

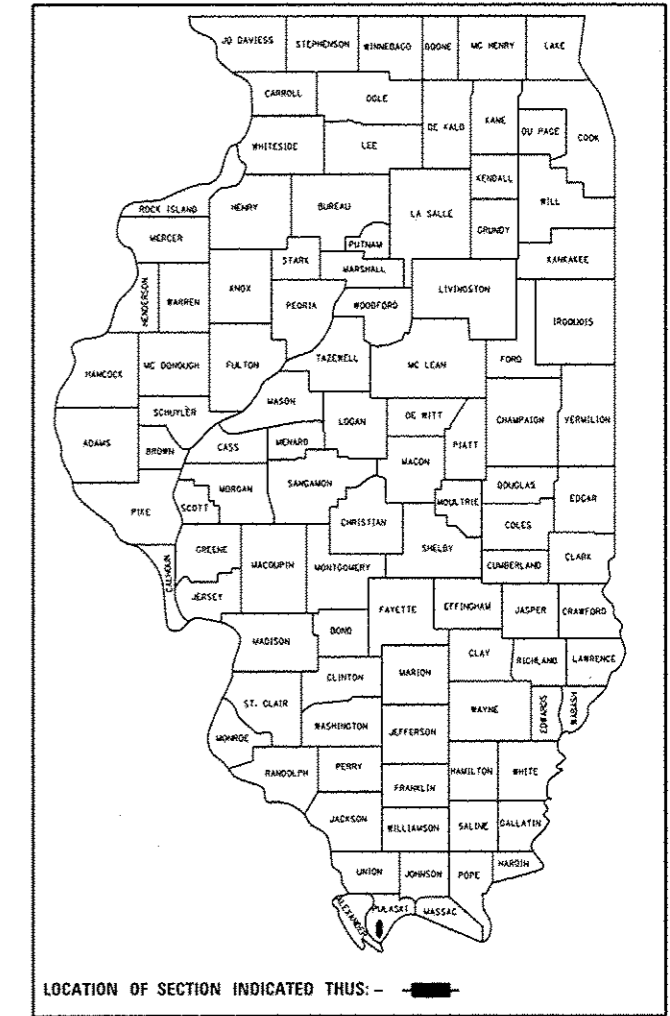
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 SEISMIC MAINT. 2014-1	PULASKI	7	1
		ILLINOIS	CONTRACT NO. 78405	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAI ROUTE 57 (I-57)  
OVER FAS 2936 (OLD RTE US 51)  
SECTION D9 SEISMIC MAINTENANCE 2014-1  
PULASKI COUNTY  
SEISMIC RETROFIT MAINTENANCE REPAIRS  
C-99-029-14

