

## **WOOD FRAME PRESCRIPTIVE PROVISIONS ONE STORY RESIDENTIAL CONSTRUCTION ONLY**

**(Formerly known as Type V Sheet)**

The wood frame prescriptive provisions are for one and two family dwellings and townhouses of wood frame construction, not exceeding one story in height. This Information Bulletin is for information and reference only and is not a substitute for accurate drawings prepared for each proposed construction project.

LARC refers to the Los Angeles City Residential Code. The number following R references the code section within the Los Angeles City Residential Code.

All buildings erected using provisions detailed herein must comply with restrictions listed below:

- a) Roof and floor boundary elements shall not cantilever past exterior wall line(s) below.
- b) The building is within all of the requirements of Section R301.2.2.2.5 for being considered as regular.

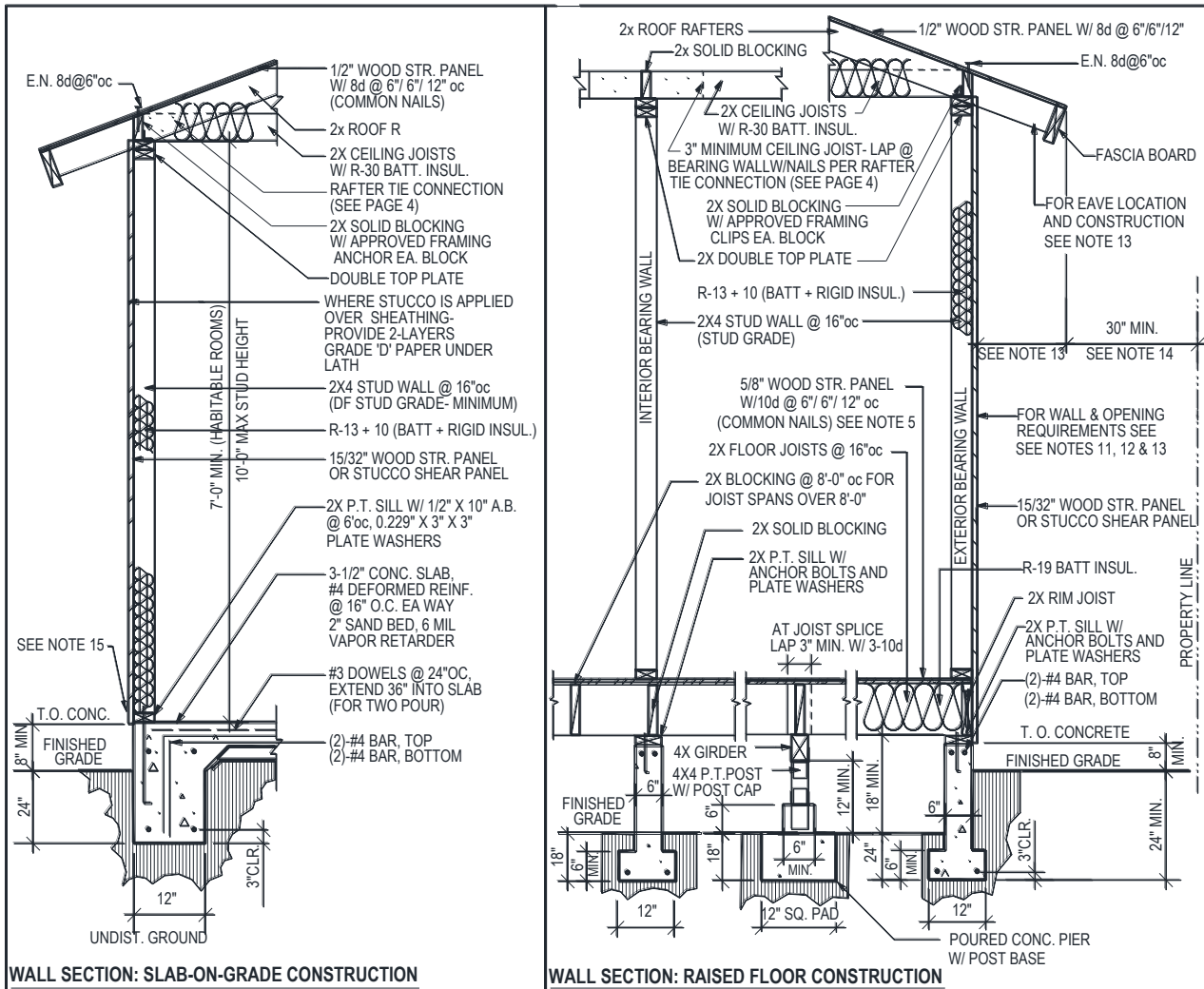
### **FOOTINGS ON EXPANSIVE SOILS**

Footing systems on expansive soil shall be constructed in a manner that will minimize damage to the structure from movement of the soil. All soil in the City of Los Angeles is considered expansive unless proven otherwise by an approved soils report.

