CONVENTIONAL CONSTRUCTION
BRAVED WALL DETAILS

THIS DRAWING DEPICTS MINIMUM CODE REQUIREMENTS PER CBC 2007. INFORMATION IS FOR REFERENCE ONLY AND IS NOT A SUBSTITUTE FOR ACCURATE DRAWINGS PREPARED FOR EACH PROPOSED CONSTRUCTION PROJECT.

TYPICAL BRACED PANEL (TYPE 3 - WOOD STRUCT. SHEATHING)

- Edge Nail @ 8" O.C., or 3" O.C., (if 1/2" Plywood, is used, 10d Nails are recommended)
- Field Nail @ 12" O.C.
- Minimum 3/8" Structural Wood Panel Sheathing
- 2x studs (Typically @ 16" O.C.)
- Anchor Bolts with Pl Washers (See Fdn. Detail Sheet)
- Support on Foundation per Sec. 1606, or on Floor with 3 Nails per ea. 16" O.C., first floor.
- Note: When calling out braced panels on floor plan, refer to framing plan sheet for details.
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- Total length of panels in EA 29" of braced wall line must add up to 12'-0" (for 1story or 24'-0" for 1st floor of 2-story per Table 1208.12.4, U.O.N.)

Rules for Configuring the Braced Wall Panels:

Lateral Design for Conventional Construction may consist of "simple boxes" as shown in the diagram below. The total length of braced wall panels must conform to Table 2308.12.4 for the Seismic Design Category (SDC) and "S" code applicable to the project site. The City of Santa Rosa is typically SDC = "0" with an S value of = 1.0. If you are proposing to use braced wall panels, you must note those values on the cover sheet of your drawings. You can look up your latitude and longitude and find your exact SDC and S value per Chapter 16, or just note SDC "D" and S value = ≥ 1.0.

For one story conditions, the total length of braced panel for each 25' of braced wall line must be 12'-0" or equivalent (for example, 3' - 4'-0" braced panels, or 2' - 4'-0" braced panels plus 1' - 2'-8" alternate braced panel). For the first floor of a 2-story condition, the required total length per each 25' of braced wall line must be 21'-0" or equivalent. These minimum total lengths are for plywood sheathed braced panels. Gypsum Board braced panels must be the full 25'-0" (no openings for one story and are not allowed for two story, therefore are not used in Santa Rosa).

Footnote 1 of Table 2308.12.4 requires braced panels to be 2'-1 max vert, to horiz. This is 4'-0" mfr. for 8' plate lines, and 5'-0" mfr. for 10' plate lines. (The max. height is 10'-0") Also, the same footnote allows you to reduce the total panel length for each 25' of wall line by 1/2 if you install the plywood on both sides and add holdowns similar to an alternate braced panel.

Figure 2308.9.3 (for SDC "D")

NAME, ADDRESS AND PHONE NO. OF DESIGNER
XXX XXX XXX XXX
XXX XXX XXX XXX
WET SIGNATURE OF DESIGNER ON EACH SHEET
(AND PROFESSIONAL STAMP IF APPLICABLE)
E:3(Co)0VACA/Details 2/004-4-BR WALL 1DWS, 01/2006 4:36:55 PM

EXAMPLE RESIDENCE
1234 MAIN ST.
SANTA ROSA, CA 95404
APN # 000-000-000

BRACED WALL
SKETCH
SAMPLE DRAWING

BRACED WALL PANELS
CONTINUOUS FOUNDATION AND BRACED CRIPPLE WALLS RECOMMENDED UNDER LOWER STORY BRACED WALL PANELS

BRACED WALL PANELS - b
BRACED PANEL ABOVE MAY EXTEND UP TO 1'-2" OVER WINDOW OR DOOR BELOW

FIGURE 2308.9.3 (FOR SDC "0")

SCALE: N.A.
DATE: DEC. 15, 2008
SHEET NO. BW-1
Conventional Construction - Braced Walls - Summary of Lateral Requirements

Per 2007 CBC Sec. 2308 for City of Santa Rosa - Seismic Design Category "D" (or "E"), SDS > 1.0

1. **Braced Wall Lines**: Floors and roofs must be supported on all edges by braced wall lines, (except where not supporting braced panels above, portion of the floor or roof may cantilever 6 feet max.) The braced wall lines must occur in two perpendicular directions. CBC 2308.12.6.2.

2. **Braced Wall Length (Each Wall Panel)**: Braced wall panels shall be 4 ft. min. in length (8’ for Gyp. Bd. both sides) except for Alternate Braced Panels which may be 2’-8” min. in length or per sec. 2308.9.3.2 if next to opening with full length header running over braced wall. CBC 2308.9.3.1.

3. **Braced Wall Line Length (Total Per Line)**: For each 25’-0” of braced wall line, the total length per line of braced walls (for most of Santa Rosa, SDC D & E, SDS > 1.0) shall be 12’-0” min. for plywood (25’-0” for Gyp. Bd. both sides) supporting no floors above. If a floor is above the total length required is 21’-4” (not permitted for Gyp, Bd) CBC Tbl. 2308.12.4

4. **Braced Wall Panels Location and Spacing**: Braced wall panels shall be within 8 ft (for SDC D & E) of the ends of braced walls and 25 ft o.c. in both directions thereafter. CBC 2308.12.3.

