**DRAINAGE DISTRICT #3**

**Closed Circuit Television (CCTV) Inspection Requirements**

When required by the Drainage District #3 Board, Contractor shall complete a CCTV inspection of enclosed Drainage District #3 owned facilities that may be or have been impacted by project activities.

1. CCTV pipe inspection shall be performed by inspection firms which are suitably equipped, experienced, qualified, and staffed for CCTV inspection. Inspection firm shall provide the District Engineer with written credentials verifying the past experience of the inspection technician.
2. If required, inspection firm shall provide a calibration video showing various water depths for the size of pipe being videoed. Calibration video shall be onsite during CCTV process. Also, if required, provide an acceptable method of measuring the depth of standing water at potential problem locations other than the calibration tapes. A camera-mounted water depth gauge may be used upon written pre-authorization of the District Engineer.
3. CCTV inspection shall be conducted in the presence of the District Engineer or authorized representative, at the discretion of the Drainage District #3 Board. Contractor shall provide minimum 48 hours of notice to the District Engineer prior to undertaking the inspection.
4. Contractor shall ensure all manhole grout work is completed prior to CCTV to prevent pipe breakage at the pipe connection to the manhole.
5. Contractor shall perform CCTV inspection after pipe backfill and prior to surface repair. Uncover and reinstall sections of the pipe found to have defects in workmanship (including standing water caused by grade defects) as required by the Drainage District #3 Board or the District Engineer. After repair, Contractor shall re-CCTV the repaired section. Do not reinstall damaged or rejected pipe.
6. Acceptance Criteria:
   1. If standing water is observed due to grade defects, use the following table to determine allowable depth of standing water in relationship to the design slope of pipe.

|  |  |
| --- | --- |
| Pipeline Slope (FT/FT) | Allowable Standing Water Depth (IN) |
| G<0.001 | ≤or=5/8” |
| 0.001≤G<0.002 | ≤or=1/2” |
| 0.002≤G<0.004 | ≤or=3/8” |
| 0.004≤G<0.006 | ≤or=1/4” |
| 0.006≤G<0.008 | ≤or=1/8” |
| G>0.008 | No standing water |

* 1. No pipeline structural defects observed.
  2. No pipeline installation defects observed.
  3. No infiltration observed.

1. Provide CCTV records in high quality digital format (MP4, MOV, WMV, AVI) unless otherwise accepted in writing by the District Engineer.
2. Provide CCTV inspection equipment including a color camera system, digital recording system, camera propulsion equipment, and on-site viewing equipment to allow real time viewing by District Engineer or authorized representative.
3. The CCTV digital file format shall include the following video and audio information:
   1. Video:
      1. Project Number & Name
      2. Date of TV Inspection
      3. Upstream and downstream manhole numbers
      4. Current distance along line segment
   2. Audio:
      1. Date of TV Inspection
      2. Verbal confirmation of upstream and downstream manhole number and/or locations
      3. Verbal description of pipe, size, type, and pipe joint length
      4. Verbal description of location of each service connection, as applicable
4. If no defects are observed, submit digital video file to District Engineer for review and acceptance. The digital video files shall be provided with written documentation referencing the applicable as-constructed project drawings. The written documentation shall include drawing name, sheet numbers and drawing date.