



## CITY OF DANA POINT

### COMMUNITY DEVELOPMENT, BUILDING AND SAFETY

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**B013 – SOILS**

**2022 CALIFORNIA CODES**  
CODE CYCLE

**01/02/2023**  
EFFECTIVE DATE

## WHEN IS A SOILS REPORT REQUIRED?

### INTRODUCTION

The topography, development history, and soils/geologic conditions within Dana Point 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 2022 California Building Code (CBC), the 2022 California Residential Code (CRC) and the City of Dana Point local ordinances necessitate the need for certain minimum foundation standards.

A review of past developments, both in the City of Dana Point (prior to and after incorporation) and the surrounding coastal hillside communities has led the city to establish the following policies in regards to when a soils and/or a geology report is required and for certain construction requirements.

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

When submitting a soils report, three (3) bounded copies are required. Submittal of less than 3 will cause a delay in the review process as reports must then be shared by reviewers.

### 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 23 of the 2022 California Building Code or the 2022 California Residential Code :
  - a. Conventional light-frame construction.
  - b. A design based on a specified compressive strength  $f'_c > 1500$  pounds per square foot.
4. Retaining walls greater than 3 ft. high measured from the bottom of the footing, supporting any surcharge.
5. Retaining walls that contain a design other than the city standard.
6. Any construction (new, additions, and alterations) in the following areas:
  - a. Beach or ocean front property, such as Beach Road. Beach road properties will also require a “Wave up rush study”
  - b. Coastal Bluff top properties, such as above Pacific Coast Highway.

- c. Building and foundations subject to scour by wind or wave action. Water pressure loads shall be designed in accordance with chapter 16.
- 7. Any construction or repair where any type of soil failure(s) or structure failure(s) has occurred.
- 8. When required by the Building Official.
- 9. Existing slope conditions within the building footprint or the graded area exceeds a 5:1 slope.
- 10. When a grading plan is required.
- 11. When a non-conventional foundation system is used such as piles, caissons, deepened footings, pre-stressed/post-tensioned slab, etc.
- 12. When slope-setback conditions exceed the Dana Point grading ordinance.
- 13. New Swimming Pools:
  - a. Ungraded Lots – Swimming pools built on ungraded lots.
  - b. Special construction– Swimming pools built in a flood plain area or on a coastal bluff top.

*Exception:*

- i) Existing Flat Lots – Pools proposed on existing, flat, non-hillside lots may not require a soils report if the terrain/topography is indicated on the plan and can be verified and the Engineer or Record 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 a record of or copies of the 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. When using this alternative, foundation plan must show and note the following conditions:

- 1. Depth of foundations below the natural grade 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.

In some cases, the use of this standard may not apply. Detail all site conditions that may affect the foundation system on the foundation and/or site plan.

**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, special 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.