

CONNECTICUT  
COMMERCIAL PROJECT OF THE YEAR FINALIST

An industrial building required piles to support its columns. While the original design called for ductile iron, Conte Company designed a less expensive alternative using Drivecast(TM) grouted displacement piles.



During the test pile installation one area refused the pile at a shallower depth than the initial design bond length call for. They chose to load test the pile, under the assumption that the soils were more dense than the soil borings initially suggested. The pile was tested in tension, using a bond break in the fill soil, and to the 100-kip ultimate compressive load. Testing like this isolated the skin friction within the bearing soils and negated any end-bearing support. The pile passed the load testing with virtually zero movement.

The team faced a multitude of challenges. From variable fill soils and a very dense sand bearing layer, to design loads of 50 kips in compression, 30 kips in tension, and 10 kips of lateral loading, they needed a pile that could create these capacities despite the possible refusal of the sand layer. The areas of very dense sand below the fill caused early refusal in some areas of the project.



Conte Company used a few methods to solve the issues at the site. They pre-drilled through the fill and into the very dense sands, and while this helped with pile advancement in some areas, they decided to load test a second test pile, only this time to a higher capacity to prove that even with a shorter bond length the piles can still be effective. This second test pile achieved 162 kips in tension with only a seven foot bond length within the dense sands. This represented a 54-psi ultimate grout bond strength within the soil, even greater than most pile design manuals specifications for friction piles.

Despite the hardships, Conte Company's use of Drivecast(TM) grouted displacement piles proved effective, leading to yet another satisfied customer.