

**INDEX OF SHEETS**

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2	PLAN & PROFILE, TYPICAL SECTIONS, GENERAL NOTES & STONE RIPRAP DITCH DESIGN
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**HIGHWAY STANDARDS**

000001-06	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS (8 SHEETS)
515001-03	NAME PLATE FOR BRIDGES (2 SHEETS)
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-04	TRAFFIC CONTROL DEVICES (3 SHEETS)
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.3
20200100	EARTH EXCAVATION	CU YD	419.0
20300100	CHANNEL EXCAVATION	CU YD	190.0
20400800	FURNISHED EXCAVATION	CU YD	384.0
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	370.0
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	365.0
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.0
50300225	CONCRETE STRUCTURES	CU YD	27.0
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SO FT	1560.0
50800105	REINFORCEMENT BARS	POUND	2780.0
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	127.0
51201400	FURNISHING STEEL PILES 10X42	FOOT	320.0
51202305	DRIVING PILES	FOOT	320.0
51500100	NAME PLATES	EACH	1.0
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	60.0
58700300	CONCRETE SEALER	SO FT	98.0
• 67100100	MOBILIZATION	L SUM	1.0
Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.0
• X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
• Z0068900	STONE LINED DITCH	TON	182.0

Δ SPECIALTY ITEMS

DESIGN DESIGNATION:  
 DESIGN SPEED: 30 MPH  
 HIGHWAY CLASS - LOCAL ROAD  
 EXISTING STRUCTURE NO.: 097-3131  
 PROPOSED STRUCTURE NO.: 097-3290  
 CURRENT A.D.T. = 75  
 CONTRACT NO. 99561



Know what's below.  
 Call before you dig.

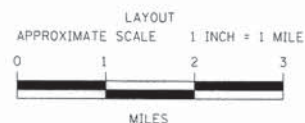
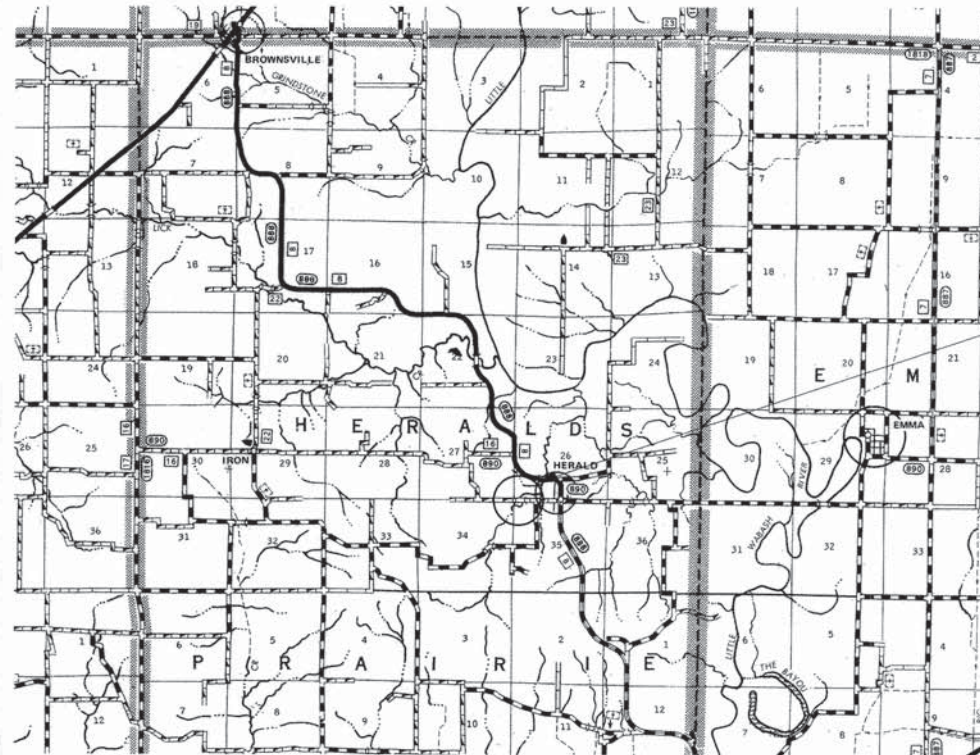
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**PLANS FOR PROPOSED  
 FEDERAL AID – S.T.P. BRIDGE**

T.R. 349 WHITE COUNTY SECTION 11-07122-00-BR

PROJECT NO. BROS-193(067) JOB NO. C-99-538-12

CONTRACT #99561 LITTLE WABASH TRIBUTARY



GROSS LENGTH	525.00 FT	0.099 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	525.00 FT	0.099 MILES

SECTION 11-07122-00-BR  
 BEGINS STATION 2+10

STA 5+00, STRUCTURE NO. 097-3290,  
 A 65' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH  
 27" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS,  
 24' WIDTH, ON 3.0% GRADE, 20° LT. FWD. SKEW.

SECTION 11-07122-00-BR  
 ENDS STATION 7+35

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

APPROVED October 16, 2015  
*Kevin A. Hill*  
 COUNTY ENGINEER

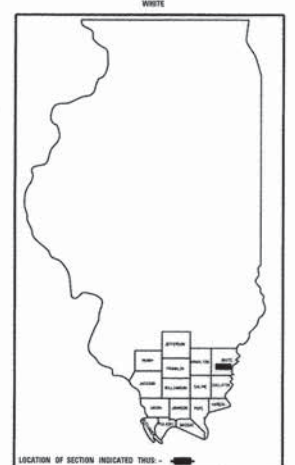
PASSED October 29, 2015  
*Dennis W. Hill*  
 ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID  
 BASED ON LIMITED  
 REVIEW: October 29, 2015  
*Jeffrey L. Keirn*  
 JEFFREY L. KEIRN, P.E.  
 DEPUTY DIRECTOR OF HIGHWAYS  
 REGION FIVE ENGINEER

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
349	11-07122-00-BR	WHITE	13	1

FED. ROAD DIST. NO. 9 ILLINOIS  
 PROJECT # BROS-193(067)  
 LITTLE WABASH TRIB.  
 CONTRACT # 99561  
 LEC JOB # H4E1019WH

323 W. 3RD ST.  
 P.O. BOX 160  
 MT. CARMEL, IL.  
 62863  
 PHONE:  
 (618)-262-8651  
 FAX:  
 (618)-263-3327



PROFESSIONAL DESIGN FIRM  
 LAND SURVEY &  
 PROFESSIONAL ENGINEERING CORPORATION  
 184-00887  
 (62-032435)(35-002769)



AARON M. MEFFORD  
 NAME  
*Aaron M. Mefford*  
 SIGNATURE  
 10-15-15  
 DATE  
 11-30-15  
 EXPIRES

TOWNSHIP ROUTE 349  
 OVER LITTLE WABASH TRIB.  
 WHITE COUNTY, ILLINOIS

SHEET TITLE:

TITLE SHEET

SCALE:	VARS
BY:	AMM.
DATE:	10/15/15
REV:	

1 OF 13 SHEETS

SHEET NO. 1



**GENERAL NOTES:**

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2012.

THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 65 FOOT LONG SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

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

AGGREGATE SURFACE COURSE, TYPE B INCLUDES 48 TON FOR FILL NEXT TO THE BRIDGE, 31 TON FOR THE ENTRANCE, AND 286 TON FOR THE ROADWAY.

NOTE: CONSTRUCTION TRANSITION  
STA. 2+10 TO STA 2+60  
STA 6+85 TO STA 7+35

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
349	11-07122-00-BR	WHITE	13	2
PROJECT * BR05-193067		CONTRACT * 99561		
LEC JOB * H410199H				

323 W. 3RD ST.  
P.O. BOX 160  
MT. CARMEL, IL  
62863

PHONE:  
(618)-262-8651  
FAX:  
(618)-263-3327

PROFESSIONAL DESIGN FIRM  
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION  
184-00887  
(62-032435)(35-002769)



AARON M. MEFFORD  
NAME  
Signature  
10-15-15  
DATE  
11-30-15  
EXPIRES

TOWNSHIP ROUTE 349  
OVER LITTLE WABASH TRIBUTARY  
WHITE COUNTY, ILLINOIS

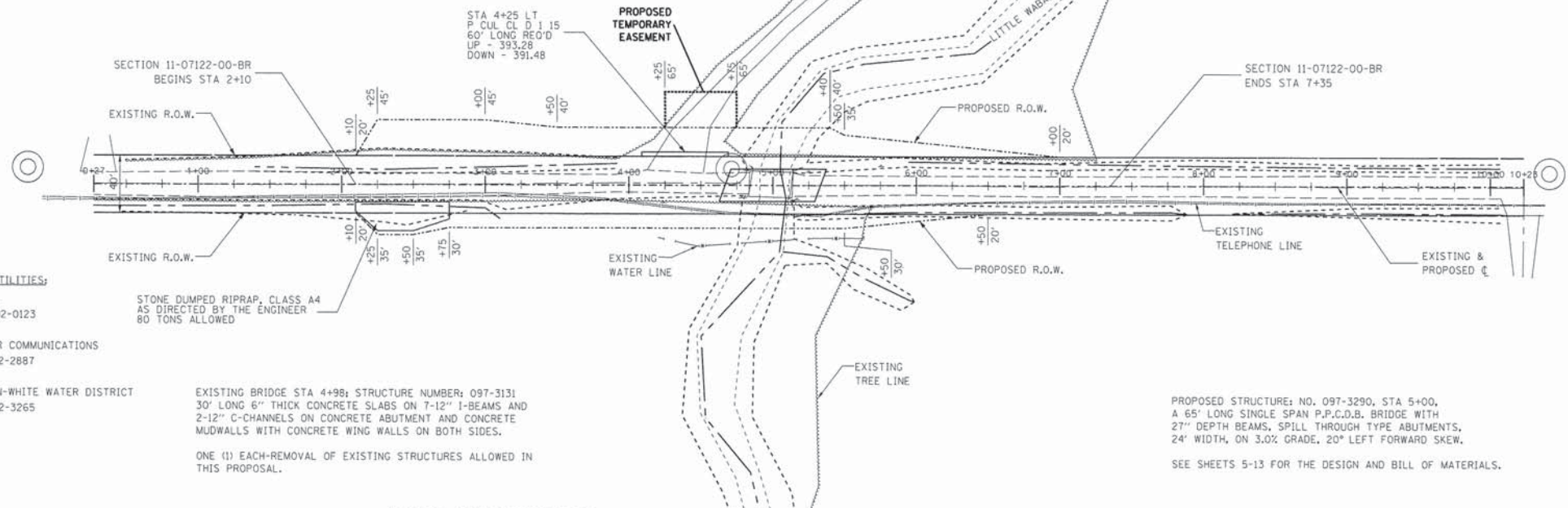
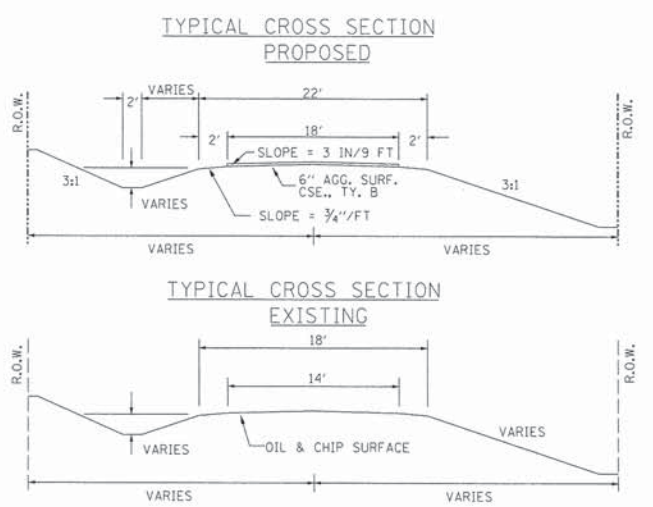
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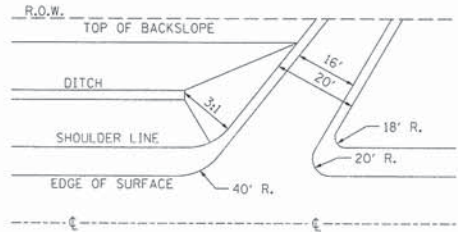
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BY: A.M.M.  
DATE: 10/15/15  
REV:

2 OF 13  
SHEETS

SHEET NO.  
2



**STA 4+25 LT FIELD ENTRANCE DETAIL**



NOTE: CONSTRUCT SPECIAL DITCH

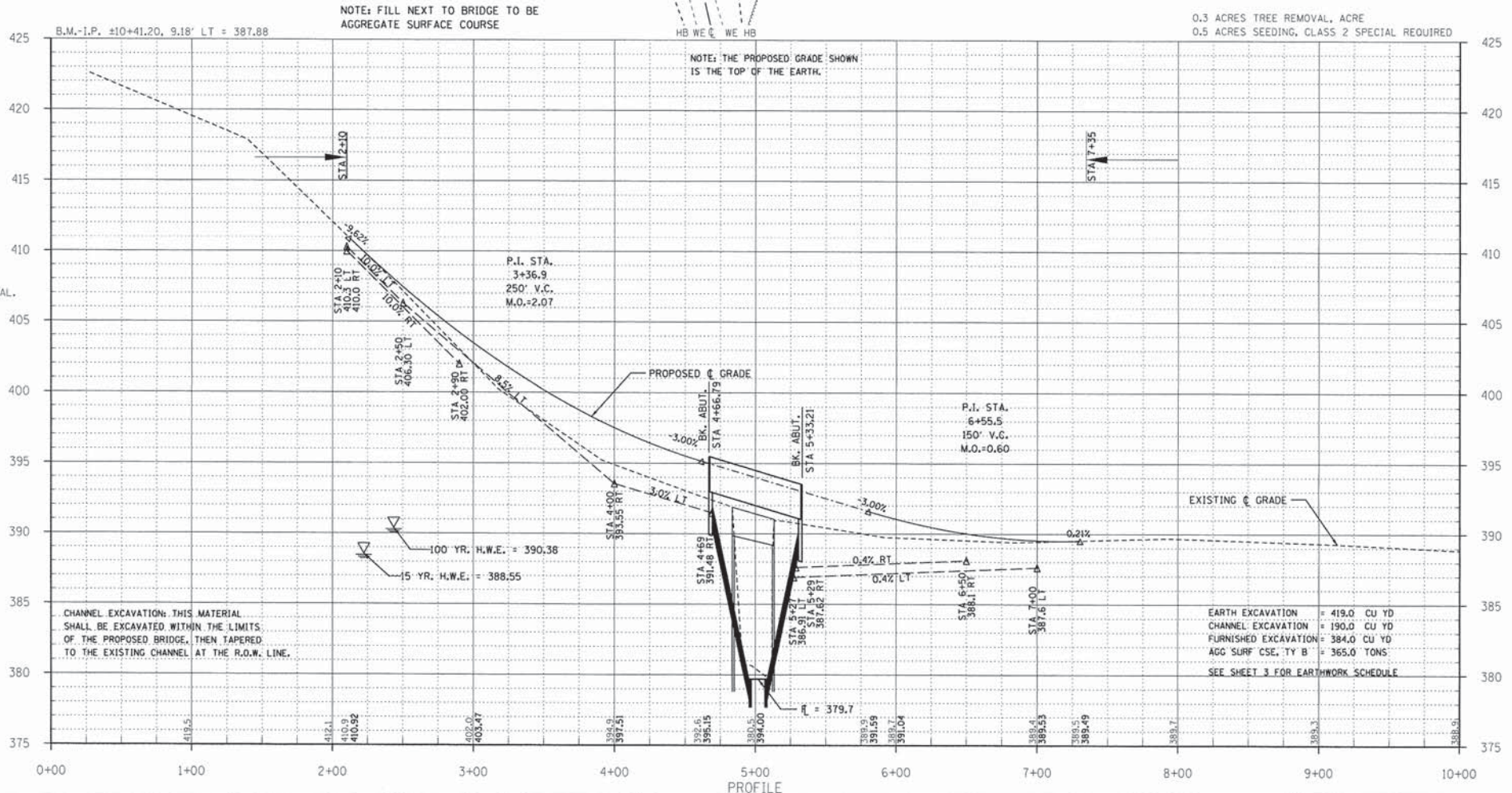
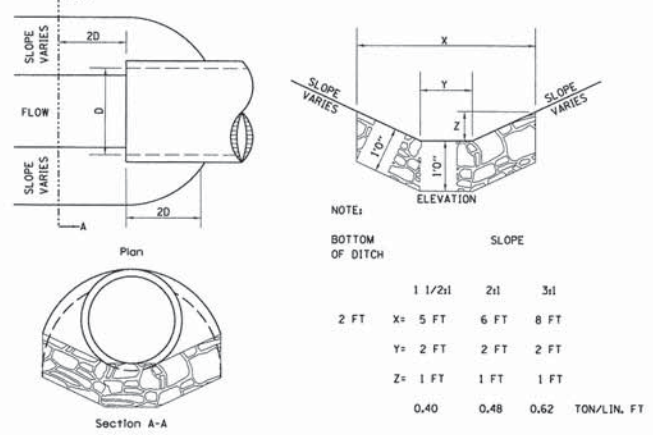
STA 2+10 TO STA 4+69 LT  
STA 2+10 TO STA 2+90 RT  
STA 5+27 TO STA 7+00 LT  
STA 5+29 TO STA 6+50 RT

