MATERIALS TESTING REQUIREMENTS

SECTION 13

February, 2024

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The following represents the minimum requirements for materials testing:

1. EARTHWORK COMPACTION TESTS

   A Pipe Trench Compaction:

   1…Standard Proctor Density (ASTM D-698-78): Proctor samples will be obtained within the street right-of-way and utility trenches for each type of soil encountered in construction.

   2…Density Test* [Nuclear (ASTM D-2922) or Sand-Cone Method (ASTM-D-1556)]: 1 test per lift of backfill, 1 test every 500 feet of pipe installed, 1 test daily when backfilling

   B Embankment Compaction:

   1…Standard Proctor Density (ASTM D-698-78): 1 test per source of material

   2…Density Test* [Nuclear (ASTM D-2922) or Sand-Cone Method (ASTM-D-1556)]: 1 test per lift of embankment, 1 test every 500 feet of roadway fill, 1 test daily when constructing embankment

   C Select Granular Borrow:

   1…Standard Proctor Density (ASTM D-698-78): 1 test per source of material

   2…Gradation Test: 1 test per source of material

   3…Density Test* [Nuclear (ASTM D-2922) or Sand-Cone Method (ASTM-D-1556)]: 1 test per lift of embankment, 1 test every 500 feet of roadway fill, 1 test daily when constructing embankment

2. STREET BASE AGGREGATE

   A Standard Proctor Density (ASTM D-698-78): 1 test per source of aggregate base, 1 test per 1000 tons of aggregate placed, 1 test daily when constructing base

   B Gradation Test (ASTM D-422): 1 test per source of aggregate base, 1 test per 1000 tons of aggregate placed, 1 test daily when placing aggregate base

   C Density Test* [Nuclear (ASTM D-2922) or Sand-Cone Method (ASTM-D-1556)]: 1 test per 500 feet of roadway

   D Test Rolling: As required by City and project specifications

* If the Nuclear Density Test Method is used, one (1) comparison Sand-Cone Density Test Method must be taken for each five (5) Nuclear Tests or change in type of soils encountered.

3. BITUMINOUS TESTS

A General: Bituminous tests are to be conducted by an independent testing laboratory. Two four inch diameter cores will be taken for every 500 tons placed, or once daily when bituminous is placed.

B Gradations (ASTM C-136)

C Marshall Densities and Field Densities (ASTM D-1559)

D Thickness

4. CONCRETE TESTS

A General: When molding cylinders for strength tests, three cylinders are to be made according to ASTM C-31, one each for 7-day and 28-day breaks, one for a companion.

B Compressive Strength (ASTM C-39): 1 set of 3 for every 1000 l.f. of curb and gutter constructed, 1 set of 3 for every 100 cubic yards of concrete placed, 1 set of 3 daily when pouring concrete

C Percent Air Test (ASTM C-231): 1 air test for every compressive strength test conducted per above requirements.

D Slump Test (ASTM C-143): 1 slump test for every compressive strength test conducted except for machine placed curb and machine placed sidewalk.