1. Depth of footings below the natural and finished grades shall not be less than 24 inches for exterior and 18 inches for interior footings.
2. Exterior walls and interior bearing walls shall be supported on continuous footings.
3. Footings shall be reinforced with four ½-inch diameter deformed reinforcing bars. Two bars shall be placed 4 inches from the bottom of the footing and two bars within 4 inches from the top of the footing. Reinforcement shall have a minimum 3-inch concrete cover for concrete cast against earth and reinforcement not exceeding 5/8-inch shall have minimum 1-1/2-inch concrete cover when not cast against earth.
4. Concrete floor slabs on grade shall be placed on a 4-inch fill of coarse aggregate or on a 2-inch sand bed covered with a minimum 6 mil moisture barrier membrane. The slabs shall be at least 3-1/2 inches thick and shall be reinforced with ½" diameter deformed reinforcing bars. Reinforcing bars shall be spaced at intervals not exceeding 16 inches each way.
5. The soil below an interior concrete slab shall be saturated with moisture to a depth of 18 inches prior to placing the concrete.
6. All drainage adjacent to footings shall be conducted away from the structure by a 3-ft wide sloped apron draining into an approved non-erosive device.

### **ENERGY REQUIREMENTS**

All work must comply with the State of California Title 24 Energy Requirements.



**WALL SECTION: SLAB-ON-GRADE CONSTRUCTION**

**WALL SECTION: RAISED FLOOR CONSTRUCTION**

**NOTES:**

1. Anchor bolts 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. Exterior walls, bearing walls and braced wall panels require continuous footings. R403.1
5. 23/32" plywood required for 24" joist spacing.
6. Where interior walls are shear walls, wall framing and sheathing shall extend to the roof sheathing.
7. Footings on or adjacent to slopes shall meet the requirements of Section R403.1.7.
8. Walls separating units in townhouses shall be provided with parapet in accordance with R302.2.2
9. Projects located in the Very High Fire Hazard Severity Zone (VHFHSZ) must also incorporate the requirements of Section 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. 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. Eaves shall not project more than 4" for each one foot of required side yard, and shall provide a minimum 30" clear space between the eave and the property line (LAMC 12.22C20(b)).
15. Exterior plaster (stucco) walls shall be provided with a corrosion resistant weep screed complying with Section R703.7.2.1

ALLOWABLE SPANS FOR DF #2 ROOF RAFTERS (DF-LARCH) Light Dead Load: up to 15 psf (Total including roofing) Max. Roofing Load: 6 psf (Asphalt Shingles) Live Load: 20 psf L/Δ = 240 (T-R802.5.1(2))			ALLOWABLE SPANS FOR DF #2 CEILING JOISTS (DF-LARCH) Dead Load: 10 psf Live Load: 20 psf L/Δ = 240 (T-R802.4(2))			ALLOWABLE SPANS FOR DF #2 FLOOR JOISTS (DF-LARCH) Light Dead Load: 10 psf Live Load: 40 psf L/Δ = 360 (T-R502.3.1(2))		
RAFTER SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN
2x6	24"	10'-9"	2x4	24"	7'-3"	2x6	24"	8'-3"
	16"	13'-0"		16"	8'-11"		16"	9'-9"
	12"	14'-9"		12"	9'-10"		12"	10'-9"
2x8	24"	13'-6"	2x6	24"	10'-8"	2x8	24"	10'-5"
	16"	16'-7"		16"	13'-00"		16"	12'-9"
	12"	18'-11"		12"	15'-00"		12"	14'-2"
2x10	24"	16'-6"	2x8	24"	13'-6"	2x10	24"	12'-9"
	16"	20'-3"		16"	16'-6"		16"	15'-7"
	12"	23'-5"		12"	19'-1"		12"	18'-0"
2x12	24"	19'-2"	2x10	24"	16'-5"	2x12	24"	14'-9"
	16"	23'-6"		16"	20'-2"		16"	18'-1"
	12"	25'-10"		12"	23'-3"		12"	20'-11"

