

INDEX OF SHEETS

1	COVER SHEET
2	PLAN & PROFILE
3-4	CROSS SECTIONS
5-14	BRIDGE PLANS
15-16	BORINGS

STANDARDS:
(SEE PROPOSAL)

280001-06	- EROSION CONTROL
515001-03	- NAME PLATES
630301-05	- SHOULDER WIDENING TYPE 1 TERMINALS
631032-07	- TRAFFIC BARR. TERM. TYPE 6A
635006-03	- REFLECTOR AND TERM. MARKER PLACEMENT
701901-02	- TRAFFIC
BLR 21-9	- TRAFFIC
BLR 22-7	- TRAFFIC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL-AID HIGHWAY BRIDGE PROGRAM
CRAWFORD COUNTY
SECTION 11-00096-00-BR
STRUCTURE NO. 017-3061
PROJECT NO. BRS-0698(103)
JOB NO. C-97-087-12
FAS 698 (CH 3)

SUMMARY OF QUANTITIES

0.3	ACRE	SEEDING, CLASS 2 (SPECIAL)	X2501000
1	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	X7010216
4	CU YD	EARTH EXCAVATION	20200100
100	CU YD	CHANNEL EXCAVATION	20300100
172	CU YD	FURNISHED EXCAVATION	20400800
96	TON	POROUS GRANULAR EMBANKMENT	20700110
60	FOOT	PERIMETER EROSION BARRIER	28000400
630	TON	STONE DUMPED RIPRAP, CLASS A5	28100809
54	GALLON	BITUMINOUS MATERIALS (PRIME COAT)	40600100
55	TON	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	40600315
19	TON	LEVELING BINDER (MACHINE METHOD), N70	40600635
102	SQ YD	PORTLAND CEMENT CONCRETE PAVEMENT 8"	42000300
161	SQ YD	PAVEMENT REMOVAL	44000100
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
75	CU YD	COFFERDAM EXCAVATION	50200300
1	EACH	COFFERDAM (TYPE 2) (LOCATION-1)	50201121
1	EACH	COFFERDAM (TYPE 2) (LOCATION-2)	50201122
139.1	CU YD	CONCRETE STRUCTURES	50300225
3.4	CU YD	CONCRETE ENCASEMENT	50300280
3150	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	50400305
10,300	POUND	REINFORCEMENT BARS	50800105
213	FOOT	STEEL RAILING, TYPE SM	50901050*
1145	FOOT	FURNISHING STEEL PILES HP12X53	51201600
1145	FOOT	DRIVING PILES	51202305
2	EACH	TEST PILE STEEL HP12X53	51203600
1	EACH	NAME PLATES	51500100
4	EACH	TRAFFIC BARRIER TERMINAL, TYPE 6A	63100087*
4	EACH	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	63100167*
1	L SUM	MOBILIZATION	67100100
4	EACH	TERMINAL MARKER - DIRECT APPLIED	78201000*

*SPECIALTY ITEM

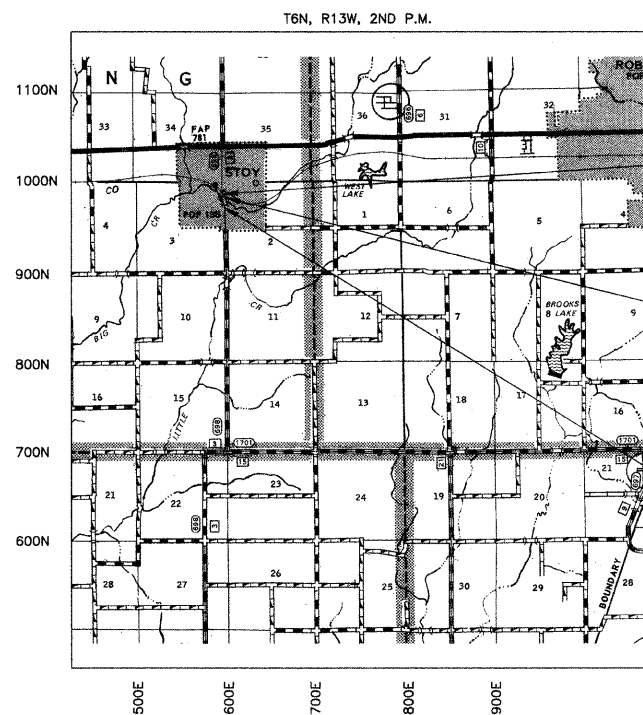
FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR
ADT = 1500
DESIGN SPEED = 50 MPH

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

PROFESSIONAL DESIGN FIRM #184-000832

SCALES

PLAN	1 INCH = 50 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET
X-SECTIONS	1 INCH = 5 FEET



LOCATION MAP
APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 221 FT. = 0.042 MILES



John A. Stone
04/05/2012
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2013

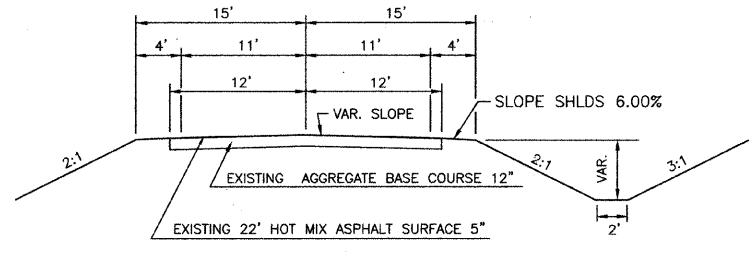
SECTION 11-00096-00-BR
ENDS STA. 299+65

STA. 298+54 - SPECIAL BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONC.
DECK BEAM BRIDGE, 3 SPANS @ 35' EACH
30' RDWY, SKEW= 25° L.F.
PROPOSED STR. NO. 017-3061
EXISTING STR. NO. 017-3010

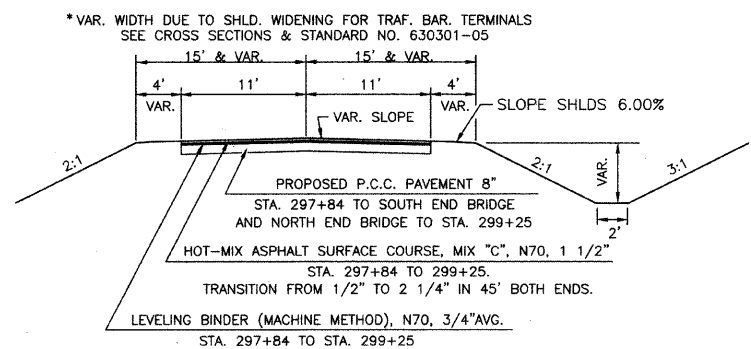
SECTION 11-00096-00-BR
BEGINS STA. 297+44

ILLINOIS DEPARTMENT OF TRANSPORTATION
APPROVED: <u>April 5</u> , 2012 <i>Justin R. Child</i> CRAWFORD COUNTY ENGINEER
PASSED: <u>April 20</u> , 2012 <i>Maureen Koehl</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW: <u>4-20</u> , 2012 <i>Roger L. Driskell</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

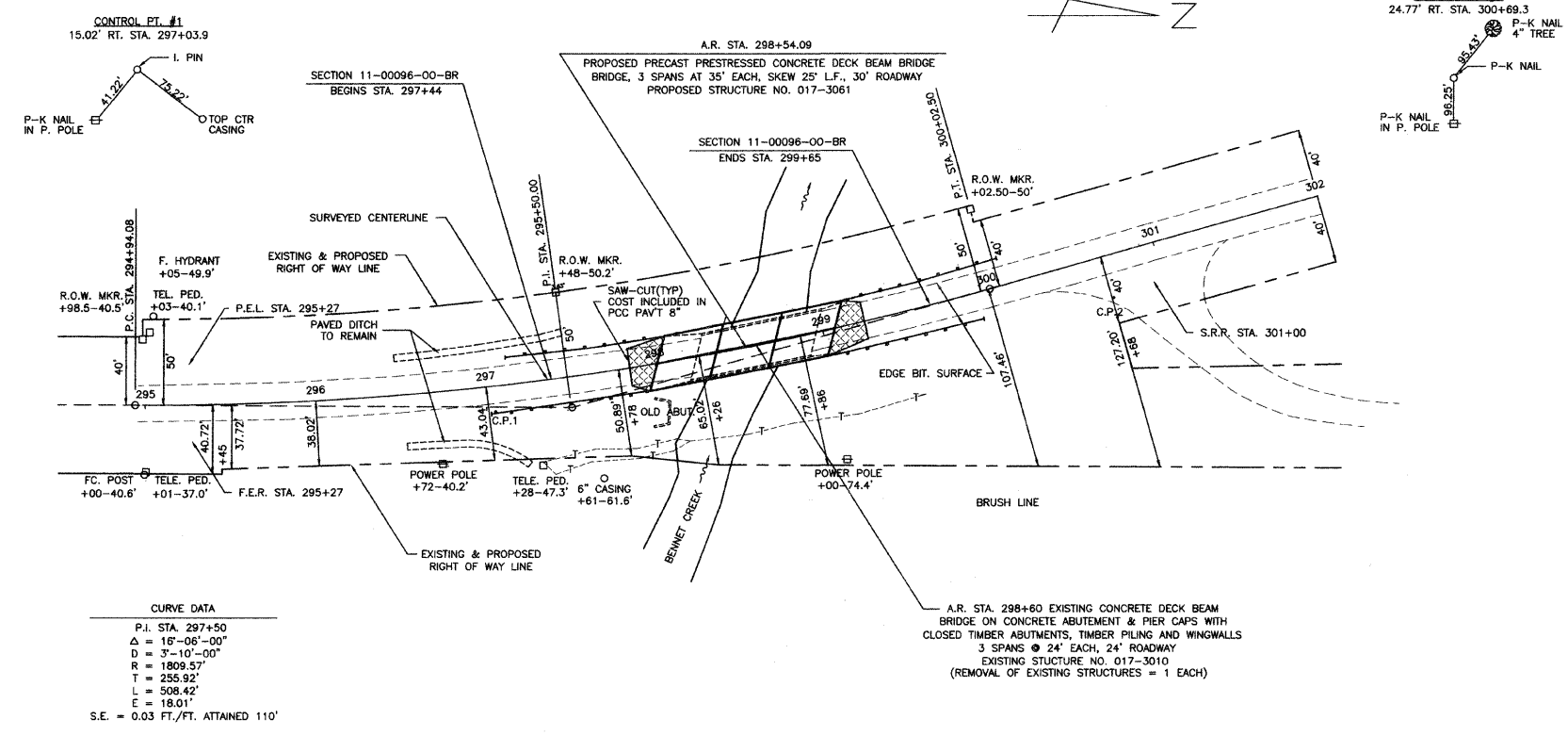
SECTION	11-00096-00-BR	TOTAL SHEETS	16	SHEET NO.	2
COUNTY	CRAWFORD				
ROUTE	FAS 698 (CH 3)				
STA. 295+00		TO STA. 302+00			



TYPICAL CROSS SECTION OF EXISTING ROADWAY



TYPICAL CROSS SECTION OF PROPOSED P.C.C. PAVEMENT 8"



