City of Oceanside
Building Division
300 N Coast Hwy
Oceanside, CA 92054

MINIMUM CONSTRUCTION SPECIFICATIONS

These are minimum specifications established by the California Building Code. These specifications apply in the absence of more restrictive specifications in the approved plans.

I. FOUNDATION AND UNDERFLOOR

1. **Concrete Strength.** Concrete for footings must have a minimum compressive strength of 2500 psi at 28 days.
   [CBC § 1805.4]

2. **Wood Supported by Exterior Foundation Walls.**
   Wood framing members, including wood sheathing, that rest on exterior foundation walls and are less than 8 inches (203 mm) from exposed earth shall be of naturally durable or preservative-treated wood.
   [CBC § 2304.11.2.2]

3. **Footing Depth.** The minimum depth of footings below the undisturbed ground shall be 12 inches.

4. **Concrete Slabs.** Slabs on grade must be at least 3 1/2" thick.
   [CBC § 1910.1]

5. **Treated Wood.** All foundation plates or sills and sleepers on concrete or masonry which is in direct contact with earth must be pressure-treated wood or foundation grade redwood. Wood joists closer than 18", or wood girders or supports closer than 12" to the ground, must be pressure treated.
   [CBC § 2304.11.2.1]

6. **Anchor Bolts and Footing Sills.** All sills must have full bearing on the footing wall or slab and must be bolted to the foundation with 1/2" diameter anchor bolts embedded at least 7" into the concrete or reinforced masonry or 15" into unreinforced grouted masonry. Bolts must be spaced not to exceed 6' on center. There must be 2 bolts per piece with bolts not over 12", nor less than 4" from end of each piece. Steel plate washers shall be placed between the foundation sill and the nut. Such washers shall be a min 0.229 inch by 3 inches by 3 inches in size. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16 inch larger than the bolt diameter and a slot length not to exceed 1-3/4 inches, provided a standard cut washer is placed between the plate washer and the nut.
   [CBC § 2305.3.11, § 2308.6 & § 2308.3.3]

7. **Underfloor Vents.** Underfloor areas must be ventilated by openings in foundation walls. Wall openings must have a net area of not less than 1 sq. ft. for each 150 sq. ft. of underfloor area. Openings must be arranged to provide cross ventilation and must be covered with corrosion-resistant wire mesh with openings of 1/8-inch in dimension.
   [CBC § 1203.3.1]

8. **Underfloor Access.** Underfloor areas must be provided with an unobstructed crawl hole not less than 18" x 24". Openings must be effectively screened, as required for vents, or covered.
   [CBC § 1209.1].

II. WOOD FRAMING

1. **Lumber.** All joist rafters, beams, and posts 2" to 4" thick must be No. 2 Grade Douglas Fir-Larch or better. All posts and beams 5" and thicker must be No. 1 Grade Douglas Fir-Larch or better (see item 13 in this section for lumber grading requirements for studs).

2. **Wall bracing.** Buildings shall be provided with exterior & interior braced wall lines. Spacing shall not exceed 25' in both directions.
   [CBC § 2308.12.3]

3. **Lateral Bracing.** CBC § 2308.8.5; 2305; 2306; 2307

4. **Blocking.** Provide blocking at ends and at supports of floor joists, and for rafters at exterior walls.
   [CBC § 2308.8.2 § 2308.10.6]

5. **Roof Blocking.** Provide 2" full depth solid blocking at ridge line and at exterior walls on trussed roofs.
   [CBC §2326.12.8]

6. **Double Joists.** Bearing partitions parallel to joists shall be supported on beams, girders, doubled joists, walls or other bearing partitions. Bearing partitions perpendicular to joists shall not be offset from supporting girders, walls or partitions more than the joist depth unless such joists are of sufficient size to carry the additional load.
[CBC § 2308.8.4]

7. **Rafter Purlin Braces.** Purlin braces shall be not less than 45 degrees to the horizontal.
[CBC § 2308.10.5]

8. **Rafter Ties.** Rafter ties must be spaced not more than 4 feet on center where rafters and ceiling joists are not parallel.
[CBC § 2308.10.4.1]

9. **Clearance.** Provide 1/2" minimum clearances between top plate of interior non-bearing partitions and bottom chord of trusses.

