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List of Technical Services

CONSTRUCTION MATERIAL TESTING

CONCRETE

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
C31	T23	611	Making and Curing Concrete Test Specimens in the Field
C39	T22	604	Compressive Strength of Cylindrical Concrete Specimens
C143	T119	600	Slump of Hydraulic Cement Concrete
C231	T152	615	Air Content of Freshly Mixed Concrete by Pressure Method
C42	T24	606	Obtaining and Testing Drilled Concrete Cores
C1140	N/A	N/A	Preparing and Testing Specimens from Shotcrete Test Panels
C803	N/A	N/A	In-Place Strength Analysis using the Windsor Probe System
E1155	N/A	N/A	Determining Floor Flatness F_f and Floor Levelness F_L Numbers
C805	N/A	N/A	In-Place Strength Analysis using the Schmidt Hammer System
C293	T177	N/A	Flexural Strength of Molded Concrete Beams (Simple Beam with Center-Point Loading)
C172	T141	601	Sampling Freshly Mixed Concrete
C1064	N/A	N/A	Temperature of Freshly Mixed Concrete
C173	T196	612	Air Content of Freshly Mixed Concrete by Volumetric Method
C192	T126	N/A	Making and Curing Concrete Test Specimens in the Laboratory
C138	T121	613	Unit Weight, Yield and Air Content of Concrete
C617	T231	N/A	Capping Cylindrical Concrete Specimens
C1231	N/A	N/A	Use of Unbonded Caps for Compressive Strength of Concrete Cylinders
C78	T97	603	Flexural Strength of Molded Concrete Beams (Simple Beam with Third-Point Loading)
C496	T198	N/A	Splitting Tensile Strength of Cylindrical Specimens
C174	T148	614	Measuring Length of Drilled Concrete Cores
C457	N/A	N/A	Microscopical Determination of the Air-Void System in Hardened Concrete (Sub-Contracted)
C856	N/A	N/A	Petrographic Examination of Hardened Concrete (Sub-Contracted)
N/A	T260	N/A	Sampling for Chloride Ion in Concrete and Concrete Raw Materials
N/A	N/A	N/A	In-Place reinforcing Steel Location (pachometer)
N/A	N/A	N/A	Concrete Mix Design Verification
N/A	T271	N/A	Density of Plastic and Hardened Portland Cement Concrete by Nuclear Methods
F1869	N/A	N/A	Concrete Subfloor Vapor Emission Rate

List of Technical Services

CONSTRUCTION MATERIAL TESTING (Continued)

SOILS

Compaction and Moisture Density Relationship

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D6938	T238	402	Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Compaction Testing)
D6938	T239	402	Moisture Content of Soil and Soil-Aggregate In-Place by Nuclear Methods
D698	T99	106	Moisture Density Relations of Soils Using 5.5 lb. Rammer and 12 in. Drop (Standard Proctor)
D1557	T180	N/A	Moisture Density Relations of Soils Using 10.0 lb. Rammer and 18 in. Drop (Modified Proctor)
D4718	T224	125	Correction for Coarse Particles in the Soil Compaction Test
D1556	T191	112	Density of Soil In-Place by the Sand-Cone Method
D4253	N/A	N/A	Maximum Index Density and Unit Weight of Soil (Relative Density)
D4254	N/A	N/A	Minimum Index Density and Unit Weight of Soil (Relative Density)

