

# 11-4-2016 LETTING ITEM 112

## INDEX OF SHEETS

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

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515001-03	NAME PLATE FOR BRIDGES (2 SHEETS)
701901-05	TRAFFIC CONTROL DEVICES (3 SHEETS)
725001	OBJECT AND TERMINAL MARKERS
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
2010010	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	14.0
2010020	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	99.0
20200100	EARTH EXCAVATION	CU YD	90.0
20300100	CHANNEL EXCAVATION	CU YD	450.0
20400800	FURNISHED EXCAVATION	CU YD	67.0
28000305	TEMPORARY DITCH CHECKS	FOOT	7.0
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	800.0
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	370.0
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1.0
50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1.0
50300225	CONCRETE STRUCTURES	CU YD	31.8
50300280	CONCRETE ENCASEMENT	CU YD	3.4
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	1,944.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3,950.0
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	159.0
51201400	FURNISHING STEEL PILES 10X42	FOOT	810.0
51202305	DRIVING PILES	FOOT	810.0
51203400	TEST PILE STEEL HP 10X42	EACH	1.0
51500100	NAME PLATES	EACH	1.0
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	80.0
54205515	PIPE CULVERTS, CLASS D, TYPE 1 EQUIVALENT ROUND-SIZE 60"	FOOT	80.0
58700300	CONCRETE SEALER	SQ FT	114.0
67100100	MOBILIZATION	L SUM	1.0
Δ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.0
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3

### Δ SPECIALTY ITEMS

DESIGN DESIGNATION:  
 DESIGN SPEED: 30 MPH  
 HIGHWAY CLASS - LOCAL ROAD  
 EXISTING STRUCTURE NO.: 097-3115  
 PROPOSED STRUCTURE NO.: 097-3288  
 CURRENT A.D.T. = 50  
 CONTRACT NO. 99574



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. 302 WHITE COUNTY SECTION 11-10132-00-BR

PROJECT NO. BROS-0193(069) JOB NO. C-99-536-12

CONTRACT #99574 DRAINAGE DITCH

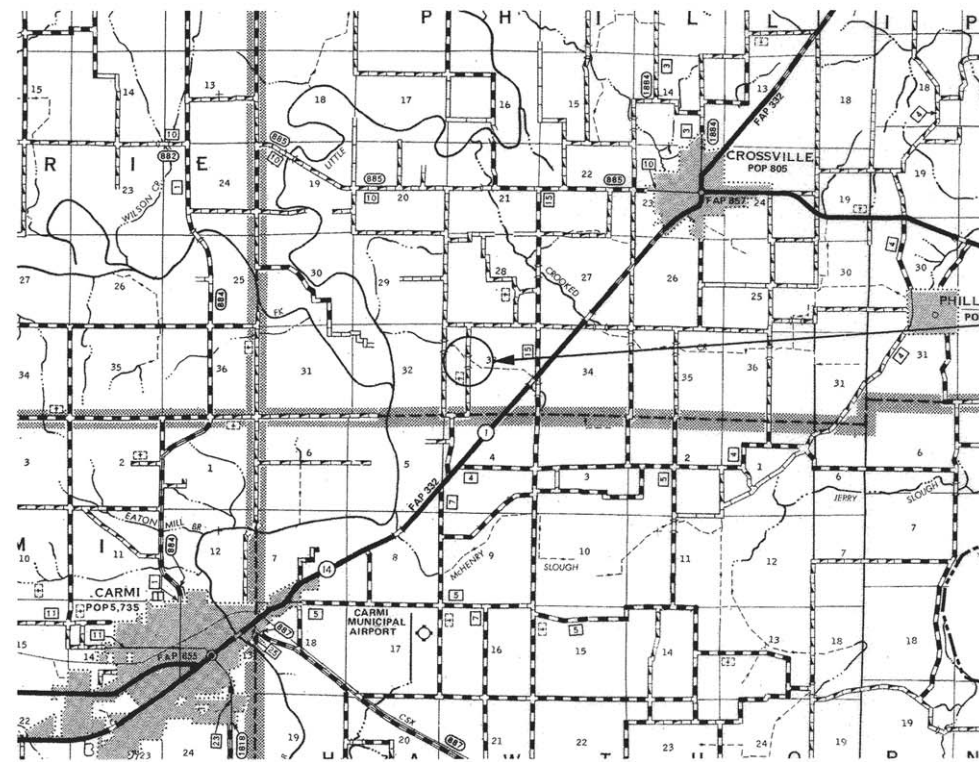
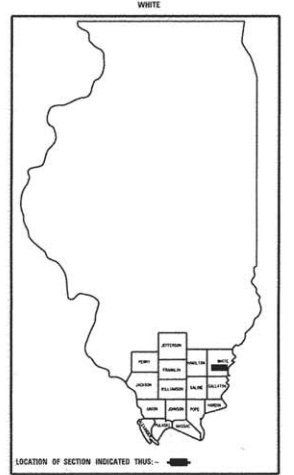
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	1

FED. ROAD DIST. NO. 9 ILLINOIS DRAINAGE DITCH  
 PROJECT \* BROS-193(069) CONTRACT \* 99574  
 HER JOB \* 15.1133 LEC JOB \* H41L018WH

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

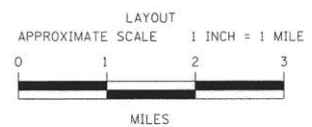
ILLINOIS PROFESSIONAL DESIGN FIRM  
 LAND SURVEY, PROFESSIONAL ENGINEERING & STRUCTURAL ENGINEERING CORPORATION  
 184-000959

**LAMAC**  
 ENGINEERING  
 A Division of Hampton, Lenzini and Remick, Inc.



PLAN	1" = 50'	0 50' 100'
PROFILE	1" = 50'	0 50' 100'
PROFILE VERT.	1" = 5'	0 5' 10'

SECTION 11-10132-00-BR BEGINS STATION 3+15  
 STA 5+00, STRUCTURE NO. 097-3288, A 81' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH 33" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS, 24' WIDTH, ON 0% GRADE, 35° LT. FWD. SKEW.  
 SECTION 11-10132-00-BR ENDS STATION 7+50



GROSS LENGTH	435.00 FT	0.082 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	435.00 FT	0.082 MILES

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

APPROVED August 19, 2016  
 \_\_\_\_\_  
 COUNTY ENGINEER

PASSED AUGUST 30, 2016  
 \_\_\_\_\_  
 ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID  
 BASED ON LIMITED  
 REVIEW: August 30, 2016  
 \_\_\_\_\_  
 JEFFREY L. KEIRN, P.E.  
 REGION FIVE ENGINEER



AARON M. MEFFORD  
 NAME  
 SIGNATURE  
 DATE  
 11-30-17  
 EXPIRES

TOWNSHIP ROUTE 302  
 OVER DRAINAGE DITCH  
 WHITE COUNTY, ILLINOIS

SHEET TITLE:

TITLE SHEET

SCALE:	VARES
BY:	A.M.M.
DATE:	8/16
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 APRIL 1, 2016.

THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURES, THE CONSTRUCTION OF A 81 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 50 TON FOR FILL NEXT TO THE BRIDGE, 100 TON FOR THE ENTRANCES, AND 220 TON FOR THE ROADWAY.

**NOTE: CONSTRUCTION TRANSITION**  
STA. 3+15 TO STA 3+65  
STA 7+00 TO STA 7+50

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	2
FED. ROAD DIST. NO. 9 ILLINOIS		DRAINAGE DITCH		
PROJECT # BROS-1930691		CONTRACT # 99574		
H.R. JOB # 15.1133		LEC JOB # H41018HW		

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

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184-000959

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AARON M. MEFFORD  
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS  
58284

AARON M. MEFFORD  
NAME  
SIGNATURE  
DATE  
11-30-17  
EXPIRES

TOWNSHIP ROUTE 302  
OVER DRAINAGE DITCH  
WHITE COUNTY, ILLINOIS

SHEET TITLE:

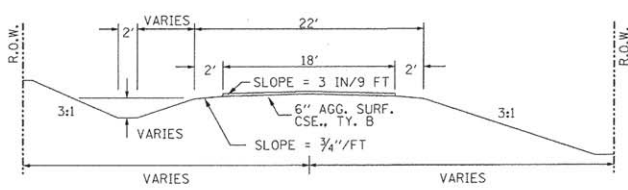
PLAN & PROFILE

SCALE: VRIES  
BY: A.M.M.  
DATE: 8/16  
REV:

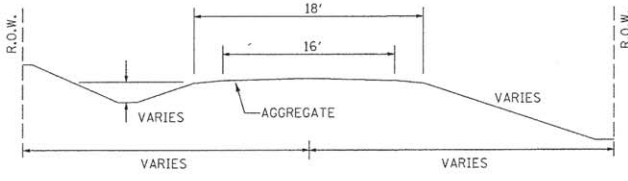
2 OF 13 SHEETS

SHEET NO. 2

**TYPICAL CROSS SECTION PROPOSED**



**TYPICAL CROSS SECTION EXISTING**



**UTILITIES:**

- J.U.L.I.E.  
1-800-892-0123
- FRONTIER COMMUNICATIONS  
1-618-382-2887
- WAYNE-WHITE ELECTRIC CO-OP  
1-618-842-2196
- CROSSVILLE GAS AND WATER  
1-618-966-2237

NOTE: CONSTRUCT SPECIAL DITCH

STA 3+00 TO STA 4+59 LT  
STA 3+15 TO STA 4+59 RT  
STA 5+25 TO STA 7+50 RT

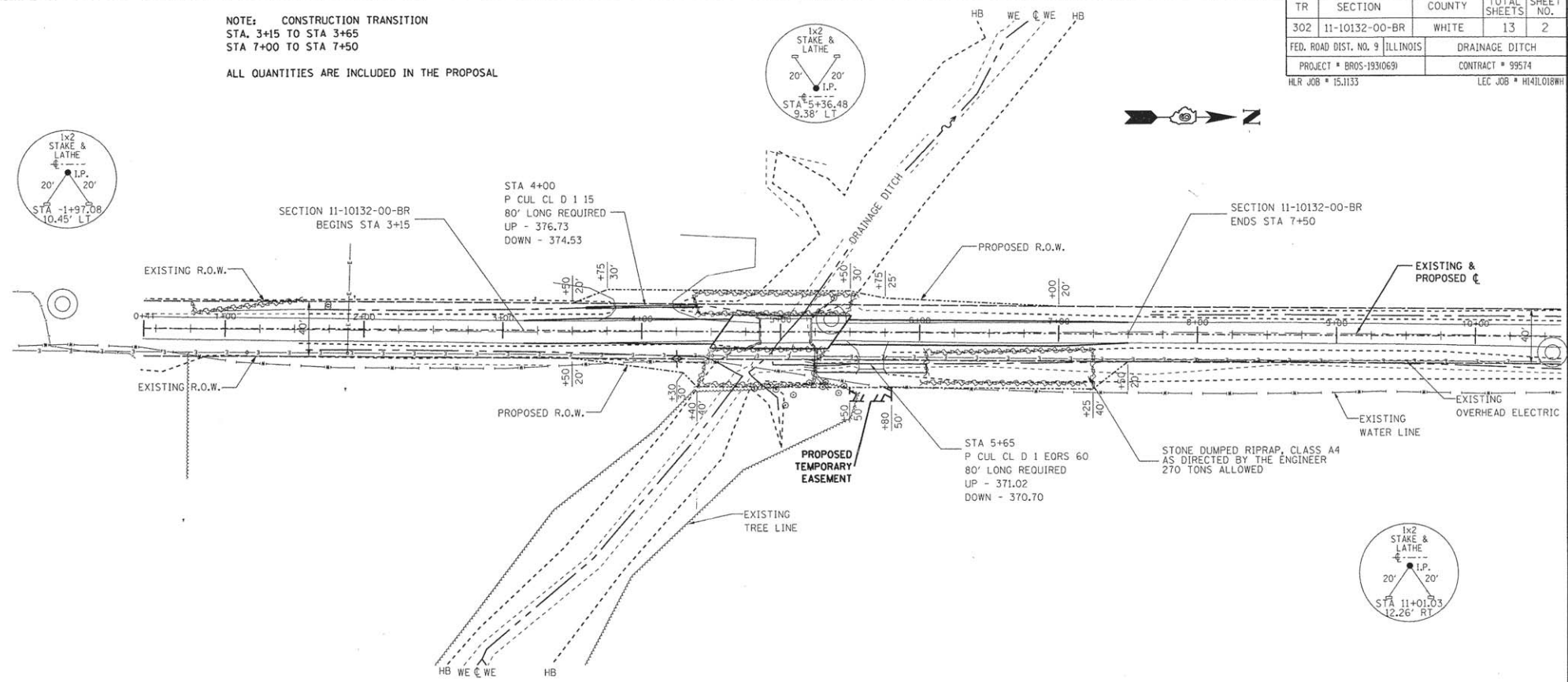
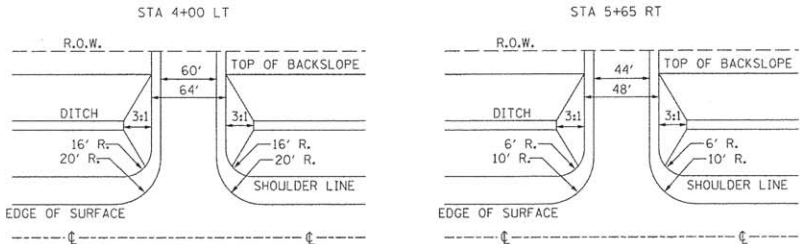
NOTE: TREE REMOVAL (6 TO 15 UNITS DIAMETER)

LOCATION	SIZE
STA 5+32 RT	6
STA 5+38 LT	8
	14 UNITS

NOTE: TREE REMOVAL (OVER 15 UNITS DIAMETER)

LOCATION	SIZE
STA 5+21 RT	59
STA 5+30 RT	23
STA 5+46 RT	17
	99 UNITS

**FIELD ENTRANCE DETAIL**



EXISTING STRUCTURE: NO. 097-3115, STA 5+03.7  
38' LONG 7" THICK CONCRETE DECK ON 7-15" I-BEAMS AND 2-15" C-BEAMS WITH CONCRETE MUDWALLS AND CONCRETE WINGWALLS INCLUDING BRIDGE RAIL.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES NO. 1 ALLOWED IN THIS PROPOSAL.

