

## SECTION 02500 PRECAST CONCRETE SEWER MANHOLES

### 1.1 GENERAL DESCRIPTION

- A. This specification covers the materials for and manufacture of precast reinforced Concrete manhole products produced in accordance with the plans and these Specifications

### 1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions.
- B. ACI 318 - Building Code Requirements for Reinforced Concrete
- C. ASTM C615/615M - Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement.
- D. ASTM A1064/1064M - Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
- E. ASTM C478 – Standard Specification for Precast Reinforced Concrete Manholes Sections
- F. ASTM C923 – Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes and Laterals
- G. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants

### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
  - 1. For standard precast concrete manhole sections, the precast concrete producer will supply shop drawings showing conformance to project drawings and requirements and to applicable ASTM specifications listed in this specification. The Precast concrete producer shall certify that such products will meet the ASTM specifications.
  - 1. For specific and/or unique precast concrete manhole structures, if required by the Owner the precast concrete producer shall supply shop drawings &/or informative literature. Supporting calculations and design details shall be available upon request. The Precast concrete producer shall warrant that such products will perform the intended task.
- B. Shop Drawings
  - 1. The plans for custom-made precast concrete manhole structures shall be shop drawings furnished by the precast concrete producer for approval by the Owner or his agent (engineer). These drawings shall show complete design, installation, and construction information in such detail as to enable the Owner to determine the adequacy of the proposed units for the

intended purpose. Details of steel reinforcement size and placement as well as supporting design calculations, if appropriate, shall be included. The drawings shall include a schedule, which will list the size and type of precast concrete manholes at each location where they are to be used. The precast concrete manholes shall be produced in accordance with the approved drawings.

#### C. QUALITY CONTROL

1. Precast Concrete Sewer Manholes 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.

#### D. DELIVERY, STORAGE AND HANDLING

1. Handling: Products shall be shipped, unloaded, handled and stored in a manner to minimize damage. Lifting holes or inserts shall be consistent with industry standards. Lifting shall be accomplished with methods or devices intended for this purpose. Steps shall not be used for handling purposes or activities other than the intended purpose.

Acceptance at Site: The Owner's representative shall make final Inspection and acceptance of the precast concrete products upon arrival at the jobsite.

### 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.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION AND BACKFILL

- A. Store precast concrete sewer manholes at the project site in a manner to prevent physical damage and arranged so identification markings are visible

- B. 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
- C. All backfill shall be accomplished using approved material. Such material shall be free of debris, large stones, organic material, and other deleterious substances
- D. Precast elements shall be installed in accordance with the contract plans and approved shop drawings
- E. Lift and support precast sewer manholes only at designated lifting and/or support points.
- F. All construction activities shall conform to applicable OSHA standards for safety.

### 3.2 FIELD QUALITY CONTROL

Site tests - when testing is required for sanitary manholes, one of the following methods need to be followed:

1. Vacuum testing prior to backfill according to ASTM C1244.
2. If required by owner, water testing according to contract documents, ASTM C969 and precast concrete producer's recommendations.

END OF SECTION