

Introduced by: _____

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF PASADENA AMENDING TITLE 14 (BUILDING AND CONSTRUCTION) OF THE PASADENA MUNICIPAL CODE BY ADOPTING THE 2022 CALIFORNIA BUILDING STANDARDS CODE INCORPORATING THE 2022 CALIFORNIA ADMINISTRATIVE CODE; 2022 CALIFORNIA BUILDING CODE WITH APPENDIX CHAPTERS G, H, I, J, P; CALIFORNIA RESIDENTIAL CODE WITH APPENDIX CHAPTERS AH, AK, AQ, AX, AND AZ; 2022 CALIFORNIA ELECTRICAL CODE WITH ANNEXES A, C, F, I; 2022 CALIFORNIA MECHANICAL CODE WITH APPENDIX CHAPTERS B, C, F, G, H; 2022 CALIFORNIA PLUMBING CODE WITH APPENDIX CHAPTERS A, D, G, I, J, K, M, N; 2022 CALIFORNIA ENERGY CODE; 2022 CALIFORNIA HISTORICAL BUILDING CODE; 2022 CALIFORNIA FIRE CODE WITH LOCAL AMENDMENTS TO STATE ADOPTED CHAPTERS INCLUDING CHAPTER 1, APPENDIX CHAPTER 4 AND CERTAIN APPENDICES WITHIN APPENDIX CHAPTERS A THROUGH O; 2022 CALIFORNIA EXISTING BUILDING CODE; 2022 CALIFORNIA GREEN BUILDINGS STANDARDS CODE; 2022 CALIFORNIA REFERENCED STANDARDS CODE.

WHEREAS, the City of Pasadena is adopting the 2022 California Building Standards Code, and is making certain amendments thereto; and

WHEREAS, certain building standards and other related model codes are adopted by the State of California in the California Building Standards Code and become applicable in the City unless amended by the City pursuant to California Health and Safety Code Section 17958; and

WHEREAS, California Health and Safety Code Section 17958.5 authorizes the City Council to make reasonably necessary changes or modifications to the State adopted building codes, including the California Building Standards Code, based on local conditions; and

WHEREAS, the City of Pasadena has determined and recommended that the modifications to the 2022 California Building Standards Code, contained herein, are reasonably necessary due to local conditions; and

WHEREAS, California Health and Safety Code Section 17958.7 requires the City Council to make express findings of the necessity for modifications to the building standards contained in the 2022 California Building Standards Code; and

WHEREAS, in support of these modifications and changes, the City Council of the City of Pasadena hereby expressly finds that the amendments and modifications to building standards contained in the 2022 California Building Standards Code as adopted by the City are reasonably necessary due to the following local climatic, geological or topographical conditions.

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

Justification: Climatic. The presence of the San Gabriel Mountains along the foothills of the City allows winds patterns during certain climatic conditions and certain periods of the year. Further, intermittent Santa Ana wind conditions occur from September to March allowing conditions that create the potential for high velocity winds with high temperature. In addition, the region is within a climate system capable of producing major winds, fire and rain related disasters, including but limited to, those caused by the Santa Ana winds and El Nino (or La Nina) subtropical-like weather.

Justification: Climatic. The City of Pasadena is located within the San Gabriel Valley region of Southern California which has extreme arid conditions and periods of severe drought. These conditions can cause extremely dry brush and fauna in the Wildland Urban Interface of the San Gabriel Mountains which has been identified as Fire Hazard Severity Zones by the Office of the State Fire Marshal.

Justification: Geological. The Safety Element of the General Plan identifies earthquake fault risk in the City due to faults located within and nearby the City boundaries such as the Sierra Madre Fault, the Santa Monica-Hollywood-Raymond Fault and the San Andreas Fault. The close proximity of these and other faults are capable of producing earthquakes, foreshocks and aftershocks of significant magnitude and intensity that require a higher order to seismic resilience in building design and construction.

Justification: Geological. The County of Los Angeles region has a vast and complex network of earthquake faults. Some of these faults, like the previously unknown Northridge Fault are blind thrust faults that earth scientists believe are capable of intense ground shaking similar or greater in size than the January 17, 1994 Northridge Earthquake. The random possible location of these blind thrust faults increase the local seismic risk and poses an increasing threat to public safety.

Justification: Geological. Areas within the City of Pasadena may have liquefiable soils that have the potential of allowing greater damage to building structures in an earthquake. Liquefaction is a very destructive secondary effect of strong seismic shaking where a loss of bearing strength occurs along with ground oscillations in the supporting soils.

Justification: Topographic. Several existing buildings are located on parcels in the City of Pasadena on hilly terrain with slopes that create grading, drainage, foundation, infrastructure, utility and emergency access challenges.

Justification: Climatic and Geological. 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 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 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. Prohibition of the use of wood, timber, and deep timber foundation systems, and wood in retaining and crib walls, as well as limiting prescriptive design provisions in an effort to mitigate potential problems or deficiencies due to the proliferation of wood destroying organisms and therefore needs to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the California Building Code and California Residential Code.

Justification: Climatic and Geological (Intermodal Shipping Containers). 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. The region is further impacted by construction of buildings and structures utilizing tradition construction materials that impact the amount of energy, air quality, greenhouse gas emission and construction waste in the area. The proposed amendment addresses structural designs specific to intermodal shipping containers, reduce environmental impact of unused and unrecycled intermodal shipping containers, and increase sustainability by reducing consumption of traditional construction materials. The proposed modification needs to be incorporated into the code to assure that new buildings and additions to existing buildings utilizing intermodal shipping containers are designed and constructed in accordance with the scope and objectives of the California Building Code and California Green Building Standards Code.

Justification: Topographic and Geological. 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. Additionally, the topography within the Los Angeles region includes significant hillsides with narrow and winding access that makes timely response by fire suppression vehicles challenging and difficult. Proposed

modifications based on Topographic and Geological conditions establishes design parameters to better mitigate and limit property damage that are the results of increased seismic forces which are imparted upon hillside buildings and structures and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the California Building Code, California Residential Code, and California Fire Code.

The following table provides the specific justification for each code amendment listed by Municipal Code Section Number, 2022 California Code Section, Section Title, Local Justification by Climatic, Geologic, Topographical Conditions.

No.	PMC Section Number	2022 California Building Code - Section	Section Title	Justification
1	14.04.115	1505.6	Fire-retardant treated wood shingles and shakes	Climatic
2	14.04.120	1507.1.1	Roof sheathing	Geologic
3	14.04.130	1613.5 and 1613.5.1	Vertical combinations	Geologic
4	14.04.140	1613.5.2	Wood diaphragms	Geologic
5	14.04.141	1613.5.3	Structural separation	Geologic
6	14.04.142	1613.6	Seismic design provisions for hillside buildings	Geologic Topographic
7	14.04.143	1613.7	Suspended ceilings	Geologic
8	14.04.145	1704.6	Structural observations	Geologic
9	14.04.147	1704.6.1	Structural observations for seismic resistance	Geologic
10	14.04.150	1705.3	Concrete construction	Geologic
11	14.04.160	1705.13	Special inspections for seismic resistance	Geologic
12	14.04.165	1807.1.4	Permanent wood foundation systems	Climatic Geologic
13	14.04.170	1807.1.6	Prescriptive design of concrete and masonry foundation walls	Geologic
14	14.04.176	1807.2	Retaining walls	Climatic Geologic
15	14.04.177	1807.3.1	Limitations – Soils and foundations	Climatic Geologic
16	14.04.178	1809.3	Stepped footings	Geologic

17	14.04.180	1809.7	Prescriptive footings for light-frame construction	Geologic
18	14.04.185	1809.12	Timber footings	Climatic Geologic
19	14.04.190	1810.3.2.4	Timber	Climatic Geologic
20	14.04.210	1905.1.7	Plain concrete	Geologic
21	14.04.215	1905.1	Concrete columns	Geologic
22	14.04.216	2304.10.2	Fastener requirements	Geologic
23	14.04.217	2304.10.3.1	Quality of nails	Geologic
24	14.04.220	2304.12.2.8	Wood used in retaining walls and cribs	Climatic Geologic
25	14.04.225	2305.4	Hold-down connectors	Geologic
26	14.04.236	2306.2	Wood-frame diaphragms	Geologic
27	14.04.237	2306.3	Wood-frame shear walls, Seismic design categories D, E, F	Geologic
28	14.04.238	2307.2	Wood-frame shear walls	Geologic
29	14.04.239	2308.6.1	Wall bracing requirements	Geologic
30	14.04.240	2308.6.5.1 2308.6.5.2	Alternate braced wall (ABW)	Geologic
31	14.04.241	2308.6.8.1	Foundation requirements	Geologic
32	14.04.250	2308.6.9	Attachment of sheathing	Geologic
33	14.04.251	3109.1.1	Fences required	Administrative
34	14.04.252	3115.1 Exception #6	Intermodal shipping containers	Climatic Geologic
35	14.04.253	3115.8.1 and 3115.8.1.2	Foundations and supports – Intermodal shipping containers	Climatic Geologic
36	14.04.254	3115.8.2	Welds – Intermodal shipping containers	Climatic Geologic
37	14.04.255	3115.8.4	Structural design procedure – Intermodal shipping containers	Climatic Geologic
38	14.04.256	3115.8.4.1, 3115.8.4.2, 3115.8.4.3	Material properties – Intermodal shipping containers	Climatic Geologic
39	14.04.257	3115.8.5.2	Simplified structural design assumptions – Intermodal shipping containers	Climatic Geologic
40	14.04.258	3115.8.5.3	Allowable shear value – Intermodal shipping containers	Climatic Geologic
41	14.04.259	J103.2	Grading permit exceptions	Administrative

No.	PMC Section Number	2022 California Residential Code - Section	Section Title	Justification
42	14.04.260	R301.1.3.2	Woodframe structures	Geologic
43	14.04.265	R301.1.5	Slopes steeper than one unit vertical in three units horizontal	Geologic Topographic
44	14.04.266	R301.2.2.6, Items 1, 3, and 5	Shear wall or braced wall offsets out of plane	Geologic
45	14.04.267	R301.2.2.11	Anchorage of mechanical, electrical, or plumbing components and equipment	Geologic
46	14.04.270	R401.1	Application foundations	Climatic Geologic
47	14.04.275	R403.1.2, R403.1.3.6 and R403.1.5	Continuous footing in Seismic Design Categories D ₀ , D ₁ , or D ₂	Geologic
48	14.04.280	R404.2	Wood foundation walls	Climatic Geologic
49	14.04.282	R501.2	Mechanical, plumbing anchorage	Geologic
50	14.04.285	R602.3(1)	Fastening schedule table	Geologic
51	14.04.290	R602.3(2) footnote "b"	Staple prohibition	Geologic
52	14.04.291	R602.3.2	Single top plate	Geologic
53	14.04.292	R602.10.2.3	Minimum number of braced wall panels	Geologic
54	14.04.293	R602.10.3(3)	Bracing requirements based on seismic design category table	Geologic
55	14.04.294	R602.10.4	Bracing methods	Geologic
56	14.04.295.1	R602.10.5	Minimum length of braced walls panels	Geologic
57	14.04.295.2	R602.10.6.1	Method ABW – Alternate braced wall panel	Geologic
58	14.04.295.3	R602.10.6.2	Method PFH – Portal frame with hold-downs at detached garage door openings	Geologic
59	14.04.295.4	R602.10.6.4	Method CS-PF – Continuously sheathed portal frame panel	Geologic
60	14.04.300	R606.4.4	Parapet walls	Geologic

61	14.04.305	R606.12.2.2.3	Reinforcement requirements for masonry elements	Geologic
62	14.04.310	R803.2.4	Openings in horizontal diaphragms	Geologic
63	14.04.315	R902.1.1.1	Roofing material in fire hazard severity zones	Climatic
64	14.04.320	R1001.3.1	Vertical reinforcing	Geologic
65	14.04.400	AX100.3.1	Enclosure fence requirements	Administrative
No.	PMC Section Number	2022 California Green Building Standard Code - Section	Section Title	Justification
66	14.04.510	4.106.4.2.1 4.106.4.2.2	Electric vehicle charging multifamily	Administrative
67	14.04.520	5.106.5.3	Electric vehicle charging nonresidential	Administrative
No.	PMC Section Number	2022 California Fire Code - Section	Section Title	Justification
68	14.28.010		California Fire Code Adopted	Topographic, Climatic, Administrative
69	14.28.140	105.6.3	Cryogenic fluids	Topographic, Climatic, Administrative
70	14.28.172	307.4.3	Portable Outdoor Fireplaces	Topographic, Climatic
71	14.28.174	308.1.4	Open-flame cooking devices	Topographic, Climatic
72	14.28.200	903.1	Approved automatic sprinkler system	Topographic, Climatic
73	14.28.210	903.1	Existing occupancies	Topographic, Climatic
74	14.28.220	903.1	Partial automatic fire sprinkler systems prohibited	Topographic, Climatic
75	14.28.222	903.3.1.1	NFPA 13 sprinkler systems	Topographic, Climatic
76	14.28.230	903.3.5	Water supplies	Topographic, Climatic
77	14.28.240	903.3.5.2	Residential combination services	Topographic, Climatic
78	14.28.242	903.4.2	Valves for Hood and Duct Systems	Topographic, Climatic

79	14.28.244	903.4.2	Audible Notification Device	Topographic, Climatic
80	14.28.250	907.2	Where required – buildings and structures	Topographic, Climatic
81	14.28.260	908	Requirements	Topographic, Climatic
82	14.28.270	914.9	Application of flammable finishes	Topographic, Climatic
83	14.28.272	1207.1.1.2	Design	Topographic, Climatic
84	14.28.300	3106.3.1	Occupant load	Topographic, Climatic, Administrative
85	14.28.320	4905.2	Additions or Alterations	Topographic, Climatic
86	14.28.330	4907.2	Application	Topographic, Climatic
87	14.28.350	5003	Minimum testing	Topographic, Climatic
88	14.28.360	5704.2.7.4	Emergency venting	Topographic, Climatic
89	14.28.370	5704.2.7.5.8	Overfill prevention	Topographic, Climatic
90	14.28.380	5704.2.8.14	Emergency vents	Topographic, Climatic
91	14.28.390	5704.2.9.6.1	Locations where above ground tanks are prohibited	Topographic, Climatic
92	14.28.400	5706.2.4.4	Locations where above ground tanks are prohibited	Topographic, Climatic
93	14.28.410	5806.2	Limitations	Topographic, Climatic
94	14.28.420	6101.3	Construction documents	Topographic, Climatic, Administrative
95	14.28.430	6101	Minimum testing	Topographic, Climatic
96	14.28.450	B105.1(1)	Buildings one-and two-family dwellings, Group R3 and R-4 buildings and townhouses	Topographic, Climatic
97	14.28.460	B105.2	Required fire-flow for buildings other than one-and two-family dwellings, Group R-3 and R-4	Topographic, Climatic

			buildings and townhouses	
98	14.28.470	B105.2	Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses	Topographic, Climatic
99	14.28.480	D103.6	Signs	Topographic, Climatic
100	14.28.500		Fire hazard severity zone map	Topographic, Climatic

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 2022 California Building Code, 2022 California Administrative Code, 2022 California Residential Code, 2022 California Electrical Code, 2022 California Mechanical Code, 2022 California Plumbing Code, 2022 California Energy Code, 2022 California Historical Building Code, 2022 California Fire Code, 2022 California Existing Building Code, 2022 California Green Buildings Standards Code, and 2022 California Referenced Standards Code as required by state law. The ordinance also provides for amendments to these codes to accommodate special topographic, geological, and climactic conditions found in Pasadena consistent with state law. Ordinance No. _____ shall take effect upon publication by title and summary. The full text of the ordinance is on file with the City Clerk’s Office.”

SECTION 2. The recitals in the ordinance codified herein are true and correct and incorporated herein by reference as findings of fact.

SECTION 3. Pasadena Municipal Code, Title 14, Chapter 14.03 (Administrative Code) is repealed in its entirety and is replaced as shown in Exhibit 1, attached hereto and incorporated by reference.

SECTION 4. Pasadena Municipal Code, Title 14, Chapter 14.04 (Building Code and Related Codes) is repealed in its entirety and is replaced as shown in Exhibit 2, attached hereto and incorporated by reference.

SECTION 5. Pasadena Municipal Code, Title 14, Chapter 14.28 (Fire Prevention Code) is repealed in its entirety and is replaced as shown in Exhibit 3, attached hereto and incorporated by reference.

SECTION 6. The City of Pasadena's changes or modifications to the California Building Standards Code in Chapters 14.03, 14.04, and 14.28 are shown in Exhibits 4, 5, and 6, respectively, attached hereto and incorporated by reference.

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SECTION 7. The City Clerk shall certify the adoption of this ordinance and shall cause this ordinance to be published by title and summary.

SECTION 8. This ordinance shall take effect upon publication.

Signed and approved this _____ day of November, 2022.

Victor Gordo
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 _____ 2022, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Date Published:

MARK JOMSKY
City Clerk

Approved as to form:

LESLEY CHEUNG
Assistant City Attorney

EXHIBIT 1

CHAPTER 14.03 – ADMINISTRATIVE CODE

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, 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 the administrative provisions of each Part of the 2022 California Building Standards Code.