10. **Top Plate.** Provide double top plate with minimum 48" lap splice.
[CBC § 2308.9.2.1]

11. **Nailing.** Nailing shall be in compliance with CBC Table 2304.9.1.

12. **Fire Blocks.** Fire blocks must be provided for walls at ceilings, floor levels and concealed spaces at 10' o.c. max horizontally.
[CBC § 717.2.2 through § 717.2.7]

13. **Studs.** In one and two story buildings, studs for exterior walls and interior bearing walls must be not less than 2"x4" at 16" o.c. Studs 2" to 4" thick, 2" to 4" wide and not more than 8 feet long must be "stud grade" Douglas fir Larch or better when supporting not more than one floor and a roof.
[CBC § 2308.9.1, Table 2308.9.1]

14. **Laminated Wood.** An AITC Certificate of Conformance for glued laminated wood members must be given to the Building Inspector prior to their installation.
[CBC § 2303.1.3]

III. GENERAL MATERIAL SPECIFICATIONS.

1. **Mortar Mix.** Mortar for use in masonry construction shall conform to ASTMC 270 and CBC Tables 2103.8 (1) & (2).

2. **Grout Mix.** Shall conform to CBC Table 2103.12.

3. **Masonry.** The masonry units must comply with ASTM Standards.
[CBC § 2103]

4. **Structural Steel.** Steel used as structural shapes such as wide flange sections, channels, plates and angles must comply with ASTM Spec. A-36. Pipe columns must comply with ASTM Spec. A-53.
[CBC Standard 22-1]

IV. ROOFING AND WEATHERPROOFING.

1. **Weather Protection.** Exterior walls shall provide weather protection for the building. The materials of the minimum nominal thickness specified in Table 1405.2 shall be acceptable as approved weather coverings.
[CBC § 1405.2]

2. **Flashing Around Openings.** Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect it to the exterior.
[CBC § 1405.3]

3. **Roof Covering.** Mineral-surfaced, built-up roofing must not be installed on roof having a pitch greater than 3 inches to 12 inches. The following are minimum pitches: composition shingles: minimum 2 inches to 12 inches; wood shingles: minimum 3 inches to 12 inches; wood shakes: minimum 4 inches to 12 inches; roofing tile: minimum 2½ inches to 12 inches; clay or concrete roofing tile: minimum 4 inches to 12 inches. Wood shingles and wood shakes must be pressure-impregnated with chemicals to obtain a Class C rating.
[Per CBC Chapter 15]

4. **Weep Screed.** A minimum 0.019-inch (0.48mm) (No. galvanized sheet gage), corrosion-resistant weep screed with a minimum vertical attachment flange of 3-1/2

inches (89 mm) shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and be of a type that will allow trapped water to drain to the exterior of the building. The water-resistive barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachment flange of the weep screed.
[CBC § 2512.1.2]

5. **Basement Walls.** Basement foundation walls below grade must be damp-proofed on the outside.
[CBC § 807]

V. GENERAL

1. **Attic Access**. Attic areas over 30" high must be accessible by an opening not less than 22" x 30". With a furnace in the attic, the opening must not be less than 30" x 30".
[CMC § 904.11.1]

2. **Shower Enclosures**. Shower walls must be finished to a height of 70" above the drain inlet with a smooth, hard, non-absorbent surface.
[CBC § 1115B.2.1]

3. **Electric Meter Enclosure**. Contact San Diego Gas & Electric Company, Customer Extension Planning Department, for meter location. All wiring must comply with the 2005 CEC.

4. **Smoke Detectors**. In new construction, smoke detectors must receive their primary power from the building wiring when such wiring is served from a commercial source. Smoke detectors may be battery-operated when installed in existing buildings, buildings without commercial power, or buildings which undergo alterations, repairs or additions regulated by 2007 CBC. In dwelling units, a detector shall be installed in each sleeping room and centrally located in the corridor or area giving access to each separate sleeping area, in each story and in the basement. Where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24" or more, smoke detectors shall be installed in the hallway and the adjacent room. Detectors shall sound an alarm audible in all sleeping rooms.
[CBC § 907.2.10.2 & CBC § 907.2.10.5.1]

VI. TABLE 1805.4.2

FOOTINGS SUPPORTING WALLS OF LIGHT-FRAME CONSTRUCTION [a,b,c,d,e]

