TECHNICAL BULLETIN

PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-2210

B-4X

Cast-in-place Drilled Piers

INTRODUCTION

The following guidelines are provided to assist Engineers, Architects, and builders in determining requirements for Cast-in-Place Drilled Piers. Requirements are specified for Engineered Piers, Prescriptive Piers, and requirements that are common to all Cast-in-Place Drilled Piers.

TECHNICAL DETAILS

Engineered Cast-in-Place Drilled Piers, at a minimum, are required to have the following calculations:

1. Maximum Factored Axial Force ($A_g f'_c$)
2. Required Pier Diameter and Depth of Embedment
3. Required Longitudinal Steel (minimum .5%)
4. Required Transverse Steel

Prescriptive Cast-in-Place Drilled Piers may be allowed when the following conditions exist:

1. Flat Lot (Slope less than 10%) with no creep loads
2. R or U Occupancy
3. Wood or Light Gauge Steel Frame Construction

For Prescriptive Cast-in-Place Drilled Piers the following criteria must be met:

1. Pier diameter shall be a minimum of 12" and pier depth shall be a minimum of 5' into competent soil, as determined by the Geotechnical Engineer.

2. Concrete shall have a minimum compressive strength of 2500 psi (f'_c).

3. Grade Beams shall be 6" by 16" with one #4 bar top and bottom, or 8" by 18" with one #5 bar top and bottom centered over piers, with a 2" maximum offset. Pier spacing shall be a maximum of 5’ for 6" grade beams and 6.5' for 8" grade beams.

4. Minimum Longitudinal Steel may be:
   a. 12" Diameter Pier 6 - #3 or 3 - #4 or 2 - #5
   b. 15" Diameter Pier 5 - #4 or 3 - #5

c. Other pier and steel sizes may be allowed with PRMD approval

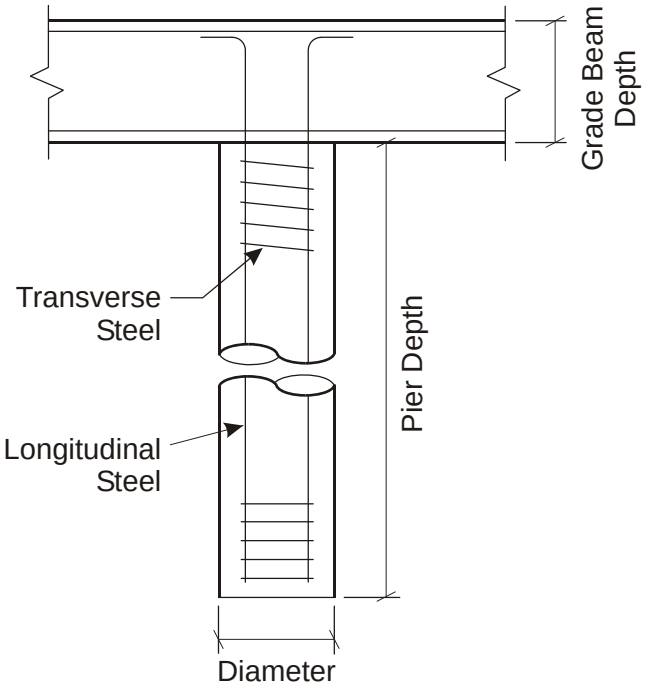
5. Minimum Transverse Steel shall be:
   a. #3 Spiral at 6" pitch; or #3 Circular, Rectangular, or Triangular Hoop reinforcing at 6" on center (o.c.) maximum with 1-1/2 extra turns at the top and bottom

All Cast-in-Place Drilled Piers shall be subject to Special Inspection:

1. The Geotechnical Engineer shall inspect pier excavation and provide a report.

2. A qualified Special Inspector shall inspect reinforcing steel and provide a report.

3. During placement of concrete a qualified special inspector shall be present to verify proper placement, take samples, and provide a report indicating work is in conformance with the approved plans.



REFERENCES

California Building Code, Section 1921
California Building Code, Section 1701
California Building Code, Section 1808
SEAOC "Blue Book," Section 302