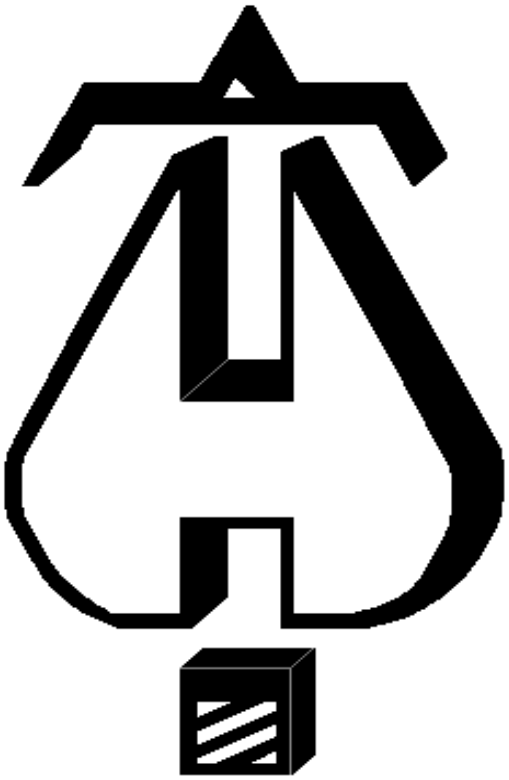

. . . Fire Protection by Computer Design

Dean and Allyn Inc
116 Lewiston Road
Gray ME, 04039
(207)657-5646

| | | |
|---|---|---|
| Job Name | : | UNUM FIRST |
| Building | : | HO-1 FIRST FLOOR |
| Location | : | PORTLAND |
| System | : | 1 |
| Contract | : | C151248 |
| Data File | : | C1248 1ST.WXF |

## Hydraulic Design Information Sheet

Name - UNUM HO-1 Date - 2/20/15
Location - PORTLAND
Building - HO-1 FIRST FLOOR System No. - 1
Contractor - DEAN AND ALLYN INC Contract No. - C151248
Calculated By - S. COTE Drawing No. - 2 OF 4
Construction: ( ) Combustible ( ) Non-Combustible Ceiling Height - 15'
Occupancy - LIGHT HAZARD

SYSTEM DESIGN

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling Made By Date

| | | | |
|---|---|---|---|
| Area of Sprinkler Operation - 930 | System Type | Sprinkler/Nozzle |
| Density - .10 | (X) Wet | Make RELIABLE |
| Area Per Sprinkler - 256 | ( ) Dry | Model J112 |
| Elevation at Highest Outlet - 15' | ( ) Deluge | Size 3/4" |
| Hose Allowance - Inside - | ( ) Preaction | K-Factor 11.2 |
| Rack Sprinkler Allowance - | ( ) Other | Temp.Rat.155 |
| Hose Allowance - Outside - 100 | | |

Note

Calculation Summary: Flow Required - 480.107 Press Required - 40.118
C-Factor Used: 120 Overhead 140 Underground

WATER SUPPLY

| Water Flow Test: | Pump Data: | Tank or Reservoir: |
|---|---|---|
| Date of Test - SEPT. 2012 | | Cap. - |
| Time of Test - | Rated Cap.- 750 | Elev.- |
| Static Press - 67 | @ Press - 50 | |
| Residual Press - 60 | Elev. - 2 | Well |
| Flow - 1316 | | Proof Flow |
| Elevation - 2 | | |

Location - HYDRANT #5

Source of Information - BY OWNER

COMMODITY

Commodity Class Location
Storage Ht. Area Aisle W.
Storage Method: Solid Piled % Palletized % Rack

| | | | |
|---|---|---|---|
| ( ) Single Row | ( ) Conven. Pallet | ( ) Auto. Storage | ( ) Encap. |
| ( ) Double Row | ( ) Slave Pallet | ( ) Solid Shelf | ( ) Non |
| ( ) Mult. Row | | ( ) Open Shelf | |

STORAGE

Flue Spacing Clearance:Storage to Ceiling
Longitudinal Transverse

Horizontal Barriers Provided:

