

APPENDIX B

MINIMUM DENSITY TESTING RATES

Manual of Instructions Sec. 314.01(d)

1. **Embankment (Below Subgrade)** - One test for each 2,500 cubic yards of material placed plus:
 - a. For fills from 500 to 2000 feet in length: two density tests will be required for each 6 inch layer within the top 5 feet of fill.
 - b. For fills less than 500 feet in length: one density test will be required for every other 6 inch layer from bottom to top of the fill starting with the second lift.

NOTE: The terms "embankment" and "fill" as used here are intended to encompass the entire roadway in width, under construction between right-of-way lines, regardless of whether the roadway is single or dual lane. For example, a dual lane fill would be considered as a single fill. However, each separate linear embankment or fill will be considered as a separate item and tested at the above specified rate, separately and independently of adjoining fills. **Location of test run is to be staggered, so that the entire length, width, and depth of the fill is covered by tests.** The top, bottom and middle of fills, and any necessary points in between, shall each be tested. When testing is not being conducted, the Inspector is to visually observe lifts being placed to ensure that proper placement and compaction procedures are being used.

2. **Finished subgrade both cut and fill sections** - a minimum of one test shall be made for each 2000 feet of subgrade for each roadway (full width)
3. **Soil Cement or Soil Lime**
 - a. Stabilized Subgrade (Material-in-Place or Imported Material, other than Aggregate Base, Subbase, or Select Material) -- One density test per ½ mile per paver application width.
 - b. Treated Aggregate Base, Subbase, and Select Material (Regardless of where material is used in pavement structure) -- Average of 5 readings (location of which shall be at randomly selected sites) per ½ mile per paver (mixer) application width for each layer of material placed, using the Backscatter, Control Strip Method of testing. A Roller Pattern and Control Strip must be set up for each layer of lift placed.
 - c. Untreated Select Material, Base and Subbase: Same as Item 3b
4. **Shoulder Material:** A Roller Pattern and Control Strip must be set up for each layer/lift placed in order to establish the density requirements.
 - a. Aggregate - Average of 5 readings per ½ mile per paver application width per layer of material on alternating sides of the road, using the Backscatter Method of testing.
5. **Pipes:** One test per lift on alternating sides of pipe for each 300 linear feet of pipe or portion thereof. Test pattern is to begin after first compactive layer above structures bedding and continue to 1 foot above top of pipe.
6. **Drop Inlets:** One test every other lift around the perimeter of the structure. Test pattern is to begin after the first 4" compacted layer above the bedding and continue to the top of the structure. Stagger tests to ensure consistent compactive effort has been achieved throughout.
7. **Manholes:** One test every fourth compacted layer around the perimeter of the structure. Test pattern is to begin after first 4" compacted layer above the bedding and continue to 5 feet below top of structure. In the top 5 feet, minimum of one test every other lift around the perimeter of structure and continue to top of structure.

