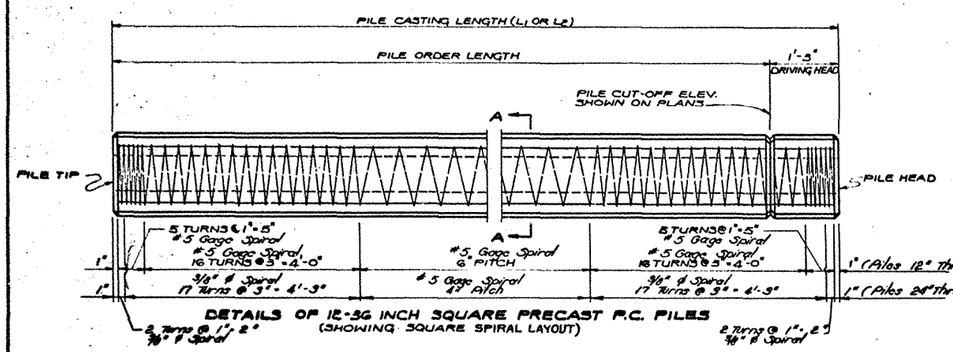
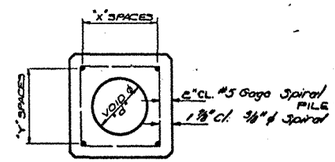
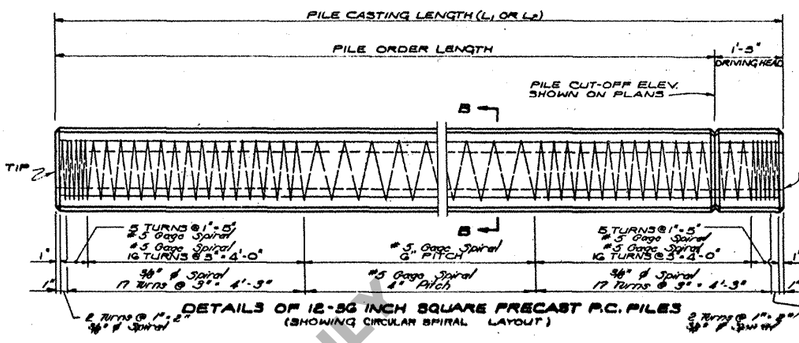
STATE PROJECT	PARISH	SHEET NO.



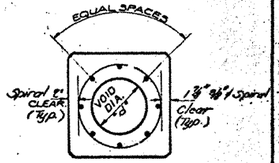
DETAILS OF 12-36 INCH SQUARE PRECAST P.C. PILES
(SHOWING SQUARE SPIRAL LAYOUT)



SECTION A-A
NOTE: VOID FOR 24", 30" & 36" PILES ONLY



DETAILS OF 12-36 INCH SQUARE PRECAST P.C. PILES
(SHOWING CIRCULAR SPIRAL LAYOUT)



SECTION B-B
NOTE: VOID FOR 24", 30", & 36" PILES ONLY

PILE PROPERTIES (SQUARE SPIRAL LAYOUT)

PILE SIZE	Nº OF STRAND				STRAND LAYOUT								INITIAL PRESTRESS P.S.I.			
	STANDARD		HIGH 36TH.		STANDARD				HIGH STRENGTH				STANDARD		HIGH 36TH.	
	7/16" ø	1/2" ø	7/16" ø	1/2" ø	7/16" ø		1/2" ø		7/16" ø		1/2" ø		7/16" ø	1/2" ø	7/16" ø	1/2" ø
					X SP.	Y SP.	X SP.	Y SP.	X SP.	Y SP.	X SP.	Y SP.				
12" SOLID	8	6	-	-	2	2	2	1	-	-	-	-	1058	1058	-	-
14" SOLID	10	8	-	-	3	2	2	2	-	-	-	-	970	1035	-	-
16" SOLID	14	10	12	10	4	3	3	2	3	3	3	2	1038	989	1022	1136
18" SOLID	16	12	14	12	4	4	3	3	4	3	3	3	957	957	941	1074
20" SOLID	22	16	18	14	6	5	4	4	5	4	4	3	1051	1019	988	1023
24" HOLLOW	24	18	22	16	6	6	5	4	6	5	4	4	990	990	1041	1009
30" HOLLOW	32	24	28	22	8	8	6	6	7	7	6	5	974	974	979	1024
36" HOLLOW	42	32	36	28	11	10	8	8	9	9	7	7	984	1000	969	1006

