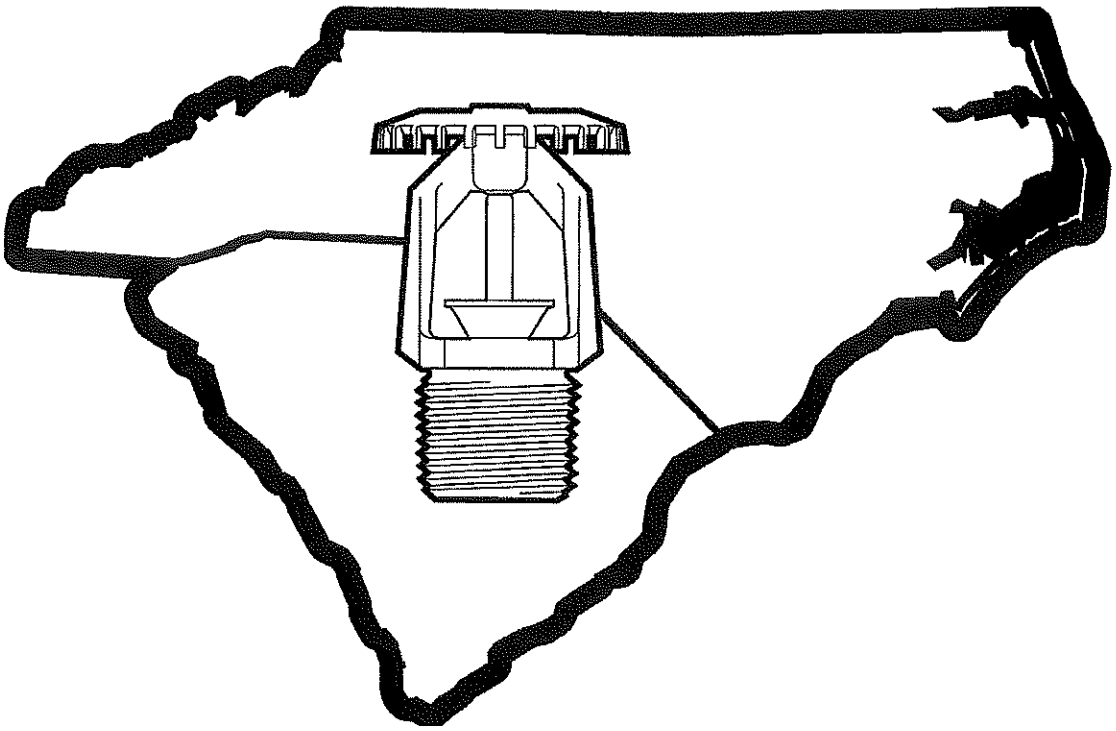


Carolina Fire Protection, Inc.
4055 Hodges Chapel Road
P.O. Box 250 (28335)
Dunn, NC 28334
910-892-1700

Kevin Melton FS-23769

NICET # 132077

Job Name	:	GOOD HOPE 2020 Addition Area #2
Building	:	Remote area #2
Location	:	410 Denim Drive
System	:	
Contract	:	20K533
Data File	:	GOOD HOPE 2020 ADDITION MEZZ.wxtmp

Hydraulic Design Information Sheet

Name - GOOD HOPE 2020 Addition Area #2 — Date - 12-3-2020
Location - 410 Denim Drive
Building - Remote area #2 — System No. -
Contractor - Carolina Fire Protection, Inc. — Contract No. - 20K533
Calculated By - Mark Ford — Drawing No. -
Construction: ( ) Combustible (X) Non-Combustible — Ceiling Height - Varies
Occupancy - Mechanical Mezzanine

SYSTEM DESIGN

(X) NFPA 13 ( ) Lt. Haz. Ord.Haz.Gp. (X) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling — Made By — Date

Area of Sprinkler Operation	- Entire	System Type	Sprinkler/Nozzle
Density	- .15	( ) Wet	Make Reliable
Area Per Sprinkler	- 100	( ) Dry	Model Upright
Elevation at Highest Outlet	- 25.750	( ) Deluge	Size 1/2
Hose Allowance - Inside	- n/a	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	- n/a	( ) Other	Temp.Rat.286
Hose Allowance - Outside	- 250		

Note

Calculation Summary — Flow Required - 416.905 Press Required - 35.939 Test
C-Factor Used: 120 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:		Pump Data:		Tank or Reservoir:	
Date of Test	- 20-19-2020			Cap. -	
Time of Test	- 4:10 pm	Rated Cap.-		Elev.-	
Static Press	- 54	@ Press	-		
Residual Press	- 46	Elev.	-		Well
Flow	- 888				Proof Flow
Elevation	- 0				

Location - 410 Denim Drive

Source of Information - Erwin Fire Department

COMMODITY STORAGE

Commodity — Class — Location
Storage Ht. — Area — Aisle W.
Storage Method: Solid Piled % Palletized % Rack

( ) Single Row	( ) Conven. Pallet	( ) Auto. Storage	( ) Encap.	
( ) Double Row	( ) Slave Pallet	( ) Solid Shelf	( ) Non	
( ) Mult. Row		( ) Open Shelf		

Flue Spacing — Clearance: Storage to Ceiling
Longitudinal — Transverse

Horizontal Barriers Provided:

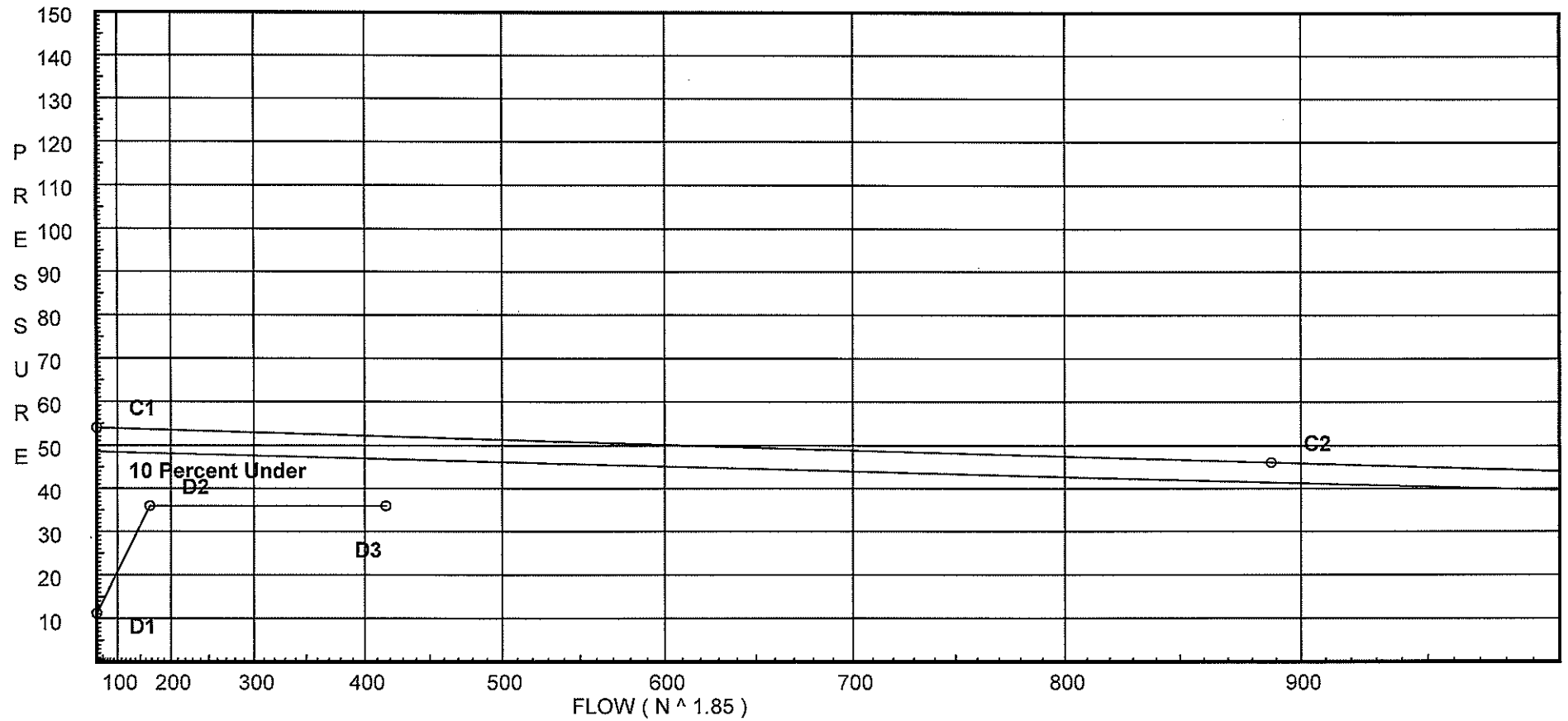
Water Supply Curve

Carolina Fire Protection, Inc.
GOOD HOPE 2020 Addition Area #2

Date 12-3-2020

City Water Supply:
- C1 - Static Pressure : 54
- C2 - Residual Pressure: 46
- C2 - Residual Flow : 888

Demand:
- D1 - Elevation : 11.152
- D2 - System Flow : 166.905
- D2 - System Pressure : 35.939
- Hose (Demand) : 250
- D3 - System Demand : 416.905
- Safety Margin : 16.086



