# Coarse Aggregate Analysis Report - 2017

## Vendor: J.H. Lynch

## Source: First St. Quarry

## Location: Cumberland, RI

<table>
<thead>
<tr>
<th>Lab No: 20170006</th>
</tr>
</thead>
</table>

## Sieve Analysis of Coarse Aggregate (AASHTO T-27)

<table>
<thead>
<tr>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA Size: 3/4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.3</td>
<td>14.1</td>
<td>2.7</td>
<td>1.1</td>
<td>0.9</td>
</tr>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>39.8</td>
<td>26.6</td>
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<td>1.8</td>
</tr>
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<td>100.0</td>
<td>100.0</td>
<td>99.8</td>
<td>93.6</td>
<td>11.6</td>
<td>1.4</td>
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</table>

## Unit Weight and Void in Aggregate (AASHTO T-19)

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact</td>
<td>103.33</td>
<td>103.33</td>
<td>103.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loose</td>
<td>Nominal Aggregate Size:</td>
<td>1 1/2&quot;</td>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>103.33</td>
<td>103.33</td>
<td>103.85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Resistance to Abrasion of CA by use of the LA Machine (AASHTO T-96)

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
</tbody>
</table>

## Specific Gravity and Absorption of Coarse Aggregate (AASHTO T-85)

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>3.014</td>
<td>2.982</td>
<td>2.920</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>3.035</td>
<td>2.994</td>
<td>2.932</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td>3.077</td>
<td>3.019</td>
<td>2.956</td>
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<td></td>
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</tr>
<tr>
<td>Absorption:</td>
<td>0.673</td>
<td>0.418</td>
<td>0.407</td>
<td></td>
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<td></td>
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## Soundness of Aggregate by Use of Sodium Sulfate (AASHTO T-104)

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.37</td>
<td>0.39</td>
<td>0.37</td>
<td>0.39</td>
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## Amount of Material Finer than # 200 Sieve in Aggregate (AASHTO T-11)

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
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</thead>
</table>

## Reviewed By

(Print / Sign) Date

REV. 4/25/16

ID# TL9-079
### COARSE AGGREGATE ANALYSIS REPORT - 2017

**Vendor:** CARDI CORP  
**Lab No:** 20170008  
**Source:** ARNOLD RD/NEW LONDON  
**Location:** COVENTRY, RI

#### Sieve Analysis of Coarse Aggregate

<table>
<thead>
<tr>
<th>AASHTO T-27</th>
<th>% Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2&quot;</td>
</tr>
</tbody>
</table>

#### Unit Weight and Void in Aggregate

<table>
<thead>
<tr>
<th>AASHTO T-19</th>
<th>Nominal Aggregate Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compacted</td>
<td>1 1/2&quot;</td>
</tr>
<tr>
<td>Loose</td>
<td>1 1/2&quot;</td>
</tr>
</tbody>
</table>

#### Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>AASHTO T-96</th>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
<td></td>
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</tbody>
</table>

#### Specific Gravity and Absorption of Coarse Aggregate

<table>
<thead>
<tr>
<th>AASHTO T-85</th>
<th>Nominal Aggregate Size:</th>
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<tbody>
<tr>
<td></td>
<td># 4</td>
</tr>
<tr>
<td>Bulk Specific Gravity:</td>
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</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td></td>
</tr>
<tr>
<td>Absorption:</td>
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</table>

#### Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>AASHTO T-104</th>
<th>Sieve Size:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2&quot; - 1 1/2&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>% Loss:</td>
<td></td>
</tr>
</tbody>
</table>

#### Amount of Material Finer than # 200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>AASHTO T-11</th>
<th>Aggregate Bin Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 1/2&quot;</td>
</tr>
<tr>
<td>% Passing # 200 sieve</td>
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</tr>
</tbody>
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**Reviewed By** (Print / Sign)  
**Date**  
**ID# TL9-079**  
**REV. 4/25/16**
**COARSE AGGREGATE ANALYSIS REPORT - 2017**

