

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE OF THE CITY OF PASADENA ADOPTING THE CALIFORNIA CODE OF REGULATIONS TITLE 24 INCORPORATING THE 2007 CALIFORNIA BUILDING CODE CHAPTERS 1-35 AND APPENDIX CHAPTERS 1, C, I, J; THE 2007 CALIFORNIA ELECTRICAL CODE; THE 2007 CALIFORNIA MECHANICAL CODE; THE 2007 CALIFORNIA PLUMBING CODE, AND THE 2007 CALIFORNIA FIRE CODE ALL AS PUBLISHED BY THE CALIFORNIA BUILDING STANDARDS COMMISSION.

The people of the City of Pasadena ordain as follows:

**SECTION 1.** This ordinance, due to its length and the corresponding costs of publication, will be published by title and summary as permitted by Section 508 of the Charter. The approved summary of this ordinance reads as follows:

“SUMMARY

The ordinance adopts the 2007 edition of the California Building Code, the 2007 Edition of the California Fire Code, and related codes as required by state law. The ordinance also provides for some necessary amendments to the California Building Code to accommodate special topographic, geologic, and climatic conditions found in Pasadena, consistent with state law.

Ordinance No. \_\_\_\_\_ shall take effect upon its publication by title and summary.”

**SECTION 2.** Sections 14.03.050, 14.03.060, 14.04.025, Chapter 14.36 in its entirety of Title 14 of said code are hereby repealed.

**SECTION 3.** Chapter 14.03 ADMINISTRATIVE CODE is hereby amended as follows:

Section 14.03.010 is amended to read as follows:

**14.03.010 Adoption and filing.**

Except as herein provided by specific changes, the administrative, organizational and enforcement for the technical codes which regulate the site preparation and construction, alteration, moving, demolition, repair, use and occupancy of buildings, structures and building service equipment within the city shall be in accordance with the provisions and in the manner prescribed in administrative

provisions of the 2007 Edition of the California Building Code, as published by the California State Building Standards Commission.

Section 14.03.020 is amended to read as follows:

**14.03.020 Section 101.1 of Appendix Chapter 1 amended Title.**

Section 101.1 is amended to read:

This ordinance shall be known and cited as the Pasadena Building Code for Building Construction Regulation, and will be referred to herein as this Code.

Section 14.03.030 is amended to read as follows:

**14.03.030 Appendix 1 Section 103.1 of the California Building Code amended.**

Appendix 1 Section 103.1, Creation of Enforcement Agency, is amended to read:

Appendix 1 Section 103.1, There has been established heretofore in this jurisdiction a code enforcement agency entitled, The Planning and Development Department which employs a Building Official who shall be authorized to enforce the provisions of this code.

**SECTION 4. Chapter 14.04 BUILDING CODE AND RELATED CODES are hereby amended as follows:**

Section 14.04.010 is amended to read as follows:

**14.04.010 Adoption and filing.**

California Building Codes adopted. The 2007 California Building Code Chapters 1-35 and Appendix Chapters 1, C, I, and J; the 2007 California Electrical Code; The 2007 California Mechanical Code; the 2007 California Plumbing Code, and 2007 California Fire Code all as published by the California Building Standards Commission and as amended by the State Department of Housing And Community Development (HCD), the Division of the State Architect/Access and Compliance (DSA/AC), and the State Office of Statewide Health, Planning and Development (OSHPD); The 1997 Uniform Housing Code; The 1997 Uniform Code for the Abatement of Dangerous Buildings; all as published by the International Conference of Building Officials. One copy of all of the above publications is on file for public inspection and is hereby adopted with the same force and affect as though set out herein in full.

Section 14.04.015 is amended to read as follows:

**14.04.015 Section 105.2.1 is added to Appendix 1 Section 105.2 of the California Building Code to read as follows:**

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

Section 14.04.020 is amended to read as follows:

**14.04.020 Changes and additions to the adopted codes.**

Pursuant to the Health and Safety Code Sections 17358.5 and 17958.7, the City establishes the following local modifications. The requisite findings if applicable for such requirements are set forth in the ordinance fact sheet accompanying this ordinance.

**1. Section 1401.1 of the California Building Code is amended to read as follows:**

Scope. The provisions of this chapter shall establish the minimum requirements for exterior walls; exterior wall coverings; exterior wall openings; exterior windows doors; architectural trim; balconies and similar projections; and bay and oriel windows. No wood covering material shall be installed on any structure located in the very high, high and moderate fire hazard zones as identified by the Pasadena Fire Department. See urban Wildland Interface Code.