NUMBER OF FLOORS SUPPORTED BY THE FOOTING[f]	WIDTH OF FOOTING (inches)	THICKNESS OF FOOTING (inches)
1	12	6
2	15	6
3	18	8[g]

For SI: 1 inch = 25.4mm, 1 foot = 304.8mm.

a. Depth of footings shall be in accordance with Section 1805.2.
b. The ground under the floor is permitted to be excavated to the elevation of the top of the footing.
c. Interior-stud-bearing walls are permitted to be supported by isolated footings. The footing width and length shall be twice the width shown in this table, and footings shall be spaced not more than 6 feet on center.
d. See Section 1908 for additional requirements for footings of structures assigned to Seismic Design Category C, D, E or F.
e. For thickness of foundation walls, see Section 1805.5.
f. Footings are permitted to support a roof in addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.
g. Plain concrete footings for Group R-3 occupancies are permitted to be 6 inches thick.

TABLE 2304.7(3)
ALLOWABLE SPANS AND LOADS FOR WOOD STRUCTURAL PANEL SHEAATHING AND SINGLE-FLOOR
GRADES CONTINUOUS OVER TWO OR MORE SPANS WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS[a,b]

Sheathing Grades		Roof[c]				Floor[d]
Panel Span Rating Roof/Floor Span	Panel Thickness (inches)	Maximum Span (inches)		Load[e] (psf)		Maximum Span (inches)
		With Edge Support[f]	Without Edge Support	Total Load	Live Load	
12/0	5/16	12	12	40	30	0
16/0	5/16, 3/8	16	16	40	30	0
20/0	5/16, 3/8	20	20	40	30	0
24/0	3/8, 7/16, 1/2	24	20[g]	40	30	0
24/16	7/16, 1/2	24	24	50	40	16
32/16	15/32, 1/2, 5/8	32	28	40	30	16[h]
40/20	19/32, 5/8, 3/4, 7/8	40	32	40	30	20[h,i]
48/24	23/32, 3/4, 7/8	48	36	45	35	24
54/32	7/8, 1	54	40	45	35	32
60/32	7/8, 1 1/8	60	48	45	35	32
Single-Floor Grades		**Roof[c]**				**Floor[d]**
Panel Span Rating (inches)	Panel Thickness (inches)	Maximum Span (inches)		Load[e] (psf)		Maximum Span (inches)
		With Edge Support[f]	Without Edge Support	Total Load	Live Load	
16 o.c.	1/2, 19/32, 5/8	24	24	50	40	16[h]
20 o.c.	19/32, 5/8, 3/4	32	32	40	30	20[h,i]
24 o.c.	23/32,3/4	48	36	35	25	24
32 o.c.	7/8, 1	48	40	50	40	32
48 o.c.	1 3/32, 1 1/8	60	48	50	50	48

For SI: 1 inch=25.4mm, 1 pound per square foot=0.0479kN/m^2.

a. Applies to panels 24 inches or wider.
b. Floor and roof sheathing conforming with this table shall be deemed to meet the design criteria of Section 2304.7.
c. Uniform load deflection limitations 1/180 of span under live load plus dead load, 1/240 under live load only.
d. Panel edges shall have approved tongue-and-groove joints or shall be supported with blocking unless ¼-inch minimum thickness underlayment or 1½ inches of approved cellular or lightweight concrete is placed over the subfloor, or finish floor is ¾-inch wood strip. Allowable uniform load based on deflection of 1/360 of span is 100 pounds per square foot (psf) except the span rating of 48 inches on center is based on a total load of 65 psf.
e. Allowable load at maximum span.
f. Tongue-and-groove edges, panel edge clips [one midway between each support, except two equally spaced between supports 48 inches on center], lumber blocking, or other. Only lumber blocking shall satisfy blocked diaphragms requirements.
g. For ½-inch panel, maximum span shall be 24 inches.
h. Span is permitted to be 24 inches on center where ¾-inch wood strip flooring is installed at right angles to joist.
i. Span is permitted to be 24 inches on center for floors where 1½ inches of cellular or lightweight concrete is applied over panels.

