

ATTACHMENT



# BEAC PUBLIC HEARING

LOCAL ADOPTION OF THE LATEST  
CALIFORNIA BUILDING STANDARDS CODE  
AND UNIFORM HOUSING CODE

AUGUST 15, 2016

PREPARED BY

LBD DEVELOPMENT SERVICES



SUSTAINABLE  
LONG BEACH

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**PROPOSED AMENDMENT:**

Section 18.40.010 of the Long Beach Municipal Code is amended to read as follows:

**18.40.010 – Adoption.**

The City Council adopts and incorporates by reference as though set forth in full in this chapter the ~~2013~~2016 Edition of the California Building Code, ~~including Appendices C, H, and I, but excluding sections, chapters or appendices pursuant to Section 18.40.040 (herein referred to as the "California Building Code").~~ The California Building Code is Part 2 of the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. This part is based on the provisions of the ~~2012~~2015 Edition of the International Building Code (~~model code~~ herein referred to as the "International Building Code") as developed by the International Code Council with necessary California amendments. The following appendices of the California Building Code are included: Appendices C and I. The following sections, chapters or appendices of the California Building Code are deleted: Sections 101 through 116 of Chapter 1, Division II; and Appendices A, B, D, E, F, G, H, J, K, L and M.

The adoption of the ~~2013~~ Edition of the California Building Code (~~herein referred to as "California Building Code"~~) is subject to the changes, amendments and modifications to said code as provided in this chapter, and certain provisions of the Long Beach Municipal Code, which shall remain in full force and effect as provided in this title. Such codes and code provisions shall constitute and be known as the Long Beach Building Code. A copy of the California Building Code, printed as code in book form, shall be on file in the Office of the City Clerk.

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. This amendment adopts the latest edition of the California Building Code and makes minor editorial changes to reflect that certain non-mandatory sections, chapters, and/or appendices are either included or deleted as part of the code adoption.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

**PROPOSED AMENDMENT:**

Section 18.40.020 of the Long Beach Municipal Code is amended to read as follows:

18.40.020 – Application.

The provisions of the ~~model code (the International Building Code)~~, which are incorporated into the California Building Code, are applicable to all occupancy groups and uses regulated by the ~~model code~~International Building Code. The amendments made by the State agencies to the ~~model code~~International Building Code and incorporated into the California Building Code are applicable only to those occupancies or uses that the State ~~agency~~agencies making the amendments ~~is~~are authorized to regulate, as listed in Chapter 1, Division I of the California Building Code. The Building and Safety Bureau shall ~~only adopt and enforce these~~such provisions and amendments made by the following State agencies:

- A. ~~The California Energy Commission (CEC) as specified in Section 1.5 of the California Building Code.~~The California Building Standards Commission as specified in Section 1.2 of the California Building Code and identified in the Matrix Adoption Tables under the acronyms BSC and BSC-CG.
- B. ~~The Department of Housing and Community Development (HCD) as specified in Section 1.8 of the California Building Code and identified in the Matrix Adoption Tables under the acronyms HCD 1 and HCD 1-AC.~~
- C. ~~The Division of the State Architect, Access Compliance (DSA/AC) as specified in Section 1.9 of the California Building Code and identified in the Matrix Adoption Tables under the acronym DSA-AC.~~
- D. ~~The Office of Statewide Health, Planning and Development (OSHDP 3) as specified in Section 1.10 of the California Building Code and identified in the Matrix Adoption Tables under the acronym OSHPD 3.~~
- E. ~~The Office of the State Fire Marshal (SFM) as specified in Section 1.11 of the California Building Code and identified in the Matrix Adoption Tables under the acronym SFM.~~

**RATIONALE:**

This amendment makes minor editorial changes to reflect the state agencies and the applicable provisions or amendments that will be adopted and enforced by the City.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

**PROPOSED AMENDMENT:**

Section 18.40.030 of the Long Beach Municipal Code is deleted as follows:

~~18.40.030 – Amendments to the adopted code.~~

~~The California Building Code is amended and modified as set forth in Sections 18.40.040 through 18.40.420.~~

**RATIONALE:**

The language regarding sections, chapters or appendices to be amended and/or modified in the CBC has been relocated to and incorporated with the LBMC Section 18.40.010. This section is no longer required.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.040 of the Long Beach Municipal Code is deleted as follows:

~~18.40.040 – Sections, chapters or appendices deleted from the adopted code.~~

~~The following sections, chapters or appendices of the California Building Code are deleted: Sections 101 through 116 of Chapter 1, Division II; Section 3412 of Chapter 34; Sections H109.2, H110.3, H110.4, H110.5, H112.4, H113.3, and H113.4 of Appendix H; and Appendices Chapter A, B, D, E, F, G, J and K.~~

**RATIONALE:**

The language regarding sections, chapters or appendices to be deleted from the CBC has been relocated to and incorporated with the LBMC Section 18.40.010. This section is no longer required.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.050 of the Long Beach Municipal Code is amended to read as follows:

18.40.050 – Amend CBC Section 201.4—Terms not defined.

Section 201.4 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies. Webster's Third New International Dictionary of the English Language, Unabridged, shall be considered as providing ordinarily accepted meanings.

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. This amendment makes minor editorial changes to reference a specific dictionary to be used for words not defined in the code since the IBC does not have such a reference.

**FINDINGS:**

Local Administrative Clarification Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.060 of the Long Beach Municipal Code is amended to read as follows:

18.40.060 – Amend CBC Section 302.1—Classification.