D-99-025-14



FOR INDEX OF SHEETS, SEE SHEET NO. 2

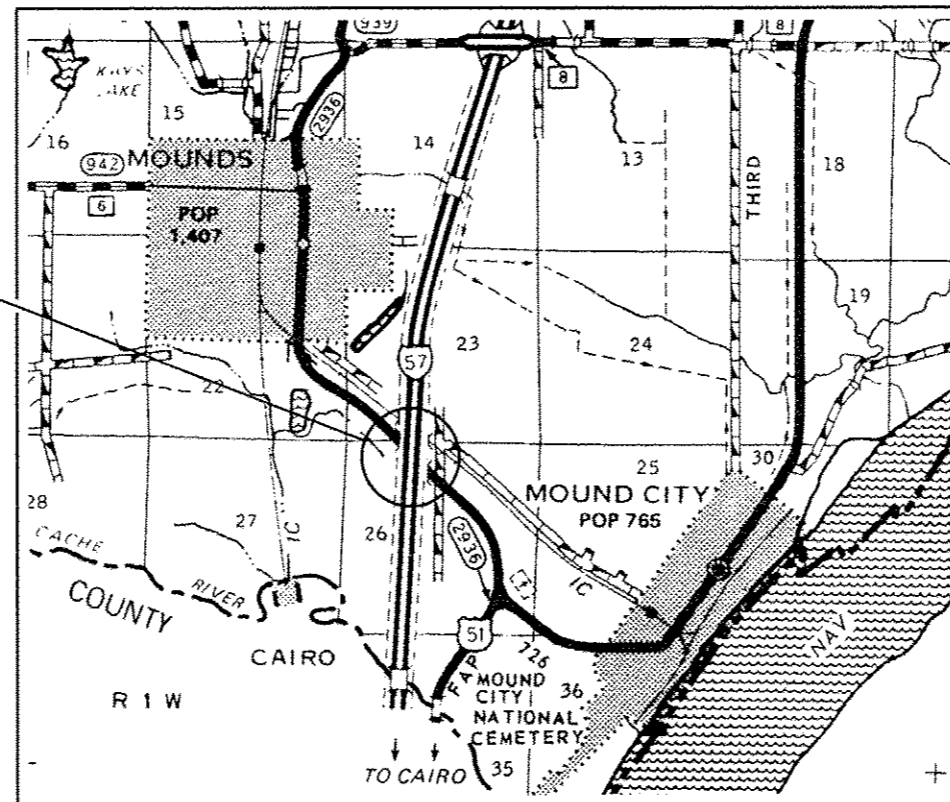
**TRAFFIC DATA**

**I-57 TRAFFIC DATA**

2013 ADT = 9,450  
32% TRUCKS

**TOWNSHIPS:**

COUNTY UNIT ROAD DISTRICT



EXISTING STRUCTURE NO. 077-0001  
FAI 57 (I-57) NB  
EXISTING STRUCTURE NO. 077-0002  
FAI 57 (I-57) SB

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

PROJECT ENGINEER: DAVID PICHE (618) 351-5227  
DESIGNER: T. WAYNE HALSTEAD (618) 351-5228

SN 077-0001 (NB)  
BRIDGE LENGTH = 1013.16 FT  
NET LENGTH = 1013.16 FT

SN 077-0002 (SB)  
BRIDGE LENGTH = 1085.48 FT  
NET LENGTH = 1085.48 FT

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED *March 19, 2014*

*Jeffrey Keem*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

*May 9, 2014*  
*John D. Baronzelli, PE*  
ENGINEER OF DESIGN AND ENVIRONMENT

*May 9, 2014*  
*Omer Osman, PE*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

FILE NAME: c:\p\work\pulsdot\hals\res\140780929\077-0001.dwg

**STANDARDS**

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
701101-04	OFF-ROAD, MULTILANE 15' TO PAVEMENT EDGE
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS $\geq$ 45 MPH
701400-07	APPROACH TO LANE CLOSURE FREEWAY/EXPRESSWAY
701406-08	LANE CLOSURE FREEWAY/EXPRESSWAY, WITH DRUMS OR BARRICADES (DAYTIME ONLY)
701901-03	TRAFFIC CONTROL DEVICES

**GENERAL NOTES**

- 1) 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.
- 2) COMMITMENTS: NONE AS OF MARCH 19, 2014.

**INDEX OF SHEETS**

1	COVER SHEET
2	INDEX OF SHEETS; GENERAL NOTES; STANDARDS
3	SUMMARY OF QUANTITIES
4	GENERAL PLAN AND ELEVATION
5	BEARING RETAINERS DETAILS
6	SEISMIC RESTRAINER DETAILS
7	SEISMIC RESTRAINER DETAILS

Prepared By: *Joe Zeleniewicz*  
DISTRICT STUDIES & PLANS ENGINEER

Examined By: *[Signature]*  
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *[Signature]*  
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *[Signature]*  
DISTRICT OPERATIONS ENGINEER

Examined By: *[Signature]*  
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: *[Signature]*  
DISTRICT CONSTRUCTION ENGINEER

Examined By: *[Signature]*  
DISTRICT MATERIALS ENGINEER

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	DRAWN -	REVISED -
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PLOT DATE = 3/19/2014	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

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

SCALE: SHEET NO. 2 OF SHEETS STA. TO STA.

