

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

**PROPOSED  
 HIGHWAY PLANS**

FAI ROUTE 24 (I-24)  
 SECTION (64-3B)I-7

BEARING REPLACEMENT  
 MASSAC COUNTY, ILLINOIS  
 McCRACKEN COUNTY, KENTUCKY

C-99-013-15

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
 FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3-4

**TRAFFIC DATA**

**I-24 TRAFFIC DATA**

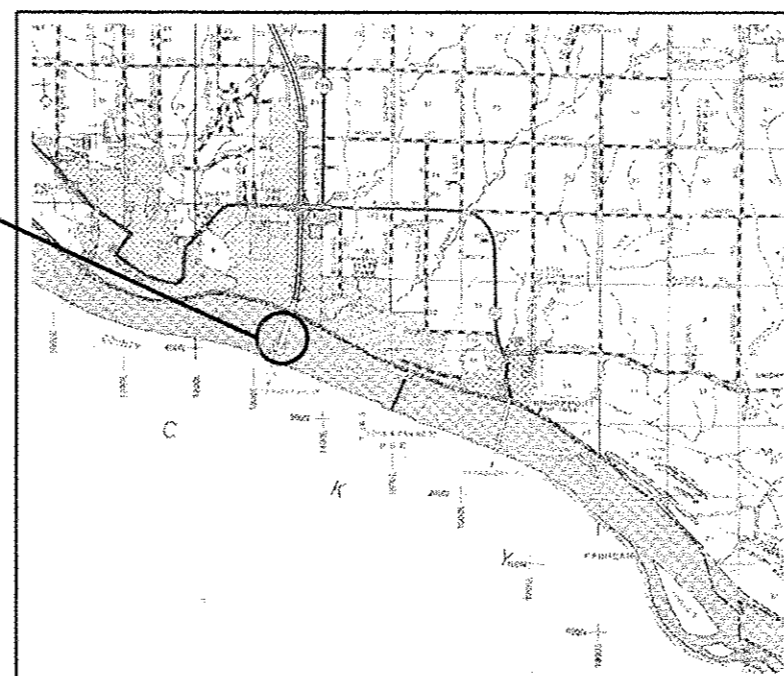
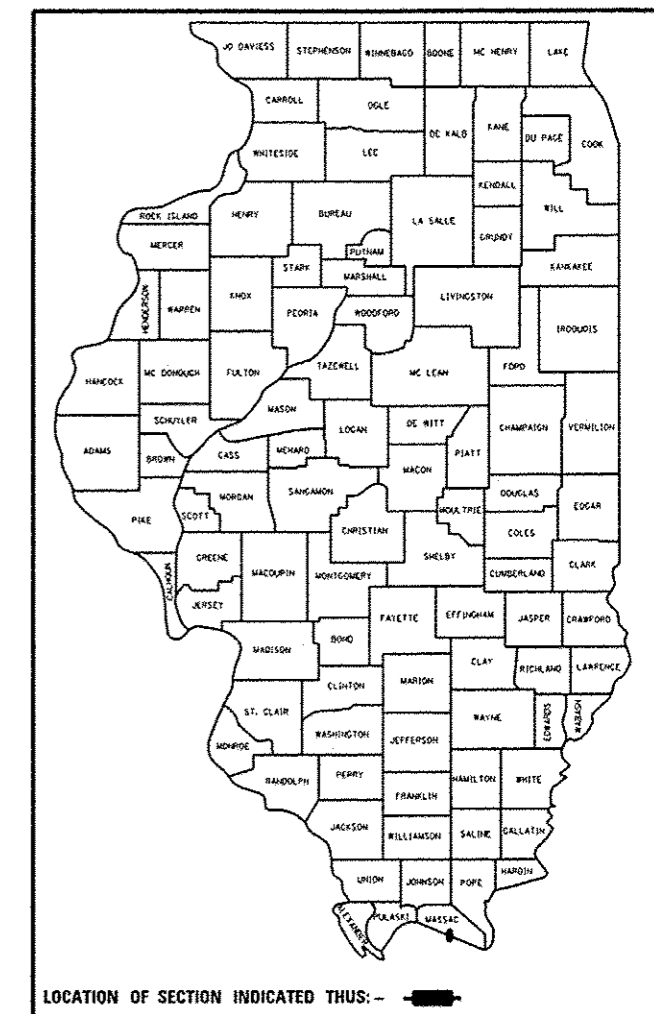
2014 ADT = 29,600 (TWO WAY)  
 20% TRUCKS

**TOWNSHIPS:**

COUNTY UNIT ROAD DISTRICT

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	(64-3B)I-7	MASSAC ILLINOIS	18	1
			CONTRACT NO. 78448	

\* 18+6 = 24 TOTAL SHEETS  
 D-99-008-15



EXISTING STRUCTURE NO.  
 064-0035 ILLINOIS  
 073-0024-B0100 KENTUCKY  
 FAI 24 OVER THE OHIO RIVER

STRUCTURE LENGTH = 5,634 FT.

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

PROJECT MANAGER: DAVID PICHE (618) 351-5227

CONTRACT NO. 78448

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

SUBMITTED Dec 16 20 14  
Jerry L. Keim  
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Jan 30 20 15  
John D. Baranzoli P.E.  
 ENGINEER OF DESIGN AND ENVIRONMENT

Jan 30 20 15  
Chris Osman P.E.  
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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 OF THE STATE OF ILLINOIS

2 REVISED 4-7-15

**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) IF THE CONTRACTOR CHOOSES TO MODIFY THE SUGGESTED SEQUENCE OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A REVISED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL LAYOUT DETAILS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
- 3) COMMITMENTS: NONE AS OF MARCH 20, 2015.

**INDEX OF SHEETS**

- 1 COVER SHEET
- 2 INDEX OF SHEETS, GENERAL NOTES, STANDARDS
- 3-4 SUMMARY OF QUANTITIES
- 5 WIDE LOAD SIGNING PLAN
- \* 6-18 BRIDGE DETAILS

\* INCLUDES SHEETS 18A - 18F.

**ILLINOIS HIGHWAY STANDARDS**

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 701101-04 OFF-ROAD, MULTILANE 15' TO PAVEMENT EDGE
- 701400-08 APPROACH TO LANE CLOSURE FREEWAY/EXPRESSWAY
- 701401-09 LANE CLOSURE FREEWAY/EXPRESSWAY
- 701402-10 LANE CLOSURE FREEWAY/EXPRESSWAY, WITH BARRIER
- 701901-04 TRAFFIC CONTROL DEVICES
- 704001-07 TEMPORARY CONCRETE BARRIER

701428

△ REVISED 4-7-15

Prepared By: *[Signature]*  
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

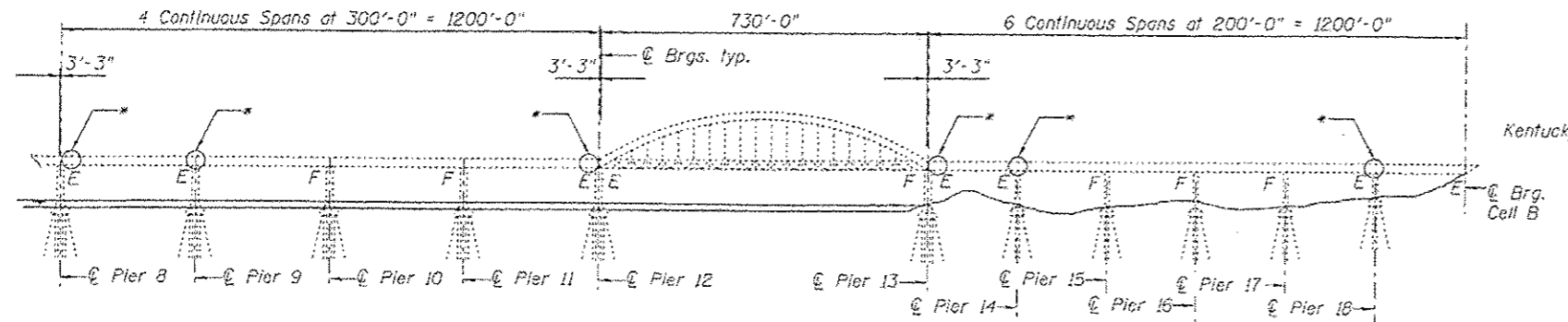
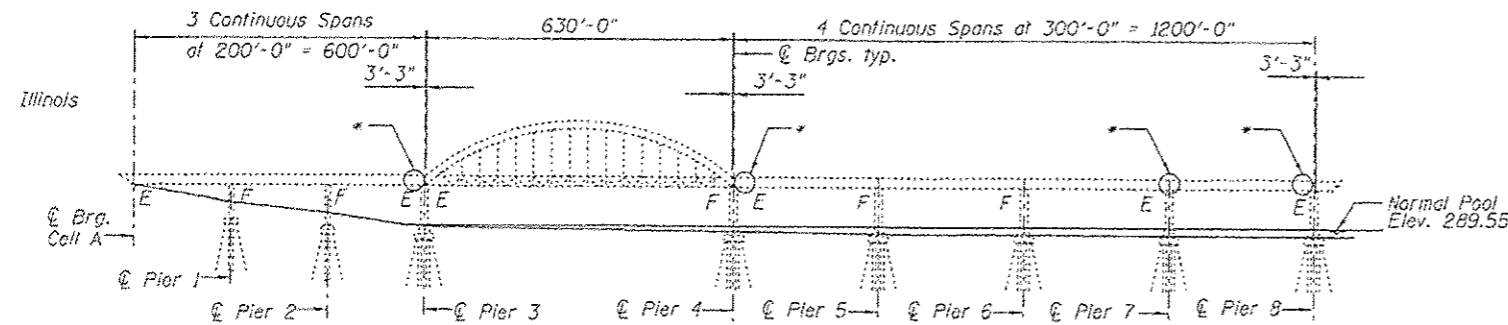
FILE NAME *	USER NAME * halsteadw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, GENERAL NOTES, STANDARDS				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pwwork\pwwork\halsteadw\ad420778\7	448-ahs-plan.dgn	DRAWN -	REVISED -						24	164-3B11-7	MASSAC	18	2
	PLOT SCALE * 100.0000' / 1"	CHECKED -	REVISED -		CONTRACT NO. 78448								
	PLOT DATE * 12/19/2014	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								

Traffic: Traffic to be maintained utilizing stage construction.

Salvage: No Salvage.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	---	1.1	1.1
Concrete Structures	Cu. Yd.	---	46.7	46.7
Reinforcement Bars, Epoxy Coated	Pound	---	5,130	5,130
Anchor Bolts, 1/2"	Each	16	---	16
Anchor Bolts, 1/2"	Each	32	---	32
Anchor Bolts, 2"	Each	40	---	40
High Load Multi-Rotational Bearings, Guided Expansion, 750K	Each	4	---	4
Structural Steel Repair	Pound	23,750	---	23,750
Removal of Existing Bearings	Each	20	---	20
Jacking and Cribbing	Each	20	---	20
High Load Multi-Rotational Bearings, Guided Expansion, 1100K	Each	8	---	8
High Load Multi-Rotational Bearings, Guided Expansion, 2000K	Each	4	---	4
High Load Multi-Rotational Bearings, Guided Expansion, 3100K	Each	4	---	4



**ELEVATION**

(Looking East)

\*Remove and replace existing rocker bearings with HLMR Expansion Bearings and Concrete Pedestals. Existing tied arch span rocker bearings are not to be replaced.

**GENERAL NOTES**

- Except as otherwise specified, fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8 in.  $\phi$ , open holes 15/16 in.  $\phi$ , unless otherwise noted.
- All structural steel shall be AASHTO M 270, Grade 50. Steel used in the jacking and cribbing shall be AASHTO M 270, Grade 50 unless otherwise noted.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Gray, Munsel No. 5B 7/1. Cost 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 Contractor shall perform the work with care, so that any materials which are to remain in place shall not be damaged. If the Contractor damages any materials which are to remain in place, the damaged materials shall be replaced or repaired in a manner satisfactory to the Engineer at the expense of the Contractor.
- The Contractor shall ensure that no infringement of the navigational underclearance or channel occurs while doing the work. Any infringement shall be approved by the United States Coast Guard. The Contractor shall contact Mr. Eric Washburn, Coast Guard 8th District, 1222 Spruce Street, St. Louis, MO 63103, (314) 269-2378 for requirements needed to obtain the necessary permits. Emergency Contact U.S.C.G. 24-Hour Watch Center (502) 779-5422.
- The combined weight of construction vehicles, construction equipment including work platforms (excluding temporary concrete barrier for stage construction), and stockpiled materials, shall not exceed 40 tons at any given time at each bearing replacement location. The Contractor shall submit construction weights and associated sequencing to the Engineer for approval.

**LOADING HS20-44 (NEW CONSTRUCTION)**

Allow 0#/sq. ft. for future wearing surface.

**DESIGN TRAFFIC LANES**

HLMR Expansion Bearings: Four lanes, max. loading configuration  
Jacking and Cribbing: Three lanes, staged configuration

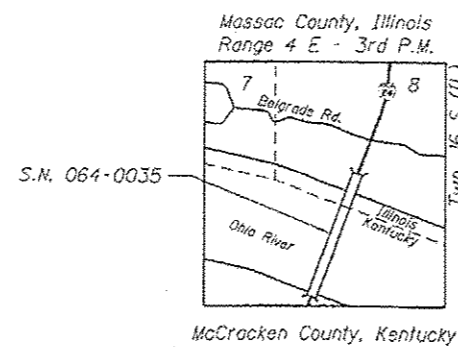
**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition and the AASHTO Manual for Bridge Evaluation, 2nd Edition, with 2011 and 2013 Interims.

**DESIGN STRESSES (NEW CONSTRUCTION)**

**FIELD UNITS**

$f'c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (A270 Grade 50 Structural Steel)



**LOCATION SKETCH**

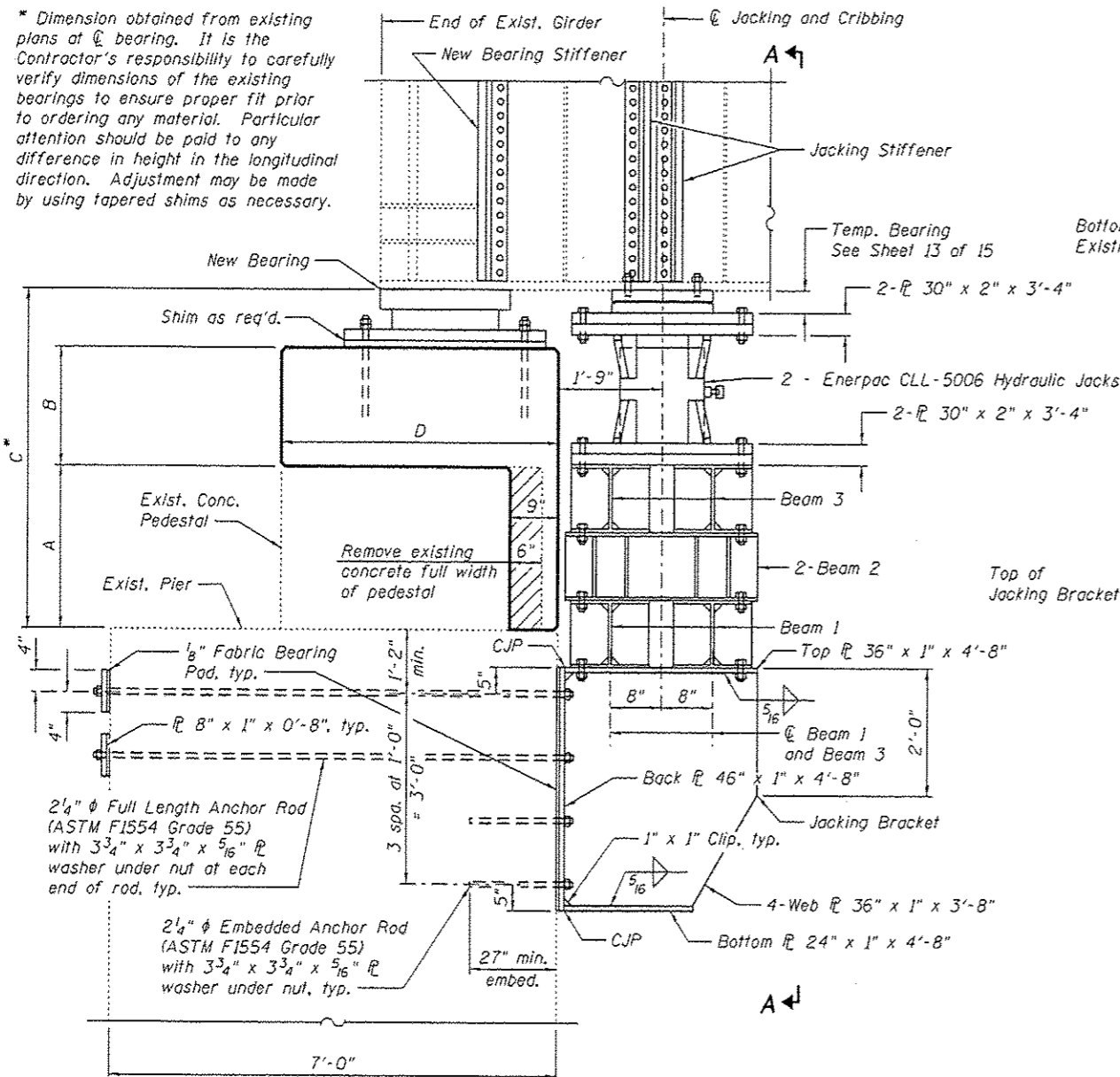
LICENSED STRUCTURAL ENGINEER  
RACHELL L. MERTZ  
EDWARDSVILLE, ILLINOIS  
ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 081-006526  
EXPIRES 11/30/2016  
4/6/15