5. **Braced Lines Spacing**: Braced wall lines shall be spaced no greater than 25 ft on center. CBC 2308.9.3.

6. **Braced Line Footings and Sill Plate Nailing**: Exterior braced walls shall have continuous footings. The code requires interior footings for braced walls at 50’ max. on center. Continuous footings are recommended by CBC Fig. 2308.9.3 at interior braced wall lines for buildings over one story. Also for buildings of one story that are less than 50’, braced wall footings are still preferred, but if not provided, parallel exterior cripple walls must be strengthened by 1.5 times or strengthened with 4” nailing per CBC 2308.12.4. Nail sill plate to joist with 3 - 16d @ each joist (16" o.c. max) per 2308.3.2. Provide details at base of all braced panels. CBC 2308.3.4.

7. **Braced Line Footings w/ Cripple Wall**: Cripple walls over 14” in height under braced walls must be strengthened to 32” or if length cannot be obtained then strengthened with 4” nailing per CBC 2308.12.4. Nail sill plate to joist with 3 - 16d @ each joist (16” o.c. max.) per 2308.3.2. Provide details at base of all braced panels. CBC 2308.3.4.

8. **Braced Panel Horizontal Offsets**: Braced panels in a single brace panel (in plan view) may not be offset more than 4 ft perpendicular to the direction of the line. CBC 2308.9.3.

9. **Braced Wall Lines, Vertical Offsets**: Exterior braced panels must be in one vertical plane unless supported by 2x10 min. @ 16” oc (max offset = 4x joist depth), 2:1 back span min, double joists at panel ends, continuous rim at cantilevers, and loads limited wall and roof above. CBC 2308.12.6.

10. **Braced Wall Panel, 2nd Floor Extension**: Braced panels may extend not more than one foot beyond wall below, except when the opening in the floor below is less than 8 feet and a 4x12 or greater sized header is used. (CBC 2308.9.4.3)

11. **Braced Panel Materials**: Braced panels must have fully blocked 3/8” min. plywood (or T-1-11, or approved 1/2 struct. shtg.) nailed with 8d min. (10d recommended for 1/2” plywood.) at 8” o.c. for edges and 12” o.c. for field. Provide notes or details on plans. Provide nailing details, notes and/or schedule. CBC 2308.9.3.1.

12. **Alternate Braced Panel Materials**: Alternate braced panels (2’-8” by 10’ max. tall) must have blocked 3/8” min. plywood, 2 A.B.’s at 1/4 points and two HD’s > 1,800 lb. uplift. (For first story ABP supporting a second story, provide plywood both sides, 3 A.B.’s at 1/4 points, and two HD’s > 3,000 lb. uplift.). Provide nailing, AB and holdown details. CBC 2308.9.3.1.

13. **Proprietary Shear Panels In Braced Wall Lines**: Proprietary braced wall panels (Simpson etc.) may be used in lieu of Alternate Braced Panels if supported by documentation showing that the proposed panel is equivalent to an alternate braced wall panel, or a 4’-0” typical braced wall panel.

14. **Braced Wall Connection at Roof**: Braced top plates shall be per 2308.9.2.1 detailed to provide full transfer of lateral loads from the roof plywood nailed at 6” o.c. Show top plate connected to underside of roof or some other method such as a sheathed wall or truss above the ceiling to the roof connected with equivalent framing clips and/or nailing (t.ex nails not allowed per 2305.1.4) to transfer the equivalent of the roof nailing to the braced wall(s). CBC 2308.3.2.

15. **Braced Wall Panels On Drawings**: Braced wall panels shall be clearly indicated on the plans. Provide marks with associated legend or other method of calling out and dimensioning each Braced Panel and Alternate Braced Panel CBC 2308.9.3.

16. **Other Conventional Construction Lateral Requirements**: Other elements may be required to rely on conventional construction provisions in lieu of an engineer’s or architect’s signed design. These elements will be reviewed on a case-by-case basis and include:
   a. Rectangular shape or simple composite rectangles (L or T shaped) required (significantly irregular configurations, angled or curved walls not allowed).
   b. Continuous and uninterrupted floor diaphragms (except for stairwell openings).
   c. Simple gable or hip roofs preferred (steep and irregular gambrel, shed, split shed, flat roofs and vaulted ceilings will be reviewed on a case-by-case basis).
   d. Any special features not included above which could adversely affect the structural stability of the building, or which may require a structural analysis will classify the building as a non-conventional structure requiring an engineer's or architect's signature in accordance with the Business Professions Code. In which case the following comment will apply.
   e. **Shear Walls**: The proposed structure does not meet the conventional construction requirements of CBC Sec. 2308. Please provide a lateral design meeting the structural force requirements of Chapter 16.