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 SEIS MAINT. 2014-1	PULASKI	7	2
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 78405	

**SUMMARY OF QUANTITIES**

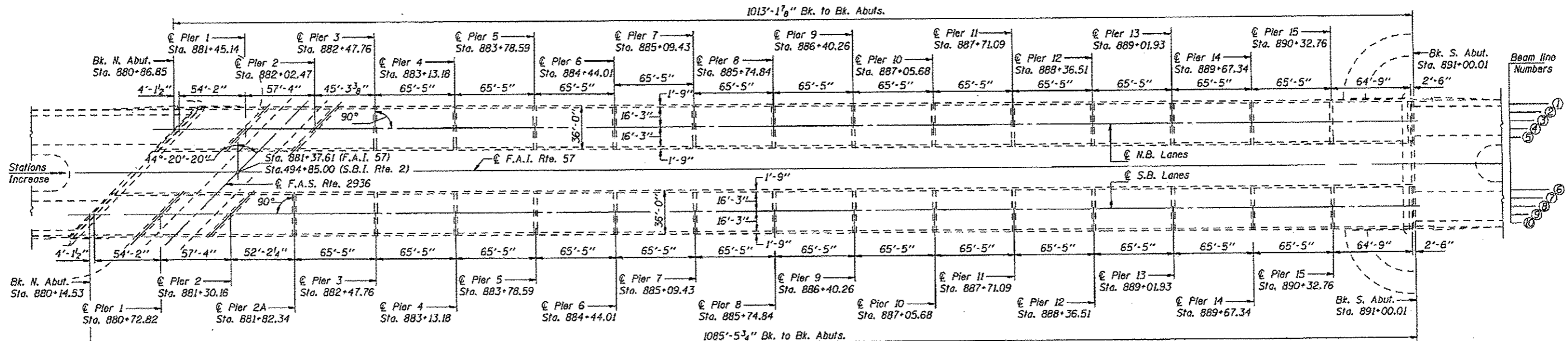
100% STATE CONSTRUCTION TYPE CODE 0014 PULASKI SN 077-0001 & 077-0002			
CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	260
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	2
67100100	MOBILIZATION	L SUM	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1
X0321778	SEISMIC RESTRAINER	EACH	348
X7010410	SPEED DISPLAY TRAILER	CAL MO	2

7

FILE NAME =	USER NAME = holsteadtv	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE = 3/19/2014		DATE -	REVISED -			SCALE:	SHEET NO. 2 OF	SHEETS	STA.	TO STA.



**ELEVATION**



**PLAN**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Seismic Restrainer	Each	348
Furnishing & Erecting Structural Steel	Lbs.	260

**GENERAL NOTES**

All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted. 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.

All structural steel shall be shop painted with inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Furnishing and Erecting Structural Steel.

**DESIGN STRESSES**

**NEW CONSTRUCTION**  
Field Units  
 $f_y = 36,000$  psi (Struct. M-270 Grade 36)

**ORIGINAL CONSTRUCTION**  
Field Units  
 $f_c = 1,400$  psi (super & sub)  
 $f_s = 20,000$  psi (reinforcement)  
 $v_c = 75$  psi  
 $n = 10$

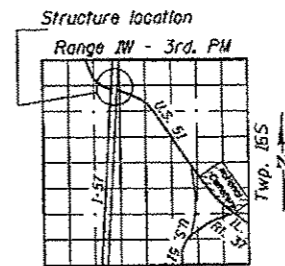
**Precast Prestressed Units**  
 $f_c = 5,000$  psi  
 $f_{st} = 4,000$  psi  
 $f_s = 248,000$  psi ( $\frac{1}{16}$ " stress relieved strands)  
 $f_{st} = 173,600$  psi ( $\frac{1}{16}$ " stress relieved strands)

