

TYPICAL PATTERN FOR BURNING STRANDS

NOTES

CONCRETE DESIGN DATA :  $f'_c = 6,000$  PSI ;  $f_c = 2,400$  PSI  
 IMPACT IN HANDLING = 50%  
 IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.  
 PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

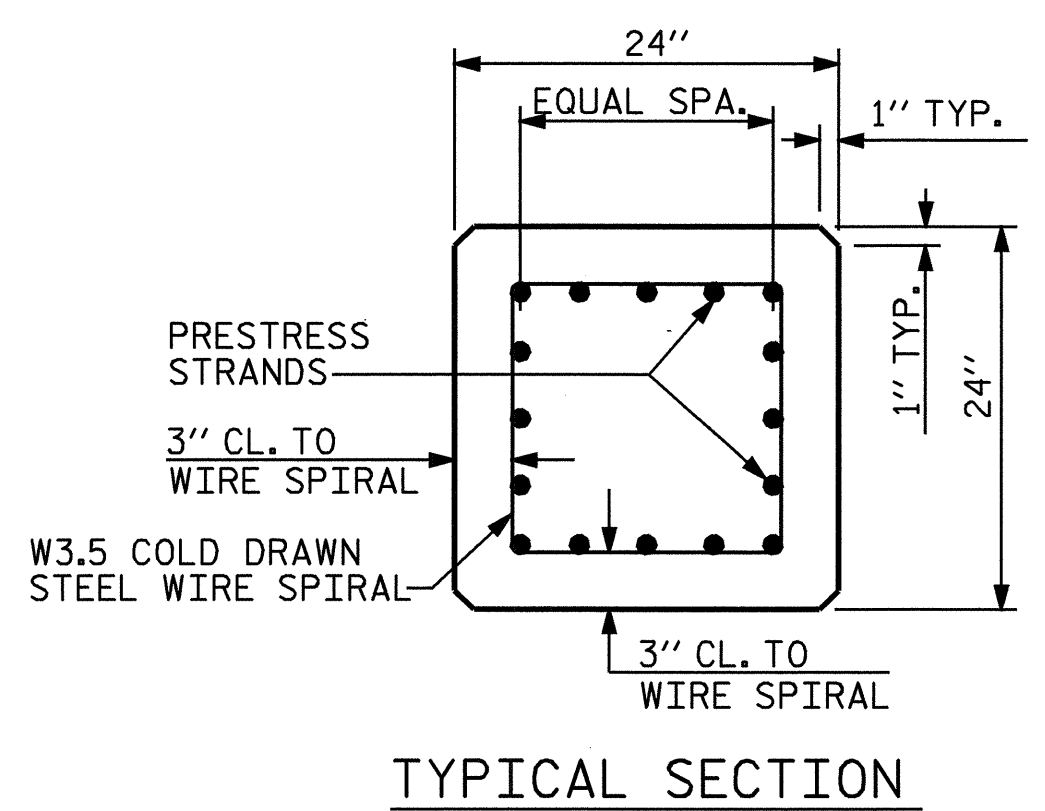
THE CONTRACTOR SHALL USE THE FOLLOWING STRAND TYPE:

SIZE	GRADE	NUMBER OF STRANDS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
1/2"	270 L.R.	16	0.153	41,300* PER STRAND	30,980* PER STRAND

