

08-03-12 LETTING 036

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP 849 (IL 142)  
OVER FAI 64 (I-64)  
D9 CM BRIDGE REPAIR 2013-2

**JEFFERSON COUNTY**

C-99-036-12

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	**	JEFFERSON	9	1
		ILLINOIS	CONTRACT NO. 78308	

\*\*D9 CM BRIDGE REPAIR 2013-2

FOR INDEX OF SHEETS, SEE SHEET NO. 2

**TRAFFIC DATA**

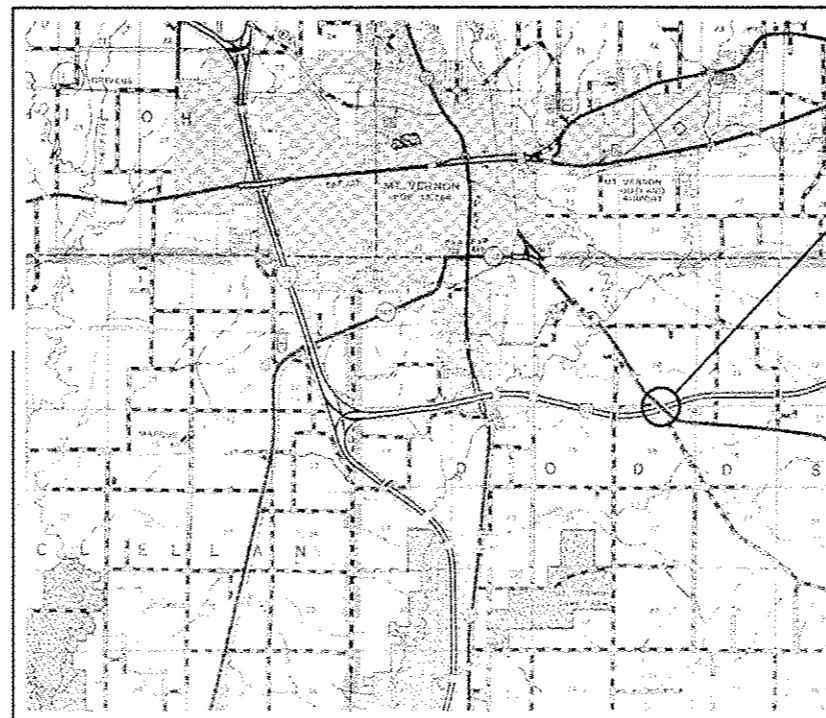
**IL 142 TRAFFIC DATA**

2011 ADT = 4,450  
6 % TRUCKS

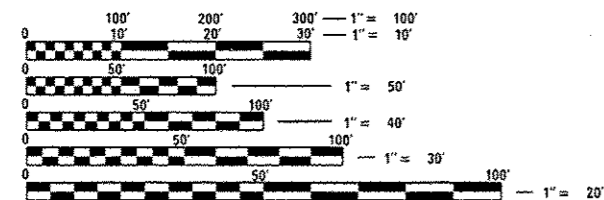
**TOWNSHIP:**

DODDS

D-99-022-11



PROJECT LOCATION  
SN 041-0062



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

DESIGNER: RUSS WALKER  
PROJECT MANAGER: DAVID PICHE (618) 351-5227

CONTRACT NO. 78308

GROSS LENGTH = 267 FT.  
NET LENGTH = 267 FT.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED May 11 20 12  
Chris Osborn  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

June 29 20 12  
John D. Baranzelli P.E. /or  
acty ENGINEER OF DESIGN AND ENVIRONMENT

June 29 20 12  
William B. Frey /or  
acty DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

**GENERAL NOTES**

- 1) THE ADVANCE DETECTOR LOOPS ARE TYPICALLY LOCATED 275 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.
- 2) IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECKS AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.16 REGARDLESS IF TRACK MOUNTED OR WHEELED.
- 3) COMMITMENTS: NONE AS OF MAY 11, 2012.

**STANDARDS**

- |           |   |
|-----------|---|
| 000001-06 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS          |
| 701001-02 | OFF-ROAD, 2L2W MORE THAN 15' FROM PAVEMENT EDGE       |
| 701006-03 | OFF-ROAD, 2L2W 15' TO 24" FROM PAVEMENT EDGE          |
| 701101-02 | OFF-ROAD, MULTILANE 15' TO PAVEMENT EDGE              |
| 701106-02 | OFF-ROAD, MULTILANE MORE THAN 15' FROM PAVEMENT EDGE  |
| 701201-04 | LANE CLOSURE, 2L2W DAY ONLY, FOR SPEEDS $\geq$ 45 MPH |
| 701316-06 | LANE CLOSURE, 2L2W BRIDGE REPAIR, FOR SPEEDS > 45 MPH |
| 701400-05 | APPROACH TO LANE CLOSURE FREEWAY/EXPRESSWAY           |
| 701406-06 | LANE CLOSURE FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY  |
| 701901-02 | TRAFFIC CONTROL DEVICES                               |

**INDEX OF SHEETS**

- |   |   |
|---|---|
| 1 | COVER SHEET                               |
| 2 | INDEX OF SHEETS; GENERAL NOTES; STANDARDS |
| 3 | SUMMARY OF QUANTITIES                     |
| 4 | GENERAL PLAN AND ELEVATION                |
| 5 | STAGING TYPICAL SECTION                   |
| 6 | DECK PATCHING DETAILS                     |
| 7 | ABUTMENT BEARING DETAILS                  |
| 8 | SUBSTRUCTURE REPAIRS                      |
| 9 | SUBSTRUCTURE REPAIRS                      |

Prepared By: *Joe Z...*  
DISTRICT STUDIES & PLANS ENGINEER

Examined By: *...*  
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *...*  
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *...*  
DISTRICT OPERATIONS ENGINEER

Examined By: *...*  
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: *...*  
DISTRICT CONSTRUCTION ENGINEER

Examined By: *Bruce Peables*  
DISTRICT MATERIALS ENGINEER

Approved By: *...*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

DATE: *May 11* 2012

\*\*09 CM BRIDGE REPAIR 2013-2

FILE NAME :	USER NAME : wolkerna	DESIGNED - RAW	REVISED -
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	PLOT DATE = 5/3/2012	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SIGNATURES, GENERAL NOTES, STANDARDS, & INDEX OF SHEETS**

SCALE: SHEET 2 OF 9 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	**	JEFFERSON	9	2
CONTRACT NO. 78308				
ILLINOIS FED. AID PROJECT				

**SUMMARY OF QUANTITIES**

CODE NUMBER	PAY ITEM	CONSTRUCTION TYPE CODE 0014	
		UNIT	FUNDING 100% STATE
50157300	PROTECTIVE SHIELD	SQ YD	515
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	2530
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	12
52100530	ANCHOR BOLTS, 1 1/4"	EACH	24
67100100	MOBILIZATION	L SUM	1
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1