**SCOPE OF WORK**

1. Replace Seismic Restrainer Cable assemblies.
2. Install missing side retainers.



*David Carl Puzey* 4/28/14  
Expires 1/30/14

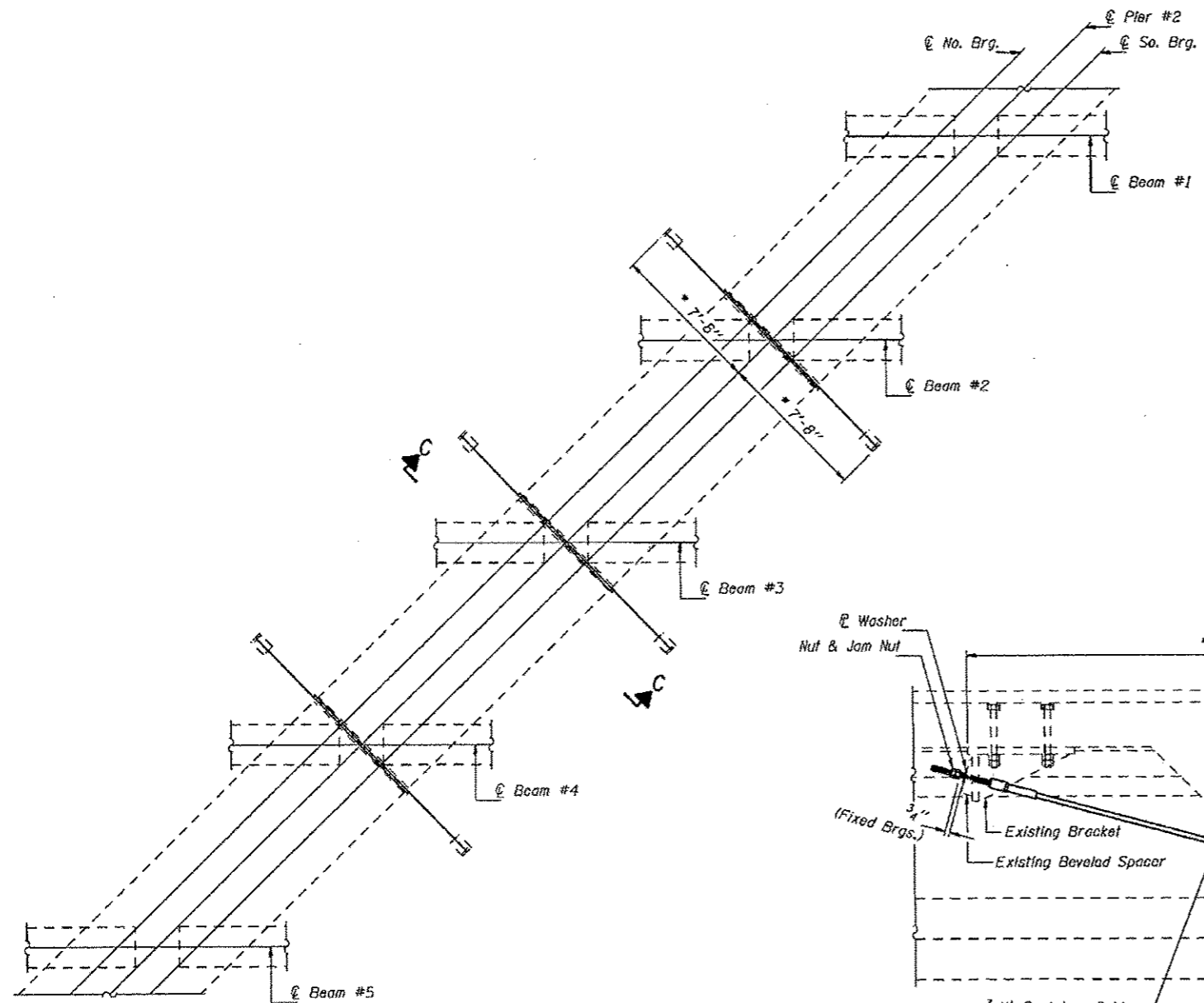


**LOCATION SKETCH**

**GENERAL PLAN SECTION**  
F.A.I. RTE. 57 OVER F.A.S. 2936  
PULASKI COUNTY  
STRUCTURE NO. 077-0001 (N.B.)  
STRUCTURE NO. 077-0002 (S.B.)

