

BUILDING STANDARDS COMMISSION

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January 8, 2014

Sam Lee
Building Official
City of El Segundo
350 Main Street
El Segundo, CA 90245

RE: Ordinance #1484, 1486, 1487, 1488, 1490

Dear Mr. Lee:

This letter is to advise you of our determination regarding the referenced ordinance with express findings received from your agency on December 5, 2013.

Our review finds the submittal to contain five ordinances modifying provisions of the 2013 California Building Standards Code in Title 24, California Code of Regulations (code), and express findings complying with Health and Safety Code §§17958.7 and 18941.5. The code modifications are accepted for filing and are enforceable. This letter attests only to the satisfaction of the cited law for filing of local code amendment supported by an express finding with the Commission. The Commission is not authorized by law to evaluate the merit of the code modification or the express finding.

Local modifications to the code are specific to a particular edition of the code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the code is published.

On a related matter, should your city receive and ratify Fire Protection District ordinances making modifications to the code, be advised that Health and Safety Code §13869.7(c) requires such ratified ordinances and express findings to be filed with the Department of Housing and Community Development, Division of Codes and Standards, State Housing Law Program, rather than this Commission. Also, ordinances making modifications to the energy efficiency standards of the code may require approval from the California Energy Commission pursuant to Public Resources Code §25402.1(h)(2).

If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,

A handwritten signature in blue ink that reads "Enrique M. Rodriguez".

Enrique M. Rodriguez
Associate Construction Analyst

cc: Chron
Local Filings

AN ORDINANCE INCORPORATING THE 2013 CALIFORNIA BUILDING CODE ("CBC") BY REFERENCE AND AMENDING THE CBC BASED UPON LOCAL CLIMATIC, TOPOGRAPHIC, AND GEOLOGICAL CONDITIONS.

DEC - 5 P 3 17
CALIFORNIA BUILDING STANDARDS COMMISSION

The council of the city of El Segundo does ordain as follows:

SECTION 1: FINDINGS. The City Council finds and declares as follows:

A. Pursuant to Health & Safety Code § 17958.7, it is in the public interest to adopt the California Building Code ("CBC") with the changes set forth in this Ordinance.

B. Pursuant to the requirements of Health & Safety Code § 17958.7, the City Council finds that there are local geological conditions justifying the CBC amendments set forth below.

C. The City of El Segundo and the greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes including, without limitation, to the 1994 Northridge Earthquake. The proposed modifications emphasize that the design concern is for seismic-force-resisting elements and therefore need to be incorporated into the CBC to ensure 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 International Building Code. Experts predict a major earthquake in Southern California within the next 50 years. This situation creates the need for both additional fire protection measures and automatic on-site fire protection of building occupants since a multitude of fires may result from breakage of gas and electric lines as a result of an earthquake. After due consideration, the City Council finds and determines that due to local climatic, geological, or topographical conditions, the structural and fire protection amendments to the 2013 CBC are necessary to give buildings a reasonable degree of structural integrity and fire life safety to help protect public health and safety in the event of a seismic event;

D. Additional amendments have been made to Codes are found to be either administrative or procedural in nature or concern themselves with subjects not covered in such Codes. The changes made include provisions making each of said Codes compatible with other Codes enforced by the City.

E. The specific amendments of the CBC that fulfill these requirements are:

- 1. Amend CBC § 105.2 Work exempt from permit**
- 2. Amend CBC § 105.3.2 Expiration of Plan Check**
- 3. Amend CBC § 105.5 Expiration of Permits**
- 4. Add CBC § 109.7 Re-inspections**
- 5. Amend CBC § 113.3 Board of appeals**
- 6. Add CBC § 1613.6 Building Separation**
- 7. Add CBC § 1613.7 Values for Vertical Combinations**
- 8. Add CBC § 1613.8 Sub-diaphragm**
- 9. Add CBC § 1613.10 Suspended Ceiling**
- 10. Amend CBC § 1704.5 Structural Observation General**
- 11. Amend CBC § 1704.5.1 Structural Observation Seismic**
- 12. Amend CBC § 1705.3 Special Inspection-Concrete Construction**
- 13. Amend CBC § 1705.3 Special Inspection-Anchors in Concrete**
- 14. Amend CBC § 1705.11 Seismic Resistance Inspection**
- 15. Amend CBC § 1711.1.1 Joist Hangers**
- 16. Amend CBC § 1711.1.2 Joist Hangers**
- 17. Amend CBC § Chapter 35 ASTM reference standards**
- 18. Amend CBC § 1807.1.4 Permanent Wood Foundation Systems**
- 19. Amend CBC § 1807.1.6 Prescriptive Design of Foundation walls**
- 20. Amend CBC § 1809.3 Stepped Footings**
- 21. Amend CBC § 1809.7 and Table 1809.7 Prescriptive Footing for Light Frame Construction**

22. Amend CBC § 1809.12 Timber Footings
23. Amend CBC § 1810.3.2.4 Timber
24. Amend CBC § 1905.1.3 Wall Pier
25. Amend CBC § 1905.1.8 Minimum Reinforcement
26. Amend CBC § 1905.1. Reinforcement
27. Amend CBC § 2304.9.1 Fastener Requirements
28. Amend CBC § 2304.11.7 Wood Retaining Walls
29. Amend CBC § 2305.4 Quality of Nails
30. Amend CBC § 2305.5 Hold-down Connectors
31. Amend CBC § 2306.2 Wood-frame Diaphragms
32. Amend CBC § 2307.2 Wood-frame Shear Walls
33. Amend CBC § 2308.3.4 Brace Wall Line Support
34. Amend CBC § 2308.9.3 Alternate Bracing
35. Amend CBC § 2308.12.4 Brace Wall Sheathing
36. Amend CBC § 2308.12.5 Attachment of Sheathing
37. Amend Appendix J § J 101 by adding a new § J 101.4 Protection of Adjacent Properties
38. Amend Appendix J § J 101 by adding a new § J 101.4 Safety Precautions
39. Amend Appendix J § J 101 by adding a new § J 101.5 Protection of Utilities
40. Amend Appendix J § J 103.2 Exemptions item 1 and add 1-A

F. At least one copy of the CBC was filed with the City Clerk and was available for public inspection for at least fifteen (15) days preceding the date of the hearing

SECTION 2: El Segundo Municipal Code ("ESMC") § 13-1-1 is amended in its entirety to read as follows:

"13-1-1: ADOPTION OF CALIFORNIA BUILDING CODE, 2013 EDITION. Pursuant to California Government Code § 50022.2, the California Building Code, 2013 Edition, published at Title 24, Part 5, of the California Code of Regulations, including Appendices F, H, I, and J ("CBC") is adopted by reference, subject to the amendments, additions and deletions set forth below. One true copy of the CBC, is on file in the office of the Building Official and is available for public inspection as required by law."

SECTION 3: ESMC § 13-1-2 is amended in its entirety to amend the California Building Code, including the adopted appendices, to read as follows:

"13-1-2: AMENDMENTS TO THE CODE:

Subsection 14 is added to § 105.2 of Division II of Chapter 1 of the CBC as follows:

Section 105.2 Work exempt from permit.

14. Block wall and concrete fences not over 3 ft 6 inches.

Section 105.3.2 of Division II of Chapter 1 of the CBC is amended to read as follows:

SECTION 105.3.2 EXPIRATION OF PLAN CHECK.

An application for a permit for any proposed work is deemed abandoned 12 months after the application date. Unless otherwise provided, after

expiration of the application, the City will not issue a permit until the plans are rechecked and approved and a new fee is paid.

EXCEPTION: The Building Official may grant extensions of time if a permit applicant submits in writing sufficient evidence that unusual conditions or circumstances precluded the securing of the permit within the allocated time.

Section 105.5 of Division II of Chapter 1 of the CBC is amended to read as follows:

SECTION 105.5 EXPIRATION OF PERMITS.

Except as otherwise provided, every permit issued by the City is valid for a period of three (3) years. However, if work authorized by permit fails to commence within 180 days after the permit is issued, the permit expires. Additionally, the permit expires if the Building Official determines that work was suspended, discontinued, or abandoned for a continuous 180 days.

EXCEPTION: The Building Official may grant extensions of time if a permit applicant submits in writing sufficient evidence that unusual conditions or circumstances precluded from the work being completed. An extension of time may require conditions of approval and additional fees.

Section 109.7 of Division II of Chapter 1 of the CBC is added to read as follows:

Section 109.7 Re-inspections.

A re-inspection fee in the amount set by City Council resolution may be assessed for each inspection or re-inspection when such portion of work for which inspection is called is incomplete or when required corrections are not made. This section is not to be interpreted as requiring re-inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or re-inspection. Re-inspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official. In instances where re-inspection fees have been assessed, no additional inspection of the work will be performed until required fees have been paid.

Section 113.3 of Division II of Chapter 1 of the CBC is amended to read as follows:

Section 113.3 Board of Appeals.

The board of appeals consists of members of the Planning Commission. The term of a board of appeals member will coincide with the term of service as a Planning Commissioner and will terminate should the member cease serving as a Planning Commissioner. The building official is the secretary to the board. The board may adopt reasonable rules and regulations for conducting its investigations and will render all its decisions and findings on contested matters, in writing to the building official, with a duplicate copy for any appellant or contestant affected by such decision or finding, and may recommend to the city council appropriate new legislation.

Three members of the board constitute a quorum. The Planning Chairperson is the board's chairperson and in the chairperson's absence the board will select a temporary chairperson.

The city will assess a \$250.00 charge, or a higher amount set by resolution, at the time that an appellant file appeal of any order, decisions, or determination made by the building official relative to the application and interpretation of this code. The filing fee is refundable should the appellant prevail in a decision by the board. The appeal must be taken by filing a written notice of appeal, in letterform, to the board of appeals. The board's decision constitutes the city's final decision.

Section 1613.6 of Division II of Chapter 1 of the CBC is added to read as follows:

1613.6 ASCE 7, 12.12.3

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

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

Section 1613.7 of Division II of Chapter 1 of the CBC is added to read as follows:

1613.7 ASCE 7, 12.2.3.1, Exception 3.

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

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

Section 1613.8 of Division II of Chapter 1 of the CBC is added to read as follows:

1613.8 ASCE 7 12.11.2.2.3 Wood Diaphragms.

In wood diaphragms, the continuous ties are in addition to the diaphragm sheathing. Anchorage cannot be accomplished by use of toe nails or nails subject to withdrawal nor may wood ledgers or framing be used in cross-grain bending or cross-grain tension. The diaphragm sheathing cannot 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 cannot exceed 40 feet. Added chords of diaphragms may be used to form subdiaphragms to transmit the anchorage forces to the main continuous cross-ties.
2. The maximum diaphragm shear used to determine the depth of the subdiaphragm cannot exceed 75% of the maximum diaphragm shear.

Section 1613.10 of Division II of Chapter 1 of the CBC is added to read as follows:

1613.10 Suspended Ceilings.

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

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

1613.10.2 General. The suspended ceilings and lighting systems are limited to 6 feet (1828 mm) below the structural deck unless the lateral bracing is designed by a licensed engineer or architect.

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

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

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

1613.10.4.1 General. Ceiling suspension systems must 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 cannot exceed 2 feet (610 mm) on center along the entire length of the suspended ceiling assembly located along the means of egress or at the lobby.

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

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

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

Section 1704.5 of Division II of Chapter 1 of the CBC is amended to read as follows:

1704.5 Structural Observations.

Where required by the provisions of Section 1704.5.1 or 1704.5.2, the owner must employ a structural observer to perform structural observations as defined in Section 1702. The structural observer must 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.

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

The owner or owner's representative must coordinate and call a preconstruction meeting between the structural observer, contractors, affected subcontractors and special inspectors. The structural observer must preside over the meeting. The purpose of the meeting must 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 must be included in the report submitted to the building official.

Observed deficiencies must 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 must submit to the building official a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer which states that all observed deficiencies have been resolved is required before acceptance of the work by the building official.

Section 1704.5.1 of Division II of Chapter 1 of the CBC is amended to read as follows:

1704.5.1 Structural observations for seismic resistance.

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

1. The structure is classified as Risk Category III or IV in accordance with Table 1604.5.
2. The height of the structure is greater than 75 feet (22860 mm) above the base.
3. The structure is classified as Risk Category I or II in accordance with Table 1604.5, and a lateral design is required for the structure or portion thereof.

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

4. When so designated by the registered design professional responsible for the structural design.
5. When such observation is specifically required by the building official.

Section 1705.3 of Division II of Chapter 1 of the CBC is amended to read as follows:

1705.3 Concrete Construction.

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

Exceptions: Special inspection cannot be required for:

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

2. Continuous concrete footings supporting walls of buildings three stories or less in height that are fully supported on earth or rock where:

2.1. The footings support walls of light-frame construction;

2.2. The footings are designed in accordance with Table 1805.4.2; 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.

Table 1705.3 of Division II of Chapter 1 of the CBC is amended to read as follows:

**TABLE 1705.3
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE
CONSTRUCTION**

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCE STANDARD ^a	IBC REFERENCE
3. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used.	—	X	ACI 318: D.9.2	1908.5,
4. Inspection of anchors post-installed in hardened concrete members ^b .	—		ACI 318:D.9.2.4	
a. <u>Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.</u>	X			—
b. <u>Mechanical anchors and adhesive anchors not defined in 4.a.</u>		X	ACI 318: D.9.2	—

b. Specific requirements for special inspection must be included in the research report for the anchor issued by an approved source in accordance with ACI 355.2 D.9.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements must be specified by the registered design professional and must be approved by the building official before the commencement of the work.

(Portions of table not shown remain unchanged.)

Exception 3 of Section 1705.11 of Division II of Chapter 1 of the CBC is amended to read as follows:

1705.11 Special inspections for seismic resistance.

Special inspections itemized in Sections 1705.11.1 through 1705.11.8, unless exempted by the exceptions of Section 1704.2, are required for the following:

1. The seismic force-resisting systems in structures assigned to Seismic Design Category C, D, E or F in accordance with Sections 1705.11.1 through 1705.11.3, as applicable.
2. Designated seismic systems in structures assigned to Seismic Design Category C, D, E or F in accordance with Section 1705.11.4.
3. Architectural, mechanical and electrical components in accordance with Sections 1705.11.5 and 1705.11.6.
4. Storage racks in structures assigned to Seismic Design Category D, E or F in accordance with Section 1705.11.7.
5. Seismic isolation systems in accordance with Section 1705.11.8.

Exception: Special inspections itemized in Sections 1705.11.1 through 1705.11.8 are not required for structures designed and constructed in accordance with one of the following:

1. The structure consists of light-frame construction; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.3.4, does not exceed 0.5; and the building height of the structure does not exceed 35 feet (10 668 mm)
2. The seismic force-resisting system of the structure consists of reinforced masonry or reinforced concrete; the design spectral response acceleration at short periods, S_{DS} , as determined in Section 1613.3.4, does not exceed 0.5; and the building height of the structure does not exceed 25 feet (7620 mm)
3. The structure is a detached one- or two-family dwelling not exceeding two stories above grade plane, is not assigned to Seismic Design Category D, E or F and does not have any of the following horizontal or vertical irregularities in accordance with Section 12.3 of ASCE 7:

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

Section 1711.1.1 of Division II of Chapter 1 of the CBC is amended to read as follows:

1711.1.1 General.

The vertical load-bearing capacity, torsional moment capacity and deflection characteristics of joist hangers must be determined in accordance with ASTM D 1761 and ASTM D 7147, as specified below using lumber having a specific gravity of 0.49 or greater, but not greater than 0.55, as determined in accordance with AF&PA NDS for the joist and headers.

Exception: The joist length cannot be required to exceed 24 inches (610 mm).

Section 1711.1.2 of Division II of Chapter 1 of the CBC is amended to read as follows:

1711.1.2 Vertical load capacity for joist hangers.

The vertical load-bearing capacity for the joist hanger must be determined by testing a minimum of three joist hanger assemblies as specified in ASTM D 1761 or ASTM D 7147. If the ultimate vertical load for any one of the tests varies more than 20 percent from the average ultimate vertical load, at least three additional tests must be conducted. The allowable vertical load-bearing of the joist hanger must be the lowest value determined from the following:

1. The lowest ultimate vertical load for a single hanger from any test divided by three (where three tests are conducted and each ultimate vertical load does not vary more than 20 percent from the average ultimate vertical load).

2. The average ultimate vertical load for a single hanger from all tests divided by three (where six or more tests are conducted).
3. The average from all tests of the vertical loads that produce a vertical movement of the joist with respect to the header of 1/8 inch (3.2 mm).
4. The sum of the allowable design loads for nails or other fasteners utilized to secure the joist hanger to the wood members and allowable bearing loads that contribute to the capacity of the hanger.
5. The allowable design load for the wood members forming the connection.

Chapter 35 of Division II of Chapter 1 of the CBC is amended to read as follows:

Amend the Reference Standards in Chapter 35 for ASTM as follows:

D 1761- 88(2000) 1	Test Method for Mechanical Fasteners in Wood	1711.1.1 1711.1.2 1711.1.3
D 7147-05	Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers	<u>1711.1.1</u> <u>1711.1.2</u>

Section 1807.1.4 of Division II of Chapter 1 of the CBC is amended to read as follows:

1807.1.4 Permanent wood foundation systems.

Permanent wood foundation systems must be designed and installed in accordance with AF&PA PWF. Lumber and plywood must be treated in accordance with AWPA U1 (Commodity Specification A, Use Category 4B and Section 5.2) and must be identified in accordance with Section 2303.1.8.1. Permanent wood foundation systems cannot be used for structures assigned to Seismic Design Category D, E or F.

Section 1807.1.6 of Division II of Chapter 1 of the CBC is amended to read as follows:

1807.1.6 Prescriptive design of concrete and masonry foundation walls.

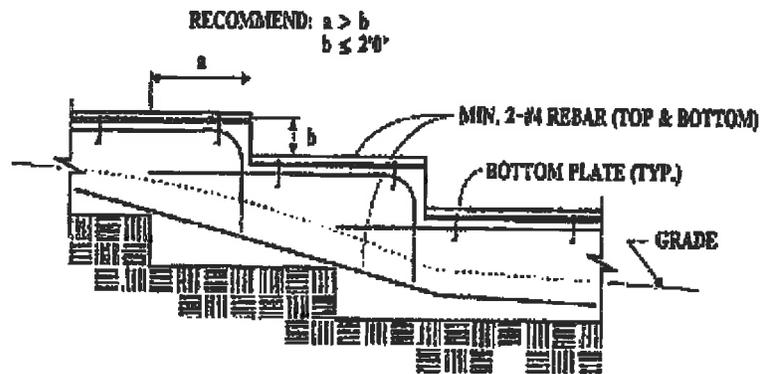
Concrete and masonry foundation walls that are laterally supported at the top and bottom must be permitted to be designed and constructed in accordance with this section. Prescriptive design of foundation walls cannot be used for structures assigned to Seismic Design Category D, E or F.

Section 1809.3 of Division II of Chapter 1 of the CBC is amended to read as follows:

1809.3 Stepped footings.

The top surface of footings must be level. The bottom surface of footings must be permitted to have a slope not exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings must 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 must also apply to the top surface of grade beams supporting walls. Footings must be reinforced with four No. 4 rebar. Two bars must be placed at the top and bottom of the footings as shown in Figure 1809.3.



STEPPED FOUNDATIONS

FIGURE 1809.3
STEPPED FOOTING

Section 1809.7 and Table 1809.7 of Division II of Chapter 1 of the CBC 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 must be permitted to be designed in accordance with Table 1809.7. Prescriptive footings in Table 1809.7 cannot exceed one story above grade plane for structures assigned to Seismic Design Category D, E or F.

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

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

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

- a. Depth of footings must be in accordance with Section 1809.4.
- b. The ground under the floor must 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 must be permitted to support a roof addition to the stipulated number of floors. Footings supporting roof only must be as required for supporting one floor.

Section 1809.12 of Division II of Chapter 1 of the CBC is amended to read as follows:

1809.12 Timber footings.

Timber footings must be permitted for buildings of Type V construction and as otherwise approved by the building official. Such footings must 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 cannot exceed 70 percent of the allowable stresses for the species and grade of timber as specified in the AF&PA NDS. Timber footings cannot be used in structures assigned to Seismic Design Category D, E or F.

Section 1810.3.2.4 of Division II of Chapter 1 of the CBC is amended to read as follows:

1810.3.2.4 Timber.

Timber deep foundation elements must be designed as piles or poles in accordance with AF&PA NDS. Round timber elements must conform to ASTM D 25. Sawn timber elements must conform to DOC PS-20. Timber cannot be used in structures assigned to Seismic Design Category D, E or F.

Section 1905.1.3 of Division II of Chapter 1 of the CBC is amended to read as follows:

1905.1.3 ACI 318, Section 21.4.

Modify ACI 318, Section 21.4, by renumbering Section 21.4.3 to become 21.4.4 and adding new Sections 21.4.3, 21.4.5, 21.4.6 and 21.4.7 to read as follows:

21.4.3 – Connections that are designed to yield must be capable of maintaining 80 percent of their design strength at the deformation induced by the design displacement or must use Type 2 mechanical splices.

21.4.4 – Elements of the connection that are not designed to yield must develop at least $1.5 S_y$.

21.4.5 – In structures assigned to Seismic Design Category D, E or F, intermediate precast wall panels and wall piers must be designed in accordance with Section 21.9 or 21.13.

21.4.6 – Wall piers not designed as part of a moment frame in buildings assigned to Seismic Design Category C must have transverse reinforcement designed to resist the shear forces determined from 21.3.3. Spacing of transverse reinforcement cannot exceed 8 inches (203 mm). Transverse reinforcement must be extended beyond the pier clear height for at least 12 inches (305 mm).

Exceptions:

- 1. Wall piers that satisfy 21.13.*
- 2. Wall piers along a wall line within a story where other shear wall segments provide lateral support to the wall piers and such segments have a total stiffness of at least six times the sum of the stiffnesses of all the wall piers.*

21.4.7 – Wall segments with a horizontal length-to-thickness ratio less than 2.5 must be designed as columns.

Section 1905.1.8 of Division II of Chapter 1 of the CBC is amended to read as follows:

1905.1.8 ACI 318, Section 22.10.

Delete ACI 318, Section 22.10, and replace with the following:

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

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

(a) Isolated footings of plain concrete supporting pedestals or columns are permitted, provided the projection of the footing beyond the face of the supported member does not exceed the footing thickness.

(c) Plain concrete footings supporting walls are permitted provided the footings have at least two continuous longitudinal reinforcing bars. Bars cannot be smaller than No. 4 and must have a total area of not less than 0.002 times the gross cross-sectional area of the footing. A minimum of one bar must be provided at the top and bottom of the footing. Continuity of reinforcement must be provided at corners and intersections.

