

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

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

**AN ORDINANCE OF THE CITY OF PASADENA ADOPTING TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS, PARTS 1-12, INCORPORATING THE 2019 CALIFORNIA BUILDING CODE AND APPENDIX CHAPTERS C, D, H, I AND J; THE 2019 CALIFORNIA RESIDENTIAL CODE APPENDIX CHAPTERS H, J, AND V; THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE; THE 2019 CALIFORNIA ELECTRICAL CODE; THE 2019 CALIFORNIA MECHANICAL CODE; THE 2019 CALIFORNIA PLUMBING CODE; THE 2019 CALIFORNIA ADMINISTRATIVE CODE; THE 2019 CALIFORNIA ENERGY CODE; THE 2019 CALIFORNIA FIRE CODE AND APPENDIX CHAPTER 4 AND APPENDICES B THROUGH O; THE 2019 CALIFORNIA HISTORICAL BUILDING CODE; THE 2019 CALIFORNIA REFERENCED STANDARDS CODE AND THE 2019 CALIFORNIA EXISTING BUILDING CODE**

Whereas the City of Pasadena is adopting the 2019 editions of the California Building Code, Residential Building Code, Fire Code and Green Building Standards Code and is making certain amendments thereto; and

Whereas State law requires that a city must adopt specific findings as to the topographic, geological, and climatic conditions to justify the amendment to these codes;

Now Therefore, the City Council of the City of Pasadena finds as follows:

1. With respect to the amendments to the State code as set forth in Sections 14.04.110, 115, 258, 265, 315,

**Justification: Topographic and Climatic,** Pasadena's hillside areas have narrow and winding access roads, which makes timely response by large fire suppression vehicles difficult. Additionally, long period of dry, hot weather, combined with unpredictable seasonal winds (Santa Ana wind conditions) result in increased exposure to fire risk. These amendments prohibit the use of wood as exterior wall and roof covering material in very high, high and moderate fire hazard areas and require other exterior wall finishes and roofing materials to have a Class A assembly. This will reduce the potential for rapid spread of fire throughout the City during periods of strong seasonal winds.

2. With respect to the amendments to the State Code as set forth in Sections 14.04.400 below,

**Justification: Climatic.** Because of the risk of delays in fire rescue response time due to traffic congestion and due to the high number of swimming pools within close proximity to small children and because of local climate which makes pool ownership desirable, pool barriers are necessary. Additionally, the amendments are consistent with barrier requirements previously in force in the City of Pasadena.

3. With respect to the amendments to the State Code as set forth in Sections 14.04.120, 130, 140, 145, 147, 150, 160, 170, 175, 180, 210, 215, 216, 225, 235, 250, 260, 267, 275, 282, 285, 290, 295,

**Justification: Geologic.** Pasadena is situated primarily on the Sierra Madre Fault near the base of the San Gabriel Mountains. Other faults near or in the city are the Eagle Rock fault (originally termed the San Rafael fault), Verdugo Hills fault, and Elysian Park fault. Said faults are generally considered major Southern California earthquake faults which may experience rupture at any time. Review of damage resulting from the January 17, 1994 Northridge Earthquake revealed significant damage to many buildings throughout the Southern California region. The referenced amendments are necessary to implement improved design standards, to use current recognized standards and referenced recently published, and to reduce the risk of personal injury, loss of life and property damage within structures.

4. With respect to the amendments to the state code as set forth in Sections 14.04.165, 185, 190, 217, 220, 270, 280,

**Justification Local Climatic and Geological Conditions.** The greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes, including but not limited to the recent 1994 Northridge Earthquake. In addition, the region is within a climate system capable of producing major winds, fire and rain related disasters, including but not limited to the those caused by the Santa Ana winds and El Nino (or La Nina) subtropical-like weather. This region is especially susceptible to more active termite and wood attacking insects and microorganisms. The proposed modification to prohibit the use of wood foundation systems as well as limit prescriptive design provisions in an effort to mitigate potential problems or deficiencies due to the proliferation of wood-destroying organisms and therefore need to be incorporated into the code to assure that new buildings and structures and addition or alterations to existing buildings or structures are designed and constructed on accordance with the scope and objectives of the International Residential Code.



5. With respect to the amendments to the state code as set forth in Section 14.04.500, 502, 507 and 509,

**Justification: Local Environmental and Climatic Conditions.** The greater Los Angeles region is a densely populated area having buildings and structures constructed within a region where environmental resources are scarce due to varying and occasional immoderate temperatures and weather conditions, and heavily traveled traffic corridors and highways, near and within the proximity of airports and/or ports, near the ocean, and within flood prone areas. This impacts the quality of the air, causes higher decibel noise level, and increases the risk of rising sea or flood levels. The proposed modification to increase the number of EV charging space and station will help to address and significantly reduce local air and noise pollutions, greenhouse gas emissions, and will improve the health and welfare of the region's residents, businesses and visitors and reduce the rise in sea or flood levels that could put at risk the region's homes and businesses, public facilities, airports and/or ports. The proposed modification to the require higher efficiencies and energy usage and greeter beneficial use of environmental material will be achieved with the proposed expansion of the Mandatory and Voluntary requirements and therefore need to be incorporated into the code to assure that new residential and non-residential buildings are designed and constructed in accordance with the scope and objectives of the California Green Building Standards Code.

6. With respect to the amendments to the state fire code as set forth in section 14.28.010 items 040, 050, 060, 070, 080, 090, 100, 110, 120, 130, 140, 310, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430,

**Justification: Topographic.** The increased use of decreased property line setback development and increased development densities increase the community risk from fire or hazardous materials spread and the number of persons potentially endangered. The proposed amendments allow for either increased review and mitigation, or decreased hazard to the community, or both.

7. With respect to the amendments to the state fire code as set forth in section 14.28.010 items 200, 210, 220. 230, 240, 250, 260, 270, 280, 320, and 330,

**Justification: Topographic and Climatic.** Increasing vehicular density, narrow and winding access roads to hillside areas, and hot, dry weather and seasonal winds result in increased exposure to fire risk. The increased use of decreased property line setback development and increased development densities increase the community risk from

fire spread and the number of persons potentially endangered. The proposed amendments allow for either increased review and mitigation, or decreased hazard to the community through increased use of automatic fire detection or extinguishing systems, and/or the decreased use of combustible exterior materials, or both.

8. With respect to the amendments to the state fire code as set forth in section 14.28.010 items 180 and 190,

**Justification: Topographic.** The increased use of decreased property line setback development, increased use of light weight construction, increased intermingling of hazardous occupancies with less hazardous occupancies that have been historically separated, and increased development densities increase the community risk from fire spread and other hazardous conditions and the number of persons potentially endangered. The proposed amendments allow for the increased efficacy and safety of the response to emergencies by ensuring acceptable emergency communications and thereby improving the safety of both the community and emergency responders.

9. With respect to the amendments to the state fire code as set forth in section 14.28.010 item 450, 460, and 470,

**Justification: Topographic.** The increased use of decreased property line setback development, increased use of light weight construction, increased intermingling of hazardous occupancies with less hazardous occupancies that have been historically separated, and increased development densities increase the community risk from fire spread and other hazardous conditions and the number of persons potentially endangered. This amendment increases public and firefighter safety by increasing the likelihood that automatic fire extinguishing systems will have sufficient water flow capacity to contain or extinguish significant fires before the fire extends to adjacent areas or structures.

