

Introduced by: \_\_\_\_\_

**ORDINANCE NO.** \_\_\_\_\_

**AN ORDINANCE OF THE CITY OF PASADENA AMENDING PASADENA MUNICIPAL CODE CHAPTER 14.04 REGARDING BUILDING CODE AND RELATED CODES.**

The People of the City of Pasadena ordain as follows:

**SECTION 1.** This Ordinance, due to its length and corresponding publication cost, will be published by title and summary as permitted by Section 508 of the Charter of the City of Pasadena. The approved summary of this ordinance is as follows:

**“SUMMARY**

Ordinance No. \_\_\_\_\_. The proposed ordinance amends Chapter 14.04 regarding Building Code and Related Codes of the Pasadena Municipal Code.

Ordinance No. \_\_\_\_\_ shall take effect upon publication by title and summary. The full text of the ordinance is on file with the City Clerk’s Office.”

**SECTION 2.** Pasadena Municipal Code, Title 14, Chapter 14.04 (Building Code and Related Codes) is repealed in its entirety and is replaced as shown in Exhibit 1, attached hereto and incorporated by reference.

**SECTION 3.** The City Clerk shall certify the adoption of this ordinance and shall cause this ordinance to be published by title and summary.

**SECTION 4.** This ordinance shall take effect upon publication.

Signed and approved this \_\_\_\_\_ day of November, 2023.

\_\_\_\_\_  
Victor Gordo  
Mayor of the City of Pasadena

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I HEREBY CERTIFY that the foregoing ordinance was adopted by the City Council of the City of Pasadena at its meeting held this \_\_\_\_\_ day of \_\_\_\_\_ 2023, by the following vote:

AYES:

NOES:

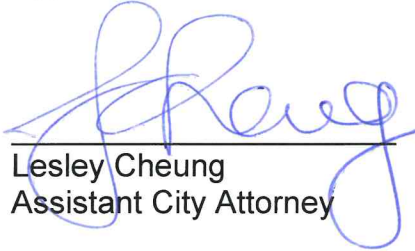
ABSENT:

ABSTAIN:

Date Published:

\_\_\_\_\_  
Mark Jomsky  
City Clerk

Approved as to form:

  
\_\_\_\_\_  
Lesley Cheung  
Assistant City Attorney

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**CHAPTER 14.04 – BUILDING CODE AND RELATED CODES**

**14.04.010 - Adoption and filing.**

California Building Codes adopted. California Code of Regulation Title 24 Parts 1 through 12 consisting of the: 2022 California Administrative Code; 2022 California Building Code with Appendix Chapters G, H, I, J, P; 2022 California Residential Code with Appendix Chapters AH, AK, AQ, AX, AZ; 2022 California Electrical Code with Annexes A, C, F, I; 2022 California Mechanical Code with Appendix Chapters B, C, F, G, H; 2022 California Plumbing Code with Appendix Chapters A, D, G, I, J, K, M, N; 2022 California Energy Code; 2022 California Historical Building Code; 2022 California Fire Code with Appendix Chapter 4, and Appendix Chapters A through O; 2022 California Existing Building Code; 2022 California Green Building Standards Code; 2022 California Referenced Standards Code, and amendments from specific State of California State Agencies. One copy of all of the above publications shall be on file for public inspection and is hereby adopted with the same force and effect as though set out herein in full.

**14.04.015 - Section 105.2 of Chapter 1 Division II of the 2022 California Building Code and Section R105.2 of Chapter 1 Division II of the 2022 California Residential Code is amended to read as follows:**

A zoning permit may be required for items exempted from building permit requirements under Chapter 1 Division II Section 105.2 and Section R105.2. Exempted work shall not violate any provisions of this Code, Federal, State, Local laws, or regulations.

**14.04.020 - Section 105.5 of the 2022 California Building Code and Section R105.5 of the 2022 California Residential Code is amended to read as follows:**

Expiration. Beginning January 1, 2017, every permit applied and issued by the Building Official under the provisions of this Code shall expire by limitation and become null and void if all work by said permit is not completed within the time limits specified below from the date of issuance of the building permit:

<b>Construction Type</b>	<b>Project Completion Time</b>
Single-Family or Duplex	24 Months
Multi-Family (3+ units)	36 Months
Non-residential	36 months

- a. Before such work can be recommenced, a permit extension, as specified in Subsection A, shall be first obtained. No permit shall be extended more than twice.
- b. Time limits will not be increased by issuance of subsequent building permits for the same project.

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- c. When a project is divided into separate permits by the applicant, the work on such permits is to be done concurrently, the time allowed to complete all work on each separate permit shall be established from the initial permit issuance date.

### A. Extensions and Fees.

- a. Any permittee holding an active permit may apply in writing for an extension of the time within which work under that permit may be continued when, for good and satisfactory reasons, he or she is unable to continue work within the time required by this section due to circumstances beyond the control of the permittee. The written request must demonstrate that:
    - i. Due to circumstances beyond the owner's or permittee's control, construction could not be commenced, continued or completed in the authorized time period;
    - ii. If the construction has started, substantial progress has been made;
    - iii. The condition of the property presents no health or safety hazard; and,
    - iv. The continued delay will not create any unreasonable aesthetic impact to the neighborhood or substantial economic detriment to the neighboring property owners.
  - b. The Building Official may extend the time for action by the permittee for a period not exceeding six calendar months. Payment of the building permit extension fee shall be required. The extension fee shall be calculated as the greater of two percent (2%) of the estimated total project valuation or one-thousand dollars.
  - c. Building permits shall not be extended more than twice, and each extension shall not exceed six months.
  - d. When a permit expires, the permit holder must first pay permit extension fees as described (b) above and reactivation fees in order to continue to complete the project. This extension may not exceed six months to complete the project and receive finals.
- B. Appeals. If the property owner feels aggrieved by the determination of the Building Official regarding the applicable time limit or by the denial of an additional six-month extension, the property owner may appeal to the Code Compliance Hearing Officer within ten days of the Building Official's decision. The appellant shall pay a hearing appeal fee at the time of filing an appeal in an amount as shall be established from time to time by resolution of the City Council. The Code Compliance Hearing Officer shall notify the appellant in writing of the date of the hearing on the appeal, and such notice shall be sent at

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least ten days before the date of the hearing, which shall be held no later than thirty days after the filing of the appeal.

### **14.04.022 – Posting of Construction Sign.**

Except for single-family construction involving only minor interior remodel, minor building permits, window change outs, re-roofs or other minor building permits, one sign, visible from the street, must be posted listing project address, permit number, work description, visual rendering, name of construction company, contact name of construction company and phone number and/or if owner-builder contact name and phone number of owner. A sign may also be required when determined by the Building Official. The sign shall also list the City's allowable construction hours and days pursuant to Pasadena Municipal Code Section 9.36.070, and clearly identify the permit expiration date. Said sign shall be white in color as background and a minimum size of 24" in height by 36" in width with 1" high legible black lettering. Posting of the required sign is the responsibility of the permittee, and such sign shall be posted and maintained at the construction site where it can be read by the public. This notice must be posted prior to the start of construction and displayed continuously until all permitted work is inspected and approved by City of Pasadena Building & Safety Division. Sign to be verified by the city upon the first inspection. Signs shall be replaced if damaged, torn, faded, or if the required information is illegible, as determined by the Building Official.

### **14.04.024 – Construction Site Fencing.**

Whenever a building permit is issued to construct, add or alter to a building or site, the installation of perimeter temporary fencing shall be required.

The installation of temporary fencing shall be required for the following projects:

1. Project involve grading, trenching or excavation activities.
2. The construction area is visible from the public right-of-way with the exception of roof replacement, window change-outs with no framing work.
3. There is outside storage of building materials, equipment, construction materials or equipment stored at the front of the property.
4. The property is vacant during the duration of the construction.
5. As determined by the Building Official.

The Building Official shall require the site to be temporarily fenced and screened on all sides for the duration of the construction project. The height of the fence shall be seventy-two inches (72) high with gates to access the site. The screening material shall be tightly secured to the fencing, free of holes and without advertising. The perimeter fencing may be removed when there are no remaining exterior construction activities visible from the public right-of-way and there is no longer visible outside storage of building materials, equipment or fixtures or as determined by the Building Official. An

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address sign shall be installed and be visible from public right of way at all perimeter points to include the street name and number of the site using minimum six-inch high letters and numbers, and shall be posted at the top of the perimeter fence or at least five feet from the ground. A "No Trespassing" sign, conforming to the requirements of California Penal Code, Section 602, shall be installed at all perimeter access points, posted at the top of the perimeter fence or at least five feet from the ground.

### **14.04.030 - Violations.**

All sections in the codes referenced in Section 14.04.010 herein pertaining to violations are amended in their entirety to read as follows:

It shall be unlawful for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert, or demolish, equip, use, occupy, or maintain, any building or structure in the City, or cause same to be done, contrary to or in violation of any of the provisions of this chapter. Any person, firm, or corporation violating any of the provisions of this Ordinance, shall be deemed guilty of a misdemeanor, and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Ordinance is committed, continued, or permitted, and upon conviction of any such violation such persons shall be punished by a fine of not more than one thousand dollars (\$1,000) or double the permit fee whichever is greater or by imprisonment for not more than one (1) year, or by both such fine and imprisonment.

In addition to the above penalty provisions, violation of any of the provisions of this chapter may be subject to the administrative proceedings set forth in Chapter 1.25 of this code.

### **14.04.040 – Board of Appeals.**

All sections in the respective codes pertaining to the Board of Appeals are hereby amended in their entirety to read as follows:

In order to hear and decide appeals or orders and determine the suitability of alternate materials and methods of construction and to provide for reasonable interpretation of the provisions of these Codes, there shall be and there is hereby created a Board of Appeals, composed of the Mayor and the City Council.

The city clerk shall be the secretary to the Board. The Board may adopt reasonable rules and regulations for conducting its investigations and shall render all its decisions and findings on contested matters, in writing to the building official, with a duplicate copy thereof to any appellant or contestant affected by any such decision of findings, and may recommend to the City Council such new legislation, if any, as is consistent therewith.

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The City Council may prescribe by resolution, to employ at the cost and expense of the City, such qualified individuals as the Board, in its discretion, may deem reasonably necessary in order to assist it in its investigation and in making its findings and decisions.

### **14.04.050 – Fees.**

The council shall by resolution adopt a schedule of fees for the permits issued pursuant hereto.

### **14.04.100 – Changes and additions to the adopted codes.**

Pursuant to the Health and Safety Code Sections 17958.5 and 17958.7, the City establishes the following local modifications. The requisite findings if applicable for such requirements are set forth in the ordinance fact sheet accompanying this ordinance.

### **14.04.110 - Section 1505.1 of the 2022 Edition of the California Building Code is amended to read as follows:**

General. Roof assemblies shall be divided into the classes defined in this section. Class A, B and C roof assemblies and roof coverings required to be listed by this section shall be tested in accordance with ASTM E108 or UL 790. In addition, fire-retardant-treated wood roof coverings shall be tested in accordance with ASTM D 2898. The minimum roof coverings installed on buildings shall comply with Table 1505.1 based on the type of construction of the building. All roof assemblies and roof coverings shall be of not less than Class B. No wood roof covering material shall be installed on any structure located in the very high, high and moderate fire hazard severity zones as identified by the Pasadena Fire Department.

**Exception #1:** Skylights and sloped glazing that comply with Chapter 24 or Section 2610. Installation of skylights of plastic material shall meet the requirements of the very high and high fire hazard severity zones.

**Exception #2:** In the moderate fire hazard severity zone, the fire code official may, upon a showing of good cause and necessity, approve the use of fire resistive wood as part of Class A listed assemblies, and may require additional mitigation as warranted, for the repair or maintenance of existing structures.

### **14.04.115 - Section 1505.6 of the 2022 Edition of the California Building Code is amended to read as follows:**

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Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and wood shakes shall not be installed in the very high, high and moderate fire hazard severity zones. Fire-retardant-treated wood shakes and shingles are wood shakes and shingles complying with UBC Standard 15-3 or 15-4 which are impregnated by the full-cell vacuum-pressure process with fire-retardant chemicals, and which have been qualified by UBC Standard 15-2 for use on Class A, B or C roofs.

Fire-retardant-treated wood shakes and shingles shall comply with ICC-ES EGI07 and with the weathering requirements contained in Health and Safety Code Section 13132.7(j). Each bundle shall bear labels from an ICC accredited quality control agency identifying their roof-covering classification and indicating their compliance with ICC-ES EGI07 and with the weathering requirements contained in Health and Safety Code Section 13132.7(j).

Health and Safety Code Section 13132.7(j). No wood roof covering materials shall be sold or applied in this state unless both of the following conditions are met:

- (1) The materials have been approved and listed by the State Fire Marshal as complying with the requirements of this section.
- (2) The materials have passed at least five years of the 10-year natural weathering test. The 10-year natural weathering test required by this subdivision shall be conducted in accordance with standard 15-2 of the 1994 Edition of the Uniform Building Code at a testing facility recognized by the State Fire Marshal.

Exception: In the moderate fire hazard severity zone, the fire code official may, upon a showing of good cause and necessity, approve the use of fire-resistive wood as part of Class A listed assemblies, and may require additional mitigation as warranted, for the repair or maintenance of existing structures.

### **14.04.120- Section 1507 of the 2022 Edition of the California Building Code is amended by adding Section 1507.1.1 to read as follows:**

Roof sheathing. When finish roofing material is removed to the existing open space sheathing, a minimum of 3/8-inch thick plywood sheathing shall be installed. The new sheathing shall comply with the requirements of the California Building Code. The sheathing shall be installed such that the edges align over rafters and individual spaced sheathing boards. The sheathing shall be attached to the existing spaced sheathing with 6d common nails at 6 inches (147mm) on center at supported edges and 6d common nails at 12 inches (294mm) on center at intermediate supports.

### **14.04.130 - Sections 1613.5 and 1613.5.1 are added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:**



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**1613.5 Amendments to ASCE 7.** The provisions of Section 1613.5 shall be permitted as an amendment to the relevant provisions of ASCE 7.

**1613.5.1 Values for vertical combinations.** Modify ASCE 7 Section 12.2.3.1 Exception 3 as follows:

3. Detached one- and two-family dwellings up to two stories in height of light frame construction.

**14.04.140 - Section 1613.5.2 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:**

**1613.5.2 Wood diaphragms.** Modify ASCE 7 Section 12.11.2.2.3 as follows:

**12.11.2.2.3 Wood Diaphragms.** The anchorage of concrete or masonry structural walls to wood diaphragms shall be in accordance with AWC SDPWS 4.1.5.1 and this section. Continuous ties required by this section shall be in addition to the diaphragm sheathing. Anchorage shall not be accomplished by use of toenails or nails subject to withdrawal, nor shall wood ledgers or framing be used in cross-grain bending or cross-grain tension. The diaphragm sheathing shall not be considered effective for providing the ties or struts required by this section.

For structures assigned to Seismic Design Category D, E or F, wood diaphragms supporting concrete or masonry walls shall comply with the following:

1. The spacing of continuous ties shall not exceed 40 feet. Added chords of diaphragms may be used to form subdiaphragms to transmit the anchorage forces to the main continuous crossties.
2. The maximum diaphragm shear used to determine the depth of the subdiaphragm shall not exceed 75% of the maximum diaphragm shear.

**14.04.141 - Section 1613.5.3 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:**

**1613.5.3 Structural separation.** Modify ASCE 7 Section 12.12.3 Equation 12.12-1 as follows:

$$\delta_M = C_d \delta_{\max} \quad (12.12-1)$$

**14.04.142 – Section 1613.6 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:**

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### 1613.6 Seismic design provisions for hillside buildings.

**1613.6.1 Purpose.** The purpose of this section is to establish minimum regulations for the design and construction of new buildings and additions to existing buildings when constructing such buildings on or into slopes steeper than one unit vertical in three units horizontal (33.3%). These regulations establish minimum standards for seismic force resistance to reduce the risk of injury or loss of life in the event of earthquakes.

**1613.6.2 Scope.** The provisions of this section shall apply to the design of the lateral-force-resisting system for hillside buildings at and below the base level diaphragm. The design of the lateral-force-resisting system above the base level diaphragm shall be in accordance with the provisions for seismic and wind design as required elsewhere in this division.

**Exception:** Non-habitable accessory buildings and decks not supporting or supported from the main building are exempt from these regulations.

**1613.6.3 Definitions.** For the purposes of this section certain terms are defined as follows:

**BASE LEVEL DIAPHRAGM** is the floor at, or closest to, the top of the highest level of the foundation.

**DIAPHRAGM ANCHORS** are assemblies that connect a diaphragm to the adjacent foundation at the uphill diaphragm edge.

**DOWNHILL DIRECTION** is the descending direction of the slope approximately perpendicular to the slope contours.

**FOUNDATION** is concrete or masonry which supports a building, including footings, stem walls, retaining walls, and grade beams.

**FOUNDATION EXTENDING IN THE DOWNHILL DIRECTION** is a foundation running downhill and approximately perpendicular to the uphill foundation.

**HILLSIDE BUILDING** is any building or portion thereof constructed on or into a slope steeper than one unit vertical in three units horizontal (33.3%). If only a portion of the building is supported on or into the slope, these regulations apply to the entire building.

**PRIMARY ANCHORS** are diaphragm anchors designed for and providing a direct connection as described in Sections 1613.6.5 and 1613.6.7.3 between the diaphragm and the uphill foundation.

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SECONDARY ANCHORS are diaphragm anchors designed for and providing a redundant diaphragm to foundation connection, as described in Sections 1613.6.6 and 1613.6.7.4.

UPHILL DIAPHRAGM EDGE is the edge of the diaphragm adjacent and closest to the highest ground level at the perimeter of the diaphragm.

UPHILL FOUNDATION is the foundation parallel and closest to the uphill diaphragm edge.

### **1613.6.4 Analysis and design.**

**1613.6.4.1 General.** Every hillside building within the scope of this section shall be analyzed, designed, and constructed in accordance with the provisions of this division. When the code-prescribed wind design produces greater effects, the wind design shall govern, but detailing requirements and limitations prescribed in this and referenced sections shall be followed.

**1613.6.4.2 Base level diaphragm-downhill direction.** The following provisions shall apply to the seismic analysis and design of the connections for the base level diaphragm in the downhill direction.

**1613.6.4.2.1 Base for lateral force design defined.** For seismic forces acting in the downhill direction, the base of the building shall be the floor at or closest to the top of the highest level of the foundation.

**1613.6.4.2.2 Base shear.** In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 5 for bearing wall and building frame systems. The total base shear shall include the forces tributary to the base level diaphragm including forces from the base level diaphragm.

### **1613.6.5 Base shear resistance-primary anchors.**

**1613.6.5.1 General.** The base shear in the downhill direction shall be resisted through primary anchors from diaphragm struts provided in the base level diaphragm to the foundation.

**1613.6.5.2 Location of primary anchors.** A primary anchor and diaphragm strut shall be provided in line with each foundation extending in the downhill direction. Primary anchors and diaphragm struts shall also be provided where interior vertical lateral-force-resisting elements occur above and in contact with the base level diaphragm. The spacing of primary anchors and diaphragm struts or collectors shall in no case exceed 30 feet (9144 mm).

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**1613.6.5.3 Design of primary anchors and diaphragm struts.** Primary anchors and diaphragm struts shall be designed in accordance with the requirements of Section 1613.6.8.

**1613.6.5.4 Limitations.** The following lateral-force-resisting elements shall not be designed to resist seismic forces below the base level diaphragm in the downhill direction:

1. Wood structural panel wall sheathing,
2. Cement plaster and lath,
3. Gypsum wallboard, and
4. Tension only braced frames.

Braced frames designed in accordance with the requirements of Section 2205.2.1.2 may be used to transfer forces from the primary anchors and diaphragm struts to the foundation provided lateral forces do not induce flexural stresses in any member of the frame or in the diaphragm struts. Deflections of frames shall account for the variation in slope of diagonal members when the frame is not rectangular.

### **1613.6.6 Base shear resistance-secondary anchors.**

**1613.6.6.1 General.** In addition to the primary anchors required by Section 1613.6.5, the base shear in the downhill direction shall be resisted through secondary anchors in the uphill foundation connected to diaphragm struts in the base level diaphragm.

**Exception:** Secondary anchors are not required where foundations extending in the downhill direction spaced at not more than 30 feet (9144 mm) on center extend up to and are directly connected to the base level diaphragm for at least 70% of the diaphragm depth.

**1613.6.6.2 Secondary anchor capacity and spacing.** Secondary anchors at the base level diaphragm shall be designed for a minimum force equal to the base shear, including forces tributary to the base level diaphragm, but not less than 600 pounds per lineal foot (8.76 kN/m) based on Allowable Stress Design (ASD) levels. The secondary anchors shall be uniformly distributed along the uphill diaphragm edge and shall be spaced a maximum of 4 feet (1219 mm) on center.

**1613.6.6.3 Design.** Secondary anchors and diaphragm struts shall be designed in accordance with Section 1613.6.8.

**1613.6.7 Diaphragms below the base level-downhill direction.** The following provisions shall apply to the lateral analysis and design of the connections for all diaphragms below the base level diaphragm in the downhill direction.

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**1613.6.7.1 Diaphragm defined.** Every floor level below the base level diaphragm shall be designed as a diaphragm.

**1613.6.7.2 Design force.** Each diaphragm below the base level diaphragm shall be designed for all tributary loads at that level using a minimum seismic force factor not less than the base shear coefficient.

**1613.6.7.3 Design force resistance-primary anchors.** The design force described in Section 1613.6.7.2 shall be resisted through primary anchors from diaphragm struts provided in each diaphragm to the foundation. Primary anchors shall be provided and designed in accordance with the requirements and limitations of Section 1613.6.5.

**1613.6.7.4 Design force resistance-secondary anchors.**

**1613.6.7.4.1 General.** In addition to the primary anchors required in Section 1613.6.7.3, the design force in the downhill direction shall be resisted through secondary anchors in the uphill foundation connected to diaphragm struts in each diaphragm below the base level.

**Exception:** Secondary anchors are not required where foundations extending in the downhill direction, spaced at not more than 30 feet (9144 mm) on center, extend up to and are directly connected to each diaphragm below the base level for at least 70% of the diaphragm depth.

**1613.6.7.4.2 Secondary anchor capacity.** Secondary anchors at each diaphragm below the base level diaphragm shall be designed for a minimum force equal to the design force but not less than 300 pounds per lineal foot (4.38 kN/m) based on Allowable Stress Design (ASD) levels. The secondary anchors shall be uniformly distributed along the uphill diaphragm edge and shall be spaced a maximum of 4 feet (1219 mm) on center.

**1613.6.7.4.3 Design.** Secondary anchors and diaphragm struts shall be designed in accordance with Section 1613.6.8.

**1613.6.8 Primary and secondary anchorage and diaphragm strut design.**

Primary and secondary anchors and diaphragm struts shall be designed in accordance with the following provisions:

1. Fasteners. All bolted fasteners used to develop connections to wood members shall be provided with square plate washers at all bolt heads and nuts. Washers shall be minimum 0.229 inch by 3 inches by 3

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inches (5.82 mm by 76 mm by 76 mm) in size. Nuts shall be tightened to finger tight plus one half (1/2) wrench turn prior to covering the framing.

2. Fastening. The diaphragm to foundation anchorage shall not be accomplished by the use of toenailing, nails subject to withdrawal, or wood in cross-grain bending or cross-grain tension.

3. Size of Wood Members. Wood diaphragm struts collectors, and other wood members connected to primary anchors shall not be less than 3 inch (76 mm) nominal width. The effects of eccentricity on wood members shall be evaluated as required per Item 9.

4. Design. Primary and secondary anchorage, including diaphragm struts, splices, and collectors shall be designed for 125% of the tributary force.

5. Allowable Stress Increase. The one-third allowable stress increase permitted under Section 1605.3.2 shall not be taken when the working (allowable) stress design method is used.

6. Steel Element of Structural Wall Anchorage System. The strength design forces for steel elements of the structural wall anchorage system, with the exception of anchor bolts and reinforcing steel, shall be increased by 1.4 times the forces otherwise required.

7. Primary Anchors. The load path for primary anchors and diaphragm struts shall be fully developed into the diaphragm and into the foundation. The foundation must be shown to be adequate to resist the concentrated loads from the primary anchors.

8. Secondary Anchors. The load path for secondary anchors and diaphragm struts shall be fully developed in the diaphragm but need not be developed beyond the connection to the foundation.

9. Symmetry. All lateral force foundation anchorage and diaphragm strut connections shall be symmetrical. Eccentric connections may be permitted when demonstrated by calculation or tests that all components of force have been provided for in the structural analysis or tests.

10. Wood Ledgers. Wood ledgers shall not be used to resist cross-grain bending or cross-grain tension.

### **1613.6.9 Lateral-force-resisting elements normal to the downhill direction.**

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**1613.6.9.1 General.** In the direction normal to the downhill direction, lateral-force-resisting elements shall be designed in accordance with the requirements of this section.

**1613.6.9.2 Base shear.** In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 5 for bearing wall and building frame systems.

**1613.6.9.3 Vertical distribution of seismic forces.** For seismic forces acting normal to the downhill direction the distribution of seismic forces over the height of the building using Section 12.8.3 of ASCE 7 shall be determined using the height measured from the top of the lowest level of the building foundation.

**1613.6.9.4 Drift limitations.** The story drift below the base level diaphragm shall not exceed 0.007 times the story height at strength design force level. The total drift from the base level diaphragm to the top of the foundation shall not exceed 3/4 inch (19 mm). Where the story height or the height from the base level diaphragm to the top of the foundation varies because of a stepped footing or story offset, the height shall be measured from the average height of the top of the foundation. The story drift shall not be reduced by the effect of horizontal diaphragm stiffness.

### **1613.6.9.5 Distribution of lateral forces.**

**1613.6.9.5.1 General.** The design lateral force shall be distributed to lateral-force-resisting elements of varying heights in accordance with the stiffness of each individual element.

**1613.6.9.5.2 Wood structural panel sheathed walls.** The stiffness of a stepped wood structural panel shear wall may be determined by dividing the wall into adjacent rectangular elements, subject to the same top of wall deflection. Deflections of shear walls may be estimated by AWC SDPWS Section 4.3.2. Sheathing and fastening requirements for the stiffest section shall be used for the entire wall. Each section of wall shall be anchored for shear and uplift at each step. The minimum horizontal length of a step shall be 8 feet (2438 mm) and the maximum vertical height of a step shall be 2 feet 8 inches (813 mm).

**1613.6.9.5.3 Reinforced concrete or masonry shear walls.** Reinforced concrete or masonry shear walls shall have forces distributed in proportion to the rigidity of each section of the wall.

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**1613.6.9.6 Limitations.** The following lateral force-resisting-elements shall not be designed to resist lateral forces below the base level diaphragm in the direction normal to the downhill direction:

1. Cement plaster and lath,
2. Gypsum wallboard, and
3. Tension-only braced frames.

Braced frames designed in accordance with the requirements of Section 2205.2.1.2 of this Code may be designed as lateral-force-resisting elements in the direction normal to the downhill direction, provided lateral forces do not induce flexural stresses in any member of the frame. Deflections of frames shall account for the variation in slope of diagonal members when the frame is not rectangular.