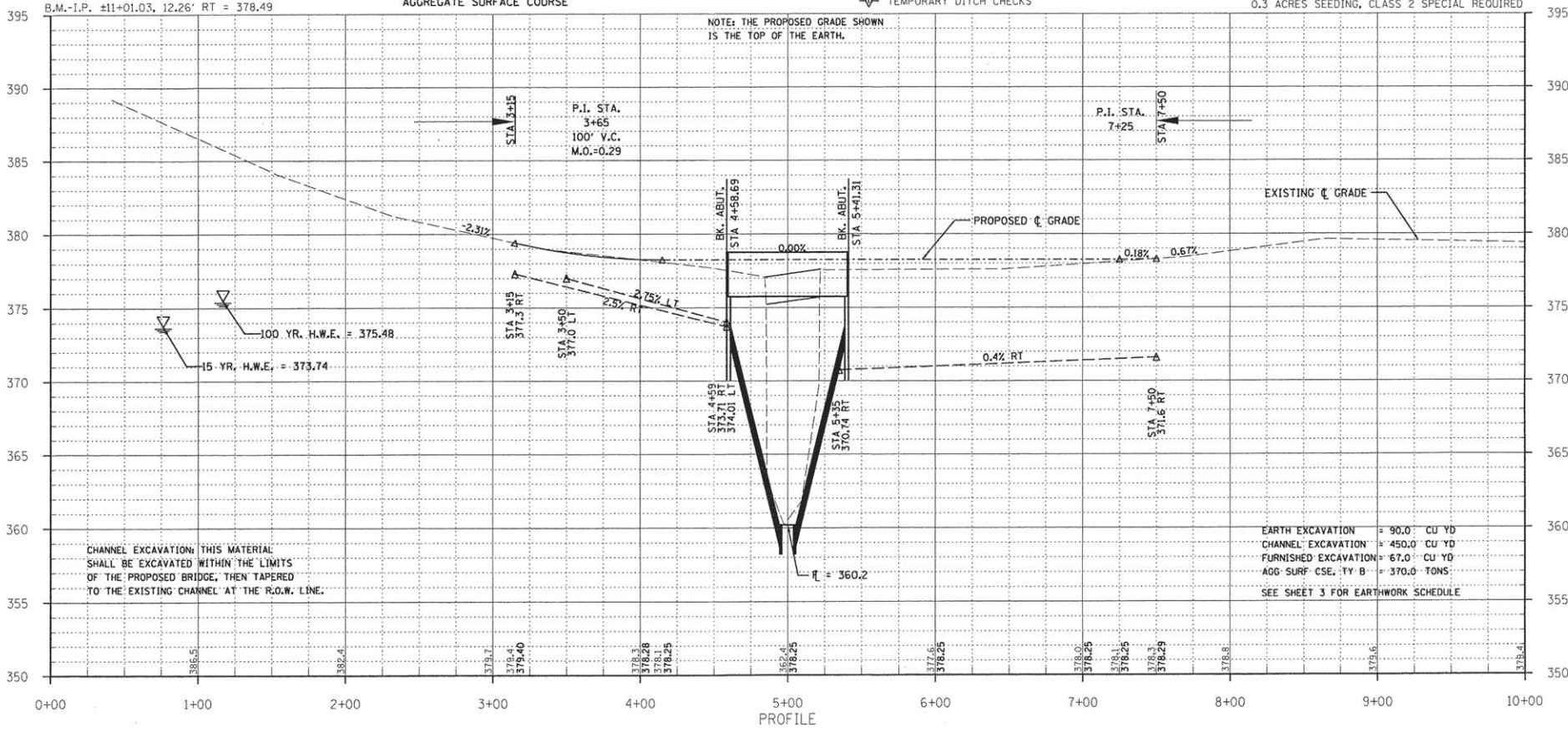
EXISTING STRUCTURE: STA 5+25 TO 5+75 RT A CONCRETE DITCH CHECK WITH CONCRETE WINGWALLS; 30' LONG CONCRETE LINED DITCH AND A 18' LONG 66"x45" BOX CULVERT WITH WINGWALLS.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES NO. 2 ALLOWED IN THIS PROPOSAL.

PROPOSED STRUCTURE: NO. 097-3288, STA 5+00, A 81' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH 33" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS, 24' WIDTH, 35" LT FWD SKEW.

SEE SHEETS 5-13 FOR THE DESIGN AND BILL OF MATERIALS.

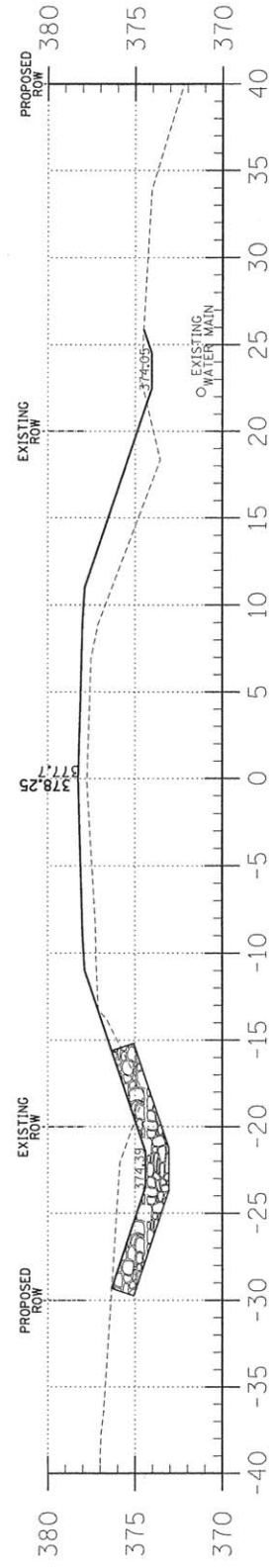
NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE



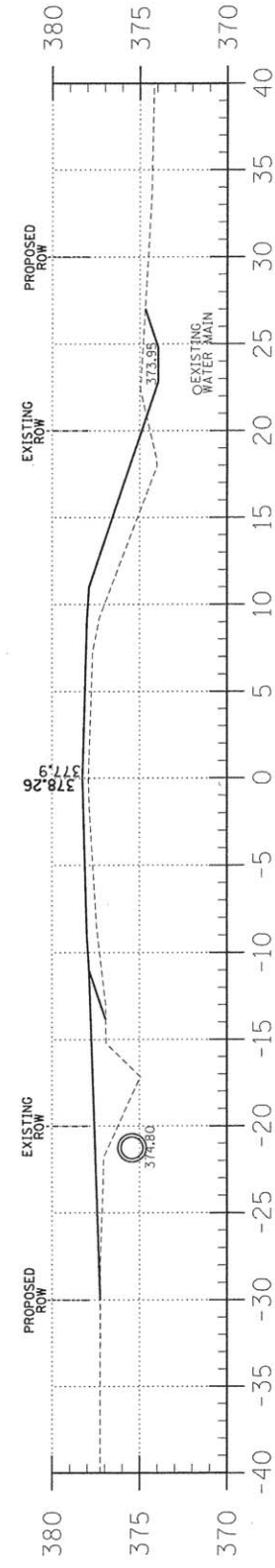
CHANNEL EXCAVATION; THIS MATERIAL SHALL BE EXCAVATED WITHIN THE LIMITS OF THE PROPOSED BRIDGE, THEN TAPERED TO THE EXISTING CHANNEL AT THE R.O.W. LINE.

EARTH EXCAVATION = 90.0 CU YD  
CHANNEL EXCAVATION = 450.0 CU YD  
FURNISHED EXCAVATION = 67.0 CU YD  
AGG SURF. CSE. TY B = 370.0 TONS  
SEE SHEET 3 FOR EARTHWORK SCHEDULE

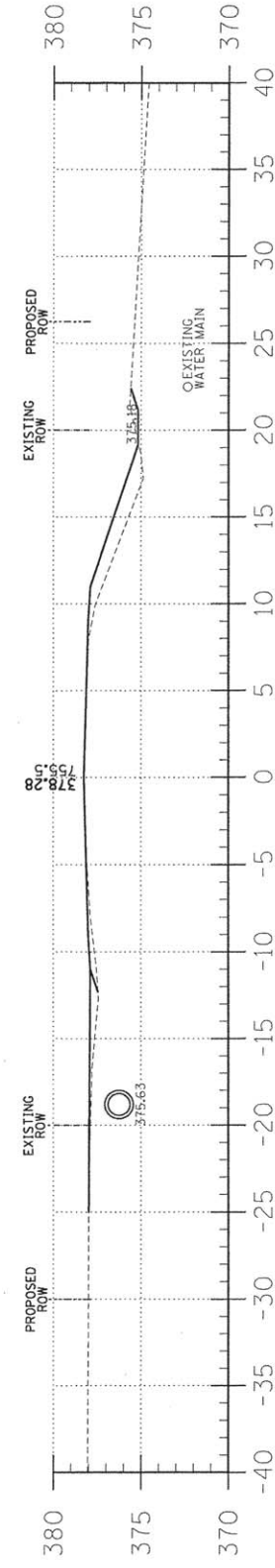
SHEET NO. 2



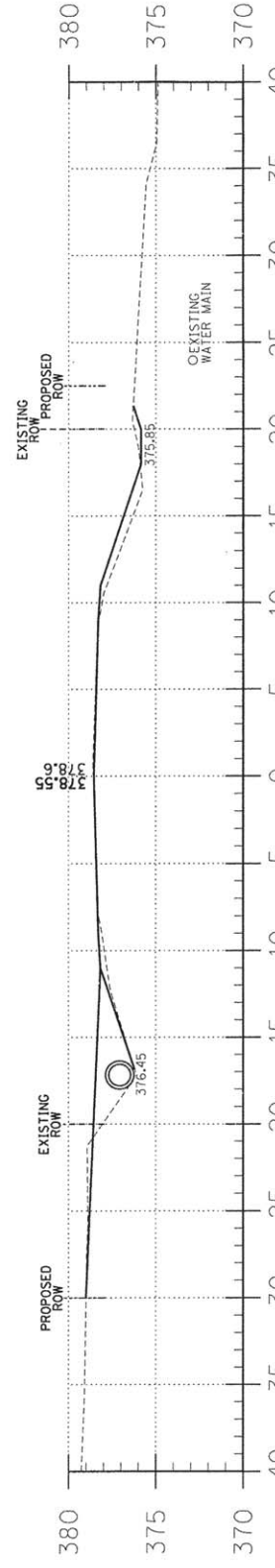
4+45



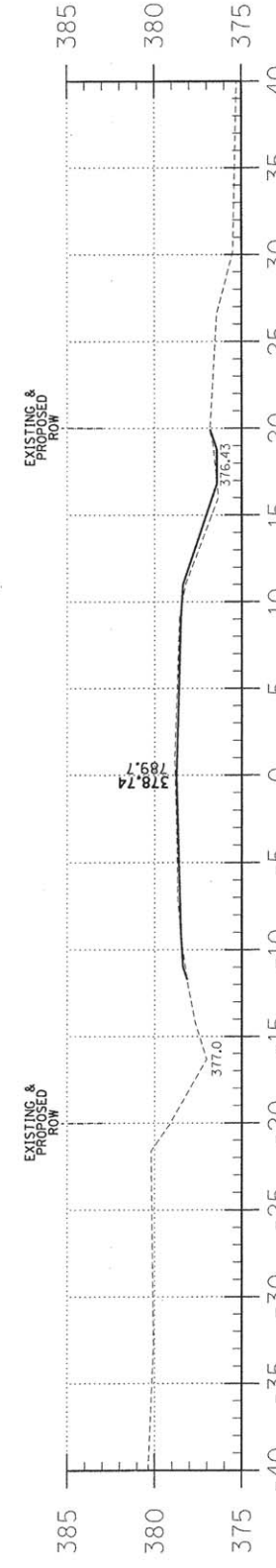
4+30



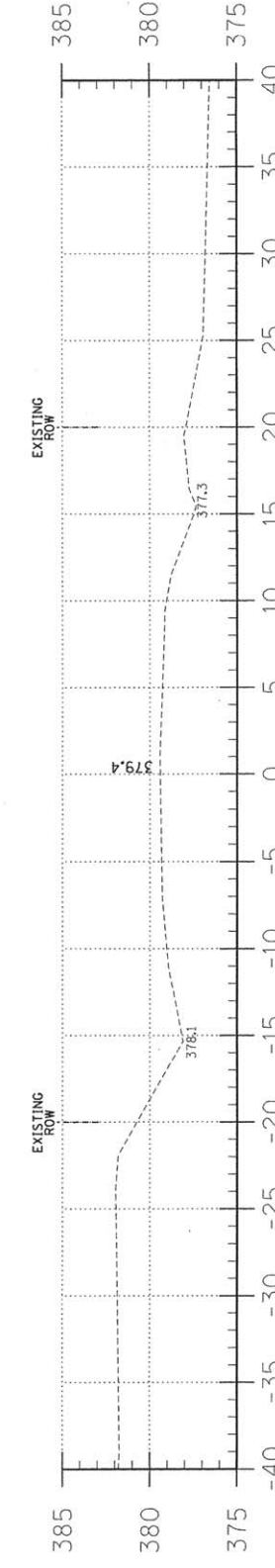
4+00



3+70



3+50



3+15

C = 10.3  
F = 34.9

C = 3.9  
F = 24.0

C = 0.7  
F = 8.6

C = 1.4  
F = 4.7

C = 1.9  
F = 1.7

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	3
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT# BROS-193(069)		CONTRACT# 99574		
JOB NO. C-99-536-12		DRAINAGE DITCH		
HLR JOB # 15.1133		LEC JOB # H414018W		

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A Division of Hampton, Lenzini and Renwick, Inc.