# Fittings Used Summary



Fitting Legend

| Abbrev. | Name | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bvca | B Fly Vic 705 | | | | | | 6 | 6 | 7 | | 8 | 12 | 14 | 16 | 18 | 19 | | | | | |
| E | NFPA 13 90' Standard Elbow | 1 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 18 | 22 | 27 | 35 | 40 | 45 | 50 | 61 |
| F | NFPA 13 45' Elbow | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 7 | 9 | 11 | 13 | 17 | 19 | 21 | 24 | 28 |
| Fha * | ½ in FlexHead - 2 Ft Long | 0 | 0 | 11 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fsp | Flow Switch Potter VSR | Fitting generates a Fixed Loss Based on Flow | | | | | | | | | | | | | | | | | | | |
| G | NFPA 13 Gate Valve | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 11 | 13 |
| I | 90' Grvd-Vic Elbow #10 | 0 | 0 | 2 | 3 | 4 | 3.5 | 6 | 5 | 8 | 7 | 8.5 | 10 | 13 | 17 | 20 | 23 | 25 | 33 | 36 | 40 |
| T | NFPA 13 90' Flow thru Tee | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 17 | 20 | 25 | 30 | 35 | 50 | 60 | 71 | 81 | 91 | 101 | 121 |
| Zac | Ames 2000SS | Fitting generates a Fixed Loss Based on Flow | | | | | | | | | | | | | | | | | | | |

Units Summary

| | |
|---|---|
| Diameter Units | Inches |
| Length Units | Feet |
| Flow Units | US Gallons per Minute |
| Pressure Units | Pounds per Square Inch |

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

# Pressure / Flow Summary - STANDARD



| Node No. | Elevation | K-Fact | Pt Actual | Pn | Flow Actual | Density | Area | Press Req. |
|---|---|---|---|---|---|---|---|---|
| 10A | 138.0 | 5.6 | 10.41 | na | 18.07 | 0.1 | 136 | 7.0 |
| 11A | 138.0 | 5.6 | 11.03 | na | 18.6 | 0.1 | 186 | 7.0 |
| 12A | 138.0 | 5.6 | 15.35 | na | 21.94 | 0.1 | 186 | 7.0 |
| 13A | 138.0 | 11.2 | 8.1 | na | 31.87 | 0.1 | 181 | 7.0 |
| 14A | 138.0 | 11.2 | 9.6 | na | 34.7 | 0.1 | 256 | 7.2 |
| 15A | 138.0 | 11.2 | 16.14 | na | 44.99 | 0.1 | 181 | 7.2 |
| 16A | 138.0 | 11.2 | 18.51 | na | 48.18 | 0.1 | 256 | 7.2 |
| 17A | 138.0 | 11.2 | 14.18 | na | 42.18 | 0.1 | 256 | 7.2 |
| 18A | 132.333 | 5.6 | 30.59 | na | 30.97 | 0.1 | 140 | 7.0 |
| 19A | 132.333 | 11.2 | 21.13 | na | 51.48 | 0.1 | 227 | 7.2 |
| 20A | 132.333 | 5.6 | 43.94 | na | 37.12 | 0.1 | 144 | 7.0 |
| 10 | 139.0 | | 11.96 | na | | | | |
| 11 | 139.0 | | 13.24 | na | | | | |
| 12 | 139.0 | | 17.73 | na | | | | |
| 100 | 139.0 | | 18.74 | na | | | | |
| 13 | 139.0 | | 13.74 | na | | | | |
| 14 | 139.0 | | 17.46 | na | | | | |
| 15 | 139.0 | | 27.19 | na | | | | |
| 16 | 139.0 | | 34.24 | na | | | | |
| 101 | 139.0 | | 22.08 | na | | | | |
| 17 | 139.0 | | 25.65 | na | | | | |
| 18 | 133.334 | | 36.36 | na | | | | |
| 103 | 139.0 | | 42.79 | na | | | | |
| 104 | 133.334 | | 47.33 | na | | | | |
| 19 | 133.334 | | 34.35 | na | | | | |
| 19.1 | 133.334 | | 46.32 | na | | | | |
| 19.2 | 133.334 | | 57.97 | na | | | | |
| 20 | 133.334 | | 50.7 | na | | | | |
| 20.1 | 133.334 | | 55.61 | na | | | | |
| 20.2 | 133.334 | | 57.99 | na | | | | |
| 107 | 133.334 | | 58.79 | na | | | | |
| 106 | 133.334 | | 58.82 | na | | | | |
| 105 | 133.334 | | 53.43 | na | | | | |
| 102 | 133.334 | | 53.85 | na | | | | |
| 110 | 134.5 | | 58.71 | na | | | | |
| 111 | 134.5 | | 65.52 | na | | | | |
| 112 | 134.5 | | 77.73 | na | | | | |
| 113 | 118.5 | | 84.82 | na | | | | |
| 114 | 117.583 | | 85.57 | na | | | | |
| 115 | 118.5 | | 85.53 | na | | | | |
| TR | 113.833 | | 88.3 | na | | | | |
| BR | 110.0 | | 91.24 | na | | | | |
| PO | 110.0 | | 91.44 | na | | | | |
| PI | 110.0 | | 61.31 | na | | | | |
| FF | 109.0 | | 64.54 | na | | | | |
| UG1 | 101.0 | | 68.71 | na | 100.0 | | | |
| UG2 | 101.0 | | 69.11 | na | | | | |
| UG3 | 101.0 | | 69.27 | na | | | | |
| TEST | 109.0 | | 65.92 | na | | | | |

The maximum velocity is 22.36 and it occurs in the pipe between nodes 110 and 111

| Hyd. Ref. Point | Qa / Qt | Dia. "C" Pf/Ft | Fitting or Eqv. | Ln. | Pipe Ftng's Total | Pt Pe Pf | Pt Pv Pn | ******* Notes ****** |
|---|---|---|---|---|---|---|---|---|
| 10A | 18.07 | 1.049 | Fha | 11.0 | 3.375 | 10.414 | | K Factor = 5.60 |
| to | | 120.0 | 2E | 4.0 | 15.000 | -0.433 | | |
| 10 | 18.07 | 0.1079 | | 0.0 | 18.375 | 1.982 | | Vel = 6.71 |
| | 0.0 | | | | | | | |
| | 18.07 | | | | | 11.963 | | K Factor = 5.22 |
| 11A | 18.60 | 1.049 | Fha | 11.0 | 3.250 | 11.032 | | K Factor = 5.60 |
| to | | 120.0 | 2E | 4.0 | 20.000 | -0.433 | | |
| 11 | 18.6 | 0.1138 | T | 5.0 | 23.250 | 2.645 | | Vel = 6.90 |
| | 0.0 | | | | | | | |
| | 18.60 | | | | | 13.244 | | K Factor = 5.11 |
| 12A | 21.94 | 1.049 | Fha | 11.0 | 3.250 | 15.348 | | K Factor = 5.60 |
| to | | 120.0 | 2E | 4.0 | 15.000 | -0.433 | | |
| 12 | 21.94 | 0.1544 | | 0.0 | 18.250 | 2.818 | | Vel = 8.14 |
| | 0.0 | | | | | | | |
| | 21.94 | | | | | 17.733 | | K Factor = 5.21 |
| 13A | 31.88 | 1.049 | Fha | 11.0 | 4.708 | 8.099 | | K Factor = 11.20 |
| to | | 120.0 | 2E | 4.0 | 15.000 | -0.433 | | |
| 13 | 31.88 | 0.3083 | | 0.0 | 19.708 | 6.075 | | Vel = 11.83 |
| | 0.0 | | | | | | | |
| | 31.88 | | | | | 13.741 | | K Factor = 8.60 |
| 14A | 34.70 | 1.049 | Fha | 11.0 | 5.000 | 9.601 | | K Factor = 11.20 |
| to | | 120.0 | E | 2.0 | 18.000 | -0.433 | | |
| 14 | 34.7 | 0.3607 | T | 5.0 | 23.000 | 8.297 | | Vel = 12.88 |
| | 0.0 | | | | | | | |
| | 34.70 | | | | | 17.465 | | K Factor = 8.30 |
| 15A | 44.99 | 1.049 | Fha | 11.0 | 4.708 | 16.135 | | K Factor = 11.20 |
| to | | 120.0 | 2E | 4.0 | 15.000 | -0.433 | | |
| 15 | 44.99 | 0.5831 | | 0.0 | 19.708 | 11.491 | | Vel = 16.70 |
| | 0.0 | | | | | | | |
| | 44.99 | | | | | 27.193 | | K Factor = 8.63 |
| 16A | 48.18 | 1.049 | Fha | 11.0 | 6.416 | 18.508 | | K Factor = 11.20 |
| to | | 120.0 | E | 2.0 | 18.000 | -0.433 | | |
| 16 | 48.18 | 0.6620 | T | 5.0 | 24.416 | 16.163 | | Vel = 17.89 |
| | 0.0 | | | | | | | |
| | 48.18 | | | | | 34.238 | | K Factor = 8.23 |
| 17A | 42.18 | 1.049 | Fha | 11.0 | 5.000 | 14.180 | | K Factor = 11.20 |
| to | | 120.0 | E | 2.0 | 18.000 | -0.433 | | |
| 17 | 42.18 | 0.5174 | T | 5.0 | 23.000 | 11.901 | | Vel = 15.66 |
| | 0.0 | | | | | | | |
| | 42.18 | | | | | 25.648 | | K Factor = 8.33 |
| 18A | 30.97 | 1.049 | Fha | 11.0 | 3.250 | 30.588 | | K Factor = 5.60 |
| to | | 120.0 | E | 2.0 | 18.000 | -0.434 | | |
| 18 | 30.97 | 0.2923 | T | 5.0 | 21.250 | 6.211 | | Vel = 11.50 |
| | 0.0 | | | | | | | |
| | 30.97 | | | | | 36.365 | | K Factor = 5.14 |
| 19A | 51.48 | 1.049 | Fha | 11.0 | 3.250 | 21.126 | | K Factor = 11.20 |
| to | | 120.0 | 2E | 4.0 | 15.000 | -0.434 | | |
| 19 | 51.48 | 0.7482 | | 0.0 | 18.250 | 13.655 | | Vel = 19.11 |

| Hyd. Ref. Point | Qa Qt | Dia. "C" Pf/Ft | Fitting or Eqv. | Ln. | Pipe Ftng's Total | Pt Pe Pf | Pt Pv Pn | ******* Notes ****** |
|---|---|---|---|---|---|---|---|---|
| | 0.0 | | | | | | | |
| | 51.48 | | | | | 34.347 | | K Factor = 8.78 |
| 20A | 37.12 | 1.049 | Fha | 11.0 | 2.625 | 43.938 | | K Factor = 5.60 |
| to | | 120.0 | 2E | 4.0 | 15.000 | -0.434 | | |
| 20 | 37.12 | 0.4086 | | 0.0 | 17.625 | 7.201 | | Vel = 13.78 |
| | 0.0 | | | | | | | |
| | 37.12 | | | | | 50.705 | | K Factor = 5.21 |
| 10 | 18.07 | 1.049 | | 0.0 | 11.875 | 11.963 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 11 | 18.07 | 0.1079 | | 0.0 | 11.875 | 1.281 | | Vel = 6.71 |
| 11 | 18.60 | 1.049 | T | 5.0 | 8.750 | 13.244 | | |
| to | | 120.0 | | 0.0 | 5.000 | 0.0 | | |
| 100 | 36.67 | 0.3995 | | 0.0 | 13.750 | 5.493 | | Vel = 13.61 |
| | 0.0 | | | | | | | |
| | 36.67 | | | | | 18.737 | | K Factor = 8.47 |
| 12 | 21.94 | 1.049 | T | 5.0 | 1.500 | 17.733 | | |
| to | | 120.0 | | 0.0 | 5.000 | 0.0 | | |
| 100 | 21.94 | 0.1545 | | 0.0 | 6.500 | 1.004 | | Vel = 8.14 |
| 100 | 36.67 | 1.38 | T | 6.0 | 7.375 | 18.737 | | |
| to | | 120.0 | | 0.0 | 6.000 | 0.0 | | |
| 101 | 58.61 | 0.2502 | | 0.0 | 13.375 | 3.346 | | Vel = 12.57 |
| | 0.0 | | | | | | | |
| | 58.61 | | | | | 22.083 | | K Factor = 12.47 |
| 13 | 31.88 | 1.049 | | 0.0 | 12.083 | 13.741 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 14 | 31.88 | 0.3082 | | 0.0 | 12.083 | 3.724 | | Vel = 11.83 |
| 14 | 34.70 | 1.38 | T | 6.0 | 8.583 | 17.465 | | |
| to | | 120.0 | | 0.0 | 6.000 | 0.0 | | |
| 101 | 66.58 | 0.3167 | | 0.0 | 14.583 | 4.618 | | Vel = 14.28 |
| | 0.0 | | | | | | | |
| | 66.58 | | | | | 22.083 | | K Factor = 14.17 |
| 15 | 44.99 | 1.049 | | 0.0 | 12.083 | 27.193 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 16 | 44.99 | 0.5831 | | 0.0 | 12.083 | 7.045 | | Vel = 16.70 |
| 16 | 48.18 | 1.38 | T | 6.0 | 8.500 | 34.238 | | |
| to | | 120.0 | | 0.0 | 6.000 | 0.0 | | |
| 103 | 93.17 | 0.5897 | | 0.0 | 14.500 | 8.550 | | Vel = 19.99 |
| | 0.0 | | | | | | | |
| | 93.17 | | | | | 42.788 | | K Factor = 14.24 |
| 101 | 125.19 | 1.61 | | 0.0 | 7.416 | 22.083 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 17 | 125.19 | 0.4807 | | 0.0 | 7.416 | 3.565 | | Vel = 19.73 |
| 17 | 42.17 | 2.067 | 3E | 15.0 | 18.916 | 25.648 | | |
| to | | 120.0 | | 0.0 | 15.000 | 2.454 | | |
| 18 | 167.36 | 0.2436 | | 0.0 | 33.916 | 8.263 | | Vel = 16.00 |
| 18 | 30.98 | 2.067 | T | 10.0 | 42.416 | 36.365 | | |
| to | | 120.0 | | 0.0 | 10.000 | 0.0 | | |
| 102 | 198.34 | 0.3335 | | 0.0 | 52.416 | 17.482 | | Vel = 18.96 |