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

**2. Section 1505.1 of the California Building Code is amended to read as follows:**

General. Roof assemblies shall be divided into the classes defined below. Class A, B and C roof assemblies and roof coverings required to be listed by this section shall be tested in accordance with ASTM E 108 or UL 790. In addition, fire-retardant-treated wood roof coverings shall be tested in accordance with ASTM D 2898. The minimum roof coverings installed on buildings shall comply with Table 1505.1 based on the type of construction of the building. All roof assemblies and roof coverings shall be of not less than Class B. No wood roof covering material shall be installed on any structure located in the very high, high and moderate fire hazard zones as identified by the Pasadena Fire Department. See Urban Wildland Interface Code.

**3. Section 1505.6 of the California Building Code is amended to read as follows:**

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

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

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

(1) The materials have been approved and listed by the State Fire Marshal as complying with the requirements of this section.

(2) The materials have passed at least five years of the 10-year natural weathering test. The 10-year natural weathering test required by this subdivision shall be conducted in accordance with standard 15-2 of the 1994 edition of the Uniform Building Code at a testing facility recognized by the State Fire Marshal.

**4. Section 1510 of the California Building Code is amended by adding a section 1510.7 entitled roof sheathing to read as follows:**

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

**5. Section 1613.6.1 of the California Building code is amended to read 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:

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.

Each line of vertical elements of the lateral-force-resisting system complies with the allowable story drift of Table 12.12-1.

Vertical elements of the lateral-force-resisting system are light-framed walls sheathed with wood structural panels rated for shear resistance or steel sheets.

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.

**6. Section 1613.7 is added to Chapter 16 of the 2007 California Building Code to read as follows:**

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

**7. Sections 1614, 1614.1 and 1614.1.1 are added to Chapter 16 of the 2007 California Building Code to read as follows:**

**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.

**8. Section 1614.1.2 is added to Chapter 16 of the 2007 California Building Code to read as follows:**

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.

**9. Section 1614.1.4 is added to Chapter 16 of the 2007 California Building Code to read as follows:**

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

Structure Type	$C_t$	$\alpha$
Eccentrically braced steel frames <i>and buckling-restrained braced frames</i>	0.03 (0.0731) <sup>a</sup>	0.75

**10. Section 1614.1.5 is added to Chapter 16 of the 2007 California Building Code to read as follows:**

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

$$\theta = P_x \Delta / (V_x h_{sx} C_d) \quad \text{(Equation 12.8-16)}$$

**11. Section 1614.1.6 is added to Chapter 16 of the 2007 California Building Code to read as follows:**

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.

**12. Section 1614.1.7 is added to Chapter 16 of the 2007 California Building Code to read as follows:**

1614.1.7 ASCE 7, Section 12.12.3. Replaces 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 ( $\Delta M$ ).  $\Delta M$  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  $\delta_{max}$  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  $\Delta_{MT}$ , where

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

and  $\Delta_{M1}$  and  $\Delta_{M2}$  are the maximum inelastic response displacements of the adjacent buildings.

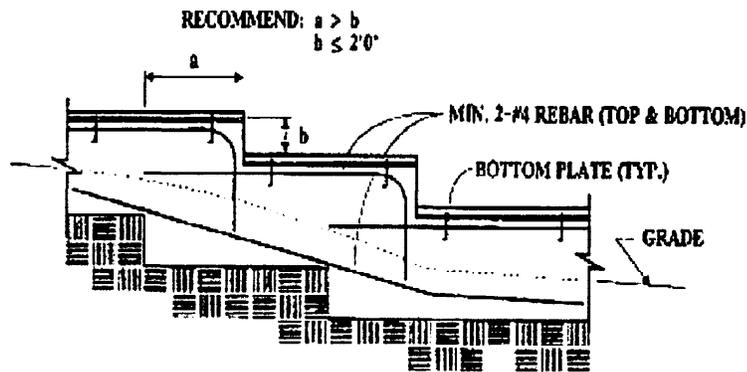
Where a structure adjoins a property line not common to a public way, the structure shall also be set back from the property line by at least the displacement,  $\Delta M$ , of that structure.

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

**13. Section 1805.1 of the 2007 California Building Code is amended to read 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**  
**Figure 1805.1**

**14. Table 1805.4.2 of the 2007 California Building Code is amended to read as follows:**

**TABLE 1805.4.2: FOOTINGS SUPPORTING WALLS OF LIGHT FRAME CONSTRUCTION** <sup>a,b,c,d,e</sup>

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

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

- a. Depth of footings shall be in accordance with Section 91.1805.2
- b. The ground under the floor is permitted to be excavated to the elevation of the top of the footing.
- c. Not adopted.
- d. See Section 1908 for additional requirements for footings of structures assigned to Seismic Design Category C, D, E or F.
- e. For thickness of foundation walls, see Section 91.1805.5
- f. 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.

