

SR 36 over Tuscarawas River

Gnadenhutzen, Ohio



Project Information
Owner: Ohio Dept. of Transportation
Client: Complete General Construction Company
Project Name: ODOT 621 (15) SR 36
Foundation Types: 48" Dia. Pipe Piles with Constrictor Plates
Completion Date: November 2016

GRL Services Provided
▪ Preliminary GRLWEAP Analysis
▪ Dynamic Pile Monitoring
▪ CAPWAP Analysis
▪ Static Load Testing

Large diameter open end pipe piles with interior constrictor plates were chosen as the foundations for the SR 36 bridge over the Tuscarawas River in Gnadenhutzen, OH. In addition, a nearly 2,400 kip static load test was specified to evaluate the design methods used for this pile type.

GRL was contracted by [Complete General Construction Company](#) to consult on hammer selection, pile wall thickness, and static load testing prior to construction. In addition, GRL's scope of work included dynamic pile testing and performance of the static load test.

The Ohio Department of Transportation concurrently had funded research into large diameter pipe piles with Case Western Reserve University (CWRU) for which GRL had agreed to provide in-kind support. Coordination between GRL, CWRU, and ODOT allowed for the results of the static and dynamic measurements from this project to be added to the research.

The load test pile, deemed "Frankenpile" by the contractor, was instrumented with 16 vibrating wire strain gages, 28 resistive strain gages, and ten accelerometers at various locations along the pile (Fig.2). Dynamic data was collected with three Pile Driving Analyzers during driving and all gages were monitored during the subsequent static load testing.

The static load test was performed to plunging failure, above the required ultimate bearing value, a success for the project and for research alike. Based on the static and dynamic testing results, all 16 of the large diameter pipe piles on this project were driven to acceptable pile capacities.

To learn more about this project or for additional information, please contact info@grlengineers.com.

