

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

FIRE PROTECTION SPRINKLER SER.
278 HARRIS RD
MINOT, MAINE
04258
207-393-7422

Job Name : MAY ST APARTMENTS
Building : FP-1
Location : 7-9 MAY ST
System : #2
Contract :
Data File : MAY ST APARTMENTS 1ST FL CALC.WXF

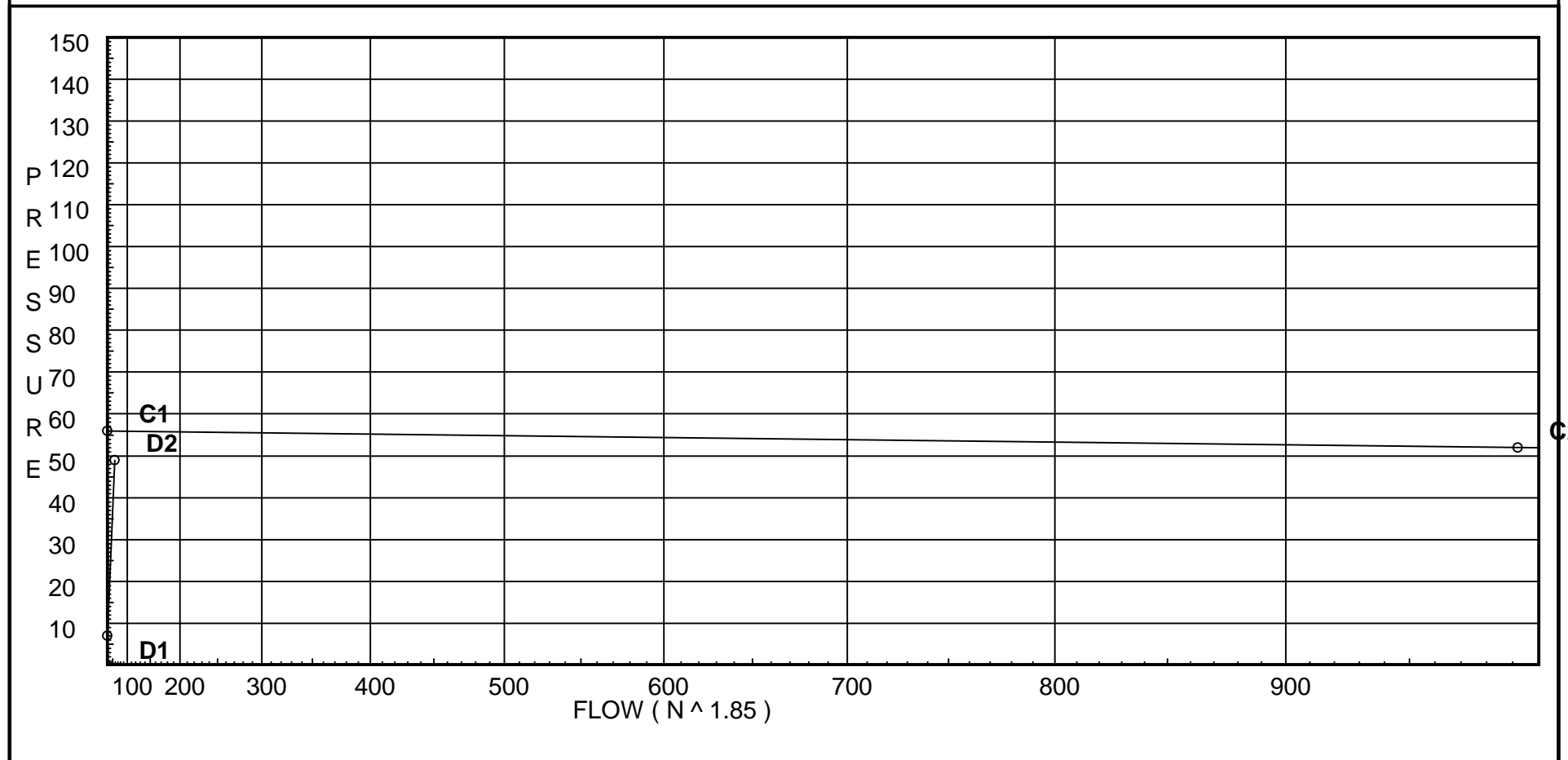
Water Supply Curve (C)

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City Water Supply:
 C1 - Static Pressure : 56
 C2 - Residual Pressure: 52
 C2 - Residual Flow : 992