Soil Properties and Classification

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D2487	N/A	N/A	Classification of Soils for Engineering Purposes (USCS)
D422	T88	N/A	Particle Size Analysis of Soils / Hydrometer
D2216	T265	N/A	Laboratory Determination of Moisture Content of Soils
A674	N/A	N/A	Corrosion Potential Series (Oxidation Reduction Potential)
N/A	N/A	133	Soil Resistivity (PennDOT Methods)
D421	T87	N/A	Dry Preparation of Disturbed Soil and Soil Aggregate Samples
D2217	T146	N/A	Wet Preparation of Disturbed Soil Samples for Test
D4972	N/A	N/A	pH of Soils
D854	T100	N/A	Specific Gravity of Soils
D1140	N/A	N/A	Amount of Material in Soils Finer than the #200 Sieve
D4318	T89	N/A	Determining the Liquid Limit of Soils
D4318	T90	N/A	Determining the Plastic Limit and Plasticity Index of Soils
N/A	M145	N/A	Classification of Soils for Highway Construction Purposes
N/A	N/A	N/A	Textural Classification of Soils - United States Department of Agriculture (USDA)
C400	N/A	N/A	Acid Neutralization
D4644	N/A	N/A	Slake Durability Index of Shale and Similar Weak Rock (Sub-Contracted)
N/A	N/A	N/A	Topsoil Analysis (Sub-Contracted)

List of Technical Services

CONSTRUCTION MATERIAL TESTING (Continued)

SOILS

Strength and Design Testing of Soil & Rock

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D3080	T236	N/A	Direct Shear Test of Soils Under Consolidated Drained Conditions
D1883	T193	113	California Bearing Ratio (CBR)
D4767	T297	N/A	Triaxial Shear Strength Testing - Consolidated Drained (CD)
D4546	N/A	N/A	One-Dimensional Swell/Settlement Potential of Cohesive Soils
D2938	T226	N/A	Compressive Strength of Intact Rock Core Specimens
D2435	T216	N/A	One-Dimensional Consolidation Properties of Soil
D2166	T208	N/A	Unconfined Compressive Strength of Cohesive Soil
D4767	T297	N/A	Triaxial Shear Strength Testing - Consolidated Undrained (CU)
D2850	T296	N/A	Triaxial Shear Strength Testing - Unconsolidated Undrained (UU)
D5731	N/A	N/A	Point Load Strength Index of Rock
D3967	N/A	N/A	Splitting Tensile Strength of Intact Rock Core Specimens

Permeability Testing

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D5084	N/A	N/A	Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
D2434	T215	119	Permeability of Granular Soils (Constant Head)

Soil-Cement/Fly Ash Testing

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D558	T134	109	Moisture-Density Relations of Soil-Cement Mixtures
D559	T135	110	Wetting and Drying Test of Compacted Soil-Cement Mixtures
D1633	N/A	N/A	Test Method for Compressive Strength of Molded Soil-Cement Cylinders

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CONSTRUCTION MATERIAL TESTING (Continued)

SOILS

Field Engineering Testing of Soil

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D1194	T235	N/A	Bearing Capacity of Soil for Static Load and Spread Footings (Field)
D4429	N/A	N/A	California Bearing Ratio of Soils in Place (Field)
STP399	N/A	N/A	Dynamic Cone Penetration (Field)

AGGREGATE

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
C117	T11	100	Material Finer than No. 200 Sieve by Washing
C136	T27	619	Sieve Analysis of Fine and Coarse Aggregate
C88	T104	510	Soundness of Fine and Coarse Aggregate
C131	T96	622	L.A. Abrasion of Coarse Aggregate
C127	T85	506	Specific Gravity and Absorption of Coarse Aggregate
C702	T248	N/A	Reducing Field Samples of Aggregate to Testing Size
C128	T84	505	Specific Gravity and Absorption of Fine Aggregate
C1252	T304	527	Uncompacted Void Content of Fine Aggregate
D2419	T176	N/A	Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
C29	T19	609	Bulk Density (Unit Weight) and Voids in Aggregate
C566	T255	N/A	Total Moisture Content of Aggregate by Drying
C40	T21	N/A	Organic Impurities in Fine Aggregate for Concrete
C142	T112	620	Clay Lumps and Friable Particles in Aggregate
D546	T37	N/A	Sieve Analysis of Mineral Filler for Road and Paving Materials
D3042	N/A	N/A	Carbonate Content of Aggregates-Insoluble Residue (Sub-Contracted)