AARON M. MEFFORD  
NAME  
*Aaron M. Mefford*  
SIGNATURE  
8-19-16  
DATE  
11-30-17  
EXPIRES

EARTHWORK SCHEDULE

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	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+58.7	10.1	0.0	0.0	0.0	0.0	7.6	45.3	-37.7				
STA 4+58.7 TO 5+41.3	0.0	450.0	0.0	225.0	168.8	168.8	0.0	+168.8				
STA 5+41.3 TO 10+00	79.6	0.0	0.0	0.0	179.5	179.5	179.5	-119.8				
2 FIELD ENTRANCE	0.0	0.0	0.0	0.0	0.0	0.0	78.4	-78.4				
TOTAL	89.7	450.0	225.0	236.1	303.2	-67.1						

TOWNSHIP ROUTE 302  
OVER DRAINAGE DITCH  
WHITE COUNTY, ILLINOIS

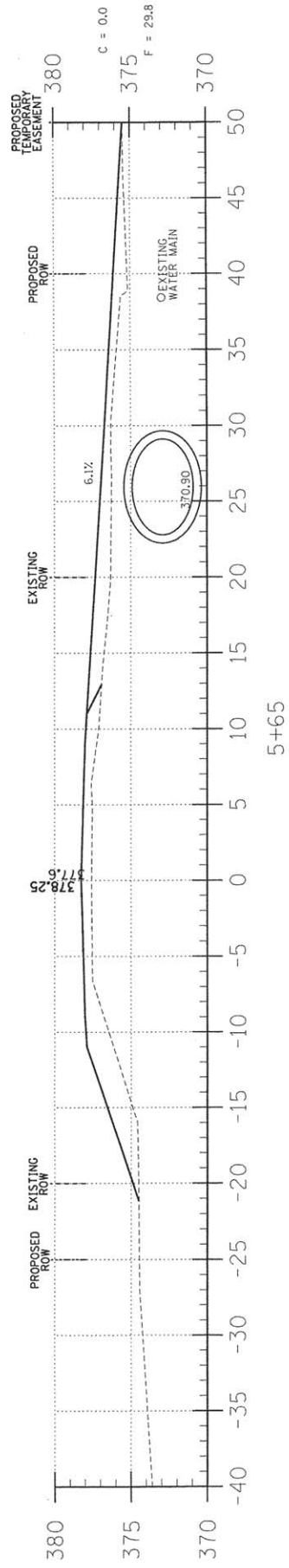
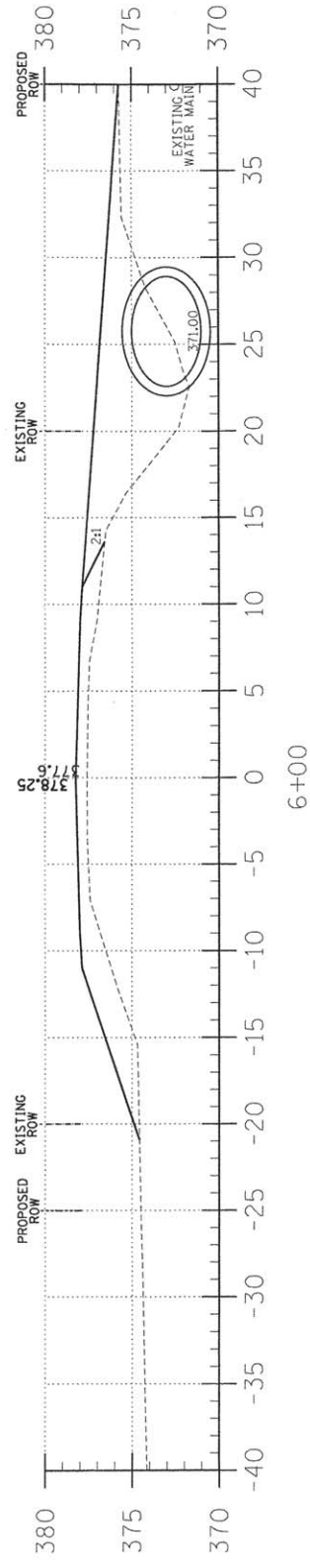
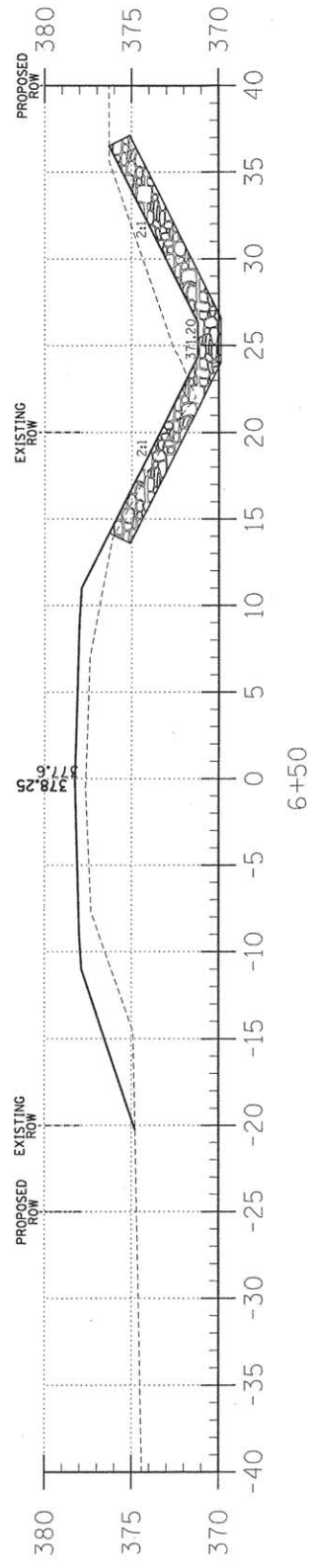
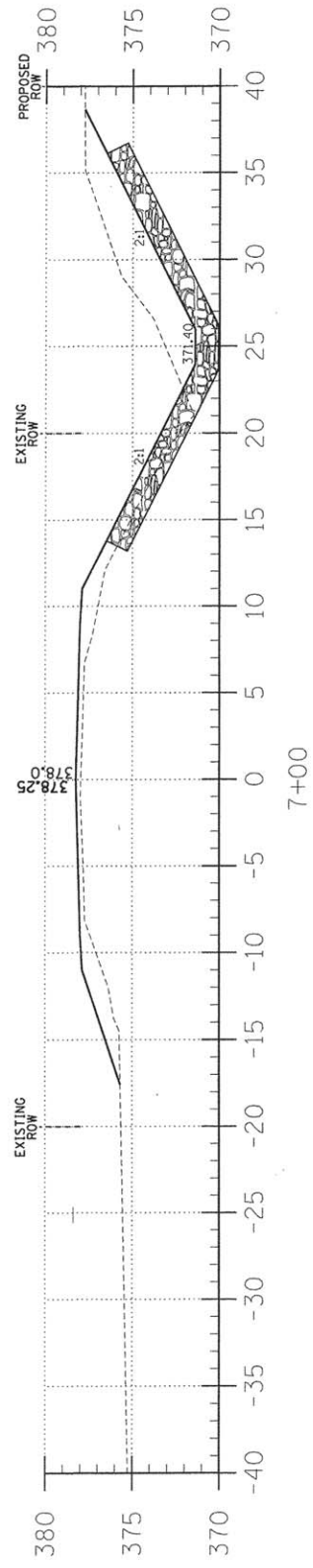
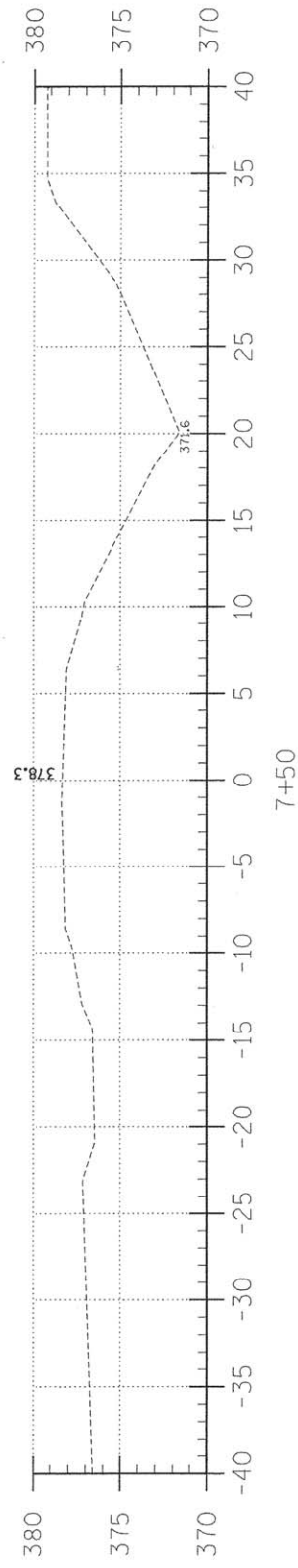
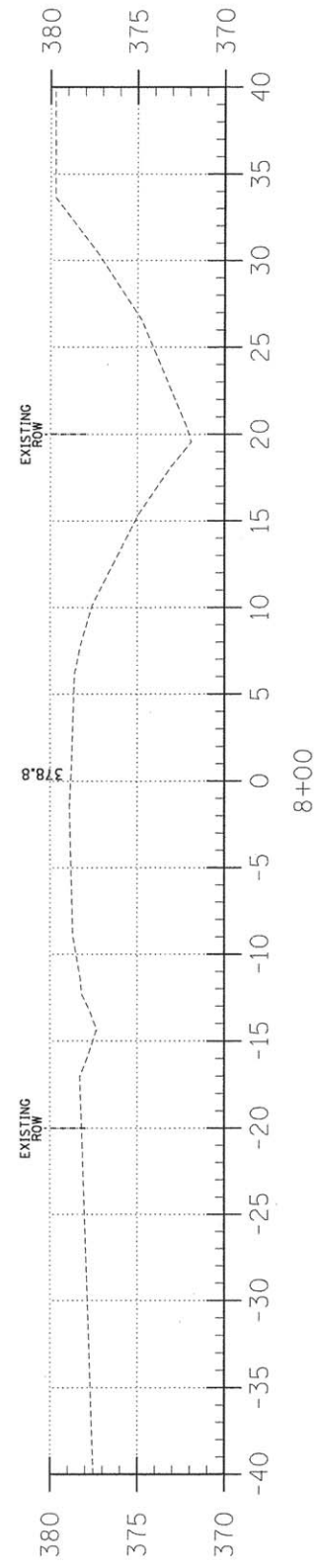
SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'  
BY: A.M.M.  
DATE: 8/16  
REV:

3 OF 13 SHEETS

SHEET NO. 3

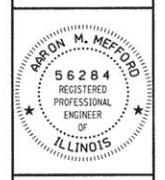


TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	4
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT * BROS-193(069)		CONTRACT * 99574		
JOB NO. C-99-536-12		DRAINAGE DITCH		
HLR JOB * 15.1133		LEC JOB * H44L018WH		

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AARON M. MEFFORD  
NAME  
*Aaron M. Mefford*  
SIGNATURE  
8-19-16  
DATE  
11-30-17  
EXPIRES

TOWNSHIP ROUTE 302  
OVER DRAINAGE DITCH  
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE: 1" = 5'  
BY: A.M.M.  
DATE: 8/16  
REV:

4 OF 13  
SHEETS

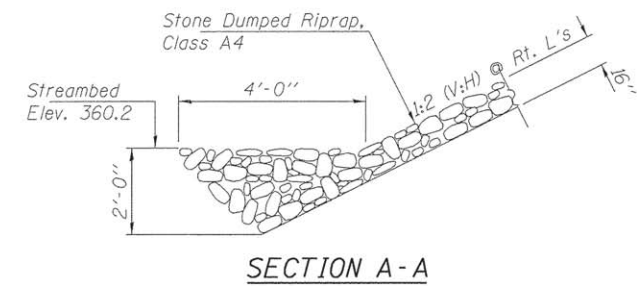
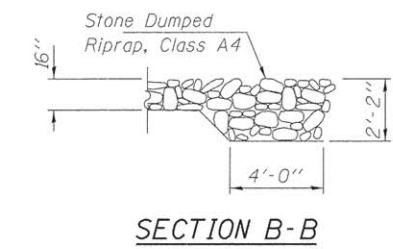
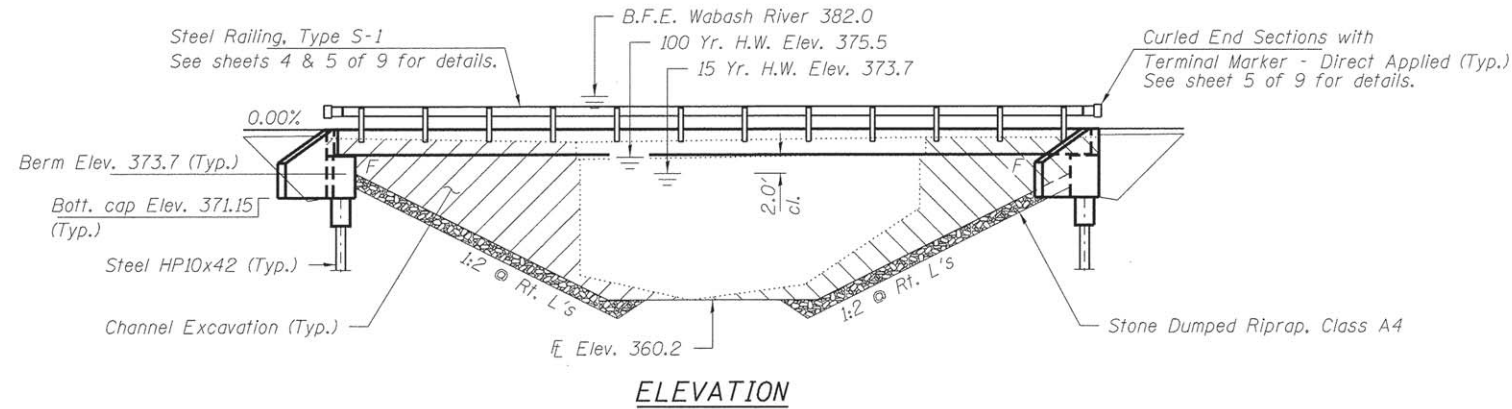
SHEET NO.  
4

EXISTING STRUCTURE NO. 097-3115: Sta: 5+03.7 38' long 7" concrete deck on 7-15" I-beams and 2-15" C-beams with concrete mudwalls, and wingwalls, including bridge rail.

Structure closed to traffic during construction.

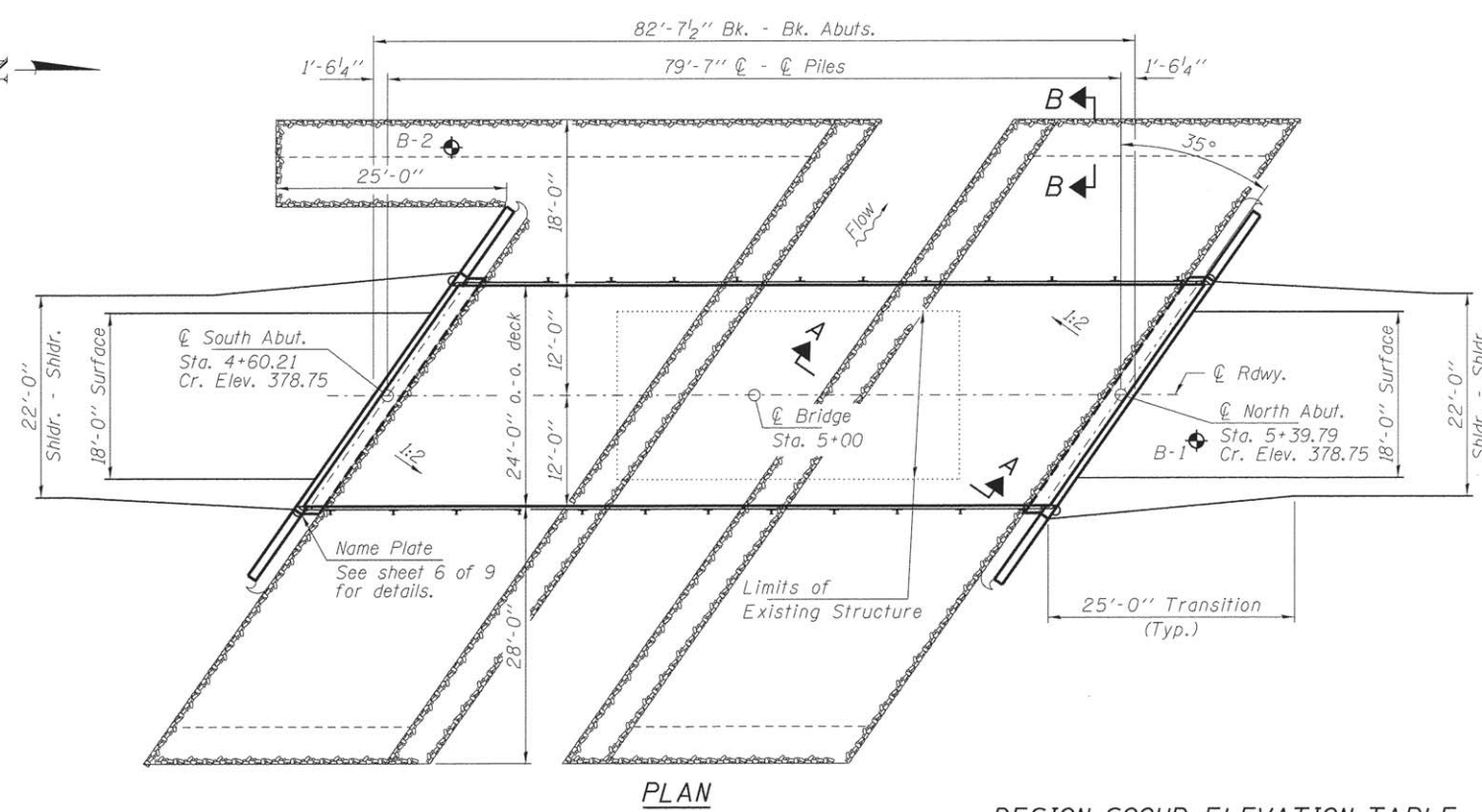
**GENERAL NOTES**

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 North 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 (IL Modified). 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.  
 An alternate beam design using 48"x33" precast prestressed concrete deck beams will be allowed with approval by the Engineer. Revised beam designs must be approved by the Engineer. No additional compensation will be allowed.

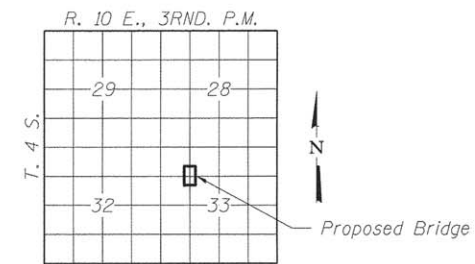


**INDEX OF STRUCTURE SHEETS**

1. General Plan & Elevation
2. 33"x36" PPC Deck Beam
3. 33"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. HP Pile Details
- 8-9. Borings



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



BUILT 201 BY  
 WHITE COUNTY  
 SEC. 11-10132-00-BR  
 PHILLIPS ROAD DISTRICT  
 STR. NO. 097-3288  
 LOADING HL-93

**NAME PLATE**  
 See Std. 515001

**DESIGN SPECIFICATIONS**

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with all 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) = 0.291g  
 Design Spectral Acceleration at 0.2 sec. (SD5) = 0.690g  
 Soil Site Class = D

**WATERWAY INFORMATION**

Drainage Area = 3.21 Sq. Mi.		Existing Low Grade Elev. 377.1 @ Sta. 5+04		Proposed Low Grade Elev. 378.75 @ Sta. 5+00	
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Natural Head - Ft.	Headwater El.
Design	15	724	388	373.74	373.74
Max. Calc.	100	1240	448	375.48	375.64

**DESIGN SCOUR ELEVATION TABLE**

Event/Limit State	Design Scour Elevations (ft.)		Item 113
	S. Abut.	N. Abut.	
Q100	371.1	371.1	8
Q200	371.1	371.1	
Design	371.1	371.1	
Check	371.1	371.1	

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."

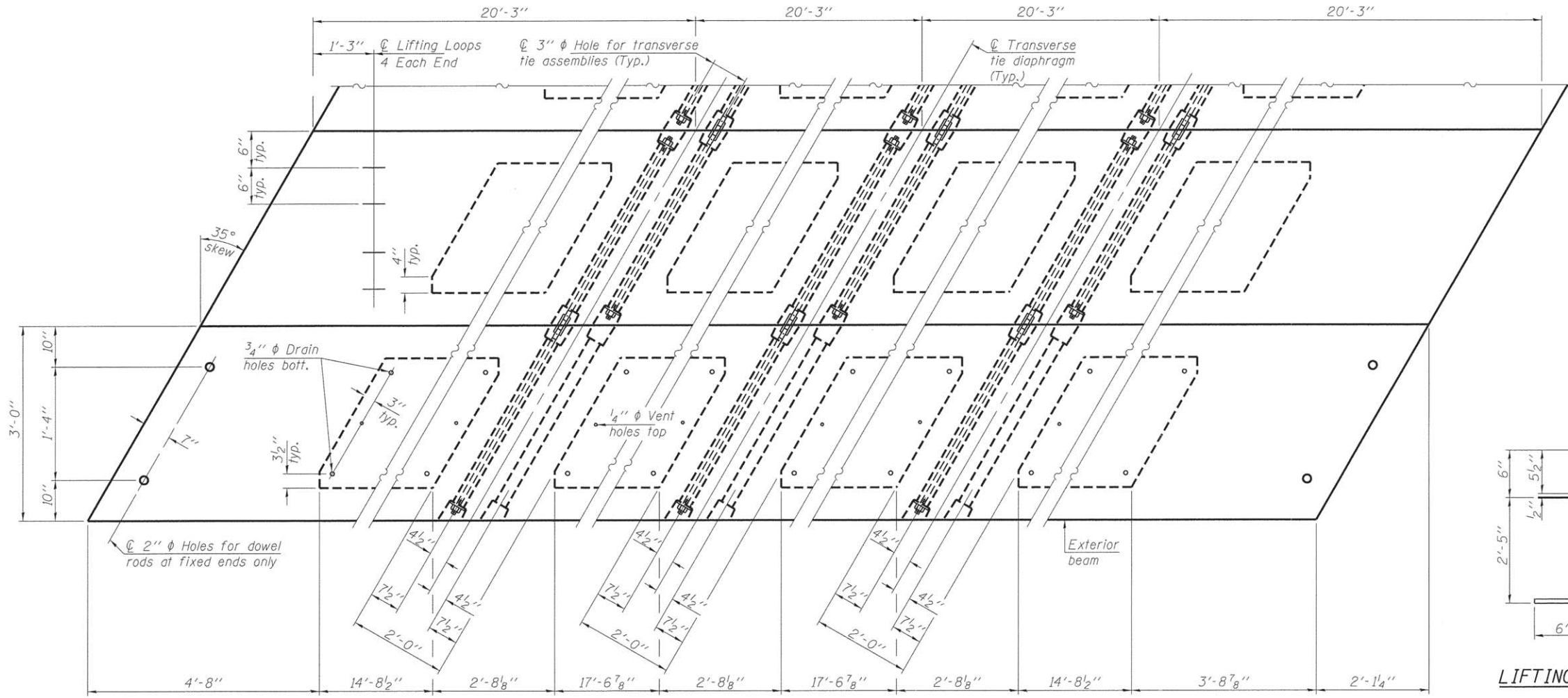
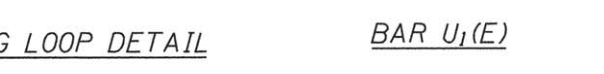
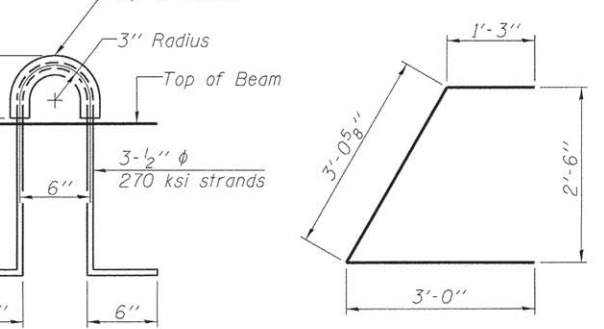
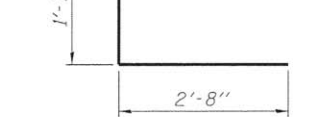
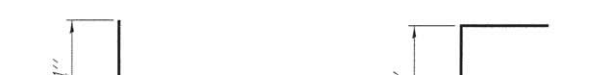
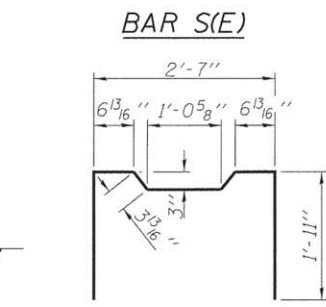
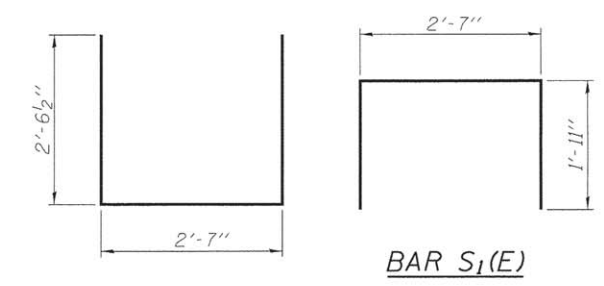
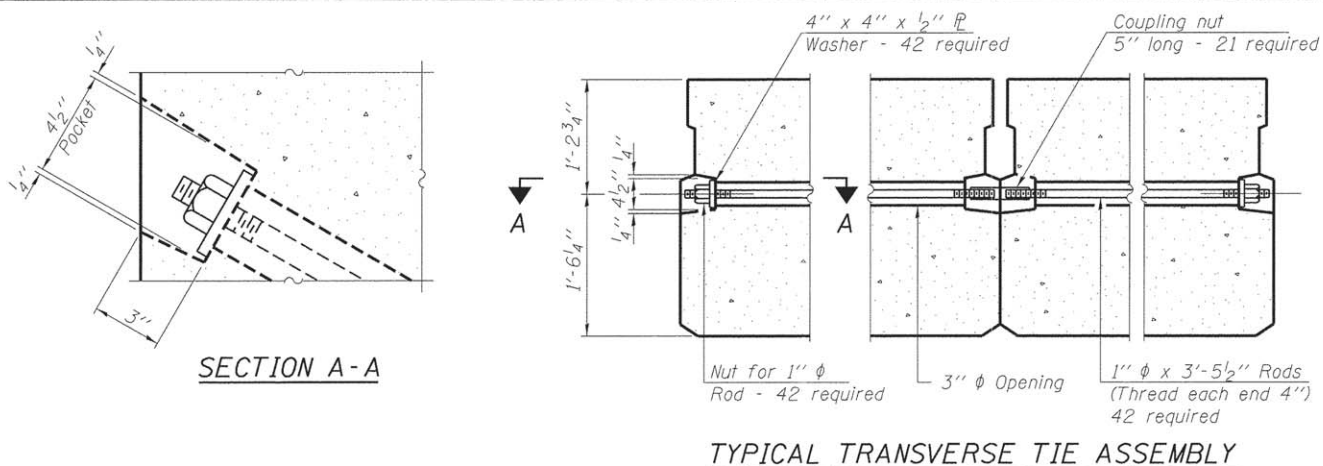
*Steven W. Meigs* 08/18/2016  
 ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			450
Stone Dumped Riprap, Class A4	Ton			530
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		31.8	31.8
Concrete Encasement	Cu. Yd.		3.4	3.4
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1,944		1,944
Reinforcement Bars, Epoxy Coated	Pound		3,950	3,950
Steel Railing, Type S-1	Foot	159		159
Furnishing Steel Piles HP10x42	Foot		810	810
Driving Piles	Foot		810	810
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





