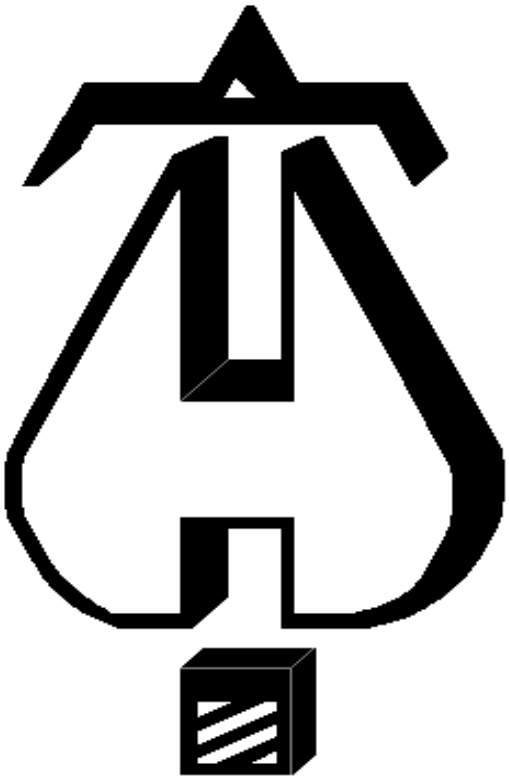

. . . Fire Protection by Computer Design

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

Job Name	:	1704 WASHINGTON AVE
Drawing	:	
Location	:	1704 WASHINGTON AVE PORTLAND MAINE
Remote Area	:	ONE
Contract	:	C111036
Data File	:	1704 WASHINGTON.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 1704 WASHINGTON AVE. Date - 10-7-11
Location - 1704 WASHINGTON AVE PORTLAND MAINE
Building - System No. - ONE
Contractor - DEAN AND ALLYN, INC. Contract No. - C111036
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 - 12 Gpm System Type
Listed Pres. at Start Point - 9 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 14 x 14 ( ) Deluge ( ) PreAction
Domestic Flow Added - Gpm Sprinkler or Nozzle
Additional Flow Added - Gpm Make VIKING Model FREEDOM
Elevation at Highest Outlet - 24' Feet Size K-Factor 4.0
Note:CUSHION 19.9 PSI Temperature Rating 155

Calculation Summary: Gpm Required 24.7 Psi Required 33.8 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
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.

DEAN & ALLYN, INC.
1704 WASHINGTON AVE

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1	24.0	4	9.0	na	12.0	0.06	196	9.0
2	24.0	4	10.13	na	12.73	0.06	196	9.0
10	16.0		12.97	na				
11	16.0		14.16	na				
12	16.0		15.09	na				
13	16.0		15.51	na				
14	16.0		16.9	na				
15	8.0		22.58	na				
TR	8.0		25.7	na				
FF	0.0		32.44	na				
PMP	0.0		33.79	na				

The maximum velocity is 9.18 and it occurs in the pipe between nodes 13 and 14

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	12.00	1.049	1E	2.0	8.000	9.000		K Factor = 4.00
to		120.0		0.0	2.000	3.465		
10	12.0	0.0506		0.0	10.000	0.506		Vel = 4.45
	0.0							
	12.00					12.971		K Factor = 3.33
2	12.73	1.049	1E	2.0	8.000	10.127		K Factor = 4.00
to		120.0		0.0	2.000	3.465		
11	12.73	0.0564		0.0	10.000	0.564		Vel = 4.73
	0.0							
	12.73					14.156		K Factor = 3.38
10	12.00	1.049	1E	2.0	30.000	12.971		
to		120.0	2T	10.0	12.000	0.0		
12	12.0	0.0506		0.0	42.000	2.124		Vel = 4.45
	0.0							
	12.00					15.095		K Factor = 3.09
11	12.73	1.049	1T	5.0	19.000	14.156		
to		120.0		0.0	5.000	0.0		
13	12.73	0.0564		0.0	24.000	1.354		Vel = 4.73
	0.0							
	12.73					15.510		K Factor = 3.23
12	12.00	1.049		0.0	8.200	15.095		
to		120.0		0.0	0.0	0.0		
13	12.0	0.0506		0.0	8.200	0.415		Vel = 4.45
13	12.73	1.049	1T	5.0	2.200	15.510		
to		120.0		0.0	5.000	0.0		
14	24.73	0.1926		0.0	7.200	1.387		Vel = 9.18
14	0.0	1.049	1E	2.0	9.500	16.897		
to		120.0		0.0	2.000	3.465		
15	24.73	0.1927		0.0	11.500	2.216		Vel = 9.18
15	0.0	1.049	2T	10.0	6.200	22.578		
to		120.0		0.0	10.000	0.0		
TR	24.73	0.1927		0.0	16.200	3.122		Vel = 9.18
TR	0.0	1.049	2S	10.0	7.000	25.700		
to		120.0		0.0	10.000	3.465		
FF	24.73	0.1927		0.0	17.000	3.276		Vel = 9.18
FF	0.0	1.049	2E	4.0	3.000	32.441		
to		120.0		0.0	4.000	0.0		
PMP	24.73	0.1927		0.0	7.000	1.349		Vel = 9.18
	0.0							
	24.73					33.790		K Factor = 4.25

City Water Supply:
C1 - Static Pressure : 55
C2 - Residual Pressure: 50
C2 - Residual Flow : 50

Demand:
D1 - Elevation : 10.394
D2 - System Flow : 24.729
D2 - System Pressure : 33.790
Hose (Demand) :
D3 - System Demand : 24.729
Safety Margin : 19.851