NUCOR® SKYLINE

CASE STUDY

Fritz Island Waste Water Treatment Plant

Reading, Pennsylvania

HISTORY

The wastewater treatment plant on Fritz Island, in the city of Reading, PA, was originally constructed in the Late 1800s. In 1929, the city moved some portions of the treatment plant and constructed a larger facility on the current site, near Angelica Creek and the Mifflin Arm of the Schuylkill River.

PROBLEM

The growing population of the region required an upgrade to the facilities to keep up with the community's needs. The plant treats the effluent for 14 municipalities. In all, the plant serves an estimated 82,000 people in the city of Reading, and a total of 130,000 for the 14-region area. The soils in the area were very poor, because the site was previously used as a dump. The project consisted of upgrades to an existing 20.5 MGD wastewater treatment facility to address the aging plant and its technologies in order to comply with a joint consent decree filed between the Department of Justice, the US EPA, the PA DEP, and the City of Reading WWTP.

SOLUTION

Albrecht Engineering, Inc., was hired to provide structural engineering design services for several new process support buildings, which included a solids handling building, blower building, RAS/WAS pump station, and a primary clarifier odor control building. Four of these structures required temporary support during construction, and Nucor Skyline was called in as a partner to help with the geotechnical needs of the project.

Because of the poor soils at the site, each structure was supported on a deep foundation system that included threaded micropile casing, center bars, tension piles, compression piles, and temporary strand anchors with double regrout tubes.

The versatility of lengths was necessary due to the inconsistency of the soil. In some areas, the drilling went deeper to get through the bedrock. Once the optimum drilling depth was found, a cementitious grout was pumped and the threaded bar inserted.

PROJECT PARTNERS

Owner
City of Reading, PA

Contractor
Wagman Heavy Civil – York, PA

Engineers
Albrecht Engineering Inc. – Baltimore, MD

PRODUCTS

Threaded micropile casing: 7 x .408" 80 ksi and #11 grade center bars (193 tons)

Temporary strand anchors with double regrout tubes (8,200 linear ft.)

Tension piles (113 each) and compression piles (172 each) at average lengths of 62 ft.

PROJECT TIME FRAME

February 2017 through September 2019

Skyline Steel, LLC
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For technical questions and engineering support, please contact us via our technical hotline at: **1-866-875-9546** or email us at: **engineering@nucorskyline.com**.