAGE SIGN



NOTE: MESSAGE BOARDS "A" SHALL BE PLACED 2 WEEKS PRIOR TO ANY LANE CLOSURES.

NOT TO SCALE

FILE NAME =  
#FILE#

USER NAME = #USER#  
DRAWN -  
CHECKED -  
DATE -

DESIGNED -  
DRAWN -  
CHECKED -  
DATE -

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CHANGEABLE MESSAGE SIGN PLAN

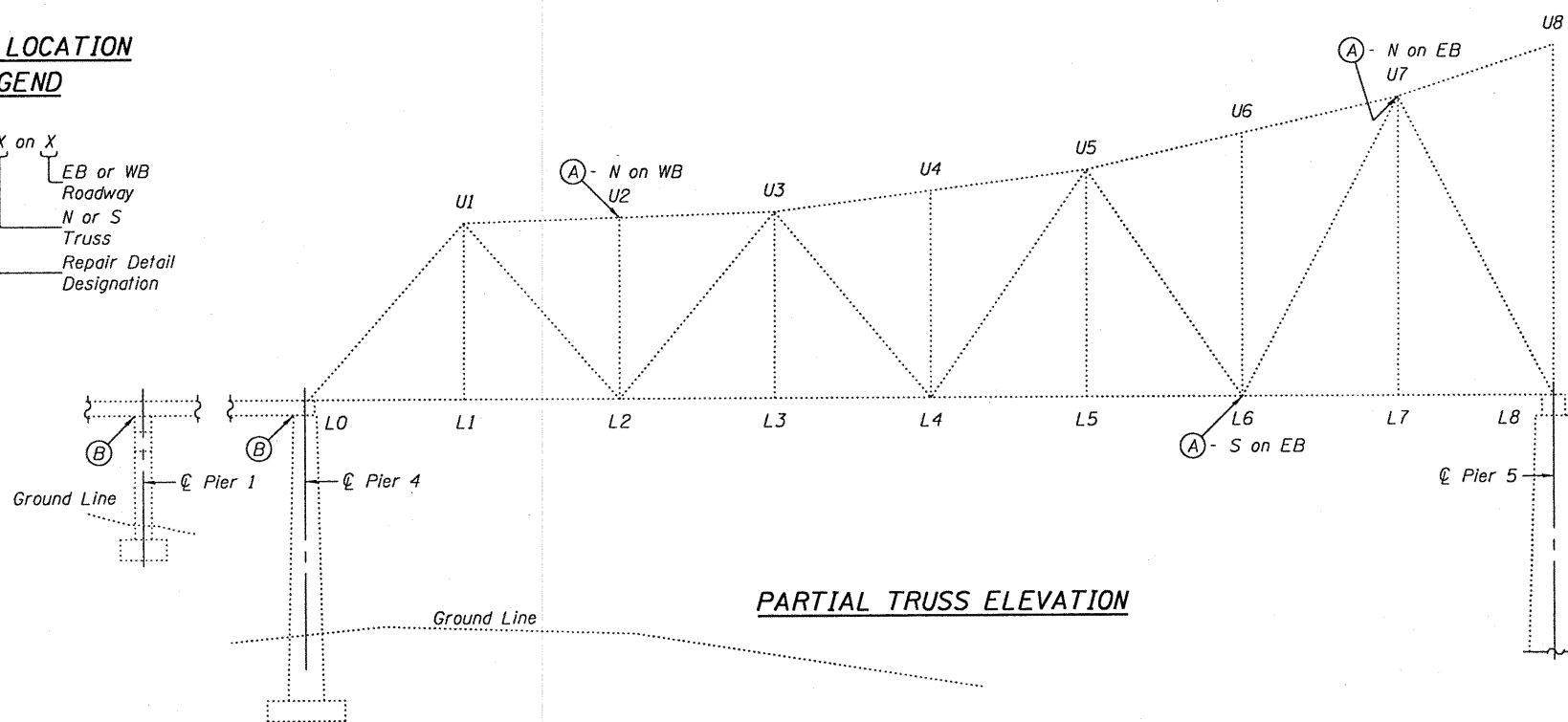
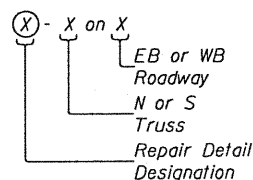
SCALE: \_\_\_\_\_ SHEET NO. \_\_\_ OF \_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.I. RTE:	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-1B-1-5	MADISON	9	3
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT			CONTRACT NO. 76E58	

**GENERAL NOTES**

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.  
 Fasteners shall be high strength bolts. Bolts  $7/8"$   $\phi$ , open holes  $15/16"$   $\phi$ , unless otherwise noted.  
 The Contractor shall grind all cracked welds parallel to the direction of the existing weld and not perpendicular to the weld.  
 Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Grinding shall be done parallel to the longitudinal axis of the member. Ground surfaces shall be inspected for cracks using dye penetrant or magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately  $1/4"$  deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting included with Structural Steel Repair.  
 Plan dimensions and details relative to 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 the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.  
 Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Structural Steel Repair.  
 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".  
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
 All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type I. Cost included with Structural Steel Repair.

