APPENDIX

TEST LOCATION SKETCH

EXPLORATION PROCEDURES

HAND AUGER BORING LOGS

LABORATORY PROCEDURES

LABORATORY TEST RESULTS
Legend:

- Approximate Boring Location

: PCC Pavements
: Asphalt Pavements

S&ME
PDRTA Parking Lot
Florence, South Carolina

TEST LOCATION SKETCH

FIGURE NO. 1

SCALE: NTS
CHECKED BY: ABG
DRAWN BY: WDK
DATE: October 2013

JOB NO. 1639-13-168
SUMMARY OF EXPLORATION PROCEDURES

The American Society for Testing and Materials (ASTM) publishes standard methods to explore soil, rock and ground water conditions in Practice D-420-98, “Standard Guide to Site Characterization for Engineering Design and Construction Purposes.” The boring and sampling plan must consider the geologic or topographic setting. It must consider the proposed construction. It must also allow for the background, training, and experience of the geotechnical engineer. While the scope and extent of the exploration may vary with the objectives of the client, each exploration includes the following key tasks:

- Reconnaissance of the Project Area
- Preparation of Exploration Plan
- Layout and Access to Field Sampling Locations
- Field Sampling and Testing of Earth Materials
- Laboratory Evaluation of Recovered Field Samples
- Evaluation of Subsurface Conditions

The standard methods do not apply to all conditions or to every site. Nor do they replace education and experience, which together make up engineering judgment. Finally, ASTM D 420 does not apply to environmental investigations.

RECONNAISSANCE OF THE PROJECT AREA

Where practical, we reviewed available topographic maps, county soil surveys, reports of nearby investigations and aerial photographs when preparing the boring and sampling plan. Then we walked over the site to note land use, topography, ground cover, and surface drainage. We observed general access to proposed sampling points and noted any existing structures.

BORING AND SAMPLING

Hand Auger Borings

Auger borings were advanced using hand-operated augers. The soils encountered were identified in the field by cuttings brought to the surface. Representative samples of the cuttings were placed in plastic bags and transported to the laboratory. Soil consistency was qualitatively estimated by the relative difficulty of advancing the augers.

At selected intervals, the augers were withdrawn and soil consistency measured with a dynamic cone penetrometer. The conical point of the penetrometer was first seated 1-3/4 inches to penetrate any loose cuttings in the boring, then driven two additional 1-3/4 inch increments by a 15 pound hammer falling 20 inches. The number of hammer blows required to achieve this penetration was recorded. When properly evaluated by qualified professional staff, the blow count is an index to the soil strength and ability to support foundations.

Ground Water Level Determination

Subsurface water levels in the boreholes were measured during the onsite exploration by measuring depths from the existing grade to the current water level using a tape.
### Soil Classification Chart

**Major Divisions**

<table>
<thead>
<tr>
<th>Coarse Grained Soils</th>
<th>Symbols</th>
<th>Typical Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Gravels</td>
<td>GW</td>
<td>Well-graded gravels, gravel - sand mixtures, little or no fines</td>
</tr>
<tr>
<td>Poorly-graded gravels, gravel - sand mixtures, little or no fines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravels with Fines</td>
<td>GM</td>
<td>Silty gravels, gravel - sand - silt mixtures</td>
</tr>
<tr>
<td>Clayey gravels, gravel - sand - clay mixtures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand and Sandy Soils</td>
<td>SW</td>
<td>Well-graded sands, gravelly sands, little or no fines</td>
</tr>
<tr>
<td>Poorly-graded sands, gravelly sand, little or no fines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sands with Fines</td>
<td>SM</td>
<td>Silty sands, sand - silt mixtures</td>
</tr>
<tr>
<td>Clayey sands, sand - clay mixtures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Grained Soils</td>
<td>ML</td>
<td>Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity</td>
</tr>
<tr>
<td>Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic silts and organic clays of low plasticity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MH</td>
<td></td>
<td>Inorganic silts, micaceous or diatomaceous fine sand or silty soils</td>
</tr>
<tr>
<td>Inorganic clays of high plasticity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic clays of medium to high plasticity, organic silts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly Organic Soils</td>
<td>PT</td>
<td>Peat, humus, swamp soils with high organic contents</td>
</tr>
</tbody>
</table>

**Symbols**

- GW
- GP
- GM
- GC
- SW
- SP
- SM
- SC
- ML
- CL
- OL
- MH
- CH
- OH
- PT
<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>DVA (ppm)</th>
<th>ELEVATION (ft.)</th>
<th>USCS</th>
<th>GRAPHIC SYMBOL</th>
<th>DEPTH (ft.)</th>
<th>DCP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.00</td>
<td></td>
<td>Asphalt Fragments - 1-1/4&quot;</td>
<td>0-0.00</td>
<td>4-3.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FILL - SILTY SAND (SM) - Very loose to medium dense, tan and dark brown, mostly fine to medium sand, some low plasticity fines, wet to moist.</td>
<td>0-0.00</td>
<td>7-10-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FILL - CLAYEY SAND (SC) - Loose, brown and gray, mostly fine to medium sand, some low to medium plasticity fines, with red and gray clayey inclusions, moist to wet.</td>
<td>0-0.00</td>
<td>10-7-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low plasticity fines, with trace roots, wood fragments, and decaying organic matter. Saturated.</td>
<td>0-0.00</td>
<td>5-5-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0-0.00</td>
<td>2-3-2</td>
</tr>
</tbody>
</table>

