



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

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

Job Name : 58 ICE POND DRIVE  
Building :  
Location : 58 ICE POND DRIVE PORTLAND MAINE  
System : ONE  
Contract : 161365  
Data File : 58 ICE POND.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 58 ICE POND DRIVE Date - 8-13-16  
Location - 58 ICE POND DRIVE PORTLAND MAINE  
Building - System No. - ONE  
Contractor - DEAN AND ALLYN Contract No. - 161365  
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 - 14 Gpm System Type  
Listed Pres. at Start Point - 10.2 Psi (X) Wet ( ) Dry  
D MAXIMUM LISTED SPACING 14 x 14 ( ) Deluge ( ) PreAction  
E Domestic Flow Added - Gpm Sprinkler or Nozzle  
S Additional Flow Added - Gpm Make RELIABLE Model F1RES44  
I Elevation at Highest Outlet - 18' Feet Size K-Factor 4.4  
G Note:CUSHION 16.9 PSI Temperature Rating 155  
N

Calculation Gpm Required 28.8 Psi Required 59.0 CITY  
Summary C-Factor Used: Overhead 120 Underground 120

W Water Flow Test: Pump Data: Tank or Reservoir:  
A Date of Test - 6-6-13 Rated Cap. Cap.  
T Time of Test - @ Psi Elev.  
E Static (Psi) - 76 Elev.  
R Residual (Psi) - 58 Other Well  
Flow (Gpm) - 1342 Proof Flow Gpm  
S Elevation - 0

P Location: ICE POND DRIVE  
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	*****
01 to 10	14.70 14.7 0.0 14.70	1.049 120.0 0.0736	T	5.0 0.0 0.0	3.500 5.000 8.500	11.166 0.0 0.626			K Factor = 4.40	
							11.792		K Factor = 4.28	
02 to 11	14.05 14.05	1.049 120.0 0.0677	T	5.0 0.0 0.0	9.000 5.000 14.000	10.200 0.0 0.948			K Factor = 4.40	
11 to 10	0.0 14.05	1.049 120.0 0.0678	T	5.0 0.0 0.0	4.500 5.000 9.500	11.148 0.0 0.644			Vel = 5.22	
10 to 12	14.70 28.75	1.049 120.0 0.2547	E T	2.0 5.0 0.0	25.300 7.000 32.300	11.792 0.0 8.228			Vel = 10.67	
12 to 13	0.0 28.75	1.049 120.0 0.2548		0.0 0.0 0.0	8.800 0.0 8.800	20.020 3.898 2.242			Vel = 10.67	
13 to 14	0.0 28.75	1.049 120.0 0.2547	E	2.0 0.0 0.0	9.800 2.000 11.800	26.160 3.898 3.005			Vel = 10.67	
14 to 15	0.0 28.75	1.049 120.0 0.2547	E T	2.0 5.0 0.0	17.000 7.000 24.000	33.063 0.0 6.114			Vel = 10.67	
15 to 16	0.0 28.75	1.049 120.0 0.2547	E	2.0 0.0 0.0	19.000 2.000 21.000	39.177 0.0 5.349			Vel = 10.67	
16 to TR	0.0 28.75	1.049 120.0 0.2548	E	2.0 0.0 0.0	12.200 2.000 14.200	44.526 0.0 3.618			Vel = 10.67	
TR to FF	0.01 28.76	1.049 120.0 0.2547	S	5.0 0.0 0.0	7.000 5.000 12.000	48.144 7.599 3.056			** Fixed Loss = 5	
FF to CTY	-0.01 28.75	1.72 120.0 0.0229	T	4.086 0.0 0.0	120.000 4.086 124.086	58.799 -2.599 2.845			Vel = 3.97	
	0.0 28.75						59.045		K Factor = 3.74	

# Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
01	18.0	4.4	11.17	na	14.7	0.05	196	10.2
02	18.0	4.4	10.2	na	14.05	0.05	196	10.2
11	18.0		11.15	na				
10	18.0		11.79	na				
12	18.0		20.02	na				
13	9.0		26.16	na				
14	0.0		33.06	na				
15	0.0		39.18	na				
16	0.0		44.53	na				
TR	0.0		48.14	na				
FF	-6.0		58.8	na				
CTY	0.0		59.04	na				

The maximum velocity is 10.68 and it occurs in the pipe between nodes TR and FF

# Water Supply Curve C

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City Water Supply:  
C1 - Static Pressure : 76  
C2 - Residual Pressure: 58  
C2 - Residual Flow : 1342

Demand:  
D1 - Elevation : 7.796  
D2 - System Flow : 28.755  
D2 - System Pressure : 59.045  
Hose ( Demand ) : \_\_\_\_\_  
D3 - System Demand : 28.755  
Safety Margin : 16.940

