



Your Company Name
Your Street Address 1
Your Street Address 2
Your City, State Zip
Your Phone

Job Name : TEST
Building : SP - XX
Location : Location of the system
System : D. A. #
Contract :
Data File : TEST AREA 1.wxf

HYDRAULIC CALCULATIONS
for

Project name: Sample project
Location: Location of the system
Drawing no: SP - XX
Date: mm/dd/yyyy

Design

Remote area number: D. A. #
Remote area location: Location of the design area
Occupancy classification: Light hazard, O.H. GP I, and so on
Density: 0.x - Gpm/SqFt
Area of application: ##### - SqFt
Coverage per sprinkler: ##### - SqFt
Type of sprinklers calculated: Upright, pdt,
No. of sprinklers calculated: ##
In-rack demand: - GPM
Hose streams: xxxx - GPM
Total water required (including hose streams): ##### - GPM @ ##### - Psi
Type of system: Wet, Dry,
Volume of dry or preaction system: ##### - Gal

Water supply information

Date: mm/dd/yyyy
Location: xxxxxxxxxxxx
Source: xxxxxxxxxxxx

Name of contractor: xxxxxxxxxxxx
Address: xxxxxxxxxxxx
Phone number: (xxx)xxxxxxx
Name of designer: xxxxxxxxxxxx
Authority having jurisdiction: xxxxxxxxxxxxxxxxxxxx
Notes: (Include peaking information or gridded systems here.)

Water Supply Curve (C)

Your Company Name
TEST

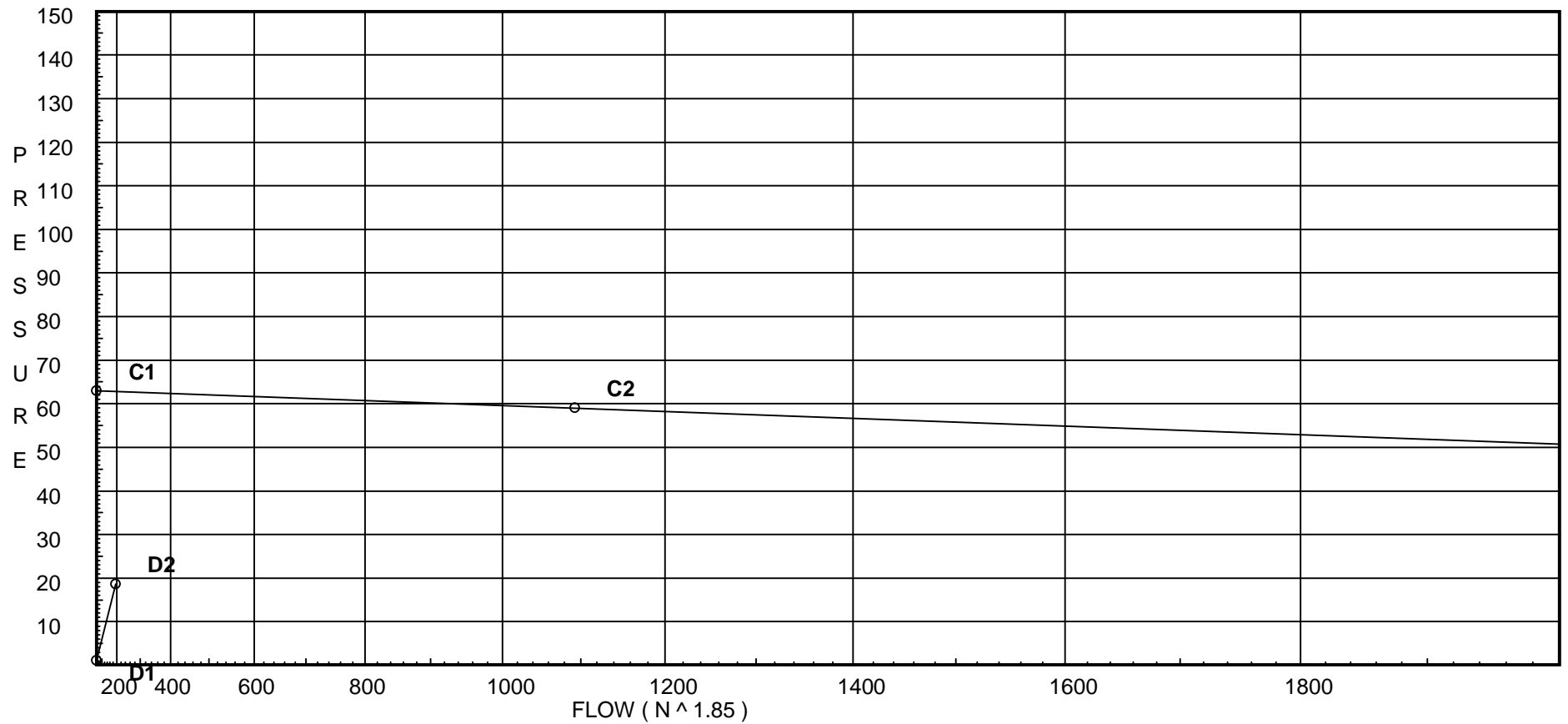
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City Water Supply:

