

## **San Antonio Water System Standard Specifications for Construction**

### **ITEM NO. 1109 Sanitary Sewer Lateral and Reconnections**

**1109.1 DESCRIPTION:** This item shall consist of the installation of sanitary sewer lateral connections in sanitary sewer mains serving areas where service did not previously exist in accordance with these specifications and as directed by the Engineer.

1. This item shall also consist of the reconnection of existing sanitary sewer lateral connections along parallel, replacement, or rehabilitated sanitary sewer mains in accordance with these specifications and as directed by the Engineer.
2. This item shall also consist of installation of sanitary sewer stubs, within the street right-of-way, terminating with a clean-out and a plug at the right-of-way line to allow for future connection of a single service, or a double-wye fitting plugged at both to allow for future connection to two services.
3. The materials for sanitary sewer stubs and reconnections shall conform to specifications contained in Item No. 848, "Sanitary Sewers" and Item No. 854, 'Sanitary Sewer Laterals.'

**1109.2 REFERENCED STANDARDS:** Reference standards cited in this Specification Item No. 1109 refer to the current reference standard published at the time of the latest revision date.

1. San Antonio Water System (SAWS):
  - a. Specifications for Water and Sanitary Sewer Construction
  - b. SAWS Materials Specifications
2. City Of San Antonio (COSA) Standard Specifications for Construction
3. Texas Commission of Environmental Quality (TCEQ)
  - a. Chapter 217 Design Criteria for Domestic Wastewater Systems
4. American Society for Testing and Materials (ASTM) International:
  - a. ASTM D 1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
  - b. ASTM D 3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
  - c. ASTM D 3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
  - d. ASTM F 477 – Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

**1109.3 SUBMITTALS:** Contractor shall submit manufacturer's product data, instructions, recommendations, shop drawings, and certifications.

#### **1109.4 CONSTRUCTION:**

1. Performance Requirements:
  - a. Provide a minimum of 72 hours' notice to customers whose sanitary sewer service will potentially be interrupted.

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- b. Accurately field locate service connections, whether in service or not, along the new, repaired, or rehabilitated sanitary sewer main. For parallel and replacement sewers, service connections may be located as pipe laying progresses from the downstream, to the upstream direction.
  - c. Properly disconnect existing connections from the sewer main and reconnect to the rehabilitated section of main, as described in this section.
  - d. Reconnect service connections, including those that go to unoccupied or abandoned buildings or to vacant lots, unless directed otherwise by the Inspector.
  - e. Complete reconnection of service lines within 24 hours after disconnection due to slip-lining, parallel, or replacement of sanitary sewer mains.
  - f. Reconnect services on cured-in-place-pipe (CIPP) without excavation, utilizing remote controlled cutting device, monitored by a video TV camera. CIPP will be completed per Item 901, "Rehabilitation of Sanitary Sewer By Cured-In-Place Pipe (Hot Water)". The SAWS Construction Inspector reserves the right to require service connections by excavation when a remote cut service connect damages the sewer mains or lateral lines. Open cut excavation for service reconnections on CIPP will only be allowed if it has been approved in writing from a SAWS Inspector.
  - g. The Inspector reserves the right to require service connections by excavation when a remote cut service connection damages the main or laterals.
  - h. Reconnection by the excavation method shall include the stack and fittings and required pipe length (up to 10 linear feet) to reconnect service line.
2. **Preparation:**
- a. Determine the existing sewer lateral locations and number of existing service connections from closed-circuit television (CCTV) inspection video or from a field survey.
  - b. Accurately field locate existing lateral connections, whether in service or not.
  - c. Use existing lateral locations to connect or reconnect service lines to the main.
  - d. For pipe-bursting sanitary sewer mains, allow liner to normalize to ambient temperature and recover from imposed stretch. For cured-in-place liners, verify that liner is completely cured.
  - e. For new parallel and replacement sanitary sewer mains, complete testing and acceptance of downstream sewers as applicable.
3. **Reconnection by Excavation Method:**
- a. Remove a portion of existing sanitary sewer main or carrier pipe to expose the liner pipe.
  - b. Provide sufficient working space for installing a prefabricated pipe saddle.
  - c. Carefully cut the liner pipe, making a hole to accept the stub out protruding from the underside of the saddle.

