

**INDEX OF SHEETS**

1	COVER SHEET
2	PLAN & PROFILE
3 - 10	BRIDGE PLANS
11	BORINGS

STANDARDS: 515001-03 - NAME PLATE  
635006-03 - REFLECTOR & TERM. MKR. PLACEMENT  
701901-04 - TRAFFIC  
BLR 21-9 - TRAFFIC

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PLANS FOR PROPOSED  
SURFACE TRANSPORTATION PROGRAM/BRIDGE  
CRAWFORD COUNTY  
SECTION 05-06130-00-BR  
MONTGOMERY ROAD DISTRICT  
STRUCTURE NO. 017-3640  
PROJECT NO. BROS-0033(053)  
JOB NO. C-97-041-14  
TR 293

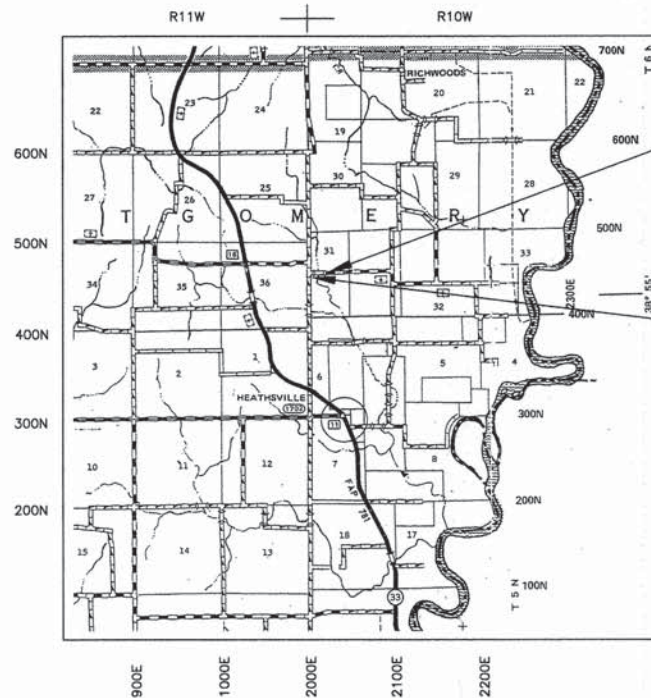
SCALES

PLAN	1 INCH = 50 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
1	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	X7010216
235	CU YD	CHANNEL EXCAVATION	20300100
92	TON	POROUS GRANULAR EMBANKMENT	20700110
280	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
1	EACH	REMOVAL OF EXISTING STRUCTURE	50100100
29.8	CU YD	CONCRETE STRUCTURES	50300225
1852	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505
3360	POUND	REINFORCEMENT BARS, EPOXY COATED	50800205
114	FOOT	STEEL RAILING, TYPE S-1	50900205Δ
140	FOOT	FURNISHING STEEL PILES HP 10X42	51201400
140	FOOT	DRIVING PILES	51202305
1	EACH	TEST PILE STEEL HP 10X42	51203400
1	EACH	NAME PLATES	51500100
114	SQ FT	CONCRETE SEALER	58700300
1	L SUM	MOBILIZATION	67100100
4	EACH	TERMINAL MARKER - DIRECT APPLIED	78201000Δ

Δ SPECIALTY ITEMS



SECTION 05-06130-00-BR  
ENDS STA. 2+23.21

STA. 1+93 SPECIAL BRIDGE DESIGN  
PROPOSED PRECAST PRESTRESSED CONC.  
DECK BEAM BRIDGE, 1 SPAN @ 59'  
28' RDWY, SKEW= 20'  
PROPOSED STR. NO. 017-3640  
EXISTING STR. NO. 017-3604

SECTION 05-06130-00-BR  
BEGINS STA. 1+62.79

FUNCTIONAL CLASS: RURAL LOCAL ROAD  
ADT = 125  
DESIGN SPEED = 30 MPH

LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE  
NET LENGTH = 60.42 FT. = 0.011 MILES



*John A. Stone* 02/06/2015  
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012  
LICENSE EXPIRES NOVEMBER 30, 2015  
PROFESSIONAL DESIGN FIRM #184-000832

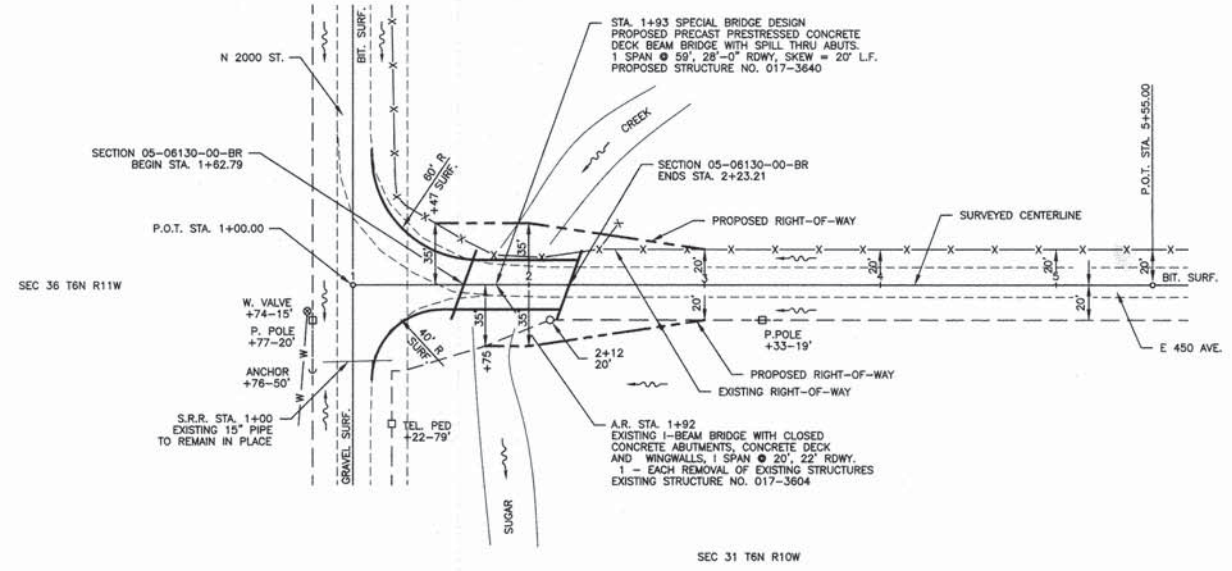
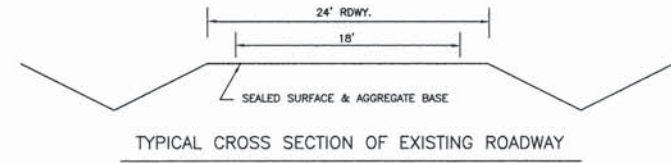
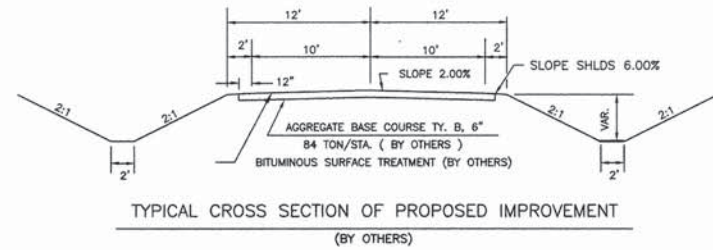
TOLL FREE JOINT UTILITY LOCATING  
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)  
TELEPHONE NO. 1-800-892-0123

ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED: <u>2/6</u> . 2015	
<i>Robert R. Child</i> LOCAL AGENCY, COUNTY ENGINEER	
PASSED: <u>2/18</u> . 2015	
<i>William D. Koval</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS	
RELEASING FOR BID BASED ON LIMITED REVIEW: <u>2/18</u> . 2015	
<i>Robert L. Anselmi</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER	

SECTION	05-06130-00-BR	TOTAL SHEETS	11	SHEET NO.	2
COUNTY	CRAWFORD				
ROAD DIST.	MONTGOMERY				
STA. 1+00		TO STA. 5+55.00			

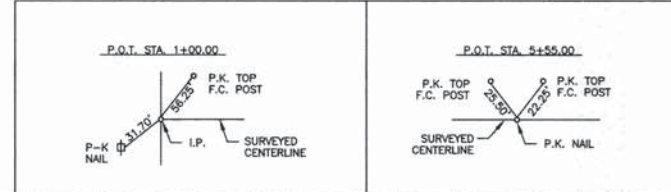
PARCEL NO. 1  
JOHN S., PATTI & RACHEL SHAW

CONTRACT NO. 95758



PARCEL NO. 2  
AUGUSTINE KIRK

NOTE: WHEN THE PLANS OR SPECIAL PROVISIONS INCLUDE INFORMATION PERTAINING TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES, SUCH INFORMATION REPRESENTS ONLY THE OPINION OF THE CRAWFORD COUNTY HIGHWAY DEPARTMENT AS TO THE LOCATION OF SUCH UTILITIES AND IS INCLUDED FOR THE CONVENIENCE OF THE BIDDER.



CHANNEL EXCAVATION = 235 CU YD

POROUS GRANULAR ENBAKMENT  
WEST ABUTMENT = 54 TON  
EAST ABUTMENT = 38 TON  
TOTAL = 92 TON

B.M. #1 ELEV. 462.23  
P-K NAIL IN POWER POLE  
20.3' RT. STA. 0+77

UTILITIES

ELECTRIC NORRIS ELECTRIC COOP  
8543 N STATE HWY. 130  
NEWTON, IL. 62448  
618-783-8785

WATER HARDINVILLE WATER CO.  
P.O. BOX 164  
4440 N 575TH ST.  
ROBINSON, IL. 62454  
618-557-3556

TELEPHONE FRONTIER  
225 E. CHESTNUT ST.  
OLNEY, IL. 62450  
618-395-6189

481.11	481.70	480.2	480.88	480.5	480.88	480.42	481.1	480.25	480.74	481.1	480.7	480.85	480.03	480.6	480.01	480.85	480.70
+36	+62	+25											+82		+32	+55	
1		2				3			4				5				