**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" φ 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.  
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" φ lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(10) 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.  
Reinforcement bars designated (E) shall be epoxy coated.

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1,944
---	---------	-------

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

PD-3336-LD

1-28-16

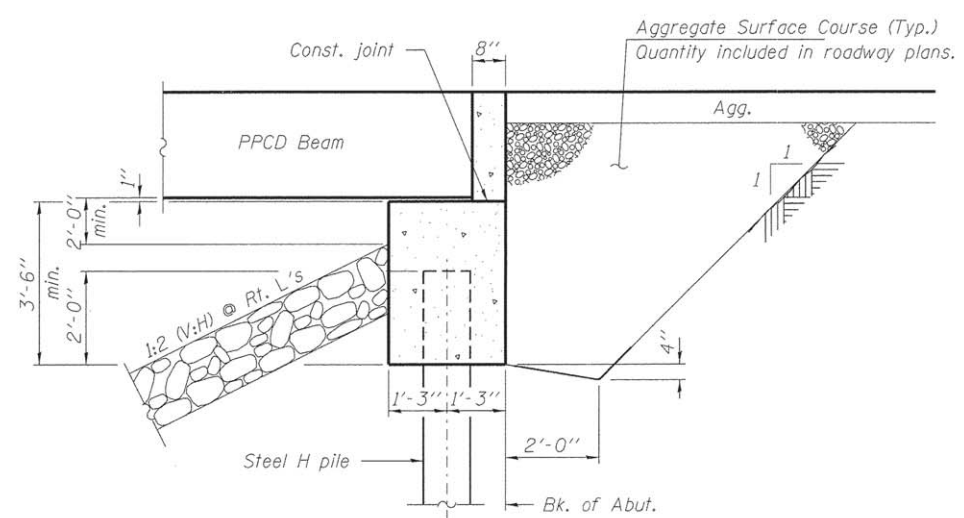
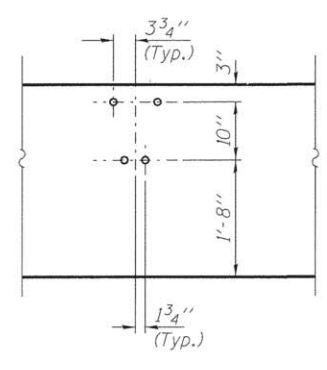
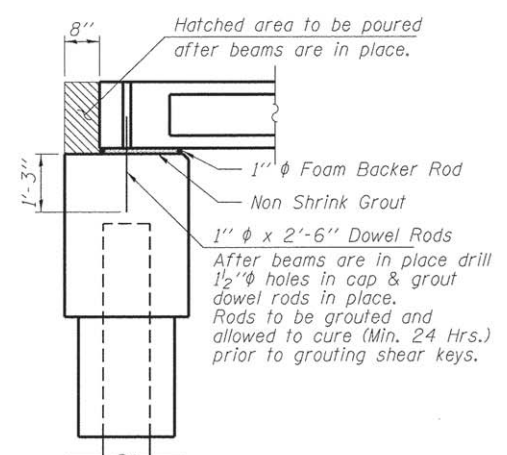
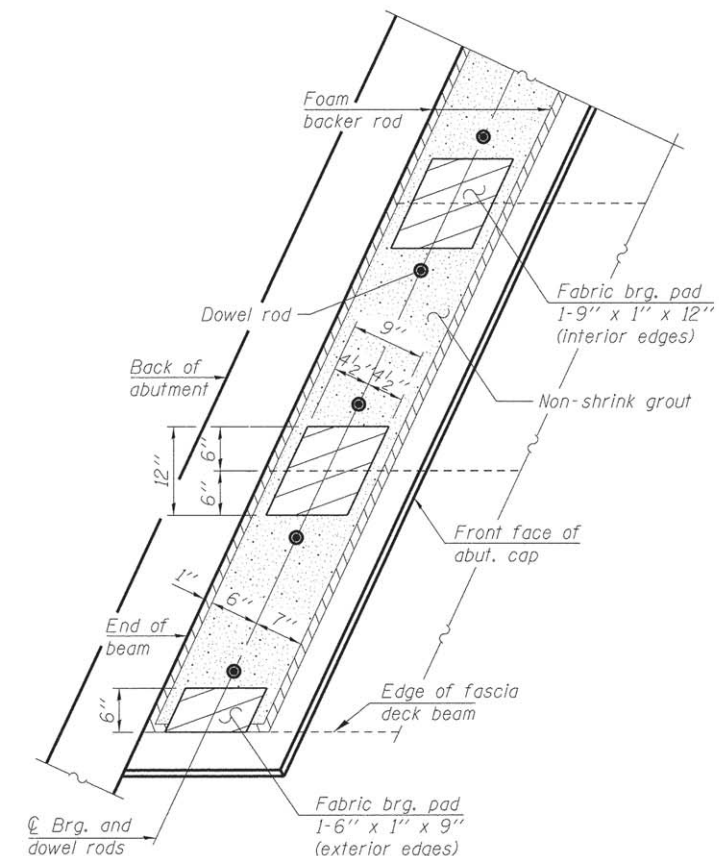
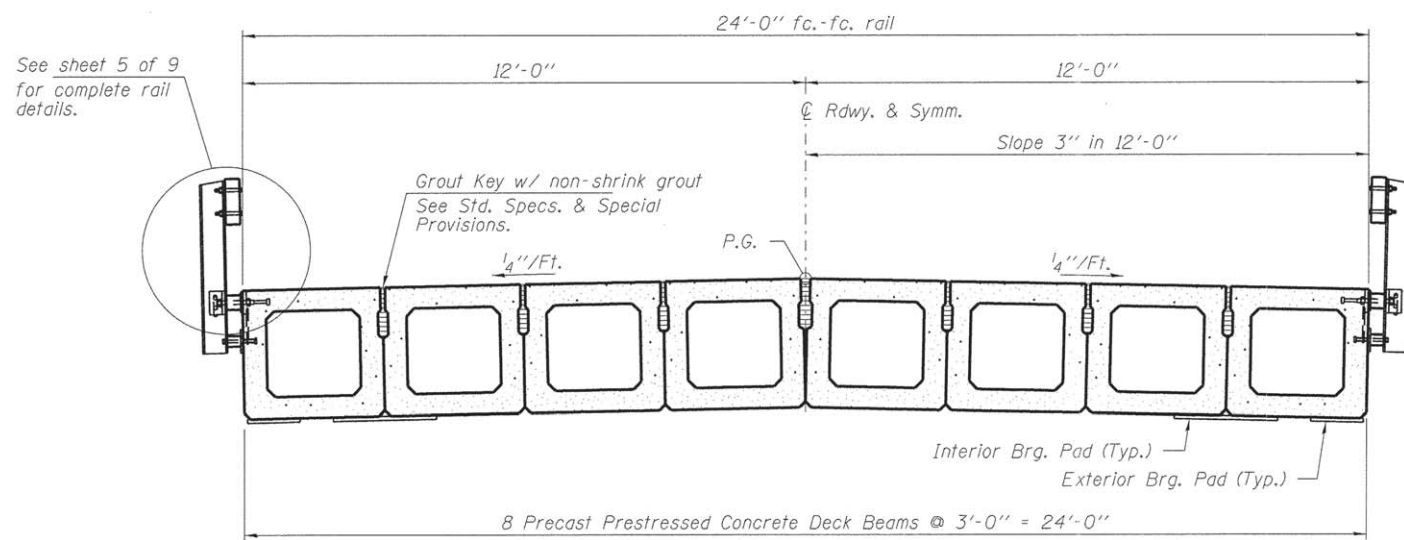
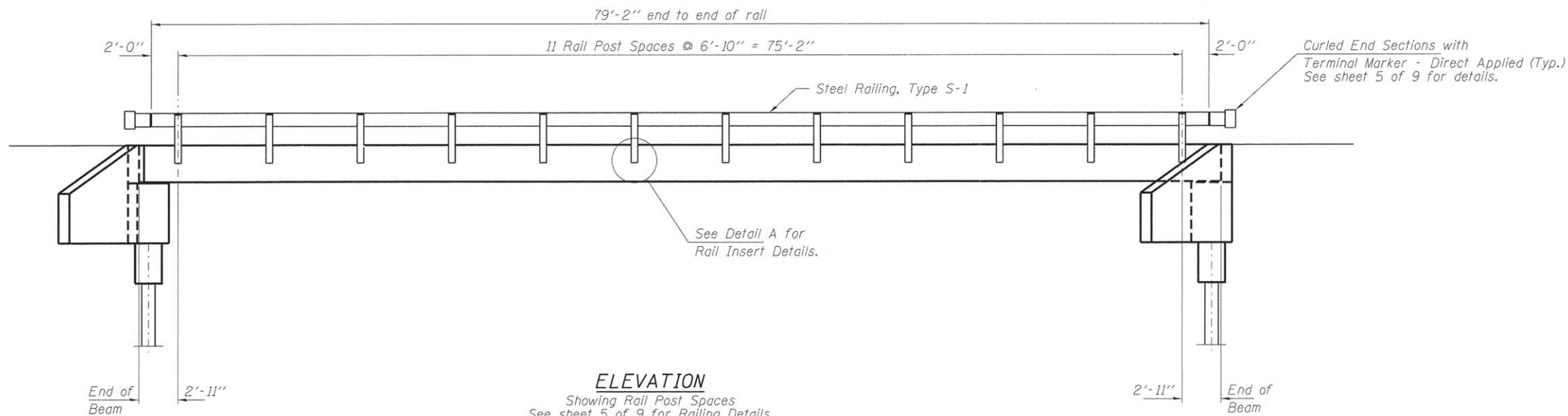
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HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
PLOT SCALE =		DRAWN - R.D.H.	REVISED -
PLOT DATE = 8/18/2016		CHECKED - S.W.M.	REVISED -

