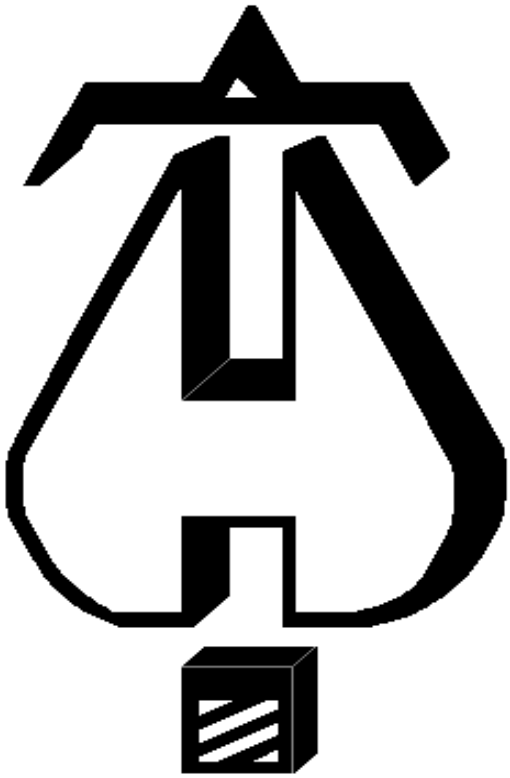


. . . Fire Protection by Computer Design

Residential Fire Protection
64 Daggett Hill Rd.
Greene, ME 04236
946-3473

Job Name : 52 WILMOT STREET APT
Building : WOOD STRUCTURE
Location : BASEMENT
System : WET
Contract : C16032
Data File : 52 WILMOT ST APT-BASEMENT.WXF

Hydraulic Design Information Sheet

Name - 52 WILMOT STREET APARTMENTS — Date - 6/28/2017
Location - BASEMENT
Building - WOOD STRUCTURE — System No. - WET
Contractor - RESIDENTIAL FIRE PROTECTION — Contract No. - C16032
Calculated By - T. PRAY — Drawing No. - 1 OF 1
Construction: (X) Combustible ( ) Non-Combustible — Ceiling Height - 7.54'
Occupancy - BASEMENT SPACE

SYSTEM DESIGN

(X) NFPA 13 ( ) Lt. Haz. Ord.Haz.Gp. (X) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling — Made By — Date

Area of Sprinkler Operation	- 935	System Type	Sprinkler/Nozzle
Density	- .15	(X) Wet	Make VIKING
Area Per Sprinkler	- 100-130	( ) Dry	Model VK300
Elevation at Highest Outlet	- 89.54	( ) Deluge	Size 1/2"
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.155
Hose Allowance - Outside	- 100		

Note

Calculation Summary — Flow Required - 489.93 Press Required - 76.7 AT TEST; C-Factor Used: 120 Overhead 150 Underground

WATER SUPPLY

Water Flow Test:		Pump Data:		Tank or Reservoir:
Date of Test	- 9/16/2016			Cap. -
Time of Test	- N/A	Rated Cap.-		Elev.-
Static Press	- 82	@ Press	-	
Residual Press	- 74	Elev.	-	Well
Flow	- 1453			Proof Flow
Elevation	- 108.0'			

Location - HYDRANTS ARE LOCATED ON WILMOT STREET, SEE PLOT PLAN FOR MORE INFORMATION
Source of Information - PORTLAND WATER DISTRICT

COMMODITY

Commodity — Class — Location
Storage Ht. — Area — Aisle W.
Storage Method: Solid Piled % Palletized % Rack

( ) Single Row	( ) Conven. Pallet	( ) Auto. Storage	( ) Encap.	
( ) Double Row	( ) Slave Pallet	( ) Solid Shelf	( ) Non	
( ) Mult. Row		( ) Open Shelf		

STORAGE

Flue Spacing — Clearance:Storage to Ceiling
Longitudinal — Transverse

Horizontal Barriers Provided:

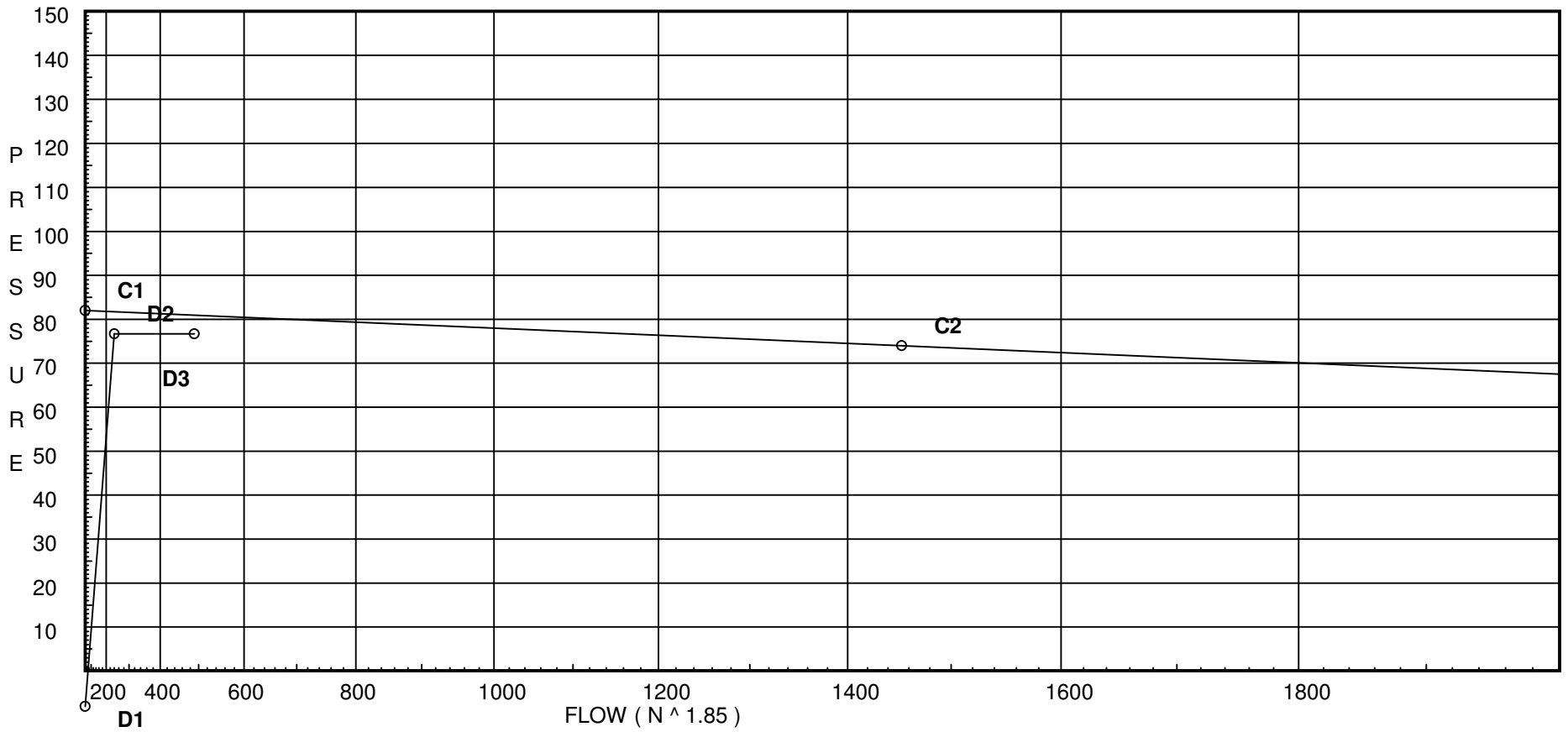
Water Supply Curve (C)

Residential Fire Protection
52 WILMOT STREET APT

City Water Supply:
- C1 - Static Pressure : 82
- C2 - Residual Pressure: 74
- C2 - Residual Flow : 1453

Demand:

D1 - Elevation	:	-7.995
D2 - System Flow	:	239.931
D2 - System Pressure	:	76.696
Hose (Adj City)	:	_____
Hose (Demand)	:	250
D3 - System Demand	:	489.931
Safety Margin	:	4.234



Fittings Used Summary

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	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Z	Generic Flow Switch	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61

Pressure / Flow Summary - STANDARD

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
DO01	0.0	5.6	12.13	na	19.5	0.15	130	7.0
30	89.54	5.6	7.17	na	15.0	0.15	100	7.0
31	89.54	5.6	7.79	na	15.63	0.15	100	7.0
32	89.54	5.6	12.1	na	19.48	0.15	100	7.0
50	89.54		12.4	na				
33	89.54	5.6	13.48	na	20.56	0.15	113	7.0
34	89.54	5.6	9.09	na	16.88	0.15	100	7.0
35	89.54	5.6	9.85	na	17.57	0.15	100	7.0
36	89.54	5.6	12.98	na	20.17	0.15	113	7.0
51	89.54		13.91	na				
52	89.54		15.11	na				
53	89.54		17.49	na				
37	88.12	5.6	19.95	na	25.01	0.15	100	7.0
38	89.25	K = K @ EQ01	27.13	na	28.8			
39	89.25	K = K @ EQ01	27.38	na	28.93			
54A	89.25		29.87	na				
54	88.67		35.28	na				
40	89.25	K = K @ EQ01	33.26	na	31.89			
55A	89.25		36.59	na				
55	88.67		38.56	na				
TOR	88.67		52.43	na				
BOR	83.05		65.91	na				
CITY	83.05		81.32	na	250.0			
TEST	108.0		76.7	na				

The maximum velocity is 25.54 and it occurs in the pipe between nodes BOR and CITY

