

	<b>CITY OF DOWNEY</b> <b>COMMUNITY DEVELOPMENT, BUILDING AND SAFETY</b> 11111 Brookshire Avenue Downey, CA 90241 562.904.7142 <a href="http://www.downeyca.org">www.downeyca.org</a>	<b>SOILS REPORT</b>			
		B <small>SECTION</small>	045 <small>FORM NUMBER</small>	2016 CBC <small>CODE CYCLE</small>	
		01/01/2017 <small>EFFECTIVE DATE</small>		01/01/2017 <small>REVISION DATE</small>	
<b>WHEN A SOILS REPORT IS REQUIRED</b>					

**INTRODUCTION**

The topography, development history, and soils/geologic conditions within Downey could present some unique and challenging development conditions by which a soils and/or geology report may be required to address and mitigate the identified conditions. These conditions, along with the new requirements of the 2016 California Building Code (CBC), the 2016 California Residential Code (CRC) and the City of Downey local ordinances necessitate the need for certain minimum foundation standards.

When the soils report is not part of a grading permit, and a soils report is otherwise required, a separate review fee will apply.

**SOILS REPORT REQUIRED**

A soils and/or geology report is required when **any** of the following conditions exist:

1. Any new construction (not an addition or alteration of an existing building)
2. Additions to a single family dwelling with any one of the following conditions:
  - a. Additions with a floor area increase greater than 400 sq. ft.
  - b. An addition of a new second floor.
  - c. Addition with a total floor area increase of 50% or greater
3. Any new construction solely based on Section 1803.2 and 1803.6 of the 2016 CBC or the 2016 CRC :
  - a. Conventional light-frame construction.
  - b. A design based on a specified compressive strength  $f'_c > 1500$  pounds per square inch.
4. Retaining walls greater than 3 ft. high measured from the bottom of the footing, walls that contain a design other than the city standard, and/or supporting any surcharge.
5. Any construction or repair where any type of soils or structure failure has occurred.
6. When required by the Building Official.
7. Existing slope conditions within the building footprint or the graded area exceeds 5:1
8. When a grading plan is required.
9. New Swimming Pools:
  - a. Ungraded Lots – Swimming pools built on ungraded lots.
  - b. Special construction– Swimming pools built in a flood plain area.

***Exception:***

- i) Existing Flat Lots – Pools proposed on existing, flat lots may not require a soils report if the terrain/topography is indicated on the plan and can be verified and the engineer provides a letter indicating that the pool construction is compatible with the site. A site pre-permit inspection and/or specific approval by the Building Official may be required.
- ii) Graded Lots – Graded lots that are part of a subdivision should provide the tract soils and/or geology reports. These reports should specifically address the requirements for pool construction. If no reference

is made, then a soils report is required addressing pool construction. The Engineering Department may or may not have record copies of previously developed sites. The applicant can check with the Engineering Department for their availability or provide a copy of the original from the developer or obtain a current (new) report.

### **STANDARD CONSTRUCTION REQUIREMENTS**

For residential additions and renovations where any of the above conditions do not apply, in lieu of a soils report, the following minimum construction requirements will be acceptable:

1. Depth of foundations below the natural and finish grades shall not be less than 24 inches for foundations.
2. Exterior walls and interior bearing walls shall be supported on continuous foundations. (Interior bearing walls on raised floor systems require a continuous footing).
3. Foundation construction shall be reinforced with at least four continuous #5 reinforcing bars. Two bars shall be placed within 4 inches of the bottom and two bars within 4 inches of the top of the foundation.
4. Slab construction shall be a minimum 5" thick, reinforced with #4 bars @ 18" on center each way, over 2" of sand over a minimum 10 ml. poly-ethylene vapor barrier, over 2" of sand (2" below + 2" above moisture barrier). Alternatively, you may submit a soils investigation as described above.
5. Isolated footings shall be tied with a grade beam.
6. Type V cement with a water/cement ratio of 0.45 and an  $f'_c = 4,500$  psi for all concrete in contact with soil.
7. Doweling of the new foundations and slabs into the existing foundations and slabs to resist the movements of expansive soils is required. Dowels shall be a minimum of 6" into the existing concrete and shall extend a minimum of 24" into the new concrete with #3 bars @ 18" on center, each way.

### **SPECIAL INSPECTION REQUIRED**

1. When the Structural Design of the footing is based on a compressive strength,  $f'_c$ , no greater than 2500 psi and is specifically noted and shown on the plans as such, deputy inspection is not required. However, a copy of the batch plant trip ticket is required for verification.
2. Grading > 25 yds. or over 12" deep total cut or fill.