

FOR IMMEDIATE RELEASE

September 2, 2007

Mahan Uses Offshore Construction Methods on the Tennessee River.

The use of large diameter piling is typical in offshore construction. But in October, C. J. Mahan Construction Co. took an innovative approach to a design-build option and used it on the Tennessee River. The replacement of the Tennessee River Bridge includes a massive pier in the middle of the navigation channel, which the Kentucky Transportation Cabinet allowed to be performed under a design-build arrangement. Mahan's option approved by the Cabinet included the installation of forty 48" open-ended steel piles driven to a depth 111 feet below the river bottom surrounded by a massive sheet pile cofferdam.



A vibratory hammer was used to penetrate each pile approximately 75' into the river bottom. The final penetration was achieved through the use of a Pileco D125-3 single-acting diesel hammer, which is made for offshore applications and had never been used in the Midwest.



Since the final cut-off elevation of the pile was 39 feet below normal pool, there would have to be a third extension welded to each pile in order to drive them to the required tip elevation. This extension was added to two of the piles, so the hammer could be tested, but Mahan took another approach to driving the remaining pile.

Mahan had a special mandrel machined to fit inside the 48" pile that was welded to a 40 foot casing . This "follower" was lowered into each pile and used to transfer the energy of the hammer into the pile. After the pile reached the required tip elevation, the "follower" was removed and used to drive the remaining piles.



The use of the “follower” enabled Mahan to install the pile more efficiently since it cut down on the amount of labor and materials necessary to install these large casings. C.J. Mahan prides itself on finding innovative solutions in heavy foundation construction for the benefit of the owner.