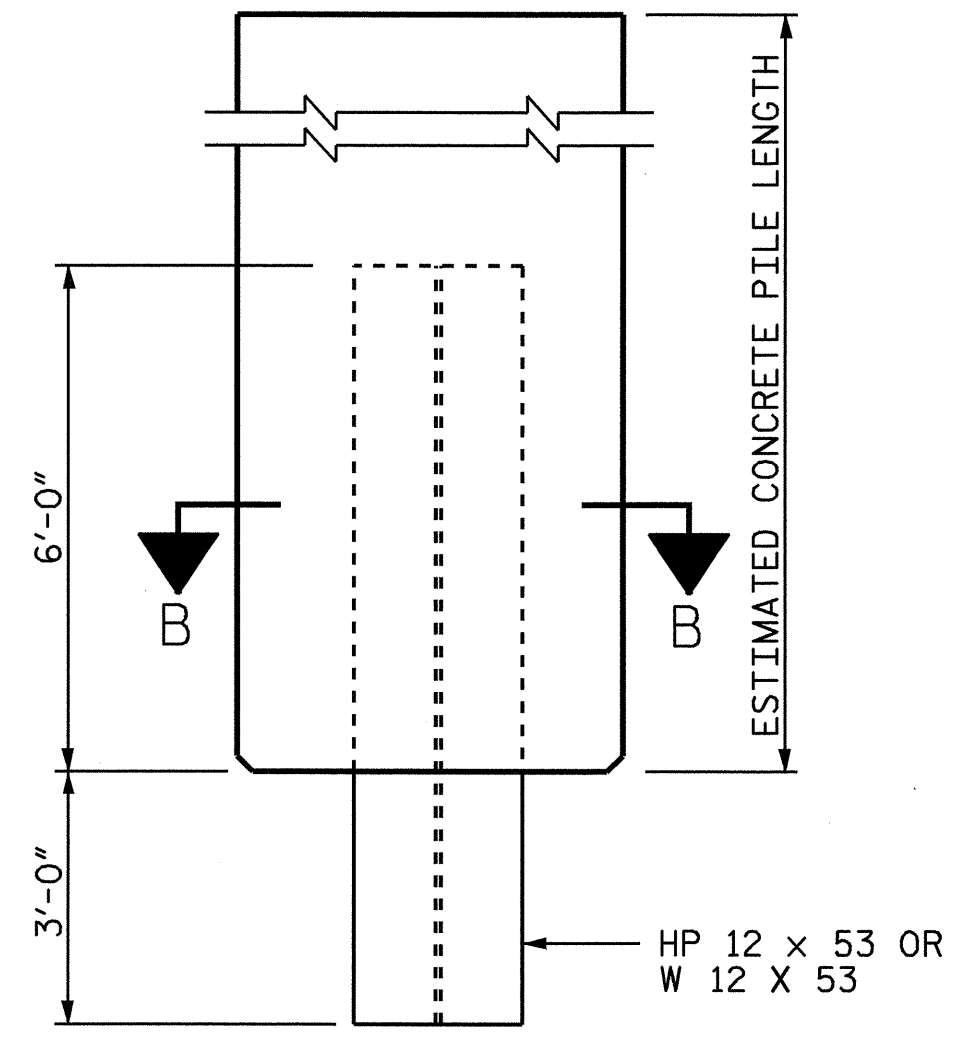
STRANDS SHALL BE EQUALLY SPACED AS SHOWN IN THE "TYPICAL SECTION".  
 A CIRCULAR STRAND PATTERN SHALL NOT BE PERMITTED.  
 THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.  
 IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS BURN IN OPPOSITE PAIRS AND SYMMETRICAL ABOUT BOTH VERTICAL AND HORIZONTAL AXES, STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 5-5 AND 6-6, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.  
 BUILD-UPS SHALL BE OF 'CLASS A' CONCRETE WITH 20% ADDITIONAL CEMENT. NO DRIVING OF THE BUILT-UP PILE WILL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 P.S.I. AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.  
 ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE PILE SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3500 PSI.  
 THE WATER/CEMENT RATIO FOR CONCRETE PILES SHALL NOT EXCEED 0.40.  
 PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. SEE SPECIAL PROVISIONS FOR CALCIUM NITRITE CORROSION INHIBITOR.  
 THE CONCRETE IN THE PILES OF BENTS No. 1 AND 2 SHALL CONTAIN SILICIA FUME. SILICIA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS TO PARTIALLY SUBSTITUTE CLASS F FLYASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

