

SECTION 01 45 00

QUALITY CONTROL

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Contractor's construction quality plan.
- B. Contractor's quality control representative.
- C. Engineer's monitoring.
- D. Engineer's inspections and tests.
- E. Contractor's quality control testing.
- F. Test reports.
- G. Quality control audits.
- H. Certificates of compliance.

1.02 MEASUREMENT AND PAYMENT

- A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

1.03 SUBMITTALS

- A. General: Refer to Section 01 33 00 - Submittal Procedures, for submittal requirements and procedures.
- B. Construction Quality Plan: Submit the Contractor's proposed Construction Quality Plan in advance of the Pre-Construction meeting specified in Section 01 31 19 - Project Meetings. The Contractor's Construction Quality Plan will be reviewed by the Engineer, who will provide comments to the Contractor within 20 days after its submittal. The Contractor shall revise its plan in accordance with the review comments and resubmit as required. The Contractor shall perform the Work in accordance with the approved plan.
- C. Construction Quality Control Representative: Submit to the Engineer for approval, within ten days after the effective date of the Notice to Proceed, the name, qualifications, experience, and resumé of the Contractor's proposed Construction Quality Control Representative as specified in Article 1.06 herein.

1.04 SOURCE OF MATERIALS

- A. In accordance with Section 01 33 23 - Shop Drawings, Product Data, and Samples, the Contractor shall notify the Engineer in writing of the sources from which the Contractor proposes to obtain materials requiring District approval, certification, or testing.

1.05 CONTRACTOR'S CONSTRUCTION QUALITY PLAN

- A. The Contractor shall prepare a Construction Quality Plan which shall identify the Contract quality requirements for each activity and describe how the Contractor intends to furnish that quality, including control testing, certifications, and records which the Contractor intends to provide.
- B. The Contractor shall obtain approval from the Engineer of the Construction Quality Plan within 60 days after the Contractor's receipt of the Notice to Proceed. The Contractor shall obtain approval from the Engineer for Quality Plans for early activities prior to the start of such activities. Such plans shall be incorporated later in the overall Construction Quality Plan. The Construction Quality Plan shall include, but not be limited to, the following elements:
 - 1. Training of personnel;
 - 2. Installation, inspection, examination, and test control;
 - 3. Control of measuring and test equipment;
 - 4. Material control;
 - 5. Control of non-conforming items;
 - 6. Subcontractor controls;
 - 7. Supplier and vendor controls;
 - 8. Documentation and records control;
 - 9. Special process control; and
 - 10. Facility turnover.

1.06 CONTRACTOR'S QUALITY CONTROL REPRESENTATIVE

- A. The Contractor shall assign a Quality Control Representative to monitor the quality of construction activities.
- B. In addition to persons performing or directly supervising the Work, the Contractor shall use qualified persons for quality verification and audits. These employees shall be free from the pressure of costs, construction scheduling, and production, and shall have the necessary authority to perform their roles effectively.
- C. The Contractor shall define the responsibility and authority of personnel primarily responsible for performing quality verification and audits. Include responsibility and authority to perform the following:
 - 1. Identify and record nonconforming items or conditions;
 - 2. Initiate and recommend correction through appropriate channels;
 - 3. Verify correction or implementation of solutions to correct nonconforming items or conditions; and
 - 4. Prevent or control further nonconformance.

1.07 ENGINEER'S MONITORING

- A. The Engineer will perform surveillance inspection of the Contractor's on-site construction activities. Surveillance inspection consists of a review, observation, or inspection of Contractor personnel, material, equipment, processes, and test results, performed at random or at selected

stages of the construction operations. The purpose of surveillance inspection is to determine if an action has been accomplished or if documents have been prepared in accordance with selected requirements of the Contract Documents.

- B. The Contractor shall provide access to the Work and shall furnish the Engineer reasonable facilities for obtaining such information as may be necessary to be fully informed of the quality and progress of the Work.
- C. Surveillance inspection does not take the place of the Contractor's quality programs or assume any responsibility for such programs or the quality of the Work. The Contractor shall establish its own quality program, perform the required inspections, and provide the necessary documentation to assure that acceptable quality has been achieved. The Contractor is responsible for specifying and controlling the quality of work performed by its Subcontractors.

1.08 ENGINEER'S INSPECTIONS AND TESTS

- A. The Engineer may perform inspections and tests as necessary to determine the Contractor's compliance with Contract requirements. The Engineer may perform such additional inspections and tests as it deems necessary to verify compliance with Contract requirements.
- B. For inspections and tests by the Engineer, the Engineer will provide the services of a qualified testing laboratory, soils engineer, or inspector, selected and paid for by the District.
- C. The District-employed testing laboratory will supervise the preparation and selection of samples required for testing.
- D. The Contractor shall provide such facilities and assistance as the testing laboratory may require for obtaining the necessary samples.