ALLOWABLE SPANS FOR DF #2 HEADERS FOR EXTERIOR BEARING WALLS Max. Roof/Ceiling Dead Load: 25 psf Max Live Load 20 psf (T-R602.7(1))							ALLOWABLE SPANS FOR DF #2 HEADERS FOR EXTERIOR BEARING WALLS Max. Roof/Ceiling Dead Load: 25 psf Max Live Load 40 psf (Roof/Limited Storage Attic) (T-R602.7(1))					
SIZE	20-ft Building Width	NJ	28-ft Building Width	NJ	36-ft Building Width	NJ	20-ft Building Width	NJ	28-ft Building Width	NJ	36-ft Building Width	NJ
2-2x6	5'- 5"	1	4'- 8"	1	4'- 2"	1	4 - 6"	1	4'- 0"	1	3'- 7"	2
2-2x8	6'- 10"	1	5'- 11"	2	5'- 4"	2	5'- 9"	2	5'- 0"	2	4'- 6"	2
2-2x10	8'- 5"	2	7'- 3"	2	6'- 6"	2	7'- 0"	2	6'- 2"	2	5'- 6"	2
2-2x12	9'- 9"	2	8'- 5"	2	7'- 6"	2	8'- 1"	2	7'- 1"	2	6'- 5"	2
3-2x8	8'- 4"	1	7'- 5"	1	6'- 8"	1	7'- 2"	1	6'- 3"	2	5'- 8"	2
3-2x10	10'- 6"	1	9'- 1"	2	8'-2"	2	8'- 9"	2	7'- 8"	2	6'-11"	2
3-2x12	12'- 2"	2	10'-7"	2	9'- 5"	2	10'- 2"	2	8'- 11"	2	8'- 0"	2

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

ALLOWABLE SPANS FOR DF #2 HEADERS FOR INTERIOR BEARING WALLS Max. Roof/Ceiling Dead Load: 25 psf Max Live Load 20 psf (T-R602.7(2))							ALLOWABLE SPANS FOR DF #2 HEADERS FOR INTERIOR BEARING WALLS Max. Roof/Ceiling Dead Load: 25 psf Max Live Load 40 psf (Roof/Limited Storage Attic) (T-R602.7(2))					
SIZE	20-ft Building Width	NJ	28-ft Building Width	NJ	36-ft Building Width	NJ	20-ft Building Width	NJ	28-ft Building Width	NJ	36-ft Building Width	NJ
2-2x6	4'- 6"	1	3'- 11"	1	3'- 6"	1	3 - 2"	2	2'- 9"	2	2'- 5"	2
2-2x8	5'- 9"	1	5'- 0"	2	4'- 5"	2	4'- 1"	2	3'- 6"	2	3'- 2"	2
2-2x10	7'- 0"	2	6'- 1"	2	5'- 5"	2	4'- 11"	2	4'- 3"	2	3'- 10"	3
2-2x12	8'- 1"	2	7'- 0"	2	6'- 3"	2	5'- 9"	2	5'- 0"	3	4'- 5"	3
3-2x8	7'- 2"	2	6'- 3"	2	5'- 7"	2	5'- 1"	2	4'- 5"	2	3'- 11"	2
3-2x10	8'- 9"	2	7'- 7"	2	6'-9"	2	6'- 2"	2	5'- 4"	2	4'- 10"	2
3-2x12	10'- 2"	2	8'-10"	2	7'-10"	2	7'- 2"	2	6'- 3"	2	5'- 7"	3

- a. Building width is perpendicular to ridge measured to exterior walls.
- 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: 15 psf <sup>1,2</sup> (T-R602.7(2))			
SIZE	20-ft Building Width	28-ft Building Width	36-ft Building Width
2-2x6	4'- 6"	3'- 11"	3'- 6"
2-2x8	5'- 9"	5'- 0"	4'- 5"
2-2x10	7'- 0"	6'- 1"	5'- 5"
2-2x12	8'- 1"	7'- 0"	6'- 3"
3-2x8	7'- 2"	6'- 3"	5'- 7"
3-2x10	8'- 9"	7'- 7"	6'-9"
3-2x12	10'- 2"	8'-10"	7-10" <sup>3</sup>

1. Building width is perpendicular to ridge measured to exterior walls.
2. Minimum 4x post
3. Minimum 4x6 post for 36' building width and 3-2x12 member.

