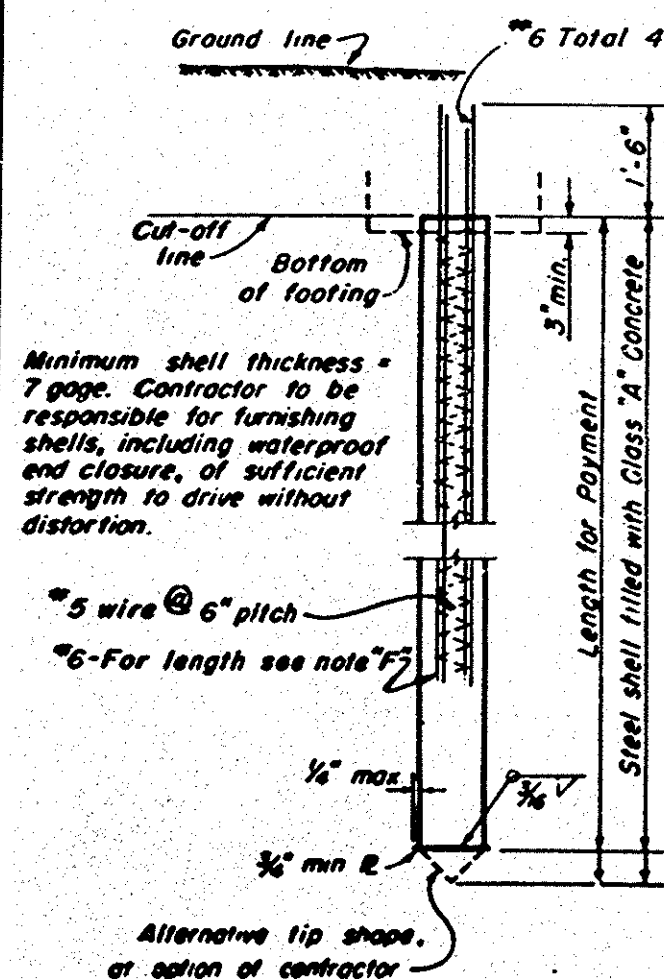
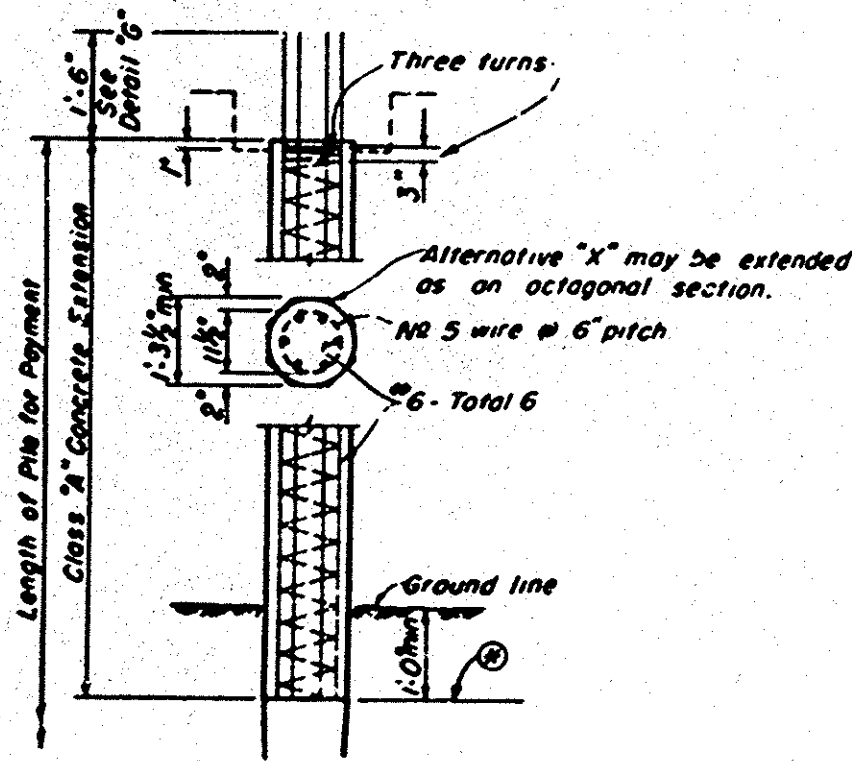