**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**
**MATERIALS AND QUALITY ASSURANCE**
**COARSE AGGREGATE ANALYSIS REPORT - 2017**

Vendor: PJ KEATING  
Lab No: 20170009  
Source: PHENIX AVENUE QUARRY  
Location: CRANSTON, RI

### Sieve Analysis of Coarse Aggregate

<table>
<thead>
<tr>
<th>CA Size</th>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>94.4</td>
<td>6.6</td>
<td>1.2</td>
<td>0.8</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.7</td>
<td>57.4</td>
<td>10.2</td>
<td>1.7</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.8</td>
<td>87.3</td>
<td>13.1</td>
<td>2.4</td>
<td></td>
<td></td>
</tr>
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### Unit Weight and Void in Aggregate

<table>
<thead>
<tr>
<th>Unit Weight</th>
<th>Bulk Specific Gravity:</th>
<th>Specific Gravity (SSD):</th>
<th>Apparent Specific Gravity:</th>
<th>Absorption:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compacted</td>
<td>2.677</td>
<td>2.733</td>
<td>2.700</td>
<td>0.680</td>
</tr>
<tr>
<td>Loose</td>
<td>2.695</td>
<td>2.745</td>
<td>2.709</td>
<td>0.427</td>
</tr>
</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
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<tr>
<td></td>
<td>28.14</td>
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### Specific Gravity and Absorption of Coarse Aggregate

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.677</td>
<td>2.733</td>
<td>2.700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.695</td>
<td>2.745</td>
<td>2.709</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td>2.727</td>
<td>2.766</td>
<td>2.725</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption:</td>
<td>0.680</td>
<td>0.427</td>
<td>0.348</td>
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</tr>
</tbody>
</table>

### Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.12</td>
<td>0.12</td>
<td></td>
<td></td>
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</tr>
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</table>

### Amount of Material Finer than # 200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Reviewed By**  
(Print / Sign)  
**Date**  
REV. 4/25/16
**Vendor:** MATERIALS S and S  
**Lab No:** 20170012  
**Source:** POUND HILL RD. QUARRY  
**Location:** N. SMITHFIELD, RI

### Sieve Analysis of Coarse Aggregate

#### AASHTO T-27

<table>
<thead>
<tr>
<th>% Passing</th>
<th>2&quot;</th>
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<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA Size:3/4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>88.1</td>
<td>15.6</td>
<td>4.3</td>
<td>1.6</td>
<td>1.3</td>
</tr>
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<td>100.0</td>
<td>100.0</td>
<td>65.5</td>
<td>10.8</td>
<td>1.1</td>
<td>0.9</td>
</tr>
<tr>
<td>CA Size:3/8</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.9</td>
<td>97.7</td>
<td>34.0</td>
<td>3.9</td>
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</table>

### Unit Weight and Void in Aggregate

#### AASHTO T-19

<table>
<thead>
<tr>
<th>Compacted Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>94.41</td>
<td>91.44</td>
<td>89.04</td>
<td></td>
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</table>

<table>
<thead>
<tr>
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<th>1 1/2&quot;</th>
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<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine

#### AASHTO T-96

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>31.12</td>
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### Specific Gravity and Absorption of Coarse Aggregate

#### AASHTO T-85

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
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<th>1 1/2&quot;</th>
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<tbody>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.646</td>
<td>2.639</td>
<td>2.639</td>
<td></td>
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</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td>2.672</td>
<td>2.661</td>
<td>2.656</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption:</td>
<td>0.601</td>
<td>0.505</td>
<td>0.390</td>
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</table>

### Soundness of Aggregate by Use of Sodium Sulfate

#### AASHTO T-104

<table>
<thead>
<tr>
<th>Sieve Size:</th>
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<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
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</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.01</td>
<td>0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
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### Amount of Material Finer than # 200 Sieve in Aggregate

#### AASHTO T-11

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Sieve Analysis of Coarse Aggregate
### AASHTO T-27

