

Maintenance and service of the instruments shall be performed annually and shall be performed only by an approved testing agency. The owner shall file with the Department a written report from an approved testing agency certifying that each instrument has been serviced and is in proper working condition. This report shall be submitted when the instruments are installed and annually thereafter. Each instrument shall have affixed to it an externally visible tag specifying the date of the last maintenance or service and the printed name and address of the testing agency performing the service.

**1613.8.4 Location.** For new buildings requiring accelerographs per Section 1613.8.2, the instruments shall be located in the basement, mid-height and near the top of the building. Each instrument shall be located so that access is maintained at all times and is unobstructed by room contents. A sign stating "MAINTAIN CLEAR ACCESS TO THIS INSTRUMENT" in 1-inch (25 mm) block letters shall be posted in a conspicuous location at the instrument.

**1613.8.5 Instrumentation of existing buildings.** All owners of existing structures selected by the Department shall provide accessible space for the installation of appropriate earthquake-recording instruments. Locations of the instruments shall be determined by the engineer of record and approved by the Department. The owners shall make arrangements with the Department to provide, maintain and service the instruments as required above. Data shall be the property of the Department, but copies of individual records shall be made available to the public on request with the payment of an appropriate fee.

All legally existing instruments shall be maintained and serviced in proper working condition. Each instrument shall be maintained and serviced as specified by Section 1613.8.3 and shall be provided with a sign as required by Section 1613.8.4.

**1613.9 Seismic design provisions for hillside buildings:**

**1613.9.1 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 these buildings on or into slopes steeper than one unit vertical in three units horizontal (33.3-percent slope). These regulations establish minimum standards for seismic force resistance to reduce the risk of injury or loss of life in the event of earthquakes.

**1613.9.2 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.

**Exception:** Nonhabitable accessory buildings and patio decks not supporting or supported from the main building are exempt from these regulations.

**1613.9.3 Definitions.** For the purposes of this section, certain terms are defined as follows:

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

**DIAPHRAGM ANCHORS.** Assemblies that connect a diaphragm to the adjacent foundation at the uphill diaphragm edge.

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

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

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

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

**PRIMARY ANCHORS.** Diaphragm anchors designed for and providing a direct connection as described in Sections 1613.9.5 and 1613.9.7.3 between the diaphragm and the uphill foundation.

**SECONDARY ANCHORS.** Diaphragm anchors designed for and providing a redundant diaphragm to foundation connection as described in Sections 1613.9.6 and 1613.9.7.4.

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

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

**1613.9.4 Analysis and design.**

**1613.9.4.1 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 stresses than seismic design stress, the wind design shall govern, but detailing requirements and limitations prescribed in this and referenced sections shall be followed.

**1613.9.4.2 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:

**1613.9.4.2.1. 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.

**1613.9.4.2.2. Base shear.** In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 4.5 for bearing wall and building frame systems. The total base shear shall include the forces tributary to the base level diaphragm including forces from the base level diaphragm.