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
Rcr	Reliable G Riser Ck					6.7	9.6	6	5.3		7.1		13.7	15.9	28.8						
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.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	54.0	46	888.0	52.025	416.9	35.939

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes	
1A	10.0		29.65			
2A	10.0		29.65			
3A	10.0		29.65			
4A	10.0		29.65			
5A	10.0		29.65			
6A	10.0		29.65			
7A	10.0		29.65			
8A	10.0		29.65			
9A	10.0		29.65			
10A	10.0		29.65			
11A	10.0		29.65			
12A	10.0		29.65			
13	25.75	5.6	7.98	15.82	0.15	100
14	23.0	5.6	9.24	17.02	0.15	100
15	21.167	5.6	10.23	17.91	0.15	100
16	23.333	5.6	8.03	15.87	0.15	100
17	25.75	5.6	7.17	15.0	0.15	100
18	23.0	5.6	8.6	16.42	0.15	100
19	21.167	5.6	9.78	17.51	0.15	100
20	25.75	5.6	8.19	16.03	0.15	100
21	23.0	5.6	9.45	17.22	0.15	100
22	21.167	5.6	10.45	18.1	0.15	100
M1	18.583		12.6			
M2	18.583		12.86			
M3	18.583		13.04			
F1	11.5		29.0			
1	11.5		29.0			
2	11.5		29.0			
3	11.5		29.0			
4	11.5		29.0			
5	11.5		29.0			
F2	11.5		29.0			
6	11.5		29.0			
7	11.5		29.0			
8	11.5		29.0			
9	11.5		29.0			
10	11.5		29.0			
F3	11.5		29.0			
11	11.5		29.0			
12	11.5		29.0			
F4	11.5		29.0			
F5	11.5		29.0			

NODE ANALYSIS (cont.)

Node Tag	*Elevation*	*Node Type*	*Pressure at Node*	*Discharge at Node*	*Notes*
F6	11.5		28.99		
F7	11.5		28.99		
F8	11.5		28.99		
F9	11.5		28.99		
F10	11.5		29.0		
F11	11.5		29.02		
F12	11.5		29.02		
F13	11.5		29.04		
F14	11.5		29.05		
F15	11.5		29.05		
N1	11.5		29.0		
N2	11.5		29.0		
N3	11.5		29.0		
N4	11.5		29.01		
N5	11.5		29.01		
N6	11.5		28.95		
N7	11.5		28.92		
N8	11.5		28.87		
N9	11.5		28.84		
N10	11.5		28.77		
N11	11.5		29.02		
N12	11.5		29.04		
N13	11.5		29.1		
N14	11.5		29.19		
N16	11.5		29.25		
TASR	11.5		29.56		
BASR	1.0		34.36	250.0	
TEST	0.0		35.94		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
1A	10		0.0	1	T	5.0	1.000	120	29.649			
to					Eql	36.0	41.000		-0.650			
1	11.5		0.0	1.049			42.000	0	0.001	Vel = 0		
			0.0									
1			0.0						29.000	K Factor = 0		
2A	10		0.0	1	T	5.0	1.000	120	29.650			
to					Eql	36.0	41.000		-0.650			
2	11.5		0.0	1.049			42.000	0	0.0	Vel = 0		
			0.0									
2			0.0						29.000	K Factor = 0		
3A	10		0.0	1	T	5.0	1.000	120	29.650			
to					Eql	36.0	41.000		-0.650			
3	11.5		0.0	1.049			42.000	0	0.001	Vel = 0		
			0.0									
3			0.0						29.001	K Factor = 0		
4A	10		0.0	1	T	5.0	1.000	120	29.651			
to					Eql	36.0	41.000		-0.650			
4	11.5		0.0	1.049			42.000	0	0.0	Vel = 0		
			0.0									
4			0.0						29.001	K Factor = 0		
5A	10		0.0	1	T	5.0	1.000	120	29.652			
to					Eql	36.0	41.000		-0.650			
5	11.5		0.0	1.049			42.000	0	0.0	Vel = 0		
			0.0									
5			0.0						29.002	K Factor = 0		
6A	10		0.0	1	T	5.0	1.000	120	29.649			
to					Eql	36.0	41.000		-0.650			
6	11.5		0.0	1.049			42.000	0	0.001	Vel = 0		
			0.0									
6			0.0						29.000	K Factor = 0		
7A	10		0.0	1	T	5.0	1.000	120	29.650			
to					Eql	36.0	41.000		-0.650			
7	11.5		0.0	1.049			42.000	0	0.0	Vel = 0		
			0.0									
7			0.0						29.000	K Factor = 0		
8A	10		0.0	1	T	5.0	1.000	120	29.650			
to					Eql	36.0	41.000		-0.650			
8	11.5		0.0	1.049			42.000	0	0.001	Vel = 0		
			0.0									
8			0.0						29.001	K Factor = 0		
9A	10		0.0	1	T	5.0	1.000	120	29.651			
to					Eql	36.0	41.000		-0.650			
9	11.5		0.0	1.049			42.000	0	0.0	Vel = 0		
			0.0									
9			0.0						29.001	K Factor = 0		
10A	10		0.0	1	T	5.0	1.000	120	29.652			
to					Eql	36.0	41.000		-0.650			
10	11.5		0.0	1.049			42.000	0	0.0	Vel = 0		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
			0.0							
10			0.0						29.002	K Factor = 0
11A	10		0.0	1	T	5.0	1.000	120	29.650	
to					Eql	36.0	41.000		-0.650	
11	11.5		0.0	1.049			42.000	0	0.0	Vel = 0
			0.0							
11			0.0						29.000	K Factor = 0
12A	10		0.0	1	T	5.0	1.000	120	29.651	
to					Eql	36.0	41.000		-0.650	
12	11.5		0.0	1.049			42.000	0	0.001	Vel = 0
			0.0							
12			0.0						29.002	K Factor = 0
13	25.750	5.60	15.82	1.5			8.000	120	7.982	
to									1.191	
14	23		15.82	1.682			8.000	0.0085	0.068	Vel = 2.28
14	23	5.60	17.02	1.5			6.000	120	9.241	
to									0.794	
15	21.167		32.84	1.682			6.000	0.0325	0.195	Vel = 4.74
15	21.167	5.60	17.92	1.5	E	4.95	2.250	120	10.230	
to					T	9.9	14.850		1.119	
M1	18.583		50.76	1.682			17.100	0.0732	1.251	Vel = 7.33
			0.0							
M1			50.76						12.600	K Factor = 14.30
16	23.333	5.60	15.87	1.5	2E	9.9	13.000	120	8.027	
to							9.900		-1.047	
17	25.750		15.87	1.682			22.900	0.0085	0.195	Vel = 2.29
17	25.750	5.60	15.00	1.5			8.000	120	7.175	
to									1.191	
18	23		30.87	1.682			8.000	0.0291	0.233	Vel = 4.46
18	23	5.60	16.42	1.5			6.000	120	8.599	
to									0.794	
19	21.167		47.29	1.682			6.000	0.0642	0.385	Vel = 6.83
19	21.167	5.60	17.51	1.5	E	4.95	2.250	120	9.778	
to					T	9.9	14.850		1.119	
M2	18.583		64.8	1.682			17.100	0.1149	1.964	Vel = 9.36
			0.0							
M2			64.80						12.861	K Factor = 18.07
20	25.750	5.60	16.03	1.5			8.000	120	8.194	
to									1.191	
21	23		16.03	1.682			8.000	0.0088	0.070	Vel = 2.31
21	23	5.60	17.22	1.5			6.000	120	9.455	
to									0.794	
22	21.167		33.25	1.682			6.000	0.0333	0.200	Vel = 4.80
22	21.167	5.60	18.10	1.5	E	4.95	2.250	120	10.449	
to					T	9.9	14.850		9.167	
M4	0		51.35	1.682			17.100	0.0747	1.278	Vel = 7.41
			0.0							

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
M4			51.35						20.894	K Factor = 11.23
M1	18.583		50.76	2			12.000	120	12.600	
to									0.0	
M2	18.583		50.76	2.157			12.000	0.0218	0.261	Vel = 4.46
M2	18.583		64.79	2			1.833	120	12.861	
to									0.0	
M3	18.583		115.55	2.157			1.833	0.0998	0.183	Vel = 10.15
M3	18.583		-166.90	2			8.917	120	13.044	
to									8.048	
M4	0		-51.35	2.157			8.917	-0.0222	-0.198	Vel = 4.51
			0.0							
M4			-51.35						20.894	K Factor = -11.23
M3	18.583		166.90	2	2E	12.307	27.167	120	13.044	
to					2T	24.613	36.920		8.048	
M5	0		166.9	2.157			64.087	0.1970	12.623	Vel = 14.65
			0.0							
M5			166.90						33.715	K Factor = 28.74
F1	11.5		2.35	2	T	12.307	11.583	120	28.998	
to							12.307		0.0	
1	11.5		2.35	2.157			23.890	0.0001	0.002	Vel = 0.21
1	11.5		0.0	2			7.667	120	29.000	
to									0.0	
2	11.5		2.35	2.157			7.667	0	0.0	Vel = 0.21
2	11.5		0.0	2			8.417	120	29.000	
to									0.0	
3	11.5		2.35	2.157			8.417	0.0001	0.001	Vel = 0.21
3	11.5		0.0	2			8.583	120	29.001	
to									0.0	
4	11.5		2.35	2.157			8.583	0	0.0	Vel = 0.21
4	11.5		0.0	2			8.583	120	29.001	
to									0.0	
5	11.5		2.35	2.157			8.583	0.0001	0.001	Vel = 0.21
5	11.5		0.0	2	T	12.307	26.583	120	29.002	
to							12.307		0.0	
N1	11.5		2.35	2.157			38.890	0.0001	0.003	Vel = 0.21
			0.0							
N1			2.35						29.005	K Factor = 0.44
F2	11.5		2.37	2	T	12.307	11.083	120	28.998	
to							12.307		0.0	
6	11.5		2.37	2.157			23.390	0.0001	0.002	Vel = 0.21
6	11.5		0.0	2			8.167	120	29.000	
to									0.0	
7	11.5		2.37	2.157			8.167	0	0.0	Vel = 0.21
7	11.5		0.0	2			9.250	120	29.000	
to									0.0	
8	11.5		2.37	2.157			9.250	0.0001	0.001	Vel = 0.21
8	11.5		0.0	2			8.583	120	29.001	
to									0.0	
9	11.5		2.37	2.157			8.583	0	0.0	Vel = 0.21

