



Case Study

Remove and Replace an Existing, Failing Retaining Wall using ECP Helical Piers and Helical Tiebacks



Demolition of Existing Failing Railroad-tie Wall.



Installation of 34 Vertical Helical Piers and Setting the Wall.



Setting the 240' Long Wall.



Support Clamps and Easy Flow Drain

The plan called for ECP 2-7/8" O.D. , Schedule 80, helical screw piles. The vertical piles were typically a 10" x5' lead and a 10' extension. The tiebacks were 1-1/2" square shaft and consisted of an 8"x10"x5' lead, extensions, a TAT-150 transition to a 1" diameter tierod, and fastened to the wall front using a 12"x 26" stamped wall plate & beveled washers. To fasten the wall to the vertical



Installing Tiebacks

piles we had ECP fabricate support clamps that were fastened to the back of the wall using (4) LedgerLok screws. The support clamps were placed at every fourth row of lumber and always at the top of the wall. Each row of 4x6 lumber was fastened to each other using 10" TimberLok screws at 2' on center.

A 240' long retaining wall consisting of railroad ties was failing and the city of North Canton, OH, required that the property owner demolish the wall and replace it. The wall varied in height from 2' to 9'. The retaining wall was the responsibility of the uphill property, an apartment complex. The downhill properties were four single family homes. A complicating factor was that the only way to do the wall was from the downhill side.

Each of the downhill properties had fences between them and no access from the street. The uphill property had a major underground electrical line near the retaining wall so excavation behind the wall would not be possible. The solution and plans provided by Midwest Foundation Tech was to build a retaining wall using vertical helical screw piles (as soldier piles) with helical screw tiebacks and pressure treated 4x6 lumber. The piles and tiebacks would be placed nominally at 8' on center except for the 9' wall, where the span was reduced to 6' and an additional layer of tiebacks were added.



Continuing Placement of 4x6's

We had a Kubota 75 track loader available to move materials around.

The project took about a month to complete.



Completed Wall Supported by ECP Helical Screw Piling and Tiebacks.



**Midwest
Foundation
Tech**

Project Overview

Engineer - Charlie Grant, P.E.
Installing Contractor - Midwest Foundation Tech
Products Installed: ECP 2-7/8" O.D., Schedule 80 Helical Screw Piles; 10" x 5' lead 10' extensions, 1-1/2" square shaft tiebacks, extensions, and TAT-150 transition to tie rods and wall plates.
Total Number of Placements: 64

Installation Overview

34 Vertical Helical Piers
30 Helical Tiebacks

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