NOTES:

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<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>O&amp;M (ppm)</th>
<th>ELEVATION (ft.)</th>
<th>USCS</th>
<th>GRAPHIC SHORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.00</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>1-1/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.00</td>
<td>5-6-6</td>
<td>FILL - SILTY SAND (SM) - Loose, tan and dark brown; mostly fine to medium sand, some low plasticity fines, moist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.00</td>
<td>5-5-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.50</td>
<td>3-4-4</td>
<td>FILL - CLAYEY SAND (SC) - Very loose, reddish brown and brown, mostly fine to medium sand, some low to medium plasticity fines, wet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.00</td>
<td>5-4-4</td>
<td>SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low plasticity fines, with trace roots and organic matter, saturated.</td>
</tr>
</tbody>
</table>

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NOTES:

LOG OF HAND AUGER BORING HA-2
### LOG OF HAND AUGER BORING NO. HA-3

**PROJECT:** PDRTA Parking Lot  
**PROJECT NO:** 1639-13-168  
**PROJECT LOCATION:** Florence, SC  
**DATE DRILLED:** 9/24/13  
**DRILLING CONTRACTOR:** S&ME, Inc.  
**DRILLING METHOD:** Hand Auger

**WATER LEVEL:** Not encountered  
**GROUND SURFACE ELEVATION:** 0.00  
**LOGGED BY:** W. Kannon

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<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>DVA (ppm)</th>
<th>ELEVATION (ft.)</th>
<th>USCS TOBACO CHART</th>
<th>DCP (blows per foot)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.00</td>
<td></td>
<td>10-8-6</td>
</tr>
</tbody>
</table>

**Asphalt Fragments - 1-1/4”**

<table>
<thead>
<tr>
<th>FILL - SILTY SAND (SM) - Loose, tan and dark gray, mostly fine to medium sand, some low plasticity fines, moist.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-6-6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FILL - CLAYEY SAND (SC) - Loose, reddish brown and gray, mostly fine to medium sand, some low to medium plasticity fines, moist to wet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5-4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low to plasticity fines with roots and organic matter, wet to saturated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-3-3</td>
</tr>
</tbody>
</table>

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2-2</td>
</tr>
</tbody>
</table>

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**NOTES:**

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**LOG OF HAND AUGER BORING HA-3**
LOG OF HAND AUGER BORING NO. HA-4

PROJECT: PDRTA Parking Lot
PROJECT NO: 1639-13-168
PROJECT LOCATION: Florence, SC

DATE DRILLED: 9/24/13
DRILLING CONTRACTOR: S&ME, Inc.
DRILLING METHOD: Hand Auger

WATER LEVEL: TOB = 3.5'
GROUND SURFACE ELEVATION: 0.00
LOGGED BY: W. Kannon

This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>OVA (ppm)</th>
<th>ELEVATION (ft.)</th>
<th>DCP (feet per increment)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.00</td>
<td>3-8-9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>12-8-9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.00</td>
<td>2-5-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.00</td>
<td>3-4-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.00</td>
<td>6-7-9</td>
</tr>
</tbody>
</table>

- FILL - SILTY SAND (SM) - Loose, tan and dark brown, mostly fine to medium sand, some low plasticity fines, moist to wet.
- SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low plasticity fines, with trace roots and organic matter, wet.
- SILTY SAND (SM) - Loose, gray, mostly fine to medium sand, some low plasticity fines, wet.
# LOG OF HAND AUGER BORING NO. HA-5

**PROJECT:** PDRTA Parking Lot  
**PROJECT NO.:** 1639-13-168  
**PROJECT LOCATION:** Florence, SC  
**WATER LEVEL:** Not encountered  
**DATE DRILLED:** 9/24/13  
**DRILLING CONTRACTOR:** S&ME, Inc.  
**DRILLING METHOD:** Hand Auger  
**LOGGED BY:** W. Kannon

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<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>DCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Fragments - 2&quot;</td>
<td>6-7-7</td>
</tr>
<tr>
<td><strong>FILL - CLAYEY SAND (SC)</strong> - Loose, brown and reddish brown, mostly fine to medium sand, some low to medium plasticity fines, moist to wet.</td>
<td></td>
</tr>
<tr>
<td><strong>FILL - SILTY SAND (SM)</strong> - Loose, dark brown and tan, mostly fine to medium sand, some low plasticity fines, moist.</td>
<td>11-10-10</td>
</tr>
<tr>
<td><strong>SILTY SAND (SM)</strong> - Very loose, dark gray, mostly fine sand, some low plasticity fines, with some trace roots and organic matter, wet.</td>
<td>4-3-3</td>
</tr>
</tbody>
</table>

