

ORDINANCE NO 16-0032

AN ORDINANCE OF THE CITY OF MANHATTAN BEACH ADOPTING BY REFERENCE THE 2016 EDITIONS OF THE CALIFORNIA BUILDING CODE, CALIFORNIA RESIDENTIAL CODE, CALIFORNIA ELECTRICAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA MECHANICAL CODE, CALIFORNIA EXISTING BUILDING CODE, CALIFORNIA GREEN BUILDING STANDARDS CODE, AND CALIFORNIA ENERGY CODE; TOGETHER WITH CERTAIN DELETIONS, ADDITIONS AND AMENDMENTS TO TITLE 5 AND TITLE 9 OF THE MANHATTAN BEACH MUNICIPAL CODE.

THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH DOES ORDAIN AS FOLLOWS:

SECTION 1. The City Council hereby finds that it can be seen with certainty that there is no possibility that the adoption of this Ordinance may have a significant effect on the environment. It is therefore exempt from review under the California Environmental Quality Act pursuant to Title 14, Section 15061(b)(3) of the California Code of Regulations (CEQA Guidelines).

SECTION 2. Chapter 9.01 of Title 9 of the Manhattan Beach Municipal Code is amended to read as follows:

**Chapter 9.01 BUILDING CODE.**

**9.01.010 Adoption of the 2016 California Building Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled the "2016 California Building Code," including the Appendices and Standards (including Chapter/Section 1, Division 2; Chapter 31B; and excluding all Appendices with the exception of Appendices I and J) therein contained, promulgated and published by the International Code Council and the California Building Standards Commission, one (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as though set forth herein at length, are hereby established and adopted as the rules, regulations, provisions and conditions to be observed and followed in the construction, alteration, improvements, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, demolition, conversion, area and height, of buildings or structures or any appurtenances connected or attached to such buildings or structures in the city; and subject to the additions, deletions and amendments set forth in this chapter, said Code with its Appendices and the said Standards containing said rules, regulations, standards, provisions and conditions is hereby established and adopted by reference, and the same shall be designated, known and referred to as the "Building Code" of and for the City.

**9.01.020 Referenced codes.**

Section [A]101.4 is hereby amended to read as follows:

**Section [A]101.4. Referenced codes.** The other codes listed in Sections [A]101.4.1 through [A]101.4.6 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Specifically, the Electrical, Gas, Mechanical,

Plumbing, Swimming Pool, Existing Building and Energy Codes; the most recently adopted California State and Manhattan Beach Municipal Code will take precedence.

**9.01.030 Work exempt from permit.**

Section [A]105.2, Item 2, is hereby amended to read as follows:

2. Fences not over 6 feet (1829 mm) high.

Section [A]105.2, Item 9, is hereby amended to read as follows:

9. Prefabricated swimming pools accessory to Group R-3 Occupancy that are less than 18 inches (457 mm) deep, do not exceed 5,000 gallons (18925 L) and installed entirely above ground.

**9.01.040 Expiration of plan review.**

Section [A]105.3.2 is hereby amended to read as follows:

**[A] 105.3.2 Time limitation of application.** Applications for which no permit is issued within 180 days following the date of application shall expire by limitation and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Building Official. The Building Official may extend the time for action by applicant for a period not exceeding 180 days upon written request by the applicant and justifiable cause demonstrated. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee and plans shall be reviewed under the current codes and ordinances at the time of the new applications.

**9.01.050 Permit expiration.**

Section [A]105.5 is hereby amended to read as follows:

**[A]105.5 Expiration.** Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the work is commenced, or if the building or work authorized by such permit is not completed within 2 calendar years from the issuance date of the permit.

Before such work can be recommenced, a new permit, or a renewed permit as specified below, shall be first obtained. No permit shall be renewed more than once.

For permits where work has not commenced within 180 days from the date of such permit, a renewed permit may be obtained provided that: (1) no changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the original issuance date.

For permits where work had commenced and was subsequently suspended or abandoned for a period exceeding 180 days, a renewed permit may be obtained provided that: (1) No changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the issuance date, and/or (3) where construction has progressed and has been approved to the point whereby only a final inspection(s) is required, a fee shall be determined based on the number of estimated inspections, estimated staff time, and required meetings as determined by the Building Official.

For permits that have exceeded two years beyond the issuance date, a new permit is required. The applicant shall pay the fee based on the valuation of the uncompleted work required for a plan check and a new permit and plans will be reviewed under the current codes and ordinances at the time of the new applications.

Any permittee holding an unexpired permit may apply for an extension of the time within which work under that permit may be continued when, for good and satisfactory reasons, the permittee is unable to continue work within the time required by this section. The Building Official may extend the time for action by the permittee for a period not exceeding six calendar months upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once.

If the owner or applicant fails to complete the construction work within the time required, the Building Official is authorized to obtain the abatement of any unsafe condition or nuisance created by such incomplete work. The City Attorney is authorized to file an action for the abatement of any such unsafe condition or nuisance if required to do so by the Building Official.

#### **9.01.060 Fees.**

Sections [A]109.2 and [A]109.4 are hereby amended to read as follows:

**[A] 109.2 Schedule of permit fees.** The fees shall be determined by the most current City Resolution of Fees.

Plan Review Fees. When submittal documents are required by the building official, a plan review fee shall be paid at the time of submitting the submittal documents for plan review. Said plan review fee shall be determined by the most current City Resolution of Fees.

The plan review fees specified in this section are separate and in addition to any permit fees required.

When submittal documents are incomplete or changed so as to require additional plan review or when the project involves deferred submittal items as defined in Section [A]107.3.4.1, an additional plan review fee shall be charged as determined by the most current City Resolution of Fees.

**[A]109.4 Work commencing before permit issuance.** Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the Building Official and the most current Manhattan Beach Resolution of Fees in addition to the required permit fees.

Investigation. Whenever any work for which a permit is required by this code has been commenced without first obtaining said permit, a special investigation shall be made before a permit may be issued for such work.

Investigation Fee. An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then or subsequently issued. The investigation fee shall be equal up to the amount of the permit fee required by this code as determined by the Building Official. The minimum investigation fee shall be determined by the most current Resolution of Fees. The payment of such investigation fee shall not exempt any person from compliance with all other provisions of this code nor from any penalty prescribed by law.

#### **9.01.070 Violation penalties.**

Section [A]114.4 is amended to read as follows:

**[A] Section 114.4. Violation penalties.** Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to the penalties as prescribed by law. Every person who willfully resists, delays, obstructs or interferes in any way with any City Building Inspector in the discharge or attempt to discharge any duty of his or her office or employment shall be guilty of a violation of this Chapter.

Any person, firm, or corporation violating any of the provisions or failing to comply with any of the mandatory requirements of the ordinances of Manhattan Beach shall be guilty of a misdemeanor. Any person convicted of a misdemeanor under the ordinances of Manhattan Beach shall be punished by a fine of not more than one thousand dollars (\$1,000), or by imprisonment not to exceed six (6) months, or by both such fine and imprisonment. Each such person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of the ordinances of Manhattan Beach is committed, continued, or permitted by any such person, and shall be punished accordingly.

#### **9.01.080 Definitions.**

Section 202 is hereby amended by adding a definition to read as follows:

**ABANDONED OR SUSPENDED WORK.** Work that has been stopped or no progress in construction and no inspection is required or performed for a period of 180 days.

#### **9.01.090 Yards.**

Section 1206.2 is hereby amended by adding Exception 1 to read as follows:

Exception 1. One and two family dwellings not exceeding three stories, which are located on a 30 foot wide lot or less may have 3 foot (914 mm) side yards, if additional artificial light and mechanical ventilation are provided for the structure as determined to be adequate by the building official.

#### **9.01.100 Roofing and re-roofing.**

The title of Table 1505.1 is hereby amended to read as follows:

**Table 1505.1. Minimum Roof Covering Classification for Types of Construction.** All roof classifications of "C" shall be deleted from Table 1505.1 and replaced by class "B" roof classification.

Sections 1505.1 and 1507.1 are hereby amended by adding a sentence to the end of each section that reads as follows:

Fire-retardant roofs are roofing assemblies complying with California Building Code Standards and listed as Class A or B roofs. The use of fire-retardant wood shakes or fire retardant wood shingles is prohibited.

Section 1505.5 is hereby amended to read as follows:

**[BF] 1505.5 Nonclassified Roofing.** Non-classified roofing is approved material that is not listed as a Class A or B roofing assembly. The use of wood shakes or wood shingles is prohibited. Sections 1505.4, 1507.6, and 1507.7 are hereby deleted.

Section 1510.1 is hereby amended by adding Exception 1 to read as follows:

**Exception 1.** All re-roofing shall conform to the applicable provisions of Chapter 15 of this code and as otherwise required in this chapter.

Roofing materials and methods of application shall comply with the California Building Code standards or shall follow the manufacturer's installation requirements when approved by the building official.

Wood shakes and wood shingles re-roofs of entire structure are prohibited unless approved by the building official because of special circumstances.

**9.01.110 General structural design provisions.**

**The following sections are hereby amended to read as follows:**

Section 1613.7 is hereby added to read as follows:

**1613.7 ASCE 7, 12.12.3**

Modify ASCE 7 Equation 12.12-1 of Section 12.12.3 to read as follows:

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

Section 1613.8 is hereby added to read as follows:

**1613.8 ASCE 7, 12.2.3.1, Exception 3.**

Modify ASCE 7 Section 12.2.3.1 Exception 3 to read as follows:

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

Section 1613.9 is hereby added to read as follows:

**1613.9 ASCE 7 12.11.2.2.3 Wood Diaphragms.**

In wood diaphragms, the continuous ties shall be in addition to the diaphragm sheathing. Anchorage shall not be accomplished by use of toe nails 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 as providing 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 1613.10 is hereby added to read as follows:

**1613.10 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.

**1613.10.1 Scope.** This part contains special requirements for suspended ceilings and lighting systems. Provisions of Section 13.5.6 of ASCE 7-10 shall apply except as modified herein.

**1613.10.2 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.

**1613.10.3 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 in. (50mm) oversize ring, sleeve, or adapter through the ceiling tile to allow for free movement of at least 1 in. (25mm) in all horizontal directions. Alternatively, a swing joint that can accommodate 1 in. (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.

**1613.10.4 Special Requirements for Means of Egress.** Suspended ceiling assemblies located along means of egress serving an occupant load of 30 or more shall comply with the following provisions.

**1613.10.4.1 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.

**1613.10.4.2 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.

**1613.10.4.3 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 1006.3 of this Code.

**1613.10.4.4 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.

Section 1704.6 is hereby amended to read as follows:

**1704.6 Structural Observations.**

Where required by the provisions of Sections 1704, or 1705, the owner shall employ a structural observer to perform structural observations as defined in Section 1702. The structural observer shall be one of the following individuals:

1. The registered design professional responsible for the structural design, or

2. A registered design professional designated by the registered design professional responsible for the structural design.

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

The owner or owner's representative 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 representative, 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.

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

The owner or owner's representative 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 representative, 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.

Section 1704.6.1 is hereby amended to read as follows:

**1704.6.1 Structural observations for seismic resistance.**

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

1. The structure is classified as Risk Category III or IV in accordance with Table 1604A.5.
2. The height of the structure is greater than 75 feet (22860 mm) above the base as defined in ASCE 7.

3. The structure is classified as Risk Category I or II in accordance with Table 1604A.5, and a lateral design is required for the structure or portion thereof.

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

4. When so designated by the registered design professional responsible for the structural design.

5. When such observation is specifically required by the building official.

Section 1705.3 is hereby amended to read as follows:

**1705.3 Concrete Construction.**

The special inspections and verifications for concrete construction shall be as required by this section and Table 1705.3.

**Exceptions:** Special inspection 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 in height 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.

Section 1705.12 is hereby amended as follows:

Exception 3 of Section 1705.12, Special inspections for seismic resistance, is hereby amended to read as follows:

Exception: The special inspections specified in Sections 1705.12.1 through 1705.12.9 are not required for structures designed and constructed in accordance with one of the following:

3. The structure is a detached one- or two-family dwelling not exceeding two stories above grade plane, provided the structure 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.

Section 1807.1.4 is hereby amended to read as follows:

**1807.1.4 Permanent wood foundation systems.** Permanent wood foundation systems shall be designed and installed in accordance with AWC PWF. Lumber and plywood shall be treated in accordance with AWPA U1 (Commodity Specification A, Use Category 4B and Section 5.2) 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.

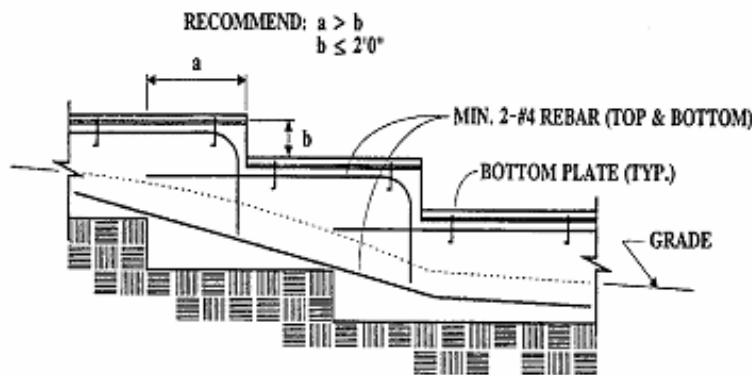
Section 1807.1.6 is hereby amended to read as follows:

**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 1809.3 is hereby 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 grade beams supporting walls. 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 1809.3.



STEPPED FOUNDATIONS

FIGURE 1809.3  
 STEPPED FOOTING

Section 1809.7 and Table 1809.7 are hereby 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. 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** <sup>a, b, c, d, e</sup>

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

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. See Section 1908 for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.
- d. For thickness of foundation walls, see Section 1807.1.6.
- e. 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.

Section 1809.12 is hereby amended to read as follows:

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

Section 1810.3.2.4 is hereby amended to read as follows:

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

Section 1905.1 is hereby amended 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.

Section 1905.1.7 is hereby 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:

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

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

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

The first sentence of Section 1905.1.8 is hereby amended to read as follows:

**1905.1.8 ACI 318, Section 17.2.3.** These requirements shall be applicable to all buildings.

Section 1905.1.9 is hereby added to read as follows:

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

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

18.7.5.9 At any section where the design strength,  $\phi P_n$ , of the column is less than the sum of the shears  $V_c$  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 may be assumed to be of opposite sign. For the determination of the design strength,  $\phi P_n$ , of the column, these moments may be assumed to result from the deformation of the frame in any one principal axis.

Section 1905.1.10 is hereby added to read as follows:

**1905.1.10. ACI 318, Section 18.10.4.** Modify ACI 318, Section 18.10.4, by adding Section 18.10.4.6 as follows:

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

Section 1905.1.11 is hereby added to read as follows:

**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.

Section 2304.10.1 is hereby amended to read as follows:

**2304.10.1 Fastener requirements.** Connections for wood members shall be designed in accordance with the appropriate methodology in Section 2301.2. The number and size of fasteners connecting wood members shall not be less than that set forth in Table 2304.10.1. Staple fasteners in Table 2304.10.1 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

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

Table 2304.10.1 is hereby amended to add the following subsections to the bottom of the table as follows:

d. Staples shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E, or F.

