

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Information required for conformance to regulatory requirements.
 - 2. Quality assurance.
 - 3. Procedures to measure and report the quality and performance of the Work.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
 - 1. All Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCE STANDARDS

- A. Whenever reference is made to the Minnesota Department of Transportation Specifications, such reference shall mean "Standard Specifications for Construction" 2020 Edition (MnDOT Spec.) and all subsequent revisions and supplements. The word "Engineer" is understood to refer to the Engineer for the Owner.

1.04 SUBMITTALS

- A. Prior to start of Work, submit testing laboratory name for various specified tests for approval by Engineer.
- B. Laboratory test results or analysis.
- C. Manufacturer's certificates of quality control or performance.

1.05 WORKMANSHIP

- A. Comply with industry standards of the region, except where more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

1.06 TESTS AND INSPECTIONS

- A. The Engineer will provide a Project Observer to ascertain that the work is accomplished properly and in accordance with the plans and specifications.
 - 1. The observer shall have full access to the work including but not limited to all areas of the site, the Contractor's shop or shops of his subcontractors, and shall be given full cooperation
 - 2. The inspector shall have the authority, subject to the final decision of the Engineer, to reject any defective work or material or to suspend the work if not being properly performed.
 - 3. The inspector shall have no authority to permit any deviation from the plans and specifications except on written order from the Engineer.

- B. The presence of the Engineer or any inspectors shall not relieve the Contractor of the responsibility for the proper execution of the work in accordance with all requirements of the Contract Documents.
- C. Compliance is a duty of the Contractor and shall not be avoided by any act or omission on the part of the Engineer or any inspectors.

1.07 SCOPE OF TESTS

- A. All materials, equipment, installation, and workmanship included in this contract, as required by the Engineer, shall be tested and inspected to prove compliance with the contract requirements.
- B. No tests specified herein shall be applied until the item to be tested has been inspected and approval given for the application of such tests.
- C. Tests and inspections shall include:
 - 1. The delivery acceptance tests and inspection.
 - 2. The installed tests and inspections of items as installed.
 - 3. Final testing and start-up.
- D. Tests and inspection shall be in accordance with the recognized standards of the industry.
- E. Owner shall conduct field tests on his work as required to comply with applicable codes, to determine acceptability of workmanship, and as specified including but not limited to the following:
 - 1. Concrete construction as specified in 32 13 14, Compression Tests.
 - 2. Engineered backfill as specified in 31 23 00.
 - 3. Preliminary test and checks associated with placing equipment and systems into service.
 - 4. Thickness tests on painting.
 - 5. Leakage testing for tank.
 - 6. Mill test report.
 - 7. Other tests as defined in the specifications.
- F. Tests will be taken according to the current Mn/DOT Schedule of Material Controls included in the project manual. If one is not included in the project manual, the Mn/DOT Schedule of Material Controls at the time of the bid opening shall be followed.

1.08 EVIDENCE OF TEST

- A. The form of evidence of satisfactory fulfillment of delivery acceptance test and of installed test and inspection requirements shall be:
 - 1. By tests and inspections carried out in the observer's presence
 - 2. By certificates or reports of tests and inspections carried out by approved persons or organizations.

1.09 DELIVERY ACCEPTANCE TESTS

- A. The delivery acceptance tests and inspections shall be at the Contractor's expense for any materials or equipment specified herein and shall include the following:
 - 1. Test of items during the process of manufacture and/or on completion of manufacture comprising of
 - a. Material test
 - b. Hydraulic pressure tests
 - c. Electric tests

- d. Performance and operating tests
 - e. Inspections in accordance with the relevant standards of the industry
 - f. Detailed individual clauses of these specifications or as may be required by the Engineer to satisfy himself that the items tested and inspected comply with the requirements of this contract.
2. Inspection of all items delivered at the site in order that the Engineer may be satisfied that such items are of the specified quality and workmanship and are in good order and condition at the time of delivery.