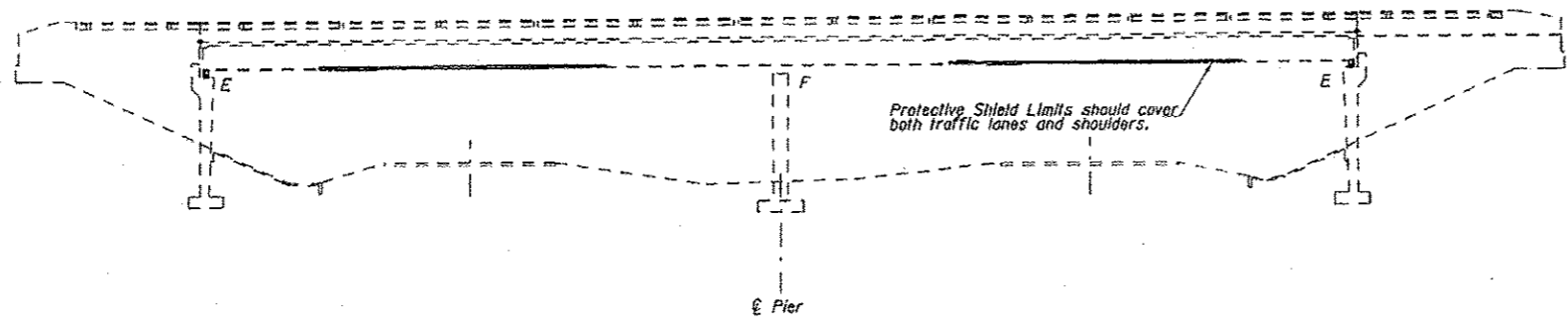
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		UNIT	FUNDING 100% STATE
70106700	TEMPORARY RUMBLE STRIPS	EACH	3
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2
86200300	UNINTERRUPTABLE POWER SUPPLY, EXTENDED	EACH	1
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	12
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	630
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	43.2
Z0021908	SILICONE JOINT SEALER, 2"	FOOT	97
Z0041895	POLYMER CONCRETE	CU FT	6.7

\*\*09 CM BRIDGE REPAIR 2013-2

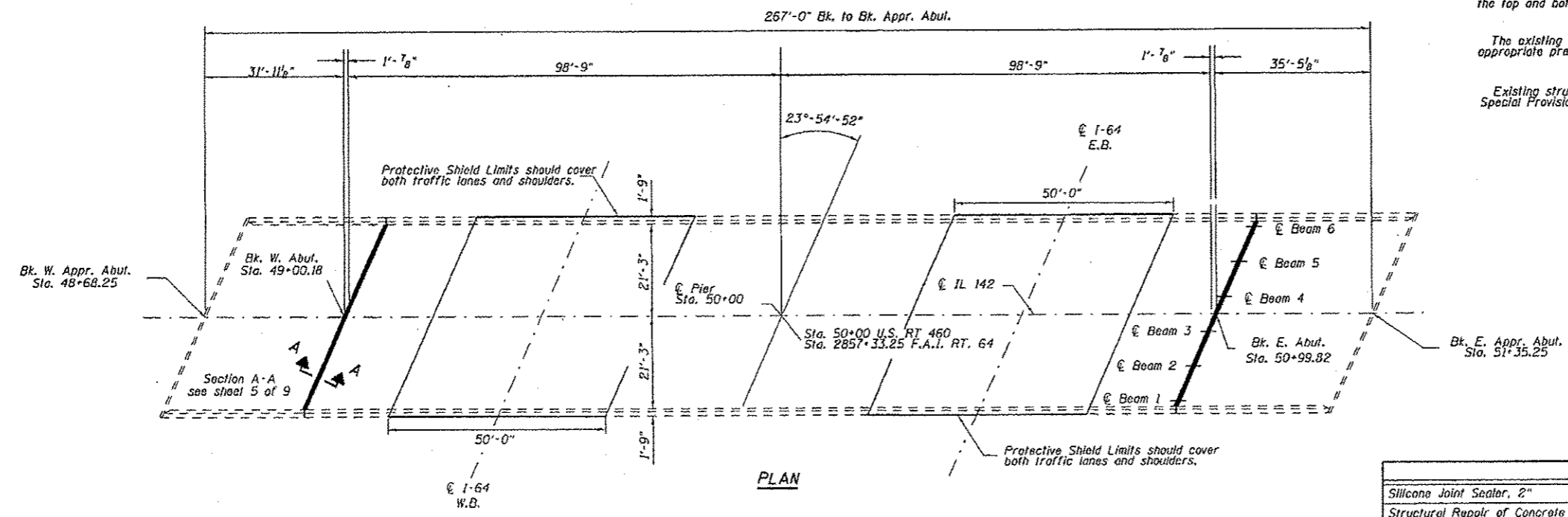


**GENERAL NOTES**

- No field welding is permitted except as specified in the contract documents.
- 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.
- The removal of the existing neoprene joint, sawing and accessories shall be included in the cost of Silicone Joint Sealer, 2".
- All structural steel shall be shop primed with inorganic zinc primer per AASHTO M300, Type I. Cost included with Furnishing and Erecting Structural Steel.
- If the analysis submitted to the Contractor for the jacking/temporary support system to be used show temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".



**ELEVATION**



**PLAN**

**DESIGN STRESSES**

- FIELD UNITS (New Construction)**
- $f'_c = 3,500 \text{ psi}$
  - $f_y = 50,000 \text{ psi}$  (AASHTO M270 Gr. 50)
  - $f_y = 36,000 \text{ psi}$  (AASHTO M270 Gr. 36)
- FIELD UNITS (Existing Construction)**
- $f'_c = 1,200 \text{ psi}$  (deck slab)
  - $f'_c = 1,400 \text{ psi}$  (curb, parapet, sub.)
  - $f_y = 20,000 \text{ psi}$  (structural steel)
  - $n = 10$