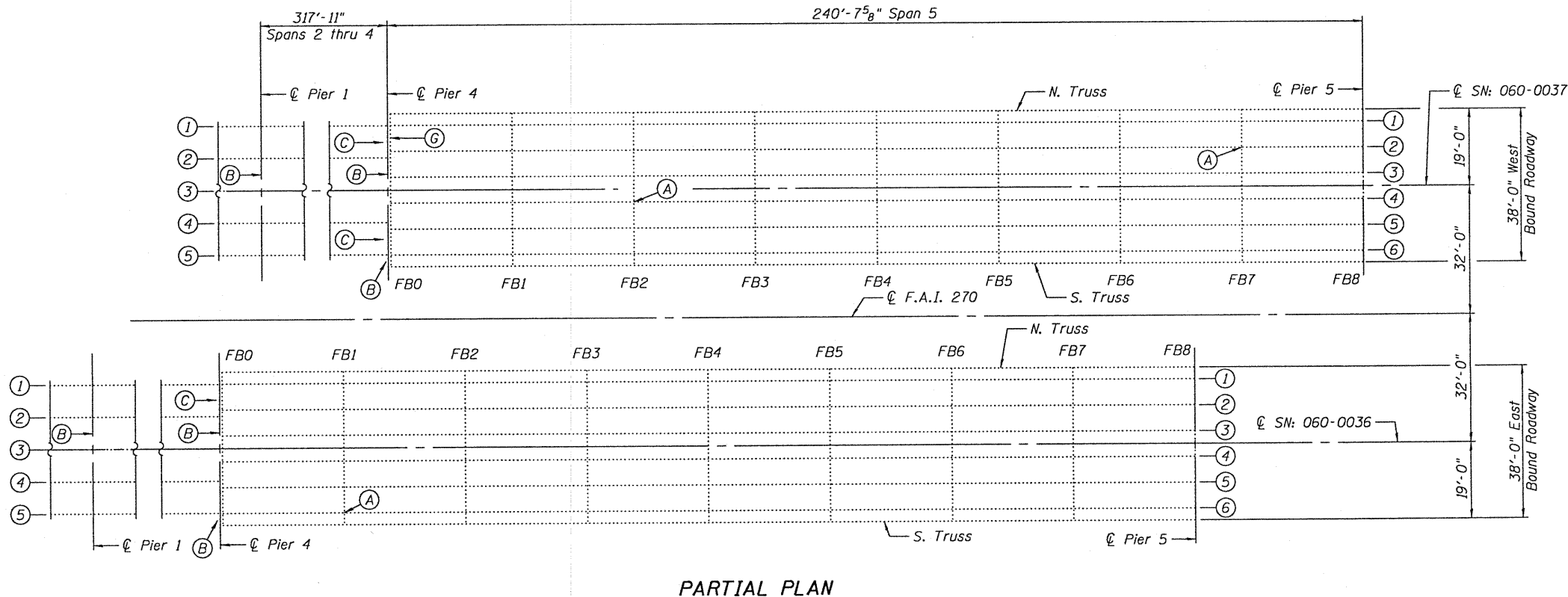
**REPAIR LOCATION LEGEND**



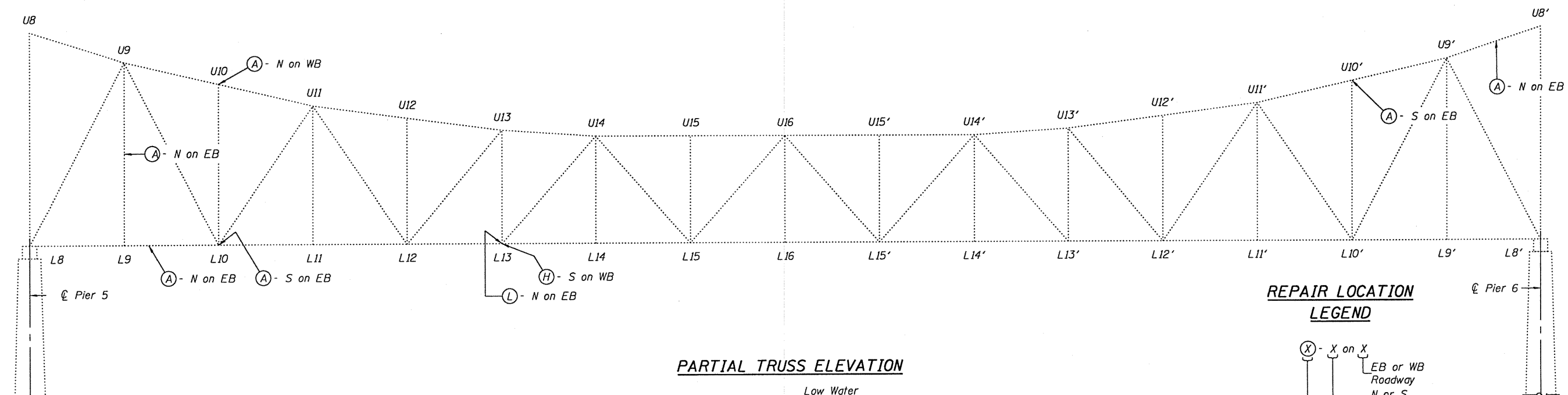
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	1,000
*Jacking Existing Superstructure	L.S.	1
Structural Repair of Concrete (Depth $\leq 5"$ )	S.F.	185.1

\*Jack existing superstructure to provide a minimum of  $1/8"$  gap at the beams at locations shown on sheet 4 of 6.



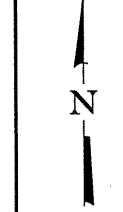
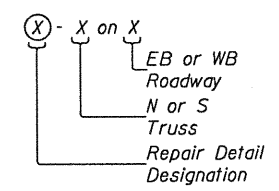
DESIGNED - <i>Adrian T. Holloway</i>	EXAMINED - <i>De Carl Puyes</i>	DATE - NOVEMBER 22, 2010	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN AND ELEVATION SN 060-0036 & 0037	F.A.I. RTE. 270	SECTION 60-1B-I-4	COUNTY Madison	TOTAL SHEETS 9	SHEET NO. 4
CHECKED - <i>Adrian T. Holloway</i>	PASSED - <i>Ralph E. Anderson</i>				SHEET NO. 1 OF 6 SHEETS	ILLINOIS FED. AID PROJECT			