<table>
<thead>
<tr>
<th>CA Size: 3/4</th>
<th>% Passing</th>
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<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>82.6</td>
<td>2.9</td>
<td>1.2</td>
<td>1.0</td>
<td>0.9</td>
<td></td>
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<tr>
<td>CA Size: 1/2</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.1</td>
<td>69.6</td>
<td>13.1</td>
<td>1.1</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>CA Size: 3/8</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.3</td>
<td>73.9</td>
<td>6.7</td>
<td>1.4</td>
<td></td>
</tr>
</tbody>
</table>

## Unit Weight and Void in Aggregate
### AASHTO T-19

<table>
<thead>
<tr>
<th>Unit Weight: (lbs./cu. ft.)</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compacted</td>
<td>92.93</td>
<td>91.44</td>
<td>89.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

## Resistance to Abrasion of CA by use of the LA Machine
### AASHTO T-96

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>34.71</td>
</tr>
</tbody>
</table>

## Specific Gravity and Absorption of Coarse Aggregate
### AASHTO T-85

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.629</td>
<td>2.636</td>
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<tr>
<td>Specific Gravity (SSD):</td>
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<tr>
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<td>2.692</td>
<td>2.681</td>
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<tr>
<td>Absorption:</td>
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<td>0.787</td>
<td>0.544</td>
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## Soundness of Aggregate by Use of Sodium Sulfate
### AASHTO T-104

<table>
<thead>
<tr>
<th>% Loss:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
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</thead>
<tbody>
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## Amount of Material Finer than # 200 Sieve in Aggregate
### AASHTO T-11

<table>
<thead>
<tr>
<th>% Passing # 200 sieve</th>
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<tbody>
<tr>
<td>Aggregate Bin Size</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
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</table>

Reviewed By (Print / Sign) Date

ID# TL9-079
REV. 4/25/16
<table>
<thead>
<tr>
<th>Vendor: LYNCH - TIVERTON</th>
<th>Lab No: 20170017</th>
</tr>
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<tbody>
<tr>
<td>Source: FISH ROAD QUARRY</td>
<td>Location: TIVERTON, RI</td>
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### Sieve Analysis of Coarse Aggregate

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<td>1/2&quot;</td>
<td>100.0</td>
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<td>3/8&quot;</td>
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<td>#4</td>
<td>100.0</td>
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<tr>
<td>#8</td>
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#### AASHTO T-27

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<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
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<td>100.0</td>
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<td>1.6</td>
<td>1.4</td>
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<td>1&quot;</td>
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<td>94.41</td>
<td>93.98</td>
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<td>3/4&quot;</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>89.9</td>
<td>13.0</td>
<td>3.1</td>
<td>1.6</td>
</tr>
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<td>1/2&quot;</td>
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<td>100.0</td>
<td>100.0</td>
<td>89.9</td>
<td>13.0</td>
<td>3.1</td>
<td>1.6</td>
</tr>
<tr>
<td>3/8&quot;</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>91.9</td>
<td>10.3</td>
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<td>91.9</td>
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### Unit Weight and Void in Aggregate

#### AASHTO T-19

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Nominal Aggregate Size:</td>
</tr>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Loose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Aggregate Size:</td>
</tr>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
</tr>
</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine

#### AASHTO T-96

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
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<tbody>
<tr>
<td>Run # 1</td>
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</table>

### Specific Gravity and Absorption of Coarse Aggregate

#### AASHTO T-85

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.596</td>
<td>2.613</td>
<td>2.604</td>
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</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.624</td>
<td>2.631</td>
<td>2.627</td>
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<tr>
<td>Apparent Specific Gravity:</td>
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<td>2.659</td>
<td>2.667</td>
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<td></td>
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<tr>
<td>Absorption:</td>
<td>1.063</td>
<td>0.654</td>
<td>0.906</td>
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### Soundness of Aggregate by Use of Sodium Sulfate