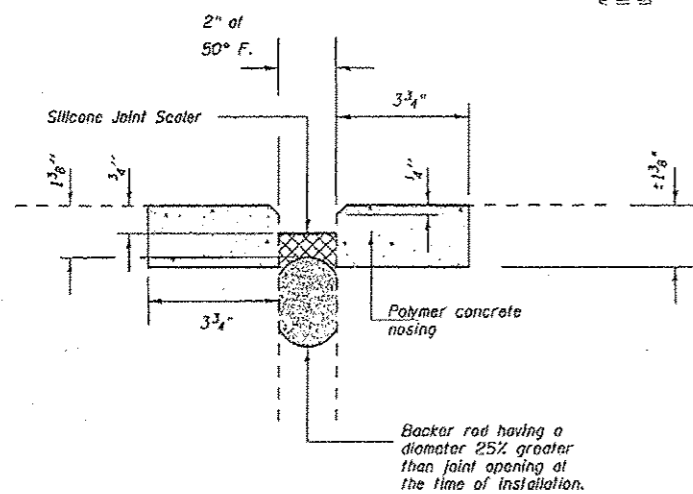
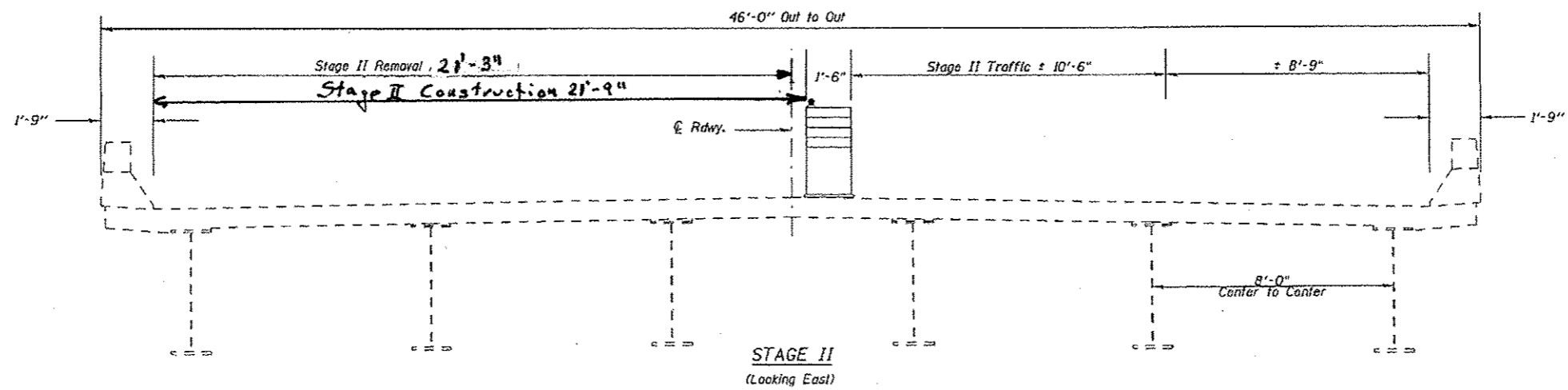
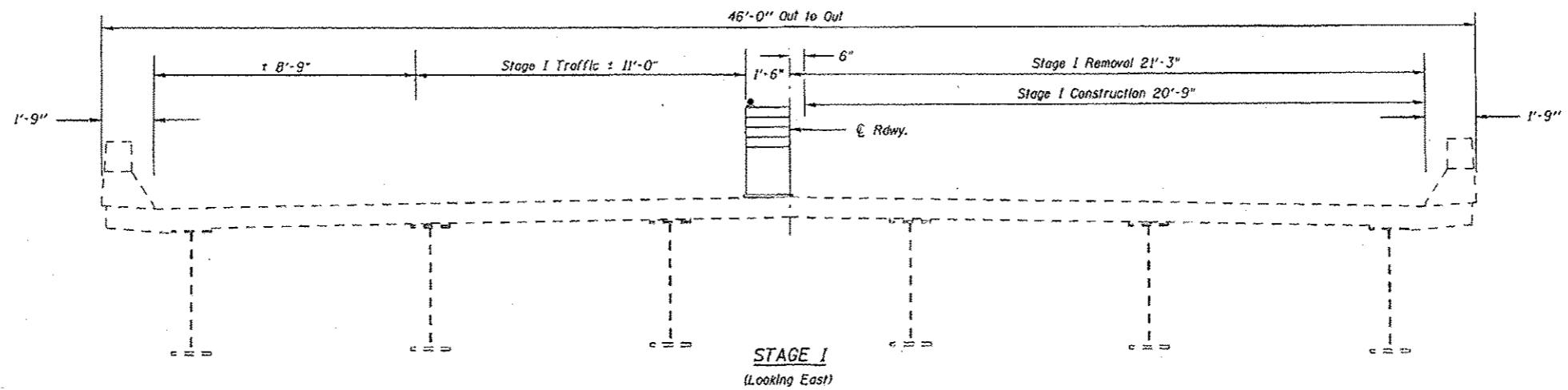
*David Carl Puzey* 6/26/12  
Expires 1/30/12

**TOTAL BILL OF MATERIAL**

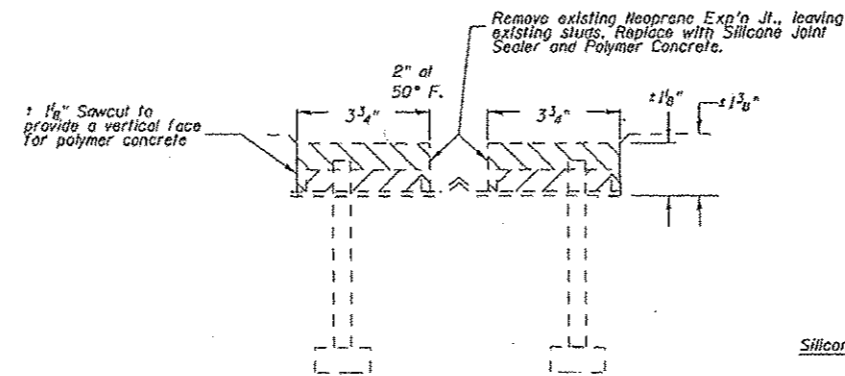
ITEM	UNIT	QUANTITY
Silicone Joint Sealer, 2"	Foot	97
Structural Repair of Concrete (Depth $\leq$ 5")	Sq. Ft.	630
Deck Slab Repair (Partial)	Sq. Yd.	43.2
Polymer Concrete	Cu. Ft.	6.7
Protective Shield	Sq. Yd.	515
Elastomeric Bearing Assembly Type I	Each	12
Anchor Bolts, 1/4"	Each	24
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	2530

**BRIDGE REPAIRS**  
FAP 849 (IL. 142) OVER FAI 64  
JEFFERSON COUNTY  
STA. 2857+33.25  
S.N. 041-0062

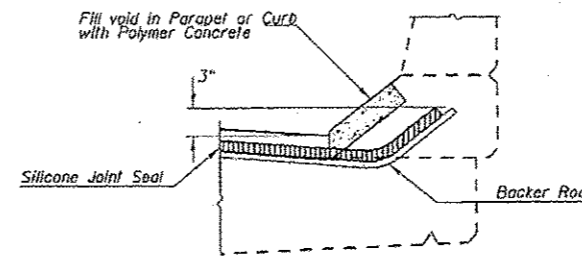
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		CHECKED	TML	REVISED											
		DATE	4/10/2012	REVISED											
		PL01 SCALE	32.0220' / 1"												
		PL01 DATE	5/2/2012												
											CONTRACT NO. 78300				
											ILLINOIS		FED. AID PROJECT		



**SILICONE JOINT SEALER DETAIL**  
Both Joints



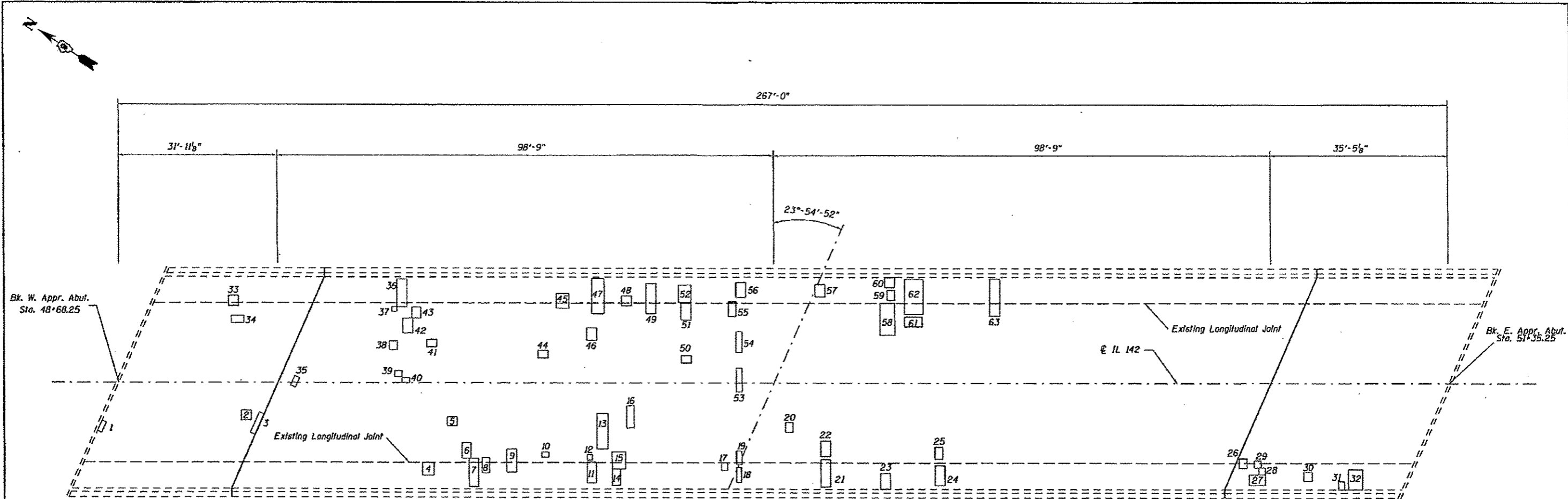
**SECTION A-A**  
EXISTING NEOPRENE JOINT DETAIL