Section 2304.12.5 is hereby amended to read as follows:

**2304.12.5 Wood used in retaining walls and cribs.**

Wood installed in retaining or crib walls shall be preservative treated in accordance with AWPA U1 (Commodity Specifications A or F) 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.

Section 2305.4 is hereby added to read as follows:

**2305.4 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.

Section 2305.5 is hereby added to read as follows:

**2305.5 Hold-down connectors.**

In Seismic Design Category D, E or F, hold-down connectors shall be designed to resist shear wall overturning moments using 75 percent of the allowable seismic load values. Such values shall be established in a valid research report from approved sources or by accepted engineering practice and the provisions of this Code.

Exception: Values established by specialized cyclic and dynamic testing may be used when approved by the Building Official in accordance with Section 104.2.8.

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 inches 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 2306.2 is hereby amended 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 panel diaphragms used to resist seismic forces in structures assigned to Seismic Design Category D, E or F shall be applied directly to the framing members.

**Exception:** Wood structural panel diaphragms 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 2306.3 is hereby amended and Section 2307.2 is added to read as follows:

**2306.3 Wood-frame shear walls.**

Wood-frame shear walls shall be designed and constructed in accordance with AWC SDPWS. For structures assigned to Seismic Design Category D, E, or F, Application of Tables 4.3A and 4.3B of 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.
4. Table 4.3B application is not allowed for structures assigned to Seismic Design Category D, E, or F.

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

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 A AWC F&PA SDPWS.

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

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

Table 2308.6.1 is hereby amended to read as follows:

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

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

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

NP = Not Permitted.

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.

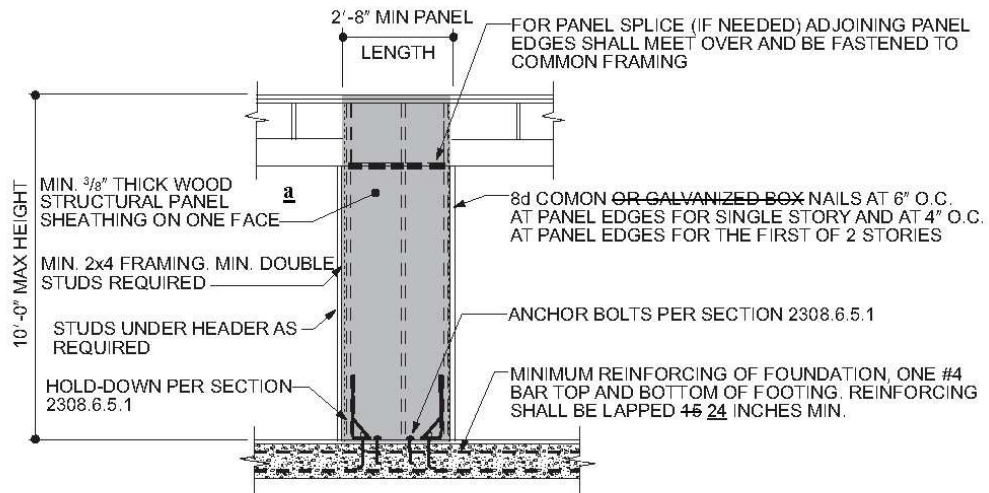
h. WSP sheathing shall be a minimum of 15/32" thick nailed with 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

Section 2308.6.5.1 is hereby 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 edge 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.

Figure 2308.6.5.1 is hereby amended to read as follows:



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)**

Section 2308.6.5.2 is hereby amended to read as follows:

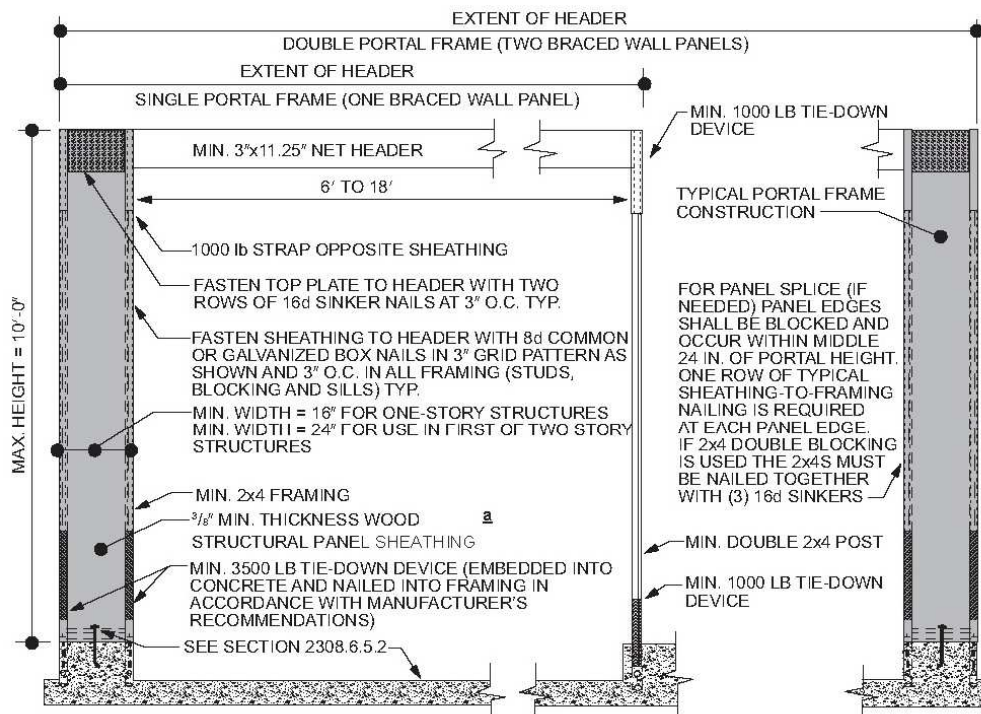
**2308.6.5.2 Portal frame with hold-downs (PFH).** A PFH shall be constructed in accordance with this section and Figure 2308.6.5.2. The adjacent door or window opening shall have a full-length header.

In one-story buildings, each panel shall have a length of not less than 16 inches (406 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with a single layer of 3/8-inch (9.5 mm) minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Figure 2308.6.5.2. For structures assigned to Seismic Design Category D or E, each panel shall be sheathed on one face with 15/32-inch minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports and in accordance with Figure 2308.6.5.2. The wood structural panel sheathing shall extend up over the solid sawn or glued-laminated header and shall be nailed in accordance with Figure 2308.6.5.2. A built-up header consisting of at least two



2-inch by 12-inch (51 mm by 305 mm) boards, fastened in accordance with Item 24 of Table 2304.10.1 shall be permitted to be used. A spacer, if used, shall be placed on the side of the built-up beam opposite the wood structural panel sheathing. The header shall extend between the inside faces of the first full-length outer studs of each panel. The clear span of the header between the inner studs of each panel shall be not less than 6 feet (1829 mm) and not more than 18 feet (5486 mm) in length. A strap with an uplift capacity of not less than 1,000 pounds (4,400 N) shall fasten the header to the inner studs opposite the sheathing. One anchor bolt not less than 5/8 inch (15.9 mm) diameter and installed in accordance with Section 2308.3.1 shall be provided in the center of each sill plate. The studs at each end of the panel shall have a hold-down device fastened to the foundation with an uplift capacity of not less than 3,500 pounds (15 570 N). Where a panel is located on one side of the opening, the header shall extend between the inside face of the first full-length stud of the panel and the bearing studs at the other end of the opening. A strap with an uplift capacity of not less than 1,000 pounds (4400 N) shall fasten the header to the bearing studs. The bearing studs shall also have a hold-down device fastened to the foundation with an uplift capacity of not less than 1,000 pounds (4400 N). The hold-down devices shall be an embedded strap type, installed in accordance with the manufacturer's recommendations. The PFH panels shall be supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No. 4 bar top and bottom. Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing is permitted at door openings in the braced wall line. This continuous footing shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped not less than 4524 inches (384610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

Figure 2308.6.5.2 is hereby amended to read as follows:



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)**

Section 2308.6.8.1 is hereby amended 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 (15240 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.

Section 2308.6.9 is hereby amended to read as follows:

**2308.6.9 Attachment of sheathing.** Fastening of braced wall panel sheathing shall not be less than that prescribed in Tables 2308.6.1 or 2304.10.1. Wall sheathing shall not be attached to framing members by adhesives. Staple fasteners in Table 2304.10.1 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E, or F.

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

All braced wall panels shall extend to the roof sheathing and shall be attached to parallel roof rafters or blocking above with framing clips (18 gauge minimum) spaced at maximum 24 inches (6096 mm) on center with four 8d nails per leg (total eight 8d nails per clip). Braced wall panels shall be laterally braced at each top corner and at maximum 24 inch (6096 mm) intervals along the top plate of discontinuous vertical framing.

SECTION 3. Chapter 9.03 of Title 9 of the Manhattan Beach Municipal Code is amended to read as follows:

## **Chapter 9.03 RESIDENTIAL CODE**

### **9.03.010 Adoption of California Residential Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "2016 California Residential Code," including Chapter 1, Division 2 and Appendix G therein contained, promulgated and published by the International Code Council and the California Building Standards Commission, one (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, and provisions and conditions to be observed and followed in the construction, enlargement, alteration, movement, replacement, repair, equipment, use and occupancy, location, removal and demolition, conversion, use, height, area and maintenance of buildings, structures and improvements of every detached one-and two-family dwelling, townhouse not more than three stories above grade plane in height with a separate means of egress and structures accessory thereto in the city and related subjects, items and matters as set forth in said Code, within the City. Subject to the additions, deletions and amendments set forth in this chapter, said Code, with its said Chapter 1, Division 2 and Appendix G, is hereby established and adopted by reference, and the same shall be designated, known and referred to as the "Residential Code" of and for the City.

### **9.03.020 Work exempt from permit.**

R105.2, Item 2 is amended to read as follows:

2. Fences not over 6 feet (1829 mm) high.

R105.2, Item 7 is amended to read as follows:

7. Prefabricated swimming pools that are less than 18 inches (457 mm) deep.

#### **9.03.030 Expiration of plan review.**

Section R105.3.2 is amended as follows:

**Section R105.3.2 Time limitation of application.** Applications for which no permit is issued within 180 days following the date of application shall expire by limitation and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Building Official. The Building Official may extend the time for action by applicant for a period not exceeding 180 days upon written request by the applicant and justifiable cause demonstrated. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee and plans shall be reviewed under the current codes and ordinances at the time of the new applications.

#### **9.03.040 Permit Expiration.**

Section R105.5 is amended to read as follows:

**R105.5 Expiration.** Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the work is commenced, or if the building or work authorized by such permit is not completed within 2 calendar years from the issuance date of the permit.

Before such work can be recommenced, a new permit, or a renewed permit as specified below, shall be first obtained. No permit shall be renewed more than once.

For permits where work has not commenced within 180 days from the date of such permit, a renewed permit may be obtained provided that: (1) no changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the original issuance date.

For permits where work had commenced and was subsequently suspended or abandoned for a period exceeding 180 days, a renewed permit may be obtained provided that: (1) No changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the issuance date and/or (3) where construction has progressed and has been approved to the point whereby only a final inspection(s) is required, a fee shall be determined based on the number of estimated inspections, estimated staff time, and required meetings as determined by the Building Official.

For permits that have exceeded two years beyond the issuance date, a new permit is required. The applicant shall pay the fee based on the valuation of the uncompleted work required for a plan check and a new permit and plans will be reviewed under the current codes and ordinances at the time of the new applications.

Any permittee holding an unexpired permit may apply for an extension of the time within which work under that permit may be continued when, for good and satisfactory reasons, the permittee is unable to continue work within the time required by this section. The Building Official may extend the time for action by the permittee for a period not exceeding six calendar months upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once.

If the owner or applicant fails to complete the construction work within the time required, the Building Official is authorized to obtain the abatement of any unsafe condition or nuisance created by such incomplete work. The City Attorney is authorized to file an action for the abatement of any such unsafe condition or nuisance if required to do so by the Building Official.

#### **9.03.050 Fees.**

Section R108.2 is hereby amended to read as follows:

**R108.2 Schedule of permit fees.** The fees shall be determined by the most current City Resolution of Fees.

Plan Review Fees. When submittal documents are required by the building official, a plan review fee shall be paid at the time of submitting the submittal documents for plan review. Said plan review fee shall be determined by the most current City Resolution of Fees.

The plan review fees specified in this section are separate fees from the permit fees and are in addition to the permit fees.

When submittal documents are incomplete or changed so as to require additional plan review or when the project involves phased submittal items as defined in Section R106.3.3, an additional plan review fee shall be charged as determined by the most current City Resolution of Fees.

Section R108.3 is amended to read as follows:

**R108.3 Building permit valuations.** The applicant for a permit shall provide an estimated permit value at time of application. Building permit valuations shall include total value of the work for which a permit is being issued, such as electrical, gas, mechanical, plumbing equipment and other permanent systems, including materials and labor. If, in the opinion of the building official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the building official. Final building permit valuation shall be set by the building official.

Section R108.6 is hereby amended to read as follows:

**R108.6 Work commencing before permit issuance.** Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the Building Official and the most current City Resolution of Fees in addition to the required permit fees.

Investigation. Whenever any work for which a permit is required by this code has been commenced without first obtaining said permit, a special investigation shall be made before a permit may be issued for such work.

Investigation Fee. An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then or subsequently issued. The investigation fee shall be equal up to the amount of the permit fee required by this code as determined by the Building Official. The minimum investigation fee shall be determined by the most current City Resolution of Fees. The payment of such investigation fee shall not exempt any person from compliance with all other provisions of this code nor from any penalty prescribed by law.

#### **9.03.060 Violation penalties.**

Section R113.4 is hereby amended to read as follows:

**Section R113.4. Violation penalties.** Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to the penalties as prescribed by law. Every person who willfully resists, delays, obstructs or interferes in any way with any City Building Inspector in the discharge or attempt to discharge any duty of his or her office or employment shall be guilty of a violation of this Chapter.

Any person, firm, or corporation violating any of the provisions or failing to comply with any of the mandatory requirements of the ordinances of Manhattan Beach shall be guilty of a misdemeanor. Any person convicted of a misdemeanor under the ordinances of Manhattan Beach shall be punished by a fine of not more than one thousand dollars (\$1,000), or by imprisonment not to exceed six (6) months, or by both such fine and imprisonment. Each such person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of the ordinances of Manhattan Beach is committed, continued, or permitted by any such person, and shall be punished accordingly.

**9.03.070 Definitions.**

Section R202 is hereby amended by adding and deleting a definition as follows:

**ADDITION.** An extension or increase in floor area or height of a building or structure. Also, major demolition which includes the removal of roof framing, interior and exterior walls for the purpose of rebuilding with an increase in floor area, shall be considered a new building as determined by the building official.

**ATTIC, HABITABLE.** This definition is deleted.

Section R301.1.3.2 is amended to read as follows:

**Section 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 Section 5537 and 6737.1.

The building official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than one story in height or with a basement located in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, D<sub>2</sub> or E.