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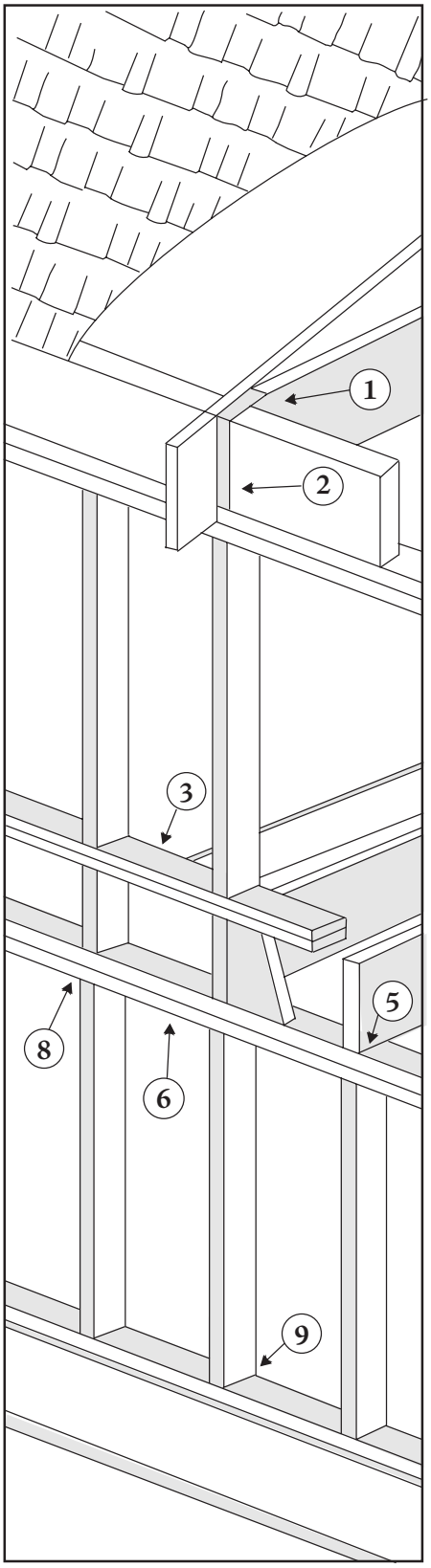
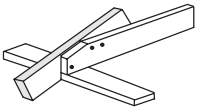
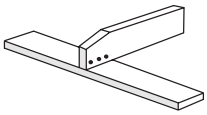
GENERAL FRAMING NAILING REQUIREMENTS*

*For alternative nailing see Table 2304.9.1 in the CBC

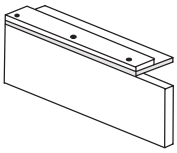


1 

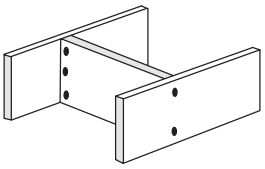
Ceiling joist to parallel rafters:
3-16d common or box nails.

2 

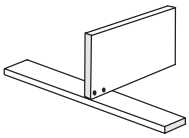
Ceiling joist to plate toenail:
3-8d common or box nails.

3 

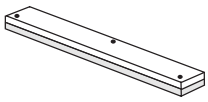
Sole (bottom) plate to joist or blocking:
16d common at 16” o.c.

4 

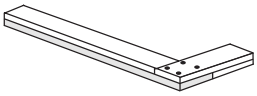
Blocking to joist:
3-8d common or box nails, toenail, or
2-16d common or box nails, face nailing.

5 

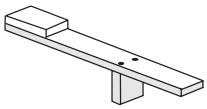
Joist to mud sill or upper top plate:
3-8d common, box nails or toenails.

6 

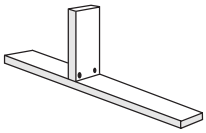
Top plates typical stitching:
16d common or box nails at 16” o.c.

7 

Top plates lap at intersection, face nail:
2-16d common or box nails. 4 is recommended.

8 

Lower top plate to stud:
2-16d common or box nails.

9 

Stud to sole bottom plate:
2-16d common or box nails.

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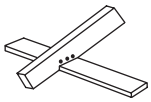
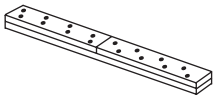
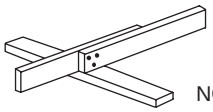
(10) Rafter to Plate, toenail:
3-8d common box nails.



(11) Upper top plates at laps:
8-16d common or box nails.

