Micropile Underpinning and Seismic Foundation Retrofit

Veterans Administration Medical Center

Memphis, TN

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Project Location: Memphis, TN USA
Micropile Layout for VA Medical Center
Micropile Design Sections
Interior and Perimeter Micropiles
Steel Pipe Sections and Cement
Reinforcing Bars for Bond Zones
Perimeter Micropile Drilling
Perimeter Micropile Installation
Courtyard Micropile Installation
Courtyard Micropile Excavation for Concrete Pile Caps
Interior Micropile Drilling
Adding Pipe Section for Micropile
Core Holes through Floor Slab
Shoring and Basement Micropiles
Basement Micropiles
Exterior Load Testing
Special Crane to Move Interior Testing Beam
Interior Micropile Testing
## Load Testing Summary

<table>
<thead>
<tr>
<th>Location</th>
<th>Pile Number</th>
<th>Loading Type</th>
<th>Test Type</th>
<th>Design Load (kips)</th>
<th>Test Load (kips)</th>
<th>Test Load Factor</th>
<th>Cyclic/Non-Cyclic</th>
<th>Comment</th>
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<tbody>
<tr>
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<td>P68</td>
<td>Compression</td>
<td>Verification</td>
<td>65</td>
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<td>Non-Cyclic</td>
<td>Production</td>
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<td>110</td>
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<td>Production, Extended Loading</td>
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<td>Sacrificial</td>
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</table>
Compression Verification Tests

- Pile P68 Load Test
- Pile 32 Load Test
Compression Verification Tests

- Pile P11 Load Test
- Pile P28 Load Test
Compression Verification Tests

- Pile P56 Load Test
- Pile 49 Load Test
Compression Verification Tests

- Test Pile C Load Test
- Test Pile D Load Test
Compression Proof Test

- **Pile 74 Load Test**

![Graph showing load vs. deflection for Pile 74, with design load and Davisson criteria indicated.](image)
Tension Verification Tests

- Pile P5 Load Test
- Pile P50 Load Test
The End

Thank you for your Attention

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