ORDINANCE NO. __________

An ordinance amending Title 26 – Building Code – of the Los Angeles County Code, by adopting by reference the 2019 California Building Code, with certain changes and modifications, and making other revisions thereto.

The Board of Supervisors of the County of Los Angeles ordains as follows:

SECTION 1. Sections 119.1.2 through 119.1.14 of Chapter 1, Chapters 2 through 35, and Appendices C, I, and J, which incorporate by reference and modify portions of the 2016 California Building Code, are hereby repealed. Chapter 65 is hereby repealed in its entirety.

SECTION 2. Chapter 1 is hereby amended to read as follows:

100 ADOPTION BY REFERENCE

Except as hereinafter changed or modified, Sections 1.2 through 1.14 of Chapter 1 of Division I of that certain building code known and designated as the 2016 California Building Code, as published by the California Building Standards Commission, are adopted and incorporated, by reference, into this Title 26 of the Los Angeles County Code as if fully set forth below, and shall be known as Sections 119.1.2 through 119.1.14, respectively, of Chapter 1 of Title 26 of the Los Angeles County Code.

Except as hereinafter changed or modified, Chapters 2 through 35 and Appendices C, H, I, and J, and O of that certain building code known and designated as the 2019 California Building Code, as published by the California Building Standards Commission, are adopted and incorporated, by reference, into this Title 26 of
the Los Angeles County Code as if fully set forth below, and shall be known as Chapters 2 through 35, and Appendices C, H, I, and J, and O of Title 26 of the Los Angeles County Code.

A copy of said California Building Code, hereinafter referred to as the CBC, including the above-designated appendices, shall be at all times maintained by the Building Official for use and examination by the public.

. . .

SECTION 102  UNSAFE BUILDINGS

102.1.  Definition.

All buildings, or structures, or grading work which are structurally unsound or not provided with adequate egress, or which constitute a fire hazard, or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety or health, or public welfare, by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster damage, lack of an approved water supply, electrical hazard, unsafe gas piping or appliances, or abandonment as specified in this Code or any other effective ordinance, are, for the purpose of this Chapter, unsafe buildings. Whenever the Building Official determines by inspection that a building or structure, whether structurally damaged or not, is dangerous to human life by reason of being located in an area which is unsafe due to hazard from landslide, settlement, or slippage or any other cause, such building shall, for the purpose of this Chapter, be considered an unsafe building.

. . .
102.4 Unsafe buildings: hearing.

102.4.1 Right of hearing.

The party concerned or the Building Official may request a hearing regarding the unsafe condition of the building or structure. The request by the interested party shall be made in writing to the Building Official within 30 days of the date of the notice of the unsafe condition. A hearing shall be requested by the Building Official prior to demolition or repair of an unsafe building by the County except when such demolition or repair is done under the emergency procedure set forth in this Chapter.

...  

102.4.5 Hearing by Building Board of Appeals.

...

When determined by the Building Official, the Code Enforcement Appeals Board or Building Rehabilitation Appeals Board shall hold the hearing in lieu of the Building Board of Appeals.

...

102.5 Unsafe Buildings; Demolition or Repair.

...

102.5.2 Emergency procedure.

Whenever any portion of a structure or grading constitutes an immediate hazard to life or property, and in the opinion of the Building Official, the conditions are such that repairs or demolition must be undertaken within less than the designated period, the Building Official may take necessary action, such as performing alterations, repairs,
and/or demolition of the structures, to protect life or property, or both, after giving such notice to the parties concerned as the circumstances will permit or without any notice whatever when, in the Building Official's opinion, immediate action is necessary.

. . .

102.5.5 Prosecution.

In case the owner shall fail, neglect or refuse to comply with the notice to repair, rehabilitate, or to demolish and remove said building or structure or portion thereof, the Building Official shall may cause the owner of the building to be prosecuted as a violator of this Code.

. . .

SECTION 103 VIOLATIONS AND PENALTIES

103.1 Compliance with Code.

It shall be unlawful for a person to erect, construct, enlarge, alter, repair, move, improve, remove, connect, convert, demolish, equip, or perform any other work on any building or structure or portion thereof, or perform any grading in the unincorporated portion of the County within a property subject to this Code as defined in Section 101.3, or cause the same to be done, contrary to, or in violation of, any of the provisions of this Code.

103.2 Violation.

It shall be unlawful for any person to own, use, occupy or maintain any building or structure or portion thereof, in the unincorporated portion of the County, or cause the same to be done, contrary to, or in violation of, any of the provisions of this Code.
103.4.1 General.

The Building Official may record a Notice of Violation (NOV) with the County Recorder’s Office that a property, building or structure, or any part thereof, is in violation of any provision of this Code provided that the provisions of this Section are complied with. The remedy provided by this Section is cumulative to any other enforcement actions permitted by this Code.

103.4.2 Recordation.

If (1) the Building Official determines that any property, building, or structure, or any part thereof is in violation of any provision of this Code; and if (2) the Building Official gives written notice as specified below of said violation; then the Building Official may have sole discretion to, at any time thereafter, record with the County Recorder’s Office a Notice of Violation (NOV) that the property and/or any building or structure located thereon is in violation of this Code.

Following the recordation of the NOV notice of violation, the Building Official is not required to conduct an inspection or review of the premises to determine the continued existence of the cited violation. It is the responsibility of the owner or other interested party to meet the requirements of this Code to remove the violation.

103.4.3 Notice.

The written notice given pursuant to this Section shall indicate:

1. The nature of the violation(s); and

2. That if the violation is not remedied to the satisfaction of the Building
Official, the Building Official may, at any time thereafter, record with the County Recorder’s Office a Notice of Violation (NOV) that the property and/or any building or structure located thereon is in violation of this Code. The notice shall be posted on the property and shall be mailed to the owner of the property as indicated on the last equalized County Assessment roll. The mailed notice may be by registered, certified, or first-class mail.

103.4.4 Rescission.

Any person who desires to have recorded a notice rescinding the NOV notice of violation must first obtain the necessary approvals and permit(s) to correct the violation. Once the Building Official determines that the work covered by such permit(s) has been satisfactorily completed, the Building Official may record a notice rescinding the NOV prior notice of violation.

SECTION 104 ORGANIZATION AND ENFORCEMENT

104.2.10 Cooperation of other officials.

The Building Official may request, and shall receive so far as may be necessary in the discharge of his or her duties, the assistance and cooperation of other officials of the County.
SECTION 105  APPEALS BOARDS

105.1  Building Board of Appeals.

105.1.1  General.

Unless otherwise provided for below, in order to conduct the hearings provided for in this Code, there shall be a Building Board of Appeals consisting of five members who are qualified by experience and training to pass upon matters pertaining to building construction. One member shall be a practicing architect, one a builder who is a licensed general contractor, one a lawyer, and two structural engineers, each of whom shall have had at least 10 years' of experience as an architect, builder, lawyer, or structural engineer. The Building Official shall be an ex officio member and shall act as secretary to the Board. The members of the Building Board of Appeals shall be appointed by the Board of Supervisors and shall hold office at its pleasure. The Building Board of Appeals shall adopt reasonable rules and regulations for conducting its investigations. Each member of the Board shall be compensated for each meeting attended as provided from time to time by the County Code.

...  

105.5  Fees.

A fee of $496.30 shall be paid to the Building Official whenever a person requests a hearing or a rehearing before the appeals boards provided for in this Section.

**Exception:** No fee shall be required for the initial hearing requested pursuant to Sections 102.4.1, or for a hearing requested pursuant to Section 103.4.5, 9606.4.
9807, or 9917 to appeal an initial determination that a building is within the scope of
Chapter 96.

... 

SECTION 106 PERMITS

... 

106.3 Work Exempted.

A building permit shall not be required for the following:

1. One-story detached accessory buildings used as tool and storage sheds, playhouses, shade structures, pump houses, and similar uses, provided the gross floor area does not exceed 120 square feet (11.15 m²), the height does not exceed 12 feet (3.69 m), and the maximum roof projection does not exceed 24 inches (610 mm).

2. Fences which are not used as a barrier to private swimming pools, spas, or hot tubs, and ground monument signs, provided that:

   2.1 Masonry or concrete fences do not exceed 6 feet (1.8 m) in height and are set back from public ways a distance at least equal to the fence height.

   2.2 Fences constructed of other materials do not exceed 6 feet (1.8 m) in height.

   2.3 Ground monument signs do not exceed 6 feet (1.8 m) in height.

3. Steel tanks not storing hazardous material as defined in the Fire Code provided that:

   3.1 Steel tanks are supported on a foundation not more than 2 feet
(610 mm) above grade when the overall height to diameter or width does not exceed 1½ times the diameter.

3.2 Water tanks constructed of materials other than steel, including cisterns and rain barrels, are supported directly on grade, the overall height to diameter or width does not exceed 1½ times the diameter, and the capacity does not exceed 5000 gallons (18925 L).

...  

6. Motion picture, television and theater stage sets and scenery, except when used as a building. Buildings or structures constructed as part of a set or as scenery shall not be occupied or used for any other purpose.

...  

10. A playhouse or tree house provided that:

10.1 It does not exceed 64 square feet (5.94 m2) in area nor 8 feet (2438 mm) in height from floor to roof.

10.2 The ceiling height as established by door height or plate line does not exceed 6 feet (1829 mm).

11. Canopies or awnings, completely supported by the exterior wall, attached to a Group R-3 or U Occupancy and extending not more than 54 inches (1372 mm) from the exterior wall of the building, and not encroaching into the public right-of-way or any required fire separation distance specified by this Code.

...
19. Non-combustible livestock shelters provided that the gross floor area does not exceed 300 square feet (27.9 m²), the height does not exceed 12 feet (3.69 m), and at least 3 sides are each a minimum of 65% open.

... Exemption from the permit requirements of this Code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this Code, or other laws, or ordinances, or regulations or required approvals from other County Departments and State and Federal agencies.

... 106.4.1 Application.

To obtain a permit, the applicant shall first file an application in writing on a form furnished for that purpose. Every such application shall:

... 6. Where applicable, state the area to be landscaped in square feet (m²) to be landscaped and the source of water for irrigation.

... 106.5.4 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 12 months from the date of such permit is issued, or the building or work authorized by such permit is suspended or abandoned...
for a period of 180 days, or the permittee fails to obtain inspection as required by the provisions of Section 108 of this Code for a period of 180 days.

**Exception:** Permits issued to abate violation(s) in conjunction with a code enforcement action shall expire and become null and void at a date **not to exceed 12 months from the issuance date or at a date determined by the Building Official.**

The Building Official may extend **one or more extensions of the time for action by the permittee for a period not exceeding 180 days from the date of expiration upon written request from the permittee and payment of a fee in an amount determined by the Building Official, not to exceed 25 percent of the permit fee. No permit shall be extended more than twice.**

... 

**SECTION 107 FEES**

... 

**107.3 Standard Plans.**

The Building Official may approve a set of plans for a building or structure as a "standard plan," provided that the applicant has made proper application, submitted complete sets of plans as required by this Section, and paid the plan checking fee required by Section 107.2, or $173.80, whichever is greater.

Plans shall reflect laws and ordinances in effect at the time a permit is issued except as provided herein below in this Section. Nothing in this Section shall prohibit modifying the permit set of approved standard plans to reflect changes in laws and ordinances which have become effective since the approval of the standard plan. The
standard plans shall become null and void where the work required by such changes exceeds five percent of the value of the building or structure.

\[\text{\ldots} \]

107.9 **Other fees.**

The following fees shall be paid before a permit is issued, inspection made, occupancy allowed or device operated:

1. In addition to the fees set forth in Items A through K, below, for issuance of each inspection application receipt .....$31.90

\[\text{\ldots} \]

G. For application and investigation for relocation building permits as required by the Existing Building Code Chapter 34:

\[\text{\ldots} \]

107.10 **Exemption from fees.**

Neither the Housing Authority of the County of Los Angeles County Development Authority nor any public officer or body acting in an official capacity on behalf of the Housing Authority shall pay or deposit any building fee. This Section does not apply where a public officer is acting with reference to private assets, which have come under such public officer’s jurisdiction by virtue of his or her office. (See Section 107.19 for affordable housing exemption.)

\[\text{\ldots} \]

107.15 **Preliminary review fees.**
Upon payment of a preliminary review fee of $252.80, an applicant may have a building, structure or other project reviewed by the Building Official prior to submittal of a permit application. Such fee entitles the applicant to two staff hours of review, which may be of any combination of building and specialty Code requirements. An additional fee of $126.40 per hour shall be charged for each hour or portion thereof in excess of two hours. All charges must be paid at the conclusion of any such meeting and before any written findings are issued.

Exception: No fee shall be charged for a preliminary review by one staff member, not in excess of which does not exceed 15 minutes.

107.17 Annual review of fees.

The fees in this Code shall be reviewed annually by the Director of Public Works. Beginning on July 1, 1992, and thereafter on each succeeding July 1, the amount of each fee in this Code shall be adjusted as follows: Calculate the percentage movement between March of the previous year and March of the current year in the Consumer Price Index (CPI) for all urban consumers in the Los Angeles, Anaheim and Riverside Los Angeles-Long Beach-Anaheim, CA areas, as published by the United States Government Bureau of Labor Statistics. Adjust each fee by said percentage amount and round off to the nearest 10 cents, provided, however, that no adjustment shall decrease any fee and no fee shall exceed the reasonable cost of providing services. When it is determined that the amount reasonably necessary to recover the cost of providing services is in excess of this adjustment, the Building Official may
present fee proposals to the Board of Supervisors for approval.

107.18  Fees — factory-built housing.

107.18.1  General.

The fees established by Section 107 for building permits and for plan checking shall be modified for "Factory-built Housing" as set forth in this Section.

107.18.2  Definitions.

For the purpose of this Section, certain terms are defined as follows:

"Factory-built Housing" FACTORY-BUILT HOUSING shall mean structures which meet all of the following criteria: (1) fabrication or fabricated at an off-site location under the inspection of the State, for which the state inspection agency has attested to compliance with the applicable State laws and regulations by the issuance of an insignia; (2) the bearing the State insignia and which have not been modified since fabrication in a manner that would void the State approval; and (3) for which the County of Los Angeles has been relieved by statute of the responsibility for the enforcement of laws and regulations of the State of California or the County of Los Angeles.

"Unit" UNIT shall mean a single factory-assembled component of the factory-built housing brought to the jobsite for connection to the foundation and/or connection to other units of the structure.

107.19 Fee exemption—affordable housing.

...
NONPROFIT ORGANIZATION is a corporation organized under the Nonprofit Public Benefit Corporation Law of the State of California (Corporations Code Section 5120, et seq.) and which qualifies under Section 501(c)(3) of the Internal Revenue Code of 1986 or the corresponding provision of any future United States internal revenue law as an exempt organization. A corporation or body organized for the private gain of any person shall not be deemed to be a nonprofit organization.

BUILDING FEE shall include plan check, permit and inspection fees required by Titles 26, 27, 28, 29, 30, 31 and 33 of the Los Angeles County Code.

LOWER-INCOME HOUSEHOLDS shall be as defined in Section 50079.5 of the Health and Safety Code.

NONPROFIT ORGANIZATION is a corporation organized under the Nonprofit Public Benefit Corporation Law of the State of California (Corporations Code Section 5120, et seq.) and which qualifies as an exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1986 or the corresponding provision of any future United States internal revenue law. A corporation or body organized for the private gain of any person shall not be deemed to be a nonprofit organization.

VERY LOW-INCOME HOUSEHOLDS shall be as defined in Section 50105 of the Health and Safety Code.

...
108.1 General.

... 

A site inspection may be required prior to plan check of building plans for lots or parcels in areas having slopes of 5 horizontal to 1 vertical (5:1) or steeper when the Building Official finds that a visual inspection of the site is necessary to establish drainage and/or grading requirements for the protection of property, existing buildings or the proposed construction. The fee for such inspection shall be as set forth in Section 107.9. When approved by the Building Official, such a preinspection shall not be required for a building pad previously graded under the provisions of Appendix J.

108.4 Required Inspections.

... 

108.4.6 Fire and smoke resistant penetrations.

Inspection shall be made after all protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions are installed, but prior to concealing the joints and penetrations.

... 

108.7 Inspection Requests.

It shall be the duty of the permit holder to notify the Building Official that work authorized by a permit is ready for inspection. The Building Official may require that every request for inspection be filed at least one working day before such inspection is desired. Such request shall be submitted in writing or by telephone at the option of a manner prescribed by the Building Official.
It shall be the duty of the person requesting any inspection required by this Code to provide access to and means for inspection of such work.

... 

SECTION 109 USE AND OCCUPANCY

... 

109.2 Change in Use.

Changes in the character or use of a building shall not be made except as specified in the Existing Building Code. When required by the Building Official, a new certificate of occupancy shall be issued in accordance with Section 109.3 where there is a change in a building's use, or a portion thereof, with no change in its occupancy classification.

... 

SECTION 110 PROHIBITED USES OF BUILDING SITES

110.1 Flood hazard.

110.1.1 Buildings are not permitted in an area determined by the Building Official to be subject to flood hazard by reason of inundation, overflow or erosion.

The placement of the building and other structures (including walls and fences) on the building site shall be such that water or mud flow will not be a hazard to the building or adjacent property, or obstruct a natural drainage course. Subject to the conditions of Section 110.1.2, this prohibition shall not apply when provision is made to eliminate such hazard to the satisfaction of the Building Official by providing adequate
drainage facilities by protective walls, suitable fill, raising the floor level of the building, a combination of these methods, or by other means. The Building Official, in the application of this Section for buildings, structures, and grading located in whole or in part in flood hazard areas, shall enforce, as a minimum, the current Federal Flood Plain Management Regulations defined in Title 44, Code of Federal Regulations, Section 60.3 and may require the applicant or property owner to provide the following information and/or comply with the following provisions:

...  

110.2 Geotechnical hazards.  

...  