**INDEX OF SHEETS**

- General Elevation
- Typical Stage Construction Details and Sequence of Construction
- Temporary Concrete Barrier for Stage Construction
- Bearing Removal and Jacking Stiffener Details - 1
- Bearing Removal and Jacking Stiffener Details - 2
- Bearing Removal and Jacking Stiffener Details - 3
- Jacking and Concrete Pedestal Details - Piers 3N and 13S
- Jacking and Concrete Pedestal Details - Piers 4S and 12N
- Cribbing Details - Piers 3N, 4S, 12N and 13S
- Jacking and Concrete Pedestal Details - Piers 7 and 9
- Jacking and Concrete Pedestal Details - Pier 8
- Jacking and Concrete Pedestal Details - Piers 14 and 18
- Temporary Bearing Details
- High Load Multi-Rotational Bearings - 1
- High Load Multi-Rotational Bearings - 2

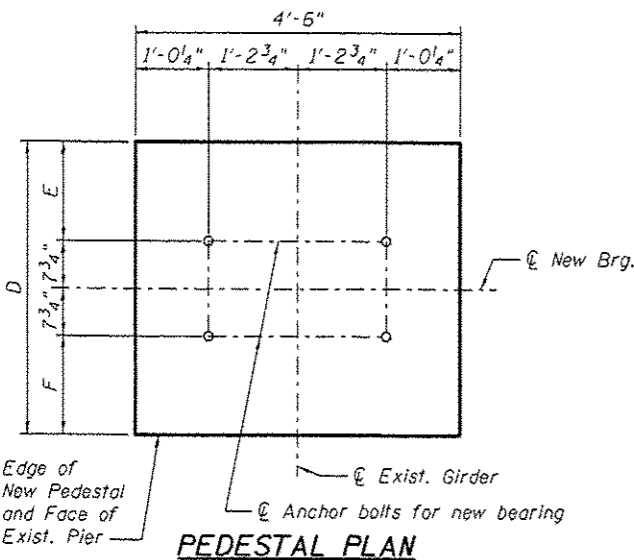
**GENERAL ELEVATION**  
**F.A.I. ROUTE 24 - SEC. (64-3B)I-7**  
**MASSAC COUNTY**  
**STRUCTURE NO. 064-0035**

\* Dimension obtained from existing plans at bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.



**ELEVATION**

Jack and Cribbing for Pier 3N shown. Jack and Cribbing for Pier 13S similar (See Sheet 9 of 15)



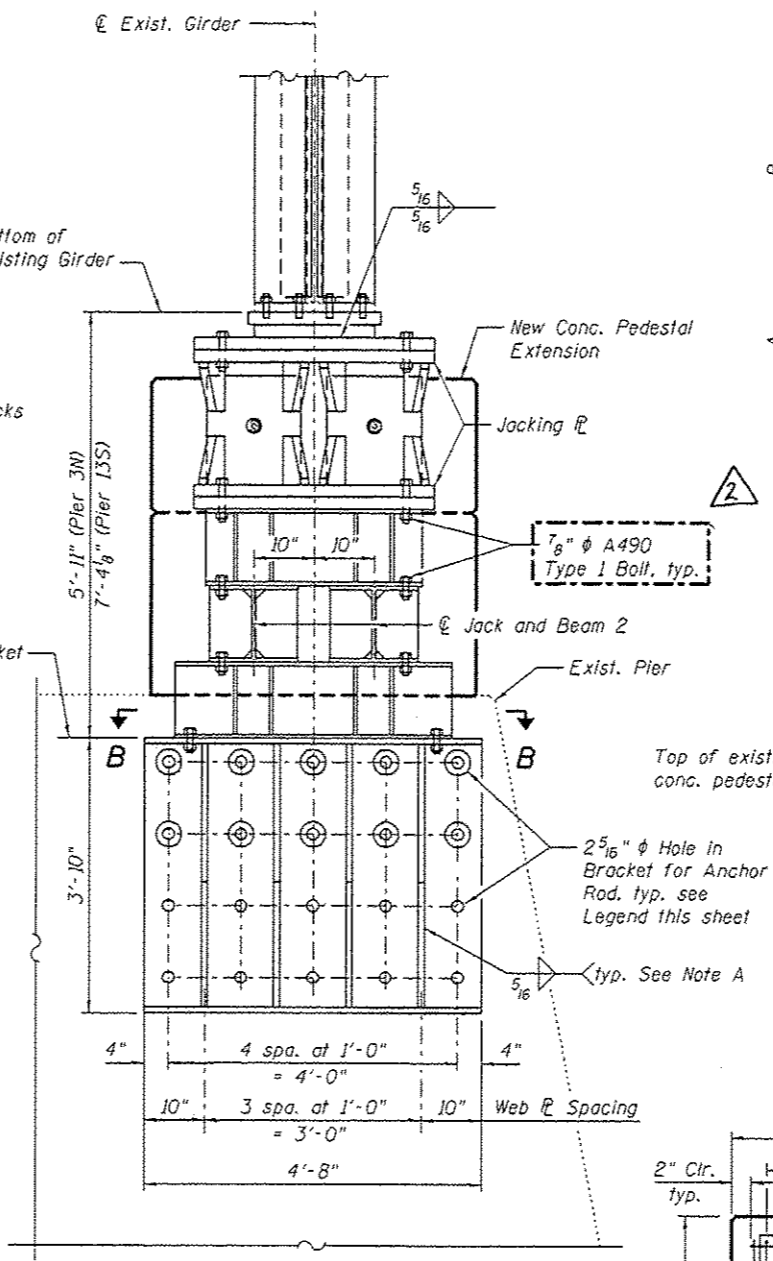
**PEDESTAL PLAN**

**LEGEND**  
(Jacking Bracket)

- Hole with threaded anchor rod, 27\"/>

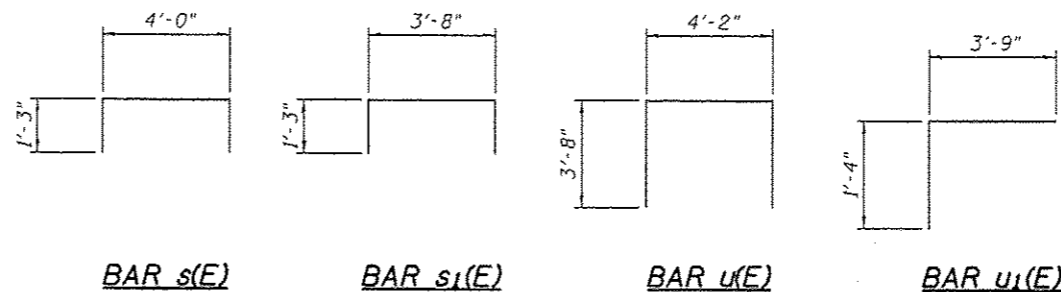
**TABLE OF DIMENSIONS**

Dim.	Pier 3N	Pier 13S
A	2'-5 1/4"	3'-10 1/8"
B	1'-10 7/8"	1'-11 1/8"
C	5'-2"	6'-7 1/8"
D	4'-4"	4'-15 1/8"
E	2'-3 3/8"	9 1/8"
F	2'-2 1/4"	7 7/8"

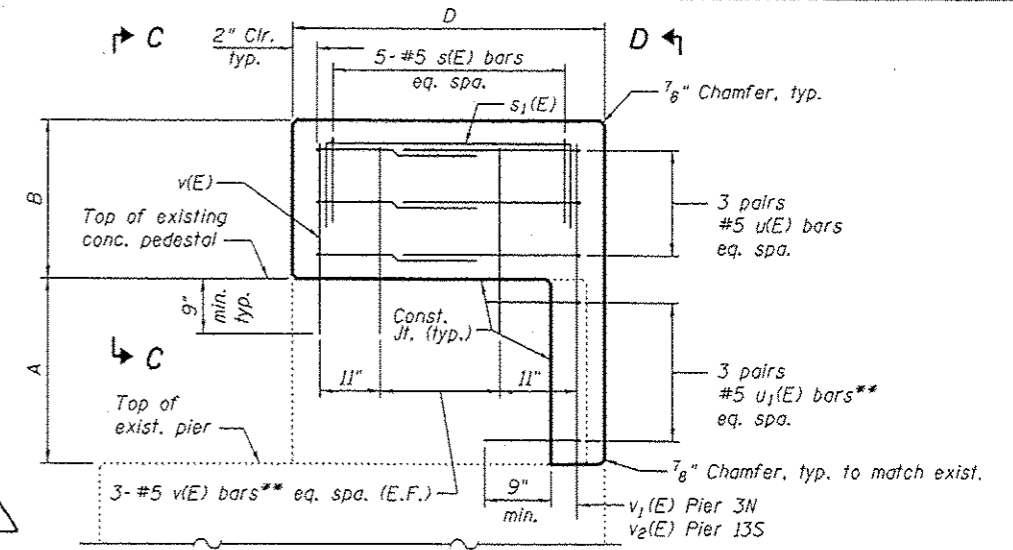


**VIEW A-A**

Note A:  
A PJP weld on one side may be substituted for the shown fillet welds on both sides.

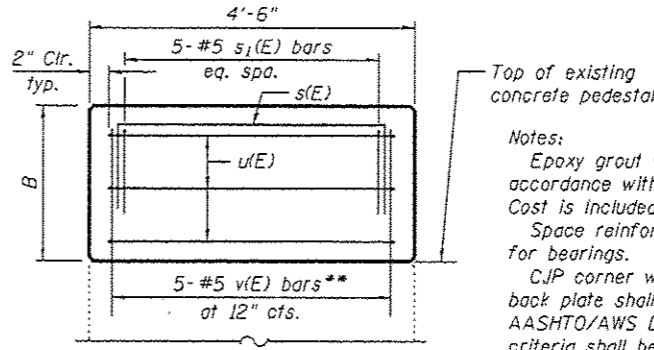


**BAR s(E) BAR s1(E) BAR u(E) BAR u1(E)**



**PEDESTAL ELEVATION**

**VIEW D-D**



**VIEW C-C**

**BILL OF MATERIAL FOR PIERS 3N AND 13S (BOTH ENDS)**

Bar	No.	Size	Length	Shape
s(E)	20	#5	6'-6"	□
s1(E)	20	#5	6'-2"	□
u(E)	24	#5	11'-6"	□
u1(E)	24	#5	5'-1"	□
v(E)	44	#5	2'-7"	—
v1(E)	10	#5	5'-0"	—
v2(E)	10	#5	6'-5"	—
Concrete Removal			Cu. Yd.	1.1
Concrete Structures			Cu. Yd.	7.0
Reinforcement Bars, Epoxy Coated			Pound	920
Jacking and Cribbing			Each	4

Notes:  
Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.  
Space reinforcement in pedestal to miss new anchor bolts for bearings.  
CJP corner welds between top and bottom plates and back plate shall be 100% UT tested in accordance with AASHTO/AWS D1.5 Bridge Welding Code. Acceptance criteria shall be for "tension welds".  
Install full length and embedded anchor rods using an IDOT approved non-shrink grout. Drill and set full length and embedded anchor rods per the jacking bracket installation procedures and the manufacturer's directions.  
Provide a fabric bearing pad at the concrete and steel interfaces shown on the plans in accordance with Article 1082 of the Standard Specifications. Cost is included with Jacking and Cribbing.  
Expected jacking load per jack = 375 kips for Pier 3N and 365 kips for Pier 13S.  
Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 12,110 lbs. for Pier 3N and 14,000 lbs. for Pier 13S (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, beams and bracket, fasteners, and full length and embedded anchor rods).  
For additional details including Section B-B, see Sheet 9 of 15.

REVISION 4-7-15



USER NAME *	DESIGNED - COB	REVISED
PLOT SCALE *	CHECKED - ACK	REVISED
PLOT DATE * 01/27/2015	DRAWN - PRC	REVISED
	CHECKED - RLM	REVISED

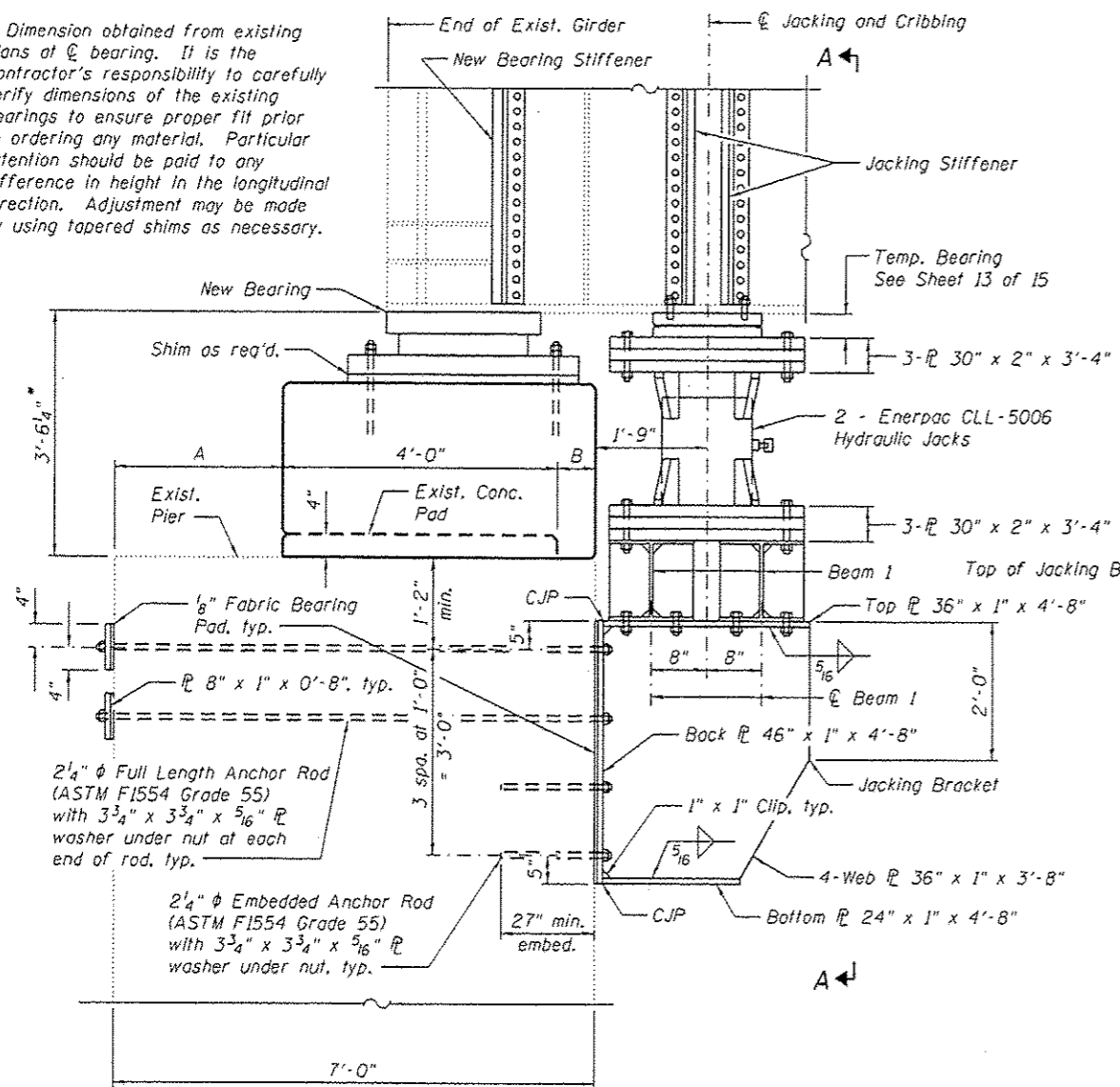
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS - PIERS 3N AND 13S  
STRUCTURE NO. 064-0035