NOTE: CONSTRUCT STONE LINED DITCH

STA 2+10 TO STA 4+09 LT (0.62 TON/LIN FT)  
STA 5+27 TO STA 5+75 LT (0.62 TON/LIN FT)  
STA 5+29 TO STA 5+75 RT (0.62 TON/LIN FT)  
182 TON STONE LINED DITCH ALLOWED IN PROPOSAL.

SEE STONE LINED DITCH DETAIL.

**STONE LINED DITCH DESIGN**





TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
349	11-07122-00-BR	WHITE	13	3
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT# BROS-19310671		CONTRACT# 99561		
JOB NO. C-99-538-12		LITTLE WABASH TRIB.		
TAX:		PHONE:		
LEC JOB # H441019W		(618)-262-8661		
		(618)-263-3327		

323 W. 3RD ST.  
P.O. BOX 160  
MT. CARMEL, IL  
62863  
PHONE:  
(618)-262-8661  
FAX:  
(618)-263-3327

PROFESSIONAL DESIGN FIRM  
LAND SURVEY &  
PROFESSIONAL ENGINEERING CORPORATION  
184-000887  
(62-032435)(35-002789)



AARON M. MEFFORD  
NAME  
*Aaron M. Mefford*  
SIGNATURE  
10-15-15  
DATE  
11-30-15  
EXPIRES

TOWNSHIP ROUTE 349  
OVER LITTLE WABASH TRIB.  
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

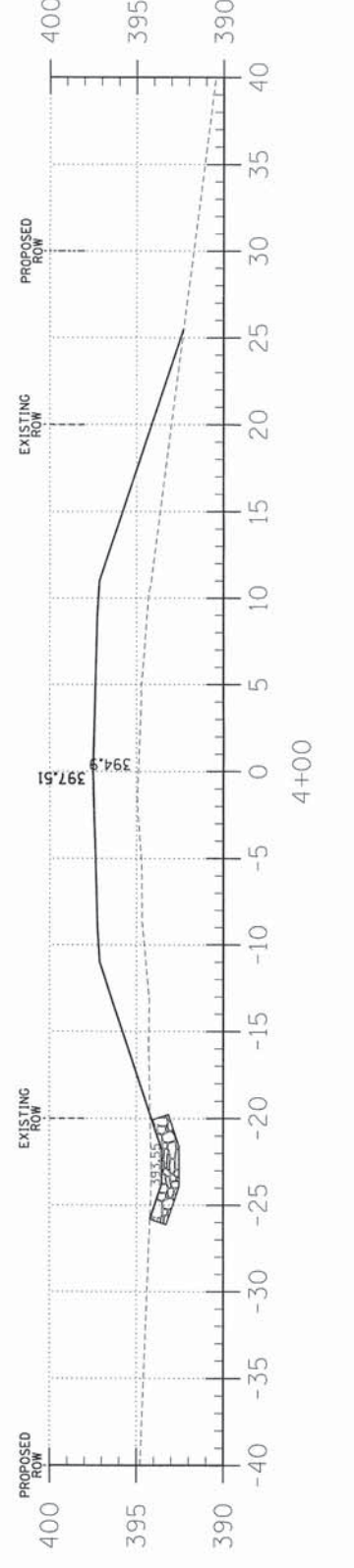
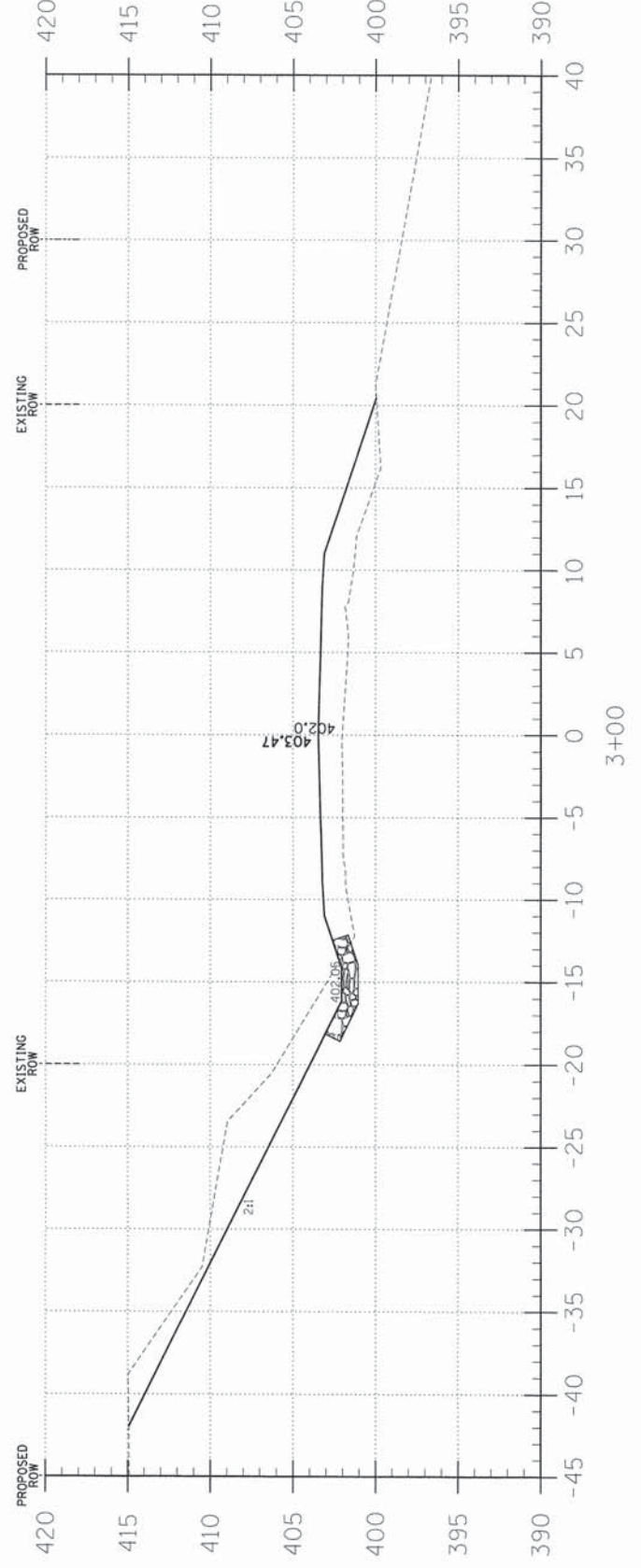
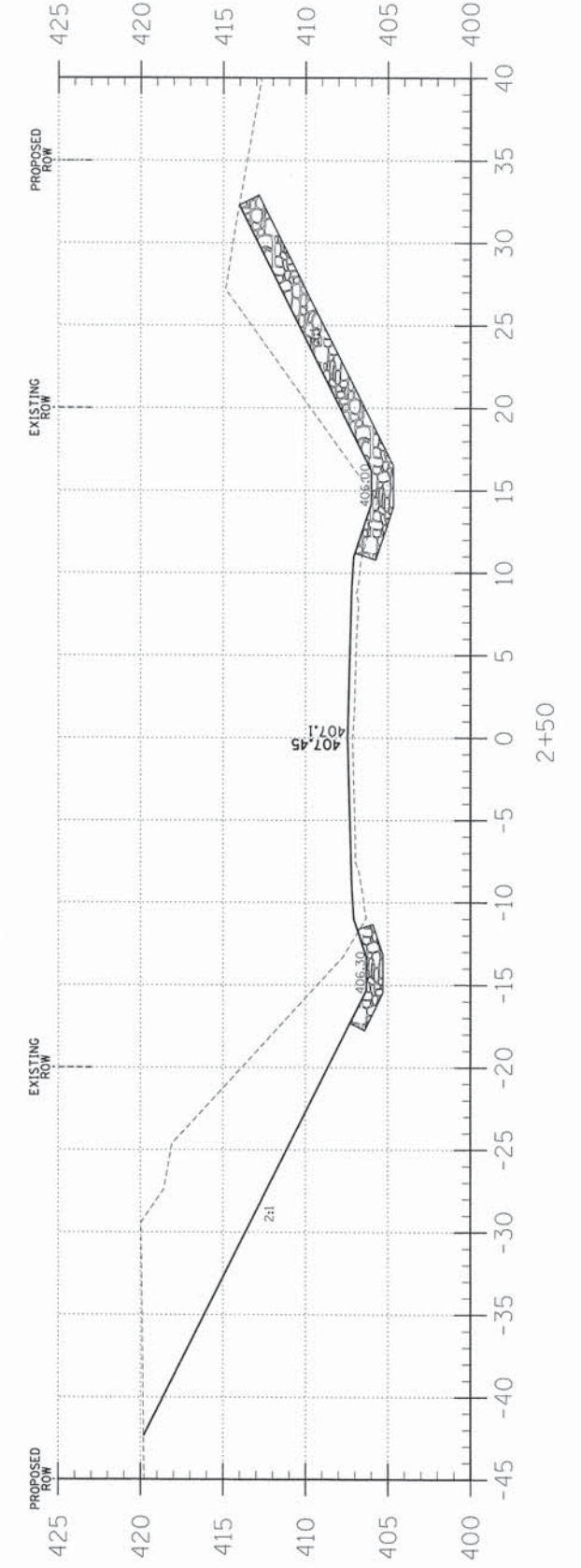
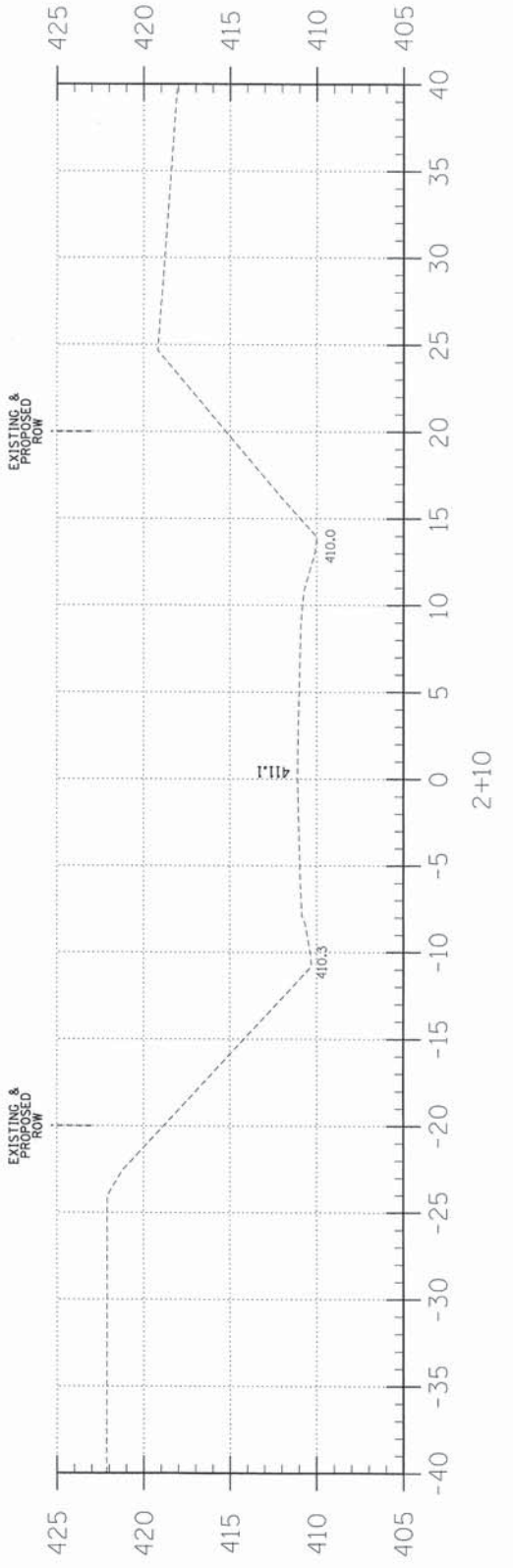
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BY: AMM  
DATE: 9/9/15  
REV:

3 OF 13  
SHEETS

SHEET NO.  
3

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+66.8	371.3	0.0	0.0	276.5	521.5	-243.0
STA 4+66.8 TO 5+33.2	0.0	190.0	95.0	71.3	0.0	+71.3
STA 5+33.2 TO 10+00	47.3	0.0	0.0	35.5	197.5	-162.0
1 FIELD ENTRANCE	0.0	0.0	0.0	0.0	50.3	-50.3
TOTAL	418.6	190.0	95.0	385.3	769.2	-384.0

