



Air Force Base Upgrade



Deep Foundations – Installing Micropiles

PROJECT OVERVIEW

The project consisted of upgrading the existing building at an Air Force Base. The upgraded building will be an advanced communication center that will include black box encrypted services and other best of the best communication technologies. The 1938 building had to be upgraded to newer, post 9-11, stringent building designs. Micropiles were chosen as the best solution to address new loading requirements and existing building construction challenges.

REQUIREMENTS AND CHALLENGES

This work consisted of Micropiles being installed in a very limited access location, overhead clearance was approximately 9 feet. Drilling spoils and drilling solutions would need to be brought out of the building for disposal.

This project was bid as a design build project. Loads were given per shear wall, it was up to the micropile installer to come up with the number and depths of piles to meet the required compression, tension and lateral loads on each shear wall. The engineer of Record requested that the micropile installer design the pier caps along with the micropiles.

SOLUTION AND RESULTS

CNC Foundations was selected as the micropile installer based on their expertise and experience in installing micropiles. We used their limited access rig to install approximately 20 foot of casing and ran hollow bar micropiles to depths up to 65 feet to achieve loads up to 252 kips in compression, 214 kips in tension, and 15 kips of shear.

CNC Foundations designed and built the micropiles and pier caps for the various shear walls. We installed 232 total piles. The micropile design was confirmed with the passing of three compression load tests. Installation of the micropiles were completed on time and on budget.

Project Details

SECTOR

Air Force Base,
Government Facility,
Office Building Upgrade

LOCATION

Illinois

APPLICATION(S)

Hollow Bar
Limited-Access Micropiles
Deep Foundations

