ST-07

Wood Frame Prescriptive Provisions for One-Story Residential Wood Construction

(2019 CRC)

The purpose of this Wood Frame Prescriptive Provisions (WFPP) Information Bulletin is to assist owners, builders and others to meet the general requirements and specifications prescribed in the 2019 California Residential Code (CRC) for building one- and two-family dwellings and townhouses not more than one story in height with light frame wood construction. This document is not applicable for areas with snow loading in excess of 30 psf or walls and foundations where solid brick or stone veneers occur.

Light-frame wood frame construction is a type of construction where vertical and horizontal structural elements are primarily formed by a system of repetitive wood framing members. It is the least restrictive construction type permitted by the CRC and CBC. The WFPP Information Bulletin is for information and reference only and is not a substitute for accurate construction documents (i.e., drawings, plan specifications, etc.) prepared for each proposed construction project. Additional construction documents may be required when the scope of work exceeds the limits of light frame wood construction as prescribed by the CRC.

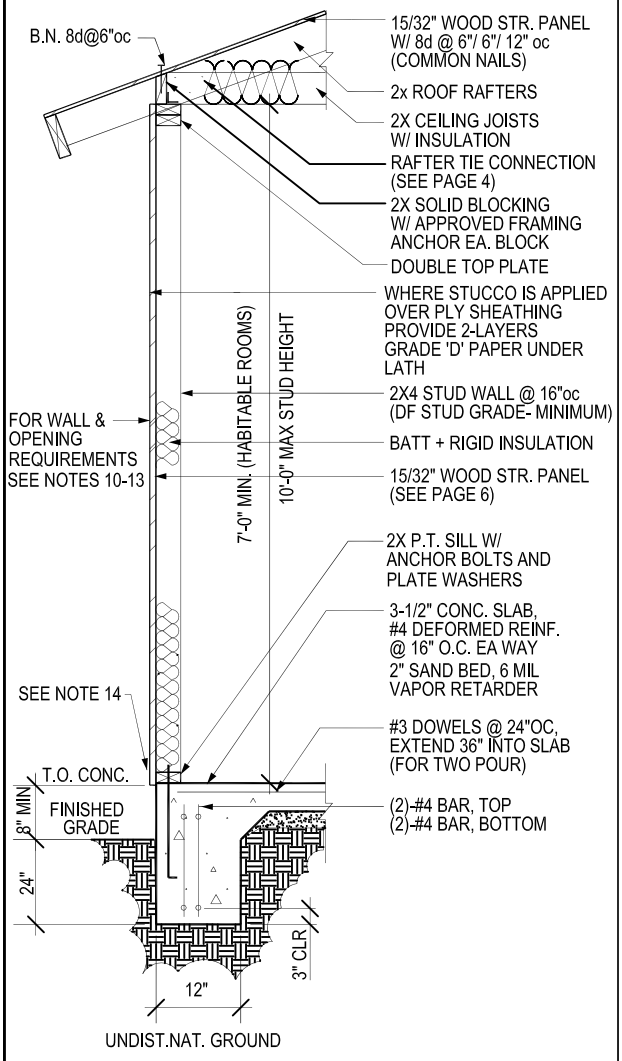
When portions of a building or structure are constructed of other than light-frame wood construction, exceed the limits of this WFPP Information Bulletin, or as required by other local ordinances, these portions and the supporting load path shall be designed by a registered design professional licensed in the State of California. This WFPP Information Bulletin may not be suitable in all cases. Where the proposed construction is located on a site with a slope steeper than 10% or has adverse soil conditions (e.g., expansive soil, liquefaction, flood hazard, etc.), a registered design professional licensed in the State of California should be consulted. The use of this WFPP Information Bulletin is permitted at the discretion of the Building Official on a case-by-case basis.

An automatic fire sprinkler system shall be installed in new one and two-family dwellings and townhouses per CRC R313.2. Installation of a fire sprinkler system may also be required in additions and alterations per the local jurisdiction.

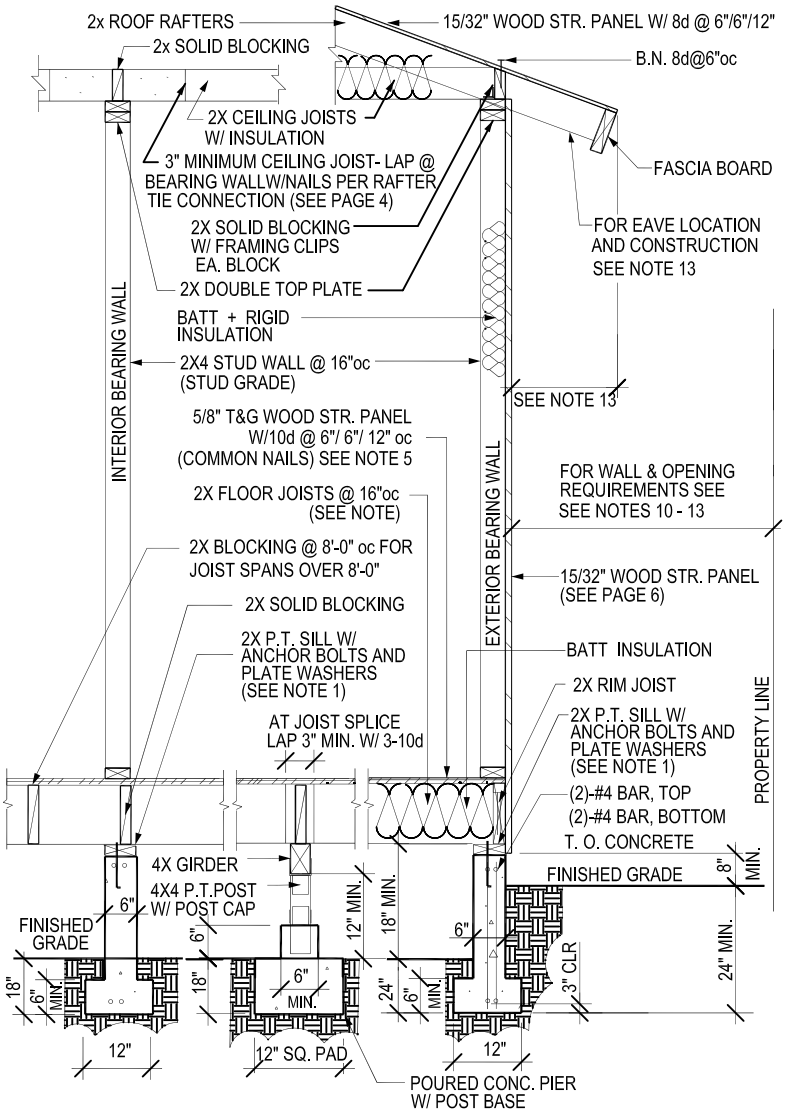
All work must comply with the California Energy Code (CEC) requirements for the climate zone within which the project resides.

For new construction and additions/alterations that increase the conditioned space, a minimum of 65-percent of construction and demolition waste shall be recycled or salvaged for reuse per 4.408.1 of the California Green Building Standards Code (CALGreen). Refer to local ordinances where more stringent requirements occur. For newly constructed one- or two- family dwellings with an attached private garage, provide accommodation for future installation and use of an electric vehicle charger per 4.106.4.1 of CALGreen.

For newly constructed one or two-family dwellings, a photo voltaic 9PV) system shall be installed per 150.1(c)14 of the California Energy Code. Consult the local jurisdiction for separate permitting processes for PV systems.