The last sentence in Section 302.1 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

Where a structure is proposed for a purpose that is not specifically provided for in this code or about which there is any question, such structure shall be classified, as determined by the Building Official, in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. This amendment makes minor editorial changes to clarify that the Building Official is authorized to make the final determination on the proposed occupancy of a building or structure where such use is not specifically provided for in the code.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

DRAFT



**PROPOSED AMENDMENT:**

Section 18.40.070 of the Long Beach Municipal Code is deleted as follows:

~~18.40.070 – Amend CBC Section 1603.1.9 – Systems and components requiring special inspections for seismic resistance.~~

~~Section 1603.1.9 of the 2013 Edition of the California Building Code is amended by changing the reference to "Section 107.1, Chapter 1, Division II" to read "Chapter 18.05 of the Long Beach Municipal Code."~~

**RATIONALE:**

This existing amendment is no longer necessary.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.080 of the Long Beach Municipal Code is amended to read as follows:

18.40.080 – Amend CBC Section 1612.3—Establishment of flood hazard areas.

Section 1612.3 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

1612.3 Establishment of flood hazard areas. To establish flood hazard areas, the City shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for the City of Long Beach" dated July 6, 1998, as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section.

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. This amendment makes minor editorial changes to reference the appropriate flood hazard information.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

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**PROPOSED AMENDMENT:**

Section 18.40.090 of the Long Beach Municipal Code is amended to read as follows:

18.40.090 – Amend CBC Section 1612.5—Flood hazard documentation.

Section 1612.5 Items 1.1 and 2.1 of the 2013~~2016~~ Edition of the California Building Code ~~is~~are amended by changing the reference to "Section 110.3.3, Chapter 1, Division II" to read "Subsection 18.07.050.A.3 of the Long Beach Municipal Code."to read as follows:

1.1 The elevation of the lowest floor, including the basement, as required by the lowest floor elevation inspection in Subsection 18.07.050.A.3 of the Long Beach Municipal Code and for the final inspection in Subsection 18.07.050.A.13 of the Long Beach Municipal Code.

2.1 The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Subsection 18.07.050.A.3 of the Long Beach Municipal Code and for the final inspection in Subsection 18.07.050.A.13 of the Long Beach Municipal Code.

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for flood related inspections.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

**PROPOSED AMENDMENT:**

Section 18.40.100 of the Long Beach Municipal Code is amended to read as follows:

18.40.100 – Add CBC Section ~~4613.6~~1613.5.2—~~Minimum distance for building~~Structural separation.

Section ~~4613.6~~1613.5.2 is added to Chapter 16 of the ~~2013~~2016 Edition of the California Building Code to read as follows:

~~4613.6~~1613.5.2 ASCE 7, 12.12.3~~Structural Separation~~. Modify ASCE 7 Section 12.12.3 Equation ~~12.12-1~~ of Section 12.12.3 to read as follows:

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

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. The inclusion of the importance factor in this equation has the unintended consequence of reducing the minimum seismic separation distance for important facilities such as hospitals, schools, police and fire stations from adjoining structures. The proposal to omit the importance factor from Equation 12.12-1 will ensure that a safe seismic separation distance is provided.

**FINDINGS:**

Local Geologic Conditions – Amendment is necessary on the basis of a local geologic condition. The modification to omit the importance factor from Equation 12.12-1 will ensure that a safe seismic separation distance is maintained for important facilities from adjoining structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.110 of the Long Beach Municipal Code is amended to read as follows:

18.40.110 – Add CBC Section ~~1613.71613.5.3~~—~~Modify ASCE 7 Section 12.2.3.1 Exception 3~~Values for vertical combinations.

Section ~~1613.71613.5.3~~ is added to Chapter 16 of the ~~2013~~2016 Edition of the California Building Code to read as follows:

~~1613.71613.5.3 ASCE 7, 12.2.3.1, Exception 3~~Values for Vertical Combinations. 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.

**RATIONALE:**

Administrative changes to reference the latest edition and section of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. Observed damages to one and two family dwellings of light frame construction after the Northridge Earthquake may have been partially attributed to vertical irregularities common to this type of occupancy and construction. In an effort to improve quality of construction and incorporate lesson learned from studies after the Northridge Earthquake, the proposed modification to ASCE 7-10 Section 12.2.3.1 Exception 3 by limiting the number of stories and height of the structure to two stories will significantly minimize the impact of vertical irregularities and concentration of inelastic behavior from mixed structural systems.

**FINDINGS:**

Local Geological Conditions – Amendment is necessary on the basis of a local geologic condition. Observed damages to one and two family dwellings of light frame construction after the Northridge Earthquake may have been partially attributed to vertical irregularities common to this type of occupancy and construction. The proposed modification to limit mixed structural system to two stories is intended to improve quality of construction by reducing potential damages that may result from vertical irregularities of the structural system in buildings subject to high seismic load. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.120 of the Long Beach Municipal Code is amended to read as follows:

18.40.120 – Add CBC Section ~~4613.81613.5.4~~—~~Modify ASCE 7, Section 12.11.2.2.3~~Wood diaphragms.

Section ~~4613.81613.5.4~~ is added to Chapter 16 of the ~~2013~~2016 Edition of the California Building Code to read as follows:

~~4613.81613.5.4~~ ASCE 7, Section 12.11.2.2.3Wood Diaphragms. ~~Modify ASCE 7, Section 12.11.2.2.3~~  
~~to read as follows:~~

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 crossies.
2. The maximum diaphragm shear used to determine the depth of the subdiaphragm shall not exceed 75% of the maximum diaphragm shear.

**RATIONALE:**

Administrative changes to reference the latest edition and section of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. A joint Structural Engineers Association of Southern California, Los Angeles County and Los Angeles City Task Force investigated the performance of concrete and masonry construction with flexible wood diaphragm failures after the Northridge earthquake. It was concluded at that time that continuous ties are needed at specified spacing to control cross grain tension in the interior of the diaphragm. Additionally, there was a need to limit subdiaphragm allowable shear loads to control combined orthogonal stresses within the diaphragm. Recognizing the importance and need to continue the recommendation made by the task force while taking into consideration the improve performances and standards for diaphragm construction today, this proposal increases the continuous tie spacing limit to 40 ft in lieu of 25 ft and to use 75% of the allowable code diaphragm shear to determine the depth of the sub-diaphragm in lieu of the 300 plf and is deemed appropriate and acceptable. Due to the frequency of this type of failure during the past significant earthquakes, various jurisdictions within the Los Angeles region have taken this additional step to prevent roof or floor diaphragms from pulling away from concrete or masonry walls.