**STATE OF ILLINOIS  
WHITE COUNTY HIGHWAY DEPARTMENT**

**33" x 36" PPC DECK BEAM DETAILS  
STRUCTURE NO. 097-3288**

SHEET NO. 3 OF 9 SHEETS

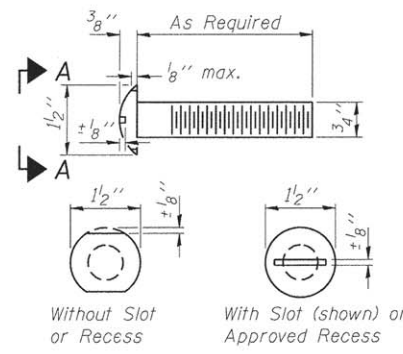
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	7
PHILLIPS ROAD DISTRICT		CONTRACT NO. 99574		
ILLINOIS FED. AID PROJECT BROS-019310691				



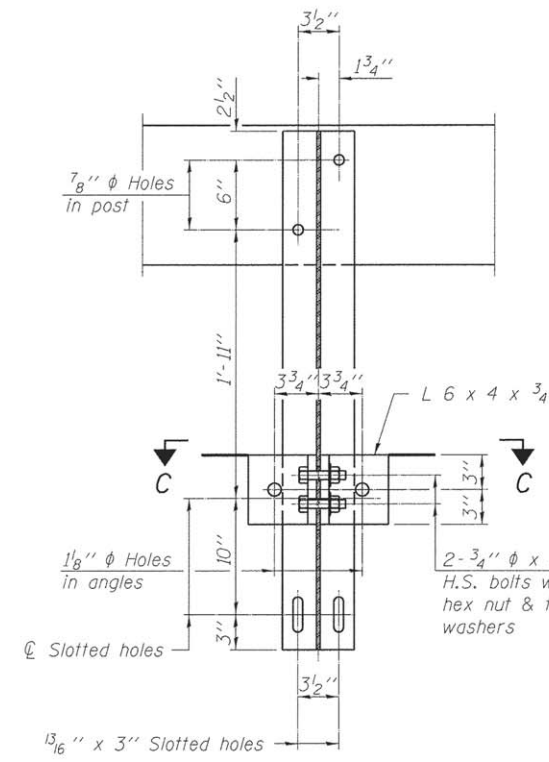
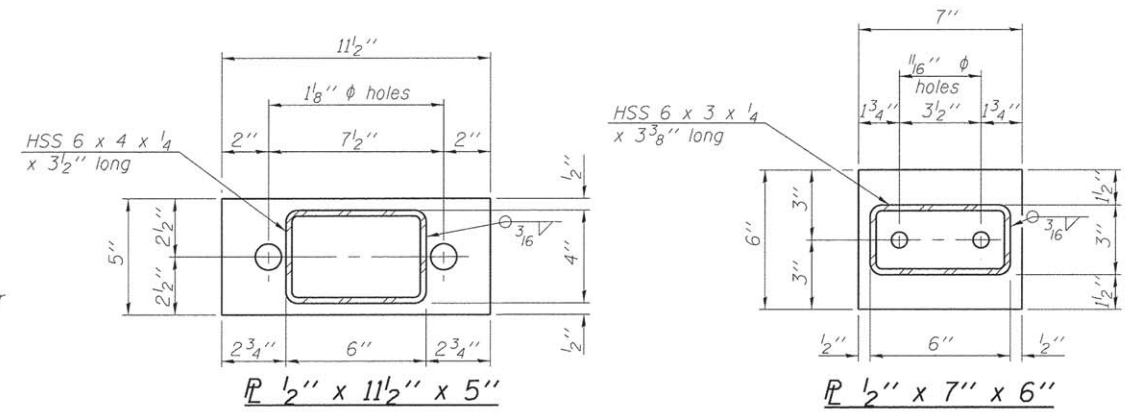
Notes:  
The bearing seat surfaces shall be adjusted by shimming the bearing to assure firm and even bearing prior to placement of grout. 2-1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shown shall be provided for each bearing.

FILE NAME = 151133-sht-brIDGE.dgn	USER NAME =	DESIGNED - A.M.C.	REVISED	<b>STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 097-3288</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLLOT SCALE =	CHECKED - S.W.M.	REVISED -			302	11-10132-00-BR	WHITE	13	8	
<b>ILR</b> ILLINOIS PROFESSIONAL DESIGN FIRM 121 PCT. 1ST COMP. 184-000959	PLLOT DATE = 8/18/2016	DRAWN - R.D.H.	REVISED -			PHILLIPS ROAD DISTRICT		CONTRACT NO. 99574		ILLINOIS FED. AID PROJECT BR05-0193(0691)	
		CHECKED - S.W.M.	REVISED -			SHEET NO. 4 OF 9 SHEETS					