**CONNOR & CONNOR, Inc.**  
CONSULTING ENGINEERS

210 East Locust Street  
ROBINSON, ILLINOIS 62454

Phone 618-544-8623  
Fax 618-544-3012

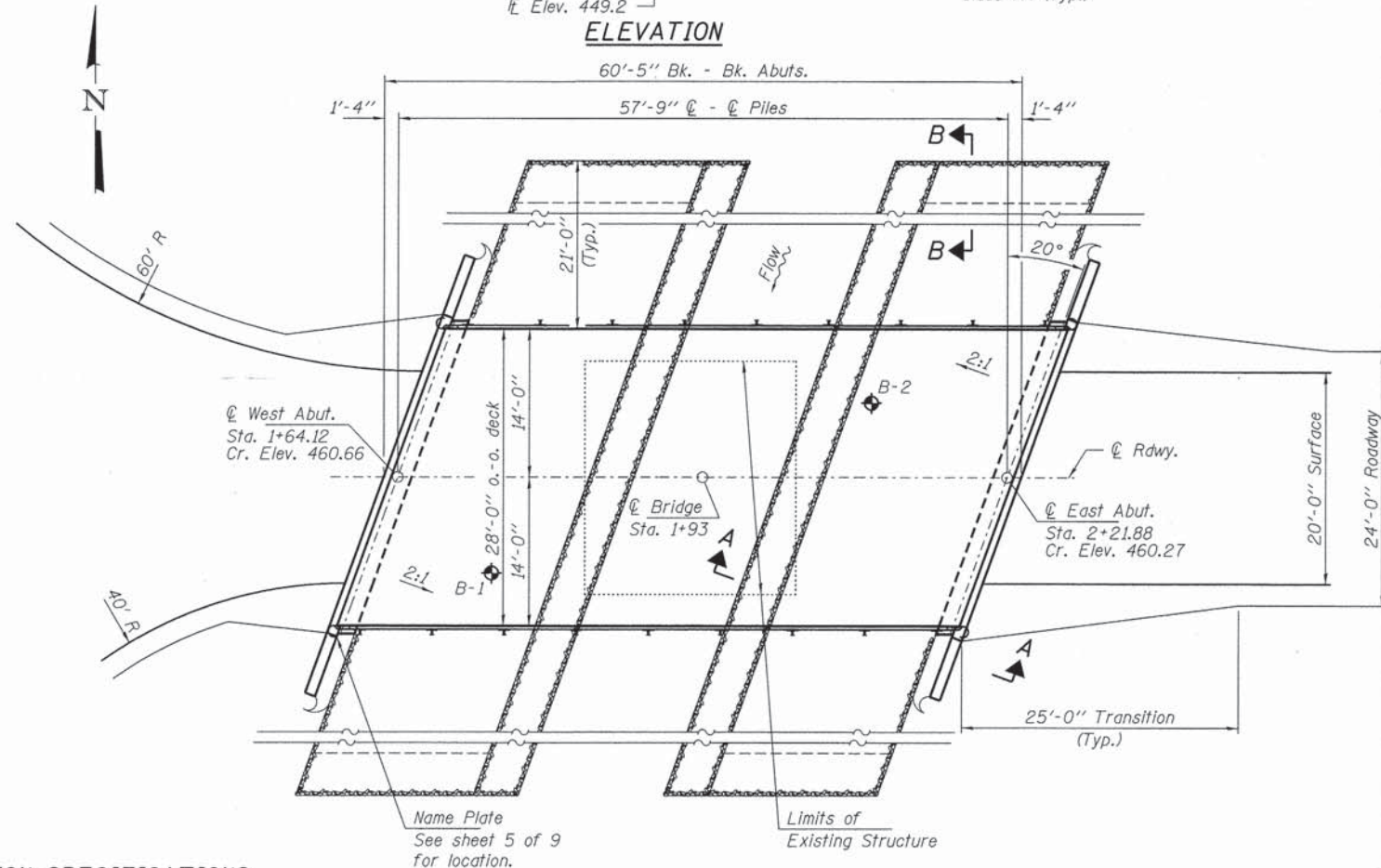
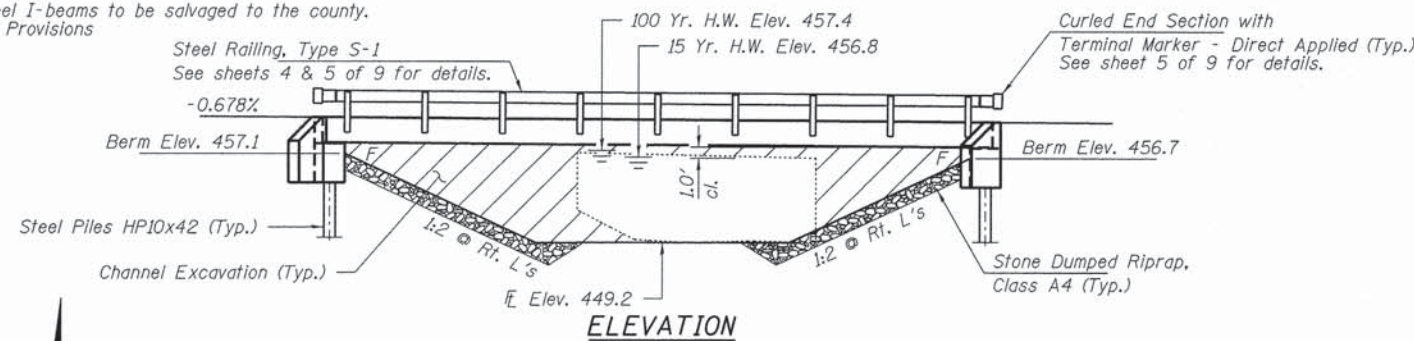
Licensed Surveyors

DATE \_\_\_\_\_  
SCALE 1" = 50'  
DRAWN BY \_\_\_\_\_  
PROJECT P-\_\_\_\_\_  
SHEET OF \_\_\_\_\_

EXISTING STRUCTURE: Sta. 1+92, Str. No. 017-3604. I-Beam bridge with closed concrete abutments, concrete wingwalls and deck.  
20.0' fc.-fc. abutts; 22' o.-o. deck.

Structure closed to traffic during construction.

Salvage: Steel I-beams to be salvaged to the county.  
See Special Provisions



**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims.

**LOADING HL-93**

Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**

**FIELD UNITS**

f'c = 3,500 psi  
fy = 60,000 psi (Reinf.)

**PRECAST PRESTRESSED UNITS**

f'c = 6,000 psi  
f'ci = 5,000 psi  
fpu = 270,000 psi (1/2" low lax. strands)  
fpbt = 201,960 psi (1/2" low lax. strands)  
fy = 60,000 psi (Reinf.)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.210g  
Design Spectral Acceleration at 0.2 sec. (SDs) = 0.420g  
Soil Site Class = C

Design Scour Elevations (ft.)		
	W. Abut.	E. Abut.
Q100	454.5	454.1

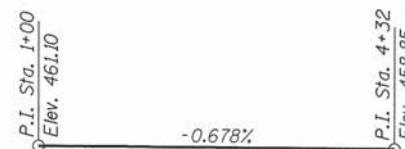
**PLAN**

**WATERWAY INFORMATION**

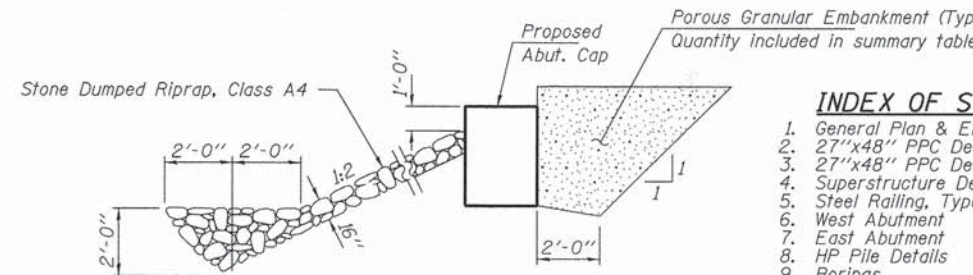
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.	
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.
Design/Overtop	15	896	142	236	456.8			
Base	100	1590	152	255	457.4	1.3	0.9	458.7 458.3

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Maggioneri 02/09/2015  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

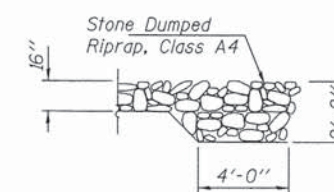


**PROFILE GRADE**  
T.R. 293



**SECTION A-A**

Note: See Special Provisions for Stone Dumped Riprap, Class A4.



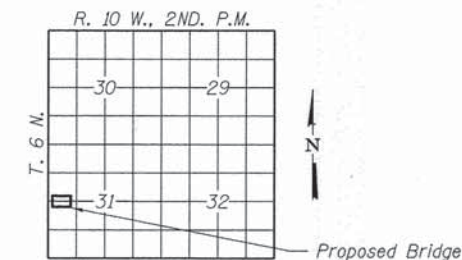
**SECTION B-B**

**GENERAL NOTES**

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at East Abutment or approved by the Engineer before ordering the remainder of piles.  
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
All bars to be epoxy coated.  
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.  
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act.  
The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.  
Concrete sealer shall be applied to the designated areas of the abutments.

**INDEX OF STRUCTURE SHEETS**

1. General Plan & Elevation
2. 27"x48" PPC Deck Beam
3. 27"x48" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. West Abutment
7. East Abutment
8. HP Pile Details
9. Borings



**LOCATION SKETCH**

SUGAR CREEK  
BUILT 201\_ BY  
CRAWFORD COUNTY  
SEC. 05-06130-00-BR  
STR. NO. 017-3640  
LOADING HL-93

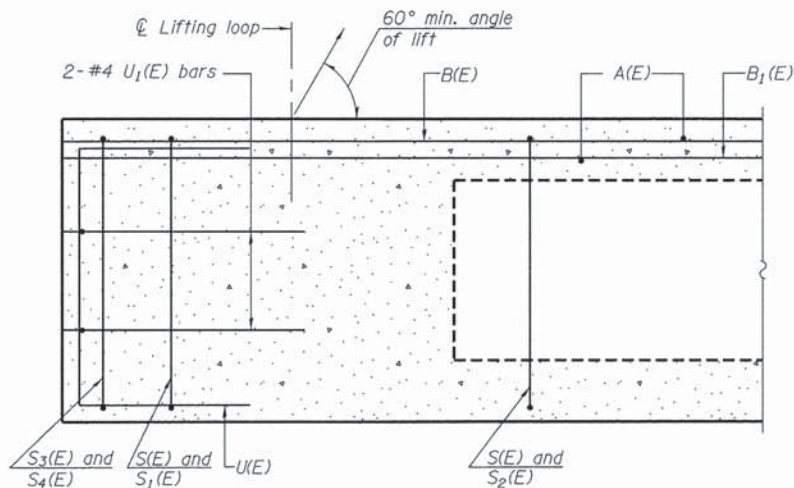
**NAME PLATE**

See Std. 515001

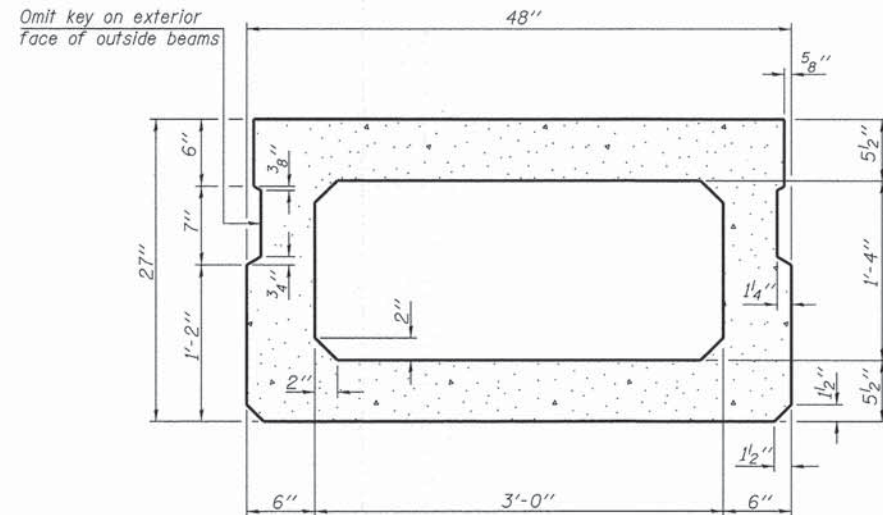
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			235
Stone Dumped Riprap, Class A4	Ton			280
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		29.8	29.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,652		1,652
Reinforcement Bars, Epoxy Coated	Pound		3,360	3,360
Steel Railing, Type S-1	Foot	114		114
Furnishing Steel Piles HP10x42	Foot		140	140
Driving Piles	Foot		140	140
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each		4	4
Concrete Sealer	Sq. Ft.		114	114

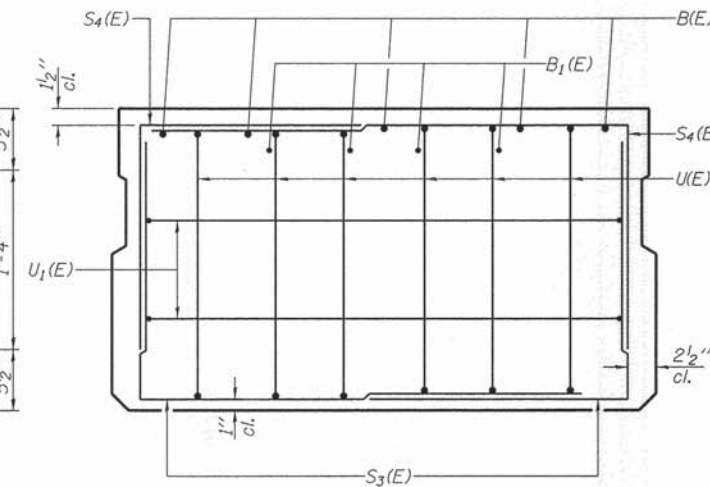
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HAMPTON, LENZINI AND RENWICK, INC. 3088 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62705 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184-000989	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			293	05-06130-00-BR	CRAWFORD	11	3
PLOT DATE = 2/9/2015		DRAWN - R.D.H.	REVISED -			MONTGOMERY ROAD DISTRICT				CONTRACT NO. 95758
		CHECKED - D.A.B.	REVISED -			ILLINOIS FED. AID PROJECT				



