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HIGHWAY STANDARDS

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SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	351.00
20300100	CHANNEL EXCAVATION	CU YD	295.00
20400800	FURNISHED EXCAVATION	CU YD	151.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	710.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	380.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.00
50300225	CONCRETE STRUCTURES	CU YD	24.10
50300280	CONCRETE ENCASEMENT	CU YD	2.80
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1680.00
50800105	REINFORCEMENT BARS	POUND	2570.00
Δ50900205	STEEL RAILING, TYPE S1	FOOT	139.00
51201400	FURNISHING STEEL PILES 10X42	FOOT	490.00
51202305	DRIVING PILES	FOOT	490.00
51203400	TEST PILE STEEL HP 10X42	EACH	1.00
51500100	NAME PLATES	EACH	1.00
67100100	MOBILIZATION	L SUM	1.00
Δ78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.00
• X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.40
• XX004633	FIELD TILE ADJUSTMENT	EACH	1.00

Δ SPECIALTY ITEMS

DESIGN DESIGNATION:
 DESIGN SPEED: 30 MPH
 HIGHWAY CLASS - LOCAL ROAD
 EXISTING STRUCTURE NO.: 097-3061
 PROPOSED STRUCTURE NO.: 097-3281
 CURRENT A.D.T. = 25
 CONTRACT NO. 99551



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. 124 WHITE COUNTY SECTION 10-09127-00-BR

PROJECT NO. BROS-193(060) JOB NO. C-99-528-11

CONTRACT #99551 PRAIRE CREEK

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	1

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
 184-000887
 (62-032435)(35-002769)



AARON M. MEFFORD
 NAME
 SIGNATURE
 DATE
 11-30-15
 EXPIRES

TOWNSHIP ROUTE 124
 OVER PRAIRE CREEK
 WHITE COUNTY, ILLINOIS

SHEET TITLE:

TITLE SHEET

SCALE: VARS

BY: SAA

DATE: 5/4/15

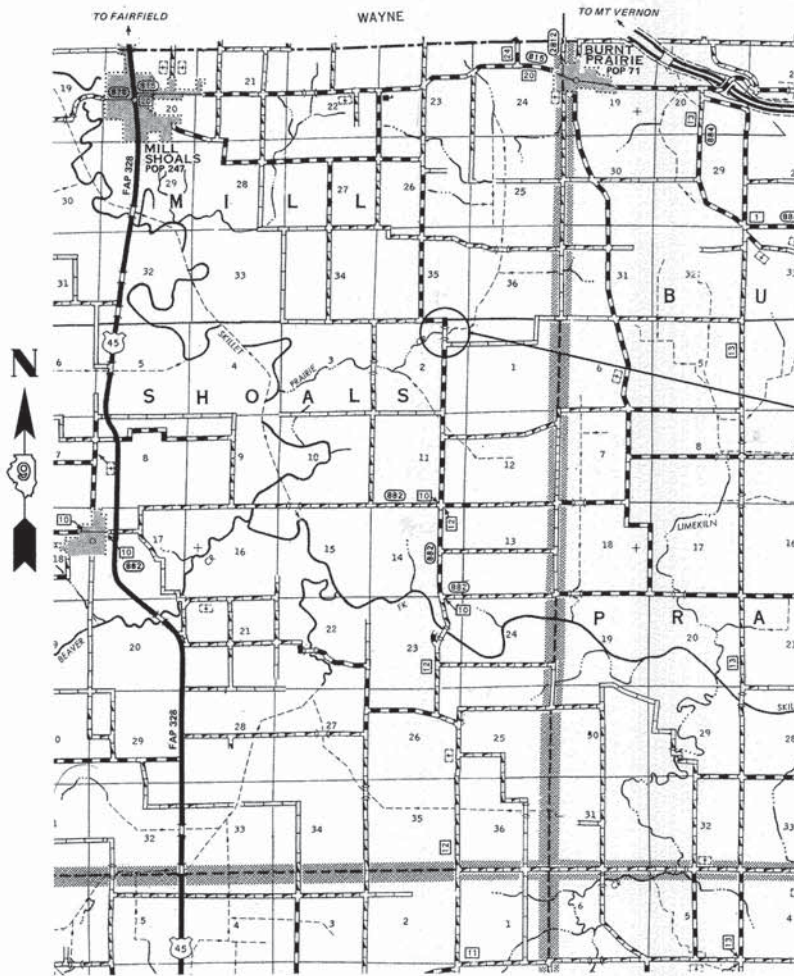
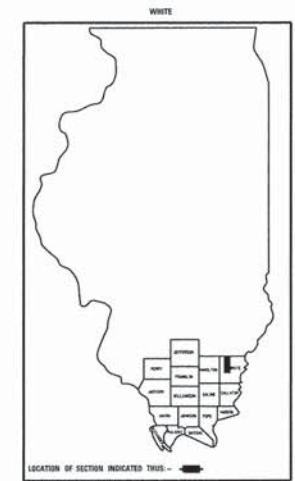
REV:

1 OF 13

SHEETS

SHEET NO.

1



LAYOUT APPROXIMATE SCALE 1 INCH = 1 MILE



GROSS LENGTH	480.00 FT	0.091 MILES
OMISSIONS	0.00 FT	0.000 MILES
NET LENGTH	480.00 FT	0.091 MILES

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

SECTION 10-09127-00-BR
 BEGINS STATION 2+60

STA 5+00, STRUCTURE NO. 097-3281,
 A 70' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH
 27" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS,
 24' WIDTH, 0° SKEW.

SECTION 10-09127-00-BR
 ENDS STATION 7+40

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

APPROVED May 5, 2015

Brian A. Ray
 COUNTY ENGINEER

PASSED MAY 18, 2015

Dennis W. Hill
 ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID
 BASED ON LIMITED
 REVIEW: MAY 18, 2015

Jeffrey L. Keirn
 JEFFREY L. KEIRN, P.E.
 DEPUTY DIRECTOR OF HIGHWAYS
 REGION FIVE ENGINEER

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	2
FED. ROAD DIST. NO. 9		ILLINOIS	PRAIRIE CREEK	
PROJECT # BR05-193060		CONTRACT # 99551		
LEC JOB # HZL0111H				

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LAND SURVEY &
PROFESSIONAL
ENGINEERING CORPORATION
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AARON M. MEFFORD
NAME
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

T.R. 124
OVER PRAIRIE CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE:
PLAN & PROFILE

SCALE: VARIES
BY: SAA
DATE: 5/05
REV:

2 OF 13
SHEETS
SHEET NO.
2

NOTE: CONSTRUCTION TRANSITION
STA. 2+60 TO STA 3+00
STA 7+00 TO STA 7+40

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

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 70 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.

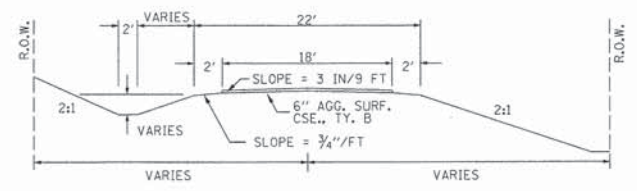
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

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.

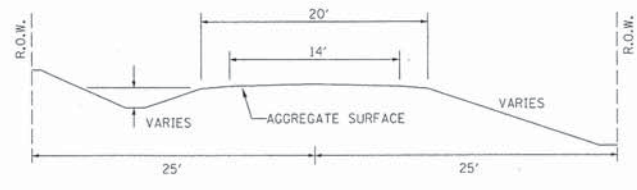
THE CONCRETE DECK BEAMS AND I-BEAMS SHALL BE SET ALONG THE ROW AND REMAIN THE PROPERTY OF THE COUNTY.

AGGREGATE SURFACE COURSE, TYPE B INCLUDES 24 TON FOR FILL NEXT TO THE BRIDGE, AND 356 TON FOR THE ROADWAY.