1.10 INSTALLED TESTS AND INSPECTIONS OF ITEMS AS INSTALLED

- A. All equipment shall be tested by the Contractor to the satisfaction of the Engineer before any facility is put into operation.
- B. Tests shall be as specified herein and shall be made to determine whether the equipment has been properly assembled, aligned, adjusted, and connected.
- C. Any changes, adjustments, or replacements required to make the equipment operate as specified shall be carried out by the Contractor as part of the work.

1.11 FINAL TESTING AND START-UP

- A. At least 10 days before the time allowed in his construction schedule for commencing testing and start-up procedures, the Contractor shall submit to the Engineer, in duplicate, details of the procedures he proposes to adopt for testing and start-up of all equipment to be operated singly and together, excepting when such procedures have been covered in the specifications.
- B. Tests requiring water shall be conducted using clear water provided by the Contractor.
- C. Any portion of the work fails to fulfill the contract requirements and is altered, renewed or replaced, tests on that portion so altered, removed, replaced, together with all other portions of the work as are affected thereby, shall, if so required by the Engineer, be repeated within reasonable time and in accordance with the specified conditions. The Contractor shall pay to the Owner all reasonable expenses incurred by the Owner as a result of the carrying out of such tests.
- D. Final testing and start-up shall be combined with the instruction of operating personnel to the end that when final testing is completed, the stations can be turned over to the Owner in an operating condition and the City personnel will be prepared to continue the operation in an orderly manner. Instruction of operating personnel by manufacturer's representatives shall be performed during this period.
- E. Should the proposed (under separate contract) connection to the water distribution system be incomplete, the Contractor may utilize a flexible, above ground temporary connection to the distribution system.
 - 1. Cost of such connection shall be the Contractor's.
 - 2. Following final testing the temporary connection shall be disconnected and the tower left full or drained at the direction of the Engineer.

1.12 REPEAT TESTS

- A. In the case of an otherwise satisfactorily installed test, any doubt, dispute or difference should arise between the Engineer and the Contractor regarding the test results or the methods or

equipment used in the carrying out by the Contractor of such test, then the Engineer may order the test to be repeated.

- B. If the repeat test, using such modified methods or equipment as the Engineer may require, substantially conforms the previous test, all costs in connection with the repeat test will be paid by the Owner; otherwise, the costs shall be borne by the Contractor.
- C. If results of any installed test fail to comply with the contract requirements for such test, then such repeat tests as may be necessary to achieve the contract requirements shall be made by the Contractor at his own expense.

1.13 TESTING AND LABORATORY SERVICES

- A. Independent Testing Laboratory: **All testing shall be coordinated by the Owner.** The Owner arrange for the services of an approved independent testing laboratory satisfactory to the Engineer to perform the testing utilizing recognized standard procedures and criteria. **The Owner will be responsible for costs associated with these tests. Additional tests required due to failing tests will be at the expense of the Contractor.** Testing rates will be according to the current MN/Dot Schedule of Materials Control.
- B. Reports and Certificates: The Contractor shall submit reports and certificates of all inspections and test to Engineer to duplicate. The reports and certificates become the property of the Owner.
- C. Sample Materials: The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by them.
- D. Additional Tests: Any additional tests required beyond these required under this specification may be ordered by the Engineer to settle disagreements with the Contractor regarding quality of work done. If the work is defective, the Contractor shall pay all costs of the extra tests and shall correct the work. If the work is satisfactory, the Owner will pay for extra tests.

1.14 SITE INVESTIGATION AND CONTROL

- A. The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction.
 - 1. The Contractor shall be solely responsible for any inaccuracies built into the work due to his failure to comply with this requirement.
- B. The Contractor shall inspect related and appurtenant work and shall report in writing to the Engineer any conditions, which will prevent proper completion of the work.
 - 1. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair or replacement caused by unsuitable conditions shall be performed by the Contractor at their expense.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 RIGHT OF REJECTION

- A. The Engineer acting for the Owner shall have the right at all time and places to reject any articles or materials to be furnished which in any respect fail to meet the requirements of these specifications, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completions of the work at the site.
- B. If the Engineer or inspector has accepted materials or work which is defective or which is contrary to the specifications no matter in what stage or condition of manufacture, deliver, or erection, may be rejected by the Engineer for the Owner.

END OF SECTION