

ENGINEERS : AUTOMATED DESIGN CONSULTANTS. (914) 393-0373.

ADDRESS : 15 Hard Scrabble Hill, Chappaqua NY 10514.

LICENSE :

DESIGNER : ADC

DATE : 09-05-2016

FILE : C:\Users\Greg Mortman\Documents\AutoDsgn\Jobs 2015\151206_164, 166 West Kings

JOB NAME : 166 West Kingsbridge Road BX

LOCATION : 4th FLOOR REAR LR

DESIGN DATA.

HAZARD : LIGHT NFPA 13R RESIDENTIAL

DENSITY : 0.066 Sq Ft

AREA PER SPRINKLER : 196 Sq Ft

TOTAL CALCULATED AREA : 588 Sq Ft

TOTAL SPRINKLERS CALCULATED : 3 Heads

FLOW DATA.

TOTAL SPRINKLER FLOW : 39.2 Gpm

TOTAL HOSE STREAM : 100.0 Gpm

TOTAL WATER REQUIRED : 139.2 Gpm

BASE OF RISER NODE : 15

FLOW : 39.2 Gpm

PRESS : 38.7 Psi



AUTHORITY HAVING JURISDICTION : NYC DOB

PHONE :

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SOURCE | STATIC : 76 Psi RESIDUAL : 75 Psi FLOW : 500 Gpm

NODE NO.	ELEVATION Feet	K-FACTOR	PRESSURE Psi	DISCHARGE Gpm
S1	37.0	4.90	7.0	13.0
2	37.0		8.0	
S2	37.0	4.90	7.2	13.1
4	37.0		8.0	
S3	37.0	4.90	7.2	13.1
6	37.0		8.3	
7	37.0		8.8	
8	0.0		25.5	
9	0.0		26.6	
10	0.0		29.6	
11	0.0		30.6	
12	0.0		30.8	
13	0.0		36.8	
14	0.0		37.8	
15	0.0	SOURCE	38.7	139.2

SPRINKLERS FLOWING	:	3	Heads
AREA PER SPRINKLER	:	196	Sq Ft
MIN SPRINKLER FLOW	:	13	Gpm

REQUIRED DENSITY	:	0.066	Gpm/Sq Ft
COMPUTED DENSITY	:	0.066	Gpm/Sq Ft

TOTAL SPRINKLER FLOW	:	39.2	Gpm
INSIDE HOSE STREAM	:		Gpm
OUTSIDE HOSE STREAM	:	100	Gpm
TOTAL WATER REQUIRED	:	139.2	Gpm
TOTAL SPRINKLER PRESS	:	27.7	Psi
FIXED PRESS LOSS	:	11.0	Psi

SUPPLY PRESS AVAILABLE	:	75.9	Psi
DEMAND PRESS REQUIRED	:	38.7	Psi
PRESSURE CUSHION	:	37.2	Psi

MAXIMUM VELOCITY	:	6.2	F/S
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Hydronics Engineering
34119 Fremont Bl, Suite 609
Fremont, CA 94555
(800) 845-9819