EARTHWORK SCHEDULE

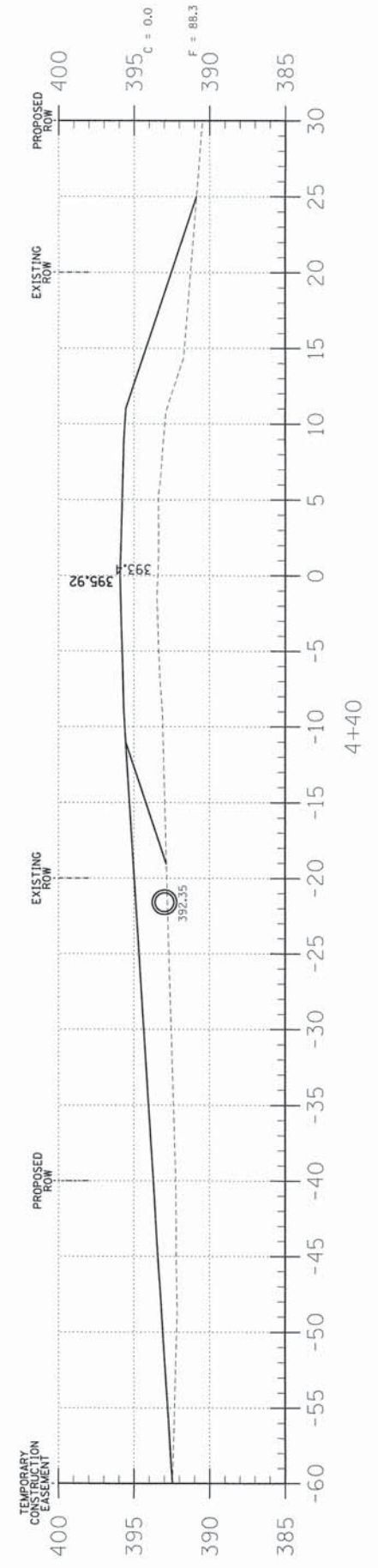
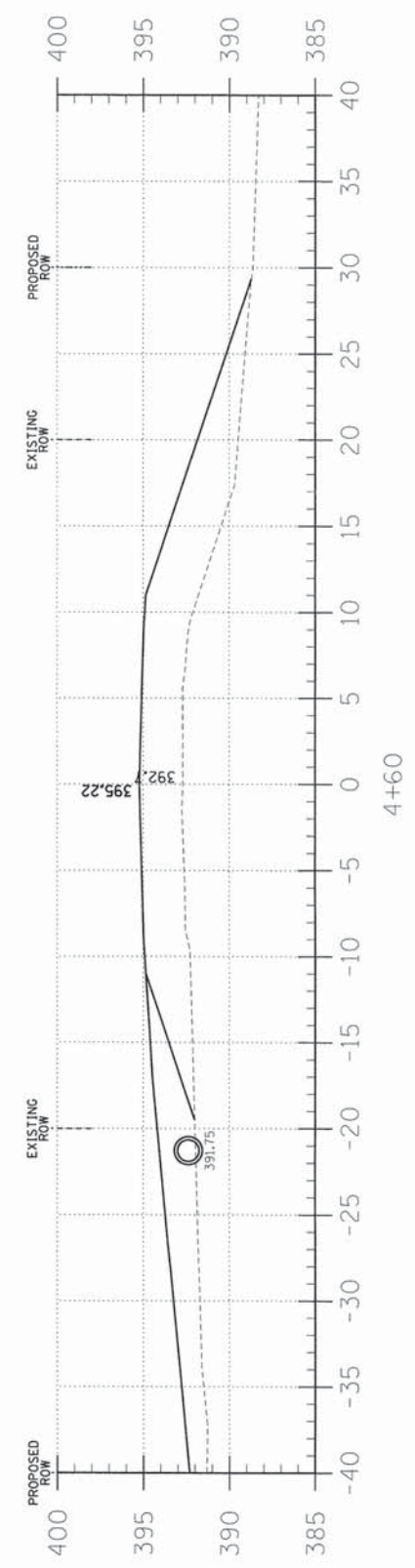
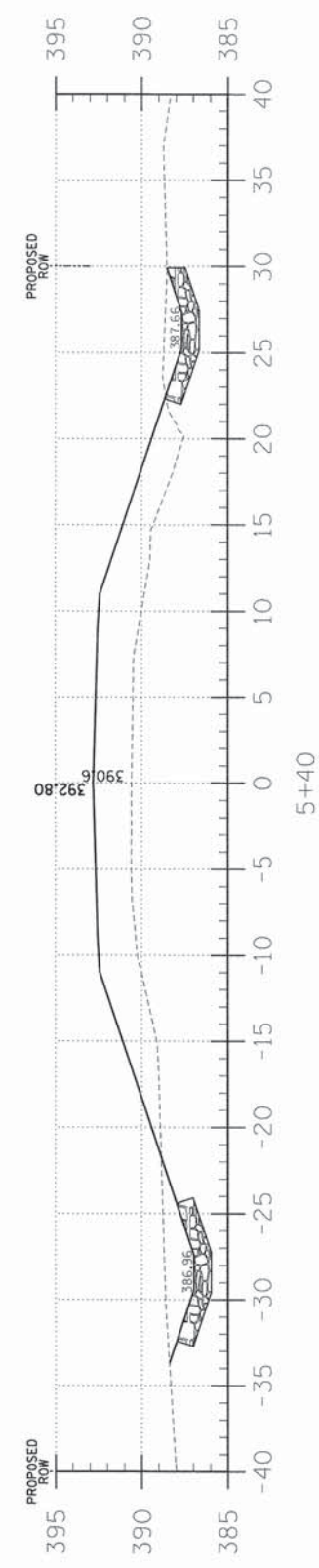
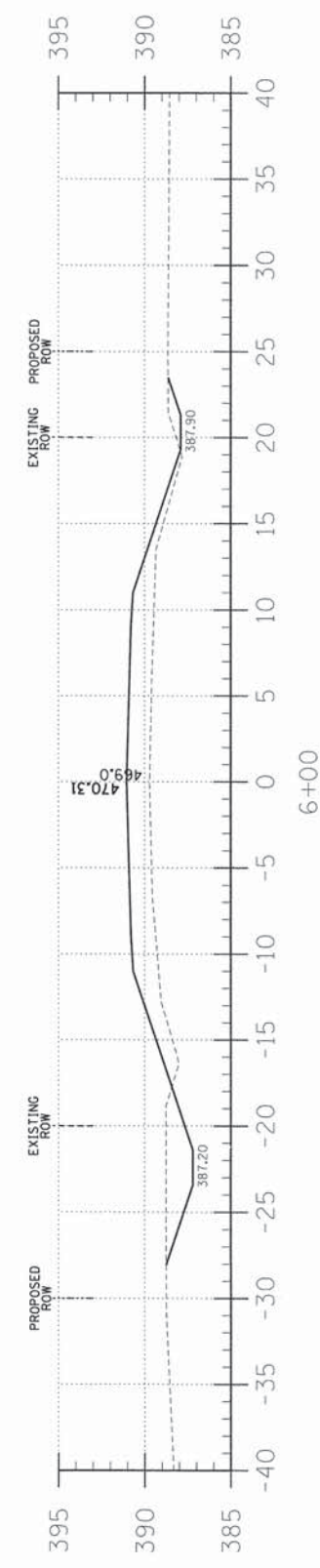
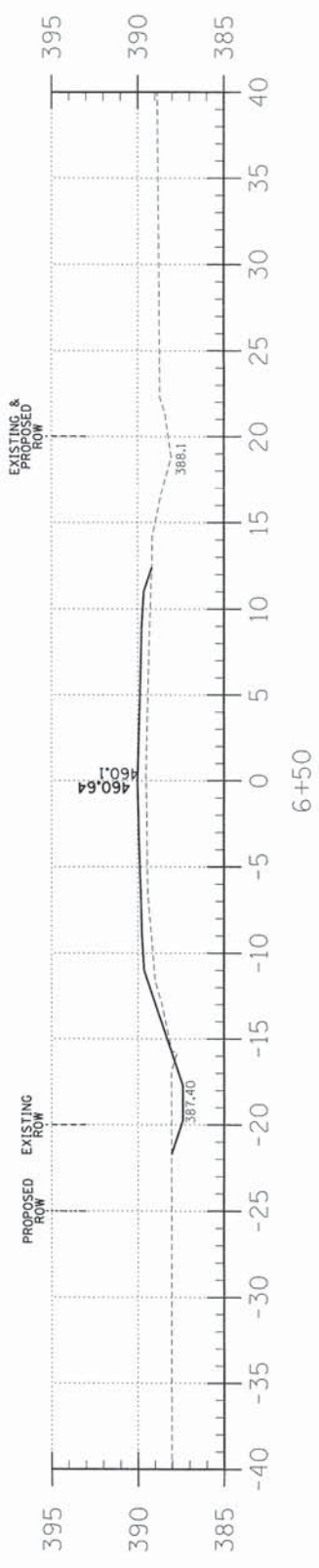
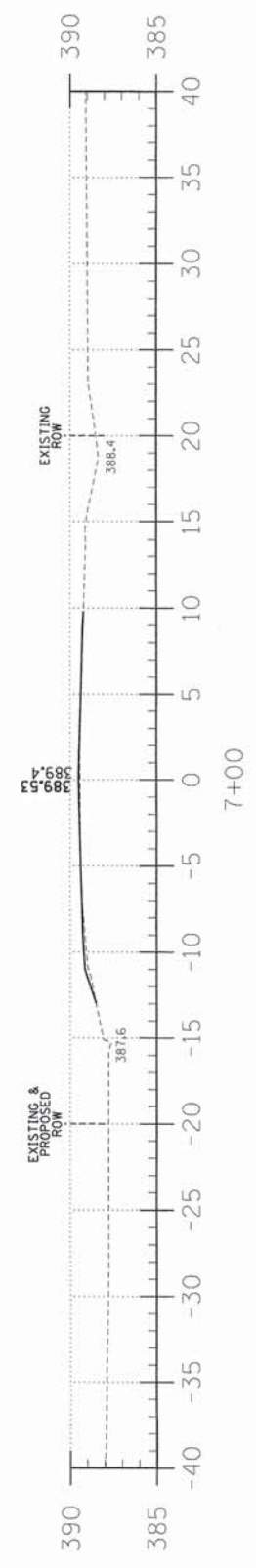
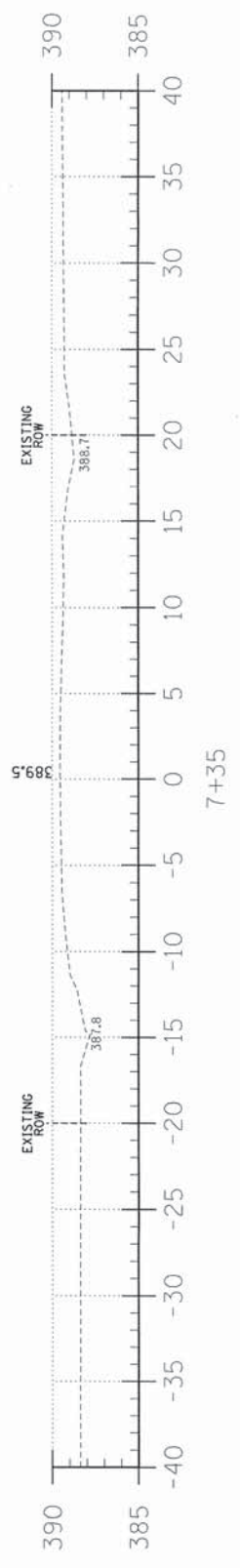


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F = 48.3

C = 161.8  
F = 10.2





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F = 84.1

C = 0.0  
F = 103.7

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
349	11-07122-00-BR	WHITE	13	4
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT# BROS-19310671		CONTRACT# 99561		
JOB NO. C-99-538-12		LITTLE WABASH TRIB.		
LEC JOB # H410199M				

323 W. 3RD ST.  
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PROFESSIONAL  
ENGINEERING  
CORPORATION  
184-00887  
(62-032435)(35-002769)



AARON M. MEFFORD  
NAME  
*Aaron Mefford*  
SIGNATURE  
10-15-15  
DATE  
11-30-15  
EXPIRES

TOWNSHIP ROUTE 349  
OVER LITTLE WABASH TRIB.  
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'  
BY: A.M.M.  
DATE: 9/9/15  
REV:

4 OF 13  
SHEETS

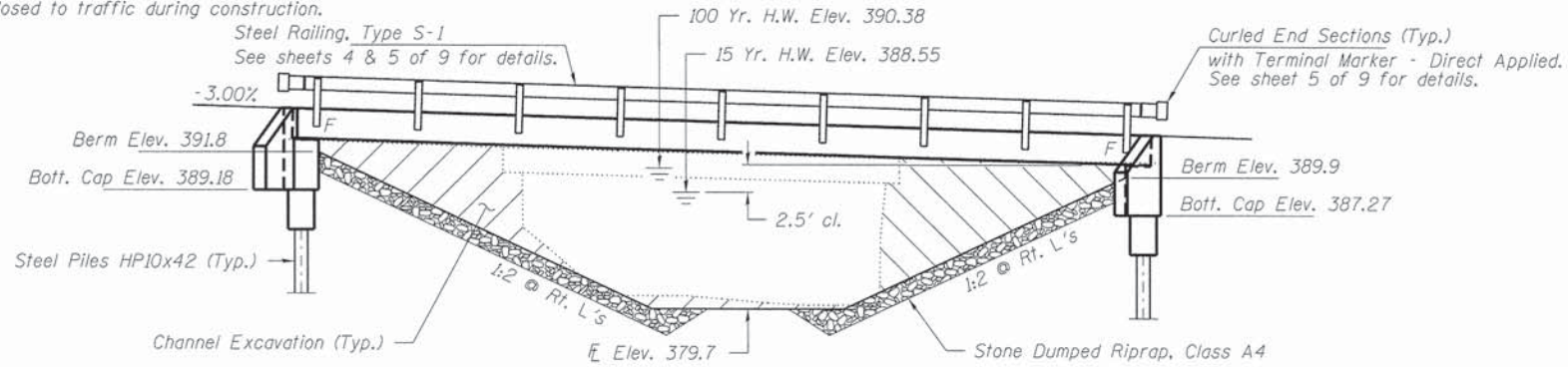
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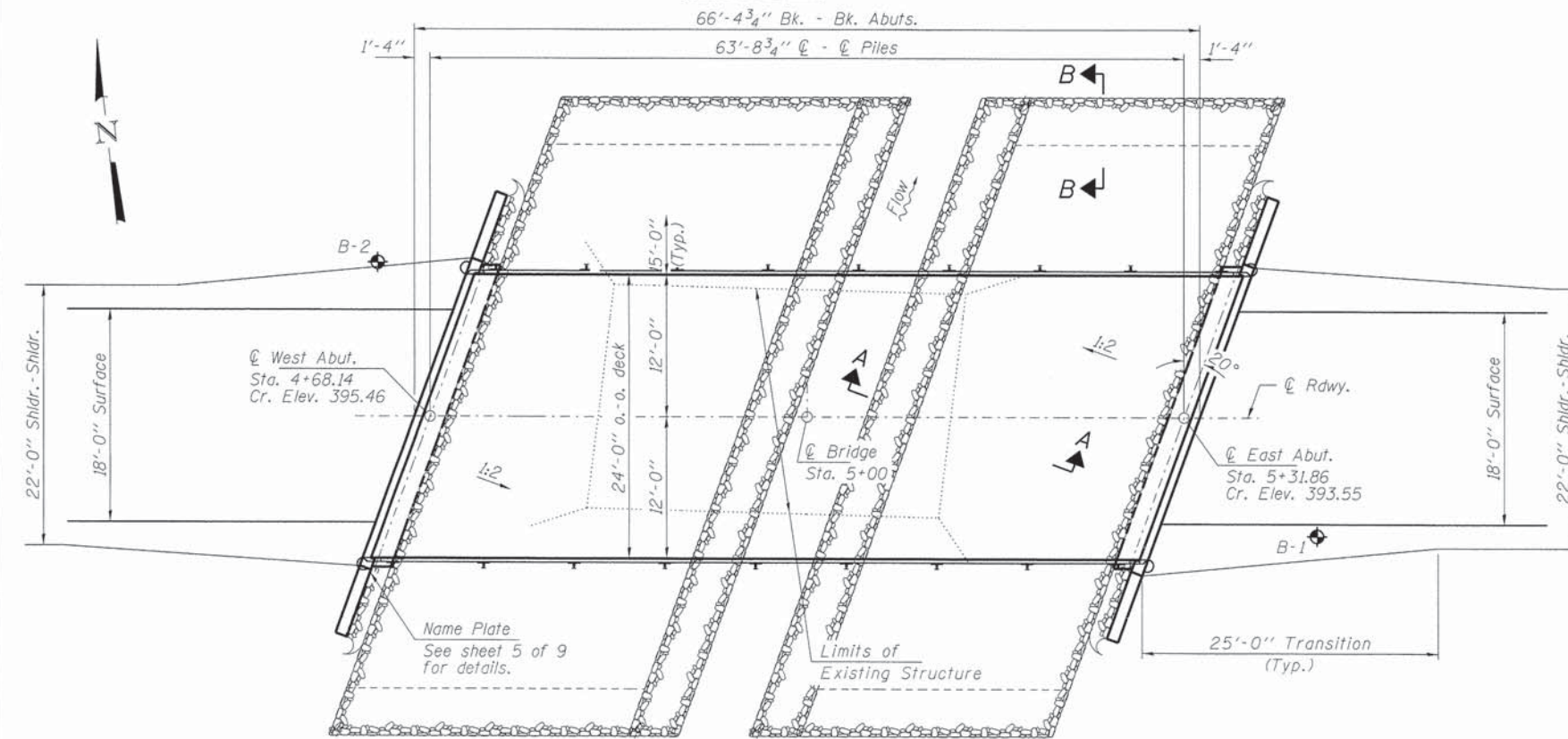
**BENCHMARK:**