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
9	11.5		0.0	2			7.750	120	29.001	
to									0.0	
10	11.5		2.37	2.157			7.750	0.0001	0.001	Vel = 0.21
10	11.5		0.0	2	T	12.307	26.583	120	29.002	
to							12.307		0.0	
N2	11.5		2.37	2.157			38.890	0.0001	0.003	Vel = 0.21
			0.0							
N2			2.37						29.005	K Factor = 0.44
F3	11.5		2.43	2	T	12.307	26.750	120	28.997	
to							12.307		0.0	
11	11.5		2.43	2.157			39.057	0.0001	0.003	Vel = 0.21
11	11.5		0.0	2			12.500	120	29.000	
to									0.0	
12	11.5		2.43	2.157			12.500	0.0002	0.002	Vel = 0.21
12	11.5		0.0	2	T	12.307	32.167	120	29.002	
to							12.307		0.0	
N3	11.5		2.43	2.157			44.474	0.0001	0.003	Vel = 0.21
			0.0							
N3			2.43						29.005	K Factor = 0.45
F4	11.5		2.62	2	2T	24.613	71.417	120	28.997	
to							24.613		0.0	
N4	11.5		2.62	2.157			96.030	0.0001	0.008	Vel = 0.23
			0.0							
N4			2.62						29.005	K Factor = 0.49
F5	11.5		2.91	2	2T	24.613	71.417	120	28.995	
to							24.613		0.0	
N5	11.5		2.91	2.157			96.030	0.0001	0.011	Vel = 0.26
			0.0							
N5			2.91						29.006	K Factor = 0.54
F6	11.5		-5.82	2	2T	24.613	71.417	120	28.992	
to							24.613		0.0	
N6	11.5		-5.82	2.157			96.030	-0.0004	-0.038	Vel = 0.51
			0.0							
N6			-5.82						28.954	K Factor = -1.08
F7	11.5		-8.10	2	2T	24.613	71.417	120	28.991	
to							24.613		0.0	
N7	11.5		-8.1	2.157			96.030	-0.0007	-0.070	Vel = 0.71
			0.0							
N7			-8.10						28.921	K Factor = -1.51
F8	11.5		-11.02	2	2T	24.613	71.417	120	28.991	
to							24.613		0.0	
N8	11.5		-11.02	2.157			96.030	-0.0013	-0.124	Vel = 0.97
			0.0							
N8			-11.02						28.867	K Factor = -2.05
F9	11.5		-12.24	2	2T	24.613	71.417	120	28.992	
to							24.613		0.0	
N9	11.5		-12.24	2.157			96.030	-0.0016	-0.150	Vel = 1.07

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt / Pe / Pf	******* Notes ******
			0.0							
N9			-12.24						28.842	K Factor = -2.28
F10	11.5		-13.00	2	4E	24.613	81.917	120	29.000	
to					2T	24.613	49.226		0.0	
N10	11.5		-13.0	2.157			131.143	-0.0018	-0.230	Vel = 1.14
			0.0							
N10			-13.00						28.770	K Factor = -2.42
F11	11.5		1.24	2	2T	24.613	71.417	120	29.016	
to							24.613		0.0	
N11	11.5		1.24	2.157			96.030	0	0.002	Vel = 0.11
			0.0							
N11			1.24						29.018	K Factor = 0.23
F12	11.5		3.72	2	2T	24.613	71.417	120	29.023	
to							24.613		0.0	
N12	11.5		3.72	2.157			96.030	0.0002	0.017	Vel = 0.33
			0.0							
N12			3.72						29.040	K Factor = 0.69
F13	11.5		7.45	2	2T	24.613	71.417	120	29.039	
to							24.613		0.0	
N13	11.5		7.45	2.157			96.030	0.0006	0.060	Vel = 0.65
			0.0							
N13			7.45						29.099	K Factor = 1.38
F14	11.5		10.82	2	2E	12.307	77.917	120	29.048	
to					2T	24.613	36.920		0.0	
N14	11.5		10.82	2.157			114.837	0.0012	0.143	Vel = 0.95
			0.0							
N14			10.82						29.191	K Factor = 2.00
F15	11.5		14.26	2	2T	24.613	71.417	120	29.052	
to							24.613		4.981	
N15	0		14.26	2.157			96.030	0.0021	0.199	Vel = 1.25
			0.0							
N15			14.26						34.232	K Factor = 2.44
F1	11.5		-2.35	3			9.167	120	28.998	
to									0.0	
F2	11.5		-2.35	3.26			9.167	0	0.0	Vel = 0.09
F2	11.5		-2.38	3			7.417	120	28.998	
to									0.0	
F3	11.5		-4.73	3.26			7.417	-0.0001	-0.001	Vel = 0.18
F3	11.5		-2.43	3			11.333	120	28.997	
to									0.0	
F4	11.5		-7.16	3.26			11.333	0	0.0	Vel = 0.28
F4	11.5		-2.62	3			10.667	120	28.997	
to									0.0	
F5	11.5		-9.78	3.26			10.667	-0.0002	-0.002	Vel = 0.38
F5	11.5		-2.91	3			14.000	120	28.995	
to									0.0	
F6	11.5		-12.69	3.26			14.000	-0.0002	-0.003	Vel = 0.49

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
F6	11.5		5.82	3			8.083	120	28.992			
to									0.0			
F7	11.5		-6.87	3.26			8.083	-0.0001	-0.001	Vel = 0.26		
F7	11.5		8.09	3			11.833	120	28.991			
to									0.0			
F8	11.5		1.22	3.26			11.833	0	0.0	Vel = 0.05		
F8	11.5		11.03	3			4.667	120	28.991			
to									0.0			
F9	11.5		12.25	3.26			4.667	0.0002	0.001	Vel = 0.47		
F9	11.5		12.24	3			9.667	120	28.992			
to									0.0			
F10	11.5		24.49	3.26			9.667	0.0008	0.008	Vel = 0.94		
F10	11.5		13.00	3			9.667	120	29.000			
to									0.0			
F11	11.5		37.49	3.26			9.667	0.0017	0.016	Vel = 1.44		
F11	11.5		-1.25	3			4.833	120	29.016			
to									0.0			
F12	11.5		36.24	3.26			4.833	0.0014	0.007	Vel = 1.39		
F12	11.5		-3.72	3			12.333	120	29.023			
to									0.0			
F13	11.5		32.52	3.26			12.333	0.0013	0.016	Vel = 1.25		
F13	11.5		-7.44	3			10.917	120	29.039			
to									0.0			
F14	11.5		25.08	3.26			10.917	0.0008	0.009	Vel = 0.96		
F14	11.5		-10.82	3			14.500	120	29.048			
to									0.0			
F15	11.5		14.26	3.26			14.500	0.0003	0.004	Vel = 0.55		
			0.0									
F15			14.26						29.052	K Factor = 2.65		
N1	11.5		2.35	4			9.167	120	29.005			
to									0.0			
N2	11.5		2.35	4.26			9.167	0	0.0	Vel = 0.05		
N2	11.5		2.38	4			7.500	120	29.005			
to									0.0			
N3	11.5		4.73	4.26			7.500	0	0.0	Vel = 0.11		
N3	11.5		2.43	4			11.333	120	29.005			
to									0.0			
N4	11.5		7.16	4.26			11.333	0	0.0	Vel = 0.16		
N4	11.5		2.62	4			10.667	120	29.005			
to									0.0			
N5	11.5		9.78	4.26			10.667	0.0001	0.001	Vel = 0.22		
N5	11.5		-126.50	4			14.000	120	29.006			
to									0.0			
N6	11.5		-116.72	4.26			14.000	-0.0037	-0.052	Vel = 2.63		
N6	11.5		-5.82	4			8.083	120	28.954			
to									0.0			
N7	11.5		-122.54	4.26			8.083	-0.0041	-0.033	Vel = 2.76		
N7	11.5		-8.10	4			11.833	120	28.921			
to									0.0			
N8	11.5		-130.64	4.26			11.833	-0.0046	-0.054	Vel = 2.94		