| Hyd. Ref. Point | Qa Qt | Dia. "C" Pf/Ft | Fitting or Eqv. | Ln. | Pipe Ftng's Total | Pt Pe Pf | Pt Pv Pn | ******* Notes ****** |
|---|---|---|---|---|---|---|---|---|
| | 0.0 | | | | | | | |
| | 198.34 | | | | | 53.847 | | K Factor = 27.03 |
| 103 | 93.17 | 1.61 | | 0.0 | 7.500 | 42.788 | | |
| to | | 120.0 | | 0.0 | 0.0 | 2.454 | | |
| 104 | 93.17 | 0.2784 | | 0.0 | 7.500 | 2.088 | | Vel = 14.68 |
| 104 | 0.0 | 2.067 | T | 10.0 | 64.000 | 47.330 | | |
| to | | 120.0 | | 0.0 | 10.000 | 0.0 | | |
| 105 | 93.17 | 0.0824 | | 0.0 | 74.000 | 6.100 | | Vel = 8.91 |
| | 0.0 | | | | | | | |
| | 93.17 | | | | | 53.430 | | K Factor = 12.75 |
| 19 | 51.48 | 1.049 | | 0.0 | 16.000 | 34.347 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 19.1 | 51.48 | 0.7481 | | 0.0 | 16.000 | 11.970 | | Vel = 19.11 |
| 19.1 | 0.0 | 1.38 | Eql | 27.208 | 32.000 | 46.317 | | |
| to | | 120.0 | | 0.0 | 27.208 | 0.0 | | |
| 19.2 | 51.48 | 0.1968 | | 0.0 | 59.208 | 11.651 | | Vel = 11.04 |
| 19.2 | 0.0 | 1.61 | T | 8.0 | 1.208 | 57.968 | | |
| to | | 120.0 | | 0.0 | 8.000 | 0.0 | | |
| 106 | 51.48 | 0.0929 | | 0.0 | 9.208 | 0.855 | | Vel = 8.11 |
| | 0.0 | | | | | | | |
| | 51.48 | | | | | 58.823 | | K Factor = 6.71 |
| 20 | 37.12 | 1.049 | | 0.0 | 12.000 | 50.705 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 20.1 | 37.12 | 0.4086 | | 0.0 | 12.000 | 4.903 | | Vel = 13.78 |
| 20.1 | 0.0 | 1.38 | | 0.0 | 22.166 | 55.608 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 20.2 | 37.12 | 0.1074 | | 0.0 | 22.166 | 2.381 | | Vel = 7.96 |
| 20.2 | 0.0 | 1.61 | T | 8.0 | 7.875 | 57.989 | | |
| to | | 120.0 | | 0.0 | 8.000 | 0.0 | | |
| 107 | 37.12 | 0.0507 | | 0.0 | 15.875 | 0.805 | | Vel = 5.85 |
| 107 | 0.0 | 2.635 | | 0.0 | 6.166 | 58.794 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 106 | 37.12 | 0.0047 | | 0.0 | 6.166 | 0.029 | | Vel = 2.18 |
| 106 | 51.48 | 2.635 | T | 16.474 | 0.708 | 58.823 | | |
| to | | 120.0 | | 0.0 | 16.474 | -0.505 | | |
| 110 | 88.6 | 0.0230 | | 0.0 | 17.182 | 0.396 | | Vel = 5.21 |
| | 0.0 | | | | | | | |
| | 88.60 | | | | | 58.714 | | K Factor = 11.56 |
| 105 | 93.17 | 2.635 | | 0.0 | 16.500 | 53.430 | | |
| to | | 120.0 | | 0.0 | 0.0 | 0.0 | | |
| 102 | 93.17 | 0.0253 | | 0.0 | 16.500 | 0.417 | | Vel = 5.48 |
| 102 | 198.34 | 2.635 | T | 16.474 | 9.291 | 53.847 | | |
| to | | 120.0 | | 0.0 | 16.474 | -0.505 | | |
| 110 | 291.51 | 0.2085 | | 0.0 | 25.765 | 5.372 | | Vel = 17.15 |
| 110 | 88.60 | 2.635 | T | 16.474 | 3.500 | 58.714 | | |
| to | | 120.0 | | 0.0 | 16.474 | 0.0 | | |
| 111 | 380.11 | 0.3406 | | 0.0 | 19.974 | 6.803 | | Vel = 22.36 |

