



## CITY OF HENDERSONVILLE INFILTRATION SOIL TESTING PROCEDURES

### I. Test Pit/Boring Procedures

1. The number of required test pits or standard soil borings is based on proposed infiltration area:
  - **$\leq 50$  linear feet = 2 tests**
  - **$> 50$  linear feet = 2 tests + 1 test for every additional 50 linear feet**
2. The location of each test pit or standard soil boring should correspond to the location of the proposed infiltration area and be performed in in situ soils.
3. Excavate each test pit or penetrate each standard soil boring to a depth at least 2 feet below the bottom of the proposed infiltration area.
4. If the groundwater table is located within 2 feet of the bottom of the proposed facility, determine the depth to the groundwater table immediately upon excavation and again 24 hours after excavation is completed.
5. Determine the USDA or Unified Soil Classification system textures at the bottom of the proposed infiltration area and at a depth that is 2 feet below the bottom. All soil horizons should be classified and described.
6. If bedrock is located within 2 feet of the bottom of the proposed infiltration area, determine the depth to the bedrock layer.
7. Test pit/soil boring stakes should be left in the field to identify where soil investigations were performed.

### II. Infiltration Testing Procedures

1. The number of required infiltration tests is based on proposed infiltration area:
  - **$\leq 50$  linear feet = 2 tests**
  - **$> 50$  linear feet = 2 tests + 1 test for every additional 50 linear feet**
2. The location of each infiltration test should correspond to the location of the proposed infiltration area.
3. Install a test casing (e.g., a rigid, 4 to 6-inch diameter pipe) to the bottom of the proposed infiltration area. Record the testing elevation.
4. Remove all loose material from the sides of the test casing and any smeared soil material from the bottom of the test casing to provide a natural soil interface into which water may percolate. If desired, a 2-inch layer of coarse sand or fine gravel may be placed at the bottom of the test casing to prevent clogging and scouring of the underlying soils. Fill the test casing with clean water to a depth of 2 feet, and allow the underlying soils to presoak for 24 hours.
5. After 24 hours, refill the test casing with another 2 feet of clean water and measure the drop in water level within the test casing after one hour. Repeat the procedure three (3) additional times by filling the test casing with clean water and measuring the drop in water level after one hour. A total of four (4) observations must be completed.
6. The infiltration rate of the underlying soils may be reported either as the average of all four observations or the value of the last observation. The infiltration rate shall be reported in terms of inches per hour along with the elevations and locations of the test pits. Locations shall be shown on site map.
7. Infiltration testing may be performed within an open test pit or a standard soil boring. After infiltration testing is completed, the test casing should be removed, and the test pit or soil boring should be backfilled and restored.