

SECTION 02732
SANITARY SEWER SERVICE LINES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. This section covers:
 - 1. Installation of sanitary sewer service lines.
 - 2. Point repairs on existing sanitary sewer service lines.
- B. Sewer lines 6 inches in diameter and larger are constructed under the requirements of Section 02730 - Sanitary Sewer Pipelines.

1.02 RELATED WORK

- A. Standard Detail Drawings
- B. Section 01100 - Requirements For Developer Funded Projects
- C. Section 02220 - Excavation, Backfilling, and Compacting
- D. Section 02575 - Pavement Repair
- E. Section 02605 - Manholes
- F. Section 02610 - Pipe and Fittings
- G. Section 02730 - Sanitary Sewer Pipelines
- H. Section 02734 - Inspection and Testing of Sanitary Sewer Pipelines, Manholes, and Service Lines
- I. Section 03300 - Cast-In-Place Concrete

1.03 DEFINITIONS

- A. City Sewer Main - A public sanitary sewer in which all owners of abutting properties have equal rights and is maintained and controlled by the Little Rock Wastewater. No sewer line smaller than six (6) inches in diameter is a city sewer.

- B. Service Line - The sewer which conveys the discharge from a building's plumbing system or other approved waste system to the city sanitary sewer system. The service line begins at the connection to the city sanitary sewer and ends at the building foundation.
- C. Permit - Written authorization issued to a plumber or contractor upon request allowing installation of a service line to connect to the Little Rock Wastewater system. No work shall be allowed on any service line (Gravity or Force Main) until a permit is issued by Little Rock Wastewater. Permit issued by Little Rock Wastewater is valid for one year from the date of issue. If permit is not used within the one year period a new permit must be purchased at the Fee Schedule in effect at that time.
- D. Plumbing Permit - Written authorization issued to a plumber or contractor upon request allowing work on existing plumbing in an existing structure or to install plumbing in a new or existing structure.

1.04 QUALITY ASSURANCE

- A. Inspect all service lines per Section 02734 - Inspection and Testing of Sanitary Sewer Pipelines, Manholes, and Service Lines.

1.05 SUBMITTALS

- A. Submit to the Engineer of Record all materials and procedures not described in these specifications. Little Rock Wastewater's approval required for all materials not described in these specifications.

1.06 REFERENCES

- A. Arkansas State Plumbing Code
- B. City of Little Rock Plumbing Code

1.07 SPECIAL REQUIREMENTS CONCERNING FIELD LOCATION OF PIPE, BENDS, CLEANOUTS, AND MANHOLES ON SERVICE LINES

- A. Bends
 - 1. Avoid using short radius ninety degree bends on 4" service lines.
 - 2. Use only long sweep bends where bends are absolutely necessary.
- B. Cleanouts
 - 1. Cleanouts are required at the building foundation per the Little Rock Plumbing Code.
 - 2. On lines longer than one hundred (100) feet, cleanouts are required at one hundred (100) foot spacing.
 - 3. Install cleanouts adjacent to any ninety degree bend.
 - 4. Install pipe on cleanout riser up to finish grade.
 - 5. The cleanout shall be the same diameter as the pipe on which it is installed.
- C. Backwater Traps (Sewage check valve)
 - 1. Provide backwater traps as required by Section 6.14 of the Arkansas Plumbing Code or as shown on the plans.
 - 2. Backwater Traps shall be Mainline "Adapt-A-Valve" or approved equal.

1.08 PROTECTION

- A. In all cases the Contractor is responsible for protecting public and private property and protecting any person or persons who might be injured as a result of the Contractor's work.
- B. All utilities shown on the plans may not represent the exact location; however, the contractor is responsible for verifying these locations and contacting "Arkansas One Call System" before excavating.

PART 2 - PRODUCTS

2.01 BEDDING AND BACKFILL

- A. Refer to Section 02220 - Excavation, Backfilling, and Compacting.

