

## SECTION 745 CONDUITS (NON-METALLIC OR GALVANIZED)

**745.01 Description.** This work consists of installing conduits (non-metallic or galvanized) with all necessary fittings.

**745.02 Materials.** All rigid steel conduits and fittings to be furnished and installed shall be hot-dipped galvanized and conform to the requirements of ANSI C80.1, UL-6, and UL-514. Intermediate metallic conduit shall not be used. Non-metallic 3 and 4O (75 and 100 mm) conduit shall be PVC Schedule 40 pipe meeting specification C5-272-05(PVC).

### **745.03 Construction Methods.**

*Under Existing Pavement, Galvanized Conduit.* Conduit shall be installed by jacking, boring, or other approved method, under the existing pavement. It shall be installed with a minimum cover of 24O (600 mm) and a maximum cover of 36O (900 mm). If a 10N (3 m) length of conduit has to be cut, it shall be cut with a pipe cutter, reamed with a pipe reamer, and threaded with a pipe threader. The thread length shall be as necessary to ensure that the sections of conduits, when screwed into a coupling, tighten and butt together when tightened with the appropriate wrenches. If approved by the Engineer, a threadless coupling shall be used to join two lengths of conduits. The threadless coupling shall not be used on a piece of conduit that is to be driven. All cut conduits shall be reamed before a threadless coupling is installed. Conduit shall be terminated 24O (600 mm) beyond the edge of the pavement unless otherwise directed by the Engineer. The standard sheets show typical methods of termination. Ends of all conduit shall be protected with threaded bushings with knockouts. When the jacking or boring is completed, the forward end of the conduit shall be uncovered and compressed air used to clear all foreign matter before inspection. The Contractor shall be responsible for correcting any existing conduit which is disturbed during construction. Each conduit shall have a 10 gage (3.4 mm) galvanized fish wire left in for future use. In instances where the Contractor installs the cable, the fish wire may be eliminated.

The size of a bore made under the pavement shall not exceed the outside diameter of the pipe by more than 1O (25 mm). If it does, cement grout shall be pumped into the void around the outside of the pipe.

At the discretion of the Engineer, sod that must be removed for the placement of conduits shall either be removed by the use of an approved sod cutter and then replaced or 4O (100 mm) of topsoil shall be placed and the surface seeded in accordance with Section 734. In areas where new pavement is to be placed or in areas where total reconstruction is taking place, sodding or seeding may not be required by the Engineer.

Elbows of rigid steel conduit manufactured by the Contractor with a hydraulic bender will be acceptable provided that a smooth radius of the proper dimension is achieved and the galvanizing is not damaged.

*Under Existing Pavement, PVC Conduit.* Conduit shall be placed by jacking, boring, or other approved method, under the existing pavement. It shall be installed with a minimum cover of 18O (450 mm) and a maximum cover of 25O (640 mm) as measured from the top of the finished pavement. It shall be extended from the specified location under the roadway to a conduit junction well as specified. The pipe shall slope slightly toward the junction well. Joints shall be squared, reamed, and shall be fully set and cemented, with the upper end covered with a manufactured cap or plug and the lower end open. Conduit shall be flush with the inside wall of the junction well.

The size of the bore made under the pavement shall not exceed the outside diameter of the pipe by more than 1O (25 mm). If it does, cement grout shall be pumped into the void around the outside of the pipe.

At the discretion of the Engineer, sod, that must be removed for the placement of conduits, shall either be removed by the use of an approved sod cutter and then replaced or 4O (100 mm) of topsoil shall be placed

and the surface seeded in accordance with [Section 734](#). In areas where new pavement is to be placed or in areas where total reconstruction is taking place, sodding or seeding may not be required by the Engineer.

*Under New Pavement, Galvanized and PVC Conduit.* Conduit shall be installed directly in the earth with a minimum cover of 24O (600 mm) and maximum cover of 36O (900 mm). If a 10N (3 m) length of conduit has to be cut, it shall be cut with pipe cutter, reamed with a pipe reamer, and threaded with a pipe threader. The thread length shall be as necessary to ensure that the section of conduits, when screwed into a coupling, tighten and butt together when tightened with the appropriate wrenches. If approved by the Engineer, a threadless coupling shall be used to join two lengths of conduit. All cut conduits shall be reamed before a threadless couplings is installed. Conduit shall be terminated 24O (600 mm) beyond the edge of the pavement unless otherwise directed by the Engineer. The standard sheets show typical methods of termination. Ends of all conduits shall be protected with threaded pipe bushings with knockouts after compressed air has been used to clear all foreign matter. Backfill in conduit trenches shall be compacted thoroughly as it is being placed. Each empty conduit shall have a 10 gage (3.4 mm) galvanized fish wire left in for future use. In instances where the Contractor installs the cable, the fish wire may be eliminated.

At the discretion of the Engineer, sod, that must be removed for the placement of conduit, shall either be removed by the use of an approved sod cutter and then replaced or 4O (100 mm) of topsoil shall be placed and the surface seeded in accordance with [Section 734](#). In areas where new pavement is to be placed or in areas where total reconstruction is taking place, sodding or seeding may not be required by the Engineer.

Elbows of rigid steel conduit manufactured by the Contractor with a hydraulic bender will be acceptable provided that a smooth radius of the proper dimension is achieved and that the galvanizing is not damaged.

**745.04 Method of Measurement.** The quantity of non-metallic or galvanized conduit will be measured in linear feet (linear meters) of conduit, in place and accepted.

**745.05 Basis of Payment.** The quantity of non-metallic or galvanized conduit will be paid for at the Contract unit price per linear foot (linear meter), for the size used. Price and payment will constitute full compensation for furnishing and installing all materials, and for all labor, equipment, tools, and incidentals required to complete the work.