**15. Section 1805.4.5 and 1805.6 of the 2007 California Building Code are hereby deleted and replaced with the phrase “not adopted”.**

**16. Section 1805.5 of the 2007 California Building Code is hereby deleted in their entirety and replaced with the following:**

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

**17. Section 1908.1 of the California Building code is amended by adding section 1908.1.17 to read as follows:**

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

*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).

1. 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.

$$I_{cr} = E_s/E_c[A_s+(P_u/f_y)(h/2d)](d-c)^2+(I_w c^3)/3 \quad (\text{Equation 14-7})$$

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

2. Modify ACI 318 Sec, 14.8.4 as follows:

14.8.4 – Maximum out-of-plane deflection,  $\Delta_s$ , 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  $(2/3) M_{cr}$ ,  $\Delta_s$  shall be calculated by Equation (14-8):

$$\Delta_s = 2/3\Delta_{cr} + (M_a - 2/3M_{cr})(\Delta_n - 2/3\Delta_{cr}) / (M_n - 2/3M_{cr})$$

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

$$\Delta_s = (M_a/M_{cr})\Delta_{cr}$$

where:

$$\Delta_{cr} = (5M_{cr}l_c^2) / (48E_cI_g)$$

$$\Delta_n = (5M_nl_c^2) / (48E_cI_{cr})$$

**18. Section 1908.1 is amended to read as shown below and 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 contra flexure 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:

21.4.4.7 – At any section where the design strength,  $\Phi P_n$ , 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,  $\phi P_n$ , 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:

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.

**19. 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.

1. 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, 1 top 1 bottom, 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.

**20. Section 2205.4 is added to Chapter 22 of the 2007 California Building Code to read as follows:**

2205.4 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.

**21. Section 2305.2.5 of the 2007 California Building Code is amended to read as follows:**

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.

**22. Section 2305.3.7.1 is added to Chapter 23 of the 2007 California Building Code 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.

**23. Section 2305.3.12 is added to Chapter 23 of the 2007 California Building Code 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.

**24. Sections 2306.4.1 and Table 2306.4.1 of the 2007 California Building Code are amended to read as follows:**

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. Shear walls are permitted to be calculated by principles of mechanics without limitations by using values for nail strength given in the AF&PA NDS and wood structural panel design properties given in the APA Panel Design Specification. 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<sup>a</sup> FOR WIND OR SEISMIC LOADING<sup>b, h, i, j, l, m, n</sup>**

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					
			NAIL (common) or staple size <sup>k</sup>			Fastener spacing at panel edges (inches)			NAIL (common) or staple size <sup>k</sup>			Fastener spacing at panel edges (inches)		
			6	4	2 <sup>e</sup>	6	4	2 <sup>e</sup>	6	4	2 <sup>e</sup>	6	4	2 <sup>e</sup>
Structural I Sheathing	3/8	1-3/8	8d (2 1/2"x0.131" common)			200	200	200	8d (2 1/2"x0.131" common)			230 <sup>d</sup>	360 <sup>d</sup>	460 <sup>d</sup>
			1-1/2 16 Gage			116	176	200	1-1/2 16 Gage			155	235	310
	7/16	1-3/8	8d (2 1/2"x0.131" common)			255	395	505	8d (2 1/2"x0.131" common)			255 <sup>d</sup>	395 <sup>d</sup>	505 <sup>d</sup>
			1-1/2 16 Gage			128	195	259	1-1/2 16 Gage			170	260	345
	15/32	1-3/8	8d (2 1/2"x0.131" common)			280	430	550	8d (2 1/2"x0.131" common)			280	430	550
			1-1/2 16 Gage			139	210	281	1-1/2 16 Gage			185	280	375
	3/8	1-1/2	10d (3"x0.148" common)			340	510	665	10d (3"x0.148" common)			340	510	665
			6d (2"x0.113" common)			200	200	200	6d (2"x0.113" common)			200	300	389
	7/16	1-3/8	8d (2 1/2"x0.131" common)			200	200	200	8d (2 1/2"x0.131" common)			220 <sup>d</sup>	320 <sup>d</sup>	410 <sup>d</sup>
			1-1/2 16 Gage			105	158	200	1-1/2 16 Gage			140	210	280
15/32	1-3/8	8d (2 1/2"x0.131" common)			240	350	450	8d (2 1/2"x0.131" common)			240 <sup>d</sup>	350 <sup>d</sup>	450 <sup>d</sup>	
		1-1/2 16 Gage			116	173	233	1-1/2 16 Gage			155	230	310	
19/32	1-1/2	8d (2 1/2"x0.131" common)			260	380	490	8d (2 1/2"x0.131" common)			260	380	490	
		10d (3"x0.148" common)			310	460	600	10d (3"x0.148" common)			310	460	600	
3/8	1-1/2	1-1/2 16 Gage			128	191	251	1-1/2 16 Gage			170	255	335	
		10d (3"x0.148" common)			340	510	665	10d (3"x0.148" common)			340	510	665	
	1	1-3/4 16 Gage			139	210	281	1-3/4 16 Gage			185	280	375	
	1-3/8	Nail Size (galvanized casing)			160	200	200	Nail Size (galvanized casing)			160	240	310	
		8d (2 1/2"x0.113")						8d (2 1/2"x0.113")					410	

