CMGT 235 – Electrical and Mechanical Systems

Department of Construction Management ✿ California State University, Chico

Homework #11 – Plumbing Systems

Points: 20

Due: 9/29/2022

Name: __Solution_____

1. The local municipal water service has a MDSSPA of 80 psi. For the house plan used in homework #10 the highest fixture is a showerhead that is 14 ft above the source of the supply. Assume a water meter pressure loss of 5 psi and a water softener pressure loss of 9 psi. Calculate the Available Water Pressure.

   Available Pressure = 80 psi – (14 ft x 0.433 psi/ft) – 5 psi – 9 psi = 59.938 psi

2. Complete the table below for the home plan used for homework #10. There are four ¾" hose bibbs outside around the perimeter of the home and one laundry machine.
   See: https://www.engineeringtoolbox.com/fixture-water-capacity-d_755.html

Fixture	Minimum Supply Pressure (psi)
Water Closet	8
LAV	8
Tub/Shower	8
Tub	8
Shower	8
Kitchen Sink	8
Dishwasher	8
Laundry Machine	8
Laundry Sink	8
¾" Hose Bibb	8

3. If every fixture in the home was used simultaneously what would be the total pressure demand?

Fixture	Number of Fixtures	Total Pressure (psi)
Water Closet	5	40
LAV	7	56
Tub/Shower	3	24
Tub	1	8
Shower	1	8
Kitchen Sink	1	8
Dishwasher	2	16
Laundry Machine	1	8
Laundry Sink	1	8
¾" Hose Bibb	4	32
Total Pressure Demand		208