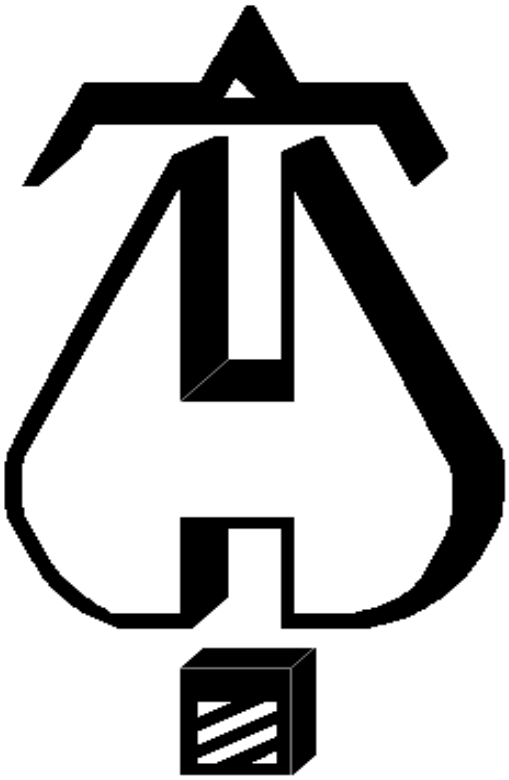

. . . Fire Protection by Computer Design

DEAN & ALLYN, INC.
PO BOX 709
116 LEWISTON ROAD
GRAY, MAINE 04039
207-657-5646

Job Name : MACISAAC-DELUCIA RES
Building :
Location : 499 ISLAND AVE. PEAKS ISLAND MAINE
System : ONE
Contract : C111032
Data File : PEAKS.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - MACISAAC-DELUCIA RES. Date - 9-15-11
Location - 499 ISLAND AVE. PEAKS ISLAND MAINE
Building - System No. - ONE
Contractor - DEAN AND ALLYN, INC. Contract No. - C111032
Calculated By - H. KING Drawing No. - 1 OF 1
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 8'
OCCUPANCY - RESIDENCE

SYSTEM DESIGN

Type of Calculation: ( )NFPA 13 Residential ( )NFPA 13R (X)NFPA 13D
Number of Sprinklers Flowing: ( )1 (X)2 ( )4 ( )
( )Other
( )Specific Ruling Made by Date

Listed Flow at Start Point - 23 Gpm System Type
Listed Pres. at Start Point - 15.7 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 18 x 18 ( ) Deluge ( ) PreAction
Domestic Flow Added - Gpm Sprinkler or Nozzle
Additional Flow Added - Gpm Make VIKING Model FREEDOM
Elevation at Highest Outlet - 31 Feet Size K-Factor 5.8
Note:CUSHION 3.04 PSI Temperature Rating 155

Calculation Summary: Gpm Required 23.0 Psi Required 50.8 PUMP
C-Factor Used: Overhead 120 Underground 120

WATER SUPPLY

Water Flow Test:
Date of Test -
Time of Test -
Static (Psi) - 55
Residual (Psi) - 50
Flow (Gpm) - 50
Elevation - 0

Pump Data:
Rated Cap.
@ Psi
Elev.
Other

Tank or Reservoir:
Cap.
Elev.

Well
Proof Flow Gpm

Location: GOULDS PUMP CURVE

Source of Information:

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	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
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
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

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.

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1	31.0	5.8	15.7	na	22.98	0.05	324	15.7
10	18.0		24.61	na				
11	18.0		26.8	na				
12	18.0		31.01	na				
13	18.0		33.11	na				
14	8.0		39.68	na				
TR	8.0		44.73	na				
FF	0.0		53.21	na				
PMP	0.0		53.44	na				

The maximum velocity is 8.53 and it occurs in the pipe between nodes 1 and 10

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
1	22.98	1.049	1E	2.0	12.500	15.700		K Factor = 5.80
to		120.0	1T	5.0	7.000	5.630		
10	22.98	0.1683		0.0	19.500	3.282		Vel = 8.53
10	0.0	1.049	1E	2.0	6.000	24.612		
to		120.0	1T	5.0	7.000	0.0		
11	22.98	0.1682		0.0	13.000	2.187		Vel = 8.53
11	0.0	1.049	1T	5.0	20.000	26.799		
to		120.0		0.0	5.000	0.0		
12	22.98	0.1683		0.0	25.000	4.207		Vel = 8.53
12	0.0	1.049	1T	5.0	7.500	31.006		
to		120.0		0.0	5.000	0.0		
13	22.98	0.1683		0.0	12.500	2.104		Vel = 8.53
13	0.0	1.049	1E	2.0	11.300	33.110		
to		120.0		0.0	2.000	4.331		
14	22.98	0.1683		0.0	13.300	2.238		Vel = 8.53
14	0.0	1.049	2T	10.0	16.000	39.679		
to		120.0	2E	4.0	14.000	0.0		
TR	22.98	0.1683		0.0	30.000	5.048		Vel = 8.53
TR	0.0	1.049	1S	5.0	7.000	44.727		
to		120.0	1Fsp	0.0	5.000	6.465		* Fixed loss = 3
FF	22.98	0.1682		0.0	12.000	2.019		Vel = 8.53
FF	0.0	1.61	2E	8.0	3.000	53.211		
to		120.0		0.0	8.000	0.0		
PMP	22.98	0.0209		0.0	11.000	0.230		Vel = 3.62
	0.0							
	22.98					53.441		K Factor = 3.14