TYPICAL CROSS SECTION PROPOSED



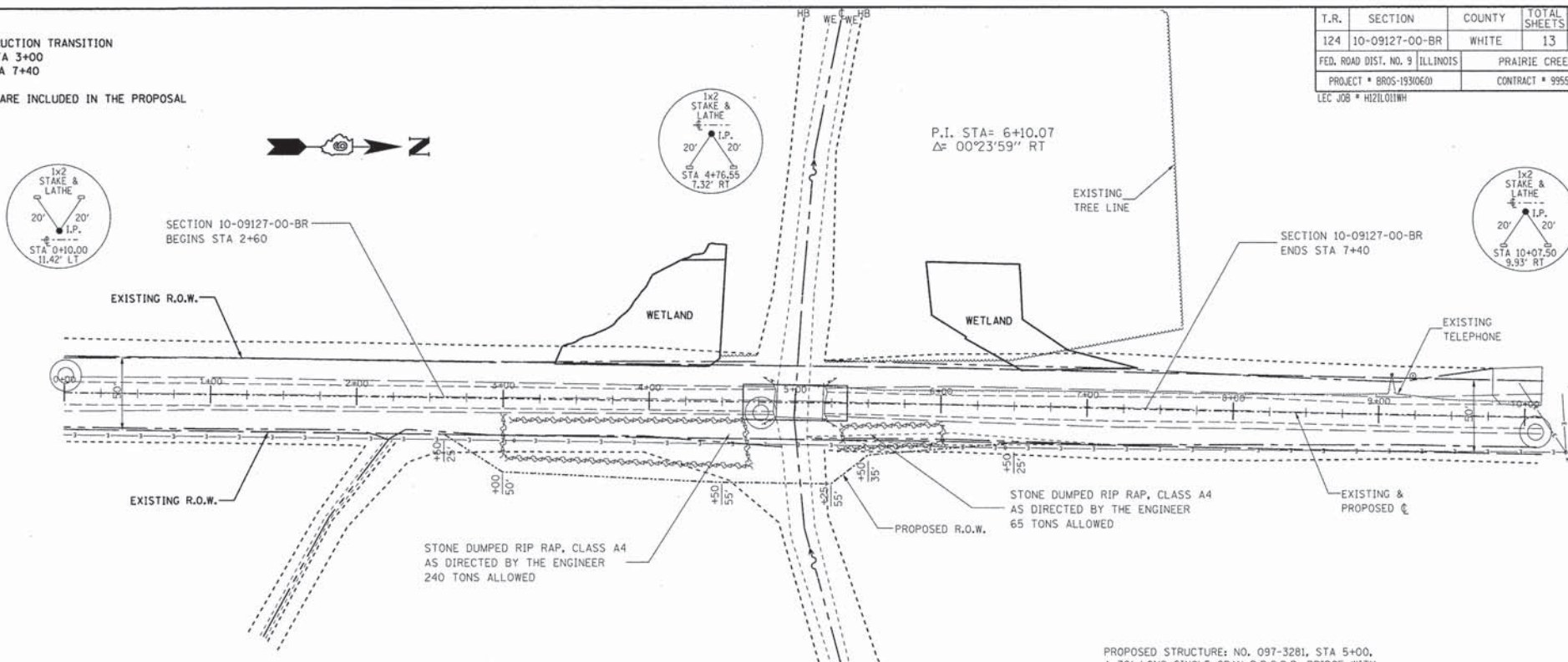
TYPICAL CROSS SECTION EXISTING



UTILITIES:
J.U.L.I.E. 1-800-892-0123
WAYNE-WHITE ELECTRIC CO-OP
1-618-842-2196
FRONTIER COMMUNICATIONS
1-618-382-2887

NOTE: CONSTRUCT SPECIAL DITCH
STA 2+60 TO STA 4+81 LT
STA 5+28 TO STA 6+50 LT

NOTE: FIELD TILE ADJUSTMENT
STA 3+25 RT
1 EACH FIELD TILE ADJUSTMENT

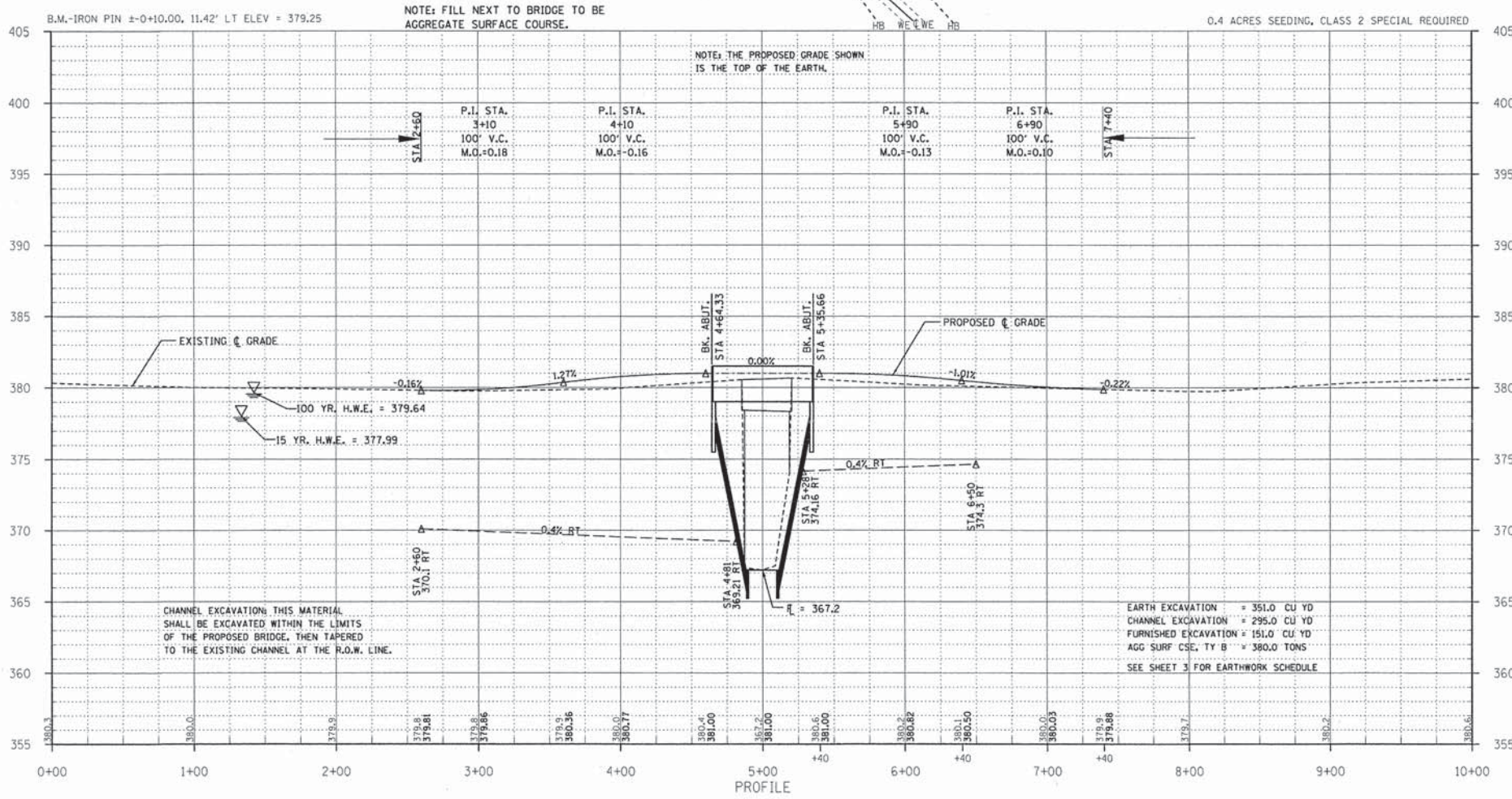


EXISTING BRIDGE STA 5+03.4; STRUCTURE NUMBER: 097-3061
32' LONG SINGLE SPAN WITH 21" CONCRETE DECK BEAMS ON WOOD CAPS WITH 5-WOOD PILING, WOOD MUDWALLS, WINGWALLS, AND BRIDGE RAIL. HAS ABUTMENT REPAIR OF 10" I-BEAMS FOR CAPS ON 2-10" I-BEAMS INSIDE WOOD CAPS AT EACH ABUTMENT.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.

PROPOSED STRUCTURE: NO. 097-3281, STA 5+00, A 70' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH 27" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS, 24' WIDTH, 0° SKEW.

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



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 = 351.0 CU YD
CHANNEL EXCAVATION = 295.0 CU YD
FURNISHED EXCAVATION = 151.0 CU YD
AGG SURF CSE. TY B = 380.0 TONS
SEE SHEET 3 FOR EARTHWORK SCHEDULE

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	3
FED. ROAD DIST. NO. 9 ILLINOIS		PRAIRIE CREEK		
PROJECT * BROS-193(060)		CONTRACT * 99551		
LEC JOB * HZL0101WH				

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LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000887
(62-032435)(35-002769)



AARON M. MEFFORD
NAME
Aaron Mefford
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

T.R. 124
OVER PRAIRIE CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

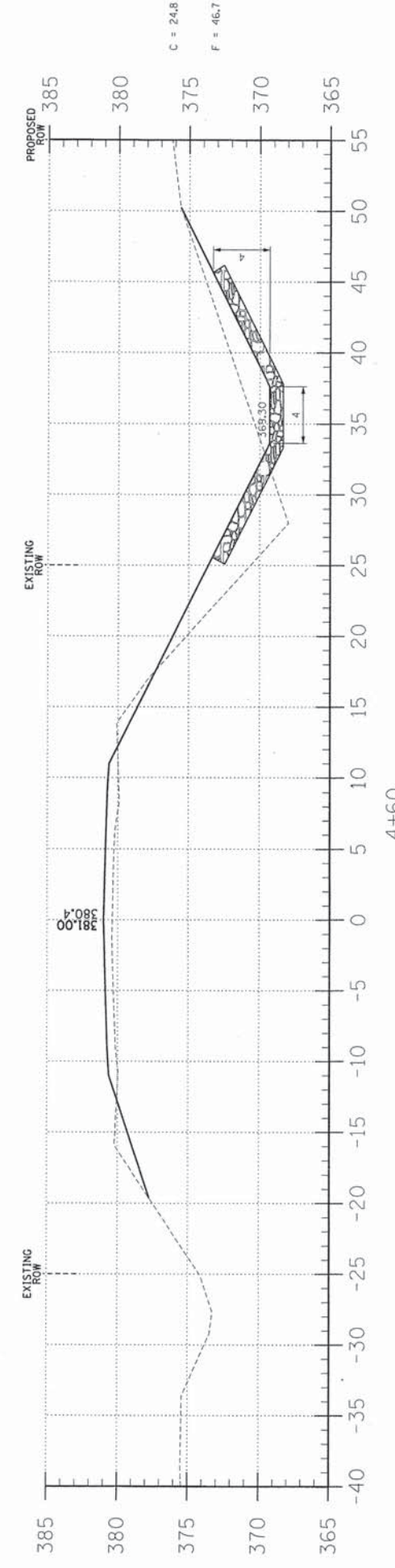
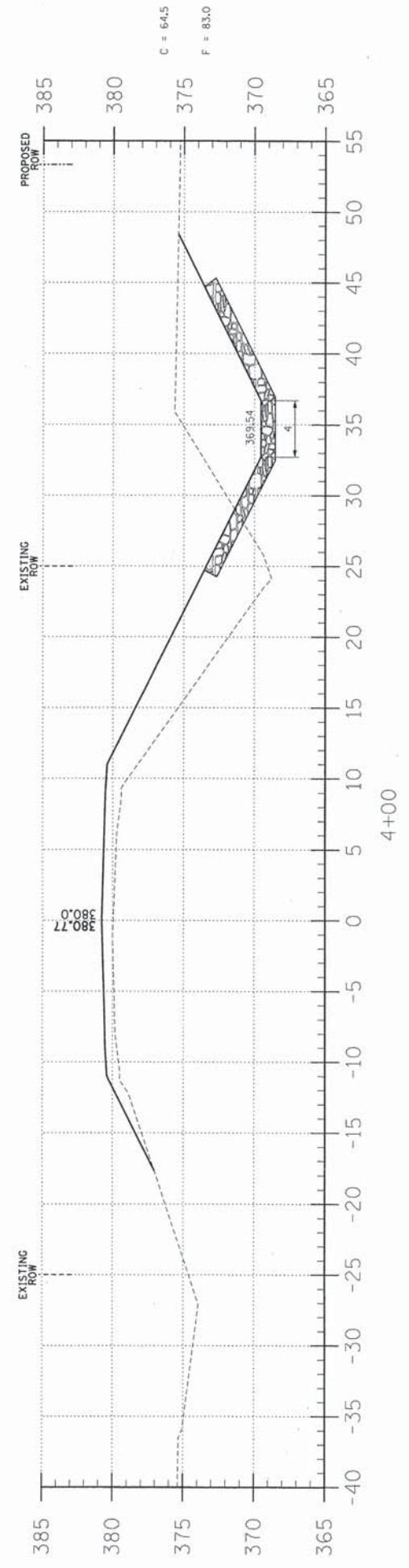
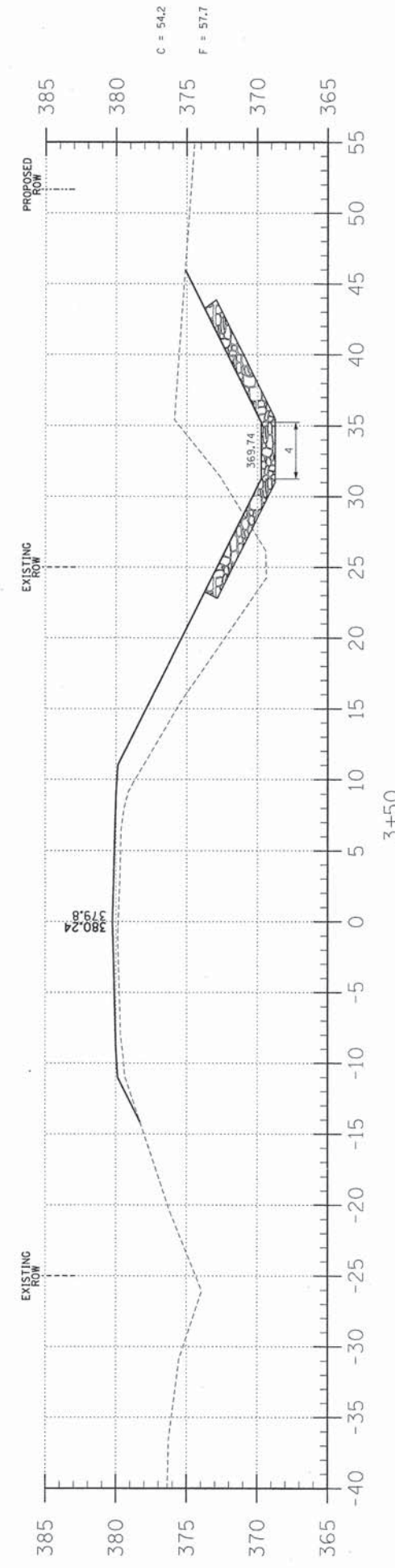
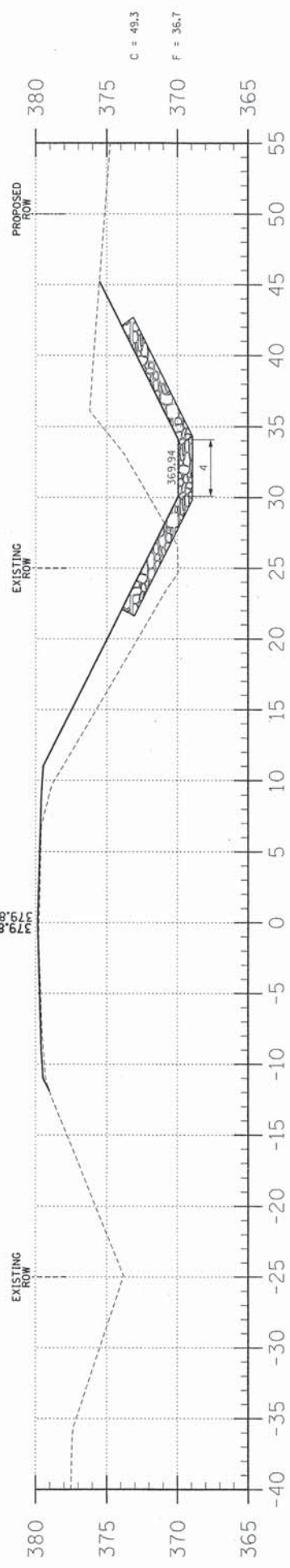
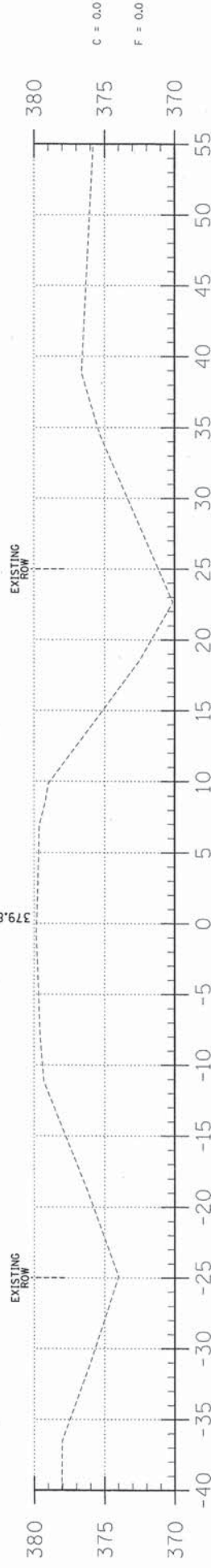
SCALE: 1" = 5'
BY: SAA
DATE: 5/5/15
REV:

3 OF 13
SHEETS

SHEET NO.
3

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
STA 0+00 TO 4+64.3	342.2	0.0	0.0	256.7	394.6	-137.9
STA 4+64.3 TO 5+35.7	0.0	295.0	147.5	110.6	0.0	110.6
STA 5+35.7 TO 10+00	9.2	0.0	0.0	6.9	130.3	-123.4
TOTAL	351.4	295.0	147.5	374.2	524.9	-150.7



C = 24.8
F = 46.7

C = 64.5
F = 83.0

C = 54.2
F = 57.7

C = 49.3
F = 36.7

C = 0.0
F = 0.0

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	4
FED. ROAD DIST. NO. 9 ILLINOIS		PRAIRIE CREEK		
PROJECT# BROS-193(060)		CONTRACT# 99551		

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LAND SURVEY &
PROFESSIONAL
ENGINEERING
CORPORATION
184-000887
(62-032435)(35-002769)



AARON M. MEFFORD
NAME
Aaron Mefford
SIGNATURE
5-5-15
DATE
11-30-15
EXPIRES

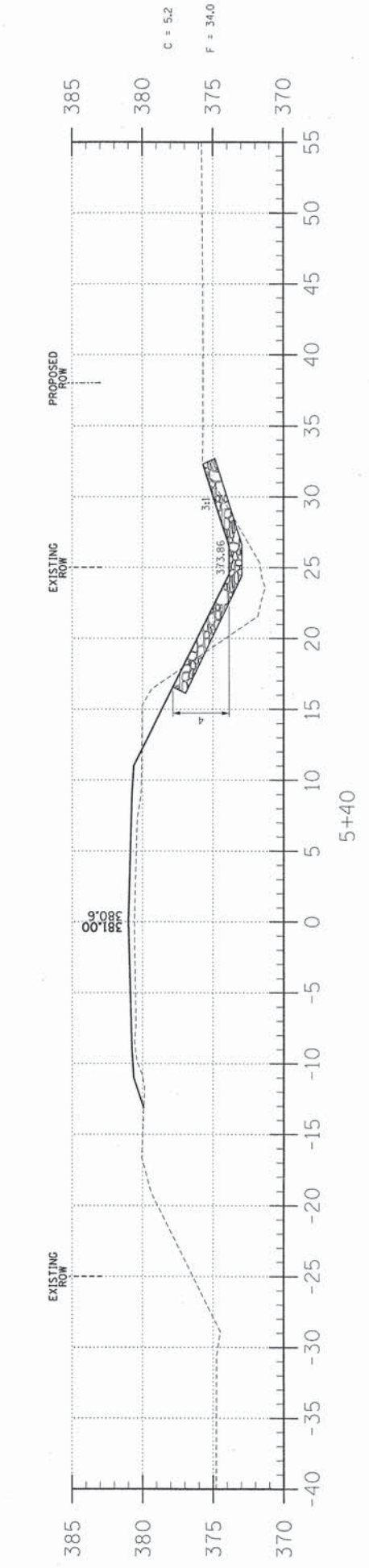
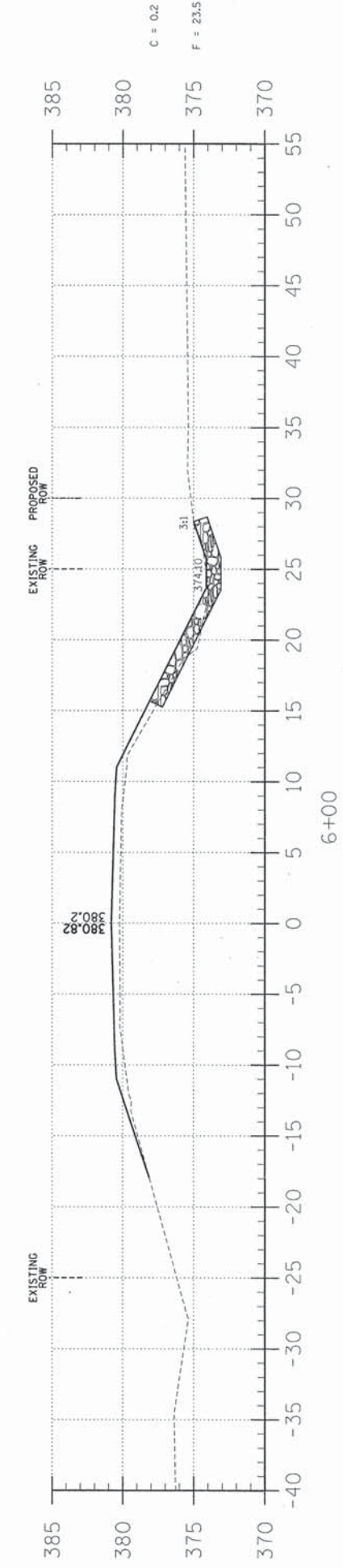
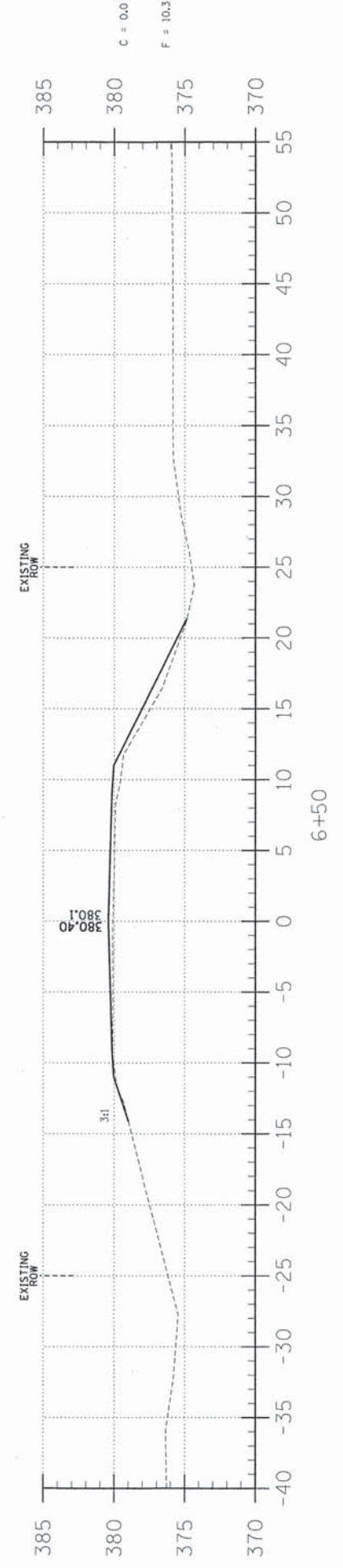
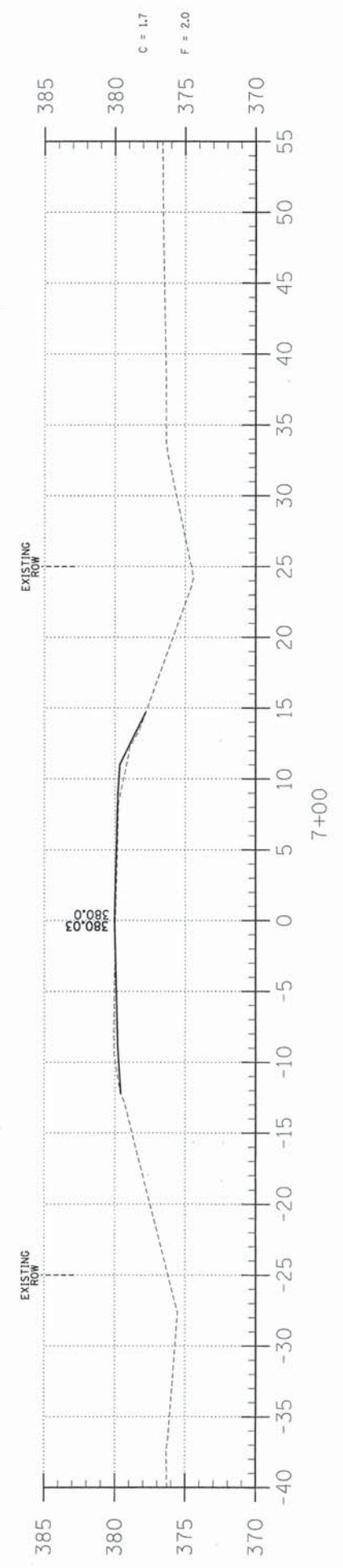
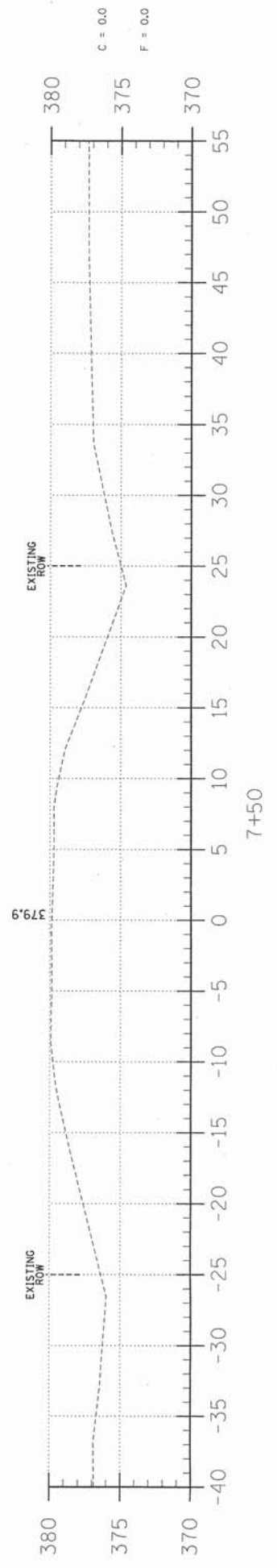
T.R. 124
OVER PRAIRIE CREEK
WHITE COUNTY, ILLINOIS

SHEET TITLE:
CROSS-SECTIONS

SCALE: 1" = 5'
BY: SAA
DATE: 5/5/15
REV:

4 OF 13
SHEETS

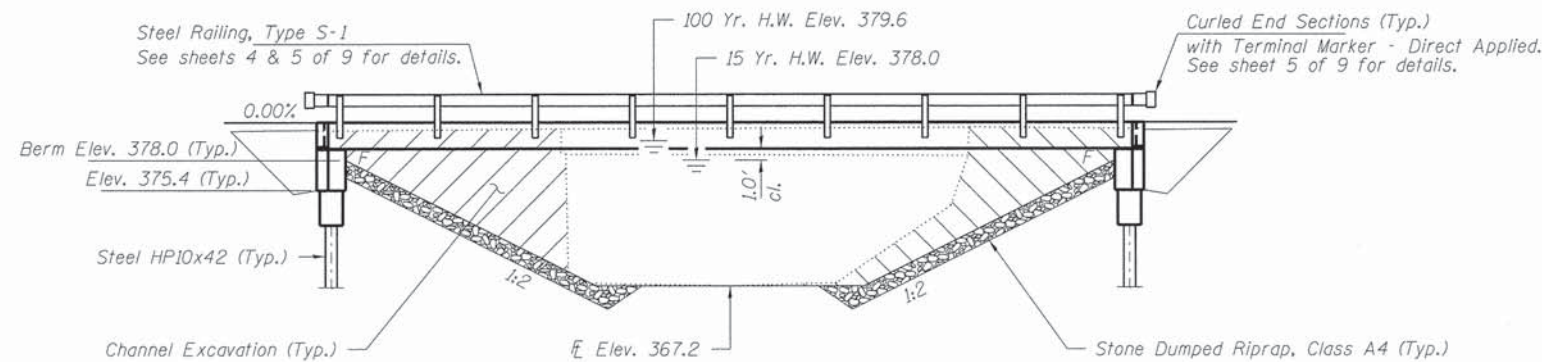
SHEET NO.
4



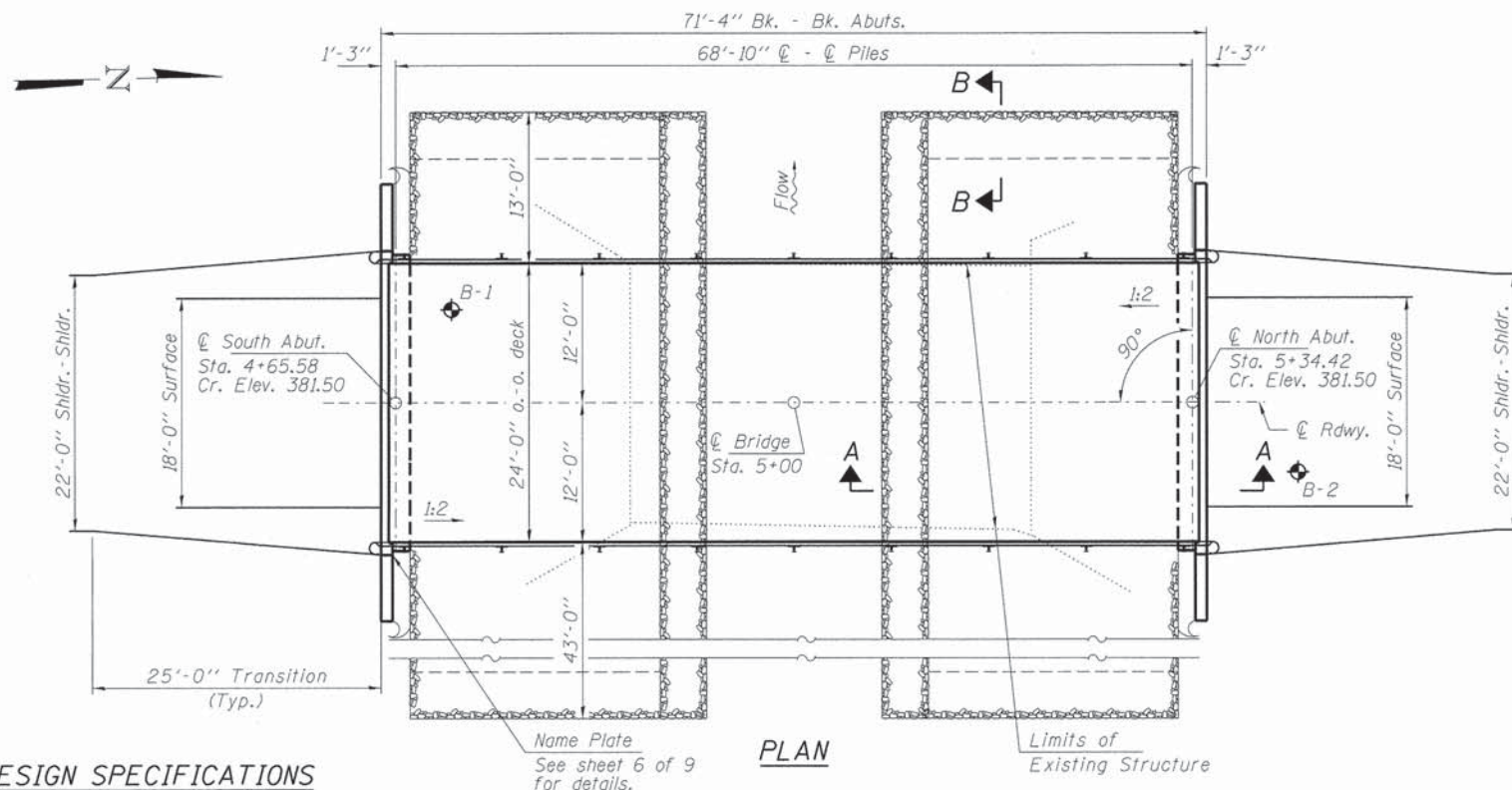
EXISTING STRUCTURE: Structure No. 097-3061; Sta. 5+03.4 - A single span precast concrete beam bridge on closed timber abutments and wingwalls with S.P.B.G.R. as bridge railing. Steel WF retrofit at each abutment. 32.0' fc.-fc. abut.

Structure closed to traffic during construction.

Salvage abutment retrofit steel beams and piles.



ELEVATION



PLAN

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with all applicable 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 (2" low lax. strands)
fy = 60,000 psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.293g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.700g
Soil Site Class = D

Design Scour Elevations (ft.)		
	N. Abut.	S. Abut.
Q100	375.4	375.4

WATERWAY INFORMATION

Drainage Area = 8.6 Sq. Mi.		Existing Low Grade Elev. 379.8 @ Sta. 2+50		Proposed Low Grade Elev. 379.8 @ Sta. 2+50	
Flood Yr.	Freq.	Q C.F.S.	Opening Sq. Ft.	Natural Head - Ft.	Headwater El.
Design	15	2347	301	482	377.99
Base	100	4000	313	549	379.64
				1.4	0.5
				381.04	380.14

15 Year Velocity through Existing Bridge = 7.8 fps 15 Year Velocity through Proposed Bridge = 4.9 fps

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."

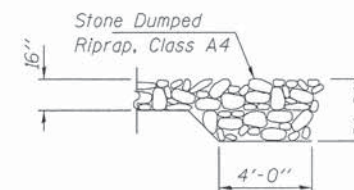
Steven W. Megginson 05/10/2015
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



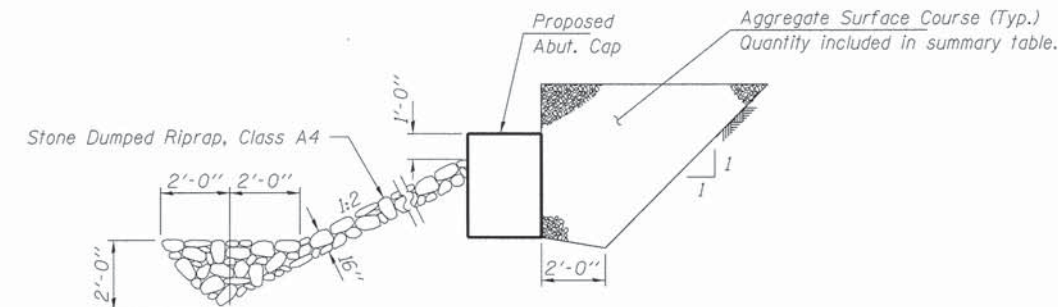
Expires 11-30-2016

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 the 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. 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.



SECTION B-B

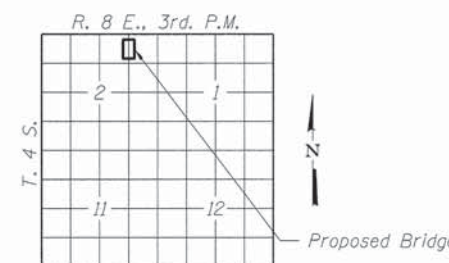


SECTION A-A

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

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. Abutments
7. Steel HP Pile Details
- 8-9. Borings



LOCATION SKETCH

PRAIRIE CREEK
BUILT 201_ BY
MILL SHOALS ROAD DISTRICT
WHITE COUNTY
SEC. 10-09127-00-BR
STR. NO. 097-3281
LOADING HL-93

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			295
Stone Dumped Riprap, Class A4	Ton			405
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		24.1	24.1
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,680		1,680
Reinforcement Bars	Pound		2,570	2,570
Steel Railing, Type S-1	Foot	139		139
Furnishing Steel HP10x42	Foot		490	490
Driving Piles	Foot		490	490
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each		4	4

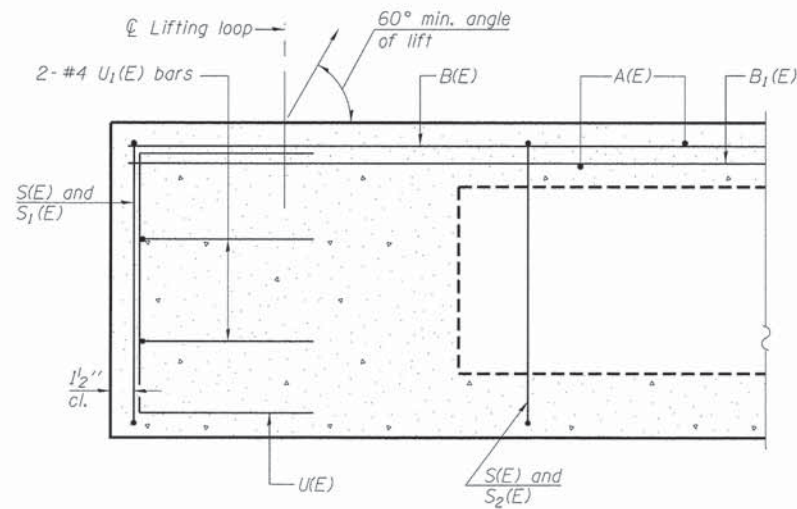
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HAMPTON, LENZINI AND RENWICK, INC.	CHECKED - S.W.M.	REVISED -	
3800 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	DRAWN - R.D.H.	REVISED -	
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. P.E. S.E. CORP. 184-000959	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

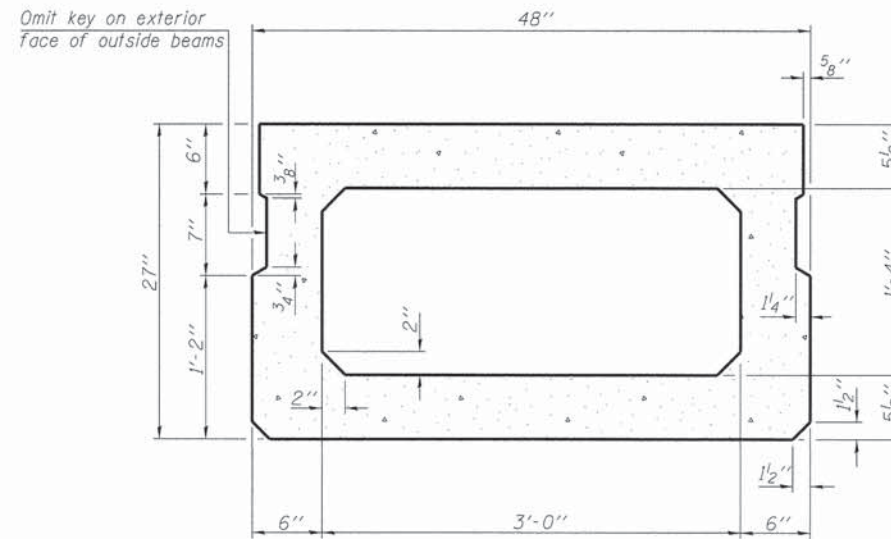
GENERAL PLAN & ELEVATION
STRUCTURE NO. 097-3281

SHEET NO. 1 OF 9 SHEETS

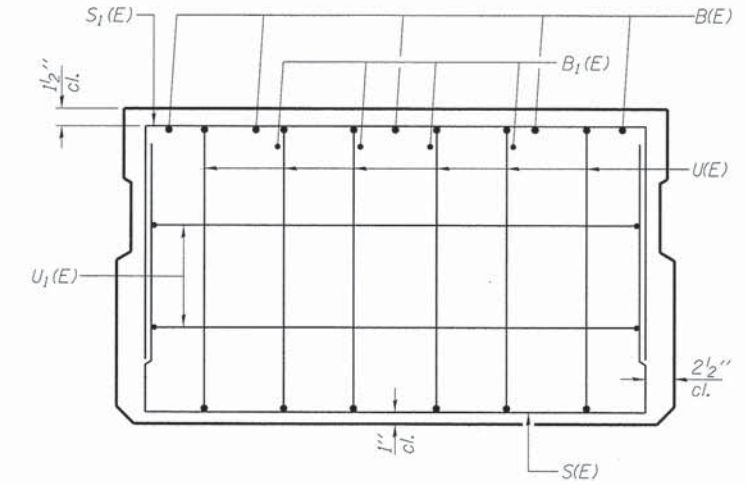
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	5
MILL SHOALS ROAD DISTRICT			CONTRACT NO. 99551	
ILLINOIS FED. AID PROJECT				