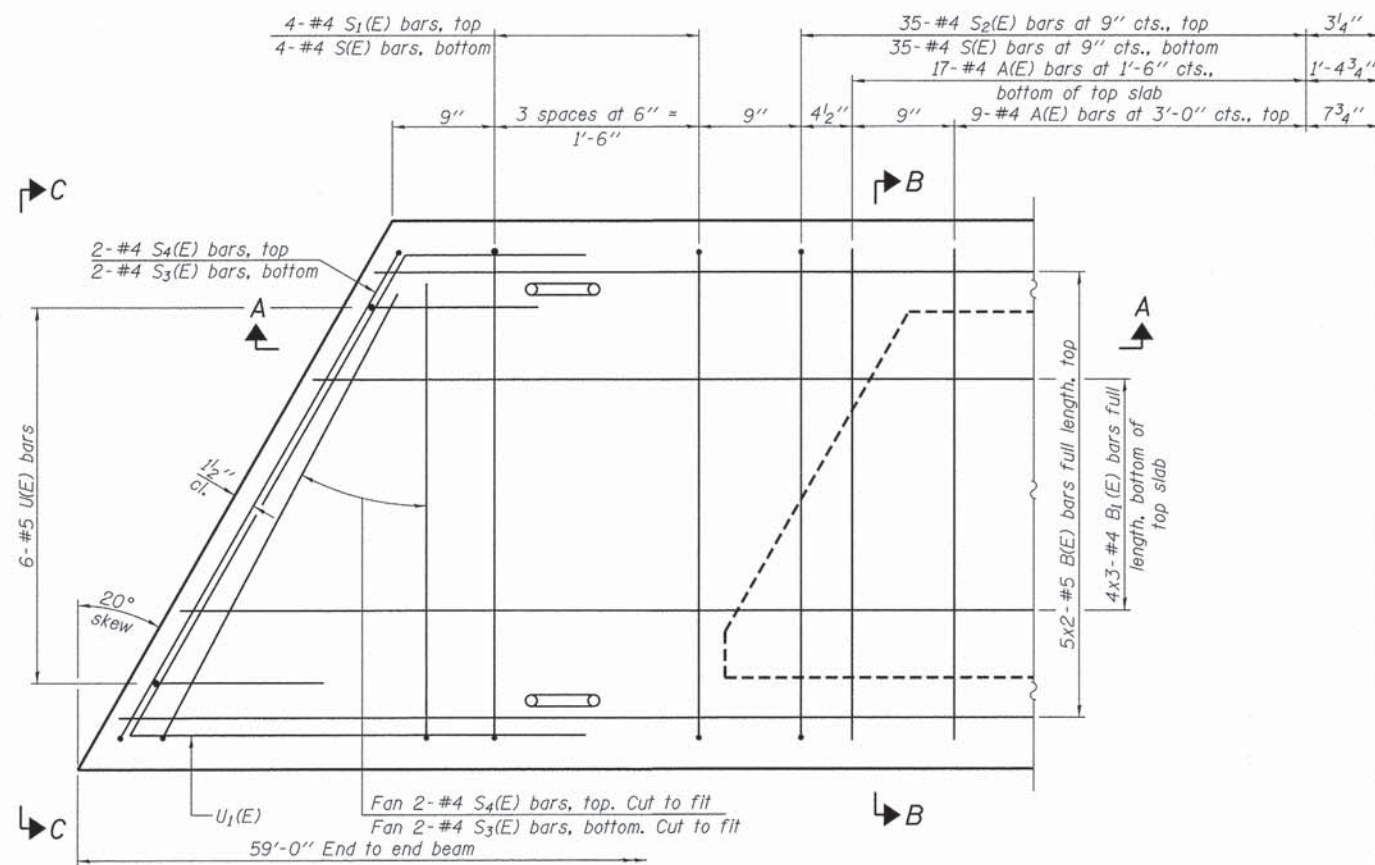
SECTION A-A



SECTION B-B  
(Showing dimensions)

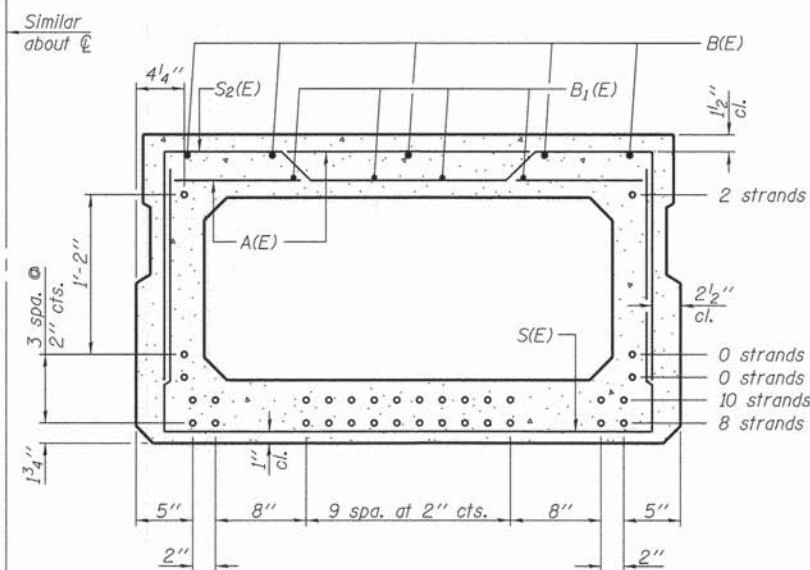


VIEW C-C



PLAN VIEW

NOTES:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.  
Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line.



SECTION B-B

(Showing reinforcement and permissible strand locations)  
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	53	#4	3'-7"	—
B(E)	10	#5	30'-8"	—
B1(E)	12	#4	20'-11"	—
S(E)	78	#4	7'-5"	—
S1(E)	8	#4	6'-11"	┌
S2(E)	70	#4	7'-2"	┌
S3(E)	8	#4	4'-9"	┌
S4(E)	8	#4	4'-6"	┌
U(E)	12	#5	4'-6"	┌
U1(E)	4	#4	7'-6"	┌

Note: See sheet 3 & 4 of 9 for additional details and Bill of Material.

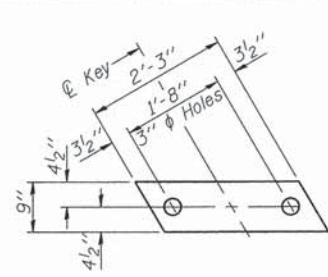
MINIMUM BAR LAP

#4 bar = 2'-0"  
#5 bar = 2'-6"

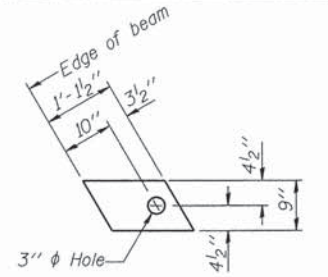
PD-2748-L

7-1-10

FILE NAME = 148341-ahb-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	<b>STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT</b>	<b>27" x 48" PPC DECK BEAM STRUCTURE NO. 017-3640</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			293	05-06130-00-BR	CRAWFORD	11	4
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.000859	PLOT DATE = 2/9/2015	DRAWN - R.D.H.	REVISED -			MONTGOMERY ROAD DISTRICT	CONTRACT NO. 95758			
		CHECKED - D.A.B.	REVISED -			ILLINOIS FED. AID PROJECT				

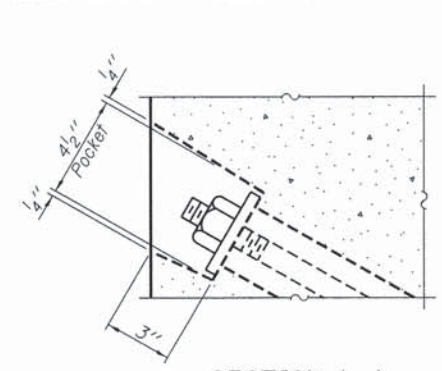


**FABRIC BEARING PAD**  
(Interior - 12 Req'd.)

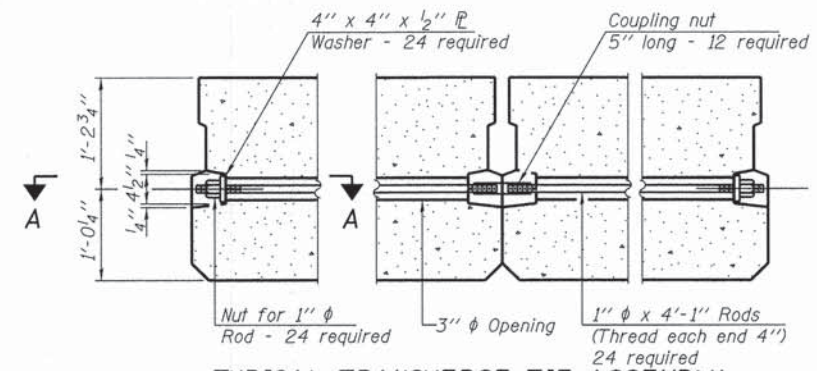


**FABRIC BEARING PAD**  
(Exterior - 4 Req'd.)

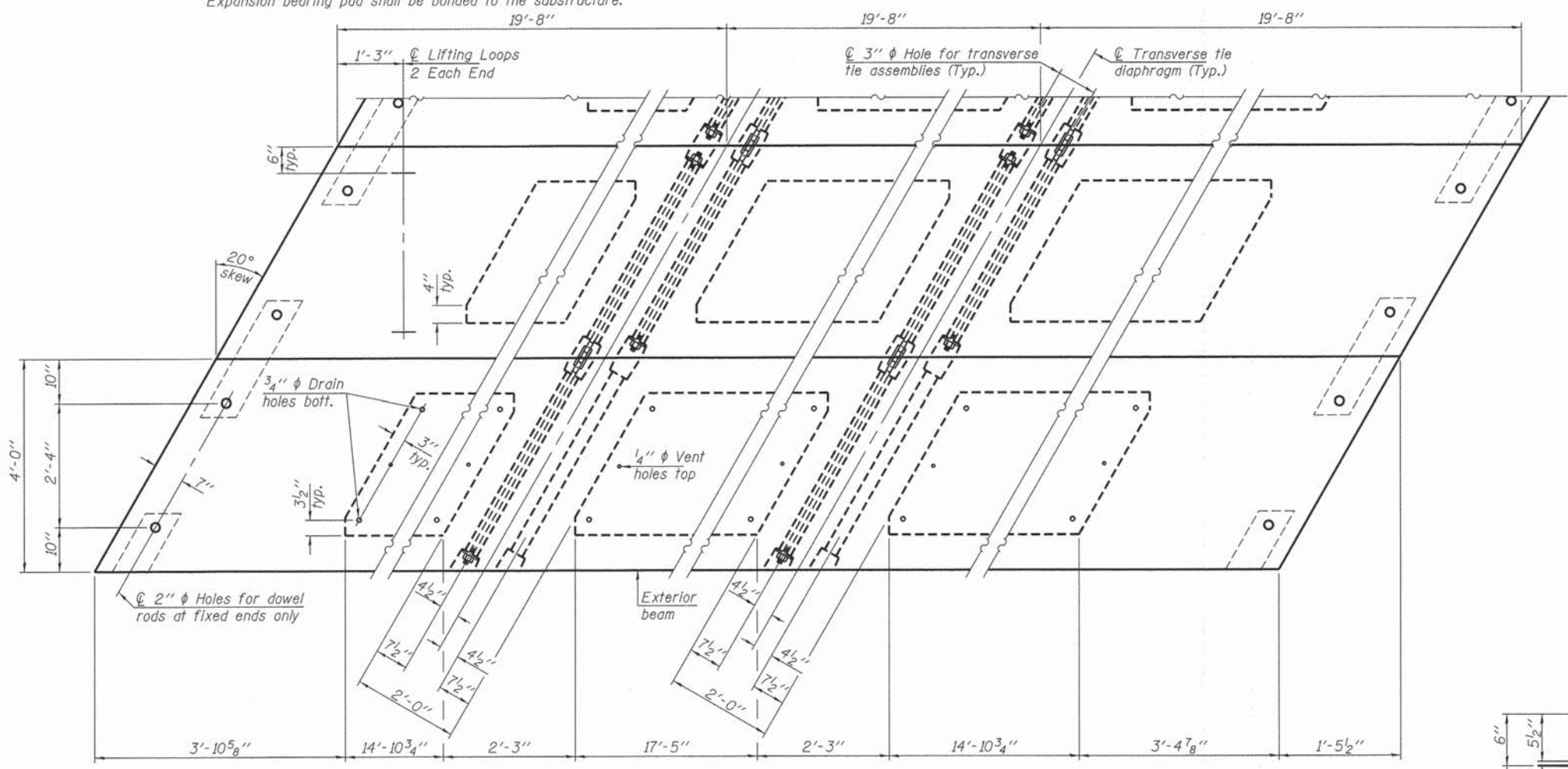
**Notes:**  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

