NEARNESS OF PIPE

SUMMARY
There are requirements about how close pipes/lines can be.
Crossing pipe should not touch each other.

PROXIMITY OF LINES

Typically, the depths of pipelines conveying potable water, recycled water, and sewage are in descending order of water quality. There is usually a requirement that there be at least one foot vertical separation between parallel or crossing lines (measured between pipe barrels). There is also usually a requirement that there be a minimum of 10 ft horizontally between parallel water and sewer pipe. Many agencies also require that there should not be a gasketed joint in the water pipe that is within 8 to 10 feet of the sewer line. In other cases, there is a one foot minimum separation requirement between any pipe and a structure. Separation distances refer to outer surface of any pipe coating or wrap.

If the pipelines that are exposed in the excavation do not meet these requirements, the owner or design engineer must be notified. This pertains to both existing lines and the new lines.

PIPE ON PIPE

Pipe should not touch each other. The weight of the pipe, water in pipe, and the backfill soil over the pipe are all concentrated at the point of contact, as illustrated in Figure 1. This creates a point load on the lower pipe. The effect is the same as a boulder resting on the pipe. Any vibration in either of the lines creates a sawing action of one pipe on the other.

The pipe should be separated by a spacer, such as Styrofoam block, as shown in Figure 2. Styrofoam separation is beginning to be specified by some agencies as a method to separate the pipe. The Styrofoam may also be required if there is less than the one foot separation as discussed above.

Because of the difficulty in compacting soil beneath a pipe, the pipe support at the crossing is poor and can lead to differential settlement. Flowable fill should be used to backfill the excavation at such a site.
Figure 1  Pipe Touching Another Pipe

Figure 2  Use of Styrofoam Spacer between Pipe