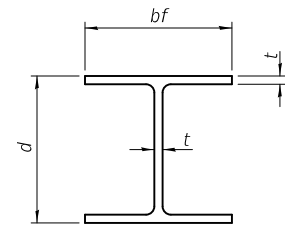
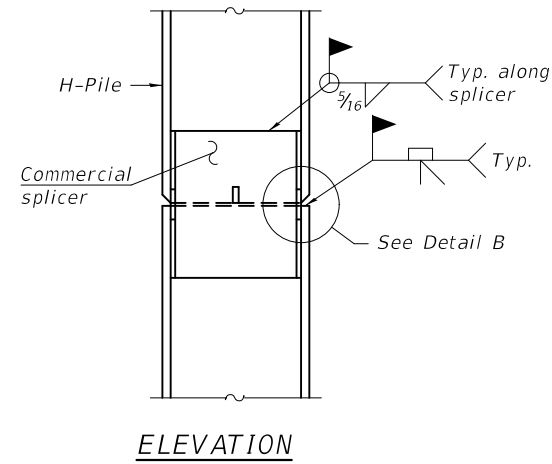


CELL / MODEL NAME	DESCRIPTION	DATE
F-HP	Steel H piles	2/17/2017
F-MS	Metal shell piles	2/17/2017
F-PC	Precast piles	2/17/2017

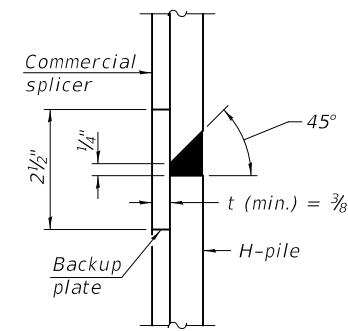


STEEL PILE TABLE

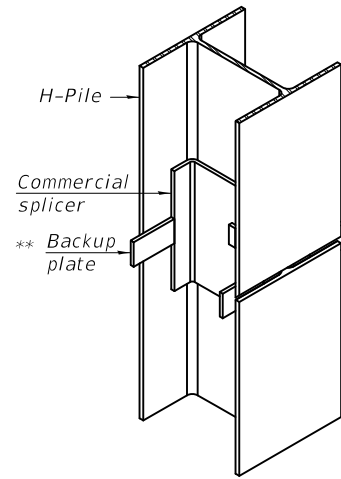
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

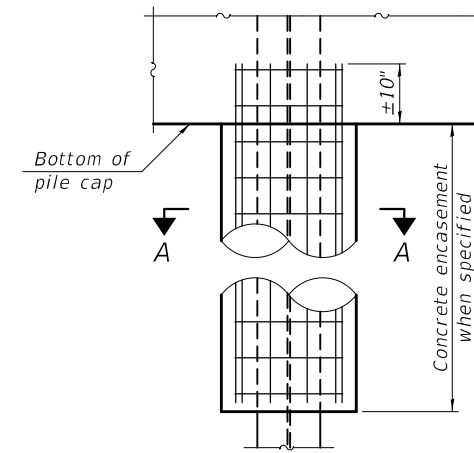


DETAIL "B"

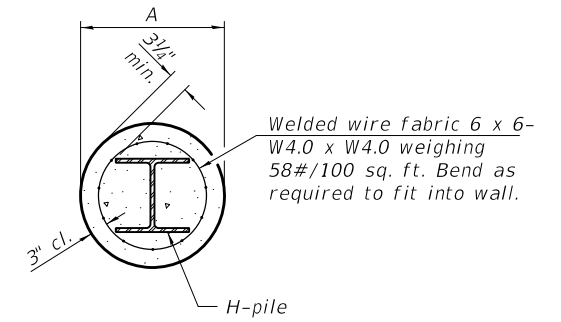


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

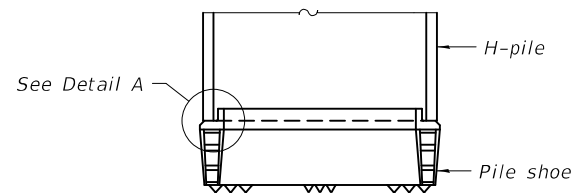


ELEVATION

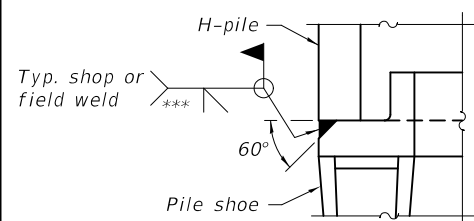


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASUREMENT
(Forms for encasement may be omitted when soil conditions permit).