110.2.3.5 When the proposed work involves the repair of a single-family residence or accessory structures where the cost of such repair exceeds 25 percent of the current market value of the existing building.

The scope of the repair work shall be subject to the approval of the Building Official. Before a permit may be issued pursuant to this Section, the owner shall do all of the following:

1. Submit an engineering geology and/or soils engineering report or reports that contain(s), at a minimum, a qualitative and/or conditional finding that the proposed work complies with the provisions of Section 110.2.1 of this Code.

...  

110.2.3.6 When the proposed work involves the replacement of structures destroyed by causes other than landslide, settlement, or slippage, and the
permit applicant was the owner of the property at the time of the loss, their immediate heir(s), or their authorized representative, and the application for a permit under this Section is filed no later than ten (10) years following the date of the loss.

...  

2. Submit an engineering geology and/or soils engineering report or reports that contain, at a minimum, a qualitative and/or conditional finding that the proposed work complies with the provisions of Section 110.2.1 of this Code and that contain recommendations for enhancing the stability of the site.

...  

110.2.3.7 When the proposed work involves a one-story, detached, light-framed structure not intended or used for human occupancy, such as a garage, carport, patio cover, deck or storage shed, accessory to a single-family residence not exceeding 400 square feet (37.2 m²) in gross floor area nor 12 feet (3.69 m) in height. Before a permit may be issued pursuant to this Section, the owner shall do all of the following:

...  

110.2.3.8 When the Building Official determines that the hazard from landslide, settlement or slippage is based solely on the fact that the area has been identified as a potentially liquefiable area in a seismic hazard zone (pursuant to Public Resources Code Section 2690 et seq.) and a foundation investigation is performed in connection with the work in accordance with Section 1803 of this Code.

...
110.2.3.10 When the proposed work involves the repair and restoration of a slope. Before a permit may be issued pursuant to this Section, the owner shall submit an engineering geology and/or soils engineering report or reports that contain(s) the following:

1. A description and analysis of the existing conditions, including the cause or causes of the failed slope.
2. Recommendations for the repair of the failed slope.
3. A qualitative and/or conditional finding that the proposed work complies with the provisions of Section 110.2.1 of this Code.

110.3 Fills containing decomposable material.

Permits shall not be issued for new buildings or enclosed structures, additions, or conversions of a building or structure to habitable or occupiable space regulated by this Code within (1,000) feet (304.8 m) of fills containing rubbish or other decomposable material unless the fill is isolated by approved natural or artificial protective systems or unless designed according to the recommendation contained in a report prepared by a registered design professional, such as a licensed civil engineer or a licensed petroleum engineer. Such report shall contain a description of the investigation, study and recommendation to minimize the possible intrusion, and to prevent the accumulation of explosive concentrations of decomposition gases within or under enclosed portions of such building or structure. At the time of the final inspection, the civil engineer registered design professional shall furnish a signed statement attesting that the building or
structure has been constructed in accordance with the civil engineer's design professional's recommendations as to decomposition gases required herein.

**Exception:** When approved by the Building Official, mitigation of decomposition gases shall not be required for additions to single-family dwellings not exceeding 400 square feet ($37.2 \text{ m}^2$) in gross floor area and/or alterations to single-family dwellings.

...  

110.4 **Methane Gas Hazards.**

Permits shall not be issued for new buildings or enclosed structures, additions, or conversions of a building or structure to habitable or occupiable space regulated by this Code on, adjacent to, or within 300 feet (91.44 m) of active, abandoned or idle oil or gas well(s) unless designed according to recommendations contained in a report prepared by a registered design professional, such as a licensed civil engineer and/or a licensed petroleum engineer, to evaluate whether such wells are being properly operated or maintained, or are abandoned. No permits shall be issued until documentation of proper operation, maintenance, or abandonment or reabandonment is submitted to and approved by the Building Official.

**Exceptions:**

1. When approved by the Building Official, mitigation of methane gas hazards shall not be required for additions or alterations to existing buildings or structures located no closer than 200 feet (60.96 m) to active, abandoned or idle oil or gas well(s).
2. Grading permits may be issued when the proposed work is necessary to mitigate the methane gas hazard.

As used in this Section, "well" shall mean any well as defined by Section 3008- Subdivisions (a), (b), and (c) of the California Public Resources Code.

110.5 Contaminated soil hazards.

Permits shall not be issued for new buildings or enclosed structures, additions, or conversions of a building or structure to habitable or occupiable space regulated by this Code on contaminated soil unless designed according to recommendations contained in a report prepared by a registered design professional, such as a licensed civil engineer or licensed petroleum engineer. Such report shall contain a description of the design professional's investigation and recommendation to prevent the accumulation of hazardous concentrations of organic and inorganic compounds, gases, or other accumulation of hazardous material caused by contaminated soil within or under enclosed portions of such building or structure. At the time of the final inspection, the registered design professional shall furnish a signed statement attesting that the building or structure has been constructed in accordance with the engineer's recommendations to address the contaminated soil conditions.

As used in this Section, “contaminated soil” shall mean contaminated soil as defined by Title 14 of California Code Regulation Section 17361(b). "Contaminated soil" shall also include soil containing harmful concentrations of any additional organic or inorganic compounds that the Building Official determines to be hazardous or potentially hazardous.
110.56 Conditional use.

... 

SECTION 112 EARTHQUAKE FAULT MAPS

Earthquake Fault Zone Maps within the County of Los Angeles prepared under Sections 2622 and 2623 of the California Public Resources Code which show traces of earthquake faults are hereby declared to be, on the date of official issue, a part of this Code, and may be referred to elsewhere in this Code. Earthquake Fault Zone Maps revised under the above sections of the California Public Resources Code shall, on the date of their official issue, supersede previously issued maps which they replace.

...

SECTION 113 EARTHQUAKE FAULTS

...

113.3 Definition.

For the purpose of this Section, a geologist shall be a professional geologist, licensed by the California State Board for Professional Engineers, Land Surveyors, and Geologists and Geophysicists to practice geology in California.

...

### TABLE 1-D

<table>
<thead>
<tr>
<th>LANDSCAPE PERMIT FEES UP TO ONE ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASED ON AREA TO BE LANDSCAPED</strong></td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td>2,500 - 7,500 ft² (23246.5 m² - 696.8 m²)</td>
</tr>
<tr>
<td>7,501 - 15,000 ft² (696.9 m² - 1393.5 m²)</td>
</tr>
<tr>
<td>15,001 - 30,000 ft² (1393.6 m² - 2787.1 m²)</td>
</tr>
<tr>
<td>30,001 ft² - 1 acre (2787.2 m² - 4046.9 m²)</td>
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### TABLE 1-E
**LANDSCAPE PLAN CHECK FEES UP TO ONE ACRE**

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<thead>
<tr>
<th>BASED ON AREA TO BE LANDSCAPED</th>
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<tr>
<td>2,500 - 7,500 ft² (23246.5 m² - 696.8 m²)</td>
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</tr>
<tr>
<td>7,501 - 15,000 ft² (696.9 m² - 1393.5 m²)</td>
<td>$1,949.80</td>
</tr>
<tr>
<td>15,001 - 30,000 ft² (1393.6 m² - 2787.1 m²)</td>
<td>$2,094.50</td>
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<tr>
<td>30,001 ft² - 1 acre (2787.2 m² - 4046.9 m²)</td>
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### TABLE 1-F
**CODE ENFORCEMENT FEES**

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<th>SERVICE</th>
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<tbody>
<tr>
<td>1 - Investigation and Processing</td>
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<tr>
<td>2 - Preparation of job specifications</td>
<td>$503.60</td>
</tr>
<tr>
<td>3 - Board of Supervisors or City Council approval</td>
<td>Reserved</td>
</tr>
<tr>
<td>4 - Contract cancellation</td>
<td>$262.60</td>
</tr>
<tr>
<td>5 - Contract performance inspection</td>
<td>$201.20</td>
</tr>
<tr>
<td>6 - For processing a 45-day letter</td>
<td>$509.90</td>
</tr>
<tr>
<td>7 - For processing a Notice of Violation</td>
<td>$405.20</td>
</tr>
<tr>
<td>8 - For processing a Rescission of Notice of Violation</td>
<td>$348.60</td>
</tr>
<tr>
<td>9 - Billing</td>
<td>$150.30</td>
</tr>
<tr>
<td>10 - Record Lien</td>
<td>$150.30</td>
</tr>
<tr>
<td>11 - Filing of Special Assessment</td>
<td>$254.80</td>
</tr>
</tbody>
</table>

### SECTION 3.
Section 202 is hereby amended to read as follows:

... 

**INTERMODAL SHIPPING CONTAINER.** A six-sided steel unit originally constructed as a general cargo container used for the transport of goods and materials.

... 

### SECTION 4.
Section 701A.1 is hereby amended to read as follows:

**701A.1 Scope.**

This Chapter applies to building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located, and to additions.
alterations, or repairs made to existing buildings, erected, constructed, or moved within a Wildland-Urban Interface Fire Area as defined in Section 702A.

SECTION 5. Section 701A.3 is hereby amended to read as follows:

701A.3 Application.

New buildings, and any additions, alterations, or repairs made to existing buildings located in or moved within any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area designated by the enforcing agency Los Angeles County Fire Department constructed after the application date shall comply with the provisions of this Chapter.

Exceptions:

... 4. Reserved. Additions to and remodels of buildings originally constructed prior to the applicable application date.

SECTION 6. Section 701A.3.1 is hereby amended to read as follows:

701A.3.1 Application date and where required.

New buildings for which an application for a building permit is submitted on or after July 1, 2008, and any additions, alterations, or repairs made to existing buildings for which an application for a building permit is submitted on or after January 1, 2020, located in any Fire Hazard Severity Zone or Wildland Interface Fire Area shall comply with all Sections of this Chapter, including all of the following areas:

...
Exceptions:

1. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas, for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all Sections of this Chapter.

2. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland Interface Fire Area designated by cities and other local agencies for which an application for a building permit is submitted on or after December 1, 2005, but prior to July 1, 2008, shall only comply with the following Sections of this Chapter:

...  

SECTION 7. Section 701A.3.2 is hereby amended to read as follows:

701A.3.2 Application to accessory buildings and miscellaneous structures.

New accessory buildings and miscellaneous structures, including additions, alterations, or repairs, as specified in Section 710A shall comply only with the requirements of that Section.

SECTION 8. Section 701A.4 is hereby amended to read as follows:

701A.4 Inspection and certification.

Building permit applications and final completion approvals for buildings within the scope and application of this Chapter shall comply with the following:

1. Building permit issuance. The local building official shall, prior to construction, provide the owner or applicant a certification that the building as proposed...
to be built complies with all applicable state and local building standards, including those for materials and construction methods for wildfire exposure as described in this chapter. Issuance of a building permit by the local building official for the proposed building shall be considered as complying with this section.

2. Building permit final. The local building official shall, upon completion of construction, provide the owner or applicant with a copy of the final inspection report that demonstrates the building was constructed in compliance with all applicable state and local building standards, including those for materials and construction methods for wildfire exposure as described in this chapter. Issuance of a certificate of occupancy by the local building official for the proposed building shall be considered as complying with this section.

SECTION 9. Section 702A is hereby amended to read as follows:

702A DEFINITIONS

... FIRE PROTECTION PLAN is a document prepared for a specific project or development proposed for a Wildland-Urban Interface Fire Area. It describes ways to minimize and mitigate potential for loss from wildfire exposure.

The Fire Protection Plan shall be in accordance with this chapter and the California Title 32 – Fire Code – of the Los Angeles County Code, Chapter 49. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted. Only locally adopted ordinances that have been filed with the California Building Standards Commission or the Department of Housing and...
Community Development in accordance with Section 1.1.8 shall apply.

**FIRE HAZARD SEVERITY ZONES** are geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code Sections 51175 through 51189. See California Title 32 – Fire Code – of the Los Angeles County Code, Chapter 49.

... WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency Los Angeles County Fire Department to be at a significant risk from wildfires.

**SECTION 10.** Section 703A.2 is hereby amended to read as follows:

703A.2 Qualification by testing.

Material and material assemblies tested in accordance with the requirements of Section 703A shall be accepted for use when the results and conditions of those tests are met. Product evaluation testing of material and material assemblies shall be approved or listed by the State Fire Marshal, the Building Official, or identified in a current report issued by an approved agency.

**SECTION 11.** Section 703A.3 is hereby amended to read as follows:
703A.3  **Approved agency.**

Product evaluation testing shall be performed by an approved agency as defined in Section 1702. The scope of accreditation for the approved agency shall include building product compliance with this eCode.

**SECTION 12.** Section 703A.5.2 is hereby amended to read as follows:

703A.5.2  **Weathering.**

Fire-retardant-treated wood and fire-retardant treated wood shingles and shakes shall meet the fire test performance requirements of this eChapter after being subjected to the weathering conditions contained in the following standards, as applicable to the materials and the conditions of use.

**SECTION 13.** Section 703A.5.2.2 is hereby deleted in its entirety.

703A.5.2.2  **Fire-retardant-treated wood shingles and shakes.**

Fire-retardant treated wood shingles and shakes shall be approved and listed by the State Fire Marshal in accordance with Section 208(c), Title 19 California Code of Regulations.

**SECTION 14.** Section 703A.6 is hereby amended to read as follows:

703A.6  **Alternates for materials, design, tests, and methods of construction.**

The enforcing agency is permitted to modify the provisions of this eChapter for site-specific conditions in accordance with Chapter 1, Section 4.11.2.4104.2.7. When required by the enforcing agency Building Official for the purposes of granting
modifications, a fire protection plan shall be submitted in accordance with the California Title 32 – Fire Code – of the Los Angeles County Code, Chapter 49.

SECTION 15. Section 704A.4 is hereby amended to read as follows:

704A.4 Alternative methods for determining ignition-resistant material.

...  
3. Fire retardant treated wood shingles and shakes. Fire retardant treated wood shingles and shakes, as defined in section 1505.6 and listed by State Fire Marshal for use as "Class B" roof covering, shall be accepted as an Ignition-resistant wall covering material when installed over solid sheathing.

SECTION 16. Section 705A.2 is hereby amended to read as follows:

705A.2 Roof coverings.

Roof coverings shall be Class A as specified in Section 1505.2. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced non-perforated cap sheet complying with ASTM D3909 installed over the combustible decking. Wood shingles and wood shakes are prohibited in any Fire Hazard Severity Zones regardless of classification.

SECTION 17. Section 706A.3 is hereby amended to read as follows:

706A.3 Ventilation openings on the underside of eaves and cornices.
Exceptions:

2. The enforcing agency\textit{Building Official} shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.

\textbf{SECTION 18}. Section 710A.3 is hereby amended to read as follows:

\textbf{710A.3} \textbf{Where required.}

No requirements shall apply to accessory buildings or miscellaneous structures when located at least 50 feet from an applicable building. Applicable accessory buildings and attached miscellaneous structures, or detached miscellaneous structures that are installed at a distance of less than 3 feet from an applicable building, shall comply with this section. When required by the enforcing agency\textit{Building Official}, detached miscellaneous structures that are installed at a distance of more than 3 feet but less than 50 feet from an applicable building shall comply with the requirements of this section.

\textbf{SECTION 19}. Section 710A.3.3 is hereby amended to read as follows:

\textbf{710A.3.3} \textbf{Detached miscellaneous structure requirements.}

When required by the enforcing agency\textit{Building Official}, applicable detached miscellaneous structures that are installed at a distance of more than 3 feet but less than 50 feet from an applicable building shall be constructed of noncombustible
materials or of ignition-resistant materials as described in Section 704A.2.

SECTION 20. Section 1030.1.1 is hereby amended to read as follows:

1030.1.1 Operational constraints and opening control devices.

... Where security bars (burglar bars) are installed on emergency egress and rescue windows or doors, on or after July 1, 2000, such devices shall comply with California Building Standards Code, Part 12, Chapter 12-3 and other applicable provisions of Part 2.

... SECTION 21. Section 1507.3.1 is hereby amended to read as follows:

1507.3.1 Deck requirements.

Concrete and clay tile shall be installed only over solid sheathing or spaced structural sheathing boards.

SECTION 22. Table 1507.3.7 is hereby amended to read as follows:

TABLE 1507.3.7
CLAY AND CONCRETE TILE ATTACHMENT a, b, c

<table>
<thead>
<tr>
<th>Maximum Allowable Stress Design Wind Speed, ( V_{\text{bsd}} ) (mph)</th>
<th>Mean roof height (feet)</th>
<th>Roof slope &lt;3:12</th>
<th>Roof slope 3:12 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>0 - 60</td>
<td>Minimum slope: 2.5:12</td>
<td>Two fasteners per tile. Only one fastener on slopes of 7:12 and less for tiles with installed weight exceeding 7.5 lbs/sq. ft. having a width no greater than 16 inches.</td>
</tr>
<tr>
<td>100</td>
<td>0 - 40</td>
<td>One fastener per tile. Flat tile without vertical laps.</td>
<td>Two fasteners per tile.</td>
</tr>
</tbody>
</table>

... INTERLOCKING CLAY OR CONCRETE ROOF TILE WITH PROJECTING ANCHOR LUGS d, e (Installations on spaced/solid sheathing with battens or spaced sheathing)

<table>
<thead>
<tr>
<th>Maximum Allowable Stress Design Wind</th>
<th>Mean roof height (feet)</th>
<th>Roof slope &lt;5:12</th>
<th>Roof slope 5:12&lt;12:12</th>
<th>Roof slope 12:12 and over</th>
</tr>
</thead>
</table>

...
**INTERLOCKING CLAY OR CONCRETE ROOF TILE WITH PROJECTING ANCHOR LUGS**

(Installations on solid sheathing without battens)

<table>
<thead>
<tr>
<th>Speed, $V_{asd}$ (mph)</th>
<th>Mean roof height (feet)</th>
<th>All-Minimum roof slopes 4 units vertical in 12 units horizontal</th>
<th>Maximum slope 7 units vertical in 12 units horizontal</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>0 - 60</td>
<td>Fasteners are not required. Tiles with installed weight less than 9 lbs/sq. ft. require not fewer than one fastener per tile.</td>
<td>One fastener per tile every other row. All perimeter tiles require one fastener. Tiles with installed weight less than 9 lbs/sq.ft. require not fewer than one fastener per tile.</td>
</tr>
<tr>
<td>100</td>
<td>0 - 40</td>
<td></td>
<td>One fastener required for eve every tile. Tiles with installed weight less than 9 lbs./sq. ft. require not fewer than one fastener per tile.</td>
</tr>
</tbody>
</table>

INTERLOCKING CLAY OR CONCRETE ROOF TILE WITH PROJECTING ANCHOR LUGS

(Installations on solid sheathing without battens)

Minimum fastener size. Hot dipped galvanized ring shank or other corrosion-resistant nails not less than No. 11 gage with 5/16-inch head. Fasteners shall be long enough to penetrate into the sheathing ¾ inch or through the thickness of the sheathing, whichever is less. Attaching wire for clay and concrete tile shall not be smaller than 0.083 inch and shall be copper, brass or stainless steel.

