



Agenda Item #: 07/1204.18-16

Staff Report

City of Manhattan Beach

TO: Honorable Mayor Aldinger and Members of the City Council

THROUGH: Geoff Dolan, City Manager

FROM: Richard Thompson, Director of Community Development Department
Dennis Groat, Fire Chief
Derek Edmonds, Fire Marshal
Carol Jacobson, Building Official

DATE: December 18, 2007

SUBJECT: Consideration of Ordinances to Adopt the Most Recent California Building Standards Code and City Amendments to the Following Codes: 2007 California Building Code, 2007 California Plumbing Code, 2007 California Mechanical Code, 2007 California Electrical Code, 2006 Uniform Swimming Pool, Spa, and Hot Tub Code, and to adopt the 2007 California Fire Code and City Amendments.

RECOMMENDATION:

Staff recommends that Council to conduct a PUBLIC HEARING and ADOPT ORDINANCES 2108 and 2109.

FISCAL IMPLICATION:

There are no fiscal implications associated with the recommended action.

BACKGROUND:

The California Building Standards Commission published the State construction codes July 1, 2007. The California Department of Housing and Community Development adopted these codes, which will be effective statewide on January 1, 2008. The City must adopt these codes with any amendments. These codes include the Building, Plumbing, Mechanical, Electrical, and Fire construction regulations. The last complete set of building codes was adopted in 2002. The Swimming Pool Code is also being updated from the 1979 edition to the 2006 edition.

DISCUSSION:

At the City Council Meeting on December 4th, Council introduced the attached ordinances to adopt the most current construction codes and City amendments per California requirements. Also attached is the staff report from that meeting, which summarizes the proposed code changes and amendments for the construction and fire codes.

Agenda Item #: _____

To adopt the codes, the procedure is as follows: introduce the title and ordinance, publish notification for two successive weeks, and conduct a public hearing and adopt the ordinance. The public has been duly noticed. If the Council adopts the proposed ordinance after the public hearing, it would become effective in thirty (30) days.

Attachments: A. Ordinance No's. 2108 and 2109
B. City Council Staff Report to Introduce Construction Codes December 4, 2007



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RECOMMENDATION:

Staff recommends that Council pass a motion to INTRODUCE ORDINANCES 2108 and 2109, WAIVE FURTHER READING, and SET PUBLIC HEARING for December 18, 2007.

FISCAL IMPLICATION:

There are no fiscal implications associated with the recommended action.

BACKGROUND:

The California Building Standards Commission published the State construction codes July 1, 2007. The California Department of Housing and Community Development adopted these codes, which will be effective statewide on January 1, 2008. The City must adopt these codes with any amendments before that date. These codes include the Building, Plumbing, Mechanical, Electrical, and Fire construction regulations. The last complete set of building codes was adopted in 2002.

One of the new changes of the California Building Code (CBC) is that it now combines three different model building codes. Previously, it was based on one model building code by the International Conference of Building Officials. The new CBC is more restrictive in some areas. For example, it now restricts total window openings on exterior building walls.

Additionally, our swimming pool code is no longer up-to-date with current practices. The most recent model code is the 2006 Uniform Swimming Pool, Spa, and Hot Tub Code. The last swimming pool code adopted was the 1979 edition as published by the International Association of

Plumbing and Mechanical Officials.

DISCUSSION:

Staff is proposing amendments to all codes. The most significant amendments, which have been in effect in Manhattan Beach for the last several years, are:

1. Continue to limit the maximum duration of construction permits to two (2) years for construction projects instead of the State provision, which has no definite limit.
2. Continue to prohibit new roof or re-roof covering material of wood shakes and wood shingles due to fire safety concerns.
3. Continue the current requirements for undergrounding or stubbing out of utilities for major remodels and new construction.
4. Continue to disallow aluminum conductors because of our unique weather conditions, which can cause arcing and sparking from aluminum conductors.
5. Continue detailed requirements for structural observation that is performed as part of the inspection process.

The ordinance contains several new amendments to clarify and to maintain up-to-date structural requirements due to potential hazards specific to our community. These amendments are part of the joint effort by 89 jurisdictions within the Los Angeles County to develop the Los Angeles Regional Uniform Code Program. These new amendments include additional structural engineering design-related provisions for earthquake, wind, and other geologic or climatic concerns.

Staff is also proposing simple inexpensive code requirements for new construction to encourage more sustainable building practices. Other sustainable building methods will be further studied and implemented in future City Council special study sessions and through the public process as directed by the City Council. These suggested techniques are more than what is currently mandatory per the minimum requirements of the California Energy Code regulations, commonly known as Title 24. They are:

- Insulating hot water pipes to minimize energy loss
- Using caulk and insulation that are formaldehyde-free or contain low VOC (volatile organic compounds)
- Pre-plumb water piping and sensor wiring to the roof for future solar water heating
- Use duct mastic on all duct joints and seams to minimize energy loss
- Install "Energy Star" bath fans vented to the outside

Additionally, staff included an amendment to permit installation of waterless urinals.

There are no significant changes regarding amendments of Fire Code. A majority of the amendments are being carried over from previous amendments to the Municipal Code regarding fire life safety. We propose to continue the more restrictive or specific policies for fire investigation, technical assistance, obstruction of fire apparatus access roads, address number sizes

and complex structure directories, continuance of fire sprinklers requirements, and prohibition of manufacturing, possession, storage, sale and use of fireworks.

According to the California Health and Safety Code Section 17958.7, we must find specific needs to support amendments more restrictive than the State-adopted model codes. These findings are included in the attached ordinance and, after City Council approval, will be filed with the California Building Standards Commission.

The California Building Standards Code that will be effective statewide is the 2007 edition. Each of the State construction codes with amendments is based on various model codes as determined by the California Building Standards Commission. The building code is based on the 2006 International Building Code; the plumbing and mechanical codes are based on the 2006 Uniform Plumbing Code and Mechanical Code; the electrical code is based on the 2005 National Electrical Code, and the 2006 International Fire Code. These model codes are published by various professional organizations, such as the International Code Council, the International Association of Plumbing and Mechanical Officials, the National Fire Protection Association, and the Western Fire Chiefs Association.

To adopt the codes, the procedure is as follows: introduce the title and ordinance, publish notification for two successive weeks, and conduct a public hearing and adopt the ordinance. After the ordinance is introduced and notification published, the public hearing would be scheduled for the City Council meeting of December 18, 2007.

This proposed ordinances will not have a significant effect on the environment, and is therefore exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15061 (b)(3) of the CEQA Guidelines.

Attachments: A. Draft Ordinance No's. 2109 and 2108

ORDINANCE NO. 2109

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, AMENDING CHAPTERS 1, 12, 32, 52, AND 64 OF THE MANHATTAN BEACH MUNICIPAL CODE TO ADOPT BY REFERENCE THE RULES, REGULATIONS, PROVISIONS AND CONDITIONS SET FORTH IN THE MOST RECENT CALIFORNIA BUILDING STANDARDS CODE AND CITY AMENDMENTS TO THE FOLLOWING CODES: BUILDING CODE; ELECTRICAL CODE, SWIMMING POOL CODE, PLUMBING CODE; AND MECHANICAL CODE.

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

SECTION 1. The City Council of the City of Manhattan Beach, California, hereby finds as follows:

- A. The State of California has adopted the California Building Standard Codes that must in turn be adopted or utilized by each city or county. Certain of the provisions of these Codes are inappropriate for use within the City of Manhattan Beach because of unique climatic, geological and topographical conditions prevailing within the City. The California Health and Safety Code Sections 17958, 17985.7 and 17958.5 provide for certain amendments to the California Building Standard Codes provided findings of necessity can be made. The findings are:
1. Adverse climate conditions such as salt fog air and strong winds such as those in existence in the City of Manhattan Beach increase the likelihood of fire spreading (conflagration) from one building to another. Additionally, we must reduce potential impact to climate change through energy efficient materials and sustainable practices.
 2. Geological conditions of the City of Manhattan Beach are affected by the nearby locations of earthquake faults that can create tremendous loss of life and structures in the City.
 3. Topographical conditions of the City of Manhattan Beach coupled with the density of buildings, limited setbacks, narrow access to buildings, small lots and narrow streets would potentially create a problem for governmental agencies to respond to emergency conditions.
 4. There is a need for proposing certain amendments in the California Building Standard Codes because of climatic, geological and topographical conditions.
- B. This project will not have a significant effect on the environment, and is therefore exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15061 (b)(3) of the CEQA Guidelines.

SECTION 2. Chapter 1 of Title 9 of the Manhattan Beach Municipal Code is hereby amended in its entirety as follows:

Chapter 9.01 Building Code.

9.01.010 Adoption of 2007 California Building Code.

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "California Building Code 2007 Edition," including the Appendices and Standards therein contained, promulgated and published by the International Conference of Building Officials and the California Building Standards Commission, one (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and

made a part hereof as fully and for all intents and purposes as though set forth herein at length, are hereby established and adopted as the rules, regulations, provisions and conditions to be observed and followed in the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion, occupancy, equipment, use, height, area and maintenance of buildings, structures and improvements in the city; and subject to the additions, deletions and amendments set forth in this chapter, said Code with its Appendices and the said Standards containing said rules, regulations, standards, provisions and conditions is hereby established and adopted, and the same shall be designated, known and referred to as the "Building Code" of and for the City.

9.01.020 Scope.

Section 101.4 and 101.5 of the California Building Code are hereby amended for administrative requirements as follows:

Section 101.4. Appendices. Wherever in this Code reference is made to the Appendix, the provisions in the Appendix shall not apply unless specifically adopted. The following appendix is hereby adopted to the appendix of the California Building Code: entire Appendix Chapter 1 Administration, Appendix J Grading and International Building Code Appendix K, specifically Chapter K5 Construction Documents

Section 101.5 Referenced Codes. Wherever the Code references the use of code references for Electrical, Gas, Mechanical, Plumbing, Swimming Pool, and Energy Codes; the most recently adopted California State and Manhattan Beach Municipal Codes will take precedence.

9.01.030 Work exempt from permit.

Appendix 105.2, item 9 is hereby amended per administrative requirements as follows:

9. Prefabricated swimming pools accessory to Group R-3 Occupancy that are less than 18 inches (457.5 mm) deep, do not exceed 5,000 gallons (18925 L) and installed entirely above ground.

9.01.040 Soil report required.

Appendix Section 105.3, item 8 is hereby added per the above geological findings as follows:

8. Soil Report Required.

- 8.1 For foundation design with a soil bearing value exceeding allowable pressures per Table 1804.2.
- 8.2 For shoring construction with lateral bearing pressure of more than 100 pounds per square feet.
- 8.3 Whenever the Building Official has reason to believe that the site upon which a building or structure is to be constructed contains expansive soil, uncompacted fill, or other soil problems which if not corrected would lead to structural defects if the proposed building or structure is constructed thereon, a soil investigation and report may be required.

