



Geopier® Rigid Inclusion Technology Used to Support Portland Area Super Market



CLIENT'S CHALLENGE

The project included the construction of a supermarket to serve as the anchor amenity of a 2 million-square foot mixed-use development. Helical Drilling utilized Geopier GeoConcrete® Column (GCC) Rigid Inclusion elements that extended through the soft/sensitive clay layer. Given the challenges with the installation of rigid inclusions in thick/sensitive clays, the project included a state-of-the-art pre-production testing program.

Portland Area Super Market

Portland, ME

SUBSURFACE CONDITIONS

Soils included fill underlain by a soft, sensitive clay that extended about 70 feet below grade which was underlain by Till. Due to the soft clays and the planned grade-raise-fill, the settlements of footings and slabs were estimated to be excessive, which lead the design team to consider ground improvement.

Dirigo Center Developers

Owner

Consigli Construction Co., Inc.

General Contractor

S.W. Cole Engineering, Inc.

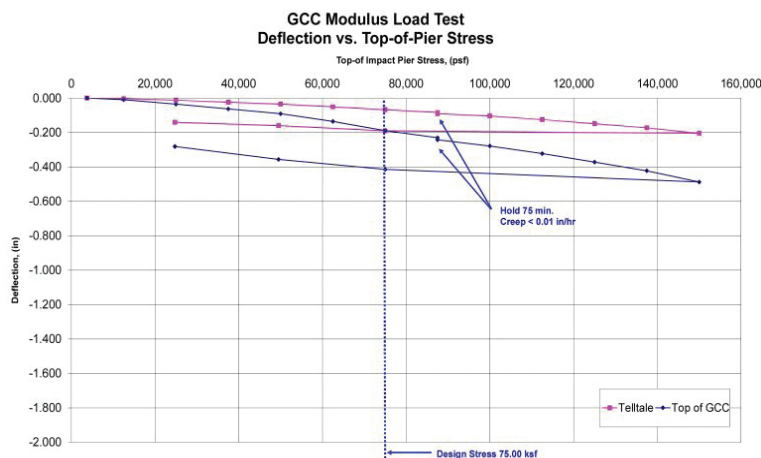
Geotechnical Engineer

Branagan Engineering, Inc.

Structural Engineer

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GEOPIER® SOLUTION

Geopier GeoConcrete® Column (GCC) rigid inclusions were utilized to transfer fill, slab, and foundation loads through the fill and soft/sensitive clay layer to the dense tills below. The design utilized finite element modeling to help ensure proper support of the grade-raise fill and slab-on-grade. Over 1,300 GCC elements were installed to depths up to ~ 70 feet below ground surface. Production was completed ahead of schedule with two rigs/crews to expedite building pad delivery to the supermarket tenant.