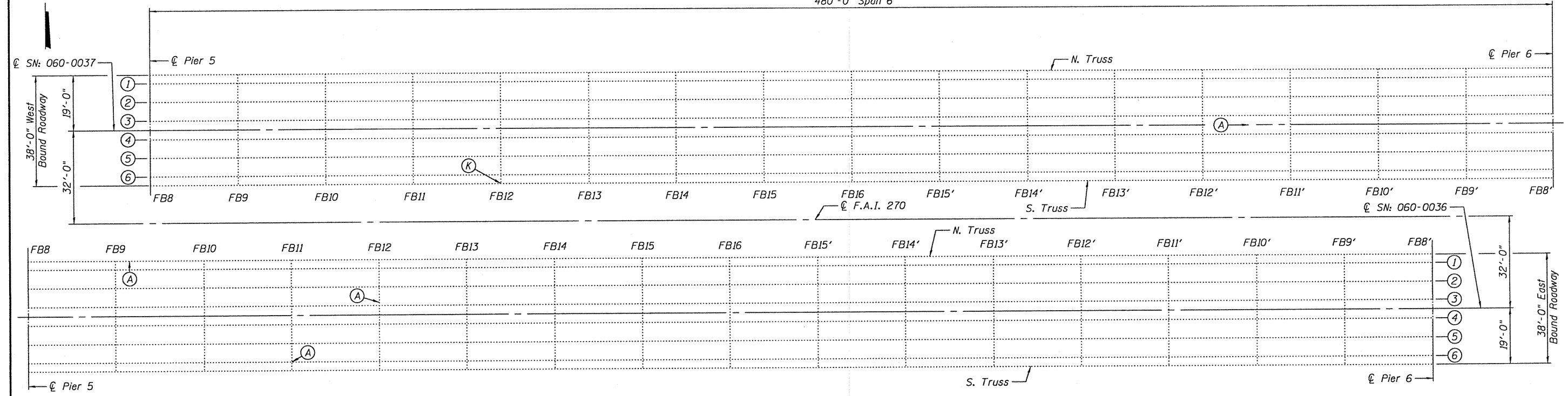
**PARTIAL TRUSS ELEVATION**

Low Water  
Elev. ±397.0

**REPAIR LOCATION  
LEGEND**



480'-0" Span 6



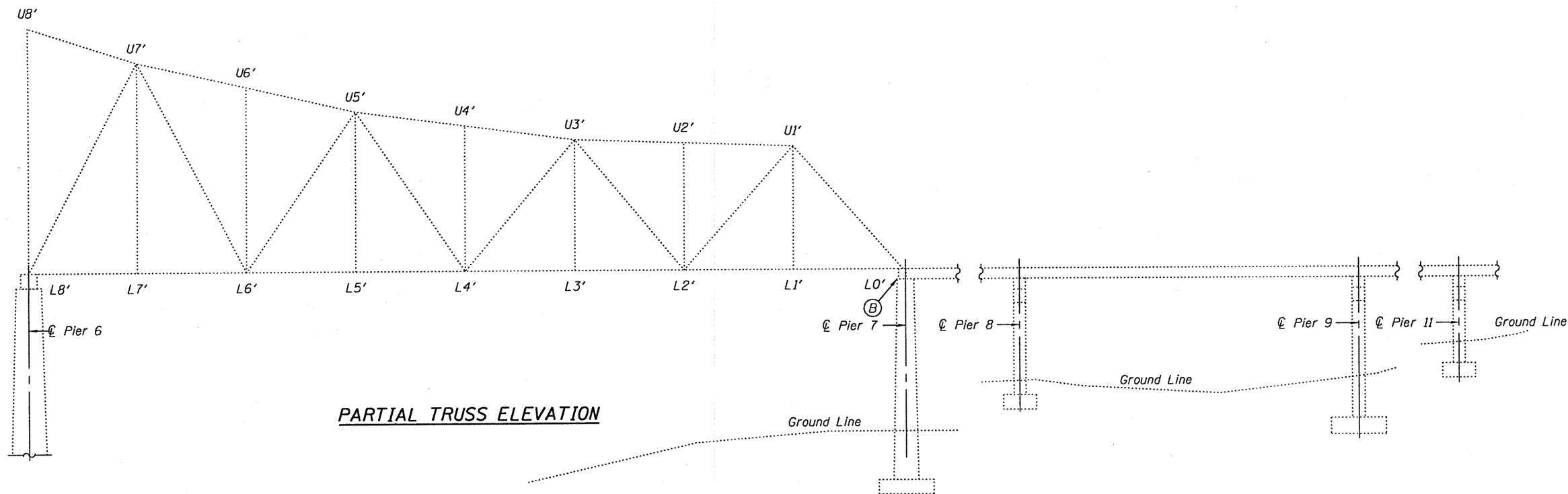
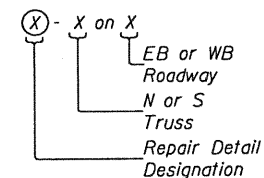
**PARTIAL PLAN**

DESIGNED - A.T.H.	EXAMINED - <i>Carl Prosser</i>	DATE - NOVEMBER 22, 2010	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILS</b>		F.A.I. RTE. 270	SECTION 60-1B-I-4	COUNTY Madison	TOTAL SHEETS 9	SHEET NO. 5
CHECKED - M.K.C.	PASSED - <i>Ralph E. Anderson</i>			SN 060-0036 & 0037				CONTRACT NO. 76E58		
DRAWN - Drew Christopher				SHEET NO. 2 OF 6 SHEETS		ILLINOIS FED. AID PROJECT				
CHECKED - A.T.H. M.K.C.										

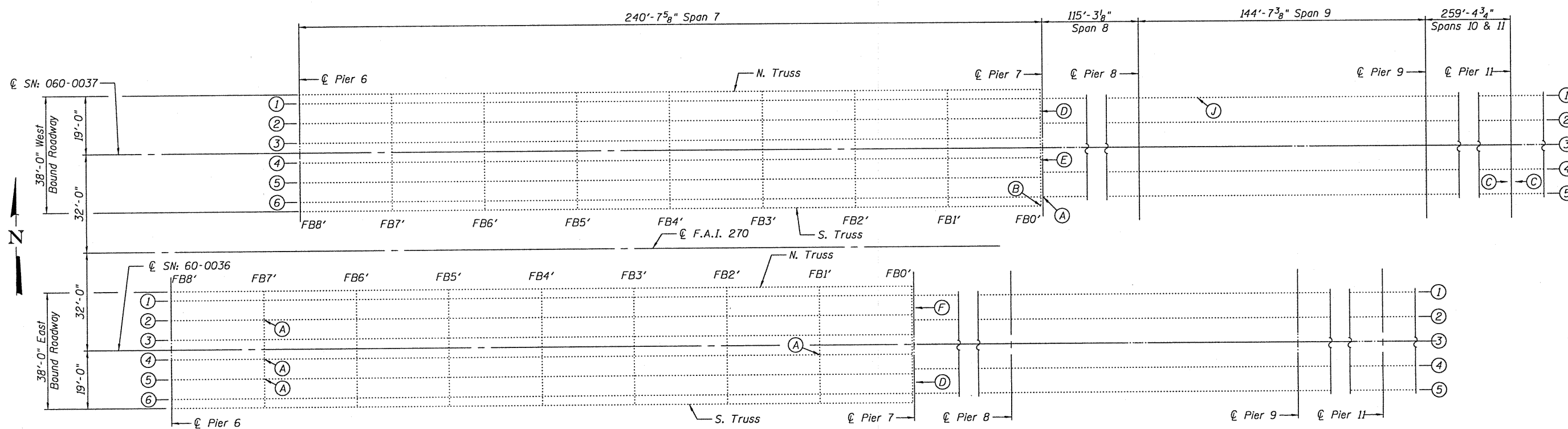
SLT-98-001-10

**REPAIR LOCATION**

**LEGEND**



**PARTIAL TRUSS ELEVATION**



**PARTIAL PLAN**

DESIGNED - A.T.H.	EXAMINED - <i>Carl Kruger</i>
CHECKED - M.K.C.	ENGINEER OF STRUCTURAL SERVICES
DRAWN - <b>Drew Christopher</b>	PASSED - <i>Ralph E. Anderson</i>
CHECKED - A.T.H. M.K.C.	ENGINEER OF BRIDGES AND STRUCTURES