Section 1905.1 of Division II of Chapter 1 of the CBC is amended and Sections 1905.1.10 thru 1905.1.12 are added to Chapter 19 of Division II of Chapter 1 of the CBC to read as follows:

1905.1 General.

The text of ACI 318 must be modified as indicated in Sections 1905.1.1 through 1905.1.12.

1905.1.10 ACI 318, Section 21.6.4.

Modify ACI 318, Section 21.6.4, by adding Section 21.6.4.8 and 21.6.4.9 as follows:

21.6.4.8 Where the calculated point of contraflexure is not within the middle half of the member clear height, provide transverse reinforcement as specified in ACI 318 Sections 21.6.4.1, Items (a) through (c), over the full height of the member.

21.6.4.9 – At any section where the design strength, ϕP_n , of the column is less than the sum of the shears V_e computed in accordance with ACI 318 Sections 21.5.4.1 and 21.6.5.1 for all the beams framing into the column above the level under consideration, transverse reinforcement as specified in ACI 318 Sections 21.6.4.1 through 21.6.4.3 must be provided. For beams framing into opposite sides of the column, the moment components are permitted to be assumed to be of opposite sign. For the determination of the design strength, ϕP_n , of the column, these moments are permitted to be assumed to result from the deformation of the frame in any one principal axis.

1905.1.11 ACI 318, Section 21.9.4.

Modify ACI 318, Section 21.9.4, by adding Section 21.9.4.6 as follows:

21.9.4.6 – Walls and portions of walls with $P_u > 0.35P_o$ cannot be considered to contribute to the calculated shear strength of the structure for resisting earthquake-induced forces. Such walls must conform to the requirements of ACI 318 Section 21.13.

1905.1.12 ACI 318, Section 21.11.6.

Modify ACI 318, by adding Section 21.11.6.1 as follows:

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

Section 2304.9.1 of Division II of Chapter 1 of the CBC is amended to read as follows:

2304.9.1 Fastener requirements.

Connections for wood members must be designed in accordance with the appropriate methodology in Section 2301.2. The number and size of fasteners connecting wood members cannot be less than that set forth in Table 2304.9.1. Staple fasteners in Table 2304.9.1 cannot 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.

Section 2304.11.7 of Division II of Chapter 1 of the CBC is amended to read as follows:

2304.11.7 Wood used in retaining walls and cribs.

Wood installed in retaining or crib walls must be preservative treated in accordance with AWPA U1 (Commodity Specifications A or F) for soil and fresh water use. Wood cannot be used in retaining or crib walls for structures assigned to Seismic Design Category D, E or F.

Section 2305.4 of Division II of Chapter 1 of the CBC is amended 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 must meet the same dimensions as that required for hand-driven nails, including diameter, minimum length and minimum head diameter. Clipped head or box nails are not permitted in new construction. The allowable design value for clipped head nails in existing construction may be taken at no more than the nail-head-area ratio of that of the same size hand-driven nails.

Section 2305.5 of Division II of Chapter 1 of the CBC is added to Chapter 23 to read as follows:

2305.5 Hold-down connectors.

In Seismic Design Category D, E or F, hold-down connectors must 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 must require steel plate washers on the post on the opposite side of the anchorage device. Plate size must 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 must be tightened to finger tight plus one half (1/2) wrench turn just before covering the wall framing.

Section 2306.2 of Division II of Chapter 1 of the CBC is amended to read as follows:

2306.2 Wood-frame diaphragms.

Wood-frame diaphragms must be designed and constructed in accordance with AF&PA SDPWS. Where panels are fastened to framing members with staples, requirements and limitations of AF&PA SDPWS must be met and the allowable shear values set forth in Table 2306.2(1) or 2306.2(2) must 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 must be applied directly to the framing members.

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

Section 2306.3 of Division II of Chapter 1 of the CBC is amended and Section 2307.2 is added to read as follows:

2306.3 Wood-frame shear walls.

Wood-frame shear walls must be designed and constructed in accordance with AF&PA SDPWS. For structures assigned to Seismic Design Category D, E, or F, application of Tables 4.3A and 4.3B of AF&PA SDPWS must include the following:

1. Wood structural panel thickness for shear walls cannot be less than 3/8 inch thick and studs cannot 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 cannot 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 must 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.

4. Nails must 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 must 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.

5. 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 SDPWS cannot 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 SDPWS must be met and the allowable shear values set forth in Table 2306.3(1), 2306.3(2) or 2306.3(3) must 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 must be permitted to use design values for Plywood Siding in the AF&PA 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.

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

Section 2308.3.4 of Chapter 23 of Division II of Chapter 1 of the CBC is amended to read as follows:

2308.3.4 Braced wall line support.

Braced wall lines must 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.

Section 2308.9.3.1, Section 2308.9.3.2 and Figure 2308.9.3.2 of the 2013 Edition of the California Building Code are amended to read as follow:

2308.9.3.1 Alternative bracing.

Any bracing required by Section 2308.9.3 is permitted to be replaced by the following:

1. In one-story buildings, each panel must have a length of not less than 2 feet 8 inches (813 mm) and a height of not more than 10 feet (3048 mm). Each panel must be sheathed on one face with 3/8-inch-minimum-thickness (9.5 mm) wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 2304.9.1 and blocked at wood structural panel edges. For structures assigned to Seismic Design Category D or E, each panel must be sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports. Two anchor bolts installed in accordance with Section 2308.6 must be provided in each panel. Anchor bolts must be placed at each panel outside quarter points. Each panel end stud must have a tie-down device fastened to the foundation, capable of providing an approved uplift capacity of not less than 1,800 pounds (8006 N). The tie-down device must be installed in accordance with the manufacturer's recommendations. The panels must be supported directly on a foundation or on floor framing supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation must be reinforced with not less than one No. 4 bar top and bottom.

Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing or turned down slab edge is permitted at door openings in the braced wall line. This continuous footing or turned down slab edge must be reinforced with not less than one No. 4 bar top and bottom. This reinforcement must be lapped 15 inches (381 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

2. In the first story of two-story buildings, each wall panel must be braced in accordance with Section 2308.9.3.1, Item 1, except that the wood structural panel sheathing must be provided on both faces, three anchor bolts must be placed at one-quarter points, and tie-down device uplift capacity cannot be less than 3,000 pounds (13 344 N).

2308.9.3.2 Alternate bracing wall panel adjacent to a door or window opening.

Any bracing required by Section 2308.9.3 may be replaced by the following when used adjacent to a door or window opening with a full-length header:

1. In one-story buildings, each panel must have a length of not less than 16 inches (406 mm) and a height of not more than 10 feet (3048 mm). Each panel must be sheathed on one face with a single layer of 3/8 inch (9.5 mm) minimum thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Figure 2308.9.3.2. For structures assigned to Seismic Design Category D or E, each panel must be sheathed on one face with 15/32-inch-minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports and in accordance with Figure 2308.9.3.2. The wood structural panel sheathing must extend up over the solid sawn or glued-laminated header and must be nailed in accordance with Figure 2308.9.3.2. A built-up header consisting of at least two 2 × 12s and fastened in accordance with Item 24 of Table 2304.9.1 must be permitted to be used. A spacer, if used, must be placed on the side of the built-up beam opposite the wood structural panel sheathing. The header must extend between the inside faces of the first full-length outer studs of each panel. The clear span of the header between the inner studs of each panel must be not less than 6 feet (1829 mm) and not more than 18 feet (5486 mm) in length. A strap with an uplift capacity of not less than 1,000 pounds (4,400 N) must fasten the header to the inner studs opposite the sheathing. One anchor bolt not less than 5/8 inch (15.9 mm) diameter and installed in accordance with Section 2308.6 must be provided in the center of each sill plate. The studs at each end of the panel must have a tie-down device fastened to the foundation with an uplift capacity of not less than 4,200 pounds (18 480 N).

Where a panel is located on one side of the opening, the header must extend between the inside face of the first full-length stud of the panel and the bearing studs at the other end of the opening. A strap with an uplift capacity of not less than 1,000 pounds (4400 N) must fasten the header to the bearing studs. The bearing studs must also have a tie-down device fastened to the foundation with an uplift capacity of not less than 1,000 pounds (4400 N).

The tie-down devices must be an embedded strap type, installed in accordance with the manufacturer's recommendations. The panels must be supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation must be reinforced with not less than one No. 4 bar top and bottom.

Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing or turned down slab edge is permitted at door openings in the braced wall line. This continuous footing or turned down slab edge

must be reinforced with not less than one No. 4 bar top and bottom. This reinforcement must be lapped not less than 15 inches (381 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

2. In the first *story* of two-story buildings, each wall panel must be braced in accordance with Item 1 above, except that each panel must have a length of not less than 24 inches (610 mm).

Table 2308.12.4 of Division II of Chapter 1 of the CBC is amended to read as follows:

TABLE 2308.12.4
WALL BRACING IN SEISMIC DESIGN CATEGORIES D AND E
(Minimum Percentage of Wall Bracing per each Braced Wall Line ^a)

CONDIT ON	SHEATHING TYPE ^b	$S_{DS} < 0.50$	$0.50 \leq S_{DS} < 0.75$	$0.75 \leq S_{DS} \leq 1.00$	$S_{DS} > 1.00$
One Story	G-P ^c	43	59	75	100
	S-W ^d	21	32	37	48

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

- a. Minimum length of panel bracing of one face of the wall for S-W sheathing must be at least 4'-0" long or both faces of the wall for G-P sheathing must be at least 8'-0" long; h/w ratio cannot exceed 2:1. For S-W panel bracing of the same material on two faces of the wall, the minimum length is permitted to be one-half the tabulated value but the h/w ratio cannot exceed 2:1 and design for uplift is required. The 2:1 h/w ratio limitation does not apply to alternate braced wall panels constructed in accordance with Section 2308.9.3.1 or 2308.9.3.2. Wall framing to which sheathing used for bracing is applied must be nominal 2 inch wide [actual 1 1/2 inch (38 mm)] or larger members and spaced a maximum of 16 inches on center. Braced wall panel construction types cannot be mixed within a braced wall line.
- b. G-P = gypsum board, portland cement plaster or gypsum sheathing boards; S-W = wood structural panels
- c. Nailing as specified below must occur at all panel edges at studs, at top and bottom plates and, where occurring, at blocking:
 - For 1/2-inch gypsum board, 5d (0.113 inch diameter) cooler nails at 7 inches on center;
 - For 5/8-inch gypsum board, No 11 gage (0.120 inch diameter) cooler nails at 7 inches on center;
 - For gypsum sheathing board, 1-3/4 inches long by 7/16-inch head, diamond point galvanized nails at 4 inches on center;
 - For gypsum lath, No. 13 gage (0.092 inch) by 1-1/8 inches long, 19/64-inch head, plasterboard at 5 inches on center;
 - For Portland cement plaster, No. 11 gage (0.120 inch) by 1 1/2 inches long, 7/16-inch head at 6 inches on center;
- d. S-W sheathing must be a minimum of 15/32" thick nailed with 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

Section 2308.12.5 of Division II of Chapter 1 of the CBC is amended to read as follows:

2308.12.5 Attachment of sheathing.

Fastening of braced wall panel sheathing cannot be less than that prescribed in Table 2308.12.4 or 2304.9.1. Wall sheathing cannot be attached to framing members by adhesives. Staple fasteners in Table 2304.9.1 cannot 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 must extend to the roof sheathing and must 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 must be laterally braced at each top corner and at maximum 24 inches (6096 mm) intervals along the top plate of discontinuous vertical framing.

Amend Appendix J section J 101 of Division II of Chapter 1 of the CBC by adding a new section J 101.3 Protection of Adjacent Properties that reads as follows:

J 101.3 Protection of Adjacent Properties

The owner and permittee of any property on which grading has been performed and that requires a grading permit is responsible for the prevention of damage to adjacent property and no person must excavate on land sufficiently close to the property line to endanger any adjoining public street, sidewalk, alley, or other public or private property without supporting and protecting such property from settling, cracking or other damage that might result. Special precautions approved by the building official must be made to prevent imported or exported materials from being deposited on the adjacent public way and/or drainage courses. A 30 day excavation notice must be provided as required by California Civil Code Section 829-834 when the excavation is of sufficient depth and proximity to adjacent lot structures.

Amend Appendix J section J 101 of Division II of Chapter 1 of the CBC by adding a new section J101.4 Safety Precautions that reads as follows:

J101.4 Safety Precautions

1. General

- a) If at any stage of work on an excavation or fill, the building official determines that the work has become or is likely to become dangerous to any person, or is likely to endanger any property,

public or private, the building official must be authorized to require safety precautions to be immediately taken by the property owner as a condition to continuing such permitted work or to require cessation thereof forthwith unless and until it is made safe and to amend the plans for such work.

- b) Safety precautions may include, without limitation, specifying a flatter exposed slope or construction of additional drainage facilities, berms, terracing, compaction, cribbing, retaining walls or buttress fills, slough walls, desilting basins, check dams, benching, wire mesh and guniting, rock fences, revetments or diversion walls.
- c) Upon the determination of the building official that such safety precautions during grading are necessary, the building official must provide a notice and order to the permittee to implement same. After receiving such notice, oral or written, it is unlawful for the permittee or any person to proceed with such work contrary to such order.

2. Removal of Ground Cover

- a) The existing vegetative ground cover of any watershed in any hillside area cannot be destroyed, removed or damaged except for routine maintenance pursuant to lawful grading, use or occupancy of the property or to clear hazardous vegetation near structures and roads in areas designated as High Fire Hazard areas
- b) Whenever ground cover is removed or damaged pursuant to a validly issued grading permit, the permittee must restore and maintain the affected area with an approved ground cover, or must accomplish such other erosion control protection measures as may be approved by the building official. Such erosion control must be completed within thirty days after cessation of the grading work or other work pursuant to a validly issued building permit.

3. Maintenance of Protective Devices

All devices used to protect hillside areas from erosion or landslide damage including, without limitation, retaining walls, cribbing, terracing, surface and subsurface drainage structures, interceptor drains, check dams, and riprap must be maintained in good condition and repair as approved by the building official at the time of completion of construction thereof.

Amend Appendix J section J 101 of Division II of Chapter 1 of the CBC by adding a new section J101.5 Protection of Utilities that reads as follows:

J101.5 Protection of Utilities

The owner and permittee of any property on which grading has been performed and that requires a grading permit must be responsible for the prevention of damage to any public utilities or services.

Amend Appendix J section J 103.2 Exemptions item 1 and add 1-A to read as follows:

J 103.2 Exemptions item 1 and 1-A

1. An excavation which (a) is less than 2 feet (610 mm) in depth, or (b) which does not create a cut slope greater than 5 feet (1524 mm) in height and steeper than one unit vertical in two units horizontal (50 percent slope). This exception cannot apply to cut which exceeds 50 cubic yards (38.3 m³) or which changes the existing drainage pattern.

A. Fill that is less than one foot (305 mm) in depth and placed on natural terrain with a slope flatter than one unit vertical in 10 units horizontal (10 percent slope). This exception cannot apply when the fill exceeds 50 cubic yards (38.3 m³) or when the fill changes the existing drainage pattern.

Appendix V – Voluntary Retrofit Standards are added to the CBC as follows:

APPENDIX V – SECTION V101 - VOLUNTARY EARTHQUAKE HAZARD REDUCTION IN EXISTING TILT-UP CONCRETE WALL BUILDINGS

SECTION V101. PURPOSE.

The purpose of this Chapter is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on tilt-up concrete wall buildings designed under the building codes in effect before January 1, 1976.

The provisions of this Chapter are minimum voluntary standards for structural seismic resistance established primarily to reduce the risk of life loss or injury on both subject and adjacent properties and will not necessarily prevent loss of life or injury or prevent earthquake damage to an existing building which complies with these standards. This Chapter provides systematic procedures and standards for identification and classification of tilt-up concrete wall building based on the current use of the building.

SECTION V102. SCOPE.

The provisions of this Chapter apply to all buildings designed under building codes in effect before January 1, 1976, which, on the effective date of this Chapter have tilt-up concrete walls as defined herein.

SECTION V103. DEFINITIONS.

For purposes of this Chapter, the applicable definitions in Chapter 16, Chapter 19, Chapter 23 and Chapter 11 of ASCE 7, and the following apply:

COMMENCED CONSTRUCTION. Construction pursuant to a valid building permit has progressed to the point that one of the called inspections as required by the Department has been made and the work for which the inspection has been called has been judged by the Department to be substantial and has been approved by the Department.

DEPARTMENT. The Division of Building and Safety.

ESSENTIAL BUILDING. For purposes of this Chapter, any building housing a hospital or other medical facility having surgery or emergency treatment areas, fire or police stations, municipal government disaster operations, and communication centers.

TILT-UP CONCRETE WALL. A form of precast concrete panel construction either cast in the horizontal position at the site and after curing, lifted and moved into place in a vertical position, or cast off-site in a fabricator's shop.

SECTION V104. RATING CLASSIFICATIONS.

The rating classification as exhibited in Table No. V1-A is established and each building within the scope of this Chapter must be placed in one rating classification by the Department. The total occupant load as determined by Section 1004.1 for the entire building plus the occupant load of any adjacent building, which interconnects with the subject building or uses the subject building for exiting purposes, must be used to determine the rating classification.

SECTION V105. ANALYSIS AND DESIGN.

For the purpose of this section, “**anchorage system(s)**” means all structural elements, which supports the wall in the lateral direction, including wall anchorage and continuity tie (cross-tie) connectors in subdiaphragms and main diaphragms for retrofit and repairs.

V105.1. Wall Panel Anchorage. Concrete walls must be anchored to all floors and roofs which provide lateral support for the wall. The anchorage must provide a positive direct connection between the wall and floor or roof construction capable of resisting a horizontal force equal to 30 percent of the tributary wall weight for all buildings, and 45 percent of the tributary wall weight for essential buildings, or a minimum force of 250 pounds per linear foot of wall, whichever is greater. The required anchorage must be based on the tributary wall panel assuming simple supports at floors and roof.

V105.2. Special Requirements for Wall Anchors and Continuity Ties. The steel elements of the wall anchorage systems and continuity ties must be designed by the allowable stress design method using a load factor of 1.7. The 1/3 stress increase permitted by Chapter 12 of ASCE 7 is not permitted for materials using allowable stress design methods. The strength design specified in Chapter 19, using a load factor of 2.0 in lieu of 1.4 for earthquake loading, must be used for design of embedments in concrete. Wall anchors must be provided to resist out-of-plane forces, independent of existing shear anchors.

EXCEPTION: Existing cast-in-place shear anchors may be used as wall anchors if the tie element can be readily attached to the anchors and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing, and through analysis showing that the bolts are capable of resisting the total shear load while being acted upon by the maximum tension force due to earthquake

Expansion anchors are not allowed. Attaching the edge of plywood sheathing to steel ledgers is not considered as complying with the positive anchoring requirements of the Code; and attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this Code unless testing and/or analysis are performed, which establish shear values for the attachment perpendicular to the edge of the deck.

V105.3. Development of Anchor Loads into the Diaphragm. Development of anchor loads into roof and floor diaphragms must comply with Chapter 12 of ASCE 7.

EXCEPTION: If continuously tied girders are present, then the maximum spacing of the continuity ties is the greater of the girder spacing or 24 feet (7315 mm). In wood diaphragms, anchorage cannot be accomplished by use of toe nails or nails subject to withdrawal, nor must wood ledgers, top

plates or framing be used in cross-grain bending or cross-grain tension. The continuous ties required by Chapter 12 of ASCE 7 must be in addition to the diaphragm sheathing. Lengths of development of anchor loads in wood diaphragms must be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site.

At reentrant corners, continuity collectors may be required for existing return walls not designed as shear walls, to develop into the diaphragm a force equal to the lesser of the rocking or shear capacity of the return wall, or the tributary shear, but not exceeding the capacity of the diaphragm. Shear anchors for the return wall must be commensurate with the collector force. If a truss or beam, other than rafters or purlins, is supported by the return wall or by a column integral with the return wall, an independent secondary column, is required to support the roof or floor members whenever rocking or shear capacity of the return wall is governing. Seismic deflection must be determined at the return walls, and fins/canopies at entrances, to ensure deflection compatibility with the diaphragm, by either seismically isolating the element or attaching the element and integrating its load into the diaphragm.

V105.4. Anchorage at Pilasters. Anchorage of pilasters must be designed for the tributary wall anchoring load per Section V105.1 of this Code, considering the wall as a two-way slab. The edge of the two-way slab must be considered “fixed” when there is continuity at pilasters, and considered “pinned” at roof or floor levels. The pilasters or the walls immediately adjacent to the pilasters must be anchored directly to the roof framing such that the existing vertical anchor bolts at the top of the pilasters are by-passed without causing tension or shear failure at the top of the pilasters.

EXCEPTION: If existing vertical anchor bolts at the top of the pilasters are used for the anchorage, then additional exterior confinement must be provided. The minimum anchorage at a floor or roof between the pilasters must be that specified in Section V105.1 of this Code.

V105.5. Symmetry. Symmetry of connectors in the anchorage system is required. Eccentricity may be allowed when it can be shown that all components of forces are positively resisted and justified by calculations or tests.

V105.6. Minimum Roof Member Size. Wood members used to develop anchorage forces to the diaphragm must be at least 3x for new construction and replacement. All such members must be checked for gravity and earthquake as part of the wall anchorage system. For existing buildings, the member check must be without the 1/3 stress increase per Section V108.2.

V105.7. Combination of Anchor Types. To repair and retrofit existing buildings, a combination of different anchor types of different behavior or stiffness cannot be permitted. The capacity of the new and existing connectors cannot be added.

V105.8. Prohibited Anchors. Usage of connectors that were bent and/or stretched from the intended use is prohibited.

V105.9. Crack and Damage Repairs, Evaluation of Existing Structural Alterations. The engineer must report any observed structural conditions and structural damage that have imminent life safety effects on the buildings and recommend repairs. Evaluations and repairs must be reviewed and approved by the Department. The engineer must also evaluate the effects of alterations such as openings cut in existing wall panels without a permit, that may present immediate life safety hazard and correct when necessary.

V105.10. Miscellaneous. Existing mezzanines relying on the tilt-up walls for vertical and/or lateral support must be anchored to the walls for the tributary mezzanine load. Walls depending on the mezzanine for lateral support must be anchored per Sections V105.1, V105.2 and V105.3.

