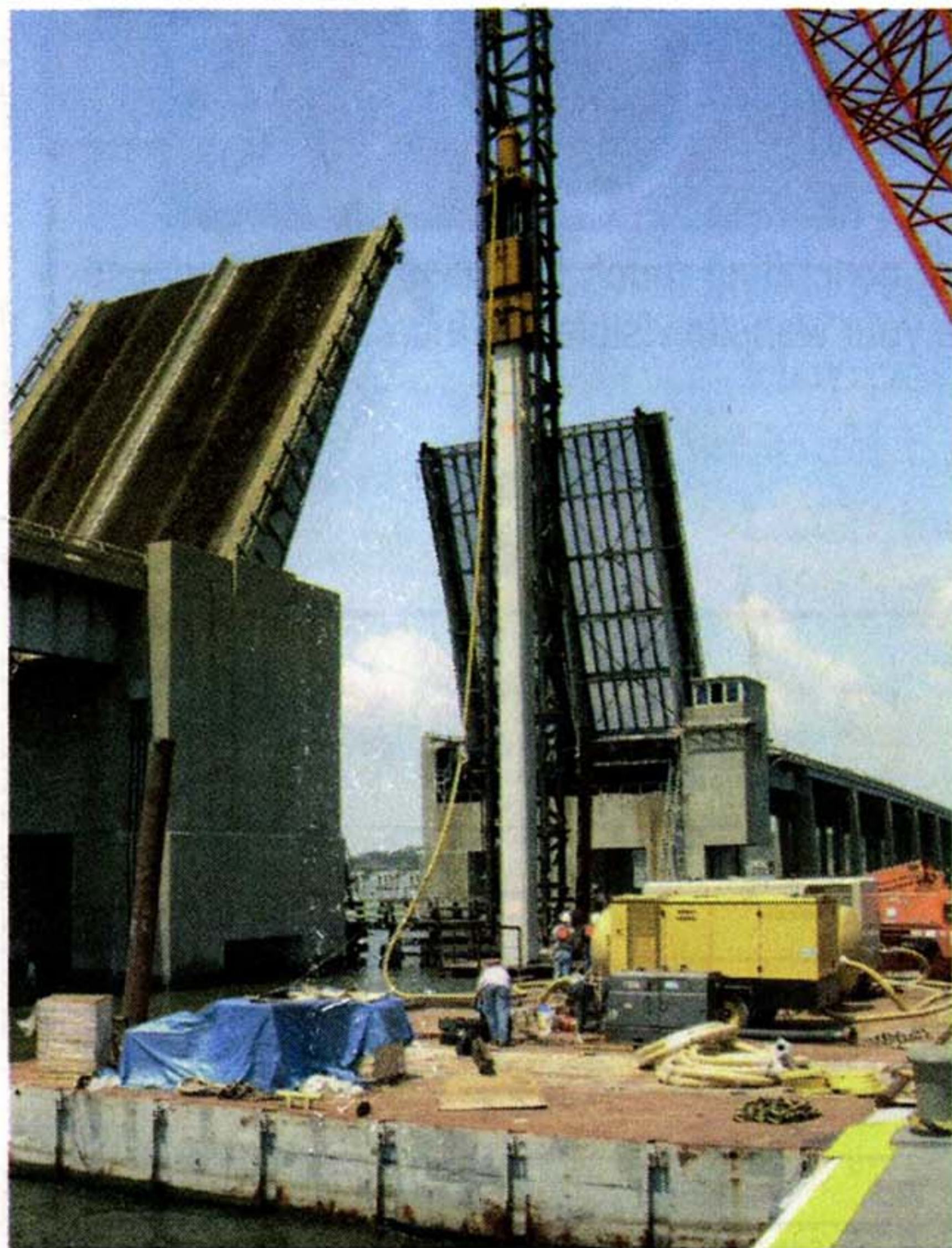


Innovative Wireless Testing of Deep Foundations in North Carolina, USA



Wireless Dynamic Load Testing of foundations of the Tar River Bridge, part of the US 17 Washington Bypass in the state of North Carolina, US, was performed by GRL Engineers, Inc. for MACTEC Engineering and Consulting, Inc. The Tar River Bridge is in a wetland area.

Dynamic Load Testing of Deep Foundations no longer requires cables to connect the sensors that acquire data for the test to a Pile Driving Analyzer® (PDA). Pile Dynamics, Inc. has released a system that allows accelerometers and strain transducers to transmit data to a PDA model PAX placed as far as 100 m away from the foundation being tested. Wireless trans-

mission eliminates the need to transport heavy cables to the job site and simplifies the set up of the test.

Dynamic Load Testing continues to be a reliable and cost effective way of determining the bearing capacity of piles and shafts, and of investigating their integrity. In the case of driven piles, when the PDA also monitors driving stresses and hammer per-

formance during driving, wireless transmission avoids damage to cables and sensors during the pile hoisting process and improves safety by making it unnecessary to climb the leads to connect cables after hoisting.

Wireless Dynamic Load Testing of foundations of the Tar River Bridge, part of the US 17 Washington Bypass in the state of North Carolina, US, was performed by GRL Engineers, Inc. for MACTEC Engineering and Consulting, Inc. The Tar River Bridge is in a wetland area. In order to avoid having any construction equipment in the wetland, the bridge is being built using a gantry system that 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 consists of 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 the length of the gantry and are used to transport the various items needed for construction to proceed. The piles are lifted at the back end of the gantry and then rolled to the working end for driving. The PDA model PAX with wireless transmission freed the GRL from having to be tied to a cable, and allowed it to perform the pile test from not only a much more convenient place but also from a safer area away from the pile driving.

Pile Dynamics, Inc. is the leading developer and manufacturer of quality control solutions for deep foundations. Its products are available directly from its Cleveland OH headquarters or through its network of worldwide representatives. For more information visit www.pile.com/pdi.