



INFORMATION SHEET

NO. S-05

DATE : May 20, 2015

CATEGORY : Structural

SUBJECT : **Geotechnical Report Requirements**

PURPOSE : The purpose of this Information Sheet is to establish the permit work scope which will require the submittal of a geotechnical report.

REFERENCE : San Francisco Building Code (SFBC)
State of California Department of Conservation Division of Mines and Geology (CDMG) Seismic Hazard Zones Map for San Francisco, released November 17, 2000. [Note: Map is posted near 1660 Mission St. 2nd Floor Counter. "Liquefaction zones" are colored "Green," or Seismic Hazard Zones Map Indices listing property street addresses and/or blocks and lots which are in the potential landslide and liquefaction zones (see Attachments 1&2)]
Figure 4 of the San Francisco Seismic Safety Investigation report prepared by URS/John A. Blume & Associates, Engineers, June 1974. (Note: Map is posted near 1660 Mission St. 2nd Floor Counter. "Landslide Hazard Areas" are colored "Red")

DISCUSSION :

(A) Permit requiring geotechnical report

The following permit application submittal will require a geotechnical report:

1. New Building (with the exception of one-story storage or utility occupancy, including storage shed and garage)
2. Horizontal Additions if the footprint area increases more than 50% of the existing square footage
3. Horizontal and Vertical Additions increase more than 1000 square feet of projected roof area within the Landslide Hazard Areas (see Reference) per SFBC Section 106A.4.1.4.3 and per SFBC Section 106A.4.1.4.4.

[See SECTION (C) page 3]

4. Any of the following grading (per SFBC Section J104.3):
 - a) Cut section is greater than 10 feet in vertical height.
 - b) Cut slope is steeper than 2 horizontal to 1 vertical.
 - c) The tops of cut banks are separated from any structure or major improvement by a distance, measured horizontally, less than the height of the bank.
 - d) More than 5000 cubic yards are involved in grading.
 - e) Grading performed at a site located within Earthquake Fault Zones, Seismic Hazard Zones, Landslide Zones (see Attachment 1), or Liquefaction Zones (see Attachment 2) as shown in the most recently published maps from California Geological Survey.
5. Slope of fill is steeper than two units horizontal to one unit vertical (50 percent slope) specified per SFBC Section J107.6, or deviate from the stipulated provisions in SFBC Section J107 Fills.
6. Any footings on/or adjacent to slopes steeper than one unit vertical in three units horizontal without clearances as indicated per SFBC Section 1808.7 and Figure 1808.7.1.
7. The design soil lateral loads are less than the minimum design requirements specified in Section 1610 Soil Lateral Loads.
8. The design load bearing value used exceeds values stipulated for Class 4 or 5 soil materials in SFBC Table 1806.2 Presumptive Load-Bearing Values.
9. Special foundation including but not limited to piles, piers, base isolation and any design not covered by code, excluding piers supporting a fence, sign or isolated post.
10. As required per Building Code:
 - a) Expansive soil per SFBC Section 1803.5.3.
 - b) Drainage system as an alternative to the requirements per SFBC Section J109 Drainage and Terracing.
 - c) Water Table per SFBC Section 1803.5.4 to determine whether the existing ground-water table is above or within 5 feet below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation, unless waterproofing is provided in accordance with SFBC Section 1805.
 - d) Ground improvement, including soil mix grouting and chemical soil grouting.
 - e) Where shallow foundations will bear on controlled low-strength material (CLSM), a geotechnical investigation shall be conducted per SFBC Section 1803.5.9 Controlled low-strength material.
 - f) Where geological investigation is deemed necessary per SFBC Section 1803 Geotechnical Investigations.
11. Permit scope subject to mandatory structural advisory review under SFBC Section 106A.4.1.2 Edgehill Slope Protection Area, Section 106A.4.1.3 Northwest Mt. Sutro Slope Protection Area.
12. All structures utilizing Modal Response Spectrum Analysis in accordance with ASCE 7-10 Section 12.9 Modal Response Spectrum Analysis.

