

SECTION 02751

PREPARATORY CLEANING OF SEWERS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This section covers the preparatory cleaning of designated sewer lines prior to the internal inspection of the sewer lines by closed-circuit television. The Contractor shall furnish all necessary material, labor, equipment and services required for cleaning the specific sewer lines authorized by the Engineer. Arrangements shall be made with the appropriate Water Company for the purchase of water at no additional cost to the owner.

1.02 GENERAL

- A. Sewer line walls shall be cleaned adequately to provide for a camera used in internal inspection to discern structural defect, misalignment, and infiltration/inflow sources. Cleaning immediately prior to internal inspection is required to preclude the build-up of debris from infiltration/inflow sources and upstream manhole sections.
- B. The term "clean" as used in these Specifications shall mean the adequate removal of sand, dirt, roots, grease and other solid or semisolid materials from the sewer lines. The designated sanitary sewer manhole sections shall be cleaned using mechanically powered, hydraulically propelled or high velocity sewer cleaning equipment, as specified.
- C. Hydraulic Cleaning Equipment:
 - 1. The equipment used shall be of a movable dam type and 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. The movable dam shall be of equal diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure total removal of grease. If sewer cleaning balls or other such equipment, which cannot be collapsed instantly, are used, special precautions against flooding of the sewers and public or private property, shall be taken.

D. High Velocity Hydro-Cleaning Equipment:

1. All high velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more velocity nozzles. 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 include a high velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a long distance solid stream.

The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel. All controls shall be located so the equipment can be operated above ground.

E. Mechanical Cleaning Equipment

1. Bucket machines shall be in pairs with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the pipe will not be allowed. A power rodding machine shall be either a sectional or continuous type capable of holding a minimum of 750 feet of rod. The rod shall be specifically treated steel. To ensure safe operation, the machine shall have a fully enclosed body and an automatic safety throw-out clutch or relief valve.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 GENERAL

A. The equipment and methods selected shall be satisfactory to the Engineer's Representative. The equipment selected for cleaning shall be capable of removing dirt, grease, rocks, sand and other deleterious materials and obstructions from the sewer lines and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be re-setup on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists and the cleaning effort shall be abandoned. Blockages, if any, shall be reported to the Engineer immediately.

3.02 MATERIAL REMOVAL

A. All sludge, dirt, sand, rocks, grease and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole section to manhole section which could cause line stoppages, accumulations of sand in wet wells, or damage to pumping equipment shall not be permitted.

3.03 DISPOSAL OF MATERIALS

A. All solids or semisolids resulting from the cleaning operations shall be removed from the site and disposed of in an approved manner. All materials shall be removed from the site no less than at the end of each workday. Under NO circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as approved by the Engineer.

3.04 CLEANING PRECAUTIONS

A. During all sewer cleaning operations, 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 line are used, precautions shall be taken to ensure that the water pressure created does not cause any damage or flooding to public or private property being served by the manhole section involved. The flow of sewage in the sewer lines shall be utilized to provide necessary pressures for hydraulic cleaning devices whenever possible. When additional 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 in case of a fire in the area served by the hydrant nor shall a hydrant be used for the purpose described unless a vacuum break is provided.

3.05 FINAL ACCEPTANCE

A. Acceptance of this portion of the work shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the Engineer's representative. In areas where cleaning was not found satisfactory during the television inspection, that section shall be cleaned again as designated by the Engineer.

3.06 RECORDING OF FIELD DATA

A. For each location where cleaning is performed, a cleaning report shall be completed which shall contain the following items of information.

1. Location, size, material, and condition of the reach.
2. Length of sewer cleaned.
3. Estimated amount and types of debris and sediment removed.
4. Grease build-ups.
5. Method required for cleaning.
6. Structural failure.

B. All preparatory cleaning shall be witnessed by the Engineer or his Project Representative to insure acceptability of work performance and record-keeping procedures of the Contractor. Preparatory cleaning records shall be ratified daily by the Engineer or his Representative.

END OF DOCUMENT