The report shall be prepared by a Civil or geotechnical Engineer registered by the State of California and shall contain:

A certification that the engineer has investigated the soil within the lot.

The locations of borings or excavations made.

Summaries of field and lab tests made.

A statement of the qualities of the soil, including expansive characteristics, relative compaction, and any soil problem which if not corrected would lead to structural defects of buildings or structures constructed upon the site.

Recommended corrective action necessary to prevent structural damage to buildings or structures erected on site.

The Building Official shall review the report and if it is determined that the action recommended therein is likely to prevent structural damage to buildings or structures constructed on the site, the incorporation of the approved recommended corrective action in the construction shall be required.

8.4 The soil bearing value and the soil type shall be stated on the plans. The statement will include the following:

"By field observation/or from the soil investigation report, the soil type is _____.
And per Table 1804.2 of the of the California Building Code/or from the soil investigation report, the soil bearing value is _____."

This statement shall be certified by the Engineer. Seal and signature below it.

9.01.050 Expiration of plan review.

Appendix Section 105.3.2 is amended for administrative requirements as follows:

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

9.01.060 Permit Expiration.

Appendix Section 105.5 is hereby amended for administrative requirements as follows:

Permit Expiration. Every permit issued by the Building Official under the provisions of this Code shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days, or if the building or work authorized by such permit is not completed within 2 calendar years from the issuance date of the permit.

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

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

For permits where work had commenced and was subsequently suspended or abandoned for a period exceeding 180 days, a renewed permit may be obtained provided that: (1) No changes have been made or will be required in the original plans and specifications for such work; and (2) the expiration has not exceeded two years from the issuance date and/or (3) Where construction has progressed and has been approved to the point whereby only a final inspection is required, a fee equal to one quarter the amount required for a new permit shall be paid.

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

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

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

9.01.070 Fees.

Appendix Section 108.2.1 shall be added per administrative requirements as follows:

108.2.1 The fees shall be determined by the most current City Resolution of Fees.

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

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

When submittal documents are incomplete or changed so as to require additional plan review or when the project involves deferred submittal items as defined in Section 106.3.4.2, an additional plan review fee shall be charged as determined by the most current City Resolution of Fees.

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

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

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

9.01.080 Violation penalties.

Appendix Section 113.4 is amended for administrative requirements as follows:

Appendix Section 113.4. Violation penalties. It shall be unlawful for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy, or maintain any building or structure in the city, or cause same to be done, contrary to or in violation of any of the provisions of this Code or directive of the building official.

Every person who willfully resists, delays, obstructs or interferes in any way with any City Building Inspector in the discharge or attempt to discharge any duty of his or her office or employment shall be guilty of a violation of this Chapter

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

9.01.090 Definitions.

Section 202 is hereby amended for administrative requirements by adding as follows:

"Abandoned or suspended work." Work has been stopped or no progress in construction and no inspection is required or performed for a period of 180 days.

9.01.100 Sustainable Building Requirements for R-2 and R-3 occupancies

Section 419.7 is hereby added per the above climatic findings as follows:

419.7 Sustainable building. All new R-2 and R-3 occupancies are required to incorporate all the following sustainable building practices in addition to the requirements of the California Energy Code, Title 24, Part 6 unless waived by the building official.

1. Insulate all hot water piping
2. Install low-emitting insulation in required areas of walls, floors, ceilings, and roof
3. Use low volatile organic compound (VOC) caulking
4. Pre-plumb piping and sensor wiring from water heater to attic for future solar water heating
5. Use duct mastic on all duct joints and seams
6. Install "Energy Star" or equivalent bathroom fan vented to the outside

9.01.110 Building with one exit.

Section 1019.2 of the California Building Code is hereby revised per the above topographical findings to add Exception 4.

Exceptions:

4. For buildings with two stories and basement complying with the provisions of story as specified in Section 202, only one exit is required. If such exit is located at the basement level or at a level between the basement and the first story, the building shall comply with the following:

- 4.1 The entire building shall be fire sprinklered in accordance with the Fire Department requirements.
- 4.2 All smoke detectors throughout the building shall be interconnected.
- 4.3 All interior doors at the basement level shall be a self-closing one-hour fire rated assembly with smoke seal, except for closets and bathrooms.

9.01.120 Roofing and Re-roofing.

Table 1505 is amended per the above climatic and topographical findings as follows:

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

Sections 1505 and 1507 are amended per the above climatic and topographical findings as follows:

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

1505.5 Non-classified Roofing. Non-classified roofing is approved material that is not listed as a Class A or B roofing assembly. The use of wood shakes or wood shingles is prohibited.

Sections 1505.6 and 1505.7, 1507.8, and 1507.9 are hereby deleted

Section 1510.1 is amended per the above climatic and topographical findings to add Exception 2 as follows:

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

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

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

9.01.130 Special seismic provisions.

Sections 1613.6.1, 1613.7 and 1613.8, 1614 are amended per the above geological and topographical findings as follows:

1613.6.1 Assumption of flexible diaphragm. Add the following text at the end of Section 12.3.1.1 of ASCE 7:

Diaphragms constructed of wood structural panels or untopped steel decking shall also be permitted to be idealized as flexible, provided all of the following conditions are met:

1. Toppings of concrete or similar materials are not placed over wood structural panel diaphragms except for nonstructural toppings no greater than 1 ½ inches (38 mm) thick.
2. Each line of vertical elements of the lateral-force-resisting system complies with the allowable story drift of Table 12.12-1.
3. Vertical elements of the lateral-force-resisting system are light-framed walls sheathed with wood structural panels rated for shear resistance or steel sheets.
4. Portions of wood structural panel diaphragms that cantilever beyond the vertical elements of the lateral-force-resisting system are designed in accordance with Section 2305.2.5 of the California Building Code.

Exception: In lieu of Section 2305.2.5, flexible diaphragm assumption is permitted to be used for buildings up to two stories in height provided cantilevered diaphragms supporting lateral-force-resisting elements from above does not exceed 15 percent of the distance between lines of lateral-force-resisting elements from which the diaphragm cantilevers nor one-fourth the diaphragm width perpendicular to the overhang.

Section 1613.7 Suspended ceilings.

1613.7 Suspended Ceilings. Minimum design and installation standards for suspended ceilings shall be determined in accordance with the requirements of Chapter 25 of this Code and this subsection.

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

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

1613.7.3 Design and Installation Requirements.

1613.7.3.1 Bracing at Discontinuity. Positive bracing to the structure shall be provided at changes in the ceiling plane elevation or at discontinuities in the ceiling grid system.

1613.7.3.2 Support for Appendages. Cable trays, electrical conduits and piping shall be independently supported and independently braced from the structure.

1613.7.3.3 Sprinkler Heads. All sprinkler heads (drops) except fire-resistance-rated floor/ceiling or roof/ceiling assemblies, shall be designed to allow for free movement of the sprinkler pipes with oversize rings, sleeves or adaptors through the ceiling tile, in accordance with Section 13.5.6.2.2 (e) of ASCE 7.

Sprinkler heads penetrating fire-resistance-rated floor/ceiling or roof/ceiling assemblies shall comply with Section 712 of this Code.

1613.7.3.4 Perimeter Members. A minimum wall angle size of at least a two inch (51 mm) horizontal leg shall be used at perimeter walls and interior full height partitions. The first ceiling tile shall maintain 3/4 inch (19 mm) clear from the finish wall surface. An equivalent alternative detail that will provide sufficient movement due to anticipated lateral building displacement may be used in lieu of the long leg angle subject to the approval of the Superintendent of Building.

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

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

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

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

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

Section 1613.8 Hillside buildings.

1613.8 Seismic Design Provisions for Hillside Buildings.

1613.8.1 Purpose. The purpose of this section is to establish minimum regulations for the design and construction of new buildings and additions to existing buildings when constructing such buildings on or into slopes steeper than one unit vertical in three units horizontal (33.3%). These regulations establish minimum standards for seismic force resistance to reduce the risk of injury or loss of life in the event of earthquakes.

1613.8.2 Scope. The provisions of this section shall apply to the design of the lateral-force-resisting system for hillside buildings at and below the base level diaphragm. The design of the lateral-force-resisting system above the base level diaphragm shall be in accordance with the provisions for seismic and wind design as required elsewhere in this division.

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

1613.8.3 Definitions. For the purposes of this section certain terms are defined as follows:

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

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

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

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

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

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

PRIMARY ANCHORS are diaphragm anchors designed for and providing a direct connection as described in Sections 1613.8.5 and 1613.8.7.3 between the diaphragm and the uphill foundation.

SECONDARY ANCHORS are diaphragm anchors designed for and providing a redundant diaphragm to foundation connection, as described in Sections 1613.8.6 and 1613.8.7.4.

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

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

1613.8.4 Analysis and Design.

1613.8.4.1 General. Every hillside building within the scope of this section shall be analyzed, designed, and constructed in accordance with the provisions of this division. When the code-prescribed wind design produces greater effects, the wind design shall govern, but detailing requirements and limitations prescribed in this and referenced sections shall be followed.

1613.8.4.2 Base Level Diaphragm-Downhill Direction. The following provisions shall apply to the seismic analysis and design of the connections for the base level diaphragm in the downhill direction.

1613.8.4.2.1 Base for Lateral Force Design Defined. For seismic forces acting in the downhill direction, the base of the building shall be the floor at or closest to the top of the highest level of the foundation.

1613.8.4.2.2 Base Shear. In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 4.5 for bearing wall and building frame systems. The total base shear shall include the forces tributary to the base level diaphragm including forces from the base level diaphragm.

1613.8.5 Base Shear Resistance-Primary Anchors.

1613.8.5.1 General. The base shear in the downhill direction shall be resisted through primary anchors from diaphragm struts provided in the base level diaphragm to the foundation.

1613.8.5.2 Location of Primary Anchors. A primary anchor and diaphragm strut shall be provided in line with each foundation extending in the downhill direction. Primary anchors and diaphragm struts shall also be provided where interior vertical lateral-force-resisting elements occur above and in contact with the base level diaphragm. The spacing of primary anchors and diaphragm struts or collectors shall in no case exceed 30 feet (9144 mm).

1613.8.5.3 Design of Primary Anchors and Diaphragm Struts. Primary anchors and diaphragm struts shall be designed in accordance with the requirements of Section 1613.8.8.

