

117-10 204 STREET Fire Sprinkler Reports

for

GABRIEL MALKA
117-10 204 ST
QUEENS NY 11412

Prepared By:

JEON CONSUTING
80-15 LEFFERTS BLVD
KEW GARDENS NY 11415
917-559-2100
5/16/2022



General Project Data Report

General Data

Project Title:	117-10 204 STREET	Project File Name:	117-10 204ST_05-16-22..fiw
Designed By:		Date:	5/16/2022
Code Reference:	NFPA13	Approving Agency:	
Client Name:	GABRIEL MALKA	Phone:	
Address:	117-10 204 ST	City, State Zip Code:	QUEENS NY 11412
Company Name:	JEON CONSUTING	Representative:	
Company Address:	80-15 LEFFERTS BLVD	City And State:	KEW GARDENS NY 11415
Phone:	917-559-2100		
Building Name:		Building Owner:	
Contact at Building:		Phone at Building:	
Address Of Building:	117-10 204 ST	City, State Zip Code:	QUEENS NY 11412

Project Data

Description Of Hazard:	Light Hazard	Sprinkler System Type:	Wet
Design Area Of Water Application:	371 ft ²	Maximum Area Per Sprinkler:	225 ft ²
Default Sprinkler K-Factor:	5.80 K	Default Pipe Material:	SCHED 40 WET STEEL
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:	RFC
Size:	1/2"	Temperature Rating:	135 F

Water Supply Test Data

Source Of Information:	NYC HYDRAULIC TESTING UNIT		
Test Hydrant ID:	NORTH SIDE OF LINDEN BLVD 1ST HYDRANT		
	Date Of Test:	9/13/2018 9:58AM	
Hydrant Elevation:	0 ft	Static Pressure:	41.00 psi
Test Flow Rate:	500.00 gpm	Test Residual Pressure:	40.00 psi
Calculated System Flow Rate:	54.64 gpm	Calculated Inflow Residual Pressure:	33.69 psi
Available Residual Pressure At System Flow:	40.98 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:	9		
Number Of Active Pipes:	8	Number Of Inactive Pipes:	0
Number Of Active Sprinklers:	3	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 Stnd Fittings	Node Elev (ft) Branch Non- Stnd Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
1	Sprinkler ----	---- 0.000	5.80 0.0	14.78 ----	25.00 0.0	0.00 0.00
2	No Discharge ----	---- 0.000	N/A 0.0	16.49 ----	25.00 0.0	0.00 0.00
3	No Discharge ----	---- 0.000	N/A 0.0	19.55 ----	25.00 0.0	0.00 0.00
4	Sprinkler ----	---- 0.000	5.80 0.0	8.59 ----	25.00 0.0	0.00 0.00
5	Sprinkler ----	---- 0.000	5.80 0.0	7.00 ----	25.00 0.0	0.00 0.00
6	No Discharge ----	---- 0.000	N/A 0.0	31.45 ----	0.00 0.0	0.00 0.00
7	No Discharge ----	---- 0.000	N/A 0.0	32.53 ----	0.00 0.0	0.00 0.00
8	No Discharge ----	---- 0.000	N/A 0.0	33.54 ----	0.00 0.0	0.00 0.00
9	No Discharge ----	---- 0.000	N/A 0.0	33.69 ----	0.00 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)
1	2	SCHED 40 WET STEEL	1.000	0	T	5.75	5.00	10.75	120
2	3	SCHED 40 WET STEEL	1.500	0	ET	17.50	12.00	29.50	120
2	4	SCHED 40 WET STEEL	1.000	0	T	19.91	5.00	24.91	120
4	5	SCHED 40 WET STEEL	1.000	0		20.00	0.00	20.00	120
3	6	SCHED 40 WET STEEL	2.000	0	2E	25.00	10.00	35.00	120
6	7	SCHED 40 WET STEEL	2.000	0	E	30.00	5.00	35.00	120
7	8	Backflo Prev	1.000	Loss					
8	9	SCHED 40 WET STEEL	2.000	0		5.00	0.00	5.00	120



Fire Sprinkler Output Data

Overall Node Groupings Output Data

Pipe Segment Beg. Node	End. Node	Pipe Type Group	Pipe Flow Rate (gpm)	Sprinkler Flow At Beg. Node (gpm)	Non-Sprinkler Flow Out (+) (gpm)	In (-) (gpm)	Beg. Node Residual Pressure (psi)	Imbalance Flow At Beg. Node (gpm)
1	2	0	-22.30	22.30	0.00	0.00	14.78	
2	1	0	22.30	0.00	0.00	0.00	16.49	0.00000
2	3	0	-54.64					
2	4	0	32.35					
3	2	0	54.64	0.00	0.00	0.00	19.55	0.00000
3	6	0	-54.64					
4	2	0	-32.35	17.00	0.00	0.00	8.59	0.00021
4	5	0	15.35					
5	4	0	-15.35	15.35	0.00	0.00	7.00	0.00008
6	3	0	54.64	0.00	0.00	0.00	31.45	0.00000
6	7	0	-54.64					
7	6	0	54.64	0.00	0.00	0.00	32.53	-0.17463
7	8	0	-54.82					
8	7	0	54.82	0.00	0.00	0.00	33.54	0.17463
8	9	0	-54.64					
9	8	0	54.64	0.00	0.00	-54.64	33.69	



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)
1	5.80	25.00	22.30	14.78	1.00	22.30	0.15917	5.75	1.711
2	0.00	25.00	0.00	16.49	1.049	22.30	T	5.00	0.000
	SCHD 40 WET STEEL				120	8.28	0	10.75	1.711
2	0.00	25.00	0.00	16.49	1.00	17.00	0.31690	19.91	7.894
4	5.80	25.00	17.00	8.59	1.049	32.35	T	5.00	0.000
	SCHD 40 WET STEEL				120	12.01	0	24.91	7.894
2	0.00	25.00	0.00	16.49	1.50	0.00	0.10378	17.50	3.062
3	0.00	25.00	0.00	19.55	1.610	54.64	ET	12.00	0.000
	SCHD 40 WET STEEL				120	8.61	0	29.50	3.062
4	5.80	25.00	17.00	8.59	1.00	15.35	0.07974	20.00	1.595
5	5.80	25.00	15.35	7.00	1.049	15.35	----	0.00	0.000
	SCHD 40 WET STEEL				120	5.70	0	20.00	1.595
3	0.00	25.00	0.00	19.55	2.00	0.00	0.03074	25.00	1.076
6	0.00	0.00	0.00	31.45	2.067	54.64	2E	10.00	10.825
	SCHD 40 WET STEEL				120	5.22	0	35.00	11.901
6	0.00	0.00	0.00	31.45	2.00	0.00	0.03074	30.00	1.076
7	0.00	0.00	0.00	32.53	2.067	54.64	E	5.00	0.000
	SCHD 40 WET STEEL				120	5.22	0	35.00	1.076
7	Backflo Prev	0.00		32.53		54.82			
8	1.00 psi	0.00		33.54					
8	0.00	0.00	0.00	33.54	2.00	0.00	0.03074	5.00	0.154
9	0.00	0.00	0.00	33.69	2.067	54.64	----	0.00	0.000
	SCHD 40 WET STEEL				120	5.22	0	5.00	0.154



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 (ft²)	Flowing Density (gpm/ft²)	Sprinkler Discharge (gpm)
1		5.80	25.00	14.78	123.60	0.180	22.30
Sub Totals For Non-Group					123.60	0.180	22.30
4		5.80	25.00	8.59	123.60	0.138	17.00
Sub Totals For Non-Group					123.60	0.138	17.00
5		5.80	25.00	7.00	123.60	0.124	15.35
Sub Totals For Non-Group					123.60	0.124	15.35
Totals For All Groups					370.80	0.147	54.65



Fire Sprinkler Output Summary

Hydraulically Most Demanding Sprinkler Node

HMD Sprinkler Node Number:	5
HMD Actual Residual Pressure:	7.00 psi
HMD Actual Flow:	15.35 gpm

Sprinkler Summary

Sprinkler System Type:	Wet
Specified Area Of Application:	371.00 ft ²
Minimum Desired Density:	0.100 gpm/ft ²
Application Average Density:	0.147 gpm/ft ²
Application Average Area Per Sprinkler:	123.67 ft ²
Sprinkler Flow:	54.65 gpm
Average Sprinkler Flow:	18.22 gpm

Flow Velocity And Imbalance Summary

Maximum Flow Velocity (In Pipe 2 - 4)	12.01 ft/sec
Maximum Velocity Pressure (In Pipe 2 - 4)	0.97 psi
Allowable Maximum Nodal Pressure Imbalance:	0.0100 psi
Actual Maximum Nodal Pressure Imbalance:	0.0056 psi
Actual Average Nodal Pressure Imbalance:	0.0014 psi
Actual Maximum Nodal Flow Imbalance:	-0.1746 gpm
Actual Average Nodal Flow Imbalance:	0.0388 gpm

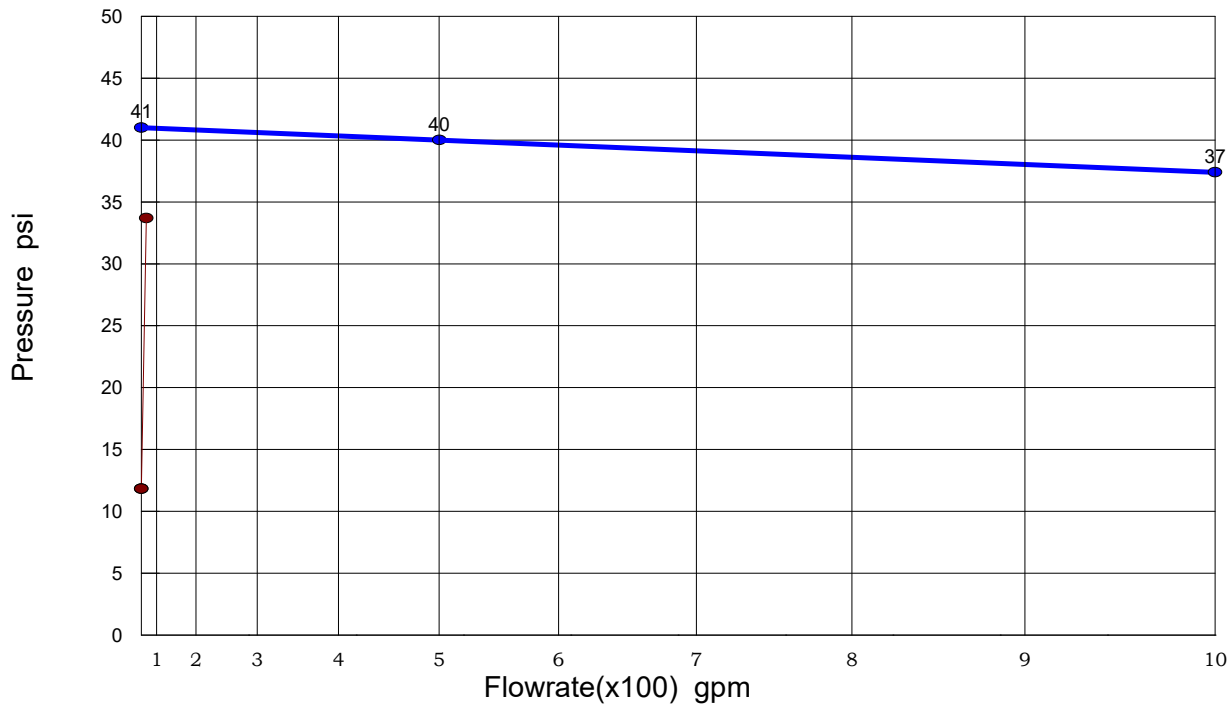
Overall Network Summary

Number Of Unique Pipe Sections:	8
Number Of Flowing Sprinklers:	3
Pipe System Water Volume:	14.36 gal
Sprinkler Flow:	54.65 gpm
Non-Sprinkler Flow:	0.00 gpm
Minimum Required Residual Pressure At System Inflow Node:	33.69 psi
Demand Flow At System Inflow Node:	54.64 gpm



Fire Sprinkler Output Data

Hydraulic Supply/Demand Graph



Supply Curve Data

Static Pressure: 41 psi
Test Residual Pressure: 40 psi
Test Flow Rate: 500 gpm

Demand Curve Data

Calculated Residual Pressure: 33.69 psi
Calculated Flow Rate: 54.64 gpm
Excess Available Residual Pressure At Calculated Flow: 7.29 psi
Pressure Required For First Sprinkler Downstream From Inflow Node To Flow: 11.83 psi