Cleveland's I-90 Innerbelt Bridge

The George V. Voinovich Bridge, also known as Cleveland's Innerbelt Bridge, carries I-90 over the Cuyahoga River Valley near downtown Cleveland, Ohio. The construction was completed in two design-build phases and was the first design-build project for the Ohio Department of Transportation. The six year, $566 million, twin bridge project was completed in late 2016. GRL Engineers provided several deep foundation consultation and testing services to Walsh Construction Company for the Westbound structure, as well as to Trumbull-Great Lakes-Ruhlin, a joint venture, for the Eastbound structure.

The main viaduct structures were founded on HP 18x204 H-piles driven to bedrock with factored axial loads up to approximately 1,600 kips and up to 180 feet in length. For the Westbound structure, GRL's APPLE 4 load testing system, complete with a 40 ton drop hammer, was utilized to mobilize the full pile capacity after the pile was driven to refusal with the production pile driving hammer. This eliminated the need for a very large pile driving hammer to mobilize the nominal pile capacity and resulted in substantial cost savings to the contractor.

Piers 3 and 4 of both bridges were founded on 66" diameter drilled shafts. GRL performed crosshole sonic logging and thermal integrity profiling on the drilled shafts which extended approximately 130 feet to bedrock.

To learn more about GRL Engineers, visit www.grlengineers.com or email us at info@grlengineers.com.

Project Details

Client: Walsh Construction / Trumbull-Great Lakes- Ruhlin, A Joint Venture

Location: Cleveland, Ohio

GRL Office: Ohio

GRL Services

- Preliminary GRLWEAP Analysis
- Dynamic Pile Monitoring
- APPLE Load Testing
- Crosshole Sonic Logging (CSL)
- Thermal Integrity Profiling