WALL SECTION: SLAB-ON-GRADE CONSTRUCTION



WALL SECTION: RAISED FLOOR CONSTRUCTION

NOTES:

1. Anchor bolts $\frac{1}{2}$" x 10" embedded 7" and spaced maximum 6' with 0.229" x 3" x 3"" plate washers, 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 preservative treated wood(AWPA U1) and field cut ends, notches, and drilled holes shall be field treated in accordance with AWPA M4. Fasteners (other than anchor bolts) in preservative treated wood or fire retardant treated wood shall be of hot dipped zinc coated galvanized steel or stainless steel.
3. Minimum concrete strength 2,500-psi.
4. Bearing walls and braced wall panels require continuous footings.
5. Where 23/32" thick T&G plywood is provided, 24" joist spacing may be used.
6. Where interior walls are shear walls, wall framing and sheathing shall extend to the roof sheathing. (See Page 6)
7. Footings on or adjacent to slopes shall meet the requirements of R403.1.7.
8. Walls separating units in townhouses shall be fire-resistance rated per R302.2 and provided with a parapet in accordance with R302.2.2. Walls separating two-family dwellings shall be fire-resistance rated per R302.3.
9. New construction located in the Very High Fire Hazard Severity Zone (VHFHSZ) must also incorporate the requirements of R337 into the design.
10. Exterior walls of dwellings and accessory structures closer than 5-ft. (non-sprinklered) / 3-ft. (sprinklered) to the property line shall be 1-hr fire-resistance rated construction.
11. No openings other than approved foundation vents shall be permitted in the exterior walls of dwellings and accessory buildings where the exterior wall is less than 3-ft. to the property line.
12. The area of exterior wall openings of non-sprinklered dwellings and accessory buildings located ≥ 3-ft. and < 5-ft. to the property line shall be limited to 25% of the wall area. Exterior wall openings are unlimited when exterior walls are located ≥ 5-ft. for non-sprinklered buildings and ≥ 3-ft. for sprinklered buildings.
13. Where gable or eave vents occur, eaves shall be of 1-hr fire-resistive construction on the underside when located between 2-ft. and 5-ft. from the property line for non-sprinklered buildings and between 2-ft. and 3-ft. from the property line for sprinklered buildings. Detached garages within 2-ft of a property line may have a maximum 4-inch eave, provided the eave does not extend over the property line and is allowed by the Zoning Code.
14. Exterior plaster (stucco) walls shall be provided with a corrosion resistant weep screed complying with R703.7.2.1
15. Insulation shall meet the prescriptive requirements of 2019 California Energy Code, Table 150.1-A.

ALLOWABLE SPANS FOR DF #2
ROOF RAFTERS (DF - LARCH)
Light Dead Load: up to 20psf (Total including roof)
Max. Roofing Load: 6 psf (Asphalt Shingles)
Live Load: 20 psf Δ⊟/240 (T-R802.4.1(2))

RAFTER SIZE	SPACING	ALLOWABLE SPAN
2 X 6	24"	10' - 4"
	16"	12' - 7"
	12"	14' - 7"
2 X 8	24"	13' - 0"
	16"	16' - 0"
	12"	18' - 5"
2 X 10	24"	15' - 11"
	16"	19' - 6"
	12"	22 - 6"
2 X 12	24"	18' - 6"
	16"	22' - 7"
	12"	26' - 0"

ALLOWABLE SPANS FOR DF #2
CEILING JOISTS (DF - LARCH)
Dead Load: 10 psf
Live Load : 20 psf
L/ Δ = 240 (T-R802.5.1(2))

JOIST SIZE	SPACING	ALLOWABLE SPAN
2 X 4	24"	7' - 3"
	16"	8' - 11"
	12"	9' - 10"
2 X 6	24"	10' - 8"
	16"	13' - 0"
	12"	15' - 0"
2 X 8	24"	13' - 6"
	16"	16' - 6"
	12"	19' - 1"
2 X 10	24"	16' - 5"
	16"	20' - 2"
	12"	23' - 3"

ALLOWABLE SPANS FOR DF #2
FLOOR JOISTS (DF - LARCH)
Light Dead Load : 20psf
Live Load : 40 psf
L/ Δ = 360 (T-R502.3.1(2))

JOIST SIZE	SPACING	ALLOWABLE SPAN
2 X 6	24"	7' - 6"
	16"	9' - 3"
	12"	10' - 8"
2 X 8	24"	9' - 6"
	16"	11' - 8"
	12"	13' - 6"
2 X 10	24"	11' - 8"
	16"	14' - 3"
	12"	16' - 5"
2 X 12	24"	13' - 6"
	16"	16' - 6"
	12"	19' - 1"

ALLOWABLE SPANS FOR DF #2 HEADERS FOR EXTERIOR BEARING WALLS
Max. Roof and Ceiling Dead Load: 20 psf
Max. Live Load: 20 psf (T-R602.7(1))

SIZE	12-ft. Building Width	NJ	24-ft. Building Width	NJ	36-ft. Building Width	NJ
2-2 X 6	6'-0"	1	4'-7"	1	3'-10"	1
2-2 X 8	7'-7"	1	5'-9"	1	4'-10"	2
2-2 X 10	9'-0"	1	6'-10"	2	5'-9"	2
2-2 X 12	10'-7"	1	8'-1"	2	6'-10"	2
3-2 X 8	9'-5"	1	7'-3"	1	6'-1"	1
3-2 X 10	11'-3"	1	8'-7"	1	7'-3"	2
3-2 X 12	13'-2"	1	10'-1"	2	8'-6"	2

a. Building width is perpendicular to ridge measured to exterior wall.
b. NJ - Number of Jack Studs required to support each end of header.

ALLOWABLE SPANS FOR DF #2 HEADERS FOR EXTERIOR BEARING WALLS
Max. Roof/ Ceiling Dead Load: 20 psf
Max. Live Load: 40 psf (Roof/Limited Storage Attic) (T-R602.7(1))

SIZE	12-ft. Building Width	NJ	24-ft. Building Width	NJ	36-ft. Building Width	NJ
2-2 X 6	5'-1"	1	3'-11"	2	3'-3"	2
2-2 X 8	6'-5"	1	5'-0"	2	4'-2"	2
2-2 X 10	7'-8"	2	5'-11"	2	4'-11"	2
2-2 X 12	9'-0"	2	6'-11"	2	5'-10"	2
3-2 X 8	8'-1"	1	6'-3"	2	5'-3"	2
3-2 X 10	9'-7"	1	7'-4"	2	6'-2"	2
3-2 X 12	11'-3"	2	8'-8"	2	7'-4"	2

a. Building width is perpendicular to ridge measured to exterior wall.
b. NJ - Number of Jack Studs required to support each end of header.