#### AASHTO T-104

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
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<tr>
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### Amount of Material Finer than # 200 Sieve in Aggregate

#### AASHTO T-11

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
## Sieve Analysis of Coarse Aggregate

### AASHTO T-27

<table>
<thead>
<tr>
<th>CA Size: 3/4</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>99.5</td>
<td>38.1</td>
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<td>2.0</td>
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<tr>
<td>CA Size: 1/2</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>86.7</td>
<td>26.7</td>
<td>4.4</td>
<td>2.8</td>
</tr>
<tr>
<td>CA Size: 3/8</td>
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<td>100.0</td>
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<td>100.0</td>
<td>94.7</td>
<td>34.9</td>
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## Unit Weight and Void in Aggregate

### AASHTO T-19

#### Compacted

<table>
<thead>
<tr>
<th>Nominal Aggregate Size: 1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
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</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>97.38</td>
<td>98.87</td>
<td>98.91</td>
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#### Loose

<table>
<thead>
<tr>
<th>Nominal Aggregate Size: 1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
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<td></td>
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</tr>
</tbody>
</table>

## Resistance to Abrasion of CA by use of the LA Machine

### AASHTO T-96

<table>
<thead>
<tr>
<th>LA Result</th>
<th>LA Type</th>
</tr>
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<tbody>
<tr>
<td>23.96</td>
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</table>

## Specific Gravity and Absorption of Coarse Aggregate

### AASHTO T-85

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.741</td>
<td>2.770</td>
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<tr>
<td>Specific Gravity (SSD):</td>
<td>2.760</td>
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<td>Apparent Specific Gravity:</td>
<td>2.793</td>
<td>2.814</td>
<td>2.751</td>
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<tr>
<td>Absorption:</td>
<td>0.681</td>
<td>0.566</td>
<td>0.601</td>
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## Soundness of Aggregate by Use of Sodium Sulfate

### AASHTO T-104

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
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</thead>
<tbody>
<tr>
<td>% Loss:</td>
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## Amount of Material Finer than # 200 Sieve in Aggregate

### AASHTO T-11

<table>
<thead>
<tr>
<th>Aggregate Bin Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
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</tr>
</tbody>
</table>
## Sieve Analysis of Coarse Aggregate

### AASHTO T-27

<table>
<thead>
<tr>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1.5</td>
<td></td>
</tr>
<tr>
<td>CA Size:</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CA Size:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CA Size:</td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

## Unit Weight and Void in Aggregate

### AASHTO T-19

#### Compacted

- Nominal Aggregate Size: 1 1/2" 1" 3/4" 1/2" 3/8"  
- Unit Weight: (lbs./cu. ft.) 101.84

#### Loose

- Nominal Aggregate Size: 1 1/2" 1" 3/4" 1/2" 3/8"  
- Unit Weight: (lbs./cu. ft.)

## Resistance to Abrasion of CA by use of the LA Machine

### AASHTO T-96

### LA Type

Run # 1  B

## Specific Gravity and Absorption of Coarse Aggregate

### AASHTO T-85

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
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</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
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<tr>
<td>Absorption:</td>
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## Soundness of Aggregate by Use of Sodium Sulfate

### AASHTO T-104

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
</tr>
</thead>
<tbody>
<tr>
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## Amount of Material Finer than # 200 Sieve in Aggregate

### AASHTO T-11

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
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</thead>
<tbody>
<tr>
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## Sieve Analysis of Coarse Aggregate

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<th>% Passing</th>
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<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
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<td>58.7</td>
<td>19.4</td>
<td>3.0</td>
<td>1.4</td>
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</table>

## Unit Weight and Void in Aggregate

### Compact

<table>
<thead>
<tr>
<th>Nominal Aggregate Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight (lbs./cu. ft.)</td>
<td>105.41</td>
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### Loose

<table>
<thead>
<tr>
<th>Nominal Aggregate Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight (lbs./cu. ft.)</td>
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</tr>
</tbody>
</table>

## Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
</tbody>
</table>

## Specific Gravity and Absorption of Coarse Aggregate

<table>
<thead>
<tr>
<th>Nominal Aggregate Size</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
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</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
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<td>2.919</td>
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<tr>
<td>Apparent Specific Gravity:</td>
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<td>Absorption:</td>
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## Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.21</td>
<td>0.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Amount of Material Finer than # 200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Sieve Analysis of Coarse Aggregate

<table>
<thead>
<tr>
<th>CA Size: 3/4</th>
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<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>98.1</td>
<td>15.3</td>
<td>2.4</td>
<td>0.9</td>
<td>0.8</td>
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</table>

<table>
<thead>
<tr>
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<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
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<td>100.0</td>
<td>78.6</td>
<td>11.4</td>
<td>0.9</td>
<td>0.7</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CA Size: 3/8</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>94.3</td>
<td>24.8</td>
<td>2.2</td>
<td></td>
</tr>
</tbody>
</table>

## Unit Weight and Void in Aggregate

<table>
<thead>
<tr>
<th>Compacted Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>92.93</td>
<td>91.44</td>
<td>89.04</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loose Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>28.12</td>
</tr>
</tbody>
</table>

## Specific Gravity and Absorption of Coarse Aggregate

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.626</td>
<td>2.625</td>
<td>2.622</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.646</td>
<td>2.643</td>
<td>2.636</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td>2.678</td>
<td>2.672</td>
<td>2.659</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption:</td>
<td>0.733</td>
<td>0.662</td>
<td>0.530</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.03</td>
<td>0.33</td>
<td></td>
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</table>

## Amount of Material Finer than #200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing #200 sieve</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
### Sieve Analysis of Coarse Aggregate

**AASHTO T-27**

<table>
<thead>
<tr>
<th>Nominal Aggregate Size</th>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA Size: 1/2</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>79.4</td>
<td>24.8</td>
<td>3.3</td>
<td>2.3</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>CA Size: 3/4</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>83.7</td>
<td>8.2</td>
<td>3.5</td>
<td>2.4</td>
<td>2.1</td>
</tr>
<tr>
<td>CA Size: 1/2</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>70.8</td>
<td>11.3</td>
<td>1.8</td>
<td>1.4</td>
</tr>
<tr>
<td>CA Size: 3/8</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>93.6</td>
<td>13.8</td>
<td>2.1</td>
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</table>

### Unit Weight and Void in Aggregate

**AASHTO T-19**

<table>
<thead>
<tr>
<th>Compacted</th>
<th>Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>94.41</td>
<td>94.41</td>
<td>91.44</td>
<td>89.04</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loose</th>
<th>Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine

**AASHTO T-96**

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
</tbody>
</table>

### Specific Gravity and Absorption of Coarse Aggregate

**AASHTO T-85**

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.597</td>
<td>2.622</td>
<td>2.595</td>
<td>2.603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.620</td>
<td>2.642</td>
<td>2.613</td>
<td>2.623</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td>2.658</td>
<td>2.676</td>
<td>2.642</td>
<td>2.654</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption:</td>
<td>0.885</td>
<td>0.768</td>
<td>0.680</td>
<td>0.740</td>
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<td></td>
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### Soundness of Aggregate by Use of Sodium Sulfate

**AASHTO T-104**

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.01</td>
<td>0.06</td>
<td></td>
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### Amount of Material Finer than # 200 Sieve in Aggregate

**AASHTO T-11**

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
### Sieve Analysis of Coarse Aggregate

<table>
<thead>
<tr>
<th>CA Size:</th>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>92.2</td>
<td>73.0</td>
<td>40.0</td>
<td>7.7</td>
<td>1.3</td>
<td>1.0</td>
</tr>
<tr>
<td>1/2</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>95.8</td>
<td>64.3</td>
<td>7.8</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>98.9</td>
<td>79.4</td>
<td>10.4</td>
<td>7.7</td>
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### Unit Weight and Void in Aggregate

