ORDINANCE NO. ____________


The Board of Supervisors of the County of Los Angeles ordains as follows:

SECTION 1. Chapters 2 through 10, Chapter 44, and Appendix H, which incorporate by reference, and modify portions of the 2016 California Residential Code, are hereby repealed.

SECTION 2. Chapter 1 is hereby amended to read as follows:

R100 ADOPTION BY REFERENCE

Except as hereinafter changed or modified, Sections 102 through 119 of Chapter 1, Section 1207 of Chapter 12, Chapters 67, 68, 69, 98, 99, and Appendix J of Title 26 of the Los Angeles County Code are adopted by reference and incorporated into this Title 30 as if fully set forth below, and shall be known as Sections 102 through 119 of Chapter 1, Section 1207 of Chapter 12, Chapters 67, 68, 69, 98, 99, and Appendix J of Title 30 of the Los Angeles County Code.

Except as hereinafter changed or modified, Chapters 2 through 10, Chapter 44, and Appendixes H, Q, S and X of that certain code known and designated as the 20162019 California Residential Code as published by the California Building Standards Commission are adopted and incorporated, by reference, into this Title 30 as if fully set forth below, and shall be known as Chapters 2 through 10, Chapter 44, and Appendixes H, Q, S and X of Title 30 of the Los Angeles County Code. A copy of the
California Residential Code shall be at all times maintained by the Building Official for use and examination by the public.

**R101**  
**TITLE, PURPOSE, AND INTENT**

... 

**R101.3**  
**Scope.**

... 

**Exceptions:**

1. Live/work units complying with the requirements of Section 419 of the Los Angeles County Building Code shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression otherwise required by Section 419.5 of the Los Angeles County Building Code for buildings and structures constructed under this Code shall conform to Section 903.3.1.3 of the Los Angeles County Building Code.

2. Owner-occupied lodging houses with five or fewer guestrooms shall be permitted to be constructed in accordance with the Los Angeles County Residential Code for one- and two-family dwellings when equipped with a fire sprinkler system in accordance with Section R313.

Additions, alterations, repairs, and changes of use or occupancy in all buildings and structures to which this Code applies shall comply with the provisions for new buildings and structures except as otherwise provided in the Existing Building Code and Section 109 of the Los Angeles County Building Code.
SECTION 3. Section R301.1.3.2 is hereby amended to read as follows:

R301.1.3.2 Woodframe structures greater than two-stories.

The Building Official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than two stories and basement in height located in Seismic Design Category A, B, or C. Notwithstanding other sections of law, the law establishing these provisions is found in Business and Professions Code Sections 5537 and 6737.1.

The Building Official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than one story in height or with a basement located in Seismic Design Category D₀, D₁, or D₂ or E.

SECTION 4. Section R301.1.4 is hereby added to read as follows:

R301.1.4 Seismic design provisions for buildings constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope).

The design and construction of new buildings and additions to existing buildings when constructed on or into slopes steeper than one unit vertical in three units
horizontal (33.3 percent slope) shall comply with Section 1613.6 of the Los Angeles County Building Code.

**SECTION 5.** Section R301.2 is hereby amended to read as follows:

**R301.2 Climatic and geographic design criteria.**

Buildings shall be constructed in accordance with the provisions of this Code as limited by the provisions of this Section. Additional criteria shall be established by the local jurisdiction and set forth Consult with the Building Official regarding additional criteria in Table R301.2(1).

**SECTION 6.** Section R301.2.2.6 is hereby amended to read as follows:

**R301.2.2.6 Irregular buildings.**

... 1. **Shear wall or braced wall offsets out of plane.** Conditions where exterior shear wall lines or braced wall panels are not in one plane vertically from the foundation to the uppermost story in which they are required.

**Exception:** For wood light-frame construction, floors with cantilevers or setbacks not exceeding four times the nominal depth of the wood floor joists are permitted to support braced wall panels that are out of plane with braced wall panels below provided that all of the following are satisfied:

1. Floor joists are nominal 2 inches by 10 inches (51 mm by 254 mm) or larger and spaced not more than 16 inches (406 mm) on center.
2. The ratio of the back span to the cantilever is not less than 2 to 1.
3. Floor joists at ends of braced wall panels are doubled.
4. For wood-frame construction, a continuous rim joist is connected to ends or all cantilever joists. Where spliced, the rim joists shall be spliced using a galvanized metal tie not less than 0.058 inch (1.5 mm) (16 gage) and 1 1/2 inches (38 mm) wide fastened with six 16d nails on each side of the splice; or a block of the same size as the rim joist and of sufficient length to fit securely between the joist space at which the splice occurs, fastened with eight 16d nails on each side of the splice.