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**SECTION 23.** Section 1613.5 is hereby added to read as follows:

**1613.5 Modifications to ASCE 7.**

The text of ASCE 7 shall be modified as indicated in Sections 1613.5.1 through 1613.5.3.

**1613.5.1 ASCE 7, 12.12.3.1, Exception 3.**

Modify ASCE 7, Section 12.12.3.1, Exception 3 to read as follows:

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

**1613.5.2 ASCE 7, Section 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.

The anchorage of concrete or masonry structural walls to wood diaphragms shall be in accordance with AWC SDPWS 4.1.5.1 and this section. Continuous ties required by this section shall be in addition to the diaphragm sheathing. Anchorage shall not be accomplished by use of toe nails or nails subject to withdrawal, nor shall wood ledgers or framing be used in cross-grain bending or cross-grain tension. The diaphragm sheathing shall not be considered effective as providing ties or struts required by this Section.

For structures assigned to Seismic Design Category D, E, or F, wood diaphragms supporting concrete or masonry walls shall comply with the following:

1. The spacing of continuous ties shall not exceed 40 feet. Added chords of diaphragms may be used to form subdiaphragms to transmit the anchorage forces to the main continuous crossties.

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

1613.5.3 ASCE 7, 12.12.3.

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

\[ \delta_M = \frac{C_d \delta_{r,\text{max}}}{I_e} \]

(Equation 12.12-1)

SECTION 24. Section 1613.6 is hereby added to read as follows:
1613.6 **Seismic design provisions for hillside buildings.**

1613.6.1 **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 percent). These regulations establish minimum standards for seismic force resistance to reduce the risk of injury or loss of life in the event of earthquakes.

1613.6.2 **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 Chapter.

**Exceptions:**

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

2. Additions to existing buildings that do not exceed 10 percent of the existing floor area provided that the addition is being supported completely by the existing foundation.

1613.6.3 **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 percent). 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 1613.6.5 and 1613.6.7.3 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 1613.6.6 and 1613.6.7.4.

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.

**1613.6.4 Analysis and design.**

**1613.6.4.1 General.**

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

**1613.6.4.2 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.

**1613.6.4.2.1 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.

**1613.6.4.2.2 Base shear.**

In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 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.

**1613.6.5 Base shear resistance-primary anchors.**
1613.6.5.1 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.

1613.6.5.2 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 (9,144 mm).

1613.6.5.3 Design of primary anchors and diaphragm struts.
Primary anchors and diaphragm struts shall be designed in accordance with the requirements of Section 1613.6.8.

1613.6.5.4 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.

1613.6.6 Base shear resistance-secondary anchors.

1613.6.6.1 General.

In addition to the primary anchors required by Section 1613.6.5, 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 (9,144 mm) on center extend up to and are directly connected to the base level diaphragm for at least 70 percent of the diaphragm depth.

1613.6.6.2 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 (1,219 mm) on center.

1613.6.6.3 Design.

Secondary anchors and diaphragm struts shall be designed in accordance with Section 1613.6.8.
1613.6.7 **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.

1613.6.7.1 **Diaphragm defined.**

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

1613.6.7.2 **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.

1613.6.7.3 **Design force-resistance-primary anchors.**

The design force described in Section 1613.5.7.2 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 1613.5.5.

1613.6.7.4 **Design force-resistance-secondary anchors.**

1613.6.7.4.1 **General.**

In addition to the primary anchors required in Section 1613.5.7.3, 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 (9,144 mm) on center, extend up
to and are directly connected to each diaphragm below the base level for at least 70 percent of the diaphragm depth.

1613.6.7.4.2 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 (1,219 mm) on center.

1613.6.7.4.3 Design.

Secondary anchors and diaphragm struts shall be designed in accordance with Section 1613.6.8.

1613.6.8 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 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Nuts shall be tightened to finger tight plus one half (1/2) wrench turn prior to covering the framing.

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 percent 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. Steel Element of Structural Wall Anchorage System. The strength design forces for steel elements of the structural wall anchorage system, with the exception of anchor bolts and reinforcing steel, shall be increased by 1.4 times the forces otherwise required.

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.

1613.6.9 Lateral-force-resisting elements normal to the downhill direction.

1613.6.9.1 General.
In the direction normal to the downhill direction, lateral-force-resisting elements shall be designed in accordance with the requirements of this Section.

1613.6.9.2 Base shear.
In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 5 for bearing wall and building frame systems.

1613.6.9.3 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.

1613.6.9.4 Drift limitations.
The story drift below the base level diaphragm shall not exceed 0.007 times the story height at strength design force level. 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.

1613.6.9.5 Distribution of lateral forces.

1613.6.9.5.1 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.

1613.6.9.5.2 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 AWC SDPWS Section 4.3.2. 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 8 feet (2438 mm) and the maximum vertical height of a step shall be 2 feet, 8 inches (813 mm).

1613.6.9.5.3 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.

1613.6.9.6 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 Section 2205.2.1.2 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.

1613.6.10 Specific design provisions.

1613.6.10.1 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 be reinforced as required for concrete or masonry walls.
1613.6.10.2 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) based on Allowable Stress Design (ASD) levels 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.

1613.6.10.3 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.

1613.6.10.4 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 based on ASD levels, 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.

1613.6.10.5 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 25. Section 1613.7 is hereby added 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 Section 2506.2.1 and this Section.

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 **Sprinkler heads.**

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

Sprinkler heads penetrating fire-resistance-rated floor/ceiling or roof/ceiling assemblies shall comply with Section 714.
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 1008.3.

1613.7.4.4 Supports for appendages.

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

SECTION 26. Section 1704.2.3 is hereby amended to read as follows:
1704.2.3 Statement of special inspections.

The applicant shall submit a statement of special inspections in accordance with Section 106.4107.1, Chapter 1, Division II, as a condition for permit issuance. This statement shall be in accordance with Section 1704.3.

... 

SECTION 27. Section 1704.6 is hereby amended to read as follows:

1704.6 Structural observations.

Where required by the provisions of Section 1704.6.1, 1704.6.2, or 1704.6.3, the owner or the owner’s authorized agent shall employ a registered design professional structural observer to perform structural observations. Structural observation does not include or waive the responsibility for the inspections in Section 110 or the special inspections in Section 1705 or other Sections of this Code.

The structural observer shall be one of the following individuals:

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

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

At the conclusion of the work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer’s...
knowledge, have not been resolved.

The owner or owner’s authorized agent shall coordinate and call a
preconstruction meeting between the structural observer, contractors, affected
subcontractors, and special inspectors. The structural observer shall preside over the
meeting. The purpose of the meeting shall be to identify the major structural elements
and connections that affect the vertical and lateral load resisting systems of the
structure and to review scheduling of the required observations. A record of the
meeting shall be included in the report submitted to the Building Official.

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

SECTION 28. Section 1704.6.2 is hereby amended to read as follows:

1704.6.2 Structural observations for seismic resistance.

  2. The structure is assigned to Seismic Design Category E, is classified as
Risk Category I or II, and is greater than two stories one stories above grade plane a
lateral design is required for the structure or portion thereof.
**Exception:** One-story wood framed Group R-3 and Group U Occupancies less than 2,000 square feet in area, provided the adjacent grade is not steeper than 1 unit vertical in 10 units horizontal (10 percent sloped), assigned to Seismic Design Category D.

**SECTION 29.** Section 1705.3 is hereby amended to read as follows:

1705.3 **Concrete Construction.**

Special inspections and tests of concrete construction shall be performed in accordance with this Section and Table 1705.3.

**Exception:** Special inspections and tests shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock where the structural design of the footing is based on a specified compressive strength \( f'c \) not greater than 2,500 pounds per square inch (psi) (17.2 Mpa) regardless of the compressive strength specified in the construction documents or used in the footing construction.

2. . .

3. . .

4. Concrete foundation walls constructed in accordance with Table 1807.1.6.2.

5. Concrete patios, driveways, and sidewalks, on grade.

**SECTION 30.** Section 1705.12 is hereby amended to read as follows:

1705.12 **Special inspections for seismic resistance.**

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

...  

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

...  

SECTION 31. Section 1807.1.4 is hereby amended to read as follows:

1807.1.4 Permanent wood foundations systems.
Permanent wood foundation systems shall be designed and installed in accordance with AWC PWF. Lumber and plywood shall be preservative treated in accordance with AWPA U1 (Commodity Specification A, Special Requirement 4.2) and shall be identified in accordance with Section 2303.1.9.1. Permanent wood foundation systems shall not be used for structures assigned to Seismic Design Category D, E, or F.

SECTION 32. Section 1807.1.6 is hereby amended to read as follows:

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

SECTION 33. Section 1807.2 is hereby amended to read as follows:

1807.2 Retaining walls.

Retaining walls shall be designed in accordance with Section 1807.2.1 through 1807.2.3. Retaining walls assigned to Seismic Design Category D, E, or F shall not be partially or wholly constructed of wood.

SECTION 34. Section 1807.3.1 is hereby amended to read as follows:

1807.3.1 Limitations.

The design procedures outlined in this section are subject to the following limitations:

1. The frictional resistance for structural walls and slabs on silts and clays shall be limited to one-half of the normal force imposed on the soils by the weight of the footing or slab.

2. Posts embedded in earth shall not be used to provide lateral support for structural or nonstructural materials such as plaster, masonry or concrete unless bracing is provided that develops the limited deflection required.

Wood poles shall be treated in accordance with AWPA U1 for sawn timber posts (Commodity Specification A, Use Category 4B) and for round timber posts (Commodity Specification B, Use Category 4B). Wood poles and posts embedded in direct contact with soil shall not be used for structures assigned to Seismic Design Category D, E or F.

Wood poles and posts embedded in accordance with Methods 2 and 3 of Section
1807.3.3 shall not be permitted for structures assigned to Seismic Design Category D, E, or F, except when used to support nonhabitable, nonoccupiable structures such as fences when approved by the Building Official.

SECTION 35. Section 1809.3 is hereby amended to read as follows:

1809.3 Stepped footings.

For structures assigned to Seismic Design Category D, E, or F, the stepping requirement shall also apply to the top surface of continuous footings supporting walls. Footings shall be reinforced with four No. 4 reinforcing bars. Two bars shall be located at the top and bottom of the footings as shown in Figure 1809.3.

SECTION 36. Figure 1809.3 is hereby added to read as follows:
FIGURE 1809.3

STEPPED FOOTING

SECTION 37. Section 1809.7 is hereby amended to read as follows:

1809.7 Prescriptive footings for light-frame construction.

Where a specific design is not provided, concrete or masonry-unit footings supporting walls of light-frame construction shall be permitted to be designed in accordance with Table 1809.7. Prescriptive footings in accordance with Table 1809.7 shall not be used to support structures that exceed one story above grade plane and are assigned to Seismic Design Category D, E, or F.

SECTION 38. Table 1809.7 is hereby amended to read as follows:

TABLE 1809.7

PRESCRIPTIVE FOOTINGS SUPPORTING WALLS OF LIGHT-FRAME CONSTRUCTION a, b, c, d, e

<table>
<thead>
<tr>
<th>NUMBER OF FLOORS SUPPORTED BY THE FOOTING</th>
<th>WIDTH OF FOOTING (inches)</th>
<th>THICKNESS OF FOOTING (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>8*</td>
</tr>
</tbody>
</table>

... c. Interior stud-bearing walls shall be permitted to be supported by isolated footings. The footing width and length shall be twice the width shown in this table, and footings shall be spaced not more than 6 feet on center. [Reserved].

... g. Plain concrete footings for Group R-3 occupancies shall be permitted to...
be 6 inches thick.

SECTION 39. Section 1809.12 is hereby amended to read as follows:

1809.12 Timber footings.

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

SECTION 40. Section 1810.3.2.4 is hereby amended to read as follows:

1810.3.2.4 Timber.

Timber deep foundation elements shall be designed as piles or poles in accordance with ANSI/AWC NDS. Round timber elements shall conform to ASTM D25. Sawn timber elements shall conform to DOC PS-20. Timber shall not be used in structures assigned to Seismic Design Category D, E, or F.

SECTION 41. Section 1905.1 is hereby amended to read as follows:
1905.1 General.

The text of ACI 318 shall be modified as indicated in Sections 1905.1.1 through 1905.1.811.

SECTION 42. Section 1905.1.7 is hereby amended to read as follows:

1905.1.7 ACI 318, Section 14.1.4.

Delete ACI 318, Section 14.1.4, and replace with the following:

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

(a) Structural plain concrete basement, foundation or other walls below the base as defined in ASCE 7 are permitted in detached one- and two-family dwellings three stories or less in height constructed with stud-bearing walls. In dwellings assigned to Seismic Design Category D or E, the height of the wall shall not exceed 8 feet (2438 mm), the thickness shall not be less than 7½ inches (190 mm), and the wall shall retain no more than 4 feet (1219 mm) of unbalanced fill. Walls shall have reinforcement in accordance with 14.6.1. Concrete used for fill with a minimum cement content of two (2) sacks of Portland cement or cementious material per cubic yard.

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

Exception: In detached one- and two-family dwellings three stories or less in height, the projection of the footing beyond the face of the supported member is
permitted to 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. For footings that exceed 8 inches (203 mm) in thickness, 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.

Exceptions:

1. In Seismic Design Categories A, B and C, detached one- and two-family dwellings three stories or less in height and constructed with stud-bearing walls are permitted to have plain concrete footings without longitudinal reinforcement with at least two continuous longitudinal reinforcing bars not smaller than No. 4 and a total area of less than 0.002 times the gross cross-sectional area of the footing.

2. For foundation systems consisting of a plain concrete footing and a plain concrete stemwall, a minimum of one bar shall be provided at the top of the stemwall and at the bottom of the footing.

3. Where a slab on ground is cast monolithically with the footing, one No. 5 bar is permitted to be located at either the top of the slab or bottom of the footing.

SECTION 43. Section 1905.1.8 is hereby amended to read as follows:

1905.1.8 ACI 318, Section 17.2.3.

These requirements shall be applicable to all buildings. Modify ACI 318 Sections 17.2.3.4.2, 17.2.3.4.3 (d) and 17.2.3.5.2 to read as follows:
SECTION 44. Section 1905.1.9 is hereby added to read as follows:

1905.1.9. ACI 318, Section 18.7.5.

Modify ACI 318, Section 18.7.5, by adding Section 18.7.5.7 and 18.7.5.8 as follows:

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

18.7.5.8 At any section where the design strength, $\varphi P_n$, of the column is less than the sum of the shears $V_e$ computed in accordance with ACI 318 Sections 18.7.6.1 and 18.6.5.1 for all the beams framing into the column above the level under consideration, transverse reinforcement as specified in ACI 318 Sections 18.7.5.1 through 18.7.5.3 shall be provided. For beams framing into opposite sides of the column, the moment components may be assumed to be of opposite sign. For the determination of the design strength, $\varphi P_n$, of the column, these moments may be assumed to result from the deformation of the frame in any one principal axis.

SECTION 45. Section 1905.1.10 is hereby added to read as follows:

1905.1.10. ACI 318, Section 18.10.4.

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

18.10.4.6 Walls and portions of walls with $P_u > 0.35P_o$ shall not be considered to contribute to the calculated shear strength of the structure for resisting earthquake-induced forces. Such walls shall conform to the requirements of ACI 318 Section 18.14.
SECTION 46. Section 1905.1.11 is hereby added to read as follows:

1905.1.11 ACI 318, Section 18.12.6.

Modify ACI 318, by adding Section 18.12.6.2, as follows:

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

SECTION 47. Section 2304.10.1 is hereby amended to read as follows:

2304.10.1 Fastener requirements.

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

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

SECTION 48. Table 2304.10.1 is hereby amended to read as follows:

TABLE 2304.10.1

FASTENING SCHEDULE

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

SECTION 49. Section 2304.10.2.1 is hereby added to read as follows:

2304.10.2.1 **Quality of nails.**

In Seismic Design Category D, E, or F, mechanically driven nails used in wood structural panel shear walls shall meet the same dimensions as that required for hand-driven nails, including diameter, minimum length, and minimum head diameter. Clipped head or box nails are not permitted in new construction. The allowable design value for clipped head nails in existing construction may be taken at no more than the nail-head-area ratio of that of the same size hand-driven nails.

SECTION 50. Section 2304.12.5 is hereby amended to read as follows:

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

Wood installed in retaining or crib walls shall be preservative treated in accordance with AWPA U1 for soil and fresh water use. Wood shall not be used in retaining or crib walls for structures assigned to Seismic Design Category D, E, or F.