DATE - NOVEMBER 22, 2010
--------------------------

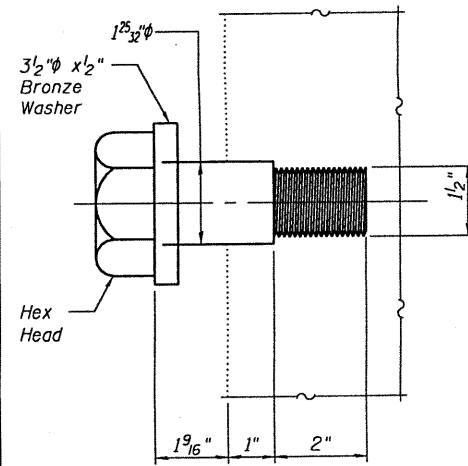
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DETAILS  
SN 060-0036 & 0037**  
SHEET NO. 3 OF 6 SHEETS

F.A.I. RTE. 270	SECTION 60-1B-I-4	COUNTY Madison	TOTAL SHEETS 9	SHEET NO. 6
				CONTRACT NO. 76E58
ILLINOIS FED. AID PROJECT				

**LOOSE OR MISSING BOLTS - REPAIR (A)**

Structure	Location	No. of Bolts Req'd	Description
060-0036 Eastbound	FBI	1 - 3/4"φ	Span 5, Stringer 6
	L6S	2 - 7/8"φ	Exterior Gusset Ⓡ
	U7N	2 - 7/8"φ	Exterior Gusset Ⓡ
	L9N to U9N	1 - 7/8"φ	East Face ±20'-0" Below U9N
	L9N to L10N	3 - 7/8"φ	±8'-0" from L9N on Exterior
	L10S	2 - 7/8"φ	Exterior Gusset Ⓡ
	FBI1	2 - 3/4"φ	Span 6, Stringer 6
	FBI2	2 - 3/4"φ	Span 6, Stringer 3
	UIOS	1 - 7/8"φ	Inside Gusset Ⓡ and Top Lateral
	U9'N to U8'N	3 - 7/8"φ	Bottom Ⓡ ±20'-0" from U9'N
	FB7'	4 - 3/4"φ	Span 7, Stringer 2
	FB7'	3 - 3/4"φ	Span 7, Stringer 4
	FB7'	4 - 3/4"φ	Span 7, Stringer 5
	FBI'	1 - 3/4"φ	Span 7, Stringer 4
060-0037 Westbound	U2N	4 - 7/8"φ	Top Gusset Ⓡ
	FB2	1 - 3/4"φ	Span 5, Stringer 4
	FB7	4 - 3/4"φ	Span 5, Stringer 2
	U10N	1 - 7/8"φ	Top Exterior Gusset Ⓡ
	FBI2' and FBI1'	2 - 3/4"φ	Lat. Bracing Hanger Btwn Floorbeams
Pier 7, South Truss	1 - See Detail	Bearing Retainer Bolt Missing	

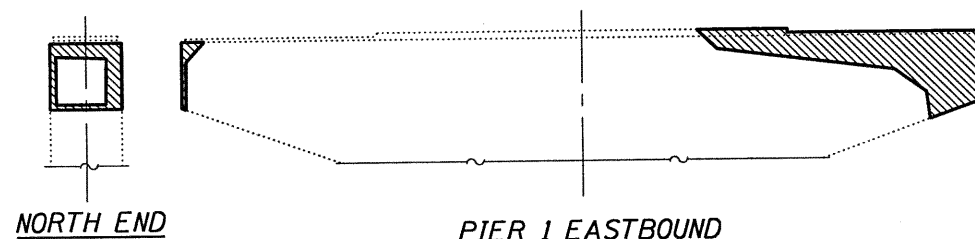
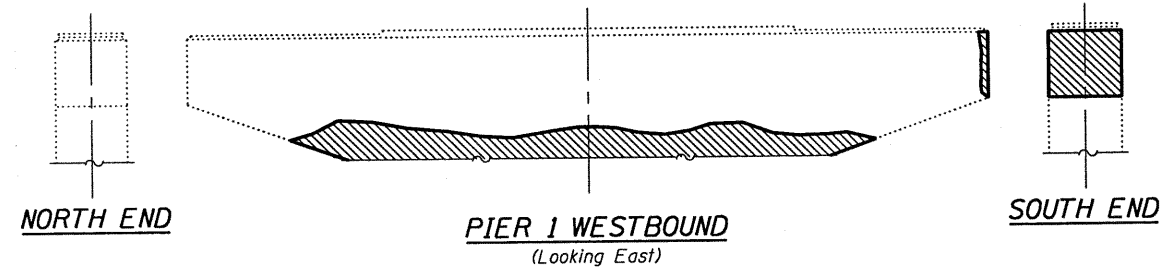


**BEARING RETAINER BOLT DETAIL**

Cost included with Structural Steel Repair.

**FORMED CONCRETE REPAIR - REPAIR (B)**

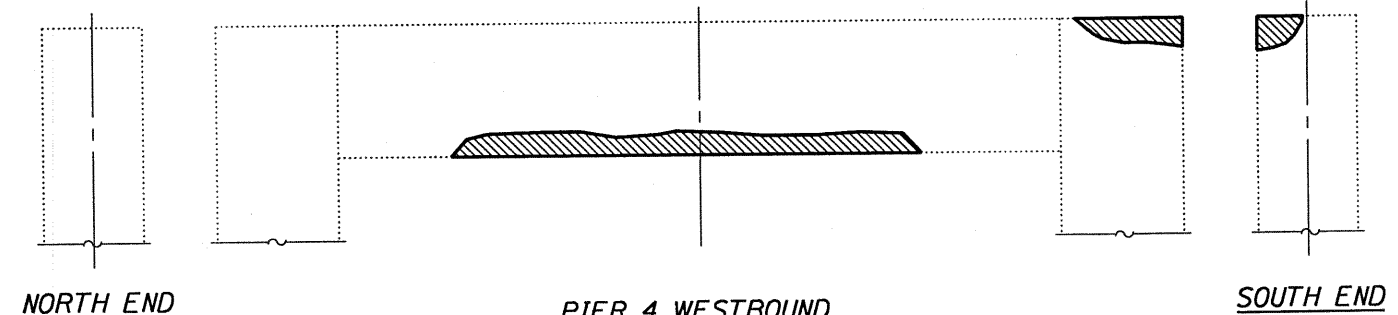
Structure	Location	Approximate Area	Description
060-0036 Eastbound	Pier 1	±26 Sq. Ft.	Along Cap at South End and North End
	Pier 4	4" x 4" Void	South End and East Face
	Pier 4	±108 Sq. Ft.	Along Cap
060-0037 Westbound	Pier 1	±22 Sq. Ft.	East Face and South End of Cap
	Pier 4	±29 Sq. Ft.	South End and East Face
	Pier 7	±3 Sq. Ft.	S. Brg. Seat at W. Face



