PILE DETAIL:

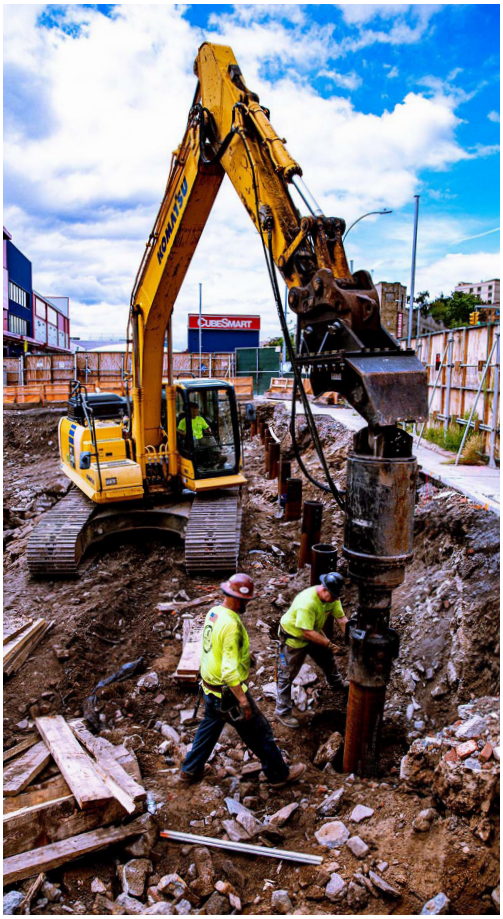
HELICAL PIPE PILE
Single 24” Helix
12.75” O.D. X 0.500” W.T. – 45 ksi
Central Shaft

PILE LENGTH: 20’

NUMBER OF PILES: 18

GEOLOGY:

The soil at this location is generally comprised of granular fill overlaying a natural silty sand deposit and glacial till. The geotechnical exploration encountered a natural sandy layer extending about 20 feet below the fill, including trace amounts of gravel and silt. Following the sand layer is a silty layer that includes sands and clays. The borings reached refusal in a layer of glacial till consisting of cobbles and boulders. The depth at which the layer was encountered varied from 30’ to 50’ across the installation area.



OVERVIEW:

In late 2020, Family Life Academy and Charter School(FLACS) closed on the largest tax-exempt bond for a charter school operator in New York City’s history. The $126.4 million transaction will include renovating existing facilities and constructing the new FLACS IV location. The new campus is estimated to cost $42 million and will be developed by Highmark school development. The new FLACS IV will be the charter school’s first grade 9-12 high school and is located across the street from the original FLACS campus. The 70,000-square-foot building will be complete in August 2023 and accommodate approximately 40 classrooms, ten offices, and a gymnasium.

CHALLENGES:

The proposed school building will have a lower level below grade. The structure’s proximity to roadways required a support of excavation (SOE) wall to reinforce the roads while excavating the basement. As it supports two streets bordering the property, the SOE wall was crucial to the project’s progress. Mobilizing additional equipment for installation or installing a time-consuming system would cause delays for the entire project. Based on these limitations, there were few possible solutions.

ALL 18 HELICAL PIPE PILES WERE INSTALLED IN 2 DAYS WITH NO ADDITIONAL MACHINERY OR PREDRILLING.

SOLUTION:

Initially, the SOE wall was to be constructed using a drilled H-pile system. However, only 18 piles were required, and this system would have been inefficient and could not meet the schedule. An IDEAL representative recommended Helical Pipe piles to the Long Island Concrete team as an SOE wall solution. STELCOR Drilled-in Displacement Micropiles also needed to be installed for the building foundations, so it was a perfect fit.

Long Island Concrete, the foundation specialist for this project, installed 18 helical pipe piles with a 12 3/4 inch diameter to support the roadways. The piles were installed with the same excavator and drive motor used for the STELCOR DDMs, allowing installation with no additional machinery and no predrilling. Installing each pile as a single 20-foot lead section increased the installation rates, and all 18 piles were installed in 2 days. Long Island Concrete was able to begin excavating and adding lagging to piles to hold back soil immediately after installation. Helical Pipe piles saved time and money, keeping the project on schedule. That’s ideal.