### **1613.6.10 Specific design provisions.**

**1613.6.10.1 Footings and grade beams.** All footings and grade beams shall comply with the following:

1. Grade beams shall extend at least 12 inches (305 mm) below the lowest adjacent grade and provide a minimum 24 inch (610 mm) distance horizontally from the bottom outside face of the grade beam to the face of the descending slope.
2. Continuous footings shall be reinforced with at least two No. 4 reinforcing bars at the top and two No. 4 reinforcing bars at the bottom.
3. All main footing and grade beam reinforcement steel shall be bent into the intersecting footing and fully developed around each corner and intersection.
4. All concrete stem walls shall extend from the foundation and reinforced as required for concrete or masonry walls.

**1613.6.10.2 Protection against decay and termites.** All wood to earth separation shall comply with the following:

1. Where a footing or grade beam extends across a descending slope, the stem wall, grade beam, or footing shall extend up to a minimum 18 inches (457 mm) above the highest adjacent grade.

**Exception:** At paved garage and doorway entrances to the building, the stem wall need only extend to the finished



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concrete slab, provided the wood framing is protected with a moisture proof barrier.

2. Wood ledgers supporting a vertical load of more than 100 pounds per lineal foot (1.46 kN/m) based on Allowable Stress Design (ASD) levels and located within 48 inches (1219 mm) of adjacent grade are prohibited. Galvanized steel ledgers and anchor bolts, with or without wood nailers, or treated or decay resistant sill plates supported on a concrete or masonry seat, may be used.

**1613.6.10.3 Sill plates.** All sill plates and anchorage shall comply with the following:

1. All wood framed walls, including nonbearing walls, when resting on a footing, foundation, or grade beam stem wall, shall be supported on wood sill plates bearing on a level surface.
2. Power-driven fasteners shall not be used to anchor sill plates except at interior nonbearing walls not designed as shear walls.

**1613.6.10.4 Column base plate anchorage.** The base of isolated wood posts (not framed into a stud wall) supporting a vertical load of 4,000 pounds (17.8 kN) based on Allowable Stress Design (ASD) levels or more and the base plate for a steel column shall comply with the following:

1. When the post or column is supported on a pedestal extending above the top of a footing or grade beam, the pedestal shall be designed and reinforced as required for concrete or masonry columns. The pedestal shall be reinforced with a minimum of four No. 4 bars extending to the bottom of the footing or grade beam. The top of exterior pedestals shall be sloped for positive drainage.
2. The base plate anchor bolts or the embedded portion of the post base, and the vertical reinforcing bars for the pedestal, shall be confined with two No. 4 or three No. 3 ties within the top 5 inches (127 mm) of the concrete or masonry pedestal. The base plate anchor bolts shall be embedded a minimum of 20 bolt diameters into the concrete or masonry pedestal. The base plate anchor bolts and post bases shall be galvanized and each anchor bolt shall have at least 2 galvanized nuts above the base plate.

**1613.6.10.5 Steel beam to column supports.** All steel beam to column supports shall be positively braced in each direction. Steel beams shall have stiffener plates installed on each side of the beam web at the column. The stiffener plates shall be welded to each beam flange and the

## EXHIBIT 1

beam web. Each brace connection or structural member shall consist of at least two 5/8 inch (15.9 mm) diameter machine bolts.

### **14.04.143 - Section 1613.7 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:**

**1613.7 Suspended ceilings.** Minimum design and installation standards for suspended ceilings shall be determined in accordance with the requirements of Section 2506.2.1 of this Code and this section.

**1613.7.1 Scope.** This part contains special requirements for suspended ceilings and lighting systems. Provisions of Section 13.5.6 of ASCE 7 shall apply except as modified herein.

**1613.7.2 General.** The suspended ceilings and lighting systems shall be limited to 6 feet (1828 mm) below the structural deck unless the lateral bracing is designed by a licensed engineer or architect.

**1613.7.3 Sprinkler heads.** All sprinkler heads (drops) except fire-resistance-rated floor/ceiling or roof/ceiling assemblies, shall be designed to allow for free movement of the sprinkler pipes with oversize rings, sleeves or adaptors through the ceiling tile. Sprinkler heads and other penetrations shall have a 2 inch (50mm) oversize ring, sleeve, or adapter through the ceiling tile to allow for free movement of at least 1 inch (25mm) in all horizontal directions. Alternatively, a swing joint that can accommodate 1 inch (25 mm) of ceiling movement in all horizontal directions is permitted to be provided at the top of the sprinkler head extension.

Sprinkler heads penetrating fire-resistance-rated floor/ceiling or roof/ceiling assemblies shall comply with Section 714 of this Code.

**1613.7.4 Special requirements for means of egress.** Suspended ceiling assemblies located along means of egress serving an occupant load of 30 or more and at lobbies accessory to Group A Occupancies shall comply with the following provisions.

**1613.7.4.1 General.** Ceiling suspension systems shall be connected and braced with vertical hangers attached directly to the structural deck along the means of egress serving an occupant load of 30 or more and at lobbies accessory to Group A Occupancies. Spacing of vertical hangers shall not exceed 2 feet (610 mm) on center along the entire length of the suspended ceiling assembly located along the means of egress or at the lobby.

**1613.7.4.2 Assembly device.** All lay-in panels shall be secured to the suspension ceiling assembly with two hold-down clips minimum for each tile within a 4-foot (1219 mm) radius of the exit lights and exit signs.

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**1613.7.4.3 Emergency systems.** Independent supports and braces shall be provided for light fixtures required for exit illumination. Power supply for exit illumination shall comply with the requirements of Section 1008.3 of this Code.

**1613.7.4.4 Supports for appendage.** Separate support from the structural deck shall be provided for all appendages such as light fixtures, air diffusers, exit signs, and similar elements.

### **14.04.145 - Section 1704.6 of the 2022 Edition of the California Building Code is amended to read as follows:**

**Section 1704.6 Structural Observations.** Where required by the provisions of Section 1704.6.1, the owner or the owner's authorized agent shall employ a structural observer to perform structural observations. The structural observer shall visually observe representative locations of structural systems, details and load paths for general conformance to the approved construction documents. Structural observation does not include or waive the responsibility for the inspections in Section 110 or the special inspections in Section 1705 or other sections of this code. The structural observer shall be one of the following individuals:

1. The registered design professional responsible for the structural design, or
2. A registered design professional designated by the registered design professional responsible for the structural design.

Prior to the commencement of observations, the structural observer shall submit to the building official a written statement identifying the frequency and extent of structural observations.

The owner or owner's authorized agent shall coordinate and call a preconstruction meeting between the structural observer, contractors, affected subcontractors and special inspectors. The structural observer shall preside over the meeting. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load resisting systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the report submitted to the building official.

Observed deficiencies shall be reported in writing to the owner or owner's authorized agent, special inspector, contractor and the building official. Upon the form prescribed by the building official, the structural observer shall submit to the building official a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer which states that all observed deficiencies have been resolved is required before acceptance of the work by the building official.

## EXHIBIT 1

### 14.04.147 – Section 1704.6.1 of the 2022 Edition of the California Building Code is amended to read as follows:

**1704.6.1 Structural observations for structures seismic resistance.** Structural observations shall be provided for those structures where one or more of the following conditions exist:

1. The structure is classified as Risk Category III or IV.
2. The structure is a high-rise building.
3. A lateral design is required for the structure or portion thereof.

**Exception:** One-story wood framed Group R-3 and Group U Occupancies less than 2,000 square feet in area, provided the adjacent grade is not steeper than 1 unit vertical in 10 units horizontal (10% sloped), assigned to Seismic Design Category D.

4. Such observation is required by the registered design professional responsible for the structural design.
5. Such observation is specifically required by the building official.

### 14.04.150 - Section 1705.3 of the 2022 Edition of the California Building Code is amended to read as follows:

**1705.3 Concrete Construction.** Special inspections and tests of concrete construction shall be performed in accordance with this section and Table 1705.3.

**Exceptions:** Special inspection and tests shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock, where the structural design of the footing is based on a specified compressive strength,  $f'_c$ , no greater than 2,500 pounds per square inch (psi) (17.2 MPa) regardless of the compressive strength specified in the construction documents or used in the footing construction.
2. Continuous concrete footings supporting walls of buildings three stories or less above grade plane that are fully supported on earth or rock where:
  - 2.1. The footings support walls of light-frame construction;
  - 2.2. The footings are designed in accordance with Table 1809.7; or
  - 2.3. The structural design of the footing is based on a specified compressive strength,  $f'_c$ , no greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the construction documents or used in the footing construction.

## EXHIBIT 1

3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 MPa).
4. Concrete patios, driveways and sidewalks, on grade.

### **14.04.160 - Section 1705.13 of the 2022 Edition of the California Building Code is amended to read as follows:**

**1705.13 Special inspections for seismic resistance.** Special inspections for seismic resistance shall be required as specified in Sections 1705.13.1 through 1705.13.9, unless exempted by the exceptions of Section 1704.2.

**Exception:** The special inspections specified in Sections 1705.13.1 through 1705.13.9 are not required for structures designed and constructed in accordance with one of the following:

1. The structure consists of light-frame construction; the design spectral response acceleration at short periods,  $S_{DS}$ , as determined in Section 1613.2.4, does not exceed 0.5; and the building height of the structure does not exceed 35 feet (10 668 mm).
2. The seismic force-resisting system of the structure consists of reinforced masonry or reinforced concrete; the design spectral response acceleration at short periods,  $S_{DS}$ , as determined in Section 1613.2.4, does not exceed 0.5; and the building height of the structure does not exceed 25 feet (7620 mm).
3. The structure is a detached one- or two-family dwelling not exceeding two stories above grade plane, is not assigned to Seismic Design Category D, E or F, and does not have any of the following horizontal or vertical irregularities in accordance with Section 12.3 of ASCE 7:
  - 3.1 Torsional or extreme torsional irregularity.
  - 3.2 Nonparallel systems irregularity.
  - 3.3 Stiffness-soft story or stiffness-extreme soft story irregularity.
  - 3.4 Discontinuity in lateral strength-weak story irregularity.

### **14.04.165 - Section 1807.1.4 of the 2022 Edition of the California Building Code is amended to read as follows:**

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**1807.1.4 Permanent wood foundation systems.** Permanent wood foundation systems shall be designed and installed in accordance with AWC PWF. Lumber and plywood shall be treated in accordance with AWPA U1 (Commodity Specification A, Special Requirement 4.2) and shall be identified in accordance with Section 2303.1.9.1. Permanent wood foundation systems shall not be used for structures assigned to Seismic Design Category D, E or F.

**14.04.170 - Section 1807.1.6 of the 2022 Edition of the California Building Code is amended to read as follows:**

**1807.1.6 Prescriptive design of concrete and masonry foundation walls.** Concrete and masonry foundation walls that are laterally supported at the top and bottom shall be permitted to be designed and constructed in accordance with this section. Prescriptive design of foundation walls shall not be used for structures assigned to Seismic Design Category D, E or F.

**14.04.176 - Section 1807.2 of the 2022 Edition of the California Building Code is amended to read as follows:**

**1807.2 Retaining walls.** Retaining walls shall be designed in accordance with Section 1807.2.1 through 1807.2.4. Retaining walls assigned to Seismic Design Category D, E or F shall not be partially or wholly constructed of wood.

**14.04.177 - Section 1807.3.1 of the 2022 Edition of the California Building Code is amended to read as follows:**

**1807.3.1 Limitations.** The design procedures outlined in this section are subject to the following limitations:

1. The frictional resistance for structural walls and slabs on silts and clays shall be limited to one-half of the normal force imposed on the soil by the weight of the footing or slab.
2. Posts embedded in earth shall not be used to provide lateral support for structural or nonstructural materials such as plaster, masonry or concrete unless bracing is provided that develops the limited deflection required.

Wood poles shall be treated in accordance with AWPA U1 for sawn timber posts (Commodity Specification A, Use Category 4B) and for round timber posts (Commodity Specification B, Use Category 4B). Wood poles and posts embedded in direct contact with soil shall not be used for structures assigned to Seismic Design Category D, E or F.

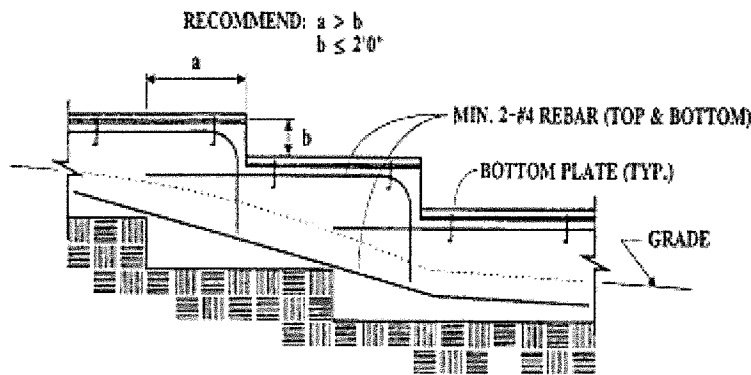
## EXHIBIT 1

**Exception:** Wood poles and posts embedded in direct contact with soil may be used to support nonhabitable, nonoccupiable structures such as fences when approved by the building official.

**14.04.178 – Section 1809.3 of the 2022 Edition of the California Building Code is amended to read as follows:**

**1809.3 Stepped footings.** The top surface of footings shall be level. The bottom surface of footings shall be permitted to have a slope not 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 footing or where the surface of the ground slopes more than one unit vertical in 10 units horizontal (10-percent slope).

For structures assigned to Seismic Design Category D, E or F, the stepping requirement shall also apply to the top surface of continuous footings supporting walls. Footings shall be reinforced with four No. 4 deformed reinforcing bars. Two bars shall be placed at the top and bottom of the footings as shown in Figure 1809.3.



STEPPED FOUNDATIONS

FIGURE 1809.3  
STEPPED FOOTING

**14.04.180- Section 1809.7 and Table 1809.7 of the 2022 Edition of the California Building Code is amended to read as follows:**

**1809.7 Prescriptive footings for light-frame construction.** Where a specific design is not provided, concrete or masonry-unit footings supporting walls of light-frame construction shall be permitted to be designed in accordance with Table 1809.7. Light-frame construction using prescriptive footings in Table 1809.7 shall not exceed one story above grade plane for structures assigned to Seismic Design Category D, E or F.

TABLE 1809.7  
PRESCRIPTIVE FOOTINGS SUPPORTING WALLS OF

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## LIGHT-FRAME CONSTRUCTION <sup>a, b, c, d, e</sup>

NUMBER OF FLOORS SUPPORTED BY THE FOOTING <sup>f</sup>	WIDTH OF FOOTING (inches)	THICKNESS OF FOOTING (inches)
1	12	6
2	15	6
3	18	8

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

- Depth of footings shall be in accordance with Section 1809.4.
- The ground under the floor shall be permitted to be excavated to the elevation of the top of the footing.
- Not adopted.
- See Section 1905 for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.
- For thickness of foundation walls, see Section 1807.1.6.
- Footings shall be permitted to support a roof addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

### 14.04.185 - Section 1809.12 of the 2022 Edition of the California Building Code is amended to read as follows:

**1809.12 Timber footings.** Timber footings shall be permitted for buildings of Type V construction and as otherwise approved by the Building Official. Such footings shall be treated in accordance with AWPA U1 (Commodity Specification A, Use Category 4B). Treated timbers are not required where placed entirely below permanent water level, or where used as capping for wood piles that project above the water level over submerged or marsh lands. The compressive stresses perpendicular to grain in untreated timber footings supported on treated piles shall not exceed 70 percent of the allowable stresses for the species and grade of timber as specified in the ANSI/AWC NDS. Timber footings shall not be used in structures assigned to Seismic Design Category D, E or F.

### 14.04.190 - Section 1810.3.2.4 of the 2022 Edition of the California Building Code is amended to read as follows:

**1810.3.2.4 Timber.** Timber deep foundation elements shall be designed as piles or poles in accordance with ANSI/AWC NDS. Round timber elements shall conform to ASTM D 25. Sawn timber elements shall conform to DOC PS-20. Timber deep foundation elements shall not be used in structures assigned to Seismic Design Category D, E or F.

### 14.04.210 - Section 1905.1.7 of the 2022 Edition of the California Building Code is amended to read as follows:

**1905.1.7 ACI 318, Section 14.1.4.** Delete ACI 318, Section 14.1.4, and replace with the following:

14.1.4 – Plain concrete in structures assigned to Seismic Design Category C, D, E or F.



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14.1.4.1 – Structures assigned to Seismic Design Category C, D, E or F shall not have elements of structural plain concrete, except as follows:

- (a) Concrete used for fill with a minimum cement content of two (2) sacks of Portland cement or cementitious material per cubic yard.
- (b) Isolated footings of plain concrete supporting pedestals or columns are permitted, provided the projection of the footing beyond the face of the supported member does not exceed the footing thickness.
- (c) Plain concrete footings supporting walls are permitted, provided the footings have at least two continuous longitudinal reinforcing bars. Bars shall not be smaller than No. 4 and shall have a total area of not less than 0.002 times the gross cross-sectional area of the footing. A minimum of one bar shall be provided at the top and bottom of the footing. Continuity of reinforcement shall be provided at corners and intersections.

Exception:

Detached one- and two-family dwellings three stories or less in height and constructed with stud-bearing walls, are permitted to have plain concrete footings with at least two continuous longitudinal reinforcing bars not smaller than No. 4 and are permitted to have a total area of longitudinal reinforcement less than 0.002 times the gross cross-sectional area of the footing.

**14.04.215 - Section 1905.1 is amended and Sections 1905.1.9 through 1905.1.11 are added to Chapter 19 of the 2022 Edition of the California Building Code to read as follows:**

**1905.1 General.** The text of ACI 318 shall be modified as indicated in Sections 1905.1.1 through 1905.1.11.

**1905.1.9 ACI 318, Section 18.7.5.** Modify ACI 318, Section 18.7.5, by adding Section 18.7.5.8 and 18.7.5.9 as follows:

18.7.5.8 – Where the calculated point of contraflexure is not within the middle half of the member clear height, provide transverse reinforcement as specified in ACI 318 Sections 18.7.5.1, Items (a) through (c), over the full height of the member.

18.7.5.9 – At any section where the design strength,  $\phi P_n$ , of the column is less than the sum of the shears  $V_e$  computed in accordance with ACI 318 Sections 18.7.6.1 and 18.6.5.1 for all the beams framing into the column

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above the level under consideration, transverse reinforcement as specified in ACI 318 Sections 18.7.5.1 through 18.7.5.3 shall be provided. For beams framing into opposite sides of the column, the moment components are permitted to be assumed to be of opposite sign. For the determination of the design strength,  $\phi P_n$ , of the column, these moments are permitted to be assumed to result from the deformation of the frame in any one principal axis.

**1905.1.10 ACI 318, Section 18.10.4.** Modify ACI 318, Section 18.10.4, by adding Section 18.10.4.7 as follows:

18.10.4.7 – Walls and portions of walls with  $P_u > 0.35P_o$  shall not be considered to contribute to the calculated shear strength of the structure for resisting earthquake-induced forces. Such walls shall conform to the requirements of ACI 318 Section 18.14.

**1905.1.11 ACI318, Section 18.12.6.** Modify ACI 318, by adding Section 18.12.6.2 as follows:

18.12.6.2 Collector and boundary elements in topping slabs placed over precast floor and roof elements shall not be less than 3 inches (76 mm) or  $6 d_b$  in thickness, where  $d_b$  is the diameter of the largest reinforcement in the topping slab.

**14.04.216 – Section 2304.10.2 of the 2022 Edition of the California Building Code is amended to read as follows:**

**2304.10.2 Fastener requirements.** Connections for wood members shall be designed in accordance with the appropriate methodology in Section 2302.1. The number and size of fasteners connecting wood members shall not be less than that set forth in Table 2304.10.2. Staple fasteners in Table 2304.10.2 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

**Exception:** Staples may be used to resist or transfer seismic forces when the allowable shear values are substantiated by cyclic testing and approved by the building official.

**14.04.217 – Section 2304.10.3.1 of the 2022 Edition of the California Building Code is amended to read as follows:**

**2304.10.3.1 Quality of Nails.** In Seismic Design Category D, E or F, mechanically driven nails used in wood structural panel shear walls shall meet the same dimensions as that required for hand-driven nails, including diameter, minimum length and minimum head diameter. Clipped head or box nails are not permitted in new construction. The

## EXHIBIT 1

allowable design value for clipped head nails in existing construction may be taken at no more than the nail-head-area ratio of that of the same size hand-driven nails.

**14.04.220 – Section 2304.12.2.8 of the 2022 Edition of the California Building Code is amended to read as follows:**

**2304.12.2.8 Wood used in retaining walls and cribs.** Wood installed in retaining or crib walls shall be preservative treated in accordance with AWPA U1 for soil and fresh water use. Wood shall not be used in retaining or crib walls for structures assigned to Seismic Design Category D, E or F.

**14.04.225- Section 2305.4 is added to the 2022 Edition of the California Building Code to read as follows:**

**2305.4 Hold-down connectors.** In Seismic Design Category D, E or F, hold-down connectors shall be designed to resist shear wall overturning moments using approved cyclic load values or 75 percent of the allowable seismic load values that do not consider cyclic loading of the product. Connector bolts into wood framing shall require steel plate washers on the post on the opposite side of the anchorage device. Plate size shall be a minimum of 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Hold-down connectors shall be tightened to finger tight plus one half (1/2) wrench turn just prior to covering the wall framing.

**14.04.236 - Section 2306.2 is added to the 2022 Edition of the California Building Code to read as follows:**

**2306.2 Wood-frame diaphragms.** Wood-frame diaphragms shall be designed and constructed in accordance with AWC SDPWS. Where panels are fastened to framing members with staples, requirements and limitations of AWC SDPWS shall be met and the allowable shear values set forth in Table 2306.2(1) or 2306.2(2) shall only be permitted for structures assigned to Seismic Design Category A, B, or C.

**Exception:** Allowable shear values where panels are fastened to framing members with staples may be used if such values are substantiated by cyclic testing and approved by the building official.

The allowable shear values in Tables 2306.2(1) and 2306.2(2) are permitted to be increased 40 percent for wind design.

Wood structural panels used to resist seismic diaphragm forces in structures assigned to Seismic Design Category D, E or F shall be applied directly to the framing members.

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**Exception:** Wood structural panels are permitted to be fastened over solid lumber planking or laminated decking, provided the panel joints and lumber planking or laminated decking joints do not coincide.

**14.04.237 – Section 2306.3 is added to the 2022 Edition of the California Building Code to read as follows:**

**2306.3 Wood-frame shear walls.** Wood-frame shear walls shall be designed and constructed in accordance with ANSI/AWC SDPWS. For structures assigned to Seismic Design Category D, E, or F, application of Table 4.3A of ANSI/AWC SDPWS shall include the following:

1. Wood structural panel thickness for shear walls shall not be less than 3/8 inch thick and studs shall not be spaced at more than 16 inches on center.
2. The maximum nominal unit shear capacities for 3/8 inch wood structural panels resisting seismic forces in structures assigned to Seismic Design Category D, E or F is 400 pounds per linear foot (plf).

**Exception:** Other nominal unit shear capacities may be permitted if such values are substantiated by cyclic testing and approved by the building official.

3. Nails shall be placed not less than 1/2 inch in from the panel edges and not less than 3/8 inch from the edge of the connecting members for shear greater than 350 plf using ASD or 500 plf using LRFD. Nails shall be placed not less than 3/8 inch from panel edges and not less than 1/4 inch from the edge of the connecting members for shears of 350 plf or less using ASD or 500 plf or less using LRFD.

For structures assigned to Seismic Design Category D, E or F, application of Table 4.3B of ANSI/AWC SDPWS shall not be allowed.

For structures assigned to Seismic Design Category D, E or F, application of Table 4.3C of ANSI/AWC SDPWS shall not be used below the top level in a multi-level building.

Where panels are fastened to framing members with staples, requirements and limitations of AWC SDPWS shall be met and the allowable shear values set forth in Table 2306.3(1), 2306.3(2) or 2306.3(3) shall only be permitted for structures assigned to Seismic Design Category A, B, or C.

**Exception:** Allowable shear values where panels are fastened to framing members with staples may be used if such values are substantiated by cyclic testing and approved by the building official.

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The allowable shear values in Tables 2306.3(1) and 2306.3(2) are permitted to be increased 40 percent for wind design. Panels complying with ANSI/APA PRP-210 shall be permitted to use design values for Plywood Siding in the ANSI/AWC SDPWS.

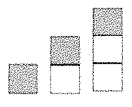


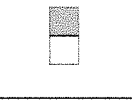


**14.04.238 – Section 2307.2 is added to the 2022 Edition of the California Building Code to read as follows:**

**2307.2 Wood-frame shear walls.** Wood-frame shear walls shall be designed and constructed in accordance with Section 2306.3 as applicable.

**14.04.239 – Table 2308.6.1 is added to the 2022 Edition of the California Building Code to read as follows:**

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**TABLE 2308.6.1<sup>a</sup>**  
**WALL BRACING REQUIREMENTS**

SEISMIC DESIGN CATEGORY	STORY CONDITION (SEE SECTION 2308.2)	MAXIMUM SPACING OF BRACED WALL LINES	BRACED PANEL LOCATION, SPACING (O.C.) AND MINIMUM PERCENTAGE (X)			MAXIMUM DISTANCE OF BRACED WALL PANELS FROM EACH END OF BRACED WALL LINE
			Bracing method <sup>b</sup>			
			LIB	DWB, WSP	SFB, PBS, PCP, HPS, GB <sup>c,d</sup>	
A and B		35'- 0"	Each end and ≤ 25'- 0" o.c.	Each end and ≤ 25'- 0" o.c.	Each end and ≤ 25'- 0" o.c.	12'- 6"
		35'- 0"	Each end and ≤ 25'- 0" o.c.	Each end and ≤ 25'- 0" o.c.	Each end and ≤ 25'- 0" o.c.	12'- 6"
		35'- 0"	NP	Each end and ≤ 25'- 0" o.c.	Each end and ≤ 25'- 0" o.c.	12'- 6"
C		35'- 0"	NP	Each end and ≤ 25'- 0" o.c.	Each end and ≤ 25'- 0" o.c.	12'- 6"
		35'- 0"	NP	Each end and ≤ 25'- 0" o.c. (minimum 25% of wall length) <sup>e</sup>	Each end and ≤ 25'- 0" o.c. (minimum 25% of wall length) <sup>e</sup>	12'- 6"
D and E <sup>f,g,h</sup>		25'- 0"	NP	$S_{DS} < 0.50$ : Each end and ≤ 25'- 0" o.c. (minimum 21% of wall length) <sup>e</sup>	$S_{DS} < 0.50$ : Each end and ≤ 25'- 0" o.c. (minimum 43% of wall length) <sup>e</sup>	8'- 0"
				$0.5 \leq S_{DS} < 0.75$ : Each end and ≤ 25'- 0" o.c. (minimum 32% of wall length) <sup>e</sup>	$0.5 \leq S_{DS} < 0.75$ : Each end and ≤ 25'- 0" o.c. (minimum 59% of wall length) <sup>e</sup>	
				$0.75 \leq S_{DS} \leq 1.00$ : Each end and ≤ 25'- 0" o.c. (minimum 37% of wall length) <sup>e</sup>	$0.75 \leq S_{DS} \leq 1.00$ : Each end and ≤ 25'- 0" o.c. (minimum 75% of wall length)	
				$S_{DS} > 1.00$ : Each end and ≤ 25'- 0" o.c. (minimum 48% of wall length) <sup>e</sup>	$S_{DS} > 1.00$ : Each end and ≤ 25'- 0" o.c. (minimum 100% of wall length) <sup>e</sup>	

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

NP = Not Permitted.

