<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Station</th>
<th>Location</th>
<th>Surface Elevation</th>
<th>Log of Materials *</th>
</tr>
</thead>
<tbody>
<tr>
<td>384-62</td>
<td>30.0' RT</td>
<td>323.8</td>
<td>Inaccessible due to slope.</td>
<td></td>
</tr>
<tr>
<td>384-62</td>
<td>60.0' RT</td>
<td>324.2</td>
<td>0.0-16.0' Brown loam clay, trace gravel, moist, stiff.</td>
<td></td>
</tr>
<tr>
<td>385-45</td>
<td>45.0' RT</td>
<td>308.5</td>
<td>Inaccessible due to slope.</td>
<td></td>
</tr>
<tr>
<td>385-45</td>
<td>60.0' RT</td>
<td>309.1</td>
<td>Inaccessible due to slope.</td>
<td></td>
</tr>
<tr>
<td>386-28</td>
<td>45.0' RT</td>
<td>319.8</td>
<td>0.0-15.5' Brown loam clay, trace gravel.</td>
<td></td>
</tr>
<tr>
<td>386-28</td>
<td>60.0' RT</td>
<td>322.2</td>
<td>0.0-15.4' Brown loam clay, trace gravel, moist, stiff.</td>
<td></td>
</tr>
<tr>
<td>387-11</td>
<td>30.0' RT</td>
<td>326.4</td>
<td>Inaccessible due to slope.</td>
<td></td>
</tr>
<tr>
<td>387-11</td>
<td>45.0' RT</td>
<td>326.4</td>
<td>0.0-15.2' Brown loam clay, trace gravel, moist.</td>
<td></td>
</tr>
</tbody>
</table>

**LOG OF MATERIALS**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>SP.Tests</th>
<th>N%</th>
<th>Pct.</th>
<th>Pen.</th>
<th>Wat.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0-10.0</td>
<td>20.0</td>
<td>55</td>
<td>0.45</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>10.0-20.0</td>
<td>30.0</td>
<td>55</td>
<td>0.40</td>
<td>0.15</td>
<td>0.05</td>
</tr>
<tr>
<td>20.0-30.0</td>
<td>40.0</td>
<td>55</td>
<td>0.35</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>30.0-40.0</td>
<td>50.0</td>
<td>55</td>
<td>0.30</td>
<td>0.25</td>
<td>0.10</td>
</tr>
</tbody>
</table>

**SOIL CLASSIFICATION**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>LL</th>
<th>FI</th>
<th>ASTM Class.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0-10.0</td>
<td>30</td>
<td>50</td>
<td>CL</td>
</tr>
<tr>
<td>10.0-20.0</td>
<td>30</td>
<td>50</td>
<td>CL</td>
</tr>
<tr>
<td>20.0-30.0</td>
<td>30</td>
<td>50</td>
<td>CL</td>
</tr>
<tr>
<td>30.0-40.0</td>
<td>30</td>
<td>50</td>
<td>CL</td>
</tr>
</tbody>
</table>

**CORE DRILLING**

- **Date and Time:**
- **Remarks:**
- **Logs:**

**WATER TABLE OBSERVATIONS**

- **Date:**
- **Depth:**
- **Waste Open:**
- **To Water:**

**BORING DATA**

- **Job No.:** JBP0959
- **County:** Butler
- **Route:** 67
- **Design:** A7609
- **Over:** Cane Creek (Overflow)
- **Log by:** R. Todd
- **Operator:** Holmeyer
- **Date of Work:** 11/9/2010, 12/8/2010
- **Automatic Hammer Efficiency:** 82 %

**Note:** For locations of borings, see Sheet No. 1.

**Note:** This drawing is not to scale. Follow dimensions.
MISSOURI DEPARTMENT OF TRANSPORTATION
Construction and Materials

BORING DATA (CORE & SPT)

Job No.: JB26959
County: Butler
Route: 67
Design: A7669
Owner: Cane Creek (Overflow)