14.03.020 - Section 101.1 of Chapter 1 Division II of the 2022 California Building Code and Section R101.1 of the California Residential Code.

This ordinance shall be known and cited as the City of 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 2022 Edition of the California Building Code and Chapter 1 Division II Section R103.1 of the 2022 Edition of the California Residential 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.

EXHIBIT 2

CHAPTER 14.04 – BUILDING CODE AND RELATED CODES

14.04.010 - Adoption and filing.

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

14.04.015 - Section 105.2 of Chapter 1 Division II of the 2022 California Building Code and Section 105.2 of the 2022 California Residential 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.

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

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

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

Exception #2: In the moderate fire hazard severity zone, the fire code official may, upon a showing of good cause and necessity, approve the use of fire resistive wood as

EXHIBIT 2

part of Class A listed assemblies, and may require additional mitigation as warranted, for the repair or maintenance of existing structures.

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

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

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

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

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

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

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

Roof sheathing. When finish roofing material is removed to the existing open space sheathing, a minimum of 3/8-inch thick plywood sheathing shall be installed. The new sheathing shall comply with the requirements of the California Building Code. The sheathing shall be installed such that the edges align over rafters and individual spaced sheathing boards. The sheathing shall be attached to the existing spaced sheathing

EXHIBIT 2

with 6d common nails at 6 inches (147mm) on center at supported edges and 6d common nails at 12 inches (294mm) on center at intermediate supports.

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

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

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

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

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

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

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

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

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

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

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

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

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

1613.6 Seismic design provisions for hillside buildings.

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

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

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

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

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

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

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

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

EXHIBIT 2

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

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

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

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

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

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

1613.6.4 Analysis and design.

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

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

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

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

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1613.6.5 Base shear resistance-primary anchors.

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

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

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

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

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

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

1613.6.6 Base shear resistance-secondary anchors.

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

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

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

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

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

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

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

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

1613.6.7.4 Design force resistance-secondary anchors.

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

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

1613.6.7.4.2 Secondary anchor capacity. Secondary anchors at each diaphragm below the base level diaphragm shall be designed for a minimum force equal to the design force but not less than 300 pounds per lineal foot (4.38 kN/m) based on Allowable Stress

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Design (ASD) levels. The secondary anchors shall be uniformly distributed along the uphill diaphragm edge and shall be spaced a maximum of 4 feet (1219 mm) on center.

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

1613.6.8 Primary and secondary anchorage and diaphragm strut design.

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

1. **Fasteners.** All bolted fasteners used to develop connections to wood members shall be provided with square plate washers at all bolt heads and nuts. Washers shall be minimum 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Nuts shall be tightened to finger tight plus one half (1/2) wrench turn prior to covering the framing.
2. **Fastening.** The diaphragm to foundation anchorage shall not be accomplished by the use of toenailing, nails subject to withdrawal, or wood in cross-grain bending or cross-grain tension.
3. **Size of Wood Members.** Wood diaphragm struts collectors, and other wood members connected to primary anchors shall not be less than 3 inch (76 mm) nominal width. The effects of eccentricity on wood members shall be evaluated as required per Item 9.
4. **Design.** Primary and secondary anchorage, including diaphragm struts, splices, and collectors shall be designed for 125% of the tributary force.
5. **Allowable Stress Increase.** The one-third allowable stress increase permitted under Section 1605.3.2 shall not be taken when the working (allowable) stress design method is used.
6. **Steel Element of Structural Wall Anchorage System.** The strength design forces for steel elements of the structural wall anchorage system, with the exception of anchor bolts and reinforcing steel, shall be increased by 1.4 times the forces otherwise required.
7. **Primary Anchors.** The load path for primary anchors and diaphragm struts shall be fully developed into the diaphragm and into the foundation. The foundation must be shown to be adequate to resist the concentrated loads from the primary anchors.

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

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

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

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

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

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

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

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

1613.6.9.5 Distribution of lateral forces.

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

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

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

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

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

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

1613.6.10 Specific design provisions.

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

1. Grade beams shall extend at least 12 inches (305 mm) below the lowest adjacent grade and provide a minimum 24 inch (610 mm) distance horizontally from the bottom outside face of the grade beam to the face of the descending slope.
2. Continuous footings shall be reinforced with at least two No. 4 reinforcing bars at the top and two No. 4 reinforcing bars at the bottom.

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3. All main footing and grade beam reinforcement steel shall be bent into the intersecting footing and fully developed around each corner and intersection.

4. All concrete stem walls shall extend from the foundation and reinforced as required for concrete or masonry walls.

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

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

Exception: At paved garage and doorway entrances to the building, the stem wall need only extend to the finished concrete slab, provided the wood framing is protected with a moisture proof barrier.

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

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

1. All wood framed walls, including nonbearing walls, when resting on a footing, foundation, or grade beam stem wall, shall be supported on wood sill plates bearing on a level surface.

2. Power-driven fasteners shall not be used to anchor sill plates except at interior nonbearing walls not designed as shear walls.

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

1. When the post or column is supported on a pedestal extending above the top of a footing or grade beam, the pedestal shall be designed and reinforced as required for concrete or masonry columns. The pedestal shall be reinforced with a minimum

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of four No. 4 bars extending to the bottom of the footing or grade beam. The top of exterior pedestals shall be sloped for positive drainage.

2. The base plate anchor bolts or the embedded portion of the post base, and the vertical reinforcing bars for the pedestal, shall be confined with two No. 4 or three No. 3 ties within the top 5 inches (127 mm) of the concrete or masonry pedestal. The base plate anchor bolts shall be embedded a minimum of 20 bolt diameters into the concrete or masonry pedestal. The base plate anchor bolts and post bases shall be galvanized and each anchor bolt shall have at least 2 galvanized nuts above the base plate.

1613.6.10.5 Steel beam to column supports. All steel beam to column supports shall be positively braced in each direction. Steel beams shall have stiffener plates installed on each side of the beam web at the column. The stiffener plates shall be welded to each beam flange and the beam web. Each brace connection or structural member shall consist of at least two 5/8 inch (15.9 mm) diameter machine bolts.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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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 1704.6.1 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

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

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

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

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

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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 1705.13 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

1. The structure consists of light-frame construction; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.2.4, does not exceed 0.5; and the building height of the structure does not exceed 35 feet (10 668 mm).
2. The seismic force-resisting system of the structure consists of reinforced masonry or reinforced concrete; the design spectral response acceleration at

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short periods, S_{DS} , as determined in Section 1613.2.4, does not exceed 0.5; and the building height of the structure does not exceed 25 feet (7620 mm).

3. The structure is a detached one- or two-family dwelling not exceeding two stories above grade plane, is not assigned to Seismic Design Category D, E or F, and does not have any of the following horizontal or vertical irregularities in accordance with Section 12.3 of ASCE 7:

- 3.1 Torsional or extreme torsional irregularity.
- 3.2 Nonparallel systems irregularity.
- 3.3 Stiffness-soft story or stiffness-extreme soft story irregularity.
- 3.4 Discontinuity in lateral strength-weak story irregularity.

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

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 AWWA U1 (Commodity Specification A, Special Requirement 4.2) and shall be identified in accordance with Section 2303.1.9.1. Permanent wood foundation systems shall not be used for structures assigned to Seismic Design Category D, E or F.

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

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

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

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

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

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

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

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

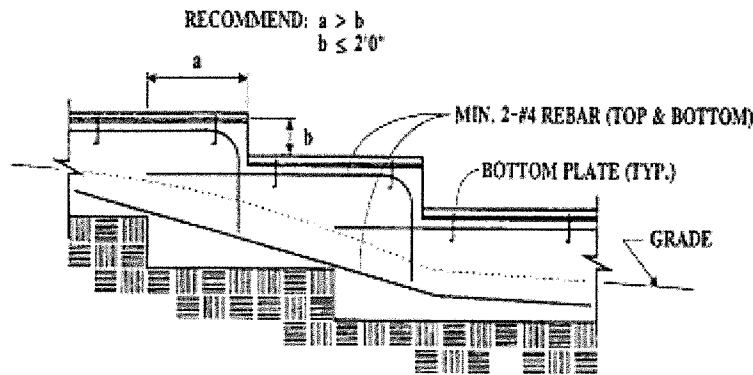
Exception: Wood poles and posts embedded in direct contact with soil may be used to support nonhabitable, nonoccupiable structures such as fences when approved by the building official.

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

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

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

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STEPPED FOUNDATIONS

FIGURE 1809.3
STEPPED FOOTING

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

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

TABLE 1809.7
PREScriptive FOOTINGS SUPPORTING WALLS OF
LIGHT-FRAME CONSTRUCTION a, b, c, d, e

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

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

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

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

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

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

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

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

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

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

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

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provided at the top and bottom of the footing. Continuity of reinforcement shall be provided at corners and intersections.

Exceptions:

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

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

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

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

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

18.7.5.9 – At any section where the design strength, ϕP_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, ϕP_n , of the column, these moments are permitted to be assumed to result from the deformation of the frame in any one principal axis.

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

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

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

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

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

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

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

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

2304.10.3.1 Quality of Nails. In Seismic Design Category D, E or F, mechanically driven nails used in wood structural panel shear walls shall meet the same dimensions as that required for hand-driven nails, including diameter, minimum length and minimum head diameter. Clipped head or box nails are not permitted in new construction. The allowable design value for clipped head nails in existing construction may be taken at no more than the nail-head-area ratio of that of the same size hand-driven nails.

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

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

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

EXHIBIT 2

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

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

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

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

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

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

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

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

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

1. Wood structural panel thickness for shear walls shall not be less than 3/8 inch thick and studs shall not be spaced at more than 16 inches on center.

EXHIBIT 2

2. The maximum nominal unit shear capacities for 3/8 inch wood structural panels resisting seismic forces in structures assigned to Seismic Design Category D, E or F is 400 pounds per linear foot (plf).

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

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

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

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

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

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

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

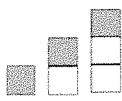





14.04.238 – Section 2307.2 is added to the 2022 Edition of the California Building Code to read as follows:

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

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

EXHIBIT 2

TABLE 2308.6.1^a
WALL BRACING REQUIREMENTS

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

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

NP = Not Permitted.

a. This table specifies minimum requirements for braced wall panels along interior or exterior braced wall lines.

b. See Section 2308.6.3 for full description of bracing methods.

c. For Method GB, gypsum wallboard applied to framing supports that are spaced at 16 inches on center.

d. The required lengths shall be doubled for gypsum board applied to only one face of a braced wall panel.

e. Percentage shown represents the minimum amount of bracing required along the building length (or wall length if the structure has an irregular shape).

f. DWB, SFB, PBS and HPS wall braces are not permitted in Seismic Design Categories D or E.

g. Minimum length of panel bracing of one face of the wall for WSP sheathing shall be at least 4'-0" long or both faces of the wall for GB or PCP sheathing shall be at least 8'-0" long; h/w ratio shall not exceed 2:1. Wall framing to which sheathing used for bracing is applied shall be nominal 2 inch wide [actual 1 1/2 inch (38 mm)] or larger members and spaced a maximum of 16 inches on center. Braced wall panel construction types shall not be mixed within a braced wall line.

h. WSP sheathing shall be a minimum of 15/32" thick nailed with 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

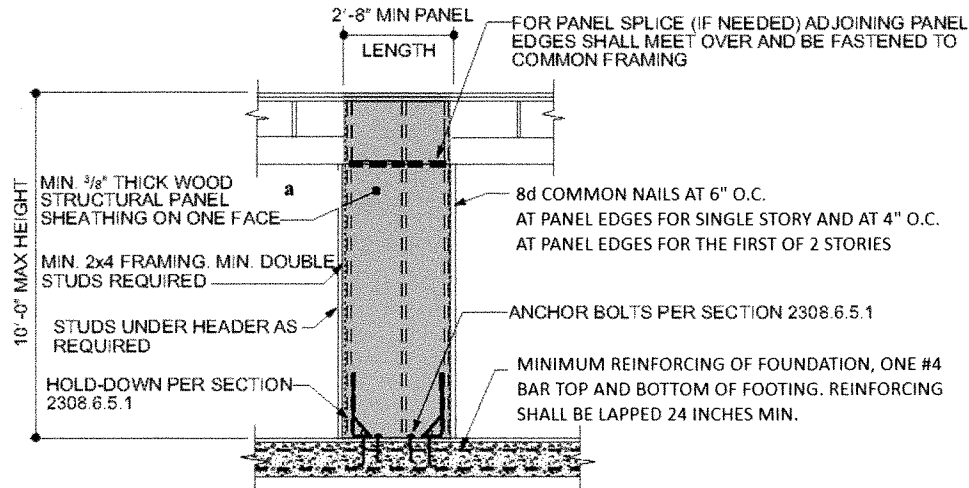
EXHIBIT 2

Section 14.04.240 amending Sections 2308.6.5.1 and 2308.6.5.2 and Figures 2308.6.5.1 and 2308.6.5.2 of the 2022 Edition of the California Building Code are amended to read as follows:

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

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

EXHIBIT 2



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

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

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

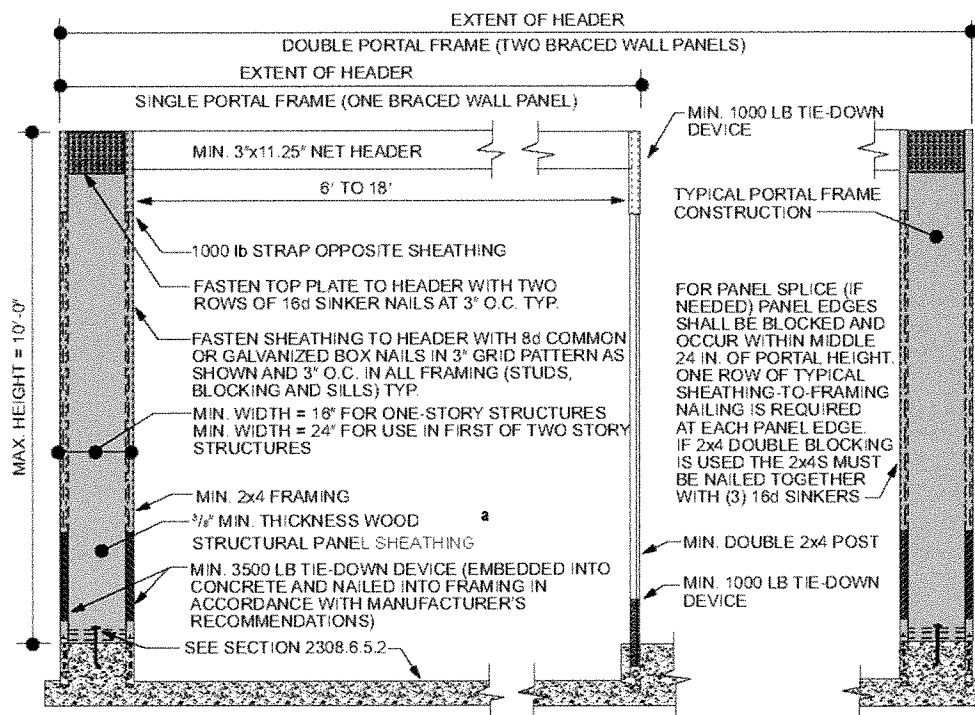
2308.6.5.2 Portal frame with hold-downs (PFH). A PFH shall be constructed in accordance with this section and Figure 2308.6.5.2. The adjacent door or window opening shall have a full-length header.

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

EXHIBIT 2

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

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



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

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

FIGURE 2308.6.5.2
PORTAL FRAME WITH HOLD-DOWNS (PFH)

EXHIBIT 2

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

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

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

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

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

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

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

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

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

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

EXHIBIT 2

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

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

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

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

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

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

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

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

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

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

EXHIBIT 2

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

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

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

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

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

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

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

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

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

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

1. The total linear length of all openings in any individual side walls or end walls shall be limited to not more than 50 percent of the length of that side walls or end walls, as shown in Figure 3115.8.5.3(1).
2. Any full height wall length, or portion thereof, less than 4 feet (305 mm) long shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2).
3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3). The existing door interlocking mechanism shall not be considered as a component of the required load path.
4. Where openings are made in container walls, floors or roofs, for doors, windows and other openings:
 - 4.1 The opening shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.
 - 4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.
5. A maximum of one penetration not greater than a 6-inch (152 mm) diameter hole for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 322mm²) for electrical boxes, is permitted for each individual 8 feet (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the wall lateral force resisting system shall not be limited in size or quantity. Existing intermodal shipping container's vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4).
6. End wall door or doors designated as part of the lateral force-resisting system shall be intermittently welded closed around the full perimeters of the door panels.

TABLE 3115.8.5.3

EXHIBIT 2

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

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

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

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

- An excavation that does not exceed 50 cubic yards (38.3 m³) and complies with
 - or (b) as follows:
 - Is less than 2 feet (0.6 m) in depth.
 - Does not create a cut slope greater than 5 feet (1.5 m) measured vertically upward from the cut surface to the surface of the natural grade and is not steeper than 2 units horizontal to 1 unit vertical (50 percent slope).