### 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).

### **25. 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.

### **26. Table 2306.4.5 of the 2007 California Building Code is hereby deleted in its entirety and is replaced by the following.**

Table 2306.4.5 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 <sup>b</sup> MAXIMUM (inches)	SHEAR VALUE <sup>a,c</sup> (plf)		MINIMUM FASTENER SIZE <sup>c,d,i,k,l</sup>	
				Seismic	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	4	30	175	16 Ga. Galv. Staple, 1-3/4" long	
		Unblocked	7	30	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	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	4	30	110		
		Unblocked	7	30	100		
		Unblocked	4	30	125		
		Blocked <sup>g</sup>	7	30	125		
		Blocked <sup>g</sup>	4	30	150		
		Unblocked	8/12" <sup>h</sup>	30	60		
		Blocked <sup>g</sup>	4/16" <sup>h</sup>	30	160		
	5/8"	Blocked <sup>g</sup>	4/12" <sup>h</sup>	30	155	No. 6- 1-1/4" screws <sup>i</sup>	
		Blocked <sup>g</sup>	8/12" <sup>h</sup>	30	70		
	5/8"	Unblocked <sup>f</sup>	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		
			7	30	145		
		Blocked <sup>g</sup>	4	30	175		
Blocked <sup>g</sup>			Two ply	Base ply: 9 Face ply: 7	30		250
Unblocked			8/12" <sup>h</sup>	30	70		
Blocked <sup>g</sup>	8/12" <sup>h</sup>	30	90	No. 6- 1-1/4" screws <sup>i</sup>			

***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 3/4 inch, measured outside the legs.
- l. This construction shall not be used below the top level of wood construction in a multi-level building.

**27. Section 3109.1 of the California Building Code is amended to read as follows:**

General: Swimming pools and other bodies of water over 18 inches deep shall comply with the requirements of this section and other applicable sections of this code.

**28. Section 3109.2 of the California Building Code is amended to read as follows:**

SWIMMING POOL: Any structure intended for swimming, recreational bathing or wading that contains water over 18 inches deep. This includes in-ground, above ground and on ground pools; hot tubs; spas and fixed in place wading pools.

**29. Section 3109.4.4.2.1 is added to the California Building Code to read as follows:**

Fences required: In addition to the requirements in the California Building Code, a barrier in compliance with section 3109.4.4.3 of the CBC is required to isolate the pool or any other bodies of water over 18 inches deep from neighboring properties and public ways

Exception: When the swimming pool or any other bodies of water over 18 inches deep is fully enclosed around its perimeter by an enclosure complying to California Building Code Section 3109.4.4.3

**30. Section 8-408 of the 2007 California Historical Building Code is amended by adding the following:**

4. The use of wood on the exterior side of exterior walls shall be prohibited in the Extreme, high and moderate fire hazard severity zones as identified by the Pasadena Fire Department.

Exception: In the moderate fire hazard severity zone, the fire code official may, upon a showing of good cause and necessity, approved the use of fire-

resistive wood as part of class A listed assemblies, and may require additional mitigation as warranted, for the repair or maintenance of existing structures.  
Section 14.04.030 is amended to read as follows:

**14.04.030 Violations.**

All sections in the codes referenced in Section 14.04.010 herein pertaining to violations are amended in their entirety to read as follows:

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 chapter. Any person, firm, or corporation violating any of the provisions of this Ordinance, shall be deemed guilty of a misdemeanor, and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Ordinance is committed, continued, or permitted, and upon conviction of any such violation such persons shall be punished by a fine of not more than one thousand dollars (\$1,000) or by imprisonment for not more than one (1) year, or by both such fine and imprisonment.