Node1 / to / Node2	Elev1 / Elev2	K Fact	Qa / Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt / Pe / Pf	******* Notes ******
N8	11.5		-11.02	4			4.833	120	28.867	
to									0.0	
N9	11.5		-141.66	4.26			4.833	-0.0052	-0.025	Vel = 3.19
N9	11.5		-12.24	4			11.667	120	28.842	
to									0.0	
N10	11.5		-153.9	4.26			11.667	-0.0062	-0.072	Vel = 3.46
N10	11.5		-13.00	4			5.000	120	28.770	
to									4.981	
M5	0		-166.9	4.26			5.000	-0.0072	-0.036	Vel = 3.76
			0.0							
M5			-166.90						33.715	K Factor = -28.74
N5	11.5		129.42	4			2.750	120	29.006	
to									0.0	
N11	11.5		129.42	4.26			2.750	0.0044	0.012	Vel = 2.91
N11	11.5		1.24	4			4.833	120	29.018	
to									0.0	
N12	11.5		130.66	4.26			4.833	0.0046	0.022	Vel = 2.94
N12	11.5		3.72	4			12.333	120	29.040	
to									0.0	
N13	11.5		134.38	4.26			12.333	0.0048	0.059	Vel = 3.02
N13	11.5		7.45	4			17.333	120	29.099	
to									0.0	
N14	11.5		141.83	4.26			17.333	0.0053	0.092	Vel = 3.19
N14	11.5		10.82	4			10.000	120	29.191	
to									0.0	
N16	11.5		152.65	4.26			10.000	0.0061	0.061	Vel = 3.44
N16	11.5		-166.91	4			3.583	120	29.252	
to									4.981	
N15	0		-14.26	4.26			3.583	-0.0003	-0.001	Vel = 0.32
			0.0							
N15			-14.26						34.232	K Factor = -2.44
N16	11.5		166.90	4	E	13.167	4.250	120	29.252	
to					T	26.334	39.501		0.0	
TASR	11.500		166.9	4.26			43.751	0.0072	0.313	Vel = 3.76
TASR	11.500		0.0	4	B	15.8	10.000	120	29.565	
to					Rcr	9.349	25.149		4.548	
BASR	1		166.9	4.26			35.149	0.0071	0.251	Vel = 3.76
BASR	1	H250	250.00	6			235.000	140	34.364	
to									0.433	
TEST	0		416.9	6.16			235.000	0.0049	1.142	Vel = 4.49
			0.0							
TEST			416.90						35.939	K Factor = 69.54

Erwin Fire Department And Rescue Squad

Flow Test for Hydrant 43070016

Start Time: 2020-10-19 08:00:00
End Time: 2020-10-19 08:10:00
Tested By: WARRICK, DAVID

Test Hydrant

Static Pressure:	**54.0**
Residual Pressure:	**46.0**
Desired Pressure:	**20.0**
Volume at Desired Pressure:	**1939.0**

Flow Hydrants

Downstream Hydrant ID	Port Diameter	Friction Coefficient	Pitot Pressure	Flow (Calculated)
43070017	2.5	0.90000000000000002	28.0	888.0

adorman@carolinafireprotection.com

From: Allen Monds <cfdfirecapt5@gmail.com>
Sent: Thursday, November 19, 2020 3:28 PM
To: adorman@carolinafireprotection.com
Subject: Hydrant information for Good Hope Hospital project
Attachments: Good Hope Hospital Hydrant # 16.pdf

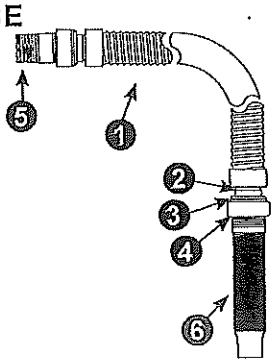
Andrew,
My map is showing hydrant # 16 on Denim Drive to be on a 6 inch main, however, the line on 8th street is 8 inch and the line on 10th street is 10 inch. At the end of the day it is on a looped system. Attached you will find the 2 most recent flow tests.

Allen Monds-Asst.Fire Chief
Erwin Fire Department

PRODUCT DESCRIPTION -

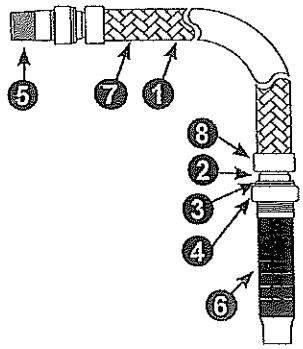
UNBRAIDED FLEXIBLE HOSE

No	Item Description
1	Flexible Hose / Bellow
2	Isolation Ring
3	Gasket
4	Nut
5	Branch Line Nipple (1")
6	Reducer



BRAIDED FLEXIBLE HOSE

No	Item Description
1	Flexible Hose / Bellow
2	Isolation Ring
3	Gasket
4	Nut
5	Branch Line Nipple (1")
6	Reducer
7	Braid
8	Welded Collar Fitting



UL FRICTION LOSS DATA - BRAIDED FLEXIBLE HOSE

Length of Flexible Hose (inch)	Outlet Size		Sprinkler K-Factor	Maximum Ambient Temperature °F (°C)	Maximum Working Pressure psi (bar)	Maximum Number of 90° Bends at 3" (76mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	Size (inch)	Type					
24	1/2	Straight	5.6 (80)	300°F (149°C)	175 (12.07)	2	10 (3)
	3/4	Straight	14.0 (200)	300°F (149°C)	175 (12.07)	2	13 (4)
31	1/2	Straight	5.6 (80)	300°F (149°C)	175 (12.07)	3	14 (4.3)
	3/4	Straight	14.0 (200)	300°F (149°C)	175 (12.07)	3	16 (3.9)
40	1/2	Straight	5.6 (80)	300°F (149°C)	175 (12.07)	4	21 (6.4)
	3/4	Straight	14.0 (200)	300°F (149°C)	175 (12.07)	4	23 (7)
48	1/2	Straight	5.6 (80)	300°F (149°C)	175 (12.07)	4	24 (7.3)
	3/4	Straight	14.0 (200)	300°F (149°C)	175 (12.07)	4	26 (7.9)
60	1/2	Straight	5.6 (80)	300°F (149°C)	175 (12.07)	4	25 (7.6)
	3/4	Straight	14.0 (200)	300°F (149°C)	175 (12.07)	4	30 (9.1)
72 →	1/2	Straight	5.6 (80)	300°F (149°C)	175 (12.07)	5	36 (11)
	3/4	Straight	14.0 (200)	300°F (149°C)	175 (12.07)	5	33 (10.1)

RASCOFLEX® Sprinkler Connections

cULus Listed, FM Approved

Product Description

RASCOFLEX® Sprinkler Connections are intended to connect a branch line to a sprinkler using a flexible stainless steel hose assembly. RASCOFLEX® Sprinkler Connections are suitable for use in suspended and hard ceiling applications such as T-Bar ceiling grids, wood, metal stud, or hat furring channel hard lid ceilings. Every package contains one (1) fully assembled stainless steel flexible sprinkler system complete with hose, branch line connection, and sprinkler connection, as well as the pre-assembled bracket assembly to attach to the ceiling.

RASCOFLEX® Sprinkler Connections are designed for use in hydraulically calculated wet, preaction, or dry sprinkler systems per NFPA 13, 13R, 13D, and FM Global Loss Prevention Data Sheets.

Technical Data — Table A

Maximum Working Pressure		FM: 200 psi (13.8 bar) UL: 175 psi (12.1 bar)
Maximum Working Temperature		300°F (149°C)
Connections	Inlet/Branch Line	1" NPT
	Outlet/Reducer	1/2" or 3/4" NPT
Minimum Bending Radius		UL: 3" (76 mm) FM: 7" (178 mm)
Maximum Number of Bends		See Friction Loss Chart
Maximum K-Factor	1/2" Outlet	5.6 (80 metric)
	3/4" Outlet	14.0 (200 metric)

Maintenance

RASCOFLEX® Sprinkler Connections should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

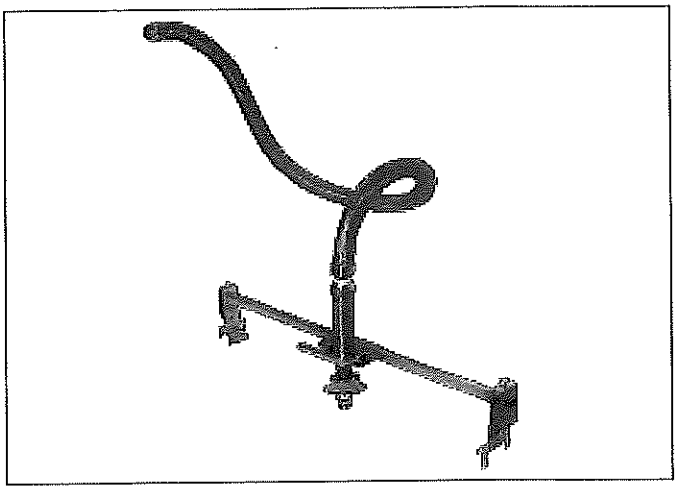
Patents

RASCOFLEX® Sprinkler Connections may be covered by one or more of the following US Patent Nos. 10,173,088 and 10,328,296.

