

Dynamic day in Osceola County

DYNAMIC PILE testing for the foundations of a bridge in Osceola County, Florida has been carried out by US pile integrity testing company Goble Rausche Likins.

Costed at \$5.23M (ECU5.4M), the 680m long bridge will take State Road 600 over Reedy Creek in central Florida, south west of Orlando.

The bridge has two abutments and 29 piers, each supported on rows of five to seven 610mm diameter closed end steel piles with 13mm thick walls. The required ultimate static pile capacities are between 1700kN and 2400kN.

Geology consists of a 4m thick peat layer over mixed layers of sandy silt and clayey sand to



depths of 20-80m. This is underlain by Limestone with SPT N values between 50 and refusal.

A crane sitting on an independently supported platform in the river used two different diesel

hammers, an ICE 80s and a 120S, to drive the piles. A total of 22 test piles with lengths between 23m and 85m were installed.

Goble Rausche Likins used a Pile Driving Analyser from sister company Pile Dynamics to record test results. Data was analysed by the Case Pile Wave Analysis Program (CAPWAP) computer software to determine the pile lengths.

Based on CAPWAP results, wave equation analyses were performed as a basis for the pile driving criteria. Pile driving recommendations, testing and data analysis, including a review from the Florida Department of Transportation, were carried out in less than 24 hours.