ALLOWABLE SPANS FOR DF #2 FLOOR GIRDERS SUPPORTING ONE FLOOR ONLY
Max. Floor Dead Load: 20 psf [1,2] (T-R602.7(2))

SIZE	12-ft Building Width	24-ft Building Width	36-ft Building Width
2-2X6	6'-1"	4'-4"	3'-6"
2-2X8	7'-9"	5'-5"	4'-5"
2-2X10	9'-2"	6'-6"	5'-3"
2-2X12	10'-9"	7'-7"	6'-3"
3-2X8	9'-8"	6'-10"	5'-7"
3-2X10	11'-5"	8'-1"	6'-7"
3-2X12	13'-6"	9'-6"	7'-9"

1. Building width is perpendicular to ridge measured to exterior walls.
2. Minimum 4x post.

ALLOWABLE SPANS FOR DF #2 HEADER FOR INTERIOR BEARING WALLS
Max. Roof/ Ceiling Dead Load: 20 psf
Max. Live Load: 20 psf (T-R602.7(2))

SIZE	12-ft. Building Width	NJ	24-ft. Building Width	NJ	36-ft. Building Width	NJ
2-2 X 6	6'-1"	1	4'-4"	1	3'-6"	1
2-2 X 8	7'-9"	1	5'-5"	1	4'-5"	2
2-2 X 10	9'-2"	1	6'-6"	2	5'-3"	2
2-2 X 12	10'-9"	1	7'-7"	2	6'-3"	2
3-2 X 8	9'-8"	1	6'-10"	1	5'-7"	1
3-2 X 10	11'-5"	1	8'-1"	1	6'-7"	2
3-2 X 12	13'-6"	1	9'-6"	2	7'-9"	2

a. Building width is perpendicular to ridge measured to exterior wall.
b. NJ - Number of Jack Studs required to support each end of header.

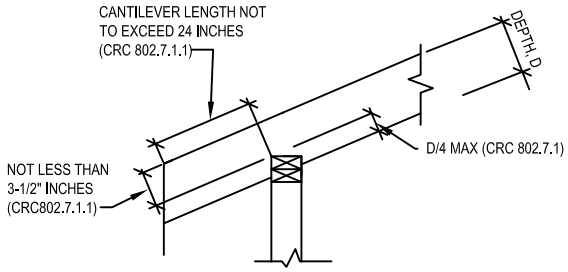
RAFTER TIE CONNECTION
ROOF LIVE LOAD 20 psf [Table R802.5.2]
Minimum number of 16d common nails at rafter tie connection[1]

Rafter Slope	Tie Spacing (in)	Roof Span (ft.)			
		12	20	28	36
3 : 12	16	5	8	10	13
	24	7	11	15	19
4 : 12	16	4	6	8	10
	24	5	8	12	15
5 : 12	16	3	5	6	8
	24	4	7	9	12

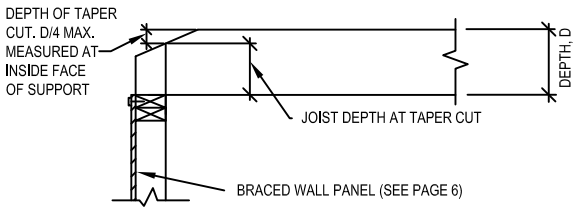
1. When nails are clinched, nailing shall be permitted to be reduced 25 percent.

ALLOWABLE SPANS AND LOADS FOR WOOD STRUCTURAL PANEL SHEATHING AND SINGLE-FLOOR GRADES CONTINUOUS OVER TWO OR MORE SPANS WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS
NOTE: APPLIES TO PANELS 24" OR WIDER
(T503.2.1.1(1))

SHEATHING GRADES		ROOF				FLOOR
PANEL SPAN RATING Roof/ Floor Span	MINIMUM PANEL THICKNESS (INCHES)	MAXIMUM SPAN (INCHES)		LOADS (PSF)		MAX. SPAN (INCHES) Panel edges with tongue and groove joints or with blocking
		EDGE SUPPORT	NO EDGE SUPPORT	TOTAL LOAD	LIVE LOAD	
24/ 0	3/ 8	24	20	40	30	
24/ 16	7/ 16	24	24	50	40	16
32/ 16	15/ 32, 1/ 2	32	28	40	30	16
40/ 20	19/ 32, 5/ 8	40	32	40	30	20
48/ 24	23/ 32, 3/ 4	48	36	45	35	24



RAFTER NOTCH (FIGURE R802.7.1.1)



CEILING JOIST TAPER CUT (FIGURE R802.7.1.2)

TABLE R602.10.3(3)
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

***SOIL CLASS D_b** ***WALL HEIGHT = 10 FT** ***10 PSF FLOOR DEAD LOAD** ***15 PSF ROOF/CEILING DEAD LOAD** ***BRACED WALL LINE SPACING ≤ 25 FEET**			**MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE [a,f]**			
Seismic Design Category (SDC)	Story Location	Braced Wall Line Length	METHOD LIB [d]	METHOD GB AND PCP	METHOD WSP	METHODS CSWSP, CS-G,CS-PF
SDC D_0		10	NP	5.6	4	1.6
		20	NP	11	4	3.1
		30	NP	16.6	5.4	4.6
		40	NP	22	7.2	6.1
		50	NP	27.6	9	7.7
SDC D_1		10	NP	6	4	1.7
		20	NP	12	4	3.4
		30	NP	18	6	5.1
		40	NP	24	8	6.8
		50	NP	30	10	8.5
SDC D_2		10	NP	8	2.5	2.1
		20	NP	16	5	4.3
		30	NP	24	7.5	6.4
		40	NP	32	10	8.5
		50	NP	40	12.5	10.6

a. Linear Interpolation shall be permitted.
b. Wall bracing lenghts are based on a soil site class "D". Interpolation of bracing length between the Sds values associated with the seismic design categories shall be permitted when a site specific Sds value is determined in accordance with section 1613.2 of the *California Building Code*.
c.Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shal lbe in accordance with this table.
d. Method LIB shall have gypsum board fastened to not less than one side with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fastener at panel edges shall not exceed 8 inches.
e. Methods PFG and CS-SFB do not apply In Seismic Design Categories D_0,D_1, and D_2.
f. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1.
g. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D_0,D_1, and D_2. Methods DWB, SFB, PBS, and HPS are not permitted in D_0,D_1, and D_2.

