

## ATTACHMENT 5

### LABORATORY AND FIELD TESTING SERVICES

#### ASPHALTIC MATERIALS

<b>ASTM #</b>	<b>TEST DESIGNATION</b>
C 128	Specific Gravity and Absorption of Fine Aggregate
C 1127	Specific Gravity and Absorption of Coarse Aggregate
D 979	Practice for Sampling Bituminous Paving Mixtures
D 1559	Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
D 2041	Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
D 2172	Test Methods for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
D 2726	Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens
D 2950	Test Method for Density of Bituminous Concrete in Place by Nuclear Method
D 3203	Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures

#### CONCRETE

<b>ASTM #</b>	<b>TEST DESIGNATION</b>
C 31	Practice for Making and Curing Concrete Test Specimens in the Field
C 39	Test Method for Compressive Strength of Cylindrical Concrete and Sawed Beams of Concrete
C 42	Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C 78	Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)

C 88	Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
C 131	Test Method for Resistance to Degradation of Small-Size Coarse Aggregates by Abrasion and Impact in the Los Angeles Machine
C 136	Test Method for Sieve Analysis of Fine and Coarse Aggregates
C 138	Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
C 143	Test Methods for Slump of Hydraulic Cement Concrete
C 172	Practice for Sampling Freshly Mixed Concrete
C 231	Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
C 1064	Temperature of Freshly Mixed Portland Cement Concrete
D 75	Practice for Sampling Aggregates

## **SOILS**

### **ASTM #**

### **TEST DESIGNATION**

D 420	Practice for Investigating and Sampling Soil and Rock for Engineering Purposes
D 422	Method for Particle-Size Analysis of Soils
D 698	Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft <sup>3</sup> (2,700 KN-m/m <sup>3</sup> ))
D 1140	Test Method for Amount of Material in Soils Finer than the No. 200 (75Dm) sieve
D 1557	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> (2,700 KN-m/m <sup>3</sup> ))
D 1883	Test Method for CBR (California Bearing Ratio) of Laboratory-Compacted Soils
D 2216	Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
D 2434	Test Method for Permeability of Granular Soils (Constant Head)

- D 2922 Test Method for Density of Soil and Soil Aggregate In Place by Nuclear Methods (Shallow Depth)
- D 3017 Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
- D 4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils