

3221 PEARSALL AVENUE Fire Sprinkler Reports

for

Pearsall Holdings LLC
84-03 Cuthbert Road #1
Kew Gardens, NY 11415

Prepared By:

ROV
Sideris Kefalas Engineers, P.C.
217-22 Northern Boulevard
Bayside, NY 11361
718-224-9091
3/9/2017



General Project Data Report

General Data

Project Title:	3221 Pearsall Avenue	Project File Name:	3219 Pearsall Avenue..fiw
Designed By:	ROV	Date:	3/9/2017
Code Reference:	NYC Building Code	Approving Agency:	NYC DOB
Client Name:	Pearsall Holdings LLC	Phone:	
Address:	84-03 Cuthbert Road #1	City, State Zip Code:	Kew Gardens, NY 11415
Company Name:	Sideris Kefalas Engineers, P.C.	Representative:	ROV
Company Address:	217-22 Northern Boulevard	City And State:	Bayside, NY 11361
Phone:	718-224-9091		
Building Name:	3221 Pearsall Avenue	Building Owner:	Yaniv Zohar
Contact at Building:		Phone at Building:	
Address Of Building:		City, State Zip Code:	

Project Data

Description Of Hazard:	Light Hazard	Sprinkler System Type:	Wet
Design Area Of Water Application:	264 ft ²	Maximum Area Per Sprinkler:	225 ft ²
Default Sprinkler K-Factor:	4.90 K	Default Pipe Material:	BLAZEMASTER CPVC
Inside Hose Stream Allowance:	0.00 gpm	Outside Hose Stream Allowance:	0.00 gpm
In Rack Sprinkler Allowance:	0.00 gpm		

Sprinkler Specifications

Make:	Reliable	Model:	RFC49
Size:	1/2	Temperature Rating:	165 F

Water Supply Test Data

Source Of Information:	NYC DEP	Date Of Test:	05/11/2016
Test Hydrant ID:			
Hydrant Elevation:	0 ft	Static Pressure:	45.00 psi
Test Flow Rate:	500.00 gpm	Test Residual Pressure:	43.00 psi
Calculated System Flow Rate:	54.47 gpm	Calculated Inflow Residual Pressure:	34.05 psi
Available Residual Pressure At System Flow:	44.97 psi		

Calculation Project Data

Calculation Mode:	Demand		
HMD Minimum Residual Pressure:	7.00 psi	Minimum Desired Flow Density:	0.10 gpm/ft ²
Number Of Active Nodes:	16		
Number Of Active Pipes:	15	Number Of Inactive Pipes:	0
Number Of Active Sprinklers:	4	Number Of Inactive Sprinklers:	0





Fire Sprinkler Input Data

Node Input Data

Node No.	Node Description Branch Description	Area Group Branch Dia. (in)	Sprinkler KFactor (K) Branch Len. (ft)	Pressure Estimate (psi) Branch Std Fittings	Node Elev (ft) Branch Non- Std Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
10	No Discharge ----	----- 0.000	N/A 0.0	34.05 ----	-4.00 0.0	0.00 0.00
100	No Discharge ----	----- 0.000	N/A 0.0	33.35 ----	-5.80 0.0	0.00 0.00
110	No Discharge ----	----- 0.000	N/A 0.0	33.31 ----	-5.80 0.0	0.00 0.00
120	No Discharge ----	----- 0.000	N/A 0.0	28.28 ----	-5.80 0.0	0.00 0.00
130	No Discharge ----	----- 0.000	N/A 0.0	24.95 ----	0.30 0.0	0.00 0.00
140	No Discharge ----	----- 0.000	N/A 0.0	24.38 ----	0.30 0.0	0.00 0.00
150	No Discharge ----	----- 0.000	N/A 0.0	19.75 ----	9.30 0.0	0.00 0.00
160	No Discharge ----	----- 0.000	N/A 0.0	18.82 ----	9.30 0.0	0.00 0.00
170	No Discharge ----	----- 0.000	N/A 0.0	10.09 ----	27.30 0.0	0.00 0.00
180	No Discharge ----	----- 0.000	N/A 0.0	9.29 ----	27.30 0.0	0.00 0.00
190	No Discharge ----	----- 0.000	N/A 0.0	8.61 ----	27.30 0.0	0.00 0.00
200	Sprinkler ----	----- 0.000	4.90 0.0	8.36 ----	27.30 0.0	0.00 0.00
210	Sprinkler ----	----- 0.000	4.90 0.0	8.59 ----	27.30 0.0	0.00 0.00
220	No Discharge ----	----- 0.000	N/A 0.0	7.11 ----	27.30 0.0	0.00 0.00
230	Sprinkler ----	----- 0.000	4.90 0.0	7.01 ----	27.30 0.0	0.00 0.00
240	Sprinkler ----	----- 0.000	4.90 0.0	7.00 ----	27.30 0.0	0.00 0.00



