1. A small office building has two plumbing clusters (see Figure 1 on the next page) with a total of 8 flushometer siphonic valve toilets, 8 lavatories, 2 service sinks, and 2 drinking fountains, using “public” numbers, determine:

   Total fixture units:

   Total demand flow (gpm):

   The street main pressure is 42 psi. The most critical fixture (a water closet) is 10’ above the inlet main. The developed length is 80’. What diameter building main would you select (presuming an equal friction loss is maintained in all pipe sections)?

   How many fixture units are used for the domestic hot water?

   What demand flow rate does this equal (gpm)?

2. Size the cold water supply piping using the given data from problem 1 (see Figures 1 and 2).
Figure 1: Typical Plumbing Cluster “A”
(Cluster “B” is similar but opposite hand)
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Branch 'B' is mirrored opposite of Branch 'A'.