

Woodrow Wilson Bridge

Construction of the Woodrow Wilson Bridge (WWB) Project between Virginia and Washington in the US is scheduled for completion in November 2007. The project entails replacing the existing I-95 highway bridge and upgrading four highway interchanges.

Contract VA-4 of the 12 km project includes construction of the 'Virginia abutment', the South Washington Street Urban Deck Bridge over I-95, retaining wall trails, reconstruction of about 8 km of South Washington Street, and a new, widened I-95 corridor from Route 1 to the WWB.

Pile driving presented several challenges, including limits on hours of operation, a tight schedule, vibration and noise. Four different types of piles were used – open-ended pipe piles, pre-stressed concrete piles, H-piles for support of excavation, and mini piles.

More than 500 610 mm diameter pre-stressed concrete piles and 450 460 mm diameter pre-stressed concrete piles were driven with a J&M 220 hydraulic impact hammer (10 tonne ram/1.2 m maximum stroke).

In order to assure consistent and adequate hammer performance, sub-contractor Corman Construction monitored the hammer's kinetic energy using Pile Dynamics, Inc.'s portable E-Saximeter. Proximity switches measured impact velocity and transmitted data to the E-Saximeter, which computed its kinetic energy and created pile driving logs.