<table>
<thead>
<tr>
<th>Compacted</th>
<th>Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>97.38</td>
<td>94.41</td>
<td>93.98</td>
<td></td>
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<table>
<thead>
<tr>
<th>Loose</th>
<th>Nominal Aggregate Size:</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run #1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>28.95</td>
</tr>
</tbody>
</table>

### Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>Sieve Size:</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss:</td>
<td>0.12</td>
<td>0.06</td>
<td>0.06</td>
<td>0.06</td>
<td>0.06</td>
<td>0.06</td>
<td>0.06</td>
</tr>
</tbody>
</table>

### Amount of Material Finer than # 200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
</table>

| % Passing # 200 sieve | 0.12 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |

---

**Vendor:** G. LOPES

**Source:** MIDDLEBORO PIT

**Lab No:** 20170049

**Location:** MIDDLEBORO, MA.
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
MATERIALS AND QUALITY ASSURANCE
COARSE AGGREGATE ANALYSIS REPORT - 2017

Vendor: CHERENZIA-WHITE ROCK  Lab No: 20170058
Source: WHITE ROCK QUARRY  Location: WESTERLY, RI

### Sieve Analysis of Coarse Aggregate (AASHTO T-27)

<table>
<thead>
<tr>
<th>CA Size</th>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
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<tbody>
<tr>
<td>3/4&quot;</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>95.0</td>
<td>5.7</td>
<td>2.2</td>
<td>1.2</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>73.8</td>
<td>14.2</td>
<td>2.1</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>95.0</td>
<td>25.4</td>
<td>4.0</td>
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<td></td>
</tr>
</tbody>
</table>

### Unit Weight and Void in Aggregate (AASHTO T-19)

<table>
<thead>
<tr>
<th></th>
<th>Compacted</th>
<th>Loose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Aggregate Size:</td>
<td>1 1/2&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>91.44</td>
<td>91.44</td>
</tr>
</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine (AASHTO T-96)

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>40.53</td>
</tr>
</tbody>
</table>

### Specific Gravity and Absorption of Coarse Aggregate (AASHTO T-85)

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
<th>#4</th>
<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.605</td>
<td>2.612</td>
<td>2.625</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.631</td>
<td>2.629</td>
<td>2.637</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity</td>
<td>2.674</td>
<td>2.656</td>
<td>2.656</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Absorption:</td>
<td>0.977</td>
<td>0.623</td>
<td>0.448</td>
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</tr>
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</table>

### Soundness of Aggregate by Use of Sodium Sulfate (AASHTO T-104)

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Loss</td>
<td>0.07</td>
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<td></td>
<td></td>
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</tr>
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</table>

### Amount of Material Finer than # 200 Sieve in Aggregate (AASHTO T-11)

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
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### Sieve Analysis of Coarse Aggregate

<table>
<thead>
<tr>
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<th>1 1/2&quot;</th>
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<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
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<tbody>
<tr>
<td>CA Size: 3/4</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
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<td>2.3</td>
<td>1.8</td>
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<td>CA Size: 1/2</td>
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<td>100.0</td>
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<td>100.0</td>
<td>68.4</td>
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<td>100.0</td>
<td>100.0</td>
<td>99.6</td>
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### Unit Weight and Void in Aggregate

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<th>1&quot;</th>
<th>3/4&quot;</th>
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<th>3/8&quot;</th>
<th>Unit Weight: (lbs./cu. ft.)</th>
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</thead>
<tbody>
<tr>
<td></td>
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<th>3/8&quot;</th>
<th>Unit Weight: (lbs./cu. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
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### Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # 1</td>
<td>B</td>
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<tr>
<td></td>
<td>35.39</td>
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### Specific Gravity and Absorption of Coarse Aggregate