- This table specifies minimum requirements for braced wall panels along interior or exterior braced wall lines.
- See Section 2308.6.3 for full description of bracing methods.
- For Method GB, gypsum wallboard applied to framing supports that are spaced at 16 inches on center.
- The required lengths shall be doubled for gypsum board applied to only one face of a braced wall panel.
- Percentage shown represents the minimum amount of bracing required along the building length (or wall length if the structure has an irregular shape).
- DWB, SFB, PBS and HPS wall braces are not permitted in Seismic Design Categories D or E.
- Minimum length of panel bracing of one face of the wall for WSP sheathing shall be at least 4'-0" long or both faces of the wall for GB or PCP sheathing shall be at least 8'-0" long; h/w ratio shall not exceed 2:1. Wall framing to which sheathing used for bracing is applied shall be nominal 2 inch wide [actual 1 1/2 inch (38 mm)] or larger members and spaced a maximum of 16 inches on center. Braced wall panel construction types shall not be mixed within a braced wall line.
- WSP sheathing shall be a minimum of 15/32" thick nailed with 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

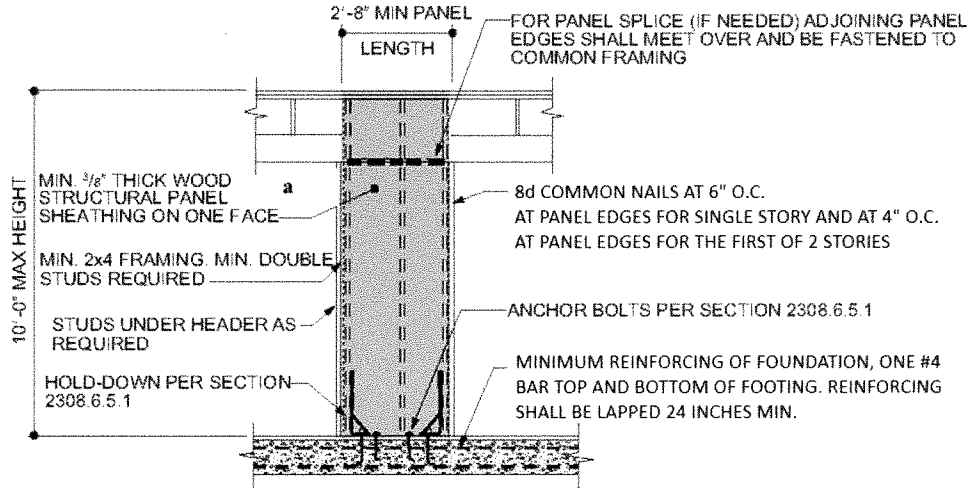
## EXHIBIT 1

**Sections 2308.6.5.1 and 2308.6.5.2 and Figures 2308.6.5.1 and 2308.6.5.2 of the 2022 Edition of the California Building Code are amended to read as follows:**

**2308.6.5.1 Alternate braced wall (ABW).** An ABW shall be constructed in accordance with this section and Figure 2308.6.5.1. In one-story buildings, each panel shall have a length of not less than 2 feet 8 inches (813 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with 3/8-inch (3.2 mm) minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 2304.10.1 and blocked at wood structural panel edges. For structures assigned to Seismic Design Category D or E, each panel shall be sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports. Two anchor bolts installed in accordance with Section 2308.3.1 shall be provided in each panel. Anchor bolts shall be placed at each panel outside quarter points. Each panel end stud shall have a hold-down device fastened to the foundation, capable of providing an approved uplift capacity of not less than 1,800 pounds (8006 N). The hold-down device shall be installed in accordance with the manufacturer's recommendations. The ABW shall be supported directly on a foundation or on floor framing supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No.4 bar top and bottom. Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing is permitted at door openings in the braced wall line. This continuous footing shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped 24 inches (610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

Where the ABW is installed at the first story of two-story buildings, the wood structural panel sheathing shall be provided on both faces, three anchor bolts shall be placed at one-quarter points and tie-down device uplift capacity shall be not less than 3,000 pounds (13 344 N).

**EXHIBIT 1**



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

a. For structures assigned to Seismic Design Category D or E, sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing.

**FIGURE 2308.6.5.1  
ALTERNATE BRACED WALL PANEL (ABW)**

**2308.6.5.2 Portal frame with hold-downs (PFH).** A PFH shall be constructed in accordance with this section and Figure 2308.6.5.2. The adjacent door or window opening shall have a full-length header.

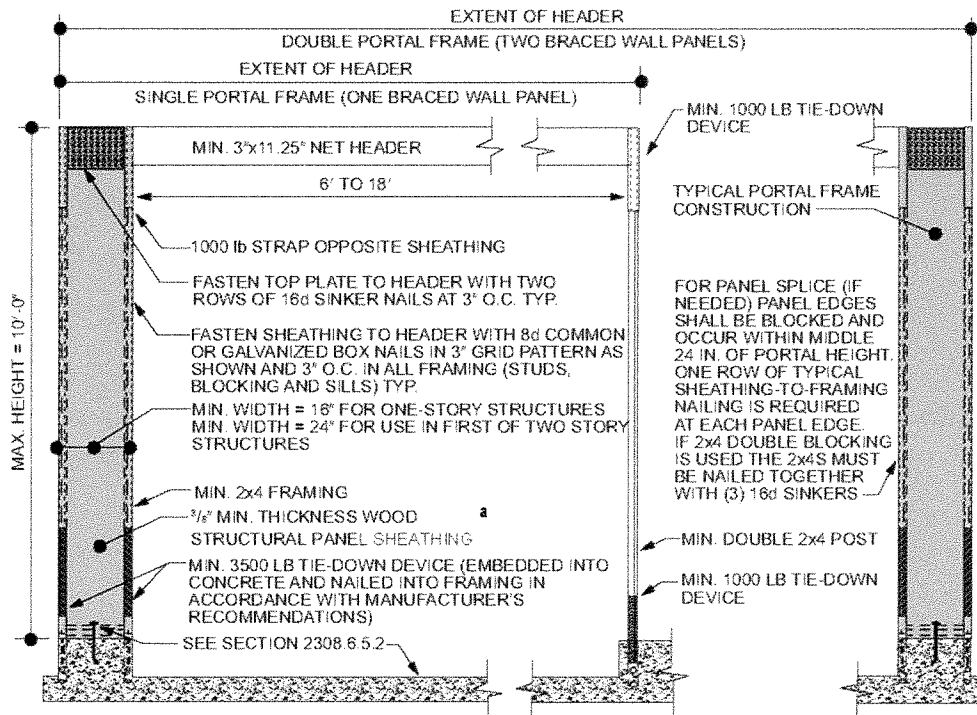
In one-story buildings, each panel shall have a length of not less than 16 inches (406 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with a single layer of 3/8-inch (9.5 mm) minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Figure 2308.6.5.2. For structures assigned to Seismic Design Category D or E, each panel shall be sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports and in accordance with Figure 2308.6.5.2. The wood structural panel sheathing shall extend up over the solid sawn or glued-laminated header and shall be nailed in accordance with Figure 2308.6.5.2. A built-up header consisting of at least two 2-inch by 12-inch (51 mm by 305 mm) boards, fastened in accordance with Item 24 of Table 2304.10.1 shall be permitted to be used. A spacer, if used, shall be placed on the side of the built-up beam opposite the wood structural panel sheathing. The header shall extend between the inside faces of the first full-length outer studs of each panel. The clear span of the header between the inner studs of each panel shall be not less than 6 feet (1829 mm) and not more than 18 feet (5486 mm) in length. A strap with an uplift capacity of not less than 1,000 pounds (4,400 N) shall fasten the header to the inner studs opposite the sheathing. One anchor bolt not less than 5/8 inch (15.9 mm) diameter and installed in accordance with Section 2308.3.1 shall be provided in the center of each sill plate. The studs at each end of the panel shall have a hold-down device fastened to the foundation with an uplift capacity of not less than 3,500 pounds (15 570 N).



# EXHIBIT 1

Where a panel is located on one side of the opening, the header shall extend between the inside face of the first full-length stud of the panel and the bearing studs at the other end of the opening. A strap with an uplift capacity of not less than 1,000 pounds (4400 N) shall fasten the header to the bearing studs. The bearing studs shall also have a hold-down device fastened to the foundation with an uplift capacity of not less than 1,000 pounds (4400 N). The hold-down devices shall be an embedded strap type, installed in accordance with the manufacturer's recommendations. The PFH panels shall be supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No. 4 bar top and bottom. Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing is permitted at door openings in the braced wall line. This continuous footing shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped not less than 24 inches (610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

Where a PFH is installed at the first story of two-story buildings, each panel shall have a length of not less than 24 inches (610 mm).



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.448 N.

a. For structures assigned to Seismic Design Category D or E, sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing.

**FIGURE 2308.6.5.2**  
**PORTAL FRAME WITH HOLD-DOWNS (PFH)**

## EXHIBIT 1

### **14.04.241 - Section 2308.6.8.1 is added to the 2022 Edition of the California Building Code to read as follows:**

**2308.6.8.1 Foundation requirements.** Braced wall lines shall be supported by continuous foundations.

**Exception:** For structures with a maximum plan dimension not more than 50 feet (15 240 mm), continuous foundations are required at exterior walls only for structures assigned to Seismic Design Category A, B, or C.

For structures in Seismic Design Categories D and E, exterior braced wall panels shall be in the same plane vertically with the foundation or the portion of the structure containing the offset shall be designed in accordance with accepted engineering practice and Section 2308.1.1.

### **14.04.250 – Section 2308.6.9 of the 2022 Edition of the California Building Code is amended to read as follows:**

**2308.6.9 Attachment of sheathing.** Fastening of braced wall panel sheathing shall not be less than that prescribed in Tables 2308.6.1 or 2304.10.2. Wall sheathing shall not be attached to framing members by adhesives. Staple fasteners in Table 2304.10.2 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

**Exception:** Staples may be used to resist or transfer seismic forces when the allowable shear values are substantiated by cyclic testing and approved by the building official.

All braced wall panels shall extend to the roof sheathing and shall be attached to parallel roof rafters or blocking above with framing clips (18 gauge minimum) spaced at maximum 24 inches (6096 mm) on center with four 8d nails per leg (total eight 8d nails per clip minimum). Braced wall panels shall be laterally braced at each top corner and at intervals not to exceed 24 inches (6096 mm) intervals along the top plate of discontinuous vertical framing.

### **14.04.251 - Section 3109.1.1 to the 2022 Edition of the California Building Code to read as follows:**

In addition to the requirements of Section 3109 in the California Building Code, a swimming pool, pool, spa or any body of water over 18 inches deep shall have an enclosure consisting of a fence, wall, portions of a building or other approved durable material, that isolates all bodies of water from the private building or structure. The enclosure shall be installed around the perimeter of the bodies of water, or at the perimeter of the property.

## EXHIBIT 1

### **14.04.252 - Exception #6 of Section 3115.1 to Chapter 31 of the 2022 Edition of the California Building Code to read as follow:**

6. Single-unit stand-alone intermodal shipping containers used as temporary storage or construction trailer on active construction sites. Construction support facilities for uses and activities not directly associated with the actual processes of construction, including but not limited to, offices, meeting rooms, plan rooms, other administrative or support functions shall not be exempt from Section 3115.

### **14.04.253 – Section 3115.8.1 and Section 3115.8.1.2 of the 2022 Edition of the California Building Code are amended to read as follows:**

**3115.8.1 Foundations and supports.** Intermodal shipping containers repurposed for use as a permanent building or structure shall be supported on foundations or other supporting structures designed and constructed in accordance with Chapters 16 through 23.

**3115.8.1.2 Stacking.** Intermodal shipping containers used to support stacked units shall comply with Section 3115.8.4.

### **14.04.254 – Section 3115.8.2 of the 2022 Edition of the California Building Code is amended to read as follows:**

**3115.8.2 Welds.** The strength of new welds and connections shall be no less than the strength provided by the original connections. All new welds and connections shall be designed and constructed in accordance with Chapters 16, 17 and 22.

### **14.04.255 – Section 3115.8.4 of the 2022 Edition of the California Building Code is amended to read as follows:**

**3115.8.4 Detailed structural design procedure.** A structural analysis meeting the requirements of this section shall be provided to the building official to demonstrate the structural adequacy of the intermodal shipping containers.

**Exception:** Structures using an intermodal shipping containers designed in accordance with Section 3115.8.5.

## EXHIBIT 1

**14.04.256 – Sections 3115.8.4.1, 3115.8.4.2, and 3115.8.4.3 of the 2022 Edition of the California Building Code are amended to read as follows:**

**3115.8.4.1 Material properties.** Structural material properties for existing intermodal shipping container steel components shall be established by Section 2202.