10. With respect to the amendments to the state fire code as set forth in section 14.28.010 item 290, and 300,

**Justification: Topographic.** The increased use of decreased property line setback development, increased use of light weight construction, increased intermingling of hazardous occupancies with less hazardous occupancies that have been historically separated, and increased development densities increase the community risk from fire spread and other hazardous conditions and the number of persons potentially endangered. This amendment increases public and firefighter safety during special events where temporary structures are erected and occupied presenting unique egress challenges.



11. For sections not specified above, no express findings are required under the requirements established by sections 17958, 17958.5, and 17958.7 of the California Health and Safety Code as these amendments are administrative in nature, merely provide clarification of existing California Code requirement, or address matters outside the scope of the above sections.

Accordingly, 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 ordinance adopts the 2019 California Building Code, the 2019 California Residential Code, the 2019 California Green Building Standards Code, the 2019 California Electrical Code, 2019 California Mechanical Code, the 2019 California Plumbing Code, the 2019 California Administrative Code, the 2019 California Energy Code, the 2019 California Fire Code, the 2019 California Historical Building Code, the 2019 California Referenced Standards Code, and the 2019 California Existing Building Code as required by state law. The ordinance also provides for some amendments to these codes to accommodate special topographic, geological, and climatic conditions found in Pasadena consistent with state law. Ordinance No. \_\_\_\_\_ shall take effect 30 days after its publication by title and summary. The full text of the ordinance is on file in the City Clerk’s Office.”

**SECTION 2.** Chapter 14.03 of the Pasadena Municipal is hereby repealed in its entirety and rewritten as follows:

**14.03.010 - Adoption and filing.**

Except as herein provided by specific changes, the administrative, organizational and enforcement for the technical codes which regulate the site preparation and construction, alteration, moving, demolition, repair, use and occupancy of buildings, structures and building service equipment within the city shall be in accordance with the provisions and in the manner prescribed in administrative provisions of the 2019 Edition of the California Building Code, as published by the California State Building Standards Commission.

**14.03.020 - Section 101.1 of Chapter 1 Division II and Section R101.1 of the California Residential Building Code amended Title.**

This ordinance shall be known and cited as the Pasadena Building Code for Building Construction Regulation, and will be referred to herein as this Code.

**14.03.030 - Chapter 1 Division II Section 103.1 of the 2019 edition of the California Building Code and Chapter 1 Division II Section R103.1 of the 2019 edition of the California Residential Building Code, creation of enforcement agency is amended as follows:**

There has been established heretofore in this jurisdiction a code enforcement agency entitled, The Planning and Community Development Department which employs a Building Official who shall be authorized to enforce the provisions of this code.

**SECTION 3.** Chapter 14.04 of the Pasadena Municipal Code is hereby repealed in its entirety and rewritten as follows:

**14.04.010 - Adoption and filing.**

California Building Codes adopted. California Code of Regulation Title 24 part 1-12. The 2019 California Building Code Chapters 1-35 and Appendix Chapters C, D, H, I, and J; the 2019 California Residential Code Appendix Chapters H, J, and V, the 2019 California Green Building Standards Code, the 2019 California Electrical Code; The 2019 California Mechanical Code; the 2019 California Plumbing Code, and 2019 California Fire Code and Appendix Chapter 4 and appendices B through O; California Historical Building Code, 2019 California Referenced Standards, and 2019 California Existing Building Code all as published by the California Building Standards Commission and as amended by the State Department of Housing And Community Development (HCD), the Division of the State Architect/Access and Compliance (DSA/AC), and the State Office of Statewide Health, Planning and Development (OSHDP), The Office of the State Fire Marshal (SFM): all as published by the International Code Council. One copy of all of the above publications is 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 105.2.1 is added to Chapter 1 Division II of the 2019 California Building Code and to Section 105.2 of the 2019 California Residential Building Code 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. Exempted work shall not violate any provisions of this code, Federal, State, Local laws, or regulations.

**14.04.020 – Section 105.5 of the 2019 California Building Code and Section R105.5 of the 2019 California Residential Building 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
Multiple 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.
- 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 in (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 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, 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 displaced 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.

#### **14.04.24 - 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. Projects 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 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 interpretations 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.

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 investigations 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 17358.5 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 2019 California Building Code is amended to read as follows:**

General. Roof assemblies shall be divided into the classes defined below. Class A and B 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 zones as identified by the Pasadena Fire Department.

Exception: Skylights and sloped glazing that comply with Chapter 24 or Section 2610.

In the moderate fire hazard 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 2019 Edition of the California Building Code is amended to read as follows:**

Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes shall not be installed in the very high, high and moderate fire 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 or B roofs.

Fire-retardant-treated wood shakes and shingles shall comply with ICC-ES EG107 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 EG107 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 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 2019 California Building Code is amended by adding a section 1507.1.1 entitled roof sheathing to read as follows:**

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 (294 mm) on center at intermediate supports.

**14.04.130 – Sections 1613.4 and 1613.4.1 are added to Chapter 16 of the 2019 Edition of the California Building Code to read as follows:**

**1613.4 - Amendments to ASCE 7.** The provisions of Section 1613.4 shall be permitted as an amendment to the relevant provisions of ASCE 7.

**1613.4.1 - 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 1613.4.2 is added to Chapter 16 of the 2019 Edition of the California Building Code to read as follows:**

**1613.4.2 - 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.

**14.04.145 – Section 1704.6 of the 2019 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 or 1704.6.2 or 1704.6.3, the owner or the owner's authorized agent shall employ a structural observer to perform structural observations. Structural observation does not include or waive the responsibility for the inspections in Section 110 or the special inspections in Section 1705 or other section 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.

**14.04.147 - Section 1704.6.2 of the 2019 Edition of the California Building Code is amended to read as follows.**

**1704.6.2 - Structural observations for seismic resistance.** Structural observations shall be provided for those structures assigned to Seismic Design Category D, E or F, where one or more of the following conditions exist:



1. The structure is classified as Risk Category III or IV.
2. The structure is classified as Risk Category I or II, and 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.

3. When such observation is specifically required by the Building Official.

**14.04.150 - Section 1705.3 of the 2019 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.
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 1705.12 of the 2019 Edition of the California Building Code is amended to read as follows:**

**1705.12 Special inspections for seismic resistance.** Special inspections for seismic resistance shall be required as specified in Sections 1705.12.1 through 1705.12.9, unless exempted by the exceptions of Section 1704.2.