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
DO01	19.50	1.049	1E	2.0	0.500	12.125		K Factor = 5.60
to		120		0.0	2.000	0.0		
EQ01	19.5	0.1244		0.0	2.500	0.311		Vel = 7.24
	0.0							
	19.50					12.436		K Factor = 5.53
30	15.00	1.049		0.0	8.000	7.175		K Factor = 5.60
to		120		0.0	0.0	0.0		
31	15.0	0.0764		0.0	8.000	0.611		Vel = 5.57
31	15.63	1.049	1T	5.0	11.125	7.786		K Factor = 5.60
to		120		0.0	5.000	0.0		
50	30.63	0.2863		0.0	16.125	4.616		Vel = 11.37
	0.0							
	30.63					12.402		K Factor = 8.70
32	19.48	1.049		0.0	2.420	12.102		K Factor = 5.60
to		120		0.0	0.0	0.0		
50	19.48	0.1240		0.0	2.420	0.300		Vel = 7.23
50	30.63	1.38	1E	3.0	2.750	12.402		
to		120		0.0	3.000	0.0		
33	50.11	0.1871		0.0	5.750	1.076		Vel = 10.75
33	20.56	1.61	1E	4.0	12.040	13.478		K Factor = 5.60
to		120	1T	8.0	12.000	0.0		
53	70.67	0.1669		0.0	24.040	4.012		Vel = 11.14
	0.0							
	70.67					17.490		K Factor = 16.90
34	16.88	1.049		0.0	8.000	9.087		K Factor = 5.60
to		120		0.0	0.0	0.0		
35	16.88	0.0951		0.0	8.000	0.761		Vel = 6.27
35	17.57	1.049		0.0	11.420	9.848		K Factor = 5.60
to		120		0.0	0.0	0.0		
51	34.45	0.3560		0.0	11.420	4.065		Vel = 12.79
	0.0							
	34.45					13.913		K Factor = 9.24
36	20.17	1.049	1T	5.0	2.080	12.977		K Factor = 5.60
to		120		0.0	5.000	0.0		
51	20.17	0.1322		0.0	7.080	0.936		Vel = 7.49
51	34.46	1.38		0.0	5.460	13.913		
to		120		0.0	0.0	0.0		
52	54.63	0.2196		0.0	5.460	1.199		Vel = 11.72
52	0.0	1.38	1E	3.0	1.830	15.112		
to		120	1T	6.0	9.000	0.0		
53	54.63	0.2196		0.0	10.830	2.378		Vel = 11.72
53	70.66	1.61		0.0	3.830	17.490		
to		120		0.0	0.0	0.615		
37	125.29	0.4817		0.0	3.830	1.845		Vel = 19.74
37	25.02	1.61	3E	12.0	11.090	19.950		K Factor = 5.60
to		120		0.0	12.000	-0.238		
54	150.31	0.6742		0.0	23.090	15.568		Vel = 23.69
	0.0							

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
	150.31					35.280		K Factor = 25.31
38	28.80	1.049	1T	5.0	5.710	27.131		K Factor @ node EQ01
to		120		0.0	5.000	0.0		
54A	28.8	0.2555		0.0	10.710	2.736		Vel = 10.69
	0.0							
	28.80					29.867		K Factor = 5.27
39	28.93	1.049	1T	5.0	4.670	27.376		K Factor @ node EQ01
to		120		0.0	5.000	0.0		
54A	28.93	0.2576		0.0	9.670	2.491		Vel = 10.74
54A	28.80	1.049	1T	5.0	0.580	29.867		
to		120		0.0	5.000	0.251		
54	57.73	0.9251		0.0	5.580	5.162		Vel = 21.43
54	150.31	2.067		0.0	9.000	35.280		
to		120		0.0	0.0	0.0		
55	208.04	0.3643		0.0	9.000	3.279		Vel = 19.89
	0.0							
	208.04					38.559		K Factor = 33.50
40	31.89	1.049	1T	5.0	5.790	33.258		K Factor @ node EQ01
to		120		0.0	5.000	0.0		
55A	31.89	0.3084		0.0	10.790	3.328		Vel = 11.84
55A	0.0	1.049	1T	5.0	0.580	36.586		
to		120		0.0	5.000	0.251		
55	31.89	0.3086		0.0	5.580	1.722		Vel = 11.84
55	208.04	2.067	1E	5.0	24.250	38.559		
to		120		0.0	5.000	0.0		
TOR	239.93	0.4744		0.0	29.250	13.875		Vel = 22.94
TOR	0.0	2.067	1Z	5.0	5.625	52.434		
to		120		0.0	5.000	8.434		* Fixed loss = 6
BOR	239.93	0.4744		0.0	10.625	5.040		Vel = 22.94
BOR	0.0	1.959	1G	1.164	25.000	65.908		
to		150	1T	11.635	12.799	0.0		
CITY	239.93	0.4077		0.0	37.799	15.410		Vel = 25.54
CITY	250.00	4.1		0.0	130.000	81.318		Qa = 250
to		140		0.0	0.0	-10.806		
TEST	489.93	0.0476		0.0	130.000	6.184		Vel = 11.91
	0.0							
	489.93					76.696		K Factor = 55.94