

MARION COUNTY

GEOTECHNICAL REPORT REQUIREMENTS

The geotechnical report is intended to define the subsurface conditions and provide specific geotechnical conclusions and recommendations for design and construction of the project. A geological assessment or engineering geology report may be incorporated into or included as an appendix to the geotechnical report for the purpose of providing geologic information for the geotechnical engineer, explaining the implications of the subsurface conditions for appropriate project design and construction. The investigation should include the following:

General

- Name, address, and phone number.
- Client for whom the report was prepared.
- A description of the proposed project and its location.
- Scope of services provided and any limitations as appropriate.
- A site map of the area at a scale of 1":400' or larger. Geologic conditions, topography, and location of proposed structures are to be shown. A copy of published geologic maps shall also be provided, or a geologic assessment of the site referenced.
- A review of the geologic history and history of prior excavation and fills.
- A field reconnaissance and subsurface explorations accomplished of the site.
- Planned construction (type of structure and use, type of construction and foundation/ floor system, number of stories, estimated structural loads).
- Discussion of geologic hazards.
- A discussion of the engineering aspects of the site soils/rock units and proposed construction for project. The discussion should address foundation types for proposed structures, retaining systems, grading considerations, stability of cut-slopes and constructed embankments, and proposed surface and subsurface drainage facilities.
- A bibliography of all references used.

Field Investigations

- Scope (date of work done, investigative methods, sampling methods, logs of borings/ test pits, elevations of borings/test pits for reference of materials and samples to finished grade or footing elevations, identify real or assume elevations).
- Location of all samples taken, surface and subsurface.
- Groundwater conditions observed and potential variations due to natural and artificial seepage effects.
- Geologic cross-sections (one or more appropriately positioned and referenced on map; especially through critical areas, slopes and slides) of suitable size and engineering scale; with labeled units, features and structures; and a legend. These sections should correlate with surface and subsurface data showing inferred stratigraphic relationships.

Engineering/Material Characteristics and Testing

- Test methods used, type or condition of samples, applicable engineering graphics and calculations, results of all tests, and sample locations of all test samples.
- Unified Soil Classifications of soils.
- Material strength of existing soils/rock:

- Pertinent engineering geologic attributes with well defined terminology (clayey, weak, loose; alignments, fissility, planar boundaries; pervious or water-bearing parts; susceptibility to mass wasting, erosion, piping, or compressibility).
- Effects and extent of weathering (existing and relationship to project design and future site stability, material strength).
- Field densities of unconsolidated field areas and moisture content.
- Bearing capacity and/or shear strength of areas affected by future foundation placement (drained or undrained conditions, effective stress or total stress analysis, in-situ or remolded samples must be identified).
- Consolidation or settlement potential.
- Expansion potential.
- Maximum density-optimum moisture parameters of proposed fill material. Use of onsite soils for structural and nonstructural fill.

Slope Stability Features and Conditions

- Adequate mapping, geologic sections and type of known potential downslope movement, soil/rock creep, flows, falls, slumps, slides.
- A description of historic activity, cause or contributing factors for known downslope movement features.
- Recent erosion, deposition, or flooding features.
- Subsidence/settlement, piping, solution or other void features or conditions.
- Groundwater and surface drainage characteristics or features:
- Surface expression (past and present); permeability/porosity of near surface materials.
- Actual or potential aquifers or conduits, perching situations, barriers or other controls to percolation and groundwater movement and fluctuations of groundwater levels at the site.

Foundation Design Criteria

- Recommended foundation types and dimensions.
- Criteria for site preparation for foundations and fill/embankments.
- Allowable bearing capacity.
- Lateral earth pressures (active, passive, or at-rest conditions) and coefficient of friction for retaining walls.
- Anticipated settlement - total, differential, and rate of settlement.

Reference

In supplemental or grading plan review reports referencing earlier reports, supply copies of those referenced reports or applicable portions as required by the Director.

Conclusions and Recommendations

Fill support:

- Suitability and precompaction of in-situ materials (describe test results and other pertinent data to be used to determine suitability).
- Densification and moisturization or dewatering measures (equipment, surcharge, settlement monitoring, if applicable).

Placement of fill:

- Material approval (on site, imported).
- Methods and standards (ASTM standards or approved equivalent).

- Testing (ASTM standards (D1556, D1557, D2167, D2922, D2937, D3017) or equivalent) and frequency of field density testing by vertical intervals and/or volume of fill.
- Elimination of cut/fill or other different transitions beneath improvements.
- Opinion as to adequacy of site for the proposed development (this opinion should also be summarized in the first part of the report).
- Other pertinent geotechnical information for the safe development of the site.

Certification

- A signature, certification number, and stamp of a Professional Engineer, registered in the State of Oregon as provided by ORS 672.002 to 672.325, who by training, education and experience is qualified in the practice of geotechnical or soils engineering practices.
- A signature, certification number, and stamp of a Registered Geologist who is certified in the specialty of Engineering Geology under the provisions of ORS 672.505 to 672.705 if a geological assessment or engineering geology report is incorporated into or included as an appendix to the geotechnical report.