

No Cables Necessary



The gantry with the pile at its back end

Dynamic load testing can now be done without cables to connect sensors to a Pile Driving Analyzer (PDA). **Pile Dynamics, Inc.** has developed wireless sensors that eliminate the need to transport cables to the job site, and simplify testing.

Without cables, the PDA can be placed at considerable distance from the foundation being tested, as far away as 100 m (approximately 330 ft).

After several successful experimental tests in Florida and Ohio on steel and concrete driven piles, GRL Engineers, Inc.'s North Carolina office used the PDA model PAX with wireless gages for dynamic testing services for MACTEC Engineering and Consulting at the US 17 Washington Bypass, Washington, N.C. The bypass is in a wetland area, where construction equipment could not be placed, so the bridge is being built using a gantry system.

This allows the contractor to build two or three pile caps in front of the bridge, set the beams and then pour bridge decks to move along the bridge alignment. The gantry is basically a pair of long trusses supported at two locations. The working end is cantilevered out over the end of the recently constructed bridge. The gantry has a pair of lifting points which run its length, and these are used to transport the various items needed for construction. The piles are lifted at the back end of the gantry and then rolled to the working end for driving. The photo shows the gantry with the pile at its back end. GRL tested two piles using the wireless system, including one tested both during initial driving and after a two hour wait.

Dynamic load testing is a reliable and cost-effective way of determining foundation bearing capacity and foundation integrity. With driven piles, the PDA also monitors driving stresses and hammer performance during driving, and the wireless sensors avoid damage to cables and sensors during the pile hoisting process. Wireless sensors also improve safety, by eliminating the need to climb leads to make cable connections after hoisting.

Products from Pile Dynamics, Inc., are available through the company's Cleveland Ohio headquarters and from worldwide representatives. For more information, visit www.pile.com/pdi.