CHAPTER 6

LATERALS & SPECIAL FEATURES

In main line and lateral sewer construction, it is important to assure proper embedment, backfill and compaction of the construction materials which support and surround all Wye's or Tee's used for service connections. Some cities use Tee's instead of Wye's since there is an insignificant difference in turbulence of flow between Wye and Tee connections to small and intermediate diameter main line sewers.

No matter which style of service connection is specified, it is critical that all lateral service connections observe the same standards as the mainline installation for embedment, backfill, and compaction of the construction materials.

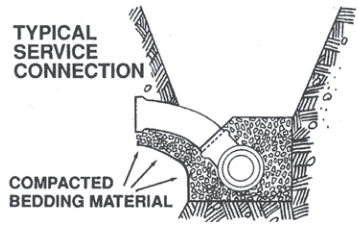

Figure 29: *Typical Service Connection*

Pipe Fittings

Special attention should be given to compaction under the fitting spurs/branches to avoid shear failure through backfill load.

Where vertical risers cannot be avoided, special construction methods are required and should be evaluated by the design engineer.

Tapping for Service Connections

Connection of a service lateral to a 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 sewer main (see Figure 30).

Figure 30: *Tapping a new sewer main for a service connection*

Excavation of Laterals

Pipe trenches should be dug with the same care required for main lines. Trenches should be straight, to the required grade with width held to a minimum, while allowing adequate room for haunching.

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.

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 rock or similar material.

Installation

Each section of pipe should be installed to a specified line and grade. Pipe are generally 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 manufacturer's recommendations should be carefully followed.

Figure 31: *Two services constructed in the same trench excavation*

Backfill

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.

Stoppers

In cases where fittings or stub-outs will not be connected immediately, a suitable stopper with compatible jointing should be securely placed in the fitting. If a low-pressure air test is performed, stoppers must be braced externally.