**FINDINGS:**

Local Geological Conditions – Amendment is necessary on the basis of a local geologic condition. The proposed amendment to require special anchorage of the diaphragm to the wall and limit the allowable shear will address special needs for concrete and masonry construction with flexible wood diaphragm. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.130 of the Long Beach Municipal Code is amended to read as follows:

18.40.130 – Add CBC Section ~~1613.10~~1613.7—Suspended ceiling.

Section 1613.7 is added to Chapter 16 of the 2016 Edition of the California Building Code to read as follows:

~~1613.10~~1613.7 **Suspended Ceilings.** Minimum design and installation standards for suspended ceilings shall be determined in accordance with the requirements of Section 2506.2.1 of this Code and this section.

~~1613.10.1~~1613.7.1 **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~~1613.7.2 **General.** The suspended ceilings and lighting systems shall be limited to 6 feet (1828 mm) below the structural deck unless the lateral bracing is designed by a ~~licensed engineer or architect~~registered design professional.

~~1613.10.3~~1613.7.3 **Sprinkler Heads.** All sprinkler heads (drops) except fire-resistance-rated floor/ceiling or roof/ceiling assemblies, shall be designed to allow for free movement of the sprinkler pipes with oversize rings, sleeves or adaptors through the ceiling tile. Sprinkler heads and other penetrations shall have a 2 in.-inch (50 mm) oversize ring, sleeve, or adapter through the ceiling tile to allow for free movement of at least 1 in.-inch (25 mm) in all horizontal directions. ~~Alternatively, a swing joint that can accommodate 1 in.-inch (25 mm) of ceiling movement in all horizontal directions is permitted to be provided at the top of the sprinkler head extension.~~

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

~~1613.10.4~~1613.7.4 **Special Requirements for Means of Egress.** Suspended ceiling assemblies located along means of egress serving an occupant load of 30 or more shall comply with the following provisions.

~~1613.10.4.1~~1613.7.4.1 **General.** Ceiling suspension systems shall be connected and braced with vertical hangers attached directly to the structural deck along the means of egress serving an occupant load of 30 or more and at lobbies accessory to Group A Occupancies. Spacing of vertical hangers shall not exceed 2 feet (610 mm) on center along the entire length of the suspended ceiling assembly located along the means of egress or at the lobby.

~~1613.10.4.2~~1613.7.4.2 **Assembly Device.** All lay-in panels shall be secured to the suspension ceiling assembly with two hold-down clips minimum for each tile within a 4-foot (1219 mm) radius of the exit lights and exit signs.

~~1613.10.4.3~~1613.7.4.3 **Emergency Systems.** Independent supports and braces shall be provided for light fixtures required for exit illumination. Power supply for exit illumination shall comply with the requirements of Section ~~1006.3~~1008.3 of this Code.

~~1613.10.4.4~~1613.7.4.4 **Supports for Appendage.** Separate support from the structural deck shall be provided for all appendages such as light fixtures, air diffusers, exit signs, and similar elements.

**RATIONALE:**

Administrative changes to reference the latest edition and section of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. The

California Building Code has little to no information regarding the safe design and construction requirements for ceiling suspension systems subject to seismic loads. It is through the experience of prior earthquakes, such as the Northridge Earthquake, that this amendment is proposed so as to minimize the amount of bodily and building damage within the spaces in which this type of ceiling will be installed. This proposed amendment complements ASCE 7-10 Chapter 13 Section 13.5.6.2.2 and the cited reference to ASTM E580.

**FINDINGS:**

Local Geological Conditions – Amendment is necessary on the basis of a local geologic condition. The proposed amendment requiring safe design and construction requirements for ceiling suspension systems to resist seismic loads is intended to minimize the amount of damage within a building and along the path of the means of egress. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.140 of the Long Beach Municipal Code is amended to read as follows:

18.40.140 – Amend CBC Section 1705.3—Concrete construction.

Section 1705.3 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

1705.3 Concrete Construction. The special inspections and verifications ~~fortests~~ of concrete construction shall be as ~~required by~~performed in accordance with this section and Table 1705.3.

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

1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock, where the structural design of the footing is based on a specified compressive strength,  $f'c$ , ~~no greater than 2,500 pounds per square inch (psi) (17.2 Mpa)~~ regardless of the compressive strength specified in the construction documents or used in the footing construction.
2. Continuous concrete footings supporting walls of buildings three stories or less in height above grade plane that are fully supported on earth or rock where:
  - 2.1. The footings support walls of light-frame construction;
  - 2.2. The footings are designed in accordance with Table 1805.4-~~29.7~~; 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.

**RATIONALE:**

Results from studies after the 1994 Northridge Earthquake indicated that a lot of the damages were attributed to lack of quality control during construction resulting in poor performance of the building or structure. This amendment requires special inspection for concrete with a compressive strength greater than 2,500 pounds per square inch to improve performance through additional quality control measures.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. The proposed modification ensures better performance of building or structure by requiring special inspection for concrete with a compressive strength greater than 2,500 pounds per square inch. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.150 of the Long Beach Municipal Code is amended to read as follows:

18.40.150 – Amend CBC Section 1705.4412—Seismic resistance.

Exception 3 of Section 1705.4412 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

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

**RATIONALE:**

There are few detached one- or two-family dwellings not exceeding two stories above grade plane that are built as “box-type” structures, especially those in the hillside areas and near the oceanfront. Many steel moment frame, braced frames, and/or cantilevered columns within these buildings can still be shown as “regular” structures by calculations. With the higher seismic demand placed on buildings in this area, the language in Sections 1705.12 Exception 3 of the California Building Code would permit many detached one- or two-family dwellings not exceeding two stories above grade plane with complex structural elements to be constructed without the benefit of special inspections. By requiring special inspections, the quality of major structural elements and connections that affect the vertical and lateral load resisting systems of the structure will greatly be increased. The exception should only be allowed for detached one- or two-family dwellings not exceeding two stories above grade plane assigned to Seismic Design category A, B and C and excludes those located in higher seismic zones.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. The proposed modification to exclude structures assigned to Seismic Design Category D, E or F from being exempt from requiring special inspections will improve quality assurance and ensures better performance of buildings or structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

18.40.160 – Amend CBC Section ~~4704.51704.6~~—Structural observations.