Fire Sprinkler Input Data

Pipe Input Data

Beg. Node	End. Node	Pipe Description	Nominal Diameter (inch)	Type Group	Fitting Data	Nominal Length (feet)	Fitting Length (feet)	Total Length (feet)	CFactor (gpm/inch-psi)
10	100	BLAZEMASTER CPVC	2.000	0	2EG	40.00	22.80	62.80	150
100	110	BLAZEMASTER CPVC	2.000	0		2.00	0.00	2.00	150
110	120	Backflo Prev	5.000	Loss					
120	130	BLAZEMASTER CPVC	2.000	0	2E	7.25	22.00	29.25	150
130	140	BLAZEMASTER CPVC	2.000	0	E	13.25	11.00	24.25	150
140	150	BLAZEMASTER CPVC	2.000	0	2E	9.00	22.00	31.00	150
150	160	BLAZEMASTER CPVC	2.000	0	2E	17.50	22.00	39.50	150
160	170	BLAZEMASTER CPVC	2.000	0	2E	18.00	22.00	40.00	150
170	180	BLAZEMASTER CPVC	2.000	0	2E	12.00	22.00	34.00	150
180	190	BLAZEMASTER CPVC	1.500	0	T	1.50	8.00	9.50	150
190	200	BLAZEMASTER CPVC	1.000	0		7.00	0.00	7.00	150
190	210	BLAZEMASTER CPVC	1.250	0		0.25	0.00	0.25	150
210	220	BLAZEMASTER CPVC	1.000	0	T	8.50	5.00	13.50	150
220	230	BLAZEMASTER CPVC	1.000	0		3.25	0.00	3.25	150
220	240	BLAZEMASTER CPVC	1.000	0		3.50	0.00	3.50	150



Fire Sprinkler Output Data

Overall Node Groupings Output Data

Pipe Segment Beg. Node	Pipe Segment End. Node	Pipe Type Group	Pipe Flow Rate (gpm)	Sprinkler Flow At Beg. Node (gpm)	Non-Sprinkler Flow Out (+) (gpm)	Non-Sprinkler Flow In (-) (gpm)	Beg. Node Residual Pressure (psi)	Imbalance Flow At Beg. Node (gpm)
10	100	0	54.47	0.00	0.00	-54.47	34.05	
100	10	0	-54.47	0.00	0.00	0.00	33.35	0.00007
100	110	0	54.47					
110	100	0	-54.47	0.00	0.00	0.00	33.31	-0.05444
110	120	0	54.41					
120	110	0	-54.41	0.00	0.00	0.00	28.28	0.05438
120	130	0	54.47					
130	120	0	-54.47	0.00	0.00	0.00	24.95	0.00000
130	140	0	54.47					
140	130	0	-54.47	0.00	0.00	0.00	24.38	-0.00001
140	150	0	54.47					
150	140	0	-54.47	0.00	0.00	0.00	19.75	0.00000
150	160	0	54.47					
160	150	0	-54.47	0.00	0.00	0.00	18.82	0.00000
160	170	0	54.47					
170	160	0	-54.47	0.00	0.00	0.00	10.09	0.00000
170	180	0	54.47					
180	170	0	-54.47	0.00	0.00	0.00	9.29	0.00000
180	190	0	54.47					
190	180	0	-54.47	0.00	0.00	0.00	8.61	0.00001
190	200	0	14.17					
190	210	0	40.30					
200	190	0	-14.17	14.17	0.00	0.00	8.36	0.00035
210	190	0	-40.30	14.36	0.00	0.00	8.59	0.00033
210	220	0	25.94					
220	210	0	-25.94	0.00	0.00	0.00	7.11	0.00007
220	230	0	12.97					
220	240	0	12.96					
230	220	0	-12.97	12.97	0.00	0.00	7.01	0.00018
240	220	0	-12.96	12.96	0.00	0.00	7.00	-0.00007