PILE PROPERTIES (CIRCULAR SPIRAL LAYOUT)

PILE SIZE	Nº OF STRANDS				SPIRAL DIA. (OUT TO OUT)	INITIAL PRESTRESS P.S.I.			
	STANDARD		HIGH 36TH.			STANDARD		HIGH 36TH.	
	7/16" ø	1/2" ø	7/16" ø	1/2" ø		7/16" ø	1/2" ø	7/16" ø	1/2" ø
12" SOLID	8	6	-	-	8	1058	1058	-	-
14" SOLID	10	8	9	7	10	970	1035	1002	1038
16" SOLID	14	10	12	9	12	1038	989	1022	1021
18" SOLID	16	12	14	11	14	957	957	941	988
20" SOLID	21	16	18	14	16	1004	1019	988	1023
24" HOLLOW	24	18	21	16	20	990	990	994	1009
30" HOLLOW	32	24	28	21	26	974	974	979	978
36" HOLLOW	42	32	36	28	32	984	1000	969	1004

PILE PROPERTIES (TYPICAL)

PILE SIZE	WEIGHT PER LIN. FOOT	SECTION MODULUS OF CROSS SECTION	AREA OF NORMAL CROSS SECTION	VOID DIA. "d"	MAX. CASTING LENGTH	
					1 POINT PICK-UP L_1	2 POINT PICK-UP L_2
12" SOLID	150#	288 IN^3	144 IN^2	0.00	51'-3"	72'-3"
14" SOLID	204#	457 IN^3	196 IN^2	0.00	53'-3"	75'-3"
16" SOLID	267#	685 IN^3	256 IN^2	0.00	57'-3"	81'-3"
18" SOLID	338#	972 IN^3	324 IN^2	0.00	59'-3"	84'-3"
20" SOLID	417#	1333 IN^3	400 IN^2	0.00"	64'-3"	91'-3"
24" HOLLOW	482#	2219 IN^3	495 IN^2	12.00"	77'-3"	109'-3"
30" HOLLOW	651#	4100 IN^3	625 IN^2	18.70"	89'-3"	127'-3"
36" HOLLOW	845#	6736 IN^3	811 IN^2	24.85"	100'-3"	145'-3"

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: LA. DEPT. OF HWYS. STD. SPECS. FOR ROADS AND BRIDGES, OCTOBER, 1966, AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: A.A.S.H.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1961, WITH THE LATEST AMENDMENTS.

CONCRETE: CONCRETE IN THE PRECAST PRESTRESSED PILES SHALL BE CLASS "P" CONCRETE. CONCRETE IN BUILD-UPS WITHOUT DRIVING SHALL BE CLASS "A" CONCRETE.

PRESTRESSING REINFORCEMENT:
HIGH STRENGTH STRANDS SHALL BE TYPE 270 K, SEVEN-WIRE, UNCOATED, STRESS-RELIEVED STEEL STRANDS & SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. DESIGNATION A-416 AS MODIFIED BY THE STANDARD SPECIFICATIONS. AN INITIAL TENSILE FORCE OF 21,700 LBS. SHALL BE APPLIED TO EACH 7/16" ø STRAND AND AN INITIAL TENSILE FORCE OF 28,910 LBS. SHALL BE APPLIED TO EACH 1/2" ø STRAND.
STANDARD STRANDS SHALL BE SEVEN-WIRE, UNCOATED STRESS-RELIEVED STEEL STRANDS & SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. DESIGNATION A416-59 T. AN INITIAL TENSILE FORCE OF 10,500 LBS. SHALL BE APPLIED TO EACH 7/16" ø STRAND AND AN INITIAL TENSILE FORCE OF 28,200 LBS. SHALL BE APPLIED TO EACH 1/2" ø STRAND.

DEFORMED REINFORCING STEEL: REINFORCING BARS SHALL BE INTERMEDIATE OR HARD GRADE A.S.T.M. A15 OR A.S.T.M. A160 OR RAIL STEEL A.S.T.M. A16 AND SHALL CONFORM TO A.S.T.M. A305.