---

**NOTES:**


<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>O&amp;A (rpm)</th>
<th>ELEVATION (ft.)</th>
<th>USCS</th>
<th>GRAPHIC SYMBOL</th>
<th>DESCRIPTION</th>
<th>DCP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>FILL - CLAYEY SAND (SC) - Very loose, reddish brown, mostly fine to medium sand, some low to medium plasticity fines, moist.</td>
<td>5-4-4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>FILL - SILTY SAND (SM) - Loose, tan and brown, mostly fine to medium sand, some low plasticity fines, moist to wet.</td>
<td>4-6-8</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>6-6-7</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low plasticity fines, with some roots and organic matter, wet.</td>
<td>4-3-3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>SILTY SAND (SM) - Gray, mostly fine to medium sand, some low plasticity fines, some trace roots, wet.</td>
<td>5-6-8</td>
</tr>
</tbody>
</table>

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## LOG OF HAND AUGER BORING NO. HA-7

**PROJECT:** PDRTA Parking Lot  
**PROJECT NO.:** 1639-13-168  
**PROJECT LOCATION:** Florence, SC  
**DATE DRILLED:** 9/24/13  
**DRILLING CONTRACTOR:** S&ME, Inc.  
**DRILLING METHOD:** Hand Auger  

**WATER LEVEL:** TOB = 3.5'  
**GROUND SURFACE ELEVATION:** 0.00  
**LOGGED BY:** W. Kannon

---

<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>O&amp;V (ppm)</th>
<th>ELEVATION (ft.)</th>
<th>USGS GRAPHIC SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.00</td>
<td>0</td>
<td>FILL - CLAYEY SAND (SC) - Medium dense to loose, reddish brown, mostly fine to medium sand, some low to medium plasticity fines, moist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.00</td>
<td></td>
<td>FILL - SILTY SAND (SM) - Loose, dark brown and tan, mostly fine to medium sand, some low plasticity fines, moist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.00</td>
<td></td>
<td>SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low plasticity fines, with some roots and organic matter, wet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.00</td>
<td>SY</td>
<td>SILTY SAND (SM) - Medium dense, gray, mostly fine to medium sand, some low plasticity fines, wet.</td>
</tr>
</tbody>
</table>

**NOTES:**

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**DCP**  
7-9-13  
8-6-6  
7-7-8  
3-4-3  
8-10-12
This log is part of the report prepared for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at the location with the passage of time. The data presented is a simplification of actual conditions encountered.

<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>SAMPLE ADVANCE (ft.)</th>
<th>OVA (ppm)</th>
<th>ELEVATION (ft.)</th>
<th>USCS</th>
<th>GRAPHIC SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>Asphalt Fragments - 2&quot;</td>
</tr>
<tr>
<td>1.00</td>
<td></td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td>FILL - CLAYEY SAND (SC) - Loose, reddish brown, mostly fine to medium sand, some low plasticity fines, moist.</td>
</tr>
<tr>
<td>2.00</td>
<td></td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td>FILL - SILTY SAND (SM) - Loose, dark brown and tan, mostly fine to medium sand, some low plasticity fines, moist.</td>
</tr>
<tr>
<td>3.00</td>
<td></td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
<td>SILTY SAND (SM) - Very loose, dark gray, mostly fine sand, some low plasticity fines, with some roots and organic matter, saturated.</td>
</tr>
<tr>
<td>4.00</td>
<td></td>
<td>0</td>
<td>4</td>
<td></td>
<td></td>
<td>SILTY SAND (SM) - Loose, gray, mostly fine to medium sand, some low plasticity fines, wet.</td>
</tr>
</tbody>
</table>

DCP (Gross per increment)

- 10-7-6
- 11-10-8
- 8-7-7
- 3-2-2
- 6-9-10
SUMMARY OF LABORATORY PROCEDURES

Examination of Recovered Soil Samples
Soil and field records were reviewed in the laboratory by the geotechnical professional. Soils were classified in general accordance with the visual-manual method described in ASTM D 2488, “Standard Practice for Description and Identification of Soils (Visual-Manual Method)”. Representative soil samples were selected for classification testing to provide grain size and plasticity data to allow classification of the samples in general accordance with the Unified Soil Classification System method described in ASTM D 2487, “Standard Practice for Classification of Soils for Engineering Purposes”. The geotechnical professional also prepared the final boring and sounding records enclosed with this report.

Moisture Content Testing of Soil Samples by Oven Drying
Moisture content was determined in general conformance with the methods outlined in ASTM D 2216, “Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil or Rock by Mass.” This method is limited in scope to Group B, C, or D samples of earth materials which do not contain appreciable amounts of organic material, soluble solids such as salt or reactive solids such as cement. This method is also limited to samples which do not contain contamination.