C1 - Static Pressure : 63
C2 - Residual Pressure: 59
C2 - Residual Flow : 1093

Demand:

D1 - Elevation : 1.083
D2 - System Flow : 192.825
D2 - System Pressure : 18.573
Hose (Adj City) : _____
Hose (Demand) : _____
D3 - System Demand : 192.825
Safety Margin : 44.266



Fittings Used Summary

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Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
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
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

Units Summary

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

Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1	2.5	5.6	7.0	na	14.82	0.1	127	7.0
2	2.5	5.6	7.66	na	15.5	0.1	127	7.0
3	2.5	5.6	8.32	na	16.15	0.1	127	7.0
5	2.5	5.6	8.22	na	16.05	0.1	127	7.0
6	2.5	5.6	8.98	na	16.79	0.1	127	7.0
4	2.5		9.93	na				
7	1.0		12.48	na				
8	1.0		12.52	na				
9	1.0		14.62	na				
10	-14.0		24.6	na				
TEST	0.0		18.57	na				
11	2.5	5.6	7.0	na	14.82	0.1	127	7.0
12	2.5	5.6	7.67	na	15.5	0.1	127	7.0
13	2.5	5.6	8.32	na	16.16	0.1	127	7.0
15	2.5	5.6	8.22	na	16.06	0.1	127	7.0
16	2.5	5.6	8.99	na	16.79	0.1	127	7.0
14	2.5		9.93	na				
17	1.0		12.49	na				
18	2.5	5.6	8.91	na	16.72	0.1	127	7.0
19	2.5	5.6	9.74	na	17.47	0.1	127	7.0
20	2.5		11.47	na				

