

# FIRE-WATER CALC WORKSHEET FOR \_\_\_\_\_

(Based upon the Hazen-Williams Formula)

NAME/ADDRESS OF PROJECT \_\_\_\_\_

## INFORMATION REQUIRED TO CALCULATE WATER SERVICE SIZE

- |  |                                |                          |                 |              |
|--|--------------------------------|--------------------------|-----------------|--------------|
| 1. Sprinkler Demand:   | 1 Sprinkler (gpm) _____        | 2 Sprinklers (gpm) _____ | Total           | GPM = _____  |
|  | Sprinkler Manufacturer; _____  | Model # _____            | K-Factor; _____ |              |
| 2. Difference in elevation from main to external pressure tank or to building control valve. |                                |                          |                 | (feet) _____ |
| 3. Size of the water meter when applicable.  | Example; 5/8, 3/4, 1, 2, 3, 4. |                          |                 | _____        |
| 4. Developed length from main or external pressure tank to building control valve.           |                                |                          |                 | (feet) _____ |
| 5. Low pressure at main in street or external pressure tank.                                 |                                |                          |                 | (psig) _____ |

## CALCULATE WATER SERVICE PRESSURE LOSS

- |  |                   |   |                                 |                    |
|--|-------------------|---|---------------------------------|--------------------|
| 6. Low pressure at main in street or external pressure tank. (value of #5 above)               |                   |   |                                 | _____              |
| 7. Water service diameter is _____   | Material is _____ | Pressure loss   |                                 |                    |
| per 100 ft = _____   | psi X _____       | (decimal equivalent of service length, i.e. 65 ft = 0.65) |                                 |                    |
|  |                   |   | (Subtract line 7. From line 6.) | subtotal _____     |
| 8. Determine pressure gain or loss due to elevation. (multiply the value of #2 above by 0.434) |                   |   |                                 | value of "8" _____ |
| 9. Available pressure after the bldg. Control valve. (subtract or add line 8. Enter in "B".)   |                   |   |                                 | subtotal _____     |

## CALCULATE THE PRESSURE AVAILABLE FOR UNIFORM LOSS (VALUE OF "A")

- |   |  |  |                             |                           |
|---|--|--|-----------------------------|---------------------------|
| B. Available pressure after the building control valve. (from "9" above)  |  |  |                             | value of "B" _____        |
| C. Pressure loss of water meter. (when meter is required or installed)  |  |  |                             | value of "C" _____        |
|   |  |  | (subtract line C. From B.)  | subtotal _____            |
| D. Pressure at controlling sprinkler(s).  |  |  |                             | value of "D" _____        |
| (controlling sprinkler(s) is _____)   |  |  |                             |                           |
|   |  |  | (subtract the value of D.)  | subtotal _____            |
| E. Difference in elevation between the building control valve and the controlling sprinkler(s) in feet; _____ X 0.434 psi/ft.             |  |  |                             | value of "E" _____        |
|   |  |  | (subtract the value of E.)  | subtotal _____            |
| F. Pressure loss due to water treatment devices, instantaneous water heaters and backflow preventers which serve the controlling fixture. |  |  |                             | value of "F" _____        |
| Pressure loss due to _____  |  |  |                             | (subtract the value of F) |
|   |  |  |                             | subtotal _____            |
| G. Developed length from building control valve to controlling sprinkler in feet _____ X 1.5  |  |  |                             | value of "G" _____        |
|   |  |  | (divide by the value of G.) | subtotal _____            |
| (Note: Excessive number of fittings refer to material fitting pressure loss tables)   |  |  |                             |                           |
| Water distribution piping material is: _____  |  |  |                             |                           |
|   |  |  | (multiply by 100)           | _____                     |
| A. Pressure available for uniform loss  |  |  |                             | "A" = _____               |
|   |  |  |                             | 100                       |

### Comments