EXCEPTION: Existing mezzanines that have independent lateral and vertical support need not be anchored to the walls. Existing interior masonry or concrete walls not designed as shear walls, that extend to the floor above or to the roof diaphragm must also be anchored for out-of-plane forces per Sections V105.1, V105.2 and V105.3 of this Code. In the in-plane direction, the walls may be isolated or must be developed into the diaphragm for a lateral force equal to the lesser of the rocking or shear capacity of the wall, or the tributary shear but not exceeding the diaphragm capacity.

SECTION V110. INFORMATION REQUIRED ON PLANS.

V110.1. General. In addition to the seismic analysis required elsewhere in this Chapter, the licensed engineer or architect responsible for the seismic analysis of the building must record the information required by this section on the approved plans.

V110.2. Information Required. The plans must accurately reflect the results of the engineering investigation and design and show all pertinent dimensions and sizes for plan review and construction. The following must be provided:

1. Floor plans and roof plans must show existing framing construction, diaphragm construction, proposed wall anchors, cross-ties and collectors. Existing nailing, anchors, ties and collectors must also be shown on the plans if these are part of the design, and these structural elements need to be verified in the field.

2. At elevations where there are alterations or damage, details must show roof and floor heights, dimensions of openings, location and extent of existing damage, and proposed repair.
3. Typical wall panel sections with panel thickness, height, location of anchors must be provided.
4. Details must include existing and new anchors and the method of development of anchor forces into the diaphragm framing; existing and/or new cross-ties; existing and/or new or improved support of roof and floor girders at pilasters or walls.

V110.3. Engineer's or Architect's Statement.

The responsible engineer or architect must state on the approved plans, the following:

1. I am responsible for this building's seismic strengthening design in compliance with the minimum seismic resistance standards of Appendix V Section V105 of the California Building Code and when applicable:
2. The Registered Deputy Inspector, required as a condition of the use of structural design stresses requiring continuous inspection, will be responsible to me, the California Licensed Engineer or Architect, as required by Chapter 17 of the El Segundo Building Code.

SECTION V111. REQUIRED BUILDING MAINTENANCE.

Every building within the scope of this Chapter which has been analyzed to demonstrate compliance or structurally altered to comply with the minimum earthquake standards in this Chapter must be maintained in conformity with the requirements of this Chapter in effect at the time of such analysis or structural alteration.

TABLE NO. V1-A
RATING CLASSIFICATIONS

Classification	Occupant Load
Essential	N/A
Group I	300 or more
Group II	100 to 299
Group III	50 to 99
Group IV	Less than 50

Appendix V-Cripple Wall is added to the CBC to read as follows:

**CHAPTER V – SECTION V201 - VOLUNTARY EARTHQUAKE HAZARD
REDUCTION IN
EXISTING WOOD FRAME RESIDENTIAL BUILDINGS WITH WEAK CRIPPLE
WALLS AND UNBOLTED SILL PLATES**

SECTION V201. GENERAL.

V201.1. Purpose.

The provisions of this Chapter are intended to promote public safety and welfare by reducing the risk of earthquake-induced damage to existing wood-framed residential buildings. The voluntary minimum standards contained in this Chapter must substantially improve the seismic performance of these residential buildings but will not necessarily prevent all earthquake damage. When fully followed, these standards will strengthen the portion of the structure that is most vulnerable to earthquake damage.

Before 1960, most wood frame residential buildings were built with raised wood floors supported by short wood stud walls known as cripple walls. These cripple walls are typically braced with weak seismic materials such as portland cement plaster or horizontal wood siding. In addition, wood frame buildings built under building codes in effect before July 1938 were not required to be bolted to their foundations. Recent earthquakes have shown that if a building has weak cripple walls or is unbolted, it may fall off its foundation even in moderate earthquakes. Fallen buildings have collapsed, caught fire or needed extensive repairs to restore their occupancy.

This Chapter sets prescriptive standards for strengthening of underfloor enclosures that must be permitted by the Building Official without requiring plans or calculations prepared by an architect or an engineer. This Chapter also provides a design standard for the use of alternate materials or an alternate method of construction in lieu of the prescriptive standards. Construction documents for strengthening using alternate materials or methods must be prepared by an architect or engineer.

V201.2. Scope. The provisions of this Chapter may be applied to light wood frame Group R Occupancies with no more than four dwelling units when they contain one or more of the structural weaknesses specified in Section V203.1. The provisions of this Chapter do not apply to the buildings or elements of the buildings, listed below. These buildings or elements require analysis by an engineer or architect in accordance with Chapter 16 or other approved standards to determine appropriate strengthening.

1. Buildings with a lateral force resisting system using poles or columns embedded in the ground.
2. Cripple walls that exceed four feet (1234 mm) in height.

3. Buildings exceeding three stories in height and any three-story building with cripple wall studs exceeding 14 inches (360 mm) in height.
4. Buildings, or portions of buildings, constructed on a concrete slab on grade or constructed on or into a slope steeper than three horizontal to one vertical.
5. Buildings where the Building Official determines that conditions exist that are beyond the scope of the requirements of this Chapter. The standard details approved by the Building Official and these prescriptive provisions are not intended to be the only acceptable strengthening methods permitted. Alternate details and methods are permitted when approved by the Building Official.

V201.3. Alternative Design Procedures. When analysis by an engineer or architect is required or provided for a building within the scope of this Chapter, that analysis must be in accordance with all requirements of this Code except as provided in this Chapter. The design must provide strengthening for any structural weakness listed in Section V203 that is at least equivalent to that provided by the prescriptive requirements of this Chapter with respect to strength, deflection, and capacity. The Building Official may require that sufficient evidence be submitted to substantiate that equivalence. The base shear may be determined in accordance with the following:

$$V = 0.1375 W \text{ (V2-1)}$$

Where:

V = The total design lateral force or shear at the base.

W = The total seismic dead load defined in Chapter 12 of ASCE 7

SECTION V202. DEFINITIONS.

For the purpose of this Chapter, in addition to the applicable definitions, symbols and notations in this Code, certain additional terms are defined as follows:

ADHESIVE ANCHOR is a fastener placed in hardened concrete or masonry that derives its holding strength from a chemical adhesive compound placed between the wall of the hole and the embedded portion of the anchor.

ANCHOR SIDE PLATE is a metal plate or plates used to connect a sill plate to the side of a concrete or masonry stem wall.

CRIPPLE WALL is a wood-framed stud wall extending from the top of the foundation to the underside of the lowest floor framing.

EXPANSION ANCHOR is a mechanical fastener placed in hardened concrete or assembled masonry, designed to expand in a self-drilled or pre-drilled hole of a specified size and engage the sides of the hole in one or more locations to develop shear and/or tension resistance to applied loads without grout, adhesive or drypack.

PERIMETER FOUNDATION is a foundation system which is located under the exterior walls of a building.

SNUG-TIGHT is as tight as an individual can torque a nut on a bolt by hand using a wrench with a 10-inch (254 mm) long handle and the point at which the full surface of the plate washer is contacting the wood member and slightly indents the wood surface.

UNREINFORCED MASONRY includes adobe, burned clay, concrete or sand-lime brick, hollow clay or concrete block, hollow clay tile, rubble, cut stone and unburned clay masonry walls in which the area of reinforcement is less than 50 percent of the minimum steel ratios required for reinforced masonry.

SECTION V203. STRUCTURAL WEAKNESSES.

V203.1. General. For the purpose of this Chapter, structural weaknesses are as specified below.

1. Sill plates or floor framing which are supported directly on the ground without an approved foundation system.
2. A perimeter foundation system which is constructed of wood posts supported on isolated pad footings.
3. Perimeter foundation systems that are not continuous.

EXCEPTIONS:

- A. Existing single-story exterior walls not exceeding 10 feet (3084 mm) in length forming an extension of floor area beyond the line of an existing continuous perimeter foundation.
 - B. Porches, storage rooms and similar spaces not containing fuel-burning appliances.
4. A perimeter foundation system which is constructed of unreinforced masonry.
 5. Sill plates which are not connected to the foundation or are connected with less than what is required by Section V204.3.1.
 6. Cripple walls that are not braced in accordance with the requirements of Section V204.4 and Table V2-A.

SECTION V204. STRENGTHENING REQUIREMENTS.

V204.1. General.

V204.1.1. Scope. The structural weaknesses noted in Section V203 must be strengthened in accordance with the requirements of this section. Strengthening work must be allowed to include both new construction and alteration of existing construction. Except as provided here, all strengthening work and materials must comply with the applicable provisions of this Code. All prescribe nailing in this Chapter must be common nails. Alternate methods of strengthening must be allowed provided the systems are designed by an engineer or architect and approved by the Building Official.

V204.1.2. Condition of Existing Wood Materials. All existing wood materials which will be a part of the strengthening work must be in a sound condition and free from defects which substantially reduce the capacity of the member. Any wood material found to contain fungus infection must be removed and replaced with new material. Any wood material found to be infested with insects or to have been infested must be strengthened or replaced with new materials to provide a net dimension of sound wood at least equal to its undamaged original dimension.

V204.1.3. Floor Joists Not Parallel to Foundations. Floor joists framed perpendicular or at an angle to perimeter foundations must be restrained by either a nominal two-inch (51 mm) wide continuous rim joist or a nominal two-inch (51 mm) wide full depth blocking between alternate joists in one- and two-story buildings, and between each joist in three-story buildings. Blocking for multistory buildings must occur at each joist space above a braced cripple wall panel. Existing connections at the top edge of an existing rim joist or blocking need not be verified. The bottom edge connection to either the foundation sill plate or top plate of a cripple wall must be verified unless a supplemental connection is provided. The minimum existing bottom edge connection must consist of 8d toe nails spaced six inches (152 mm) apart for a continuous rim joist or three 8d toe nails per block. When this minimum bottom edge connection is not present, or is not verified, a supplemental connection must be provided.

When an existing continuous rim joist or the minimum existing blocking does not occur, new 1-1/8 inch (29 mm) wood structural panel blocking installed tightly between floor joists and nailed with 10d common nails at four inches on center to the sill or wall top plate must be provided at the inside face of the cripple wall. In lieu of 1-1/8 inch (29 mm) wood structural panel blocking, tight fitting, full or near full depth two inches nominal width (51 mm) lumber blocking must be allowed provided it does not split during installation. New blocking is not required where it will interfere with vents or plumbing which penetrates the wall.

V204.1.4. Floor Joists Parallel to Foundations. Where existing floor joists are parallel to the perimeter foundations, the end joist must be located over the foundation and, except for required ventilation openings, must be continuous and in continuous contact with any existing foundation sill plate or top plate of the cripple wall. Existing connections at the top edge connection of the end joist need not be verified; however, the bottom edge connection to either the foundation sill plate or the top plate of a cripple wall must be verified unless a supplemental connection is provided. The minimum bottom edge connection must be 8d toe nails spaced six inches (152 mm) apart. If this minimum bottom edge connection is not present or is not verified, a supplemental connection must be provided.

V204.1.5. Supplemental Connections. Supplemental connections must provide sufficient strength to transfer the seismic forces. Framing anchors of minimum 18 gauge steel and 12 approved fasteners may be considered to meet this requirement when spaced 32 inches (813 mm) on center for one story buildings, 24 inches (610 mm) on center for two story buildings and 16 inches (406 mm) on center for three story buildings.

EXCEPTION: A supplemental connection is not required when:

1. The structural wood panel sheathing extends from the sill plate to the rim joist or blocking above.
2. The floor sheathing is nailed directly into the sill or top plate of the cripple wall.

V204.1.6. Single Top Plate Ties. When a single top plate exists in the cripple wall, all end joints in the top plate must be tied. Ties must be connected to each end of the discontinuous top plate and must be equal to one of the following:

1. 3-inch by 6-inch (76 mm by 152 mm) by 0.036-inch-thick (0.9 mm) galvanized steel and nailed with six 8d nails at each end.
2. 1-1/2 inches (38 mm) by 12-inch (305 mm) by 0.058 inches (1.47 mm) galvanized steel nailed with six 16d nails at each end.
3. 2-inch by 4-inch by 12-inch wood blocking nailed with six 16d nails at each end.

V204.2. Foundations.

V204.2.1. New Perimeter Foundations. New perimeter foundations must be provided for structures with the structural weaknesses noted in Items 1 and 2 of Section V203.1. Soil investigations or geotechnical studies are not required for this work unless the building shows signs of excessive settlement or creep.

V204.2.2. Foundation Evaluation by Engineer or Architect. Partial perimeter foundations or unreinforced masonry foundations must be evaluated by an engineer or architect for the force levels noted in Formula (V2-1). Test reports or other substantiating data to determine existing foundation material strengths must be submitted for review. When approved by the Building Official, these foundation systems may be strengthened in accordance with the recommendations included with the evaluation in lieu of being replaced.

EXCEPTION: In lieu of testing existing foundations to determine material strengths and when approved by the Building Official, a new nonperimeter foundation system, designed for the forces noted in Formula (V2-1), may be used to resist all exterior wall lateral forces.

V204.2.3. Details for New Perimeter Foundations. All new perimeter foundations must be continuous and constructed according to the standards for new buildings.

EXCEPTIONS:

1. When approved by the Building Official, the existing clearance between existing floor joists or girders and existing grade below the floor need not comply with Chapter 23. This exception is not permitted when buildings are relocated on new foundations.
2. When approved by the Building Official, and when designed by an engineer or architect, partial perimeter foundations may be used in lieu of a continuous perimeter foundation.

V204.3. Foundation Sill Plate Anchorage.

V204.3.1. Existing Perimeter Foundations. When the building has an existing continuous perimeter foundation, all perimeter wall sill plates must be connected to the foundation in accordance with Table V2-A and this section. Anchors must be installed with the plate washer installed between the nut and the sill plate. The nut must be tightened to a snugtight condition after curing is complete for adhesive anchors and after expansion wedge engagement for expansion anchors. The installation of nuts on all anchors must be subject to verification by the Building Official. Torque testing must be performed for 25 percent of all adhesive or expansion anchors. Minimum test values must be 30 foot pounds (41 N-m) for 1/2-inch (12.7 mm) and 40 foot pounds (55 N-m) for 5/8-inch (15.9 mm) diameter anchors.

Anchor side plates must be permitted when conditions prevent anchor installation vertically through the sill plate. Anchor side plates must be spaced as required for adhesive or expansion anchors but only one anchor side plate is

required on individual pieces of sill plate less than 32 inches (813 mm) in length. Wood structural panel shims must be used on sill plates for single plate anchor side plates when the foundation stem wall is from 3/16 inch (4.8 mm) to 3/4 inch (19 mm) wider than the sill plate.

The shim length must extend a minimum of two inches (50.8 mm) past each end of the anchor side plate. Two plate anchor side plates must be used when the total thickness of the required shim exceeds 3/4 inch (19 mm). All anchor side plates, which use lag or wood screws must pre-drill the sill plate to prevent splitting as required by Section 2304.9. Lag or wood screws must be installed in the center of the thickness of the existing sill plate. Expansion anchors cannot be used in unreinforced masonry or concrete or masonry grout of poor quality. Adhesive anchors must be required when expansion anchors will not tighten to the required torque or their installation causes surface cracking of the foundation wall.

V204.3.2. Placement of Anchors. Anchors must be placed within 12 inches (305 mm), but not less than nine inches (229 mm), from the ends of sill plates and must be placed near the center of the stud space closest to the required spacing. New sill plates may be installed in pieces when necessary because of existing conditions. The minimum length of new sill plate pieces must be 30 inches (762 mm).

EXCEPTION: Where physical obstructions such as fireplaces, plumbing or heating ducts interfere with the placement of an anchor, the anchor must be placed as close to the obstruction as possible, but not less than nine inches (229 mm) from the end of the plate. Center-to-center spacing of the anchors must be reduced as necessary to provide the minimum total number of anchors required based on the full length of the wall. Center-to-center spacing cannot be less than 12 inches (305 mm).

V204.3.3. New Perimeter Foundations. Sill plates for new perimeter foundations must be anchored as required by Chapter 18.

V204.4. Cripple Wall Bracing.

V204.4.1. General.

Exterior cripple walls, not exceeding four feet (1219 mm) in height must use the prescriptive bracing method listed below. Cripple walls more than four feet (1219 mm) in height require analysis by an engineer or architect in accordance with Chapter 16.

V204.4.1.1. Sheathing Requirements.

Wood structural panel sheathing cannot be less than 15/32-inch (12 mm) thick. When used, plywood panels must be constructed of five or more plies. All wood structural panels must be nailed with 8d common nails spaced four inches (102 mm) on center at all edges and at 12 inches (305 mm) on center at each

intermediate support with not less than two nails for each stud. Nails must be driven so that their head or crown is flush with the surface of the sheathing and must penetrate the supporting member a minimum of 1-1/2 inch (38 mm). When a nail fractures the surface, it must be left in place and not counted as part of the required nailing. A new 8d nail must be located within two inches (51 mm) of the discounted nail and hand driven flush with the sheathing surface.

EXCEPTION: No. 6 × 1-1/2 inch (38 mm) wood screws may be used for sheathing nailing when bracing materials are installed on the interior face of studs and cement plaster or other brittle finishes are on the exterior of the sheathed wall. All horizontal joints must occur over nominal two-inch by four-inch (51 mm by 102 mm) blocking installed with the nominal four-inch (102 mm) dimension against the face of the plywood. All vertical joints must occur over studs. Vertical joints at adjoining pieces of wood structural panels must be centered on existing studs such that there is a minimum 1/8 inch (3.2 mm) between the panels. Nails must be placed a minimum of 1/2 inch (12.7 mm) from the edges of the existing stud. When such edge distance cannot be maintained because of the width of the existing stud, a new stud must be added adjacent to the existing and connected with 16d common nails at eight inches (206 mm) on center. A minimum of three such nails must be provided.

V204.4.2. Distribution and Amount of Bracing.

See Table V2-A for the distribution and amount of bracing required. Bracing for a building with three or more floor levels above cripple wall studs exceeding 14 inches (356 mm) in height must be designed in accordance with Chapter 16. The braced panel must be at least two times the height of the cripple stud wall but not less than 48 inches (1219 mm) in width. All panels along a wall must be nearly equal in length and must be nearly equally spaced along the length of the wall. Braced panels at ends of walls must be located as near the end as possible.

Where physical obstructions such as fireplaces, plumbing or heating ducts interfere with the placement of cripple wall bracing, the bracing must then be placed as close to the obstruction as possible. The total amount of bracing required cannot be reduced because of obstructions but the required length of bracing need not exceed the length of the wall.

Underfloor ventilation openings must be maintained in accordance with Chapter 12. Braced panels may include underfloor ventilation openings when the height of the solid portion of the panel meets or 75 percent of the height of the cripple stud wall. When the minimum amount of bracing prescribed in Table V2-A cannot be installed due to obstructions along any wall, the bracing must be designed by an architect or engineer in accordance with Chapter 23.

V204.4.3. Stud Space Ventilation. When bracing materials are installed on the interior face of studs forming an enclosed space between the new bracing and existing exterior finish, each braced stud space must be ventilated. Adequate ventilation and access for future inspection must be provided by drilling a two-inch to three-inch (51 mm to 76 mm) diameter round hole through the sheathing nearly centered between each stud at the top and bottom of the cripple wall. Such holes should be spaced a minimum of one-inch (25 mm) clear from the sill or top plates. In stud spaces containing sill bolts, the hole must be located on the center line of the sill bolt but not closer than one-inch (25 mm) clear from the nailing edge of the sheathing.

When existing blocking occurs within the stud space, additional ventilation holes must be placed above and below the blocking or the existing block must be removed and a new nominal two-inch (51 mm) by four-inch (102 mm) block installed with the nominal four-inch (102 mm) dimension against the face of the plywood. For stud heights less than 18 inches (457 mm) only one ventilation hole need be provided.

V204.4.4. Existing Underfloor Ventilation. Existing underfloor ventilation cannot be reduced without providing equivalent new ventilation as close to the existing as possible. New sheathing may be installed around existing vent openings in braced panels when the length of the panel is increased a distance equal to the length of the vent opening or one stud space minimum.

EXCEPTION: For residential buildings with a post and pier foundation system where a new continuous perimeter foundation system is being installed, ventilation must be provided in accordance with this Code.

SECTION V205. QUALITY CONTROL.

V205.1. Inspection by the Department. All work must be inspected by the Building Official including, without limitation:

1. Placement and installation of new adhesive or expansion anchors or anchor side plates installed in existing foundations.
2. Placement of required blocking and framing anchors.
3. Installation and nailing of new cripple wall bracing.

The torque testing of sill plate anchors per Section V204.3.1 must be performed by the building inspector.

V205.2. Special Inspection.

Special inspection is not required for sill plate anchors installed in existing foundations regulated by the provisions of this Chapter. Any work may be subject

to special inspection when required by the Building Official or when so designated by the architect or engineer of record.

V205.3. Structural Observation.

Structural observation is not required for work done under the prescriptive provisions of this Chapter. When construction documents for strengthening are prepared by an architect or engineer and alternate materials or methods are used, structural observation must be provided as required in Chapter 17.

V205.4. Engineer's or Architect's Statement.

When an alternative design is provided per Section V201.3, the responsible engineer or architect must place the following statement on the approved plans:

1. "I am responsible for this building's seismic strengthening design for the underfloor cripple walls and sill bolting in compliance with the minimum seismic resistance standards of Appendix Chapter V201 of the Building Code." or when applicable:
2. "The Registered Deputy Inspector, required as a condition of the use of structural design stresses requiring continuous inspection, will be responsible to me, the California Licensed Engineer or Architect, as required by Chapter 13-1 of the El Segundo Municipal Code."

TABLE V2-A

SILL PLATE ANCHORAGE AND CRIPPLE WALL BRACING 1,2,3 **Number of Stories above Cripple Walls Minimum Sill Plate Connection** **and Maximum Spacing Amount of Wall Bracing**

One Story Adhesive or expansion anchors must be 1/2-inch (12.7 mm) minimum diameter spaced at six feet (1829 mm) maximum center to center. Each end and not less than 50% of the wall length. Two Story Adhesive or expansion anchors must be 1/2-inch (12.7 mm) minimum diameter spaced at four feet (1219 mm) maximum center to center; or 5/8 inch (15.9 mm) spaced at six feet maximum center to center. Each end and not less than 70% of the wall length. Three Story Adhesive or expansion anchors must be 1/2- inch minimum (12.7 mm) diameter spaced at two feet eight inches (813 mm) maximum center to center; or 5/8-inch minimum (15.9 mm) diameter spaced at four feet (1219 mm) maximum center to center. 100% of the wall length. 1. Plate washers for use with adhesive or expansion anchors must be two-inch (51 mm) by two- inch (51 mm) by 3/16-inch (4.8 mm) for 1/2-inch (12.7 mm) diameter anchors and 2-1/2-inch (64 mm) by 2-1/2-inch (64 mm) by 1/4-inch (6 mm) for 5/8 inch (15.9 mm) diameter anchors. 2. Existing sill plate anchor bolts must be permitted to provide all or a portion of the sill plate connection requirement if:

- a. the anchor bolt is cast in concrete and in sound condition, and:

b. the diameter size and maximum spacing meets or exceeds the requirements of Table V2-A, and:

c. a new plate washer conforming to footnote 1 is installed, and:

d. the sill plate is connected to a snug tight condition and torque tested per Section V204.3.1.3. Anchor side plates must be permitted when conditions prevent anchor installation vertically through the sill plate

APPENDIX V301 - VOLUNTARY – EARTHQUAKE HAZARD REDUCTION IN EXISTING REINFORCED CONCRETE AND REINFORCED MASONRY WALL BUILDINGS WITH FLEXIBLE DIAPHRAGMS

SECTION V301. PURPOSE.

