

DESCRIPTION

This work shall consist of furnishing and installing Steel Mister Spray Fixture in accordance with the contract documents and as directed by the Engineer.

MATERIALS

Footings: Shall be 3,200 psi average Class A concrete meeting the requirements of Subsection 501 – Portland Cement Concrete – General.

Steel Mister Spray Fixture:

Manufacturer: Model No. 501 as manufactured by:
Aquajoux International, Inc.
Ste-Julie (Quebec) J3E 1Y2
1-888-441-2040
or approved equal as determined by the Engineer

Spray fixtures shall be made of class 304L Stainless Steel schedule 10 meeting the requirements of ASTM A240, 150 mm outside diameter pipe x 2.4 m high above ground. The fixture is provided with a 38 mm NPT female threaded coupling for connection to water supply. The Fixture is welded to a 300 mm x 300 mm x 9.52 mm thick Stainless Steel plate for anchoring to concrete. A 6.35 mm threaded hole is provided on the Stainless Steel mounting plate for grounding. The fixture is also available in a surface mount configuration.

Each Fixture shall have a 38 mm MIP threaded water inlet connection.

Spray Fixture Nozzles: Nozzles shall be made of brass. Each Steel Mister Spray Fixture-Custom comes with 9 nozzles, with a rate of 7.95 LPH each, at 1.41 kg/cm². (71.5 LPH at 1.41 kg/cm² for all 9 nozzles).

Coating: Fixtures shall receive a UV resistant two-layer non-toxic polyester powder coat. The color shall be black, unless otherwise indicated on the plans.

Copper Tubing: The water service pipe shall be hard temper Type "K" copper tubing meeting the Department of Purchase Specification No. 32-T-1.64 and ASTM No. B88-1974. All tubing and fittings shall be as specified and paid for in the 'Copper Tubing' Item.

Fittings: Fittings shall be approved red brass, Class 'A' threadless type, containing no less than eighty five percent (85%) copper adaptable for copper tubing.

Hardware: All hardware, fittings, and fastenings shall be as indicated on the shop drawings and as required to complete the installation. Anchors shall be stainless steel in the sizes required. Tamper proof hardware shall be stainless steel.

O & M Manual & Videotape: The Contractor shall furnish six (6) copies (see Submittals) of the O & M Manual (Operation & Maintenance Manual) for the spray shower system and the associated mechanical system. The manual shall include a checklist for trouble shooting and corrective measures in addition to operation and maintenance instructions. The Contractor shall also furnish an

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instructional video (VHS or DVD) of highlights of the O & M Training and Demonstration, including identification of components of the spray shower system.

EXTRA MATERIALS: The Contractor shall furnish (furnish only, not install) and deliver, to the Engineer additional new materials obtained from the approved spray equipment manufacturer. Contractor shall also furnish to the Engineer any catalogs, invoices, statements, etc. for verification that a complete set of all maintenance and operations manuals, Repair Kit tools, materials, etc. have been furnished. All furnished material shall be properly identified with the installation location. Extra new materials shall include the following:

1 (One) - Tools and Hardware Maintenance Repair Kit, complete with toolbox, fastener, tamper resistant tool wrenches for each nozzle size included with the equipment. The repair kit shall be clearly marked with the Contract Number and the Playground name. Marking shall be done with permanent magic marker or other method approved by the Engineer.

Shop Drawings: The Contractor shall submit Shop Drawings of the spray fixtures (including spray nozzles and colors) for approval.

Operation and Maintenance Manual: The Contractor shall furnish an Operation and Maintenance (O & M) Manual prepared in conjunction with the manufacturers of equipment in this specification. The O & M manual shall contain the following:

- 1) Description of system operation and operating modes.
- 2) Start-Up Procedures.
- 3) Troubleshooting and Repair Guide.
- 4) List of parts with their model numbers.
- 5) Electrical diagram showing the valve assembly, the controller, the activation bollard, the power supply, and all operating switches.
- 6) O & M Manual & Videotape: The six (6) copies of the Operation & Maintenance Manual and one (1) instructional videotape (all labeled with name of site and contract number) shall be delivered to the owner by the Engineer as follows:
 - One (1) laminated O & M manual
 - One (5) O & M manual and one (1) Instructional Videotape

CONSTRUCTION DETAILS

Activation Pneumatic Activated Valve: Push button activation. Shall be factory assembled to the fixture. Access door to permit access to the valve, protected by stainless steel tamper resistant screws. Operation time is adjustable from 30 to 120 seconds.

Copper Tubing: Copper tubing and fittings are to be supplied from valves on the water supply line to the fixtures, with the connection at the fixture to be made with a dielectric coupling.

Joints: Joints shall be made by soldering, using 95-5 tin antimony solder.

Excavating for Foundation: All excavation shall be cut accurately to required lines and dimensions for work on drawings, and shall be large enough to provide adequate clearance for the proper execution of the work within them.

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Cast in Place Footings Inspection: When the excavation has been carried to the required depth, as shown on the drawings, the Contractor shall do no more work until after the inspection by the Engineer, who shall order the foundation work to proceed, or further excavation as the conditions indicate, and no other work shall be done until the excavation has been approved by the Engineer.

Forms: Forms for footings shall be lined with exterior grade plywood. The formwork shall be coated with an approved oil or lacquer.

Curing: All finished concrete shall be protected and kept moist continuously for three days, as directed by the Engineer.

Water Feature Fixtures: Steel Mister Spray Fixtures shall be installed in accordance with the manufacturers written directions. Entire assemblies shall be installed in accurate locations, square and plumb on concrete footings and in required locations to surrounding finished grade, as shown on the plans. Anchor bolts shall be accurately set, plumb and true, in concrete footings, using templates supplied by the manufacturer.

Electrical work: Steel Mister Spray Fixture and its built-in mechanical controller should not require electric work.

Field Connection: All field connections shall be made by a Master Plumber licensed in the governing municipality for the project area.

Testing: Before backfilling, the entire system shall be pre-tested and inspected. This shall include maintaining full pressure on the entire system for no less than one hour. Following the pressure test, it is imperative that all components be flushed by running the water supply through the fixture for a period of time to ensure all debris has been removed from the entire system prior to installation of any nozzles and in the presence of the Engineer. Nozzles shall be secured to the spray fixtures utilizing the security tooling provided by the manufacturer and all work shall be performed to the satisfaction of the Engineer. After paving is completed, all nozzles shall be adjusted and secured for proper operation and spray patterns, to the satisfaction of the Engineer.

O & M Training and Demonstration: After testing is completed and approved by the Engineer, a training and demonstration session shall be held for the O & M staff. The installed spray feature system shall be demonstrated for the district O & M Staff. The demonstrations shall include manual and automatic operations. The demonstration shall also include identification and operation of each component, trouble shooting for each component, winterizing the system, removal and replacement of defective components, general and specific requirements for system maintenance, and a checklist for frequent attention of components. Highlights of the demonstration, including identification of components shall be videotaped for future O & M training.

METHOD OF MEASUREMENT

This work will be measured as the number of Steel Mister Spray Fixture satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.