FASTENING SCHEDULE (PARTIAL) SEE R602.3(1)) & XXXX AMENDMENTS

TABLE R602.3(1) FASTENING SCHEDULE

Item	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER [a,b,c]	SPACING AND LOCATION
	Roof		
1	Blocking between ceiling joists or rafters to top plate	4-8d box (2 1/2" x O.113 ") or 3-8d common (2 1/ 2"x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	Toe nail
2	Ceiling joists to top plate	4-8d box (2 1/2"x 0.113"); or 3-8d common (2 1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	Per joist, toe nail
3	Ceiling joist not attached to parallel rafter, laps over partitions (see Section R802.5.2 and Table R802.5.2)	4-10d box (3"x 0.128"); or 3-16d common (3 1/2" x 0.162"); or 4-3" x 0.131" nails	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (see Section R802.5.2 and Table R802.5.2)[j]	Table R802.5.2	Face nail
5	~~Collar tie to rafter, face nail or 1 1/4" x 20 ga. ridge strap to rafter~~	~~4-10d box (3"x 0.128"); or 3-10d common (3" x O.148"); or 4-3" x 0.131" nails~~	~~Face nail each rafter~~
6	Rafter or roof truss to plate	3-16d box nails (3 1/2" x 0.135"); or 3-10d common nails (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	2 toe nails on one side and 1 toe nail on opposite sidie of each rafter or truss [i]
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam	4-16d (3 1/2"x 0.135"); or 3-10d common (3" x O.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	Toe nail
		3-16d box 3 1/2 " x 0..135"); or 2-16d common (3 1/2 " x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	End nail
	Wall		
8	Stud to stud (not at braced wall panels)	16d common (3 1/2" x 0.162")	24" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0..131" nails	16" o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d box (3 1/2" x 0.135"); or 3" x 0..131" nails	12" o.c. face nail
		16d common (3 1/2" x 0.162")	16" o.c. face nail
10	Built-up header (2" to 2" header with 1/2" spacer)	16d common (3 1/2" x 0.162")	16" o.c. each edge face nail
		16d box (3 1/2" x 0.135")	12" o.c. each edge face nail
11	Continuous header to stud	5-8d box (2 1/2" x 0.113"); or 4-8d common (2 1/2" x 0.131"); or 4-10d box (3" x 0.128")	Toe nail
12	Top plate to top plate	16d common (3 1/2" x 0.162")	16" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0..131" nails	12" o.c. face nail
13	Double top plate splice	8-16d common (3 1/2" x 0.162"); or 12-16d box (3 1/2" x 0.135"); or 12-10d box (3" x 0.128"); or 12-3" x 0.131" nails	Face nail on each side of end joint (minimum 24 "lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 1/2" x 0.162")	16" o.c. face nail
		16d box (3 1/2" x 0.135"); or 3" x 0.131" nails	12" o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking (at braced wall panel)	3-16d box (3 1/2" x 0.135"); or 2-16d common (3 1/2" x 0.162"); or 4-3" x 0.131" nails	3 each 16" o.c. face nail 2 each 16" o.c. face nail 4 each 16" o.c. face nail
16	Top or bottom plate to stud	4-8d box (2 1/2" x 0.113"); or 3-16d box (3 1/2" x 0.135"); or 4-8d common (2 1/2" x 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	Toe nail
		3-16d box (3 1/2" x 0..135"); or 2-16d common (3 1/2" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	End nail
17	Top plates, laps at corners and intersections	3-10d box (3" x 0.128"); or 2-16d common (3 1/2" x 0.162"); or 3-3" x 0.131" nails	Face nail
18	1" brace to each stud and plate	3-8d box (2 1/2" x 0.113"); or 2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0.128"); or 2 staples 1 3/4"	Face nail
19[k]	1" x 6" sheathing to each bearing	3-8d box (2 1/2" x 0.113"); or 2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0. 128"); or 2 staples, 1" crown, 16 ga., 1 3/4" long	Face nail
20[k]	1" x 8" and wider sheathing to each bearing	3-8d box (2 1/2" x 0.113"); or 3-8d common (2 1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 3 staples, 1" crown, 16ga., 1 3/4" long	Face nail
		Wider than 1" x 8" 4-8d box (2 1/2" x 0.113"); or 3-8d common (2 1/2" x 0.131"); or 3-10d box (3" x 0.128"); or 4 staples, 1" crown, 16i ga., 1 3/4" long	

FASTENING SCHEDULE (PARTIAL) SEE R602.3(1)) & XXXX AMENDMENTS

Item	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER [a,b,c]	SPACING AND LOCATION: Edges (inches)[h]	SPACING AND LOCATION: Intermediate supports[c,e] (inches)
	Floor			
21	Joist to sill, top plate or girder	4-8d box (2 1/2" x 0.113"); or 3-8d common (2 1/2" x 0. 131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	Toe nail	
22	Rim joist, band joist or blocking to sill or top plate (roof applications also)	8d box (2 1/2" x 0.113")	4" o.c. toe nail	
		8d common (2 1/2" x 0.131"); or 10d box (3" x 0.128"); or 3" x 0.131" nails	6" o.c. toe nail	
23[k]	1" x 6" subfloor or less to each joist	3-8d box (2 1/2" x 0.113"); or 2-8d common (2 1/2" x 0. 131"); or 3-10d box (3" x 0.128"); or 2 staples, 1" crown, 16 ga., 1 3/4" long	Face nail	
24	2" subfloor to joist or girder	3-16d box (3 1/2" x 0.135"); or 2-16d common (3 1/2" x D.162")	Blind and face nail	
25	2" planks (plank & beam-floor & roof)	3-16d box (3 1/2" x 0.135"); or 2-16d common (3 1/2" x D.162")	At each bearing, face nail	
26	Band or rim joist to joist	3-16d common (3 1/2" x D.162") 4-10 box (3" x 0.128"), or 4-3" x 0.131" nails; or 4-3" x 14 ga. staples, 7/16" crown	End nail	
27	Built-up girders and beams, 2-inch lumber layers	20d common (4" x 0.192"); or	Nail each layer as follows: 32"	
		10d box (3" x 0.128"); or 3" x 0.131" nails	24" o.c. face nail at top and bottom staggered on opposite	
		And: 2-20d common (4" x 0.192"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails	Face nail at ends and at each splice	
28	Ledger strip supporting joists or rafters	4-16d box (3 1/2" x 0.135"); or 3-16d common (3 1/2" x D.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails	At each joist or rafter, face nail	
29	Bridging or blocking to joist	2-10d box (3" x 0.128"), or 2-8d common (2 1/2" x 0. 131"; or 2-3" x 0.131") nails	Each end, toe nail	
	Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3)) for wood structural			
30	3/8" - 1/2"	6d common (2" x 0.113") nail (subfloor, wall)[f] 8d common (2 1/2" x 0.131") nail (roof); or RSRS-01 (2 3/8" x 0.113") nail (roof)	6	12[f]
31	19/32" - 1"	8d common nail (2 1/2" x 0.131"); or RSRS-01 (2 3/8" x 0.113") nail (roof)	6	12[f]
32	1 1/8" - 1 1/4"	10d common (3" x 0.148") nail; or 8d (2 1/2" x 0.131") deformed nail	6	12[f]
	Other wall sheathing[d]			
33[g]	1/2" structural cellulosic fiberboard sheathing	1 1/2" galvanized roofing nail, 7/16" head diameter, or 1 1/4" long 16 ga staple with 7/16" or 1" crown	3	6
34[g]	25/32" structural cellulosic fiberboard sheathing	1 3/4" galvanized roofing nail, 7/16" head diameter, or 1 1/2"" long 16 ga. staple with 7/16" or 1" crown	3	6
35[g]	1/2" gypsum sheathing[d]	1 1/2" galvanized roofing nail; staple galvanized, 1 1/2" long; 1 1/4" screws, Type W or S	7	7
36[g]	5/8" gypsum sheathing[d]	1 3/4" galvanized roofing nail; staple galvanized, 1 5/8" long; 1 5/8" screws, Type W or S	7	7
	Wood structural panels, combination subfloor underlayment to framing			
37	3/4" and less	6d deformed (2" x 0.120") nail; or 8d common (2 1/2" x 0.131") nail	6	12
38	7/8" - 1"	8d common (2 1/2" x 0.1331") nail; or 8d deformed (2 1/2" x 0.1.20") nail	6	12
39	1 1/8" - 1 1/4"	10d common (3" x 0.148") nail; or 8d deformed (2 1/2" x 0.1.20") nail	6	12

a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.

b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).

f. For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 6 inches on center where the ultimate design wind speed is less than 130 mph and shall be spaced 4 inches on center where the ultimate design wind speed is 130 mph or greater but less than 140 mph.