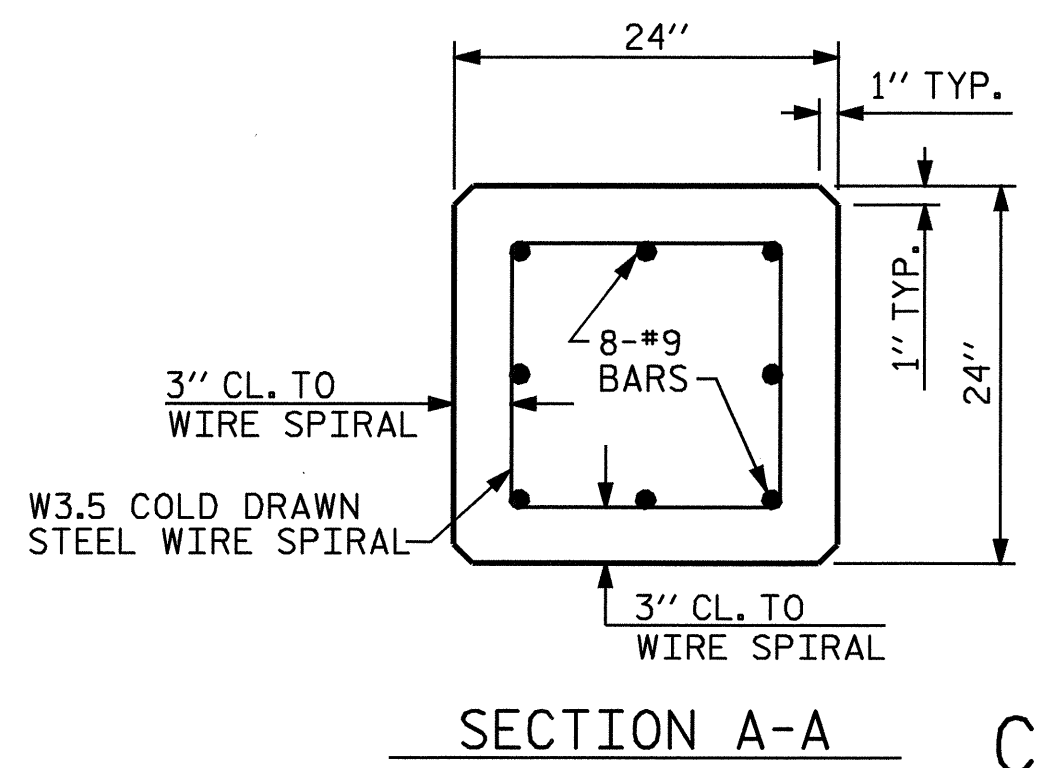
FOR STEEL PILE TIPS, SEE SPECIAL PROVISIONS.  
 FOR PRESTRESSED CONCRETE PILES, SEE SPECIAL PROVISIONS.  
 FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.