**3115.8.4.2 Seismic design parameters.** The seismic force-resisting system shall be designed and detailed in accordance with ASCE 7 and one of the following:

1. Where all or portions of the profiled steel panel elements are considered to be the seismic force-resisting system, design and detailing shall be in accordance with AISI S100 and ASCE 7, Table 12.2-1 requirements for steel systems not specifically detailed for seismic resistance, excluding cantilevered column systems.
2. Where all or portions of the profiled steel panel elements are not considered to be part of the seismic force-resisting system, an independent seismic force-resisting system shall be selected, and detailed in accordance with ASCE 7, Table 12.2-1, or
3. Where all or portions of the profiled steel panel elements are retained and integrated into a seismic force-resisting system other than as permitted by Section 3115.8.4.2 Item 1, seismic design parameters shall be developed from testing and analysis in accordance with Section 104.11 and ASCE 7, Section 12.2.1.1 or 12.2.1.2.

**3115.8.4.3 Allowable shear value.** The allowable shear values for the profiled steel panel side walls and end walls shall be determined in accordance with the design approach selected in Section 3115.8.4.2. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.

**14.04.257 – Section 3115.8.5.2 of the 2022 Edition of the California Building Code is amended to read as follows:**

**3115.8.5.2 Simplified structural design assumptions.** Where permitted by Section 3115.8.5.1, single-unit stand-alone, intermodal shipping containers shall be designed using the following assumptions for the profiled steel panel side walls and end walls:

1. The appropriate detailing requirements contained in Chapters 16 through 23.
2. Response modification coefficient,  $R = 2$ .
3. Over strength factor,  $\Omega_0 = 2.5$ .
4. Deflection amplification factor,  $C_d = 2$ .
5. Limits on structural height,  $h_n = 9.5$  feet (2900 mm).

## EXHIBIT 1

### 14.04.258 – Section 3115.8.5.3 and Table 3115.8.5.3 of the 2022 Edition of the California Building Code are amended to read as follows:

**3115.8.5.3 Allowable shear value.** The allowable shear values for the profiled steel panel side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section 3115.8.5.2 shall be in accordance with Table 3115.8.5.3, provided that all of the following conditions are met:

1. The total linear length of all openings in any individual side walls or end walls shall be limited to not more than 50 percent of the length of that side walls or end walls, as shown in Figure 3115.8.5.3(1).
2. Any full height wall length, or portion thereof, less than 4 feet (305 mm) long shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2).
3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3). The existing door interlocking mechanism shall not be considered as a component of the required load path.
4. Where openings are made in container walls, floors or roofs, for doors, windows and other openings:
  - 4.1 The opening shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.
  - 4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.
5. A maximum of one penetration not greater than a 6-inch (152 mm) diameter hole for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 322mm<sup>2</sup>) for electrical boxes, is permitted for each individual 8 feet (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the wall lateral force resisting system shall not be limited in size or quantity. Existing intermodal shipping container's vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4).
6. End wall door or doors designated as part of the lateral force-resisting system shall be intermittently welded closed around the full perimeters of the door panels.

**EXHIBIT 1**

**TABLE 3115.8.5.3  
ALLOWABLE SHEAR VALUES FOR PROFILED STEEL PANEL  
SIDE WALLS AND END WALLS FOR WIND OR SEISMIC LOADING**

CONTAINER DESIGNATION <sup>b</sup>	CONTAINER DIMENSION (Nominal Length)	CONTAINER DIMENSION (Nominal Height)	ALLOWABLE SHEAR VALUES (PLF) <sup>a,c</sup>	
			Side Wall	End Wall
1EEE	45 feet (13.7 M)	9.5 feet (2896 mm)	75	843
1EE		8.6 feet (2591 mm)		
1AAA	40 feet (12.2 M)	9.5 feet (2896 mm)	84	
1AA		8.5 feet (2592 mm)		
1A		8.0 feet (2438 mm)		
1AX		<8.0 feet (2483 mm)		
1BBB	30 feet (9.1 M)	9.5 feet (2896 mm)	112	
1BB		8.5 feet (2591 mm)		
1B		8.0 feet (2438 mm)		
1BX		<8.0 feet (2438 mm)		
1CC	20 feet (9.1 M)	8.5 feet (2591 mm)	168	
1C		8.0 feet (2438 mm)		
1CX		<8.0 feet (2438 mm)		

- a. The allowable shear values for the side walls and end walls of the intermodal shipping containers are derived from ISO 1496-1 and reduced by a factor of safety of 5.
- b. Container designation type is derived from ISO 668.
- c. Limitations of Sections 3115.8.5.1 and 3115.8.5.3 shall apply.

**14.04.259 – Section J103.2 of the 2022 Edition of the California Building Code is amended to read as follows:**

- 8. An excavation that does not exceed 50 cubic yards (38.3 m<sup>3</sup>) and complies with (a) or (b) as follows:
  - (a) Is less than 2 feet (0.6 m) in depth.
  - (b) Does not create a cut slope greater than 5 feet (1.5 m) measured vertically upward from the cut surface to the surface of the natural grade and is not steeper than 2 units horizontal to 1 unit vertical (50 percent slope).

**14.04.260 – Section R301.1.3.2 of the 2022 Edition of the California Residential Code is amended to read as follows:**

**R301.1.3.2 Woodframe structures.** 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.

## EXHIBIT 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 D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

### **14.04.265 – Section R301.1.5 is added to the 2022 Edition of the California Residential Code to read as follows:**

**R301.1.5** 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 California Building Code.

### **14.04.266 – Items 1, 3, and 5 of Section R301.2.2.6 of the 2022 Edition of the California Residential Code are amended to read as follows:**

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

### **14.04.267 – Section R301.2.2.11 is added to the 2022 Edition of the California Residential Code 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 California 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 lb (1,780 N) or less and has a center of mass located 4 ft (1.22 m) or less above the supporting structure; or
2. The component weighs 20 lb (89N) or less or, in the case of a distributed system, 5 lb/ft (73 N/m) or less.

## EXHIBIT 1

### **14.04.270 – Section R401.1 of the 2022 Edition of the California Residential Code is amended to read as follows:**

**R401.1 Application.** The provisions of this chapter shall control the design and construction of the foundation and foundation spaces for buildings. In addition to the provisions of this chapter, the design and construction of foundations in flood hazard areas as established by Table R301.2 shall meet the provisions of Section R322. Wood foundations shall be designed and installed in accordance with AWC PWF.

**Exception:** The provisions of this chapter shall be permitted to be used for wood foundations only in the following situations:

1. In buildings that have no more than two floors and a roof.
2. When interior basement and foundation walls are constructed at intervals not exceeding 50 feet (15 240 mm).

Wood foundations in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub> shall not be permitted.

**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.

### **14.04.275 – Sections R403.1.2, R403.1.3.6, R403.1.5 of the 2022 Edition of the California Residential Code are amended to read as follows:**

**R403.1.2 Continuous footing in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.** Exterior walls of buildings located in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub> shall be supported by continuous solid or fully grouted masonry or concrete footings. Required interior braced wall panels in buildings located in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub> shall be supported on continuous foundations.

**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.

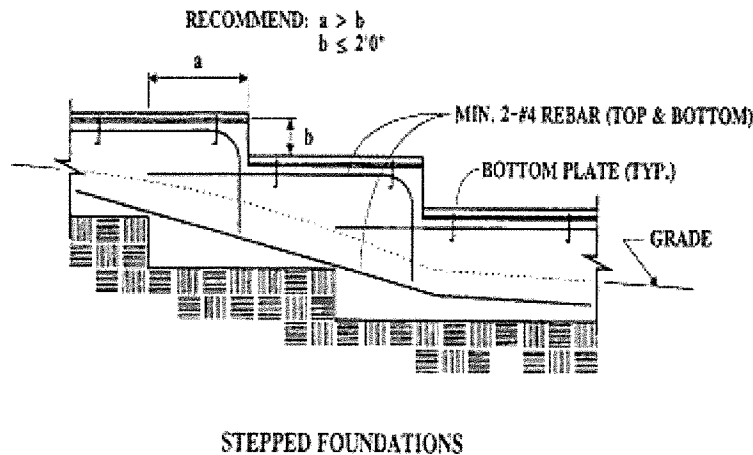
**R403.1.5 Slope.** The top surface of footings shall be level. The bottom surface of footings shall not have a slope exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings shall be stepped where it is necessary to change the elevation of the top surface of the footings or where the slope of the bottom surface of the footings will exceed one unit vertical in 10 units horizontal (10-percent slope).



## EXHIBIT 1

For structures assigned to Seismic Design Categories D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>, stepped footings shall be reinforced with four No. 4 rebar. Two bars shall be placed at the top and bottom of the footings as shown in Figure R403.1.5.

**FIGURE R403.1.5  
STEPPED FOOTING**



**14.04.280 – Section R404.2 of the 2022 Edition of the California Residential Code is 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 D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

**14.04.282 – Section R501.2 of the 2022 Edition of the California Residential Code is amended to read as follows:**

**R501.2 Requirements.** Floor construction shall be capable of accommodating all loads in accordance with Section R301 and of transmitting the resulting loads to the supporting structural elements. Mechanical or plumbing fixtures and equipment shall be attached or anchored to the structure in accordance with Section R301.2.2.11.

**14.04.285 – Lines 20, 21, 24, and 34-37 of Table R602.3(1) of the 2022 Edition of the California Residential Code are amended to read as follows:**

**EXHIBIT 1**

**TABLE R602.3(1)—continued FASTENING SCHEDULE**

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>	SPACING AND LOCATION	
20 <sup>k</sup>	1" × 6" sheathing to each bearing	3-8d box (2½" × 0.113"); or 2-8d common (2½" × 0.131"); or 2-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., 1¾" long	Face nail	
21 <sup>k</sup>	1" × 8" and wider sheathing to each bearing	3-8d box (2½" × 0.113"); or 3-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 3 staples, 1" crown, 16 ga., 1¾" long	Face nail	
		Wider than 1" × 8" 4-8d box (2½" × 0.113"); or 3-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 4 staples, 1" crown, 16 ga., 1¾" long		
<b>Floor</b>				
24 <sup>k</sup>	1" × 6" subfloor or less to each joist	3-8d box (2½" × 0.113"); or 2-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 2 staples, 1" crown, 16 ga., 1¾" long	Face nail	
<b>Other wall sheathing<sup>g</sup></b>				
34 <sup>k</sup>	½" structural cellulosic fiberboard sheathing	1½" x 0.120" galvanized roofing nail, 7/16" head diameter, or 1¼" long 16 ga. staple with 7/16" or 1" crown	3	6
35 <sup>k</sup>	25/32" structural cellulosic fiberboard sheathing	1¾" x 0.120" galvanized roofing nail, 7/16" head diameter, or 1¼" long 16 ga. Staple with 7/16" or 1" crown	3	6
36 <sup>k</sup>	½" gypsum sheathing <sup>d</sup>	1½" x 0.120" galvanized roofing nail, 7/16" head diameter, or 1¼" long, 16 ga.; staple galvanized, 1½" long; 7/16" or 1" crown or 1¼" screws, Type W or S	7	7
37 <sup>k</sup>	5/8" gypsum sheathing <sup>d</sup>	1¾" galvanized roofing nail, 7/16" head diameter, or 1¼" long, 16 ga.; staple galvanized, 1½" long; 7/16" or 1" crown or 1¼" screws, Type W or S	7	7

**TABLE R602.3(1)—continued FASTENING SCHEDULE**

k. Use of staples in roof, floor, and braced wall panels shall be prohibited in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

**14.04.290 – Footnote “b” of Table R602.3(2) of the 2022 Edition of the California Residential Code is amended to read as follows:**

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<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

**14.04.291 - Section R602.3.2, Exception and Table R602.3.2 of the 2022 Edition of the California Residential Code are amended to read as follows:**

## EXHIBIT 1

**Exception:** In other than Seismic Design Category D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>, a single top plate used as an alternative to a double top plate shall comply with the following:

1. The single top plate shall be tied at corners, intersecting walls, and at in-line splices in straight wall lines in accordance with Table R602.3.2.
2. The rafters or joists shall be centered over the studs with a tolerance of not more than 1 inch (25 mm).
3. Omission of the top plate is permitted over headers where the headers are adequately tied to adjacent wall sections in accordance with Table R602.3.2.

TABLE R602.3.2  
SINGLE TOP-PLATE SPLICE CONNECTION DETAILS

CONDITION	TOP-PLATE SPLICE LOCATION			
	Corners and intersecting walls		Butt joints in straight walls	
	Splice plate size	Minimum nails each side of joint	Splice plate size	Minimum nails each side of joint
Structures in SDC A-C	3" × 6" × 0.036" galvanized steel plate or equivalent	(6) 8d box (2 <sup>1</sup> / <sub>2</sub> " × 0.113") nails	3' × 12" × 0.036" galvanized steel plate or equivalent	(12) 8d box (2 <sup>1</sup> / <sub>2</sub> " × 0.113") nails

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

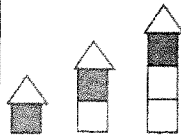
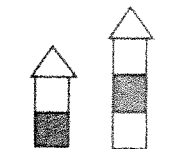
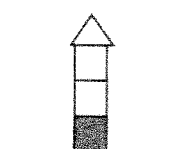
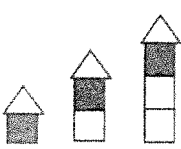
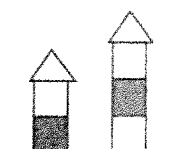
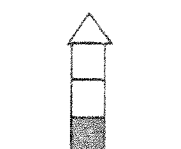
**14.04.292 – Section R602.10.2.3 of the 2022 Edition of the California Residential Code is amended to read as follows:**

**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. In Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>, no braced wall panel shall have a contributing length less than 48 inches in length or as required in Section R602.10.3, whichever is greater.