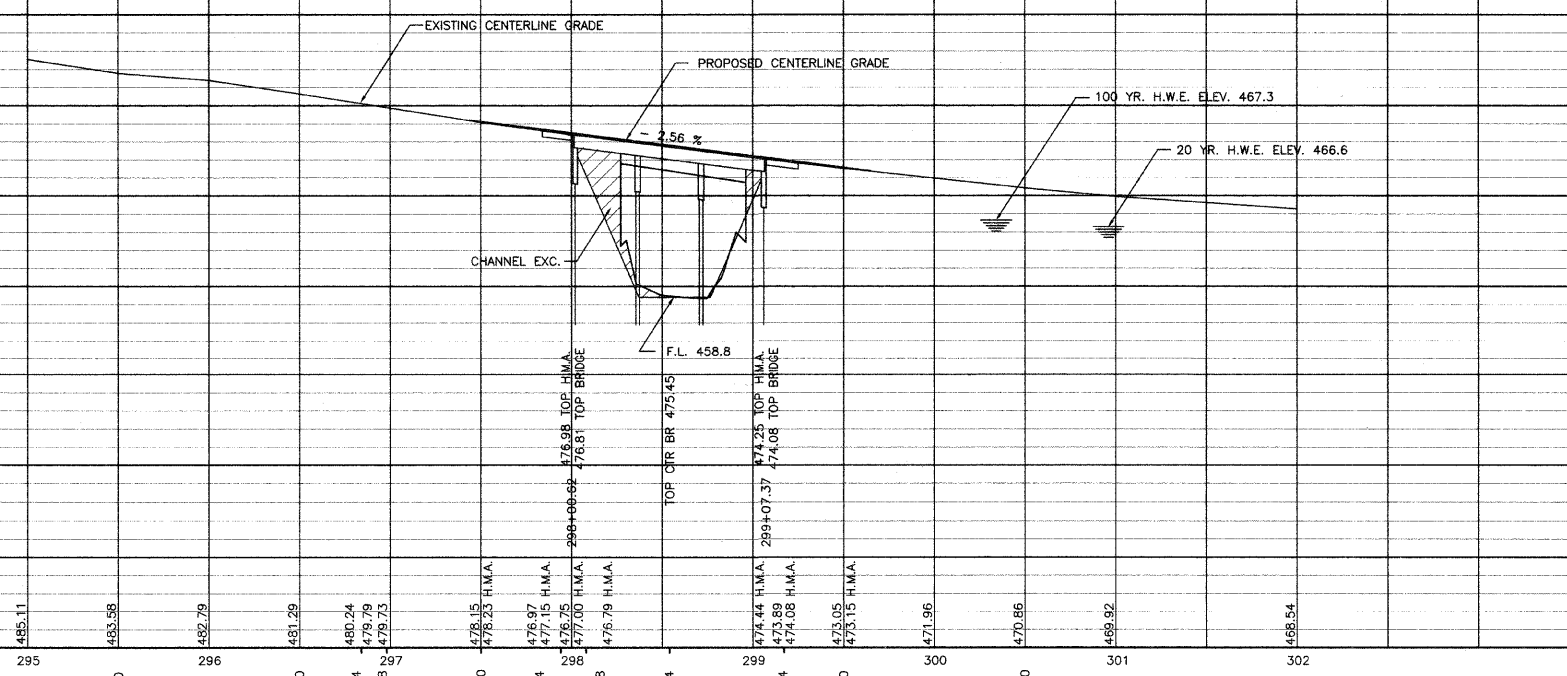
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70 STA. 297+84 TO STA. 299+25 = 55 TON (SEE TYPICAL X-SECTION ABOVE)	EARTHWORK QUANTITIES EARTH EXCAVATION = 4 CU.YD. EARTH EXCAVATION ADJ. 25% = 3 CU.YD. CHANNEL EXCAVATION = 100 CU.YD. CHANNEL EXCAVATION ADJ. 25% = 75 CU.YD. EMBANKMENT (SHLD. WID.) = 250 CU.YD. FURNISHED EXCAVATION = 172 CU.YD.	TRAF. BAR. TERM. TY. 1 SPEC. (TANGENT) RT. 297+00 TO 297+50 = 1 EACH LT. 297+14 TO 297+64 = 1 EACH RT. 299+44 TO 299+94 = 1 EACH LT. 299+58 TO 300+08 = 1 EACH TOTAL = 4 EACH	TRAF. BAR. TERM. TY. 6A RT. 297+50 TO 297+94 = 1 EACH LT. 297+64 TO 298+08 = 1 EACH RT. 299+00 TO 299+44 = 1 EACH LT. 299+14 TO 299+58 = 1 EACH TOTAL = 4 EACH	P.C.C. PAVEMENT 8" STA. 297+84 TO 298+01 = 51 SQ. YD. STA. 299+07 TO 299+25 = 51 SQ. YD. TOTAL = 102 SQ. YD.	POROUS GRANULAR EMBANKMENT SOUTH ABUTMENT = 48 CU. YD. NORTH ABUTMENT = 48 CU. YD. TOTAL = 96 CU. YD.	PAVEMENT REMOVAL STA. 297+84 TO 298+24 = 93 SQ. YD. STA. 298+96 TO 299+25 = 68 SQ. YD. TOTAL = 161 SQ. YD.	B.M. TOP S.E. CORNER HWL. 159' RT. 303+40 ELEV. 467.65
LEVELING BINDER (MACHINE METHOD), N70 STA. 297+84 TO STA. 299+25 = 19 TON (SEE TYPICAL X-SECTION ABOVE)							
SEEDING, CLASS 2 (SPECIAL) STA. 296+62 TO STA. 300+46 = 0.03 ACRES							
PERIMETER EROSION BARRIER LOCATE ALONG TOE OF CHANNEL SLOPE 15 FEET @ EACH CORNER OF BRIDGE = 60 FOOT							

UTILITIES

ELECTRIC: NORRIS ELECTRIC CO-OP
8543 N. STATE HWY. 130
NEWTON, IL. 62448
618-783-8765

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

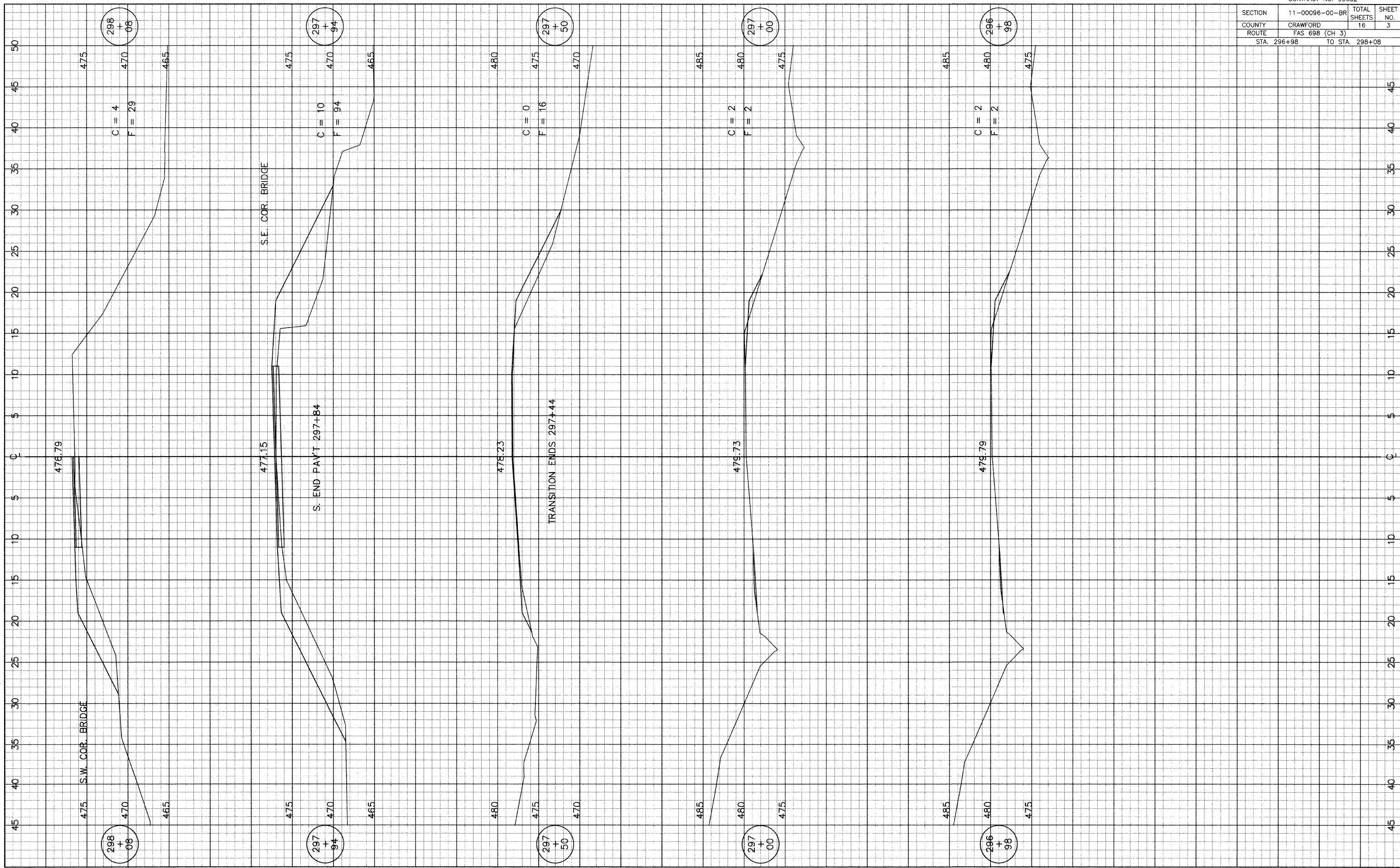
WATER: HARDINVILLE WATER CO.
4440 N. 575TH
ROBINSON, IL. 62454
618-557-3556



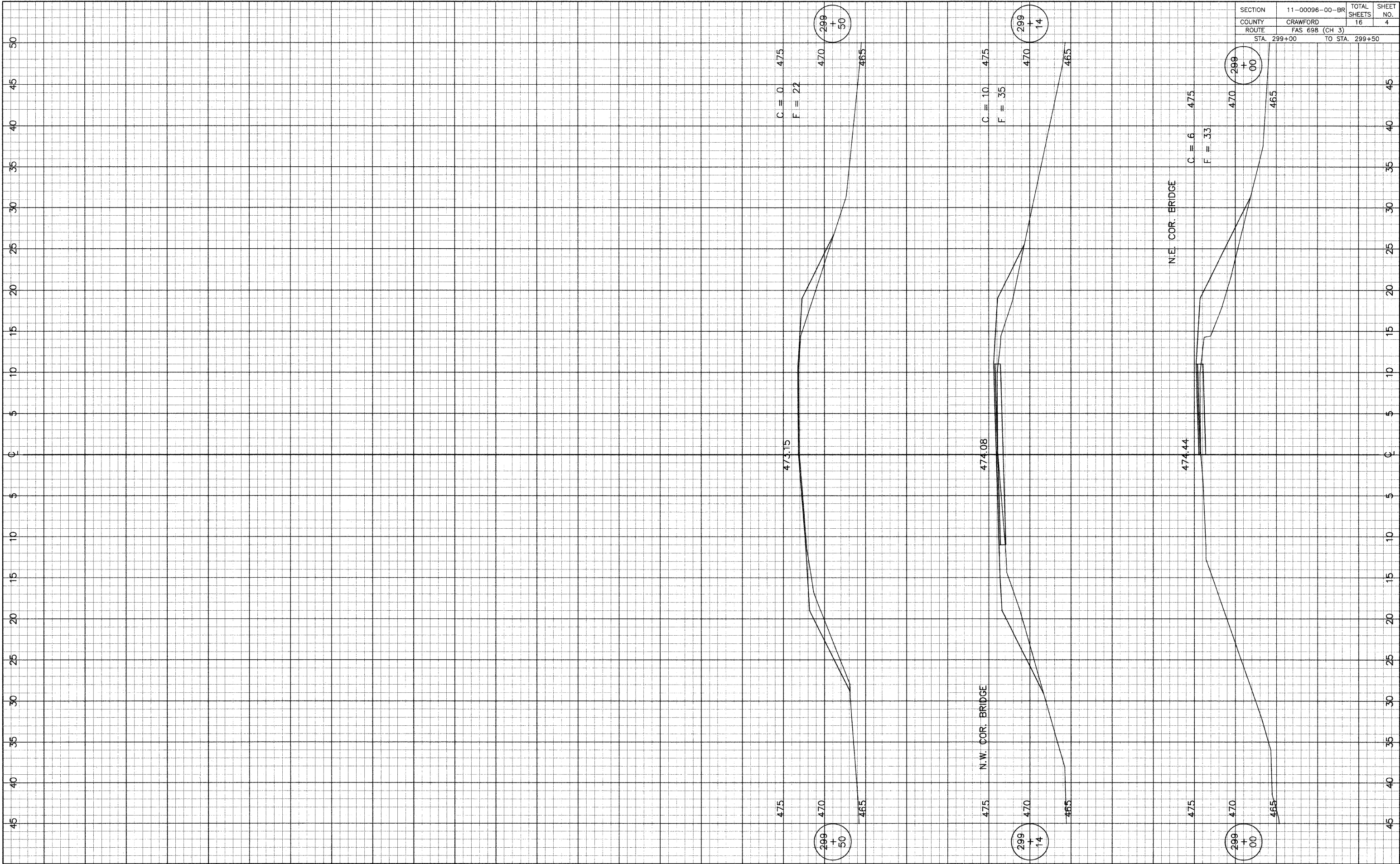
CONNOR & CONNOR, Inc.
CONSULTING ENGINEERS
210 East Locust Street
ROBINSON, ILLINOIS 62454
Phone: 618-544-8623
Fax: 618-544-3012
Licensed Surveyors
Licensed Engineers

DATE	
SCALE	
DRAWN BY	
PROJECT	
SHEET	

SECTION	11-00096-00-BR	TOTAL SHEETS	16	SHEET NO.	3
COUNTY	CRAWFORD				
ROUTE	FAS 698 (CH 3)				
STA. 296+98		TO STA. 298+08			



SECTION	11-00096-00-BR	TOTAL SHEETS	16	SHEET NO.	4
COUNTY	CRAWFORD	ROUTE	FAS 698 (CH 3)		
STA. 299+00		TO STA. 299+50			

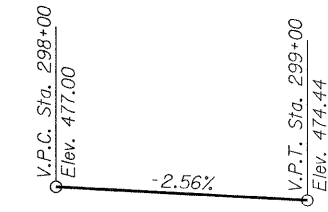
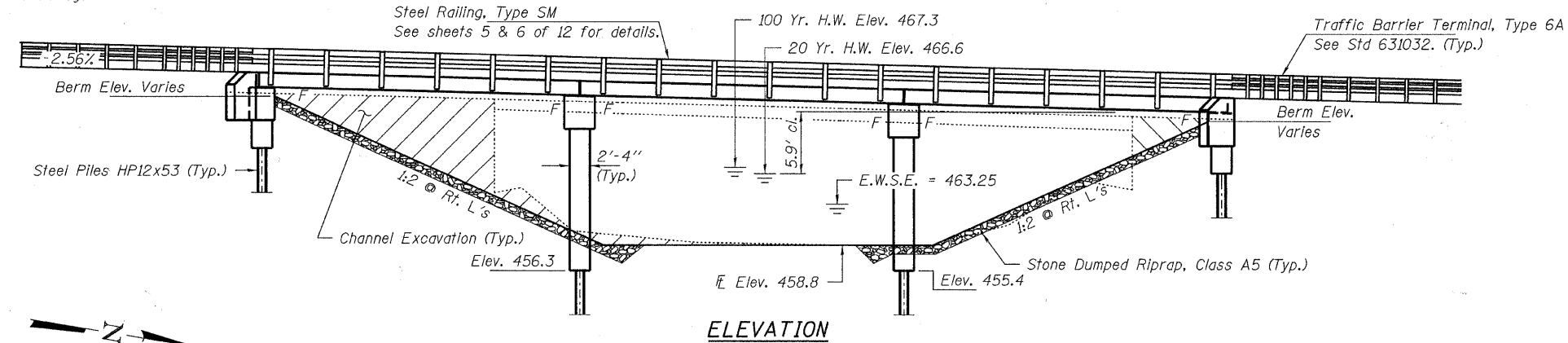


BENCHMARK:

EXISTING STRUCTURE NO. 017-3010; Sta. 298+60 - Three span concrete deck beam bridge on concrete abutment and pier caps with closed timber abutments, timber piling and wingwalls. 73.0' bk.-bk. abuts.; 26.2' o.-o. deck.