<table>
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<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
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</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.632</td>
<td>2.628</td>
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</tr>
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<td>Specific Gravity (SSD):</td>
<td>2.646</td>
<td>2.640</td>
<td>2.630</td>
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<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
<td>2.668</td>
<td>2.660</td>
<td>2.648</td>
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<td>Absorption:</td>
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<td>0.466</td>
<td>0.420</td>
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### Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>2&quot; - 1 1/2&quot;</th>
<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
<th>% Loss</th>
</tr>
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<tbody>
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<td></td>
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### Amount of Material Finer than # 200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
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<tbody>
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<td>% Passing # 200 sieve</td>
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</tr>
</tbody>
</table>
**COARSE AGGREGATE ANALYSIS REPORT - 2017**

**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**
**MATERIALS AND QUALITY ASSURANCE**
**COARSE AGGREGATE ANALYSIS REPORT - 2017**

Vendor: CUMBERLAND QUARRY.
Source: MANVILLE HILL ROAD
Location: CUMBERLAND, RI

### Sieve Analysis of Coarse Aggregate

<table>
<thead>
<tr>
<th>CA Size</th>
<th>% Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>100.0</td>
</tr>
<tr>
<td>1/2</td>
<td>100.0</td>
</tr>
<tr>
<td>3/8</td>
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<tr>
<td>#4</td>
<td>98.9</td>
</tr>
<tr>
<td>#8</td>
<td>92.7</td>
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</tbody>
</table>

### Unit Weight and Void in Aggregate

<table>
<thead>
<tr>
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<th>Nominal Aggregate Size: 1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>91.44</td>
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### Resistance to Abrasion of CA by use of the LA Machine

<table>
<thead>
<tr>
<th>Run #1</th>
<th>LA Type</th>
<th>LA Result</th>
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<tbody>
<tr>
<td>1</td>
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<td>27.52</td>
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### Specific Gravity and Absorption of Coarse Aggregate

<table>
<thead>
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<th>Nominal Aggregate Size:</th>
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<th>1/2&quot;</th>
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<th>1&quot;</th>
<th>1 1/2&quot;</th>
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</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.671</td>
<td>2.682</td>
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<td>Specific Gravity (SSD):</td>
<td>2.687</td>
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<td>Apparent Specific Gravity:</td>
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<td>2.711</td>
<td>2.699</td>
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<tr>
<td>Absorption:</td>
<td>0.609</td>
<td>0.398</td>
<td>0.273</td>
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### Soundness of Aggregate by Use of Sodium Sulfate

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; - 1 1/2&quot;</td>
<td>0.04</td>
</tr>
<tr>
<td>1 1/2&quot; - 1&quot;</td>
<td></td>
</tr>
<tr>
<td>1&quot; - 3/4&quot;</td>
<td></td>
</tr>
<tr>
<td>3/4&quot; - 1/2&quot;</td>
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<tr>
<td>1/2&quot; - 3/8&quot;</td>
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<tr>
<td>3/8&quot; - #4</td>
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<tr>
<td>#4 - #8</td>
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</tbody>
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### Amount of Material Finer than # 200 Sieve in Aggregate

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>% Passing # 200 sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot;</td>
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<tr>
<td>1&quot;</td>
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<tr>
<td>3/4&quot;</td>
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<tr>
<td>1/2&quot;</td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
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</tr>
<tr>
<td>#4</td>
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</tr>
<tr>
<td>Vendor: Continental Paving</td>
<td>Lab No: 20170069</td>
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<td>-----------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Source: Hanover, NH</td>
<td>Location: NH</td>
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### Sieve Analysis of Coarse Aggregate

**AASHTO T-27**

<table>
<thead>
<tr>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA Size 1/2</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>97.2</td>
<td>49.4</td>
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<td>0.6</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CA Size:</td>
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</tr>
<tr>
<td>CA Size:</td>
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### Unit Weight and Void in Aggregate

**AASHTO T-19**

<table>
<thead>
<tr>
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<th>Nominal Aggregate Size: 1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>94.41</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<th>Nominal Aggregate Size: 1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Resistance to Abrasion of CA by use of the LA Machine

