



PROJECT DESCRIPTION

PARKING DECK and BUILDING
WILMINGTON, NC

MORRIS-SHEA PROJECT COMPONENTS DeWAAL PILE SYSTEM

12 INCH DIAMETER - 170 PILES
14 INCH DIAMETER - 147 PILES



MORRIS-SHEA

nCino HEADQUARTERS

PILES:

- VE alternate to conventional augercast
- Higher production rates
- Reduced material expense
- Improved load capacity
- No drilling spoils



PROJECT OVERVIEW

Morris-Shea (MSB) installed a deep foundation system for the construction of a parking structure and office building at the nCino Headquarters in Wilmington, NC. The 640 car, four story parking deck and 90,000 SQ FT, three story office building expand the corporation's headquarters footprint. The Morris-Shea team utilized a PVE 90 Drill Rig and Schwing Concrete Pump to install 170 12-inch diameter DeWaal piles at the building site. MSB drilled 147 14-inch diameter piles for the parking structure's deep foundation. The piles were drilled to depths of 40-feet. The unique design of the DeWaal Pile System was ideal for this application in loose to medium dense subsurface soils and sand.



DEEP FOUNDATION PILE SYSTEM

DeWaal drilled, full displacement, cast-in-place concrete piles were installed by a powerful, fixed mast drill rig capable of applying high rotational torque and crowd forces to the unique tool. This single-pass process densified the soil, improved shaft friction, and increased overall pile capacity. As the DeWaal tool advanced into the ground, the partial displacement auger transported soil to the full displacement element. Prior to lifting the tool, the drill stem was filled with a self-consolidating, high slump, coarse aggregate concrete. It functioned as a tremie pipe from which pressurized concrete flowed while the tooling was withdrawn



VALUE ENGINEERED REDESIGN

The Morris-Shea engineering team redesigned deep foundation specifications from 16-inch diameter and 14-inch diameter augercast piles to 14-inch diameter and 12-inch diameter DeWaal piles. The use of the DeWaal Pile System reduced material expense, increased production rates, and improved load capacity.



SOIL CONDITIONS / TESTINGS

Soil testing at the nCino building site determined that the subsurface conditions included loose to medium dense existing fill, loose to medium dense silty sand, and medium dense to very dense sand throughout the Wilmington, NC project. Morris-Shea performed compression testing on 12-inch and 14-inch diameter DeWaal piles.

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