Plans and Section Views of DSM Treated Sections

Product 0-5179-P3

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TEXAS DEPARTMENT OF TRANSPORTATION

Performed in cooperation with the Texas Department of Transportation and the Federal Highway Administration
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PLANS AND SECTION VIEWS OF DSM TREATED SECTIONS

by

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DISCLAIMER

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Details of Soil Profile, Plan and Sectional Views of DSM Treated Sites

The following provides various details of DSM column designs and configurations used in the TxDOT research project.

DSM Columns (Soil-Lime-Cement Columns):
Column diameter: 2.0 ft
Column spacing: 3.5 ft c/c (for site 1)
               : 3.0 ft c/c (for site 2)

Anchor Rods:
Anchor rod length: 3 ft
Anchor rod diameter: ¾ in.
Material: Galvanized Iron
Ultimate Strength: 19 ksi

Anchor Plates:
Size: 8 x 8 in.
Thickness: ½ in.
Material: Polypropylene

Geogrid:
Type: Biaxial geogrid
Tensile Strength: 20 kN/m or 1400 lb/ft (both in machine and cross-machine directions)
Material: Polypropylene
Product used: Tensar

This Product presents the following plans and drawings:

Figure 1: Bore Log Information of Test Site 1 (Low PI Site)
Figure 2: Bore Log Information of Test Site 2 (High PI Site)
Figure 3: Plan View of DSM Column Layout of Test Site 1
Figure 4: Plan View of DSM Column Layout of Test Site 2
Figure 5: Sectional Details of DSM Columns at Test Site 1
Figure 6: Sectional Details of DSM Columns at Test Site 2
Figure 7: Details of Anchor Rod/Plate and Geogrid Connections to the DSM Column (Detail A)
Figure 8: Typical Perspective View of the DSM Treatment Test Section
### DRILLING LOG

<table>
<thead>
<tr>
<th>Elev. (ft)</th>
<th>L.O.G.</th>
<th>Texas Cone Penetrometer</th>
<th>Strata Description</th>
<th>Triaxial Test Lateral Deviator Stress (ppi)</th>
<th>Properties</th>
<th>Additional Remarks</th>
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<tr>
<td>5</td>
<td></td>
<td></td>
<td>FILL, CLAY, sand with gravel and limestone pieces, dark brown, grayish brown, light brown, light gray (SC)</td>
<td>30 64 39 114.73</td>
<td>P = 2.0, qu=11.06 psi, FS=4.8</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18.85 140.2</td>
<td>P=1.5, qu=22.72 psi, FS=12.6</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23.27 81.5 129 39.5</td>
<td>P=4.5, qu=58.81, FS=20.4</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24.22 134.5</td>
<td>P=3.0, qu=40.17 psi, FS=22</td>
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<tr>
<td>80. 10</td>
<td></td>
<td></td>
<td>CLAY, with calcareous nodules, dark brown, grayish brown (CH)</td>
<td>13 148.55</td>
<td>P=3.0, qu=76.3 psi, FS=12.1</td>
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<tr>
<td>85. 15</td>
<td></td>
<td></td>
<td></td>
<td>24 46 22 132.3</td>
<td>P=3.5, qu=41.67, FS=5.2</td>
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<tr>
<td>83.5</td>
<td></td>
<td></td>
<td>WEATHERED LIMESTONE, with clay layers, light brown</td>
<td>23 125.2</td>
<td>P=4.0, qu=20.83, FS=0.8</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Ground water was not encountered during or after drilling completion.

The ground water elevation was not determined during the course of this boring.

Driller: David  Logger: MB  Organization: CTL Thompson Texas, LLC

Figure 1: Bore Log Information of Test Site 1 (Low PI site)
Figure 2: Bore Log Information of Test Site 2 (High PI site)
Figure 3: Plan View of DSM Column Layout of Test Site 1 (15 ft X 40 ft)
Figure 4: Plan View of DSM Column Layout of Test Site 2 (15 ft X 40 ft)
Figure 5: Sectional Details of DSM Columns at Site 1
Figure 6: Sectional Details of DSM Columns at Site 2

- Anchor rod [\( \frac{3}{4} \text{ in.} \times 3 \text{ ft. (} \phi \times l \)]
- Anchor plate (size: 6x6 in., \( \frac{1}{2} \text{ in.} \) thick)
- Geogrid layer (Biaxial grid, SS 20)
- Detail A
- Deep Mixing columns (2ft. \( \phi \))
Figure 7: Details of Anchor Rod/Plate and Geogrid Connections to the DSM Column (Detail A)
Figure 8: Typical Perspective View of the DSM Treatment Test Section