

# Helical Piles Support New Restaurant

## Project

Culver's Restaurant

## Location

Orland Park, IL

### CHALLENGE ▾

Construction details for the new Culver's restaurant included an 8-inch-thick poured concrete foundation wall, steel framing and anchored masonry veneer. Based upon the geotechnical investigation, project engineers recommended helical piles be used to support the structure. Four test borings extended to depths of 25 feet and encountered stiff silty clay at the bottoms of each of the borings. In fact, all four test borings identified consistent soil types, strengths, layer thicknesses and strata depths. Existing fill soil was encountered from the surface to a depth of 11 feet, over soft peat from 11 to 15 feet, over loose organic silt from 15 to 19 feet. Therefore, the helical piles were designed to extend beyond the 19-foot depth for bearing in stiff silty clay.

### SOLUTION ▾

Due to scheduling issues and forecasted cold weather conditions, pouring concrete at the site needed to be completed within 13 days from the start of construction. Helical piles became an even more logical solution since foundation concrete can be poured immediately after installation of the piles. Forty-seven (47) Foundation Supportworks® Model 288 Helical Piles were specified on the project with allowable capacities of 5, 10, 15, 20 and 25



Pier locations marked



Lead sections advanced



Culver's Orland Park

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► Continued

hips. Three different helical lead configurations were installed to torque values that correlated to the respective capacities, or higher, including a factor of safety of two. Isolated obstructions were encountered within the fill at depths between 10 and 12 feet, but the piles were able to advance through or around this material. Large boulders were also encountered within the first few feet at several locations, requiring removal in order to complete the pile installation. Despite the challenges, the installation of the 47 helical piles was completed in less than three days and the project remained on schedule.



Pile caps installed



Concrete "mud mat" poured to receive wall

## PROJECT SUMMARY ▼

Architect:	Warren Johnson Architects, Inc
Structural Engineer:	Virgilio & Associates
Geotechnical Engineer:	Construction Testing Services
General Contractor:	Innovative Construction Concepts, Inc.
Certified Installer:	Foundation Supportworks of WI
Products Installed:	(47) Foundation Supportworks® Model 288 Helical Piles

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