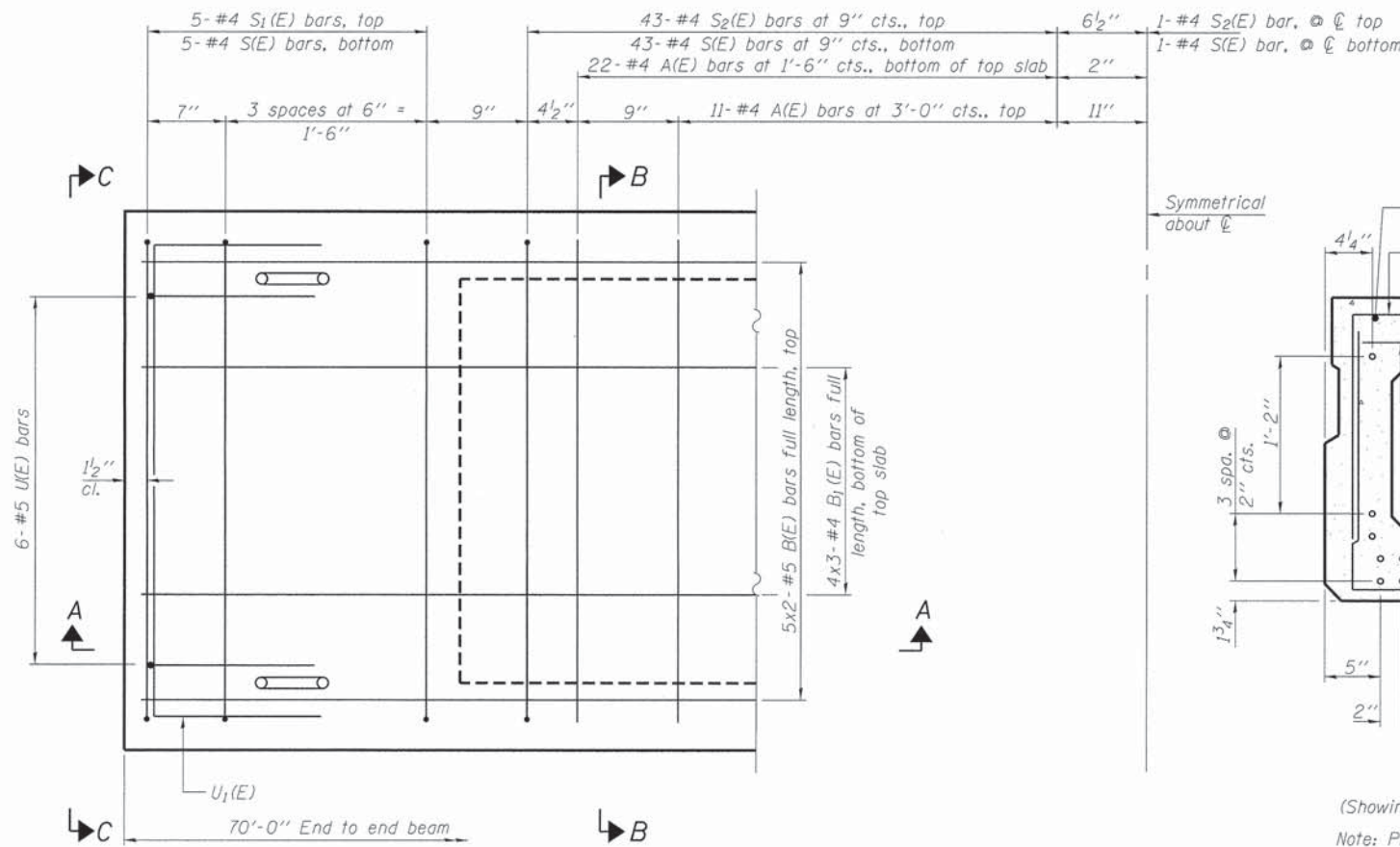
SECTION A-A



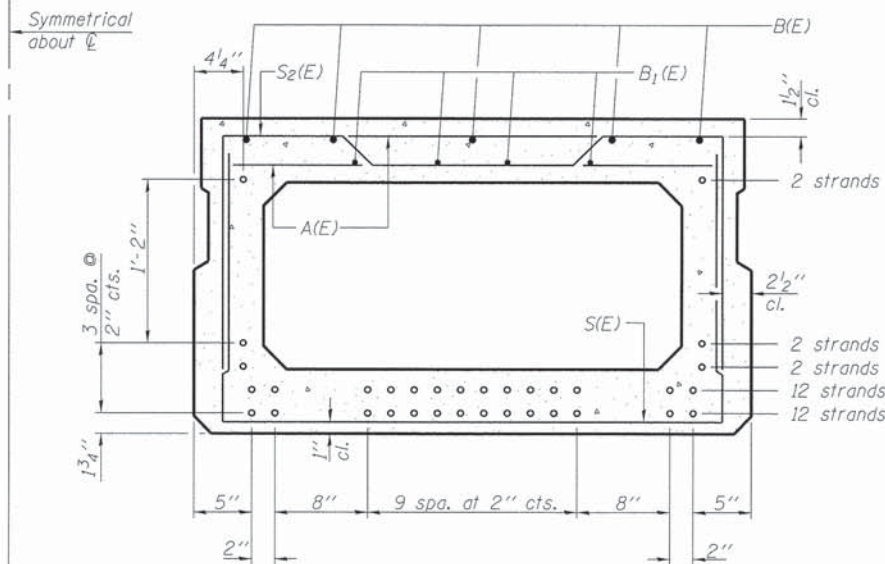
SECTION B-B
(Showing dimensions)



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)	66	#4	3'-7"	—
B(E)	10	#5	36'-2"	—
B1(E)	12	#4	24'-7"	—
S(E)	97	#4	7'-5"	U
S1(E)	10	#4	6'-11"	U
S2(E)	87	#4	7'-2"	U
U(E)	12	#5	4'-6"	U
U1(E)	4	#4	6'-0"	U

Note: See sheet 3 & 4 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 = 2'-0"
#5 bar = 2'-6"

PD-2748-0

7-1-10

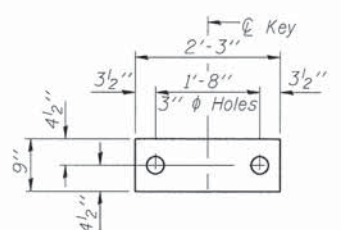
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HAMPTON, LENZINI AND RENWICK, INC.	1085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L8 / P8 / SE CORP. 184-200969	PLOT SCALE = #SCALE#	DRAWN - R.D.H.	REVISED -
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STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

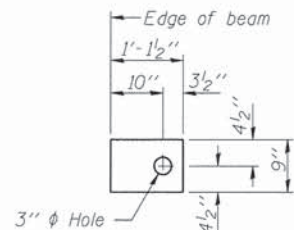
27" x 48" PPC DECK BEAM
STRUCTURE NO. 097-3281

SHEET NO. 2 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	6
MILL SHOALS ROAD DISTRICT	CONTRACT NO. 99551			
ILLINOIS FED. AID PROJECT				



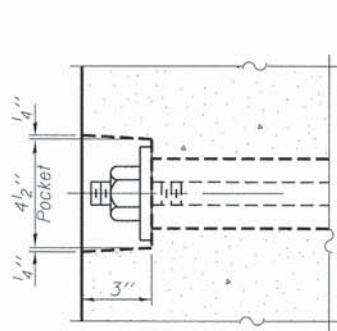
FABRIC BEARING PAD
(Interior - 10 Req'd.)



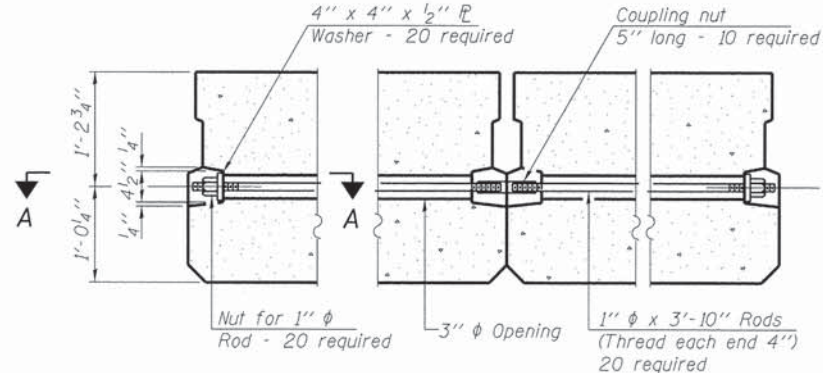
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED

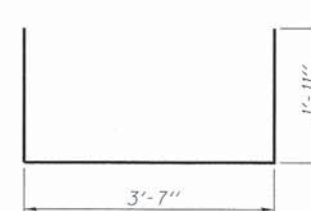
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



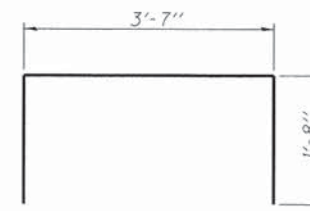
SECTION A-A



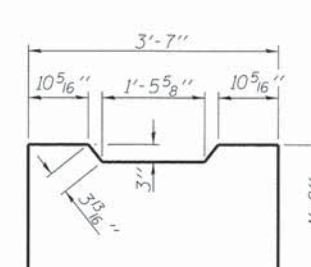
TYPICAL TRANSVERSE TIE ASSEMBLY



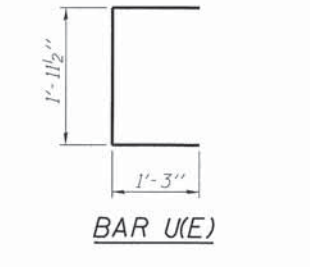
BAR S(E)



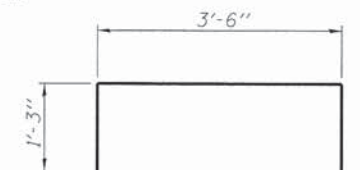
BAR S1(E)



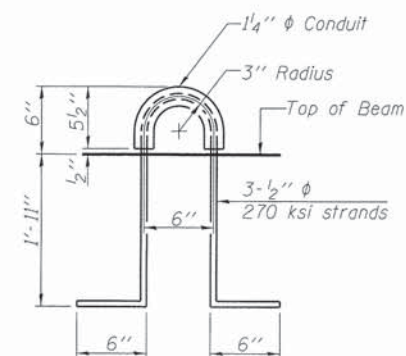
BAR S2(E)



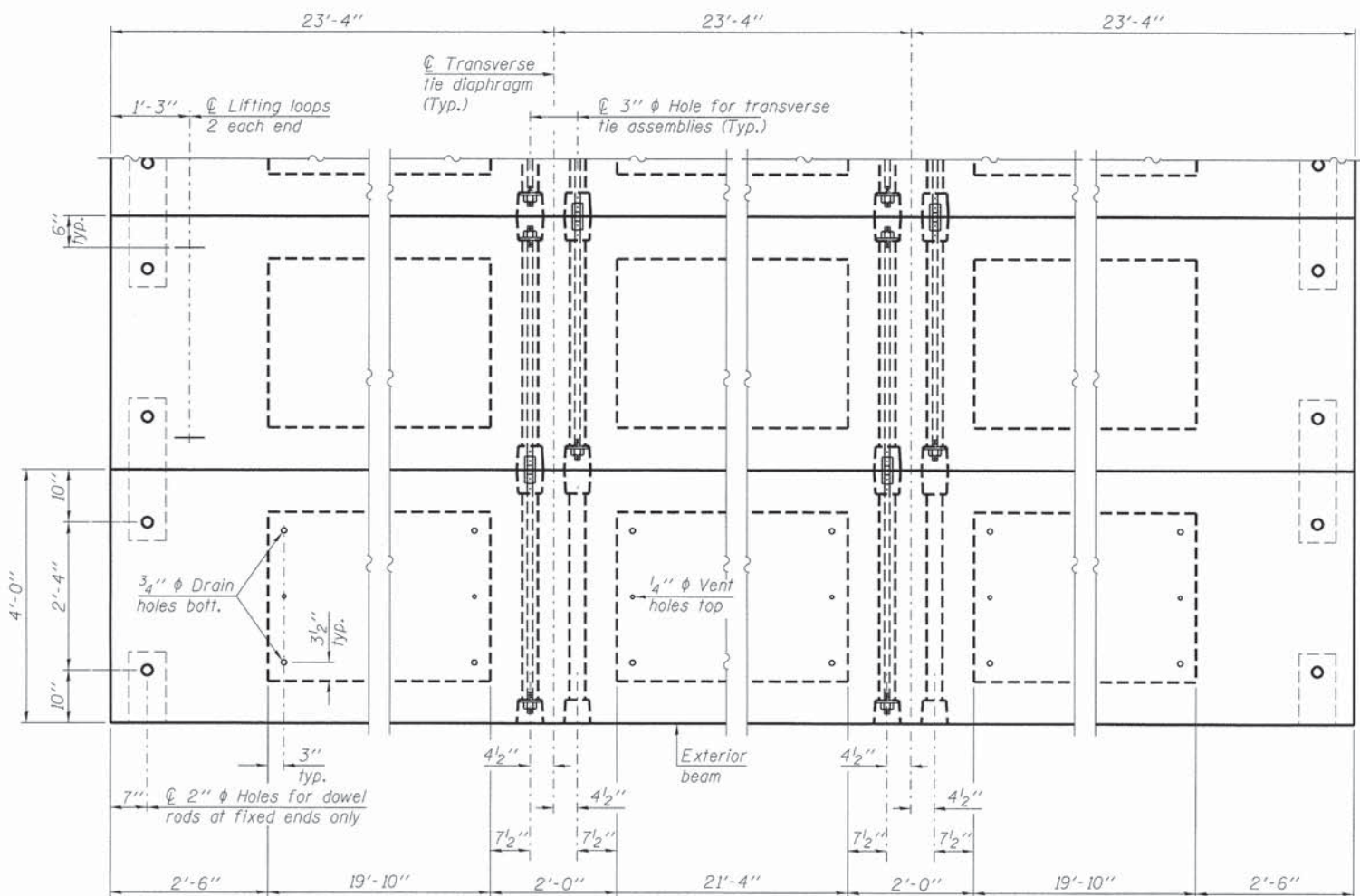
BAR U(E)



BAR U1(E)



LIFTING LOOP DETAIL



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.
Reinforcement bars designated (E) shall be epoxy coated.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,680
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Note: Connect beams in pairs with the transverse tie configuration shown.

