



MILTON E. REINOSO - PE 91359

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BROTHERS FIRE PROTECTION INC
3781 NE 11 AVENUE
POMPANO BEACH, FL 33064
954-419-9377

Job Name : MIAMI LAKES GARAGE
Drawing :
Location : 16200 NW 57 AVE, MAIMI LAKES, FL 33014
Remote Area : STP
Contract : C25-029
Data File : Standpipe.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - MIAMI LAKES GARAGE Date - 4/16/25
Location - 16200 NW 57 AVE, MAIMI LAKES, FL 33014
Building -
Contractor - BROTHERS FIRE PROTECTION System No. - STP
Calculated By - DAVID SENGSOURINHO Contract No. - C25-029
Occupancy - Drawing No. -

S (X) NFPA 14 Number of Standpipes () 1 () 2 (X) 3 () 4 ()
Y () Other
S () Specific Ruling Made by Date

E Flow at Top Most Outlet - 500 Gpm System Type
M Pres. at Top Most Outlet - 100 Psi (X) Wet () Dry
Flow For Ea. Additional Standpipe - 250 Gpm
D Total Additional Flow - 500 Gpm
E Elevation at Highest Outlet - Feet
S Hose Valve Connection () 1 1/2" (X) 2 1/2"
I Class Service () I () II (X) III
G Note: WET MANUAL
N

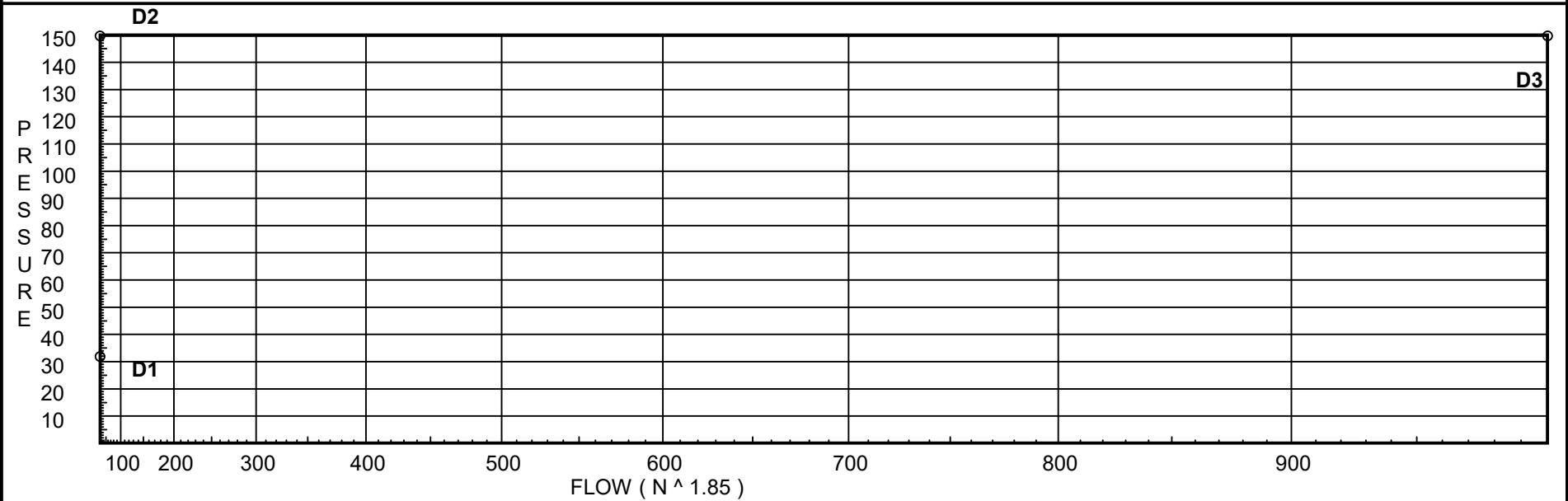
Calculation Gpm Required 1000 Psi Required 149.65 At FDC
Summary C-Factor Used: Overhead 120 Underground 150

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 3-19-26 Cap.
T Time of Test - 10:30 AM Rated Cap. 1000 Elev.
E Static (Psi) - 55 @ Psi 75
R Residual (Psi) - 53 Elev. 2 Well
Flow (Gpm) - 1082 Proof Flow Gpm
S Elevation - 1.5
U
P Location:
P
L Source of Information:
Y