5. Gravity loads carried at the end of cantilevered joists are limited to uniform wall and roof loads and the reactions from headers having a span of 8 feet (2438 mm) or less.

2. Lateral support of roofs and floors. Conditions where a section of floor or roof is not laterally supported by shear walls or braced wall lines on all edges.

   Exception: Portions of floors that do not support shear walls, braced wall panels above, or roofs shall be permitted to extend not more than 6 feet (1829 mm) beyond a shear wall or braced wall line.

3. Shear wall or braced wall offsets in plane. Conditions where the end of a braced wall panel occurs over an opening in the wall below, and extends more than 1 foot (305 mm) horizontally past the edge of the opening. This provision is applicable to shear walls and braced wall panels offset in plane and to braced wall panels offset out of plane in accordance with the exception to Item 1.

   Exception: For wood light-frame wall construction, one end of a braced wall panel shall be permitted to extend more than 1 foot (305 mm) over an opening not more than 8 feet (2438 mm) in width in the wall below provided that the opening includes a...
header in accordance with all of the following:

1. The building width, loading condition and framing member species limitations of Table R602.7(1) shall apply.

2. The header is composed of:

   2.1 Not less than one 2x12 or two 2x10 for an opening not more than 4 feet (1219 mm) wide.

   2.2 Not less than two 2x12 or three 2x10 for an opening not more than 6 feet (1829 mm) in width.

   2.3 Not less than three 2x12 or four 2x10 for an opening not more than 8 feet (2438 mm) in width.

3. The entire length of the braced wall panel does not occur over an opening in the wall below.

4. **Floor and roof opening.** Conditions where an opening in a floor or roof exceeds the lesser of 12 feet (3658 mm) or 50 percent of the least floor or roof dimension.

5. **Floor Level offset.** Conditions where portions of a floor level are vertically offset.

**Exceptions:**

1. Framing supported directly by continuous foundations at the perimeter of the building.

2. For wood light-frame construction, floors shall be permitted to be vertically offset when the floor framing is lapped or tied together as required by section R502.6.1.
SECTION 7. Section R301.2.2.11 is hereby added to read as follows:

R301.2.2.11 Anchorage of mechanical, electrical, or plumbing components and equipment.

Mechanical, electrical, or plumbing components and equipment shall be anchored to the structure. Anchorage of the components and equipment shall be designed to resist loads in accordance with the Los Angeles County Building Code and ASCE 7, except where the component is positively attached to the structure and flexible connections are provided between the component and associated ductwork, piping, and conduit; and either:

1. The component weighs 400 pounds (1,780 N) or less and has a center of mass located 4 feet (1.22 m) or less above the supporting structure; or

2. The component weighs 20 pounds (89N) or less or, in the case of a distributed system, 5 pounds per foot (73 N/m) or less.

SECTION 8. Table R302.1(2) is hereby amended as follows:
a. Reserved. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler system installed in accordance with Section R313, the fire separation distance for exterior walls not fire-resistance rated and for fire-resistance-rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

... 

SECTION 9. Section R337.1.1 is hereby amended to read as follows:

R337.1.1 Scope.

This chapter applies to building materials, systems and or assemblies used in the exterior design and construction of new buildings, and to additions, alterations, or repairs made to existing buildings, erected, constructed, located, or moved within a Wildland-Urban Interface Fire Area as defined in Section R337.2A.

SECTION 10. Section R337.1.3 is hereby amended to read as follows:

R337.1.3 Application.

New buildings, and any additions, alterations, or repairs made to existing buildings located in or moved within any Fire Hazard Severity Zone or any Wildland-Urban Interface Fire Area designated by the enforcing agencyLos Angeles County Fire Departmentconstructed after the application date shall comply with the provisions of this chapter.
Exceptions:

...  

4. Additions to and remodels of buildings originally constructed prior to the applicable application date Reserved.  

SECTION 11. Section R337.1.3.1 is hereby amended to read as follows:  

R337.1.3.1 Application date and where required.  