A representative portion of the soil was divided from the sample using one of the methods described in Section 9 of ASTM D 2216. The split portion was then placed in a drying oven and heated to approximately 110 degrees C overnight or until a constant mass was achieved after repetitive weighing. The moisture content of the soil was then computed as the mass of water removed from the sample by drying, divided by the mass of the sample dry, times 100 percent. No attempt was made to exclude any particular particle size from the portion split from the sample.

Grain Size Analysis of Samples
The distribution of particle sizes greater than 75 mm was determined in general accordance with the procedures described by ASTM D 421, “Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants”, and D 422, “Standard Test Method for Particle Size Analysis of Soils,” except that the hydrometer portion of the test standard was not utilized. During preparation samples were divided into two portions. The material coarser than the No. 30 U.S. sieve size fraction was dry sieved through a nest of standard sieves as described in Article 6. Material passing the No. 30 sieve was independently passed through a nest of sieves down to the No. 200 size.

Percent Fines Determination of Samples
A selected specimen of soils was washed over a No. 200 sieve after being thoroughly mixed and dried. This test was conducted in general accordance with ASTM D 1140, “Standard Test Method for Amount of Material Finer Than the No. 200 Sieve.” Method A, using water to wash the sample through the sieve without soaking the sample for a prescribed period of time, was used and the percentage by weight of material washing through the sieve was deemed the “percent fines” or percent clay and silt fraction.

Compaction Tests of Soils Using Modified Effort
Soil placed as engineering fill is compacted to a dense state to obtain satisfactory engineering properties. Laboratory compaction tests provide the basis for determining the percent compaction
and water content needed to achieve the required engineering properties, and for controlling construction to assure the required compaction and water contents are achieved. Test procedures generally followed those described by ASTM D 1557, “Modified Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (56,000 lb/ft²).”

The relationship between water content and the dry unit weight is determined for soils compacted in a 4 inch diameter molds with a 10 lb rammer dropped from a height of 18 inches, producing a compactive effort of 56,000 lb/ft².

Soil was compacted in the mold in five layers of approximately equal thickness, each compacted with 25 blows of the rammer. After compaction of the sample in the mold, the resulting dry density and moisture content was determined and the procedure repeated. Separate soils were used for each sample point, adjusting the moisture content of the soil as described in Section 10.2 (Moist Preparation Method). The procedure was repeated for a sufficient number of water content values to allow the dry density vs. water content values to be plotted and the maximum dry density and optimum moisture content to be determined from the resulting curvilinear relationship.

**Laboratory California Bearing Ratio Tests of Compacted Samples**

This method is used to evaluate the potential strength of subgrade, subbase, and base course material, including recycled materials, for use in road and airfield pavements. Laboratory CBR tests were run in general accordance with the procedures laid out in ASTM D 1883, “Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.” Specimens were prepared in standard molds using two different levels of compactive effort within plus or minus 0.5 percent of the optimum moisture content value. While embedded in the compaction mold, each sample was inundated for a minimum period of 96 hours to achieve saturation. During inundation the specimen was surcharged by a weight approximating the anticipated weight of the pavement and base course layers. After removing the sample from the soaking bath, the soil was then sheared by jacking a piston having a cross sectional area of 3 square inches into the end surface of the specimen. The piston was jacked 0.5 inches into the specimen at a constant rate of 0.05 inches per minute.

The CBR is defined as the load required to penetrate a material to a predetermined depth, compared to the load required to penetrate a standard sample of crushed stone to the same depth. The CBR value was usually based on the load ratio for a penetration of 0.10 inches, after correcting the load-deflection curves for surface irregularities or upward concavity. However, where the calculated CBR for a penetration of 0.20 inches was greater than the result obtained for a penetration of 0.10 inches, the test was repeated by reversing the specimen and shearing the opposite end surface. Where the second test indicated a greater CBR at 0.20 inches penetration, the CBR for 0.20 inches penetration was used.
# Laboratory Determination of Water Content

**Project #:** 1639-13-168  
**Report Date:** 10/02/13

**Project Name:** PDRTA - Parking Lot  
**Test Date(s):** 09/25/13

**Client Name:** PDRTA  
**Sample Date(s):** 09/25/13

**Client Address:** 313 S. Stadium Road; Florence, SC 29506  
**Sampling Method:** Grab  
**Drill Rig:**

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Sample No.</th>
<th>Sample Depth</th>
<th>Tare #</th>
<th>Tare Weight</th>
<th>Tare Wt. + Wet Wt</th>
<th>Tare Wt. + Dry Wt</th>
<th>Water Weight</th>
<th>Percent Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk</td>
<td>1</td>
<td>0-2'</td>
<td>54</td>
<td>0.00</td>
<td>513.60</td>
<td>438.70</td>
<td>74.90</td>
<td>17.1%</td>
</tr>
<tr>
<td>Bulk</td>
<td>2</td>
<td>0-2'</td>
<td>89</td>
<td>0.00</td>
<td>416.30</td>
<td>349.80</td>
<td>66.50</td>
<td>19.0%</td>
</tr>
<tr>
<td>HA-2</td>
<td>-</td>
<td>1-3'</td>
<td>707</td>
<td>0.00</td>
<td>740.90</td>
<td>617.50</td>
<td>123.40</td>
<td>20.0%</td>
</tr>
<tr>
<td>HA-6</td>
<td>-</td>
<td>0-3'</td>
<td>702</td>
<td>0.00</td>
<td>1047.00</td>
<td>935.50</td>
<td>111.50</td>
<td>11.9%</td>
</tr>
</tbody>
</table>

