



# Southwest Washington Chapter of ICC

This construction detail is illustrative of the minimum standard of construction based upon the 2021 IRC / WAC 51-51 and 2021 IBC WAC 51-50

Visit our web site at: [www.sww-icc.org](http://www.sww-icc.org)

## Geotechnical Reports - General Code Requirements

The following is a basic outline of when a geotechnical report is required, and what is an acceptable level of practice and expectation for the preparation of such reports. The following is not meant to be all inclusive, and is subject to specific conditions based upon individual sites.

### *When is a geotech report required?*

1) When any of the following conditions exist:

- a. Expansive Soil
- b. Compressible Soil R401.4.2
- c. Shifting Soil R401.4.2
- d. Geologic Slide Area.
- e. Steep Slope.
- f. Area of Fill.
- g. The report is required by the local jurisdiction.
- h. When the site slope exceeds 1V:3H unless the proposed structure meets the requirements of setbacks based upon IRC 2021 Figure R403.1.7.1 or IBC 2021 Figure 1808.7.1.

### *What is required for an acceptable geotech report?*

A soils investigation per IBC 2021 section 1803 shall be based on observation and any necessary tests of the materials disclosed by borings, test pits or other subsurface exploration made in appropriate locations. Additional studies shall be made as necessary to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction and expansiveness. IBC 2021 section 1803.

Per 1803.3.1: The scope of the soil investigation including the number and types of borings or soundings, the equipment used to drill and sample, the in-situ testing equipment and the laboratory testing program shall be determined by a **registered design professional meeting the registration requirements of Washington state per RCW 18.43.**



# Southwest Washington Chapter of ICC

This construction detail is illustrative of the minimum standard of construction based upon the 2021 IRC / WAC 51-51 and 2021 IBC WAC 51-50  
Visit our web site at: [www.sww-icc.org](http://www.sww-icc.org)

## Geotechnical Reports - General Code Requirements

The following is a basic outline of when a geotechnical report is required, and what is an

Per 1803.4: The soil boring and sampling procedure and apparatus shall be in accordance with generally accepted engineering practice. The registered design professional shall have a fully qualified representative on the site during all boring and sampling operations.

### 1803.6 Reports:

- 1) Plot showing location of boring and excavation
- 2) Complete record of soil samples
- 3) Record of soil profile
- 4) Elevation of water table, if encountered
- 5) Recommendations for foundation type and design criteria, including but not limited to: bearing capacity of natural or compacted soil; provisions to mitigate the effects of expansive soils; mitigation of the effects of liquefaction, differential settlement and varying soil strength; and the effects of adjacent *loads*.
- 6) Recommendation of foundation type and design criteria including but not limited to:
  - a. Bearing capacity of natural or compacted soil
  - b. Provision to mitigate effects of expansive soils
  - c. Mitigation of effects of liquefaction
  - d. Differential settlement and varying soils strength; and effects of adjacent loads
- 6) Expected total and differential settlement
- 7) Deep foundation information in accordance with Section 1803.5.5.
- 8) Pier and Pile foundation information in accordance with section 1809.10 & 1810
- 9) Special design and construction provisions for footings and foundations founded on expansive soils as necessary
- 10) Compacted fill material properties in accordance with section 1804.5.8

Section IBC 1805.4: **Subsoil Soil Drainage systems** designed and constructed in accordance with IBC 1805.1.3.