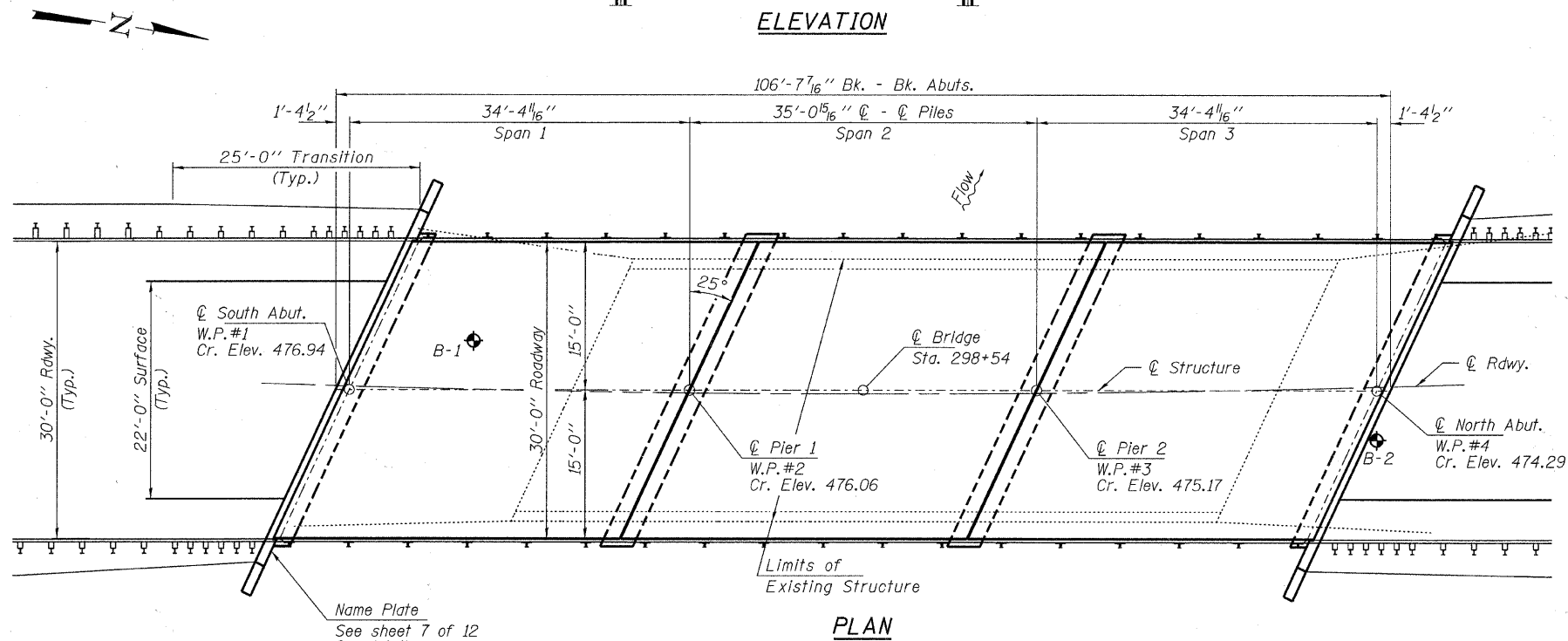
Structure closed to traffic during construction.

No Salvage



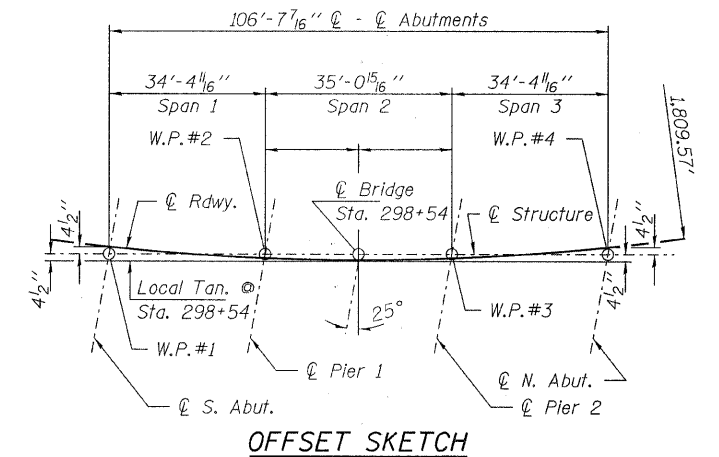
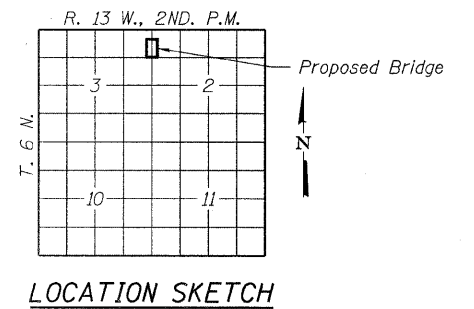
INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. Riprap Details
3. 17" x 36" PPC Deck Beam - All Spans
4. 17" x 36" PPC Deck Beam Details - All Spans
5. Superstructure Details
6. Steel Railing, Type SM
- 7-8. Abutments
9. Piers
10. HP Pile Details
- 11-12. Borings



CURVE DATA

P.I. Sta. 297+50
 $\Delta = 16^\circ 06' 00''$ (Lt.)
 $D = 3^\circ 10' 00''$
 $R = 1,809.57'$
 $T = 255.92'$
 $L = 508.42'$
 $E = 18.01'$
 $S.E. = 0.03$ Ft/Ft. Attained 110'



DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinf.)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

LOADING HL-93

Design Specifications: 2010 AASHTO LRFD with all applicable Interims.
 50#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.148g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.366g
 Soil Site Class = C

DESIGN SCOUR TABLE

Location	S. Abut.	Pier 1	Pier 2	N. Abut.
Elevation	471.0	454.8	454.8	468.4

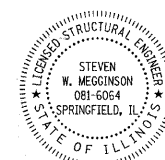
WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Natural		Head - Ft.		Headwater El.	
				Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	20	2160	361	405	466.6	0.6	-	467.2	467.2
Base	100	3320	405	453	467.3	1.1	1.0	468.4	468.3
Max. Calc.	500	-	-	-	-	-	-	-	-

Drainage Area = 8.51 Sq. Mi. Existing Low Grade Elev. @ Sta. Proposed Low Grade Elev. @ Sta.

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. Meggison 5/29/2012
 ILLINOIS STRUCTURAL NO. 081-6064



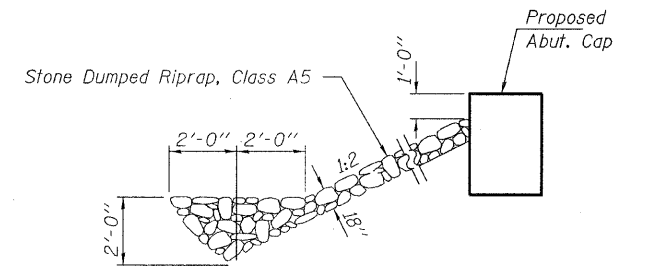
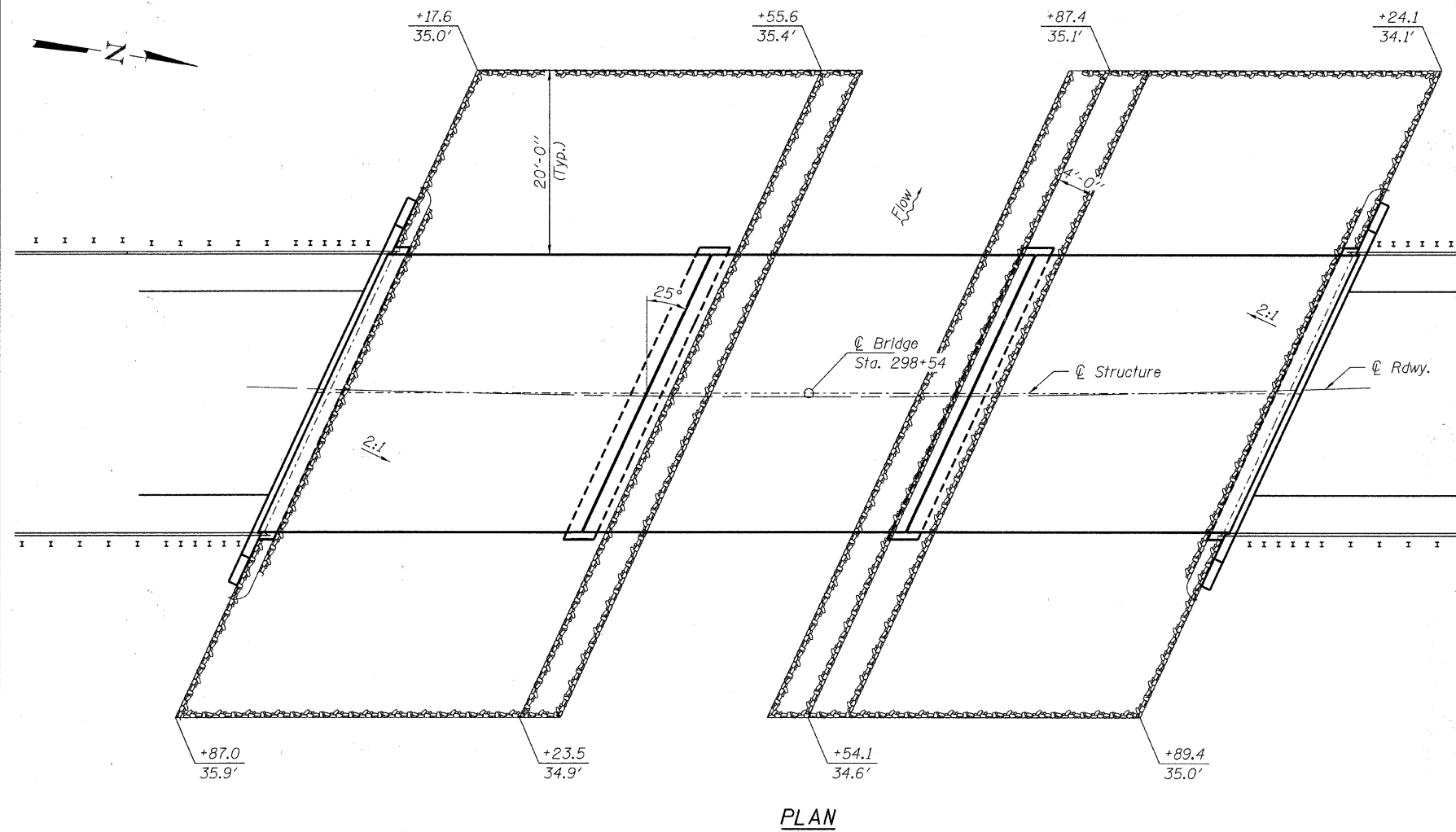
Expires 11-30-2012

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			100
Stone Dumped Riprap, Class A5	Ton			630
Hot Mix Asphalt Surface Course, Mix C, N50	Ton			44
Removal of Existing Structures	Each			1
Cofferdam Excavation	Cu. Yd.			75
Cofferdam (Type 2) (Location-1)	Each			1
Cofferdam (Type 2) (Location-2)	Each			1
Concrete Structures	Cu. Yd.		139.1	139.1
Concrete Encasement	Cu. Yd.		3.4	3.4
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3,150		3,150
Reinforcement Bars	Pound		10,300	10,300
Steel Railing, Type SM	Foot	213		213
Furnishing Steel Piles HP12x53	Foot		1,145	1,145
Driving Piles	Foot		1,145	1,145
Test Pile Steel HP12x53	Each		2	2
Name Plates	Each		1	1

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 South Abutment and at Pier 2 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 and piers 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 A-A

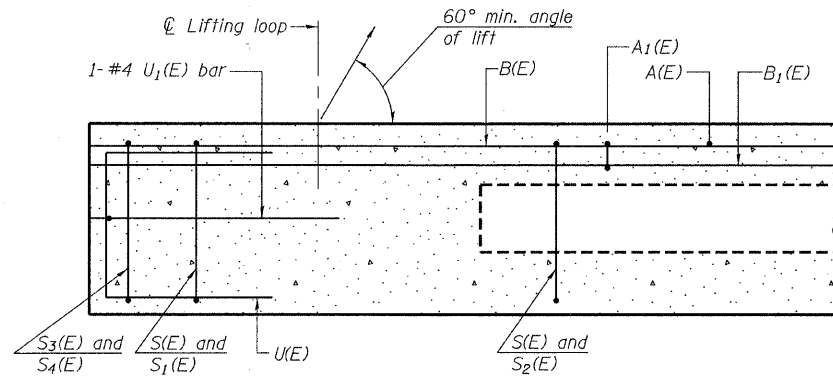
Note: See Special Provisions for Stone Dumped Riprap, Class A5.

