R602.3 Design and Construction

Exterior walls of wood-frame construction shall be designed and constructed in accordance with the provisions of this chapter and Figures R602.3(1) and R602.3(2), or in accordance with AWC NDS. Components of exterior walls shall be fastened in accordance with Tables R602.3(1) through R602.3(4). Wall sheathing shall be fastened directly to framing members and, where placed on the exterior side of an exterior wall, shall be capable of resisting the wind pressures listed in Table R301.2.1(1) adjusted for height and exposure using Table R301.2.1(2) and shall conform to the requirements of Table R602.3(3). Wall sheathing used only for exterior wall covering purposes shall comply with Section R703.

3. ALL 6x FRAMING MEMBERS SHALL BE DF #1 OR BETTER, ALL 6x FRAMING MEMBERS SHALL BE DF #1 OR BETTER, UNLESS NOTED OTHERWISE.
4. ALL 2x AND 4x FRAMING MEMBERS SHALL BE DF #2 OR ALL 2x AND 4x FRAMING MEMBERS SHALL BE DF #2 OR BETTER, UNLESS NOTED OTHERWISE.
5. ALL 2x WALL STUDS SHALL BE DF #2 OR BETTER, UNLESS ALL 2x WALL STUDS SHALL BE DF #2 OR BETTER, UNLESS NOTED OTHERWISE.
6. ALL SHEATHING SHALL BE GRADE C-D MINIMUM, RATED ALL SHEATHING SHALL BE GRADE C-D MINIMUM, RATED STRUCTURAL 1 , FABRICATED IN ACCORDANCE WITH ICC ES REPORT NO. ESR-2586 AND IDENTIFIED WITH THE GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION (APA). ROOF SHEATHING SHALL HAVE A MINIMUM PANEL INDEX RATING OF 32/16 AND BE EXPOSURE 1. FLOOR SHEATHING SHALL HAVE A MINIMUM PANEL INDEX RATING OF 48/24 AND BE EXPOSURE 1. WALL SHEATHING SHALL HAVE A MINIMUM PANEL INDEX RATING OF 24/0 AND BE EXPOSURE 1. SHEATHING EXPOSED AT OVERHANGS OR OTHERWISE PERMANENTLY EXPOSED TO THE EXTERIOR SHALL AT A MINIMUM BE GRADE C-C EXTERIOR WITH A PANEL INDEX AS NOTED ABOVE.
7. MAXIMUM MOISTURE CONTENT OF ALL LUMBER PRIOR TO MAXIMUM MOISTURE CONTENT OF ALL LUMBER PRIOR TO ERECTION/INSTALLATION SHALL NOT EXCEED 19%.
8. ALL NAILS SHALL BE COMMON WIRE. REFER TO CBC ALL NAILS SHALL BE COMMON WIRE. REFER TO CBC TABLE R602.3(1) FOR MINIMUM REQUIREMENTS.
9. FINGER-JOINTED STUDS AND FRAMING SHALL NOT BE USED.
10. ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A-307 MINIMUM, UNLESS NOTED OTHERWISE. STANDARD WASHERS SHALL BE FURNISHED AT EACH BOLT HEAD AND NUT PLACED NEXT TO WOOD.
11. ALL SHEET METAL CONNECTORS AND FASTENERS SHALL ALL SHEET METAL CONNECTORS AND FASTENERS SHALL HAVE CBC AND ICC APPROVAL AND BE SIMPSON STRONG-TIE PRODUCTS OR APPROVED EQUAL. ALL PRODUCTS SHALL BE HOT DIP GALVANIZED, GALVANIZED OR PROVIDED WITH CORROSION RESISTANT FINISH IN ACCORDANCE WITH CBC REQUIREMENTS FOR THE SPECIFIC CONDITIONS OF INSTALLATION AND EXPOSURE.
12. ALL FRAMING DETAILS AND MINIMUM CONSTRUCTION REQUIREMENTS SHALL CONFORM TO CRC R301 DESIGN CRITERIA, R301.1.2 CONSTRUCTION SYSTEMS AND COMPANION CHAPTERS AND SECTIONS.
13. ALL GLUE LAMINATED BEAMS (GLULAMS) SHALL BE ALL GLUE LAMINATED BEAMS (GLULAMS) SHALL BE COMBINATION 24F-V4 OR 24F-V5 PER THE LATEST EDITION OF THE AMERICAN FOREST AND PAPER ASSOCIATION NATIONAL DESIGN SPECIFICATION, UNLESS NOTED OTHERWISE. GLULAM BEAMS SHALL BE FABRICATED IN CONFORMANCE WITH THE "STANDARD SPECIFICATIONS FOR STRUCTURAL GLUE LAMINATED MEMBERS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)" WITH ALL LAMINATIONS 1 1/2" THICK. ALL GLULAM BEAMS SHALL BE CAMBERED +2000 FEET RADIUS, UNLESS NOTED OTHERWISE. SUBMIT GLULAM CERTIFICATES TO BUILDING OFFICIALS AND DESIGN PROFESSIONALS PRIOR TO ERECTION.
14. ALL PARALLAM PSL LUMBER SHALL BE AS MANUFACTURED ALL PARALLAM PSL LUMBER SHALL BE AS MANUFACTURED BY iLEVEL TRUSS JOIST IN ACCORDANCE WITH ICC ES REPORT NO. ESR-1387 WITH THE FOLLOWING DESIGN CRITERIA: GRADE 2.0E E = 2,000,000 psi Fb = 2,900 psi Ft = 2,025 psi Fcperp = 750 psi Fcpara = 2,900 psi Fv = 290 psi SG Equivalent = 0.50
15. ALL TIMBERSTRAND LSL LUMBER SHALL BE AS ALL TIMBERSTRAND LSL LUMBER SHALL BE AS MANUFACTURED BY iLEVEL TRUSS JOIST IN ACCORDANCE WITH ICC ES REPORT NO. ESR-1387 WITH THE FOLLOWING DESIGN CRITERIA: GRADE 1.6E E = 1,600,000 psi Fb = 2,425 psi Ft = 1,700 psi Fcperp = 825 psi Fcpara = 2,150 psi Fv = 400 psi SG Equivalent = 0.50
16. **Excerpt from CRC R317.3.1** - Fasteners for preservative-treated wood. Fasteners, including nuts and washers, for preservative-treated wood shall be of hot-dipped, zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Coating types and weights for connectors in contact with preservative-treated wood shall be in accordance with the connector manufacturer's recommendations. In the absence of manufacturer's recommendations, a minimum of ASTM A 653 type G185 zinc-coated galvanized steel, or equivalent, shall be used. *Exceptions:1. One-half-inch-diameter (12.7 mm) or greater steel bolts. 2. Fasteners other than nails and timber rivets shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum. 3. Plain carbon steel fasteners in SBX/DOT and zinc borate preservative-treated wood in an interior, dry environment shall be permitted.*