**TYPICAL END OF SEAL TREATMENT**  
AT EXPANSION JOINT

**STAGE CONSTRUCTION & JOINT DETAILS**  
FAP 849 (IL. 142) OVER FAI 64  
STA. 2857+33.25  
S.N. 041-0062

FILE NAME	USER NAME = walkera	DESIGNED - RAW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGING DETAILS		F.A.P. RTE. 849	SECTION **	CDUNTY JEFFERSON	TOTAL SHEETS 9	SHEET NO. 5
PROJECT NO. 041-0062	DATE 4/10/2012	DRAWN - RAW	REVISED -				CONTRACT NO. 7830B				
PLOT SCALE = 5/16" = 1' in.	DATE 4/10/2012	CHECKED - TWH	REVISED -				ILLINOIS FED. AID PROJECT				
PLOT DATE = 5/9/2012	DATE 4/10/2012	REVISED -	REVISED -				SCALE: SHEET 5 OF 9 SHEETS STA. TO STA.				



PLAN

Number	Length (ft)	Width (ft)	Area (sq yd)
1	2.5	1	0.3
2	2	2	0.4
3	4.5	1	0.5
4	2.3	2.6	0.7
5	2	1.8	0.4
6	3.1	1.8	0.6
7	5.7	1.9	1.2
8	3	1.5	0.5
9	4.6	2	1.0
10	1.5	1	0.2
11	4.2	1.8	0.8
12	1	1	0.1
13	7.2	2.2	1.8
14	3.3	1.7	0.6
15	3.4	2.7	1.0
16	4.5	1.5	0.8
17	1.5	1.2	0.2
18	3	1	0.3
19	2.7	4	1.2
20	2	1.5	0.3
21	5.5	2	1.2

Number	Length (ft)	Width (ft)	Area (sq yd)
22	2	3.1	0.7
23	3.2	2	0.7
24	4	2	0.9
25	2.4	1.5	0.4
26	1.9	1.6	0.3
27	3.3	2.1	0.8
28	1.3	1.4	0.2
29	1.4	1.3	0.2
30	1.8	1.7	0.3
31	1.6	1.2	0.2
32	2.8	4	1.2
33	2	2	0.4
34	1.5	2.5	0.4
35	2.1	1.2	0.3
36	5.5	2	1.2
37	1	1	0.1
38	1.6	1.8	0.3
39	1.5	1.2	0.2
40	1	1.5	0.2
41	1.5	2	0.3
42	2	3	0.7

Number	Length (ft)	Width (ft)	Area (sq yd)
43	1.8	2.2	0.4
44	1.5	2	0.3
45	3	2.5	0.8
46	2.5	2	0.6
47	7	2.5	1.9
48	2	2	0.4
49	6	2	1.3
50	2	1.5	0.3
51	3.5	2	0.8
52	3.5	2.5	1.0
53	4.2	1.2	0.6
54	4.2	1.2	0.6
55	3	1.5	0.5
56	3	2	0.7
57	2	2.5	0.6
58	6.5	3	2.2
59	1.5	2	0.3
60	2	2	0.4
61	2	3.5	0.8
62	7	3.7	2.9
63	7.5	2	1.7

Notes: Deck sounding was performed in February 2012.  
The Resident Engineer will determine final patch locations and quantities in the field before bridge deck patching operations begin.  
The Engineer shall show actual locations of deck repairs on As-Built Plans.

BILL OF MATERIAL

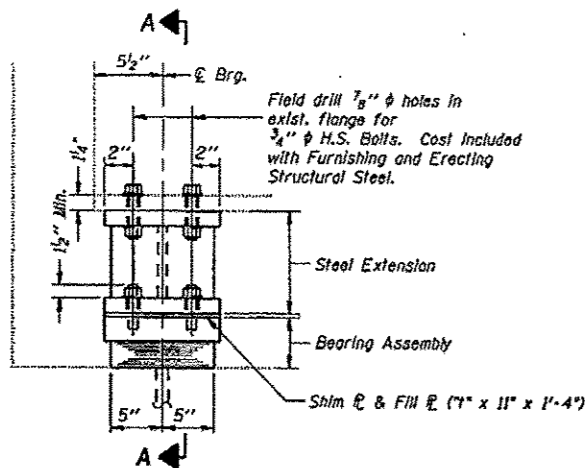
Item	Unit	Total
Deck Slab Repair (Partial)	Sq Yd	43.2

DECK SLAB REPAIRS  
FAP 849 (IL. 142) OVER FAI 64  
STA. 2857+33.25  
S.N. 041-0062

\*\*09 CM BRIDGE REPAIR 2013-2

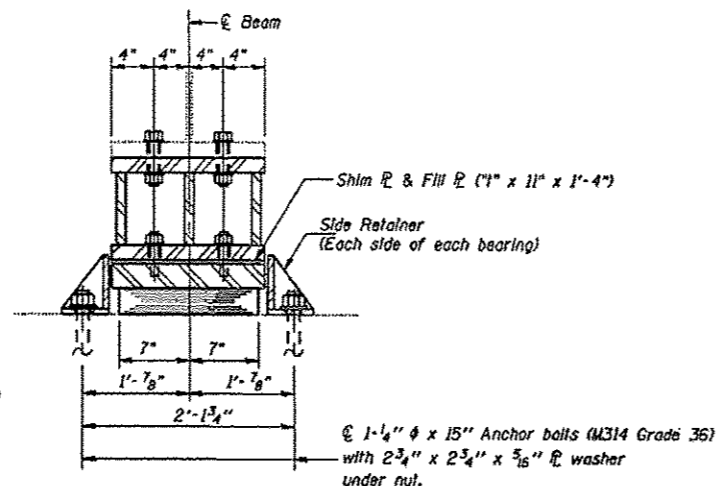
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PLOT SCALE: 20.8101' / in.	CHECKED: TWH	REVISION: -	CONTRACT NO. 78308								
PLOT DATE: 5/2/2012	DATE: 4/10/2012	REVISION: -	ILLINOIS FED. AID PROJECT								

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION AT ABUT.

TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A

Notes:

Anchor bolts shall be ASTM F1554 all-thread for an Engineer-approved alternate material of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

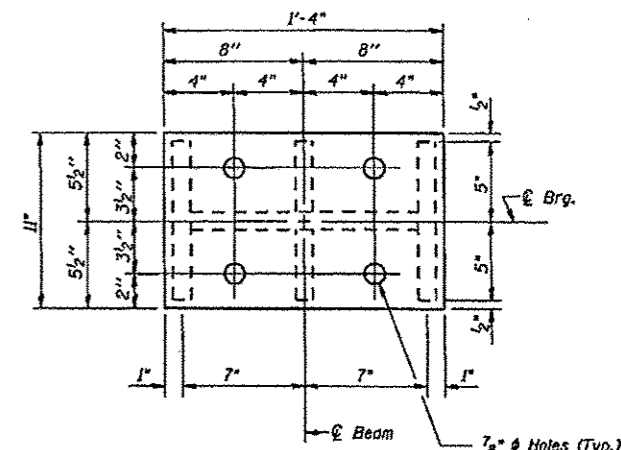
The minimum jack capacity required is 60 Tons.

Existing diaphragm removal and reinstallation may be required to facilitate drilling holes, cost to be included with "Jack and Remove Existing Bearings".

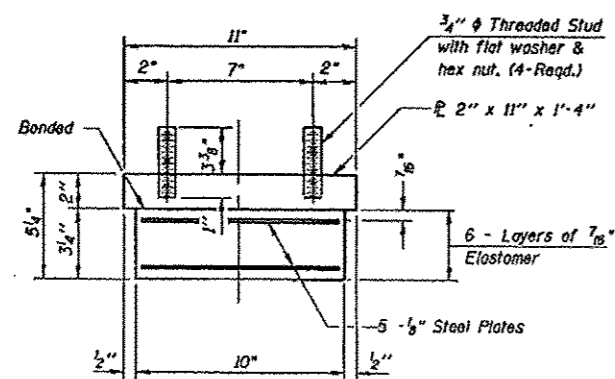
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

New steel extensions, connection bolts, Fill P's and Shim P's are included in "Furnishing and Erecting Structural Steel".



PLAN-TOP & BOTTOM PLATE



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

GIRDER REACTIONS

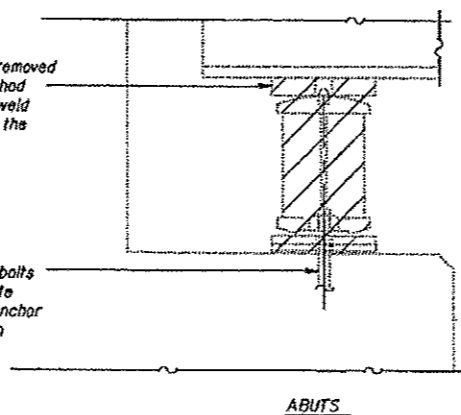
RP	(K)	48
Rt	(K)	47
Imp.	(K)	11
R (Total)	(K)	106

FILL PLATES "Y"

Beam #5	1/2" x 11" x 1'-4"
Beam #6	5/8" x 11" x 1'-4"

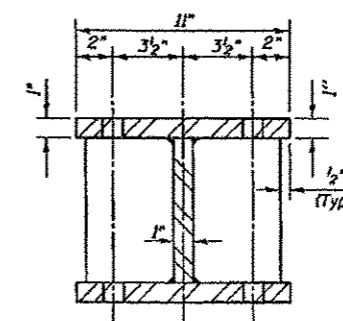
Existing Plate to be removed using the air-arc method and grind smooth all weld material remaining on the bottom flange.

Burn the existing anchor bolts flush with existing concrete surface. Grind existing anchor bolts smooth and seal with epoxy.

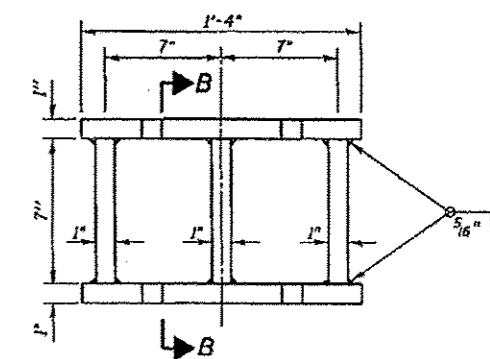


EXISTING BEARING REMOVAL DETAIL

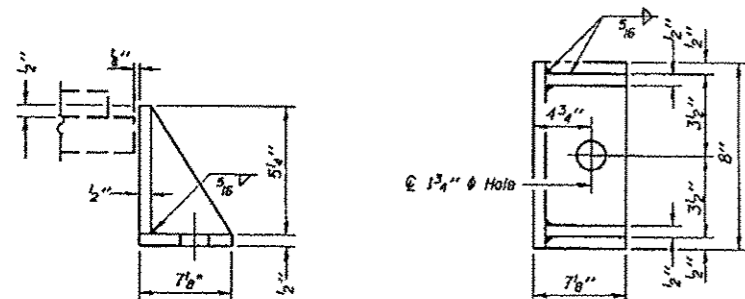
Cost is included with Jack and Remove Existing Bearings



SECTION B-B

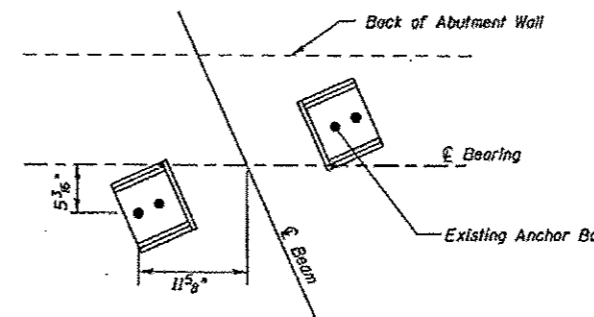


STEEL EXTENSION DETAIL



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ANCHOR BOLT LAYOUT

BILL OF MATERIAL BOTH ABUTS.

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Anchor Bolts, 1"	Each	24
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	2530

