



RECOMMENDED SCOPE OF GEOTECHNICAL WORK AND FEES FOR CUSTOM RESIDENTIAL PROJECTS 06-05

Design and construction of residential and commercial projects in the Gulf Coast area has been relatively difficult as a result of treacherous subsoils conditions that exist in the area. In general, these soils consist of loose sands or highly expansive clays. Foundations on loose sands or highly expansive clays can experience significant settlement and/or shrink-swell problems, with foundation and structural distress. An improperly designed foundation may result in high construction costs with a liability exposure to the builder, designer, and the owner.

Foundations for the structures in the Houston area may consist of drilled footings, piling, spread footings, a slab-at-grade, or a post-tensioned slab foundation. It is our opinion that conducting a soils exploration study can generally identify difficult subsoil conditions at a relatively low cost, and a proper foundation system can be designed.

The scope of geotechnical exploration for residences with a foot print of 3,000 square-feet or less should consist of a minimum of two borings to a minimum depth of 15-feet. Additional borings are recommend for every additional 1,500 square-feet of the slab area. Deeper borings should be made if heavy loads or when soft soils are encountered during the drilling operations. Deeper borings (20-feet) should also be drilled in the expansive soil areas, where drilled footings are to be used, if trees are located on the lot and the trees are to be removed prior to slab construction. In the event that a pool/basement is planned, a boring must be performed in the pool/basement area to evaluate the subsoil and groundwater conditions. The geotechnical report will include the following recommendations:

- o General soil conditions.
- o Groundwater depth and management.
- o Foundation types, depth, allowable loading.
- o Foundations and risk.
- o Structural fill type, earthwork, compaction, etc.
- o Color picture of the site
- o Homeowner Maintenance Program.
- o Site drainage.
- o Subsoil stabilization.
- o Vegetation control.
- o Evaluation of zone of constant soil suction when deeper borings are drilled.

In the event that a pool/basement is built the recommendations will include:

- o Lateral earth pressures on the pool/basement walls.
- o Groundwater control, including dewatering.
- o Subgrade soil stabilization.
- o Excavation procedures based on occupational safety and health administration (OSHA).
- o Pool movements and maintenance programs.

The cost of a basic soil report for two borings to 15-feet, within a 25-mile radius of our offices is \$720. The cost of each additional boring to a depth of 15-feet is \$325. The cost of geotechnical exploration report for two borings to a depth of 20-feet is \$960. Our fees are due at the completion of the report.

The above cost estimate assumes that underground obstructions will not be encountered that would require boring relocations. The locations of underground objects should be defined by the client prior to drilling and sampling. The cost estimate assumes that boring locations are accessible to our truck-mounted drilling rig. The cost of clearing will be at cost plus 15-percent.

For further information, contact David Eastwood (713) 699-4000.

General notes:

1. A soils exploration study generally takes about 10- to 20 working days from the date of the drilling and sampling.
2. All messenger charges will be charged at cost plus 15-percent. The cost estimate includes three copies of the report.
3. The geotechnical report does not include a geologic fault study.
4. The mobilization charge for projects outside a 25-mile radius of our office will be at a rate of \$2.00 per mile, round trip.
5. A different scope of geotechnical exploration is required for projects built near ravines, lakes, or on the slopes.
6. Geotech Engineering and Testing can provide these services statewide.
7. In the event that soft soils are encountered during the field exploration, deeper borings must be drilled. The cost of drilling deeper borings will be charged in accordance to our fee schedule.
8. Deeper boring are required for projects that require piling, such as beach houses in the Galveston area.