EXISTING STRUCTURE: SN 097-3131; Sta. 4+98; Single span steel I-beam bridge with concrete deck on closed concrete abutments (6" concrete slab on 12" beams and C-channels). 30.0' Bk.-Bk. abuts.; 19.3' o.-o. deck

Structure closed to traffic during construction.



**ELEVATION**



**PLAN**

**DESIGN SCOUR ELEVATION TABLE**

Event/Limit State	Design Scour Elevations (ft.)		Item 113
	W. Abut.	E. Abut.	
0.100	389.2	387.3	8
0.200	389.2	387.3	
Design	389.2	387.3	
Check	389.2	387.3	

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2014 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) = 2  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.226g  
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.622g  
Soil Site Class = C

**WATERWAY INFORMATION**

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.	Headwater El. Exist. Prop.		
			Exist.	Prop.					
Design	15	818	204	266	388.55	0.73	0.06	391.11	390.44
Base	100	1450	230	364	390.38	0.73	0.06	391.11	390.44

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."

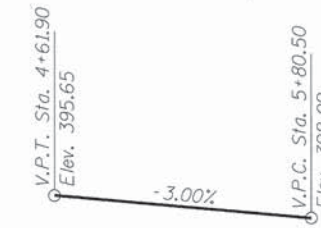
*Steven W. Megginson* 10/15/2015  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



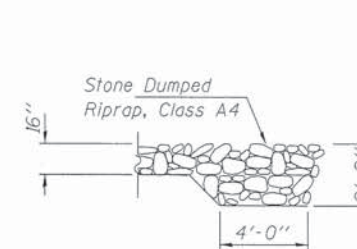
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**GENERAL NOTES**

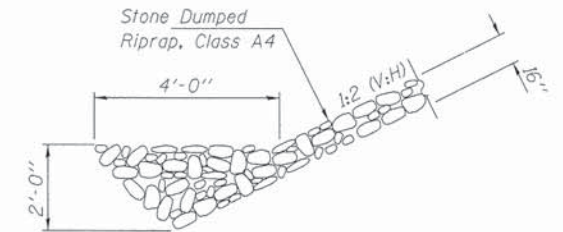
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions. Excavation required to construct the Abutments shall be included in the cost of Concrete 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. All bars shall be epoxy coated.



**PROFILE GRADE**



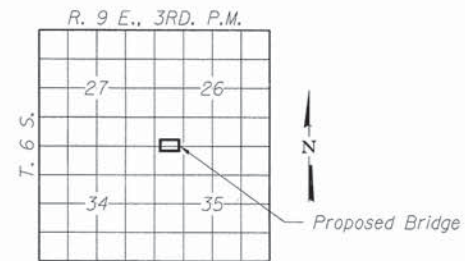
**SECTION B-B**



**SECTION A-A**

**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**

BUILT 2011 BY  
WHITE COUNTY  
SEC. 11-07122-00-BR  
HERALDS PRAIRIE ROAD DISTRICT  
STR. NO. 097-3290  
LOADING HL-93

**NAME PLATE**

See Std. 515001

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			190
Stone Dumped Riprap, Class A4	Ton			290
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		27.0	27.0
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,560		1,560
Reinforcement Bars, Epoxy Coated	Pound		2,780	2,780
Steel Railing, Type S-1	Foot	127		127
Furnishing Steel Piles HP10x42	Foot		320	320
Driving Piles	Foot		320	320
Name Plates	Each		1	1
Concrete Sealer	Sq. Ft.		98	98
Terminal Marker - Direct Applied	Each	4		4

FILE NAME = 148327-sh1-bridge.dgn	USER NAME = #USER#	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3058 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184.000098	PLOT SCALE = #SCALE#	CHECKED - S.W.M.	REVISED -
	PLOT DATE = 10/15/2015	DRAWN - D.A.B.	REVISED -
		CHECKED - S.W.M.	REVISED -

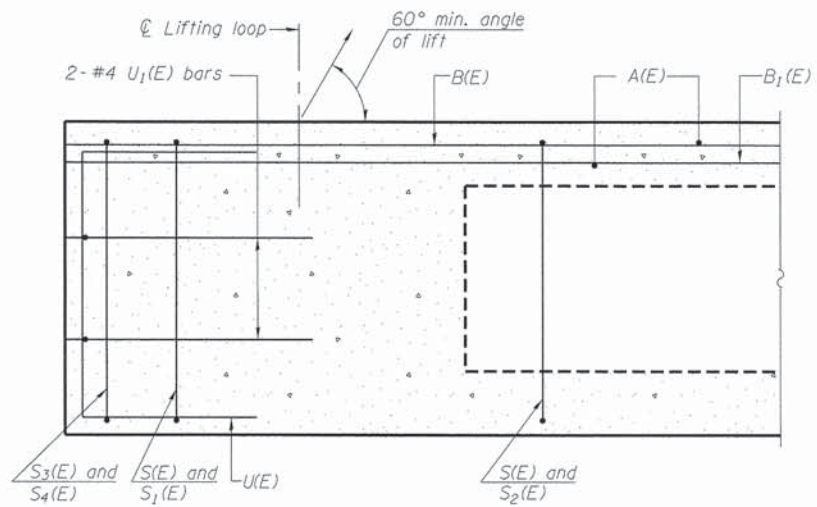
STATE OF ILLINOIS  
WHITE COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION  
STRUCTURE NO. 097-3290

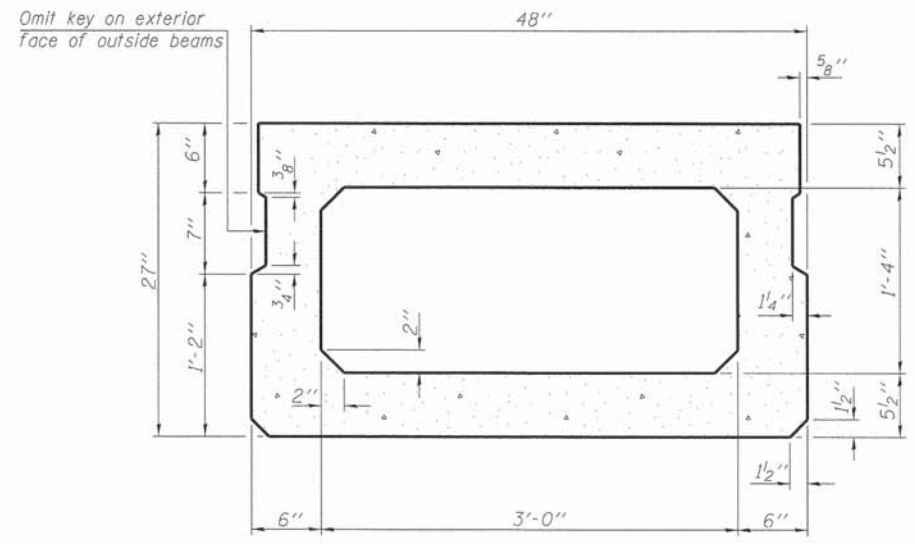
SHEET NO. 1 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
349	11-07122-00-BR	WHITE	13	5
HERALDS PRAIRIE ROAD DISTRICT			CONTRACT NO. 99561	
ILLINOIS FED. AID PROJECT BR05-0193067				



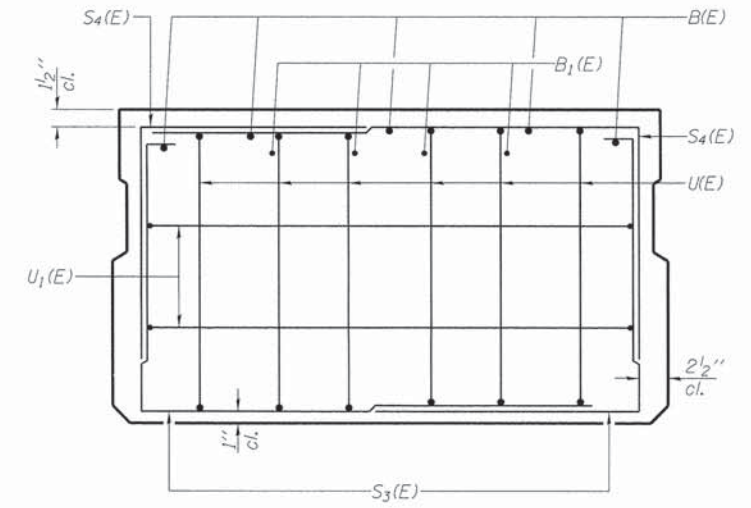


SECTION A-A

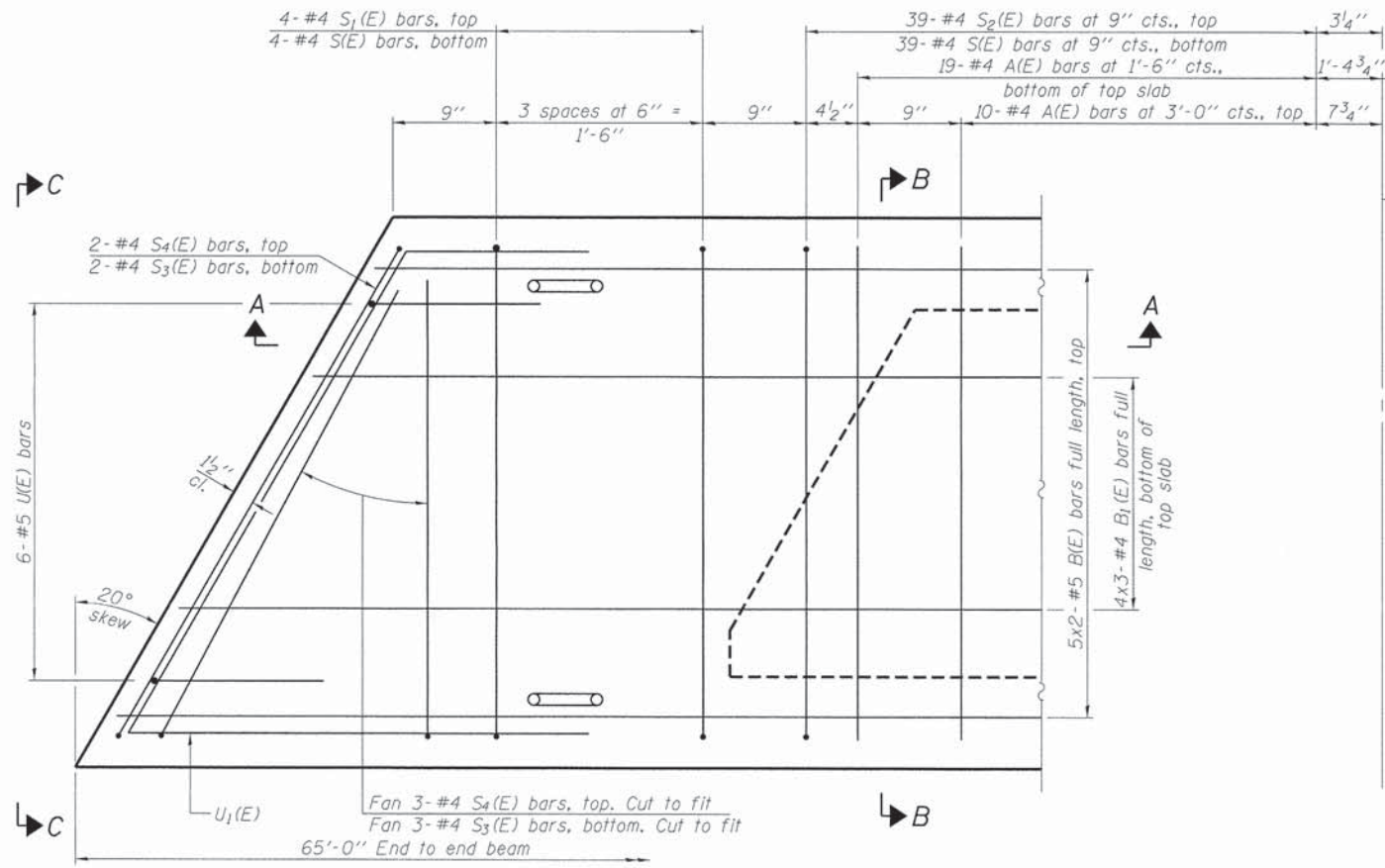


SECTION B-B

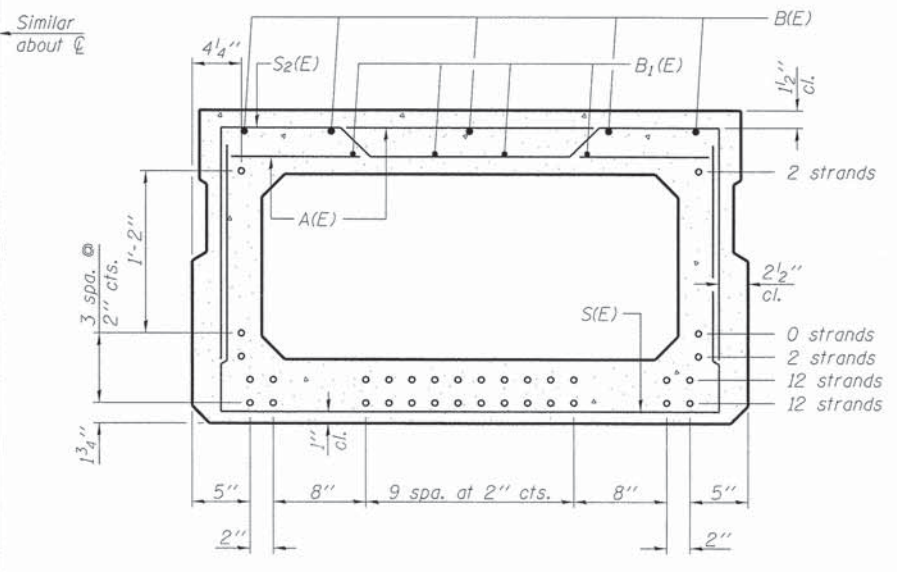
(Showing dimensions)



VIEW C-C



PLAN VIEW



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)	59	#4	3'-7"	—
B(E)	10	#5	33'-8"	—
B1(E)	12	#4	22'-11"	—
S(E)	86	#4	8'-5"	U
S1(E)	8	#4	6'-11"	U
S2(E)	78	#4	7'-2"	U
S3(E)	10	#4	5'-4"	U
S4(E)	10	#4	4'-7"	U
U(E)	12	#5	4'-6"	U
U1(E)	4	#4	7'-6"	U

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

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.