Fire Sprinkler Output Data

Overall Pipe Output Data

Beg. End. Node	Nodal KFactor (K)	Elevation (feet)	Spk/Hose Discharge (gpm)	Residual Pressure (psi)	Nom. Dia. Inside Dia. C-Value	q (gpm) Q (gpm) Velocity (fps)	F. L./ft (psi/ft) Fittings Type-Grp	Pipe-Len. Fit-Len. Tot-Len. (ft)	PF-(psi) PE-(psi) PT-(psi)
10	0.00	-4.00	0.00	34.05	2.00	0.00	0.02357	40.00	1.480
100	0.00	-5.80	0.00	33.35	2.003	54.47	2EG	22.80	-0.779
	BLAZEMASTER CPVC				150	5.55	0	62.80	0.700
100	0.00	-5.80	0.00	33.35	2.00	0.00	0.02357	2.00	0.047
110	0.00	-5.80	0.00	33.31	2.003	54.47	----	0.00	0.000
	BLAZEMASTER CPVC				150	5.55	0	2.00	0.047
110	Backflo Prev	-5.80		33.31		54.41			
120	5.00 psi	-5.80		28.28					
120	0.00	-5.80	0.00	28.28	2.00	0.00	0.02357	7.25	0.689
130	0.00	0.30	0.00	24.95	2.003	54.47	2E	22.00	2.641
	BLAZEMASTER CPVC				150	5.55	0	29.25	3.331
130	0.00	0.30	0.00	24.95	2.00	0.00	0.02357	13.25	0.571
140	0.00	0.30	0.00	24.38	2.003	54.47	E	11.00	0.000
	BLAZEMASTER CPVC				150	5.55	0	24.25	0.571
140	0.00	0.30	0.00	24.38	2.00	0.00	0.02357	9.00	0.731
150	0.00	9.30	0.00	19.75	2.003	54.47	2E	22.00	3.897
	BLAZEMASTER CPVC				150	5.55	0	31.00	4.628
150	0.00	9.30	0.00	19.75	2.00	0.00	0.02357	17.50	0.931
160	0.00	9.30	0.00	18.82	2.003	54.47	2E	22.00	0.000
	BLAZEMASTER CPVC				150	5.55	0	39.50	0.931
160	0.00	9.30	0.00	18.82	2.00	0.00	0.02357	18.00	0.943
170	0.00	27.30	0.00	10.09	2.003	54.47	2E	22.00	7.794
	BLAZEMASTER CPVC				150	5.55	0	40.00	8.737
170	0.00	27.30	0.00	10.09	2.00	0.00	0.02357	12.00	0.801
180	0.00	27.30	0.00	9.29	2.003	54.47	2E	22.00	0.000
	BLAZEMASTER CPVC				150	5.55	0	34.00	0.801
180	0.00	27.30	0.00	9.29	1.50	0.00	0.07080	1.50	0.673
190	0.00	27.30	0.00	8.61	1.598	54.47	T	8.00	0.000
	BLAZEMASTER CPVC				150	8.71	0	9.50	0.673
190	0.00	27.30	0.00	8.61	1.00	14.17	0.03597	7.00	0.252
200	4.90	27.30	14.17	8.36	1.101	14.17	----	0.00	0.000
	BLAZEMASTER CPVC				150	4.77	0	7.00	0.252