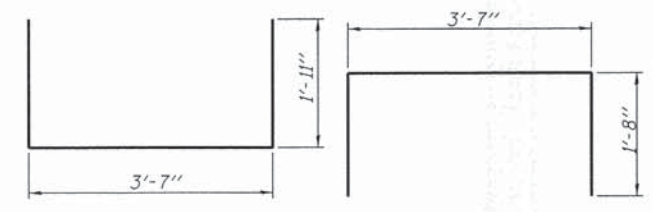


**PLAN VIEW**

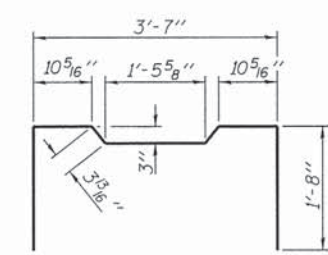
Note: Connect beams in pairs with the transverse tie configuration shown.

**NOTES**

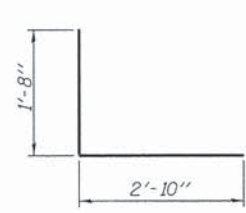
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.  
Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'cl, shall be 5000 psi.  
All reinforcement bars shall be epoxy coated.



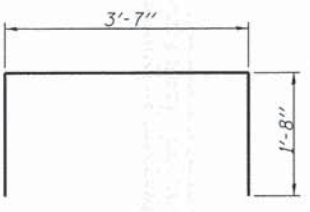
**BAR S1(E)**



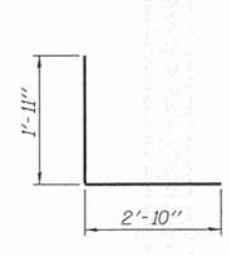
**BAR S2(E)**



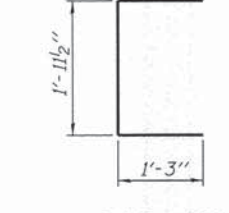
**BAR S4(E)**



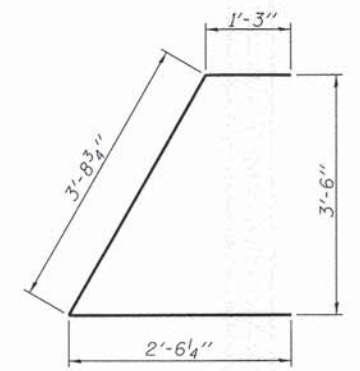
**BAR S3(E)**



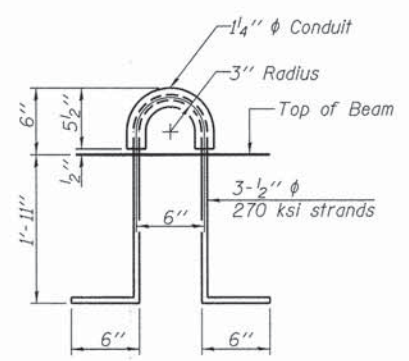
**BAR S3(E)**



**BAR U1(E)**



**BAR U2(E)**



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,652
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PD-2748-LD 7-1-10

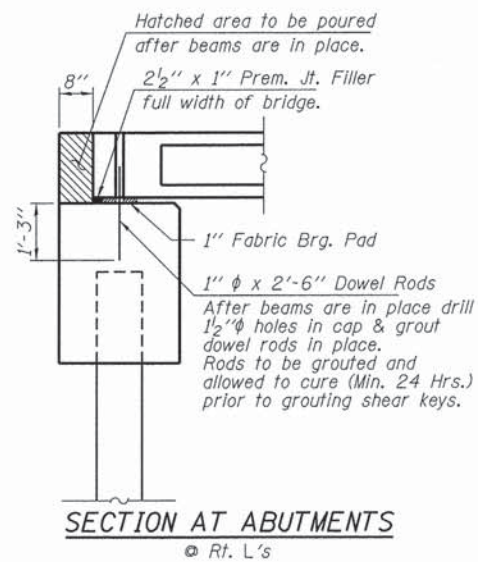
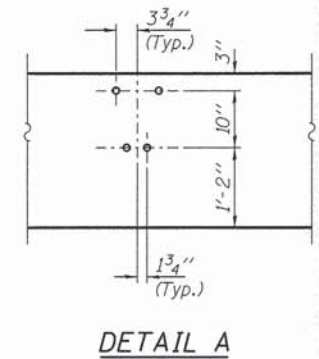
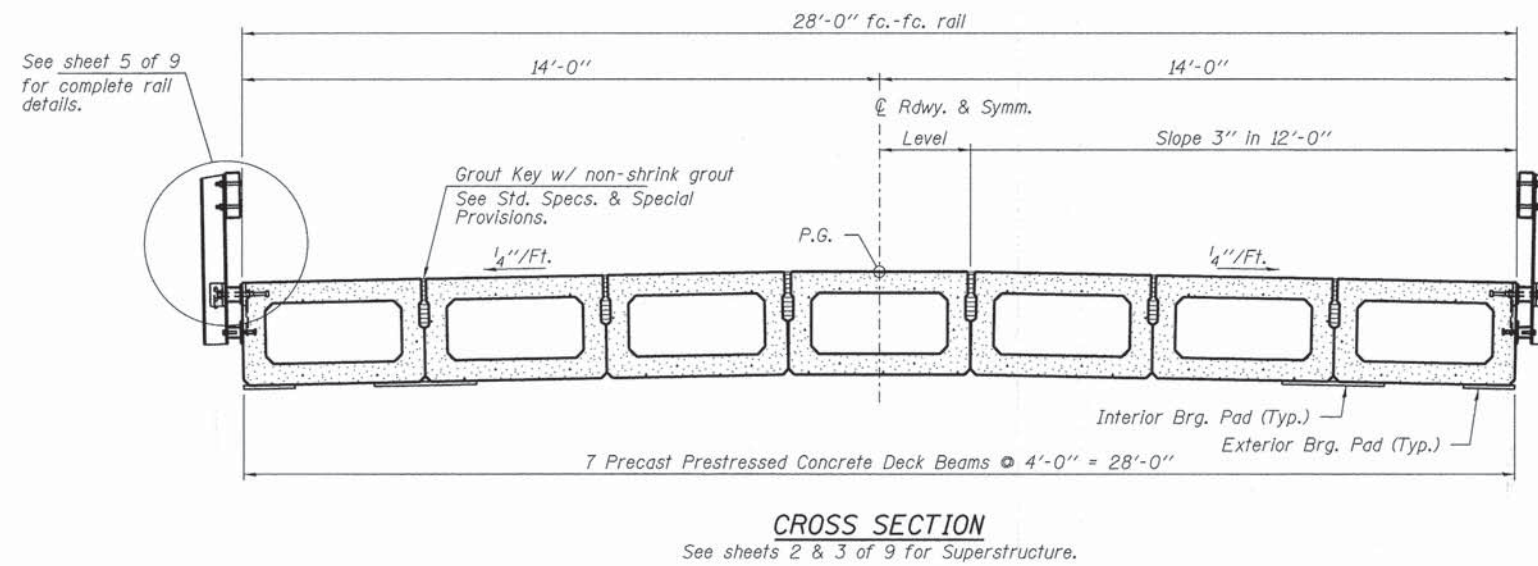
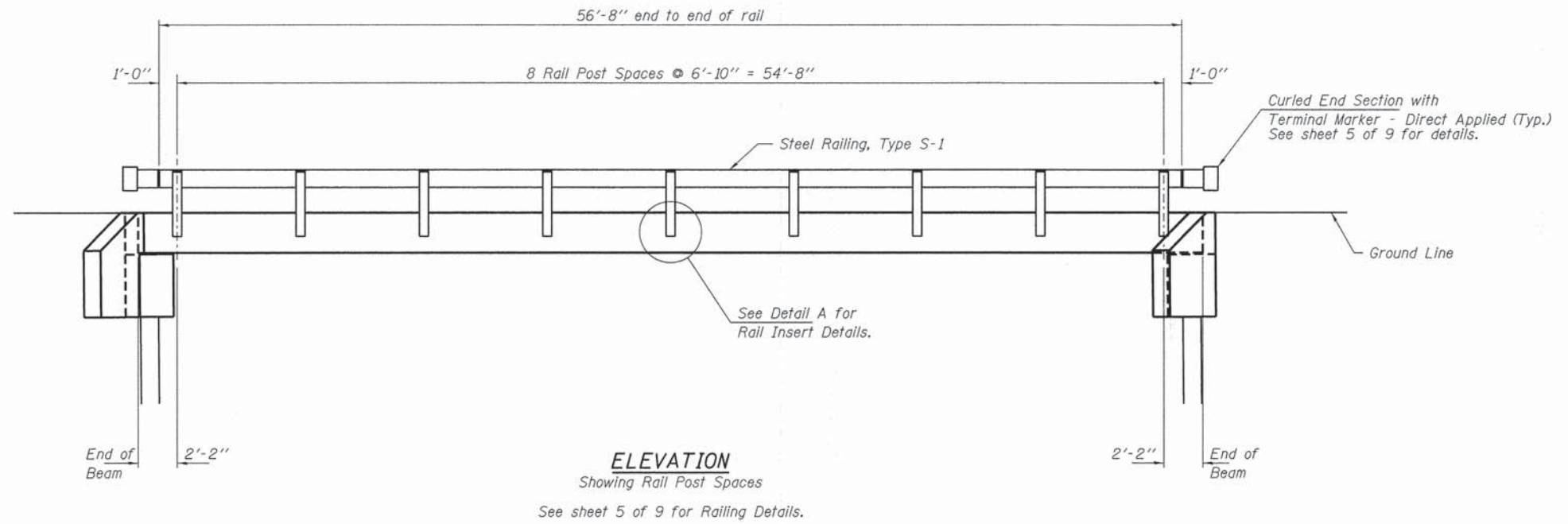
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3085 STEVENSON DRIVE, SUITE 201		DRAWN - R.D.H.	REVISED -
SPRINGFIELD, ILLINOIS 62763	PLOT SCALE =	CHECKED - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM	PLOT DATE = 2/9/2015		
LS / PE / SE CORP. 184.000958			