New buildings for which an application for a building permit is submitted on or after July 1, 2008, and any additions, alterations, or repairs made to existing buildings for which an application for a building permit is submitted on or after January 1, 2020, located in any Fire Hazard Severity Zone or Wildland Interface Fire Area shall comply with all sections of this Chapter, including all of the following areas:  

...  

Exceptions:  

1. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas, for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all Sections of this Chapter.  

2. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland Interface Fire Area designated by cities and other local agencies for which an application for a building permit is submitted on or after December 1, 2005 but prior to July 1, 2008, shall only comply with the following Sections of this Chapter:  

...
SECTION 12.  Section R337.1.4 is hereby amended to read as follows:

R337.1.4 Inspection and certification.

...  

1. Building permit issuance. The local building official shall, prior to construction, provide the owner or applicant a certification that the building as proposed to be built complies with all applicable state and local building standards, including those for materials and construction methods for wildfire exposure as described in this Chapter. Issuance of a building permit by the local building official for the proposed building shall be considered as complying with this Section.

2. Building permit final. The local building official shall, upon completion of construction, provide the owner or applicant with a copy of the final inspection report that demonstrates the building was constructed in compliance with all applicable state and local building standards, including those for materials and construction methods for wildfire exposure as described in this Chapter. Issuance of a certificate of occupancy by the local building official for the proposed building shall be considered as complying with this Section.

SECTION 13.  Section R337.1.6 is hereby amended to read as follows:

R337.1.6 Application to accessory buildings and miscellaneous structures.

New accessory buildings and miscellaneous structures, including additions, alterations, or repairs, as specified in Section R337.10 shall comply only with the requirements of that Section.
SECTION 14. Section R33.2 is hereby amended to read as follows:

SECTION R33.2

DEFINITIONS

... 

FIRE PROTECTION PLAN is a document prepared for a specific project or development proposed for a Wildland-Urban Interface Fire Area. It describes ways to minimize and mitigate potential for loss from wildfire exposure. The fire protection plan shall be in accordance with this Chapter and the California Los Angeles County Fire Code, Chapter 49. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted. Only locally adopted ordinances that have been filed with the California Building Standards Commission or the Department of Housing and Community Development in accordance with Section 1.1.8 shall apply.

FIRE HAZARD SEVERITY ZONES are geographical areas designated pursuant to California Public Resources Code Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very-High Fire Hazard Severity Zones designated pursuant to California Government Code Sections 51175 through 51189. See California Los Angeles County Fire Code, Article 86, Chapter 49.

... 

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources
Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency Los Angeles County Fire Department to be at a significant risk from wildfires.

SECTION 15. Section R337.3.2 is hereby amended to read as follows:

R337.3.2 Qualification by testing.

Material and material assemblies tested in accordance with the requirements of Section R337.3 shall be accepted for use when the results and conditions of those tests are met. Product evaluation testing of material and material assemblies shall be approved or listed by the State Fire Marshal or the Building Official, or identified in a current report issued by an approved agency.

SECTION 16. Section R337.3.3 is hereby amended to read as follows:

R337.3.3 Approved agency.

Product evaluation testing shall be performed by an approved agency as defined in Section 1702 of the California Los Angeles County Building Code. The scope of accreditation for the approved agency shall include building product compliance with Code.

SECTION 17. Section R337.3.5.2 is hereby amended to read as follows:

R337.3.5.2 Weathering.

Fire-retardant-treated wood and fire-retardant-treated wood shingles and shakes shall meet the fire test performance requirements of this Chapter after being subjected to the weathering conditions contained in the following standards, as applicable to the materials and the conditions of use.
SECTION 18. Section R337.3.5.2.1 is hereby amended to read as follows:

R337.3.5.2.1 Fire-retardant-treated wood.

Fire-retardant-treated wood shall be tested in accordance with ASTM D2898 (Method A), and the requirements of Section 2303.2 of the California Los Angeles County Building Code.

SECTION 19. Section R337.3.5.2.2 is hereby deleted in its entirety.

R337.3.5.2.2 Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes shall be approved and listed by the State Fire Marshal in accordance with Section 208(c), Title 19 California Code of Regulations.

SECTION 20. Section R337.3.6 is hereby amended to read as follows:

R337.3.6 Alternates for materials, design, tests and methods of construction.