② WOOD FRAMING NOTES

10	Built-up header (2" to 2" header with $^1/_2$" spacer)	16d common ($3^1/_2$" × 0.162")	16" o.c. each edge face nail
		16d box ($3^1/_2$" × 0.135")	12" o.c. each edge face nail
11	Continuous header to stud	5-8d box ($2^1/_2$" × 0.113"); or 4-8d common ($2^1/_2$" × 0.131"); or 3-10d box (3" × 0.128"); or 4 staples, 1" crown, 16 ga., $1^3/_4$" long	Toe nail
Floor			
12	Blocking between joists or rafters to top plate	4-8d box ($2^1/_2$" × 0.113"); or 3-8d common ($2^1/_2$" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	Toe nail
13	Rim joist to top plate	8d common ($2^1/_2$" × 0.131"); or 8d box ($2^1/_2$" × 0.113"); or 3" × 0.131" nails	Toe nail at 6" o.c.
14	Double top plate splice	16d box ($3^1/_2$" × 0.135"); or 12-16d box ($3^1/_2$" × 0.135"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
15	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panel)	16d common ($3^1/_2$" × 0.162")	16" o.c. face nail
		16d box ($3^1/_2$" × 0.135"); or 3" × 0.131" nails	12" o.c. face nail
Roof			
16	Bottom plate to joist, rim joist, band joist or blocking (at braced wall panel)	3-16d box ($3^1/_2$" × 0.135"); or 2-16d common ($3^1/_2$" × 0.162"); or 4-3" × 0.131" nails	16" o.c. face nail
17	Top or bottom plate to stud	4-8d box ($2^1/_2$" × 0.113"); or 3-16d box ($3^1/_2$" × 0.135"); or 4-8d common ($2^1/_2$" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	Toe nail
		3-16d box ($3^1/_2$" × 0.135"); or 2-16d common ($3^1/_2$" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	End nail
18	Top plates, laps at corners and intersections	3-10d box (3" × 0.128"); or 2-16d common ($3^1/_2$" × 3-3" × 0.131" nails	Face nail
19	1" brace to each stud and plate	3-8d box ($2^1/_2$" × 0.113"); or 2-8d common ($2^1/_2$" × 0.131"); or 2-10d box (3" × 0.128"); or 2 staples $1^3/_4$"	Face nail
20	1" × 6" sheathing to each bearing	3-8d box ($2^1/_2$" × 0.113"); or 2-8d common ($2^1/_2$" × 0.131"); or 2-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., $1^3/_4$" long	Face nail
21	1" × 8" and wider sheathing to each bearing	3-8d box ($2^1/_2$" × 0.113"); or 3-8d common ($2^1/_2$" × 0.131"); or 3-10d box (3" × 0.128"); or 3 staples, 1" crown, 16 ga., $1^3/_4$" long	Face nail
		Wider than 1" × 8" 4-8d box ($2^1/_2$" × 0.113"); or 3-8d common ($2^1/_2$" × 0.131"); or	