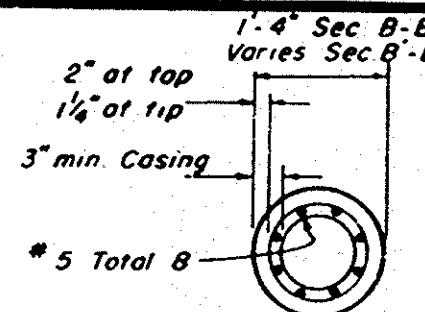
PLAN
Scale: $\frac{3}{4}$ " = 1'-0"



**CAST-IN-PLACE
CONCRETE PILE
ALTERNATIVE 'U'**



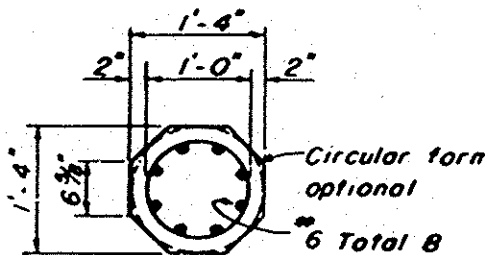
TYPICAL PILE EXTENSION



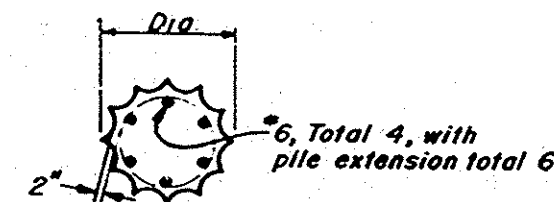
SECTION B-B
Scale: $\frac{3}{4}$ " = 1'-0"

Section B'-B' similar except as noted.

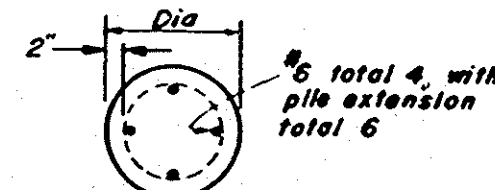
As an alternative to the reinforcement shown, Alternative 'W' longitudinal reinforcement may consist of steel strands prestressed to have a total remaining force after losses of not less than 67,000 lbs. At no time shall the stress in the steel exceed 0.7 of its ultimate value.