Listings and Approvals

FM Approved Class No. 1637 (FM)

UL Listed and UL Certified for Canada to ANSI/UL 2443 (cULus)



RASCOFLEX® Sprinkler Connections

Ordering Information

Specify:

Model Name
- Model RFB

Nominal Hose Length
- 24" (610 mm)
- 31" (790 mm)
- 40" (1015 mm)
- 48" (1220 mm)
- 60" 1525 mm)
- 72" (1830 mm)

Reducer Outlet: 1/2" NPT or 3/4" NPT

Reducer Type

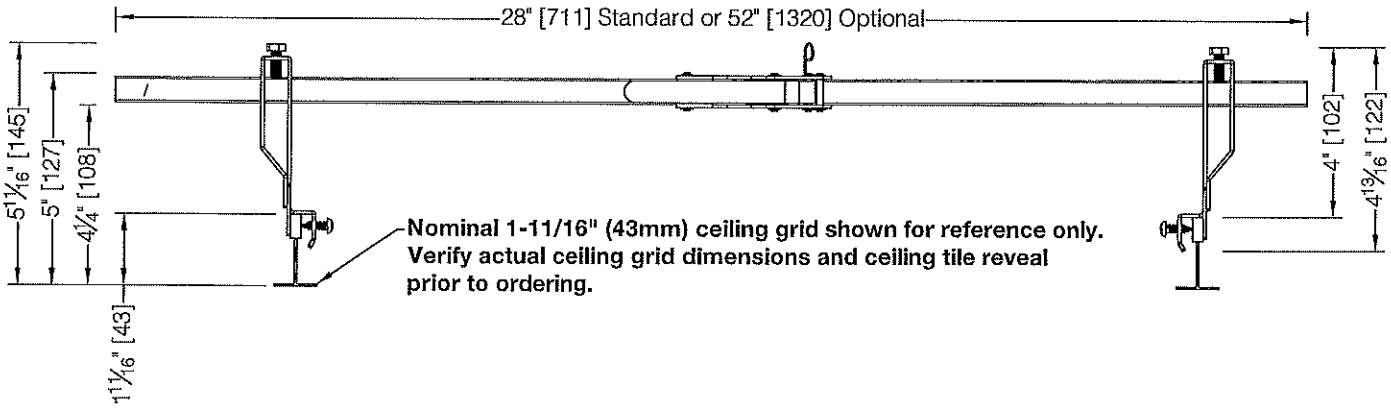
Standard:
- 6-1/8" (155 mm) straight

Optional:
- 4-5/16" (110 mm) straight
- 5-5/16" (135 mm) straight
- 11-3/4" (300 mm) straight
- 5-5/8" (143 mm) elbow
- 7-3/8" (187 mm) elbow

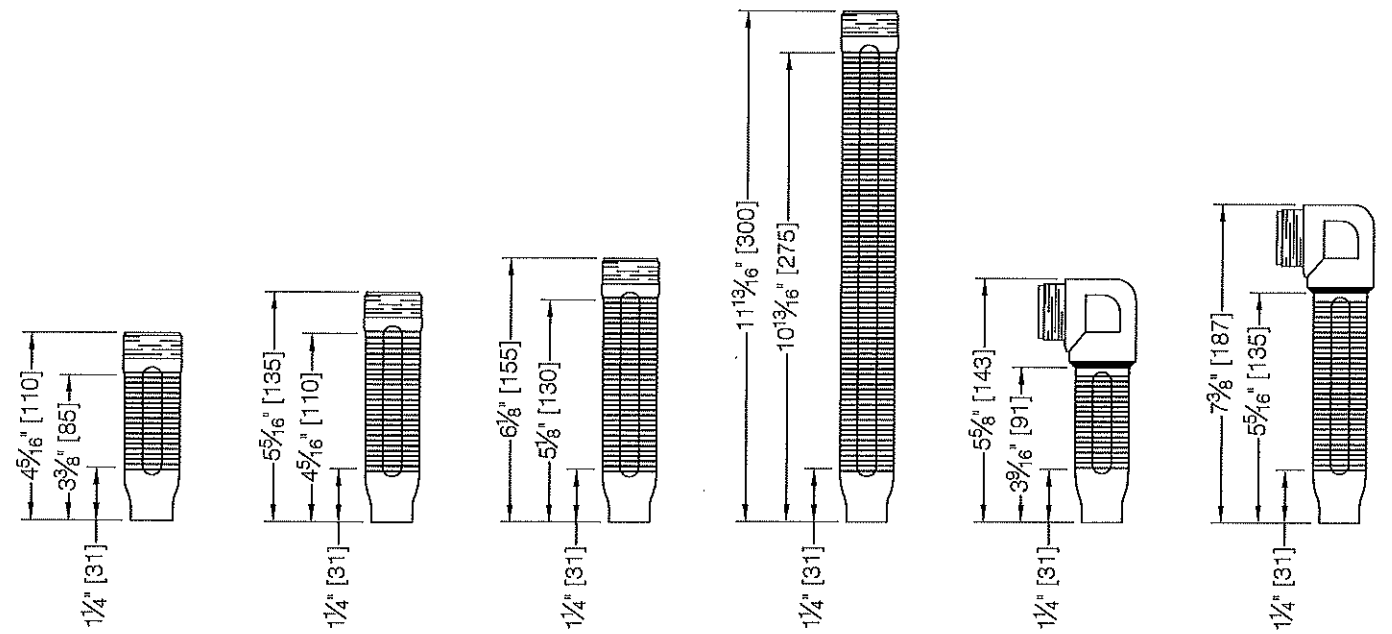
Bracket Assembly Length
- 24" (610 mm) standard
- 48" (1220 mm) optional

Accessories
- See Table F

Bracket Dimensions **Figure 1**



Reducer Dimensions **Figure 2**



4-5/16" (110 mm) Straight

5-5/16" (135 mm) Straight

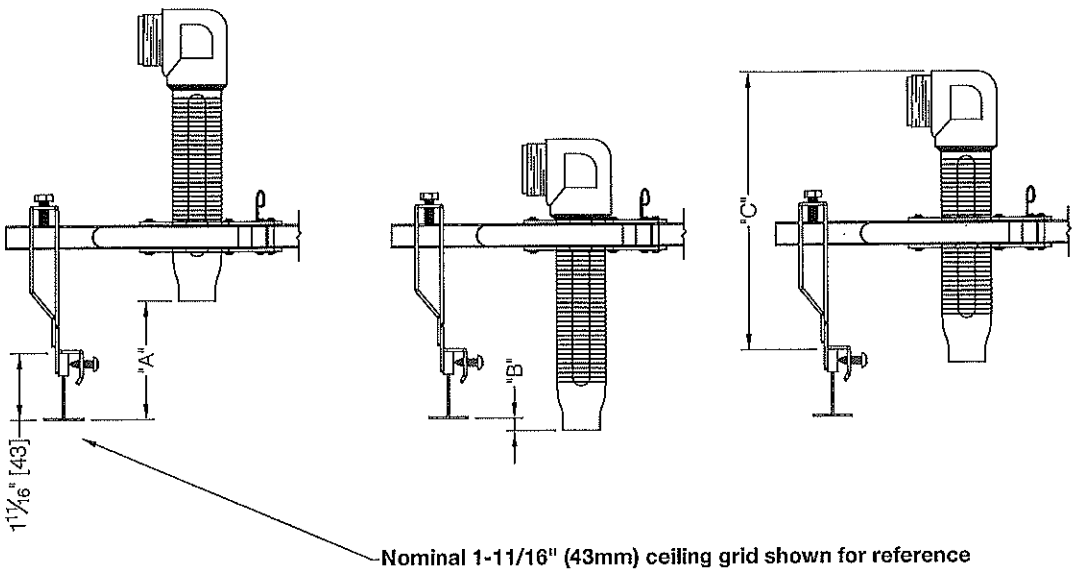
6-1/8" (155 mm) Straight **Standard**

11-13/16" (300 mm) Straight

5-5/8" (143 mm) Elbow

7-3/8" (187 mm) Elbow

Installation Dimensions **Figure 3**



Nominal 1-11/16" (43mm) ceiling grid shown for reference only.
Verify actual ceiling grid dimensions and ceiling tile reveal prior to ordering.

Minimum and Maximum Face of Fitting to Bottom of Ceiling Grid for Each Reducer **Table B**

	6-1/8" (155mm) Straight Standard	4-5/16" (110mm) Straight	5-5/16" (135mm) Straight	11-13/16" (300mm) Straight	5-5/8" (143mm) Elbow	7-3/8" (187mm) Elbow
Fig. 3 Dimension A Max. Face of Fitting Distance above Bottom of Ceiling Grid	3" (77mm)	3" (7mm)	3" (7mm)	3" (7mm)	3" (7mm)	3" (7mm)
Fig. 3 Dimension B Max. Face of Fitting Distance from Bottom of Ceiling Grid	1/8" (3mm) below	1-5/8" (42mm) above	11/16" (17mm) above	6-3/8" (148mm) below	1-7/16" (36mm) above	5/16" (60mm) below

Note: Based on 1-11/16" (43mm) tall ceiling grid.

