# CASE HISTORY

#### SITE PREPARATION

NEW CONSTRUCTION

REMEDIAL REPAIR

HELICAL PULLDOWN<sup>®</sup> MICROPILE

ATLAS RESISTANCE<sup>®</sup> PIERS

HELICAL UNDERPINNING

EARTH RETENTION

RETAINING WALLS

HELICAL TIEBACK

SOIL SCREW®

PIPELINE STABILIZATION

TELECOM/SUBSTATION

UTILITY/SOLAR

# CERTIFIED INSTALLER

**CONTE COMPANY, LLC** Norwalk, CT

CHANCE<sup>®</sup> DISTRIBUTOR

**DANBRO DISTRIBUTORS** Philadelphia, PA

MARINE CONTRACTOR

**G&C MARINE** Norwalk, CT

Hubbell Power Systems, Inc. is the world's leading helical pile/anchor manufacturer. The CHANCE® brand offers a technically advanced, cost effective solution for the Civil Construction and Electric Utility and Telecommunications markets.

# **HELICAL FOUNDATION SOLUTIONS**

# Roton Boat Club Dock Repair



HELICAL PILES INSTALLED IN LIMITED WINDOWS OF TIME AND REDUCED OVERALL PROJECT COSTS

# PROJECT

Eight CHANCE<sup>®</sup> Helical Piers were installed under a dock with limited clearance (seven feet) during low tide.

### PROBLEM

Members of the Roton Boat Club in Norwalk, Connecticut can once again enjoy sitting on the club's large dock (25 ft by 100 ft), especially now that it is level. The dock extends out into the Norwalk Harbor in the Long Island Sound. While protected from the open ocean, it is still affected by the major storms that hit the east coast of the United States.

In August 2011, Hurricane Irene destroyed the old dock. It was replaced with a well-built dock supported by wooden pilings driven into the sandy coastline.

In October 2012, Hurricane Sandy (the second most costly hurricane in U.S. history) hit the east coast. The storm surge pulled up some of the dock's wooden pilings near the shoreline. These were replaced with helical piles, installed by Conte Company, LLC, Norwalk, CT, in January 2013. Matthew Conte, Principal, explains, "A marine contractor, who we do a lot of business with, built the dock. He did such a good job that, when the storm surge came in and the waves slammed into the underside of the dock, the dock held. But, some of the piles, closest to shore, were pulled up by a couple of feet."

Conte Company, a certified CHANCE installer, was called in to evaluate the situation and agreed that helical piles would be the best solution. They could provide tensile strength to protect against future up lift forces and, most importantly, be installed during the limited time constraints of low tide without taking apart the existing dock. *continued* 

66 Superior tensile strength found in CHANCE® Helical Piles allow for additional protection against future storm surge damage.

-MATTHEW CONTE, PRINCIPAL, CONTE COMPANY, LLC

Bore samples were not taken since soil conditions at the site were already known to be suitable for screw-in piles. The surface was very sandy with a mix of stones ranging from three to six inches in diameter. Beneath was dense gravel mixed with large boulders and hardpan.

The real challenge was going to be the working conditions. Only the timber piles nearest to the shore came loose and the decking was not removed. This meant all work would have to be done under the dock, which provided about seven feet of headroom.

Additionally, despite the close-to-the-shore locale of the eight piles, they were still under water for most of the day. With installation only possible at low tide, Conte Company only had about two hours of working time per day.

### SOLUTION

In this case, CHANCE brand Helical Piles were the best solution. Re-driving the wooden piles would leave the dock vulnerable to future storms. Conte Company measured the dock and decided that a mini excavator with a drilling rig would just barely fit.

The design called for the helical piles to be installed next to, or in between, some of the pilings that had lifted. Each would provide 2 kips of uplift resistance.

"We drove our CAT 303, mini-excavator (with a Pengo 12K drilling head) down a small boat ramp to the beach, then across the beach and under the dock. The wet sand was pretty stiff, so getting bogged down wasn't a problem. Head room was. There was only 7 or 8 feet,



SUPERIOR TENSILE STRENGTH FOUND IN CHANCE HELICAL PILES ALLOW FOR ADDITIONAL PROTECTION AGAINST FUTURE STORM SURGE DAMAGE

which was just enough room to lift the boom of our excavator. Superior tensile strength found in CHANCE Helical Piles allow for additional protection against future storm surge damage," says Conte.

The other challenge was timing. "At dead low tide, we had about two hours to work. We installed the piles furthest out first, of course. And, we had to reposition a few because we hit rock, but we did get all 8 helical piles installed before the tide came back in," continues Conte.

Danbro Distributors of Philadelphia, PA, provided the CHANCE SS175 Helical Piles to Conte Company with 10, 12, and 14 inch helical plates. Ideal for rocky soil conditions, each pile was screwed down to a depth of approximately 10 feet and a torque rating of 2,500 to 3,000 foot-pounds.

A turnbuckle was attached to the top of each pile and new wooden posts were installed and tied into the dock.

### **KEY BENEFITS**

Helical piles saved the Roton Boat Club a great deal of time and money due to their quick installation and the dock not needing to be dismantled before it could be repaired. Additionally, the use of CHANCE Helical Piles provided superior tensile strength so the dock has additional protection from future storm surge damage.



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