The purpose of this Chapter is to promote public safety and welfare by reducing the risk of death or injury that may result from the effects of earthquakes on reinforced concrete and masonry wall buildings with flexible diaphragms designed under the building codes in effect before January 1, 1995. These buildings are potentially hazardous and prone to significant damage, including possible collapse, in a moderate to major earthquake. These structures typically shelter large numbers of persons and property for retail, food markets, food distribution centers, warehousing, aerospace, industrial/manufacturing and general

business and office use. Their continued use after an earthquake is also essential to the local economy and its post-earthquake recovery.

The provisions of this Chapter are minimum standards for structural seismic resistance established primarily to reduce the risk of loss of life or injury on both subject and adjacent properties and will not necessarily prevent all earthquake damage to an existing building which complies with these standards. This Chapter cannot require existing electrical, plumbing, mechanical or fire safety systems to be altered unless they constitute a hazard to life or property.

This Chapter provides voluntary retrofit standards for deficient wall anchorage systems on structures that are not subject to the mandatory provisions of Chapter When fully followed, these standards will strengthen the portion of the structure that is most vulnerable to earthquake damage.

SECTION V302. SCOPE.

The voluntary provisions of this Chapter apply to existing buildings of the following types:

1. Cast-in-place reinforced concrete or masonry wall buildings with flexible diaphragms designed under building codes in effect before January 1, 1995.
 2. Tilt-up concrete wall buildings with flexible diaphragms designed under the building codes in effect before January 1, 1995, but after January 1, 1976.
- All tilt-up concrete wall buildings designed under the Building Code in effect before January 1, 1976 are subject to the mandatory provisions of this Chapter
All existing reinforced masonry or concrete buildings with flexible diaphragms,

including tilt-up concrete wall buildings, designed under the Building Code in effect on or after January 1, 1995, must be designed in conformance with Chapter 16.

SECTION V303. DEFINITIONS.

For the purposes of this Chapter, the applicable definitions in Chapter 2, Chapter 16, Chapter 19 and Chapter 23 of this Code; Chapter 1, Chapter 3, Chapter 4, Chapter 5, Chapter 6 and Chapter 11 of ASCE 7, and the following apply:

ANCHORAGE SYSTEM is the system of all structural elements and connections, which support the concrete or masonry wall in the lateral direction, including diaphragms and subdiaphragms, wall anchorage and continuity or cross tie connectors in subdiaphragms and main diaphragms.

COMMENCED CONSTRUCTION is construction pursuant to a valid building permit that has progressed to the point that one of the called inspections as required by the Department has been made and the work for which the inspection has been called has been judged by the Department to be substantial and has been approved by the Department.

EXISTING BUILDING is an erected building for which a legal building permit and a certificate of occupancy have been issued.

FLEXIBLE DIAPHRAGM is any diaphragm constructed of wood structural panel, diagonal or straight wood sheathing, metal decking without a structural concrete topping, or horizontal rod bracing.

HISTORICAL BUILDING is any building designated or currently in the process of being designated as a historical building by an appropriate federal, state or City jurisdiction.

REINFORCED CONCRETE WALL is a concrete wall that has 50 percent or more of the reinforcing steel required for reinforced concrete in Chapter 19.

REINFORCED MASONRY WALL is a masonry wall that has 50 percent or more of the reinforcing steel required by Chapter 21.

RETROFIT is strengthening or structurally improving the lateral force resisting system of an existing building by alteration of existing or addition of new structural elements.

TILT-UP CONCRETE WALL is a form of precast concrete panel construction either cast in the horizontal position at the site and after curing, lifted and moved into place in a vertical position, or cast off-site in a fabricator's shop.

SECTION V304. ANALYSIS AND DESIGN.

V304.1. Wall Panel Anchorage. Concrete and masonry walls must be anchored to all floors and roofs which provide lateral support for the wall. The anchorage must provide a positive direct connection between the wall and floor or roof construction capable of resisting a horizontal force equal to 30 percent of the tributary wall weight for all buildings, and 45 percent of the tributary wall weight for essential buildings, or a minimum force of 250 pounds per linear foot of wall, whichever is greater. The required anchorage must be based on the tributary wall panel assuming simple supports at floors and roof.

EXCEPTION: An alternate design may be approved by the Building Official when justified by well established principles of mechanics.

V304.2. Special Requirements for Wall Anchors and Continuity Ties. The steel elements of the wall anchorage systems and continuity ties must be designed by the allowable stress design method using a load factor of 1.7. The 1/3 stress increase permitted by Chapter 16 cannot be permitted for materials using allowable stress design methods. The strength design specified in Chapter 19 using a load factor of 2.0 in lieu of 1.4 for earthquake loading, must be used for the design of embedment in concrete. Wall anchors must be provided to resist out-of-plane forces, independent of existing shear anchors.

EXCEPTION: Existing cast-in-place shear anchors may be used as wall anchors if the tie element can be readily attached to the anchors and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing, and through analysis showing that the bolts are capable of resisting the total shear load while being acted upon by the maximum tension force due to seismic loading. Criteria for analysis and testing must be determined by the Building Official.

Expansion anchors are not allowed without special approval of the Building Official. Attaching the edge of plywood sheathing to steel ledgers is not considered as complying with the positive anchoring requirements of the Code; and attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this Code unless testing and analysis are performed, which establish shear values for the attachment perpendicular to the edge of the deck.

V304.3. Development of Anchor Loads into the Diaphragm. Development of anchor loads into roof and floor diaphragms must comply with Chapter 12 of ASCE 7.

EXCEPTION: If continuously tied girders are present, then the maximum spacing of the continuity ties is the greater of the girder spacing or 24 feet (7315 mm). In wood diaphragms, anchorage cannot be accomplished by use of toe nails or nails subject to withdrawal, nor must wood ledgers, top plates or framing be used in cross-grain bending or cross-grain tension. The continuous ties required

by Chapter 12 of ASCE 7 must be in addition to the diaphragm sheathing. Lengths of development of anchor loads in wood diaphragms must be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site. At reentrant corners, continuity collectors may be required for existing return walls not designed as shear walls, to develop into the diaphragm a force equal to the lesser of the rocking or shear capacity of the return wall, or the tributary shear but not exceeding the capacity of the diaphragm. Shear anchors for the return wall must be commensurate with the collector force. If a truss or beam other than rafters or purlins is supported by the return wall or by a column integral with the return wall, an independent secondary column is required to support the roof or floor members whenever rocking or shear capacity of the return wall is governing.

V304.4. Anchorage at Pilasters. Anchorage of pilasters must be designed for the tributary wall anchoring load per Section V304.1 of this Code, considering the wall as a two-way slab. The edge of the two-way slab must be considered “fixed” when there is continuity at pilasters, and considered “pinned” at roof or floor levels. The pilasters or the walls immediately adjacent to the pilasters must be anchored directly to the roof framing such that the existing vertical anchor bolts at the top of the pilasters are by-passed without causing tension or shear failure at the top of the pilasters.

EXCEPTION: If existing vertical anchor bolts at the top of the pilasters are used for the anchorage, then additional exterior confinement must be provided. The minimum anchorage at a floor or roof between the pilasters must be that specified in Section V304.1 of this Code.

V304.5. Symmetry. Symmetry of connectors in the anchorage system is required. Eccentricity may be allowed when it can be shown that all components of forces are positively resisted and justified by calculations or tests.

V304.6. Minimum Roof Member Size. Wood members used to develop anchorage forces to the diaphragm must be of minimum nominal width for new construction and replacement. All such members must be designed for gravity and earthquake forces as part of the wall anchorage system. For existing structural members, the allowable stresses must be without the 1/3 stress increase per Section V304.2.

V304.7. Combination of Anchor Types. To repair and retrofit existing buildings, a combination of different anchor types of different behavior or stiffness is prohibited. The capacity of the new and existing connectors cannot be added.

V304.8. Prohibited Anchors. Usage of connectors that were bent or stretched from the intended use is prohibited.

V304.9. Crack and Damage Repairs, Evaluation of Existing Structural Alterations. The engineer or architect must report any observed structural

conditions and structural damage that have imminent life safety effects on the buildings and recommend repairs. This includes alterations such as openings cut in existing wall panels without a building permit. Evaluations and repairs must be reviewed and approved by the Building Official.

V304.10. Miscellaneous. Existing mezzanines relying on the concrete or masonry walls for vertical or lateral support must be anchored to the walls for the tributary mezzanine load. Walls depending on the mezzanine for lateral support must be anchored per Sections V304.1, V304.2 and V304.3 of this Code.

EXCEPTION: Existing mezzanines that have independent lateral and vertical support need not be anchored to the concrete or masonry walls. Existing interior masonry or concrete walls not designed as shear walls, which extend to the floor above or to the roof diaphragm must also be anchored for out-of-plane forces per Section V304.1, V304.2 and V304.3 of this Code. In the in-plane direction, the walls may be isolated or must be developed into the diaphragm for a lateral force equal to the lesser of the rocking or shear capacity of the wall, or the tributary shear but not exceeding the diaphragm capacity.

V304.11. Historical Buildings. Qualified historical buildings must be permitted to use alternate building standards or deviations from this Chapter in order to preserve their original or restored architectural elements and features.

SECTION V305. MATERIALS OF CONSTRUCTION.

All materials permitted by this Code.

SECTION V306. INFORMATION REQUIRED ON PLANS.

V306.1. General. In addition to the seismic analysis required elsewhere in this Chapter, the licensed engineer or architect responsible for the seismic analysis of the building must record the information required by this section on the approved plans.

V306.2. Information Required. The plans must accurately reflect the results of the engineering investigation and design and show all pertinent dimensions and sizes for plan review and construction. The following must be provided:

1. Floor plans and roof plans must show the existing framing construction, diaphragm construction, proposed wall anchors, cross-ties and collectors. Existing nailing, anchors, ties and collectors must also be shown on the plans if these are part of the design, and these structural elements need to be verified in the field.
2. At elevations where there is alterations or damage, the details must show the roof and floor heights, dimensions of openings, location and extent of existing damage, and proposed repair.

3. Typical concrete or masonry wall sections with wall thickness, height, and location of anchors must be provided.
4. Details must include the existing and new anchors and the method of development of anchor forces into the diaphragm framing; existing and new cross-ties, existing and new or improved support of the roof and floor girders at pilasters or walls.

V306.3. Engineer's or Architect's Statement. The responsible engineer or architect must state on the approved plans, the following:

1. "I am responsible for this building's seismic strengthening design of the tilt-up concrete wall anchorage system in compliance with the minimum seismic resistance standards of Chapter V3 of the California Building Code, as adopted by the El Segundo Municipal Code." or when applicable:
2. "The Registered Deputy Inspector, required as a condition of the use of structural design stresses requiring continuous inspection, will be responsible to me, the California Licensed Engineer or Architect, as required by Section 1704 of the California Building Code, as adopted by the El Segundo Municipal Code."

SECTION 8: CALIFORNIA ENVIRONMENTAL QUALITY ACT EXEMPTION.

The City Council determines that this ordinance is exempt from review under the California Environmental Quality Act (California Public Resources Code §§ 21000, et seq., "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, et seq., the "State CEQA Guidelines") because it consists only of minor revisions and clarifications to an existing code of construction-related regulations and specification of procedures related thereto and will not have the effect of deleting or substantially changing any regulatory standards or findings required therefor. This ordinance, therefore, is an action being taken for enhanced protection of the environment and that does not have the potential to cause significant effects on the environment.

SECTION 9: SAVINGS CLAUSE. Repeal of any provision of the ESMC or any other city ordinance herein will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before, this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 10: SEVERABILITY. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

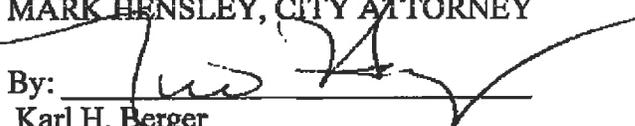
SECTION 11: VALIDITY OF PREVIOUS CODE SECTIONS. If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the ESMC or other the city ordinance by this Ordinance will be rendered void and cause such ESMC provision or other the city ordinance to remain in full force and effect for all purposes.

SECTION 11: EFFECTIVE DATE. This Ordinance will take effect on January 1, 2014.

PASSED AND ADOPTED this 5th day of Nov., 2013.


Bill Fisher, Mayor

APPROVED AS TO FORM
MARK HENSLEY, CITY ATTORNEY

By: 
Karl H. Berger
Assistant City Attorney

ATTEST:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF EL SEGUNDO)

I, Tracy Weaver, City Clerk of the City of El Segundo, California, do certify that the whole number of ¹⁴⁸⁴ members of the City Council of said City is five; that the foregoing Ordinance No. was duly introduced by said City Council at a regular meeting held on the 15th day of Oct., 2013, and was duly passed and adopted by said City Council, approved and signed by the Mayor, and attested to by the City Clerk, all at a regular meeting of said Council held on the 5th day of Nov., 2013, and the same was so passed and adopted by the following vote:

AYES: **Fisher, Jacobson, Fuentes, Atkinson, Fellhauer**
NOES: **None**
ABSENT: **None**
ABSTAIN: **None**



Tracy Weaver, City Clerk

ORDINANCE NO. 1486

AN ORDINANCE ADOPTING THE 2013 EDITION OF THE CALIFORNIA PLUMBING CODE WITH AMENDMENTS.

The Council of the City of El Segundo does ordain as follows:

SECTION 1: FINDINGS. The City Council finds and declares as follows:

- A. Health and Safety Code § 17958 requires the City is required to adopt certain uniform codes that are set forth in Health and Safety Code § 17922 and published in the California Code of Regulations;
- B. Pursuant to Government Code § 50022.2, *et seq.*, the City may adopt other uniform codes by reference;
- C. It is in the public interest to adopt the 2013 Edition of the California Plumbing Code ("CPC") with the changes set forth in this Ordinance;
- D. Amendments have been made to Codes are hereby found to be either administrative or procedural in nature or concern themselves with subjects not covered in such Codes. The changes made include provisions making each of said Codes compatible with other Codes enforced by the City.
- E. At least one copy of the CPC was filed with the City Clerk of the City was available for public inspection for at least fifteen (15) days preceding the date of the hearing

SECTION 2: Chapter 5 to Title 13 of the El Segundo Municipal Code ("ESMC") is amended in its entirety to read as follows:

CHAPTER 5

PLUMBING CODE

SECTION:

- 13-5-1: California Plumbing Code Adopted.
- 13-5-2: Amendments to California Plumbing Code.

13-5-1: **ADOPTION OF CALIFORNIA PLUMBING CODE, 2013 EDITION.** Pursuant to California Government Code § 50022.1 to 50022.8, the California Plumbing Code, 2013 Edition, published at Title 24, Part 4, of the California Code of Regulations, including Appendices A, B, D, I, and L ("CPC") is adopted by reference, subject to the amendments, additions and deletions set forth below. One true copy of the CPC, is on file in the office of the Building Official and is available for public inspection as required by law.

Section 103.3 of the CPC is amended to read as follows:

CPC Section 103.3, Permit Issuance, is deleted in its entirety. The 2013 California Building Code, as incorporated into the El Segundo Municipal Code, will govern the administration of the CPC.

Section 103.4 of the CPC is hereby amended to read as follows:

CPC Section 103.4 Fees, is deleted in its entirety. The 2013 California Building Code, as incorporated into the El Segundo Municipal Code, will govern the administration of the CPC."

SECTION 3: CALIFORNIA ENVIRONMENTAL QUALITY ACT EXEMPTION. The City Council determines that this ordinance is exempt from review under the California Environmental Quality Act (California Public Resources Code §§ 21000, *et seq.*, "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, *et seq.*, the "CEQA Guidelines") because it consists only of minor revisions and clarifications to an existing code of construction-related regulations and specification of procedures related thereto and will not have the effect of deleting or substantially changing any regulatory standards or findings required therefor. This ordinance, therefore, is an action being taken for enhanced protection of the environment and that does not have the potential to cause significant effects on the environment. Consequently, it is categorically exempt in accordance with CEQA Guidelines §§ 15301 as a minor alteration of existing public or private structures involving no expansion of use; 15305 as a minor alteration in land use limitations which do not result in any changes in land use or density; and 15308 as an action taken by a regulatory agency as authorized by California law to assure maintenance or protection of the environment.

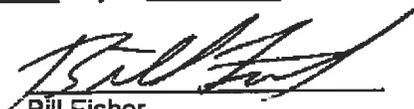
SECTION 4: SAVINGS CLAUSE. Repeal of any provision of the ESMC or any other city ordinance herein will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before, this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 5: SEVERABILITY. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

SECTION 6: VALIDITY OF PREVIOUS CODE SECTIONS. If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the ESMC or other the city ordinance by this Ordinance will be rendered void and cause such ESMC provision or other the city ordinance to remain in full force and effect for all purposes.

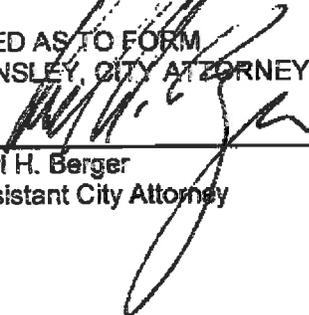
SECTION 7: EFFECTIVE DATE. This Ordinance will take effect on January 1, 2014.

PASSED AND ADOPTED this 5th day of Nov., 2013.



Bill Fisher,
Mayor

APPROVED AS TO FORM
MARK HENSLEY, CITY ATTORNEY

By: 

Karl H. Berger
Assistant City Attorney

ATTEST:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF EL SEGUNDO)

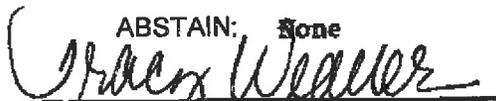
I, Tracy Weaver, City Clerk of the City of El Segundo, California, do hereby certify that the whole number of members of the City Council of said City is five; that the foregoing Ordinance No. ~~1486~~ was duly introduced by said City Council at a regular meeting held on the 15th day of Oct., 2013, and was duly passed and adopted by said City Council, approved and signed by the Mayor, and attested to by the City Clerk, all at a regular meeting of said Council held on the 5th day of Nov., 2013, and the same was so passed and adopted by the following vote:

AYES: **Fisher, Jacobson, Fuentes, Atkinson, Fellhauer**

NOES: **None**

ABSENT: **None**

ABSTAIN: **None**



Tracy Weaver, City Clerk

ORDINANCE NO. 1487

AN ORDINANCE ADOPTING THE 2013 EDITION OF THE CALIFORNIA MECHANICAL CODE WITH AMENDMENTS.

The Council of the City of El Segundo does ordain as follows:

SECTION 1: FINDINGS. The City Council finds and declares as follows:

- A. Health and Safety Code § 17958 requires the City is required to adopt certain uniform codes that are set forth in Health and Safety Code § 17922 and published in the California Code of Regulations;
- B. Pursuant to Government Code § 50022.2, *et seq.*, the City may adopt other uniform codes by reference;
- C. It is in the public interest to adopt the 2013 Edition of the California Mechanical Code ("CMC") with the changes set forth in this Ordinance;
- D. Amendments have been made to Codes are hereby found to be either administrative or procedural in nature or concern themselves with subjects not covered in such Codes. The changes made include provisions making each of said Codes compatible with other Codes enforced by the City.
- E. At least one copy of the CMC was filed with the City Clerk of the City was available for public inspection for at least fifteen (15) days preceding the date of the hearing

SECTION 2: Chapter 6 to Title 13 of the El Segundo Municipal Code ("ESMC") is amended in its entirety to read as follows:

CHAPTER 6

MECHANICAL CODE

SECTION:

13-6-1: California Mechanical Code Adopted.

13-6-2: Amendments to California Mechanical Code.

13-6-1: **ADOPTION OF CALIFORNIA MECHANICAL CODE, 2013 EDITION.** Pursuant to California Government Code § 50022.1 to 50022.8, the California Mechanical Code, 2013 Edition, published at Title 24, Part 4, of the California Code of Regulations, including Appendices A through D ("CMC") is adopted by reference, subject to the amendments, additions and deletions set forth below. One true copy of the CMC, is on file in the office of the Building Official and is available for public inspection as required by law.

13-6-2:

Section 110.0 of the CMC is hereby amended to read as follows:

CMC Section 110.0, Board of Appeals, is deleted in its entirety. The 2013 California Building Code, as incorporated into the El Segundo Municipal Code, will govern the administration of the CMC.

Section 114.0 of the CMC is hereby amended to read as follows:

CMC Section 114.0 Permits, is deleted in its entirety. The 2013 California Building Code, as incorporated into the El Segundo Municipal Code, will govern the administration of the CMC.

Section 115.0 of the CMC is hereby amended to read as follows:

CMC Section 115.0 Fees, is deleted in its entirety. The 2013 California Building Code, as incorporated into the El Segundo Municipal Code, will govern the administration of the CMC.

SECTION 4: CALIFORNIA ENVIRONMENTAL QUALITY ACT EXEMPTION. The City Council determines that this ordinance is exempt from review under the California Environmental Quality Act (California Public Resources Code § 21000, *et seq.*, "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations § 15000, *et seq.*, the "CEQA Guidelines") because it consists only of minor revisions and clarifications to an existing code of construction-related regulations and specification of procedures related thereto and will not have the effect of deleting or substantially changing any regulatory standards or findings required therefor. This ordinance, therefore, is an action being taken for enhanced protection of the environment and that does not have the potential to cause significant effects on the environment. Consequently, it is categorically exempt in accordance with CEQA Guidelines § 15301 as a minor alteration of existing public or private structures involving no expansion of use; 15305 as a minor alteration in land use limitations which do not result in any changes in land use or density; and 15308 as an action taken by a regulatory agency as authorized by California law to assure maintenance or protection of the environment.