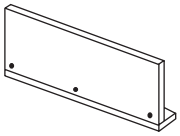


(12) Ceiling joist, lap over walls and partition:
3-16d

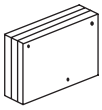


NOT SHOWN IN DIAGRAM

(13) Rim joist to upper top plate or mud sill:
8d common, box nails or 16d toenails
at 6” o.c.



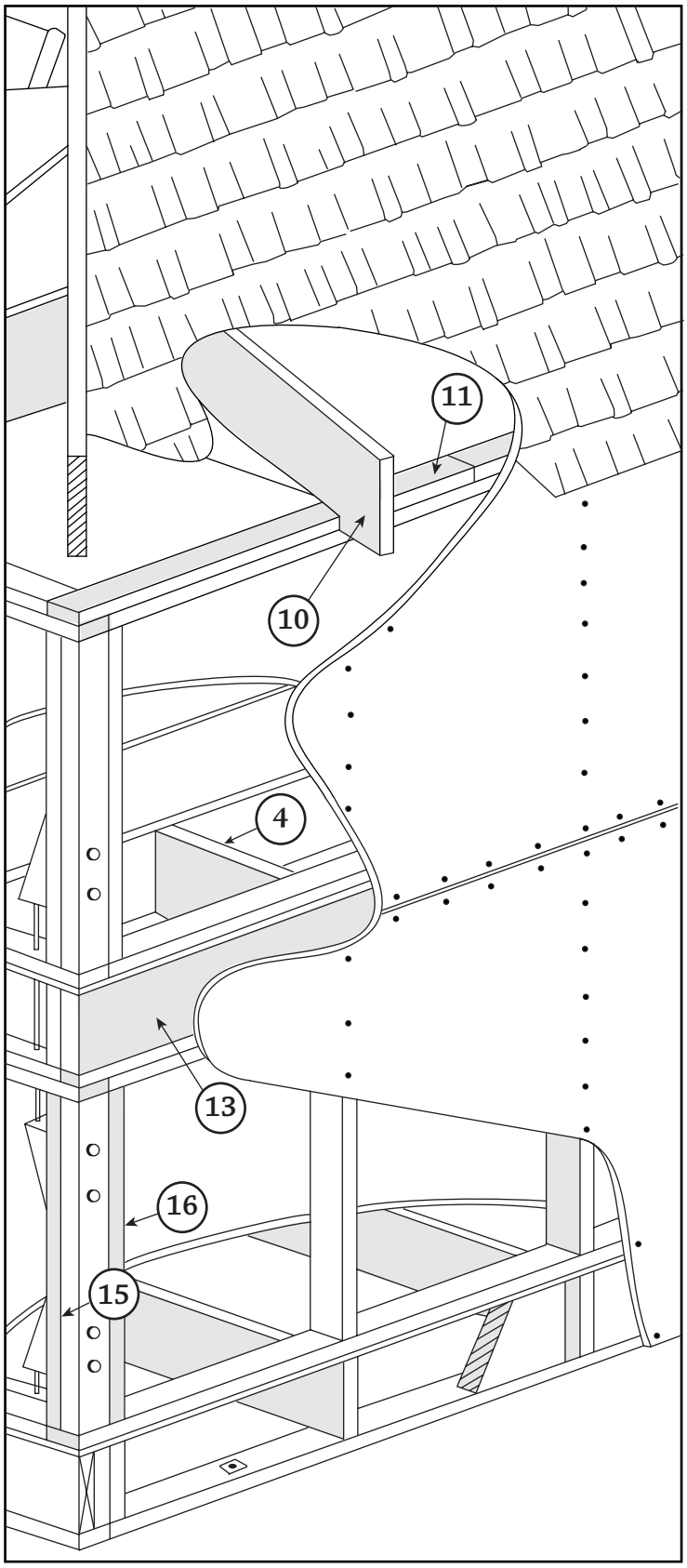
(14) Three piece built up girder and beam:
20 d @ 32” o.c. @ top, bottom and staggered.
2-20d @ ends and each splice.



NOT SHOWN IN DIAGRAM

(15) Double studs, or built-up studs typical stitching:
16d common or box nails at 24”o.c.

(16) Built up corner studs:
16d box nails at 24” o.c.