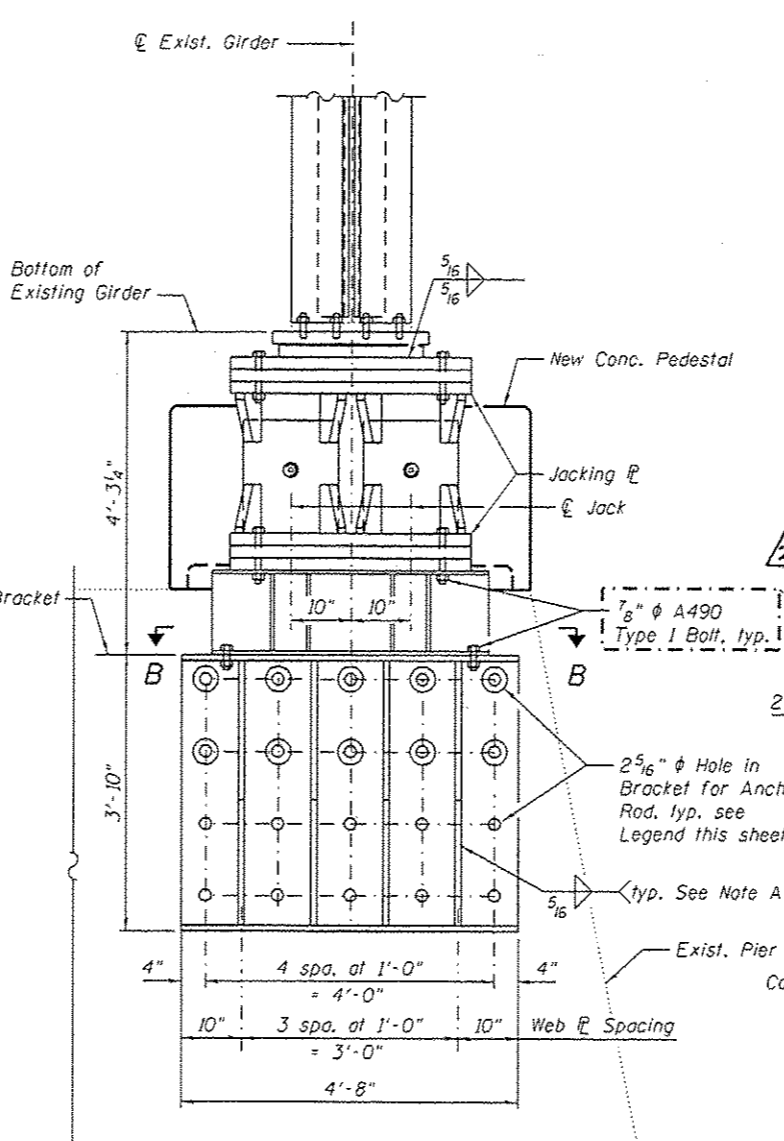
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	(64-3B)-1	MASSAC	18	12
CONTRACT NO. 78448			ILLINOIS FED. AID PROJECT	

SHEET NO. 7 OF 15 SHEETS

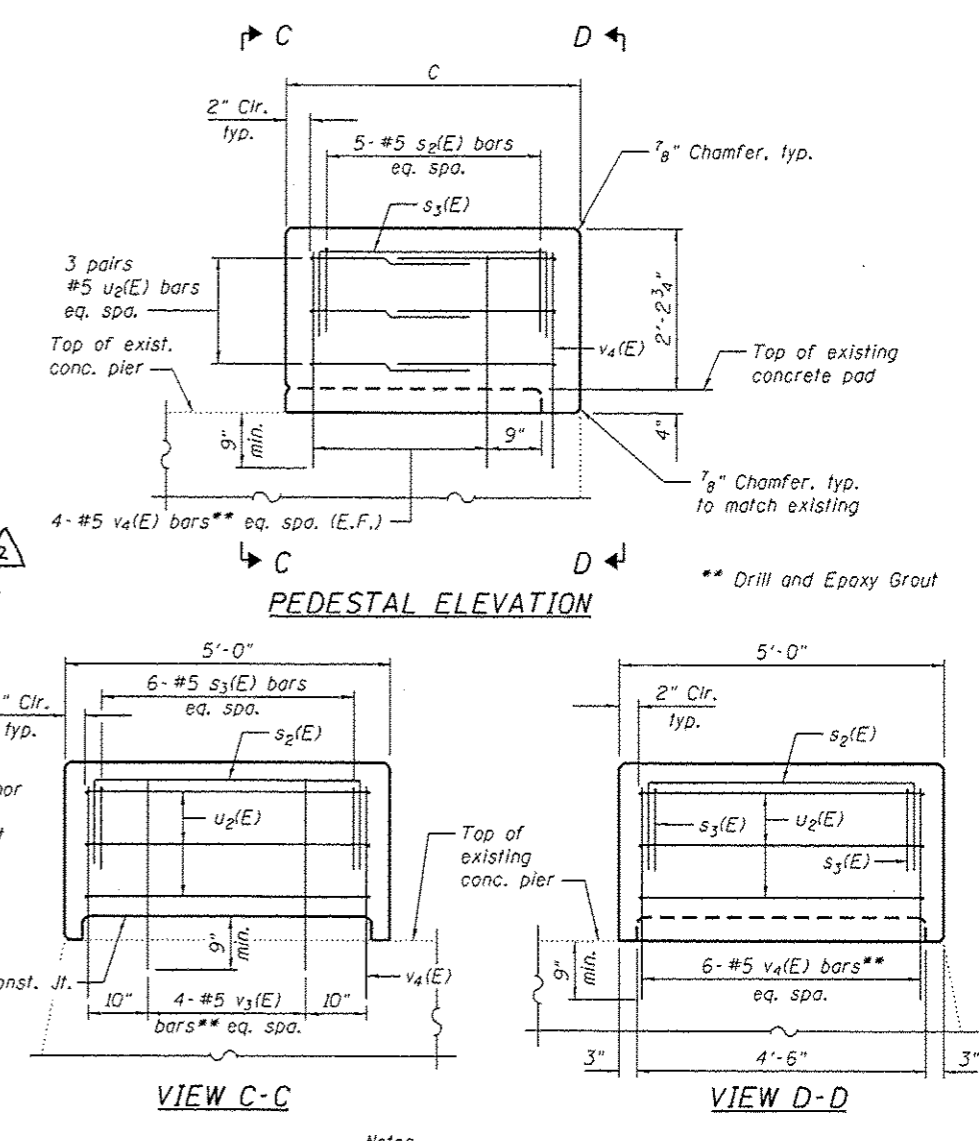
\* Dimension obtained from existing plans at  $\bar{C}$  bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.



ELEVATION



VIEW A-A



PEDESTAL ELEVATION

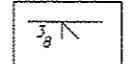
VIEW C-C

VIEW D-D

TABLE OF DIMENSIONS

Dim.	Pier 4S	Pier 12N
A	2'-5 1/2"	2'-6 3/8"
B	6 1/2"	5 5/8"
C	4'-6 1/2"	4'-5 5/8"
D	9 7/8"	9"

Note A:  
A PJP weld on one side may be substituted for the shown fillet welds on both sides.



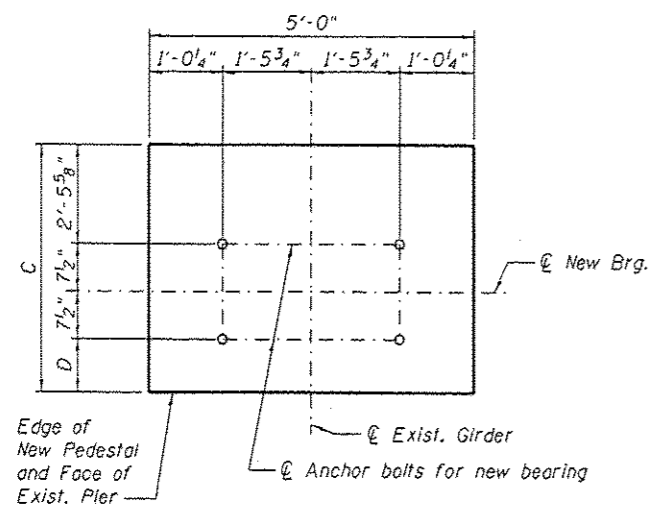
LEGEND (Jacking Bracket)

- Hole with threaded anchor rod, 27" embedment
- ⊙ Hole with threaded anchor rod, full length

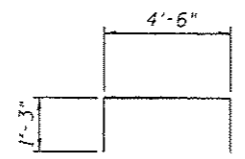
BILL OF MATERIAL FOR PIERS 4S AND 12N (BOTH ENDS)

Bar	No.	Size	Length	Shape
s <sub>2</sub> (E)	20	#5	7'-0"	□
s <sub>3</sub> (E)	24	#5	6'-6"	□
u <sub>2</sub> (E)	24	#5	12'-2"	□
v <sub>3</sub> (E)	16	#5	2'-10"	—
v <sub>4</sub> (E)	56	#5	3'-2"	—
Concrete Structures	Cu. Yd.	7.7		
Reinforcement Bars, Epoxy Coated	Pound	850		
Jacking and Cribbing	Each	4		

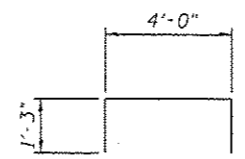
Notes:  
Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.  
Space reinforcement in pedestal to miss new anchor bolts for bearings.  
CJP corner welds between top and bottom plates and back plate shall be 100% UT tested in accordance with AASHTO/AWS D1.5 Bridge Welding Code. Acceptance criteria shall be for "tension welds".  
Install full length and embedded anchor rods using an IDOT approved non-shrink grout. Drill and set full length and embedded anchor rods per the jacking bracket installation procedures and the manufacturer's directions.  
Provide a fabric bearing pad at the concrete and steel interfaces shown on the plans in accordance with Article 10B2 of the Standard Specifications. Cost is included with Jacking and Cribbing.  
Expected jacking load per jack = 550 Kips.  
Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 12,770 lbs. (Includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, beams and bracket, fasteners, and full length and embedded anchor rods).  
Pressure transducer piping and timber protection are mounted to the east end of Pier 12 in the vicinity of the bearing replacement. This equipment is essential for the automatic control of the navigation lights which are to remain operational at all times during construction. The Contractor shall perform the bearing replacement with care to ensure the existing equipment is not damaged during construction.  
For additional details including Section B-B, see Sheet 9 of 15.



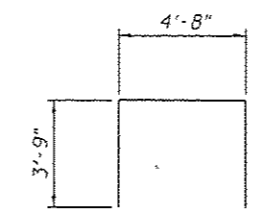
PEDESTAL PLAN



BAR s<sub>2</sub>(E)



BAR s<sub>3</sub>(E)



BAR u<sub>2</sub>(E)

REVISED 4-7-15



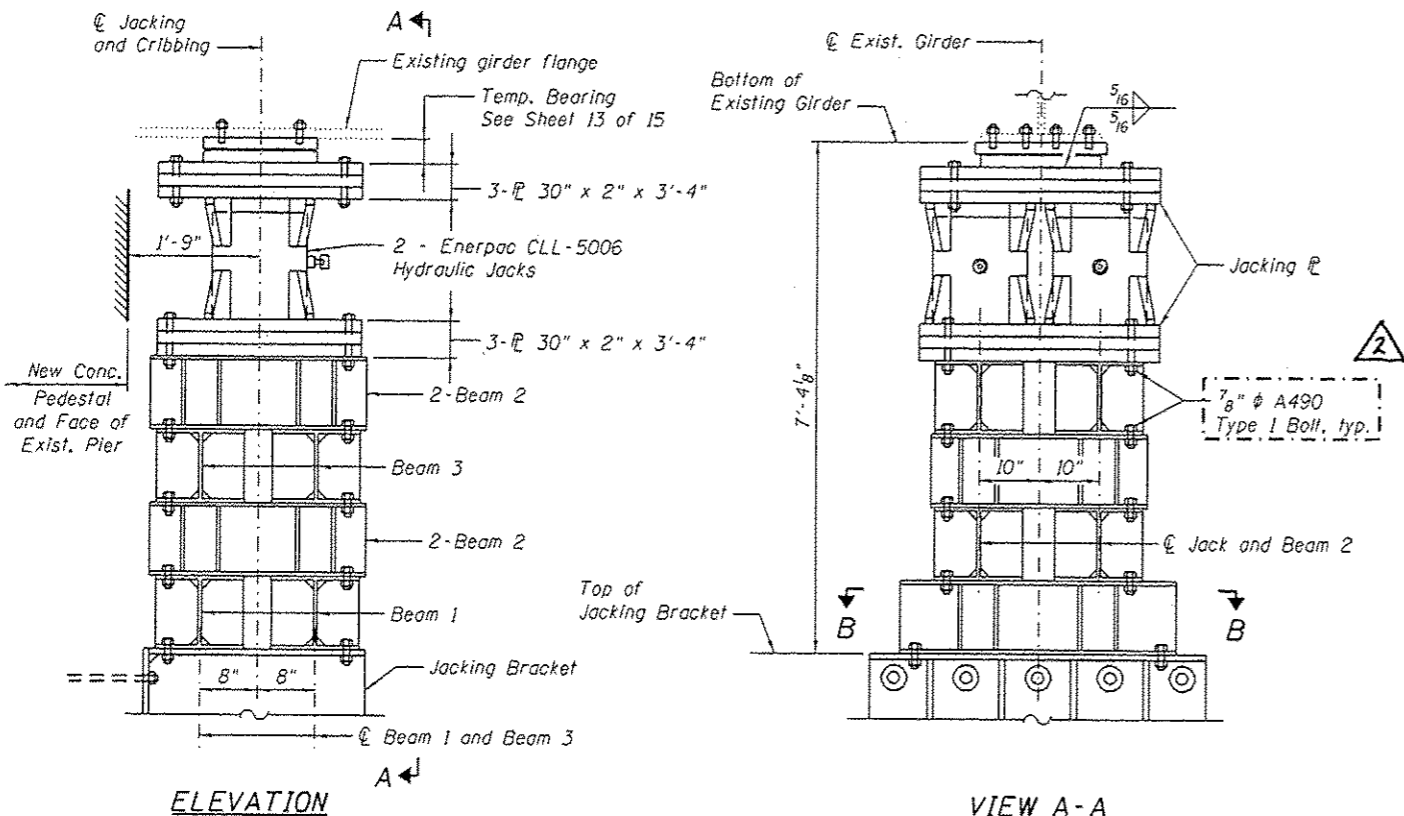
USER NAME :	DESIGNED - CDB	REVISED
	CHECKED - ACK	REVISED
PLOT SCALE :	DRAWN - PRC	REVISED
PLOT DATE : 01/27/2015	CHECKED - RLM	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS - PIERS 4S AND 12N  
STRUCTURE NO. 064-0035

SHEET NO. 8 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	64-3811-7	MASSAC	18	13
CONTRACT NO. 78448			ILLINOIS FED. AID PROJECT	

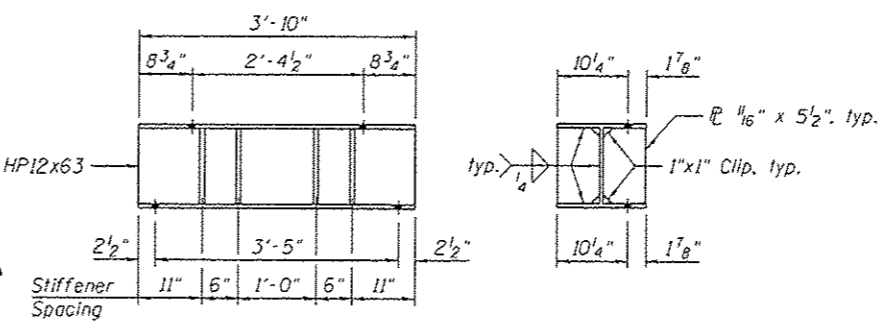


**ELEVATION**

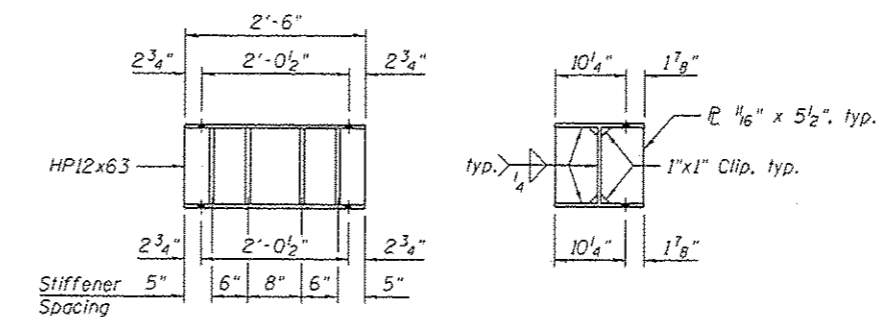
**VIEW A-A**

**JACKING AND CRIBBING AT PIER 13S**

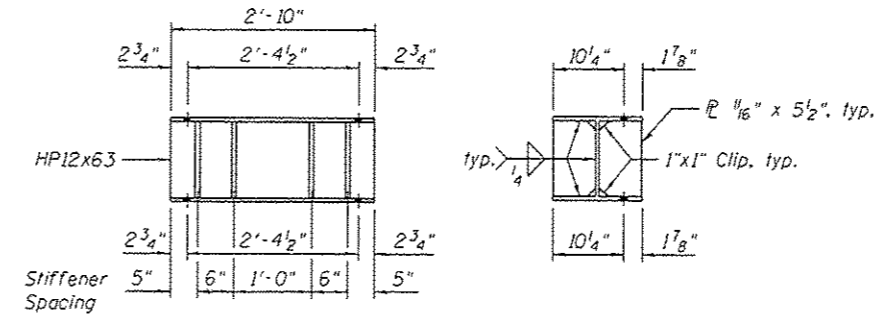
For additional details, see Sheet 7 of 15.



