

DRC

PZ23-12000003

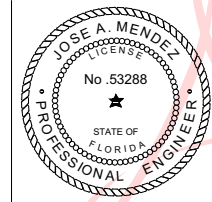
03/06/2024



Hydraulic Calculations by HydraCALC

Firetech Services, Inc.
7750 W 24th Avenue #27
Hialeah, Fl. 33016
786.201.1303

Jose A Mendez P.E 53288



Digitally
signed by jose
a mendez
Date:
2024.01.26
11:59:12
-05'00'

Job Name : Seabird Hallandale beach -1 FLOOR
Drawing :
Location : 3225 NE 6th STREET. POMPANO BEACH
Remote Area :
Contract :
Data File : CALC- 1 FLOOR.wxtmp

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HYDRAULIC DESIGN INFORMATION SHEET

03/06/2024

Name - Seabird Hallandale beach - 1 FLOOR Date - 1-15-24
Location - 3225 NE 6th STREET. POMPANO BEACH
Building - System No. -
Contractor - FIRETECH SERVICES, INC Contract No. -
Calculated By - V. CASADEVALL Drawing No. -
Construction: () Combustible (X) Non-Combustible Ceiling Height 8'
OCCUPANCY - RESIDENTIAL - LIGHT HAZARD

S Type of Calculation: (X)NFPA 13 Residential (X)NFPA 13R ()NFPA 13D
Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
S ()Other
T ()Specific Ruling Made by NFPA13R Date 2016
E
M Listed Flow at Start Point - 13.04Gpm System Type
Listed Pres. at Start Point - 7.081Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 16 x 16 () Deluge () PreAction
E Domestic Flow Added - Gpm Sprinkler or Nozzle
S Additional Flow Added - 100 Gpm Make TYCO Model LFII
I Elevation at Highest Outlet - 11 Feet Size 1/2" K-Factor 4.9
G Note: Temperature Rating 155
N

Calculation Gpm Required 139.283 Psi Required 29.890 At Test
Summary C-Factor Used: Overhead 150 Underground 150

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 1/17/2024 Rated Cap. Cap.
T Time of Test - 8:00AM @ Psi Elev.
E Static (Psi) - 75 Elev.
R Residual (Psi) - 70 Other Well
Flow (Gpm) - 1280 Proof Flow Gpm
S Elevation - 0

P Location: NE 6th STREET AND OCEAN BLVD

P
L Source of Information: CITY OF POMPANO BEACH FIRE DPT
Y

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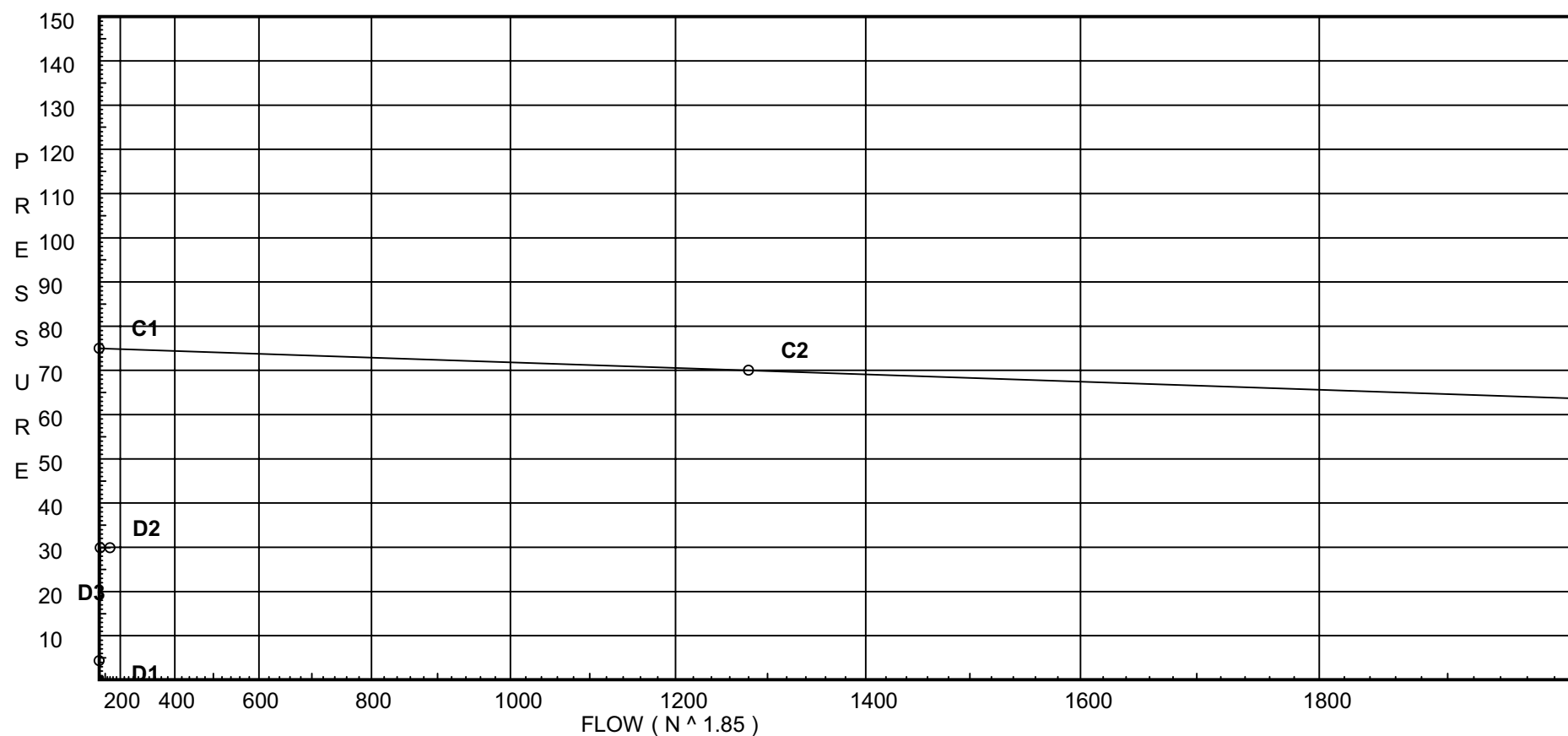
03/03/2024