1613.8.5.4 Limitations. The following lateral-force-resisting elements shall not be designed to resist seismic forces below the base level diaphragm in the downhill direction:

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

Braced frames designed in accordance with the requirements of Section 2205.2.2 may be used to transfer forces from the primary anchors and diaphragm struts to the foundation provided lateral forces do not induce flexural stresses in any member of the frame or in the diaphragm struts. Deflections of frames shall account for the variation in slope of diagonal members when the frame is not rectangular.

1613.8.6. Base Shear Resistance-Secondary Anchors.

1613.8.6.1 General. In addition to the primary anchors required by Section 1613.8.5, the base shear in the downhill direction shall be resisted through secondary anchors in the uphill foundation connected to diaphragm struts in the base level diaphragm.

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

1613.8.6.2 Secondary Anchor Capacity and Spacing. Secondary anchors at the base level diaphragm shall be designed for a minimum force equal to the base shear, including forces tributary to the base level diaphragm, but not less than 600 pounds per lineal foot (8.76 kN/m). The secondary anchors shall be uniformly distributed along the uphill diaphragm edge and shall be spaced a maximum of four feet (1219 mm) on center.

1613.8.6.3 Design. Secondary anchors and diaphragm struts shall be designed in accordance with Section 1613.8.8.

1613.8.7 Diaphragms Below the Base Level-Downhill Direction. The following provisions shall apply to the lateral analysis and design of the connections for all diaphragms below the base level diaphragm in the downhill direction.

1613.8.7.1 Diaphragm Defined. Every floor level below the base level diaphragm shall be designed as a diaphragm.

1613.8.7.2 Design Force. Each diaphragm below the base level diaphragm shall be designed for all tributary loads at that level using a minimum seismic force factor not less than the base shear coefficient.

1613.8.7.3 Design Force Resistance-Primary Anchors. The design force described in Section

1613.8.7.2 shall be resisted through primary anchors from diaphragm struts provided in each diaphragm to the foundation. Primary anchors shall be provided and designed in accordance with the requirements and limitations of Section 1613.8.5.

1613.8.7.4 Design Force Resistance-Secondary Anchors.

1613.8.7.4.1 General. In addition to the primary anchors required in Section 1613.8.7.3, the design force in the downhill direction shall be resisted through secondary anchors in the uphill foundation connected to diaphragm struts in each diaphragm below the base level.

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

1613.8.7.4.2 Secondary Anchor Capacity. Secondary anchors at each diaphragm below the base level diaphragm shall be designed for a minimum force equal to the design force but not less than 300 pounds per lineal foot (4.38 kN/m). The secondary anchors shall be uniformly distributed along the uphill diaphragm edge and shall be spaced a maximum of four feet (1219 mm) on center.

1613.8.7.4.3 Design. Secondary anchors and diaphragm struts shall be designed in accordance with Section 1613.8.8.

1613.8.8 Primary and Secondary Anchorage and Diaphragm Strut Design. Primary and secondary anchors and diaphragm struts shall be designed in accordance with the following provisions:

1. Fasteners. All bolted fasteners used to develop connections to wood members shall be provided with square plate washers at all bolt heads and nuts. Washers shall be minimum 3/16 inch (4.8 mm) thick and two inch (51 mm) square for 1/2-inch (12.7 mm) diameter bolts, and 1/4-inch (6.4 mm) thick and 2-1/2-inch (64 mm) square for 5/8-inch (15.9 mm) diameter or larger bolts. Nuts shall be wrench tightened prior to covering.

2. Fastening. The diaphragm to foundation anchorage shall not be accomplished by the use of toenailing, nails subject to withdrawal, or wood in cross-grain bending or cross-grain tension.

3. Size of Wood Members. Wood diaphragm struts collectors, and other wood members connected to primary anchors shall not be less than three-inch (76 mm) nominal width. The effects of eccentricity on wood members shall be evaluated as required per Item 9.

4. Design. Primary and secondary anchorage, including diaphragm struts, splices, and collectors shall be designed for 125% of the tributary force.

5. Allowable Stress Increase. The one-third allowable stress increase permitted under Section 1605.3.2 shall not be taken when the working (allowable) stress design method is used.

6. Seismic Load Factor. The seismic load factor shall be 1.7 for steel and concrete anchorage when the strength design method is used.

7. Primary Anchors. The load path for primary anchors and diaphragm struts shall be fully developed into the diaphragm and into the foundation. The foundation must be shown to be adequate to resist the concentrated loads from the primary anchors.

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

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

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

1613.8.9 Lateral-Force-Resisting Elements Normal to the Downhill Direction.

1613.8.9.1 General. In the direction normal to the downhill direction, lateral-force-resisting elements shall be designed in accordance with the requirements of this section.

1613.8.9.2 Base Shear. In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 4.5 for bearing wall and building frame systems.

1613.8.9.3 Vertical Distribution of Seismic Forces. For seismic forces acting normal to the downhill direction the distribution of seismic forces over the height of the building using Section 12.8.3 of ASCE 7 shall be determined using the height measured from the top of the lowest level of the building foundation.

1613.8.9.4 Drift Limitations. The story drift below the base level diaphragm shall not exceed 0.005 times the story height. The total drift from the base level diaphragm to the top of the foundation shall not exceed 3/4 inch (19 mm). Where the story height or the height from the base level diaphragm to the top of the foundation varies because of a stepped footing or story offset, the height shall be measured from the average height of the top of the foundation. The story drift shall not be reduced by the effect of horizontal diaphragm stiffness.

Where code-prescribed wind forces govern the design of the lateral force resisting system normal to the downhill direction, the drift limitation shall be 0.0025 for the story drift and the total drift from the base level diaphragm to the top of the foundation may exceed 3/4 inch (19 mm) when approved by the Department. In no case, however, shall the drift limitations for seismic forces be exceeded.

1613.8.9.5 Distribution of Lateral Forces.

1613.8.9.5.1 General. The design lateral force shall be distributed to lateral-force-resisting elements of varying heights in accordance with the stiffness of each individual element.

1613.8.9.5.2 Wood Structural Panel Sheathed Walls. The stiffness of a stepped wood structural panel shear wall may be determined by dividing the wall into adjacent rectangular elements, subject to the same top of wall deflection. Deflections of shear walls may be estimated by Section 2305.3.2. Sheathing and fastening requirements for the stiffest section shall be used for the entire wall. Each section of wall shall be anchored for shear and uplift at each step. The minimum horizontal length of a step shall be eight feet (2438 mm) and the maximum vertical height of a step shall be two feet, eight inches (813 mm).

1613.8.9.5.3 Reinforced Concrete or Masonry Shear Walls. Reinforced concrete or masonry shear walls shall have forces distributed in proportion to the rigidity of each section of the wall.

1613.8.9.6 Limitations. The following lateral force-resisting-elements shall not be designed to resist lateral forces below the base level diaphragm in the direction normal to the downhill direction:

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

Braced frames designed in accordance with the requirements of Chapter 22 of this Code may be designed as lateral-force-resisting elements in the direction normal to the downhill direction, provided lateral forces do not induce flexural stresses in any member of the frame. Deflections of frames shall account for the variation in slope of diagonal members when the frame is not rectangular.

1613.8.10 Specific Design Provisions.

1613.8.10.1 Footings and Grade Beams. All footings and grade beams shall comply with the following:

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

1613.8.10.2 Protection Against Decay and Termites. All wood to earth separation shall comply with the following:

1. Where a footing or grade beam extends across a descending slope, the stem wall, grade beam, or footing shall extend up to a minimum 18 inches (457 mm) above the highest adjacent grade.
EXCEPTION: At paved garage and doorway entrances to the building, the stem wall need only extend to the finished concrete slab, provided the wood framing is protected with a moisture proof barrier.
2. Wood ledgers supporting a vertical load of more than 100 pounds per lineal foot (1.46 kN/m) and located within 48 inches (1219 mm) of adjacent grade are prohibited. Galvanized steel ledgers and anchor bolts, with or without wood nailers, or treated or decay resistant sill plates supported on a concrete or masonry seat, may be used.

1613.8.10.3 Sill Plates. All sill plates and anchorage shall comply with the following:

1. All wood framed walls, including nonbearing walls, when resting on a footing, foundation, or grade beam stem wall, shall be supported on wood sill plates bearing on a level surface.
2. Power-driven fasteners shall not be used to anchor sill plates except at interior nonbearing walls not designed as shear walls.

1613.8.10.4 Column Base Plate Anchorage. The base of isolated wood posts (not framed into a stud wall) supporting a vertical load of 4000 pounds (17.8 kN) or more and the base plate for a steel column shall comply with the following:

1. When the post or column is supported on a pedestal extending above the top of a footing or grade beam, the pedestal shall be designed and reinforced as required for concrete or masonry columns. The pedestal shall be reinforced with a minimum of four No. 4 bars extending to the bottom of the footing or grade beam. The top of exterior pedestals shall be sloped for positive drainage.
2. The base plate anchor bolts or the embedded portion of the post base, and the vertical reinforcing bars for the pedestal, shall be confined with two No. 4 or three No. 3 ties within the top five inches (127 mm) of the concrete or masonry pedestal. The base plate anchor bolts shall be

embedded a minimum of 20 bolt diameters into the concrete or masonry pedestal. The base plate anchor bolts and post bases shall be galvanized and each anchor bolt shall have at least two galvanized nuts above the base plate.

1613.8.10.5 Steel Beam to Column Supports. All steel beam to column supports shall be positively braced in each direction. Steel beams shall have stiffener plates installed on each side of the beam web at the column. The stiffener plates shall be welded to each beam flange and the beam web. Each brace connection or structural member shall consist of at least two 5/8 inch (15.9 mm) diameter machine bolts.

Section 1614 Diaphragms.

SECTION 1614 MODIFICATION TO ASCE 7.

1614.1 General. The text of ASCE 7 shall be modified as indicated in this Section.

1614.1.1 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.

1614.1.2 ASCE 7, 12.3.1.1. Modify ASCE 7 Section 12.3.1.1 to read as follows:

12.3.1.1 Flexible Diaphragm Condition. Diaphragm constructed of untopped steel decking or wood structural panels are permitted to be idealized as flexible in structures in which the vertical elements are steel or composite steel and concrete braced frames, or concrete, masonry, steel, or composite shear walls. Diaphragms of wood structural panels or untopped steel decks in one- and two-family residential buildings of light-frame construction shall also be permitted to be idealized as flexible. Flexible diaphragm assumption is permitted to be used for buildings up to two stories in height provided cantilevered diaphragms supporting lateral-force-resisting elements from above does not exceed 15 percent of the distance between lines of lateral-force-resisting elements from which the diaphragm cantilevers nor one-fourth the diaphragm width perpendicular to the overhang.