Table R301.2.2.1.1 and Section R301.2.2.1.2 are hereby amended to read as follows:

**TABLE R301.2.2.1.1  
SEISMIC DESIGN CATEGORY DETERMINATION**

| <b>CALCULATED S<sub>DS</sub></b> | <b>SEISMIC DESIGN CATEGORY</b> |
|----------------------------------|--------------------------------|
| $S_{DS} \leq 0.17g$              | A                              |
| $0.17g < S_{DS} \leq 0.33g$      | B                              |
| $0.33g < S_{DS} \leq 0.50g$      | C                              |
| $0.50g < S_{DS} \leq 0.67g$      | D <sub>0</sub>                 |

|                             |                |
|-----------------------------|----------------|
| $0.67g < S_{DS} \leq 0.83g$ | D <sub>1</sub> |
| $0.83g < S_{DS} \leq 1.00g$ | D <sub>2</sub> |
| $1.00g < S_{DS}$            | E              |

**R301.2.2.1.2 Alternative determination of Seismic Design Category E.**

Buildings located in Seismic Design Category E in accordance with Figure R301.2(2) are permitted to be reclassified as being in Seismic Design Category D<sub>2</sub> provided one of the following is done:

1. A more detailed evaluation of the seismic design category is made in accordance with the provisions and maps of the *California Building Code*. Buildings located in Seismic Design Category E per Table R301.2.2.1.1, but located in Seismic Design Category D per the *California Building Code*, may be designed using the Seismic Design Category D<sub>2</sub> requirements of this code.
2. Buildings located in Seismic Design Category E that conform to the following additional restrictions are permitted to be constructed in accordance with the provisions for Seismic Design Category D<sub>2</sub> of this code:
  - 2.1. All exterior shear wall lines or *braced wall panels* are in one plane vertically from the foundation to the uppermost story.
  - 2.2. Floors shall not cantilever past the exterior walls.
  - 2.3. The building is within all of the requirements of Section R301.2.2.2.5 for being considered as regular.
  - 2.4. For buildings over one story in height, the calculated S<sub>DS</sub> shall not exceed 1.25g.

Section R301.2.2.2.5. Items 1, 3 and 5, are hereby amended to read as follows:

**R301.2.2.2.5 Irregular buildings**

1. When 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. When the end of a braced wall panel occurs over an opening in the wall below and ends at a horizontal distance greater than 1 foot (305 mm) from the edge of the opening. This provision is applicable to shear walls and braced wall panels offset in plane.
5. When portions of a floor level are vertically offset.

Section R301.2.2.3.8 is hereby added to read as follows:

**R301.2.2.3.8 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 International 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 R401.1 is hereby 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 all buildings. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding as established by Table R301.2(1) shall meet the provisions of Section R322. Wood foundations shall be designed and installed in accordance with AWC PWF.

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

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

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

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

Section R403.1.2, is hereby amended to read as follows:

**R403.1.2 Continuous footing in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.**

The braced wall panels at exterior walls of buildings located in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub> shall be supported by continuous footings. All required interior braced wall panels in buildings located in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub> shall be supported by continuous footings.

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

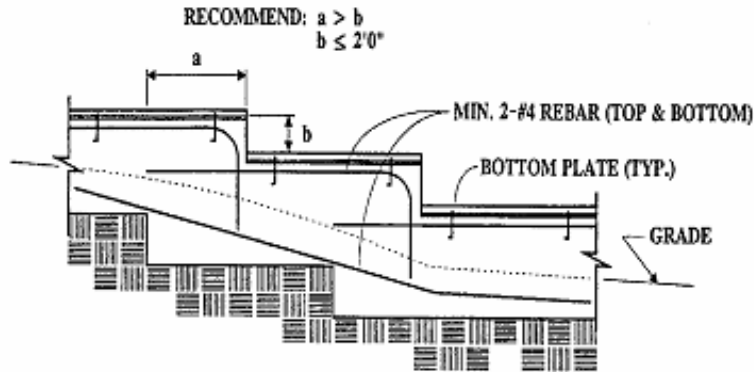
**R403.1.3.6 Isolated concrete footings.** In detached one-and two-family dwellings located in Seismic Design Category A, B, or C that are three stories or less in height and constructed with stud bearing walls, isolated plain concrete footings, supporting columns or pedestals are permitted.

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

**R403.1.5 Slope.** The top surface of footings shall be level. The bottom surface of footings shall 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 located in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>, stepped footings shall be reinforced with four No. 4 rebar. Two bars shall be placed at the top and bottom of the footings as shown in Figure R403.1.5.

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



STEPPED FOUNDATIONS

**FIGURE R403.1.5**  
**STEPPED FOOTING**

Section R404.2 is hereby amended to read as follows:

**R404.2 Wood foundation walls.** Wood foundation walls shall be constructed in accordance with the provisions of Sections R404.2.1 through R404.2.6 and with the details shown in Figures R403.1(2) and R403.1(3). Wood foundation walls shall not be used for structures located in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

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

**R501.1 Application.**

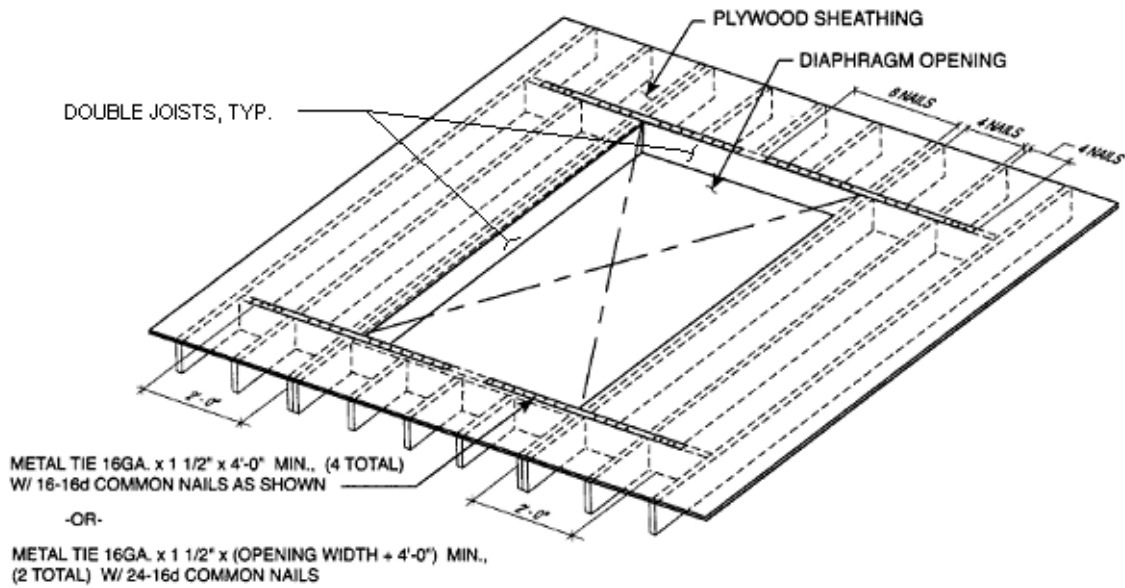
The provisions of this chapter shall control the design and construction of the floors for all buildings including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment. Mechanical or plumbing fixtures and equipment shall be attached (or anchored) to the structure in accordance with Section R301.2.2.3.8.

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

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

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





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

- Blockings shall be provided beyond headers.
- Metal ties not less than 0.058 inch [1.47 mm (16 galvanized gage)] by 1.5 inches (38 mm) wide with eight 16d common nails on each side of the header-joist intersection. The metal ties shall have a minimum yield of 33,000 psi (227 MPa).
- Openings in diaphragms shall be further limited in accordance with Section R301.2.2.2.5.

**FIGURE R503.2.4  
OPENINGS IN HORIZONTAL DIAPHRAGMS**

The exception within Section R602.3.2 is hereby amended to read as follows:

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

- 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.
- The rafters or joists shall be centered over the studs with a tolerance of not more than 1 inch (25 mm).
- 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 is hereby amended to read as follows:

**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 D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub> 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 <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub> , 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.

Table R602.3(1) Items 37 and 38 is hereby amended and footnote J is added to read as follows:

**TABLE 602.3(1)**  
**FASTENING SCHEDULE—continued**

| ITEM  | DESCRIPTION OF BUILDING ELEMENTS  | NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>  | SPACING AND LOCATION  |  |
|---|---|---|---|--|
| <b>Floor</b>  |   |   |   |  |
| 24  | 2" subfloor to joist or girder  | 3-16d box (3 <sup>1</sup> / <sub>2</sub> " × 0.135"); or<br>2-16d common (3 <sup>1</sup> / <sub>2</sub> " × 0.162")   | Blind and face nail   |  |
| 25  | 2" planks (plank & beam—floor & roof)                                       | 3-16d box (3 <sup>1</sup> / <sub>2</sub> " × 0.135"); or<br>2-16d common (3 <sup>1</sup> / <sub>2</sub> " × 0.162")   | At each bearing, face nail  |  |
| 26  | Band or rim joist to joist  | 3-16d common (3 <sup>1</sup> / <sub>2</sub> " × 0.162")<br>4-10 box (3" × 0.128"), or<br>4-3" × 0.131" nails; or<br>4-3" × 14 ga. staples, <sup>7</sup> / <sub>16</sub> " crown | End nail  |  |
| 27  | Built-up girders and beams, 2-inch lumber layers                            | 20d common (4" × 0.192"); or  | Nail each layer as follows: 32" o.c. at top and bottom and staggered. |  |
|   |   | 10d box (3" × 0.128"); or<br>3" × 0.131" nails  | 24" o.c. face nail at top and bottom staggered on opposite sides      |  |
|   |   | And:<br>2-20d common (4" × 0.192"); or<br>3-10d box (3" × 0.128"); or<br>3-3" × 0.131" nails  | Face nail at ends and at each splice                                  |  |
| 28  | Ledger strip supporting joists or rafters                                   | 4-16d box (3 <sup>1</sup> / <sub>2</sub> " × 0.135"); or<br>3-16d common (3 <sup>1</sup> / <sub>2</sub> " × 0.162"); or<br>4-10d box (3" × 0.128"); or<br>4-3" × 0.131" nails   | At each joist or rafter, face nail                                    |  |
| 29  | Bridging to joist   | 2-10d (3" × 0.128")   | Each end, toe nail  |  |
| ITEM  | DESCRIPTION OF BUILDING ELEMENTS  | NUMBER AND TYPE OF FASTENER <sup>a, b, c</sup>  | SPACING OF FASTENERS  |  |
|   |   |   | Edges (inches) <sup>h</sup>   | Intermediate supports <sup>c, e</sup> (inches) |
| <b>Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing</b><br>[see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing] |   |   |   |  |
| 30  | 3 <sup>7</sup> / <sub>8</sub> " - 1 <sup>1</sup> / <sub>2</sub> "           | 6d common (2" × 0.113") nail (subfloor, wall) <sup>i</sup><br>8d common (2 <sup>1</sup> / <sub>2</sub> " × 0.131") nail (roof)  | 6   | 12 <sup>f</sup>                                |
| 31  | 1 <sup>9</sup> / <sub>32</sub> " - 1"                                       | 8d common nail (2 <sup>1</sup> / <sub>2</sub> " × 0.131")   | 6   | 12 <sup>f</sup>                                |
| 32  | 1 <sup>1</sup> / <sub>8</sub> " - 1 <sup>1</sup> / <sub>4</sub> "           | 10d common (3" × 0.148") nail; or<br>8d (2 <sup>1</sup> / <sub>2</sub> " × 0.131") deformed nail  | 6   | 12   |
| <b>Other wall sheathing<sup>g</sup></b>   |   |   |   |  |
| 33  | 1 <sup>1</sup> / <sub>2</sub> " structural cellulosic fiberboard sheathing  | 1 <sup>1</sup> / <sub>2</sub> " galvanized roofing nail, <sup>7</sup> / <sub>16</sub> " head diameter, or 1" crown staple 16 ga., 1 <sup>1</sup> / <sub>4</sub> " long          | 3   | 6  |
| 34  | 2 <sup>5</sup> / <sub>32</sub> " structural cellulosic fiberboard sheathing | 1 <sup>3</sup> / <sub>4</sub> " galvanized roofing nail, <sup>7</sup> / <sub>16</sub> " head diameter, or 1" crown staple 16 ga., 1 <sup>1</sup> / <sub>4</sub> " long          | 3   | 6  |
| 35 <sup>l</sup>   | 1 <sup>1</sup> / <sub>2</sub> " gypsum sheathing <sup>d</sup>               | 1 <sup>1</sup> / <sub>2</sub> " galvanized roofing nail; staple galvanized, 1 <sup>1</sup> / <sub>2</sub> " long; 1 <sup>1</sup> / <sub>4</sub> " screws, Type W or S           | 7   | 7  |
| 36 <sup>l</sup>   | 5 <sup>1</sup> / <sub>8</sub> " gypsum sheathing <sup>d</sup>               | 1 <sup>3</sup> / <sub>4</sub> " galvanized roofing nail; staple galvanized, 1 <sup>5</sup> / <sub>8</sub> " long; 1 <sup>5</sup> / <sub>8</sub> " screws, Type W or S           | 7   | 7  |
| <b>Wood structural panels, combination subfloor underlayment to framing</b>   |   |   |   |  |
| 37  | 3 <sup>4</sup> / <sub>4</sub> " and less                                    | 6d deformed (2" × 0.120") nail; or<br>8d common (2 <sup>1</sup> / <sub>2</sub> " × 0.131") nail   | 6   | 12   |
| 38  | 7 <sup>1</sup> / <sub>8</sub> " - 1"  | 8d common (2 <sup>1</sup> / <sub>2</sub> " × 0.131") nail; or<br>8d deformed (2 <sup>1</sup> / <sub>2</sub> " × 0.120") nail  | 6   | 12   |
| 39  | 1 <sup>1</sup> / <sub>8</sub> " - 1 <sup>1</sup> / <sub>4</sub> "           | 10d common (3" × 0.148") nail; or<br>8d deformed (2 <sup>1</sup> / <sub>2</sub> " × 0.120") nail  | 6   | 12   |

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

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

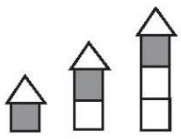
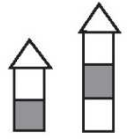

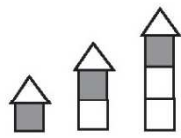
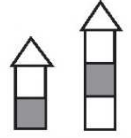

- a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
- b. Staples are 16 gage wire and have a minimum  $7/16$ -inch on diameter crown width.
- c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
- d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.
- e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
- f. Where the ultimate design wind speed is 130 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. Where the ultimate design wind speed is greater than 130 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.
- g. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.
- h. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
- i. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.
- j. Use of staples in braced wall panels shall be prohibited in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

Table R602.3(2), Footnote “b” is amended to read as follows:

- b. Staples shall have a minimum crown width of  $7/16$ -inch on diameter except as noted. Use of staples in roof, floor, subfloor, and braced wall panels shall be prohibited in Seismic Design Category D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

Table R602.10.3(3) is amended to read as follows:

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

| <ul style="list-style-type: none"> <li>• SOIL CLASS D<sup>b</sup></li> <li>• WALL HEIGHT = 10 FEET</li> <li>• 10 PSF FLOOR DEAD LOAD</li> <li>• 15 PSF ROOF/CEILING DEAD LOAD</li> <li>• BRACED WALL LINE SPACING ≤ 25 FEET</li> </ul> |   |   | MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS<br>REQUIRED ALONG EACH BRACED WALL LINE <sup>d</sup> |                        |  |            |                      |
|--|---|---|--|------------------------|--|------------|----------------------|
| Seismic Design Category  | Story Location  | Braced Wall Line Length (feet) <sup>c</sup> | Method LIB <sup>d</sup>  | Method GB <sup>f</sup> | Methods DWB, SFB, PBS, PCP, HPS, CS-SFB <sup>g,j</sup> | Method WSP | Methods CS-WSP, CS-G |
| C<br>(townhouses only)   |    | 10  | 2.5  | 2.5                    | 2.5  | 1.6        | 1.4                  |
|  |   | 20  | 5.0  | 5.0                    | 5.0  | 3.2        | 2.7                  |
|  |   | 30  | 7.5  | 7.5                    | 7.5  | 4.8        | 4.1                  |
|  |   | 40  | 10.0   | 10.0                   | 10.0   | 6.4        | 5.4                  |
|  |   | 50  | 12.5   | 12.5                   | 12.5   | 8.0        | 6.8                  |
|  |    | 10  | NP   | 4.5                    | 4.5  | 3.0        | 2.6                  |
|  |   | 20  | NP   | 9.0                    | 9.0  | 6.0        | 5.1                  |
|  |   | 30  | NP   | 13.5                   | 13.5   | 9.0        | 7.7                  |
|  |   | 40  | NP   | 18.0                   | 18.0   | 12.0       | 10.2                 |
|  |   | 50  | NP   | 22.5                   | 22.5   | 15.0       | 12.8                 |
|  |    | 10  | NP   | 6.0                    | 6.0  | 4.5        | 3.8                  |
|  |   | 20  | NP   | 12.0                   | 12.0   | 9.0        | 7.7                  |
|  |   | 30  | NP   | 18.0                   | 18.0   | 13.5       | 11.5                 |
|  |   | 40  | NP   | 24.0                   | 24.0   | 18.0       | 15.3                 |
|  |   | 50  | NP   | 30.0                   | 30.0   | 22.5       | 19.1                 |
| D <sub>0</sub>   |   | 10  | NP   | <del>2.8</del> 5.6     | <del>2.8</del> 5.6                                     | 1.8        | 1.6                  |
|  |   | 20  | NP   | <del>5.5</del> 11.0    | <del>5.5</del> 11.0                                    | 3.6        | 3.1                  |
|  |   | 30  | NP   | <del>8.3</del> 16.6    | <del>8.3</del> 16.6                                    | 5.4        | 4.6                  |
|  |   | 40  | NP   | <del>11.0</del> 22.0   | <del>11.0</del> 22.0                                   | 7.2        | 6.1                  |
|  |   | 50  | NP   | <del>13.8</del> 27.6   | <del>13.8</del> 27.6                                   | 9.0        | 7.7                  |
|  |  | 10  | NP   | <del>6.3</del> NP      | <del>6.3</del> NP                                      | 3.8        | 3.2                  |
|  |   | 20  | NP   | <del>10.5</del> NP     | <del>10.5</del> NP                                     | 7.5        | 6.4                  |
|  |   | 30  | NP   | <del>15.8</del> NP     | <del>15.8</del> NP                                     | 11.3       | 9.6                  |
|  |   | 40  | NP   | <del>21.0</del> NP     | <del>21.0</del> NP                                     | 15.0       | 12.8                 |
|  |   | 50  | NP   | <del>26.3</del> NP     | <del>26.3</del> NP                                     | 18.8       | 16.0                 |
|  |  | 10  | NP   | <del>7.3</del> NP      | <del>7.3</del> NP                                      | 5.3        | 4.5                  |
|  |   | 20  | NP   | <del>14.5</del> NP     | <del>14.5</del> NP                                     | 10.5       | 9.0                  |
|  |   | 30  | NP   | <del>21.8</del> NP     | <del>21.8</del> NP                                     | 15.8       | 13.4                 |
|  |   | 40  | NP   | <del>29.0</del> NP     | <del>29.0</del> NP                                     | 21.0       | 17.9                 |
|  |   | 50  | NP   | <del>36.3</del> NP     | <del>36.3</del> NP                                     | 26.3       | 22.3                 |

(continued)

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

| <ul style="list-style-type: none"> <li>• SOIL CLASS D<sup>b</sup></li> <li>• WALL HEIGHT = 10 FEET</li> <li>• 10 PSF FLOOR DEAD LOAD</li> <li>• 15 PSF ROOF/CEILING DEAD LOAD</li> <li>• BRACED WALL LINE SPACING ≤ 25 FEET</li> </ul> |   |   | MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE <sup>3</sup> |                        |  |            |                      |      |      |
|--|---|---|---|------------------------|--|------------|----------------------|------|------|
| Seismic Design Category  | Story Location                                | Braced Wall Line Length (feet) <sup>c</sup> | Method LIB <sup>d</sup>   | Method GB <sup>f</sup> | Methods DWB, SFB, PBS, PCP, HPS, CS-SFB <sup>g,j</sup> | Method WSP | Methods CS-WSP, CS-G |      |      |
| D <sub>1</sub>   |   | 10  | NP  | <del>3.0</del> 6.0     | <del>3.0</del> 6.0                                     | 2.0        | 1.7                  |      |      |
|  |   | 20  | NP  | <del>6.0</del> 12.0    | <del>6.0</del> 12.0                                    | 4.0        | 3.4                  |      |      |
|  |   | 30  | NP  | <del>9.0</del> 18.0    | <del>9.0</del> 18.0                                    | 6.0        | 5.1                  |      |      |
|  |   | 40  | NP  | <del>12.0</del> 24.0   | <del>12.0</del> 24.0                                   | 8.0        | 6.8                  |      |      |
|  |   | 50  | NP  | <del>15.0</del> 30.0   | <del>15.0</del> 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 <sub>2</sub>   |   | 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 |
|  |   | 10  | NP  | NP                     | NP   | NP         | NP                   | NP   |      |
|  |   | 20  | NP  | NP                     | NP   | NP         | NP                   | NP   |      |
|  |   | 30  | NP  | NP                     | NP   | NP         | NP                   | NP   |      |
|  |   | 40  | NP  | NP                     | NP   | NP         | NP                   | NP   |      |
|  |   | 50  | NP  | NP                     | NP   | NP         | NP                   | NP   |      |
|  | Cripple wall below one- or two-story dwelling | 10  | NP  | NP                     | NP   | NP         | 7.5                  | 6.4  |      |
|  |   | 20  | NP  | NP                     | NP   | NP         | 15.0                 | 12.8 |      |
|  |   | 30  | NP  | NP                     | NP   | NP         | 22.5                 | 19.1 |      |
|  |   | 40  | NP  | NP                     | NP   | NP         | 30.0                 | 25.5 |      |
|  |   | 50  | NP  | NP                     | NP   | NP         | 37.5                 | 31.9 |      |

- a. Linear interpolation shall be permitted.
- b. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the  $S_{ds}$  values associated with the seismic design categories shall be permitted when a site-specific  $S_{ds}$  value is determined in accordance with Section 1613.3 of the *International Building Code*.
- c. Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shall be in accordance with this table.
- d. Method LIB shall have gypsum board fastened to not less than one side with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches.
- e. Method CS-SFB does not apply in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- f. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>. Methods DWB, SFB, PBS, and HPS are not permitted in SDC D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>.

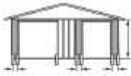
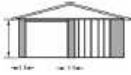
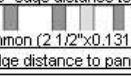



Table R602.10.4 is hereby amended to read as follows:

**TABLE R602.10.4  
BRACING METHODS <sup>1</sup>**

| METHODS, MATERIAL           | MINIMUM THICKNESS  | FIGURE  | CONNECTION CRITERIA <sup>a</sup> |   |  |
|-----------------------------|--|---|----------------------------------|---|--|
|                             |  |   | Fasteners                        | Spacing   |  |
| Intermittent Bracing Method | <b>LIB</b><br>Let-in-bracing   | 1 × 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing |                                  | Wood: 2-8d common nails or 3-8d (2 1/2" long x 0.113" dia.) nails<br>Metal strap: per manufacturer  | Wood: per stud and top and bottom plates<br>Metal: per manufacturer                      |
|                             | <b>DWB</b><br>Diagonal wood boards   | 3/4" (1" nominal) for maximum 24" stud spacing  |                                  | 2-8d (2 1/2" long x 0.113" dia.) nails or 2 - 1 3/4" long staples   | Per stud   |
|                             | <b>WSP</b><br>Wood structural panel (See Section R604)   | 3/8" or 15/32"  |                                  | 8d common (2 1/2" x 0.131) nails<br>3/8" edge distance to panel edge<br>Exterior sheathing per Table R602.3(3)<br>Interior sheathing per Table R602.3(1) or R602.3(2)             | 6" edges 12" field<br>Varies by fastener<br>6" edges 12" field                           |
|                             | <b>BV-WSP</b><br>Wood Structural Panels with Stone or Masonry Veneer (See Section R602.10.6.5) | 7/16"   | See Figure R602.10.6.5           | 8d common (2 1/2" x 0.131) nails  | 4" at panel edges<br>12" at intermediate supports<br>4" at braced wall panel end posts   |
|                             | <b>SFB</b><br>Structural fiberboard sheathing  | 1/2" or 25/32" for maximum 16" stud spacing   |                                  | 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 or 8d common (2 1/2" long x 0.131" dia.) nails | 3" edges 6" field  |
|                             | <b>GB</b><br>Gypsum board  | 1/2"  |                                  | Nails or screws per Table R602.3(1) for exterior locations<br>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 |
|                             | <b>PBS</b><br>Particleboard sheathing (See Section R605)                                       | 3/8" or 1/2" for maximum 16" stud spacing   |                                  | For 3/8", 6d common (2" long x 0.113" dia.) nails<br>For 1/2", 8d common (2 1/2" long x 0.131" dia.) nails  | 3" edges 6" field  |
|                             | <b>PCP</b><br>Portland cement plaster  | See Section R703.6 for maximum 16" stud spacing                                       |                                  | 1 1/2" long, 11 gage, 7/16" dia. head nails or 7/8" long, 16 gage staples <sup>a</sup>  | 6" o.c. on all framing members   |
|                             | <b>HPS</b><br>Hardboard panel siding   | 7/16" for maximum 16" stud spacing  |                                  | 0.092" dia., 0.225" dia. head nails with length to accommodate 1 1/2" penetration into studs  | 4" edges 8" field  |
|                             | <b>ABW</b><br>Alternate braced wall  | 3/8"  |                                  | See Section R602.10.6.1   | See Section R602.10.6.1  |

(continued)

TABLE R602.10.4—continued  
BRACING METHODS<sup>†</sup>

| METHODS, MATERIAL            |  | MINIMUM THICKNESS   | FIGURE   | CONNECTION CRITERIA <sup>a</sup>   |  |
|------------------------------|--|---|--|--|--|
|                              |  |   |  | Fasteners  | Spacing                                  |
| Intermittent Bracing Methods | <b>PFH</b><br>Portal frame with hold-downs   | $\frac{3}{8}$ "   |   | See Section R602.10.6.2  | See Section R602.10.6.2                  |
|                              | <b>PFG</b><br>Portal frame at garage   | $\frac{7}{16}$ "  |   | See Section R602.10.6.3  | See Section R602.10.6.3                  |
| Continuous Sheathing Methods | <b>CS-WSP</b><br>Continuously sheathed wood structural panel   | $\frac{3}{8}$ "<br>15/32"   |   | 8d common (2 1/2" x 0.131") nails<br>3/8" edge distance to panel edge<br>Exterior sheathing per Table R602.3(3)  | 6" edges 12" field                       |
|                              | <b>CS-G<sup>b,c</sup></b><br>Continuously sheathed wood structural panel adjacent to garage openings | $\frac{3}{8}$ "<br>15/32"   |   | 8d common (2 1/2" x 0.131") nails<br>3/8" edge distance to panel edge<br>Interior sheathing per Table R602.3(1) or R602.3(2)   | Varies by fastener<br>6" edges 12" field |
|                              | <b>CS-PF</b><br>Continuously sheathed portal frame   | $\frac{7}{16}$ "<br>15/32"  |   | See Section R602.10.6.4  | See Section R602.10.6.4                  |
|                              | <b>CS-SFB<sup>d</sup></b><br>Continuously sheathed structural fiberboard                             | $\frac{1}{2}$ " or $\frac{25}{32}$ " for maximum 16" stud spacing |  | $1\frac{1}{2}$ " long x 0.12" dia. (for $\frac{1}{2}$ " thick sheathing)<br>$1\frac{3}{4}$ " long x 0.12" dia. (for $\frac{25}{32}$ " thick sheathing)<br>galvanized roofing nails or 8d common ( $2\frac{1}{2}$ " long x 0.131" dia.) nails | 3" edges 6" field                        |

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 degree = 0.0175 rad, 1 pound per square foot = 47.8 N/m<sup>2</sup>, 1 mile per hour = 0.447 m/s.

- Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of the garage. In Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>, roof covering dead load shall not exceed 3 psf.
- Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.5(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.
- Method CS-SFB does not apply in Seismic Design Categories D<sub>0</sub>, D<sub>1</sub> and D<sub>2</sub>.
- Method applies to detached one- and two-family dwellings in Seismic Design Categories D<sub>0</sub> through D<sub>2</sub> only.
- Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>. Methods LIB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.
- Use of staples in braced wall panels shall be prohibited in SDC D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>.

