

ITEM 022130

Item 0221301 - CONCRETE HAND HOLE TYPE I

Item 0221302 - CONCRETE HAND HOLE TYPE II

Item 0221303 - PRECAST POLYMER CONCRETE HAND HOLE TYPE I

Item 0221304 - PRECAST POLYMER CONCRETE HAND HOLE TYPE II

DESCRIPTION

This item shall consist of furnishing and installing or installing a City-furnished concrete hand hole of the type called for at the location and to the dimensions and details shown on the plans, or as ordered by the Engineer and in conformity with these specifications.

Concrete Hand Hole Type I refers to 30" x 30" hand holes and Concrete Hand Hole Type II refers to 30" x 14" hand holes. Concrete hand holes shall be precast concrete.

The Precast Polymer Concrete Hand Hole Type I refers to 17" (w) X 30" (d) X 30" (h) hand holes and Precast Polymer Concrete Hand Hole Type II refers to 24" (w) X 24" (d) X 24" (h) hand holes.

REFERENCED ITEMS

Items 0100801, 0102101, 010430 and 0106401

REQUIRED SUBMITTALS

Shop Drawings:

Submit 5 copies of shop drawings for hand holes and covers in accordance with the contract general requirements.

Material Certificate of Compliance:

Submit 5 copies of material certificate of compliance for hand holes and covers in accordance with the contract general requirements.

MATERIALS

The materials for this work shall conform to the following specifications.

Bituminous concrete shall conform to Item 0104703

Precast concrete shall conform to the material requirements of Article M08.02 of the State of Connecticut, Department of Transportation, Standard Specification for Roads Bridges and Incidental Construction (Form 816)

Topsoil, fertilizing, seeding & mulching: These items shall conform to Item 0106401. 3/4-inch crushed stone free from soft, disintegrated pieces, mud, dirt or other deleterious substances, conforming to item 0100801

Hand hole cover - The concrete hand hole covers shall be galvanized, non-skid floor plate steel which will have a minimum tensile strength of fifty thousand (50,000) pounds.

Precast Polymer Concrete Hand hole: Enclosures, covers and extensions shall be of monolithic material construction; components of dissimilar materials shall not be used. All products shall conform to all test provisions of ANSI/SCTE 77 "Specification For Underground Enclosures Integrity" for Tier 15 (heavy duty) applications. The following requirements shall apply:

All components in an assembly (box & cover) shall be manufactured using matched surface tooling. All covers are required to have a minimum coefficient of friction of 0.50 in accordance with ASTM C 1028. Enclosures are to be UL listed.

Covers shall be secured with two stainless steel bolts. Bolts shall be self retaining and shall withstand a minimum of 70 ft. lbs. torque and have a minimum 750 lbs. pull out strength. Nuts shall be floating and shall provide a minimum of 1/2" movement from the center of the nut.

The LOGO on the Polymer Concrete Hand hole shall indicate "Traffic Signal" for signalization projects unless shown otherwise on the Plans, and shall be indicated as such in the submitted shop drawing.

CONSTRUCTION METHODS

The precast hand hole of the size specified shall be installed as shown on the plans, which includes placement of 12 inches crushed stone before the installation of hand hole. The areas disturbed by the excavation for the hand holes shall be neatly graded to conform to the adjacent surface and contours. Where topsoil has been removed, it shall be replaced to its original depth (except that in no case shall this depth be less than four inches) and the area shall be fertilized, seeded and mulched.

Where hand holes are shown in sidewalk or paved areas, the concrete hand hole shall be set flush and the surrounding area shall be replaced with the same type of material as removed. These hand holes shall have no beveled edges.

Unless otherwise ordered by the Engineer, a hand hole cover plate (galvanized steel) of the size specified, shall be installed on each hand hole.

If specified on the plans, or in the standard details, hand holes shall be set on a concrete pad of minimum 3" to 4" thickness and matching the outside dimensions of the hand hole. This concrete pad shall be set on 12" of crushed stone.

When a cast iron cover is called for on the plans, it shall be paid for as a separate item. All conduits entering the hand hole shall be bonded together by means of a jumper running from ground bushings on the conduit ends. All open conduit entrances in the walls of precast hand hole shall be grouted to prevent the surrounding sand or dirt entering into the hand hole.

When hand hole is placed in sidewalk areas, the sidewalk shall be sawcut at the nearest joint and the complete slab(s) of sidewalk shall be removed and replaced. The replacement of sidewalk shall conform to the requirements specified under Item 0102101. When hand hole is placed in brick sidewalk areas, the sidewalk shall be restored matching the existing Pattern.

Precast Polymer Concrete Hand hole: Excavation shall be 12 inches deeper than finished grade level. With the box set in place, crushed rock or gravel shall be installed in the excavation to a depth of 12 inches and with cover installed, soil is to be back filled and compacted around the box. At final installation the box and cover shall be flush with finished grade. When the hand hole is placed in the sidewalk the back fill shall be replaced with the trap-rock as fill material.

METHOD OF MEASUREMENT

This work will be measured for payment by the number of hand holes of the type specified, complete and accepted in-place.

BASIS OF PAYMENT

This work will be paid for at the contract price each for "CONCRETE HANDHOLES TYPE (TYPE)" or "PRECAST POLYMER CONCRETE HAND HOLE (TYPE)" of the type called for, complete in-place, which price shall include a precast concrete hand hole, concrete pad, cover, crushed stone, excavating, backfilling and replacement of all surrounding areas including sidewalk, pavement, grading and placing topsoil, seeding, fertilizing, mulching and equipment, tools, labor and work incidental thereto. The contract unit price shall also include locating and intercepting existing conduit at those locations shown on the plans, and cutting exiting conduit and installing copper bonding jumpers in accordance with the details.

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0221301	Concrete Hand Hole Type I	EA
0221302	Concrete Hand Hole Type II	EA
0221303	Precast Polymer Concrete Hand Hole Type I	EA
0221304	Precast Polymer Concrete Hand Hole Type II	EA