1614.1.3 ASCE 7, Section 12.8.1.1. Modify ASCE 7 Section 12.8.1.1 by amending Equation 12.8-5 as follows:

$$C_s = 0.044 S_{DS} I \geq 0.01 \quad (\text{Eq. 12.8-5})$$

1614.1.4 ASCE 7, Table 12.8-2. Modify ASCE 7 Table 12.8-2 by adding the following:

Structure Type	C_1	α
Eccentrically braced steel frames and buckling-restrained braced frames	0.03 (0.0731) ^a	0.75

1614.1.5 ASCE 7, Section 12.8.7. Modify ASCE 7 Section 12.8.7 by amending Equation 12.8-16 as follows:

$$\theta = \frac{P_x \Delta I}{V_x h_{sx} C_d} \quad (12.8-16)$$

1614.1.6 ASCE 7, 12.11.2.2.3. Modify ASCE 7 Section 12.11.2.2.3 to read as follows:

12.11.2.2.3 Wood Diaphragms. In wood diaphragms, the continuous ties shall be in addition to the diaphragm sheathing. Anchorage shall not be accomplished by use of toe nails or nails subject to withdrawal nor shall wood ledgers or framing be used in cross-grain bending or cross-grain tension. The diaphragm sheathing shall not be considered effective as providing ties or struts required by this section.

For wood diaphragms supporting concrete or masonry walls, wood diaphragms shall comply with the following:

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

1614.1.7 ASCE 7, Section 12.12.3. Replace ASCE 7 Section 12.12.3 as follows:

12.12.3 Minimum Building Separation. All structures shall be separated from adjoining structures. Separations shall allow for the maximum inelastic response displacement (Δ_M). Δ_M shall be determined at critical locations with consideration for both translational and torsional displacements of the structure as follows:

$$\Delta_M = C_d \delta_{\max} \quad (\text{Equation 16-45})$$

where δ_{\max} is the calculated maximum displacement at Level x as defined in ASCE 7 Section 12.8.4.3.

Adjacent buildings on the same property shall be separated by at least a distance Δ_{MT} , where

$$\Delta_{MT} = \sqrt{(\Delta_{M1})^2 + (\Delta_{M2})^2} \quad (\text{Equation 16-46})$$

and Δ_{M1} and Δ_{M2} are the maximum inelastic response displacements of the adjacent buildings.

Where a structure adjoins a property line not common to a public way, the structure shall also be set back from the property line by at least the displacement, Δ_M , of that structure.

Exception: Smaller separations or property line setbacks shall be permitted when justified by rational analysis.

1614.1.8 ASCE 7, 12.12.4. Modify ASCE 7 Section 12.12.4 to read as follows:

12.12.4 Deformation Compatibility for Seismic Design Category D through F. For structures assigned to Seismic Design Category D, E, or F, every structural component not included in the seismic force-resisting system in the direction under consideration shall be designed to be adequate for the gravity load effects and the seismic forces resulting from displacement to the design story drift (Δ) as determined in accordance with Section 12.8.6 (see also Section 12.12.1).

Exception: Reinforced concrete frame members not designed as part of the seismic force-resisting system shall comply with Section 21.9 of ACI 318.

When determining the moments and shears induced in components that are not included in the seismic force-resisting system in the direction under consideration, the stiffening effects of adjoining rigid structural and nonstructural elements shall be considered and a rational value of member and restraint stiffness shall be used.

When designing the diaphragm to comply with the requirements stated above, the return walls and fins/canopies at entrances shall be considered. Seismic compatibility with the diaphragm shall be provided by either seismically isolating the element or by attaching the element and integrating its load into the diaphragm.

9.01.140 Special Inspection and Structural Observation.

Amend Sections 1704.1, 1704.4, 1704.8, 1709.1, and 1709.2 per the above geological findings as follows:

Section 1704.1 Special Inspections.

1704.1 General. Where application is made for construction as described in this section, the owner or the registered design professional in responsible charge acting as the owner's agent shall employ

one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. These inspections are in addition to the inspections specified in Section 109, Appendix Chapter 1.

Exceptions:

1. Special inspections are not required for work of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.
2. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.

3.[HCD 1] The provisions of Health and Safety Code Division 13, Part 6 and the California Code of Regulations, Title 25, Division 1, Chapter 3, commencing with Section 3000, shall apply to the construction and inspection of factory-built housing as defined in Health and Safety Code Section 19971.

4. Shoring Construction. During excavation of shoring foundation and installation of the shoring member, special inspection is required per City of Manhattan Beach procedures.

1704.4 Concrete Construction. The special inspections and verifications for concrete construction shall be as required by this section and Table 1704.4.

Exceptions: Special inspection shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less in height 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).
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. Not adopted.
5. Concrete patios, driveways and sidewalks, on grade.

1704.8 Pile foundation and connecting grade beams. Special inspections shall be performed during installation and testing of pile foundations as required by Table 1704.8. The approved soils report, required by Section 1802.2, and the documents prepared by the registered design professional in responsible charge shall be used to determine compliance. Special inspections for connecting grade beams shall be in accordance with Section 1704.4.

1709 Structural Observation.

1709.1 General. Where required by the provisions of Section 1709.2 or 1709.3 the owner shall employ the registered design professional in responsible charge for the structural design, or another registered design professional designated by the registered design professional in responsible charge for the structural design to perform structural observations as defined in Section 1702.

The owner or owner's representative shall coordinate and call a preconstruction meeting between the registered design professional in responsible charge for the structural design, structural observer, contractor, affected subcontractors and special inspectors. The structural observer shall preside over the meeting. The purpose of the meeting shall be to identify the major structural

elements and connections that affect the vertical and lateral load resisting systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the report submitted to the building official.

Observed deficiencies shall be reported in writing to the owner's representative, special inspector, contractor and the building official. Upon the form prescribed by the building official, the structural observer shall submit to the building official a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer which states that all observed deficiencies have been resolved is required before acceptance of the work by the building official.

1709.2 Structural observations for seismic resistance. Structural observations shall be provided for those structures included in Seismic Design Category D, E or F, as determined in Section 1613, where one or more of the following conditions exist:

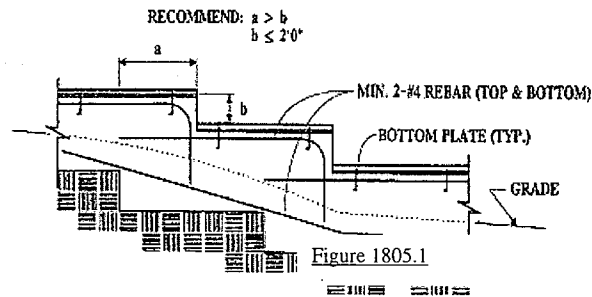
1. The structure is classified as Occupancy Category III or IV in accordance with Section 1604.5.
2. The height of the structure is greater than 75 feet (22860 mm) above the base.
3. The structure is classified as Occupancy Category I or II in accordance with Section 1604.5 and a lateral design is required for the structure or portion thereof.
Exception: One-story wood framed Group R-3 and Group U Occupancies less than 2000 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 in responsible charge of the design.
5. When such observation is specifically required by the building official.

9.01.150 Footings and foundations, Structural concrete, Structural steel

Sections 1805.1, 1805.4.2, 1805.4.5, 1805.4.6, 1805.5, 1908, 2205.4 are hereby amended per the above geological finding as follows:

1805.1 General. Footings and foundations shall be designed and constructed in accordance with Sections 1805.1 through 1805.9. Footings and foundations shall be built on undisturbed soil, compacted fill material or controlled low-strength material (CLSM). Compacted fill material shall be placed in accordance with Section 1803.5. CLSM shall be placed in accordance with Section 1803.6.

The top surface of footings shall be level. The bottom surface of footings is permitted to have a slope not exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings shall be stepped where it is necessary to change the elevation of the top surface of the footing or where the surface of the ground slopes more than one unit vertical in 10 units horizontal (10-percent slope). This stepping requirement shall also apply to the top surface of grade beams supporting walls. Footings shall be reinforced with four 1/2-inch diameter (12.7 mm) deformed reinforcing bars. Two bars shall be placed at the top and bottom of the footings as shown in Figure 1805.1.



STEPPED FOUNDATIONS

Table 1805.4.2 Footings Supporting Walls of Light-framed Construction:

TABLE 1805.4.2
FOOTINGS SUPPORTING WALLS OF LIGHT-FRAMED CONSTRUCTION^{a, b, c, d, e}

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

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

- Depth of footings shall be in accordance with Section 91.1805.2
- The ground under the floor is permitted to be excavated to the elevation of the top of the footing.
- Not adopted.
- See Section 1908 for additional requirements for footings of structures assigned to Seismic Design Category C, D, E or F.
- For thickness of foundation walls, see Section 91.1805.5
- Footings are permitted to support a roof in addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

Section 1805.4.5 of the 2007 California Building Code is hereby deleted and replaced with the phrase "Not adopted".

Section 1805.4.6 of the 2007 California Building Code is hereby deleted and replaced with the phrase "Not adopted".

Section 1805.5 of the 2007 California Building Code is hereby deleted in its entirety.

Section 1805.5 of the 2007 California Building Code is added to read as follows:

1805.5 Foundation walls. Concrete and masonry foundation walls shall be designed in accordance with Chapter 19 or 21.

Section 1908 Structural Concrete. Modifications to ACI 318 is hereby amended per the above geological findings:

1908.1 General. The text of ACI 318 shall be modified as indicated in Sections 1908.1.1 through 1908.1.17.

1908.1.17 ACI 318, Section 14.8. Modify ACI 318 Section 14.8.3 and 14.8.4 replacing equation (14-7), (14-8) and (14-9).

- Modify equation (14-7) of ACI 318 Section 14.8.3 as follows:
 I_{cr} shall be calculated by Equation (14-7), and M_a shall be obtained by iteration of deflections.

$$I_{cr} = \frac{E_s}{E_c} \left(A_s + \frac{P_u}{f_y} \frac{h}{2d} \right) (d - c)^2 + \frac{I_w c^3}{3} \quad (14-7)$$

and the value E_s/E_c shall not be taken less than 6

- Modify ACI 318 Sec, 14.8.4 as follows:

14.8.4 – Maximum out-of-plane deflection, Δ_s , due to service loads, including $P\Delta$ effects, shall not exceed $l_c/150$.

