

CASE STUDY



94 STELCOR PILES FOR 10 STORY HOUSING PROJECT ON ROCKY CONTAMINATED SOILS IN THE BRONX

GENERAL CONTRACTOR:

GKC Industries
Port Washington, NY

ARCHITECT:

MHG Architects
New York, NY

INSTALLER:

Rich Anastasio

STRUCTURAL ENGINEER:

De Nardis Engineering
White Plains, NY

GEOTECHNICAL ENGINEER:

Haley & Aldrich Engineering
Rochester, NY

LOADS:

400 kips ultimate compression
150 kips ultimate tension
8 kips lateral

SPECIFICATIONS:

5.5" pile shaft
.476 wall thickness 80 ksi
16" tip or drive plate
12" corrugated grout column
9" solid grout column
8" reverse auger

SOILS + EMBEDMENT DEPTH:

Fill, Alluvium, Glacial Deposits, and
Decomposed Rock.
40' Embedment Depth

OVERVIEW: A 10-story residential 92-unit building is going up at 2065 Walton Avenue. 60 percent of the apartments will go to homeless veterans, with the remainder going to homeless youth between the ages of 18 and 25.

CHALLENGE: The site challenges included a high water table and rubble foundations of the neighboring buildings which were not underpinned. Boulders were encountered up to 15'. The project was originally spec'd with Drilled Shaft Case Piles which could be installed at a rate of 1.5 piles per day and were much more expensive. Furthermore, the cost of spoil removal was cost prohibitive and oil was present in the contaminated groundwater.

SOLUTION: Rich Anastasio teamed up with IDEAL to present STELCOR as an alternate. In order to bypass the boulders and rubble in the soils, each pile location was rock drilled with an 18" diameter down-the-hole hammer and then pre-augered to 18". A 70k drive head was used to install the piles to a depth of 40'. Two full 200 ton load tests were performed using 6 reaction piles each. The full 200 ton load was applied to the 40' test piles and after the 12 hour hold period, total settlement was approximately six tenths of an inch. Upon initial unload and rebound total settlement was around three tenths of an inch. The first and second load tests showed a net settlement of 0.312" and 0.268" respectively. The production piles were installed at a rate of 8-9 piles per day and 5 on the slowest day. This resulted in a significant cost and time savings with no spoils.



ONLY SIX TENTHS OF AN INCH NET SETTLEMENT AFTER 24 HOUR LOAD TEST AT FULL LOAD OF 200 TONS!



PILES INCREASED FROM 1.5 DRILLED SHAFT CASE PILES PER DAY TO UP TO 8-9 STELCOR MICROPILES PER DAY