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



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

| METHOD<br>(See Table R602.10.4)      |  | MINIMUM LENGTH <sup>a</sup><br>(inches) |                  |                  |                               |                               | CONTRIBUTING LENGTH<br>(inches)                      |
|--------------------------------------|--|---|------------------|------------------|-------------------------------|-------------------------------|--|
|                                      |  | Wall Height                             |                  |                  |                               |                               |  |
|                                      |  | 8 feet                                  | 9 feet           | 10 feet          | 11 feet                       | 12 feet                       |  |
| DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP |  | 48                                      | 48               | 48               | 53                            | 58                            | Actual <sup>b</sup>                                  |
| GB                                   |  | 48                                      | 48               | 48               | 53                            | 58                            | Double sided = Actual<br>Single sided = 0.5 × Actual |
| LIB                                  |  | 55                                      | 62               | 69               | NP                            | NP                            | Actual <sup>b</sup>                                  |
| ABW                                  | SDC A, B and C, ultimate design<br>wind speed < 140 mph  | 28                                      | 32               | 34               | 38                            | 42                            | 48   |
|                                      | SDC D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub> , ultimate design<br>wind speed < 140 mph | 32                                      | 32               | 34               | NP                            | NP                            |  |
| PFH                                  | Supporting roof only   | <del>16</del> 24                        | <del>16</del> 24 | <del>16</del> 24 | <del>18</del> 24 <sup>c</sup> | <del>20</del> 24 <sup>c</sup> | 48   |
|                                      | Supporting one story and roof  | 24                                      | 24               | 24               | 27 <sup>c</sup>               | 29 <sup>c</sup>               | 48   |
| PFG                                  |  | 24                                      | 27               | 30               | 33 <sup>d</sup>               | 36 <sup>d</sup>               | 1.5 × Actual <sup>b</sup>                            |
| CS-G                                 |  | 24                                      | 27               | 30               | 33                            | 36                            | Actual <sup>b</sup>                                  |
| CS-PF                                | SDC A, B and C   | 16                                      | 18               | 20               | 22 <sup>e</sup>               | 24 <sup>e</sup>               | 1.5 × Actual <sup>b</sup>                            |
|                                      | SDC D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub>   | <del>16</del> 24                        | <del>18</del> 24 | <del>20</del> 24 | <del>22</del> 24 <sup>e</sup> | 24 <sup>e</sup>               | Actual <sup>b</sup>                                  |
| CS-WSP, CS-SFB                       | Adjacent clear opening height<br>(inches)  |   |                  |                  |                               |                               | Actual <sup>b</sup>                                  |
|                                      | ≤ 64   | 24                                      | 27               | 30               | 33                            | 36                            |  |
|                                      | 68   | 26                                      | 27               | 30               | 33                            | 36                            |  |
|                                      | 72   | 27                                      | 27               | 30               | 33                            | 36                            |  |
|                                      | 76   | 30                                      | 29               | 30               | 33                            | 36                            |  |
|                                      | 80   | 32                                      | 30               | 30               | 33                            | 36                            |  |
|                                      | 84   | 35                                      | 32               | 32               | 33                            | 36                            |  |
|                                      | 88   | 38                                      | 35               | 33               | 33                            | 36                            |  |
|                                      | 92   | 43                                      | 37               | 35               | 35                            | 36                            |  |
|                                      | 96   | 48                                      | 41               | 38               | 36                            | 36                            |  |
|                                      | 100  | —                                       | 44               | 40               | 38                            | 38                            |  |
|                                      | 104  | —                                       | 49               | 43               | 40                            | 39                            |  |
|                                      | 108  | —                                       | 54               | 46               | 43                            | 41                            |  |
|                                      | 112  | —                                       | —                | 50               | 45                            | 43                            |  |
|                                      | 116  | —                                       | —                | 55               | 48                            | 45                            |  |
|                                      | 120  | —                                       | —                | 60               | 52                            | 48                            |  |
|                                      | 124  | —                                       | —                | —                | 56                            | 51                            |  |
|                                      | 128  | —                                       | —                | —                | 61                            | 54                            |  |
|                                      | 132  | —                                       | —                | —                | 66                            | 58                            |  |
|                                      | 136  | —                                       | —                | —                | —                             | 62                            |  |
| 140                                  | —  | —                                       | —                | —                | 66                            |                               |  |
| 144                                  | —  | —                                       | —                | —                | 72                            |                               |  |

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

NP = Not Permitted.

a. Linear interpolation shall be permitted.

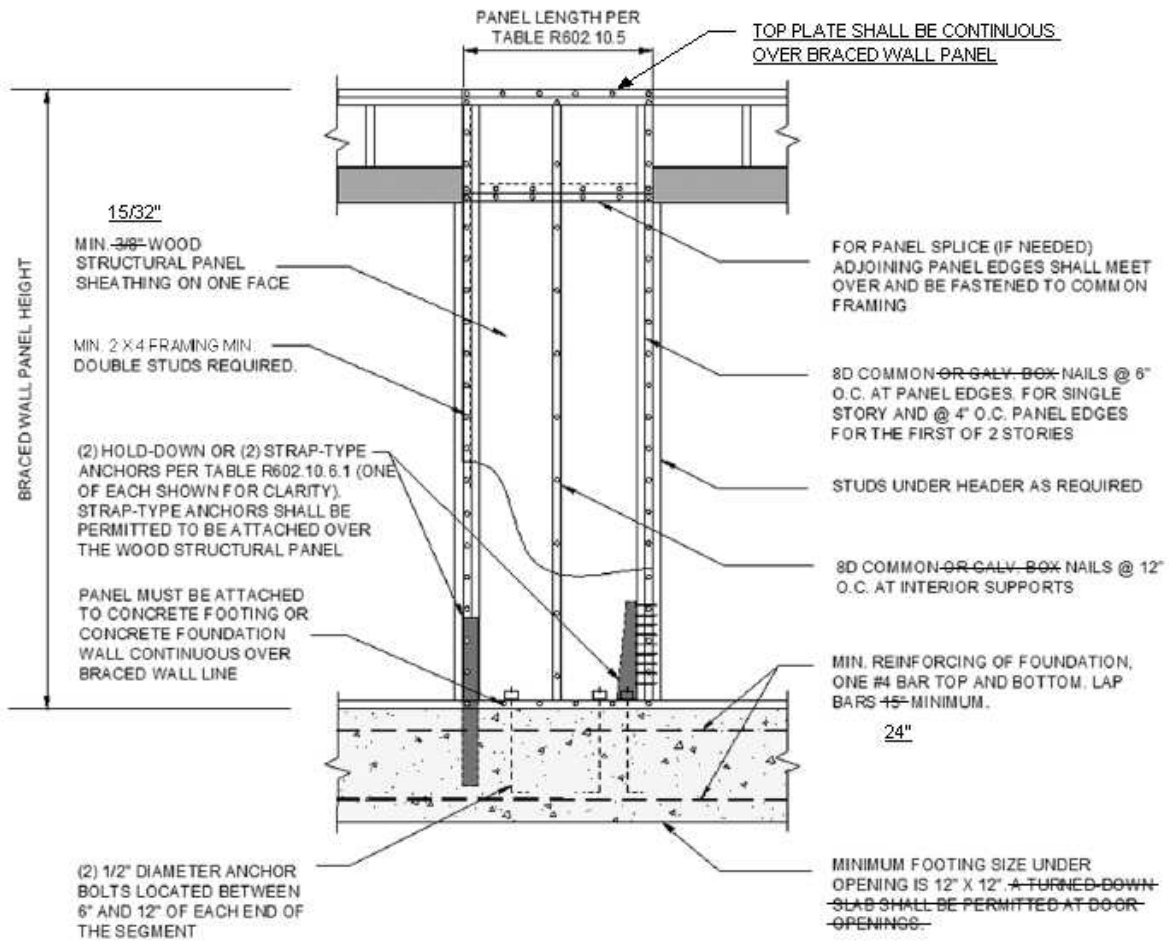
b. Use the actual length where it is greater than or equal to the minimum length.

c. Maximum header height for PFH is 10 feet in accordance with Figure R602.10.6.2, but wall height shall be permitted to be increased to 12 feet with pony wall.

d. Maximum opening height for PFG is 10 feet in accordance with Figure R602.10.6.3, but wall height shall be permitted to be increased to 12 feet with pony wall.

e. Maximum opening 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.

Figure R602.10.6.1 is hereby amended to read as follows:



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

Figure R602.10.6.2 is hereby amended to read as follows:

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

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

| METHOD<br>(See Table R602.10.4)      |  | MINIMUM LENGTH <sup>a</sup><br>(inches) |                  |                  |                              |                              | CONTRIBUTING LENGTH<br>(inches)                      |
|--------------------------------------|--|---|------------------|------------------|------------------------------|------------------------------|--|
|                                      |  | Wall Height                             |                  |                  |                              |                              |  |
|                                      |  | 8 feet                                  | 9 feet           | 10 feet          | 11 feet                      | 12 feet                      |  |
| DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP |  | 48                                      | 48               | 48               | 53                           | 58                           | Actual <sup>b</sup>                                  |
| GB                                   |  | 48                                      | 48               | 48               | 53                           | 58                           | Double sided = Actual<br>Single sided = 0.5 × Actual |
| LIB                                  |  | 55                                      | 62               | 69               | NP                           | NP                           | Actual <sup>b</sup>                                  |
| ABW                                  | SDC A, B and C,<br>wind speed < 110 mph  | 28                                      | 32               | 34               | 38                           | 42                           | 48   |
|                                      | SDC D <sub>0</sub> , D <sub>1</sub> and D <sub>2</sub> ,<br>wind speed < 110 mph | 32                                      | 32               | 34               | NP                           | NP                           |  |
| PFH                                  | Supporting roof only   | <del>16-24</del>                        | <del>16-24</del> | <del>16-24</del> | <del>18-24<sup>c</sup></del> | <del>20-24<sup>c</sup></del> | 48   |
|                                      | Supporting one story and roof  | 24                                      | 24               | 24               | 27 <sup>c</sup>              | 29 <sup>c</sup>              | 48   |
| PFG                                  |  | 24                                      | 27               | 30               | 33 <sup>d</sup>              | 36 <sup>d</sup>              | 1.5 × Actual <sup>b</sup>                            |
| CS-G                                 |  | 24                                      | 27               | 30               | 33                           | 36                           | Actual <sup>b</sup>                                  |
| CS-PF                                |  | <del>16-24</del>                        | <del>18-24</del> | <del>20-24</del> | <del>22-24<sup>c</sup></del> | 24 <sup>c</sup>              | Actual <sup>b</sup>                                  |
| CS-WSP, CS-SFB                       | Adjacent clear opening height<br>(inches)  |   |                  |                  |                              |                              | Actual <sup>b</sup>                                  |
|                                      | ≤ 64   | 24                                      | 27               | 30               | 33                           | 36                           |  |
|                                      | 68   | 26                                      | 27               | 30               | 33                           | 36                           |  |
|                                      | 72   | 27                                      | 27               | 30               | 33                           | 36                           |  |
|                                      | 76   | 30                                      | 29               | 30               | 33                           | 36                           |  |
|                                      | 80   | 32                                      | 30               | 30               | 33                           | 36                           |  |
|                                      | 84   | 35                                      | 32               | 32               | 33                           | 36                           |  |
|                                      | 88   | 38                                      | 35               | 33               | 33                           | 36                           |  |
|                                      | 92   | 43                                      | 37               | 35               | 35                           | 36                           |  |
|                                      | 96   | 48                                      | 41               | 38               | 36                           | 36                           |  |
|                                      | 100  | —                                       | 44               | 40               | 38                           | 38                           |  |
|                                      | 104  | —                                       | 49               | 43               | 40                           | 39                           |  |
|                                      | 108  | —                                       | 54               | 46               | 43                           | 41                           |  |
|                                      | 112  | —                                       | —                | 50               | 45                           | 43                           |  |
|                                      | 116  | —                                       | —                | 55               | 48                           | 45                           |  |
|                                      | 120  | —                                       | —                | 60               | 52                           | 48                           |  |
|                                      | 124  | —                                       | —                | —                | 56                           | 51                           |  |
|                                      | 128  | —                                       | —                | —                | 61                           | 54                           |  |
| 132                                  | —  | —                                       | —                | 66               | 58                           |                              |  |
| 136                                  | —  | —                                       | —                | —                | 62                           |                              |  |
| 140                                  | —  | —                                       | —                | —                | 66                           |                              |  |
| 144                                  | —  | —                                       | —                | —                | 72                           |                              |  |

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

NP = Not Permitted.

a. Linear interpolation shall be permitted.

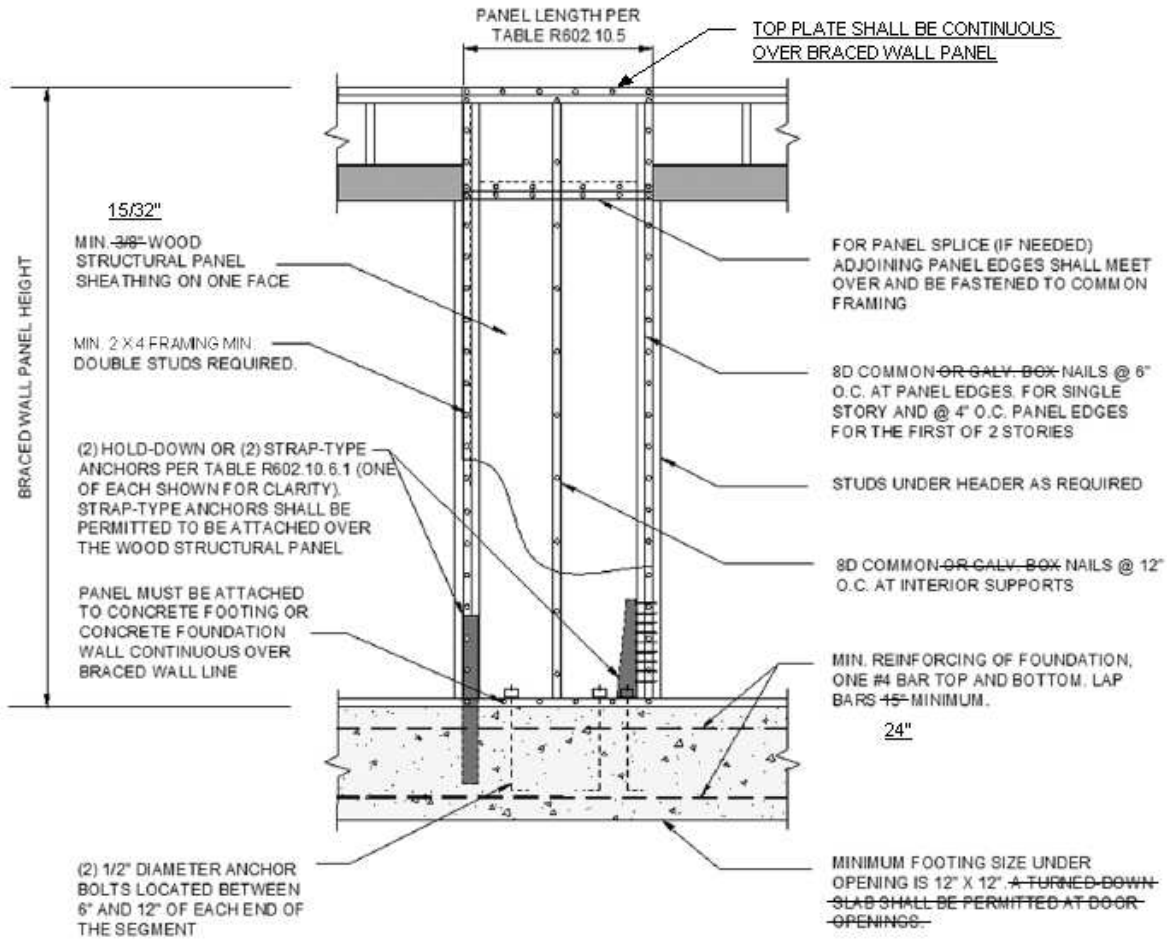
b. Use the actual length when it is greater than or equal to the minimum length.

c. Maximum header height for PFH is 10 feet in accordance with Figure R602.10.6.2, but wall height may be increased to 12 feet with pony wall.

d. Maximum opening height for PFG is 10 feet in accordance with Figure R602.10.6.3, but wall height may be increased to 12 feet with pony wall.