SECTION 51. Section 2305.4 is hereby added to read as follows:

2305.4 **Hold-down connectors.**

In Seismic Design Category D, E or F, hold-down connectors shall be designed to resist shear wall overturning moments using 75 percent of the allowable seismic load values. Such values shall be established in a valid research report from approved sources or by accepted engineering practice and the provisions of this Code.
**Exception:** Values established by specialized cyclic and dynamic testing may be used when approved by the Building Official in accordance with Section 104.2.8.

Connector bolts into wood framing shall require steel plate washers on the post on the opposite side of the anchorage device. Plate size shall be a minimum of 0.229 inches by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Hold-down connectors shall be tightened to finger tight plus one half (1/2) wrench turn just prior to covering the wall framing.

**SECTION 52.** Section 2306.2 is hereby amended to read as follows:

**2306.2 Wood-frame diaphragms.**

Wood-frame diaphragms shall be designed and constructed in accordance with AWC SDPWS. Where panels are fastened to framing members with staples, requirements and limitations of AWC SDPWS shall be met and the allowable shear values set forth in Table 2306.2(1) or 2306.2(2) shall only be permitted for structures assigned to Seismic Design Category A, B, or C.

**Exception:** Allowable shear values where panels are fastened to framing members with staples may be used if such values are substantiated by cyclic testing and approved by the Building Official.

The allowable shear values in Tables 2306.2(1) and 2306.2(2) are permitted to be increased 40 percent for wind design.

Wood structural panel diaphragms used to resist seismic forces in structures assigned to Seismic Design Category D, E or F shall be applied directly to the framing members.
Exception: Wood structural panel diaphragms are permitted to be fastened over solid lumber planking or laminated decking, provided the panel joints and lumber planking or laminated decking joints do not coincide.

SECTION 53. Section 2306.3 is hereby amended to read as follows:

2306.3 Wood-frame shear walls.

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

1. Wood structural panel thickness for shear walls shall not be less than 3/8 inch thick and studs shall not be spaced at more than 16 inches on center.

2. The maximum nominal unit shear capacities for 3/8 inch wood structural panels resisting seismic forces in structures assigned to Seismic Design Category D, E or F is 400 pounds per linear foot (plf).

   Exception: Other nominal unit shear capacities may be permitted if such values are substantiated by cyclic testing and approved by the Building Official.

3. Nails shall be placed not less than 1/2 inch from the panel edges and not less than 3/8 inch from the edge of the connecting members for shear greater than 350 plf using ASD or 500 plf using LRFD. Nails shall be placed not less than 3/8 inch from panel edges and not less than 1/4 inch from the edge of the connecting members for shears of 350 plf or less using ASD or 500 plf or less using LRFD.

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

Where panels are fastened to framing members with staples, requirements and limitations of AWC SDPWS shall be met and the allowable shear values set forth in Table 2306.3(1), 2306.3(2) or 2306.3(3) shall only be permitted for structures assigned to Seismic Design Category A, B, or C.

**Exception:** Allowable shear values where panels are fastened to framing members with staples may be used if such values are substantiated by cyclic testing and approved by the Building Official.

The allowable shear values in Tables 2306.3(1) and 2306.3(2) are permitted to be increased 40 percent for wind design. Panels complying with ANSI/APA PRP-210 shall be permitted to use design values for Plywood Siding in the AWC SDPWS.

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

**SECTION 54.** Section 2307.2 is hereby added to read as follows:

**2307.2 Wood-frame panel shear walls.**

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

**SECTION 55.** Table 2308.6.1 is hereby amended to read as follows:
## TABLE 2208.6.1†   WALL BRACING REQUIREMENTS

<table>
<thead>
<tr>
<th>SEISMIC DESIGN CATEGORY</th>
<th>STORY CONDITION (SEE SECTION 2208.2)</th>
<th>MAXIMUM SPACING OF BRACED WALL LINES</th>
<th>BRACED PANEL LOCATION, SPACING (O.C.) AND MINIMUM PERCENTAGE (X)</th>
<th>MAXIMUM DISTANCE OF BRACED WALL PANELS FROM EACH END OF BRACED WALL LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bracing method&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LIB</td>
<td>DWB, WSP</td>
</tr>
<tr>
<td>A and B</td>
<td>35° - 0°</td>
<td>Each end and ≤ 25° - 0° o.c.</td>
<td>Each end and ≤ 25° - 0° o.c. Each end and ≤ 25° - 0° o.c.   </td>
<td>12° - 6°</td>
</tr>
<tr>
<td>C</td>
<td>35° - 0°</td>
<td>Each end and ≤ 25° - 0° o.c.</td>
<td>Each end and ≤ 25° - 0° o.c. Each end and ≤ 25° - 0° o.c.   </td>
<td>12° - 6°</td>
</tr>
<tr>
<td>D and E</td>
<td>35° - 0°</td>
<td>Each end and ≤ 25° - 0° o.c.</td>
<td>Each end and ≤ 25° - 0° o.c. Each end and ≤ 25° - 0° o.c.   </td>
<td>12° - 6°</td>
</tr>
</tbody>
</table>

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

NP = Not Permitted.

a. This table specifies minimum requirements for braced wall panels along interior or exterior braced wall lines.
b. See Section 2208.6.3 for full description of bracing methods.
c. For Method GB, gypsum wallboard applied to framing supports that are spaced at 16 inches on center.
d. The required lengths shall be doubled for gypsum board applied to only one face of a braced wall panel.
e. Percentage shown represents the minimum amount of bracing required along the building length (or wall length if the structure has an irregular shape).
f. DWB, SFB, PBS, and HPS wall bracings are not permitted in Seismic Design Categories D or E.
g. Minimum length of panel bracing of one face of the wall for WSP sheathing shall be at least 6'-0" on both faces of the wall for GB or PCP sheathing shall be at least 8'-0" long. h/w ratio shall not exceed 2:1. Wall framing to which sheathing is used for bracing is applied shall be nominal 2 inch wide flanged 1 1/2 inch (38 mm) or larger members and spaced a maximum of 16 inches on center. Braced wall panel construction types shall not be mixed within a braced wall line.
h. WSP sheathing shall be a minimum of 1/2 inch thick nailed with 8d common placed 3/8 inch from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.
SECTION 56. Section 2308.6.5.1 is hereby amended to read as follows:

2308.6.5.1 Alternate braced wall (ABW).

An ABW shall be constructed in accordance with this section and Figure 2308.6.5.1. In one-story buildings, each panel shall have a length of not less than 2 feet 8 inches (813 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with 3/8-inch (3.2 mm) minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 2304.10.1 and blocked at wood structural panel edges. For structures assigned to Seismic Design Category D or E, each panel shall be sheathed on one face with 15/32-inch minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports.

Two anchor bolts installed in accordance with Section 2308.3.1 shall be provided in each panel. Anchor bolts shall be placed at each panel outside quarter points. Each panel end stud shall have a hold-down device fastened to the foundation, capable of providing an approved uplift capacity of not less than 1,800 pounds (8006 N). The hold-down device shall be installed in accordance with the manufacturer’s recommendations. The ABW shall be supported directly on a foundation or on floor framing supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No. 4 bar top and bottom. Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing or turned-down slab edge is permitted at door openings in the braced wall line.
This continuous footing or turned-down slab edge shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped 4524 inches (1610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

\[ \ldots \]

SECTION 57. Figure 2308.6.5.1 is hereby amended to read as follows:

\[ \text{FIGURE 2308.6.5.1} \]

\[ \text{ALTERNATE BRACED WALL PANEL (ABW)} \]

SECTION 58. Section 2308.6.5.2 is hereby amended to read as follows:

2308.6.5.2 Portal frame with hold-downs (PFH).

A PFH shall be constructed in accordance with this section and Figure 2308.6.5.2. The adjacent door or window opening shall have a full-length header.

In one-story buildings, each panel shall have a length of not less than 16 inches (406 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with a single layer of 3/8-inch (9.5 mm) minimum-thickness wood
structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Figure 2308.6.5.2. For structures assigned to Seismic Design Category D or E, each panel shall be sheathed on one face with 15/32-inch minimum-thickness (11.9 mm) wood structural panel sheathing nailed with 8d common nails spaced 3 inches on panel edges, 3 inches at intermediate supports and in accordance with Figure 2308.6.5.2. The wood structural panel sheathing shall extend up over the solid sawn or glued-laminated header and shall be nailed in accordance with Figure 2308.6.5.2. A built-up header consisting of at least two 2-inch by 12-inch (51 mm by 305 mm) boards, fastened in accordance with Item 24 of Table 2304.10.1 shall be permitted to be used. A spacer, if used, shall be placed on the side of the built-up beam opposite the wood structural panel sheathing. The header shall extend between the inside faces of the first full-length outer studs of each panel. The clear span of the header between the inner studs of each panel shall be not less than 6 feet (1829 mm) and not more than 18 feet (5486 mm) in length. A strap with an uplift capacity of not less than 1,000 pounds (4,400 N) shall fasten the header to the inner studs opposite the sheathing. One anchor bolt not less than 5/8 inch (15.9 mm) diameter and installed in accordance with Section 2308.3.1 shall be provided in the center of each sill plate. The studs at each end of the panel shall have a hold-down device fastened to the foundation with an uplift capacity of not less than 3,500 pounds (15 570 N).

Where a panel is located on one side of the opening, the header shall extend between the inside face of the first full-length stud of the panel and the bearing studs at the other end of the opening. A strap with an uplift capacity of not less than
1,000 pounds (4400 N) shall fasten the header to the bearing studs. The bearing studs shall also have a hold-down device fastened to the foundation with an uplift capacity of not less than 1,000 pounds (4400 N). The hold-down devices shall be an embedded strap type, installed in accordance with the manufacturer’s recommendations. The PFH panels shall be supported directly on a foundation that is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No. 4 bar top and bottom. Where the continuous foundation is required to have a depth greater than 12 inches (305 mm), a minimum 12-inch by 12-inch (305 mm by 305 mm) continuous footing or turned-down slab edge is permitted at door openings in the braced wall line. This continuous footing or turned-down slab edge shall be reinforced with not less than one No. 4 bar top and bottom. This reinforcement shall be lapped not less than 1524 inches (381610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

... 

SECTION 59. Figure 2308.6.5.1 is hereby amended to read as follows:
SECTION 60. Section 2308.6.8.1 is hereby amended to read as follows:

2308.6.8.1 Foundation requirements.

... Exception: For structures with a maximum plan dimension not more than 50 feet (15240 mm), continuous foundations are required at exterior walls only for structures assigned to Seismic Design Category A, B, or C.

For structures in Seismic Design Categories D and E, exterior braced wall panels shall be in the same plane vertically with the foundation or the portion of the structure containing the offset shall be designed in accordance with accepted engineering practice and Section 2308.1.1.

Exceptions:

1. Exterior braced wall panels shall be permitted to be located not more than...
4 feet (1219 mm) from the foundation below where supported by a floor constructed in accordance with all of the following:

1.1. Cantilevers or setbacks shall not exceed four times the nominal depth of the floor joists.

1.2. Floor joists shall be 2 inches by 10 inches (51 mm by 254 mm) or larger and spaced not more than 16 inches (406 mm) on center.

1.3. The ratio of the back span to the cantilever shall be not less than 2 to 1.

1.4. Floor joists at ends of braced wall panels shall be doubled.

1.5. A continuous rim joist shall be connected to the ends of cantilevered joists. The rim joist is permitted to be spliced using a metal tie not less than 0.058 inch (1.47 mm) (16 galvanized gage) and 1 1/2 inches (38 mm) in width fastened with six 16d common nails on each side. The metal tie shall have a yield stress not less than 33,000 psi (227 MPa).

1.6. Joists at setbacks or the end of cantilevered joists shall not carry gravity loads from more than a single story having uniform wall and roof loads nor carry the reactions from headers having a span of 8 feet (2438 mm) or more.

2. The end of a required braced wall panel shall be allowed to extend not more than 1 foot (305 mm) over an opening in the wall below. This requirement is applicable to braced wall panels offset in plane and braced wall panels offset out of plane as permitted by Exception 1. Braced wall panels are permitted to extend over an opening not more than 8 feet (2438 mm) in width where the header is a 4-inch by 12-
inch (102 mm by 305 mm) or larger member.

**SECTION 61.** Section 2308.6.9 is hereby amended to read as follows:

**2308.6.9 Attachment of sheathing.**

Fastening of braced wall panel sheathing shall not be less than that prescribed in Tables 2308.6.1 or 2304.10.1. Wall sheathing shall not be attached to framing members by adhesives. \(^1\)Staple fasteners in Table 2304.10.1 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E, or F.

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

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

**SECTION 62.** Section 3101.1 is hereby amended to read as follows:

**3101.1 Scope.**

The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, automatic vehicular gates, awnings and canopies, marquees, signs, towers, antennas,
relocatable buildings, swimming pool enclosures and safety devices, and solar energy systems, and intermodal shipping containers.

**SECTION 63.** Section 3114 is hereby added to read as follows:

**SECTION 3114 INTERMODAL SHIPPING CONTAINERS**

3114.1 **General.**

The provisions of Section 3114 and other applicable sections of this Code shall apply to intermodal shipping containers that are repurposed for use as buildings or structures or as a part of buildings or structures.

**Exceptions:**

1. Stationary storage battery arrays located in intermodal shipping containers complying with Chapter 12 of the Los Angeles County Fire Code.

2. Intermodal shipping containers that are listed as equipment complying with the standard for equipment, such as air chillers, engine generators, modular datacenters, and other similar equipment.

3. Intermodal shipping containers that comply with all of the following:

   3.1. Single-unit stand-alone intermodal shipping containers that are supported at grade level and used only for occupancies as specified under Risk Category I in Table 1604.5;

   3.2. Single-unit stand-alone intermodal shipping containers that are located a minimum of 8 feet from adjacent structures and are not connected to a fuel gas system or fuel gas utility; and
3.3. In flood hazard areas, single-unit stand-alone intermodal shipping containers are designed in accordance with the applicable provisions of Chapter 16.

4. Intermodal shipping containers approved as temporary structures complying with Section 3103.

5. Single-unit stand-alone intermodal shipping containers used as temporary storage or construction trailer on active construction sites. Construction support facilities for uses and activities not directly associated with the actual processes of construction, including but not limited to, offices, meeting rooms, plan rooms, other administrative or support functions shall not be exempt from Section 3114.

3114.2 Construction documents.

The construction documents shall contain information to verify the dimensions and establish the physical properties of the steel and wood floor components of the intermodal shipping container in addition to the information required by Sections 106.4 and 1603.

3114.3 Intermodal shipping container information.

Intermodal shipping containers shall bear the manufacturer’s existing data plate containing the following information as required by ISO 6346 and verified by an approved agency. A report of the verification process and findings shall be provided to the building owner and the Building Official.

1. Manufacturer’s name or identification number

2. Date manufactured
Where approved by the Building Official, the markings and manufacturer’s existing data plate are permitted to be removed from the intermodal shipping containers before they are repurposed for use as buildings or structures or as part of buildings or structures.

3114.4 Protection against decay and termites.

Wood structural floors of intermodal shipping containers shall be protected from decay and termites in accordance with the applicable provisions of Section 2304.12.1.1.

3114.5 Under-floor ventilation.

The space between the bottom of the floor joists and the earth under any intermodal shipping container, except spaces occupied by basements and cellars, shall be provided with ventilation in accordance with Section 1202.4.

3114.6 Roof assemblies.

Intermodal shipping container roof assemblies shall comply with the applicable requirements of Chapter 15.

Exception: Single-unit stand-alone intermodal shipping containers not attached
to, or stacked vertically over, other intermodal shipping containers, buildings or structures.

3114.7 **Joints and voids.**

Joints and voids that create concealed spaces between intermodal shipping containers that are connected or stacked, at fire-resistance-rated walls, at floor or floor/ceiling assemblies and at roofs or roof/ceiling assemblies shall be protected by an approved fire-resistant joint system in accordance with Section 715.

3114.8 **Structural.**

Intermodal shipping containers that conform to ISO 1496-1 and are repurposed for use as buildings or structures, or as a part of buildings or structures, shall be designed in accordance with Chapter 16 and this section.

3114.8.1 **Foundations.**

Intermodal shipping containers repurposed for use as a permanent building or structure shall be supported on foundations or other supporting structures designed and constructed in accordance with Chapters 16 through 23.

3114.8.1.1 **Anchorage.**

Intermodal shipping containers shall be anchored to foundations or other supporting structures as necessary to provide a continuous load path for all applicable design and environmental loads in accordance with Chapter 16.

3114.8.2 **Welds.**

All new welds and connections shall be equal to or greater than the original connections.
3114.8.3 Openings in containers.

Where openings are made in container walls, floors, and roofs for doors, windows and other similar openings:

1. The openings shall be framed with steel elements that are designed in accordance with Chapter 16 and Chapter 22.

2. The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.

3114.8.4 Detailed structural design procedure.

A structural analysis meeting the requirements of this section shall be provided to the Building Official to demonstrate the structural adequacy of the intermodal shipping containers.

Exception: Intermodal shipping containers that meet the limitations of Section 3114.8.5.1 and designed in accordance with the simplified procedure in Section 3114.8.5.

3114.8.4.1 Material properties.

Structural material properties for existing intermodal shipping container steel components shall be established by material testing where the steel grade and composition cannot be identified by the manufacturer's designation as to manufacture and mill test.

3114.8.4.2 Seismic design parameters.

The seismic force-resisting system shall be designed and detailed in accordance with one of the following:
1. Where all or portions of the intermodal shipping container sides are considered to be the seismic force-resisting system, design and detailing shall be in accordance with the ASCE 7 Table 12.2-1 requirements for light-frame bearing-wall systems with shear panels of all other materials,

2. Where portions of intermodal shipping container sides are retained, but are not considered to be the seismic force-resisting system, an independent seismic force-resisting system shall be selected, designed and detailed in accordance with ASCE 7 Table 12.2-1, or

3. Where portions of the intermodal shipping container sides are retained and integrated into a seismic force-resisting system other than as permitted by Section 3114.8.4.2 Item 1, seismic design parameters shall be developed from testing and analysis in accordance with Section 104.2.8 and ASCE 7 Section 12.2.1.1 or 12.2.1.2.