SECTION 5: SAVINGS CLAUSE. Repeal of any provision of the ESMC or any other city ordinance herein will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before, this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 6: SEVERABILITY. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

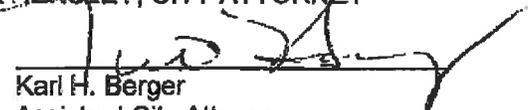
SECTION 7: VALIDITY OF PREVIOUS CODE SECTIONS. If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the ESMC or other the city ordinance by this Ordinance will be rendered void and cause such ESMC provision or other the city ordinance to remain in full force and effect for all purposes.

SECTION 8: EFFECTIVE DATE. This Ordinance will take effect on January 1, 2014.

PASSED AND ADOPTED this 5th day of Nov., 2013.


Bill Fisher,
Mayor

APPROVED AS TO FORM
MARK HENSLEY, CITY ATTORNEY

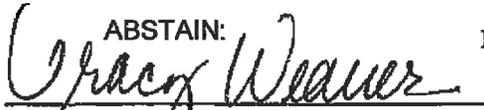
By: 
Karl H. Berger
Assistant City Attorney

ATTEST:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF EL SEGUNDO)

I, Tracy Weaver, City Clerk of the City of El Segundo, California, do hereby certify that the whole number of members of the City Council of said City is five; that the foregoing Ordinance No. 1487 was duly introduced by said City Council at a regular meeting held on the 15th day of Oct., 2013, and was duly passed and adopted by said City Council, approved and signed by the Mayor, and attested to by the City Clerk, all at a regular meeting of said Council held on the 5th day of Nov., 2013, and the same was so passed and adopted by the following vote:

- AYES: **Fisher, Jacobson, Fuentes, Atkinson, Fellhauer**
- NOES: **None**
- ABSENT: **None**
- ABSTAIN: **None**


Tracy Weaver, City Clerk

ORDINANCE NO. 1488

AN ORDINANCE ADOPTING BY REFERENCE THE 2013 EDITION OF THE CALIFORNIA FIRE CODE, CHAPTERS 1, DIVISION 2, 3, and 4, AND SECTIONS 503, 510.2 AND 1103.2 OF THE INTERNATIONAL FIRE CODE, 2012 EDITION, AND AMENDING THESE CODES THROUGH EXPRESS FINDINGS OF LOCAL NECESSITY.

The Council of the City of El Segundo does ordain as follows:

SECTION 1: FINDINGS. The City Council finds that certain local climatic, geological, or topographical conditions exist as follows:

- A. Climatic - The City experiences periods of extremely high temperatures accompanied by low humidity and high winds each year. These conditions could create an environment in which the Fire Department may be unable to control fires occurring in vegetation as well as structures not having built in fire protection.
- B. Geological - The City is located in a seismically active area. A significant earthquake could render the Fire Department incapable of providing adequate fire protection. In that instance, built-in fire protection would be relied upon for controlling most structural fires.
- C. After due consideration, the City Council finds and determines that due to these local climatic, geological, or topographical conditions that amendments, additions, and deletions to the California Fire Code, 2007 Edition, are reasonably necessary to provide sufficient and effective levels of fire safety for the protection of life, health and property. Specifically, these amendments are made as follows:
 1. CFC § 503 – Provides a means of ensuring that fire department access to buildings and fire hydrants is provided uniformly in the City during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
 2. CFC § 505.1, 505.1.1 – Provides a means of ensuring that fire department access to buildings and fire hydrants is provided uniformly in the City during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
 3. CFC § 510.2 and 1103.2 – Provides a means of ensuring that safe and efficient firefighting operations are conducted in buildings with limited radio reception during periods of low humidity and high

winds, potential seismic activity, or in areas of restricted access present in the City.

4. CFC § 605.11.3.2.1 – Provides roof access on residential structures for firefighter smoke and heat ventilation operations that will provide adequate protection during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
5. CFC § 901.4.7 – 910.1. Provides a means of ensuring that fire protection systems are installed and maintained in a manner that will provide adequate protection during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
6. CFC 903.3.5.3 – Requires that fire sprinkler systems are designed to allow for water reduction during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
7. CFC § 915.1 – 915.8.2.6. Requires the installation of fire protection and life safety equipment in new mid-rise buildings/structures that increase the fire and life safety of the structures/buildings in order to provide adequate fire protection during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
- 8.. CFC § 1030.9. Requires fire escapes to be kept clear, maintained and an annual inspection by a certified individual to ensure the fire escapes are operable due to potential seismic activity.
9. CFC § 5601.2 and 5601.3 Prohibits the general use of fireworks, including “Safe and Sane” fireworks and authorizes the fire code official to confiscate fireworks in order to reduce the danger from fire during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.
10. CFC Appendix B § B105.2. Reduces the available fire flow reduction to 50 percent to increase site available fire flow to provide adequate fire protection and life safety during periods of low humidity and high winds, potential seismic activity, or in areas of restricted access present in the City.

SECTION 2: Chapter 10 to Title 13 of the El Segundo Municipal Code ("ESMC") is amended in its entirety to read as follows:

**"CHAPTER 10
13-10-2: FIRE CODE**

A. SECTIONS:

13-10-1: ADOPTION OF CODES.

13-10-2: AMENDMENTS, ADDITIONS, AND DELETIONS.

13-10-3: ADDING APPENDIX M TO THE CFC.

13-10-4: GEOGRAPHICAL LIMITS.

13-10-1: ADOPTION OF CODES.

Pursuant to California Government Code §§ 50022.1 to 50022.8, the City adopts and incorporates by reference the California Fire Code, 2013 Edition ("CFC"), including Appendixes A, B, and C published drafted and published by the International Code Council, 500 New Jersey Avenue NW, 6th Floor, Washington DC, 20001-2070 and the California Building Standards Commission, 2525, Natoma Park Drive, Ste 130, Sacramento, California 95833. The City also adopts and incorporates by reference Chapters 1, Division 2, 3, 4, and Section 503 of the International Fire Code, 2012 Edition, published by the International Code Council, not included in the California Building Standards Code, as modified and amended by this chapter. Should the changes set forth below conflict with the provisions of any other locally adopted code, these changes will prevail. The CFC and the IFC will apply to all occupancies within the City's jurisdiction. One (1) true copy of each code is on file with the City Clerk and is available for public inspection as required by law.

13-10-2: AMENDMENTS, ADDITIONS, AND DELETIONS.

After due consideration, the City Council has found that as a result of existing local climatic, geological, or topographical conditions that amendments, additions, and deletions to the CFC are reasonably necessary to provide sufficient and effective levels of fire safety for the protection of life, health and property. Therefore, the CFC is amended, added to, or deleted from, as set forth below:

§ 104.10 Investigations. The Fire Department is authorized to promptly investigate the cause, origin and circumstances of each and every fire, explosion, unauthorized release of hazardous materials, or any other hazardous condition within the City. If it appears to the bureau of investigation that such fire is suspicious in origin, it is authorized to take immediate charge of all physical evidence relating to the cause of fire and to pursue investigation to its conclusion.

§ 104.10.1 Assistance from other agencies. The Police Department and other public agencies are authorized to assist the Fire Department in its investigations when requested to do so.

§ 104.10.2 Technical assistance. When there is a fire, explosion, hazardous materials incident or other potential life or serious property threatening situation, the fire code official can request the owner to or operator to hire a private fire protection or hazardous materials investigator, acceptable to the fire code official and at the expense of the owner or operator, to provide a full report of the incident, including, without limitation, such matters as origin, cause, circumstances or proposed solution to the problem.

§ 104.11.4 Financial Responsibility. Any person who personally, or through another, willfully, negligently, or in violation of law, sets a fire, allows a fire to be set, or allows a fire kindled or attended by him/her to escape from his/her control, allows any hazardous material to be handled, stored, disposed of, or transported in a manner not in accordance with this Code, State law or nationally recognized Standards, allows any hazardous material to escape from his/her control, allows continuation of a violation of this Code is liable for the expense of fighting the fire or for the expenses incurred during a hazardous materials incident, and such expense will be a charge against that person.

§ 105.2 Application for Permit. Applications for permits will be made to the fire prevention office in such form and detail as prescribed by the fire code official. Applications for permits must be accompanied by such plans as required by the fire code official. Any applicable permit fees must be paid at the time of application for the permit.

§ 105.6.48 Battery systems. To install or operate stationary storage battery systems having a liquid capacity of more than 50 gallons (189 L) for flooded lead acid, nickel cadmium (NiCad) and valve-regulated lead acid (VRLA), or 1,000 pounds (454 kg) for lithium-ion, used for facility standby power, emergency power or uninterruptible power supplies. See Section 608.

§ 105.6.49 Woodworking. To operate a business which conducts woodworking, or operates as a cabinet shop or other similar purposes.

§ 105.7.13 Rooftop obstructions. A construction permit is required to install or modify solar photovoltaic power systems, rooftop gardens or landscaped roofs.

§ 106.2.1 Inspection requests. It is the duty of the holder of the permit or their duly authorized agent to notify the fire code official when work is ready for inspection. It is the duty of the permit holder to provide access to and means for inspection of such work that are required by this code. Every request for inspection must be filed not less than two working days before such inspection is desired. Such request may be in writing or by telephone.

§ 108.4 Filing fee and application. The City will assess a fee in an amount set by resolution at the time that an appellant files an appeal of any order, decisions, or determination made by the fire code official relative to the application and

interpretation of this Code. The fee is refundable should the appellant prevail in a decision by the Board. The appeal must be taken by filing a written notice of appeal, in letterform, to the Board of Appeals. The Board's decision constitutes the City's final decision.

§ 109.4 Violation penalties. Persons who violate a provision of this code or fail to comply with any of its requirements or who erects, installs, alters, repairs or does work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, is guilty of a misdemeanor, punishable by a fine of not more than \$1,000 dollars or by imprisonment not exceeding 6 months, or both such fine and imprisonment. Each day that a violation continues after due notice has been served constitutes a separate offense.

§ 202 GENERAL DEFINITIONS are amended to add and/or modify the following definitions to read as follows:

"Administrator" means the City Manager, or designee, of the city of El Segundo.

"Building Access" means an exterior door opening conforming to all of the following:

1. Suitable and available for fire department use, opening onto or adjacent to a public way or a fire department access road as described in Section 902.
2. Located not more than 2 feet (609.6 mm) above adjacent ground level.
3. Leading to a space, room or area having foot traffic communication capabilities with the remainder of the building.
4. Designed to permit access with the use of keys available in an approved key lock box.

"Fire Code Official" is the Fire Chief or a duly authorized representative.

"Low-Rise Building" is any building that is less than four stories in height from the lowest level of fire department access. Measurement will be from the topside of the highest floor level that can be occupied to the lowest floor level of building access, as defined in Section 202.

"Mid-Rise Building" is any building having space used for human occupancy four complete stories or more in height while being 75 feet (22,860 mm) or less in height and not defined as a high-rise building by Section 202. Measurement will be from the topside of the highest floor level that can be occupied to the lowest floor level of building access, as defined in Section 202.

"Open Burning" is the burning of materials wherein products of combustion are emitted directly into the ambient air without passing through a stack or chimney from an enclosed chamber. Open burning does not include road flares, smudge-pots and similar devices associated with safety or occupational uses typically considered open flames. For the purpose of this definition, a chamber must be regarded as enclosed when, during the time combustion occurs, only apertures, ducts, stacks, flues or chimneys necessary to provide combustion air and permit the escape of exhaust gas are open.

§ 307.1.1 Prohibited Open Burning. Open flame, open burning, recreational burning, fires in outdoor fireplaces or portable fireplaces that is offensive or objectionable because of smoke emissions or when atmospheric conditions or local circumstances make such fires hazardous is prohibited.

§ 308.1.4 Open-flame cooking devices. is deleted

§ 311.5 Placards. is deleted

§ 405.2 Table 405.2 Footnote 'a'

- a. The frequency in all school levels are allowed to be modified in accordance with Section 408.3.2. Secondary level schools need only conduct evacuation drills twice each school year.

§ 408.1 General. is deleted

§ 408.2 Group A occupancies. is deleted

§ 408.3 Group E occupancies and Group R-2 college and university buildings. is deleted

§ 408.5 I occupancies. is deleted

§ 408.6 Group I-2 occupancies. is deleted

§ 408.7 Group I-3 occupancies. is deleted

§ 408.8 Group R-1 occupancies. is deleted

§ 408.9 Group R-2 occupancies. is deleted

§ 408.10 Group R-4 occupancies. is deleted

§ 408.11 Covered mall buildings. is deleted

§ 503, Fire Apparatus Access Roads is adopted with the following amendments:

§ 503.1.1 Buildings and facilities. Approved fire apparatus access roads must be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road must comply with the requirements of this section and extend to within 150 feet (45,720 mm) of all portions of the facility and all portions of the exterior walls of the of the first story of the building as measured by an approved route around the exterior of the building or facility. The fire code official has the authority to designate fire apparatus access roads on private property.

Exception: The fire code official is authorized to increase to dimension of 150 feet (45,720 mm) where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

§ 503.2.1 Dimensions. Fire apparatus access roads must have an unobstructed width of not less than 20 feet (6096 mm) exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 15 feet (4572 mm).

Exception:

1. When serving only one Group R, Division 3 or Group U Occupancy the unobstructed width of the access road may be 12 feet (3658 mm).

§ 503.2.1.1 Access roads with vehicle parking. No access roads can be less than 32 feet (9754 mm) in width if the vehicle parking is permitted on one side of the access road and not less than 40 feet (12,192 mm) if vehicle parking is permitted on both sides of the access road. To permit the free passage of vehicles, access roads designated for vehicle parking on only one side must have signs or markings prohibiting the parking of vehicles on the traffic flow side of the roadway.

§ 503.2.1.2 Road divider. An access road divider into separate adjacent one-way traffic lanes by a curbed divider or similar obstacle must not be less than 15 feet (4572 mm) in unobstructed width on each side of the divider.

§ 503.2.4 Turning radius. The inside turning radius of a fire apparatus access road must be a minimum of 60 feet, outside and 40 feet, inside.

§ 503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads cannot be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 must be maintained at all times. Speed bumps and speed humps must be approved before installation.

§ 505.1 Address numbers. Approved address numbers and letters must be placed on all new and existing buildings and units in such a location as to be plainly visible and legible from the street or road fronting such buildings and units. Numbers and letters must be at least four (4) inches in height for residential, six (6) inches in height for commercial, and twelve (12) inches in height for industrial buildings and units and may not be located on doors or other areas that can be obstructed from view. The numbers and letters will be in a color that contrasts with their background and must be in the City's approved numbering sequence. Commercial and industrial buildings and units that are served by an alley must also have approved address numbers and letters posted in a visible location near the primary door to the alley.

§ 505.1.1 Directory. For complexes and large buildings, a directory or premises map with approved addressing must be installed and maintained at a location and in format as approved by the fire code official.

§ 507.5.1.1 Hydrant for sprinkler systems and standpipe systems. Buildings equipped with a an automatic sprinkler system or a standpipe system installed in accordance with Sections 903 or 905 must have a fire hydrant within 80 feet of the fire department connection.

Exception: The distance may be permitted to exceed 80 feet where approved by the fire code official.

§ 510.2 Emergency responder radio coverage in existing buildings. is adopted

§ 605.11.3.2.1 Residential building smoke and heat ventilation. Panels/modules installed on the roof of residential buildings must be located only on one side of any ridge in order to allow for Fire Department smoke and heat ventilation operations. The opposite ridge must have the panels/modules located no higher than 3 feet below the ridge.

Exceptions:

1. Where the solar panels/modules are spaced a minimum 5 feet from the ridge.
2. Where the building is protected throughout by a fire sprinkler system installed in accordance with the applicable NFPA Standard.
3. Where the building is provided with approved skylights and/or smoke and heat vents located in approved locations per the El Segundo Fire Department.

§ 805 Upholstered Furniture and Mattress In New and Existing Buildings. is deleted

§ 808 Furnishings Other Than Upholstered Furniture and Mattresses or Decorative Materials in New and Existing Buildings. is deleted

§-901.4.7 Partial fire sprinkler systems. Where in this Code or the Building Code a partial fire sprinkler system is required, the fire sprinkler system must be installed, modified or extended to protect the entire building or structure.

§ 901.11 Problematic systems. In the event of a failure of a fire protection system or 2 or more alarms in a week where the fire code official finds no evidence of a situation requiring a response, the fire code official is authorized to require the building owner or occupant to provide a fire watch until the system is repaired. Fire watch personnel must be provided with at least one approved means for notification of the Fire Department and their only duty is to perform constant patrols of the protected premises and keep watch for fires.

§ 903.2.11.3 Building 4 stories or more in height. An automatic sprinkler system must be installed throughout all buildings having usable floor area four stories or more above grade, or buildings attached thereto.

Exceptions:

1. Airport control towers
2. Open parking structures.
3. Occupancies in Group F-2.

§ 903.2.20 Structures in the Smoky Hollow Specific Plan Area. An automatic sprinkler system must be provided throughout every facility or building hereafter constructed within the Smoky Hollow Specific Plan Area.

§ 903.3.1.2.2 Protection of attached garages. Residential occupancies protected by an automatic sprinkler system in accordance with NFPA 13R must have automatic sprinklers installed in attached garages and in other areas as required by the fire code official.

§ 903.3.1.3.1 Protection of attached garages. Residential occupancies protected by an automatic sprinkler system in accordance with NFPA 13D must have automatic sprinklers installed in attached garages and in other areas as required by the fire code official.

§ 903.3.5.3 Hydraulically calculated systems. The design of hydraulically calculated fire sprinkler systems shall not exceed 90% of the water supply capacity.

§ 903.3.8 Shutoff valves. Sprinkler shut off valves are required on each floor of buildings three stories or greater in height.

§ 905.5.3 Intentionally blank.

§ 907.6.5 Monitoring. All fire alarm and detection systems must be monitored by an approved central station as defined in NFPA 72. A (UL) Underwriters Laboratories Certificate or (FM) Factory Mutual Placard must be provided and maintained by a UL Listed or FM Approved fire alarm contractor who provides runner service in accordance with the 2013 Edition of NFPA 72, Chapter 26 for all newly installed fire alarm systems in commercial occupancies. This regulation applies to all fire alarm systems that are newly installed in commercial occupancies for which permits are required by the El Segundo Fire Department on or after January 1, 2014. Any existing fire alarm system in a commercial occupancy wherein the fire alarm control unit and alarm system components are to be replaced is considered newly installed for the purposes of this section.

Exception. Supervisory service is not required for:

1. Single and multiple-station smoke alarms required by Section 907.2.11.
2. Smoke detectors in Group I-3 occupancies.
3. Automatic sprinkler systems in one and two-family dwellings.

§ 910.1 General. Where required by this Code or otherwise installed, smoke and heat vents or mechanical smoke exhaust systems and draft curtains must conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an approved automatic sprinkler system.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, smoke and heat venting must be provided by mechanical smoke exhaust systems in accordance with Section 910.4 within these areas.

SECTION 915 MID-RISE BUILDINGS

SECTION 915.1 General

§ 915.1.1 Scope. In addition to other applicable provisions of this code, other laws and regulations, and any policies of the fire code official, the provisions of this article apply to every mid-rise building, of any type construction, newly constructed after the adoption of this Code, or which undergoes a complete renovation that requires the complete vacancy of the building.

Exceptions: The following structures, while defined as mid-rise buildings, are not subject to this article:

1. Buildings used exclusively as open parking garage;
2. Buildings where all floors above the third floor (9,144 mm) level are used exclusively as open parking garage;
1. Buildings such as power plants, lookout towers, steeples, grain houses, and similar structures with non-continuous human occupancy, when so determined by the fire code official;
2. Buildings used exclusively for jails, prisons and hospitals.

§ 915.1.2 Definitions. For definitions of MID-RISE BUILDING and BUILDING ACCESS, see Section 202.

§ 915.2 Building Access.

§ 915.2.1 Building Access. Building access must be provided and approved by the fire code official.

§ 915.3 Fire and Life Safety Requirements.

§ 915.3.1 Automatic Fire Sprinklers. Every mid-rise building must be protected throughout by an automatic fire sprinkler system that is designed and installed in conformance with NFPA 13. A shut-off valves and a water flow alarm device must be provided for each floor.

§ 915.3.2 Standpipes. Every mid-rise building must be provided with a class I standpipe system in each required stairway. The standpipe system must be interconnected with the fire sprinkler system. The system must consist of 2½ inch hose valves provided for each floor level above or below grade. Two hose outlets must also be located on the roof, outside of each stair shaft enclosure that penetrates the roof. Hose connections must be located in the exit vestibule, unless otherwise approved by the fire code official.

§ 915.3.3 Smoke Detection. Smoke detectors must be provided in accordance with this section. Smoke detectors must be connected to an automatic fire alarm system installed in accordance with NFPA 72. The actuation of any detector required by this section will operate the emergency voice alarm signaling system and will place into operation all equipment necessary to prevent the circulation of smoke through air return and exhaust ductwork.

§ 915.3.3.1 Location. Smoke detectors must be located as follows:

1. In every elevator machinery room and in all elevator lobbies. Elevator lobby detectors must be connected to an alarm verification zone or be listed as a releasing device.
2. In the main return-air and exhaust-air plenum of each air-conditioning system. Such device must be located in a serviceable area downstream of the last duct inlet.
3. At each connection to a vertical duct or riser serving two or more stories from a return-air duct or plenum of an air conditioning system. In Group R-1 and R-2 Occupancies, an approved smoke detector may be used in each return-air riser carrying not more than 5,000 cubic feet per minute and serving not more than 10 air inlet openings.
4. For Group R-1 and R-2 Occupancies, in all corridors serving as a means of egress for an occupant load for 10 or more.

§ 915.3.4 Smoke Control. A passive or active smoke control system must be provided for all mid-rise buildings whenever a complete floor is in excess of 55 feet (16.764 mm) from the lowest point of Fire Department access. Such system must be mechanical and must be designed, installed and tested to be in compliance with Section 909.

§ 915.3.5 Fire Alarm System. An approved and listed, automatic and manual, fully addressable and electronically supervised fire alarm system must be provided in conformance with this code and any policies of the Fire Prevention Division.

§ 915.3.6 Emergency voice alarm signaling system. The operation of any automatic or manual fire alarm initiating device must automatically sound an alert tone followed by a pre-recorded voice instruction giving appropriate information and direction on a general or selective basis to entire building, occupied and normally non-occupied areas.

§ 915.3.6.1 Pre-recorded instructions. The content of the voice alarm instruction must be approved by the El Segundo Fire Department.

§ 915.3.6.2 Manual override. A manual override for emergency voice communication must be provided for all paging zones.

§ 915.4 Central Control Station.

