



Case Study- 2022

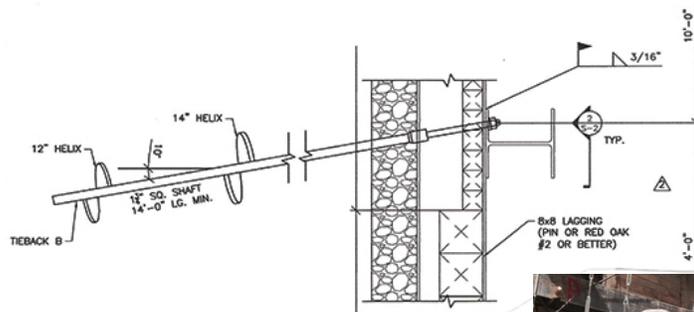
108 Helical Screw Tiebacks for Temporary Shoring, North Royalton, OH

The North Royalton Water Treatment Plant needed to build a new pump station for ongoing operations. Constructing the pump station required excavating 33 feet below grade in an area surrounded by other structures that needed to continue operation during construction. Enabling construction required an extensive shoring plan. The engineers planned on vertical steel HP soldier piles with three rows of HP steel walers and 108 tiebacks. The lagging consisted of 4x4 or 6x6 timbers.

Installation required working from the top down after the soldier piles were installed. The tiebacks were installed prior to placing the walers and lagging.



Row 1 Tiebacks.



North Royalton Detail.

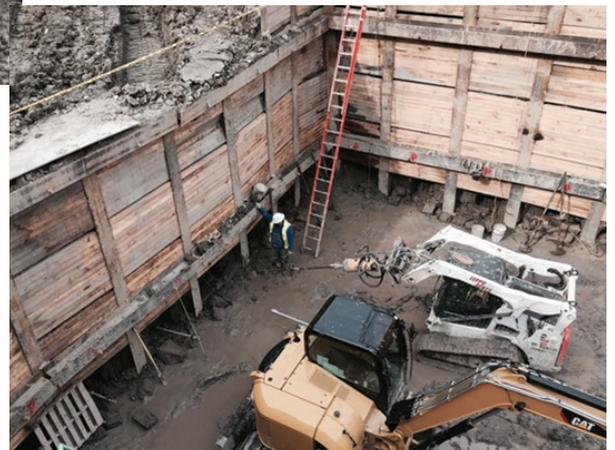


Tieback Under Water Line.



Row 2 Tiebacks.

The track loader used in the project needed to remain in the excavation during placement of all shoring. The tiebacks consisted of 1-3/4" square shafts with a 12"x14" helix lead and extensions, transitioning to a tie rod connected and locked off to the walers. The tiebacks were installed to varying torque values using a Pro-dig 12k5 motor.



Installation seen from above.



Post Tensioning.

The installation was complicated by limited working space, a need to work around existing pipes, and constant de-watering due to a nearby creek. After the final layer of tiebacks and lagging was installed the track loader was hoisted out of the excavation by crane. The installation of the shoring took one month.



**Shoring complete;
Construction begins.**



Hoisting Track Loader out of site.



Finished Project.

Project Overview

Engineer - TTR Engineers

Geotechnical - Resource International

Tieback Contractor - Midwest Foundation Tech, Inc.

Foundation Contractor - Industrial Contracting Company

Helical Screw Piles - Mfg. by Earth Contact Products

Helical Screw Piles - (108) TAF-175-84-12-14

Extensions - TAE-175-xx

Pile Transitions - TAT-175-HD

Installation Torque - 2500 to 9600 ft-lbs.

Installation Equipment - Bobcat Track Loader
with Pro-Dig 12k5 Torque Motor



Midwest Foundation Tech, Inc

7897 Lutz Ave. NW

Massillon, OH 44646

Phone: 330-685-3525

Email: Charlie.grant.48@gmail.com

www.MidwestFoundationTech.com