2.02 PIPE AND FITTINGS

- A. Refer to Section 02610 - Pipe and Fittings for allowable materials.

2.03 BACKFILL AND ASPHALT FOR PAVEMENT REPAIRS

- A Refer to Section 02575 - Pavement Repair

2.04 MANHOLES, MANHOLE RINGS AND LIDS

- A. Refer to Section 02605 - Manholes

2.05 CONCRETE

- A. Refer to Section 03300 - Cast-In-Place Concrete

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Perform excavation and prepare bedding in accordance with Section 02220 - Excavation, Backfilling, and Compacting for Sanitary Sewer Pipelines.
- B. Never lay pipe in a water filled trench.
- C. Excavate for bells so that the entire barrel of the pipe will be uniformly supported before placing pipe in the trench.

3.02 PIERS

- A. Install concrete piers as indicated on the plans in accordance with Section 03300 - Cast-In-Place Concrete.
- B. Use only ductile iron pipe on piers.

3.03 PIPE INSTALLATION

- A. Inspect each joint of pipe carefully before it is placed in the trench. Discard damaged joints.
- B. If trimming joint length is required, cut pipe in a neat and workmanlike manner without damage to pipe or pipe lining.
- C. Lay all pipe with the bell upstream.
- D. Lower pipe carefully into the trench so the spigot and bell will not become contaminated.
- E. Lay the service line on a straight alignment and at a constant slope. Install pipe a minimum slope of one percent (1.00%); this equals one-eighth inch fall per lineal foot (1/8" / LF). The maximum allowable deflection in a horizontal plane is one inch per lineal foot (1.00"/LF).
- F. Install bends on 4" service lines at all changes in alignment and slope. Cleanouts are required at 90 degree bends and every 100 feet on lines longer than 100 feet. Bends on 6" and larger service lines are only permitted within 5 feet of the building foundation and 2 feet from the manhole being connected to; if longer than 150 feet, bends are not allowed and manholes must be built.
- G. Keep the pipe joints' interior clean from all dirt and other foreign matter as the work progresses. Maintain the pipe's interior cleanliness until accepted or put in service.

- H. At the end of each day's work, and when for any reason the laying of pipe will be discontinued for an appreciable period, close the open ends of the pipeline temporarily with an appropriate manufactured plug.

3.04 PIPE TO PIPE CONNECTIONS

- A. Make all pipe joints in strict accordance with the manufacturer's recommendation and these specifications as stated below for the particular type of connection. Make all joints watertight in accordance with the latest ASTM Standards.
- B. "No-Hub" type pipe connections are not permitted.
- C. Slip-Type Or Push-On Joints Connection Procedure
 1. Clean the bell and spigot end of the pipes prior to jointing thoroughly by whatever means necessary to remove all foreign matter and attain the required cleanliness. Use a brush as necessary. Exercise particular care to clean the gasket seat.
 2. Apply lubricant and attach gasket in strict accordance with the specific joint manufacturer's recommendations. Clean and insert the rubber gasket in the gasket seat within the bell. Insert the spigot end of the pipe in the bell of the pipe to which connection is being made, and force a firm contact with the shoulder of the bell.
- D. Mechanical Joints Connection Procedure
 1. Clean thoroughly the spigot end of pipe, the bell of fitting, and the rubber gasket as specified for slip-type or push-on joints. Clean the gland in a similar manner.
 2. After the gland and gasket are placed on the spigot end of the pipe a sufficient distance from the end to avoid fouling the bell, insert the spigot end in the fitting bell to the point of firm contact with the bell shoulder. Then advance the rubber gasket into the bell and seat in the gasket seat. Exercise care to center the spigot end within the bell.

