



... Fire Protection by Computer Design

DEAN AND ALLYN, INC.
116 LEWISTON ROAD
GRAY MAINE
207 657 5646

Job Name : MILLIGAN RESIDENCE
Building :
Location : 466 CAPISIC STREET PORTLAND, MAINE
System : ONE
Contract : C151316
Data File : 466 CAPISIC STREET.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - MILLIGAN RES. Date - 12-20-15
Location - 466 CAPISIC STREET PORTLAND, MAINE
Building - System No. - ONE
Contractor - DEAN AND ALLYN, INC. Contract No. - C151316
Calculated By - H. KING Drawing No. - 1 OF 1
Construction: (X) Combustible () Non-Combustible Ceiling Height 8'
OCCUPANCY - RESIDENCE

S Type of Calculation: ()NFPA 13 Residential ()NFPA 13R (X)NFPA 13D
Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
S ()Other
T ()Specific Ruling Made by Date
E
M Listed Flow at Start Point - 13 Gpm System Type
Listed Pres. at Start Point - 9.1 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 16 x 16 () Deluge () PreAction
E Domestic Flow Added - Gpm Sprinkler or Nozzle
S Additional Flow Added - Gpm Make RELIABLE Model RFC43
I Elevation at Highest Outlet - 10 Feet Size K-Factor 4.3
G Note:CUSHION 36.3 PSI Temperature Rating 155
N

Calculation Gpm Required 26.0 Psi Required 43.7 CTY
Summary C-Factor Used: Overhead 120 Underground 120

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 2-24-15 Rated Cap. Cap.
T Time of Test - @ Psi Elev.
E Static (Psi) - 80 Elev.
R Residual (Psi) - 62 Other Well
Flow (Gpm) - 887 Proof Flow Gpm
S Elevation - 0

P Location: CAPISIC STREET

P
L Source of Information: PWD
Y

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	*****
1A to 1	12.97 12.97	1.049 120.0 0.0583	T 5.0 0.0 0.0	1.000 5.000 6.000	9.100 0.0 0.350		K Factor = 4.30 Vel = 4.81		
	0.0 12.97				9.450		K Factor = 4.22		
1B to 10	12.99 12.99	1.049 120.0 0.0585	0.0 0.0 0.0	10.000 0.0 10.000	9.473 0.0 0.585		K Factor @ node 1 Vel = 4.82		
	0.0 12.99				10.058		K Factor = 4.10		
2 to 10	12.97 12.97	1.049 120.0 0.0585	T 5.0 0.0 0.0	5.400 5.000 10.400	9.450 0.0 0.608		K Factor @ node 1 Vel = 4.81		
10 to 11	12.99 25.96	1.049 120.0 0.2108	T 5.0 0.0 0.0	22.400 5.000 27.400	10.058 0.0 5.776		Vel = 9.64		
11 to 12	0.0 25.96	1.049 120.0 0.2108	T 5.0 0.0 0.0	12.000 5.000 17.000	15.834 0.0 3.584		Vel = 9.64		
12 to 13	0.0 25.96	1.049 120.0 0.2107	E 2.0 0.0 0.0	10.400 2.000 12.400	19.418 4.331 2.613		Vel = 9.64		
13 to TR	0.0 25.96	1.049 120.0 0.2108	3T 15.0 0.0 0.0	15.200 15.000 30.200	26.362 0.0 6.367		Vel = 9.64		
TR to FF	0.0 25.96	1.049 120.0 0.2107	0.0 0.0 0.0	7.000 0.0 7.000	32.729 7.599 1.475		* * Fixed Loss = 5 Vel = 9.64		
FF to CTY	0.0 25.96	1.314 120.0 0.0704	T 2.974 0.93 0.0	60.000 3.904 63.904	41.803 -2.599 4.498		Vel = 6.14		
	0.0 25.96				43.702		K Factor = 3.93		

Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1A	9.0	4.3	9.1	na	12.97	0.05	256	9.1
1	9.0		9.45	na				
1B	10.0	K = K @ 1	9.47	na	12.99			
2	10.0	K = K @ 1	9.45	na	12.97			
10	10.0		10.06	na				
11	10.0		15.83	na				
12	10.0		19.42	na				
13	0.0		26.36	na				
TR	0.0		32.73	na				
FF	-6.0		41.8	na				
CTY	0.0		43.7	na				

The maximum velocity is 9.64 and it occurs in the pipe between nodes 10 and 11

Water Supply Curve C

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City Water Supply:
C1 - Static Pressure : 80
C2 - Residual Pressure: 62
C2 - Residual Flow : 887

Demand:
D1 - Elevation : 4.331
D2 - System Flow : 25.958
D2 - System Pressure : 43.702
Hose (Demand) : _____
D3 - System Demand : 25.958
Safety Margin : 36.271