**Exception:** The special inspections specified in Sections 1705.12.1 through 1705.12.9 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.
  - 3.2 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 2019 Edition of the California Building Code is amended to read as follows:**

**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.

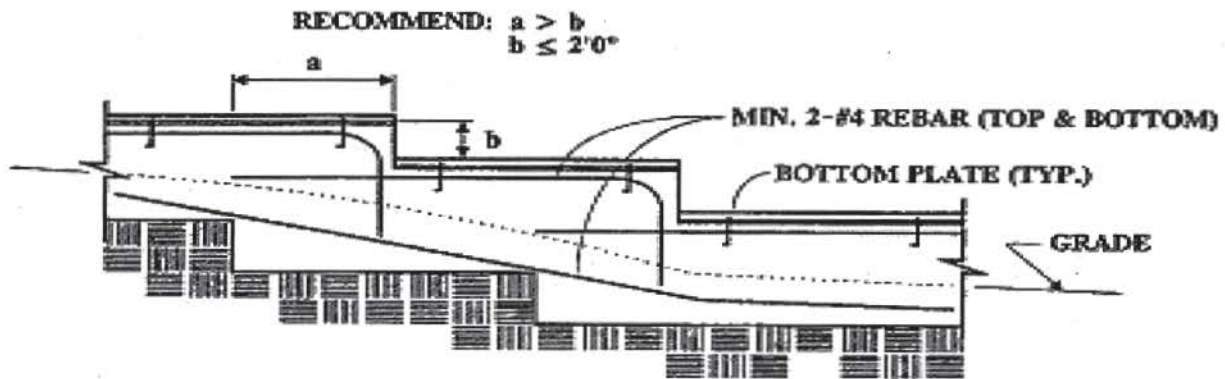
**14.04.170 - Section 1807.1.6 of the 2019 Edition of the California Building Code is amended to read as follows:**

**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.

**14.04.175 - Section 1809.3 of the 2019 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 2019 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  
LIGHT-FRAME CONSTRUCTION a, b, c, d, e**

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

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

- a. Depth of footings shall be in accordance with Section 1809.4.
- b. The ground under the floor shall be permitted to be excavated to the elevation of the top of the footing.
- c. Not Adopted.



- d. See Section 1905 for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.
- e. For thickness of foundation walls, see Section 1807.1.6.
- f. 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 2019 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 AWWA 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 2019 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 2019 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.

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.

**Exceptions:**

1. 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 are permitted to have a total area of 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 thru 1905.1.11 are added to Chapter 19 of the 2019 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 18.7.5.7 and 18.7.5.8 as follows:

18.7.5.7 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.

18.7.5.8 – 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 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 18.10.4.6 as follows:

18.10.4.6 – 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 ACI 318, 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 2304.10.1 of the 2019 Edition of the California Building Code is amended to read as follows:**

**2304.10.1 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 2304.10.1. Staple fasteners in Table 2304.10.1 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 2304.10.2.1 of the 2019 Edition of the California Building Code is amended to read as follows:**

**2304.10.2.1 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 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 2304.12.5 of the 2019 Edition of the California Building Code is amended to read as follows:**

**2304.12.5 Wood used in retaining walls and cribs.** Wood installed in retaining or crib walls shall be preservative treated in accordance with AWWPA 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 Chapter 23 of the 2019 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.

**14.04.235 Sections 2308.6.5, 2308.6.5.1 and 2308.6.5.2 and Figures 2308.6.5.1 and 2308.6.5.2 of the 2019 Edition of the California Building Code are amended to read as follows:**

**2308.6.5 Alternative bracing.** An alternate braced wall (ABW) or a portal frame with hold-downs (PFH) described in this section is permitted to substitute for a 48-inch (1219 mm) braced wall panel of Method DWB, WSP, SFB, PBS, PCP or HPS. For Method GB, each 96-inch (2438 mm) section (applied to one face) or 48-inch (1219 mm) section (applied to both faces) or portion thereof required by Table 2308.6.1 is permitted to be replaced by one panel constructed in accordance with Method ABW or PFH.

**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).

**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).

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).

\*Note: For figure 2308.6.5.1 and 2308.6.5.2, structures assigned to Seismic Category D or E, sheathed on one face with 15/32 inch-minimum thickness wood structural panel sheathing nailed with 8d common nails spaced 6 inches on panel edges, 12 inches at intermediate supports.

**14.04.250 - Section 2308.6.9 of the 2019 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 2304.10.1. Wall sheathing shall not be attached to framing members by adhesives. Staple fasteners in Table 2304.10.1 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). Braced wall panels shall be laterally braced at each top corner and at maximum 24 inches (6096 mm) intervals along the top plate of discontinuous vertical framing.

**14.04.257 - Section 3109.1.1 is added to the 2019 Edition of the California Building Code to read as follows:**

Fences required: In addition to the requirements in the California Building Code, a barrier in compliance with section 3109 of the CBC is required to isolate the pool or any other bodies of water over 18 inches deep from neighboring properties and public ways

Exception: When the swimming pool or any other bodies of water over 18 inches deep is fully enclosed around its perimeter by an enclosure complying to California Building Code Section 3109.

**14.04.258 - Section 8-408 of the 2019 Edition of the California Historical Building Code is amended by adding the following:**

4. The use of wood on the exterior side of exterior walls shall be prohibited in the Extreme, high and moderate fire hazard severity zones as identified by the Pasadena Fire Department.

Exception: In the moderate fire hazard severity zone, the fire code official may, upon a showing of good cause and necessity, approved 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.

**14.04.260 - Section R301.1.3.2 of the 2019 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.

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 R301.1.4 is added to Chapter 3 of the 2019 California Residential Code to read as follows:**

**R301.1.4** Seismic design provisions for buildings constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope). The design and construction of new buildings and additions to existing buildings when constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope) shall comply with Section 1613.5 of the California Building Code.

**Section 14.04.267. Section R301.2.2.11 is added to Chapter 3 of the 2019 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.

**Section 14.04.270 – Section R401.1 of the 2019 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(1) 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.

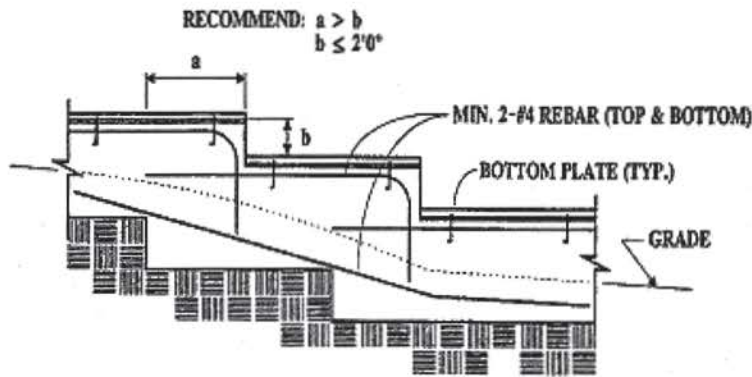
**Exception:** In non-occupied, single-story, detached storage sheds and similar uses other than carport or garage, provided the gross floor area does not exceed 200 square feet, the plate height does not exceed 12 feet in height above the grade plane at any point, and the maximum roof projection does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

**14.04.275 - Sections R403.1.2, R403.1.3.6, R403.1.5 of the 2019 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> and 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. All required interior braced wall panels in buildings located in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and 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). 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.



STEPPED FOUNDATIONS

FIGURE R403.1.5  
STEPPED FOOTING

**14.04.280 - Section R404.2 of the 2019 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 R501.1 of the 2019 Edition of the California Residential Code is amended to read as follows:**

**R501.1 Application.** The provisions of this chapter shall control the design and construction of the floors for buildings, including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment. Mechanical or plumbing fixtures and equipment shall be attached or anchored to the structure in accordance with Section R301.2.2.11.