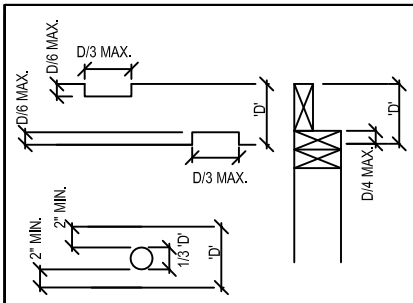
g. Gypsum sheathing shall conform to ASTM C1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C208.

h. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

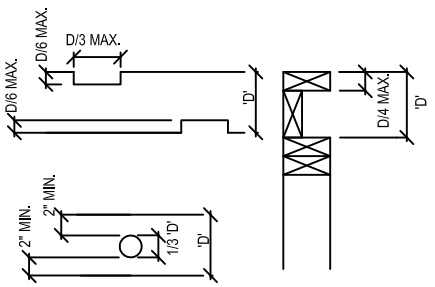
i. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

j. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.

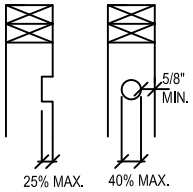
k. Use of staples in roof, floor, subfloor, & braced wall panels shall be prohibited in Seismic Design Categorpy D_0, D_1, or D_2



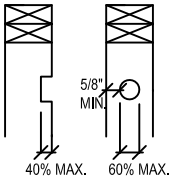
NOTCHING & BORING FLOOR JOIST
(NOTCHING NOT PERMITTED IN MIDDLE 1/3 JOIST SPAN)



NOTCHING & BORING RAFTERS AND CEILING JOIST
(NOTCHING NOT PERMITTED IN MIDDLE 1/3 JOIST SPAN)
(HOLES SHALL NOT BE LOCATED WITHIN 2 IN OF A NOTCH)

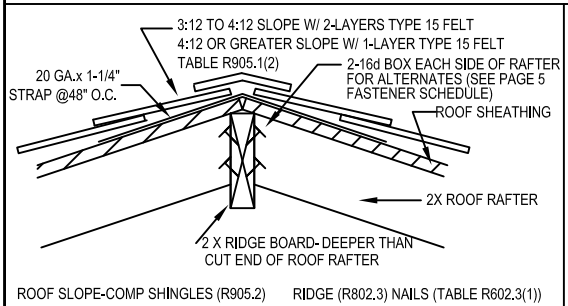


EXTERIOR WALLS AND
BEARING PARTITIONS

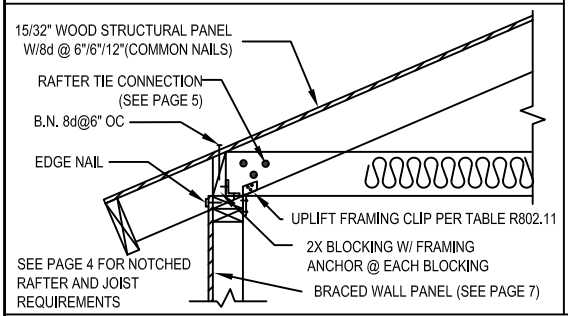


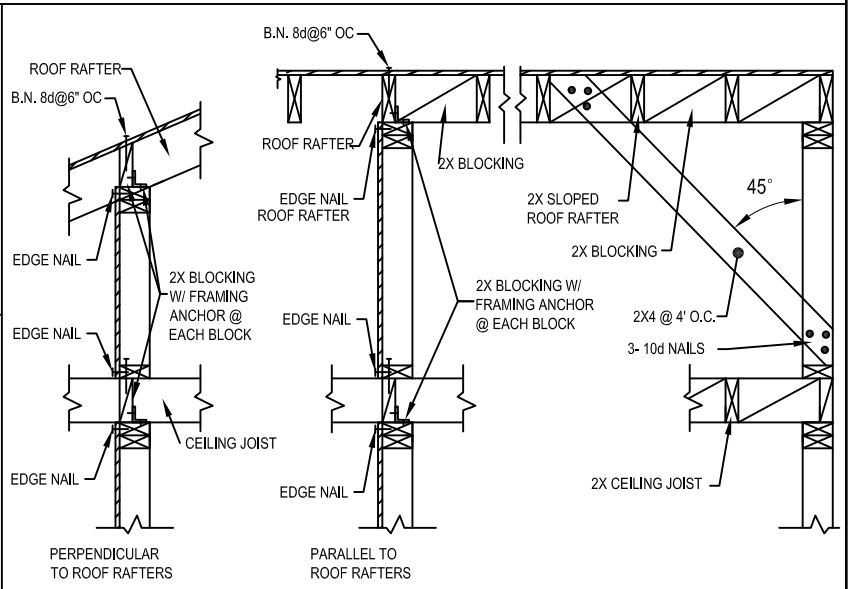
NON-BEARING PARTITIONS

EXTERIOR WALLS AND BEARING WALLS MAY HAVE BORED HOLES BETWEEN 40 AND 60 PERCENT WHEN STUD IS DOUBLED AND NOT MORE THAN TWO SUCCESSIVE DOUBLE STUDS ARE BORED (R502.1, R802.7.1 R602.6)

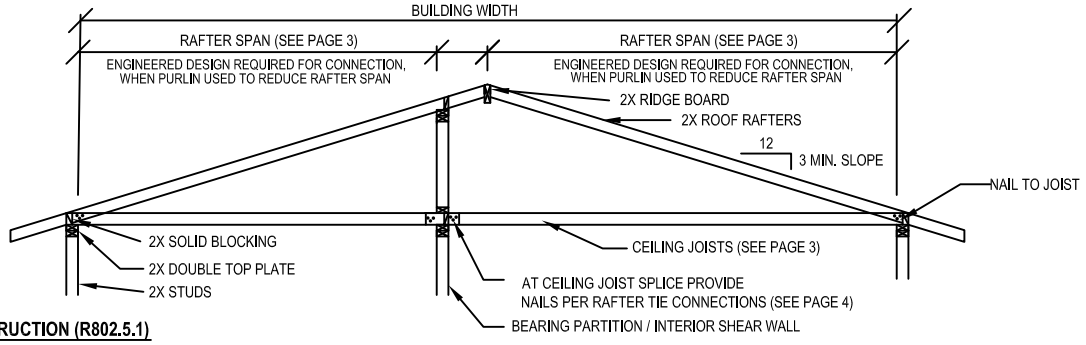


ROOF SLOPE-COMP SHINGLES (R905.2) RIDGE (R802.3) NAILS (TABLE R602.3(1))