PD-2748-OD 7-1-10

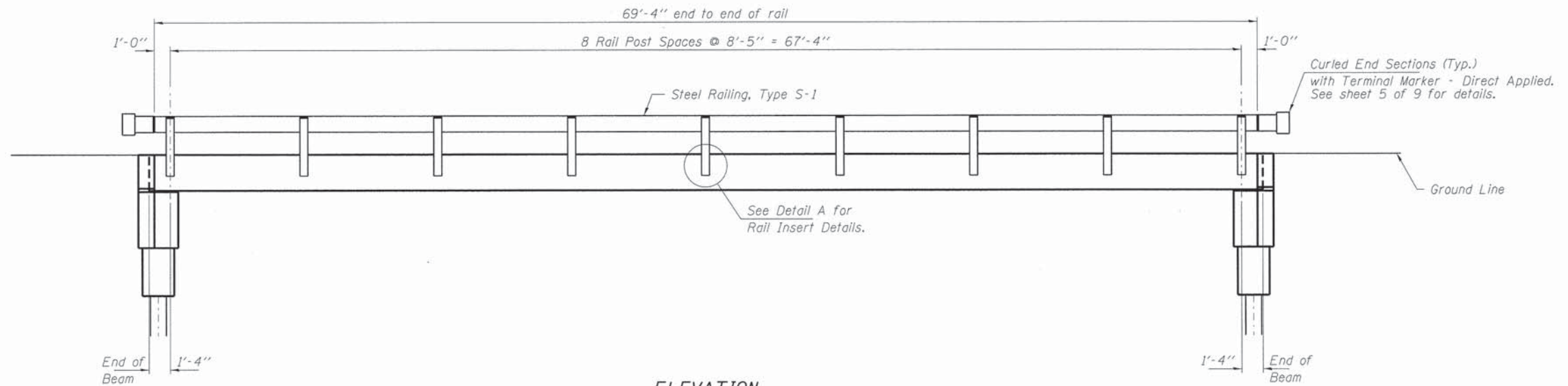
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ILLINOIS PROFESSIONAL DESIGN FIRM 131 PE / SE CORP. 184 00099	PLLOT DATE = 5/1/2015	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
WHITE COUNTY HIGHWAY DEPARTMENT

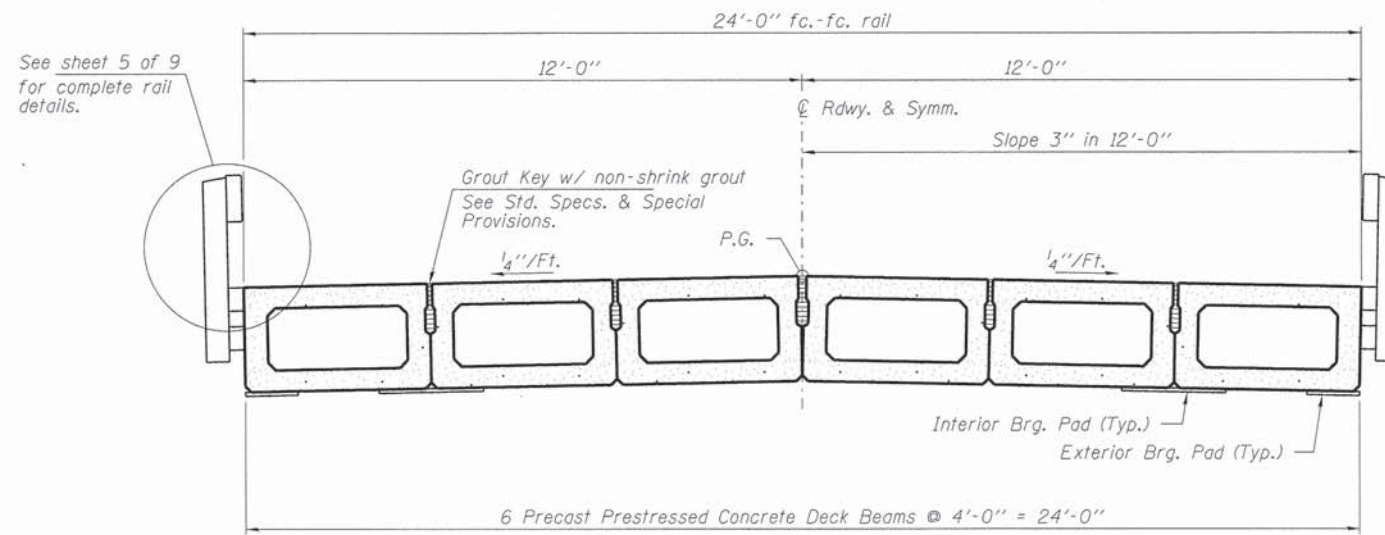
27" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 097-3281

SHEET NO. 3 OF 9 SHEETS

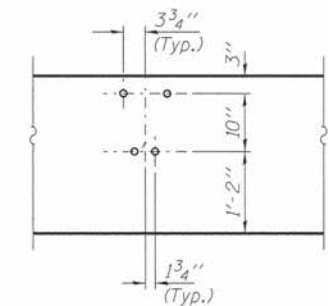
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124	10-09127-00-BR	WHITE	13	7
MILL SHOALS ROAD DISTRICT			CONTRACT NO. 99551	
ILLINOIS FED. AID PROJECT				



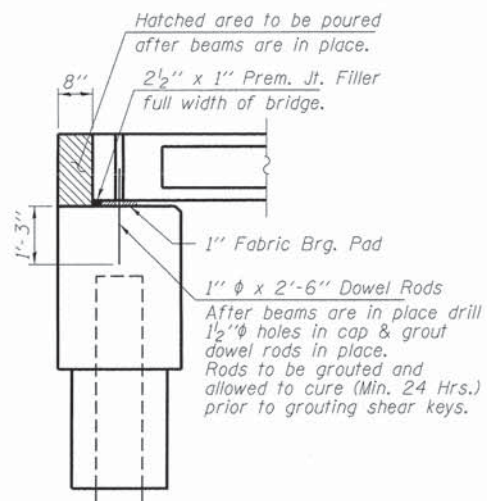
ELEVATION
Showing Rail Post Spaces
See sheet 5 of 9 for Railing Details.



CROSS SECTION
See sheets 2 & 3 of 9 for Superstructure.

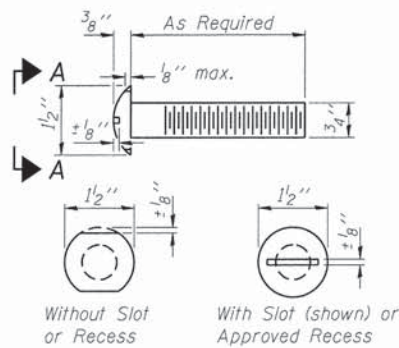


DETAIL A

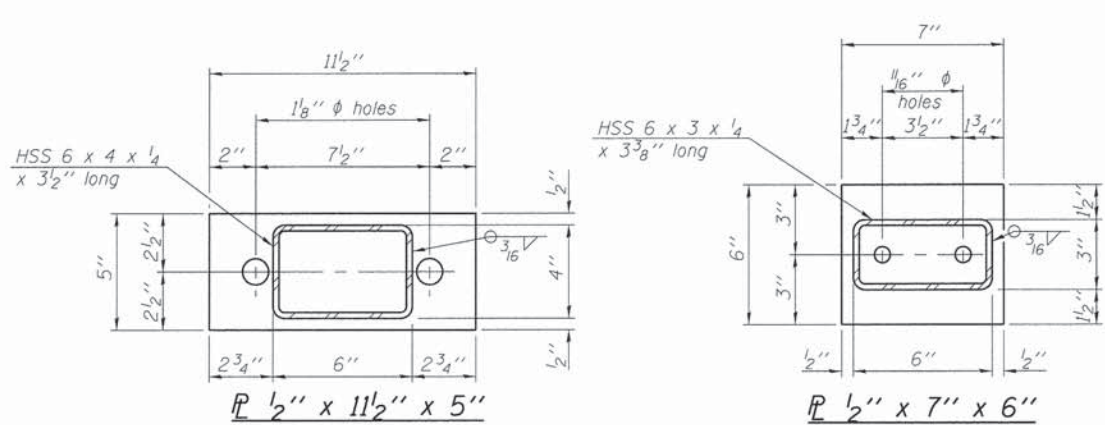


SECTION AT ABUTMENTS

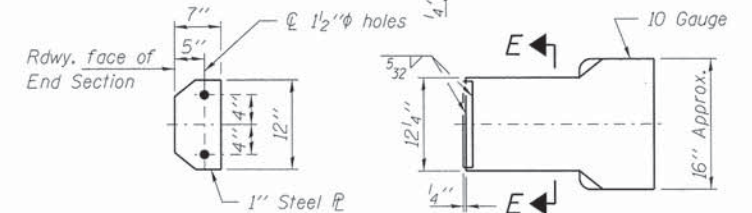
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		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT					
				SHEET NO. 4 OF 9 SHEETS							



VIEW A-A
ROUND HEAD BOLT



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

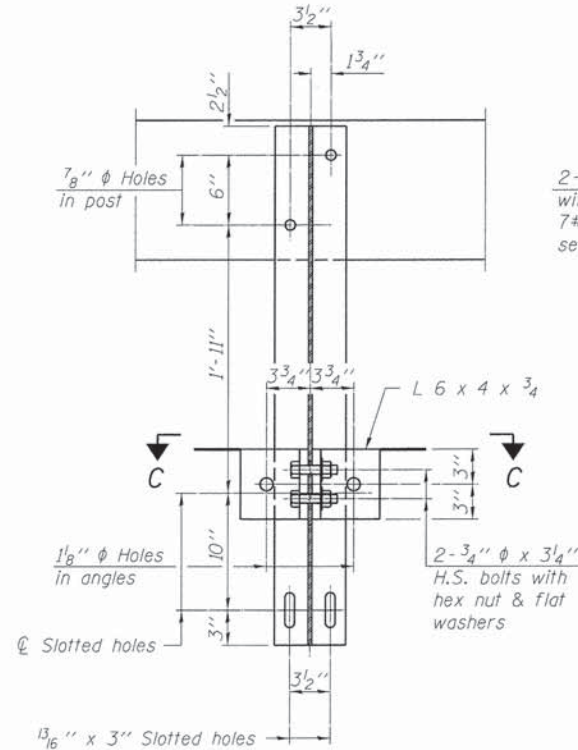


SECTION E-E
CURLLED END SECTION DETAILS
SPLICE DIMENSIONS

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"	

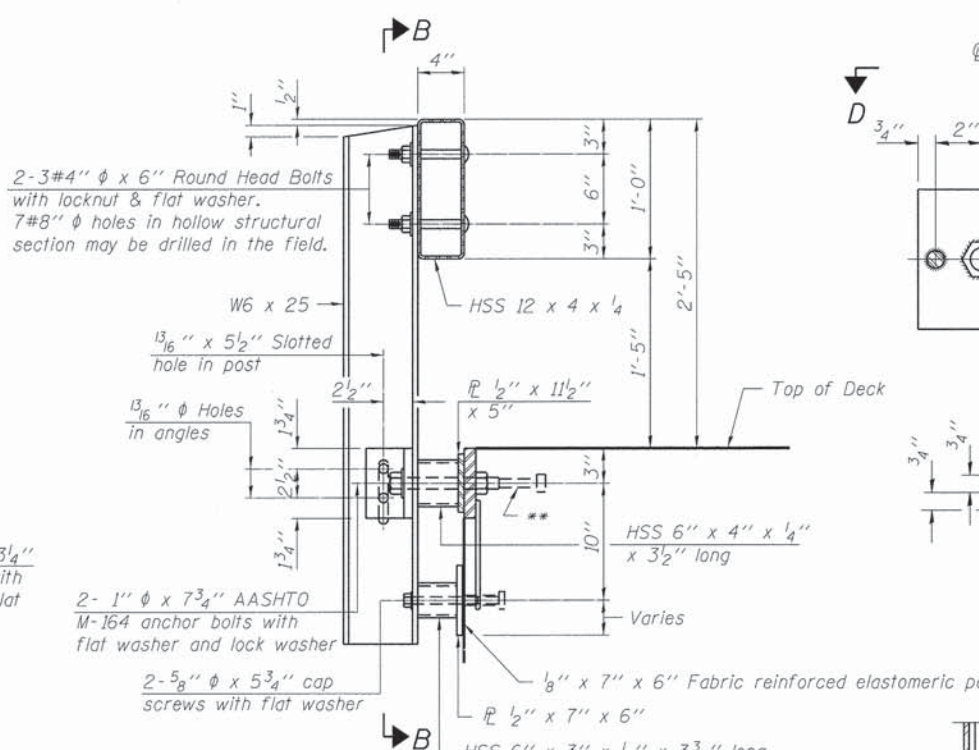
T = Total movement at expansion joint as shown on the design plans.

