

Model HP288 Helical Piles

Project: *New Pool Construction*

Location: *Fort Myers Beach, FL*

Date: *July 2016*

Challenge:

A swimming pool was planned behind a bayside home that was still under construction. The cinderblock and wood framework of the new home was supported by driven concrete piles; however, deep foundations were not installed for the proposed pool.

Existing homes on both sides of the property limited access to the tight working area between the partially-built structure and the adjacent bay. These restrictions prevented the use of large equipment needed to install additional driven piles or other conventional deep foundations.

A geotechnical investigation performed for the home construction identified five feet of loose to medium dense sand, over ten feet of very loose silty sand, over medium dense cemented sands with rock fragments to the maximum explored depth of 40 feet below grade.

Solution:

Helical piles can be quickly installed with relatively small equipment and, therefore, proved to be the ideal deep foundation solution given the project challenges. The pool foundation design included thirteen (13) Model 288 (2.875-inch OD by 0.276-inch wall) round shaft helical piles with 10"-12"-14" triple-helix lead sections to support a design working load of eight kips per pile. The helical piles were installed to depths from 21 to 28 feet below the bottom of the pool excavation to achieve torque-correlated ultimate capacities exceeding twice the design working load (FOS > 2). The installed piles were then fitted with new construction brackets to be cast within the concrete pool slab. The pile sections and brackets were hot-dip galvanized for corrosion protection. Despite limited access and tight working conditions, the helical piles were installed within two days.

Project Summary

Structural Engineer: *Aqua-Terra Engineering, Inc.*

Geotechnical Engineer: *Universal Engineering Sciences*

General Contractor: *Nease, Inc.*

Pool Contractor: *Artesian Pool Construction, Inc.*

Certified Pile Installer: *N Square, Inc.*

Products Installed: *(13) Foundation Supportworks HP288 Helical Piles, 10"-12"-14" Helix Plate Configuration, Design Working Compression Load of 8 kips, Installed Depths from 21 to 28 feet Below Pool Excavation*



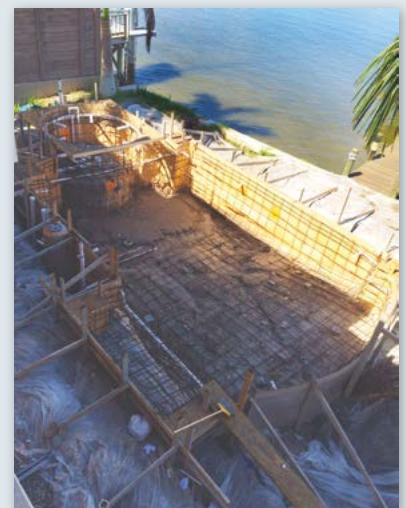
Proposed pool area between seawall and new home



Installing helical pile lead section within pool excavation



Piles installed and fitted with galvanized new construction brackets



Pouring concrete within pool forms