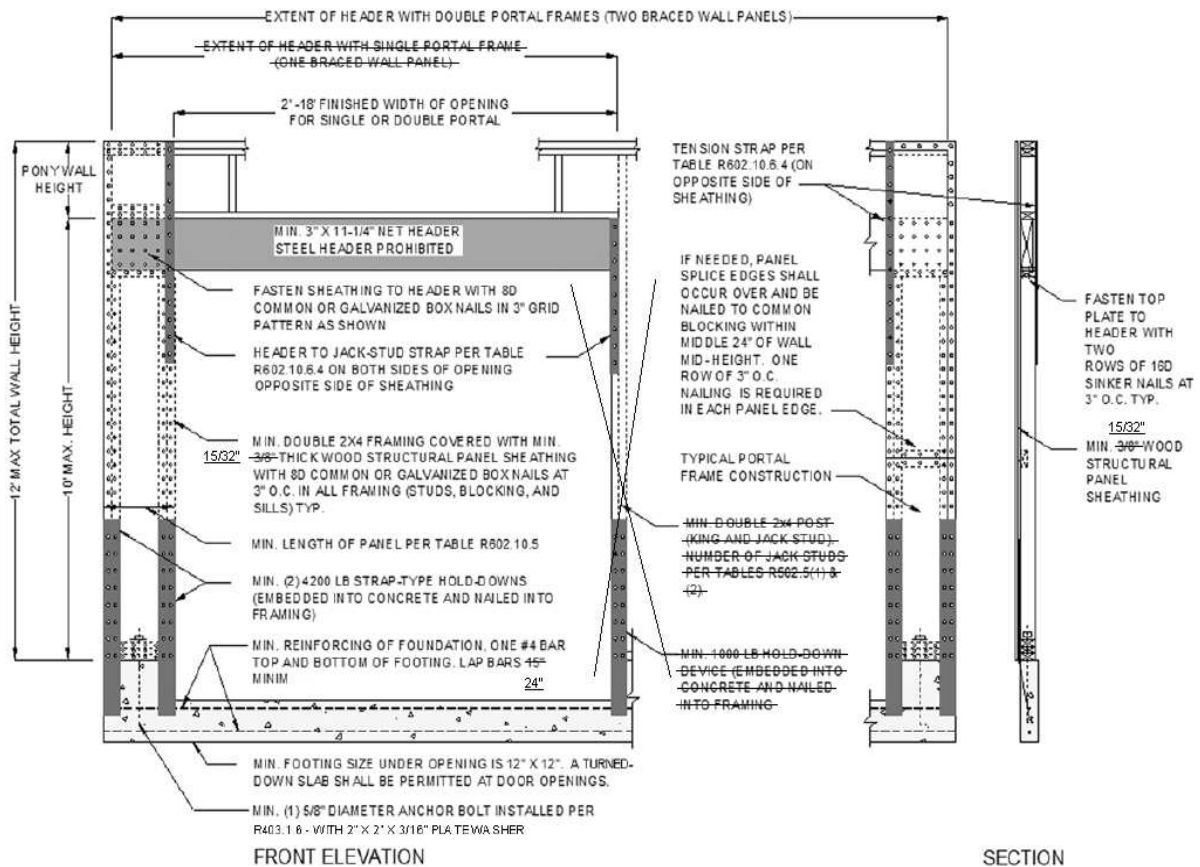
e. Maximum opening height for CS-PF is 10 feet in accordance with Figure R602.10.6.4, but wall height may be increased to 12 feet with pony wall.

Figure R602.10.6.1 is amended to read as follows:



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

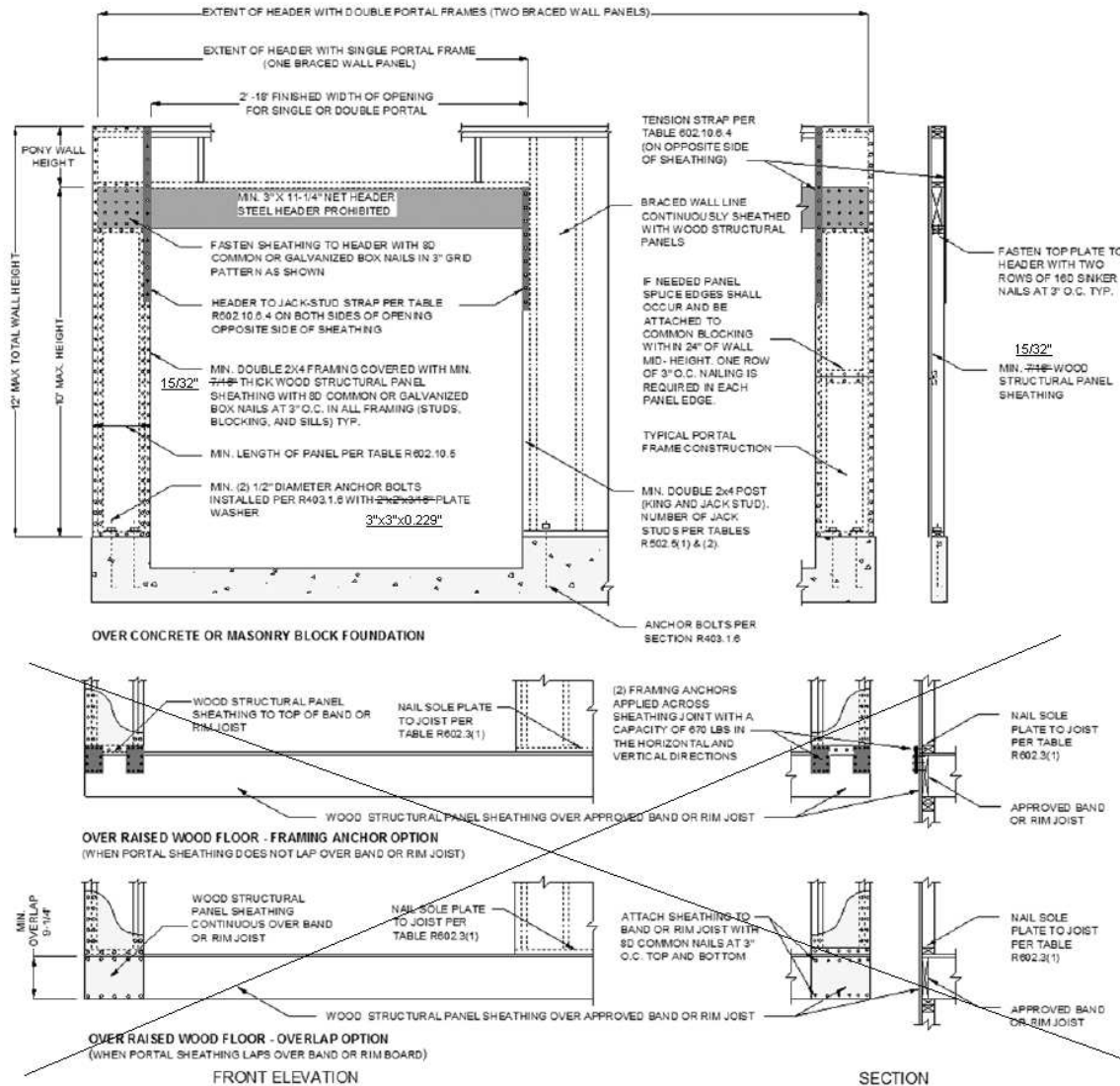
Figure R602.10.6.2 is amended to read as follows:



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



Figure R602.10.6.4 is hereby 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

Section R606.4.4 is hereby amended to read as follows:

### R606.4.4 Parapet walls.

Unreinforced solid masonry parapet walls shall not be less than 8 inches (203 mm) thick and their height shall not exceed four times their thickness. Unreinforced hollow unit masonry parapet walls shall be not less than 8 inches (203 mm) thick, and their height shall not exceed three times their thickness. Masonry parapet walls in areas subject to wind loads of 30 pounds per square foot (1.44 kPa) or located in Seismic Design Category D<sub>0</sub>, D<sub>1</sub> or D<sub>2</sub>, or on townhouses in Seismic Design Category C shall be reinforced in accordance with Section R606.12.

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

**R606.12.2.2.3 Reinforcement requirements for masonry elements.** Masonry elements listed in Section R606.12.2.2.2 shall be reinforced in either the horizontal or vertical direction as shown in Figure R606.11(3) 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.
1. Vertical reinforcement. Vertical reinforcement shall consist of at least one No. 4 bar spaced not more than 48 inches (1219 mm). Vertical reinforcement shall be within 8 inches (406mm) of the ends of masonry walls.

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

**R803.2.4 Openings in horizontal diaphragms.**

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

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

**R1001.3.1 Vertical reinforcing.**

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

SECTION 4. Chapter 9.12 of the Manhattan Beach Municipal Code is hereby amended to read as follows:

**Chapter 9.12. ELECTRICAL CODE.**

**9.12.010 Adoption of California Electrical Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive of the Government Code of the State and subject to the particular additions, amendments, and deletions set forth in this chapter, the rules, regulations, provisions, and conditions set forth in those certain Codes entitled "2016 California Electrical Code", ("CEC"), including the Annexes and Tables therein contained, promulgated and published by the National Fire Protection Association of Quincy, Massachusetts and the California Building Standards Commission, including the Annexes and Tables therein contained, one (1) full printed copy of which, printed as a Code in book form, was by the Council ordered filed and which has been actually filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as though set forth herein at length, are hereby established and adopted as the rules, regulations, standards, provisions, and conditions to be observed and followed in the installation, arrangement, alteration, repair, use, and operation of electrical wire connections, fixtures, and other electrical appliances, and subject to the additions, amendments, and deletions set forth in this chapter, said Code with its Annexes and Tables, containing said rules, regulations, standards, provisions, and conditions, is hereby established and adopted by reference, and the same shall be designated, known, and referred to as the "Electrical Code" of and for the City.

### **9.12.020 Fees.**

Section 89.108.4.2 is amended by adding the following paragraph to the section:

**ELECTRICAL PERMIT AND ELECTRICAL PLAN REVIEW FEES.** Any person desiring an electrical permit shall, at the time of filing an application therefor, pay to the City fees established by the Council under the Fee Resolution in accordance to the building permit and building plan review fees or may be based on an hourly rate as established in the applicable fee resolution.

### **9.12.030 Plans and specifications.**

Section 89.108.4.3 is amended by adding the following paragraphs to the section:

**Electrical Plans and Specifications.** When required by the Building Official, electrical plans, specifications, and applications shall be filed and approved by the Building Official prior to any electrical wiring or installations.

Electrical plans and specifications for all occupancies listed in the current adopted California Building Code shall be prepared by an Electrical Engineer who possesses a valid Professional Electrical Engineering Registration issued pursuant to and in accordance with the laws of the State of California. All electrical sheets shall be wet stamped and have a wet signature by the licensed Professional Electrical Engineer.

Residential electrical plans shall include but are not limited to load schedule, wiring diagrams, homeruns, wire sizes, location and size of service panels and subpanels, method of grounding of service. The following must be included:

- (1) All Commercial and Industrial tenant improvements, additions, and service changes.
- (2) The mixed Occupancy of R-2 and U Occupancy where U Occupancy is between 1000 and 3000 square feet and over 200 amps.
- (3) R-3 Occupancy and U Occupancy when service is over 200 amps.

“Green Sheet” Plans shall be prepared and submitted by a licensed electrical contractor and/or owner/builder under the following conditions:

- (1) R-3 Occupancy including new construction, additions, and service changes.
- (2) U Occupancy (which is part of the R -3 Occupancy), which does not exceed 1000 square feet in area.

**Exception:** The Building Official may waive the submission of electrical plans, calculations, etc., if it is found that the nature of the work applied for is such that reviewing of electrical plans is not necessary to obtain compliance with this Code.

### **9.12.040 Penalties.**

Section 89.108.3.2.6 is hereby added to read as follows:

**89.108.3.2.6 Penalties.** (a) Any person, firm, or corporation violating any of the provisions of this Chapter, or of the Electrical Code adopted thereby, shall be guilty of a misdemeanor and upon conviction of any such violation such person shall be punishable by a fine of not more than one



thousand dollars or by imprisonment for a period of not to exceed six months, or by both such fine and imprisonment in the discretion of the Court.

(b) Every such person shall be deemed guilty of a separate offense for each and every day during which, or during any portion of which, any of the provisions of this Code are violated, committed, continued, or permitted by such person, and shall be punishable therefore as herein provided.

#### **9.12.050 Services undergrounding.**

Section 230-30 (A) is amended by the addition of subsection (5) to read as follows:

(5)Underground Utilities Required. All new buildings and structures in the City of Manhattan Beach shall provide underground electrical and communication service laterals on the premises to be served, as hereinafter required.

(a) New Construction. All electrical, telephone, cable television system, and similar service wires and cables which provide direct service to new main buildings, new accessory buildings, and structures, shall be installed underground in compliance with all applicable building and electrical codes, safety regulations, and orders, rules of the Public Utilities Commission of the State of California, and specifications or standards of the Public Works Department.

(b) Existing Buildings. Such service wires and cables shall also be placed underground when existing buildings, existing accessory buildings, and structures are repaired, remodeled, altered or expanded, except where the value, as determined for building permit fee purposes, by the Building Code of the City of Manhattan Beach, of such repairs or remodeling, or expansion does not exceed fifty percent (50%) of the value of the building or structure as determined by the California Building Code.

(c) Wiring between the accessory buildings and the main buildings shall be in an underground system.

(d) Responsibility for Compliance. The Contractor and Owner are jointly and severally responsible for complying with the requirements of this section and shall make the necessary arrangements with the utility companies servicing the structure for the installation of such facilities.

If a proposed building or structure would create a situation which would make unreasonable, impractical, or physically impossible the continuance of overhead utility service to an existing adjacent property (or properties), then the Contractor and owner of the proposed building or structure shall be responsible for relocating such utilities per utility company specifications, and shall be installed underground in compliance with all applicable codes, safety regulations, and orders, rules of the Public Utilities Commission of the State of California, and specifications or standards of the Public Works Department.

(e) Appurtenances. For the purpose of this section, appurtenances and associated equipment such as, but not limited to, service mounted transformers, pedestal mounted terminal boxes and meter cabinets may be placed above ground if permitted by and in accordance with the rules of the State Public Utilities Commission.

(f) Waiver of Underground Requirements. If topographical, soil, or any other conditions make such underground installations unreasonable or impractical, a

waiver of the requirements of this section may be granted by the Building Official, (a written approval from Southern California Edison is required when necessary) subject to the installation of all necessary electrical conduits, terminal boxes and other appurtenances as may be required to provide underground service in the future.

If the utility pole(s) from which underground service would be provided are not situated on the same side of the public street as the permittee, or not within five (5) feet of the area enclosed by the extension of the side property lines to said public street, the permittee may have the alternative of installing all conduit, wires, pullboxes, electrical panel and other appurtenances which may be required for future underground utility services from the structure to an approved location on the property line of the parcel which will facilitate future underground service; and that the property may continue to be served by overhead wires until said future underground utility conversion.

If a building or structure is served by the rear from utilities not located in the public right-of-way, the permittee may have the alternative of installing all conduit, wires, pullboxes, electrical panel, and other appurtenances which may be required for future underground utility services from the building or structure to an approved location on the property line of the parcel which will facilitate future underground service; and that the property may continue to be served by overhead wires until said future underground utility conversion.

Exceptions: This section shall not apply to:

- (i) Utility lines which do not provide service to the area being developed.
- (ii) Detached dwelling units with separate utility services which are not the subject of a common including permit.