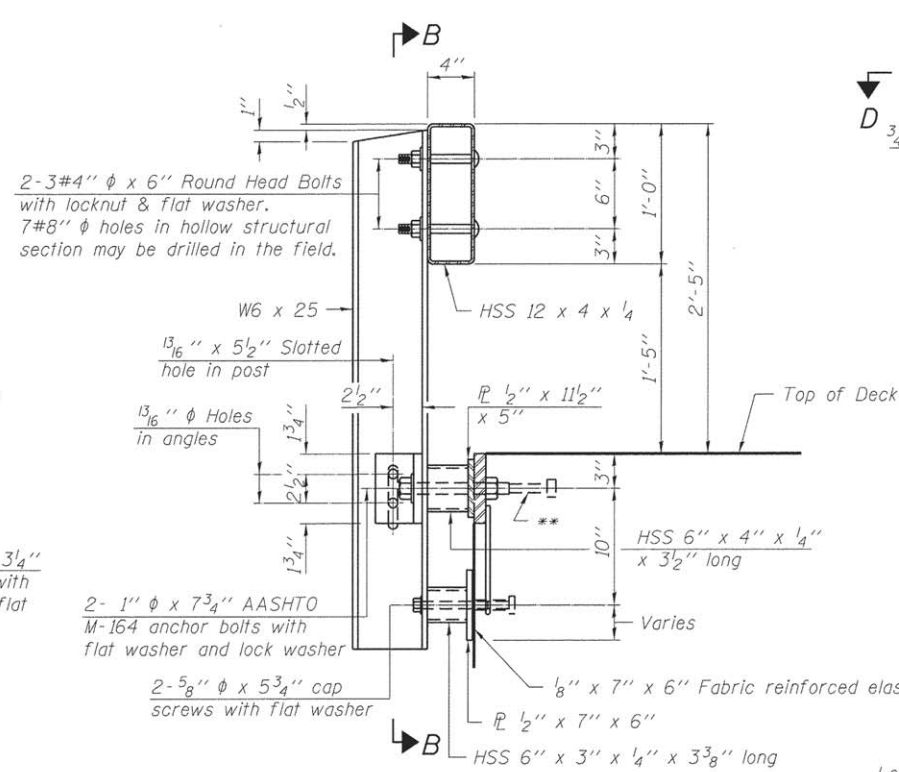




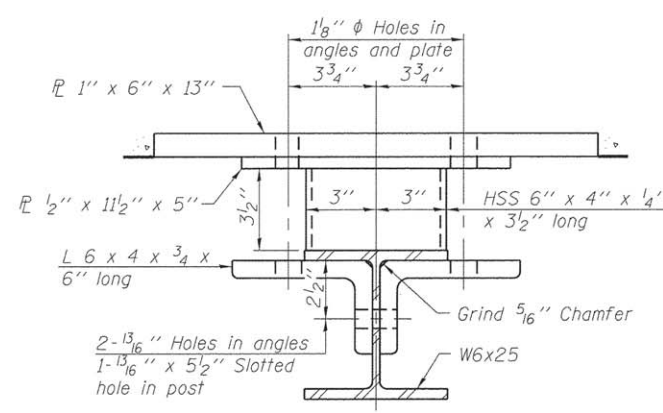
**VIEW A-A  
ROUND HEAD BOLT**



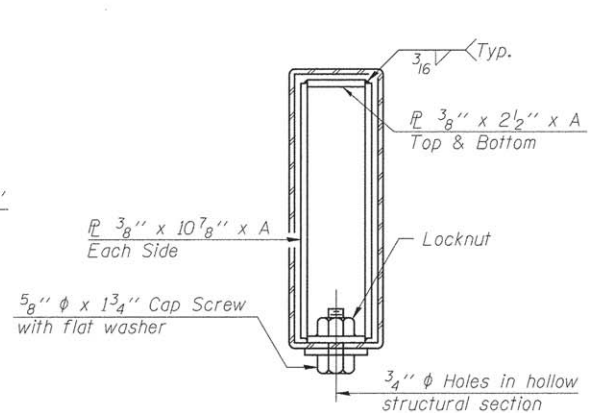
**SECTION C-C**



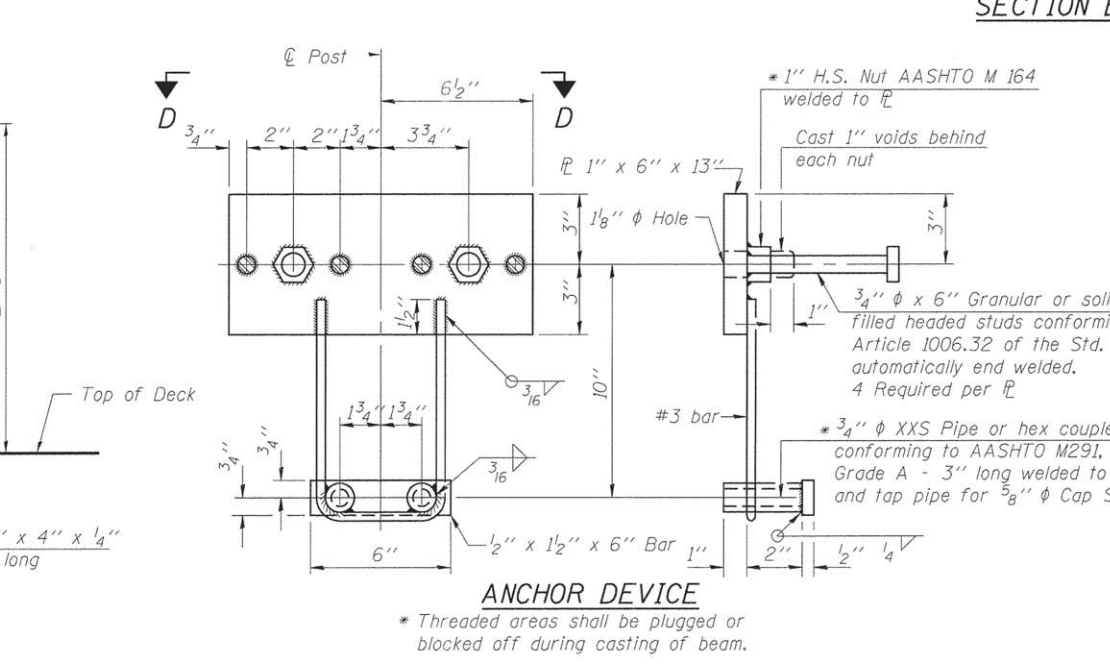
**SECTION AT RAILING POST**



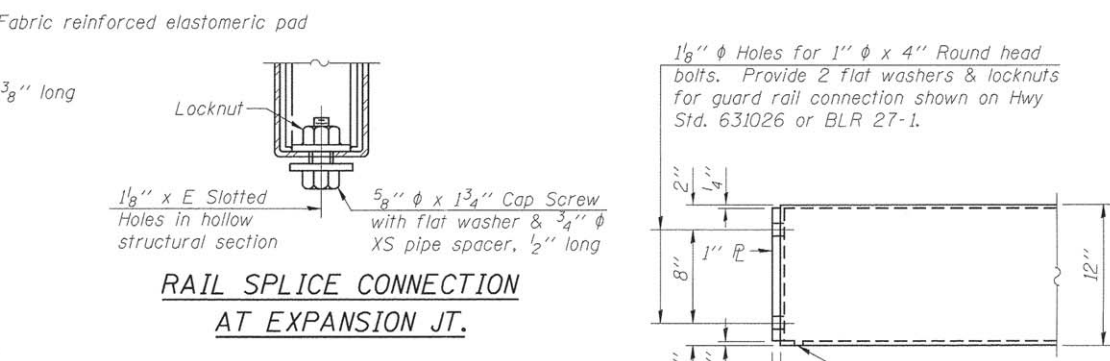
**SECTION C-C**



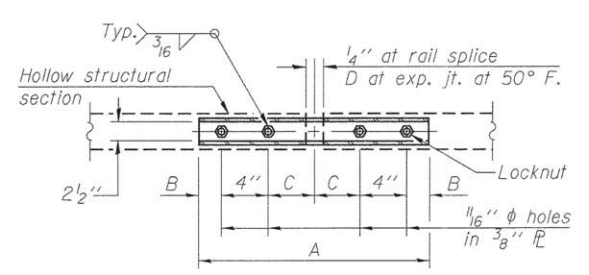
**SECTIONS AT RAIL SPLICE**



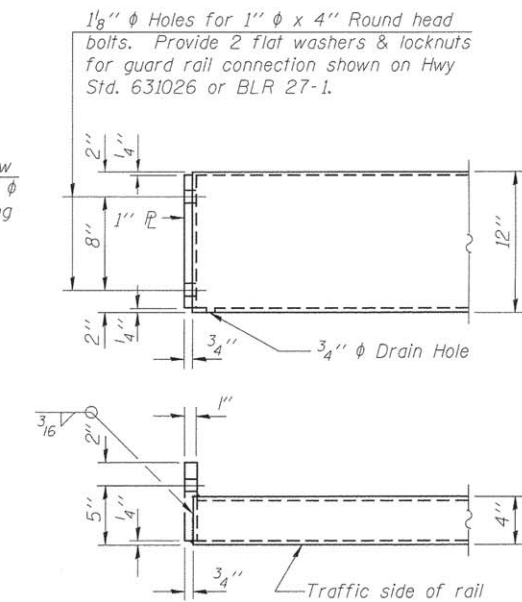
**ANCHOR DEVICE**



**RAIL SPLICE CONNECTION  
AT EXPANSION JT.**

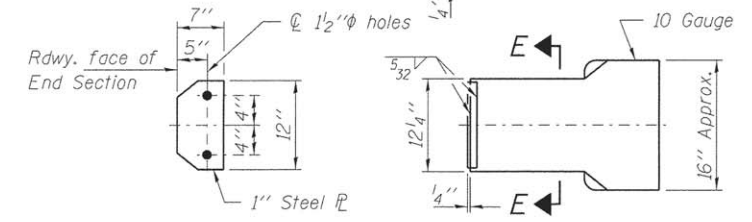


**PLAN-BOTT. SPLICE R  
TYPICAL**



**END OF RAIL DETAILS**

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



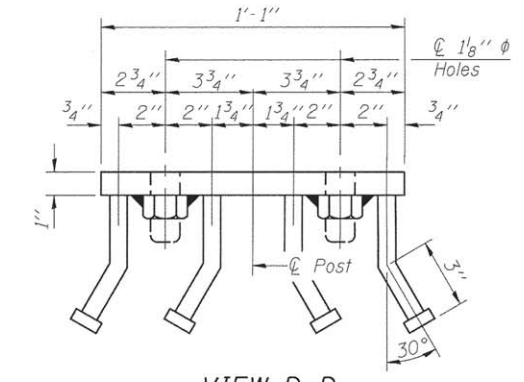
**SECTION E-E CURLED END SECTION DETAILS**

**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.



**VIEW D-D**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	159

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

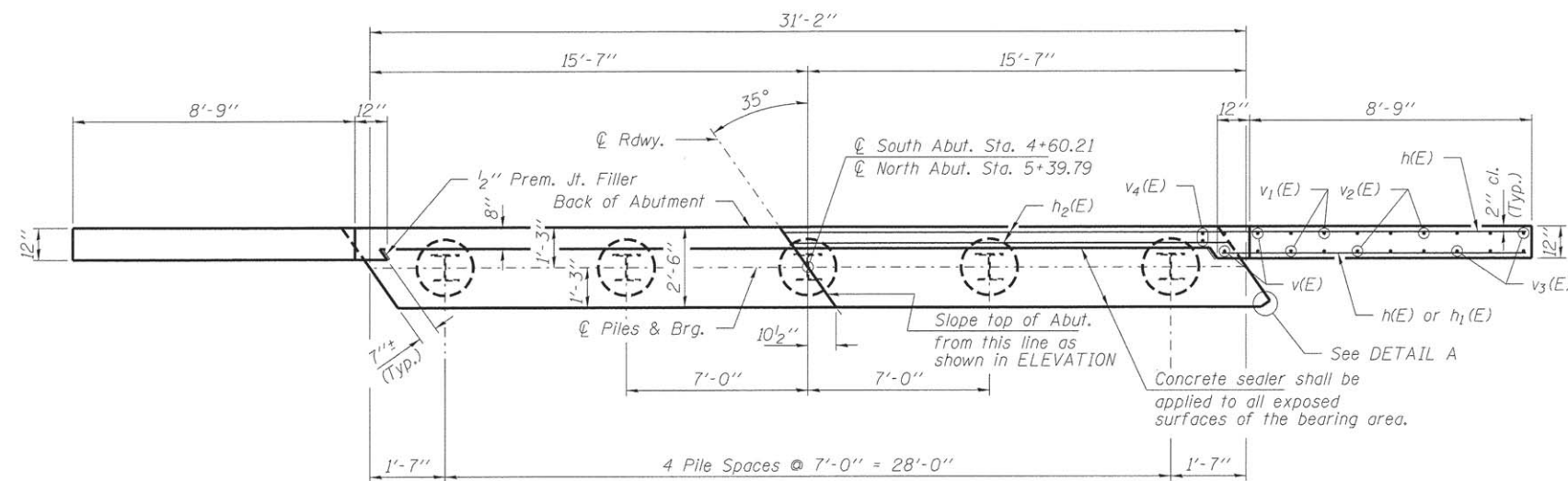
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HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
PLOT SCALE =		DRAWN - R.D.H.	REVISED -
PLOT DATE = 8/18/2015		CHECKED - S.W.M.	REVISED -

**STATE OF ILLINOIS  
WHITE COUNTY HIGHWAY DEPARTMENT**

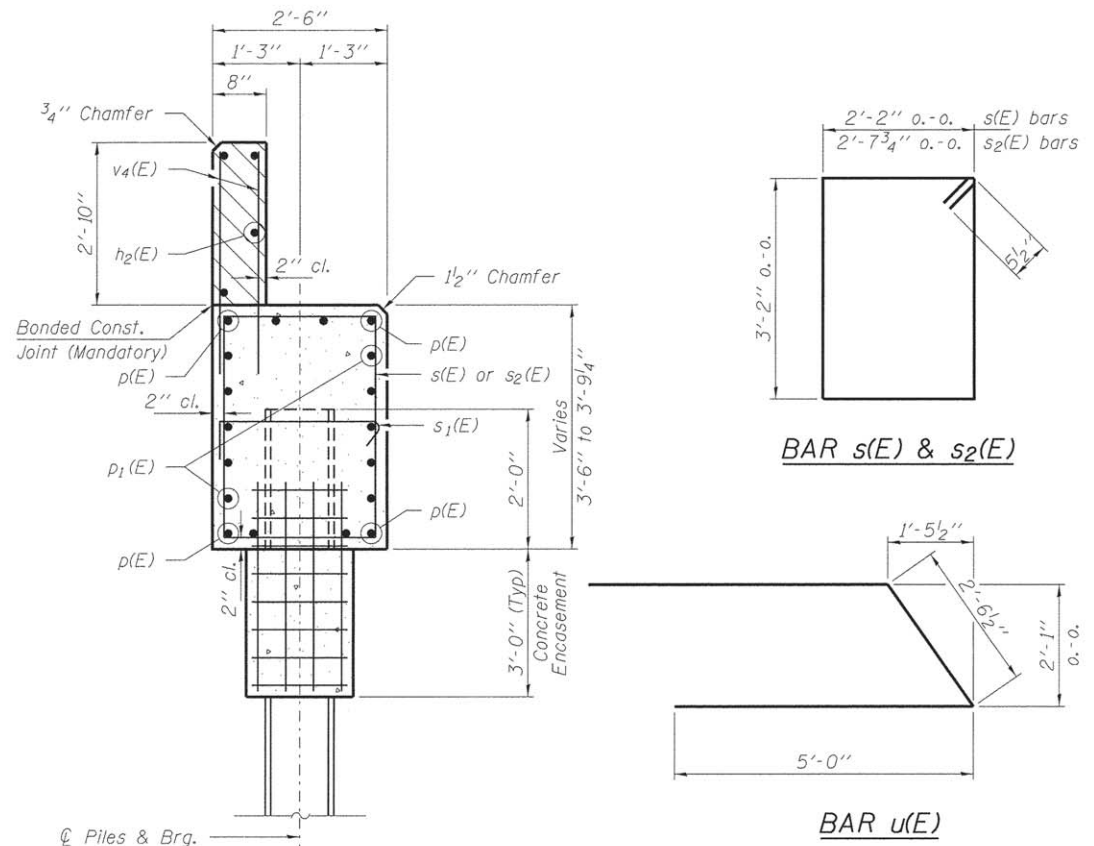
**STEEL RAILING, TYPE S-1  
STRUCTURE NO. 097-3288**

SHEET NO. 5 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	9
PHILLIPS ROAD DISTRICT				CONTRACT NO. 99574
ILLINOIS FED. AID PROJECT BROS-01930691				



**PLAN**

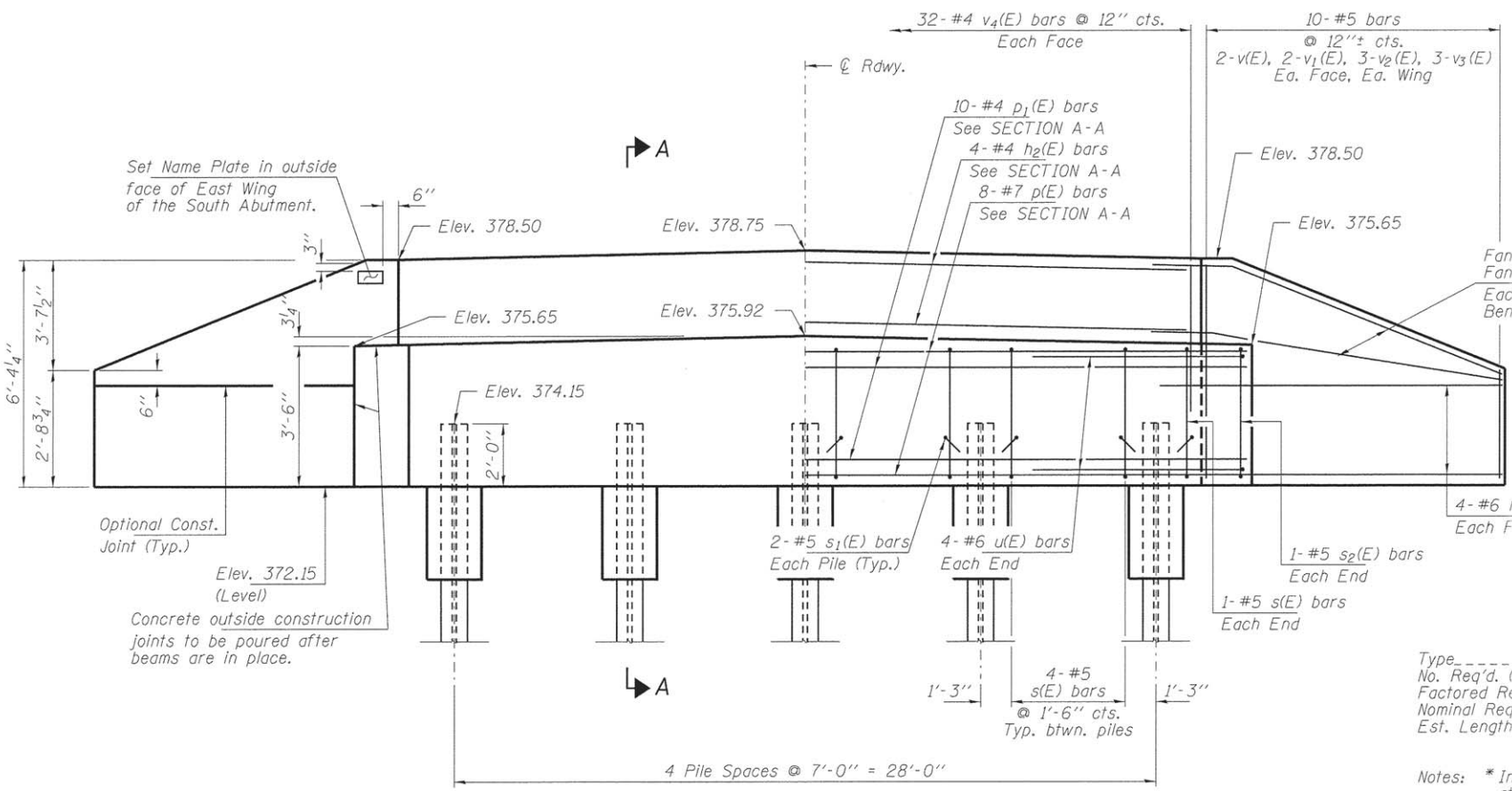


**SECTION A-A**

**BAR s(E) & s2(E)**

**BAR u(E)**

**BAR s1(E)**



**ELEVATION**

Note: Extend h(E) bars into abutment cap.