**AASHTO T-96**

- LA Type: B
- LA Result: 15.78

### Specific Gravity and Absorption of Coarse Aggregate

**AASHTO T-85**

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
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<th>3/4&quot;</th>
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<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
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<td>Absorption:</td>
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### Soundness of Aggregate by Use of Sodium Sulfate

**AASHTO T-104**

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<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - #4</th>
<th>#4 - #8</th>
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</thead>
<tbody>
<tr>
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<td>0.09</td>
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### Amount of Material Finer than # 200 Sieve in Aggregate

**AASHTO T-11**

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
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<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Passing # 200 sieve</td>
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</tbody>
</table>
**RHODE ISLAND DEPARTMENT OF TRANSPORTATION**  
**MATERIALS AND QUALITY ASSURANCE**  
**COARSE AGGREGATE ANALYSIS REPORT - 2017**

**Vendor:** BROOKLYN S & G  
**Lab No:** 20170078  
**Source:** WAUREGAN RD PIT  
**Location:** BROOKLYN CONN

### Sieve Analysis of Coarse Aggregate

**AASHTO T-27**

<table>
<thead>
<tr>
<th>% Passing</th>
<th>2&quot;</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th>#4</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>93.6</td>
<td>8.6</td>
<td>1.8</td>
<td>1.2</td>
<td>1.0</td>
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<tr>
<td>CA Size:1/2</td>
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<td>100.0</td>
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<td>100.0</td>
<td>84.9</td>
<td>25.5</td>
<td>3.7</td>
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</tr>
<tr>
<td>CA Size:3/8</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>96.0</td>
<td>18.0</td>
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### Unit Weight and Void in Aggregate

**AASHTO T-19**

<table>
<thead>
<tr>
<th>Compacted</th>
<th>Nominal Aggregate Size:</th>
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<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight: (lbs./cu. ft.)</td>
<td>94.41</td>
<td>97.38</td>
<td>98.91</td>
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<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Loose</th>
<th>Nominal Aggregate Size:</th>
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<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
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<tbody>
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<td>Unit Weight: (lbs./cu. ft.)</td>
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### Resistance to Abrasion of CA by use of the LA Machine

**AASHTO T-96**

<table>
<thead>
<tr>
<th>LA Type</th>
<th>LA Result</th>
</tr>
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<tbody>
<tr>
<td>Run # 1</td>
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### Specific Gravity and Absorption of Coarse Aggregate

**AASHTO T-85**

<table>
<thead>
<tr>
<th>Nominal Aggregate Size:</th>
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<th>3/8&quot;</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1 1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Specific Gravity:</td>
<td>2.636</td>
<td>2.645</td>
<td>2.628</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (SSD):</td>
<td>2.663</td>
<td>2.672</td>
<td>2.650</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Specific Gravity:</td>
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<td>2.718</td>
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<tr>
<td>Absorption:</td>
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### Soundness of Aggregate by Use of Sodium Sulfate

**AASHTO T-104**

<table>
<thead>
<tr>
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<th>1 1/2&quot; - 1&quot;</th>
<th>1&quot; - 3/4&quot;</th>
<th>3/4&quot; - 1/2&quot;</th>
<th>1/2&quot; - 3/8&quot;</th>
<th>3/8&quot; - # 4</th>
<th># 4 - # 8</th>
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</thead>
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<tr>
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### Amount of Material Finer than # 200 Sieve in Aggregate

**AASHTO T-11**

<table>
<thead>
<tr>
<th>Aggregate Bin Size</th>
<th>1 1/2&quot;</th>
<th>1&quot;</th>
<th>3/4&quot;</th>
<th>1/2&quot;</th>
<th>3/8&quot;</th>
<th># 4</th>
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<tbody>
<tr>
<td>% Passing # 200 sieve</td>
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</tbody>
</table>

**Reviewed By**  
(Date / Sign)  
**REV. 4/25/16**