**3114.8.4.3 Allowable shear value.**

The allowable shear values for the intermodal shipping container side walls and end walls shall be demonstrated by testing and analysis in accordance with Section 104.2.8. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.

**3114.8.5 Simplified structural design procedure of single-unit containers.**

Single-unit intermodal shipping containers conforming to the limitations of
Section 3114.8.5.1 shall be permitted to be designed in accordance with Sections 3114.8.5.2 and 3114.8.5.3.

3114.8.5.1 Limitations.

Use of Section 3114.8.5 is subject to all the following limitations:

1. The intermodal shipping container shall be a single stand-alone unit supported on a foundation and shall not be in contact with or supporting any other shipping container or other structure.

2. The intermodal shipping container’s top and bottom rails, corner castings, and columns or any portion thereof shall not be notched, cut, or removed in any manner.

3. The intermodal shipping container shall be erected in a level and horizontal position with the floor located at the bottom.

3114.8.5.2 Structural design.

Where permitted by Section 3114.8.5.1, single-unit stand-alone intermodal shipping containers shall be designed using the following assumptions for the side walls and end walls:

1. The appropriate detailing requirements contained in Chapters 16 through 23.

2. Response modification coefficient, $R = 2$,

3. Over strength factor, $\Omega_0 = 2.5$,

4. Deflection amplification factor, $C_d = 2$, and

5. Limits on structural height, $h_n = 9.5$ feet (2900 mm).
3114.8.5.3 Allowable shear value.

The allowable shear values for the intermodal shipping container side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section 3114.8.5.2 shall be in accordance with Table 3114.8.5.3, provided that all of the following conditions are met:

1. The total linear length of all openings in any individual side walls or end walls shall be limited to not more than 50 percent of the length of that side wall(s) or end wall(s), as shown in Figure 3114.8.5.3(1).

2. Any full height wall length, or portion thereof, less than 4 feet (305 mm) long shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3114.8.5.3(2).

3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3114.8.5.3(3).

4. A maximum of one penetration not greater than a 6-inch (152 mm) diameter hole for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 322 mm²) for electrical boxes, is permitted for each individual 8 feet length (2438 mm) lateral force resisting wall. Penetrations located in walls that are not part of the wall lateral force resisting system shall not be limited in size or quantity. Existing intermodal shipping container vents shall not be considered a penetration, as shown in Figure 3114.8.5.3(4).
5. End wall door or doors designated as part of the lateral force-resisting system shall be welded closed.

SECTION 64. Table 3114.8.5.3 is hereby added to read as follows:

**TABLE 3114.8.5.3**
ALLOWABLE SHEAR VALUES FOR INTERMODAL SHIPPING CONTAINER SIDE WALLS AND END WALLS FOR WIND OR SEISMIC LOADING

<table>
<thead>
<tr>
<th>CONTAINER DESIGNATION 2</th>
<th>CONTAINER DIMENSION (Nominal Length)</th>
<th>CONTAINER DIMENSION (Nominal Height)</th>
<th>ALLOWABLE SHEAR VALUES (PLF) 1,3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Side Wall</td>
<td>End Wall</td>
<td></td>
</tr>
<tr>
<td>1EEE</td>
<td>45 feet (13.7 M)</td>
<td>9.5 feet (2896 mm)</td>
<td>75</td>
</tr>
<tr>
<td>1EE</td>
<td>8.6 feet (2591 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1AAA</td>
<td>40 feet (12.2 M)</td>
<td>9.5 feet (2896 mm)</td>
<td>84</td>
</tr>
<tr>
<td>1AA</td>
<td>8.5 feet (2592 mm)</td>
<td>8.0 feet (2438 mm)</td>
<td></td>
</tr>
<tr>
<td>1A</td>
<td>&lt;8.0 feet (2438 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1AX</td>
<td>30 feet (9.1 M)</td>
<td>9.5 feet (2896 mm)</td>
<td>112</td>
</tr>
<tr>
<td>1BBB</td>
<td>8.5 feet (2591 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1BB</td>
<td>8.0 feet (2438 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1B</td>
<td>&lt;8.0 feet (2438 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1CX</td>
<td>20 feet (9.1 M)</td>
<td>8.5 feet (2591 mm)</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.0 feet (2438 mm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;8.0 feet (2438 mm)</td>
<td></td>
</tr>
</tbody>
</table>

1. The allowable strength for the side walls and end walls of the intermodal shipping containers are derived from ISO 1496-1 and reduced by a factor of safety of 5.
2. Container designation type is derived from ISO 668.
3. Limitations of Sections 3114.8.5.1 and 3114.8.5.3 shall apply.

SECTION 64. Figures 3114.8.5.3(1), 3114.8.5.3(2), 3114.8.5.3(3) and 3114.8.5.3(4) are hereby added to read as follows:
FIGURE 3114.8.5.3(1)
Bracing Unit Distribution – Maximum Linear Length

$L = \text{length of wall}$
FIGURE 3114.8.5.3(2)
Bracing Unit Distribution – Minimum Linear Length

FIGURE 3114.8.5.3(3)
Bracing Unit Distribution – Boundary Elements
SECTION 65. Section 6805 is hereby amended to read as follows:

SECTION 6805 FEES

Permit fees for the installation of small residential rooftop solar energy systems shall be charged according to the applicable fees prescribed in Section 107 of this Code, Section 82-8 of the Electrical Code, and Sections 103.10 and 103.11 of the Plumbing Code, as applicable. The combined solar energy permit fee for small residential rooftop photovoltaic systems shall not exceed the amount set forth in $500, unless modified by or in accordance with Government Code section 66015 or other applicable law.

...
SECTION 66. Section 6807.3 is hereby amended to read as follows:

6807.3 Solar Permitting Guidebook.

The submitted plans must comply with Building Code Manual 6807, Article 1, including its checklist and standard plans as developed in substantial conformance with the most recent version of the California Solar Permitting guidebook adopted by the Governor's Office of Planning and Research and as adopted by the Building Official.

... 

SECTION 67. Section 9807 is hereby amended to read as follows:

SECTION 9807 REQUEST FOR HEARING

Within 10 days after service upon the record owner of an order pursuant to Section 9803, the said record owner or any other person deeming himself or herself aggrieved may request a hearing.

SECTION 68. Section 9908 is hereby amended to read as follows:

SECTION 9908 DETERMINATION BY BUILDING OFFICIAL

Whenever the Building Official determines by inspection that any existing building or portion thereof is substandard or any lot or other premises is substandard, or both, as defined in this Chapter, such building or premises, or both, are hereby declared a public nuisance, and the Building Official shall order the abatement of the nuisance by demolition, repair, or rehabilitation of the substandard building or portion thereof or, at the option of the party concerned, by demolition or demolishment thereof. The order
also may require that the building be vacated if found to be unsafe as defined in Section 102. If the premises are substandard, the Building Official also may order that the substandard conditions be removed.

**SECTION 69.** Section 9909 is hereby amended to read as follows:

**SECTION 9909 INFORMAL NOTICE**

When the Building Official has so found, in addition to any notices hereafter required by this Chapter, the Building Official may give to the occupants of the substandard property, and to any other person whom the Building Official deems should be so notified, information concerning the provisions of this Chapter, any violation thereof, how the person notified may comply and any other information deemed expedient. The Building Official may post such information on the substandard property or on the substandard building.

**SECTION 70.** Section H103.1 is hereby amended to read as follows:

**H103.1 Location restrictions.**

Signs shall not be erected, constructed or maintained so as to obstruct any fire escape or any window or door or opening used as part of a means of egress or as part of the accessible route, except as permitted by Chapter 10, 11A, and 11B, or so as to prevent free passage from one part of a roof to any other part thereof. A sign shall not be attached in any form, shape or manner to a fire escape, nor be placed in such manner as to interfere with any opening required for ventilation.

No sign shall project into any alley whatsoever below a height of 14 feet (4267 mm) above grade or more than 6 inches (152 mm) when over 14 feet (4267 mm).
SECTION 71. Section H103.2 is hereby added as follows:

H103.2 Projections and clearances.

Signs extending beyond the exterior wall of the building shall comply with Section 705.2 and the following requirements.

Signs may project over a public street, public sidewalk or building line in accordance with Section 3202 and a distance as determined by the clearance of the bottoms thereof above the level of the sidewalk or grade immediately below, whichever is more restrictive, as follows:

- Clearance less than 8 feet (2438 mm) shall be prohibited.
- Clearance 8 feet (2438 mm) and above, a 1 foot (305 mm) projection is permitted and for each additional 2-foot clearance (610 mm), an additional 1-foot (305 mm) projection is permitted.

Provided that no structure shall have a projection of more than 5 feet (1524 mm), and provided further that a projecting sign built above and in connection with a marquee may have such a projection of 5 feet (1524 mm) without clearance between sign and marquee; and provided further that no structure shall project beyond the curb line, regardless of clearance above grade.

Signs projecting more than 6 inches (152 mm) from the face of building over private property used or intended to be used by the general public shall have a minimum clearance of 8 feet (2438 mm) above said sidewalk or grade.

SECTION 72. Section H104.1 is hereby amended to read as follows:
H104.1  Identification.

Every outdoor advertising display sign other than wall signs hereafter erected, constructed or maintained, for which a permit is required, shall be plainly marked with the name of the person, weight of the sign, firm or corporation erecting and maintaining such sign and shall have affixed on the front thereof the permit number issued for said sign or other method of identification approved by the building official.

SECTION 73.  Section H105.1 is hereby amended to read as follows:

H105.1  General requirements.

Signs shall be designed and constructed to comply with the provisions of this code for use of materials, loads and stresses. Glass panels used in signs shall comply with the limits of Table 4-A and shall comply with the requirements of Chapter 24.

SECTION 74.  Section H106.1 is hereby amended to read as follows:

H106.1  Illumination.

A sign shall not be illuminated by other than electrical means, and electrical devices and wiring shall be installed in accordance with the requirements of NFPA 70 the Electrical Code, Title 27 of the Los Angeles County Code and a separate electrical permit shall be obtained. Any open spark or flame shall not be used for display purposes unless specifically approved.

SECTION 75.  Section H106.2 is hereby amended to read as follows:
H106.2  **Electrical service.**

Signs that require electrical service shall comply with NFPA 70, the Electrical Code, Title 27 of the Los Angeles County Code.

**SECTION 76.** Section H110.1 is hereby amended to read as follows:

**H110.1  General.**

Roof signs shall be constructed entirely of metal or other approved noncombustible material except as provided for in Sections H106.1.1 and H107.1. Provisions shall be made for electric grounding of metallic parts. Where combustible materials are permitted in letters or other ornamental features, wiring and tubing shall be kept free and insulated therefrom. Roof signs shall be so constructed as to leave a clear space of not less than 6 feet (1829 mm) between the roof level and the lowest part of the sign and shall have not less than 5 feet (11524 mm) clearance between the vertical supports thereof. Roof sign structures shall not project beyond an exterior wall.

**Exception:** Signs on flat roofs with every part of the roof accessible shall not be required to provide clear space between the roof level and the lowest part of the sign.

Blocks, angles or supports fastened to the roof shall be located as not to interfere with the drainage of the roof and, where necessary, flashing or counter flashing shall be placed.

**SECTION 77.** Section H112.1 is hereby amended to read as follows:

**H112.1  General.**

Projecting signs shall be constructed entirely of metal or other noncombustible material and securely attached to a building or structure by metal supports such as
bolts, anchors, supports, chains, guys or steel rods. Staples or nails shall not be used to secure any projecting sign to any building or structure. The dead load of projecting signs not parallel to the building or structure and the load due to wind pressure shall be supported with chains, guys or steel rods having net cross-sectional dimension of not less than 3/8 inch (9.5 mm) diameter. Such supports shall be erected or maintained at an angle of not less than 45 percent (0.78 rad) with the horizontal to resist the dead load and at angle of 45 percent (0.78 rad) or more with the face of the sign to resist the specified wind pressure. If such projecting sign exceeds 30 square feet (2.8 m²) in one facial area, there shall be provided not fewer than two such supports on each side not more than 8 feet (2438 mm) apart to resist the wind pressure.

The thickness of projecting signs shall comply with Table 4-B.

SECTION 78. Section H115 is hereby deleted in its entirety:

H115 Reference Standards

REferenced STandards

ASTM D635-10 Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position H107.1.1

NFPA 70-17 National Electrical H106.1, H106.2

NFPA 701-10 Methods of Fire Test for Flame Propagation of Textiles and Films H106.1.1

SECTION 79. Section J101 is hereby amended to read as follows:

J101 GENERAL
J101.1 Scope.

The provisions of this chapter apply to grading, excavation, and earthwork construction, including fills and embankments and the control of runoff from graded sites, including erosion sediments and construction-related pollutants. Where conflicts occur between the technical requirements of this chapter and the geotechnical report, the geotechnical report shall govern. The purpose of this Appendix is to safeguard life, limb, property, and the public welfare by regulating grading on property subject to this Code.

J101.2 Flood hazard areas.

Unless the applicant has submitted an engineering analysis, hydrology and hydraulic analysis, prepared in accordance with standard engineering practice by a registered design professional California licensed civil engineer, that demonstrates the proposed work will not result in any increase in the level of the base flood, grading, excavation and earthwork construction, including fills and embankments, shall not be permitted in floodways designated in Chapter 11.60 of Title 11 – Health and Safety – of the Los Angeles County Code or in floodways that are in flood hazard areas established in Section 1612.3 or in flood hazard areas where design flood elevations are specified but floodways have not been designated.

J101.3 General hazards.

Whenever the Building Official determines that any existing excavation, embankment, or fill on property subject to this Code 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 Building Official may give written notice thereof to the owner of the property upon which the excavation, embankment, or fill is located, or other person or agent in control of said property. Upon receipt of said notice, the owner or other person or agent in control of the property shall repair or eliminate such excavation, embankment, or fill so as to eliminate the hazard, in conformance with the requirements of this Code, within the period specified in said notice.

**J101.4 Safety precautions.**

If at any stage of the work the Building Official determines by inspection that further grading as authorized is likely to endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course, the Building Official may order the work stopped by notice in writing served on any persons engaged in doing or causing such work to be done, and any such person shall immediately stop such work. The Building Official may authorize the work to proceed if the Building Official finds adequate safety precautions can be taken or corrective measures incorporated in the work to avoid likelihood of such danger, deposition, or interference.

If the grading work as done has created or resulted in a hazardous condition, the Building Official shall give written notice requiring correction thereof as specified in Section J101 of this Code.

**J101.5 Protection of utilities.**

Both the permittee and the owner of the property on which the grading is performed shall be responsible for the prevention of damage to any public and/or
private utilities or services.

J101.6 Protection of adjacent property.

Both the permittee and owner of the property on which the grading is performed shall be responsible for the prevention of damage to adjacent property. No person shall excavate on land sufficiently close to the property line to endanger any adjoining public street, sidewalk, alley, or other public or private property without taking adequate measures to support and protect such property from settling, cracking, or other damage that might result from the proposed work. Any person performing any grading that involves imported or exported materials shall take special precautions, as approved by the Building Official, to prevent such materials from being deposited on adjacent properties, any public way, and/or any drainage course.

J101.7 Storm water control measures.

Both the permittee and the owner of the property on which the grading is performed shall put into effect and maintain all precautionary measures necessary to protect adjacent water courses and public or private property from damage by erosion, flooding, and deposition of mud, debris, and construction-related pollutants originating from the site during grading and related construction activities.

J101.8 Maintenance of protective devices and rodent control.

All drainage structures and other protective devices and all burrowing rodent control measures, as shown on the grading plans approved by the Building Official, shall be maintained in a good condition and, when necessary, promptly repaired by the permittee or the owner of the property on which grading has been performed or by any
other person or agent in control of such property.

**J101.9 Correlation with other sections.**

The provisions of this Appendix are independent of the provisions of Chapter 99 of this Code relating to building and property rehabilitation. This Section may be applied even though the same facts have been used to determine that there is substandard property subject to the provisions of Chapter 99.

**J101.10 Conditions of approval.**

In granting any permit under this Code, the Building Official may include such conditions as may be reasonably necessary to prevent creation of a nuisance or hazard to public or private property. Such conditions may include, but shall not be limited to:

1. Improvement of any existing grading to comply with the standards of this Code.
2. Requirements for fencing of excavations or fills which would otherwise be hazardous.
3. Requirements for temporary excavations and shoring to be shown on plans.

**SECTION 80.** Section J102.1 is hereby amended to read as follows:

**J102.1 Definitions.**

The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of the *California Building Code* for general definitions. For the purposes of this Appendix, the terms, phrases, and words listed in this Section and their derivatives shall have the indicated meanings.
**APPROVAL.** When the proposed work or completed work conforms to this Appendix, as determined by and to the satisfaction of the Building Official.

**AS-BUILT.** See Section J105.12.

**BEDROCK.** The relatively solid, undisturbed rock in place either at the ground surface or beneath superficial deposits of alluvium, colluvium and/or soil.

**BENCH.** A relatively level step excavated into earth material on which fill is to be placed.

**BEST MANAGEMENT PRACTICE (BMP).** Practices, prohibitions of practices, or other activities to reduce or eliminate the discharge of pollutants to surface waters. BMPs include structural and nonstructural controls, management practices, operation and maintenance procedures, and system, design, and engineering methods that are required to be employed in order to comply with the requirements of the National Pollution Discharge Elimination System (NPDES) permit issued to the County of Los Angeles (see Section 106.4.3 and Title 31 – Green Building Standards Code – of the Los Angeles County Code).