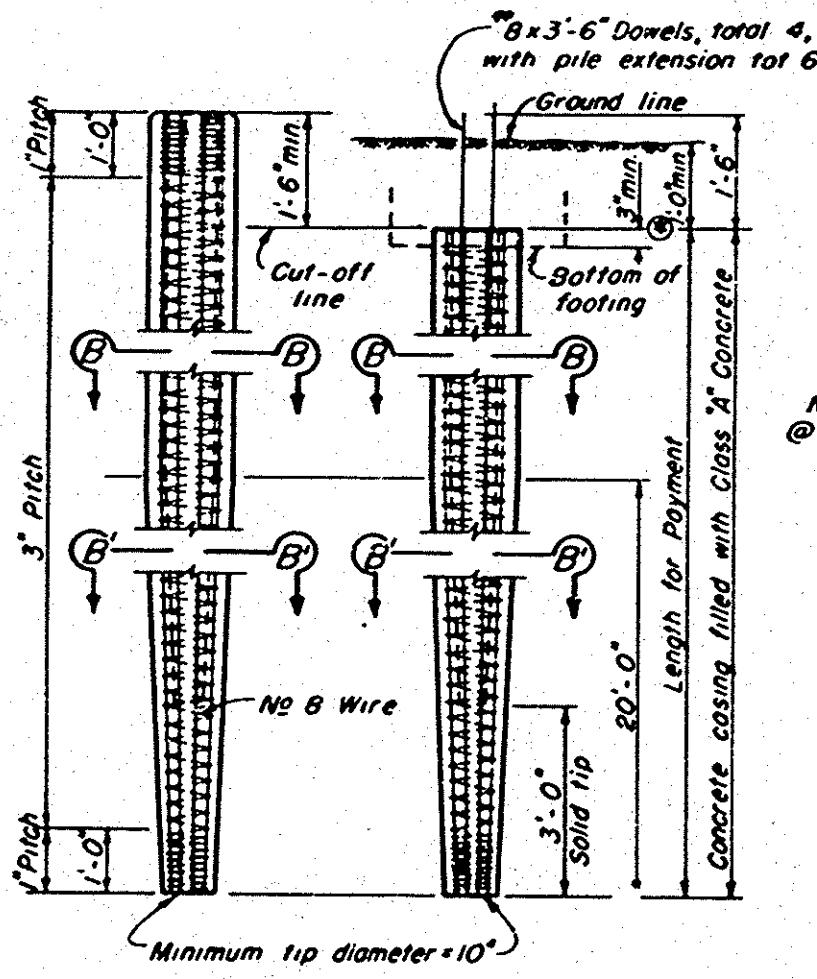
SECTION C-C
Scale: $\frac{3}{4}$ " = 1'-0"



SECTION D-D
Scale: $\frac{3}{4}$ " = 1'-0"

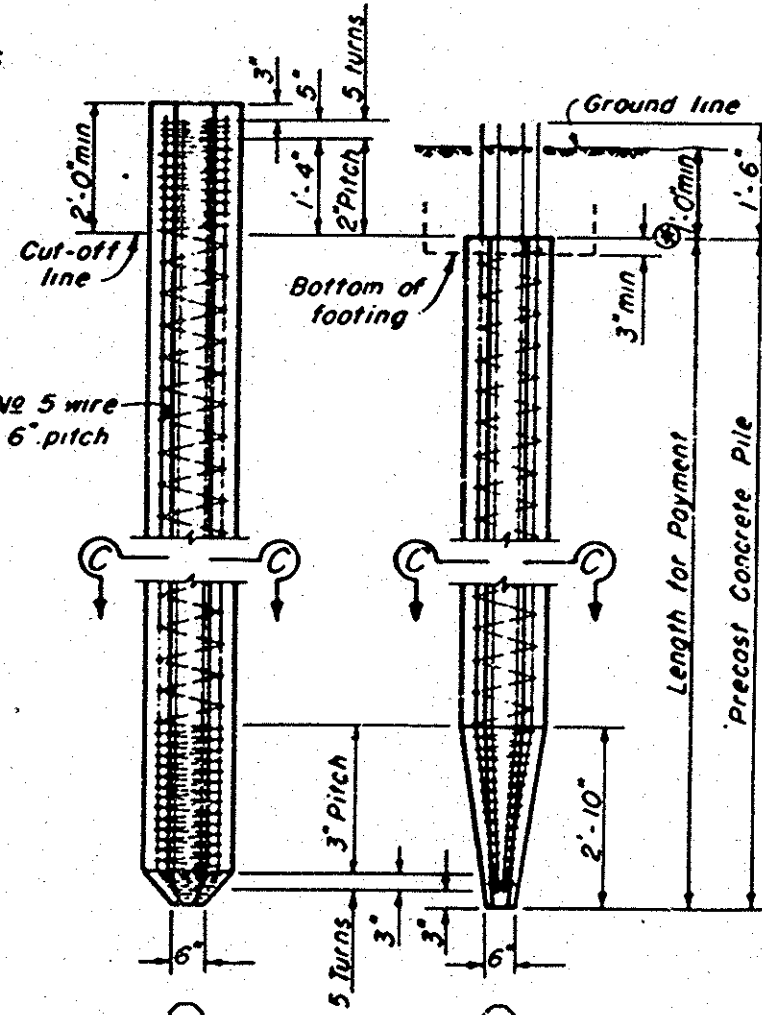


SECTION E-E
Scale: $\frac{3}{4}$ " = 1'-0"