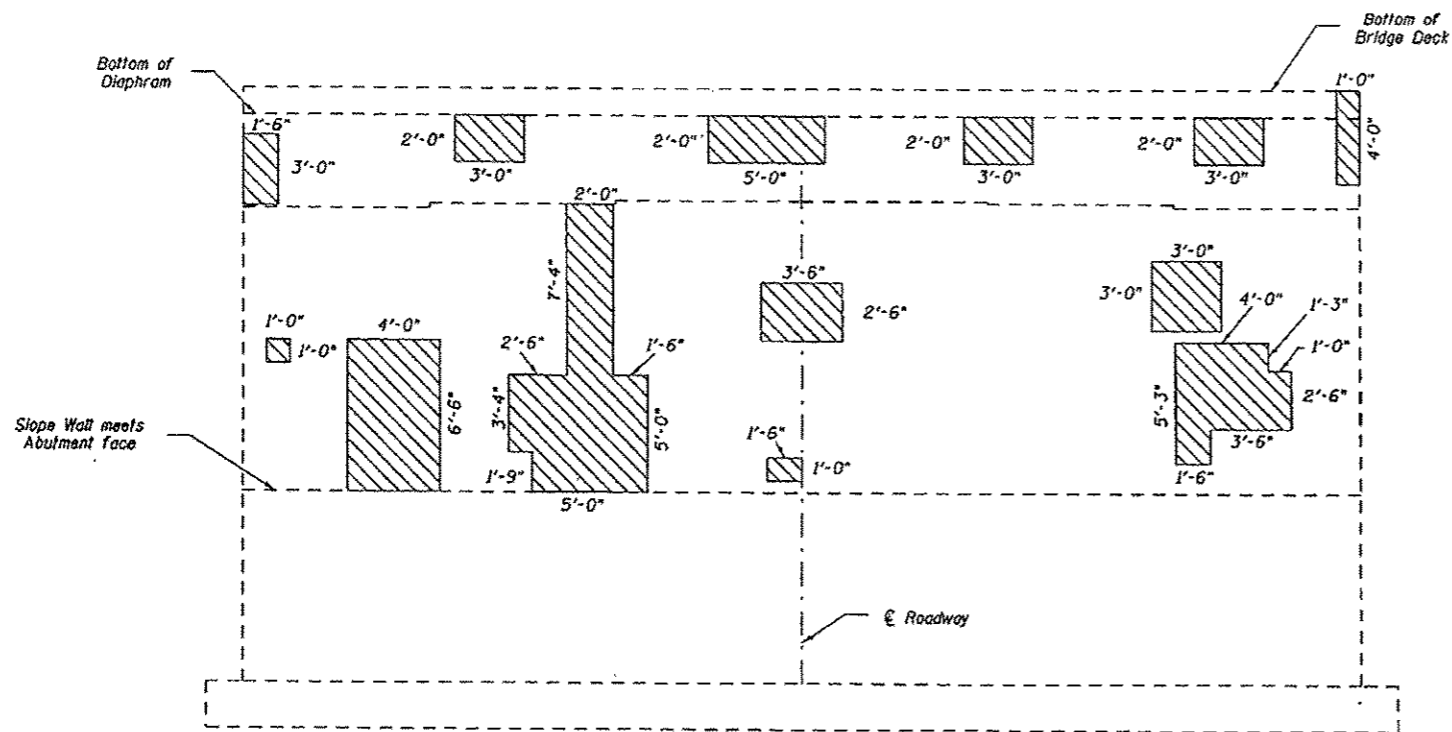
BEARING DETAILS

ABUTMENTS

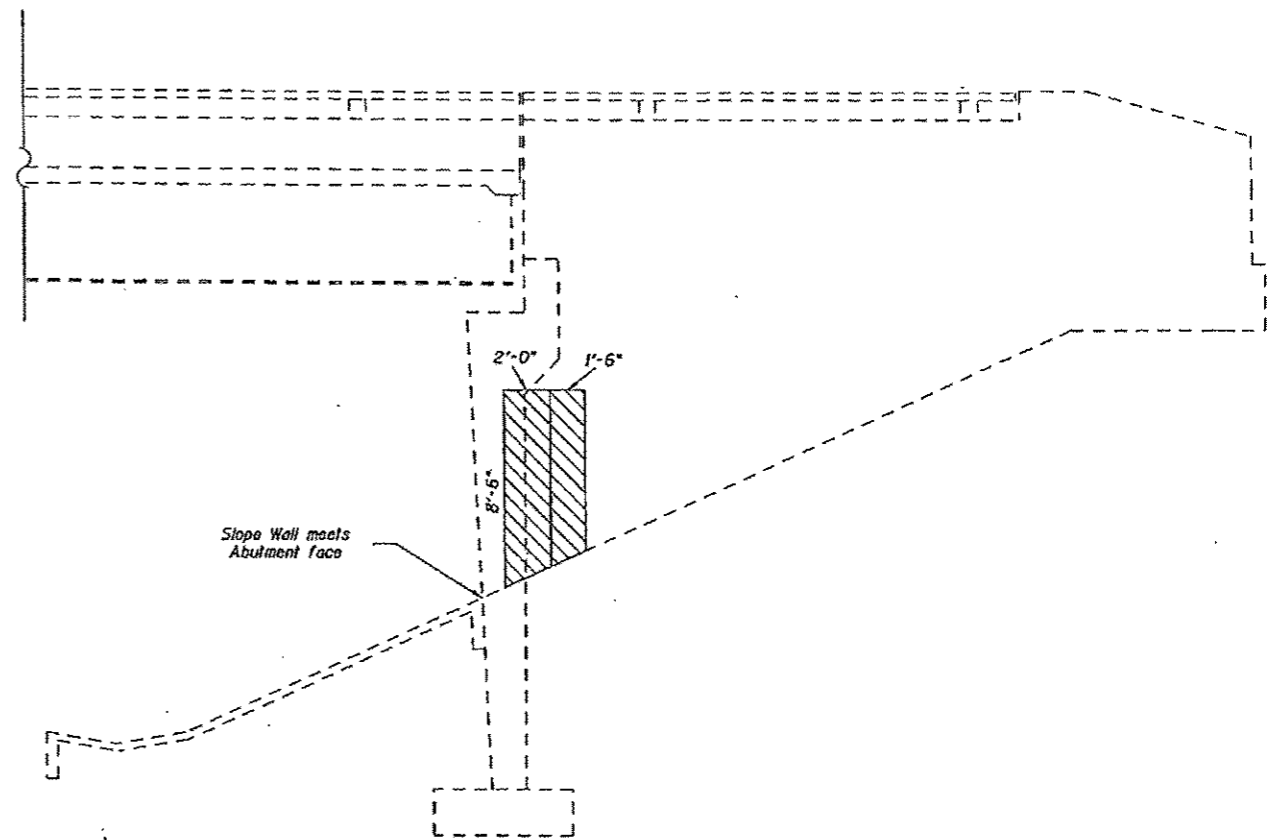
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\*\*09 CM BRIDGE REPAIR 2013-2