**14.04.285 - Lines 19, 20, 23 and 33-36 of Table R602.3(1) of the 2019 Edition of the California Residential Code are amended to read as follows:**

Staples shall not be used on other wall sheathing as fasteners in table R602.3.(1).



**14.04.290 – Footnote b of Table R602.3(2) of the 2019 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>.

**14.04.295 - Figure R602.10.6.2 of the 2019 Edition of the California Residential Code is amended to read as follows:**

Minimum 15/32" thick wood structural panel sheathing on one face shall be required. Galvanized box nails shall not be used. Portal frame with hold downs at detached garage door openings shall be double portal frame (two braced wall panels) type at both ends. Single portal frame shall not be used. Minimum width of portal frame shall be 24 inches with 15/32" thick wood structural panel sheathing fastened to the frame.

**14.04.315 - Section R902.1.1.1 is added to the 2019 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 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 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.

**14.04.400 – Section AV100.3.1 is added to the 2019 edition of the California Residential Code to read as follows:**

Enclosure (fence) required: In addition to the requirements in the California Residential Code, a barrier/enclosure is required to isolate the pool or any other bodies of water over 18 inches deep from neighboring properties and public ways.

Exception: When the swimming pool or any other bodies of water over 18 inches deep is fully enclosed around its perimeter by an enclosure per section AV100.3 of the California Residential Code.

## California Green Building Standards Code

### **14.04.500 - Section 101.3 of the 2019 edition of the California Green Buildings Standards Code is amended to read as follows:**

**Section 101.3 Scope.** The provisions of this code shall apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure, additions or alterations to existing buildings, unless otherwise indicated in this code, throughout the State of California.

It is not the intent that this code substitute or be identified as meeting the certification requirements of any green building program.

### **14.04.502 - Section 301.3 of the 2019 edition of the California Green Building Standards Code is amended to read as follows:**

Nonresidential additions and alterations. The provisions of individual sections of Chapter 5 apply to newly constructed buildings, building additions, and/or building alterations (for occupancies within the authority of California Building Standards Commission). Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.

A code section will be designated by a banner to indicate where the code section only applies to newly constructed buildings {N} or to additions and alterations {A}. When the code section applies to both, no banner will be used.

### **14.04.504 - Section 307 is added to the 2019 edition of the California Green Building Standards Code is to read as follows:**

307.1 Buildings required to comply with Tier 1 include the following:

1. municipal buildings of 5,000 square feet or more of new construction
2. non-residential buildings with 25,000 square feet or more of new construction
3. tenant improvements of 25,000 square feet or more



4. mixed use and multi-family residential buildings four stories in height or more

307.2 Buildings required to comply with Tier 2 include the following:

1. new municipal buildings
2. municipal renovations of 15,000 square feet or more
3. commercial type buildings of over 50,000 square feet or more

Note: Where there are practical difficulties involved in complying with the threshold levels of a tier, the enforcing agency may grant modifications for individual cases. The enforcing agency shall first find that a special individual reason makes the strict letter of the tier impractical and that modification is in conformance with the intent and purpose of the measure. The details of any action granting modification shall be recorded and entered in the files of the enforcing agency.

**14.04.507 - Section 4.106.4.2 of the 2019 Edition of the California Green Building Standards Code is amended to read as follows:**

**4.106.4.2 New multifamily dwellings.** If residential parking is available, twenty-five (25) 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 EVSE and five (5) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging stations (EVCS). Calculations for the required number of EV spaces and EVCS shall be rounded up to the nearest whole number.

**Notes:**

1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

**14.04.509 – Section 4.106.4.3, Section 4.106.4.3.1 and Table 4.106.4.3.1 of the 2019 Edition of the California Green Building Standards Code are amended to read as follows:**

**4.106.4.3 New hotels and motels.** All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE and EVCS. The construction documents shall identify the location of the EV spaces and EVCS.

**Notes:**

1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

**4.106.4.3.1 Number of required EV spaces and EVCS.** The number of required EV spaces and EVCS shall be based on the total number of parking spaces provided for all type of parking facilities in accordance with Table 4.106.4.3.1. Calculation for the required number of EV spaces and EVCS shall be rounded up to the nearest whole number.

**TABLE 4.106.4.3.1**

<b>TOTAL NUMBER OF PARKING SPACES</b>	<b>NUMBER OF REQUIRED EV SPACES</b>	<b><u>NUMBER OF REQUIRED EVCS</u></b>
0-9	0	0
10-25	3	1
26-50	7	2
51-75	13	3
76-100	19	4
101-150	26	6
151-200	38	8
201 and over	25 percent of total	5 percent of total

**14.04.511 – Section 5.106.5.3.3 and Table 5.106.5.3.3 of the 2019 Edition of the California Green Building Standards Code are amended to read as follows:**



**5.106.5.3.3 EV charging space and charging station calculation. (N)** Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE and EVCS. Calculations for the required number of EV charging spaces and EVCS shall be rounded up to the nearest whole number.

**Exceptions:** On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:

1. Where there is insufficient electrical supply.
2. Where there is evidence suitable to the local enforcing 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.

**TABLE 5.106.5.3.3**

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES	NUMBER OF REQUIRED EVCS
0-9	0	0
10-25	3	1
26-50	7	2
51-75	13	3
76-100	19	4
101-150	26	6
151-200	38	8
201 and over	25 percent of total	5 percent of total

**SECTION 4.** Chapter 14.28 of the Pasadena Municipal Code is hereby repealed in its entirety and rewritten as follows:

**14.28.010 - California Fire Code adopted.**

Except as otherwise provided for in the chapter by specific provision, the minimum standards, provisions, and requirements for the safe construction and maintenance of property, facilities, conditions, materials, equipment, fire prevention and alarms

systems, and the general supervision thereof for the purpose of combating and control of fire and fire hazard and abatement same within the corporate limits of the City shall be in accordance with the provisions and in the manner prescribed by the California Fire Code, 2019 edition (California Fire Code) in its entirety, as published by the International Code Council and including Appendix Chapter 4 and Appendices B through O, all as compiled, adopted, and subsequently amended by the International Code Council, California State Fire Marshal's Office, California Building Standards Commission, or City of Pasadena. One copy of the above publication is on file for public inspection and they are adopted and incorporated herein as if fully set forth in this chapter.

**14.28.020 - Section 101.1 of the 2019 California Fire Code titled "Title" is amended to read as follows:**

**101.1 Title.** These regulations shall be known as the Fire Code of the City of Pasadena hereinafter referred to as "this code."