List of Technical Services

CONSTRUCTION MATERIAL TESTING (Continued)

MASONRY

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
C140	N/A	N/A	Compressive Strength of Concrete Masonry Units
C1314	N/A	N/A	Compressive Strength of Concrete Masonry Prisms
C1019	N/A	N/A	Compressive Strength of Masonry Grout (Rectangular Specimens)
C780	N/A	N/A	Pre-Construction and Construction Evaluation of Mortar
C109	N/A	N/A	Compressive Strength of Hydraulic Cement Mortar Cubes
C67	T32	N/A	Brick Testing (Efflorescence, Absorption and Compressive Strength)

ASPHALT

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D2726	T166	715	Bulk Specific Gravity of Compacted Hot Mixed Asphalt (Surface Saturated Dry)
D1188	T275	716	Bulk Specific Gravity of Compacted Hot Mixed Asphalt (Paraffin-Coated Specimens)
D2950	N/A	402	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods

STRUCTURAL STEEL

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
N/A	N/A	N/A	Visual Weld Inspection (AWS and ASNT Methods)
N/A	N/A	N/A	Visual Inspection of Bolted Connections (AWS and ASNT Methods)
A325/A490	N/A	N/A	Bolt Torque Testing of Bolted Connections
N/A	N/A	N/A	AISC Steel Erection Inspection
N/A	N/A	N/A	Pull Out Testing of Embedded Anchors
E165	N/A	N/A	Dye Penetrant Weld Inspection
			Magnetic Particle Weld Inspection
			Ultrasonic Weld Inspection (Sub-Contracted)
A325/A490	N/A	N/A	Bolt Tensioning-Torque Requirement Development (5 Bolts per Set)



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CONSTRUCTION MATERIAL TESTING (Continued)

SPRAYED FIRE RESISTIVE MATERIALS (SFRM) (FIREPROOFING)

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
E605	N/A	N/A	Thickness of SFRM
E605	N/A	N/A	Density of SFRM
E736	N/A	N/A	Cohesion/Adhesion of SFRM
E759	N/A	N/A	Effect of Deflection
E760	N/A	N/A	Effect of Impact on Bonding

On-Site Inspection Services

- Masonry Construction Inspection (IBC)
- Fresh Mixed Concrete Testing and Inspection (ACI)
- Specification Compliance for Steel Reinforcing Placement
- Hot Mixed Asphalt Placement Inspection and Density Testing
- Verification of Bearing Capacity of Soil and Rock for Foundation Construction
- Monitor and Test Placement of Fill/Backfill Materials

List of Technical Services

GEOTECHNICAL ENGINEERING

DRILLING

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
D1452	T203	N/A	Soil Investigation and Sampling by Auger Borings
D1586	T206	N/A	Standard Penetration Test and Split-Barrel Sampling of Soil
D1587	T207	N/A	Thin Walled Tube Sampling of Soil
D2113	T225	N/A	Diamond Core Drilling for Site Investigation
N/A	T251	N/A	Soil Investigation and Sampling by Hollow-Stem Auger Borings

SOILS

Soil Properties and Classification

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SPECIALTY FOUNDATION DESIGN

Specialty foundation design would include the following foundation elements as well as pile caps.

- Minipiles
- H-Driven Piles
- Tapered Piles
- Caisson
- Underpinning
- Helical Piles

SOIL SCIENCE

Designation			DESCRIPTION
ASTM	AASHTO	PTM	
N/A	N/A	N/A	Double Ring Infiltrimeter Field Test (Dec. 2006 PADEP Stormwater BMP Manual)
N/A	N/A	N/A	Uncased Hole - Percolation Field Test (Dec. 2006 PADEP Stormwater BMP Manual)
N/A	N/A	N/A	Cased Hole - Percolation Field Test (Maryland Stormwater Manual Appendix D.1)