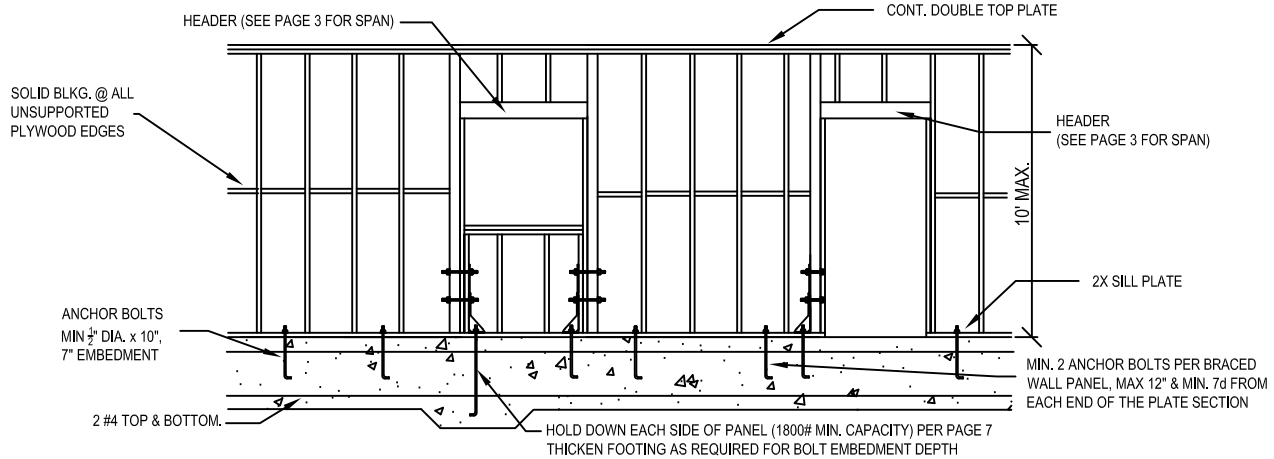




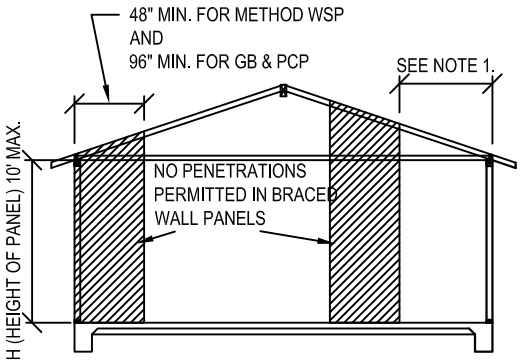
INTERIOR SHEAR WALL AT ATTIC **GABLE SUPPORT**

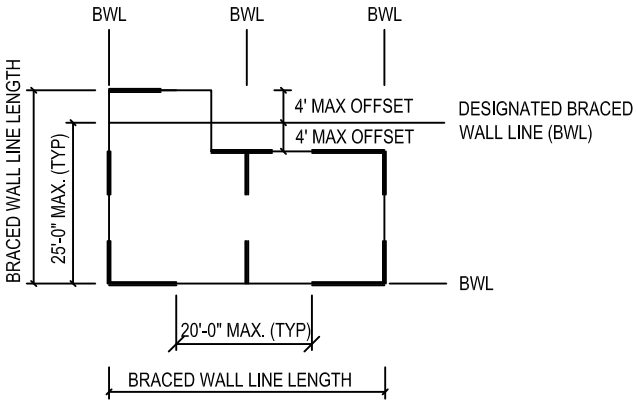


BRACED RAFTER CONSTRUCTION (R802.5.1)



WALL FRAMING

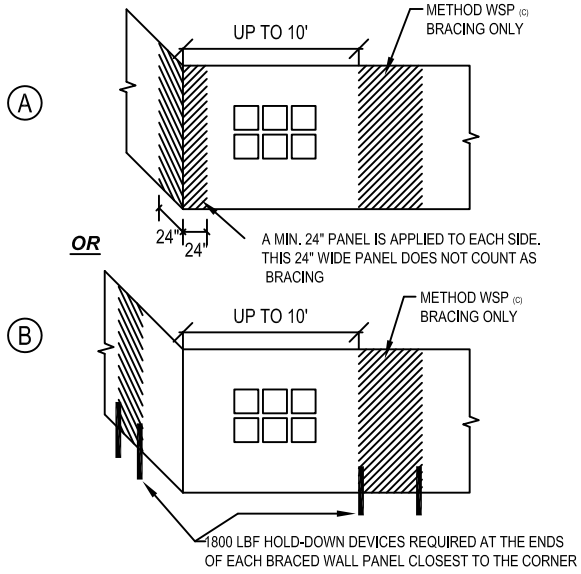




BRACED WALL PANEL REQUIREMENTS

NOTES:

1. BRACED WALL LINES AT EXTERIOR WALLS SHALL HAVE A BRACED WALL PANEL LOCATED AT EACH END OF THE BRACED WALL LINE.
   ***EXCEPTION*:** FOR METHOD WSP (C), THE BRACED WALL PANEL SHALL BE PERMITTED TO BEGIN NO MORE THAN 10 FEET FROM EACH END OF THE BRACED WALL LINE PROVIDED:



2. MIXING BRACING METHODS WITHIN A BRACED WALL LINE IS NOT PERMITTED.
3. INTERIOR BRACED WALL PANEL SHALL BE LOCATED NOT MORE THAN 10-FT FROM THE END OF A BRACED WALL LINE AS DEMONSTRATED IN FIGURE R602.10.2.2 OF THE CRC.
4. HOLD-DOWN DEVICE SHALL BE APPROVED BY CURRENT EVALUATION SERVICE REPORT (ESR) OR A NATIONALLY RECOGNIZED AGENCY REPORT W/ 25% CAPACITY REDUCTION.

BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

Roof/ Ceiling Dead Load = 15-psf Wall Height = 10-ft Floor Dead Load = 10-psf Braced Wall Line Spacing = 25-ft.			Minimum Total Length of Braced Wall Panels Required Along each Braced Wall Line (ft.)	
Seismic Design Category (SDC)	Story Location	Braced Wall Line Length	METHOD GB(a,d) AND PCP (b,d)	METHOD WSP (C)
SDC D_0, D_1,D_2		10	8	4
		20	16	5
		30	24	7.5
		40	32	10
		50	40	12.5

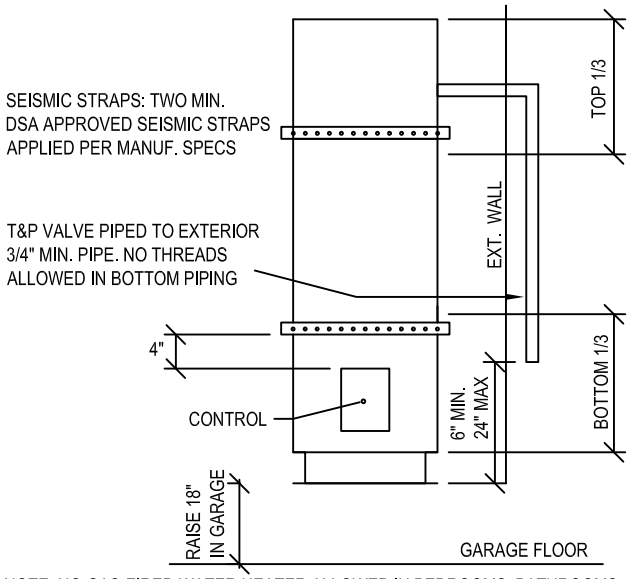
a. Method GB: $\frac{1}{2}$" in minimum thickness gypsum board with 1-$\frac{1}{2}$ inch galvanized roofing nail, or 1-$\frac{1}{4}$ in screws, Type W or S for exterior sheathing, or 5d cooler nail, 0.086 inch diameter , 1-$\frac{5}{8}$ inch head for interior gypsum board.Maximum fastener spacing shall be 7 inch o.c. at panel edges, including top and bottom plates, and along intermidiate supports. When method GB panels are applied to only one face of a braced wall panel, the mInImum total length In the table shall be doubled.

b. Method PCP: $\frac{7}{8}$" Inch mInImum thIckness Portland cement plaster wIth 1-$\frac{1}{2}$ inch,11-gage,$\frac{7}{16}$ in head nails at 6 in spacing (16 inch stud spacIng requIred). $\frac{1}{2}$ Inch mInImum gypsum wallboard shall be Installed on the sIde of the wall opposIte the bracIng material,except when the minimum total length of braced wall panel in the Table is multiplied by a factor 1.5.

c.Method WSP : $\frac{15}{32}$ inch minimum thickness wood structural panel with 8d common (2-1/2 inch x 0.131 inch) nails at 6 inch spacing along panel edges, 12 inch spacing at intermediate supports, and $\frac{3}{8}$ inch distance to panel edge. $\frac{1}{2}$ inch minimum gypsum wall board shall be installed on the side of the wall opposite the bracing material, except when the minimum total length of braced wall panel in the Table is multiplied by a factor of 1.5.