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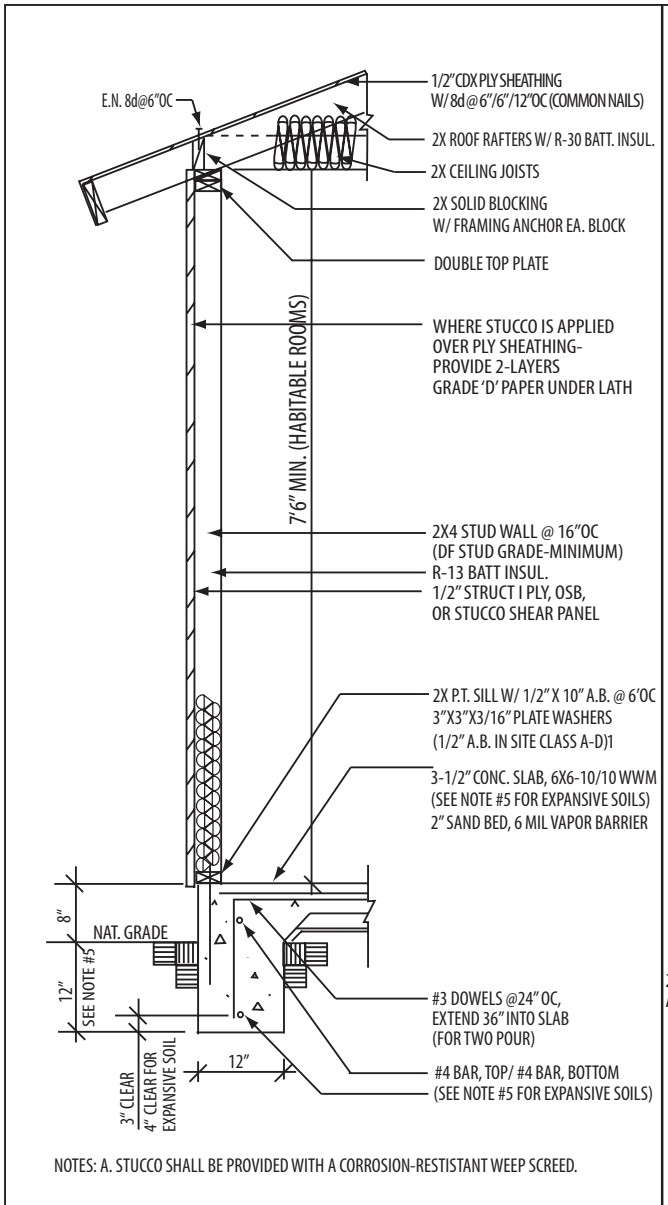
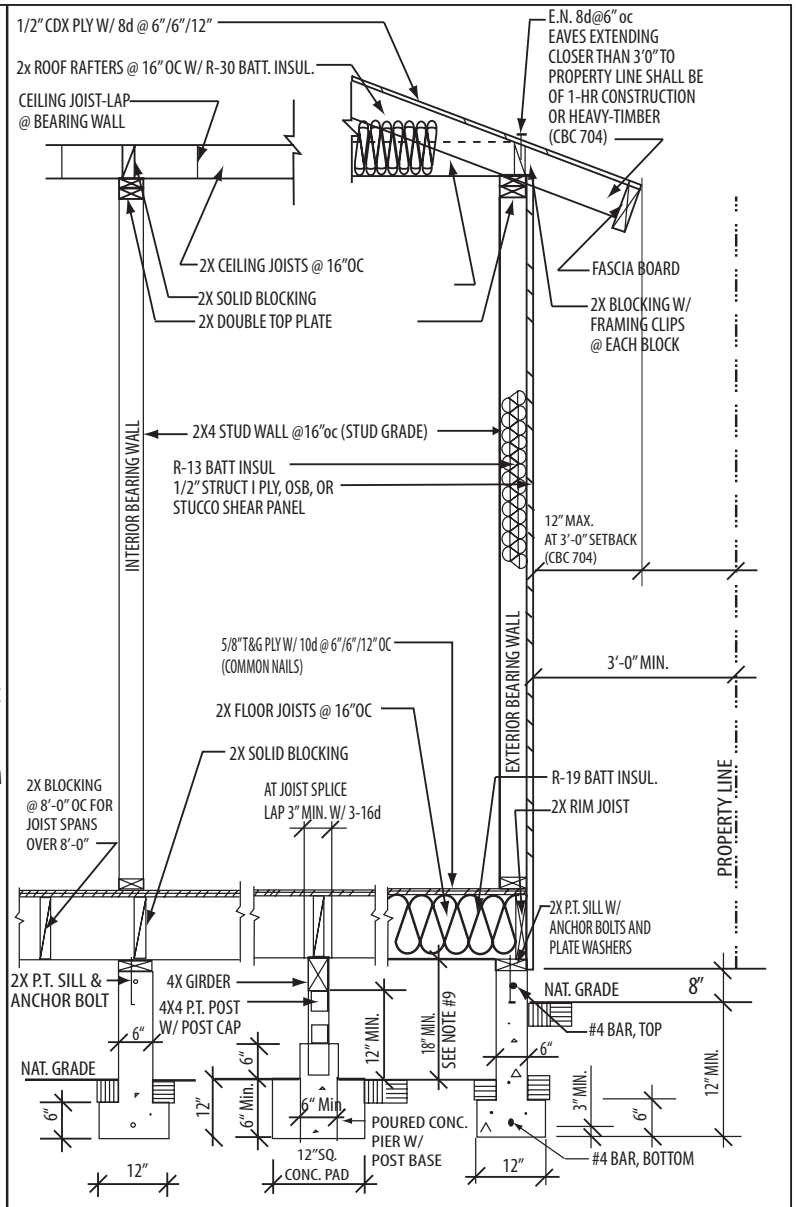
MIMIMUM CONSTRUCTION SPECIFICATIONS