MINIMUM BAR LAP

#4 bar = 1'-11"  
#5 bar = 2'-6"

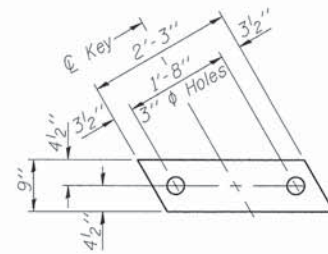
PD-2748-L 6-8-15

FILE NAME = 148327-sht-bridge.dgn	USER NAME = #USER#	DESIGNED - J.R.T.	REVISED -	<b>STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT</b>	<b>27" x 48" PPC DECK BEAM STRUCTURE NO. 097-3290</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 2055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L8 / PE / SE CORP. 184.000059	PLOT SCALE = #SCALE#	CHECKED - S.W.M.	REVISED -			349	11-07122-00-BR	WHITE	13	6
	PLOT DATE = 10/15/2015	DRAWN - D.A.B.	REVISED -			HERALDS PRAIRIE ROAD DISTRICT	CONTRACT NO. 99561			
		CHECKED - S.W.M.	REVISED -							

SHEET NO. 2 OF 9 SHEETS

ILLINOIS FED. AID PROJECT BR05-01931067

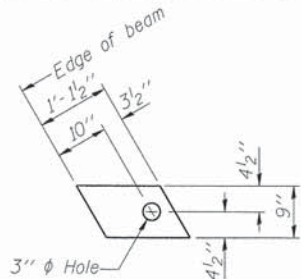




**FABRIC BEARING PAD**  
(Interior - 10 Required)

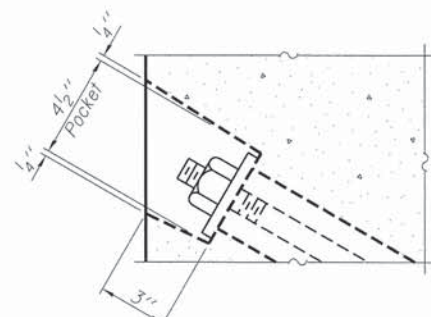
Notes:

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

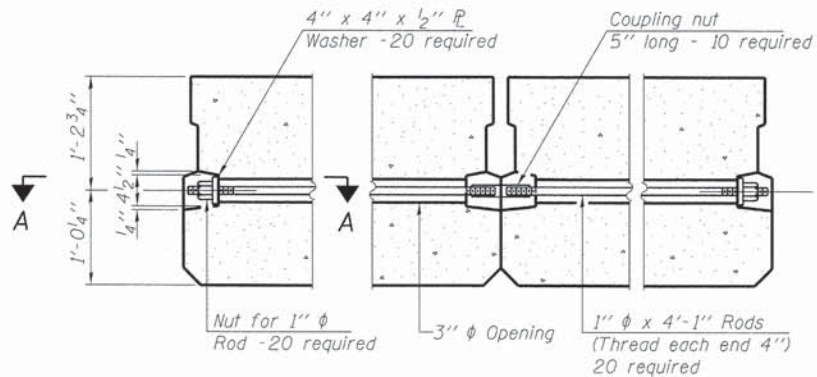


**FABRIC BEARING PAD**  
(Exterior - 4 Required)

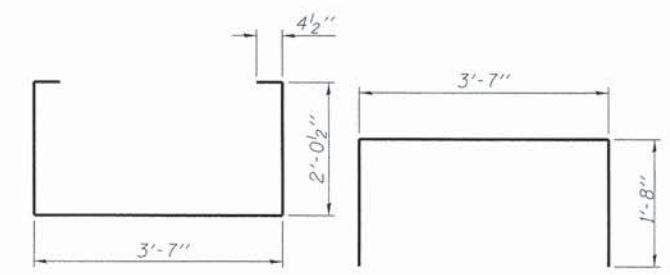
**FIXED**



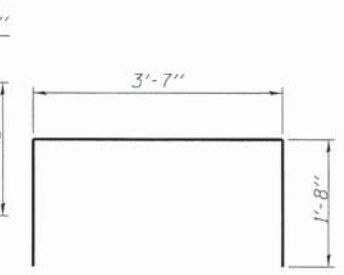
**SECTION A-A**



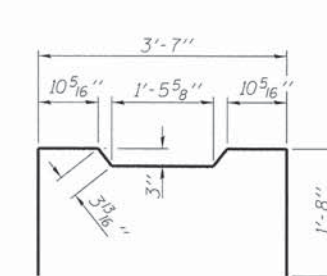
**TYPICAL TRANSVERSE TIE ASSEMBLY**



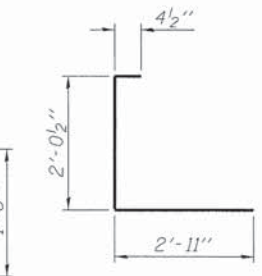
**BAR S(E)**



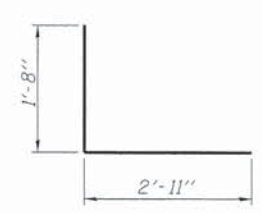
**BAR S1(E)**



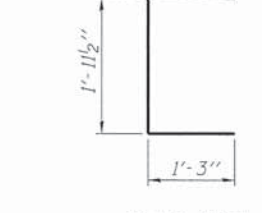
**BAR S2(E)**



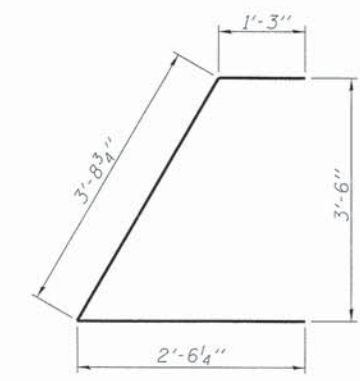
**BAR S3(E)**



**BAR S4(E)**



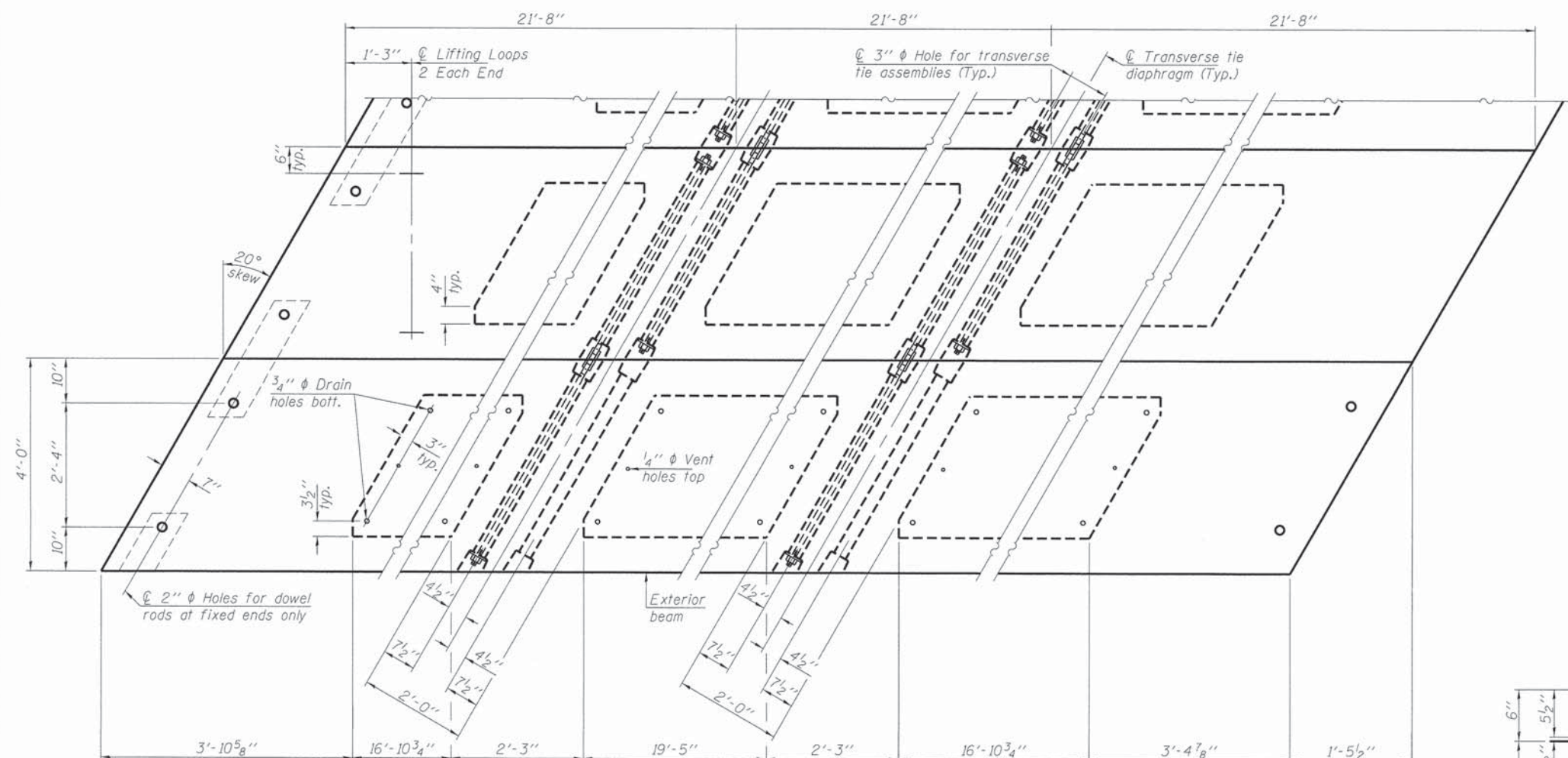
**BAR U(E)**



**BAR U1(E)**

**BILL OF MATERIAL**

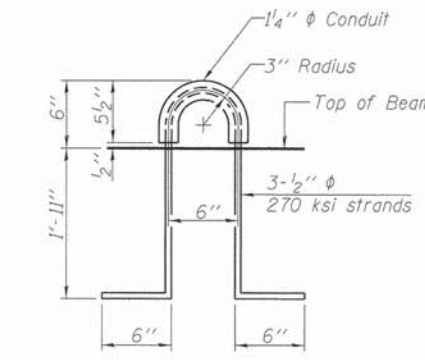
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,560
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**PLAN VIEW**

**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" diameter 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'ci, shall be 5000 psi.  
All reinforcement shall be epoxy coated.



**LIFTING LOOP DETAIL**

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

PD-2748-LD

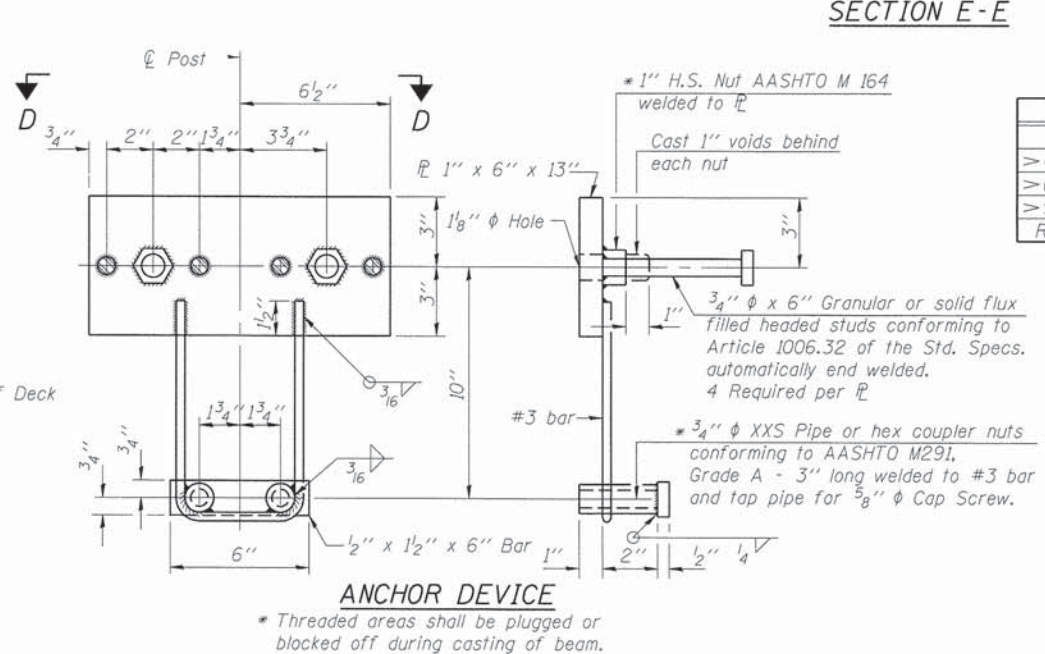
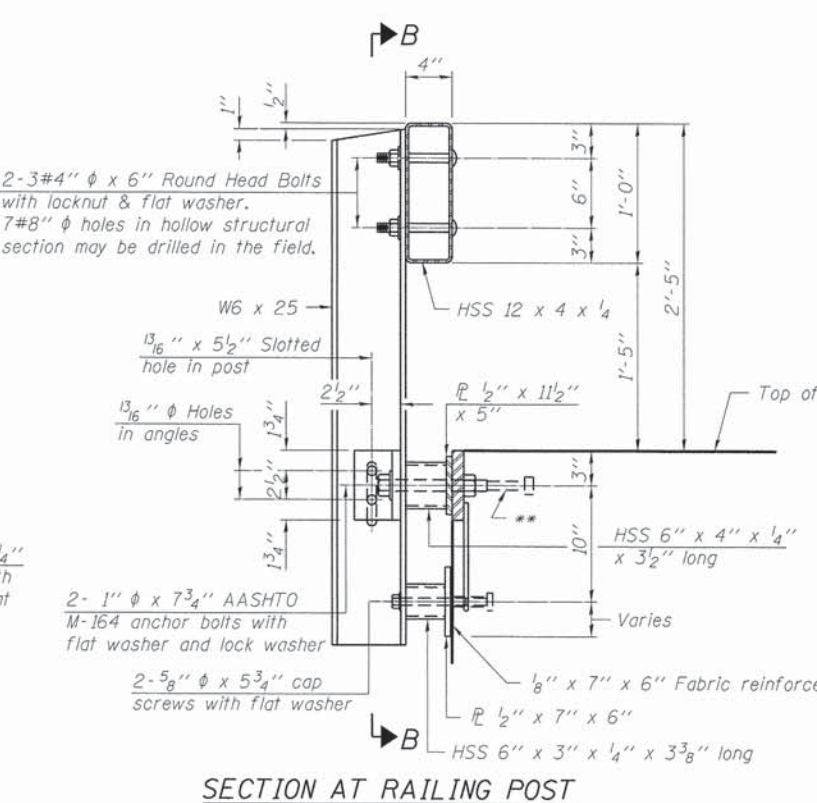
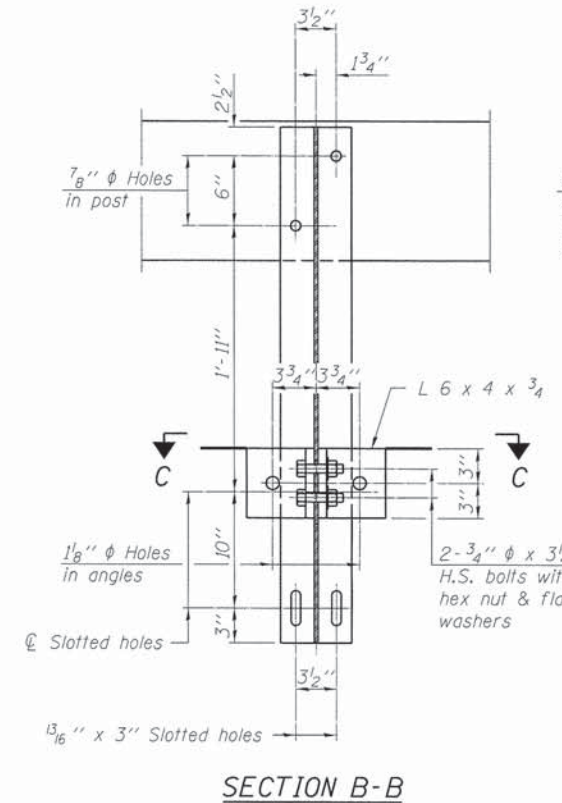
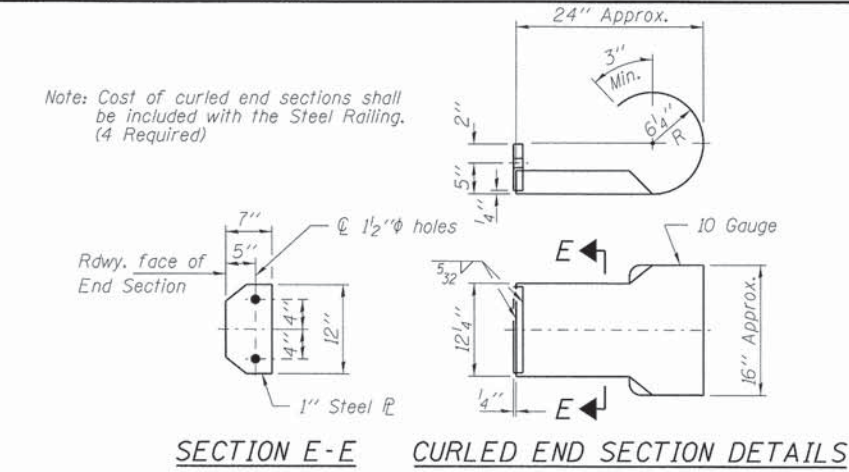
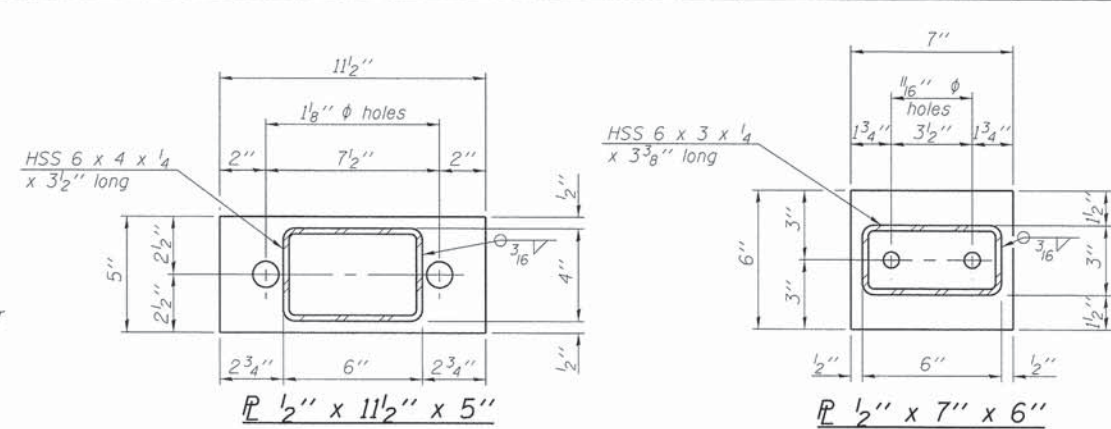
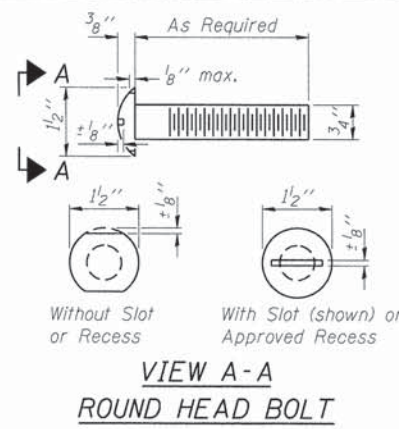
6-8-15

FILE NAME = 148327-shr-bridge.dgn	USER NAME = #USER8	DESIGNED - J.R.T.	REVISED -	<b>STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT</b>	<b>27" x 48" PPC DECK BEAM DETAILS STRUCTURE NO. 097-3290</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 2055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L3/PE/SE CORP. 184.000969	PLOT SCALE = #SCALE#	CHECKED - S.W.M.	REVISED -			349	11-07122-00-BR	WHITE	13	7	
	PLOT DATE = 10/15/2015	DRAWN - D.A.B.	REVISED -			HERALDS PRAIRIE ROAD DISTRICT	CONTRACT NO. 99561	[ILLINOIS] FED. AID PROJECT BR05-01931067			
		CHECKED - S.W.M.	REVISED -			SHEET NO. 3 OF 9 SHEETS					







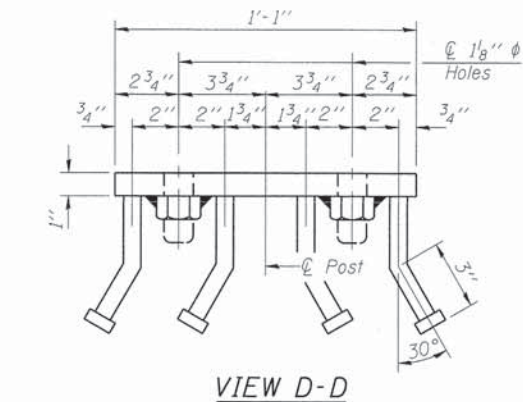
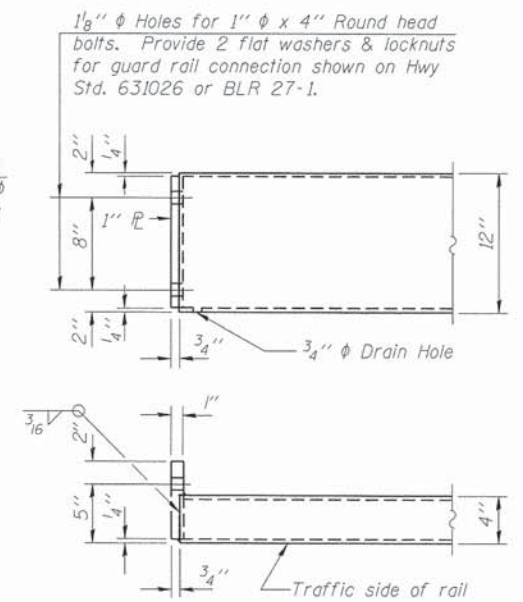
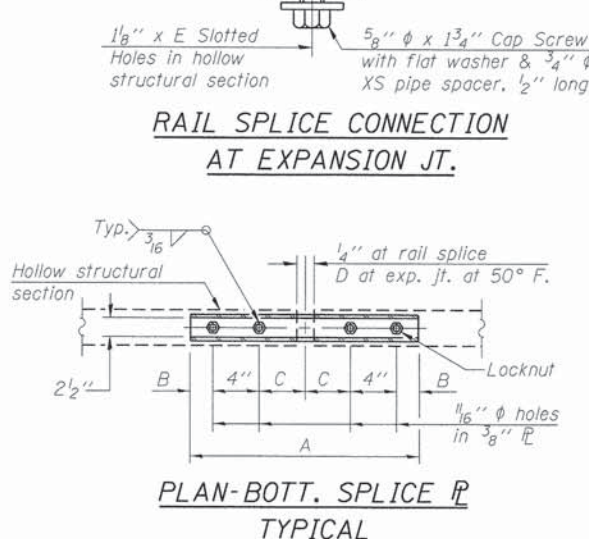
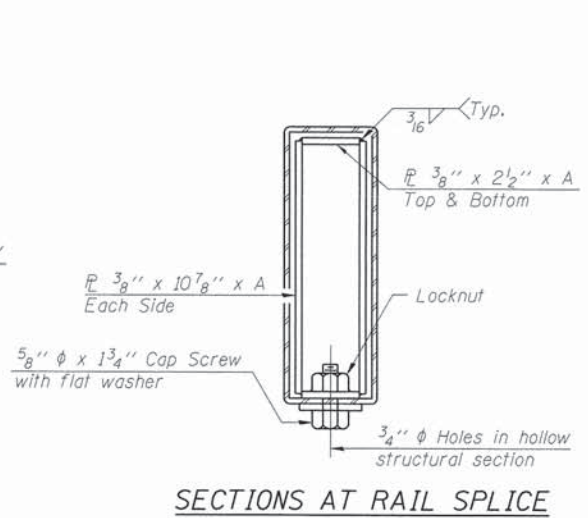
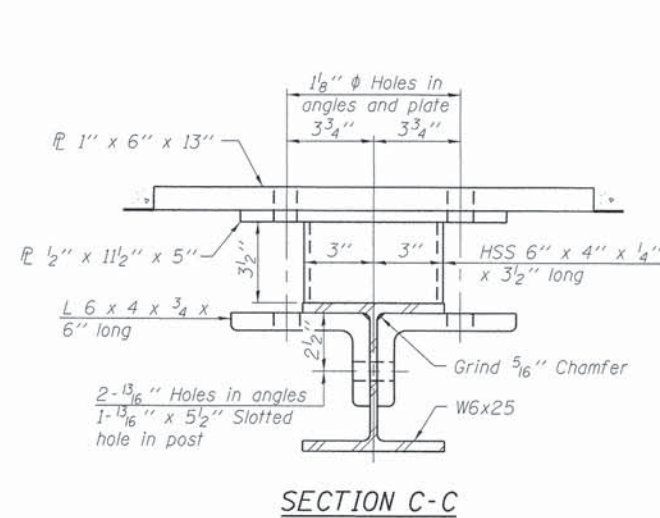


SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

Notes:  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" 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.



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	127

R-23A 1-12-15 (10'-9" Maximum Post Spacing)

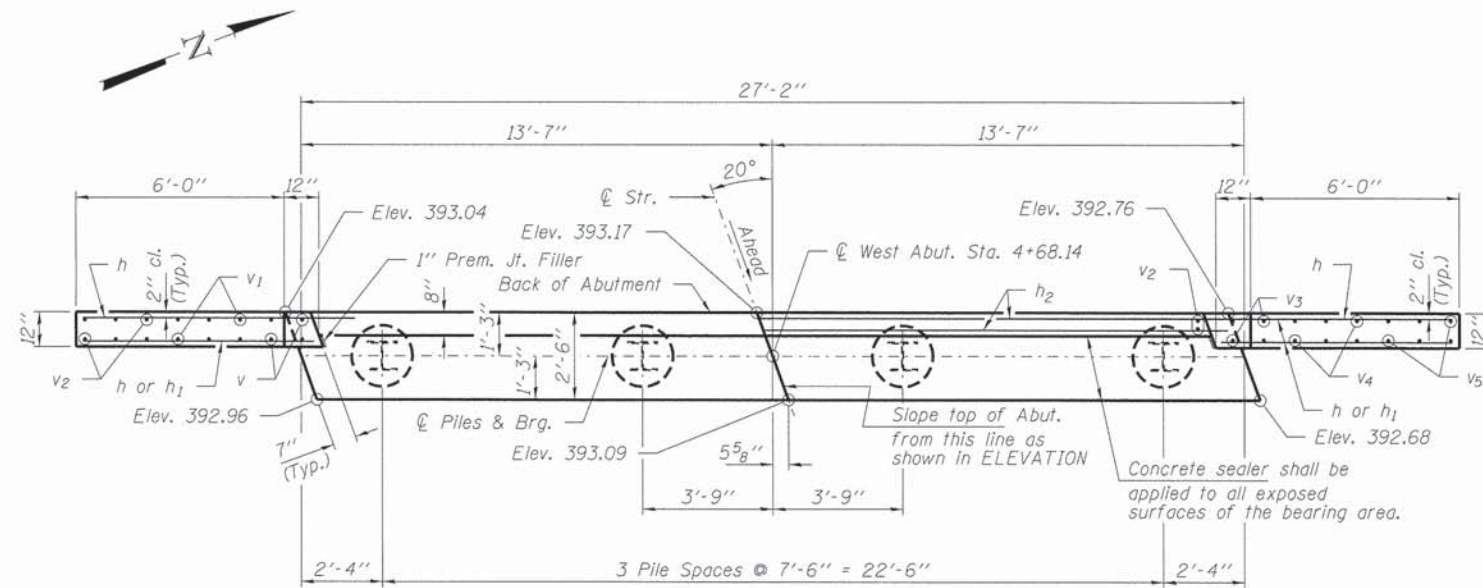
FILE NAME = 148327-shr-bridge.dgn	USER NAME = #USER#	DESIGNED - J.R.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62765	PLOT SCALE = #SCALE#	DRAWN - D.A.B.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184-000909	PLOT DATE = 10/15/2015	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS  
WHITE COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1  
STRUCTURE NO. 097-3290  
SHEET NO. 5 OF 9 SHEETS

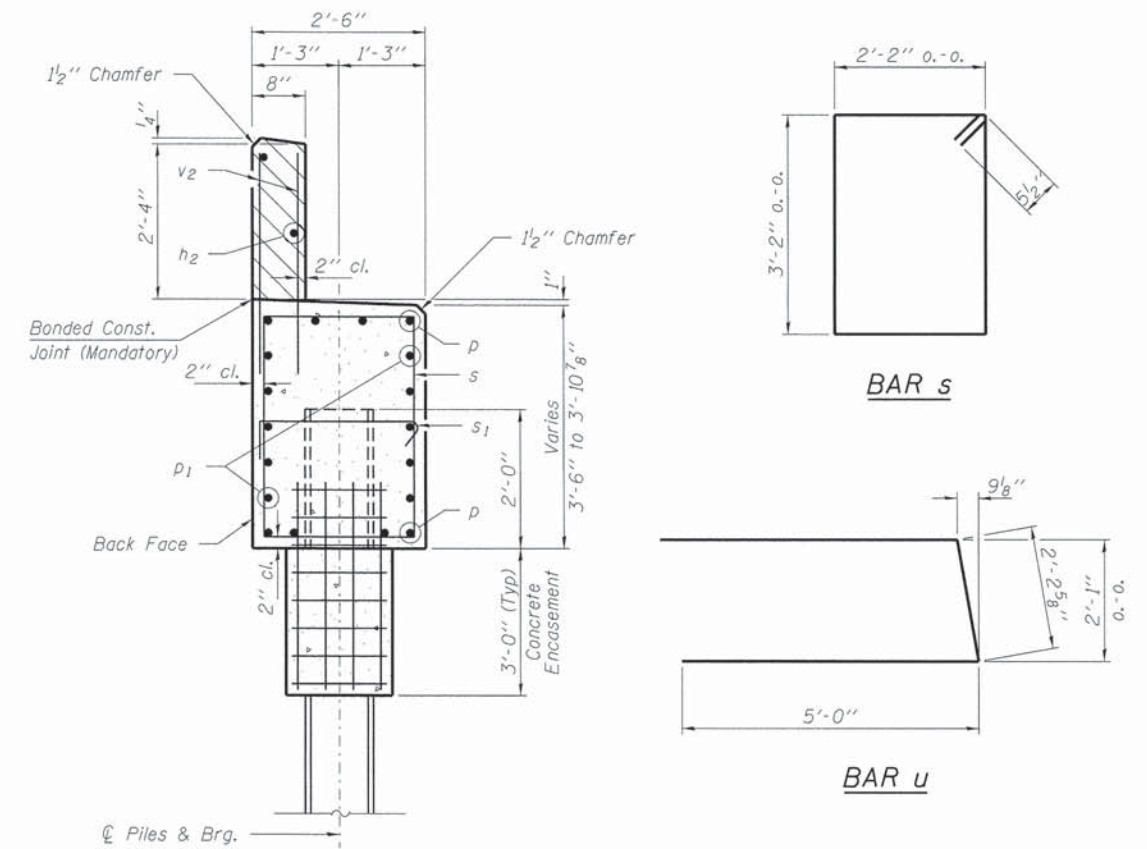
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
349	11-07122-00-BR	WHITE	13	9
HERALDS PRAIRIE ROAD DISTRICT		CONTRACT NO. 99561		
[ILLINOIS] FED. AID PROJECT #R05-01931067				





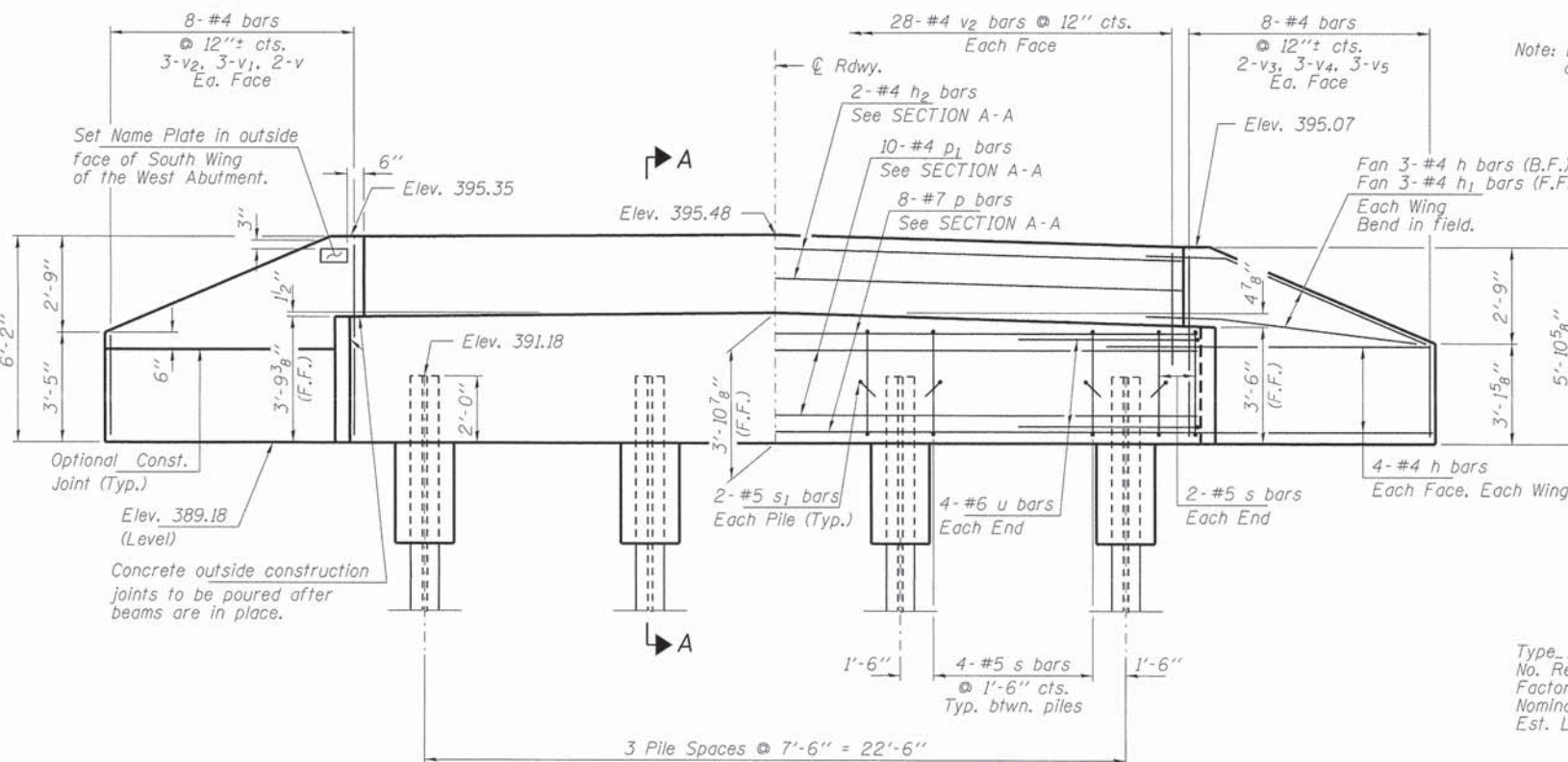
**PLAN**

Note: Elevations in PLAN are to top of concrete cap. Top of wing and backwall elevations in ELEVATION are to top of beam.



**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**

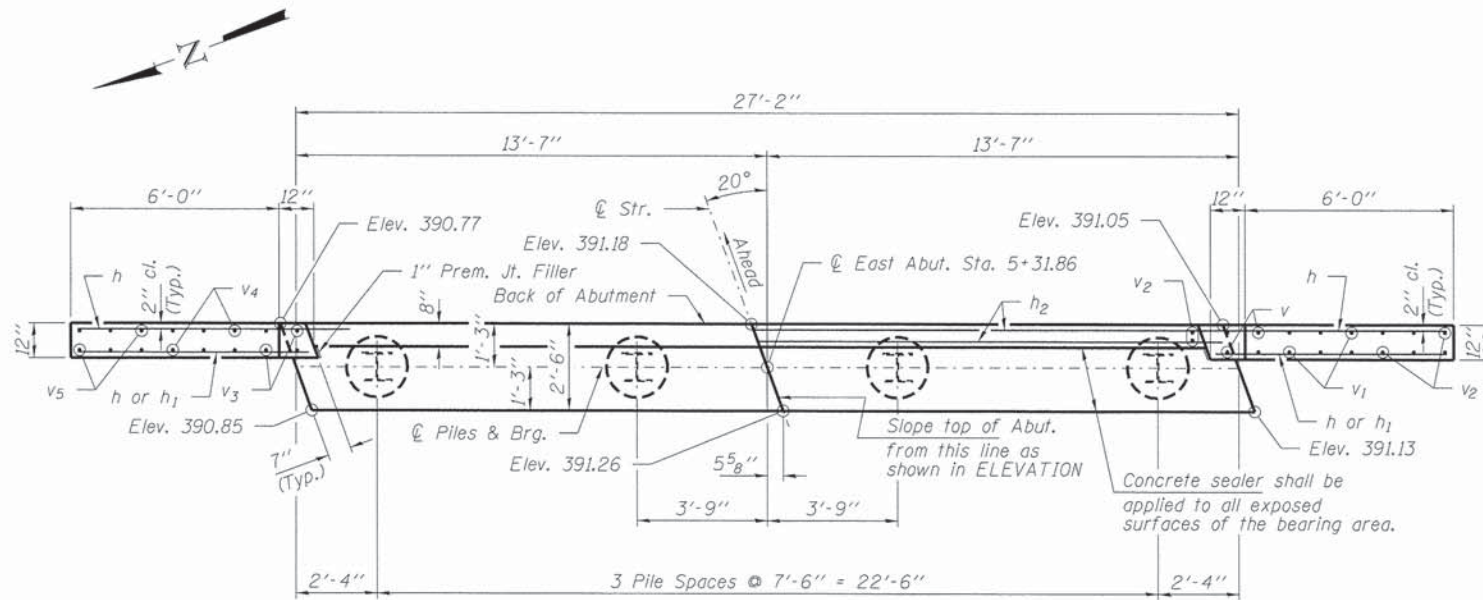
Type: Steel HP10x42  
 No. Req'd. (W. Abut.): 4  
 Factored Resistance Available (RF): 184 Kips/Pile  
 Nominal Required Bearing (Rn): 335 Kips/Pile  
 Est. Length: 40 Ft/Pile

**BILL OF MATERIAL - WEST ABUT.**

BAR	NO.	SIZE	LENGTH	SHAPE
h	22	#4	9'-3"	—
h1	6	#4	6'-9"	—
h2	2	#4	26'-10"	—
p	8	#7	26'-10"	—
p1	10	#4	26'-10"	—
s	16	#5	11'-7"	□
s1	8	#5	3'-2"	┌
u	8	#6	12'-3"	┌
v	4	#4	5'-9"	—
v1	6	#4	4'-5"	—
v2	62	#4	3'-2"	—
v3	4	#4	5'-6"	—
v4	6	#4	4'-2"	—
v5	6	#4	2'-11"	—
Concrete Structures			Cu. Yd.	13.5
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars, Epoxy Coated			Pound	1,390
Steel Piles HP10x42			Foot	160
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	49

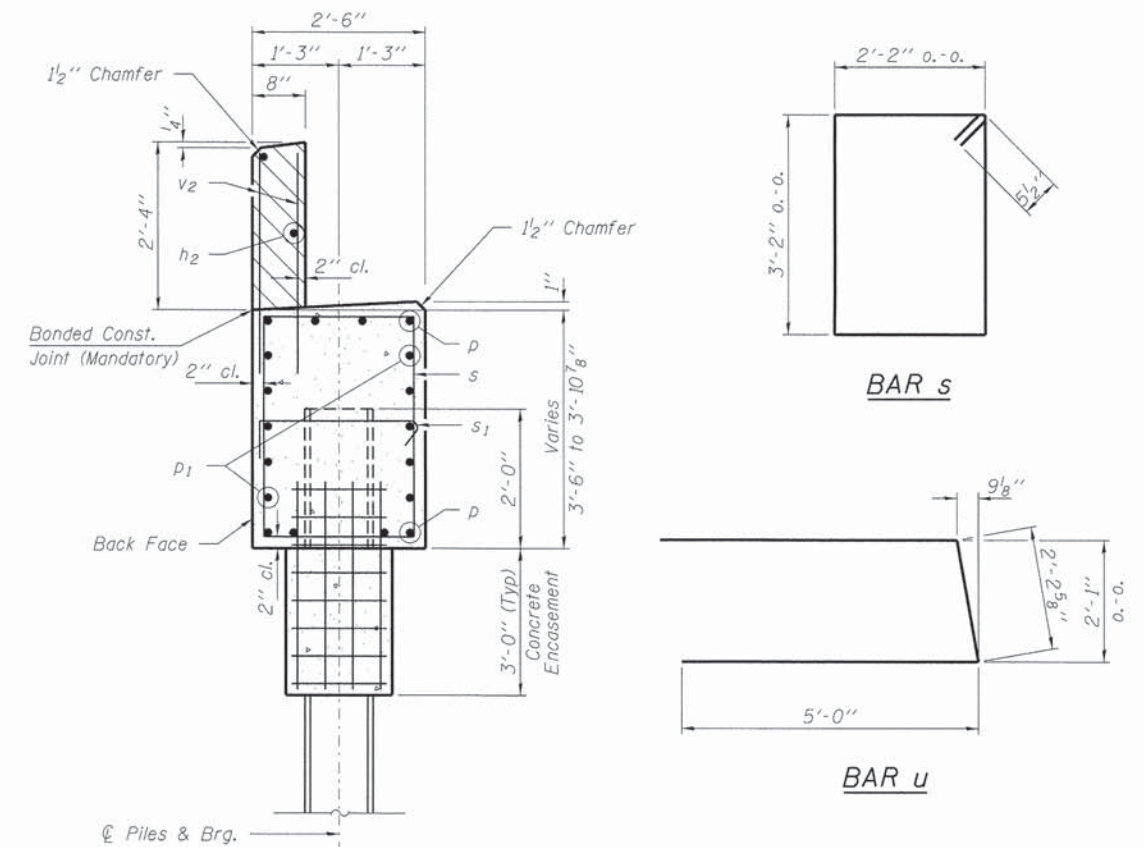
All bars shall be epoxy coated.





