



# WATER SUPPLY SYSTEM SIZING USING APPENDIX "A"

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The following information is requested so the CLV Building Department will be able to verify the sizing of the water piping correctly when the 2018 UPC, Appendix "A" is used. **Please provide supporting documents for the information provided.** While the information contained in this form is believed to be accurate, this information should not be used or relied upon for any specific application without competent professional examination and verification of its accuracy, suitability and applicability by a competent licensed mechanical engineer, architect, or other licensed professional. Anyone making use of this information assumes all liability arising from such use.

### PRELIMINARY INFORMATION:

- 1) Minimum average daily service pressure..... \_\_\_\_\_ PSI  
Call the Las Vegas Valley Water District at 258-8518 or the NLV Water District at 633-1206
- 2) Water meter and RPPA size..... \_\_\_\_\_ / \_\_\_\_\_ Inches
- 3) Water meter and RPPA pressure loss..... \_\_\_\_\_ / \_\_\_\_\_ Total \_\_\_\_\_ PSI loss  
(At continuous flow, see demand load)

### DEMAND LOAD:

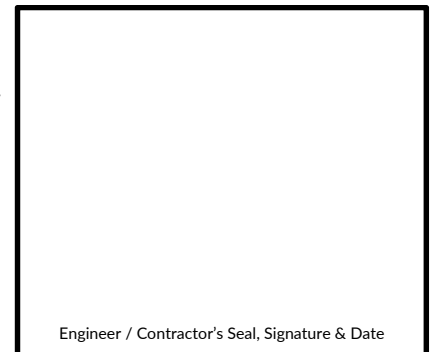
- 4) Total Fixture Units (From Table A103.1). Provide list of fixtures & units for each)..... \_\_\_\_\_ FU
- 5) Flow in gallons per minute..... \_\_\_\_\_ GPM  
(From Table A103.1(2) or A103.1(1) using number of total fixture units from line 4 above)
- 6) Continuous supply demands (sprinklers, A/C, etc.)..... \_\_\_\_\_ GPM
- 7) Line 5 added to line 6 equals the total flow..... \_\_\_\_\_ TOTAL GPM through Meter

### PERMISSIBLE FRICTION LOSS:

- 8) Minimum residual pressure desired (15 lbs. min.)..... \_\_\_\_\_ PSI
- 9) Elevation of highest fixture above street water main..... \_\_\_\_\_ Feet
- 10) Static elevation pressure loss equals maximum elevation multiplied by 0.43. \_\_\_\_\_ x 0.43 = \_\_\_\_\_ PSI  
(maximum elevation) (static pressure loss)
- 11) The average minimum daily service pressure minus (the static pressure loss + residual pressure desired + meter pressure loss + RPPA pressure loss) = pressure available for friction loss in supply piping.  
\_\_\_\_\_ PSI - ( \_\_\_\_\_ PSI + \_\_\_\_\_ PSI + \_\_\_\_\_ PSI + \_\_\_\_\_ PSI ) = \_\_\_\_\_ PSI  
(Minimum daily service pressure) (Static Loss) (Residual Pressure) (meter loss) (RPPA Loss) (Pressure available)
- 12)  $100 \times \frac{\text{pressure available for friction loss}}{\text{total developed length of piping}} = \text{allowable friction loss per 100 feet of piping}$   
total developed length of piping = total lineal feet + \_\_\_\_\_ % fitting loss  
 $100 \times \frac{\text{_____ PSI}}{\text{_____ PSI per 100 ft. of piping}} = \text{_____ PSI}$

13) Using the above information the building supply, branches and risers can be sized. Check below which chart is used.\*