RAFTER TIE CONNECTION ROOF LIVE LOAD 20-psf [Table R802.5.1(9)] Minimum number of 16d common nails at rafter tie connection.					
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 may be reduced 25percent.
2. Roof span is measured between exterior walls or between exterior wall and roof purlin when interior bearing wall is used

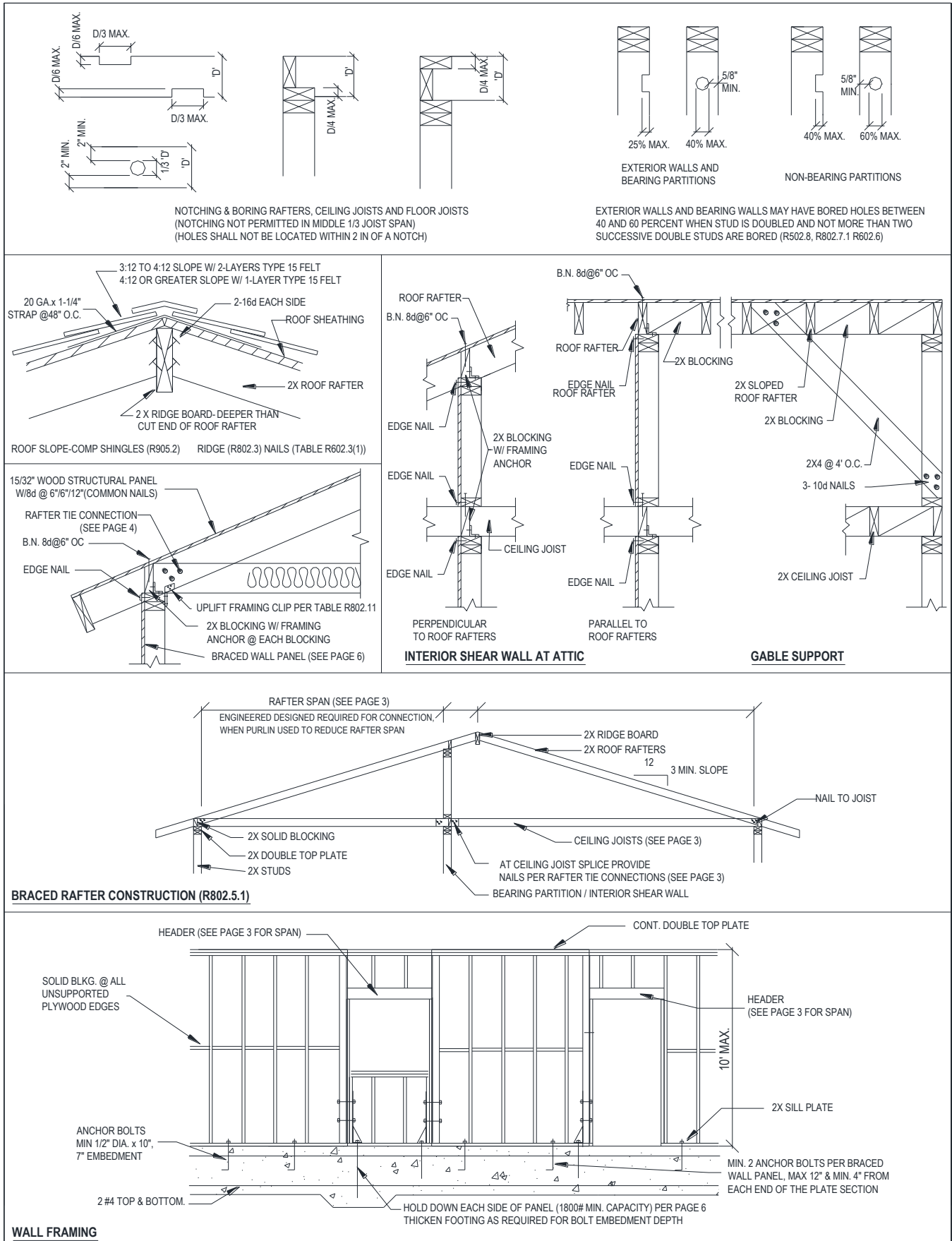
ALLOWABLE SPANS AND LOADS FOR WOOD STRUCTURAL PANEL SHEATHING AND SINGLE-FLOOR GRADES CONTINUOUS OVER TWO OR MORE SPANS WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS NOTE: APPLIES TO PANELS 24" OR WIDER (T-R503.2.1.1(1))