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

R301.1.3.2 Woodframe structures. The building official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than two stories and basement in height located in Seismic Design Category A, B or C. Notwithstanding other sections of law; the law establishing these provisions is found in Business and Professions Code Sections 5537 and 6737.1.

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

EXHIBIT 2

more than one story in height or with a basement located in Seismic Design Category D₀, D₁, or D₂.

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

R301.1.5 Seismic design provisions for buildings constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope). The design and construction of new buildings and additions to existing buildings when constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope) shall comply with Section 1613.6 of the California Building Code.

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

1. **Shear wall or braced wall offsets out of plane.** Conditions where exterior shear wall lines or braced wall panels are not in one plane vertically from the foundation to the uppermost story in which they are required.
3. **Shear wall or braced wall offsets in plane.** Conditions where the end of a braced wall panel occurs over an opening in the wall below.
5. **Floor level offset.** Conditions where portions of a floor level are vertically offset.

14.04.267 – Section R301.2.2.11 is added to the 2022 Edition of the California Residential Code to read as follows:

R301.2.2.11 Anchorage of mechanical, electrical, or plumbing components and equipment. Mechanical, electrical, or plumbing components and equipment shall be anchored to the structure. Anchorage of the components and equipment shall be designed to resist loads in accordance with the California Building Code and ASCE 7, except where the component is positively attached to the structure and flexible connections are provided between the component and associated ductwork, piping, and conduit; and either

1. The component weighs 400 lb (1,780 N) or less and has a center of mass located 4 ft (1.22 m) or less above the supporting structure; or
2. The component weighs 20 lb (89N) or less or, in the case of a distributed system, 5 lb/ft (73 N/m) or less.

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

EXHIBIT 2

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

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

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

Wood foundations in Seismic Design Category D₀, D₁, or D₂ shall not be permitted.

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

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

R403.1.2 Continuous footing in Seismic Design Categories D₀, D₁, or D₂. Exterior walls of buildings located in Seismic Design Categories D₀, D₁ and D₂ shall be supported by continuous solid or fully grouted masonry or concrete footings. Required interior braced wall panels in buildings located in Seismic Design Categories D₀, D₁, or D₂ shall be supported on continuous foundations.

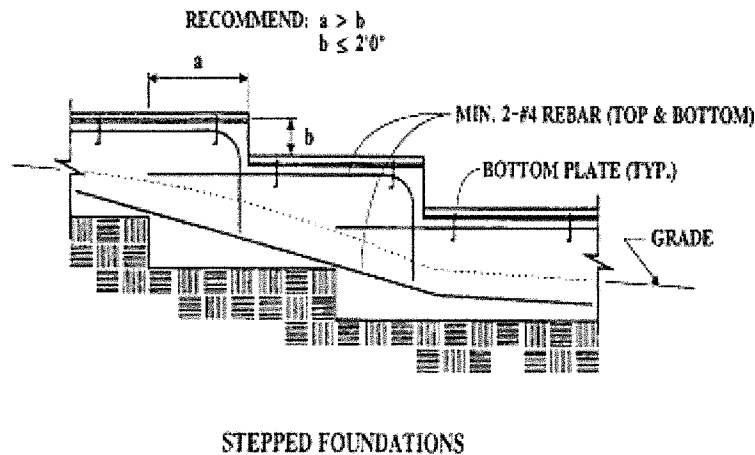
R403.1.3.6 Isolated concrete footings. In detached one- and two-family dwellings located in Seismic Design Category A, B, or C, that are three stories or less in height, and constructed with stud bearing walls, isolated plain concrete footings supporting columns or pedestals are permitted.

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

EXHIBIT 2

For structures assigned to Seismic Design Categories D₀, D₁, or D₂, stepped footings shall be reinforced with four No. 4 rebar. Two bars shall be placed at the top and bottom of the footings as shown in Figure R403.1.5.

**FIGURE R403.1.5
STEPPED FOOTING**



14.04.280 – Section R404.2 of the 2022 Edition of the California Residential Code is amended to read as follows:

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

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

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

EXHIBIT 2

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

TABLE R602.3(1)—continued FASTENING SCHEDULE

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

TABLE R602.3(1)—continued FASTENING SCHEDULE

k. Use of staples in roof, floor, and braced wall panels shall be prohibited in Seismic Design Category D₀, D₁, or D₂.

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

b. Staples shall have a minimum crown width of 7/16-inch on diameter except as noted. Use of staples in roof, floor, subfloor, and braced wall panels shall be prohibited in Seismic Design Category D₀, D₁, or D₂.

EXHIBIT 2

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

Exception: In other than Seismic Design Category D₀, D₁ or D₂, a single top plate used as an alternative to a double top plate shall comply with the following:

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

TABLE R602.3.2
SINGLE TOP-PLATE SPLICE CONNECTION DETAILS

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

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

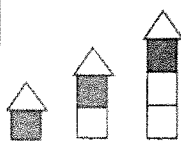
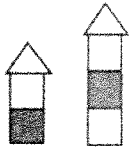

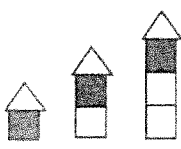
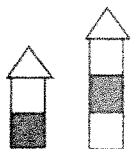

14.04.292 – Section R602.10.2.3 of the 2022 Edition of the California Residential Code is amended to read as follows:

R602.10.2.3 Minimum number of braced wall panels. Braced wall lines with a length of 16 feet (4877 mm) or less shall have not less than two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have not less than two braced wall panels. In Seismic Design Category D₀, D₁, or D₂, no braced wall panel shall have a contributing length less than 48 inches in length or as required in Section R602.10.3, whichever is greater.

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

EXHIBIT 2

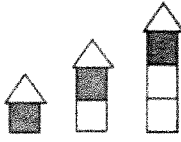
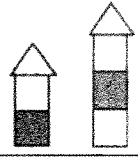



TABLE R602.10.3(3)
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

• WALL HEIGHT = 10 FEET • 10 PSF FLOOR DEAD LOAD • 15 PSF ROOF/CEILING DEAD LOAD • BRACED WALL LINE SPACING ≤ 25 FEET			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE ^{a, b}				
Seismic Design Category ^b	Story Location	Braced Wall Line Length (feet) ^c	Method LIB ^d	Method GB	Methods DWB, SFB, PBS, PCP, HPS, CS-SFB ^e	Methods WSP, ABW ^f , PFH ^g and PFG ^{h, i}	Methods CS-WSP, CS-G, CS-PF
C (townhouses only)		10	2.5	2.5	2.5	1.6	1.4
		20	5.0	5.0	5.0	3.2	2.7
		30	7.5	7.5	7.5	4.8	4.1
		40	10.0	10.0	10.0	6.4	5.4
		50	12.5	12.5	12.5	8.0	6.8
		10	NP	4.5	4.5	3.0	2.6
		20	NP	9.0	9.0	6.0	5.1
		30	NP	13.5	13.5	9.0	7.7
		40	NP	18.0	18.0	12.0	10.2
		50	NP	22.5	22.5	15.0	12.8
		10	NP	6.0	6.0	4.5	3.8
		20	NP	12.0	12.0	9.0	7.7
		30	NP	18.0	18.0	13.5	11.5
		40	NP	24.0	24.0	18.0	15.3
		50	NP	30.0	30.0	22.5	19.1
D ₀		10	NP	5.6	5.6	1.8	1.6
		20	NP	11.0	11.0	3.6	3.1
		30	NP	16.6	16.6	5.4	4.6
		40	NP	22.0	22.0	7.2	6.1
		50	NP	27.6	27.6	9.0	7.7
		10	NP	NP	NP	3.8	3.2
		20	NP	NP	NP	7.5	6.4
		30	NP	NP	NP	11.3	9.6
		40	NP	NP	NP	15.0	12.8
		50	NP	NP	NP	18.8	16.0
		10	NP	NP	NP	5.3	4.5
		20	NP	NP	NP	10.5	9.0
		30	NP	NP	NP	15.8	13.4
		40	NP	NP	NP	21.0	17.9
		50	NP	NP	NP	26.3	22.3

(continued)

EXHIBIT 2

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

• WALL HEIGHT = 10 FEET • 10 PSF FLOOR DEAD LOAD • 15 PSF ROOF/CEILING DEAD LOAD • BRACED WALL LINE SPACING ≤ 25 FEET			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE ^a				
Seismic Design Category ^b	Story Location	Braced Wall Line Length (feet) ^c	Method LIB ^d	Method GB	Methods DWB, SFB, PBS, PCP, HPS, CS-SFB ^e	Methods WSP, ABW ^f , PFH ^g and PFG ^h	Methods CS-WSP, CS-G, CS-PF
D ₁		10	NP	6.0	6.0	2.0	1.7
		20	NP	12.0	12.0	4.0	3.4
		30	NP	18.0	18.0	6.0	5.1
		40	NP	24.0	24.0	8.0	6.8
		50	NP	30.0	30.0	10.0	8.5
		10	NP	NP	NP	4.5	3.8
		20	NP	NP	NP	9.0	7.7
		30	NP	NP	NP	13.5	11.5
		40	NP	NP	NP	18.0	15.3
		50	NP	NP	NP	22.5	19.1
		10	NP	NP	NP	6.0	5.1
		20	NP	NP	NP	12.0	10.2
		30	NP	NP	NP	18.0	15.3
		40	NP	NP	NP	24.0	20.4
		50	NP	NP	NP	30.0	25.5
D ₂ ^h		10	NP	8.0	8.0	2.5	2.1
		20	NP	16.0	16.0	5.0	4.3
		30	NP	24.0	24.0	7.5	6.4
		40	NP	32.0	32.0	10.0	8.5
		50	NP	40.0	40.0	12.5	10.6
		10	NP	NP	NP	5.5	4.7
		20	NP	NP	NP	11.0	9.4
		30	NP	NP	NP	16.5	14.0
		40	NP	NP	NP	22.0	18.7
		50	NP	NP	NP	27.5	23.4
	Three-story dwelling	10	NP	NP	NP	NP	NP
		20	NP	NP	NP	NP	NP
		30	NP	NP	NP	NP	NP
		40	NP	NP	NP	NP	NP
		50	NP	NP	NP	NP	NP
	Cripple wall below one- or two-story dwelling	10	NP	NP	NP	7.5	6.4
		20	NP	NP	NP	15.0	12.8
		30	NP	NP	NP	22.5	19.1
		40	NP	NP	NP	30.0	25.5
		50	NP	NP	NP	37.5	31.9

(continued)

- Linear interpolation shall be permitted.
- Interpolation of bracing length between the S_{ds} values associated with the seismic design categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.2 of the *California Building Code*.
- Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shall be in accordance with this table.
- Method LIB shall have gypsum board fastened to not less than one side with nails or screws in

EXHIBIT 2

accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board.

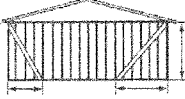
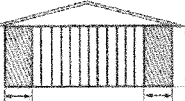

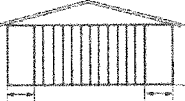
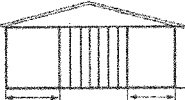

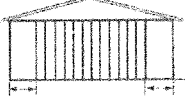
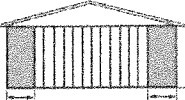
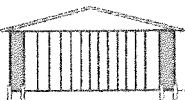
Spacing of fasteners at panel edges shall not exceed 8 inches.

- e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D₀, D₁ and D₂.
- f. Methods PFH, PFG and ABW are only permitted on a single story or a first of two stories.
- g. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1.
- h. One- and two- family dwellings in Seismic Design Category D₂ exceeding two stories shall be designed in accordance with accepted engineering practice.
- i. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D₀, D₁ and D₂. Methods DWB, SFB, PBS, HPS, and CS-SFB are not permitted in D₀, D₁ and D₂.

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

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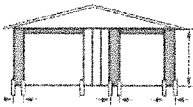
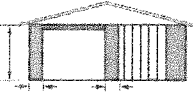
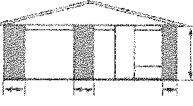


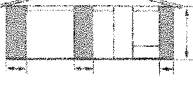
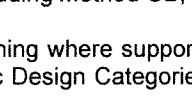
**TABLE R602.10.4
BRACING METHODS**

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

(continued)

EXHIBIT 2

TABLE R602.10.4—continued
BRACING METHODS

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

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

- Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D₀, D₁ and D₂.
- Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of the garage. In Seismic Design Categories D₀, D₁ and D₂, roof covering dead load shall not exceed 3 psf.
- Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.7(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.
- Method CS-SFB does not apply in Seismic Design Categories D₀, D₁ and D₂.
- Method applies to detached one- and two- family dwellings in Seismic Design Categories D₀ through D₂ only.
- Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D₀, D₁ and D₂. Methods LIB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D₀, D₁ and D₂.
- Use of stapes in braced wall panels shall be prohibited in SDC D₀, D₁ and D₂.

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

EXHIBIT 2

TABLE R602.10.5
MINIMUM LENGTH OF BRACED WALL PANELS

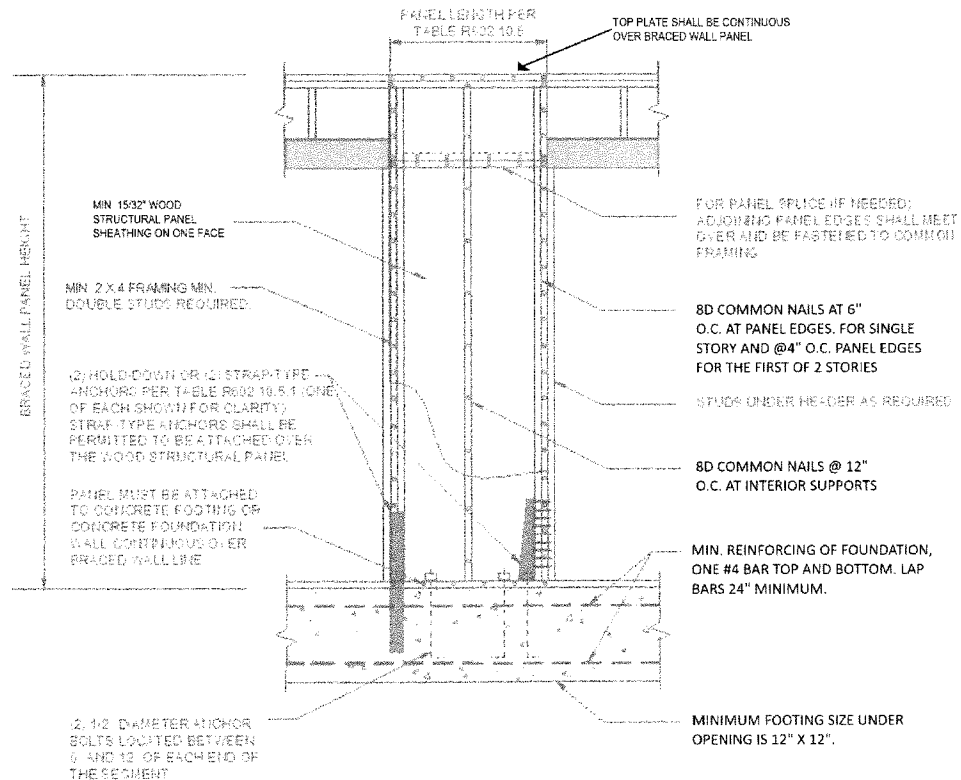
METHOD (See Table R602.10.4)		MINIMUM LENGTH* (inches)					CONTRIBUTING LENGTH (inches)
		Wall Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP		48	48	48	53	58	Actual ^b
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 × Actual
LIB		55	62	69	NP	NP	Actual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

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

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

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

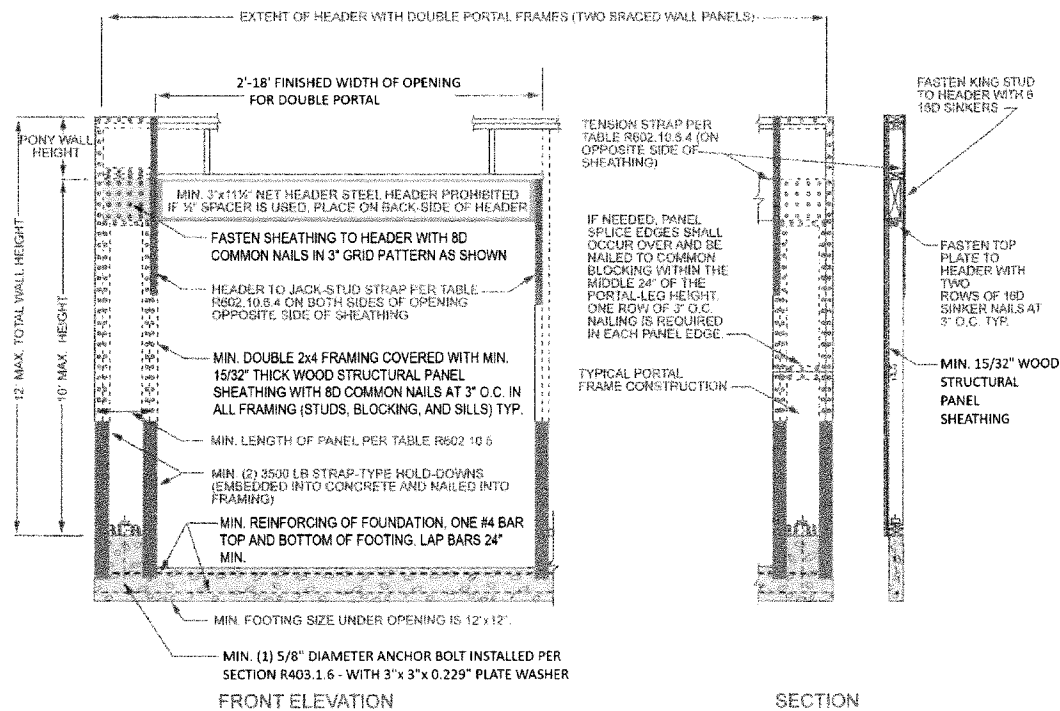


For SI: 1 inch = 25.4 mm.

