

CHANCE™ HELICAL PULLDOWN® MICROPILES REPORT

A CASE HISTORY

Project: C-Port One
Cement Bulk Plant
Fourchon, LA

Geotechnical Engineer:
Gore Engineering, Inc.,
Metairie, LA

Structural Engineer:
Berard, Hertz & Associates
New Iberia, LA

Contractor: CenterLine
Foundation Repair Co.
Lafayette, LA

Job Description:

Holding tanks and waste tanks to service offshore drilling platforms were to be placed on boat slips. These workboat slips were 40 ft. wide by 118 long. The tanks were to be supported on deep piling. Land access to the pile locations was limited to equipment with a width of 7 ft. Otherwise, the required piling would have to be installed from barge-mounted equipment.

Soil conditions to 37 ft. depth: Very soft to medium-stiff clay. From 37 to 57 ft.: Dense to medium-dense sand stratum. Below 57 ft.: Reverted to a soft to medium-stiff clay.

Underground obstructions included existing bull-head tie rods, drainage piping and existing building column piling.

Six piles were required at each holding tank location and four piles at each waste tank location. The design (working) load per pile was 56 kips.

Repair:

HELICAL PULLDOWN® Micropiles were selected due to the smaller and lightweight equipment used for their installation.



The HELICAL PULLDOWN® Micropile size and configuration used was the SS175 (10,000 ft.-lb. maximum torque rating) with a three-helix lead section (8", 10", 12" diameters) and 7-ft. plain extension shaft with a 7" displacement disc affixed at each extension coupling. Overall length of the pile below groundline was 41 ft. Each pile included a 7"-diameter grout column around the shaft above the helices, approximately 36 ft. in length.

This HELICAL PULLDOWN® Micropile was considered a composite pile in that its load capacity was a function of both the end-bearing capacity of the helices and friction-

continued on other side . . .



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al capacity of the 7"-diameter grout column.



Load Testing:

A pile compression load test was required prior to the installation of the production piles. The pile was to be loaded to 200% of its required design load or 112 kips. The HELICAL PULLDOWN™ Micropile as installed for testing is described in the above section. The test pile was installed using a Bobcat unit equipped with a 12,500 ft.-lb. drive motor and a DP1 (delta pressure) gauge for monitoring the installation torque.

The final average displacement of the pile head at the 56-kip design load was 0.30 inch. The maximum displacement of the pile head at 200% of the design load (112 kips) was 1.2 inches.

Production Pile Installation:

All production piles were installed the same procedures as employed for the installation of the test pile. The grout mix consisted of Type I Portland cement with 1 pound of fibril mesh per cubic yard of grout and 5% silica fume by weight of grout (5 lb. of silica fume per 96-lb. bag of grout). The grout was mixed on site in a drum mounted on a Bobcat unit and powered by the Bobcat's hydraulic system.