**14.28.030 - Section 104 of the 2019 California Fire Code is amended by adding new Section 104.12 titled "Cost recovery" to read as follows:**

**104.12 Cost recovery.** Where an emergency situation is caused or exacerbated by a willful act, a negligent act, or a violation of the Fire Code, Building Code, or any other applicable law, ordinance or regulation, the cost of mitigating and securing any emergency that is within the responsibility of the Fire Chief if a charge against the person who caused the emergency or who caused the circumstances leading to the creation of the emergency. Damages and expenses incurred by any public agency providing mutual aid shall constitute debt of such person and shall be collectible by the Fire Chief for proper distribution in the same manner as in the case of an obligation under contract expressed or implied. Expenses as stated above shall include, but not limited to, equipment and personnel committed and any payments required by the public agency to outside business firms requested by the public agency to mitigate or secure the emergency, monitor remediation, and clean up.

**14.28.040 - Section 105.6.1 of the 2019 California Fire Code titled "Aerosol products" is amended to read as follows:**

**105.6.1 Aerosol products.** An operational permit is required to manufacture, store or handle any amount of aerosol products.

Exception: Pursuant to Health and Safety Code (HSC) Section 25507(b)(5) Hazardous material contained solely in a consumer product, handled at, and found in, a retail



establishment and intended for sale to, and for the use by, the public. The exemption provided for in this paragraph shall not apply to a consumer product handled at the facility which manufactures that product, or a separate warehouse or distribution center of that facility, or where a product is dispensed on the retail premises.

**14.28.050 - Section 105.6.8 of the 2019 California Fire Code titled “Compressed gases” is amended to read as follows:**

**105.6.8 Compressed gases.** An operational permit is required for the storage, use or handling at normal temperature and pressure (NTP) of compressed gases at any amount.

**Exceptions:**

1. Vehicles equipped for and using compressed gas as a fuel for propelling the vehicle.
2. Inert and simple asphyxiants less than 200 cubic feet.
3. Oxidizing gases less than 30 cubic feet.

**14.28.060 - Table 105.6.8 of the 2019 California Fire Code titled “PERMIT AMOUNTS FOR COMPRESSED GASES” is amended to read as follows:**

**Table 105.6.8 – PERMIT AMOUNTS FOR COMPRESSED GASES**

<b>TYPE OF GAS</b>	<b>AMOUNT (cubic feet at NTP)</b>
Carbon dioxide used in carbon dioxide enrichment systems	200
Carbon dioxide used in insulated liquid carbon dioxide beverage dispensing applications	200
Corrosive	Any Amount
Flammable (except cryogenic fluids and liquefied petroleum gases)	Any Amount
Highly toxic	Any Amount
Inert and simple asphyxiant	200
Oxidizing (including oxygen)	30
Pyrophoric	Any Amount
Toxic	Any Amount

**14.28.070 - Section 105.6.10 of the 2019 California Fire Code titled “Cryogenic fluids” is amended to read as follows:**

**105.6.10 Cryogenic fluids.** An operational permit is required to produce, store, transport on site, use, handle or dispense cryogenic fluids at any amount.

**Exception:** Permits are not required for vehicles equipped for and using cryogenic fluids as a fuel for propelling the vehicle or for refrigerating the lading.

**14.28.080 - Table 105.6.10 of the 2019 California Fire Code titled “PERMIT AMOUNTS FOR CRYOGENIC FLUIDS” is amended to read as follows:**

**Table 105.6.10 – PERMIT AMOUNTS FOR CRYOGENIC FLUIDS**

<b>TYPE OF CRYOGENIC FLUID</b>	<b>INSIDE BUILDING (gallons)</b>	<b>OUTSIDE BUILDING (gallons)</b>
Flammable	Any Amount	Any Amount
Inert	Any Amount	Any Amount
Oxidizing (includes oxygen)	Any Amount	Any Amount
Physical or health hazard not indicated above	Any Amount	Any Amount

**14.28.090 - Section 105.6.16 of the 2019 California Fire Code titled “Flammable and combustible liquids” is amended to read as follows:**

**105.6.16 Flammable and combustible liquids.** An operational permit is required:

1. To use or operate a pipeline for the transportation within facilities of flammable or combustible liquids. This requirement shall not apply to the off-site transportation in pipelines regulated by the Department of Transportation (DOTn) nor does it apply to piping systems.

2. To store, handle or use Class I liquids at any amount, except that a permit is not required for the following:

2.1. The storage or use of Class I liquids in the fuel tank of a motor vehicle, aircraft, motorboat, mobile power plant or mobile heating plant, unless such storage, in the opinion of the fire code official, would cause an unsafe condition.

2.2. The storage or use of paints, oils, varnishes or similar flammable



mixtures where such liquids are stored for maintenance, painting or similar purposes for a period of not more than 30 days.

3. To store, handle or use Class II or Class IIIA liquids at any amount.

**Exception:** R-2 & R-3 occupancies where the maximum allowable limits shall be 10 gallons stored inside of a building and 25 gallons outside of a building.

4. To store, handle or use Class IIIB liquids in tanks or portable tanks for fueling motor vehicles at motor fuel-dispensing facilities or where connected to fuel-burning equipment.

**Exception:** Fuel oil and used motor oil used for space heating or water heating.

5. To remove Class I or II liquids from an underground storage tank used for fueling motor vehicles by any means other than the approved, stationary on-site pumps normally used for dispensing purposes.

6. To operate tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.

7. To place temporarily out of service (for more than 90 days) an underground, protected above-ground or above-ground flammable or combustible liquid tank.

8. To change the type of contents stored in a flammable or combustible liquid tank to a material that poses a greater hazard than that for which the tank was designed and constructed.

9. To manufacture, process, blend or refine flammable or combustible liquids.

10. To engage in the dispensing of liquid fuels into the fuel tanks of motor vehicles at commercial, industrial, governmental or manufacturing establishments.

11. To utilize a site for the dispensing of liquid fuels from tank vehicles into the fuel tanks of motor vehicles, marine craft and other special equipment at commercial, industrial, governmental or manufacturing establishments.

**14.28.100 - Section 105.6.20 of the 2019 California Fire Code titled "Hazardous materials" is amended to read as follows:**

**105.6.20 Hazardous materials.** An operational permit is required to store, transport on site, dispense, use or handle hazardous materials regardless of quantity unless the material meets the following exceptions:

1. Inert compressed gases less than 200 cubic feet.
2. Oxidizing gases less than 30 cubic feet.
3. Corrosive liquids in S-2 occupancies under 15 gallons.