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PIPE NO.	BEG END	ELEV (Feet) ELEV	FLOW Gpm	K-FACTOR FITTING TYPE DIAMETER	LENGTH FTG TOTAL	C-FACTOR FRI-LOSS (Psi/Ft)	PRESSURE (Psi)		
1	S1	37.0	q= 13.0	K= 4.90	L= 20.0		Pt	7.0	Pt 7.0
			Q= 13.0	F= ET	F= 12.0	C= 150	Pe	0.0	Pv -0.1
			Vel= 4.3	D= 1.109	TL= 32.0	0.0296	Pf	0.9	Pn 6.9
	2	37.0					Pt	8.0	
2	S2	37.0	q= 13.1	K= 4.90	L= 16.8		Pt	7.2	Pt 7.2
			Q= 13.1	F= ET	F= 12.0	C= 150	Pe	0.0	Pv -0.1
			Vel= 4.4	D= 1.109	TL= 28.8	0.0300	Pf	0.9	Pn 7.0
	4	37.0					Pt	8.0	
3	S3	37.0	q= 13.1	K= 4.90	L= 18.2		Pt	7.2	Pt 7.2
			Q= 13.1	F= 2ET	F= 19.0	C= 150	Pe	0.0	Pv -0.1
			Vel= 4.4	D= 1.109	TL= 37.2	0.0301	Pf	1.1	Pn 7.0
	6	37.0					Pt	8.3	
4	2	37.0	q= 0.0	K= 0.00	L= 7.1		Pt	8.0	Pt 8.0
			Q= 13.0	F=	F= 0.0	C= 150	Pe	0.0	Pv 0.0
			Vel= 2.1	D= 1.602	TL= 7.1	0.0049	Pf	0.0	Pn 7.9
	4	37.0					Pt	8.0	
5	4	37.0	q= 0.0	K= 0.00	L= 14.6		Pt	8.0	Pt 8.0
			Q= 26.1	F=	F= 0.0	C= 150	Pe	0.0	Pv -0.1
			Vel= 4.2	D= 1.602	TL= 14.6	0.0179	Pf	0.3	Pn 7.9
	6	37.0					Pt	8.3	
6	6	37.0	q= 0.0	K= 0.00	L= 6.2		Pt	8.3	Pt 8.3
			Q= 39.2	F= T	F= 8.0	C= 150	Pe	0.0	Pv -0.3
			Vel= 6.2	D= 1.602	TL= 14.2	0.0381	Pf	0.5	Pn 8.0
	7	37.0					Pt	8.8	
7	7	37.0	q= 0.0	K= 0.00	L= 39.0		Pt	8.8	Pt 8.8
			Q= 39.2	F= E	F= 11.0	C= 150	Pe	16.0	Pv -0.1
			Vel= 4.0	D= 2.003	TL= 50.0	0.0128	Pf	0.6	Pn 8.7
	8	0.0					Pt	25.5	
8	8	0.0	q= 0.0	K= 0.00	L= 26.0		Pt	25.5	Pt 25.5
			Q= 39.2	F= 5ET	F= 65.0	C= 150	Pe	0.0	Pv -0.1
			Vel= 4.0	D= 2.003	TL= 91.0	0.0128	Pf	1.2	Pn 25.4
	9	0.0					Pt	26.6	
ALV	9	0.0	Q= 39.2				Pt	26.6	
			FIXED PRESSURE LOSS				Valve	3.0	
	10	0.0					Pt	29.6	
BFP	10	0.0	Q= 39.2				Pt	29.6	
			FIXED PRESSURE LOSS				Valve	1.0	
	11	0.0					Pt	30.6	
11	11	0.0	q= 0.0	K= 0.00	L= 3.0		Pt	30.6	Pt 30.6
			Q= 39.2	F= 2EG	F= 9.0	C= 150	Pe	0.0	Pv -0.1
			Vel= 4.2	D= 1.959	TL= 12.0	0.0143	Pf	0.2	Pn 30.5
	12	0.0					Pt	30.8	

DDC	12	0.0	Q= 39.2	Pt	30.8
			FIXED PRESSURE LOSS	Valve	6.0
	13	0.0		Pt	36.8
DDC	13	0.0	Q= 39.2	Pt	36.8
			FIXED PRESSURE LOSS	Valve	1.0
	14	0.0		Pt	37.8

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PIPE NO.	BEG END	ELEV (Feet) ELEV	FLOW Gpm	K-FACTOR FITTING TYPE DIAMETER	LENGTH FTG TOTAL	C-FACTOR FRI-LOSS (Psi/Ft)	PRESSURE (Psi)
14	14	0.0	q= 0.0	K= 0.00 L=	50.0		Pt 37.8 Pt 37.8
			Q= 39.2	F= 2E3GT F=	16.0	C= 150	Pe 0.0 Pv -0.1
			Vel= 4.2	D= 1.959 TL=	66.0	0.0143	Pf 0.9 Pn 37.7
	15	0.0					Pt 38.7

			Q= 139.2	<<< SOURCE >>>			Pt 38.7

E=90-Elb T=Tee L=LgtElb C=ChkVlv B=BfyVlv G=GatVlv A=AlmChk F=45-E

HYDRONICS: COMMERCIAL FIRE SPRINKLER HYDRAULICS 5.8 - SUBMITTAL.

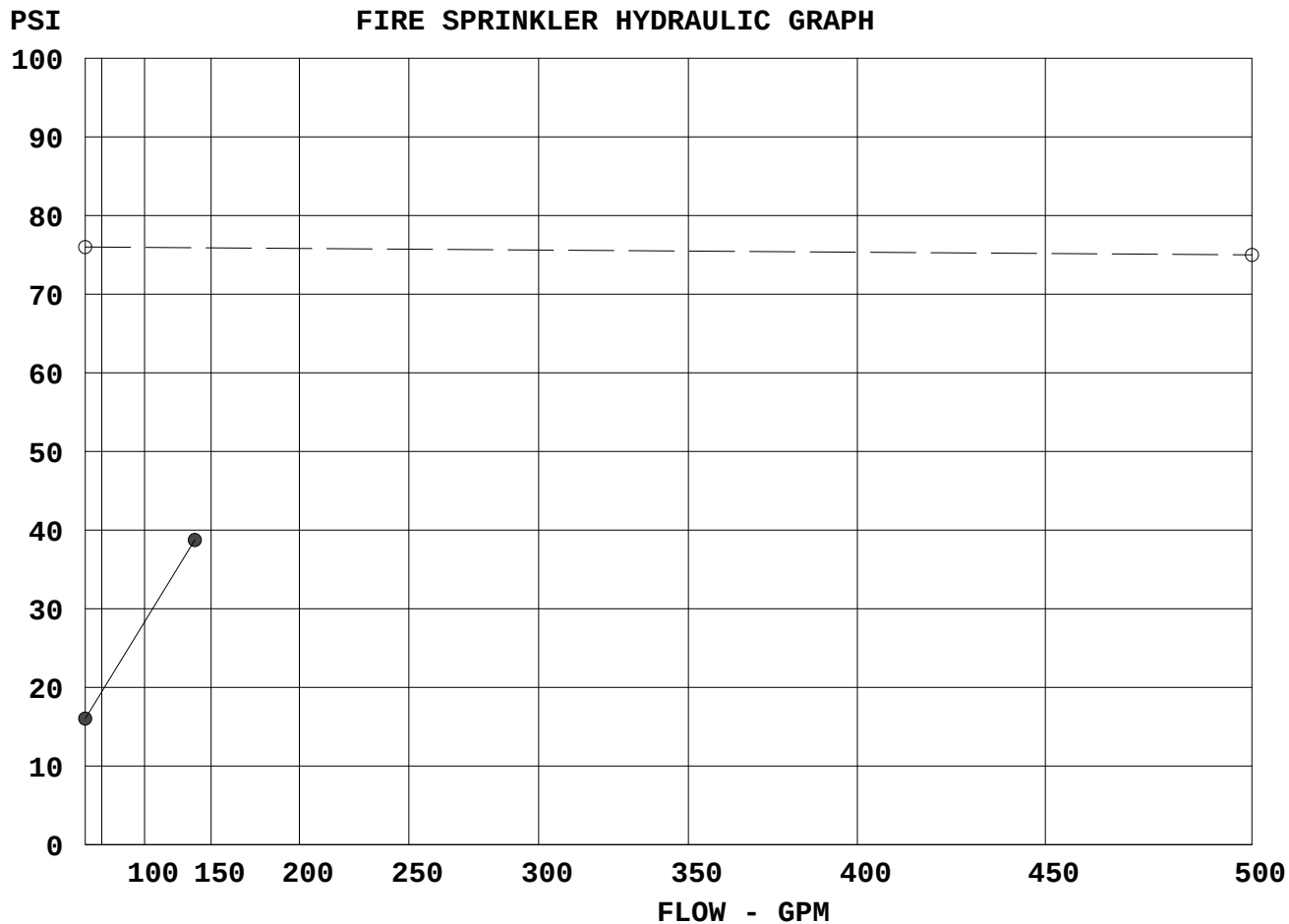
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○ — — ○ **Water Supply**

Static : 76 Psi

Resid : 75 Psi

Flow : 500 Gpm

● — — ● **Water Demand**

Avl Press : 75.9 Psi @ 139 Gpm

Req Press : 38.7 Psi @ 139 Gpm

Press Cush: 37.2 Psi

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