

... **Fire Protection by Computer Design**

ALTERNATIVE SPRINKLER  
39 JACKSON RD.  
POLAND SPRING, ME  
04274  
207-838-8930

Job Name : 72 MUNJOY ST CALC  
Building : FP-01  
Location : 72 MUNJOY ST  
System : #1  
Contract :  
Data File : 72 MUNJOY CALC.WXF

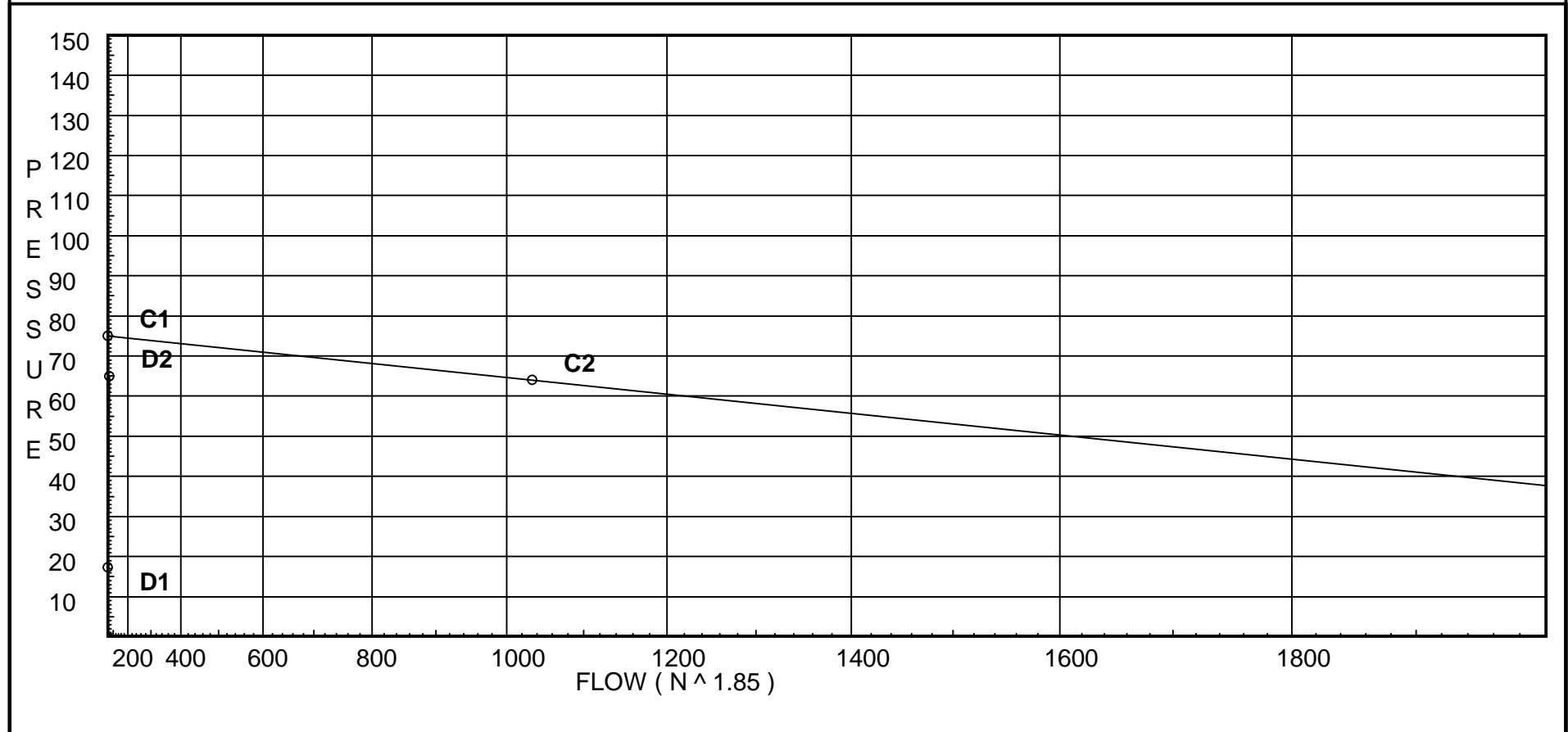
# Water Supply Curve (C)

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City Water Supply:  
C1 - Static Pressure : 75  
C2 - Residual Pressure: 64  
C2 - Residual Flow : 1034

Demand:  
D1 - Elevation : 17.324  
D2 - System Flow : 55.5823  
D2 - System Pressure : 64.952  
Hose ( Adj City ) : \_\_\_\_\_  
Hose ( Demand ) : \_\_\_\_\_  
D3 - System Demand : 55.5823  
Safety Margin : 9.999