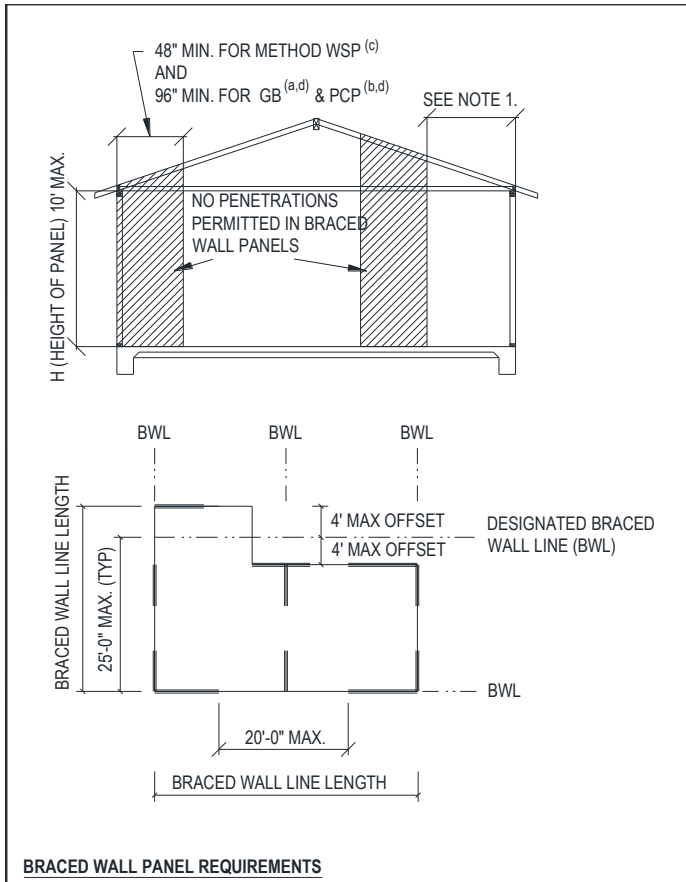
SHEATHING GRADES		ROOF				FLOOR
PANEL SPAN RATING Roof/Floor Span	MINIMUM PANEL THICKNESS (INCHES)	MAXIMUM SPAN (INCHES)		LOADS (PSF)		MAX. SPAN (INCHES) Panel edges with tongue and groove joints or with blocking
		EDGE SUPPORT	NO EDGE SUPPORT	TOTAL LOAD	LIVE LOAD	
24/0	3/8	24	20	40	30	
24/16	7/16	24	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

CONNECTION	FASTENING	REMARKS
Roof		
Blocking between joists or rafters to top plate	4-8d box (2-1/2" x 0.113")	Toe nail
Ceiling joist to plate	4-8d box (2-1/2" x 0.113")	Toe nail
Ceiling Joist not attached to parallel rafter, laps over partitions	4-10d box (3" x 0.128")	Toe nail
Collar tie rafter, face nail or 1 1/4" 20-gage ridge strap	4-10d box (3" x 0.128")	
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")	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss
Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam:	4-16d box (3-1/2" x 0.135"), or 3-10d common (3-1/2" x 0.148")	Toe nail
	3-16d box (3-1/2" x 0.135"), or 2-16d common (3-1/2" x 0.162")	End nail
Wall		
Stud to Stud (not braced wall panels)	16d common (3-1/2" x 0.162")	16" o.c. face nail
	10d box (3" x 0.128")	24" o.c. face nail
Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d box (3-1/2" x 0.135")	12" o.c. face nail
	16d common (3-1/2" x 0.162")	16" o.c. face nail
Abutting Studs at intersecting wall corners, face nail	16d (3-1/2" x 0.135")	12" o.c.
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
Continuous header to stud	5-8d box (2-1/2" x 0.113")	Toe nail
	4 8d common (2-1/2" x 0.131")	Toe nail
Top plate to top plate	16 common (3-1/2" x 0.162")	16" o.c. face nail
	10d box (3" x 0.128")	12" o.c. face nail
Double top plate splice	8-16d (3-1/2" x 0.135")	Face nail on each side of end joint (minimum 24" lap splice length each side of joint)
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")	12" o.c. face nail
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")	3 each 16" o.c. face nail 2 each 16" o.c. face nail
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")	toe nail
	3-16d box (3-1/2" x 0.135"), or	End nail