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.



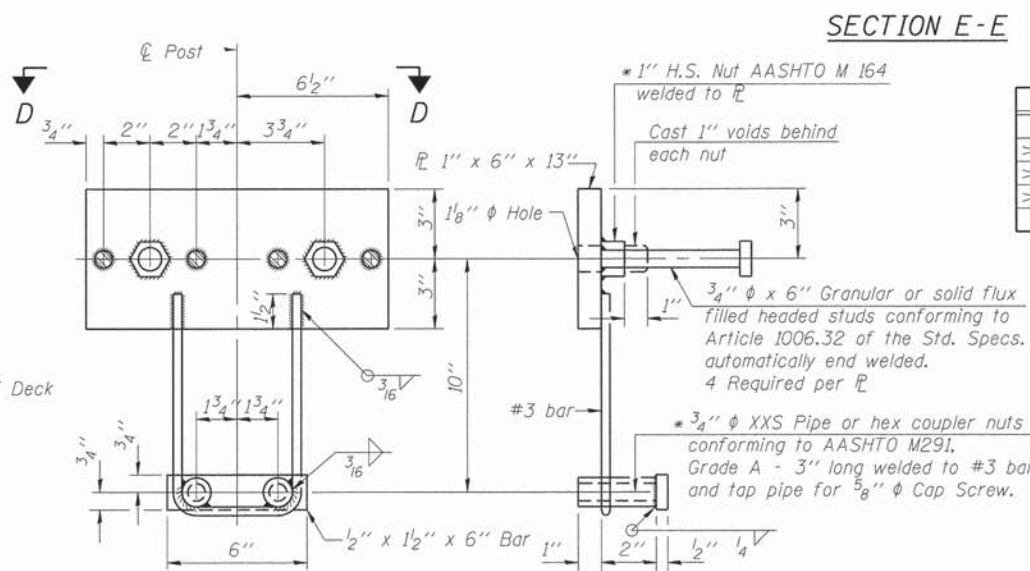
SECTION B-B

SECTION C-C

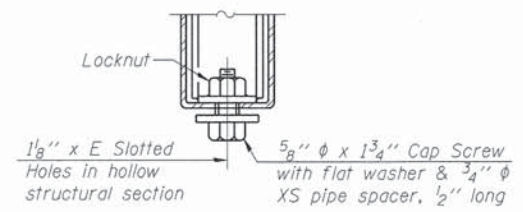


SECTION AT RAILING POST

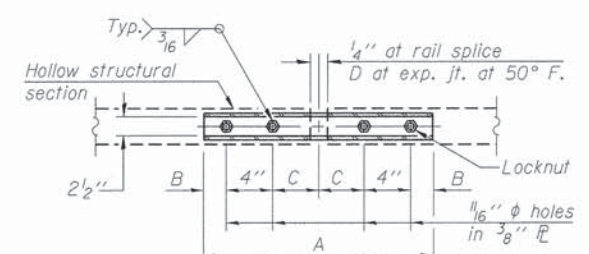
SECTIONS AT RAIL SPLICE



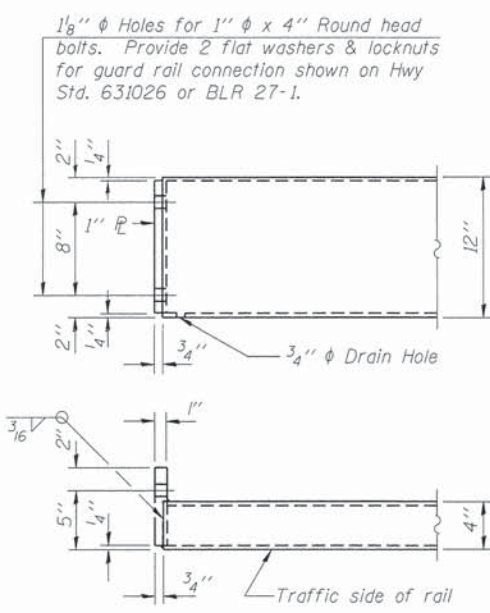
ANCHOR DEVICE



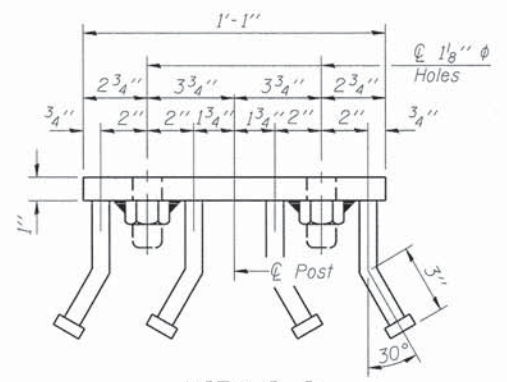
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE
TYPICAL



END OF RAIL DETAILS

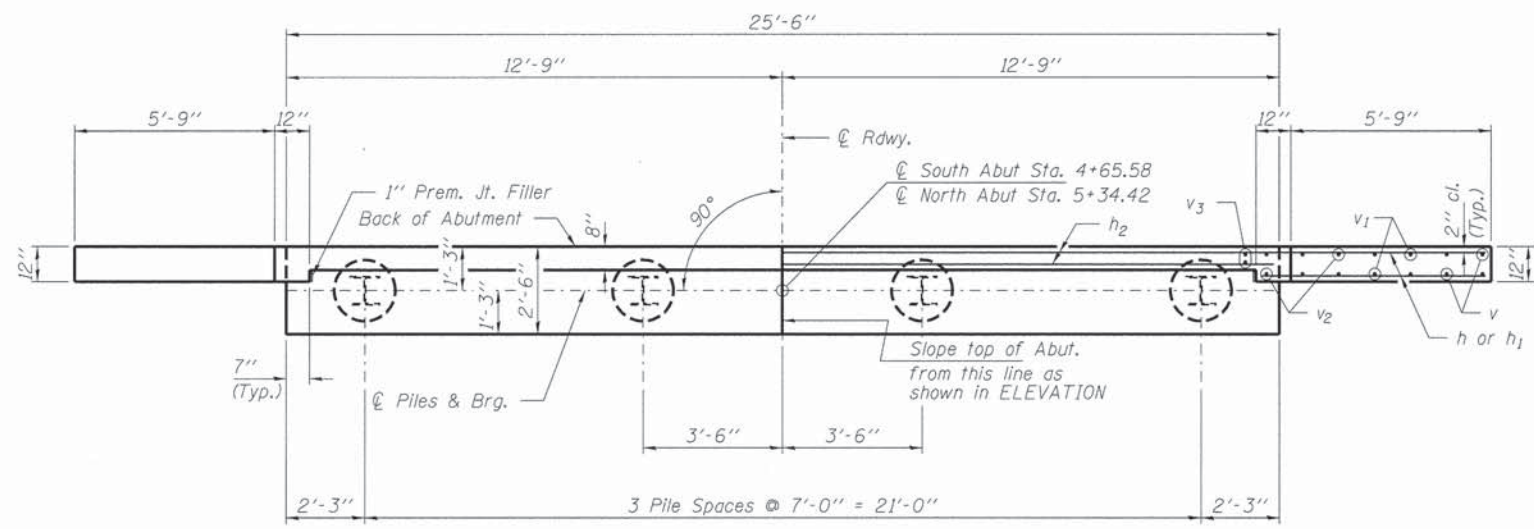


VIEW D-D

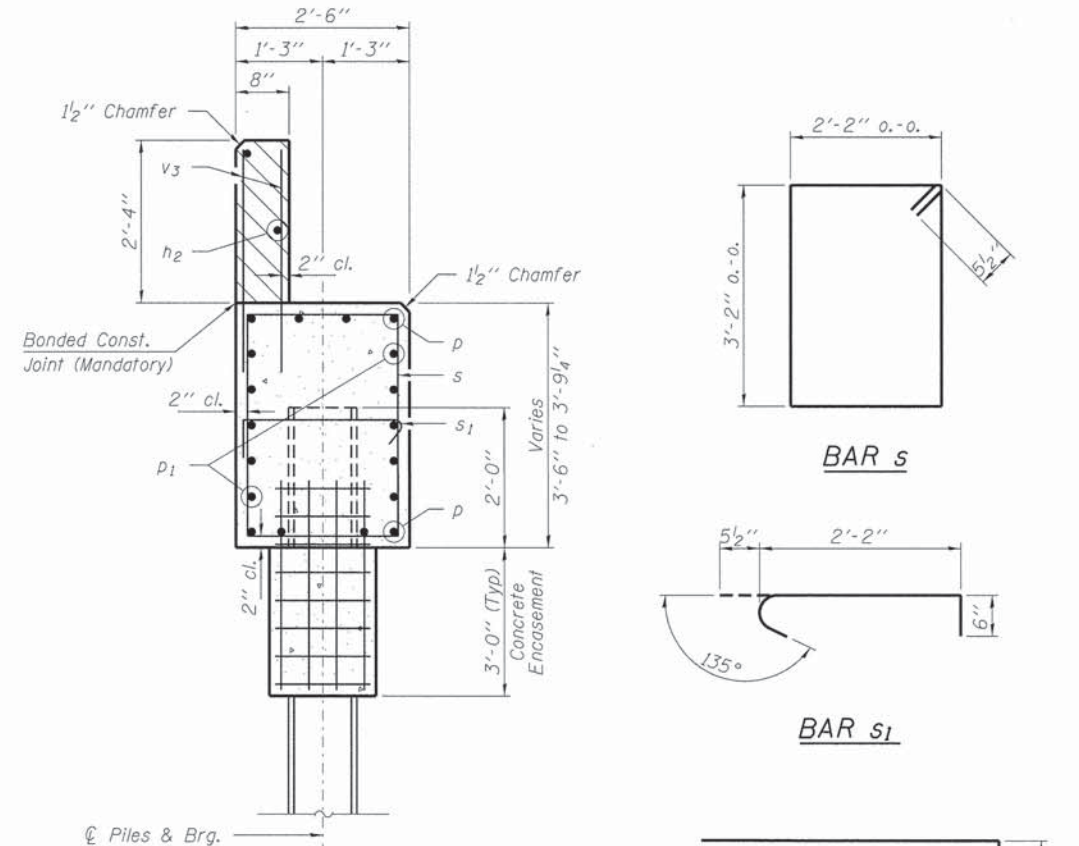
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	139

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

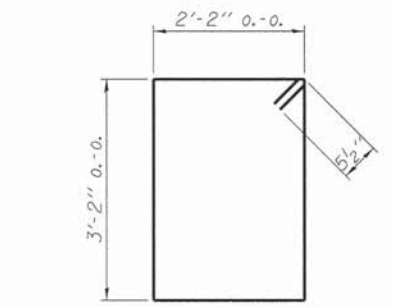


PLAN

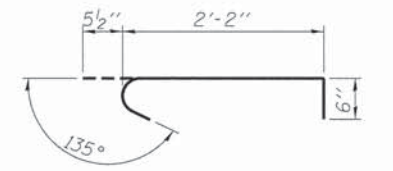


SECTION A-A

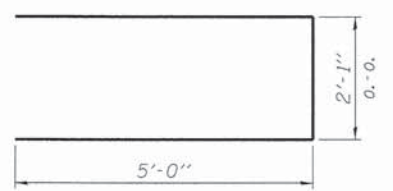
Hatched area to be poured after beams are in place.