Section ~~4704.51704.6~~ of the 2013~~2016~~ Edition of the California Building Code is amended to read as follows:

~~4704.51704.6~~ Structural observations. Where required by the provisions of Section ~~4704.5.11704.6.1~~ or ~~4704.5.21704.6.2~~, the owner or the owner's authorized agent shall employ a structural observer to perform structural observations ~~as defined in Section 1702. Structural observation does not include or waive the responsibility for the inspections or special inspections in Chapter 18.07 of the Long Beach Municipal Code or special inspections in Section 1705 or other sections of this code.~~ The structural observer shall be one of the following individuals:

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

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

The owner or owner's 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.

**RATIONALE:**

Administrative changes to reference the latest edition of the State's code. State law requires that local jurisdictions adopt the 2016 Edition of the California Building Code by January 1, 2017. The language in Section 1704.6 of the California Building Code permits the owner to employ any registered design professional to perform structural observations with minimum guideline. However, it is important to recognize that the registered design professional responsible for the structural design has thorough knowledge of the building he/she designed. By requiring the registered design professional responsible for the structural design or their designee who were involved with the design to observe the construction, the quality of the observation for major structural elements and connections that affect the vertical and lateral load resisting systems of the structure will greatly be increased. Additional requirements are provided to help clarify the role and duties of the structural observer and the method of reporting and correcting observed deficiencies to the building official.

**FINDINGS:**

Local Geological Condition – Amendment is necessary on the basis of a local geologic condition. The proposed amendment to require the registered design professional in responsible charge for the

structural design to observe the construction will help ensure acceptable standards of workmanship is provided and to improve the quality of the observation. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.170 of the Long Beach Municipal Code is amended to read as follows:

18.40.170 – Amend CBC Section 1707.1—Alternateive test procedure.

Section 1707.1 of the ~~2013~~2016 Edition of the California Building Code is amended by changing the reference to "Section 104.11, Chapter 1, Division II" to read "Section 18.03.060 of the Long Beach Municipal Code."

**RATIONALE:**

This amendment makes minor editorial changes to reflect the appropriate reference to the City's Municipal Code for alternate test procedure.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.180 of the Long Beach Municipal Code is amended to read as follows:

18.40.180 – Amend CBC Section 1807.1.4—Permanent wood foundation systems.

Section 1807.1.4 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

1807.1.4 Permanent wood foundation systems. Permanent wood foundation systems shall be designed and installed in accordance with AF&PA 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 ~~2303.1.8.1~~2303.1.9.1. Permanent wood foundation systems shall not be used for structures assigned to Seismic Design Category D, E or F.

**RATIONALE:**

No substantiating data has been provided to show that wood foundation is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood foundation systems when they are not properly treated and protected against deterioration have performed very poorly and have led to slope failures. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result in using wood foundation systems that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms.

**FINDINGS:**

Local Geologic and Climatic Conditions – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that wood foundation is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood foundation systems when they are not properly treated and protected against deterioration have performed very poorly and have led to slope failures. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result in using wood foundation systems that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.190 of the Long Beach Municipal Code is amended to read as follows:

18.40.190 – Amend CBC Section 1807.1.6— Prescriptive design of concrete and masonry foundation walls.

Section 1807.1.6 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

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

**RATIONALE:**

With the higher seismic demand placed on buildings and structures in this region, it is deemed necessary to take precautionary steps to reduce or eliminate potential problems that may result by following prescriptive design provisions that does not take into consideration the surrounding environment. Plain concrete performs poorly in withstanding the cyclic forces resulting from seismic events. In addition, no substantiating data has been provided to show that under-reinforced foundation walls are effective in resisting seismic loads and may potentially lead to a higher risk of failure. It is important that the benefit and expertise of a registered design professional be obtained to properly analyze the structure and take these issues into consideration.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, it is deemed necessary to take precautionary steps to reduce or eliminate potential problems that may result by following prescriptive design provisions that does not take into consideration the surrounding environment. Plain concrete performs poorly in withstanding the cyclic forces resulting from seismic events. In addition, no substantiating data has been provided to show that under-reinforced foundation walls are effective in resisting seismic loads and may potentially lead to a higher risk of failure. It is important that the benefit and expertise of a registered design professional be obtained to properly analyze the structure and take these issues into consideration. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.200 of the Long Beach Municipal Code is amended to read as follows:

18.40.200 – Amend CBC Section 1809.3—Stepped footings.

Section 1809.3 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

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

For structures assigned to Seismic Design Category D, E or F, the stepping requirement shall also apply to the top surface of grade beams supporting walls. Footings shall be reinforced with four 1/2-inch diameter (12.7 mm) deformed reinforcing bars. Two bars shall be placed at the top and bottom of the footings as shown in Figure 1809.3.

