Life Safety Fire Protection
Fire Sprinklers Save Lives
97 Lower Jaffrey Road - Dublin NH

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 06/04/18

H Y D R A U L I C C A L C U L A T I O N S

C O V E R S H E E T

Bramhall Row - 749 Congress Street

W A T E R S U P P L Y

STATIC PRESSURE	(psi)	55
RESIDUAL PRESSURE	(psi)	53
RESIDUAL FLOW	(gpm)	1779

B O O S T E R P U M P S

NUMBER OF BOOSTER PUMPS 0

S P R I N K L E R S

MINIMUM FLOW PER SPRINKLER (gpm) 13

MINIMUM PRESSURE PER SPRINKLER (psi) 7.04

THIS SYSTEM OPERATES AT A FLOW OF 0.00 gpm AT A PRESSURE OF 0.00 psi
AT THE BASE OF THE RISER (REF. PT. 0)

PIPES USED FOR THIS SYSTEM
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111 DUCTILE IRON (350)
002 SCHEDULE 10
009 BLAZEMASTER CPVC

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FITTING Equivalent Length per NFPA 13 1994, 6-4.3
'-' Indicates Equivalent Length. 'T' Indicates Threaded Fitting
1=45 Elbow, 2=90 Elbow, 3='T'/Cross, 4=Butterfly Valve, 5=Gate Valve, 6=Swing Check Valve

FROM	TO	FLOW (gpm)	PIPE (ft)	FITS	EQV. (ft)	H-W C	PIPE TYPE	DIA. (in)	FRIC. (psi)	ELEV. (psi)	FROM (psi)	TO (psi)	DIFF (psi)
1	2	40.48	226.00	2223	98.50	140	111	6.400	0.000	0.867	43.65	42.76	0.02
2	3	40.48	11.00	222	12.93	120	2	2.157	0.014	3.033	42.76	33.39	6.34
3	4	40.48	12.00	23	21.03	150	9	2.003	0.014	0.000	33.39	32.94	0.45
4	5	40.48	30.00	2222	44.05	150	9	2.003	0.014	3.900	32.94	28.03	1.01
5	6	40.48	40.00	2222	36.07	150	9	1.602	0.040	0.000	28.03	24.97	3.07
6	7	40.48	40.00	2222	36.07	150	9	1.602	0.040	0.000	24.97	21.90	3.07
7	8	40.48	3.50	22	18.04	150	9	1.602	0.040	0.000	21.90	21.03	0.87
8	9	40.48	9.00	0	0.00	150	9	1.602	0.040	0.000	21.03	20.67	0.36
9	60	0.00	4.00	2	8.01	150	9	1.400	0.000	0.000	20.67	20.67	0.00
60	61	0.00	11.00	0	0.00	150	9	1.400	0.000	0.000	20.67	20.67	0.00
61	10	0.00	12.00	0	0.00	150	9	1.109	0.000	0.000	20.67	20.67	0.00
10	62	0.00	4.00	3	5.01	150	9	1.109	0.000	0.000	20.67	20.67	0.00
10	63	0.00	7.50	3	5.01	150	9	1.109	0.000	0.000	20.67	20.67	0.00
63	11	0.00	7.00	22	14.03	150	9	1.109	0.000	0.000	20.67	20.67	0.00
11	12	0.00	14.50	22	14.03	150	9	1.109	0.000	-3.900	20.67	24.57	0.00
12	72	0.00	3.00	23	12.02	150	9	1.109	0.000	0.000	24.57	24.57	0.00
12	71	0.00	14.00	33	10.01	150	9	1.109	0.000	0.000	24.57	24.57	0.00
8	70	0.00	19.00	2223	26.05	150	9	1.109	0.000	-3.900	21.03	24.93	-0.00
9	13	40.48	21.00	23	14.02	150	9	1.400	0.078	7.800	20.67	10.15	2.72
13	50	40.48	5.00	22	16.02	150	9	1.400	0.078	0.000	10.15	8.51	1.63
50	14	26.18	10.00	0	0.00	150	9	1.109	0.108	0.000	8.51	7.44	1.08
14	51	13.18	1.50	3	5.01	150	9	1.109	0.030	0.000	7.44	7.24	0.20
14	52	13.00	8.50	3	5.01	150	9	1.109	0.029	0.000	7.44	7.04	0.40

A MAX. VELOCITY OF 8.69 ft./sec. OCCURS BETWEEN REF. PT. 50 AND 14

Sprinkler-CALC Release 7.2 Win
By Walsh Engineering Inc.
North Kingstown R.I. U.S.A.