If M_a , maximum moment at mid-height of wall due to service lateral and eccentric loads, including $P\Delta$ effects, exceed $(2/3) M_{cr}$, Δ_s shall be calculated by Equation (14-8):

$$\Delta_s = \frac{2}{3} \Delta_{cr} + \frac{M_a - \frac{2}{3} M_{cr}}{M_n - \frac{2}{3} M_{cr}} \left(\Delta_n - \frac{2}{3} \Delta_{cr} \right) \quad (14-8)$$

If M_a does not exceed $(\frac{2}{3}) M_{cr}$, Δ_s shall be calculated by Equation (14-9):

$$\Delta_s = \left(\frac{M_a}{M_{cr}} \right) \Delta_{cr} \quad (14-9)$$

where:

$$\Delta_{cr} = \frac{5 M_{cr} I_c^2}{48 E_c I_g}$$

$$\Delta_n = \frac{5 M_n I_c^2}{48 E_c I_{cr}}$$

Section 1908.1.18 thru 1908.1.21 is added to Chapter 19 of the 2007 California Building Code to read as follows:

1908.1 General. The text of ACI 318 shall be modified as indicated in Sections 1908.1.1 through 1908.1.21.

1908.1.18 ACI 318, Section 21.4.4.1. Modify ACI 318 Section 21.4.4.1 as follows:

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 21.4.4.1, Items (a) through (c), over the full height of the member.

1908.1.19 ACI 318, Section 21.4.4. Modify ACI 318 by adding Section 21.4.4.7 as follows:

Section 21.4.4.7 – 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 21.3.4.1 and 21.4.5.1 for all the beams framing into the column above the level under consideration, transverse reinforcement as specified in ACI 318 Sections 21.4.4.1 through 21.4.4.3 shall be provided. For beams framing into opposite sides of the column, the moment components may be assumed to be of opposite sign. For the determination of the design strength, ϕP_n , of the column, these moments may be assumed to result from the deformation of the frame in any one principal axis.

1908.1.20 ACI 318, Section 21.7.4. Modify ACI 318 by adding Section 21.7.4.6 as follows:

Section 21.7.4.6 – Walls and portions of walls with $P_u > 0.35P_o$ shall not be considered to contribute to the calculated strength of the structure for resisting earthquake-induced forces. Such walls shall conform to the requirements of Section 1631.2, Item 4 ACI 318 Section 21.11.

1908.1.21 ACI 318, Section 21.9.4. Modify ACI 318 section 21.9.4 by adding the following:

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

Section 1908.1.15 of the 2007 California Building Code is amended to read as follows:

1908.1.15 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 shall not have elements of structural plain concrete, except as follows:

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

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

2205.4 Structural Steel. Modifications to AISC 341.

2205.4.1 Part I, Structural Steel Building Provisions Modifications.

2205.4.1.1 Part I, Section 13, Special Concentrically Braced Frames (SCBF) Modifications.

2205.4.1.1.1 AISC 341, Part I, 13, Members. Add a new section as follows:

AISC 341, 13.2f – Member Types

The use of rectangular HSS are not permitted for bracing members, unless filled solid with cement grout having a minimum compressive strength of 3000 psi (20.7 MPa) at 28 days. The effects of composite action in the filled composite brace shall be considered in the sectional properties of the system where it results in the more severe loading condition or detailing.

9.01.160 Masonry chimneys.

Section 2113.1 is hereby amended to add 2113.1.2 per the above geological finding as follows:

2113.1.2 Design. Masonry chimneys shall be designed and constructed to comply with applicable design requirements of this Section.

Notwithstanding any other provisions of this code, an existing masonry chimney which is altered or repaired more than 10 percent of its replacement cost within any 12-month period shall have its entire chimney structure comply with the current requirements of this Code or other standards approved by the Building Official.

9.01.170 Wood.

Chapter 23, Sections 2305, 2306, and 2308 are hereby amended for the above geological finding per the following:

Section 2305 General Design Requirements for Lateral-Force-Resisting Systems

2305.2.5 Rigid Diaphragms. Design of structures with rigid diaphragms shall conform to the structure configuration requirements of Section 12.3.2 of ASCE 7 and the horizontal shear distribution requirements of Section 12.8.4 of ASCE 7.

Wood structural panel diaphragms shall not be considered as transmitting lateral forces by rotation. Rigid wood diaphragms are permitted to cantilever past the outermost supporting shear wall (or other vertical resisting element) a length, l , of not more than 25 feet (7620 mm) or two-thirds of the diaphragm width, w , whichever is smaller. Figure 2305.2.5(2) illustrates the dimensions of l and w for a cantilevered diaphragm.

Section 2305.3.7.1 is added to read as follows:

2305.3.7.1 Hold-down connectors. Hold-down connectors shall be designed to resist shear wall overturning moments using approved cyclic load values or 75 percent of the allowable earthquake load values that do not consider cyclic loading of the product. Connector bolts into wood framing require steel plate washers on the post on the opposite side of the anchorage device. Plate size

shall be a minimum of 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Hold-downs shall be re-tightened just prior to covering the wall framing.

Section 2305.3.12 is added to read as follows:

2305.3.12 Quality of Nails. Mechanically driven nails used in wood structural panel shear walls shall meet the same dimensions as that required for hand-driven nails, including diameter, minimum length and minimum head diameter. No clipped head or box nails 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.

Sections 2306.3.1, 2306.4.1 and Table 2306.4.1 are amended to read as follows:

2306.3.1 Wood structural panel diaphragms. Wood structural panel diaphragms are permitted to resist horizontal forces using the allowable shear capacities set forth in Table 2306.3.1 or 2306.3.2.

2306.4.1. Wood structural panel shear walls. The allowable shear capacities for wood structural panel shear walls shall be in accordance with Table 2306.4.1. These capacities are permitted to be increased 40 percent for wind design. Wood shear walls shall be constructed of wood structural panels and not less than 4 feet by 8 feet (1219 mm by 2438 mm), except at boundaries and at changes in framing. Wood structural panel thickness for shear walls shall not be less than 3/8 inch thick and studs shall not be spaced at more than 16 inches on center.

The maximum allowable shear value for three-ply plywood resisting seismic forces is 200 pounds per foot (2.92 kN/m). Nails shall be placed not less than 1/2 inch (12.7 mm) in from the panel edges and not less than 3/8 inch (9.5mm) from the edge of the connecting members for shear greater than 350 pounds per foot (5.11kN/m). Nails shall be placed not less than 3/8 inch (9.5 mm) from panel edges and not less than 1/4 inch (6.4 mm) from the edge of the connecting members for shears of 350 pounds per foot (5.11kN/m) or less.

Any wood structural panel sheathing used for diaphragms and shear walls that are part of the seismic-force-resisting system shall be applied directly to framing members.

Exception: Wood structural panel sheathing in a horizontal diaphragm is 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.

Table 2306.4.1 of the 2007 California Building Code is hereby deleted in its entirety.

Table 2306.4.1 is added to read as follows:

TABLE 2306.4.1

ALLOWABLE SHEAR (POUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL SHEAR WALLS WITH FRAMING OF DOUGLAS FIR-LARCH OR SOUTHERN PINE^a FOR WIND OR SEISMIC LOADING^{b, c, h, i, j, l, m, n}

PANEL GRADE	MINIMUM NOMINAL PANEL THICKNESS (inch)	MINIMUM FASTENER PENETRATION IN FRAMING (inches)	ALLOWABLE SHEAR VALUE FOR SEISMIC FORCES PANELS APPLIED DIRECTLY TO FRAMING					ALLOWABLE SHEAR VALUE FOR WIND FORCES PANELS APPLIED DIRECTLY TO FRAMING				
			Fastener spacing at panel edges (inches)					Fastener spacing at panel edges (inches)				
			6	4	3	2 ^o	2 ^e	6	4	3	2 ^e	2 ^e
NAIL (common) size			NAIL (common) size					NAIL (common) size				
Structural I Sheathing	3/8	1-3/8	200	200	200	200	200	230 ^d	360 ^d	460 ^d	610 ^d	
	7/16	1-3/8	255	395	505	670	255 ^d	395 ^d	505 ^d	670 ^d		
	15/32	1-3/8	280	430	550	730	280	430	550	730		
		1-1/2	340	510	665 ^f	870	340	510	665 ^f	870		
	3/8	1-1/4	200	200	200	200	200	300	390	510		
	7/16	1-3/8	200	200	200	200	220 ^d	320 ^d	410 ^d	530 ^d		
Sheathing, plywood siding ^g except Group 5 Species	3/8	1-3/8	240	350	450	585	240 ^d	350 ^d	450 ^d	585 ^d		
	15/32	1-3/8	260	380	490	640	260	380	490	640		
	19/32	1-1/2	310	460	600 ^f	770	310	460	600 ^f	770		
	3/8	1-1/2	340	510	665 ^f	870	340	510	665 ^f	870		
		Nail Size (galvanized casing)		Nail Size (galvanized casing)					Nail Size (galvanized casing)			
			160	200	200	200	160	240	310	410		
			8d (2 1/2"x0.113")					8d (2 1/2"x0.113")				

Notes to Table 2306.4.1

For SI: 1 inch = 25.4 mm, 1 foot = 25.4 mm, 1 pound per foot = 14.5939 N/m.

- a. For framing of other species: (1) Find specific gravity for species of lumber in AF&PA NDS. (2) For staples find shear value from table above for Structural I panels (regardless of actual grade) and multiply value by 0.82 for species with specific gravity of 0.42 or greater, or 0.65 for all other species. (3) For nails find shear value from table above for nail size for actual grade and multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = $[1 - (0.5 - SG)]$, where SG = Specific Gravity of the framing lumber. This adjustment factor shall not be greater than 1.
- b. Panel edges backed with 2-inch nominal or ~~wider~~ thicker framing. Install panels either horizontally or vertically. Space fasteners maximum 6 inches on center along intermediate framing members for 3/8-inch and 7/16-inch panels installed on studs spaced 24 inches on center. For other conditions and panel thickness, space fasteners maximum 12 inches on center on intermediate supports.
- c. 3/8-inch panel thickness or siding with a span rating of 16 inches on center is the minimum recommended where applied direct to framing as exterior siding.
- d. Allowable shear values are permitted to be increased to values shown for 15/32-inch sheathing with same nailing provided (a) studs are spaced a maximum of 16 inches on center, or (b) panels are applied with long dimension across studs.
- e. Framing at adjoining panel edges shall be 3 inches nominal or ~~wider~~ thicker, and nails shall be staggered where nails are spaced 2 inches on center.
- f. Framing at adjoining panel edges shall be 3 inches nominal or ~~wider~~ thicker, and nails shall be staggered where both of the following conditions are met: (1) 10d (3"x0.148") nails having penetration into framing of more than 1-1/2 inches and (2) nails are spaced 3 inches on center.
- g. Values apply to all-veneer plywood. Thickness at point of fastening on panel edges governs shear values.
- h. Where panels applied on both faces of a wall and nail spacing is less than 6 inches o.c. on either side, panel joints shall be offset to fall on different framing members, or framing shall be 3-inch nominal or thicker at adjoining panel edges and nails on each side shall be staggered.
- i. In Seismic Design Category D, E or F, where shear design values exceed 350 pounds per linear foot, all framing members receiving edge nailing from abutting panels shall not be less than a single 3-inch nominal member, or two 2-inch nominal members fastened together in accordance with Section 2306.1 to transfer the design shear value between framing members. Wood structural panel joint and sill plate nailing shall be staggered in all cases. See Section 2305.3.11 for sill plate size and anchorage requirements.
- j. Galvanized nails shall be hot dipped or tumbled.
- k. Staples shall have a minimum crown width of 7/16 inch and shall be installed with their crowns parallel to the long dimension of the framing members.
- l. For shear loads of normal or permanent load duration as defined by the AF&PA NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.
- m. [DSA-SS & OSHPD 1, 2 and 4] Refer to Section 2305.2.4.2, which requires any wood structural panel sheathing used for diaphragms and shear walls that are part of the seismic-force-resisting system to be applied directly to framing members.
- n. The maximum allowable shear value for three-ply plywood resisting seismic forces is 200 pounds per foot (2.92 kN/m).

