

less often than at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as approved by the Engineer.

- G. Acceptance of drainage line cleaning shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the Engineer. If TV inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to reclean and reinspect the drainage line until the cleaning is shown to be satisfactory.

### **29.3.1.2 Cleaning Equipment**

- A. Hydraulically propelled equipment shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the drainage flows. The movable dam shall be equal in diameter to the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure removal of grease. Drainage pipes cleaning balls or other equipment which cannot be collapsed shall not be used.
- B. High-velocity jet (Hydrocleaning) equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps and hydraulically driven hose reel.
- C. Mechanically powered equipment of a power rodding machine type shall be either a sectional or continuous rod type capable of holding a minimum of 200 m of rod. The rod shall be specifically heat-treated steel. To ensure safe operation, the machine shall be fully enclosed and have an automatic safety clutch or relief valve. Buckets, scrapers, scooters, porcupines, brushes and other mechanical equipment may also be utilised.
- D. All equipment and devices shall be operated by experienced personnel so that drainage lines are not damaged in the process of cleaning. When hydraulically propelled tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the drainage line are used, precautions shall be taken to ensure that the water pressure created does not damage or cause flooding of property being served by the drainage line. When possible, the drainage flow in the pipeline shall be utilised to provide the necessary pressure for hydraulic cleaning devices. When additional water from hydrants is necessary to