

SECTION 03400 PRECAST CONCRETE UTILITY STRUCTURES

1.1 GENERAL DESCRIPTION

- A. Furnish all labor, materials, equipment, and incidentals required to provide precast concrete utility structures as shown on the contract plans.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions.
- B. ASTM C857 – “Minimum Structural Design Loading for Underground Precast Concrete Utility Structures”
- C. ASTM C858 – “Standard Specification for Underground Precast Concrete Utility Structures
- D. ASTM C891 – “Installation of Underground Precast Concrete Utility Structures”
- E. ASTM C990 – “Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants”
- F. ACI 318 – “Building Code Requirements for Reinforced Concrete” - American Concrete Institute

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Include construction details, material descriptions, dimensions of individual components, and profiles.
- B. Shop Drawings:
 - 1. Submit shop drawings showing all components, dimensions, openings, connections, and reinforcing
- C. Material Data
 - 1. Submit certificates of material conformance with specifications
 - 2. Submit manufacturer’s literature and instructions
- D. Design Data
 - 1. Precast Concrete Utility Structures shall be designed for a live load of HS20-44 according to ASTM C857

2. Design computations shall be stamped by a Professional Engineer registered in the state in which the project is located.

E. QUALITY CONTROL

1. Precast Concrete Utility Structures shall be provided by a supplier with 5+ years of experience in the manufacture of products required for this project.
2. Precast Producer shall be an NPCA certified plant.
3. Precast Producer shall be certified to ISO standards.

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE

- A. Precast elements shall be manufactured with concrete having a minimum 28 day compressive strength, f'c equal to 4000psi.
- B. Reinforcement:
 1. Deformed Wire Reinforcing WWR – Per ASTM A1064
 2. Reinforcing Bars – Per ASTM A615, Grade 60. Weldable bars shall conform to ASTM A706, Grade 60

2.2 ACCESSORIES

- A. Access Hatches – Aluminum Type 6061-TS and shall be of the size and type shown on the drawings
- B. Manhole Frames – Cast Iron Class Gray (CL35) conforming to ASTM A48 &/or Ductile Iron Conforming to ASTM A536
- C. Manhole Lids – Ductile Iron Conforming to ASTM A536
- D. Steps – Steel reinforced copolymer polypropylene conforming to ASTM C478
- E. Pulling irons – A36 Steel bar or embedded stranded cable capable of withstanding a pulling force of 5,000 lbs
- F. Joint Material – Butyl sealant shall conform to ASTM C990

PART 3 - EXECUTION

3.1 INSTALLATION AND BACKFILL

- A. Precast Concrete Utility Structures shall be installed in accordance with ASTM C891.
- B. Store precast concrete utility structures at the project site in a manner to prevent physical damage and arranged so identification markings are visible
- C. Contractor shall be responsible for locating and protecting all existing utilities, structures, etc., whether indicated or not, which may be affected by the construction process.
- D. All backfill shall be accomplished using approved material. Such material shall be free of debris, large stones, organic material, and other deleterious substances.
- E. Precast elements shall be installed in accordance with the contract plans and approved shop drawings.
- F. Lift and support precast utility structures only at designated lifting and/or support points.
- G. All construction activities shall conform to applicable OSHA standards for safety.

END OF SECTION