**BEAM 1**



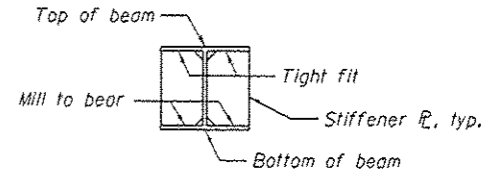
**BEAM 2**



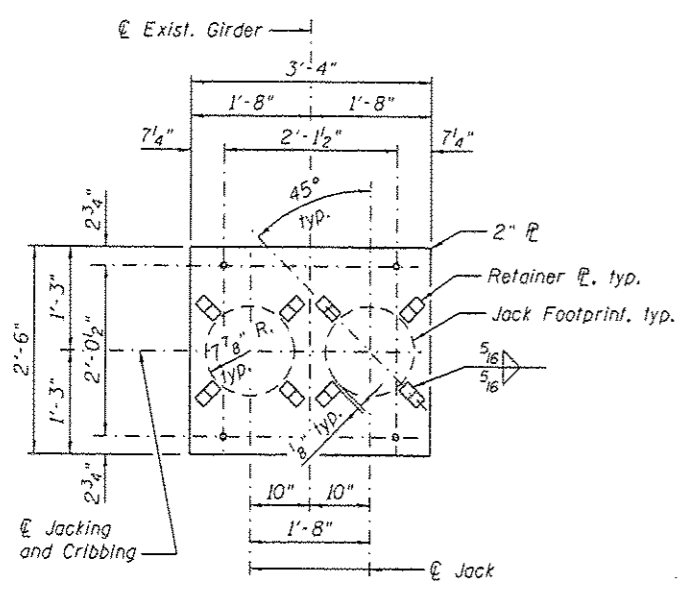
**BEAM 3**

**JACKING BRACKET INSTALLATION**

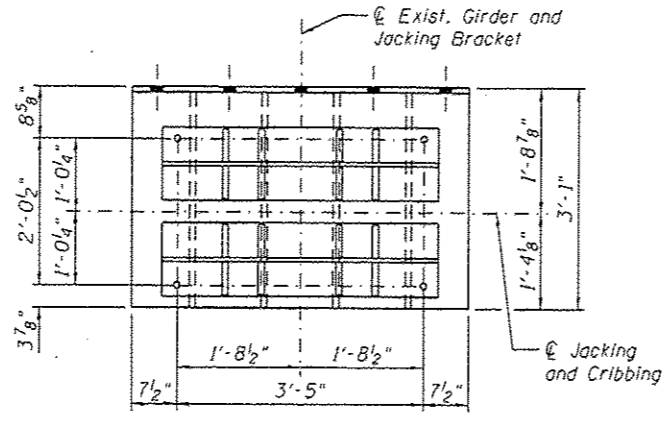
1. Prior to drilling holes through existing concrete, locate existing reinforcing bars within concrete using rebar detection equipment. Mark locations of existing reinforcing bars near proposed holes to ensure that existing reinforcing bars are not damaged during drilling.
2. Using a template, pre-drill anchor holes in the piers as indicated in the plans. Holes for the anchor rods shall be in accordance with the non-shrink grout manufacturer's recommendations.
3. Using another template at the bracket side of the pier, insert the through-rods, leaving the appropriate projection at both the front and back faces of the concrete pier. Center the rods within the holes and verify that the rods are aligned so that the top plate of the jacking bracket will sit level. Grout the annulus around the rods using an approved non-shrink grout.
4. After the grout has taken initial set, install fabric bearing pads, backing plates and plate washers at the back-side of the pier. Secure the plate with snug tightened nuts.
5. Install the fabric bearing pad and jacking bracket at the front face of the pier, place washers, and snug tighten the nuts on the through-rods to secure the bracket.
6. Install the embedded anchor rods using an approved non-shrink grout. Install plate washers and hand tighten the nuts for the embedded anchor rods.



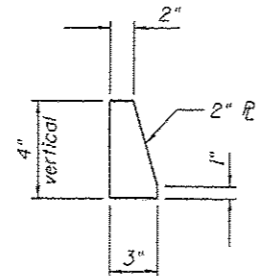
**TYPICAL STIFFENER DETAIL**



**JACKING PLATE**



**SECTION B-B**



**RETAINER PLATE**

2 REVISED 4-7-15



USER NAME :	DESIGNED - CDB	REVISED
	CHECKED - ACK	REVISED
PLOT SCALE :	DRAWN - PRC	REVISED
PLOT DATE : 01/27/2015	CHECKED - RLM	REVISED

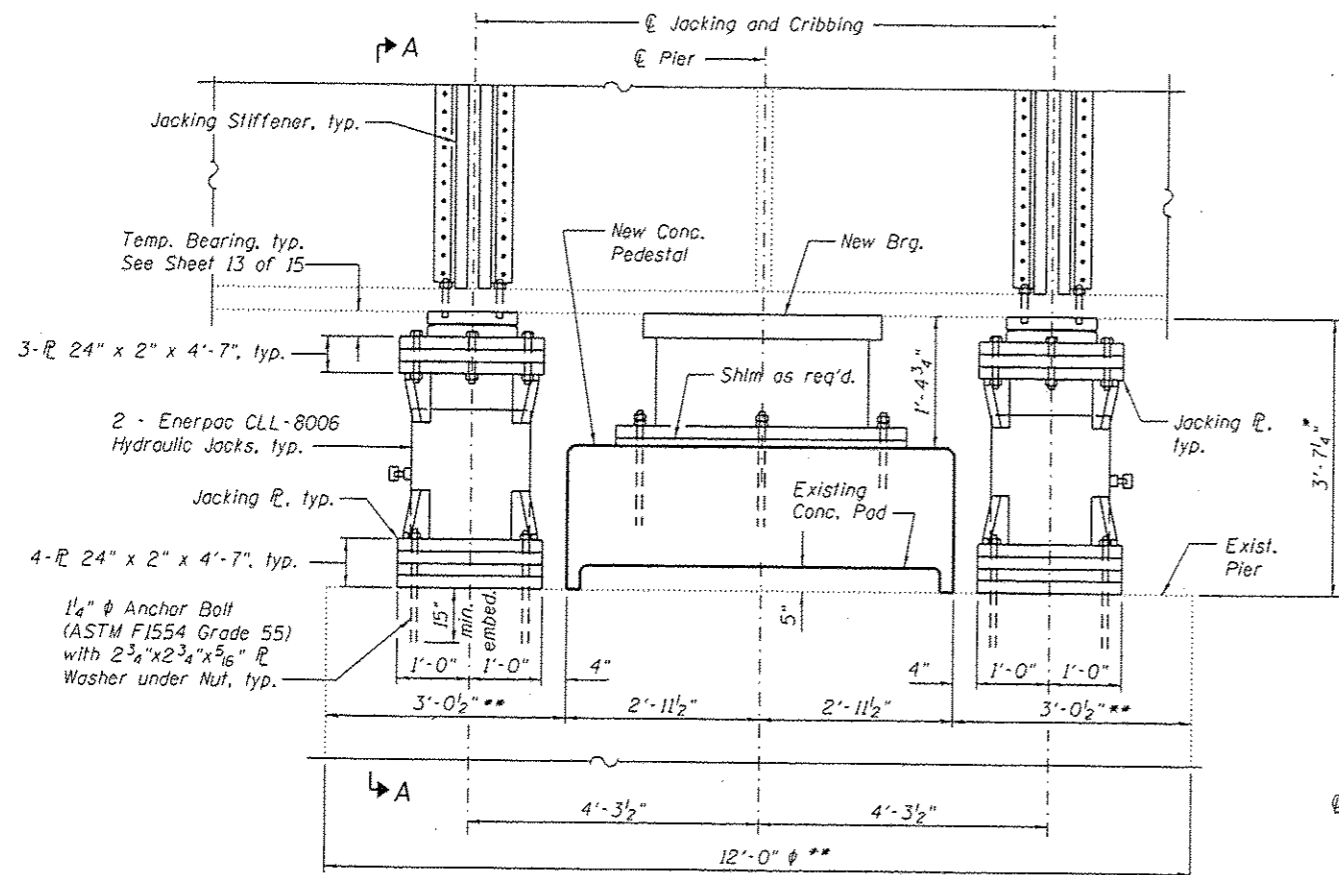
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CRIBBING DETAILS - PIERS 3N, 4S, 12N AND 13S  
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	(64-381)-7	MASSAC	16	14
CONTRACT NO. 78448				

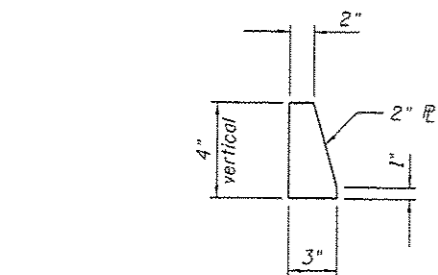
SHEET NO. 9 OF 15 SHEETS

ILLINOIS FED. AID PROJECT

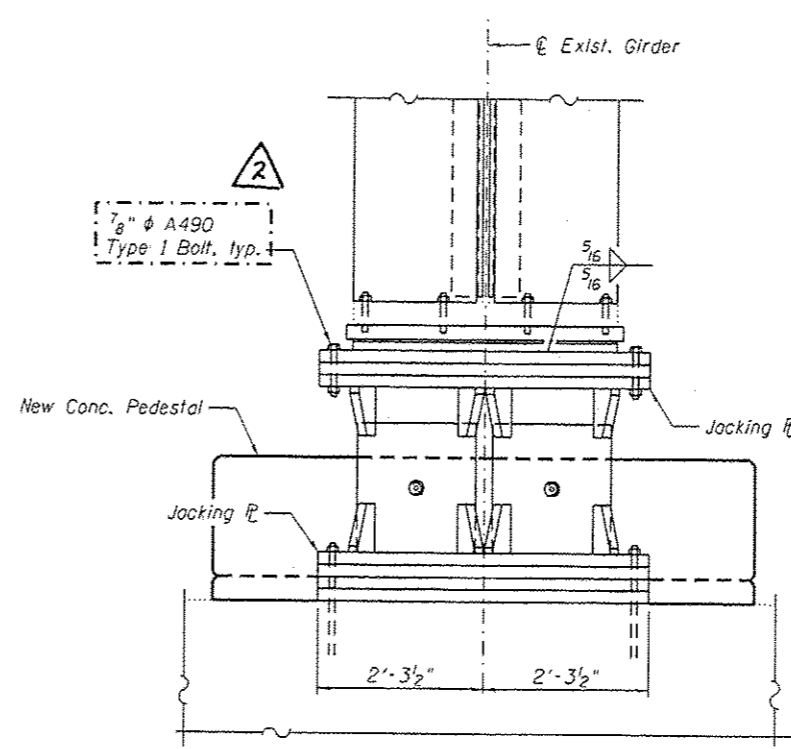


**ELEVATION**

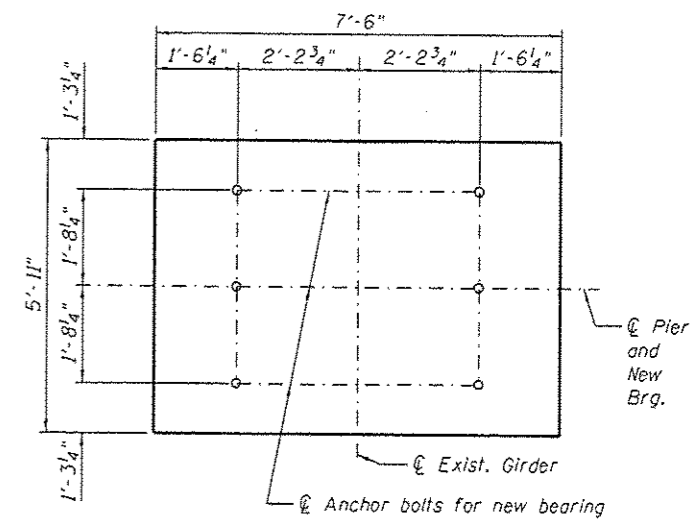
\*\* Measured at centerline of girder



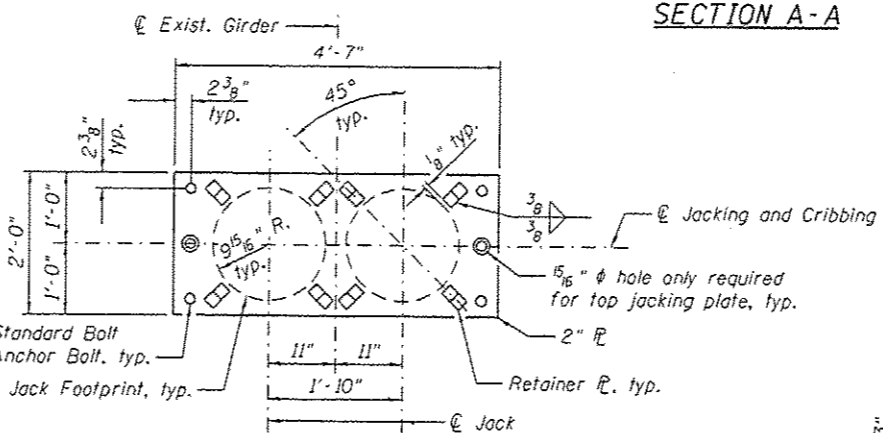
**RETAINER PLATE**



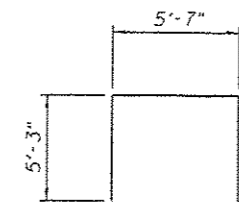
**SECTION A-A**



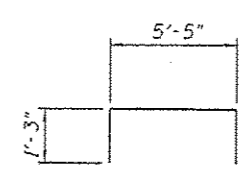
**PEDESTAL PLAN**



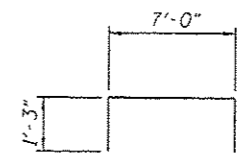
**JACKING PLATE**



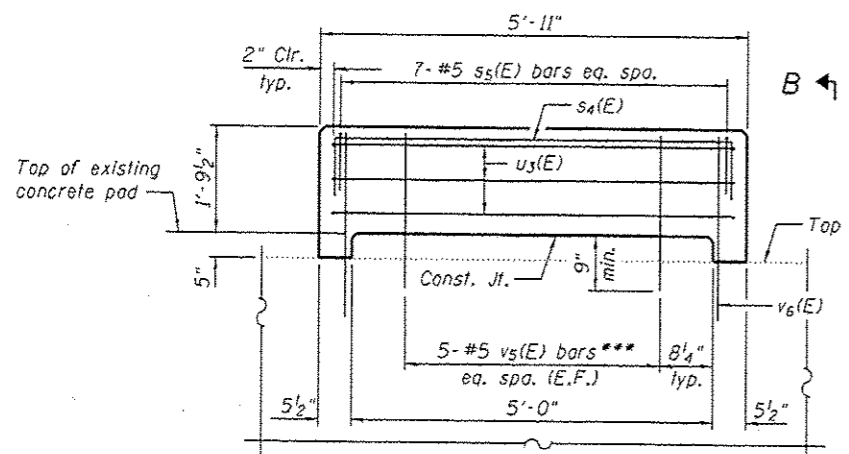
**BAR u3(E)**



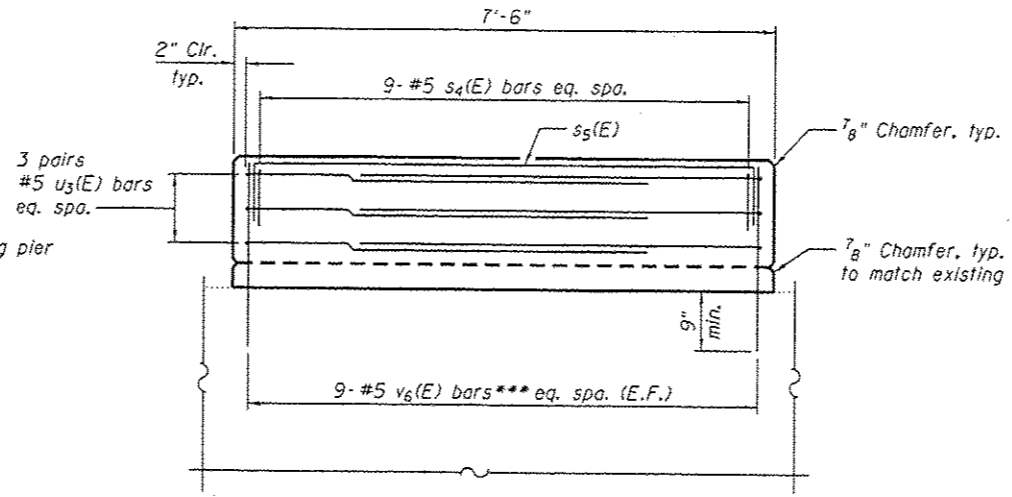
**BAR s4(E)**



**BAR s5(E)**



**PEDESTAL ELEVATION**



**VIEW B-B**

\*\*\* Drill and Epoxy Grout

\* Dimension obtained from existing plans at bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.