Reviewed for Code Compliance
Inspections Division
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Date: 06/04/18

Sprinkler-CALC 7.2 Win

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H Y D R A U L I C C A L C U L A T I O N S

C O V E R S H E E T

Bramhall Row - 749 Congress Street

W A T E R S U P P L Y

STATIC PRESSURE	(psi)	55
RESIDUAL PRESSURE	(psi)	53
RESIDUAL FLOW	(gpm)	1779

B O O S T E R P U M P S

NUMBER OF BOOSTER PUMPS 0

S P R I N K L E R S

MINIMUM FLOW PER SPRINKLER (gpm) 13

MINIMUM PRESSURE PER SPRINKLER (psi) 7.04

THIS SYSTEM OPERATES AT A FLOW OF 0.00 gpm AT A PRESSURE OF 0.00 psi
AT THE BASE OF THE RISER (REF. PT. 0)

PIPES USED FOR THIS SYSTEM
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111 DUCTILE IRON (350)
002 SCHEDULE 10
009 BLAZEMASTER CPVC

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FITTING Equivalent Length per NFPA 13 1994, 6-4.3
'-' Indicates Equivalent Length. 'T' Indicates Threaded Fitting
1=45 Elbow, 2=90 Elbow, 3='T'/Cross, 4=Butterfly Valve, 5=Gate Valve, 6=Swing Check Valve

FROM	TO	FLOW (gpm)	PIPE (ft)	FITS	EQV. (ft)	H-W C	PIPE TYPE	DIA. (in)	FRIC. (psi)	ELEV. (psi)	FROM (psi)	TO (psi)	DIFF (psi)
1	2	55.66	226.00	2223	98.50	140	111	6.400	0.000	0.867	41.58	40.69	0.03
2	3	55.66	11.00	222	12.93	120	2	2.157	0.026	3.033	40.69	31.03	6.62
3	4	55.66	12.00	23	21.03	150	9	2.003	0.024	0.000	31.03	30.23	0.81
4	5	55.66	30.00	2222	44.05	150	9	2.003	0.024	3.900	30.23	24.51	1.81
5	6	55.66	40.00	2222	36.07	150	9	1.602	0.073	0.000	24.51	18.98	5.53
6	7	55.66	40.00	2222	36.07	150	9	1.602	0.073	0.000	18.98	13.45	5.53
7	8	55.66	3.50	22	18.04	150	9	1.602	0.073	0.000	13.45	11.88	1.57
8	9	55.66	9.00	0	0.00	150	9	1.602	0.073	0.000	11.88	11.23	0.65
9	60	55.66	4.00	2	8.01	150	9	1.400	0.140	0.000	11.23	9.55	1.68
60	61	40.52	11.00	0	0.00	150	9	1.400	0.078	0.000	9.55	8.69	0.86
61	10	26.08	12.00	0	0.00	150	9	1.109	0.107	0.000	8.69	7.40	1.28
10	62	13.08	4.00	3	5.01	150	9	1.109	0.030	0.000	7.40	7.12	0.28
10	63	13.00	7.50	3	5.01	150	9	1.109	0.029	0.000	7.40	7.04	0.37
63	11	0.00	7.00	22	14.03	150	9	1.109	0.000	0.000	7.04	7.04	0.00
11	12	0.00	14.50	22	14.03	150	9	1.109	0.000	-3.900	7.04	10.94	0.00
12	72	0.00	3.00	23	12.02	150	9	1.109	0.000	0.000	10.94	10.94	0.00
12	71	0.00	14.00	33	10.01	150	9	1.109	0.000	0.000	10.94	10.94	0.00
8	70	0.00	19.00	2223	26.05	150	9	1.109	0.000	-3.900	11.88	15.78	0.00
9	13	0.00	21.00	23	14.02	150	9	1.400	0.000	7.800	11.23	3.43	0.00
13	50	0.00	5.00	22	16.02	150	9	1.400	0.000	0.000	3.43	3.43	0.00
50	14	0.00	10.00	0	0.00	150	9	1.109	0.000	0.000	3.43	3.43	0.00
14	51	0.00	1.50	3	5.01	150	9	1.109	0.000	0.000	3.43	3.43	0.00
14	52	0.00	8.50	3	5.01	150	9	1.109	0.000	0.000	3.43	3.43	0.00

A MAX. VELOCITY OF 11.6 ft./sec. OCCURS BETWEEN REF. PT. 9 AND 60

Sprinkler-CALC Release 7.2 Win
By Walsh Engineering Inc.
North Kingstown R.I. U.S.A.

