

SECTION 16618
CONDUIT

PART 1 DESCRIPTION

- A. Furnish and place conduit.

PART 2 MATERIALS

- A. Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the pertinent requirements of Item 16622, "Duct Cable."
- B. When specified in the plans, provide:
1. rigid metal (RM) conduit that is hot-dip galvanized inside and outside with a minimum of 1.5 oz. per square foot of a zinc coating in accordance with Item 16445, "Galvanizing";
 2. electrical metallic tubing (EMT) and intermediate metal conduit (IMC) that is steel, galvanized on the outside, and protected on the inside with a suitable corrosion-resistant material;
 3. polyvinyl chloride (PVC) conduit that meets the requirements of NEMA Standard TC-2, UL 651, and the NEC;
 4. high-density polyethylene (HDPE) conduit without factory-installed conductors that meets the requirements of Item 16622, "Duct Cable"; or
 5. flexible conduit that is liquid-tight.
- C. Unless otherwise shown on the plans, fabricate fittings such as junction boxes and expansion joints from a material similar to the connecting conduit. Use watertight fittings. Do not use set screw and pressure-cast fittings. Steel compression fittings are permissible. When using HDPE conduit, provide fittings that are UL listed as electrical conduit connectors or thermally fused using an electrically heated wound wire resistance welding method.
- D. Use red 3 in. 4 mil polyethylene underground warning tape that continuously states "Caution Buried Electrical Line Below."

PART 3 CONSTRUCTION

- A. Place conduit in accordance with the lines, grades, details, and dimensions shown on the plans or as directed. Install conduit a minimum of 18 in. deep underground unless otherwise shown on the plans. Meet the requirements of the NEC when installing conduit. Secure and support conduit placed for concrete encasement in such a manner that the alignment will not be disturbed during placement of the concrete. Cap ends of conduit and close box openings before concrete is placed.

- B. Ream conduit to remove burrs and sharp edges. Use a standard conduit cutting die with a 3/4 in. taper per foot when conduit is threaded in the field. Fasten conduit placed on structures with conduit straps or hangers as shown on the plans or as directed. Fasten conduit within 3 ft. of each box or fitting and at other locations shown on the plans or as directed. Use metal conduit clamps that are galvanized malleable or stainless steel unless otherwise shown on the plans. Use 2 hole type clamps for 2 in. diameter or larger conduit.
- C. Fit PVC and HDPE conduit terminations with bushings or bell ends. Fit metal conduit terminations with a grounding type bushing, except conduit used for duct cable casing that does not terminate in a ground box and is not exposed at any point. Conduit terminating in threaded bossed fittings does not need a bushing. Prior to installation of conductors or final acceptance, pull a spherical template having a diameter of at least 75% of the inside diameter of the conduit through the conduit to ensure that the conduit is free from obstruction. Cap or plug empty conduit placed for future use.
- D. Perform trench excavation and backfilling as shown on the plans or as directed and in accordance with Item 02226, "Excavation and Backfill for Structures." Excavation and backfilling will be subsidiary to the installation of the conduit.
- E. Jack and bore as shown on the plans or as directed, and in accordance with Item 16476, "Jacking, Boring, or Tunneling Pipe."
- F. Place warning tape approximately 10 in. above trenched conduit. Where existing surfacing is removed for placing conduit, repair by backfilling with material equal in composition and density to the surrounding areas and by replacing any removed surfacing, such as asphalt pavement or concrete riprap, with like material to equivalent condition. Mark conduit locations as directed.

PART 4 MEASUREMENT

- A. This Item will be measured by the foot of conduit.
- B. This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal. Additional measurements or calculations will be made if adjustments of quantities are required.

PART 5 PAYMENT

- A. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Conduit" of the type and size specified and the installation method specified as applicable. This price is full compensation for furnishing and installing conduit; hanging, strapping, jacking, boring, tunneling, excavating, and furnishing and placing backfill; replacing pavement structure, sod, riprap, curbs, or other surface; marking

location of conduit (when required); furnishing and installing fittings, junction boxes, and expansion joints; and equipment, labor, tools and incidentals.

- B. Flexible conduit will not be paid for directly but will be subsidiary to pertinent Items. Unless otherwise shown on the plans, no payment will be allowed under this Item for conduit used on electrical services or in foundations.

END OF SECTION