BENNETT CREEK
 BUILT 201L BY
 CRAWFORD COUNTY
 SEC. 11-00096-00-BR
 C.H. 3 / F.A.S. 698
 STR. NO. 017-3061
 LOADING HL-93

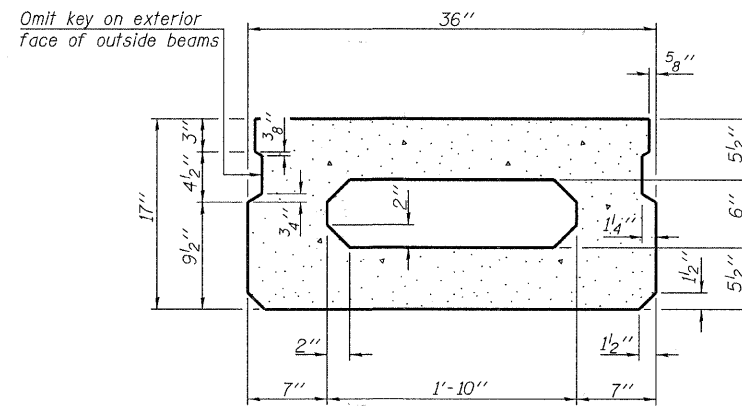
NAME PLATE

See Std. 515001

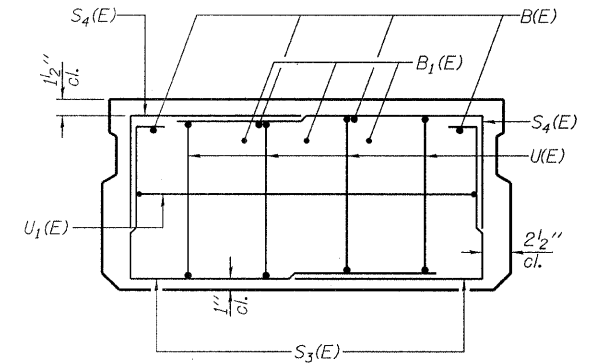
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HAMPTON, LENZINI AND RENWICK, INC. 308 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.M.S.	REVISED -			3	11-00096-00-BR	CRAWFORD	16	6
PLLOT SCALE =		DRAWN - D.A.B.	REVISED -			CONTRACT NO. 95682				
PLLOT DATE = 3/29/2012		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT				
				SHEET NO. 2 OF 12 SHEETS						



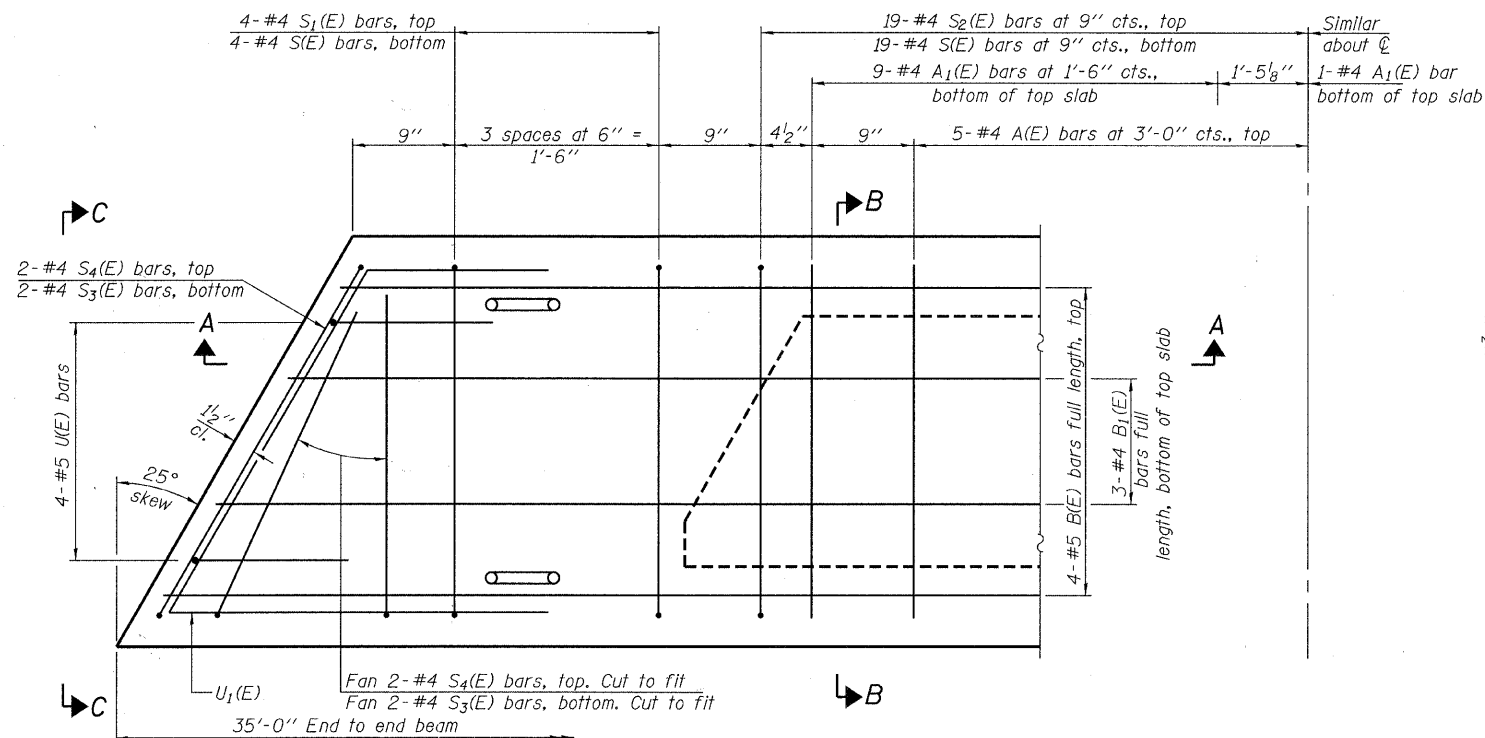
SECTION A-A



SECTION B-B
(Showing dimensions)

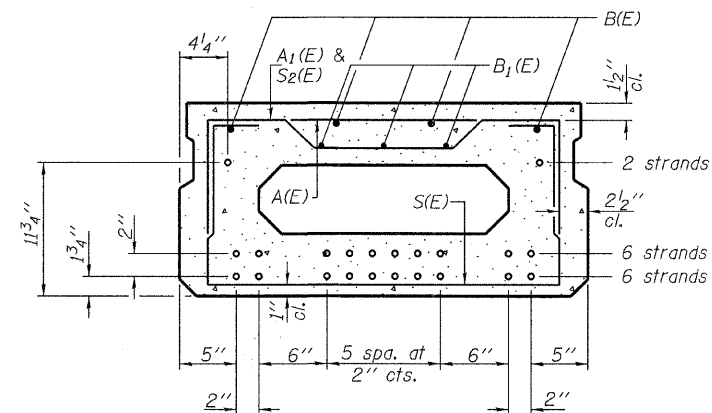


VIEW C-C



PLAN VIEW

Note: 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.



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)	10	#4	2'-7"	—
A1(E)	19	#4	2'-10"	—
B(E)	4	#5	34'-8"	—
B1(E)	3	#4	34'-8"	—
S(E)	46	#4	5'-9"	□
S1(E)	8	#4	4'-3"	□
S2(E)	38	#4	4'-6"	□
S3(E)	8	#4	3'-11"	□
S4(E)	8	#4	3'-2"	□
U(E)	8	#5	3'-8"	□
U1(E)	2	#4	6'-6"	□

Note: See sheet 4 & 5 of 12 for additional details and Bill of Material.

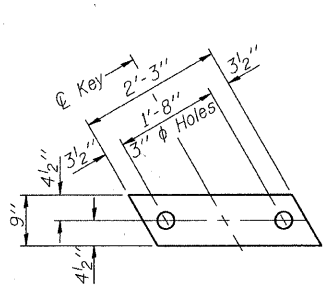
MINIMUM BAR LAP

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

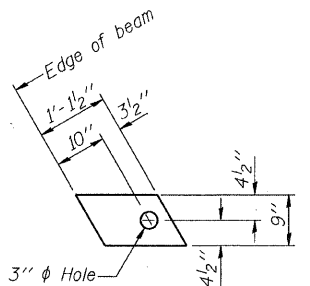
PD-1736-L

7-1-10

FILE NAME = 110368-ah-t-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	17" x 36" PPC DECK BEAM - ALL SPANS STRUCTURE NO. 017-3061	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3545 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.M.S.	REVISED -			3	11-00096-00-BR	CRAWFORD	16	7	
ILR ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184-000919	PLOT DATE = 3/29/2012	DRAWN - D.A.B.	REVISED -			CONTRACT NO. 95682					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT					



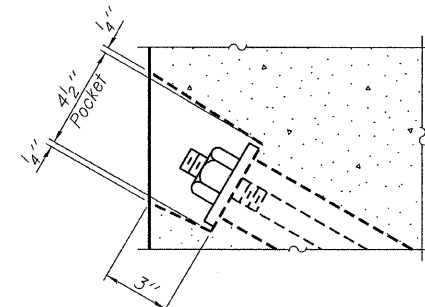
FABRIC BEARING PAD
(Interior - 54 Required)



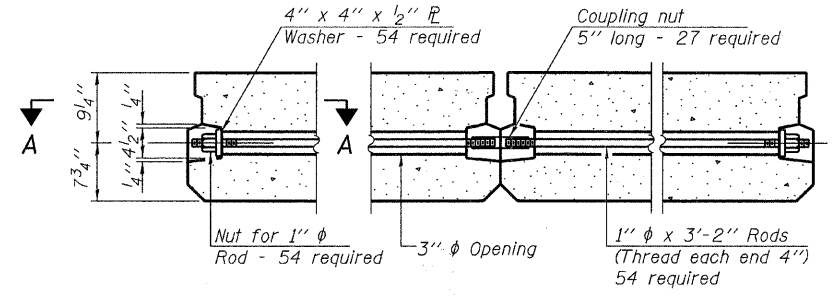
FABRIC BEARING PAD
(Interior - 12 Required)

FIXED

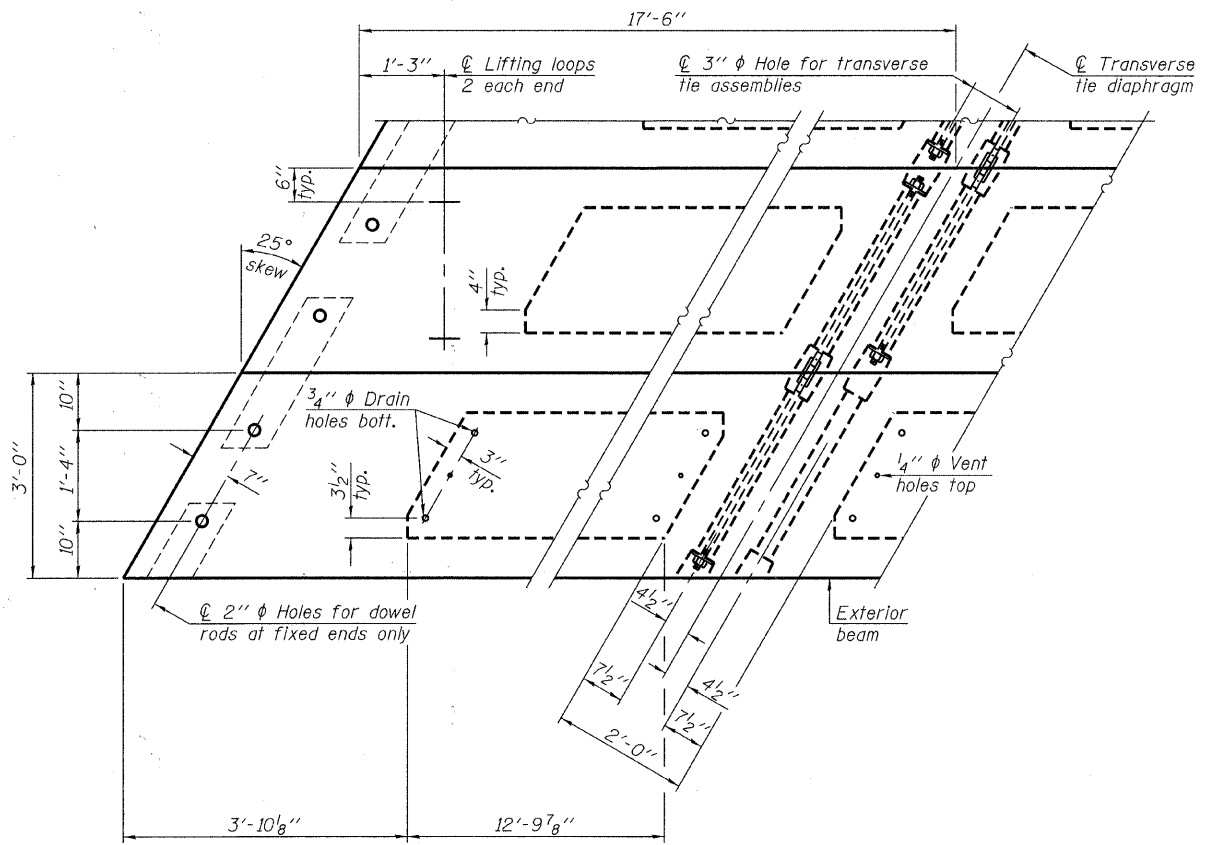
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

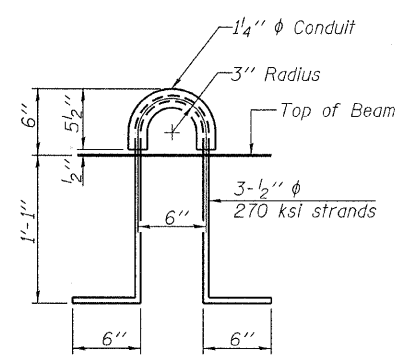


PLAN VIEW

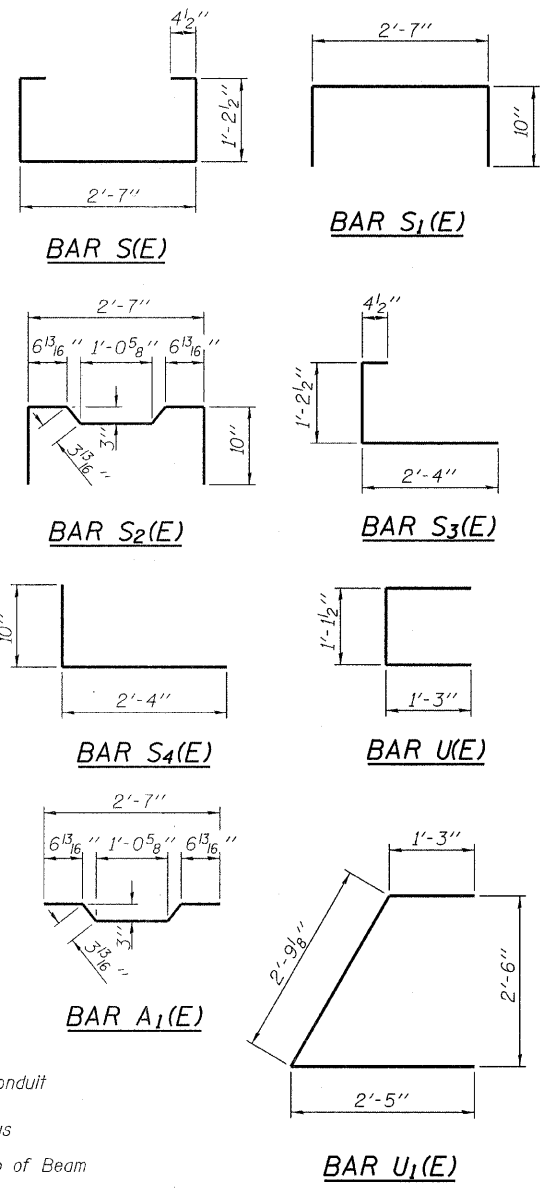
Note: Connect beams in pairs with the transverse tie configuration shown.