Log No.: JB26959
Hole: Hollow Stem Auger

Automatic Hammer Efficiency: 79 %

<table>
<thead>
<tr>
<th>Boring Data</th>
<th>Sheet 3 of 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>JB26959</td>
</tr>
<tr>
<td>County</td>
<td>Butler</td>
</tr>
<tr>
<td>Route</td>
<td>67</td>
</tr>
<tr>
<td>Design</td>
<td>A7669</td>
</tr>
<tr>
<td>Owner</td>
<td>Cane Creek (Overflow)</td>
</tr>
<tr>
<td>Log No.</td>
<td>JB26959</td>
</tr>
<tr>
<td>Hole Location</td>
<td>Hollow Stem Auger</td>
</tr>
<tr>
<td>Automatic Hammer Efficiency</td>
<td>79 %</td>
</tr>
</tbody>
</table>

Note: For locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 27 of 41

BORING DATA

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 3

Note: This drawing is not to scale. Follow dimensions.
### Boring Data (Core & SPT)

**Note:** For locations of borings, see Sheet No. 1.

**Note:** This drawing is not to scale. Follow dimensions.

**County:** Butler  
**Route:** 67  
**Design:** A7669  
**Operator:** Mathews  
**Date of Work:** 11-5-2010  
**Deli No.:** G-7867

<table>
<thead>
<tr>
<th>Bored</th>
<th>Station</th>
<th>Location</th>
<th>Surface Elevation, ft.</th>
<th>Bored %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>357-11</td>
<td>826108-E</td>
<td>130.43</td>
<td></td>
</tr>
</tbody>
</table>

**LOD OF MATERIALS**

- 0.00-10.8’
  - Brown medium gray loam clay, trace sand, moist, soft to medium stiff
- 10.8-24.7’
  - Gray medium gray clay to silt, scattered sand, trace organic, moist, medium stiff
- 24.7-35.4’
  - Brown-gray loam clay, trace sand, moist, medium stiff to stiff
- 35.4-60.6’
  - Gray clay, moist, medium stiff
- 60.6-63.2’
  - Gray coarse gravel sand, with gravel, moist very dense
- 63.2-80.0’
  - Gray loam clay, scattered sand, moist, stiff to very stiff
- 80.0-90.8’
  - Gravel, very dense
- 90.8-109.3’
  - Gray medium gravel, gravel, tuff, hard, dense, yellow, weathered, and moderately hard

**SOIL CLASSIFICATION TEST DATA**

<table>
<thead>
<tr>
<th>Depth, ft.</th>
<th>LL</th>
<th>PI</th>
<th>ASTM Class.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>CL</td>
<td>ML</td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td>20</td>
<td>21</td>
<td>CL-ML</td>
</tr>
<tr>
<td>20.0</td>
<td>20</td>
<td>21</td>
<td>CL-ML</td>
</tr>
<tr>
<td>30.0</td>
<td>20</td>
<td>21</td>
<td>CL-ML</td>
</tr>
<tr>
<td>40.0</td>
<td>20</td>
<td>21</td>
<td>CL-ML</td>
</tr>
<tr>
<td>50.0</td>
<td>20</td>
<td>21</td>
<td>CL-ML</td>
</tr>
</tbody>
</table>

**CORE Og LoC (CN Double Tube Barrel)**

<table>
<thead>
<tr>
<th>Depth, ft.</th>
<th>54.3</th>
<th>59.3</th>
<th>60.6</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>54.3</td>
<td>5.0</td>
<td>3.3</td>
<td>1.7</td>
<td>0</td>
</tr>
<tr>
<td>59.3</td>
<td>5.6</td>
<td>4.0</td>
<td>3.0</td>
<td>0</td>
</tr>
<tr>
<td>60.6</td>
<td>5.8</td>
<td>2.8</td>
<td>2.2</td>
<td>0</td>
</tr>
</tbody>
</table>

**WATER TABLE OBSERVATION**

- No water encountered in this boring.

**Coordinate System:** Missouri State Plane 1983  
**Coordinate Zone:** Missouri East 2401  
**Coordinate Unit:** U.S. Survey Feet  
**Coordinate Projection Factor:** 1.00007642387

**Notes:**
- **BORING DATA**
  - For location of borings, see Sheet No. 1.
- **Note:** This drawing is not to scale. Follow directions.
- **Sheet No. 28 of 41**

**Sheet No. 29 of 41**

**Note:** This drawing is not to scale. Follow directions.

**Count No. 29 of 41**

**Note:** This drawing is not to scale. Follow directions.
Note: For locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow directions.
### Boring Data

Note: For locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow dimensions. Sheet No. 31 of 41.

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Depth (ft)</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boring 1</td>
<td>20</td>
<td>Clay</td>
<td></td>
</tr>
<tr>
<td>Boring 2</td>
<td>30</td>
<td>Sand</td>
<td></td>
</tr>
<tr>
<td>Boring 3</td>
<td>40</td>
<td>Gravel</td>
<td></td>
</tr>
<tr>
<td>Boring 4</td>
<td>50</td>
<td>Bedrock</td>
<td></td>
</tr>
</tbody>
</table>

**Counties:**
- [County A] 1005
- [County B] 1006

**Route:**
- [Route A] 1005
- [Route B] 1006

**Date Prepared:** 2/17/2012

**Project No.:**
- [Project A] 1005
- [Project B] 1006

**Contract No.:**
- [Contract A] 1005
- [Contract B] 1006

**Bridge No.:**
- [Bridge A] 1005
- [Bridge B] 1006

**JOP0659:**
- [Job Order 0659]

**2/17/2012:** [Date]

**DTE:**
- [Date Time]

**DATE:**
- [Date]

**CHECKED:**
- [Checked]

**ASB:**
- [Approval]
<table>
<thead>
<tr>
<th>Location</th>
<th>Depth (ft)</th>
<th>Water Level (ft)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>12.0</td>
<td>10.0</td>
<td>Sand</td>
</tr>
<tr>
<td>20.0</td>
<td>14.0</td>
<td>12.0</td>
<td>Sand</td>
</tr>
<tr>
<td>30.0</td>
<td>16.0</td>
<td>14.0</td>
<td>Sand</td>
</tr>
<tr>
<td>40.0</td>
<td>18.0</td>
<td>16.0</td>
<td>Sand</td>
</tr>
</tbody>
</table>

Note: This drawing is not to scale. Follow dimensions.

Note: For locations of borings, see Sheet No. 1.

Counties:
- Job No.: [Redacted]
- County: [Redacted]
- District: [Redacted]
- State: [Redacted]

Date:
- Date Prepared: 2/17/2012
- Date Checked: 11/30/2011
- Date Approved: 12/07/2011

Map:
- Map Code: [Redacted]
- Map Title: [Redacted]
### Boring Data

Note for locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow dimensions. Sheet No. 33 of 41
**BORING DATA**

Note: For locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow dimensions.

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Material</th>
<th>Density</th>
<th>Water</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>Sand</td>
<td>55</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>10-20</td>
<td>Gravel</td>
<td>60</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>Clay</td>
<td>50</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Sheet No. 35 of 41

[Note: Additional columns might be present in the table, such as "Date," "Location," etc., depending on the specific requirements of the documentation.]
BORING DATA

Note: For locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 36 of 41

Dated Nov., 2011

Checked Nov., 2011

THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT.
BORING DATA

Note: For locations of borings, see Sheet No. 1.

Note: This drawing is not to scale. Follow directions.

Sheet No. 37 of 41
### Particle Size Distribution Report

**Project:** COUNTY: BUTLER, RTE: 67  
**Project No.:** JIP0959  
**Client:** EASAW THOMAS, INT. GEOTECH. SPEC.

**Location:** STATION: 355-20.6, OFFSET: 21.1' FT.  
**Sample Number:** 10ME11897  
**Depth:** 10.0  
**Date:** 12-06-10  
**Note:** This drawing is not to scale. Follow dimensions.