Water Supply:

C1 - Static Pressure : 75
C2 - Residual Pressure: 70
C2 - Residual Flow : 1280

Demand:

D1 - Elevation : 4.331
D2 - System Flow : 39.283
D2 - System Pressure : 29.890
Hose (Demand) : 100
D3 - System Demand : 139.283
Safety Margin : 45.027



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Fitting Legend		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
Abbrev.	Name																				
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																			
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
N *	CPVC 90'Ell Harvel-Spears		7	7	8	9	11	12	13	0	0	0	0	0	0	0	0	0	0	0	0
O *	CPVC Tee - Branch	3	3	5	6	8	10	12	15	0	0	0	0	0	0	0	0	0	0	0	0
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
Zaf	Ames 3000SS	Fitting generates a Fixed Loss Based on Flow																			

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.

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Flow Summary NFPA

Fletcher Services, Inc.
Sealord Hall, Dale Beach -1 FLOOR

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SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	75.0	70	1280.0	74.917	139.28	29.89

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes	
S21	10.0	4.9	7.08	13.04	0.05	256
M21	11.0		7.28			
S22	10.0	4.9	7.0	12.96	0.05	144
L21	11.0		7.1			
M22	11.0	4.9	7.34	13.28	0.05	144
M1	11.0		7.89			
M2	11.0		13.75			
TOR	11.0		14.37			
BOR	0.0		22.9			
BK1	0.0		23.51			
BK2	0.0		29.88			
TEST	0.0		29.89	100.0		

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Final Calculations : Hazen-Williams

Firetech Services, Inc.
Sealord Hall, Sealord Beach -1 FLOOR

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Date 1-15-24

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Node1	Ele1	K	Qa	Nom	Fitting or Equiv	Len	Pipe Ftngs Total	CFact	Pt Pe Pf	*****	Notes	*****
Node2	Elev2	Fact	Qt	Act				Pf/Ft				
S21	10	4.90	13.04	1	N	7.0	8.660	150	7.081			
to					O	5.0	12.000		-0.433			
M21	11		13.04	1.101			20.660	0.0308	0.637	Vel =	4.39	
M21	11		0.0	1.5			12.000	150	7.285			
to									0.0			
M22	11		13.04	1.598			12.000	0.0050	0.060	Vel =	2.09	
			0.0									
M22			13.04						7.345	K Factor =	4.81	
S22	10	4.90	12.96	1	N	7.0	5.500	150	7.000			
to					O	5.0	12.000		-0.433			
L21	11		12.96	1.101			17.500	0.0305	0.534	Vel =	4.37	
L21	11		0.0	1	O	5.0	3.000	150	7.101			
to							5.000		0.0			
M22	11		12.96	1.101			8.000	0.0305	0.244	Vel =	4.37	
M22	11	4.90	26.32	1.5			14.000	150	7.345			
to									0.0			
M1	11		39.28	1.598			14.000	0.0386	0.541	Vel =	6.28	
M1	11		0.0	1.5	N	9.0	142.750	150	7.886			
to							9.000		0.0			
M2	11		39.28	1.598			151.750	0.0387	5.866	Vel =	6.28	
M2	11		0.0	1.5	E	5.022	8.750	120	13.752			
to							5.022		0.0			
TOR	11		39.28	1.687			13.772	0.0449	0.618	Vel =	5.64	
TOR	11		0.0	1.5	E	5.022	12.000	120	14.370			
to					Fsp	0.0	5.022		7.764	** Fixed Loss = 3		
BOR	0		39.28	1.687			17.022	0.0449	0.764	Vel =	5.64	
BOR	0		0.0	2.5	6E	49.637	70.420	150	22.898			
to							49.637		0.0			
BK1	0		39.28	2.423			120.057	0.0051	0.611	Vel =	2.73	
BK1	0		0.0	2.5	2E	16.474	10.000	120	23.509			
to					Zaf	0.0	16.474		6.238	** Fixed Loss = 6.238		
BK2	0		39.28	2.635			26.474	0.0051	0.136	Vel =	2.31	
BK2	0		0.0	6	E	20.084	55.000	140	29.883			
to					G	4.304	67.425		0.0			
TEST	0		39.28	6.16	T	43.037	122.425	0.0001	0.007	Vel =	0.42	
			100.00							Qa =	100.00	
TEST			139.28						29.890	K Factor =	25.48	