PROJECT SUMMARY

North Bass River Area Phase II Utility Support
Beverly, Massachusetts

Description: Support of approximately 400 feet of 8-in sanitary sewer and 12-in water main lines and 1 to 2 feet of grade raise fill.

Subsurface Conditions: Five feet of sand and gravel fill underlain by 4 to 10 feet of very soft organic silt and peat. Stiff silt and clay followed by dense sand and gravel were encountered below the peat. Groundwater was located at the top of the organic soils.

Design Details: *Geopier*® soil reinforcement was used as an alternative to overexcavation and replacement to support the two utility lines and grade-raise fill after excavations encountered very soft, compressible soils along the alignment. A total of 149 Geopier elements were installed at a spacing of 5 feet on-center to support an 18-in thick geofabric-wrapped layer of crushed stone used to bridge between elements, providing uniform support for the utility lines and backfill. The Geopier solution provided time and cost savings compared to the overexcavation option, which would have required an expensive sheeted excavation.

Geopier Designer & Installer: Design-Build Geotechnical; Helical Drilling, Inc.

General Contractor: N. Cibotti, Inc., Braintree, MA

Owner: City of Beverly, MA

Geotechnical Engineer: CDM/Jessberger, Inc., Cambridge, MA

Structural Engineer: Camp, Dresser & McKee, Inc., Cambridge, MA

Reference: Mr. Owen McKenna - Camp, Dresser & McKee (617) 452-6000
Mr. Ben Cibotti - N. Cibotti, Inc. (781) 843-2382