**STATE OF ILLINOIS**  
**CRAWFORD COUNTY HIGHWAY DEPARTMENT**

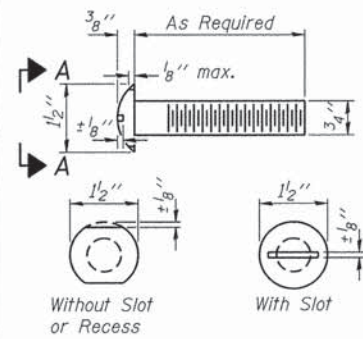
**27" x 48" PPC DECK BEAM DETAILS**  
**STRUCTURE NO. 017-3640**

SHEET NO. 3 OF 9 SHEETS

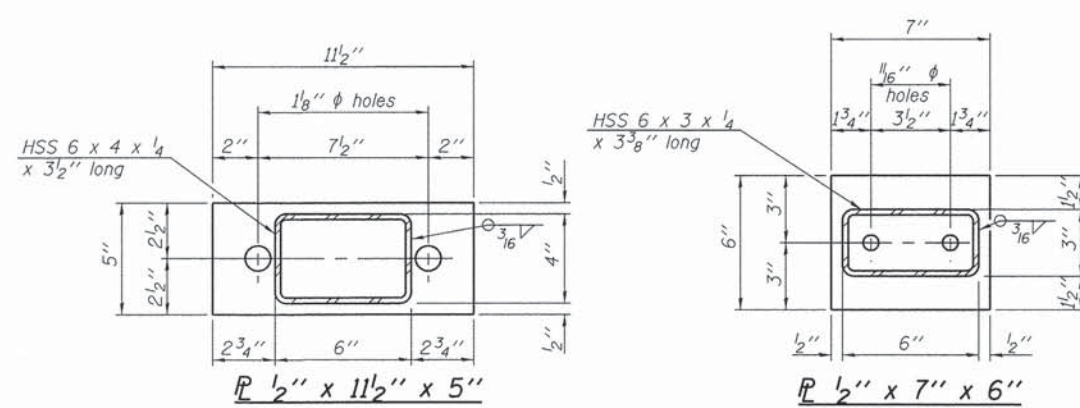
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MONTGOMERY ROAD DISTRICT		CONTRACT NO. 95758		
ILLINOIS FED. AID PROJECT				



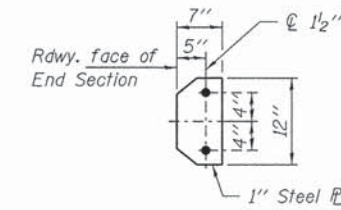
FILE NAME = 148341-sht-brsdge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	<b>STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 017-3640</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3843 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763		CHECKED - S.W.M.	REVISED -			293	05-06130-00-BR	CRAWFORD	11	6
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000589	PLOT SCALE =	DRAWN - R.D.H.	REVISED -			MONTGOMERY ROAD DISTRICT	CONTRACT NO. 95758			
	PLOT DATE = 2/9/2015	CHECKED - D.A.B.	REVISED -			ILLINOIS FED. AID PROJECT				
						SHEET NO. 4 OF 9 SHEETS				



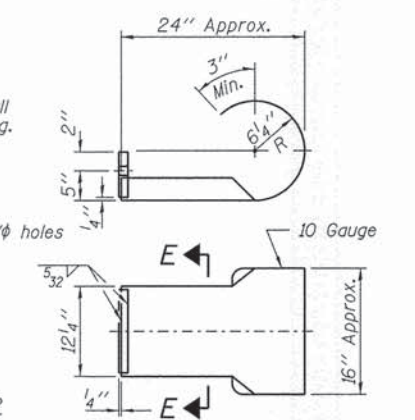
VIEW A-A  
ROUND HEAD BOLT



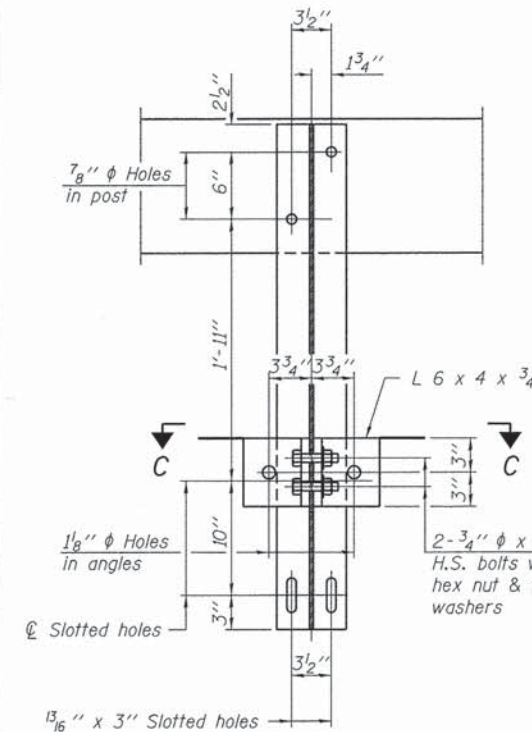
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



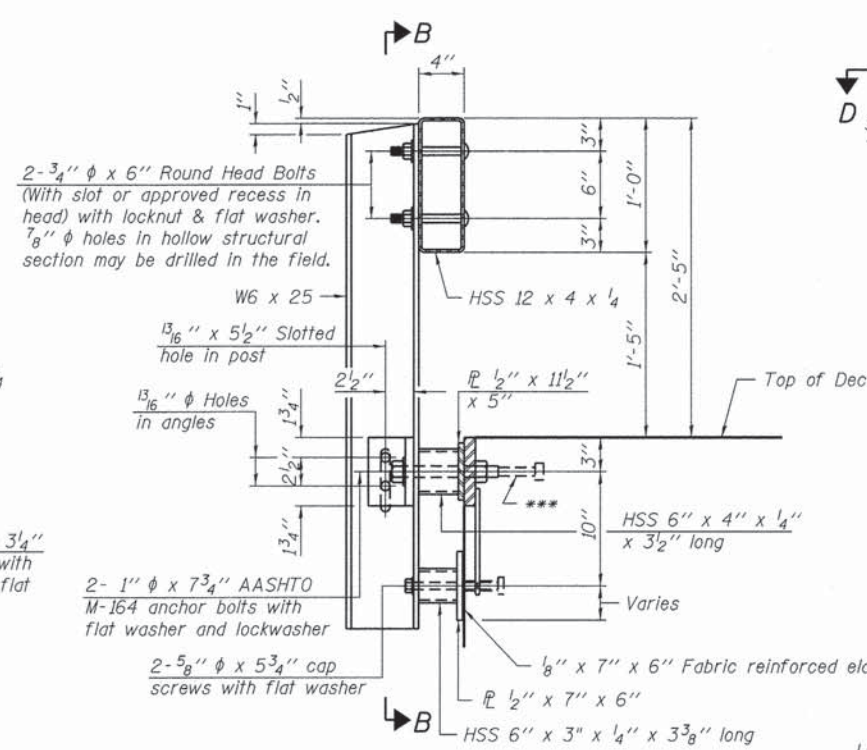
SECTION E-E



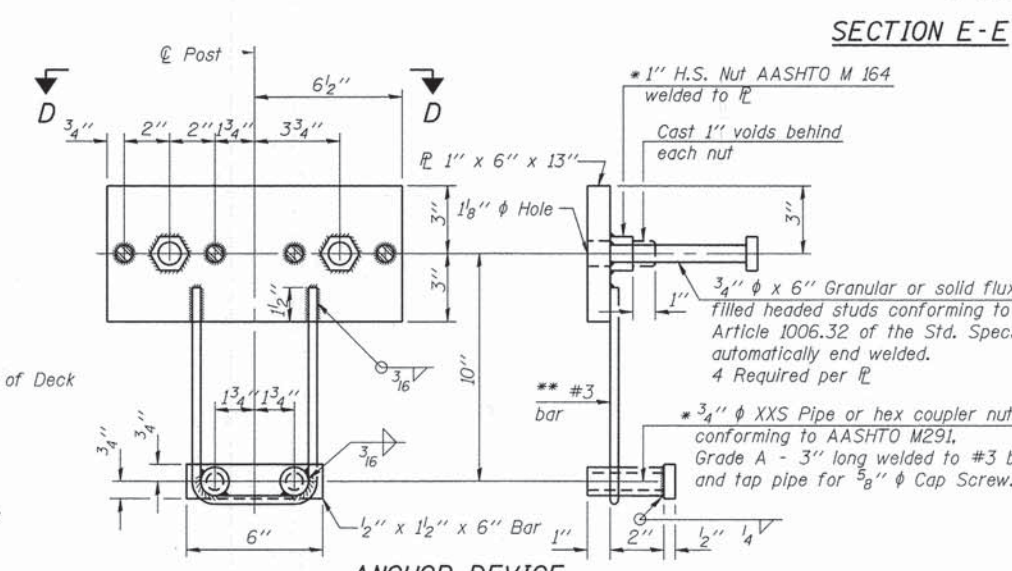
CURLLED END SECTION DETAILS



SECTION B-B

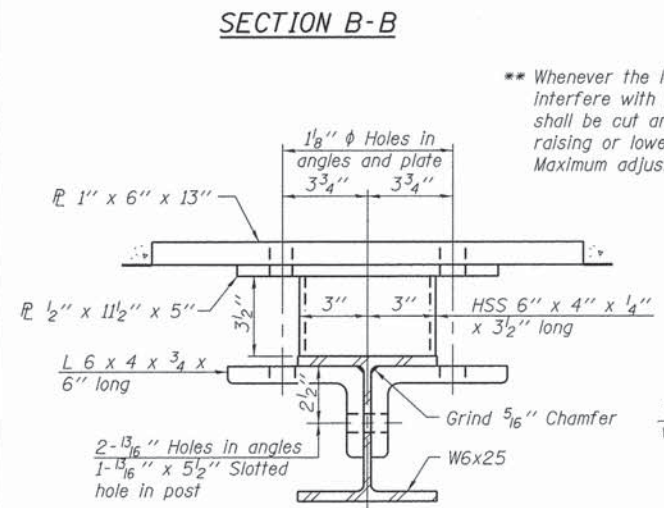


SECTION AT RAILING POST

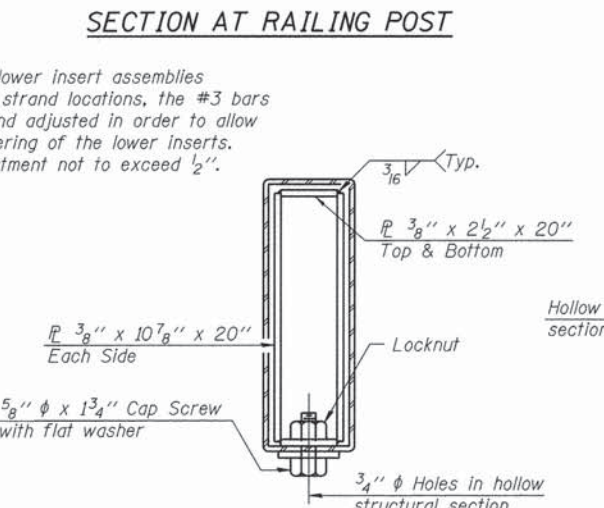


ANCHOR DEVICE

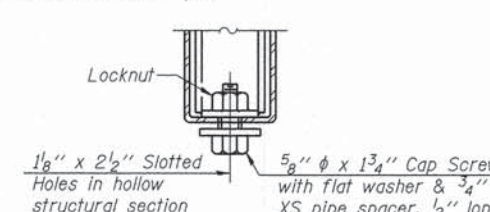
Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