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

EXHIBIT 2

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

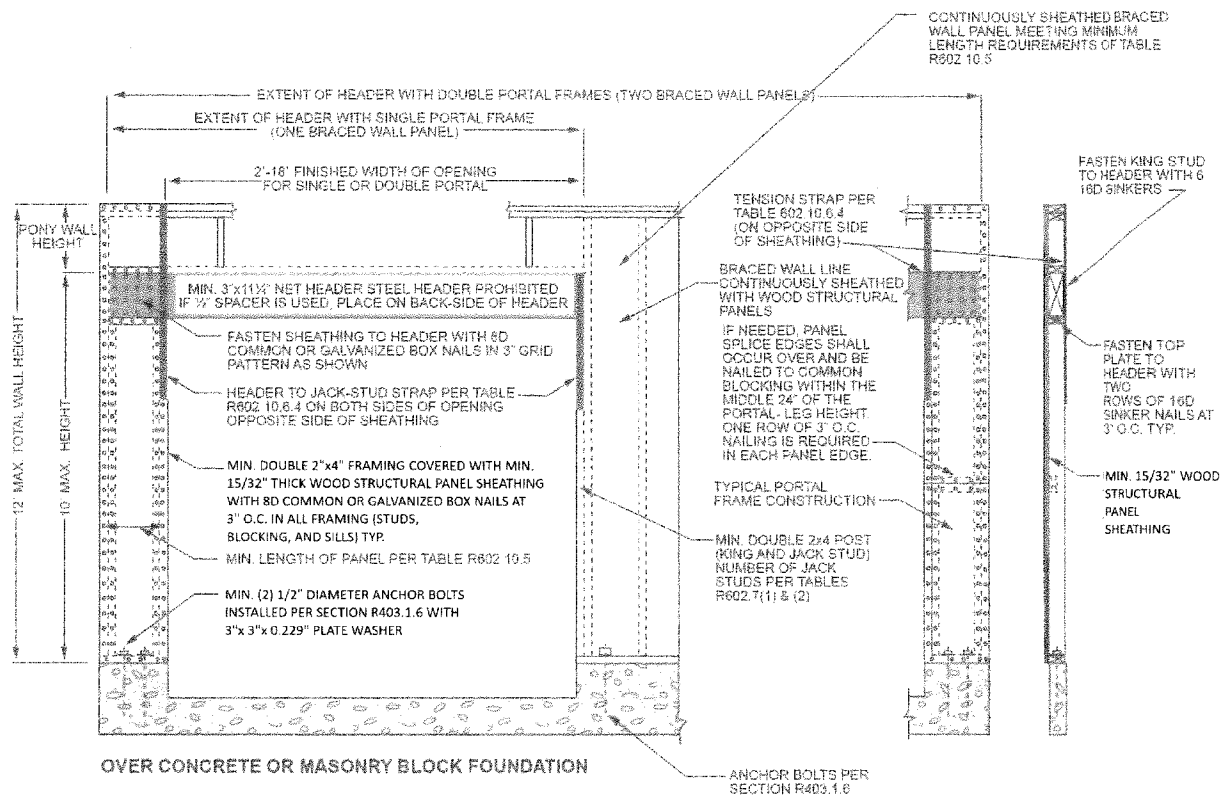


For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

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

EXHIBIT 2

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



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

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

14.04.300 – Section R606.4.4 of the 2022 Edition of the California Residential Code is amended to read as follows:

R606.4.4 Parapet walls. Unreinforced solid masonry parapet walls shall not be less than 8 inches (203 mm) thick and their height shall not exceed four times their thickness. Unreinforced hollow unit masonry parapet walls shall be not less than 8 inches (203 mm) thick, and their height shall not exceed three times their thickness. Masonry parapet walls in areas subject to wind loads of 30 pounds per square foot (1.44 kPa) or located in Seismic Design Category D₀, D₁ or D₂, or on townhouses in Seismic Design Category C shall be reinforced in accordance with Section R606.12.

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

R606.12.2.2.3 Reinforcement requirements for masonry elements. Masonry elements listed in Section R606.12.2.2.2 shall be reinforced in either the horizontal or vertical direction as shown in Figure R606.11(2) and in accordance with the following:

1. Horizontal reinforcement. Horizontal joint reinforcement shall consist of not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Horizontal reinforcement shall be provided within 16 inches (406 mm) of the top and bottom of these masonry elements.
2. Vertical reinforcement. Vertical reinforcement shall consist of not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Vertical reinforcement shall be within 8 inches (203 mm) of the ends of masonry walls.

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

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

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

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

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

14.04.320 – Section R1001.3.1 of the 2022 Edition of the California Residential Code is amended to read as follows:

R1001.3.1 Vertical reinforcing. For chimneys up to 40 inches (1016 mm) wide, four No. 4 continuous vertical bars adequately anchored into the concrete foundation shall be placed between wythes of solid masonry or within the cells of hollow unit masonry and grouted in accordance with Section R606. Grout shall be prevented from bonding

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with the flue liner so that the flue liner is free to move with thermal expansion. For chimneys more than 40 inches (1016 mm) wide, two additional No. 4 vertical bars adequately anchored into the concrete foundation shall be provided for each additional flue incorporated into the chimney or for each additional 40 inches (1016 mm) in width or fraction thereof.

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

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

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

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

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

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

Exceptions:

1. When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.
2. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

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

Notes:

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

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

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

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

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

Exceptions:

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

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Notes:

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

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

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

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

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

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

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

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Exceptions:

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

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Chapter 14.28 - FIRE PREVENTION CODE

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, 2022 edition (California Fire Code) in its entirety, as published by the International Code Council. This adoption of the code also includes adoption by reference of the 2021 International Fire Code Chapters 1, 3, Appendix Chapter 4 and Appendices B through I, K, M, N, O and Sections 1101 and 1104, 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 2022 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 2022 California Fire Code is amended by adding new Section 104.13 titled "Cost recovery" to read as follows.

104.13 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.

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14.28.140 - Section 105.6.3 of the 2022 California Fire Code titled "Cryogenic fluids" is amended to read as follows.

105.6.3 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 105.5.11. 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 111 of Chapter 1 of the California Fire Code titled "MEANS OF APPEALS" is deleted in its entirety.

14.28.160 - Section 112.4 of the 2022 California Fire Code titled "Violation penalties" is amended to read as follows.

112.4 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 113.4 of the 2022 California Fire Code titled "Failure to comply" is amended to read as follows.

113.4 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.

14.28.172 – Section 307.4.3 of the 2021 International Fire Code titled “Portable outdoor fireplaces” is added and amended to read as follows:

307.4.3 Portable outdoor fireplaces. Portable outdoor fireplaces shall be used in accordance with the manufacturer’s instructions and shall not be operated within 15 feet (3048 mm) of a structure or combustible materials.

Exception:

1. Portable outdoor fireplaces used at one-and two-family dwellings.

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2. Portable outdoor fireplaces as approved by the fire code official for Fire Department staffed special events within the parameters established by the fire code official

14.28.174 – Section 308.1.4 of the 2021 International Fire Code titled “Open-flame cooking devices” is added and amended to read as follows:

308.1.4 Open-flame cooking devices. Charcoal burners and other open-flame cooking devices shall not be operated on combustible balconies or within 10 feet of combustible construction.

Exceptions:

1. One-and two-family dwellings.
2. Where buildings, balconies and decks are protected by an automatic sprinkler system.
3. LP-gas cooking devices having LP-gas container with a water capacity not greater than 20 pounds.

14.28.200 - Section 903.1 of the 2022 California Fire Code is amended by adding Section 903.1.2 titled "Approved automatic sprinkler system in all new construction" to read as follows.

903.1.2 Minimum fire sprinkler system protection for new construction. All new construction shall be provided with an approved automatic fire sprinkler 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. Private garages and 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^2) 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. Solar photovoltaic power systems and panel structures with no use underneath as per CFC 903.3.1.1.3
5. Other similar structures as deemed appropriate by the fire code official.

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14.28.210 - Section 903.1 of the 2022 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 m²) 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 a change of occupancy 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 nonresidential occupancy is converted, in part or whole, to a residential occupancy.

14.28.220 - Section 903.1 of the 2022 California Fire Code is amended by adding Section 903.1.4 titled "Partial automatic fire sprinkler system prohibited" to read as follows.

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

14.28.222 - Section 903.3.1.1 of the 2022 California Fire Code titled "NFPA 13 sprinkler systems" is amended to read as follows.

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in

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accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 *as amended in Chapter 80* except as provided in Sections 903.3.1.1.1 through 903.3.1.1.3 and in accordance with NFPA 13 Appendix A and B.

14.28.230 - Section 903.3.5 of the 2022 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 2022 California Fire Code titled "Residential combination services" is amended to read as follows.

903.3.5.2 Residential combination services. Single combination water supply services are not allowed for NFPA 13R systems.

14.28.242 – Section 903.4.2 of the 2022 California Fire Code is amended by adding Section 903.4.1.1 titled “Valves for Hood and Duct Systems” to read as follows.

903.4.1.1 Valves for Hood and Duct Systems. Valves for hood and duct systems shall be electrically supervised when the building has a monitoring fire alarm control unit.

14.28.244 – Section 903.4.2 of the 2022 California Fire Code is amended by adding Section 903.4.2.1 titled “Audible Notification Device” to read as follows.

903.4.2.1 Audible Notification Device. One interior approved audible notification device shall be installed for monitoring systems. Valves for hood and duct systems shall be electrically supervised when the building has a monitoring fire alarm control unit.

14.28.250 - Section 907.2 of the 2022 California Fire Code titled "Where required—buildings and structures" is amended to read as follows.

907.2 Where required - 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 907.2.29

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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 m²) 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.

The requirements of this section shall also apply to existing buildings and occupancies with a floor area greater than 10,000 gross square feet where one of the following conditions exists:

1. Whenever the value of alterations exceed fifty percent (50%) of the replacement value of the structure, excluding the value of property and contents.
2. Whenever there is a change of occupancy.

For existing buildings, an alternate type of fire detection device may be approved by the fire code official in isolated areas or in special situations where the fire code official determines that the type of detection is suitable for that environment.

14.28.260 - Section 908 of the 2022 California Fire Code is amended by adding Section 908.5 titled "Requirements" to read as follows.

908.5 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 2022 California Fire Code titled "Application of flammable finishes" is amended 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

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immersing spaces and storage rooms, and shall be installed in accordance with Chapter 9.

14.28.272 - Section 1207 of the 2022 California Fire Code is amended by adding Section 1207.1.1.2 "Design" to read as follows:

1207.1.1.2 Design. Electrical Energy Storage Systems (ESS) shall comply with the requirements of NFPA 855 and UL 9540.

14.28.300 - Section 3106.3.1 of the 2022 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.

14.28.320 - Section 4905.2 of the 2022 California Fire Code is amended by adding Section 4905.2.1 titled "Additions or Alterations" to read as follows.

4905.2.1 Additions or alterations shall be permitted to be made to any building or structure without requiring the existing building or structure to comply with the requirements of Section 4905.2, provided that the addition or alteration conforms to that required for a new building or structure as per Section 4905.2, including the following:

1. California Building Code, Chapter 7A,
2. California Residential Code, Section R337
3. California Referenced Standards Code, Chapter 12-7A

Exception: Reasonably equivalent alternatives as approved by the fire code official and building official when dealing with qualified historical buildings and districts, in accordance with the California Historical Building Code.

14.28.330 - Section 4907.2 of the 2022 California Fire Code titled "Application" is amended to read as follows.

4907.2 Application. Buildings and structures located in the following areas shall maintain the required hazardous vegetation and fuel management as prescribed in this code and Chapter 14.29 of the Pasadena Municipal Code:

1. All unincorporated lands designated by the State Board of Forestry and Fire Protection as State Responsibility Area (SRA) including:

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- 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 in ordinance by local agencies as a Moderate, High or Very-High Fire Hazard Severity Zone (pursuant to Government Code Section 51179).
3. Land designated as a Very High Fire Hazard Severity Zone by the Director.

14.28.340 - Section 5001 of the 2022 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 2022 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 2022 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.

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14.28.370 - Section 5704.2.7.5.8 of the 2022 California Fire Code titled "Overfill prevention" is amended to read as follows.

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 2022 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 2022 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 2022 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 2022 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.

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14.28.420 - Section 6101.3 of the 2022 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 2022 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.

14.28.450 - Table B105.1(1) of Appendix B of the 2022 California Fire Code titled "Buildings one- and two-family dwellings, Group R3 and R-4 buildings and townhouses" is amended 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

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0-3,600	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 m², 1 gallon per minute = 3.875 L/m.

14.28.460 - Table B105.2 of Appendix B of the 2022 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 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 required fire flow rate

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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 required fire flow rate
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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 2022 California Fire Code titled "Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses" is amended 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.

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14.28.480 - Section D103.6 of Appendix D of the 2022 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 adopted permit and inspection fees.

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 2022 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.

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The city council may prescribe by resolution to employ at the cost and expense of the city such qualified individuals as the board, in its discretion, may reasonably find necessary in order to assist it in its investigation and in making its findings and decisions.

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14.03.020 - Section 101.1 of Chapter 1 Division II of the 2022 California Building Code and Section R101.1 of the California Residential Code shall be amended as follows:

~~California Residential Building Code amended Title.~~

This ordinance shall be known and cited as the City of 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 2022 eEdition of the California Building Code and Chapter 1 Division II Section R1-03.1 of the 2022 eEdition 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.

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14.04.015 - Section 105.2.1 is added to of Chapter 1 Division II Section 105.2 of the 2022 California Building Code and to Section 105.2 of the 2022 California Residential Building Code is amended to read as follows:

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

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 2022 California Building Code is amended to read as follows:

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

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

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

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

Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and wood shakes shall not be installed in the very high, high and moderate fire hazard severity zones. Fire-retardant-treated wood shakes and shingles are wood shakes and shingles complying with UBC Standard 15-3 or 15-4 which are impregnated by the full-

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cell vacuum-pressure process with fire-retardant chemicals, and which have been qualified by UBC Standard 15-2 for use on Class A, B or C roofs.

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

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

- (1) The materials have been approved and listed by the State Fire Marshal as complying with the requirements of this section.
- (2) The materials have passed at least five years of the 1-0-year natural weathering test. The 10-year natural weathering test required by this subdivision shall be conducted in accordance with standard 15-2 of the 1994 Edition of the Uniform Building Code at a testing facility recognized by the State Fire Marshal.

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

14.04.120- Section 1507 of the 2022 California Building Code is amended by adding a ~~s~~Section 1507.1.1 entitled roof sheathing to read as follows:

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

14.04.130 - Sections 1613.4 and 1613.4.1 are renumbered as Sections 1613.5 and 1613.5.1 and ~~is~~ are added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:

1613.4 1613.5 Amendments to ASCE 7. The provisions of Section 1613.5 shall be permitted as an amendment to the relevant provisions of ASCE 7.

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1613.4.1 1613.5.1 Values for vertical combinations. Modify ASCE 7 Section 12.2.3.1 Exception 3 as follows:

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

14.04.140 - Section 1613.4.2 is renumbered as Section 1613.5.2 and is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:

1613.4.2 1613.5.2 Wood diaphragms. Modify ASCE 7 Section 12.11.2.2.3 as follows:

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

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

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

Section 14.04.141 is added to the Pasadena Municipal Code, adding – Section 1613.5.3 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:

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

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

Section 14.04.142 is added to the Pasadena Municipal Code, adding - Section 1613.6 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:

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1613.6 Seismic design provisions for hillside buildings.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1613.6.4 Analysis and design.

