

ITEM 563

CLOSED CIRCUIT TELEVISION INSPECTION
OF AS BUILT STORM SEWER SYSTEMS

563.1 Description. The Contractor shall furnish all materials, labor and equipment necessary for the inspection, of the new constructed storm sewer lines or systems indicated on the as-built drawings.

Inspection shall be by means of a closed circuit television inspection; and be documented in a written report, including DVD copies of the televised inspection.

563.2 Definitions.

Stationing - The term denoting longitudinal measurement in linear feet. For example: Manhole No.1 is at Sta. 0+50, and Manhole No.2 is at Sta. 5+01.

Manhole Section - The term "manhole section" as used in these specifications shall mean the length of pipe and or box culverts connecting two manholes.

Lateral Pipe and/or Lead Pipe – the Pipe connecting an inlet to a manhole and/or a junction box.

Outfall Pipe – a section of pipe run from a manhole to an outfall ditch.

563.3 Contractor Obligations

A. The Contractor shall furnish at no cost to the television crew, the following items during the entire project:

1. Site Access. Access to the site of work with sufficient area for the placement of the equipment and personnel. All work will be within easements and roadway rights-of-way.
2. Drawings. A set of "as-built" drawings indicating the location of the storm sewer system to be inspected, along with identification of the manholes, inlets, outfalls and all pipe runs.
3. Prior to beginning the televising of the storm sewer system, a sign board shall be filmed showing the name of the project, the date, and time filming begins.

563.4 Closed Circuit Television (CCTV) Inspection

A. Equipment and Procedures

1. A self contained and air conditioned mobile trailer or van shall be provided which is large enough to accommodate representatives of the Engineer and the Contractor for purpose of viewing/monitoring the work while inspection is in progress. Trailer or van shall be equipped with a closed circuit television camera, color monitor, video tape recorder and/or DVDR, winches (power and mechanical), cable, and cable reel, suitable metering device so that exact location of camera within the line being televised can be noted at all times, and all necessary equipment for successful completion of television inspection, recorded on technicolor DVD media.
2. Perform cleaning prior to performing closed circuit television inspection. Cleaning shall include utilizing variable water pressure nozzles, up to 3,000 psi. The CCTV contractor shall remove, collect, transport, and dispose of sand, debris, and liquid wastes to legal disposal sites.
3. Television equipment shall consist of a tilt and pan color camera and a monitoring unit connected by a coaxial cable. Camera shall be small enough to ensure passage through the lines, be waterproof and provide a continuous, clear picture showing the entire inside periphery of the pipe or box culvert. The contractor shall provide suitable lighting system to allow all features and condition of the pipe to be clearly visible on the colored DVD media.
4. The television inspection shall be performed on one manhole section at a time. Each manhole section being inspected shall be isolated from the remainder of the line by the use of a line plug to insure total viewing of the inside periphery of the pipe or box culvert. The inspection shall be performed by pulling the television camera through the line along the axis of the pipe or box culvert. A crawler type tractor for the camera is also acceptable. The inspection shall be performed in a forward and/or backward direction, according to line conditions at the time the inspection is made.
5. During the television inspection operation an inspection record shall be kept which will show clearly the exact location, in relation to the centerline of the adjacent manhole, of each defect, crack, gap, or separation discovered by the television. To ensure accurate measurement, the measurement shall be made from an

object at a fixed distance in front of the television camera, being positioned at the exact location of the defect, crack, separation of pipe or box culvert failure. The measurement reading shall be made at ground level by means of a meter device.

6. Should a water level be encountered that would prevent the viewing of the storm sewer interior, the Contractor shall dewater the segment to allow for inspection. In the case where there is constant water infiltration due to an adjacent pipe break, the Contractor shall notify the utility operator.

563.5 Records

1. A record shall be kept of the locations of defects located in the storm sewer using the distance from the nearest manhole so that the defects can be easily re-located.
2. Contractor shall furnish a minimum two (2) complete recorded/televised, narrated, record of all lines televised (Two DVD's). All recorded media shall have a continuous audio recording that reflects footage during the televising operations. At the completion of each recording, the televised media become the property of the Owner. All costs incurred in connection with the television operation are to be included as a lump sum bid price for this televising and recording. The DVD's shall be labeled with the following:

Contractor's name ...
Inspection Type- "Post Installation"
Date of Inspection
Project name
DVD Number of Total number of DVD's
Date Submitted

3. Following the CCTV inspection, the Contractor shall provide two (2) copies of the bound written report indicating the physical location of the storm sewer elements, with a map that illustrates the relationship between the televised footage and above ground location between manholes, size of lines, pipe materials used, location of deficiencies observed, and depth of flow line relative to the natural grade.

563.6 Measurement and Payment. This item shall be paid for as a lump sum bid item which shall include the full cost of cleaning and televising/recording the complete as built storm sewer system.

There are line code(s), description(s), and unit(s) for this item.

END OF ITEM 563