**14.28.110 - Table 105.6.20 of the 2019 California Fire Code titled "PERMIT AMOUNTS FOR HAZARDOUS MATERIALS" is amended to read as follows:**

**Table 105.6.20 PERMIT AMOUNT FOR HAZARDOUS MATERIALS**

<b>TYPE OF MATERIAL</b>	<b>AMOUNT</b>
Combustible liquids	Any amount
Corrosive materials	
Gases	Any amount
Liquids	Any amount
Solids	Any amount
Explosive materials	Any amount
Flammable materials	
Gases	Any amount
Liquids	Any amount
Solids	Any amount
Highly toxic materials	
Gases	Any amount
Liquids	Any Amount
Solids	Any Amount
Organic peroxides	
Liquids	



<b>TYPE OF MATERIAL</b>	<b>AMOUNT</b>
Class I	Any Amount
Class II	Any Amount
Class III	Any amount
Class IV	Any amount
Class V	Any amount
Solids	
Class I	Any Amount
Class II	Any Amount
Class III	Any amount
Class IV	Any amount
Class V	Any amount
Oxidizing materials	
Gases	See Section 105.6.8
Liquids	
Class 4	Any Amount
Class 3	Any amount
Class 2	Any amount
Class 1	Any amount
Solids	
Class 4	Any Amount
Class 3	Any amount
Class 2	Any amount
Class 1	Any amount
Pyrophoric materials	
Gases	Any Amount
Liquids	Any Amount
Solids	Any Amount
Toxic materials	
Gases	Any amount
Liquids	Any amount
Solids	Any amount

<b>TYPE OF MATERIAL</b>	<b>AMOUNT</b>
Unstable (reactive) materials	
Liquids	
Class 4	Any Amount
Class 3	Any Amount
Class 2	Any amount
Class 1	Any amount
Solids	
Class 4	Any Amount
Class 3	Any Amount
Class 2	Any amount
Class 1	Any amount
Water-reactive materials	
Liquids	
Class 3	Any Amount
Class 2	Any amount
Class 1	Any amount
Solids	
Class 3	Any Amount
Class 2	Any amount
Class 1	Any amount

**14.28.120 - Exception 1 in Section 105.6.27 of the 2019 California Fire Code titled "LP-gas" is amended to read as follows:**

**105.6.27 LP-gas.** An operational permit is required for:

1. Storage and use of LP-gas.

A permit is not required for individual containers with a 5 gallon water capacity or multiple containers having an aggregate amount of 10 gallons in Group R-2 & R-3.



2. Operation of cargo tankers that transport LP-gas.

**14.28.130 - Section 105.6.28 of the 2019 California Fire Code titled "Magnesium" is amended to read as follows:**

**105.6.28 Magnesium.** An operational permit is required to melt, cast, heat treat or grind any amount of magnesium.

**14.28.140 - Section 105.7.5 of the 2019 California Fire Code titled "Cryogenic fluids" is amended to read as follows:**

**105.7.5 Cryogenic fluids.** A construction permit is required for installation, alteration, or closure to outdoor stationary cryogenic fluid storage systems where the system capacity exceeds the amounts listed in Table 105.6.10. Maintenance performed in accordance with this code is not considered to be an alteration and does not require a construction permit.

**14.28.150 - Section 109 of Chapter 1 of the California Fire Code titled "BOARD OF APPEALS" is deleted in its entirety.**

**14.28.160 - Section 110.4 of the 2019 California Fire Code titled "Violation penalties" is amended to read as follows:**

**110.4 Violation penalties.** Persons who violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a misdemeanor and subject to the penalties specified in Chapter 1.24 of the Pasadena Municipal Code.

**14.28.170 - Section 112.4 of the 2019 California Fire Code titled "Failure to comply" is amended to read as follows:**

**112.4 Failure to comply.** Any person who continues any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be guilty of a misdemeanor and subject to the penalties specified in Chapter 1.24 of the Pasadena Municipal Code.

**14.28.180 - Section 510.4.1.1 of the 2019 California Fire Code titled "Minimum signal strength into the building" is amended to read as follows:**

**510.4.1.1 Minimum signal strength into the building.** A minimum inbound signal strength shall be sufficient to provide usable voice communication throughout the coverage area as specified by the fire code official. The inbound signal level shall be a minimum signal strength of -95 dBm and sufficient to provide not less than a Delivered Audio Quality (DAQ) of 3.0 or an equivalent Signal-to-Interference-Plus-Noise Ratio (SINR) applicable to the technology for either analog or digital strengths.

**14.28.190 - Section 510.4.1.2 of the 2019 California Fire Code titled "Minimum signal strength out of the building" is amended to read as follows:**

**510.4.1.2 Minimum signal strength out of the building.** A minimum outbound signal strength shall be sufficient to provide usable voice communication throughout the coverage area as specified by the fire code official. The outbound signal level shall be a minimum signal strength of -95 dBm and sufficient to provide not less than a DAQ of 3.0 or an equivalent SINR applicable to the technology for either analog or digital strengths.

**14.28.200 - Section 903.1 of the 2019 California Fire Code is amended by adding Section 903.1.2 titled "Minimum fire suppression protection for new construction" to read as follows:**

**903.1.2 Minimum fire suppression protection for new construction.** All new construction shall be provided with an approved automatic fire suppression system throughout the building, without regard to the criteria listed in Section 903.2 et. seq.

Exception: The following types of construction may be exempt from this section when approved by the fire code official.

1. Garages, carports, and similar structures provided no portion of the structure is located more than 150 feet (45720 mm) from approved fire department access.
2. Utility sheds, gazebos and similar structures of less than 120 square feet (11.15 m<sup>2</sup>) provided no portion of the structure is located more than 150 feet from (45720 mm) approved fire department access.
3. Fences and open trellises.
4. Other similar structures as deemed appropriate by the fire code official.

**14.28.210 - Section 903.1 of the 2019 California Fire Code is amended by adding Section 903.1.3 titled "Existing occupancies" to read as follows:**



**903.1.3 Existing occupancies.** Existing occupancies, with the exception of R-3.1 and R-4 occupancies, shall comply with Section 903.1.2 where one of the following conditions exists:

1. Whenever additions result in an additional level above or below grade, or a total increase of more than 1000 square feet (92.9 m<sup>2</sup>) or an increase of more than fifty percent (50%) in the total floor area including mezzanines and additional stories, whichever is less, regardless of ownership. Additions shall be cumulative with each application for a building permit from January 1, 2008. R-3 occupancies shall not be required to comply with this condition solely due to the addition of an additional level, unless one of the criteria for an increase of total floor area is also exceeded.
2. Whenever the value of alterations exceed fifty percent (50%) of the replacement value of the structure, excluding the value of property and contents, as determined by the Building Official. Alteration values shall be cumulative with each application for a building permit from January 1, 2008. Expenditures for maintenance and repairs such as interior and exterior painting, carpeting, interior window coverings, drapes, movable partitions, surface re-roofing or plumbing, mechanical and electrical repairs shall not be considered when calculating the percentage of alterations.
3. Whenever there is an occupancy classification change to a more hazardous use, as determined by the fire code official.
4. Whenever any existing Group R Division 1 occupancy is subdivided to a condominium or any non-residential occupancy is converted, in part or whole, to a residential occupancy.

**14.28.220 - Section 903.1 of the 2019 California Fire Code is amended by adding Section 903.1.4 titled "Partial automatic fire suppression systems prohibited" to read as follows:**

**903.1.4 Partial automatic fire suppression systems prohibited.** Whenever an automatic fire suppression system is installed for any portion of any building or structure, an automatic fire suppression system shall be installed for the entire building or structure.

**14.28.230 - Section 903.3.5 of the 2019 California Fire Code titled “Water supplies” is amended by adding a sentence at the end of the paragraph to read as follows:**

**903.3.5 Water supplies.** Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with *Health and Safety Code 13114.7*. For connections to public waterworks systems, the water supply test used for design of fire protection systems shall be adjusted to account for seasonal and daily pressure fluctuations based on information from the water supply authority and as approved by the fire code official. Hydraulic calculations shall include a 10% reduction from the source.