TYPE V-B CONSTRUCTION IS A CLASSIFICATION OF BUILDINGS BY CONSTRUCTION MATERIALS AND METHODS. IT IS THE LEAST RESTRICTIVE PERMITTED BY THE CALIFORNIA BUILDING CODE AND INCLUDES LIGHT, WOOD-FRAME CONSTRUCTION. THIS SHEET IS FOR INFORMATION AND REFERENCE ONLY AND IS NOT A SUBSTITUTE FOR ACCURATE DRAWINGS PREPARED FOR EACH POPOSED CONSTRUCTION PROJECT.



NOTES: A. STUCCO SHALL BE PROVIDED WITH A CORROSION-RESTISTANT WEEP SCREED.

WALL SECTION: SLAB-ON-GRADE CONSTRUCTION
FOUNDATION DIMENSIONS SHOWN BASED ON NON-EXPANSIVE SOILS



WALL SECTION: RAISED FLOOR CONSTRUCTION
FOUNDATION DIMENSIONS SHOWN BASED ON NON-EXPANSIVE SOILS

1. Anchor bolts: 1/2" x10" embedded 7" and spaced 6'-0"oc with 3"x3"x1/16" plate washers, with minimum 2 anchor bolts per piece, located not more than 12" or less than 7 bolt diameters from each end of the piece.
2. All foundation plates or sills and sleepers on a concrete or masonry slab, which is in direct contact with earth, and sills that rest on concrete or masonry foundations, shall be pressure treated wood.
3. Minimum Concrete Strength: 2500psi.
4. Bearing walls and braced wall panels require continuous footings.
5. FOR EXPANSIVE SOIL: Refer to local jurisdiction requirements.
6. Where interior walls are shear wall panels, wall framing and sheathing shall extend to the roof sheathing.
7. Under floor areas shall be ventilated by approved mechanical means or by openings into the under-floor area walls. Such openings shall have a net area of not less than 1 square foot for each 150 square feet of under-floor area. Openings shall be located as close as possible to corners and provide cross ventilation. The openings shall be approximately equally distributed along the length of at least two sides. Corrosion resistant mesh w/ minimum 1/8" openings.
8. Enclosed attics and enclosed rafter spaces shall have cross ventilation for each separate space. The net free ventilating area shall not be less than 1/150 of the area of the space ventilated. The openings may be 1/300 of the area provided 50% of the opening area is provided with ventilators in the uppper portion at least 3' above the eave or cornice with the balance of the ventilators provided by eave or cornice vents. Provide baffles to prevent attic insulation from blocking eave vents.
9. For stem walls greater than 24" high: refer to local jurisdiction requirements.