Midwest Foundation Tech

Case Study

Installation of Helical Screw Piling for a
Goodman Warehouse Structure, Valley View, Ohio

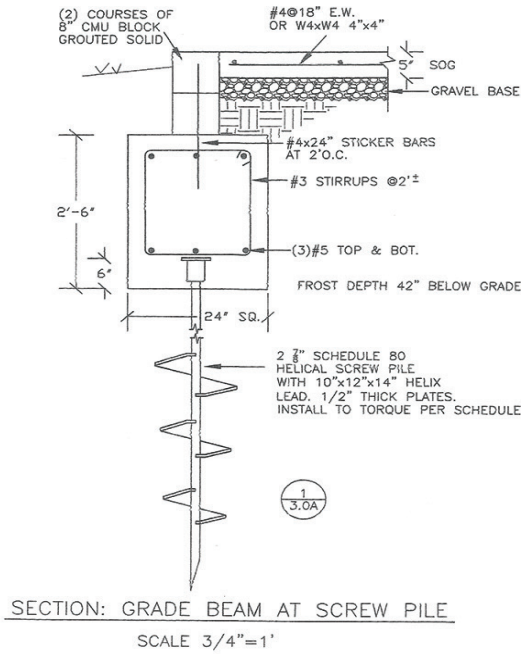
Midwest Foundation Tech was contacted by Williams Building Group to provide an option for supporting the foundation of a new 45,000 square foot warehouse in Valley View, Ohio. The geotechnical reports indicated up to twelve feet of uncontrolled fill over 20 feet of soft clay.

Finished Goodman Warehouse.

Staging the Screw Piles for Installation

The original foundation design recommended rammed aggregate piers to provide support for a more conventional shallow foundation. The owner requested an option to support the foundation on helical piles. Midwest provided a preliminary plan and estimate which was accepted by the owner.

Midwest Foundation Tech re-engineered the existing foundation so that it would be supported by helical screw piles. The final plan included 115 helical piles. The piles consisted of 2-7/8" schedule 80, 10"-12"-14" helix leads, plus extensions. Due to the presence of slag, larger rock fragments, brick and wood fragment Midwest recommended 1/2" thick helix plates.



SECTION: GRADE BEAM AT SCREW PILE
SCALE 3/4"=1'

The construction of the foundation was staged to eliminate the amount of time between excavation and placement of concrete. The excavation was completed in stages.

Attaching Extensions

First the footing was excavated a limited distance. Then the helical screw piling were installed. Immediately thereafter the rebar was placed followed by the concrete. This process was repeated until the entire foundation was completed.

The average depth of the helical screw piling was 42 feet. The installation torque required was primarily 5500 ft-lbs. with a few installed to 6500 ft-lbs. Midwest used a Kubota track loader with a Pro-Dig 9k5 torque motor attached to a boom. Torque was measured by recording the pressure differential across the motor. The installation of the screw piling was completed within five days-averaging 23 piles per day.

Installing ECP Helical Screw Piling

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Project Overview

Engineer - Charlie Grant, P.E., Midwest Foundation Tech

Geotechnical - PSI and Wertz Geotechnical

Installing Contractor - Midwest Foundation Tech

General Contractor - Williams Building Group

Helical Screw Piles - Manufactured by Earth Contact Products

Helical Screw Piles - 115 HTAF 288-84-10-12-14

Extensions - TAE-288-xx

Pile Caps - TAB-288-NC

Installation Torque for piles - 5500 ft-lbs.

Installation Equipment - Kubota SVL 75-2 Track Loader with Pro-Dig 9k5 Torque Motor

Installation Overview

115 Vertical Helical Piers

Midwest Foundation Tech, Inc
7897 Lutz Ave. NW
Massillon, OH 44646
Ph. 330-685-3525
Email:Charlie.grant.48@gmail.com