

## **SECTION 10.08 ELECTRICAL CONDUIT**

**10.08.01--Description:** This item shall consist of furnishing and installing conduit of the size and type specified with necessary fittings, where called for, at locations shown on the plans or as directed by the Engineer and in accordance with these specifications.

**10.08.02--Materials:** Materials for this work shall conform to the requirements of Article M.15.09.

**10.08.03--Construction Methods:** The conduit shall be installed in the locations and to the dimensions shown on the plans or as directed by the Engineer. All conduit runs shall be installed in a neat and workmanlike manner in accordance with recognized trade practices. Trenching and backfilling of conduit shall conform to Article 10.01. All conduit shall be installed in strict accordance with the current NEC. Where conduit is to be capped, a commercial pipe or conduit cap shall be used. An expansion fitting shall be used wherever required by an expansion joint in the structure. Upon completion of the work, all conduits shall be cleaned, swabbed and free from obstructions and burrs. For buried conduit, marking tape shall be installed in the trench at the depth and to the requirements as set forth in the Article 1.05.15. After all cable has been installed, U.L. approved duct sealing compound shall be installed in the ends of all conduit which terminates in foundations, handholes, junction boxes and manholes.

**1. Conduit Surface:** Beam clamps or conduit strips with back spacers shall be provided at intervals in accordance with the NEC. Expansion fittings shall be installed at all expansion joints. All surface mounted conduit on wood poles shall be bonded to a driven ground rod. Stand-offs shall be installed in accordance with serving utility company regulations.

**2. Conduit in Trench:** Trenches shall be of the depth and cross section shown on the plans or as directed by the Engineer. All conduit shall have a minimum covering of 600 mm.

**3. Conduit Under Roadway:** Installations shall be such as to avoid pockets in runs. Conduit under roadway shall have a minimum cover of 600 mm under the roadway. Each end of conduit runs shall terminate with a cap in a concrete handhole as shown on the plans. When conduit is to be placed under new roadway during roadway construction, the Contractor shall coordinate the placement of the conduit prior to the placement of the pavement.

Where conduit is to be installed under existing roadway a trench shall be opened and conduit installed as shown on plans, or as directed by the Engineer. The trench shall be backfilled with suitable material and the surface shall be restored to original condition.

**4. Conduit in Structure:** It shall be the Contractor's responsibility to coordinate the setting of all conduit in structure prior to pouring concrete. Expansion fittings shall be installed at all expansion joints. Where shown on the plans, outlet boxes with the conduits properly connected and conduit hanger inserts with proper sized nuts installed, shall be accurately and securely placed in the forms for concrete. Care shall be taken during the placing of the concrete around these boxes and inserts to consolidate the concrete thoroughly, preventing voids and honeycomb and to prevent any material displacement of the boxes or inserts. Sealed bonding bushing shall be provided at each conduit outlet in all boxes.

**5. Conduit Under Slope Protection:** Conduit shall be installed in trench under bridge slope protection or between the slope protection and the edge of pavement at the locations and to the dimensions shown on the plans or as directed by the Engineer. The conduit shall have a minimum cover of 600 mm under finish grade and each end of the conduit shall extend 3 m beyond the limits of the slope protection. All conduit shall terminate with a standard pipe cap and the trench shall be backfilled with suitable material. The Contractor shall coordinate the placement of the conduit prior to the placement of slope protection.

**10.08.04--Methods of Measurement:** Conduit will be measured for payment by the actual number of meters of the type and size installed and accepted. The measured length shall be from end to end along the centerline through all fittings.

**10.08.05--Basis of Payment:** This work will be paid for at the Contract unit price per meter for "(Size) (Kind) Conduit-(Type)."

This price shall include all materials required including expansion fittings, conduit fittings, locknuts, bonding bushings, bonding wire, hangers, clamps, duct seal, caps, inserts, equipment, tools, labor and work incidental thereto.

Trenching and backfilling shall be paid under Article 10.01.

No payment for trenching and backfilling will be made for conduit installed during construction under new pavement or in the fill area of new median barrier curb installations.

| Pay Item                     | Pay Unit |
|------------------------------|----------|
| (Size) (Kind) Conduit (Type) | m        |