| Hyd. Ref. Point | Qa Qt | Dia. "C" Pf/Ft | Fitting or Eqv. | Ln. | Pipe Ftng's Total | Pt Pe Pf | Pt Pv Pn | ******* Notes ****** |
|---|---|---|---|---|---|---|---|---|
| 111 | 0.0 | 2.635 | T | 16.474 | 2.333 | 65.517 | | |
| to | | 120.0 | Bvca | 8.237 | 24.711 | 3.000 | | * * Fixed Loss = 3 |
| 112 | 380.11 | 0.3406 | Fsp | 0.0 | 27.044 | 9.212 | | Vel = 22.36 |
| 112 | 0.0 | 6.357 | E | 17.603 | 16.000 | 77.729 | | |
| to | | 120.0 | | 0.0 | 17.603 | 6.930 | | |
| 113 | 380.11 | 0.0047 | | 0.0 | 33.603 | 0.157 | | Vel = 3.84 |
| 113 | 0.0 | 6.357 | 2E | 35.205 | 41.041 | 84.816 | | |
| to | | 120.0 | | 0.0 | 35.205 | 0.397 | | |
| 114 | 380.11 | 0.0047 | | 0.0 | 76.246 | 0.356 | | Vel = 3.84 |
| 114 | 0.0 | 6.357 | 2E | 35.205 | 41.000 | 85.569 | | |
| to | | 120.0 | | 0.0 | 35.205 | -0.397 | | |
| 115 | 380.11 | 0.0047 | | 0.0 | 76.205 | 0.356 | | Vel = 3.84 |
| 115 | 0.0 | 6.357 | E | 17.603 | 142.750 | 85.528 | | |
| to | | 120.0 | | 0.0 | 17.603 | 2.021 | | |
| TR | 380.11 | 0.0047 | | 0.0 | 160.353 | 0.750 | | Vel = 3.84 |
| TR | 0.0 | 6.357 | Fsp | 0.0 | 3.833 | 88.299 | | |
| to | | 120.0 | Bvca | 17.603 | 55.323 | 2.660 | | * * Fixed Loss = 1 |
| BR | 380.11 | 0.0047 | T | 37.72 | 59.156 | 0.276 | | Vel = 3.84 |
| BR | 0.0 | 6.357 | 2I | 25.147 | 19.479 | 91.235 | | |
| to | | 120.0 | | 0.0 | 25.147 | 0.0 | | |
| PO | 380.11 | 0.0047 | | 0.0 | 44.626 | 0.209 | | Vel = 3.84 |
| | 0.0 | | | | | | | |
| | 380.11 | | | | | 91.444 | | K Factor = 39.75 |
| System Demand Pressure | | | | | | 91.444 | | |
| Safety Margin | | | | | | 25.798 | | |
| Continuation Pressure | | | | | | 117.242 | | |
| Pressure @ Pump Outlet | | | | | | 117.242 | | |
| Pressure From Pump Curve | | | | | | -55.932 | | |