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Sprinkler-CALC 7.2 Win

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H Y D R A U L I C C A L C U L A T I O N S

C O V E R S H E E T

Bramhall Row - 749 Congress Street

W A T E R S U P P L Y

STATIC PRESSURE	(psi)	55
RESIDUAL PRESSURE	(psi)	53
RESIDUAL FLOW	(gpm)	1779

B O O S T E R P U M P S

NUMBER OF BOOSTER PUMPS 0

S P R I N K L E R S

MINIMUM FLOW PER SPRINKLER (gpm) 14

MINIMUM PRESSURE PER SPRINKLER (psi) 10.12

THIS SYSTEM OPERATES AT A FLOW OF 0.00 gpm AT A PRESSURE OF 0.00 psi
AT THE BASE OF THE RISER (REF. PT. 0)

PIPES USED FOR THIS SYSTEM
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111 DUCTILE IRON (350)
002 SCHEDULE 10
009 BLAZEMASTER CPVC

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Life Safety Fire Protection
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CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
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FITTING Equivalent Length per NFPA 13 1994, 6-4.3
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1=45 Elbow, 2=90 Elbow, 3='T'/Cross, 4=Butterfly Valve, 5=Gate Valve, 6=Swing Check Valve

FROM	TO	FLOW (gpm)	PIPE (ft)	FITS	EQV. (ft)	H-W C	PIPE TYPE	DIA. (in)	FRIC. (psi)	ELEV. (psi)	FROM (psi)	TO (psi)	DIFF (psi)
1	2	47.14	226.00	2223	98.50	140	111	6.400	0.000	0.867	42.79	41.90	0.02
2	3	47.14	11.00	222	12.93	120	2	2.157	0.019	3.033	41.90	32.41	6.45
3	4	47.14	12.00	23	21.03	150	9	2.003	0.018	0.000	32.41	31.81	0.59
4	5	47.14	30.00	2222	44.05	150	9	2.003	0.018	3.900	31.81	26.58	1.33
5	6	47.14	40.00	2222	36.07	150	9	1.602	0.053	0.000	26.58	22.52	4.06
6	7	47.14	40.00	2222	36.07	150	9	1.602	0.053	0.000	22.52	18.46	4.07
7	8	47.14	3.50	22	18.04	150	9	1.602	0.053	0.000	18.46	17.31	1.15
8	9	28.20	9.00	0	0.00	150	9	1.602	0.021	0.000	17.31	17.12	0.19
9	60	28.20	4.00	2	8.01	150	9	1.400	0.040	0.000	17.12	16.64	0.48
60	61	28.20	11.00	0	0.00	150	9	1.400	0.040	0.000	16.64	16.20	0.44
61	10	28.20	12.00	0	0.00	150	9	1.109	0.124	0.000	16.20	14.71	1.49
10	62	0.00	4.00	3	5.01	150	9	1.109	0.000	0.000	14.71	14.71	0.00
10	63	28.20	7.50	3	5.01	150	9	1.109	0.124	0.000	14.71	13.17	1.55
63	11	28.20	7.00	22	14.03	150	9	1.109	0.124	0.000	13.17	10.56	2.60
11	12	28.20	14.50	22	14.03	150	9	1.109	0.124	-3.900	10.56	10.94	3.53
12	72	14.20	3.00	23	12.02	150	9	1.109	0.035	0.000	10.94	10.41	0.53
12	71	14.00	14.00	33	10.01	150	9	1.109	0.034	0.000	10.94	10.12	0.81
8	70	18.94	19.00	2223	26.05	150	9	1.109	0.059	-3.900	17.31	18.54	2.67
9	13	0.00	21.00	23	14.02	150	9	1.400	0.000	7.800	17.12	9.32	0.00
13	50	0.00	5.00	22	16.02	150	9	1.400	0.000	0.000	9.32	9.32	0.00
50	14	0.00	10.00	0	0.00	150	9	1.109	0.000	0.000	9.32	9.32	0.00
14	51	0.00	1.50	3	5.01	150	9	1.109	0.000	0.000	9.32	9.32	0.00
14	52	0.00	8.50	3	5.01	150	9	1.109	0.000	0.000	9.32	9.32	0.00

A MAX. VELOCITY OF 9.36 ft./sec. OCCURS BETWEEN REF. PT. 11 AND 12

Sprinkler-CALC Release 7.2 Win
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