**Notes / Deviations / References**

---

**ASTM D 2216:** Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

---

W. Kannon  
*Technical Responsibility*

Project Engineer  
*Signature*

**Date:** 10/8/13

---

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Material Finer than the #200 Sieve

ASTM D1140

S&ME, Inc. Florence, 2327 Prosperity Way Suite 9, Florence SC 29501

Project #: 1639-13-168  
Project Name: PDRTA - Parking Lot  
Report Date: 10/02/13  
Client Name: PDRTA  
Client Address: 313 S. Stadium Road; Florence, SC  
Sample by: W. Kannon  
Sample Date(s): 09/24/13  
Sampling Method: Grab  
Drill Rig:  

Method:  

<table>
<thead>
<tr>
<th>Boring #</th>
<th>Sample #</th>
<th>Sample Depth</th>
<th>Tare #</th>
<th>Tare Weight</th>
<th>Tare Wt. + Wet Wt</th>
<th>Tare Wt. + Dry Wt</th>
<th>Tare Wt. + Dry Wt after Wash</th>
<th>% Passing #200</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA-2</td>
<td>-</td>
<td>1 - 3'</td>
<td>2</td>
<td>0.00</td>
<td>0.00</td>
<td>159.20</td>
<td>96.70</td>
<td>39.3%</td>
</tr>
<tr>
<td>HA-6</td>
<td>-</td>
<td>0 - 3'</td>
<td>69</td>
<td>0.00</td>
<td>0.00</td>
<td>143.80</td>
<td>112.80</td>
<td>21.6%</td>
</tr>
<tr>
<td>Bulk</td>
<td>1</td>
<td>0 - 2'</td>
<td>54</td>
<td>0.00</td>
<td>0.00</td>
<td>120.30</td>
<td>69.90</td>
<td>41.9%</td>
</tr>
<tr>
<td>Bulk</td>
<td>2</td>
<td>0 - 2'</td>
<td>89</td>
<td>0.00</td>
<td>0.00</td>
<td>197.10</td>
<td>139.10</td>
<td>29.4%</td>
</tr>
</tbody>
</table>

Balance ID: 24496  
Calibration Date: 11-1-12  
#200 Sieve: 24527  
Calibration Date: 7-10-13

Notes / Deviations / References: ASTM D1140: Amount of Material in Soil Finer than the No. 200 (75-um) Sieve

W. Kannon  
Technical Responsibility

Project Engineer  
Signature  
Date  

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# Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc. Florence, 2327 Prosperity Way Suite 9: Florence, SC 29501**

**Project #:** 1639-13-168  
**Report Date:** 10/02/13  
**Test Date(s):** 09/30/13  
**Client Name:** PDRTA  
**Project Name:** PDRTA - Parking Lot  
**Client Address:** 313 S. Stadium Road; Florence, SC  
**Boring #:** HA-2  
**Sample #:** 1751  
**Sample Date:** 09/24/13  
**Location:** Parking Lot  
**Depth:** 1' - 3'

**Sample Description:** Reddish Brown Clayey Sand (SC)

<table>
<thead>
<tr>
<th>Pan #</th>
<th>Tare #:</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>51</td>
</tr>
<tr>
<td>A</td>
<td>Tare Weight</td>
<td>15.44</td>
<td>15.07</td>
</tr>
<tr>
<td>B</td>
<td>Wet Soil Weight + A</td>
<td>21.09</td>
<td>23.68</td>
</tr>
<tr>
<td>C</td>
<td>Dry Soil Weight + A</td>
<td>19.54</td>
<td>21.18</td>
</tr>
<tr>
<td>D</td>
<td>Water Weight (B-C)</td>
<td>1.55</td>
<td>2.50</td>
</tr>
<tr>
<td>E</td>
<td>Dry Soil Weight (C-A)</td>
<td>4.10</td>
<td>6.11</td>
</tr>
<tr>
<td>F</td>
<td>% Moisture (D/E)*100</td>
<td>37.8%</td>
<td>40.9%</td>
</tr>
<tr>
<td>N</td>
<td># OF DROPS</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>LL</td>
<td>LL = F * FACTOR</td>
<td>20.1%</td>
<td></td>
</tr>
</tbody>
</table>

**Ave. Average**

- One Point Liquid Limit
  - N  Factor  N  Factor
    - 20  0.974  26  1.005
    - 21  0.979  27  1.009
    - 22  0.985  28  1.014
    - 23  0.999  29  1.018
    - 24  1.000  30  1.022