**BILL OF MATERIAL FOR PIERS 7 AND 9 (BOTH ENDS)**

Bar	No.	Size	Length	Shape
s4(E)	36	#5	7'-11"	□
s5(E)	28	#5	9'-6"	□
u3(E)	24	#5	16'-1"	□
v5(E)	40	#5	2'-5"	—
v6(E)	72	#5	2'-10"	—
Concrete Structures		Cu. Yd.	12.3	
Reinforcement Bars, Epoxy Coated		Pound	1,300	
Jacking and Cribbing	Each		4	

Notes:  
 Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.  
 Space reinforcement in pedestal to miss new anchor bolts for bearings.  
 Jacking plate anchor bolts shall be installed in accordance with Article 521.06 of the Standard Specifications. Cost is included with Jacking and Cribbing.  
 Expected jacking load per jack = 760 Kips.  
 Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 29,110 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, fasteners, and jacking plate anchor bolts).

REVISION 2 REVISED 4-7-15



USER NAME :	DESIGNED - APL	REVISED
PLOT SCALE :	CHECKED - ACK	REVISED
PLOT DATE - 01/27/2015	DRAWN - PRC	REVISED
	CHECKED - RLM	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

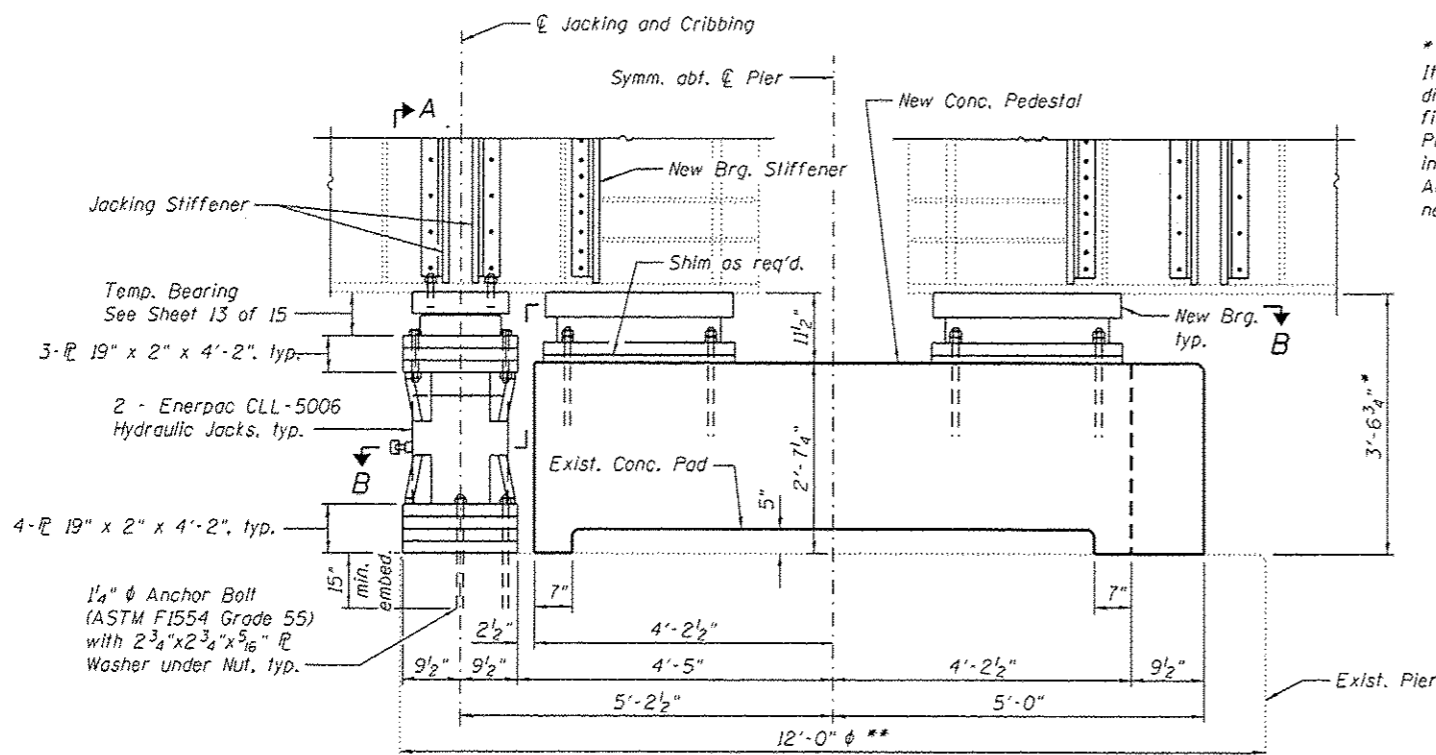
JACKING AND CONCRETE PEDESTAL DETAILS - PIERS 7 AND 9  
STRUCTURE NO. 064-0035

SHEET NO. 10 OF 15 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	164-381-7	MASSAC	18	15
			CONTRACT NO. 78448	
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR PIER 8 (BOTH ENDS)**

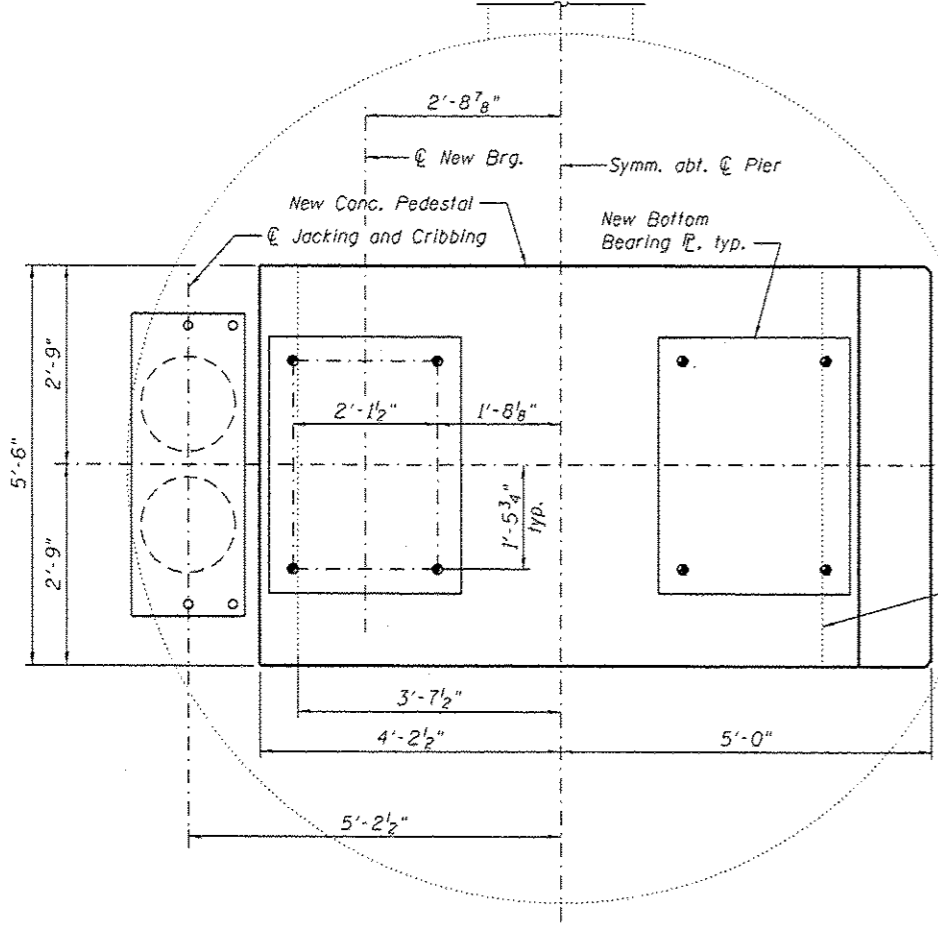
Bar	No.	Size	Length	Shape
s <sub>6</sub> (E)	14	#5	10'-5"	□
s <sub>7</sub> (E)	22	#5	7'-6"	□
u <sub>4</sub> (E)	12	#5	16'-7"	□
u <sub>5</sub> (E)	24	#5	5'-8"	□
v <sub>7</sub> (E)	28	#5	2'-10"	—
v <sub>8</sub> (E)	56	#5	3'-3"	—
Concrete Structures		Cu. Yd.	9.4	
Reinforcement Bars, Epoxy Coated		Pound	950	
Jacking and Cribbing		Each	4	



**HALF ELEVATION**  
(Showing Jacking and Cribbing for One Bearing Replacement)

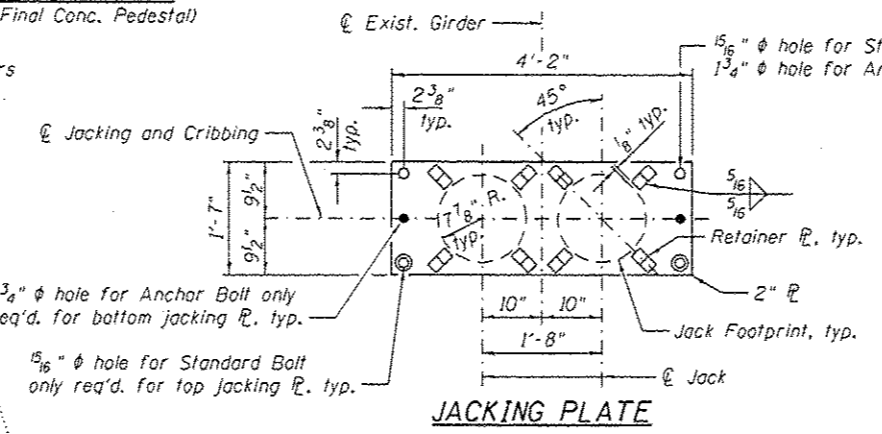
**HALF ELEVATION**  
(Showing Final Conc. Pedestal)

\*\* Measured at centerline of girders



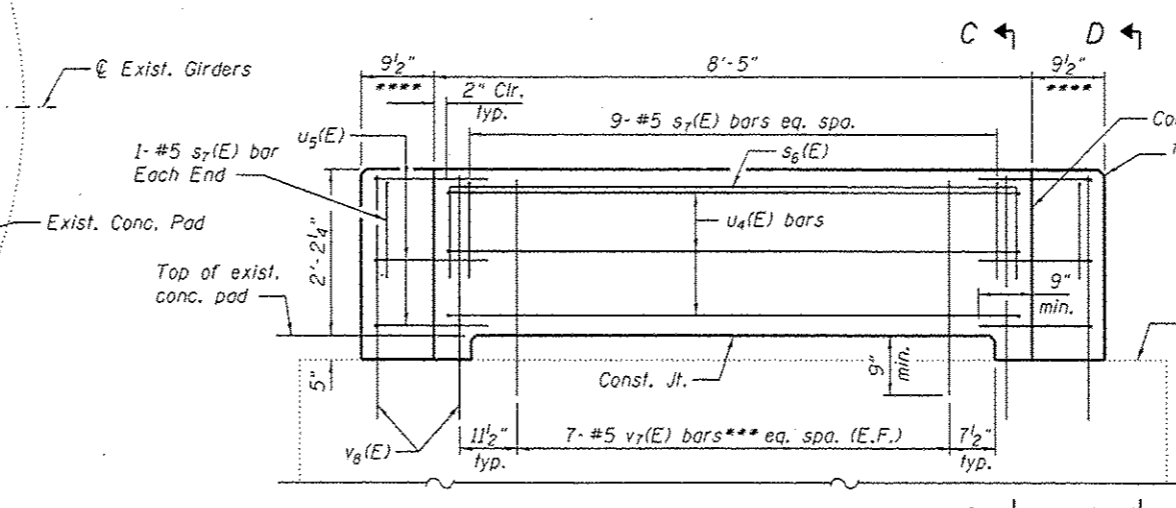
**HALF SECTION B-B**  
(Showing Jack Placement)

**HALF SECTION B-B**  
(Showing Final Conc. Pedestal)

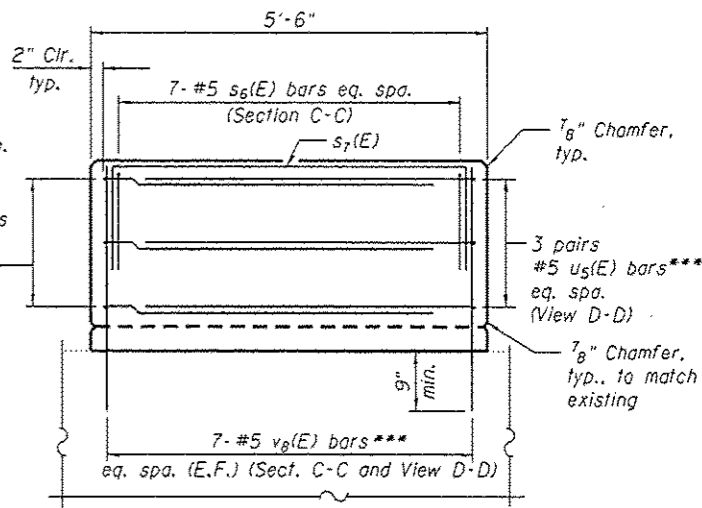


**JACKING PLATE**

**RETAINER PLATE**



**PEDESTAL ELEVATION**



**SECTION C-C**

**VIEW D-D**

Space u<sub>5</sub>(E) bars to miss u<sub>4</sub>(E) bars in pedestal

\* Dimension obtained from existing plans at C bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.

2 7/8" phi A490 Type 1 Bolt, typ.

Notes:  
Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.  
Space reinforcement in pedestal to miss new anchor bolts for bearings.  
Jacking plate anchor bolts shall be installed in accordance with Article 521.06 of the Standard Specifications. Cost is included with Jacking and Cribbing.  
Expected jacking load per jack = 550 Kips.  
Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 7,250 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, fasteners, and jacking plate anchor bolts).

REVIS 4-7-15

\*\*\*\* This portion of the concrete pedestal is to be poured after the new bearing is installed and the jacking and cribbing has been removed.

\*\*\* Drill and Epoxy Grout



USER NAME :	DESIGNED - APL	REVISED
DESIGNED - APL	CHECKED - ACK	REVISED
DESIGNED - APL	DRAWN - PRC	REVISED
DESIGNED - APL	CHECKED - RLM	REVISED

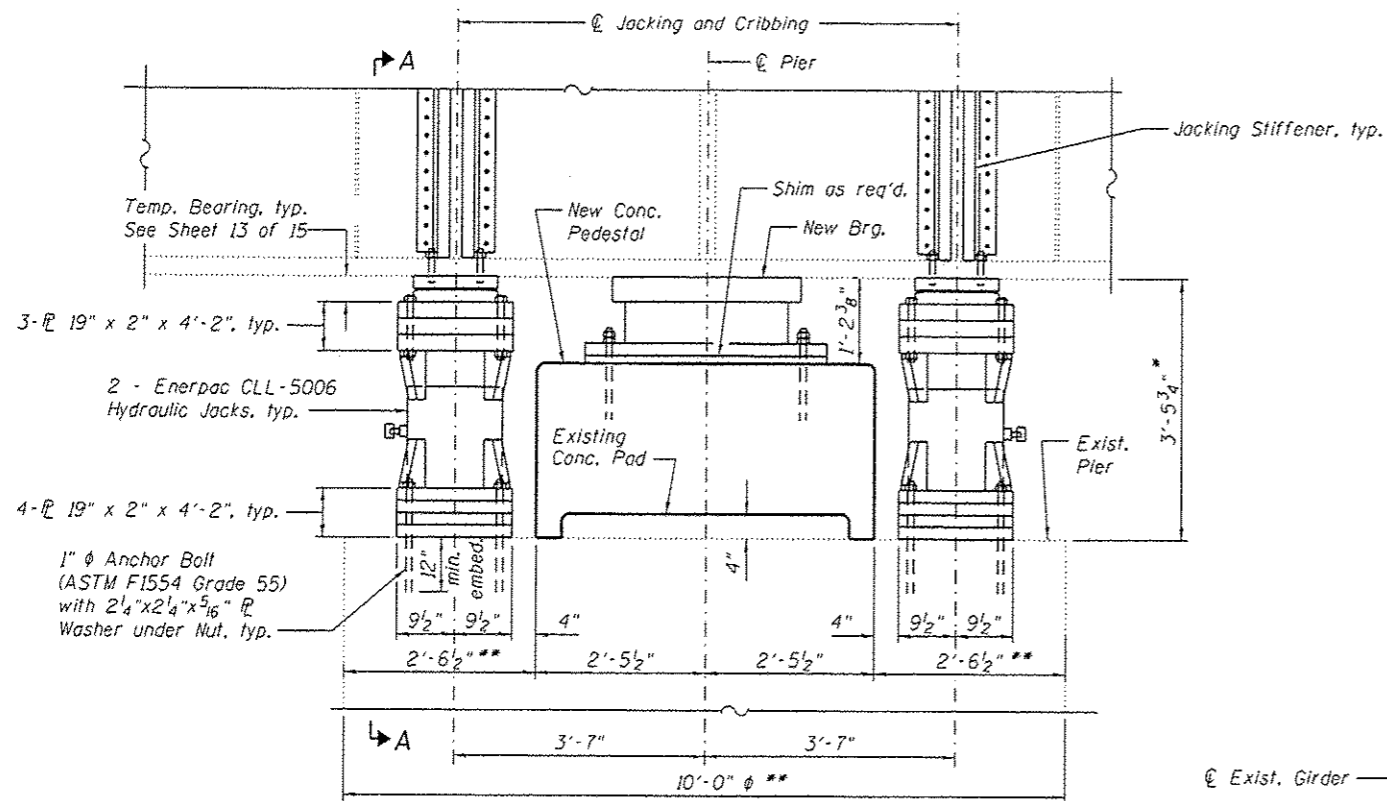
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS - PIER 8  
STRUCTURE NO. 064-0035

F.A.I. RTE. 1-24	SECTION 164-3B11-7	COUNTY MASSAC	TOTAL SHEETS 18	SHEET NO. 16
CONTRACT NO. 78448			ILLINOIS FED. AID PROJECT	

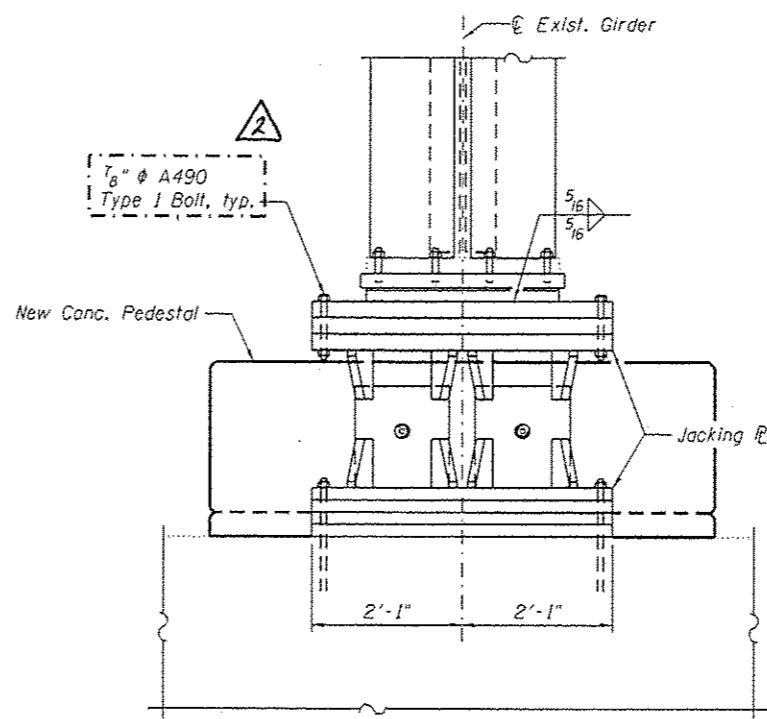
SHEET NO. 11 OF 15 SHEETS



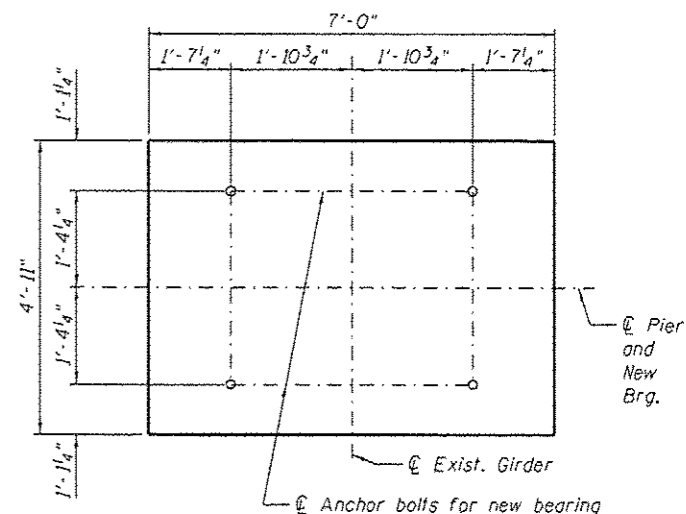


**ELEVATION**

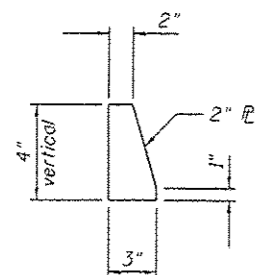
\*\* Measured at centerline of girder



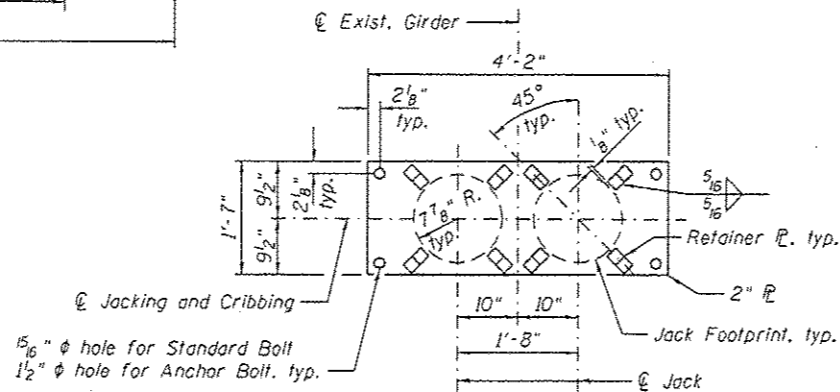
**SECTION A-A**



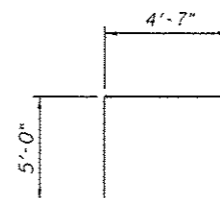
**PEDESTAL PLAN**



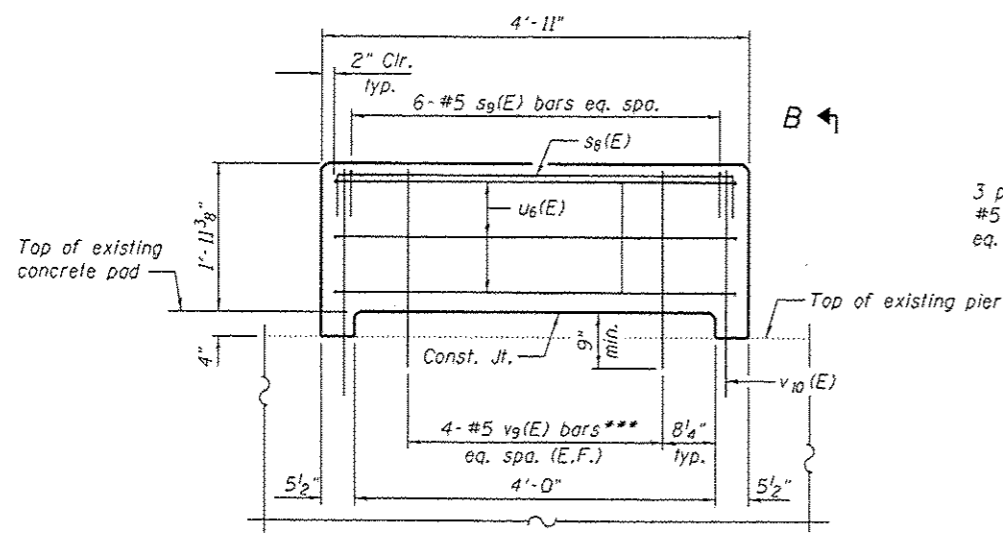
**RETAINER PLATE**



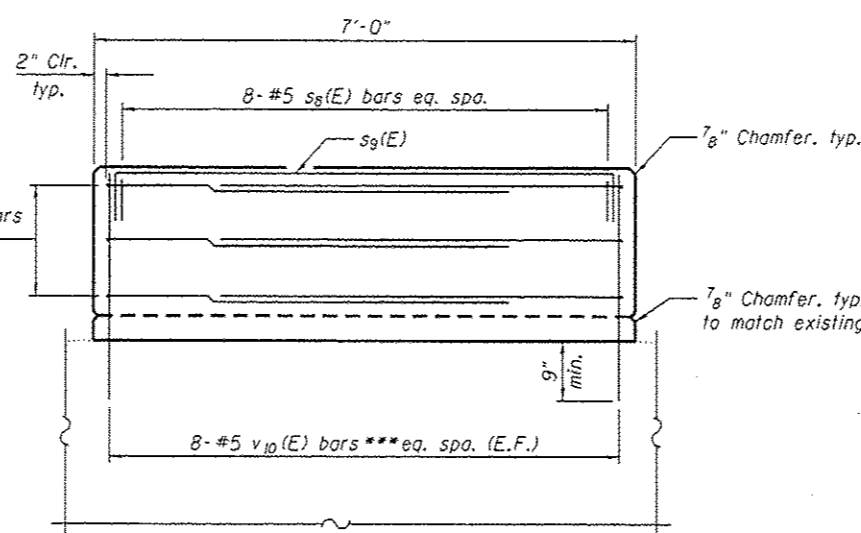
**JACKING PLATE**



**BAR u6(E)**

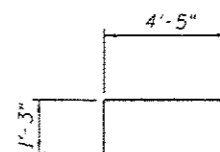


**PEDESTAL ELEVATION**

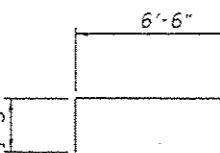


**VIEW B-B**

\*\*\* Drill and Epoxy Grout



**BAR s8(E)**



**BAR s9(E)**

\* Dimension obtained from existing plans at @ bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.

**BILL OF MATERIAL FOR PIERS 14 AND 18 (BOTH ENDS)**

Bar	No.	Size	Length	Shape
s8(E)	32	#5	6'-11"	□
s9(E)	24	#5	9'-0"	□
u6(E)	24	#5	14'-7"	□
v9(E)	32	#5	2'-7"	—
v10(E)	64	#5	2'-11"	—
Concrete Structures		Cu. Yd.	10.3	
Reinforcement Bars, Epoxy Coated		Pound	1,110	
Jacking and Cribbing		Each	4	

Notes:  
 Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.  
 Space reinforcement in pedestal to miss new anchor bolts for bearings.  
 Jacking plate anchor bolts shall be installed in accordance with Article 521.06 of the Standard Specifications. Cost is included with Jacking and Cribbing.  
 Expected jacking load per jack = 480 Kips.  
 Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 14,520 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, fasteners, and jacking plate anchor bolts).



USER NAME	DESIGNED - APL	REVISED
	CHECKED - ACK	REVISED
PLOT SCALE	DRAWN - PRC	REVISED
PLOT DATE - 01/27/2015	CHECKED - RLM	REVISED

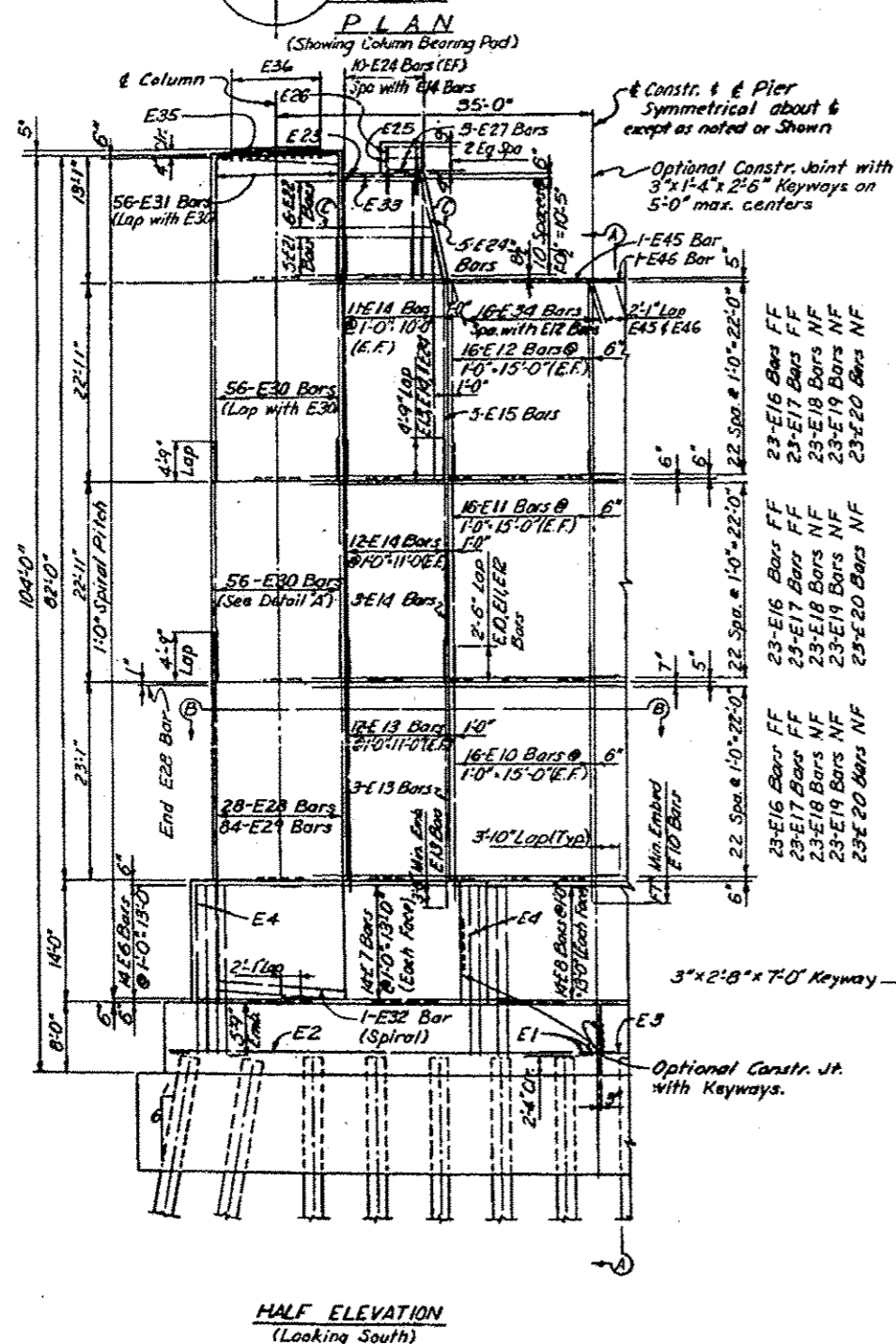
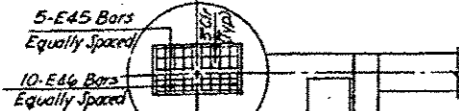
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS - PIERS 14 AND 18  
STRUCTURE NO. 064-0035

