



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

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

Job Name : ANSEL RESIDENCE  
Building :  
Location : 11 ORCHARD STREET PORTLAND, MAINE  
System : ONE  
Contract : C151307  
Data File : ANSEL RES.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - ANSEL RESIDENCE Date - 2-14-16  
Location - 11 ORCHARD STREET PORTLAND, MAINE  
Building - System No. - ONE  
Contractor - DEAN AND ALLYN, INC. Contract No. - C151307  
Calculated By - H. KING Drawing No. - 1 OF 1  
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 10'  
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 - 18 Gpm System Type  
Listed Pres. at Start Point - 17.5 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 - 24' Feet Size K-Factor 4.3  
G Note:CUSHION 5.5 PSI Temperature Rating 155  
N

Calculation Gpm Required 36.8 Psi Required 64.4 CTY  
Summary C-Factor Used: Overhead 120 Underground 120

W Water Flow Test: Pump Data: Tank or Reservoir:  
A Date of Test - 10-31-13 Rated Cap. Cap.  
T Time of Test - @ Psi Elev.  
E Static (Psi) - 70 Elev.  
R Residual (Psi) - 62 Other Well  
Flow (Gpm) - 691 Proof Flow Gpm  
S Elevation - 0

P Location: ORCHARD 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	17.99 17.99	1.049 120.0 0.1070	T	5.0 0.0 0.0	1.000 5.000 6.000	17.500 0.0 0.642			K Factor = 4.30	
	0.0 17.99						18.142		K Factor = 4.22	
1B to 2	17.99 17.99	1.049 120.0 0.1069	2E	4.0 0.0 0.0	12.000 4.000 16.000	18.142 0.0 1.711			K Factor @ node 1	
2 to 10	18.82 36.81	1.049 120.0 0.4022	2E T	4.0 5.0 0.0	19.700 9.000 28.700	19.853 -3.898 11.543			K Factor @ node 1	
10 to 11	0.0 36.81	1.38 120.0 0.1058	E	3.0 0.0 0.0	11.700 3.000 14.700	27.498 5.197 1.555			Vel = 7.90	
11 to 12	0.0 36.81	1.38 120.0 0.1058	T 2E	6.0 6.0 0.0	32.500 12.000 44.500	34.250 0.0 4.707			Vel = 7.90	
12 to 13	0.0 36.81	1.61 120.0 0.0499	E	4.0 0.0 0.0	12.000 4.000 16.000	38.957 5.630 0.799			Vel = 5.80	
13 to TR	0.0 36.81	1.61 120.0 0.0499	2T E	16.0 4.0 0.0	12.500 20.000 32.500	45.386 0.0 1.622			Vel = 5.80	
TR to FF	0.0 36.81	1.61 120.0 0.0500		0.0 0.0 0.0	8.000 0.0 8.000	47.008 8.465 0.400			** Fixed Loss = 5	
FF to CTY	0.0 36.81	1.314 120.0 0.1343	T Ball	2.974 0.93 0.0	60.000 3.904 63.904	55.873 0.0 8.581			Vel = 8.71	
	0.0 36.81						64.454		K Factor = 4.59	

# Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1A	24.0	4.3	17.5	na	17.99	0.05	256	17.5
1	24.0		18.14	na				
1B	24.0	K = K @ 1	18.14	na	17.99			
2	24.0	K = K @ 1	19.85	na	18.82			
10	33.0		27.5	na				
11	21.0		34.25	na				
12	21.0		38.96	na				
13	8.0		45.39	na				
TR	8.0		47.01	na				
FF	0.0		55.87	na				
CTY	0.0		64.45	na				

The maximum velocity is 13.66 and it occurs in the pipe between nodes 2 and 10

# Water Supply Curve C

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City Water Supply:  
C1 - Static Pressure : 70  
C2 - Residual Pressure: 62  
C2 - Residual Flow : 691

Demand:  
D1 - Elevation : 10.394  
D2 - System Flow : 36.806  
D2 - System Pressure : 64.454  
Hose ( Demand ) : \_\_\_\_\_  
D3 - System Demand : 36.806  
Safety Margin : 5.511