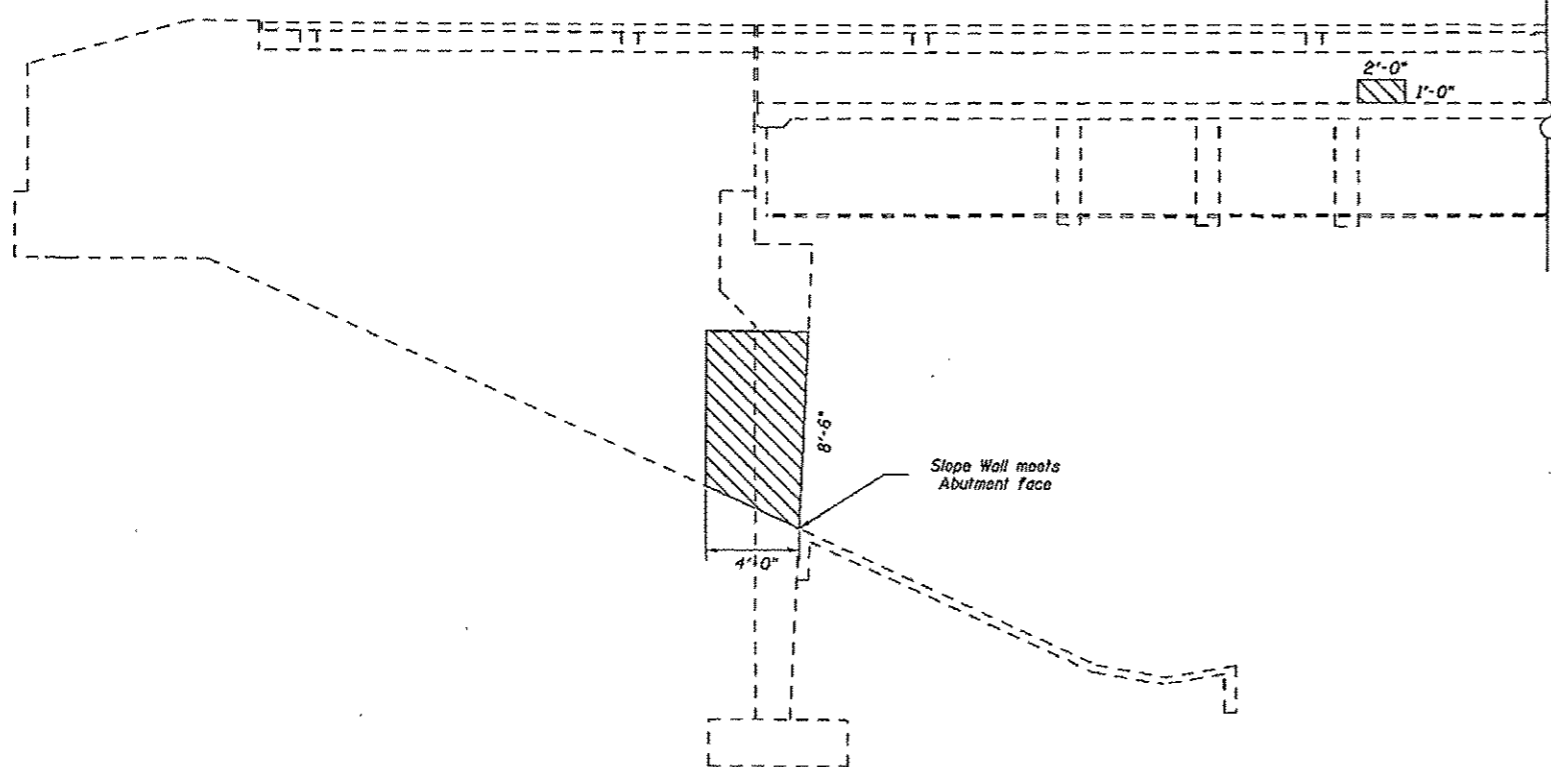
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PLOT SCALE = 1/8" = 1' - 0"	CHECKED - TWH	REVISED -	REVISED -			SCALE: SHEET 7 OF 9 SHEETS STA. TO STA.	CONTRACT NO. 78308			
PLOT DATE = 5/1/2012	DATE - 4/10/2012	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT				




**WEST ABUTMENT**  
(LOOKING NORTH)



**NORTHEAST CORNER**  
(LOOKING WEST)



**NORTHWEST CORNER**  
(LOOKING EAST)

 Structural Repair of Concrete (Depth  $\leq$  5")

**BILL OF MATERIAL**

Item	Unit	Total
Structural Repair of Concrete (Depth $\leq$ 5")	Sq. Ft.	212

**WEST ABUTMENT  
SUBSTRUCTURE REPAIRS**  
FAP 849 (IL. 142) OVER FAI 64  
STA. 2857+33.25  
S.N. 041-0062

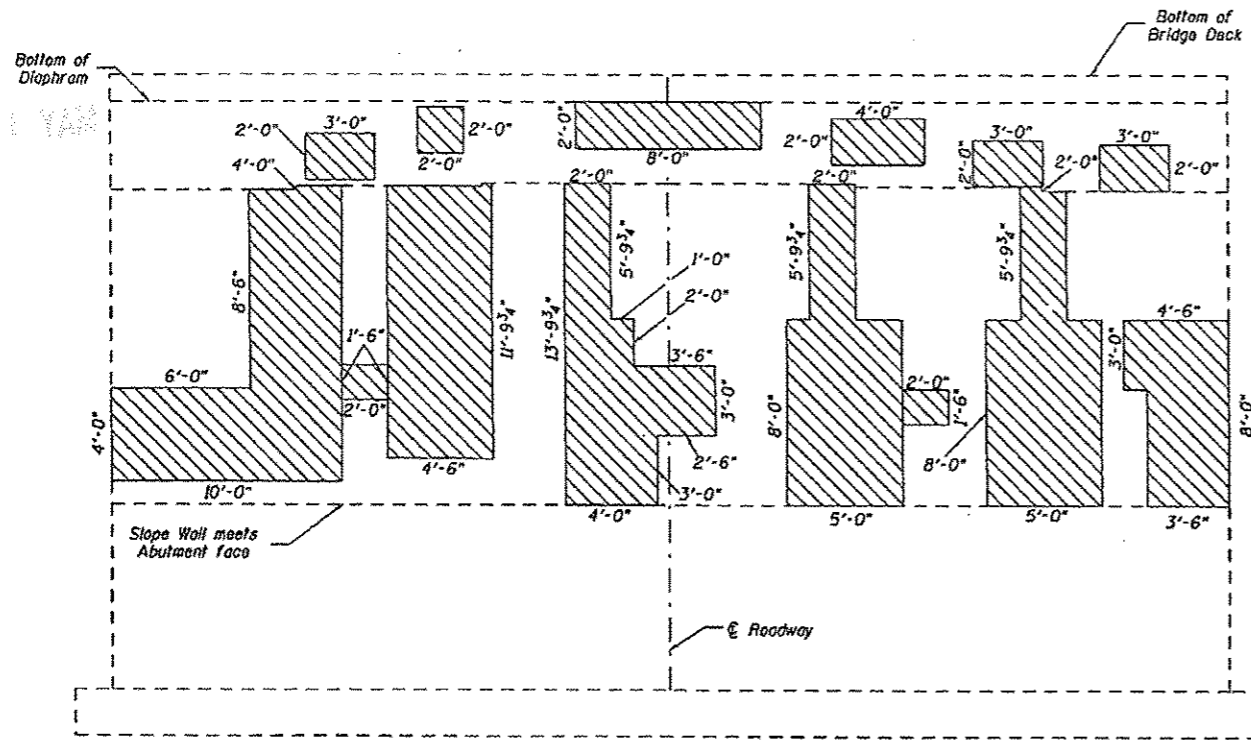
\*\*09 CM BRIDGE REPAIR 2013-2

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PLOT DATE = 5/11/2012	DATE = 4/10/2012	REVISED -	REVISED -