In addition to the above penalty provisions, violation of any of the provisions of this chapter may be subject to the administrative proceedings set forth in Chapter 1.25 of this code.

Section 14.04.040 is amended to read as follows:

**14.04.040 Board of appeals.**

All sections in the respective codes pertaining to the Board of Appeals are hereby amended in their entirety to read as follows:

In order to hear and decide appeals or orders and determine the suitability of alternate materials and methods of construction and to provide for reasonable interpretations of the provisions of these Codes, there shall be and there is hereby created a Board of Appeals, composed of the Mayor and the City Council.

The city clerk shall be the secretary to the Board. The Board may adopt reasonable rules and regulations for conducting its investigations and shall render all its decisions and findings on contested matters, in writing to the building official, with a duplicate copy thereof to any appellant or contestant affected by any such decision of findings, and may recommend to the City Council such new legislation, if any, as is consistent therewith.

The City Council may prescribe by resolution, to employ at the cost and expense of the City, such qualified individuals as the Board, in its discretion, may deem reasonably necessary in order to assist it in its investigations and in making its findings and decisions.

Section 14.04.050 is amended to read as follows:

**14.04.050 Fees.**

The council shall by resolution adopt a schedule of fees for the permits issued pursuant hereto.

Section 14.04.080 is amended to read as follows:

**14.04.080 Moved building.**

Section 3408 of the California Building Code is amended by adding the following: Before a permit is issued, the building-mover shall furnish and file with the City Clerk, a good and sufficient bond in the principal sum of \$5,000.00 in favor of the City of Pasadena for the benefit of any person, firm or corporation who may be damaged directly by the moving of said building or structure, provided that any person, firm or corporation engaged in the business of moving buildings may file with the City Clerk a surety bond in the sum of \$10,000.00 indemnifying the City for the purposes, and in that event such person, firm or corporation need not file the \$5,000.00 bond herein above required for any single moving operation.

**SECTION 5. Chapter 14.05 EXCAVATION AND GRADING IN HILLSIDE AREAS** is amended as follows:

Section 14.05.010 is amended to read as follows:

**14.05.010 Excavation and grading.**

A. Applicability. The provisions of this chapter shall apply to excavation and grading activities on any one lot:

1. In hillside development overlay (HD) districts; and
2. On a slope any portion of which is greater than 15 percent.

B. Minimum Standards. In any matter in which any city employee, officer or board is given discretion under this chapter, no activity shall be permitted which would not also be allowed by Appendix J of the California Building Code as adopted by the city. Appendix J shall set the minimum performance standards under this chapter in such matters.

Section 14.05.020 is amended to read as follows:

**14.05.020 Purpose.**

The purpose of this chapter is to regulate excavation and grading within hillside districts and excavation and grading on a slope any portion of which is greater than 15 percent in order to:

- A. Safeguard life, limb, property and public welfare;
- B. Protect streams, lakes, reservoirs, and any other water bodies from pollution with chemicals, fuels, lubricants or any other harmful materials associated with construction or grading activities;
- C. Avoid pollution of the water bodies described above with nutrients, sediment materials, or other earthen or organic materials generated on or caused by surface runoff on or across the permit area;
- D. Preserve the contours of the natural landscape and land forms; and
- E. Prevent erosion and control sedimentation.

This chapter is enacted for the protection of the public and is not for the benefit of any private person or entity.

Section 14.050.030 is amended to read as follows:

**14.05.030 Scope.**

This chapter sets forth rules and regulations and describes measures to control excavation, grading and earthwork construction, including cuts, fills and embankments; establishes an administrative procedure for issuance of permits; and provides for approval of plans, specifications, and inspection of grading construction.

Section 14.05.040 is amended to read as follows:

**14.05.040 Hazards.**

A. Notice. Whenever the building official determines that any existing excavation, embankment or fill on private property has become a hazard to life and limb, or endangers property, or adversely affects the safety, use or stability of a public way or drainage channel, the owner of the property upon which the excavation or fill is located or other person or agent in control of said property, upon receipt of notice in writing from the building official describing the hazard, shall, within 48 hours, repair or eliminate such excavation or embankment or fill so as to eliminate the hazard and be in conformance with the requirements of this chapter. All such work shall be completed within 90 days from the date of notice, unless otherwise stipulated by the building official.