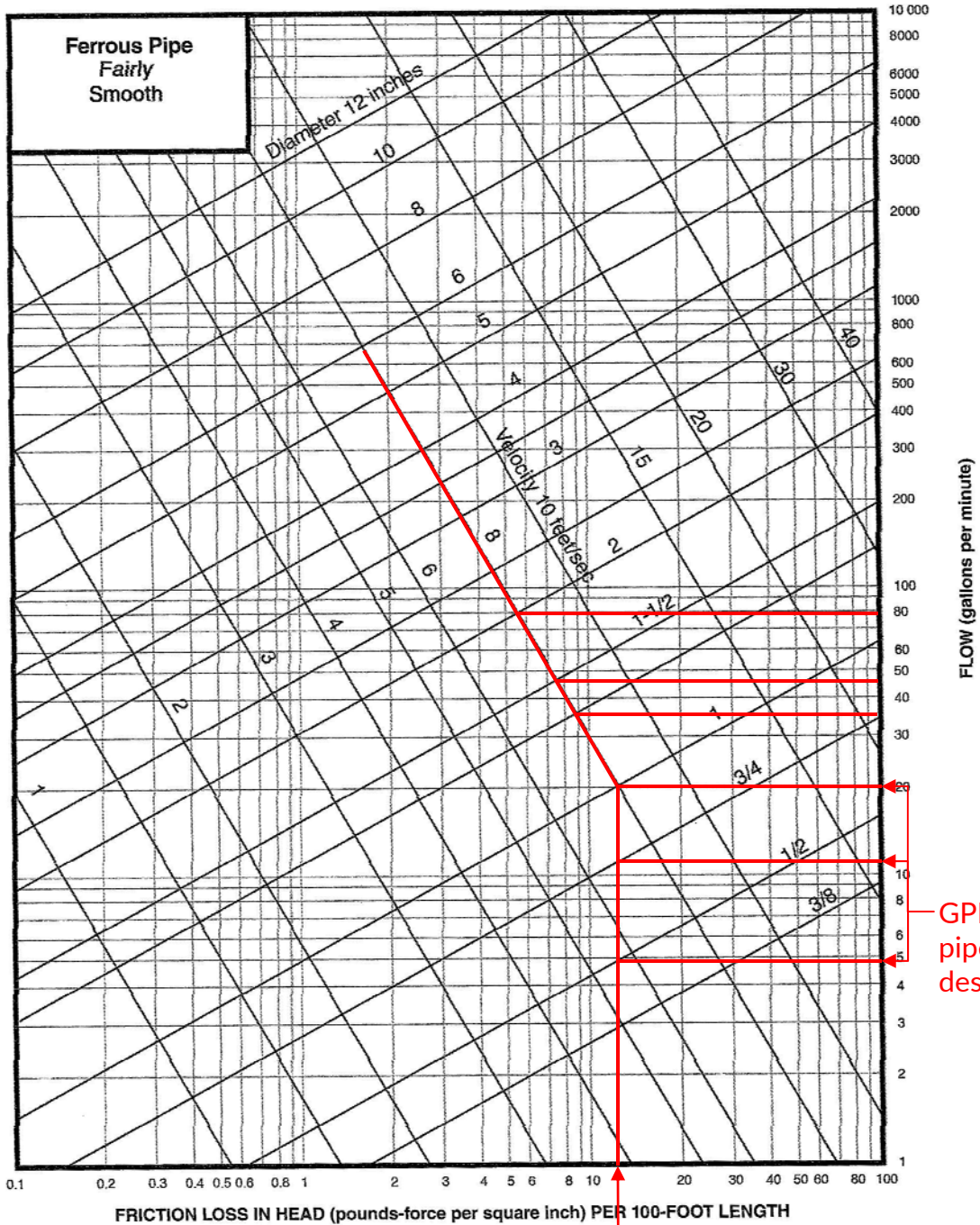
- Chart A105.1(1) \_\_\_\_\_
- Chart A105.1(2) \_\_\_\_\_
- Chart A105.1(3) \_\_\_\_\_
- Chart A105.1(4) \_\_\_\_\_



\* -Charts and Appendix A Calcs shall be on plans with permissible friction loss per 100 ft. and flow (GPM) clearly identified on chart (See Example).

# EXAMPLE

CHART A 105.1(2)



GPM for each pipe size in design.

Friction loss from calculation

For SI units: 1 inch = 25 mm, 1 gallon per minute = 0.06 L/s, 1 pound-force per square inch = 6.8947 kPa, 1 foot = 304.8 mm, 1 foot per second = 0.3048 m/s