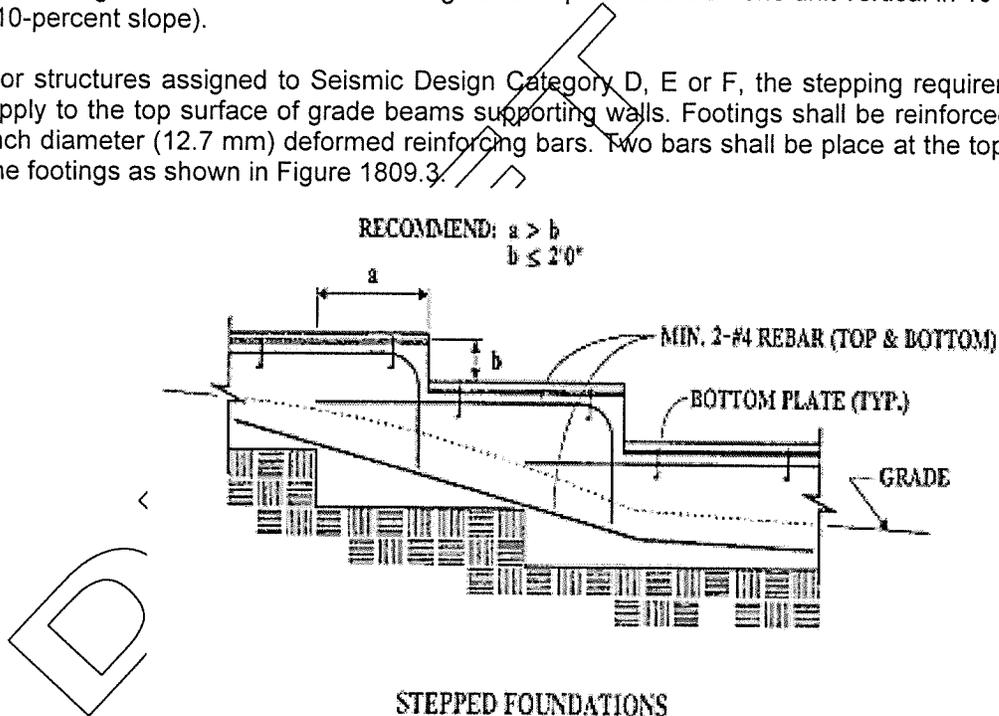


FIGURE 1809.3  
STEPPED FOOTING

**RATIONALE:**

With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result for under reinforced footings located on sloped surfaces. Requiring minimum reinforcement for stepped footings is intended to address the problem of poor performance of plain or under-reinforced footings during a seismic event. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result for under reinforced footings located on sloped surfaces. Requiring minimum reinforcement for stepped footings is intended to address the

problem of poor performance of plain or under-reinforced footings during a seismic event. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.210 of the Long Beach Municipal Code is amended to read as follows:

18.40.210 – Amend CBC Section 1809.7 and Table 1809.7— Prescriptive footings for light-frame construction.

Section 1809.7 and Table 1809.7 of the 2013~~2016~~ Edition of the California Building Code are 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 BY THE FOOTING <sup>f</sup>	WIDTH OF FOOTING (inches)	THICKNESS OF FOOTING (inches)
1	12	6
2	15	6
3	18	8

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

- a. Depth of footings shall be in accordance with Section 1809.4.
- b. The ground under the footing shall be permitted to be excavated to the elevation of the top of the footing.
- c. Not Adopted.
- d. See Section 1908 for additional requirements for concrete footings of structures assigned to Seismic Design Category C, D, E or F.
- e. For thickness of foundation walls, see Section 1807.1.6.
- f. Footings shall be permitted to support a roof addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

**RATIONALE:**

No substantiating data has been provided to show that under-reinforced footings are effective in resisting seismic loads and may potentially lead to a higher risk of failure. Therefore, this proposed amendment requires minimum reinforcement in continuous footings to address the problem of poor performance of plain or under-reinforced footings during a seismic event. With the higher seismic demand placed on buildings and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result by following prescriptive design provisions for footing that does not take into consideration the surrounding environment. It was important that the benefit and expertise of a registered design professional be obtained to properly analyze the structure and take these issues into consideration. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force that investigated the poor performance observed in the 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. No substantiating data has been provided to show that under-reinforced footings are effective in resisting seismic loads and may potentially lead to a higher risk of failure. Therefore, the amendment requires minimum reinforcement in continuous footings to address the problem of poor performance of plain or under-reinforced footings during a seismic event. With the higher seismic demand placed on buildings

and structures in this region, precautionary steps are proposed to reduce or eliminate potential problems that may result by following prescriptive design provisions for footing that does not take into consideration the surrounding environment. It was important that the benefit and expertise of a registered design professional be obtained to properly analyze the structure and take these issues into consideration. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.220 of the Long Beach Municipal Code is amended to read as follows:

18.40.220 – Amend CBC Section 1809.12—Timber footings.

Section 1809.12 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

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

**RATIONALE:**

No substantiating data has been provided to show that timber footings are effective in supporting buildings and structures during a seismic event, especially while being subjected to deterioration caused by the combined detrimental effects of moisture in the soil and wood-destroying organisms. Timber footings, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using timber footings that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic and Climatic Conditions – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that timber footings is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Timber footings, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using timber footings that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.230 of the Long Beach Municipal Code is amended to read as follows:

18.40.230 – Amend CBC Section 1810.3.2.4—Timber.

Section 1810.3.2.4 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

1810.3.2.4 Timber. Timber deep foundation elements shall be designed as piles or poles in accordance with ~~AF&PA~~ANSI/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.

**RATIONALE:**

No substantiating data has been provided to show that timber deep foundation is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Timber deep foundation, when they are not properly treated and protected against deterioration, has performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using timber deep foundation that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic and Climatic Conditions – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that timber footings is effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Timber footings, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using timber footings that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.240 of the Long Beach Municipal Code is amended to read as follows:

18.40.240 – Amend CBC Section ~~2304.11.7~~2304.12.5—Wood used in retaining walls and cribs.

Section ~~2304.11.7~~2304.12.5 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

~~2304.11.7~~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.

**RATIONALE:**

No substantiating data has been provided to show that wood used in retaining or crib walls are effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood used in retaining or crib walls, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using wood in retaining or crib walls that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic and climatic condition. No substantiating data has been provided to show that wood used in retaining or crib walls are effective in supporting buildings and structures during a seismic event while being subject to deterioration caused by the combined detrimental effect of constant moisture in the soil and wood-destroying organisms. Wood used in retaining or crib walls, when they are not properly treated and protected against deterioration, have performed very poorly. Most contractors are typically accustomed to construction in dry and temperate weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes it suitable for both seismic event and wet applications. The proposed amendment takes the precautionary steps to reduce or eliminate potential problems that may result by using wood in retaining or crib walls that experience relatively rapid decay due to the fact that the region does not experience temperatures cold enough to destroy or retard the growth and proliferation of wood-destroying organisms. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic or climatic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.250 of the Long Beach Municipal Code is amended to read as follows:

18.40.250 – Add CBC Section 2305.4—Quality of nails.