		3-10d box (3" × 0.128"); or 4 staples, 1" crown, 16 ga., $1^3/_4$" long	
Floor			
		4-8d box ($2^1/_2$" × 0.113"); or	
24	1" × 6" subfloor or less to each joist	2-8d common ($2^1/_2$" × 0.131"); or 3-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., $1^3/_4$" long	Face nail
25	2" subfloor to joist or	3-16d box ($3^1/_2$" × 2-16d common ($3^1/_2$" × 0.162")	Blind and face nail
26	2" planks (plank & beam—floor & roof)	3-16d box ($3^1/_2$" × 0.135"); or 2-16d common ($3^1/_2$" × 0.162")	At each bearing, face nail
27	Band or rim joist to joist	3-16d common ($3^1/_2$" × 0.162"); or 4-10 box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" × 14 ga. staples, $^7/_{16}$" crown	End nail
28	Built-up girders and beams, 2-inch lumber layers	20d common (4" × 0.192"); or	Nail each layer as follows: 32" o.c. at top and bottom and staggered.
		10d box (3" × 0.128"); or 3" × 0.131" nails	24" o.c. face nail at top and bottom staggered on opposite sides
		And: 2-20d common (4" × 0.192"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails	Face nail at ends and at each splice
29	Ledger strip supporting joists or rafters	4-16d box ($3^1/_2$" × 0.135"); or 3-16d common ($3^1/_2$" × 0.162"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails	At each joist or rafter, face nail
30	Bridging or blocking to joist, rafter or truss	2-10d box (3" × 0.128"); or 2-8d common ($2^1/_2$" × 0.131"); or 2-3" × 0.131" nails	Each end, toe nail

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING OF FASTENERS: Edges[h] (inches)	SPACING OF FASTENERS: Intermediate supports[c, e] (inches)
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 panel exterior wall sheathing to wall framing]				
31	$^3/_8$" — $^1/_2$"	6d common or deformed (2" × 0.113"× 0.266" head); or $2^3/_8$" × 0.113" × 0.266" head nail (subfloor, wall)[i]	6	6[f]
		8d common ($2^1/_2$" × 0.131") nail (roof); or RSRS-01 ($2^3/_8$" × 0.113") nail (roof)[b]	6	6[f]
32	$^{19}/_{32}$" — $^3/_4$"	8d common (2-$2^1/_2$" × 0.131") nail (subfloor, wall)	6	12
		8d common ($2^1/_2$" × 0.131") nail (roof); or RSRS-01; ($2^3/_8$" × 0.113") nail (roof)[b]	6	6[f]
		Deformed $2^3/_8$" × 0.113" × 0.266" head (wall or subfloor)	6	12
33	$^7/_8$" — $1^1/_4$"	10d common (3" × 0.148") nail; or ($2^1/_2$" × 0.131 × 0.281" head) deformed nail	6	12
		Other wall sheathing[g]		
		$1^1/_2$" × 0.120" galvanized roofing nail, $^7/_{16}$" head diameter, or $1^1/_4$" long 16 ga.; staple galvanized, $1^1/_2$" long; $^7/_{16}$" or 1"crown or $1^1/_4$" screws, Type W or S		
37	$^5/_8$" gypsum sheathing[d]	$1^3/_4$" × 0.120" galvanized roofing nail, $^7/_{16}$" head diameter, or $1^1/_4$" long 16 ga.; staple galvanized, $1^1/_2$" long; $^7/_{16}$" or 1"crown or $1^1/_4$" screws, Type W or S	7	7
Wood structural panels, combination subfloor underlayment to framing				
38	$^3/_4$" and less	Deformed (2" × 0.113") or Deformed (2" × 0.120") nail; or 8d common ($2^1/_2$" × 0.131") nail	6	12
39	$^7/_8$" — 1"	8d common ($2^1/_2$" × 0.131") nail; or Deformed (2" × 0.113"); or Deformed ($2^1/_2$" × 0.120") nail	6	12
40	$1^1/_8$" — $1^1/_4$"	10d common (3" × 0.148") nail; or Deformed (2" × 0.113");or Deformed ($2^1/_2$" × 0.120") nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi = 6.895 MPa.

a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections are carbon steel and 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. Connections using nails and staples of other materials, such as stainless steel, shall be designed by accepted engineering practice or approved under Section R104.11.

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

① FASTENER SCHEDULE1
1/8" = 1'-0"

NOTES

CITY OF MERCED
ACCESSORY DWELLING UNIT PROGRAM

498
CANOGA

No.	Description	DATE
A	SITE PLAN REVIEW	5/11/2022
B	SITE PLAN REVIEW	6/13/2022
C	DRAFT RELEASE	8/31/2022
D	DRAFT RELEASE	9/29/2022
1		
2		
3		

Project Number
2210.2

A5.4

set date:
9/29/2022

6/9/2023 3:29:18 PM