§ 915.4.1 General. A central control station room for fire department-operations must be provided. The location and accessibility of the central control station room must be approved by the fire department. The room must be separated from the remainder of the building by not less than one-hour, fire resistive occupancy

separation. The room must be a minimum of 96 square feet with a minimum dimension of 8 feet. It must contain the following as a minimum:

1. The voice alarm and public address panels.
2. The fire alarm annunciator panel.
3. Elevator annunciator panel when the building exceeds 55 feet in height
4. Status indicators and controls of air handling systems.
5. Controls for unlocking stairwell doors.
6. Annunciator panels for emergency and stand-by power status.
7. Annunciator panels for fire pump status.
8. Complete building plans set.
9. Work table.
10. Elevator control switches for switching of emergency power.

§ 915.4.2 Annunciation identification. Control panels in the central control station must be permanently identified as to function. Water flow, automatic fire detection and manually activated fire alarms, supervisory and trouble signals must be monitored by an approved, UL listed Central Monitoring Station or Proprietary Monitoring Station and annunciated in the central control station by means of an audible and visual indicator. For the purposes of annunciation, zoning must be in accordance with the following:

1. When the system serves more than one building, each building must be considered separately.
2. Each floor must be considered a separate zone.
3. When one or more risers serve the same floor, each riser must be considered a separate zone.

§ 915.5 Elevators.

§ 915.5.1 Standards. Elevators and elevator lobbies must be provided and must comply with the California Building Code and the following:

§ 915.5.2 General. At least one elevator cab must be assigned for Fire Department use, which serves all floors of the building. All provisions hereinafter are in reference to said elevator cab(s).

§ 915.5.2.1 Size. The size of the elevator cab must have dimensions as specified in Section 915.5.2.1.1.

§ 915.5.2.1.1 Ambulance Stretcher. The elevator cab must be provided with adequate dimensions to accommodate an ambulance type stretcher in accordance with the provisions of Section 3002.4a.1 of California Building Code.

§ 915.6 Standby Power.

§ 915.6.1 General. An on-site standby power system conforming to the Electrical Code must be provided. In the event of failure of the normal power source, the standby power system must provide an alternate source of electrical power to serve at least the designated loads as set forth in Section 915.6.2 at full power. The system may consist of an on-site generator or a system of batteries, or both. The installation must be in accordance with this code, nationally recognized standards, and any policies of the fire code official.

§ 915.6.2 Loads. The power load requirements for sizing the standby power system must include, without limitation to the following:

1. Exit signs and exit path illumination;
2. Fire alarm system;
3. Elevator(s) assigned for fire department use;
4. Electrically driven fire pumps (if provided);
5. Smoke control systems;
6. Stairwell pressurization;
7. Lighting circuits supplying all elevator cabs, elevator lobbies, generator room, fire pump room, and other areas designated by the fire code official.

§ 915.6.3 Fuel Supplies. On-site fuel supplies for prime movers of a standby power generator must be sufficient for at least 48 hours at the generator's listed full load. Where fuel supplies require automatic transfer into a primary tank from a secondary fuel storage tank, the fuel transfer system must be provided with redundant fuel pumps to insure reliability. The fuel supply tank provided must be capable of storing at least 200% of the calculated amount of fuel needed.

§ 915.7 Emergency Electrical System

§ 915.7.1 General. Electrical systems and equipment specified in Section 915.6 are classed as emergency systems and must be installed in accordance with this code, NFPA 110, NFPA 111 and policies of the fire code official. Such systems must operate within 10 seconds of failure to normal power supply. Such emergency power supply may be separate from the standby power required for fire pumps and elevators assigned for fire department use.

§ 915.7.2 Emergency Systems. The following are classed as emergency systems:

1. Exit signs and means of egress illumination

2. Fire alarm system
3. Fire detection system
4. Sprinkler alarm system
5. Elevator cab lighting
6. Smoke control systems.

§ 915.8 Means of Egress

§ 915.8.1 General. Means of egress must comply with the provisions of Section 915.8.

§ 915.8.1 Stairway enclosures. All stairways used for exiting must be protected by an exit enclosure designed in accordance with the California Building Code, Section 1020.1 and this Section.

§ 915.8.2.1 Construction. Construction of stairway enclosures must in accordance with the California Building Code, Section 1005.3.3.2.

§ 915.8.2.2 Extent of Enclosure. Stairway enclosures must be continuous and must fully enclose all portions of the stairway. Exit enclosure must exit directly to the exterior of the building or include an exit passageway on the ground floor, leading to the exterior of the building. Each exit enclosure must extend completely through the roof and be provided with a door that leads onto the roof.

§ 915.8.2.3 Openings and Penetrations. Openings and Penetrations must be as specified in the California Building Code, Section 1020.1.1.

§ 915.8.2.4 Pressurized Enclosures. A pressurized stairway enclosure must be provided for all mid-rise buildings whenever a complete floor is in excess of 55 feet (16.764 m) from the lowest point of Fire Department access. The pressurized stairway must be designed and pressurized as specified in the California Building Code, Section 909.20.

§ 915.8.2.4.1 Vestibules. Pressurized stairway enclosures, serving Mid-Rise buildings must be provided with a pressurized entrance vestibule on each floor that complies with the California Building Code, Section 909.20.

§ 915.8.2.4.1.1 Vestibule Size. Vestibule size must be not less than 44 inches in width and not less than 72 inches in the direction of travel.

§ 915.8.2.4.1.2 Vestibule Construction. Vestibules must have walls, ceilings and floors of not less than two-hour fire resistive construction.

§ 915.8.2.4.1.3 Vestibule Doors. Vestibule doors must comply with California Building Code, Section 909.20.

§ 915.8.2.4.1.4 Pressure Differences. The minimum pressure difference within a vestibule must comply with California Building Code, Section 909.20.

§ 915.8.2.4.1.5 Standpipes. Fire Department standpipe connections and valves serving the floor must be within the vestibule and located in a manner so as not to obstruct egress when hose lines are connected and charged.

§ 915.8.2.5 Locking of Stairway doors. All stairway doors that are locked to prohibit access from the stairway side must have the capability of being unlocked simultaneously, without unlatching, upon a signal from the fire control room. Upon failure of normal electrical service, or activation of any fire alarm, the locking mechanism must automatically retract to the unlocked position. Hardware for locking of stairway doors must be State Fire Marshal listed and approved by the fire code official by permit before installation. Stairway doors located between the vestibules and stairway shaft must not be locked.

§ 915.8.2.6 Communications. A telephone or other two-way communications system connected to an approved emergency service which operates continuously must be provided at not less than every third floor in each required exit stairway vestibule.

§ 1030.10 Fire escape maintenance. Fire escapes must be kept clear and unobstructed at all times, must be maintained in good working order at all times and must receive an annual inspection by a Los Angeles Fire Department Regulation 4 certified individual. The inspection records must remain on site for Fire Department review.

§ 1103.2 Emergency responder radio coverage in existing buildings. is adopted

§ 3304.8 Fire retardant plastic sheeting and tarpaulins. Fire retardant tarpaulins and sheeting must be used to barricade construction areas from occupied building spaces and to provide floor or wall protection in occupied buildings.

§ 3206.2 Table 3206.2, Footnote 'j' is amended to read as follows:

- j. Smoke and heat removal must be accomplished by mechanical ventilation in accordance with Section 910.4 when storage areas are protected by early suppression fast response (ESFR) sprinkler systems installed in accordance with NFPA 13.

§ 5601.2 Fireworks. The manufacturing, possession, storage sale, use and handling of fireworks, including without limitation, "Safe and Sane" fireworks, is prohibited

Exceptions:

1. Storage of fireworks in accordance with the requirements for low order explosives in Title 19, California Code of Regulations, Chapter 10.
2. Storage of fireworks, 1.4G in accordance with the Building Code.
3. Use and handling of fireworks for professional display in accordance with Title 19, California Code of Regulations, Chapter 6.

§ 5601.3 Seizure of Fireworks. The fire code official has the authority to seize, take and remove fireworks stored, sold, offered for sale, used or handled in violation of the provisions of Title 19, California Code of Regulations, Chapter 6 and California Health and Safety Code, Chapter 9.

Appendix B § B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings is specified in Table B105.1

Exception: A reduction in required fire-flow up to 50 percent, as approved, is allowed when the building is protected with an approved automatic sprinkler system installed in accordance with Section 903.1.1 or 903.1.2. The resulting fire-flow must not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1

13-10-3: A new Appendix K Temporary Haunted Houses, Ghost Walks, And Similar Amusement Uses is added to the CFC to read as follows:

**SECTION K101
GENERAL**

§ K101.1 Scope. These regulations apply to temporary Haunted Houses, Ghost Walks, or similar amusement uses, where decorative materials and confusing sounds and/or visual effects are present.

§ K101.2 Permits. An operational permit is required for Haunted Houses, Ghost Walks, or similar amusement uses in accordance with Appendix K101.2.

§ K101.2.1 Permit documents. The permit application must include a dimensioned site plan and floor plan.

A site plan showing the following:

1. The proximity of the event building(s) to other structures or hazardous areas.
2. The path of travel from the event building or area to the public way.
3. The location of exterior evacuation assembly points.

A floor plan showing the following:

1. Dimensions of the area being used (include total square footage, width, and types of exits, aisles, or interior exit pathways, etc.).
2. The path of travel must include the layout of any mazes, mirrors or other display items that may confuse the egress paths.
3. A brief description of what will be depicted in each room or area along the walk or course including the type of special effects to be utilized.
4. Location of exits, exit signs, and emergency lighting.
5. Location of electrical panel(s) and light switches.
6. Identification of what the normal or prior use of the structure(s) being used is (e.g., auditorium, school, church)
7. Accessible egress routes.
8. When required, areas of refuge.
9. When required by Section 318.9, fire alarm panel location, manual fire alarm boxes, and horn/strobe locations.
10. Portable fire extinguisher locations.
11. The location and fuel capacity of all generators.

§ K101.3 El Segundo Department of Planning and Building Safety approval.

Approval to operate a temporary amusement haunted house or similar use or to change the approved of use of an existing building, or portion thereof, for temporary amusement haunted house or similar use or to change the approved of use of an existing building, or portion thereof, for temporary amusement haunted house or similar use requires approved by the El Segundo Department of Planning and Building Safety before the Fire Department's final construction document approval and issuance of an operational permit.

SECTION K102

DEFINITIONS

§ K102.1 [CFC 202] DECORATIVE MATERIALS. All materials applied over the building interior finish for decorative, acoustical or other effect (such as curtains, draperies, fabrics, streamers and surface coverings) and all other materials utilized for decorative effect (such as batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include floor coverings, ordinary window shades, interior finish and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

§ K102.2 HAUNTED HOUSE. A building or structure usually used during the Halloween season for amusement or entertainment purposes. A Haunted House may or may not be considered a Special Amusement Building depending on the layout and effects employed.

§ K102.3 GHOST WALKS. Similar to Haunted Houses and may include both indoor and outdoor areas where the means of egresses are similarly not readily identifiable.

§ K102.4 [CBC 411.2] SPECIAL AMUSEMENT BUILDING. A special amusement building is any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction so arranged that the means of egress path is not readily apparent due to visual or audio distractions or is intentionally confounded or is not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

SECTION K103 GENERAL REQUIREMENTS

§ K103.1 Allowable structures. Temporary Amusement Haunted Houses, Ghost Walks, and similar amusement uses which meet the definition of a Special Amusement Building can only be located in structures that comply with the provisions for Special Amusement Buildings in accordance with the California Building Code when the planned layout and effects employed meet the definition of a Special Amusement Building.

§ K103.2 Tents or membrane structures. Tents and membrane structures may be used when in compliance with all applicable requirements of this Appendix and when the total floor area of the tent is less than 1,000 square feet and the travel distance to an exit from any location is less than 50 feet.

§ K103.3 Fire evacuation plans. A fire safety and evacuation plan that complies with Section 404 of the California Fire Code must be submitted and approved.

§ K103.4 Staffing. The event must be adequately staffed by qualified person(s) to control the occupant load and assist patrons in exiting should an evacuation become necessary. Staffing level is determined upon review of plans and may be established at the discretion of the Fire Code Official.

§ K103.5 Occupant load. Maximum occupant load must conform with Chapter 10 Table 1004.1.1. A sign stating maximum occupancy must be posted in a visible location near the entrance. The attendant(s) must control the flow of patrons so as not to exceed this limit.

§ K103.6 Exits. Exiting must be in accordance with Chapter 10 and this Section.

1. Two exits must be provided from each room with an occupant load of 50 or more. Required exit doors shall swing in the direction of egress.
2. Illuminated exit signs must be provided at each exit serving an occupant load of 50 or more.
3. Exit doors with a lock or latch are prohibited when serving an occupant load of 50 or more unless it constitutes panic hardware.

4. When tents or membrane structures are approved for use, curtains are not be allowed to cover the exits.
5. Emergency lighting must be provided in exit pathways.
6. Exhibits and decorative materials cannot obstruct, confuse, or obscure exits, exit pathways, exit signs, or emergency lights.
7. Additional exit pathway markings, such as low level exit signs and directional exit path markings may be required.

§ K103.7 Fire protection. Temporary Amusement Haunted Houses, Ghost Walks, and similar amusement uses which meet the definition of a Special Amusement Building must be provided with fire protection systems in accordance with Appendix K103. 7.

Exception: When the total floor area of Haunted Houses or indoor portions of Ghost Walks are less than 1,000 square feet and the travel distance to an exit is less than 50 feet.

§ K103.7.1 Fire sprinkler protection. An automatic fire sprinkler system is required for Haunted Houses and indoor portions of Ghost Walks. Fire sprinkler systems must comply with Section 903.

§ K103.7.2 Fire detection systems. An approved automatic fire detection system shall be provided in accordance with Section 907.2.12 as required for special amusement buildings.

§ K103.7.3 Alarm. Activation of any single smoke detector, the fire sprinkler system, or other automatic fire detection device shall be in accordance with Section 907.2.12.1.

§ K103.7.4 Emergency voice alarm. Special amusement buildings must provide an emergency voice/alarm communication system in accordance with Section 907.2.12.3.

§ K103.7.5 Portable fire extinguishers. See Section K103.16.

§ K103.8 Electrical. When required, a permit shall be obtained from the local Building Official.

§ K103.8.1 Extension cords. Extension cords shall be UL listed and must be appropriate for the intended use.

§ K103.8.2 Power taps. Only UL listed relocatable power taps with overcurrent protection may be used when the number of outlets provided is inadequate. Power strips must be plugged directly into the outlet, and cannot be plugged into one another in series.

§ K103.8.3 String lighting. Manufacturer's installation instructions must be followed for the maximum allowable number of string lights that can be connected. When connecting string lights together, the total amperage of all string lights must be calculated to ensure they do not exceed the amperage for the extension cord and circuit.

§ K103.8.4 Protection. All extension cords and power strips must be adequately protected from foot traffic.

§ K103.8.5 Portable generators. When portable generators are utilized, they must be diesel fuel type and located a minimum of 20 feet away from all structures.

§ K103.8.6 Additional electrical requirements. See California Fire Code Section 605 for additional electrical requirements.

§ K103.9 Decorative materials and interior finishes. Interior wall, ceiling, and floor finishes must be Class A rated in accordance with the California Building Code. Also see California Fire Code Chapter 8.

§ K103.9.1 Decorative materials. All decorative materials must be inherently flame retardant, or be treated with a California State Fire Marshal (SFM) listed flame retardant material. If the decorative material is treated SFM listed flame retardant material by a non-SFM licensed applicator, the SFM labeled container and sales receipt must be provided to the fire code official for inspection purposes. Also see Fire Code Chapter 8.

§ K103.9.2 Flame test. Flame retardant material testing must be completed in accordance with Section 803.5 of the California Fire Code as referenced from the California Code of Regulations, Title 19, Division 1, Article 3, Section 3.21(a) and (b). Proof of testing shall be provided.

§ K103.9.3 Placement of decorative materials. Decorative materials, props and/or performer platforms cannot obstruct, confuse, or obscure exits, exit signs, exit pathways, emergency lighting or any component of fire protection systems and equipment (e.g. fire extinguishers, fire alarm systems, fire sprinklers, etc.) inside or outside the building.

§ K103.10 Smoke generators. The fire code official may restrict use of smoke-generating equipment if it is determined to be incompatible with smoke alarm(s). Care and consideration must be used with respect to smoke generator and smoke alarm locations. Smoke generator and smoke alarm locations shall be approved by the fire code official.

§ K103.11 Display of motor vehicles. Display of motor vehicles must be in accordance with Section 2402.18 of the California Fire Code.

§ K103.12 Inspections. A fire and life safety inspection must be conducted by the fire code official before any haunted house, ghost walk or special amusement building is made available for public use.

§ K103.13 Signs. “NO SMOKING” signs must be conspicuously posted at the main entrance and throughout the exhibit.

K103.14 Prohibited areas. Inside storage or use of flammable and/or combustible liquids, gases, and solids is prohibited. Open flames are prohibited.

§ K103.15 Maintenance. Good housekeeping must be maintained throughout exhibit and exit pathways, at all times. The means of egress system cannot be obstructed during event operations.

§ K103.16 Portable fire extinguishers. Fire extinguishers must have a minimum 2A-10B:C rating. Fire extinguishers must be properly mounted and be visible and accessible at all times. Clearly identify locations with signs or reflective tape. Fire extinguishers may be located within 50 feet travel distance from anywhere in the building or structure.

13-10-4: GEOGRAPHICAL LIMITS

Geographic limits referred to in certain sections of this Code are established as follows:

Establishment of limits of districts in which storage of flammable or combustible liquids in outside aboveground tanks is prohibited.

The limits referred to in Sections 5704.2.9.6.1 and 5706.2.4.4 in which the storage of Class I flammable liquids or Class II combustible liquids in aboveground tanks outside of buildings is restricted are established as the City of El Segundo's corporate boundaries.

Exceptions: Such use is allowed in the following zoning districts:

1. The storage of Class I flammable liquids or Class II combustible liquids in aboveground tanks outside of buildings is allowed in M-1 and M-2, Zones;
2. The storage of Class II combustible liquids in aboveground tanks outside of buildings is allowed in C-0, MM, MU-N, MU-S or P-F Zones;

Establishment of limits of districts in which storage of liquefied petroleum gases is to be restricted.

The limits referred to in Section 6104.2 in which storage of liquefied petroleum gas in excess of an aggregate of 2,000 gallons water capacity is restricted are established as the City of El Segundo's corporate boundaries.

Exceptions:

1. The storage of liquefied petroleum gas in excess of an aggregate of 2,000 gallons water capacity is allowed in the M-2 Zone, when located at least one-half (1/2) mile from property zoned or designated for residential use and

at least one-half (1/2) mile from existing residential development with a density greater than one (1) dwelling unit per acre and at least one-half (1/2) mile from any hotel or motel.

2. The storage of liquefied petroleum gas in excess of an aggregate of 2,000 gallons water capacity is allowed in M-1 Zone with a Conditional Use Permit issued by the Planning Department.

SECTION 4: CALIFORNIA ENVIRONMENTAL QUALITY ACT EXEMPTION. The City Council determines that this ordinance is exempt from review under the California Environmental Quality Act (California Public Resources Code §§ 21000, *et seq.*, "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, *et seq.*, the "CEQA Guidelines") because it consists only of minor revisions and clarifications to an existing code of construction-related regulations and specification of procedures related thereto and will not have the effect of deleting or substantially changing any regulatory standards or findings required therefor. This ordinance, therefore, is an action being taken for enhanced protection of the environment and that does not have the potential to cause significant effects on the environment. Consequently, it is categorically exempt in accordance with CEQA Guidelines §§ 15301 as a minor alteration of existing public or private structures involving no expansion of use; 15305 as a minor alteration in land use limitations which do not result in any changes in land use or density; and 15308 as an action taken by a regulatory agency as authorized by California law to assure maintenance or protection of the environment.

SECTION 5: SAVINGS CLAUSE. Repeal or amendment of any provision of the ESMC or any other city regulation does will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before, this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 6: SEVERABILITY. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

SECTION 7: VALIDITY OF PREVIOUS CODE SECTIONS. If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the ESMC or other the city ordinance by this Ordinance will be rendered void and cause such ESMC provision or other the city ordinance to remain in full force and effect for all purposes.

SECTION 8: The City Clerk is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City of El Segundo's book of original ordinances; make a note of the passage and adoption in the records of this meeting;

and, within fifteen (15) days after the passage and adoption of this Ordinance, cause it to be published or posted in accordance with California law.

SECTION 9: This Ordinance will become effective on January 1, 2014.

PASSED AND ADOPTED this 5th day of November, 2013.


Bill Fisher, Mayor

ATTEST:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF EL SEGUNDO)

I, Tracy Weaver, City Clerk of the City of El Segundo, California, do hereby certify that the whole number of members of the City Council of said City is five; that the foregoing Ordinance No. 1488 was duly introduced by said City Council at a regular meeting held on the 15th day of October, 2013, and was duly passed and adopted by said City Council, approved and signed by the Mayor, and attested to by the City Clerk, all at a regular meeting of said Council held on the 5th day of November, 2013, and the same was so passed and adopted by the following vote:

AYES: Fisher, Jacobson, Fuentes, Atkinson, Fellhauer

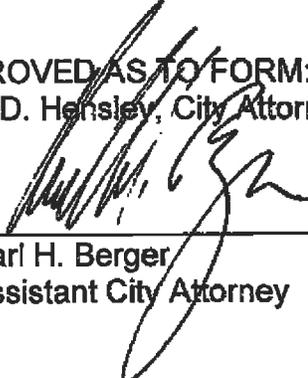
NOES: None

ABSENT: None

ABSTAIN: None


Tracy Weaver, City Clerk

APPROVED AS TO FORM:
Mark D. Hensley, City Attorney

By: 
Karl H. Berger
Assistant City Attorney

ORDINANCE NO. 1490

**AN ORDINANCE INCORPORATING THE 2013 CALIFORNIA
RESIDENTIAL CODE ("CRC") BY REFERENCE AND
AMENDING THE CRC BASED UPON LOCAL CLIMATIC,
TOPOGRAPHIC, AND GEOLOGICAL CONDITIONS.**

The City Council of the city of El Segundo does ordain as follows:

SECTION 1: FINDINGS. The City Council finds and declares as follows:

A. Pursuant to Health & Safety Code § 17958.7, it is in the public interest to adopt the California Residential Code ("CRC") with the local amendments set forth in this Ordinance.

B. Pursuant to the requirements of Health & Safety Code § 17958.7, the City Council finds that there are local geological conditions justifying the CRC amendments set forth below.