**14.28.240 - Section 903.3.5.2 of the 2019 California Fire Code titled “Residential combination services” is amended by adding a sentence at the end of the paragraph to read as follows:**

**903.3.5.2 Residential combination services.** A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R. Combination services are not allowed for NFPA 13R systems.

**14.28.250 - Section 907 of the 2019 California Fire Code is amended by adding a sentence to existing Section 907.2 titled “Where required—new buildings and structures” to read as follows:**

**907.2 Where required – new buildings and structures.** An approved fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

Not fewer than one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers or automatic fire alarm systems, a single fire alarm box shall be installed at a location approved by the enforcing agency.

For new construction of 10,000 square feet (929 m<sup>2</sup>) or more, an approved automatic fire alarm system shall be installed in compliance with this code and NFPA 72. At a minimum, smoke detectors, or other listed and approved detection devices, shall be installed in all electrical, mechanical, storage, conference or similar rooms. Listed and



approved alarm notification appliances providing both audible and visual notification shall be installed throughout the building in compliance with this code and NFPA 72.

Exceptions:

1. The manual fire alarm box is not required for fire alarm *control units* dedicated to elevator recall control, supervisory service *and fire sprinkler monitoring*.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.
3. *The manual fire alarm box is not required to be installed when approved by the fire code official.*

**14.28.260 - Section 908 of the 2019 California Fire Code is amended by adding Section 908.4 titled "Requirements" to read as follows:**

**908.4 Requirements.** All emergency alarm control panels shall be UL 2017 or UL 864 listed. All sensors shall be UL 2075 listed. All detection and alarm systems shall be powered and supervised as required for fire alarm systems per NFPA 72. Secondary power supplies shall be calculated for 24-hour equipment standby time plus emergency standby duration calculated for the longest modeled release rate or 5-minutes, whichever is the longest duration. Visual alarms shall be a color approved by the fire code official.

**14.28.270 - Section 914.9 of the 2019 California Fire Code titled "Application of flammable finishes" is amended by maintaining text from 2016 California Fire Code Section 914.9, amending the section to read as follows:**

**914.9 Application of flammable finishes.** An automatic sprinkler system or fire-extinguishing system shall be provided in all spray rooms, spray booths, dip and immersing spaces and storage rooms, and shall be installed in accordance with Chapter 9.

**14.28.280 - Section 1103 of the 2019 California Fire Code is amended by adding Section 1103.1.2 titled "Existing occupancies" to read as follows:**

**1103.1.2 Existing occupancies.** Existing occupancies shall comply where one of the following conditions exists:

1. Whenever additions result in an additional level above or below grade, or a total increase of more than 1000 square feet (92.9 m<sup>2</sup>) or an increase of more than fifty percent (50%) in the total floor area including mezzanines and additional stories, whichever is less, regardless of ownership. Additions shall be cumulative with each application for a building permit from January 1, 2008.
2. Whenever the value of alterations exceed fifty percent (50%) of the replacement value of the structure, excluding the value of property and contents, as determined by the Building Official. Alteration values shall be cumulative with each application for a building permit from January 1, 2008. Expenditures for maintenance and repairs such as interior and exterior painting, carpeting, interior window coverings, drapes, movable partitions, surface re-roofing or plumbing, mechanical and electrical repairs shall not be considered when calculating the percentage of alterations.
3. Whenever there is an occupancy classification change to a more hazardous use, as determined by the fire code official.
4. Whenever any existing Group R Division 1 occupancy is subdivided into a condominium or any non-residential occupancy is converted, in part or whole, to a residential occupancy.
5. Where required by Chapter 11 of this code.

**14.28.290 - Section 3103 of the 2019 California Fire Code is amended by adding Section 3103.2.1 titled "Cumulative area of tents and other membrane structures" to read as follows:**

**3103.2.1 Cumulative area of tents and other membrane structures.** Square footage shall be calculated cumulatively for all tents and membrane structures in conjunction with an operational permit as required by Section 105.

**14.28.300 - Section 3106.3.1 of the 2019 California Fire Code titled "Occupant load" is amended to read as follows:**

**3106.3.1 Occupant load.** The fire code official has the authority to establish an occupant load for the event site.

**14.28.310 - Section 3107.13.2 of the 2019 California Fire Code titled "Location of containers" is amended by deleting Table 6104.3 and to read as follows:**



**3107.13.2 Location of containers.** LP-gas containers and tanks, shall be located outside. Portable LP-gas containers with a capacity of 500 gallons (1893L) or less shall have a minimum separation between the container and structure of not less than 10 feet (3048mm). Pressure relief devices shall be pointed away from tents, membrane structures, and appliances.

**14.28.320 - Section 4905.2 of the 2019 California Fire Code is amended by adding Section 4905.2.1 titled "Wood roof cover" to read as follows:**

**4905.2 Wood roof cover.** No wood roof covering material shall be installed on any structure located in the Very High Hazard, High Hazard, or Moderate Hazard Fire Severity Zones as identified by the Pasadena Fire Department.

**14.28.330 - Section 4906.2 of the 2019 California Fire Code titled "Application" is amended by changing Item 2 to read as follows:**

**4906.2 Application.** Buildings and structures located in the following areas shall maintain the required hazardous vegetation and fuel management:

1. All unincorporated lands designated by the State Board of Forestry and Fire Protection as State Responsibility Area (SRA) including:
  - 1.1. Moderate Fire Hazard Severity Zones.
  - 1.2. High Fire Hazard Severity Zones.
  - 1.3. Very-high Fire Hazard Severity Zones.
2. Land designated as Moderate, High and Very-High Fire Hazard Severity Zones by cities and other local agencies.

**14.28.340 - Section 5001 of the 2019 California Fire Code is amended by adding Section 5001.6.1.1 titled "Temporary facility closure" to read as follows:**

**5001.6.1.1 Temporary facility closure.** Unless otherwise specified, a temporary facility closure shall last not more than 180 calendar days. The fire code official may authorize one 180 day extension.

**14.28.350 - Section 5003 of the 2019 California Fire Code is amended by adding Section 5003.2.9.3 titled "Minimum testing" to read as follows:**

**5003.2.9.3 Minimum testing.** At a minimum, all tanks, primary storage, secondary containment, monitoring systems, release prevention and mitigation systems, and other safety equipment or systems for the storage, use or handling of any hazardous material shall be tested for proper function as described by manufacturer's or design

specifications, whichever is more stringent, prior to the introduction of a hazardous material.

**14.28.360 - Section 5704.2.7.4 of the 2019 California Fire Code titled "Emergency venting" is amended to read as follows:**

**5704.2.7.4 Emergency venting.** Stationary, above-ground tanks shall be equipped with additional venting that will relieve excessive internal pressure caused by exposure to fires. Emergency venting devices shall be listed and approved. Emergency vents for Class I, II and IIIA liquids shall not discharge inside buildings. This requirement shall also apply to each compartment of a compartmentalized tank, the interstitial space (annulus) of a secondary containment type tank, and the enclosed space of tanks of closed-top dike construction. Additionally, this requirement shall apply to spaces or enclosed volumes, such as those intended for insulation, membranes or weather shields that can contain liquid because of a leak from the primary vessel and can inhibit venting during fire exposure. The insulation, membrane or weather shield shall not interfere with emergency venting. The venting shall be installed and maintained in accordance with Section 22.7 of NFPA 30.

