

Model 288 Helical Piles

Project: FSU Doak Campbell Stadium
Location: Tallahassee, FL
Date: January 2016

Challenge:

Florida State University planned to enclose the south end of Doak Campbell Stadium to create the Champions Club Level which will offer over 5,000 premium seats, a 70,000-square-foot, air-conditioned club, and 34,000 square feet of shaded rooftop terraces. The renovations would include providing additional foundation support to 14 existing column locations. Designers originally considered installing two auger-cast piles at each column to provide the additional support; however, low overhead clearance and narrow access points at some of the column locations made it too difficult to use standard auger-cast equipment. A geotechnical investigation identified highly variable soil conditions containing sands, clays, silts, and organic material, also making it difficult to predetermine target depths for the auger-cast piles.

Solution:

Helical piles can be installed quickly with relatively small equipment, making them the obvious choice to provide the additional column support. A load test was performed to verify pile capacity and depth. Each existing column location would include pile cap extensions supported by four helical piles. Each pile would support a design working load of 25 kips. The pile configuration consisted of Model 288 (2.875-inch OD by 0.276-inch wall) hollow round shaft with a 10"-12"-14" triple-helix lead section. Standard extensions advanced the piles to depths from 14 to 21 feet to achieve torque-correlated ultimate capacities of at least twice the design working load ($FOS \geq 2$). The piles were fitted with standard new construction brackets to be cast within the pile caps. Despite tight access and working conditions, 56 helical piles were installed within just four days.

Project Summary

General Contractor: Childers Construction Co.
Structural Engineer: Bliss & Nyitray, Inc.
Geotechnical Engineer: Ardaman & Associates, Inc.
Certified Pile Installer: Alpha Foundation Specialists, Inc.
Products Installed: (56) Foundation Supportworks HP288 Helical Piles, 10"-12"-14" Lead Section, Installed Depths from 14 to 21 feet, Design Working Load of 25 kips



Compression load test



Installing helical piles within stadium



Advancing helical pile lead section



Piles installed and fitted with new construction brackets



Construction underway on south end of stadium (Image courtesy of Aero Photo)