B. Failure to Comply. If the owner of the property fails to comply with the notice to eliminate the hazard the city council may order the building official to proceed with the work specified in the notice. A statement of the cost of work shall be transmitted to the city council, who shall cause said amount to be paid and levied as a special assessment against the property.

C. Costs. Costs incurred under subsection B of this section shall be paid out of the city treasury. Such costs shall be charged to the property involved as a special assessment, and shall be collected in the manner provided for special

assessments. To the extent permitted by law, the city may attach a lien to recover such costs.

Section 14.05.050 is amended to read as follows:

**14.05.050 Definitions.**

A. The following definitions shall apply to this chapter:

1. "Approval" means that the proposed work or completed work conforms to this chapter in the opinion of the building official.
2. "As-graded" means the extent of surface conditions on completion of grading.
3. "Bedrock" means the more-or-less consolidated rock in place either on or beneath the surface of the earth.
4. "Bench" means a relatively level step excavated into earth material on which fill is to be placed.
5. "Borrow" means earth material acquired from an offsite location for use in grading a site.
6. "Building official" means the chief building official or other designated authority charged with the administration and enforcement of this code, or such person's duly authorized representative.
7. "Civil engineer" means a professional engineer registered in the state of California to practice in the field of civil works.
8. "Civil engineering" means the application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the valuation, design and construction of civil works.
9. "Compaction" means the densification of a fill by mechanical means.
10. "Cut" means excavation.
11. "Earth material" means any rock, natural soil or fill and/or any combination thereof.
12. "Embankment" means a deposit of earth material placed by natural or artificial means.
13. "Engineering geologist" means a geologist certified in the state of California to practice engineering geology.
14. "Engineering geology" means the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soils for use in the design of civil works.

15. "Erosion" means the wearing away of the ground surface as a result of the movement of wind, water and/or ice.
16. "Excavation" means the mechanical removal of earth material.
17. "Export" means to transport away from the site.
18. "Fill" means deposit of earth material placed by artificial means and includes imported materials.
19. "Geotechnical engineer." See "soils engineer."
20. "Grade" means the vertical location of the ground surface. "Existing grade" means the grade prior to grading. "Rough grade" means the stages at which the grade approximately conforms to the approved plan. "Finish grade" means the final grade of the site which conforms to the approved plan.
21. "Grading" means any excavating or filling or combination thereof.
22. "Import" means transport to the site.
23. "Key" means a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed slope.
24. "Rainy season" means that period between October 15 of any year and April 15 of the following year.
25. "Retaining wall" means a wall designed to resist the lateral displacement of soil or other materials.
26. "Site" means any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.
27. "Soil" means naturally occurring superficial deposits overlying bedrock.
28. "Soils engineer (Geotechnical engineer)" means a civil engineer experienced and knowledgeable in the practice of soils engineering and duly registered in the state of California whose field of expertise is soils mechanics.
29. "Soils engineering" means the application of the principles of soils mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection and/or testing of the construction thereof.

Section 14.05.060 is amended to read as follows:

**14.05.060 Permits required.**

A. No person shall do, or cause or allow to be done, any of the following: grade, excavate or fill on any lands within HD districts and on a slope any portion of which is greater than 15 percent without first having obtained a grading permit pursuant to this chapter.

B. A separate permit shall be required for each separate site. A single grading permit covers both an excavation and fill on the same site.

C. No grading permit shall be issued for grading for a project or development for which a discretionary permit is required under this code prior to the approval of such discretionary permit.

Section 14.05.070 is amended to read as follows:

**14.05.070 Permit exemptions.**

No permit shall be required under this chapter for any of the following:

A. Grading done exclusively for agricultural purposes in connection with crops or animals, but not including grading for buildings or structures that require a building permit or registration certificate, unless such grading is exempt under other provisions of this section;

B. An excavation for pipeline or other underground utility lines; provided, that erosion control measures are incorporated into the project;

C. Public works projects not requiring a building permit including sewer and storm drain construction, utility trenches and retaining walls or grading accomplished as part of street maintenance activities;

D. A grading operation performed only once in a calendar year involving a cut or fill or combination thereof, 3 feet or less below or above existing grade, which is less than 50 cubic yards.

Section 14.05.080 is amended to read as follows:

**14.05.080 Grading permit requirements.**

A. Application. The most current provisions of Appendix Chapter 1, Section 105 of the California Building Code are applicable to grading and, in addition, the application shall state the estimated quantities of grading involved.

