



Improving Soil Strength for Education Facility



THE PROBLEM

CNC Foundations recently completed ground improvement through use of aggregate piers to support column footings, strip footings, and slabs at an educational development project job site near Newark, N.J. The job site consisted of up to 6 ft of urban fill, underlain with soft to medium stiff silts to 25 ft below grade.

OUR SOLUTION

CNC Foundations installed the aggregate piers beneath the slabs to avoid a costly over-excavation process that would have been challenging to execute in this urban setting near existing roads and structures, as well as to prevent slab performance issues in the future. Over 25,000 linear ft of aggregate piers were installed at this site, each up to 30 ft below grade. The piers were used to densify and reinforce the variable fill and soft natural soils to provide a bearing capacity of 6,000 psf and reduce settlements to less than 1 in.

QUALITY ASSURANCE AND CONTROL

CNC Foundations has created a comprehensive quality control and assurance procedure for every project. Each project is validated by an outside, third-party design firm. This process guarantees an independent peer review on each project to ensure that the design will meet the requirements for the project. CNC Foundations also maintains a computer data acquisition system on its aggregate pier equipment. This allows the rig operator to monitor the flot depth and flot hydraulic pressure, and to visually verify the placement of the rock in real time as the aggregate pier is installed.

Because of this, CNC Foundations' operators provide the full time quality control for the installation of every aggregate pier. CNC Foundations performs a minimum of one full-scale load test on each project. The aggregate pier design submittal includes the calculated pier elastic modulus (pier stiffness) and the top of pier stresses for each footing type on the jobsite. Full-scale load testing is performed on a sacrificial aggregate pier installed at a location determined by the engineer of record. Additionally, throughout the project, the data from the field (both installation logs and load testing) are submitted daily to CNC Foundations' office.

