

ITEM #0702768 STATNAMIC AXIAL LOAD TESTING OF DRILLED SHAFT

Description:

This work shall consist of furnishing all materials, equipment and labor necessary for conducting a Statnamic Load Test and reporting the results. The Contractor shall supply all material and labor as hereinafter specified and include prior to, during and after the load test. The test shaft shall be constructed at the location shown on the site plan and in accordance with the requirements of these special provisions and also as outlined elsewhere in project plans and/or contract documents.

Materials:

The Contractor shall furnish all materials required to install the Statnamic testing apparatus, conduct the load test, and remove the load test apparatus as required. The Statnamic testing apparatus to be provided shall have a load capacity as called for in the project plans and/or contract documents and shall be equipped with all necessary equipment, materials and instrumentation.

Construction Methods:

1. Qualification of Stanamic Load Testing Personnel and Submittals: The Contractor shall employ a qualified Professional Engineer registered in the State of Connecticut and experienced in the conducting and reporting of a Statnamic load test to design, setup, perform and prepare a report of the Statnamic load test. The qualifications of the testing personnel shall be submitted to the Engineer for review and approval. The testing personnel shall have successfully completed and submit the names of no less than three (3) Stanamic load tests on drilled shafts of similar dimensions and capacities in the past three (3) years. The list of projects shall contain names and phone numbers of owner's representatives who can verify the testing personnel participation on those projects.

The Contractor shall submit working drawings with a testing plan that outlines the test setup, including details of all system elements, instrumentation, materials, data collection system and procedures. This testing submittal shall be developed in coordination with and submitted concurrently with the Drilled Shaft working drawing submittal as required in related specifications elsewhere in the contract documents.

All submittals shall comply with the working drawing submittal requirements as outlined in Article 1.05.02 of the Form 816.

2. Equipment: The testing personnel's firm shall supply all equipment necessary for the performance of the load test. The Contractor shall supply equipment and labor required for the installation and removal of the load test apparatus as required by the testing firm. Required equipment for installation and removal may include, but not necessarily be limited to:

(a) A crane or other lifting equipment capable of lifting the Statnamic components, operator and labor for unloading Statnamic trucks during mobilization and demobilization, and for assembling and disassembling the Statnamic load test.

(b) Power source adequate for electronic equipment as required in the approved working plans (minimum 5000 watts).

(c) Clam shell bucket or loader and concrete bucket for gravel.

3. Installation and Notification of Test: The Contractor's testing personnel shall be responsible for the development and supervision of the installation and testing procedure used for the Statnamic test.

Load testing shall not begin until cylinder break testing has confirmed that the drilled shaft concrete has obtained the compressive strength as called for in the plans or contract documents. Testing to confirm the concrete strength shall be in conformance with Article 6.01.03 of the Form 816.

The Contractor and/or Contractor's testing personnel shall notify local officials (including but not necessarily limited to police and fire departments), nearby utilities and other individuals and entities that may be affected by the performance of the Statnamic load test. Such notice shall be given sufficiently in advance of the test so as to address any concerns or issues raised by those notified. The notice shall include, but not necessarily be limited to; location of the test; date and time frame of test; anticipated noise levels; etc.

The Contractor and the testing personnel shall also insure that the test complies with Articles 1.02.13, 1.07.01, and 1.07.02 of the Form 816.

4. Testing and Reporting: The testing personnel shall acquire the test data during testing and culminate the Statnamic data into a report. The report will be presented to the Engineer. All required electronic equipment for the recording, processing and storage of the Statnamic test will be operated by the testing personnel.

The criteria described herein shall be used to establish the failure load of axial Statnamic load tests unless shown otherwise on the approved working drawings. The Unloading Point Method shall be used to construct the static load versus displacement diagram. The axial failure load is defined as the static load that causes a shaft top deflection equal to the calculated elastic compression plus 1/30 of the minimum shaft diameter or as directed by the engineer.

A report providing all data readings and plots of the readings, as well as a determination of the end bearing and friction/adhesion of the rock shall be submitted to the Engineer for review. An initial data report containing the load-movement curves and test data shall be provided to the Engineer within 4 working days of the completion of load testing, to allow evaluation of the test results. A final report of Statnamic Load Testing shall be submitted to the Engineer within seven 7 working days after completion of the load testing. As a minimum, the report shall include the following:

- (a) As-installed location of the test shaft.
- (b) Logs of test borings conducted at the test shaft location.
- (c) Installation records of test shaft showing locations of all instrumentation.
- (d) Summary of the load test procedure and data collected during load testing.
- (e) Analysis of unit side adhesion in the test socket and unit end-bearing pressure.
- (f) Plots of axial load versus displacement at the base of the shaft, and axial load versus displacement and/or strain along the test socket.

Method of Measurement:

The “Statnamic Axial Load Testing of Drilled Shaft” shall be measured by the actual number of test(s) completed and accepted, and shall include and material, labor and equipment necessary for the Statnamic load testing of the drilled shaft(s). This item should include everything necessary to assemble, install and remove the load test apparatus, conduct and report results of the load test. All costs associated with the normal production of the drilled shafts are measured and paid for elsewhere in the contract documents.

Basis of Payment:

The Statnamic load tests shall be paid for at the contract unit price for each accepted “Statnamic Axial Load Testing of Drilled Shaft”. The price and payment shall be considered full compensation for furnishing all materials, providing all tools, equipment, labor and incidentals to perform the Statnamic load test, subsequent removal of test apparatus and appurtenances, and preparation of the load test report.