

Longhorn Steakhouse Portland, Maine



Description: Construction of a 6,400 square foot, single-story restaurant. Site grades were raised by up to 3 feet. Maximum column loads were 50 kips and wall loads ranged from 3 to 4 kips per foot.

Subsurface Conditions: A thin veneer of fill and a 4 to 7-foot thick layer of stiff silty clay was underlain by a 9 to 10-foot thick zone of very soft, sensitive marine clay. SPT N-values in the clay ranged from W.O.H. to 4 blows per foot. Silty sand was encountered beneath the compressible clay. Groundwater was encountered 12 to 14 feet below grade.

Design Details: Settlement of spread footings sized for 2,000 psf on the unreinforced site was estimated to be 2 to 3 inches. *Geopier*® soil reinforcement was selected as an alternative to deep foundations and a structural floor slab. A total of 76 *Geopier* elements were installed to support the shallow footings and lightly-reinforced floor slab. In addition to providing foundation support, the elements constructed using open-graded stone served as radial drains to quickly dissipate the excess pore pressures resulting from the grade-raise fill. The *Geopier* solution provided cost and schedule savings compared to the alternative foundation options.

Geopier Licensee: Helical Drilling Inc., Braintree, MA

General Contractor: James J. Welsh Construction Co., Salem, MA

Owner: Rare Hospitality International, Inc., Atlanta, GA

Geotechnical Engineer: PSI, Inc., Wilmington, MA

Structural Engineer: WD Partners, Columbus, OH

Reference: Mitchell Linnabary - Rare Hospitality International (770) 551-5455

Warren Koch - WD Partners (614) 324-5524