B. Plans and Specifications. Each application for a grading permit shall be accompanied by 3 sets of plans and specifications and 3 copies of supporting data. Plans shall be drawn to scale of at least 1-inch equals 20 feet upon substantial paper, Mylar or similar material and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that the proposed grading will conform to the provisions of this chapter and all other relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give the location of the work and the name and address of the owner, the person by whom they were prepared, the project soils engineer and the project engineering geologist. The plans and specifications shall be prepared and signed by a civil engineer.

C. Information on Plans and in Specifications. The plans shall include the following information:

1. Limiting dimensions, elevations or finished contours to be achieved by the grading and proposed drainage channels and related construction shown by contour map, cross-sections or other means. The contours shall be shown for the existing land conditions and the proposed final work. The proposed final grades shall indicate clearly all cut, fill and slopes, and show the calculation of the quantities of excavation and fill involved. Contours shall be shown according to the following schedule:

Natural Slope	Maximum Contour Interval(in feet)
2 percent or less	2
Over 2 percent	5;

2. General vicinity map of the proposed site;

3. Property limits and accurate contours of existing ground and details of terrain, soil types and area drainage, prepared, signed and sealed by a licensed surveyor;

4. Location of any buildings or structures on the property where the work is to be performed and the approximate location of any buildings or structures on land of adjacent owners which may be affected by the proposed grading operations;

5. Specifications of the construction and material requirements.

6. The following notes shall be placed on the plans:

a. In the case of emergency, call \_\_\_\_\_ (Responsible Person) at \_\_\_\_\_ (24-hour Phone Number)

b. The undersigned civil engineer will supervise erosion-control work and affirm to the best of his/her knowledge that work is in substantial conformance with the approved plans.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Section 14.05.081 is amended to read as follows:

**14.05.081 Engineering geology report.**

An engineering geology report shall be submitted with the application for a grading permit and shall include an adequate description of the geology of the site, provide conclusions and recommendations regarding the effect of geologic conditions on the proposed development, show calculations, and provide opinions and recommendations covering the adequacy of structural locations to be developed by the proposed grading based upon recognized engineering standards. The report shall be prepared by an engineering geologist. The building official may

waive the submittal of such report for hillside grading operations involving 250 cubic yards or less.

Section 14.05.082 is amended to read as follows:

**14.05.082 Soil engineering report.**

A soils engineering report shall be submitted with the application for a grading permit and shall include data and conclusions regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading and compaction procedures and design criteria for corrective measures when necessary, and opinions and recommendations covering adequacy of sites to be developed by the proposed grading based upon recognized engineering standards. The report shall be prepared by a soils engineer. The building official may waive the submittal of such report for hillside grading operations of 250 cubic yards or less.

Section 14.05.083 is hereby amended to read as follows:

**14.05.083 Hydrology and soil loss report.**

A soil loss report is required for grading in excess of 2,000 cubic yards. The soil loss report shall contain calculations showing the predicted soil loss under natural conditions, the soil loss potential, the soil loss during the grading and construction period, and the predicted annual loss following completion of the project based upon recognized engineering standards. Sheet and soil loss calculations shall be based upon the universal soil loss equation and factors, specific to the area to be graded, developed by the U.S. Soil Conservation Service. The report shall be prepared by a soils or civil engineer.

Section 14.05.084 is amended to read as follows:

**14.05.084 Erosion and sedimentation control design report and plans.**

An erosion and off-site sedimentation control design plan shall be submitted with the application for a grading permit. This plan shall describe in detail the necessary methods, management practices and mechanical devices which will be used to mitigate the release of sediment-laden waters from the project standards. The permittee shall sign a statement as part of the plan submittal concerning subsequent conformance with the maintenance requirements of the erosion control design plan. This report and plan shall include, but not be limited to, the following:

A. Slopes. Drainage shall be directed away from the faces of cut and fill slopes into approved drainage structures at the top of the slope. The faces of cut and fill slopes shall also be formed to control against erosion. This control may consist of stepping or other surface protection, as approved by the building official. The protection for the slopes shall be installed within 15 days after completion of the rough grading. Where cut slopes are not subject to erosion due to the erosion-

resistant character of the materials, such protection may be omitted if approved by the building official

B. Other Measures. Where graded slopes exceed a 3 to 1 ratio or 10 feet in height, they shall be protected with a temporary soil stabilization measure to be approved by the building official to provide immediate surface protection following completion of the rough grading if they will remain in the rough-graded condition during the rainy season.

