

	<p align="center">CITY OF AGOURA HILLS BUILDING & SAFETY DIVISION 30001 LADYFACE COURT AGOURA HILLS, CA 91301</p>	<p align="right">PHONE: (818) 597-7334 FAX: (818) 597-7352 www.AgouraHillsCity.org</p>	
<p align="center">GEOTECHNICAL REPORTS POLICY</p>		<p align="center">OP-02</p>	<p align="center">3-15-22</p>

A Geotechnical report is required if the answer to ANY of the following questions is “YES” for Single Family Dwellings and Duplexes.

Please check the following boxes:

- | | <u>NO</u> | <u>YES</u> |
|---|--------------------------|--------------------------|
| 1. Is the proposed new light- frame 1-story structure > 1000 sf? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is the project a new 2-story or more structure and >1000 sf? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Is the proposed 2 nd story addition > 500 SF, or >50% of existing floor area or valuation? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Is a basement proposed for the project? (CBC 1803.5.11) | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is the project located in the Liquefaction Zone, Flood Zone, Alquist-Priolo earthquake fault Zone? (CBC 1803.5.4, CBC 1804.5, CBC1803.5.11,) | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Is lot/land where structure to be built located in the Hillside designated zone or has a slope of 10% or more? (CBC 1803.5.10) | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Is the foundation system non-conventional. (CBC1803.5.5) | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Is the structure supported by proposed fill? (CBC 1803.5.8) | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Is soil classification, strength or compressibility of soil in doubt? (1803.5.2) | <input type="checkbox"/> | <input type="checkbox"/> |

If answer to any of these questions is found inaccurate or false during plan check or field inspection, a soils report will be required and plans will need to be corrected and resubmitted by the applicant for review.

Signature _____ **Date** _____

Per CBC 1803.5.2, the Building Official shall be permitted to require that a geotechnical investigation be conducted.

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PURPOSE

To provide a guideline for requiring a soil investigation report for detached one- and two-family dwelling projects being submitted for plan review.

POLICY

All Structures located in, but not limited to, liquefaction, landslide, collapsible soil, Alquist-Priolo earthquake fault zone, slope 10% or greater, flood zone are subject to the building official approval

1. NEW ONE STORY, one- or two-family dwellings with a floor area of 1,000 square feet or less do not require a soil investigation report. However, the foundation shall be designed to meet the minimum expansive soil mitigation measures listed below.
2. ONE-STORY ADDITIONS with a floor area of not more than 1,000 square feet in aggregate with existing do not require a soil investigation report. However, the foundation shall be designed to meet the minimum liquefaction mitigation measures listed below.
3. New TWO-STORY, one- or two- family dwelling projects require a geotechnical investigation report that may include an evaluation of the effects of liquefaction and recommended mitigation measures.
4. Second-floor additions that do not exceed the least of 50 percent of the value of the structure, 50 percent of the existing second-floor area, or 500 SF of the second-floor structure do not require a soil investigation report. However, the foundation shall be designed to meet the minimum expansive soil mitigation measures listed below.
5. New one- or two-family dwelling projects that are part of multiple building projects require a geotechnical investigation report that may include an evaluation of the effects of liquefaction and recommended mitigation measures.
6. Retaining walls - Cantilever retaining wall less than 6 ft high measured from the bottom of the footing and not supported on proposed fill; or not supporting, surcharging, or surcharged by other structures; not located in Liquefaction Zone, Flood Zone, or Alquist-Priolo earthquake fault Zone
7. Where a geotechnical report is not required, the foundation design shall meet the minimum building design requirements for expansive soils.

MINIMUM EXPANSIVE SOILS MITIGATION MEASURES

1. Concrete slab shall be a minimum of 4 inches thick.
2. Slab shall be reinforced with #4 bars at 16 inches on center each way.
3. Slab reinforcement shall be doweled a minimum of 6 inches into the footing.
4. Continuous footings shall be provided with a minimum of 2-#4 top and bottom bars.
5. Footings shall be embedded a minimum of 18/24 inches into natural competent materials.
6. Footings shall be designed for a maximum allowable soil pressure of 1,500 psf.