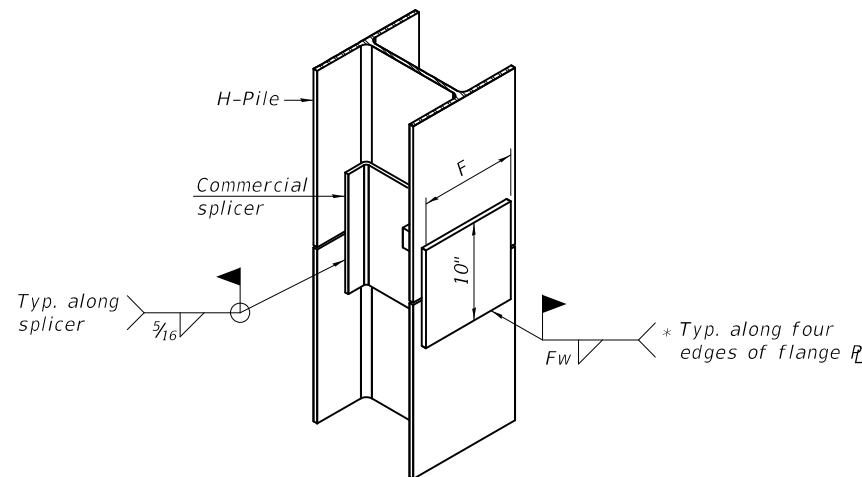
ELEVATION



DETAIL A

SHOE ATTACHMENT

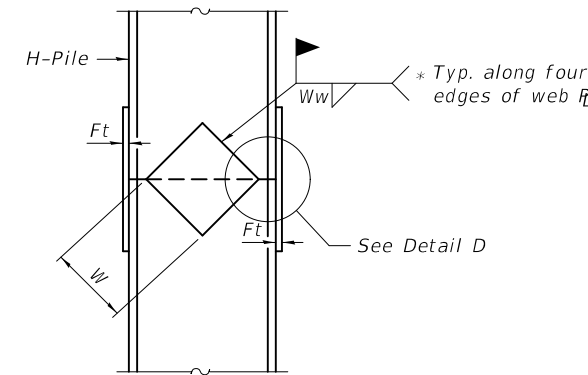
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



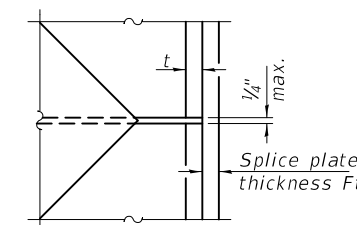
ISOMETRIC VIEW

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.).