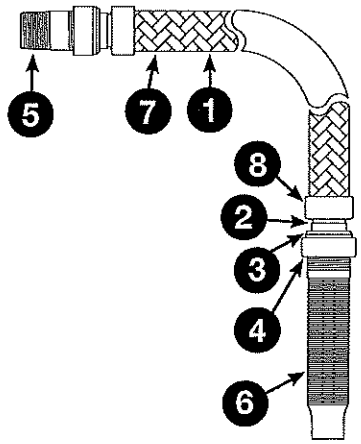
Fig. 3 Dimension C - Clearance Above Ceiling Required at Max. Sprinkler Recess **Table C**

Recessed Escutcheon or Concealed/Flush Sprinkler	Reducer	
	5-5/8" (143mm) Elbow	7-3/8" (187mm) Elbow
F1 recessed escutcheon	NC	5-5/8" (144mm)
F2 or FV recessed escutcheon	NC	5-3/8" (138mm)
FP recessed escutcheon	NC	6-1/4" (160mm)
CCP conical concealed cover plate	NC	6-1/4" (160mm)
G4 series concealed sprinklers	5-5/8" (144mm)	7-3/8" (188mm)
G5 series concealed sprinklers	5-1/4" (134mm)	7" (179mm)
RFC series concealed sprinklers	5-1/4" (134mm)	7" (179mm)
XL commercial flush sprinkler with flat escutcheon	4-7/8" (125mm)	6-5/8" (169mm)
XL commercial flush sprinkler with conical escutcheon	4-3/8" (112mm)	6-1/8" (157mm)

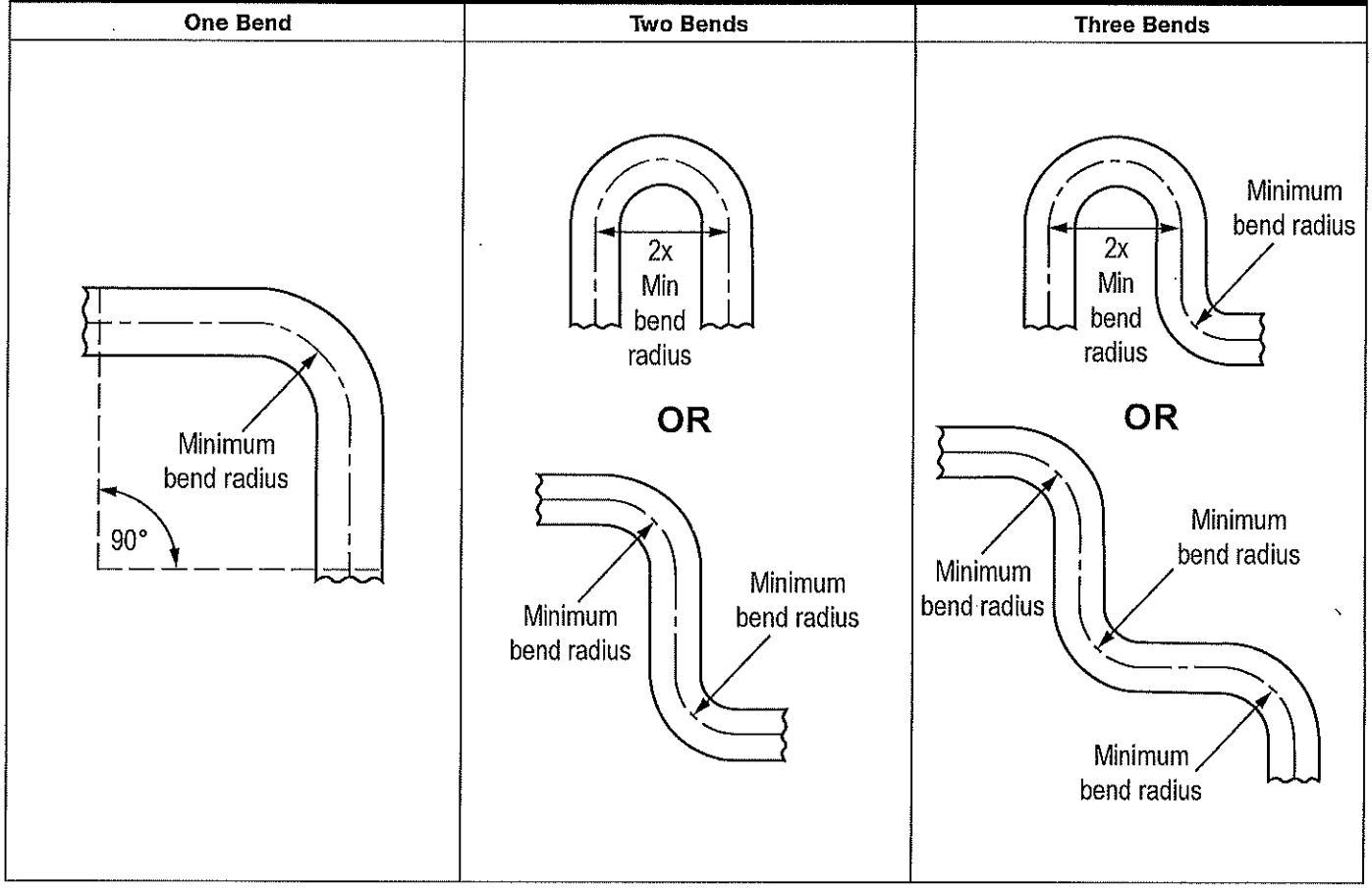
Note: NC - Reducer not compatible with sprinkler adjustment range.
Based on 1-11/16" (43mm) tall ceiling grid and flush ceiling tile.

Materials — Figure 4

Number	Item Description	Material
1	Flexible Hose/Bellow	AISI Type 304 Stainless Steel
2	Isolation Ring	Nylon 66
3	Gasket	EPDM
4	Nut	Zinc Plated Carbon Steel
5	Branch Line Nipple (1")	Zinc Plated Carbon Steel
6	Reducer	Zinc Plated Carbon Steel
7	Braid	AISI Type 304 Stainless Steel
8	Welded Collar Fitting	AISI Type 304 Stainless Steel
-	Bar Stock	Zinc Plated SGCC Steel
-	Brackets: Center and Side	Zinc Plated SPCC Steel



Flexible Hose Number of Bends — Figure 5



c UL us

cULus Friction Loss Data

Table D

Nominal Length of Flexible Hose in (mm)	Reducer		Maximum Sprinkler K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Maximum Number of 90° Bends at 3" (76mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	NPT Threads	Type			
24 (610)	1/2	Straight	5.6 (80)	2	10 (3)
	3/4	Straight	14.0 (200)	2	13 (4)
31 (790)	1/2	Straight	5.6 (80)	3	14 (4.3)
	3/4	Straight	14.0 (200)	3	16 (4.9)
40 (1015)	1/2	Straight	5.6 (80)	4	21 (6.4)
	3/4	Straight	14.0 (200)	4	23 (7)
48 (1220)	1/2	Straight	5.6 (80)	4	24 (7.3)
	3/4	Straight	14.0 (200)	4	26 (7.9)
60 (1525)	1/2	Straight	5.6 (80)	4	25 (7.6)
	3/4	Straight	14.0 (200)	4	30 (9.1)
72 (1830)	1/2	Straight	5.6 (80)	5	36 (11)
	3/4	Straight	14.0 (200)	5	33 (10.1)

The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Mark is less than 1/2 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye.

The font for all letter forms is Helvetica Condensed Black, except for the trademark symbol ®, which is Helvetica Condensed Medium. No other fonts are acceptable.

Please Note:
The word "MARK" should only be used for UL Classified marked products.

200-195F 20MAY97

UL Notes:

1. Available data for use with 6.1" straight reducers.
2. Sprinkler K-Factor: 5.6 (80 metric) for 1/2-inch reducer and 14.0 (200 metric) for 3/4-inch reducer.
3. RASCOFLEX® Sprinkler Connections have been tested and approved by Underwriter's Laboratories, Inc. for use in wet, preaction, and dry sprinkler systems per NFPA 13, 13D, 13R and UL2443.

FM APPROVED

FM Friction Loss Data

Table E

Nominal Length of Flexible Hose in (mm)	Reducer		Maximum Sprinkler K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Maximum Number of 90° Bends at 7" 178mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	NPT Threads	Type			
24 (610)	1/2	Straight	5.6 (80)	1	9.7 (2.9)
	1/2	90° Elbow	5.6 (80)	0	11.5 (3.5)
	3/4	Straight	8.0 (115)	1	9.9 (3)
			11.2 (160)	1	9.8 (2.9)
			14.0 (200)	1	9.6 (2.9)
	3/4	90° Elbow	8.0 (115)	0	10.2 (3.1)
			11.2 (160)	0	10 (3)
			14.0 (200)	0	9.8 (2.9)
31 (790)	1/2	Straight	5.6 (80)	2	12.4 (3.8)
	1/2	90° Elbow	5.6 (80)	2	15.8 (4.8)
	3/4	Straight	8.0 (115)	2	13.7 (4.1)
			11.2 (160)	2	12.9 (3.9)
			14.0 (200)	2	12.2 (3.7)
	3/4	90° Elbow	8.0 (115)	2	14.5 (4.4)
			11.2 (160)	2	13.7 (4.1)
			14.0 (200)	2	13 (3.9)
40 (1015)	1/2	Straight	5.6 (80)	2	15.9 (4.8)
	1/2	90° Elbow	5.6 (80)	2	21.6 (6.6)
	3/4	Straight	8.0 (115)	2	18.5 (5.6)
			11.2 (160)	2	17.4 (5.3)
			14.0 (200)	2	16.3 (4.9)
	3/4	90° Elbow	8.0 (115)	2	20 (6)
			11.2 (160)	2	18.9 (5.7)
			14.0 (200)	2	20 (6)
48 (1220)	1/2	Straight	5.6 (80)	3	19.0 (5.8)
	1/2	90° Elbow	5.6 (80)	3	25.9 (7.9)
	3/4	Straight	8.0 (115)	3	22.7 (6.9)
			11.2 (160)	3	21.5 (6.5)
			14.0 (200)	3	20.5 (6.2)
	3/4	90° Elbow	8.0 (115)	3	24.8 (7.5)
			11.2 (160)	3	23.6 (7.2)
			14.0 (200)	3	22.6 (6.8)

FM Friction Loss Data (cont.)

Table E

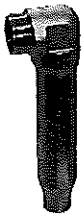
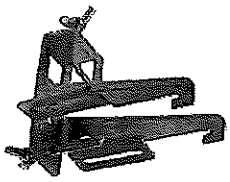
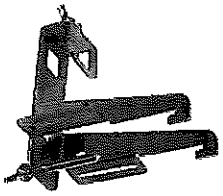
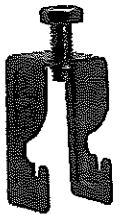
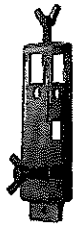
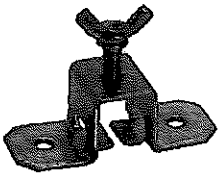
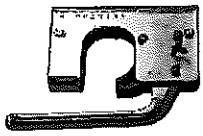
Nominal Length of Flexible Hose in (mm)	Reducer		Maximum Sprinkler K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Maximum Number of 90° Bends at 7" (178mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	NPT Threads	Type			
60 (1525)	1/2	Straight	5.6 (80)	4	23.7 (7.2)
	1/2	90° Elbow	5.6 (80)	4	33.1 (10)
	3/4	Straight	8.0 (115)	4	29.1 (8.8)
			11.2 (160)	4	28 (8.5)
			14.0 (200)	4	27 (8.2)
	3/4	90° Elbow	8.0 (115)	4	32.2 (9.8)
			11.2 (160)	4	31.1 (9.5)
			14.0 (200)	4	30 (9.1)
72 (1830)	1/2	Straight	5.6 (80)	4	28.4 (8.6)
	1/2	90° Elbow	5.6 (80)	4	40.4 (12.3)
	3/4	Straight	8.0 (115)	4	35.5 (10.8)
			11.2 (160)	4	34.3 (10.4)
			14.0 (200)	4	33.2 (10.1)
	3/4	90° Elbow	8.0 (115)	4	39.5 (12)
			11.2 (160)	4	38.3 (11.6)
			14.0 (200)	4	37.2 (11.3)

FM Notes:

1. RASCOFLEX® Sprinkler Connections have been tested and approved by FM Approvals for use in wet, preaction, and dry sprinkler systems per FM data sheets 2-0, 2-5, and 2-8 per FM1637.
2. Maximum sprinkler K-Factor: 5.6 (80 metric) for 1/2-inch reducer and 14.0 (200 metric) for 3/4-inch reducer.
3. Differences in equivalent lengths are due to varying test methods, per FM 1637 standards.
4. Above data of friction loss for use with 6.1" straight reducers.

Accessories List

Table F

 5-5/8" (143mm) Elbow Reducer- Short 1/2": 7M99003303 3/4": 7M99003305	 7-3/8" (187mm) Elbow Reducer- Long 1/2": 7M99003302 3/4": 7M99003304	 4-5/16" (110mm) Straight Reducer 1/2": 7M99003306 3/4": 7M99003325
 5-5/16" (135mm) Straight Reducer 1/2": 7M99003307 3/4": 7M99003326	 Replacement 6-1/8" (155mm) Standard Straight Reducer 1/2": 7M99003308 3/4": 7M99003327	 11-13/16" (300mm) Straight Reducer 1/2": 7M99003309 3/4": 7M99003328
 Hat Channel End Bracket- Short 3" (76mm) 7M99003310	 Hat Channel End Bracket- Long 3-3/4" (95mm) 7M99003311	 Metal Stud End Bracket-Short 1-1/2" (38mm) 7M99003312
 Metal Stud End Bracket- Long 2-1/16" (53mm) 7M99003313	 T-Bar End Bracket- Short 2-5/8" (68mm) 7M99003314	 T-Bar End Bracket- Long 4-1/8" (105mm) 7M99003316
 Wood Beam Stud End Bracket 7M99003317	 Replacement Center Bracket 7M99003321	 3" (76 mm) Bend Radius Indicator 7M99004179
 Replacement 1" NPT Inlet Adapter 7M99003322	 #2 Square Drive Bit 7M99004539	 Replacement Gasket 7M99004319
 48" (1220mm) Bracket Assembly 7M99003301		

P/N 9999970560

Job Name _____ Contractor _____

Job Location _____ Approval _____

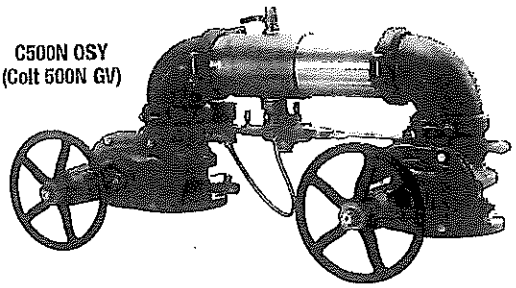
Engineer _____ Contractor's P.O. No. _____

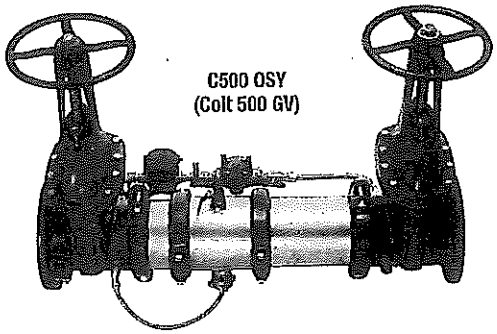
Approval _____ Representative _____

Colt™ Series C500 (Colt 500), C500N (Colt 500N), C500Z (Colt 500Z)

Reduced Pressure Detector Assemblies

Sizes: 2½" – 10"





The Colt C500, C500N, C500Z Reduced Pressure Detector Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for health-hazard non-potable service applications such as irrigation, fire line, or industrial processing. The Colt C500, C500N, C500Z are used to monitor unauthorized use of water from the fire protection system.

Features

- Extremely Compact Design
- 70% Lighter than Traditional Designs
- 304 (Schedule 40) Stainless Steel Housing & Sleeve
- Groove Fittings Allow Integral Pipeline Adjustment
- Patented Link Check Provides Lowest Pressure Loss
- Unmatched Ease of Serviceability
- Replaceable Check Disc Rubber
- Available with Grooved Butterfly Valve Shutoffs
- Bottom Mounted Cast Stainless Steel Relief Valve
- Metered Bypass to Detect Leakage or Theft of Water from the Fire Sprinkler System

Specifications

The Colt C500, C500N, C500Z Reduced Pressure Detector Assemblies shall consist of two independent Link Check modules, a differential pressure relief valve located between and below the two modules, two drip tight shutoff valves, and required test cocks. Link Check modules and relief valve shall be contained within a sleeve accessible single housing constructed from 304 (Schedule 40) stainless steel pipe with groove end connections. Link Checks shall have reversible elastomer discs and in operation produce drip tight closure against the reverse flow of liquid caused by backpressure or backsiphonage. The bypass assembly consists of a meter registering either gallon or cubic measurements, a reduced pressure zone assembly and required test cocks. Assembly shall be Colt C500, C500N, C500Z as manufactured by the Ames Fire & Waterworks.

⚠ WARNING

It is illegal to use this product in any plumbing system providing water for human consumption, such as drinking or dishwashing, in the United States. Before installing standard material product, consult your local water authority, building and plumbing codes.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

AMES
FIRE & WATERWORKS
A WATTS Brand

Configurations

- Horizontal
- "Z" pattern horizontal
- "N" pattern horizontal

Materials

- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna 'N'
- Link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Lead Free* Bronze Body
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Pressure – Temperature

Temperature Range: 33°F – 140°F (0.5°C – 60°C)

Maximum Working Pressure: 175 psi (12.1 bar)

Available Models

Suffix:

OSY — UL/FM outside stem and yoke resilient seated gate valves

BFG — UL/FM grooved gear operated butterfly valves w/ tamper switch

*OSY FxG — Flanged inlet gate connection and grooved outlet gate connection

*OSY GxF — Grooved inlet gate connection and flanged outlet gate connection

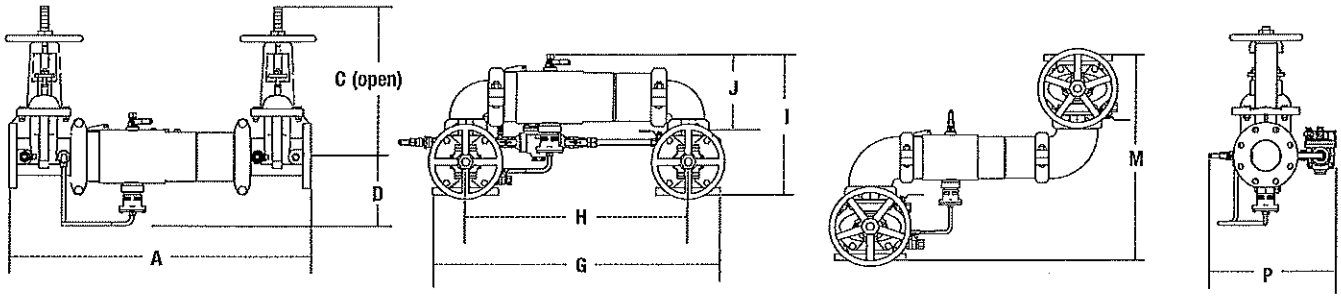
*OSY GxG — Grooved inlet gate connection and grooved outlet gate connection