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ANALYSIS

- California Building Code (2019) Sections 1803.5.11 and 1803.5.12 require a geotechnical investigation for all structures assigned to Seismic Design Category C, D, E, or F. Reports must include, among other things, evaluation of the effects of liquefaction and recommended mitigation measures.
- Seismic Hazard Zone Mapping Act states that cities and counties, prior to the approval of a “project” located in seismic hazard zone, require a geotechnical report defining and delineating any seismic hazard. However, Public Resources Code Sections 2621.6 and 2693, exempt structures such as single- family dwellings and alterations or additions to any structure within a seismic hazard zone which do not exceed either 50 percent of the value of the structure or 50 percent of the existing floor area of the structure.
- A preliminary soil report may be waived if the building department of the city, charged with the administration and enforcement of the provisions of Section CBC 1803.1.1 / CRC R401.4.1.1.1 , determines that, due to the knowledge such department has as to the soil qualities of the subdivision or lot, no preliminary analysis is necessary. Building Officials are permitted to waive requirements for a geotechnical investigation where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary per Health and Safety Code Section 17953 (CBC 1803.1.1.1 / CRC R401.4.1.1.1)
- Requiring a soils report for minor projects would create an unreasonable financial hardship to the homeowner. The intent of this document is to recognize the City's familiarity with the soil conditions and geotechnical hazards associated with particular areas of the jurisdiction and to provide criteria for exempting the same types of structures as those exempted by the Public Resources Code Sections 2621.6 and 2693.
- Structures that are located in, but not limited to, a liquefaction, landslide, collapsible soil, Alquist-Priolo earthquake fault zone, slope 10% or greater, flood zone are subject to the building official approval.
- To mitigate seismic hazards for minor projects, in the absence of a soils report, the City will require deeper footings, thicker slab, heavier reinforcements for footings and slabs, sufficient dowels for footings and slabs, and a maximum design bearing pressure of 1,500 psf.

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Soils Reports are required for all projects with exceptions below:

A. One and two-dwelling residential structures- Group R-3, R-3.1, and R-4 and U Occupancies

Exceptions:

1. **New one-story or two-story** light frame structures less than 1000 SF and
 - Not supported on proposed fill; or
 - Not in hillside lot; or
 - Not located in Liquefaction Zone, Flood Zone, or Alquist-Priolo earthquake fault Zone
2. **Additions of one-story** light frame structures less than 1000 SF and
 - Not supported on proposed fill; or
 - Not in hillside lot; or
 - Not located in Liquefaction Zone, Flood Zone, or Alquist-Priolo earthquake fault Zone
3. **Additions of two-story** light frame structures not exceeding the least of 50 % of the value of the structure or 50% of the existing second-floor area of the structure or 500 SF; and
 - Not supported on proposed fill; or
 - Not in hillside lot; or
 - Not located in Liquefaction Zone, Flood Zone, or Alquist-Priolo earthquake fault Zone

A1. Where a geotechnical report is not required, the foundation design shall meet the minimum building design requirements for expansive soils.

MINIMUM EXPANSIVE SOILS MITIGATION MEASURES

1. Concrete slab shall be a minimum of 4 inches thick.
2. Slab shall be reinforced with #4 bars at 16 inches on center each way.
3. Slab reinforcement shall be doweled a minimum of 6 inches into the footing.
4. Continuous footings shall be provided with a minimum of 2-#4 top and bottom bars.
5. Footings shall be embedded a minimum of 18/24 inches into natural competent materials.
6. Footings shall be designed for a maximum allowable soil pressure of 1,500 psf.

B. Commercial, Industrial, Multi-family, Mixed-Use Projects

Exceptions:

1. Additions of 500 SF or less with conventional foundation and
 - Not supported on proposed fill; or
 - Not on hillside lot; or
 - Not located in City Liquefaction Zone, Flood Zone, or Alquist-Priolo earthquake fault Zone

C. Retaining Walls

Exceptions:

1. Cantilever retaining wall less than 6 ft high measured from the bottom of the footing and
 - Not supported on proposed fill; or
 - Not supporting, surcharging, or surcharged by other structures
 - Not located in City Liquefaction Zone, Flood Zone, or Alquist-Priolo earthquake fault Zone