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" 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 1021.06 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



BILL OF MATERIAL

Material	Sq. Ft.	3,150
Precast Prestressed Conc. Deck Bms. (17" depth)		
Hot-Mix Asphalt Surface Course	Ton	44

PD-1736-LD 7-1-10

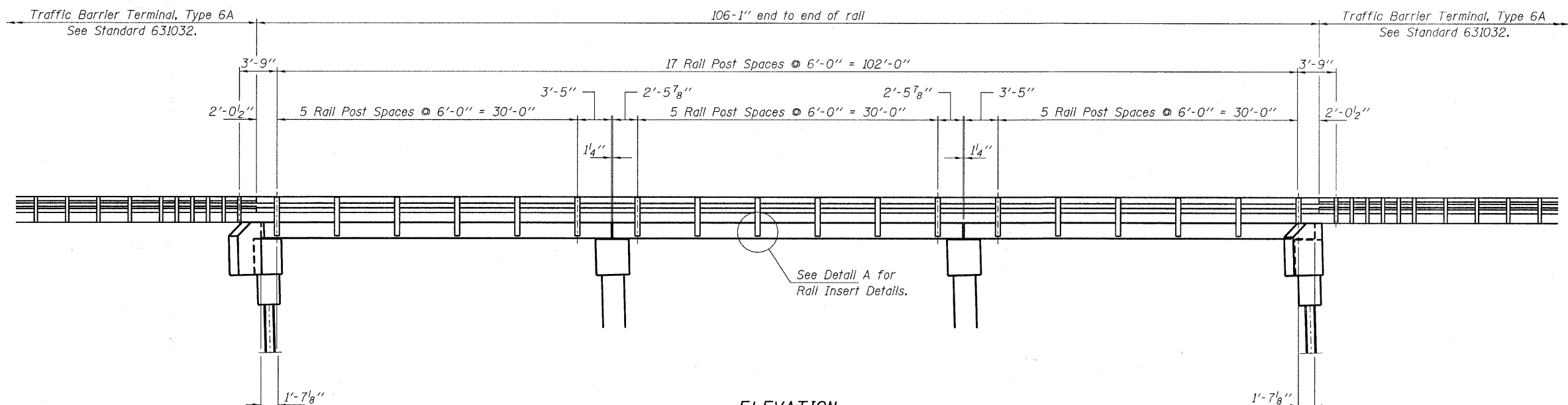
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3805 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62783	CHECKED - S.M.S.
ILLINOIS PROFESSIONAL DESIGN FIRM LS 1 PE / SE CORP. 184-000699	DRAWN - D.A.B.
	CHECKED - S.W.M.
	REVISOR -
	REVISOR -
	REVISOR -
	REVISOR -

DESIGNED - D.W.T.	REVISOR -
CHECKED - S.M.S.	REVISOR -
DRAWN - D.A.B.	REVISOR -
CHECKED - S.W.M.	REVISOR -

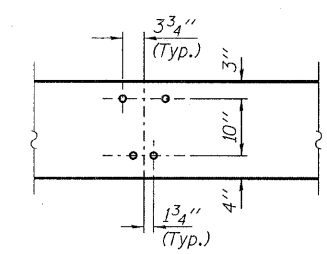
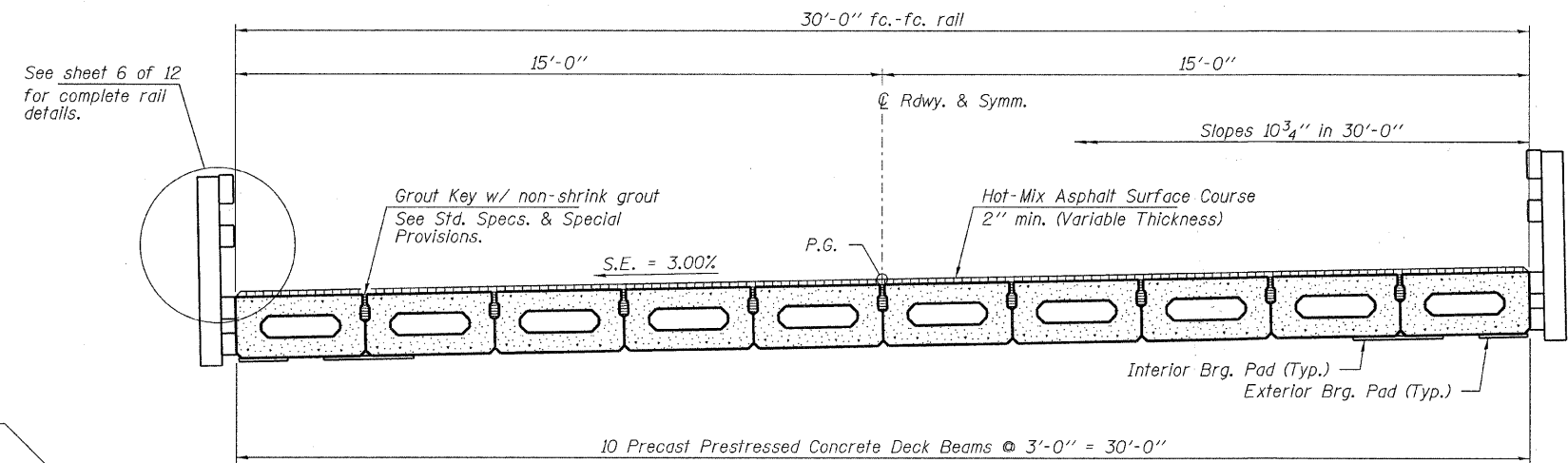
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

17" x 36" PPC DECK BEAM DETAILS - ALL SPANS
STRUCTURE NO. 017-3061
SHEET NO. 4 OF 12 SHEETS

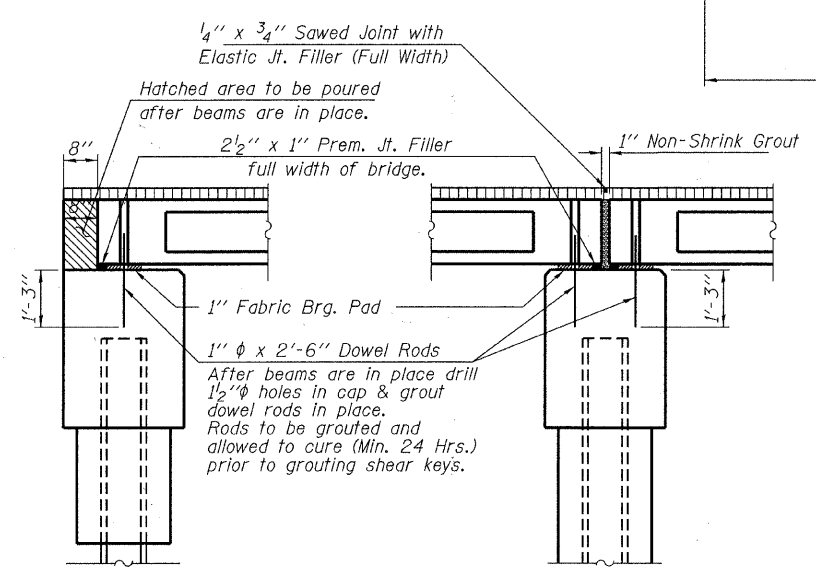
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	11-00096-00-BR	CRAWFORD	16	8
				CONTRACT NO. 95682
[ILLINOIS] FED. AID PROJECT				



ELEVATION
Showing Rail Post Spaces
See sheet 6 of 12 for Railing Details.

