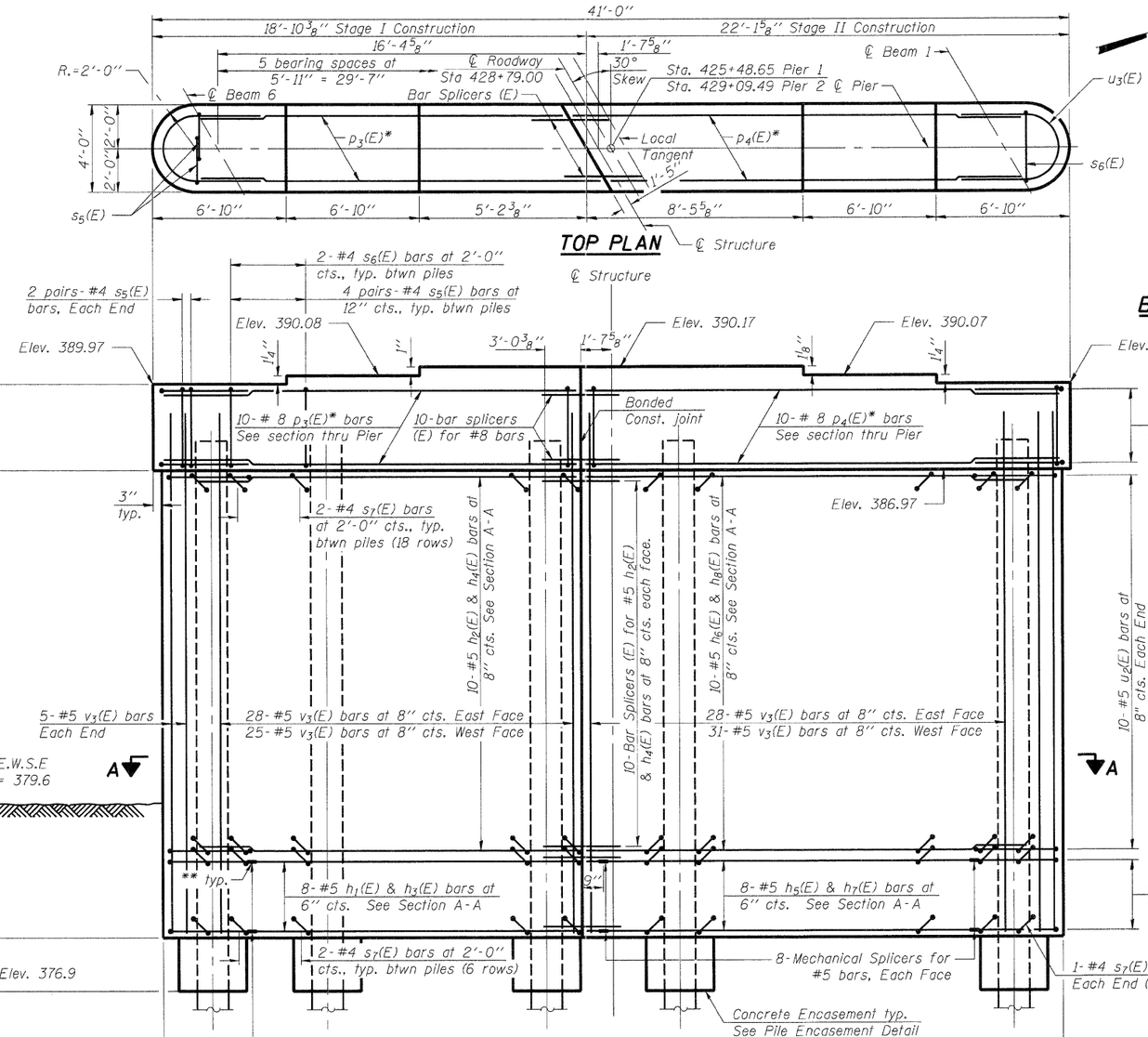
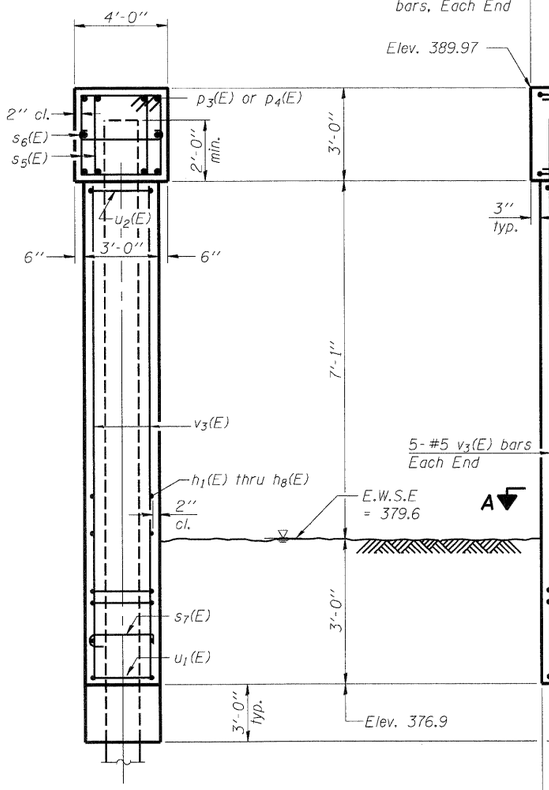
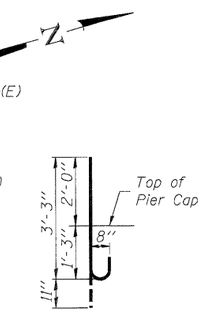
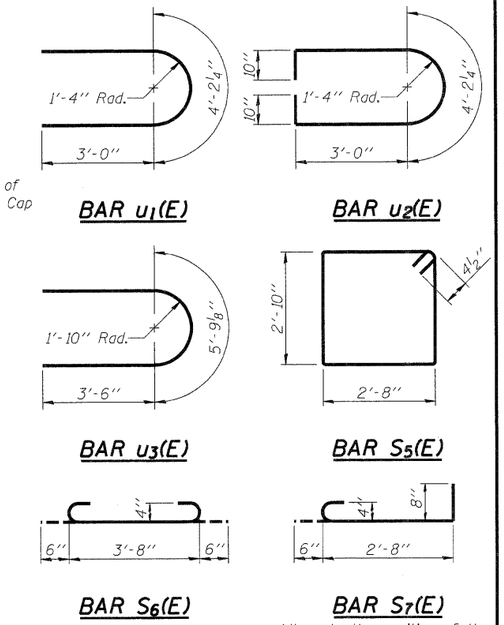
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 22 of 24.
*Cut $p(E)$ and $p_1(E)$ bars to fit skew.
**Mechanical spice or shop welded splice per AWS D1.4.
If a portion of the concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.
*** Pier 1 is Location 1, Pier 2 is Location 2
**** See sheet 11 of 24 for $V_4(E)$ bars









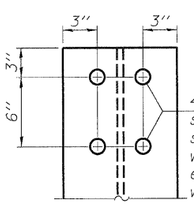
Alternate the position of the 90° hooks on the $S_2(E)$ bars in the field.

BILL OF MATERIAL FOR TWO PIERS

Bar	No.	Size	Length	Shape
$h_1(E)$	16	#5	15'-9"	
$h_2(E)$	20	#5	17'-10"	
$h_3(E)$	16	#5	14'-0"	
$h_4(E)$	20	#5	16'-2"	
$h_5(E)$	16	#5	15'-9"	
$h_6(E)$	20	#5	19'-5"	
$h_7(E)$	16	#5	17'-6'	
$h_8(E)$	20	#5	21'-2"	
$p_3(E)$	20	#8	17'-11"	
$p_4(E)$	20	#8	21'-2"	
$s_5(E)$	160	#4	11'-9"	
$s_6(E)$	36	#4	4'-8"	
$s_7(E)$	396	#4	3'-6"	
$u_1(E)$	32	#5	10'-3"	
$u_2(E)$	40	#5	11'-11"	
$u_3(E)$	12	#6	12'-9"	
$v_3(E)$	244	#5	12'-0"	
$v_4(E)$ ****	60	#8	4'-2"	
Cofferdam Excavation			Cu. Yd.	118.6
Concrete Structures			Cu. Yd.	126.1
Reinforcement Bars, Epoxy Coated			Pound	11,780
Furnishing Steel Piles HP 14x117			Foot	1136
Driving Piles			Foot	1136
Test Pile Steel HP 14x117			Each	2
Concrete Encasement			Cu. Yd.	9.8
*** Cofferdam Type 1, Location 1			Each	1
*** Cofferdam Type 1, Location 2			Each	1

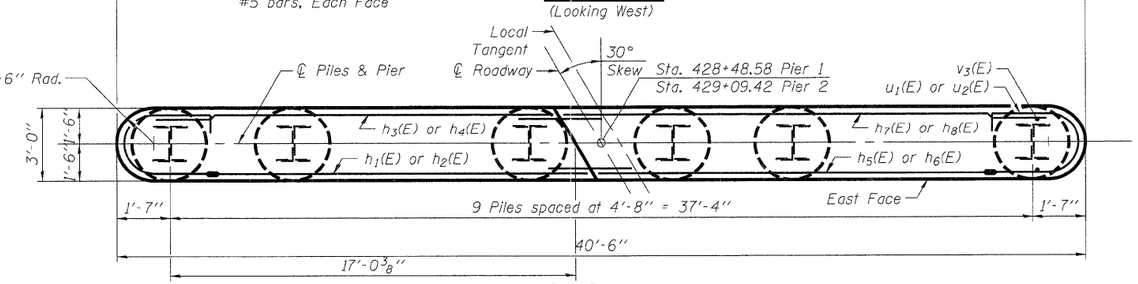
PILE DATA

Type: Steel HP 14x117
Nominal Required Bearing: 423 kips
Factored Resistance Available: 204 kips
Est. Length: 71'
No. Production Piles: 16 (for two piers)
No. Test Piles: 2 (one at each pier)

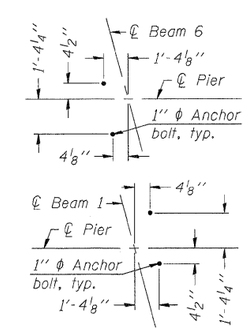


4-3/4" ϕ X4" Granular or solid flux filled headed studs automatically end welded (Typ. each flange, each pile) Cost included with Furnishing Piles.

TOP OF PILE



SECTION A-A



ANCHOR BOLT LAYOUT

DESIGNED	DF
CHECKED	ADG
DRAWN	ADG
CHECKED	DF

ESI CONSULTANTS, LTD
753 WINDSOR ROAD
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS
STRUCTURE NO. 096-0073
SHEET NO. 20 OF 24 SHEETS

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
823	(22,B2A)B-1 & (22,B2B)B-1	Wayne	85	75

CONTRACT NO 74216
ILLINOIS FEDERAL AID PROJECT

PRINTED DATE: 12/5/2011
FILE NAME = n:\projects\idot\pdb 148, sen 29 - a7 various design\Work Order 85\CADD\Drawings\Sheets\75_W35_Piers.dgn