

**CANTSINK™**
— SUPPORTING INNOVATION —

SITUATION

AN EXISTING COASTAL HOME IN NEW SMYRNA BEACH WAS UNDERGOING A SUBSTANTIAL RENOVATION. THE PROJECT INCLUDED STRUCTURAL WORK AND UPGRADES TO THE HOME'S EXISTING PILING AND BEAM FOUNDATION SYSTEM. BECAUSE THE RENOVATION REQUIRED THE STRUCTURE TO MEET CURRENT REQUIREMENTS, THE EXISTING FOUNDATION HAD TO BE EVALUATED FOR SUITABILITY UNDER THE NEW DESIGN CONDITIONS.

TESTING OF THE EXISTING CAST-IN-PLACE FOUNDATION ELEMENTS SHOWED THAT THE ORIGINAL SUPPORTS WERE SIGNIFICANTLY SHALLOWER THAN THE REQUIRED SCOUR ELEVATION. PILE ECHO TESTING IDENTIFIED NINE EXISTING FOUNDATION DEPTHS RANGING FROM APPROXIMATELY 4.3 FEET TO 7.3 FEET. WITH A REQUIRED 12-FOOT SCOUR ELEVATION, THE EXISTING FOUNDATION ELEMENTS TERMINATED WITHIN THE POTENTIAL SCOUR ZONE AND COULD NOT BE RELIED UPON AS THE SOLE DEEP-FOUNDATION SUPPORT FOR THE RENOVATED STRUCTURE.

CASE STUDY



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SCOPE OF WORK

Cantsink helical piles were selected to establish a new deep-foundation load path below the scour elevation. A total of 24 new-construction helical piles were installed in accordance with the engineered foundation plan, totaling 405 linear feet, with installation torque monitored during advancement.

ANCHOR SYSTEM

The engineered design specified 3.50-inch O.D. shafts with 10-inch and 12-inch double helices. Leads and extensions were hot-dip galvanized for corrosion protection. The work order established a target installation torque of approximately 10,800 ft-lb, and torque was monitored throughout advancement so that piles were installed to the required resistance rather than relying on depth alone.

RESULT

Installation terminated between 15 and 20 feet, with 405 total linear feet installed. Depth and torque were documented throughout installation, providing field verification of pile performance. The completed helical pile system extended the home's new foundation support below the 12-foot scour elevation and into deeper bearing material. Compared with the original foundation elements, which were measured as shallow as 4.3 feet, the new piles provided a substantially deeper, torque-verified foundation system for the renovated residence. This project demonstrates the value of helical piles for coastal renovation work: existing structures can be upgraded with a modern deep-foundation system while limiting excavation and disturbance around the home.