

All non-engineered lateral designs for residential projects must meet the Conventional Light-Frame Construction requirements of the California Building Code (CBC) Section 2308. Structures of conventional light-framed construction shall not exceed two stories in height and are subject to limitations of Sections 2308.2, 2308.11, and 2308.12.

Braced Wall Panels and Braced Wall Lines

Braced Wall Panels are constructed of 5/16" wood structural panel sheathing over 2x wall studs at 16-inch stud spacing (or 3/8" sheathing for 24-inch stud spacing), with 8d nails at 6"/12" spacing. The maximum height of a brace panel is 10'-0". The minimum width of each panel is half the panel height (e.g. 8'-0" tall brace panels are required to be a minimum of 4'-0" long.)

Alternative Brace Panels are not allowed in Alameda, as we are located within Seismic Design Category D and their design does not meet the minimum height to width requirements of CBC Table 2308.12.4.

Braced Wall Lines consist of a series of brace panels aligned in a row. Every structure must have braced wall lines at each side of the exterior of the structure in each principal axis and at the interior as required to maintain a wall line spacing of 25'-0" or less. Panels shall not be offset from any other panel within the same wall line by more than 4'-0". Each panel must start not more than 8'-0" from each end of a braced wall line. The total length of braced wall panels at each braced wall line shall be 48% of the total braced wall line length for one-story structures and 85% for the bottom story of two-story structures. All braced wall panel locations shall be clearly indicated and specified on plans.

Cripple Walls

48" or Less in Height: Foundation cripple walls shall be framed of studs not less in size than the studs above with a minimum length of 14" or shall be framed of solid blocking. Cripple walls having a stud height exceeding 14" shall be considered as a story and must be braced with braced wall panels as described above.

More than 48" in Height: Walls shall be framed of studs having the size required for an additional story, and shall be braced with braced wall panels as described above.

Connections

Sill Anchorage: Sill plates shall be anchored to concrete or masonry foundations with 1/2" diameter minimum steel anchor bolts at 6'-0" on center for single story structures and 4'-0" on center for structures two stories in height, embedded at least 7" in footings. Plate washers shall be a minimum of 3"x3" x 0.229" thick at each bolt. There shall be a minimum of two bolts per sill plate with one bolt located not more than 12" or less than 4" from each end of the sill plate.

Top Plates: Bearing and exterior wall studs shall be capped with double top plates installed to provide overlapping at corners and at intersections. End joints in double top plates shall be offset at least 48", and shall be nailed with not less than (8)16d face nails on each side of the joint. Top plates of braced wall panels shall be fastened to joists, rafters, or full-depth blocking with a minimum of 8d toenails at 6" on center or (3) 8d toenails per block.

Bottom Plates: Bottom plates shall be fastened to joist or blocking below with not less than (3) 16d nails at 16" on center.