

## **Appendix A:**

List of ASTM tests capabilities of Jaca & Sierra Testing laboratories:

- **Subsoil Explorations:**

ASTM D 1586 Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils

ASTM D 1587 Standard Practice for Thin-Walled Tube Geotechnical Sampling of Soils

ASTM D 2113 Standard Practice for Diamond Core Drilling for Site Investigation

- **Monitoring Wells Installation:**

ASTM D 5092 Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers

- **Laboratory Soil Testing:**

ASTM D 421 Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants

ASTM D 422 Standard Test Method for Particle-Size Analysis of Soils

ASTM D 427 Standard Test Method for Shrinkage Factors of Soils by the Mercury Method

ASTM D 698 Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600kN-m/m<sup>3</sup>))

ASTM D 854 Standard Test Method for Specific Gravity of Soils

ASTM D 1140 Standard Test Method for Amount of Material in Soils Finer Than the No.200 (75- $\mu$ m) Sieve

ASTM D 1195 Standard Test Method for Repetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements

ASTM D 1196	Standard Test Method for Nonrepetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements
ASTM D 1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> (2,700kN-m/m <sup>3</sup> ))
ASTM D 1883	Standard Test Method for CBR (California Bearing Ratio) of Laboratory-Compacted Soils
ASTM D 2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
ASTM D 2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2216	Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM D 2217	Standard Practice for Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
ASTM D 2435	Standard Test Method for One-Dimensional Consolidation Properties of Soils
ASTM D 2487	Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2488	Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
ASTM D 2850	Standard Test Method for Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression
ASTM D 2922	Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

ASTM D 3080	Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions
ASTM D 3282	Standard Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
ASTM D 4253	Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
ASTM D 4254	Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D 4318	Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4429	Standard Test Method for CBR (California Bearing Ratio) of Soils in Place
ASTM D 4767	Standard Test Method for Consolidated-Undrained Triaxial Compression Test on Cohesive Soils
ASTM D 4972	Standard Test Method for pH of Soils
ASTM D 5084	Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter

- **Laboratory Concrete Testing:**

ASTM C 29	Standard Test Method for Unit Weight and Voids in Aggregate
ASTM C 31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 40	Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
ASTM C 42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C 78	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with third-Point Loading)

ASTM C 88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	Standard Test Method for Material Finer Than 75- $\mu\text{m}$ (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	Standard Test Method for Specific Gravity and Absorption of Fine Aggregate
ASTM C 131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C 143	Standard Test Method for Slump of Hydraulic Cement Concrete
ASTM C 172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C 192	Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
ASTM C 231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 293	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)
ASTM C 496	Standard Test Method for Splitting tensile Strength of Cylindrical Concrete Specimens
ASTM C 535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

- **Laboratory Paving Materials Testing:**

- ASTM D 2172 Standard Test Methods for Quantitative Extraction of Bitumen From Bituminous Paving Mixtures
- ASTM D 2726 Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures using Saturated Surface-Dry Specimens
- ASTM D 2950 Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Method
- ASTM D 3549 Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens
- ASTM D 5581 Standard Test Method for Resistance to plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6-Inch-Diameter Specimen)