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

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

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

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

1613.6.5 Base shear resistance-primary anchors.

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

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

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

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

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

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

1613.6.6 Base shear resistance-secondary anchors.

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

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

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

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

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

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

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

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

1613.6.7.4 Design force resistance-secondary anchors.

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

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

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

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

1613.6.8 Primary and secondary anchorage and diaphragm strut design. Primary and secondary anchors and diaphragm struts shall be designed in accordance with the following provisions:

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1. Fasteners. All bolted fasteners used to develop connections to wood members shall be provided with square plate washers at all bolt heads and nuts. Washers shall be minimum 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Nuts shall be tightened to finger tight plus one half (1/2) wrench turn prior to covering the framing.
2. Fastening. The diaphragm to foundation anchorage shall not be accomplished by the use of toenailing, nails subject to withdrawal, or wood in cross-grain bending or cross-grain tension.
3. Size of Wood Members. Wood diaphragm struts collectors, and other wood members connected to primary anchors shall not be less than 3 inch (76 mm) nominal width. The effects of eccentricity on wood members shall be evaluated as required per Item 9.
4. Design. Primary and secondary anchorage, including diaphragm struts, splices, and collectors shall be designed for 125% of the tributary force.
5. Allowable Stress Increase. The one-third allowable stress increase permitted under Section 1605.3.2 shall not be taken when the working (allowable) stress design method is used.
6. Steel Element of Structural Wall Anchorage System. The strength design forces for steel elements of the structural wall anchorage system, with the exception of anchor bolts and reinforcing steel, shall be increased by 1.4 times the forces otherwise required.
7. Primary Anchors. The load path for primary anchors and diaphragm struts shall be fully developed into the diaphragm and into the foundation. The foundation must be shown to be adequate to resist the concentrated loads from the primary anchors.
8. Secondary Anchors. The load path for secondary anchors and diaphragm struts shall be fully developed in the diaphragm but need not be developed beyond the connection to the foundation.
9. Symmetry. All lateral force foundation anchorage and diaphragm strut connections shall be symmetrical. Eccentric connections may be permitted when demonstrated by calculation or tests that all components of force have been provided for in the structural analysis or tests.
10. Wood Ledgers. Wood ledgers shall not be used to resist cross-grain bending or cross-grain tension.

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

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

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

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

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

1613.6.9.5 Distribution of lateral forces.

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

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

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

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

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

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

1613.6.10 Specific design provisions.

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

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

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

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

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

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

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

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

1. All wood framed walls, including nonbearing walls, when resting on a footing, foundation, or grade beam stem wall, shall be supported on wood sill plates bearing on a level surface.

2. Power-driven fasteners shall not be used to anchor sill plates except at interior nonbearing walls not designed as shear walls.

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

1. When the post or column is supported on a pedestal extending above the top of a footing or grade beam, the pedestal shall be designed and reinforced as required for concrete or masonry columns. The pedestal shall be reinforced with a minimum of four No. 4 bars extending to the bottom of the footing or grade beam. The top of exterior pedestals shall be sloped for positive drainage.

2. The base plate anchor bolts or the embedded portion of the post base, and the vertical reinforcing bars for the pedestal, shall be confined with two No. 4 or three No. 3 ties within the top 5 inches (127 mm) of the concrete or masonry pedestal. The base plate anchor bolts shall be embedded a minimum of 20 bolt diameters into the concrete or masonry pedestal. The base plate anchor bolts and post bases shall be galvanized and each anchor bolt shall have at least 2 galvanized nuts above the base plate.

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

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

Section 14.04.143 is added to the Pasadena Municipal Code, by adding- Section 1613.7 is added to Chapter 16 of the 2022 Edition of the California Building Code to read as follows:

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

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

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

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

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

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

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

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

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

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

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

Section 1704.6 Structural Observations. Where required by the provisions of Section 1704.6.1 ~~or 1704.6.2 or 1704.6.3~~, the owner or the owner's authorized agent shall employ a ~~registered design professional structural observer~~ to perform structural observations. The structural observer shall visually observe representative locations of structural systems, details and load paths for general conformance to the approved construction documents. Structural observation does not include or waive the responsibility for the inspections in Section 110 or the special inspections in Section 1705 or other sections of this code. The structural observer shall be one of the following individuals:

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

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

~~At the conclusion of the work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.~~

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

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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.

14.04.146-147 – Section 1704.6.1 of the 2022 Edition of the California Building Code is amended to read as follows:

1704.6.1 Structural observations for ~~structures~~ seismic resistance. Structural observations shall be provided for those structures assigned to Seismic Design Category D, E, F, where one or more of the following conditions exist:

1. The structure is classified as Risk Category III or IV.
- ~~1.2. The structure is classified as Risk Category I or II, and a lateral design is required for the structure or portion thereof.~~
2. The structure is a high-rise building.
- ~~2.3. When such observation is specifically required by the Building Official.~~
3. The structure is assigned to Seismic Design Category E, and is greater than two stories above the grade plane. A lateral design is required for the structure or portion thereof.

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

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

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

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

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

1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock, where the structural design of the footing is based on a specified compressive strength, f'_c , no greater than 2,500 pounds per square inch (psi) (17.2 MPa) regardless of the compressive strength specified in the construction documents or used in the footing construction.

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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 foundation walls constructed in accordance with Table 1807.1.6.2.
54. Concrete patios, driveways and sidewalks, on grade.

14.04.160_- Section 1705.12 ~~1705.13~~ of the 2022 Edition of the California Building Code is renumbered as Section 1705.13 and amended to read as follows:

1705.121705.13 Special inspections for seismic resistance. Special inspections for seismic resistance shall be required as specified in Sections 1705.12.1 through 1705.12.91705.13.1 through 1705.13.9, unless exempted by the exceptions of Section 1704.2.

Exception: The special inspections specified in Sections 1705.12.1 through 1705.12.91705.13.1 through 1705.13.9 are not required for structures designed and constructed in accordance with one of the following:

1. The structure consists of light-frame construction; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.2.4, does not exceed 0.5; and the building height of the structure does not exceed 35 feet (1-0668 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).

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3. The structure is a detached one- or two-family dwelling not exceeding two stories above grade plane, is not assigned to Seismic Design Category D, E or F, and does not have any of the following horizontal or vertical irregularities in accordance with Section 12.3 of ASCE 7:

3.1 Torsional or extreme torsional irregularity.

3.2 Nonparallel systems irregularity.

3.3 Stiffness-soft story or stiffness-extreme soft story irregularity.

3.4 Discontinuity in lateral strength-weak story irregularity.

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

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 AWP A U1 (Commodity Specification A, Special Requirement 4.2) and shall be identified in accordance with Section 2303.1.9.1. Permanent wood foundation systems shall not be used for structures assigned to Seismic Design Category D, E or F.

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

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

Section 14.04.176 is added to the Pasadena Municipal Code, amending –Section 1807.2 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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Section 14.04.177 is added to the Pasadena Municipal Code, amending- Section 1807.3.1 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

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

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

Section 14.04.175 is renumbered as Section 14.04.178 amending -Section 1809.3 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

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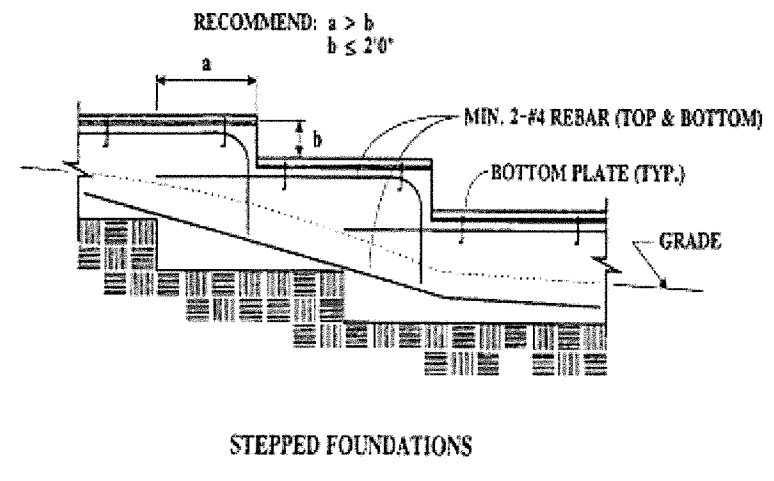


FIGURE 1809.3
STEPPED FOOTING

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

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

TABLE 1809.7
PRESCRIPTIVE FOOTINGS SUPPORTING WALLS OF
LIGHT-FRAME CONSTRUCTION ^{a, b, c, d, e}

NUMBER OF FLOORS SUPPORTED BY THE FOOTING ^f	WIDTH OF FOOTING (inches)	THICKNESS OF FOOTING (inches)
1	12	6
2	15	6
3	18	8 ^g

- 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. ~~Interior stud-bearing walls shall be permitted to be supported by isolated footings. The footing width and length shall be twice the width shown in this table, and footings shall be spaced not more than 6 feet on center. 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.
 - g. ~~Plain concrete footings for Group R-3 occupancies shall be permitted to be 6 inches thick.~~

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

1809.12 Timber footings. Timber footings shall be permitted for buildings of Type V construction and as otherwise approved by the Building Official. Such footings shall be treated in accordance with AWP A 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 181-0.3.2.4 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

1905.1.7 ACI 318, Section 14.1.4. Delete ACI 318, Section 14.1-.4, and replace with the following:

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

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) Structural plain concrete basement, foundation or other walls below the base as defined in ASCE 7 are permitted in detached one and two family dwellings three stories or less in height constructed with stud bearing walls. In dwellings assigned to Seismic Design Category D or E, the height of the wall shall not exceed 8 feet (2438 mm), the thickness shall not be less than 7½ inches (190 mm), and the wall shall retain no more than 4 feet (1219 mm) of unbalanced fill. Walls shall have reinforcement in accordance with 14.6.1. Concrete used~~

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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.

~~Exception: In detached one- and two-family dwellings three stories or less in height, the projection of the footing beyond the face of the supported member is permitted to 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. ~~For footings that exceed 8 inches (203 mm) in thickness, 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. In Seismic Design Categories A, B and C, 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 without longitudinal reinforcement with at least two continuous longitudinal reinforcing bars not smaller than No. 4 and are permitted to have a total area of longitudinal reinforcement less than 0.002 times the gross cross-sectional area of the footing.~~
- ~~2. For foundation systems consisting of a plain concrete footing and a plain concrete stemwall, a minimum of one bar shall be provided at the top of the stemwall and at the bottom of the footing.~~
- ~~3. Where a slab on ground is cast monolithically with the footing, one No. 5 bar is permitted to be located at either the top of the slab or bottom of the footing.~~

14.04.215 - Section 1905.1 is amended and Sections 1905.1.9 through 1905.1.11 are added to Chapter 19 of the 2022 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 ~~1905.1.8~~ 1905.1.11.

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

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

18.7.5.9 – At any section where the design strength, ϕP_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, ϕP_n , of the column, these moments are permitted to be assumed to result from the deformation of the frame in any one principal axis.

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

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

1905.1.11 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 2304.10.2 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

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

2304.10.3.1 Quality of Nails. In Seismic Design Category D, E or F, mechanically driven nails used in wood structural panel shear walls shall meet the same dimensions as that required for hand-driven nails, including diameter, minimum length and minimum head diameter. Clipped head or box nails are not permitted in new construction. The allowable design value for clipped head nails in existing construction may be taken at no more than the nail-head-area ratio of that of the same size hand-driven nails.

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

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

14.04.225- Section 230.5.4 is added to Chapter 23 of the 2022 Edition of the California Building Code to read as follows:

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

Section 14.04.236 is added to the Pasadena Municipal Code, amending– Section 2306.2 is added to the 2022 Edition of the California Building Code to read as follows:

2306.2 Wood-frame diaphragms. Wood-frame diaphragms shall be designed and constructed in accordance with AWC SDPWS. Where panels are fastened to framing members with staples, requirements and limitations of AWC SDPWS shall be met and

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the allowable shear values set forth in Table 2306.2(1) or 2306.2(2) shall only be permitted for structures assigned to Seismic Design Category A, B, or C.

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

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

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

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

Section 14.04.237 is added to the Pasadena Municipal Code, amending– Section 2306.3 is added to the 2022 Edition of the California Building Code to read as follows:

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

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

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

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

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

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

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

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

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

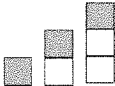





Section 14.04.238 is added to the Pasadena Municipal Code, adding– Section 2307.2 is added to the 2022 Edition of the California Building Code to read as follows:

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

Section 14.04.239 is added to the Pasadena Municipal Code, amending –Table 2308.6.1 is added to of the 2022 Edition of the California Building Code to read as follows:

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TABLE 2308.6.1^a
WALL BRACING REQUIREMENTS

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

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

NP = Not Permitted.

a. This table specifies minimum requirements for braced wall panels along interior or exterior braced wall lines.

b. See Section 2308.6.3 for full description of bracing methods.

c. For Method GB, gypsum wallboard applied to framing supports that are spaced at 16 inches on center.

d. The required lengths shall be doubled for gypsum board applied to only one face of a braced wall panel.

e. Percentage shown represents the minimum amount of bracing required along the building length (or wall length if the structure has an irregular shape).

f. DWB, SFB, PBS, and HPS wall braces are not permitted in Seismic Design Categories D or E.

g. Minimum length of panel bracing of one face of the wall for WSP sheathing shall be at least 4'-0" long or both faces of the wall for GB or PCP sheathing shall be at least 8'-0" long; h/w ratio shall not exceed 2:1. Wall framing to which sheathing used for bracing is applied shall be nominal 2 inch wide (actual 1 1/2 inch (38 mm) or larger members and spaced a maximum of 16 inches on center. Braced wall panel construction types shall not be mixed within a braced wall line.

h. WSP sheathing shall be a minimum of 15/32" thick nailed with 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

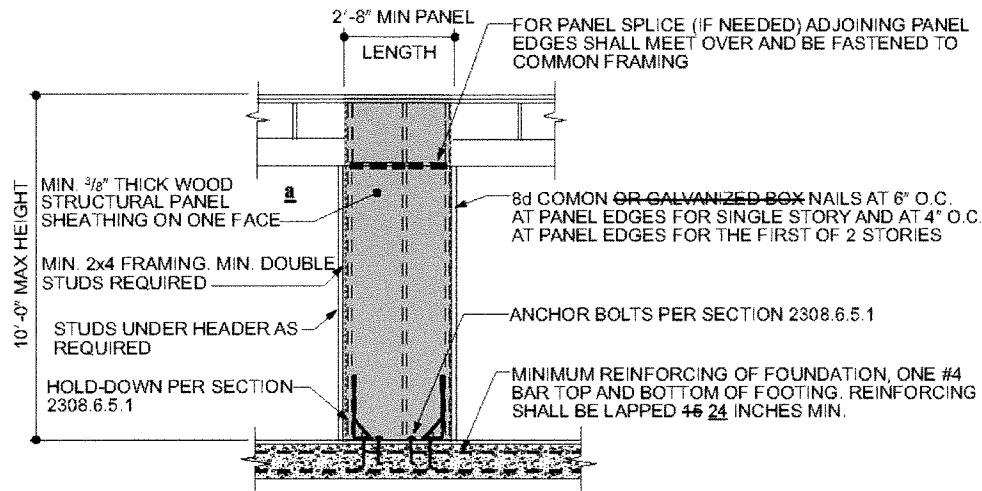
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14.04.235~~Section 14.04.235 is renumbered as Section 14.04.240 amending Sections 2308.6.5.1 and 2308.6.5.2 and Figures 2308.6.5.1 and 2308.6.5.2 of the 2022 Edition of the California Building Code are amended to read as follows:~~

2308.6.5.1 Alternate braced wall (ABW). An ABW shall be constructed in accordance with this section and Figure 2308.6.5.1. In one-story buildings, each panel shall have a length of not less than 2 feet 8 inches (813 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with 3/8-inch (3.2 mm) minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 2304.10.1 and blocked at wood structural panel edges. For structures assigned to Seismic Design Category D or E, each panel shall be sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports. Two anchor bolts installed in accordance with Section 308.3.1 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 ~~or turned-down slab edge~~ is permitted at door openings in the braced wall line. This continuous footing ~~or turned-down slab edge~~ shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped ~~15~~ 24 inches (~~384~~ 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).

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

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

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

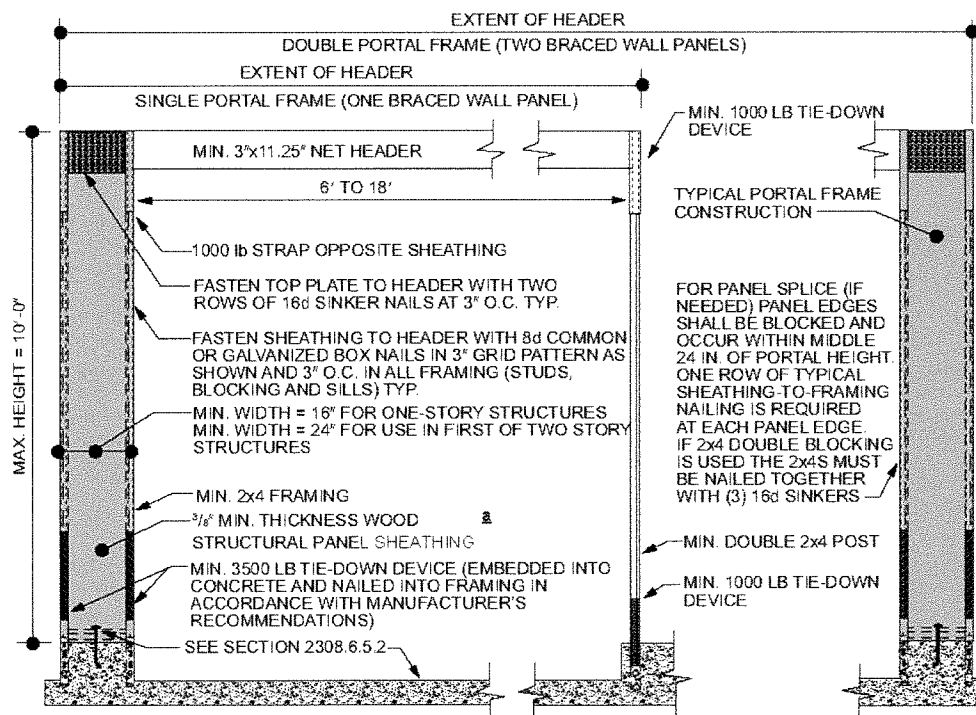
2308.6.5.2 Portal frame with hold-downs (PFH). A PFH shall be constructed in accordance with this section and Figure 2308.6.5.2. The adjacent door or window opening shall have a full-length header.

