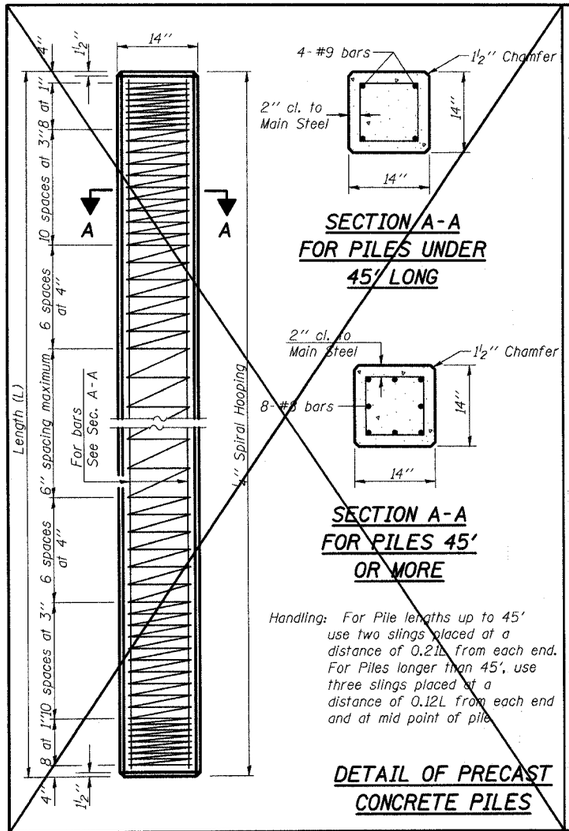
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 17	(123WPH) BR-1	OGLE	61	36
FEDERAL ROAD DISTRICT NUMBER 7		ILLINOIS	FEDERAL AID PROJECT -	

SHEET NO. 9
10 SHEETS

CONTRACT #64417

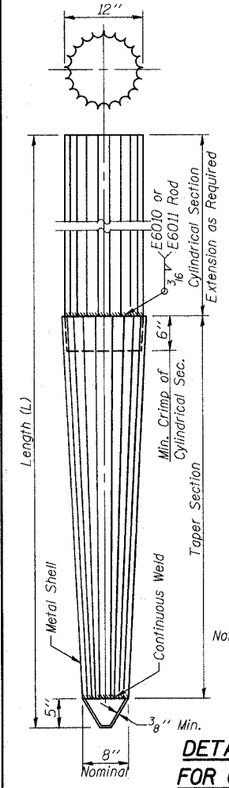


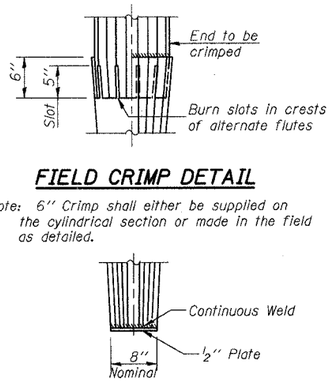
SECTION A-A
FOR PILES UNDER 45' LONG

SECTION A-A
FOR PILES 45' OR MORE

Handling: For Pile lengths up to 45' use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

DETAIL OF PRECAST CONCRETE PILES





FIELD CRIMP DETAIL

Note: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.

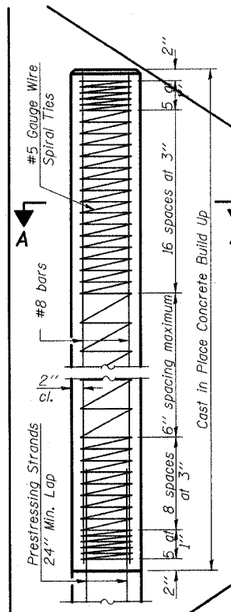
OPTIONAL FLAT END

ALLOWABLE TAPER SECTIONS

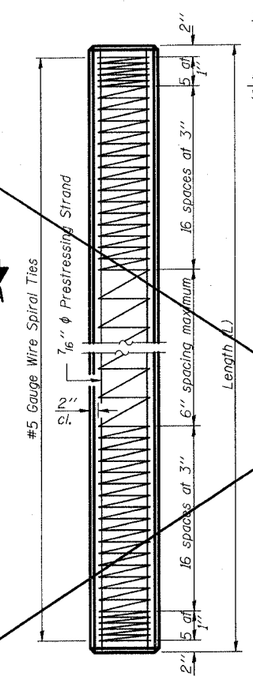
10' Length-Taper 1" in 2'-6"
17' Length-Taper 1" in 4'-0"
25' Length-Taper 1" in 7'-0"
30' Length-Taper 1" in 7'-0"

Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be according to Article 1006.05(a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 p.s.i.

