

SECTION 02760
PIPELINE CLEANING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. This Section covers the cleaning of sanitary sewer lines.

1.02 RELATED WORK

- A. Section 02605 - Manholes
- B. Section 02730 - Sanitary Sewer Pipelines
- C. Section 02732 - Sanitary Sewer Service Lines
- D. Section 02762 - Pipeline Television Inspection
- E. Section 02766 - Cured-In-Place Pipe Installed Using the Inversion Method
- F. Section 02769 – Polyethylene Pipe Installed Using the Pipe Bursting Method
- G. Section 03350 - Manhole Rehabilitation

1.03 SUBMITTALS

- A. The Contractor shall submit for approval manufacturer's brochures and specifications for his proposed cleaning equipment. The equipment and methods selected for cleaning shall be approved by the Engineer of Record.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Equipment selected for cleaning shall be of a type generally recognized by the trade for the purpose being used and that has proved satisfactory. The equipment shall be capable of removing all roots, dirt, grease, rock and other deleterious material and obstructions from the sewer lines and manholes that would prevent efficient use of the inspection equipment.
- B. Hydraulic cleaning equipment shall be of a movable dam type and shall be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. Sewer cleaning balls or other such equipment which cannot be collapsed instantly will not be considered acceptable cleaning equipment. The moveable dam shall be of the same diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to insure total removal of grease. If a line segment is found to be completely stopped up or plugged or heavily intruded with roots, then a mechanical root cutter shall be used.
- C. High velocity hydro-cleaning equipment shall be truck mounted for ease of operation. The equipment shall have minimum of 600 feet of 1 inch I.D. high pressure hose with a selection of two or more high velocity nozzles. The nozzles shall have a capacity of 60 GPM at a minimum working pressure of 1000 pounds per square inch (psi). The nozzles shall be capable of producing a scouring action from 15 degrees to 45 degrees in all size lines designated to be cleaned. Equipment shall also have a high velocity gun for washing and scouring manhole walls and floor. The equipment shall carry its own water tank capable of holding corrosive or caustic cleaning or sanitizing chemicals, auxiliary engines, pump and a hydraulically driven hose reel. All controls shall be located so that equipment can be operated above ground with minimal interference to traffic and/or danger to the operator.

- D. Mechanical cleaning equipment shall be used to remove heavy accumulations of silt, sludge, etc., and roots. Bucket machines shall be operated in pairs with each machine powered by an engine with a minimum of 16 horsepower (HP) to ensure sufficient pulling power. Machines shall be capable of operating at least two speeds to match job conditions. Sufficient accessories and tools shall be furnished to accomplish the required cleaning in a complete and efficient manner.
- E. Power rodding machines shall be of a continuous rod type, capable of holding a minimum of 1000 feet of rod. The rod shall be specifically treated steel. The machine shall have a positive rod drive and produce a 2000 pound rod pull. To insure safe operation, the machine shall have a fully enclosed body and an automatic safety throw-out clutch.
- F. Cleaning equipment shall be provided that includes an air conveying vacuum system to provide for the simultaneous removal of the debris flushed to the manhole.
- G. A temporary debris catcher, as approved by the Little Rock Wastewater, shall be used in the downstream manhole if the project is tied to existing sewer mains. See Standard Details.

2.02 PERSONNEL

- A. Contractor personnel shall be thoroughly familiar with all phases of sewer line cleaning to insure satisfactory end results without causing damage to the sewer lines or adjacent property.

PART 3 - EXECUTION

3.01 CLEANING EQUIPMENT

- A. The importance of the cleaning operation cannot be too strongly emphasized. The equipment selected for cleaning shall be capable of removing all dirt, grass, rocks and other deleterious materials from the sewer lines and manholes.
- B. The Contractor shall make an inspection of the lines to be cleaned in order to determine the type of cleaning equipment that is required. It is anticipated that hydraulic cleaning will be adequate for most of the line segments.

3.02 CLEANING REQUIREMENTS

Prior to inspection, all sewer mains will be thoroughly cleaned as specified below:

- A. The sewer lines shall be cleaned by using standard mechanically powered or hydraulically propelled cleaning tools or combinations thereof, such as rodding machines, boring machines, hydraulic balls, cones, ferrets, or other similar devices.
- B. All roots, sludge, dirt, sand, rock, grease and other solid or semi-solid material resulting from the cleaning operations shall be removed at the downstream manhole without passing the material to existing sewer mains. When cleaning equipment is used, a debris catch riser, as approved by Little Rock Wastewater, shall be used in the downstream manhole so that both solids and water shall be trapped. All solids or semi-solids resulting from the cleaning operations shall be removed from the site and disposed of by the Contractor. It is the responsibility of the Contractor to secure a legal dump site for the disposal of this material. Contractor will be responsible for any material allowed to enter Little Rock Wastewater's System as a result of this cleaning process. Contractor will be responsible for any damages resulting, either private or public, from any material

entering LRW's System. All costs incurred to remove such material will be paid by the Contractor.

- C. Satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools, which depend upon water pressure to provide their cleaning force or any tools which retard the flow of water in the sewer lines are used, precautions shall be taken to insure that the water pressure created does not cause any damage or flooding to public or private property. When quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed or used when there is a fire in the area. Before using any water from the City water supply system, the Contractor shall apply for and receive permission from Central Arkansas Water. The Contractor shall be responsible for the water meter and related charges for the set up, including the water usage bill. All expenses shall be considered incidental to cleaning.
- D. **UNDER NO CIRCUMSTANCES SHALL SEWAGE OR SOLIDS REMOVED FROM THE SEWER SYSTEM BE DUMPED ONTO STREETS OR INTO DITCHES, CATCH BASINS, STORM DRAINS OR EXISTING SANITARY SEWER MANHOLES.**

END OF SECTION 02760