



Micropiling – Quality Control – Load Testing

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	04-22-2019	Original issue.	Steve Altman

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Background

This process establishes Structure Construction (S.C.) responsibilities and procedures for micropile load testing performed by the Contractor, including arrangements for the Department to verify the test loads using Department furnished load cells.

Additional unique requirements for Micropiling are detailed in:

- Bridge Construction Memo ([B.C.M. 49-5.01C](#)), *Micropiling – Submittals*.
- [B.C.M. 49-5.01D\(5\)](#), *Micropiling – Quality Assurance – Department Acceptance*.

Prior to reviewing this B.C.M., it is essential to review the [Contract Specification](#), Section 49-5.01D(4)(c), *Micropiling – Quality Control – Load Testing*, applicable to your specific project, that this B.C.M. is based on, as identified in the title block above. The information in the contract specifications typically will not be repeated in the text of this B.C.M.

Process Inputs

1. Authorized micropile submittals.
2. Contractor notification of load testing operation.
3. Grout test results for each load test pile.

Procedure

1. All work associated with this process is charged as [Project-Direct – Construction](#).
2. Inspection of field work for this process is:
 - a. [Continuous](#) for all Contractor-performed micropile load testing.
3. For technical assistance during load testing contact the:
 - a. Structure and Geotechnical Designer.
 - b. S.C. Substructure Engineer and B.C.E.
4. Before construction begins:
 - a. Review contract documents including the:
 - i. Special Provisions for load testing and verification requirements.
 - ii. American Society for Testing and Materials (A.S.T.M.) test methods specified in the contract documents.
 - iii. Authorized shop drawings and installation plan per [B.C.M. 49-5.01C](#), *Micropiling – Submittals*.
 - b. Review the *Foundation Manual*, [Chapter 13](#), *Micropiles*, [Appendix J](#), *Micropiles*, and [Appendix K5](#), *Micropile Checklist*, for information pertinent to load testing of micropiling.
 - c. Verify grout has attained the compressive strength specified in the contract documents.
 - d. Remind the Contractor to notify the Engineer prior to performing each load test.
 - e. Discuss with the Foundation and Instrumentation Branch (F.T.I.), the availability and schedule for verification of test loads using Department-furnished load cells or performing load testing (if applicable).
 - f. Verify that Department-furnished load cells are calibrated.
 - g. Obtain training from F.T.I., if necessary, on how to operate the calibrated load cells.
 - h. Notify the Contractor to furnish the resources necessary to install and support the Department's testing equipment at the load testing location and to remove the equipment after the testing is complete, upon the request of the S.R.
 - i. Review the project-specific Code of Safe Practices and [Foundation Manual](#), [Chapter 13-2.9](#), *Safety*, for micropiling operation.
 - j. Verify that the Contractor can record load test data.

5. During construction:
 - a. Be present at the jobsite during load testing.
 - b. Verify that the Contractor's testing equipment complies with the authorized micropiling submittals.
 - c. Verify that the Contractor measures and records the micropile movements for both verification and proof loading testing per the tables in the contract documents.
 - d. Document all inspection, construction, and quality assurance activities, including load testing work, in the Daily Reports per [B.C.M. C-4.04](#), *Daily and Weekly Reports*.
6. Following construction:
 - a. Verify load test data are sealed and signed by an engineer who is registered as a civil engineer in the State of California.
 - b. For interpretation of load test data (acceptance/rejection), refer to [B.C.M. 49-5.01D\(5\)](#), *Micropiling – Quality Assurance – Department Acceptance*.
7. File all load test data and Daily Reports in the appropriate category in the project records as specified in the *Construction Manual*, [Section 5-102](#), *Organization of Project Documents*.

Process Outputs

1. Load Test Data
2. Daily Reports

Attachments

None