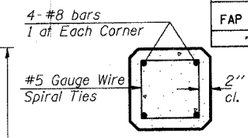
DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



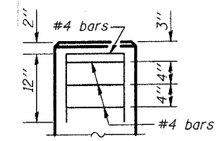
PILE BUILD UP



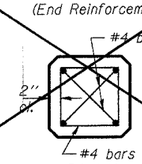
PILE PLAN



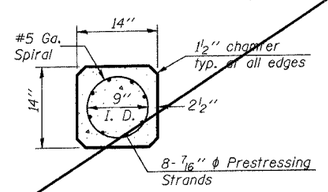
SECTION A-A



ELEVATION
(End Reinforcement)



PLAN
(End Reinforcement)



SECTION THRU PILE

DESIGN STRESSES

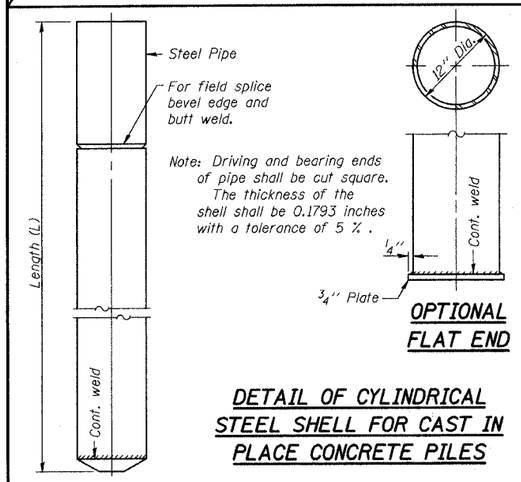
f'_c = 5,000 p.s.i.
f'_{ci} = 4,000 p.s.i.
f'_s = 270,000 p.s.i. (31,000 lbs.-7/16" ϕ or 41,300 lbs.-½" ϕ)
f_{si} = 189,000 p.s.i. (21,700 lbs.-7/16" ϕ or 28,900 lbs.-½" ϕ)

NOTES

Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand. An equal substitution of low-relaxation strands for the stress-relieved strands will be permitted, provided the initial prestressing force applied to each strand is the same as that shown for stress-relieved strands. The nominal diameter shall be 7/16" and the nominal cross-sectional area shall be 0.115 in² or the equivalent 6-½" ϕ strands with a cross-sectional area of 0.153 in² may be used.

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.

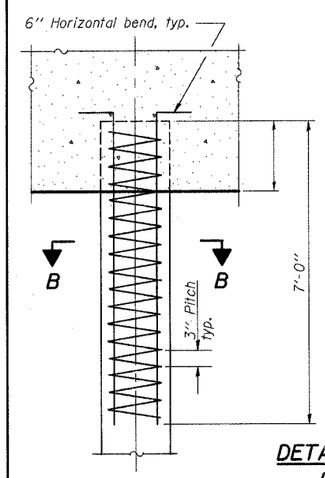
PRECAST PRESTRESSED CONCRETE PILE

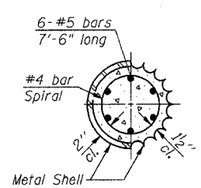


Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.1793 inches with a tolerance of 5 %.

OPTIONAL FLAT END

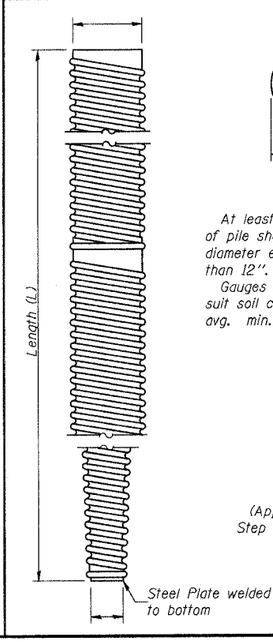
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

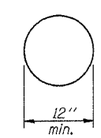




SECTION B-B

DETAIL OF REINFORCEMENT FOR METAL SHELLS AT ABUTMENTS

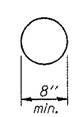




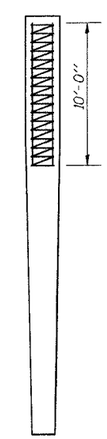
BUTT

At least 10% of the length of pile shall have a Butt diameter equal to or greater than 12".

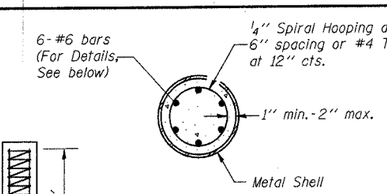
Gauges are furnished to suit soil conditions (16 Gauge avg. min.)



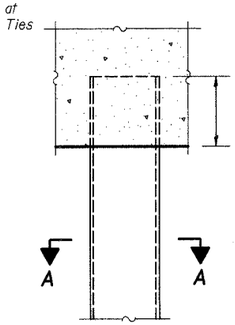
POINT
(Applies only to Step Taper type pile)



PILE REINFORCEMENT



SECTION A-A



DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

DESIGNED	KJW
CHECKED	AJS
DRAWN	KJW
CHECKED	AJS

X-3 10-31-02

STRAND ASSOCIATES, INC. ENGINEERS

ILLINOIS DEPARTMENT OF TRANSPORTATION
PILE DETAILS
IL 64 OVER TRIBUTARY TO KILBUCK CREEK
F.A.P. RTE. 17 (123WPH) BR-1
OGLE COUNTY
STA. 266+38
S.N. 071-0091

SCALE: DATE: 06/23/2004