



Case Study

Helical Screw Piling Support of 300 Foot boardwalk for the Erie Canal towpath, Bolivar, Ohio

The Ohio & Erie Canalway Coalition has been making ongoing progress in completing the Erie Canal towpath trail from Cleveland to Dover, Ohio. The coalition identified the McDonnell Trailhead as one of the last pieces to make the trail continuous for bikers and hikers. The design of the boardwalk was made complicated by requiring the boardwalk to avoid



Boardwalk Complete.

utility poles and guy wires, limit intrusion on private properties, go under a railroad overpass,, and maintain existing vegetation.

The alignment of the boardwalk made for a circuitous “S” shape.

Midwest Foundation Tech (MFT) was hired by Cavanaugh Building to install the screw piles, timber brackets, lateral screw pile braces with transition tie-rods and connectors. Cavanaugh required MFT provide the engineered shop drawings for the project.



Close up of beam to pile framing.

The project began with the installation of the vertical piles-2-7/8” OD, schedule 40 pipe piles with 10” x 12” helix lead and extensions using an E-50 Bobcat mini-excavator with Pro-dig 9k5 torque motor. Placement of the piling was difficult due to steep terrain, uncontrolled fill, particularly under the railroad overpass. Average length of the 54 vertical piles was around 21 feet. Some of the piles would stick out of the ground some 8 feet.



Vertical Framing.



Framing of Boardwalk.



Installation of Lateral Braces.

Following the vertical piles, Midwest installed 25 lateral braces. The braces consisted of 1-1/2" square shaft helical screw piles with 10" x 12" helix lead and extensions. A transition piece was attached at the end of the square shaft and connected to the cross beams via clip angles. All the steel material was hot dipped galvanized by ECP. The installation of the screw piles and lateral braces took one week.



Perspective view showing steep incline.



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Project Overview

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

Project Manager - Ohio & Erie Canalway Coalition

General Contractor - Cavanaugh Building

Geotechnical - Ridgeway Drilling

Installing Contractor - Midwest Foundation Tech

Helical Screw Piles - Mfg. by Earth Contact Products

Helical Screw Piles - (54) TAF-288L-84-8-10

Extensions and Timber Braces - TAF-150-84-10-12

Extensions - TAT-150, Angle Clips

Installation Torque for piles and braces - Varied from
1200 to 1800 ft-lbs.

Installation Equipment - Bobcat E50 Mini-Excavator and
Pro-Dig 9k5 Torque Motor



Installation Overview

54 Helical Screw Piles

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