| Pressure @ Pump Inlet | | | | | | 61.310 | | |
| PI | 0.0 | 6.357 | 2I | 25.147 | 7.250 | 61.310 | | |
| to | | 120.0 | Zac | 0.0 | 25.147 | 3.073 | | * * Fixed Loss = 2.64 |
| FF | 380.11 | 0.0047 | | 0.0 | 32.397 | 0.152 | | Vel = 3.84 |
| FF | 0.0 | 6.16 | 2E | 40.168 | 90.667 | 64.535 | | |
| to | | 140.0 | T | 43.037 | 83.205 | 3.465 | | |
| UG1 | 380.11 | 0.0041 | | 0.0 | 173.872 | 0.712 | | Vel = 4.09 |
| UG1 | 100.00 | 8.27 | 2F | 28.468 | 174.667 | 68.712 | | Qa = 100 |
| to | | 140.0 | G | 6.326 | 90.148 | 0.0 | | |
| UG2 | 480.11 | 0.0015 | T | 55.354 | 264.815 | 0.398 | | Vel = 2.87 |
| UG2 | 0.0 | 8.27 | T | 55.354 | 50.000 | 69.110 | | |
| to | | 140.0 | | 0.0 | 55.354 | 0.0 | | |
| UG3 | 480.11 | 0.0015 | | 0.0 | 105.354 | 0.158 | | Vel = 2.87 |
| UG3 | 0.0 | 8.27 | T | 55.354 | 13.167 | 69.268 | | |
| to | | 140.0 | G | 6.326 | 61.680 | -3.465 | | |
| TEST | 480.11 | 0.0015 | | 0.0 | 74.847 | 0.113 | | Vel = 2.87 |
| | 0.0 | | | | | | | |
| | 480.11 | | | | | 65.916 | | K Factor = 59.14 |

City Water Supply:
- C1 - Static Pressure : 67
- C2 - Residual Pressure: 60
- C2 - Residual Flow : 1316

City Water Adjusted to Pump Inlet for Pf - Elev - Hose Flow
- A1 - Adjusted Static: 62.471
- A2 - Adj Resid : 54.897 @ 750
- A3 - Adj Resid : 44.598 @ 1125

Pump Data:
- P1 - Pump Churn Pressure : 56
- P2 - Pump Rated Pressure : 50
- P2 - Pump Rated Flow : 750
- P3 - Pump Pressure @ Max Flow : 32.5
- P3 - Pump Max Flow : 1125
- City Residual Flow @ 0 = 4461.84
- City Residual Flow @ 20 = 3683.69
- City Water @ 150% of Pump = 61.76

Demand:
- D1 - Elevation : 12.560
- D2 - System Flow : 380.107
- D2 - System Pressure : 91.444
- Hose ( Demand ) : _____
- D3 - System Demand : 380.107
- Hose ( Adj City ) : 100
- Safety Margin : 25.798