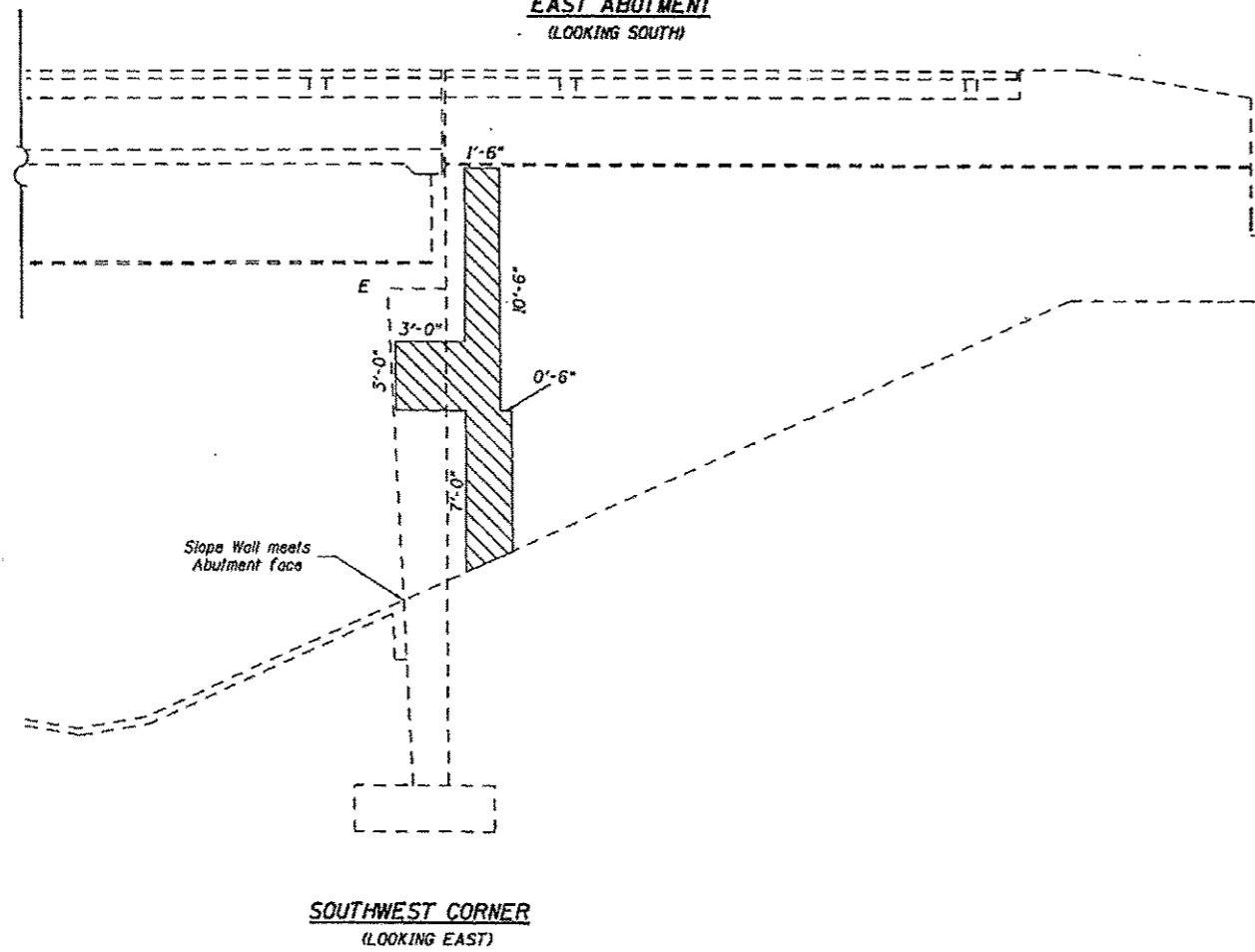
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

SCALE:	SHEET 8 OF 9 SHEETS	STA. TO STA.	F.A.P. R.T.E. 849	SECTION **	COUNTY JEFFERSON	TOTAL SHEETS 9	SHEET NO. 8
						CONTRACT NO. 78308	
ILLINOIS FED. AID PROJECT							

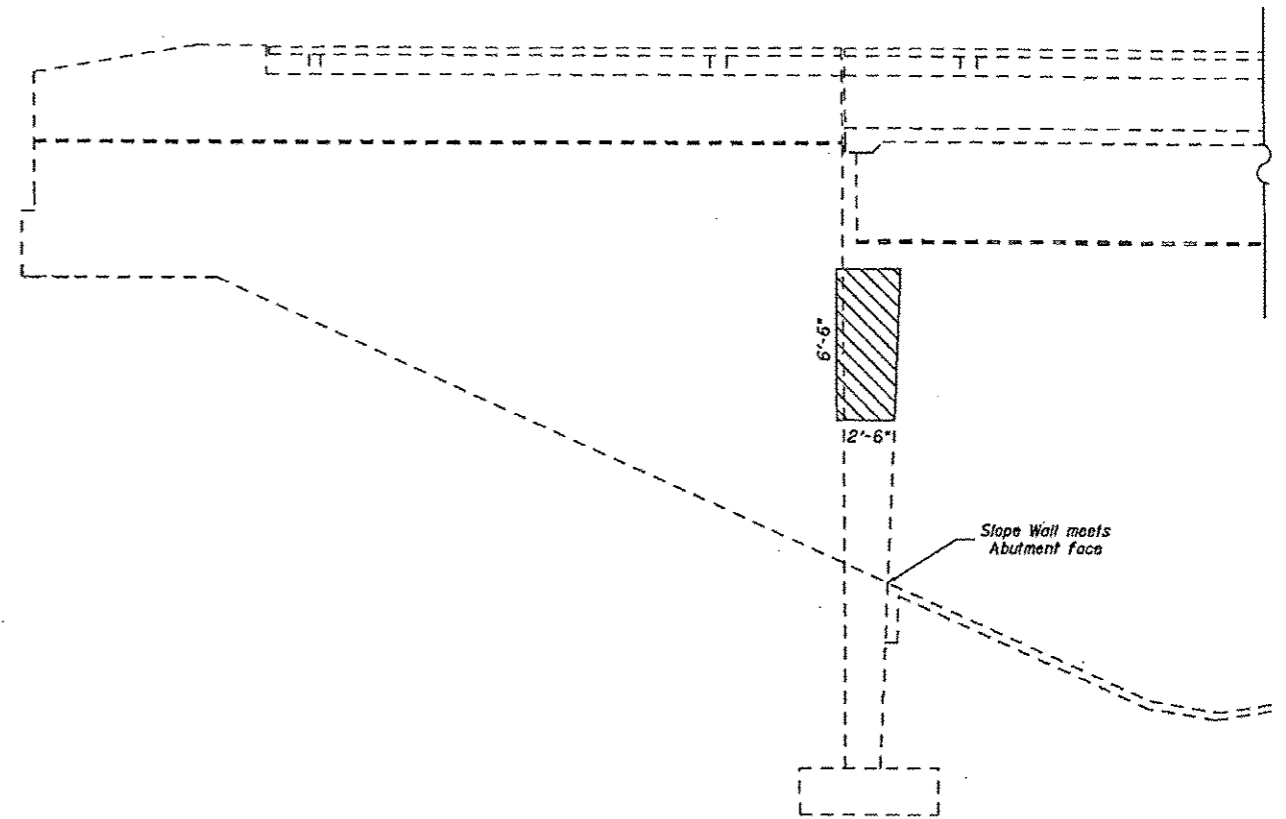




**EAST ABUTMENT**  
(LOOKING SOUTH)



**SOUTHWEST CORNER**  
(LOOKING EAST)



**SOUTHEAST CORNER**  
(LOOKING WEST)



Structural Repair of Concrete  $\leq$  5"

**BILL OF MATERIAL**

Item	Unit	Total
Structural Repair of Concrete (Depth $\leq$ 5")	Sq. Ft.	419

**EAST ABUTMENT**  
**SUBSTRUCTURE REPAIRS**  
FAP 849 (IL. 142) OVER FAI 64  
STA. 2857+33.25  
S.N. 041-0062

\*\*09 CMA BRIDGE REPAIR 2013-2

FILE NAME *	USER NAME = walkerna	DESIGNED - RAW	REVISED -
c:\pwworking\pwwalkerna\10398332178333\1311.plt	3/10/2012	DRAWN - RAW	REVISED -
PLOT SCALE = 0.8427' / 1" =		CHECKED - TWH	REVISED -
PLOT DATE = 5/3/2012		DATE - 4/10/2012	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUBSTRUCTURE REPAIRS**

SCALE: SHEET 9 OF 9 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	**	JEFFERSON	9	9
CONTRACT NO. 78308			ILLINOIS FED. AID PROJECT	