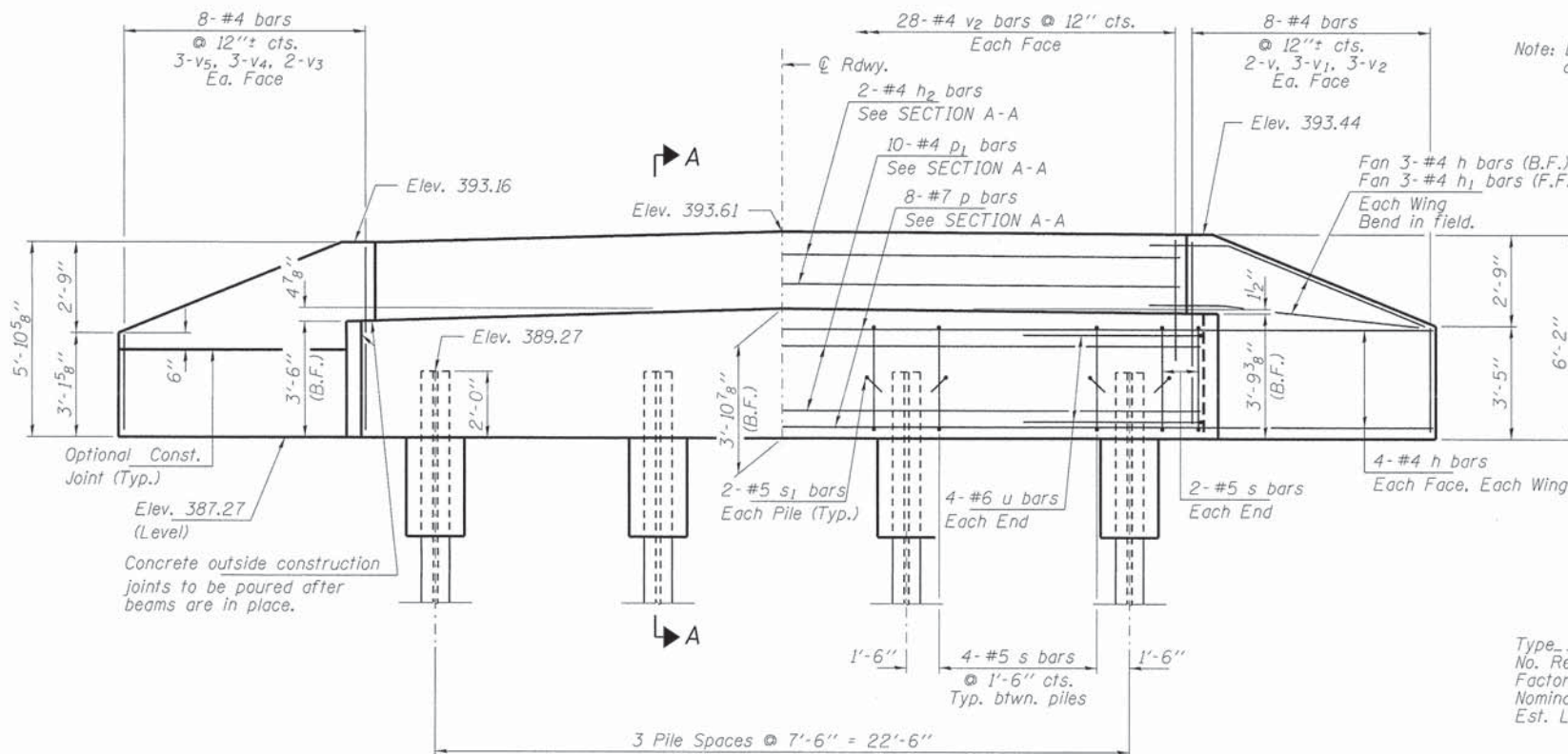
PLAN

Note:  
Elevations in PLAN are to top of concrete cap. Top of wing and backwall elevations in ELEVATION are to top of beam.



SECTION A-A

Hatched area to be poured after beams are in place.



ELEVATION  
(Looking East)

Note: Extend h bars into abutment cap.

PILE DATA

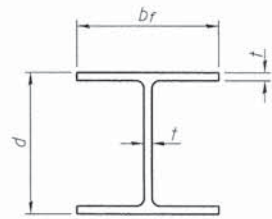
Type ----- Steel HP10x42  
No. Req'd. (E. Abut.) ----- 4  
Factored Resistance Available (Rf) ----- 184 Kips/Pile  
Nominal Required Bearing (Rn) ----- 335 Kips/Pile  
Est. Length ----- 40 Ft/Pile

BILL OF MATERIAL - EAST ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	22	#4	9'-3"	—
h1	6	#4	6'-9"	—
h2	2	#4	26'-10"	—
p	8	#7	26'-10"	—
p1	10	#4	26'-10"	—
s	16	#5	11'-7"	□
s1	8	#5	3'-2"	┌
u	8	#6	12'-3"	┌
v	4	#4	5'-9"	—
v1	6	#4	4'-5"	—
v2	62	#4	3'-2"	—
v3	4	#4	5'-6"	—
v4	6	#4	4'-2"	—
v5	6	#4	2'-11"	—
Concrete Structures			Cu. Yd.	13.5
Concrete Encasement			Cu. Yd.	1.4
Reinforcement Bars, Epoxy Coated			Pound	1,390
Steel Piles HP10x42			Foot	160
Concrete Sealer			Sq. Ft.	49

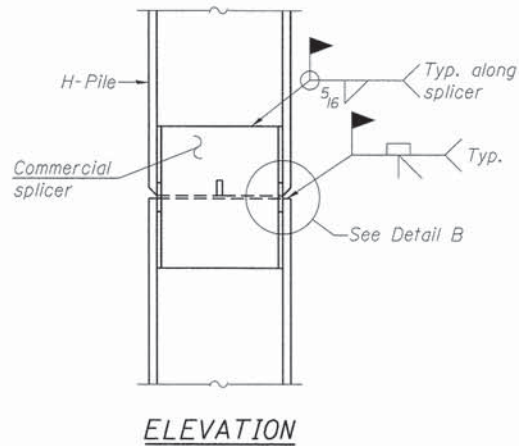
All bars shall be epoxy coated.



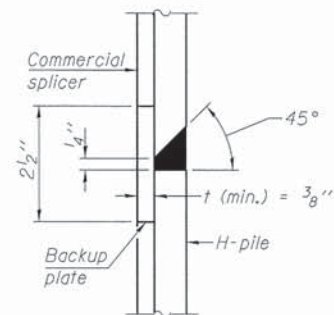


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	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"	1/16"	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"

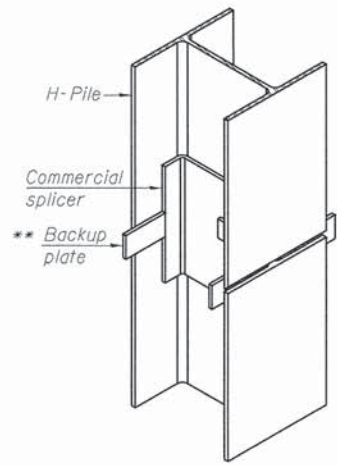


ELEVATION

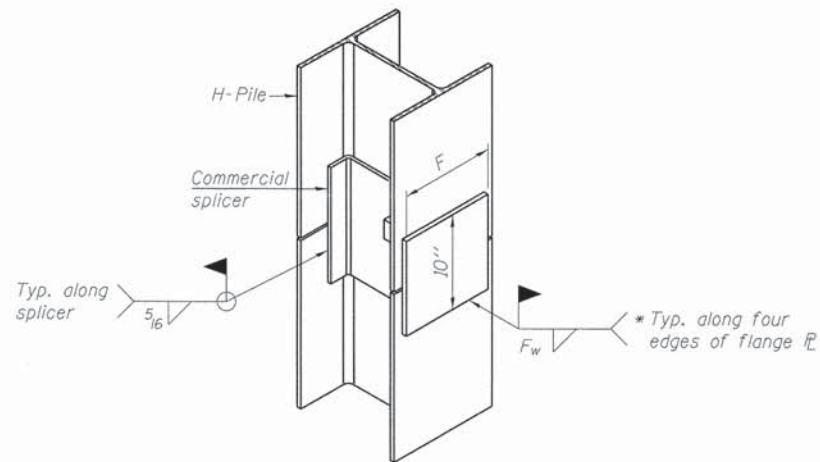


DETAIL "B"

WELDED COMMERCIAL SPLICE



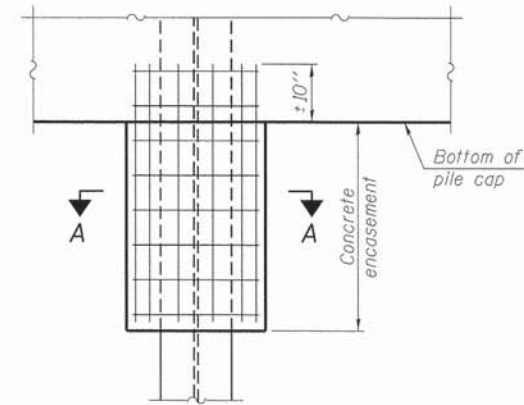
ISOMETRIC VIEW



ISOMETRIC VIEW

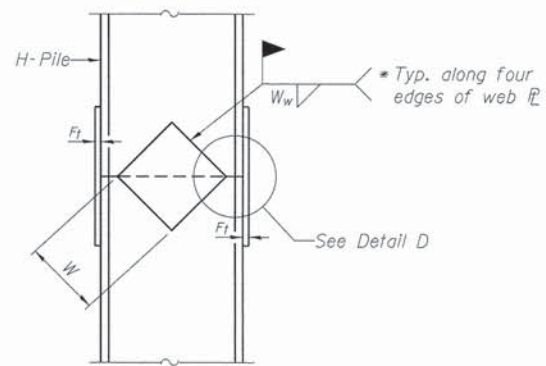
WELDED COMMERCIAL SPLICE ALTERNATE

- \* 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

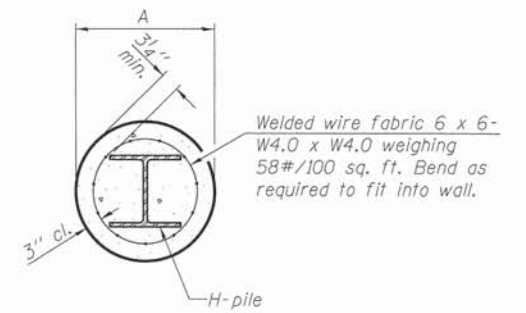
PILE ENCASEMENT



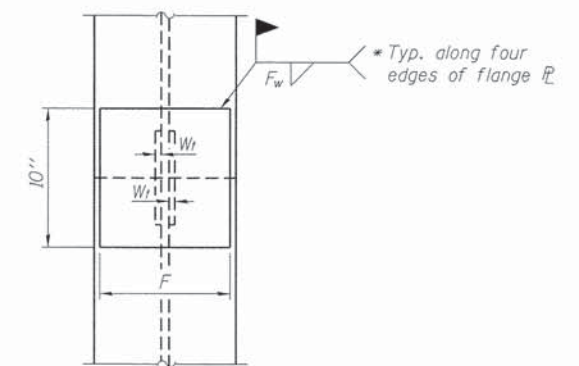
ELEVATION

DETAIL D

WELDED PLATE FIELD SPLICE



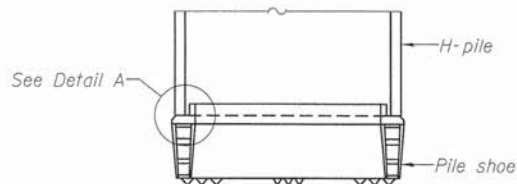
SECTION A-A



END VIEW

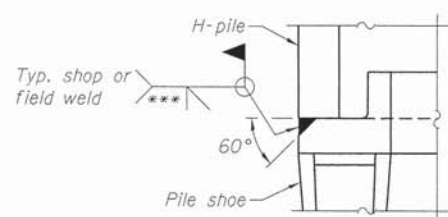
Note:  
Forms for encasement may be omitted when soil conditions permit.

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



ELEVATION

H-PILE SHOE ATTACHMENT



DETAIL A

F-HP

1-27-12



HOLCOMB FOUNDATION ENGINEERING INC.  
P.O. Box 88 618-529-5262  
Carbondale, IL 62903 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-14297 Bridge TR-349 Date: 1/7/2015  
Section: 11-07122-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 097-3131 Checked By: T. Holcomb  
County: White

Boring No: <u>1</u>	Station: _____	Offset: _____	Surface Water Elev. _____			Ground Water Elev. _____							
			Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %			
Ground Surface <u>390.3</u>			0										
3" Topsoil													
Brown Mottled Gray Sandy CLAY (A-6)													
			10	0.4B	13					-25	6	0.8B	27
			-5	2	--	26					7	1.4B	21
			<u>384.3</u>							<u>361.8</u>			
Brown Mottled Gray Silty CLAY (A-6) with sand and pebbles													
			8	3.0S	20					-30	71	3.3B	19
			-10	46	3.4B	20							
			<u>379.3</u>							<u>356.8</u>			
Gray Mottled Brown Silty CLAY (A-6) with sand and pebbles													
			15	1.2B	18					-35	100/6"	1.0B	12
			-15	22	2.1B	18					100/3"	--	8
			<u>374.3</u>							<u>351.3</u>			
Gray Silty CLAY (A-6) with pebbles													
			10	2.4B	18					-40	100/4"	--	8
			-20	10	2.1B	19							
			<u>369.3</u>										
Gray SILT (A-4)													
			6	0.9B	31								

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

B-1

HOLCOMB FOUNDATION ENGINEERING INC.  
P.O. Box 88 618-529-5262  
Carbondale, IL 62903 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-14297 Bridge TR-349 Date: 1/13/2015  
Section: 11-07122-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 097-3131 Checked By: T. Holcomb  
County: White

Boring No: <u>2</u>	Station: _____	Offset: _____	Surface Water Elev. _____			Ground Water Elev. _____							
			Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %			
Ground Surface <u>391.6</u>			0										
4" Topsoil													
Brown Silty CLAY (A-6)													
			1	0.4B	25					-25	4	0.8B	24
			-5	4	0.2B	19					9	2.4S	20
			<u>385.6</u>							<u>363.1</u>			
Brown Sandy CLAY (A-6)													
			3	--	24					-30	34	1.4S	21
			-10	11	3.2B	20							
			<u>383.1</u>							<u>358.1</u>			
Gray Mottled Brown Silty CLAY (A-6) with sand and pebbles													
			14	4.0S	17					-35	100/3"	--	12
			-15	14	2.9B	17					100/4"	--	7
			<u>380.6</u>							<u>355.6</u>			
Gray to Brown Weathered SHALE													
			14	2.9B	17								
			-15	14	2.9B	17					100/3"	--	7
			<u>374.3</u>							<u>352.6</u>			
Gray Silty CLAY (A-6) with pebbles													
			15	1.2B	20					-40	100/3"	--	7
			-20	8	1.7B	18							
			<u>370.6</u>										
Gray Silty CLAY (A-6)													
			8	2.0B	24								

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

B-2