**BORROW.** Earth material acquired from an off-site location for use in grading on a site.

**CIVIL ENGINEER.** A professional engineer licensed in the State of California to practice in the field of civil works.

**CIVIL ENGINEERING.** The application of the knowledge of the forces of nature, principles of mechanics, and the properties of materials to the evaluation, design, and construction of civil works.
COMPACCTION. The densification of a fill by mechanical means.

CUT. See "Excavation."

DESLITING BASINS. Physical structures, constructed for the removal of sediments from surface water runoff.

DESIGN ENGINEER. The Civil Engineer responsible for the preparation of the grading plans for the site grading work.

DOWN DRAIN. A device for collecting water from a swale or ditch located on or above a slope, and safely delivering it to an approved drainage facility.

EARTH MATERIAL. Any rock, natural soil, or fill or any combination thereof.

ENGINEERING GEOLOGIST. A geologist experienced and knowledgeable in engineering geology, holding a license as a geologist in the specialty of engineering geology issued by the State of California under the applicable provisions of the Geologist and Geophysicist Act of the Business and Professions Code.

ENGINEERING GEOLOGY. The application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

EROSION. The wearing away of the ground surface as a result of the movement of wind, water, or ice.

EXCAVATION. The removal of earth material by artificial means, also referred to as a cut.

FIELD ENGINEER. The Civil Engineer responsible for performing the functions as set forth in Section J105.3.
**FILL.** Deposition of earth materials by artificial means.

**GEOTECHNICAL ENGINEER.** See "Soils Engineer".

**GEOTECHNICAL HAZARD.** An adverse condition due to landslide, settlement, and/or slippage. These hazards include, but are not limited to, loose debris, slopewash, and mud flows from natural or graded slopes.

**GRADE.** The vertical location of the ground surface.

**GRADE, EXISTING.** The grade prior to grading.

**GRADE, FINAL.** See Section J105.7.

**GRADE, FINISHED.** The grade of the site at the conclusion of all grading efforts.

**GRADE, INITIAL.** See Section J105.7.

**GRADE, ROUGH.** See Section J105.7.

**GRADING.** An excavation or fill or combination thereof.

**KEY.** A compacted fill placed in a trench excavated in earth material beneath the toe of a slope.

**LANDSCAPE ARCHITECT.** A person who holds a certificate to practice landscape architecture in the State of California under the applicable landscape architecture provisions of Division 3, Chapter 3.5 of the Business and Professions Code.

**LINE.** The horizontal location of the ground surface.

**PERMITTEE.** See Section J105.6.

**PRIVATE SEWAGE DISPOSAL SYSTEM.** A septic tank with effluent discharging into a subsurface disposal field, into one or more seepage pits, or into a
combination of a subsurface disposal field and a seepage pit or of such other facilities as may be permitted in accordance with the procedures and requirements set forth in Title 28 – Plumbing Code – of the Los Angeles County Code and as required by the Los Angeles County Department of Public Health.

**PROJECT CONSULTANTS.** The professional consultants required by this Code which may consist of the Design Engineer, Field Engineer, Soils Engineer, Engineering Geologist, and Landscape Architect as applicable to this Appendix.

**PROFESSIONAL INSPECTION.** The inspection required by this Code to be performed by the Project Consultants. Such inspections shall be sufficient to form an opinion relating to the conduct of the work.

**QSD.** Qualified SWPPP Developer as defined in the California State Construction General Permit.

**QSP.** Qualified SWPPP Practitioner as defined in the California State Construction General Permit.

**SITE.** A lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

**SLOPE.** An inclined surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

**SOIL.** Naturally occurring superficial deposits overlying parent bedrock.

**SOILS ENGINEER (GEOTECHNICAL ENGINEER).** A licensed civil engineer experienced and knowledgeable in the practice of soils engineering.

**SOILS ENGINEERING (GEOTECHNICAL ENGINEERING).** 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 or testing of construction thereof.

**STORM DRAIN SYSTEM.** A conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, and man-made channels, designed or used for collecting and conveying storm water.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP).** A site drawing with details, notes, and related documents that identify the measures proposed by the permittee to: (1) control erosion and prevent sediment and construction-related pollutants from being carried offsite by storm water, and (2) prevent non-storm-water discharges from entering the storm drain system.

**SURFACE DRAINAGE.** Flows over the ground surface.

**SOIL TESTING AGENCY.** An agency regularly engaged in the testing of soils and rock under the direction of a Civil Engineer experienced in soil testing.

**TERRACE.** A relatively level step constructed in the face of a graded slope for drainage and maintenance purposes.

**SECTION 81.** Section J103 is hereby amended to read as follows:

**SECTION J103 PERMITS REQUIRED**

**J103.1** Permits required.

Except as exempted in Section J103.2, no grading shall be performed without first having obtained a permit therefor from the Building Official. A grading permit does not include the construction of retaining walls or other structures. A separate
permit shall be obtained for each site and may cover both excavations and fills. Any engineered grading as described in Section J104.2.3 shall be performed by a contractor licensed by the State of California to perform the work described hereon. Regular Grading less than 5,000 cubic yards may require a licensed contractor if the Building Official determines that special conditions or hazards exist.

**J103.2 Exemptions.**

A grading permit shall not be required for the following:

1. When approved by the Building Official, grading in an isolated, self-contained area, provided there is no danger to the public, and that such grading will not adversely affect adjoining properties or public rights of way.

...  

7. Exploratory excavations performed under the direction of a registered design professional Geotechnical Engineer or Engineering Geologist. This shall not exempt grading of access roads or pads created for exploratory excavations. Exploratory excavations must not create a hazardous condition to adjacent properties or the public in accordance with Section J101.3. A restoration plan must be provided and approved by the Building Official for all grading of access roads or pads. Restoration shall be completed within 90 days after the completion of soils testing unless otherwise approved by the Building Official.

8. An excavation that does not exceed 50 cubic yards (38.3 m³) and complies with one of the following conditions and as shown in Figure J103.2:

   (a) Is less than 2 feet (0.6 m) in depth.
(b) Does not create a cut slope greater than 5 feet (1.5 m) measured vertically upward from the cut surface to the surface of the natural grade and is not steeper than 2 units horizontal to 1 unit vertical (50 percent slope).

9. A fill not intended to support a structure that does not obstruct a drainage course and complies with one of the following conditions and as shown in Figure J103.2:

(a) Is less than 1 foot (0.3 m) in depth and is placed on natural terrain with a slope flatter than 5 units horizontal to 1 unit vertical (20 percent slope).

(b) Is less than 3 feet (0.9 m) in depth at its deepest point measured vertically upward from natural grade to the surface of the fill, does not exceed 50 cubic yards, and creates a fill slope no steeper than 2 units horizontal to 1 unit vertical (50 percent slope).

(c) Is less than 5 feet (1.5 m) in depth at its deepest point measured vertically upward from natural grade to the surface of the fill, does not exceed 20 cubic yards, and creates a fill slope no steeper than 2 units horizontal to 1 unit vertical (50 percent slope).

Exemption from the permit requirements of this Appendix shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this Code or any other laws or ordinances of this jurisdiction.

**J103.3 Unpermitted grading.**

A person shall not own, use, occupy, or maintain any site containing unpermitted
grading. For the purposes of this Code, unpermitted grading shall be defined as either of the following:

(1) Grading that was performed, at any point in time, without the required permit(s) having first been obtained from the Building Official, pursuant to Section J103.1; or

(2) Grading for which a permit was obtained pursuant to this Section, but which was not completed, pursuant to Section J105, prior to the expiration of the permit, pursuant to Section 106.5.4.

**J103.4 Availability of permit at site.**

No person shall perform any grading that requires a permit under this Appendix unless a copy of the grading permit and approved grading plans are in the possession of a responsible person and available at the site for the Building Official's reference.

**J103.5 Grading fees.**

Fees shall be assessed in accordance with the provisions of this Section. The amount of the fees shall be as specified in Section 107.

1. **Plan Review Fees.** When a plan or other data are required to be submitted, a plan review fee shall be paid at the time of submitting plans and specifications for review. Separate plan review fees shall apply to retaining walls or major drainage structures as required elsewhere in this Code. For excavation and fill on the same site, the fee shall be based on the volume of excavation or fill, whichever is greater.
2. **Permit Fees.** A fee for each grading permit shall be paid to the Building Official at the time of issuance of the permit. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in this Code.

3. **Site Inspection Fee.** When the Building Official finds that a visual inspection of the site is necessary to establish drainage requirements for the protection of property, existing buildings, or the proposed construction, a site inspection shall be made during plan check of grading plans. A fee for such inspection shall be paid to the Building Official at the time of submitting plans and specifications for review.

**J103.6 Compliance with zoning code.**

The Building Official may refuse to issue a grading permit for work on a site if either the proposed grading or the proposed land use for the site shown on the grading plan application does not comply with the provisions of Title 22 – Planning and Zoning – of the Los Angeles County Code.

**J103.7 Grading security.**

**J103.7.1 Scope and purpose.**

The Building Official may require a permittee or the owner(s) of the property on which the grading is proposed to occur to provide security, as a condition of the issuance of a grading permit for any grading involving more than 1,000 cubic yards (764.6 m³). Where unusual conditions or special hazards exist, the Building Official may require security for grading involving less than 1,000 cubic yards (764.6 m³). The purpose of the security shall be to guarantee the permittee’s obligation to mitigate any hazardous conditions, including flood and geotechnical hazards, that may be created if
the grading is not completed in accordance with the approved plans and specifications, and to complete any work that the Building Official determines is necessary to bring the property into compliance with this Appendix.

Security required by this Section may include incidental off-site grading on property contiguous with the site to be developed, provided written consent of the owner of such contiguous property is filed with the Building Official.

The Building Official may waive the requirements for security for the following:

1. Grading being done by or for a governmental agency.
2. Grading necessary to remove a geotechnical hazard, where such work is covered by an agreement and security posted pursuant to the provisions of Title 21 – Subdivisions – of the Los Angeles County Code.
3. Grading on a site, not exceeding a slope of three horizontal to one vertical, provided such grading as determined by the Building Official will not affect drainage from or to adjacent properties.
4. Filling of holes or depressions, provided such grading will not affect the drainage from or to adjacent properties.

**J103.7.2 Form of security.**

The security referred to in Section J103.7.1 shall be in one of the following forms:

1. A bond furnished by a corporate surety authorized to do business in this state.
2. Cash.
3. Savings and loan certificates or shares deposited and assigned to the County as provided in Chapter 4.36 of Title 4 – Revenue and Finance – of the Los Angeles County Code.

4. An instrument of credit from a financial institution subject to regulation by the state or federal government and pledging that funds in the amount required by the Building Official are on deposit and guaranteed for payment, or a letter of credit issued by such a financial institution.

J103.7.3 Amount of security.

The amount of security shall be based on the number of cubic yards of material in either excavation or fill, whichever is greater, and the cost of all drainage or other protective devices or work necessary to eliminate potential flooding and geotechnical hazards. That portion of the security valuation based on the volume of material in either excavation or fill shall be computed as follows:

- 100,000 cubic yards or less - 50 percent of the estimated cost of grading work.
- Over 100,000 cubic yards - 50 percent of the cost of the first 100,000 cubic yards plus 25 percent of the estimated cost of that portion in excess of 100,000 cubic yards.

When the rough grading has been completed in conformance with the requirements of this Code, the Building Official may, at his or her discretion, consent to a proportionate reduction of the security to an amount estimated to be adequate to ensure completion of the grading work, site development or planting remaining to be performed. The costs referred to in this Section shall be as estimated by the Building Official.
J103.7.4 Conditions.

All security shall include the conditions that the principal shall:

1. Comply with all of the provisions of this Code, applicable laws, and ordinances;
2. Comply with all of the terms and conditions of the grading permit; and
3. Complete all of the work authorized by the permit.

J103.7.5 Term of security.

The term of each security shall begin upon the filing with the Building Official and the security shall remain in effect until the work authorized by the grading permit is completed and approved by the Building Official.

J103.7.6 Default procedures.

In the event any grading for which a permit has been issued is not completed in accordance with the approved plans and specifications for said work or with all terms and conditions of the grading permit, the Building Official may declare that a default has occurred. The Building Official shall give notice thereof to the principal and surety or financial institution executing the security, or to the owner in the case of a cash bond or assignment.

The Building Official may thereafter determine the work that is necessary to mitigate any hazardous or unsafe conditions on the site and cause such work to be performed.

Where the security consists of a bond or instrument of credit, the surety or financial institution executing the security shall be responsible for the payment of all
costs and expenses incurred by the Building Official in causing such work to be performed, up to the full amount of the security. In the case of cash security or assignment, the Building Official may pay all costs and expenses incurred in causing such work to be performed from the funds deposited, and return any unused portion of such deposit or funds to the person making said deposit or assignment.

J103.7.7 Right of entry.

The Building Official or the authorized representative of any surety company or financial institution furnishing the security shall have access to the premises described in the permit for the purpose of inspecting the work.

In the event of default, as described in Section J103.7.6, the surety or financial institution furnishing the security or the Building Official, or any person employed or engaged on the behalf of any of these parties, shall have the right to go upon the premises to perform the mitigation work, as described in Section J103.7.6.

Neither the permittee, owner, or any other person shall interfere with or obstruct the ingress into or egress from any such premises, of any authorized representative of the surety or financial institution executing the security or the Building Official engaged to perform the mitigation work, as described in Section J103.7.6.
SECTION 82. Figure J103.2 is hereby added to read as follows:

![Figure J103.2: Grading Exemption Cases]

FIGURE J103.2
GRADING EXEMPTION CASES

SECTION 83. Section J104 is hereby amended to read as follows:

SECTION J104 PERMIT APPLICATION AND SUBMITTALS

J104.1 Submittal requirements.

In addition to the provisions of Section 105.3 and 1.8.4, as applicable, the applicant shall state the estimated quantities of excavation and fill following:

1. The estimated quantities of excavation, fill, borrow, removal or combination thereof.

2. The proposed land use for the site on which the grading is to be performed.
J104.2  Site plan requirements.

In addition to the provisions of Section J104.2, a grading plan shall show the existing grade and finished grade in contour intervals of sufficient clarity to indicate the nature and extent of the work and show in detail that it complies with the requirements of this eCode. The plans shall show the existing grade on adjoining properties in sufficient detail to identify how grade changes will conform to the requirements of this eCode.

J104.2.1  Grading designation.

Grading in excess of 5,000 cubic yards (3,825 m³) or that is proposed to support any structure shall be designated as "engineered grading." All engineered grading shall be performed in accordance with an approved grading plan and specifications prepared by a Civil Engineer, unless otherwise required by the Building Official.

Grading involving less than 5,000 cubic yards (3,825 m³) and that will not support any structure shall be designated "regular grading" unless the permittee chooses to have the grading be designated as engineered grading, or the Building Official determines that, due to the existence of special conditions or unusual hazards, the grading should be designated as engineered grading.

J104.2.2  Regular grading requirements.

In addition to the provisions of Section 106 and Section J104.2, an application for a regular grading permit shall be accompanied by plans of sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of the work, the
name of the owner, and the name of the person who prepared the plan. The plan shall include the following information:

1. General vicinity of the proposed site.

2. Limits and depths of cut and fill.

3. Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within 15 feet (4.6 m) of the proposed grading.

4. Contours, flow areas, elevations, or slopes which define existing and proposed drainage patterns.

5. Storm water mitigation measures in accordance with the requirements of Section 106.4.3 of this Code. See Section J110.8 for specific requirements.

6. Location of existing and proposed utilities, drainage facilities, and recorded public and private easements and restricted use areas.

7. Location of all recorded floodways as established by Chapter 11.60 of Title 11 – Health and Safety – of the Los Angeles County Code.

8. Location of all Special Flood Hazard Areas as designated and defined in Title 44 of the Code of Federal Regulations.

**J104.2.3 Engineered grading requirements.**

In addition to the provisions of Section 106 and Section J104.2, an application for a permit for engineered grading shall be accompanied by plans and specifications, and supporting data consisting of a geotechnical report and engineering geology report.

Specifications shall contain information covering construction and material requirements. Plans shall be drawn to scale on paper and shall be of sufficient clarity to
indicate the nature and extent of the work proposed and shall show in detail that the proposed work will conform to the provisions of this Code and all relevant laws, ordinances, rules, and regulations. The first sheet of the plans shall depict the location of the proposed work, the name and address of the owner, and the person by whom they were prepared.

The plans shall include or be accompanied by the following information:

1. General vicinity of the proposed site.
2. Property limits and accurate contours of existing ground and details of terrain and area drainage.
3. Limiting dimensions, elevations, or finish contours to be achieved by the grading, proposed drainage channels, and related construction.
4. Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams, and other protective devices to be constructed with, or as a part of, the proposed work. A map showing the drainage area and the estimated runoff of the area served by any drains shall also be provided.
5. Location of any existing or proposed buildings or structures located on the property on which the work is to be performed and the location of any buildings or structures on adjacent properties that are within 15 feet (4.6 m) of the property or that may be affected by the proposed grading operations.
6. Recommendations in the geotechnical report and the engineering geology report shall be incorporated into the grading plans or specifications. When approved by the Building Official, specific recommendations contained in the soils engineering report...
and the engineering geology report, that are applicable to grading, may be included by
reference.

7. The dates of the geotechnical and engineering geology reports together
with the names, addresses, and phone numbers of the firms or individuals who
prepared the reports.

8. A statement of the quantities of material to be excavated and/or filled.
Earthwork quantities shall include quantities for geotechnical and geological
remediation. In addition, a statement of the quantities of material to be imported or
exported from the site.

9. A statement of the estimated starting and completion dates for proposed
work.

10. A statement signed by the owner, acknowledging that a Design Engineer,
Field Engineer, Geotechnical Engineer, and Engineering Geologist, when appropriate,
will be employed to perform the services required by this Code, when the Building
Official requires that such professional persons be so employed. These
acknowledgments shall be on a form furnished by the Building Official.