1.09 CONTRACTOR'S QUALITY CONTROL TESTING

- A. Scope: The Contractor shall perform quality control inspections and tests as necessary to ensure compliance with Contract requirements.
- B. Testing Services:
 - 1. Quality control testing is the testing of materials prior to their delivery from a manufacturer, or during construction, such as soils compaction tests, load tests, concrete tests during placement, concrete strength tests, pipe leakage tests, and such other tests as are specified in the various Sections of the Specifications to ensure compliance with the Contract Documents. The Contractor shall assume full responsibility for quality control testing and shall give sufficient notice to the Engineer to permit the Engineer to witness the tests. Quality control testing shall be at the expense of the Contractor and shall be performed by a Contractor-employed independent testing firm.
 - 2. The Contractor shall submit the name, address, and qualifications, together with the scope of proposed services, of the proposed testing firm to the Engineer for approval at least 30 days prior to the scheduled commencement of any work involving such testing. Should the Contractor desire to use more than one firm for quality control testing, the required information shall be submitted for each such proposed firm.

- C. Laboratory Tests: All laboratory testing shall be performed by an independent, qualified testing laboratory approved by the Engineer. The selected laboratory shall employ the proper equipment and qualified testing personnel for the testing specified in these Specifications. The Contractor shall obtain the Engineer's approval of the testing equipment and personnel. The Engineer may monitor the operations to ensure that tests are being performing in accordance with approved procedures and in compliance with these Specifications.
- D. Qualification of Laboratory Testing Personnel: Personnel performing laboratory tests shall be qualified for such work by virtue of prior experience and training.
- E. Testing Equipment: Testing equipment shall be in satisfactory operating condition, of adequate capacity and range, and accurately calibrated. Testing equipment shall be calibrated in accordance with national standards which are certified by the National Institute of Standards and Technology. Testing equipment shall be calibrated at the frequency recommended by the equipment manufacturer.
- F. Test Program Plan:
 - 1. A Test Program Plan shall be prepared, identifying the approach for accomplishing each of the specified tests. A narrative shall be prepared for each test specified, describing the test set-up, equipment, and instrumentation that will be used; procedure to be implemented; and the anticipated, as well as acceptable, test results. Drawings showing the relationship of the test sample and all significant components of the test equipment shall be included, as necessary, to describe the test set-up and procedure. The Test Program Plan shall include the test sequencing.
 - 2. Equipment specifications and calibration methods for all testing equipment shall be included in the Test Program Plan.
 - 3. Identity and qualifications of personnel who will perform testing shall be included in the Test Program Plan.
 - 4. The Test Program Plan shall include the proposed format for reporting test data.
 - 5. The projected schedule for test procedure submittals, test executions, and test results' report submittals shall be included in the Test Program Plan.
 - 6. After approval of the Test Program Plan, any proposed changes will require approval of the Engineer prior to implementing the change.

1.10 TEST REPORTS

- A. Within five days after completion of testing performed by or for the Contractor, submit test results of such tests to the Engineer. Identify test reports with the information specified for submittals in Section 01 33 00 - Submittal Procedures, and, additionally, the name and address of the organization performing the test, and the date of the tests. Test reports shall include the following information:

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1. Actual test results compared with the Contract requirements and identification of all non-conforming items.
 2. Calibration Certificates.
- B. The Engineer will make available to the Contractor copies of all test reports of tests performed by the Engineer.

1.11 QUALITY CONTROL AUDITS

- A. The Engineer may perform quality control audits of the Contractor's, Subcontractor's, and Supplier's quality records and performance. The Contractor shall ensure that all quality control records and places of work are open and available to the Engineer for inspection. The Engineer will give 30 days notice of intention to audit specific activities or installations.
- B. The Contractor, Subcontractor, or Supplier being audited shall be available during the audit as required by the audit team.

1.12 CERTIFICATES OF COMPLIANCE

- A. The Contractor may use certificates of compliance for certain materials and products in lieu of the specified sampling and testing procedures. Submit any certificates required for demonstrating proof of compliance of materials with specification requirements with each lot of material delivered to the Work. The lot so certified shall be clearly identified by the certificate. Certificates shall be signed by an authorized representative of the producer or manufacturer and shall state that the material complies in all respects with Contract requirements.
- B. The Project CPM Schedule specified in Section 01 32 16 - Construction Progress Schedule, shall indicate the date scheduled for the submittal of certificates. In the case of multiple shipments, each of which shall be accompanied by a certificate of compliance, the scheduled date on the Project CPM Schedule shall indicate the initial submittal only.
- C. The certificate of compliance shall be accompanied by a certified copy of test results or shall state that such test results are on file with the producer or manufacturer and shall be furnished to the District on request. The certificate shall give the information specified for submittals in Section 01 33 00 - Submittal Procedures, the name and address of the organization performing the tests, the date of the tests, and the quantity of material shipped.
- D. Materials used on the basis of a certificate of compliance may be sampled and tested by the Engineer at any time. The fact that material is used on the basis of a certificate of compliance shall not relieve the Contractor of its responsibility for incorporating material in the Work which conforms to the requirements of the Contract, and any such material not conforming to such requirements will be subject to rejection, whether in place or not.
- E. The District reserves the right to refuse to permit the use of certain materials on the basis of a certificate of compliance.

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PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 45 00