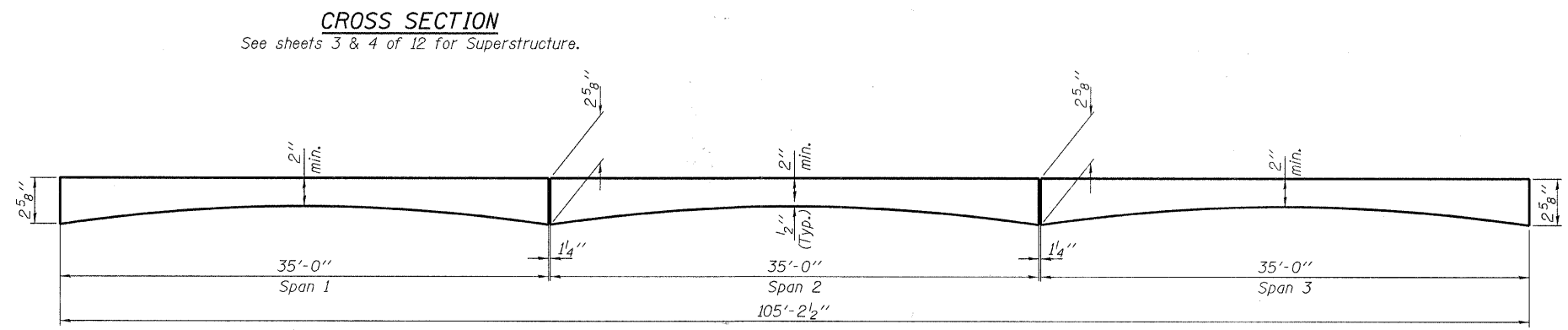


DETAIL A



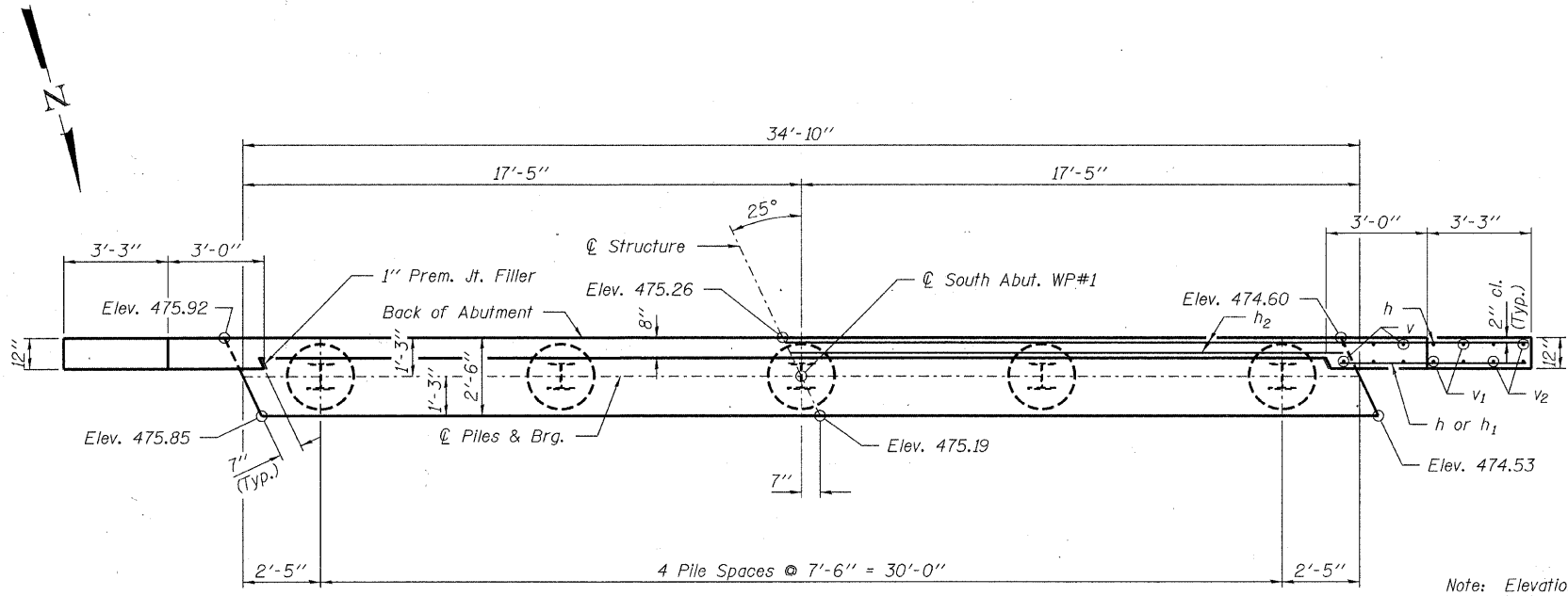
SECTION AT ABUTMENTS
© Rt. L's

SECTION AT PIERS
© Rt. L's



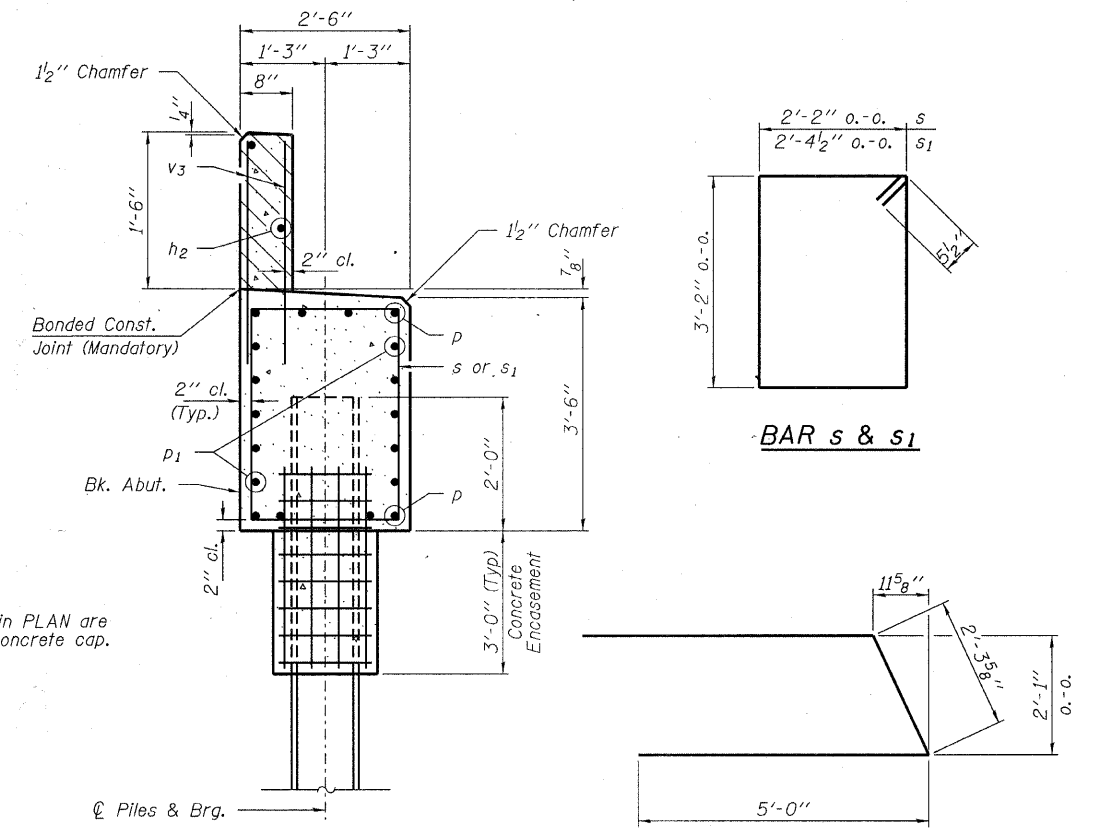
ANTICIPATED HMA WEARING SURFACE PROFILE
(For information only - beam camber may vary in field.)

FILE NAME = 110368-shr-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 017-3061	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3805 STEVENSON DRIVE, SUITE 301 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.M.S.	REVISED -			3	11-00096-00-BR	CRAWFORD	16	9	
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 134-000929	PLOT DATE = 3/29/2012	DRAWN - D.A.B.	REVISED -			CONTRACT NO. 95682					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT					



PLAN

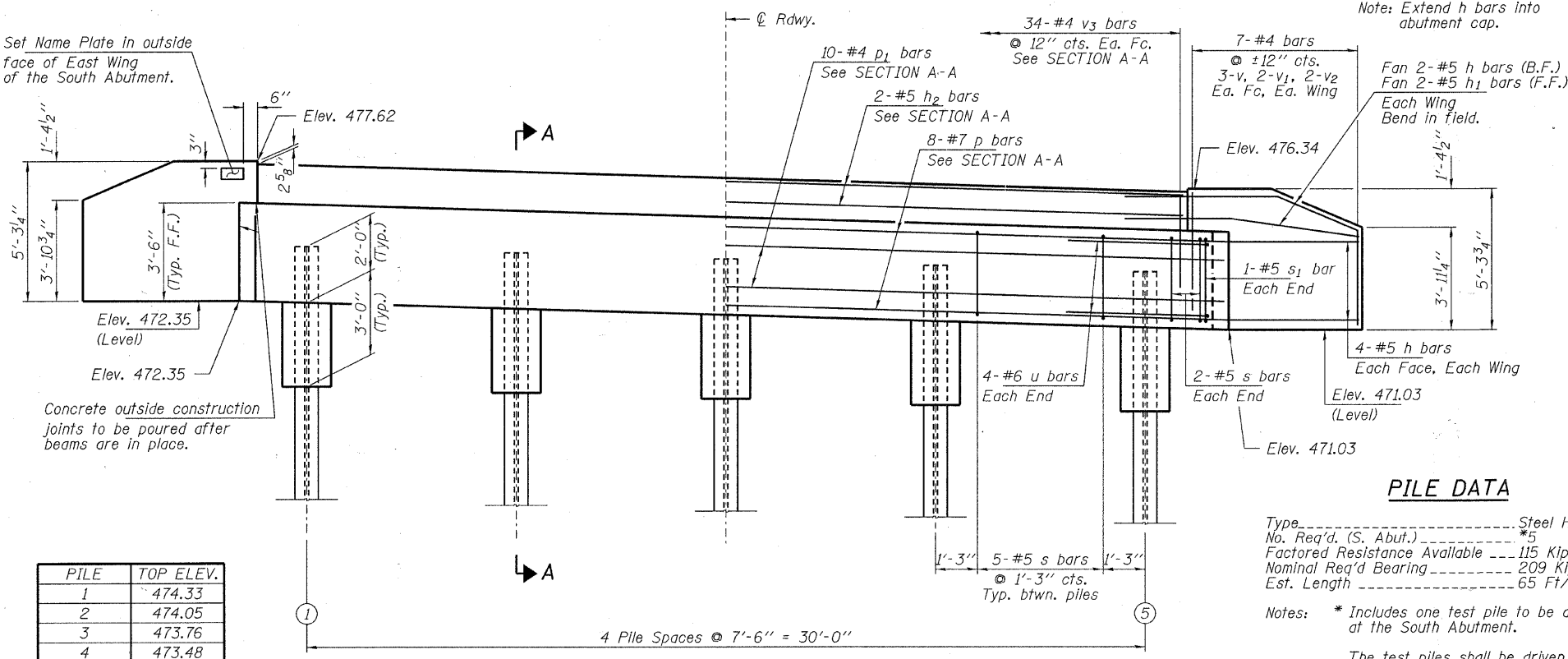
Note: Elevations in PLAN are to top of concrete cap.



SECTION A-A

Hatched area to be poured after beams are in place.

Set Name Plate in outside face of East Wing of the South Abutment.



ELEVATION
(Looking South)

PILE	TOP ELEV.
1	474.33
2	474.05
3	473.76
4	473.48
5	473.19

PILE DATA

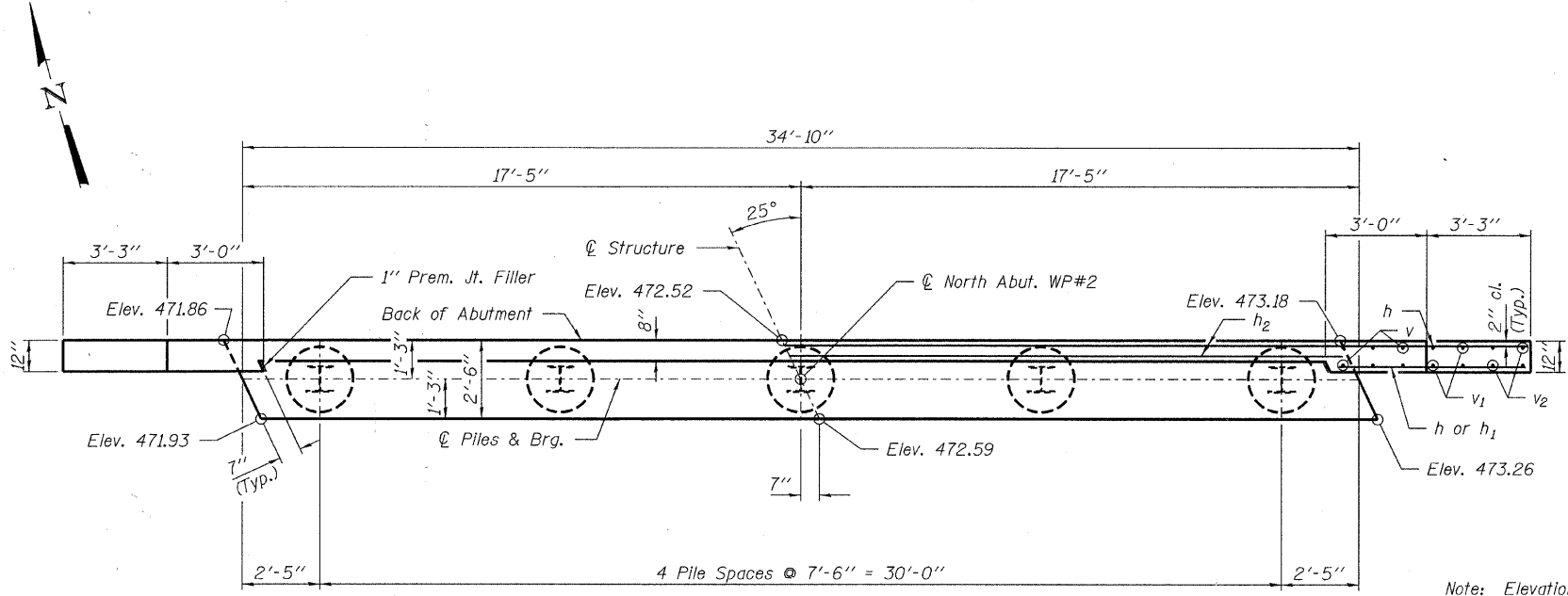
Type ----- Steel HP12x53
 No. Req'd. (S. Abut.) ----- 5
 Factored Resistance Available ----- 115 Kips/Pile
 Nominal Req'd Bearing ----- 209 Kips/Pile
 Est. Length ----- 65 FT/Pile

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

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

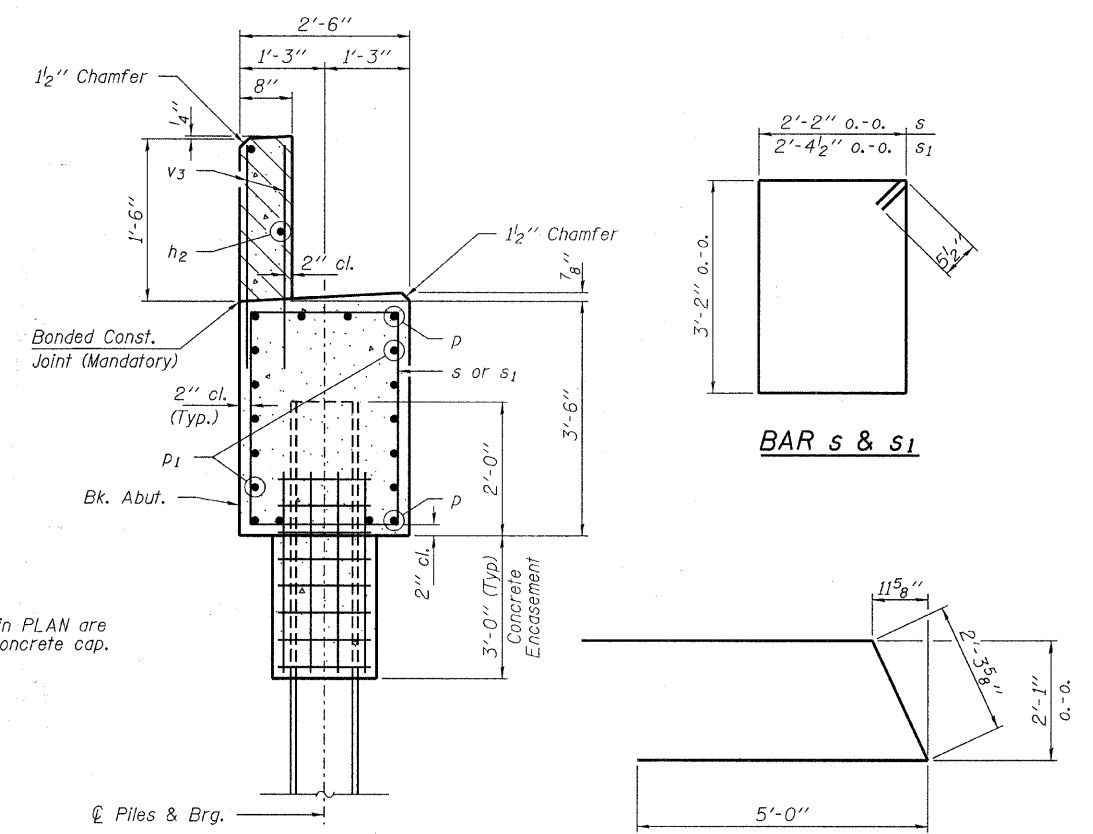
BILL OF MATERIAL - S. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#5	9'-3"	—
h1	4	#5	6'-0"	—
h2	2	#5	34'-6"	—
p	8	#7	34'-6"	—
p1	10	#4	34'-6"	—
s	24	#5	11'-7"	□
s1	2	#5	11'-10"	□
u	8	#6	12'-4"	—
v	12	#4	4'-11"	—
v1	8	#4	4'-3"	—
v2	8	#4	3'-7"	—
v3	68	#4	2'-5"	—
Concrete Structures			Cu. Yd.	14.8
Concrete Encasement			Cu. Yd.	1.7
Reinforcement Bars			Pound	1,570
Steel Piles HP12x53			Foot	260
Test Pile Steel HP12x53			Each	1
Name Plates			Each	1