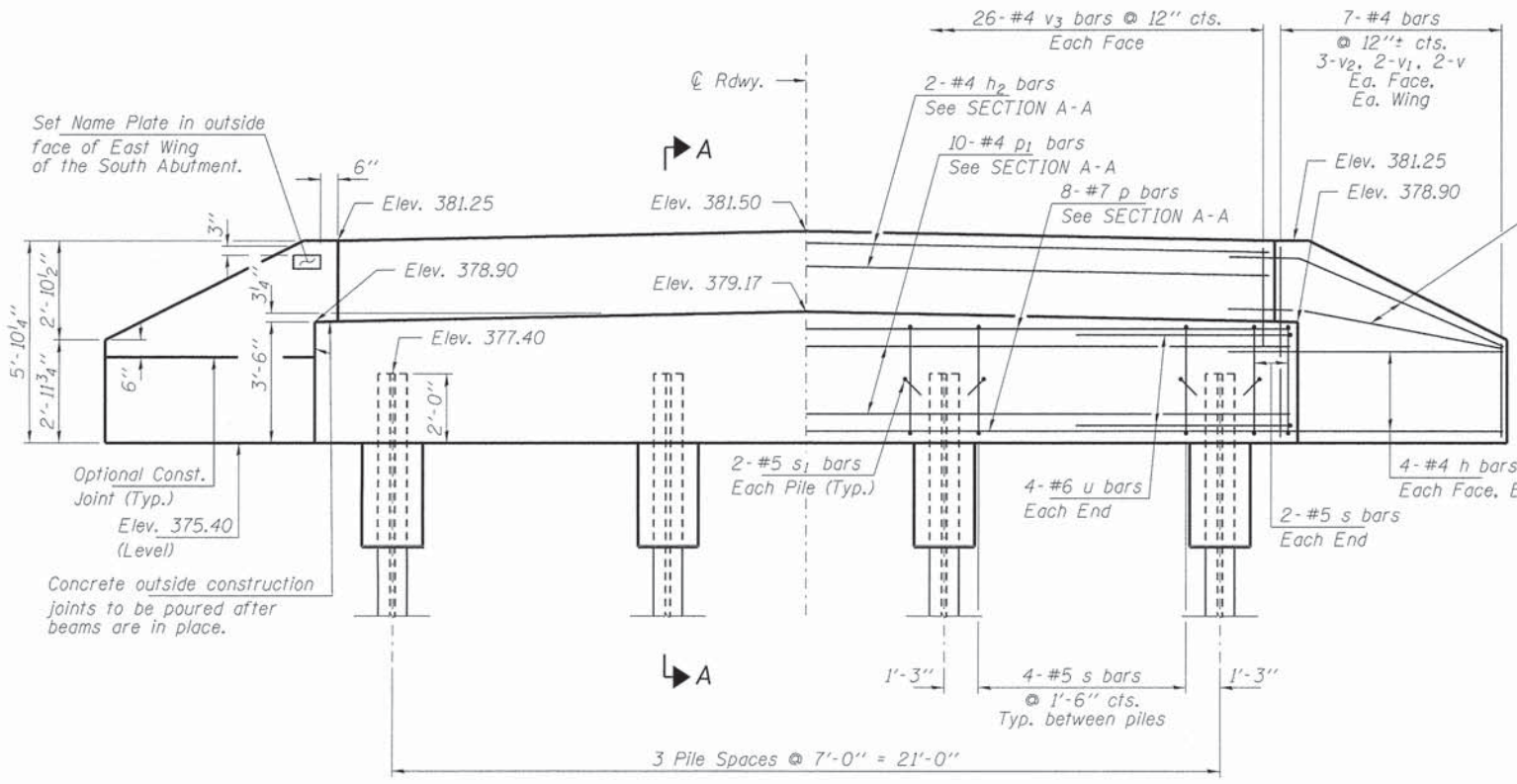
BAR s



BAR s1



BAR u



ELEVATION

Note: Extend h bars into abutment cap.

Fan 2-#4 h bars (B.F.)
Fan 2-#4 h1 bars (F.F.)
Each Wing
Bend in field.

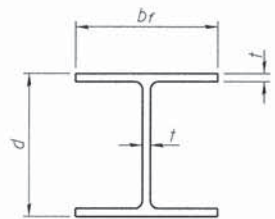
PILE DATA

Type ----- Steel HP10x42
No. Req'd. (2 Abutments) ----- 8
Factored Resistance Available (Rf) ----- 184 Kips/Pile
Nominal Required Bearing (Rn) ----- 335 Kips/Pile
Est. Length ----- 70 Ft/Pile

Notes: *Includes one test pile to be driven in permanent location at the North Abutment.
The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

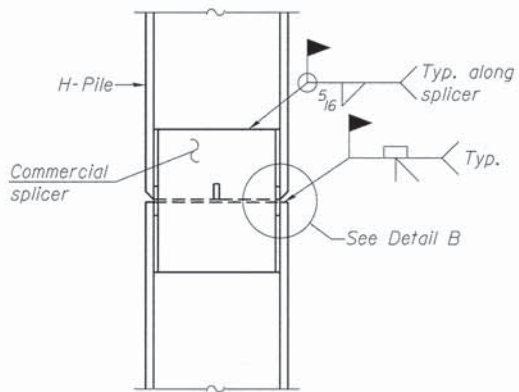
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	8'-0"	—
h1	8	#4	6'-6"	—
h2	4	#4	25'-2"	—
p	16	#7	25'-2"	—
p1	20	#4	25'-2"	—
s	32	#5	11'-7"	□
s1	16	#5	3'-2"	U
u	16	#6	12'-1"	—
v	16	#4	2'-9"	—
v1	16	#4	3'-9"	—
v2	24	#4	4'-10"	—
v3	104	#4	3'-2"	—
Concrete Structures			Cu. Yd.	24.1
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,570
Steel Piles HP10x42			Foot	490
Test Pile HP10x42			Each	1
Name Plates			Each	1

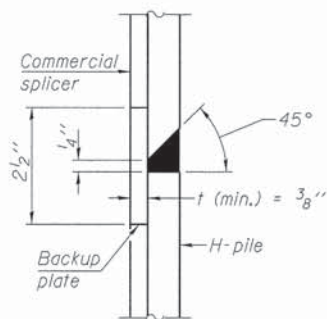


STEEL PILE TABLE

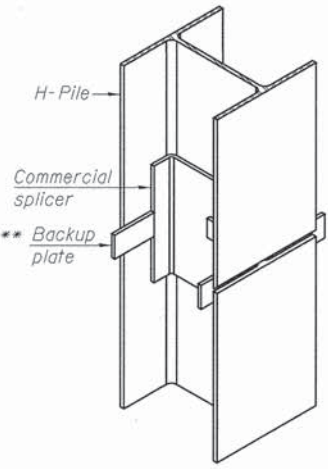
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	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

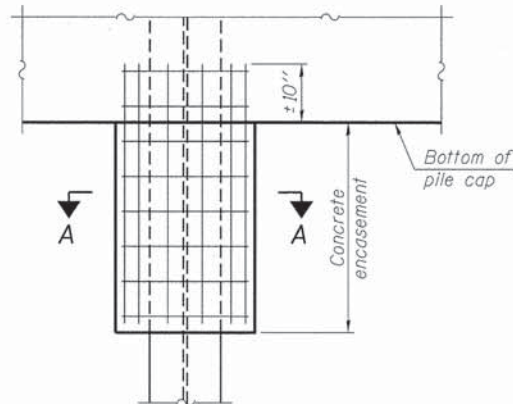


DETAIL "B"



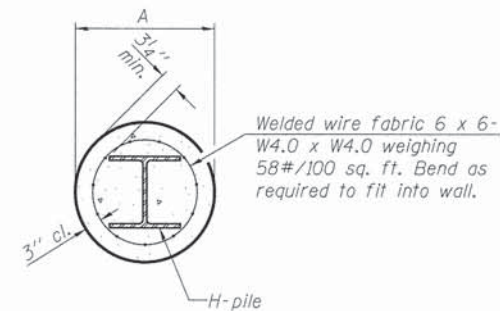
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



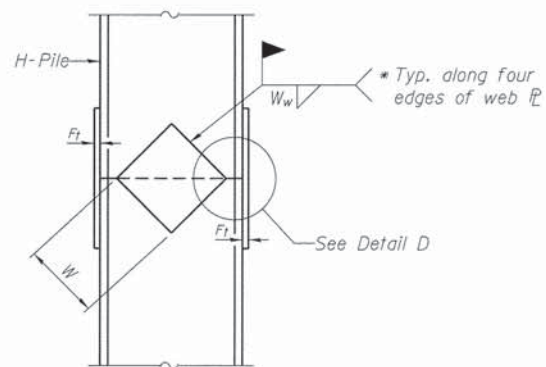
ELEVATION

PILE ENCASEMENT

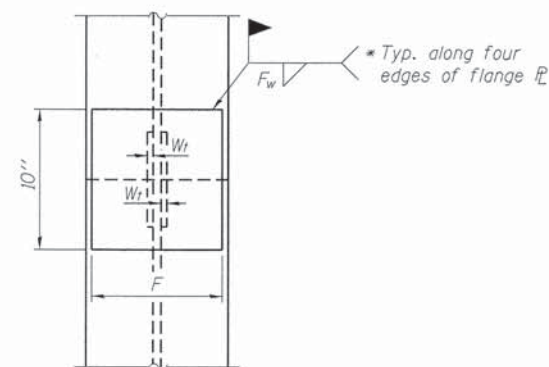


SECTION A-A

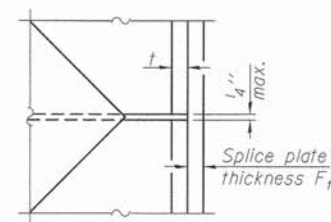
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



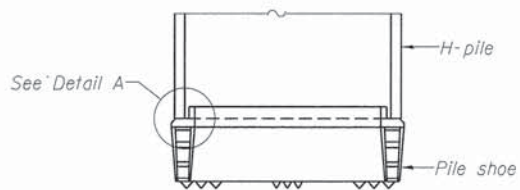
END VIEW



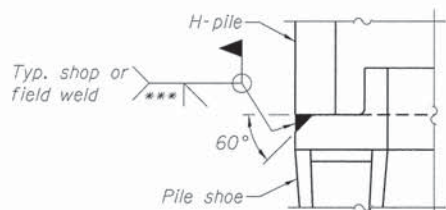
DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
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"	11/16"	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"	11/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	11/16"	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"

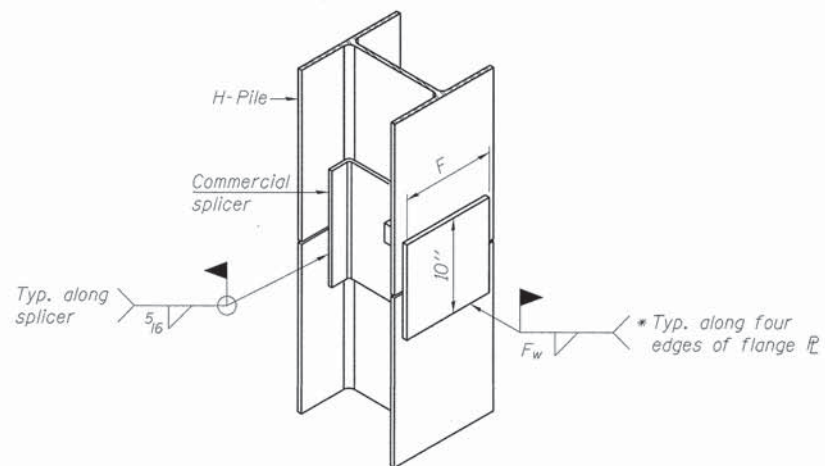


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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.).

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

F-HP

1-27-12

FILE NAME = 120152-shl-bridge.dgn	USER NAME = #USERS	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 097-3281	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3081 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = #SCALE#	CHECKED - S.W.M.	REVISED -			124	10-09127-00-BR	WHITE	13	11
ILLINOIS PROFESSIONAL DESIGN FIRM 15 / PE / SE CORP. 184.000899	PLOT DATE = 5/1/2015	DRAWN - R.D.H.	REVISED -			MILL SHOALS ROAD DISTRICT	CONTRACT NO. 99551			
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT				

SHEET NO. 7 OF 9 SHEETS