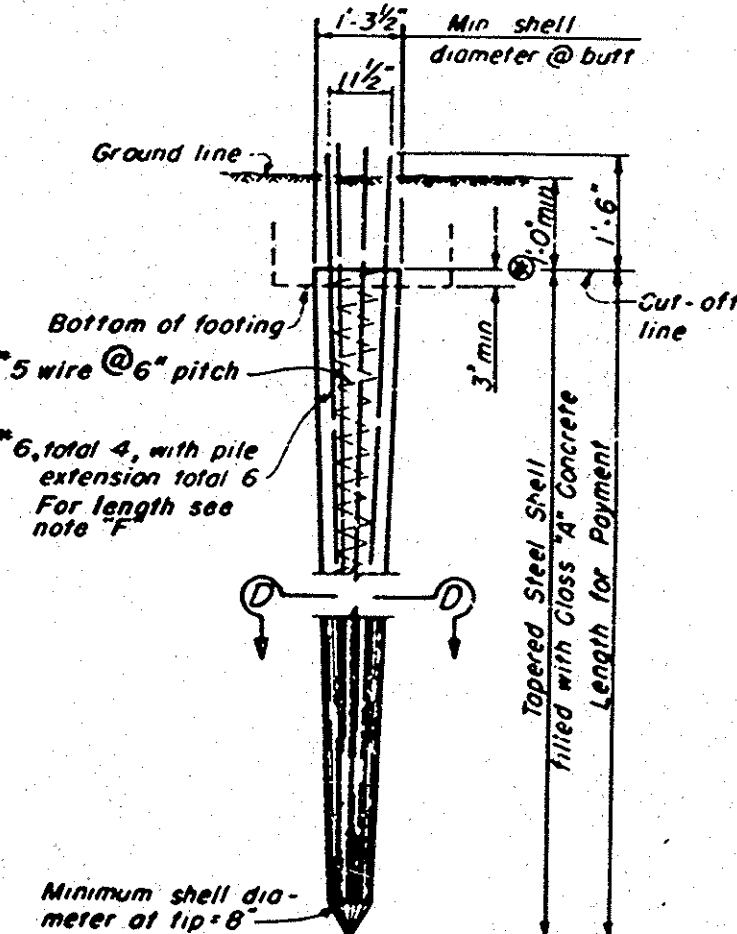
Longitudinal reinforcement in the driven portion of Alternative 'W' shall be prestressed to 10,000 lbs per bar