(B) Submittal requirements for geotechnical report (if required)**GEOTECHNICAL:**

1. Provide original letter wet signed by geotechnical consultant, who is a licensed civil or geotechnical engineer, stating that they have reviewed and approved final structural plans.
{Note: In addition to the licensed geotechnical or civil engineer, a licensed geologist is also required for properties subject to the Slope Protection Act [See SECTION (C) BELOW]}.
2. Provide two (2) sets of original geotechnical reports and one (1) CD-ROM:
SOILS REPORTS: Effective November 1, 2011, DBI will no longer accept soils reports solely in "hard" copy format. Two (2) "hard" copies and one (1) copy on a CD-ROM in Adobe 'PDF' format are required. After DBI review, one "hard" copy will be returned to the applicant with a 'Received' stamp. DBI will retain its copy, and the CD-ROM will be sent to the State Department of Conservation, as required by state law.
3. Geotechnical report shall be in accordance with SFBC Section 1803.2 through Section 1803.6 and Section J104.3.
4. Civil engineers experienced in geotechnical engineering are authorized to practice geotechnical engineering. This includes preparing or reviewing soils reports.

(C) Projects subject to the Slope Protection Act (SFBC Section 106A.4.1.4)

Scope. Properties are subject to these requirements where any portion of the property lies within the areas of "Earthquake-Induced Landslide" in the Seismic Hazard Zone Map, released by California Department of Conservation, Division of Mines and Geology, dated November 17, 2000 (see Attachment 1), or amendments thereto; or within the "Landslide Hazard Areas" mapped as "Landslide Locations" in Figure 4 of the San Francisco Seismic Safety Investigation report prepared by URS/John A. Blume & Associates, Engineers, June 1974; or any successor map thereto. (see Reference)

Sites that are deemed stable by the geologist and where the geologist has mapped the site underlain by bedrock at depth shallower than the proposed depth of excavation are not required to be explored to depths specified in Section 1803.5.6.

Proposed construction work that is subject to these requirements includes the construction of new buildings or structures having over 1000 square feet of new projected roof area, and horizontal or vertical additions having over 1000 square feet projected roof area of newly constructed addition. In addition, these requirements shall apply to the following activity or activities, if determined by the plan reviewer that the proposed work may have a substantial impact on the slope stability of any property, such as: shoring, underpinning, excavation or retaining wall work; grading, including excavation or fill, of over fifty (50) cubic yards of earth materials; or any other construction activity. Such determination by plan reviewer shall be verified by supervisor or manager.

If required as above, permit applications submitted to the Department of Building Inspection for construction shall include report(s) prepared and signed by both a licensed geologist and a licensed geotechnical or civil engineer identifying areas of potential slope instability, defining potential risks of development due to geological and geotechnical factors, and drawing conclusions and making recommendations regarding the proposed development. These reports shall undergo design review by a licensed geotechnical or civil engineer. Such design review shall verify that appropriate geological and geotechnical issues have been considered and that appropriate slope instability mitigation strategies, including drainage plans if required, have been proposed.

Procedure to request for Structural Advisory Committee (SAC). After reviewing all submitted information pursuant to Section 106A.4.1.4.4, the plan reviewer may request that the permit application be subject to review by a Structural Advisory Committee (SAC), as defined by Building Code Section 105A.6. Such request will be reviewed by Supervisor or Manager and needs to be approved by Deputy Director.

Site Permit Processing. For projects that may be subject to the Slope Protection Act, plan reviewer should request design professional to stipulate on plan the acknowledgement that: Addendum plan review may determine the project is subjecting to compliance with the Slope Protection Act that requires submittal of Geological and Geotechnical report(s) per SFBC Section 106A.4.1.4.4. Two (2) hard copies and one (1) CD_ROM of the report(s) shall be submitted to DBI upon request, prior to issuance of the structural or foundation addenda.

Tom C. Hui, S.E., C.B.O.
Director
Department of Building Inspection

Date

Attachments: Seismic Hazard Zones Map Indices

1. Addresses in LANDSLIDE ZONES
www.sfdbi.org/IS_S05_Addresses_Landslide_Zones_Attachment01
2. Addresses in LIQUEFACTION ZONES
www.sfdbi.org/IS_S05_Addresses_Liquefaction_Zones_Attachment02

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