#### **9.12.060 Service equipment.**

Section 230-62 is amended by the addition of subsection (C) to read as follows:

**(C) Single Family Dwellings, Multi-family Industrial and Commercial Structures Service Equipment.** The minimum capacity of the service equipment for a single family dwelling, industrial and commercial structures shall be as follows:

- (1) A service entry conduit not less than 1-1/2" in diameter of rigid galvanized steel, except 100 amp service may be 1-1/4" rigid galvanized steel.

#### **9.12.080 Conductor material.**

Section 310.106(B) is amended to read as follows:

- (B) **Conductor material.** Conductors in this article shall be of copper unless otherwise approved by the Building Official.

#### **9.12.100 Ampacities of various conductors.**

Tables 310.15 (B) (16) - 310.15 (B) (21), including Notes to said Tables, are amended to delete all references to aluminum or copper-clad aluminum.

SECTION 5. Chapter 9.32 of Title 9 of the Manhattan Beach Municipal Code is amended to read as follows:

### **Chapter 9.32: PLUMBING CODE**

### **9.32.010 Adoption of California Plumbing Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "2016 California Plumbing Code" including the Appendices therein contained, promulgated and published by the International Association of Plumbing and Mechanical Officials, one (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, and provisions and conditions to be observed and followed in the moving, removal, demolition, condemnation, maintenance and use of plumbing, house drainage, house sewers, sanitary sewers, cesspools, septic tanks, gas piping, gas water heater vents, swimming pools, and gas outlets for swimming pool heaters and related subjects, items and matters as set forth in said Code, within the City. Subject to the additions, deletions and amendments set forth in this chapter, said Code, with its said specified sections of Chapter 1, Division II, Chapters 2 through 17, and Appendices A, B, D, I, and J, is hereby established and adopted by reference, and the same shall be designated, known and referred to as the "Plumbing Code" of and for the City.

### **9.32.020 Violations and penalties.**

Section 106.3 is hereby amended to read as follows:

**Penalties.** Any person, firm or corporation violating any provisions of this Code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not to exceed one thousand (\$1,000.00) dollars or by imprisonment in the County Jail of the County of Los Angeles, California, to not exceed six (6) months, or by both such fine and imprisonment. Each separate day or any portion thereof during which any violation of this Code occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.

The issuance or granting of a permit or approval of plans and specifications shall not be deemed or construed to be a permit for, or an approval of, any violation of any of the provisions of this Code. No permit presuming to give authority to violate or cancel the provisions of this Code shall be valid, except insofar as the work or use which it authorized is lawful.

The issuance or granting of a permit or approval of plans shall not prevent the Administrative Authority from thereafter requiring the correction of errors in said plans and specifications or from preventing construction operations being carried on thereunder when in violation of this Code or of any other ordinance or from revoking any certificate of approval when issued in error.

Every permit issued by the Administrative Authority under the provisions of this Code shall expire by limitation and become null and void, if the work authorized by such permit is not commenced within one hundred eighty (180) days from date of such permit, or if the work authorized by such permit is suspended or abandoned at any time after work is commenced for a period of one hundred eighty (180) days. Before such work can be recommenced, a new permit shall be first obtained, and the fee therefore shall be one-half the amount required for a new permit for such work, provided no changes have been made, or will be made in the original plan and specifications for such work; and provided further, that such suspension or abandonment has not exceeded one (1) year. Whenever any work for which a permit is required by this Code has been commenced without first obtaining said permit, an additional fee shall be collected at the time when the permit is issued. This fee shall be equal to the amount of the permit fees required by the most current City Resolution of Fees.

### **9.32.030 Plumbing permit fees.**

Table 104.5, Plumbing Permit Fees, of Chapter 1, Division II of the 2016 California Plumbing Code is hereby deleted. The fees shall be determined as required by the most current City Resolution of Fees.

SECTION 6. Chapter 9.36 of Title 9 of the Manhattan Beach Municipal Code is amended to read as follows:

“Chapter 9.36. SUSTAINABLE GREEN BUILDING PROGRAM AND ENERGY EFFICIENCY STANDARDS

**9.36.010 Adoption of California Green Building Standards Code and California Energy Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled “2016 California Green Building Standards Code” and the “2016 California Energy Code” including the Appendices therein contained, promulgated and published by the California Building Standards Commission, one (1) full printed copy of each, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, and provisions and conditions to be observed and followed in the planning, design, operation, construction, demolition, use, occupancy, operations and maintenance regarding the planning, design and construction of buildings and related systems, equipment, and building components for energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality enhancement in the City and related subjects, items and matters as set forth in said Code, within the City. Subject to the additions, deletions and amendments set forth in this chapter, said Codes, with said Appendices, are hereby established and adopted by reference, and the California Green Building Standards Code shall be designated, known and referred to as “Sustainable Green Building Program” and the California Energy Code shall be designated, known and referred to as the “Energy Efficiency Standards” of and for the City.

Nothing in this chapter shall require the applicant to use covered products, as defined in the federal Energy Policy and Conservation Act (42 U.S.C. §6201 et seq.), that exceed any applicable federal energy conservation standards for such products.

**9.36.020 Program and purpose.**

A. This section sets forth a Sustainable Green Building Program as well as minimum Energy Efficiency Standards within the City of Manhattan Beach for new construction and renovation as set forth below.

B. The purpose of the chapter is to enhance the public health and welfare by promoting the environmental and economic health of the City through the design, construction, maintenance, operation and demolition of buildings and other site development by incorporating sustainable building practices into all development. The sustainable building provisions referred to in this chapter are designed to achieve the following goals:

1. Increase energy efficiency in buildings;
2. Encourage water and resource conservation through efficient fixtures and irrigation, recycled and renewable materials;
3. Improve indoor air quality; increased natural lighting, and improved thermal comfort/control.
3. Reduce waste generated by construction projects;
4. Provide durable buildings that are efficient and economical to own and operate; and

5. Promote the health and productivity of residents, workers, and visitors to the City.

**9.36.030 Definitions.**

“City” shall mean the City of Manhattan Beach, State of California

“City building” shall mean a building primarily funded by the City or on City owned land.

“Compliance official” shall mean the Building Official or his or her designee.

“Good faith effort” shall mean a project that has not met the required compliance threshold, but for extenuating reasons, the Compliance official has found the project meets the good faith effort provisions of Section 9.36.060.

“LEED™” shall mean the “Leadership in Energy and Environmental Design” green building rating system developed by the U.S. Green Building Council (USGBC).

“LEED® AP” shall mean a person who has been designated a LEED Accredited Professional by the Green Building Certification Institute (GBCI).

“LEED™ checklist” shall mean the credit and point checklists developed by the Leadership in Energy and Environmental Design Green Building Rating System for measuring the sustainability, efficiency, and environmentally soundness of a building.

“Project” shall mean any proposal for new or changed use, or for new construction, alteration, or enlargement of any structure, that is subject to the provisions of this title.

“Renovation” shall mean any rehabilitation, repair, remodeling, change, or modification to an existing building, where changes to floor area and the footprint of the building are negligible. The valuation of renovation improvements shall be determined by the Director of Community Development per Section 10.68.030(E) of the Manhattan Beach Municipal Code. Additionally, the compliance official may exclude from such valuation the cost of (a) seismic upgrades, (b) accessibility upgrades, or (c) photovoltaic panels or other solar energy or similar devices exterior to the building.

“Sustainable building rating system” shall mean the rating system associated with specific sustainable building criteria and used to determine compliance thresholds. An example of a rating system includes, but is not limited to, the LEED rating system.

**9.36.040 Applicability.**

A. Projects meeting the following thresholds and for which no use permit, variance, vesting subdivision, or any other discretionary Planning approval has been granted, or for which no valid building permit has been lawfully issued by the City prior to the effective date of this ordinance shall comply with the provisions of this chapter:

1. City buildings of 5,000 square feet or more of new “gross floor area” (new construction), as defined by Section 10.04.030.
2. Renovations of or in City buildings of 5,000 gross square feet or more, where the project exceeds the total building replacement valuation of 50% of the entire existing building as defined by Section 10.68.030(E) of the Manhattan Beach Municipal Code. For the purposes of this section, estimated construction and reconstruction costs shall be determined by the Community Development Director in the same manner as the Community Development Director determines final valuation for the purposes of building permit fees.

3. Non-residential buildings of 10,000 square feet or more of “new gross floor area” (new construction) as defined by Section 10.04.030.
4. Renovations of or in non-residential buildings 10,000 gross square feet or greater, where the project exceeds the total building replacement valuation of 50% of the entire existing building as defined by Section 10.68.030(E) of the Manhattan Beach Municipal Code. For the purposes of this section, estimated construction and reconstruction costs shall be determined by the Community Development Director in the same manner as the Community Development Director determines final valuation for the purposes of building permit fees.

#### **9.36.050 Standards for compliance:**

- A. The City shall adopt by reference the USGBC LEED™ green building rating system as the standard for which a project shall be measured as a green building. Requiring projects to incorporate LEED™ green building measures is necessary and appropriate to achieve the benefits of green building. The specific actions required for project compliance with this chapter are as follows:
  1. All applicable projects are required to retain the services of a LEED® Accredited Professional who is accredited in the appropriate category for the project as determined by the Compliance official and complete LEED™ project registration prior to issuance of a building permit.
  2. All applicable projects shall submit a LEED checklist and supporting documentation indicating points meeting at a minimum LEED ‘Silver’ level incorporated into documentation for a building permit. Projects as described in Section 9.36.040 subsections 3. and 4. of 10,000 square feet or more of new gross square footage or more than 50% renovation shall meet LEED ‘Silver’ level. These projects would include, but not limited to, typical office, retail, medical, private club, religious, and academic buildings with occupied and conditioned spaces. A signed declaration from the LEED AP member of the Project team, stating that the plans and plan details have been reviewed, and that the Project meets the intent of the criteria for certification of the selected LEED™ Rating System. The LEED checklist shall be prepared, signed, and dated by the project LEED accredited professional. All building documents shall indicate in the general notes and/or individual detail drawing, where feasible, the green building measures employed to attain the applicable LEED rating.
  3. Applicable City buildings are required to attain LEED certification and meet, at a minimum LEED ‘Gold’ rating.
  4. Building commissioning, although specified as a prerequisite for LEED™ certification, is not required for applicable projects under this chapter except for City buildings. Applicants are encouraged to verify that fundamental building systems are designed, installed, and calibrated to operate as intended.
  5. All projects must demonstrate compliance with 2013 or the most recent California Energy Efficiency Standards (Title 24, Part 6) by submitting all required forms and calculations for review and approval by compliance official.

#### **9.36.060 Compliance official’s responsibilities**

- A. The compliance official shall review the required LEED™ checklist and supporting documentation prior to issuance of a grading or building permit. Compliance official will use the appropriate LEED™ scoring system applicable to project and categories within it.
- B. The compliance official shall verify that the building measures and provisions indicated on the project LEED™ checklist and on the supporting approved documentation, including approved plan sets, are being implemented at foundation inspection, framing inspection, and prior to issuance of a final certificate of occupancy.
- C. The compliance official shall conduct any inspections as needed to ensure compliance with this chapter.

#### **9.36.070 Penalties and administrative remedies**

- A. If, as a result of any inspection, the compliance official determines that the applicable project does not comply with the approved documentation, a stop work order may be issued. At the discretion of the compliance official or designee such a stop work order may apply to the portion of the project impacted by noncompliance or to the entire project. The stop work order shall remain in effect until the compliance official determines that the project is in compliance with the requirements of this chapter.
- B. If the compliance official determines that the applicable project has not met the requirements of the LEED™ checklist, as set forth in section 9.36.060 of this chapter, he or she shall determine on a case by case basis whether the applicant has made a good faith effort to comply with this chapter. In making this determination, the compliance official shall consider the availability of markets for materials to be recycled, the availability of sustainable building materials and technologies, and the documented efforts of the applicant to comply with this chapter. The compliance official or designee may require additional reasonable sustainable building measures be included in the operation of the covered project to mitigate the failure to comply fully with this chapter.

#### **9.36.080 Mandatory and voluntary requirements.**

Section 101.10 of the California Green Building Standards Code is hereby amended to read as follows:

**101.10 Mandatory and voluntary requirements.** This code contains both mandatory and voluntary green building measures. Mandatory and voluntary measures are identified in the appropriate application checklist contained in this code. The mandatory measures of Chapter 4 are applicable to residential buildings except where specifically amended hereinafter. The mandatory measures of Chapter 5 are applicable to all buildings which are nonresidential buildings except where specifically amended hereinafter. The Mandatory measures of Chapter 5 and voluntary measures of Appendix A5 are applicable to all buildings, which qualify for conditions of section 9.36.040 except where specifically amended hereinafter.

#### **9.36.090 Residential building**

The first paragraph of Section 301.1.1 of the California Green Building Standards Code is hereby amended to read as follows:

**301.1.1 Additions and alterations. (HCD)** The Mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings within the specific area of the addition or alteration. Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of permitted work.

### **9.36.120 Material conservation and resource efficiency**

Section 4.408 of the California Green Building Standards Code is hereby amended to read as follows:

**4.408.1 [Residential] Construction waste reduction of at least 65%** Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition debris. See Municipal Code sections: 5.26.010 Definitions: "Diversion Requirement," 5.26.050 Review of Waste Management Plan, and 5.26.060 Compliance with Waste Management Plan

**4.408.4 Waste Stream reductions alternative.** Projects that generate a total combined weight of construction and demolition waste disposal of in landfills, which do not exceed 3.4 lbs. per square foot. of the building area shall meet the construction waste reduction requirements of section 4.408.1.

**4.408.4.1 Waste stream reduction alternative. [HR].** Projects that generate a total combined weight of construction and demolition waste disposal of in landfills, which do not exceed two (2) pounds per square foot of the building area, shall meet the construction waste reduction requirements of section 4.408.1.

Section 5.408 of the California Green Building Standards Code is hereby amended to read as follows:

**5.408.1 Construction waste management.** Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition debris. See Municipal Code sections: 5.26.010 Definitions: "Diversion Requirement," 5.26.050 Review of Waste Management Plan, and 5.26.060 Compliance with Waste Management Plan. Calculate the amount of materials diverted by weight or volume, but not by both.

**5.408.1.3 Waste stream reduction alternative.** The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the minimum requirements of section 5.408.1.

### **9.36.130 Environmental quality**

Section 4.501.1 of the California Green Building Standards Code is hereby amended to read as follows:

**4.501.1 [Residential] Scope and applicability** The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors. Requirements for adhesives, sealants, caulks, and finishes shall apply to any construction. Fireplaces, Section 4.503 shall apply to any new gas fireplaces.

Section 4.503 of the California Green Building Standards Code is hereby amended to read as follows:

**4.503.1 Fireplaces – General.** Any installed gas fireplace shall be a direct-vent sealed-combustion type with a 65% thermal efficiency. Any installed woodstove or pellet stove shall comply with the U.S. EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

Section 5.501.1 of the California Green Building Standards Code is amended to read as follows:



**5.501.1 [Nonresidential] Scope and Applicability** The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors. Requirements for adhesives, sealants, caulks, and finishes shall apply to any construction or renovation. Fireplace Section 5.503 shall apply to any new gas fireplaces.