Section 2305.4 is added to Chapter 23 of the ~~2013~~2016 Edition of the California Building Code 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.

**RATIONALE:**

The overdriving of nails into the structural wood panel still remains a concern when pneumatic nail guns are used for wood structural panel shear wall nailing. Box nails were observed to cause massive and multiple failures of the typical 3/8-inch thick plywood during the 1994 Northridge Earthquake. The use of clipped head nails as allowed in Table A1 of AFPA SDPWS footnote referencing to ASTM F1667, continues to be restricted from being used in wood structural panel shear walls where the minimum nail head size must be maintained in order to minimize nails from pulling through sheathing materials. Clipped or mechanically driven nails used in wood structural panel shear wall construction were found to perform much less in previous wood structural panel shear wall testing done at the University of California Irvine. The existing test results indicated that, under cyclic loading, the wood structural panel shear walls were less energy absorbent and less ductile. The panels reached ultimate load capacity and failed at substantially less lateral deflection than those using same size hand-driven nails. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. The overdriving of nails into the structural wood panel still remains a concern when pneumatic nail guns are used for wood structural panel shear wall nailing. Box nails were observed to cause massive and multiple failures of the typical 3/8-inch thick plywood during the 1994 Northridge Earthquake. The use of clipped head nails continues to be restricted from being used in wood structural panel shear walls where the minimum nail head size must be maintained in order to minimize nails from pulling through sheathing materials. Clipped or mechanically driven nails used in wood structural panel shear wall construction were found to perform much less in previous wood structural panel shear wall testing done at the University of California Irvine. The existing test results indicated that, under cyclic loading, the wood structural panel shear walls were less energy absorbent and less ductile. The panels reached ultimate load capacity and failed at substantially less lateral deflection than those using same size hand-driven nails. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.260 of the Long Beach Municipal Code is amended to read as follows:

18.40.260 – Add CBC Section 2305.5—Hold-down connectors.

Section 2305.5 is added to Chapter 23 of the ~~2013~~2016 Edition of the California Building Code 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 approved cyclic load values or 75 percent of the allowable seismic load values that do not consider cyclic loading of the product. Connector bolts into wood framing shall require steel plate washers on the post on the opposite side of the anchorage device. Plate size shall be a minimum of 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Hold-down connectors shall be tightened to finger tight plus one half (1/2) wrench turn just prior to covering the wall framing.

**RATIONALE:**

ICC-ES AC 155 Acceptance Criteria for Hold-downs (Tie-Downs) Attached to Wood Members is widely used to establish allowable values for hold-down connectors in evaluation reports. AC 155 uses monotonic loading to establish allowable values. Yet, cyclic and dynamic forces imparted on buildings and structures by seismic activity cause more damage than equivalent forces that are applied in a monotonic manner. However, the engineering, regulatory and manufacturing industries have not reached consensus on the appropriate cyclic or dynamic testing protocols. This condition is expected to continue for some time. In the interim, this proposed amendment continues to limit the allowable capacity to 75% of the evaluation report value to provide an additional factor of safety for statically tested anchorage devices. Steel plate washers will reduce the additional damage that can result when hold-down connectors are fastened to wood framing members. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles with additional editorial revisions for clarification.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. ICC-ES AC 155 Acceptance Criteria for Hold-downs (Tie-Downs) Attached to Wood Members is widely used to establish allowable values for hold-down connectors in evaluation reports. AC 155 uses monotonic loading to establish allowable values. Yet, cyclic and dynamic forces imparted on buildings and structures by seismic activity cause more damage than equivalent forces that are applied in a monotonic manner. However, the engineering, regulatory and manufacturing industries have not reached consensus on the appropriate cyclic or dynamic testing protocols. This condition is expected to continue for some time. This amendment continues to limit the allowable capacity to 75% of the acceptance report value to provide an additional factor of safety for statically tested anchorage devices. Steel plate washers will reduce the additional damage that can result when hold-down connectors are fastened to wood framing members. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.270 of the Long Beach Municipal Code is amended to read as follows:

18.40.270 – Amend CBC Section 2306.2—Wood-frame diaphragms.

Section 2306.2 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

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

Exception: ~~[DSA-SS, DSA-SS/CC and OSHPD 1, 2 & 4] Wood structural panel diaphragms using staples as fasteners are not permitted by DSA and OSHPD.~~

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.

**RATIONALE:**

The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with staples are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner.

In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing.

Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This proposed amendment is intended to prevent the undesirable

performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board.

This proposed amendment continues the previous amendment adopted during the 2010 code adoption cycle.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with staples are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with staples would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with staples appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of staples as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing. Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.280 of the Long Beach Municipal Code is amended to read as follows:

18.40.280 – Amend CBC Section 2306.3—Wood-frame shear walls.

Section 2306.3 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

2306.3 Wood-frame shear walls. Wood-frame shear walls shall be designed and constructed in accordance with ~~AF&PA~~AWC SDPWS. For structures assigned to Seismic Design Category D, E, or F, application of Tables 4.3A and 4.3B of ~~AF&PA~~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. Where shear design values using allow stress design (ASD) exceed 350 plf or load and resistance factor design (LRFD) exceed 500 plf, all framing members receiving edge nailing from abutting panels shall not be less than a single 3-inch nominal member, or two 2-inch nominal members fastened together in accordance with Section 2306.1 to transfer the design shear value between framing members. Wood structural panel joint and sill plate nailing shall be staggered at all panel edges. See Section 4.3.6.1 and 4.3.6.4.3 of AF&PA SDPWS for sill plate size and anchorage requirements.~~

~~43. 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.~~

~~54. 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 ~~AF&PA~~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 ~~AF&PA~~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 ~~AF&PA~~AWC SDPWS.

