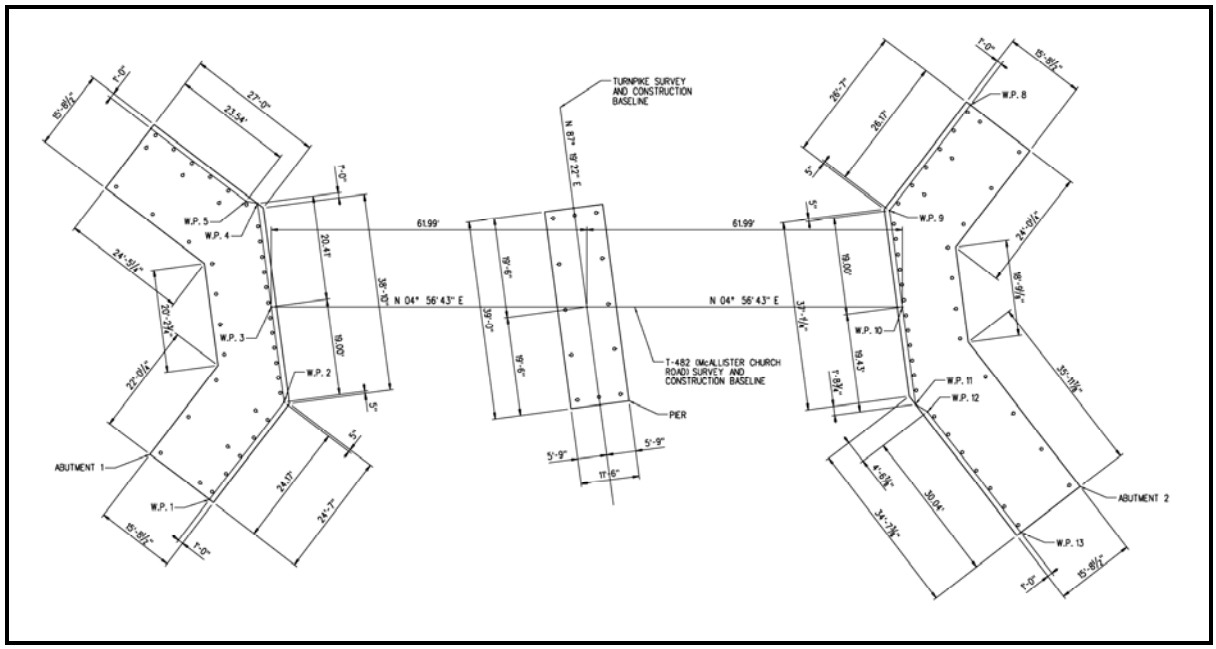
Bridge B529 over Pennsylvania Turnpike

Cumberland County, PA



Project Description: Replacement of Bridge B529 over the Pennsylvania Turnpike required foundation support in challenging subsurface conditions (Karst geology).

This project was the first use of micropiles for the Pennsylvania Turnpike Commission for bridge foundation support. GeoStructures provided an alternate foundation design resulting in a substantial cost savings over an original design utilizing predrilled H-Piles socketed into rock. A fairly extensive pre-production load testing program was performed to demonstrate the high load carrying capacity for the micropiles and to optimize the micropile design. The design utilized LRFD (Load and Resistance Factor Design) methodology in accordance with PennDOT DM4 requirements. The installation of ninety (90) micropiles with a design load of 250 kips in compression at abutment and pier locations was completed in Spring of 2009.

Owner: Pennsylvania Turnpike Commission, Harrisburg, PA
General Contractor: New Enterprise Stone and Lime, New Enterprise, PA
Structural Engineer: Alfred Benesch and Co., Allentown, PA
Geotechnical Engineer: GTS Technologies, Inc., Harrisburg, PA

GeoStructures, Inc.