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	2-16d common (3 1/2" x 0.135"), or 2-10d (3" x 0.162"), or 3-10d box (3" x 0.128")	
Top plates, lap at corners and intersections	3-10d box (3" x 0.128"), or 2-16d common (3 1/2" x 0.162")	Face nail
<b>Floor</b>		
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")	Toenail
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.
	8d common (2-1/2" x 0.131"), or 10d box (3" x 0.128")	6" o.c.
Band or rim joist to joist	3-16d common (3-1/2" x 0.162"), or 4-10d box (3" x 0.128")	End nail
Built-up girders and beams, 2-inch lumber layers	20d common (4" x 0.192"), or	Nail each layer as follows: 32" o.c. at top and bottom and staggered.
	10d box (3" x 0.128"), or	24" o.c. face nail at top and bottom staggered on opposite sides
	AND: 2-20d common (4" x 0.192"), or 3-10d box (3" x 0.128"),	Face nail at ends and at each splice
Ledger strip supporting joists or rafters	4-16d box (3-1/2" x 0.135"), or 3-16d common (3-1/2" x 0.162), or 4-10d box (3" x 0.128")	At each joist or rafter
Bridging to Joist	2-10d (3" x 0.128")	Each end, toe nail





**NOTES:**

- 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<sup>(c)</sup>, THE BRACED WALL PANEL SHALL BE PERMITTED TO BEGIN NO MORE THAN 10 FEET FROM EACH END OF THE BRACED WALL LINE PROVIDED:

**Diagram A:** Shows a wall panel with a height of "UP TO 10'". It is labeled "METHOD WSP<sup>(c)</sup> BRACING ONLY".

**Diagram B:** Shows a wall panel with a height of "UP TO 10'". It is labeled "METHOD WSP BRACING ONLY". It notes "A MIN. 24\"

- MIXING BRACING METHODS WITHIN A BRACED WALL LINE IS NOT PERMITTED.
- INTERIOR BRACE WALL PANEL SHALL BE LOCATED NOT MORE THAN 10.0-FT FROM THE END OF A BRACED WALL LINE AS DEMONSTRATED IN FIGURE R602.10.2.2 OF THE LARC.
- HOLD-DOWN DEVICE SHALL BE APPROVED BY CURRENT LOS ANGELES CITY RESEARCH REPORT.

**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	Methods GB <sup>a,d</sup> and PCP <sup>b,d</sup>	Method WSP <sup>c</sup>
SDC D <sub>2</sub>		10	8	4
		20	16	5
		30	24	7.5
		40	32	10
		50	40	12.5

- Method GB (Gypsum Board) = 1/2-in. minimum thickness gypsum board with 1-1/2-in. galvanized roofing nail, or 1-1/4-in. screws, Type W or S. for exterior sheathing, or 5d cooler nail, 0.086-in. diameter, 1-5/8-in. long, 15/64-in head for interior gypsum board. Maximum fastener spacing shall be 7-in. o.c. at panel edges, including top and bottom plates, and along intermediate 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.
- Method PCP (Portland Cement Plaster) = 7/8-in. minimum thickness Portland cement plaster with 1-1/2-in., 11-gage, 7/16-in. head nails at 6-in. spacing (16-in stud spacing required). 1/2-in. 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 of 1.5.
- Method WSP (Wood Structural Panel) = 15/32-in. minimum thickness wood structural panel with 8d common (2-1/2-in x 0.131-in.) nails at 6-in. spacing along panel edges, 12-in. spacing at intermediate supports, and 3/8-in. distance to panel edge. 1/2-in. minimum thickness 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.
- Method GB and PCP braced wall panel height to width ratio (h/w) shall not exceed 1:1.
- 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.

