

San Antonio Water System Standard Specifications for Construction

ITEM 866

Sanitary Sewer Main Television Inspection

866.1 DESCRIPTION: The Contractor shall furnish all labor, materials, equipment, and incidentals to provide the televising and a NASSCO-(PACP) compliant standard video, recorded in MPEG-4 (MP4) format. In accordance with NASSCO PACP requirements, all inspections shall be conducted by a NASSCO certified CCTV operator and shall include respective certification number on each video and a NASSCO PACP database shall be submitted and uploaded onto SAWS Contract and Project Management System (CPMS) or SAWS most current program management system. All digital video files shall be color, closed-circuit TV in MPEG-4 (MP4) format. The video shall include an inclinometer, visible on the video being viewed, noting the slope of the main being televised. The Contractor shall provide inclination reports detailing the inclinometer data found in the main being televised. The Contractor shall provide all inspection data of mains and manholes written to a single storage device. The video Contractor maybe required to televise both pre and post project.

866.2 REFERENCED STANDARDS: Reference standards cited in the Specification Item No. 866 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. 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. Pipe Condition Assessment Using CCTV Performance Specification Guideline

866.3 SUBMITTALS: All submittals shall be in accordance with most recent version of SAWS’s General Conditions requirements. Submit the following prior to performing any work.

1. Certifications: Per General Conditions section 5.12.2 all Contractor submittals for all pipe and other products or materials furnished under this specification shall be marked as reviewed and approved by Contractor for compliance with Contract Documents and the referenced standards
2. Contractor is to coordinate the video procedures with the Inspector prior to commencement of any work, including mobilization and preparation of right-of-way effort.
3. The Contractor is to provide the televising and a NASSCO-(PACP) compliant standard video, recorded in MPEG-4 (MP4) format.
4. All inspections shall be conducted by a NASSCO certified CCTV operator and

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- shall include respective certification number on each video in accordance with NASSCO PACP requirements.
5. Video shall be submitted and uploaded onto SAWS CPMS or SAWS most current program management system. Video must include all the televised segments for the entire project, or for each worksite.
 6. Log of the televised system for review shall be uploaded for review and approval by the Engineer.
 7. Contractor to provide a post construction video upon request.
 8. Contractor is to coordinate the video procedures with the Inspector at completion of project, prior to close out.
 9. The Contractor shall provide a line diagram area sketch and written log for each completed segment of videoed sewer main describing the section being televised, flow and camera direction, position of service connections, description and location of failures, pipe condition, weather conditions, and other significant observations.
 10. Video shall include an inclinometer, visible on the video being viewed, noting the slope of the main being televised.
 11. The Contractor shall provide a graphed report of the inclinometer data gathered for each completed segment of videoed sewer main.

866.4 EXECUTION: Before construction of the sanitary sewer main, the main shall be televised to locate laterals, observe existing conditions and immediately upon cleaning or clearing existing main. After completion of the work specified in the contract documents, and prior to placement of the final course of asphalt or other final surface, the newly constructed or rehabilitated sanitary sewer main shall be televised immediately upon cleaning.

1. Equipment:
 - a. The television unit shall have the capability of displaying in color, on the video, pipe inspection observations such as pipe defects, sags, and points of root intrusion, offset joints, service connection locations, and any other relevant physical attributes.
 - i. Each video shall be permanently labeled with the following:
 - ii. Project name / SAWS Job # / Work Order #;
 - iii. Date of television inspection;
 - iv. Station to station location and size of sanitary sewer;
 - v. Street/easement location;
 - vi. Name of Contractor;
 - vii. Date video submitted;
 - viii. Video number;
 - ix. SAWS Inspector Name.
 - b. The television inspection equipment shall have an accurate footage counter which displays on the monitor the exact distance of the camera from the center of the starting manhole.
 - c. A camera with rotating and panning lens capabilities is required.
 - d. The camera height shall be centered in the conduit being televised.
 - e. The speed of the camera through the conduit shall not exceed 40 feet per