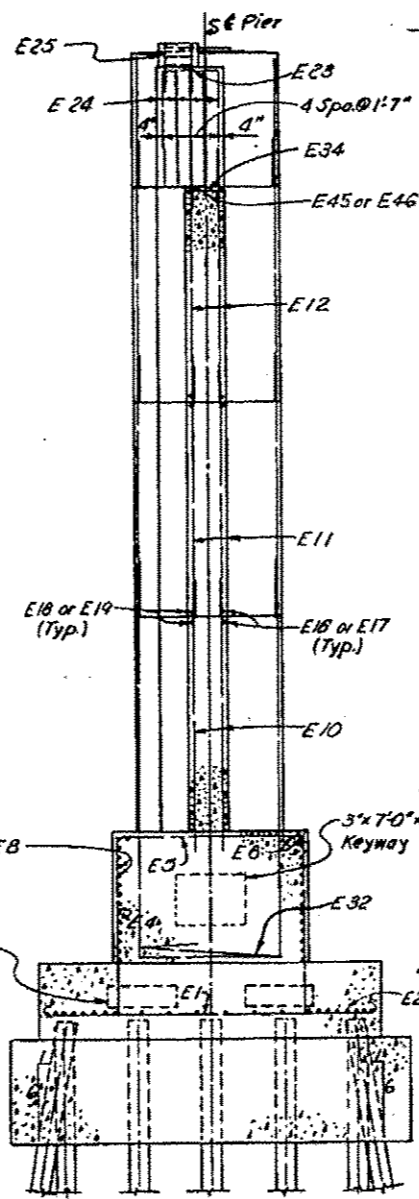
SHEET NO. 12 OF 15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	164-3811-7	MASSAC	18	11
CONTRACT NO. 78448			ILLINOIS FED. AID PROJECT	

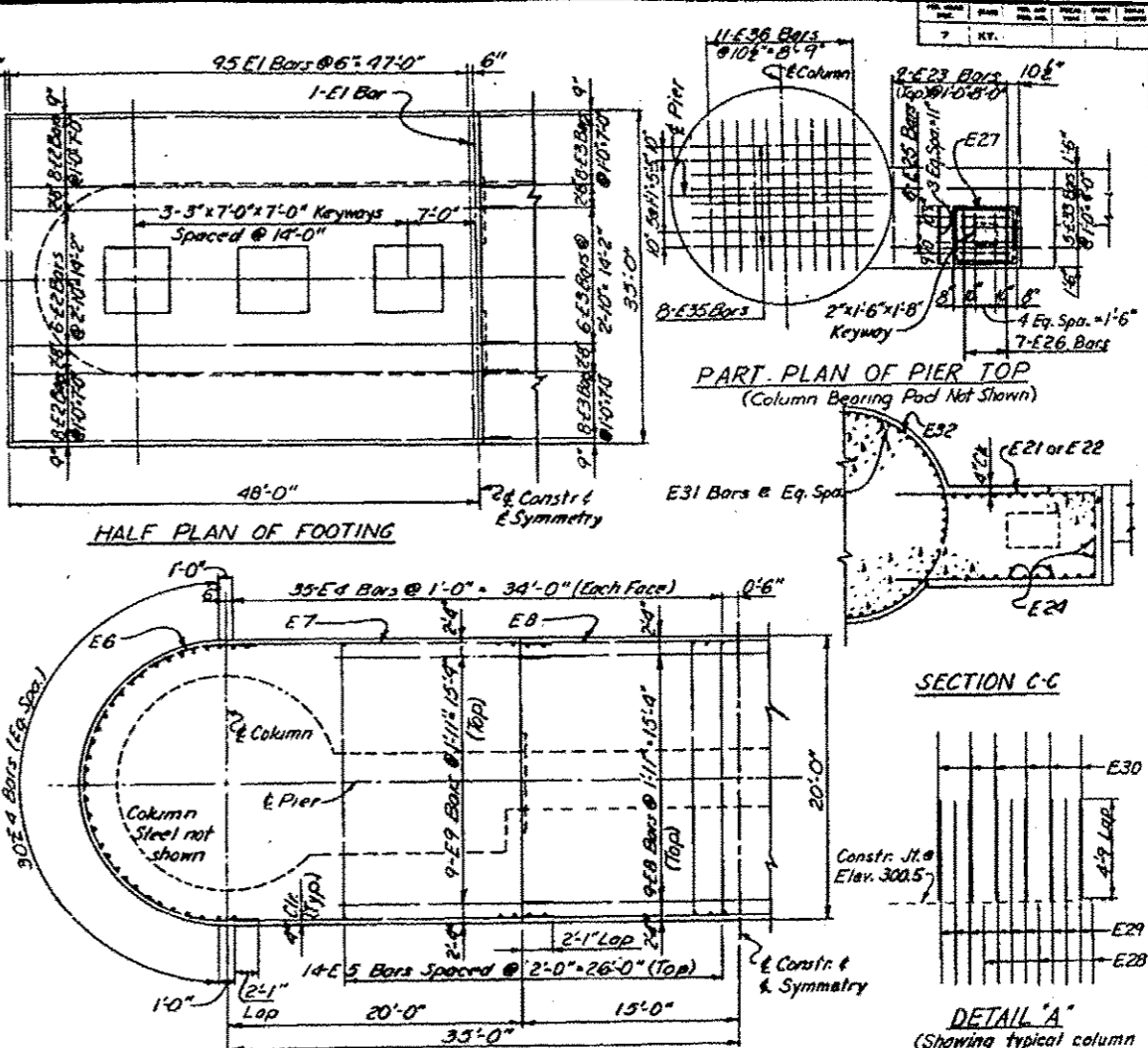
REVISION 4-7-15



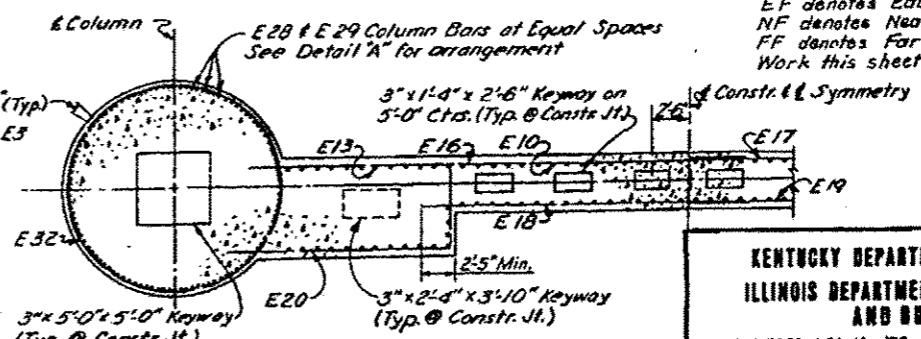
HALF ELEVATION  
(Looking South)



SECTION A-A



HALF PLAN OF DISTRIBUTION BLOCK



SECTION B-B

PART PLAN OF PIER TOP  
(Column Bearing Pod Not Shown)

SECTION C-C

DETAIL 'A'  
(Showing typical column bar arrangement)

NOTES:  
EF denotes Each Face  
NF denotes Near Face  
FF denotes Far Face  
Work this sheet with Sheet No. 25

KENTUCKY DEPARTMENT OF HIGHWAYS  
ILLINOIS DEPARTMENT OF PUBLIC WORKS  
AND BUILDINGS  
PROJECTS 124 (1) 138, 124-91 10, 124-11 11  
BRIDGE OVER OHIO RIVER ON 124  
BETWEEN MACRAKON COUNTY, KENTUCKY  
AND MASSAC COUNTY, ILLINOIS

PIER 3

DRAWING NO. 17247	DATE NOV 1958
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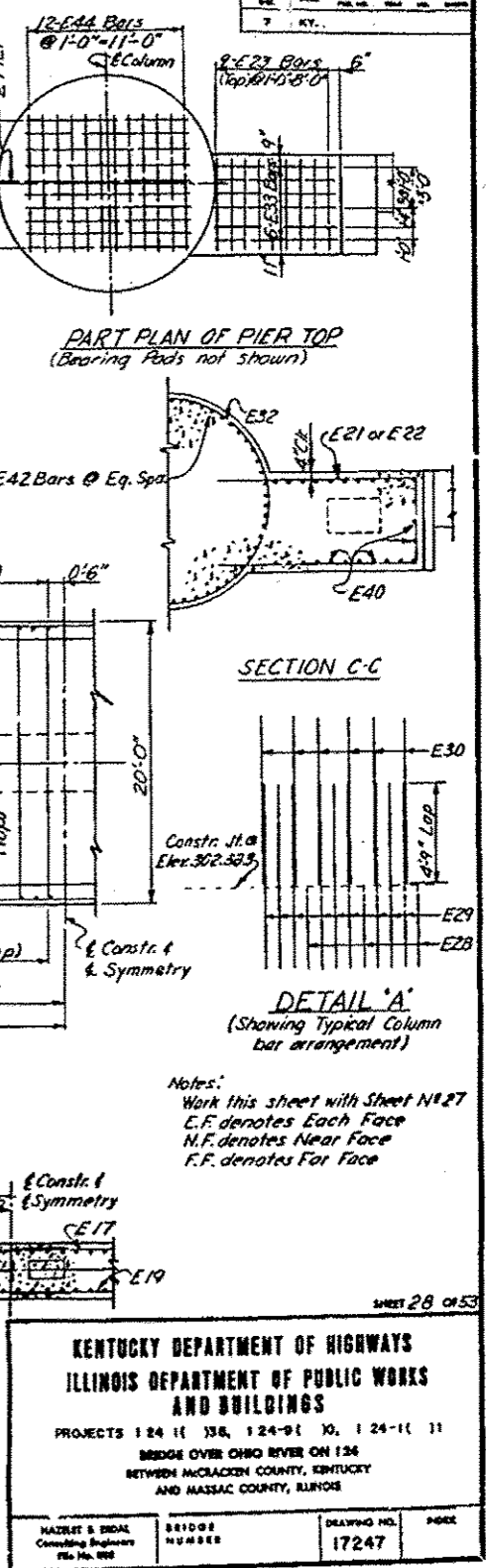
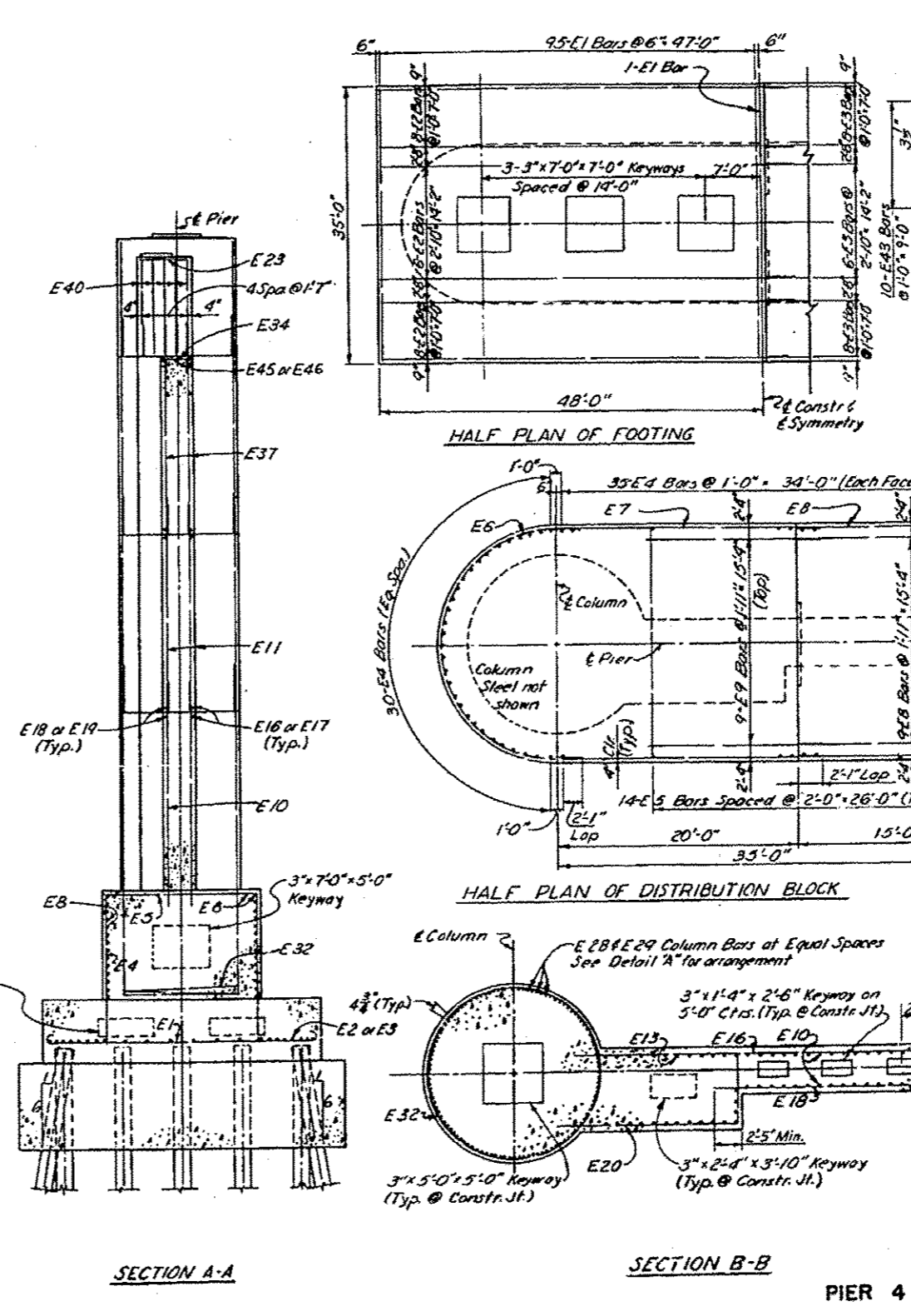
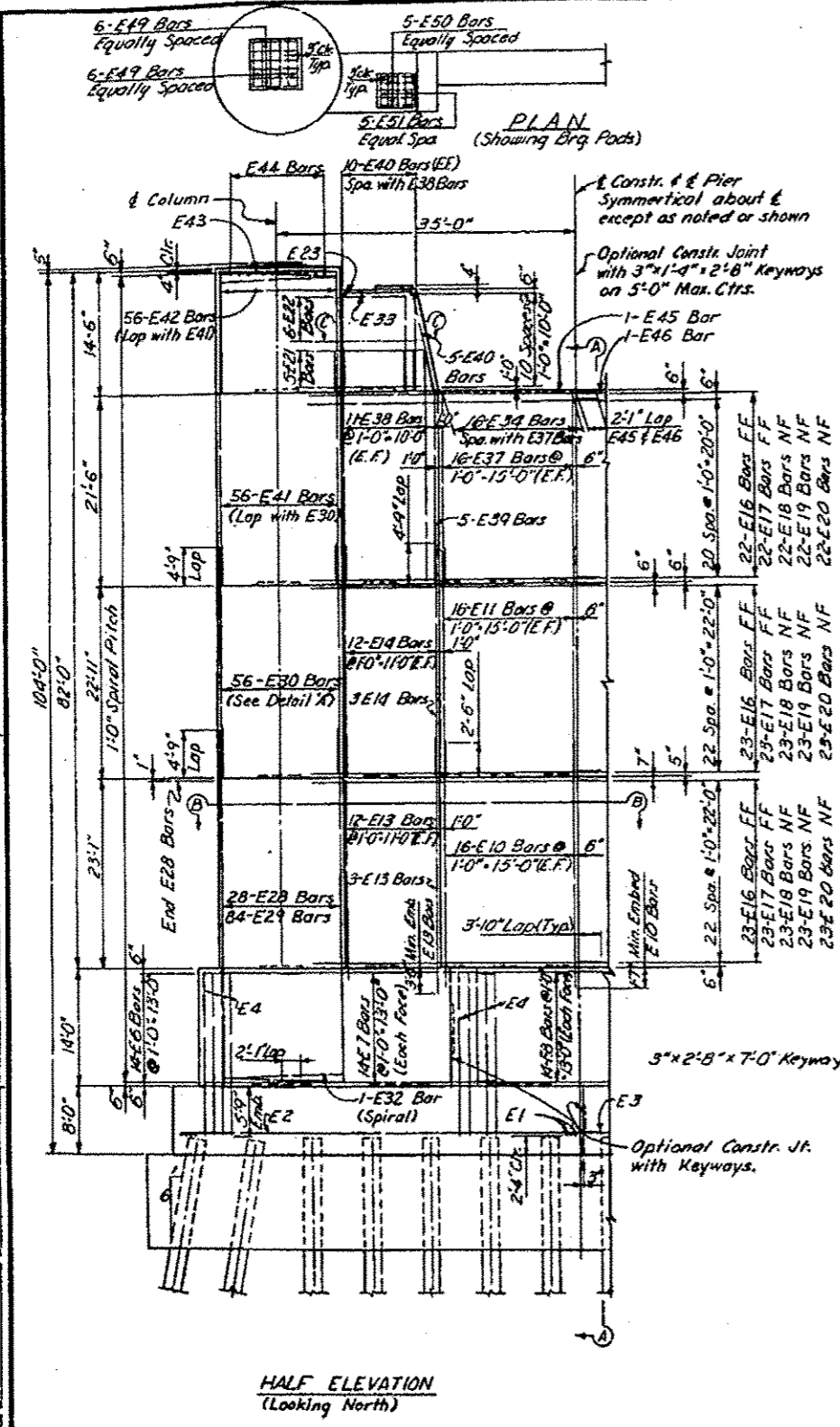
SHEET ADDED 4-7-15

