

SECTION 26 05 43: UNDERGROUND ELECTRICAL WORK

1. GENERAL

- A. Underground ducts: PVC schedule 40 minimum
- B. Primary duct banks, defined as multiple-duct pathways for medium-voltage and low-voltage power feeders, and telecommunications circuit runs between buildings, to be nominally sized as 5" ducts.
- C. All primary duct banks to contain at least one spare duct; duct banks must contain a minimum of two conduits.
- D. Primary electrical power and telecommunications duct banks to be concrete-encased.
- E. Primary electrical power duct banks to include a # 2/0 AWG bare copper grounding conductor, bonded to the grounds within each intermediate manhole and handhole.

2. UNDERGROUND RACEWAY APPLICATIONS

- A. Following is a minimum for secondary ducts and raceways, defined as individual circuits and raceways. Raceways size to be minimum of 1".
- B. Electrical circuits over 600 volts: concrete-encased ducts, 5" minimum.
- C. Building electric service entrance conductors: concrete-encased ducts, 4" minimum.
- D. 480/277 volt and 208/120 volt branch circuits: direct-buried PVC schedule 40 raceways, except under roadways and parking lots.
- E. Site lighting circuits: direct-buried PVC schedule 40 raceways, except under roadways and parking lots.
- F. Telecommunications, security circuits and CATV local circuits: direct-buried PVC schedule 40 raceways, except under roadways and parking lots.
- G. Site lighting circuits, telecommunications, security circuits and CATV services under parking lots and roadways: concrete-encased PVC schedule 40 or 80 raceways.

3. DUCTBANK & UNDERGROUND RACEWAY APPLICATIONS

- A. Grade (pitch) may be from one manhole to the next, or both ways from a high point between manholes, depending on contour of the finish grade, so that all ducts drain water out into the manholes. Ensure no water egress into building by sloping conduits entering building down away from building.
- B. Provide detectable polyethylene/metallic warning tape twelve inches above the entire length of underground raceway and cables, including under buildings.

- C. Spare raceways to be plugged and sealed watertight at all manholes, handholes, buildings, and structures.
- D. Raceways with cables installed within to be sealed watertight and gastight with appropriate fitting.

4. MANHOLES & HANDHOLES

- A. Manholes and handholes to be precast concrete, rated for Class H-20 wheel loading in accordance with AASHTO-HS-20-44 Standard Specifications for Highway Bridges.
- B. Frames and covers in paved areas: Heavy-duty cast iron with machined bearing surfaces suitable for truck loading. Frame and cover shall provide at least 30" opening. Covers shall be indented, solid top. Label covers with "ELECTRIC" or "TELEPHONE", as appropriate.
- C. Manufacturer: Wundercover
- D. Installation:
 - 1. Must be set on a bed of crushed stone
 - 2. Provide ground rod in each manhole and handhole; bond all exposed metal parts within, as well as splice and cable termination grounds.