

# *San Antonio Water System Standard Specifications for Construction*

## ITEM NO. 868

### Sanitary Sewer System Cleaning

**868.1 DESCRIPTION:** This item shall govern cleaning the sanitary sewer system. The Contractor shall furnish all labor, equipment, and materials necessary for cleaning the sanitary sewer system, including the removal of all debris/solids, sand, grease, grit, rock, etc. from the sewer mains, manholes, or structures to facilitate television inspection.

**868.2 REFERENCED STANDARDS:** Reference standards cited in this Specification Item NO. 868 refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification Item No. 868, unless a date is specifically cited.

1. San Antonio Water System (SAWS):
  - a. Specifications for Water and Sanitary Sewer Construction
  - b. SAWS Materials Specifications
2. COSA – City of San Antonio:
  - a. Utility Excavation Criteria Manual.
  - b. City of San Antonio (COSA) Specifications for Construction
3. Texas Commission of Environmental Quality (TCEQ)
  - a. Chapter 217 Design Criteria for Domestic Wastewater Systems
  - b. Chapter 213 (“Edwards Aquifer Recharge Zone”)
4. National Association of Sewer Service Companies
  - a. Sewer Pipe Cleaning Specification Guideline

**868.3 SUBMITTALS:** Submit equipment manufacturer’s operational manuals and guidelines to the Inspector for review.

1. Submit a list of lawful disposal sites proposed for dumping debris from cleaning operations.
2. Submit and maintain Liquid Waste Manifests conforming to City of San Antonio requirements.
3. Send the SAWS copies of the completed manifests to the Inspector within 24 hours after disposal of waste materials.

**868.4 CONSTRUCTION:** The Contractor shall be required to have all materials, equipment, and labor necessary to complete the cleaning of the sanitary sewer system on the jobsite prior to isolating it for the cleaning process.

1. The Contractor shall only use the type of cleaning identified below to perform the necessary removal of all material which will not create hazards to health, property, affect downstream treatment plant processes, or damage to the sanitary sewer system.
2. The sanitary sewer mains, manholes, and structures shall be cleaned using mechanical, hydraulically-propelled, and/or high velocity sewer cleaning equipment.
3. The cleaning process shall remove all debris, grease, sand, silts, solids, rags, rock, etc. from each sewer segment, including the manhole(s) or structures.
4. Selection of cleaning equipment and the method for cleaning shall be based on the

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- condition of the sanitary sewer lines at the time work commences and will be subject to SAWS' pre-approval.
5. All cleaning equipment and devices shall be operated by experienced personnel. Satisfactory precautions shall be taken to protect the sanitary sewer lines, manholes, or structures from damage that might be inflicted by the improper use of the cleaning process or equipment.
  6. Any damages done to a sewer line manhole, or structure by the Contractor shall be repaired by the Contractor at no additional cost and to the satisfaction of SAWS.
  7. Cleaning shall also include the manhole or structure wall washing by a high pressure water jet.
  8. Hydraulic-propelled devices which require a head of water to operate must utilize a collapsible dam.
  9. The dam must be easily collapsible to prevent damage to the sewer line, property, etc.
  10. When using hydraulically-propelled devices, precautions shall be taken to insure that the water pressure created does not cause damage or flood public or private property.
  11. The Contractor shall not increase the hydraulic gradient of the sanitary sewers beyond the elevation that could cause overflow of sewage into area waterways or laterals.
  12. The flow of wastewater present in the sanitary sewer line shall be utilized to provide necessary fluid for hydraulic cleaning devices whenever possible.
  13. Cleaning equipment that uses a high velocity water jet for removing all debris shall be capable of producing a minimum volume of 50 gpm, with a pressure of 1,500 psi, for the sanitary sewer main and 3,500 psi for the (manhole) structure at the pump.
  14. Any variations to this pumping rate must be pre-approved by the Inspector.
  15. To prevent damage to older sewer lines and property, a pressure less than 1,500 psi can be used.
  16. A working pressure gauge shall be used on the discharge of all high pressure water pumps.
  17. The Contractor shall use, in addition to conventional nozzles, a nozzle which directs the cleaning force to the bottom of the pipe for sewers 18" and larger in diameter. The Contractor shall operate the equipment so that the pressurized nozzle continues to move at all times.
  18. The pressurized nozzle shall be turned off or reduced anytime the hose is on hold or delayed in order to prevent damage to the line.
  19. Mechanical cleaning, in addition to normal cleaning when required, shall be with approved equipment and accessories driven by power winching devices.
  20. The Contractor shall submit the equipment manufacturer's operational manual and guidelines to the Inspector, which shall be followed strictly unless modified by the Inspector.
  21. All equipment and devices shall be operated by experienced operators so that they do not damage the pipe in the process of cleaning. Buckets, scrapers, scooters, porcupines, kites, heavy duty brushes, and other debris-removing equipment/accessories shall be used as appropriate and necessary in the field, in

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- conjunction with the approved power machines.
22. The use of cleaning devices such as rods, metal pigs, porcupines, root saws, snakes, scooters, sewer balls, kites, and other approved equipment, in conjunction with hand winching device, and/or gas, electric rod propelled devices, shall be considered normal cleaning equipment.
  23. In addition to the requirements specified herein, the Contractor shall maintain a clean work area and surrounding premises within the work limits so as to comply with Federal, State, and local environmental and anti-pollution laws, ordinances, codes, and regulations when cleaning and disposing of waste materials, debris, and rubbish.
  24. The contractor shall also keep the work and surrounding premises within work limits free of accumulations of dirt, dust, waste materials, debris, and rubbish.
  25. Suitable containers for storage of waste materials, debris, and rubbish shall be provided until time of disposal. It is the sole responsibility of the Contractor to secure a licensed legal dump site for the disposal of this material.
  26. Under no circumstances shall sewage or solids removed from the main or manhole be dumped on the ground, streets, ditches, catch basins, storm drains, or sanitary sewers. Cost for this item shall be included in the price bid for sanitary sewer system cleaning.
  27. The Contractor may be required to demonstrate the performance capabilities of the cleaning equipment proposed for use on the project. If the results obtained by the proposed sanitary sewer system cleaning equipment are not satisfactory to the Inspector, the Contractor shall use different equipment and/or attachments, as required, to meet the requirements of the contract documents. More than one type of equipment/attachments may be required at any given location within the project scope. When hydraulic or high velocity cleaning equipment is used, a suitable sand trap, weir, dam, or suction shall be constructed in the downstream manhole in such a manner that all the solids and debris are trapped for removal.
  28. Whenever hydraulically-propelled cleaning tools which depend upon water pressure to provide their cleaning force, or any tool which retard the flow of water in the sanitary sewer mains 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 being served by the manhole section involved.
  29. Any damage of property, as a result of flooding, shall be the sole liability and responsibility of the Contractor.
  30. The flow of wastewater present in the sanitary sewer system shall be utilized to provide necessary fluid 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.
  31. No fire hydrant shall be obstructed or used when there is a fire in the area. The Contractor shall be responsible for obtaining the water meter and all related charges for the set-up, including the water usage bills from respective water purveyor agency. All expenses shall be considered incidental to the cleaning of the existing sanitary sewer system.

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**868.4 MEASUREMENT AND PAYMENT:** The Contractor shall be fully responsible and shall be paid for sewer system cleaning as part of Item No. 866, "Sewer Main Television Inspection" for furnishing all labor, hauling, materials, equipment, tools, debris disposal, inspection, and incidentals necessary to complete the work. No separate pay item will be made for sewer system cleaning.

**End of Specification**