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

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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 or ~~turned down slab edge~~ is permitted at door openings in the braced wall line. This continuous footing or ~~turned down slab edge~~ shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped not less than ~~15~~ 24 inches (384 610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

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



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

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

FIGURE 2308.6.5.2
PORTAL FRAME WITH HOLD-DOWNS (PFH)

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Section 14.04.2410 is added to the Pasadena Municipal Code, amending– Section 2308.6.8.1 is added to of the 2022 Edition of the California Building Code to read as follows:

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

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

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

Exceptions:

1. ~~Exterior braced wall panels shall be permitted to be located not more than 4 feet (1219 mm) from the foundation below where supported by a floor constructed in accordance with all of the following:~~
 - 1.1 ~~Cantilevers or setbacks shall not exceed four times the nominal depth of the floor joists.~~
 - 1.2 ~~Floor joists shall be 2 inches by 10 inches (51 mm by 254 mm) or larger and spaced not more than 16 inches (406 mm) on center.~~
 - 1.3 ~~The ratio of the back span to the cantilever shall be not less than 2 to 1.~~
 - 1.4 ~~Floor joists at ends of braced wall panels shall be doubled.~~
 - 1.5 ~~A continuous rim joist shall be connected to the ends of cantilevered joists. The rim joist is permitted to be spliced using a metal tie not less than 0.058 inch (1.47 mm) (16-galvanized gage) and 1 1/2 inches (38 mm) in width fastened with six 16d common nails on each side. The metal tie shall have a yield stress not less than 33,000 psi (227 MPa).~~
 - 1.6 ~~Joists at setbacks or the end of cantilevered joists shall not carry gravity loads from more than a single story having uniform wall and roof loads nor carry the reactions from headers having a span of 8 feet (2438 mm) or more.~~
2. ~~The end of a required braced wall panel shall be allowed to extend not more than 1 foot (305 mm) over an opening in the wall below. This requirement is applicable to braced wall panels offset in plane and braced wall panels offset out of plane as permitted by Exception 1. Braced wall panels are permitted to~~

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~~extend over an opening not more than 8 feet (2438 mm) in width where the header is a 4 inch by 12 inch (102 mm by 305 mm) or larger member.~~

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

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

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

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

Section 14.04.257 is renumbered as Section 14.04.251 adding Section 3109.1.1 to the 2022 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.~~

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

The amendments to Section 8-408 of the 2019 Edition of the California Historical Building Code, appearing in Section 14.04.258 are hereby deleted.

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Section 14.04.258 is renumbered as 14.04.252 is added to the Pasadena Municipal Code~~14.04.251~~, **Section 3115.1 Exception Item #6 is added**~~adding Exception #6~~ of Section 3115.1 to Chapter 31 of the 2022 Edition of the California Building Code to read as follow:

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

Section 14.04.252-253 is added to the Pasadena Municipal Code, amending–
Section 3115.8.1 and Section 3115.8.1.2 of the 2022 Edition of the California Building Code are amended to read as follows:

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

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

Section 14.04.2543 is added to the Pasadena Municipal Code, amending–
Section 3115.8.2 of the 2022 Edition of the California Building Code is amended to read as follows:

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

Section 14.04.254-255 is added to the Pasadena Municipal Code, amending–
Section 3115.8.4 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

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Section 14.04.255-256 is added to the Pasadena Municipal Code, amending– Sections 3115.8.4.1, 3115.8.4.2, and 3115.8.4.3 of the 2022 Edition of the California Building Code are amended to read as follows:

3115.8.4.1 Material properties. Structural material properties for existing intermodal shipping container steel components shall be established by material testing where the steel grade and composition cannot be identified by the manufacturer's designation as to manufacture and mill test Section 2202.

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

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

3115.8.4.3 Allowable shear value. The allowable shear values for the intermodal shipping container profiled steel panel side walls and end walls shall be ~~demonstrated by testing and analysis accordance with Section 104.11~~ determined in accordance with the design approach selected in Section 3115.8.4.2. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.

Section 14.04.256-257 is added to the Pasadena Municipal Code, amending– Section 3115.8.5.2 of the 2022 Edition of the California Building Code is amended to read as follows:

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

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

~~14.04.257-258~~ is added to the Pasadena Municipal Code, amending– Section 3115.8.5.3 and Table 3115.8.5.3 of the 2022 Edition of the California Building Code are amended to read as follows:

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

1. The total linear length of all openings in any individual side walls or end walls shall be limited to not more than 50 percent of the length of that side walls or end walls, as shown in Figure 3115.8.5.3(1).
2. Any full height wall length, or portion thereof, less than 4 feet (305 mm) long shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2).
3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3). The existing door interlocking mechanism shall not be considered as a component of the required load path.
4. Where openings are made in container walls, floors or roofs, for doors, windows and other openings:
 - 4.1 The opening shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.

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- 4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.
5. A maximum of one penetration not greater than a 6-inch (152 mm) diameter hole for conduits, pipes, tubes or vents, or not greater than 16 square inches (10322mm²) for electrical boxes, is permitted for each individual 8 feet (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the wall lateral force resisting system shall not be limited in size or quantity. Existing intermodal shipping container's vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4).
6. End wall door or doors designated as part of the lateral force-resisting system shall be intermittently welded closed around the full perimeters of the door panels.

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

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

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

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

8. An excavation that does not exceed 50 cubic yards (38.3 m³) and complies with (a) or (b) as follows:
- (a) Is less than 2 feet (0.6 m) in depth.

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- (b) Does not create a cut slope greater than 5 feet (1.5 m) measured vertically upward from the cut surface to the surface of the natural grade and is not steeper than 2 units horizontal to 1 unit vertical (50 percent slope).

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

R301.1.3.2 Woodframe structures ~~greater than two stories~~. *The building official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than two stories and basement in height located in Seismic Design Category A, B or C. Notwithstanding other sections of law; the law establishing these provisions is found in Business and Professions Code Sections 5537 and 6737.1.*

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

14.04.265 – Section R301.1.5 is added to Chapter 3 of the 2022 California Residential Code to read as follows:

R301.1.5 Seismic design provisions for buildings constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope). The design and construction of new buildings and additions to existing buildings when constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope) shall comply with Section 1613.6 of the California Building Code.

Section 14.04.266 is added to the Pasadena Municipal Code, amending– Items 1, 3, and 5 of Section R301.2.2.6 of the 2022 Edition of the California Building Residential Code are amended to read as follows:

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

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

1. Floor joists are nominal 2 inches by 10 inches (51 mm by 254 mm) or larger and spaced not more than 16 inches (406 mm) on center.

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- ~~2. The ratio of the back span to the cantilever is not less than 2 to 1.~~
 - ~~3. Floor joists at ends of braced wall panels are doubled.~~
 - ~~4. For wood frame construction, a continuous rim joist is connected to ends of cantilever joists. When spliced, the rim joists shall be spliced using a galvanized metal tie not less than 0.058 inch (1.5 mm) (16 gage) and 1 1/2 inches (38 mm) wide fastened with six 16d nails on each side of the splice or a block of the same size as the rim joist of sufficient length to fit securely between the joist space at which the splice occurs fastened with eight 16d nails on each side of the splice; and~~
 - ~~5. Gravity loads carried at the end of cantilevered joists are limited to uniform wall and roof loads and the reactions from headers having a span of 8 feet (2438 mm) or less.~~
3. **Shear wall or braced wall offsets in plane.** Conditions where the end of a braced wall panel occurs over an opening in the wall below and extends more than 1 foot (305 mm) horizontally past the edge of the opening. This provision is applicable to shear walls and braced wall panels offset in plane and to braced wall panels offset out of plane as permitted by the exception to item 1.
- Exception:** For wood light frame wall construction, one end of a braced wall panel shall be permitted to extend more than one foot (305 mm) over an opening not more than 8 feet (2438 mm) in width in the wall below provided that the opening includes a header in accordance with all of the following:
- ~~1. The building width, loading condition and framing member species limitations of Table R602.7(1) shall apply.~~
 - ~~2. The header is composed of:~~
 - ~~2.1 Not less than one 2x12 or two 2x10 for an opening not more than 4 feet (1219 mm) wide.~~
 - ~~2.2 Not less than two 2x12 or three 2x10 for an opening not more than 6 feet (1829 mm) in width.~~
 - ~~2.3 Not less than three 2x12 or four 2x10 for an opening not more than 8 feet (2438 mm) in width.~~
 - ~~3. The entire length of the braced wall panel does not occur over an opening in the wall below.~~
5. **Floor level offset.** Conditions where portions of a floor level are vertically offset.

Exceptions:

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- ~~1. Framing supported directly by continuous foundations at the perimeter of the building.~~
- ~~2. For wood light-frame construction, floors shall be permitted to be vertically offset where the floor framing is lapped or tied together as required by section R502.6.1.~~

14.04.267 – Section R301.2.2.11 is added to Chapter 3 of the 2022 Edition of the California Residential Code to read as follows:

R301.2.2.11 Anchorage of mechanical, electrical, or plumbing components and equipment. Mechanical, electrical, or plumbing components and equipment shall be anchored to the structure. Anchorage of the components and equipment shall be designed to resist loads in accordance with the California Building Code and ASCE 7, except where the component is positively attached to the structure and flexible connections are provided between the component and associated ductwork, piping, and conduit; and either

1. The component weighs 400 lb (1,780 N) or less and has a center of mass located 4 ft (1.22 m) or less above the supporting structure; or
2. The component weighs 20 lb (89N) or less or, in the case of a distributed system, 5 lb/ft (73 N/m) or less.

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

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

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

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

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

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200 square feet, the plate height does not exceed 12 feet in height above the grade plane at any point, and the maximum roof projection does not exceed 24 inches.

14.04.275 – Sections R403.1 .2, R403.1.3.6, R403.1.5 of the 2022 Edition of the California Residential Code are amended to read as follows:

R403.1.2 Continuous footing in Seismic Design Categories D₀, D₁, or D₂. Exterior walls of buildings located in Seismic Design Categories D₀, D₁ and D₂ shall be supported by continuous solid or fully grouted masonry or concrete footings. ~~Other footing materials or systems shall be designed in accordance with accepted engineering practice.~~ Required interior braced wall panels in buildings located in Seismic Design Categories D₀, D₁, or D₂ ~~with plan dimensions greater than 50 feet (15 240 mm) shall be supported by continuous solid or fully grouted masonry or concrete footings in accordance with Section R403.1.3.4, except for two-story buildings in Seismic Design Category D₂, in which all braced wall panels, interior and exterior, shall be supported on continuous foundations.~~

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

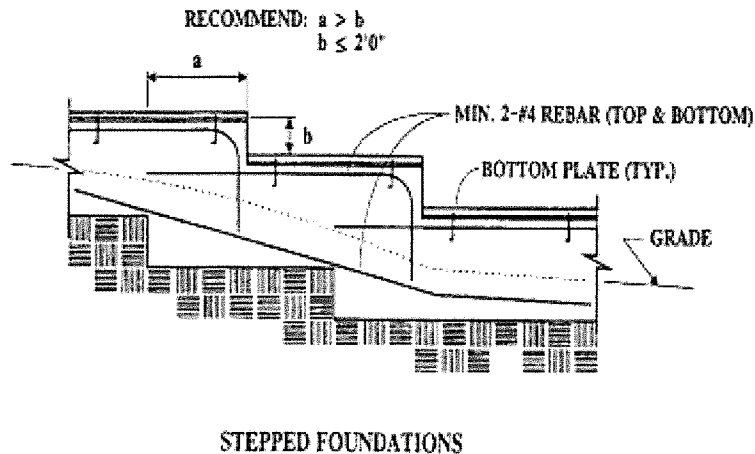
- ~~1. The height of cripple walls does not exceed 4 feet (1219 mm).~~
- ~~2. First floor braced wall panels are supported on doubled floor joists, continuous blocking or floor beams.~~
- ~~3. The distance between bracing lines does not exceed twice the building width measured parallel to the braced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

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 D₀, D₁, or D₂, stepped footings shall be reinforced with four No. 4 rebar. Two bars shall be placed at the top and bottom of the footings as shown in Figure R403.1.5.

**FIGURE R403.1.5
STEPPED FOOTING**



14.04.280 – Section R404.2 of the 2022 Edition of the California Residential Code is amended to read as follows:

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

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

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

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14.04.285 – Lines 19, 20, 23, and 33-36 of Table R602.3(1) of the 2022 Edition of the California Residential Code are renumbered to as Lines 20, 21, 24, and 34-37 and amended to read as follows:

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

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

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

k. Use of staples in roof, floor, and braced wall panels shall be prohibited in Seismic Design Category D₀, D₁, or D₂.

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

b. Staples shall have a minimum crown width of 7/16-inch on diameter except as noted.
Use of staples in roof, floor, subfloor, and braced wall panels shall be prohibited in Seismic Design Category D₀, D₁, or D₂.

EXHIBIT 5

Section 14.04.291 is added to the Pasadena Municipal Code, amending— Section Exception of Section R602.3.2, Exception and Table R602.3.2 of the 2022 Edition of the California Residential Code is amended to read as follows:

Exception: A In other than Seismic Design Category D₀, D₁ or D₂, a single top plate used as an alternative to a double top plate shall comply with the following:

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

TABLE R602.3.2
SINGLE TOP-PLATE SPLICE CONNECTION DETAILS

CONDITION	TOP-PLATE SPLICE LOCATION			
	Corners and intersecting walls		Butt joints in straight walls	
	Splice plate size	Minimum nails each side of joint	Splice plate size	Minimum nails each side of joint
Structures in SDC A-C; and in SDC D₀, D₁ and D₂ with braced wall line spacing less than 25 feet	3" × 6" × 0.036" galvanized steel plate or equivalent	(6) 8d box (2 1/2" × 0.113") nails	3' × 12" × 0.036" galvanized steel plate or equivalent	(12) 8d box (2 1/2" × 0.113") nails
Structures in SDC D ₀ , D ₁ and D ₂ with braced wall line spacing greater than or equal to 25 feet	3" × 8" by 0.036" galvanized steel plate or equivalent	(9) 8d box (2 1/2" × 0.113") nails	3' × 16" × 0.036" galvanized steel plate or equivalent	(18) 8d box (2 1/2" × 0.113") nails

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

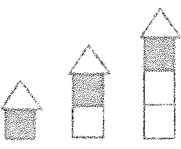
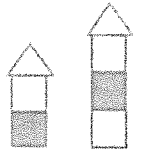
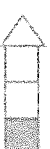

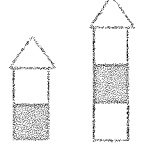

Section 14.04.292 is added to the Pasadena Municipal Code, amending— Section R602.10.2.3 of the 2022 Edition of the California Residential Code is amended to read as follows:

R602.10.2.3 Minimum number of braced wall panels. Braced wall lines with a length of 16 feet (4877 mm) or less shall have not less than two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have not less than two braced wall panels. In Seismic Design Category D₀, D₁, or D₂, no braced wall panel shall have a contributing length less than 48 inches in length or as required in Section R602.10.3, whichever is greater.

