

## GEOTECHNICAL REPORT REQUIREMENTS

Geotechnical Reports must comply with the County of Ventura General Plan, Goals, Policy and Programs as well as provide the information required by the Ventura County Building Code, latest Edition. The following guidelines are provided to assist in the preparation of Geotechnical Reports for Building and Grading Permits.

1. Purpose and Scope of Study
  - a. Proposed Project Description;
  - b. Site Address and Assessor Parcel Number (APN)
  - c. Scope of Work: ex. Geotechnical Report, Fault Investigation,
  - d. Date of site inspection and person performing inspection;
  - e. Job Address: Lot/Tract Number, APN (Assessor's Parcel Number);
  - f. Signature and registration number of licensed professionals; Soils Engineer, Geologist
2. Site Conditions
  - a. Location description
  - b. Site Access: How is site Accessed?
  - c. Site Topography including Site Maps with scale and north arrow
    - i. USGS Quad Location Map
    - ii. Dibblee, USGS, or CGS Regional Geologic Map
    - iii. California Seismic Hazards, Earthquake, Landslides and Liquefaction
  - d. Site Relief, steepness and heights of slopes
  - e. Site Drainage Conditions and Evidence of Erosion.
  - f. Geologic Hazards; faults, landslides, liquefaction, subsidence, erosion, rockfall, etc.
  - g. FEMA floodplains
  - h. Existing man made features.
  - i. Existing improvement performance or distress.
  - j. Past site uses.
  - k. Adjacent Property; present use or boundary delineation, existing structures, etc.
3. Planned Construction Parameters
  - a. Type of construction
  - b. Type of foundation and floor system, including setbacks.
  - c. Number of stories
  - d. Estimated structural loads
  - e. Distance to adjacent structures and property lines
  - f. Retaining wall type and surcharge loads
  - g. Swimming Pool or other structures
4. Geotechnical Data
  - a. Previous Geotechnical Data, referenced reports
  - b. Field Investigation
    - i. Scope of field investigation, date, methods used, sampling methods and type of sample, logs of exploration (boring/test pit, etc.), elevations of explorations, method of backfilling and future requirements.
    - ii. Site plan showing explorations, proposed improvements, terrain and man made features, areas of geologic hazard, access to proposed improvements, cross-sections, geologic information and structural data

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- iii. Data on location and method used for sample collection, both surface and subsurface.
  - iv. Groundwater conditions, depth encountered or depth of historical high based on research source, provide source. Must demonstrate groundwater table is greater than 5 feet to lowest below grade floor level. (Sec. 1803.5.4)
- c. Laboratory Testing:
- i. Describe the laboratory testing procedures and test results. Provide graphical laboratory test results, and reference laboratory test procedures.
    - 1. Soil Classification ASTM
    - 2. Grain Size Analysis justifying soil classification ASTM
    - 3. Moisture content and dry density for undisturbed samples ASTM.
    - 4. Expansion Index (VC Building Code)
    - 5. Shear Strength ASTM
    - 6. Consolidation ASTM
    - 7. Corrosivity properties; sulfide-sulfate, chlorides, pH, and Resistivity.
    - 8. R-value
  - ii. Other tests to obtain material properties.
- d. Analysis
- i. Foundation design criteria
    - 1. Foundation type, depth, width, bearing material, installation conditions and allowable loads, lateral pressures, coefficient of friction.
    - 2. Estimated settlement, total, differential and rate.
    - 3. For Pile Foundations:
      - a. Point of Fixity or Depth to Fixity from Ground Surface
      - b. Downward and Upward Capacity based on Skin Friction
      - c. Requirements for Restraint from all Four Directions (Sec. 1810.3.13)
      - d. Moment and Shear Diagram resulting from Lateral Loads based on Embedment Depth and Soil Type
  - ii. Expansive Soils
  - iii. Pavement Design, R-value
  - iv. Hydrocollapse potential.
  - v. Slope Stability; cross-sections, gross (static and pseudo-static) and surficial
  - vi. Retaining Wall, static, seismic loads for walls over 6 feet high. (Sec. 1803.5.12)
  - vii. CBC Seismic Analysis for Structural Design
  - viii. Liquefaction
    - 1. In accordance with California Geological Survey, SP 117
  - ix. Surface Displacement due to faulting or seismically induced lateral spreading
  - x. Temporary Excavation Slope Stability and Shoring System Design

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- xi. Surface Erosion Resistance.
  - xii. Geologic hazards, faulting, landsliding, rockfall, as applicable
5. Report
- a. Conclusions
  - b. Geotechnical Engineering Recommendations.
  - c. Foundation Design
  - d. Retaining Wall Design including dynamic loads
  - e. Subdrain System Design
  - f. Slabs on Grade
  - g. Concrete Slabs, Pavements, Permeable Pavements.
  - h. Mitigation of Geologic, Geotechnical, and Flood Hazard Risks
  - i. Grading Recommendations, including transition pads or other project requirements
  - j. List of References