The enforcing agency Building Official is permitted to modify the provisions of this chapter for site-specific conditions in accordance with Chapter 1, Section 1.11.2.4104.2.7. When required by the enforcing agency Building Official for the purposes of granting modifications, a fire protection plan shall be submitted in accordance with the California Los Angeles County Fire Code, Chapter 49.

SECTION 21. Section R337.4.4 is hereby amended to read as follows:

R337.4.4 Alternative methods for determining ignition-resistant material.

...  
2. Fire-retardant-treated wood. Fire-retardant-treated wood identified for
exterior use that complies with the requirements of Section 2303.2 of the California Los Angeles County Building Code.

3. Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes, as defined in section 1505.6 of the California Building Code and listed by State Fire Marshal for use as “Class B” roof covering, shall be accepted as an Ignition-resistant wall covering material when installed over solid sheathing.

SECTION 22. Section R337.5.2. is hereby amended to read as follows:

R337.5.2 Roof coverings.

Roof coverings shall be Class A as specified in Section R902.1. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909 installed over the combustible decking. Wood shingles and wood shakes are prohibited in any Fire Hazard Severity Zones regardless of classification.

SECTION 23. Section R337.6.1 is hereby amended to read as follows:

R337.6.1 General.

Where provided, ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with Section 12032 of the California Los Angeles County Building Code and Sections R337.6.1 through R337.6.3 of this Section to resist building ignition from the intrusion
of burning embers and flame through the ventilation opening.

SECTION 24. Section R337.6.3 is hereby amended to read as follows:

R337.6.3 Ventilation openings on the underside of eaves and cornices.

... 

Exceptions:

... 

2. The enforcing agency [Building Official] shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.

3. Vents complying with the requirements of Section R337.6.2 shall be permitted to be installed on the underside of eaves and cornices in accordance with either one of the following conditions:

3.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the California Los Angeles County Building Code or,

... 

SECTION 25. Section R337.10.3 is hereby amended to read as follows:

R337.10.3 Where required.

No requirements shall apply to accessory buildings or miscellaneous structures when located at least 50 feet from an applicable building. Applicable accessory buildings and attached miscellaneous structures, or detached miscellaneous structures
that are installed at a distance of less than 3 feet from an applicable building, shall comply with this Section. When required by the enforcing agency, Building Official, detached miscellaneous structures that are installed at a distance of more than 3 feet but less than 50 feet from an applicable building shall comply with the requirements of this Section.

**SECTION 26.** Section R337.10.3.3 is hereby amended to read as follows:

**R337.10.3.3 Detached miscellaneous structure requirements.**

When required by the enforcing agency, Building Official, applicable detached miscellaneous structures that are installed at a distance of more than 3 feet but less than 50 feet from an applicable building shall be constructed of noncombustible materials or of ignition-resistant materials as described in Section R337.4.3.

**SECTION 27.** Section R401.1 is hereby amended to read as follows:

**R401.1 Application.**

... Wood foundations in Seismic Design Category D₀, D₁, or D₂ shall be designed in accordance with accepted engineering practice.

**Exception:** In non-occupied, single-story, detached storage sheds and similar uses other than carport or garage, provided the gross floor area does not exceed 200 square feet, the plate height does not exceed 12 feet in height above the grade plane at any point, and the maximum roof projection does not exceed 24 inches.

**SECTION 28.** Section R403.1.2 is hereby amended to read as follows:

**R403.1.2 Continuous footing in Seismic Design Categories D₀, D₁**
Exterior walls of buildings located in Seismic Design Categories D₀, D₁ and D₂ shall be supported by continuous solid or fully grouted masonry or concrete footings. Other footing materials or systems shall be designed in accordance with accepted engineering practices.

Required interior braced wall panels in buildings located in Seismic Design Categories D₀, D₁ and D₂ with plan dimensions greater than 50 feet (15,240 mm) shall be supported by continuous solid or fully grouted masonry or concrete footings in accordance with Section R403.1.3.4, except for two-story buildings in Seismic Design Category D₂, in which all braced wall panels, interior and exterior, shall be supported on continuous foundations.

Exception: Two-story buildings shall be permitted to have interior braced wall panels supported on continuous foundations at intervals not exceeding 50 feet (15,240 mm) provided that:

1. The height of cripple walls does not exceed 4 feet (1219 mm).
2. First floor braced wall panels are supported on doubled floor joists, continuous blocking or floor beams.
3. The distance between bracing lines does not exceed twice the building width measured parallel to the braced wall line.

