



TECHNICAL MEMORANDUM #7

TO: Applicants and Designers for State and Federal Projects

FROM: Sediment and Stormwater Plan Review Division
Water and Science Administration

DATE: June 18, 2018

SUBJECT: Soils Investigation Requirements

Soils investigations are required at all sites. Refer to Appendix D.1 of the Stormwater Design Manual for testing procedures. The type and number of soils tests required at minimum for State and federal projects is as follows:

- Permeable pavement applications $\leq 10,000$ s.f.:
 - United States Department of Agriculture (USDA) Soil Survey, and
 - One test pit or boring per 1 acre of site disturbance indicating groundwater elevation;
- Permeable pavement applications $> 10,000$ s.f.:
 - USDA Soil Survey, and
 - One test pit or boring per 5000 s.f. indicating groundwater elevation, and
 - One infiltration test per 5000 s.f. reporting infiltration rate(s);
- Submerged gravel wetlands:
 - USDA Soil Survey, and
 - One test pit or boring per facility indicating groundwater elevation;
- Landscape infiltration:
 - USDA Soil Survey, and
 - One test pit or boring per 1 acre of site disturbance indicating groundwater elevation;
- Infiltration berms:
 - USDA Soil Survey;
- Dry wells:
 - USDA Soil Survey, and
 - One perc test, test pit, or boring per 1 acre of site disturbance indicating groundwater elevation;
- Micro-bioretenention:
 - USDA Soil Survey, and
 - One test pit or boring per 1 acre of site disturbance indicating groundwater elevation;
- Bioretention:
 - USDA Soil Survey, and
 - One test pit or boring per facility indicating groundwater elevation;

- Rain gardens:
 - USDA Soil Survey;
- Bio-swales:
 - USDA Soil Survey, and
 - One test pit or boring per 1 acre of site disturbance indicating groundwater elevation;
- Grass swales:
 - USDA Soil Survey;
- Wet ponds:
 - USDA Soil Survey, and
 - One test pit or boring per facility indicating groundwater elevation;
- Wetland ponds:
 - USDA Soil Survey, and
 - One test pit or boring per facility indicating groundwater elevation;
- Infiltration trenches and basins:
 - USDA Soil Survey, and
 - One test pit or boring per 5000 s.f indicating groundwater elevation, and
 - One infiltration test per 5000 s.f. reporting infiltration rate;
- Underground and surface sand filters:
 - USDA Soil Survey, and
 - One test pit or boring per facility indicating groundwater elevation;
- Wet swales:
 - USDA Soil Survey, and
 - One test pit or boring per 1 acre of site disturbance indicating groundwater elevation;
- Pond Code 378 embankments:
 - One boring along centerline of proposed embankment;
 - One boring in emergency spillway location; and,
 - Soils analysis of borrow material.

Notes

1. “Groundwater elevation” refers to **seasonally high** groundwater elevation. Groundwater elevations are generally highest from late winter to early summer. The applicant should make a concerted effort to conduct soil investigations during this period. When soils investigations are not performed from late winter to early summer, further assessment is necessary.
2. The USDA Natural Resources Conservation Services refreshes the Official Web Soil Survey on October 1st of each year. Refer to <http://directives.sc.egov.usda.gov/>