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## 02760 - TELEVISION INSPECTION OF SEWER LINES

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(Revised 11/30/09)

### SELECTED LINKS TO SECTIONS WITHIN THIS SPECIFICATION

**PART 1 – GENERAL**

[DOCUMENTATION](#)

[PART 2 – PRODUCTS](#)

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### [PART 1 – GENERAL](#)

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Requirements and Supplementary Conditions applicable to this specification.
- B. Section 01000 – GENERAL REQUIREMENTS.
- C. Section 02750 – SEWER LINE CLEANING.
- D. Section 02770 – SEWER FLOW CONTROL.
- E. Section 02780 – LINER FOR SEWER REHABILITATION.

#### 1.2 SUMMARY

This section includes all the equipment, labor, and materials necessary to perform all work for television inspection of sewer lines.

#### 1.3 SUBMITTALS

- A. Submit a written description of procedures to be used to the Owner, including product literature for all digital video equipment including, but not limited to cabling, camera, monitor, footage counter, digital video titling device, and recorder.
- B. Submit a written/printed copy of television inspection logs to the Owner. Logs shall record defects according to NASSCO's Pipeline Assessment and Certification Program (PACP) or/and Manhole Assessment and Certification Program (MACP).
- C. Submit 2 copies of visual and audio recording to the Owner. The Owner will review the inspections, not for accuracy of content, but to make sure that the required information is provided and the recording is of acceptable quality. If the Owner determines that the recording is defective or not of adequate quality, the Contractor shall TV inspect again at the Contractor's expense.

## 1.4 QUALITY ASSURANCE

- A. Comply with all codes, laws, ordinances, and regulations of governmental authorities having jurisdiction over this part of the work.
- B. The Contractor shall comply with the latest revision of the Virginia Occupational Safety and Health Standards for the Construction Industry as adopted by the Safety and Health Codes Commission of Virginia.
- C. The Contractor shall comply with Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, "Virginia Erosion and Sedimentation Control Handbook," latest revision.
- D. The television inspection shall be performed one section of line at a time.
- E. Inspection shall be performed in accordance with NASSCO's Pipeline Assessment and Certification Program (PACP) or/and Manhole Assessment and Certification Program (MACP).

## 1.5 COORDINATION

- A. The contractor shall completely remove and dispose of all dirt, debris, rubbish and surplus, and unsuitable materials at the end of each work day at no additional cost to the owner.
- B. Whenever the contractor desires to use a hydrant for water supply, the contractor shall obtain the permission of the owner. All costs associated with the use of water supplied from hydrants shall not be paid for separately but shall be deemed to be included in the bid. Operation of hydrant shall be in accordance with the City Of Lynchburg Backflow Prevention Program. Use of an RPZ device or air gap is required.

## **PART 2 - PRODUCTS**

### 2.1 DIGITAL VIDEO SYSTEM

- A. The television camera used for the inspection shall be one specifically designed and constructed for such inspection. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100 percent humidity conditions. The camera, television monitor, and other components of the digital video system shall be capable of producing picture quality to the satisfaction of the engineer; and if unsatisfactory, equipment shall be removed and no payment will be made for an unsatisfactory inspection.
- B. Recordings of all sewer line inspections shall be made on DVD. The audio portion of the composite digital video shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report.

- C. A footage counter device, which measures the distance traveled by the camera in the sewer, shall be accurate to plus or minus 2 feet in 1,000 feet.
- D. Digital video equipment shall include genlocking capabilities to the extent that computer generated data (i.e., footage, date, size, address and location, etc.) as determined by the Owner can be overlaid onto digital video, and both indicated on the television monitor and permanently recorded on the digital inspection.

## **PART 3 - EXECUTION**

### **3.1 TELEVISION INSPECTION OF SEWER LINE**

- A. Move the camera through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. In no case pull television camera at a speed greater than 30 feet per minute. Use manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions to move the camera through the sewer line.
- B. If, during the inspection operation, the television camera will not pass through the entire section, set up equipment so that the inspection can be performed from the opposite manhole. If, again, the camera fails to pass through the entire section, the obstruction shall be cleared by cleaning, root removal, or point repair as directed by the City Engineer and the section reinspected.
- C. When manually operated winches are used to pull the television camera through the line, set up telephones or other suitable means of communication between the two manholes of the section being inspected to insure good communications between members of the crew.
- D. Measurement for location of defects shall be aboveground by means of a meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Check accuracy of the distance meter by use of a walking meter, roll-a-tape, or other suitable device. The accuracy shall be satisfactory to the City Engineer.
- E. The camera image shall be down the center axis of the pipe when the camera is in motion. The Contractor is required to provide a 360-degree radial view of the pipe interior using a camera with pan and tilt capabilities for 8-inch diameter and larger pipes. Points of interest shall also be digitally recorded and shall include, but not be limited to, defective joints, ovality, debris, sediment, cracked pipes, holes, or blockages.

### 3.2 DOCUMENTATION OF THE TELEVISION RESULTS

- A. **Television Inspection Logs:** Develop and keep printed location records that clearly show the location in relation to an adjacent manhole of each infiltration point observed during inspection. In addition, record other points of significance such as locations of building sewers, unusual conditions, roots, storm sewer connections, broken pipe, presence of scale and corrosion, and other discernible features.
- B. **Photographs:** Take digital photographs or digital video stills of any defects or points of interest recorded on the inspection report. If no defects are present provide one still image of pipe for information purposes.
- C. **Videotape Recordings:** A visual and audio recording of all areas of the lines shall be performed and produced in a format that may be replayed in a standard CD/DVD player/recorder device.

END OF SECTION 02760

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