SECTION 29. Section R403.1.3.6 is hereby amended to read as follows:

R403.1.3.6 Isolated concrete footings.

In detached one-and two-family dwellings located in Seismic Design Category A, B, or C that are three stories or less in height and constructed with stud bearing walls,
isolated plain concrete footings supporting columns or pedestals are permitted.

SECTION 30. Section R403.1.5 is hereby amended to read as follows:

R403.1.5 Slope.

The top surface of footings shall be level. The bottom surface of footings shall not have a slope exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings shall be stepped where it is necessary to change the elevation of the top surface of the footings or where the slope of the bottom surface of the footings will exceed one unit vertical in 10 units horizontal (10-percent slope).

For structures located in Seismic Design Category D₀, D₁, or D₂, stepped footings shall be reinforced with two No. 4 reinforcing bars. Two bars shall be located at the top and bottom of the footings as shown in Figure R403.1.5.

SECTION 31. Figure R403.1.5 is hereby added to read as follows:

SECTION 32. Section R404.2 is hereby amended to read as follows:
R404.2 Wood foundation walls.

Wood foundation walls shall be constructed in accordance with the provisions of Sections R404.2.1 through R404.2.6 and with the details shown in Figures R403.1(2) and R403.1(3). Wood foundation walls shall not be used for structures located in Seismic Design Category D₀, D₁, or D₂.

SECTION 33. Section R501.1 is hereby amended to read as follows:

R501.1 Application.

The provision of this chapter shall control the design and construction of the floors for buildings, including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment. Mechanical or plumbing fixtures and equipment shall be attached or anchored to the structure in accordance with Section R301.2.2.11.

SECTION 34. Section R503.2.4 is hereby added to read as follows:

R503.2.4 Openings in horizontal diaphragms.

Openings in horizontal diaphragms with a dimension perpendicular to the joist that is greater than 4 feet (1.2 m) shall be constructed in accordance with Figure R503.2.4.

SECTION 35. Figure R503.2.4 is hereby added to read as follows:
FIGURE R503.2.4

OPENING IN HORIZONTAL DIAPHRAGMS

Notes:

a. Blockings shall be provided beyond headers.

b. Metal ties not less than 0.058 inch \[1.47 \text{ mm (16 galvanized gage)}\] by 1.5 inches (38 mm) wide with eight 16d common nails on each side of the header-joist intersection. The metal ties shall have a minimum yield of 33,000 psi (227 MPa).

c. Openings in diaphragms shall be further limited in accordance with Section R301.2.2.6.

SECTION 36. Table R602.3(1) is hereby amended to read as follows:
TABLE R602.3(1)
FASTENING SCHEDULE

... b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width. Use of staples in roof, floor, subfloor, and braced wall panels shall be prohibited in Seismic Design Category D_0, D_1, or D_2.

... SECTION 37. Table R602.3(2) is hereby amended to read as follows:

TABLE R602.3(2)
ALTERNATE ATTACHMENTS TO TABLE R602.3(1)

... b. Staples shall have a minimum crown width of 7/16-inch on diameter except as noted. Use of staples in roof, floor, subfloor, and braced wall panels shall be prohibited in Seismic Design Category D_0, D_1, or D_2.

... SECTION 38. Section R602.3.2 is hereby amended to read as follows:

R602.3.2 Top plate.

... Exception: In other than Seismic Design Category D_0, D_1, or D_2, a single top plate used as an alternative to a double top plate shall comply with the following:

... SECTION 39. Table R602.3.2 is hereby amended to read as follows:
Section 40. Section R602.10.2.3 is hereby amended to read as follows:

R602.10.2.3 Minimum number of braced wall panels.