Section 2306.4.5 of the 2007 California Building Code is amended to read as follows:

2306.4.5 Shear walls sheathed with other materials. Shear wall capacities for walls sheathed with lath, plaster or gypsum board shall be in accordance with Table 2306.4.5. Shear walls sheathed with lath, plaster or gypsum board shall be constructed in accordance with Chapter 25 and Section 2306.4.5.1. Walls resisting seismic loads shall be subject to the limitations in Section 12.2.1 of ASCE 7. The allowable shear values shown in Table 2306.4.5 for material in Category 1 is limited to 90 pound per foot (1.31 kN/m); materials in Category 2 thru 4 are limited to 30 pound per foot (438 N/m). Shear walls sheathed with lath, plaster or gypsum board shall not be used below the top level in a multi-level building.

Table 2306.4.5 of the 2007 California Building Code is hereby deleted in its entirety.

Table 2306.4.5 of the 2007 California Building Code is added to read as follows:

TABLE 2306.4.5

ALLOWABLE SHEAR FOR WIND OR SEISMIC FORCES FOR SHEAR WALLS OF LATH AND PLASTER OR GYPSUM BOARD WOOD FRAMED WALL ASSEMBLIES

TYPE OF MATERIAL	THICKNESS OF MATERIAL	WALL CONSTRUCTION	FASTENER SPACING ^b MAXIMUM (inches)	SHEAR VALUE ^{a,c} (plf)		MINIMUM FASTENER SIZE ^{e,d,j,k,l}	
				Seismic ⁱ	Wind		
1. Expanded metal, or woven wire lath and portland cement plaster	7/8"	Unblocked	6	90	180	No. 11 gage, 1-1/2" long, 7/16" head 16 Ga. Galv. Staple, 7/8" legs	
2. Gypsum lath, plain or perforated	3/8" lath and 1/2" plaster	Unblocked	5	30	100	No. 13 gage, 1-1/8" long, 19/64" head, plasterboard nail 16 Ga. Galv. Staple, 1-1/8" long 0.120" Nail, min. 3/8" head, 1-1/4" long	
3. Gypsum sheathing	1/2" x 2' x 8'	Unblocked	4	30	75	No. 11 gage, 1-3/4" long, 7/16" head, diamond-point, galvanized	
	1/2" x 4'	Blocked ^f Unblocked	4 7	30 30	175 100		
	5/8" x 4'	Blocked	4" edge/ 7" field	30	200	6d galvanized 0.120" Nail, min. 3/8" head, 1-3/4" long	
4. Gypsum board, gypsum veneer base or water-resistant gypsum backing board	1/2"	Unblocked ^f	7	30	75	5d cooler (1-5/8" x 0.086") or wallboard 0.120" Nail, min. 3/8" head, 1-1/2" long 16 Gage Staple, 1-1/2" long	
		Unblocked ^f	4	30	110		
		Unblocked	7	30	100		
		Unblocked	4	30	125		
		Blocked ^g	7	30	125		
		Blocked ^g	4	30	150		
		Unblocked	8/12 ^h	30	60		No. 6- 1-1/4" screws ⁱ
		Blocked ^g	4/16 ^h	30	160		
	Blocked ^g	4/12 ^h	30	155			
	Blocked ^{f,g}	8/12 ^h	30	70			
	5/8"	Unblocked ^f	7	30	115	6d cooler (1-7/8" x 0.092") or wallboard 0.120" Nail, min. 3/8" head, 1-3/4" long 16 Gage Staple, 1-1/2" legs, 1-5/8" long	
			4	30	145		
		Blocked ^g	7	30	145		
			4	30	175		
		Blocked ^g Two ply	Base ply: 9 Face ply: 7	30	250	Base ply-6d cooler (1-7/8" x 0.092") or wallboard 1-3/4" x 0.120" Nail, min. 3/8" head 1-5/8" 16 Ga. Galv. Staple Face ply-8d cooler (2-3/8" x 0.113") or wallboard 0.120" Nail, min. 3/8" head, 2-3/8" long 15 Ga. Galv. Staple, 2-1/4" long	
		Unblocked	8/12 ^h	30	70	No. 6- 1-1/4" screws ⁱ	
Blocked ^g	8/12 ^h	30	90				

Notes to Table 2306.4.5

For SI: 1 inch = 25.4 mm, 1 foot = 25.4 mm, 1 pound per foot = 14.5939 N/m.

- a. These shear walls shall not be used to resist loads imposed by masonry or concrete construction (see Section 2305.1.5). Values shown are for short-term loading due to wind or seismic loading. Walls resisting seismic loads shall be subject to the limitations in Section 12.2.1 of ASCE 7. Values shown shall be reduced 25 percent for normal loading.
- b. Applies to fastening at studs, top and bottom plates and blocking.
- c. Alternate fasteners are permitted to be used if their dimensions are not less than the specified dimensions. Drywall screws are permitted to substitute for the 5d (1-5/8" x 0.086"), and 6d (1-7/8" x 0.092")(cooler) nails listed above, and No. 6 1-1/4 inch Type S or W screws for 6d (1-7/8" x 0.092")(cooler) nails.
- d. For properties of cooler nails, see ASTM C 514.
- e. Except as noted, shear values are based on maximum framing spacing of 16 inches on center.
- f. Maximum framing spacing of 24 inches on center.
- g. All edges are blocked, and edge fastening is provided at all supports and all panel edges.
- h. First number denotes fastener spacing at the edges; second number denotes fastener spacing at intermediate framing members.
- i. Screws are Type W or S.
- j. Staples shall have a minimum crown width of 7/16 inch, measure outside the legs, and shall be installed with their crowns parallel to the long dimension of the framing members.
- k. Staples for the attachment of gypsum lath and woven-wire lath shall have a minimum crown width of ¼ inch, measured outside the legs.
- l. This construction shall not be used below the top level of wood construction in a multi-level building.

Section 2308 of the 2007 California Building Code is amended to read as follows:

2308.3.4 Braced wall line support. Braced wall lines shall be supported by continuous foundations.

2308.12.1 Number of stories. Structures of conventional light-frame construction shall not exceed one story in height in Seismic Design Category D or E.

2308.12.2 Concrete or masonry. Concrete or masonry walls or masonry veneer shall not extend above the basement.

Exception: Masonry veneer is permitted to be used in the first story above grade plane in Seismic Design Category D, provided the following criteria are met:

1. Type of brace in accordance with Section 2308.9.3 shall be Method 3 and the allowable shear capacity in accordance with Table 2306.4.1 shall be a minimum of 350 plf (5108 N/m).
2. The bracing of the first story shall be located at each end and at least every 25 feet (7620 mm) o.c. but not less than 45 percent of the braced wall line.
3. Hold-down connectors shall be provided at the ends of braced walls for the first floor to foundation with an allowable design of 2,100 pounds (9341 N).
4. Cripple walls shall not be permitted.
5. Anchored masonry and stone wall veneer shall not exceed 5 inches (127 mm) in thickness, shall conform to the requirements of Division 14 and shall not extend more than 5 feet (1524 mm) above the first story finished floor.

2308.12.4 Braced wall line sheathing. Braced wall lines shall be braced by one of the types of sheathing prescribed by Table 2308.12.4 as shown in Figure 2308.9.3. The sum of lengths of braced wall panels at each braced wall line shall conform to Table 2308.12.4. Braced wall panels shall be distributed along the length of the braced wall line and start at not more than 8 feet (2438 mm) from each end of the braced wall line. Panel sheathing joints shall occur over studs or blocking. Sheathing shall be fastened to studs, top and bottom plates and at panel edges occurring over blocking. Wall framing to which sheathing used for bracing is applied shall be nominal 2 inch wide [actual 1½ inch (38 mm)] or larger members, spaced a maximum of 16 inches on center. Nailing shall be minimum 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.

Braced wall panel construction types shall not be mixed within a braced wall line.

Braced wall panels required by Section 2308.12.4 may be eliminated when all of the following requirements are met:

1. One story detached Group U occupancies not more than 25 feet in depth or length.

2. The roof and three enclosing walls are solid sheathed with ½-inch nominal thickness wood structural panels with 8d common nails placed 3/8 inches from panel edges and spaced not more than 6 inches on center along all panel edges and 12 inches on center along intermediate framing members. Wall openings for doors or windows are permitted provided a minimum 4 foot wide wood structural braced panel with minimum height to length ratio of 2 to 1 is provided at each end of the wall line and that the wall line be sheathed for 50% of its length.

2308.12.5 Attachment of sheathing. Fastening of braced wall panel sheathing shall not be less than that prescribed in Table 2308.12.4 or Table 2304.9.1. Wall sheathing shall not be attached to framing members by adhesives.

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

**TABLE 2308.12.4
WALL BRACING IN SEISMIC DESIGN CATEGORIES D AND E
(Minimum Length of Wall Bracing per each 25 Linear Feet of Braced Wall Line^a)**

CONDITION	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	10 feet 8 inches	14 feet 8 inches	18 feet 8 inches	25 feet 0 inches
	S-W	5 feet 4 inches	8 feet 0 inches	9 feet 4 inches	12 feet 0 inches

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 shall be at least 4'-0" long or both faces of the wall for G-P sheathing shall be at least 8'-0" long; h/w ratio shall not 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 shall not exceed 2:1 and design for uplift is required.

b. G-P = gypsum board, portland cement plaster or gypsum sheathing boards; S-W = wood structural panels.

c. Nailing as specified below shall 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 shall be 15/32" thick nailed with 8d nails, at 6:6:12.

