

SECTION 01410

TESTING LABORATORY SERVICES

1.0 GENERAL

1.1 CONDITIONS

- A. Testing, inspection, and control of materials required by these specifications shall be performed by a commercial testing laboratory meeting the specified requirements.
- B. Owner will select and pay for services of commercial testing laboratory to perform density tests for field control and to perform the various laboratory testing services necessary for field control of the work as specified in respective specification sections, except Contractor shall pay for services of commercial testing laboratory approved by Owner to perform the following:
 - 1. Pipe diameter deflection tests on all flexible and semi-rigid sanitary sewer collection system pipe installation.
 - 2. Testing of systems or partially completed systems, such as testing of water and sewer systems, water supply and drainage systems, air systems, electrical systems and grounding systems.
 - 3. Laboratory services required to establish mix design proposed for use for Portland cement concrete, asphaltic concrete mixtures, and other material mixes requiring control by testing laboratory.
 - 4. Analysis of aggregates, fixing gradations, and the preparation and testing of design cylinders, beams, or specimens, and other services required to establish design or redesign of material mixes requiring control by testing laboratory when required because of change in source of materials or other conditions not caused by Owner.
 - 5. Tests required to establish optimum moisture of earth and base materials and to determine required compactive effort to meet density requirements (Contractor shall pay for all proctor curves to establish optimum moisture and Owner shall pay for all density tests).
 - 6. Cores to test for thickness of paving that are performed at Contractor's election.

7. Testing and inspection performed for the Contractor's convenience.
 8. Retesting and repetitions of laboratory services when initial tests indicate work does not comply with requirements of Contract Documents.
- C. Specified testing frequencies are recommended standards, and may be increased or decreased by the Owner or Owner's Representative as deemed necessary for quality control of materials and the work.
 - D. Reports and commentaries by testing laboratory shall in no way relieve Contractor of his obligation to perform work in full compliance with standards and provisions of the Contract Documents.
 - E. The Contractor shall not be relieved of his obligation to perform work in full compliance with the standards and provisions of the Contract Documents by reason of the Owner's performance in testing or refraining from testing the work.
 - F. Owner reserves right to take samples and specimens, and conduct tests on material and work provided by Contractor to assure quality control.

1.2 REQUIREMENTS OF LABORATORY

- A. Meet basic requirements of ASTM E329, latest edition.
- B. Testing Equipment: Calibrated at maximum twelve month intervals by devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.
- C. Testing laboratory is only required to have testing facilities for work included in this project.
- D. Submit copy of report of inspection of facilities made by Materials Reference Laboratory of National Bureau of Standards during most recent tour of inspection.
- E. Submit memorandum of remedies of any deficiencies reported by inspection.

1.3 LABORATORY DUTIES AND LIMITATIONS OF AUTHORITY

- A. Cooperate with Owner's Representative, Owner and Contractor.
 1. Unless directed by Owner or Owner's Representative, types and frequencies of tests as specified in specifications sections for field quality control shall not be exceeded.

2. Owner may not accept charges for tests in excess of types and frequencies specified in specifications sections unless authorized by the Owner's Representative or Owner.
 3. Charges for tests to be paid for by Owner shall be submitted promptly to Owner's Representative to allow adequate time for his review before time for payment by Owner.
 4. Unless otherwise directed or stipulated, samples, specimens, and field test locations shall be selected under the control of the Owner's Representative.
- B. Provide qualified personnel promptly on notice.
- C. Perform required inspections, sampling, and testing of materials and methods of construction, including making and curing concrete test specimens.
- D. Ascertain Contractor's compliance with specifically named standards of the Contract Documents.
- E. Comply with specified testing and sampling standards, or recognized authoritative testing and sampling standards when none are specifically named in the Specifications.
- F. Immediately notify Owner's Representative, Owner and Contractor of irregularities or deficiencies of work which are observed during performance of services. Immediately is defined as the same day that the irregularity or deficiency is determined and shall be in person, by telephone or by e-mail.
- G. Promptly distribute copies of reports of inspections and tests:
1. Owner: One copy.
 2. Owner's Representative: One copy.
 3. Contractor: Two copies.
- H. Perform additional services as required by Owner.
- I. Laboratory is not authorized to:
1. Revoke, alter, enlarge on, or waive requirements of Contract Documents.
 2. Approve or accept any portion of work.

3. Reject or stop work, but only shall notify Owner's Representative or his representative of any failure, deficiencies, or irregularities immediately.
4. Perform any duties of Contractor.

1.4 CONTRACTOR'S RESPONSIBILITIES

- A. Before starting to use proposed design mix and mix materials in construction, arrange for testing of design mixes and mix materials for Portland cement concrete, asphaltic concrete, and other material mixes requiring control by testing laboratory.
- B. Cooperate with laboratory personnel, provide access to work, and to construction and fabrication operations.
- C. Provide samples of materials to be tested in required quantities.
- D. Provide adequate on-site storage area for testing laboratory.
- E. Furnish copies of mill test reports for the materials being used on the job when requested by Owner's Representative.
 1. Mill certificates will be acceptable when it is definite that certified mill test sheets apply to the material being supplied.
- F. Furnish labor to provide access to work to be tested, to obtain and handle samples at site, and to facilitate inspections and tests.
- G. Notify laboratory and Owner's Representative 48 hrs. minimum in advance of operations requiring control by testing laboratory, to allow for assignment of personnel and scheduling of tests.
- H. Contractor shall notify the Laboratory and Owner's Representative immediately upon discovery of conditions or circumstances requiring cancellation of work.
- I. Arrange with laboratory and pay for:
 1. Retesting required for failed tests.
 2. Retesting for nonconforming Work.
 3. Additional sampling and tests requested by Contractor beyond specified requirements.

4. Insufficient notification of cancellation of tests for work scheduled but not performed.

1.5 SPECIFIC TESTS, INSPECTIONS AND METHODS REQUIRED

- A. Certification of Products: As required by respective specification sections.
- B. Test, Adjust and Balance of Equipment: As required by respective specification sections.
- C. Sampling and Laboratory Tests: As required by respective specification sections.

END OF SECTION