Braced wall lines with a length of 16 feet (4877 mm) or less shall have not less than two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have not less than two braced wall panels. No braced wall panel shall be less than 48 inches in length in Seismic Design Category D₀, D₁, or D₂.
SECTION 41. Table R602.10.3(3) is hereby amended to read as follows:

**TABLE R602.10.3(3)**

**BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY**

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<th>Method WSP</th>
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<td>4.6</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td></td>
<td>NP</td>
<td>22.0</td>
<td>22.0</td>
<td>7.2</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td></td>
<td>NP</td>
<td>27.6</td>
<td>27.6</td>
<td>9.0</td>
<td>7.7</td>
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<td></td>
<td>10</td>
<td></td>
<td>NP</td>
<td>8.3</td>
<td>NP</td>
<td>3.3</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td></td>
<td>NP</td>
<td>16.6</td>
<td>NP</td>
<td>7.5</td>
<td>6.4</td>
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<td></td>
<td>30</td>
<td></td>
<td>NP</td>
<td>24.8</td>
<td>NP</td>
<td>11.3</td>
<td>9.6</td>
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<tr>
<td></td>
<td>40</td>
<td></td>
<td>NP</td>
<td>32.0</td>
<td>NP</td>
<td>15.0</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td></td>
<td>NP</td>
<td>36.3</td>
<td>NP</td>
<td>18.8</td>
<td>16.0</td>
</tr>
</tbody>
</table>

(continued)
a. Linear interpolation shall be permitted.

b. Wall bracing lengths are based on a soil site class “D.” Interpolation of bracing length between the \( S_{ds} \) values associated with the seismic design categories shall be permitted when a site-specific \( S_{ds} \) 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 shall be 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 fasteners at panel edges shall not exceed 8 inches.
e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D0, D1 and D2.
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 D0, D1 and D2. Methods DWB, SFB, PBS, and HPS are not permitted in D0, D1 or D2.

SECTION 42. Table R602.10.4 is hereby amended to read as follows:

TABLE R602.10.4

BRACING METHODS
<table>
<thead>
<tr>
<th>METHOD, MATERIAL</th>
<th>MINIMUM THICKNESS</th>
<th>FIGURE</th>
<th>CONNECTION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIB Let-in-bracing</td>
<td>1 x 4 wood or approved metal straps at 45° to 60° angles for maximum 16&quot; stud spacing</td>
<td><img src="image" alt="Diagram" /></td>
<td>Wood; 2-8d common nails or 3.8d (2 1/2&quot; long x 0.113&quot; dia.) nails</td>
</tr>
<tr>
<td>DWB Diagonal wood boards</td>
<td>¾&quot; (1&quot; nominal) for maximum 24&quot; stud spacing</td>
<td><img src="image" alt="Diagram" /></td>
<td>2-8d (2 1/2&quot; long x 0.113&quot; dia.) nails or 2 - 1 5/8&quot; long staples</td>
</tr>
<tr>
<td>WSP Wood structural panel (See Section R604)</td>
<td>½&quot; or ¾&quot;</td>
<td><img src="image" alt="Diagram" /></td>
<td>8d common (2 1/2&quot; x 0.131&quot;) nails or 3/8&quot; edge distance to panel edge</td>
</tr>
<tr>
<td>RV-WSP Wood structural panel with stone or masonry veneer (See Section R602.10.6.5)</td>
<td>½&quot; or ¾&quot; for maximum 16&quot; stud spacing</td>
<td><img src="image" alt="Diagram" /></td>
<td>8d common (2 1/2&quot; x 0.131&quot;) nails</td>
</tr>
<tr>
<td>STB Structural fiberboard sheathing</td>
<td>½&quot; or ¾&quot;</td>
<td><img src="image" alt="Diagram" /></td>
<td>1½&quot; long x 0.12&quot; dia. (for ½&quot; thick sheathing) 1½&quot; long x 0.12&quot; dia. (for ¾&quot; thick sheathing) galvanized roofing nails</td>
</tr>
<tr>
<td>GB Gypsum board</td>
<td>½&quot;</td>
<td><img src="image" alt="Diagram" /></td>
<td>Nails or screws per Table R602.2.3(1) for exterior locations</td>
</tr>
<tr>
<td>PRS Particleboard sheathing (See Section R605)</td>
<td>½&quot; or ¾&quot; for maximum 16&quot; stud spacing</td>
<td><img src="image" alt="Diagram" /></td>
<td>For ½&quot;, 6d common (2&quot; long x 0.113&quot; dia.) nails For ¾&quot;, 8d common (2 1/2&quot; long x 0.131&quot; dia.) nails</td>
</tr>
<tr>
<td>PCP Portland cement plaster</td>
<td>See Section R703.7 for maximum 16&quot; stud spacing</td>
<td><img src="image" alt="Diagram" /></td>
<td>1½&quot; long, 11 gage, ¼&quot; dia. head nails or 7/8&quot; long, 16 gage staples</td>
</tr>
<tr>
<td>HPS Hardboard panel siding</td>
<td>¾&quot; for maximum 16&quot; stud spacing</td>
<td><img src="image" alt="Diagram" /></td>
<td>0.092&quot; dia., 0.225&quot; dia. head nails with length to accommodate 1 ½&quot; penetration into studs</td>
</tr>
<tr>
<td>ABW Alternate braced wall</td>
<td>½&quot;</td>
<td><img src="image" alt="Diagram" /></td>
<td>See Section R602.10.6.1</td>
</tr>
</tbody>
</table>

(continued)
TABLE R602.10.5—continued
BRACING METHODS

<table>
<thead>
<tr>
<th>METHODS, MATERIAL</th>
<th>MINIMUM THICKNESS</th>
<th>FIGURE</th>
<th>CONNECTION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFIH Portal frame with hold downs</td>
<td>(1/4) in.</td>
<td>See Section R602.10.6.2</td>
<td>See Section R602.10.6.2</td>
</tr>
<tr>
<td>PFG Portal frame at garage</td>
<td>(1/8) in.</td>
<td>See Section R602.10.6.3</td>
<td>See Section R602.10.6.3</td>
</tr>
<tr>
<td>Continuous Sheathing Methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS-WSP Continuously sheathed wood structural panel</td>
<td>(1/4) in.</td>
<td>6&quot; edges 12&quot; field</td>
<td></td>
</tr>
<tr>
<td>CS-G(^{-}) Continuously sheathed wood structural panel adjacent to garage openings</td>
<td>(1/8) in.</td>
<td>6&quot; edges 12&quot; field</td>
<td></td>
</tr>
<tr>
<td>CS-PF Continuously sheathed portal frame</td>
<td>(1/8) in.</td>
<td>6&quot; edges 12&quot; field</td>
<td></td>
</tr>
<tr>
<td>CS-SFB(^{-}) Continuously sheathed structural fiberboard</td>
<td>(1/4) in. or (3/16) in.</td>
<td>6&quot; edges 12&quot; field</td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad, 1 pound per square foot = 47.8 N/m², 1 mile per hour = 0.447 m/s.

a. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D\(_{1}\), D\(_{2}\), and D\(_{3}\).
b. Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of the garage. In Seismic Design Categories D\(_{1}\), D\(_{2}\), and D\(_{3}\), roof covering dead load shall not exceed 3 psf.
c. Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.5(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.
d. Method applies to detached one- and two-family dwellings in Seismic Design Categories D\(_{1}\), D\(_{2}\), and D\(_{3}\).
e. Method applies to detached one- and two-family dwellings in Seismic Design Categories D\(_{1}\), D\(_{2}\), and D\(_{3}\).
f. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D\(_{1}\), D\(_{2}\), or D\(_{3}\). Methods LFB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D\(_{1}\), D\(_{2}\), or D\(_{3}\).
g. Use of staples in braced wall panels shall be prohibited in SDC D\(_{1}\), D\(_{2}\), or D\(_{3}\).

SECTION 43. Table R602.10.5 is hereby amended to read as follows:

**TABLE R602.10.5**

MINIMUM LENGTH OF BRACED WALL PANELS
### TABLE R602.10.5
MINIMUM LENGTH OF BRACED WALL PANELS

<table>
<thead>
<tr>
<th>METHOD (See Table R602.10.4)</th>
<th>MINIMUM LENGTH&lt;sup&gt;*&lt;/sup&gt; (inches)</th>
<th>CONTRIBUTING LENGTH (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>PWB, SFB, PBS, PCP, HPS, BV-WSP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GB</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lib</td>
<td>55</td>
<td>62</td>
</tr>
<tr>
<td>ABW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDC A, B and C, ultimate design wind speed &lt; 140 mph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDC D&lt;sub&gt;1&lt;/sub&gt;, D&lt;sub&gt;2&lt;/sub&gt;, ultimate design wind speed &lt; 140 mph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS-G</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>CS-WSP, CS-SFB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjacent clear opening height (inches)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 64</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>68</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>72</td>
<td>27</td>
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<td>76</td>
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<td>80</td>
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<td>84</td>
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<td>144</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PWH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting roof only</td>
<td>16 24</td>
<td>16 24</td>
</tr>
<tr>
<td>Supporting one story and roof</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>PFG</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>CS-PF</td>
<td>16</td>
<td>18</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s.
NP = Not Permitted.
SECTION 44. Figure R602.10.6.1 is amended to read as follows:

FIGURE R602.10.6.1
METHOD ABW—ALTERNATE BRACED WALL PANEL
SECTION 45. Figure R602.10.6.2 is hereby amended to read as follows:

![Diagram of R602.10.6.2](image-url)

**FIGURE R602.10.6.2**

**METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS AT DETACHED GARAGE DOOR OPENINGS**

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

MIN. 2/3X1 1/2 X 80/SPX 10D SIDES NAILS IN 2" GRID PATTERNS AS SHOWN

MIN. 2X1 1/2 X 80/SPX 10D SIDES NAILS AT 3" O.C. IN ALL FRAMING (BLOKKING AND SILL) TYP.

MIN. (3) 2500 LB STRAP TYPE HOLD-DOWNS EMBEDDED INTO CONCRETE AND NAILLED INTO FRAMING

MIN. REINFORCING OF FOUNDATION, ONE #4 BAR AT TOP AND BOTTOM OF FOOTING, LAPS AT MIN.

MIN. FOOTING SIZE UNDER OPENING IS 12X12, A TURNED-DOWN SLAB SHALL BE PERMITTED AT DOOR OPENINGS.

MIN. (1) 1" DIAMETER ANCHOR BOLT INSTALLED PER SECTION R602.1.6 WITH 1/2"-13 PLATE WASHER PH/1/2X3/8" TYP.
SECTION 46. Figure R602.10.6.4 is hereby amended to read as follows:
**SECTION 47.** Section R606.4.4 is hereby amended to read as follows:

**R606.4.4 Parapet walls.**

Unreinforced solid masonry parapet walls shall not be less than 8 inches (203 mm) thick and their height shall not exceed four times their thickness. Unreinforced hollow unit masonry parapet walls shall be not less than 8 inches (203 mm) thick, and their height shall not exceed three times their thickness. Masonry parapet walls in areas subject to wind loads of 30 pounds per square foot (1.44 kPa), or located in Seismic Design Category D₀, D₁, or D₂, or on townhouses in Seismic Design Category C shall be reinforced in accordance with Section R606.12.

**SECTION 48.** Section R606.12.2.2.3 is hereby amended to read as follows:

**R606.12.2.2.3 Reinforcement requirements for masonry elements.**

Masonry elements listed in Section R606.12.2.2.2 shall be reinforced in either the horizontal or vertical direction as shown in Figure R606.11(2)R606.11(3) and in accordance with the following:

1. Horizontal reinforcement. Horizontal joint reinforcement shall consist of not less than two longitudinal W1.7 wires spaced not more than 16 inches (406 mm) for walls greater than 4 inches (102 mm) in width and not less than one longitudinal W1.7 wire spaced not more than 16 inches (406 mm) for walls not exceeding 4 inches (102 mm) in width, or not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Where two longitudinal wires of joint reinforcement are used, the space between these wires shall be the widest that the mortar joint will accommodate.
reinforcement shall be provided within 16 inches (406 mm) of the top and bottom of these masonry elements.

2. Vertical reinforcement. Vertical reinforcement shall consist of not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Vertical reinforcement shall be located within 16-8 inches (406-203 mm) of the ends of masonry walls.

SECTION 49. Section R803.2.4 is hereby added to read as follows:

R803.2.4 Openings in horizontal diaphragms.

Openings in horizontal diaphragms shall conform with Section R503.2.4.

SECTION 50. Section R905.3.1 is hereby amended to read as follows:

R905.3.1 Deck Requirements.

Concrete and clay tile shall be installed only over solid sheathing or spaced structural sheathing boards.

SECTION 51. Section R1001.3.1 is hereby amended to read as follows:

R1001.3.1 Vertical reinforcing.

For chimneys up to 40 inches (1016 mm) wide, four No. 4 continuous vertical bars adequately anchored into the concrete foundation shall be placed between wythes of solid masonry or within the cells of hollow unit masonry and grouted in accordance with Section R606. Grout shall be prevented from bonding with the flue liner so that the flue liner is free to move with thermal expansion. For chimneys more than 40 inches (1016 mm) wide, two additional No. 4 vertical bars adequately anchored into the concrete foundation shall be provided for each additional flue incorporated into the chimney or for each additional 40 inches (1016 mm) in width or fraction thereof.