C. The City of El Segundo and the greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes including, without limitation, the 1994 Northridge Earthquake. The proposed modification emphasize that the design concern is for seismic-force-resisting elements and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Building Code. Experts predict a major earthquake in Southern California within the next 50 years. This situation creates the need for both additional fire protection measures and automatic on-site fire protection of building occupants since a multitude of fires may result from breakage of gas and electric lines as a result of an earthquake. After due consideration, the City Council finds and determines that due to local climatic, geological, or topographical conditions, the structural and fire protection amendments to the 2013 CRC are necessary to give buildings a reasonable degree of structural integrity and fire life safety to help protect public health and safety in the event of a seismic event;

D. Additional amendments have been made to Codes are found to be either administrative or procedural in nature or concern themselves with subjects not covered in such Codes. The changes made include provisions making each of said Codes compatible with other Codes enforced by the City.

E. The specific amendments of the CRC that fulfill this requirement are:

1. Amend CRC § R105.2 Work exempt from permit
2. Amend CRC § R105.3.2 Expiration of Plan Check
3. Amend CRC § R105.5 Expiration of Permits
4. Add CRC § R109.5 Re-inspections
5. Amend CRC § 112.3 Board of appeals
6. Amend CRC § R301.1.3.2 Wood frame Structures
7. Amend CRC Table R301.2.2.1.1 and Section R301.2.2.1.2 Seismic Design Category
8. Amend CRC § R301.2.2.2.5 Irregular Buildings
9. Amend CRC § R301.2.2.3.8 Anchorage of Equipment
10. Amend CRC § R401.1 Foundation Application
11. Amend CRC § R403.1 General Footings
12. Amend CRC § R404.2 Wood Foundation Walls
13. Amend CRC § R501.1 Application
14. Amend CRC § R503.2.4 Openings In Horizontal Diaphragms
15. Amend CRC Table R602.3(1) Fastener Schedule
16. Amend CRC Table R602.3(2) Alternate Attachment
17. Amend CRC Table R602.10.1.3(3) and Table R602.10.1.3(4) Bracing Requirement
18. Amend CRC Table R602.10.1.(4) Intermittent Bracing
19. Amend CRC Table R602.10.1.(5) Minimum Length of Braced Wall Panels
20. Amend CRC Figure R602.10.6.1 Alternate Braced Wall Panel

21. Amend CRC Figure R602.10.6.2 Portal Frame
22. Amend CRC Figure R602.10.6.4 Continuous Sheathed Portal Frame
23. Delete CRC § R602.10.9.1 Braced Wall Panel
24. Amend CRC § R606.2.4 Parapet Walls
25. Amend CRC § R606.12.2.2.3 Reinforcement for Masonry
26. Amend CRC § R602.3.2 Single Top Plate
27. Amend CRC § R803.2.4 Openings in Horizontal Diaphragms
28. Amend CRC § R1001.3.1 Vertical Reinforcing

F. At least one copy of the CBC was filed with the City Clerk of the City was available for public inspection for at least fifteen (15) days preceding the date of the hearing

SECTION 2: El Segundo Municipal Code ("ESMC") Chapter 16 is amended in its entirety to read as follows:

"CHAPTER 16

RESIDENTIAL CODE

- 13-16-1: California Residential Code Adopted
13-16-2: Amendments to California Residential Code

13-16-1: **ADOPTION OF CALIFORNIA RESIDENTIAL CODE, 2013 EDITION.** Pursuant to California Government Code § 50022.2, the California Residential Code, 2013 Edition, published at Title 24, Part 2.5, of the California Code of Regulations is adopted by reference, subject to the amendments, additions and deletions set forth below. One true copy of the CRC, is on file in the office of the Building Official and is available for public inspection as required by law.

**13-16-2: AMENDMENTS TO THE CALIFORNIA
RESIDENTIAL CODE:**

Subsection 14 is added to § R105.2 of the 2013 Edition of the California Residential Code:

Section R105.2 Work exempt from permit.

14. Block wall and concrete fences not over 3 ft 6 inches.

Section R105.3.2 of the 2013 Edition of the California Residential Code is hereby amended to read as follows:

SECTION R105.3.2 EXPIRATION OF PLAN CHECK.

An application for a permit for any proposed work is deemed to have been abandoned 12 months after the application date. Unless otherwise provided, after expiration of the application, the City will not issue a permit until the plans are rechecked and approved and a new fee is paid.

EXCEPTION: The Building Official may grant extensions of time if a permit applicant submits in writing sufficient evidence that unusual conditions or circumstances precluded the securing of the permit within the allocated time.

Section R105.5 of Division II of Chapter 1 of the CRC is hereby amended to read as follows:

SECTION R105.5 EXPIRATION OF PERMITS.

Except as otherwise provided, every permit issued by the City is valid for a period of three (3) years. However, if work authorized by permit fails to commence within 180 days after the permit is issued, the permit expires. Additionally, the permit expires if the Building Official determines that work was suspended, discontinued, or abandoned for a continuous 180 days.

EXCEPTION: The Building Official may grant extensions of time if a permit applicant submits in writing sufficient evidence that unusual conditions or circumstances precluded from the work being completed. An extension of time may require conditions of approval and additional fees

Section R109.5 of Division II of Chapter 1 of the CRC is hereby added to read as follows:

Section R109.5 Re-inspections. A re-inspection fee in the amount set by the City Council resolution may be assessed for each inspection or re-inspection when such portion of work for which inspection is called is incomplete or when required corrections called are not made. This section is not to be interpreted as requiring re-inspection fees the first time a job is rejected for failure to comply with the requirements of this code, but as controlling the practice of calling for inspections before the job is ready for such inspection or re-inspection. Re-inspection fees may be assessed when the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which inspection is requested, or for deviating from plans requiring the approval of the building official. In instances where re-inspection fees have been assessed, no additional inspection of the work will be performed until required fees have been paid.

Section R113.3 of Division II of Chapter 1 of the CRC is hereby added to read as follows:

Section R112.3 Board of Appeals.

The board of appeals consist of members of the Planning Commission. The term of a board of appeals member will coincide with the term of service as a Planning Commissioner and will terminate should the member cease serving as a Planning Commissioner. The building official is the secretary to the board. The board may adopt reasonable rules and regulations for conducting its investigations and will render all its decisions and findings on contested matters, in writing to the building official, with a duplicate copy for any appellant or contestant affected by such decision or finding, and may recommend to the city council appropriate new legislation.

Three members of the board constitute a quorum. The Planning Chairperson is the board's chairperson and in the chairperson's absence the board will select a temporary chairperson.

The city will assess a \$250.00 charge, or a higher amount set by resolution, at the time that an appellant file appeal of any order, decisions, or determination made by the building official relative to the application and interpretation of this code. The filing fee is refundable should the appellant prevail in a decision by the board. The appeal must be taken by filing a written notice of appeal, in letterform, to the board of appeals. The board's decision constitutes the city's final decision.

Section R301.1.3.2 of the 2013 Edition of the California Residential Code is hereby amended to read as follows:

Section R301.1.3.2 Woodframe Structures.

The building official cannot require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than two stories and basement in height located in Seismic Design Category A, B or C. Notwithstanding other sections of law; the law establishing these provisions is found in Business and Professions Code Section 5537 and 6737.1.

The building official cannot require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than one story in height or with a basement located in Seismic Design Category D₀, D₁, D₂ or E.

Table R301.2.2.1.1 and Section R301.2.2.1.2 of the 2013 Edition of the California Residential Code are hereby amended to read as follows:

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

CALCULATED S_{DS}	SEISMIC DESIGN CATEGORY
$S_{DS} \leq 0.17g$	A
$0.17g < S_{DS} \leq 0.33g$	B
$0.33g < S_{DS} \leq 0.50g$	C
$0.50g < S_{DS} \leq 0.67g$	D_0
$0.67g < S_{DS} \leq 0.83g$	D_1
$0.83g < S_{DS} \leq 1.00g$	D_2
$1.00g < S_{DS}$	E

R301.2.2.1.2 Alternative determination of Seismic Design Category E.
Buildings located in Seismic Design Category E in accordance with Figure R301.2(2) are permitted to be reclassified as being in Seismic Design Category D_2 provided one of the following is done:

1. A more detailed evaluation of the seismic design category is made in accordance with the provisions and maps of the California Building Code. Buildings located in Seismic Design Category E per Table R301.2.2.1.1, but located in Seismic Design Category D per the California Building Code, may be designed using the Seismic Design Category D_2 requirements of this code.
2. Buildings located in Seismic Design Category E that conform to the following additional restrictions are permitted to be constructed in accordance with the provisions for Seismic Design Category D_2 of this code:
 - 2.1. All exterior shear wall lines or braced wall panels are in one plane vertically from the foundation to the uppermost story.
 - 2.2. Floors cannot not cantilever past the exterior walls.
 - 2.3. The building is within all of the requirements of Section R301.2.2.2.5 for being considered as regular.
 - 1.4. For buildings over one story in height, the calculated S_{DS} cannot exceed 1.25g.

Items 1, 3 and 5 of Section R301.2.2.2.5 of the 2013 Edition of the California Residential Code are hereby amended to read as follows:

R301.2.2.2.5 Irregular Buildings

When exterior shear wall lines or braced wall panels are not in one plane vertically from the foundation to the uppermost story in which they are required.

3. When the end of a braced wall panel occurs over an opening in the wall below
5. When portions of a floor level are vertically offset.

Section R301.2.2.3.8 is added to Chapter 3 of the 2013 Edition of the California Residential Code to read as follows:

R301.2.2.3.8 Anchorage of Mechanical, Electrical, or Plumbing Components and Equipment.

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

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

Section R401.1 of the 2013 Edition of the California Residential Code is amended to read as follows:

R401.1 Application.

The provisions of this chapter cannot control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding as established by Table R301.2(1) cannot meet the provisions of Section R322. Wood foundations are designed and installed in accordance with AF&PA PWF.

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

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

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

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

Sections R403.1.2, R403.1.3 and R403.1.5 of the 2013 Edition of the California Residential Code are amended to read as follows:

R403.1.2 Continuous footing in Seismic Design Categories D₀, D₁ and D₂.

The braced wall panels at exterior walls of buildings located in Seismic Design Categories D₀, D₁ and D₂ are supported by continuous footings. All required interior braced wall panels in buildings are supported by continuous footings.

R403.1.3 Seismic reinforcing.

Concrete footings located in Seismic Design Categories D₀, D₁ and D₂, as established in Table R301.2(1), cannot have minimum reinforcement. Bottom reinforcement are located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

In Seismic Design Categories D₀, D₁ and D₂ where construction joint is created between a concrete footing and a stem wall, a minimum of one No. 4 bar are installed at not more than 4 feet (1219 mm) on center. The vertical bar

cannot extend to 3 inches (76 mm) clear of the bottom of the footing, have a standard hook and extend a minimum of 14 inches (357 mm) into the stem wall.

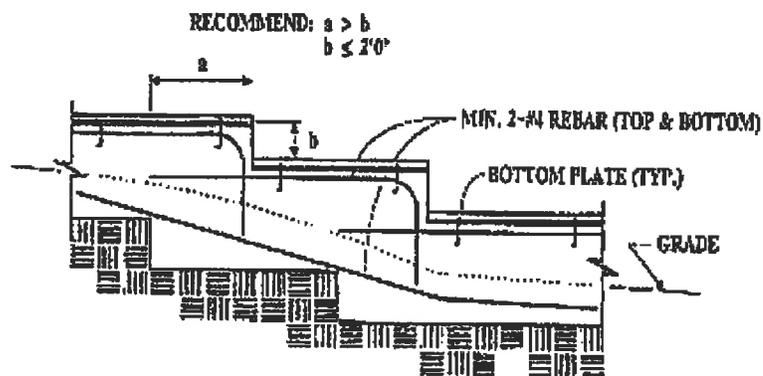
In Seismic Design Categories D_0 , D_1 and D_2 where a grouted masonry stem wall is supported on a concrete footing and stem wall, a minimum of one No. 4 bar are installed at not more than 4 feet (1219 mm) on center. The vertical bar cannot extend to 3 inches (76 mm) clear of the bottom of the footing and have a standard hook.

In Seismic Design Categories D_0 , D_1 and D_2 masonry stem walls without solid grout and vertical reinforcing are not permitted.

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

R403.1.5 Slope. The top surface of footings are level. The bottom surface of footings are permitted to have a slope not exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings are stepped where it is necessary to change the elevation of the top surface of the footing or where the surface of the ground slopes more than one unit vertical in 10 units horizontal (10-percent slope).

For structures located in Seismic Design Categories D_0 , D_1 or D_2 , stepped footings are reinforced with four No. 4 rebar. Two bars are placed at the top and bottom of the footings as shown in Figure R403.1.5.



STEPPED FOUNDATIONS
FIGURE R403.1.5
STEPPED FOOTING

Section R404.2 of the 2013 Edition of the California Residential Code is amended to read as follows:

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

Section R501.1 of the 2013 Edition of the California Residential Code is amended to read as follows:

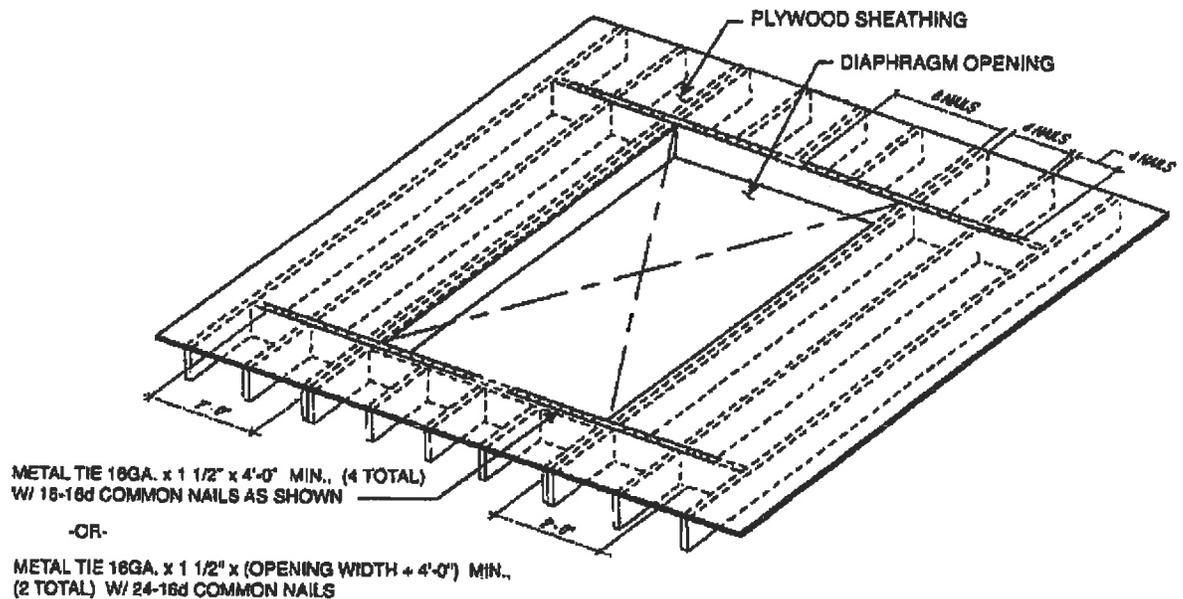
R501.1 Application.

The provisions of this chapter cannot control the design and construction of the floors for all buildings including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment. Mechanical or plumbing fixtures and equipment are attached (or anchored) to the structure in accordance with Section R301.2.2.3.8

Section R503.2.4 is added to Chapter 5 of the 2013 Edition of the California Residential Code to read as follows:

R503.2.4 Openings in horizontal diaphragms.

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



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

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

FIGURE R503.2.4
OPENINGS IN HORIZONTAL DIAPHRAGMS

Lines 37 and 38 of Table R602.3(1) of the 2013 Edition of the California Residential Code are amended to read as follows:

TABLE R602.3(1)—continued
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER ^{a, b, c}	SPACING OF FASTENERS	
			Edges (inches) ^f	Intermediate supports ^{e, g} (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing				
32	$\frac{3}{4}$ " - $\frac{1}{2}$ "	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 $\frac{1}{2}$ " x 0.131") nail (roof) ⁱ	6	12 ^f
33	$1\frac{1}{2}$ " - 1"	8d common nail (2 $\frac{1}{2}$ " x 0.131")	6	12 ^f
34	$1\frac{1}{2}$ " - $1\frac{1}{4}$ "	10d common (3" x 0.148") nail or 8d (2 $\frac{1}{2}$ " x 0.131") deformed nail	6	12
Other wall sheathing ^h				
35	$\frac{1}{2}$ " structural cellulose fiberboard sheathing	1 $\frac{1}{4}$ " galvanized roofing nail, $\frac{7}{16}$ " crown or 1" crown staple 16 ga., 1 $\frac{1}{4}$ " long	3	6
36	$\frac{5}{8}$ " structural cellulose fiberboard sheathing	1 $\frac{1}{4}$ " galvanized roofing nail, $\frac{7}{16}$ " crown or 1" crown staple 16 ga., 1 $\frac{1}{2}$ " long	3	6
37 ^k	$\frac{1}{2}$ " gypsum sheathing ^d	1 $\frac{1}{4}$ " galvanized roofing nail; staple galvanized, 1 $\frac{1}{2}$ " long; 1 $\frac{1}{4}$ " screws, Type W or S	7	7
38 ^k	$\frac{5}{8}$ " gypsum sheathing ^d	1 $\frac{1}{4}$ " galvanized roofing nail; staple galvanized, 1 $\frac{1}{2}$ " long; 1 $\frac{1}{4}$ " screws, Type W or S	7	7
Wood structural panels, combination subfloor underlayment to framing				
39	$\frac{3}{4}$ " and less	6d deformed (2" x 0.120") nail or 8d common (2 $\frac{1}{2}$ " x 0.131") nail	6	12
40	$\frac{7}{8}$ " - 1"	8d common (2 $\frac{1}{2}$ " x 0.131") nail or 8d deformed (2 $\frac{1}{2}$ " x 0.120") nail	6	12
41	$1\frac{1}{8}$ " - $1\frac{1}{4}$ "	10d common (3" x 0.148") nail or 8d deformed (2 $\frac{1}{2}$ " x 0.120") nail	6	12

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

- a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20U common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
- b. Staples are 16 gage wire and have a minimum $\frac{7}{16}$ -inch on diameter crown width.
- c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
- d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.
- e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
- f. For regions having basic wind speed of 110 mph or greater, 8d deformed (2 $\frac{1}{2}$ " x 0.120") nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.
- g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.
- h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.
- i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
- j. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

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

Footnote "b" of Table R602.3(2) of the 2013 Edition of the California Residential Code is amended to read as follows:

Table R602.3(2) Alternate Attachments to Table R602.3(1)

b. Staples cannot have a minimum crown width of 7/16-inch on diameter except as noted. Use of staples in roof, floor, subfloor, and braced wall panels are prohibited in Seismic Design Category D0, D1, or D2.

Table R602.10.3(3) of the 2013 Edition of the California Residential Code is amended to read as follows:

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

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

(continued)

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

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

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound per square foot = 0.0479 kPa.

a. Linear interpolation shall be permitted.

b. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the S_{ds} values associated with the Seismic Design Categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.3 of the *International Building Code*.

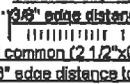
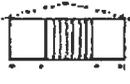
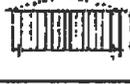
c. Method LIB shall have gypsum board fastened to at least one side with nails or screws per Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches.

d. Method CS-SFB applies in SDC C only.

e. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D0, D1 or D2. Methods DWB, SFB, PBS, and HPS are not permitted in SDC D0, D1, or D2.

