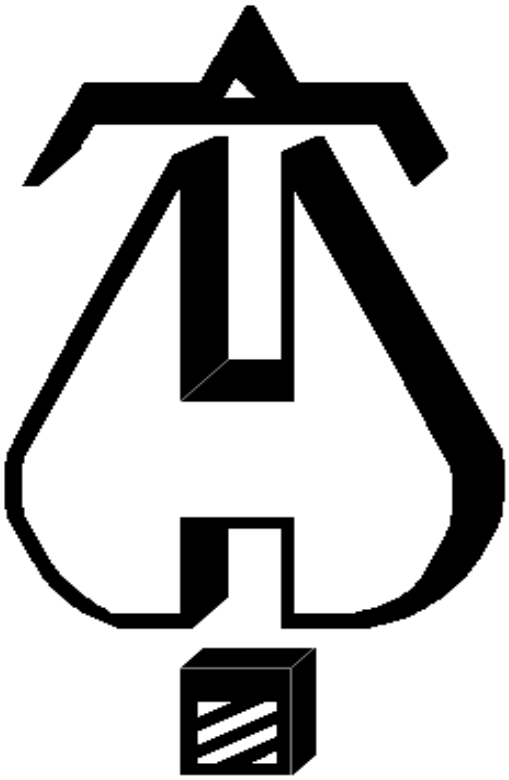

. . . Fire Protection by Computer Design

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 : C-111038
Data File : PEAKS1.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 Contract No. - C-111038
Calculated By - H KING Drawing No. - 1 OF 1
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 8'
OCCUPANCY - RESIIDENCE

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 - 11 Gpm System Type
Listed Pres. at Start Point - 7.6 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 12 x 12 ( ) Deluge ( ) PreAction
Domestic Flow Added - Gpm Sprinkler or Nozzle
Additional Flow Added - Gpm Make VIKING Model FREEDOM
Elevation at Highest Outlet - 31 Feet Size 1/2" K-Factor 4.0
Note:CUSHION 17.93 PSI Temperature Rating 155

Calculation Summary: Gpm Required 22.4 Psi Required 35.9 At Test
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:

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.
2	31.0	4	7.6	na	11.03	0.05	144	7.6
3	31.0	4	8.05	na	11.35	0.05	144	7.6
20	18.0		13.53	na				
21	18.0		14.29	na				
23	18.0		14.48	na				
22	18.0		15.03	na				
24	18.0		15.25	na				
12	18.0		16.74	na				
13	18.0		18.75	na				
14	8.0		25.21	na				
TR	8.0		30.01	na				
FF	0.0		38.4	na				
PMP	0.0		38.62	na				

The maximum velocity is 8.31 and it occurs in the pipe between nodes 24 and 12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
2	11.03	1.049	2E	4.0	3.000	7.600		K Factor = 4.00
to		120.0		0.0	4.000	5.630		
20	11.03	0.0433		0.0	7.000	0.303		Vel = 4.09
	0.0							
	11.03					13.533		K Factor = 3.00
3	11.35	1.049	2E	4.0	13.500	8.050		K Factor = 4.00
to		120.0		0.0	4.000	5.630		
23	11.35	0.0457		0.0	17.500	0.799		Vel = 4.21
	0.0							
	11.35					14.479		K Factor = 2.98
20	11.03	1.049	2E	4.0	13.500	13.533		
to		120.0		0.0	4.000	0.0		
21	11.03	0.0433		0.0	17.500	0.757		Vel = 4.09
21	0.0	1.049	1E	2.0	10.000	14.290		
to		120.0	1T	5.0	7.000	0.0		
22	11.03	0.0432		0.0	17.000	0.735		Vel = 4.09
	0.0							
	11.03					15.025		K Factor = 2.85
23	11.35	1.049	1E	2.0	10.000	14.479		
to		120.0	1T	5.0	7.000	0.0		
24	11.35	0.0456		0.0	17.000	0.776		Vel = 4.21
	0.0							
	11.35					15.255		K Factor = 2.91
22	11.03	1.049		0.0	5.300	15.025		
to		120.0		0.0	0.0	0.0		
24	11.03	0.0434		0.0	5.300	0.230		Vel = 4.09
24	11.35	1.049	1T	5.0	4.300	15.255		
to		120.0		0.0	5.000	0.0		
12	22.38	0.1601		0.0	9.300	1.489		Vel = 8.31
12	0.0	1.049	1T	5.0	7.500	16.744		
to		120.0		0.0	5.000	0.0		
13	22.38	0.1602		0.0	12.500	2.002		Vel = 8.31
13	0.0	1.049	1E	2.0	11.300	18.746		
to		120.0		0.0	2.000	4.331		
14	22.38	0.1602		0.0	13.300	2.131		Vel = 8.31
14	0.0	1.049	2T	10.0	16.000	25.208		
to		120.0	2E	4.0	14.000	0.0		
TR	22.38	0.1602		0.0	30.000	4.805		Vel = 8.31
TR	0.0	1.049	1S	5.0	7.000	30.013		
to		120.0	1Fsp	0.0	5.000	6.465		* Fixed loss = 3
FF	22.38	0.1602		0.0	12.000	1.922		Vel = 8.31

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
FF	0.0	1.61	2E	8.0	3.000	38.400		
to		120.0		0.0	8.000	0.0		
PMP	22.38	0.0199		0.0	11.000	0.219		Vel = 3.53
	0.0							
	22.38					38.619		K Factor = 3.60