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- d. Strap on the saddle using a stainless steel band on each side of the saddle. Tighten the bands to produce a watertight seal of the saddle gasket to the liner pipe.
  - e. Remove and replace cracked, offset, or leaking service line for up to 10 feet, measured horizontally, from the center of the new main or liner.
  - f. Make up the connection between new main or liner and lateral using PVC sewer pipe, with approved fittings and couplings.
  - g. Encase the entire lateral connection in cement stabilized sand as shown in the contract documents.
  - h. Test each lateral connection before backfilling.
4. **Reconnection by Remote Method:**
- a. Make service reconnections using remote-operated cutting tools on cured-in-place liners. If a service connection is dislodged, protruding, misaligned or missing, an open cut excavation can be made only after it has been approved in writing from the SAWS Inspector. If open cut is allowed, a new lateral service piping (including up to 10 linear feet of piping) shall be installed with all approved pipe and connections conforming to Item No. 854, "Sanitary Sewer Laterals
  - b. Employ method and equipment that restore the service connection capacity to not less than 90 percent of original capacity.
  - c. Immediately open any missed lateral connections and repair any holes drilled in error using a method approved by the Inspector.
5. **Reconnection on Parallel or Replacement Segments:**
- a. Install lateral connections on the sewer main.
  - b. Remove and replace cracked, offset or leaking lateral for up to 10 feet, measured horizontally, from the centerline of the sanitary sewer main.
  - c. Make up the connection between the main and the existing lateral using PVC sewer pipe, with approved couplings, as shown in the contract documents.
  - d. Test each lateral connection before backfilling.
  - e. Embed the lateral pipe and point of connection, as specified for the sanitary sewer main, as shown in the contract documents.
  - f. Place and compact trench zone backfill in compliance with Specification Item No. 804, Excavation, Trenching and Backfill.
6. **Installation of New Service Laterals:**
- a. Install laterals on sanitary sewer main for each service connection.
  - b. Provide the length of stub indicated in the contract documents.
  - c. Install plug or cap on the upstream end of the service stub, as needed.
  - d. Test each lateral connection before backfilling.
  - e. Embed the lateral pipe and point of connection, as specified for sanitary sewer main, and as shown in the contract documents.
  - f. Place and compact trench zone backfill in compliance with Specification Item No. 804, Excavation, Trenching and Backfill.

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- g. Install a minimum 2 foot length of magnetic locating tape along the axis of the service stub out and 9 to 12 inches above the crown of the pipe, at the end of the stub out.

### **1109.5 MEASUREMENT AND PAYMENT:**

- 1. Unit Prices:
  - a. Measurement and payment for sanitary sewer service reconnections will be made per each connection. Payment will be made for each connection made by remote control cutting device, open cut excavation, or person entry.
  - b. Payment for lateral stub outs or service reconnections shall be considered full compensation for furnishing of all materials, labor, tools, equipment, testing, cleaning, preparation, repairs, inspection, work execution and any other work necessary to complete the service reconnection.
  - c. Payment for sanitary sewer lateral stub outs or service reconnections without stacks located within 10 feet of the sanitary sewer main, is on a unit price basis for each stub or reconnection.
  - d. Payment will be made for each lateral stub out or reconnection installed complete in place, including service connections, couplings, adapters, disconnecting existing services, reconnecting new service, fittings, excavation, backfill, and testing as required by Specification Item No. 804, Excavation, Trenching and Backfill.
  - e. Payment for sanitary sewer laterals more than 10 feet laterally from the sewer main shall be governed by Specification Item No. 854, "Sanitary Sewer Laterals."
  - f. One or more lateral connections discharging into a common point are considered one service connection.
  - g. The Contractor shall not add lateral reconnections without approval of the Inspector.
  - h. The Inspector may require laterals to be relocated to avoid having more than two lateral connections per reconnection.
  - i. Protruding lateral connections, which must be removed to allow liner insertion, are paid as a lateral reconnection (when connected).
  - j. No direct payment will be made for plugged abandonment of lateral connections.
  - k. No separate payment will be made for abandonment of a lateral connection, unless excavation is required.
  - l. No separate payment will be made for excavation of sanitary sewer laterals within the new or replacement sewer trench.
  - m. No separate payment will be made for removal of existing sanitary lateral service stub outs.
  - n. No separate payment will be made for a plugged and abandoned lateral connection, if the service to be abandoned is within 4 feet of an active connection.
  - o. Payment for abandoned service connection will not be allowed.

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- p. If a faulty remote cut is later corrected using the procedures specified for reconnection by excavation, only one reconnection will be allowed for payment.
- q. No direct payment will be made for hand excavation and backfill when authorized by Inspector in locations where excavation by machine is not suitable.
- r. Payment for service reconnections by open cut shall be considered full compensation for furnishing all materials, labor, tools, fittings, couplings, adapters, stack, disconnecting existing service, up to ten (10) linear feet of lateral pipe, excavation, trenching, shoring, backfilling, concrete encasement, collars, and all necessities and related work specified herein to complete the task. Site restoration (including but limited to replacement of pavement, sidewalks, driveways, curbing, landscaping, sodding, etc.) will not be paid for separately and shall be considered subsidiary to the Service Reconnection by Open Cut bid items. There will be no payment for abandoning service connections.
- s. No payment shall be made for removal of a lodged remote cutting device.

**-End of Specification-**