Strong Foundation

We provide extensive geotechnical design and analysis services in support of highway, bridge, building, and railway projects. We also offer geotechnical engineering services related to commercial and private land development, wireless telecommunications and underground utilities, dam and wastewater engineering, rockfall mitigation, and airport improvements. Our clients include contractors, private developers, and state and federal agencies. Our projects range from inspection services for residential property construction, to investigation and recommendations for remediation of highway slope failures, to design and analysis of multispans bridges over major waterways.

- Shallow foundations
- Deep foundations—drilled and driven piles, drilled shafts, micropiles
- Lateral capacity of piles and drilled shafts
- Roadway embankment—settlement analysis, lightweight fill, surcharge, wick drains, geofoam
- Slope stability
- Retaining walls for temporary construction support and permanent structures
- Cantilevered and anchored bulkheads
- Soil and rock anchors
- Floodwalls and levees
- Seepage analysis

Bridges for Major Interchanges and Waterways

I-295/I-76/Route 42 Direct Connection | Camden County, NJ
Owner: New Jersey Department of Transportation
Description: This interchange is one of the largest and most congested intersections in southern New Jersey. Our design solution will carry I-295 over I-76/Route 42 via a six-lane structure and includes 13 bridges, two culverts, 22 retaining walls, 42 sign structures and several noisewalls. To prepare the site for the expanded roadway, we designed ground improvements using controlled modulus columns and load transfer platforms to meet settlement and bearing capacity criteria over soft soils.

Route 3 Over the Passaic River | Bergen and Passaic Counties, NJ
Owner: New Jersey Department of Transportation
Description: As part of the Route 3 roadway improvement project, we conducted a 350-hole subsurface investigation program, reviewed the boring data, developed a laboratory testing program, and prepared geotechnical reports for five bridges, 19 retaining walls, nine noise barriers, and 19 sign structures. Foundation designs included eight-foot-diameter drilled shafts, pile supported MSE stub abutments, soldier pile and lagging abutments and retaining walls, proprietary retaining walls, sign structure drilled shafts and spread footings, noise barrier posts, and high mast lighting foundations.

Mount Vernon (East) Transportation Center | Mount Vernon, NY
Owner: Metro-North Railroad
Description: We performed the subsurface investigation, geotechnical analyses, and foundation report preparation for the reconstruction of this rail station and adjacent parking lot and construction of a new station building, elevator/pedestrian overpass, and retaining walls. Design features included the reconfiguration of an existing street to introduce bus service for intermodal transfers. Provisions were made for improved walk-in passenger and bicycle access, elderly and disabled access, and pedestrian and vehicular flows.

Rail Station Expansion | Trenton, NJ
Owner: New Jersey Transit Corporation
Description: For this $79-million renovation of intermodal railway station, specific tasks included geotechnical investigations and design for station improvements and new timber pile foundations, design of embankment stabilization techniques, mechanically stabilized earth walls, a geofoam fill to avoid overloading an existing wall, curtain wall design, parking facilities design, and roadway widening.

Bus and Rail

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### Buildings

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Location</th>
<th>Owner</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Atlantic Center Plaza over LIRR Flatbush Avenue Station</td>
<td>Brooklyn, NY</td>
<td>Forest City Ratner</td>
<td>Performed subsurface investigation and geotechnical engineering for a 130,000 SF, 17-story building.</td>
</tr>
<tr>
<td>Jersey Shore University Medical Center</td>
<td>Neptune, NJ</td>
<td>Meridian Health</td>
<td>Geotechnical engineer of record for $300-million hospital expansion including medical wings and 12-story parking garage. Majority of project was constructed atop an old landfill.</td>
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<tr>
<td>St. Mary’s Children’s Hospital</td>
<td>Queens, NY</td>
<td>St. Mary’s Children’s Hospital</td>
<td>Geotechnical engineer for $45-million hospital expansion. Performed subsurface investigation and prepared geotechnical report for four-story, 2,000 SF expansion and 22,400 SF new tower.</td>
</tr>
<tr>
<td>Fort Hamilton Armed Forces Reserve Center</td>
<td>Brooklyn, NY</td>
<td>U.S. Army Corps of Engineers</td>
<td>Work included development and execution of the subsurface investigation program and preparation of the final geotechnical report and design.</td>
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### Retaining Walls and Bulkheads

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<tbody>
<tr>
<td>Walmart Site Development</td>
<td>Charlottesville, VA</td>
<td>Walmart Stores Inc.</td>
<td>Designed a 210-LF by 31-foot-high permanent soil nail wall to provide space for a proposed store expansion. Prepared construction specifications and provided construction support services.</td>
</tr>
<tr>
<td>Long Beach Waterfront Park</td>
<td>Nassau County, NY</td>
<td>Nassau County Department of Public Works</td>
<td>Designed a 2,000-LF steel bulkhead, pier addition, and boat ramp. Included design and specification of subsurface exploration program.</td>
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### Ground Improvement

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<tr>
<td>Fonda-Fultonville Elementary School</td>
<td>Fonda, NY</td>
<td>Fonda-Fultonville Central School District</td>
<td>Subsurface investigation and design to remediate slab cracking and heave in school partially constructed over fill and expansive soils.</td>
</tr>
<tr>
<td>North Hempstead Transfer Station/Recycling Facility</td>
<td>North Hempstead, NY</td>
<td>Town of North Hempstead</td>
<td>Performed geotechnical investigation and re-designed pile and grade-beam system to a pre-load and surcharge with approximately 13-inch settlement estimated and achieved.</td>
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