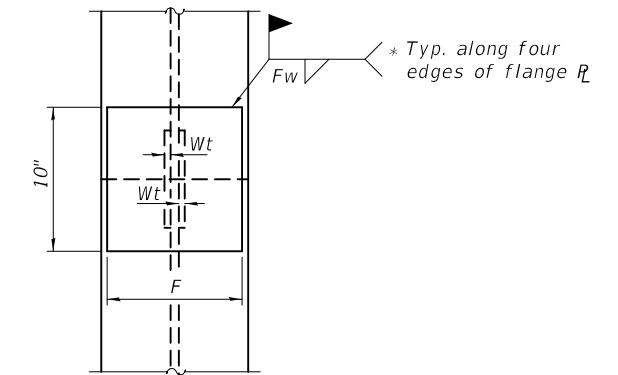


ELEVATION



DETAIL D

WELDED PLATE FIELD SPLICE

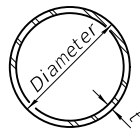


END VIEW

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

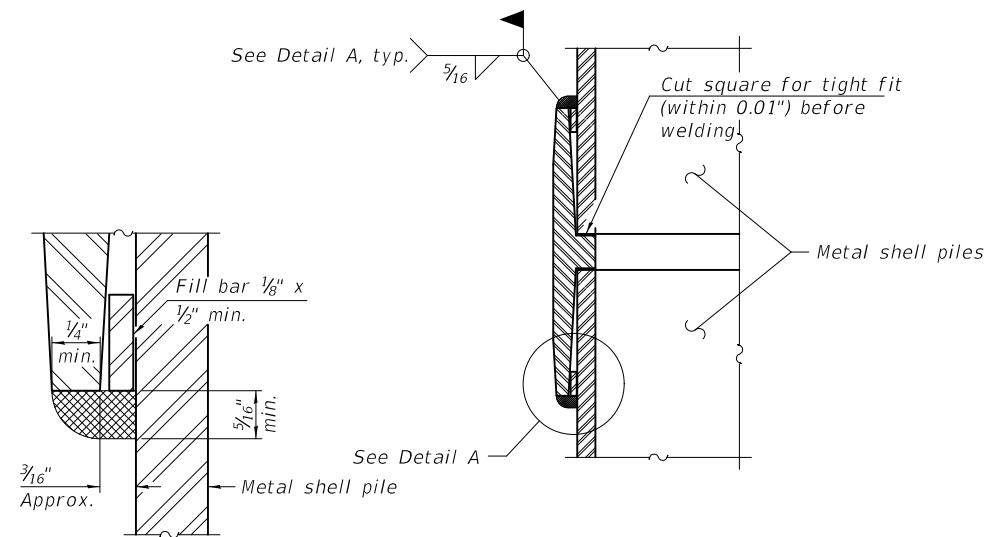
F-HP 2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HP PILE DETAILS STRUCTURE NO.	F.A. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISD -			CONTRACT NO.					
		DRAWN -	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED -	REVISD -								



METAL SHELL PILE TABLE

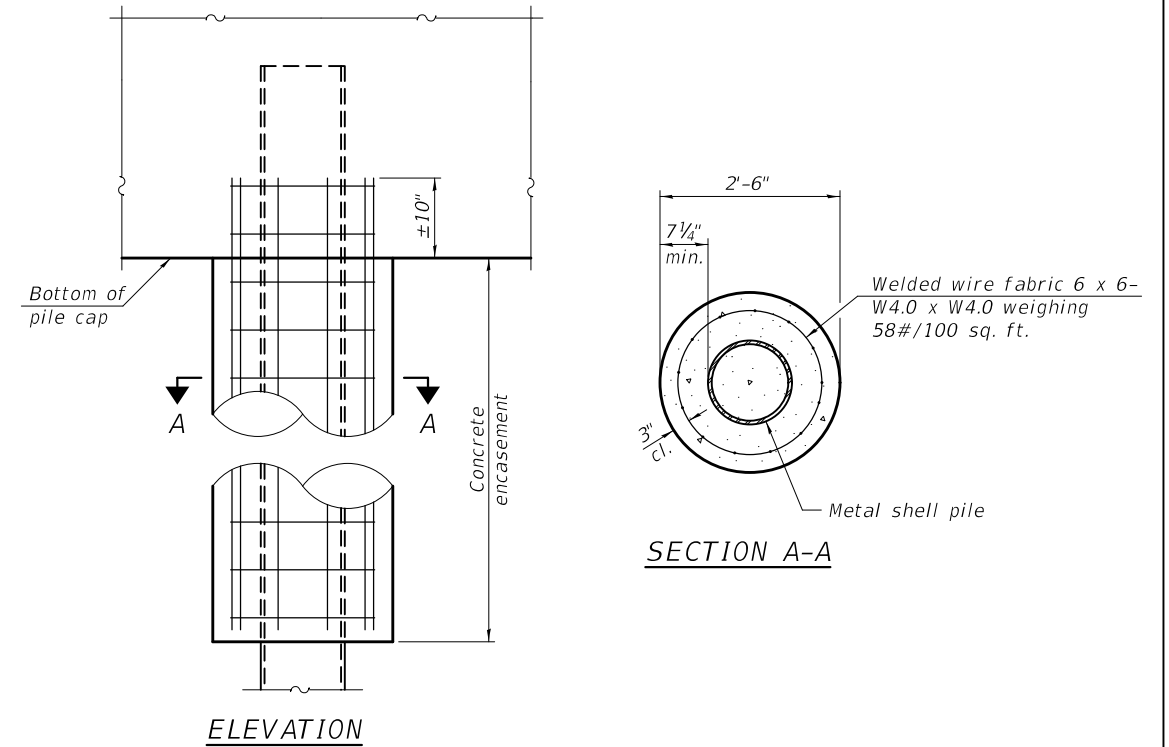
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