C. Planting. The surface of all cut slopes more than 5 feet in height, except those cut slopes adequately stabilized from erosion by stepping or other physical surface protection pursuant to this section, and fill slopes more than 3 feet in height shall be permanently protected against damage by erosion by planting with approved plant material contained on a list maintained by the city. Such plant material shall be planted upon completion of the final grading in conjunction with the installation of final soil stabilization measures as specified above. Graded slopes exceeding 15 feet in vertical height shall be landscaped pursuant to a landscape plan approved by the building official or other responsible city official indicating the plant mix of groundcover, shrubs and trees by plant type, size and location of planting.

D. Irrigation. Slopes which require planting shall be provided with an approved system of irrigation, designed to cover all portions of the slope, the plans for which shall be submitted and approved prior to installation. A functional test of the system shall be required. All irrigation systems where required shall be designed on an individual lot basis unless commonly maintained in an approved manner.

E. Maintenance. Graded slopes and landscaped areas in subdivisions or parcel map areas shall be maintained in accordance with the requirements of this chapter by the sub-divider or its successor in interest until the individual lots or parcels are transferred to individual ownership or a homeowners association or similar group responsible for maintenance of the property.

F. The building official may waive the submittal of such report for hillside grading operations involving 2,000 cubic yards or less.

Section 14.05.085 is amended to read as follows:

**14.05.085 Storm damage precautions.**

Drainage collected on site or which crosses the site must be filtered, treated or controlled on site so that downstream drainage patterns are not changed or drainage systems overtaxed by a 25-year storm and so as to prevent the buildup of siltation from the site and erosion of downstream properties.

Section 14.05.086 is amended to read as follows:

**14.05.086 Grading activity during rainy season.**

Activities such as clearing of brush and vegetation shall not be initiated during the rainy season on any site which is not adequately protected with desilting basins or other temporary drainage or control measures.

1. Temporary Erosion Control. Temporary erosion control plans shall be provided for the following:

a. Temporary soil stabilization measures shall be installed on graded slopes exceeding a 3 to 1 ratio or 10 feet in height as required by subsection B of Section 14.05.084.

b. Desilting facilities shall be provided at all drainage outlets from the graded site, designed for a 25-year, 6-hour storm intensity. They must be detailed on the plans. Design and specific recommendations shall be submitted for the following:

i. Desilting basin volume based on gradient and nature of soils;

ii. The area of the graded site and identification of any temporary soil stabilization measures;

iii. Size of desilting basin outlet pipe and overflow;

iv. Dike requirements: minimum wall width, slope of walls, percent compaction, and other material features.

c. A standby crew for emergency work shall be available at all times during the rainy season. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of temporary devices or to repair any damaged erosion-control measures when rain is imminent.

d. Devices shall not be moved or modified without the approval of the building official.

e. All removable protective devices shown shall be in place at the end of each working day when the 5-day rain probability forecast by the National Weather Service of the Department of Commerce exceeds 40 percent.

f. After a rainstorm, all silt and debris shall be expeditiously removed from check berms and desilting basins and the basins pumped dry. Any graded slope surface protection measures damaged during a rainstorm shall also be repaired immediately.

g. Fill slopes at the site perimeter must drain away from the top of the slope at the conclusion of each working day.

h. A guard shall be posted on the site whenever the depth of water in any device exceeds 18 inches.

2. The plans required by this section shall indicate which streets will be paved and which drainage devices will be completed by October 15.

3. Placement of devices to reduce erosion damage within the site is left to the discretion of the civil engineer. These devices, if any, must be shown on the plan if their presence will affect the required capacity of the desilting basin.

4. Outlet conditions from the desilting basin shall not exceed downstream limitations, with the exception of overflow which is to be designed to provided capacity of 1.5 times the maximum design flow.

Section 14.05.087 is amended to read as follows:

**14.05.087 Building official review of grading permit.**

A. The building official shall review all materials for a grading permit required by this chapter to determine whether the application is complete. All incomplete applications shall be rejected.

B. A registered professional engineer employed by the building department shall review all plans and specifications pursuant to this chapter for completeness and accuracy and shall report the findings in writing.

Section 14.05.090 is amended to read as follows:

**14.05.090 Supplemental application information.**

The building official may also require the following additional information to be submitted with the permit application where applicable:

A. A schedule defining staging and timing of construction and estimated area of disturbance at strategic points during construction;

B. The equipment, methods and location of soils disposal;

C. A plan defining staging and timing of construction and estimated area of disturbance at strategic points during construction;

D. Such further applicable information as the building official may require to carry out the purposes of this chapter.

Section 14.05.095 is amended to read as follows:

**14.05.095 Fees.**

The city council shall by resolution establish the fees required by this section as prescribed in the general fee schedule.