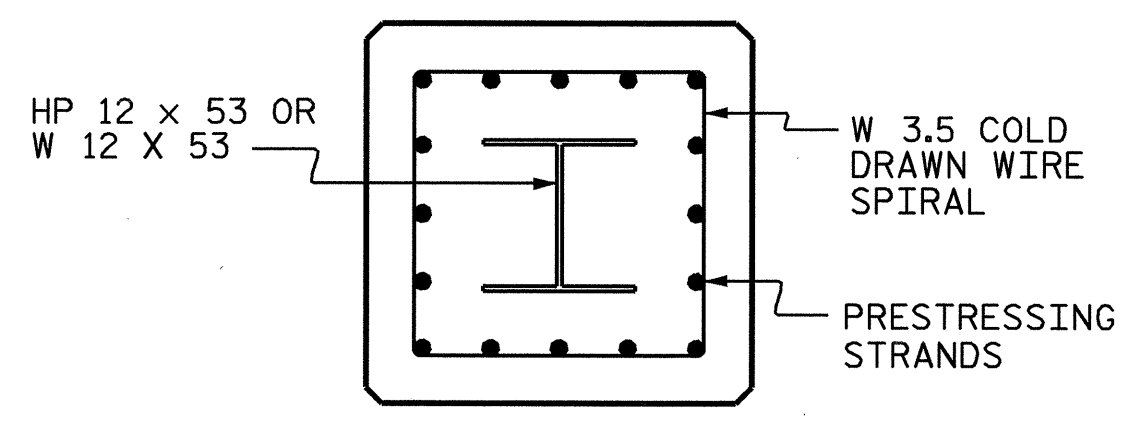
TYPICAL SECTION



ELEVATION



SECTION A-A



SECTION B-B

COMPOSITE PILE TIP DETAILS

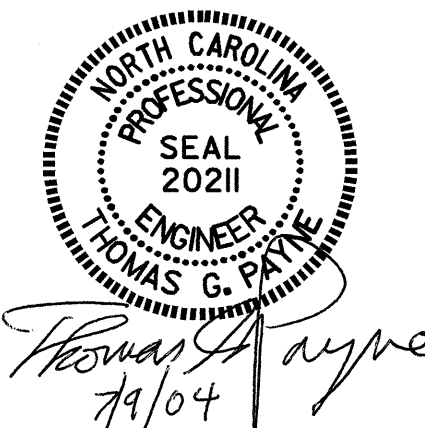
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	QUANTITIES FOR ONE 24" SQUARE PILE					
			ONE PICK-UP POINT 0.3L	ONE PICK-UP POINT 0.7L	TWO PICK-UP POINTS 0.207L	TWO PICK-UP POINTS 0.586L	THREE PICK-UP POINTS 0.145L	THREE PICK-UP POINTS 0.355L
25'-0"	3.69	7.47	7'-6"	17'-6"				
30'-0"	4.43	8.97	9'-0"	21'-0"				
35'-0"	5.17	10.46	10'-6"	24'-6"				
40'-0"	5.91	11.96	12'-0"	28'-0"				
45'-0"	6.64	13.45	13'-6"	31'-6"				
50'-0"	7.38	14.95	15'-0"	35'-0"				
55'-0"	8.12	16.44	16'-6"	38'-6"				
60'-0"	8.86	17.94	18'-0"	42'-0"				
65'-0"	9.60	19.43	19'-6"	45'-6"				
70'-0"	10.33	20.93	21'-0"	49'-0"				
75'-0"	11.07	22.42			15'-6 1/2"	43'-11"		
80'-0"	11.81	23.92			16'-6 1/2"	46'-11"		
85'-0"	12.55	25.41			17'-7"	49'-10"		
90'-0"	13.29	26.91			18'-7 1/2"	52'-9"		
95'-0"	14.03	28.40			19'-8"	55'-8"		
100'-0"	14.76	29.90			20'-8 1/2"	58'-7"		
105'-0"	15.50	31.39					15'-3"	37'-3"
110'-0"	16.24	32.89					15'-11 1/2"	39'-0 1/2"
115'-0"	16.98	34.38					16'-8"	40'-10"
120'-0"	17.72	35.87					17'-5"	42'-7"

PROJECT NO. B-3445  
 CURRITUCK COUNTY  
 STATION 24+18.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD  
 24" SQUARE PRESTRESSED  
 CONCRETE PILE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40
1			3			TOTAL SHEETS 43
2			4			



ASSEMBLED BY : KEITH D. LAYNE DATE : 3-20-02  
 CHECKED BY : T. G. PAYNE DATE : 5-8-02  
 DRAWN BY : WJH 1/89 REV. 6/1/94 EEM/GRP  
 CHECKED BY : CRK 3/89 REV. 8/16/99 RAL/LES