11. Storm water mitigation measures are required to be shown on the grading
plan in accordance with the requirement of Section 106.4.3 of this Code. See
Section J110.8 for specific requirements.

12. A drainage plan for those portions of property proposed to be utilized as a
building site (building pad), including elevations of floors with respect to finish site grade
and locations of proposed stoops, slabs, and fences that may affect drainage.
13. Location and type of any proposed private sewage disposal system, including the location of the expansion area.

14. Location of existing and proposed utilities, drainage facilities, and recorded public and private easements and restricted use areas.

15. Location of all recorded floodways as established by Chapter 11.60 of Title 11 – Health and Safety – of the Los Angeles County Code.

16. Location of all Special Flood Hazard Areas as designated and defined in Title 44 of the Code of Federal Regulations.

**J104.3 Geotechnical and engineering geology reports.**

A geotechnical report prepared by registered design professionals shall be provided. The report shall contain at least the following:

1. The nature and distribution of existing soils;

2. Conclusions and recommendations for grading procedures;

3. Soil design criteria for any structures or embankments required to accomplish the proposed grading; and

4. Where necessary, slope stability studies, and recommendations and conclusions regarding site geology.

The geotechnical report required by Section J104.2.3 shall include data regarding the nature, distribution, and strength of existing soils, conclusions, and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and an opinion on the adequacy for the intended use of sites to be developed by the proposed grading as affected by...
geotechnical factors, including the stability of slopes. All reports shall conform with the requirements of Section 111 and shall be subject to review by the Building Official. Supplemental reports and data may be required as the Building Official may deem necessary. Recommendations included in the reports and approved by the Building Official shall be incorporated in the grading plan or specifications.

The engineering geology report required by Section J104.2.3 shall include an adequate description of the geology of the site, conclusions, and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy for the intended use of sites to be developed by the proposed grading, as affected by geologic factors. The engineering geology report shall include a geologic map and cross sections utilizing the most recent grading plan as a base. All reports shall conform with the requirements of Section 111 and shall be subject to review by the Building Official. Supplemental reports and data may be required as the Building Official may deem necessary. Recommendations included in the reports and approved by the Building Official shall be incorporated in the grading plan or specifications.

Exception: A geotechnical or engineering geology report is not required where the Building Official determines that the nature of the work applied for is such that a report is not necessary.

J104.4 Liquefaction study.

For sites with mapped maximum considered earthquake spectral response accelerations at short periods ($S_s$) greater than 0.5g as determined by Section 1613, a
study of the liquefaction potential of the site shall be provided and the recommendations incorporated in the plans. A geotechnical investigation will be required when the proposed work is a "Project" as defined in California Public Resources Code section 2693, and is located in an area designated as a "Seismic Hazard Zone" as defined in Title 14 of the California Code of Regulations section 3722 and on Seismic Hazard Zone Maps issued by the State Geologist under Public Resources Code section 2696.

**Exception:** A liquefaction study is not required where the Building Official determines from established local data that the liquefaction potential is low.

**SECTION 84.** Section J105 is hereby amended to read as follows:

**SECTION J105  INSPECTIONS**

J105.1  General.

Grading inspections shall be governed by Section 141, Chapter 1, Division II of this code and as indicated herein. Grading operations for which a permit is required shall be subject to inspection by the Building Official. In addition, professional inspection of grading operations shall be performed by the Field Engineer, the Geotechnical Engineer, and the Engineering Geologist retained to provide such services in accordance with this Section for engineered grading and as required by the Building Official for regular grading.

J105.2  Special and supplemental inspections.

The special inspection requirements of Section 1705.6 shall apply to work performed under a grading permit where required by the Building Official. In addition
to the called inspections specified in Section J105.7, the Building Official may make such other inspections as may be deemed necessary to determine that the work is being performed in conformance with the requirements of this Code. The Building Official may require investigations and reports by an approved soil testing agency, Geotechnical Engineer and/or Engineering Geologist, and Field Engineer. Inspection reports shall be provided when requested in writing by the Building Official.

The Building Official may require continuous inspection of drainage devices by the Field Engineer in accordance with this Section when the Building Official determines that the drainage devices are necessary for the protection of the structures in accordance with Section 110.

**J105.3 Field engineer.**

The Field Engineer shall provide professional inspection of those parts of the grading project within such engineer’s area of technical specialty, oversee and coordinate all field surveys, set grade stakes, and provide site inspections during grading operations to ensure the site is graded in accordance with the approved grading plan and the appropriate requirements of this Code. During site grading, and at the completion of both rough grading and final grading, the Field Engineer shall submit statements and reports as required by Sections J105.11 and J105.12. If revised grading plans are required during the course of the work, they shall be prepared by a Civil Engineer and approved by the Building Official.

**J105.4 Geotechnical engineer.**

The Geotechnical Engineer shall provide professional inspection of those parts of
the grading project within such engineer’s area of technical specialty, which shall include observation during grading and testing for required compaction. The Geotechnical Engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this Appendix. If conditions differing from the approved geotechnical engineering and engineering geology reports are encountered during grading, the Geotechnical Engineer shall provide revised recommendations to the permittee, the Building Official and the Field Engineer.

**J105.5 Engineering geologist.**

The Engineering Geologist shall provide professional inspection of those parts of the grading project within such engineer’s area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. If conditions differing from the approved engineering geology report are encountered, the Engineering Geologist shall provide revised recommendations to the Geotechnical Engineer.

**J105.6 Permittee.**

The permittee shall be responsible for ensuring that the grading is performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code. The permittee shall engage project consultants, if required under the provisions of this Code, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the project consultants, the contractor,
and the Building Official. In the event of changed conditions, the permittee shall be responsible for informing the Building Official of such change and shall provide revised plans for approval.

J105.7 Required inspections.

The permittee shall call for an inspection by the Building Official at the following various stages of work and shall obtain the approval of the Building Official prior to proceeding to the next stage of work:

**Pre-grade.** Before any construction or grading activities occur at the site. Permittee shall schedule a pre-grade inspection with the Building Official. The permittee shall ensure that all project consultants are present at the pre-grade inspection.

**Initial grade.** When the site has been cleared of vegetation and unapproved fill and has been scarified, benched, or otherwise prepared for fill. No fill shall have been placed prior to this inspection.

**Rough grade.** When approximate final elevations have been established, drainage terraces, swales, and other drainage devices necessary for the protection of the building sites from flooding have been installed, berms have been installed at the top of the slopes, and the statements required by Section J105.12 have been received.

**Final grade.** When grading has been completed, all drainage devices necessary to drain the building pad have been installed, slope planting has been established, irrigation systems have been installed, and the as-built plans and required statements and reports have been submitted.
J105.8 Notification of noncompliance.

If, in the course of fulfilling their respective duties under this Appendix, the Field Engineer, the Geotechnical Engineer, or the Engineering Geologist determines that the work is not being done in conformance with this Appendix or the approved grading plans, the Field Engineer, the Geotechnical Engineer, or the Engineering Geologist shall immediately report, in writing, the discrepancies and the recommended corrective measures to the permittee and to the Building Official.

J105.9 Transfer of responsibility.

If the Field Engineer, the Geotechnical Engineer, or the Engineering Geologist of record is changed at any time after the grading plans required pursuant to Section J104.2.2 or J104.2.3 have been approved by the Building Official, the permittee shall immediately provide written notice of such change to the Building Official. The Building Official may stop the grading from commencing or continuing until the permittee has identified a replacement and the replacement has agreed in writing to assume responsibility for those parts of the grading project that are within the replacement's area of technical competence.

J105.10 Non-inspected grading.

No person shall own, use, occupy, or maintain any non-inspected grading. For the purposes of this Code, non-inspected grading shall be defined as any grading for which a grading permit was first obtained, pursuant to Section J103, above, but which has progressed beyond any point requiring inspection and approval by the Building Official without such inspection and approval having been obtained.
J105.11 Routine field inspections and reports.

Unless otherwise directed by the Building Official, the Field Engineer for all engineered grading projects shall prepare routine inspection reports and shall file these reports with the Building Official as follows:

1. Bi-weekly during all times when grading of 400 cubic yards or more per week is occurring on the site;
2. Monthly, at all other times; and
3. At any time when requested in writing by the Building Official.

Such reports shall certify to the Building Official that the Field Engineer has inspected the grading site and related activities and has found them in compliance with the approved grading plans and specifications, this Code, all grading permit conditions, and all other applicable ordinances and requirements. The reports shall conform to a standard "Report of Grading Activities" form, which shall be provided by the Building Official.

J105.12 Completion of work.

Upon completion of the rough grading work and at the final completion of the work, the following reports and drawings and supplements thereto are required for engineered grading or when professional inspection is otherwise required by the Building Official:

1. An "As-built" grading plan prepared by the Field Engineer retained to provide such services in accordance with Section J105.3 showing all plan revisions as approved by the Building Official. This shall include original ground surface elevations.
as-built ground surface elevations, lot drainage patterns, and the locations and elevations of surface drainage facilities and the outlets of subsurface drains. As-built locations, elevations, and details of subsurface drains shall be shown as reported by the Geotechnical Engineer.

The As-built grading plan shall be accompanied by a certification by the Field Engineer that to the best of his or her knowledge, the work within the Field Engineer’s area of responsibility was done in accordance with the final approved grading plan.

2. A report prepared by the Geotechnical Engineer retained to provide such services in accordance with Section J105.4, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved geotechnical engineering investigation report. The report shall include a certification by the Geotechnical Engineer that, to the best of his or her knowledge, the work within the Geotechnical Engineer’s area of responsibility is in accordance with the approved geotechnical engineering report and applicable provisions of this Appendix. The report shall contain a finding regarding the safety of the completed grading and any proposed structures against hazard from landslide, settlement, or slippage.

3. A report prepared by the Engineering Geologist retained to provide such services in accordance with Section J105.5, including a final description of the geology of the site and any new information disclosed during the grading and the effect of such new information, if any, on the recommendations incorporated in the approved grading.
The report shall contain a certification by the Engineering Geologist that, to the best of his or her knowledge, the work within the Engineering Geologist’s area of responsibility is in accordance with the approved engineering geology report and applicable provisions of this Appendix. The report shall contain a finding regarding the safety of the completed grading and any proposed structures against hazard from landslide, settlement, or slippage. The report shall contain a final as-built geologic map and cross-sections depicting all the information collected prior to and during grading.

4. The grading contractor shall certify, on a form prescribed by the Building Official, that the grading conforms to said as-built plan and the approved specifications.

5. When a landscape permit is required by Section 490.1 of the California Department of Water Resources Model Water Efficient Landscape Ordinance, the Landscape Architect shall certify on a form prescribed by the Building Official that the landscaping conforms to approved landscape plans and specifications.

J105.13 Notification of completion.

The permittee shall notify the Building Official when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the final approved grading plan, and all required reports have been submitted and approved.

J105.14 Change of ownership.

Unless otherwise required by the Building Official, when a grading permit has
been issued on a site and the owner sells the property prior to final grading approval, the new property owner shall be required to obtain a new grading permit.

SECTION 85. Section J106.1 is hereby amended to read as follows:

J106.1 Maximum cut slope.

The slope of cut surfaces shall be no steeper than is safe for the intended use, and shall be not more than one unit vertical in two units horizontal (50-percent slope) unless the owner or the owner's authorized agent furnishes a geotechnical or an engineering geology report, or both, justifying a steeper slope. The reports must contain a statement by the Geotechnical Engineer or Engineering Geologist that the site was investigated and an opinion that a steeper slope will be stable and will not create a hazard to public or private property, in conformance with the requirements of Section 111. The Building Official may require the slope of the cut surfaces to be flatter in slope than 2 units horizontal to 1 unit vertical if the Building Official finds it necessary for the stability and safety of the slope.

Exceptions:

1. A cut surface shall be permitted to be at a slope of 1.5 units horizontal to one unit vertical (67 percent slope) provided that all of the following are met:
   1.1 It is not intended to support structures or surcharges.
   1.2 It is adequately protected against erosion.
   1.3 It is no more than 8 feet (2438 mm) in height.
   1.4 It is approved by the Building Official.
   1.5 Ground water is not encountered.
2. A cut surface in bedrock shall be permitted to be at a slope of one unit horizontal to one unit vertical (100 percent slope).

SECTION 86. Section J107 is hereby amended to read as follows:

SECTION J107 FILLS

J107.1 General.

Unless otherwise recommended in the geotechnical report, fills shall comply with the provisions of this Section.

Exception: The Building Official may permit a deviation from the provisions of this Appendix for minor fills not intended to support structures, where no geotechnical report has been prepared.

J107.2 Surface Preparation.

Fill slopes shall not be constructed on natural slopes steeper than 2 units horizontal to 1 unit vertical (50 percent slope). The ground surface shall be prepared to receive fill by removing vegetation, topsoil and other unsuitable materials (including any existing fill that does not meet the requirements of this Appendix), and scarifying the ground to provide a bond with the fill material.

Subdrains shall be provided under all fills placed in natural drainage courses and in other locations where seepage is evident, except where the Geotechnical Engineer or Engineering Geologist recommends otherwise. Such sub-drainage systems shall be of a material and design approved by the Geotechnical Engineer and acceptable to the Building Official. The Geotechnical Engineer shall provide continuous inspection during the process of subdrain installations. The location of the subdrains shall be shown on a
plan prepared by the Geotechnical Engineer. Excavations for the subdrains shall be inspected by the Engineering Geologist when such subdrains are included in the recommendations of the Engineering Geologist.

**J107.3** Benching.

Where existing grade is at a slope steeper than one unit vertical in five units horizontal (20-percent slope) and the depth of the fill exceeds 5 feet (1524 mm) benching shall be provided into sound bedrock or other competent material as determined by the Geotechnical Engineer in accordance with Figure J107.3 or as determined by the Geotechnical Engineer. When fill is to be placed over a cut, a key shall be provided that is at least 10 feet (3048 mm) in width and 2 feet (610 mm) in depth. The area beyond the toe of fill shall be sloped for sheet overflow or a paved drain shall be constructed thereon. The Geotechnical Engineer or Engineering Geologist, or both, shall inspect and approve the cut as being suitable for the foundation and placement of fill material before any fill material is placed on the excavation.

**J107.4** Fill material.

Fill material shall not include organic, frozen or other deleterious materials. No rock or similar irreducible material greater than 12 inches (305 mm) in any dimension shall be included in fills.

**Exception:** The Building Official may permit placement of larger rock when the Geotechnical Engineer properly devises and recommends a method of placement, and continuously inspects the placement and approves the fill stability. The following requirements shall also apply:
1. Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.

2. Rock sizes greater than 12 inches (0.3 m) in maximum dimension shall be 10 feet (3.0 m) or more below grade, measured vertically.

3. Rocks shall be placed so as to assure filling of all voids with well-graded soil.

4. The reports submitted by the Geotechnical Engineer shall acknowledge the placement of the oversized material and whether the work was performed in accordance with the engineer’s recommendations and the approved plans.

5. The location of oversized rock dispersal areas shall be shown on the as-built plan.

J107.5 Compaction.

All fill material shall be compacted to a minimum of 90 percent of maximum density as determined by ASTM D1557, Modified Proctor, in lifts not exceeding 12 inches (305 mm) in depth within 40 feet (12.2 m) below finished grade and 93 percent of maximum dry density deeper than 40 feet (12.2 m) below finished grade, unless a lower relative compaction (not less than 90 percent of maximum dry density) is justified by the Geotechnical Engineer and approved by the Building Official. Where ASTM D1557, Modified Proctor is not applicable, a test acceptable to the Building Official shall be used.
Field density shall be determined by a method acceptable to the Building Official. However, not less than ten percent of the required density tests, uniformly distributed, shall be obtained by the Sand Cone Method.

Fill slopes steeper than 2 units horizontal to 1 unit vertical (50-percent slope) shall be constructed by the placement of soil a sufficient distance beyond the proposed finish slope to allow compaction equipment to operate at the outer surface limits of the final slope surface. The excess fill is to be removed prior to completion or rough grading. Other construction procedures may be utilized when it is first shown to the satisfaction of the Building Official that the angle of slope, construction method, and other factors will comply with the intent of this Section.

**J107.6 Maximum slope.**

The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes steeper than one unit vertical in two units horizontal (50-percent slope) shall be justified by a geotechnical report or engineering data conforming to the requirements of Section 111, containing a statement by the Geotechnical Engineer that the site has been investigated and an opinion that a steeper fill slope will be stable and will not create a hazard to public or private property. Substantiating calculations and supporting data may be required where the Building Official determines that such information is necessary to verify the stability and safety of the proposed slope. The Building Official may require the fill slope to be constructed with a face flatter in slope than 2 units horizontal to 1 unit vertical (50-percent slope) if the Building Official finds it necessary for stability and safety of the slope.
J107.7 Slopes to receive fill.

Where fill is to be placed above the top of an existing slope steeper than 3 units horizontal to 1 unit vertical (33-percent slope), the toe of the fill shall be set back from the top edge of the existing slope a minimum distance of 6 feet (1.8 m) measured horizontally or such other distance as may be specifically recommended by a Geotechnical Engineer or Engineering Geologist and approved by the Building Official.

J107.8 Inspection of fill.

For engineered grading, the Geotechnical Engineer shall provide sufficient inspections during the preparation of the natural ground and the placement and compaction of the fill to ensure that the work is performed in accordance with the conditions of plan approval and the appropriate requirements of this Appendix. In addition to the above, the Geotechnical Engineer shall provide continuous inspection during the entire fill placement and compaction of fills that will exceed a vertical height or depth of 30 feet (9.1 m) or result in a slope surface steeper than 2 units horizontal to 1 unit vertical (50-percent slope).

J107.9 Testing of fills.

Sufficient tests of the fill soils shall be made to determine the density and to verify compliance of the soil properties with the design requirements. This includes soil types and shear strengths in accordance with Section J111 Referenced Standards.

SECTION 88. Section J108 is hereby amended to read as follows:
J108.1  General.

