CODE

16.5.6 *Reinforcement detailing*

16.5.6.1 Concrete cover shall be in accordance with 20.5.1.3.

16.5.6.2 Minimum spacing for deformed reinforcement shall be in accordance with 25.2.

16.5.6.3 At the front face of a bracket or corbel, primary tension reinforcement shall be anchored by (a), (b), or (c):

(a) A weld to a transverse bar of at least equal size that is designed to develop f_y of primary tension reinforcement
(b) Bending the primary tension reinforcement back to form a horizontal loop
(c) Other means of anchorage that develops f_y

COMMENTARY

of reinforcement required to cross the face of the support, as shown in Fig. R16.5.1b, is the sum of A_{sc} and A_h.

R16.5.6 *Reinforcement detailing*

R16.5.6.3 For brackets and corbels of variable depth (refer to Fig. R16.5.1a), the stress at ultimate in the reinforcement is almost constant at approximately f_y from the face of support to the load point. This is because the horizontal component of the inclined concrete compression strut is transferred to the primary tension reinforcement at the location of the vertical load. Therefore, reinforcement should be fully anchored at its outer end (refer to 16.5.6.3) and in the supporting column (refer to 16.5.6.4), so as to be able to develop its specified yield strength from the face of support to the vertical load (refer to Fig. R16.5.6.3a). Satisfactory anchorage at the outer end can be obtained by bending the primary tension reinforcement bars in a horizontal loop as specified in 16.5.6.3b, or by welding a bar of equal diameter or a suitably sized angle across the ends of the primary tension reinforcement bars. The weld detail used successfully in the corbel tests reported in Mattock et al. (1976a) is shown in Fig. R16.5.6.3b. Refer to ACI Committee 408 (1966).

An end hook in the vertical plane, with the minimum diameter bend, is not totally effective because a zone of unreinforced concrete beneath the point of loading will exist for loads applied close to the end of the bracket or corbel. For wide brackets (perpendicular to the plane of the figure) and loads not applied close to the end, U-shaped bars in a horizontal plane provide effective end hooks.

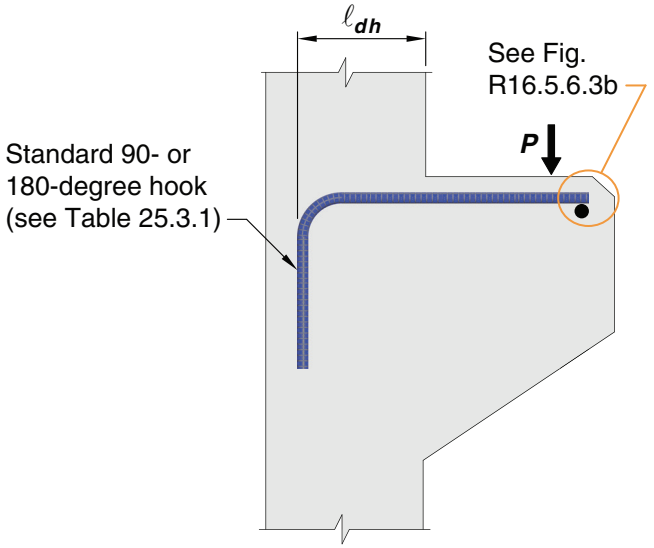

Fig. R16.5.6.3a*—Member largely dependent on support and end anchorages.*