Exception: ~~[DSA-SS-7 DSA-SS/CC and OSHPD 1, 2 & 4] Wood structural panel shear walls using staples as fasteners are not permitted by DSA and OSHPD.~~

**RATIONALE:**

The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with stapled nails are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner.

In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with stapled nails would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with stapled nails appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of stapled nail as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing.

Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This proposed amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board.

This proposed amendment continues the previous amendment adopted during the 2010 code adoption cycle.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with stapled nails are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with stapled nails would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with stapled nails appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of stapled nail as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing. Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board. The amendment makes modification and changes to

better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.290 of the Long Beach Municipal Code is amended to read as follows:

18.40.290 – Add CBC Section 2307.2—Wood-frame shear walls.

Section 2307.2 is added to the ~~2013~~2016 Edition of the California Building Code to read as follows:

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

**RATIONALE:**

The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with stapled nails are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner.

In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with stapled nails would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with stapled nails appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of stapled nail as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing.

Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This proposed amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board.

This proposed amendment continues the previous amendment adopted during the 2010 code adoption cycle.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. The Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the damages to buildings and structures during the 1994 Northridge Earthquake recommended reducing allowable shear values in wood structural panel shear walls or diaphragms that were not substantiated by cyclic testing. That recommendation was consistent with a report to the Governor from the Seismic Safety Commission of the State of California recommending that code requirements be "more thoroughly substantiated with testing." The allowable shear values for wood structural panel shear walls or diaphragms fastened with stapled nails are based on monotonic testing and does not take into consideration that earthquake forces load shear wall or diaphragm in a repeating and fully reversible manner. In September 2007, limited cyclic testing was conducted by a private engineering firm to determine if wood structural panels fastened with stapled nails would exhibit the same behavior as the wood structural panels fastened with common nails. The test result revealed that wood structural panel fastened with

stapled nails appeared to be much lower in strength and stiffness than wood structural panels fastened with common nails. It was recommended that the use of stapled nail as fasteners for wood structural panel shear walls or diaphragms not be permitted to resist seismic forces in structures assigned to Seismic Design Category D, E and F unless it can be substantiated by cyclic testing. Furthermore, the cities and county within the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of shear walls and diaphragms designed for high levels of seismic forces by requiring wood sheathing be applied directly over the framing members and prohibiting the use of panels placed over gypsum sheathing. This amendment is intended to prevent the undesirable performance of nails when gypsum board softens due to cyclic earthquake displacements and the nail ultimately does not have any engagement in a solid material within the thickness of the gypsum board. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

DRAFT

**PROPOSED AMENDMENT:**

Section 18.40.300 of the Long Beach Municipal Code is amended to read as follows:

18.40.300 – Amend CBC Section ~~2308.3.4~~2308.6.8.1—Braced wall line support.

Section ~~2308.3.4~~2308.6.8.1 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

~~2308.3.4 Braced wall line support~~2308.6.8.1 Foundation requirements. Braced wall lines shall be supported by continuous foundations.

Exception: For structures with a maximum plan dimension not over 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.

**RATIONALE:**

With the higher seismic demand placed on buildings and structures in this region, interior walls can easily be called upon to resist over half of the seismic loading imposed on simple buildings or structures. Without a continuous foundation to support the braced wall line, seismic loads would be transferred through other elements such as non-structural concrete slab floors, wood floors, etc. The proposed change is to limit the use of the exception to structures assigned to Seismic Design Category A, B or C where lower seismic demands are expected. Requiring interior braced walls be supported by continuous foundations is intended to reduce or eliminate the poor performance of buildings or structures. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. With the higher seismic demand placed on buildings and structures in this region, interior walls can easily be called upon to resist over half of the seismic loading imposed on simple buildings or structures. Without a continuous foundation to support the braced wall line, seismic loads would be transferred through other elements such as non-structural concrete slab floors, wood floors, etc. The change is to limit the use of the exception to structures assigned to Seismic Design Category A, B or C where lower seismic demands are expected. Requiring interior braced walls be supported by continuous foundations is intended to reduce or eliminate the poor performance of buildings or structures. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.340 of the Long Beach Municipal Code is amended to read as follows:

18.40.340 – Amend CBC Section ~~2304.9.12304.10.1~~—Fastener requirements.

Section ~~2304.9.12304.10.1~~ of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

~~2304.9.12304.10.1~~ 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 ~~2304.9.12304.10.1~~. Staple fasteners in Table ~~2304.9.12304.10.1~~ 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.

**RATIONALE:**

Due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this proposed local amendment limit the use of staple fasteners in resisting or transferring seismic forces. In September 2007, limited cyclic testing data was provided to the ICC Los Angeles Chapter Structural Code Committee showing that stapled wood structural shear panels do not exhibit the same behavior as the nailed wood structural shear panels. The test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results. Therefore, the use of staples as fasteners to resist or transfer seismic forces shall not be permitted without being substantiated by cyclic testing. This proposed amendment is a continuation of a similar amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. Due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this amendment limit the use of staple fasteners in resisting or transferring seismic forces. In September 2007, limited cyclic testing data was provided to the ICC Los Angeles Chapter Structural Code Committee showing that stapled wood structural shear panels do not exhibit the same behavior as the nailed wood structural shear panels. The test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results. Therefore, the use of staples as fasteners to resist or transfer seismic forces shall not be permitted without being substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.40.350 of the Long Beach Municipal Code is amended to read as follows:

18.40.350 – Amend CBC Section ~~2308.12.5~~2308.6.9—Attachment of sheathing.

