

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

GEOTECHNICAL ENVIRONMENTAL PAVEMENT
BUREAU FOUNDATION DRILLING AND SAMPLING
GUIDELINES

III. Retaining Wall Foundation Investigations- Drilling and Sampling

A. Drilling Criteria

1. Borings for retaining walls should generally be made at 200-foot intervals for long walls (walls longer than about 300 feet) unless erratic foundation conditions are found. In this case, enough borings should be made to sufficiently define the subsurface conditions. Shorter walls and walls used in bridge abutments should have at least 2 borings per wall. If the borings made for the bridge are relatively close to the proposed wall, these may be used in lieu of new boring(s). For mechanically stabilized earth walls (MSE walls), two-thirds of the borings should be made along the proposed footing line and one-third made within the special backfill area.
2. Borings should be drilled as closely as possible to the location of the proposed footing or special backfill area. Borings should be offset only when site or traffic conditions prevent this. If a lane or shoulder closure is required to perform borings, prior approval must be obtained from the District Engineer's office. All lane or shoulder closures must be set up in accordance with MUTCD standards, and within the hours set by the District Engineer's office.
3. Borings should be drilled to a depth of 1½ times the wall height as measured from the bottom of the wall footing. At longer walls, one boring every 600 feet (with at least one boring per wall) should be drilled slightly deeper, to 2 to 2½ times the wall height to check for groundwater or varying foundation conditions. If voids or other erratic subsurface conditions are encountered, notify the engineer in charge of the project as soon as possible.

B. Sampling Guidelines

1. For MSE walls, if the proposed footing is more than 5 feet below the existing ground, perform SPT tests at 5-foot intervals from the ground line to the proposed wall footing, beginning at a depth of 5 feet. At the footing elevation, perform SPT tests at 2½-foot intervals for the next 10 feet and at 5-foot intervals thereafter. Save all samples in a clean sample jar, and mark all jar boxes with the project number and county, boring number, bridge location and date.
2. Note the type of bit(s) used throughout the boring. When drilling hard rock layers or boulders, also note the time to drill through these materials.
3. Obtain 24-hour groundwater elevations on at least one of the borings at each wall site. If the borings are dry, indicate this on the boring logs.
4. If soft layers of clay or plastic silt are found at the borings, push at least two Shelby tubes at or near the center of the soft layer(s) so that consolidation tests can be performed on the samples. Mark the tube with the project number and county, the boring number, the depth of the sample, and the date.

C. Special Notes

1. Obtain the ground elevations at each boring by using the wall or roadway plans.
2. In addition to all drilling and sampling data, each boring log should contain the project number and county, the date, the bridge location, the driller's name, the type of drill used (truck-mounted Failing 250, CME 550 on ATV, etc.), the drilling method used (auger, rotary, etc.), the groundwater elevation and all other notes relevant to the subsurface conditions.
3. After groundwater checks are made, all boring holes should be filled in (and patched if made in a travel lane or paved shoulder) and the site left in good condition. Drill cuttings and all other spoils should be cleaned off any paved areas.