Demand:
 D1 - Elevation : 6.930
 D2 - System Flow : 57.7459
 D2 - System Pressure : 49.007
 Hose (Adj City) : _____
 Hose (Demand) : _____
 D3 - System Demand : 57.7459
 Safety Margin : 6.972



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																					
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	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	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	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.
30	16.0	4.9	7.0	na	12.96	0.05	256	7.0
31	16.0	4.9	7.52	na	13.43	0.05	256	7.0
8	16.0		9.1	na				
32	16.0	4.9	9.88	na	15.4	0.05	256	7.0
33	16.0	4.9	10.59	na	15.95	0.05	256	7.0
34	16.0		11.7	na				
9	16.0		14.46	na				
10	16.0		18.13	na				
11	8.0		24.05	na				
12	8.0		25.26	na				
13	8.0		29.6	na				
TOR	8.0		34.49	na				
BOR	0.0		47.98	na				
UG	-3.0		50.3	na				
TEST	0.0		49.01	na				

The maximum velocity is 19.46 and it occurs in the pipe between nodes 34 and 9

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	*****
30 to 31	12.96	1.101 150.0	1N	7.0 0.0	9.900 7.000	7.000 0.0			K Factor = 4.90	
31 to 8	12.96	0.0305		0.0	16.900	0.516			Vel = 4.37	
31 to 8	13.44	1.101 150.0	1O 1N	5.0 7.0	1.900 12.000	7.516 0.0			K Factor = 4.90	
8 to 34	26.4	0.1137		0.0	13.900	1.580			Vel = 8.90	
8 to 34	0.0	1.101 150.0	1R 1N	1.0 7.0	9.900 13.000	9.096 0.0				
	26.4	0.1137	1O	5.0	22.900	2.604			Vel = 8.90	
	0.0 26.40					11.700			K Factor = 7.72	
32 to 33	15.40	1.101 150.0	1N	7.0 0.0	9.900 7.000	9.881 0.0			K Factor = 4.90	
33 to 34	15.4	0.0420		0.0	16.900	0.709			Vel = 5.19	
33 to 34	15.95	1.101 150.0	1O	5.0 0.0	2.100 5.000	10.590 0.0			K Factor = 4.90	
34 to 9	31.35	0.1563		0.0	7.100	1.110			Vel = 10.56	
34 to 9	26.40	1.101 150.0	1O	5.0 0.0	0.700 5.000	11.700 0.0				
9 to 10	57.75	0.4837		0.0	5.700	2.757			Vel = 19.46	
9 to 10	0.0	1.101 150.0	1N	7.0 0.0	0.600 7.000	14.457 0.0				
10 to 11	57.75	0.4838		0.0	7.600	3.677			Vel = 19.46	
10 to 11	0.0	1.394 150.0	1N	8.0 0.0	8.000 8.000	18.134 3.465				
11 to 12	57.75	0.1533		0.0	16.000	2.453			Vel = 12.14	
11 to 12	0.0	1.394 150.0	1O	6.0 0.0	1.900 6.000	24.052 0.0				
12 to 13	57.75	0.1534		0.0	7.900	1.212			Vel = 12.14	
12 to 13	0.0	1.394 150.0	2R 1O	2.0 6.0	20.300 8.000	25.264 0.0				
13 to TOR	57.75	0.1533		0.0	28.300	4.339			Vel = 12.14	
13 to TOR	0.0	1.394 150.0	2R 1O	2.0 6.0	23.900 8.000	29.603 0.0				
TOR to BOR	57.75	0.1533		0.0	31.900	4.891			Vel = 12.14	
TOR to BOR	0.0	1.38 150.0	1G 1Zik	1.511 0.0	6.000 6.044	34.494 11.542			* Fixed loss = 8.077	
BOR to UG	57.75	0.1611	1Z	4.533	12.044	1.940			Vel = 12.39	
BOR to UG	0.0	1.917 150.0	1G 1T	1.047 10.47	20.000 11.517	47.976 1.299				
UG	57.75	0.0325		0.0	31.517	1.024			Vel = 6.42	

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
UG	0.0	8.27	1T	55.354	180.000	50.299			
to		140.0		0.0	55.354	-1.299			
TEST	57.75	0.0		0.0	235.354	0.007		Vel = 0.34	
	0.0								
	57.75					49.007		K Factor = 8.25	