WELDED COMMERCIAL SPLICE

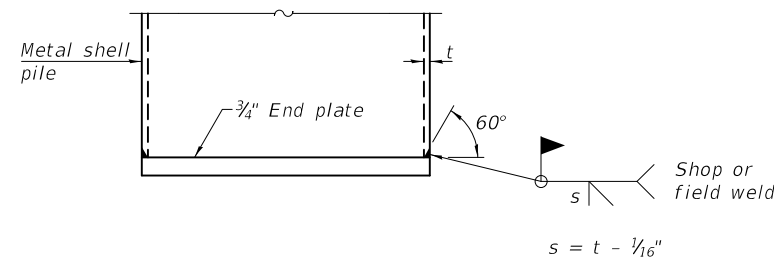
Notes:
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.



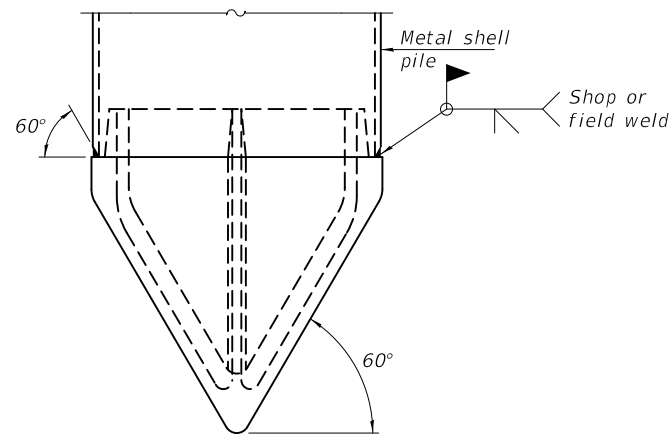
ELEVATION

SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT AT PIERS

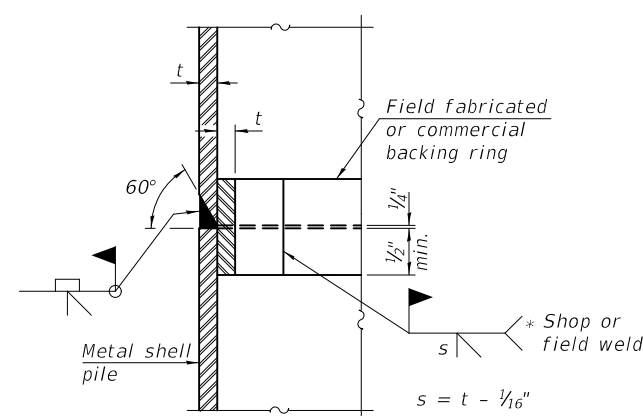


END PLATE ATTACHMENT



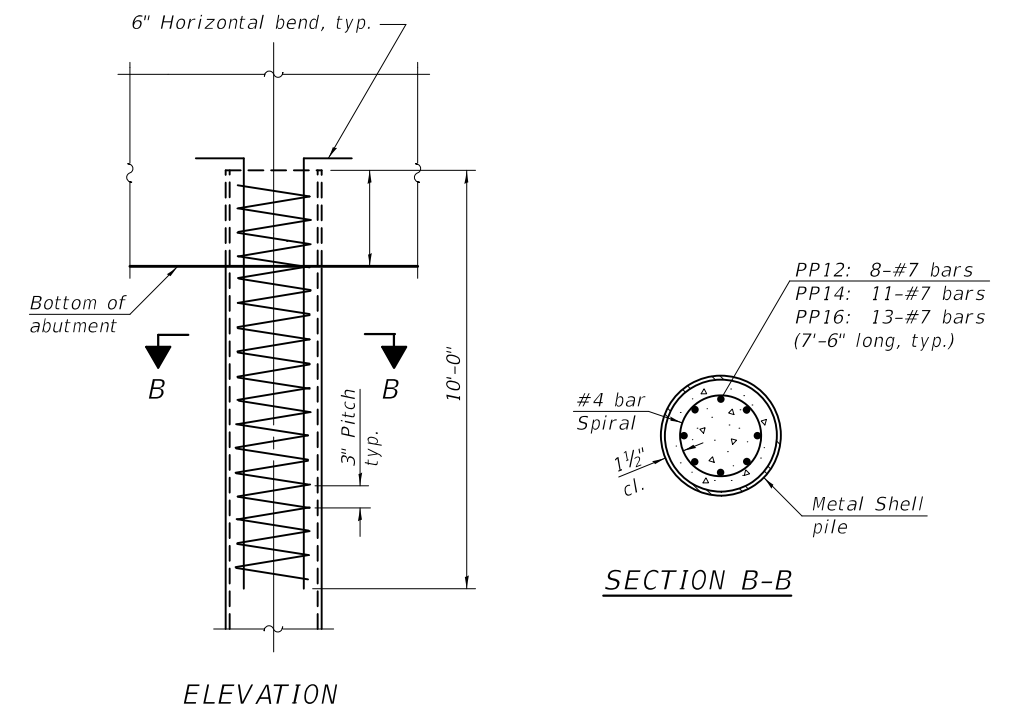
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION

SECTION B-B

REINFORCEMENT AT ABUTMENTS

Note:
 The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 2-17-2017

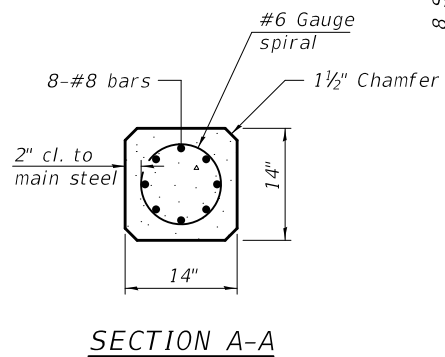
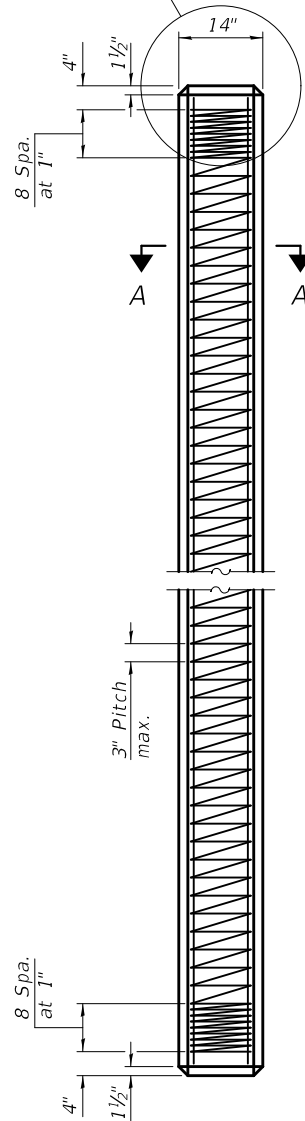
FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -
		CHECKED -	REVISIONS -
		DRAWN -	REVISIONS -
		CHECKED -	REVISIONS -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILE DETAILS
 STRUCTURE NO.**

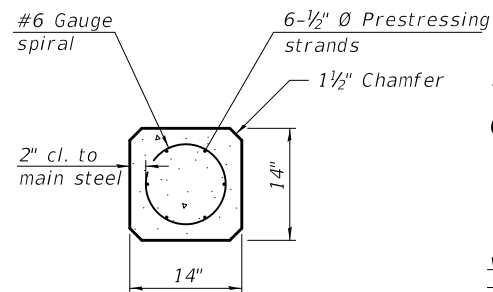
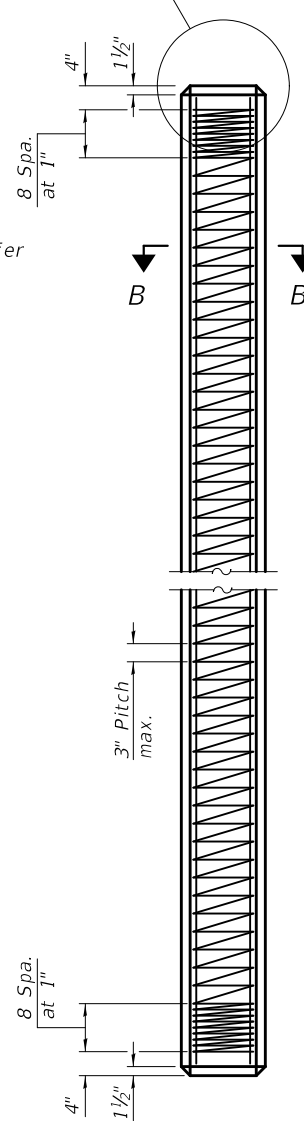
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

