

SECTION 02513**CLEANING AND TELEVISION INSPECTION****PART 1 GENERAL****1.01 SUMMARY**

- A. Furnish all necessary labor, materials, supervision, and equipment to clean and inspect sewer and drain lines that are either existing or replaced/lined prior to the installation and after construction of the new 36-inch MWRA drain to confirm sewer and drains were not damaged by construction activity. Work shall be conducted by means of a closed-circuit color television system as specified below and by personnel who have been trained and certified by the manufacturer of the television inspection equipment. Each pipeline section shall be clean prior to television inspection.
- B. All sewers and drains within the Limits of Disturbance or as noted on the Contract Drawings shall be televised before and after the Work included in this Contract.
 - 1. Any utilities in poor condition, per the Town of Needham, shall be replaced or repaired prior to the start of construction.
 - 2. Any utility damaged after construction as identified by the televised inspection, shall be replaced or repaired as directed by the Authority.
- C. All television inspections shall be recorded and shared using the PMIS as noted in Section 01300 - Submittals. A copy shall also be provided in USB or external hard drive to the Authority.

1.02 RELATED SECTIONS

- A. SECTION 01300 – SUBMITTALS
- B. SECTION 02625 – GRAVITY SEWER AND DRAIN PIPE

1.03 QUALITY ASSURANCE

- A. The work described herein shall be performed by a company with not less than five (5) years of experience in providing the required services, employing experienced workers and experienced supervisory personnel.
- B. Supervisory personnel shall have not less than three (3) years of experience in providing the required services and shall be present at the jobsite during all work related to the required services.

1.04 REFERENCES

A. The following standards form a part of this specification as referenced:

1. The National Association of Sewer Service Companies (NASSCO) Recommended Specifications for Sewer Collection System Rehabilitation (Current Edition).

1.05 SYSTEM DESCRIPTION

- A. Unless otherwise indicated herein, the pipe cleaning and inspection shall be carried out in accordance with the other referenced specifications herein and NASSCO Pipeline Assessment Certification Program.
- B. The Contractor may propose alternative processes and/or products for review and approval by the Authority.

1.06 SUBMITTALS

- A. Prior to beginning work, submit the following:
1. Qualifications of the firm/personnel who will perform the work.
 2. Description of system proposed for handling existing flows during the various procedures to be carried out.
 3. Description of the system and equipment proposed for cleaning the pipe.
 4. Description of the equipment and system proposed for inspecting the pipe after cleaning.
 5. Proof of NASSCO Pipeline Assessment and Certification Program (PACP) certifications for personnel performing the pipeline inspection.
- B. Submit the results of the pre- and post-construction televised inspection to the Authority and the Town of Needham within five (5) days of performing each inspection.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. The color television system shall be one specifically designed and constructed for inspection of pipes.
- B. The television camera used for the inspection shall be 360 degree tilt-type specifically designed and constructed for such inspection. Lighting for the camera shall allow a clear picture of the entire pipe barrel. The camera shall be operative in 100% humidity

conditions and shall be waterproof. The camera, television monitor and other components of the video system shall be capable of producing a minimum 600 line resolution color video picture.

PART 3 EXECUTION

3.01 GENERAL

- A. Perform cleaning and televised inspection of all existing sewers and drains within the Limits of Disturbance and as indicated on the Contract Drawings, prior to the construction of the 36-inch drain line and prior to any sewer or drain replacements or linings as indicated on the Contract Drawings.
- B. Perform televised inspection of all existing and replaced/lined sewers and drains within the Limits of Disturbance or as indicated on the Contract Drawings, after the construction of the 36-inch drain line and after any sewer or drain replacements or linings as indicated on the Contract Drawings.
- C. Coordinate the cleaning and televised inspection with the Town of Needham for access to sewer and drain lines and if any temporary bypass is required. Perform the inspection a minimum of two (2) weeks prior to any planned construction.

3.02 PIPE CLEANING

- A. Use either high velocity jet, or mechanically powered equipment, as described in the NASSCO Standard Specifications. Selection of equipment shall be based upon field conditions such as access to manholes, quantity of debris, size of sewer or drain, depth of flow, etc.
- B. All sludge, dirt, sand, rocks, grease, and other solid or semisolid material resulting from the cleaning operation shall be disposed of in accordance with all applicable regulations and in a method acceptable to the Authority. Pipe cleaning shall be performed in advance of pipe television inspection.
- C. Arrange for the legal disposal of all debris removed from the sewers or drains during the cleaning operation including any costs incurred. The Contractor shall not expect the Authority to provide a dump site.
- D. Perform light cleaning of the sewer or drain prior to television inspection. Heavy cleaning shall not be performed. Light cleaning shall include a minimum of two (2) passes with either high velocity jet, or mechanically powered equipment, as described in the NASSCO Standard Specifications. Maintain a list of line segments that require additional cleaning. The list shall detail the reason additional cleaning is required (e.g. sediment, roots, grease, etc.).

3.03 PIPE INSPECTION

- A. Pipe shall be visually inspected by means of closed-circuit television. 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, with minimal reflective glare, for the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions and shall be waterproof. The camera, television monitor and other components of the video system shall be capable of producing a minimum 600 line resolution color video picture. Picture quality and definition shall be to the satisfaction of the Authority.
- B. The camera shall have a remote controlled, pan and tilt type lens and lighting system capable of turning perpendicular to the direction of flow and rotating 360 degrees while inside the pipe. The camera shall be able to view a minimum service connection length of four (4) feet in order to determine whether the connection is active or inactive.
- C. Electronic video equipment shall be capable of displaying and recording during the entire inspection, as a minimum, the following data for each sewer or drain reach videotaped:
 - 1. Project identification;
 - 2. Date recorded;
 - 3. Sewer or drain reach identification (street location, MH to MH); and
 - 4. Footage counter
- D. The camera shall be moved through the line in either direction at a uniform rate, stopping when necessary to ensure proper identification of the sewer's or drain's condition. Manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with proper NASSCO PACP documentation of the sewer or drain conditions shall be used to move the camera through the sewer or drain line. If, during the inspection operation the television camera will not pass through the entire sewer or drain section, the Contractor shall re-set its equipment in a manner so that the inspection can be performed from the opposite manhole.
- E. The camera shall be moved through the sewer or drain line at a prudent rate so that all pipe leaks and defects are observed and recorded. Each service line will be internally viewed from the mainline utilizing the pan and tilt camera. Estimate, by observation, the discharge rate of all continuously running service connections and leakage into the pipe.
- F. Standing water within a sagging pipe shall be removed so that the pipe can be

adequately television inspected. A minimum of 80% of the pipe shall be visible before television inspection.

- G. Documentation of the sewer or drain conditions shall conform to the NASSCO PACP protocol. Personnel shall be NASSCO PACP certified.

3.04 OPERATION

- A. The camera shall be moved through the line in either direction at a uniform rate, stopping at observed defects and pipe connections to document drain condition, but in no case shall the television camera be pulled at a speed greater than 30 feet per minute. Do not obstruct the camera view, or interfere with documentation of drain conditions, when moving the camera through the pipe.
- B. For each pipeline section being televised, both the adjoining upstream and downstream manholes shall be inspected for condition of invert, walls, and pipe connections.

3.05 RECORDS

- A. Document television inspections with a type-written log of each pipeline section inspected. Four (4) copies of type written logs shall be turned over to the Authority.

**** END OF SECTION ****