

**SECTION 33 71 19  
ELECTRICAL UTILITY MANHOLES**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Prefabricated concrete manholes
- B. Manhole accessories

1.2 REFERENCES

- A. ASTM A48/A48M – Standard Specification for Gray Iron Castings
- B. ASTM A123/A123M – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Product
- C. ASTM A153/A153M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- D. ASTM A659/A659M – Standard Specification for Commercial Steel (CS), Sheet and Strip, Carbon (0.16 Maximum to 0,25 Maximum Percent), Hot-Rolled

1.3 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in precast concrete structures with three years documented experience.

1.4 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Sec 01 33 00.
- B. Indicate material specifications, dimensions, capacities, size, and location of openings, reinforcing details, and accessory locations.
- C. Provide product data for manhole accessories.
- D. Submit manufacturer's installation instructions under provisions of Sec 01 33 00.

**PART 2 PRODUCTS**

2.1 PRECAST CONCRETE MANHOLES

- A. Precast Concrete: Air-entrained, 2000-psi compressive strength at 28 days.
- B. Reinforcing shall be per AASHTO H-20, bridge loading.

2.2 CAST-IN-PLACE MANHOLES

- A. Concrete: 3000-psi compressive strength at 28 days in conformance with requirements of Sec 03 30 00.
- B. Provide reinforcing under the provisions of Sec 03 20 00.

2.3 MANHOLE ACCESSORIES

- A. Manhole Frames and Covers: ASTM A48/A48M; Class 30B gray cast iron, machine finished with flat bearing surfaces.
- B. Sump Covers: ASTM A48/A48M Class 30B gray cast iron.
- C. Pulling Irons:
  - 1. 7/8-inch diameter steel bar forming a triangle of 9 inches per side when set.
  - 2. Galvanize to ASTM A153/A153M for irregular shaped articles.
- D. Cable Rack Inserts: Steel channel insert with minimum load rating of 800 pounds, length to match cable rack channel.
- E. Cable Rack Channel: 4" x 1½" x 3/16" steel channel wall bracket, 48" length, with cable rack arm mounting slots on 8" centers.
- F. Cable Racks: ASTM A659/A659M steel channel, 2 ½" x 14" with high-glazed wet-process porcelain insulators.

**PART 3 EXECUTION**

**3.1 PREPARATION**

- A. Excavate, install base material, and compact base material in accordance with manufacturer's instructions under provisions of Sec 31 20 00.

**3.2 INSTALLATION - PRECAST CONCRETE MANHOLES**

- A. Install and seal precast sections in accordance with manufacturer's instructions.
- B. Use precast neck and shaft sections to bring manhole entrance to proper elevation.
- C. Install manholes plumb.
- D. Set the top of each manhole to finished elevation or otherwise as indicated on the drawings.

**3.3 INSTALLATION - CAST-IN-PLACE CONCRETE MANHOLES**

- A. Form cast-in-place manholes, inside and outside surfaces, in accordance with the provisions of Section 03 11 00.
- B. Manhole Shape: As indicated.
- C. Inside Dimensions: As indicated.
- D. Wall Thickness: As indicated.
- E. Form window for duct entry as indicated.
- F. Include 12" drain opening and one-1" ground rod openings in base section.
- G. Cast cable-pulling irons in place opposite each duct entry window as indicated.
- H. Cast inserts for cable racks in place as indicated.

**3.4 INSTALLATION - MANHOLE ACCESSORIES**

- A. Install drains in manholes, and connect to 4" pipe terminating in cu yd crushed gravel bed in accordance with provisions of Sec 22 20 00.
- B. Install ground rod with top protruding 4" above manhole floor.
- C. Waterproof exterior surfaces, joints, and interruptions of manholes after concrete has cured 28 days minimum, in accordance with provisions of Section 07 11 13.
- D. Attach cable racks to inserts after manhole installation is complete.

END OF SECTION