**PIER 1 EASTBOUND**

(Looking East)

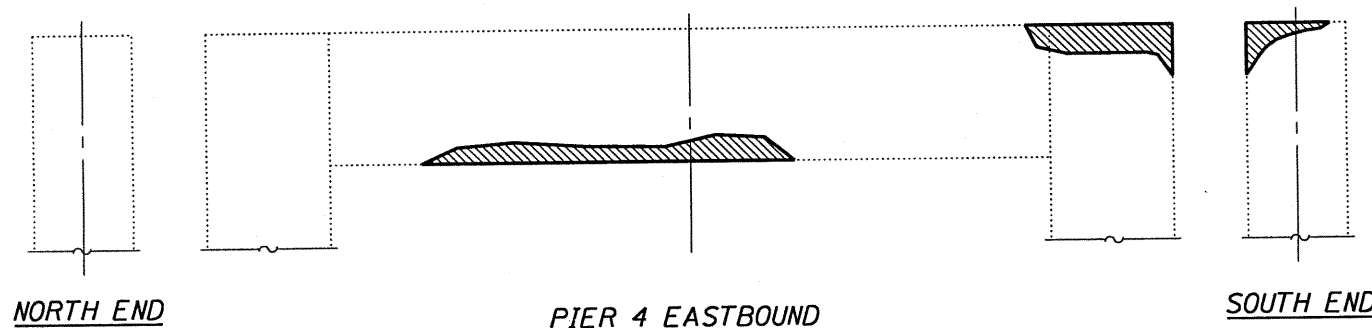
Jack all existing girders both sides of Pier.  
(Cost included with Jacking Existing Superstructure)



**PIER 4 WESTBOUND**

(Looking East)

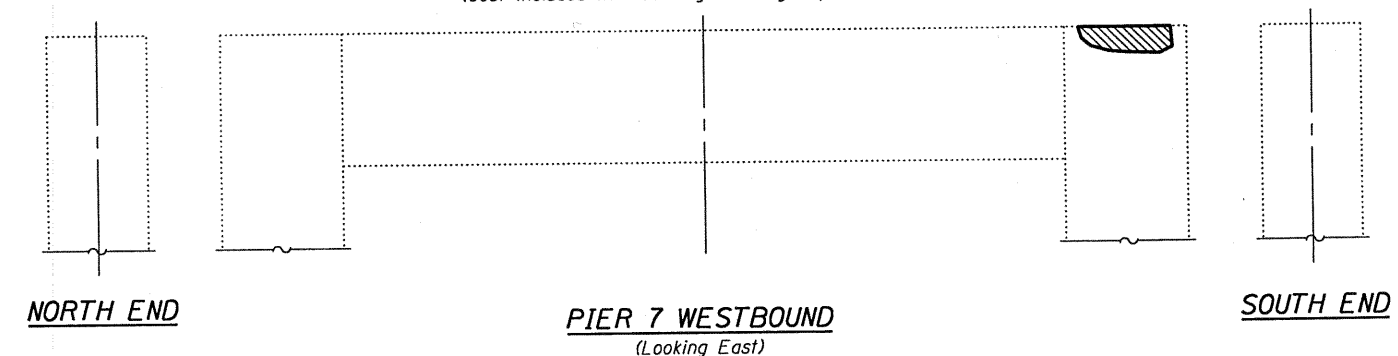
Jack all existing girders on Span 4 side only.  
(Cost included with Jacking Existing Superstructure)



**PIER 4 EASTBOUND**

(Looking East)

Jack all existing girders on Span 4 side only.  
(Cost included with Jacking Existing Superstructure)



**PIER 7 WESTBOUND**

(Looking East)

**GIRDER AND TRUSS REACTIONS**

	Pier 1		Pier 4		Pier 7	
	Span 1	Span 2	Span 4	*Span 5	*Span 7	Span 8
DL (kips)	65.2	58.5	58.5	171	171	56.5
LL (kips)	47.1	46.6	46.6	116	116	46.9
I (kips)	10.8	10.1	10.1	17	17	9.8
Total (kips)	123.1	115.2	115.2	304	304	113.2

\*For Information Only



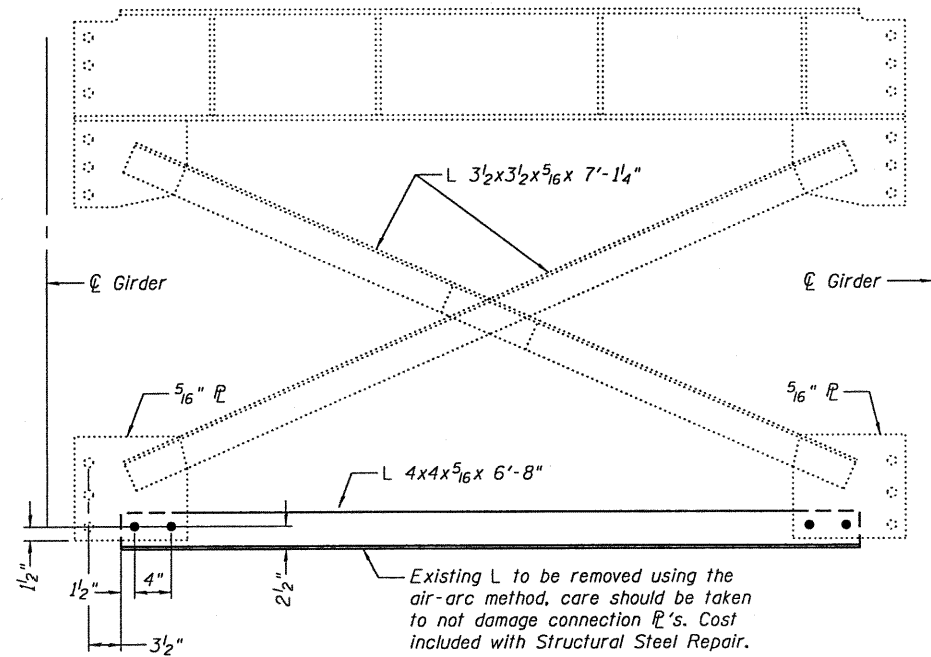
DESIGNED - A.T.H.  
CHECKED - M.K.C.  
DRAWN - Drew Christopher  
CHECKED - A.T.H. M.K.C.