SECTION 3. Chapter 12 of Title 9 of the Manhattan Beach Municipal Code is hereby amended in its entirety as follows:

Chapter 12. Electrical Code.

9.12.010 Adoption of California Electrical Code.

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive of the Government Code of the State and subject to the particular additions, amendments, and deletions set forth in this chapter, the rules, regulations, provisions, and conditions set forth in those certain Codes entitled "California Electrical Code, 2007 Edition ("NEC"), " including the Appendices and Tables therein contained, promulgated and published by the National Fire Protection Association of Quincy, Massachusetts and

the California Building Standards Commission, including the appendices and tables therein contained, one (1) full printed copy of which, printed as a Code in book form, was by the Council ordered filed and which has been actually filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as though set forth herein at length, are hereby established and adopted as the rules, regulations, standards, provisions, and conditions to be observed and followed in the installation, arrangement, alteration, repair, use, and operation of electrical wire connections, fixtures, and other electrical appliances, and subject to the additions, amendments, and deletions set forth in this chapter, said Code with its Annexes A, B, C, and Tables, containing said rules, regulations, standards, provisions, and conditions, is hereby established and adopted, and the same shall be designated, known, and referred to as the "Electrical Code" of and for the City.

9.12.020 Fees.

California Electrical Code Sections 89.108.4.2 is hereby amended to add the following paragraph for administrative requirements as follows:

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

9.12.030 Plans and specifications.

California Electrical Code Section 89.108.4.3 is hereby amended to add the following paragraphs for administrative requirements:

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

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

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

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

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

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

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

9.12.040 Penalties.

California Electrical Code Section 89.108.4.5 is hereby added for administrative requirements.

- (a) Any person, firm, or corporation violating any of the provisions of this Chapter, or of the Electrical Code adopted thereby, shall be guilty of a misdemeanor and upon conviction of any such violation such person shall be punishable by a fine of not more than one thousand dollars or by imprisonment for a period of not to exceed six months, or by both such fine and imprisonment in the discretion of the Court.
- (b) Every such person shall be deemed guilty of a separate offense for each and every day during which, or during any portion of which, any of the provisions of this Code are violated, committed, continued, or permitted by such person, and shall be punishable therefore as herein provided.

9.12.050 Services undergrounding.

California Electrical Code Section 230-30 is amended per the above geological and topographical findings by the addition of subsection (5) to read as follows:

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

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

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

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

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

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

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

(f) Waiver of Underground Requirements. If topographical, soil, or any other conditions make such underground installations unreasonable or impractical, a waiver of the requirements of this section may be granted by the Building Official, (a written approval from Southern California Edison is required when necessary) subject to the installation of all necessary electrical conduits, terminal boxes and other appurtenances as may be required to provide underground service in the future.

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

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

Exceptions: This section shall not apply to:

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

9.12.060 Service Equipment.

California Electrical Code Section 230-62 is amended per the above climatic findings by the addition of subsection (c) as follows:

- (c) Single Family Dwellings, Multi-family Industrial and Commercial Structures Service Equipment. The minimum capacity of the service equipment for a single family dwelling, industrial, and commercial structures shall be as follows:
 - (1) A service entry conduit not less than 1-1/2" in diameter of rigid galvanized steel.

9.12.070 Grounding and bonding.

California Electrical Code Section 250-53 is amended per the above climatic findings to add subsection (e) as follows:

- (e) Supplemental electrode required. All services shall have a minimum 5/8" by 8-foot long ground rod added, if not existing, when a new electrical service, water main or repipe is installed.

9.12.080 Conductor material.

California Electrical Code Section 310-2(b) is amended per the above climatic findings as follows:

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

9.12.090 Aluminum conductor material.

California Electrical Code Section 310-14 per the above climatic findings is deleted.

9.12.100 Ampacities of various conductors.

California Electrical Code Tables 310-16, 310-17, 310-18, 310-19, including Notes to said Tables, are amended per the above climatic findings to delete all references to aluminum or copper-clad aluminum.

SECTION 4. Chapter 32 of Title 9 of the Manhattan Beach Municipal Code is hereby amended per administrative requirements in its entirety as follows:

Chapter 32. PLUMBING CODE

9.32.010 Adoption of California Plumbing Code.

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "California Plumbing Code 2007 Edition," including the Appendices therein contained, promulgated and published by the International Association of Plumbing and Mechanical Officials, one (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, and provisions and conditions to be observed and followed in the moving, removal, demolition, condemnation, maintenance and use of plumbing, house drainage, house sewers, sanitary sewers, cesspools, septic tanks, gas piping, gas water heater vents, swimming pools, and gas outlets for swimming pool heaters and related subjects, items and matters as set forth in said Code, within the City. Subject to the additions, deletions and amendments set forth in this chapter, said Code, with its said Appendices Chapter 1, A, B, and D, is hereby established and adopted, and the same shall be designated, known and referred to as the "Plumbing Code" of and for the City.

9.32.020 Violations and penalties.

Appendix Sections 102.3.1 and 102.3.2 of the California Plumbing Code are hereby amended for administrative requirements as follows:

Any person, firm or corporation violating any provisions of this Code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not to exceed One thousand and no/100th (\$1,000.00) Dollars or by imprisonment in the County Jail of the County of Los Angeles, California, for not to exceed six (6) months, or by both such fine and imprisonment. Each separate day or any portion thereof during which any violation of this Code occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.

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

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

Every permit issued by the Administrative Authority under the provisions of this Code shall expire by limitation and become null and void, if the work authorized by such permit is not commenced within one

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

9.32.030 Plumbing permit fees.

Appendix Section 103.1 of the California Plumbing Code is hereby amended for administrative requirements as follows

Table 1-1 Plumbing Permit Fees of the California Plumbing Code 2007 Edition is hereby deleted for administrative requirements. The fees shall be determined as required by the most current City Resolution of Fees.

9.32.040 Non-water-using urinals as plumbing fixtures.

California Plumbing Code Section 402.3 Exception is hereby added per above climatic findings as follows:

402.3 Urinals.

Exception:

Non-water-using urinals as plumbing fixtures

(a) Purpose. This section is intended to promote the efficient use of water as a natural resource and reduce the local need for reliance on imported water for daily consumption.

(b) Scope. Notwithstanding any California Plumbing Code requirements to the contrary, this section establishes voluntary standards for the use of non-water-using urinals as plumbing fixtures in all occupancies and types of construction throughout the City.

(c) Definitions. "Non-water-using urinals" are urinal plumbing fixtures designed to receive and convey only liquid waste (urine) through a trap seal and into the gravity drainage system without the use of water for such function.

(d) Material standards. Fixtures shall be manufactured in compliance with the requirements for ASME A112.19.2M-1998 American National Standard for Vitreous China Plumbing Fixtures, American Society of Mechanical Engineers or ANSI Z124.9-1994, American National Standard for Urinal Fixtures, American National Standards Institute. Fixtures shall be permanently marked with the manufacturer's name and model number or description.

(e) Testing and listing requirements. Testing laboratories and test reports shall comply with ICC Acceptance Criteria for Test Reports (AC85) and Section 4.2 of the ICC-ES Rules of Procedure for Evaluation Reports. Reports of tests showing conformance of the units to the material standards shall be submitted for approval by an approved testing agency. Evaluation shall use the ICC Evaluation Guideline EG267, Evaluation Guideline for Non-water-using Urinals as Plumbing fixtures, effective September 1, 2004 for review criteria.

Non-water-using urinals approved under an ICC Evaluation Service, Inc (ICC-ES) evaluation report shall be considered to comply with the requirements of this subsection.

(f) Installation and maintenance. Fixtures shall be installed and maintained in accordance with the manufacturer's instructions, any recognized listing or approval requirements and all other applicable provisions of the California Plumbing and California Building Codes. Potable water supply shall be provided but not connected to each fixture location. The owner of the building shall provide and maintain a maintenance log near the fixture that records the frequency of seal and trap replacements. Such maintenance log shall be available during operating hours for inspection by the building official.

SECTION 5. Chapter 52 of Title 9 of the Manhattan Beach Municipal Code is hereby amended per administrative requirements in its entirety as follows:

Chapter 52. SWIMMING POOL CODE

9.52.010 Adoption of Uniform Swimming Pool, Spa, and Hot Tub Code.

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the rules, regulations, provisions and conditions set forth in that certain Code entitled "Uniform Swimming Pool, Spa, and Hot Tub Code 2006 Edition," including all Appendices therein contained, promulgated and published by the International Association of Plumbing and Mechanical Officials of. One (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, provisions and conditions to be observed and followed in the erection, installation, alteration, repair, relocation, replacement, addition to, use or maintenance of any heating ventilating, comfort cooling, refrigerator systems, incinerators, or other miscellaneous heat producing appliances in the city; and subject to the additions, deletions, and amendments set forth in this chapter, said Code with its Appendices, containing said rules, regulations, standards, provisions, and conditions is hereby established and adopted, and the same shall be designated, known and referred to as the "Swimming Pool Code" of and for the City.

9.52.020 Violations and penalties.

Section 102.3.1 and 102.3.2 of the Uniform Swimming Pool Code are hereby amended for administrative requirements as follows:

Any person, firm or corporation violating any provisions of this Code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not to exceed One Thousand and no/100th (\$1,000.00) Dollars or by imprisonment in the County Jail of the County of Los Angeles, California, for not to exceed six (6) months, or by both such fine and imprisonment. Each separate day or any portion thereof during which any violation of this Code occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided. The issuance or granting of a permit or approval of plans and specifications shall not be deemed or construed to be a permit for, or an approval of, any violation of any of the provisions of this Code. No permit presuming to give authority to violate or cancel the provisions of this Code shall be valid, except insofar as the work or use which it authorized is lawful.

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

9.64.030 Swimming pool, spa, and hot tub permit fees.

Section 103.4 of the Uniform Swimming Pool Code is hereby amended for administrative requirements as follows:

Table 1-1 Swimming Pool, Spa, Hot Tub Permit Fees per administrative requirements is hereby deleted. The fee shall be determined as required by the most current City Resolution of Fees.

SECTION 6. Chapter 64 of Title 9 of the Manhattan Beach Municipal Code is hereby amended per administrative requirements in its entirety as follows:

Chapter 64. MECHANICAL CODE

9.64.010 Adoption of California Mechanical Code.

Pursuant to the provisions of Section 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions and amendments set forth in this chapter, the

rules, regulations, provisions and conditions set forth in that certain Code entitled "California Mechanical Code 2007 Edition," including all Appendices therein contained, promulgated and published by the International Association of Plumbing and Mechanical Officials of. One (1) full printed copy of which, printed as a Code in book form were by the Council ordered filed and which have been filed in the office of the City Clerk, expressly incorporated herein and made a part hereof as fully and for all intents and purposes as set forth herein at length, are hereby established and adopted as the rules, regulations, provisions and conditions to be observed and followed in the erection, installation, alteration, repair, relocation, replacement, addition to, use or maintenance of any heating ventilating, comfort cooling, refrigerator systems, incinerators, or other miscellaneous heat producing appliances in the city; and subject to the additions, deletions, and amendments set forth in this chapter, said Code with all of its Appendices, containing said rules, regulations, standards, provisions, and conditions is hereby established and adopted, and the same shall be designated, known and referred to as the "Mechanical Code" of and for the City.