FOR INFORMATION ONLY

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PIER 3  
SN 064-0035  
SHEET NO. 15A OF 15 SHEETS

P.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-381)-7	MASSAC	18	18C
				CONTRACT NO. 78448
(ILLINOIS) FED. AID PROJECT				



Notes:  
 Work this sheet with Sheet No. 27  
 E.F. denotes Each Face  
 N.F. denotes Near Face  
 F.F. denotes Far Face

SHEET 28 of 53

**KENTUCKY DEPARTMENT OF HIGHWAYS  
 ILLINOIS DEPARTMENT OF PUBLIC WORKS  
 AND BUILDINGS**

PROJECTS 124-11-336, 124-9-110, 124-11-111  
 BRIDGE OVER OHIO RIVER ON 136  
 BETWEEN MCLACKEN COUNTY, KENTUCKY  
 AND MASSAC COUNTY, ILLINOIS

DRAWING NO. 17247	PAGE 180	DATE 11-67	PIER 4
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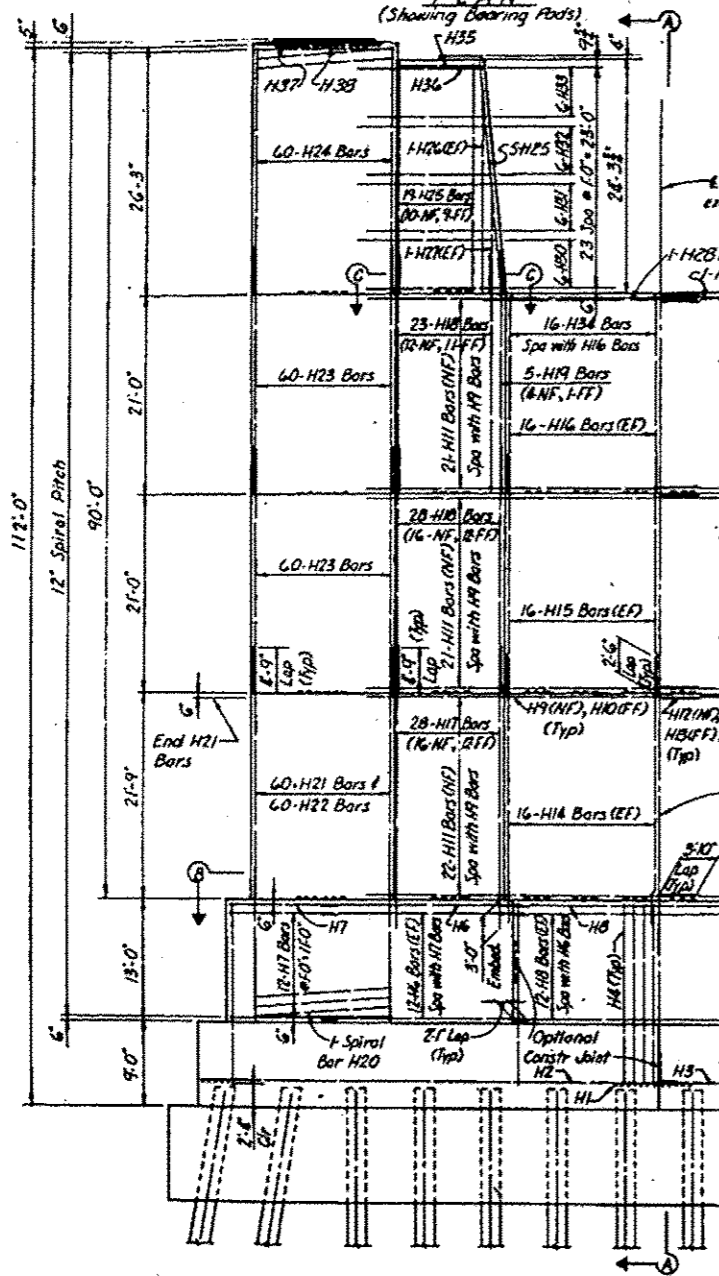
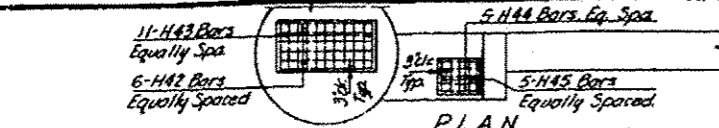
**FOR INFORMATION ONLY**

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 4  
 SN 064-0035  
 SHEET NO. 15B OF 15 SHEETS

2 SHEET ADDED 4-7-15

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B1)-7	MASSAC	18	180
				CONTRACT NO. 78448
ILLINOIS FED. AID PROJECT				

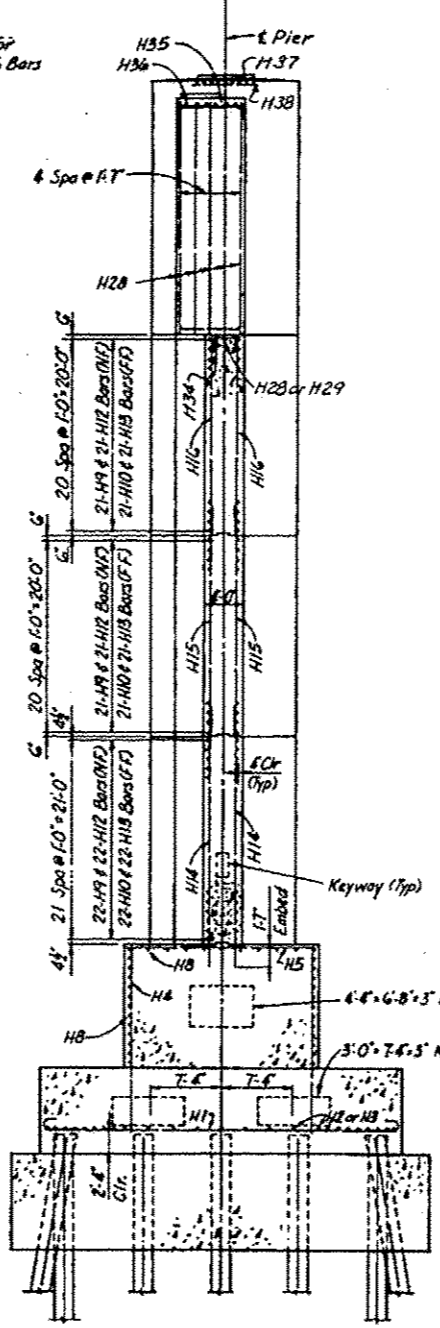


HALF ELEVATION

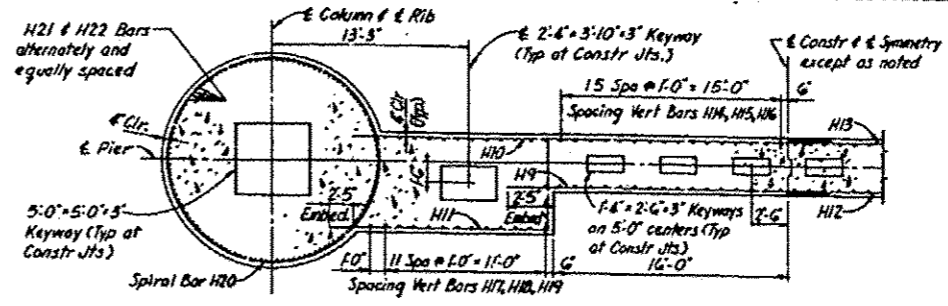
Note:  
See "Plan of Column" for  
spacing of H35 & H36 Bars

Constr & Symmetry  
except as noted

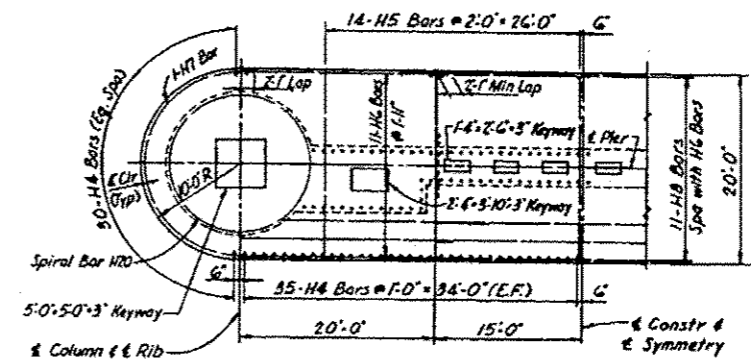
Optional Constr Jt  
with 1'-6" x 2'-0" Keyways  
on 5'-0" centers



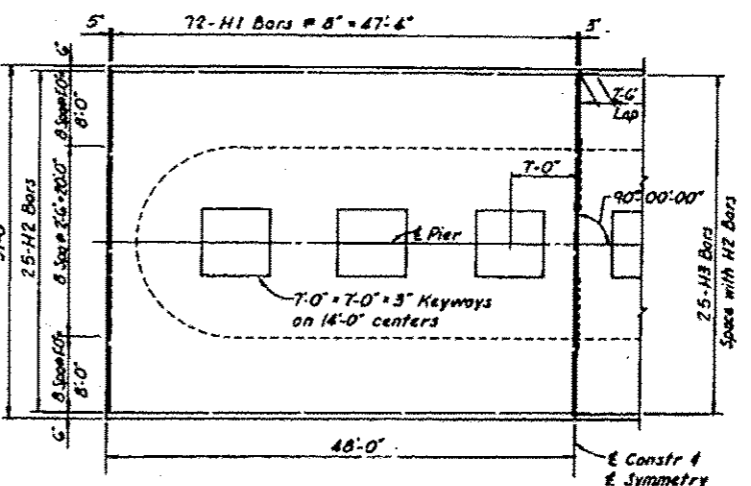
SECTION A-A



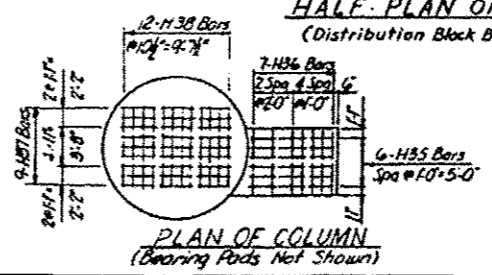
SECTION B-B



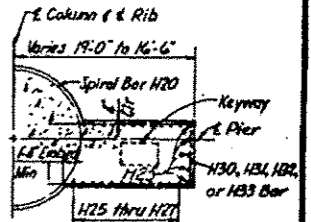
HALF PLAN OF DISTRIBUTION BLOCK  
(Column Bars Not Shown)



HALF PLAN OF FOOTING  
(Distribution Block Bars Not Shown)



PLAN OF COLUMN  
(Bearing Pads Not Shown)



SECTION C-C

NOTES  
E.F. denotes Each Face  
N.F. denotes Near Face  
F.F. denotes Far Face  
Work this sheet with Sheet 1135

KENTUCKY DEPARTMENT OF HIGHWAYS  
ILLINOIS DEPARTMENT OF PUBLIC WORKS  
AND BUILDINGS  
PROJECTS 124-11 136, 124-91 10, 124-11 11  
BRIDGE OVER OHIO RIVER ON 124  
BETWEEN MARIACON COUNTY, KENTUCKY  
AND MARIACON COUNTY, ILLINOIS

HAZLET & BRAD  
Consulting Engineers  
P.O. Box 242

DRAWING NO.  
17247

PIER 12

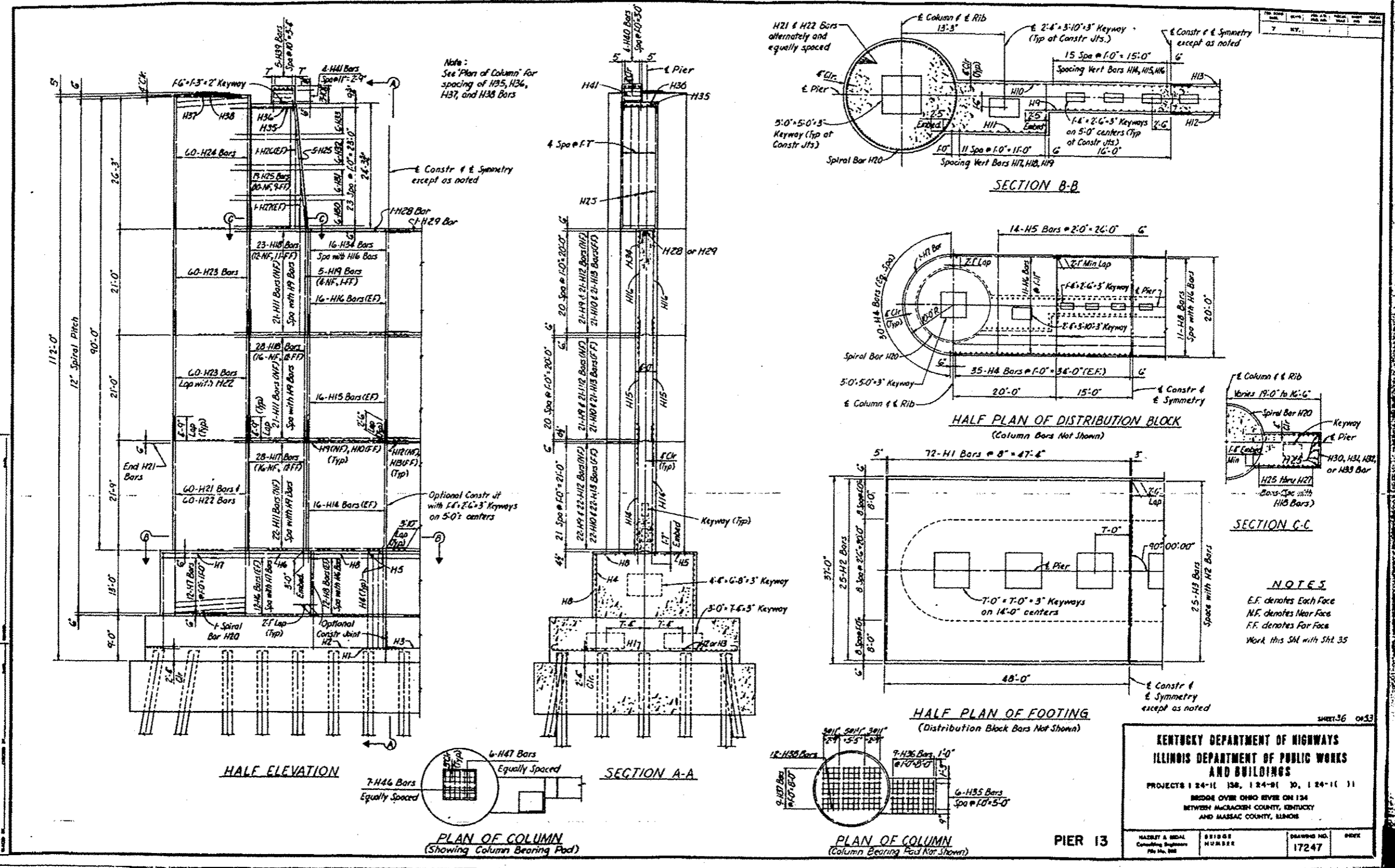
FOR INFORMATION ONLY

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PIER 12  
SN 064-0035  
SHEET NO. 15C OF 15 SHEETS

P.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-381)-7	MASSAC	18	18E
			CONTRACT NO. 78448	
ILLINOIS FED. AID PROJECT				

△ SHEET ADDED 4-7-15



**NOTES**  
 E.F. denotes Each Face  
 N.F. denotes Near Face  
 F.F. denotes Far Face  
 Work this Sd. with Sht. 35

SHEET 36 OF 33

**KENTUCKY DEPARTMENT OF HIGHWAYS  
 ILLINOIS DEPARTMENT OF PUBLIC WORKS  
 AND BUILDINGS**

PROJECTS 124-11 138, 124-91 30, 124-11 11  
 BRIDGE OVER OHIO RIVER ON 124  
 BETWEEN MACLACHER COUNTY, KENTUCKY  
 AND MASSAC COUNTY, ILLINOIS

HAZLET & BIRD Consulting Engineers File No. 288	BRIDGE NUMBER	DRAWING NO. 17247	INDEX
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**FOR INFORMATION ONLY**

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 13  
 SN 064-0035  
 SHEET NO. 150 OF 155 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-381)-7	MASSAC	18	18F
				CONTRACT NO. 78448
ILLINOIS FED. AID PROJECT				

SHEET ADDED 4-7-15