The maximum velocity is 11.45 and it occurs in the pipe between nodes 4 and 7

Final Calculations - Hazen-Williams - 2007

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv. Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
*EQUIVALENT K'S											
*REMOTE HEAD TO SUPPLY											
1	2.5	5.60	14.82	1	0.0	11.000	120	7.000			
to					0.0	0.0		0.0			
2	2.5		14.82	1.097	0.0	11.000	0.0601	0.661	Vel =	5.03	
2	2.5	5.60	15.50	1.25	0.0	11.000	120	7.661			
to					0.0	0.0		0.0			
3	2.5		30.32	1.442	0.0	11.000	0.0596	0.656	Vel =	5.96	
3	2.5	5.60	16.15	1.25	1T	7.432	4.810	120	8.317		
to					0.0	7.432		0.0			
4	2.5		46.47	1.442	0.0	12.242	0.1314	1.609	Vel =	9.13	
4			0.0								
			46.47					9.926	K Factor =	14.75	
*NEW PATH											
5	2.5	5.60	16.05	1	0.0	11.000	120	8.217			
to					0.0	0.0		0.0			
6	2.5		16.05	1.097	0.0	11.000	0.0697	0.767	Vel =	5.45	
6	2.5	5.60	16.79	1.25	1T	7.432	6.190	120	8.984		
to					0.0	7.432		0.0			
4	2.5		32.84	1.442	0.0	13.622	0.0692	0.942	Vel =	6.45	
4	2.5		46.46	1.5	1T	9.9	1.500	120	9.926		
to					0.0	9.900		0.650			
7	1		79.3	1.682	0.0	11.400	0.1669	1.903	Vel =	11.45	
7	1		-22.33	3	0.0	11.500	120	12.479			
to					0.0	0.0		0.0			
8	1		56.97	3.26	0.0	11.500	0.0036	0.041	Vel =	2.19	
8	1		34.19	3	2E	18.815	224.810	120	12.520		
to					0.0	18.815		0.0			
9	1		91.16	3.26	0.0	243.625	0.0086	2.098	Vel =	3.50	
9	1		101.66	3	1T	20.159	43.340	120	14.618		
to					4E	37.631	57.790		6.496		
10	-14		192.82	3.26	0.0	101.130	0.0344	3.481	Vel =	7.41	
10	-14		0.0	8	1E	28.468	120.030	140	24.595		
to					0.0	28.468		-6.063			
TEST	0		192.82	8.27	0.0	148.498	0.0003	0.041	Vel =	1.15	
TEST			0.0								
			192.82					18.573	K Factor =	44.74	
*NEW PATH											
11	2.5	5.60	14.82	1	0.0	11.000	120	7.004			
to					0.0	0.0		0.0			
12	2.5		14.82	1.097	0.0	11.000	0.0602	0.662	Vel =	5.03	
12	2.5	5.60	15.51	1.25	0.0	11.000	120	7.666			
to					0.0	0.0		0.0			
13	2.5		30.33	1.442	0.0	11.000	0.0596	0.656	Vel =	5.96	
13	2.5	5.60	16.15	1.25	1T	7.432	4.810	120	8.322		
to					0.0	7.432		0.0			
14	2.5		46.48	1.442	0.0	12.242	0.1315	1.610	Vel =	9.13	

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
14			0.0 46.48						9.932		K Factor = 14.75	
*NEW PATH												
15 to 16	2.5 2.5	5.60	16.06 16.06	1 1.097		0.0 0.0	11.000 0.0	120	8.223 0.0		Vel = 5.45	
16 to 14	2.5 2.5	5.60	16.79 32.85	1.25 1.442	1T	7.432 0.0	6.190 7.432 13.622	120	8.990 0.0		Vel = 6.45	
14 to 17	2.5 1		46.48 79.33	1.5 1.682	1T	9.9 0.0	1.500 9.900	120	9.932 0.650		Vel = 11.45	
17 to 9	1 1		22.33 101.66	3 3.26	2E	18.815 0.0	183.550 18.815 202.365	120	12.486 0.0		Vel = 3.91	
9			0.0 101.66						14.618		K Factor = 26.59	
*NEW PATH												
18 to 19	2.5 2.5	5.60	16.72 16.72	1 1.097		0.0 0.0	11.000 0.0	120	8.911 0.0		Vel = 5.68	
19 to 20	2.5 2.5	5.60	17.47 34.19	1.25 1.442	1T	7.432 0.0	15.810 7.432 23.242	120	9.737 0.0		Vel = 6.72	
20 to 8	2.5 1		0.0 34.19	1.5 1.682	1T	9.9 0.0	1.500 9.900	120	11.469 0.650		Vel = 4.94	
8			0.0 34.19						12.520		K Factor = 9.66	
*NEW PATH												
7 to 17	1 1		22.33 22.33	3 3.26		0.0 0.0	11.500 0.0	120	12.479 0.0		Vel = 0.86	
17			0.0 22.33						12.486		K Factor = 6.32	