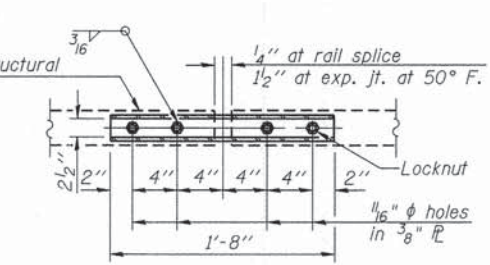
SECTION C-C



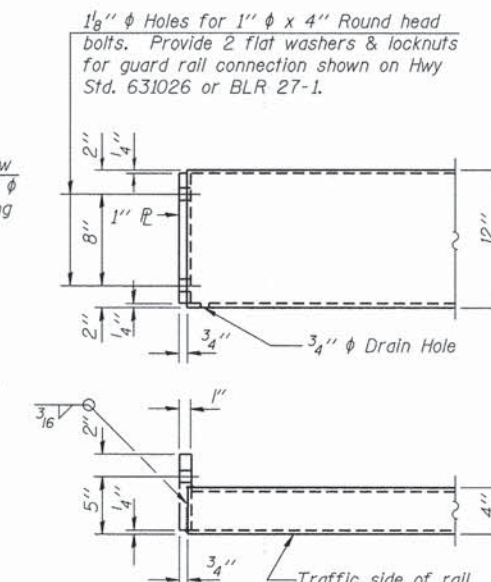
SECTIONS AT RAIL SPLICE



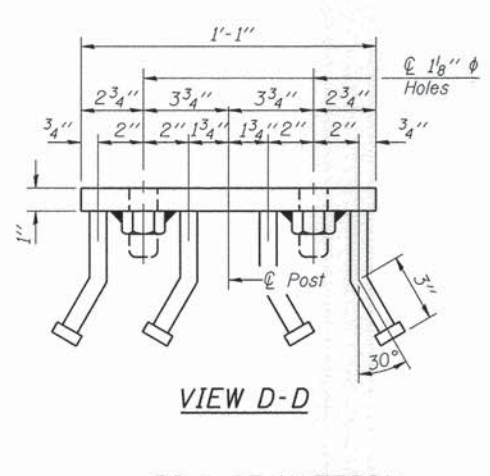
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE R TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	114

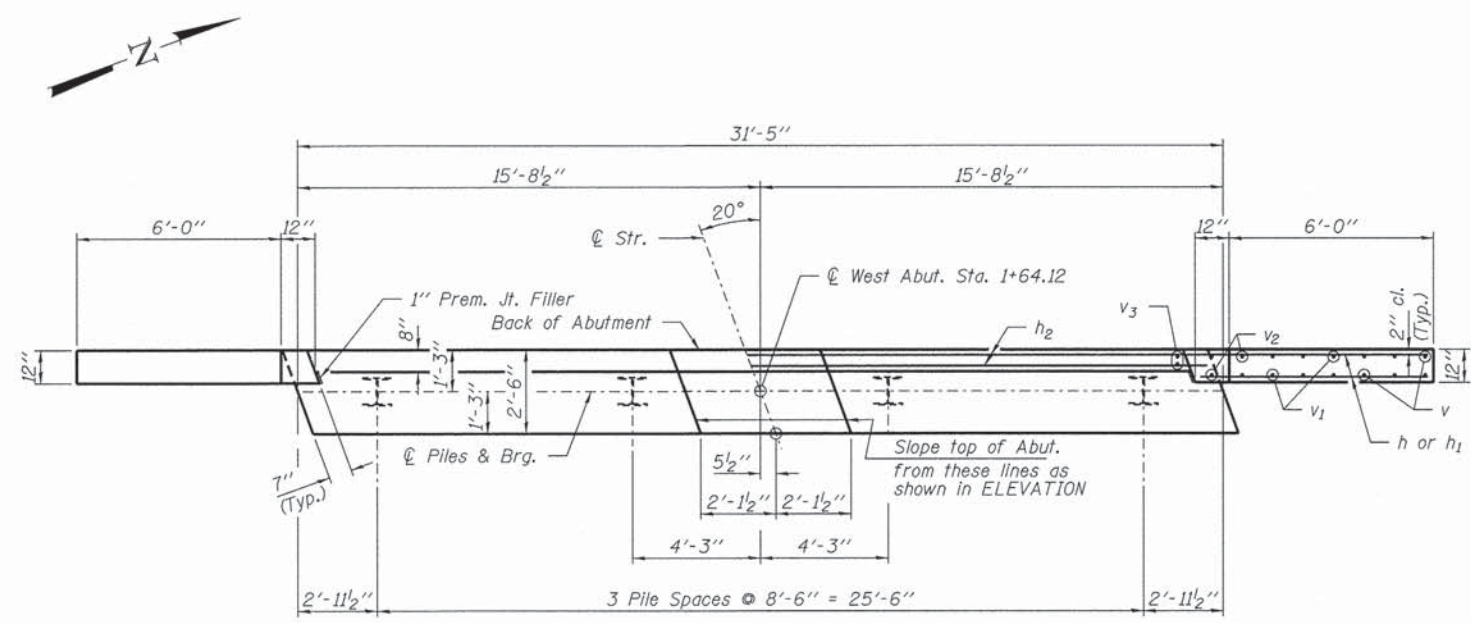
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 140341-ah-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3913 STEVENSON DRIVE, SUITE 201	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
SPRINGFIELD, ILLINOIS 62719		CHECKED - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM	PLOT DATE = 2/9/2015		
LS / PE / SE CORP. 184 000959			

STATE OF ILLINOIS  
CRAWFORD COUNTY HIGHWAY DEPARTMENT

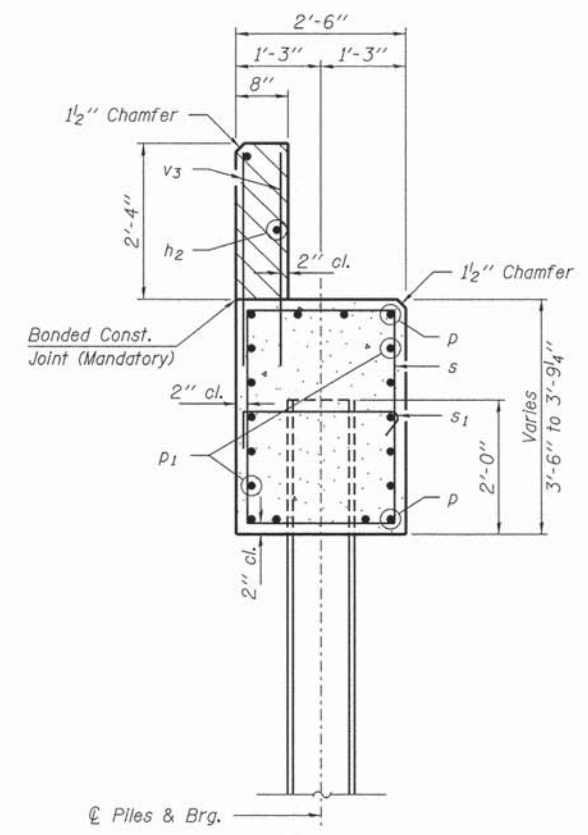
STEEL RAILING, TYPE S-1  
STRUCTURE NO. 017-3640  
SHEET NO. 5 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
293	05-06130-00-BR	CRAWFORD	11	7
MONTGOMERY ROAD DISTRICT		CONTRACT NO. 95758		
[ILLINOIS] FED. AID PROJECT				



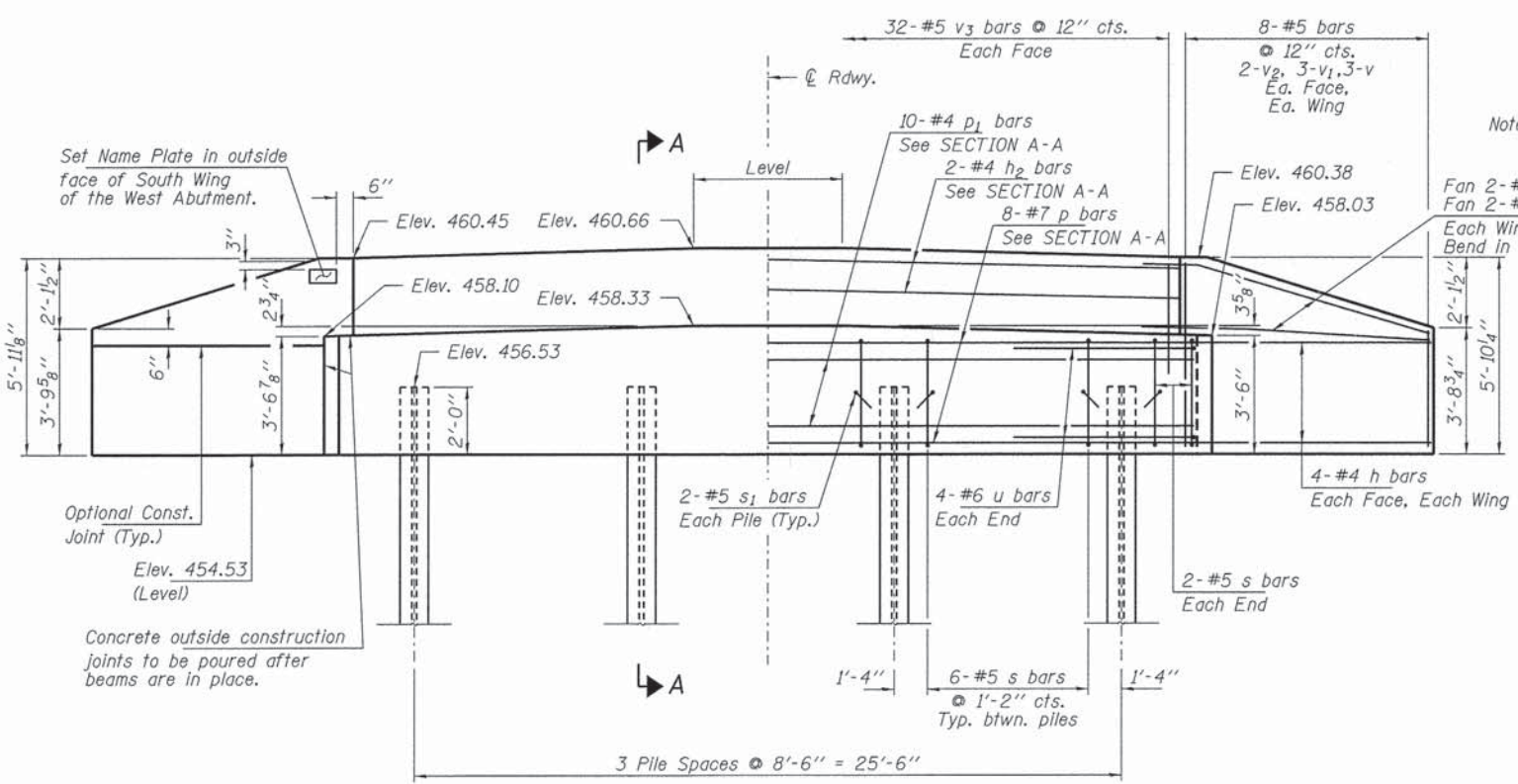
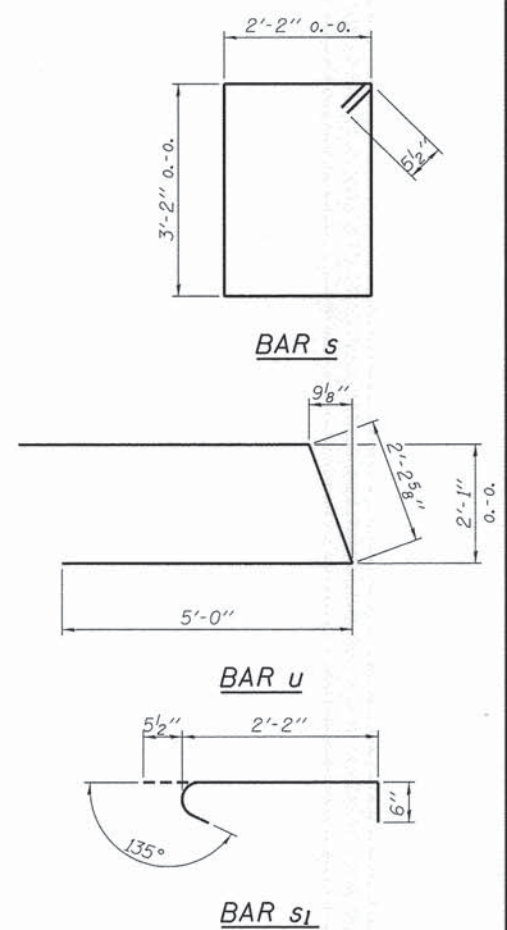
**PLAN**

Note: Concrete sealer shall be applied to all exposed surfaces of the bearing area.