9.64.020 Violations and penalties.

Appendix Section 110.0 of the California Mechanical Code is hereby amended for administrative requirements as follows

Any person, firm or corporation violating any provisions of this Code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not to exceed One Thousand and no/100th (\$1,000.00) Dollars or by imprisonment in the County Jail of the County of Los Angeles, California, for not to exceed six (6) months, or by both such fine and imprisonment. Each separate day or any portion thereof during which any violation of this Code occurs or continues shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided. The issuance or granting of a permit or approval of plans and specifications shall not be deemed or construed to be a permit for, or an approval of, any violation of any of the provisions of this Code. No permit presuming to give authority to violate or cancel the provisions of this Code shall be valid, except insofar as the work or use which it authorized is lawful.

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

9.64.030 Mechanical permit fees.

Appendix Section 115.2 of the California Mechanical Code is hereby amended for administrative requirements as follows:

Table 1-1 Mechanical Permit Fees per administrative requirements is hereby deleted. The fee shall be determined as required by the most current City Resolution of Fees.

SECTION 7. Any provisions of the Manhattan Beach Municipal Code, or appendices thereto, or any other ordinances of the City, to the extent that they are inconsistent with this ordinance, and no further, are hereby repealed.

SECTION 8. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or unconstitutional.

SECTION 9. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or unconstitutional.

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

SECTION 11. This notice shall be published by one insertion in *The Beach Reporter*, the official newspaper of the City, and this ordinance shall take effect and be in full force and operation thirty (30) days after its final passage and adoption.

SECTION 12. The City Clerk shall certify to the adoption of this ordinance; shall cause the same to be entered in the book of original ordinances of said City; shall make a minute of the passage and adoption thereof in the records of the meeting at which the same is passed and adopted; and shall within fifteen (15) days after the passage and adoption thereof cause the same to be published by one insertion in *The Beach Reporter*, the official newspaper of the City and a weekly newspaper of general circulation, published and circulated within the City of Manhattan Beach hereby designated for that purpose.

SECTION 13. This Ordinance will become effective thirty (30) days following its passage and adoption.

SECTION 14. The City Clerk shall cause a summary of this Ordinance to be published as provided by law. The summary shall be published and a certified copy of the full text of this Ordinance shall be posted in the Office of the City Clerk at least five (5) days prior to the City Council meeting at which this Ordinance is to be adopted. Within fifteen (15) days after the adoption of this Ordinance, the City Clerk shall cause a summary to be published with the names of those City Council members voting for and against this Ordinance and shall post in the Office of the City Clerk a certified copy of the full text of this Ordinance along with the names of those City Council members voting for and against the Ordinance.

PASSED, APPROVED and ADOPTED this 18th day of December, 2007.

Ayes:
Noes:
Absent:
Abstain:

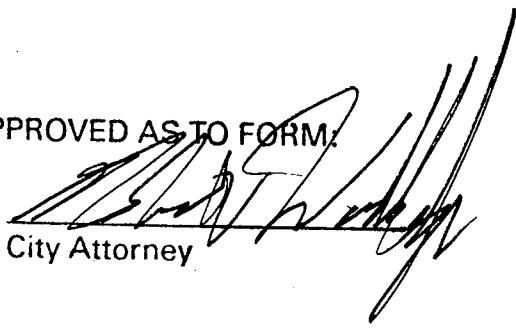
Mayor, City of Manhattan Beach, California

ATTEST:

City Clerk

APPROVED AS TO FORM:

By _____
City Attorney



ORDINANCE NO. 2108

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, ADOPTING BY REFERENCE THE 2007 EDITION OF THE CALIFORNIA FIRE CODE, 2006 EDITION OF THE INTERNATIONAL FIRE CODE, AND AMENDING THESE CODES THROUGH EXPRESS FINDINGS OF LOCAL NECESSITY.

The Council of the City of Manhattan Beach 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 § 901.4.1.1 – 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.
 2. CFC § 3301.1.3 and 3309. 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.

ADOPTION OF CODES.

Pursuant to California Government Code §§ 50022.1 to 50022.8, the City adopts and incorporates by reference the California Fire Code, 2007 Edition ("CFC"), including Appendix Chapters 1, 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 the International Fire Code, 2006 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.

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.

CHAPTER 16 OF TITLE 3 OF THE MANHATTAN BEACH MUNICIPAL CODE IS HEREBY AMENDED IN ITS ENTIRETY AS FOLLOWS:

“3.16.010 Adoption of 2007 California Fire Code.

Pursuant to the provisions of sections 50022.1 to 50022.10, inclusive, of the Government Code of the State and subject to the particular additions, deletions, amendments set forth in this chapter, the Rules, Regulations, Provisions, and Conditions set forth in that certain Code and standards known as the California Fire Code, including appendices, two full printed copies of which, printed as a code in book form, whereby the City Council ordered filed and which have been filed in the office of the City Clerk, and which are expressly incorporated herein and made a part hereof as fully and for all intents and purposes as thought set forth herein at length, are hereby established and adopted as the Rules, Regulations, Provisions, and Conditions to be observed and followed, and which shall control within the City for the safe guarding of life and property from the hazard of fire and explosion arising from the storage, handling and use of hazardous substances, materials and device, and from conditions therein set forth and which are hereby established and adopted are hereby designated and may be known and referenced to as the “Fire Prevention Code” of the City of Manhattan Beach.

3.16.020 Manhattan Beach Fire Code Amendments

The following amendments to the 2007 Fire Code are hereby adopted as applicable to the unique conditions of the City of Manhattan Beach:

Appendix Chapter 1 § 102.7 **Subjects Not Specifically Regulated by this Code.** Where no applicable standards or requirements are set forth in this code, or contained within other laws, codes, regulations or ordinances, the fire code official may interpret, administer and enforce this Code by reference to the standards of the National Fire Protection Association and such other nationally recognized fire safety standards as are set out in Chapter 45. Any decision of the fire code official relating to the interpretation of this Code may be appealed to the Board of Appeals.

§ 106.5 Inspection Requests. It is the duty of the person doing the work authorized by a permit to notify the fire code official that such work is ready for inspection. 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.

Appendix Chapter 1 § 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.

Appendix Chapter 1 § 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.

Appendix Chapter 1 § 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.

Appendix Chapter 1 § 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.

Appendix Chapter 1 § 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 chief 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.

Appendix Chapter 1 § 105.6.49 Woodworking. To operate a business which conducts woodworking, or operates as a cabinet shop or other similar purposes.

§ 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 Manhattan Beach.

"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.
5. "Fire Code Official" is the Fire Chief or a duly authorized representative.
6. "High-Rise Building" Is every building of any type of construction or occupancy having floors for human occupancy located more than 55 feet above the lowest level of fire vehicle access.

§ 405.2 Table 405.2 Footnote 'a'

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

§ 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 shall 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.

§ 503.4 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.

§ 503.2.1 Dimensions. Fire apparatus access roads must have an unobstructed width of not less than 20 feet (6096 mm) and an unobstructed vertical clearance of not less than 15 feet (4572 mm).

EXCEPTIONS:

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.

§ 508.1 Required Water Supply. Water supplies and fire hydrant requirements must be required in accordance with Section 508.

§ 508.1.1 New facilities. An approved water supply capable of supplying the required fire flow for fire protection must be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

§ 508.1.2 Existing facilities. When required by the fire code official, water supply and fire hydrants must be provided at existing facilities when the fire load potential exceeds the water supply availability.

§ 508.5.1 Additional On-site fire hydrants. When any portion of the facility or building protected is in excess of 150 feet (45 720 mm) from a water supply on a public street, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow must be provided when required by the Fire code official. See Section Appendix C.

§ 901.4.5 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.

§ 901.10 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 shall be provided with at least one approved means for notification of the Fire Department and their only duty shall be to perform constant patrols of the protected premises and keep watch for fires.

§ 903.2.0.1 All Occupancies except Group R Division 3 and Group U, An Automatic Sprinkler System is Required in addition to all applicable items as listed within this section. An automatic sprinkler system shall be installed throughout all new structures that exceed 2,000 square feet in gross floor area or exceeds two stories in height, and any additional structures attached thereto.

§ 903.2.0.2 **Existing Occupancies, except Group R, Division 3.** An automatic sprinkler system shall be installed in all existing occupancies, except Group R, Division 3 whenever:

1. An addition or remodel causes the occupancy to exceed 2,000 square feet in gross floor area, or exceeds two stories in height.
2. The occupancy is 2,000 square feet in gross floor area and an addition, alteration, or remodel in excess of 50% of the value of the building is constructed. Existing building value shall be determined as set forth in the Uniform Building Code.

§ 903.2.0.3 **Group R Division 3 Occupancies.** An automatic sprinkler shall be installed in Group R, Division 3 occupancies for all attached or detached two family or condominium dwellings when the gross floor area exceeds 2,000 square feet, or which exceeds two stories in height.

An automatic sprinkler system shall be installed in all new attached garages.

An automatic sprinkler system shall be installed in attached garages when a remodel causes a change in square footage to the garage or when the remodel causes living area to be next to that garage.

§ 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.

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

§ 905.3.0.1 **Required Installations.** All occupancies, except Group R-3, less than 4 stories in height but greater than 10,000 square feet in sprinklered buildings are required to have a type III standpipe.

§ 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.

§ 1404.8 **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.

§ 2306.2 **Table 2306.2, 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.

§ 3301.1.3 **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.

§ 3309 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."

SECTION 2. 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 3. SAVINGS CLAUSE. Repeal of any provision of the MBMC 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 4. 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 5. 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 MBMC or other the city ordinance by this Ordinance will be rendered void and cause such MBMC provision or other the city ordinance to remain in full force and effect for all purposes.

SECTION 6. The City Clerk is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City of Manhattan Beach'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 7. This Ordinance will become effective thirty (30) days following its passage and adoption.

PASSED, APPROVED AND ADOPTED this 18th day of December, 2007.

Ayes:
Noes:
Absent:
Abstain:

Mayor, City of Manhattan Beach, California

ATTEST:

City Clerk

APPROVED AS TO FORM:

By



City Attorney