FILE NAME *	USER NAME * hoisteadtw	DESIGNED - TWH	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND ELEVATION</b>		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		CHECKED - DSP	REVISED -									
		DATE - 03/14/14	REVISED -									





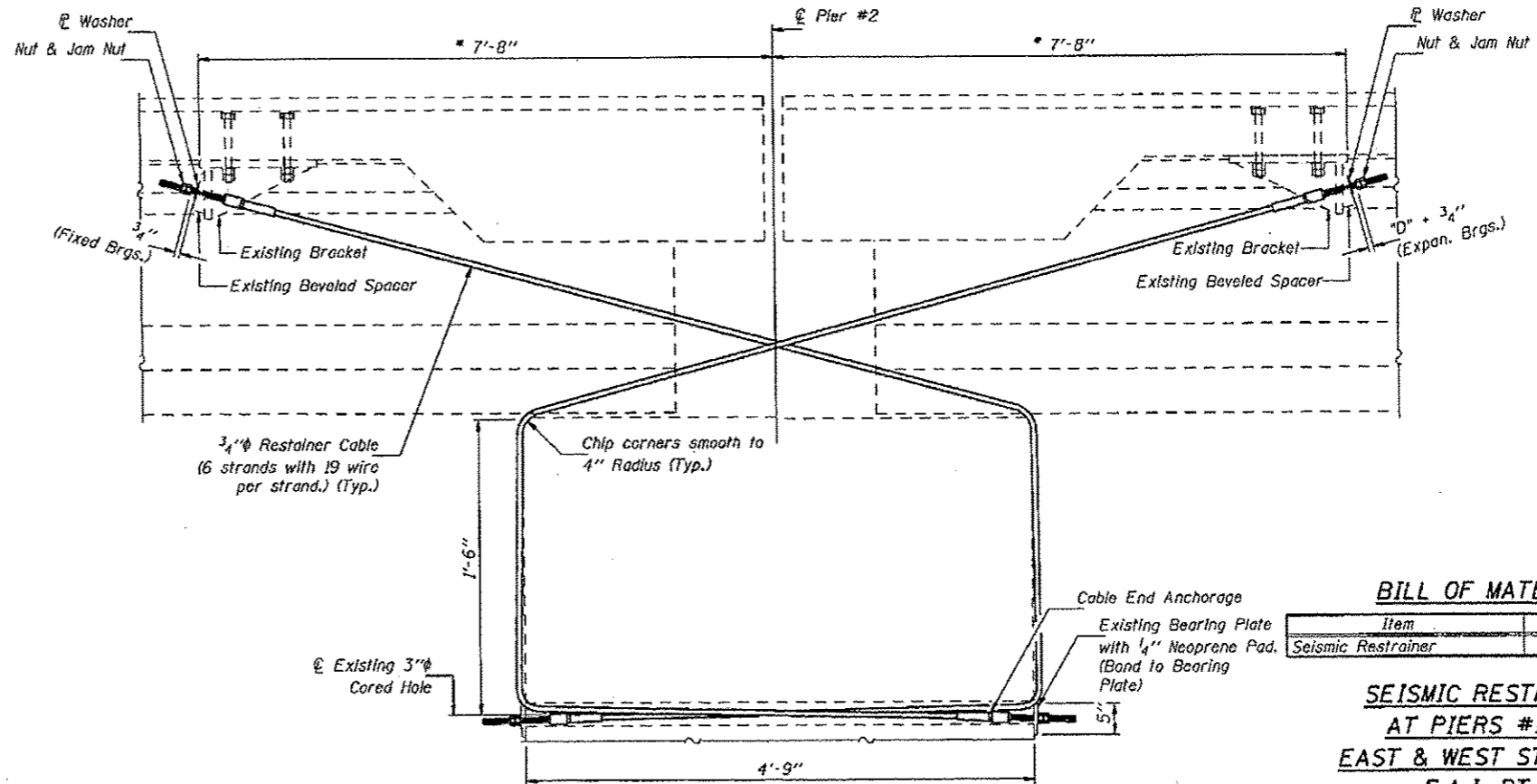
**PLAN - PIERS #2**  
(Showing location of Seismic Restrainers)  
(Pier #1 similar)