**NP, Non-Plastic**  
**Liquid Limit** 40  
**Plastic Limit** 20  
**Plastic Index** 20  
**Group Symbol** SC

**Notes / Deviations / References:**

- Wet Preparation [ ]  
- Dry Preparation [ ]  
- Air Dried [ ]

---

**ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils**

**W. Kannon**  
Technical Responsibility

**Signature**

**Project Engineer**  
Position  
Date 10/8/13

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S&ME, INC. - Florence  
2327 Prosperity Way, Suite 9: Florence SC
Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. Florence, 2327 Prosperity Way Suite 9; Florence, SC 29501

Project #: 1639-13-168  Report Date: 10/02/13
Project Name: PDRTA - Parking Lot  Test Date(s): 09/30/13
Client Name: PDRTA
Client Address: 313 S. Stadium Road

Boring #: HA-6  Sample #: 1752  Sample Date: 09/24/13
Location: HA-6  Depth: 1'-3'

Sample Description: Dark Brown Silty Sand (SM)

<table>
<thead>
<tr>
<th>Pan #</th>
<th>Tare #</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pan</th>
<th>Tare</th>
<th>Liquid Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pan Preparation**
- Wet Preparation [ ]
- Dry Preparation [ ]
- Air Dried [ ]

**Notes / Deviations / References:**

---

**Wet Preparation**

**Dry Preparation**

**Air Dried**

---

**One Point Liquid Limit**

<table>
<thead>
<tr>
<th>N</th>
<th>Factor</th>
<th>N</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0.974</td>
<td>26</td>
<td>1.005</td>
</tr>
<tr>
<td>21</td>
<td>0.976</td>
<td>27</td>
<td>1.009</td>
</tr>
<tr>
<td>22</td>
<td>0.985</td>
<td>28</td>
<td>1.014</td>
</tr>
<tr>
<td>23</td>
<td>0.99</td>
<td>29</td>
<td>1.018</td>
</tr>
<tr>
<td>24</td>
<td>0.995</td>
<td>30</td>
<td>1.022</td>
</tr>
<tr>
<td>25</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NP, Non-Plastic**

**Liquid Limit**

**Plastic Limit**

**Plastic Index**

**Group Symbol**

**Multipoint Method**

**One-point Method**

---

**ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils**

W. Kannon  Signature  Project Engineer  10/8/13

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. Florence, 2327 Prosperity Way Suite 9; Florence, SC 29501**

**Project #:** 1639-13-168  
**Project Name:** PDRTA - Parking Lot  
**Client Name:** PDRTA  
**Client Address:** 313 S. Stadium Road; Florence, SC  
**Boring #:** HA-5 thru HA-8  
**Sample #:** 1749  
**Sample Date:** 09/24/13  
**Location:** BULK #1  
**Depth:** 0-2'

**Sample Description:** Brown Silty Sand (SM)

<table>
<thead>
<tr>
<th>Pan #</th>
<th>Tare Weight</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Balance (0.01 g)</td>
<td>24496</td>
<td>11/1/2012</td>
</tr>
<tr>
<td>B</td>
<td>Wet Soil Weight + A</td>
<td>24510</td>
<td>1/4/2013</td>
</tr>
<tr>
<td>C</td>
<td>Dry Soil Weight + A</td>
<td>24456</td>
<td>9/10/2013</td>
</tr>
<tr>
<td>D</td>
<td>Water Weight (B-C)</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Dry Soil Weight (C-A)</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>% Moisture (D/E)*100</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td># OF DROPS</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>LL</td>
<td>LL = F * FACTOR</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Ave.</td>
<td>Average</td>
<td>38</td>
<td></td>
</tr>
</tbody>
</table>

**Notes / Deviations / References:**

**ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils**

W. Kannon  
**Technical Responsibility**

[Signature]  
Project Engineer

**10/2/13**

**ASTM D 4318**  
**Quality Assurance**

---

**N**  
Factor  
29  
0.974  
26  
1005

21  
0.984  
28  
1014

22  
0.998  
29  
1018

25  
1.000  
30  
1022

**NP, Non-Plastic**  
**Liquid Limit** --  
**Plastic Limit** NP  
**Plastic Index** --

**Group Symbol** SM

**Multipoint Method**  
**One-point Method**

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Sieve Analysis of Soils

ASTM D 422

S&ME, Inc. - Florence, 2327 Prosperity Way Suite 9; Florence, SC 29501

Project #: 1639-13-168
Project Name: PDRTA - Parking Lot
Client Name: PDRTA
Client Address: 313 S. Stadium Road; Florence, SC
Lab #: 1749
Sample Date: 9/24/13

Location: BULK #1: Borings HA-1 thru HA-4
Depth: 0 - 3'

Sample Description: Brown Silty Sand (SM)

Maximum Particle Size
- Cobbles: < 300 mm (12") and > 75 mm (3"
- Gravel: < 75 mm and > 4.75 mm (#4)
- Coarse Sand: < 4.75 mm and > 2.00 mm (#10)
- Medium Sand: < 2.00 mm and > 0.425 mm (#40)

Coarse Sand: 2.0%
Medium Sand: 8.7%
Fine Sand: 47.4%
Silt & Clay: 41.9%
Plastic Index: -
Moisture Content: 17.1%

Debris was removed from the sample prior to testing.