EXAMINED - *Carl P. ...*  
PASSED - *Ralph E. Anderson*  
DATE - NOVEMBER 22, 2010

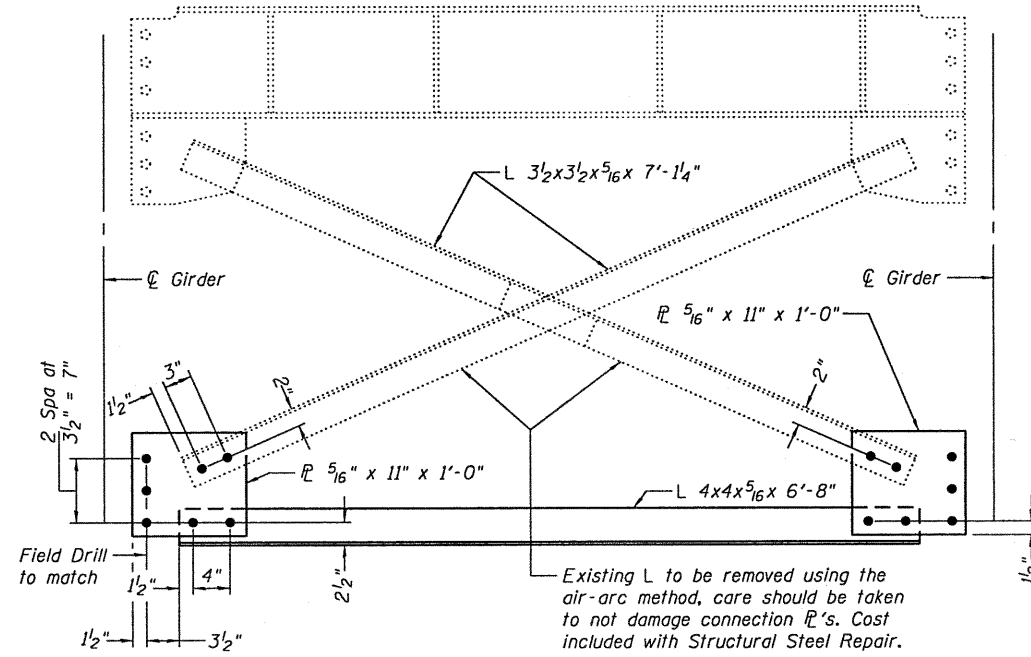
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DETAILS  
SN 060-0036 & 0037  
SHEET NO. 4 OF 6 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-1B-I-4	Madison	9	7
CONTRACT NO. 76E58			ILLINOIS FED. AID PROJECT	