**SEISMIC RESTRAINER NOTES**

All nuts and washers shall be galvanized in accordance with A.S.T.M. A153.  
 Cables shall be Class C, galvanized in accordance with A.S.T.M. A741.  
 Cable shall be 3/4"φ preformed, 6 x 19 wire strand core or independent wire rope core, minimum breaking strength, 46 Kips in accordance with A.S.T.M. A603.  
 Cost of cables, cable end anchorages, washers and nuts including removal of the existing and installation of the new restrainers will be paid for at the unit bid price each for "SEISMIC RESTRAINER".  
 Each "SEISMIC RESTRAINER" consists of 3/4"φ Restraint Cable with 2 end anchorage assemblies and misc. hardware.  
 For details of the 3/4"φ Restraint Cable Ends, existing Beveled Spacer and existing Bearing Plate (including neoprene pad) see sheet #7 of 7.

**SEISMIC RESTRAINER INSTALLATION PROCEDURES**

- 1.) Locate and install cables snug tight.
- 2.) For Restrainers at fixed bearings, back off the nut at bracket end of cable by 3/4".
- 3.) For Restrainers at expansion bearings, back off the nut at bracket end of cable by "D" + 3/4".  
 "D" = + 1/8" per 100' of expansion length for every 15° F. temperature rise above 50° F. Normal Temperature.  
 "D" = - 1/8" per 100' of expansion length for every 15° F. temperature drop below 50° F. Normal Temperature.
- 4.) Tighten jam nuts.



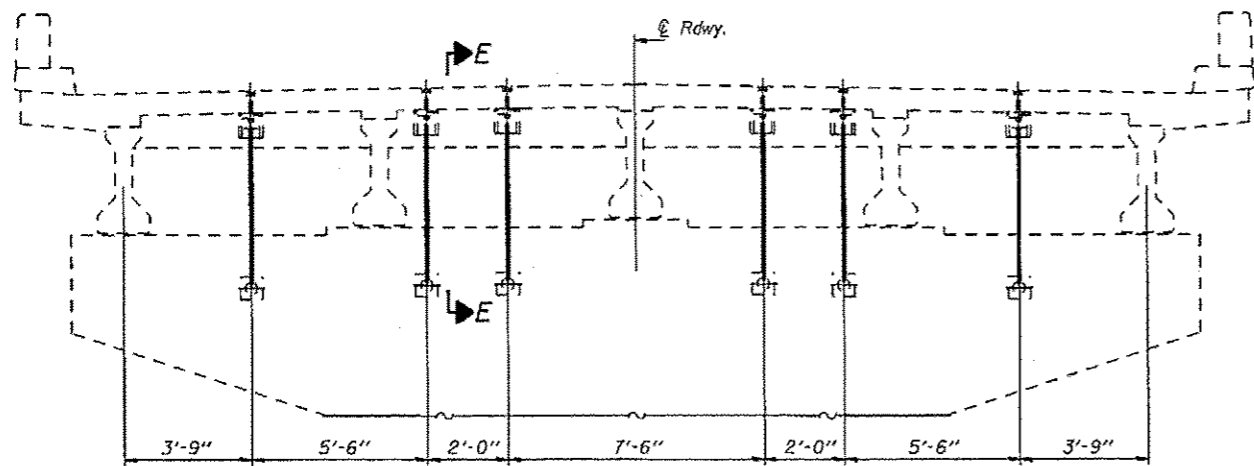
**SECTION C-C**  
\* Estimated. Contractor required to check actual length.

