

## Pier 4 Reconfiguration

The Port of Tacoma in Washington state has numerous Piers for the loading and unloading of ships carrying containers. The original configuration of Pier 4 is at an angle with Pier 3. Reconfiguring Pier 4 to be aligned with Pier 3 will create a straight, continuous wharf of almost 3,000 feet, and allow for the simultaneous working of two mega ships (carrying containers 24-rows wide and stacked up to 10 high on deck) at these two Piers. At the same time, the reconfiguration will strengthen Pier 4 and allow for the addition of super post-Panamax cranes with a height of 165 feet.

Manson Construction Co. is driving approximately 174,000 linear feet of 24-inch octagonal prestressed concrete piles for the pier foundation. GRL Engineers performed preliminary [Wave Equation Analysis](#) on selected hammers for the job.

GRL Engineers also performed [dynamic pile monitoring](#) on selected piles, during initial driving, and again during restrikes. This quality assurance provides the geotechnical engineers, Hart Crowser, Inc., with the confidence that the installation of the piles is suitable, and that the ultimate pile capacity after set-up is sufficient.

To learn more about GRL Engineers, visit [www.grlengineers.com](http://www.grlengineers.com) or email us at [info@grlengineers.com](mailto:info@grlengineers.com).

### Project Details

**Client:** Manson Construction Co.

**Location:** Tacoma, Washington

**GRL Office:** Washington

### GRL Services

- Preliminary GRLWEAP Analysis
- Dynamic Pile Monitoring
- CAPWAP® Analysis

