ROAD COMMISSION FOR OAKLAND COUNTY

SPECIAL PROVISION
FOR
HANDHOLE, ROUND

a. Description

This work consists of constructing a round handhole, and providing hardware, connectors, fittings, cast iron frame, cast iron ring and cover, mastic sealer, excavation, backfill, and removal of waste excavated material, and all materials necessary to complete the work.

This work must be done in accordance with sections 818, 820, and 918 of the Standard Specifications for Construction, except as herein provided.

b. Materials

Provide material in accordance with section 918 of the Standard Specifications for Construction.

1. Provide handhole with live loads in accordance with the requirements of AASHTO HS 20 for wheel loading.

2. Provide Grade 4500 concrete in accordance with section 1004 of the Standard Specifications for Construction.

3. Provide smooth or deformed welded wire fabric in accordance with *ASTM A185/A185M or ASTM A497/A497M.*

4. Provide reinforcing steel in accordance with the requirements of *ASTM A615/A615M*, Grade 60 rebar, if required. Bend bars and place in accordance with the latest *ACI* standards.

5. Provide integral wall and base.

6. Provide round frame and round cover:

    A. Provide a heavy-duty frame and cover manufactured by East Jordan, Neenah Foundry, or a Department approved equal, with “TRAFFIC SIGNAL” cast into the cover.

7. Provide 2-foot diameter precast handhole with the following characteristics:

    A. Construct per MDOT detail SIG-240-A dimensions except as herein provided:
        (1) One, 6-inch opening in the base for a sump drain hole.
        (2) Walls with four tapered knock-outs for conduits entering the handhole, 12 inches in diameter.

8. Provide 3-foot diameter precast handhole with the following characteristics:

    A. Construct per MDOT detail SIG-240-A dimensions except as herein provided:
        (1) One, 6-inch opening in the base for a sump drain hole.
        (2) Walls with four tapered knock-outs for conduits entering the handhole, 12 inches in diameter.

9. Grounding Rod

    A. Provide a copper clad steel grounding rod with a diameter of at least ¾ inch and a length of at least 10 feet, with no more than 10 ohms resistance to ground.

    Use a ground rod that meets the requirements of subsection 918.02.C of the Standard Specifications for Construction.

10. Granular Material Class II – per section 902 of the Standard Specifications for Construction

11. Butyl rubber sealant that conforms to ASTM C990 - Place the butyl sealant between the bottom of the heavy-duty frame and concrete.

c. Construction

Complete this work in accordance with sections 818, 820, and 918 of the Standard Specifications for Construction, as shown on the plans, and as directed by the Engineer.

1. Submittals / Working Drawings

If requested by the Engineer, submit a detailed dimensional drawing of all equipment, material specification list which shows the materials to be used, equipment to be furnished, and assembly/installation method.

2. General

   Construct the handhole to accept a heavy-duty frame and cover centered on top of the handhole. Ensure the inner surface of handhole is smooth.

   The handhole must be delivered and unloaded at the job site in good condition. Any cracked or otherwise damaged units shall not be accepted, nor shall any reimbursement be made for delivery or pick-up of damaged units.

   The handhole must be installed so the top of the frame and cover is level or flush with finish grade level, as directed by the Engineer.

   All conduits entering the handhole must be installed in the provided terminators or in individually bored holes. Conduits installed in bored holes must be properly spaced, cut flush with the interior face on the wall and must be grouted from the outside of the handhole. Attach end bells on the ends of conduits entering handholes to prevent damage to the cable.

3. Grounding Rod
   The grounding rod must be installed centered in the sump opening. The ground rod must be installed with 12 inches of exposed rod above the bottom of the handhole.

4. Backfill
   Install the handhole on compacted 6 inches of Class II granular material. Granular Class II material shall be used in backfilling all handholes that fall within the 1:1 influence lines from the edge of pavement or back of curb. All material must be compacted. The Engineer will determine whether excavated material meets the backfill requirement. Use Class II granular material if the Engineer determines that excavated material does not meet the backfill requirement.

d. Measurement and Payment

The completed work, as described, will be measured and paid for at the contract unit price using the following pay item(s):

Pay Item	**Pay Unit**
Hh, Round, 2 foot dia, RCOC	Each
Hh, Round, 3 foot dia, RCOC	Each

Hh, Round, __ foot dia, RCOC (Ea) includes all costs for, but not limited to, constructing a round handhole and providing hardware, connectors, fittings, cover and all material necessary to complete the work. The contract unit price shall be payment in full for furnishing and installing all materials including frame and cover, ground rod(s), steel reinforcement and sewer grade ring, sealing the joints with mortar, and all required material to build the structure complete. Where existing cables are maintained in new manholes or handholes additional cable shall be spliced into the cable for proper racking on the manhole or handhole walls. Excavation, granular material backfill, compaction, breaking away concrete encasement and conduit where new manholes or handholes are broken into an existing conduit run and disposal of waste excavated material is also included in the item and will not be paid for separately. The unit prices for handhole pay items include the cost of removing concrete encasement and conduit where new manholes or handholes access an existing conduit run as indicated on the plans and installing cable racks and hooks.