**BILL OF MATERIAL**

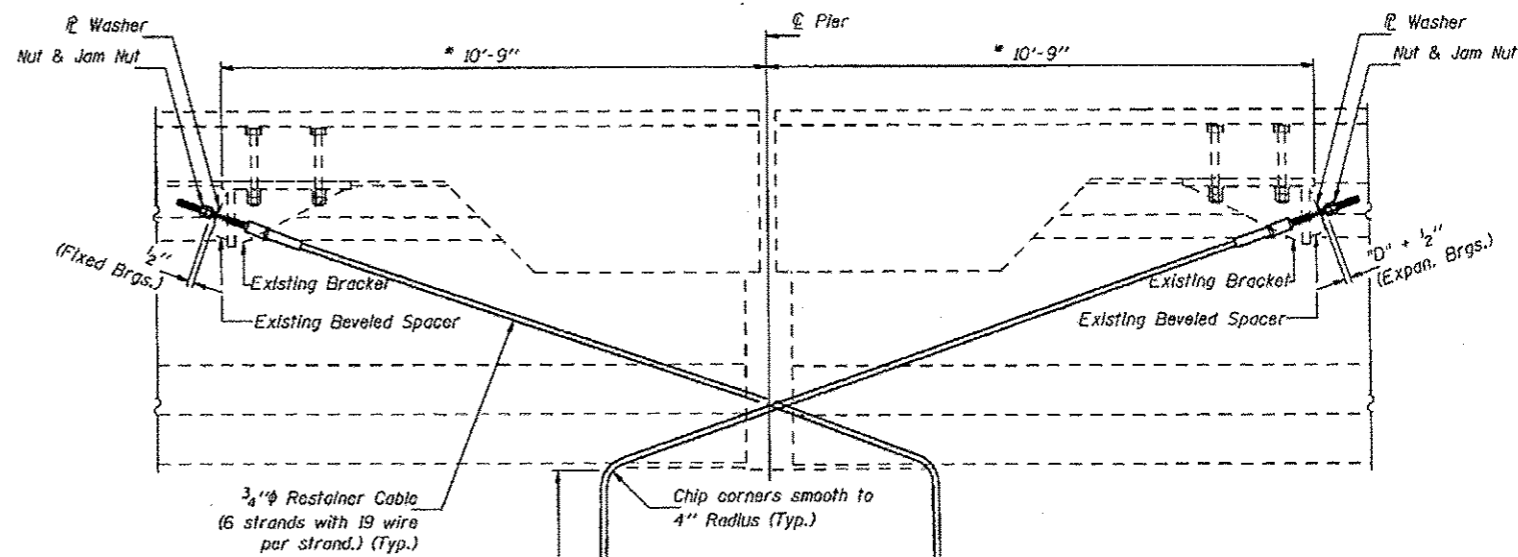
Item	Unit	Total
Seismic Restraint	Each	24

**SEISMIC RESTRAINERS**  
**AT PIERS #1 & #2**  
**EAST & WEST STRUCTURES**  
**F.A.I. RT. 57**  
**PULASKI COUNTY**  
**STATION 881+37.61**

FILE NAME =	USER NAME = halssteadw	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	SCALE: SHEET OF SHEETS STA. TO STA.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		CHECKED -	REVISED -			CONTRACT NO. 78405					
Default	PLOT DATE = 3/19/2014	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

