

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
COMMUNICATION INFRASTRUCTURE RECONFIGURATION

ITS:EG

1 of 3

APPR:MS:JVG:03-29-23

FHWA:APPR:04-12-23

a. Description. This work consists of cleaning and testing empty conduit innerduct, cleaning electrical or communication handhole(s), and/or installing a new conduit into the following existing infrastructure:

1. The foundation or base adapter of a ground-mounted cabinet; or
2. A pole-mounted cabinet; or
3. A handhole.

b. Materials. Furnish materials in accordance with section 818 of the Standard Specifications for Construction.

c. Construction.

1. Handhole Cleaning.

A. Pump out standing water, clear all silt, debris, and foreign matter to the satisfaction of the Engineer. Remove, store, and dispose of debris as specified in section 403.03.G of the Standard Specifications for Construction.

B. Train cable(s) and innerduct in the handhole along the walls and fasten to the existing rack(s). Replace damaged or missing racks at no additional cost to the Department.

C. Seal each conduit end that enters the handhole in a manner that prevents the entry of water and rodents.

D. Report damage to splice closures, fiber optic splices, or fiber optic cable to MDOT immediately. Repair damage caused by the Contractor within 24 hours at no additional cost to the Department.

E. Acceptance of this work will be at the time of final inspection. Remove additional silt, debris, or water accumulate in the handhole between the original cleaning and final inspection

2. Cleaning and Testing Conduit.

A. Clear existing, empty conduit and innerduct of all dirt, water, concrete, and foreign materials with a dry swab and mandrel.

B. Test the suitability of the empty conduit for use by pulling a mandrel and swab through it in the presence of the Engineer. Use a mandrel 12 inches long (shorter in conduit runs with bends) and 1/2 inch smaller in diameter than the conduit.

C. Install pull rope in conduit that is suitable and not damaged. Tie each end of the rope in the box or cabinet at the end of the conduit segment and seal each end of the segment in a manner that prevents the entry of water and rodents for conduit not used immediately.

D. Present the Engineer with a recommendation for repairing or bypassing damaged conduit.

E. Install coupling between conduit entry and exit in existing handholes for any bends in conduit run greater than 5 degrees. For ease of installation of trunkline fiber optic cables (96 strand and larger), coupling may be installed between conduit entry and exit in existing handholes regardless of direction change. Ensure the continuous length of pull between handholes is not greater than 1500 feet for any single cable.

F. Ensure all materials are approved by the Engineer before use, along with an installation plan. Any work associated with this will not be paid for separately.

3. Install Conduit into Existing Handhole. This work is included in the contract unit prices for the installation of conduit.

A. Expose the outside of the existing handhole at the point where the proposed conduit will enter. Do not interfere with existing cabling/system inside.

B. Mark the penetration location of reinforcing bar(s) in the handhole.

C. Perforate the side wall of the handhole at the point where the conduit is to enter. Remove concrete by cutting, chiseling, or core drilling. Do not damage existing conduits, cables, reinforcing bars, or the box. Protect the cables inside the handhole during this operation.

D. Wash the perforated area with pressurized water. Dry the area with compressed air.

E. Position new conduits and apply an approved concrete bonding compound on the exposed concrete surfaces.

F. Place grout in all open spaces around the conduit to prevent debris and water entry into the handhole.

G. Backfill and restore the area around the handhole.

H. If Contractor operations cause any damage the cost for repairing, removing, replacing, or otherwise making whole an item will be borne by the Contractor.

4. Conduit Entry, Through Metal.

A. Use a knockout punch to make a hole into the side wall of the metallic base

adapter underneath a ground-mounted cabinet, or in the bottom of a pole-mounted cabinet. Use the punch size recommended by the manufacturer for the conduit being installed. Do not disturb any existing cables, cabinet equipment, or the integrity of the base adapter.

B. Run a galvanized steel close nipple through the hole, using sealing lock nut on each side of the wall.

C. Install a plastic insulating bushing on the nipple inside the base adapter or cabinet.

D. Connect the nipple to an underground conduit using metal conduit and fittings as required. Match the size of the underground conduit. At right angle connections, install mogul line box (LB) conduit bodies to facilitate the installation of cable.

5. Cabinet Entry, Core Drill.

A. Provide an entrance for a new conduit by core drilling into the existing concrete cabinet foundation.

B. Connect the conduits as shown on the plans using conduit elbows and couplings.

C. Grout the gap between the conduit and foundation.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

Pay Item	Pay Unit
Hh, Clean.....	Each
Conduit, Clean and Test.....	Foot
Cabinet Entry, Through Metal.....	Each
Cabinet Entry, Core Drill.....	Each

1. **Hh, Clean** includes clearing obstructions in the existing handhole. The installation of any new cable such as fiber optics will be paid for separately under the pay item appropriate for the type of cable installed.

2. **Conduit, Clean and Test** includes clearing obstructions, and testing the existing conduit. All work required to design an acceptable solution to replace conduit found to be damaged, including but not limited to coordinating with the Engineer and updating the plans and quantities, is also included, and will not be paid for separately. The installation of any new conduit will be paid for separately under the pay item appropriate for the type of conduit installed.