**14.28.370 - Section 5704.2.7.5.8 of the 2019 California Fire Code titled "Overfill prevention" is amended by deleting the exception.**

**5704.2.7.5.8 Overfill prevention.** An approved means or method in accordance with Section 5704.2.9.7.5 shall be provided to prevent the overfill of all Class I, II and IIIA liquid storage tanks. Storage tanks in refineries, bulk plants or terminals regulated by Section 5706.4 or 5706.7 shall have overfill protection in accordance with API 2350.

An approved means or method in accordance with Section 5704.2.9.7.5 shall be provided to prevent overfilling of Class IIIB liquid storage tanks connected to fuel-burning equipment inside buildings.

**14.28.380 - Section 5704.2.8.14 of the 2019 California Fire Code titled "Emergency vents" is amended to read as follows:**

**5704.2.8.14 Emergency vents.** Emergency vents shall be vapor tight and shall not be allowed to discharge inside the vault. Long-bolt manhole covers shall not be allowed for this purpose.

**14.28.390 - Section 5704.2.9.6.1 of the 2019 California Fire Code titled "Locations where above ground tanks are prohibited" is amended to read as follows:**



**5704.2.9.6.1 Locations where above ground tanks are prohibited.** Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited in the City of Pasadena.

**14.28.400 - Section 5706.2.4.4 of the 2019 California Fire Code titled "Locations where above ground tanks are prohibited" is amended to read as follows:**

**5706.2.4.4 Location where above-ground tanks are prohibited.** Storage of Class I and II liquids in above-ground tanks is prohibited within the limits established by law as the limits of districts in which such storage is prohibited in the City of Pasadena.

**14.28.410 - Section 5806.2 of the 2019 California Fire Code titled "Limitations" is amended to read as follows:**

**5806.2 Limitations.** Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited in the City of Pasadena.

**14.28.420 - Section 6101.3 of the 2019 California Fire Code titled "Construction documents" is amended to read as follows:**

**6101.3 Construction documents.** Where a single LP-gas container is more than 20 gallons (75.7 L) in water capacity, or the aggregate water capacity of LP-gas containers is more than 40 gallons (151 L) in water capacity, the installer shall submit construction documents of such installation.

**14.28.430 - Section 6101 of the 2019 California Fire Code titled "Minimum testing" is amended by adding Section 6101.4 to read as follows:**

**6101.4 Minimum testing.** At a minimum, all tanks, primary storage, secondary containment, monitoring systems, release prevention and mitigation systems, and other safety equipment or systems for the storage, use or handling of any hazardous material shall be tested for proper function as described by manufacturer's or design specifications, whichever is more stringent, prior to the introduction of a hazardous material.

**14.28.440 - Appendix A of the 2019 California Fire Code titled "BOARD OF APPEALS" is deleted in its entirety.**

**14.28.450 - Table B105.1(1) of Appendix B of the 2019 California Fire Code titled "Buildings one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses" is amended by as follows:**

TABLE B105.1(1)  
REQUIRED FIRE-FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3  
AND R-4 BUILDINGS AND TOWNHOUSES

Fire Flow Calculation Area (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2) at the required fire-flow rate
0-3,601	Section 903.3.1.3 of the California Fire Code or Section 313.3 of the California Residential Code	1,000	½
3,601 and greater	Section 903.3.1.3 of the California Fire Code or Section 313.3 of the California Residential Code	1,500	1

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 gallon per minute = 3.785 L/m.



**14.28.460 - Table B105.2 of Appendix B of the 2019 California Fire Code titled "REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES" is amended by as follows:**

**TABLE B105.2  
REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES**

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the California Fire Code	50% of the value in Table B105.1(2)	Duration in Table B105.1(2) at the reduced fire-flow rate
Section 903.3.1.2 of the California Fire Code	50% of the value in Table B105.1(2)	Duration in Table B105.1(2) at the reduced fire-flow rate

For SI: 1 gallon per minute = 3.785 L/m.

- a. The reduced fire-flow shall be not less than 1,000 gallons per minute.
- b. The reduced fire-flow shall be not less than 1,500 gallons per minute.

**14.28.470 - Section B105.2 of Appendix B of the 2019 California Fire Code titled "Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses" is amended by adding Exception 5 to read as follows:**

**B105.2 Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses.** The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses shall be as specified in Tables B105.2 and B105.1(2).

Exception: [SFM] Group B, S-2 and U occupancies having a floor area not exceeding 1,000 square feet, primarily constructed of noncombustible exterior walls with wood or steel roof framing, having a Class A roof assembly, with uses limited to the following or similar uses:

1. California State Parks buildings of an accessory nature (restrooms).
2. Safety roadside rest areas (SRRA), public restrooms.
3. Truck inspection facilities, (TIF), CHP office space and vehicle inspection bays.
4. Sand/salt storage buildings, storage of sand and salt.

5. A reduction in required fire-flow of up to 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1(1). Table B105.2 is amended by replacing "25%" with "50%" wherever "25%" appears in the Table.

**14.28.480 - Section D103.6 of Appendix D of the 2019 California Fire Code titled "Signs" is amended to read as follows:**

**D103.6 Signs.** Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with the current specifications maintained by the Pasadena Department of Public Works.

**14.28.490 - Fees**

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

A. Work commencing before permit issuance.

Any person who commences any work requiring a permit under this Code before obtaining the necessary permits, unless otherwise approved by the fire code official in writing or as part of an approved phased permit approval process, shall be subject to double the permit and inspection fees adopted pursuant to section 14.28.015.

**14.28.500 – Fire hazard severity zone map**

The map entitled "City of Pasadena Fire Hazard Severity Zone Map" dated July 1, 2008 is adopted and incorporated in this chapter by this reference. Such map shall be used by the fire chief in administering this chapter.



**14.28.510 – Board of Appeals**

All sections in the respective 2019 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 alternative material and methods of construction and to provide for reasonable interpretation of the provisions of these codes, there shall 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 the investigations and shall render all its decisions and findings on contested matters in writing to the building fire code official with a duplicate copy thereof to any appellant or contestant affected by any such decision or findings, and may recommend to the city council such new legislation, if any, as is consistent therewith.

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 reasonable necessary in order to assist it in its investigation and in making its findings and decisions.

**SECTION 5.** This ordinance shall take effect 30 days after its publication.

Signed and approved this \_\_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Terry Tornek  
Mayor of the City of Pasadena

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 November, 2019, by the following vote:

Ayes

Noes

Absent

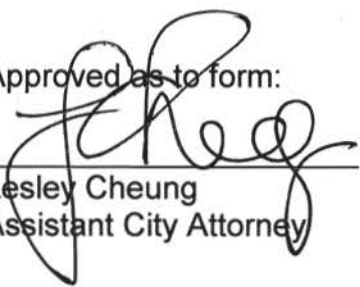
Abstain

Date Published:

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Mark Jomsky, CMC  
City Clerk

Approved as to form:



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Lesley Cheung  
Assistant City Attorney