Cut and fill slopes shall be set back from the property lines in accordance with this Section. Setback dimensions shall be measured perpendicular to the property line and shall be as shown in Figure J108.1, unless substantiating data is submitted justifying reduced setbacks and reduced setbacks are recommended in a geotechnical engineering and engineering geology report approved by the Building Official.

J108.2  Top of slope.

The setback at the top of a cut slope shall be not less than that shown in Figure J108.1, or than is required to accommodate any required interceptor drains, whichever is greater. For graded slopes the property line between adjacent lots shall be at the apex of the berm at the top of the slope. Property lines between adjacent lots shall not be located on a graded slope steeper than 5 units horizontal to 1 unit vertical (20-percent slope).

J108.3  Toe of fill slope protection.

The setback from the toe of a fill slope shall not be less than that shown by Figure J108.1. Where required to protect adjacent properties at the toe of a slope from adverse effects of the grading, additional protection, approved by the Building Official, shall be included. Such protection may include but shall not be limited to:

1. Setbacks greater than those required by Figure J108.1.
2. Provisions for retaining walls or similar construction.
3. Erosion protection of the fill slopes.
4. Provision for the control of surface waters.
J108.4 Alternate setbacks.

The Building Official may approve alternate setbacks if he or she determines that no hazard to life or property will be created or increased. The Building Official may require an investigation and recommendation by a qualified engineer or Engineering Geologist to justify any proposed alternate setback.

SECTION 89. Figure J108.1 is hereby amended to read as follows:

![Diagram of drainage setback dimensions]

SECTION 90. Section J109 is hereby amended to read as follows:

SECTION J109 DRAINAGE AND TERRACING

J109.1 General.

Unless otherwise recommended by a registered design professional licensed Civil
Engineer and approved by the Building Official, drainage facilities and terracing shall be provided in accordance with the requirements of this Section J109.2 for all cut and fill slopes 3 units horizontal to 1 unit vertical (33-percent slope) and steeper.

**EXCEPTION:** Drainage facilities and terracing need not be provided where the ground slope is not steeper than one unit vertical in three units horizontal (33-percent slope).

For slopes flatter than 3 units horizontal to 1 unit vertical (33-percent slope) and steeper than 5 units horizontal to 1 unit vertical (20-percent slope) a paved swale or ditch shall be installed at 30 foot (9.1 m) vertical intervals to control surface drainage and debris. Swales shall be sized based on contributory area and have adequate capacity to convey intercepted waters to the point of disposal as defined in Section J109.5. Swales must be paved with reinforced concrete not less than 3 inches (0.08 m) in thickness, reinforced with 6-inch (0.2 m) by 6-inch (0.2 m) No. 10 by No. 10 welded wire fabric or equivalent reinforcing centered in the concrete slab or an equivalent approved by the Building Official. Swales must have a minimum flow line depth of 1 foot (0.3 m) and a minimum paved width of 18 inches (0.5 m). Swales shall have a minimum gradient of not less than 5 percent. There shall be no reduction in grade along the direction of flow unless the velocity of flow is such that slope debris will remain in suspension on the reduced grade.

**J109.2 Drainage Terraces.**

Drainage Terraces at least 6 feet (1829 mm) to 8 feet (2.4 m) in width shall be established at not more than 30-foot (9144 mm) vertical intervals on all cut or fill slopes
to control surface drainage and debris. Suitable access shall be provided to allow for
cleaning and maintenance.

Where more than two terraces are required, one terrace, located at
approximately mid-height, shall be at least 12 feet (3658 mm) in width.

Swales or ditches shall be provided on terraces. They shall have a minimum
gradient of one unit vertical in 20 units horizontal (5-percent slope) and shall be paved
with concrete not less than 3 inches (76 mm) in thickness, or with other materials
suitable to the application. They shall have a depth not less than 12 inches (305 mm)
and a width not less than 5 feet (1524 mm).

A single run of swale or ditch shall not collect runoff from a tributary area
exceeding 13,500 square feet (1256 m²) (projected) without discharging into a down

drain. When only one terrace is required, it shall be at mid-height. For cut or fill slopes
greater than 100 feet (30.5 m) and up to 120 feet (36.6 m) in vertical height, one terrace
at approximately mid-height shall be 20 feet (6.1 m) in width. Terrace widths and
spacing for cut and fill slopes greater than 120 feet (36.6 m) in height shall be designed
by the Civil Engineer and approved by the Building Official. Suitable access shall be
provided to permit proper cleaning and maintenance.

Drainage swales on terraces shall have a longitudinal grade of not less than
5 percent nor more than 12 percent and a minimum depth of 1 foot (0.3 m) at the flow
line. There shall be no reduction in grade along the direction of flow unless the velocity
of flow is such that slope debris will remain in suspension on the reduced grade.

Drainage swales must be paved with reinforced concrete not less than 3 inches (0.8 m).
in thickness, reinforced with 6-inch (0.2 m) by 6-inch (0.2 m) No. 10 by No. 10 welded wire fabric or equivalent reinforcing centered in the concrete slab or an approved equal paving. Drainage swales shall have a minimum depth at the deepest point of 1 foot (0.3 m) and a minimum paved width of 5 feet (1.5 m). Drainage swales on terraces shall be sized based on contributory area and have adequate capacity to convey intercepted waters to the point of disposal as defined in Section J109.5. Downdrains or drainage outlets shall be provided at approximately 300 foot (91.4 m) intervals along the drainage terrace or at equivalent locations. Downdrains and drainage outlets shall be of approved materials and of adequate capacity to convey the intercepted waters to the point of disposal as defined in Section J109.5.

J109.3 Interceptor drains and overflow protection.

Berms, interceptor drains, swales, or other devices shall be installed along the top of cut slopes receiving drainage from a tributary width greater than 40 feet (12.192 mm), measured horizontally, to prevent surface waters from overflowing onto and damaging the face of a slope. Berms used for slope protection shall not be less than 12 inches (0.3 m) above the level of the pad and shall slope back at least 4 feet (1.2 m) from the top of the slope. Interceptor drains shall be installed along the top of graded slopes greater than 5 feet in height receiving drainage from a slope with a tributary width greater than 30 feet (9.1 m), measured horizontally. They shall have a minimum depth of 1 foot (305 mm) and a minimum width of 3 feet (915 mm). The slope shall be approved by the Building Official, but shall be not less than one unit vertical in 50 units horizontal
(2-percent slope). The drain shall be paved with concrete not less than 3 inches (76mm) in thickness, or by other materials suitable to the application and reinforced as required for drainage terraces. Discharge from the drain shall be accomplished in a manner to prevent erosion and shall be approved by the Building Official.

...  

**J109.5 Disposal.**

All drainage facilities shall be designed to convey waters to the nearest practicable street, storm drain, or natural watercourse or drainage way approved by the Building Official or other appropriate governmental agency provided that the discharge of such waters at that location will not create or increase a hazard to life or property. Erosion of the ground in the area of discharge shall be prevented by installation of non-erosive down drains or other devices. Desilting basins, filter barriers, or other methods, as approved by the Building Official, shall be utilized to remove sediments from surface waters before such waters are allowed to enter streets, storm drains, or natural watercourses. If the drainage device discharges onto natural ground, riprap or a similar energy dissipator may be required.

Building pads shall have a minimum drainage gradient of 2 percent toward an approved drainage facility or a public street unless otherwise directed by the Building Official. A lesser slope may be approved by the Building Official for sites graded in relatively flat terrain, or where special drainage provisions are made, when the Building Official finds such modification will not result in a hazard to life or property.

**SECTION 91.** Section J110 is hereby amended to read as follows:
SECTION J110  SLOPE PLANTING AND EROSION CONTROL

J110.1  General.

The faces of cut and fill slopes shall be prepared and maintained to control erosion. This control shall be permitted to consist of effective planting, erosion control blankets, soil stabilizers, or other means as approved by the Building Official.

Exception: Erosion control measures need not be provided on cut slopes not subject to erosion due to the erosion-resistant character of the materials as approved by the Project Consultants, to the satisfaction of the Building Official.

...  

J110.3  Planting.

The surface of all cut slopes more than 5 feet (1.5 m) in height and fill slopes more than 3 feet (0.9 m) in height shall be protected against damage from erosion by planting with grass or ground cover plants. Slopes exceeding 15 feet (4.6 m) in vertical height shall also be planted with shrubs, spaced at not to exceed 10 feet (3 m) on centers, or trees, spaced at not to exceed 20 feet (6.1 m) on centers; or a combination of shrubs and trees at an equivalent spacing, in addition to the grass or ground cover plants. The plants selected and planting methods used shall be suitable for the soil and climatic conditions of the site.

Plant material shall be selected which will produce a coverage of permanent planting to effectively control erosion. Consideration shall be given to deep-rooted plant material needing limited watering, maintenance, high root to shoot ratio, wind...
susceptibility, and fire-retardant characteristics. All plant materials must be approved by the Building Official.

Planting may be modified for the site if specific recommendations are provided by both the Geotechnical Engineer and a Landscape Architect. Specific recommendations must consider soils and climatic conditions, irrigation requirements, planting methods, fire-retardant characteristics, water efficiency, maintenance needs, and other regulatory requirements. Recommendations must include a finding that the alternative planting will provide a permanent and effective method of erosion control. Modifications to planting must be approved by the Building Official prior to installation.

**J110.4 Irrigation.**

Slopes required to be planted by Section J110.3 shall be provided with an approved system of irrigation that is designed to cover all portions of the slope. Irrigation system plans shall be submitted to and approved by the Building Official prior to installation. A functional test of the system may be required.

For slopes less than 20 feet (6.1 m) in vertical height, hose bibs to permit hand watering will be acceptable if such hose bibs are installed at conveniently accessible locations where a hose no longer than 50 feet (15.2 m) is necessary for irrigation.

Irrigation requirements may be modified for the site if specific recommendations are provided by both the Geotechnical Engineer and a Landscape Architect. Specific recommendations must consider soils and climatic conditions, plant types, planting methods, fire-retardant characteristics, water efficiency, maintenance needs, and other regulatory requirements. Recommendations must include a finding that the alternative
irrigation method will sustain the proposed planting and provide a permanent and effective method of erosion control. Modifications for irrigation systems must be approved by the Building Official prior to installation.

**J110.5 Plans and specifications.**

Planting and irrigation plans shall be submitted for slopes which are required to be planted and irrigated pursuant to Sections J110.3 and J110.4. Except as otherwise required by the Building Official for minor grading, the plans for slopes 20 feet (6.1 m) or more in vertical height shall be prepared and signed by a Civil Engineer or Landscape Architect. If requested by the Building Official, planting and irrigation details shall be included on the grading plan.

**J110.6 Rodent control.**

Fill slopes shall be protected from potential slope damage by a preventative program of rodent control.

**J110.7 Release of security.**

The planting and irrigation systems required by this Section shall be installed as soon as practical after rough grading. Prior to final approval of grading and before the release of the grading security, the planting shall be well established and growing on the slopes and there shall be evidence of an effective rodent control program.

**J110.8 National Pollutant Discharge Elimination System (NPDES) compliance.**

**J110.8.1 General.**

All grading plans and permits and the owner of any property on which such
grading is performed shall comply with the provisions of this Section for NPDES compliance.

All best management practices shall be installed before grading begins or as instructed in writing by the Building Official for unpermitted grading as defined by Section J103.3. As grading progresses, all best management practices shall be updated as necessary to prevent erosion and to control construction-related pollutants from discharging from the site. All best management practices shall be maintained in good working order to the satisfaction of the Building Official until final grading approval has been granted by the Building Official and all permanent drainage and erosion control systems, if required, are in place. Failure to comply with this Section is subject to "Noncompliance Penalties" pursuant to Section J110.8.5. Payment of a penalty shall not relieve any persons from fully complying with the requirements of this Code in the execution of the work.

J110.8.2 Storm Water Pollution Prevention Plan (SWPPP).

The Building Official may require a SWPPP. The SWPPP shall contain details of best management practices, including desilting basins or other temporary drainage or control measures, or both, as may be necessary to control construction-related pollutants which originate from the site as a result of construction-related activities. When the Building Official requires a SWPPP, no grading permit shall be issued until the SWPPP has been submitted to and approved by the Building Official.

For unpermitted grading as defined by Section J103.3 upon written request, a SWPPP in compliance with the provisions of this Section and Section 106.4.3 for
NPDES compliance shall be submitted to the Building Official. Failure to comply with this Section is subject to "Noncompliance Penalties" per Section J110.8.5. Payment of a penalty shall not relieve any persons from fully complying with the requirements of this Code in the execution of the work.

**J110.8.3 Erosion and Sediment Control Plans (ESCP).**

Where a grading permit is issued and the Building Official determines that the grading will not be completed prior to November 1, the owner of the site on which the grading is being performed shall, on or before October 1, file or cause to be filed with the Building Official an ESCP. The ESCP shall include specific best management practices to minimize the transport of sediment and protect public and private property from the effects of erosion, flooding, or the deposition of mud, debris, or construction-related pollutants. The best management practices shown on the ESCP shall be installed on or before October 15. The plans shall be revised annually or as required by the Building Official to reflect the current site conditions.

The ESCP shall be accompanied by an application for plan checking services and plan-checking fees in an amount determined by the Building Official, up to but not exceeding 10 percent of the original grading permit fee.

Failure to comply with this Section is subject to "Noncompliance Penalties" pursuant to Section J110.8.5. Payment of a penalty shall not relieve any persons from fully complying with the requirements of this Code in the execution of the work.
J110.8.4 **Storm Water Pollution Prevention Plan (SWPPP), effect of noncompliance.**

Should the owner fail to submit the SWPPP or the ESCP as required by Section J110.8 or fail to install the best management practices, it shall be deemed that a default has occurred under the conditions of the grading permit security. The Building Official may thereafter enter the property for the purpose of installing, by County forces or by other means, the drainage, erosion control, and other devices shown on the approved plans, or if there are no approved plans, as the Building Official may deem necessary to protect adjoining property from the effects of erosion, flooding, or the deposition of mud, debris, or constructed-related pollutants.

The Building Official shall also have the authority to impose and collect the penalties imposed by Section J110.8.5. Payment of a penalty shall not relieve any persons from fully complying with the requirements of this Code in the execution of the work.

J110.8.5 **Noncompliance penalties.**

The amount of the penalties shall be as follows:

1. If a SWPPP or an ESCP is not submitted as prescribed in Sections J110.8.2 and J110.8.3:

<table>
<thead>
<tr>
<th>Grading Permit Volume</th>
<th>Penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10,000 cubic yards (1-7645.5 m$^3$)</td>
<td>$50.00 per day</td>
</tr>
<tr>
<td>10,001-100,000 cubic yards (7646.3-76455 m$^3$)</td>
<td>$250.00 per day</td>
</tr>
<tr>
<td>More than 100,000 cubic yards (76455 m$^3$)</td>
<td>$500.00 per day</td>
</tr>
</tbody>
</table>
2. If the best management practices for storm water pollution prevention and wet weather erosion control, as approved by the Building Official, are not installed as prescribed in this Section J110.8:

<table>
<thead>
<tr>
<th>Grading Permit Volume</th>
<th>Penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10,000 cubic yards (1-7645.5 m³)</td>
<td>$100.00 per day</td>
</tr>
<tr>
<td>10,001-100,000 cubic yards (7646.3-76455 m³)</td>
<td>$250.00 per day</td>
</tr>
<tr>
<td>More than 100,000 cubic yards (76455 m³)</td>
<td>$500.00 per day</td>
</tr>
</tbody>
</table>

NOTE: See Section 108 for inspection request requirements.

SECTION 92. Section J111 is hereby amended to read as follows:

SECTION J111 REFERENCED STANDARDS

<table>
<thead>
<tr>
<th>ASTM D1557-12</th>
<th>Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort ((56,000 \text{ ft-lb/ft}^3 \text{ (2,700kN-m/m}^3)))</th>
</tr>
</thead>
<tbody>
<tr>
<td>J 107.5</td>
<td></td>
</tr>
</tbody>
</table>

These regulations establish minimum standards and are not intended to prevent the use of alternate materials, methods, or means of conforming to such standards, provided such alternate has been approved by the Building Official.

The Building Official shall approve such an alternate provided he or she determines that the alternate is, for the purpose intended, at least the equivalent of that prescribed in this Code in quality, strength, effectiveness, durability, and safety.

The Building Official shall require that sufficient evidence or proof be submitted to substantiate any claims regarding the alternate.

The standards listed below are recognized standards. Compliance with these recognized standards shall be prima facie evidence of compliance with the standards set forth in Sections J104 and J107.
<table>
<thead>
<tr>
<th>ASTM D 1557 – Latest Revision</th>
<th>Laboratory Characteristics Compaction of Soil Using Modified Effort</th>
<th>J107.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 1556 – Latest Revision</td>
<td>Density and Unit Weight of Soils In Place by the Sand Cone Method</td>
<td>J104.2.3, J104.3 and J107.9</td>
</tr>
<tr>
<td>ASTM D 2167 – Latest Revision</td>
<td>Density and Unit Weight of Soils In Place by the Rubber Balloon Method</td>
<td>J104.2.3, J104.3 and J107.9</td>
</tr>
<tr>
<td>ASTM D 2937 – Latest Revision</td>
<td>Density of Soils in Place by the Drive Cylinder Method</td>
<td>J104.2.3, J104.3 and J107.9</td>
</tr>
<tr>
<td>ASTM D 2922 – Latest Revision</td>
<td>Density of Soil and Soil Aggregate In Place by Nuclear Methods</td>
<td>J104.2.3, J104.3 and J107.9</td>
</tr>
<tr>
<td>ASTM D 3017 – Latest Revision</td>
<td>Water Content of Soil and Rock in Place by Nuclear Methods</td>
<td>J104.2.3, J104.3 and J107.9</td>
</tr>
</tbody>
</table>