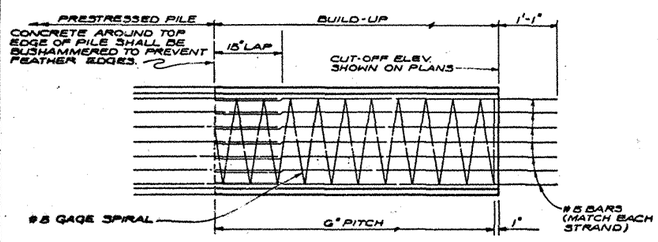
SPIRAL REINFORCING STEEL: Nº 5 GAGE or 3/8" ø Spiral Point SHALL BE PLAIN BARS AND MAY BE EITHER INTERMEDIATE, HARD, OR STRUCTURAL GRADE CONFORMING TO A.S.T.M. DESIGNATION A15, OR COLD DRAWN WIRE CONFORMING TO A.S.T.M. DESIGNATION A82.
IT WILL BE PERMISSIBLE TO SUBSTITUTE 1/4 INCH ROUND PLAIN REINFORCING OF THE SAME GRADE AND AT THE SAME SPACING FOR THE Nº 5. GAGE SPIRAL TIES.

REINFORCEMENT DIMENSIONS: ALL DIMENSIONS TO REINFORCEMENT ARE TO BAR CENTERS EXCEPT AS NOTED.

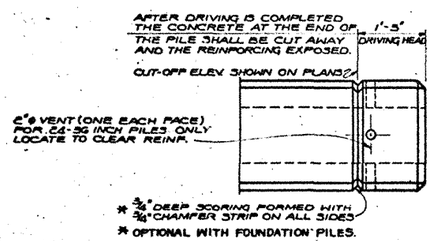
FABRICATION TOLERANCES: FABRICATION TOLERANCES OF THE PRESTRESSED CONCRETE PILE WILL BE AS REQUIRED BY A.A.S.H.O. "TENTATIVE STANDARDS FOR PRECAST CONCRETE I-BEAMS FOR BRIDGES."

CHAMFERS AND CORNERS:
ON PILES 18" OR SMALLER ALL EXPOSED CONCRETE CORNERS ARE TO HAVE 3/4" CHAMFERS.
ON PILES 20" OR LARGER ALL EXPOSED CONCRETE CORNERS ARE TO HAVE 1 1/2" CHAMFER.

PICK-UP AND HANDLING: MAXIMUM LENGTHS FOR PICK-UP HAVE BEEN DETERMINED USING THE FOLLOWING STRESS ASSUMPTIONS:
LOADING: 1 1/2 TIMES FULL DEAD LOAD. ALLOWABLE TENSILE STRESS EQUALS 0.4 X 7.5 √f'c. THIS STRESS AND LOADING CRITERIA ARE BASED ON CAREFUL HANDLING OF THE PILE. ROTATION OF PILE IN THE SLING IS TO BE PREVENTED UNTIL PILE IS IN VERTICAL POSITION. PICK-UP POINTS FOR ALL PILES TO BE CLEARLY MARKED ON PILE. PILES MAY BE MADE AT A CENTRAL PLANT AND TRANSPORTED TO THE BRIDGE SITE IN TRUCKS.



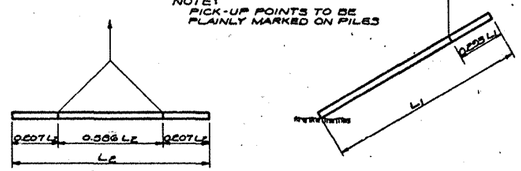
TYPICAL BUILD-UP WHERE REDRIVING IS NOT REQUIRED



DETAIL OF PILE HEAD

NOTE:
NO DIRECT PAYMENT WILL BE MADE FOR THE DRIVING HEAD, NOR WILL THE DRIVING HEAD BE INCLUDED IN MEASUREMENT OF CUT-OFF.

NOTE:
PICK-UP POINTS TO BE PLAINLY MARKED ON PILES



2 POINT PICK-UP

1 POINT PICK-UP

NOTE: L_1 & L_2 = PILE CASTING LENGTH = PILE ORDER LENGTH + 1'-3"

FOR INFORMATIONAL PURPOSES ONLY

VOID
9-16-68
W.A.K.

DATE	DESCRIPTION	BY
4-3-68	Spiral Size and Pitch	R.L.W.
2-1-67	General Notes	RRG.

REVISIONS

PILES

STANDARD PLAN
12-14-16-18,20, 24,30 & 36 INCH
PRECAST PRESTRESSED CONCRETE PILES
DATED MARCH 17, 1966

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED K. Quinn | DETAILED G.B.W. | TRACED T. Minnis
CHECKED | CHECKED | CHECKED R. Owen
IN CHARGE OF

C. S. 214