

**ITEM 523 DYNAMIC LOAD TEST****523.01 Description****523.02 General****523.03 Equipment****523.04 Test Report****523.05 Basis of Payment**

**523.01 Description.** This work consists of establishing a driving criteria for all the piles of a specified shape, cross-section, and ultimate bearing capacity or as specified on the plans to be installed in the structure. This shall be accomplished by applying dynamic loads with a pile hammer during driving of production piles to determine driving requirements. Apply the dynamic load to the piles using a pile hammer that is operating at its normal operating level. Perform restrrike tests when specified in the plans

**523.02 General.** Perform dynamic tests on a minimum of two piles. Perform signal matching analysis of the dynamic test data on at least one of the two test piles. Perform the test according to ASTM D 4945 to determine driving requirements to achieve the required ultimate bearing values for the piles to be installed in the structure.

Perform restrrike tests after piles have been driven and a minimum time specified in the plans has elapsed. When performing a restrrike, warm the hammer before restriking the pile by applying at least 20 blows to another pile. Each restrrike consists of performing dynamic testing on two piles and performing a signal matching analysis on one of the two piles tested.

Use the hammer selected for driving the test piles to drive all piles represented by the test piles. If the Contractor subsequently finds it necessary to use a different hammer or multiple hammers to drive piles represented by dynamic load testing, or if the hammer performance varies subsequent to the dynamic test, complete additional tests at no additional cost to the City.

**523.03 Equipment.** Supply all required dynamic testing equipment necessary to run the test set forth in ASTM D 4945. Supply personnel with an Advanced, Master, or Expert Level Certification in High Strain Dynamic Pile Testing (HSDPT) from Foundation QC to operate this equipment. Supply the Engineer a copy of the certificate showing that personnel operating dynamic testing equipment are currently certified. Supply all personnel and equipment needed to strike the test piles with the pile hammer.

**523.04 Test Report.** Perform the dynamic test and signal matching analysis and immediately provide the Engineer driving criteria for any piles to be driven within the next 48 hours. Within 48 hours after performing the dynamic pile test or restrrike tests, supply the Engineer with a written report confirming driving requirements for piles represented by the test. Include in the report, the required blow count for:

- A. The different strokes of the ram at 6-inch (150 mm) intervals within the expected range of operation as determined by a wave equation analysis, when open ended diesel hammers and drop hammers are used.
- B. The selected bounce pressures when closed end diesel hammers are used.
- C. The operating air pressure and stroke when an air operated hammer is used.

D. The selected output energy or stroke when a hydraulic hammer is used.

Also include in the report a minimum depth of penetration if applicable.

Submit an electronic version of the report and data files from the testing and analysis to the Engineer.

**523.05 Basis of Payment.** The City will pay for dynamic load testing after being provided the written test at the contract price as follows:

<b>Item</b>	<b>Unit</b>	<b>Description</b>
523	Each	Dynamic Load Testing
523	Each	Restrike