CHAPTER 10: RESIDENTIAL BUILDING SEWERS

Figure 10-1: *6-inch VCP curves connected to the sewer main via wye fittings*

Lateral Sewers

A lateral sewer is a continuation of the municipal sanitary sewerage system. This installation demands the same special care and experience as municipal sewerage construction for the line to be permanent and trouble free. Experienced, competent contractors should perform the installation.

Lateral sewers must be resistant to the action of corrosive chemicals. Ordinary sewage contains quantities of acetic, citric, sulfuric and lactic acid as well as organic acids. These sewers pass thousands of gallons of hot, soapy water, vegetable and fruit juices, a variety of cleansers and drain cleaners, which are highly corrosive. In addition, the widespread use of garbage disposals introduces a large amount of organic matter into sewers. Dishwashers and washing machines contribute large quantities of hot water, which greatly increase the sewage temperature.

Lateral sewer pipe should not deflect, deform, soften, rust, decompose or disintegrate from the effect of domestic wastes, high sewerage temperatures, moisture saturation, sustained trench loading or cleaning equipment.

Trench Excavation

Pipe trenches should be dug with the same care required for main lines. Trenches should be straight, to the required grade and width held to a minimum.

Where the soil is sufficiently firm to provide a solid foundation for the pipe, the trench bottom should provide uniform support for the barrel of the pipe. Bell or coupling holes must be dug at the proper intervals so that the barrel of the pipe supports the weight.

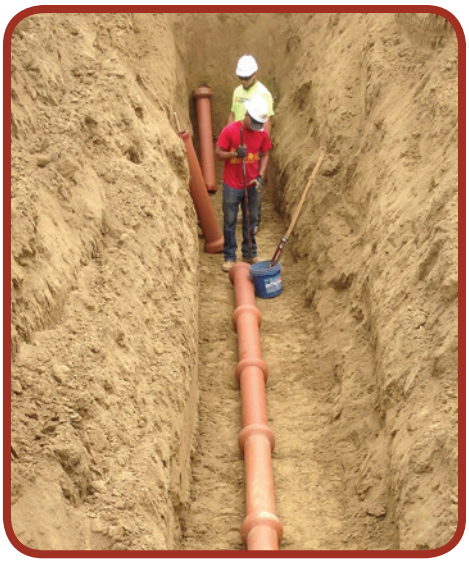

Figure 10-2: *Not a Typical residential sewer installation.*

Care should be taken to excavate no deeper than necessary, unless there is a supply of angular crushed stone or other suitable coarse material available to bring the trench bottom to grade and provide uniform support for the barrel of the pipe. Rock or other unyielding material, which is encountered, should be removed. The pipe foundation should be free of all lumps and irregularities.

Where the bottom of the trench is either of rock or an unstable material, it is necessary to excavate below grade and backfill to grade with angular crushed stone or similar material.

Installation

Each section of pipe should be installed to a specified line and grade. All pipe should be installed with bells or couplings upgrade.

As the installation progresses, the interior of the pipe should be cleared of all dirt and foreign material. The trench should be kept as dry as possible while the pipe is being installed. The specific manufacturers' recommendations should be carefully followed.

Figure 10-3: *Two services constructed in the same trench excavation.*

Backfilling

Normally the excavated earth is satisfactory for backfilling purposes. The trench should be backfilled as soon as inspection is completed. To protect the line from lateral movement, the bedding and backfill should be carefully placed around and above the top of the pipe.

Adding New Service Connections

Connection of a new service lateral to an existing sewer main can be accomplished by the use of various available tap saddle kits or tee fittings. All tap saddle kits and tee fittings require core drilling a hole in the existing sewer main (see Figures 10-4 and 10-5).

Figure 10-4: *Hole cored in clay jacking pipe to reconnect a lateral following a pipe burst.*

Figure 10-5: *Service connection made using a cored hole and a tee fitting.*

Another method is to cut and remove a section of the existing main line followed by inserting a plain end tee or wye fitting with rubber compression couplings on each end. Cutting of the pipe can be accomplished by using a saw or chain cutter. For reconnection to the existing mainline pipe, two couplings are needed for each new fitting installed. The replacement branch spur can be a plain end or jointed pipe (see Figures 10-6 and 10-7).

Figure 10-6: *Cutting out a section of main line to insert a factory made, plain-end wye fitting.*

Figure 10-7: *Wye fitting for lateral service connection to main line made using shielded rubber couplings.*