PLAN

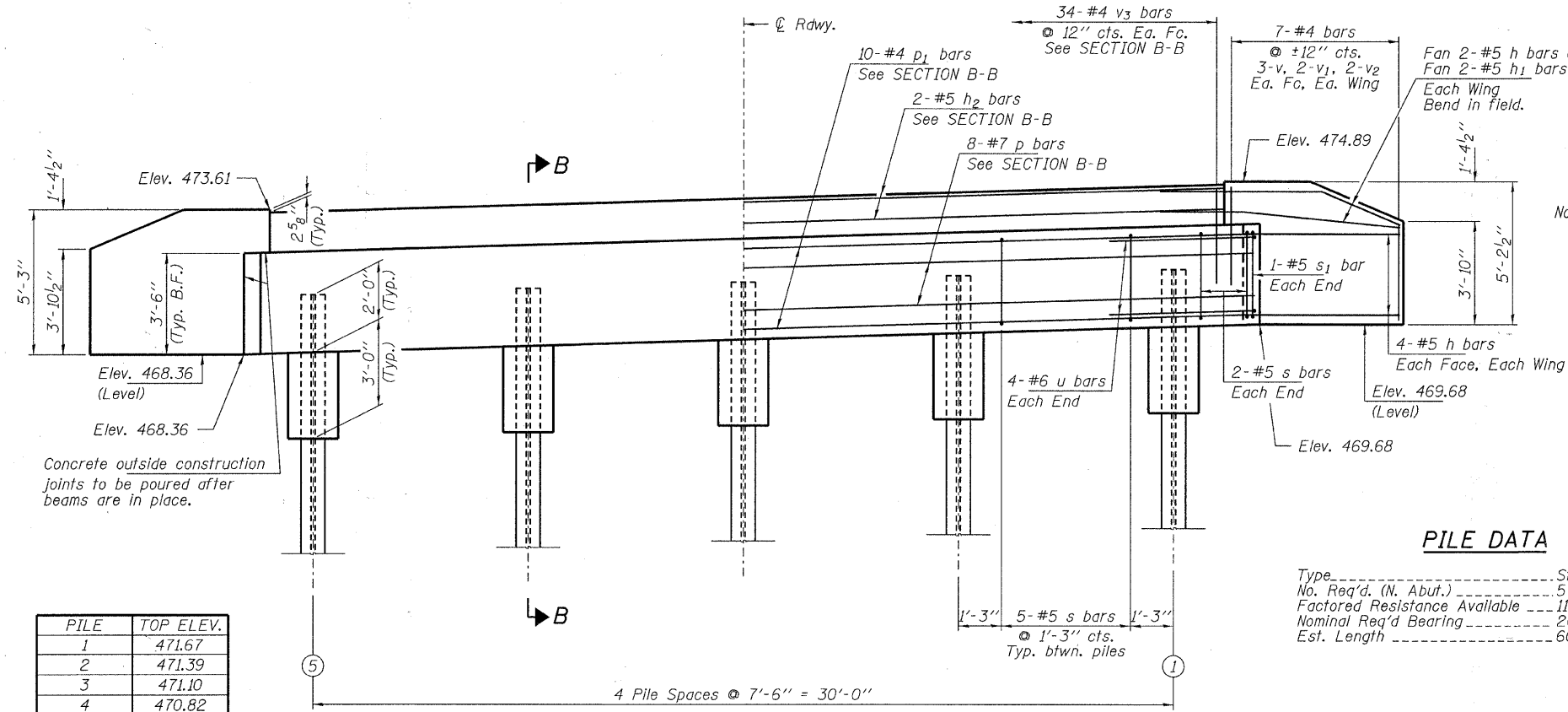
Note: Elevations in PLAN are to top of concrete cap.



SECTION B-B

Hatched area to be poured after beams are in place.

BAR u



ELEVATION
(Looking North)

Note: Extend h bars into abutment cap.

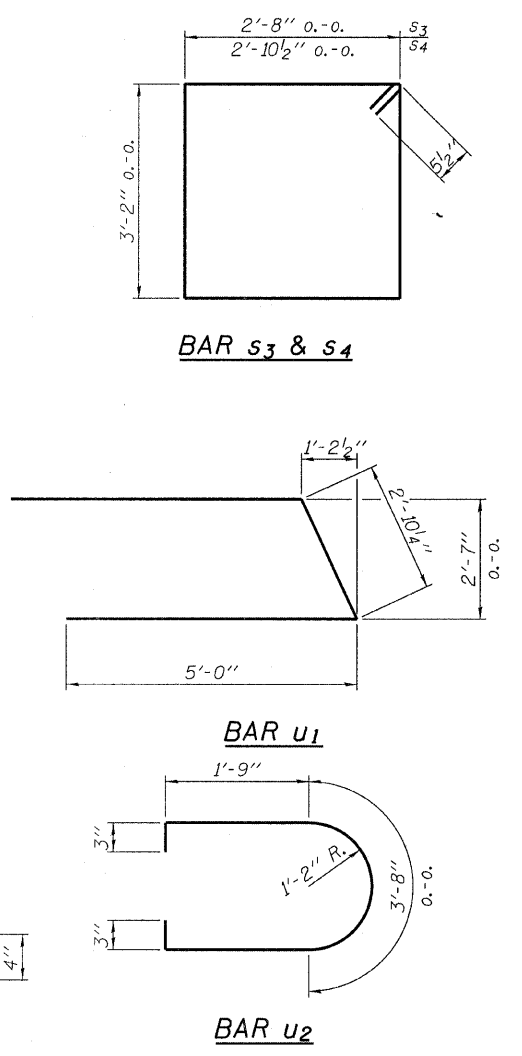
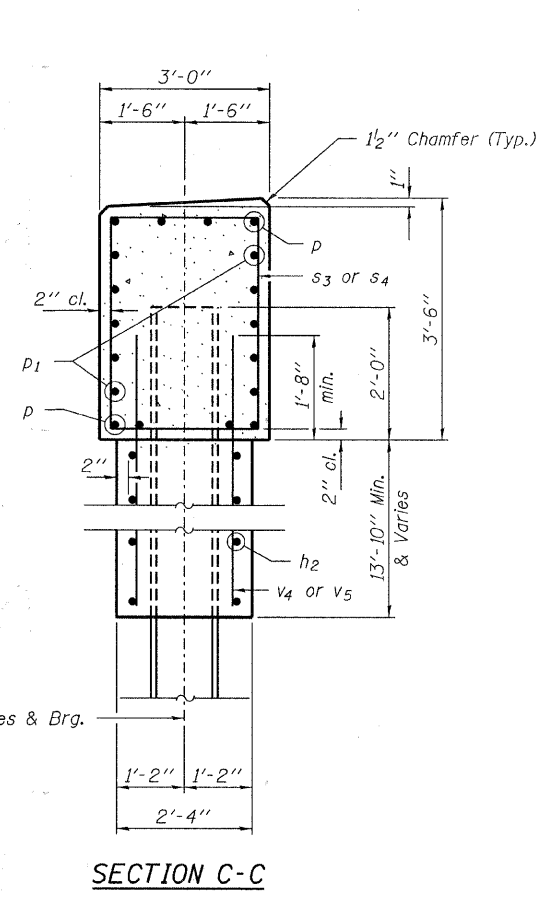
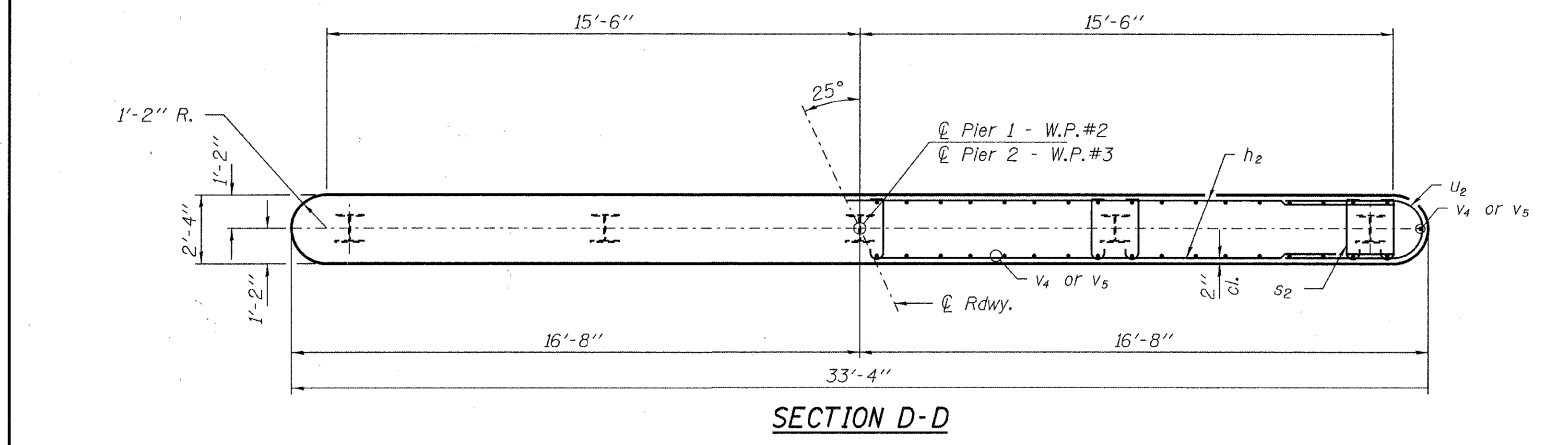
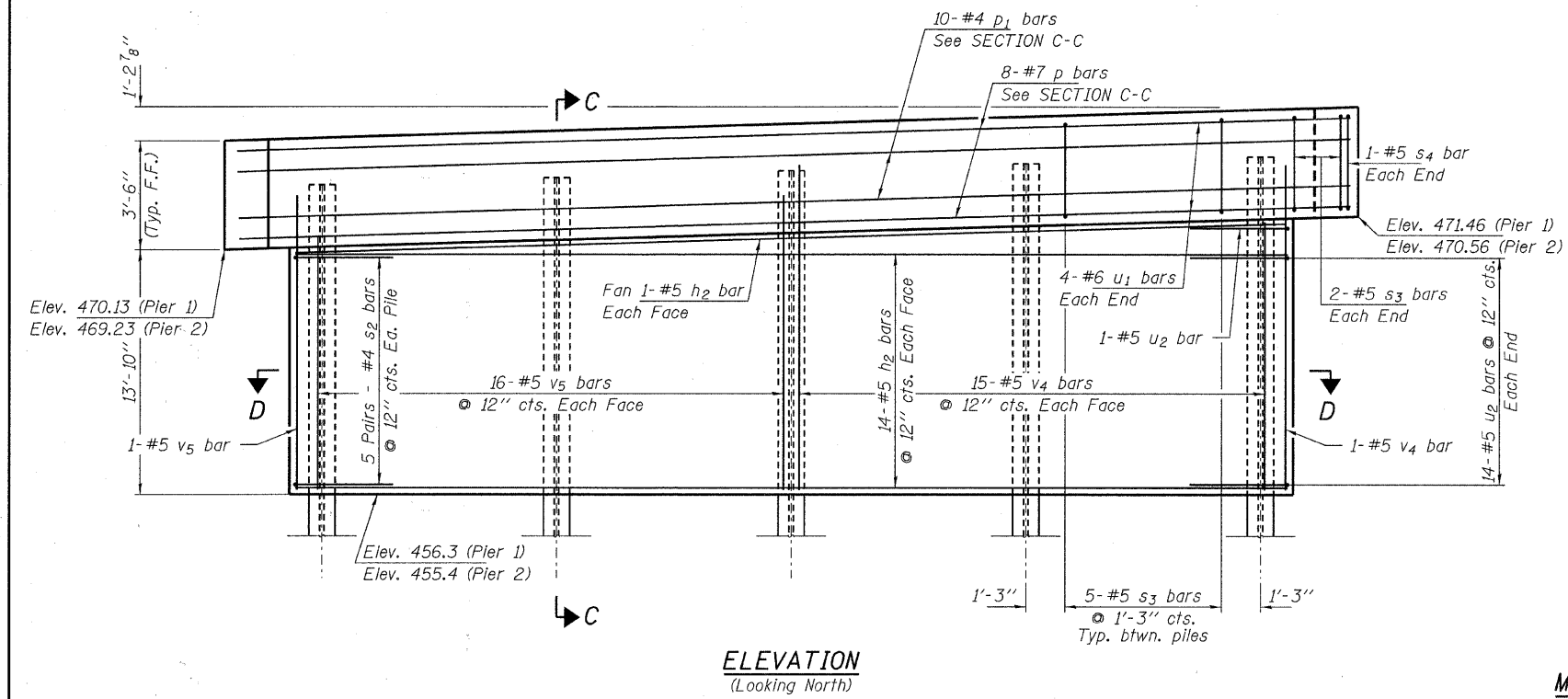
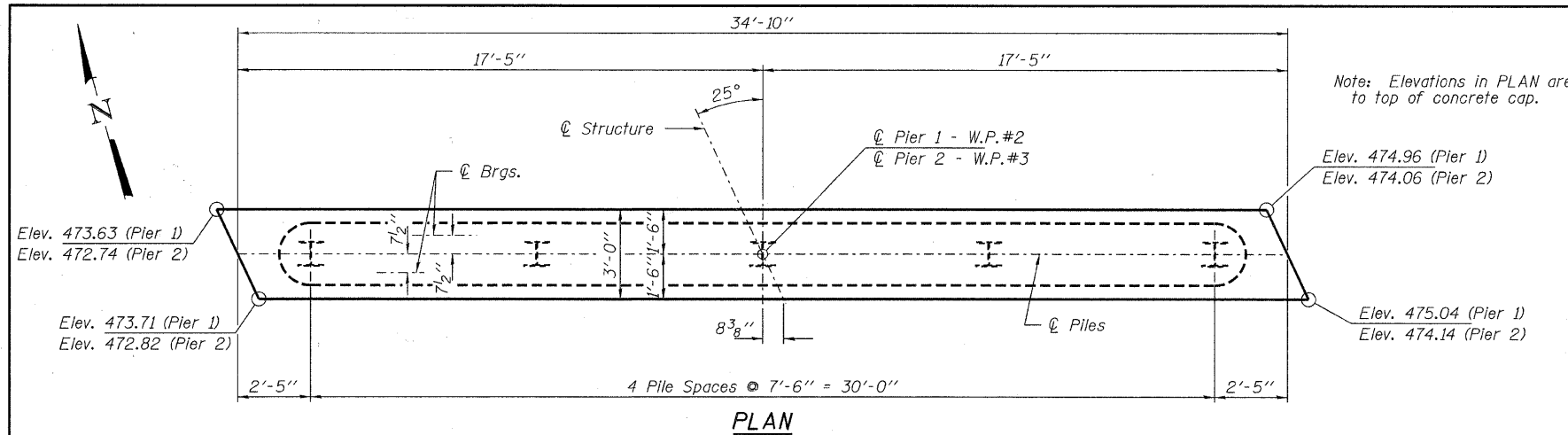
PILE	TOP ELEV.
1	471.67
2	471.39
3	471.10
4	470.82
5	470.53

