CODE

COMMENTARY

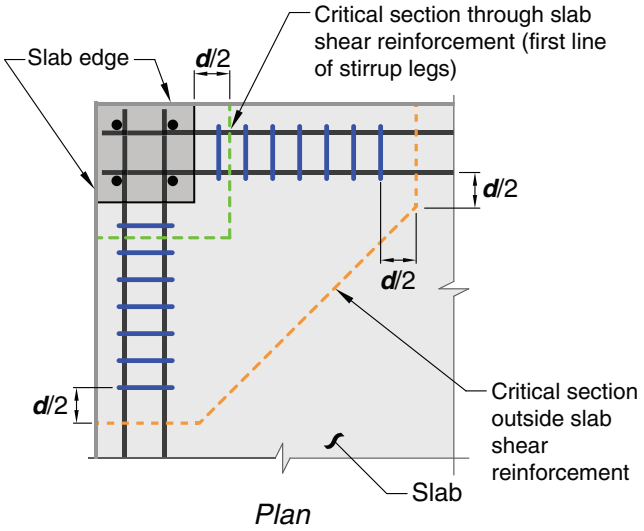

***Fig. R22.6.4.2c**—Critical sections for two-way shear in slab with shear reinforcement at corner column.*

22.6.4.3 If an opening is located closer than **4*h*** from the periphery of a column, concentrated load, or reaction area, the portion of b_o enclosed by straight lines projecting from the centroid of the column, concentrated load or reaction area and tangent to the boundaries of the opening shall be considered ineffective.

R22.6.4.3 Provisions for design of openings in slabs (and footings) were developed in Joint ACI-ASCE Committee 326 (1962). The locations of the effective portions of the critical section near typical openings and free edges are shown by the dashed lines in Fig. R22.6.4.3. Research (Joint ACI-ASCE Committee 426 1974) has confirmed that these provisions are conservative.

Research (Genikomsou and Polak 2017) has shown that when openings are located at distances greater than **4*d*** from the periphery of a column, the punching shear strength is the same as that for a slab without openings.