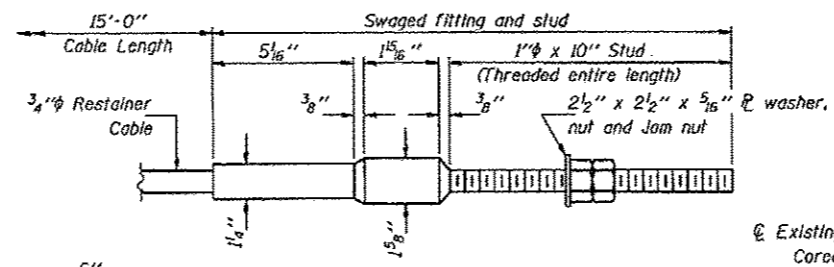


**RESTRAINER CABLES AT PIERS #2A THRU #15**

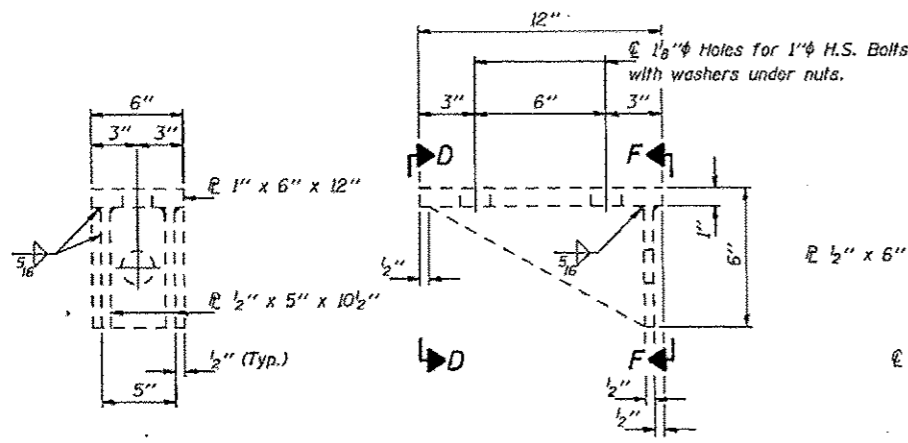


**SECTION E-E**

\* Estimated. Contractor required to check actual length.



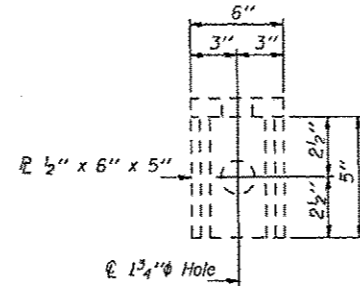
**CABLE END ANCHORAGE**  
(2 Per Cable)



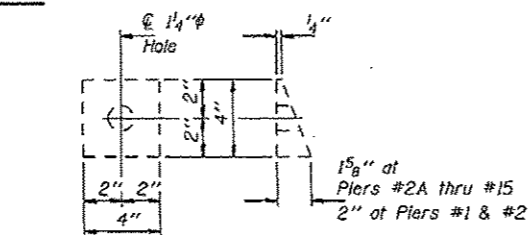
**SECTION D-D**

**ELEVATION**

**EXISTING BRACKET DETAILS**



**SECTION F-F**



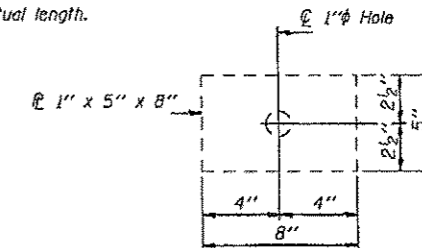
**EXISTING BEVELED SPACER**

**SEISMIC RESTRAINER NOTES**

All nuts and washers shall be galvanized in accordance with A.S.T.M. A153. Cables shall be Class C, galvanized in accordance with A.S.T.M. A741. Cable shall be 3/4 inch preformed, 6 x 19 wire strand core or independent wire rope core, minimum breaking strength, 46 Kips in accordance with A.S.T.M. A603. Cost of cables, cable end anchorages, washers and nuts including removal of the existing and installation of the new restrainers will be paid for at the unit bid price each for "SEISMIC RESTRAINER". Each "SEISMIC RESTRAINER" consists of 3/4 inch Restrainer Cable with 2 end anchorage assemblies and misc. hardware.

**SEISMIC RESTRAINER INSTALLATION PROCEDURES**

- 1.) Locate and install cables snug tight.
- 2.) For Restrainers at fixed bearings, back off the nut at bracket end of cable by 3/4 inch.
- 3.) For Restrainers at expansion bearings, back off the nut at bracket end of cable by "D" + 3/4 inch.  
 "D" = + 1/8 inch per 100' of expansion length for every 15° F. temperature rise above 50° F. Normal Temperature.  
 "D" = - 1/8 inch per 100' of expansion length for every 15° F. temperature drop below 50° F. Normal Temperature.
- 4.) Tighten jam nuts.



**EXISTING BEARING PLATE**

**BILL OF MATERIAL**

Item	Unit	Total
Seismic Restrainer	Each	324

**SEISMIC RESTRAINERS  
AT PIERS #2A THRU #15  
EAST & WEST STRUCTURES  
F.A.I. RT. 57  
PULASKI COUNTY  
STATION 881+37.61**

FILE NAME *	USER NAME * halsteadv	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	SCALE: SHEET OF SHEETS STA. TO STA.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT DATE = 3/19/2014	DATE -	REVISED -			ILLINOIS FEB. 410 PROJECT					