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- minute.
 - f. The produced video shall also have an inclinometer that displays the slope of the sewer main being televised.
 - g. The Contractor shall be required to have all materials, equipment, and labor force necessary to complete all videotaping on the job site prior to isolating the sewer manhole segment and beginning videotaping operations.
2. Televising shall be observed by the Inspector or Engineer and Contractor, as the camera is run through the system.
 3. Any abnormalities such as, but not limited to, misaligned joints, cracked/defected pipe, rolled gaskets, shall be repaired by the Contractor solely at his expense.
 4. Sections requiring repair shall be re-televised from manhole to manhole to verify condition of repair.
 5. If the Contractor provides a video of such poor quality that it cannot be properly evaluated, the Contractor shall re-televising as necessary and provide a video of good quality at no additional cost to SAWS.
 6. If the Contractor cannot provide a video of such good quality that can be reviewed by SAWS, SAWS may elect to televise the line at the Contractor's expense.
 7. Television inspection shall be done one section between two manholes at a time.
 8. Flow in the section being televised shall be bypassed if the line is in service and the flow exceeds 25% of the internal pipe diameter.
 9. When the depth of flow at the upstream manhole of the manhole section being worked is above the maximum allowable for television inspection, the flow can be reduced to allowable levels by performing bypass pumping, as approved by the Inspector.
 10. The Contractor shall not be allowed to float the camera.
 11. There may be occasions during the televised inspection of a manhole section when the camera will be unable to pass an obstruction.
 - a. At that time, and prior to proceeding, the Contractor shall contact the Inspector.
 - b. If the length of sewer main cannot be televised because of obstructions, the Contractor shall clean the system as is necessary.
 - c. If, in the opinion of the Inspector, the obstruction is attributed to a collapsed main or pipe deflection, televising shall be suspended, payment shall be made based on the actual televised length, and the remaining televising of the sewer line shall be continued upon successful correction of the blockage by the Contractor at his expense.
 - d. No additional payment shall be made for additional setups required due to obstructions encountered during televising.
 12. No lateral connections shall be made to the sanitary sewer main at the "12 o'clock" position.
 13. All lateral connections shall clearly indicate which side of the sanitary sewer main it was installed from.
 14. The Contractor is solely responsible for any damage of sewer mains as a direct result of televising operations.
 15. Any repair shall also be the responsibility of the Contractor.
 16. The method(s) used for securing passage of the camera are at the discretion of the Contractor, and as approved by the Inspector.
 17. No sanitary sewer main televising effort shall commence until all pertinent permits

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- or required approvals have been obtained by SAWS.
18. No separate and/or additional payment will be made for any excavation, man entry, or any other method which may be required to retrieve video equipment that may have been hung up, destroyed, and/or lost during the operation.
19. Bypass Pumping:
- a. The Contractor shall perform bypass pumping operations in accordance with Specification Item No. 864, "Large Diameter Bypass Pumping," or Specification Item No. 865 "Small Diameter Bypass Pumping".
 - b. The Contractor shall furnish all labor, supervision, tools, equipment, appliances, and materials to perform all operations in connection with bypass pumping of sewage flow for the purpose of preventing interference with the televising of the sanitary sewer manholes and mainlines as well as providing reliable sewer service to the occupants of the buildings being served.
 - c. The Contractor will be required to provide adequate pumping equipment and force mains in order to maintain reliable sanitary sewer service in all mains involved in the scope of the work.
 - d. Under no circumstances shall the flow be interrupted or stopped, such that damage is done to either private or public property, or sewage flows/overflows into a storm sewer or natural waterway.
 - e. The Contractor shall provide bypass pumping of sewage around each segment(s) of main that is to be televised and shall be responsible for all required bulkheads, pumps, equipment, piping, and other related appurtenances to accomplish the sequence of pumping.
 - f. The Contractor shall be required to have all materials, equipment, and labor necessary to complete the repair or replacement on the jobsite prior to isolating the sewer manhole or line segment and beginning bypass pumping operations.
 - g. The Contractor shall locate bypass pumping suction and discharge lines so as to not cause undue interference with the use of streets, private driveways, and alleys to include the possible temporary trenching of force mains at critical intersections.
 - h. Traffic management shall be done under the approval of respective SAWS, City, County, or State Traffic, Barricade, and Signalization Departments.
 - i. The Contractor shall not initiate any effort to accommodate bypass pumping piping operations until specific written approval is given.
 - j. The Contractor shall coordinate with all property owners to ensure that no damage will be caused to their property during any and all sewer rehabilitation work.
 - k. The Contractor shall complete the televising as quickly as possible and shall satisfactorily meet all requirements prior to discontinuing bypass pumping operations and returning flow to the sewer manhole or main segment.
 - l. The Contractor shall ensure that no damage will be caused to private property as a result of bypass pumping operations. Ingress and egress to adjacent properties shall be maintained at all times.
 - m. Ramps, steel plates, or other methods shall be employed by the Contractor to facilitate traffic over surface piping.

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- n. Pre-televising of sanitary sewer lines will be required prior to rehabilitating lines.

866.5 SETTLEMENT TESTING: Settlement testing shall be performed in accordance with Specification Item No. 849 "Sanitary Sewer Testing."

866.6 PAYMENT: Payment will be made for the work to be done for pre and post television inspection on the basis of the unit bid price per linear foot of pipe diameters 8" through 15", 18" through 24", and 27" larger shall be considered full compensation for all labor, materials, settlement test, equipment, tools, logging, cleaning, by pass pumping and incidentals necessary to complete the work, as illustrated below:

- a. 8" through 15"
- b. 18" through 24"
- c. 27" and larger

1. No additional compensation shall be provided for all needed repairs, re-cleaning, or re-televising effort.
2. There will be no separate pay item for this work for bypass pumping associated with this work.
3. There will be no separate pay item for ramps, steel plates, or other methods be employed by the Contractor to facilitate traffic over surface piping.

-End of Specification-