Available with grooved NRS gate valves — consult factory*

Post indicator plate and operating nut available — consult factory*

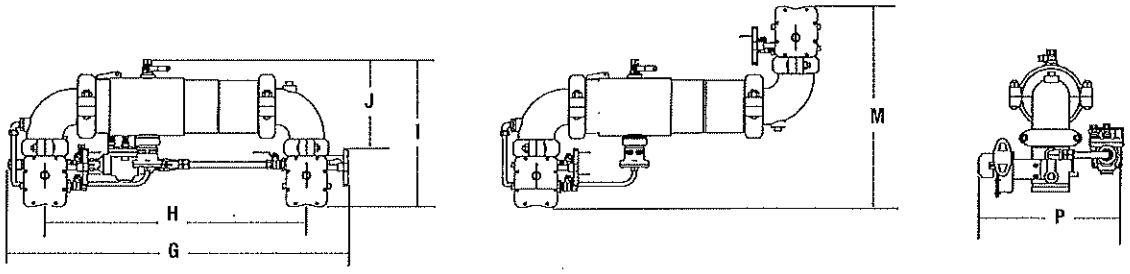
*Consult factory for dimensions

Dimensions – Weights



C500, C500N, C500Z

SIZE	DIMENSIONS																		WEIGHT			
	A		C (OSY)		D		G		H		I		J		M		P		C500		C500N	
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	30¾	781	16⅜	416	6½	165	29 1/16	738	21½	546	15½	393	8 13/16	223	21¼	540	13 3/16	335	118	54	126	57
3	31¾	806	18⅞	479	6 1/16	170	30¼	768	22¼	565	17⅛	435	9 3/16	233	23	584	14½	368	134	61	147	67
4	33¾	857	22¾	578	7	178	35⅝	905	23½	597	18½	470	9 15/16	252	26¼	667	15 3/16	386	164	74	187	85
6	43½	1105	30⅛	765	8½	216	44¾	1137	33¼	845	23 3/16	589	13 1/16	332	34¼	870	19	483	276	125	317	144
8	49¾	1264	37¾	959	9 1/16	246	54⅛	1375	40⅛	1019	27 1/16	697	15 1/16	399	36⅞	937	21 3/16	538	441	200	516	234
10	57¾	1467	45¾	1162	11 3/16	285	66	1676	49½	1257	32½	826	17 5/16	440	44½	1124	24	610	723	328	893	405



C500NBFG/C500ZBFG

SIZE	DIMENSIONS												WEIGHT	
	G		H		I		J		M		P		C500BFG	
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½	32½	826	23	584	15½	394	9½	241	19¾	502	15 13/16	402	81	37
3	34	864	24	610	16 5/16	414	10 1/16	256	21¼	540	16⅛	410	84	38
4	35⅝	905	25½	648	17 3/16	437	10 15/16	279	23½	597	16⅝	422	101	46
6	46½	1181	35¼	895	20½	521	13½	343	27¼	692	19	483	174	79

Noryl® is a registered trademark of SABIC Innovative Plastics™.

Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
  (Excluding 10" 'N' and 'Z' configurations)
- AWWA C551-92

1047 B64.4 (**BFG & OSY Only)

For additional approval information please contact the factory or visit our website at www.amesfirewater.com

Capacity

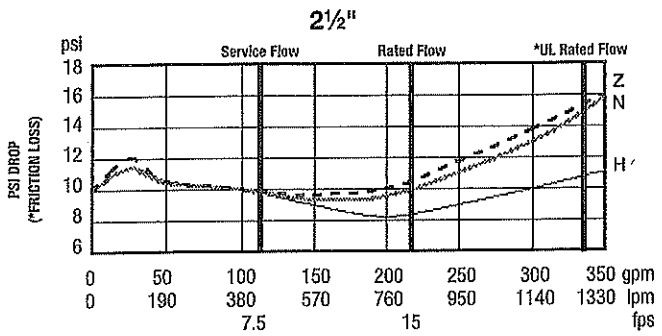
UL/FM Certified Flow Characteristics

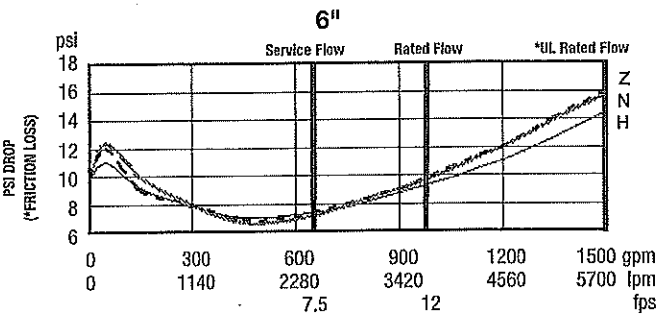
N&Z Flow characteristics collected using butterfly shutoff valves.

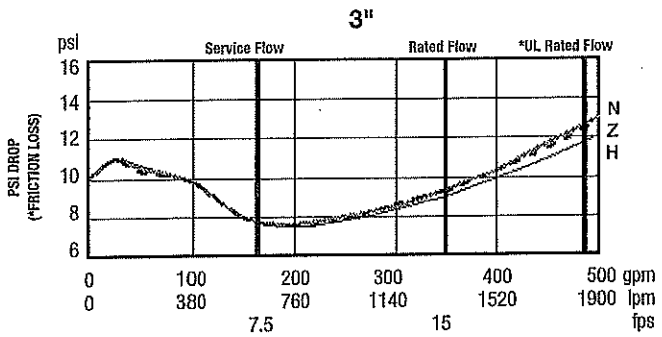
Flow capacity chart identifies valve performance based upon rated water velocity up to 25fps

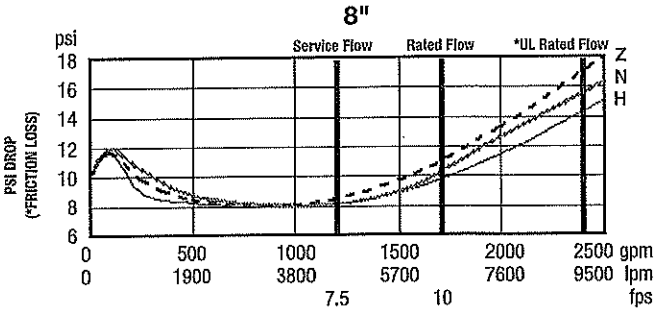
- Service Flow is typically determined by a rated velocity of 7.5fps based upon schedule 40 pipe.
- Rated Flow identifies maximum continuous duty performance determined by AWWA.
- UL Flow Rate is 150% of Rated Flow and is not recommended for continuous duty.
- AWWA Manual M22 [Appendix C] recommends that the maximum water velocity in services be not more than 10fps.

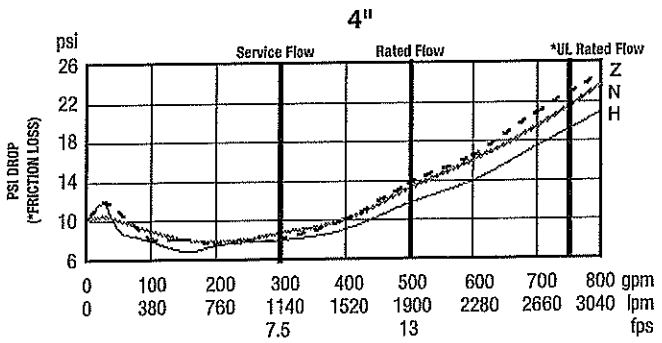
Horizontal — N - Pattern ----- Z - Pattern

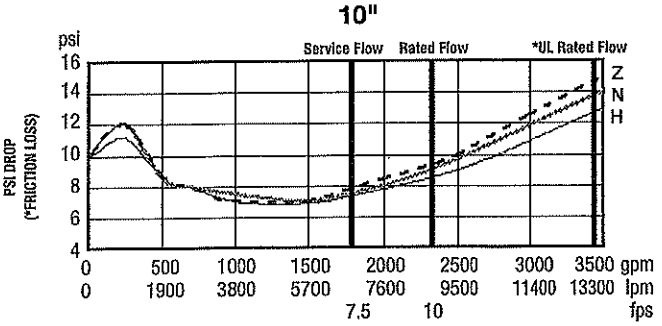












NOTICE

Inquire with governing authorities for local installation requirements

AMES
FIRE & WATERWORKS

A **WATTS** *Brand*

USA: Backflow Tel: (978) 689-6066 • Fax: (978) 975-8350 • AmesFireWater.com
USA: Control Valves Tel: (713) 943-0688 • Fax: (713) 944-9445 • AmesFireWater.com
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • AmesFireWater.ca
Latin America: Tel: (52) 55-4122-0138 • AmesFireWater.com

ES-A-C500-C500N-C500Z 1944