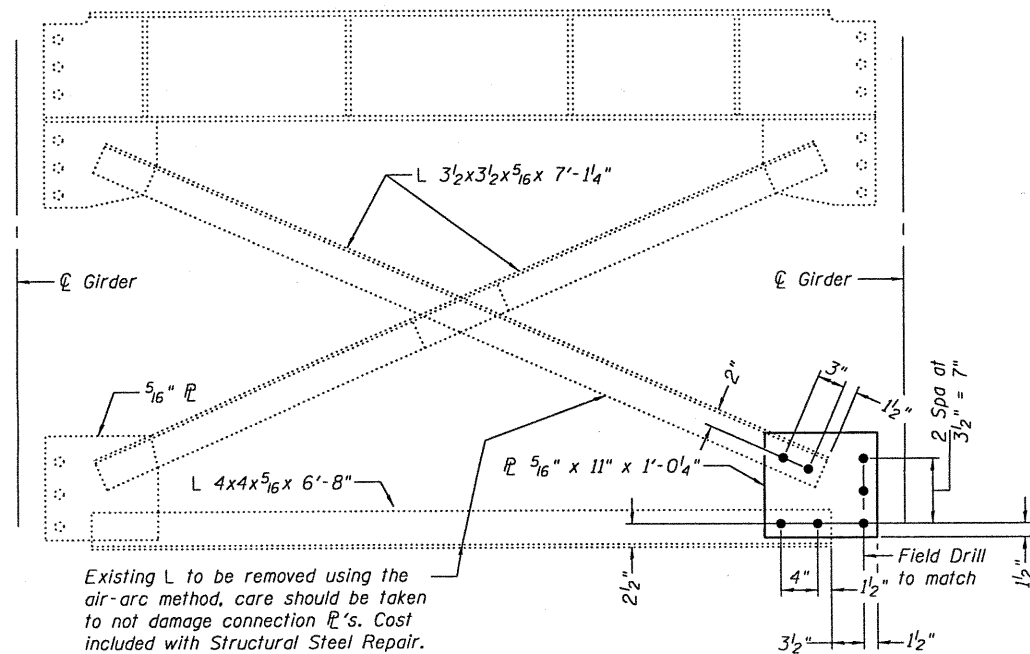


**REPAIR DETAIL C**  
(5 Req'd)

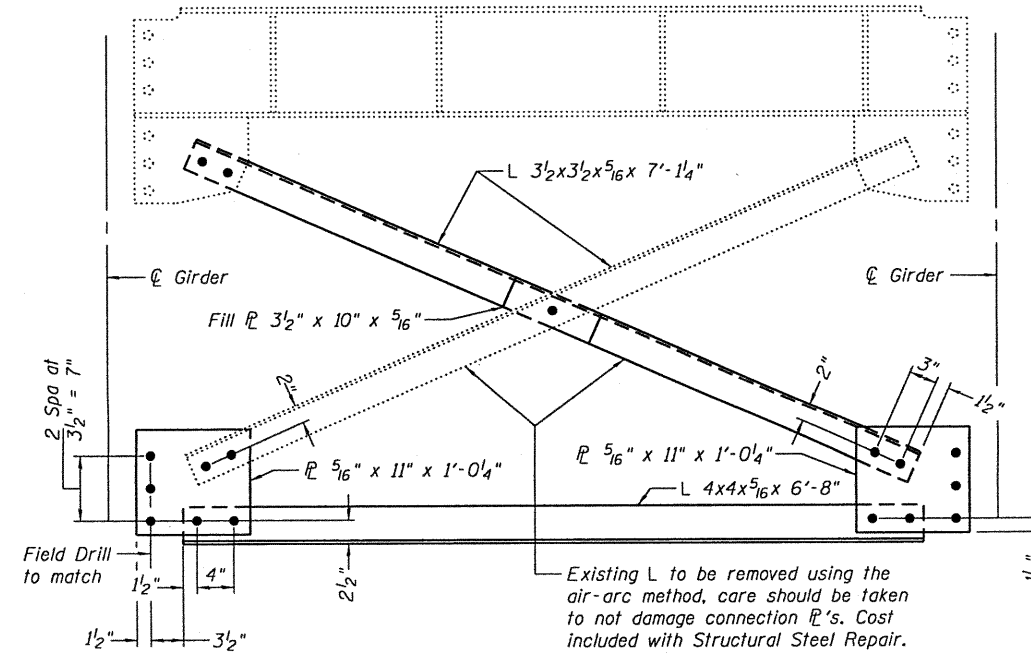


**REPAIR DETAIL D**  
(2 Req'd)

Fasteners shall be high strength bolts. Bolts 3/4"φ, open holes 13/16"φ, unless otherwise noted. New holes in existing members are to be filled drilled using holes in new members as a template.



**REPAIR DETAIL E**  
(1 Req'd)



**REPAIR DETAIL F**  
(1 Req'd)

DESIGNED - A.T.H.  
CHECKED - M.K.C.  
DRAWN - **Drew Christopher**  
CHECKED - A.T.H. M.K.C.

EXAMINED - *Carl Proyer*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED - *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES  
DATE - NOVEMBER 22, 2010

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

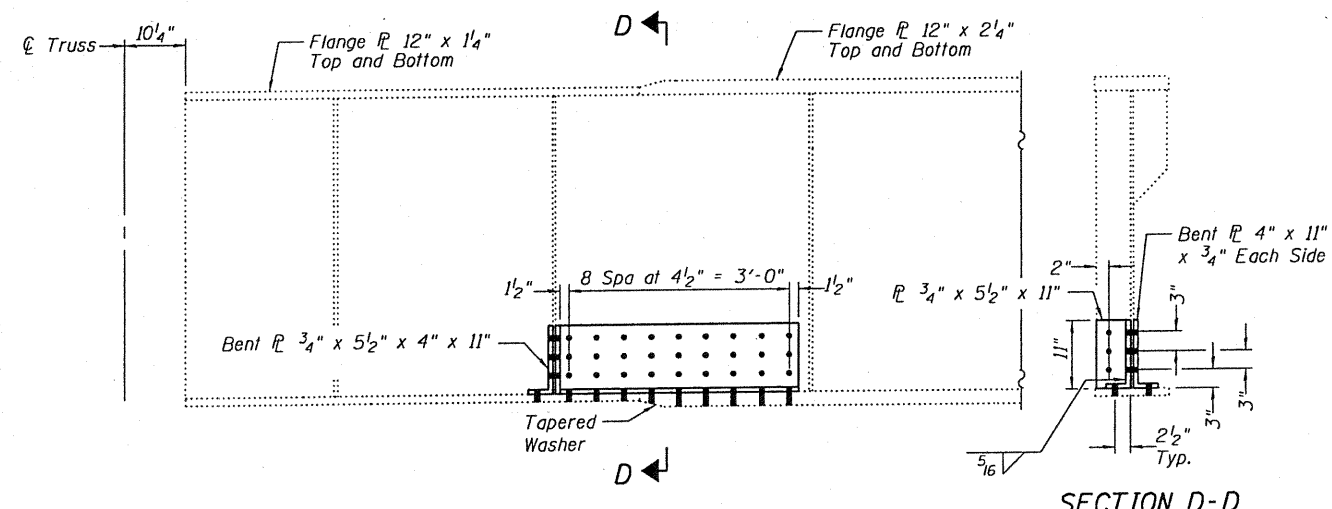
DETAILS  
SN 060-0036 & 0037

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 76E58				
ILLINOIS FED. AID PROJECT				