See End Plan and End Elevation for end reinforcement, typ.

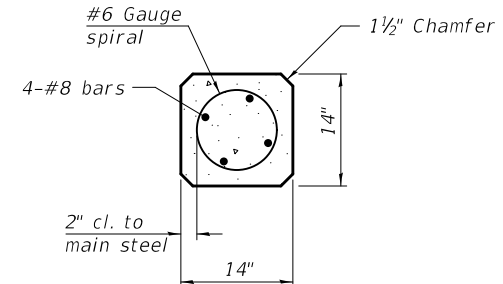
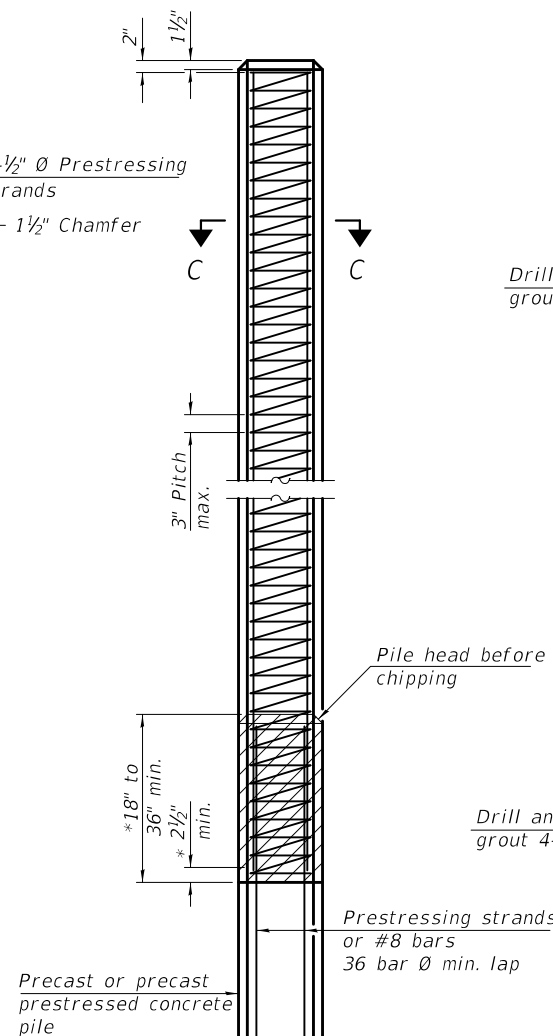


SECTION A-A

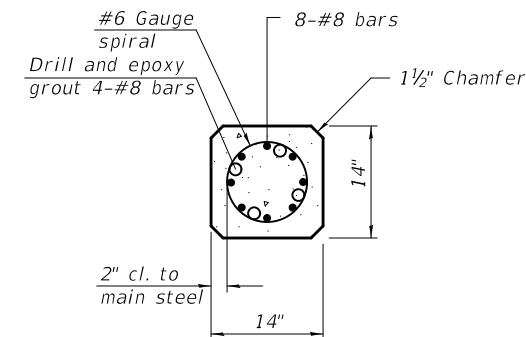
See End Plan and End Elevation for end reinforcement, typ.