#### Sieve Size Distribution:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Finer</th>
<th>Percent Coarse</th>
<th>Pass (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>100.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>750</td>
<td>100.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>63</td>
<td>100.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>2.36</td>
<td>98.9</td>
<td>1.1</td>
<td>97.7</td>
</tr>
<tr>
<td>2.3</td>
<td>98.9</td>
<td>1.1</td>
<td>97.7</td>
</tr>
<tr>
<td>2.000</td>
<td>96.7</td>
<td>3.3</td>
<td>96.7</td>
</tr>
</tbody>
</table>

#### Material Description:

- **Occurrence:** lean clay
- **Atterberg Limits:**
  - LS: 20
  - PI: 15
- **Coefficients:**
  - D: 10
  - D': 2
  - C: 0.02

#### Classification:

- **USCS:** CL
- **AASHTO:** A-6(15)
- **ASTM M 144-49:** D90 = 4.0, D95 = 0.0
- **F.M. = 0.02**

**Tested By:** KENNY  
**Checked By:** Keith E. Pigg

---

### Particle Size Distribution Report

**Project:** COUNTY: BUTLER, RTE: 67  
**Project No.:** JIP0959  
**Client:** EASAW THOMAS, INT. GEOTECH. SPEC.

**Location:** STATION: 355-260, OFFSET: 21.1' FT.  
**Sample Number:** 10ME11898  
**Depth:** 23.0  
**Date:** 12-06-10  
**Note:** This drawing is not to scale. Follow dimensions.

#### Sieve Size Distribution:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Finer</th>
<th>Percent Coarse</th>
<th>Pass (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>100.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>750</td>
<td>100.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>63</td>
<td>100.0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>2.36</td>
<td>98.9</td>
<td>1.1</td>
<td>97.7</td>
</tr>
<tr>
<td>2.3</td>
<td>98.9</td>
<td>1.1</td>
<td>97.7</td>
</tr>
<tr>
<td>2.000</td>
<td>96.7</td>
<td>3.3</td>
<td>96.7</td>
</tr>
</tbody>
</table>

#### Material Description:

- **Occurrence:** fat clay
- **Atterberg Limits:**
  - LS: 23
  - PI: 27
- **Coefficients:**
  - D: 10
  - D': 2
  - C: 0.02

#### Classification:

- **USCS:** CH
- **AASHTO:** A-7(31)
- **ASTM M 144-49:** D90 = 4.0, D95 = 0.0
- **F.M. = 0.02**

**Tested By:** KENNY  
**Checked By:** Keith E. Pigg

---

**BORING DATA**  
**Detected Nov. 2011**  
**Checked Nov. 2011**  
**Note:** This drawing is not to scale. Follow dimensions.  
**Sheet No. 39 of 41**

**Note:** For locations of borings, see Sheet No. 1.

---
Particle Size Distribution Report

Project: COUNTY: BUTLER, RTE: 67
Project No.: JIP0959
Client: EASAW THOMAS, INT. GEOTECH. SPEC.

Location: STATION: 385+00.0, OFFSET: 21' FRT.
Sample Number: 106M11099  Depth: 35.0
Date: 12/09/10

Note: For locations of borings, see Sheet No. 1.
Note: This drawing is not to scale. Follow dimensions.

---

Material Description
- poorly graded sand

Sieve Size 1 2 3 4 5 6 7 8 9 10 11 12 13
Percent Finer 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0
SPEC. % Coarse Fine % Finer
0.0 22.8 -7.6 28.5 1.1

Altenberg Limits

Landfill P.$ P.$

Coefficients

D' = 1.651 D' = 1.561
C' = 2.91
C' = 1.96

Classification

USCS: SP AASHO: A-1b
ASTM M 145-49 = A-9
D90 = 4.31, D95 = 5.9
F.M. = 3.02

Remarks

* (no specification provided)

Figure

Tested By: Kenny
Checked By: Keith E. Pigg

---

BORING DATA

Note: For locations of borings, see Sheet No. 1.
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 40 of 41