

Kentucky Lake Bridge

Eggner's Ferry Bridge, also known as Kentucky Lake Bridge, was the first of two major structures in the Lake Bridges Projects. The bridge carries US-68 over Kentucky Lake, connecting the land between the lake's National Recreational Area and includes a basket handle tied arch over the main navigational channel. Johnson Bros. Corporation was awarded the project in February 2014.

To address lateral loads from potential boat impacts and seismic considerations, 72-inch diameter, open end pipe piles were chosen as the foundations for the piers. The piles were furnished in single sections up to 210 feet in length. Additionally, interior constrictor plates were installed to force a soil plug after the minimum penetration depth was reached to increase the total pile capacity. Nominal axial resistances were as high as 9,200 kips. GRL offered hammer sizing evaluation with the [GRLWEAP](#) program. Ultimately, an IHC S-800 hydraulic hammer, rated at an energy of 590 kip-ft, was used to install the pier piles.

The [dynamic testing program](#) included monitoring nearly all of the pier foundation piles during initial drive and during multiple restrikes (often measurements were collected underwater). For the tower piers with larger numbers of piles, driving criteria was established based on a sequence of restrrike tests.

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

Project Details

Client: Johnson Bros. Corporation, a Southland Company

Location: Aurora, Kentucky

GRL Office: Ohio

GRL Services

- Preliminary GRLWEAP Analysis
- Dynamic Pile Monitoring (underwater)
- CAPWAP® Analysis