Fire Sprinkler Output Data

Overall Pipe Output Data (cont'd)

Beg. End. Node	Nodal KFactor (K)	Elevation (feet)	Spk/Hose Discharge (gpm)	Residual Pressure (psi)	Nom. Dia. Inside Dia. C-Value	q (gpm) Q (gpm) Velocity (fps)	F. L./ft (psi/ft) Fittings Type-Grp	Pipe-Len. Fit-Len. Tot-Len. (ft)	PF-(psi) PE-(psi) PT-(psi)
190	0.00	27.30	0.00	8.61	1.25	14.36	0.07885	0.25	0.020
210	4.90	27.30	14.36	8.59	1.394	40.30	-----	0.00	0.000
	BLAZEMASTER CPVC				150	8.47	0	0.25	0.020
210	4.90	27.30	14.36	8.59	1.00	0.00	0.11009	8.50	1.486
220	0.00	27.30	0.00	7.11	1.101	25.94	T	5.00	0.000
	BLAZEMASTER CPVC				150	8.74	0	13.50	1.486
220	0.00	27.30	0.00	7.11	1.00	12.97	0.03055	3.25	0.099
230	4.90	27.30	12.97	7.01	1.101	12.97	-----	0.00	0.000
	BLAZEMASTER CPVC				150	4.37	0	3.25	0.099
220	0.00	27.30	0.00	7.11	1.00	12.96	0.03052	3.50	0.107
240	4.90	27.30	12.96	7.00	1.101	12.96	-----	0.00	0.000
	BLAZEMASTER CPVC				150	4.37	0	3.50	0.107



Fire Sprinkler Output Data

Overall Sprinkler Output Data

Flowing Sprinkler Node No.	Area Group Code	Sprinkler KFactor (K)	Sprinkler Elevation (feet)	Residual Pressure (psi)	Flowing Area (ft ²)	Flowing Density (gpm/ft ²)	Sprinkler Discharge (gpm)
200		4.90	27.30	8.36	86.00	0.165	14.17
Sub Totals For Non-Group					86.00	0.165	14.17
210		4.90	27.30	8.59	86.00	0.167	14.36
Sub Totals For Non-Group					86.00	0.167	14.36
230		4.90	27.30	7.01	86.00	0.151	12.97
Sub Totals For Non-Group					86.00	0.151	12.97
240		4.90	27.30	7.00	86.00	0.151	12.96
Sub Totals For Non-Group					86.00	0.151	12.96
Totals For All Groups					344.00	0.158	54.47



Fire Sprinkler Output Summary

Hydraulically Most Demanding Sprinkler Node

HMD Sprinkler Node Number: 240
HMD Actual Residual Pressure: 7.00 psi
HMD Actual GPM: 12.96 gpm

Sprinkler Summary

Sprinkler System Type: Wet
Specified Area Of Application: 264.00 ft²
Minimum Desired Density: 0.100 gpm/ft²
Application Average Density: 0.206 gpm/ft²
Application Average Area Per Sprinkler: 66.00 ft²
Sprinkler Flow: 54.47 gpm
Average Sprinkler Flow: 13.62 gpm

Flow Velocity And Imbalance Summary

Maximum Flow Velocity (In Pipe 210 - 220) 8.74 ft/sec
Maximum Velocity Pressure (In Pipe 210 - 220) 0.51 psi
Allowable Maximum Nodal Pressure Imbalance: 0.0100 psi
Actual Maximum Nodal Pressure Imbalance: 0.0097 psi
Actual Average Nodal Pressure Imbalance: 0.0019 psi
Actual Maximum Nodal Flow Imbalance: -0.0544 gpm
Actual Average Nodal Flow Imbalance: 0.0069 gpm