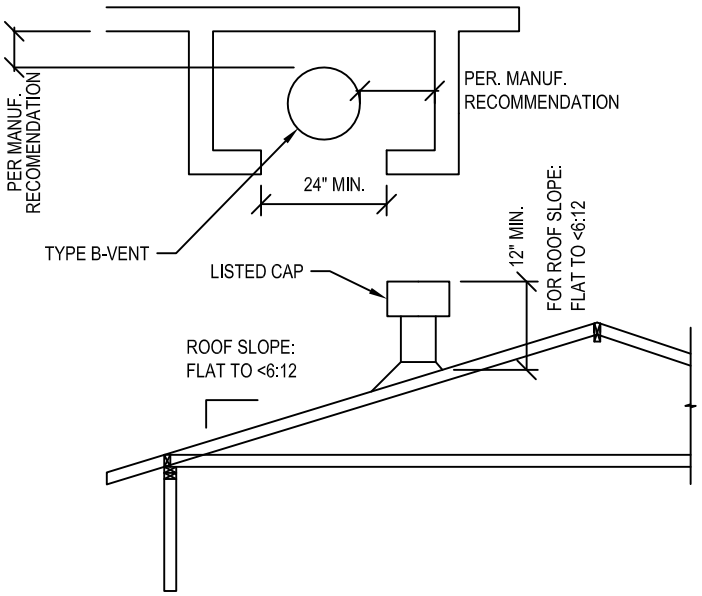
d.Method GB and PCP braced wall panel height to width ratio (h/w) shall not exceed 1:1

e.Multiply required braced wall panel lengths specified in the Table by 1.2 when combined Roof Ceiling Dead Load is between 15 psf and 25 psf.

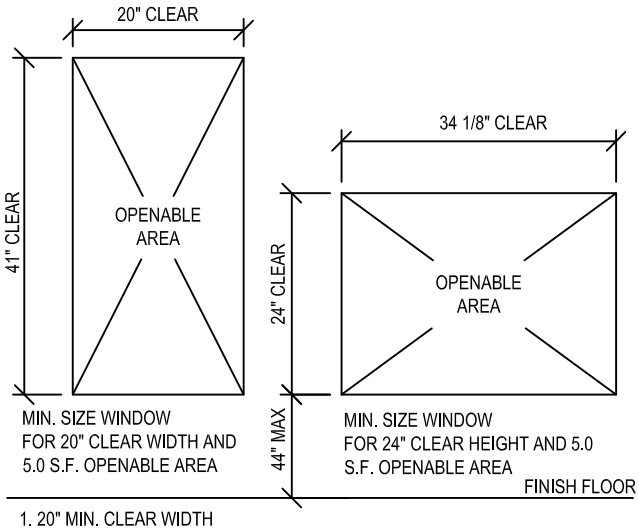


NOTE: NO GAS-FIRED WATER HEATER ALLOWED IN BEDROOMS, BATHROOMS, CLOTHES CLOSETS, OR ANY SPACE OPENING INTO A BEDROOM OR BATHROOM.

WATER HEATERS (CPC 507.2)

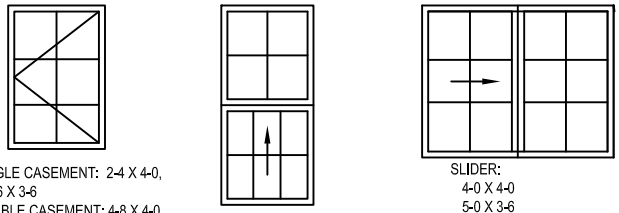


WATER HEATER VENT AND ACCESS REQUIREMENTS



1. 20" MIN. CLEAR WIDTH
2. 24" MIN. CLEAR HEIGHT
3. 5.0 SF MIN. OPENABLE AREA AT GRADE-FLOOR ONLY,5.7 SF MIN. ELSEWHERE.

THE FOLLOWING WINDOW SIZES WILL BE THE MINIMUM ALLOWED FOR EGRESS, UNLESS MANUFACTURER DATE IS SUPPLIED



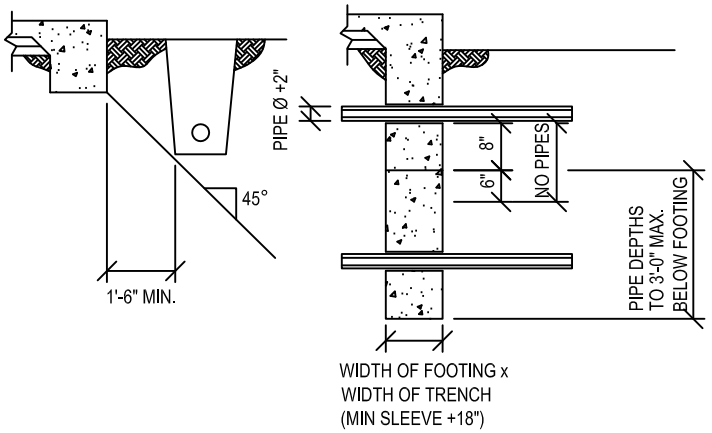
SINGLE CASEMENT: 2-4 X 4-0,
2-6 X 3-6
DOUBLE CASEMENT: 4-8 X 4-0
CASEMENT/ FIXED COMBO: 7-0 X 4-0
OTHER WINDOW TYPES:
AWNING & BAY W/ FIXED CENTER:
NONE W/O MANUF. DATA

SINGLE/ DOUBLE HUNG:
3-0 X 5-0, 3-0 X 5-6 ,3-4 X 5-0,
3-8 X 5-0, 4-0 X 5-0
SINGLE/ FIXED COMBO: NONE W/O
MANUF. DATA

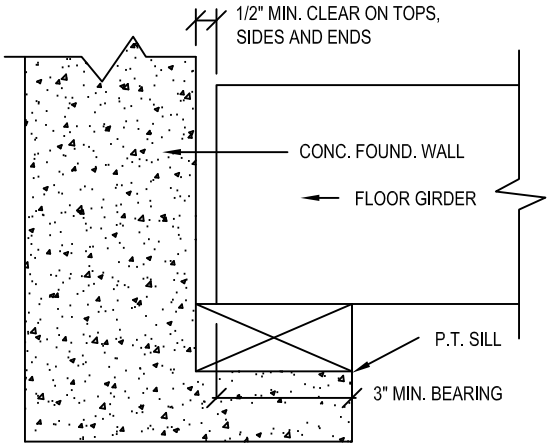
SLIDER:
4-0 X 4-0
5-0 X 3-6
6-0 X 3-0
SLIDER/ FIXED COMBO:
8-0 X 4-0
10-0 X 4-0
12-0 X 3-0

NOTE: SIZES ARE TAKEN FROM DATA SUPPLIED BY WINDOW MANUFACTURERS. HOWEVER, THESE ARE GENERAL DIMENSIONS AND MUST BE VERIFIED WITH ACTUAL WINDOWS INSTALLED TO MEET MINIMUM EGRESS REQUIREMENTS.

