

# CCTV Specifications

Current PACP certification of all CCTV operators will be required for all CCTV work.

Database shall be an unmodified NASSCO-PACP Certified Access Database.

CCTV Software shall be NASSCO-PACP certified.

The contractor shall televise the sewer and shall inspect the upstream and downstream manholes and document all observations.

Sewer sections and manholes shall be inspected by means of remote CCTV. If a blockage cannot be removed and hampers the video taping of the sewer in one direction then the contractor shall attempt to complete the section by televising from the other manhole to complete the section, this reversal must immediately follow the initial direction on the same survey and report. The contractor must immediately report the obstruction to the MSD project manager.

The recorded video must show the entire circumference of the sewer. Any flow control to remove standing water and debris shall be incidental to the contract. The contractor must also consider weather conditions to obtain the best video image of the sewer. This may require the contractor to delay any video work after major rain events until the system can return to lower dry weather flow.

Perform all CCTV inspections in accordance with NASSCO's Pipeline Assessment Certification Program (PACP). CCTV inspections will be conducted entirely in digital format. The entire inspection survey shall be recorded in MPEG-1 format written to DVD and submitted with digital links to the survey. All cleaning and television inspection reports shall be within +/- 2 (two) feet of the measured linear footage between manholes along the existing sewer centerline from the end of pipe to end of pipe. Work not following these specifications may be rejected for payment and the contractor may be required to re do the work.

The documentation of the work shall consist of PACP CCTV Reports, Unmodified PACP database, logs, electronic reports, etc. noting important features encountered during the inspection. The speed of travel shall be slow enough to inspect each pipe joint, tee connection, structural deterioration, infiltration and inflow sources, and deposits, but should not, at any time, be faster than 30 feet per minute. The camera must be centered in the pipe to provide accurate distance measurements to provide exact locations of important features in the sewer and these footage measurements shall be displayed and documented on the video. The completed DVD will become the property of the District.

Every section of sewer (manhole to manhole) shall be identified by audio and alphanumeric on the video display and shall include: project name, municipality, street name, CAGIS manhole numbers, inspector's name, sewer diameter and length, and date of inspection. Important features shall be identified by audio and on PACP log to include all manholes, active and inactive service connections, structural defects, maintenance problems, grease, roots, infiltration, obvious inflow sources, etc. All video must be continuously metered from manhole to manhole. In addition to televising the sewer, all manholes shall be panned with the video camera and visually inspected.