

SECTION 33 39 00

SANITARY UTILITY SEWER STRUCTURES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Sanitary sewer manholes and miscellaneous appurtenances.

1.02 REFERENCES

A. American Society of Testing Materials (ASTM)

1. A615 – Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
2. C150 – Specification for Portland Cement.
3. C443 – Specification for Joints for concrete Pipe and Manholes, Using Rubber Gaskets.
4. C478 – Specification for Precast Reinforced Concrete Manhole Sections
5. C923 – Specification for Resilient connectors Between Reinforced Concrete Manhole Structures, Pipe and Laterals.

1.03 SUBMITTALS

A. Submittals shall conform to Section 01 33 00. Submit Product Data for the following items:

1. Gaskets
2. Joint Sealants
3. Manufacturers recommended installation procedures for jointing.
4. Plastic liner materials

B. Shop drawings shall indicate complete information for fabrication and installation of units. Include the following:

1. Plans and elevations defining all material furnished by manufacturers.
2. Sections and details showing connections, cast-in items, field installed lifting devices, capacities, all openings, and their relation to the structure.

1.04 SEQUENCING AND SCHEDULING

A. No work to begin until traffic control is in place.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Manholes

1. Precast concrete sections conforming to ASTM C478 and this Section. No lift holes permitted.
2. All sections shall be cured by an approved method and shall not be shipped nor subjected to loading until the concrete compressive strength has attained 3,000 psi and not before 5 days after fabrication and/or repair, whichever is longer.
3. The date of manufacture and the name and trademark of the manufacture shall be clearly marked on the inside of each precast section.
4. Joints shall be rubber gasketed joint forming a watertight seal conforming to ASTM C443
5. Water tight pipe connections conforming to ASTM C923 for connections between maintenance hole structures and pipes.

B. Structure Bases

1. Pre-cast integral with bottom section of manhole.
2. Pre-cast inverts installed.
3. Outside Drop: Manhole bottom section to be pre-cast as monolithic base containing lower DIP elbow for drop, as shown on the Drawings.

2.02 ACCESSORIES

A. Joint Sealers

1. Sealer between upper precast section and casting frame and between all precast sections.
2. High quality, non-hardening, butyl rubber, 98-percent solids that will not oxidize, shrink, or harden.
3. Ram-nek, or approved equal.

B. Mortar

1. Non-shrink grout – minimum compressive strength of 3,000 psi.

C. External Seals

1. External Seals Approved Manufacturer: Cretex type chimney seal, or approved equal.

2.08 ADJUSTING RING

A. Concrete

1. Size to match cone or opening in top slab.
2. Concrete Compressive Strength: Minimum 3,000 psi

3. Reinforcing: Single hoop 8-gauge steel wire.
4. Thickness: Minimum 2 inches, maximum 4 inches.

B. HDPE adjustment rings allowed.

2.09 CASTINGS

A. Manhole Frames and Covers.

1. Requirement: ASTM A48
2. Material: Class 35 cast iron. Best grade. Free from injurious defects and flaws.
3. Machine cover and frame contact surface for non-rocking protection.

C. Jointing material shall be gray in color.

PART 3 EXECUTION

3.01 MANHOLE INSTALLATION

A. Place pre-cast integral base section on compacted subgrade and bedding for structures.

B. Set pre-cast concrete sections plumb with a ¼ inch maximum out of plumb tolerance allowed. Seal all joints of pre-cast sections with a combination a rubber o-ring set in a recess and a Ram-Nek preformed joint sealer in sufficient quantity to fill 75 percent of the joint depth.

C. Repair the inside of any leaking joint be chemical injection or other approved material.

D. Casting Adjustment

1. Seal joint at the casting frame seat with 2 rows of joint sealer.
2. No shims of any material allowed.
3. Adjust Manholes and Catch Basin Frames 3/8 to 3/4 inch below grade prior to placing wear course.

3.02 CLEANING

A. All new manholes shall be thoroughly cleaned of all silt, debris, and foreign matter of any kind prior to final inspection.

