2. *At the bottom of load-bearing walls or in the top of foundations where doweled to the wall.*
3. *At a maximum spacing of 120 in. (3,048 mm).*

Reinforcement at the top and bottom of openings, where used in determining the maximum spacing specified in Item 3 in the preceding text, shall be continuous in the wall.

14.2.2.9 Strength Requirements for Anchors

Modify Section D.4 by adding a new exception at the end of Section D.4.2.2 to read as follows:

EXCEPTION: *If* N_b *is determined using Eq. D-7, the concrete breakout strength of Section D.4.2 shall be considered satisfied by the design procedure of Sections D.5.2 and D.6.2 without the need for testing regardless of anchor bolt diameter and tensile embedment.*

14.2.3 Additional Detailing Requirements for Concrete Piles

In addition to the foundation requirements set forth in Sections 12.1.5 and 12.13 of this standard and in Section 21.12 of ACI 318, design, detailing, and construction of concrete piles shall conform to the requirements of this section.

14.2.3.1 Concrete Pile Requirements for Seismic Design Category C

Concrete piles in structures assigned to Seismic Design Category C shall comply with the requirements of this section.

14.2.3.1.1 Anchorage of Piles All concrete piles and concrete-filled pipe piles shall be connected to the pile cap by embedding the pile reinforcement in the pile cap for a distance equal to the development length as specified in ACI 318 as modified by Section 14.2.2 of this standard or by the use of field-placed dowels anchored in the concrete pile. For deformed bars, the development length is the full development length for compression or tension, in the case of uplift, without reduction in length for excess area.

Hoops, spirals, and ties shall be terminated with seismic hooks as defined in Section 2.2 of ACI 318.

Where a minimum length for reinforcement or the extent of closely spaced confinement reinforcement is specified at the top of the pile, provisions shall be made so that those specified lengths or extents are maintained after pile cutoff.

14.2.3.1.2 Reinforcement for Uncased Concrete Piles (SDC C) Reinforcement shall be provided where required by analysis. For uncased cast-in-place drilled or augered concrete piles, a minimum of four longitudinal bars, with a minimum longitudinal reinforcement ratio of 0.0025, and transverse reinforcement, as defined below, shall be provided throughout the minimum reinforced length of the pile as defined below starting at the top of the pile. The longitudinal reinforcement shall extend beyond the minimum reinforced length of the pile by the tension development length. Transverse reinforcement shall consist of closed ties (or equivalent spirals) with a minimum 3/8 in. (9 mm) diameter. Spacing of transverse reinforcing shall not exceed 6 in. (150 mm) or 8 longitudinal-bar diameters within a distance of three times the pile diameter from the bottom of the pile cap. Spacing of transverse reinforcing shall not exceed 16 longitudinal-bar diameters throughout the remainder of the minimum reinforced length.

The minimum reinforced length of the pile shall be taken as the greater of

1. One-third of the pile length.
2. A distance of 10 ft (3 m).
3. Three times the pile diameter.
4. The flexural length of the pile, which shall be taken as the length from the bottom of the pile cap to a point where the concrete section cracking moment multiplied by a resistance factor 0.4 exceeds the required factored moment at that point.

14.2.3.1.3 Reinforcement for Metal-Cased Concrete Piles (SDC C) Reinforcement requirements are the same as for uncased concrete piles.

EXCEPTION: Spiral-welded metal casing of a thickness not less than No. 14 gauge can be considered as providing concrete confinement equivalent to the closed ties or equivalent spirals required in an uncased concrete pile, provided that the metal casing is adequately protected against possible deleterious action due to soil constituents, changing water levels, or other factors indicated by boring records of site conditions.

14.2.3.1.4 Reinforcement for Concrete-Filled Pipe Piles (SDC C) Minimum reinforcement 0.01 times the cross-sectional area of the pile concrete shall be provided in the top of the pile with a length equal to two times the required cap embedment anchorage into the pile cap.

14.2.3.1.5 Reinforcement for Precast Nonprestressed Concrete Piles (SDC C) A minimum longitudinal steel reinforcement ratio of 0.01 shall be provided for