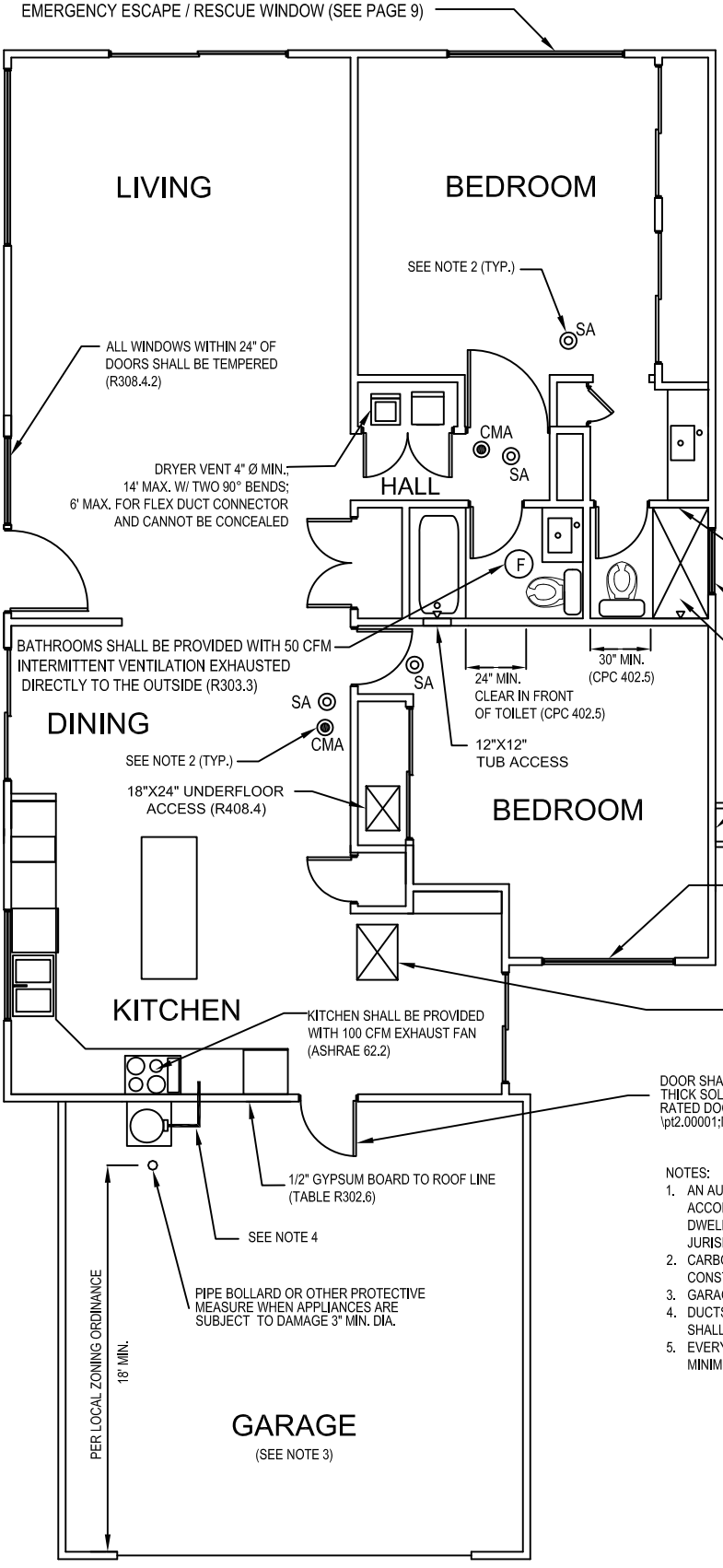
EMERGENCY ESCAPE/ RESCUE OPENING (R310)



TRENCHES AT FOOTINGS



GIRDER (R317.1 / R502.6)



MINIMUM ROOM DIMENSIONS: (R304 & R305)

1. HABITABLE ROOMS SHALL HAVE A FLOOR AREA OF NOT LESS THAN 70 SF.
2. HABITABLE ROOMS SHALL NOT BE LESS THAN 7 FT. IN ANY HORIZONTAL DIMENSION.
3. HABITABLE SPACE AND HALLWAYS SHALL HAVE A CEILING HEIGHT NOT LESS THAN 7 FT. BATHROOMS, TOILET ROOMS, AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6' - 8".

LIGHT: (R303) ALL ROOMS REQUIRE NATURAL LIGHT BY MEANS OF EXTERIOR WINDOWS OR SKYLIGHTS MIN. 8% OF THE FLOOR AREA OF THE ROOM.

VENTILATION: (R303) ALL ROOMS REQUIRE NATURAL VENTILATION BY MEANS OF OPENABLE WINDOWS MIN. 4% OF THE FLOOR AREA OF THE ROOM. BATHROOMS, WATER CLOSET COMPARTMENTS AND SIMILAR ROOMS SHALL BE PROVIDED WITH AGGREGATE GLAZING AREA IN WINDOWS OF NOT LESS THAN 3 SQ. FT. ONE HALF OF WHICH MUST BE OPENABLE WHEN MECHANICAL VENTILATION IS NOT PROVIDED.

UNDER-FLOOR SPACES SHALL BE VENTILATED BY OPENINGS INTO THE UNDER-FLOOR SPACE EXTERIOR WALLS. SUCH OPENINGS SHALL HAVE A NET AREA OF NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER-FLOOR AREA. ONE VENTILATION OPENINGS SHALL BE LOCATED WITHIN 3-FT. OF EACH CORNER OF THE BUILDING AND PROVIDE CROSS VENTILATION. VENTILATION OPENINGS SHALL BE COVERED WITH CORROSION RESISTANT MESH W/ LEAST DIMENSION NOT EXCEEDING 1/4".

THE NET FREE VENTILATING AREA OF ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED, EXCEPT THAT REDUCTION OF TOTAL THE AREA TO 1/300 IS PERMITTED PROVIDED THAT AT LEAST 40%-50% OF VENTILATORS LOCATED IN THE UPPER PORTION OF (3-FEET MAX BELOW RIDGE OR HIGHEST POINT) WITH THE BALANCE OF THE REQUIRED VENTILATION IN THE LOWER ONE THIRD OF THE ATTIC SPACE. ADDITIONALLY A CLASS I OR CLASS II VAPOR BARRIER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING IN CLIMATE ZONES 14 AND 16. A MINIMUM OF 1-INCH CLEARANCE SHALL BE PROVIDED BETWEEN THE INSULATION AND ROOF SHEATHING.

NOTES:

1. AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION R313.3 OR NFPA 13D FOR A NEW ONE- AND TWO-FAMILY DWELLING. INSTALL IN ADDITIONS AND ALTERATIONS AS REQUIRED BY THE LOCAL JURISDICTION. (R313)
2. CARBON MONOXIDE ALARMS (CMA) AND SMOKE ALARMS (SA) ARE REQUIRED FOR ALL NEW CONSTRUCTION, ALTERATIONS, REPAIRS OR ADDITIONS (R314)
3. GARAGE FLOOR SURFACE SHALL BE OF APPROVED NON-COMBUSTIBLE MATERIAL. (R309)
4. DUCTS PENETRATING WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MIN. 26 GAGE SHEET STEEL OR APPROVED MATERIAL.(R302.5)
5. EVERY INTERIOR DOOR IN A DOORWAY THROUGH WHICH OCCUPANTS PASS SHALL HAVE A MINIMUM WIDTH OF 32"