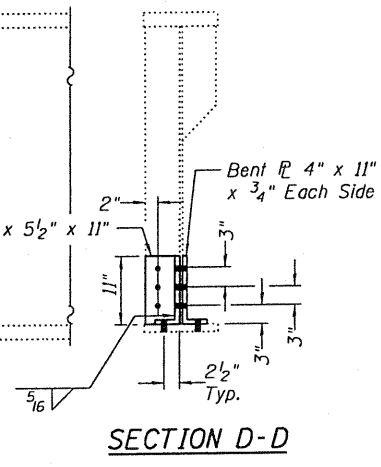
SHEET NO. 5 OF 6 SHEETS

SLT-98-001-10

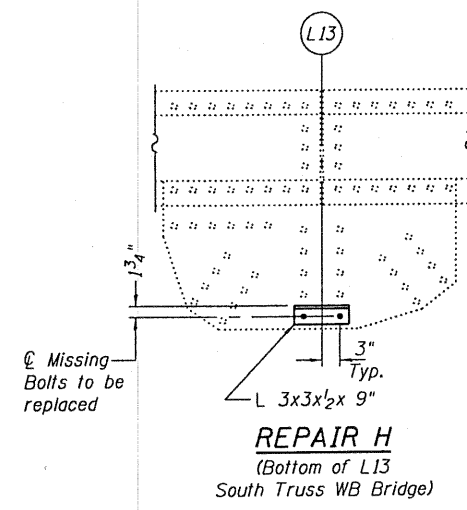




**REPAIR G**  
(FBO at Pier 4)



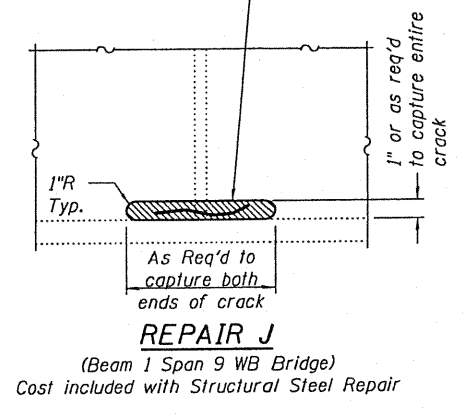
**SECTION D-D**



**REPAIR H**  
(Bottom of L13  
South Truss WB Bridge)

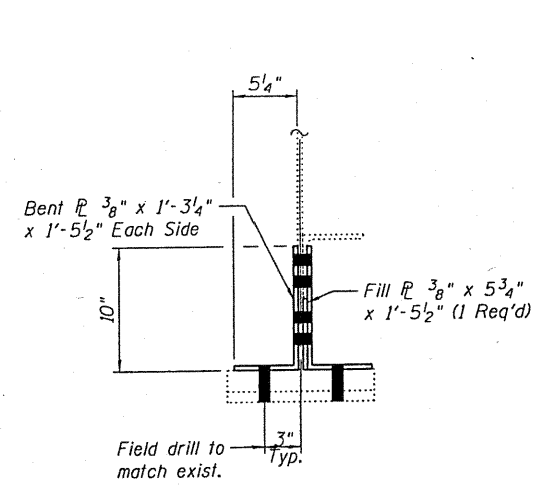
If crack is on stiffener instead of stringer web then a 1 3/16" min  $\phi$  crack arrester hole is to be drilled at each end of the crack in lieu of the web removal shown.

Area of stringer web to be removed, method to be approved by Engineer prior to commencing work. After grinding the area should be spot cleaned and painted with an aluminum epoxy mastic primer.

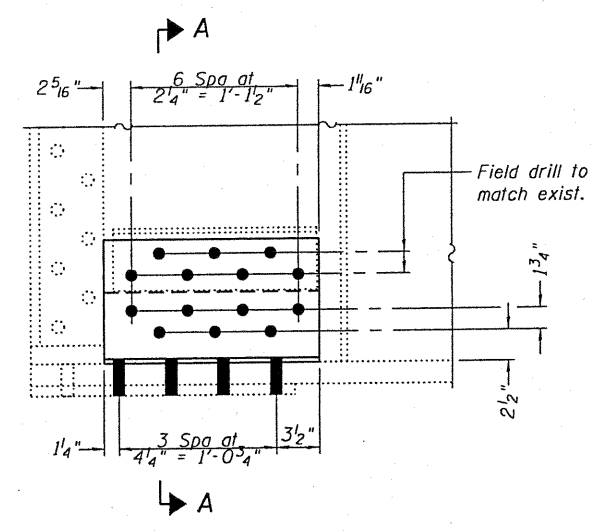


**REPAIR J**  
(Beam 1 Span 9 WB Bridge)  
Cost included with Structural Steel Repair

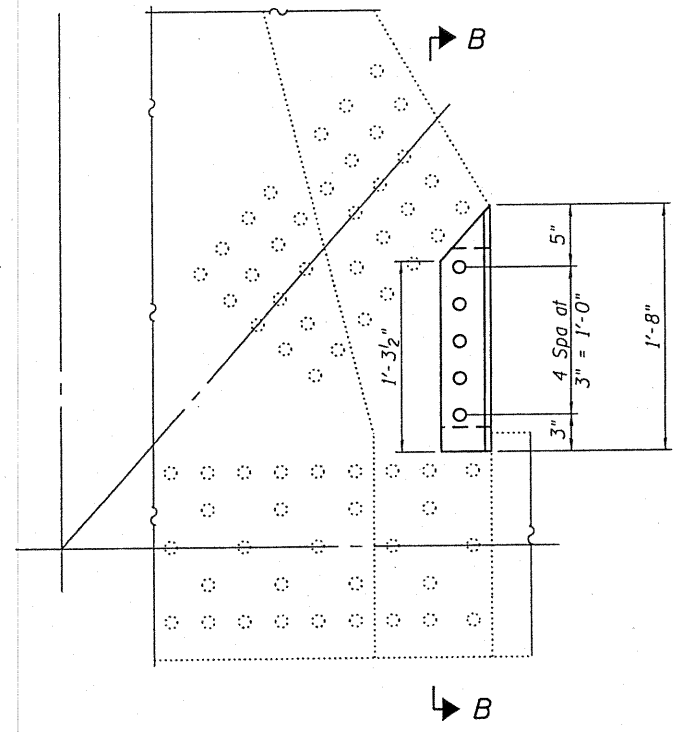
Fasteners shall be high strength bolts. Bolts 3/4"  $\phi$ , open holes 1 3/16"  $\phi$ , unless otherwise noted. New holes in existing members are to be filled drilled using holes in new members as a template.



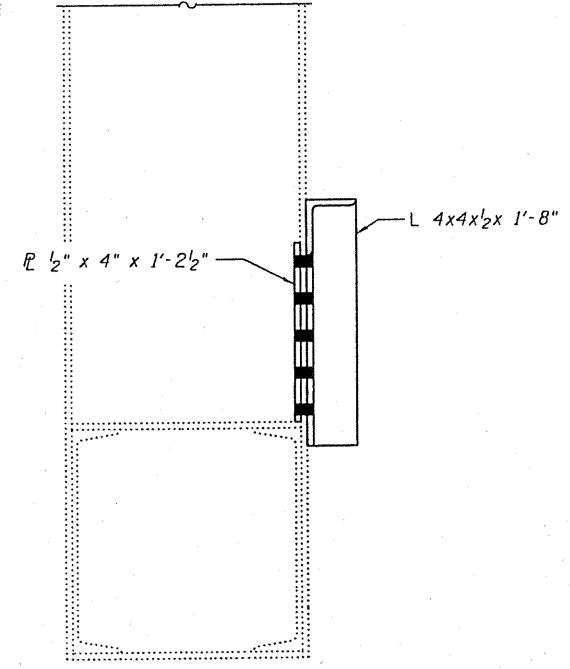
**SECTION A-A**



**REPAIR K**  
(FB12 S. End  
WB Bridge)



**REPAIR L**  
(FB13 N. End  
EB Bridge)



DESIGNED - A.T.H.	EXAMINED - <i>A. Carl Pitzer</i>	DATE - NOVEMBER 22, 2010	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILS</b>		F.A.I. RTE. 270	SECTION 60-1B-1-4	COUNTY Madison	TOTAL SHEETS 9	SHEET NO. 9	
CHECKED - M.K.C.	PASSED - <i>Ralph E. Anderson</i>			SN 060-0036 & 0037		CONTRACT NO. 76E58		ILLINOIS FED. AID PROJECT			
DRAWN - Drew Christopher				SHEET NO. 6 OF 6 SHEETS							
CHECKED - A.T.H. M.K.C.											