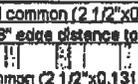
Table R602.10.4 of the 2013 Edition of the California Residential Code is amended to read as follows:

TABLE R602.10.4
BRACING METHODS 1

METHODS. MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA*			
			Fasteners	Spacing		
Intermittent Bracing Method	LIB Let-in-bracing	1 x 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d common nails or 3-8d (2 1/2" long x 0.113" dia.) nails Metal strap: per manufacturer	Wood: per stud and top and bottom plates Metal: per manufacturer	
	DWB Diagonal wood boards	1/2" (1" nominal) for maximum 24" stud spacing		2-8d (2 1/2" long x 0.113" dia.) nails or 2 - 1 1/2" long staples	Per stud	
	WSP Wood structural panel (See Section R604)	1/4" - 15/32"		8d common (2 1/2" x 0.131) nails 3/8" edge distance to panel edge 8d common (2 1/2" x 0.131) nails 3/8" edge distance to panel edge	Exterior sheathing per Table R602.3.1 Interior sheathing per Table R602.3.1 or R602.3.2	6" edges 12" field Varies by fastener - 6" edges 12" field
	BS/WSP Wood Structural Panels with Stone or Masonry Veneer (See Section R602.10.6.5)	7/16"	See Figure R602.10.6.5	8d common (2 1/2" x 0.131) nails	4" at panel edges 12" at intermediate supports 4" at braced wall panel end posts	
	SFB Structural fiberboard sheathing	1/2" or 5/8" for maximum 16" stud spacing		1 1/2" long x 0.12" dia. (for 1/2" thick sheathing) 1 1/4" long x 0.12" dia. (for 5/8" thick sheathing) galvanized roofing nails or 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field	
	GB Gypsum board	1/2"		Nails or screws per Table R602.3(1) for exterior locations Nails or screws per Table R702.3.5 for interior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field	
	EBS Particleboard sheathing (See Section R605)	3/8" or 1/2" for maximum 16" stud spacing		For 3/8": 6d common (2" long x 0.113" dia.) nails For 1/2": 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field	
	PCP Portland cement plaster	See Section R703.6 for maximum 16" stud spacing		1 1/2" long, 11 gage, 3/16" dia. head nails or 7/8" long, 16 gage staples	6" o.c. on all framing members	
	HPS Hardboard panel siding	7/16" for maximum 16" stud spacing		0.092" dia., 0.225" dia head nails with length to accommodate 1 1/2" penetration into studs	4" edges 8" field	
	ABW Alternate braced wall	7/8"		See Section R602.10.6.1	See Section R602.10.6.1	

(continued)

TABLE R602.10.4—continued
BRACING METHODS 1

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA*		
			Fasteners	Spacing	
Intermittent Bracing Methods	PFH Portal frame with hold-downs	$\frac{3}{8}$ "		See Section R602.10.6.2	See Section R602.10.6.2
	PFG Portal frame at garage	$\frac{7}{16}$ "		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	CS-WSP Continuously sheathed wood structural panel	$\frac{3}{8}$ " 15/32"		8d common (2 1/2" x 0.131) nails 3/8" edge distance to panel edge Exterior sheathing per Table R602.3(3) Interior sheathing per Table R602.3(1) or R602.3(2)	6" edges 12" field Varies by fastener— 6" edges 12" field
	CS-G^{1,2} Continuously sheathed wood structural panel adjacent to garage openings	$\frac{3}{8}$ " 15/32"		See Method CS-WSP	See Method CS-WSP
	CS-PF Continuously sheathed portal frame	$\frac{7}{16}$ " 15/32"		See Section R602.10.6.4	See Section R602.10.6.4
	CS-SFB⁴ Continuously sheathed structural fiberboard	$\frac{1}{2}$ " or $\frac{3}{4}$ " for maximum 16" stud spacing		1 1/2" long x 0.12" dia. (for 1/2" thick sheathing) 1 7/8" long x 0.12" dia. (for 3/4" thick sheathing) galvanized roofing nails or 8d common (2 1/2" long x 0.131" dia.) nails	3" edges 6" field

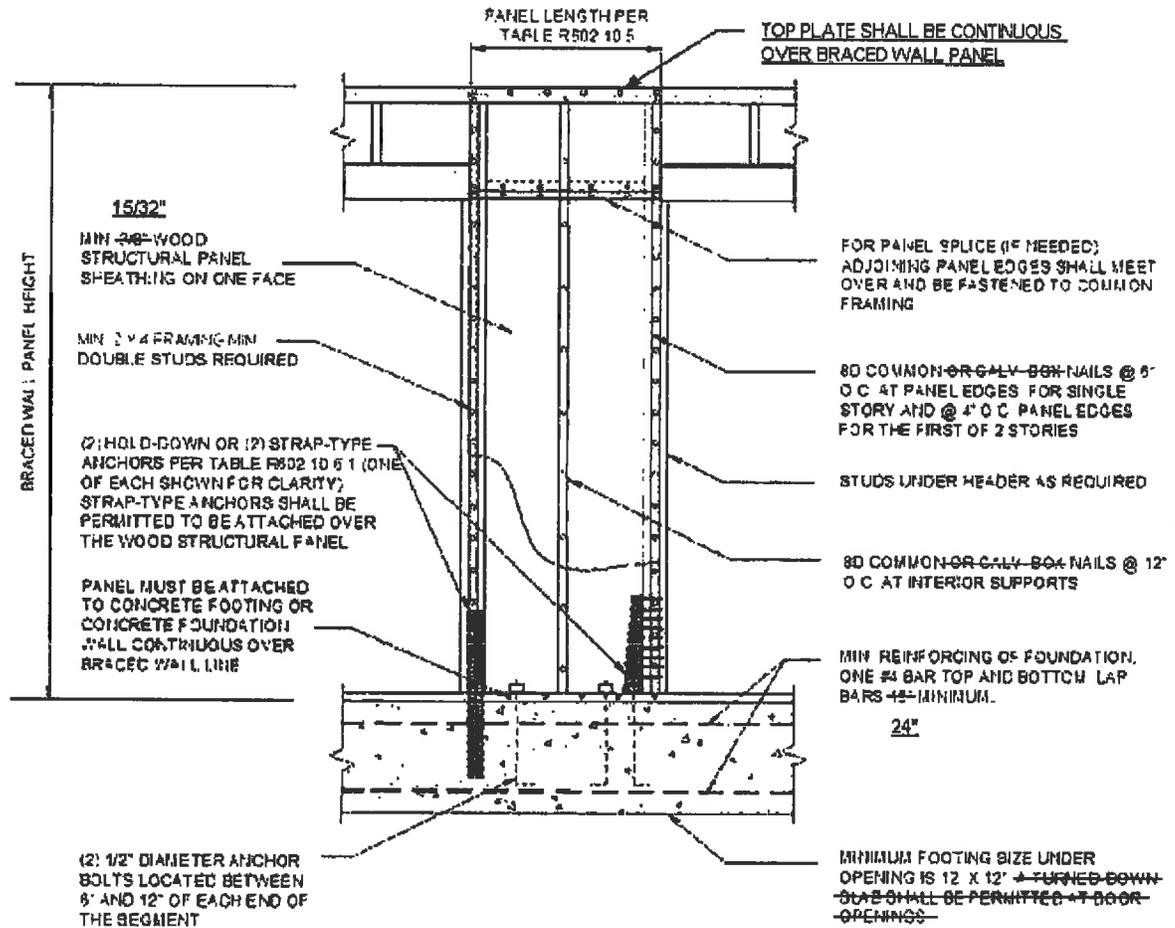
For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 degree = 0.0175 rad, 1 pound per square foot = 47.8 N/m², 1 mile per hour = 0.447 m/s.

- Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D_s, D₁, and D₂.
- Applies to panels next to garage door opening when supporting gable end wall or roof load only. May only be used on one wall of the garage. In Seismic Design Categories D_s, D₁, and D₂, roof covering dead load may not exceed 3 psf.
- Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R502.5(1). A full height clear opening shall not be permitted adjacent to a Method CS-G panel.
- Method CS-SFB does not apply in Seismic Design Categories D_s, D₁, and D₂ and in areas where the wind speed exceeds 100 mph.
- Method applies to detached one- and two-family dwellings in Seismic Design Categories D_s through D₂ only.

1. Methods GB and PCP braced wall panel h/v ratio shall not exceed 1:1 in SDC D0, D1, or D2. Methods LIB, DMW, SFB, PBS, HPS, and PFG are not permitted in SDC D0, D1, or D2.

4. Use of staples in braced wall panels shall be prohibited in SDC D0, D1, or D2.

Figure R602.10.6.1 of the 2013 Edition of the California Residential Code is amended to read as follows:



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

Figure R602.10.6.2 of the 2013 Edition of the California Residential Code is amended to read as follows:

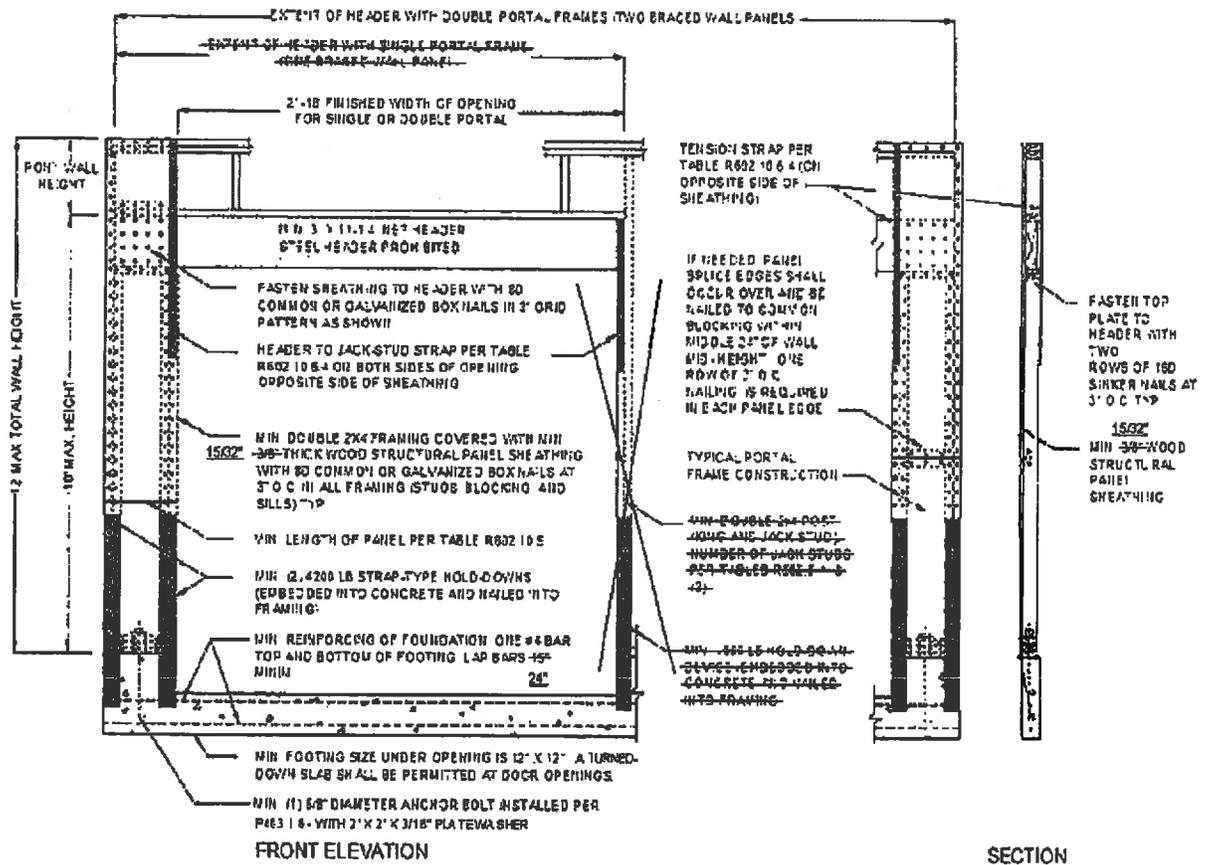


FIGURE R602.10.6.2
METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS
AT DETACHED GARAGE DOOR OPENINGS

Table R602.10.5 of the 2013 Edition of the California Residential Code is amended to read as follows:

TABLE R602.10.5
MINIMUM LENGTH OF BRACED WALL PANELS

METHOD (See Table R602.10.4)		MINIMUM LENGTH* (Inches)					CONTRIBUTING LENGTH (Inches)
		Wall Height					
		8 feet	9 feet	10 feet	11 feet	12 feet	
DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP		48	48	48	53	58	Actual ^b
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 × Actual
LIB		55	62	69	NP	NP	Actual ^b
ABW	SDC A, B and C, wind speed < 110 mph	28	32	34	38	42	48
	SDC D ₁ , D ₂ and D ₃ , wind speed < 110 mph	32	32	34	NP	NP	
PFH	Supporting roof only	16-24	16-24	16-24	18-24	20-24	48
	Supporting one story and roof	24	24	24	27	29	48
PFG		24	27	30	33 ^d	36 ^d	1.5 × Actual ^c
CS-G		24	27	30	33	36	Actual ^b
CS-PF		16-24	18-24	20-24	22-24	24 ^e	Actual ^b
CS-WSP, CS-SFB	Adjacent clear opening height (Inches)						Actual ^b
	≤ 64	24	27	30	33	36	
	68	26	27	30	33	36	
	72	27	27	30	33	36	
	76	30	29	30	33	36	
	80	32	30	30	33	36	
	84	35	32	32	33	36	
	88	38	35	33	33	36	
	92	43	37	35	35	36	
	96	48	41	38	36	36	
	100	—	44	40	38	38	
	104	—	49	43	40	39	
	108	—	54	46	43	41	
	112	—	—	50	45	43	
	116	—	—	55	48	45	
	120	—	—	60	52	48	
	124	—	—	—	56	51	
	128	—	—	—	61	54	
	132	—	—	—	66	58	
136	—	—	—	—	62		
140	—	—	—	—	66		
144	—	—	—	—	72		

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

NP = Not Permitted.

a. Linear interpolation shall be permitted.

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

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

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

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

Figure R602.10.6.1 of the 2013 Edition of the California Residential Code is amended to read as follows:

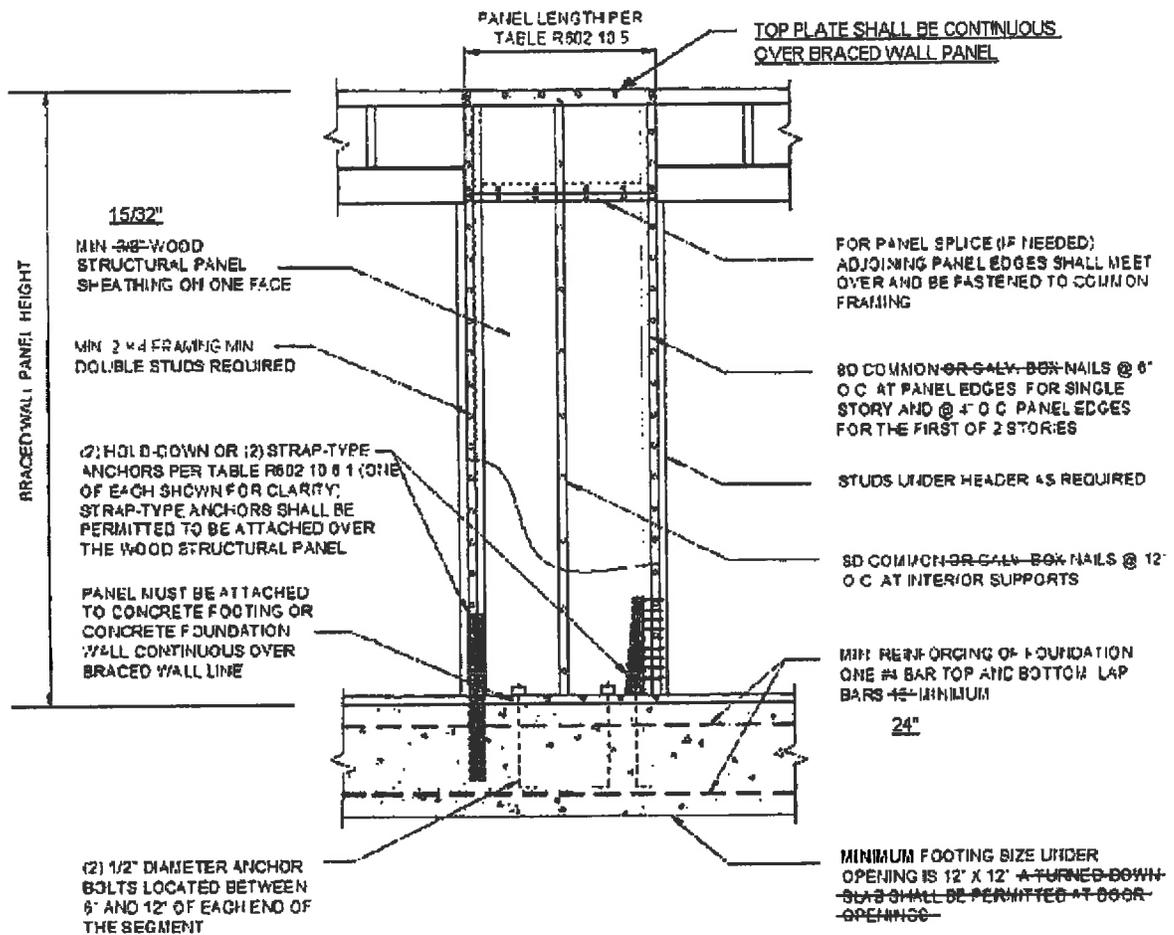


FIGURE R602.10.6.1
METHOD ABW—ALTERNATE BRACED WALL PANEL

Figure R602.10.6.2 of the 2013 Edition of the California Residential Code is amended to read as follows:

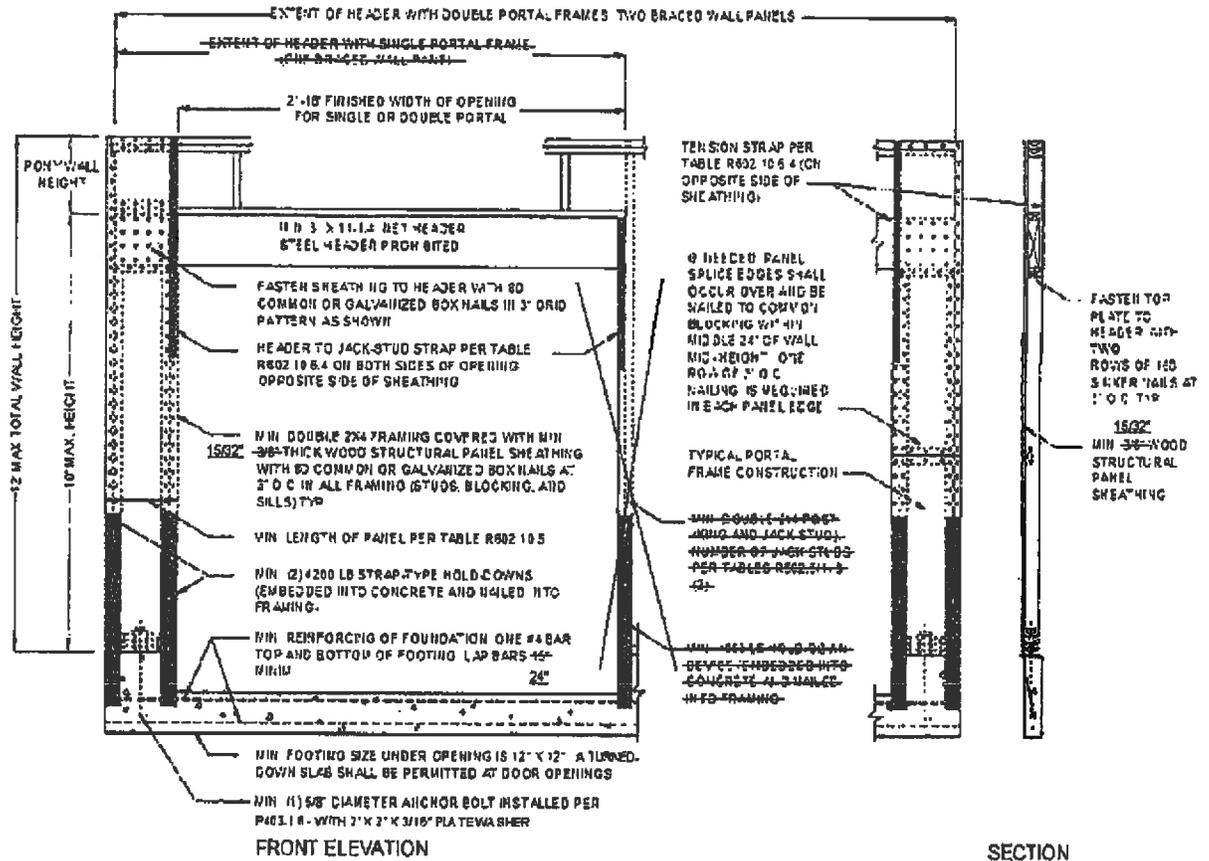


FIGURE R602.10.6.2
METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS
AT DETACHED GARAGE DOOR OPENINGS

Section R602.10.9.1 of the 2013 Edition of the California Residential Code is deleted in its entirety.

Section R606.2.4 of the 2013 Edition of the California Residential Code is amended to read as follows:

R606.2.4 Parapet walls.

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

Section R606.12.2.2.3 of the 2013 Edition of the California Residential Code is amended to read as follows:

R606.12.2.2.3 Reinforcement requirements for masonry elements. Masonry elements listed in Section R606.12.2.2.2 are reinforced in either the horizontal or vertical direction as shown in Figure R606.11(3) and in accordance with the following:

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

Exception of Section R602.3.2 of the 2013 Edition of the California Residential Code is amended to read as follows:

Exception: In other than Seismic Design Category D₀, D₁ or D₂, a single top plate may be installed in stud walls, provided the plate is adequately tied at joints, corners and intersecting walls by a minimum 3-inch-by-6-inch by a 0.036-inch-thick (76 mm by 152 mm by 0.914 mm) galvanized steel plate that is nailed to each wall or segment of wall by six 8d nails on each side, provided the rafters or joists are centered over the studs with a tolerance of no more than 1 inch (25 mm). The top plate may be omitted over lintels that are adequately tied to adjacent wall sections with steel plates or equivalent as previously described.

Section R803.2.4 is added to Chapter 8 of the 2013 Edition of the California Residential Code to read as follows:

R803.2.4 Openings in horizontal diaphragms.

Openings in horizontal diaphragms cannot conform with Section R503.2.4.

Section R1001.3.1 of the 2013 Edition of the California Residential Code is amended to read as follows:

R1001.3.1 Vertical reinforcing.

For chimneys up to 40 inches (1016 mm) wide, four No. 4 continuous vertical bars adequately anchored into the concrete foundation are placed between wythes of solid masonry or within the cells of hollow unit masonry and grouted in accordance with Section R609. Grout are prevented from bonding with the flue liner so that the flue liner is free to move with thermal expansion. For chimneys more than 40 inches (1016 mm) wide, two additional No. 4 vertical bars adequately anchored into the concrete foundation are provided for each additional flue incorporated into the chimney or for each additional 40 inches (1016 mm) in width or fraction thereof."

SECTION 3: CALIFORNIA ENVIRONMENTAL QUALITY ACT EXEMPTION.

The City Council determines that this ordinance is exempt from review under the California Environmental Quality Act (California Public Resources Code §§ 21000, et seq., "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, et seq., the "State CEQA Guidelines") because it consists only of minor revisions and clarifications to an existing code of construction-related regulations and specification of procedures related thereto and will not have the effect of deleting or substantially changing any regulatory standards or findings required therefor. This ordinance, therefore, is an action

being taken for enhanced protection of the environment and that does not have the potential to cause significant effects on the environment.

SECTION 4: SAVINGS CLAUSE. Repeal of any provision of the ESMC or any other city ordinance herein will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before, this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 5: SEVERABILITY. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

SECTION 6: VALIDITY OF PREVIOUS CODE SECTIONS. If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the ESMC or other the city ordinance by this Ordinance will be rendered void and cause such ESMC provision or other the city ordinance to remain in full force and effect for all purposes.

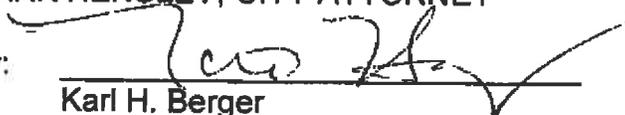
SECTION 7: EFFECTIVE DATE. This Ordinance will take effect on January 1, 2014.

PASSED AND ADOPTED this 5th day of Nov., 2013.


Bill Fisher, Mayor


Tracy Weaver
City Clerk

APPROVED AS TO FORM
MARK HENSLEY, CITY ATTORNEY

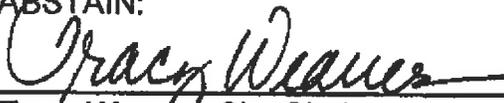
By: 
Karl H. Berger
Assistant City Attorney

ATTEST:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF EL SEGUNDO)

I, Tracy Weaver, City Clerk of the City of El Segundo, California, do certify that the whole number of members of the City Council of said City is five; that the foregoing Ordinance No. was duly introduced by said City Council at a regular meeting held on the 15th day of Oct., 2013, and was duly passed and adopted by said City Council, approved and signed by the Mayor, and attested to by the City Clerk, all at a regular meeting of said Council held on the 5th day of Nov., 2013, and the same was so passed and adopted by the following vote:

AYES: **Fisher, Jacobson, Fuentes, Atkinson, Fellhauer**
NOES: **None**
ABSENT: **None**
ABSTAIN: **None**



Tracy Weaver, City Clerk