W. Kannon
Technical Responsibility

Project Engineer

S&ME, Inc. - Florence
2327 Prosperity Way, Suite 9
Florence, SC 29501
Moisture - Density Report

S&M E, Inc.- Florence 2327 Prosperity Way, Suite 9; Florence, SC 29501

S&M E Project #: 1639-13-168 Report Date: 10/2/13
Project Name: PDRTA - Parking Lot Test Date(s): 9/26/13
Client Name: PDRTA
Client Address: 313 S. Stadium Road; Florence, SC

Lab # 1749 Sample Date: 9/24/2013
Location: BULK #1: HA-1 thru HA-4
Sample Description: Brown Silty Sand (SM)

Depth: 0 - 2"

Maximum Dry Density 123.9 PCF.

Optimum Moisture Content 9.8%

Moisture-Density Relations of Soil and Soil-Aggregate Mixtures

Moisture-Density Curve Displayed: Fine Fraction ✗ Corrected for Oversize Fraction (ASTM D-4718) ☐
Sieve Size used to separate the Oversize Fraction: #4 Sieve ✗ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐
Mechanical Rammer ✗ Manual Rammer ☐ Moist Preparation ☐ Dry Preparation ✗

References / Comments / Deviations:
ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 1557: Laboratory Compaction Characteristics of Soil Using Modified Effort

W. Kannon
Signature
Position
Date 10/8/13

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S&M E, Inc. - Florence
CBR (California Bearing Ratio) of Laboratory Compacted Soil

S&ME, Inc. Florence 2327 Prosperity Way, Suite 9, Florence, SC 29501

ASTM D 1883

Project #: 1639-13-168
Project Name: PDRAA - Parking Lot
Client Name: PDRA
Client Address: 313 S. Stadium Road, Florence, SC
Boring #: Bulk #1
Lab #: 1749
Sample Date: 9/24/13
Location: HA-1 thru HA-4
Depth: 0.2'

Sample Description: Brown Silty Sand (SM)

<table>
<thead>
<tr>
<th>Uncorrected CBR Values</th>
<th>Corrected CBR Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBR at 0.1 in.</td>
<td>16.6</td>
</tr>
<tr>
<td>CBR at 0.1 in.</td>
<td>16.7</td>
</tr>
</tbody>
</table>

CBR Sample Preparation:
The entire production was used and compacted in a 6" CBR mold in accordance with ASTM D1883, Section 6.1.1.

Before Soaking
- Compactive Effort (Blows per Layer) | 30
- Initial Dry Density (PCF) | 117.8
- Moisture Content of the Compacted Specimen | 10.0%
- Percent Compaction | 95.0%
- Soak Time | 96 hrs.

After Soaking
- Final Dry Density (PCF) | 116.2
- Average Final Moisture Content | 11.5%
- Moisture Content (top 1" after soaking) | 18.4%
- Percent Swell | 0.0%
- Surcharge Weight | 20.0
- Surcharge Wt. per sq. Ft. | 102.0
- Plastic Index | NP
- Apparent Relative Density | --

Notes/Deviations/References: Liquid Limit: ASTM D 4318, Classification: ASTM D 2487

W. Kannon
Technical Responsibility

Signature

Project Engineer

Date

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# Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc., Florence, 2327 Prosperity Way Suite 9; Florence, SC 29501**

<table>
<thead>
<tr>
<th>Project #:</th>
<th>1639-13-168</th>
<th>Report Date:</th>
<th>10/02/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name:</td>
<td>PDRTA - Parking Lot</td>
<td>Test Date(s):</td>
<td>09/30/13</td>
</tr>
<tr>
<td>Client Name:</td>
<td>PDRTA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client Address:</td>
<td>313 S. Stadium Road; Florence, SC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boring #:</td>
<td>HA-5 thru HA-8</td>
<td>Sample #:</td>
<td>1750</td>
</tr>
<tr>
<td>Location:</td>
<td>BULK #2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth:</td>
<td>0 - 2'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Description:</td>
<td>Reddish Brown Silty Sand (SM)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pan #</th>
<th>Tare #:</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, C, D, E, F, N, LL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pan #</th>
<th>Tare #:</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL</td>
<td>10</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pan #</th>
<th>Tare #:</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL</td>
<td>10</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>

**Notes / Deviations / References:**

- Wet Preparation: 
- Dry Preparation: 
- Air Dried: 

---

**ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils**

**W. Kannon**

**Project Engineer:**

---

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S&ME, INC. - Florence

2327 Prosperity Way, Suite 9, Florence, SC
Sieve Analysis of Soils

S&ME, Inc. - Florence, 2327 Prosperity Way Suite 9; Florence, SC 29501

Project #: 1639-13-168
Report Date: 10/2/13

Project Name: PDRTA - Parking Lot
Test Date(s): 9/27/13

Client Name: PDRTA
Lab #: 1750

Client Address: 313 S. Stadium Road, Florence, SC
Sample Date: 9/24/13

Location: Bulk #2; HA-5 thru HA-8

Sample Description: Reddish Brown Silty Sand (SM)