**14.04.293 – Table R602.10.3(3) of the 2022 Edition of the California Residential Code is amended to read as follows:**

# EXHIBIT 1

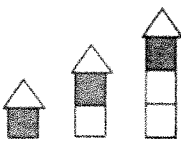
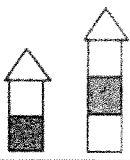
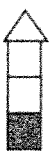
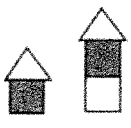

TABLE R602.10.3(3)  
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

<ul style="list-style-type: none"> <li>• WALL HEIGHT = 10 FEET</li> <li>• 10 PSF FLOOR DEAD LOAD</li> <li>• 15 PSF ROOF/CEILING DEAD LOAD</li> <li>• BRACED WALL LINE SPACING ≤ 25 FEET</li> </ul>			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE <sup>a, b</sup>				
Seismic Design Category <sup>b</sup>	Story Location	Braced Wall Line Length (feet) <sup>c</sup>	Method LIB <sup>d</sup>	Method GB	Methods DWB, SFB, PBS, PCP, HPS, CS-SFB <sup>e</sup>	Methods WSP, ABW <sup>f</sup> , PFH <sup>f</sup> and PFG <sup>f</sup>	Methods CS-WSP, CS-G, CS-PF
C (townhouses only)		10	2.5	2.5	2.5	1.6	1.4
		20	5.0	5.0	5.0	3.2	2.7
		30	7.5	7.5	7.5	4.8	4.1
		40	10.0	10.0	10.0	6.4	5.4
		50	12.5	12.5	12.5	8.0	6.8
		10	NP	4.5	4.5	3.0	2.6
		20	NP	9.0	9.0	6.0	5.1
		30	NP	13.5	13.5	9.0	7.7
		40	NP	18.0	18.0	12.0	10.2
		50	NP	22.5	22.5	15.0	12.8
		10	NP	6.0	6.0	4.5	3.8
		20	NP	12.0	12.0	9.0	7.7
		30	NP	18.0	18.0	13.5	11.5
		40	NP	24.0	24.0	18.0	15.3
		50	NP	30.0	30.0	22.5	19.1
D <sub>0</sub>		10	NP	5.6	5.6	1.8	1.6
		20	NP	11.0	11.0	3.6	3.1
		30	NP	16.6	16.6	5.4	4.6
		40	NP	22.0	22.0	7.2	6.1
		50	NP	27.6	27.6	9.0	7.7
		10	NP	NP	NP	3.8	3.2
		20	NP	NP	NP	7.5	6.4
		30	NP	NP	NP	11.3	9.6
		40	NP	NP	NP	15.0	12.8
		50	NP	NP	NP	18.8	16.0
		10	NP	NP	NP	5.3	4.5
		20	NP	NP	NP	10.5	9.0
		30	NP	NP	NP	15.8	13.4
		40	NP	NP	NP	21.0	17.9
		50	NP	NP	NP	26.3	22.3

(continued)

# EXHIBIT 1

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

• WALL HEIGHT = 10 FEET • 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 <sup>a</sup>				
Seismic Design Category <sup>b</sup>	Story Location	Braced Wall Line Length (feet) <sup>c</sup>	Method LIB <sup>d</sup>	Method GB	Methods DWB, SFB, PBS, PCP, HPS, CS-SFB <sup>e</sup>	Methods WSP, ABW, PFH <sup>f</sup> and PFG <sup>g</sup>	Methods CS-WSP, CS-G, CS-PF
D <sub>1</sub>		10	NP	6.0	6.0	2.0	1.7
		20	NP	12.0	12.0	4.0	3.4
		30	NP	18.0	18.0	6.0	5.1
		40	NP	24.0	24.0	8.0	6.8
		50	NP	30.0	30.0	10.0	8.5
		10	NP	NP	NP	4.5	3.8
		20	NP	NP	NP	9.0	7.7
		30	NP	NP	NP	13.5	11.5
		40	NP	NP	NP	18.0	15.3
		50	NP	NP	NP	22.5	19.1
		10	NP	NP	NP	6.0	5.1
		20	NP	NP	NP	12.0	10.2
		30	NP	NP	NP	18.0	15.3
		40	NP	NP	NP	24.0	20.4
		50	NP	NP	NP	30.0	25.5
D <sub>2</sub> <sup>h</sup>		10	NP	8.0	8.0	2.5	2.1
		20	NP	16.0	16.0	5.0	4.3
		30	NP	24.0	24.0	7.5	6.4
		40	NP	32.0	32.0	10.0	8.5
		50	NP	40.0	40.0	12.5	10.6
		10	NP	NP	NP	5.5	4.7
		20	NP	NP	NP	11.0	9.4
		30	NP	NP	NP	16.5	14.0
		40	NP	NP	NP	22.0	18.7
		50	NP	NP	NP	27.5	23.4
	Three-story dwelling	10	NP	NP	NP	NP	NP
		20	NP	NP	NP	NP	NP
		30	NP	NP	NP	NP	NP
		40	NP	NP	NP	NP	NP
		50	NP	NP	NP	NP	NP
	Cripple wall below one- or two-story dwelling	10	NP	NP	NP	7.5	6.4
		20	NP	NP	NP	15.0	12.8
		30	NP	NP	NP	22.5	19.1
		40	NP	NP	NP	30.0	25.5
		50	NP	NP	NP	37.5	31.9

(continued)

- Linear interpolation shall be permitted.
- Interpolation of bracing length between the  $S_{D5}$  values associated with the seismic design categories shall be permitted when a site-specific  $S_{D5}$  value is determined in accordance with Section 1613.2 of the *California Building Code*.
- 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.
- Method LIB shall have gypsum board fastened to not less than one side with nails or screws in

## EXHIBIT 1

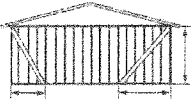
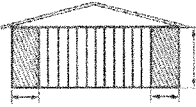
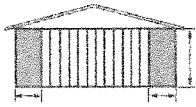
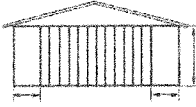
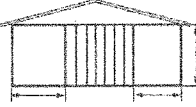

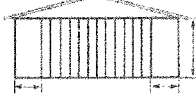
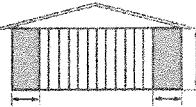
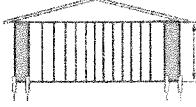
accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board.  
Spacing of fasteners at panel edges shall not exceed 8 inches.

- e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- f. Methods PFH, PFG and ABW are only permitted on a single story or a first of two stories.
- g. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1.
- h. One- and two- family dwellings in Seismic Design Category D<sub>2</sub> exceeding two stories shall be designed in accordance with accepted engineering practice.
- i. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>. Methods DWB, SFB, PBS, HPS, and CS-SFB are not permitted in D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.

**14.04.294 – Table R602.10.4 of the 2022 Edition of the California Residential Code is amended to read as follows:**

**EXHIBIT 1**

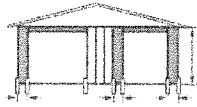
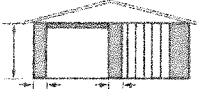



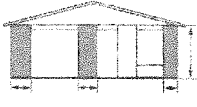
**TABLE R602.10.4  
BRACING METHODS**

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA <sup>a</sup>	
			Fasteners	Spacing
<b>LIB</b> Let-in-bracing	1 × 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d common nails or 3-8d (2 1/2" long × 0.113" dia.) nails	Wood: per stud and top and bottom plates
			Metal strap: per manufacturer	Metal: per manufacturer
<b>DWB</b> Diagonal wood boards	3/4" (1" nominal) for maximum 24" stud spacing		2-8d (2 1/2" long × 0.113" dia.) nails or 2-1 3/4" long staples	Per stud
<b>WSP</b> Wood structural panel (See Section R604)	3/8"		8d common (2 1/2" × 0.131) nails 3/8" edge distance to panel edge	6" edges 12" field
			8d common (2 1/2" × 0.131) nails 3/8" edge distance to panel edge	Varies by fastener
<b>BV-WSP<sup>b</sup></b> Wood structural panels with stone or masonry veneer (See Section R602.10.6.5)	7/16"	See Figure R602.10.6.5.2	8d common (2 1/2" × 0.131) nails	4" at panel edges 12" at intermediate supports 4" at braced wall panel end posts
<b>SFB</b> Structural fiberboard sheathing	1/2" or 25/32" for maximum 16" stud spacing		1 1/2" long × 0.12" dia. (for 1/2" thick sheathing) 1 3/4" long × 0.12" dia. (for 25/32" thick sheathing) galvanized roofing nails	3" edges 6" field
<b>GB</b> Gypsum board	1/2"		Nails or screws per Table R602.3(1) for exterior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
			Nails or screws per Table R702.3.5 for interior locations	
<b>PBS</b> Particleboard sheathing (See Section R605)	3/8" or 1/2" for maximum 16" stud spacing		For 3/8", 6d common (2" long × 0.113" dia.) nails; For 1/2", 8d common (2 1/2" long × 0.131" dia.) nails	3" edges 6" field
<b>PCP</b> Portland cement plaster	See Section R703.6 for maximum 16" stud spacing		1 1/2" long, 11 gage, 0.120" dia., 7/16" dia. head nails or 7/8" long, 16 gage staples	6" o.c. on all framing members
<b>HPS</b> Hardboard panel siding	7/16" for maximum 16" stud spacing		0.092" dia., 0.225" dia. head nails with length to accommodate 1 1/2" penetration into studs	4" edges 8" field
<b>ABW</b> Alternate braced wall	3/8"		See Section R602.10.6.1	See Section R602.10.6.1

(continued)

**EXHIBIT 1**

**TABLE R602.10.4—continued  
BRACING METHODS**

	METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA <sup>a</sup>	
				Fasteners	Spacing
Intermittent Bracing Methods	<b>PFH</b> Portal frame with hold-downs	$\frac{3}{8}$ "		See Section R602.10.6.2	See Section R602.10.6.2
	<b>PFG</b> Portal frame at garage	$\frac{7}{16}$ "		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	<b>CS-WSP</b> Continuously sheathed wood structural panel	$\frac{3}{8}$ "		8d common (2 1/2" x 0.131) nails 3/8" edge distance to panel edge	6" edges 12" field
	<b>CS-G<sup>b,c</sup></b> Continuously sheathed wood structural panel adjacent to garage openings	$\frac{3}{8}$ "		8d common (2 1/2" x 0.131) nails 3/8" edge distance to panel edge	Varies by fastener
	<b>CS-PF</b> Continuously sheathed portal frame	$\frac{7}{16}$ "		See Section R602.10.6.4	See Section R602.10.6.4
	<b>CS-SFB<sup>d</sup></b> Continuously sheathed structural fiberboard	$\frac{1}{2}$ " or $\frac{25}{32}$ " for maximum 16" stud spacing		$1\frac{1}{2}$ " long x 0.12" dia. (for $\frac{1}{2}$ " thick sheathing) $1\frac{3}{4}$ " long x 0.12" dia. (for $\frac{25}{32}$ " thick sheathing) galvanized roofing nails	3" edges 6" field

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/m<sup>2</sup>, 1 mile per hour = 0.447 m/s.

- Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- 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<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>, roof covering dead load shall not exceed 3 psf.
- Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.7(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.
- Method CS-SFB does not apply in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- Method applies to detached one- and two- family dwellings in Seismic Design Categories D<sub>0</sub> through D<sub>2</sub> only.
- Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>. Methods LIB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- Use of stapes in braced wall panels shall be prohibited in SDC D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.