3. Bring the gland into contact with the gasket, enter all bolts, and make all nuts hand tight. Exercise continued care to keep the spigot centered in the bell.
 4. Make the joints tight by turning the nuts with a wrench - first partially tightening a nut, then partially tightening the nut 180 degrees therefrom and working thus around the pipe with uniformly applied tension until the required torque is applied to all nuts. Required torque ranges and indicated wrench lengths for standard cast iron bolts are shown in Section 02730 - Sanitary Sewer Pipelines.
- E. Reinforced Rubber Couplings
1. Install a reinforced rubber coupling only where dissimilar pipe materials are connected.
 2. Take care that proper alignment is maintained.
 3. Encase reinforced rubber coupling in Class B concrete as shown on the Standard Details.

3.05 SERVICE LINE CONNECTIONS TO CITY SEWER PIPELINES

- A. Wye connection - Use existing wye or other prefabricated outlet if one has been left in the city sewer for sewer service to a lot unless it can be shown that the dwelling unit or building cannot drain by gravity to the wye.
- B. Taps
1. Where a wye or other prefabricated outlet in the city sewer is not available to serve a lot, a tap connection shall be installed at a location approved by the Utility to connect the building sewer to the city sewer.
 2. The Contractor shall install all taps using approved materials and equipment.
- C. Manhole Taps
1. Make manhole tap connections into existing manholes as indicated on the plans.

2. Install manhole taps no more than twenty-four (24) inches or 2/3 of the main line pipe diameter whichever is greater above the manhole invert.
3. Make manhole tap watertight and flush with inside surface of manhole.
4. Manhole taps are considered as part of the service line and are subject to inspection.

3.06 BACKFILLING AND INSPECTION

- A. Before backfilling, place concrete encasement at transitions between different types of pipe and around all flexible rubber couplings as shown on the Standard Details.
- B. Install backwater traps (Sewage check valve) if required.
- C. Before backfilling, install concrete anchor collars in accordance with the details at the location and interval and shown on the plans. Use Class "A" concrete and reinforce with steel bars per Section 03300 - Cast-In-Place Concrete.
- D. After the pipeline is installed and visually inspected by the Engineer, backfill the trench and clean up the site per Section 02220 - Excavation, Backfilling, and Compacting.
- E. Test the service line per Section 02734 - Inspection and Testing of Sanitary Sewer Pipelines, Manholes, and Service Lines.
- F. Repair all pavements per Section 02575 - Pavement Repair.
- G. Repair all incidental damage to buildings, structures, utilities, pavements, landscaping, etc.

3.07 SERVICE LINE REPLACEMENT/REPAIRS

- A. Obtain permit per Little Rock Wastewater requirements.
- B. When possible, the existing tap or wye should be used to connect a repaired or replaced service line.

- C. When the existing wye or tap cannot be used, then the Contractor shall seal original wye or tap (to prevent entrance of rainwater or debris into the city sewer) and contact LRW Engineering Services to arrange for inspection of seal.
- D. Repair damaged portion in accordance with these specifications.
- E. If reinforced rubber couplings are required, be sure to encase them in Class B Concrete as shown in the Standard Details.
- F. Contact LRW Engineering Services to arrange for inspection of service line repair.

3.08 PIPE BURSTING SERVICE LINES

- A. Pipe bursting of existing service lines shall be done only with prior approval from Little Rock Wastewater personnel. Submittal of location, depth, method used, pipe material to be installed and reason for bursting service line instead of conventional relay will be required prior to approval.
- B. Pre and Post televising of existing service line will be required.
- C. Connections at each end of pipe bursting shall be inspected by Utility personnel. All normal inspection fees will be charged for pipe bursting installations.

3.08 RELOCATE SERVICE EXIT

- A. Obtain Plumbing Permit from the Little Rock Public Works Permit Section. A copy of the permit shall be given to the Utility.
- B. Relocate where the sanitary sewer line exits the structure and plug the old sewer line where it was cut to be rerouted.
- C. Have the work inspected by the City Plumbing Inspector and provide the LRW a copy of the Approval Slip.

END OF SECTION 02732