**CAST-IN-PLACE
CONCRETE PILE
ALTERNATIVE 'W'**

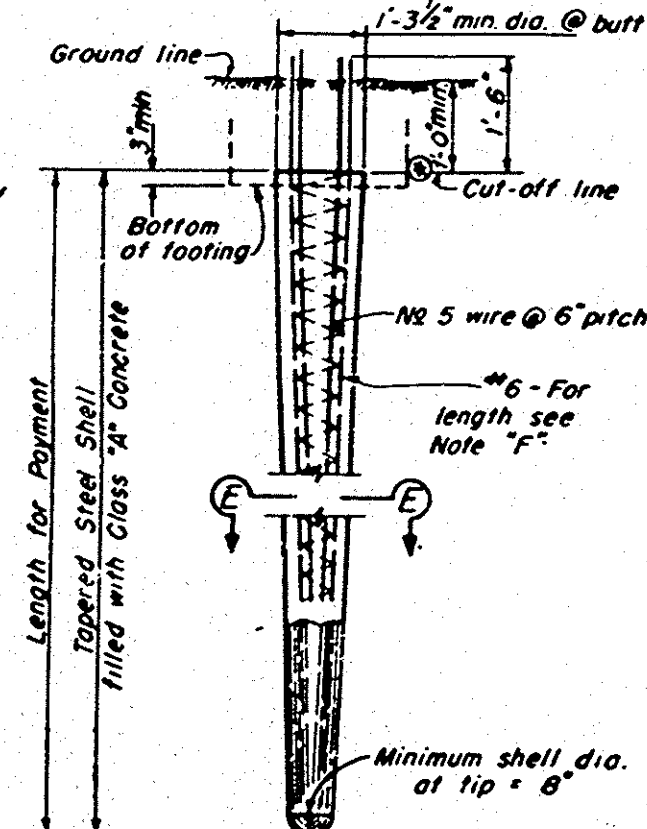


**ALTERNATIVE TIP
PRECAST
CONCRETE PILE
ALTERNATIVE 'X'**

As an alternative to the reinforcement shown this pile may be prestressed by the use of steel strands to provide a total remaining force after losses of not less than 150,000 lbs. At no time shall the stress in the steel exceed 0.7 of its ultimate value. Place 6-#6x8 in top of prestressed pile to provide for pile extension or connection to cap or footing.



**CAST-IN-PLACE
CONCRETE PILE
ALTERNATIVE 'Y'**



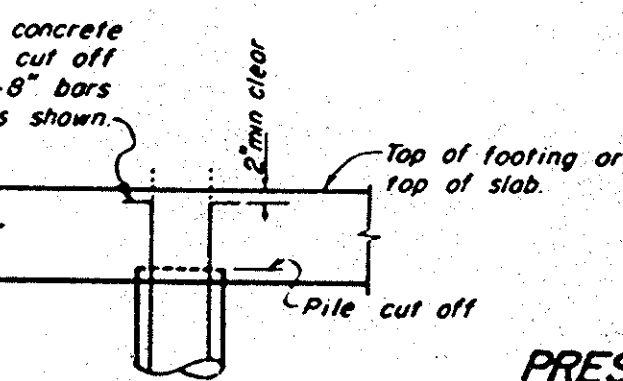
**CAST-IN-PLACE
CONCRETE PILE
ALTERNATIVE 'Z'**

PILE NOTES

- For Alternatives 'W' and 'X' the piles may be driven full length and cut off without extension or they may be extended as shown at the option of the Contractor.
- When Alternatives 'U', 'Y', 'Z' are extended above ground, the Typical Pile Extension shall be used.
- When piles are extended, the bottom of extension shall be located 1'-0" minimum below ground line, unless shown otherwise on the plans.
- Note 'F': In Alternatives 'U', 'Y', 'Z' the length of #6 bars shall be either a minimum of 1/3 penetration or 20", whichever is the greater. Penetration shall be measured below the lowest of the following controlling elevations:
 - Bottom of footing.
 - Top of final ground surface.
 - Top of original ground surface, when piles are driven through fills.

PRESTRESSING NOTE

All steel strand to be prestressed shall be high tensile cold-drawn stress relieved wire strand, of a diameter not to exceed $\frac{1}{8}$ ", having an ultimate tensile strength of not less than 200,000 p.s.i. and an elongation at rupture of not less than 4% in 24".



DETAIL 'G'

FOR PILE TEST: PLACE 4-#8 FULL LENGTH OF PILE, TENSION PILES ONLY. ALTERNATES 'Y' & 'Z' ONLY, IN ADDITION TO REINF. SPECIFIED ABOVE.

AS BUILT

ORANGE COUNTY HIGHWAY DEPARTMENT	
DOWLING AVENUE BRIDGE ACROSS SANTA ANA RIVER	
PILE DETAIL	
Scale: AS NOTED	SHEET 4 OF 7

SA-8