**EXHIBIT 1**

**14.04.295.1 – Table R602.10.5 of the 2022 Edition of the California Residential Code is amended to read as follows:**

# EXHIBIT 1

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

METHOD (See Table R602.10.4)		MINIMUM LENGTH* (inches)					CONTRIBUTING LENGTH (inches)
		Wall Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP		48	48	48	53	58	Actual <sup>b</sup>
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 × Actual
LIB		55	62	69	NP	NP	Actual <sup>b</sup>
ABW	SDC A, B and C, ultimate design wind speed < 140 mph	28	32	34	38	42	48
	SDC D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub> , ultimate design wind speed < 140 mph	32	32	34	NP	NP	
CS-G		24	27	30	33	36	Actual <sup>b</sup>
CS-WSP, CS-SFB	Adjacent clear opening height (inches)						Actual <sup>b</sup>
	≤ 64	24	27	30	33	36	
	68	26	27	30	33	36	
	72	27	27	30	33	36	
	76	30	29	30	33	36	
	80	32	30	30	33	36	
	84	35	32	32	33	36	
	88	38	35	33	33	36	
	92	43	37	35	35	36	
	96	48	41	38	36	36	
	100	—	44	40	38	38	
	104	—	49	43	40	39	
	108	—	54	46	43	41	
	112	—	—	50	45	43	
	116	—	—	55	48	45	
	120	—	—	60	52	48	
	124	—	—	—	56	51	
128	—	—	—	61	54		
132	—	—	—	66	58		
136	—	—	—	—	62		
140	—	—	—	—	66		
144	—	—	—	—	72		
METHOD (See Table R602.10.4)		Portal header height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
PFH	Supporting roof only	24	24	24	Note c	Note c	48
	Supporting one story and roof	24	24	24	Note c	Note c	
PFG		24	27	30	Note d	Note d	1.5 × Actual <sup>b</sup>
CS-PF	SDC A, B and C	16	18	20	Note e	Note e	1.5 × Actual <sup>b</sup>
	SDC D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub>	24	24	24	Note e	Note e	Actual <sup>b</sup>

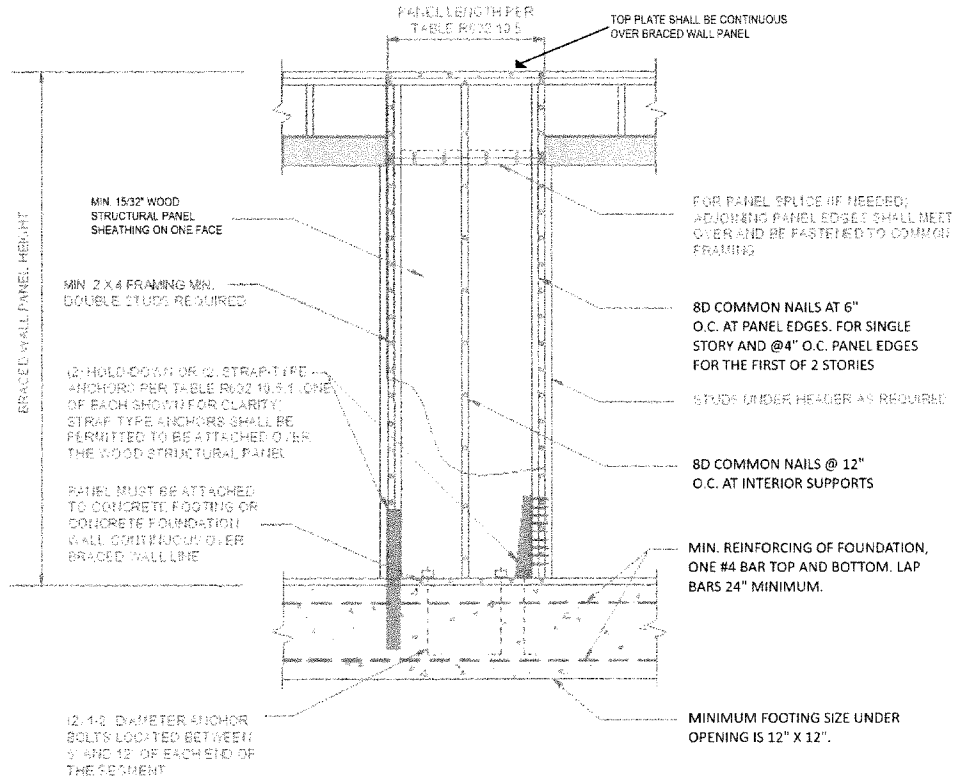
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s.  
NP = Not Permitted.

a. Linear interpolation shall be permitted.

**EXHIBIT 1**

- b. Use the actual length where it is greater than or equal to the minimum length.
- c. Maximum header height for PFH is 10 feet in accordance with Figure R602.10.6.2, but wall height shall be permitted to be increased to 12 feet with pony wall.
- d. Maximum header height for PFG is 10 feet in accordance with Figure R602.10.6.3, but wall height shall be permitted to be increased to 12 feet with pony wall.
- e. Maximum header height for CS-PF is 10 feet in accordance with Figure R602.10.6.4, but wall height shall be permitted to be increased to 12 feet with pony wall.

**14.04.295.2 – Figure R602.10.6.1 of the 2022 Edition of the California Residential Code is amended to read as follows:**

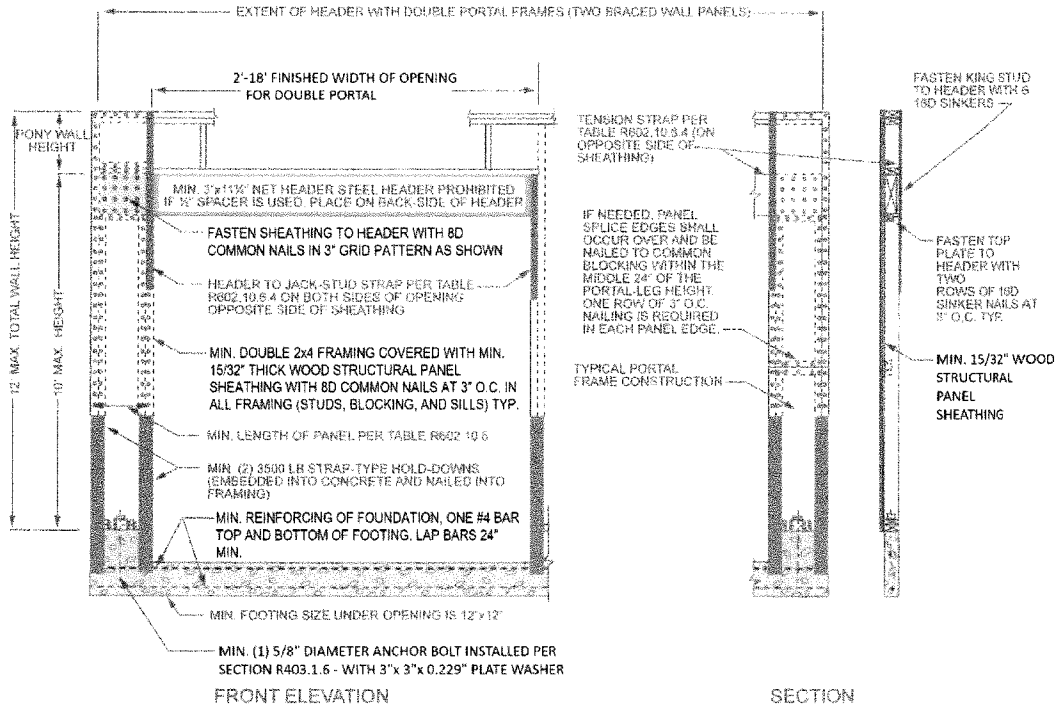


For SI: 1 inch = 25.4 mm.

**FIGURE R602.10.6.1  
METHOD ABW—ALTERNATE BRACED WALL PANEL**

**EXHIBIT 1**

**14.04.295.3 - Figure R602.10.6.2 of the 2022 Edition of the California Residential Code is amended to read as follows:**

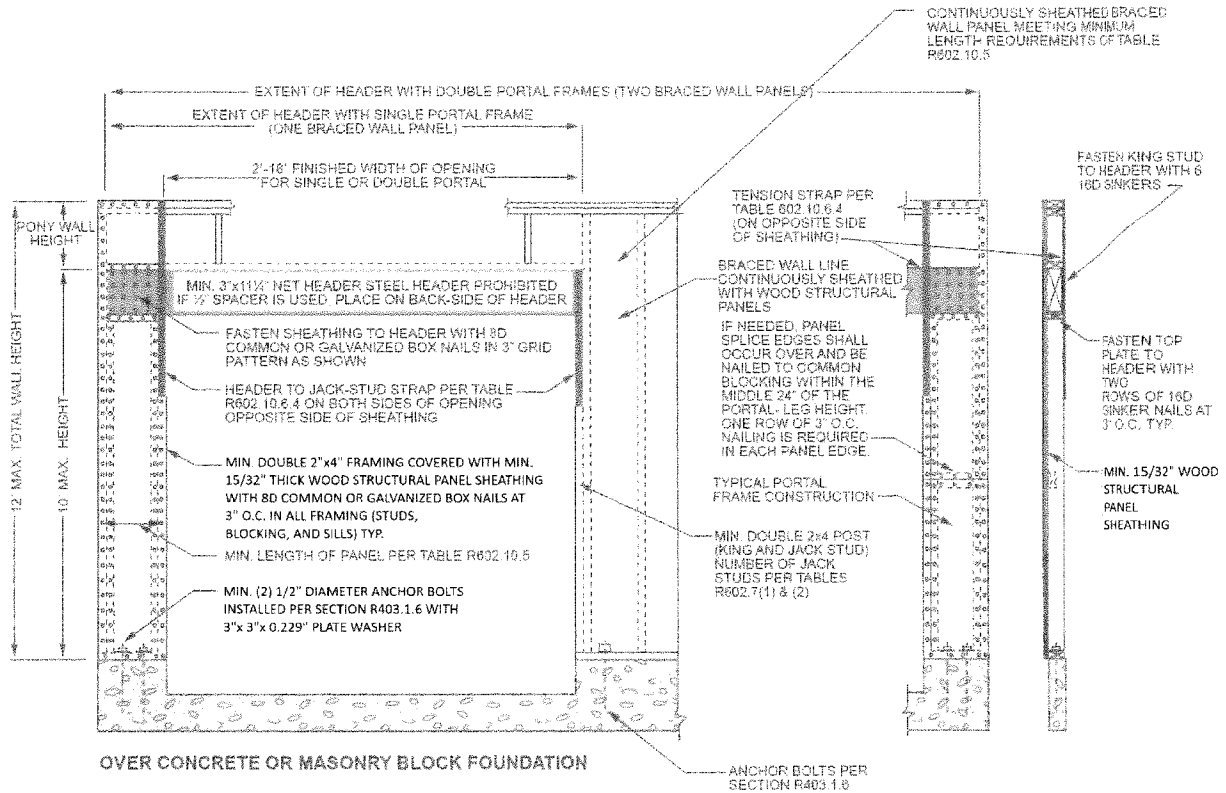


For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

**FIGURE R602.10.6.2  
METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS  
AT DETACHED GARAGE DOOR OPENINGS**

**EXHIBIT 1**

**14.04.295.4 – Figure R602.10.6.4 of the 2022 Edition of the California Residential Code is amended to read as follows:**



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

**FIGURE R602.10.6.4**  
**METHOD CS-PF—CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION**

**14.04.300 – Section R606.4.4 of the 2022 Edition of the California Residential Code is 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 D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>, or on townhouses in Seismic Design Category C shall be reinforced in accordance with Section R606.12.

**14.04.305 – Section R606.12.2.2.3 of the 2022 Edition of the California Residential Code is amended to read as follows:**

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**R606.12.2.2.3 Reinforcement requirements for masonry elements.** Masonry elements listed in Section R606.12.2.2 shall be reinforced in either the horizontal or vertical direction as shown in Figure R606.11(2) and in accordance with the following:

1. Horizontal reinforcement. Horizontal joint reinforcement shall consist of not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Horizontal 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 within 8 inches (203 mm) of the ends of masonry walls.

**14.04.310 – Section R803.2.4 is added to Chapter 8 of the 2022 Edition of the California Residential Code to read as follows:**

**R803.2.4 Openings in horizontal diaphragms.** Openings in horizontal diaphragms shall conform with Section R503.2.4.

**14.04.315 – Section R902.1.1.1 is added to the 2022 Edition of the California Residential code to read as follows:**

All roofing material in the very-high and moderate fire hazard severity zone must be Class A. No wood roof covering material shall be installed on any structure located in the very high, high and moderate fire hazard severity zones as identified by the Pasadena Fire Department. All other roof covering materials in other zones shall be Class A or B.

**Exception:** In the moderate fire hazard severity zone, the fire code official may, upon a showing of good cause and necessity, approve the use of fire-resistive wood as part of Class A listed assemblies, and may require additional mitigation as warranted, for the repair or maintenance of existing structure.

**14.04.320 – Section R1001.3.1 of the 2022 Edition of the California Residential Code is 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

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flue incorporated into the chimney or for each additional 40 inches (1016 mm) in width or fraction thereof.

### **14.04.400 – Section AX100.1 is added to the 2022 Edition of the California Residential Code to read as follows:**

In addition to the requirements of Appendix AX, the Swimming Pool Safety Act, of the 2022 California Residential Code, a swimming pool, pool, spa or any body of water over 18 inches deep shall have an enclosure consisting of a fence, wall, portions of a building or other approved durable material, that isolates all bodies of water from the private single family dwelling and/or Accessory Dwelling Unit. The enclosure shall be installed around the perimeter of the bodies of water, or at the perimeter of the property.

### **14.04.510 – Sections 4.106.4.2.1 and 4.106.4.2.2 of the 2022 Edition of the California Green Building Standards Code are amended to read as follows:**

**4.106.4.2.1 Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.** The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1. **EV Capable.** Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as “EV CAPABLE” in accordance with the California Electrical Code.

#### **Exceptions:**

1. When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.
2. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.
3. Areas of parking facilities served by parking lifts or parking spaces accessible only by automated mechanical car parking systems.

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### Notes:

- a. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
  - b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.
2. **EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

**Exception:** Areas of parking facilities served by parking lifts or parking spaces accessible only by automated mechanical car parking systems.

**4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.** The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1. **EV Capable.** Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

### Exceptions:

1. When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.
2. Areas of parking facilities served by parking lifts or parking spaces accessible only by automated mechanical car parking systems.

### Notes:



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- a. Construction documents shall show locations of future EV spaces.
  - b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.
2. **EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

**Exception:** Areas of parking facilities served by parking lifts or parking spaces accessible only by automated mechanical car parking systems.

3. **EV Chargers.** Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

**Exception:** Areas of parking facilities served by parking lifts or parking spaces accessible only by automated mechanical car parking systems.

### **14.04.520 – Section 5.106.5.3 of the 2022 Edition of the California Green Building Standards Code is amended to read as follows:**

**5.106.5.3 Electric vehicle (EV) charging.** [N] Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3 and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code.

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### Exceptions:

1. On a case by case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
  - a. Where there is no local utility power.
  - b. Where the local utility is unable to supply adequate power.
  - c. Where there is evidence suitable to the local enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.
2. Areas of parking facilities served by parking lifts or parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.