Section 5.503 of the California Green Building Standards Code is amended to read as follows:

**5.503.1 Fireplaces – General.** Install only direct-vent sealed-combustion type with a 65% thermal efficiency gas or fireplace. Refer to residential requirements in the *California Energy Code*, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

### **9.36.140 California Energy Code**

Section 110.4(b)(2) of the California Energy Code is amended to read as follows:

**110.4 (b) 2. Covers.** A thermal cover or blanket rated at not less than R-2 for outdoor pools or outdoor spas that have a heat pump or gas heater.

SECTION 7. Chapter 9.64 of Title 9 of the Manhattan Beach Municipal Code is amended to read as follows:

### **Chapter 9.64: MECHANICAL CODE**

#### **9.64.010 Adoption of California Mechanical Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "2016 California Mechanical Code including Appendix A therein contained, promulgated and published by the International Association of Plumbing and Mechanical Officials of. One (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, provisions and conditions to be observed and followed in the erection, installation, alteration, repair, relocation, replacement, addition to, use or maintenance of any heating ventilating, comfort cooling, refrigerator systems, incinerators, or other miscellaneous heat producing appliances in the city; and subject to the additions, deletions, and amendments set forth in this chapter, said Code with Appendix A, containing said rules, regulations, standards, provisions, and conditions is hereby established and adopted by reference, and the same shall be designated, known and referred to as the "Mechanical Code" of and for the City.

#### **9.64.020 Violations and penalties.**

Section 106.1 is hereby amended to read as follows

**106.1 General.** Any person, firm or corporation violating any provisions of this Code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not to exceed One Thousand (\$1,000.00) Dollars or by imprisonment in the County Jail of the County of Los Angeles, California, not to exceed six (6) months, or by both such fine and imprisonment. Each separate day or any portion thereof during which any violation of this Code occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided. The issuance or granting of a permit or approval of plans and specifications shall

not be deemed or construed to be a permit for, or an approval of, any violation of any of the provisions of this Code. No permit presuming to give authority to violate or cancel the provisions of this Code shall be valid, except insofar as the work or use which it authorized is lawful.

The issuance or granting of a permit or approval of plans shall not prevent the Administrative Authority from thereafter requiring the correction of errors in said plans and specifications or from preventing construction operations being carried on thereunder when in violation of this code or of any other ordinance or from revoking any certificate of approval when issued in error.

**9.64.030 Mechanical permit fees.**

Section 104.5 is amended as follows:

Table 104.5 Mechanical Permit Fees is hereby deleted. The fees shall be determined as required by the most current City Resolution of Fees.

SECTION 8. Chapter 5.26 of Title 5 of the Manhattan Beach Municipal Code entitled CONSTRUCTION AND DEMOLITION DEBRIS WASTE REDUCTION AND RECYCLING REQUIREMENTS is amended as provided in this Section.

Section 5.26.010 is amended by revising the following definition to read as follows:

K. "Diversion requirement" means the redirection of at least sixty-five percent (65%) of the total construction and demolition debris generated by a project via reuse or recycling, unless the applicant has been granted an exemption pursuant to Section 5.26.070 of this chapter, in which case the diversion requirement shall be the maximum feasible diversion rate established by the WMP Compliance Official for the project.

Section 5.26.050 Review of Waste Management Plan, Subsections A.2. and B, are hereby amended as follows:

**A.2.** WMP must indicate that at least sixty-five percent (65%) of all C & D debris generated by the project will be diverted.

**B. Nonapproval.** If the WMP Compliance Official determines that the WMP is incomplete or fails to indicate that at least sixty-five percent (65%) of all C & D debris generated by the project will be reused or recycled, he or she shall either:

Section 5.26.060 A. is hereby amended to read as follows:

**A. Documentation.** Prior to the final building approval, the applicant shall submit to the WMP Compliance Official documentation that it has met the diversion requirement for the project. If the applicant does not submit the required documentation, he or she may be subject to an administrative penalty or enforcement action as described in Sections 5.26.040 and 5.26.080 of this chapter. The diversion requirement shall be that the applicant must divert at least sixty-five percent (65%) of the total C & D debris generated by the project via reuse or recycling. Provided, however, that an applicant granted an exemption pursuant to Section 5.26.070 of this chapter shall be required to comply with the maximum feasible diversion rate established by the WMP Compliance Official for that project. . The documentation for compliance shall include all of the following:

1. Copies of receipts from the vendor or facility which collected or received each material showing the actual weight of that material;
2. A copy of the previously approved WMP for the project adding the actual weight of each material diverted and landfilled;

3. Any additional information the applicant believes is relevant to determining its efforts to comply in good faith with this chapter.

SECTION 9. Chapter 9.02 of Title 9 of the Manhattan Beach Municipal Code is hereby added to read as follows:

## **Chapter 9.02 EXISTING BUILDING CODE**

### **9.02.010 Adoption of the 2016 California Existing Building Code.**

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "2016 California Existing Building Code," including the Appendices and Standards therein contained, promulgated and published by the International Code Council and the California Building Standards Commission, one (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as though set forth herein at length, are hereby established and adopted as the rules, regulations, provisions and conditions to be observed and followed in the construction, alteration, improvements, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, demolition, conversion, area and height, of existing buildings or structures or any appurtenances connected or attached to such buildings or structures in the city; and subject to the additions, deletions and amendments set forth in this chapter, said Code with its Appendices and the said Standards containing said rules, regulations, standards, provisions and conditions is hereby established and adopted by reference, and the same shall be designated, known and referred to as the "Existing Building Code" of and for the City.

### **9.02.020 Expiration of plan review.**

Section [A]105.3.2 is hereby amended to read as follows:

**[A] 105.3.2 Time limitation of application.** Applications for which no permit is issued within 180 days following the date of application shall expire by limitation and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Building Official. The Building Official may extend the time for action by applicant for a period not exceeding 180 days upon written request by the applicant and justifiable cause demonstrated. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay a new plan review fee and plans shall be reviewed under the current codes and ordinances at the time of the new applications.

### **9.02.030 Permit expiration.**

Section [A]105.5 is hereby amended to read as follows:

**[A] 105.5 Expiration.** Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within 180 days after its issuance, or if the work authorized on the site by such permit is suspended or abandoned for a period of 180 days after the work is commenced, or if the building or work authorized by such permit is not completed within 2 calendar years from the issuance date of the permit.

Before such work can be recommenced, a new permit, or a renewed permit as specified below, shall be first obtained. No permit shall be renewed more than once.

For permits where work has not commenced within 180 days from the date of such permit, a renewed permit may be obtained provided that: (1) no changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the original issuance date.

For permits where work had commenced and was subsequently suspended or abandoned for a period exceeding 180 days, a renewed permit may be obtained provided that: (1) No changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the issuance date and/or (3) where construction has progressed and has been approved to the point whereby only a final inspection(s) is required, a fee shall be determined based on the number of estimated inspections, estimated staff time, and required meetings as determined by the Building Official.

For permits that have exceeded two years beyond the issuance date, a new permit is required. The applicant shall pay the fee based on the valuation of the uncompleted work required for a plan check and a new permit and plans will be reviewed under the current codes and ordinances at the time of the new applications.

Any permittee holding an unexpired permit may apply for an extension of the time within which work under that permit may be continued when, for good and satisfactory reasons, the permittee is unable to continue to work within the time required by this section. The Building Official may extend the time for action by the permittee for a period not exceeding six calendar months upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once.

If the owner or applicant fails to complete the construction work within the time required, the Building Official is authorized to obtain the abatement of any unsafe condition or nuisance created by such incomplete work. The City Attorney is authorized to file an action for the abatement of any such unsafe condition or nuisance if required to do so by the Building Official.

#### **9.02.040 Fees.**

Sections [A]108.2 and [A]108.4 are amended to read as follows:

**[A] 108.2 Schedule of permit fees.** The fees shall be determined by the most current City Resolution of Fees.

Plan Review Fees. When submittal documents are required by the building official, a plan review fee shall be paid at the time of submitting the submittal documents for plan review. Said plan review fee shall be determined by the most current City Resolution of Fees.

The plan review fees specified in this section are separate fees from the permit fees and are in addition to the permit fees.

When submittal documents are incomplete or changed so as to require additional plan review or when the project involves deferred submittal items as defined in Section [A]106.3.4., an additional plan review fee shall be charged as determined by the most current City Resolution of Fees.

**[A] 108.4 Work commencing before permit issuance.** Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the Building Official and the most current Manhattan Beach Resolution of Fees in addition to the required permit fees.

Investigation. Whenever any work for which a permit is required by this code has been commenced without first obtaining said permit, a special investigation shall be made before a permit may be issued for such work.

Investigation Fee. An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then or subsequently issued. The investigation fee shall be equal up to the amount of the permit fee required by this code as determined by the Building Official. The minimum investigation fee shall be determined by the City's most current Resolution of Fees. The payment of such investigation fee shall not exempt any person from compliance with all other provisions of this code nor from any penalty prescribed by law.

#### **9.02.050 Violation and penalties.**

Section [A] 113.4 is amended to read as follows:

**[A] Section 113.4. Violation penalties.** Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to the penalties as prescribed by law. Every person who willfully resists, delays, obstructs or interferes in any way with any City Building Inspector in the discharge or attempt to discharge any duty of his or her office or employment shall be guilty of a violation of this Chapter.

Any person, firm, or corporation violating any of the provisions or failing to comply with any of the mandatory requirements of the ordinances of Manhattan Beach shall be guilty of a misdemeanor. Any person convicted of a misdemeanor under the ordinances of Manhattan Beach shall be punished by a fine of not more than one thousand dollars (\$1,000), or by imprisonment not to exceed six (6) months, or by both such fine and imprisonment. Each such person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of the ordinances of Manhattan Beach is committed, continued, or permitted by any such person, and shall be punished accordingly.

Section 302.6 is hereby added to read as follows:

#### **302.6 Parapets and appendages.**

##### **302.6.1 General compliance.**

Whenever the Building Official determines by inspection that, as a result of inadequate construction or bracing to resist horizontal forces, an existing parapet or appendage attached to and supported by an exterior wall of a building is likely to become a hazard to life or property in the event of earthquake disturbance, and such parapet or appendage is not an immediate hazard or danger as described in Section 115, the Building Official may provide the owner of the building or other person or agent in control of the building where such parapet or other appendage exists, with a written notice specifying the hazards and the inadequacies of the construction or bracing. The owner of the building or other person or agent in control of the building shall, within 12 months from the date of such written notice, eliminate the hazard as set forth below. Any person receiving notice as set out in this Section may appeal, in the manner provided by Section 112, to the Building Board of Appeals.

##### **302.6.2 Wall anchor.**

The parapet or appendage shall be removed and the remainder of the wall shall be anchored at the roof line, or it shall be reconstructed so that it will conform structurally as near as it is practicable to do so with the requirements of Chapter 16 of the Building Code, or it shall be otherwise braced and

strengthened in a manner satisfactory to the Building Official, so that it will resist a reasonable degree of horizontal forces without becoming dislodged with danger of falling.

### **302.6.3 Inspection of existing condition.**

Where, in the opinion of the Building Official, it is necessary to open a portion of roof, wall, or ceiling of a building in order to determine the structural condition of any parapet or appendage, the Building Official may order the owner to make such opening and the owner shall comply with said order at the owner's sole cost and expense.

Section 302.7 is hereby added to read as follows:

### **302.7 Existing glass.**

Whenever the Building Official determines by inspection that an existing glass installation, in rooms having an occupant load of more than 100 persons or a means of egress serving an occupant load of more than 100 persons, as determined by Chapter 10 of the California Building Code, is likely to become a hazard in the event of accidental human impact as described in Section 2406.4 of the Building Code and such installation does not comply with the provisions for glazing in such locations, the Building Official may provide the owner of the building or other person or agent in control of the building where such glazing exists with a written notice of such condition. The owner of the building or other person or agent in control of the building shall, within 90 days after receiving said notice, replace such glass or otherwise cause the installation to conform to the requirements of the Building Code.

Section A401.2 is hereby amended to read as follows:

**A401.2 Scope.** The provisions of this chapter may be used for voluntary seismic improvements to all existing Occupancy Group R buildings of wood construction or portions thereof where the structure has a soft, weak, or open-front wall line, and there exists one or more stories above.

Section A404.1 is hereby amended to read as follows:

**[BS] A404.1 Limitation.** These prescriptive measures shall apply only to two-story buildings and only when deemed appropriate by the Building Official. These prescriptive measures rely on rotation of the second floor diaphragm to distribute the seismic load between the side and rear walls of the ground floor open area. In the absence of an existing floor diaphragm of wood structural panel or diagonal sheathing, a new wood structural panel diaphragm of minimum thickness of  $\frac{3}{4}$  inch (19.1 mm) and with 10d common nails at 6 inches (152 mm) on center shall be applied. A California licensed architect or engineer shall demonstrate compliance with the requirements of Section A404, and shall approve and stamp the construction documents.

**[BS] A407.1 Structural observation, testing and inspection.** Structural observation, in accordance with Section 1704.6 of the California Building Code, shall be required for all structures in which seismic retrofit is being performed in accordance with this chapter. Structural observation shall include visual observation of work for conformance to the approved construction documents and confirmation of existing conditions assumed during design.

Structural testing and inspection for new construction materials shall be in accordance with the building code, except as modified by this chapter.

**SECTION 10.** Any provisions of the Manhattan Beach Municipal Code, or appendices thereto, or any other ordinances of the City, to the extent that they are inconsistent with this ordinance, and no further, are hereby repealed.

**SECTION 11.** If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction,

such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or unconstitutional.

SECTION 12. This notice shall be published by one insertion in *The Beach Reporter*, the official newspaper of the City, and this ordinance shall take effect and be in full force and operation thirty (30) days after its final passage and adoption.

SECTION 13. The City Clerk shall certify to the adoption of this ordinance; shall cause the same to be entered in the book of original ordinances of said City; shall make a minute of the passage and adoption thereof in the records of the meeting at which the same is passed and adopted; and shall within fifteen (15) days after the passage and adoption thereof cause the same to be published by one insertion in *The Beach Reporter*, the official newspaper of the City and a weekly newspaper of general circulation, published and circulated within the City of Manhattan Beach hereby designated for that purpose.

SECTION 14. This Ordinance will become effective at 12:01 a.m. on January 1, 2017

SECTION 15. The City Clerk shall cause a summary of this Ordinance to be published as provided by law. The summary shall be published and a certified copy of the full text of this Ordinance shall be posted in the Office of the City Clerk at least five (5) days prior to the City Council meeting at which this Ordinance is to be adopted. Within fifteen (15) days after the adoption of this Ordinance, the City Clerk shall cause a summary to be published with the names of those City Council members voting for and against this Ordinance and shall post in the Office of the City Clerk a certified copy of the full text of this Ordinance along with the names of those City Council members voting for and against the Ordinance.

PASSED, APPROVED and ADOPTED this \_\_\_\_ day of \_\_\_\_\_, 2016.

Ayes:  
Noes:  
Abstain:  
Absent:

Mayor, City of Manhattan Beach, California

ATTEST:

City Clerk