Section ~~2308.12.5~~2308.6.9 of the ~~2013~~2016 Edition of the California Building Code is amended to read as follows:

~~2308.12.5~~2308.6.9 Attachment of sheathing. Fastening of braced wall panel sheathing shall not be less than that prescribed in Tables ~~2308.12.4~~2308.6.1 or ~~2304.9.12~~304.10.1. Wall sheathing shall not be attached to framing members by adhesives. Staple fasteners in Table ~~2304.9.12~~304.10.1 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

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

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

**RATIONALE:**

This proposed amendment is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region. This proposed amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

**FINDINGS:**

Local Geologic Condition – Amendment is necessary on the basis of a local geologic condition. Due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this amendment limit the use of staple fasteners in resisting or transferring seismic forces. In September 2007, limited cyclic testing data was provided to the ICC Los Angeles Chapter Structural Code Committee showing that stapled wood structural shear panels do not exhibit the same behavior as the nailed wood structural shear panels. The test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results. Therefore, the use of staples as fasteners to resist or transfer seismic forces shall not be permitted without being substantiated by cyclic testing. The amendment makes modification and changes to better limit personal injury and property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

**PROPOSED AMENDMENT:**

Section 18.65.010 of the Long Beach Municipal Code is amended to read as follows:

18.65.010 - Demolition of landmarks prohibited without building permit and funding for replacement structure.

- A. No permit to demolish a landmark or contributing structure designated pursuant to Chapter 2.63 of this code may be issued by the Department unless: (1) a building permit has been issued for a replacement structure or project for the property involved; and (2) the applicant has submitted evidence to the satisfaction of the ~~Planning Commission~~Cultural Heritage Commission that a financial commitment has been obtained by the applicant to assure the completion of the structure or project.
- B. Whenever, following action by the ~~Planning Commission~~Cultural Heritage Commission pursuant to Subsection 18.65.010.A, a permit to demolish a landmark is either issued or denied by the Department, the Director shall immediately notify the applicant and the Cultural Heritage Commission of such issuance.

**RATIONALE:**

The City updated the Cultural Heritage Ordinance in 2015, recognizing that contributing structures are very significant to their respective Historic Districts. The Ordinance mandates a Certificate of Appropriateness process for contributing structures, which is the same process to review changes for designated historical landmarks. This proposed amendment would bring this Section of Title 18 pertaining to demolition of historic structures into consistency with the updated Cultural Heritage Ordinance by including the same process for contributing structures as for designated landmarks.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes administrative changes to requirements that must be met prior to issuance of building permits for demolition of historic structures. The administrative changes will ensure that this section of Title 18 is consistent with the Cultural Heritage Ordinance, which protects historic resources in the City. The administrative changes also correctly designate the hearing body that has jurisdiction over the City's historic resources.

**PROPOSED AMENDMENT:**

Section 21.15.025 is added to Chapter 21.15 of the Long Beach Municipal Code to read as follows:

21.15.025 – Terms Not Defined.

Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies. Webster's Third New International Dictionary of the English Language, Unabridged shall be considered as providing ordinarily accepted meanings.

**RATIONALE:**

While Chapter 21.15 – Definitions, is intended to be as complete and comprehensive as possible. However, situations arise where a definition is not included within Title 21, which hinders the ability to enforce zoning and building regulations. The proposed language is also currently used within the Definitions section of Title 18.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment makes administrative changes to improve the ability to locate definitions for zoning and building words.

DRY

**PROPOSED AMENDMENT:**

Subsection 21.21.406.A of the Long Beach Municipal Code is amended to read as follows:

21.21.406 – Expiration.

- A. Except as otherwise provided in the conditions of approval, every right or privilege authorized under this Title shall terminate ~~on~~at two years after the granting of the request if the right or privilege has not been exercised ~~in good faith~~commenced within that two-year period. The termination will take effect without further City action if a timely request for extension of time has not been made or is denied. Any interruption or cessation necessitated by fire, flood, earthquake or act of war or vandalism or cessation shall not result in the termination of the right or privilege.

**RATIONALE:**

The Zoning Ordinance includes a one-year expiration date for land use entitlements, such as Site Plan Review, Conditional Use Permits, etc. Based on the complexity of the development environment, the construction industry has frequently been unable to commence construction or complete the plan review process prior to the expiration date. This necessitates the filing of a Time Extension application, which is added time and expense for the applicant. This change would allow for a two-year period in which to commence the project.

**FINDINGS:**

Local Administrative Clarification – Amendment is necessary for local administrative clarification, and does not modify a Building Standard pursuant to Sections 17958, 17958.5 and 17958.7 of the California Health and Safety Code. This amendment to the expiration date of land use entitlements allows for construction projects to have adequate time to evaluate and process building construction plans to take into account the complexities of the construction environment in the City of Long beach, which includes, but is not limited to, buildings and structures constructed within close proximity to one another, adjacent to the public rights-of-way, the presence of oil wells, flood zones, seismic zones, easements, utilities, and other land encumbrances.

**PROPOSED AMENDMENT:**

Section 21.31.220.B.4 of the Long Beach Municipal Code is amended to read as follows:

4. Solar Rooftop solar collectors and associated supporting structures may exceed the applicable height limit only if necessary for the sole purpose of solar collection, and not otherwise installed on any occupiable areas of the roof.

**RATIONALE:**

This clarifies that rooftop-mounted solar collectors may exceed the applicable height limit when installed on non-occupiable areas of the roof. This eliminates ambiguity, as there are both occupiable and non-occupiable areas of the roof.

**FINDINGS:**

Local Environmental Conditions – The City of Long Beach is a densely populated area having buildings and structures constructed often to or close to their allowable height limits. As such, the Municipal Code includes a provision for solar collectors to exceed the allowable height limit, since that would allow structures constructed to or near the allowable height limit to accommodate solar collectors. However, as rooftops in the City have many forms (flat roof, pitched roof, roof decks), the blanket application of the height exceedance provision may create ambiguities and inconsistencies. The proposed modification clarifies that solar collectors may only exceed the applicable height limit when installed on a non-occupiable area of the roof that may already be built to or near the allowable height limit, and therefore, needs to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the Long Beach Municipal Code.