# Fittings Used Summary

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Fitting Legend		½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24	
Abbrev.	Name																					
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
G	Generic Gate Valve	0	0	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13	
N*	CPVC 90'Ell Harvel-Spears	7	7	7	8	9	11	12	13	0	0	0	0	0	0	0	0	0	0	0	0	
O*	CPVC Tee-Branch	3	3	5	6	8	10	12	15	0	0	0	0	0	0	0	0	0	0	0	0	
R*	CPVC Coupling Tee-Run	1	1	1	1	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	
T	90' Flow Thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121	
Z	Generic Flow Switch	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
Zik	Wilkins 950XL	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

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1	40.0	4.9	7.0	na	12.96	0.05	256	7.0
2	40.0	4.9	7.08	na	13.04	0.05	256	7.0
3	40.0		7.56	na				
4	40.0	4.9	9.06	na	14.75	0.05	256	7.0
5	40.0	4.9	9.16	na	14.83	0.05	256	7.0
6	40.0		9.78	na				
7	40.0		26.46	na				
8	40.0		31.17	na				
9	31.0		36.35	na				
10	22.0		41.54	na				
11	13.0		46.72	na				
12	13.0		49.15	na				
TOR	13.0		50.85	na				
BOR	0.0		64.8	na				
UG	0.0		64.9	na				
UG1	-35.0		80.08	na				
TEST	0.0		64.95	na				

The maximum velocity is 18.73 and it occurs in the pipe between nodes 6 and 7

Final Calculations - Hazen-Williams

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Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
1 to 3	12.96 12.96	1.101 150.0 0.0305	1N 7.0 1O 5.0 0.0	6.500 12.000 18.500	7.000 0.0 0.564		K Factor = 4.90 Vel = 4.37
	0.0 12.96				7.564		K Factor = 4.71
2 to 3	13.04 13.04	1.101 150.0 0.0308	1N 7.0 1O 5.0 0.0	3.700 12.000 15.700	7.080 0.0 0.484		K Factor = 4.90 Vel = 4.39
3 to 6	12.96 26.0	1.101 150.0 0.1106	1R 1.0 1O 5.0 0.0	14.000 6.000 20.000	7.564 0.0 2.212		Vel = 8.76
	0.0 26.00				9.776		K Factor = 8.32
4 to 6	14.75 14.75	1.101 150.0 0.0388	1N 7.0 1O 5.0 0.0	6.500 12.000 18.500	9.059 0.0 0.717		K Factor = 4.90 Vel = 4.97
	0.0 14.75				9.776		K Factor = 4.72
5 to 6	14.83 14.83	1.101 150.0 0.0392	1N 7.0 1O 5.0 0.0	3.700 12.000 15.700	9.161 0.0 0.615		K Factor = 4.90 Vel = 5.00
6 to 7	40.75 55.58	1.101 150.0 0.4508	4R 4.0 1O 5.0 0.0	28.000 9.000 37.000	9.776 0.0 16.680		Vel = 18.73
7 to 8	0.0 55.58	1.394 150.0 0.1429	1R 1.0 1O 6.0 1N 8.0	18.000 15.000 33.000	26.456 0.0 4.715		Vel = 11.68
8 to 9	0.0 55.58	1.394 150.0 0.1428	0.0 0.0 0.0	9.000 0.0 9.000	31.171 3.898 1.285		Vel = 11.68
9 to 10	0.0 55.58	1.394 150.0 0.1429	0.0 0.0 0.0	9.000 0.0 9.000	36.354 3.898 1.286		Vel = 11.68
10 to 11	0.0 55.58	1.394 150.0 0.1429	0.0 0.0 0.0	9.000 0.0 9.000	41.538 3.898 1.286		Vel = 11.68
11 to 12	0.0 55.58	1.394 150.0 0.1429	1N 8.0 0.0 0.0	9.000 8.000 17.000	46.722 0.0 2.429		Vel = 11.68

Final Calculations - Hazen-Williams

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Hyd. Ref. Point	Qa  Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
12 to TOR	0.0  55.58	1.394 150.0 0.1429	1N  8.0 0.0 0.0	3.900 8.000 11.900	49.151 0.0 1.700		Vel = 11.68		
TOR to BOR	0.0  55.58	1.682 120.0 0.0865	1E 4.95 1Z 4.95 1Zik 0.0	8.000 9.900 17.900	50.851 12.397 1.548		* Fixed loss = 6.767 Vel = 8.03		
BOR to UG	0.0  55.58	4.1 140.0 0.0008	1G 2.907 1T 29.067 0.0	85.000 31.974 116.974	64.796 0.0 0.099		Vel = 1.35		
UG to UG1	0.0  55.58	8.27 140.0 0.0	4T 221.418 0.0 0.0	800.000 221.418 1021.418	64.895 15.158 0.029		Vel = 0.33		
UG1 to TEST	0.0  55.58	6.16 140.0 0.0001	1E 20.084 1T 43.037 0.0	175.000 63.121 238.121	80.082 -15.158 0.028		Vel = 0.60		
	0.0 55.58				64.952		K Factor = 6.90		