

SECTION 02564**CONNECTIONS TO EXISTING SANITARY SEWER FACILITIES****02564.01 GENERAL****A. Description**

Connections to existing sanitary sewer facilities shall include, but not necessarily be limited to, all work necessary to make connections of new sanitary sewers to existing manholes and to connect new sanitary house connections to existing sanitary sewers, complete in place, in accordance with the Contract Documents.

B. Related Work Included Elsewhere

1. Trench excavation, backfill, and compaction; Section 02250.
2. Sanitary sewers and sanitary house connection installation; Section 02561.
3. Sanitary sewer manhole installation; Section 02562.

C. Quality Assurance

1. Materials

The Engineer will inspect all materials before and after installation to ensure compliance with the Contract Documents.

2. Field Tests

No testing will be conducted on manhole or sanitary house connections installed in accordance with this Section, however, the work will be visually inspected for conditional acceptance and for final acceptance. Should this inspection discover any defects at the manhole or the sewer at the connection points, the Contractor shall take such actions and make repairs in accordance with the connector manufacturer's written recommendations, as approved by the Engineer, to stop the leakage. No connection shall be backfilled until approved by the Engineer.

D. Submittals

1. Shop Drawings

Shop drawings shall be submitted as specified in the "General Provisions" for the following materials, and include the following information:

- a. Manhole-to-pipe connectors: product description, materials identification, installation instructions including torque requirements where applicable.

- b. Saddle assemblies: product description, materials identification, installation instructions including torque requirements where applicable.
2. Certificates of compliance shall be submitted as specified in the "General Provisions" for banded-boot and compression type manhole-to-pipe connectors: stating they meet requirements of ASTM C 923, "Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes".

02564.02 MATERIALS

A. Materials Furnished by the County

The County will not furnish any materials for connections to existing facilities.

B. Contractor's Options

1. The Contractor may furnish mechanically wedged-in-place, grouted-in-place sleeve, or grouted-in-place water-stop type connections for manhole-to-pipe connections, unless otherwise noted.
2. The Contractor may furnish Geneco Seal-Tite Saddles for use on polyvinyl chloride (PVC) sewer mains.

C. Detailed Material Requirements

1. Portland cement concrete for pipe encasement shall be Mix No. 1 as specified in Section 03310.
2. Quick setting, non-shrink grout shall be as specified in Section 03600.
3. Mortar for brickwork shall be as specified in Section 04100.
4. Brick for manhole inverts shall be sewer brick as specified in Section 04200.
5. Existing Manhole Connections
 - a. Mechanically wedged-in-place type connectors shall be Link-Seal as manufactured by Thunderline Corp., Z-Lok XP as manufactured by A-Lok Products, Inc., Kor-n-Seal as manufactured by National Pollution Control Systems, Inc., or equal.
 - b. Grouted-in-place sleeve type connectors shall be Z-Lok Repair Sleeve manufactured by Atlantic Concrete Products Co., Type CT manhole adapter as manufactured by Certain Teed, or equal.
 - c. Grouted-in-place water-stop type connectors shall be Water Stop Ring as manufactured by Certain Teed, Type CMA Adaptor or large diameter waterstops as manufactured by Fernco., Inc. or equal.

- d. All metal fasteners (bolts, nuts, etc.) shall be Type 304 stainless steel.
6. House Connection Saddles
 - a. All house connection saddles shall be specifically designed for the pipe material to which they are to be attached.
 - b. Saddles may have cast iron, ductile iron; Type 304 stainless steel straps, T-bolts, nuts, and washers; and resilient gaskets. Spot welds for strap fabrication shall be fully passivated. The resilient gasket shall be permanently attached to the saddle body to prevent its displacement during installation or shall be of a design that will permit easy visual verification that the gasket is in place. The assembly shall have an integral stop to prevent house connection pipes from protruding into the sewer.
 - c. Metal saddles shall be the Seal-Tite Sewer Pipe Saddles as manufactured by the General Engineering Company; Style CB Sewer Saddle as manufactured by Romac Industries, Inc.; or equal.
 7. Bentonite shall be in granular form as specified in Section 07130.02.

02564.03 EXECUTION

A. General

1. Trench excavation, foundation preparation, backfill, and compaction shall be as specified in Section 02250.
2. Connections to existing facilities shall be in accordance with the connector manufacturers written recommendations, the Standard Details, and as specified.

B. Manhole Connections

1. Holes for installing new pipes in existing manholes shall be carefully cored, drilled, or cut in such a manner to minimize damage to the manhole. Any damage to the existing manhole structure shall be promptly repaired to the satisfaction of the Engineer or the manhole replaced. Reinforcing steel in precast manholes shall be cut only to the extent necessary to accommodate the new pipe and seal system.
2. The new pipe and connector shall be roughly centered in the hole and the pipe end set flush with the inside wall of the manhole.
3. The pipe and connector shall be encased in a 100% bentonite collar for a distance of 6 inches beyond the end of the connector and extending at least 6 inches all around the connecting pipe.
4. The manhole channel shall be reconstructed as necessary to accommodate the new pipe connection in accordance with Section 02562.03.

C. House Connection Saddles

1. The sanitary sewer shall be uncovered, cleaned, and inspected at the location of the proposed sewer house connection. The Geneco Seal-Tite Saddle shall not be installed where surface imperfections in the main will prevent the saddle gasket from making a watertight seal or within 1 foot of a mainline pipe joint.
2. The saddle shall be attached to the sewer and the strap tightened to the appropriate torque and in accordance with the manufacturer's recommendations.
3. The sewer shall be cut using a tapping or cutting machine of suitable design, and the "coupon" removed.

D. New House Connection Tees or Wyes

1. Whenever a saddle cannot be installed in an existing pipeline in accordance with Paragraph C above, a new wye or tee fitting of proper size shall be inserted into the existing pipeline.
2. The existing sanitary sewer shall be fully exposed for the portion to be removed and the sewer pipe power-saw-cut to a flat face perpendicular to the centerline of the pipe and removed to limits of the fitting or as directed by the Engineer, and a new fitting and/or sections of pipe installed in its place. Particular care shall be given to insure the slope and invert of the new fitting matches the existing line by careful reshaping of the trench bottom.
3. The new fitting shall be installed and connected to the existing pipe with full circle, transition (if required), stainless steel and rubber gasketed coupling and/or repair sleeves and stainless steel clamps.

02564.04 METHOD OF MEASUREMENT

Manhole connections and house connection saddles, tees, and/or wyes will not be measured for payment.

02564.05 BASIS OF PAYMENT

Payment for manhole connections and house connection saddles tees and/or wyes will be included in the price bid for furnishing and installing sanitary sewers and sanitary house connections as specified in Section 02561.