Section 14.04.293 is added to the Pasadena Municipal Code, amending— Table R602.10.3(3) of the 2022 Edition of the California Residential Code is amended to read as follows:

EXHIBIT 5


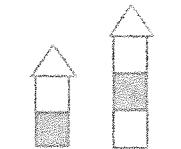
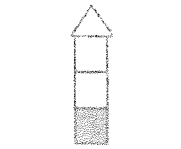
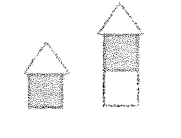
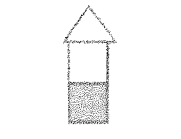
TABLE R602.10.3(3)
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

• WALL HEIGHT = 10 FEET • 10 PSF FLOOR DEAD LOAD • 15 PSF ROOF/CEILING DEAD LOAD • BRACED WALL LINE SPACING ≤ 25 FEET			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE ^{a,c}				
Seismic Design Category ^b	Story Location	Braced Wall Line Length (feet) ^e	Method LIB ^d	Method GB	Methods DWS, SFB, PBS, PCP, HPS, CS-SFB ^a	Methods WSP, ABW, PFH ^a and PFG ^{a,f}	Methods CS-WSP, CS-G, CS-PF
C (townhouses only)		10	2.5	2.5	2.5	1.6	1.4
		20	5.0	5.0	5.0	3.2	2.7
		30	7.5	7.5	7.5	4.8	4.1
		40	10.0	10.0	10.0	6.4	5.4
		50	12.5	12.5	12.5	8.0	6.8
		10	NP	4.5	4.5	3.0	2.6
		20	NP	9.0	9.0	6.0	5.1
		30	NP	13.5	13.5	9.0	7.7
		40	NP	18.0	18.0	12.0	10.2
		50	NP	22.5	22.5	15.0	12.8
		10	NP	6.0	6.0	4.5	3.8
		20	NP	12.0	12.0	9.0	7.7
		30	NP	18.0	18.0	13.5	11.5
		40	NP	24.0	24.0	18.0	15.3
		50	NP	30.0	30.0	22.5	19.1
D _c		10	NP	2.5 5.6	2.5 5.6	1.8	1.6
		20	NP	5.0 11.0	5.0 11.0	3.6	3.1
		30	NP	7.5 16.6	7.5 16.6	5.4	4.6
		40	NP	10.0 22.0	10.0 22.0	7.2	6.1
		50	NP	12.5 27.6	12.5 27.6	9.0	7.7
		10	NP	4.5 NP	4.5 NP	3.8	3.2
		20	NP	9.0 NP	9.0 NP	7.5	6.4
		30	NP	13.5 NP	13.5 NP	11.3	9.6
		40	NP	18.0 NP	18.0 NP	15.0	12.8
		50	NP	22.5 NP	22.5 NP	18.8	16.0
		10	NP	6.0 NP	6.0 NP	5.3	4.5
		20	NP	12.0 NP	12.0 NP	10.5	9.0
		30	NP	18.0 NP	18.0 NP	15.8	13.4
		40	NP	24.0 NP	24.0 NP	21.0	17.9
		50	NP	30.0 NP	30.0 NP	26.3	22.3

(continued)

EXHIBIT 5

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

• WALL HEIGHT ≤ 10 FEET • 10 PSF FLOOR DEAD LOAD • 15 PSF ROOF/CEILING DEAD LOAD • BRACED WALL LINE SPACING ≤ 25 FEET			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE ^a				
Seismic Design Category ^b	Story Location	Braced Wall Line Length (feet) ^c	Method L18 ^d	Method GB	Methods DWB, SFB, PBS, PCP, HPS, CS-SFB ^e	Methods WSP, ABW ^f , PFH ^g and PFG ^h ⁱ	Methods CS-WSP, CS-G, CS-PF
D ₁		10	NP	3.0 6.0	3.0 6.0	2.0	1.7
		20	NP	6.0 12.0	6.0 12.0	4.0	3.4
		30	NP	9.0 18.0	9.0 18.0	6.0	5.1
		40	NP	12.0 24.0	12.0 24.0	8.0	6.8
		50	NP	15.0 30.0	15.0 30.0	10.0	8.5
		10	NP	6.0 NP	6.0 NP	4.5	3.8
		20	NP	12.0 NP	12.0 NP	9.0	7.7
		30	NP	18.0 NP	18.0 NP	13.5	11.5
		40	NP	24.0 NP	24.0 NP	18.0	15.3
		50	NP	30.0 NP	30.0 NP	22.5	19.1
		10	NP	8.5 NP	8.5 NP	6.0	5.1
		20	NP	17.0 NP	17.0 NP	12.0	10.2
		30	NP	25.5 NP	25.5 NP	18.0	15.3
		40	NP	34.0 NP	34.0 NP	24.0	20.4
		50	NP	42.5 NP	42.5 NP	30.0	25.5
D ₂ ^h		10	NP	4.0 8.0	4.0 8.0	2.5	2.1
		20	NP	8.0 16.0	8.0 16.0	5.0	4.3
		30	NP	12.0 24.0	12.0 24.0	7.5	6.4
		40	NP	16.0 32.0	16.0 32.0	10.0	8.5
		50	NP	20.0 40.0	20.0 40.0	12.5	10.6
		10	NP	7.5 NP	7.5 NP	5.5	4.7
		20	NP	15.0 NP	15.0 NP	11.0	9.4
		30	NP	22.5 NP	22.5 NP	16.5	14.0
		40	NP	30.0 NP	30.0 NP	22.0	18.7
		50	NP	37.5 NP	37.5 NP	27.5	23.4
	Three-story dwelling	10	NP	NP	NP	NP	NP
		20	NP	NP	NP	NP	NP
		30	NP	NP	NP	NP	NP
		40	NP	NP	NP	NP	NP
		50	NP	NP	NP	NP	NP
	Cripple wall below one- or two-story dwelling	10	NP	NP	NP	7.5	6.4
		20	NP	NP	NP	15.0	12.8
		30	NP	NP	NP	22.5	19.1
		40	NP	NP	NP	30.0	25.5
		50	NP	NP	NP	37.5	31.9

(continued)

- Linear interpolation shall be permitted.
- Interpolation of bracing length between the S_{ds} values associated with the seismic design categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.2 of the *California Building Code*.
- Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shall be in accordance with this table.

EXHIBIT 5

- d. Method LIB shall have gypsum board fastened to not less than one side with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches.
- e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D₀, D₁ and D₂.
- f. Methods PFH, PFG and ABW are only permitted on a single story or a first of two stories.
- g. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1.
- h. One- and two- family dwellings in Seismic Design Category D₂ exceeding two stories shall be designed in accordance with accepted engineering practice.
- i. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D₀, D₁ and D₂. Methods DWB, SFB, PBS, HPS, and CS-SFB are not permitted in D₀, D₁ and D₂.

Section 14.04.294 is added to the Pasadena Municipal Code, amending– Table R602.10.4 of the 2022 Edition of the California Residential Code is amended to read as follows:

EXHIBIT 5

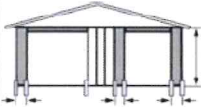
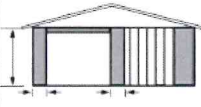
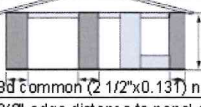
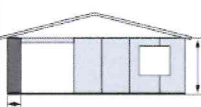
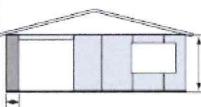
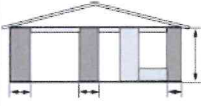
TABLE R602.10.4
BRACING METHODS

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA*	
			Fasteners	Spacing
Intermittent Bracing Methods	LIB Let-in-bracing		Wood: 2-8d common nails or 3-8d (2 1/2" long x 0.113" dia.) nails Metal strap: per manufacturer	Wood: per stud and top and bottom plates Metal: per manufacturer
	DWB Diagonal wood boards		2-8d (2 1/2" long x 0.113" dia.) nails or 2-1 3/4" long staples	Per stud
	WSP Wood structural panel (See Section R604)		8d common (2 1/2" x 0.131") nails 3/8" edge distance to panel edge Exterior sheathing per Table R602.3(3) Interior sheathing per Table R602.3(1) or R602.3(2)	6" edges 12" field Varies by fastener
	BV-WSP* Wood structural panels with stone or masonry veneer (See Section R602.10.6.5)	See Figure R602.10.6.5.2	8d common (2 1/2" x 0.131") nails	4" at panel edges 12" at intermediate supports 4" at braced wall panel end posts
	SFB Structural fiberboard sheathing		1 1/2" long x 0.12" dia. (for 1/2" thick sheathing) 1 3/4" long x 0.12" dia. (for 5/8" thick sheathing) galvanized roofing nails	3" edges 6" field
	GB Gypsum board		Nails or screws per Table R602.3(1) for exterior locations Nails or screws per Table R702.3.5 for interior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
	PBS Particleboard sheathing (See Section R605)		For 3/8", 6d common (2" long x 0.113" dia.) nails; For 1/2", 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field
	PCP Portland cement plaster		1 1/2" long, 11 gage, 0.120" dia., 7/16" dia. head nails or 7/8" long, 16 gage staples	6" o.c. on all framing members
	HPS Hardboard panel siding		0.092" dia., 0.225" dia. head nails with length to accommodate 1 1/2" penetration into studs	4" edges 8" field
	ABW Alternate braced wall		See Section R602.10.6.1	See Section R602.10.6.1

(continued)

EXHIBIT 5

TABLE R602.10.4—continued
BRACING METHODS

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA ^a	
			Fasteners	Spacing
Intermittent Bracing Methods	PFH Portal frame with hold-downs		See Section R602.10.6.2	See Section R602.10.6.2
	PFG Portal frame at garage		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	CS-WSP Continuously sheathed wood structural panel	 8d common (2 1/2"x0.131") nails 3/8" edge distance to panel edge	Exterior sheathing per Table R602.3(3) Interior sheathing per Table R602.3(1) or R602.3(2)	6" edges 12" field Varies by fastener
	CS-G ^{b,c} Continuously sheathed wood structural panel adjacent to garage openings	 8d common (2 1/2"x0.131") nails 3/8" edge distance to panel edge	See Method CS-WSP	See Method CS-WSP
	CS-PF Continuously sheathed portal frame		See Section R602.10.6.4	See Section R602.10.6.4
	CS-SFB ^d Continuously sheathed structural fiberboard		1 1/2" long x 0.12" dia. (for 1/2" thick sheathing) 1 3/4" long x 0.12" dia. (for 25/32" thick sheathing) galvanized roofing nails	3" edges 6" field

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

- Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D₀, D₁ and D₂.
- Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of the garage. In Seismic Design Categories D₀, D₁ and D₂, roof covering dead load shall not exceed 3 psf.
- Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.7(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.
- Method CS-SFB does not apply in Seismic Design Categories D₀, D₁ and D₂.
- Method applies to detached one- and two- family dwellings in Seismic Design Categories D₀ through D₂ only.
- Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D₀, D₁ and D₂. Methods LIB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D₀, D₁ and D₂.
- Use of staples in braced wall panels shall be prohibited in SDC D₀, D₁ and D₂.

Section 14.04.295.1 is added to the Pasadena Municipal Code, amending– Table R602.10.5 of the 2022 Edition of the California Residential Code is amended to read as follows:

EXHIBIT 5

TABLE R602.10.5
MINIMUM LENGTH OF BRACED WALL PANELS

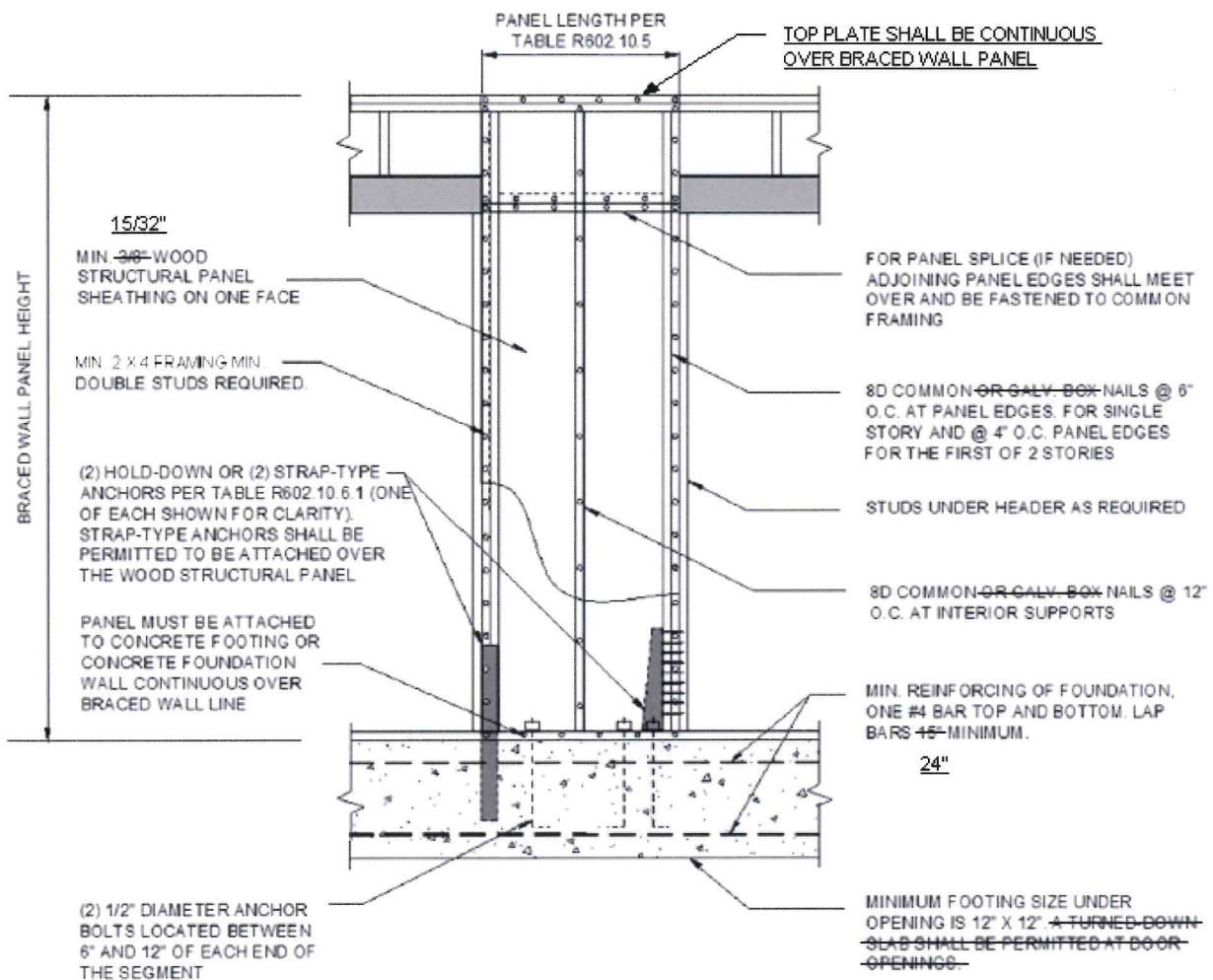
METHOD (See Table R602.10.4)		MINIMUM LENGTH ^a (inches)					CONTRIBUTING LENGTH (inches)
		Wall Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP		48	48	48	53	58	Actual ^b
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 × Actual
LIB		55	62	69	NP	NP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

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

EXHIBIT 5

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

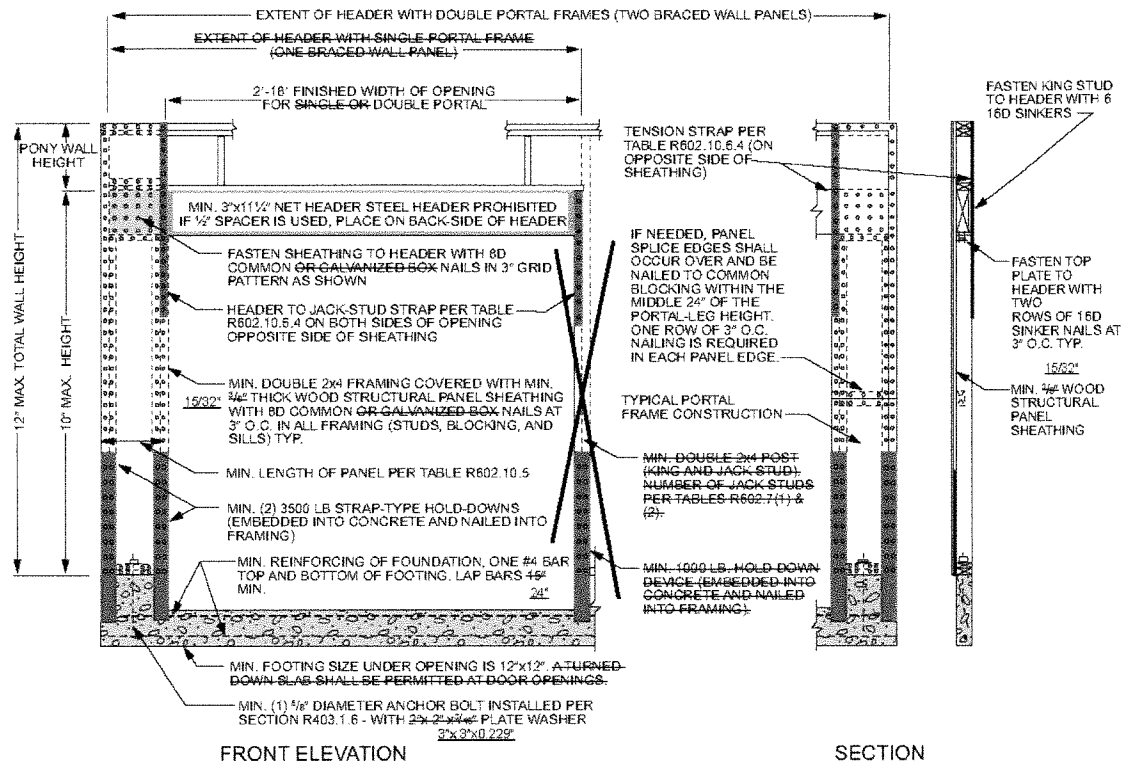
Section 14.04.295.2 is added to the Pasadena Municipal Code, amending– Figure R602.10.6.1 of the 2022 Edition of the California Residential Code is amended to read as follows:



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

EXHIBIT 5

Section 14.04.295 –is renumbered as Section 14.04.295.3 amending Figure R602.10.6.2 of the 2022 Edition of the California Residential Code is amended to read as follows:

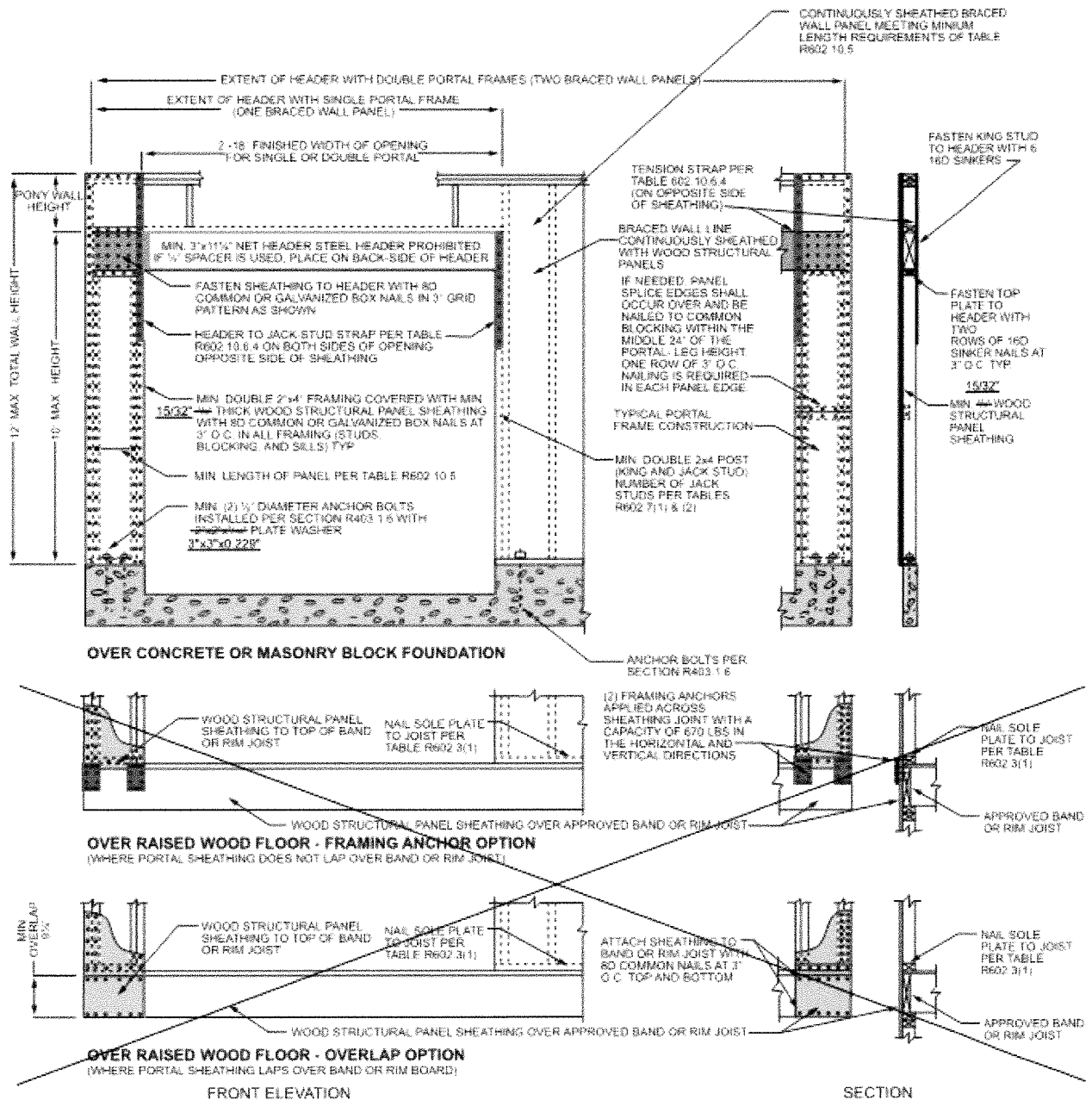


For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

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

EXHIBIT 5

Section 14.04.295.4 is added to the Pasadena Municipal Code, amending– Figure R602.10.6.4 of the 2022 Edition of the California Residential Code is amended to read as follows:



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

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

EXHIBIT 5

Section 14.04.300 is added to the Pasadena Municipal Code, amending– Section R606.4.4 of the 2022 Edition of the California Residential Code is amended to read as follows:

R606.4.4 Parapet walls. Unreinforced solid masonry parapet walls shall not be less than 8 inches (203 mm) thick and their height shall not exceed four times their thickness. Unreinforced hollow unit masonry parapet walls shall be not less than 8 inches (203 mm) thick, and their height shall not exceed three times their thickness. Masonry parapet walls in areas subject to wind loads of 30 pounds per square foot (1.44 kPa) or located in Seismic Design Category D₀, D₁ or D₂, or on townhouses in Seismic Design Category C shall be reinforced in accordance with Section R606.12.

Section 14.04.305 is added to the Pasadena Municipal Code, amending– Section R606.12.2.2.3 of the 2022 Edition of the California Residential Code is amended to read as follows:

R606.12.2.2.3 Reinforcement requirements for masonry elements. Masonry elements listed in Section R606.12.2.2.2 shall be reinforced in either the horizontal or vertical direction as shown in Figure ~~R606.11(2)~~ R606.11(2) and in accordance with the following:

1. Horizontal reinforcement. Horizontal joint reinforcement shall consist of ~~not less than two longitudinal W1.7 wires spaced not more than 16 inches (406 mm) for walls greater than 4 inches (102 mm) in width and at least one longitudinal W1.7 wire spaced not more than 16 inches (406 mm) for walls not exceeding 4 inches (102 mm) in width; or not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Where two longitudinal wires of joint reinforcement are used, the space between these wires shall be the widest that the mortar joint will accommodate.~~ Horizontal reinforcement shall be provided within 16 inches (406 mm) of the top and bottom of these masonry elements.
2. Vertical reinforcement. Vertical reinforcement shall consist of not less than one No. 4 bar spaced not more than 48 inches (1219 mm). Vertical reinforcement shall be within ~~16-8 inches (406~~ 203 mm) of the ends of masonry walls.

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

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

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

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

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

Section 14.04.320 is added to the Pasadena Municipal Code, amending– Section R1001.3.1 of the 2022 Edition of the California Residential Code is amended to read as follows:

R1001.3.1 Vertical reinforcing. For chimneys up to 40 inches (1016 mm) wide, four No. 4 continuous vertical bars adequately anchored into the concrete foundation shall be placed between wythes of solid masonry or within the cells of hollow unit masonry and grouted in accordance with Section R606. Grout shall be prevented from bonding with the flue liner so that the flue liner is free to move with thermal expansion. For chimneys more than 40 inches (1016 mm) wide, two additional No. 4 vertical bars adequately anchored into the concrete foundation shall be provided for each additional flue incorporated into the chimney or for each additional 40 inches (1016 mm) in width or fraction thereof.

14.04.400 – ~~Section AV100.3.1~~ AX100.1 is added to the 2022 eEdition 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.~~

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

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Section 14.04.507 is deleted in its entirety and replaced by Section 14.04.510 is added to the Pasadena Municipal Code, amending– Sections 4.106.4.2.1 and 4.106.4.2.2 of the 2022 Edition of the California Green Building Standards Code are amended to read as follows:

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

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

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

Exceptions:

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

Notes:

- a. Construction documents are intended to demonstrate the project’s capability and capacity for facilitating future EV charging.
- b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

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2. **EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

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

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

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

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

Exceptions:

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

Notes:

- a. Construction documents shall show locations of future EV spaces.
 - b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.
2. **EV Ready.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily

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parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

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

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

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

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

Section 14.04.509 is deleted in its entirety.

Section 14.04.511 is deleted in its entirety and replaced with Section 14.04.520 is added to the Pasadena Municipal Code, amending– Exception 2 of Section 5.106.5.3 of the 2022 Edition of the California Green Building Standards Code is amended to read as follows:

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

Exceptions:

1. On a case by case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
 - a. Where there is no local utility power.

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- b. Where the local utility is unable to supply adequate power.
 - c. Where there is evidence suitable to the local enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.
2. Areas of parking facilities served by parking lifts or Pparking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

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Chapter 14.28 - FIRE PREVENTION CODE

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, 2022~~19~~ edition (California Fire Code) in its entirety, as published by the International Code Council. This adoption of the code also and includes adoption by reference of the 2021 International Fire Code Chapters 1, 3, Appendix Chapter 4 and Appendices B through I, K, M, N, O and Sections 1101 and 1104, 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~~22~~ 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 2022~~19~~ California Fire Code is amended by adding ~~new~~ Section 104.13~~2~~ titled "Cost recovery" to read as follows.

104.13~~2~~ 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

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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.

14.28.140 - Section 105.~~76.3.5~~ of the 2022~~19~~ California Fire Code titled "Cryogenic fluids" is amended to read as follows.

105.~~6.3.7.5~~ 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.~~5.116.40~~. 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 111~~09~~ of Chapter 1 of the California Fire Code titled "~~MEANS~~BOARD OF APPEALS" is deleted in its entirety.

14.28.160 - Section 110~~2.4~~ of the 2022~~19~~ California Fire Code titled "Violation penalties" is amended to read as follows.

112~~0.4~~ 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 113~~2.4~~ of the 2022~~19~~ California Fire Code titled "Failure to comply" is amended to read as follows.

112~~3.4~~ 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

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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.

14.28.172 – Section 307.4.3 of the 2021 International Fire Code titled “Portable outdoor fireplaces” is added and amended to read as follows:

307.4.3 Portable outdoor fireplaces. Portable outdoor fireplaces shall be used in accordance with the manufacturer’s instructions and shall not be operated within 15 feet (3048 mm) of a structure or combustible materials.

Exception:

1. Portable outdoor fireplaces used at one-and two-family dwellings.
2. Portable outdoor fireplaces as approved by the fire code official for Fire Department staffed special events within the parameters established by the fire code official

14.28.174 – Section 308.1.4 of the 2021 International Fire Code titled “Open-flame cooking devices” is added and amended to read as follows:

308.1.4 Open-flame cooking devices. Charcoal burners and other open-flame cooking devices shall not be operated on combustible balconies or within 10 feet of combustible construction.

Exceptions:

1. One-and two-family dwellings.
2. Where buildings, balconies and decks are protected by an automatic sprinkler system.
3. LP-gas cooking devices having LP-gas container with a water capacity not greater than 20 pounds.

~~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.~~

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~~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.~~
~~(Ord. No. 7355, § 4, 11-25-2019)~~

~~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 2022~~19~~ California Fire Code is amended by adding Section 903.1.2 titled "Approved automatic sprinkler system in all ~~Minimum re~~ suppression protection for new construction" to read as follows.

903.1.2 Minimum fire sprinkler suppression system protection for new construction. All new construction shall be provided with an approved automatic fire ~~suppression~~sprinkler 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. Private ~~G~~garages and, carports, and similar structures provided no portion of the structure is located more than 150 feet (45720 mm) from approved fire department access.

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2. Utility sheds, gazebos and similar structures of less than 120 square feet (11.15 m^2) provided no portion of the structure is located more than 150 feet from (45720 mm) approved fire department access.
3. Fences and open trellises.
- 3.4. Solar photovoltaic power systems and panel structures with no use underneath as per CFC 903.3.1.1.3
- 4.5. Other similar structures as deemed appropriate by the fire code official.

14.28.210 - Section 903.1 of the ~~2022~~19 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^2) 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

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plumbing, mechanical and electrical repairs shall not be considered when calculating the percentage of alterations.

3. Whenever there is an change of 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 nonresidential occupancy is converted, in part or whole, to a residential occupancy.

14.28.220 - Section 903.1 of the ~~2022~~¹⁹ California Fire Code is amended by adding Section 903.1.4 titled "Partial automatic fire sprinklers~~suppression~~ systems prohibited" to read as follows.

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

14.28.222 - Section 903.3.1.1 of the 2022 California Fire Code titled "NFPA 13 sprinkler systems" is amended to read as follows:

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion ~~thereof~~thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 *as amended in Chapter 80* except as provided in Sections 903.3.1.1.1 *through* 903.3.1.1.3 and in accordance with NFPA 13 Appendix A and B.

14.28.230 - Section 903.3.5 of the ~~2022~~¹⁹ California Fire Code titled "Water supplies" is amended 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*

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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 2022~~19~~ California Fire Code titled "Residential combination services" is amended 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.~~ Single Combination water supply services are not allowed for NFPA 13R systems.

14.28.242 – Section 903.4.2 of the 2022 California Fire Code is amended by adding Section 903.4.1.1 titled “Valves for Hood and Duct Systems” to read as follows:

903.4.1.1 Valves for Hood and Duct Systems. Valves for hood and duct systems shall be electrically supervised when the building has a monitoring fire alarm control unit.

14.28.244 – Section 903.4.2 of the 2022 California Fire Code is amended by adding Section 903.4.2.1 titled “Audible Notification Device” to read as follows:

903.4.2.1 Audible Notification Device. One interior approved audible notification device shall be installed for monitoring systems. Valves for hood and duct systems shall be electrically supervised when the building has a monitoring fire alarm control unit.

14.28.250 - Section 907.2 of the 2022~~19~~ California Fire Code ~~is amended by adding a sentence to existing Section 907.2 titled "Where required—new buildings and structures"~~ is amended 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

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907.2.293 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 m²) 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.~~

The requirements of this section shall also apply to existing buildings and occupancies with a floor area greater than 10,000 gross square feet where one of the following conditions exists:

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1. Whenever the value of alterations exceed fifty percent (50%) of the replacement value of the structure, excluding the value of property and contents.

2. Whenever there is a change of occupancy.

For existing buildings, an alternate type of fire detection device may be approved by the fire code official in isolated areas or in special situations where the fire code official determines that the type of detection is suitable for that environment.

14.28.260 - Section 908 of the 2022~~19~~ California Fire Code is amended by adding Section 908.54 titled "Requirements" to read as follows.

908.54 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. (~~Ord. No. 7355, § 4, 11-25-2019~~)

14.28.270 - Section 914.9 of the 2022~~19~~ 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.~~

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~~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 m²) 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 nonresidential occupancy is converted, in part or whole, to a residential occupancy.~~
- ~~5. Where required by Chapter 11 of this code.~~

14.28.272 - Section 1207 of the 2022 California Fire Code is amended by adding Section 1207.1.1.2 titled "Design" to read as follows.

1207.1.1.2 Design. Electrical Energy Storage Systems (ESS) shall comply with the requirements of NFPA 855 and UL 9540.

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~~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 2022~~19~~ 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 2022~~19~~ 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 2022~~19~~ California Fire Code is amended by adding Section 4905.2.1 titled "Additions or Alterations" ~~Wood roof cover~~ to read as follows.

4905.2.1 Additions or alterations shall be permitted to be made to any building or structure without requiring the existing building or structure to comply with the requirements of Section 4905.2, provided that the addition or alteration conforms to that required for a new building or structure as per Section 4905.2, including the following:

1. California Building Code, Chapter 7A,
2. California Residential Code, Section R337
3. California Referenced Standards Code, Chapter 12-7A

~~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.~~

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Exception: Reasonably equivalent alternatives as approved by the fire code official and building official when dealing with qualified historical buildings and districts, in accordance with the California Historical Building Code.

14.28.330 - Section 49076.2 of the 2022~~19~~ California Fire Code titled "Application" is amended to read as follows.

49076.2 Application. Buildings and structures located in the following areas shall maintain the required hazardous vegetation and fuel management as prescribed in this code and Chapter 14.29 of the Pasadena Municipal Code:

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 in ordinance by local agencies as a Moderate, High orand Very-High Fire Hazard Severity Zone (pursuant to Government Code Section 51179). ~~s by cities and other local agencies.~~
3. Land designated as a Very High Fire Hazard Severity Zone by the Director.

14.28.340 - Section 5001 of the 2022~~19~~ 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 2022~~19~~ 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

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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 ~~2022~~¹⁹ 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 ~~2022~~¹⁹ California Fire Code titled "Overfi-ll prevention" is amended to read as follows:

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 ~~2022~~¹⁹ California Fire Code titled "Emergency vents" is amended to read as follows.

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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 ~~2022~~19 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 ~~2022~~19 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 ~~2022~~19 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 ~~2022~~19 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 ~~2022~~19 California Fire Code titled "Minimum testing" is amended by adding Section 6101.4 to read as follows.

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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 ~~2022~~2019 California Fire Code titled "Buildings one- and two-family dwellings, Group R3 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 <u>required fire-flow</u> rate
0-3,600 <u>4</u>	Section 903.3.1.3 of the California Fire Code or Section 313.3 of the California Residential Code	1,000	½

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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
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For SI: 1 square foot = 0.0929 m², 1 gallon per minute = 3.875 L/m.

14.28.460 - Table B105.2 of Appendix B of the 2022~~19~~ 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 <u>required fire fl</u> -ow 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 <u>required fire</u> -flow rate

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

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

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14.28.470 - Section B105.2 of Appendix B of the ~~2022~~⁴⁹ California Fire Code titled "Buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses" is amended 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 ~~2022~~⁴⁹ 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.

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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 adopted 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 2022~~19~~ 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 reasonably

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