PILE DATA

Type: Steel HP12x53
 No. Req'd. (N. Abut.) 5
 Factored Resistance Available 115 Kips/Pile
 Nominal Req'd Bearing 209 Kips/Pile
 Est. Length 60 Ft/Pile

BILL OF MATERIAL - N. ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h	20	#5	9'-3"	—
h1	4	#5	6'-0"	—
h2	2	#5	34'-6"	—
p	8	#7	34'-6"	—
p1	10	#4	34'-6"	—
s	24	#5	11'-7"	□
s1	2	#5	11'-10"	□
u	8	#6	12'-4"	—
v	12	#4	4'-10"	—
v1	8	#4	4'-3"	—
v2	8	#4	3'-7"	—
v3	68	#4	2'-5"	—
Concrete Structures			Cu. Yd.	14.7
Concrete Encasement			Cu. Yd.	1.7
Reinforcement Bars			Pound	1,570
Steel Piles HP12x53			Foot	300



MIN. BAR LAP
#5 = 1'-9"

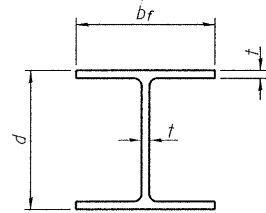
PILE DATA

Type ----- Steel HP12x53
No. Req'd. (2 Piers) ----- *10
Factored Resistance Available ----- 197 Kips/Pile
Nominal Req'd Bearing ----- 359 Kips/Pile
Est. Length ----- 65 Ft/Pile

Notes: * Includes one test pile to be driven in a permanent location at Pier 2.
The test piles shall be driven to 110 percent of the Nominal Required Bearing Indicated in the pile data information.

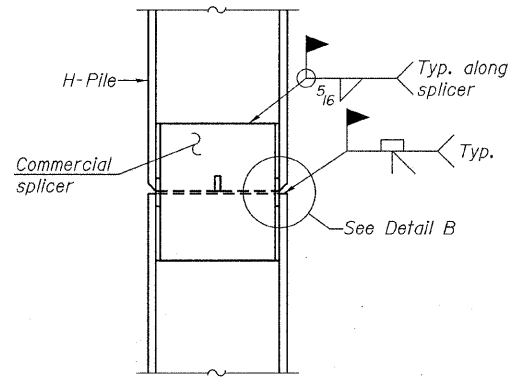
BILL OF MATERIAL - 2 PIERS

BAR	NO.	SIZE	LENGTH	SHAPE
h2	60	#5	31'-0"	—
p	16	#7	34'-6"	—
p1	20	#4	34'-6"	—
s2	300	#4	2'-10"	U
s3	48	#5	12'-7"	□
s4	4	#5	13'-0"	□
u1	16	#6	12'-11"	U
u2	58	#5	7'-8"	U
v4	62	#5	16'-0"	—
v5	66	#5	15'-0"	—
Concrete Structures			Cu. Yd.	109.6
Reinforcement Bars			Pound	7,160
Steel Piles HP12x53			Foot	585
Test Pile Steel HP12x53			Each	1
Cofferdam (Type 2) (Location 1)			Each	1
Cofferdam (Type 2) (Location 2)			Each	1

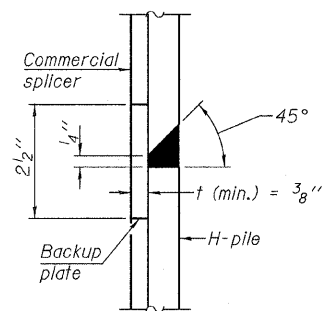


STEEL PILE TABLE

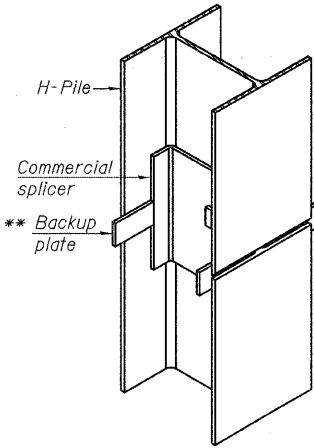
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53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

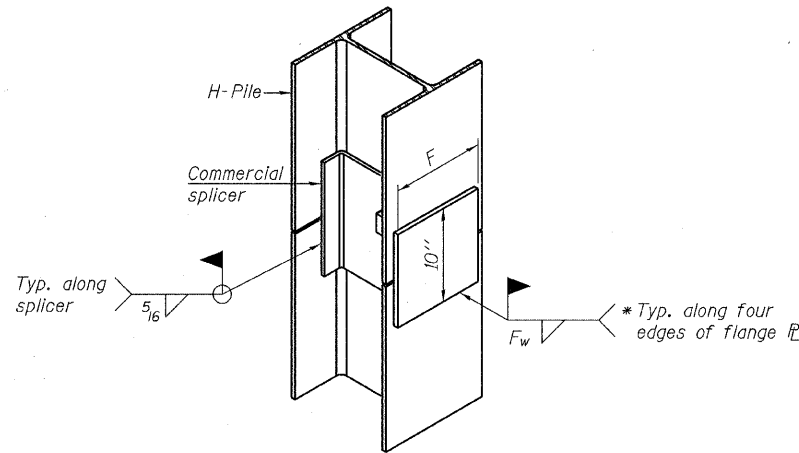


DETAIL "B"



ISOMETRIC VIEW

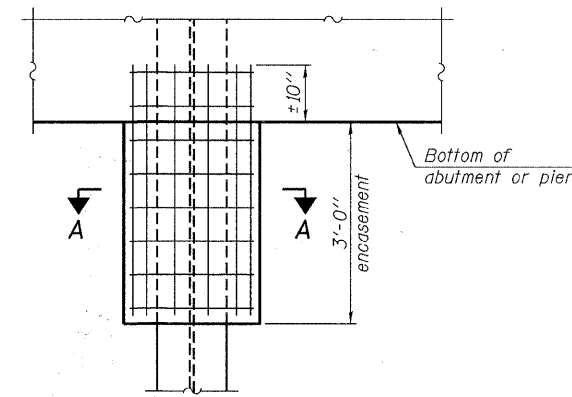
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

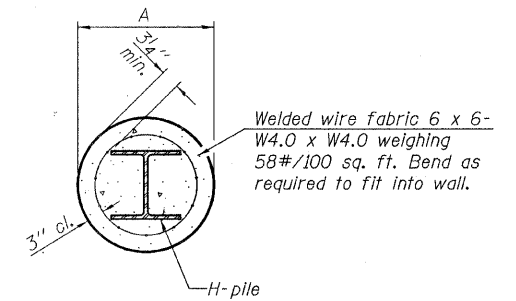
WELDED COMMERCIAL SPLICE ALTERNATE

- * 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.).



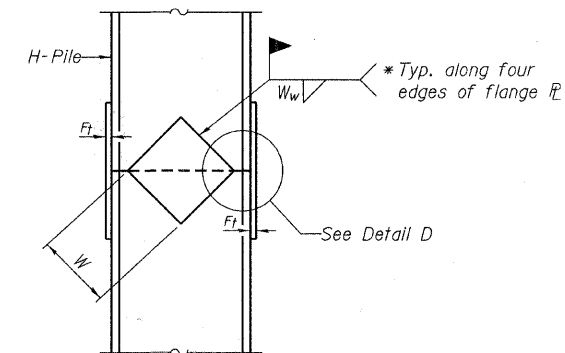
ELEVATION

PILE ENCASEMENT

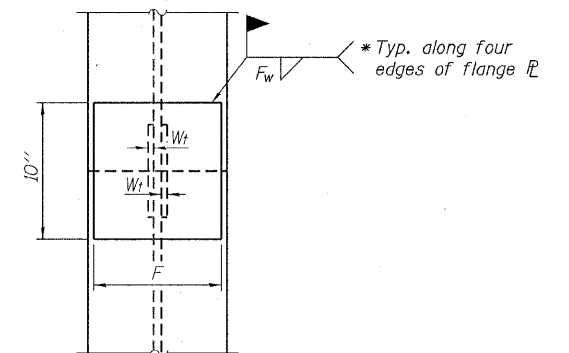


SECTION A-A

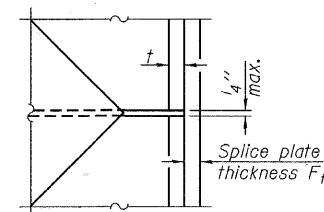
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



END VIEW

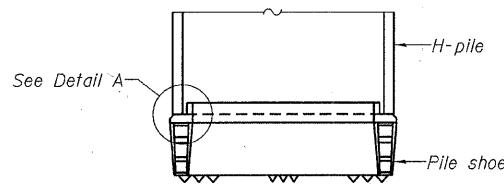


DETAIL D

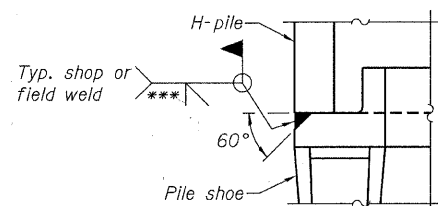
WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5 8/8"	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"

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



ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT

F-HP 7-1-10

FILE NAME = 110368-ah-bridge.dgn	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 017-3061	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.M.S.	REVISED -			3	11-00096-00-BR	CRAWFORD	16	14	
ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184-002699	PLOT DATE = 3/29/2012	DRAWN - D.A.B.	REVISED -			CONTRACT NO. 95682					
		CHECKED - S.W.M.	REVISED -			[ILLINOIS] FED. AID PROJECT					

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax Page 1 of 2

Bridge Foundation Boring Log

Project: H-11183 Bridge Structure No. 017-3010 Date: 10/4/2011
Section: 11-00096-00-BR Station 298+60
Route: FAS 698 (CH3) Bored by: J. Carter
County: Crawford Checked By: T. Holcomb

Boring No: 2
Station: 299+02
Offset: 5' RT
Surface Water Elev. _____
Ground Water Elev. During Drilling Dry
Upon Completion Dry

Description	Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %
Ground Surface	474.3	0						
2.5" A-3 Surface/ 10" C. Stone	473.3							
Brown Mottled Gray Silty CLAY (A-6)		6	---	17	-25	22	5.6B	12
		5	1.1B	18	-49	5.0S		9
		6	1.0B	15	-30	53	3.7S	10
		7	1.7B	16				
Gray Silty CLAY (A-6) with sand	463.3	3	0.8B	19	-35	127	---	16
		3	0.4S	17				
Brown Silty CLAY (A-6) with sand and gravel	458.3	9	2.6B	13	-40	76	2.0S	11
Gray Silty CLAY (A-6) with sand	455.8	35	5.2B	8				
		39	4.3B	8	-26	3.9B		13

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

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax Page 2 of 2

Bridge Foundation Boring Log

Project: H-11183 Bridge Structure No. 017-3010 Date: 10/4/2011
Section: 11-00096-00-BR Station 298+60
Route: FAS 698 (CH3) Bored by: J. Carter
County: Crawford Checked By: T. Holcomb

Boring No: 2
Station: 299+02
Offset: 5' RT
Surface Water Elev. _____
Ground Water Elev. During Drilling Dry
Upon Completion Dry

Description	Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %
Silty CLAY with sand (continued)					-45			
					-70			
		19	2.6B	18	-50			
					-75			
		18	3.7B	17	-55			
					-80			
		22	4.3B	14	-60			
End of Boring @ -60.0'	414.3							
					-85			
					-65			
		31	---	10				

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