**SECTION A-A**

Hatched area to be poured after beams are in place.



**ELEVATION**  
(Looking West)

Note: Extend h bars into abutment cap.

**PILE DATA**

Type ----- Steel HPI0x42  
 No. Req'd. (W. Abut.) ----- 4  
 Factored Resistance Available (Rf) ----- 184 Kips/Pile  
 Nominal Required Bearing (Rn) ----- 335 Kips/Pile  
 Est. Length ----- 20 Ft/Pile

**BILL OF MATERIAL - W. ABUT.**

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#4	8'-3"	—
h1	4	#4	6'-9"	—
h2	2	#4	31'-1"	—
p	8	#7	31'-1"	—
p1	10	#4	31'-1"	—
s	22	#5	11'-7"	□
s1	8	#5	3'-2"	┌
u	8	#6	12'-3"	└
v	12	#5	3'-6"	—
v1	12	#5	4'-6"	—
v2	8	#5	5'-6"	—
v3	64	#5	3'-2"	—
Concrete Structures			Cu. Yd.	14.9
Reinforcement Bars, Epoxy Coated			Pound	1,680
Steel Piles HPI0x42			Foot	80
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	57

All reinforcement bars shall be epoxy coated

FILE NAME = 148341-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62769	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184-00099	PLOT DATE = 2/9/2015	CHECKED - D.A.B.	REVISED -

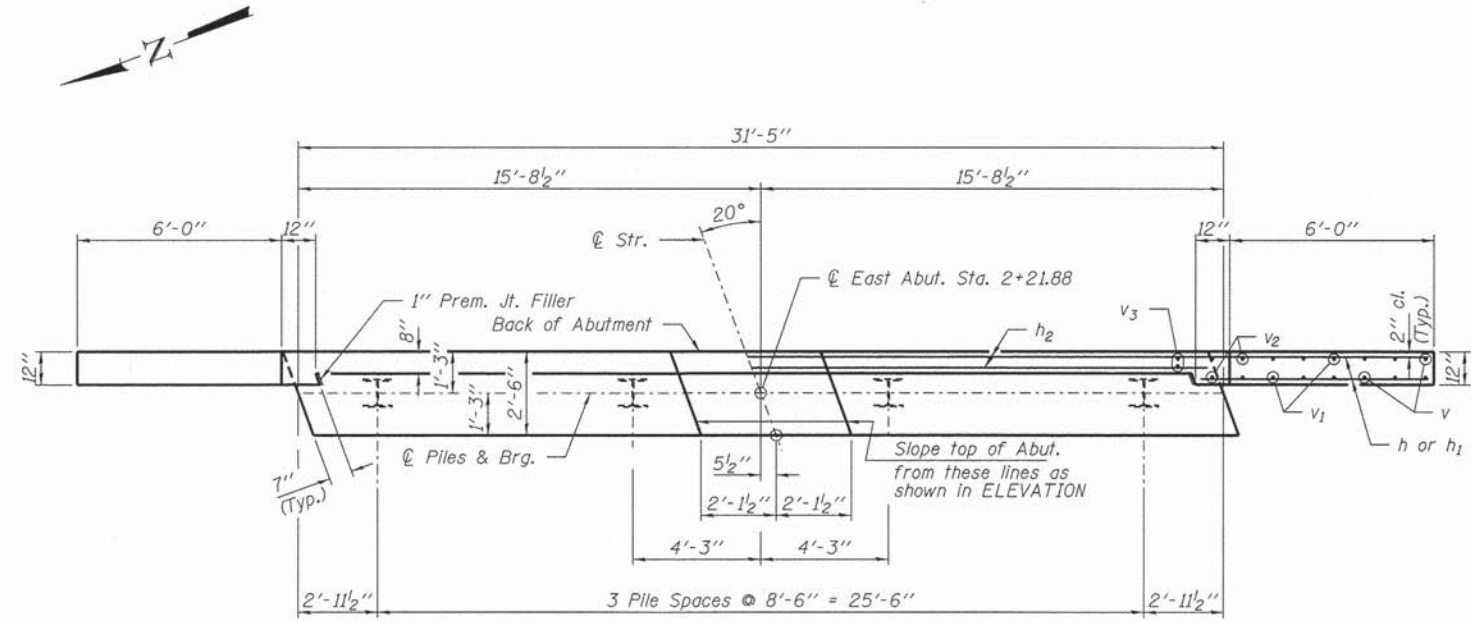
**STATE OF ILLINOIS**  
**CRAWFORD COUNTY HIGHWAY DEPARTMENT**

**WEST ABUTMENT**  
**STRUCTURE NO. 017-3640**

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
293	05-06130-00-BR	CRAWFORD	11	8
MONTGOMERY ROAD DISTRICT		CONTRACT NO. 95758		
ILLINOIS FED. AID PROJECT				

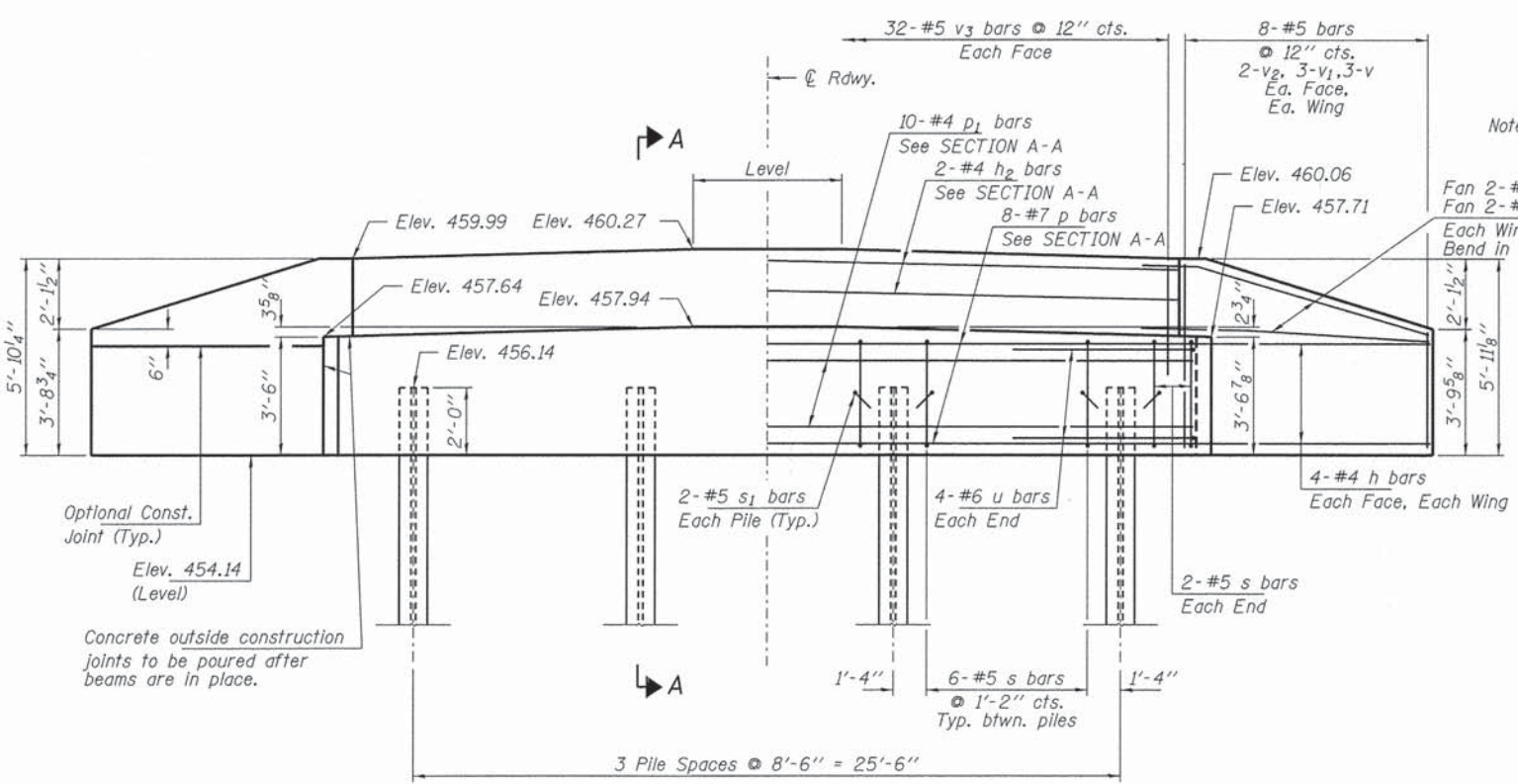
SHEET NO. 6 OF 9 SHEETS





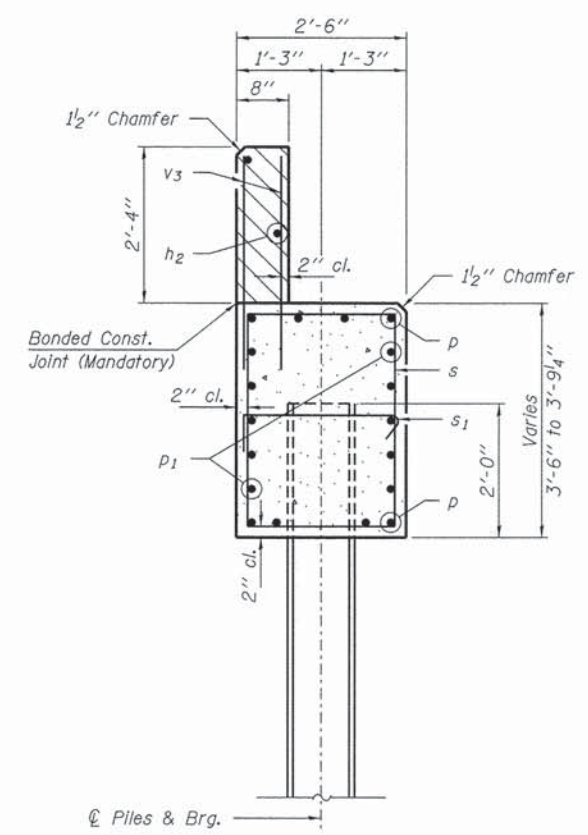
**PLAN**

Note: Concrete sealer shall be applied to all exposed surfaces of the bearing area.



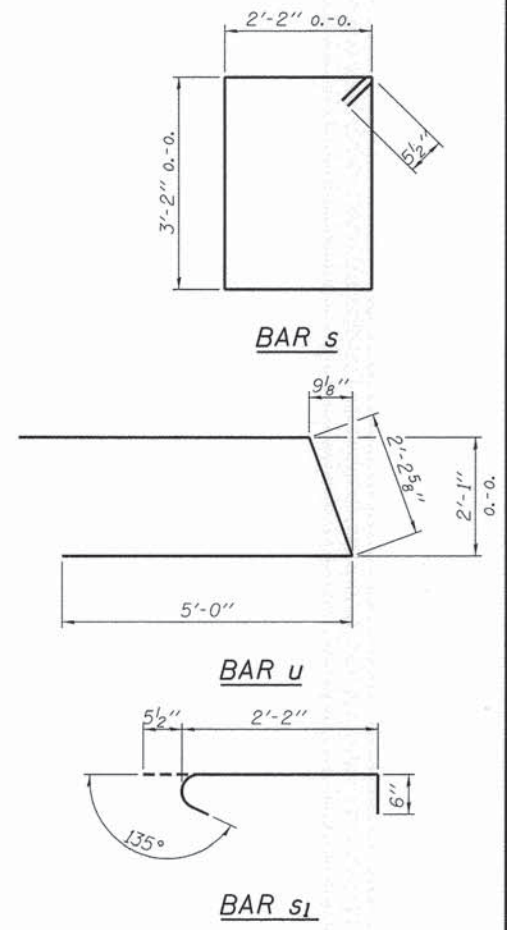
**ELEVATION**  
(Looking East)

Note: Extend h bars into abutment cap.