Overall Network Summary

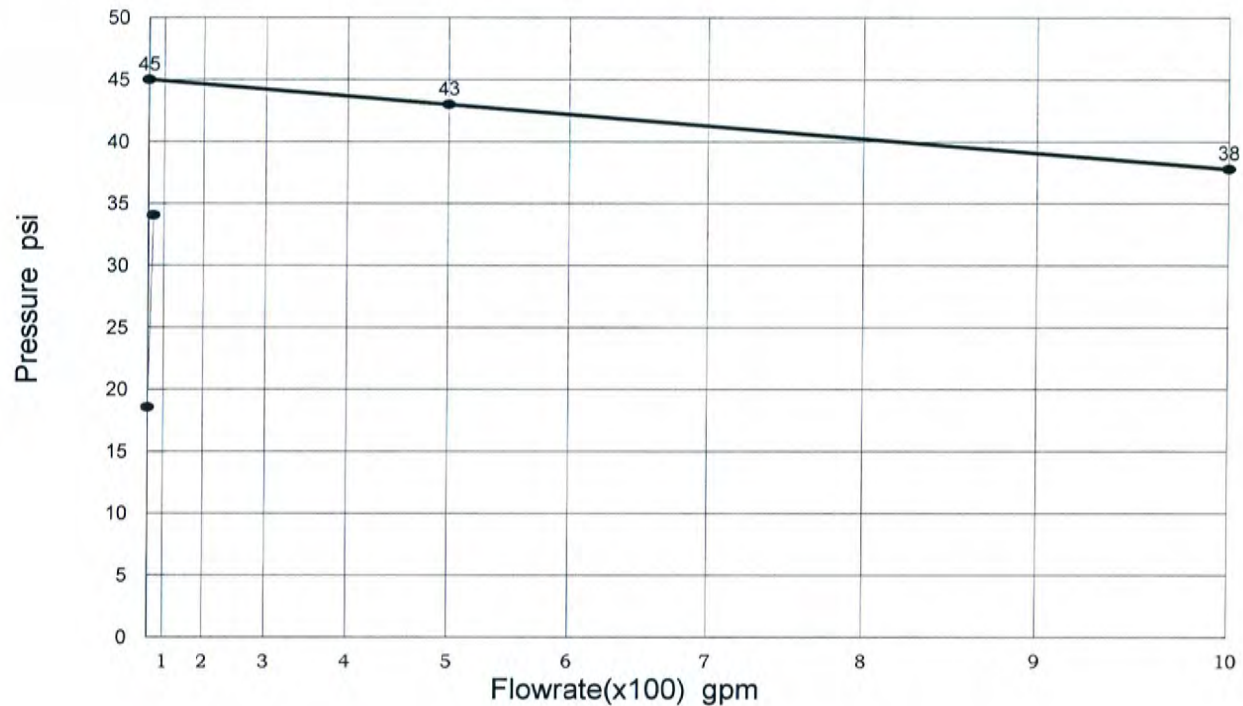
Number Of Unique Pipe Sections: 15
Number Of Flowing Sprinklers: 4
Pipe System Water Volume: 20.76 gal
Sprinkler Flow: 54.47 gpm
Non-Sprinkler Flow: 0.00 gpm
Minimum Required Residual Pressure At System Inflow Node: 34.05 psi
Demand Flow At System Inflow Node: 54.47 gpm





Fire Sprinkler Output Data

Hydraulic Supply/Demand Graph



Supply Curve Data

Static Pressure: 45 psi
Test Residual Pressure: 43 psi
Test Flow Rate: 500 gpm

Demand Curve Data

Calculated Residual Pressure: 34.05 psi
Calculated Flow Rate: 54.47 gpm
Excess Available Residual Pressure At Calculated Flow: 10.91 psi
Pressure Required For First Sprinkler Downstream From Inflow Node To Flow: 18.55 psi

