



Helical Piles of New York Installs Chance Transitional Helical Piles for a New House Foundation in Island Park, NY on a Site with Very High Water Table

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Project Name & Location:	New House Foundation, Island Park, NY
Project Date:	March 2014
Project Type:	House was Destroyed by Super Storm Sandy. Helical Piles Installed to Support New House Foundation
Helical Pile Installation Contractor:	Helical Piles of New York - Div. of High-Rise Industries
Structural Engineer:	R Shatarah Consulting Engineers, P.C. - Syosset, NY
Helical Piles Specifications:	(44) Transition Helical Piles; 1.5" SS5 Leads with 8",10",12" Helix Bearing Plates with 2.88" RS Extensions; 15 Ton Ultimate Capacity; Galvanized
Soils & Embedment Depth:	Sand and Clay. Average Pile Embedment 22 ft.
Project Timeline:	Helical Pile Installation - 2.5 days
Helical Pile Manufacturer:	A.B. Chance - Centralia, MO

Helical Piles of NY, a division of High Rise Industries with headquarters located in Shirley, NY, recently completed helical pile installations on a very difficult residential site in Island Park – a seaside community on Long Island. Super Storm Sandy destroyed the previous house on this site, and the owner decided to rebuild. The company was contracted to do the required excavation for the concrete foundation, install helical piles as the deep foundation solution and place all of the concrete for the new house.

As soon as the crew began excavating, company owners Silvio and Danny Rebelo realized there were some real challenges ahead as ground water was present at just 18 inches below grade. Local code specifies that foundation footings must be 48 inches below grade. While dewatering excavations is normal business for foundation contractors, this situation presented a special challenge because local code stipulates that water cannot be pumped to the street, and the adjacent lot had a punctured oil tank on it. Silvio realized the company had a special situation on its hands, and he immediately reached out to the project architect, the engineer of record and the building department to ask for advice.



"I knew installing the helical piles through the ground water was not going to be a problem, as the soils report revealed competent soil at around 20-25 feet," Rebelo explained. "What we were most concerned about was the amount of water we would have to remove in order to pour the foundation footings. After meeting with the architect, engineer of record and the building official, it was determined that the 48 inch depth requirement for the footings would be changed to 36 inches in an attempt to reduce the water management challenge," Rebelo added.



The engineer of record, Rudolph Shatarah of R. Shatarah Consulting Engineers, P.C., was concerned about the extremely high water table and the potential for frost heave that could potentially compromise the foundation. Part of his solution to help mitigate potential heave was a change in the grade beam design from a traditional continuous footer to a design calling for sections or points. He also specified A.B. Chance transitional helical piles with 1.5 inch square bar lead sections followed by 2.875 inch round shaft extensions connected to an uplift resistant pile cap. Shatarah has significant knowledge and experience specifying helical piles, and he is well aware of the product's ability to perform in both compression and tension – the latter of which was very important to him for this project. (44) Chance transitional helical piles were installed to an average depth of 22 feet and a 15 ton ultimate bearing capacity.



Engineer Shatarah's creative design change enabled Silvio's team to basically divide the foundation in half by using excess fill, and this enabled the crews to dewater one side at a time and pour the concrete. Once the concrete for side one cured, the second side was dewatered and pouring was completed for that side. "It was a challenging project to put it mildly, but with the knowledge and creativity of our team members we were able to successfully complete the project with minimal time delays and cost overruns," Rebelo added.

Click the links below to see videos of the project
<https://www.youtube.com/watch?v=RMCj-sg-ocA>
<https://www.youtube.com/watch?v=0jrCGPsysc2E>

