

DESCRIPTION

This work shall consist of furnishing and installing STEEL TALK TUBES (NYCDPR) in accordance with the contract documents and as directed by the Engineer.

MATERIALS

Steel Talk Tubes shall be manufactured by Landscape Structures, Delano, MN; or Powerscape™, as manufactured by Gametime, Fort Payne, AL; or City Park Series™, as manufactured by Miracle Recreation Equipment Company, Monett, MO., or approved equal.

Footings shall be "Average Concrete". Footings shall be installed below grade so that a minimum of 38mm (1 1/2") of asphalt top course may be installed over the concrete. Any concrete at proposed grade shall be rejected and the work redone at no additional cost to the State.

Steel Members:

Posts: Posts and vertical members shall be Schedule 40 pipe or Structural Steel tubing as specified below. Tubing for posts shall have a minimum thickness of 3 millimeters.

Tube: Tube shall be steel, RS 20 pipe.

Tubular Steel: Tubular steel shall be structural tubing of the sizes and shapes shown in the approved shop drawings. Steel shall be treated for corrosion resistance by thermal spray zinc coating to a minimum external thickness of 3 mils. Steel shall meet the specification for ASTM designation A500, Grade B which has a minimum tensile strength of 400 Mpa (58,000 psi) (round and shaped) and a minimum yield point of 289 Mpa (42,000 p.s.i). for round structural tubing and a minimum yield point of 317 Mpa (46,000 psi) for shaped structural tubing.

Underground Tubing as shown on the plans shall be PVC pipe.

Hardware: All fittings and fastenings shall be as indicated on the approved shop drawings and as may be required to complete the installation. All fittings shall be of the best quality malleable iron, drop-forged steel.

Clamps and Fittings: Shall be cast aluminum or 12 gauge drawn quality or better steel and finished to match vertical components and shall be smoothly constructed with no projections or sharp edges. All clamps shall have tamper resistant fasteners and shall be pinned with a minimum of two (2) #10 "U" drive screws through to the vertical components as an additional precaution against slipping and twisting.

All bolts, lag screws, tie rods, threaded rods, nuts, washers, etc. shall be of the sizes indicated on drawings and/or approved on shop drawings, and shall be hot-dipped galvanized. All rivets and pins shall be cadmium plated.

CONSTRUCTION DETAILS

Note: Contractor shall install underground pipe before installing pavements.

Steel Fabrication: All steel components shall be welded in complete accordance with the standards of the American Welding Society. All welds shall be continuous around the entire perimeter.

All welds shall be ground smooth. **NO TACK WELDING AND NO FIELD WELDING SHALL BE PERMITTED.** After assembly, all steel shall be treated for corrosion resistance by thermal spray zinc coating to a minimum thickness of 3 mils.

Painting: Before painting, all fabrication and welding and corrosion resistant treatment shall be completed. Prior to application of the thermal spray coating all metal pieces shall be cleaned of all weld spatter, mill scale, varnish, rust, grease and the like, and the surface mechanically or chemically prepared to receive the thermal zinc coating. Paint shall then be applied to the thermal zinc coated metal pieces in such a manner that the paint will not peel off. The manufacturer shall perform all processes required to achieve a smooth paint bond. Paint shall be electromagnetic applied polyester powder coating applied to a minimum of 5 mil thickness which shall be oven cured at temperatures between 204 and 260 degrees Celcius for a period of 20 minutes.

Corrosion Resistant Treatment: All fabrication and welding shall be completed prior to application of the corrosion resistant coating, metal pieces shall be cleaned of all weld spatter, mill scale, varnish, rust, grease, and the like and the surface mechanically or chemically prepared to receive the coating. This corrosion resistant coating shall be either a thermal spray zinc coating with a minimum thickness of 3 mils, or a multi-step iron phosphate bath coating process.

Polyester Powder Coating: A surface coat shall be applied to the thermal zinc or iron phosphate coated metal pieces in such a manner that the coating will not peel off. The manufacturer shall perform all processes required to achieve a smooth material bond. The surface coat shall be an electrostatically sprayed, lead-free, TGIC (triglycidyl isocyanurate) polyester powder coating applied to a minimum of 5 mil thickness which shall be oven cured at temperatures between 204 and 232 degrees Celcius for a period of 20 minutes. The TGIC polyester powder coating shall be similar to Secural by Spraylat, Tiger Drylac Series 49 as manufactured by Tiger Drylac U.S.A., Reading, PA, or approved equal and shall comply with ASTM standards as follows:

<u>PHYSICAL PROPERTIES</u>	<u>TEST METHODS</u>	<u>ACCEPTANCE CRITERIA</u>
Adhesion cross hatching	D-3359B	5B (0% area removed)
Flexibility conical mandrel	D-522	Pass 10 mm (3/8") mandrel
Pencil hardness	D-3363	Pencil hardness 2H min.
Impact resistance	D-2794	15.8 N-m(140 inch lbs. min.)
Overbake resistance- Adhesion	D-2454	5B
Overbake resistance- Hardness	D-2454	Pencil hardness 2H min.
Overbake resistance- Direct Impact	D-2454	15.8 N-m(140 inch lbs. min.).

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Humidity resistance-250 hours	D-4585	No visible change to surface
Weatherability	D-822	No visible change to surface

Colors shall be as shown on the drawings. Submittals are required. Material manufacturer's directions for storage and use shall be adhered to. Material surfaces shall be protected during shipment so as to arrive, mar and scratch free in the field. Paint manufacturers directions for storage and use shall be adhered to. Painted surfaces shall be protected during shipment so as to arrive mar and scratch free in the field. Colors are to be as indicated on the drawings.

Talk Tube steel posts shall be set square and plumb in concrete footings as shown on the approved shop drawing. All work shall be done so that no hazardous projections shall be left in the finished work.

METHOD OF MEASUREMENT

This work will be measured on a lump sum basis.

BASIS OF PAYMENT

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

DISAPPROVED BY E1 12-001