---

Maximum Particle Size

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Sand</td>
<td>0.5%</td>
</tr>
<tr>
<td>Medium Sand</td>
<td>7.9%</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>62.2%</td>
</tr>
</tbody>
</table>

Gravel

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Sand</td>
<td>0.0%</td>
</tr>
<tr>
<td>Medium Sand</td>
<td>0%</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>0%</td>
</tr>
</tbody>
</table>

Liquid Limit

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Sand</td>
<td>NP</td>
</tr>
<tr>
<td>Medium Sand</td>
<td>NP</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>NP</td>
</tr>
</tbody>
</table>

Specific Gravity

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Sand</td>
<td>N/D</td>
</tr>
<tr>
<td>Medium Sand</td>
<td>N/D</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>N/D</td>
</tr>
</tbody>
</table>

Moisture Content

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Sand</td>
<td>N/D</td>
</tr>
<tr>
<td>Medium Sand</td>
<td>N/D</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>N/D</td>
</tr>
</tbody>
</table>

---

Notes / Deviations / References:
Debris was removed from the sample prior to testing.

---

W. Kannon
Technical Responsibility

Signature

Project Engineer

Position

Date 10/8/13

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Moisture - Density Report

S&ME, Inc.- Florence 2327 Prosperity Way, Suite 9; Florence, SC 29501

S&ME Project #: 1639-13-168  Report Date: 10/2/13
Project Name: PDRTA - Parking Lot  Test Date(s): 9/26/13
Client Name: PDRTA
Client Address: 313 S. Stadium Road; Florence, SC

Lab # 1750  Sample Date: 9/24/2013
Location: BULK #2: HA-5 thru HA-8  Depth: 0 - 2'
Sample Description: Reddish Brown Silty Sand (SM)

Maximum Dry Density 117.8 PCF.

Optimum Moisture Content 13.7%

ASTM D1557 -- Method A

Moisture-Density Relations of Soil and Soil-Aggregate Mixtures

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐
Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐
Mechanical Rammer ☒ Manual Rammer ☐ Moist Preparation ☐ Dry Preparation ☒

References / Comments / Deviations:
ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 1557: Laboratory Compaction Characteristics of Soil Using Modified Effort

W. Kannon  Project Engineer  10/8/13
Technical Responsibility  Signature  Position  Date

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CBR (California Bearing Ratio) of Laboratory Compacted Soil

ASTM D 1883

S&ME, Inc. Florence 2327 Prosperity Way, Suite 9; Florence, SC 29501

Project #: 1639-13-168
Project Name: PDR1A - Parking Lot
Client Name: PDR1A
Client Address: 313 S. Stadium Road, Florence, SC
Boring #: HA-5 thru HA-8
Lab#: 1750
Location: BULK #2
Depth: 0-2"

Sample Description: Reddish Brown Silty Sand (SM)

ASTM D1557 Method A
Maximum Dry Density: 117.8 PCF
Optimum Moisture Content: 13.7%

Compaction Test performed on grading complying with CBR spec. 5% Retained on the 3/4" sieve: 0.0%

Uncorrected CBR Values

<table>
<thead>
<tr>
<th>CBR at 0.1 in.</th>
<th>25.3</th>
<th>CBR at 0.2 in.</th>
<th>27.2</th>
<th>CBR at 0.1 in.</th>
<th>25.3</th>
<th>CBR at 0.2 in.</th>
<th>27.2</th>
</tr>
</thead>
</table>

Corrected CBR Values

<table>
<thead>
<tr>
<th>CBR at 0.1 in.</th>
<th>25.3</th>
<th>CBR at 0.2 in.</th>
<th>27.2</th>
</tr>
</thead>
</table>

CBR Sample Preparation:
The entire gradation was used and compacted in a 6" CBR mold in accordance with ASTM D1883, Section 6.1.1.

Before Soaking

<table>
<thead>
<tr>
<th>Compactive Effort (Blows per Layer)</th>
<th>35</th>
<th>Final Dry Density (PCF)</th>
<th>113.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Dry Density (PCF)</td>
<td>111.9</td>
<td>Average Final Moisture Content</td>
<td>12.1%</td>
</tr>
<tr>
<td>Moisture Content of the Compacted Specimen</td>
<td>13.5%</td>
<td>Moisture Content (top 1&quot; after soaking)</td>
<td>17.3%</td>
</tr>
<tr>
<td>Percent Compaction</td>
<td>95.0%</td>
<td>Percent Swell</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Soak Time: 96 hrs.  Surcharge Weight: 20.0  Surcharge Wt. per sq. Ft: 102.0

Notes/Deviations/References: Liquid Limit: ASTM D4318, Classification: ASTM D 2487

W. Kannon
Technical Responsibility

Signature

Project Engineer

Position

Date 10/6/13

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