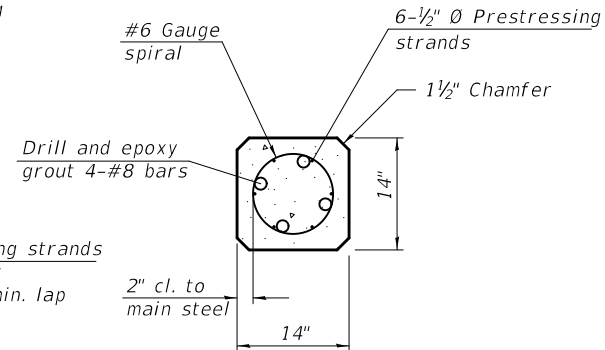
SECTION B-B



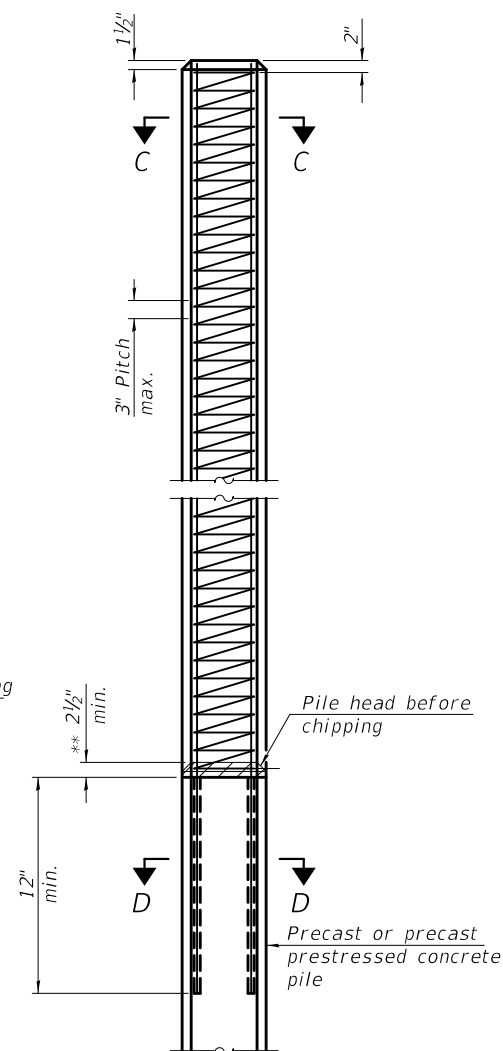
SECTION C-C



SECTION D-D (Precast)



SECTION D-D (Precast prestressed)



ALTERNATE PILE EXTENSION

PRECAST CONCRETE PILE

PRECAST PRESTRESSED CONCRETE PILE

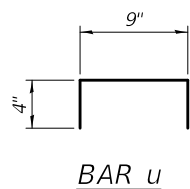
STANDARD PILE EXTENSION

* To construct pile extension, chip top of pile back 36 bar Ø min. to expose vertical bars and lap vertical buildup bars. Remove spiral to 2 1/2 min. above chipping and provide full strength lap weld exterior face (4 min. length).

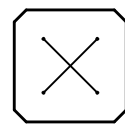
** To construct pile extension, chip top of pile back 2 1/2 to expose wire spiral and provide full strength lap weld exterior face (4 min. length).

DESIGN STRESSES

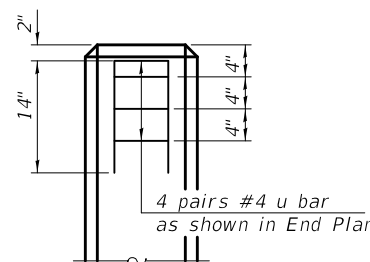
$f'_c = 5,000$ p.s.i. (prestressed)
 $f'_c = 4,500$ p.s.i. (precast)
 $f'_{ci} = 4,000$ p.s.i.
 $f'_s = 270,000$ p.s.i. (41,300 lbs.-1/2" Ø)
 $f_{si} = 189,000$ p.s.i. (28,900 lbs.-1/2" Ø)



BAR u



END PLAN (End reinforcement only)



END ELEVATION (End reinforcement only)

NOTES

Prestressing steel shall be uncoated high strength, low-relaxation 7-wire strand. The nominal diameter shall be 1/2" with a cross-sectional area of 0.153 in².
 For Pile lengths up to 65', use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 65', use three slings placed at a distance of 0.12 L* from each end and at midpoint of pile. *L= Overall length of pile to be handled.
 For handling pile lengths up to 45', use two slings placed at a distance of 0.21 L from each end. For handling piles longer than 45', use three slings placed at a distance of 0.12 L from each end and at midpoint of pile.

F-PC

2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST PILE DETAILS
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				