**DETAIL A**

**PILE DATA**

Type ----- Steel HP10x42  
 No. Req'd. (2 Abuts.) ----- \*10  
 Factored Resistance Available ----- 184 Kips/Pile  
 Nominal Req'd Bearing ----- 335 Kips/Pile  
 Est. Length ----- 90 Ft/Pile

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

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

**BILL OF MATERIAL - 2 ABUTS.**

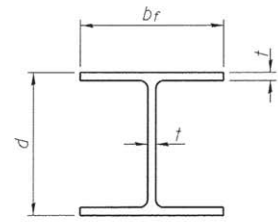
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	40	#6	11'-0"	—
h1(E)	8	#4	9'-6"	—
h2(E)	8	#4	30'-10"	—
p(E)	16	#7	30'-10"	—
p1(E)	20	#4	30'-10"	—
s(E)	36	#5	11'-7"	□
s1(E)	20	#5	3'-2"	U
s2(E)	4	#5	12'-7"	□
u(E)	16	#6	12'-7"	U
v(E)	16	#5	5'-6"	—
v1(E)	16	#5	4'-2"	—
v2(E)	24	#5	3'-4"	—
v3(E)	24	#5	2'-5"	—
v4(E)	128	#5	3'-8"	—
Concrete Structures			Cu. Yd.	31.8
Concrete Encasement			Cu. Yd.	3.4
Reinforcement Bars, Epoxy Coated			Pound	3,950
Furnishing Steel Piles HP10x42			Foot	810
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	114

FILE NAME = 151133-sht-brIDGE.dgn	USER NAME =	DESIGNED - A.M.C.	REVISED
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
<b>ILR</b> ILLINOIS PROFESSIONAL DESIGN FIRM L3 / P1 / PSE CORP. 184-000989	PLOT DATE = 8/18/2016	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

**STATE OF ILLINOIS  
WHITE COUNTY HIGHWAY DEPARTMENT**

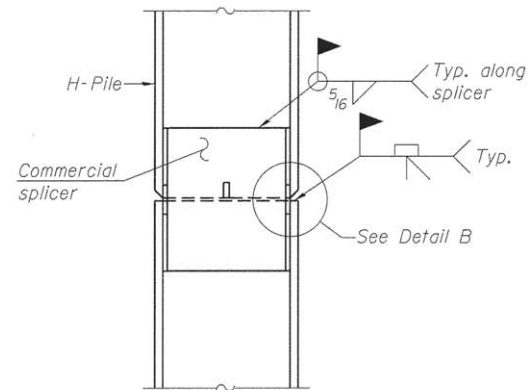
**ABUTMENTS  
STRUCTURE NO. 097-3288**  
SHEET NO. 6 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
302	11-10132-00-BR	WHITE	13	10
PHILLIPS ROAD DISTRICT		CONTRACT NO. 99574		
ILLINOIS FED. AID PROJECT BR05-019310691				

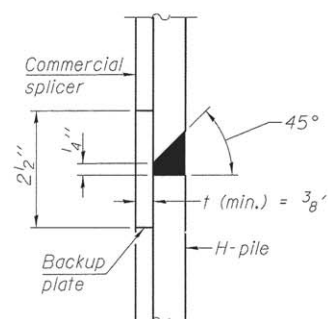


**STEEL PILE TABLE**

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"	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 5/8"	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 5/8"	7/16"	24"
HP 8x36	8"	8 5/8"	7/16"	18"

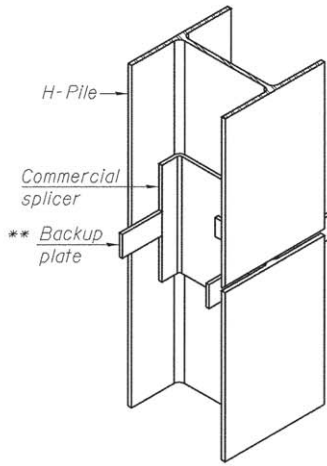


**ELEVATION**

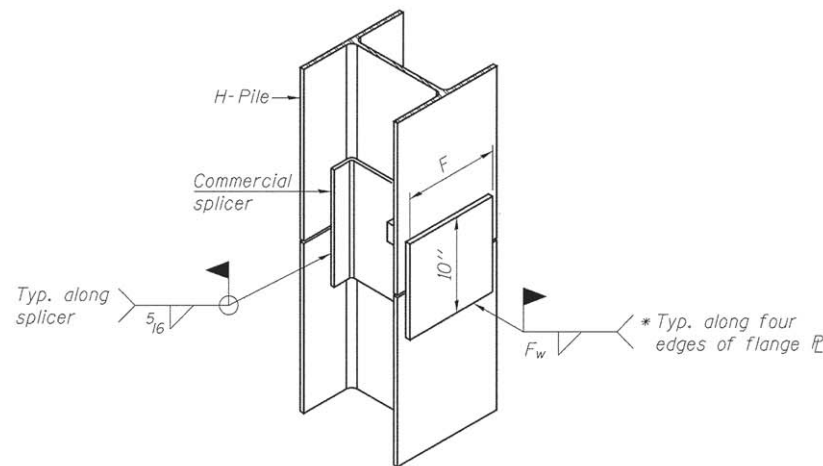


**DETAIL "B"**

**WELDED COMMERCIAL SPLICE**



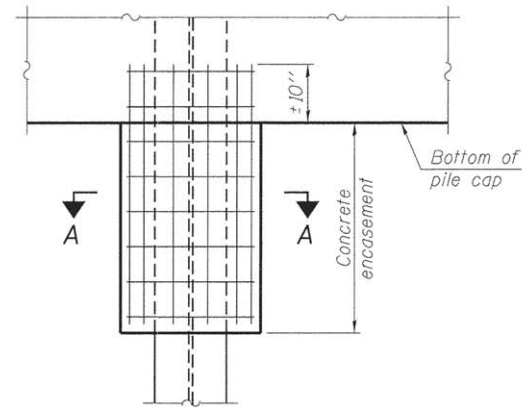
**ISOMETRIC VIEW**



**ISOMETRIC VIEW**

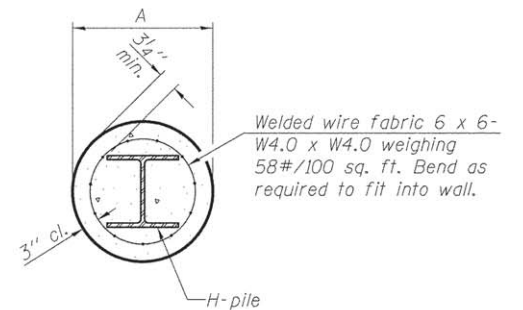
**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* 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.).



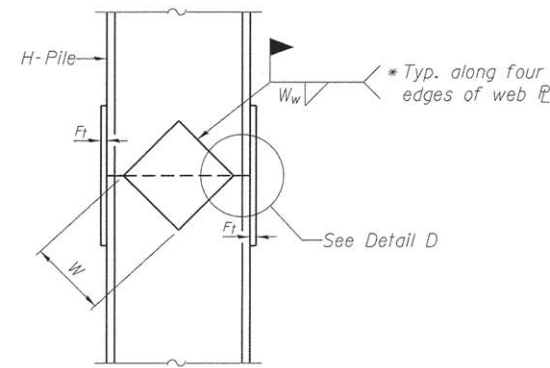
**ELEVATION**

**PILE ENCASEMENT**

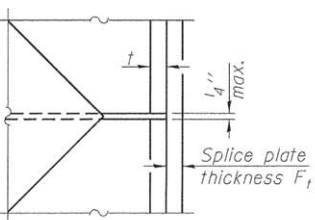


**SECTION A-A**

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

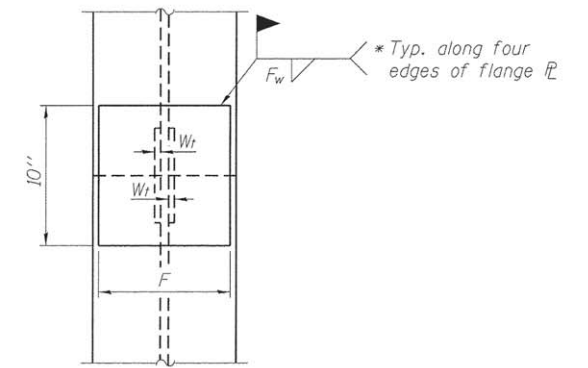


**ELEVATION**



**DETAIL D**

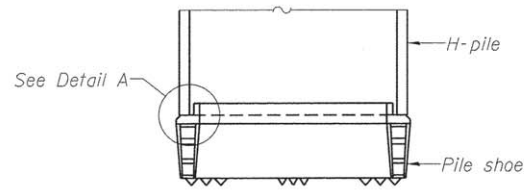
**WELDED PLATE FIELD SPLICE**



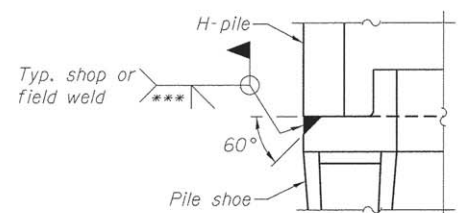
**END VIEW**

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 5/8"	1 1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 5/8"	1 1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 5/8"	1 1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 5/8"	1 1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 5/8"	1 1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 5/8"	1 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.



**ELEVATION**



**DETAIL A**

**H-PILE SHOE ATTACHMENT**

F-HP 1-27-12

FILE NAME = 151133-sht-bridge.dgn	USER NAME =	DESIGNED - A.M.C.	REVISED	<b>STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 097-3288</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 2085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			302	11-10132-00-BR	WHITE	13	11
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. / C.D.P.E. / 184.000989	PLOT DATE = 8/18/2016	DRAWN - R.D.H.	REVISED -			PHILLIPS ROAD DISTRICT	CONTRACT NO. 99574			
		CHECKED - S.W.M.	REVISED -			SHEET NO. 7 OF 9 SHEETS		[ILLINOIS] FED. AID PROJECT BROS-019310691		

Bridge Foundation Boring Log

Project: H-14299 Bridge TR-302 over Drainage Ditch Date: 1/14/2015  
 Section: 11-10132-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
 Structure: 097-3115 Checked By: T. Holcomb  
 County: White

Elevation	N	Qu	tsf	w	Surface Water Elev.		Elevation	N	Qu	tsf	w
					Ground Water Elev. During Drilling	Upon Completion					
377.2	0				plugged		363.7				
Ground Surface 6" Crushed Stone Brown Mottled Gray Sandy CLAY (A-6)											
	15	1.35	15				-25	13			23
Gray Silty CLAY (A-6) with sand and pebbles											
	10	1.15	12				-5	7	1.88	17	
Gray Sandy CLAY (A-6)											
	0	0.75	22				-30	11	1.78	16	
	5	1.55	17				-10				
	10	1.68	20				-35	11	2.38	18	
Gray Clayey SAND (A-2-4)											
	5		23				-15				
Gray Fine to Medium SAND (A-2-4)											
	8		21				-40	17	1.48	18	
Brown Fine to Medium SAND (A-2-4)											
	6		24				-20				
Gray Fine to Medium SAND (A-2-4)											
	12		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

Bridge Foundation Boring Log

Project: H-14299 Bridge TR-302 over Drainage Ditch Date: 1/14/2015  
 Section: 11-10132-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
 Structure: 097-3115 Checked By: T. Holcomb  
 County: White

Elevation	N	Qu	tsf	w	Surface Water Elev.		Elevation	N	Qu	tsf	w
					Ground Water Elev. During Drilling	Upon Completion					
clay (continued)											
	45	41	3.55	16			-70	28	3.78	24	
clay (continued)											
	30	4.55	25				-50				
	27	3.35	24				-55				
	15	2.88	30				-75				
	23	1.28	23				-60				
	24	3.98	24				-65				

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
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Bridge Foundation Boring Log

Project: H-14299 Bridge TR-302 over Drainage Ditch Date: 1/14/2015  
 Section: 11-10132-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
 Structure: 097-3115 Checked By: T. Holcomb  
 County: White

Elevation	N	Qu	tsf	w	Surface Water Elev.		Elevation	N	Qu	tsf	w
					Ground Water Elev. During Drilling	Upon Completion					
clay (continued)											
	14	2.28	33				-115				
	17	3.28	20				-100				
	46						-110				

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-14299 Bridge TR-302 over Drainage Ditch Date: 1/15/2015  
Section: 11-10132-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 097-3115 \_\_\_\_\_ Checked By: T. Holcomb  
County: White \_\_\_\_\_

Elevation	N	Qu tsf	w %	Surface Water Elev.	
				Ground Water Elev.	Upon Completion
376.3	0			370.3	371.3
4" Topsoil					
175.5					
10	1.08	27			
8	0.88	28			
370.3					
8	--	23			
367.8					
8	1.78	21			
9	--	25			
362.8					
8	--	26			
337.8					
8	--	24			
357.8					
14	--	23			
14	--	19			

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  
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Bridge Foundation Boring Log

Project: H-14299 Bridge TR-302 over Drainage Ditch Date: 1/15/2015  
Section: 11-10132-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 097-3115 \_\_\_\_\_ Checked By: T. Holcomb  
County: White \_\_\_\_\_

Elevation	N	Qu tsf	w %	Surface Water Elev.	
				Ground Water Elev.	Upon Completion
45	34	4.38	23	370.3	370.3
26	2.75	25			
37	3.08	27			
48	3.18	25			
22	6.05	21			
36	--	19			

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

Bridge Foundation Boring Log

Project: H-14299 Bridge TR-302 over Drainage Ditch Date: 1/15/2015  
Section: 11-10132-00-BR Station \_\_\_\_\_ Bored by: B. Schwartz  
Structure: 097-3115 \_\_\_\_\_ Checked By: T. Holcomb  
County: White \_\_\_\_\_

Elevation	N	Qu tsf	w %	Surface Water Elev.	
				Ground Water Elev.	Upon Completion
17	2.65	25		370.3	371.3
24	1.78	22			
45	--	20			

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