Water Supply Curve

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MIAMI LAKES GARAGE

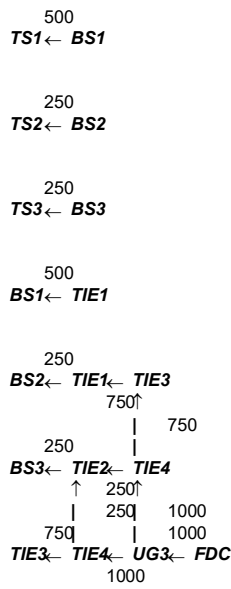
Demand:		
D1 - Elevation	:	31.833
D2 - System Flow	:	
D2 - System Pressure	:	149.650
Hose (Demand)	:	1000
D3 - System Demand	:	1000
Safety Margin	:	



Flow Diagram

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Fittings Used Summary

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Fitting Legend																					
Abbrev.	Name	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
E	NFPA 13 90' Standard Elbow	0	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
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
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.

Flow Summary - NFPA

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SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
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NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
TS1	75.0		100.0	500.0	
TS2	75.0		101.1	250.0	
TS3	75.0		108.11	250.0	
BS1	12.0		127.77		
BS2	12.0		128.52		
TIE1	12.0		128.89		
BS3	12.0		135.53		
TIE2	12.0		135.89		
TIE3	12.0		134.08		
TIE4	12.0		136.07		
UG3	-3.0		145.14		
FDC	1.5		149.65		

Final Calculations : Hazen-Williams

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
TS1 to BS1	75 12	H500	500.00 500.0	6 6.357			62.000 62.000	120 0.0078	100.000 27.285 0.481		Vel = 5.05	
BS1			0.0 500.00						127.766		K Factor = 44.23	
TS2 to BS2	75 12	H250	250.00 250.0	6 6.357			62.000 62.000	120 0.0022	101.099 27.285 0.134		Vel = 2.53	
BS2			0.0 250.00						128.518		K Factor = 22.05	
TS3 to BS3	75 12	H250	250.00 250.0	6 6.357			62.000 62.000	120 0.0022	108.108 27.285 0.134		Vel = 2.53	
BS3			0.0 250.00						135.527		K Factor = 21.47	
BS1 to TIE1	12 12		500.00 500.0	6 6.357	3E G T	52.808 3.772 37.72	51.000 94.300 145.300	120 0.0078	127.766 0.0 1.128		Vel = 5.05	
TIE1			0.0 500.00						128.894		K Factor = 44.04	
BS2 to TIE1	12 12		250.00 250.0	6 6.357	2E G T	35.205 3.772 37.72	97.917 76.697 174.614	120 0.0022	128.518 0.0 0.376		Vel = 2.53	
TIE1 to TIE3	12 12		500.00 750.0	6 6.357	T	37.72	278.083 37.720 315.803	120 0.0164	128.894 0.0 5.189		Vel = 7.58	
TIE3			0.0 750.00						134.083		K Factor = 64.77	
BS3 to TIE2	12 12		250.00 250.0	6 6.357	E G T	17.603 3.772 37.72	108.833 59.095 167.928	120 0.0021	135.527 0.0 0.361		Vel = 2.53	
TIE2 to TIE4	12 12		0.0 250.0	6 6.357	T	37.72	44.667 37.720 82.387	120 0.0022	135.888 0.0 0.178		Vel = 2.53	
TIE4			0.0 250.00						136.066		K Factor = 21.43	
TIE3 to TIE4	12 12		750.00 750.0	6 6.357	T	37.72	82.917 37.720 120.637	120 0.0164	134.083 0.0 1.983		Vel = 7.58	

Final Calculations : Hazen-Williams

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
TIE4 to UG3	12 -3		250.00 1000.0	6 6.357	2E	35.205	56.875 35.205 92.080	120 0.0280	136.066 6.496 2.576		Vel = 10.11	
UG3 to FDC	-3 1.500		0.0 1000.0	6 5.86	4E S	71.573 40.899	122.250 112.472 234.722	150 0.0275	145.138 -1.949 6.461		Vel = 11.90	
FDC			0.0 1000.00						149.650		K Factor = 81.75	