**SECTION A-A**

Hatched area to be poured after beams are in place.



**PILE DATA**

Type: Steel HPI0x42  
 No. Req'd. (E. Abut.): 4  
 Factored Resistance Available (RF): 184 Kips/Pile  
 Nominal Required Bearing (Rn): 335 Kips/Pile  
 Est. Length: 20 Ft/Pile

Notes: \* Includes one test pile to be driven in a permanent location at the East Abutment.

The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

**BILL OF MATERIAL - E. ABUT.**

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#4	8'-3"	—
h1	4	#4	6'-9"	—
h2	2	#4	31'-1"	—
p	8	#7	31'-1"	—
p1	10	#4	31'-1"	—
s	22	#5	11'-7"	□
s1	8	#5	3'-2"	┌
u	8	#6	12'-3"	└
v	12	#5	3'-6"	—
v1	12	#5	4'-6"	—
v2	8	#5	5'-6"	—
v3	64	#5	3'-2"	—
Concrete Structures		Cu. Yd.	14.9	
Reinforcement Bars, Epoxy Coated		Pound	1,680	
Steel Piles HPI0x42		Foot	60	
Test Pile Steel HPI0x42		Each	1	
Concrete Sealer		Sq. Ft.	57	

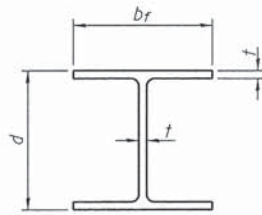
All reinforcement bars shall be epoxy coated

FILE NAME = 148341-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
2085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62761	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184-000959	PLOT DATE = 2/9/2015	CHECKED - D.A.B.	REVISED -

**STATE OF ILLINOIS**  
**CRAWFORD COUNTY HIGHWAY DEPARTMENT**

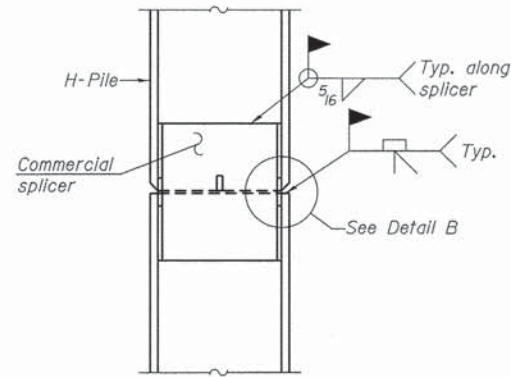
**EAST ABUTMENT**  
**STRUCTURE NO. 017-3640**  
 SHEET NO. 7 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
293	05-06130-00-BR	CRAWFORD	11	9
MONTGOMERY ROAD DISTRICT		CONTRACT NO. 95758		
ILLINOIS FED. AID PROJECT				

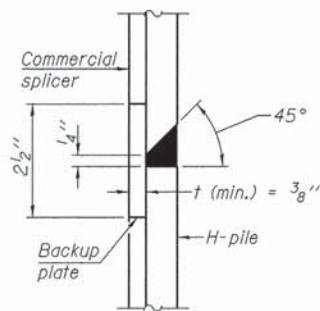


**STEEL PILE TABLE**

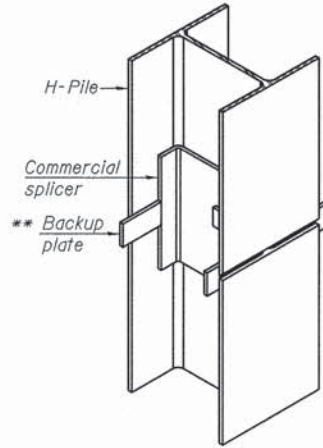
Designation	Depth d	Flange width b <sub>f</sub>	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



**ELEVATION**

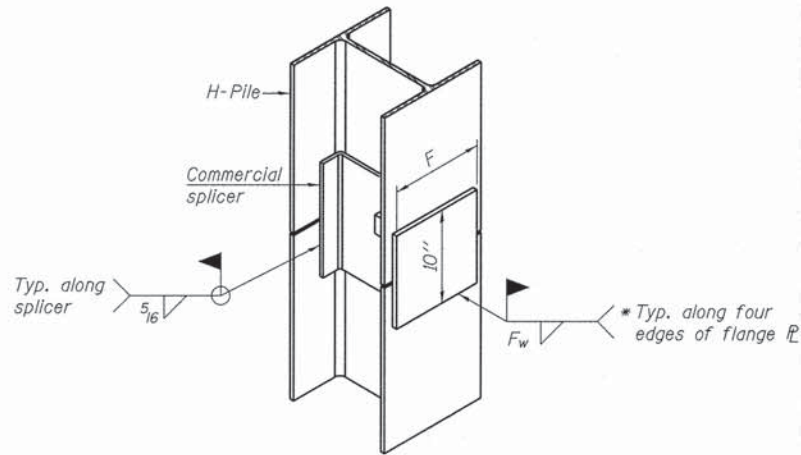


**DETAIL "B"**



**ISOMETRIC VIEW**

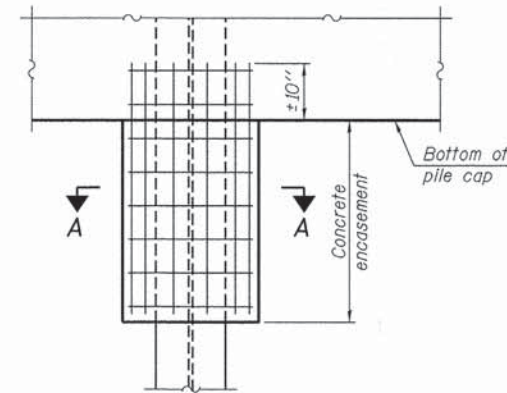
**WELDED COMMERCIAL SPLICE**



**ISOMETRIC VIEW**

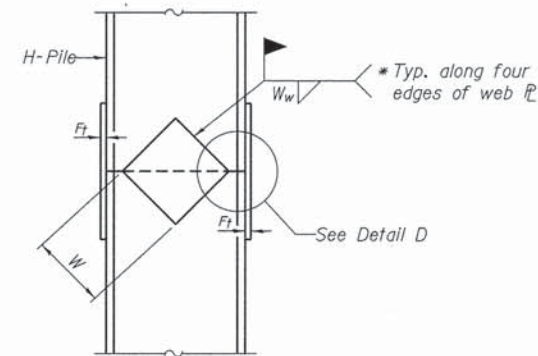
**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plates that extend outside the flanges.
- \*\*\* Weld size per pile shoe manufacturer (5/16" min.).

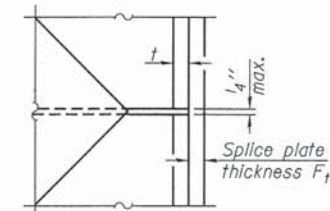


**ELEVATION**

**PILE ENCASEMENT  
(Not Required)**

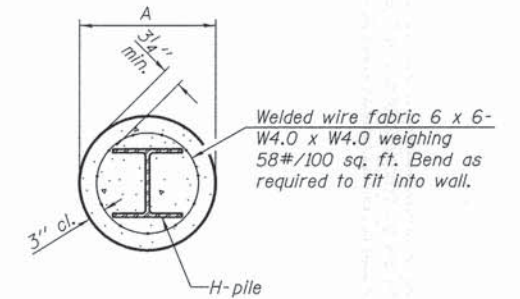


**ELEVATION**



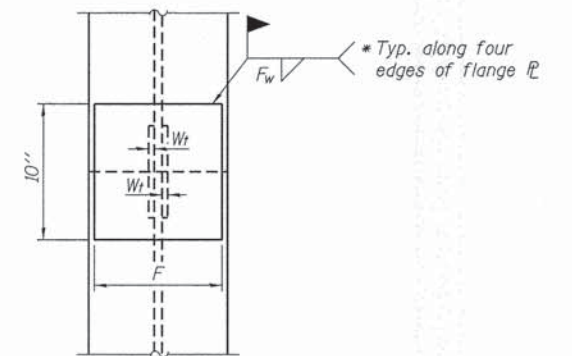
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

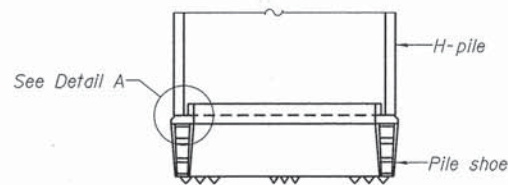


**SECTION A-A**

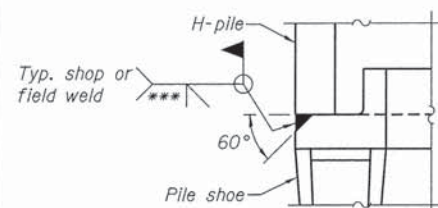
Note:  
Forms for encasement may be omitted when soil conditions permit.



**END VIEW**



**ELEVATION**



**DETAIL A**

**H-PILE SHOE ATTACHMENT**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 1/2"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 1/2"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5 1/2"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 1/2"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5 1/2"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP 1-27-12

FILE NAME = 140341-eh1-brsidge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	<b>STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 017-3640</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3545 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -			293	05-06130-00-BR	CRAWFORD	11	10	
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000989	PLOT SCALE =	DRAWN - R.D.H.	REVISED -			MONTGOMERY ROAD DISTRICT		CONTRACT NO. 95758			
	PLOT DATE = 2/9/2015	CHECKED - D.A.B.	REVISED -			SHEET NO. 8 OF 9 SHEETS		ILLINOIS FED. AID PROJECT			

Bridge Foundation Boring Log

Project: H-07017 Bridge Station 1+92 Date: 01/18/07  
Section: 05-06130-00-BR Bored by: D. Russell  
Route: Montgomery R.D. Checked By: T. Holcomb  
County: Crawford

Boring No:	Station:	Offset:	Elevation	N	Qu	tsf	w	%	Surface Water Elev.	Ground Water Elev.	Upon Completion
1	1+73	9' RT.	459.7	0							
			458.0								
				3	0.68	25					
			453.7								
				2	0.58	26					
			453.7								
				7	1.78	24					
			450.2								
				7	1.08	35					
			448.7								
				19	3.95	16					
			446.2								
				60	4.75	8					
				100/6"	4.05	8					
				100/5"		4					
			437.7								
				100/5"		6					

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
Qu - Unconfined Compressive Strength in tons/sq.ft.  
w - Water Content - percentage of oven dry weight-%  
B = Bulge Failure  
S = Shear Failure  
E = Estimated Value  
P = Penetrometer

BORING-1

Bridge Foundation Boring Log

Project: H-07017 Bridge Station 1+92 Date: 01/18/07  
Section: 05-06130-00-BR Bored by: D. Russell  
Route: Montgomery R.D. Checked By: T. Holcomb  
County: Crawford

Boring No:	Station:	Offset:	Elevation	N	Qu	tsf	w	%	Surface Water Elev.	Ground Water Elev.	Upon Completion
2	2+09	7' LT.	459.7	0							
				3	0.78	22					
			456.2								
				5		24					
			453.7								
				5	0.78	19					
				5	1.08	41					
			448.7								
				30	1.15	20					
			446.2								
				50	5.45	13					
				100/5"		5					
				100/6"		5					
			438.2								
				100/6"		5					

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
Qu - Unconfined Compressive Strength in tons/sq.ft.  
w - Water Content - percentage of oven dry weight-%  
B = Bulge Failure  
S = Shear Failure  
E = Estimated Value  
P = Penetrometer

BORING-2