

ATI Hot-Rolling and Processing Facility

Brackenridge, Pennsylvania

Keller constructed a water-tight secant retaining structure for the ATI Hot-Rolling and Processing Facility.



The project

The individual piles extended approximately 62 feet through sands and gravels to the underlying bedrock. Once intact rock was encountered, the shaft diameter was reduced to 42 inches and extended an additional 22 feet through the sandstone and siltstone layers. Unconfined compression tests on the rock core samples ranged from 9,700 psi to 25,100 psi.

The challenge

The piles were to be installed through sands and gravels to the underlying bedrock, approximately 62 feet into the ground. Once intact rock was reached, the shaft diameter was reduced to 42 inches and extended an additional 22 feet through the sandstone and siltstone layers.

The solution

128 secant piles, configured in an oval shape (as seen in the photo above), were installed with a length of 120 feet and a width of 90 feet. Following the installation of the secant piles a ring beam was formed and poured on top of the secant wall. Excavation depth inside of the secant wall was 42 feet and a 6 foot thick water-tight reinforced slab was constructed. The result was an open pit approximately 40 feet deep as measured from the top of the ring beam.

Project facts

Owner(s)

Allegheny Ludlum Corporation

Keller business unit(s)

Keller

Main contractor(s)

ATI Allegheny Ludlum Corporation

Engineer(s)

Siemens VAI Metals Technologies GmbH

Solutions

Heavy foundations

Markets

Industrial and manufacturing

Techniques

Secant or tangent (contiguous) piles

Email address

info@keller-na.com

Phone number

1 (800) 456-6548