

**SECTION 02245
REINFORCED CONCRETE PIPE (RCP)**

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Reinforced concrete pipe for sanitary sewers and storm sewers.

1.2 MEASUREMENT AND PAYMENT

A. Unit Prices:

1. No separate payment will be made for reinforced concrete pipe under this Section. Include cost in unit price work as specified in following Sections:
 - a. Section 02500 – Gravity Sanitary Sewers.
 - b. Section 02600 – Storm Sewers.
2. Refer to Section 01270- Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum):

1. If Contract is Stipulated Price Contract, payment for work in this section is included in Total Stipulated Price.

1.3 REFERENCES

A. ASTM – American Society for Testing and Materials.

1. ASTM C76 – Standard Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.
2. ASTM C443 – Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe Using Rubber Gaskets.
3. ASTM C497 – Standard Test Method for Concrete Pipe, Manhole Sections or Tile.
4. ASTM C506 – Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain and Sewer Pipe.
5. ASTM C655 – Standard Specification for Reinforced Concrete D-load Culvert, Storm Drain and Sewer Pipe.
6. ASTM C877 – Standard Specification for External Sealing Bands for Noncircular Concrete Sewer, Storm Drain and Culvert Pipe.

B. CFTS – City of Friendswood Technical Specifications.

1.4 SUBMITTALS

- A. Conform to requirements of Section 01330 – Submittal Procedures.
- B. Submit complete product data for pipe, fittings and gaskets for approval. Indicate conformance to appropriate reference standards.
- C. Submit manufacturer's certificate that concrete pipes meet applicable standards.
- D. For jacking pipe, submit drawings and data describing grouting port design and closure procedures when required by Section 03105 – Grout,

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including liner repair, as applicable.

1.5 QUALITY ASSURANCE

- A. Provide manufacturer's affidavits that pipe was manufactured in compliance with standards referenced in this Section.

PART II: PRODUCTS

2.1 REINFORCED CONCRETE PIPE

- A. Conform circular reinforced concrete pipe to requirements of ASTM C76, for Class III wall "B" thickness. Conform to rubber gasket joints for sanitary sewers and storm sewers and tongue and groove for roadside ditch culverts to ASTM C443.
- B. Conform reinforced concrete arch pipe to requirements of ASTM C506 for Class A-III. Joints shall conform to ASTM C877.
- C. Reinforced concrete elliptical pipe, either vertical or horizontal, shall conform to requirements of ASTM C507 for Class VE-III for vertical or Class HE-III for horizontal. Use rubber gasket joints conforming to ASTM C877.
- D. Conform reinforced concrete D-load pipe requirements of ASTM C655.

2.2 GASKETS

- A. When no contaminant is identified, furnish rubber gasket conforming to ASTM C443 for circular reinforced concrete pipe and rubber gasket conforming to ASTM C877 for reinforced concrete elliptical pipe.
- B. Pipes allowed to be installed in potentially contaminated areas, where free product is found near elevation of proposed sewer, shall have gasket materials for noted contaminant as specified in TABLE 4.1 – GASKET MATERIAL REQUIRED FOR CONTANIMANTS in this Section.

2.3 LINERS FOR SANITARY SEWER PIPE

- A. Reinforced concrete pipe for sanitary sewers shall be PVC lined.
- B. Reinforced concrete pipes to be installed in potentially contaminated areas shall have liners recommended by manufacturer as resistant to contaminants identified in Phase II Environmental Site Assessment Report.

2.4 SOURCE QUALITY CONTROL

- A. The Project Manager shall inspect manufacturer's plant and casting operations as deemed necessary.

PART III: EXECUTION

3.1 BEDDING

- A. Bed pipe sections on foundation of firm and stable material accurately shaped to conform to their bases. Install bedding as specified in Section 02125 – Excavation and Backfill for Utilities. When required by the Drawings, use special bedding material. When single-cell pipe sections are placed in parallel for multi-cell installation, place in conformance with details shown on the Drawings.

3.2 PLACEMENT

- A. Carefully lower pipe sections to bottom of trench and lay accurately in line and grade, with spigot or tongue end downstream entering bell or groove end to full depth and in such manner as not to drag foreign material into annular space.

3.3 JOINTING

- A. Join pipe sections together and match so that they shall form continuous smooth and uniform invert.

3.4 BACKFILLING

- A. After pipe has been properly jointed and bedded, commence backfilling.
- B. Backfill in accordance with Section 02125 – Excavation and Backfill for Utilities.

PART IV: TABLES

4.1 GASKET MATERIAL REQUIRED FOR CONTANIMANTS

CONTAMINANT	GASKET MATERIAL REQUIRED
Petroleum (diesel, gasoline)	Nitrile Rubber
Other Contaminants	As recommended by pipe manufacturer

END OF SECTION